

March 5, 2019

Mr. Josh Haugh

Engineering Geologist
New York State Department of Environmental Conservation
Division of Environmental Remediation
1130 N. Westcott Road
Schenectady, New York 12306

RE: Emerging Contaminant Sampling
Richardson Hill Road Landfill (Site #4-13-008)
Town of Sidney, New York
FILE: 3729/68804

Dear Mr. Haugh:

This letter report presents the results of sampling and analysis of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane at the Richardson Hill Road Landfill site (the Site) in the Town of Sidney, New York. Activities summarized in this report were completed in accordance with the New York State Department of Environmental Conservation (NYSDEC) approved *Emerging Contaminant Sampling Work Plan* (OBG, October 22, 2018).

GROUNDWATER SAMPLING

PFAS and 1,4-dioxane samples were collected on November 12, 2018. In accordance with the NYSDEC-approved *Emerging Contaminant Sampling Work Plan* (OBG, October 22, 2018), groundwater samples were collected from six monitoring wells (RH-02, RH-05D, RH-06S, RH-07S, RH-08D, and MW-12DD). The monitoring well locations are shown on **Figure 1**.

Passive diffusion bags (PDBs) are used for the collection of samples for VOC analysis in some of the wells. Where present, the PDBs were removed approximately six weeks prior to the PFAS and 1,4-dioxane sampling. Each well was purged and sampled via low-flow methods using a submersible pump and dedicated high-density polyethylene (HDPE) discharge tubing.

Water quality parameters including temperature, specific conductance, dissolved oxygen, oxidation-reduction potential, and pH, were measured using a YSI 556 water quality meter. The measured water quality parameters and water levels were recorded on groundwater sampling forms (**Attachment A**) along with visual and olfactory observations noted at the start and end of purging.

PFAS and 1,4-dioxane groundwater samples were collected directly from the HDPE discharge tubing into the laboratory-provided bottleware. PFAS samples were collected in certified PFAS-free bottles, immediately capped, labelled, and placed into a cooler containing ice before collecting 1,4-dioxane samples. Additionally, the PFAS samples were stored and shipped separately from the 1,4-dioxane samples. The sample identifier, location, date, time, and sample collector were recorded on the groundwater sampling log and a chain-of-custody form. Sample coolers were shipped to SGS Accutest (SGS) in Dayton, New Jersey. The PFAS samples were shipped from the Dayton facility to the SGS facility in Orlando, Florida for the PFAS analyses. The 1,4-dioxane analyses were performed by the Dayton facility.

Quality control (QC) samples were collected at a minimum frequency of one per 20 samples. The QC samples for the PFAS analyses included one field duplicate (FD) sample, one matrix spike/matrix spike duplicate (MS/MSD)



sample pair, one equipment blank (EB) and one field reagent blanks (FRB). The QC samples for 1,4-dioxane included one FD sample, one MS/MSD sample pair, and one EB.

PFAS and associated QC samples were analyzed in accordance with USEPA Method 537 (modified) for the 21 PFAS analytes. The 1,4-dioxane samples were analyzed using USEPA Method 8270D with selected ion monitoring (SIM). The laboratory provided a full category B deliverable per the NYSDEC analysis and reporting guidelines. The analytical data package is provided in **Attachment B**.

The Data Usability Summary Report (DUSR) is provided in **Attachment C**.

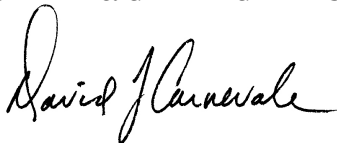
GROUNDWATER SAMPLE RESULTS

The analytical results from the November 2018 sampling event are presented in **Table 1**. The following observations are based on a review of the analytical results.

- 1,4-Dioxane was detected in five of the six groundwater samples and in the QC field duplicate sample. Detected concentrations ranged from an 0.0658 µg/L (estimated) to 3.16 µg/L (estimated).
- PFOS was detected in samples RH-02, RH-05D, RH-06S, and RH-08D (and corresponding field duplicate). The detected concentrations ranged from 1.74 ng/L (estimated) at RH-02 to 6.86 ng/L at RH-05D. The detected concentrations are well below the lifetime health advisory (LHA) of 70 ng/L for drinking water issued by the United States Environmental Protection Agency (USEPA) in May 2016.
- PFOA was detected in each of the six samples and the field duplicate. The detected concentrations ranged from 2.01 ng/L at RH-06S to 8.85 ng/L at RH-05D. The detected concentrations are well below the LHA of 70 ng/L.

If you have any questions regarding these data, please do not hesitate to contact me at your earliest convenience.

Very truly yours,
O'BRIEN & GERE ENGINEERS, INC.



David J. Carnevale
Managing Scientist

I:\Amphenol.3729\68804.2018-Landfills\Docs\Reports\RHRL\Emerging_Contaminant_Sampling\Letter_Report\EC_Letter_Report_20190305.docx

cc: J. Bianchi, Amphenol Corporation – via email
M. Sweitzer, Honeywell International Inc. – via email
P. Tames, USEPA – via email
D. Wright, OBG – via email

Table 1

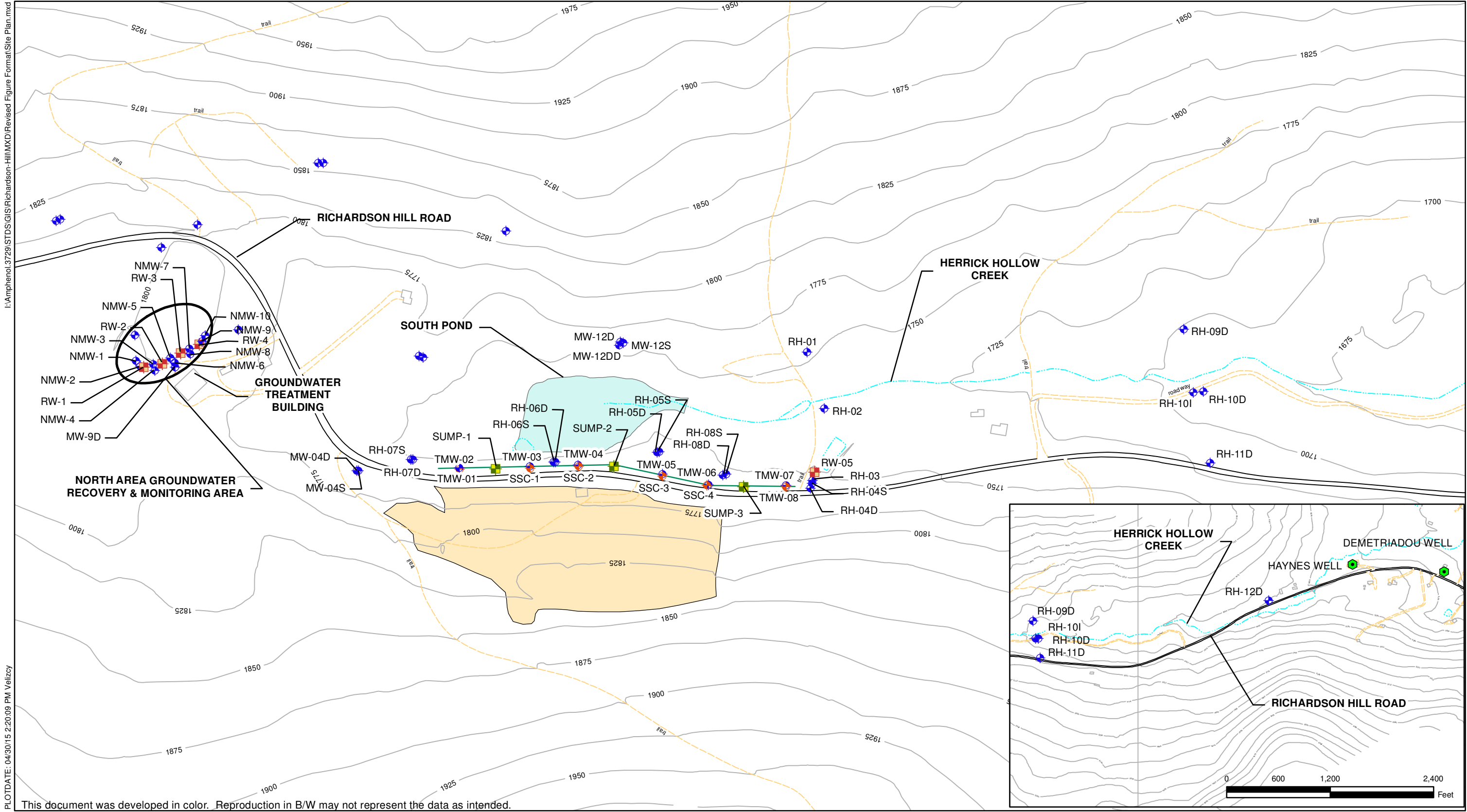
Richardson Hill Road Landfill Site (Site #4-13-008)
Town of Sidney, New York

1,4-Dioxane and PFAS Analytical Summary

Field Sample ID Location Sample Date Sample Delivery Group			MW-12DD_111218 MW-12DD 11/12/2018 JC78016	RH-02_111218 RH-02 11/12/2018 JC78016	RH-05D_111218 RH-05D 11/12/2018 JC78016	RH-06S_111218 RH-06S 11/12/2018 JC78016	RH-07S_111218 RH-07S 11/12/2018 JC78016	RH-08D_111218 RH-08D 11/12/2018 JC78016	X-1_111218 RH-08D 11/12/2018 JC78016	EQUIPMENT BLANK_111218 QC 11/12/2018 JC78016	FIELD REAGENT BLANK_111218 QC 11/12/2018 JC78016
Parameter Name	Units	Method									
6:2 Fluorotelomer sulfonate	ng/L	E537M	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
8:2 Fluorotelomer sulfonate	ng/L	E537M	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
EtFOSAA	ng/L	E537M	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
MeFOSAA	ng/L	E537M	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Perfluorobutanesulfonic acid	ng/L	E537M	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorobutanoic acid	ng/L	E537M	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	2.00 J	2.03 J	8.0 U	8.0 U
Perfluorodecanesulfonic acid	ng/L	E537M	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 U	4.0 U
Perfluorodecanoic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluorododecanoic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluoroheptanesulfonic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluoroheptanoic acid	ng/L	E537M	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorohexanesulfonic acid	ng/L	E537M	2.0 U	2.0 U	1.13 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorohexanoic acid	ng/L	E537M	4.0 U	4.0 U	1.22 J	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluorononanoic acid	ng/L	E537M	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorooctanesulfonic acid (PFOS)	ng/L	E537M	2.0 U	1.74 J	6.86	1.82 J	2.0 U	6.06	6.06	2.0 U	2.0 U
Perfluorooctanoic acid (PFOA)	ng/L	E537M	2.0 U	2.76	8.85	2.01	2.39	3.73	3.43	2.0 U	2.0 U
Perfluoropentanoic acid	ng/L	E537M	4.0 U	4.0 U	2.68 J	1.61 J	2.49 J	1.81 J	2.10 J	4.0 U	4.0 U
Perfluorotetradecanoic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluorotridecanoic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Perfluoroundecanoic acid	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
PFOSA	ng/L	E537M	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,4-Dioxane	ug/L	SW8270-SIM	0.0658 J	3.16 J	2.57	0.991	0.098 U	0.394	0.356	0.10 U	NA

Notes: ng/L - nanograms per liter
ug/L - micrograms per liter
J - Result is less than the reporting limit but greater than or equal to the method detection limit and the concentrations is an approximate value
BOLD - Detected concentration
NA - Not applicable

FIGURE 1





Groundwater Sampling Logs



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: RH-2Sample Date: 11/12/18Sample Time: 0945Sample ID: XRH-02XX-1804-XXSampler(s) Name: RB/MWWeather Conditions: Sunny 30°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18Purge Method: Submersible PumpSample Method: Submersible PumpAmbient PID - PPMWell Head PID - PPMWell Head LEL - %

Static Water Level	16.60	Water Column Height	72.72
LNAPL	ND	1 Purge Volume	45L
DNAPL	ND	Purge Rate	3 LPM →
Well Depth	89.32	Approximate Volume Purged	

Volume Removed	Initial	100l						Stabilization Criteria
Time	0915	0930	0935	0940	0945			
Static Water Level	16.60	19.91	19.90	19.90	19.90			< 0.3 feet
Purge Rate	3 LPM	3 LPM	5 LPM	5 LPM	5 L/min			< 500 mls/min
Temperature	9	9	9	9	9			+/- 1 °C
Specific Conductance	150	148	146	147	146			+/- 3 %
Dissolved Oxygen	6.36	5.66	4.40	4.23	4.15			+/- 10 % or <1
pH	5.4	5.8	6.0	6.0	6.0			+/- 0.1 s.u.
Redox Potential	86.4	52.2	48.2	46.2	46.4			+/- 10 mV
Turbidity	8	4	3	3	3			+/- 10 % or <10
Observation								

Comments: _____

Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES / NO _____EPA Oversight Personnel Present: YES / NO _____



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: MW-12DDSample Date: 11/12/18Sample Time: 1143Sample ID: xmw-12DD-1804-AKSampler(s) Name: RB/MWWeather Conditions: SUN 30°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18

Purge Method: Submersible Pump

Sample Method: Submersible Pump

Ambient PID - PPMWell Head PID - PPMWell Head LEL - %

Static Water Level	63.36	Water Column Height	76.06
LNAPL	ND	1 Purge Volume	50 Gal
DNAPL	ND	Purge Rate	3 L/min
Well Depth	139.42	Approximate Volume Purged	~52 Gal

Volume Removed	-	1001						Stabilization Criteria
Time	1028	1131	1136	1141				
Static Water Level	63.36	96.42	96.58	96.59				< 0.3 feet
Purge Rate	3 LPM	3 LPM	.5 LPM	.5 LPM				< 500 mls/min
Temperature	9	9	9	9				+/- 1 °C
Specific Conductance	288	275	274	272				+/- 3 %
Dissolved Oxygen	0.40	0.41	0.39	0.28				+/- 10 % or <1
pH	8.9	9.1	9.1	9.1				+/- 0.1 s.u.
Redox Potential	-48.3	-89.4	-82.8	-89.4				+/- 10 mV
Turbidity	76	57	52	49				+/- 10 % or <10
Observation	Clear, no odor	Clear, no odor	Clear, no odor	Clear, no odor				

Comments: Reagent Blank Collected @ 1010 / Equipment Blank Collected @ 1020Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES / NOEPA Oversight Personnel Present: YES / NO



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: RH-5DSample Date: 11/12/18Sample Time: 1400Sample ID: XR14-05DX-1804-XXSampler(s) Name: RB/mwWeather Conditions: SUN 35°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18

Purge Method: Submersible Pump

Sample Method: Submersible Pump

Ambient PID — PPMWell Head PID — PPMWell Head LEL — %

Static Water Level	15.35	Water Column Height	34.25
LNAPL	ND	1 Purge Volume	22L
DNAPL		Purge Rate	1.5 LPM
Well Depth	49.60	Approximate Volume Purged	~27L

Volume Removed	Initial	100L						Stabilization Criteria
Time	1333	1349	1354	1359				
Static Water Level	15.35	21.90	21.90	21.90				< 0.3 feet
Purge Rate	1.5 LPM	1.5 LPM	.5 LPM	.5 LPM				< 500 mls /min
Temperature	10	10	10	10				+/- 1 °C
Specific Conductance	336	302	299	296				+/- 3 %
Dissolved Oxygen	0.89	0.21	0.16	0.16				+/- 10 % or <1
pH	6.7	6.5	6.4	6.4				+/- 0.1 s.u.
Redox Potential	96.4	145.8	167.3	168.4				+/- 10 mV
Turbidity	50	25	10	8				+/- 10 % or <10
Observation	Clear, No odor	Clear, No odor	Clear No odor	Clear, No odor				

Comments: _____

Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES / NO _____EPA Oversight Personnel Present: YES / NO _____



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: RH-65Sample Date: 11/12/18Sample Time: 1443Sample ID: KRH-063K-1604-KKSampler(s) Name: RB MWWeather Conditions: sun 35°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18

Purge Method: Submersible Pump

Sample Method: Submersible Pump

Ambient PID — PPMWell Head PID — PPMWell Head LEL — %

Static Water Level	9.85	Water Column Height	16.85
LNAPL	ND	1 Purge Volume	11 L
DNAPL	ND	Purge Rate	1 LPM
Well Depth	26.70	Approximate Volume Purged	~16 L

Volume Removed	Initial	1001						Stabilization Criteria
Time	1420	1431	1436	1441				
Static Water Level	9.85	10.21	10.21	10.21				< 0.3 feet
Purge Rate	1 LPM	1 LPM	.5 LPM	.5 LPM				< 500 mls /min
Temperature	12	12	12	12				+/- 1 °C
Specific Conductance	261	291	291	289				+/- 3 %
Dissolved Oxygen	4.75	3.52	3.21	3.34				+/- 10 % or <1
pH	6.6	6.8	6.9	6.9				+/- 0.1 s.u.
Redox Potential	199.4	125.9	122.7	121.6				+/- 10 mV
Turbidity	110	21	20	19				+/- 10 % or <10
Observation	cloudy, no odor	clear, no odor	clear no odor	clear, no odor				

Comments: _____

Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES / NO _____EPA Oversight Personnel Present: YES / NO _____



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: RH-7SSample Date: 11/12/18Sample Time: 1520Sample ID: XRH-07SK-1804-KKSampler(s) Name: RB MWWeather Conditions: Sun 35°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18

Purge Method: Submersible Pump

Sample Method: Submersible Pump

Ambient PID — PPMWell Head PID — PPMWell Head LEL — %

Static Water Level	6.66	Water Column Height	19.19
LNAPL	ND	1 Purge Volume	12L
DNAPL		Purge Rate	1 LPM
Well Depth	25.85	Approximate Volume Purged	~19L

Volume Removed	1453	1505	1510	1515	1520			Stabilization Criteria
Time								
Static Water Level	6.66	8.00	8.00	8.00	8.00			< 0.3 feet
Purge Rate	1 LPM	1 LPM	.5 LPM	.5 LPM	.5 LPM			< 500 mls /min
Temperature	9	11	11	11	11			+/- 1 °C
Specific Conductance	225	194	189	185	189			+/- 3 %
Dissolved Oxygen	7.41	6.38	6.45	5.89	5.75			+/- 10 % or <1
pH	6.8	6.4	6.4	6.4	6.4			+/- 0.1 s.u.
Redox Potential	153.3	114.6	118.8	120.0	122.1			+/- 10 mV
Turbidity	>999	460	424	262	268			+/- 10 % or <10
Observation	Turbid, no odor	Cloudy, no odor	Cloudy, no odor	Cloudy, no odor	Cloudy, no odor			

Comments: _____

Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES NO _____EPA Oversight Personnel Present: YES / NO _____



OBG Syracuse – Richardson Hill Road Landfill Field Data Sheet

Sample Location: RH-8DSample Date: 11/12/18Sample Time: 1305Sample ID: KRH-08DK-1804-XFSampler(s) Name: RB/mwWeather Conditions: sun 30°FField Observation(s)/Well Condition: GoodPurge Date: 11/12/18

Purge Method: Submersible Pump

Sample Method: Submersible Pump

Ambient PID — PPMWell Head PID — PPMWell Head LEL — %

Static Water Level	12.52	Water Column Height	36.02
LNAPL	ND	1 Purge Volume	24 L
DNAPL		Purge Rate	3 LPM → 5 LPM
Well Depth	48.54	Approximate Volume Purged	~26 L

Volume Removed	Initial	100 l						Stabilization Criteria
Time	1228	1258	1303					
Static Water Level	12.52	15.27	15.41					< 0.3 feet
Purge Rate	3 LPM	3 LPM	5 LPM					< 500 mls /min
Temperature	10	11	11					+/- 1 ° C
Specific Conductance	299	268	267					+/- 3 %
Dissolved Oxygen	2.74	0.10	0.10					+/- 10 % or <1
pH	6.8	6.2	6.3					+/- 0.1 s.u.
Redox Potential	-9.4	26.2	27.8					+/- 10 mV
Turbidity	215	11	8					+/- 10 % or <10
Observation	Cloudy, no odor	Clear, no odor	→					

Comments: _____

Purge Water Collected and Transported to RHRL Groundwater Treatment Plant YES / NO _____EPA Oversight Personnel Present: YES / NO _____



Analytical Data Package

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

e-Hardcopy 2.0
Automated Report

Technical Report for

O'Brien & Gere Engineers, Inc

Richardson Hill Road Landfill, Syndey, NY

68804 PO# 11800650

SGS Job Number: JC78016

Sampling Date: 11/12/18

Report to:

O'Brien & Gere Engineers, Incorporated
333 West Washington Street P.O. Box 4873
Syracuse, NY 13221
david.carnevale@obg.com

ATTN: David Carnevale

Total number of pages in report: 743



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.

A handwritten signature in black ink, appearing to read 'Brian McGuire'.

Brian McGuire
General Manager

Client Service contact: Cynthia Romero 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)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

O'Brien & Gere Engineers, Inc

Job No: JC78016

Richardson Hill Road Landfill, Syndey, NY
Project No: 68804 PO# 11800650

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC78016-1	11/12/18	15:20	11/15/18	AQ	Ground Water	RH-07S
JC78016-2	11/12/18	14:43	11/15/18	AQ	Ground Water	RH-06S
JC78016-3	11/12/18	14:00	11/15/18	AQ	Ground Water	RH-05D
JC78016-4	11/12/18	09:45	11/15/18	AQ	Ground Water	RH-02
JC78016-4D	11/12/18	09:45	11/15/18	AQ	Water Dup/MSD	RH-02 MSD
JC78016-4S	11/12/18	09:45	11/15/18	AQ	Water Matrix Spike	RH-02 MS
JC78016-5	11/12/18	13:05	11/15/18	AQ	Ground Water	RH-08D
JC78016-6	11/12/18	11:43	11/15/18	AQ	Ground Water	MW-12DD
JC78016-7	11/12/18	10:20	11/15/18	AQ	Equipment Blank	EQUIPMENT BLANK
JC78016-8	11/12/18	13:05	11/15/18	AQ	Ground Water	X-1
JC78016-9	11/12/18	10:10	11/15/18	AQ	Field Blank Water	FIELD REAGENT BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: O'Brien & Gere Engineers, Inc

Job No JC78016

Site: Richardson Hill Road Landfill, Syndey, NY

Report Date 12/4/2018 12:31:24 P

On 11/15/2018, 8 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 1.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC78016 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 EPA 537M BY ID

Matrix: AQ

Batch ID: F:OP72753

- The data for EPA 537M BY ID meets quality control requirements.
- JC78016-1: Analysis performed at SGS Orlando, FL.
- JC78016-2: Analysis performed at SGS Orlando, FL.
- JC78016-3: Analysis performed at SGS Orlando, FL.
- JC78016-4: Analysis performed at SGS Orlando, FL.
- JC78016-5: Analysis performed at SGS Orlando, FL.
- JC78016-6: Analysis performed at SGS Orlando, FL.
- JC78016-9: Analysis performed at SGS Orlando, FL.
- JC78016-7: Analysis performed at SGS Orlando, FL.
- JC78016-8: Analysis performed at SGS Orlando, FL.
- JC78016-9 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-1 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-1 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits high, however sample is ND.
- JC78016-2 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits high, however sample is ND.
- JC78016-6 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-8 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-4 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-3 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-7 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-5 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.
- JC78016-2 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

MS Semi-volatiles By Method SW846 8270D BY SIM

Matrix: AQ

Batch ID: OP16734A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC78016-4MS, JC78016-4MSD were used as the QC samples indicated.
- JC78016-4 for 1,4-Dioxane: Associated CCV outside of control limits high.

Tuesday, December 04, 2018

Page 1 of 2

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Dayton, NJ

Job No JC78016

Site: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Report Date 11/30/2018 12:56:02

8 Samples and 1 Field Blank(s) were collected on 11/12/2018 and were received at SGS North America Inc-Orlando on 11/15/2018, properly preserved at 3 Deg. C, and arrived intact. An SGS Orlando job number of JC78016 was assigned to the samples. 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: OP72753

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) JC78016-4MS, JC78016-4MSD 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.

Sample(s) JC78016-1, JC78016-2 have surrogates outside control limits.

OP72753-BS for Perfluorodecanesulfonic acid: Sporadic marginal failure.

JC78016-1 for 13C2-6:2FTS: Outside control limits.

JC78016-1 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits high, however sample is ND.

JC78016-1 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-2 for 13C2-6:2FTS: Outside control limits.

JC78016-2 for 13C7-PFUnDA: Outside control limits.

JC78016-2 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits high, however sample is ND.

JC78016-2 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-2 for Perfluoroundecanoic acid: Associated ID Standard outside control limits high, however sample is ND.

JC78016-3 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-4 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-5 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-6 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-7 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-8 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

JC78016-9 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

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:

Courtney Hulce, QA Coordinator (signature on file)

Summary of Hits

Page 1 of 2

Job Number: JC78016
Account: O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY
Collected: 11/12/18



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
JC78016-1	RH-07S					
Perfluoropentanoic acid ^a		2.49 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorooctanoic acid ^a		2.39	2.0	1.0	ng/l	EPA 537M BY ID
JC78016-2	RH-06S					
Perfluoropentanoic acid ^a		1.61 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorooctanoic acid ^a		2.01	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanesulfonic acid ^a		1.82 J	2.0	1.5	ng/l	EPA 537M BY ID
1,4-Dioxane		0.991	0.098	0.048	ug/l	SW846 8270D BY SIM
JC78016-3	RH-05D					
Perfluoropentanoic acid ^a		2.68 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorohexanoic acid ^a		1.22 J	4.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanoic acid ^a		8.85	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorohexanesulfonic acid ^a		1.13 J	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanesulfonic acid ^a		6.86	2.0	1.5	ng/l	EPA 537M BY ID
1,4-Dioxane		2.57	0.098	0.048	ug/l	SW846 8270D BY SIM
JC78016-4	RH-02					
Perfluorooctanoic acid ^a		2.76	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanesulfonic acid ^a		1.74 J	2.0	1.5	ng/l	EPA 537M BY ID
1,4-Dioxane ^b		3.16	0.10	0.049	ug/l	SW846 8270D BY SIM
JC78016-5	RH-08D					
Perfluorobutanoic acid ^a		2.00 J	8.0	2.0	ng/l	EPA 537M BY ID
Perfluoropentanoic acid ^a		1.81 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorooctanoic acid ^a		3.73	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanesulfonic acid ^a		6.06	2.0	1.5	ng/l	EPA 537M BY ID
1,4-Dioxane		0.394	0.098	0.048	ug/l	SW846 8270D BY SIM
JC78016-6	MW-12DD					
1,4-Dioxane		0.0658 J	0.10	0.049	ug/l	SW846 8270D BY SIM
JC78016-7	EQUIPMENT BLANK					

No hits reported in this sample.

Summary of Hits

Page 2 of 2

Job Number: JC78016
Account: O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY
Collected: 11/12/18



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC78016-8	X-1					
Perfluorobutanoic acid ^a		2.03 J	8.0	2.0	ng/l	EPA 537M BY ID
Perfluoropentanoic acid ^a		2.10 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorooctanoic acid ^a		3.43	2.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanesulfonic acid ^a		6.06	2.0	1.5	ng/l	EPA 537M BY ID
1,4-Dioxane		0.356	0.098	0.048	ug/l	SW846 8270D BY SIM

JC78016-9 FIELD REAGENT BLANK

No hits reported in this sample.

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated CCV outside of control limits high.



Dayton, NJ

Section 4

4

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	RH-07S	
Lab Sample ID:	JC78016-1	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31154.D	1	11/30/18 19:49	CC	11/17/18 05:00	OP16734A	E4P1711
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	75%		29-124%
321-60-8	2-Fluorobiphenyl	84%		23-122%
1718-51-0	Terphenyl-d14	54%		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

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Client Sample ID:	RH-07S	
Lab Sample ID:	JC78016-1	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24188.D	1	11/28/18 14:02	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	J
2706-90-3	Perfluoropentanoic acid	2.49	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	2.39	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	
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 ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate ^c	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		30-140%
	13C5-PFPeA	93%		40-140%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	107%		50-150%
	13C8-PFOA	137%		50-150%
	13C9-PFNA	129%		50-150%
	13C6-PFDA	109%		50-150%
	13C7-PFUnDA	136%		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

Report of Analysis

Client Sample ID:	RH-07S	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-1	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	127%		50-150%
	13C2-PFTeDA	83%		40-150%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	72%		30-140%
	d3-MeFOSAA	69%		50-150%
	13C2-6:2FTS	199% ^d		50-150%
	13C2-8:2FTS	106%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
- (b) Associated BS recovery outside control limits.
- (c) Associated ID Standard outside control limits high, however sample is ND.
- (d) Outside control limits.

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

4.1
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	RH-06S	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D BY SIM SW846 3510C		
Project:	Richardson Hill Road Landfill, Syndey, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31155.D	1	11/30/18 20:12	CC	11/17/18 05:00	OP16734A	E4P1711
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	0.991	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	67%		23-122%
1718-51-0	Terphenyl-d14	32%		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

Page 1 of 2

Client Sample ID:	RH-06S	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24189.D	1	11/28/18 14:17	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
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
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	1.61	4.0	1.5	ng/l	J
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	2.01	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 ^b	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	
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	1.82	2.0	1.5	ng/l	J
335-77-3	Perfluorodecanesulfonic acid ^c	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate ^b	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		30-140%
	13C5-PFPeA	104%		40-140%
	13C5-PFHxA	111%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	143%		50-150%
	13C9-PFNA	137%		50-150%
	13C6-PFDA	127%		50-150%
	13C7-PFUnDA	154% ^d		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

Report of Analysis

Client Sample ID:	RH-06S	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	139%		50-150%
	13C2-PFTeDA	79%		40-150%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	106%		30-140%
	d3-MeFOSAA	79%		50-150%
	13C2-6:2FTS	199% ^d		50-150%
	13C2-8:2FTS	116%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
- (b) Associated ID Standard outside control limits high, however sample is ND.
- (c) Associated BS recovery outside control limits.
- (d) Outside control limits.

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

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	RH-05D	
Lab Sample ID:	JC78016-3	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31156.D	1	11/30/18 20:35	CC	11/17/18 05:00	OP16734A	E4P1711
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	2.57	0.098	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		29-124%
321-60-8	2-Fluorobiphenyl	57%		23-122%
1718-51-0	Terphenyl-d14	32%		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

Page 1 of 2

Client Sample ID:	RH-05D	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24177.D	1	11/28/18 11:09	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	2.68	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	8.85	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	
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.13	2.0	1.0	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	6.86	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	99%		30-140%
	13C5-PFPeA	101%		40-140%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	113%		50-150%
	13C9-PFNA	108%		50-150%
	13C6-PFDA	115%		50-150%
	13C7-PFUnDA	106%		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

Report of Analysis

Client Sample ID:	RH-05D	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	100%		50-150%
	13C2-PFTeDA	95%		40-150%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	102%		50-150%
	13C8-FOSA	109%		30-140%
	d3-MeFOSAA	87%		50-150%
	13C2-6:2FTS	108%		50-150%
	13C2-8:2FTS	107%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	RH-02	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D BY SIM SW846 3510C		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P72910.D	1	11/28/18 01:06	SA	11/17/18 05:00	OP16734A	E3P3447
Run #2							

Run #	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 ^a	3.16	0.10	0.049	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	73%		29-124%		
321-60-8	2-Fluorobiphenyl	67%		23-122%		
1718-51-0	Terphenyl-d14	41%		22-130%		

(a) Associated CCV outside of control limits high.

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

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Client Sample ID:	RH-02	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24178.D	1	11/28/18 11:24	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
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	2.76	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	
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	1.74	2.0	1.5	ng/l	J
335-77-3	Perfluorodecanesulfonic acid ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		30-140%
	13C5-PFPeA	100%		40-140%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	98%		50-150%
	13C8-PFOA	109%		50-150%
	13C9-PFNA	106%		50-150%
	13C6-PFDA	113%		50-150%
	13C7-PFUnDA	102%		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

Report of Analysis

Client Sample ID:	RH-02	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	106%		50-150%
	13C2-PFTeDA	86%		40-150%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	101%		30-140%
	d3-MeFOSAA	87%		50-150%
	13C2-6:2FTS	102%		50-150%
	13C2-8:2FTS	100%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	RH-08D	
Lab Sample ID:	JC78016-5	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31157.D	1	11/30/18 20:58	CC	11/17/18 05:00	OP16734A	E4P1711
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	0.394	0.098	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		29-124%
321-60-8	2-Fluorobiphenyl	82%		23-122%
1718-51-0	Terphenyl-d14	42%		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

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Client Sample ID:	RH-08D	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24185.D	1	11/28/18 13:14	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	2.00	8.0	2.0	ng/l	J
2706-90-3	Perfluoropentanoic acid	1.81	4.0	1.5	ng/l	J
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	3.73	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	
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	6.06	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		30-140%
	13C5-PFPeA	96%		40-140%
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	104%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	84%		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

Report of Analysis

Client Sample ID:	RH-08D	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	88%		50-150%
	13C2-PFTeDA	74%		40-150%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	83%		30-140%
	d3-MeFOSAA	67%		50-150%
	13C2-6:2FTS	98%		50-150%
	13C2-8:2FTS	84%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	MW-12DD	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270D BY SIM SW846 3510C		
Project:	Richardson Hill Road Landfill, Syndey, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31158.D	1	11/30/18 21:20	CC	11/17/18 05:00	OP16734A	E4P1711
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	0.0658	0.10	0.049	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		29-124%
321-60-8	2-Fluorobiphenyl	91%		23-122%
1718-51-0	Terphenyl-d14	51%		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

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Client Sample ID:	MW-12DD	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24186.D	1	11/28/18 13:30	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
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	
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 ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%		30-140%
	13C5-PFPeA	102%		40-140%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	101%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	108%		50-150%
	13C6-PFDA	122%		50-150%
	13C7-PFUnDA	117%		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

Report of Analysis

Client Sample ID:	MW-12DD	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	96%		50-150%
	13C2-PFTeDA	80%		40-150%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	106%		30-140%
	d3-MeFOSAA	94%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	103%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	EQUIPMENT BLANK	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270D BY SIM SW846 3510C		
Project:	Richardson Hill Road Landfill, Syndey, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31159.D	1	11/30/18 21:43	CC	11/17/18 05:00	OP16734A	E4P1711
Run #2							

	Initial Volume	Final Volume
Run #1	990 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	76%		29-124%
321-60-8	2-Fluorobiphenyl	71%		23-122%
1718-51-0	Terphenyl-d14	49%		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

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Client Sample ID:	EQUIPMENT BLANK	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24183.D	1	11/28/18 12:43	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
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	
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 ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		30-140%
	13C5-PFPeA	96%		40-140%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	107%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	108%		50-150%
	13C7-PFUnDA	94%		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

Report of Analysis

Client Sample ID:	EQUIPMENT BLANK	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	82%		50-150%
	13C2-PFTeDA	77%		40-150%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	64%		30-140%
	d3-MeFOSAA	75%		50-150%
	13C2-6:2FTS	101%		50-150%
	13C2-8:2FTS	94%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

4.7
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	X-1	
Lab Sample ID:	JC78016-8	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P31160A.D	1	11/30/18 22:39	CC	11/17/18 05:00	OP16734A	E4P1711
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	0.356	0.098	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		29-124%
321-60-8	2-Fluorobiphenyl	70%		23-122%
1718-51-0	Terphenyl-d14	36%		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

Page 1 of 2

Client Sample ID:	X-1	
Lab Sample ID:	JC78016-8	Date Sampled: 11/12/18
Matrix:	AQ - Ground Water	Date Received: 11/15/18
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids: n/a
Project:	Richardson Hill Road Landfill, Syndey, NY	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24187.D	1	11/28/18 13:46	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	2.03	8.0	2.0	ng/l	J
2706-90-3	Perfluoropentanoic acid	2.10	4.0	1.5	ng/l	J
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	3.43	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	
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	6.06	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		30-140%
	13C5-PFPeA	105%		40-140%
	13C5-PFHxA	109%		50-150%
	13C4-PFHpA	114%		50-150%
	13C8-PFOA	122%		50-150%
	13C9-PFNA	120%		50-150%
	13C6-PFDA	113%		50-150%
	13C7-PFUnDA	108%		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

Report of Analysis

Client Sample ID:	X-1	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-8	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	109%		50-150%
	13C2-PFTeDA	94%		40-150%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	102%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	93%		30-140%
	d3-MeFOSAA	80%		50-150%
	13C2-6:2FTS	112%		50-150%
	13C2-8:2FTS	98%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

SGS North America Inc.

Report of Analysis

Page 1 of 2

Client Sample ID:	FIELD REAGENT BLANK	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-9	Date Received:	11/15/18
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q24184.D	1	11/28/18 12:59	AFL	11/24/18 08:00	F:OP72753	F:S2Q377
Run #2							

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

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
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	
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 ^b	ND	4.0	1.0	ng/l	
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		30-140%
	13C5-PFPeA	105%		40-140%
	13C5-PFHxA	105%		50-150%
	13C4-PFHpA	104%		50-150%
	13C8-PFOA	115%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	124%		50-150%
	13C7-PFUnDA	105%		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

Report of Analysis

Client Sample ID:	FIELD REAGENT BLANK	Date Sampled:	11/12/18
Lab Sample ID:	JC78016-9	Date Received:	11/15/18
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	EPA 537M BY ID EPA 537 MOD		
Project:	Richardson Hill Road Landfill, Syndey, NY		

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	95%		50-150%
	13C2-PFTeDA	66%		40-150%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	97%		50-150%
	13C8-FOSA	113%		30-140%
	d3-MeFOSAA	87%		50-150%
	13C2-6:2FTS	104%		50-150%
	13C2-8:2FTS	105%		50-150%

- (a) Analysis performed at SGS Orlando, FL.
(b) Associated BS recovery outside control limits.

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

Misc. Forms

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Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX 732-329-3499
www.sgs.com/ehsusa

FED-EX Tracking #	Bottle Order Control #
SGS Quote #	SGS Job #
SW 102913-16	
JC78016	

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes											
Company Name	Project Name																
OP'Brien + Gelle Engineers, Inc.	RHRL Emerging Contaminant Sampling																
Street Address	Street																
333 West Washington St	2211 Richardson Hill Rd																
City	City																
Syracuse NY	Syracuse Center NY																
State	State																
NY	NY																
Project Contact	Project #																
Mr. David Camacho	68804																
Phone #	Client Purchase Order #																
315-956-6571	11800650																
Fax #	City																
	State																
	Zip																
Sampler(s) Name(s)	Project Manager																
	Attention:																
Lab Sample #	Fir d ID / Point of Collection	MEOH/DI Val #	Date	Time	Sampled by	Matrix	# of bottles	HQ	NAOH	HNO3	H2SO4	HCN	DI Water	MEOH	DIOLINE	LAB USE ONLY	
1	RH-07S		11/12/18	1520	GW	2	2										
2	RH-06S		11/12/18	1443	GW	2	2										
3	RH-05D		11/12/18	1400	GW	2	2										E100
4	RH-02		11/12/18	0945	GW	2	2										1322
	RH-02MS		11/12/18	0945	GW	2	2										ER35
	RH-02MSD		11/12/18	0945	GW	2	2										
5	RH-05D		11/12/18	1305	GW	2	2										
6	MW-12DD		11/12/18	1143	GW	2	2										
7	Equipment Blank		11/12/18	1020	EB	2	2										
8	X-1		11/12/18	1305	GW	2	2										
Turnaround Time (Business days)		Approved by (SGS Project Manager)/Date:		Data Deliverable Information		Comments / Special Instructions											
☐ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day RUSH ☐ 2 Day RUSH ☐ 1 Day RUSH ☐ other		INITIAL ASSESSMENT 3A SM LABEL VERIFICATION		☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NJ Data of Known Quality Protocol Reporting Commercial "A" = Results Only; Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		☐ NYASP Category A ☐ NYASP Category B ☐ State Forms ☐ EDD Format ☐ Other											
Emergency & Rush TIA data available via LabLink						Questions? 518-410-1207											
Sample inventory is verified upon receipt in the Laboratory																	
Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished by:	Date Time:	Received By:	Date Time:										
1	11/14/18 1000	1	FX	2	FX	2	11/15/18 9:20										
Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished by:	Date Time:	Received By:	Date Time:										
3		3		4		4											
Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	Intact	Preserved where applicable	On Ice										
5		5			☐ Intact ☐ Not Intact	☐	☐										
							Cooler Temp. 2.1°C										

SGS Sample Receipt Summary

Job Number: JC78016

Client: O'BRIEN & GERE ENGINEERS, INCORPO

Project: RICHARDSON HILL ROAD LANDFILL, SYDNEY,

Date / Time Received: 11/15/2018 9:20:00 AM

Delivery Method:
Airbill #s:
Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.5);

Cooler Security
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:

216017

pH 12+:

208717

Other: (Specify)

Comments

SM089-03

Rev. Date 12/7/17

JC78016: Chain of Custody

Page 2 of 2

Internal Sample Tracking Chronicle

O'Brien & Gere Engineers, Inc

Job No: JC78016

Richardson Hill Road Landfill, Syndey, NY

Project No: 68804 PO# 11800650

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC78016-1 RH-07S	Collected: 12-NOV-18 15:20	By:	Received: 15-NOV-18	By: FR		
JC78016-1	EPA 537M BY ID	28-NOV-18 14:02	AFL	24-NOV-18		LCID537NY21
JC78016-1	SW846 8270D BY SIM	30-NOV-18 19:49	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-2 RH-06S	Collected: 12-NOV-18 14:43	By:	Received: 15-NOV-18	By: FR		
JC78016-2	EPA 537M BY ID	28-NOV-18 14:17	AFL	24-NOV-18		LCID537NY21
JC78016-2	SW846 8270D BY SIM	30-NOV-18 20:12	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-3 RH-05D	Collected: 12-NOV-18 14:00	By:	Received: 15-NOV-18	By: FR		
JC78016-3	EPA 537M BY ID	28-NOV-18 11:09	AFL	24-NOV-18		LCID537NY21
JC78016-3	SW846 8270D BY SIM	30-NOV-18 20:35	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-4 RH-02	Collected: 12-NOV-18 09:45	By:	Received: 15-NOV-18	By: FR		
JC78016-4	SW846 8270D BY SIM	28-NOV-18 01:06	SA	17-NOV-18 VP		B8270SIM14DIOX
JC78016-4	EPA 537M BY ID	28-NOV-18 11:24	AFL	24-NOV-18		LCID537NY21
JC78016-5 RH-08D	Collected: 12-NOV-18 13:05	By:	Received: 15-NOV-18	By: FR		
JC78016-5	EPA 537M BY ID	28-NOV-18 13:14	AFL	24-NOV-18		LCID537NY21
JC78016-5	SW846 8270D BY SIM	30-NOV-18 20:58	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-6 MW-12DD	Collected: 12-NOV-18 11:43	By:	Received: 15-NOV-18	By: FR		
JC78016-6	EPA 537M BY ID	28-NOV-18 13:30	AFL	24-NOV-18		LCID537NY21
JC78016-6	SW846 8270D BY SIM	30-NOV-18 21:20	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-7 EQUIPMENT BLANK	Collected: 12-NOV-18 10:20	By:	Received: 15-NOV-18	By: FR		
JC78016-7	EPA 537M BY ID	28-NOV-18 12:43	AFL	24-NOV-18		LCID537NY21

Internal Sample Tracking Chronicle

O'Brien & Gere Engineers, Inc

Job No: JC78016

Richardson Hill Road Landfill, Syndey, NY
Project No: 68804 PO# 11800650

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC78016-7	SW846 8270D BY SIM	30-NOV-18 21:43	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-8	Collected: 12-NOV-18 13:05 By: X-1		Received: 15-NOV-18 By: FR			
JC78016-8	EPA 537M BY ID	28-NOV-18 13:46	AFL	24-NOV-18		LCID537NY21
JC78016-8	SW846 8270D BY SIM	30-NOV-18 22:39	CC	17-NOV-18 VP		B8270SIM14DIOX
JC78016-9	Collected: 12-NOV-18 10:10 By: FIELD REAGENT BLANK		Received: 15-NOV-18 By: FR			
JC78016-9	EPA 537M BY ID	28-NOV-18 12:59	AFL	24-NOV-18		LCID537NY21

SGS Internal Chain of Custody

Page 1 of 3

Job Number: JC78016
Account: OBGNYs O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY
Received: 11/15/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC78016-1.1	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-1.1	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-1.1	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-1.1	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-1.1.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-1.1
JC78016-1.1.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-1.1
JC78016-1.1.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-1.1.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-1.1.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-1.1.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-1.1.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-2.2	Secured Storage	Samuel Amoakohene	11/17/18 04:42	Retrieve from Storage
JC78016-2.2	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-2.2.1	Samuel Amoakohene	Organics Prep	11/17/18 04:42	Extract from JC78016-2.2
JC78016-2.2.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-2.2
JC78016-2.2.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-2.2.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-2.2.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-2.2.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-2.2.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-3.2	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-3.2	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-3.2	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-3.2	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-3.2.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-3.2
JC78016-3.2.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-3.2
JC78016-3.2.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-3.2.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-3.2.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-3.2.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-3.2.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-4.1	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-4.1	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-4.1	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-4.1	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-4.1.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-4.1
JC78016-4.1.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-4.1

SGS Internal Chain of Custody

Page 2 of 3

Job Number: JC78016
Account: OBGNYs O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY
Received: 11/15/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC78016-4.1.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-4.1.1	Extract Storage	Sufiyanu Ahmed	11/27/18 23:55	Retrieve from Storage
JC78016-4.1.1	Sufiyanu Ahmed	GCMS3P	11/27/18 23:55	Load on Instrument
JC78016-4.1.1	GCMS3P	Christine Change	12/03/18 12:12	Unload from Instrument
JC78016-4.1.1	Christine Change	Extract Freezer	12/03/18 12:12	Return to Storage
JC78016-4.2	Secured Storage	Samuel Amoakohene	11/17/18 04:42	Retrieve from Storage
JC78016-4.2	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-4.2.1	Samuel Amoakohene	Organics Prep	11/17/18 04:42	Extract from JC78016-4.2
JC78016-4.2.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-4.2
JC78016-4.2.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-4.2.1	Extract Storage	Sufiyanu Ahmed	12/01/18 02:46	Retrieve from Storage
JC78016-4.2.1	Sufiyanu Ahmed	GCMS4P	12/01/18 02:46	Load on Instrument
JC78016-4.2.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-4.2.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-4.5	Secured Storage	Samuel Amoakohene	11/17/18 04:42	Retrieve from Storage
JC78016-4.5	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-4.5.1	Samuel Amoakohene	Organics Prep	11/17/18 04:42	Extract from JC78016-4.5
JC78016-4.5.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-4.5
JC78016-4.5.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-4.5.1	Extract Storage	Sufiyanu Ahmed	12/01/18 02:46	Retrieve from Storage
JC78016-4.5.1	Sufiyanu Ahmed	GCMS4P	12/01/18 02:46	Load on Instrument
JC78016-4.5.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-4.5.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-5.1	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-5.1	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-5.1	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-5.1	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-5.1.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-5.1
JC78016-5.1.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-5.1
JC78016-5.1.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-5.1.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-5.1.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-5.1.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-5.1.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-6.2	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-6.2	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-6.2	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage

SGS Internal Chain of Custody

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Job Number: JC78016
Account: OBGNYs O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY
Received: 11/15/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC78016-6.2	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-6.2.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-6.2
JC78016-6.2.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-6.2
JC78016-6.2.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-6.2.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-6.2.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-6.2.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-6.2.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-7.2	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-7.2	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-7.2	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-7.2	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-7.2.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-7.2
JC78016-7.2.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-7.2
JC78016-7.2.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-7.2.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-7.2.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-7.2.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-7.2.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-7.2.1	Extract Freezer	Christine Change	12/03/18 13:17	Retrieve from Storage
JC78016-7.2.1	Christine Change	GCMS4P	12/03/18 13:17	Load on Instrument
JC78016-7.2.1	GCMS4P	Christine Change	12/04/18 11:55	Unload from Instrument
JC78016-7.2.1	Christine Change	Extract Freezer	12/04/18 11:55	Return to Storage
JC78016-8.1	Secured Storage	Matthew Robbins	11/16/18 22:19	Retrieve from Storage
JC78016-8.1	Matthew Robbins	Secured Staging Area	11/16/18 22:19	Return to Storage
JC78016-8.1	Secured Staging Area	Samuel Amoakohene	11/17/18 04:41	Retrieve from Storage
JC78016-8.1	Samuel Amoakohene		11/20/18 11:28	Depleted
JC78016-8.1.1	Samuel Amoakohene	Organics Prep	11/17/18 04:41	Extract from JC78016-8.1
JC78016-8.1.1	Organics Prep	Vikas Parikh	11/17/18 09:03	Extract from JC78016-8.1
JC78016-8.1.1	Vikas Parikh	Extract Storage	11/17/18 09:03	Return to Storage
JC78016-8.1.1	Extract Storage	Christine Change	11/30/18 14:28	Retrieve from Storage
JC78016-8.1.1	Christine Change	GCMS4P	11/30/18 14:28	Load on Instrument
JC78016-8.1.1	GCMS4P	Christine Change	12/03/18 13:15	Unload from Instrument
JC78016-8.1.1	Christine Change	Extract Freezer	12/03/18 13:15	Return to Storage
JC78016-8.1.1	Extract Freezer	Christine Change	12/03/18 13:17	Retrieve from Storage
JC78016-8.1.1	Christine Change	GCMS4P	12/03/18 13:17	Load on Instrument
JC78016-8.1.1	GCMS4P	Christine Change	12/04/18 11:55	Unload from Instrument
JC78016-8.1.1	Christine Change	Extract Freezer	12/04/18 11:55	Return to Storage

MS Semi-volatiles

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: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-MB1	3P72902.D	1	11/27/18	SA	11/17/18	OP16734A	E3P3447

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

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	70% 29-124%
321-60-8	2-Fluorobiphenyl	65% 23-122%
1718-51-0	Terphenyl-d14	59% 22-130%

Method Blank Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-MB1	4M80261.D	1	11/30/18	CC	11/17/18	OP16734A	E4M3762

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

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	81% 29-124%
321-60-8	2-Fluorobiphenyl	61% 23-122%
1718-51-0	Terphenyl-d14	56% 22-130%

Method Blank Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-MB1	4P31148.D	1	11/30/18	CC	11/17/18	OP16734A	E4P1711

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

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	59% 29-124%
321-60-8	2-Fluorobiphenyl	63% 23-122%
1718-51-0	Terphenyl-d14	51% 22-130%

Method Blank Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-MB1	4P31166.D	1	12/01/18	SA	11/17/18	OP16734A	E4P1712

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

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	68% 29-124%
321-60-8	2-Fluorobiphenyl	55% 23-122%
1718-51-0	Terphenyl-d14	51% 22-130%

Blank Spike Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-BS12	3P72924.D	1	11/28/18	CC	11/17/18	OP16734A	E3P3448

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	1	0.310	31	10-110

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	59%	29-124%
321-60-8	2-Fluorobiphenyl	59%	23-122%
1718-51-0	Terphenyl-d14	53%	22-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-BS12	4P31167.D	1	12/01/18	SA	11/17/18	OP16734A	E4P1712

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	1	0.285	29	10-110

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	61%	29-124%
321-60-8	2-Fluorobiphenyl	51%	23-122%
1718-51-0	Terphenyl-d14	45%	22-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: JC78016

Account: OBGNY S O'Brien & Gere Engineers, Inc

Project: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16734A-MS	3P72908.D	1	11/28/18	SA	11/17/18	OP16734A	E3P3447
OP16734A-MSD	3P72909.D	1	11/28/18	SA	11/17/18	OP16734A	E3P3447
JC78016-4	3P72910.D	1	11/28/18	SA	11/17/18	OP16734A	E3P3447

The QC reported here applies to the following samples:

Method: SW846 8270D BY SIM

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8

CAS No.	Compound	JC78016-4 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	3.16	0.98	4.17	103	0.98	4.47	134* a	7	10-125/46

CAS No.	Surrogate Recoveries	MS	MSD	JC78016-4	Limits
4165-60-0	Nitrobenzene-d5	90%	89%	73%	29-124%
321-60-8	2-Fluorobiphenyl	87%	84%	67%	23-122%
1718-51-0	Terphenyl-d14	61%	47%	41%	22-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-DFTPP	Injection Date: 10/30/18
Lab File ID: 3P71963.D	Injection Time: 00:03
Instrument ID: GCMS3P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	12973	39.8	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	16173	49.6	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	17213	52.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	32633	100.0	Pass
199	5.0 - 9.0% of mass 198	2288	7.01	Pass
275	10.0 - 30.0% of mass 198	7771	23.8	Pass
365	1.0 - 100.0% of mass 198	904	2.77	Pass
441	Present, but less than mass 443	3286	10.1 (76.6) ^b	Pass
442	40.0 - 100.0% of mass 198	21605	66.2	Pass
443	17.0 - 23.0% of mass 442	4288	13.1 (19.8) ^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
E3P3408-IC3408	3P71964.D	10/30/18	00:37	00:34	Initial cal 5
E3P3408-IC3408	3P71965.D	10/30/18	00:57	00:54	Initial cal 2.5
E3P3408-ICC3408	3P71966.D	10/30/18	01:18	01:15	Initial cal 1
E3P3408-IC3408	3P71967.D	10/30/18	01:39	01:36	Initial cal 0.5
E3P3408-IC3408	3P71968.D	10/30/18	02:00	01:57	Initial cal 0.2
E3P3408-IC3408	3P71969.D	10/30/18	02:21	02:18	Initial cal 0.1
E3P3408-IC3408	3P71970.D	10/30/18	02:42	02:39	Initial cal 0.05
E3P3408-IC3408	3P71971.D	10/30/18	03:03	03:00	Initial cal 0.02
E3P3408-IC3408	3P71972.D	10/30/18	03:24	03:21	Initial cal 0.01
E3P3408-ICV3408	3P71973.D	10/30/18	03:45	03:42	Initial cal verification 5
E3P3408-ICV3408	3P71974.D	10/30/18	04:06	04:03	Initial cal verification 1

Instrument Performance Check (DFTPP)

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3447-DFTPP	Injection Date: 11/27/18
Lab File ID: 3P72897.D	Injection Time: 20:55
Instrument ID: GCMS3P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	22617	42.7	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	26977	50.9	Pass
70	Less than 2.0% of mass 69	166	0.31 (0.62) ^a	Pass
127	40.0 - 60.0% of mass 198	30419	57.4	Pass
197	Less than 1.0% of mass 198	191	0.36	Pass
198	Base peak, 100% relative abundance	53021	100.0	Pass
199	5.0 - 9.0% of mass 198	3685	6.95	Pass
275	10.0 - 30.0% of mass 198	13121	24.7	Pass
365	1.0 - 100.0% of mass 198	1674	3.16	Pass
441	Present, but less than mass 443	4681	8.83 (76.3) ^b	Pass
442	40.0 - 100.0% of mass 198	31735	59.9	Pass
443	17.0 - 23.0% of mass 442	6136	11.6 (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
E3P3447-CC3408	3P72898.D	11/27/18	21:06	00:11	Continuing cal 1
OP16629A-MB1	3P72900.D	11/27/18	21:50	00:55	Method Blank
OP16629A-BS12	3P72901.D	11/27/18	22:09	01:14	Blank Spike
OP16734A-MB1	3P72902.D	11/27/18	22:29	01:34	Method Blank
ZZZZZZ	3P72905.D	11/27/18	23:28	02:33	(unrelated sample)
ZZZZZZ	3P72906.D	11/27/18	23:47	02:52	(unrelated sample)
ZZZZZZ	3P72907.D	11/28/18	00:07	03:12	(unrelated sample)
OP16734A-MS	3P72908.D	11/28/18	00:26	03:31	Matrix Spike
OP16734A-MSD	3P72909.D	11/28/18	00:46	03:51	Matrix Spike Duplicate
JC78016-4	3P72910.D	11/28/18	01:06	04:11	RH-02
ZZZZZZ	3P72911.D	11/28/18	01:25	04:30	(unrelated sample)
ZZZZZZ	3P72912.D	11/28/18	01:45	04:50	(unrelated sample)
ZZZZZZ	3P72913.D	11/28/18	02:04	05:09	(unrelated sample)
ZZZZZZ	3P72914.D	11/28/18	02:24	05:29	(unrelated sample)
ZZZZZZ	3P72915.D	11/28/18	02:44	05:49	(unrelated sample)
OP16629A-MS	3P72916.D	11/28/18	03:03	06:08	Matrix Spike
OP16629A-MSD	3P72917.D	11/28/18	03:23	06:28	Matrix Spike Duplicate
JC77556-6	3P72918A.D	11/28/18	08:21	11:26	(used for QC only; not part of job JC78016)
ZZZZZZ	3P72919.D	11/28/18	08:41	11:46	(unrelated sample)

Instrument Performance Check (DFTPP)

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3448-DFTPP	Injection Date: 11/28/18
Lab File ID: 3P72922.D	Injection Time: 10:33
Instrument ID: GCMS3P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	14718	42.1	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	17016	48.7	Pass
70	Less than 2.0% of mass 69	329	0.94 (1.93) ^a	Pass
127	40.0 - 60.0% of mass 198	18065	51.7	Pass
197	Less than 1.0% of mass 198	270	0.77	Pass
198	Base peak, 100% relative abundance	34938	100.0	Pass
199	5.0 - 9.0% of mass 198	2409	6.90	Pass
275	10.0 - 30.0% of mass 198	8439	24.2	Pass
365	1.0 - 100.0% of mass 198	1112	3.18	Pass
441	Present, but less than mass 443	2926	8.37 (71.7) ^b	Pass
442	40.0 - 100.0% of mass 198	20858	59.7	Pass
443	17.0 - 23.0% of mass 442	4082	11.7 (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
E3P3448-CC3408	3P72923.D	11/28/18	10:47	00:14	Continuing cal 0.5
OP16734A-BS12	3P72924.D	11/28/18	11:18	00:45	Blank Spike
OP16644A-MB1	3P72926.D	11/28/18	11:57	01:24	Method Blank
OP16644A-BS12	3P72927.D	11/28/18	12:17	01:44	Blank Spike
ZZZZZZ	3P72929.D	11/28/18	12:57	02:24	(unrelated sample)
ZZZZZZ	3P72930.D	11/28/18	13:16	02:43	(unrelated sample)
ZZZZZZ	3P72931.D	11/28/18	13:36	03:03	(unrelated sample)
ZZZZZZ	3P72932.D	11/28/18	13:55	03:22	(unrelated sample)
ZZZZZZ	3P72933.D	11/28/18	14:15	03:42	(unrelated sample)
ZZZZZZ	3P72934.D	11/28/18	14:35	04:02	(unrelated sample)
ZZZZZZ	3P72935.D	11/28/18	14:55	04:22	(unrelated sample)
ZZZZZZ	3P72943.D	11/28/18	17:32	06:59	(unrelated sample)
ZZZZZZ	3P72944.D	11/28/18	17:51	07:18	(unrelated sample)
ZZZZZZ	3P72945.D	11/28/18	18:11	07:38	(unrelated sample)
ZZZZZZ	3P72948.D	11/28/18	19:10	08:37	(unrelated sample)
ZZZZZZ	3P72949.D	11/28/18	19:30	08:57	(unrelated sample)
ZZZZZZ	3P72950.D	11/28/18	19:49	09:16	(unrelated sample)
ZZZZZZ	3P72951.D	11/28/18	20:09	09:36	(unrelated sample)

Instrument Performance Check (DFTPP)

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4M3756-DFTPP	Injection Date: 11/26/18
Lab File ID: 4M80110.D	Injection Time: 17:06
Instrument ID: GCMS4M	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	47997	40.6	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	54725	46.3	Pass
70	Less than 2.0% of mass 69	319	0.27 (0.58) ^a	Pass
127	40.0 - 60.0% of mass 198	60848	51.4	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	118304	100.0	Pass
199	5.0 - 9.0% of mass 198	8222	6.95	Pass
275	10.0 - 30.0% of mass 198	32453	27.4	Pass
365	1.0 - 100.0% of mass 198	4538	3.84	Pass
441	Present, but less than mass 443	17171	14.5 (86.7) ^b	Pass
442	40.0 - 100.0% of mass 198	102608	86.7	Pass
443	17.0 - 23.0% of mass 442	19802	16.7 (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
E4M3756-IC3756	4M80111.D	11/26/18	17:25	00:19	Initial cal 5
E4M3756-IC3756	4M80112.D	11/26/18	17:47	00:41	Initial cal 2.5
E4M3756-ICC3756	4M80113.D	11/26/18	18:10	01:04	Initial cal 1.0
E4M3756-IC3756	4M80114.D	11/26/18	18:33	01:27	Initial cal 0.5
E4M3756-IC3756	4M80115.D	11/26/18	18:56	01:50	Initial cal 0.2
E4M3756-IC3756	4M80116.D	11/26/18	19:18	02:12	Initial cal 0.1
E4M3756-IC3756	4M80117.D	11/26/18	19:41	02:35	Initial cal 0.05
E4M3756-IC3756	4M80118.D	11/26/18	20:04	02:58	Initial cal 0.02
E4M3756-IC3756	4M80119.D	11/26/18	20:25	03:19	Initial cal 0.01
E4M3756-ICV3756	4M80120.D	11/26/18	20:47	03:41	Initial cal verification 5.0
E4M3756-ICV3756	4M80121.D	11/26/18	21:08	04:02	Initial cal verification 1.0

Instrument Performance Check (DFTPP)

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4M3762-DFTPP	Injection Date: 11/30/18
Lab File ID: 4M80258.D	Injection Time: 09:53
Instrument ID: GCMS4M	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	62295	42.4	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	72509	49.3	Pass
70	Less than 2.0% of mass 69	456	0.31 (0.63) ^a	Pass
127	40.0 - 60.0% of mass 198	77891	53.0	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	147072	100.0	Pass
199	5.0 - 9.0% of mass 198	10166	6.91	Pass
275	10.0 - 30.0% of mass 198	40096	27.3	Pass
365	1.0 - 100.0% of mass 198	5386	3.66	Pass
441	Present, but less than mass 443	22231	15.1 (91.7) ^b	Pass
442	40.0 - 100.0% of mass 198	129709	88.2	Pass
443	17.0 - 23.0% of mass 442	24251	16.5 (18.7) ^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
E4M3762-CC3756	4M80259.D	11/30/18	10:07	00:14	Continuing cal 1.0
OP16734A-MB1	4M80261.D	11/30/18	11:00	01:07	Method Blank
ZZZZZZ	4M80262.D	11/30/18	11:22	01:29	(unrelated sample)
ZZZZZZ	4M80263.D	11/30/18	11:55	02:02	(unrelated sample)
OP16629A-MB1	4M80264.D	11/30/18	12:16	02:23	Method Blank
ZZZZZZ	4M80265.D	11/30/18	12:37	02:44	(unrelated sample)
ZZZZZZ	4M80266.D	11/30/18	12:58	03:05	(unrelated sample)
ZZZZZZ	4M80267.D	11/30/18	13:19	03:26	(unrelated sample)
ZZZZZZ	4M80268.D	11/30/18	13:42	03:49	(unrelated sample)
ZZZZZZ	4M80269.D	11/30/18	14:03	04:10	(unrelated sample)
ZZZZZZ	4M80270.D	11/30/18	14:24	04:31	(unrelated sample)
ZZZZZZ	4M80271.D	11/30/18	14:47	04:54	(unrelated sample)
OP16498A-MB1	4M80272.D	11/30/18	15:08	05:15	Method Blank
OP16498A-LB28	4M80273.D	11/30/18	15:29	05:36	Leachate Blank
OP16498A-BS1	4M80274.D	11/30/18	15:50	05:57	Blank Spike
ZZZZZZ	4M80275.D	11/30/18	16:12	06:19	(unrelated sample)
ZZZZZZ	4M80276.D	11/30/18	16:34	06:41	(unrelated sample)
ZZZZZZ	4M80277.D	11/30/18	16:57	07:04	(unrelated sample)
OP16569A-MS2	4M80292.D	11/30/18	18:02	08:09	Matrix Spike

Instrument Performance Check (DFTPP)

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample:	E4M3762-DFTPP	Injection Date:	11/30/18
Lab File ID:	4M80258.D	Injection Time:	09:53
Instrument ID:	GCMS4M		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP16569A-MSD2	4M80293.D	11/30/18	18:23	08:30	Matrix Spike Duplicate
ZZZZZZ	4M80278.D	11/30/18	18:44	08:51	(unrelated sample)
ZZZZZZ	4M80279.D	11/30/18	19:05	09:12	(unrelated sample)
ZZZZZZ	4M80280.D	11/30/18	19:27	09:34	(unrelated sample)
ZZZZZZ	4M80281.D	11/30/18	19:48	09:55	(unrelated sample)
OP16498A-MS	4M80283.D	11/30/18	20:31	10:38	Matrix Spike
OP16498A-LS15	4M80283.D	11/30/18	20:31	10:38	Leachate Spike
OP16498A-MSD	4M80284.D	11/30/18	20:52	10:59	Matrix Spike Duplicate
JC76962-3R	4M80285.D	11/30/18	21:13	11:20	(used for QC only; not part of job JC78016)
ZZZZZZ	4M80286.D	11/30/18	21:34	11:41	(unrelated sample)

6.4.5

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Instrument Performance Check (DFTPP)

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1702-DFTPP	Injection Date: 11/21/18
Lab File ID: 4P30897.D	Injection Time: 23:01
Instrument ID: GCMS4P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	165744	33.7	Pass
68	Less than 2.0% of mass 69	1902	0.39 (0.66) ^a	Pass
69	Mass 69 relative abundance	290290	59.1	Pass
70	Less than 2.0% of mass 69	1684	0.34 (0.58) ^a	Pass
127	40.0 - 60.0% of mass 198	283890	57.8	Pass
197	Less than 1.0% of mass 198	1935	0.39	Pass
198	Base peak, 100% relative abundance	491114	100.0	Pass
199	5.0 - 9.0% of mass 198	34831	7.09	Pass
275	10.0 - 30.0% of mass 198	131453	26.8	Pass
365	1.0 - 100.0% of mass 198	21904	4.46	Pass
441	Present, but less than mass 443	72890	14.8 (83.3) ^b	Pass
442	40.0 - 100.0% of mass 198	443456	90.3	Pass
443	17.0 - 23.0% of mass 442	87536	17.8 (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
E4P1702-IC1702	4P30898.D	11/21/18	23:12	00:11	Initial cal 5
E4P1702-IC1702	4P30899.D	11/21/18	23:35	00:34	Initial cal 2.5
E4P1702-ICC1702	4P30900.D	11/21/18	23:57	00:56	Initial cal 1.0
E4P1702-IC1702	4P30901.D	11/22/18	00:20	01:19	Initial cal 0.5
E4P1702-IC1702	4P30902.D	11/22/18	00:43	01:42	Initial cal 0.2
E4P1702-IC1702	4P30903.D	11/22/18	01:06	02:05	Initial cal 0.1
E4P1702-IC1702	4P30904.D	11/22/18	01:30	02:29	Initial cal 0.05
E4P1702-IC1702	4P30905.D	11/22/18	01:53	02:52	Initial cal 0.02
E4P1702-IC1702	4P30906.D	11/22/18	02:16	03:15	Initial cal 0.01
E4P1702-ICV1702	4P30907.D	11/22/18	02:40	03:39	Initial cal verification 5
E4P1702-ICV1702	4P30908.D	11/22/18	03:03	04:02	Initial cal verification 1

Instrument Performance Check (DFTPP)

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1711-DFTPP	Injection Date: 11/30/18
Lab File ID: 4P31135.D	Injection Time: 11:58
Instrument ID: GCMS4P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	115463	40.1	Pass
68	Less than 2.0% of mass 69	187	0.06 (0.09) ^a	Pass
69	Mass 69 relative abundance	199938	69.5	Pass
70	Less than 2.0% of mass 69	1084	0.38 (0.54) ^a	Pass
127	40.0 - 60.0% of mass 198	170592	59.3	Pass
197	Less than 1.0% of mass 198	1579	0.55	Pass
198	Base peak, 100% relative abundance	287839	100.0	Pass
199	5.0 - 9.0% of mass 198	19334	6.72	Pass
275	10.0 - 30.0% of mass 198	69413	24.1	Pass
365	1.0 - 100.0% of mass 198	14860	5.16	Pass
441	Present, but less than mass 443	39026	13.6 (84.3) ^b	Pass
442	40.0 - 100.0% of mass 198	244394	84.9	Pass
443	17.0 - 23.0% of mass 442	46304	16.1 (18.9) ^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
E4P1711-CC1702	4P31137.D	11/30/18	12:49	00:51	Continuing cal 1.0
ZZZZZZ	4P31138.D	11/30/18	13:19	01:21	(unrelated sample)
ZZZZZZ	4P31139A.D	11/30/18	13:58	02:00	(unrelated sample)
ZZZZZZ	4P31140A.D	11/30/18	14:29	02:31	(unrelated sample)
ZZZZZZ	4P31141.D	11/30/18	14:52	02:54	(unrelated sample)
ZZZZZZ	4P31142.D	11/30/18	15:15	03:17	(unrelated sample)
ZZZZZZ	4P31143.D	11/30/18	15:38	03:40	(unrelated sample)
ZZZZZZ	4P31144.D	11/30/18	16:00	04:02	(unrelated sample)
ZZZZZZ	4P31145.D	11/30/18	16:23	04:25	(unrelated sample)
ZZZZZZ	4P31146.D	11/30/18	16:46	04:48	(unrelated sample)
OP16739A-MB1	4P31147.D	11/30/18	17:09	05:11	Method Blank
OP16734A-MB1	4P31148.D	11/30/18	17:32	05:34	Method Blank
ZZZZZZ	4P31149.D	11/30/18	17:55	05:57	(unrelated sample)
ZZZZZZ	4P31150.D	11/30/18	18:18	06:20	(unrelated sample)
ZZZZZZ	4P31151.D	11/30/18	18:40	06:42	(unrelated sample)
ZZZZZZ	4P31152.D	11/30/18	19:03	07:05	(unrelated sample)
ZZZZZZ	4P31153.D	11/30/18	19:26	07:28	(unrelated sample)
JC78016-1	4P31154.D	11/30/18	19:49	07:51	RH-07S
JC78016-2	4P31155.D	11/30/18	20:12	08:14	RH-06S

Instrument Performance Check (DFTPP)

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample:	E4P1711-DFTPP	Injection Date:	11/30/18
Lab File ID:	4P31135.D	Injection Time:	11:58
Instrument ID:	GCMS4P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JC78016-3	4P31156.D	11/30/18	20:35	08:37	RH-05D
JC78016-5	4P31157.D	11/30/18	20:58	09:00	RH-08D
JC78016-6	4P31158.D	11/30/18	21:20	09:22	MW-12DD
JC78016-7	4P31159.D	11/30/18	21:43	09:45	EQUIPMENT BLANK
JC78016-8	4P31160A.D	11/30/18	22:39	10:41	X-1

Instrument Performance Check (DFTPP)

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1712-DFTPP	Injection Date: 11/30/18
Lab File ID: 4P31161.D	Injection Time: 23:44
Instrument ID: GCMS4P	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	289282	39.5	Pass
68	Less than 2.0% of mass 69	912	0.12 (0.18) ^a	Pass
69	Mass 69 relative abundance	507578	69.3	Pass
70	Less than 2.0% of mass 69	2199	0.30 (0.43) ^a	Pass
127	40.0 - 60.0% of mass 198	437227	59.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	732203	100.0	Pass
199	5.0 - 9.0% of mass 198	50928	6.96	Pass
275	10.0 - 30.0% of mass 198	200064	27.3	Pass
365	1.0 - 100.0% of mass 198	33600	4.59	Pass
441	Present, but less than mass 443	107091	14.6 (79.1) ^b	Pass
442	40.0 - 100.0% of mass 198	659477	90.1	Pass
443	17.0 - 23.0% of mass 442	135427	18.5 (20.5) ^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
E4P1712-CC1702	4P31164.D	12/01/18	01:37	01:53	Continuing cal 0.5
OP16734A-MB1	4P31166.D	12/01/18	02:32	02:48	Method Blank
OP16734A-BS12	4P31167.D	12/01/18	02:55	03:11	Blank Spike
OP16899A-MB1	4P31169.D	12/01/18	03:41	03:57	Method Blank
OP16899A-BS1	4P31170.D	12/01/18	04:03	04:19	Blank Spike
OP16899A-BSD	4P31171.D	12/01/18	04:26	04:42	Blank Spike Duplicate
ZZZZZZ	4P31172.D	12/01/18	04:49	05:05	(unrelated sample)
ZZZZZZ	4P31173.D	12/01/18	05:11	05:27	(unrelated sample)

Internal Standard Area Summary

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std:	E3P3447-CC3408	Injection Date:	11/27/18
Lab File ID:	3P72898.D	Injection Time:	21:06
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	15343	6.83	18446	8.29	31344	10.41	26238	13.08
Upper Limit ^a	30686	7.33	36892	8.79	62688	10.91	52476	13.58
Lower Limit ^b	7672	6.33	9223	7.79	15672	9.91	13119	12.58

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP16629A-MB1	15954	6.83	21299	8.29	34345	10.41	27062	13.08
OP16629A-BS12	15578	6.83	20109	8.29	33643	10.41	26888	13.08
OP16734A-MB1	21923	6.83	27385	8.30	48520	10.41	39540	13.09
ZZZZZZ	18548	6.83	22875	8.30	39349	10.42	32728	13.09
ZZZZZZ	16192	6.83	19977	8.30	34411	10.42	29229	13.09
ZZZZZZ	23016	6.83	29136	8.30	51462	10.42	43284	13.09
OP16734A-MS	12655	6.83	15866	8.30	26212	10.42	22045	13.09
OP16734A-MSD	11389	6.83	14118	8.30	23635	10.42	19685	13.09
JC78016-4	26717	6.83	32834	8.30	57411	10.42	49008	13.09
ZZZZZZ	23358	6.83	30997	8.30	50365	10.42	41069	13.09
ZZZZZZ	24179	6.83	30976	8.30	52187	10.42	43005	13.09
ZZZZZZ	25488	6.84	32930	8.30	54851	10.42	44464	13.09
ZZZZZZ	13147	6.84	16887	8.30	27605	10.42	22424	13.09
ZZZZZZ	14317	6.84	18210	8.30	29637	10.42	24422	13.09
OP16629A-MS	18044	6.84	22554	8.30	37839	10.42	31656	13.09
OP16629A-MSD	21687	6.84	27312	8.30	47368	10.42	39153	13.09
JC77556-6	13443	6.84	16972	8.30	27606	10.42	21658	13.10
ZZZZZZ	17093	6.84	22714	8.30	34879	10.42	27796	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

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Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std: E3P3448-CC3408	Injection Date: 11/28/18
Lab File ID: 3P72923.D	Injection Time: 10:47
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	29829	6.82	36124	8.28	59058	10.40	44100	13.08
Upper Limit ^a	59658	7.32	72248	8.78	118116	10.90	88200	13.58
Lower Limit ^b	14915	6.32	18062	7.78	29529	9.90	22050	12.58

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP16734A-BS12	17415	6.82	22360	8.28	37849	10.41	26620	13.08
OP16644A-MB1	16395	6.82	21248	8.28	34224	10.40	24565	13.08
OP16644A-BS12	18209	6.82	22970	8.28	37774	10.40	27412	13.08
ZZZZZZ	21701	6.82	28265	8.28	47724	10.40	36508	13.08
ZZZZZZ	19787	6.82	27363	8.28	41343	10.40	31896	13.08
ZZZZZZ	23453	6.82	33447	8.28	56121	10.40	47248	13.08
ZZZZZZ	19817	6.82	28175	8.28	45837	10.40	36219	13.08
ZZZZZZ	33823	6.82	50705	8.28	84436	10.40	71689	13.08
ZZZZZZ	20834	6.82	28277	8.28	45765	10.40	34873	13.08
ZZZZZZ	24666	6.82	34156	8.28	58006	10.40	45969	13.08
ZZZZZZ	17284	6.82	21719	8.28	37888	10.40	26901	13.08
ZZZZZZ	15228	6.82	19154	8.28	33532	10.40	24136	13.08
ZZZZZZ	15327	6.82	19024	8.28	32511	10.40	23475	13.08
ZZZZZZ	18134	6.82	23598	8.29	39621	10.40	31592	13.08
ZZZZZZ	17903	6.82	24818	8.28	41146	10.40	30565	13.08
ZZZZZZ	23888	6.82	227842*	8.28	53829	10.41	48596	13.08
ZZZZZZ	26230	6.82	37979	8.29	78082	10.41	64983	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

Page 1 of 2

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std: E4M3762-CC3756	Injection Date: 11/30/18
Lab File ID: 4M80259.D	Injection Time: 10:07
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	47705	7.38	49110	8.85	81724	10.98	63292	13.72
Upper Limit ^a	95410	7.88	98220	9.35	163448	11.48	126584	14.22
Lower Limit ^b	23853	6.88	24555	8.35	40862	10.48	31646	13.22

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP16734A-MB1	47563	7.38	51645	8.85	86475	10.98	61464	13.72
ZZZZZZ	37309	7.37	39211	8.85	65954	10.98	48470	13.72
ZZZZZZ	40976	7.38	46117	8.85	71595	10.98	57923	13.72
OP16629A-MB1	44921	7.38	52009	8.85	81040	10.98	62810	13.71
ZZZZZZ	34475	7.38	36351	8.85	62349	10.98	43035	13.71
ZZZZZZ	34764	7.38	35850	8.85	61545	10.98	44741	13.71
ZZZZZZ	33530	7.38	35575	8.85	61502	10.98	45517	13.72
ZZZZZZ	34483	7.38	36058	8.85	64624	10.98	46491	13.72
ZZZZZZ	32603	7.38	33970	8.85	58484	10.98	44342	13.72
ZZZZZZ	30727	7.38	32496	8.85	55331	10.98	41994	13.72
ZZZZZZ	31843	7.38	33574	8.85	59206	10.98	44572	13.72
OP16498A-MB1	29644	7.38	30983	8.85	52636	10.98	38605	13.72
OP16498A-LB28	30242	7.38	30573	8.85	51355	10.98	37017	13.72
OP16498A-BS1	32948	7.38	34269	8.85	56853	10.98	42944	13.72
ZZZZZZ	32537	7.38	33985	8.85	58517	10.98	44235	13.72
ZZZZZZ	31278	7.38	33127	8.85	57770	10.98	41933	13.72
ZZZZZZ	32598	7.38	35151	8.85	63082	10.98	41896	13.72
OP16569A-MS2	33018	7.38	34504	8.85	58732	10.98	40330	13.72
OP16569A-MSD2	35561	7.38	37393	8.85	62552	10.98	43881	13.72
ZZZZZZ	30392	7.38	32660	8.85	56142	10.98	39474	13.72
ZZZZZZ	30815	7.38	34441	8.85	61125	10.98	46384	13.72
ZZZZZZ	31908	7.38	32573	8.85	58129	10.98	43077	13.73
ZZZZZZ	31387	7.38	32339	8.85	58055	10.98	43184	13.72
OP16498A-MS	35681	7.38	37594	8.85	65406	10.98	50864	13.73
OP16498A-LS15	35681	7.38	37594	8.85	65406	10.98	50864	13.73
OP16498A-MSD	35436	7.38	37774	8.85	64297	10.98	48979	13.72
JC76962-3R	30086	7.38	30491	8.85	51804	10.98	39343	13.72
ZZZZZZ	29943	7.38	30511	8.85	52297	10.99	39303	13.73

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.

Internal Standard Area Summary

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std:	E4M3762-CC3756	Injection Date:	11/30/18
Lab File ID:	4M80259.D	Injection Time:	10:07
Instrument ID:	GCMS4M	Method:	SW846 8270D BY SIM

Lab	IS 1		IS 2		IS 3		IS 4	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.5.3
6

Internal Standard Area Summary

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std: E4P1711-CC1702	Injection Date: 11/30/18
Lab File ID: 4P31137.D	Injection Time: 12:49
Instrument ID: GCMS4P	Method: SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	52148	6.99	64840	8.47	96091	10.59	65732	13.27
Upper Limit ^a	104296	7.49	129680	8.97	192182	11.09	131464	13.77
Lower Limit ^b	26074	6.49	32420	7.97	48046	10.09	32866	12.77

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
ZZZZZZ	35273	6.99	42644	8.47	63185	10.59	44724	13.27
ZZZZZZ	47304	6.99	57002	8.47	84135	10.59	61619	13.27
ZZZZZZ	43871	6.99	55599	8.47	79814	10.59	57401	13.27
ZZZZZZ	35627	6.99	45268	8.47	64230	10.59	46534	13.27
ZZZZZZ	50633	6.99	62890	8.47	89942	10.59	63843	13.27
ZZZZZZ	55518	6.99	70564	8.47	101619	10.59	71517	13.27
ZZZZZZ	44014	6.99	54648	8.47	80267	10.59	58385	13.27
ZZZZZZ	51132	6.99	64626	8.47	91549	10.59	65625	13.27
ZZZZZZ	52036	6.99	65498	8.47	86436	10.59	63517	13.27
OP16739A-MB1	33040	6.99	39907	8.47	56487	10.59	40553	13.27
OP16734A-MB1	67096	6.99	85689	8.47	125427	10.59	84791	13.27
ZZZZZZ	58412	6.99	72695	8.47	102117	10.59	69958	13.26
ZZZZZZ	47326	6.99	60827	8.47	87326	10.59	59781	13.27
ZZZZZZ	51202	6.99	64394	8.47	89370	10.59	61472	13.27
ZZZZZZ	42544	6.99	52976	8.47	75121	10.59	52610	13.27
ZZZZZZ	46568	6.99	58193	8.47	79698	10.59	59891	13.27
JC78016-1	48634	6.99	58717	8.47	87545	10.59	61668	13.27
JC78016-2	49539	6.99	60605	8.47	87596	10.59	62860	13.27
JC78016-3	53596	6.99	65311	8.47	96741	10.59	71061	13.27
JC78016-5	59608	6.99	71934	8.47	106021	10.59	75467	13.27
JC78016-6	50890	6.99	62277	8.47	93297	10.59	67529	13.27
JC78016-7	45293	6.99	55950	8.47	84984	10.59	59899	13.27
JC78016-8	59367	6.99	72257	8.47	109521	10.59	77417	13.27

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

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Check Std: E4P1712-CC1702	Injection Date: 12/01/18
Lab File ID: 4P31164.D	Injection Time: 01:37
Instrument ID: GCMS4P	Method: SW846 8270D BY SIM

	IS 1		IS 2		IS 3		IS 4	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	84824	6.99	115852	8.46	171316	10.58	121911	13.25
Upper Limit ^a	169648	7.49	231704	8.96	342632	11.08	243822	13.75
Lower Limit ^b	42412	6.49	57926	7.96	85658	10.08	60956	12.75

Lab Sample ID	IS 1		IS 2		IS 3		IS 4	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP16734A-MB1	88216	6.98	127019	8.46	182865	10.59	123077	13.25
OP16734A-BS12	95221	6.99	133452	8.46	196377	10.59	136067	13.25
OP16899A-MB1 ^c	72884	6.99	103482	8.47	146272	10.58	106112	13.26
OP16899A-BS1	62829	6.99	87001	8.46	125396	10.59	89827	13.25
OP16899A-BSD	63478	6.98	87401	8.46	126172	10.59	90862	13.25
ZZZZZZ	76334	6.99	101302	8.46	147815	10.58	104210	13.26
ZZZZZZ	77822	6.99	107633	8.46	160184	10.59	112433	13.25

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) hit target

Surrogate Recovery Summary

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, 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
JC78016-1	4P31154.D	75	84	54
JC78016-2	4P31155.D	61	67	32
JC78016-3	4P31156.D	58	57	32
JC78016-4	3P72910.D	73	67	41
JC78016-5	4P31157.D	73	82	42
JC78016-6	4P31158.D	81	91	51
JC78016-7	4P31159.D	76	71	49
JC78016-8	4P31160A.D	64	70	36
OP16734A-BS12	3P72924.D	59	59	53
OP16734A-BS12	4P31167.D	61	51	45
OP16734A-MB1	3P72902.D	70	65	59
OP16734A-MB1	4P31148.D	59	63	51
OP16734A-MB1	4P31166.D	68	55	51
OP16734A-MB1	4M80261.D	81	61	56
OP16734A-MS	3P72908.D	90	87	61
OP16734A-MSD	3P72909.D	89	84	47

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

Initial Calibration Summary

Job Number: JC78016

Account: OBGNY S O'Brien & Gere Engineers, Inc

Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-ICC3408

Lab FileID: 3P71966.D

Page 1 of 2

Response Factor Report MSGC3P											
Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M (RTE Integrator)											
Title : Semi Volatile Extractables by GC/MS											
Last Update : Tue Oct 30 11:26:22 2018											
Response via : Initial Calibration											
Calibration Files											
2.5 =3p71965.D 1.0 =3p71966.D 0.5 =3p71967.D 0.2 =3p71968.D											
0.1 =3p71969.D 0.05=3p71970.D 0.02=3p71971.D 0.01=3p71972.D											
5 =3p71964.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	0.303	0.270	0.266	0.280	0.234	0.210	0.176		0.302	0.255	17.65
3) 2-Fluorophenol	0.751	0.674	0.669	0.718	0.599	0.621	0.688	0.625	0.703	0.672	7.39
4) Phenol-d5	0.936	0.860	0.908	0.968	0.798	0.830	0.862	0.813	0.880	0.873	6.50
5) Phenol	1.013	0.924	0.979	1.070	0.880	0.927	0.947	0.981	0.944	0.963	5.79
6) bis(2-Chloroethyl)ether	0.693	0.624	0.643	0.725	0.604	0.626	0.747	0.695	0.623	0.664	7.75
7) Nitrobenzene-d5	0.825	0.765	0.829	0.925	0.762	0.786	0.815	0.757	0.746	0.801	6.98
8) Naphthalene	2.153	2.070	2.245	2.540	2.074	2.204	2.372	2.471	2.092	2.247	7.83
9) Hexachlorobutadiene	0.367	0.349	0.375	0.414	0.349	0.380	0.384		0.344	0.370	6.28
10) 2-Methylnaphthalene	1.160	1.119	1.281	1.452	1.148	1.181	1.263	1.428	1.124	1.240	10.25
11) 1-Methylnaphthalene	1.263	1.243	1.432	1.708	1.406	1.719	1.417	1.737	1.265	1.466	13.95
12) I Fluorene-d10	-----ISTD-----										
13) 2-Fluorobiphenyl	1.224	1.196	1.383	1.569	1.285	1.362	1.518	1.367	1.051	1.328	12.09
14) Acenaphthylene	1.557	1.525	1.735	1.911	1.610	1.669	1.710	1.834	1.535	1.676	8.06
15) Acenaphthene	1.037	1.027	1.143	1.281	1.045	1.116	1.195	1.185	1.043	1.119	7.96
16) 4,6-dinitro-2-methylphenol	0.167	0.129	0.121	0.103	0.072	0.066	0.068	0.073		0.100	36.81
---- Quadratic regression ---- Coefficient = 0.9999											
Response Ratio = -0.00191 + 0.10748 *A + 0.01917 *A^2											
17) Fluorene	1.157	1.160	1.369	1.526	1.320	1.421	1.471	1.383	1.137	1.327	10.90
18) 2,4,6-Tribromophenol	0.153	0.148	0.168	0.184	0.145	0.154	0.164	0.200		0.165	11.74
19) I Fluoranthene-d10	-----ISTD-----										
20) Hexachlorobenzene	0.209	0.215	0.238	0.274	0.230	0.259	0.277	0.312	0.207	0.247	14.64
21) Pentachlorophenol	0.114	0.104	0.107	0.094	0.073	0.058	0.085	0.080	0.138	0.095	25.16

Initial Calibration Summary

Page 2 of 2

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-ICC3408
Lab FileID: 3P71966.D

---- Quadratic regression ---- Coefficient = 0.9999
Response Ratio = 0.00002 + 0.09338 *A + 0.00705 *A^2

22)	Phenanthrene	0.984	0.998	1.123	1.250	1.096	1.222	1.373	0.977	1.128	12.78
23)	Anthracene	0.942	0.972	1.064	1.175	1.009	1.099	1.153	1.472	0.980	14.86
24)	Fluoranthene	1.165	1.140	1.304	1.511	1.349	1.524	1.947	1.151	1.387	19.70
25)	Pyrene	1.200	1.155	1.316	1.488	1.288	1.465	1.758	1.197	1.358	14.91
26)	Terphenyl-d14	0.645	0.634	0.725	0.828	0.696	0.759	0.864	0.982	0.588	16.89
27)	Benzo[a]anthracene	1.119	1.027	1.191	1.311	1.163	1.242	1.573	1.814	1.107	19.78
28)	Chrysene	1.167	1.071	1.249	1.383	1.270	1.404	1.768	1.111	1.303	17.07
29)	I Benzo(a)pyrene-d12	-----ISTD-----									
30)	Benzo[b]fluoranthene	1.324	1.270	1.527	1.604	1.460	1.592	1.977	1.409	1.520	14.46
31)	Benzo[k]fluoranthene	1.288	1.291	1.436	1.632	1.437	1.504	1.962	1.939	1.238	17.70
32)	Benzo[a]pyrene	1.238	1.196	1.405	1.598	1.336	1.374	1.736	1.867	1.212	16.72
33)	Indeno[1,2,3-cd]pyrene	1.583	1.383	1.578	1.667	1.494	1.568	1.869	1.794	1.510	9.42
34)	Dibenz[a,h]anthracene	1.323	1.169	1.339	1.405	1.208	1.299	1.388	1.259	1.249	6.14
35)	Benzo[g,h,i]perylene	1.275	1.097	1.288	1.393	1.225	1.363	1.536	1.491	1.200	10.71

(#) = Out of Range ### Number of calibration levels exceeded format ###

M3P3408SIM.M Tue Oct 30 11:43:44 2018

6.7.1
6

Initial Calibration Verification

Page 1 of 1

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-ICV3408
 Lab FileID: 3P71973.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3408\3p71973.D Vial: 11
 Acq On : 30 Oct 2018 3:45 am Operator: sufiyana
 Sample : ICV3408-5 Inst : MSGC3P
 Misc : op15969a,e3p3408,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Oct 30 11:26:22 2018
 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	88	0.00	7.01
5	Phenol	0.963	0.849	11.8	81	0.00	4.70
11 t	1-Methylnaphthalene		-----NA-----				
12 I	Fluorene-d10	1.000	1.000	0.0	90	0.00	8.49
16 t	4,6-dinitro-2-methylpheno	5.000	4.235	15.3	74	0.00	8.57
19 I	Fluoranthene-d10	1.000	1.000	0.0	95	0.00	10.63
	----- True		Calc.	% Drift			
21 t	Pentachlorophenol	5.000	5.407	-8.1	105	0.00	9.26

(#) = Out of Range
 3p71966.D M3P3408SIM.M

SPCC's out = 0 CCC's out = 0
 Tue Oct 30 11:31:35 2018

6.7.2
6

Initial Calibration Verification

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-ICV3408
 Lab FileID: 3P71974.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3408\3p71974.D Vial: 12
 Acq On : 30 Oct 2018 4:06 am Operator: sufiyana
 Sample : ICV3408-1 Inst : MSGC3P
 Misc : op15969a,e3p3408,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Oct 30 11:26:22 2018
 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	109	0.00	7.01
2 t	1,4-dioxane	0.255	0.184	27.8	75	-0.03	2.21
6 t	bis(2-Chloroethyl)ether	0.664	0.643	3.2	113	0.00	4.77
8 t	Naphthalene	2.247	2.134	5.0	113	0.00	6.27
9 t	Hexachlorobutadiene	0.370	0.355	4.1	111	0.00	6.40
10 t	2-Methylnaphthalene	1.240	1.221	1.5	119	0.00	6.95
12 I	Fluorene-d10	1.000	1.000	0.0	114	0.00	8.48
14 t	Acenaphthylene	1.676	1.509	10.0	113	0.00	7.83
15 t	Acenaphthene	1.119	1.050	6.2	117	0.00	8.00
	----- AvgRF CCRF % Dev -----						
17 t	Fluorene	1.327	1.192	10.2	117	0.00	8.51
19 I	Fluoranthene-d10	1.000	1.000	0.0	117	0.00	10.63
20 t	Hexachlorobenzene	0.247	0.217	12.1	118	0.00	9.07
	----- AvgRF CCRF % Dev -----						
22 t	Phenanthrene	1.128	1.041	7.7	122	0.00	9.46
23 t	Anthracene	1.096	0.955	12.9	115	0.00	9.51
24 t	Fluoranthene	1.387	1.178	15.1	121	0.00	10.64
25 t	Pyrene	1.358	1.160	14.6	118	0.00	10.87
27 t	Benzo[a]anthracene	1.283	1.049	18.2	120	0.00	12.06
28 t	Chrysene	1.303	1.104	15.3	121	0.00	12.09
29 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	109	0.00	13.36
30 t	Benzo[b]fluoranthene	1.520	1.377	9.4	118	0.00	13.07
31 t	Benzo[k]fluoranthene	1.525	1.288	15.5	109	0.00	13.10
32 t	Benzo[a]pyrene	1.440	1.238	14.0	113	0.00	13.38
33 t	Indeno[1,2,3-cd]pyrene	1.605	1.358	15.4	107	0.00	14.62
34 t	Dibenz[a,h]anthracene	1.293	1.137	12.1	106	0.00	14.65
35 t	Benzo[g,h,i]perylene	1.319	1.180	10.5	117	0.00	14.96

Initial Calibration Verification

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3408-ICV3408
Lab FileID: 3P71974.D

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p71966.D M3P3408SIM.M Tue Oct 30 11:33:23 2018

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeney, NY

Sample: E3P3447-CC3408
 Lab FileID: 3P72898.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3447\3p72898.D Vial: 2
 Acq On : 27 Nov 2018 9:06 pm Operator: sufiyana
 Sample : cc3408-1 Inst : MSGC3P
 Misc : op16388a,e3p3447,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Oct 30 11:26:22 2018
 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	73	-0.03	6.83
2 t	1,4-dioxane	0.255	0.316	-23.9#	85	0.10	2.06
3 S	2-Fluorophenol	0.672	0.760	-13.1	82	-0.03	3.66
4 S	Phenol-d5	0.873	0.939	-7.6	79	-0.02	4.55
5	Phenol	0.963	1.009	-4.8	79	0.01	4.56
6 t	bis(2-Chloroethyl)ether	0.664	0.647	2.6	75	-0.04	4.62
7 S	Nitrobenzene-d5	0.801	0.888	-10.9	84	-0.03	5.39
8 t	Naphthalene	2.247	2.259	-0.5	79	-0.04	6.09
9 t	Hexachlorobutadiene	0.370	0.406	-9.7	85	-0.04	6.23
10 t	2-Methylnaphthalene	1.240	1.182	4.7	77	-0.03	6.77
11 t	1-Methylnaphthalene	1.466	1.437	2.0	84	-0.03	6.86
12 I	Fluorene-d10	1.000	1.000	0.0	69	-0.09	8.29
13 S	2-Fluorobiphenyl	1.328	1.481	-11.5	85	-0.09	7.13
14 t	Acenaphthylene	1.676	1.699	-1.4	76	-0.09	7.64
15 t	Acenaphthene	1.119	1.173	-4.8	78	-0.09	7.82
16 t	4,6-dinitro-2-methylpheno	True 5.000	Calc. 6.324	% Drift -26.5#	92	-0.09	8.39
17 t	Fluorene	AvgRF 1.327	CCRF 1.270	% Dev 4.3	75	-0.09	8.32
18 S	2,4,6-Tribromophenol	0.165	0.157	4.8	73	-0.10	8.56
19 I	Fluoranthene-d10	1.000	1.000	0.0	70	-0.06	10.41
20 t	Hexachlorobenzene	0.247	0.222	10.1	72	-0.06	8.87
21 t	Pentachlorophenol	True 5.000	Calc. 5.226	% Drift -4.5	74	-0.05	9.07
22 t	Phenanthrene	AvgRF 1.128	CCRF 1.100	% Dev 2.5	77	-0.05	9.26
23 t	Anthracene	1.096	1.107	-1.0	80	-0.05	9.31
24 t	Fluoranthene	1.387	1.243	10.4	76	-0.06	10.43
25 t	Pyrene	1.358	1.300	4.3	79	-0.06	10.65
26 S	Terphenyl-d14	0.747	0.753	-0.8	83	-0.06	10.81
27 t	Benzo[a]anthracene	1.283	1.131	11.8	77	-0.06	11.82
28 t	Chrysene	1.303	1.141	12.4	75	-0.09	11.86
29 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	65	0.00	13.08
30 t	Benzo[b]fluoranthene	1.520	1.422	6.4	73	0.01	12.82
31 t	Benzo[k]fluoranthene	1.525	1.503	1.4	76	0.00	12.84

Continuing Calibration Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3447-CC3408
Lab FileID: 3P72898.D

32	t	Benzo[a]pyrene	1.440	1.369	4.9	75	0.00	13.10
33	t	Indeno[1,2,3-cd]pyrene	1.605	1.585	1.2	75	0.08	14.22
34	t	Dibenz[a,h]anthracene	1.293	1.363	-5.4	76	0.08	14.23
35	t	Benzo[g,h,i]perylene	1.319	1.299	1.5	77	0.00	14.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p71966.D M3P3408SIM.M Wed Nov 28 09:06:37 2018

6.7.4
6

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3448-CC3408
 Lab FileID: 3P72923.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\jonkm\3p3448\3p72923.d Vial: 2
 Acq On : 28 Nov 2018 10:47 am Operator: christc2
 Sample : cc3408-0.5 Inst : MSGC3P
 Misc : op16388a,e3p3448,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Oct 30 11:26:22 2018
 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	164	0.00	6.82
2 t	1,4-dioxane	0.255	0.330	-29.4#	203#	0.12	2.07
3 S	2-Fluorophenol	0.672	0.794	-18.2	195	-0.02	3.64
4 S	Phenol-d5	0.873	1.005	-15.1	182	0.00	4.53
5	Phenol	0.963	1.079	-12.0	181	0.02	4.54
6 t	bis(2-Chloroethyl)ether	0.664	0.684	-3.0	175	0.00	4.60
7 S	Nitrobenzene-d5	0.801	0.964	-20.3#	191	-0.01	5.37
8 t	Naphthalene	2.247	2.505	-11.5	183	0.00	6.08
9 t	Hexachlorobutadiene	0.370	0.455	-23.0#	199	0.00	6.22
10 t	2-Methylnaphthalene	1.240	1.324	-6.8	170	0.00	6.76
11 t	1-Methylnaphthalene	1.466	1.547	-5.5	177	0.00	6.85
12 I	Fluorene-d10	1.000	1.000	0.0	149	0.00	8.28
13 S	2-Fluorobiphenyl	1.328	1.697	-27.8#	183	-0.01	7.12
14 t	Acenaphthylene	1.676	1.807	-7.8	155	0.00	7.63
15 t	Acenaphthene	1.119	1.272	-13.7	166	0.00	7.80
16 t	4,6-dinitro-2-methylpheno	True 2.500	Calc. 2.837	% Drift -13.5	166	0.00	8.38
17 t	Fluorene	AvgRF 1.327	CCRF 1.382	% Dev -4.1	150	0.00	8.31
18 S	2,4,6-Tribromophenol	0.165	0.163	1.2	144	0.00	8.55
19 I	Fluoranthene-d10	1.000	1.000	0.0	138	0.00	10.40
20 t	Hexachlorobenzene	0.247	0.255	-3.2	148	0.00	8.86
21 t	Pentachlorophenol	True 2.500	Calc. 2.569	% Drift -2.8	135	0.00	9.06
22 t	Phenanthrene	AvgRF 1.128	CCRF 1.225	% Dev -8.6	151	0.00	9.25
23 t	Anthracene	1.096	1.164	-6.2	151	0.00	9.30
24 t	Fluoranthene	1.387	1.433	-3.3	152	0.00	10.42
25 t	Pyrene	1.358	1.421	-4.6	149	0.00	10.64
26 S	Terphenyl-d14	0.747	0.856	-14.6	163	0.00	10.80
27 t	Benzo[a]anthracene	1.283	1.114	13.2	129	0.01	11.82
28 t	Chrysene	1.303	1.256	3.6	139	-0.01	11.86
29 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	115	0.00	13.08
30 t	Benzo[b]fluoranthene	1.520	1.605	-5.6	121	0.01	12.82
31 t	Benzo[k]fluoranthene	1.525	1.708	-12.0	137	0.00	12.84

Continuing Calibration Summary

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E3P3448-CC3408
Lab FileID: 3P72923.D

32	t	Benzo[a]pyrene	1.440	1.543	-7.2	126	0.00	13.10
33	t	Indeno[1,2,3-cd]pyrene	1.605	1.689	-5.2	123	0.08	14.22
34	t	Dibenz[a,h]anthracene	1.293	1.431	-10.7	123	0.08	14.23
35	t	Benzo[g,h,i]perylene	1.319	1.413	-7.1	126	0.11	14.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p71967.D M3P3408SIM.M Thu Nov 29 07:32:21 2018

6.7.5
6

Initial Calibration Summary

Page 1 of 2

Job Number: JC78016

Account: OBGNY S O'Brien & Gere Engineers, Inc

Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4M3756-ICC3756

Lab FileID: 4M80113.D

Response Factor Report GCMS4M											
Method : C:\msdchem\1\METHODS\M4M3756SIM.M (RTE Integrator)											
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um											
Last Update : Tue Nov 27 01:19:38 2018											
Response via : Initial Calibration											
Calibration Files											
0.05=4m80117.D .2 =4m80115.D 2.5 =4m80112.D .02 =4m80118.D											
.1 =4m80116.D 1 =4m80113.D .01 =4m80119.D .5 =4m80114.D											
5 =4m80111.D = = =											
Compound											
	0.05	.2	2.5	.02	.1	1	.01	.5	5	Avg	%RSD

1) I 1-Methylnaphthalene-d -----ISTD-----											
2) 2-Fluorophenol											
	0.651	0.703	0.731	0.650	0.652	0.714	0.659	0.596	0.610	0.663	6.88
3) Phenol-d5											
	0.696	0.767	0.830	0.696	0.695	0.810	0.679	0.674	0.681	0.725	8.32
4) Phenol											
	0.814	0.902	0.956	0.810	0.834	0.928	0.782	0.834	0.774	0.848	7.69
5) bis(2-Chloroethyl)ether											
	0.649	0.635	0.647	0.673	0.615	0.627	0.688	0.543	0.531	0.623	8.62
6) Nitrobenzene-d5											
	0.510	0.582	0.717	0.498	0.517	0.677	0.495	0.561	0.593	0.572	13.92
7) Naphthalene											
	2.050	2.124	2.134	2.074	2.011	2.086	2.313	1.816	1.742	2.039	8.38
8) Hexachlorobutadiene											
	0.354	0.362	0.368	0.360	0.348	0.360	0.349	0.304	0.301	0.345	7.17
9) 2-Methylnaphthalene											
	1.297	1.300	1.349	1.305	1.265	1.316	1.426	1.139	1.122	1.280	7.50
10) Hexachlorocyclopentadiene											
	0.246	0.263	0.314	0.246	0.260	0.280	0.264	0.232	0.275	0.265	9.06
11) 2-Fluorobiphenyl											
	1.697	1.710	1.701	1.699	1.628	1.683	1.696	1.498	1.308	1.624	8.40
12) I Fluorene-d10 -----ISTD-----											
13) Acenaphthylene											
	1.187	1.259	1.661	1.214	1.216	1.445	1.238	1.163	1.473	1.317	12.87
14) Acenaphthene											
	1.230	1.224	1.302	1.291	1.217	1.237	1.269	1.072	1.035	1.208	7.71
15) Dibenzofuran											
	1.861	1.779	1.849	1.856	1.773	1.788	1.933	1.577	1.472	1.765	8.38
16) Fluorene											
	1.408	1.352	1.393	1.377	1.336	1.358	1.410	1.203	1.158	1.333	6.78
17) 2,4,6-Tribromophenol											
	0.133	0.216				0.185		0.148	0.180	0.172	18.99
18) Hexachlorobenzene											
	0.397	0.406	0.429	0.487	0.402	0.410	0.433	0.351	0.356	0.408	10.07
19) Pentachlorophenol											
	0.129	0.139	0.267	0.084	0.156	0.210	0.077	0.170	0.243	0.164	40.22
---- Quadratic regression ---- Coefficient = 0.9969											
Response Ratio = -0.02285 + 0.27130 *A + -0.00375 *A^2											
20) Phenanthrene											
	1.852	1.817	1.958	1.953	1.811	1.827	2.155	1.598	1.605	1.842	9.44
21) Anthracene											
	1.233	1.217	1.651	1.226	1.202	1.432	1.400	1.196	1.428	1.332	11.73

Initial Calibration Summary

Page 2 of 2

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4M3756-ICC3756
Lab FileID: 4M80113.D

22) I	Fluoranthene-d10	-----ISTD-----		
23)	Fluoranthene			
	1.412 1.333 1.353 1.580 1.325 1.275 1.885 1.099 1.083		1.372	17.85
24)	Pyrene			
	1.129 1.138 1.343 1.190 1.110 1.225 1.305 1.031 1.112		1.176	8.52
25)	Terphenyl-d14			
	0.858 0.870 0.903 0.837 0.870 0.873 0.838 0.770 0.746		0.840	6.08
26)	Benzo[a]anthracene			
	0.770 0.762 1.055 0.812 0.741 0.889 0.920 0.732 0.934		0.846	13.02
27)	Chrysene			
	1.084 1.070 1.265 1.117 1.060 1.163 1.252 0.980 1.059		1.117	8.44
28) I	Benzo(a)pyrene-d12	-----ISTD-----		
29)	Benzo[b]fluoranthene			
	1.613 1.587 1.706 1.819 1.534 1.634 2.055 1.384 1.394		1.636	12.77
30)	Benzo[k]fluoranthene			
	1.464 1.335 1.628 1.496 1.378 1.491 1.715 1.261 1.312		1.453	10.30
31)	Benzo[a]pyrene			
	1.399 1.335 1.446 1.508 1.207 1.373 1.885 1.166 1.187		1.390	15.90
32)	Indeno[1,2,3-cd]pyrene			
	1.508 1.546 1.616 1.659 1.490 1.515 1.975 1.285 1.328		1.547	12.99
33)	Dibenz[a,h]anthracene			
	1.349 1.378 1.436 1.520 1.346 1.352 1.725 1.171 1.175		1.384	12.26
34)	Benzo[g,h,i]perylene			
	1.394 1.358 1.340 1.598 1.354 1.289 1.865 1.105 1.077		1.376	17.46
35) I	1-Methylnaphthalene-d	-----ISTD-----		
36)	1,4-Dioxane			
	0.269 0.241 0.324 0.316 0.305 0.264		0.249 0.229	0.275 13.13
37)	1-Methylnaphthalene			
	1.335 1.366 1.354 1.361 1.295 1.324 1.426 1.156 1.126		1.305	7.63
38) I	Fluorene-d10a	-----ISTD-----		
39)	4,6-dinitro-2-methylphenol			
	0.074 0.085 0.227 0.070 0.081 0.145 0.070 0.105		0.107	50.77
	---- Quadratic regression ----			
	Response Ratio = -0.00169 + 0.08773 *A + 0.04464 *A^2			

(#) = Out of Range ### Number of calibration levels exceeded format ###

M4M3756SIM.M Tue Nov 27 15:31:46 2018 MANAGER

6.7.6
6

Initial Calibration Verification

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Sydeny, NY

Sample: E4M3756-ICV3756
Lab FileID: 4M80120.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3756\4m80120.D Vial: 11
Acq On : 26 Nov 2018 8:47 pm Operator: christc2
Sample : icv3756-5.0 Inst : GCMS4M
Misc : op13576a,e4m3756,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3756SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Nov 27 01:19:38 2018
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	76	0.00	7.25
4 t	Phenol	0.848	0.943	-11.2	78	0.00	4.97
12 I	Fluorene-d10	1.000	1.000	0.0	74	0.00	8.73
	----- True	Calc.	% Drift	-----			
19 t	Pentachlorophenol	5.000	5.267	-5.3	92	0.00	9.50
38 I	Fluorene-d10a	1.000	1.000	0.0	74	0.00	8.73
	----- True	Calc.	% Drift	-----			
39 t	4,6-dinitro-2-methylpheno	5.000	4.606	7.9	64	0.00	8.81

(#) = Out of Range
4m80113.D M4M3756SIM.M

SPCC's out = 0 CCC's out = 0
Tue Nov 27 01:44:32 2018 MANAGER

6.7.7
6

Initial Calibration Verification

Page 1 of 1

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeny, NY

Sample: E4M3756-ICV3756
 Lab FileID: 4M80121.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3756\4m80121.D Vial: 12
 Acq On : 26 Nov 2018 9:08 pm Operator: christc2
 Sample : icv3756-1.0 Inst : GCMS4M
 Misc : op13576a,e4m3756,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3756SIM.M (RTE Integrator)
 Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 Last Update : Tue Nov 27 01:19:38 2018
 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	100	0.00	7.25
5 t	bis(2-Chloroethyl)ether	0.623	0.612	1.8	98	0.00	5.03
7 t	Naphthalene	2.039	1.949	4.4	93	0.00	6.52
8 t	Hexachlorobutadiene	0.345	0.345	0.0	96	0.00	6.64
9 t	2-Methylnaphthalene	1.280	1.216	5.0	92	0.00	7.19
10 t	Hexachlorocyclopentadiene	0.265	0.210	20.8	76	0.00	7.36
12 I	Fluorene-d10	1.000	1.000	0.0	96	0.00	8.73
13 t	Acenaphthylene	1.317	1.277	3.0	85	0.00	8.08
14 t	Acenaphthene	1.208	1.168	3.3	91	0.00	8.24
15 t	Dibenzofuran	1.765	1.668	5.5	90	0.00	8.42
16 t	Fluorene	1.333	1.255	5.9	89	0.00	8.75
18 t	Hexachlorobenzene	0.408	0.387	5.1	91	0.00	9.30
20 t	Phenanthrene	1.842	1.683	8.6	89	0.00	9.70
21 t	Anthracene	1.332	1.202	9.8	81	0.00	9.75
22 I	Fluoranthene-d10	1.000	1.000	0.0	86	0.00	10.86
23 t	Fluoranthene	1.372	1.220	11.1	82	0.00	10.87
24 t	Pyrene	1.176	1.102	6.3	78	0.00	11.09
26 t	Benzo[a]anthracene	0.846	0.728	13.9	71	0.00	12.28
27 t	Chrysene	1.117	1.016	9.0	75	0.00	12.31
28 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	73	0.00	13.57
29 t	Benzo[b]fluoranthene	1.636	1.457	10.9	65	0.00	13.28
30 t	Benzo[k]fluoranthene	1.453	1.461	-0.6	71	0.00	13.31
31 t	Benzo[a]pyrene	1.390	1.290	7.2	68	0.00	13.59
32 t	Indeno[1,2,3-cd]pyrene	1.547	1.505	2.7	72	0.00	14.83
33 t	Dibenz[a,h]anthracene	1.384	1.363	1.5	73	0.00	14.84
34 t	Benzo[g,h,i]perylene	1.376	1.374	0.1	77	0.00	15.17
35 I	1-Methylnaphthalene-d10a	1.000	1.000	0.0	100	0.00	7.25
36 t	1,4-Dioxane	0.275	0.271	1.5	103	0.02	2.46

(#) = Out of Range
 4m80113.D M4M3756SIM.M

SPCC's out = 0 CCC's out = 0
 Tue Nov 27 01:44:34 2018 MANAGER

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeney, NY

Sample: E4M3762-CC3756
 Lab FileID: 4M80259.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\da...eel\4m3762\4m80259.d Vial: 2
 Acq On : 30 Nov 2018 10:07 am Operator: christc2
 Sample : cc3756-1.0 Inst : GCMS4M
 Misc : op13576a,e4m3762,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3756SIM.M (RTE Integrator)
 Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 Last Update : Mon Dec 03 13:15:14 2018
 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	109	0.00	7.38
2 S	2-Fluorophenol	0.663	0.640	3.5	97	0.06	4.20
3 S	Phenol-d5	0.725	0.756	-4.3	101	0.03	5.09
4 t	Phenol	0.848	0.845	0.4	99	0.03	5.10
5 t	bis(2-Chloroethyl)ether	0.623	0.955	-53.3#	166	-0.02	5.11
6 S	Nitrobenzene-d5	0.572	0.710	-24.1#	114	0.01	5.93
7 t	Naphthalene	2.039	1.948	4.5	102	0.00	6.64
8 t	Hexachlorobutadiene	0.345	0.387	-12.2	117	0.00	6.77
9 t	2-Methylnaphthalene	1.280	1.202	6.1	99	0.00	7.32
10 t	Hexachlorocyclopentadiene	0.265	0.393	-48.3#	152	0.00	7.49
11 S	2-Fluorobiphenyl	1.624	1.595	1.8	103	-0.01	7.69
12 I	Fluorene-d10	1.000	1.000	0.0	110	0.00	8.85
13 t	Acenaphthylene	1.317	1.678	-27.4#	128	0.00	8.20
14 t	Acenaphthene	1.208	1.236	-2.3	110	0.00	8.37
15 t	Dibenzofuran	1.765	1.620	8.2	99	0.00	8.55
16 t	Fluorene	1.333	1.311	1.7	106	0.00	8.88
17 S	2,4,6-Tribromophenol	0.172	0.211	-22.7#	126	0.00	9.12
18 t	Hexachlorobenzene	0.408	0.444	-8.8	119	0.00	9.42
19 t	----- True	Calc.	% Drift	-----			
	Pentachlorophenol	5.000	2.793	44.1#	69	-0.01	9.62
20 t	----- AvgRF	CCRF	% Dev	-----			
	Phenanthrene	1.842	1.759	4.5	106	-0.01	9.82
21 t	Anthracene	1.332	1.633	-22.6#	125	-0.01	9.87
22 I	Fluoranthene-d10	1.000	1.000	0.0	119	0.00	10.98
23 t	Fluoranthene	1.372	1.191	13.2	111	0.00	10.99
24 t	Pyrene	1.176	1.207	-2.6	117	0.00	11.22
25 S	Terphenyl-d14	0.840	0.831	1.1	113	-0.02	11.38
26 t	Benzo[a]anthracene	0.846	0.976	-15.4	131	0.00	12.40
27 t	Chrysene	1.117	1.134	-1.5	116	-0.02	12.44
28 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	128	0.00	13.72
29 t	Benzo[b]fluoranthene	1.636	1.401	14.4	110	-0.01	13.42
30 t	Benzo[k]fluoranthene	1.453	1.494	-2.8	129	0.00	13.44
31 t	Benzo[a]pyrene	1.390	1.295	6.8	121	0.00	13.74
32 t	Indeno[1,2,3-cd]pyrene	1.547	1.483	4.1	126	0.04	15.03
33 t	Dibenz[a,h]anthracene	1.384	1.258	9.1	119	0.04	15.05
34 t	Benzo[g,h,i]perylene	1.376	1.202	12.6	120	0.06	15.40

Continuing Calibration Summary

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Job Number: JC78016
Account: OBGNYs O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4M3762-CC3756
Lab FileID: 4M80259.D

35 I	1-Methylnaphthalene-d10a	1.000	1.000	0.0	109	0.00	7.38
36 t	1,4-Dioxane	0.275	0.274	0.4	113	0.11	2.59
37 t	1-Methylnaphthalene	1.305	1.277	2.1	105	0.00	7.41
38 I	Fluorene-d10a	1.000	1.000	0.0	110	0.00	8.85
----- True Calc. % Drift -----							
39 t	4,6-dinitro-2-methylpheno	5.000	4.586	8.3	95	0.00	8.93

(#) = Out of Range
 4m80259.d M4M3756SIM.M

SPCC's out = 0 CCC's out = 0
 Mon Dec 03 13:20:16 2018

6.7.9

6

Initial Calibration Summary

Job Number: JC78016

Account: OBGNYS O'Brien & Gere Engineers, Inc

Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1702-ICC1702

Lab FileID: 4P30900.D

Page 1 of 2

Response Factor Report MS4P											
Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M (RTE Integrator)											
Title : Semi Volatile Extractables by GC/MS											
Last Update : Thu Nov 22 03:03:48 2018											
Response via : Initial Calibration											
Calibration Files											
2.5 =4p30899.D 1.0 =4p30900.D 0.5 =4p30901.D 0.2 =4p30902.D											
0.1 =4p30903.D 0.05=4p30904.D 0.02=4p30905.D 0.01=4p30906.D											
5 =4p30898.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	0.503	0.493	0.461	0.480	0.429	0.360	0.307		0.475	0.439	15.99
3) 2-Fluorophenol	0.910	0.911	0.865	0.960	0.925	0.978	0.980	1.033	0.849	0.935	6.30
4) Phenol-d5	1.500	1.589	1.516	1.739	1.719	1.754	1.820	1.867	1.380	1.654	9.95
5) Phenol	1.978	2.010	1.900	2.163	2.089	2.127	2.116	2.208	1.911	2.056	5.38
6) bis(2-Chloroethyl)ether	1.432	1.471	1.408	1.615	1.565	1.742	1.712	1.751	1.388	1.565	9.38
7) Nitrobenzene-d5	1.596	1.713	1.657	1.880	1.808	1.899	1.856	1.996	1.405	1.757	10.39
8) Naphthalene	2.794	2.940	2.900	3.375	3.304	3.506	3.565	3.934	2.620	3.215	13.30
9) Hexachlorobutadiene	0.709	0.757	0.709	0.809	0.778	0.857	0.898	1.006	0.686	0.801	13.03
10) 2-Methylnaphthalene	1.469	1.511	1.424	1.623	1.603	1.713	1.645	1.904	1.392	1.587	10.10
11) 1-Methylnaphthalene	1.594	1.639	1.540	1.740	1.800	1.848	1.837	1.782	1.544	1.703	7.30
12) Hexachlorocyclopentadiene	0.155	0.067	0.027						0.226	0.119	75.12
13) I Fluorene-d10	-----ISTD-----										
14) 2-Fluorobiphenyl	1.294	1.423	1.353	1.583	1.607	1.723	1.808	1.864	1.066	1.525	17.17
15) Acenaphthylene	1.948	1.985	1.847	2.127	2.084	2.263	2.332	2.497	1.893	2.109	10.36
16) Acenaphthene	1.332	1.329	1.238	1.423	1.440	1.524	1.627	1.611	1.255	1.420	10.17
17) Fluorene	1.508	1.537	1.468	1.673	1.648	1.712	1.794	1.880	1.429	1.628	9.43
18) 4,6-dinitro-2-methylphenol	0.244	0.188	0.121	0.078	0.044				0.267	0.157	57.63
19) 2,4,6-Tribromophenol	0.308	0.292	0.269	0.288	0.268	0.257	0.234	0.234	0.305	0.273	10.16
20) Fluoranthene-d10	-----ISTD-----										
21) Hexachlorobenzene	0.444	0.443	0.433	0.498	0.480	0.500	0.544	0.564	0.429	0.482	10.21
22) Pentachlorophenol	0.151	0.096	0.050	0.020	0.012	0.007			0.188	0.075	96.72
23) Phenanthrene											

Initial Calibration Summary

Page 2 of 2

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Sydeny, NY

Sample: E4P1702-ICC1702
Lab FileID: 4P30900.D

	1.364	1.394	1.346	1.598	1.559	1.655	1.812	1.816	1.318		1.540	12.69
24)	Anthracene	1.336	1.329	1.265	1.430	1.372	1.485	1.528	1.753	1.309	1.423	10.56
25)	Fluoranthene	1.474	1.459	1.399	1.652	1.662	1.702	1.759		1.399	1.563	9.29
26)	Pyrene	1.519	1.538	1.452	1.645	1.613	1.772	1.784	1.916	1.485	1.636	9.64
27)	Terphenyl-d14	0.668	0.685	0.656	0.751	0.773	0.826	0.815	0.881	0.604	0.740	12.44
28)	Benzo[a]anthracene	1.284	1.280	1.187	1.395	1.362	1.454	1.626	1.783	1.242	1.401	13.82
29)	Chrysene	1.396	1.398	1.319	1.534	1.494	1.615	1.708	1.954	1.309	1.525	13.68
30)	I Benzo(a)pyrene-d12	-----ISTD-----										
31)	Benzo[b]fluoranthene	1.861	1.909	1.784	2.071	1.999	2.218	2.320	2.639	1.746	2.061	14.03
32)	Benzo[k]fluoranthene	1.729	1.716	1.628	1.753	1.795	1.785	2.106	2.295	1.730	1.838	11.78
33)	Benzo[a]pyrene	1.668	1.674	1.568	1.798	1.738	1.797	2.060	2.309	1.570	1.798	13.49
34)	Indeno[1,2,3-cd]pyrene	1.985	1.961	1.838	2.129	2.120	2.278	2.690	3.017	1.960	2.220	17.55
35)	Dibenz[a,h]anthracene	1.657	1.627	1.531	1.766	1.726	1.800	2.154	2.430	1.632	1.814	16.06
36)	Benzo[g,h,i]perylene	1.652	1.624	1.548	1.797	1.816	1.925	2.212	2.569	1.612	1.862	17.97

(#) = Out of Range ### Number of calibration levels exceeded format ###												

M4P1702SIM.M Thu Nov 22 05:30:23 2018

6.7.10
6

Initial Calibration Verification

Page 1 of 1

Job Number: JC78016
Account: OBGNY S O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1702-ICV1702
Lab FileID: 4P30907.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P1702\4p30907.D Vial: 11
Acq On : 22 Nov 2018 2:40 am Operator: christc2
Sample : icv1702-5 Inst : MS4P
Misc : op16710a,e4p1702,30.0,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Thu Nov 22 03:03:48 2018
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	98	0.00	7.08
5	Phenol	2.056	1.687	17.9	82	0.00	4.75

(#) = Out of Range

4p30900.D M4P1702SIM.M

SPCC's out = 0 CCC's out = 0
Mon Nov 26 13:31:23 2018

6.7.11
6

Initial Calibration Verification

Page 1 of 1

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeney, NY

Sample: E4P1702-ICV1702
 Lab FileID: 4P30908.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P1702\4p30908.D Vial: 12
 Acq On : 22 Nov 2018 3:03 am Operator: chris2
 Sample : icv1702-1 Inst : MS4P
 Misc : op16710a,e4p1702,30.0,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Thu Nov 22 03:03:48 2018
 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	111	0.00	7.08
2 t	1,4-Dioxane	0.439	0.450	-2.5	101	0.03	2.14
6 t	bis(2-Chloroethyl)ether	1.565	1.495	4.5	113	0.00	4.82
8 t	Naphthalene	3.215	2.791	13.2	106	0.00	6.33
9 t	Hexachlorobutadiene	0.801	0.706	11.9	104	0.00	6.47
10 t	2-Methylnaphthalene	1.587	1.426	10.1	105	0.00	7.02
13 I	Fluorene-d10	1.000	1.000	0.0	111	0.00	8.56
15 t	Acenaphthylene	2.109	1.884	10.7	105	0.00	7.90
16 t	Acenaphthene	1.420	1.269	10.6	106	0.00	8.08
17 t	Fluorene	1.628	1.454	10.7	105	0.00	8.59
20	Fluoranthene-d10	1.000	1.000	0.0	108	0.00	10.69
21 t	Hexachlorobenzene	0.482	0.439	8.9	107	0.00	9.14
23 t	Phenanthrene	1.540	1.385	10.1	107	0.00	9.54
24 t	Anthracene	1.423	1.306	8.2	106	0.00	9.58
25 t	Fluoranthene	1.563	1.427	8.7	106	0.00	10.71
26 t	Pyrene	1.636	1.445	11.7	102	0.00	10.93
28 t	Benzo[a]anthracene	1.401	1.210	13.6	102	0.00	12.11
29 t	Chrysene	1.525	1.307	14.3	101	0.00	12.14
30 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	106	0.00	13.37
31 t	Benzo[b]fluoranthene	2.061	1.738	15.7	96	0.00	13.10
32 t	Benzo[k]fluoranthene	1.838	1.585	13.8	98	0.00	13.12
33 t	Benzo[a]pyrene	1.798	1.560	13.2	99	0.00	13.39
34 t	Indeno[1,2,3-cd]pyrene	2.220	1.752	21.1	94	0.00	14.55
35 t	Dibenz[a,h]anthracene	1.814	1.407	22.4	91	0.00	14.57
36 t	Benzo[g,h,i]perylene	1.862	1.515	18.6	99	0.00	14.87

(#) = Out of Range
 4p30900.D M4P1702SIM.M

SPCC's out = 0 CCC's out = 0
 Mon Nov 26 13:31:37 2018

6.7.12
6

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeney, NY

Sample: E4P1711-CC1702
 Lab FileID: 4P31137.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P1711\4p31137.D Vial: 2
 Acq On : 30 Nov 2018 12:49 pm Operator: christc2
 Sample : cc1702-1.0 Inst : MS4P
 Misc : op16718a,e4p1711,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Fri Nov 30 14:33:54 2018
 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	58	-0.03	6.99
2 t	1,4-Dioxane	0.439	0.457	-4.1	54	-0.13	1.95
3 S	2-Fluorophenol	0.935	0.829	11.3	53	-0.07	3.71
4 S	Phenol-d5	1.654	1.543	6.7	57	-0.04	4.66
5	Phenol	2.056	1.944	5.4	56	-0.04	4.67
6 t	bis(2-Chloroethyl)ether	1.565	1.388	11.3	55	0.00	4.73
7 S	Nitrobenzene-d5	1.757	1.769	-0.7	60	-0.04	5.52
8 t	Naphthalene	3.215	2.629	18.2	52	-0.04	6.23
9 t	Hexachlorobutadiene	0.801	0.683	14.7	53	-0.03	6.37
10 t	2-Methylnaphthalene	1.587	1.380	13.0	53	-0.03	6.93
11 t	1-Methylnaphthalene	1.703	1.549	9.0	55	-0.03	7.02
12	Hexachlorocyclopentadiene	0.119	0.081	31.9#	70	-0.03	7.09
13 I	Fluorene-d10	1.000	1.000	0.0	58	-0.02	8.47
14 S	2-Fluorobiphenyl	1.525	1.697	-11.3	69	-0.03	7.29
15 t	Acenaphthylene	2.109	1.919	9.0	56	-0.02	7.81
16 t	Acenaphthene	1.420	1.270	10.6	55	-0.03	7.98
17 t	Fluorene	1.628	1.536	5.7	58	-0.01	8.50
18	4,6-dinitro-2-methylpheno	0.157	0.156	0.6	48#	-0.02	8.57
19 S	2,4,6-Tribromophenol	0.273	0.292	-7.0	58	-0.02	8.74
20	Fluoranthene-d10	1.000	1.000	0.0	58	-0.02	10.59
21 t	Hexachlorobenzene	0.482	0.438	9.1	57	-0.03	9.04
22 t	Pentachlorophenol	0.075	0.107	-42.7#	65	-0.04	9.25
23 t	Phenanthrene	1.540	1.391	9.7	58	-0.03	9.44
24 t	Anthracene	1.423	1.296	8.9	56	-0.03	9.49
25 t	Fluoranthene	1.563	1.495	4.4	59	-0.02	10.61
26 t	Pyrene	1.636	1.533	6.3	58	-0.02	10.83
27 S	Terphenyl-d14	0.740	0.707	4.5	60	-0.01	11.00
28 t	Benzo[a]anthracene	1.401	1.287	8.1	58	-0.01	12.01
29 t	Chrysene	1.525	1.327	13.0	55	-0.01	12.04
30 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	56	-0.03	13.27
31 t	Benzo[b]fluoranthene	2.061	1.796	12.9	53	-0.02	13.00
32 t	Benzo[k]fluoranthene	1.838	1.768	3.8	58	-0.02	13.02
33 t	Benzo[a]pyrene	1.798	1.663	7.5	56	-0.03	13.28
34 t	Indeno[1,2,3-cd]pyrene	2.220	2.041	8.1	58	-0.06	14.40
35 t	Dibenz[a,h]anthracene	1.814	1.703	6.1	59	-0.06	14.42
36 t	Benzo[g,h,i]perylene	1.862	1.670	10.3	58	-0.07	14.71

Continuing Calibration Summary

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1711-CC1702
Lab FileID: 4P31137.D

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p30900.D M4P1702SIM.M Fri Nov 30 14:35:18 2018

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016
 Account: OBGNY S O'Brien & Gere Engineers, Inc
 Project: Richardson Hill Road Landfill, Sydeney, NY

Sample: E4P1712-CC1702
 Lab FileID: 4P31164.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\jeryllr\4p1712\4p31164.d Vial: 2
 Acq On : 1 Dec 2018 1:37 am Operator: sufiyana
 Sample : cc1702-0.5 Inst : MS4P
 Misc : op16718a,e4p1712,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Sun Dec 02 21:39:47 2018
 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	85	0.00	6.99
2 t	1,4-Dioxane	0.439	0.434	1.1	80	-0.10	1.98
3 S	2-Fluorophenol	0.935	0.872	6.7	85	-0.05	3.71
4 S	Phenol-d5	1.654	1.569	5.1	88	-0.02	4.66
5	Phenol	2.056	1.950	5.2	87	-0.02	4.67
6 t	bis(2-Chloroethyl)ether	1.565	1.384	11.6	83	0.00	4.73
7 S	Nitrobenzene-d5	1.757	1.800	-2.4	92	-0.03	5.51
8 t	Naphthalene	3.215	2.951	8.2	86	-0.02	6.23
9 t	Hexachlorobutadiene	0.801	0.732	8.6	87	-0.01	6.37
10 t	2-Methylnaphthalene	1.587	1.411	11.1	84	-0.01	6.92
11 t	1-Methylnaphthalene	1.703	1.519	10.8	83	-0.02	7.01
12	Hexachlorocyclopentadiene	0.119	0.078	34.5#	246#	0.00	7.09
13 I	Fluorene-d10	1.000	1.000	0.0	91	0.00	8.46
14 S	2-Fluorobiphenyl	1.525	1.259	17.4	85	0.00	7.29
15 t	Acenaphthylene	2.109	1.747	17.2	86	0.00	7.80
16 t	Acenaphthene	1.420	1.174	17.3	87	0.00	7.98
17 t	Fluorene	1.628	1.365	16.2	85	0.00	8.49
18	4,6-dinitro-2-methylpheno	0.157	0.139	11.5	105	0.00	8.56
19 S	2,4,6-Tribromophenol	0.273	0.272	0.4	92	0.00	8.73
20	Fluoranthene-d10	1.000	1.000	0.0	93	0.00	10.58
21 t	Hexachlorobenzene	0.482	0.394	18.3	85	0.00	9.04
22 t	Pentachlorophenol	0.075	0.116	-54.7#	217#	-0.02	9.24
23 t	Phenanthrene	1.540	1.268	17.7	87	-0.01	9.43
24 t	Anthracene	1.423	1.223	14.1	90	-0.01	9.48
25 t	Fluoranthene	1.563	1.321	15.5	88	0.00	10.61
26 t	Pyrene	1.636	1.397	14.6	89	0.00	10.83
27 S	Terphenyl-d14	0.740	0.637	13.9	90	0.01	10.99
28 t	Benzo[a]anthracene	1.401	1.177	16.0	92	0.02	12.00
29 t	Chrysene	1.525	1.197	21.5#	84	0.02	12.04
30 I	Benzo(a)pyrene-d12	1.000	1.000	0.0	92	0.00	13.25
31 t	Benzo[b]fluoranthene	2.061	1.701	17.5	88	0.00	12.99
32 t	Benzo[k]fluoranthene	1.838	1.512	17.7	86	0.00	13.01
33 t	Benzo[a]pyrene	1.798	1.457	19.0	86	0.00	13.28
34 t	Indeno[1,2,3-cd]pyrene	2.220	1.736	21.8#	87	-0.03	14.39
35 t	Dibenz[a,h]anthracene	1.814	1.431	21.1#	86	-0.03	14.40
36 t	Benzo[g,h,i]perylene	1.862	1.430	23.2#	85	-0.04	14.69

Continuing Calibration Summary

Job Number: JC78016
Account: OBGNYS O'Brien & Gere Engineers, Inc
Project: Richardson Hill Road Landfill, Syndey, NY

Sample: E4P1712-CC1702
Lab FileID: 4P31164.D

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p30901.D M4P1702SIM.M Sun Dec 02 21:42:33 2018



MS Semi-volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31154.d
 Acq On : 30 Nov 2018 7:49 pm
 Operator : christc2
 Sample : jc78016-1 Inst : MS4P
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:58:17 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	48634	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	58717	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	87545	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	61668	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	170743	15.02	ppm	0.01
Spiked Amount 50.000			Recovery	=	30.04%	
4) Phenol-d5	4.669	99	208081	10.35	ppm	0.00
Spiked Amount 50.000			Recovery	=	20.70%	
7) Nitrobenzene-d5	5.522	82	799864	37.45	ppm	0.00
Spiked Amount 50.000			Recovery	=	74.90%	
14) 2-Fluorobiphenyl	7.295	172	944342	42.20	ppm	0.00
Spiked Amount 50.000			Recovery	=	84.40%	
19) 2,4,6-Tribromophenol	8.739	330	155644	38.85	ppm	0.00
Spiked Amount 50.000			Recovery	=	77.70%	
27) Terphenyl-d14	10.999	244	435188	26.87	ppm	0.00
Spiked Amount 50.000			Recovery	=	53.74%	
Target Compounds						Qvalue

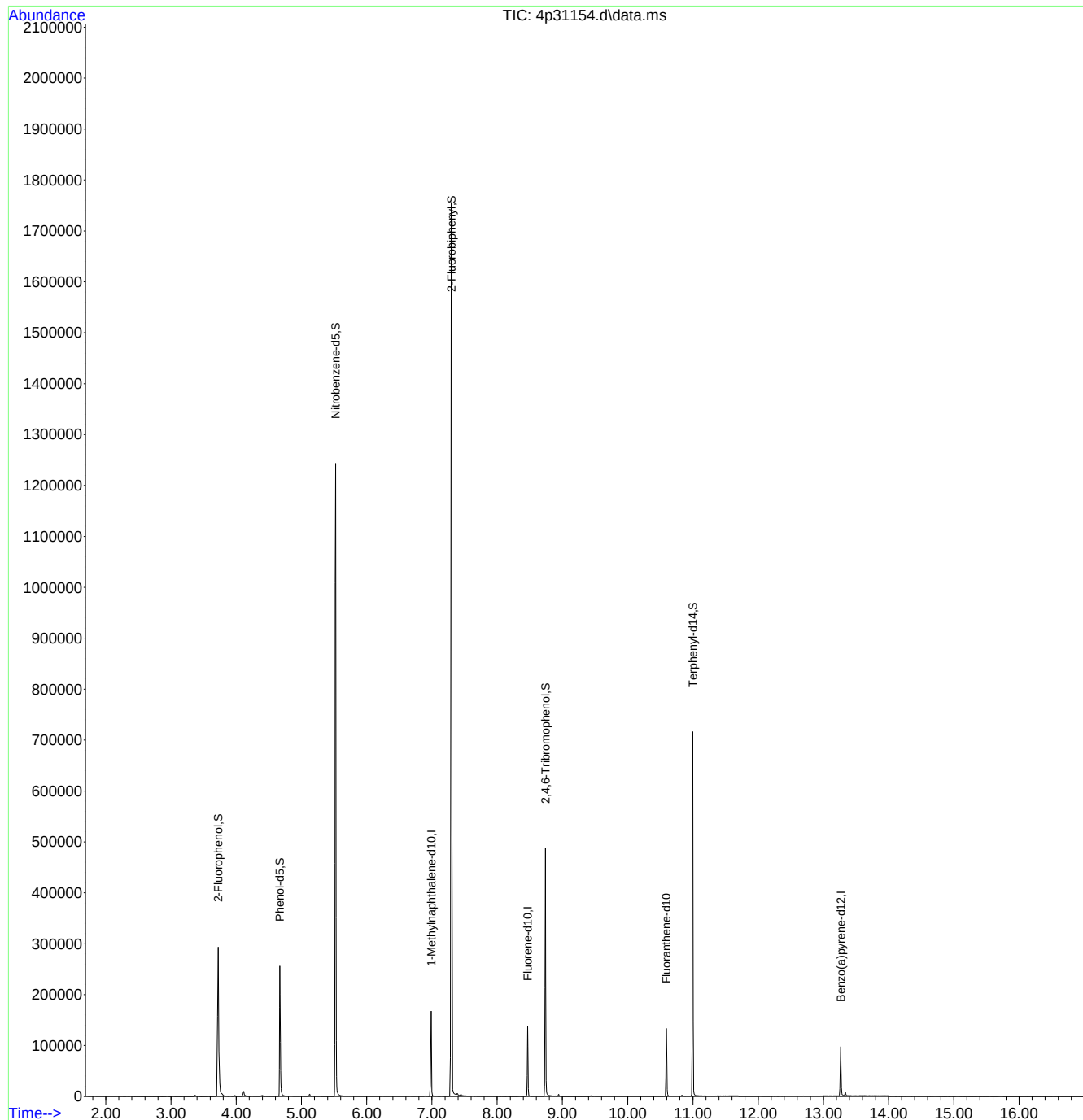
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31154.d
Acq On : 30 Nov 2018 7:49 pm
Operator : christc2
Sample : jc78016-1
Misc : op16734a,e4p1711,1020,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:58:17 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31155.d
 Acq On : 30 Nov 2018 8:12 pm
 Operator : christc2
 Sample : jc78016-2 Inst : MS4P
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:58:17 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

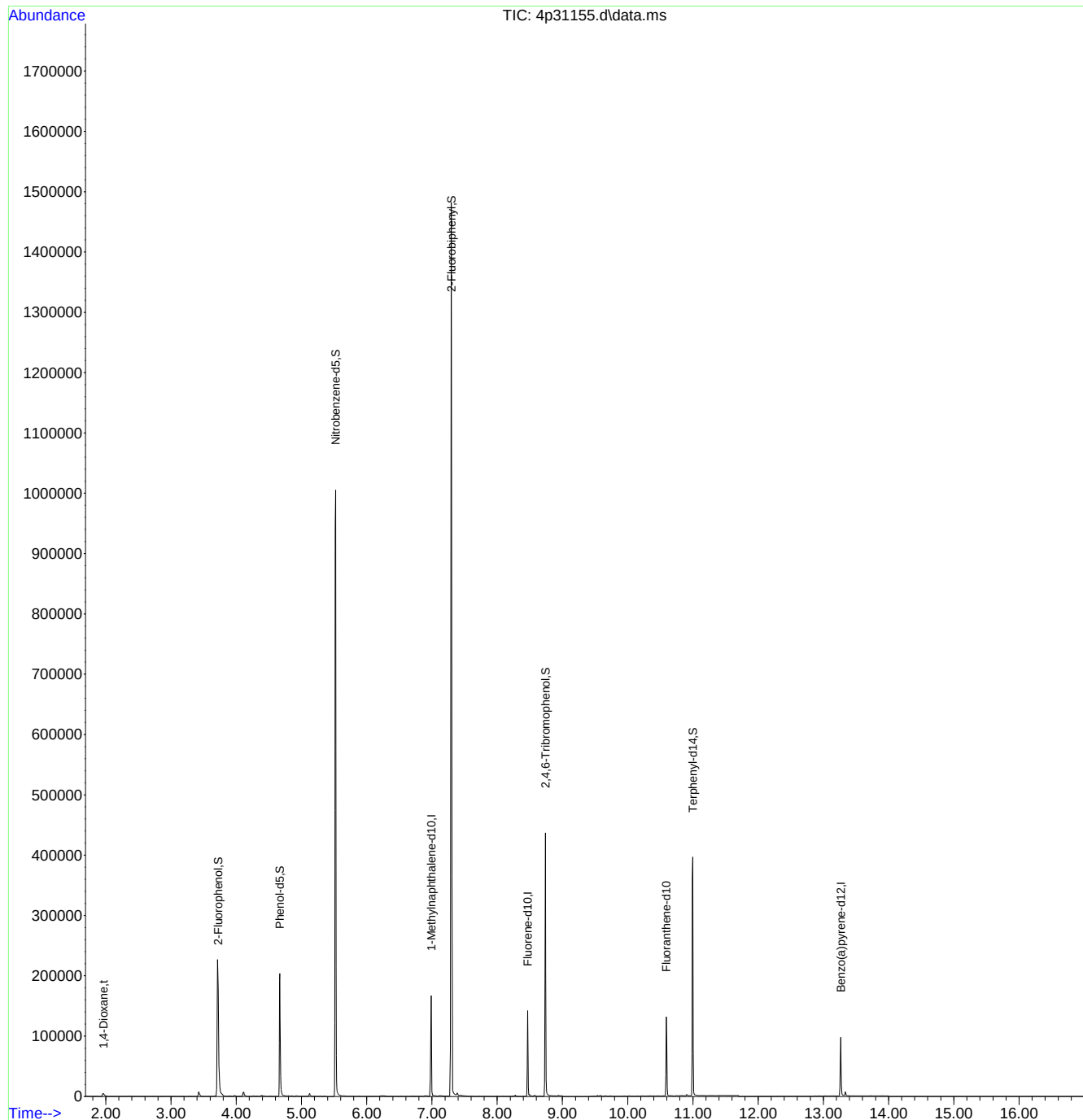
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	49539	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	60605	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	87596	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	62860	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	142497	12.31	ppm	0.01
Spiked Amount 50.000			Recovery	=	24.62%	
4) Phenol-d5	4.669	99	177281	8.66	ppm	0.00
Spiked Amount 50.000			Recovery	=	17.32%	
7) Nitrobenzene-d5	5.522	82	666553	30.64	ppm	0.00
Spiked Amount 50.000			Recovery	=	61.28%	
14) 2-Fluorobiphenyl	7.295	172	768379	33.26	ppm	0.00
Spiked Amount 50.000			Recovery	=	66.52%	
19) 2,4,6-Tribromophenol	8.739	330	140222	33.91	ppm	0.00
Spiked Amount 50.000			Recovery	=	67.82%	
27) Terphenyl-d14	10.999	244	257746	15.90	ppm	0.00
Spiked Amount 50.000			Recovery	=	31.80%	
Target Compounds						
2) 1,4-Dioxane	1.964	88	5492	1.01	ppm	Qvalue # 77

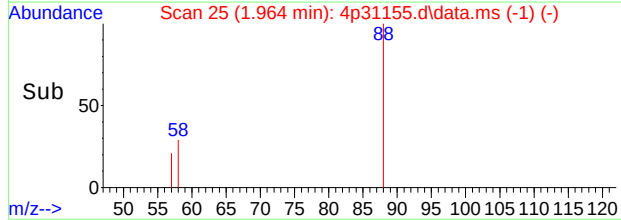
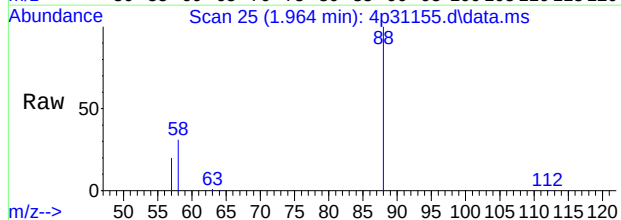
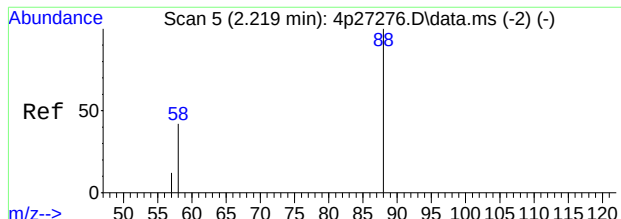
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31155.d
 Acq On : 30 Nov 2018 8:12 pm
 Operator : christc2
 Sample : jc78016-2
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 20 Sample Multiplier: 1
 Inst : MS4P

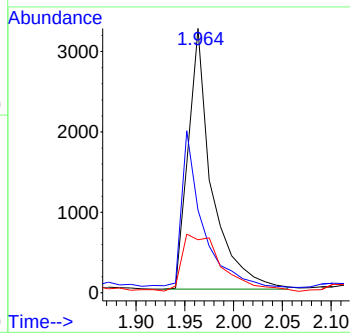
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:58:17 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1.01 ppm
RT: 1.964 min Scan# 25
Delta R.T. 0.012 min
Lab File: 4p31155.d
Acq: 30 Nov 2018 8:12 pm

Tgt Ion	Ratio	Lower	Upper
88	100		
58	29.4	30.1	70.1#
57	19.5	0.0	37.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31156.d
 Acq On : 30 Nov 2018 8:35 pm
 Operator : christc2
 Sample : jc78016-3 Inst : MS4P
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 21 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:59:23 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	53596	4.00	ppm	0.00
13) Fluorene-d10	8.467	176	65311	4.00	ppm	0.00
20) Fluoranthene-d10	10.593	212	96741	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.266	264	71061	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	147249	11.76	ppm	0.01
Spiked Amount 50.000			Recovery	=	23.52%	
4) Phenol-d5	4.669	99	188007	8.48	ppm	0.00
Spiked Amount 50.000			Recovery	=	16.96%	
7) Nitrobenzene-d5	5.522	82	684154	29.07	ppm	0.00
Spiked Amount 50.000			Recovery	=	58.14%	
14) 2-Fluorobiphenyl	7.294	172	708433	28.46	ppm	0.00
Spiked Amount 50.000			Recovery	=	56.92%	
19) 2,4,6-Tribromophenol	8.740	330	135116	30.32	ppm	0.00
Spiked Amount 50.000			Recovery	=	60.64%	
27) Terphenyl-d14	10.994	244	284523	15.90	ppm	0.00
Spiked Amount 50.000			Recovery	=	31.80%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.964	88	15378	2.62	ppm	75

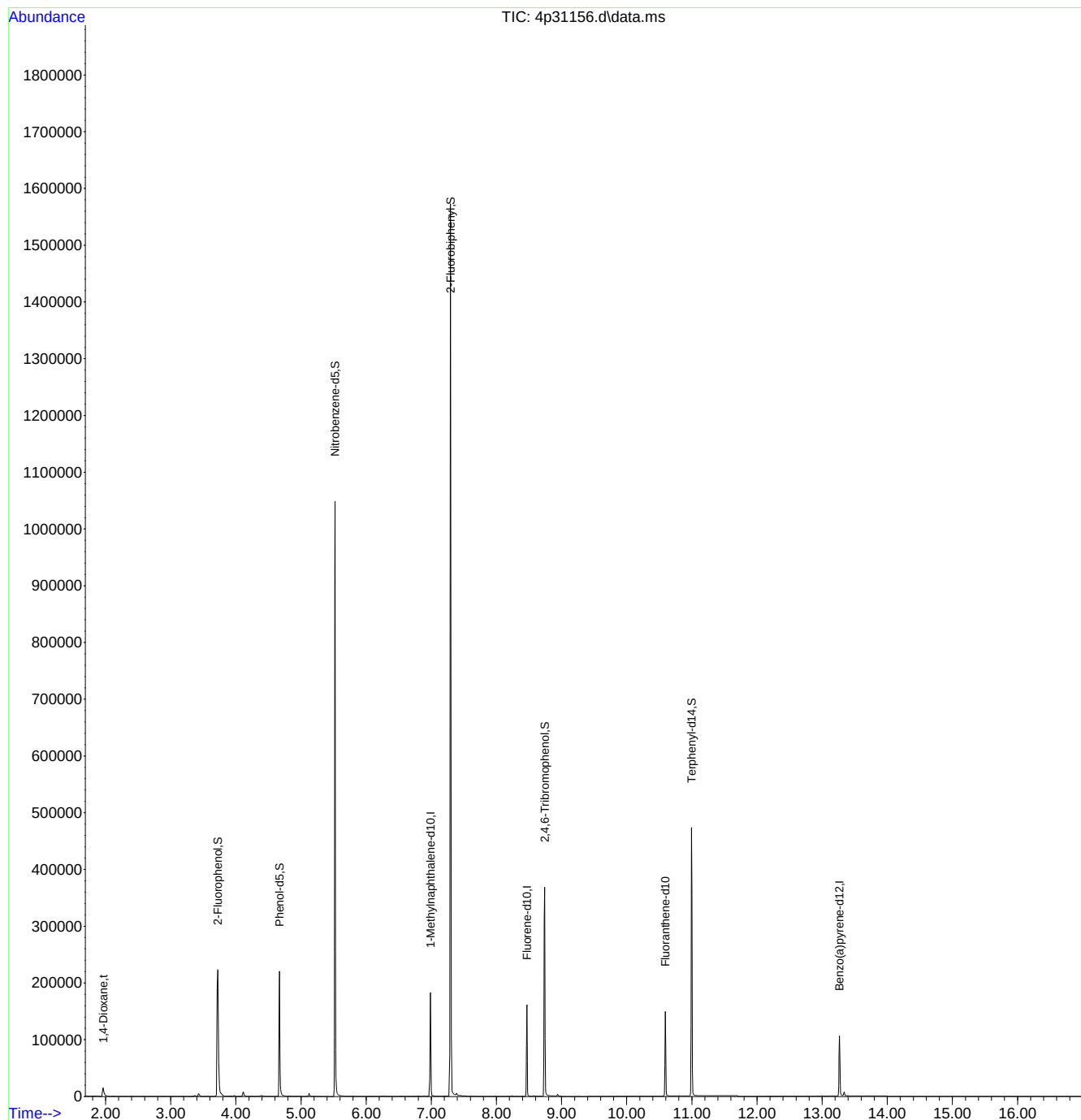
(#) = qualifier out of range (m) = manual integration (+) = signals summed

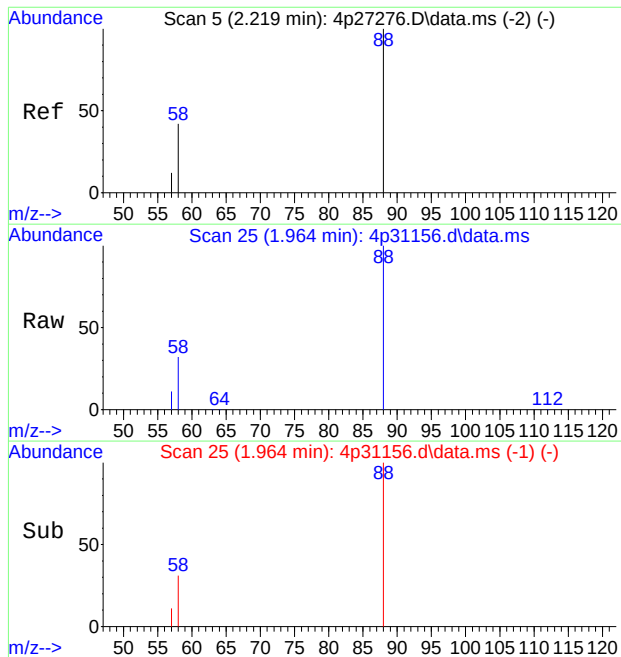
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31156.d
Acq On : 30 Nov 2018 8:35 pm
Operator : christc2
Sample : jc78016-3
Misc : op16734a,e4p1711,1020,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Inst : MS4P

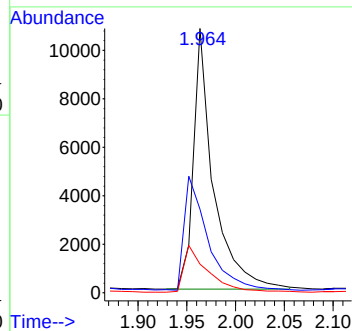
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:59:23 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 2.62 ppm
RT: 1.964 min Scan# 25
Delta R.T. 0.011 min
Lab File: 4p31156.d
Acq: 30 Nov 2018 8:35 pm

Tgt Ion: 88 Resp: 15378
Ion Ratio Lower Upper
88 100
58 30.9 30.1 70.1
57 10.6 0.0 37.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72910.D
Acq On : 28 Nov 2018 1:06 am
Operator : sufiyana
Sample : jc78016-4
Misc : op16734a,e3p3447,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 28 10:07:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Nov 27 21:26:13 2018
Response via : Initial Calibration

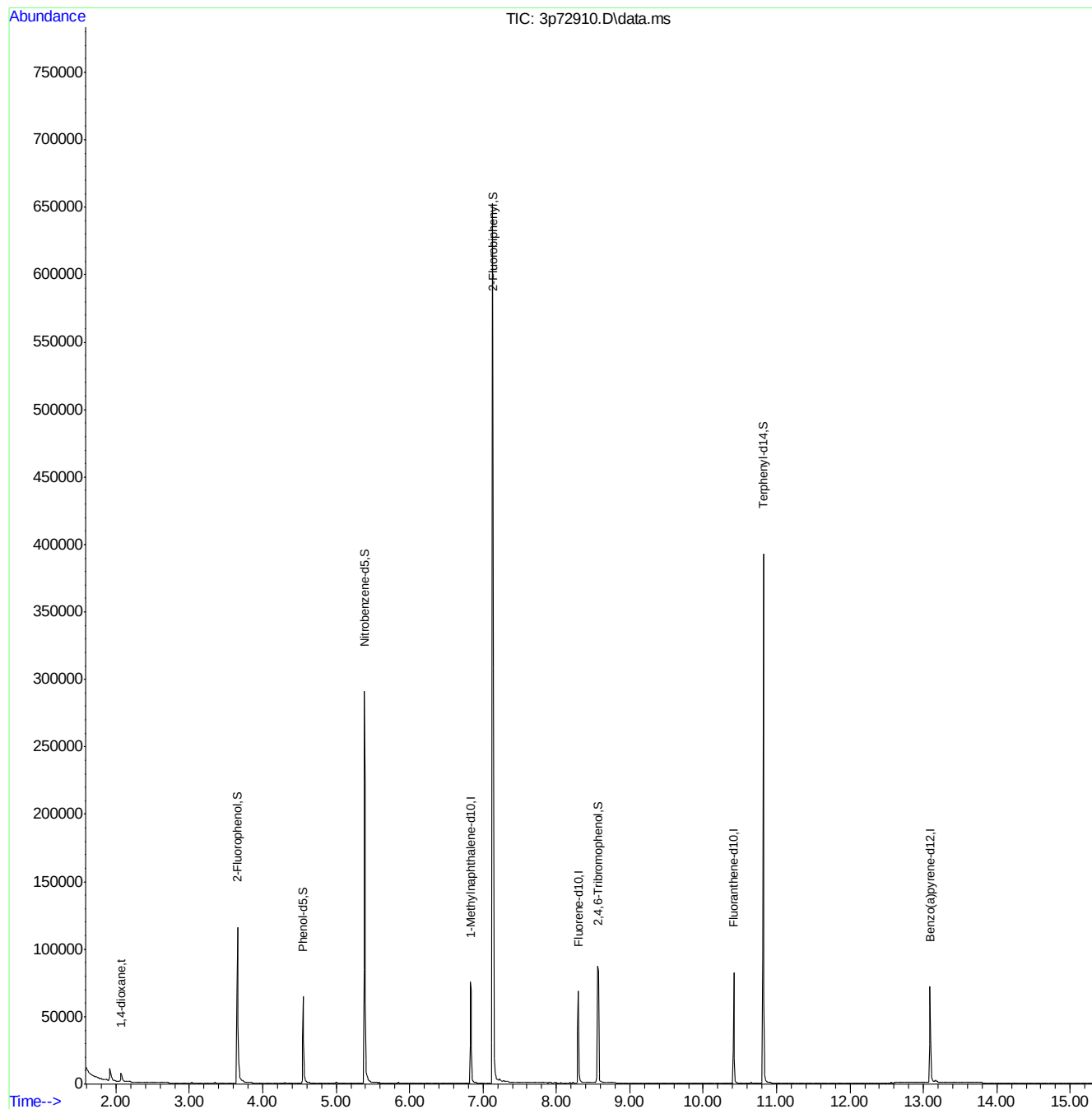
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.832	150	26717	4.00	ppm	-0.03
12) Fluorene-d10	8.302	176	32834	4.00	ppm	-0.08
19) Fluoranthene-d10	10.416	212	57411	4.00	ppm	-0.06
29) Benzo(a)pyrene-d12	13.091	264	49008	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.656	112	70523	15.71	ppm	-0.03
Spiked Amount 50.000			Recovery =	31.42%		
4) Phenol-d5	4.548	99	61658	10.58	ppm	-0.02
Spiked Amount 50.000			Recovery =	21.16%		
7) Nitrobenzene-d5	5.386	82	196480	36.72	ppm	-0.03
Spiked Amount 50.000			Recovery =	73.44%		
13) 2-Fluorobiphenyl	7.132	172	365983	33.56	ppm	-0.09
Spiked Amount 50.000			Recovery =	67.12%		
18) 2,4,6-Tribromophenol	8.571	330	39933	29.57	ppm	-0.08
Spiked Amount 50.000			Recovery =	59.14%		
26) Terphenyl-d14	10.819	244	221928	20.71	ppm	-0.06
Spiked Amount 50.000			Recovery =	41.42%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.067	88	5394m	3.16	ppm	

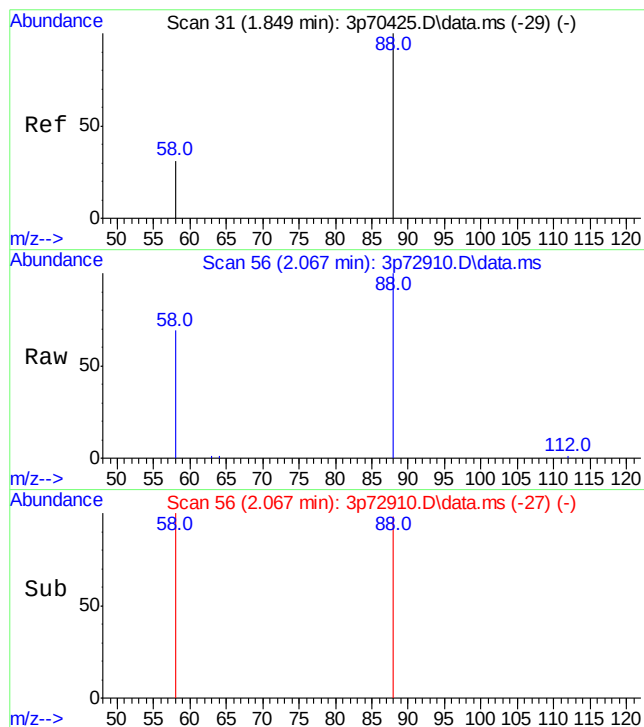
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72910.D
Acq On : 28 Nov 2018 1:06 am
Operator : sufiyana
Sample : jc78016-4
Misc : op16734a,e3p3447,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

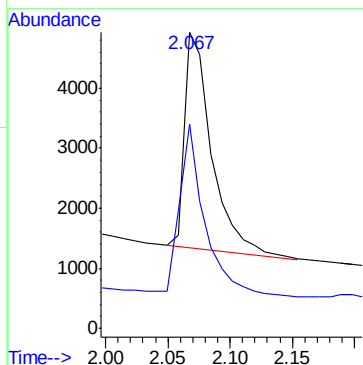
Quant Time: Nov 28 10:07:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Nov 27 21:26:13 2018
Response via : Initial Calibration





#2
1,4-dioxane
Concen: 3.16 ppm m
RT: 2.067 min Scan# 56
Delta R.T. 0.111 min
Lab File: 3p72910.D
Acq: 28 Nov 2018 1:06 am

Tgt Ion: 88 Resp: 5394
Ion Ratio Lower Upper
88 100
58 68.9 41.8 81.8



Manual Integration Approval Summary

Sample Number: JC78016-4

Method: SW846 8270D BY SIM

Lab FileID: 3P72910.D

Analyst approved: 11/28/18 10:32 Dipa Patel

Injection Time: 11/28/18 01:06

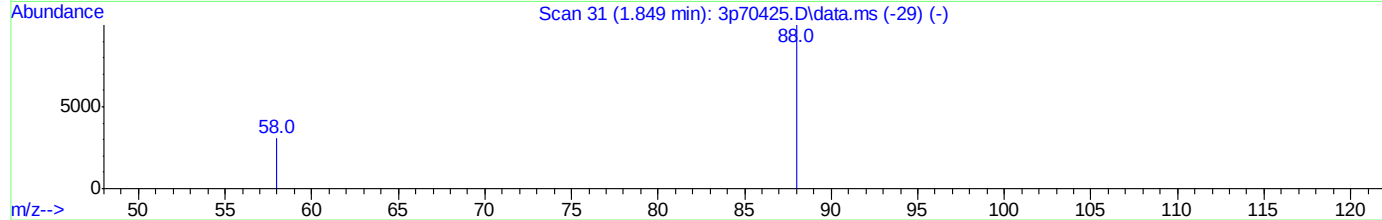
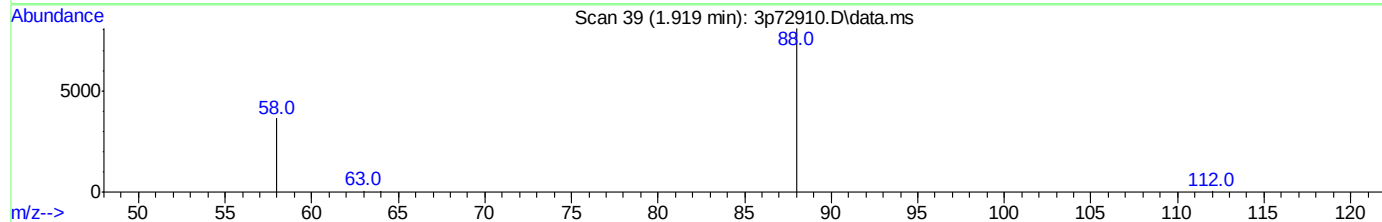
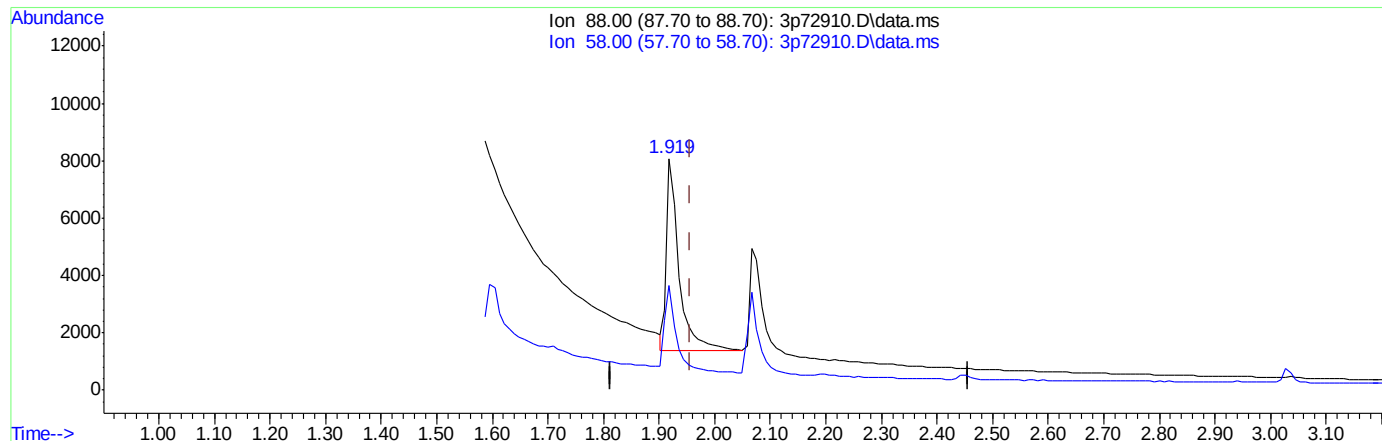
Supervisor approved: 11/29/18 17:01 Nina Pandya

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.07	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3447\
 Data File : 3p72910.D
 Acq On : 28 Nov 2018 1:06 am
 Operator : sufiyana
 Sample : jc78016-4
 Misc : op16734a,e3p3447,1000,,,1,1
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 28 01:21:35 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Nov 27 21:26:13 2018
 Response via : Initial Calibration



TIC: 3p72910.D\data.ms

(2) 1,4-dioxane (t)

1.919min (-0.038) 6.10ppm

response 10394

Ion	Exp%	Act%
88.00	100	100
58.00	61.80	45.53
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31157.d
Acq On : 30 Nov 2018 8:58 pm
Operator : christc2
Sample : jc78016-5 Inst : MS4P
Misc : op16734a,e4p1711,1020,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:59:48 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration

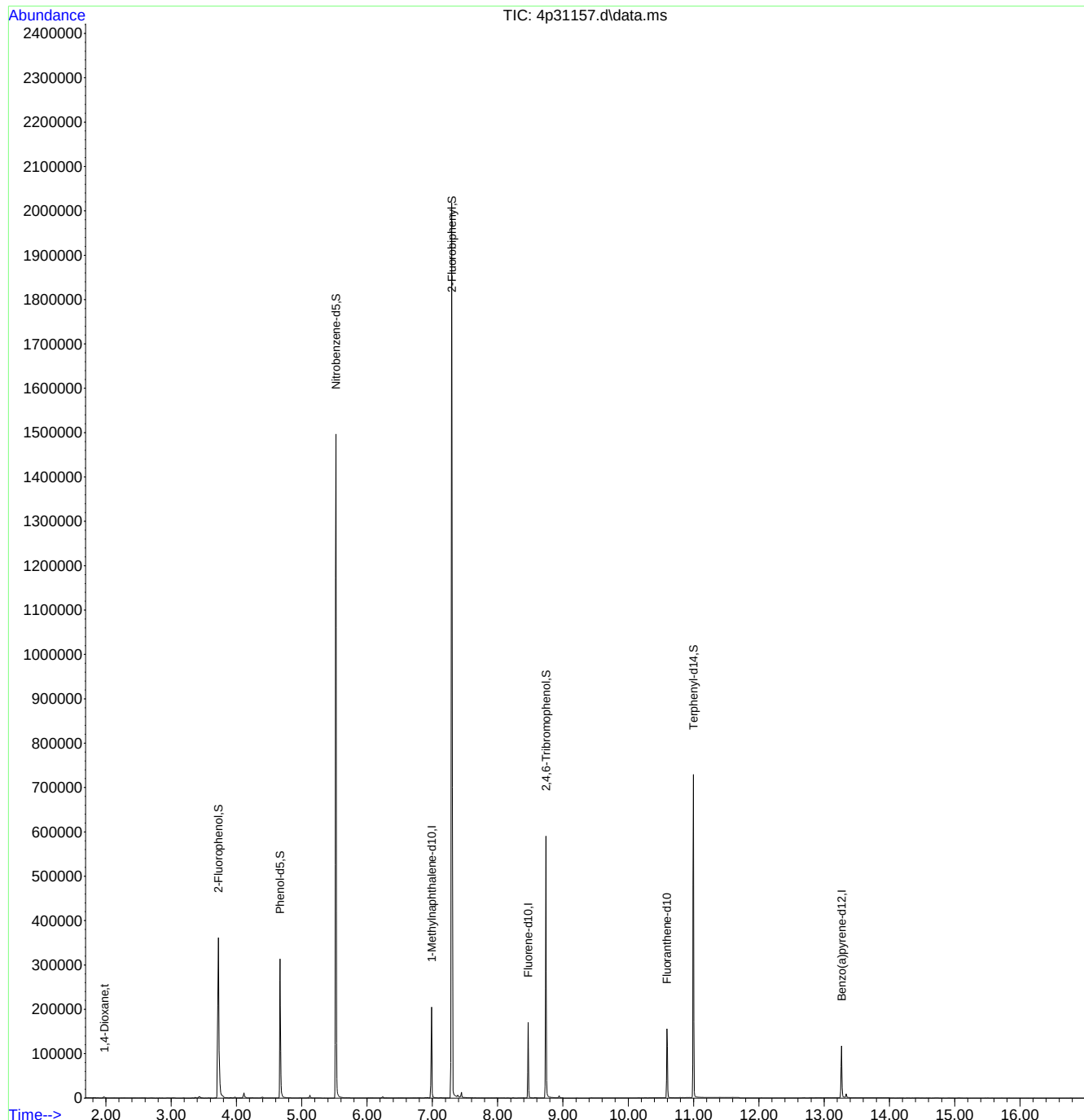
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	59608	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	71934	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	106021	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	75467	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	213398	15.32	ppm	0.01
Spiked Amount 50.000			Recovery	=	30.64%	
4) Phenol-d5	4.669	99	260732	10.58	ppm	0.00
Spiked Amount 50.000			Recovery	=	21.16%	
7) Nitrobenzene-d5	5.522	82	952126	36.37	ppm	0.00
Spiked Amount 50.000			Recovery	=	72.74%	
14) 2-Fluorobiphenyl	7.295	172	1119110	40.82	ppm	0.00
Spiked Amount 50.000			Recovery	=	81.64%	
19) 2,4,6-Tribromophenol	8.739	330	188242	38.35	ppm	0.00
Spiked Amount 50.000			Recovery	=	76.70%	
27) Terphenyl-d14	10.999	244	412529	21.03	ppm	0.00
Spiked Amount 50.000			Recovery	=	42.06%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.975	88	2624	0.40	ppm	87

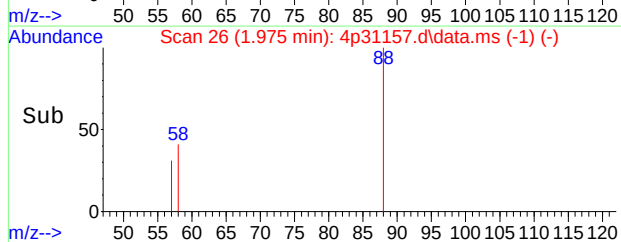
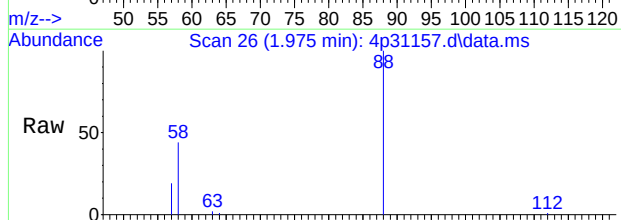
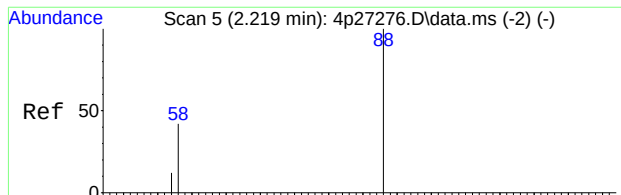
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\4p1711\
 Data File : 4p31157.d
 Acq On : 30 Nov 2018 8:58 pm
 Operator : christc2
 Sample : jc78016-5
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 22 Sample Multiplier: 1
 Inst : MS4P

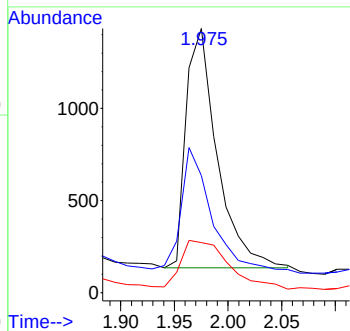
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:59:48 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 0.40 ppm
RT: 1.975 min Scan# 26
Delta R.T. 0.023 min
Lab File: 4p31157.d
Acq: 30 Nov 2018 8:58 pm

Tgt Ion	Ratio	Lower	Upper
88	100		
58	38.6	30.1	70.1
57	19.0	0.0	37.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31158.d
 Acq On : 30 Nov 2018 9:20 pm
 Operator : christc2
 Sample : jc78016-6 Inst : MS4P
 Misc : op16734a,e4p1711,1000,,,1,1
 ALS Vial : 23 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 22:01:14 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	50890	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	62277	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	93297	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	67529	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	217420	18.28	ppm	0.01
Spiked Amount 50.000			Recovery	=	36.56%	
4) Phenol-d5	4.669	99	277568	13.19	ppm	0.00
Spiked Amount 50.000			Recovery	=	26.38%	
7) Nitrobenzene-d5	5.523	82	900543	40.29	ppm	0.00
Spiked Amount 50.000			Recovery	=	80.58%	
14) 2-Fluorobiphenyl	7.295	172	1080934	45.54	ppm	0.00
Spiked Amount 50.000			Recovery	=	91.08%	
19) 2,4,6-Tribromophenol	8.739	330	181319	42.67	ppm	0.00
Spiked Amount 50.000			Recovery	=	85.34%	
27) Terphenyl-d14	11.000	244	443917	25.72	ppm	0.00
Spiked Amount 50.000			Recovery	=	51.44%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.964	88	367m	0.07	ppm	

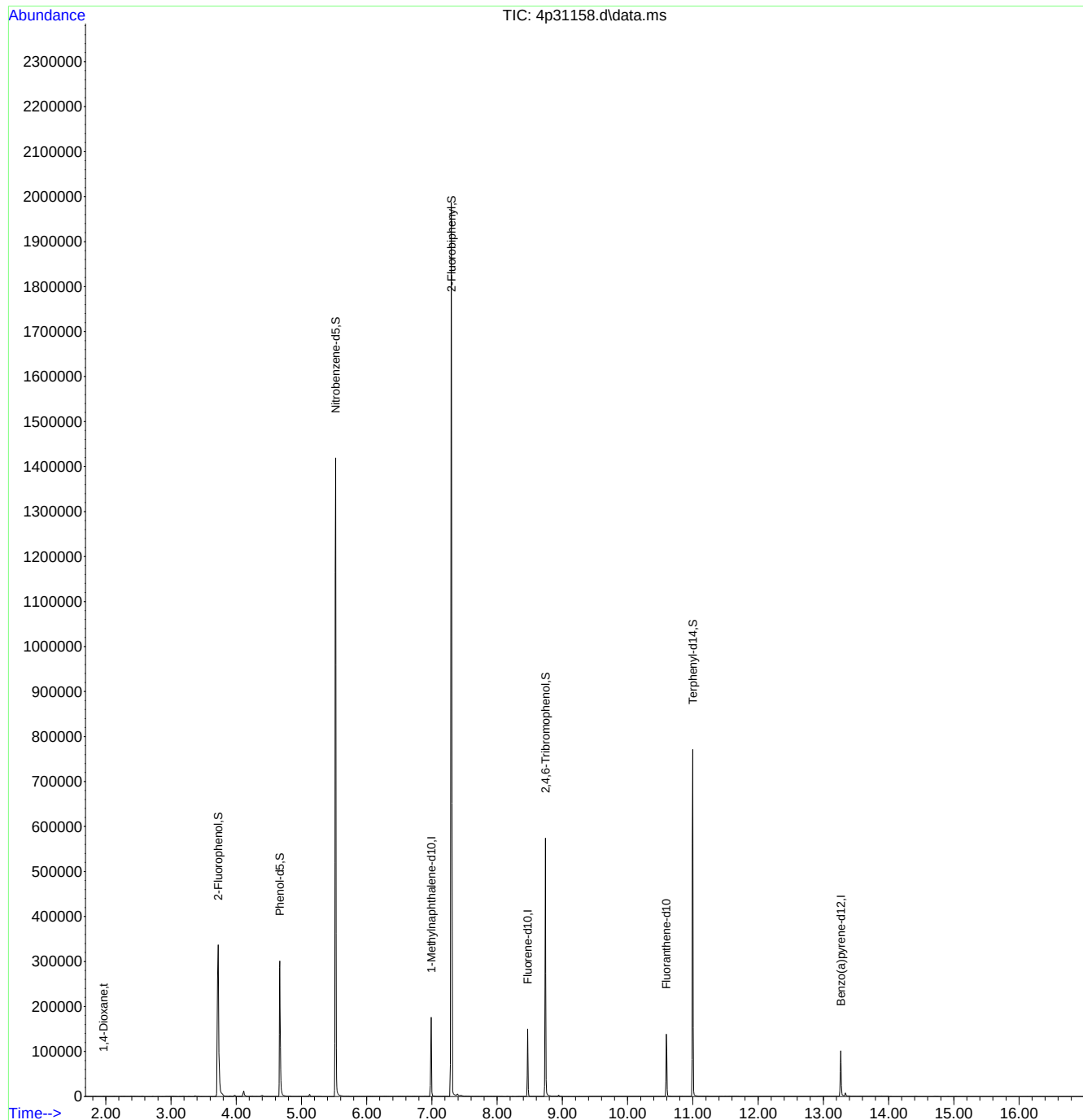
(#) = qualifier out of range (m) = manual integration (+) = signals summed

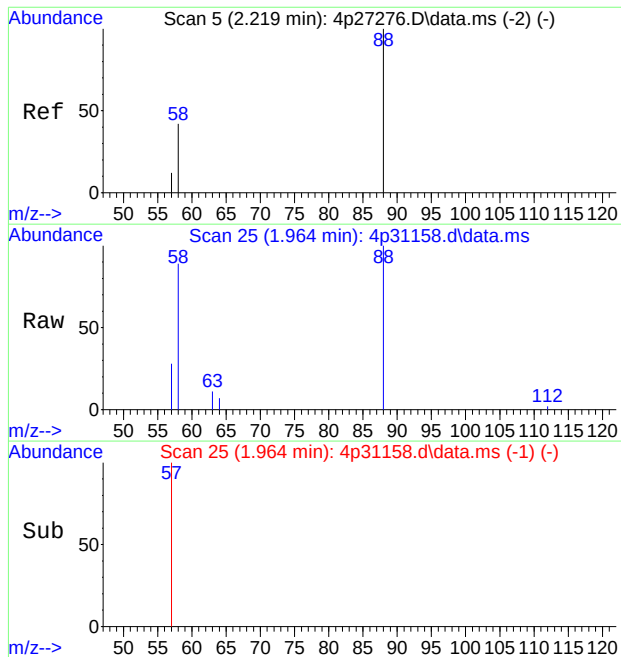
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31158.d
Acq On : 30 Nov 2018 9:20 pm
Operator : christc2
Sample : jc78016-6
Misc : op16734a,e4p1711,1000,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Inst : MS4P

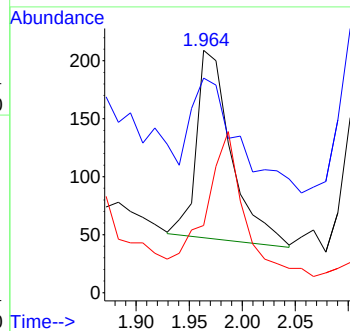
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 22:01:14 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 0.07 ppm m
RT: 1.964 min Scan# 25
Delta R.T. 0.012 min
Lab File: 4p31158.d
Acq: 30 Nov 2018 9:20 pm

Tgt Ion: 88 Resp: 367
Ion Ratio Lower Upper
88 100
58 88.5 30.1 70.1#
57 27.8 0.0 37.8



Manual Integration Approval Summary

Sample Number: JC78016-6

Method: SW846 8270D BY SIM

Lab FileID: 4P31158.D

Analyst approved: 12/02/18 22:07 Michelle Co

Injection Time: 11/30/18 21:20

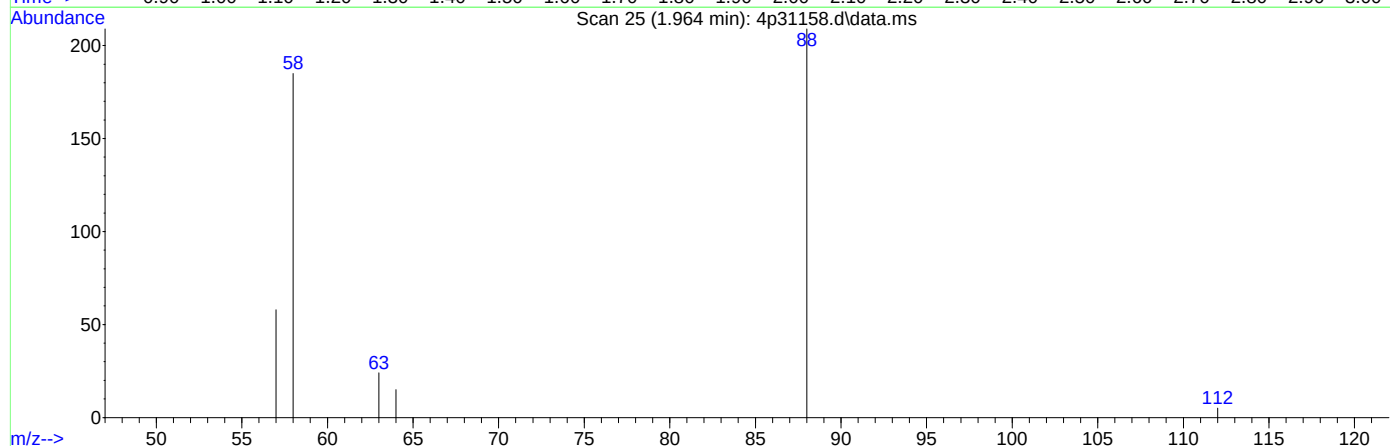
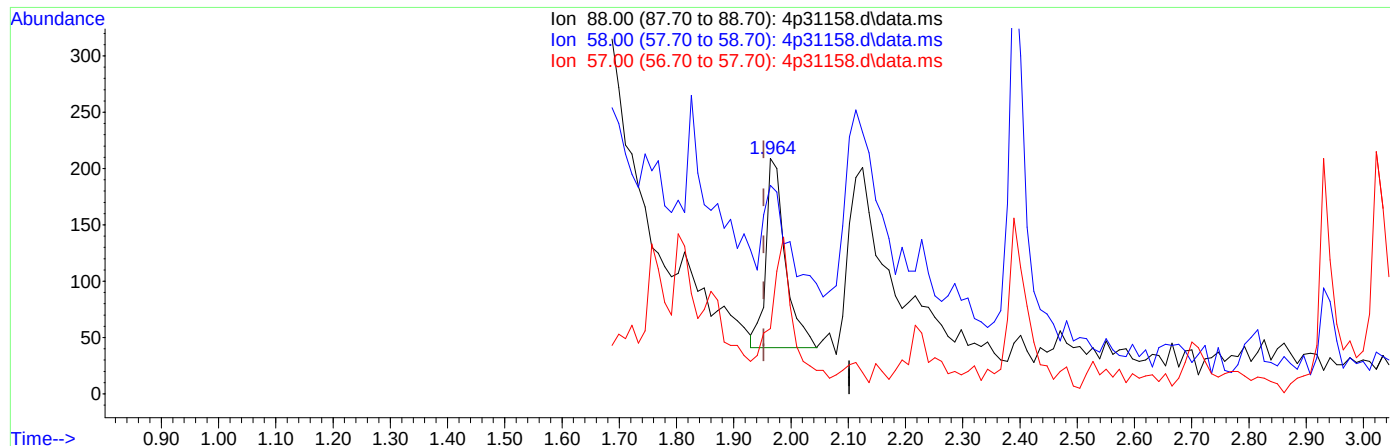
Supervisor approved: 12/04/18 10:22 Nina Pandya

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		1.96	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31158.d
 Acq On : 30 Nov 2018 9:20 pm
 Operator : christc2
 Sample : jc78016-6
 Misc : op16734a,e4p1711,1000,,,1,1
 ALS Vial : 23 Sample Multiplier: 1
 Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 20:56:57 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration



TIC: 4p31158.d\data.ms

(2) 1,4-Dioxane (t)

1.964min (+0.012) 0.07ppm

response 395

Ion	Exp%	Act%
88.00	100	100
58.00	50.10	44.31
57.00	17.80	20.31
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31159.d
 Acq On : 30 Nov 2018 9:43 pm
 Operator : christc2
 Sample : jc78016-7 Inst : MS4P
 Misc : op16734a,e4p1711,990,,,1,1
 ALS Vial : 24 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 22:01:31 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	45293	4.00	ppm	0.00
13) Fluorene-d10	8.467	176	55950	4.00	ppm	0.00
20) Fluoranthene-d10	10.593	212	84984	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.266	264	59899	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	174000	16.44	ppm	0.01
Spiked Amount 50.000			Recovery	=	32.88%	
4) Phenol-d5	4.664	99	223227	11.92	ppm	0.00
Spiked Amount 50.000			Recovery	=	23.84%	
7) Nitrobenzene-d5	5.522	82	752561	37.83	ppm	0.00
Spiked Amount 50.000			Recovery	=	75.66%	
14) 2-Fluorobiphenyl	7.294	172	752684	35.29	ppm	0.00
Spiked Amount 50.000			Recovery	=	70.58%	
19) 2,4,6-Tribromophenol	8.740	330	141746	37.13	ppm	0.00
Spiked Amount 50.000			Recovery	=	74.26%	
27) Terphenyl-d14	10.994	244	381978	24.29	ppm	0.00
Spiked Amount 50.000			Recovery	=	48.58%	

Target Compounds Qvalue

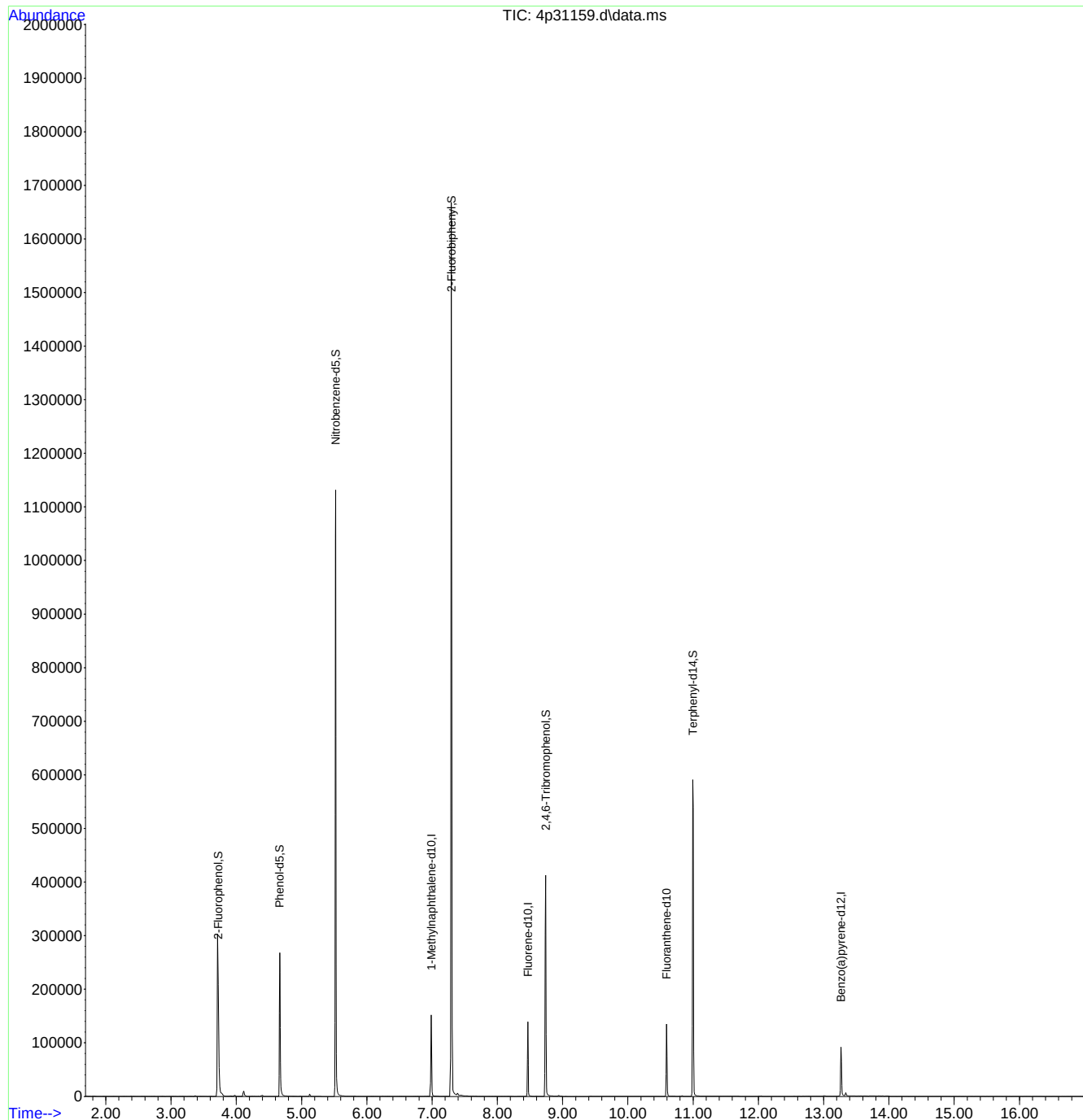
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31159.d
Acq On : 30 Nov 2018 9:43 pm
Operator : christc2
Sample : jc78016-7
Misc : op16734a,e4p1711,990,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 22:01:31 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
 Data File : 4p31160a.d
 Acq On : 30 Nov 2018 10:39 pm
 Operator : christc2
 Sample : jc78016-8 Inst : MS4P
 Misc : op16734a,e4p1711,1020,,,1,1
 ALS Vial : 25 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 22:02:00 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 20:55:16 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	59367	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	72257	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	109521	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	77417	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.713	112	204878	14.77	ppm	0.00
Spiked Amount 50.000			Recovery	=	29.54%	
4) Phenol-d5	4.661	99	248102	10.11	ppm	0.00
Spiked Amount 50.000			Recovery	=	20.22%	
7) Nitrobenzene-d5	5.519	82	838844	32.17	ppm	0.00
Spiked Amount 50.000			Recovery	=	64.34%	
14) 2-Fluorobiphenyl	7.295	172	960205	34.86	ppm	0.00
Spiked Amount 50.000			Recovery	=	69.72%	
19) 2,4,6-Tribromophenol	8.739	330	171112	34.71	ppm	0.00
Spiked Amount 50.000			Recovery	=	69.42%	
27) Terphenyl-d14	11.000	244	366205	18.07	ppm	0.00
Spiked Amount 50.000			Recovery	=	36.14%	
Target Compounds						Qvalue
2) 1,4-Dioxane	1.964	88	2361	0.36	ppm	77

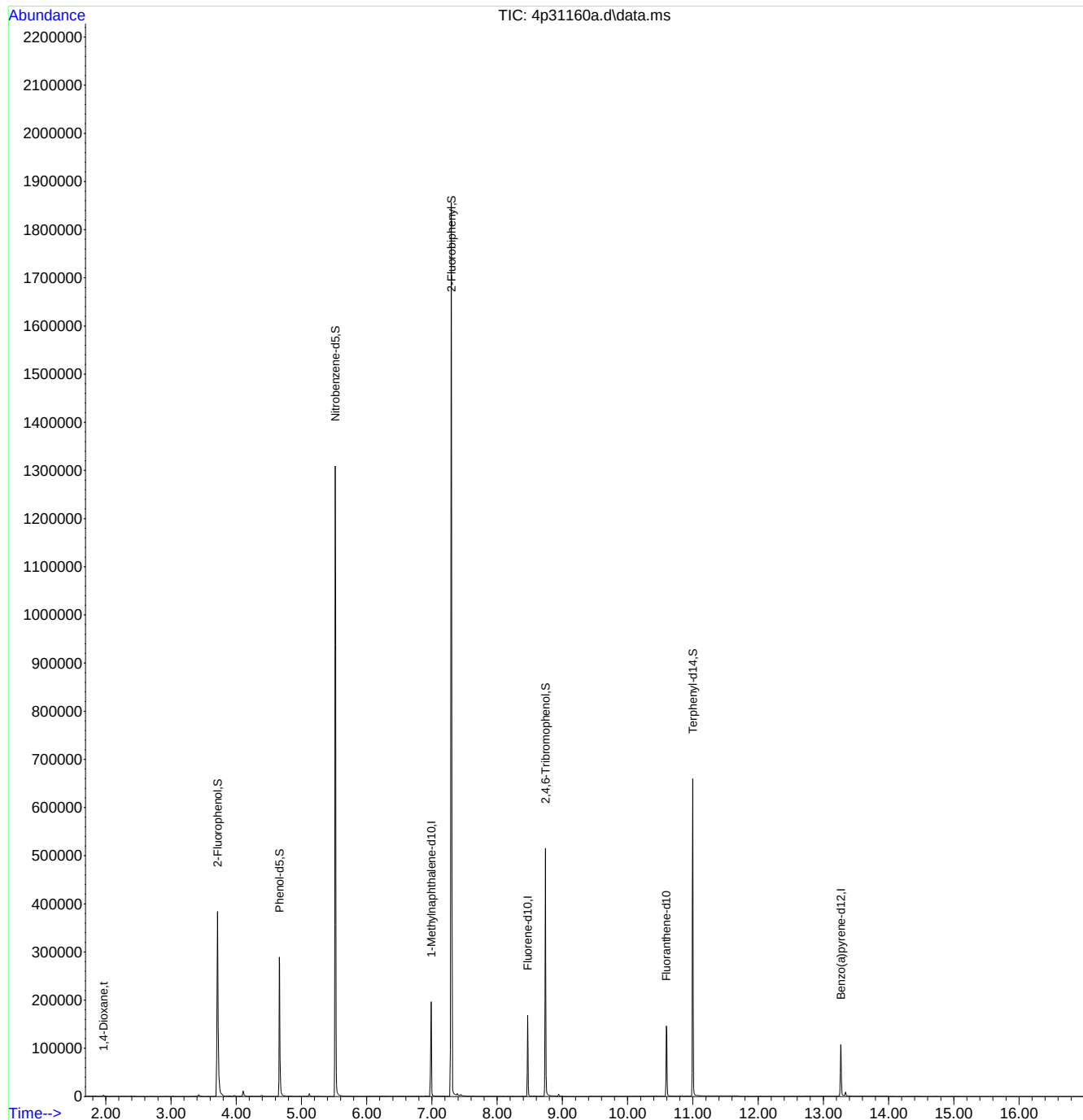
(#) = qualifier out of range (m) = manual integration (+) = signals summed

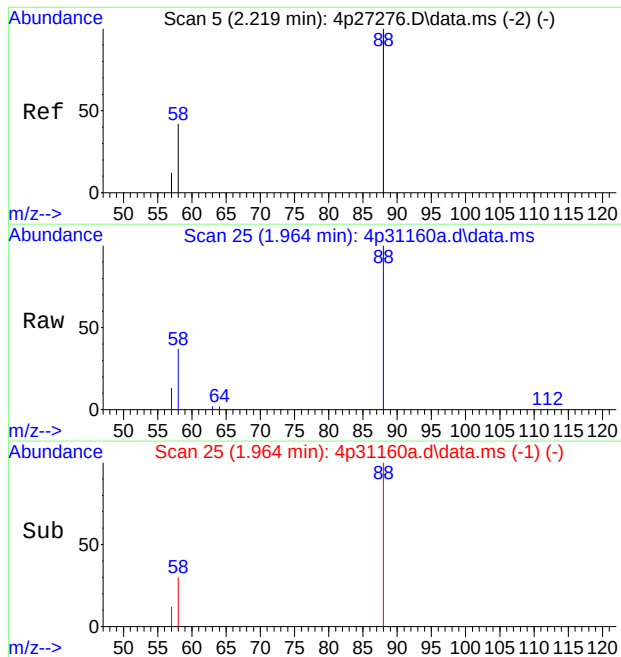
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31160a.d
Acq On : 30 Nov 2018 10:39 pm
Operator : christc2
Sample : jc78016-8
Misc : op16734a,e4p1711,1020,,,1,1
ALS Vial : 25 Sample Multiplier: 1

Inst : MS4P

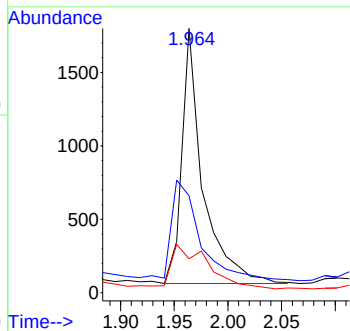
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 22:02:00 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 0.36 ppm
RT: 1.964 min Scan# 25
Delta R.T. 0.012 min
Lab File: 4p31160a.d
Acq: 30 Nov 2018 10:39 pm

Tgt Ion: 88	Resp: 2361
Ion Ratio	Lower Upper
88	100
58	32.6 30.1 70.1
57	11.0 0.0 37.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
 Data File : 3p72902.D
 Acq On : 27 Nov 2018 10:29 pm
 Operator : sufiyana
 Sample : op16734a-mb1
 Misc : op16734a,e3p3447,1000,,,1,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 28 09:55:53 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

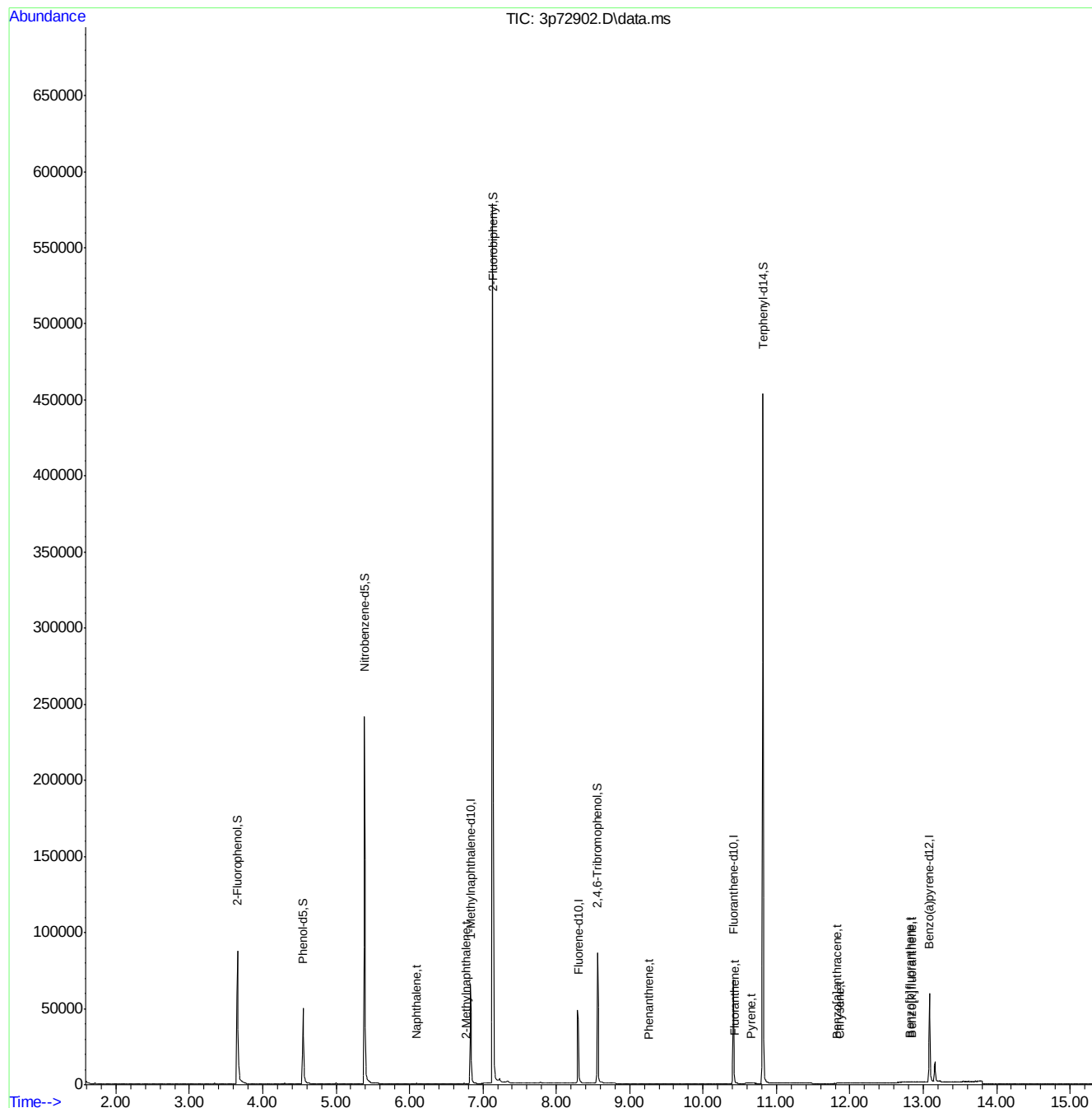
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.832	150	21923	4.00	ppm	0.00
12) Fluorene-d10	8.302	176	27385	4.00	ppm	0.00
19) Fluoranthene-d10	10.411	212	48520	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.086	264	39540	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.656	112	57031	15.48	ppm	-0.01
Spiked Amount 50.000			Recovery =	30.96%		
4) Phenol-d5	4.548	99	49057	10.26	ppm	0.00
Spiked Amount 50.000			Recovery =	20.52%		
7) Nitrobenzene-d5	5.386	82	154010	35.07	ppm	0.00
Spiked Amount 50.000			Recovery =	70.14%		
13) 2-Fluorobiphenyl	7.132	172	297629	32.73	ppm	-0.02
Spiked Amount 50.000			Recovery =	65.46%		
18) 2,4,6-Tribromophenol	8.560	330	32184	28.57	ppm	0.00
Spiked Amount 50.000			Recovery =	57.14%		
26) Terphenyl-d14	10.814	244	265375	29.30	ppm	0.00
Spiked Amount 50.000			Recovery =	58.60%		
Target Compounds						
						Qvalue
8) Naphthalene	6.094	128	136	0.01	ppm	100
10) 2-Methylnaphthalene	6.771	141	99	0.01	ppm	90
22) Phenanthrene	9.260	178	79	0.01	ppm	86
24) Fluoranthene	10.430	202	121	0.01	ppm	78
25) Pyrene	10.652	202	121	0.01	ppm	92
27) Benzo[a]anthracene	11.826	228	144	0.01	ppm	96
28) Chrysene	11.860	228	112	0.01	ppm	95
30) Benzo[b]fluoranthene	12.821	252	214	0.01	ppm	93
31) Benzo[k]fluoranthene	12.842	252	98	0.01	ppm	81

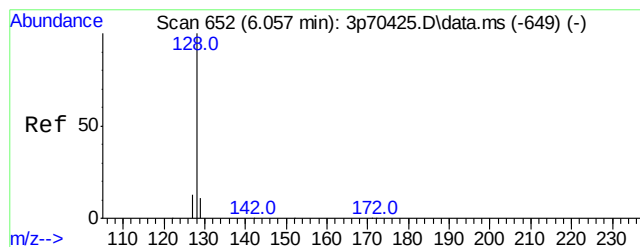
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72902.D
Acq On : 27 Nov 2018 10:29 pm
Operator : sufiyana
Sample : op16734a-mb1
Misc : op16734a,e3p3447,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

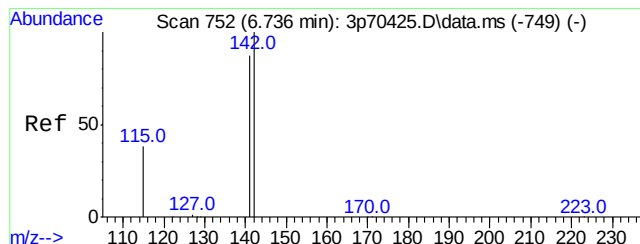
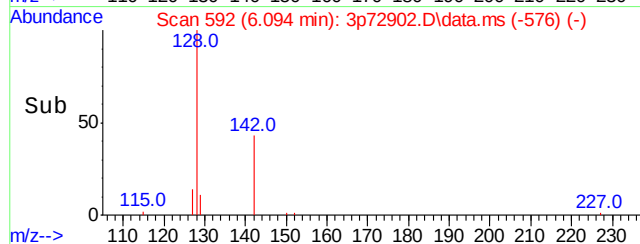
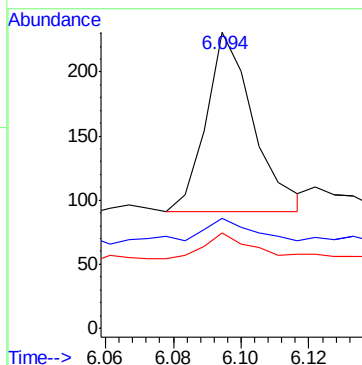
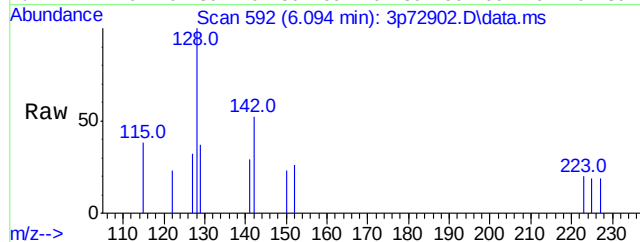
Quant Time: Nov 28 09:55:53 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration





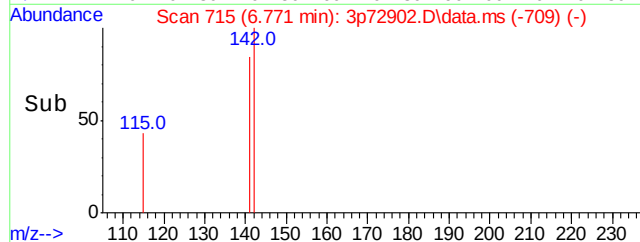
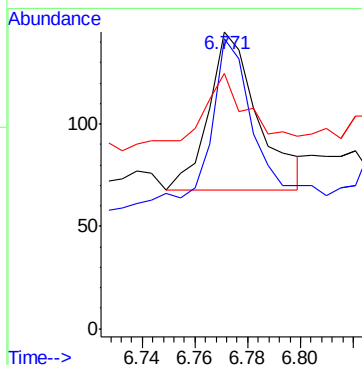
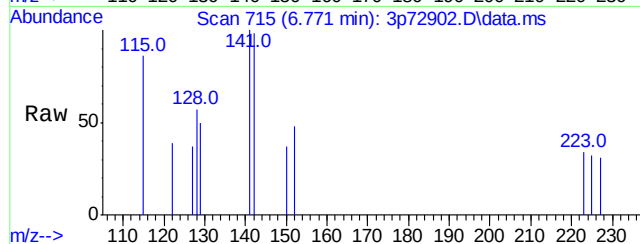
#8
Naphthalene
Concen: 0.01 ppm
RT: 6.094 min Scan# 592
Delta R.T. -0.006 min
Lab File: 3p72902.D
Acq: 27 Nov 2018 10:29 pm

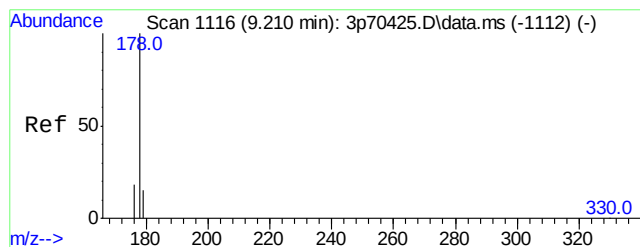
Tgt Ion:128	Resp:	136
Ion Ratio	Lower	Upper
128	100	
129	12.0	0.0 42.0
127	13.5	0.0 43.2



#10
2-Methylnaphthalene
Concen: 0.01 ppm
RT: 6.771 min Scan# 715
Delta R.T. -0.000 min
Lab File: 3p72902.D
Acq: 27 Nov 2018 10:29 pm

Tgt Ion:141	Resp:	99
Ion Ratio	Lower	Upper
141	100	
142	107.2	88.7 148.7
115	46.4	11.1 71.1





#22

Phenanthrene

Concen: 0.01 ppm

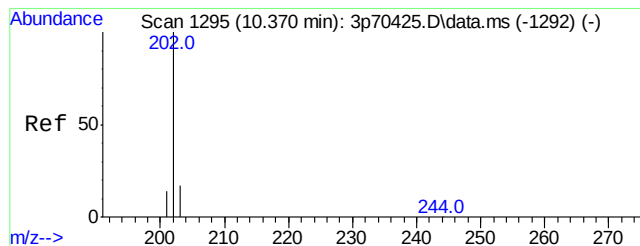
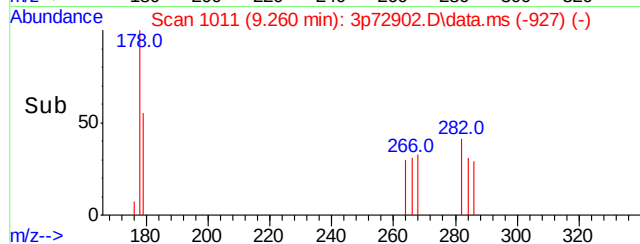
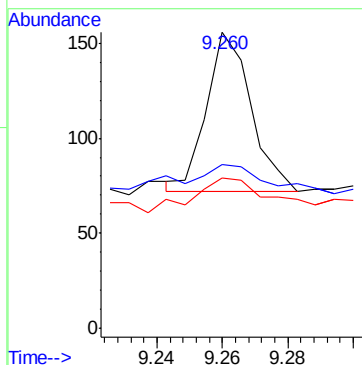
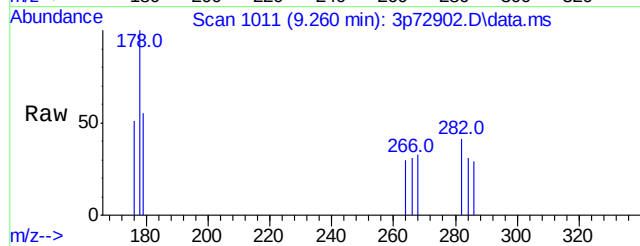
RT: 9.260 min Scan# 1011

Delta R.T. -0.001 min

Lab File: 3p72902.D

Acq: 27 Nov 2018 10:29 pm

Tgt Ion:	178	Resp:	79
Ion Ratio	Lower	Upper	
178	100		
179	9.8	0.0	45.6
176	13.5	0.0	49.7



#24

Fluoranthene

Concen: 0.01 ppm

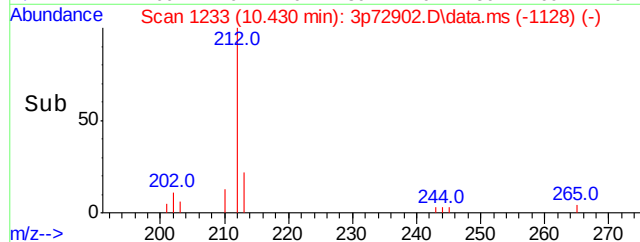
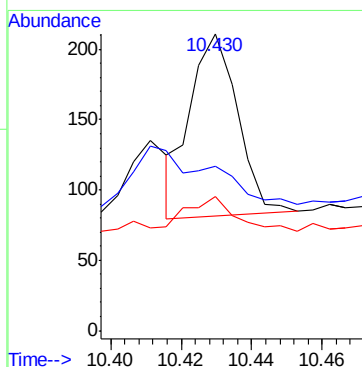
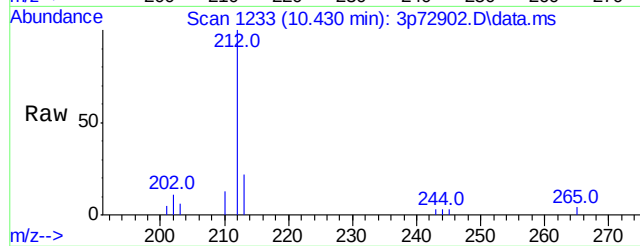
RT: 10.430 min Scan# 1233

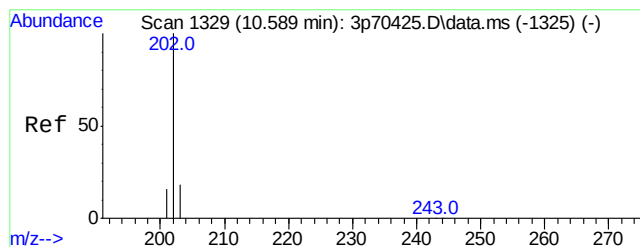
Delta R.T. 0.001 min

Lab File: 3p72902.D

Acq: 27 Nov 2018 10:29 pm

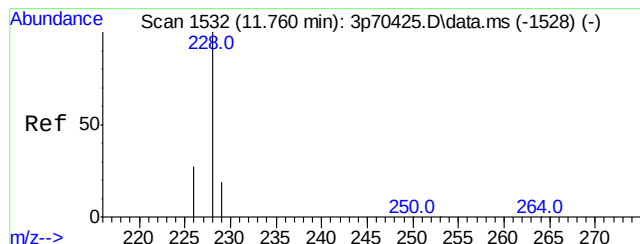
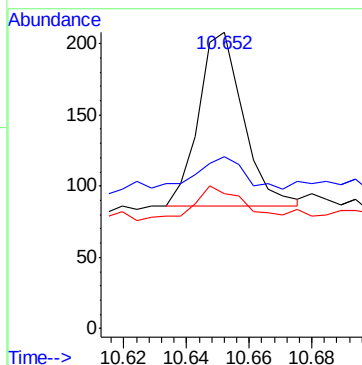
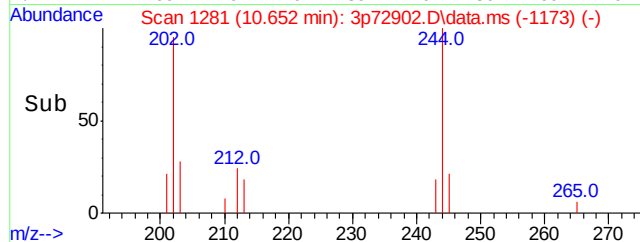
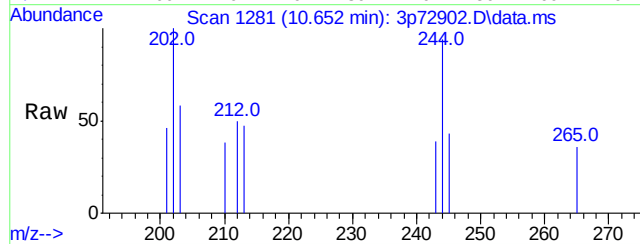
Tgt Ion:	202	Resp:	121
Ion Ratio	Lower	Upper	
202	100		
203	7.5	0.0	48.2
201	21.2	0.0	43.8





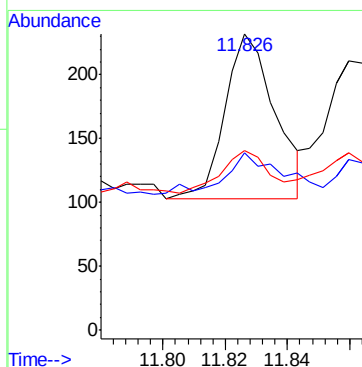
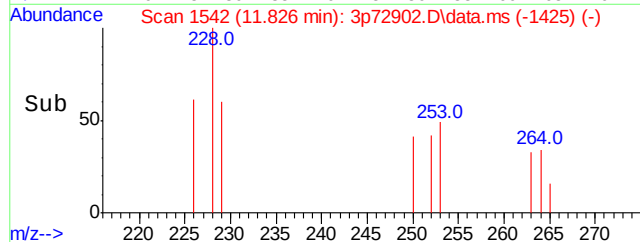
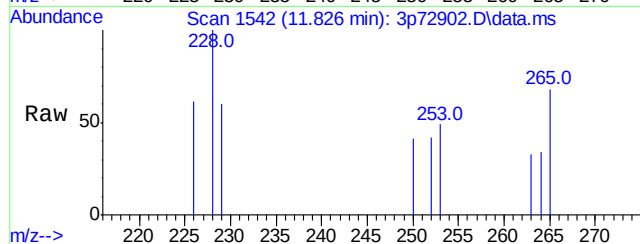
#25
Pyrene
Concen: 0.01 ppm
RT: 10.652 min Scan# 1281
Delta R.T. 0.002 min
Lab File: 3p72902.D
Acq: 27 Nov 2018 10:29 pm

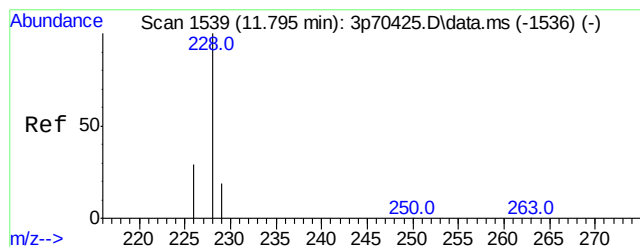
Tgt Ion	Ratio	Lower	Upper
202	100		
203	15.5	0.0	48.1
201	11.3	0.0	46.1



#27
Benzo[a]anthracene
Concen: 0.01 ppm
RT: 11.826 min Scan# 1542
Delta R.T. 0.008 min
Lab File: 3p72902.D
Acq: 27 Nov 2018 10:29 pm

Tgt Ion	Ratio	Lower	Upper
228	100		
229	21.8	0.0	50.3
226	25.0	0.0	57.0





#28

Chrysene

Concen: 0.01 ppm

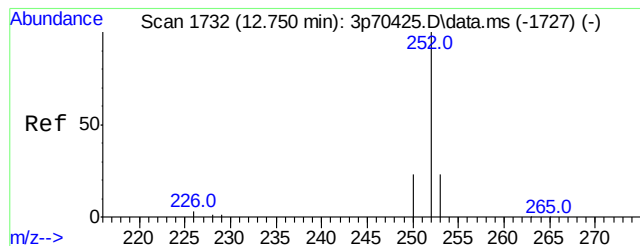
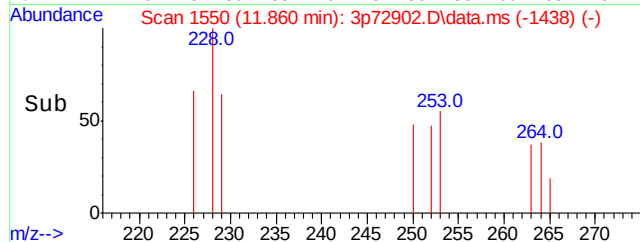
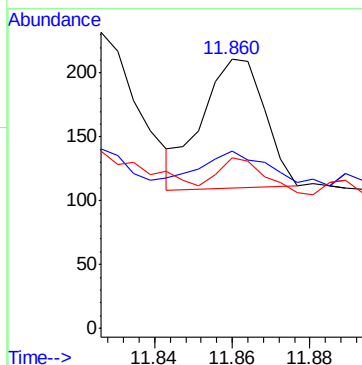
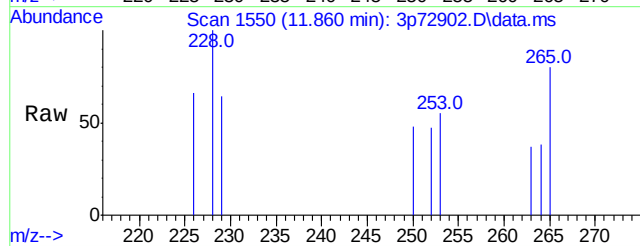
RT: 11.860 min Scan# 1550

Delta R.T. -0.021 min

Lab File: 3p72902.D

Acq: 27 Nov 2018 10:29 pm

Tgt Ion:	228	Resp:	112
Ion Ratio	Lower	Upper	
228	100		
226	27.2	0.0	59.1
229	23.1	0.0	49.7



#30

Benzo[b]fluoranthene

Concen: 0.01 ppm

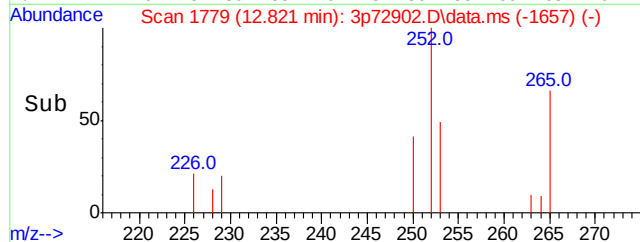
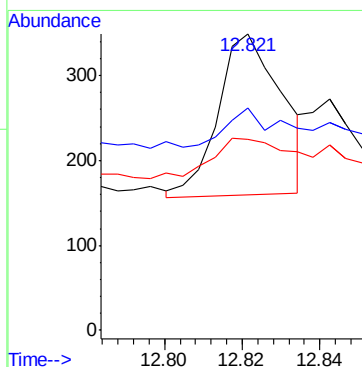
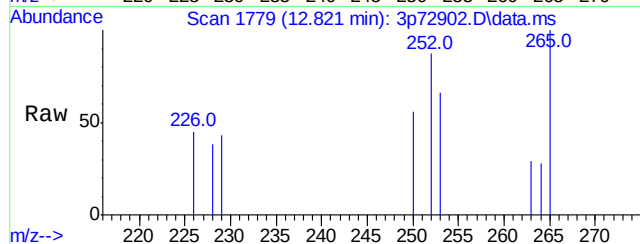
RT: 12.821 min Scan# 1779

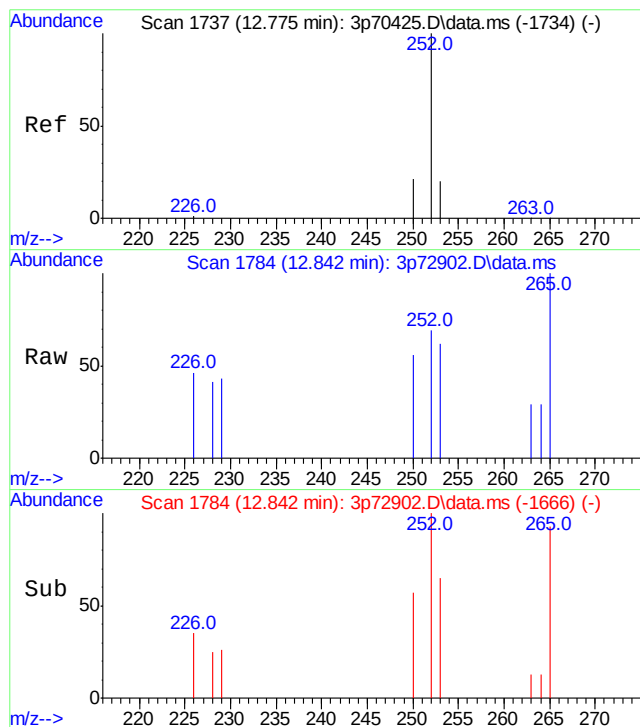
Delta R.T. 0.010 min

Lab File: 3p72902.D

Acq: 27 Nov 2018 10:29 pm

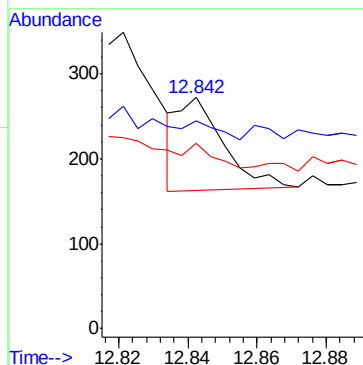
Tgt Ion:	252	Resp:	214
Ion Ratio	Lower	Upper	
252	100		
253	22.9	0.0	53.9
250	19.3	0.0	54.8





#31
Benzo[k]fluoranthene
Concen: 0.01 ppm
RT: 12.842 min Scan# 1784
Delta R.T. -0.006 min
Lab File: 3p72902.D
Acq: 27 Nov 2018 10:29 pm

Tgt Ion	Ratio	Lower	Upper
252	100		
253	14.6	0.0	51.7
250	34.1	0.0	53.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\data_aimeel\4m3762\
 Data File : 4m80261.d
 Acq On : 30 Nov 2018 11:00 am
 Operator : christc2
 Sample : op16734a-mb1 Inst : GCMS4M
 Misc : op16734a,e4m3762,1000,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Results File: M4M3756SIM.RES
 Quant Time: Dec 03 13:32:56 2018
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Dec 03 13:28:02 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.384	152	47563	4.00	ppm	0.00
12) Fluorene-d10	8.851	176	51645	4.00	ppm	0.00
22) Fluoranthene-d10	10.981	212	86475	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.723	264	61464	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.384	152	47563	4.00	ppm	0.00
38) Fluorene-d10a	8.851	176	51645	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	4.202	112	113606	14.41	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery	=	28.82%	
3) Phenol-d5	5.086	99	87456	10.14	ppm	0.00
Spiked Amount 50.000			Recovery	=	20.28%	
6) Nitrobenzene-d5	5.933	82	274856	40.39	ppm	0.00
Spiked Amount 50.000			Recovery	=	80.78%	
11) 2-Fluorobiphenyl	7.686	172	591332	30.61	ppm	0.00
Spiked Amount 50.000			Recovery	=	61.22%	
17) 2,4,6-Tribromophenol	9.119	330	78029	35.11	ppm	0.00
Spiked Amount 50.000			Recovery	=	70.22%	
25) Terphenyl-d14	11.381	244	504357	27.76	ppm	0.00
Spiked Amount 50.000			Recovery	=	55.52%	

Target Compounds Qvalue

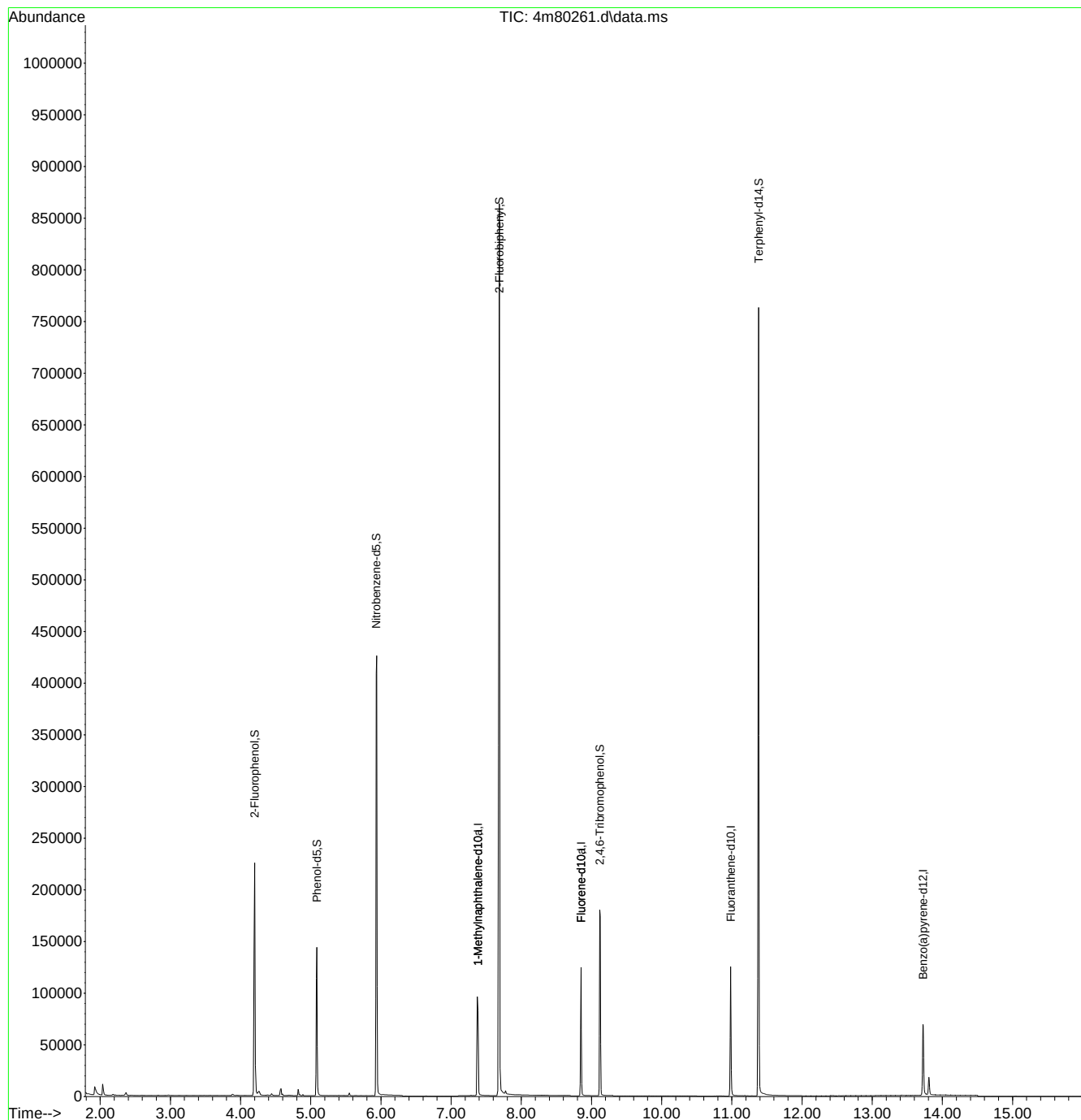
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\data_aimeel\e4m3762\
Data File : 4m80261.d
Acq On : 30 Nov 2018 11:00 am
Operator : christc2
Sample : op16734a-mb1
Misc : op16734a,e4m3762,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Inst : GCMS4M

Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Results File: M4M3756SIM.RES
Quant Time: Dec 03 13:32:56 2018
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Dec 03 13:28:02 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31148.d
Acq On : 30 Nov 2018 5:32 pm
Operator : christc2
Sample : op16734a-mb1 Inst : MS4P
Misc : op16734a,e4p1711,1000,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:45:56 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration

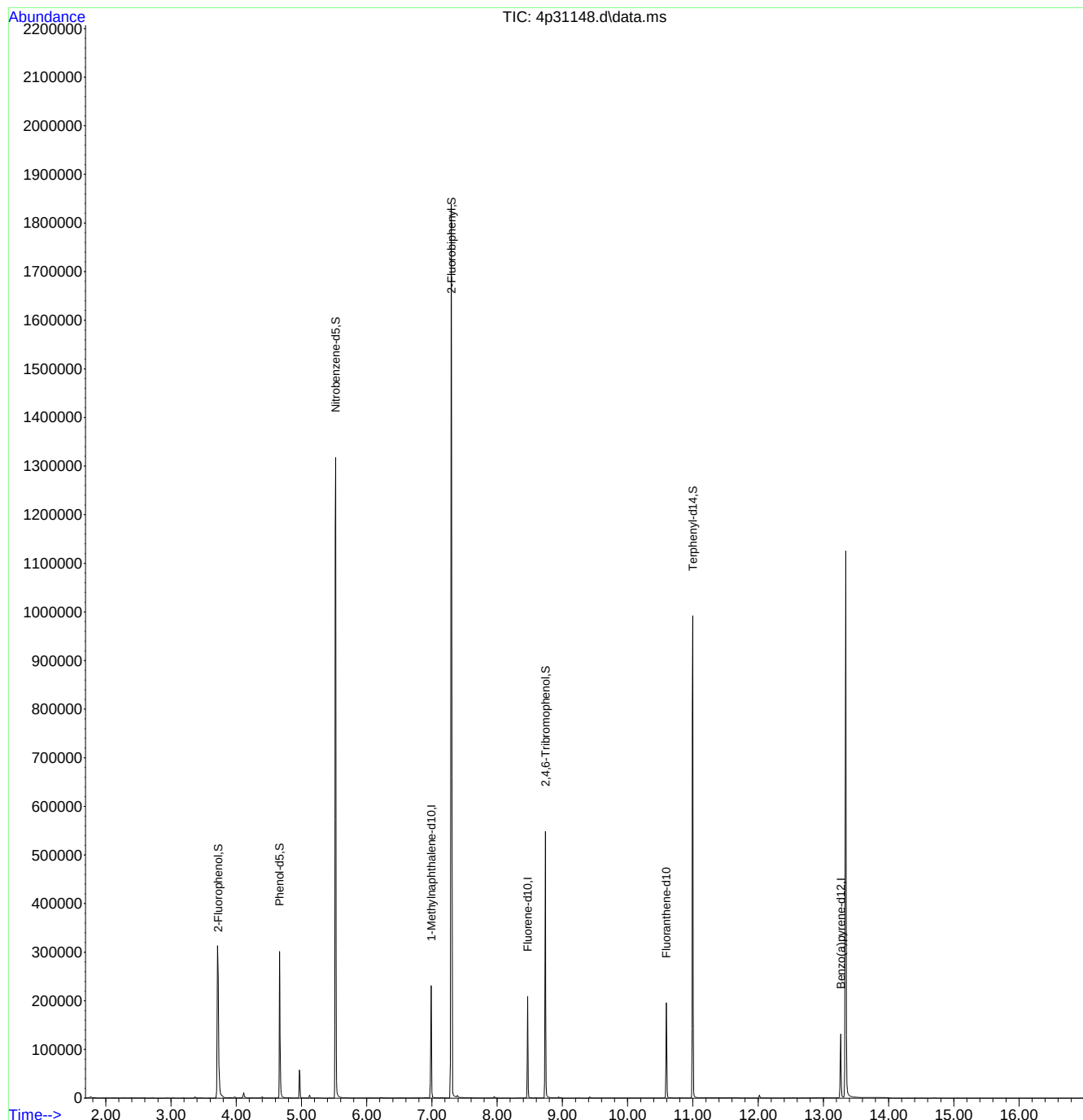
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	67096	4.00	ppm	0.00
13) Fluorene-d10	8.466	176	85689	4.00	ppm	0.00
20) Fluoranthene-d10	10.592	212	125427	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.265	264	84791	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	195464	12.47	ppm	0.01
Spiked Amount 50.000			Recovery	=	24.94%	
4) Phenol-d5	4.665	99	242079	8.73	ppm	0.00
Spiked Amount 50.000			Recovery	=	17.46%	
7) Nitrobenzene-d5	5.523	82	866391	29.40	ppm	0.00
Spiked Amount 50.000			Recovery	=	58.80%	
14) 2-Fluorobiphenyl	7.295	172	1028270	31.48	ppm	0.00
Spiked Amount 50.000			Recovery	=	62.96%	
19) 2,4,6-Tribromophenol	8.739	330	172084	29.43	ppm	0.00
Spiked Amount 50.000			Recovery	=	58.86%	
27) Terphenyl-d14	11.000	244	596042	25.69	ppm	0.00
Spiked Amount 50.000			Recovery	=	51.38%	
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4p1711\
Data File : 4p31148.d
Acq On : 30 Nov 2018 5:32 pm
Operator : christc2
Sample : op16734a-mb1
Misc : op16734a,e4p1711,1000,,,1,1
ALS Vial : 13 Sample Multiplier: 1
Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:45:56 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 20:55:16 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jeryllr\4p1712\
 Data File : 4p31166.d
 Acq On : 1 Dec 2018 2:32 am
 Operator : sufiyana
 Sample : op16734a-mb1 Inst : MS4P
 Misc : op16734a,e4p1712,1000,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:55:53 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 21:46:43 2018
 Response via : Initial Calibration

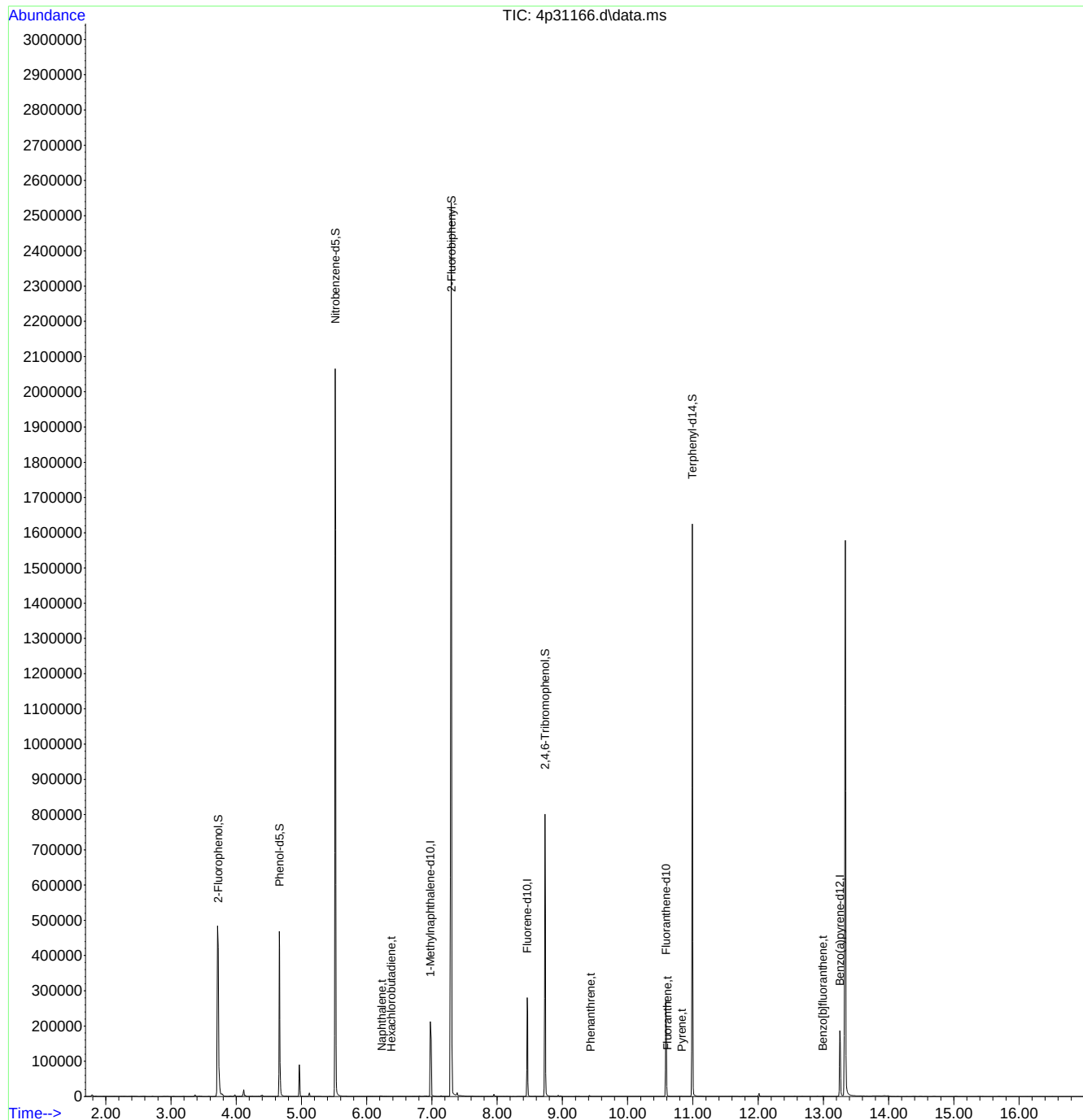
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.976	150	88216	4.00	ppm	-0.01
13) Fluorene-d10	8.459	176	127019	4.00	ppm	0.00
20) Fluoranthene-d10	10.585	212	182865	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.253	264	123077	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	287206	13.93	ppm	0.01
Spiked Amount 50.000			Recovery	=	27.86%	
4) Phenol-d5	4.661	99	368110	10.09	ppm	0.00
Spiked Amount 50.000			Recovery	=	20.18%	
7) Nitrobenzene-d5	5.519	82	1308839	33.78	ppm	0.00
Spiked Amount 50.000			Recovery	=	67.56%	
14) 2-Fluorobiphenyl	7.295	172	1331159	27.50	ppm	0.00
Spiked Amount 50.000			Recovery	=	55.00%	
19) 2,4,6-Tribromophenol	8.732	330	264940	30.57	ppm	0.00
Spiked Amount 50.000			Recovery	=	61.14%	
27) Terphenyl-d14	10.993	244	859963	25.42	ppm	0.00
Spiked Amount 50.000			Recovery	=	50.84%	
Target Compounds						
8) Naphthalene	6.231	128	1143	0.02	ppm	Qvalue 91
9) Hexachlorobutadiene	6.373	225	122	0.01	ppm	98
23) Phenanthrene	9.431	178	529	0.01	ppm	81
25) Fluoranthene	10.606	202	671m	0.01	ppm	
26) Pyrene	10.827	202	604	0.01	ppm	88
31) Benzo[b]fluoranthene	12.991	252	928	0.01	ppm	90

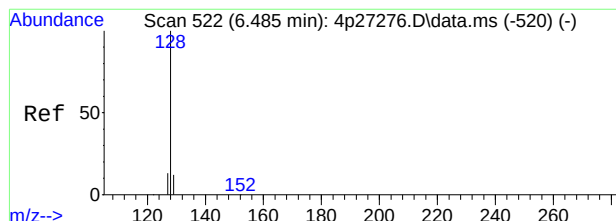
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jeryllr\e4p1712\
Data File : 4p31166.d
Acq On : 1 Dec 2018 2:32 am
Operator : sufiyana
Sample : op16734a-mb1
Misc : op16734a,e4p1712,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Inst : MS4P

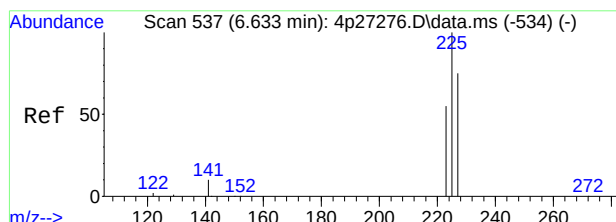
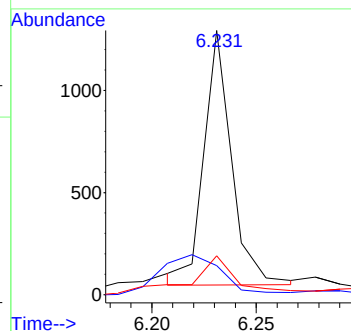
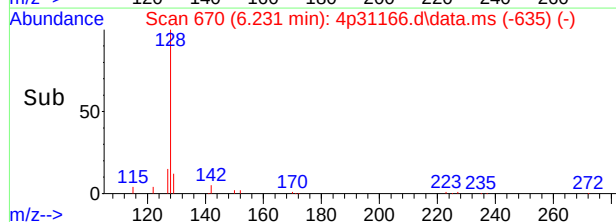
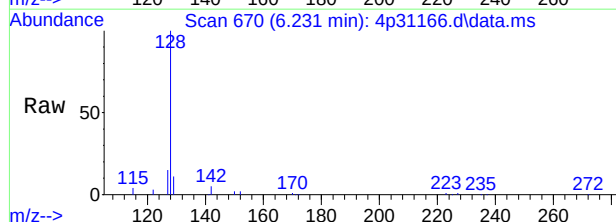
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:55:53 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 21:46:43 2018
Response via : Initial Calibration





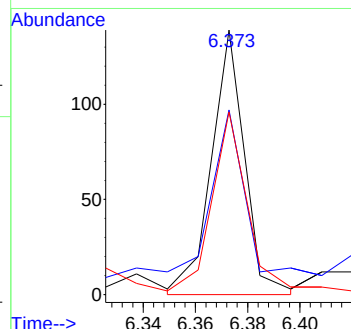
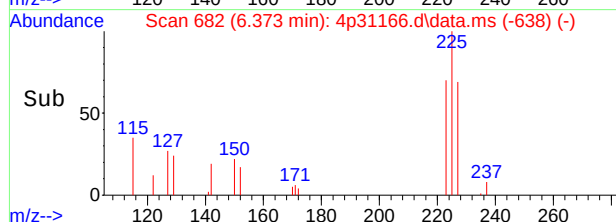
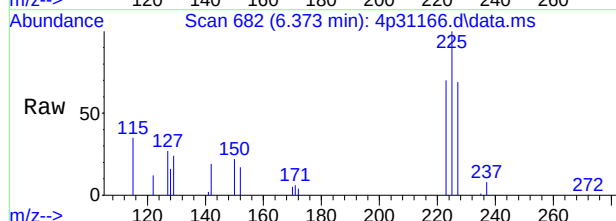
#8
Naphthalene
Concen: 0.02 ppm
RT: 6.231 min Scan# 670
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

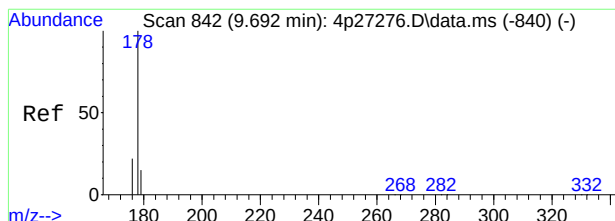
Tgt	Ion	128	Resp:	1143
	Ratio	100	Lower	Upper
	129	5.0	0.0	41.7
	127	12.9	0.0	43.7



#9
Hexachlorobutadiene
Concen: 0.01 ppm
RT: 6.373 min Scan# 682
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

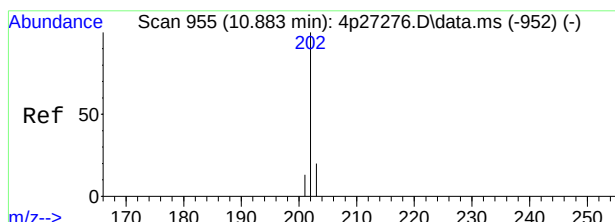
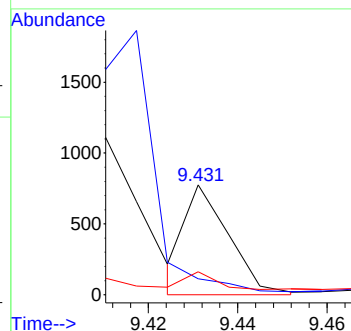
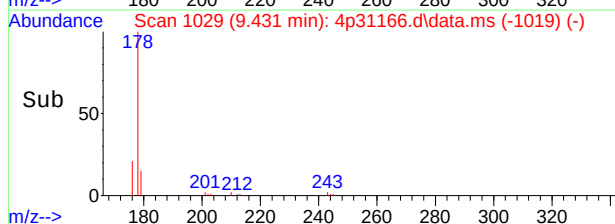
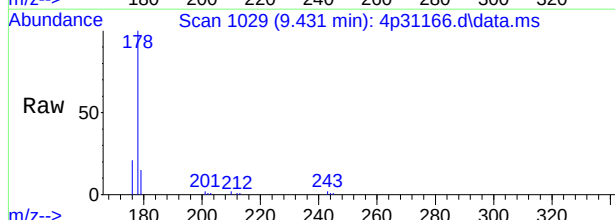
Tgt	Ion	225	Resp:	122
	Ratio	100	Lower	Upper
	223	61.8	29.7	89.7
	227	68.4	36.6	96.6





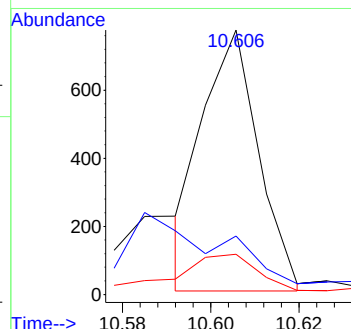
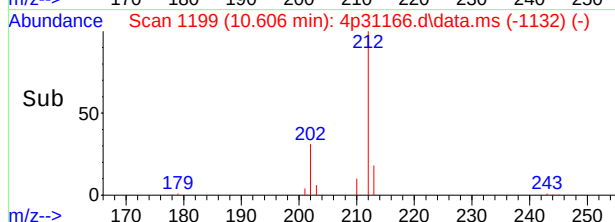
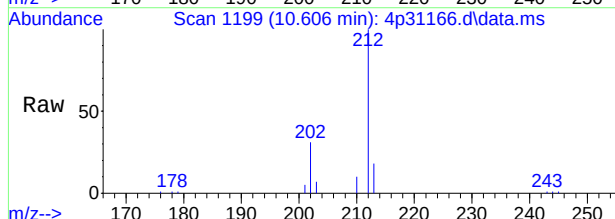
#23
Phenanthrene
Concen: 0.01 ppm
RT: 9.431 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

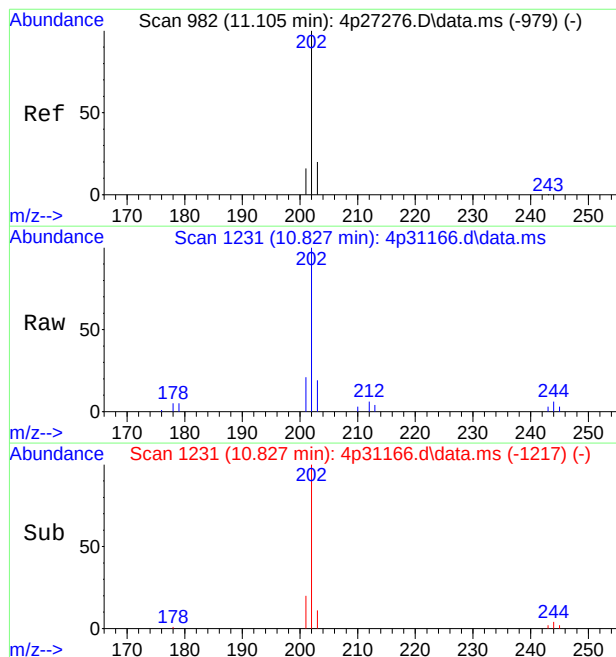
Tgt Ion:178 Resp: 529
Ion Ratio Lower Upper
178 100
179 0.0 0.0 45.9
176 17.4 0.0 48.9



#25
Fluoranthene
Concen: 0.01 ppm m
RT: 10.606 min Scan# 1199
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

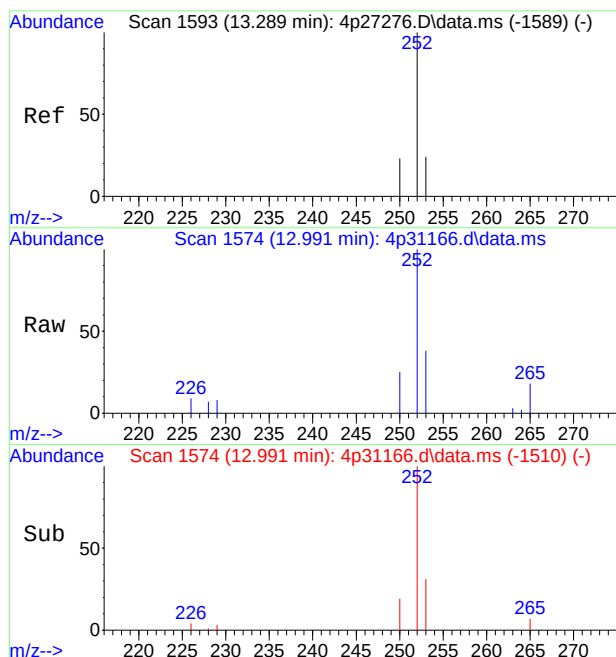
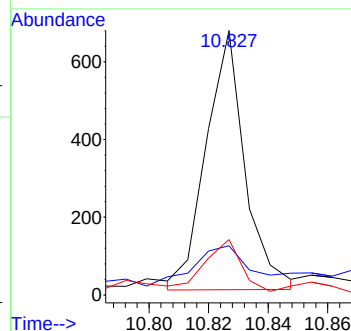
Tgt Ion:202 Resp: 671
Ion Ratio Lower Upper
202 100
203 22.1 0.0 47.6
201 15.2 0.0 43.6





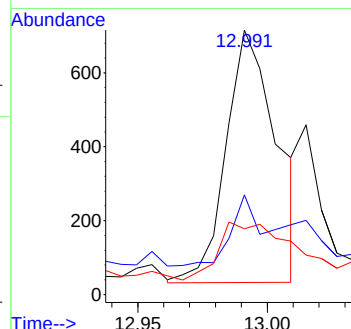
#26
Pyrene
Concen: 0.01 ppm
RT: 10.827 min Scan# 1231
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

Tgt Ion:	202	Resp:	604
Ion Ratio	Lower	Upper	
202	100		
203	11.7	0.0	49.3
201	18.7	0.0	46.1



#31
Benzo[b]fluoranthene
Concen: 0.01 ppm
RT: 12.991 min Scan# 1574
Delta R.T. 0.000 min
Lab File: 4p31166.d
Acq: 1 Dec 2018 2:32 am

Tgt Ion:	252	Resp:	928
Ion Ratio	Lower	Upper	
252	100		
253	26.8	0.0	53.9
250	15.7	0.0	52.3



Manual Integration Approval Summary

Sample Number:

OP16734A-MB1

Method:

SW846 8270D BY SIM

Lab FileID:

4P31166.D

Analyst approved:

12/02/18 22:27 Jeryll Fabriene Reyes

Injection Time:

12/01/18 02:32

Supervisor approved:

12/04/18 10:22 Nina Pandya

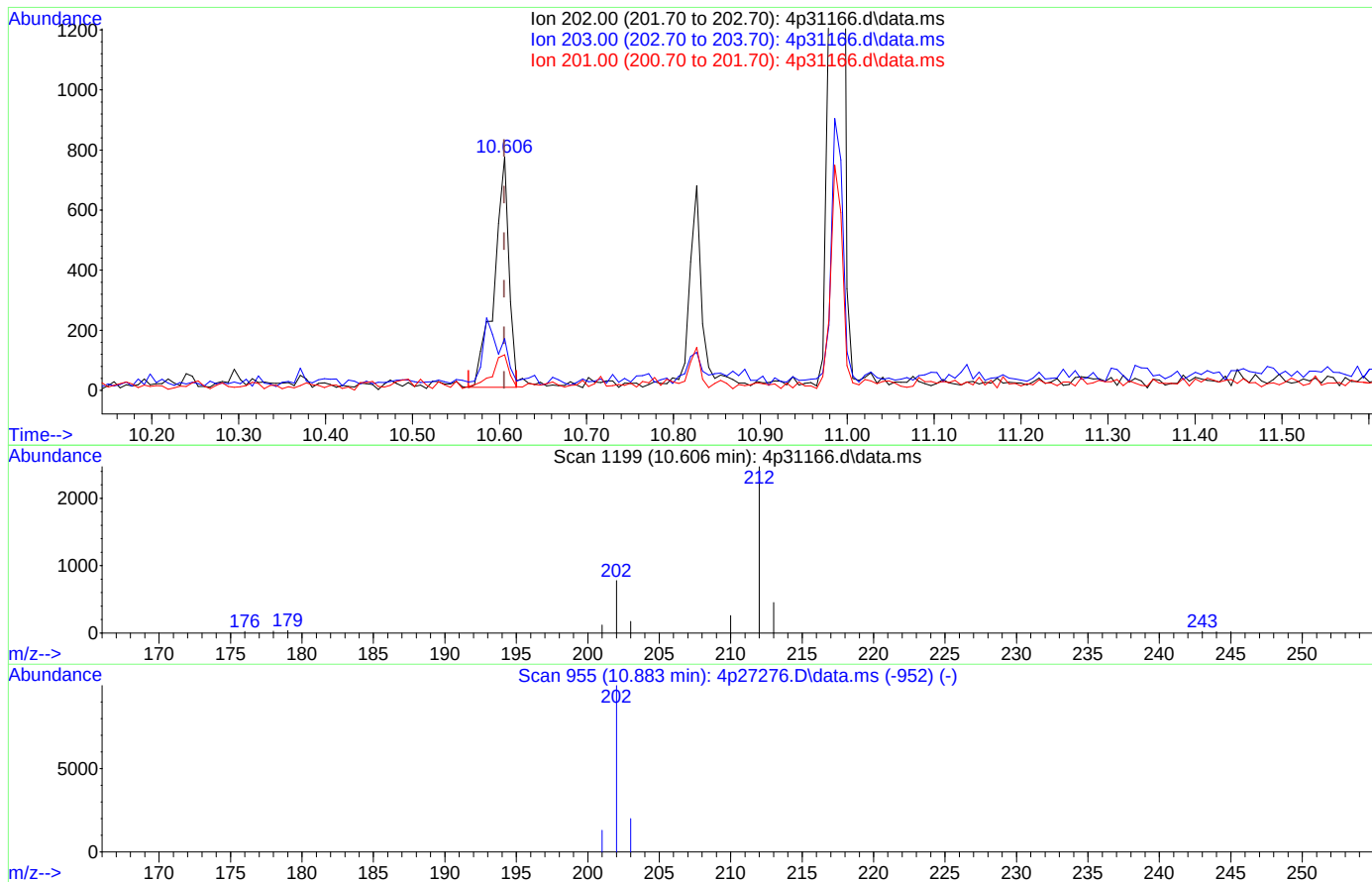
Parameter	CAS	Sig#	R.T. (min.)	Reason
Fluoranthene	206-44-0		10.61	Poor instrument integration

7.2.4.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jeryllr\e4p1712\
Data File : 4p31166.d
Acq On : 1 Dec 2018 2:32 am
Operator : sufiyana
Sample : op16734a-mb1
Misc : op16734a,e4p1712,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:47:11 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 21:46:43 2018
Response via : Initial Calibration



TIC: 4p31166.d\data.ms

(25) Fluoranthene (t)

10.606min (+0.000) 0.01ppm

response 907

Ion	Exp%	Act%
202.00	100	100
203.00	17.60	18.78
201.00	13.60	13.96
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
 Data File : 3p72924.d
 Acq On : 28 Nov 2018 11:18 am
 Operator : christc2
 Sample : op16734a-bs12 Inst : MSGC3P
 Misc : op16734a,e3p3448,1000,,,1,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Results File: M3P3408SIM.RES
 Quant Time: Nov 29 07:54:45 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 29 07:36:36 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.821	150	17415	4.00	ppm	0.00
12) Fluorene-d10	8.281	176	22360	4.00	ppm	0.00
19) Fluoranthene-d10	10.406	212	37849	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.082	264	26620	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.639	112	39889	13.63	ppm	0.00
Spiked Amount 50.000			Recovery =	27.26%		
4) Phenol-d5	4.535	99	35912	9.45	ppm	0.00
Spiked Amount 50.000			Recovery =	18.90%		
7) Nitrobenzene-d5	5.373	82	102363	29.35	ppm	0.00
Spiked Amount 50.000			Recovery =	58.70%		
13) 2-Fluorobiphenyl	7.122	172	218622	29.44	ppm	0.00
Spiked Amount 50.000			Recovery =	58.88%		
18) 2,4,6-Tribromophenol	8.550	330	21959	23.88	ppm	0.00
Spiked Amount 50.000			Recovery =	47.76%		
26) Terphenyl-d14	10.810	244	187355	26.52	ppm	0.00
Spiked Amount 50.000			Recovery =	53.04%		
Target Compounds						
2) 1,4-dioxane	2.041	88	344m	0.31	ppm	Qvalue
5) Phenol	4.541	94	4215	1.01	ppm	98
6) bis(2-Chloroethyl)ether	4.602	93	1313	0.45	ppm	# 53
8) Naphthalene	6.083	128	5313	0.54	ppm	99
9) Hexachlorobutadiene	6.215	225	869	0.54	ppm	100
10) 2-Methylnaphthalene	6.760	141	3158	0.59	ppm	99
14) Acenaphthylene	7.629	152	4916	0.52	ppm	100
15) Acenaphthene	7.805	153	3559	0.57	ppm	98
16) 4,6-dinitro-2-methylph...	8.384	198	1790	2.72	ppm	90
17) Fluorene	8.312	166	3918	0.53	ppm	100
20) Hexachlorobenzene	8.860	284	1126m	0.48	ppm	
21) Pentachlorophenol	9.060	266	2705	2.80	ppm	99
22) Phenanthrene	9.254	178	5938	0.56	ppm	97
23) Anthracene	9.300	178	5148	0.50	ppm	99
24) Fluoranthene	10.420	202	6831	0.52	ppm	99
25) Pyrene	10.643	202	6717	0.52	ppm	99
27) Benzo[a]anthracene	11.822	228	4967	0.41	ppm	98
28) Chrysene	11.856	228	5773	0.47	ppm	99
30) Benzo[b]fluoranthene	12.818	252	4694	0.46	ppm	98
31) Benzo[k]fluoranthene	12.843	252	4575	0.45	ppm	99
32) Benzo[a]pyrene	13.103	252	4064	0.42	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.223	276	3043	0.28	ppm	99
34) Dibenz[a,h]anthracene	14.235	278	2468	0.29	ppm	96
35) Benzo[g,h,i]perylene	14.527	276	2599	0.30	ppm	99

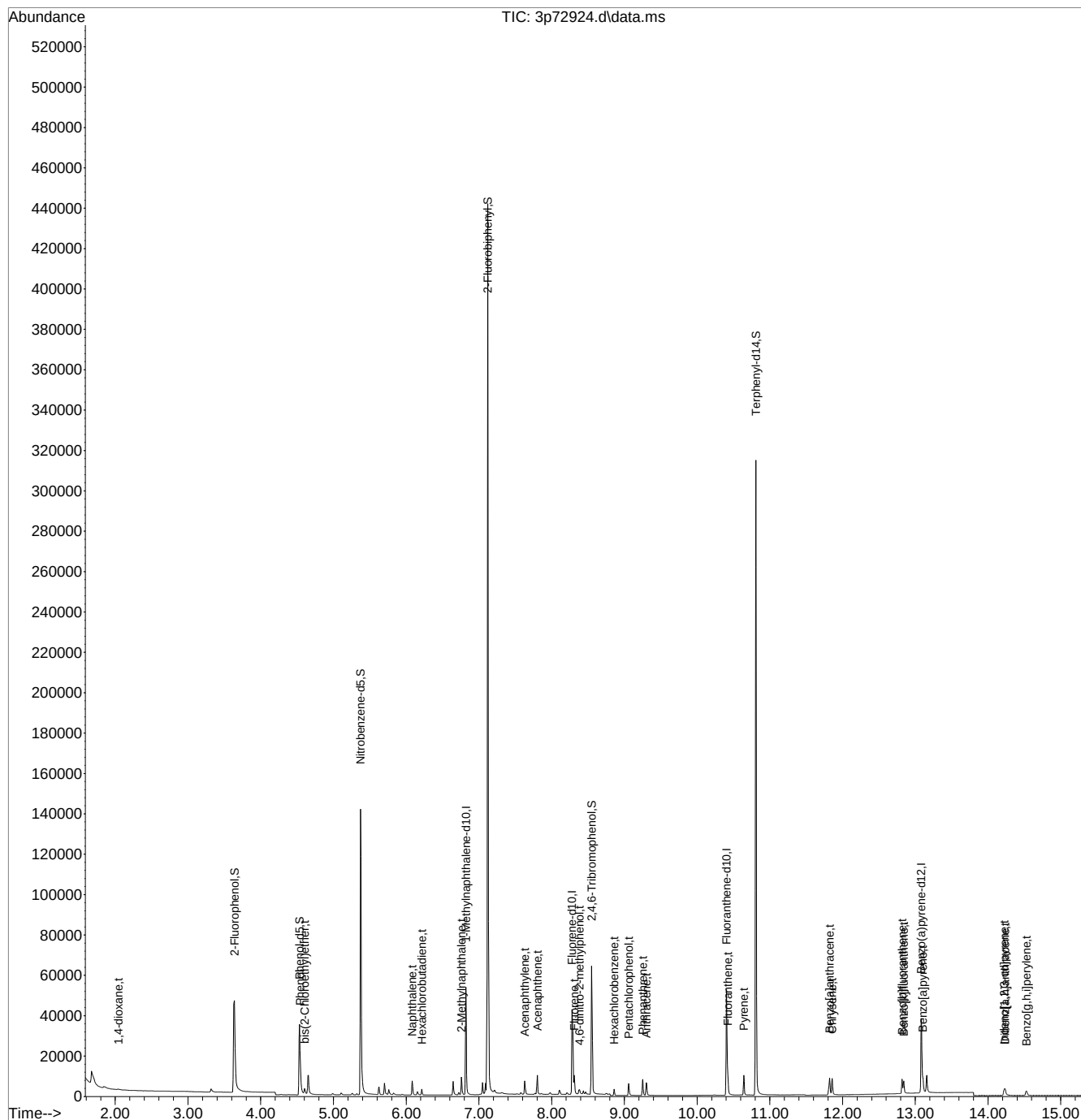
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jonkm\3p3448\
Data File : 3p72924.d
Acq On : 28 Nov 2018 11:18 am
Operator : christc2
Sample : op16734a-bs12
Misc : op16734a,e3p3448,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:54:45 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 29 07:36:36 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: OP16734A-BS12

Method: SW846 8270D BY SIM

Lab FileID: 3P72924.D

Analyst approved: 11/29/18 08:15 Jon Kreigmor Mamanta

Injection Time: 11/28/18 11:18

Supervisor approved: 11/29/18 17:01 Nina Pandya

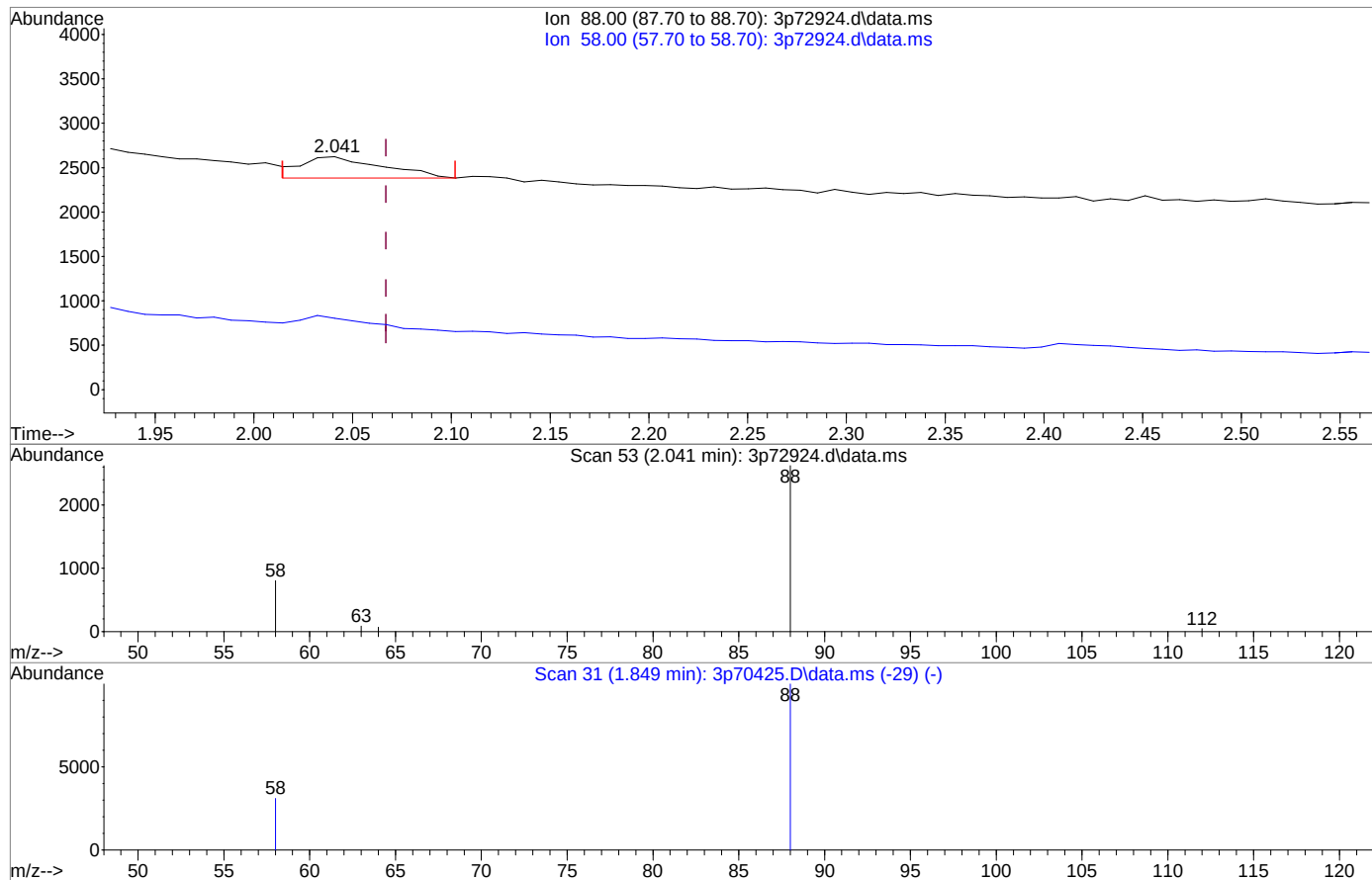
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.04	Poor instrument integration
Hexachlorobenzene	118-74-1		8.86	Poor instrument integration

7.3.1.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72924.d
Acq On : 28 Nov 2018 11:18 am
Operator : christc2
Sample : op16734a-bs12
Misc : op16734a,e3p3448,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:51:28 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 29 07:36:36 2018
Response via : Initial Calibration



TIC: 3p72924.d\data.ms

(2) 1,4-dioxane (t)

2.041min (-0.026) 0.60ppm

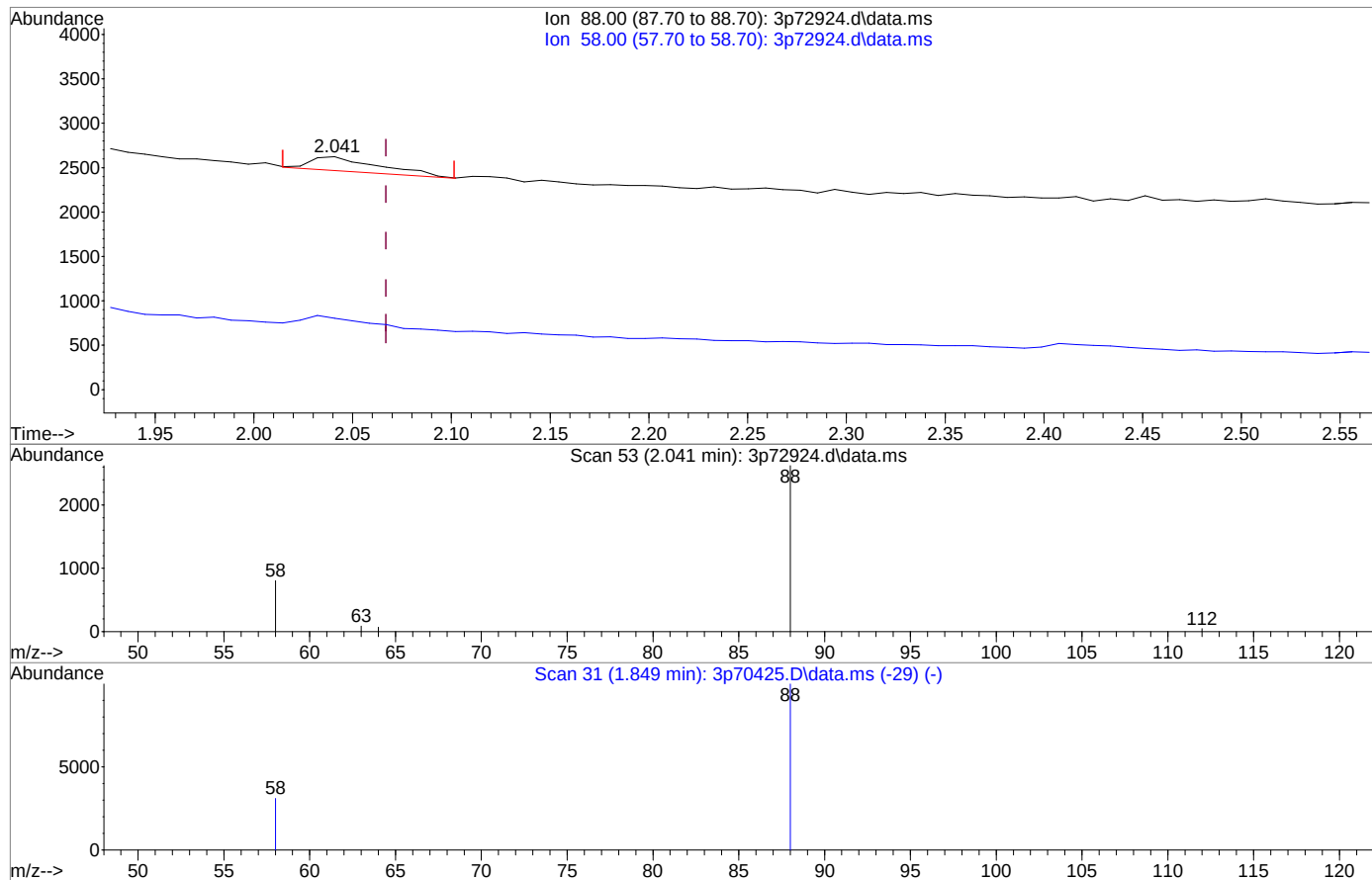
response 666

Ion	Exp%	Act%
88.00	100	100
58.00	8.90	57.30#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\3p3448\
Data File : 3p72924.d
Acq On : 28 Nov 2018 11:18 am
Operator : christc2
Sample : op16734a-bs12
Misc : op16734a,e3p3448,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:51:28 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 29 07:36:36 2018
Response via : Initial Calibration



(2) 1,4-dioxane (t)

2.041min (-0.026) 0.31ppm m

response 344

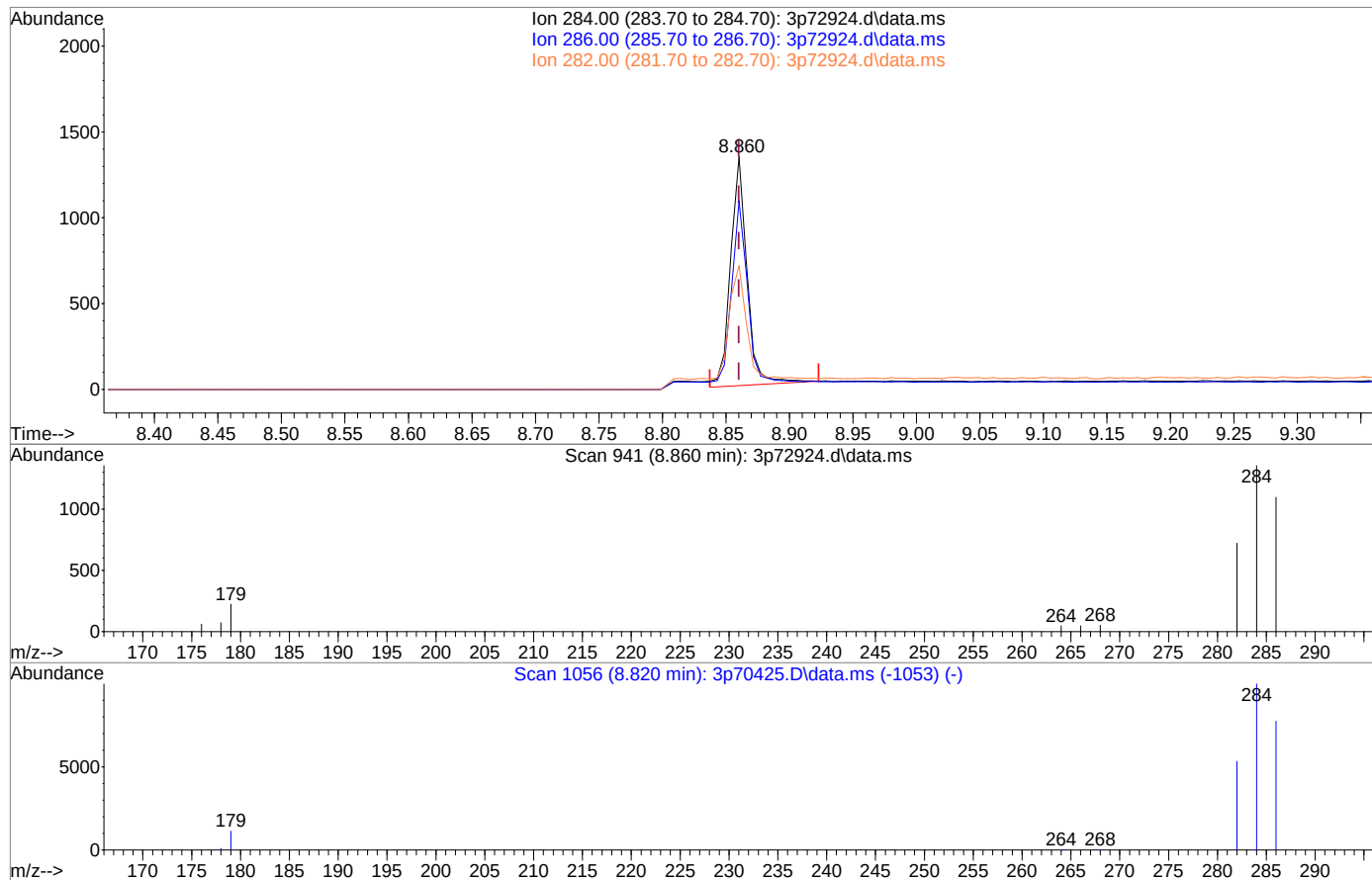
Ion	Exp%	Act%
88.00	100	100
58.00	8.90	30.64#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72924.d
Acq On : 28 Nov 2018 11:18 am
Operator : christc2
Sample : op16734a-bs12
Misc : op16734a,e3p3448,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:51:28 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 29 07:36:36 2018
Response via : Initial Calibration



TIC: 3p72924.d\data.ms

(20) Hexachlorobenzene (t)

8.860min (+0.000) 0.51ppm

response 1198

Ion	Exp%	Act%

284.00	100	100

286.00	79.70	80.54

282.00	52.70	50.31

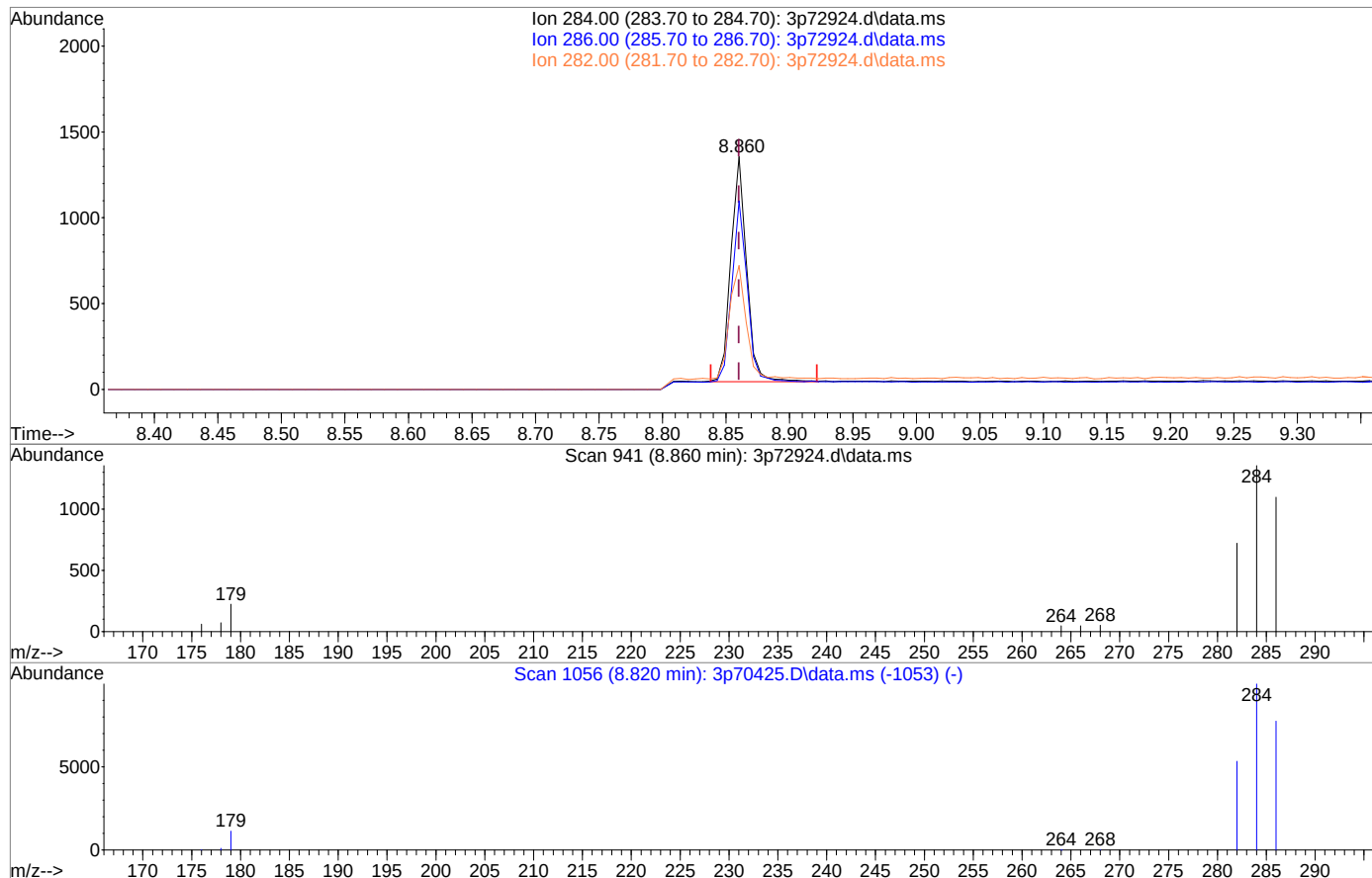
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72924.d
Acq On : 28 Nov 2018 11:18 am
Operator : christc2
Sample : op16734a-bs12
Misc : op16734a,e3p3448,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:51:28 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 29 07:36:36 2018
Response via : Initial Calibration



TIC: 3p72924.d\data.ms

(20) Hexachlorobenzene (t)

8.860min (+0.000) 0.48ppm m

response 1126

Ion	Exp%	Act%

284.00	100	100

286.00	79.70	80.97

282.00	52.70	53.17

0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jeryllr\4p1712\
 Data File : 4p31167.d
 Acq On : 1 Dec 2018 2:55 am
 Operator : sufiyana
 Sample : op16734a-bs12 Inst : MS4P
 Misc : op16734a,e4p1712,1000,,,1,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:56:49 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 21:46:43 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	95221	4.00	ppm	0.00
13) Fluorene-d10	8.459	176	133452	4.00	ppm	0.00
20) Fluoranthene-d10	10.585	212	196377	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.253	264	136067	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.724	112	325960	14.65	ppm	0.01
Spiked Amount 50.000			Recovery	=	29.30%	
4) Phenol-d5	4.665	99	404344	10.27	ppm	0.00
Spiked Amount 50.000			Recovery	=	20.54%	
7) Nitrobenzene-d5	5.519	82	1268726	30.34	ppm	0.00
Spiked Amount 50.000			Recovery	=	60.68%	
14) 2-Fluorobiphenyl	7.295	172	1299437	25.55	ppm	0.00
Spiked Amount 50.000			Recovery	=	51.10%	
19) 2,4,6-Tribromophenol	8.732	330	258732	28.42	ppm	0.00
Spiked Amount 50.000			Recovery	=	56.84%	
27) Terphenyl-d14	10.993	244	815428	22.44	ppm	0.00
Spiked Amount 50.000			Recovery	=	44.88%	
Target Compounds						
2) 1,4-Dioxane	1.998	88	2978	0.29	ppm	Qvalue 47
5) Phenol	4.677	94	58634	1.20	ppm	# 79
6) bis(2-Chloroethyl)ether	4.726	93	21639	0.58	ppm	95
8) Naphthalene	6.231	128	43894	0.57	ppm	99
9) Hexachlorobutadiene	6.373	225	9598	0.50	ppm	97
10) 2-Methylnaphthalene	6.917	141	23069	0.61	ppm	97
12) Hexachlorocyclopentadiene	7.094	237	382	0.14	ppm	92
15) Acenaphthylene	7.802	152	35653	0.51	ppm	99
16) Acenaphthene	7.980	153	23699	0.50	ppm	99
17) Fluorene	8.491	166	27831	0.51	ppm	98
18) 4,6-dinitro-2-methylph...	8.561	198	15366	2.93	ppm	98
21) Hexachlorobenzene	9.035	284	11019	0.47	ppm	71
22) Pentachlorophenol	9.238	266	17764	4.84	ppm	98
23) Phenanthrene	9.431	178	38723	0.51	ppm	98
24) Anthracene	9.480	178	35339	0.51	ppm	98
25) Fluoranthene	10.606	202	40785	0.53	ppm	98
26) Pyrene	10.827	202	42504	0.53	ppm	99
28) Benzo[a]anthracene	11.996	228	33400	0.49	ppm	96
29) Chrysene	12.032	228	33945	0.45	ppm	96
31) Benzo[b]fluoranthene	12.991	252	30950	0.44	ppm	99
32) Benzo[k]fluoranthene	13.015	252	24053	0.38	ppm	99
33) Benzo[a]pyrene	13.271	252	24188	0.40	ppm	96
34) Indeno[1,2,3-cd]pyrene	14.388	276	21650	0.29	ppm	99
35) Dibenzo[a,h]anthracene	14.402	278	16620	0.27	ppm	99
36) Benzo[g,h,i]perylene	14.693	276	17177	0.27	ppm	100

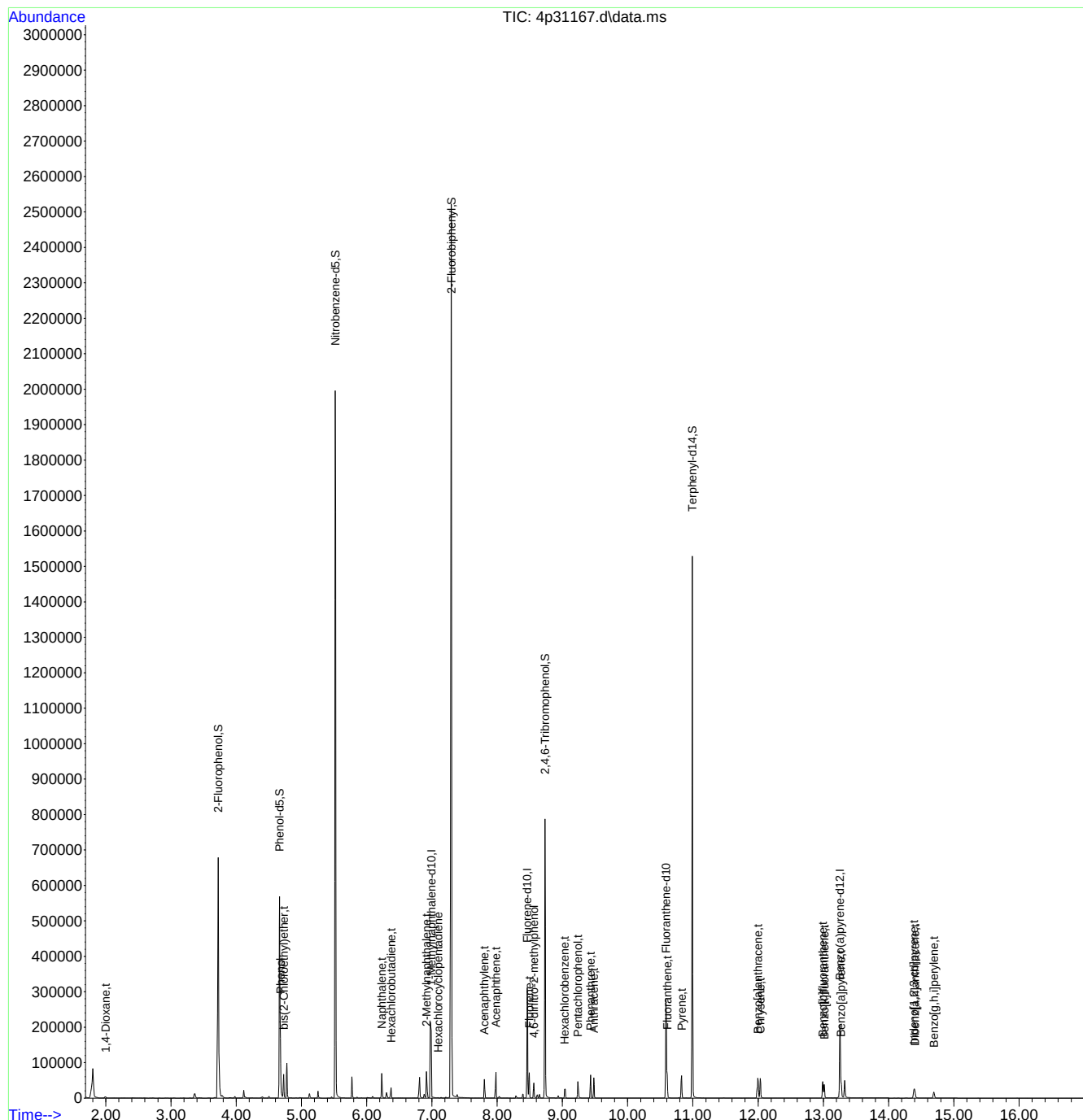
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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Data Path : C:\msdchem\1\data\jeryllr\4p1712\  
Data File : 4p31167.d  
Acq On : 1 Dec 2018 2:55 am  
Operator : sufiyana  
Sample : op16734a-bs12  
Misc : op16734a,4p1712,1000,,,1,1  
ALS Vial : 5 Sample Multiplier: 1
```

Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:56:49 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 21:46:43 2018
Response via : Initial Calibration



7.3.2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
 Data File : 3p72908.D
 Acq On : 28 Nov 2018 12:26 am
 Operator : sufiyana
 Sample : op16734a-ms
 Misc : op16734a,e3p3447,1020,,,1,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 28 10:04:59 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

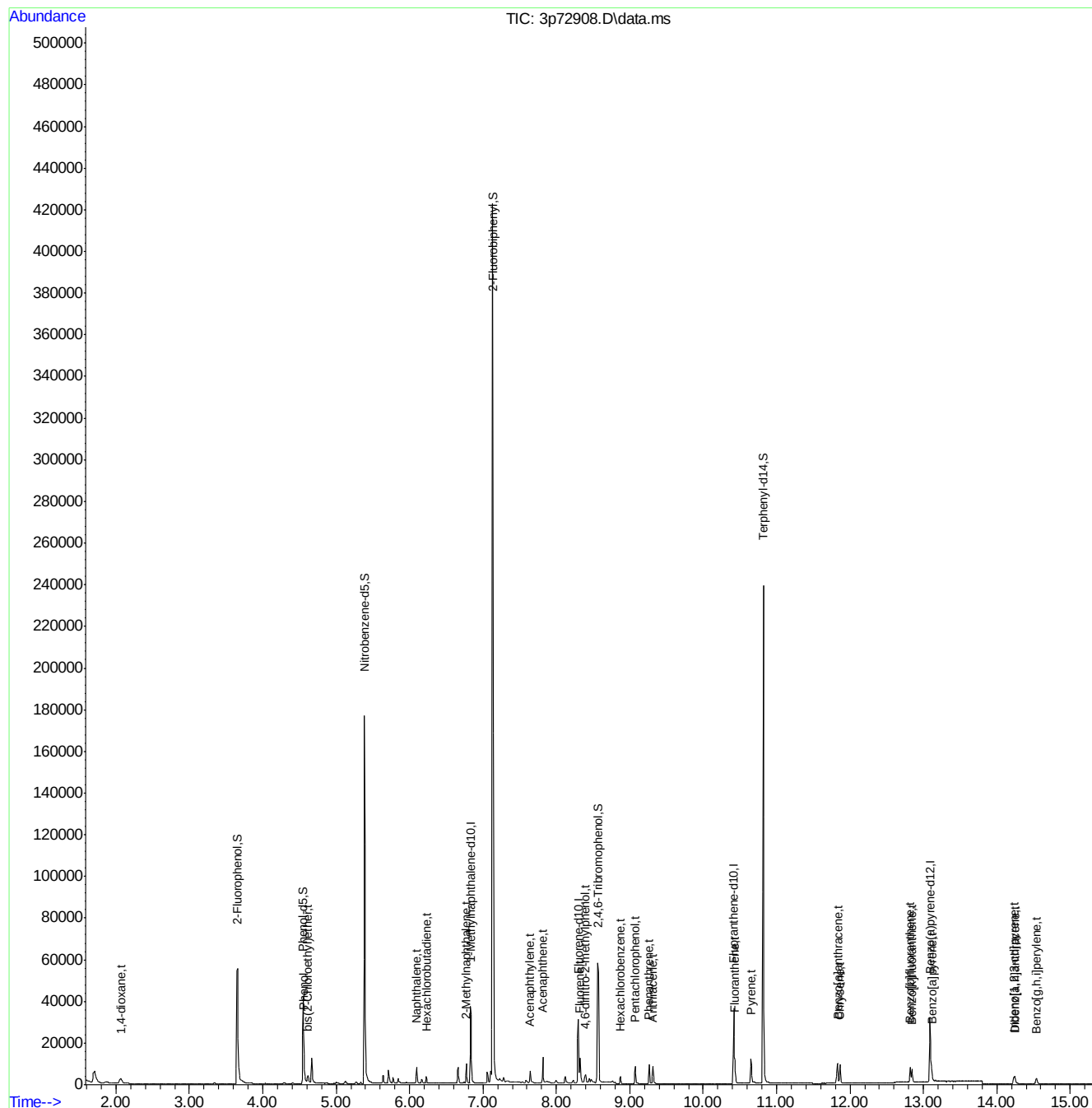
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.832	150	12655	4.00	ppm	0.00
12) Fluorene-d10	8.302	176	15866	4.00	ppm	0.00
19) Fluoranthene-d10	10.416	212	26212	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.086	264	22045	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.656	112	44754	21.04	ppm	-0.01
Spiked Amount 50.000			Recovery =	42.08%		
4) Phenol-d5	4.548	99	38309	13.88	ppm	0.00
Spiked Amount 50.000			Recovery =	27.76%		
7) Nitrobenzene-d5	5.386	82	113647	44.84	ppm	0.00
Spiked Amount 50.000			Recovery =	89.68%		
13) 2-Fluorobiphenyl	7.132	172	228680	43.40	ppm	-0.02
Spiked Amount 50.000			Recovery =	86.80%		
18) 2,4,6-Tribromophenol	8.571	330	25944	39.76	ppm	0.00
Spiked Amount 50.000			Recovery =	79.52%		
26) Terphenyl-d14	10.819	244	148628	30.37	ppm	0.00
Spiked Amount 50.000			Recovery =	60.74%		
Target Compounds						
2) 1,4-dioxane	2.067	88	3439	4.26	ppm	100
5) Phenol	4.561	94	4816	1.58	ppm	# 88
6) bis(2-Chloroethyl)ether	4.615	93	1580	0.75	ppm	89
8) Naphthalene	6.094	128	5797	0.82	ppm	98
9) Hexachlorobutadiene	6.226	225	989	0.84	ppm	97
10) 2-Methylnaphthalene	6.771	141	3525	0.90	ppm	94
14) Acenaphthylene	7.639	152	5490	0.83	ppm	98
15) Acenaphthene	7.815	153	3996	0.90	ppm	97
16) 4,6-dinitro-2-methylph...	8.395	198	2798	5.36	ppm	94
17) Fluorene	8.322	166	4530	0.86	ppm	97
20) Hexachlorobenzene	8.872	284	1403	0.87	ppm	98
21) Pentachlorophenol	9.072	266	3621	5.21	ppm	95
22) Phenanthrene	9.266	178	6732	0.91	ppm	97
23) Anthracene	9.311	178	6557	0.91	ppm	98
24) Fluoranthene	10.430	202	7668	0.84	ppm	98
25) Pyrene	10.652	202	7786	0.87	ppm	99
27) Benzo[a]anthracene	11.831	228	5720	0.68	ppm	98
28) Chrysene	11.864	228	5722	0.67	ppm	99
30) Benzo[b]fluoranthene	12.822	252	4614	0.55	ppm	96
31) Benzo[k]fluoranthene	12.847	252	4205	0.50	ppm	97
32) Benzo[a]pyrene	13.112	252	4208	0.53	ppm	96
33) Indeno[1,2,3-cd]pyrene	14.232	276	3259	0.37	ppm	100
34) Dibenz[a,h]anthracene	14.247	278	2531	0.36	ppm	94
35) Benzo[g,h,i]perylene	14.538	276	2953	0.41	ppm	89

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72908.D
Acq On : 28 Nov 2018 12:26 am
Operator : sufiyana
Sample : op16734a-ms
Misc : op16734a,e3p3447,1020,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 28 10:04:59 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
 Data File : 3p72909.D
 Acq On : 28 Nov 2018 12:46 am
 Operator : sufiyana
 Sample : op16734a-msd
 Misc : op16734a,e3p3447,1020,,,1,1
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 28 10:05:27 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

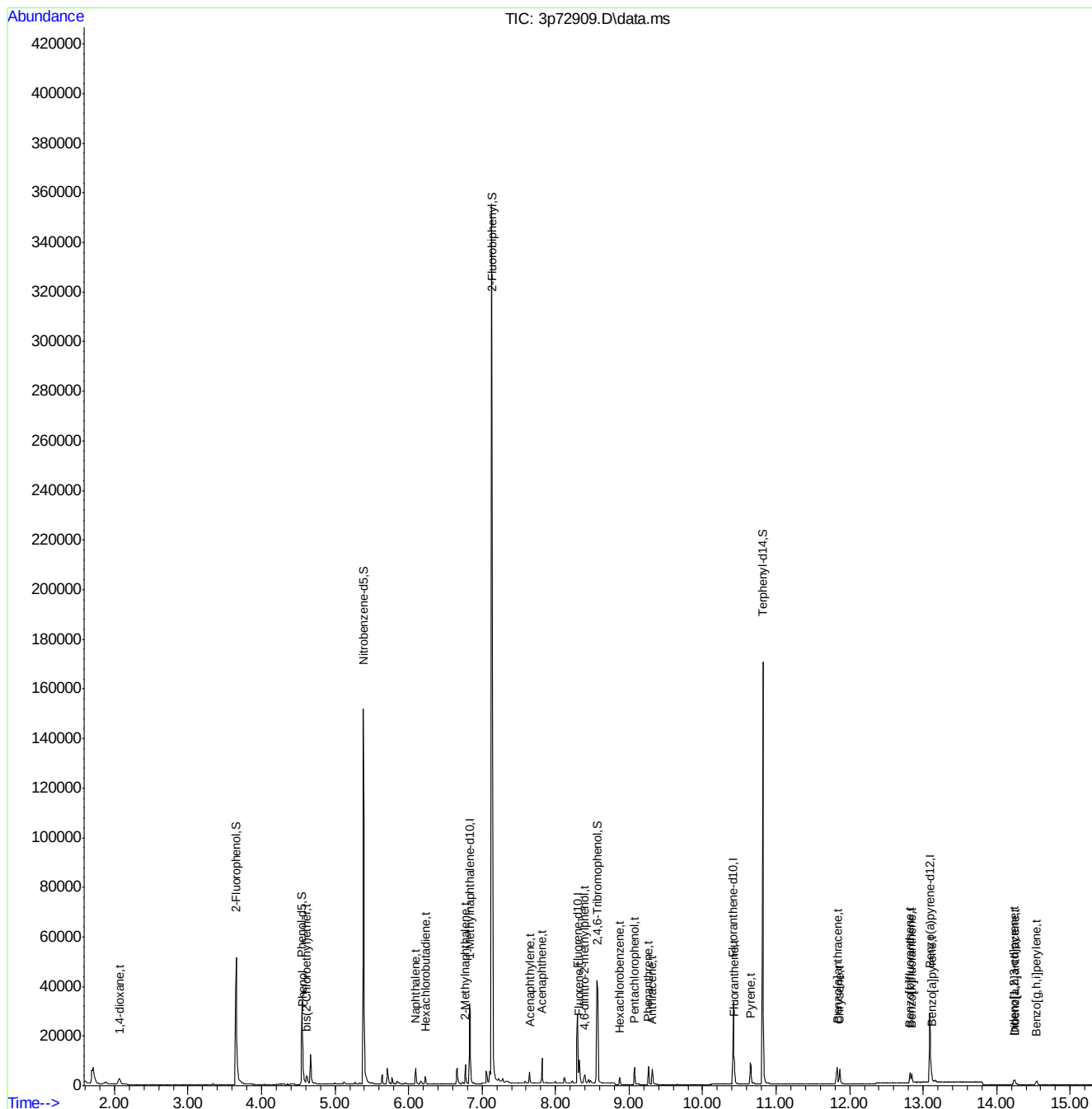
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.832	150	11389	4.00	ppm	0.00
12) Fluorene-d10	8.302	176	14118	4.00	ppm	0.00
19) Fluoranthene-d10	10.416	212	23635	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.091	264	19685	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.656	112	35161	18.37	ppm	-0.01
Spiked Amount 50.000			Recovery =	36.74%		
4) Phenol-d5	4.548	99	31136	12.53	ppm	0.00
Spiked Amount 50.000			Recovery =	25.06%		
7) Nitrobenzene-d5	5.386	82	101152	44.34	ppm	0.00
Spiked Amount 50.000			Recovery =	88.68%		
13) 2-Fluorobiphenyl	7.132	172	195781	41.76	ppm	-0.02
Spiked Amount 50.000			Recovery =	83.52%		
18) 2,4,6-Tribromophenol	8.571	330	18747	32.28	ppm	0.00
Spiked Amount 50.000			Recovery =	64.56%		
26) Terphenyl-d14	10.819	244	103075	23.36	ppm	0.00
Spiked Amount 50.000			Recovery =	46.72%		
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.067	88	3314	4.56	ppm	100
5) Phenol	4.561	94	4365	1.59	ppm	95
6) bis(2-Chloroethyl)ether	4.615	93	1356	0.72	ppm	87
8) Naphthalene	6.094	128	5139	0.80	ppm	98
9) Hexachlorobutadiene	6.226	225	894	0.85	ppm	97
10) 2-Methylnaphthalene	6.771	141	3051	0.86	ppm	94
14) Acenaphthylene	7.649	152	4551	0.77	ppm	97
15) Acenaphthene	7.815	153	3343	0.85	ppm	98
16) 4,6-dinitro-2-methylph...	8.395	198	2262	4.94	ppm	92
17) Fluorene	8.322	166	3686	0.79	ppm	96
20) Hexachlorobenzene	8.872	284	1085	0.74	ppm	96
21) Pentachlorophenol	9.071	266	2917	4.69	ppm	96
22) Phenanthrene	9.266	178	5291	0.79	ppm	97
23) Anthracene	9.311	178	4941	0.76	ppm	98
24) Fluoranthene	10.434	202	5967	0.73	ppm	99
25) Pyrene	10.652	202	5818	0.72	ppm	98
27) Benzo[a]anthracene	11.831	228	3949	0.52	ppm	98
28) Chrysene	11.864	228	3938	0.51	ppm	99
30) Benzo[b]fluoranthene	12.822	252	2699	0.36	ppm	95
31) Benzo[k]fluoranthene	12.847	252	2618	0.35	ppm	98
32) Benzo[a]pyrene	13.112	252	2526	0.36	ppm	97
33) Indeno[1,2,3-cd]pyrene	14.232	276	1703	0.22	ppm	100
34) Dibenz[a,h]anthracene	14.246	278	1371	0.22	ppm	94
35) Benzo[g,h,i]perylene	14.541	276	1554	0.24	ppm	90

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72909.D
Acq On : 28 Nov 2018 12:46 am
Operator : sufiyana
Sample : op16734a-msd
Misc : op16734a,e3p3447,1020,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 28 10:05:27 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration

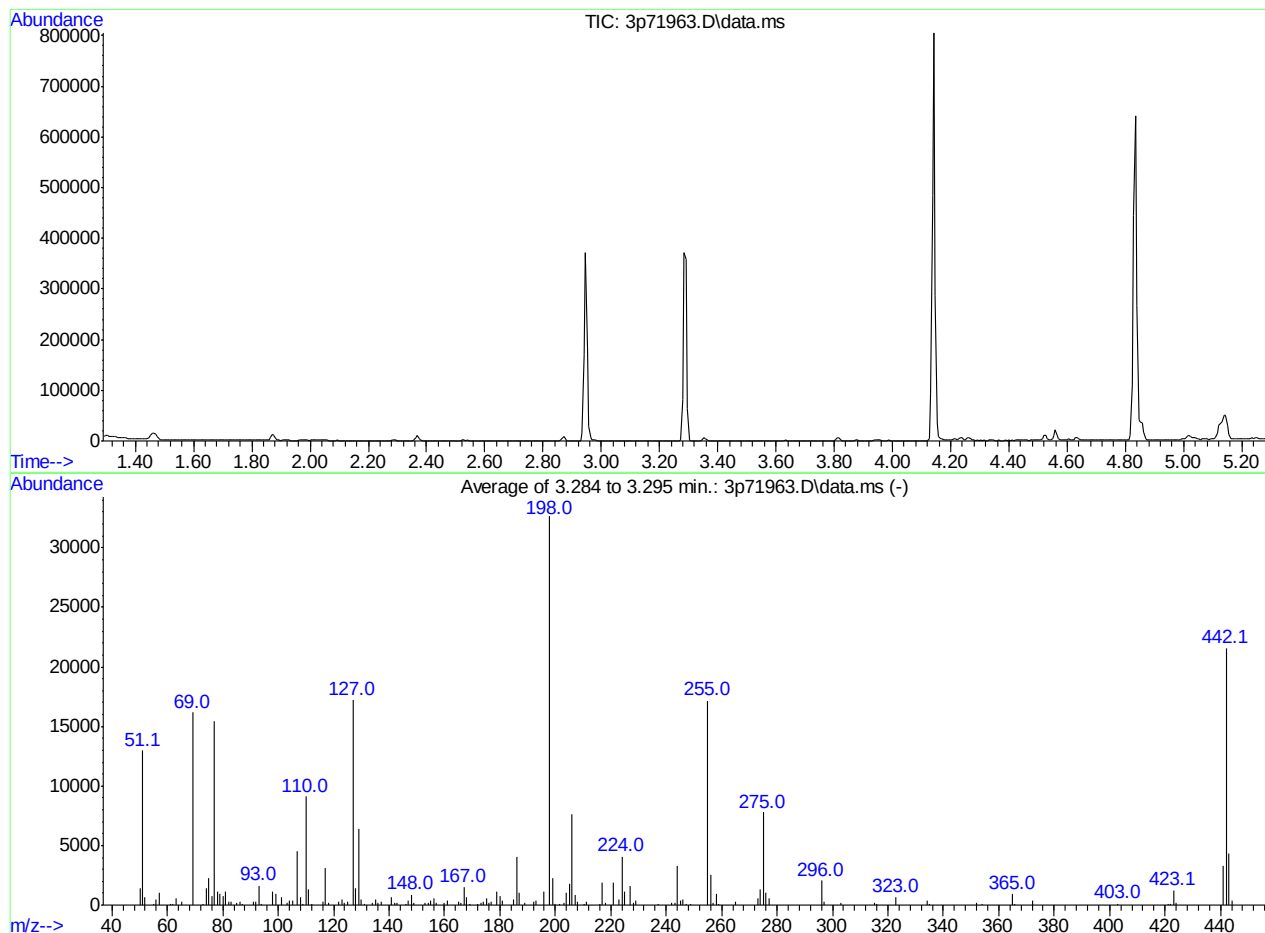


DFTPP

Data File : C:\msdchem\1\data\E3P3408\3p71963.D
 Acq On : 30 Oct 2018 12:03 am
 Sample : dftpp
 Misc : op15969a,e3p3408,1000,,,1,1
 MS Integration Params: events.e

Vial: 1
 Operator: sufiyana
 Inst : MSGC3P
 Multipl: 1.00

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
 Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 349, 350, 351; Background Corrected with Scan 345

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.8	12973	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	49.6	16173	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	52.7	17213	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	32633	PASS
199	198	5	9	7.0	2288	PASS
275	198	10	30	23.8	7771	PASS
365	198	1	100	2.8	904	PASS
441	443	0.01	100	76.6	3286	PASS
442	198	40	100	66.2	21605	PASS
443	442	17	23	19.8	4288	PASS

Average of 3.284 to 3.295 min.: 3p71963.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.00	1452	73.00	95	85.05	190	103.95	353
51.10	12973	74.00	1383	86.00	333	105.00	347
52.00	663	75.00	2270	87.00	74	107.00	4477
55.00	86	76.05	722	90.95	288	108.00	666
55.95	441	77.05	15396	92.05	252	109.00	102
57.00	1016	78.00	1092	93.00	1625	110.00	9123
61.00	97	79.00	981	94.00	74	111.00	1320
62.00	108	80.00	758	98.00	1145	112.00	102
63.00	558	81.00	1140	99.00	965	116.05	278
65.00	289	82.00	316	101.00	617	117.00	3135
69.00	16173	82.95	304	103.00	227	118.00	221

Average of 3.284 to 3.295 min.: 3p71963.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
121.95	245	135.95	175	155.00	350	173.00	159
123.00	434	137.00	254	156.00	563	173.95	289
123.95	228	140.90	659	157.05	159	175.00	575
125.00	246	141.95	238	159.95	236	176.00	186
127.00	17213	143.00	157	160.95	335	176.95	246
128.00	1375	145.95	141	164.95	259	178.95	1122
129.00	6376	147.00	354	166.00	187	180.00	748
130.00	495	148.00	882	167.00	1549	181.00	373
131.00	74	148.95	185	168.00	678	185.05	447
134.00	206	152.95	229	169.00	87	186.00	4083
135.00	455	154.00	174	171.90	71	187.00	1079

Average of 3.284 to 3.295 min.: 3p71963.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
188.95	193	206.10	7607	225.00	1155	249.00	67
192.00	319	207.00	890	227.00	1595	255.00	17155
193.00	342	208.00	253	228.00	223	256.00	2578
195.95	1142	210.40	97	228.95	354	256.95	166
198.00	32633	211.00	241	236.90	71	258.00	913
199.00	2288	216.00	68	242.00	225	259.00	78
199.90	86	217.00	1848	243.00	229	265.00	323
201.55	142	217.90	201	244.10	3267	273.00	540
202.95	197	221.00	1879	245.00	389	274.00	1300
204.00	1042	223.00	438	245.95	489	275.00	7771
205.05	1780	224.00	4082	247.00	77	276.00	1014

Average of 3.284 to 3.295 min.: 3p71963.D\data.ms

dftpp

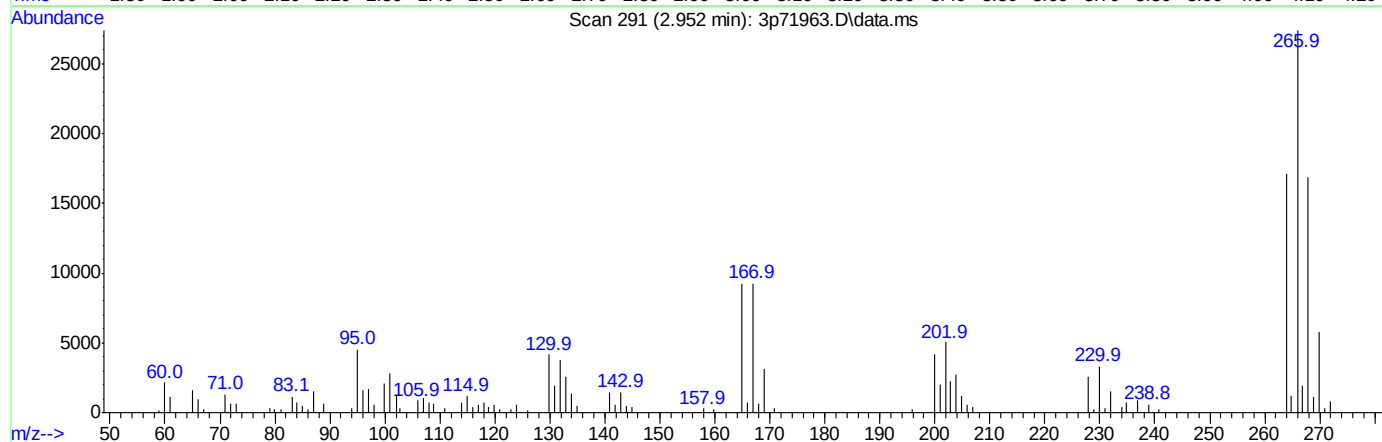
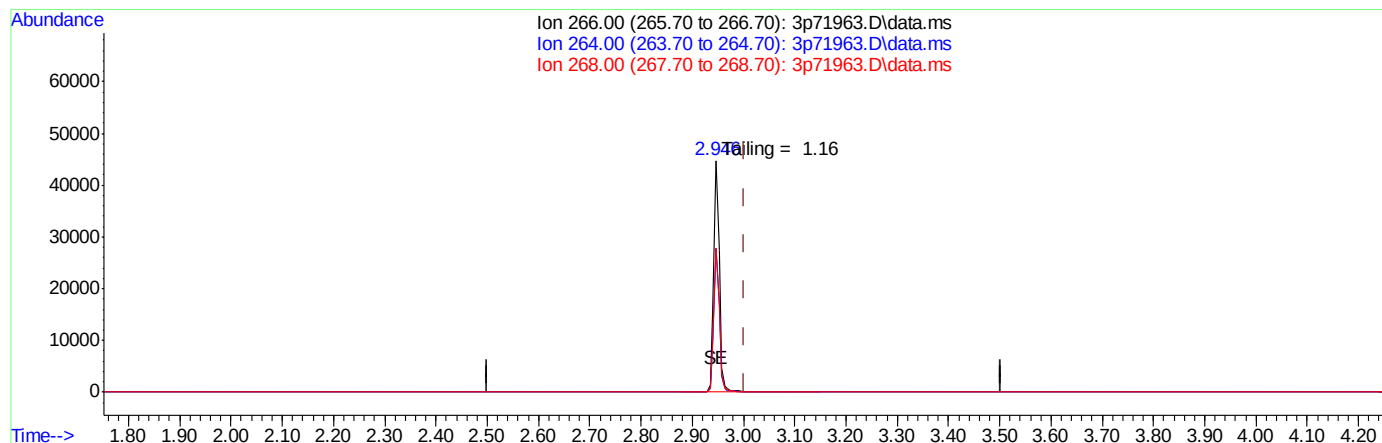
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
277.00	596	365.00	904	444.00	378		
296.00	2046	365.90	71				
296.95	252	372.05	374				
303.00	202	403.00	128				
314.95	188	421.00	81				
316.00	67	422.10	90				
323.00	679	423.05	1248				
334.00	358	424.00	184				
335.00	79	441.10	3286				
352.00	200	442.10	21605				
354.00	101	443.10	4288				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71963.D
Acq On : 30 Oct 2018 12:03 am
Operator : sufiyana
Sample : dftpp
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 00:09:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



(1) Pentachlorophenol

2.950min (-0.052) 3.32

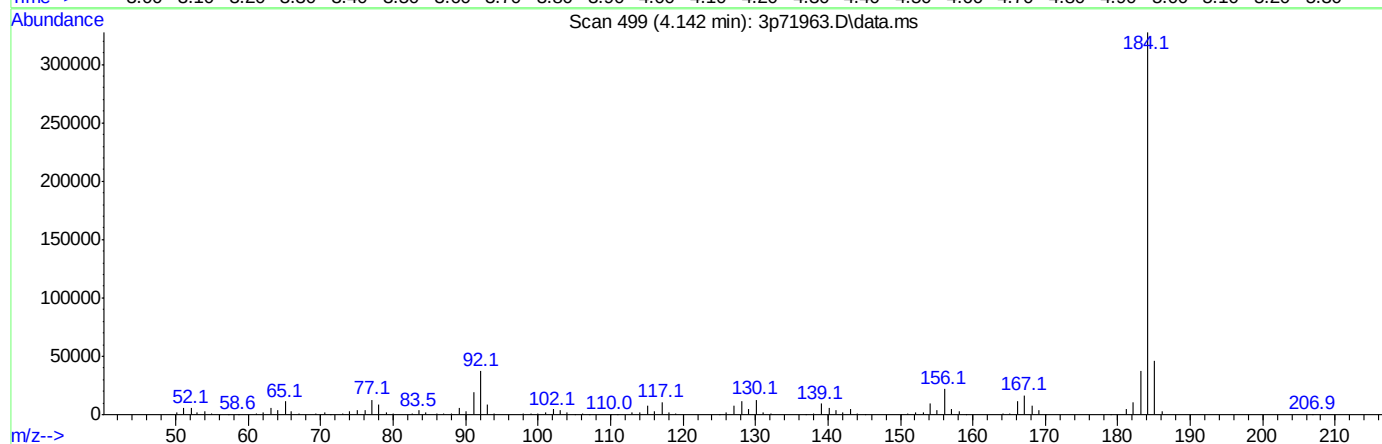
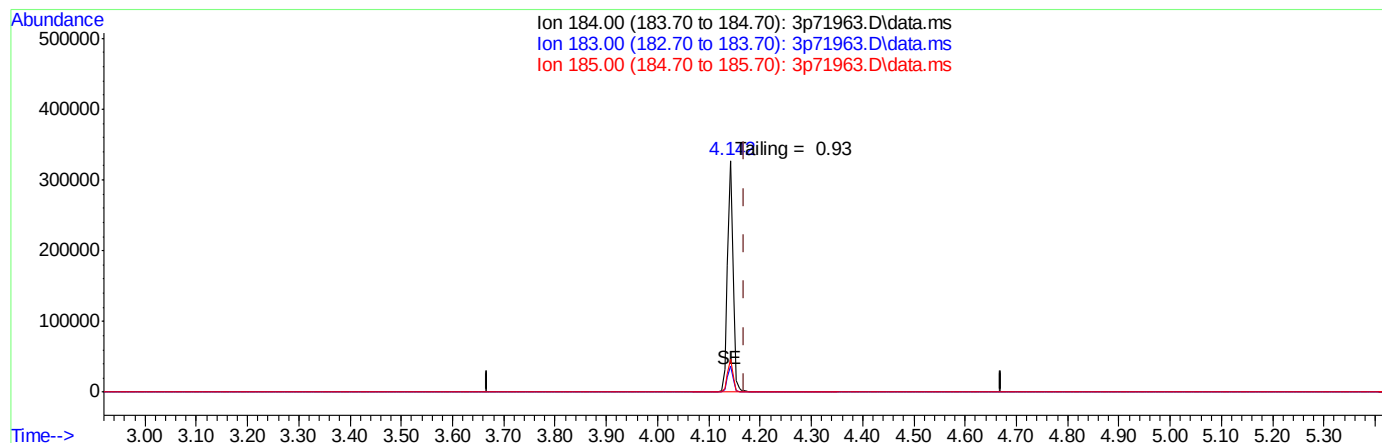
response 333309

Ion	Exp%	Act%
266.00	100	100
264.00	61.70	62.23
268.00	64.20	61.63
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71963.D
Acq On : 30 Oct 2018 12:03 am
Operator : sufiyana
Sample : dftpp
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 00:09:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



TIC: 3p71963.D\data.ms

(2) Benzidine

4.144min (-0.025) 6.29

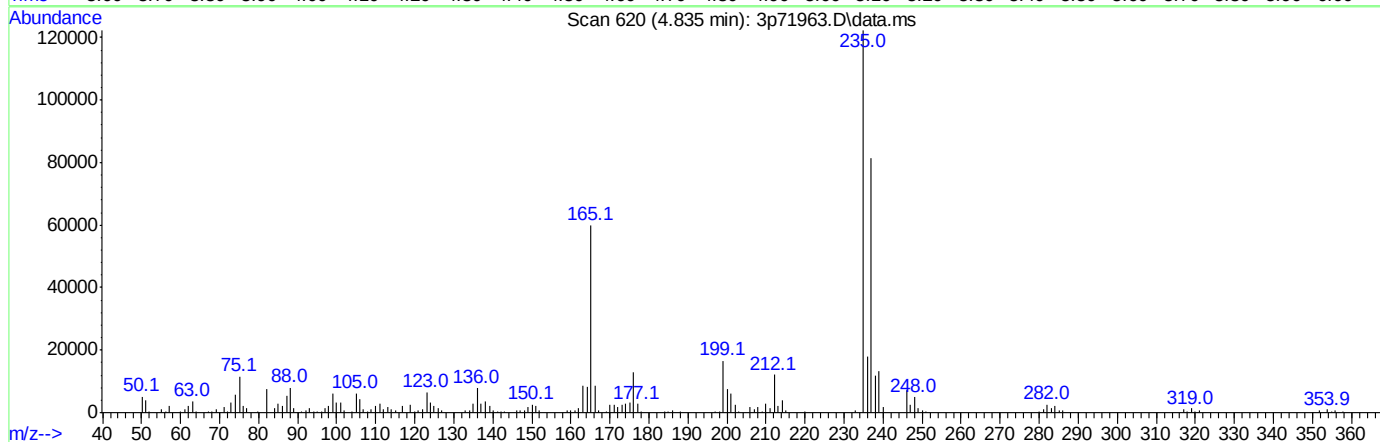
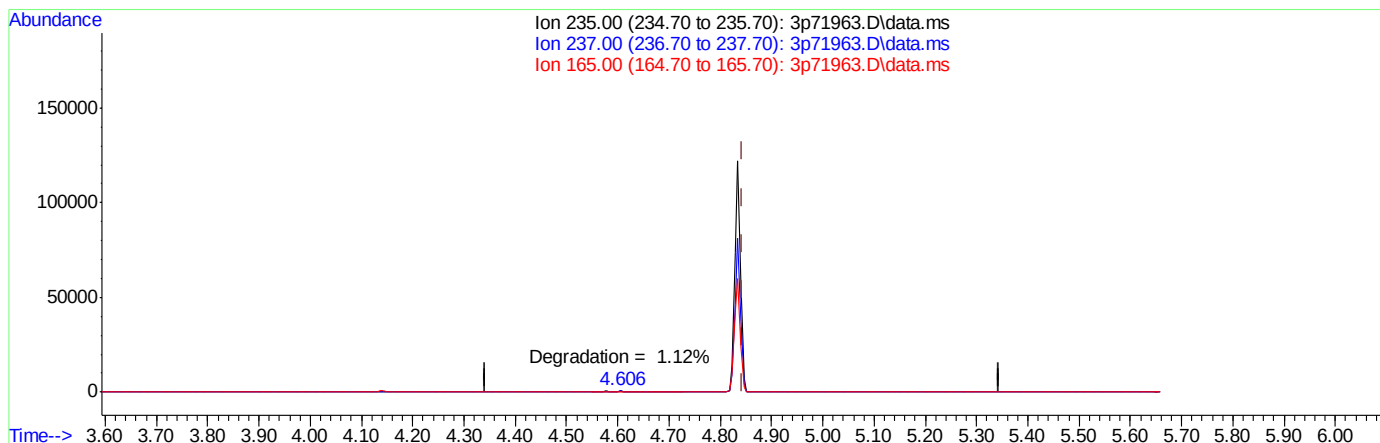
response 2388098

Ion	Exp%	Act%
184.00	100	100
183.00	11.20	11.46
185.00	14.00	14.18
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71963.D
Acq On : 30 Oct 2018 12:03 am
Operator : sufiyana
Sample : dftpp
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 00:09:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



(3) PP-DDT

4.836min (-0.007) 5.59

response 945169

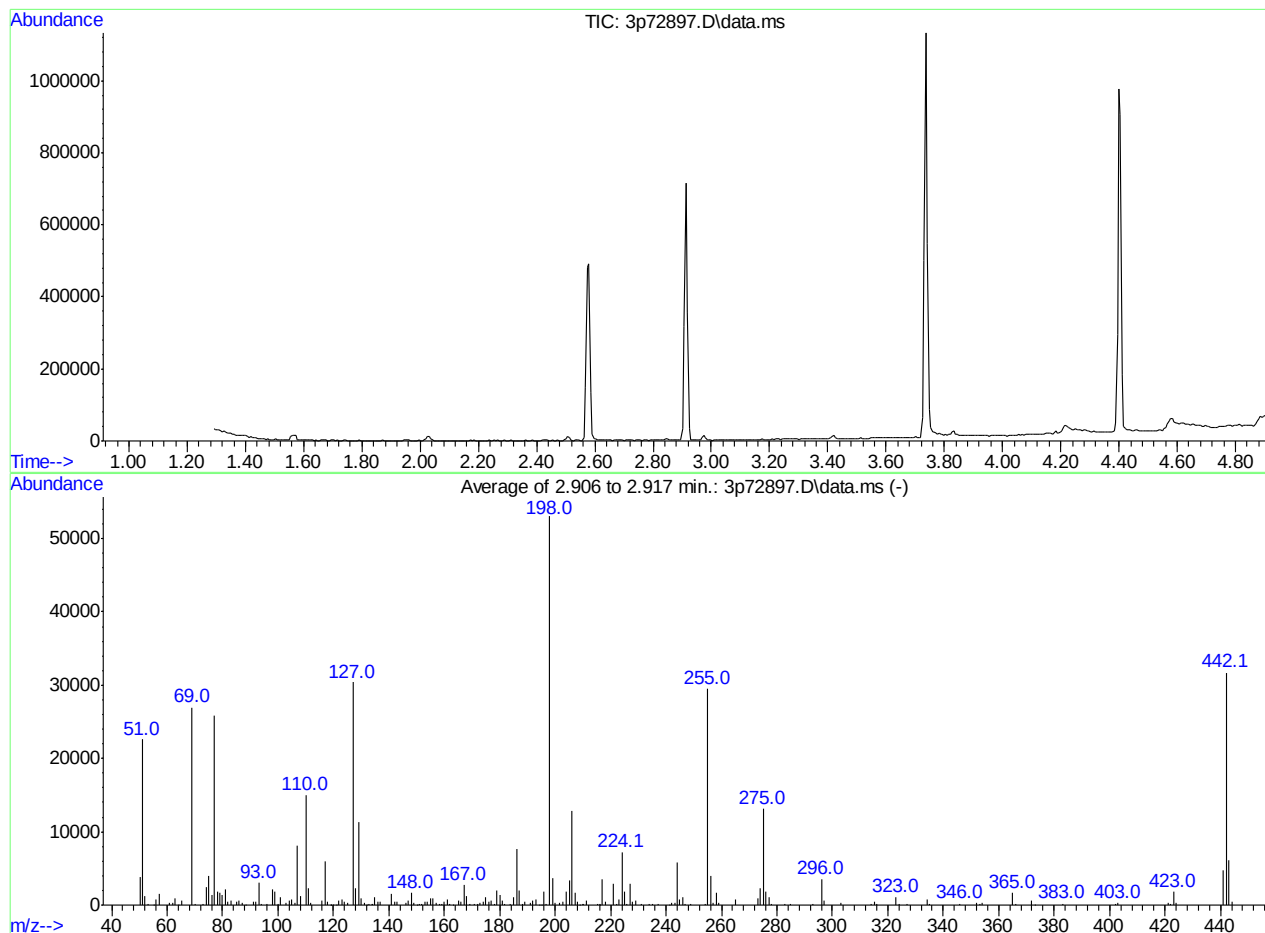
Ion	Exp%	Act%
235.00	100	100
237.00	65.20	65.32
165.00	48.20	50.37
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\E3P3447\3p72897.D
 Acq On : 27 Nov 2018 8:55 pm
 Sample : dftpp
 Misc : op16388a,e3p3447,1000,,,1,1
 MS Integration Params: events.e

Vial: 1
 Operator: sufiyana
 Inst : MSGC3P
 Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
 Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 283, 284, 285; Background Corrected with Scan 280

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.7	22617	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	50.9	26977	PASS
70	69	0.00	2	0.6	166	PASS
127	198	40	60	57.4	30419	PASS
197	198	0.00	1	0.4	191	PASS
198	198	100	100	100.0	53021	PASS
199	198	5	9	7.0	3685	PASS
275	198	10	30	24.7	13121	PASS
365	198	1	100	3.2	1674	PASS
441	443	0.01	100	76.3	4681	PASS
442	198	40	100	59.9	31735	PASS
443	442	17	23	19.3	6136	PASS

Average of 2.906 to 2.917 min.: 3p72897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	3787	65.10	623	81.00	2074	95.90	117
51.00	22617	69.00	26977	81.95	500	97.95	2190
52.00	1205	70.00	166	82.95	570	99.00	1859
52.95	214	73.00	206	85.00	418	99.90	105
55.00	73	74.00	2378	85.95	547	101.00	1140
56.00	736	75.00	3917	86.95	325	102.95	354
57.00	1587	76.00	1367	88.10	81	103.95	639
61.00	251	77.00	25779	91.00	393	105.00	785
62.00	346	78.05	1847	92.00	537	105.95	240
63.00	965	79.00	1645	93.00	3059	107.00	8150
64.00	72	80.00	1392	93.95	197	108.00	1305

Average of 2.906 to 2.917 min.: 3p72897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
110.00	15060	123.00	815	134.10	167	150.00	80
111.00	2233	123.95	422	135.00	1004	151.00	104
111.95	328	124.95	344	135.95	435	151.95	153
116.00	543	127.00	30419	137.00	520	152.95	539
117.00	5931	128.05	2355	141.00	1545	154.00	455
118.00	514	129.00	11314	142.00	443	155.00	856
118.90	67	130.00	912	143.00	404	156.00	991
119.10	69	131.05	280	146.05	285	156.95	249
120.00	80	132.00	71	147.05	682	158.10	223
121.20	71	132.95	158	148.00	1637	159.00	108
121.95	543	133.90	154	149.00	270	159.95	403

Average of 2.906 to 2.917 min.: 3p72897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
161.05	698	173.95	534	186.00	7608	198.00	53021
161.90	185	175.00	1083	187.00	1944	199.00	3685
163.00	71	176.00	484	188.00	206	199.95	263
164.95	608	176.95	586	188.90	428	201.35	343
166.00	455	178.00	125	190.95	276	202.95	411
167.00	2710	179.00	2060	191.95	652	204.00	1874
168.00	1256	180.00	1362	193.05	708	205.00	3325
169.00	231	180.95	673	194.10	80	206.05	12807
171.00	107	181.90	114	194.90	80	207.00	1622
172.00	232	183.90	103	195.95	1839	208.00	535
172.95	251	185.00	1031	196.70	191	209.00	70

Average of 2.906 to 2.917 min.: 3p72897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
209.90	140	224.05	7230	241.95	360	258.00	1743
210.10	137	225.00	1850	243.05	333	258.95	308
211.05	601	226.00	84	244.05	5869	265.00	699
215.10	165	227.00	2966	245.00	746	273.00	927
215.90	219	227.95	491	246.00	1049	274.00	2274
216.10	78	228.95	605	246.95	186	275.00	13121
216.95	3567	231.00	220	248.90	126	276.00	1807
217.95	469	234.00	173	254.00	155	277.00	1115
221.00	2886	234.95	171	255.00	29509	278.00	104
222.10	112	236.95	212	256.00	4057	282.95	141
223.00	817	241.00	71	257.05	347	284.95	209

Average of 2.906 to 2.917 min.: 3p72897.D\data.ms

dftpp

Modified:subtracted

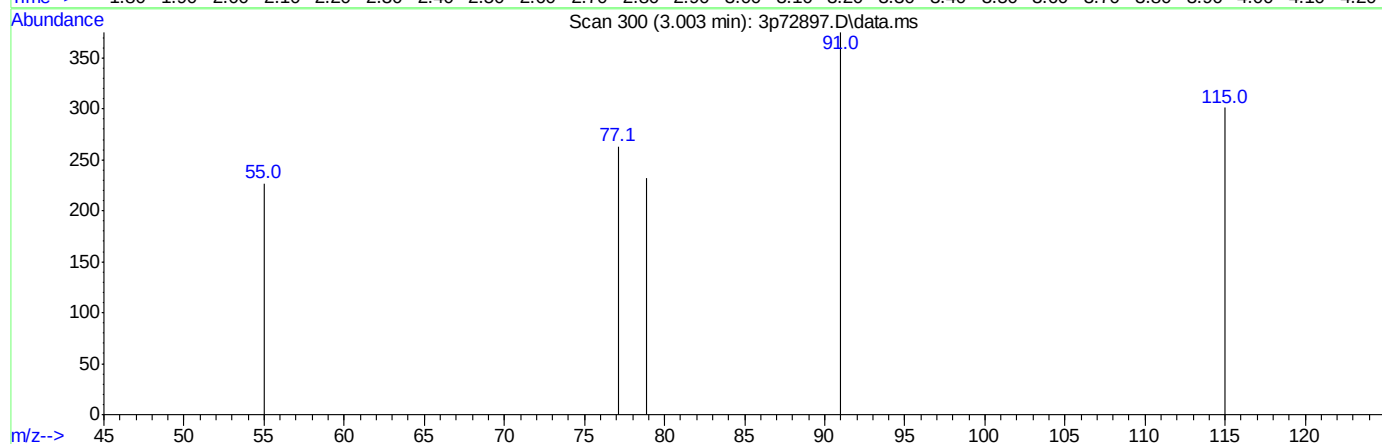
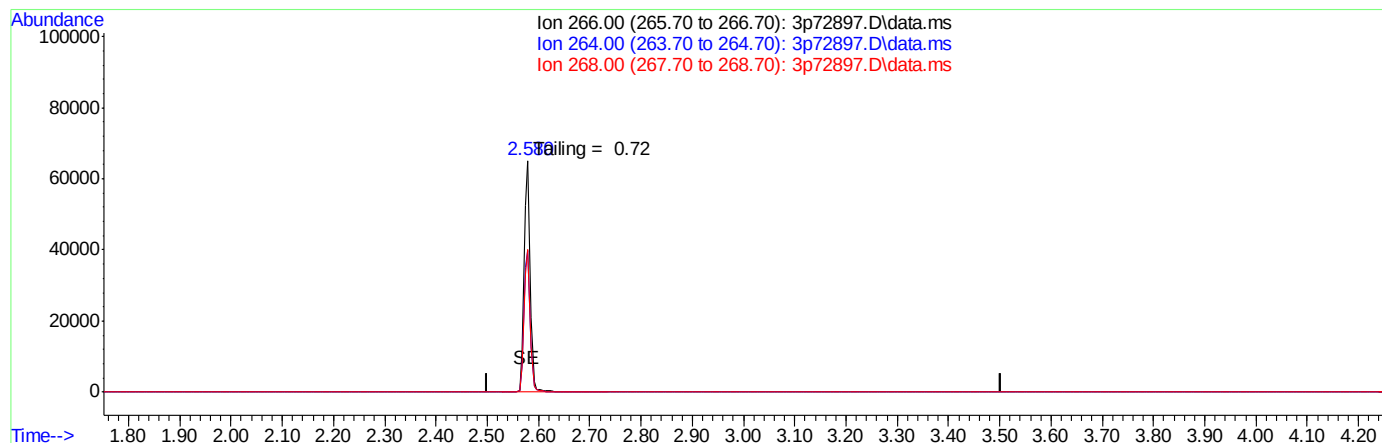
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
293.00	181	335.00	89	403.00	280		
296.00	3521	346.00	203	421.00	280		
296.95	552	352.05	304	422.00	224		
303.00	372	353.00	180	423.00	1765		

314.00	102	354.10	252	424.00	267
315.05	422	365.00	1674	441.05	4681
316.00	227	366.05	161	442.05	31735
323.00	1107	372.00	614	443.10	6136
323.95	220	372.90	75	444.00	466
326.95	223	383.00	196		
334.00	749	401.95	178		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72897.D
Acq On : 27 Nov 2018 8:55 pm
Operator : sufiyana
Sample : dftpp
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 21:01:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



TIC: 3p72897.D\data.ms

(1) Pentachlorophenol

3.002min (-3.002) 0.00

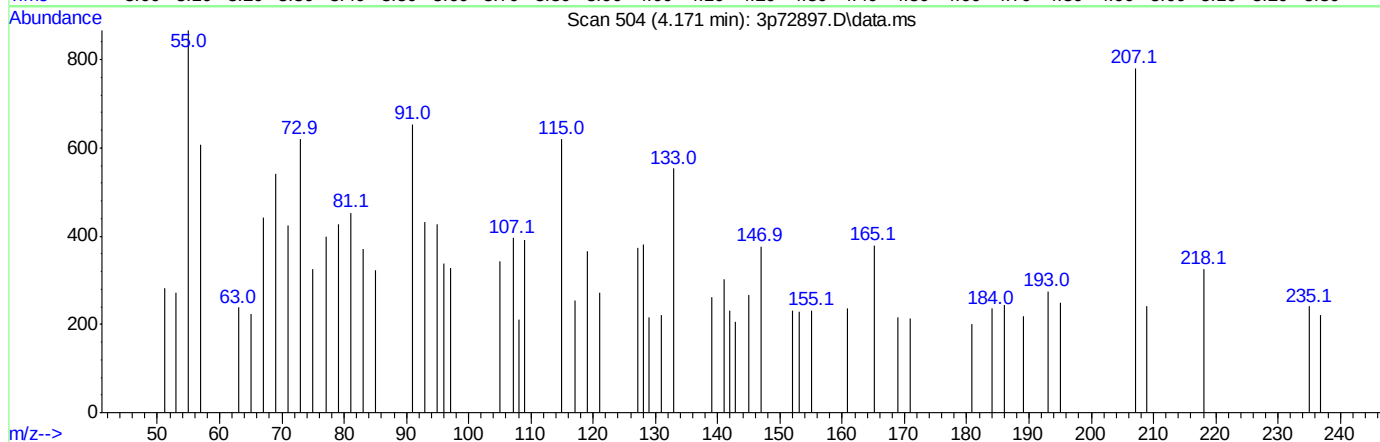
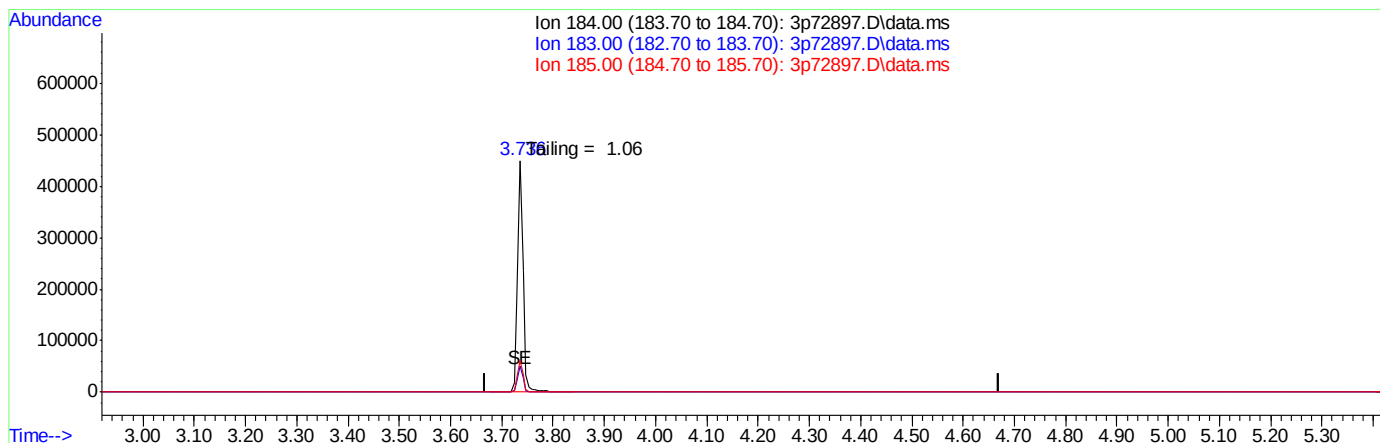
response 0

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\E3P3447\
Data File : 3p72897.D
Acq On : 27 Nov 2018 8:55 pm
Operator : sufiyana
Sample : dftpp
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 21:01:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



TIC: 3p72897.D\data.ms

(2) Benzidine

4.170min (-4.170) 0.00

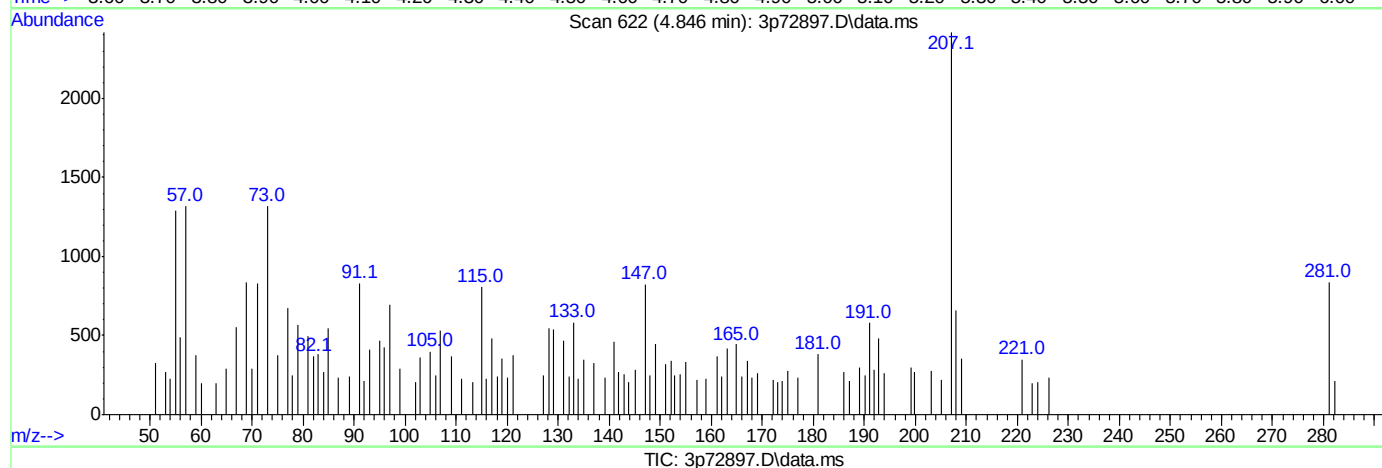
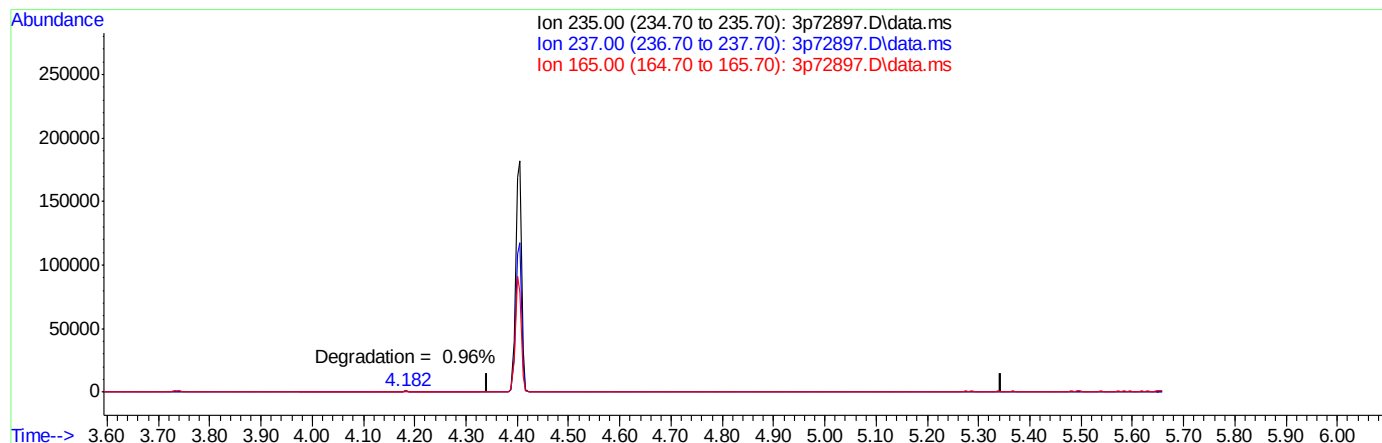
response 0

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\E3P3447\
Data File : 3p72897.D
Acq On : 27 Nov 2018 8:55 pm
Operator : sufiyana
Sample : dftpp
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 21:01:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Tue Oct 23 09:56:01 2018
Response via : Initial Calibration



(3) PP-DDT

4.843min (-4.843) 0.00

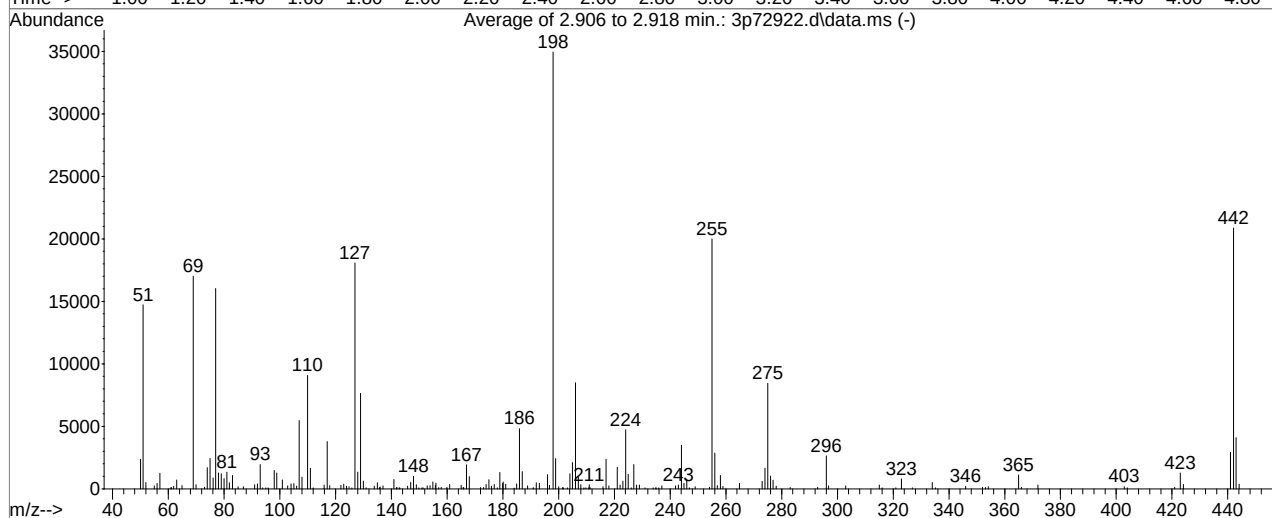
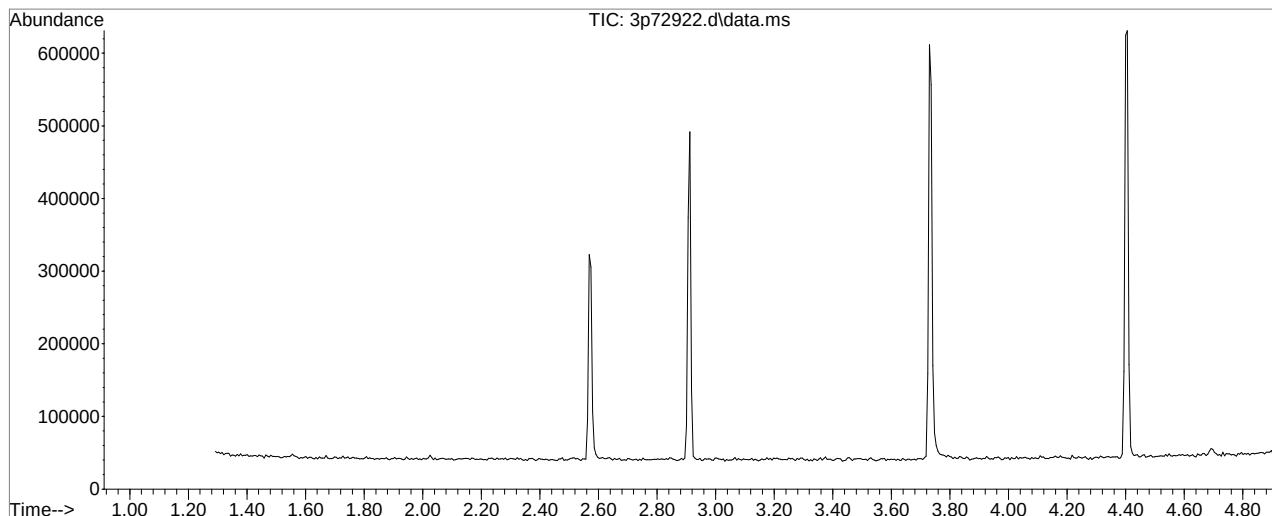
response 0

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\jonkm\e3p3448\3p72922.d Vial: 1
Acq On : 28 Nov 2018 10:33 am Operator: christc2
Sample : dftpp Inst : MSGC3P
Misc : op16388a,e3p3448,1000,,,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 283, 284, 285; Background Corrected with Scan 280

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.1	14718	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	48.7	17016	PASS
70	69	0.00	2	1.9	329	PASS
127	198	40	60	51.7	18065	PASS
197	198	0.00	1	0.8	270	PASS
198	198	100	100	100.0	34938	PASS
199	198	5	9	6.9	2409	PASS
275	198	10	30	24.2	8439	PASS
365	198	1	100	3.2	1112	PASS
441	443	0.01	100	71.7	2926	PASS
442	198	40	100	59.7	20858	PASS
443	442	17	23	19.6	4082	PASS

Average of 2.906 to 2.918 min.: 3p72922.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	2361	69.00	17016	81.90	487	98.95	1274
51.00	14718	69.95	329	83.05	1072	100.95	708
52.00	515	73.00	129	85.00	175	102.85	230
54.95	226	74.00	1701	87.00	173	104.00	393
55.95	430	75.00	2433	91.00	325	105.00	418
56.95	1257	76.05	875	92.00	393	106.05	217
60.90	86	77.00	16023	93.00	1937	107.00	5451
61.10	92	78.00	1278	93.90	90	107.95	934
61.95	199	79.00	1202	95.00	73	110.00	9080
63.00	705	80.00	823	95.80	68	111.00	1653
64.95	262	81.00	1333	98.00	1465	112.00	84

Average of 2.906 to 2.918 min.: 3p72922.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
115.95	303	129.95	629	143.00	88	155.80	272
117.00	3787	131.00	90	145.90	206	156.00	464
117.90	265	133.90	223	146.95	506	157.00	101
121.95	281	134.95	476	147.95	990	157.90	123
122.95	375	135.80	112	148.95	322	159.90	114
123.90	206	136.00	137	149.90	68	160.90	341
124.80	181	137.00	226	151.00	84	165.05	291
125.90	75	140.95	749	151.40	81	165.80	112
127.00	18065	141.80	106	152.90	238	166.00	109
127.95	1326	142.00	105	153.85	255	167.00	1909
129.00	7627	142.80	77	154.95	542	168.00	968

Average of 2.906 to 2.918 min.: 3p72922.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
172.00	112	184.00	67	198.95	2409	209.80	82
173.10	106	185.00	398	200.00	164	210.70	80
174.00	343	186.00	4818	201.40	112	211.00	337
175.00	724	187.00	1390	201.70	90	211.30	92
175.95	206	188.90	230	203.10	90	215.95	169
176.95	346	190.90	104	204.05	1210	217.00	2368
178.00	89	192.00	475	205.00	2101	218.00	228
178.95	1305	193.05	430	206.05	8491	221.00	1713
179.90	432	196.00	1138	207.05	962	222.05	312
180.10	552	196.75	270	208.00	317	223.00	619
181.00	363	198.00	34938	209.10	68	224.05	4727

Average of 2.906 to 2.918 min.: 3p72922.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
225.00	1160	241.95	237	258.00	1068	296.00	2631
226.10	74	243.00	299	258.95	196	296.85	239
226.95	1942	244.05	3495	264.85	449	302.95	231
227.95	295	245.00	447	273.00	601	315.00	300
228.95	295	246.00	784	274.00	1644	316.00	77
231.00	68	246.90	83	275.00	8439	321.00	87
233.90	78	248.95	168	276.00	1021	323.00	804
234.80	88	254.10	122	276.95	693	326.90	79
235.00	74	255.00	19993	278.00	216	334.05	500
235.90	75	256.00	2869	283.10	100	335.10	79
237.05	234	256.95	262	292.90	116	346.00	201

Average of 2.906 to 2.918 min.: 3p72922.d\data.ms

dftpp

Modified:subtracted

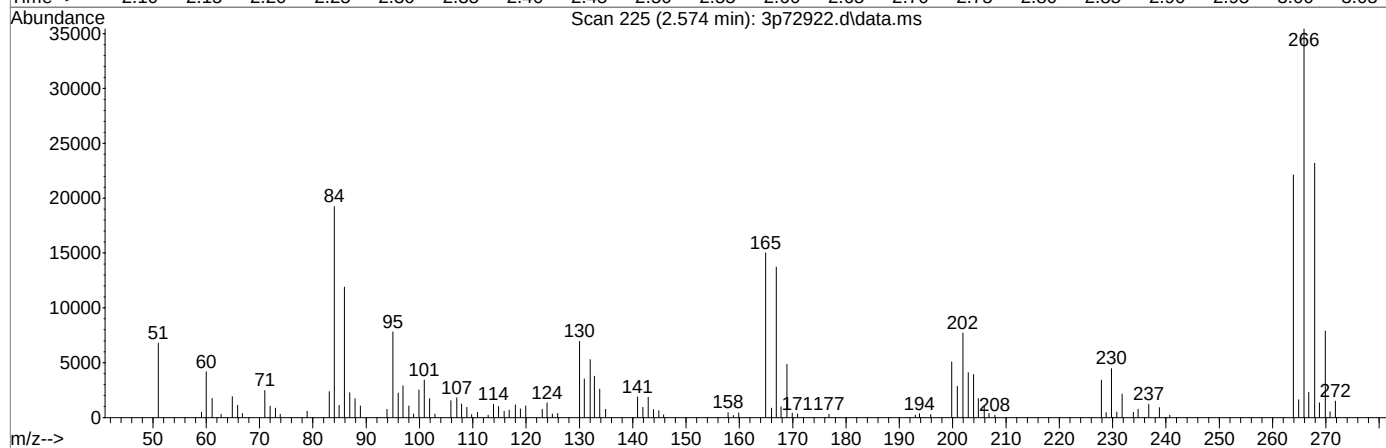
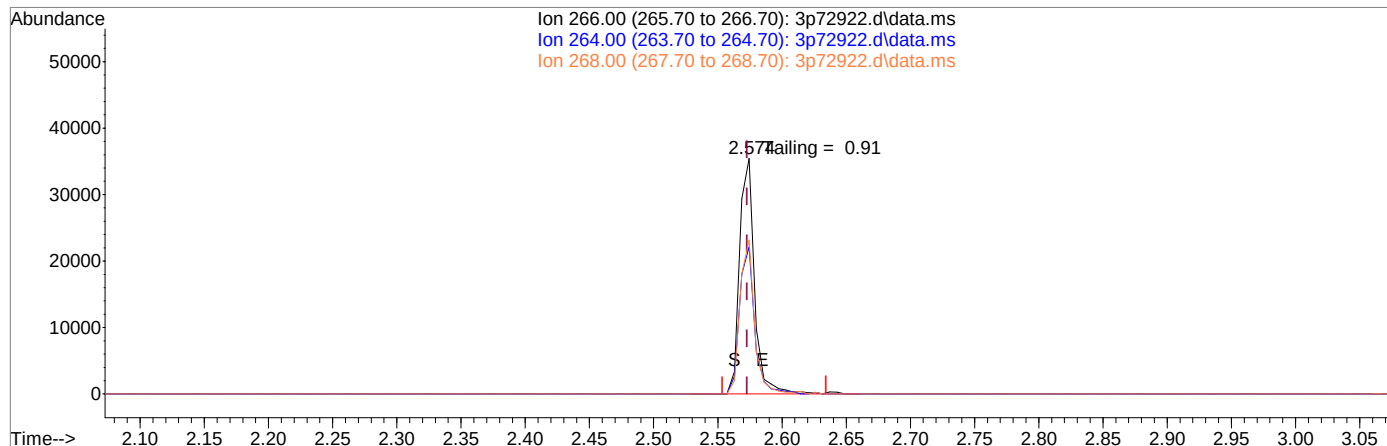
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
352.00	122	441.00	2926				
353.10	98	442.10	20858				
354.10	167	443.00	4082				
365.00	1112	444.05	373				
366.00	117						
371.95	313						
402.90	171						
404.00	85						
421.00	124						
422.95	1268						
424.05	350						

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72922.d
Acq On : 28 Nov 2018 10:33 am
Operator : christc2
Sample : dftpp
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Results File: DFTPP3P.RES
Quant Time: Nov 29 07:10:59 2018
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Thu Nov 29 07:10:44 2018
Response via : Initial Calibration



TIC: 3p72922.d\data.ms

(1) Pentachlorophenol

2.575min (+0.002) 2.87

response 287664

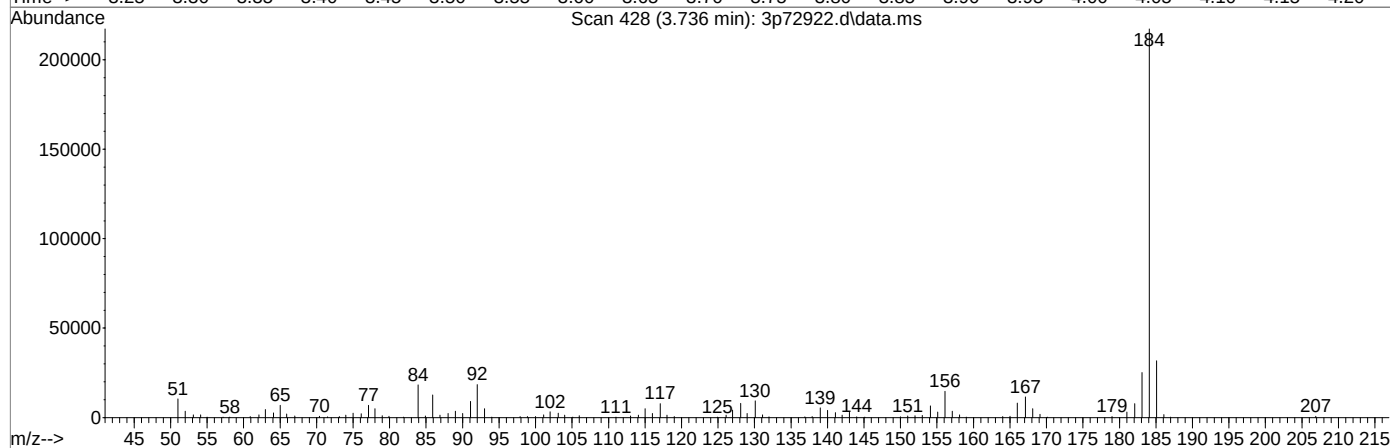
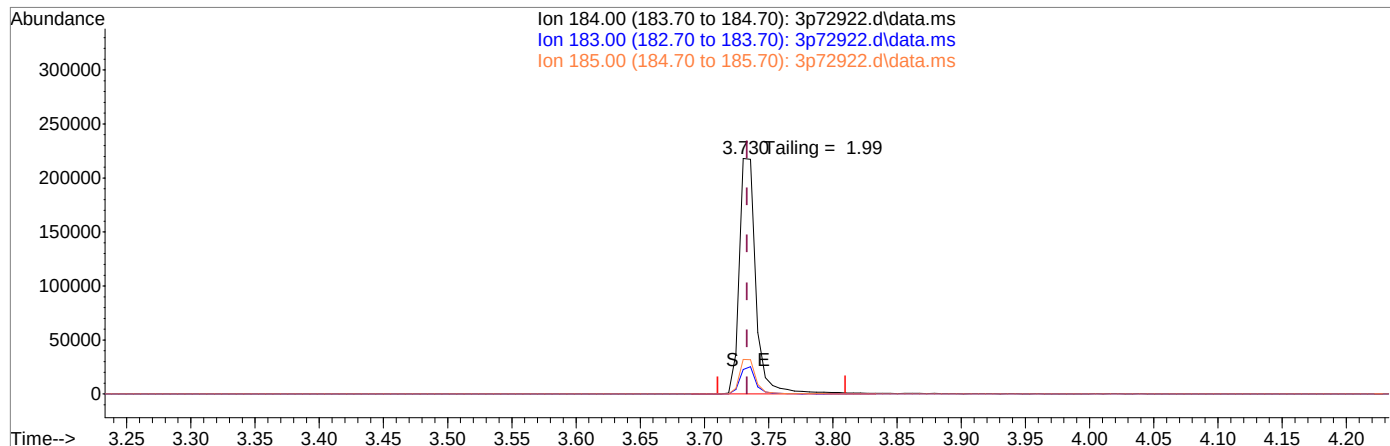
Ion	Exp%	Act%
266.00	100	100
264.00	62.40	63.51
268.00	65.40	64.37
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72922.d
Acq On : 28 Nov 2018 10:33 am
Operator : christc2
Sample : dftpp
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Results File: DFTPP3P.RES
Quant Time: Nov 29 07:10:59 2018
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Thu Nov 29 07:10:44 2018
Response via : Initial Calibration



TIC: 3p72922.d\data.ms

(2) Benzidine

3.736min (+0.003) 5.12

response 1943993

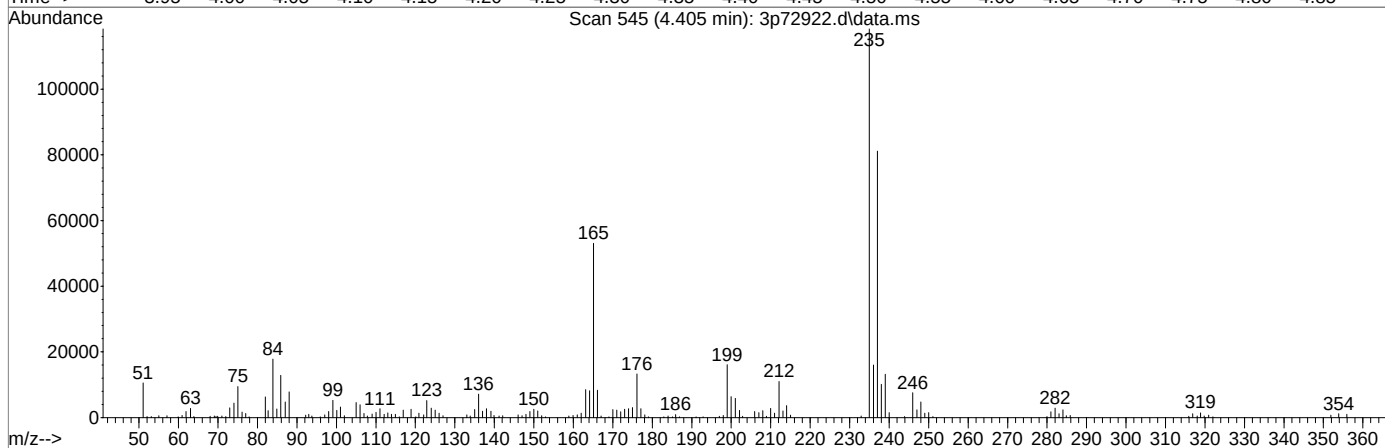
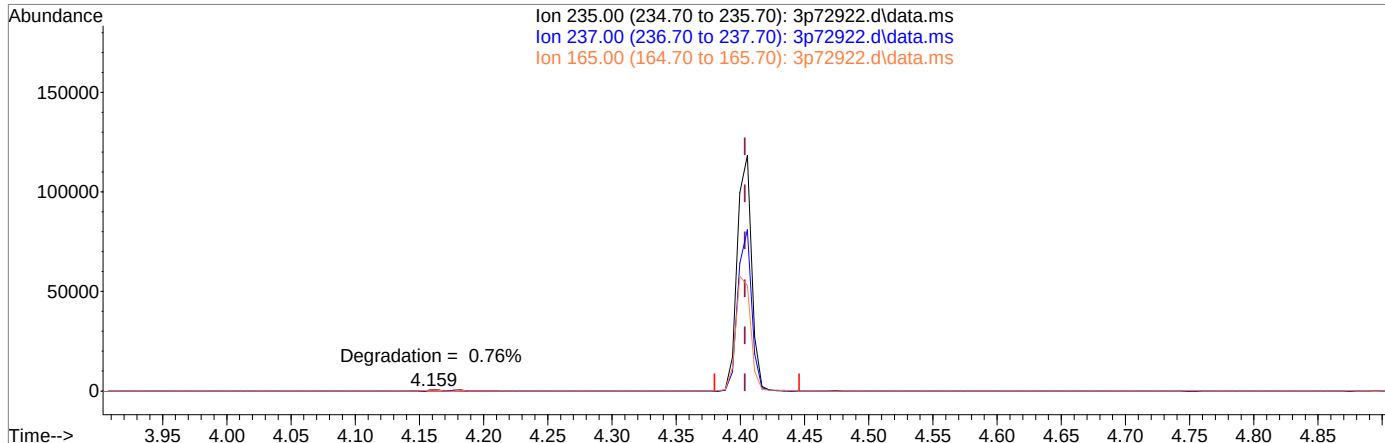
Ion	Exp%	Act%
184.00	100	100
183.00	10.40	11.29
185.00	14.70	14.40
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72922.d
Acq On : 28 Nov 2018 10:33 am
Operator : christc2
Sample : dftpp
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Results File: DFTPP3P.RES
Quant Time: Nov 29 07:10:59 2018
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Thu Nov 29 07:10:44 2018
Response via : Initial Calibration



TIC: 3p72922.d\data.ms

(3) PP-DDT

4.406min (+0.002) 5.41

response 914141

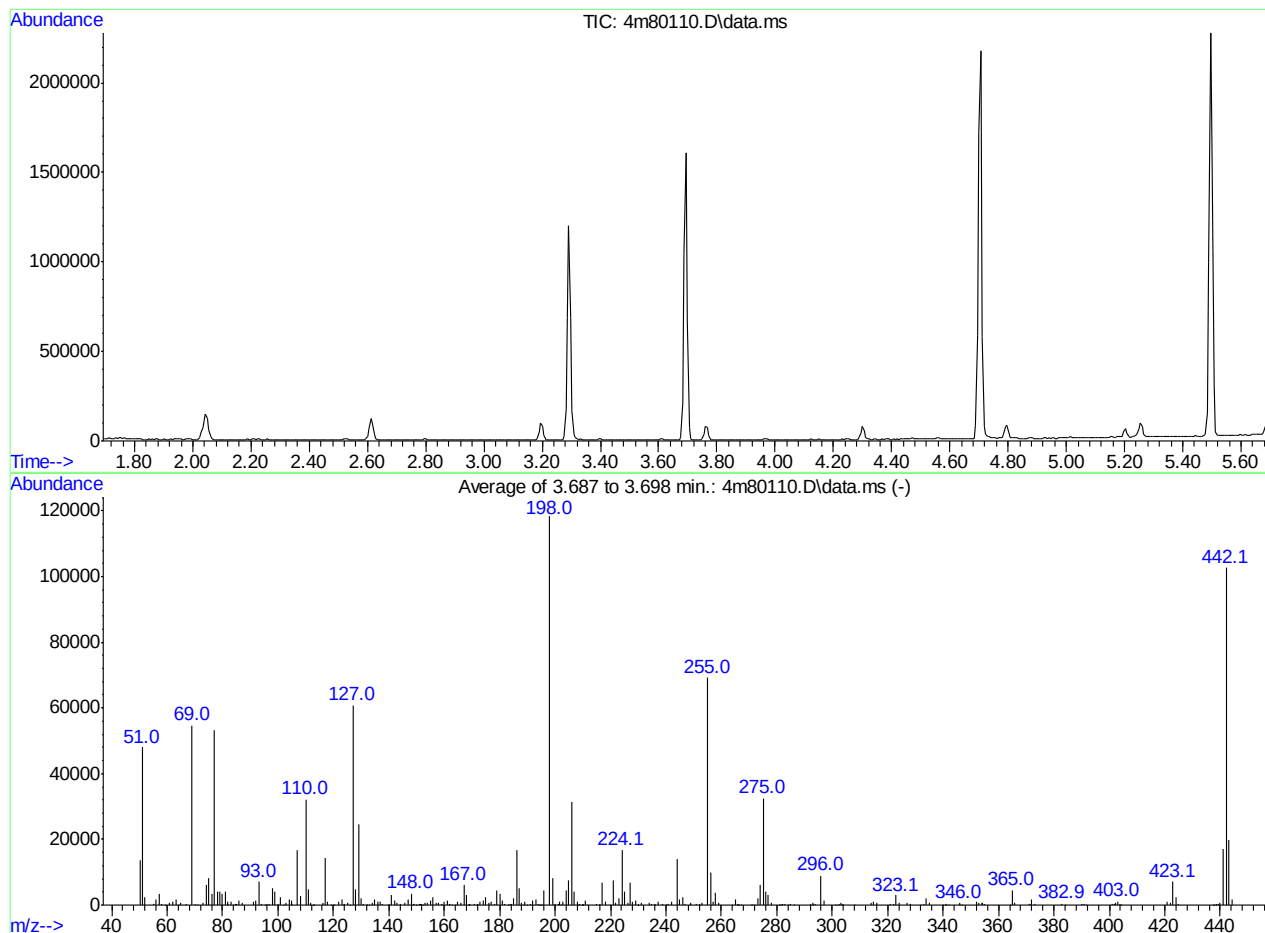
Ion	Exp%	Act%
235.00	100	100
237.00	68.50	66.23
165.00	44.80	50.85
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\E4M3756\4m80110.D
 Acq On : 26 Nov 2018 5:06 pm
 Sample : dftpp
 Misc : op13576a,e4m3756,1000,,,1,1
 MS Integration Params: rteint.p

Vial: 1
 Operator: christc2
 Inst : GCMS4M
 Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M (RTE Integrator)
 Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um



AutoFind: Scans 367, 368, 369; Background Corrected with Scan 362

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.6	47997	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.3	54725	PASS
70	69	0.00	2	0.6	319	PASS
127	198	40	60	51.4	60848	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	118304	PASS
199	198	5	9	6.9	8222	PASS
275	198	10	30	27.4	32453	PASS
365	198	1	100	3.8	4538	PASS
441	443	0.01	100	86.7	17171	PASS
442	198	40	100	86.7	102608	PASS
443	442	17	23	19.3	19802	PASS

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	13812	64.10	137	78.05	3953	86.95	617
51.05	47997	65.00	794	79.00	4149	91.05	1119
52.05	2281	67.00	226	80.00	3456	92.00	1390
55.05	292	69.00	54725	81.05	4263	93.00	7103
56.00	1616	69.95	319	81.70	123	93.95	377
57.00	3563	71.00	75	81.95	880	95.05	179
58.00	215	73.05	637	83.00	870	95.90	322
59.10	75	74.00	6206	83.95	72	96.90	218
61.00	781	75.00	8347	84.85	465	98.00	5207
62.00	871	76.10	3272	85.10	406	99.00	4181
63.05	1886	77.10	53400	86.00	1293	100.00	370

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
101.00	2492	112.70	74	124.00	504	133.95	620
102.00	81	113.10	78	124.95	792	135.00	1581
102.95	829	116.10	661	125.80	130	136.00	873
104.00	1608	117.00	14392	127.00	60848	137.00	1125
104.80	161	118.00	1022	128.05	4864	137.65	221
105.05	1245	118.90	110	129.00	24561	139.95	317
107.00	16818	119.80	116	130.00	2113	140.95	3184
107.95	2660	120.10	125	130.95	450	142.00	1224
110.00	32209	122.00	1119	131.90	113	143.00	742
111.00	4812	123.00	1657	132.10	103	144.05	305
111.95	628	123.80	247	132.90	113	145.90	565

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
147.00	1794	154.00	759	163.90	166	173.05	907
148.00	3445	155.05	1491	164.95	1087	174.00	1367
148.80	378	156.00	2431	165.95	645	175.05	2307
149.00	343	156.95	676	167.00	6039	176.10	858
150.00	94	157.90	721	168.00	2968	177.05	1060
151.00	121	158.95	299	168.80	124	178.00	382
151.20	282	160.00	978	168.90	104	178.95	4537
151.50	309	161.00	1488	169.05	364	180.05	3339
151.90	185	161.75	248	170.80	240	181.00	1452
152.10	75	162.00	202	171.70	109	181.90	191
153.05	809	162.90	73	171.95	438	182.80	91

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
183.80	219	193.05	1844	202.10	113	210.20	439
184.05	251	193.85	321	202.95	985	211.05	1532
185.00	2090	194.20	68	204.05	4422	211.80	82
186.05	16691	194.70	80	205.00	7381	215.00	460
187.00	5077	195.10	87	206.05	31293	216.00	253
188.00	788	196.00	4606	207.00	4015	216.95	6886
188.60	122	198.00	118304	208.05	1065	218.00	1199
188.95	946	199.00	8222	208.60	117	219.90	130
189.95	182	200.10	465	208.95	380	221.05	7446
191.10	498	201.00	261	209.70	85	221.80	617
192.00	1464	201.55	873	210.00	135	222.00	194

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
223.00	1890	234.95	407	246.00	2405	258.95	736
224.05	16849	235.90	133	246.95	373	264.00	70
225.00	4059	236.05	237	248.45	176	264.95	1703
226.10	590	237.00	928	249.00	544	265.70	71

Sim Ion Report for C:\msdchem\1\METHODS\M4M3754SIM.M 2

227.00	6859	238.90	189	251.05	274	266.00	269
228.00	1131	239.90	112	252.15	253	266.20	68
228.90	1486	240.10	129	253.05	609	267.00	89
229.70	76	241.00	482	255.00	69147	270.80	111
230.00	124	242.00	1072	256.00	9886	271.00	133
231.05	664	244.00	13852	257.00	942	272.10	96
233.90	547	245.05	1837	258.00	3887	273.05	2220

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
274.00	6283	285.05	501	303.10	814	327.05	620
275.00	32453	286.00	76	303.70	176	328.05	431
276.00	4257	292.10	185	304.05	205	332.00	159
276.95	2960	293.00	537	308.10	79	333.05	304
277.95	541	293.20	178	314.00	569	334.05	1996
280.90	109	293.90	233	315.00	1141	335.05	565
281.10	33	296.00	8945	316.00	576	340.10	68
281.80	154	297.00	1431	321.05	348	340.90	144
282.10	210	301.20	83	322.05	256	341.05	298
283.05	390	301.80	70	323.05	3064	342.00	165
284.00	157	302.90	330	324.05	549	345.80	113

Average of 3.687 to 3.698 min.: 4m80110.D\data.ms
dftpp

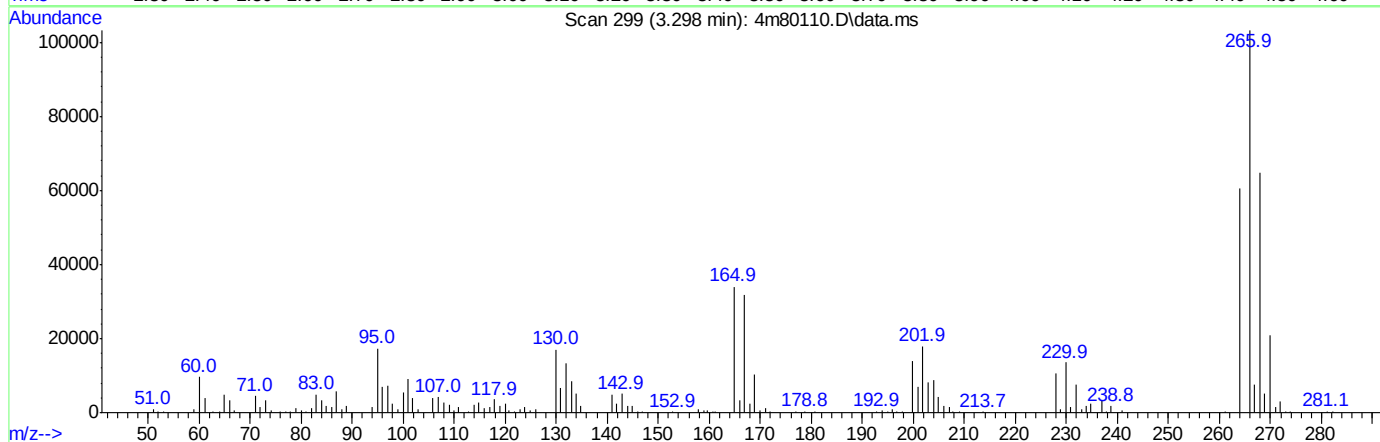
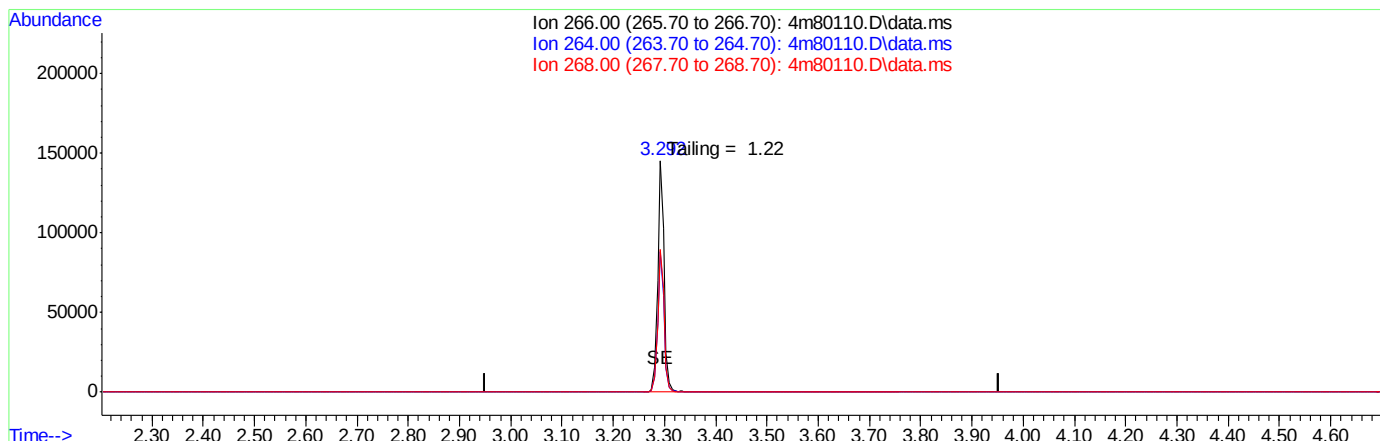
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
346.00	558	371.50	163	403.00	1110	438.80	78
346.80	88	372.05	1742	403.85	225	439.40	301
352.10	926	373.05	480	404.10	124	439.75	579
353.05	744	382.95	346	421.00	1192	441.10	17171
353.90	548	383.90	145	422.10	833	442.10	102608
354.10	562	390.15	240	423.05	7149	443.05	19802
355.05	366	391.05	207	424.10	2267	444.10	1858
364.00	138	391.90	72	424.95	389		
365.00	4538	400.85	215	437.50	73		
366.00	616	401.90	208	437.70	76		
371.00	306	402.10	608	438.50	455		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80110.D
Acq On : 26 Nov 2018 5:06 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 00:56:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Wed Jan 24 09:29:39 2018
Response via : Initial Calibration



TIC: 4m80110.D\data.ms

(1) pentachlorophenol (t)

3.452min (-3.452) 0.00ppb

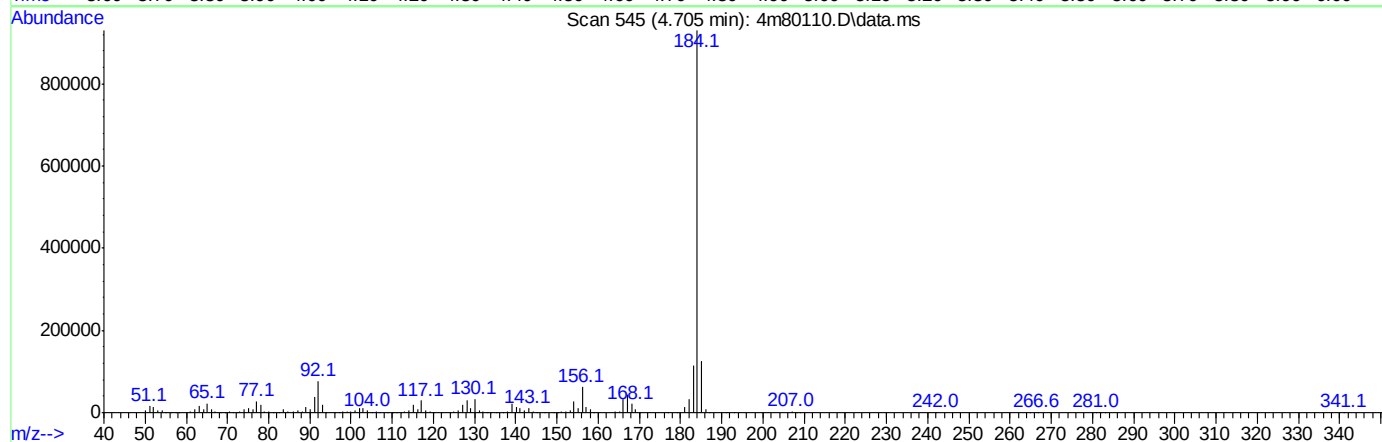
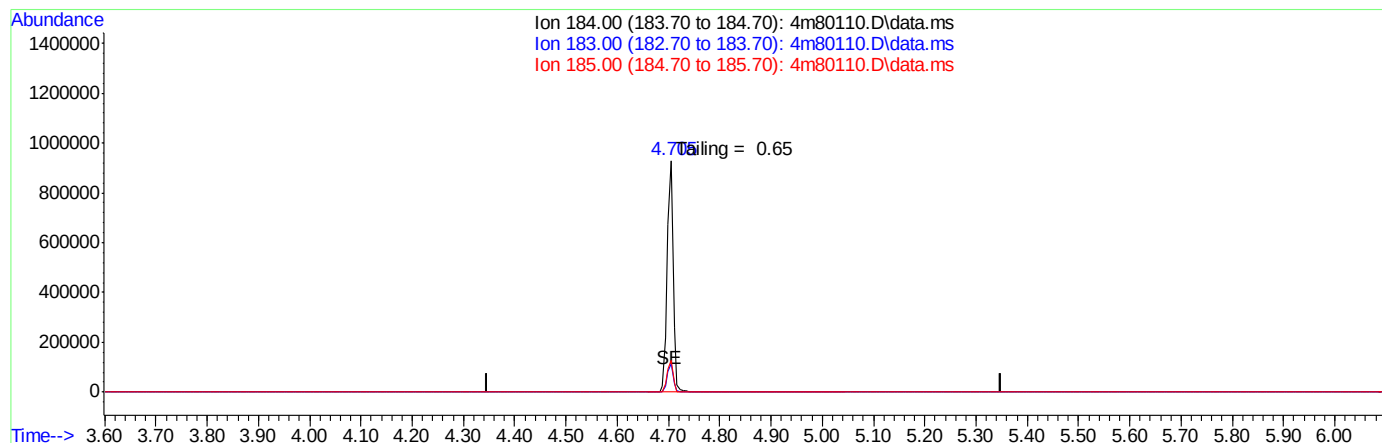
response 0

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\E4M3756\
Data File : 4m80110.D
Acq On : 26 Nov 2018 5:06 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 00:56:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Wed Jan 24 09:29:39 2018
Response via : Initial Calibration



TIC: 4m80110.D\data.ms

(2) benzidine (t)

4.848min (-4.848) 0.00ppb

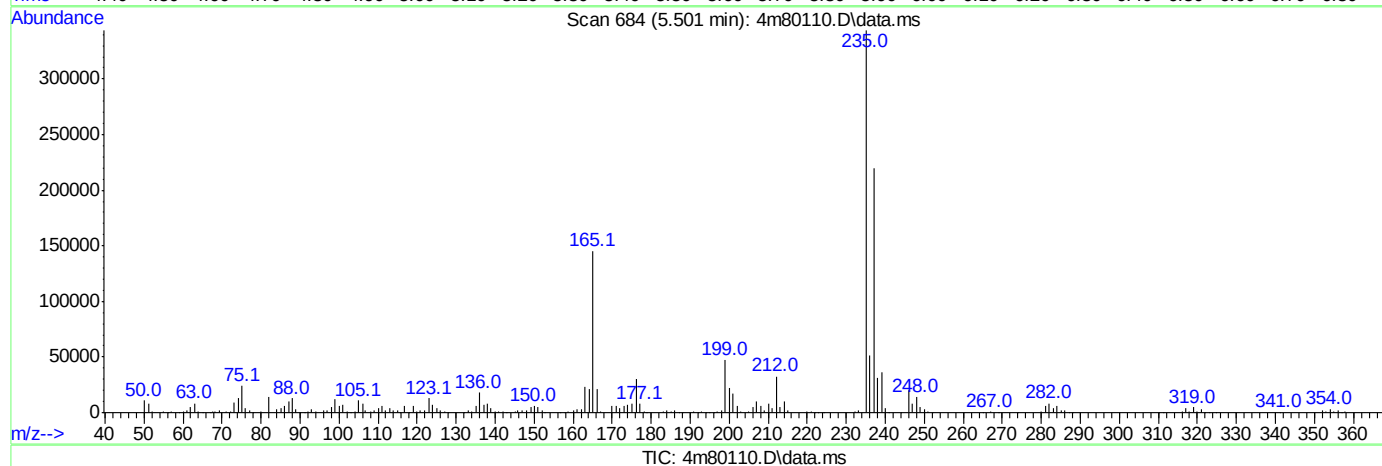
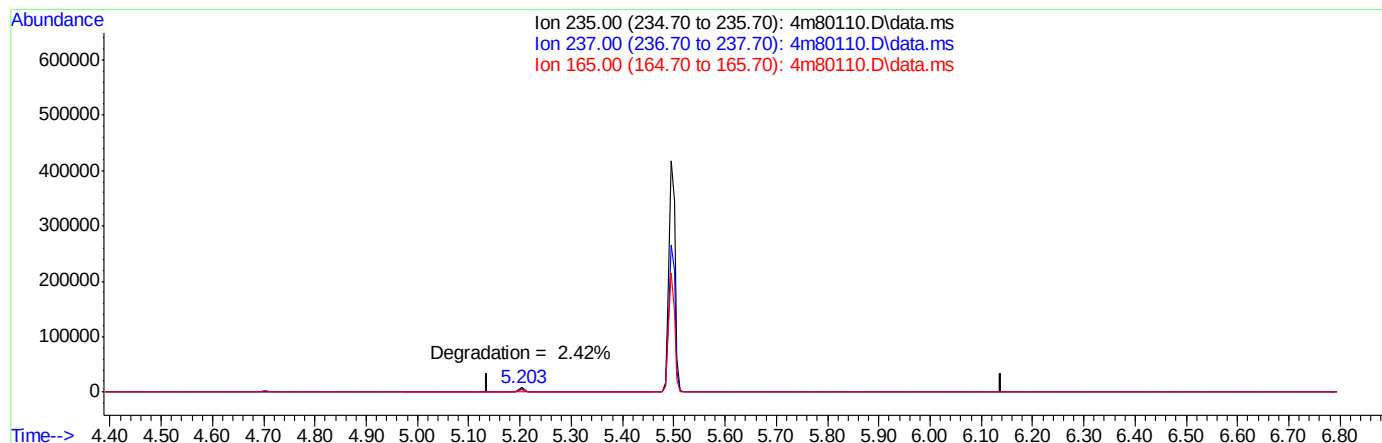
response 0

Ion	Exp%	Act%
184.00	100	0.00
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\E4M3756\
Data File : 4m80110.D
Acq On : 26 Nov 2018 5:06 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 27 00:56:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Wed Jan 24 09:29:39 2018
Response via : Initial Calibration



(3) ddt (t)

5.638min (-5.638) 0.00ppb

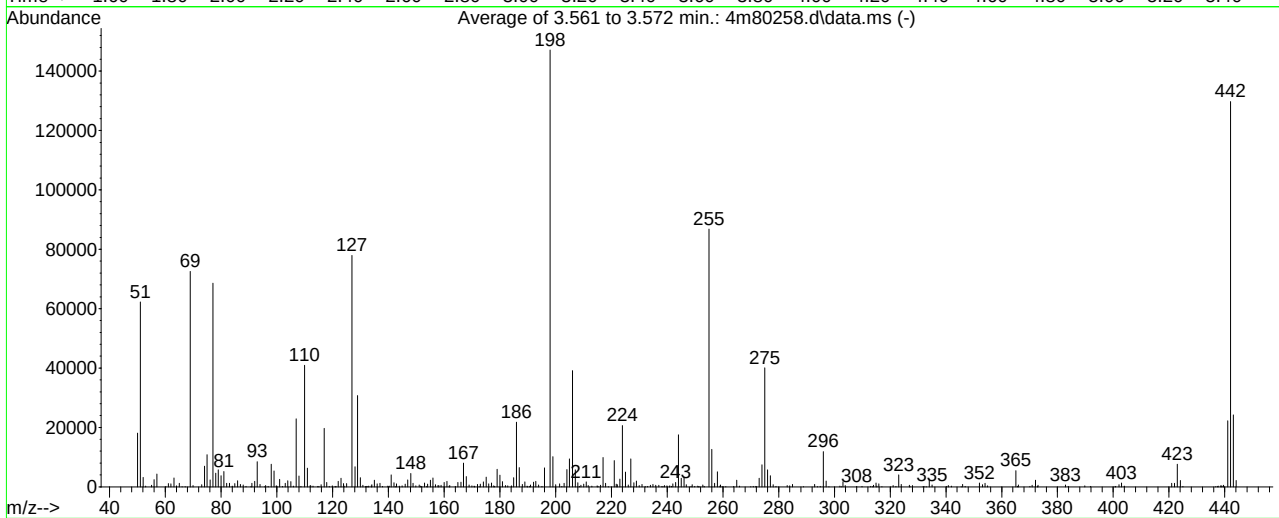
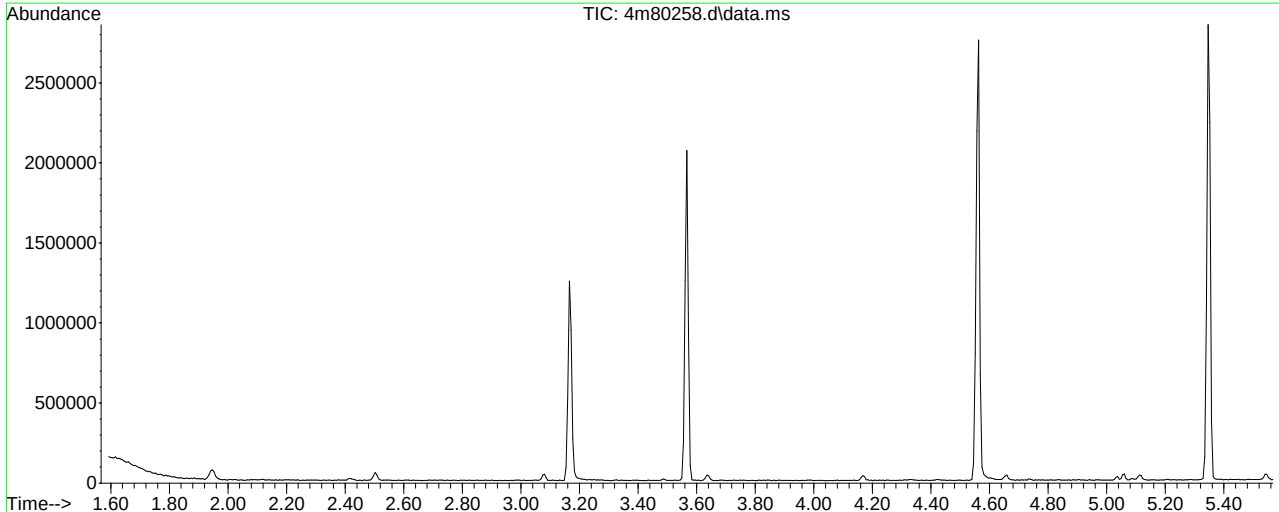
response 0

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\data\dftpp\4m3762\4m80258.d Vial: 1
Acq On : 30 Nov 2018 9:53 am Operator: christc2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3762,1000,,,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 345, 346, 347; Background Corrected with Scan 340

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.4	62295	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	49.3	72509	PASS
70	69	0.00	2	0.6	456	PASS
127	198	40	60	53.0	77891	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	147072	PASS
199	198	5	9	6.9	10166	PASS
275	198	10	30	27.3	40096	PASS
365	198	1	100	3.7	5386	PASS
441	443	0.01	100	91.7	22231	PASS
442	198	40	100	88.2	129709	PASS
443	442	17	23	18.7	24251	PASS

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	18064	64.05	295	78.10	4543	89.00	121
51.05	62295	65.05	1213	79.00	5695	90.80	146
52.10	3187	66.00	73	80.00	3768	91.05	1152
52.95	241	67.20	72	81.00	5120	92.05	1802
55.05	569	69.00	72509	82.05	1151	93.00	8502
55.95	2387	69.95	456	83.00	1195	94.00	781
57.00	4347	73.05	673	84.00	204	95.70	97
60.20	69	74.05	6949	84.90	1116	95.95	431
61.10	1088	75.00	10830	85.95	2027	96.90	107
62.05	1030	76.10	2328	86.95	851	98.00	7583
63.10	2937	77.10	68597	87.95	581	99.00	5359

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
99.80	295	110.00	40947	119.95	336	130.00	3045
100.00	238	111.00	6284	120.90	125	130.85	492
101.00	2486	111.95	403	121.20	106	131.80	88
102.00	173	112.20	312	122.00	1888	132.00	191
103.00	1205	112.95	197	123.00	2872	132.30	131
103.95	2046	114.70	188	123.90	1107	132.70	131
105.00	1799	115.10	115	124.10	265	132.95	252
105.90	283	115.95	718	125.05	1055	133.90	307
107.00	22918	117.00	19724	127.00	77891	134.05	757
108.00	3606	117.95	1503	128.05	6777	135.00	2200
108.70	144	118.80	191	129.00	30751	136.00	1011

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
137.00	1176	147.00	2332	156.05	2969	166.05	1604
137.90	139	148.05	4465	156.95	685	167.00	8029
139.80	281	148.90	1181	157.85	470	168.00	3468
140.30	283	149.90	360	158.10	390	169.00	634
141.00	4025	151.05	619	158.95	506	169.95	347
142.00	1346	151.60	195	160.00	1444	170.80	267
142.50	102	152.00	190	161.00	1843	171.00	121
142.95	1028	153.00	1312	161.80	252	171.95	780
143.95	211	153.80	148	162.05	394	172.60	88
144.90	341	154.05	899	164.00	183	173.00	923
146.05	929	155.10	2216	164.95	1434	174.05	1672

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
175.10	3264	185.00	3055	193.85	596	206.10	39139
176.05	979	186.00	21781	195.10	179	207.10	5734
177.00	1280	187.00	6498	196.00	6364	208.00	1414
177.85	299	188.10	843	198.00	147072	208.60	116
178.10	184	189.00	1658	199.00	10166	209.05	499
179.00	5893	189.80	199	200.00	668	210.10	906
180.00	3946	190.00	67	201.45	963	211.00	1645
180.95	1731	190.70	104	202.20	107	211.70	385
182.00	386	190.95	628	203.00	1151	213.00	218
182.85	321	192.05	1587	204.05	5770	214.95	342
184.10	368	192.90	1826	205.00	9401	215.20	180

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
216.10	569	227.00	9429	238.10	157	246.05	3245
217.00	9902	228.05	1385	238.50	77	246.90	667
217.95	1193	229.00	1924	239.00	385	248.60	110
218.90	85	230.00	452	239.95	355	248.95	665
221.00	8821	231.00	828	240.80	90	249.90	115
221.75	885	232.20	86	240.95	375	250.95	235
222.10	719	233.00	188	241.50	107	251.20	69
223.05	2592	234.00	536	242.00	1010	251.50	69
224.00	20625	234.95	826	243.05	1433	252.85	603
225.05	4991	235.95	529	244.05	17506	253.30	160
226.05	650	237.05	558	245.10	2906	255.00	86763

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
256.00	12585	270.00	68	283.05	463	302.50	92
257.00	1230	270.85	137	283.95	288	303.10	1631
258.00	5020	271.80	162	285.00	829	303.90	395
258.90	253	272.10	71	288.90	93	307.95	170
259.10	594	273.00	2893	292.90	854	309.90	106
259.70	72	274.00	7392	293.90	88	313.00	122
260.00	97	275.00	40096	294.90	122	313.60	97
261.00	89	276.05	5682	296.05	11860	314.05	557
263.90	172	277.00	3764	297.00	1937	314.95	1241
265.00	2239	278.00	665	298.00	72	315.20	246
266.00	219	279.00	106	301.95	210	315.95	954

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
317.00	68	334.05	2617	354.95	327	389.85	291
321.05	456	335.05	652	365.05	5386	391.80	143
322.10	119	340.20	119	365.70	184	400.70	78
323.05	4024	340.85	441	365.95	582	400.90	109
323.95	760	341.95	272	370.10	107	402.05	702
326.85	531	345.50	84	370.95	525	402.95	1243
327.10	174	345.95	793	372.10	2235	404.00	271
328.00	392	346.90	116	372.80	158	421.00	1157
331.80	88	352.05	1289	373.05	493	422.00	1184
332.10	126	353.10	749	382.90	655	423.00	7619
332.90	96	354.05	1216	383.90	150	424.05	2080

Average of 3.561 to 3.572 min.: 4m80258.d\data.ms

dftpp

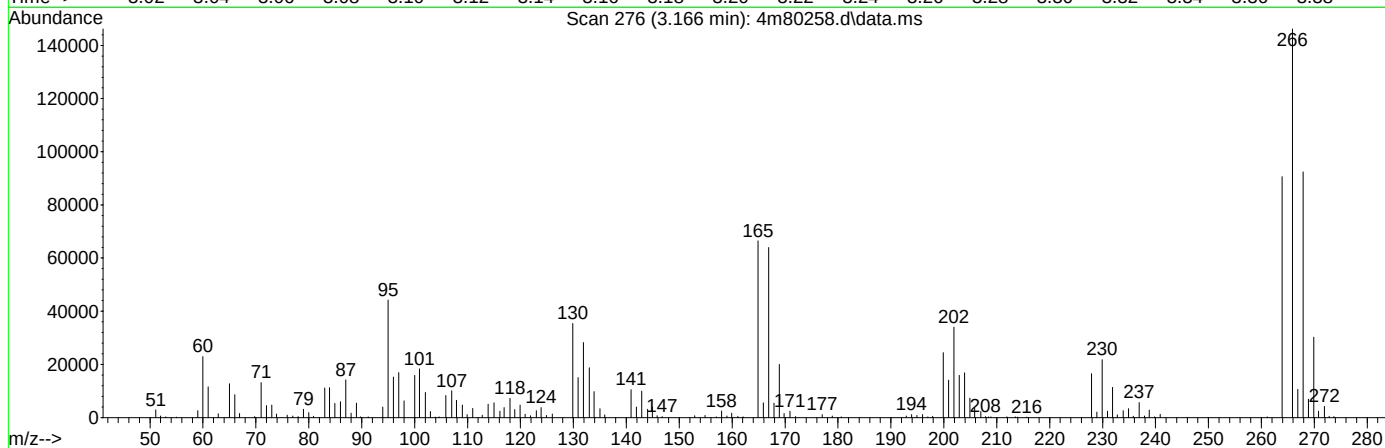
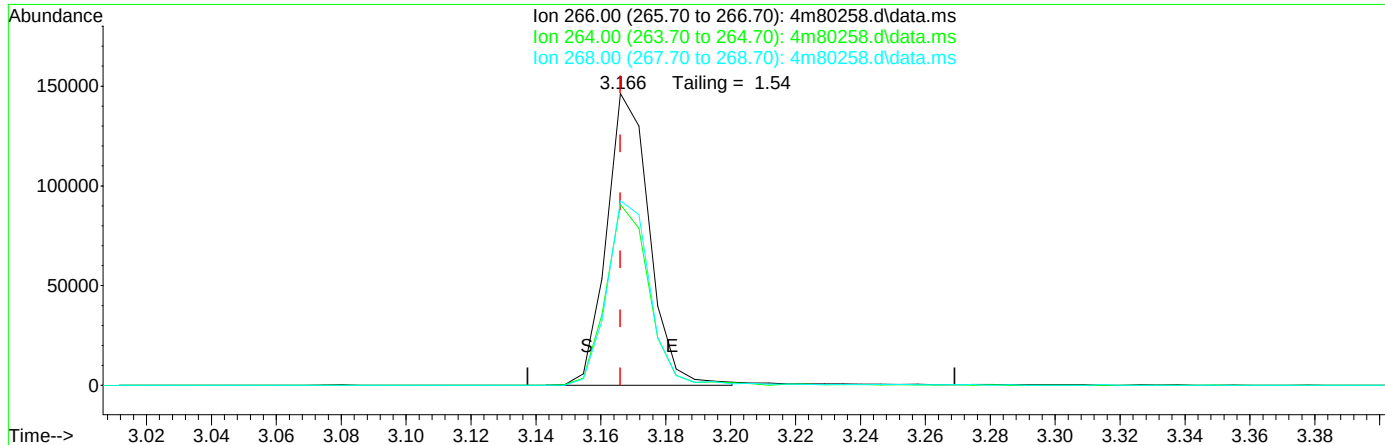
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
425.00	174	444.05	2082				
436.70	78						
437.30	126						
437.65	255						
438.55	315						
438.80	380						
439.40	202						
439.60	489						
441.10	22231						
442.10	129709						
443.10	24251						

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\data_aimeel\e4m3762\
Data File : 4m80258.d
Acq On : 30 Nov 2018 9:53 am
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3762,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : GCMS4M

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFPP4M.RES
Quant Time: Dec 03 13:09:51 2018
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Mon Dec 03 13:09:44 2018
Response via : Initial Calibration



TIC: 4m80258.d\data.ms

(1) pentachlorophenol (t)

3.166min (0.000) 8.30ppb

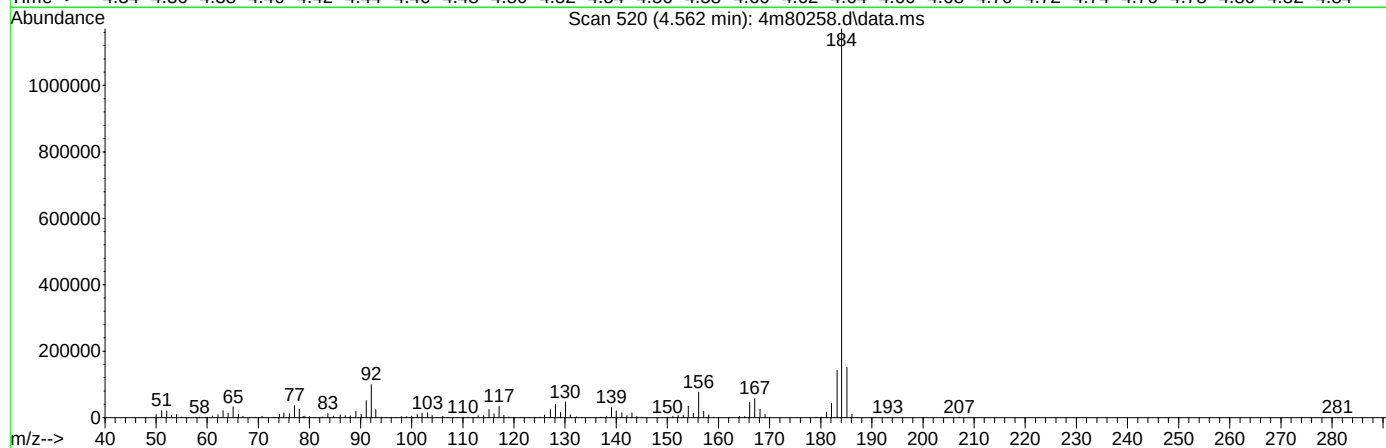
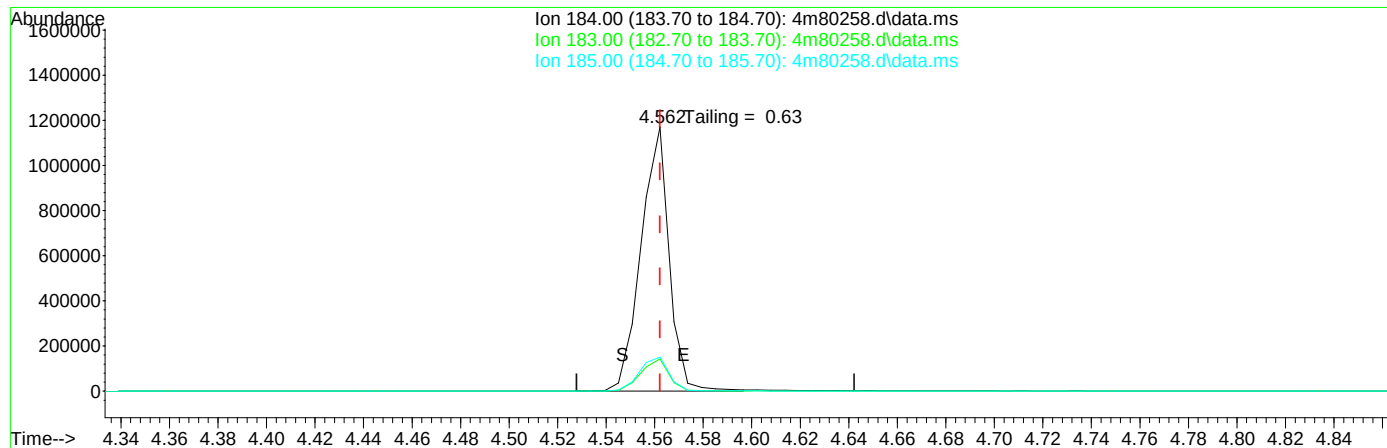
response 136972

Ion	Exp%	Act%
266.00	100	100
264.00	62.00	60.97
268.00	63.20	62.66
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\data_aimeel\e4m3762\
Data File : 4m80258.d
Acq On : 30 Nov 2018 9:53 am
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3762,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : GCMS4M

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFTPP4M.RES
Quant Time: Dec 03 13:09:51 2018
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Mon Dec 03 13:09:44 2018
Response via : Initial Calibration



TIC: 4m80258.d\data.ms

(2) benzidine (t)

4.562min (0.000) 15.96ppb

response 952868

Ion	Exp%	Act%

184.00	100	100

183.00	12.20	12.34

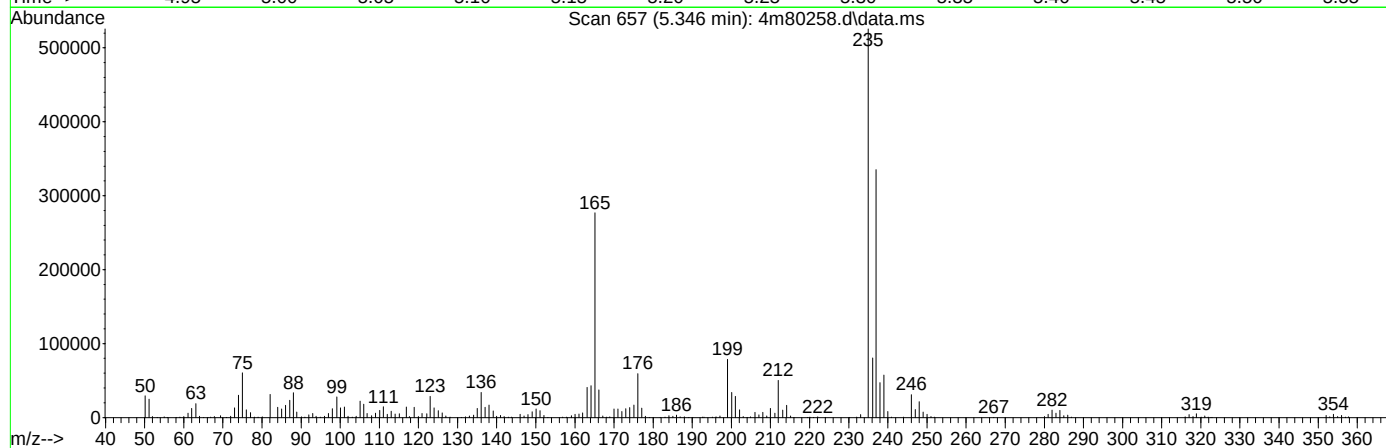
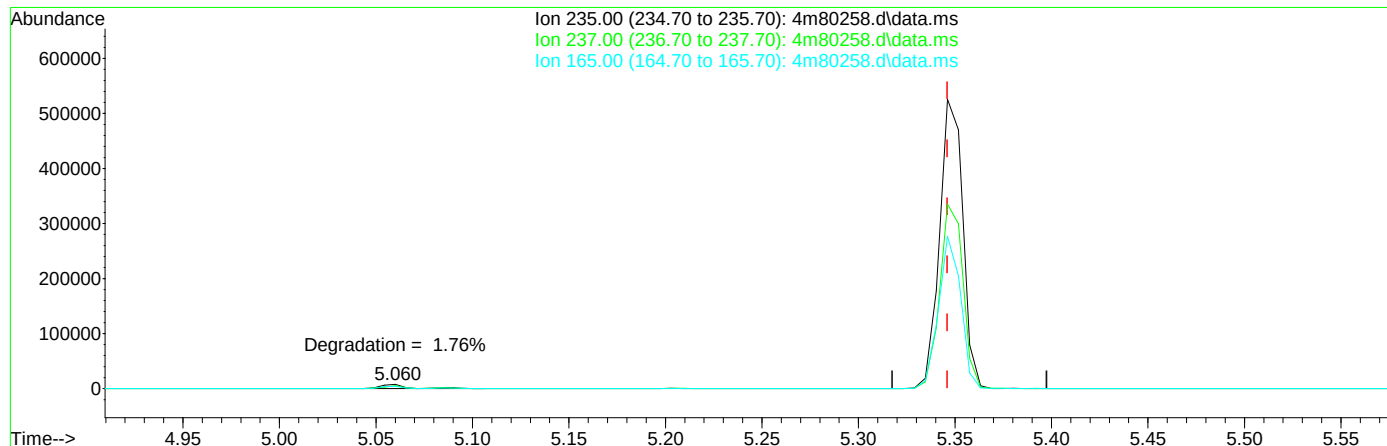
185.00	12.90	13.67

0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\data_aimeel\e4m3762\
Data File : 4m80258.d
Acq On : 30 Nov 2018 9:53 am
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3762,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : GCMS4M

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFTPP4M.RES
Quant Time: Dec 03 13:09:51 2018
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Mon Dec 03 13:09:44 2018
Response via : Initial Calibration



TIC: 4m80258.d\data.ms

(3) ddt (t)

5.346min (0.000) 15.88ppb

response 439399

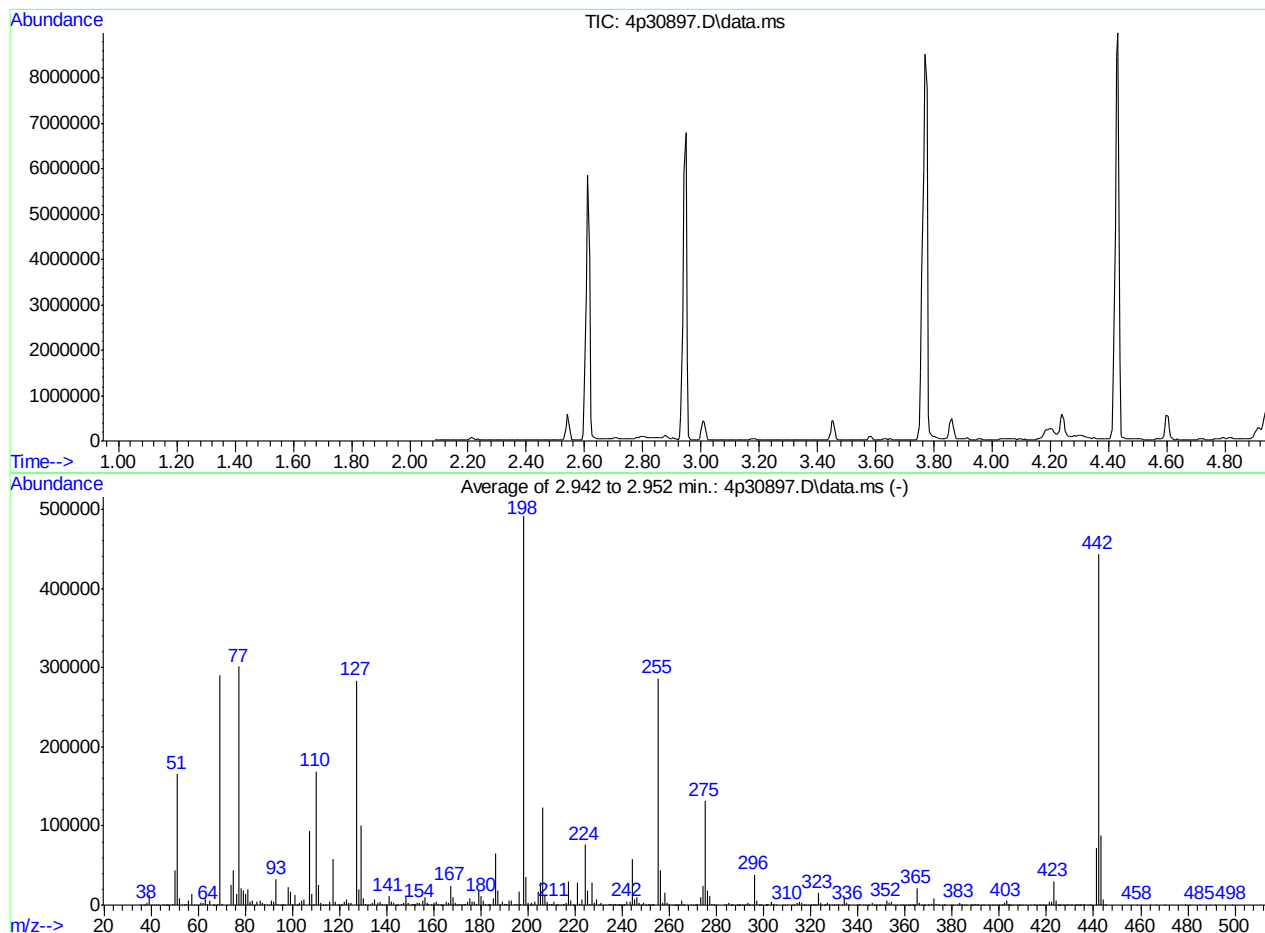
Ion	Exp%	Act%
235.00	100	100
237.00	63.70	63.93
165.00	52.60	50.42
0.00	0.00	0.00

DFTPPR

Data File : C:\msdchem\1\DATA\E4P1702\4p30897.D
 Acq On : 21 Nov 2018 11:01 pm
 Sample : dftpp
 Misc : op16733a,e4p1702,1000,,,1,1
 MS Integration Params: rteint.p

Vial: 1
 Operator: christc2
 Inst : MS4P
 Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS



AutoFind: Scans 161, 162, 163; Background Corrected with Scan 153

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.7	165744	PASS
68	69	0.00	2	0.7	1902	PASS
69	198	0.00	100	59.1	290290	PASS
70	69	0.00	2	0.6	1684	PASS
127	198	40	60	57.8	283890	PASS
197	198	0.00	1	0.4	1935	PASS
198	198	100	100	100.0	491114	PASS
199	198	5	9	7.1	34831	PASS
275	198	10	30	26.8	131453	PASS
365	198	1	100	4.5	21904	PASS
441	443	0.10	100	83.3	72890	PASS
442	198	40	100	90.3	443456	PASS
443	442	17	23	19.7	87536	PASS

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.20	32	45.20	163	56.10	6045	67.00	582
36.10	60	46.20	79	57.10	14601	68.10	1902
36.80	51	46.80	27	58.05	495	69.10	290290
37.15	544	47.10	104	59.00	99	70.15	1684
38.10	2313	49.15	1284	60.20	138	72.05	138
39.15	12270	50.10	43884	61.10	2338	74.10	24942
40.20	622	51.10	165744	62.10	3114	75.05	43515
41.15	190	52.10	7895	63.05	7843	76.15	14876
42.15	99	53.15	494	64.15	1226	77.10	301429
43.00	59	54.10	43	65.10	5063	78.10	21498
45.00	5	55.10	1000	66.15	444	79.05	18880

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
80.10	14733	91.05	5199	101.10	13249	112.10	2530
81.10	20227	92.10	4088	101.90	241	112.80	327
82.05	4393	93.10	33048	102.10	167	113.15	628
83.10	5779	94.00	1923	103.05	3246	114.05	24
84.00	762	94.95	409	104.10	6169	114.30	118
85.10	3858	95.15	91	105.10	6892	115.15	280
86.10	5472	96.10	1825	107.10	94070	116.00	3846
87.10	2394	96.80	184	108.10	13892	117.05	57648
88.10	1025	98.10	23376	109.00	1005	118.05	4137
89.05	554	99.10	17718	110.10	168994	119.05	634
90.00	226	100.05	1383	111.10	26212	119.50	280

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
120.20	916	131.00	1284	142.10	4094	151.20	935
120.70	43	132.05	720	143.05	2882	151.50	553
121.25	198	133.10	209	144.00	241	151.85	1116
122.10	4738	134.10	2379	144.20	441	152.10	573
123.05	6772	135.05	7649	144.95	134	153.10	2780
124.10	3236	136.10	2501	146.05	1708	154.05	2863
125.10	3313	137.05	4398	147.05	2613	155.15	6045
127.10	283890	137.95	943	148.05	11638	156.10	9494
128.10	19820	139.20	336	149.00	2448	157.10	2602
129.05	100379	140.10	1139	150.05	466	157.90	1554
130.10	8509	141.05	11990	150.95	756	159.10	1713

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
160.10	3504	169.15	2604	178.00	1230	187.10	18731
161.10	4837	169.80	92	179.10	17975	188.05	1522
162.05	1405	170.00	615	180.10	11878	189.10	3628
162.85	102	171.10	1057	181.05	5640	190.10	816
163.15	434	172.00	1873	182.00	803	190.40	129
163.60	197	173.00	1422	182.70	138	191.10	1655
164.00	424	173.15	1402	183.10	695	192.05	6304
165.10	3691	174.10	4480	183.60	152	193.10	6043
166.15	3312	175.10	9122	184.05	1346	194.15	1369
167.10	24590	176.15	3793	185.10	8598	195.05	845
168.10	10242	177.10	4031	186.10	65632	196.10	17718

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
196.80	1935	207.10	12963	214.70	100	225.10	18564
198.05	491114	208.00	3663	215.05	1210	226.20	1042
199.10	34831	209.00	824	216.15	2224	227.10	28179
200.10	2933	210.00	204	217.05	30123	228.05	3402

200.90	280	210.25	2034	218.10	5030	229.10	6453
201.55	2918	211.05	4992	219.00	265	230.10	666
202.10	485	211.70	120	219.35	331	230.60	72
203.10	3901	212.00	283	221.10	28484	231.10	2396
204.10	16826	212.20	75	222.10	2012	232.05	639
205.05	29077	213.00	459	223.05	7636	233.05	490
206.05	123253	213.95	82	224.05	75948	234.05	1979

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
234.90	625	240.50	297	249.80	99	257.10	2941
235.05	1460	241.15	2036	250.20	415	258.05	15675
236.10	1666	242.10	4278	250.70	65	259.05	2733
236.75	46	243.10	3707	251.20	846	260.10	776
237.15	2106	244.10	58464	251.80	232	261.00	199
237.70	102	245.10	7345	252.10	365	261.80	31
238.05	450	246.10	10422	252.60	703	262.40	91
238.70	67	247.00	2495	252.90	622	262.80	9
239.10	897	247.85	112	253.20	819	263.20	99
239.70	159	248.20	121	255.10	286268	263.90	315
240.15	691	249.05	2364	256.10	43736	264.10	117

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
265.05	6228	275.05	131453	286.30	120	292.30	310
265.95	1241	276.05	19125	286.70	21	293.05	2794
266.15	124	277.00	11638	287.10	47	293.80	293
267.80	133	278.10	1782	288.70	37	294.10	351
269.05	221	278.90	77	289.00	405	294.95	176
270.10	743	279.05	330	289.30	71	296.05	38287
270.95	725	279.80	36	289.60	61	297.10	5252
271.50	110	283.10	741	290.10	397	297.80	79
272.05	1349	284.05	1168	290.80	144	298.10	121
273.05	10499	285.00	2225	291.10	167	298.40	63
274.10	23941	285.95	361	292.00	155	299.15	162

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
300.80	556	311.85	263	320.05	170	326.95	2680
301.10	567	312.70	30	320.90	367	328.05	1780
301.50	129	313.00	449	321.10	1238	329.10	274
302.05	1082	314.15	2340	322.00	328	329.80	2
303.10	4985	315.05	4726	322.20	272	330.05	82
304.00	973	316.05	2370	323.05	14934	330.90	86
304.20	170	316.85	346	324.10	2795	332.00	879
304.95	288	317.10	206	324.80	63	333.05	583
308.15	430	317.90	159	325.70	22	334.10	8947
309.05	328	319.00	143	326.00	119	335.05	2376
310.05	713	319.90	109	326.20	65	335.95	199

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
336.20	127	348.00	209	359.00	385	366.05	3498
339.20	114	349.00	72	359.60	124	366.95	223
340.05	228	349.60	27	360.30	117	367.80	122
341.00	1191	350.30	66	361.25	132	368.50	82
342.10	213	351.10	468	361.90	109	369.80	108
343.10	89	352.10	5629	362.30	44	370.05	194
344.00	20	353.00	3005	363.00	46	371.05	1611
344.70	152	354.10	4448	363.30	83	372.05	8900
346.00	3011	355.05	457	363.50	83	373.10	1941
346.90	172	356.40	72	363.95	400	373.90	27
347.10	206	358.00	163	365.00	21904	374.15	261

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
375.70	62	388.00	35	395.80	101	404.70	51
376.50	32	388.20	48	396.80	134	405.20	364
377.10	254	388.75	71	397.70	58	406.00	29
379.20	56	389.90	886	398.65	71	407.30	19
380.10	64	390.10	413	400.00	55	408.20	26
382.10	97	390.60	230	400.80	258	409.05	141
383.10	3112	391.00	600	401.05	285	410.00	243
383.80	361	392.00	610	402.00	3074	411.00	39
384.10	195	393.10	115	403.00	5101	413.25	159
385.05	281	393.80	34	403.80	280	414.40	36
386.00	123	395.10	82	404.05	1375	415.00	252

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
415.90	21	425.20	119	432.40	168	438.50	20
417.10	168	425.60	112	432.80	216	439.05	85
417.35	91	425.90	77	433.10	77	441.10	72890
418.25	42	426.70	377	433.60	156	442.10	443456
418.80	19	427.35	156	434.20	204	443.05	87536
419.65	115	428.15	184	434.40	116	444.10	7554
421.00	4305	428.65	141	434.70	120	444.80	43
422.05	3641	429.30	137	435.40	35	445.10	229
423.10	30117	430.50	340	435.80	74	456.10	47
424.10	5062	430.85	4	436.20	20	458.50	48
425.00	413	432.00	236	437.20	109	460.00	41

Average of 2.942 to 2.952 min.: 4p30897.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
464.10	22						
466.60	18						
470.00	44						
478.80	48						
479.00	17						
480.80	19						
485.00	51						
489.20	55						
491.40	43						
498.60	72						

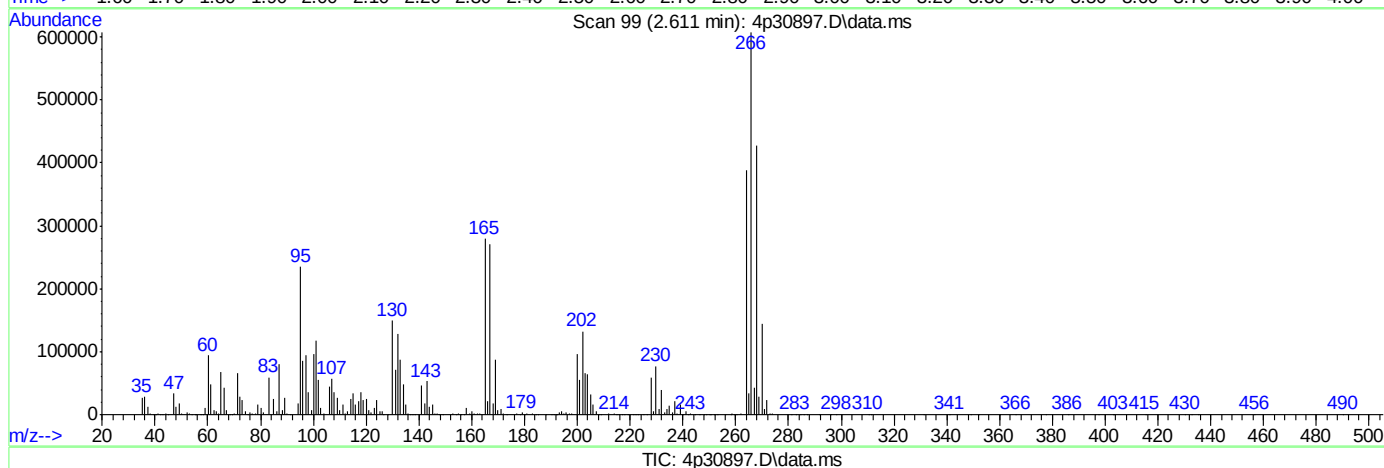
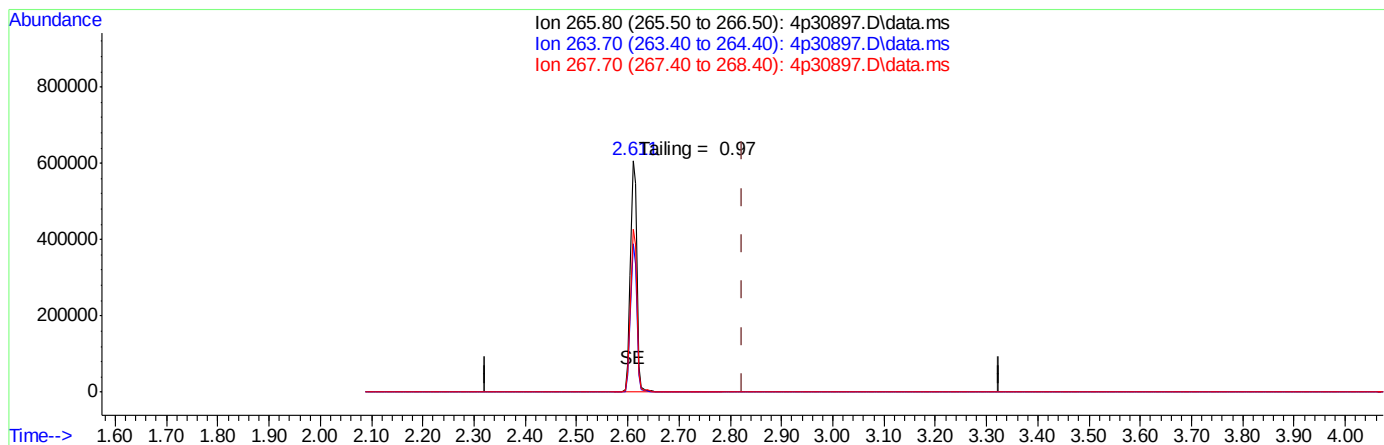
7.5.6

7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30897.D
Acq On : 21 Nov 2018 11:01 pm
Operator : christc2
Sample : dftpp
Misc : op16733a,e4p1702,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 21 23:07:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



(1) Pentachlorophenol (MC)

2.611min (-0.213) 284.43ppm

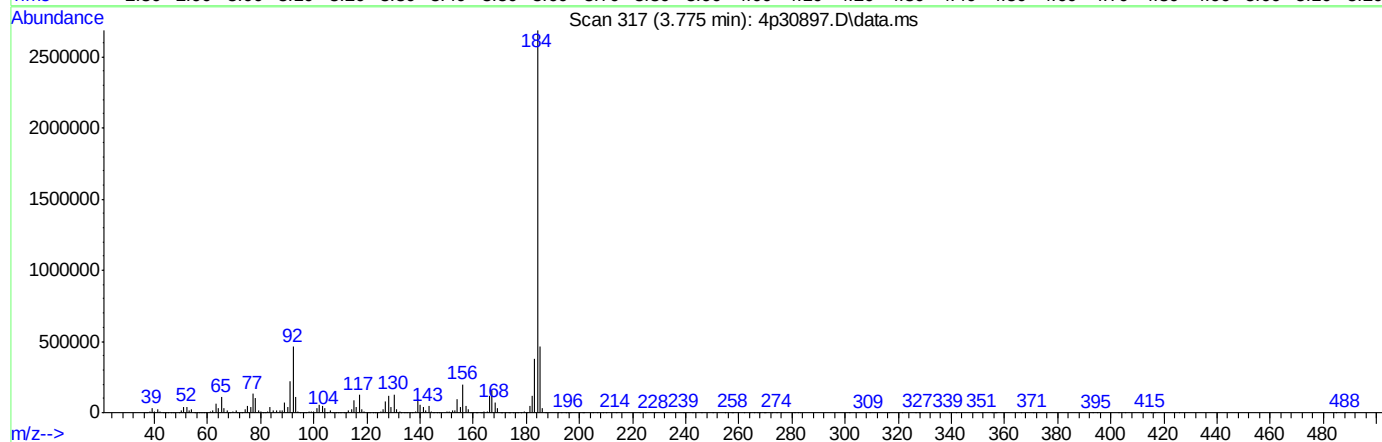
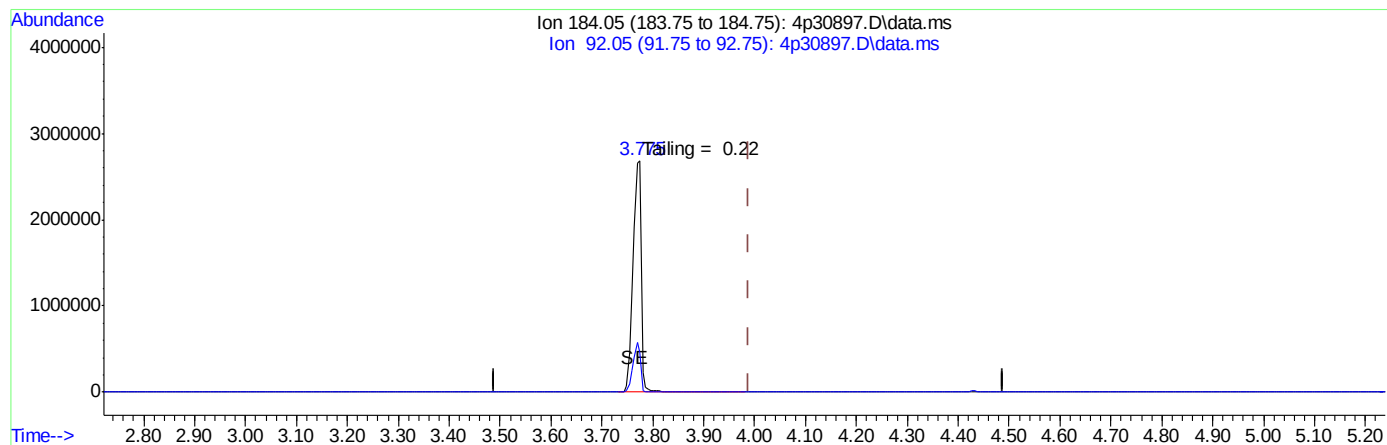
response 531830

Ion	Exp%	Act%
265.80	100	100
263.70	58.70	63.80
267.70	62.90	70.45
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30897.D
Acq On : 21 Nov 2018 11:01 pm
Operator : christc2
Sample : dftpp
Misc : op16733a,e4p1702,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 21 23:07:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



TIC: 4p30897.D\data.ms

(2) Benzidine (M)

3.775min (-0.214) 646.70ppm

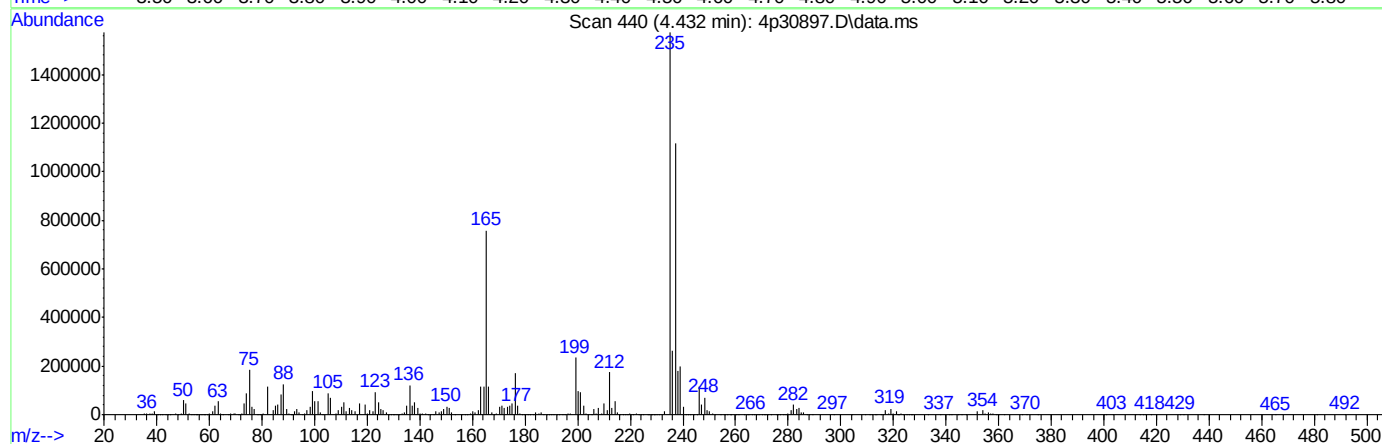
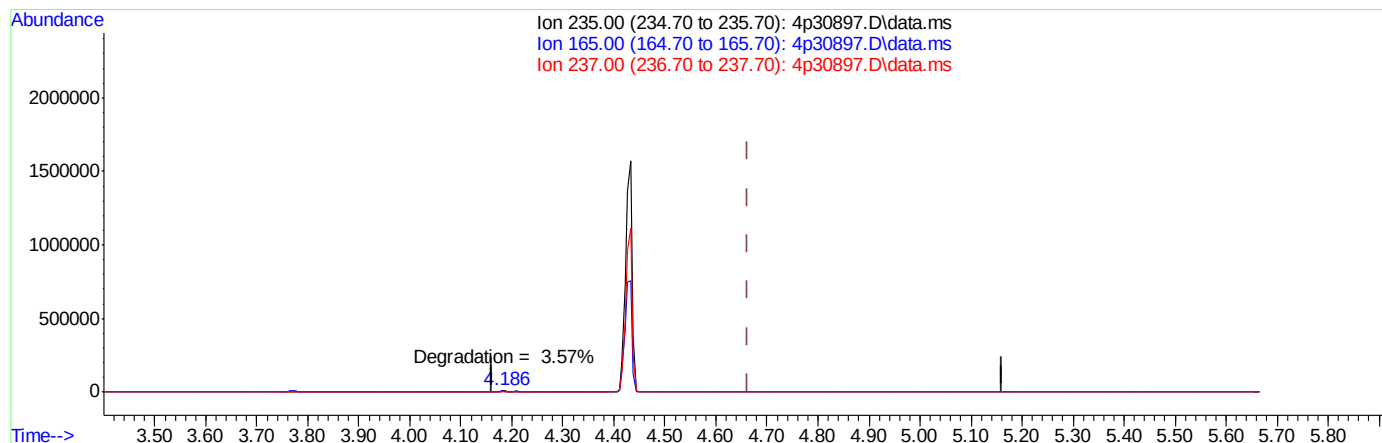
response 3011678

Ion	Exp%	Act%
184.05	100	100
92.05	10.70	17.28#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30897.D
Acq On : 21 Nov 2018 11:01 pm
Operator : christc2
Sample : dftpp
Misc : op16733a,e4p1702,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 21 23:07:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



TIC: 4p30897.D\data.ms

(3) PP-DDT (MC)

4.432min (-0.230) 737.74ppm

response 1379460

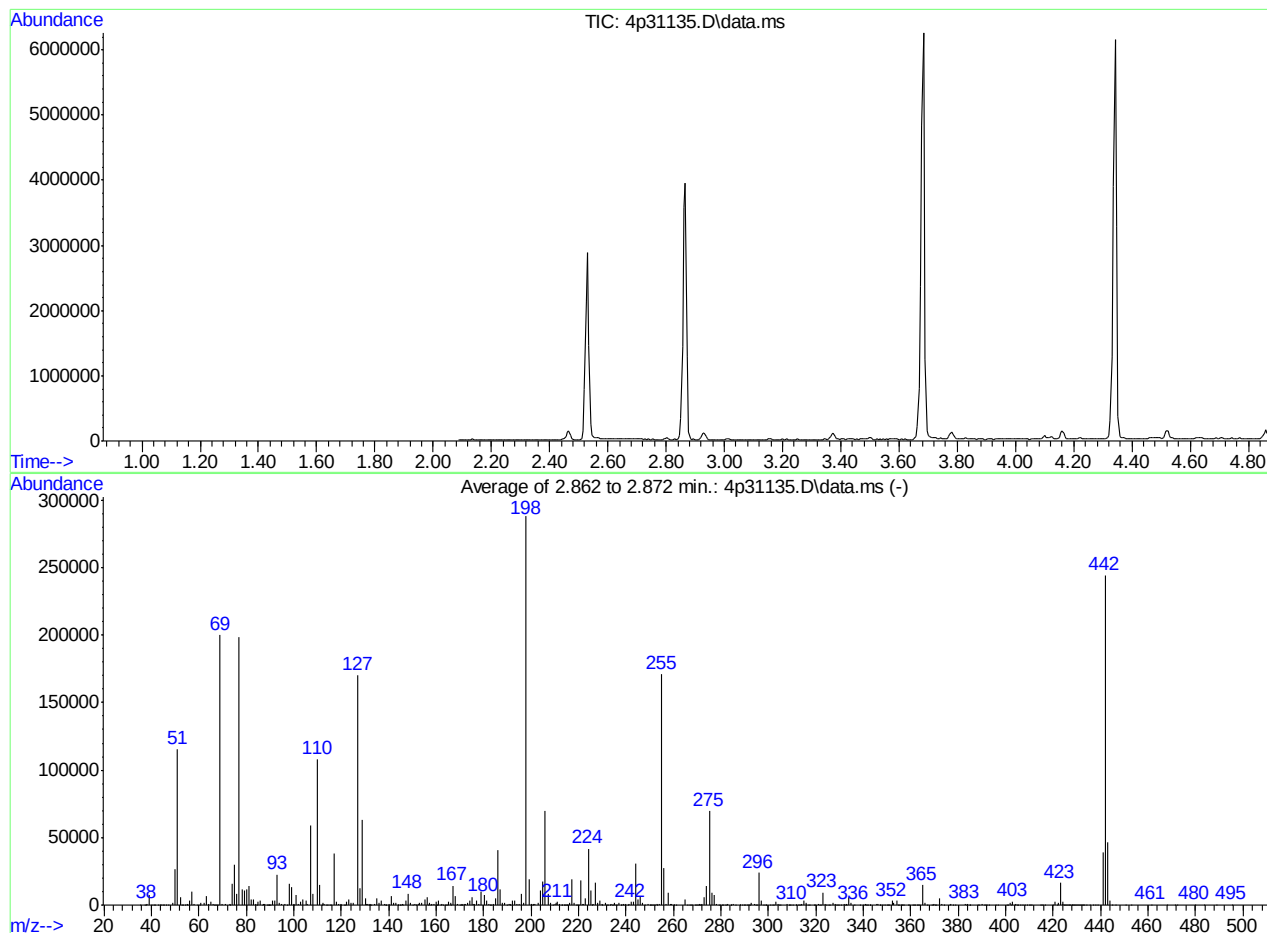
Ion	Exp%	Act%
235.00	100	100
165.00	50.70	48.16
237.00	63.50	70.97
0.00	0.00	0.00

DFTPPR

Data File : C:\msdchem\1\DATA\E4P1711\4p31135.D
 Acq On : 30 Nov 2018 11:58 am
 Sample : dftpp
 Misc : op16718a,e4p1711,1000,,,1,1
 MS Integration Params: rteint.p

Vial: 1
 Operator: christc2
 Inst : MS4P
 Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS



AutoFind: Scans 146, 147, 148; Background Corrected with Scan 137

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.1	115463	PASS
68	69	0.00	2	0.1	187	PASS
69	198	0.00	100	69.5	199938	PASS
70	69	0.00	2	0.5	1084	PASS
127	198	40	60	59.3	170592	PASS
197	198	0.00	1	0.5	1579	PASS
198	198	100	100	100.0	287839	PASS
199	198	5	9	6.7	19334	PASS
275	198	10	30	24.1	69413	PASS
365	198	1	100	5.2	14860	PASS
441	443	0.10	100	84.3	39026	PASS
442	198	40	100	84.9	244394	PASS
443	442	17	23	18.9	46304	PASS

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.10	25	44.90	82	55.00	63	65.15	2514
37.10	263	45.15	217	55.20	501	66.05	560
37.80	119	46.30	22	56.10	3206	66.30	187
38.10	1011	47.05	380	57.10	9964	66.90	79
39.10	7140	49.00	1381	58.05	449	67.30	85
40.20	117	50.10	26383	59.35	110	67.90	187
41.10	235	51.10	115463	60.20	156	69.10	199938
41.25	268	52.10	5576	61.05	1478	70.00	1084
43.10	248	52.90	222	62.05	2072	71.10	485
43.70	56	53.10	106	63.10	6897	72.90	155
44.00	206	54.10	144	64.15	766	73.20	1203

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
74.10	16221	84.50	157	91.05	3172	101.00	7170
75.10	30174	85.05	2871	92.05	3379	101.90	731
76.15	8731	86.00	2996	93.05	22807	103.05	2387
77.10	198132	86.75	35	94.10	1492	104.05	4372
78.15	12023	87.15	1095	94.95	555	105.10	3388
79.10	10911	87.90	801	96.15	1142	105.90	653
80.10	11581	88.60	70	97.00	70	107.05	58791
81.05	14219	89.00	334	98.10	15940	108.10	8494
82.05	3801	89.60	49	99.10	13136	110.10	108312
83.05	4210	89.80	19	99.90	341	111.10	15137
83.95	464	90.15	200	100.10	1072	111.80	76

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
112.10	1442	121.10	416	131.10	673	139.00	213
113.00	706	121.80	40	131.70	40	140.00	455
113.90	328	122.15	2370	132.10	537	141.05	6567
114.25	304	123.05	4098	132.40	123	142.05	1974
115.20	78	124.10	1967	132.85	249	143.00	1339
115.80	76	125.10	1974	134.10	1207	144.00	344
117.10	38261	127.05	170592	135.10	4986	144.15	206
118.05	2534	128.05	12745	136.00	2056	144.90	269
119.00	513	129.10	62728	137.00	2965	145.10	94
119.90	331	130.05	4826	138.10	448	145.80	107
120.10	557	130.90	550	138.70	148	146.05	1049

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
147.10	3154	156.80	33	163.05	415	170.40	101
148.05	8521	157.05	1550	163.90	76	170.90	377
149.05	1355	157.80	270	164.20	219	171.05	993
149.95	368	158.10	1263	164.80	174	171.90	534
151.10	1179	159.20	650	165.05	2713	172.10	859
151.70	294	160.05	2550	166.05	1650	173.05	1425
152.30	545	160.40	250	166.30	215	174.10	3146
153.00	1847	160.70	272	167.05	14498	175.10	5776
154.00	2025	161.10	2944	168.10	7023	175.85	902
155.10	4058	161.90	234	169.05	763	176.20	1171
156.10	5908	162.25	790	169.90	279	177.10	2976

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
177.90	600	188.00	1422	196.70	1579	206.10	69985
179.05	9766	189.00	1993	198.00	287839	207.10	8656
180.15	7360	189.95	421	199.05	19334	208.00	2004
181.10	3108	190.95	766	200.00	1254	208.95	430

182.20	739	191.15	459	200.20	519	209.95	581
182.75	189	191.40	95	200.80	176	210.50	1953
183.00	415	192.05	3547	201.20	538	211.10	2493
184.05	1012	193.10	3443	201.75	1096	212.10	575
185.05	4666	194.10	973	202.95	1700	212.90	51
186.10	40336	195.15	792	204.10	11192	213.15	113
187.10	11876	196.10	8247	205.10	17841	213.80	76

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
214.25	120	221.80	815	230.05	679	237.10	1514
214.85	218	222.10	813	231.15	1824	237.85	122
215.10	322	223.10	4811	231.85	112	238.20	27
215.30	73	224.10	41842	232.35	209	238.80	127
216.10	1378	225.15	10777	233.10	197	239.10	564
217.00	18729	225.90	186	233.95	1232	240.10	739
218.00	1881	226.10	836	234.20	103	240.90	387
219.10	73	227.10	16371	234.50	59	241.15	497
219.70	211	228.10	1896	235.05	1344	242.05	2291
220.00	421	229.10	3160	235.80	380	243.05	2291
221.10	18537	229.80	47	236.15	412	244.10	30600

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
245.10	4206	252.90	337	261.10	291	271.20	449
246.10	6514	253.15	1049	264.95	4346	271.50	108
247.10	1411	253.95	735	265.90	199	272.20	809
248.15	239	255.10	171282	266.95	159	273.05	5946
249.10	708	256.10	27323	267.40	55	274.05	14157
250.20	92	257.10	981	267.60	100	275.10	69413
250.40	50	258.05	9320	269.15	273	276.10	8871
250.70	40	258.80	474	269.70	37	277.05	7570
251.15	227	259.15	550	270.00	211	278.10	1097
251.60	90	260.10	329	270.40	39	279.10	384
251.95	153	260.30	97	270.90	157	279.80	78

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
280.60	18	289.05	398	296.10	23698	305.00	90
280.90	82	289.80	204	297.05	3154	307.95	455
281.90	255	290.10	252	298.05	445	308.70	96
282.25	162	291.00	105	298.80	100	309.00	57
282.95	898	291.45	187	299.10	23	309.55	49
284.10	373	291.90	126	300.95	402	310.10	382
284.30	118	292.10	321	301.80	82	311.50	85
285.20	1204	293.00	1558	302.10	122	311.70	44
286.15	139	294.10	664	303.10	2920	312.80	74
288.00	37	294.60	31	303.90	692	313.00	218
288.20	41	295.00	440	304.70	47	313.80	128

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms
dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
314.05	854	323.00	9379	332.05	888	341.40	183
315.00	3017	323.95	1180	332.30	348	341.95	290
315.90	375	324.30	153	332.85	533	342.70	41
316.10	1543	325.45	103	333.10	384	343.10	65
317.05	238	326.00	256	334.05	5462	345.90	901
317.30	83	327.10	1828	335.00	1463	346.20	624
319.10	93	328.05	575	336.05	311	347.00	301
319.95	221	328.80	57	338.80	166	347.20	226
321.05	822	329.00	131	340.00	208	348.00	68
321.85	341	329.70	29	340.90	203	348.80	29
322.20	139	330.75	89	341.05	468	350.00	32

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
350.20	99	358.90	271	368.80	169	379.00	96
351.00	87	359.50	22	369.40	114	383.00	1131
352.15	3259	360.60	61	369.85	664	383.30	144
353.00	1864	361.20	75	370.10	249	384.15	768
354.10	2982	361.90	48	370.75	405	384.80	24
354.85	367	362.50	82	372.00	5259	385.10	25
355.20	119	363.20	46	373.00	993	388.10	19
356.00	68	363.80	108	373.90	218	388.80	43
356.30	37	365.05	14860	376.60	57	390.10	798
356.60	16	366.00	2001	376.90	454	391.10	416
357.10	57	366.90	146	377.90	69	391.60	211

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
392.00	270	404.85	75	415.50	49	425.60	277
393.00	46	405.15	54	416.70	134	426.10	22
395.55	63	406.00	58	419.90	19	426.50	57
396.65	241	406.90	123	421.05	2333	426.90	52
400.70	47	408.20	46	421.80	420	427.10	77
400.95	306	409.20	79	422.05	1922	427.80	96
402.00	1507	410.10	87	423.00	16562	428.00	191
402.30	356	410.30	47	423.90	815	428.50	62
403.00	2647	410.90	26	424.05	2726	428.80	127
403.90	273	414.70	44	424.80	411	429.30	161
404.10	450	415.00	70	425.10	209	429.80	150

Average of 2.862 to 2.872 min.: 4p31135.D\data.ms

dftpp

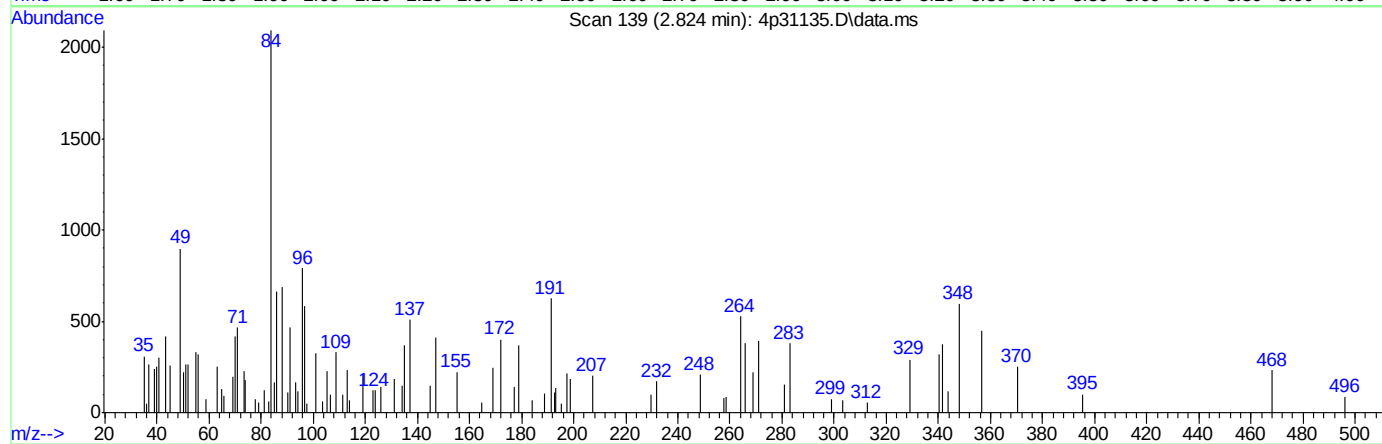
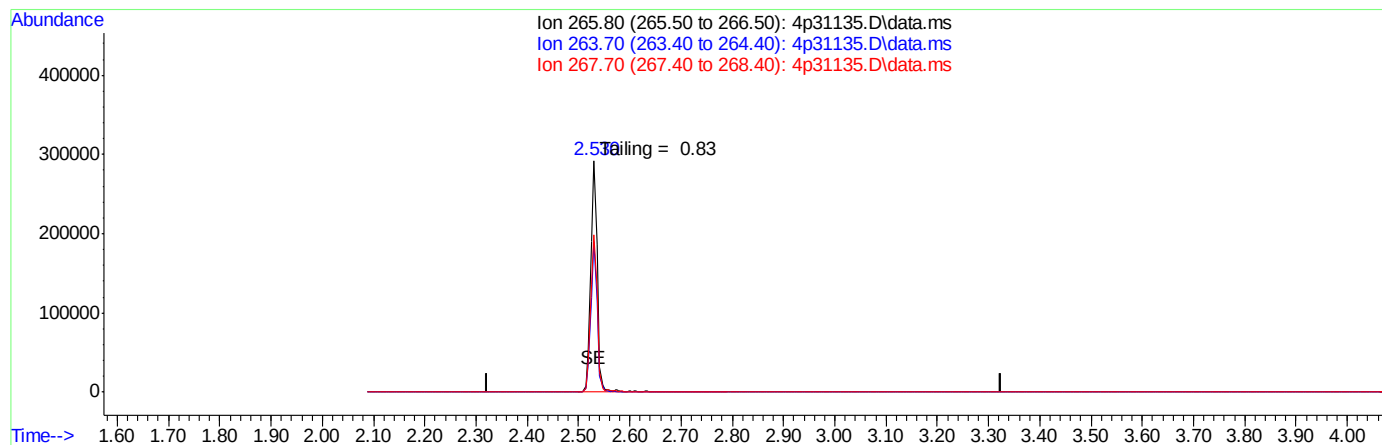
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
430.30	22	438.70	68	471.20	29		
430.70	153	441.10	39026	472.10	40		
431.30	218	442.00	244394	479.70	52		
431.55	89	443.05	46304	483.60	70		
432.25	10	444.10	3276	488.70	36		
432.70	266	445.05	212	495.30	122		
433.20	62	446.10	17				
434.20	202	450.50	70				
435.60	125	453.10	47				
437.10	42	461.30	35				
438.00	77	468.20	22				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1711\
Data File : 4p31135.D
Acq On : 30 Nov 2018 11:58 am
Operator : christc2
Sample : dftpp
Misc : op16718a,e4p1711,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 30 12:04:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



(1) Pentachlorophenol (MC)

2.824min (-2.824) 0.00ppm

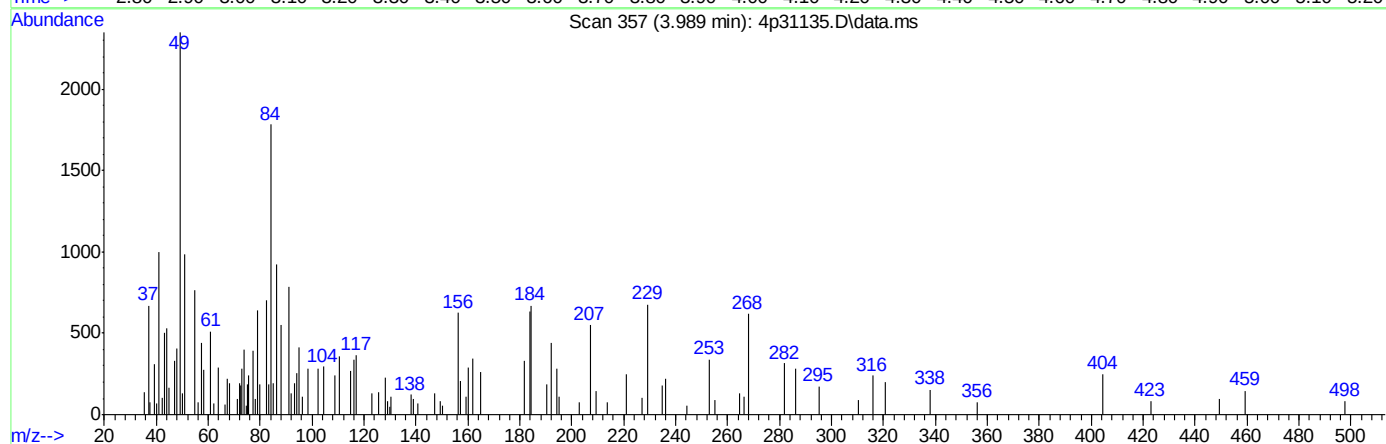
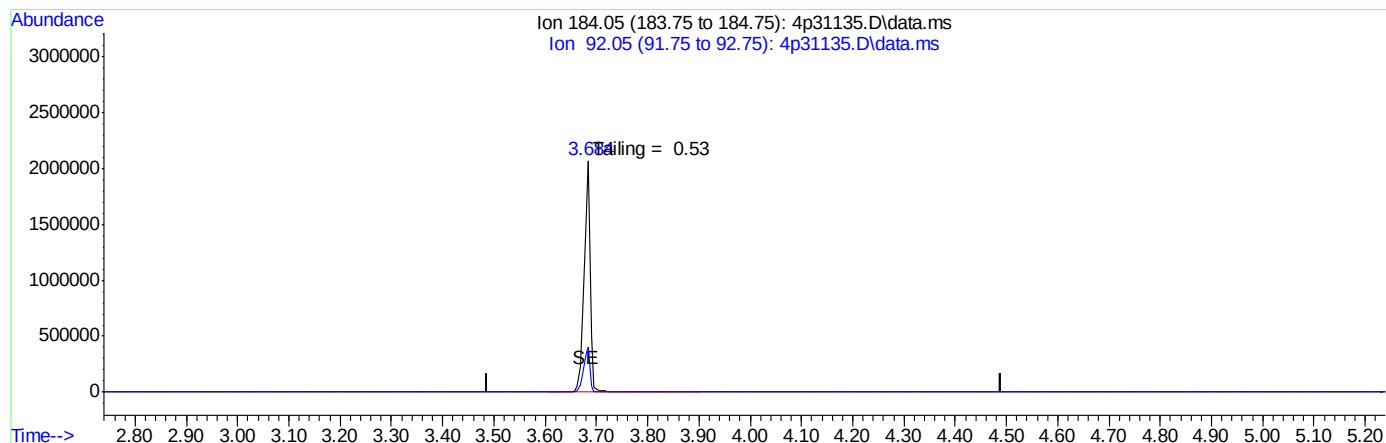
response 0

Ion	Exp%	Act%
265.80	100	0.00
263.70	58.70	0.00#
267.70	62.90	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1711\
Data File : 4p31135.D
Acq On : 30 Nov 2018 11:58 am
Operator : christc2
Sample : dftpp
Misc : op16718a,e4p1711,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 30 12:04:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



(2) Benzidine (M)

3.989min (-3.989) 0.00ppm

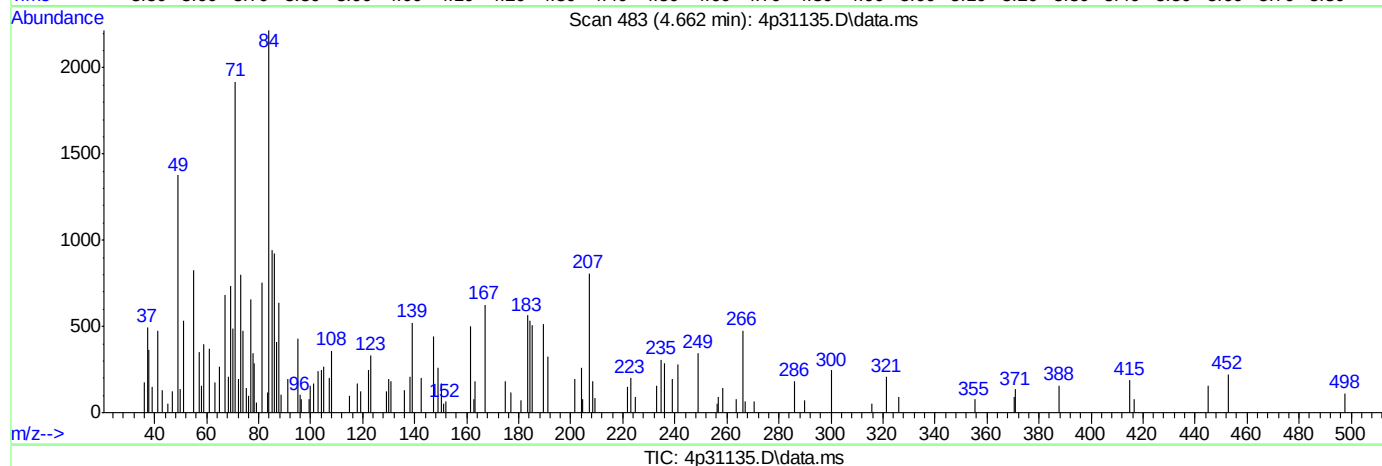
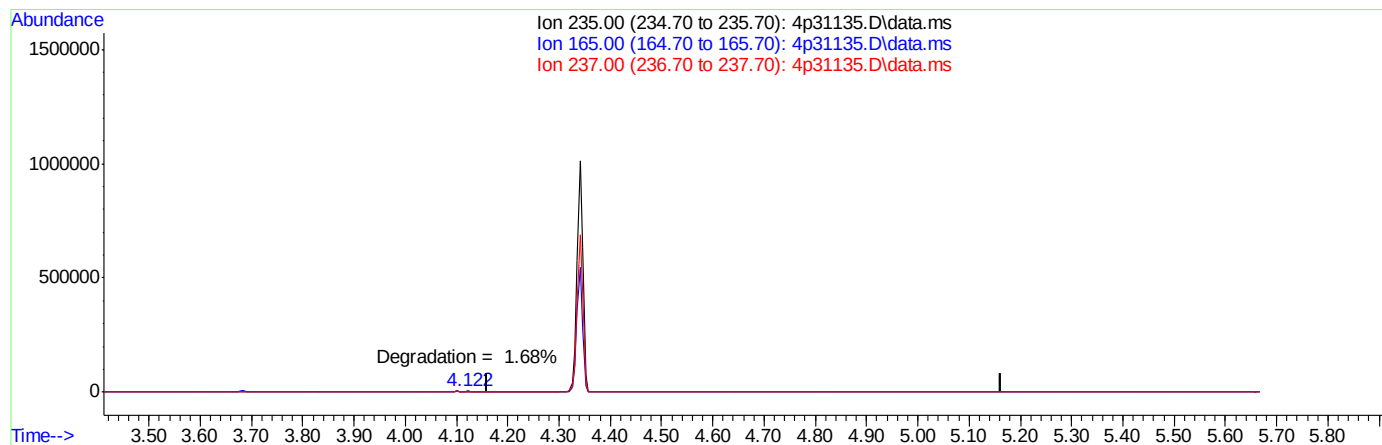
response 0

Ion	Exp%	Act%
184.05	100	0.00
92.05	10.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1711\
Data File : 4p31135.D
Acq On : 30 Nov 2018 11:58 am
Operator : christc2
Sample : dftpp
Misc : op16718a,e4p1711,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 30 12:04:35 2018
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Mar 18 08:43:31 2018
Response via : Initial Calibration



(3) PP-DDT (MC)

4.662min (-4.662) 0.00ppm

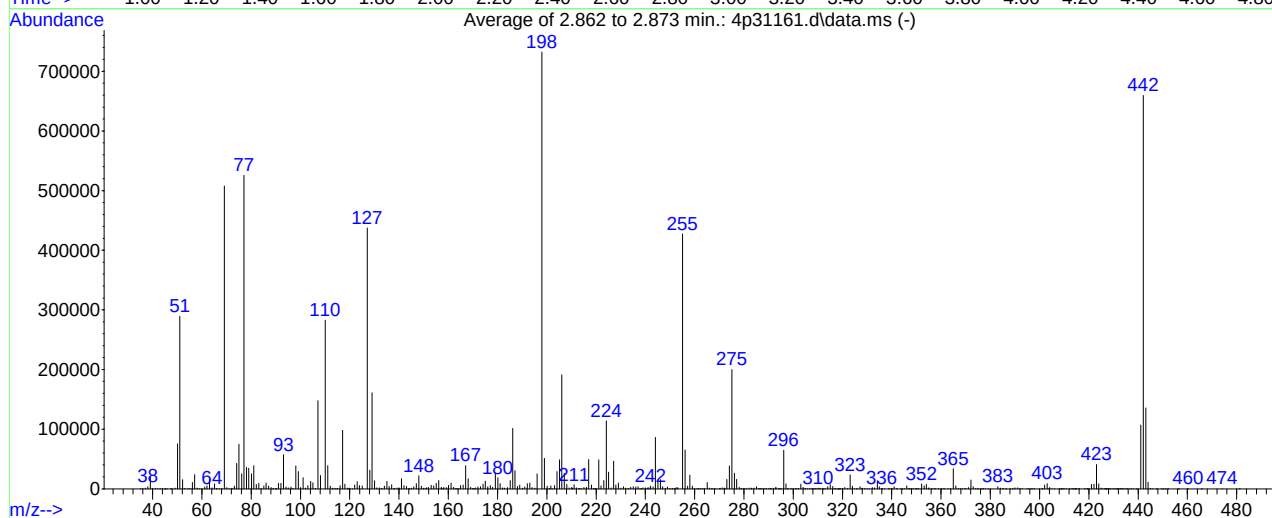
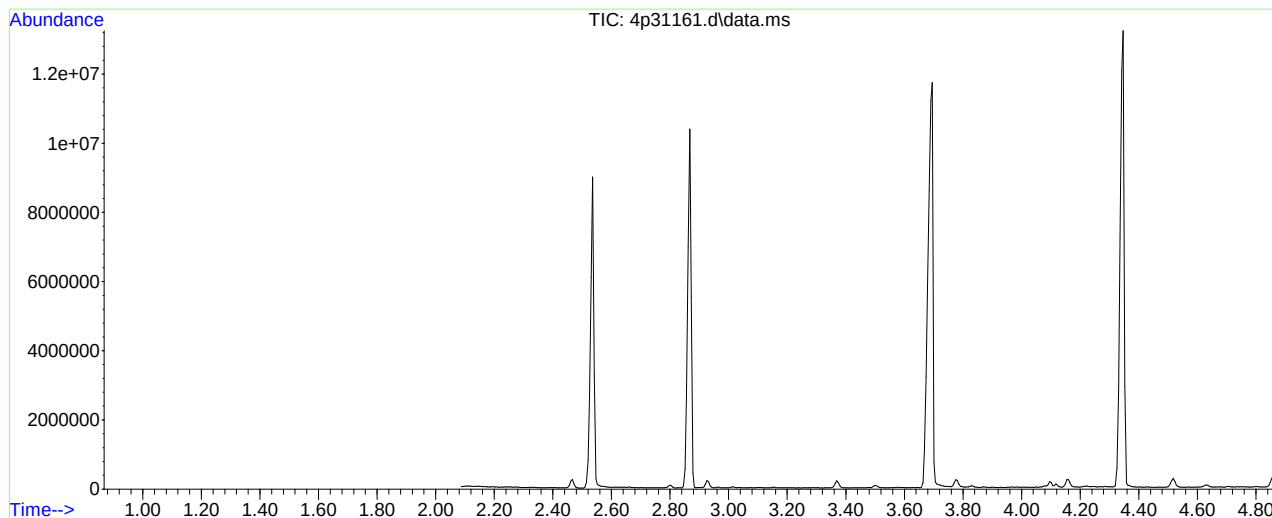
response 0

Ion	Exp%	Act%
235.00	100	0.00
165.00	50.70	0.00#
237.00	63.50	0.00#
0.00	0.00	0.00

DFTPPR

Data File : C:\msdchem\1\data\jeryllr\e4p1712\4p31161.d Vial: 1
Acq On : 30 Nov 2018 11:44 pm Operator: sufiyana
Sample : dftpp Inst : MS4P
Misc : op16718a,e4p1712,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS



AutoFind: Scans 146, 147, 148; Background Corrected with Scan 140

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	289282	PASS
68	69	0.00	2	0.2	912	PASS
69	198	0.00	100	69.3	507578	PASS
70	69	0.00	2	0.4	2199	PASS
127	198	40	60	59.7	437227	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	732203	PASS
199	198	5	9	7.0	50928	PASS
275	198	10	30	27.3	200064	PASS
365	198	1	100	4.6	33600	PASS
441	443	0.10	100	79.1	107091	PASS
442	198	40	100	90.1	659477	PASS
443	442	17	23	20.5	135427	PASS

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.10	91	45.20	454	56.10	10721	67.00	446
35.95	87	45.90	85	57.10	23957	68.05	912
37.05	1084	47.40	78	58.10	1258	69.05	507578
38.10	3560	47.70	65	59.05	436	70.10	2199
39.10	20235	49.10	980	61.10	3170	71.05	98
40.00	582	50.15	75469	62.10	5121	72.00	232
41.10	778	51.05	289282	63.10	16396	72.40	374
42.15	74	52.15	15334	64.10	1675	73.15	4546
43.10	775	53.05	557	65.10	8306	74.10	42523
44.00	146	54.30	118	65.90	203	75.05	74338
44.90	4	55.10	777	66.10	106	76.10	24932

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
77.10	525529	88.05	1927	97.00	574	108.10	22274
78.05	35848	88.80	393	98.10	38169	110.05	282642
79.05	34620	89.10	142	99.10	29087	111.10	38753
80.10	24989	89.80	22	100.05	2359	112.05	4445
81.10	38668	90.10	228	101.05	18454	113.05	1277
82.10	7317	91.10	9403	102.10	1412	113.60	278
83.05	8965	92.05	9386	103.05	5608	114.15	50
84.00	391	93.10	57107	104.10	12578	114.50	139
85.10	4885	94.10	3212	105.10	10244	115.05	884
86.10	9491	95.05	1675	106.10	857	116.10	5521
87.05	4734	96.15	2967	107.10	147885	117.10	97962

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
118.05	7816	129.10	160953	138.20	533	147.05	8574
119.05	1287	130.10	13377	139.15	1321	148.10	22104
119.60	139	131.00	1847	140.00	1873	149.10	4345
120.10	1250	132.05	1482	140.20	306	149.90	111
121.10	319	132.90	383	141.05	17028	150.10	1099
122.05	6416	133.10	203	142.05	5372	151.00	776
123.05	12070	134.00	4553	143.05	4125	151.15	1444
123.95	5603	135.05	12702	144.10	429	151.90	2689
125.05	5044	136.00	4125	144.30	551	153.05	5761
127.10	437227	137.05	6645	145.05	1311	154.05	4924
128.10	31221	137.90	559	146.05	3437	155.10	9132

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
156.10	14110	163.80	123	172.05	2890	182.90	1025
157.10	2625	164.30	510	173.10	3737	184.05	1955
157.30	714	165.05	5488	174.10	7734	185.10	13718
157.90	1086	166.05	6218	175.05	12719	186.10	101205
158.15	2201	167.10	38872	176.05	3656	187.10	30496
159.15	2324	168.10	16784	177.10	5270	188.10	3868
160.05	5715	169.05	2636	178.00	2465	189.05	6274
161.10	9784	169.85	476	179.10	26739	190.15	1221
162.10	2757	170.15	776	180.10	18764	191.10	2947
163.00	310	170.65	203	181.05	8629	192.05	8876
163.30	231	171.15	1645	182.05	1458	193.10	9574

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
194.05	2148	205.10	48747	213.50	45	223.10	13770
195.10	1267	206.10	191061	214.00	369	224.10	113845
196.10	25211	207.10	26298	215.05	2246	225.10	28000
198.00	732203	208.10	7145	216.10	2420	226.10	1631
199.00	50928	209.00	1714	217.00	49368	227.05	46099
200.10	4351	210.05	2001	218.10	6376	228.05	6254
201.00	754	210.40	1171	218.90	53	229.05	9791
201.60	5077	211.10	6744	219.15	628	230.10	1337
202.15	351	212.00	1507	219.75	932	231.10	3472
203.05	5541	212.90	373	221.10	48757	231.95	1065
204.10	28912	213.20	166	222.00	4738	232.90	130

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
233.20	295	241.10	2190	250.90	101	260.00	486
234.05	2750	241.90	1469	251.10	267	261.05	959
235.05	3371	242.15	4262	251.80	406	261.60	100
236.10	2877	243.10	2862	252.10	1042	262.10	183
237.05	3711	244.10	86195	252.80	2086	262.50	46
237.80	162	245.10	11421	253.10	1531	263.15	429
238.20	295	246.05	15174	255.10	427285	263.90	730
238.35	501	247.05	3445	256.10	65232	265.05	10409
239.10	1805	248.15	668	257.10	4569	266.00	1328
240.00	1585	249.00	3231	258.10	22971	266.80	228
240.60	549	250.00	773	259.05	4623	267.10	82

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
267.85	83	276.10	26259	284.15	1424	290.85	418
268.60	116	277.10	15822	285.10	3366	291.20	87
270.15	656	278.05	2466	286.00	731	292.00	682
270.50	353	278.90	840	286.30	168	292.90	2277
271.15	1918	279.10	155	286.70	147	293.10	1784
271.90	338	279.80	75	287.10	67	294.10	728
272.10	1362	280.30	88	287.70	174	294.50	400
272.30	806	281.05	150	288.40	285	294.90	408
273.05	15930	282.10	966	289.05	686	295.10	452
274.10	38427	282.95	1168	290.15	617	296.10	64592
275.10	200064	283.20	927	290.65	53	297.05	8280

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
297.80	457	305.05	240	311.05	294	318.30	145
298.00	193	305.80	143	311.85	141	318.80	198
299.00	198	306.65	96	312.10	287	319.00	196
299.40	33	307.25	125	312.40	89	319.30	93
300.10	242	307.80	275	312.95	604	320.05	513
301.10	766	308.05	662	314.05	3443	321.00	2326
301.50	430	308.80	359	315.05	6977	322.05	905
302.15	730	309.00	129	316.10	3837	323.10	23147
303.10	7798	309.60	149	316.90	333	324.05	4407
304.05	2674	310.10	1172	317.20	657	324.95	271
304.80	154	310.70	140	318.00	21	325.70	167

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
326.00	166	335.80	101	343.55	153	350.20	326
327.05	3363	335.95	338	344.20	20	350.60	232
327.90	1270	336.20	238	345.20	129	351.00	130
328.10	872	337.10	62	346.05	4910	352.10	8182
329.05	768	338.75	208	346.90	231	353.15	4924
330.00	417	339.20	317	347.10	762	354.05	7222
330.90	185	340.00	185	347.70	20	354.90	452
332.15	2052	340.20	158	348.15	272	355.10	1572
333.05	1839	341.00	3458	348.70	391	356.15	200
334.10	13188	342.00	153	349.60	33	356.70	61
335.00	3743	342.25	349	349.80	95	357.30	70

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
357.80	59	367.95	138	377.00	268	389.20	229
359.00	761	368.70	46	377.30	224	389.95	1460
360.15	76	369.60	296	377.90	108	391.10	1904
360.90	144	370.05	678	379.10	54	392.05	655
361.40	166	371.10	1992	383.05	3409	392.95	179
362.80	239	372.10	14806	384.05	1057	394.85	152
363.80	268	373.10	3580	384.95	190	395.50	77
365.00	33600	374.05	785	385.30	88	396.30	154
365.95	5051	374.80	59	386.20	17	396.80	99
366.90	286	375.20	57	388.10	40	397.30	172
367.10	181	376.10	24	389.00	98	398.00	181

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
400.90	340	409.10	39	415.05	780	424.05	8111
401.25	647	409.70	38	415.90	47	424.95	1316
402.05	6371	410.20	181	416.25	204	425.40	290
403.05	8529	410.90	72	418.20	146	426.20	233
403.80	411	412.20	33	418.75	66	426.50	75
404.10	2342	412.70	78	419.30	38	426.80	25
405.00	468	413.30	179	419.50	163	427.00	224
406.20	134	413.70	54	420.00	81	427.20	81
408.00	187	414.00	44	421.05	7323	427.60	87
408.60	48	414.40	30	422.05	7651	427.90	203
408.80	28	414.60	136	423.05	40845	428.50	453

Average of 2.862 to 2.873 min.: 4p31161.d\data.ms

dftpp

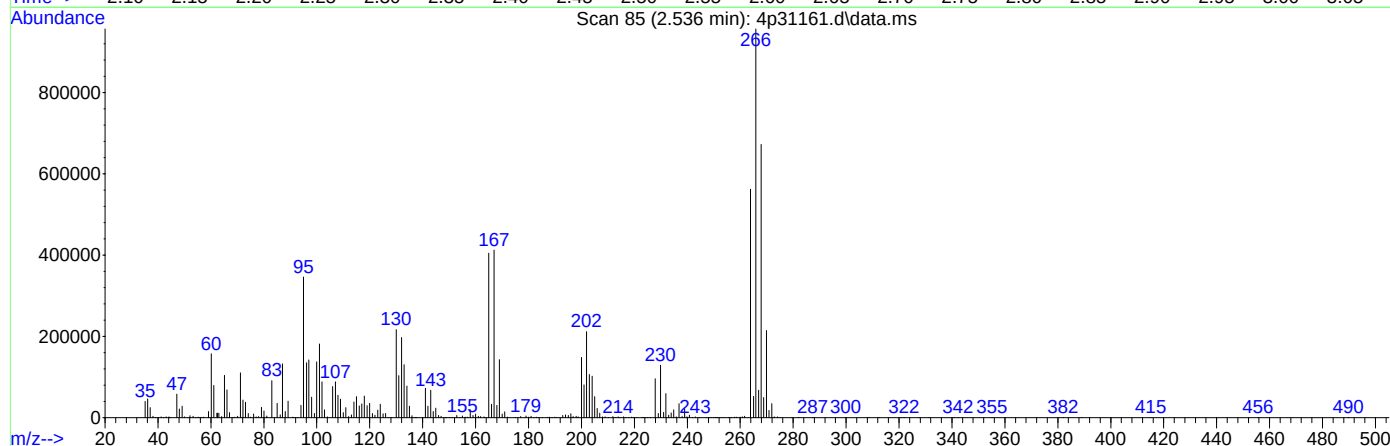
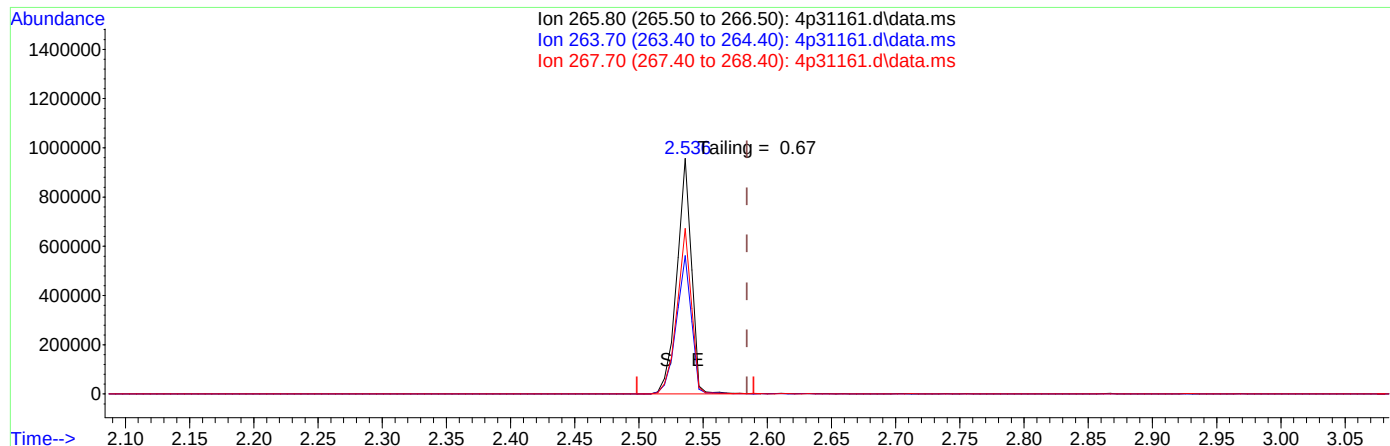
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
428.85	289	433.70	344	443.10	135427	460.30	79
429.50	249	434.15	209	444.05	10986	465.60	25
430.10	359	434.70	56	444.90	95	474.10	75
430.60	355	435.40	44	445.10	675	481.00	31
430.90	434	435.60	115	446.00	86		
431.40	234	436.60	41	447.30	23		
431.60	440	437.20	202	449.40	35		
432.00	180	438.00	58	450.00	17		
432.55	502	439.10	23	451.00	22		
432.90	231	441.10	107091	452.30	50		
433.20	278	442.10	659477	456.30	24		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jeryllr\e4p1712\
Data File : 4p31161.d
Acq On : 30 Nov 2018 11:44 pm
Operator : sufiyana
Sample : dftpp
Misc : op16718a,e4p1712,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Results File: DFTPP4P.RES
Quant Time: Dec 02 21:34:06 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Jun 20 22:27:34 2018
Response via : Initial Calibration



TIC: 4p31161.d\data.ms

(1) Pentachlorophenol (MC)

2.536min (-0.048) 405.51ppm

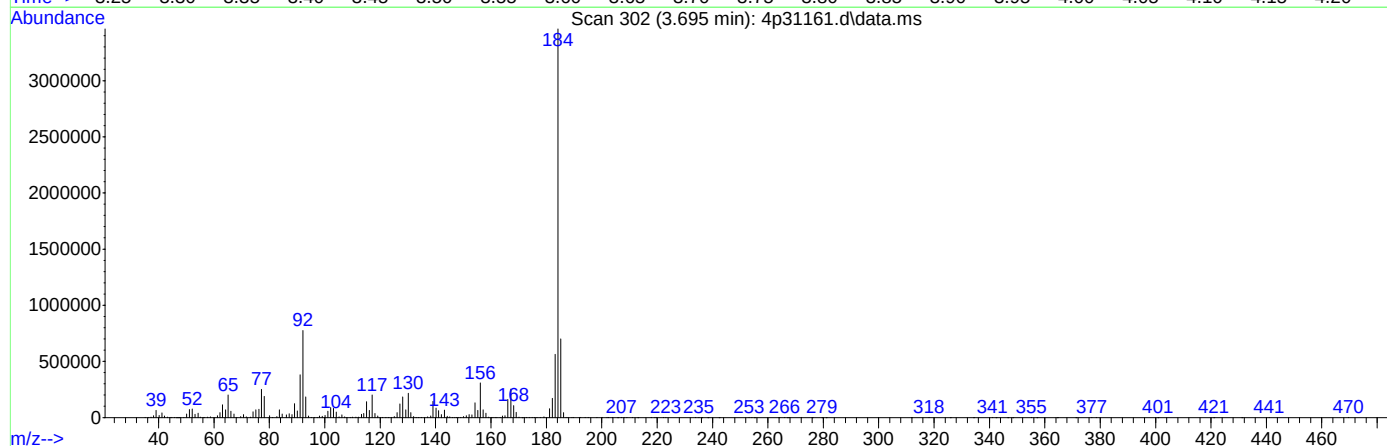
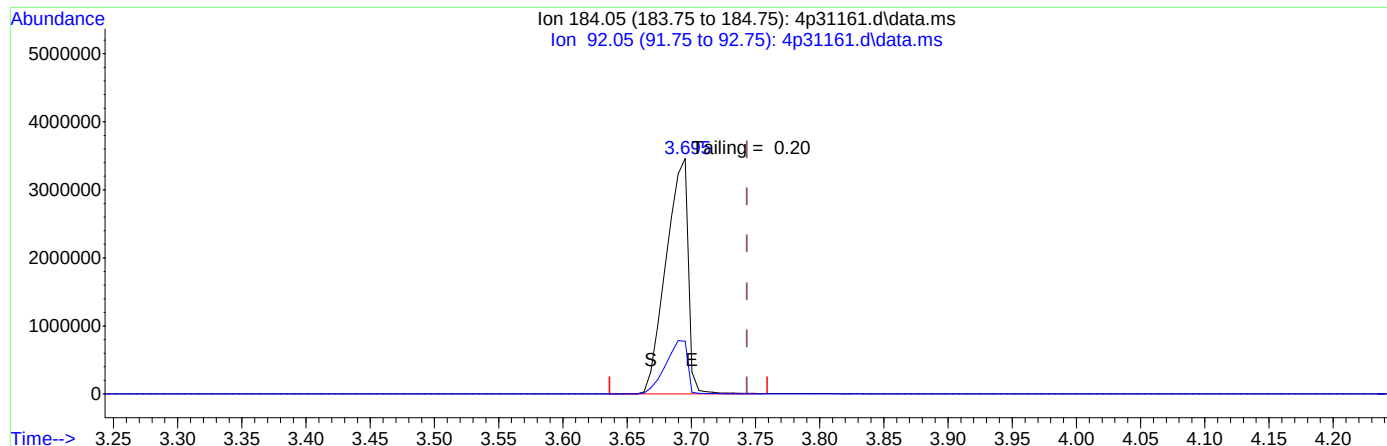
response 758236

Ion	Exp%	Act%
265.80	100	100
263.70	62.50	58.74
267.70	63.20	70.20
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jeryllr\e4p1712\
Data File : 4p31161.d
Acq On : 30 Nov 2018 11:44 pm
Operator : sufiyana
Sample : dftpp
Misc : op16718a,e4p1712,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Results File: DFTPP4P.RES
Quant Time: Dec 02 21:34:06 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Jun 20 22:27:34 2018
Response via : Initial Calibration



TIC: 4p31161.d\data.ms

(2) Benzidine (M)

3.695min (-0.048) 893.21ppm

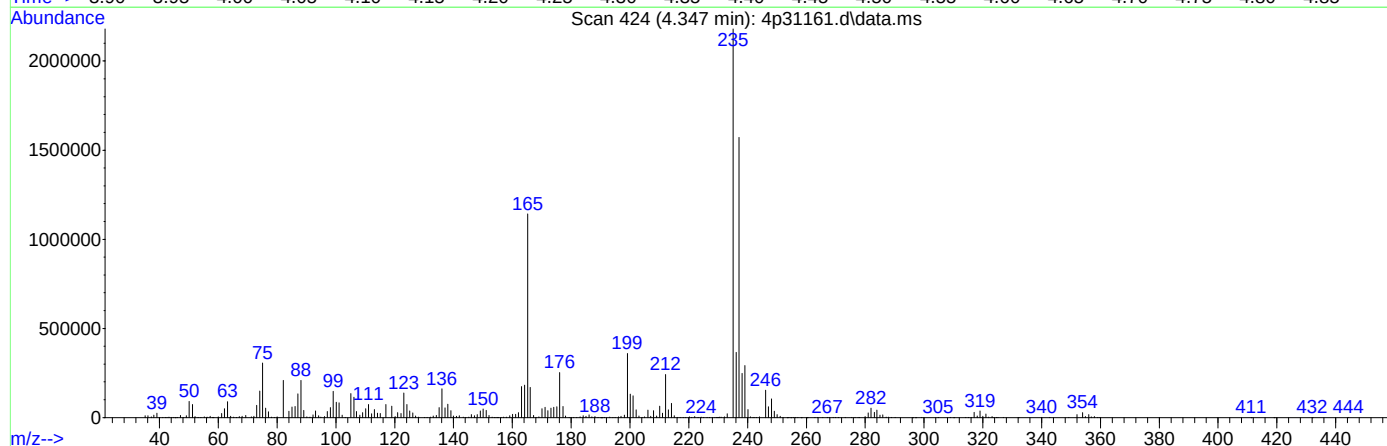
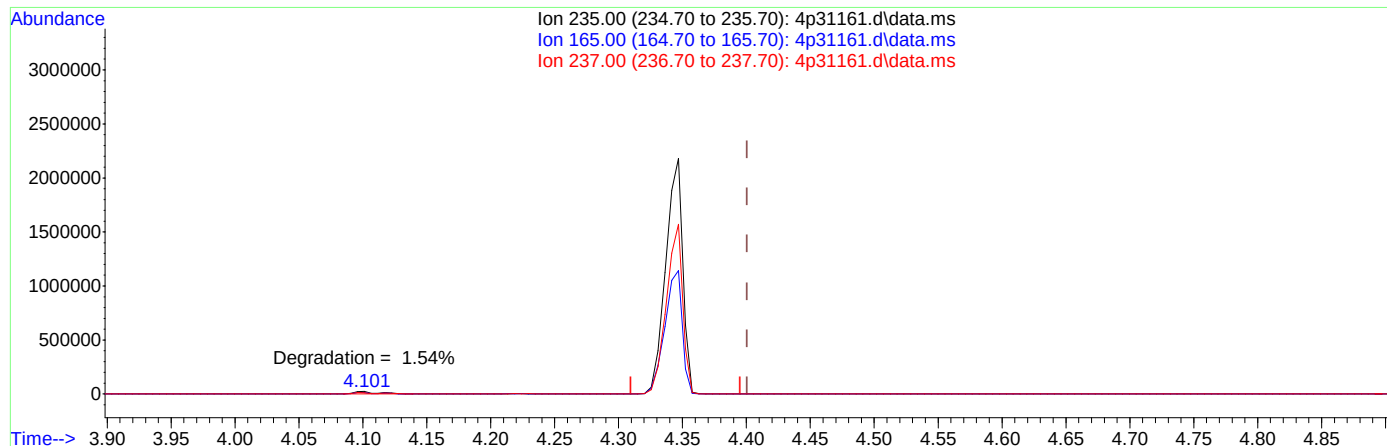
response 4159675

Ion	Exp%	Act%
184.05	100	100
92.05	13.80	22.40#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jeryllr\e4p1712\
Data File : 4p31161.d
Acq On : 30 Nov 2018 11:44 pm
Operator : sufiyana
Sample : dftpp
Misc : op16718a,e4p1712,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4P.M
Quant Results File: DFTPP4P.RES
Quant Time: Dec 02 21:34:06 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Jun 20 22:27:34 2018
Response via : Initial Calibration



TIC: 4p31161.d\data.ms

(3) PP-DDT (MC)

4.347min (-0.053) 1082.62ppm

response 2024326

Ion	Exp%	Act%
235.00	100	100
165.00	44.90	52.39
237.00	67.40	72.02
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71964.D
 Acq On : 30 Oct 2018 12:37 am
 Operator : sufiyana
 Sample : IC3408-5
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 30 11:24:01 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

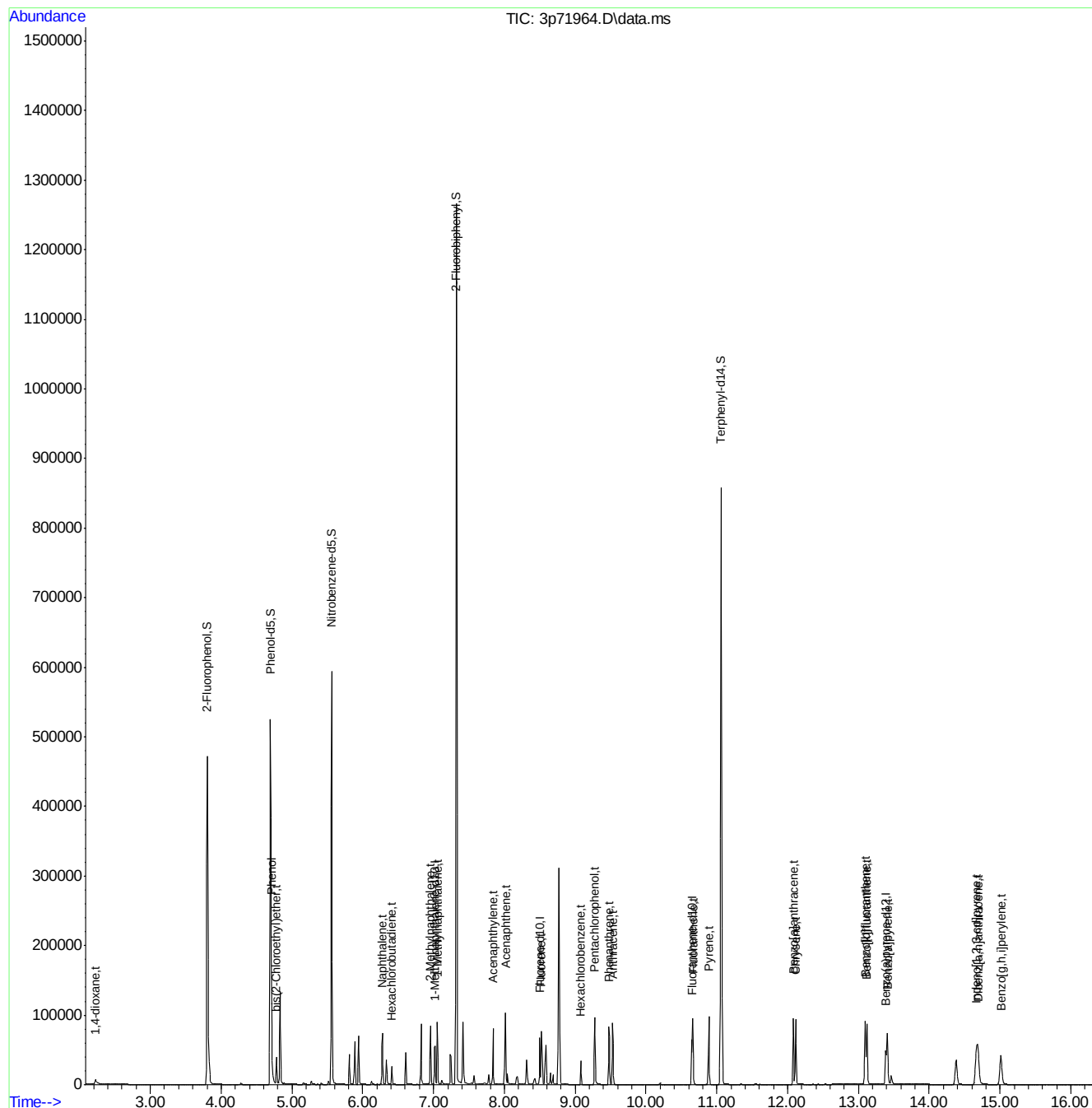
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.021	150	18141	4.00	ppm	0.01
12) Fluorene-d10	8.501	176	24657	4.00	ppm	0.01
19) Fluoranthene-d10	10.647	212	43099	4.00	ppm	0.02
29) Benzo(a)pyrene-d12	13.386	264	40157	4.00	ppm	0.03
System Monitoring Compounds						
3) 2-Fluorophenol	3.807	112	318856	69.52	ppm	0.00
Spiked Amount 50.000			Recovery =	139.04%		
4) Phenol-d5	4.698	99	398877	68.19	ppm	0.01
Spiked Amount 50.000			Recovery =	136.38%		
7) Nitrobenzene-d5	5.563	82	338329	65.04	ppm	0.01
Spiked Amount 50.000			Recovery =	130.08%		
13) 2-Fluorobiphenyl	7.321	172	647699	58.55	ppm	0.01
Spiked Amount 50.000			Recovery =	117.10%		
18) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
26) Terphenyl-d14	11.060	244	633407	61.86	ppm	0.02
Spiked Amount 50.000			Recovery =	123.72%		
Target Compounds						
2) 1,4-dioxane	2.227	88	6848m	3.71	ppm	
5) Phenol	4.711	94	106994	17.03	ppm	# 93
6) bis(2-Chloroethyl)ether	4.778	93	14123	3.34	ppm	93
8) Naphthalene	6.279	128	47449	3.37	ppm	99
9) Hexachlorobutadiene	6.411	225	7801	3.28	ppm	96
10) 2-Methylnaphthalene	6.955	141	25486	3.35	ppm	94
11) 1-Methylnaphthalene	7.054	141	28676	3.39	ppm	94
14) Acenaphthylene	7.839	152	47307	3.35	ppm	100
15) Acenaphthene	8.015	153	32143	3.39	ppm	99
17) Fluorene	8.522	166	35036	3.27	ppm	97
20) Hexachlorobenzene	9.082	284	11129	3.20	ppm	97
21) Pentachlorophenol	9.276	266	37058	21.99	ppm	95
22) Phenanthrene	9.476	178	52652	3.26	ppm	98
23) Anthracene	9.527	178	52817	3.36	ppm	98
24) Fluoranthene	10.661	202	62018	3.36	ppm	99
25) Pyrene	10.888	202	64465	3.45	ppm	99
27) Benzo[a]anthracene	12.080	228	59628	3.59	ppm	98
28) Chrysene	12.118	228	59829	3.43	ppm	99
30) Benzo[b]fluoranthene	13.096	252	70703	3.70	ppm	98
31) Benzo[k]fluoranthene	13.121	252	62135	3.20	ppm	98
32) Benzo[a]pyrene	13.411	252	60847	3.38	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.665	276	75799	3.64	ppm	99
34) Dibenz[a,h]anthracene	14.688	278	62674	3.56	ppm	96
35) Benzo[g,h,i]perylene	15.014	276	60225	3.65	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71964.D
Acq On : 30 Oct 2018 12:37 am
Operator : sufiyana
Sample : IC3408-5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 30 11:24:01 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71964.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 00:37

Supervisor approved: 10/30/18 17:36 Nina Pandya

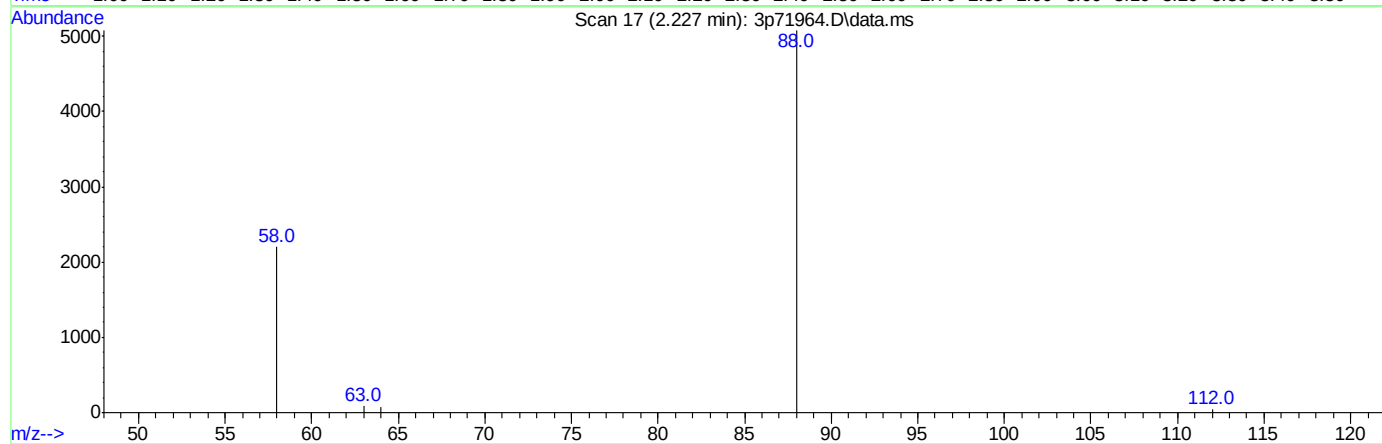
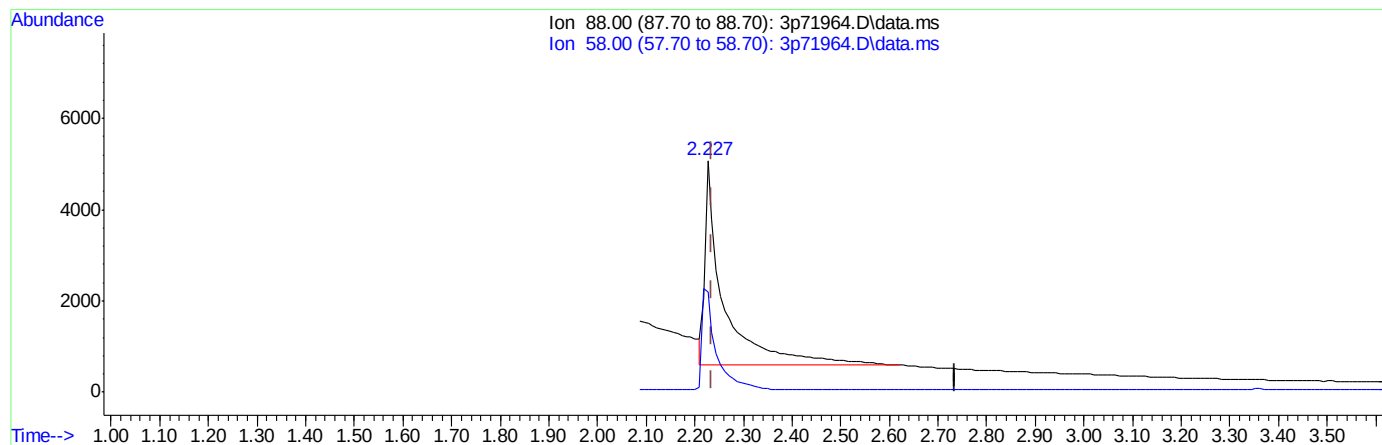
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration

7.6.1.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71964.D
Acq On : 30 Oct 2018 12:37 am
Operator : sufiyana
Sample : IC3408-5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 30 10:22:31 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71964.D\data.ms

(2) 1,4-dioxane (t)

2.227min (-0.009) 6.76ppm

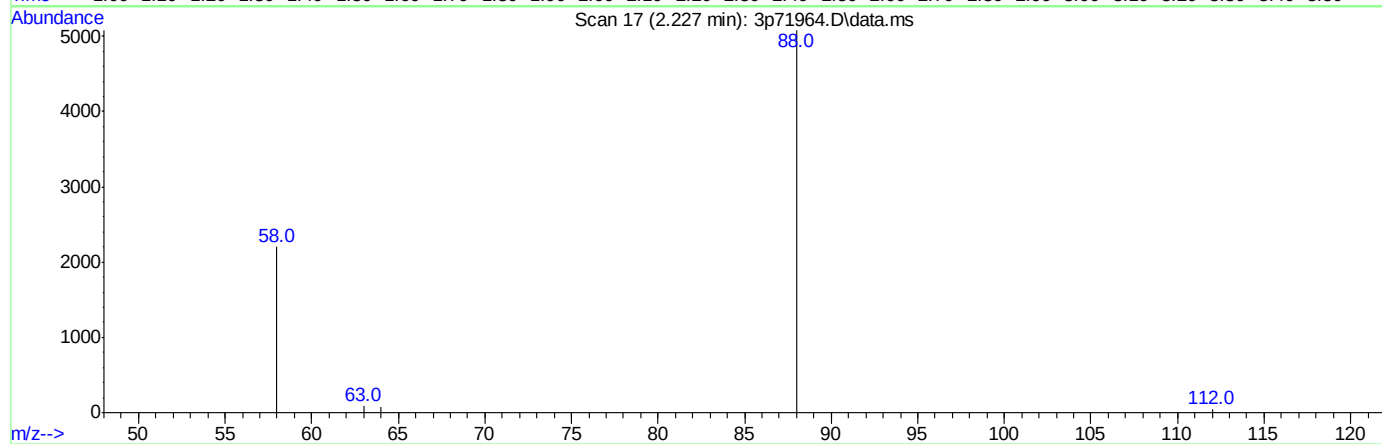
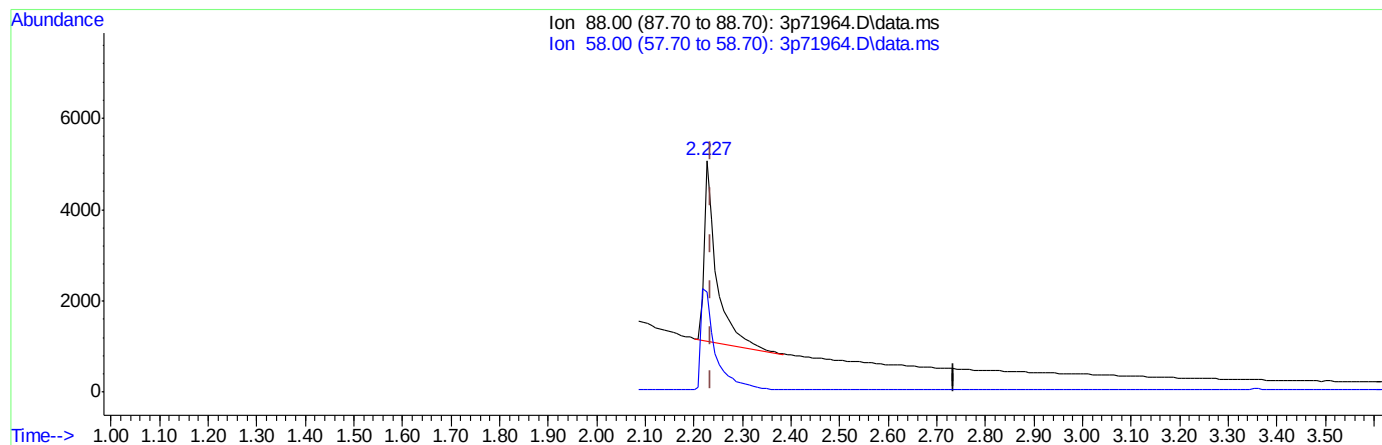
response 12456

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	50.47#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71964.D
Acq On : 30 Oct 2018 12:37 am
Operator : sufiyana
Sample : IC3408-5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 30 10:22:31 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71964.D\data.ms

(2) 1,4-dioxane (t)

2.227min (-0.009) 3.71ppm m

response 6848

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	43.39
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71965.D
 Acq On : 30 Oct 2018 12:57 am
 Operator : sufiyana
 Sample : IC3408-2.5
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 10:25:20 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

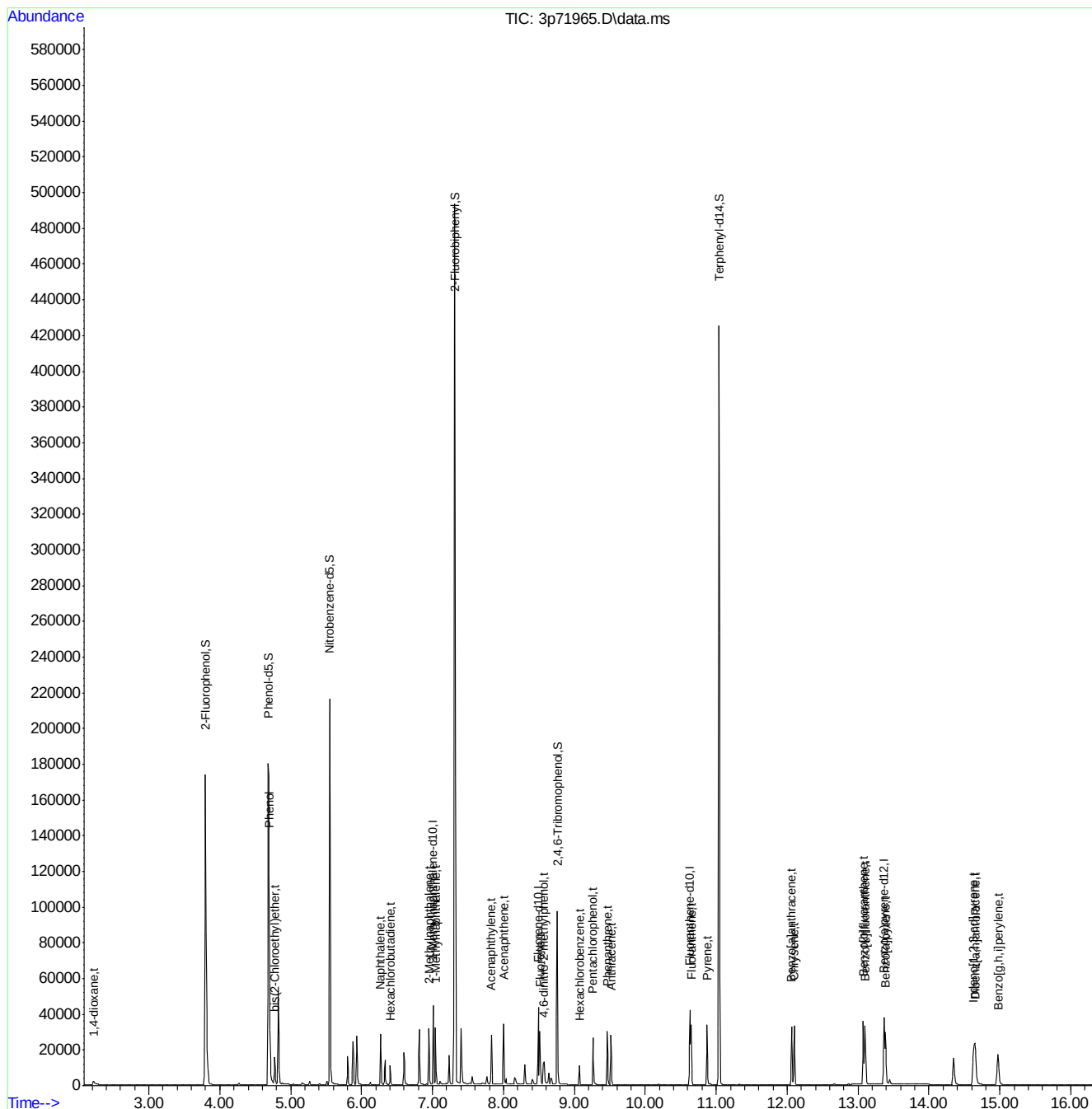
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	13393	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	16578	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	28494	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.365	264	28615	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	125745	37.14	ppm	0.00
Spiked Amount 50.000			Recovery =	74.28%		
4) Phenol-d5	4.684	99	156739	36.30	ppm	0.00
Spiked Amount 50.000			Recovery =	72.60%		
7) Nitrobenzene-d5	5.549	82	138198	35.98	ppm	0.00
Spiked Amount 50.000			Recovery =	71.96%		
13) 2-Fluorobiphenyl	7.311	172	253725	34.11	ppm	0.00
Spiked Amount 50.000			Recovery =	68.22%		
18) 2,4,6-Tribromophenol	8.760	330	31719	34.56	ppm	0.00
Spiked Amount 50.000			Recovery =	69.12%		
26) Terphenyl-d14	11.041	244	229691	33.93	ppm	0.00
Spiked Amount 50.000			Recovery =	67.86%		
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.218	88	2539m	1.87	ppm	
5) Phenol	4.698	94	42414	9.14	ppm	100
6) bis(2-Chloroethyl)ether	4.772	93	5802	1.86	ppm	94
8) Naphthalene	6.268	128	18023	1.73	ppm	100
9) Hexachlorobutadiene	6.405	225	3068	1.75	ppm	100
10) 2-Methylnaphthalene	6.950	141	9710	1.73	ppm	100
11) 1-Methylnaphthalene	7.043	141	10574	1.69	ppm	98
14) Acenaphthylene	7.829	152	16134	1.70	ppm	99
15) Acenaphthene	8.005	153	10744	1.68	ppm	99
16) 4,6-dinitro-2-methylph...	8.574	198	8641	10.78	ppm	97
17) Fluorene	8.512	166	11983	1.66	ppm	99
20) Hexachlorobenzene	9.071	284	3723	1.62	ppm	98
21) Pentachlorophenol	9.265	266	10183	9.14	ppm	98
22) Phenanthrene	9.465	178	17516	1.64	ppm	99
23) Anthracene	9.516	178	16770	1.62	ppm	99
24) Fluoranthene	10.647	202	20741	1.70	ppm	100
25) Pyrene	10.870	202	21376	1.73	ppm	99
27) Benzo[a]anthracene	12.063	228	19930	1.82	ppm	99
28) Chrysene	12.101	228	20789	1.80	ppm	99
30) Benzo[b]fluoranthene	13.075	252	23670	1.74	ppm	99
31) Benzo[k]fluoranthene	13.100	252	23028	1.66	ppm	99
32) Benzo[a]pyrene	13.390	252	22136	1.72	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.630	276	28312	1.91	ppm	100
34) Dibenzo[a,h]anthracene	14.650	278	23669	1.89	ppm	99
35) Benzo[g,h,i]perylene	14.974	276	22806	1.94	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71965.D
Acq On : 30 Oct 2018 12:57 am
Operator : sufiyana
Sample : IC3408-2.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 10:25:20 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71965.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 00:57

Supervisor approved: 10/30/18 17:36 Nina Pandya

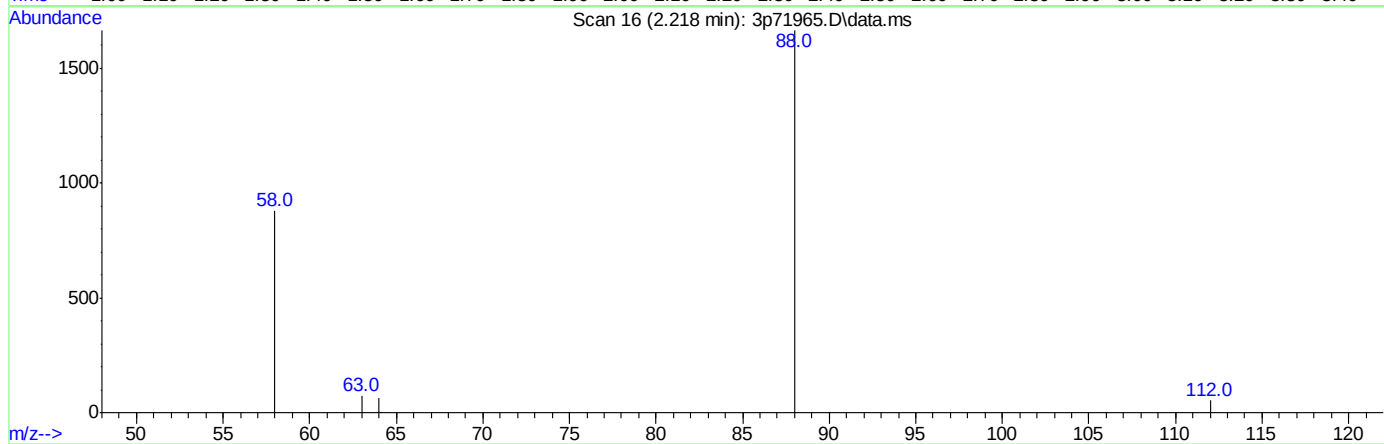
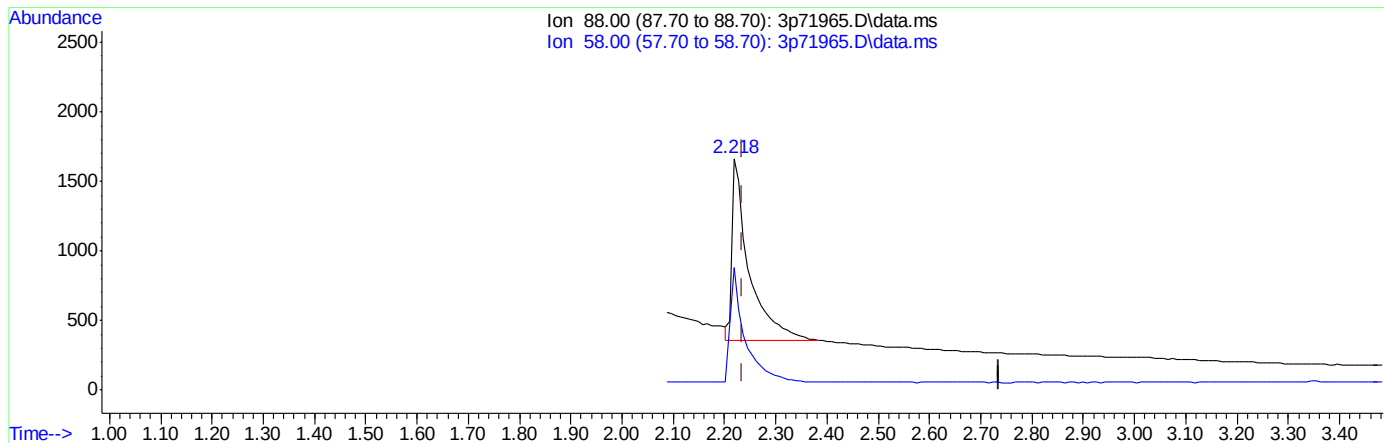
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.22	Poor instrument integration

7.6.2.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71965.D
Acq On : 30 Oct 2018 12:57 am
Operator : sufiyana
Sample : IC3408-2.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 10:24:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71965.D\data.ms

(2) 1,4-dioxane (t)

2.218min (-0.017) 2.23ppm

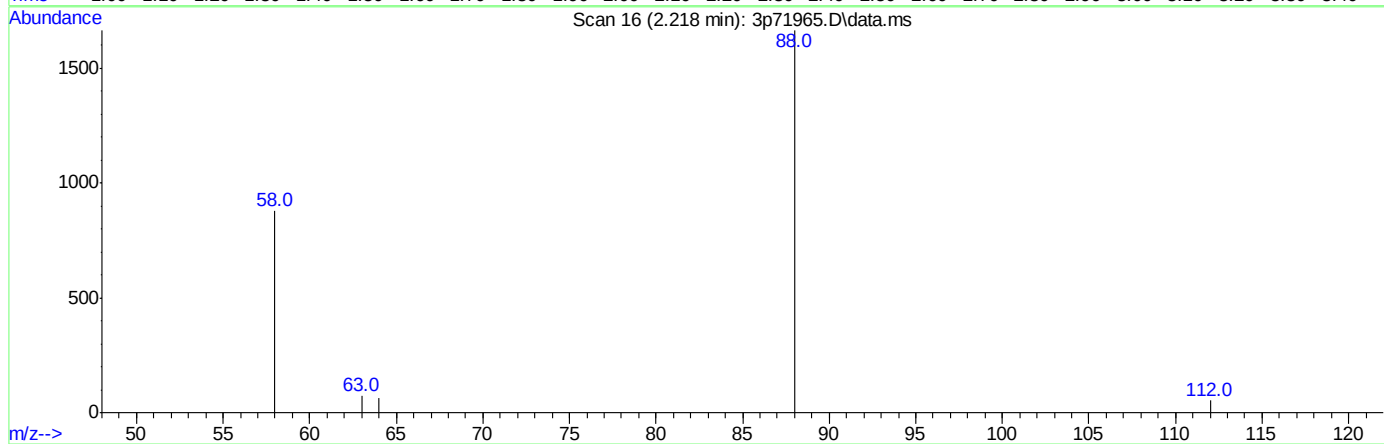
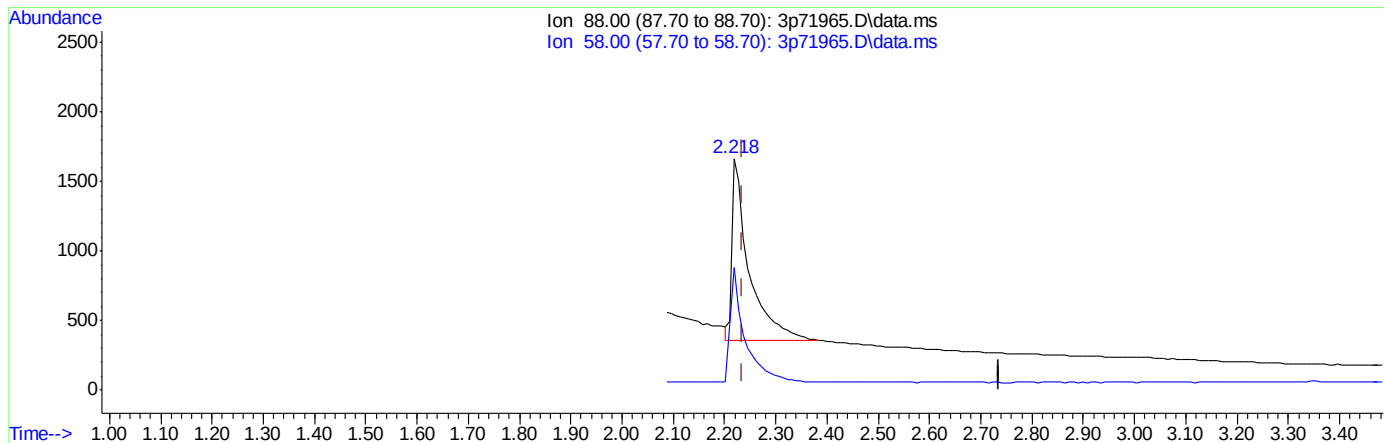
response 3039

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	64.99#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71965.D
Acq On : 30 Oct 2018 12:57 am
Operator : sufiyana
Sample : IC3408-2.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 10:24:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71965.D\data.ms

(2) 1,4-dioxane (t)

2.218min (-0.017) 2.23ppm

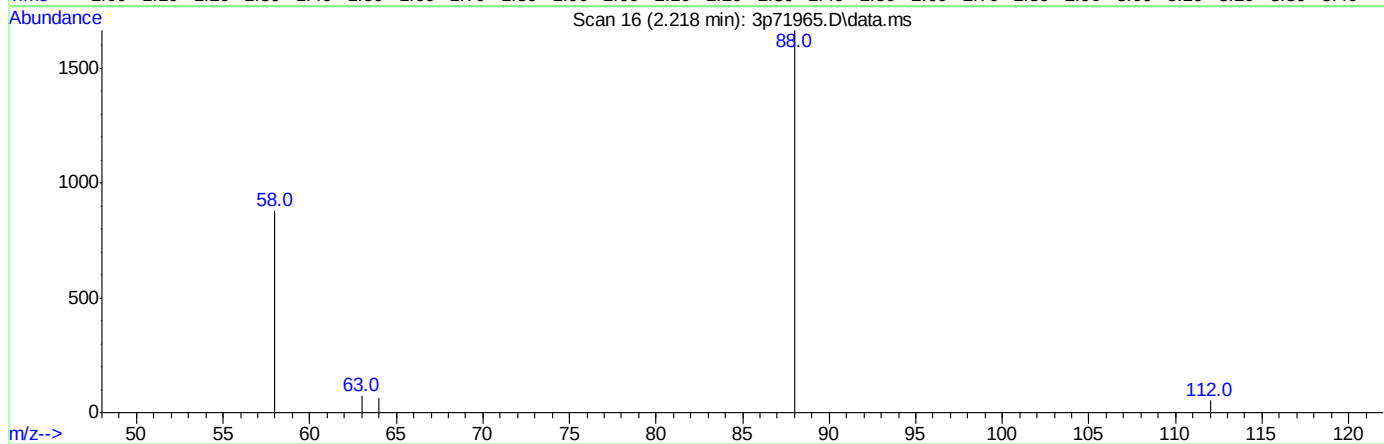
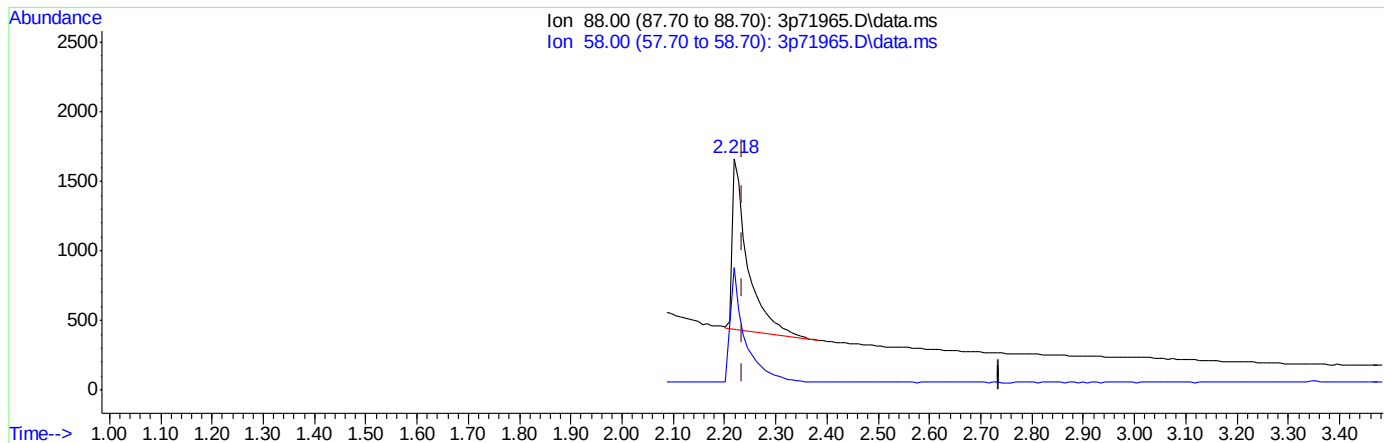
response 3039

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	64.99#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71965.D
Acq On : 30 Oct 2018 12:57 am
Operator : sufiyana
Sample : IC3408-2.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 30 10:24:12 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71965.D\data.ms

(2) 1,4-dioxane (t)

2.218min (-0.017) 1.87ppm m

response 2539

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	52.67#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71966.D
 Acq On : 30 Oct 2018 1:18 am
 Operator : sufiyana
 Sample : ICC3408-1
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 30 10:21:02 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

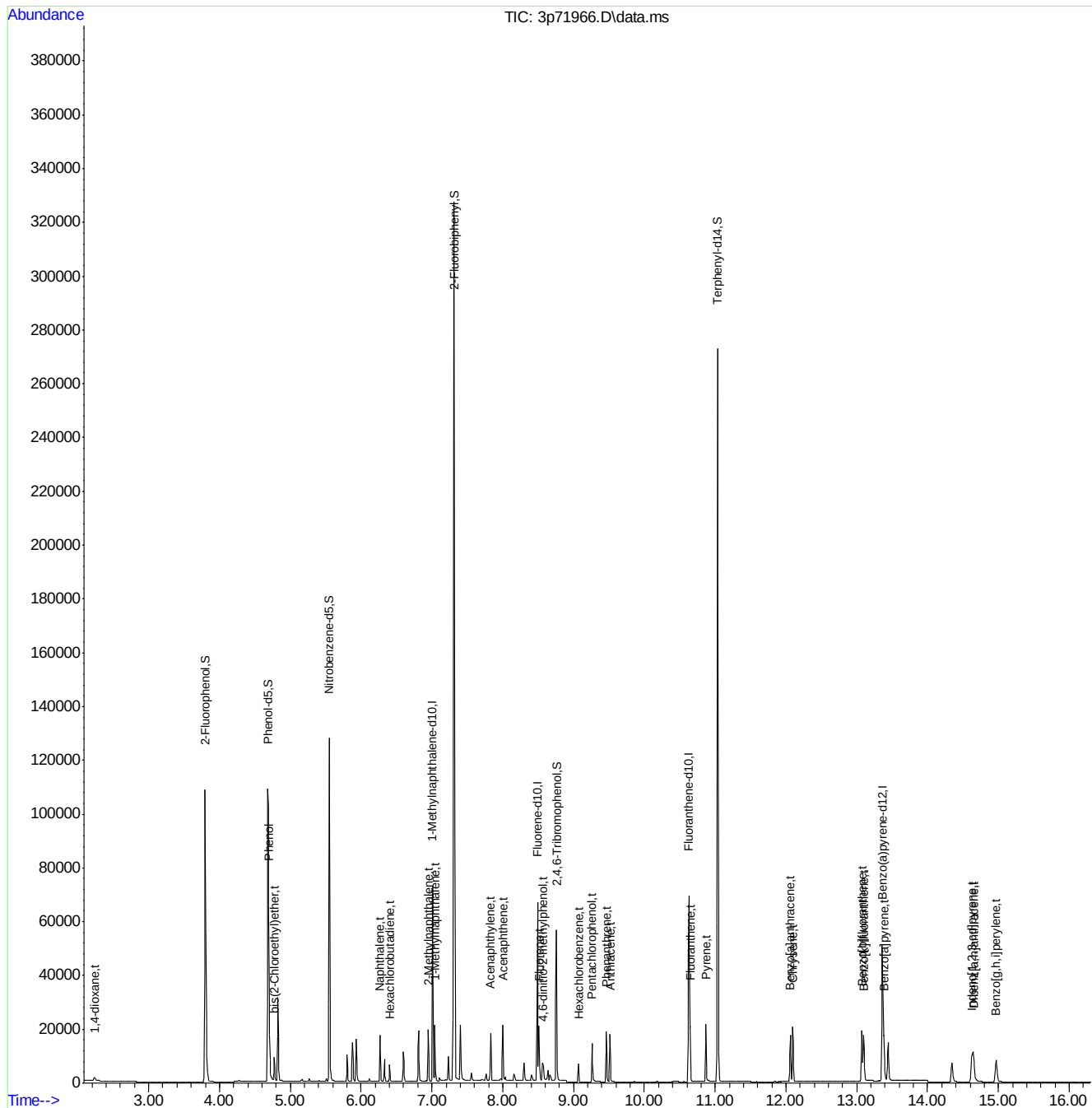
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	21118	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	26882	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	44767	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	40171	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	71188	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
4) Phenol-d5	4.684	99	90791	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
7) Nitrobenzene-d5	5.549	82	80744	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
13) 2-Fluorobiphenyl	7.311	172	160804	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
18) 2,4,6-Tribromophenol	8.760	330	19841	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
26) Terphenyl-d14	11.036	244	141813	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.235	88	1425m	0.99	ppm	100
5) Phenol	4.698	94	24379	5.00	ppm	100
6) bis(2-Chloroethyl)ether	4.771	93	3297	1.01	ppm	99
8) Naphthalene	6.268	128	10929	1.00	ppm	100
9) Hexachlorobutadiene	6.405	225	1843	1.00	ppm	100
10) 2-Methylnaphthalene	6.950	141	5906	1.00	ppm	100
11) 1-Methylnaphthalene	7.043	141	6565	1.00	ppm	100
14) Acenaphthylene	7.828	152	10252	1.00	ppm	100
15) Acenaphthene	8.004	153	6899	1.00	ppm	100
16) 4,6-dinitro-2-methylph...	8.574	198	4331	5.00	ppm	100
17) Fluorene	8.512	166	7796	1.00	ppm	100
20) Hexachlorobenzene	9.071	284	2411	1.00	ppm	100
21) Pentachlorophenol	9.265	266	5836	5.00	ppm	100
22) Phenanthrene	9.465	178	11170	1.00	ppm	100
23) Anthracene	9.516	178	10873	1.00	ppm	100
24) Fluoranthene	10.647	202	12763	1.00	ppm	100
25) Pyrene	10.870	202	12921	1.00	ppm	100
27) Benzo[a]anthracene	12.063	228	11496	1.00	ppm	100
28) Chrysene	12.097	228	11988	0.98	ppm	99
30) Benzo[b]fluoranthene	13.071	252	12750	1.00	ppm	100
31) Benzo[k]fluoranthene	13.096	252	12968	1.00	ppm	100
32) Benzo[a]pyrene	13.386	252	12010	1.00	ppm	100
33) Indeno[1,2,3-cd]pyrene	14.624	276	13892	1.00	ppm	100
34) Dibenzo[a,h]anthracene	14.647	278	11736	1.00	ppm	100
35) Benzo[g,h,i]perylene	14.968	276	11016	1.00	ppm	100

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

(QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71966.D
Acq On : 30 Oct 2018 1:18 am
Operator : sufiyana
Sample : ICC3408-1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 30 10:21:02 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Page: 2

Manual Integration Approval Summary

Sample Number: E3P3408-ICC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71966.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 01:18

Supervisor approved: 10/30/18 17:36 Nina Pandya

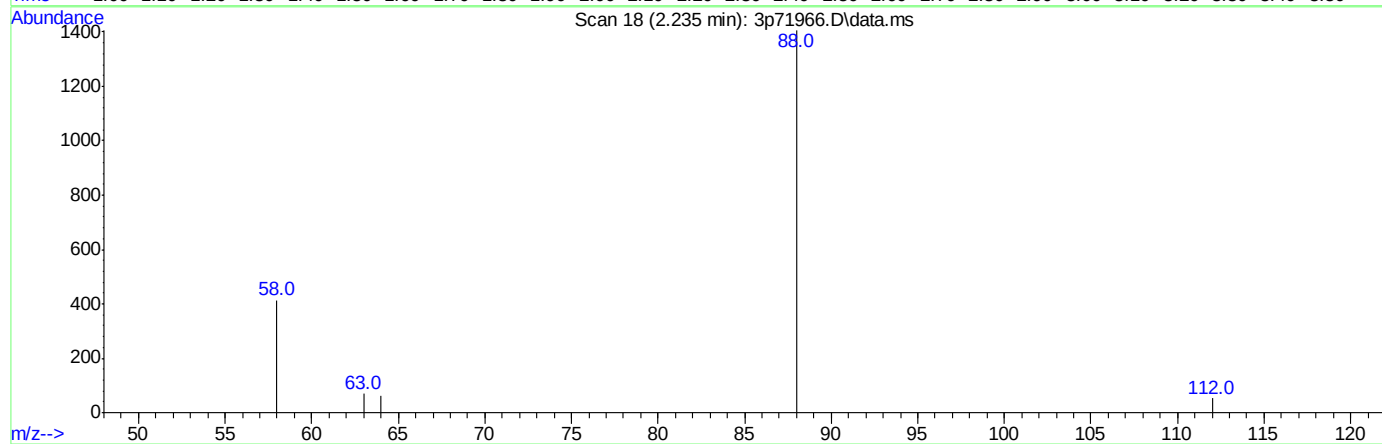
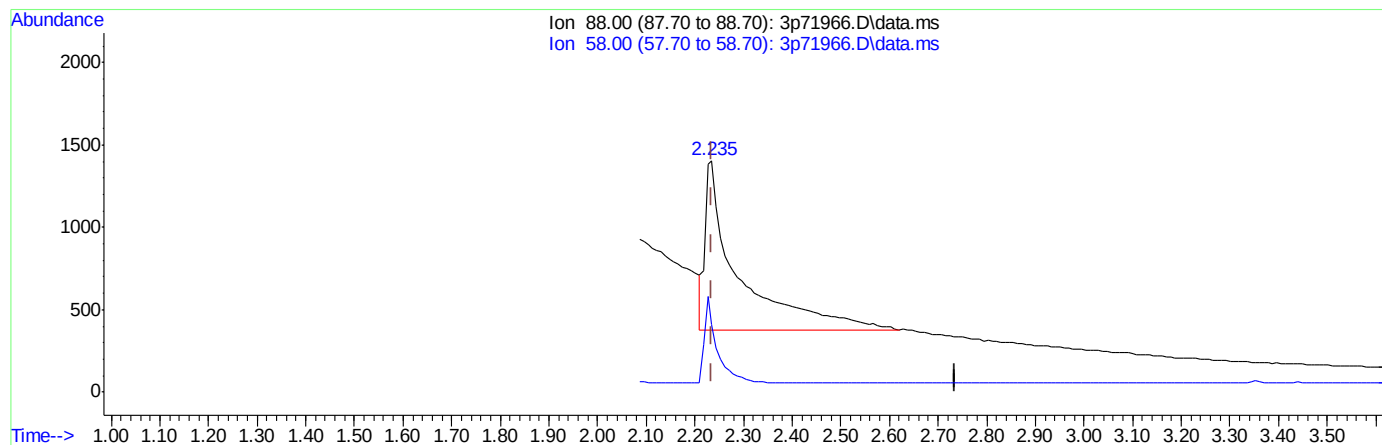
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.24	Poor instrument integration

7.6.3.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71966.D
Acq On : 30 Oct 2018 1:18 am
Operator : sufiyana
Sample : ICC3408-1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 30 10:20:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71966.D\data.ms

(2) 1,4-dioxane (t)

2.235min (+0.000) 3.46ppm

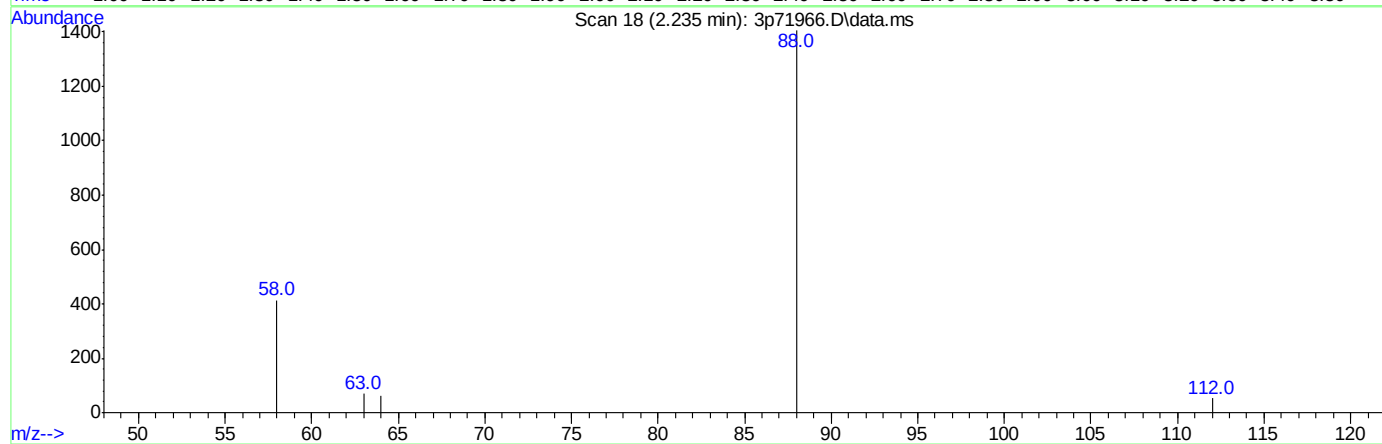
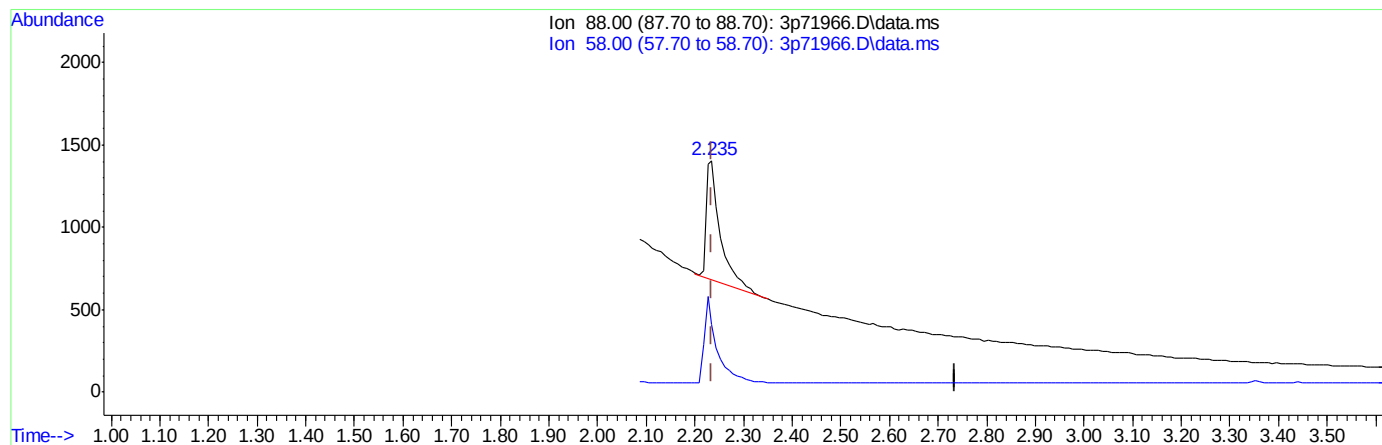
response 4993

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	41.33
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71966.D
Acq On : 30 Oct 2018 1:18 am
Operator : sufiyana
Sample : ICC3408-1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 30 10:20:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71966.D\data.ms

(2) 1,4-dioxane (t)

2.235min (+0.000) 0.99ppm m

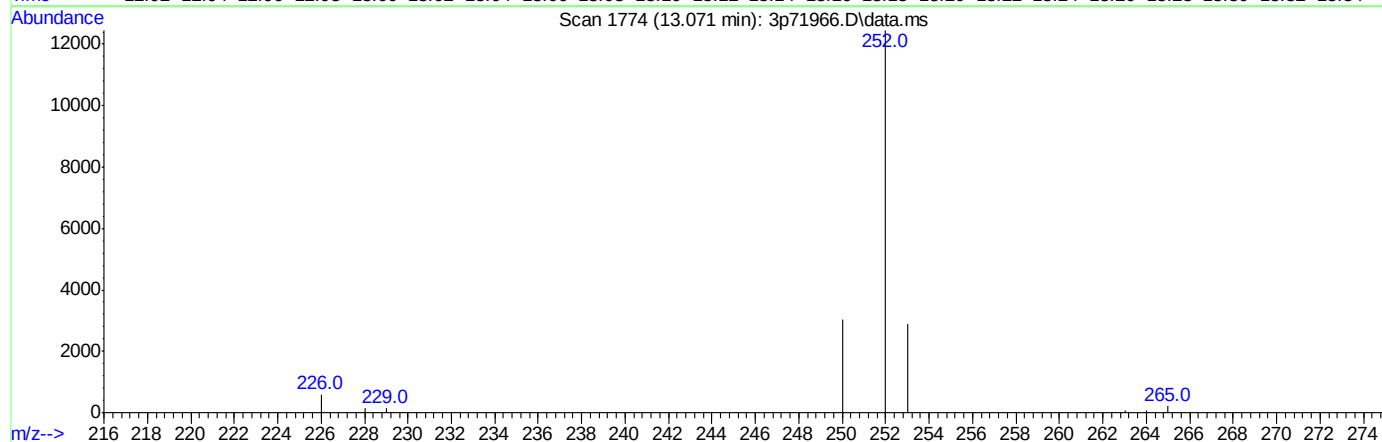
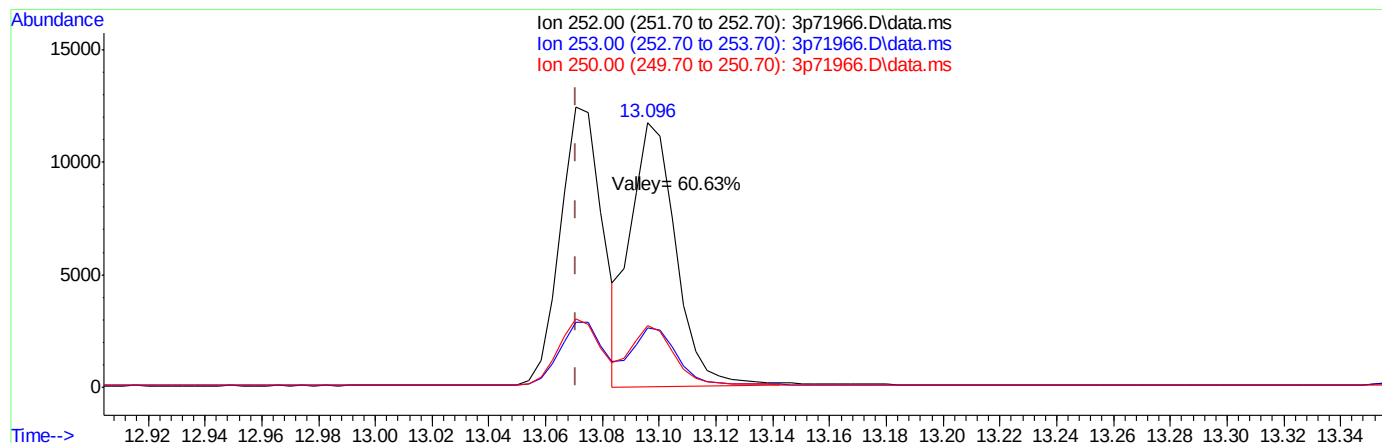
response 1425

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	29.37
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71966.D
Acq On : 30 Oct 2018 1:18 am
Operator : sufiyana
Sample : ICC3408-1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 30 10:21:02 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71966.D\data.ms

(30) Benzo[b]fluoranthene (t)

13.071min (0.000) 1.00ppm

response 12750

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.56
250.00	24.10	24.15
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71967.D
 Acq On : 30 Oct 2018 1:39 am
 Operator : sufiyana
 Sample : IC3408-0.5
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 30 10:26:00 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

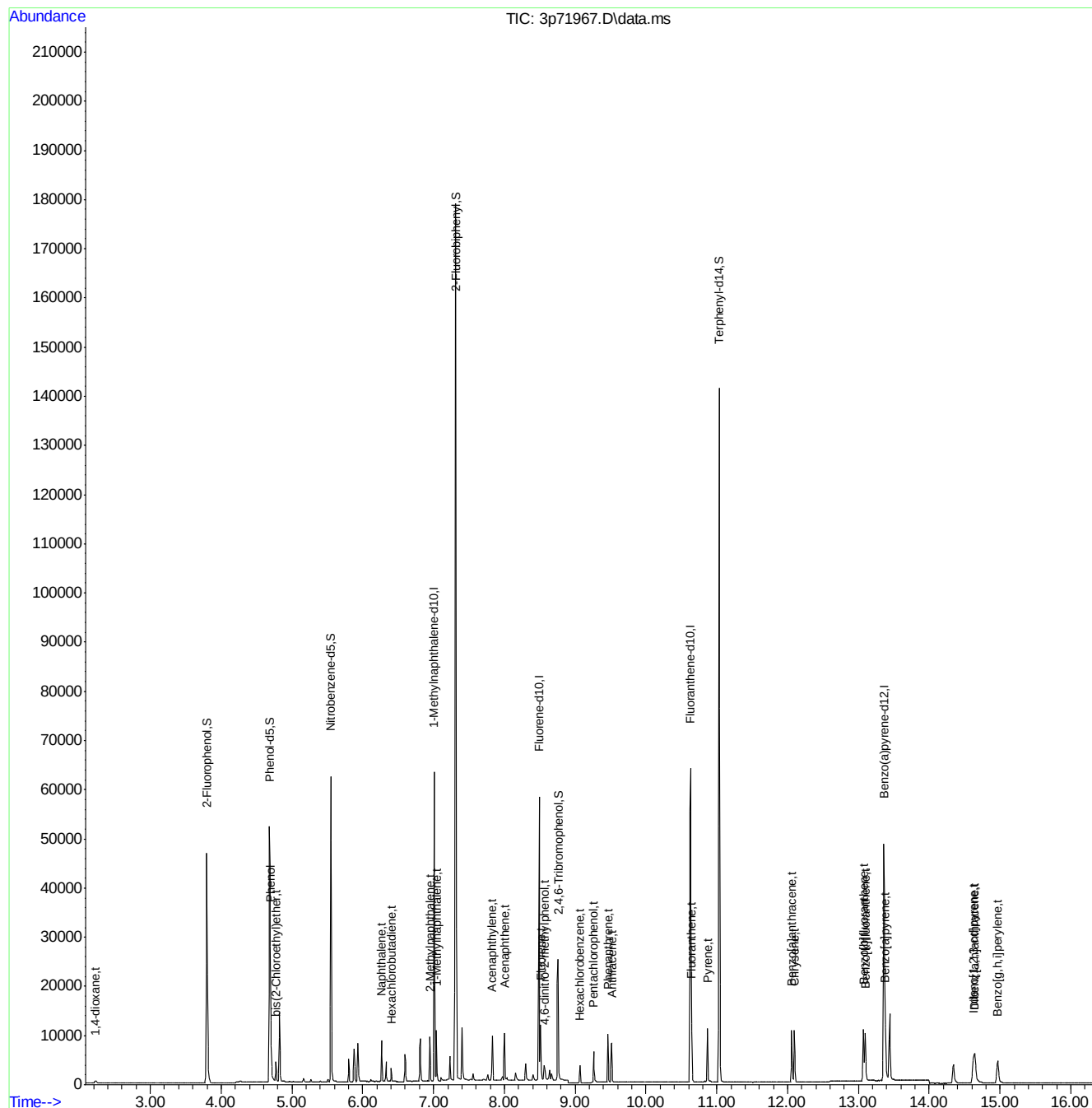
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	18167	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	24244	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	42736	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	38325	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	30391	6.62	ppm	0.00
Spiked Amount 50.000			Recovery =	13.24%		
4) Phenol-d5	4.684	99	41252	7.04	ppm	0.00
Spiked Amount 50.000			Recovery =	14.08%		
7) Nitrobenzene-d5	5.549	82	37655	7.23	ppm	0.00
Spiked Amount 50.000			Recovery =	14.46%		
13) 2-Fluorobiphenyl	7.311	172	83805	7.70	ppm	0.00
Spiked Amount 50.000			Recovery =	15.40%		
18) 2,4,6-Tribromophenol	8.760	330	10208	7.61	ppm	0.00
Spiked Amount 50.000			Recovery =	15.22%		
26) Terphenyl-d14	11.037	244	77503	7.63	ppm	0.00
Spiked Amount 50.000			Recovery =	15.26%		
Target Compounds						
2) 1,4-dioxane	2.227	88	604m	0.33	ppm	Qvalue
5) Phenol	4.698	94	11114	1.77	ppm	95
6) bis(2-Chloroethyl)ether	4.772	93	1460	0.34	ppm	93
8) Naphthalene	6.268	128	5098	0.36	ppm	100
9) Hexachlorobutadiene	6.405	225	852	0.36	ppm	99
10) 2-Methylnaphthalene	6.950	141	2910	0.38	ppm	98
11) 1-Methylnaphthalene	7.043	141	3251	0.38	ppm	99
14) Acenaphthylene	7.828	152	5257	0.38	ppm	99
15) Acenaphthene	8.004	153	3463	0.37	ppm	98
16) 4,6-dinitro-2-methylph...	8.574	198	1831	1.56	ppm	99
17) Fluorene	8.512	166	4150	0.39	ppm	98
20) Hexachlorobenzene	9.065	284	1272	0.37	ppm	91
21) Pentachlorophenol	9.265	266	2852	1.71	ppm	98
22) Phenanthrene	9.465	178	5997	0.37	ppm	99
23) Anthracene	9.516	178	5683	0.37	ppm	99
24) Fluoranthene	10.643	202	6966	0.38	ppm	99
25) Pyrene	10.870	202	7029	0.38	ppm	100
27) Benzo[a]anthracene	12.059	228	6361	0.39	ppm	98
28) Chrysene	12.092	228	6671	0.39	ppm	99
30) Benzo[b]fluoranthene	13.071	252	7316	0.40	ppm	99
31) Benzo[k]fluoranthene	13.096	252	6880	0.37	ppm	99
32) Benzo[a]pyrene	13.382	252	6733	0.39	ppm	100
33) Indeno[1,2,3-cd]pyrene	14.621	276	7558	0.38	ppm	100
34) Dibenzo[a,h]anthracene	14.644	278	6417	0.38	ppm	99
35) Benzo[g,h,i]perylene	14.968	276	6169	0.39	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71967.D
Acq On : 30 Oct 2018 1:39 am
Operator : sufiyana
Sample : IC3408-0.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 30 10:26:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71967.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 01:39

Supervisor approved: 10/30/18 17:36 Nina Pandya

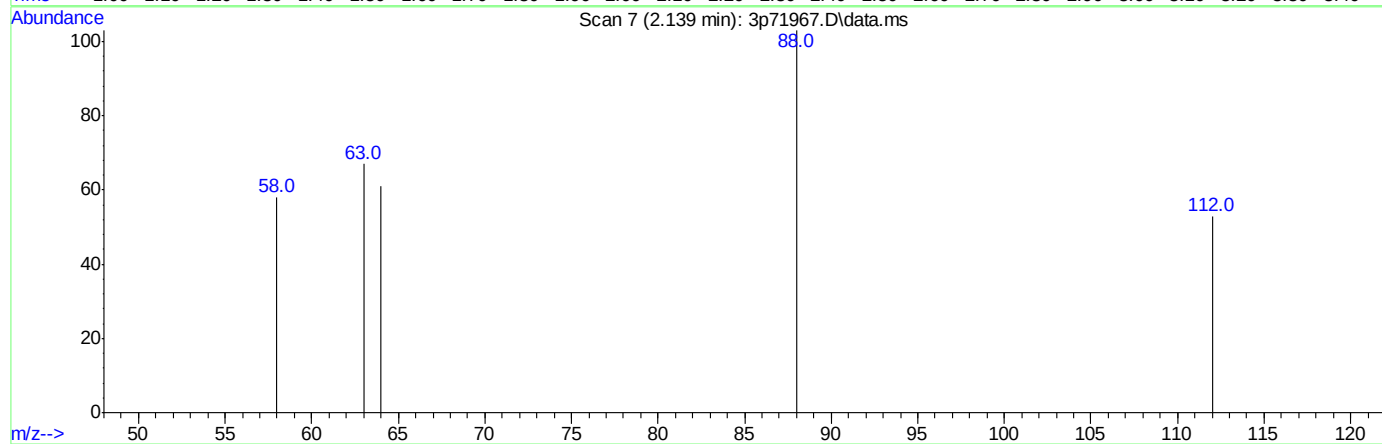
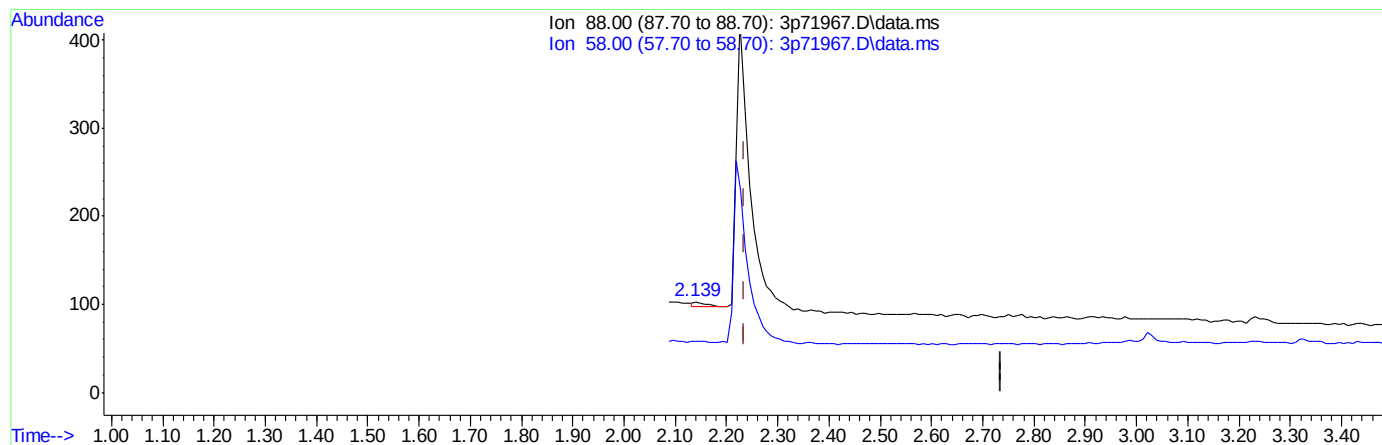
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration

7.6.4.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71967.D
Acq On : 30 Oct 2018 1:39 am
Operator : sufiyana
Sample : IC3408-0.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 30 10:25:34 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71967.D\data.ms

(2) 1,4-dioxane (t)

2.139min (-0.096) 0.01ppm

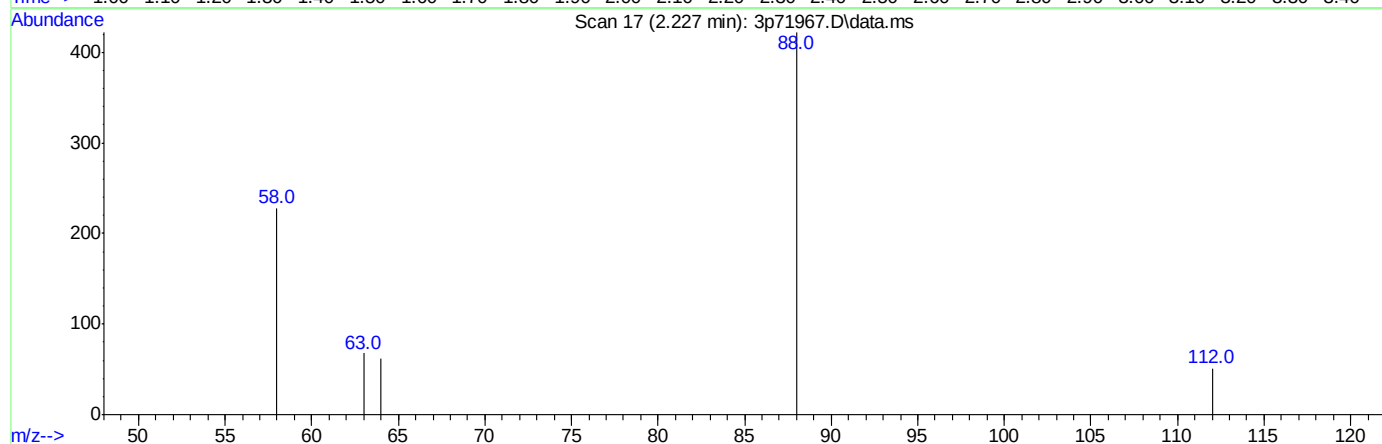
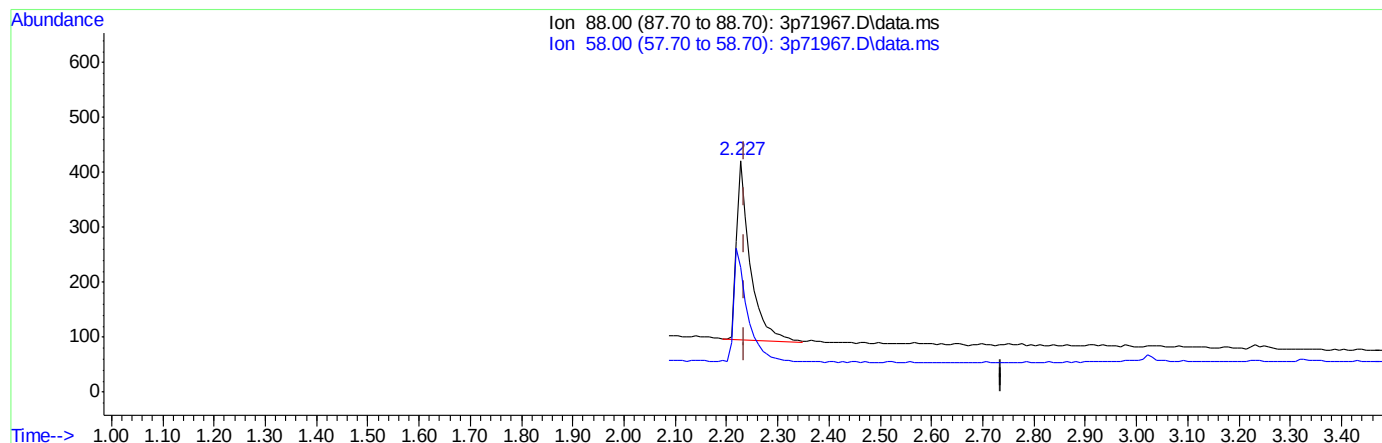
response 10

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	12.50
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71967.D
Acq On : 30 Oct 2018 1:39 am
Operator : sufiyana
Sample : IC3408-0.5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 30 10:26:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71967.D\data.ms

(2) 1,4-dioxane (t)

2.227min (-0.009) 0.33ppm m

response 604

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	54.03#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71968.D
 Acq On : 30 Oct 2018 2:00 am
 Operator : sufiyana
 Sample : IC3408-0.2
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 30 10:27:03 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

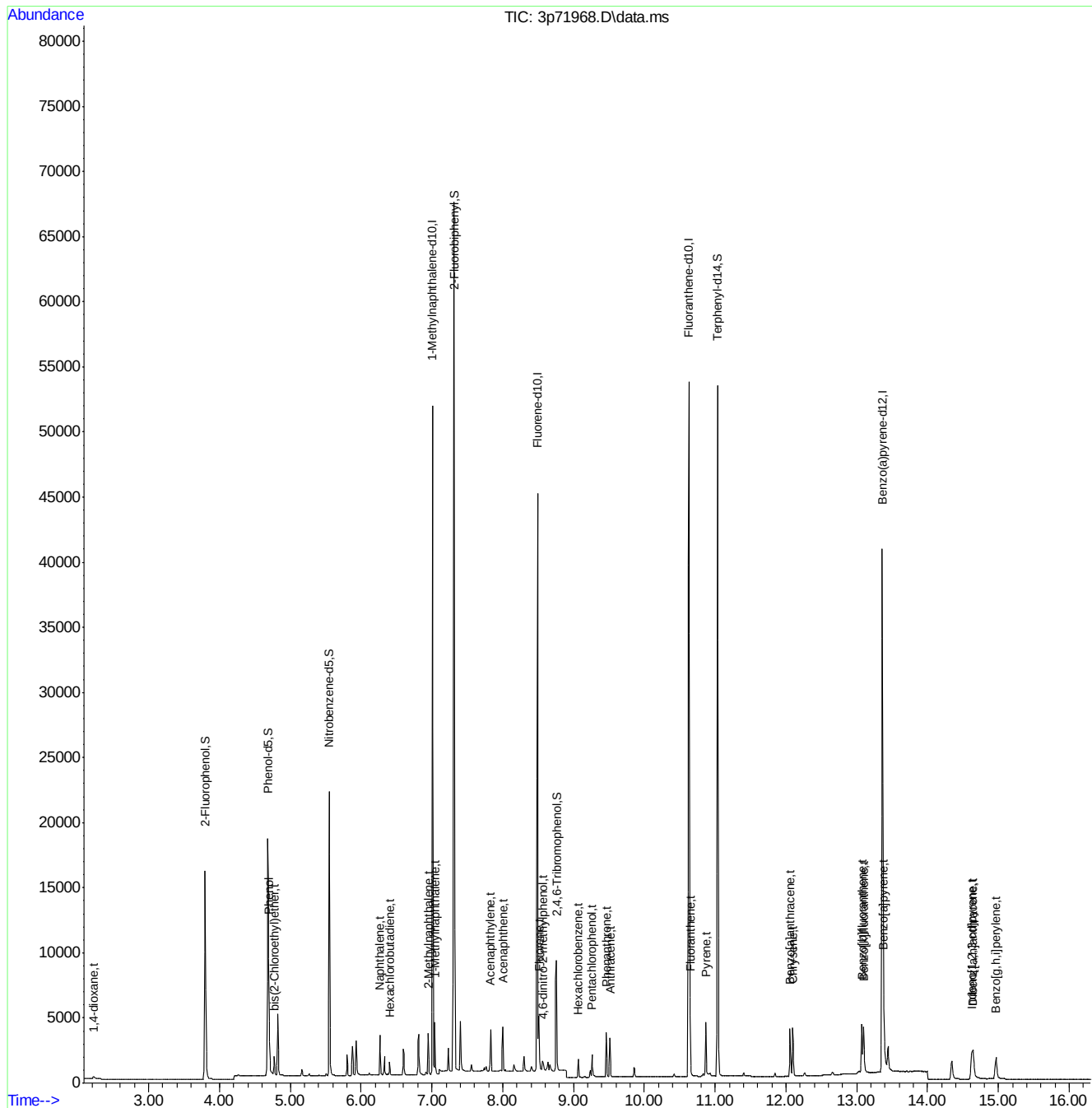
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	14699	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	19788	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	34840	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	32384	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	10561	2.84	ppm	0.00
Spiked Amount 50.000			Recovery =		5.68%	
4) Phenol-d5	4.684	99	14222	3.00	ppm	0.00
Spiked Amount 50.000			Recovery =		6.00%	
7) Nitrobenzene-d5	5.549	82	13597	3.23	ppm	0.00
Spiked Amount 50.000			Recovery =		6.46%	
13) 2-Fluorobiphenyl	7.311	172	31040	3.50	ppm	0.00
Spiked Amount 50.000			Recovery =		7.00%	
18) 2,4,6-Tribromophenol	8.760	330	3646	3.33	ppm	0.00
Spiked Amount 50.000			Recovery =		6.66%	
26) Terphenyl-d14	11.037	244	28838	3.48	ppm	0.00
Spiked Amount 50.000			Recovery =		6.96%	
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.227	88	206m	0.14	ppm	
5) Phenol	4.698	94	3931	0.77	ppm	92
6) bis(2-Chloroethyl)ether	4.772	93	533	0.16	ppm	88
8) Naphthalene	6.268	128	1867	0.16	ppm	99
9) Hexachlorobutadiene	6.405	225	304	0.16	ppm	99
10) 2-Methylnaphthalene	6.950	141	1067	0.17	ppm	97
11) 1-Methylnaphthalene	7.043	141	1255	0.18	ppm	99
14) Acenaphthylene	7.828	152	1891	0.17	ppm	99
15) Acenaphthene	8.004	153	1267	0.17	ppm	98
16) 4,6-dinitro-2-methylph...	8.574	198	510	0.53	ppm	92
17) Fluorene	8.512	166	1510	0.18	ppm	99
20) Hexachlorobenzene	9.065	284	477	0.17	ppm	91
21) Pentachlorophenol	9.265	266	823	0.60	ppm	98
22) Phenanthrene	9.465	178	2177	0.17	ppm	99
23) Anthracene	9.516	178	2046	0.16	ppm	99
24) Fluoranthene	10.647	202	2633	0.18	ppm	99
25) Pyrene	10.870	202	2592	0.17	ppm	100
27) Benzo[a]anthracene	12.059	228	2283	0.17	ppm	98
28) Chrysene	12.097	228	2410	0.17	ppm	99
30) Benzo[b]fluoranthene	13.071	252	2598	0.17	ppm	99
31) Benzo[k]fluoranthene	13.096	252	2643	0.17	ppm	99
32) Benzo[a]pyrene	13.382	252	2587	0.18	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.621	276	2700	0.16	ppm	99
34) Dibenzo[a,h]anthracene	14.642	278	2275	0.16	ppm	98
35) Benzo[g,h,i]perylene	14.965	276	2256	0.17	ppm	100

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

(QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71968.D
Acq On : 30 Oct 2018 2:00 am
Operator : sufiyana
Sample : IC3408-0.2
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 30 10:27:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Page: 2



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71968.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 02:00

Supervisor approved: 10/30/18 17:36 Nina Pandya

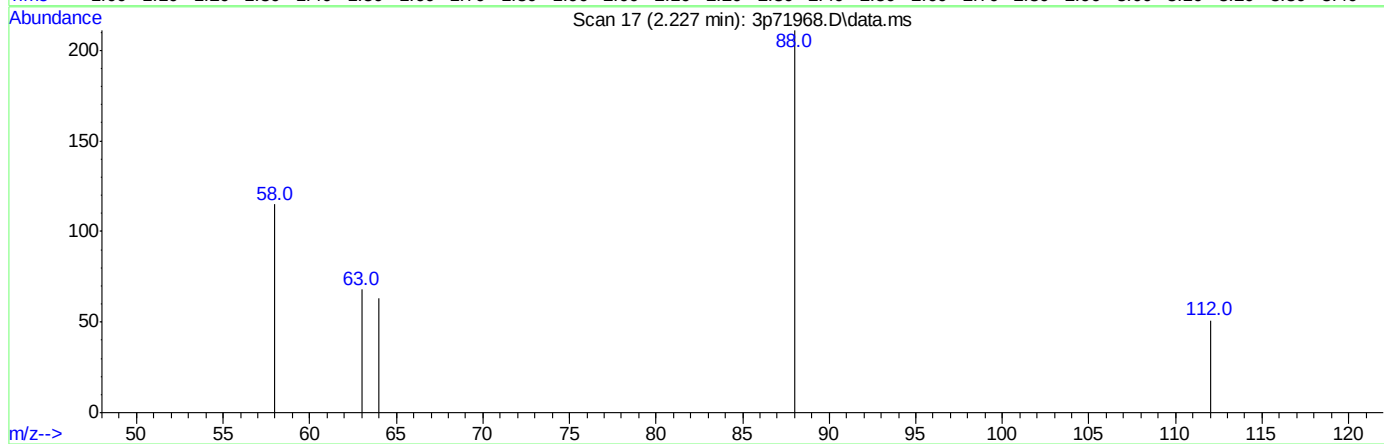
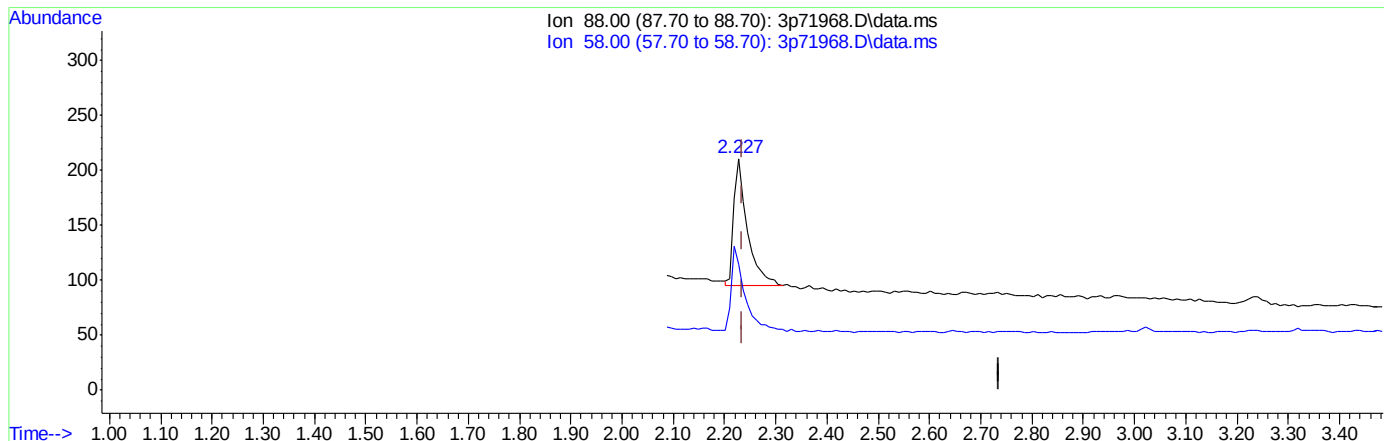
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration

7.6.5.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71968.D
Acq On : 30 Oct 2018 2:00 am
Operator : sufiyana
Sample : IC3408-0.2
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 30 10:26:48 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71968.D\data.ms

(2) 1,4-dioxane (t)

2.227min (-0.009) 0.14ppm

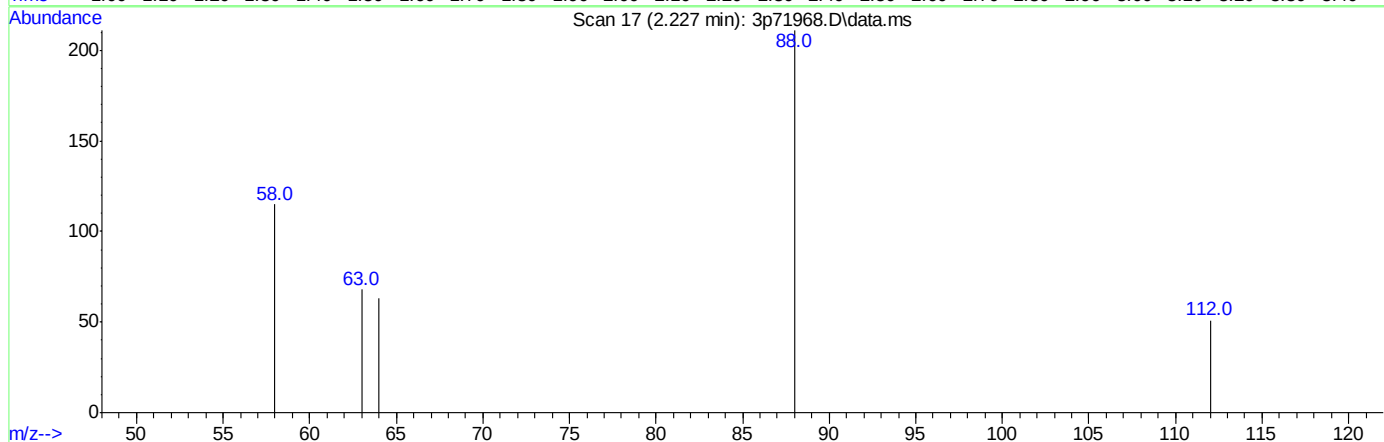
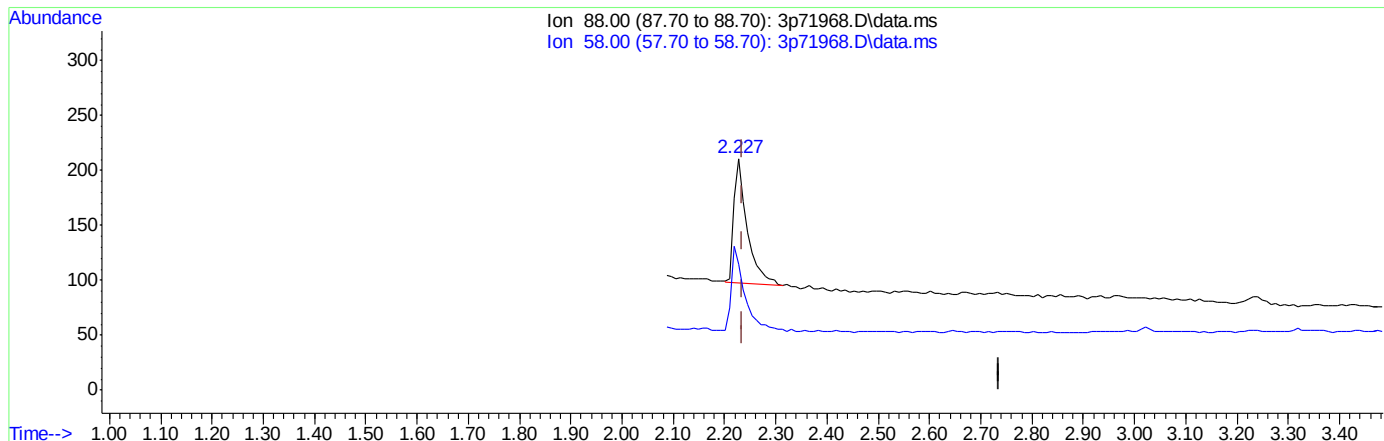
response 216

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	52.19#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71968.D
Acq On : 30 Oct 2018 2:00 am
Operator : sufiyana
Sample : IC3408-0.2
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 30 10:26:48 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71968.D\data.ms

(2) 1,4-dioxane (t)

2.227min (-0.009) 0.14ppm m

response 206

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	54.50#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71969.D
 Acq On : 30 Oct 2018 2:21 am
 Operator : sufiyana
 Sample : IC3408-0.1
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 30 10:28:11 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

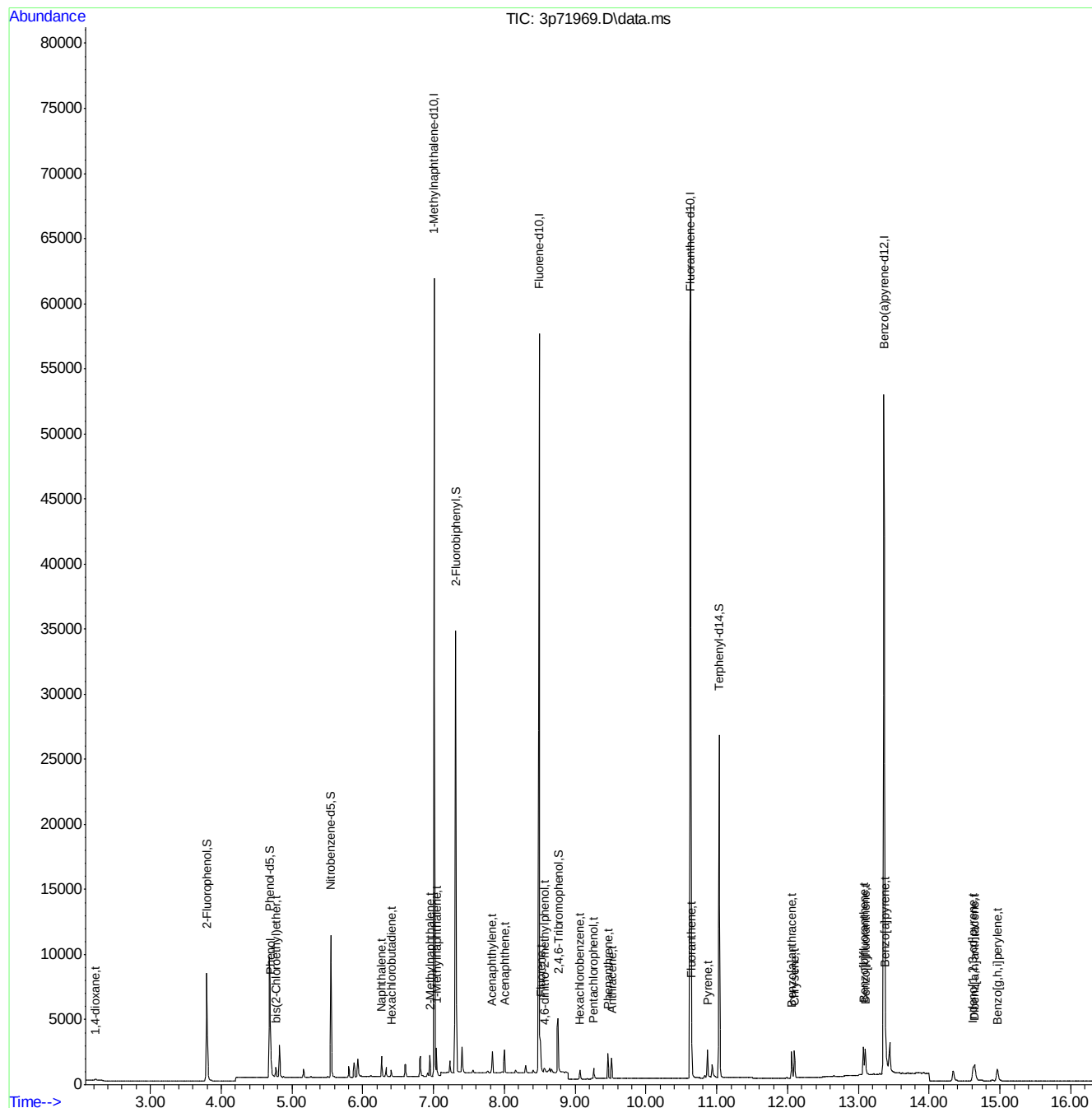
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	18088	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	24700	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	43286	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	41028	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	5417	1.18	ppm	0.00
Spiked Amount 50.000			Recovery =			2.36%
4) Phenol-d5	4.684	99	7213	1.24	ppm	0.00
Spiked Amount 50.000			Recovery =			2.48%
7) Nitrobenzene-d5	5.549	82	6895	1.33	ppm	0.00
Spiked Amount 50.000			Recovery =			2.66%
13) 2-Fluorobiphenyl	7.311	172	15874	1.43	ppm	0.00
Spiked Amount 50.000			Recovery =			2.86%
18) 2,4,6-Tribromophenol	8.760	330	1785	1.31	ppm	0.00
Spiked Amount 50.000			Recovery =			2.62%
26) Terphenyl-d14	11.036	244	15071	1.47	ppm	0.00
Spiked Amount 50.000			Recovery =			2.94%
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.226	88	106m	0.06	ppm	
5) Phenol	4.698	94	1990	0.32	ppm	91
6) bis(2-Chloroethyl)ether	4.771	93	273	0.06	ppm	88
8) Naphthalene	6.268	128	938	0.07	ppm	100
9) Hexachlorobutadiene	6.405	225	158	0.07	ppm	98
10) 2-Methylnaphthalene	6.950	141	519	0.07	ppm	99
11) 1-Methylnaphthalene	7.043	141	636	0.08	ppm	98
14) Acenaphthylene	7.828	152	994	0.07	ppm	99
15) Acenaphthene	8.004	153	645	0.07	ppm	97
16) 4,6-dinitro-2-methylph...	8.574	198	222	0.19	ppm	93
17) Fluorene	8.512	166	815	0.08	ppm	98
20) Hexachlorobenzene	9.065	284	249	0.07	ppm	91
21) Pentachlorophenol	9.265	266	394	0.23	ppm	99
22) Phenanthrene	9.465	178	1186	0.07	ppm	100
23) Anthracene	9.516	178	1092	0.07	ppm	99
24) Fluoranthene	10.643	202	1460	0.08	ppm	100
25) Pyrene	10.870	202	1394	0.07	ppm	99
27) Benzo[a]anthracene	12.059	228	1258	0.08	ppm	97
28) Chrysene	12.097	228	1374	0.08	ppm	99
30) Benzo[b]fluoranthene	13.071	252	1498	0.08	ppm	99
31) Benzo[k]fluoranthene	13.096	252	1474	0.07	ppm	99
32) Benzo[a]pyrene	13.382	252	1370	0.07	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.618	276	1532	0.07	ppm	99
34) Dibenzo[a,h]anthracene	14.641	278	1239	0.07	ppm	99
35) Benzo[g,h,i]perylene	14.962	276	1256	0.07	ppm	100

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

(QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71969.D
Acq On : 30 Oct 2018 2:21 am
Operator : sufiyana
Sample : IC3408-0.1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 30 10:28:11 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71969.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 02:21

Supervisor approved: 10/30/18 17:36 Nina Pandya

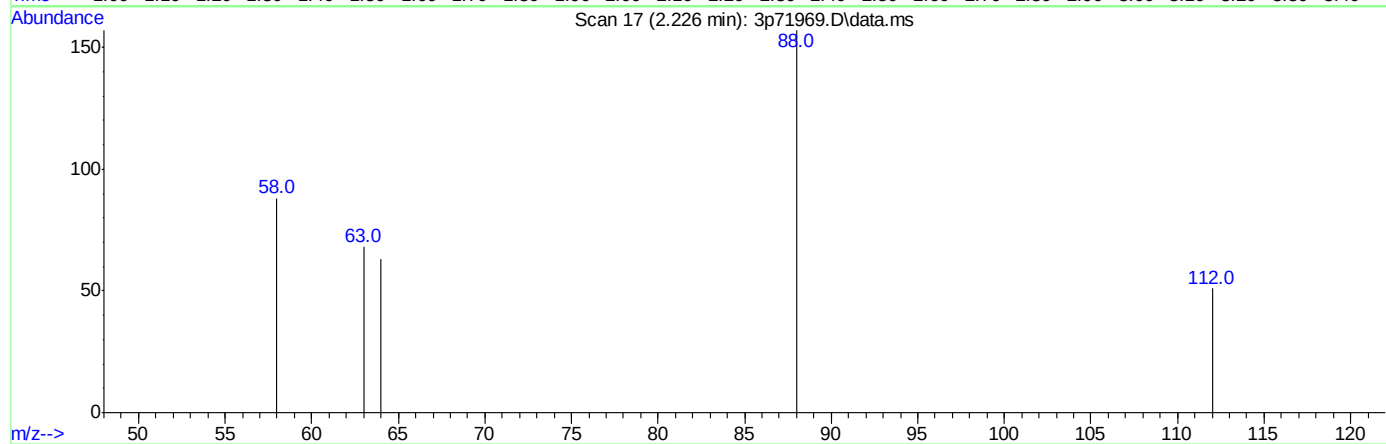
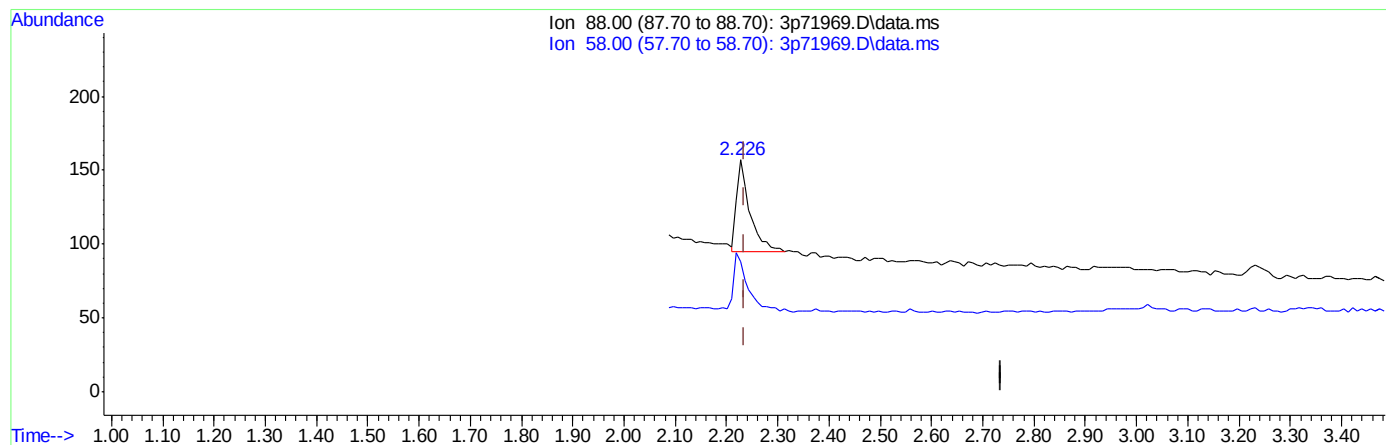
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration

7.6.6.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71969.D
Acq On : 30 Oct 2018 2:21 am
Operator : sufiyana
Sample : IC3408-0.1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 30 10:27:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71969.D\data.ms

(2) 1,4-dioxane (t)

2.226min (-0.009) 0.06ppm

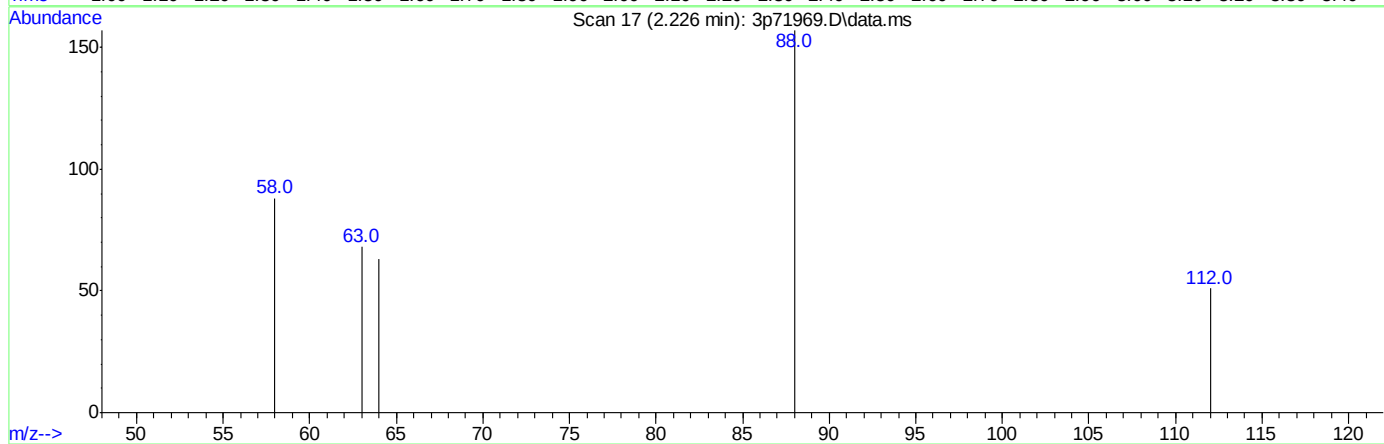
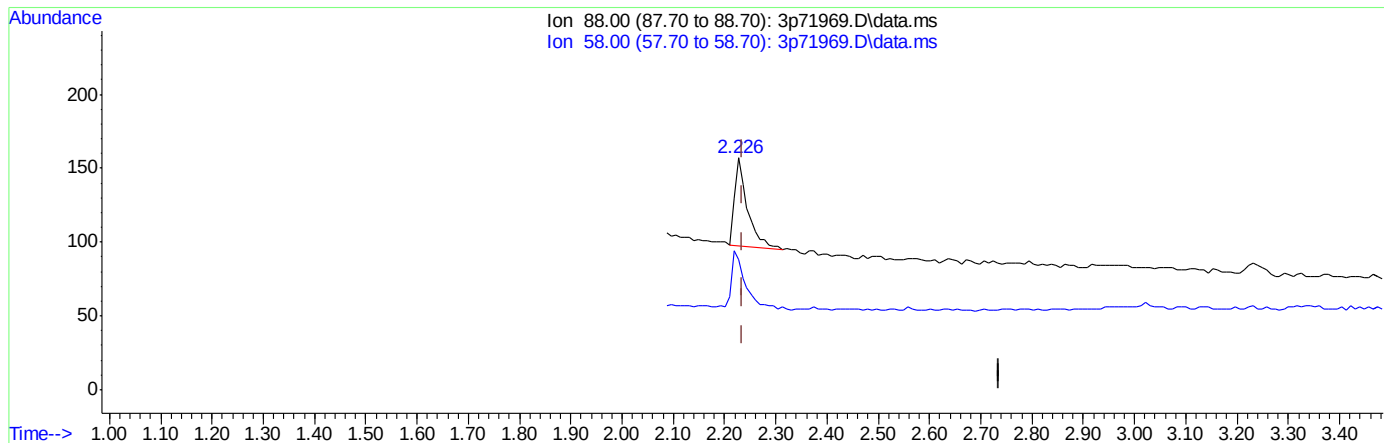
response 115

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	47.11
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71969.D
Acq On : 30 Oct 2018 2:21 am
Operator : sufiyana
Sample : IC3408-0.1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 30 10:27:57 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71969.D\data.ms

(2) 1,4-dioxane (t)

2.226min (-0.009) 0.06ppm m

response 106

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	56.05#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71970.D
 Acq On : 30 Oct 2018 2:42 am
 Operator : sufiyana
 Sample : IC3408-0.05
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 10:30:03 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

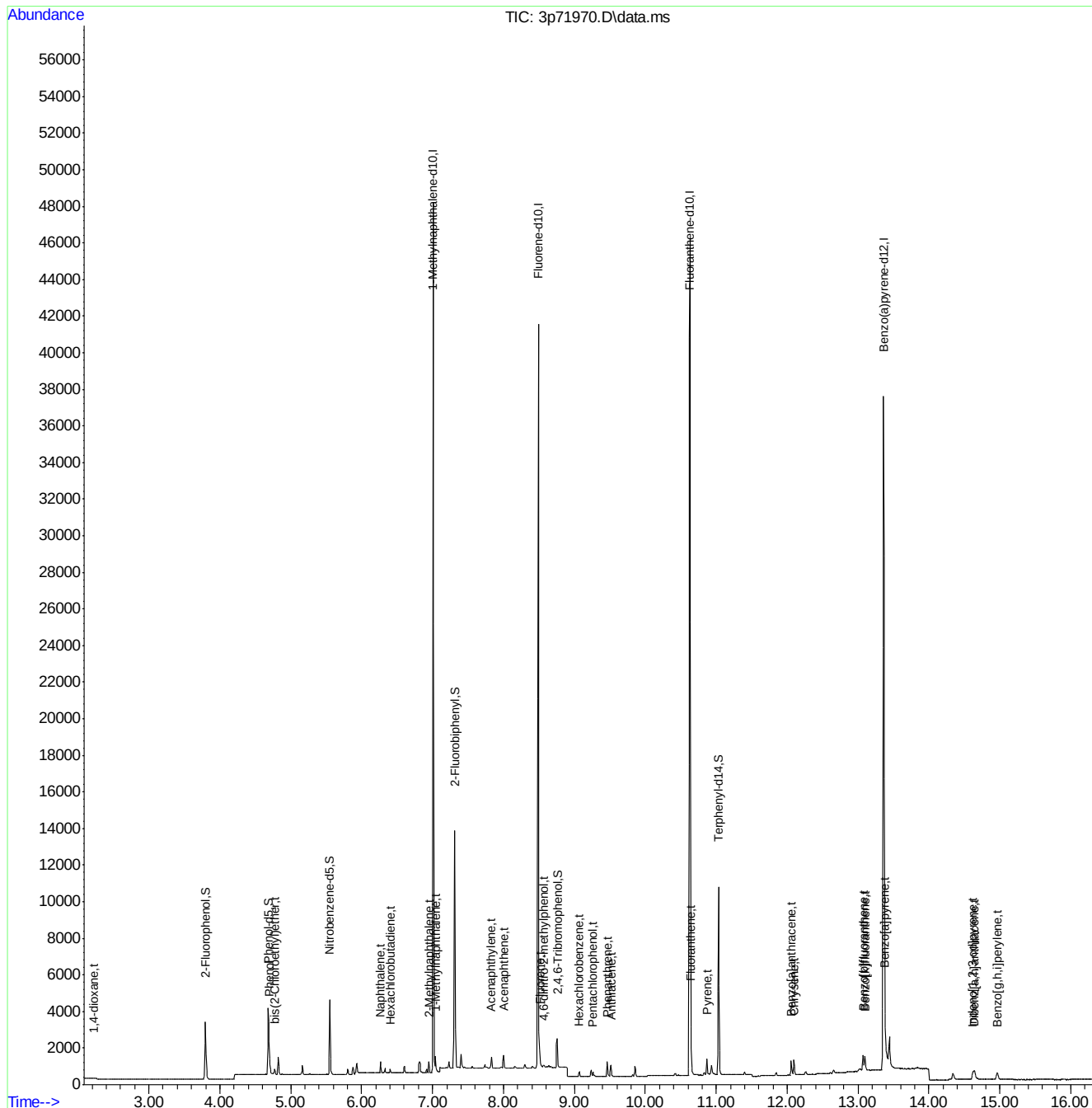
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	13684	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	18069	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	31235	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.360	264	29995	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	2125	0.61	ppm	0.00
Spiked Amount 50.000			Recovery =	1.22%		
4) Phenol-d5	4.684	99	2838	0.64	ppm	0.00
Spiked Amount 50.000			Recovery =	1.28%		
7) Nitrobenzene-d5	5.549	82	2689	0.69	ppm	0.00
Spiked Amount 50.000			Recovery =	1.38%		
13) 2-Fluorobiphenyl	7.311	172	6152	0.76	ppm	0.00
Spiked Amount 50.000			Recovery =	1.52%		
18) 2,4,6-Tribromophenol	8.760	330	697	0.70	ppm	0.00
Spiked Amount 50.000			Recovery =	1.40%		
26) Terphenyl-d14	11.036	244	5924	0.80	ppm	0.00
Spiked Amount 50.000			Recovery =	1.60%		
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.226	88	36m	0.03	ppm	
5) Phenol	4.698	94	793	0.17	ppm	92
6) bis(2-Chloroethyl)ether	4.771	93	107	0.03	ppm	93
8) Naphthalene	6.267	128	377	0.04	ppm	99
9) Hexachlorobutadiene	6.405	225	65	0.04	ppm	96
10) 2-Methylnaphthalene	6.950	141	202	0.04	ppm	97
11) 1-Methylnaphthalene	7.043	141	294	0.05	ppm	99
14) Acenaphthylene	7.828	152	377	0.04	ppm	99
15) Acenaphthene	8.004	153	252	0.04	ppm	96
16) 4,6-dinitro-2-methylph...	8.574	198	74	0.08	ppm	94
17) Fluorene	8.512	166	321	0.04	ppm	99
20) Hexachlorobenzene	9.065	284	101	0.04	ppm	93
21) Pentachlorophenol	9.265	266	114	0.09	ppm	96
22) Phenanthrene	9.464	178	477	0.04	ppm	100
23) Anthracene	9.516	178	429	0.04	ppm	98
24) Fluoranthene	10.643	202	595	0.04	ppm	99
25) Pyrene	10.870	202	572	0.04	ppm	98
27) Benzo[a]anthracene	12.059	228	485	0.04	ppm	96
28) Chrysene	12.092	228	548	0.04	ppm	98
30) Benzo[b]fluoranthene	13.071	252	597	0.04	ppm	99
31) Benzo[k]fluoranthene	13.096	252	564	0.04	ppm	98
32) Benzo[a]pyrene	13.381	252	515	0.04	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.618	276	588	0.04	ppm	99
34) Dibenzo[a,h]anthracene	14.644	278	487	0.04	ppm	93
35) Benzo[g,h,i]perylene	14.962	276	511	0.04	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71970.D
Acq On : 30 Oct 2018 2:42 am
Operator : sufiyana
Sample : IC3408-0.05
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 10:30:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71970.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 02:42

Supervisor approved: 10/30/18 17:36 Nina Pandya

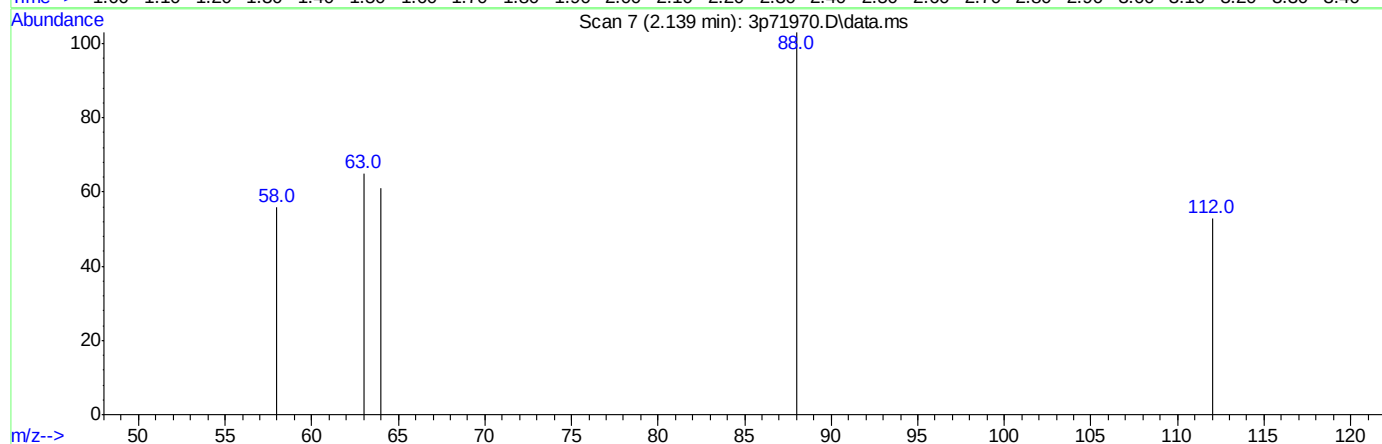
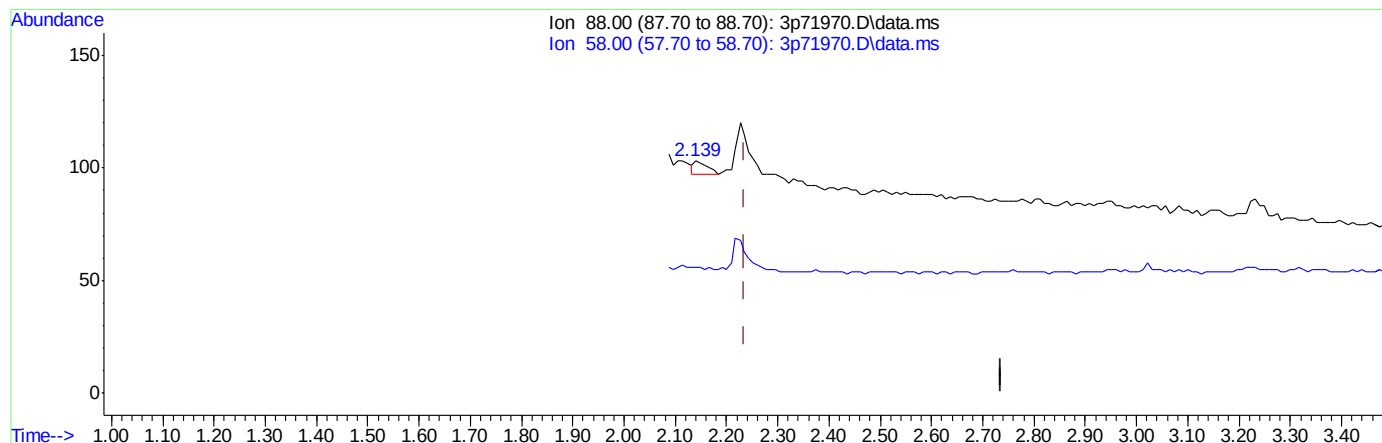
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration

7.6.7.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71970.D
Acq On : 30 Oct 2018 2:42 am
Operator : sufiyana
Sample : IC3408-0.05
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 10:29:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71970.D\data.ms

(2) 1,4-dioxane (t)

2.139min (-0.096) 0.01ppm

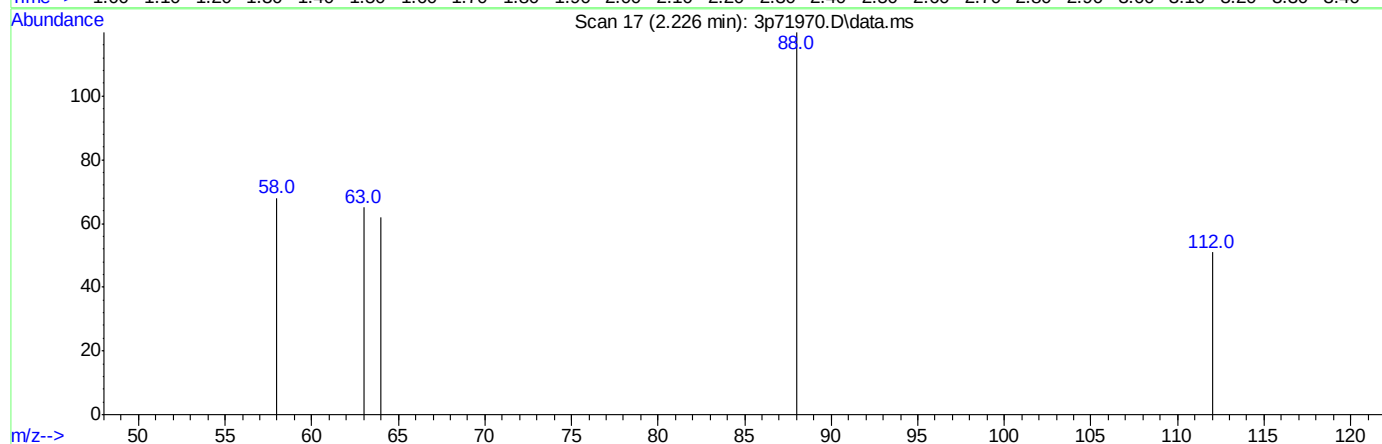
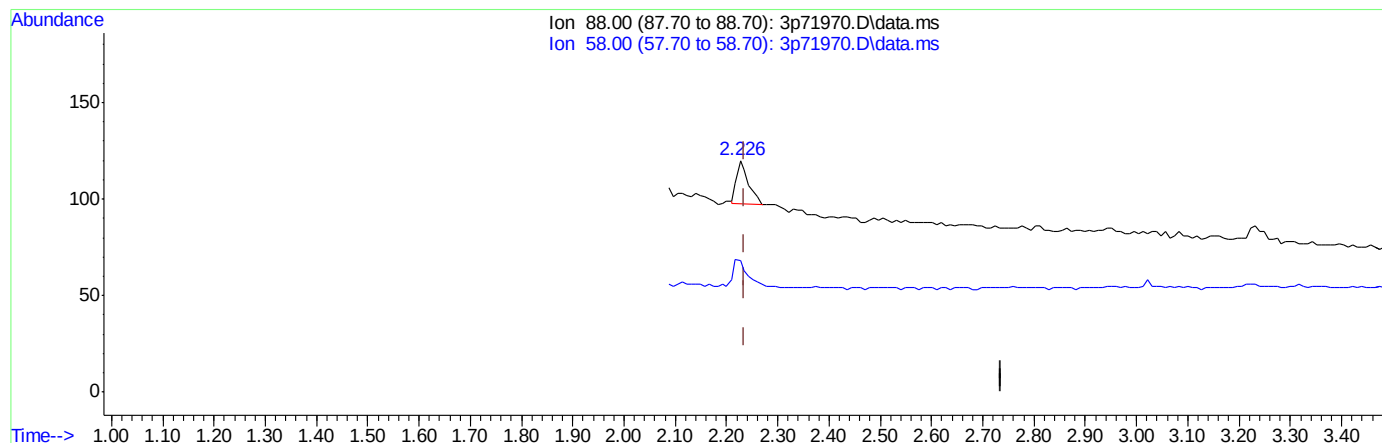
response 10

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	12.50
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71970.D
Acq On : 30 Oct 2018 2:42 am
Operator : sufiyana
Sample : IC3408-0.05
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 30 10:29:09 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71970.D\data.ms

(2) 1,4-dioxane (t)

2.226min (-0.009) 0.03ppm m

response 36

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	56.67#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71971.D
 Acq On : 30 Oct 2018 3:03 am
 Operator : sufiyana
 Sample : IC3408-0.02
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:32:37 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

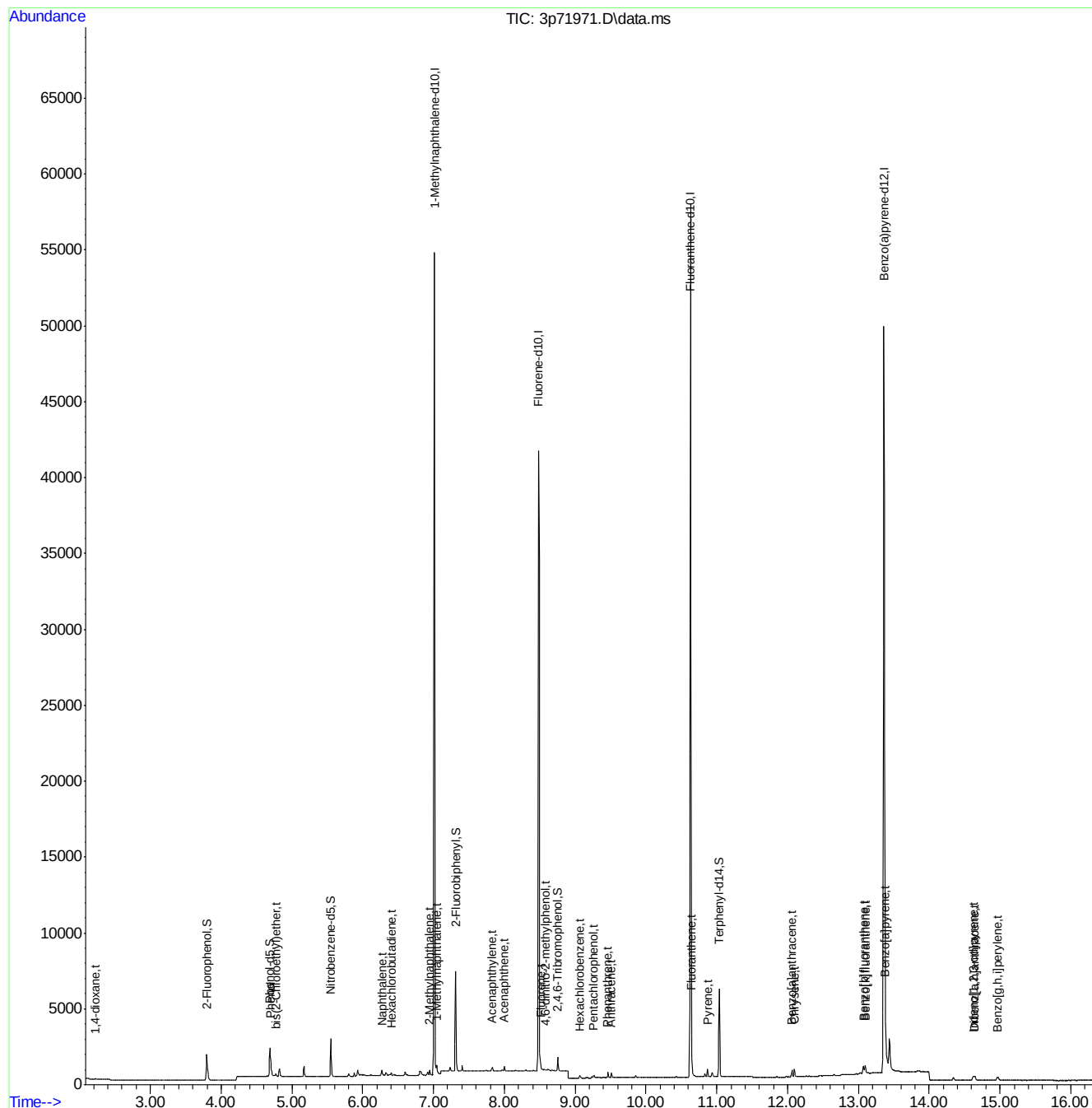
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.012	150	18209	4.00	ppm	0.00
12) Fluorene-d10	8.483	176	21753	4.00	ppm	0.00
19) Fluoranthene-d10	10.630	212	39028	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	39051	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	1253	0.27	ppm	0.00
Spiked Amount 50.000			Recovery =		0.54%	
4) Phenol-d5	4.686	99	1570	0.27	ppm	0.00
Spiked Amount 50.000			Recovery =		0.54%	
7) Nitrobenzene-d5	5.551	82	1484	0.28	ppm	0.00
Spiked Amount 50.000			Recovery =		0.56%	
13) 2-Fluorobiphenyl	7.313	172	3302	0.34	ppm	0.00
Spiked Amount 50.000			Recovery =		0.68%	
18) 2,4,6-Tribromophenol	8.752	330	356	0.30	ppm	0.00
Spiked Amount 50.000			Recovery =		0.60%	
26) Terphenyl-d14	11.033	244	3371	0.36	ppm	0.00
Spiked Amount 50.000			Recovery =		0.72%	
Target Compounds						
						Qvalue
2) 1,4-dioxane	2.226	88	16m	0.01	ppm	
5) Phenol	4.700	94	431	0.07	ppm	97
6) bis(2-Chloroethyl)ether	4.773	93	68	0.02	ppm	76
8) Naphthalene	6.270	128	216	0.02	ppm	99
9) Hexachlorobutadiene	6.402	225	35	0.01	ppm	95
10) 2-Methylnaphthalene	6.946	141	115	0.02	ppm	88
11) 1-Methylnaphthalene	7.045	141	129m	0.02	ppm	
14) Acenaphthylene	7.830	152	186	0.01	ppm	98
15) Acenaphthene	7.996	153	130	0.02	ppm	91
16) 4,6-dinitro-2-methylph...	8.576	198	37	0.04	ppm	78
17) Fluorene	8.514	166	160	0.02	ppm	93
20) Hexachlorobenzene	9.067	284	54	0.02	ppm	94
21) Pentachlorophenol	9.261	266	83	0.05	ppm	92
22) Phenanthrene	9.461	178	268	0.02	ppm	96
23) Anthracene	9.512	178	225	0.02	ppm	98
24) Fluoranthene	10.644	202	380	0.02	ppm	99
25) Pyrene	10.871	202	343	0.02	ppm	98
27) Benzo[a]anthracene	12.060	228	307	0.02	ppm	98
28) Chrysene	12.093	228	345	0.02	ppm	99
30) Benzo[b]fluoranthene	13.072	252	386	0.02	ppm	97
31) Benzo[k]fluoranthene	13.097	252	383	0.02	ppm	98
32) Benzo[a]pyrene	13.382	252	339	0.02	ppm	96
33) Indeno[1,2,3-cd]pyrene	14.622	276	365	0.02	ppm	99
34) Dibenzo[a,h]anthracene	14.642	278	271	0.02	ppm	97
35) Benzo[g,h,i]perylene	14.963	276	300	0.02	ppm	96

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71971.D
Acq On : 30 Oct 2018 3:03 am
Operator : sufiyana
Sample : IC3408-0.02
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:32:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3408-IC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P71971.D

Analyst approved: 10/30/18 11:46 Ying Li

Injection Time: 10/30/18 03:03

Supervisor approved: 10/30/18 17:36 Nina Pandya

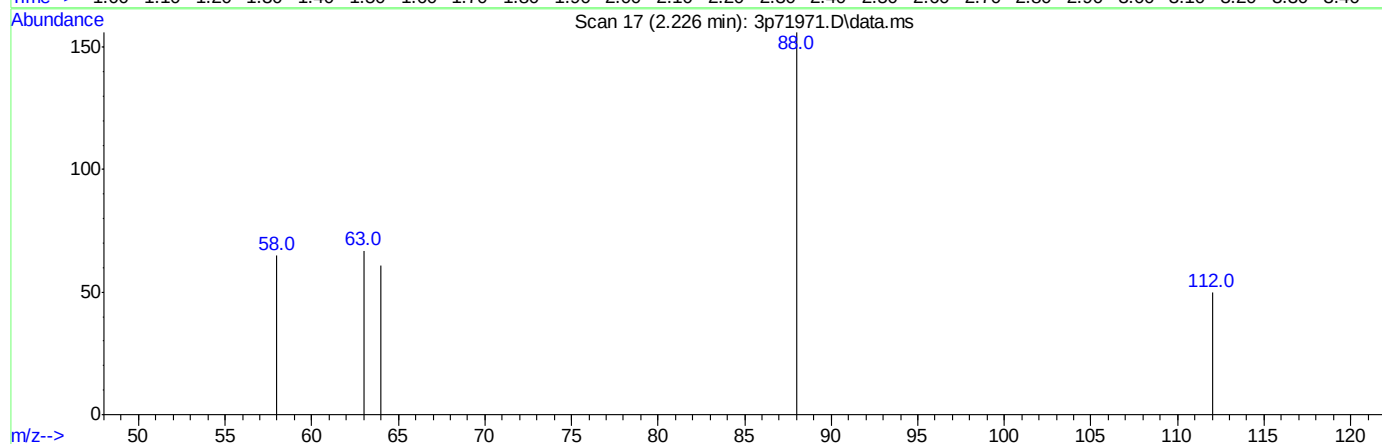
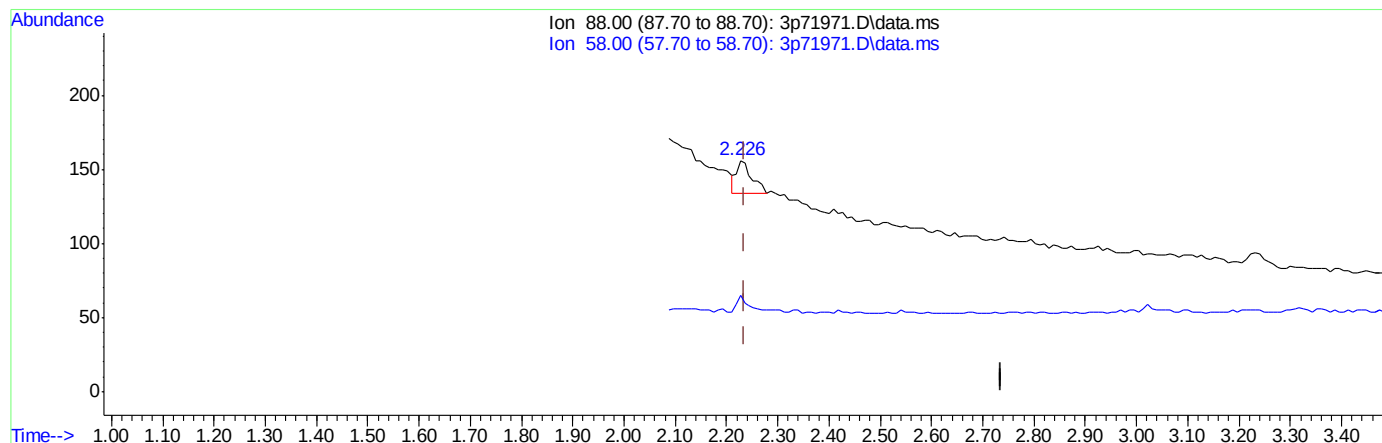
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.23	Poor instrument integration
1-Methylnaphthalene	90-12-0		7.05	Poor instrument integration

7.6.8.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71971.D
Acq On : 30 Oct 2018 3:03 am
Operator : sufiyana
Sample : IC3408-0.02
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:31:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71971.D\data.ms

(2) 1,4-dioxane (t)

2.226min (-0.009) 0.03ppm

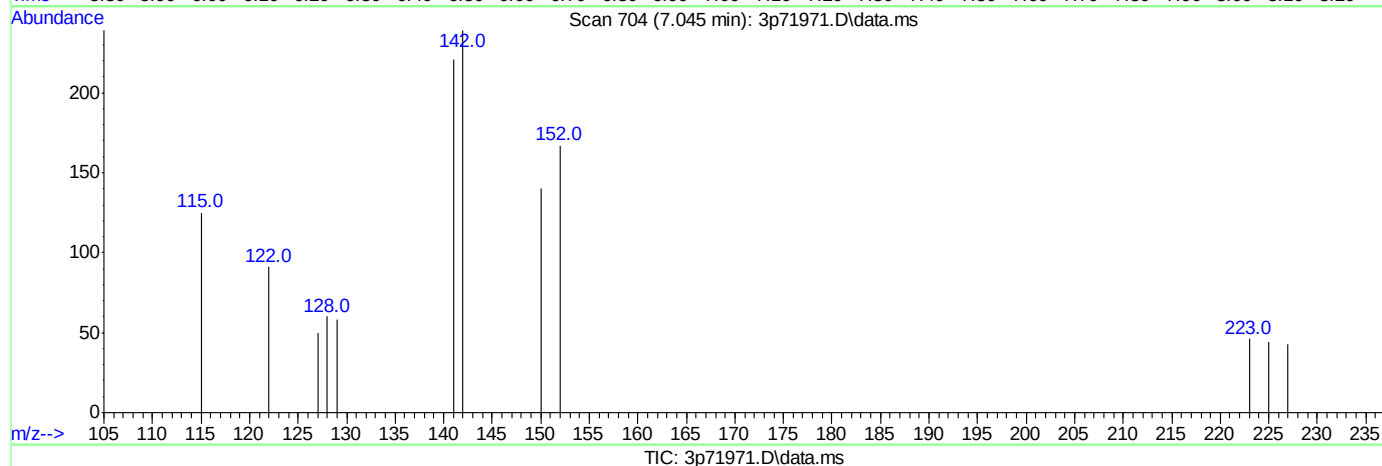
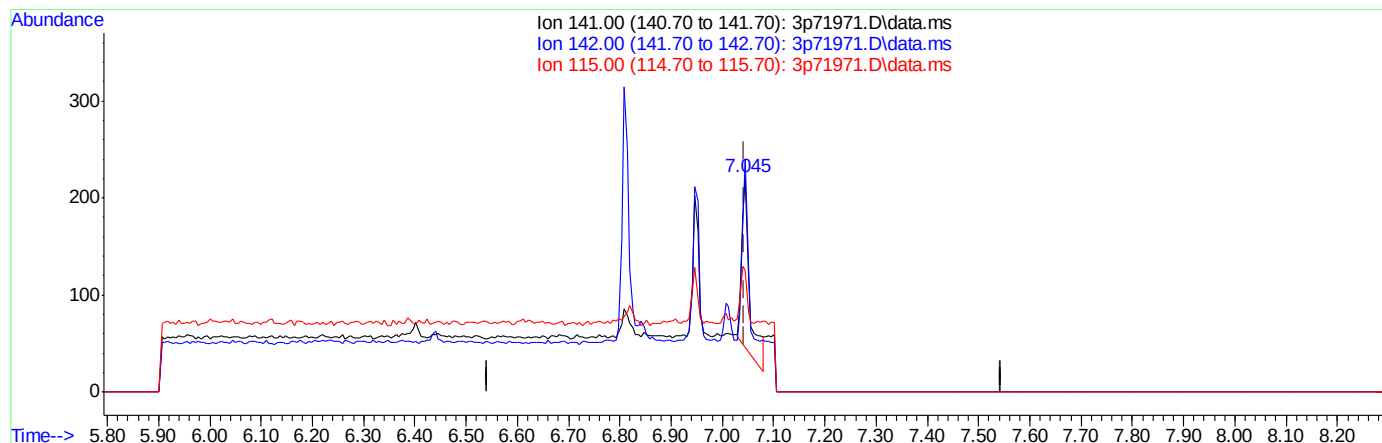
response 47

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	65.63#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71971.D
Acq On : 30 Oct 2018 3:03 am
Operator : sufiyana
Sample : IC3408-0.02
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:31:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



(11) 1-Methylnaphthalene (t)

7.045min (+0.002) 0.02ppm

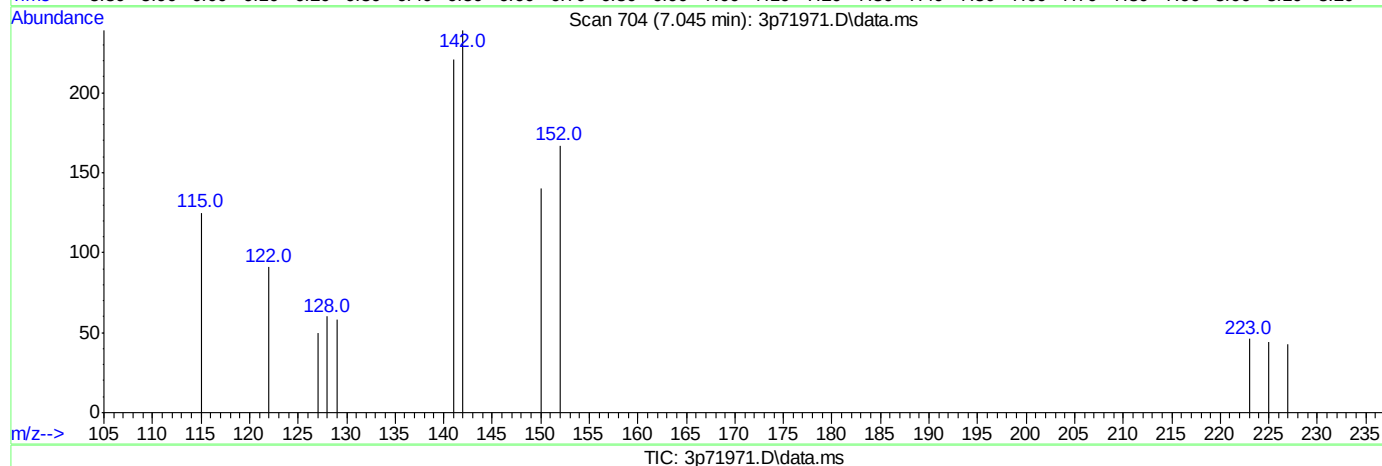
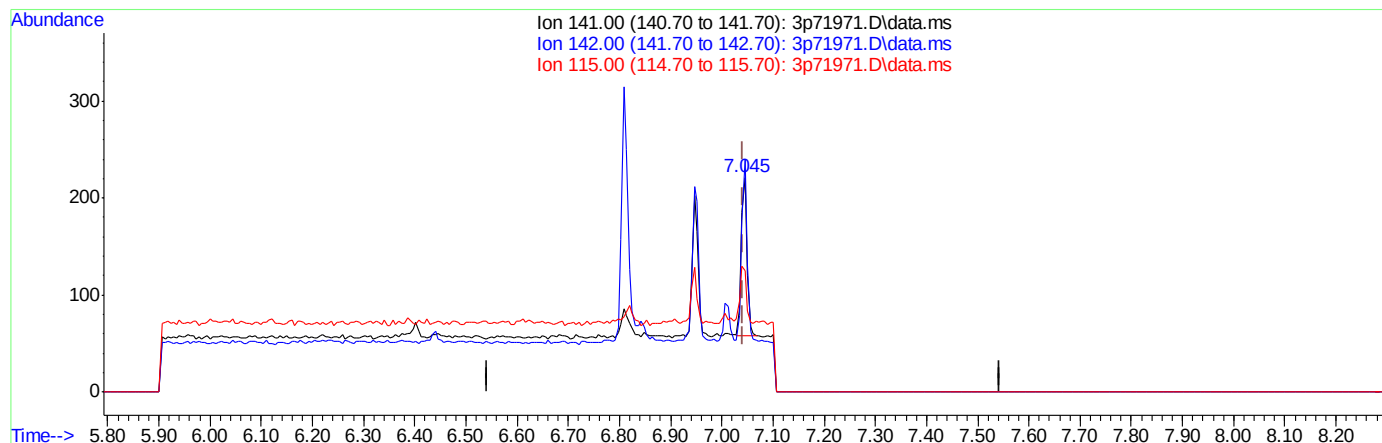
response 185

Ion	Exp%	Act%
141.00	100	100
142.00	110.10	113.80
115.00	39.30	31.29
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71971.D
Acq On : 30 Oct 2018 3:03 am
Operator : sufiyana
Sample : IC3408-0.02
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:31:14 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



(11) 1-Methylnaphthalene (t)

7.045min (+0.002) 0.02ppm m

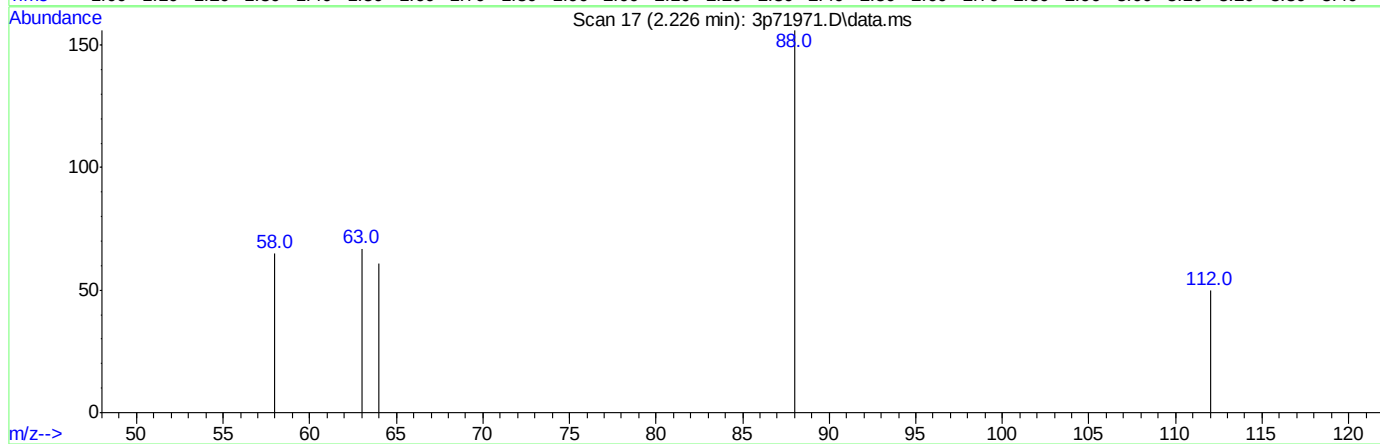
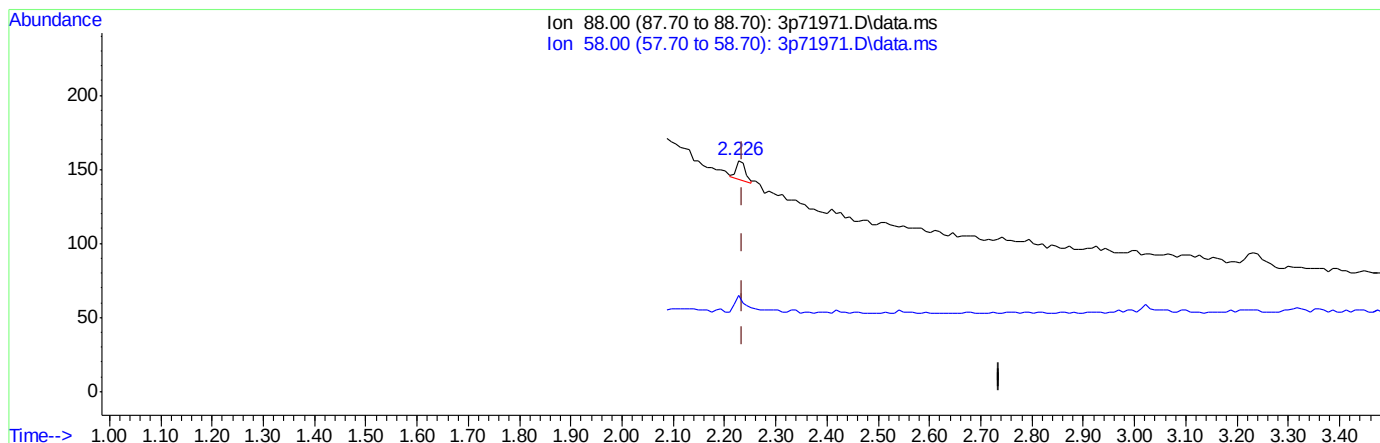
response 129

Ion	Exp%	Act%
141.00	100	100
142.00	110.10	108.14
115.00	39.30	56.56
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71971.D
Acq On : 30 Oct 2018 3:03 am
Operator : sufiyana
Sample : IC3408-0.02
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 30 10:32:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



TIC: 3p71971.D\data.ms

(2) 1,4-dioxane (t)

2.226min (-0.009) 0.01ppm m

response 16

Ion	Exp%	Act%
88.00	100	100
58.00	29.40	41.67
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71972.D
 Acq On : 30 Oct 2018 3:24 am
 Operator : sufiyana
 Sample : IC3408-0.01
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 30 11:26:43 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:19:56 2018
 Response via : Initial Calibration

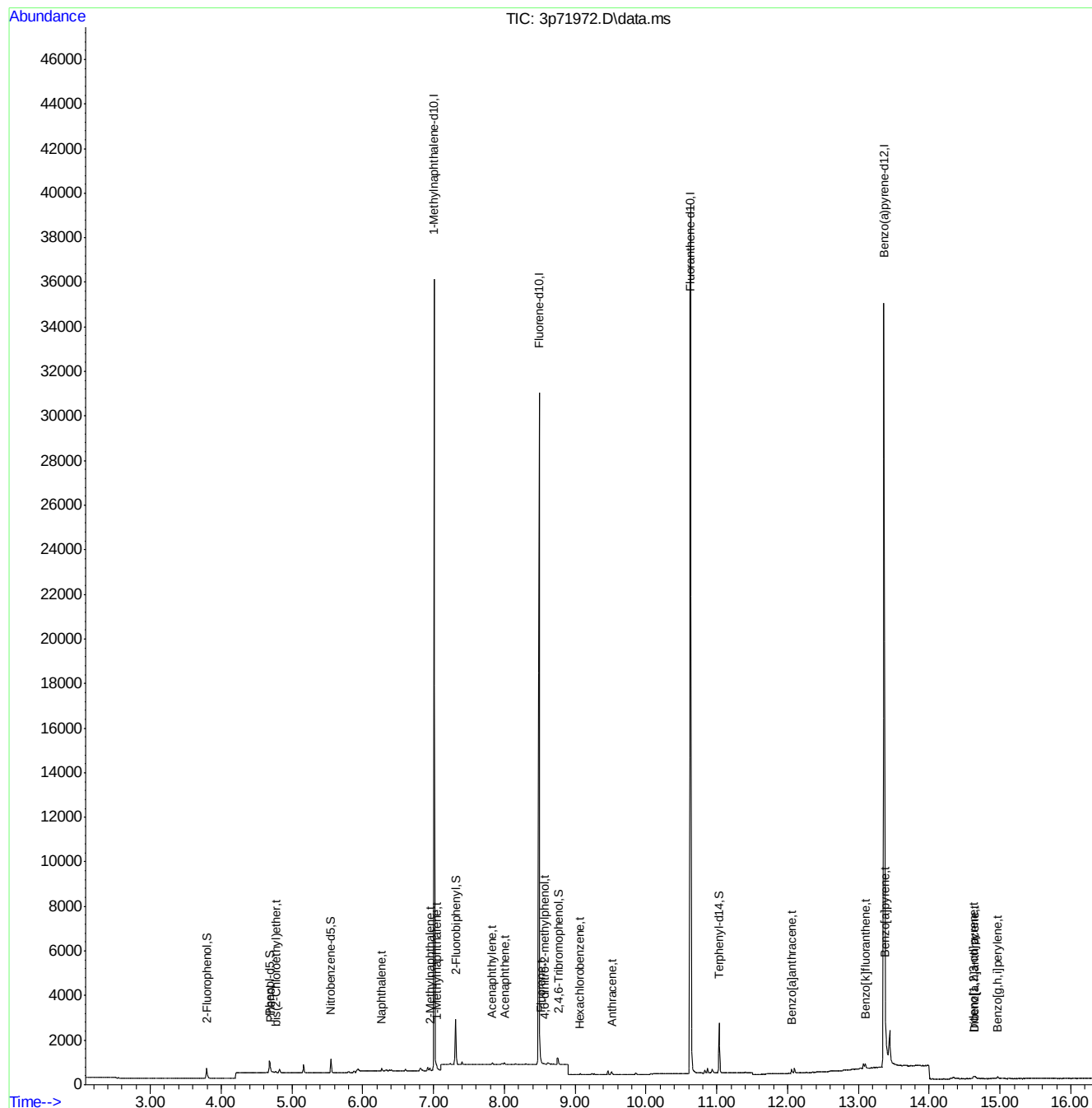
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	10361	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	14174	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	26899	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	27641	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.798	112	324	0.12	ppm	0.00
Spiked Amount 50.000			Recovery =		0.24%	
4) Phenol-d5	4.684	99	421	0.13	ppm	0.00
Spiked Amount 50.000			Recovery =		0.26%	
7) Nitrobenzene-d5	5.549	82	392	0.13	ppm	0.00
Spiked Amount 50.000			Recovery =		0.26%	
13) 2-Fluorobiphenyl	7.311	172	969	0.15	ppm	0.00
Spiked Amount 50.000			Recovery =		0.30%	
18) 2,4,6-Tribromophenol	8.760	330	142	0.18	ppm	0.00
Spiked Amount 50.000			Recovery =		0.36%	
26) Terphenyl-d14	11.037	244	1321	0.21	ppm	0.00
Spiked Amount 50.000			Recovery =		0.42%	
Target Compounds						
						Qvalue
5) Phenol	4.698	94	127	0.04	ppm	97
6) bis(2-Chloroethyl)ether	4.771	93	18	0.01	ppm	84
8) Naphthalene	6.268	128	64	0.01	ppm	100
10) 2-Methylnaphthalene	6.950	141	37	0.01	ppm	87
11) 1-Methylnaphthalene	7.043	141	45	0.01	ppm	89
14) Acenaphthylene	7.828	152	65	0.01	ppm	94
15) Acenaphthene	8.004	153	42	0.01	ppm	93
16) 4,6-dinitro-2-methylph...	8.574	198	13	0.02	ppm	# 56
17) Fluorene	8.512	166	49	0.01	ppm	94
20) Hexachlorobenzene	9.065	284	21	0.01	ppm	93
23) Anthracene	9.516	178	99	0.01	ppm	95
27) Benzo[a]anthracene	12.059	228	122	0.01	ppm	95
31) Benzo[k]fluoranthene	13.096	252	134	0.01	ppm	98
32) Benzo[a]pyrene	13.382	252	129	0.01	ppm	86
33) Indeno[1,2,3-cd]pyrene	14.624	276	124	0.01	ppm	98
34) Dibenz[a,h]anthracene	14.644	278	87	0.01	ppm	76
35) Benzo[g,h,i]perylene	14.968	276	103	0.01	ppm	97

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71972.D
Acq On : 30 Oct 2018 3:24 am
Operator : sufiyana
Sample : IC3408-0.01
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 30 11:26:43 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:19:56 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71973.D
 Acq On : 30 Oct 2018 3:45 am
 Operator : sufiyana
 Sample : ICV3408-5
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 30 11:31:07 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) 1-Methylnaphthalene-d10	7.010	150	18556	4.00	ppm	0.00
12) Fluorene-d10	8.491	176	24184	4.00	ppm	0.00
19) Fluoranthene-d10	10.629	212	42727	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	38706	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	0.000	112	0	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						
5) Phenol	4.698	94	19682	4.41	ppm	Qvalue # 93
16) 4,6-dinitro-2-methylph...	8.574	198	3225	4.23	ppm	97
21) Pentachlorophenol	9.259	266	6134	5.41	ppm	93

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

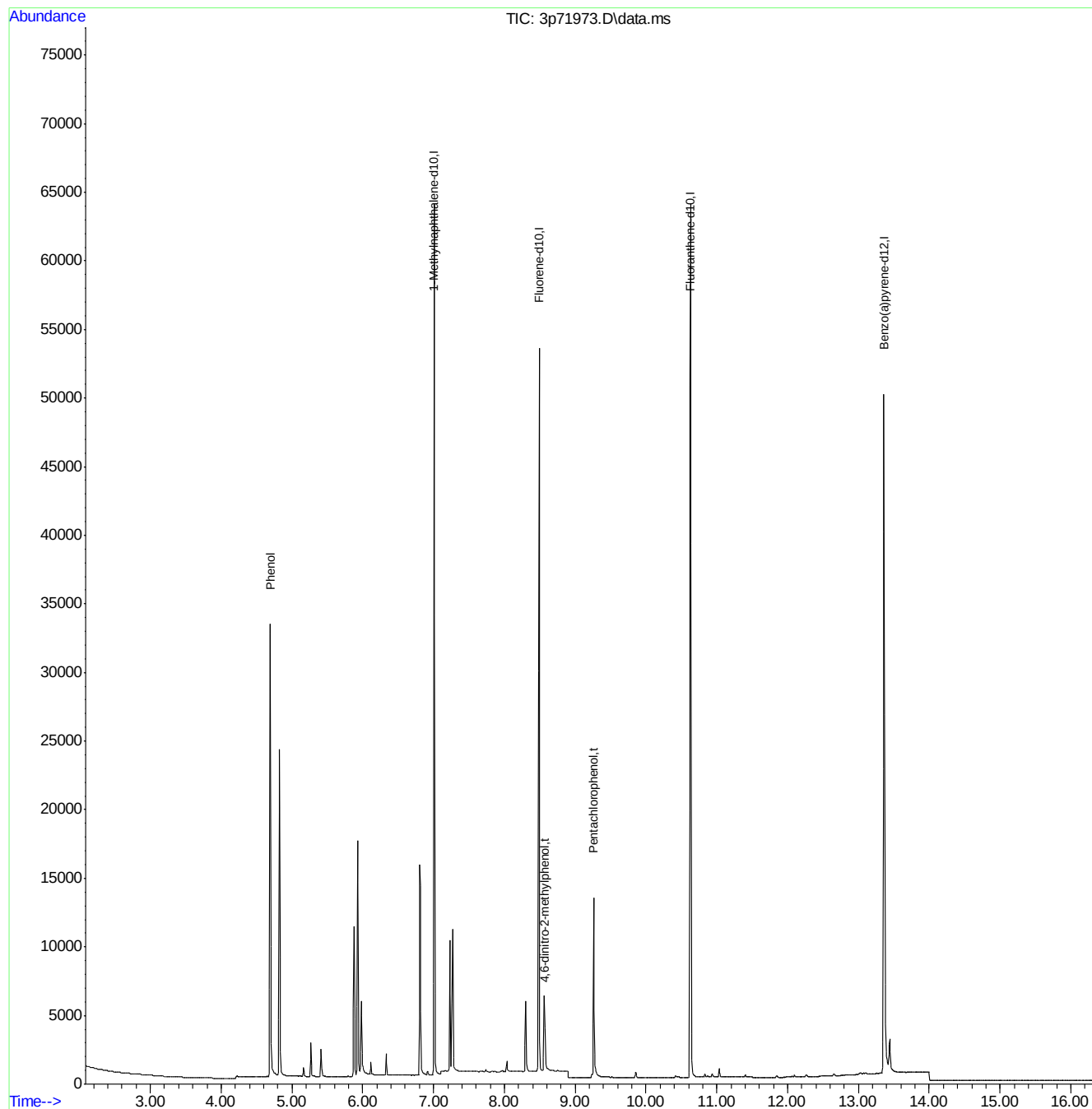
7.6.10

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71973.D
Acq On : 30 Oct 2018 3:45 am
Operator : sufiyana
Sample : ICV3408-5
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 30 11:31:07 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
 Data File : 3p71974.D
 Acq On : 30 Oct 2018 4:06 am
 Operator : sufiyana
 Sample : ICV3408-1
 Misc : op15969a,e3p3408,1000,,,1,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 30 11:32:50 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 10:49:21 2018
 Response via : Initial Calibration

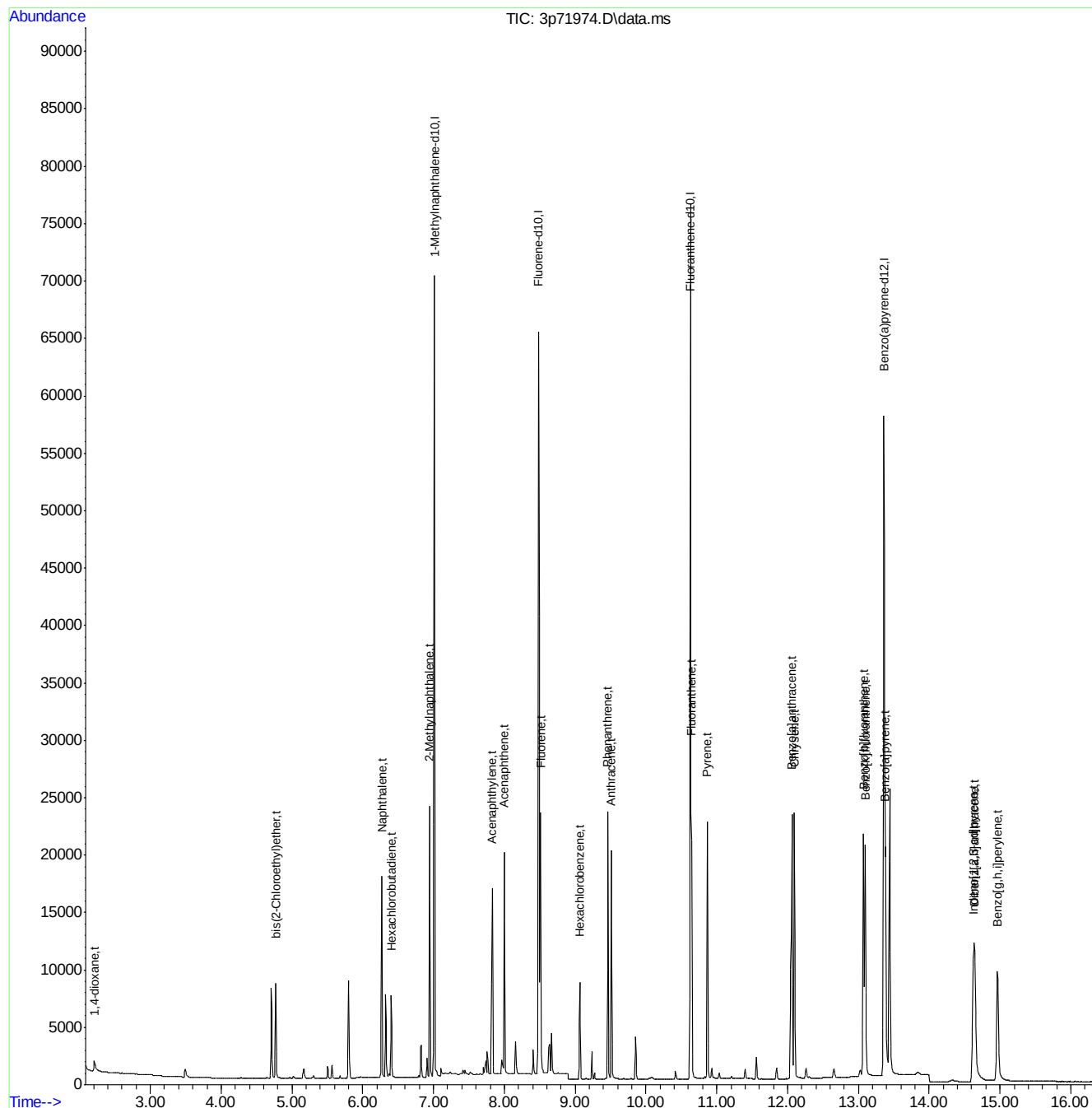
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.012	150	23079	4.00	ppm	0.00
12) Fluorene-d10	8.483	176	30694	4.00	ppm	0.00
19) Fluoranthene-d10	10.630	212	52564	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.361	264	43797	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
4) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
7) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
13) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
18) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
26) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
Target Compounds						
2) 1,4-dioxane	2.209	88	1064	0.72	ppm	Qvalue # 33
6) bis(2-Chloroethyl)ether	4.774	93	3712	0.97	ppm	75
8) Naphthalene	6.270	128	12314	0.95	ppm	98
9) Hexachlorobutadiene	6.402	225	2049	0.96	ppm	96
10) 2-Methylnaphthalene	6.946	141	7046	0.99	ppm	95
14) Acenaphthylene	7.830	152	11582	0.90	ppm	98
15) Acenaphthene	7.996	153	8060	0.94	ppm	91
17) Fluorene	8.514	166	9144	0.90	ppm	96
20) Hexachlorobenzene	9.067	284	2856	0.88	ppm	95
22) Phenanthrene	9.461	178	13679	0.92	ppm	99
23) Anthracene	9.512	178	12546	0.87	ppm	98
24) Fluoranthene	10.644	202	15483	0.85	ppm	99
25) Pyrene	10.866	202	15250	0.85	ppm	99
27) Benzo[a]anthracene	12.060	228	13785	0.82	ppm	99
28) Chrysene	12.093	228	14514	0.85	ppm	99
30) Benzo[b]fluoranthene	13.072	252	15077	0.91	ppm	97
31) Benzo[k]fluoranthene	13.097	252	14102	0.84	ppm	98
32) Benzo[a]pyrene	13.383	252	13552	0.86	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.622	276	14871	0.85	ppm	100
34) Dibenz[a,h]anthracene	14.645	278	12450	0.88	ppm	99
35) Benzo[g,h,i]perylene	14.963	276	12915	0.89	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3408\
Data File : 3p71974.D
Acq On : 30 Oct 2018 4:06 am
Operator : sufiyana
Sample : ICV3408-1
Misc : op15969a,e3p3408,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 30 11:32:50 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 10:49:21 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
 Data File : 3p72898.D
 Acq On : 27 Nov 2018 9:06 pm
 Operator : sufiyana
 Sample : cc3408-1
 Misc : op16388a,e3p3447,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 28 09:06:18 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

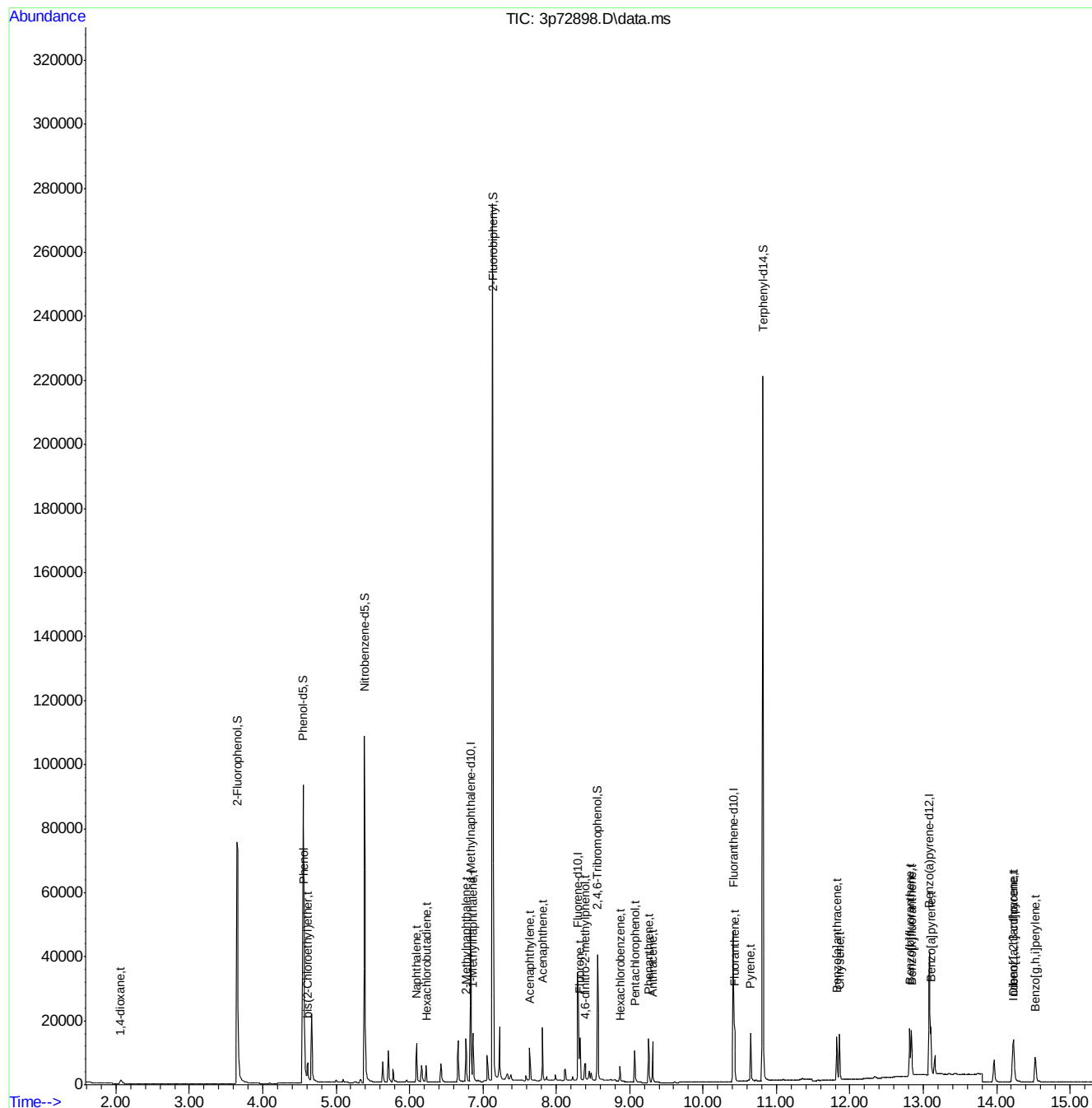
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.832	150	15343	4.00	ppm	-0.03
12) Fluorene-d10	8.291	176	18446	4.00	ppm	-0.09
19) Fluoranthene-d10	10.411	212	31344	4.00	ppm	-0.06
29) Benzo(a)pyrene-d12	13.082	264	26238	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.656	112	58327	22.62	ppm	-0.03
Spiked Amount 50.000			Recovery =	45.24%		
4) Phenol-d5	4.548	99	72004	21.51	ppm	-0.02
Spiked Amount 50.000			Recovery =	43.02%		
7) Nitrobenzene-d5	5.386	82	68127	22.17	ppm	-0.03
Spiked Amount 50.000			Recovery =	44.34%		
13) 2-Fluorobiphenyl	7.132	172	136613	22.30	ppm	-0.09
Spiked Amount 50.000			Recovery =	44.60%		
18) 2,4,6-Tribromophenol	8.560	330	14494	19.10	ppm	-0.10
Spiked Amount 50.000			Recovery =	38.20%		
26) Terphenyl-d14	10.814	244	118004	20.17	ppm	-0.06
Spiked Amount 50.000			Recovery =	40.34%		
Target Compounds						
2) 1,4-dioxane	2.058	88	1214m	1.24	ppm	Qvalue
5) Phenol	4.561	94	19348	5.24	ppm	# 93
6) bis(2-Chloroethyl)ether	4.615	93	2483	0.97	ppm	88
8) Naphthalene	6.094	128	8664	1.01	ppm	97
9) Hexachlorobutadiene	6.226	225	1558	1.10	ppm	98
10) 2-Methylnaphthalene	6.771	141	4535	0.95	ppm	99
11) 1-Methylnaphthalene	6.865	141	5511	0.98	ppm	100
14) Acenaphthylene	7.639	152	7837	1.01	ppm	99
15) Acenaphthene	7.815	153	5411	1.05	ppm	100
16) 4,6-dinitro-2-methylph...	8.395	198	3983	6.32	ppm	81
17) Fluorene	8.322	166	5855	0.96	ppm	99
20) Hexachlorobenzene	8.866	284	1743	0.90	ppm	96
21) Pentachlorophenol	9.071	266	4340	5.23	ppm	93
22) Phenanthrene	9.260	178	8616	0.97	ppm	98
23) Anthracene	9.311	178	8673	1.01	ppm	97
24) Fluoranthene	10.430	202	9741	0.90	ppm	98
25) Pyrene	10.647	202	10188	0.96	ppm	99
27) Benzo[a]anthracene	11.822	228	8860	0.88	ppm	98
28) Chrysene	11.860	228	8937	0.88	ppm	100
30) Benzo[b]fluoranthene	12.818	252	9328	0.94	ppm	95
31) Benzo[k]fluoranthene	12.839	252	9856	0.99	ppm	99
32) Benzo[a]pyrene	13.103	252	8977	0.95	ppm	96
33) Indeno[1,2,3-cd]pyrene	14.220	276	10399	0.99	ppm	100
34) Dibenzo[a,h]anthracene	14.232	278	8939	1.05	ppm	91
35) Benzo[g,h,i]perylene	14.527	276	8518	0.98	ppm	90

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72898.D
Acq On : 27 Nov 2018 9:06 pm
Operator : sufiyana
Sample : cc3408-1
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 28 09:06:18 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3447-CC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P72898.D

Analyst approved: 11/28/18 10:23 Dipa Patel

Injection Time: 11/27/18 21:06

Supervisor approved: 11/28/18 15:19 Nancy Ma

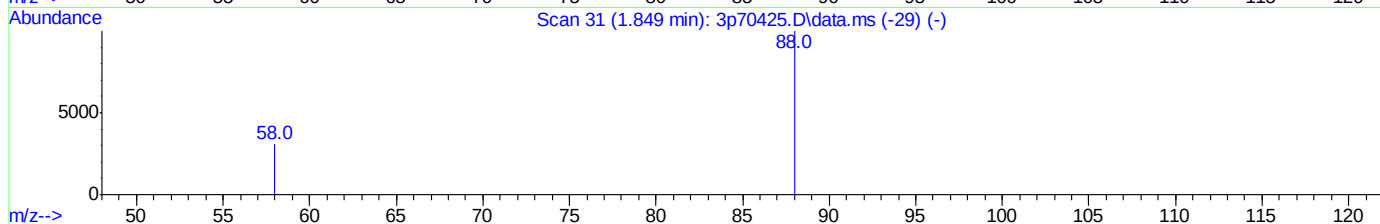
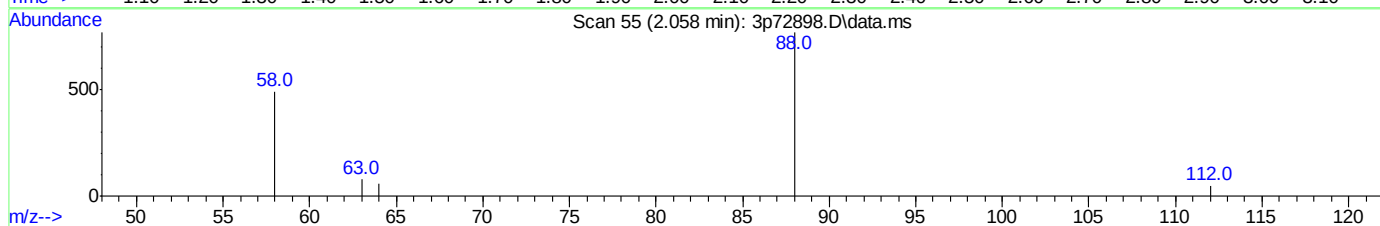
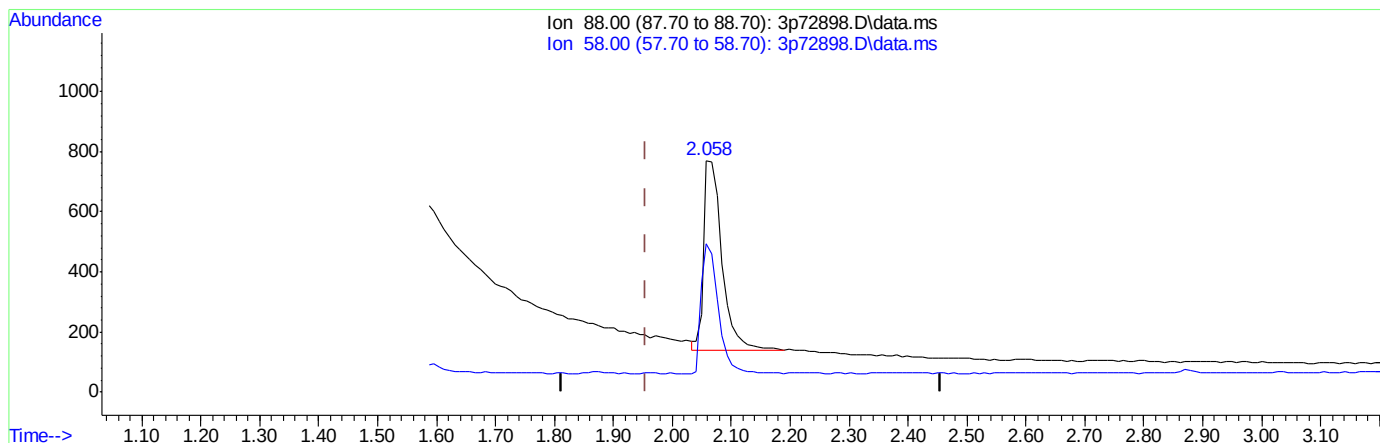
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.06	Poor instrument integration

7.6.12.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72898.D
Acq On : 27 Nov 2018 9:06 pm
Operator : sufiyana
Sample : cc3408-1
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 28 09:04:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72898.D\data.ms

(2) 1,4-dioxane (t)

2.058min (+0.102) 1.38ppm

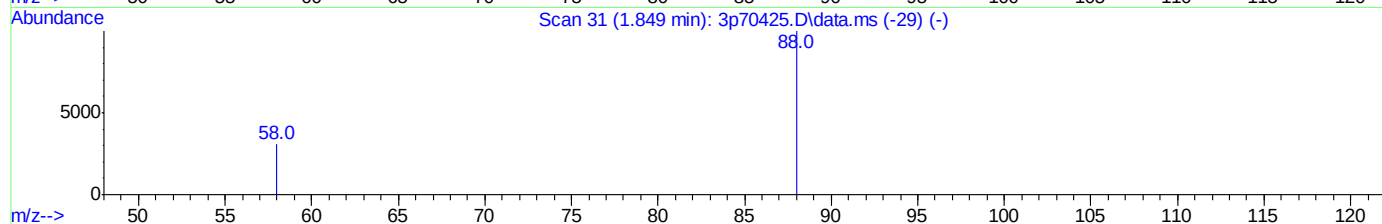
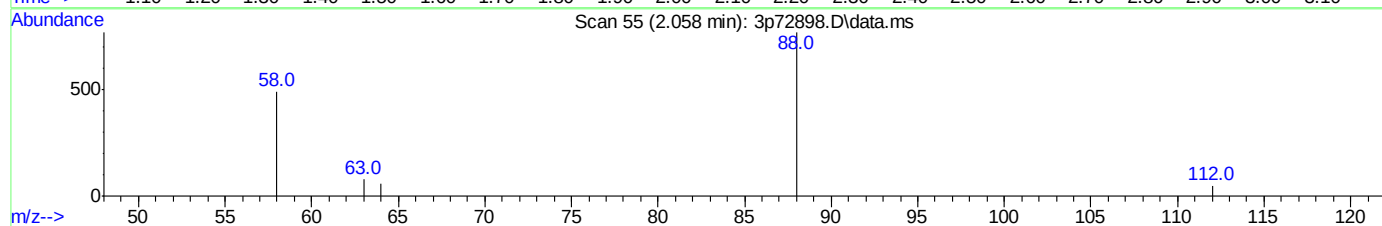
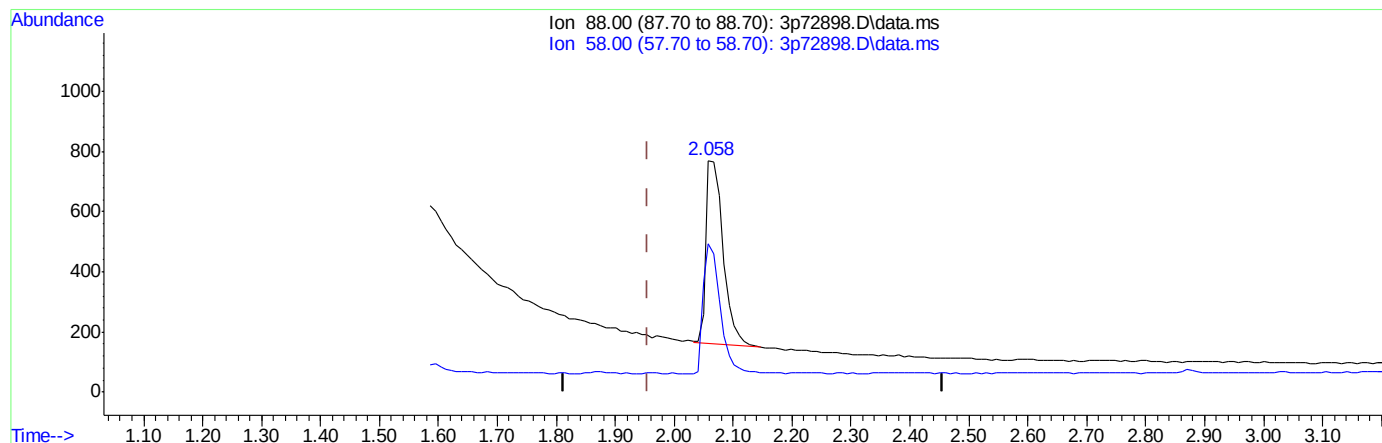
response 1348

Ion	Exp%	Act%
88.00	100	100
58.00	61.80	70.05
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3447\
Data File : 3p72898.D
Acq On : 27 Nov 2018 9:06 pm
Operator : sufiyana
Sample : cc3408-1
Misc : op16388a,e3p3447,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 28 09:04:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72898.D\data.ms

(2) 1,4-dioxane (t)

2.058min (+0.102) 1.24ppm m

response 1214

Ion	Exp%	Act%
88.00	100	100
58.00	61.80	64.03
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
 Data File : 3p72923.d
 Acq On : 28 Nov 2018 10:47 am
 Operator : christc2
 Sample : cc3408-0.5 Inst : MSGC3P
 Misc : op16388a,e3p3448,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
 Quant Results File: M3P3408SIM.RES
 Quant Time: Nov 29 07:30:29 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Tue Oct 30 11:26:22 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	150	29829	4.00	ppm	0.00
12) Fluorene-d10	8.281	176	36124	4.00	ppm	0.00
19) Fluoranthene-d10	10.402	212	59058	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.082	264	44100	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.638	112	59219	11.81	ppm	-0.02
Spiked Amount 50.000			Recovery	=	23.62%	
4) Phenol-d5	4.534	99	74967	11.52	ppm	0.00
Spiked Amount 50.000			Recovery	=	23.04%	
7) Nitrobenzene-d5	5.372	82	71861	12.03	ppm	-0.01
Spiked Amount 50.000			Recovery	=	24.06%	
13) 2-Fluorobiphenyl	7.121	172	153300	12.78	ppm	-0.01
Spiked Amount 50.000			Recovery	=	25.56%	
18) 2,4,6-Tribromophenol	8.550	330	14676	9.88	ppm	0.00
Spiked Amount 50.000			Recovery	=	19.76%	
26) Terphenyl-d14	10.805	244	126428	11.47	ppm	0.00
Spiked Amount 50.000			Recovery	=	22.94%	
Target Compounds						
2) 1,4-dioxane	2.067	88	1229m	0.65	ppm	Qvalue
5) Phenol	4.541	94	20117	2.80	ppm	# 84
6) bis(2-Chloroethyl)ether	4.601	93	2551	0.51	ppm	# 47
8) Naphthalene	6.083	128	9340	0.56	ppm	97
9) Hexachlorobutadiene	6.215	225	1698	0.61	ppm	98
10) 2-Methylnaphthalene	6.760	141	4935	0.53	ppm	96
11) 1-Methylnaphthalene	6.853	141	5767	0.53	ppm	100
14) Acenaphthylene	7.629	152	8160	0.54	ppm	99
15) Acenaphthene	7.805	153	5745	0.57	ppm	98
16) 4,6-dinitro-2-methylph...	8.384	198	3033	2.84	ppm	92
17) Fluorene	8.312	166	6242	0.52	ppm	98
20) Hexachlorobenzene	8.860	284	1885m	0.52	ppm	
21) Pentachlorophenol	9.060	266	3860	2.57	ppm	93
22) Phenanthrene	9.248	178	9043	0.54	ppm	98
23) Anthracene	9.300	178	8594	0.53	ppm	98
24) Fluoranthene	10.420	202	10577	0.52	ppm	98
25) Pyrene	10.643	202	10492	0.52	ppm	100
27) Benzo[a]anthracene	11.822	228	8222	0.43	ppm	99
28) Chrysene	11.856	228	9270	0.48	ppm	99
30) Benzo[b]fluoranthene	12.818	252	8850	0.53	ppm	96
31) Benzo[k]fluoranthene	12.839	252	9416	0.56	ppm	98
32) Benzo[a]pyrene	13.103	252	8506	0.54	ppm	96
33) Indeno[1,2,3-cd]pyrene	14.220	276	9308	0.53	ppm	99
34) Dibenz[a,h]anthracene	14.232	278	7888	0.55	ppm	90
35) Benzo[g,h,i]perylene	14.524	276	7787	0.54	ppm	97

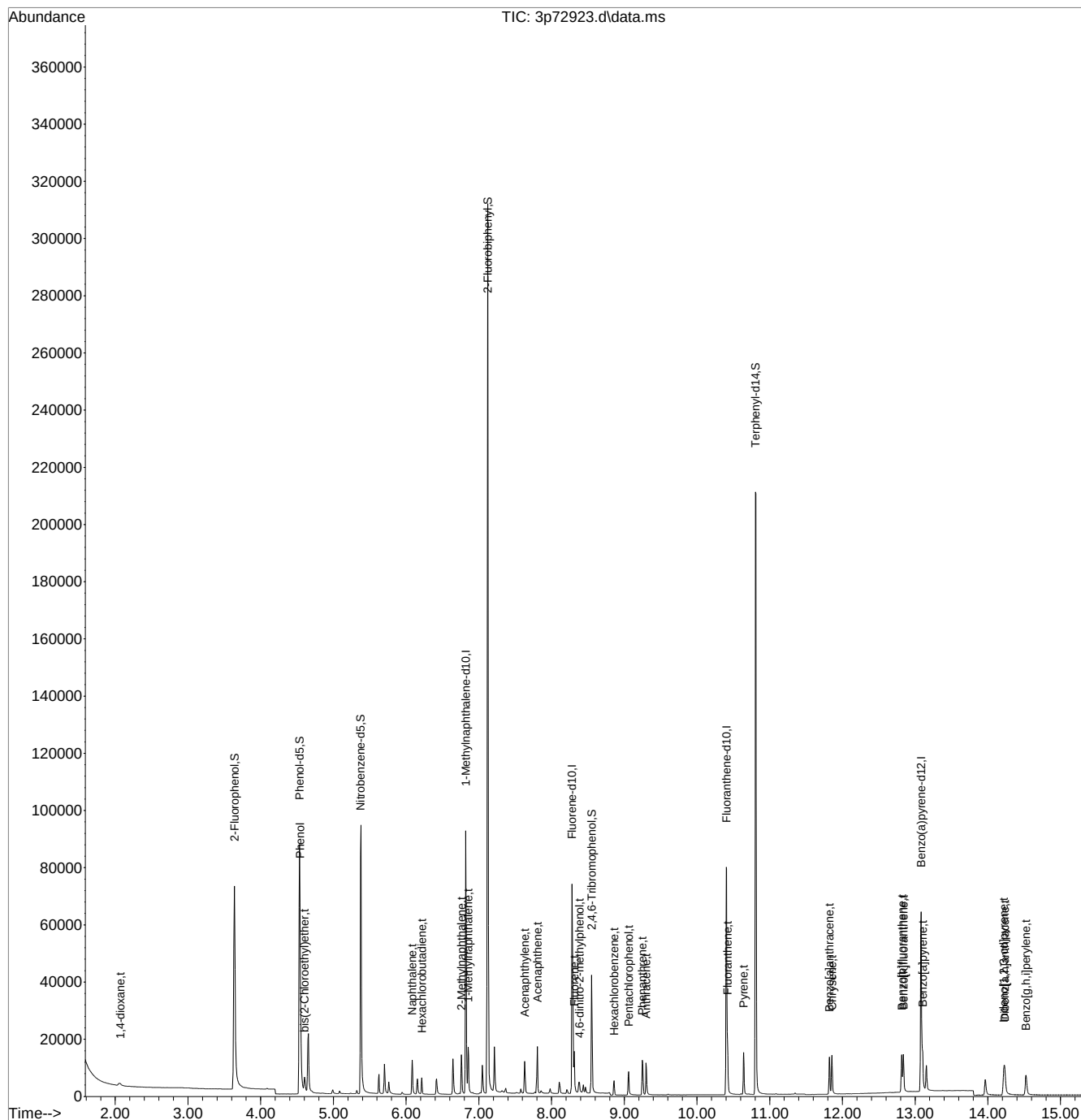
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jonkm\3p3448\
Data File : 3p72923.d
Acq On : 28 Nov 2018 10:47 am
Operator : christc2
Sample : cc3408-0.5
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:30:29 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E3P3448-CC3408

Method: SW846 8270D BY SIM

Lab FileID: 3P72923.D

Analyst approved: 11/29/18 07:34 Jon Kreigmor Mamanta

Injection Time: 11/28/18 10:47

Supervisor approved: 11/29/18 17:02 Nina Pandya

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.07	Poor instrument integration
Hexachlorobenzene	118-74-1		8.86	Poor instrument integration

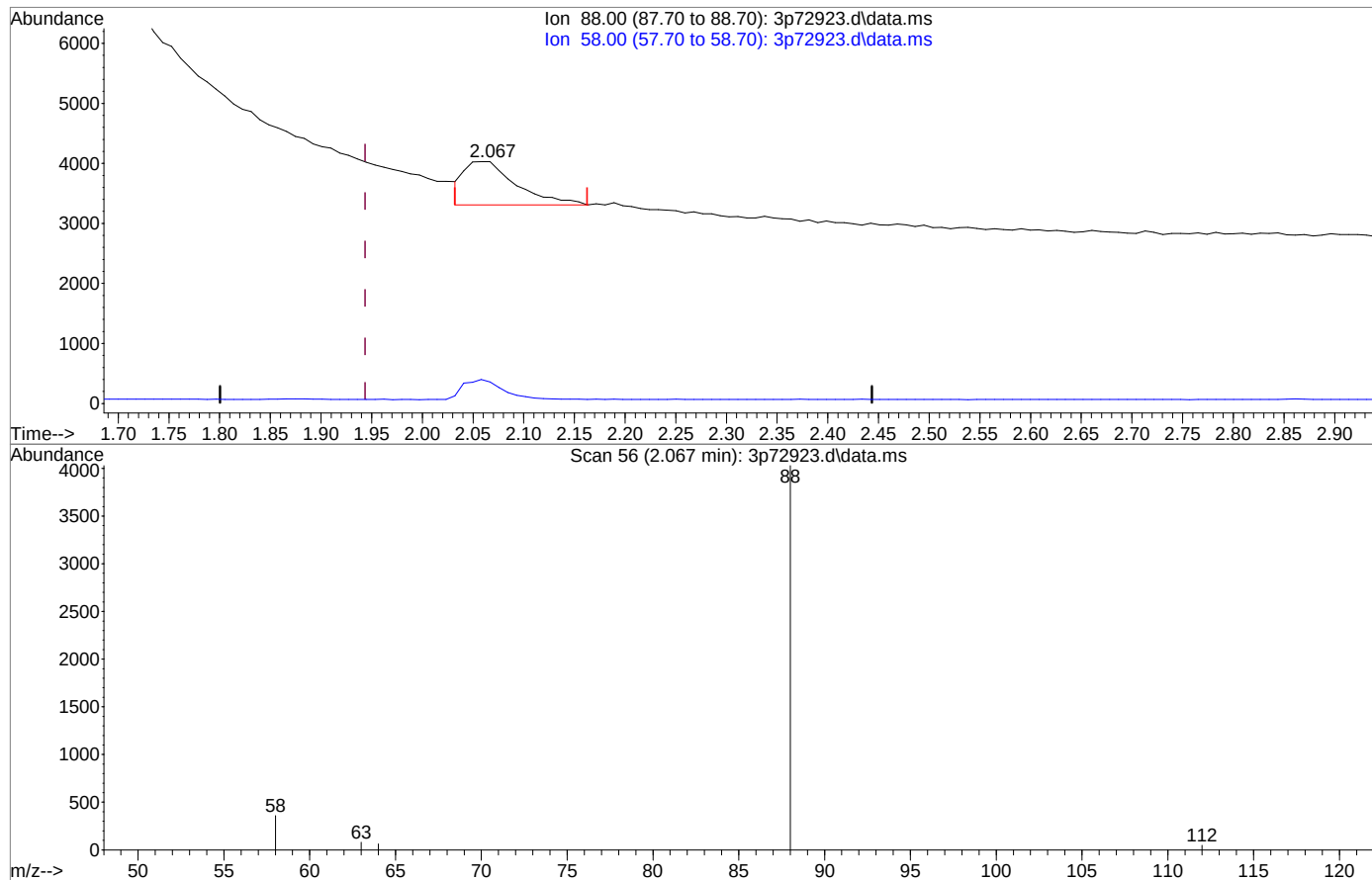
7.6.13.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72923.d
Acq On : 28 Nov 2018 10:47 am
Operator : christc2
Sample : cc3408-0.5
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:25:49 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72923.d\data.ms

(2) 1,4-dioxane (t)

2.067min (+0.123) 1.36ppm

response 2596

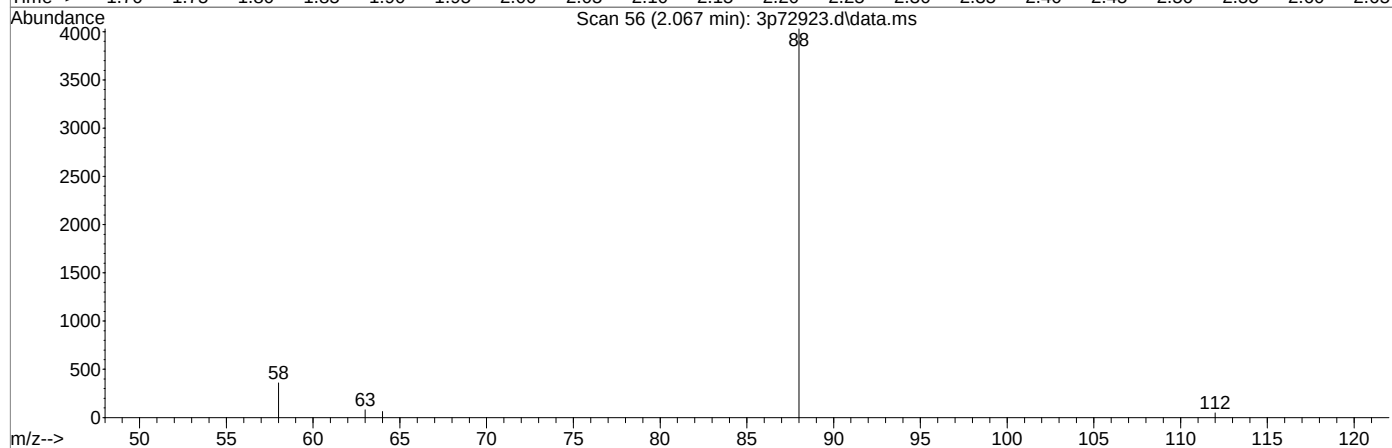
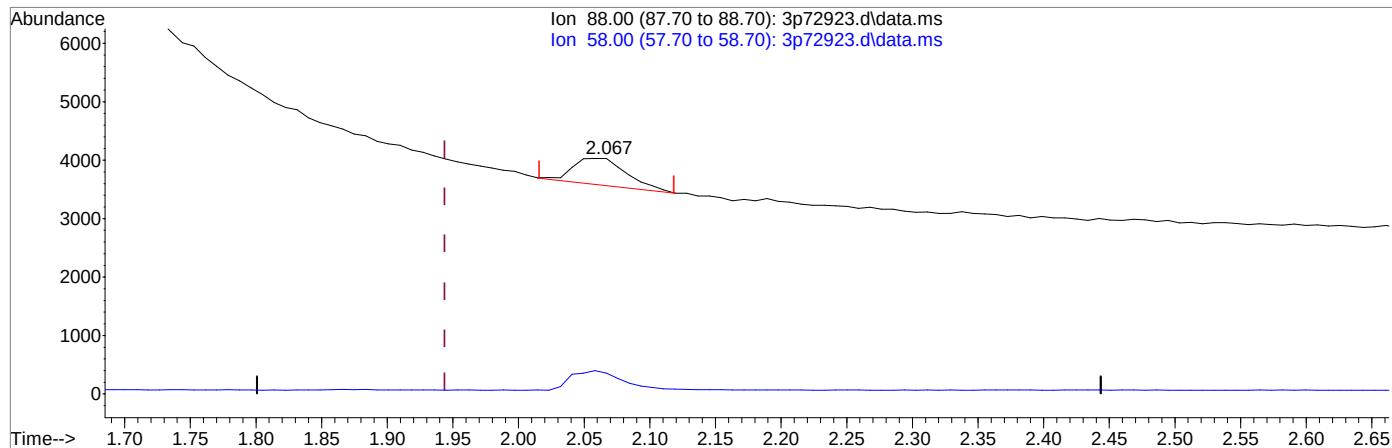
Ion	Exp%	Act%
88.00	100	100
58.00	61.80	49.48
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72923.d
Acq On : 28 Nov 2018 10:47 am
Operator : christc2
Sample : cc3408-0.5
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:25:49 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72923.d\data.ms

(2) 1,4-dioxane (t)

2.067min (+0.123) 0.65ppm m

response 1229

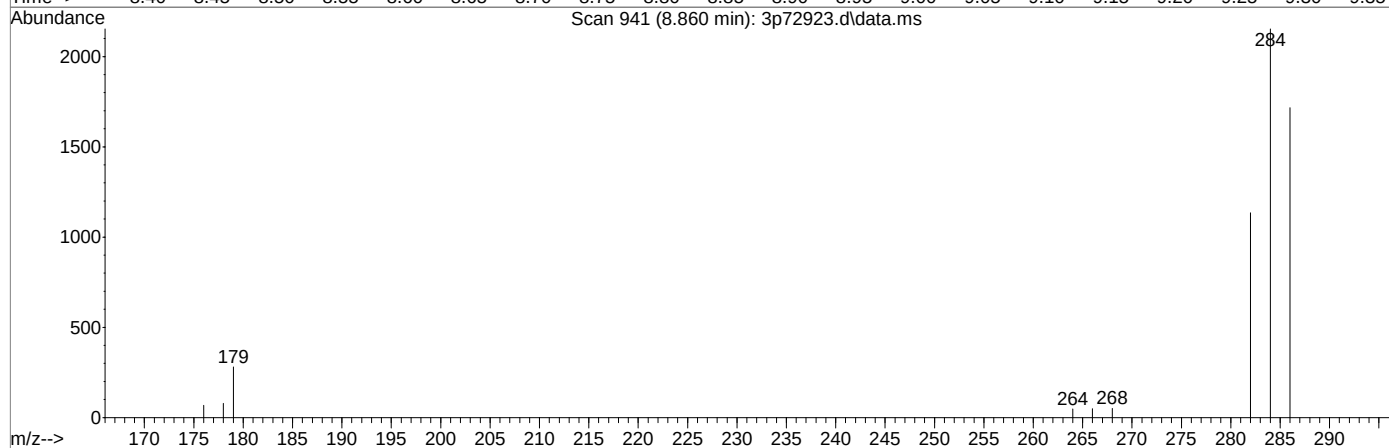
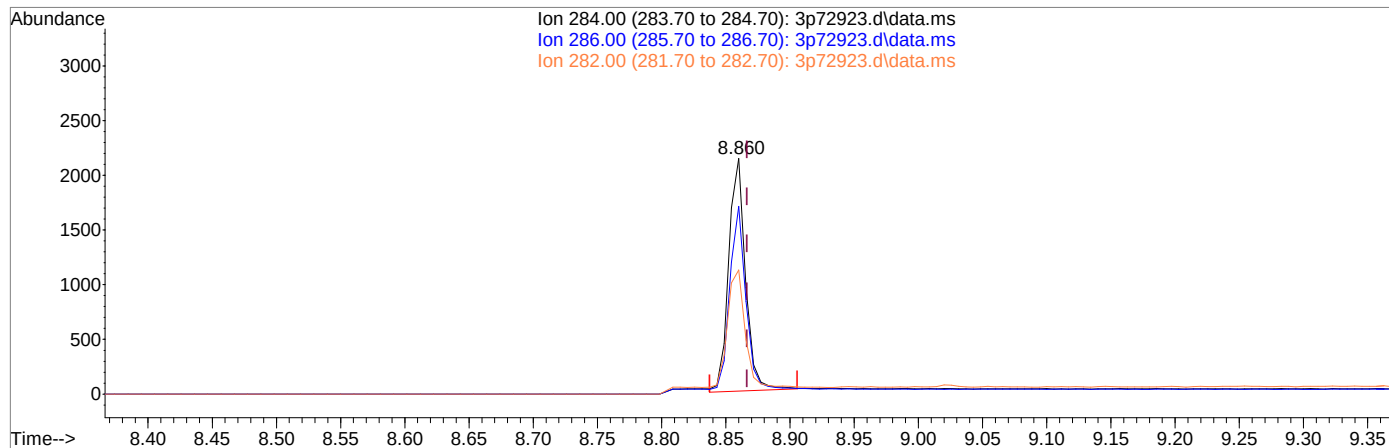
Ion	Exp%	Act%
88.00	100	100
58.00	61.80	8.88#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72923.d
Acq On : 28 Nov 2018 10:47 am
Operator : christc2
Sample : cc3408-0.5
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:25:49 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72923.d\data.ms

(20) Hexachlorobenzene (t)

8.860min (-0.006) 0.53ppm

response 1942

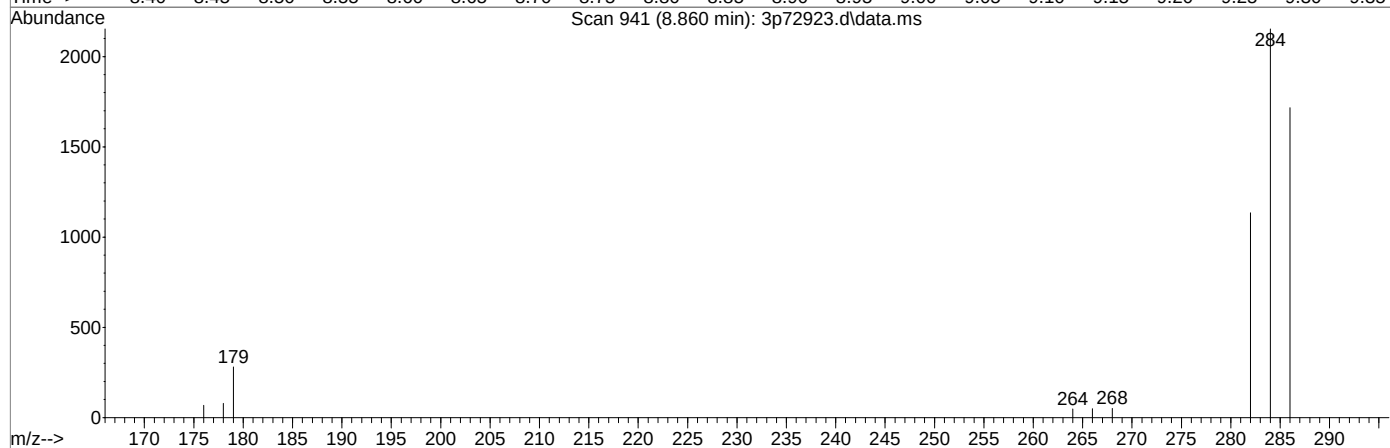
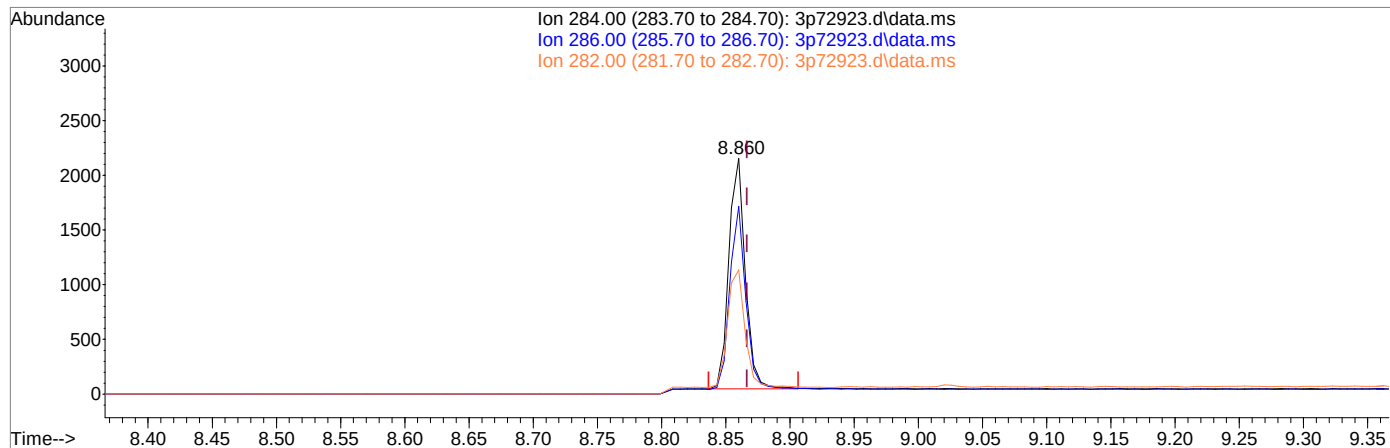
Ion	Exp%	Act%
284.00	100	100
286.00	77.60	79.42
282.00	54.30	50.92
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\jonkm\e3p3448\
Data File : 3p72923.d
Acq On : 28 Nov 2018 10:47 am
Operator : christc2
Sample : cc3408-0.5
Misc : op16388a,e3p3448,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MSGC3P

Quant Method : C:\MSDCHEM\1\METHODS\M3P3408SIM.M
Quant Results File: M3P3408SIM.RES
Quant Time: Nov 29 07:25:49 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Oct 30 11:26:22 2018
Response via : Initial Calibration



TIC: 3p72923.d\data.ms

(20) Hexachlorobenzene (t)

8.860min (-0.006) 0.52ppm m

response 1885

Ion	Exp%	Act%
284.00	100	100
286.00	77.60	79.71
282.00	54.30	52.69
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80111.D
 Acq On : 26 Nov 2018 5:25 pm
 Operator : christc2
 Sample : ic3756-5
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 27 00:57:47 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	47971	4.00	ppm	-0.03
12) Fluorene-d10	8.728	176	50602	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	78870	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.581	264	61706	4.00	ppm	-0.02
35) 1-Methylnaphthalene-d10a	7.252	152	47971	4.00	ppm	-0.03
38) Fluorene-d10a	8.728	176	50602	4.00	ppm	#-0.03

System Monitoring Compounds

2) 2-Fluorophenol	4.069	112	731094	92.50	ppm	-0.03
Spiked Amount	50.000	Range	11 - 58	Recovery	=	185.00%#
3) Phenol-d5	4.973	99	816943	95.01	ppm	-0.03
Spiked Amount	50.000			Recovery	=	190.02%
6) Nitrobenzene-d5	5.813	82	710828	107.10	ppm	-0.02
Spiked Amount	50.000			Recovery	=	214.20%
11) 2-Fluorobiphenyl	7.562	172	1568330	80.36	ppm	-0.02
Spiked Amount	50.000			Recovery	=	160.72%
17) 2,4,6-Tribromophenol	9.000	330	227100	61.07	ppm	-0.02
Spiked Amount	50.000			Recovery	=	122.14%
25) Terphenyl-d14	11.267	244	1470736	88.27	ppm	-0.01
Spiked Amount	50.000			Recovery	=	176.54%

Target Compounds

						Qvalue
4) Phenol	4.979	94	231961	22.80	ppm	86
5) bis(2-Chloroethyl)ether	5.031	93	31819	4.31	ppm	94
7) Naphthalene	6.516	128	104446	4.16	ppm	92
8) Hexachlorobutadiene	6.651	225	18073	4.07	ppm	72
9) 2-Methylnaphthalene	7.190	142	67282	4.40	ppm	96
10) Hexachlorocyclopentadiene	7.355	237	32955	9.93	ppm	91
13) Acenaphthylene	8.079	152	93177	4.02	ppm	95
14) Acenaphthene	8.244	153	65467	3.17	ppm	86
15) Dibenzofuran	8.421	168	93093	2.84	ppm	100
16) Fluorene	8.753	166	73277	2.51	ppm	90
18) Hexachlorobenzene	9.300	284	22503	3.19	ppm	95
19) Pentachlorophenol	9.507	266	76794	19.77	ppm	96
20) Phenanthrene	9.698	178	101491	3.13	ppm	99
21) Anthracene	9.746	178	90322	3.69	ppm	99
23) Fluoranthene	10.874	202	106797	3.99	ppm	99
24) Pyrene	11.099	202	109625	4.49	ppm	97
26) Benzo[a]anthracene	12.282	228	92097	4.67	ppm	99
27) Chrysene	12.319	228	104389	4.52	ppm	100
29) Benzo[b]fluoranthene	13.290	252	107507	4.44	ppm	99
30) Benzo[k]fluoranthene	13.314	252	101226	4.63	ppm	100
31) Benzo[a]pyrene	13.603	252	91533	4.16	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.832	276	102408	3.77	ppm	88
33) Dibenz[a,h]anthracene	14.853	278	90667	3.72	ppm	94
34) Benzo[g,h,i]perylene	15.180	276	83051	3.54	ppm	100
36) 1,4-Dioxane	2.424	88	13745	4.22	ppm	64
37) 1-Methylnaphthalene	7.283	142	67542	4.21	ppm	93
39) 4,6-dinitro-2-methylph...	8.813	198	70589	15.15	ppm	# 26

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80111.D
Acq On : 26 Nov 2018 5:25 pm
Operator : christc2
Sample : ic3756-5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 27 00:57:47 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

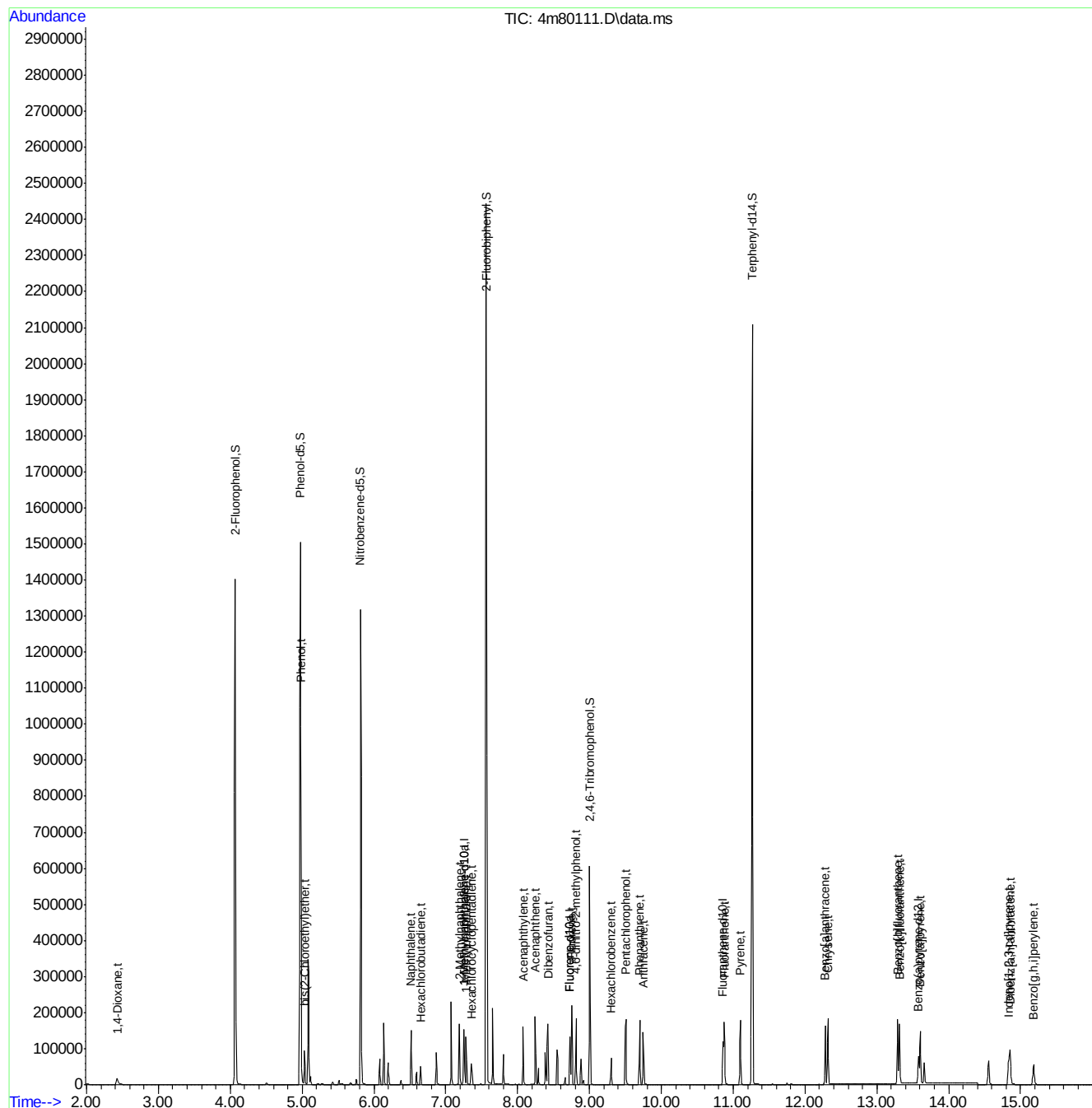
7.6.14

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80111.D
Acq On : 26 Nov 2018 5:25 pm
Operator : christc2
Sample : ic3756-5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 27 00:57:47 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80112.D
 Acq On : 26 Nov 2018 5:47 pm
 Operator : christc2
 Sample : ic3756-2.5
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 27 00:59:35 2018

Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M

Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um

QLast Update : Mon Nov 26 09:39:13 2018

Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	40229	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	41614	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.858	212	63788	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.577	264	47160	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	40229	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	41614	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	367769	55.48	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery =	110.96%	#	
3) Phenol-d5	4.966	99	417386	57.88	ppm	-0.03
Spiked Amount 50.000			Recovery =	115.76%		
6) Nitrobenzene-d5	5.813	82	360629	64.79	ppm	-0.02
Spiked Amount 50.000			Recovery =	129.58%		
11) 2-Fluorobiphenyl	7.562	172	855465	52.27	ppm	-0.02
Spiked Amount 50.000			Recovery =	104.54%		
17) 2,4,6-Tribromophenol	9.000	330	112345	36.74	ppm	-0.02
Spiked Amount 50.000			Recovery =	73.48%		
25) Terphenyl-d14	11.263	244	719715	53.41	ppm	-0.02
Spiked Amount 50.000			Recovery =	106.82%		
Target Compounds						
4) Phenol	4.979	94	120237	14.10	ppm	78
5) bis(2-Chloroethyl)ether	5.031	93	16265	2.63	ppm	92
7) Naphthalene	6.516	128	53643	2.55	ppm	92
8) Hexachlorobutadiene	6.651	225	9242	2.48	ppm	73
9) 2-Methylnaphthalene	7.190	142	33930	2.65	ppm	97
10) Hexachlorocyclopentadiene	7.355	237	15804	5.68	ppm	92
13) Acenaphthylene	8.078	152	43211	2.27	ppm	93
14) Acenaphthene	8.244	153	33860	1.99	ppm	90
15) Dibenzofuran	8.421	168	48078	1.78	ppm	100
16) Fluorene	8.753	166	36230	1.51	ppm	92
18) Hexachlorobenzene	9.300	284	11169	1.93	ppm	98
19) Pentachlorophenol	9.499	266	34659	9.87	ppm	83
20) Phenanthrene	9.698	178	50923	1.91	ppm	99
21) Anthracene	9.746	178	42951	2.13	ppm	99
23) Fluoranthene	10.876	202	53960	2.49	ppm	96
24) Pyrene	11.096	202	53557	2.71	ppm	99
26) Benzo[a]anthracene	12.281	228	42071	2.64	ppm	98
27) Chrysene	12.315	228	50445	2.70	ppm	99
29) Benzo[b]fluoranthene	13.285	252	50297	2.72	ppm	99
30) Benzo[k]fluoranthene	13.310	252	47995	2.87	ppm	99
31) Benzo[a]pyrene	13.599	252	42624	2.54	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.829	276	47624	2.29	ppm	92
33) Dibenz[a,h]anthracene	14.850	278	42336	2.27	ppm	98
34) Benzo[g,h,i]perylene	15.177	276	39488	2.20	ppm	100
36) 1,4-Dioxane	2.424	88	8153	2.98	ppm	# 35
37) 1-Methylnaphthalene	7.283	142	34052	2.53	ppm	91
39) 4,6-dinitro-2-methylph...	8.813	198	29462	7.91	ppm	57

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80112.D
Acq On : 26 Nov 2018 5:47 pm
Operator : christc2
Sample : ic3756-2.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 27 00:59:35 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

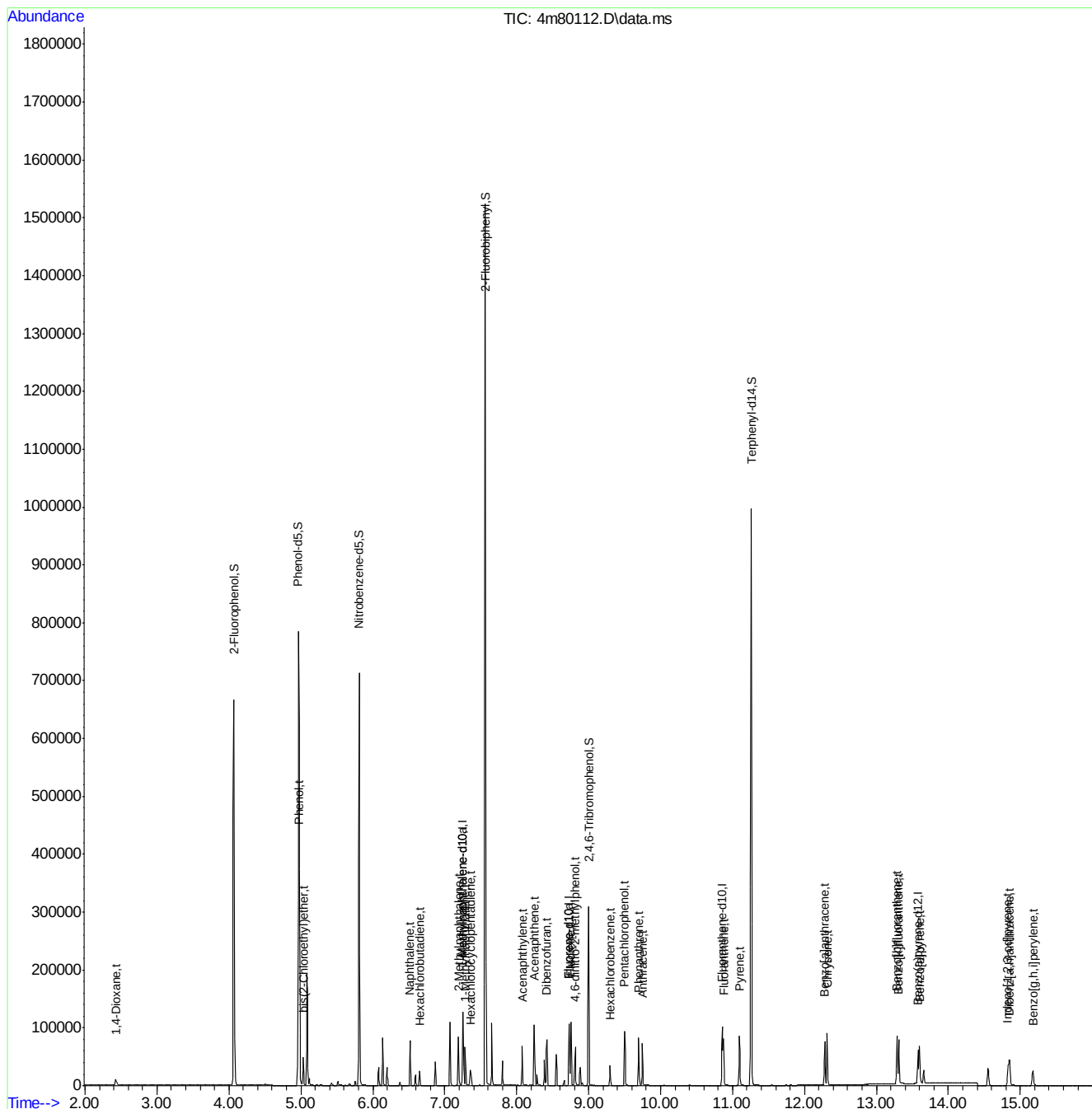
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80112.D
Acq On : 26 Nov 2018 5:47 pm
Operator : christc2
Sample : ic3756-2.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 27 00:59:35 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80113.D
 Acq On : 26 Nov 2018 6:10 pm
 Operator : christc2
 Sample : ic3756-1.0
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 27 01:00:15 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	43881	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	44711	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	68613	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.575	264	49339	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	43881	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	44711	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	156647	21.67	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery =	43.34%		
3) Phenol-d5	4.966	99	177689	22.59	ppm	-0.03
Spiked Amount 50.000			Recovery =	45.18%		
6) Nitrobenzene-d5	5.813	82	148443	24.45	ppm	-0.02
Spiked Amount 50.000			Recovery =	48.90%		
11) 2-Fluorobiphenyl	7.562	172	369151	20.68	ppm	-0.02
Spiked Amount 50.000			Recovery =	41.36%		
17) 2,4,6-Tribromophenol	9.000	330	41260	12.56	ppm	-0.02
Spiked Amount 50.000			Recovery =	25.12%		
25) Terphenyl-d14	11.261	244	299595	20.67	ppm	-0.02
Spiked Amount 50.000			Recovery =	41.34%		
Target Compounds						
					Qvalue	
4) Phenol	4.979	94	50890	5.47	ppm	65
5) bis(2-Chloroethyl)ether	5.031	93	6881	1.02	ppm	87
7) Naphthalene	6.516	128	22886	1.00	ppm	92
8) Hexachlorobutadiene	6.651	225	3948	0.97	ppm	71
9) 2-Methylnaphthalene	7.190	142	14438	1.03	ppm	96
10) Hexachlorocyclopentadiene	7.355	237	6152	2.03	ppm	91
13) Acenaphthylene	8.078	152	16149	0.79	ppm	93
14) Acenaphthene	8.244	153	13823	0.76	ppm	88
15) Dibenzofuran	8.421	168	19989	0.69	ppm	100
16) Fluorene	8.753	166	15174	0.59	ppm	91
18) Hexachlorobenzene	9.300	284	4583	0.74	ppm	98
19) Pentachlorophenol	9.499	266	11739	3.14	ppm	82
20) Phenanthrene	9.698	178	20419	0.71	ppm	100
21) Anthracene	9.746	178	16009	0.74	ppm	100
23) Fluoranthene	10.874	202	21869	0.94	ppm	98
24) Pyrene	11.099	202	21006	0.99	ppm	96
26) Benzo[a]anthracene	12.278	228	15244	0.89	ppm	99
27) Chrysene	12.316	228	19952	0.99	ppm	99
29) Benzo[b]fluoranthene	13.286	252	20161	1.04	ppm	98
30) Benzo[k]fluoranthene	13.311	252	18388	1.05	ppm	99
31) Benzo[a]pyrene	13.600	252	16941	0.96	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.832	276	18685	0.86	ppm	88
33) Dibenz[a,h]anthracene	14.848	278	16675	0.86	ppm	91
34) Benzo[g,h,i]perylene	15.175	276	15904	0.85	ppm	99
36) 1,4-Dioxane	2.435	88	2899	0.97	ppm	68
37) 1-Methylnaphthalene	7.283	142	14527	0.99	ppm	91
39) 4,6-dinitro-2-methylph...	8.813	198	8118	2.43	ppm	58

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80113.D
Acq On : 26 Nov 2018 6:10 pm
Operator : christc2
Sample : ic3756-1.0
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 27 01:00:15 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

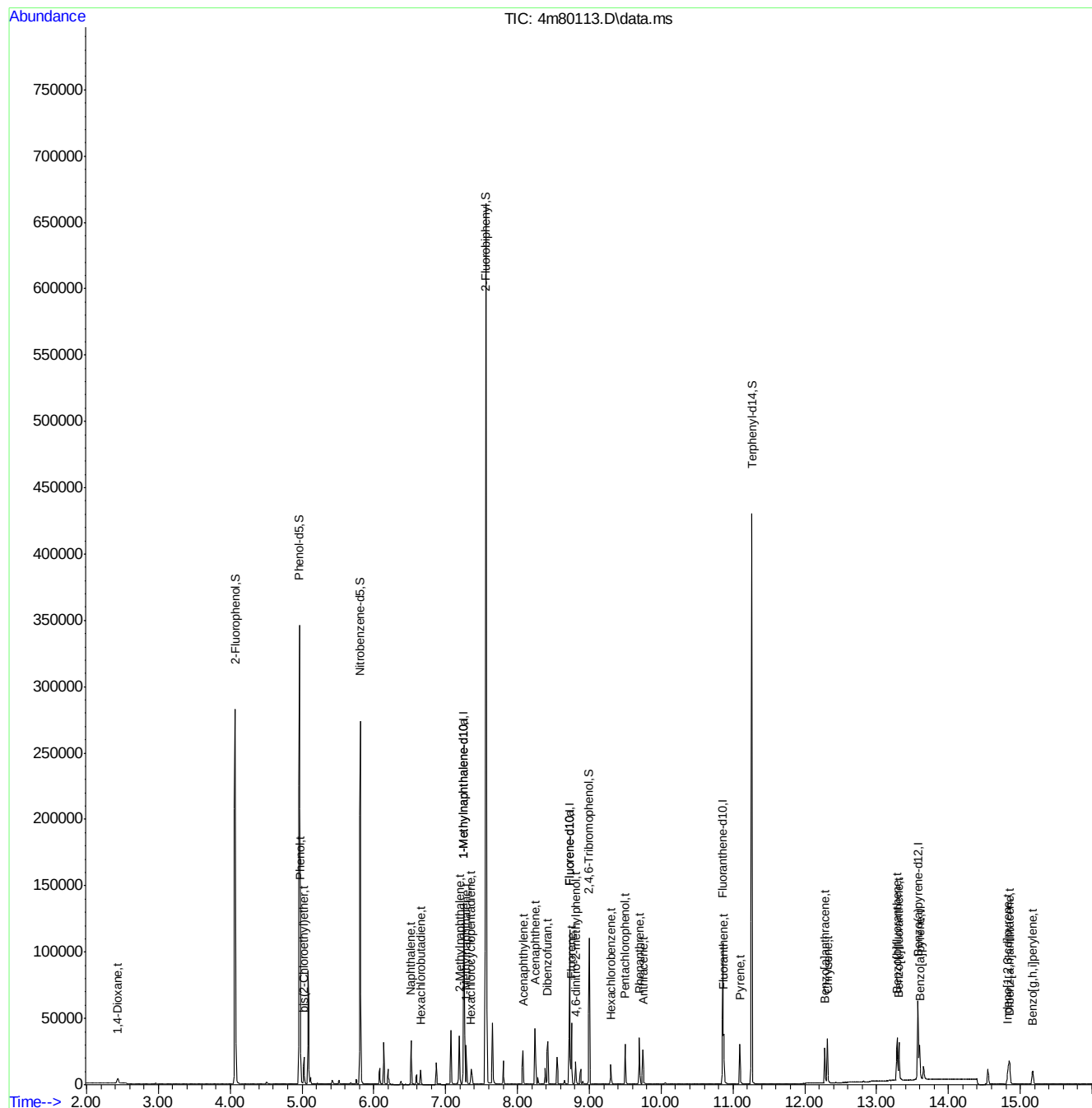
7.6.16

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80113.D
Acq On : 26 Nov 2018 6:10 pm
Operator : christc2
Sample : ic3756-1.0
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 27 01:00:15 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80114.D
 Acq On : 26 Nov 2018 6:33 pm
 Operator : christc2
 Sample : ic3756-0.5
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 27 01:01:50 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	51947	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	53855	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	84395	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.578	264	61087	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	51947	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	53855	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	77424	9.05	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery =	18.10%		
3) Phenol-d5	4.966	99	87523	9.40	ppm	-0.03
Spiked Amount 50.000			Recovery =	18.80%		
6) Nitrobenzene-d5	5.813	82	72823	10.13	ppm	-0.02
Spiked Amount 50.000			Recovery =	20.26%		
11) 2-Fluorobiphenyl	7.562	172	194573	9.21	ppm	-0.02
Spiked Amount 50.000			Recovery =	18.42%		
17) 2,4,6-Tribromophenol	9.000	330	19925	5.03	ppm	-0.02
Spiked Amount 50.000			Recovery =	10.06%		
25) Terphenyl-d14	11.255	244	162475	9.11	ppm	-0.03
Spiked Amount 50.000			Recovery =	18.22%		
Target Compounds						
					Qvalue	
4) Phenol	4.979	94	27089	2.46	ppm	72
5) bis(2-Chloroethyl)ether	5.031	93	3525	0.44	ppm	90
7) Naphthalene	6.516	128	11791	0.43	ppm	92
8) Hexachlorobutadiene	6.651	225	1977	0.41	ppm	71
9) 2-Methylnaphthalene	7.190	142	7394	0.45	ppm	97
10) Hexachlorocyclopentadiene	7.355	237	3016	0.84	ppm	92
13) Acenaphthylene	8.079	152	7832	0.32	ppm	93
14) Acenaphthene	8.244	153	7219	0.33	ppm	89
15) Dibenzofuran	8.421	168	10613	0.30	ppm	100
16) Fluorene	8.753	166	8101	0.26	ppm	90
18) Hexachlorobenzene	9.300	284	2363	0.32	ppm	98
19) Pentachlorophenol	9.499	266	5729	1.45	ppm	84
20) Phenanthrene	9.698	178	10755	0.31	ppm	99
21) Anthracene	9.746	178	8054	0.31	ppm	99
23) Fluoranthene	10.874	202	11594	0.40	ppm	97
24) Pyrene	11.093	202	10876	0.42	ppm	98
26) Benzo[a]anthracene	12.278	228	7719	0.37	ppm	99
27) Chrysene	12.313	228	10343	0.42	ppm	98
29) Benzo[b]fluoranthene	13.286	252	10570	0.44	ppm	98
30) Benzo[k]fluoranthene	13.311	252	9630	0.44	ppm	98
31) Benzo[a]pyrene	13.600	252	8902	0.41	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.826	276	9811	0.36	ppm	87
33) Dibenz[a,h]anthracene	14.848	278	8945	0.37	ppm	93
34) Benzo[g,h,i]perylene	15.175	276	8439	0.36	ppm	100
36) 1,4-Dioxane	2.445	88	1615m	0.46	ppm	
37) 1-Methylnaphthalene	7.283	142	7506	0.43	ppm	92
39) 4,6-dinitro-2-methylph...	8.813	198	3523	1.23	ppm	61

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80114.D
Acq On : 26 Nov 2018 6:33 pm
Operator : christc2
Sample : ic3756-0.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 27 01:01:50 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

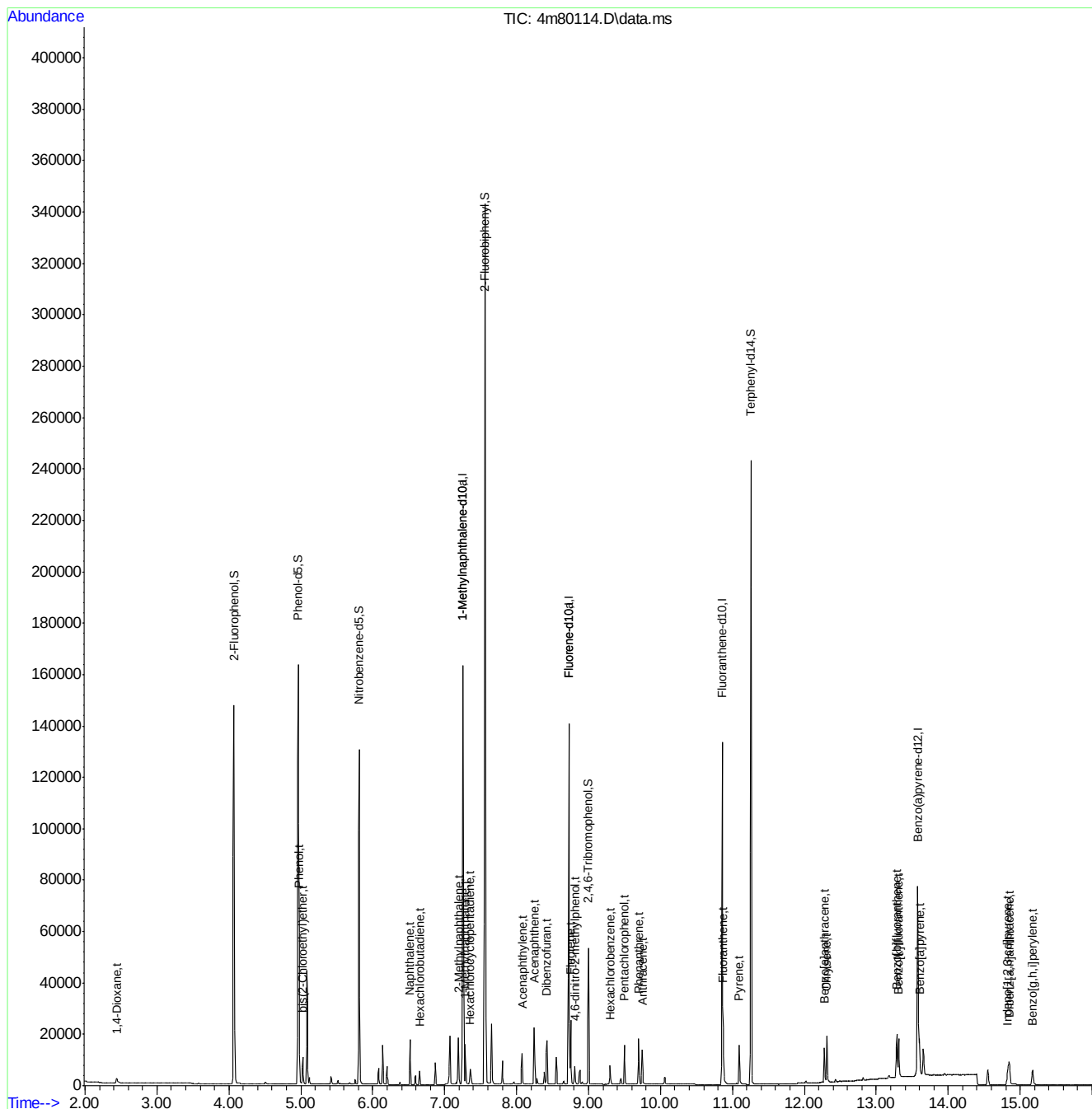
7.6.17

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80114.D
Acq On : 26 Nov 2018 6:33 pm
Operator : christc2
Sample : ic3756-0.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 27 01:01:50 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



7.6.17

Manual Integration Approval Summary

Sample Number: E4M3756-IC3756

Method: SW846 8270D BY SIM

Lab FileID: 4M80114.D

Analyst approved: 11/27/18 01:53 Christopher Sowa

Injection Time: 11/26/18 18:33

Supervisor approved: 11/27/18 15:52 Nina Pandya

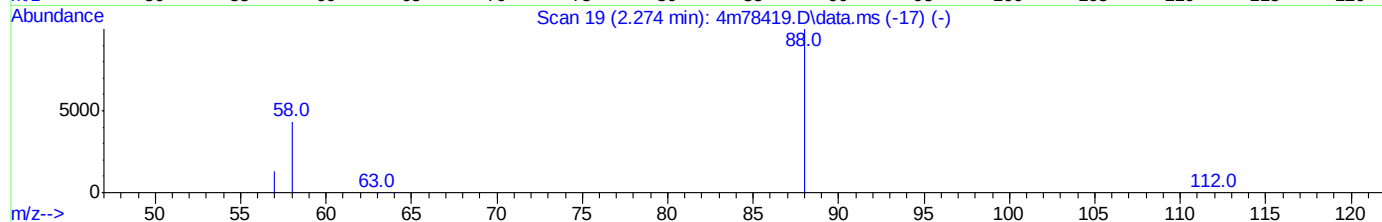
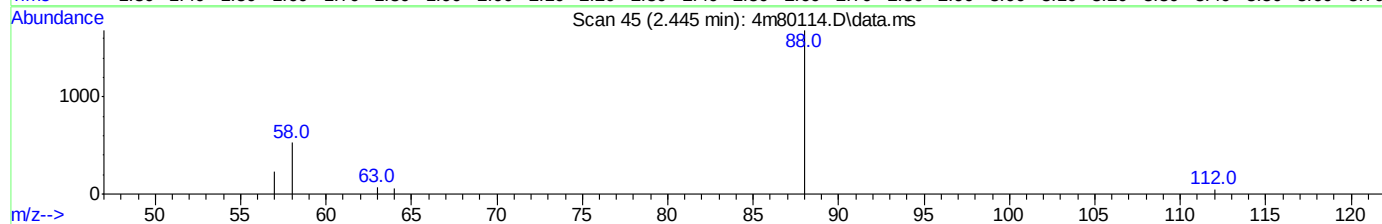
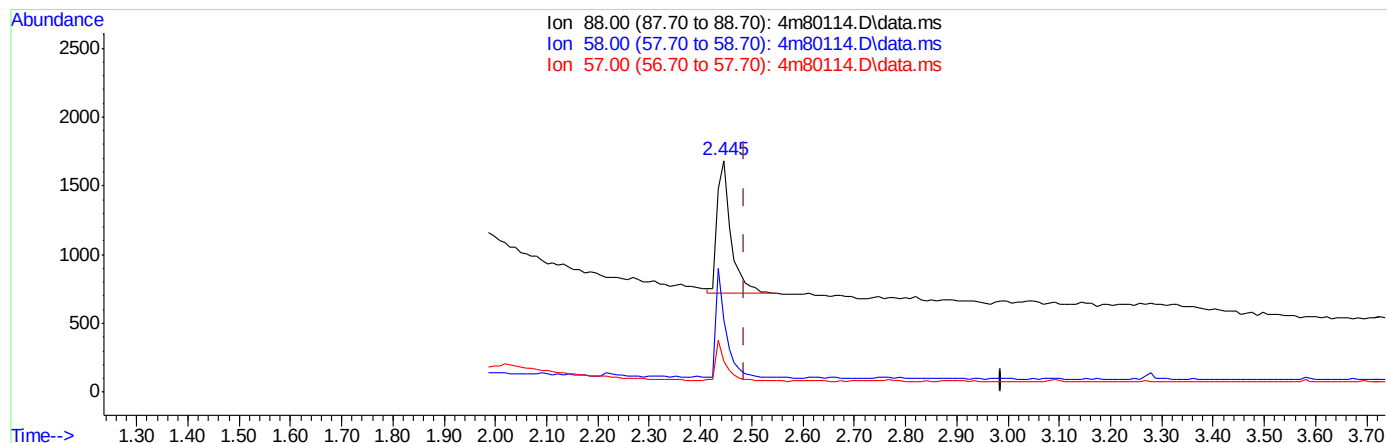
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.44	Poor instrument integration

7.6.17.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80114.D
Acq On : 26 Nov 2018 6:33 pm
Operator : christc2
Sample : ic3756-0.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 27 01:01:12 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80114.D\data.ms

(36) 1,4-Dioxane (t)

2.445min (-0.041) 0.50ppm

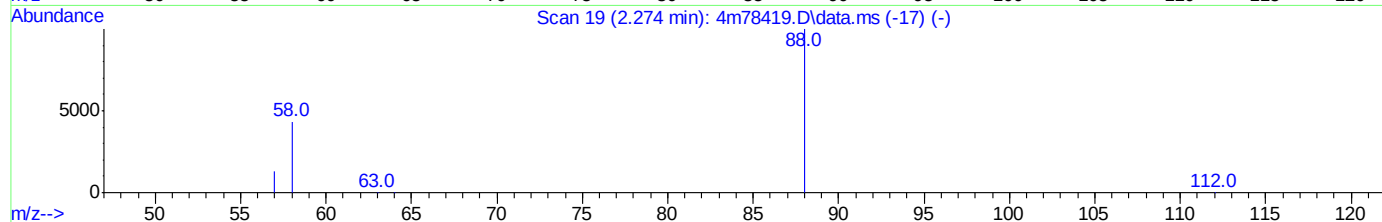
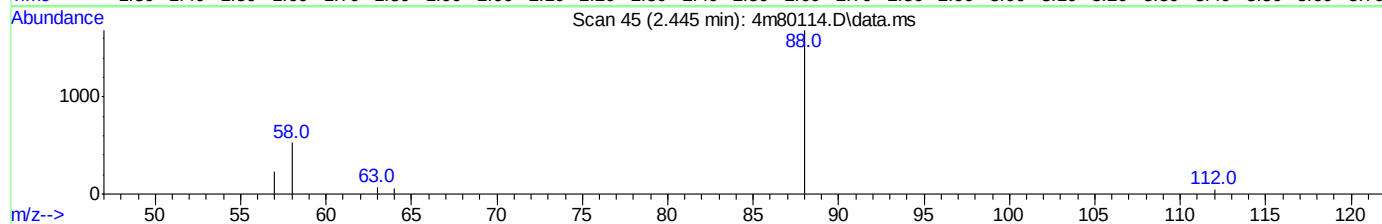
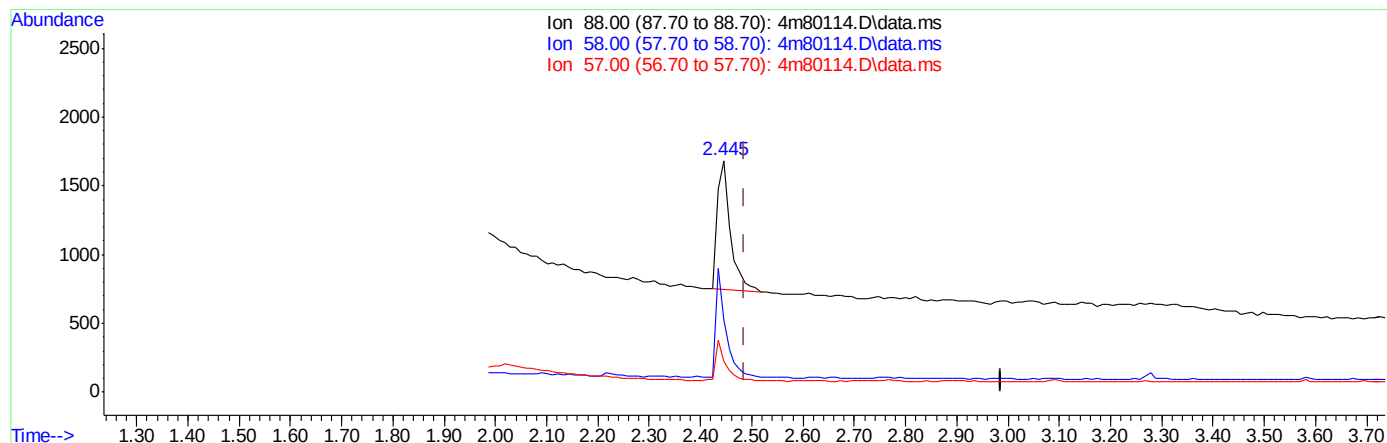
response 1769

Ion	Exp%	Act%
88.00	100	100
58.00	27.90	44.15
57.00	5.40	14.81
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80114.D
Acq On : 26 Nov 2018 6:33 pm
Operator : christc2
Sample : ic3756-0.5
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 27 01:01:12 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80114.D\data.ms

(36) 1,4-Dioxane (t)

2.445min (-0.041) 0.46ppm m

response 1615

Ion	Exp%	Act%
88.00	100	100
58.00	27.90	31.35
57.00	5.40	13.48
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80115.D
 Acq On : 26 Nov 2018 6:56 pm
 Operator : christc2
 Sample : ic3756-0.2
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 01:02:58 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	43016	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	43990	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	65797	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.575	264	44658	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	43016	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	43990	4.00	ppm	#-0.03

System Monitoring Compounds

2) 2-Fluorophenol	4.069	112	30229	4.27	ppm	-0.03
Spiked Amount	50.000	Range	11 - 58	Recovery	=	8.54%#
3) Phenol-d5	4.966	99	32997	4.28	ppm	-0.03
Spiked Amount	50.000			Recovery	=	8.56%
6) Nitrobenzene-d5	5.813	82	25044	4.21	ppm	-0.02
Spiked Amount	50.000			Recovery	=	8.42%
11) 2-Fluorobiphenyl	7.562	172	73555	4.20	ppm	-0.02
Spiked Amount	50.000			Recovery	=	8.40%
17) 2,4,6-Tribromophenol	9.000	330	5835	1.81	ppm	-0.02
Spiked Amount	50.000			Recovery	=	3.62%
25) Terphenyl-d14	11.255	244	57213	4.12	ppm	-0.03
Spiked Amount	50.000			Recovery	=	8.24%

Target Compounds

						Qvalue
4) Phenol	4.973	94	9701	1.06	ppm	90
5) bis(2-Chloroethyl)ether	5.031	93	1365	0.21	ppm	91
7) Naphthalene	6.516	128	4569	0.20	ppm	92
8) Hexachlorobutadiene	6.651	225	778	0.20	ppm	70
9) 2-Methylnaphthalene	7.190	142	2797	0.20	ppm	96
10) Hexachlorocyclopentadiene	7.355	237	1132	0.38	ppm	95
13) Acenaphthylene	8.078	152	2770	0.14	ppm	93
14) Acenaphthene	8.244	153	2692	0.15	ppm	89
15) Dibenzofuran	8.421	168	3914	0.14	ppm	100
16) Fluorene	8.753	166	2973	0.12	ppm	92
18) Hexachlorobenzene	9.300	284	893	0.15	ppm	98
19) Pentachlorophenol	9.499	266	1527	0.70	ppm	85
20) Phenanthrene	9.698	178	3997	0.14	ppm	98
21) Anthracene	9.746	178	2676	0.13	ppm	99
23) Fluoranthene	10.874	202	4386	0.20	ppm	98
24) Pyrene	11.093	202	3745	0.18	ppm	98
26) Benzo[a]anthracene	12.278	228	2507	0.15	ppm	99
27) Chrysene	12.316	228	3519	0.18	ppm	100
29) Benzo[b]fluoranthene	13.286	252	3543	0.20	ppm	99
30) Benzo[k]fluoranthene	13.308	252	2980	0.19	ppm	98
31) Benzo[a]pyrene	13.596	252	2982	0.19	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.826	276	3451	0.18	ppm	94
33) Dibenz[a,h]anthracene	14.848	278	3078	0.17	ppm	97
34) Benzo[g,h,i]perylene	15.170	276	3033	0.18	ppm	99
36) 1,4-Dioxane	2.445	88	519m	0.18	ppm	
37) 1-Methylnaphthalene	7.283	142	2937	0.20	ppm	95
39) 4,6-dinitro-2-methylph...	8.813	198	933	0.78	ppm	65

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80115.D
Acq On : 26 Nov 2018 6:56 pm
Operator : christc2
Sample : ic3756-0.2
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 01:02:58 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

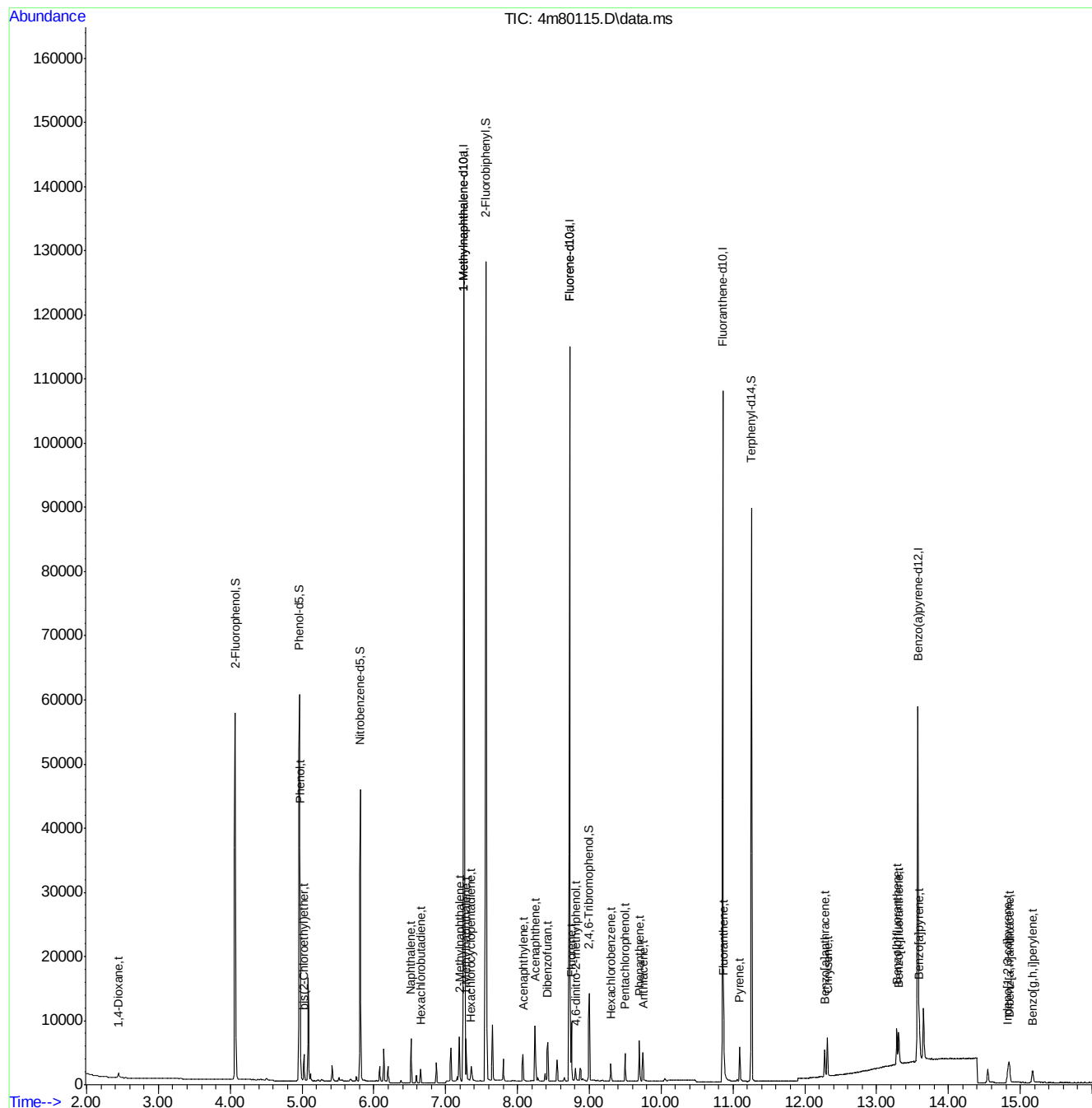
7.6.18

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80115.D
Acq On : 26 Nov 2018 6:56 pm
Operator : christc2
Sample : ic3756-0.2
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 01:02:58 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4M3756-IC3756

Method: SW846 8270D BY SIM

Lab FileID: 4M80115.D

Analyst approved: 11/27/18 01:53 Christopher Sowa

Injection Time: 11/26/18 18:56

Supervisor approved: 11/27/18 15:52 Nina Pandya

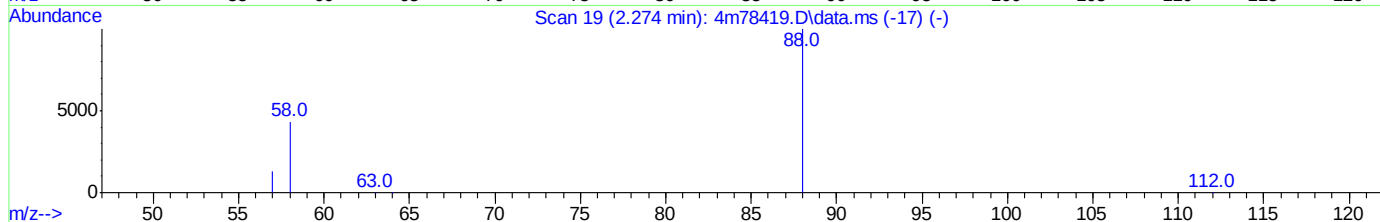
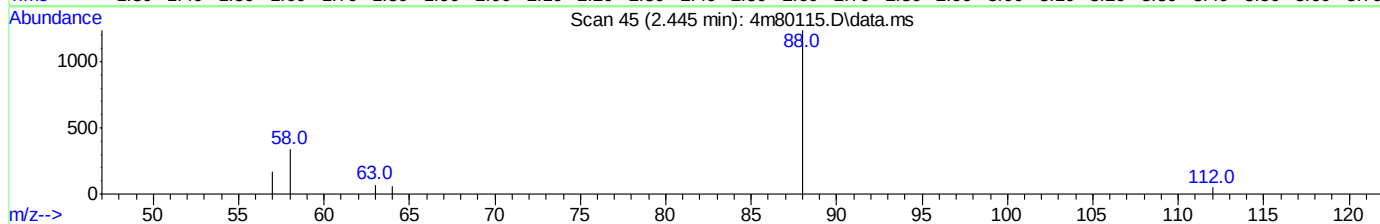
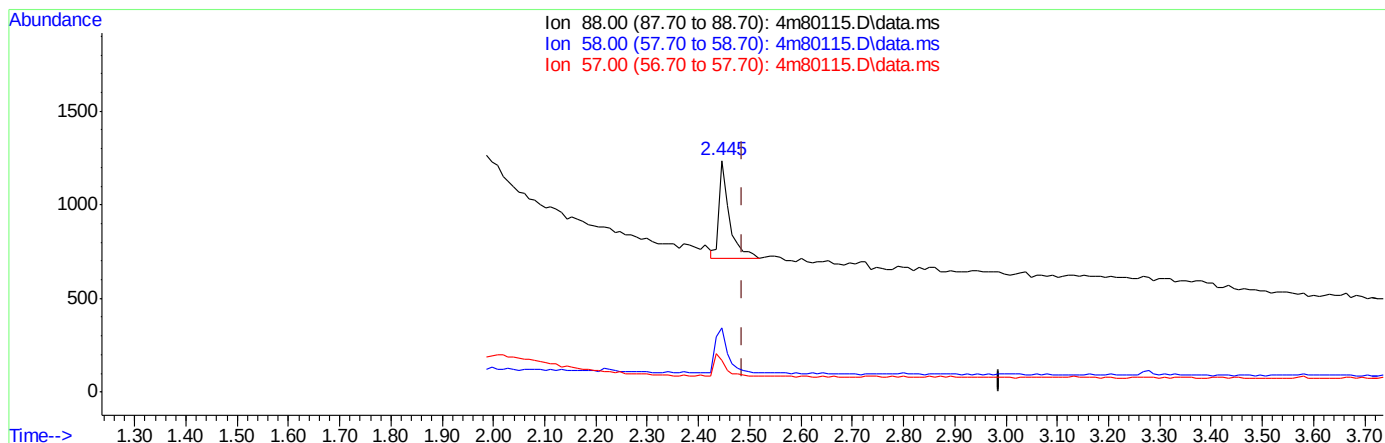
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.44	Poor instrument integration

7.6.18.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80115.D
Acq On : 26 Nov 2018 6:56 pm
Operator : christc2
Sample : ic3756-0.2
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 01:02:13 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80115.D\data.ms

(36) 1,4-Dioxane (t)

2.445min (-0.041) 0.25ppm

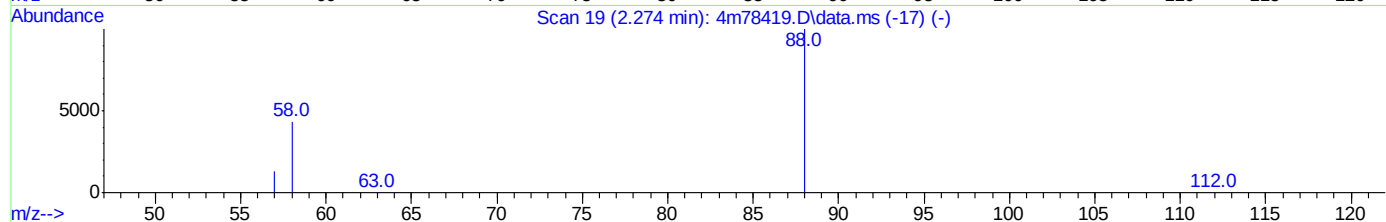
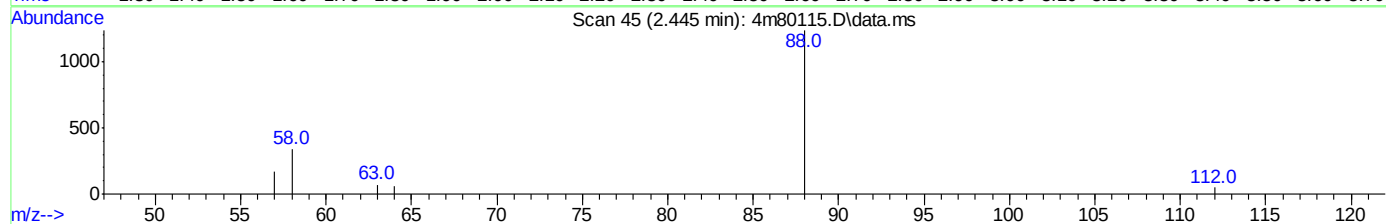
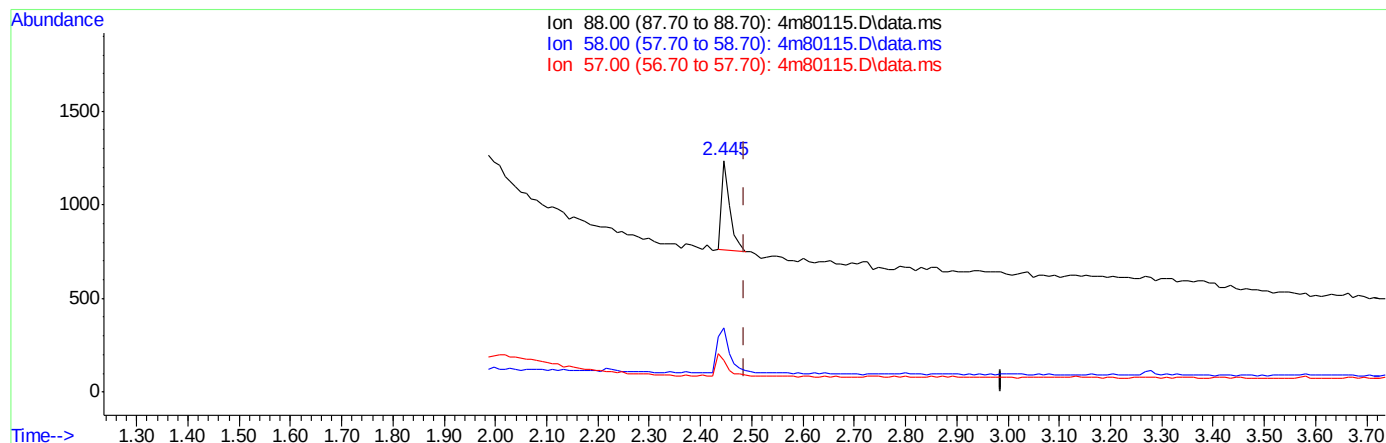
response 726

Ion	Exp%	Act%
88.00	100	100
58.00	27.90	47.52
57.00	5.40	17.06
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80115.D
Acq On : 26 Nov 2018 6:56 pm
Operator : christc2
Sample : ic3756-0.2
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 27 01:02:13 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80115.D\data.ms

(36) 1,4-Dioxane (t)

2.445min (-0.041) 0.18ppm m

response 519

Ion	Exp%	Act%
88.00	100	100
58.00	27.90	27.65
57.00	5.40	13.82
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80116.D
 Acq On : 26 Nov 2018 7:18 pm
 Operator : christc2
 Sample : ic3756-0.1
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 01:03:16 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	40910	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	40790	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	63135	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.575	264	42693	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	40910	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	40790	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	13339	1.98	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery	=	3.96%#	
3) Phenol-d5	4.966	99	14217	1.94	ppm	-0.03
Spiked Amount 50.000			Recovery	=	3.88%	
6) Nitrobenzene-d5	5.813	82	10578	1.87	ppm	-0.02
Spiked Amount 50.000			Recovery	=	3.74%	
11) 2-Fluorobiphenyl	7.562	172	33305	2.00	ppm	-0.02
Spiked Amount 50.000			Recovery	=	4.00%	
17) 2,4,6-Tribromophenol	9.000	330	2444	0.82	ppm	-0.02
Spiked Amount 50.000			Recovery	=	1.64%	
25) Terphenyl-d14	11.255	244	27467	2.06	ppm	-0.03
Spiked Amount 50.000			Recovery	=	4.12%	
Target Compounds						
						Qvalue
4) Phenol	4.973	94	4266	0.49	ppm	91
5) bis(2-Chloroethyl)ether	5.031	93	629	0.10	ppm	98
7) Naphthalene	6.516	128	2057	0.10	ppm	91
8) Hexachlorobutadiene	6.651	225	356	0.09	ppm	69
9) 2-Methylnaphthalene	7.190	142	1294	0.10	ppm	93
10) Hexachlorocyclopentadiene	7.355	237	531	0.19	ppm	98
13) Acenaphthylene	8.079	152	1240	0.07	ppm	91
14) Acenaphthene	8.244	153	1241	0.07	ppm	90
15) Dibenzofuran	8.421	168	1808	0.07	ppm	100
16) Fluorene	8.753	166	1362	0.06	ppm	90
18) Hexachlorobenzene	9.300	284	410	0.07	ppm	98
19) Pentachlorophenol	9.499	266	795	0.54	ppm	88
20) Phenanthrene	9.698	178	1847	0.07	ppm	97
21) Anthracene	9.746	178	1226	0.06	ppm	98
23) Fluoranthene	10.874	202	2092	0.10	ppm	97
24) Pyrene	11.094	202	1752	0.09	ppm	98
26) Benzo[a]anthracene	12.278	228	1169	0.07	ppm	99
27) Chrysene	12.313	228	1673	0.09	ppm	97
29) Benzo[b]fluoranthene	13.283	252	1637	0.10	ppm	100
30) Benzo[k]fluoranthene	13.308	252	1471	0.10	ppm	96
31) Benzo[a]pyrene	13.597	252	1288	0.08	ppm	98
32) Indeno[1,2,3-cd]pyrene	14.826	276	1590	0.08	ppm	93
33) Dibenz[a,h]anthracene	14.848	278	1437	0.09	ppm	98
34) Benzo[g,h,i]perylene	15.170	276	1445	0.09	ppm	99
36) 1,4-Dioxane	2.455	88	312	0.11	ppm	74
37) 1-Methylnaphthalene	7.283	142	1324	0.10	ppm	90
39) 4,6-dinitro-2-methylph...	8.813	198	413	0.66	ppm	67

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80116.D
Acq On : 26 Nov 2018 7:18 pm
Operator : christc2
Sample : ic3756-0.1
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 01:03:16 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

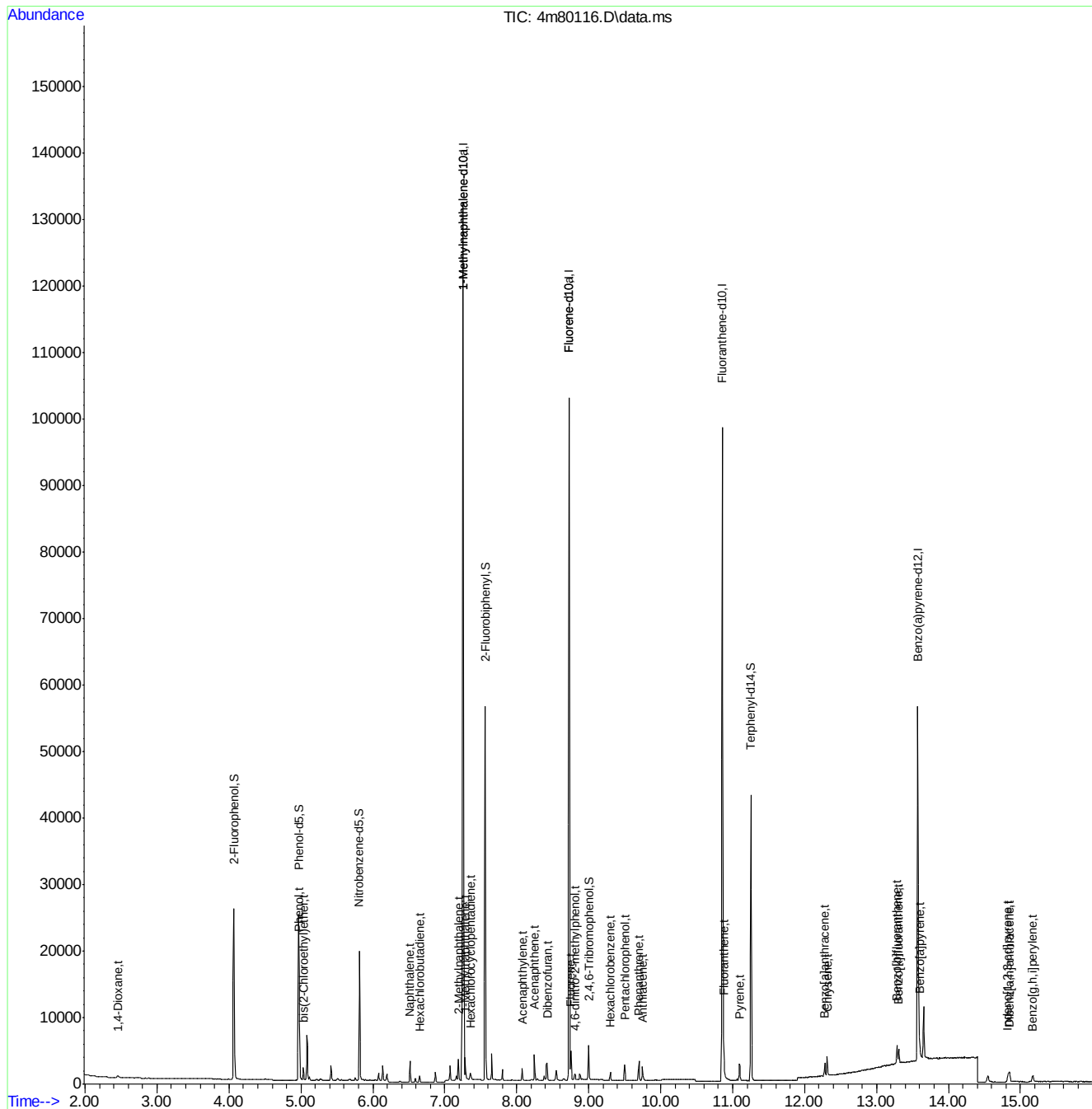
7.6.19

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80116.D
Acq On : 26 Nov 2018 7:18 pm
Operator : christc2
Sample : ic3756-0.1
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 27 01:03:16 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80117.D
 Acq On : 26 Nov 2018 7:41 pm
 Operator : christc2
 Sample : ic3756-0.05
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 27 01:03:55 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	43790	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	44758	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	68181	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.575	264	45790	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	43790	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	44758	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	7125	0.99	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery =	1.98%	#	
3) Phenol-d5	4.966	99	7621	0.97	ppm	-0.03
Spiked Amount 50.000			Recovery =	1.94%		
6) Nitrobenzene-d5	5.813	82	5583	0.92	ppm	-0.02
Spiked Amount 50.000			Recovery =	1.84%		
11) 2-Fluorobiphenyl	7.562	172	18578	1.04	ppm	-0.02
Spiked Amount 50.000			Recovery =	2.08%		
17) 2,4,6-Tribromophenol	8.992	330	1291	0.39	ppm	-0.03
Spiked Amount 50.000			Recovery =	0.78%		
25) Terphenyl-d14	11.255	244	14627	1.02	ppm	-0.03
Spiked Amount 50.000			Recovery =	2.04%		
Target Compounds						
						Qvalue
4) Phenol	4.973	94	2227	0.24	ppm	93
5) bis(2-Chloroethyl)ether	5.031	93	355	0.05	ppm	96
7) Naphthalene	6.516	128	1122	0.05	ppm	92
8) Hexachlorobutadiene	6.651	225	194	0.05	ppm	69
9) 2-Methylnaphthalene	7.190	142	710	0.05	ppm	94
10) Hexachlorocyclopentadiene	7.355	237	269	0.09	ppm	86
13) Acenaphthylene	8.079	152	664	0.03	ppm	95
14) Acenaphthene	8.244	153	688	0.04	ppm	89
15) Dibenzofuran	8.421	168	1041	0.04	ppm	100
16) Fluorene	8.753	166	788	0.03	ppm	91
18) Hexachlorobenzene	9.300	284	222	0.04	ppm	98
19) Pentachlorophenol	9.499	266	362	0.42	ppm	88
20) Phenanthrene	9.698	178	1036	0.04	ppm	98
21) Anthracene	9.746	178	690	0.03	ppm	99
23) Fluoranthene	10.874	202	1203	0.05	ppm	97
24) Pyrene	11.093	202	962	0.05	ppm	98
26) Benzo[a]anthracene	12.278	228	656	0.04	ppm	100
27) Chrysene	12.313	228	924	0.05	ppm	97
29) Benzo[b]fluoranthene	13.283	252	923	0.05	ppm	96
30) Benzo[k]fluoranthene	13.308	252	838	0.05	ppm	96
31) Benzo[a]pyrene	13.597	252	801	0.05	ppm	85
32) Indeno[1,2,3-cd]pyrene	14.826	276	863	0.04	ppm	96
33) Dibenz[a,h]anthracene	14.848	278	772	0.04	ppm	97
34) Benzo[g,h,i]perylene	15.170	276	798	0.05	ppm	100
36) 1,4-Dioxane	2.455	88	147	0.05	ppm	65
37) 1-Methylnaphthalene	7.283	142	731	0.05	ppm	93
39) 4,6-dinitro-2-methylph...	8.813	198	208	0.61	ppm	66

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80117.D
Acq On : 26 Nov 2018 7:41 pm
Operator : christc2
Sample : ic3756-0.05
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 27 01:03:55 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

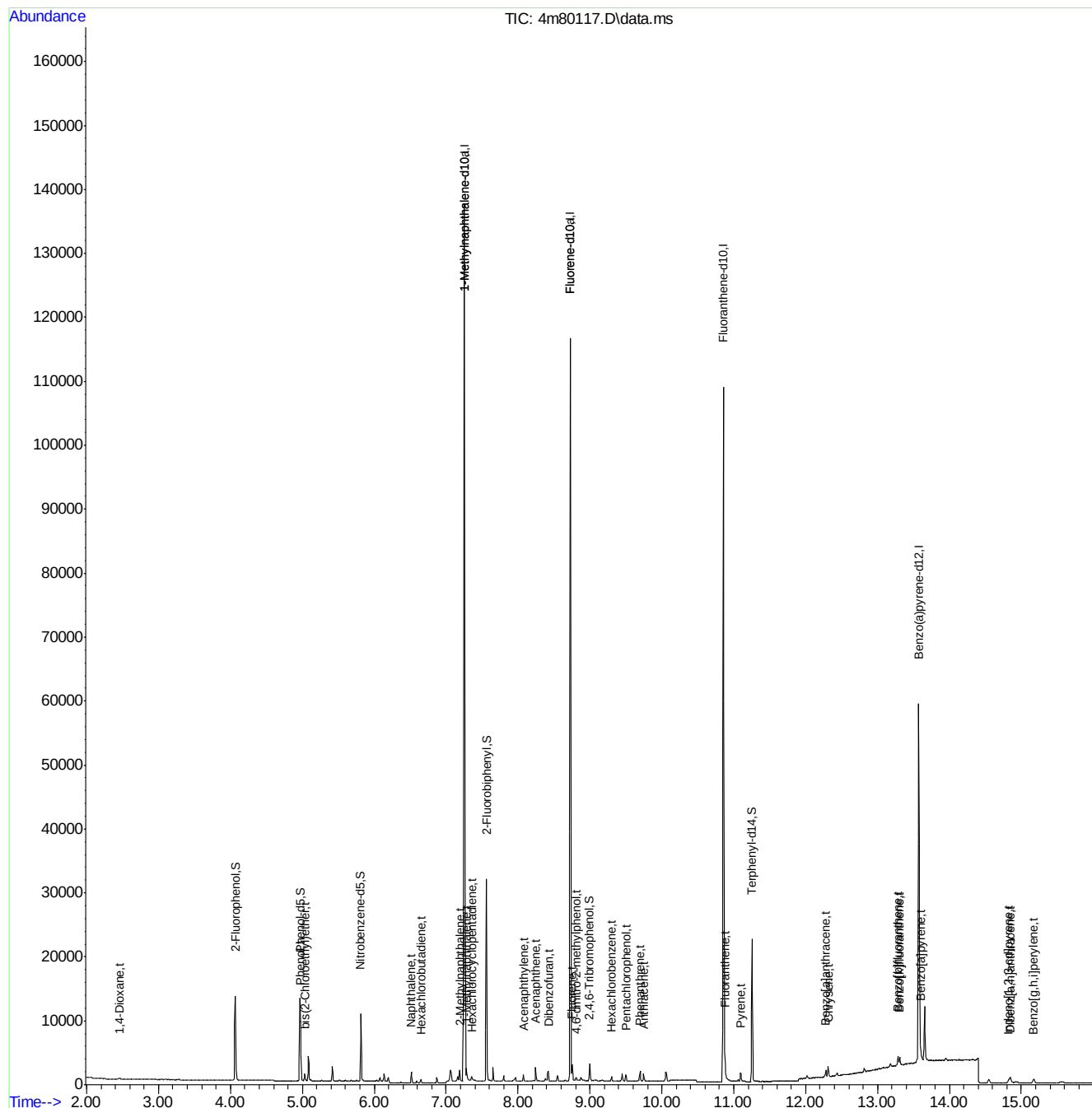
7.6.20

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80117.D
Acq On : 26 Nov 2018 7:41 pm
Operator : christc2
Sample : ic3756-0.05
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 27 01:03:55 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80118.D
 Acq On : 26 Nov 2018 8:04 pm
 Operator : christc2
 Sample : ic3756-0.02
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 01:05:19 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	49954	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	49253	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.858	212	73921	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.574	264	48939	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	49954	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	49253	4.00	ppm	#-0.03

System Monitoring Compounds

2) 2-Fluorophenol	4.069	112	3245	0.39	ppm	-0.03
Spiked Amount	50.000	Range	11 - 58	Recovery	=	0.78%#
3) Phenol-d5	4.966	99	3479	0.39	ppm	-0.03
Spiked Amount	50.000			Recovery	=	0.78%
6) Nitrobenzene-d5	5.813	82	2490	0.36	ppm	-0.02
Spiked Amount	50.000			Recovery	=	0.72%
11) 2-Fluorobiphenyl	7.562	172	8488	0.42	ppm	-0.02
Spiked Amount	50.000			Recovery	=	0.84%
17) 2,4,6-Tribromophenol	8.991	330	549	0.15	ppm	-0.03
Spiked Amount	50.000			Recovery	=	0.30%
25) Terphenyl-d14	11.257	244	6184	0.40	ppm	-0.02
Spiked Amount	50.000			Recovery	=	0.80%

Target Compounds

						Qvalue
4) Phenol	4.973	94	1011	0.10	ppm	97
5) bis(2-Chloroethyl)ether	5.031	93	168	0.02	ppm	97
7) Naphthalene	6.516	128	518	0.02	ppm	90
8) Hexachlorobutadiene	6.650	225	90	0.02	ppm	72
9) 2-Methylnaphthalene	7.190	142	326	0.02	ppm	95
10) Hexachlorocyclopentadiene	7.355	237	123	0.04	ppm	92
13) Acenaphthylene	8.078	152	299	0.01	ppm	93
14) Acenaphthene	8.244	153	318	0.02	ppm	90
15) Dibenzofuran	8.421	168	457m	0.01	ppm	
16) Fluorene	8.753	166	339	0.01	ppm	88
18) Hexachlorobenzene	9.300	284	120	0.02	ppm	95
19) Pentachlorophenol	9.499	266	104	0.36	ppm	84
20) Phenanthrene	9.698	178	481	0.02	ppm	99
21) Anthracene	9.746	178	302	0.01	ppm	96
23) Fluoranthene	10.870	202	584	0.02	ppm	100
24) Pyrene	11.096	202	440	0.02	ppm	98
26) Benzo[a]anthracene	12.277	228	300	0.02	ppm	97
27) Chrysene	12.311	228	413	0.02	ppm	94
29) Benzo[b]fluoranthene	13.282	252	445	0.02	ppm	85
30) Benzo[k]fluoranthene	13.307	252	366	0.02	ppm	92
31) Benzo[a]pyrene	13.599	252	369	0.02	ppm	86
32) Indeno[1,2,3-cd]pyrene	14.829	276	406	0.02	ppm	82
33) Dibenz[a,h]anthracene	14.845	278	372	0.02	ppm	94
34) Benzo[g,h,i]perylene	15.172	276	391	0.02	ppm	97
36) 1,4-Dioxane	2.455	88	79	0.02	ppm	88
37) 1-Methylnaphthalene	7.283	142	340	0.02	ppm	94
39) 4,6-dinitro-2-methylph...	8.812	198	86	0.58	ppm	75

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80118.D
Acq On : 26 Nov 2018 8:04 pm
Operator : christc2
Sample : ic3756-0.02
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 01:05:19 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

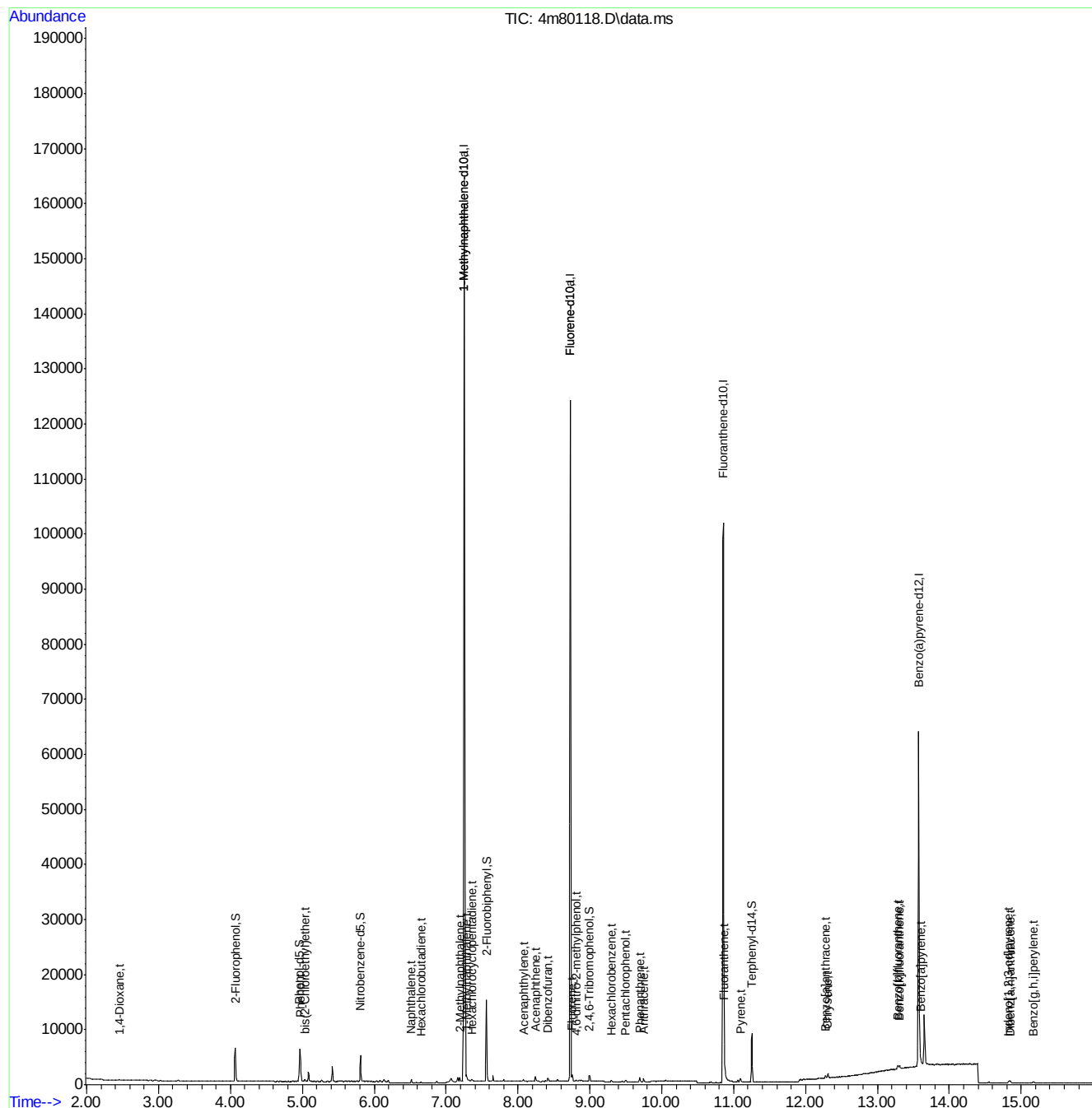
7.6.21

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80118.D
Acq On : 26 Nov 2018 8:04 pm
Operator : christc2
Sample : ic3756-0.02
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 01:05:19 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4M3756-IC3756

Method: SW846 8270D BY SIM

Lab FileID: 4M80118.D

Analyst approved: 11/27/18 01:53 Christopher Sowa

Injection Time: 11/26/18 20:04

Supervisor approved: 11/27/18 15:52 Nina Pandya

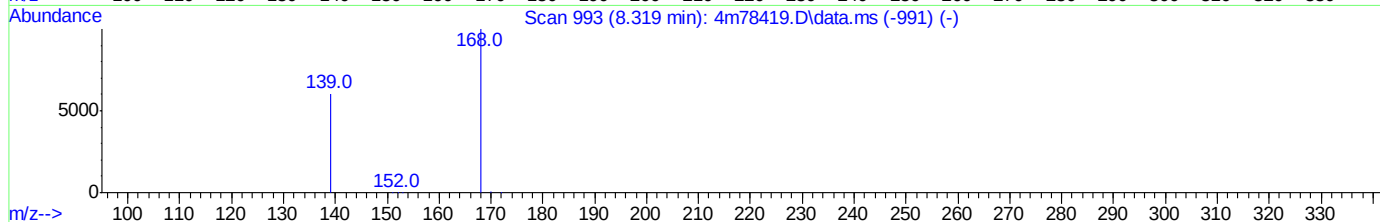
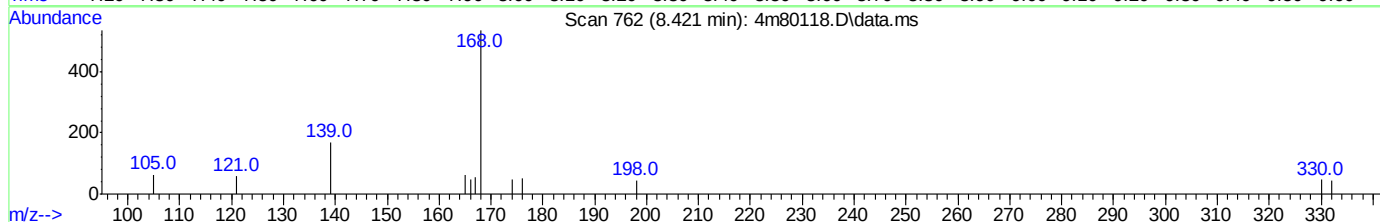
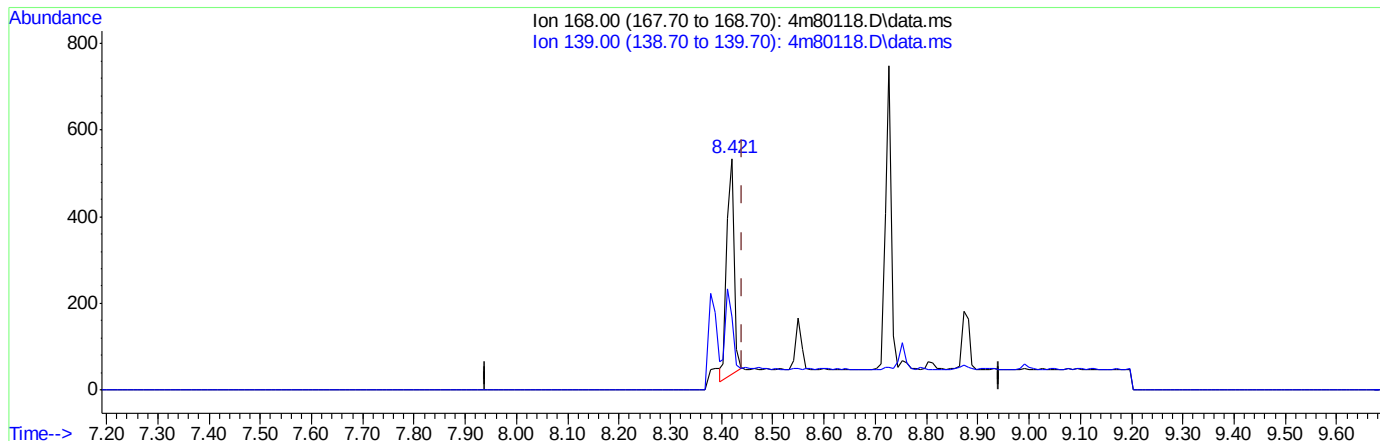
Parameter	CAS	Sig#	R.T. (min.)	Reason
Dibenzofuran	132-64-9		8.42	Poor instrument integration

7.6.21.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80118.D
Acq On : 26 Nov 2018 8:04 pm
Operator : christc2
Sample : ic3756-0.02
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 01:04:35 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80118.D\data.ms

(15) Dibenzofuran (t)

8.421min (-0.020) 0.02ppm

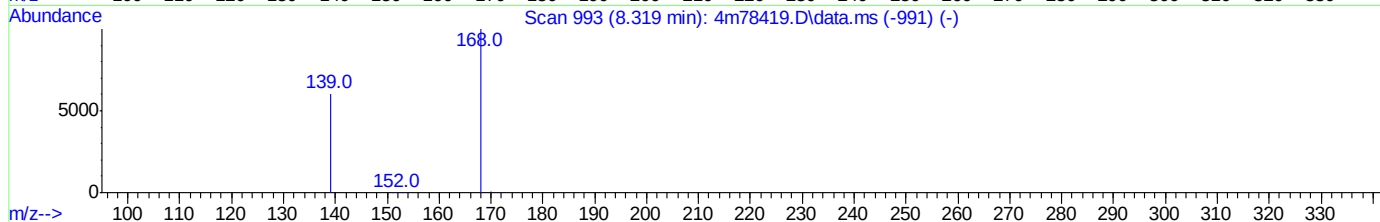
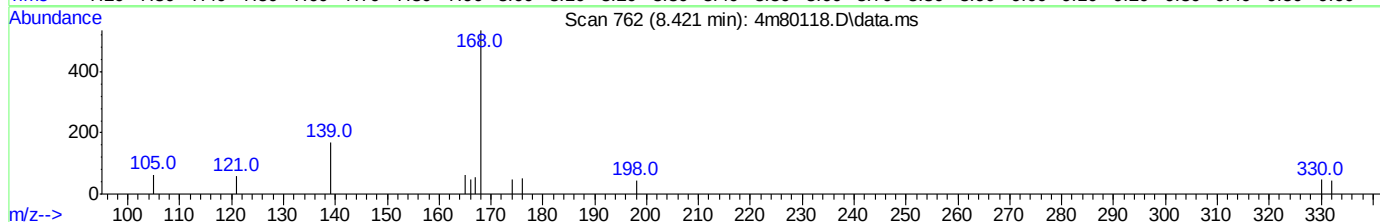
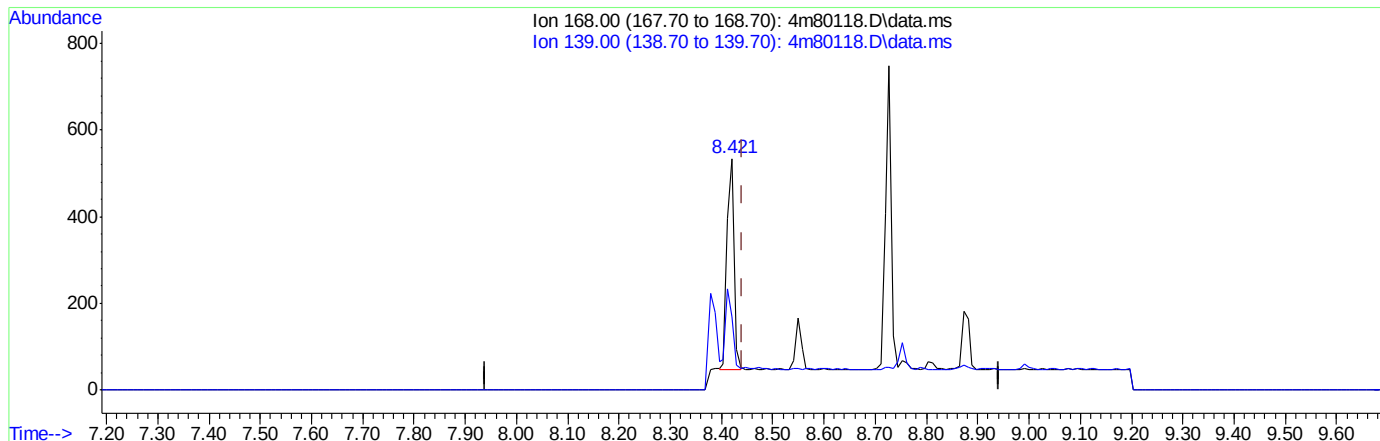
response 493

Ion	Exp%	Act%
168.00	100	100
139.00	0.00	22.89
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80118.D
Acq On : 26 Nov 2018 8:04 pm
Operator : christc2
Sample : ic3756-0.02
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 27 01:04:35 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80118.D\data.ms

(15) Dibenzofuran (t)
8.421min (-0.020) 0.01ppm m
response 457

Ion	Exp%	Act%
168.00	100	100
139.00	0.00	31.59#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80119.D
 Acq On : 26 Nov 2018 8:25 pm
 Operator : christc2
 Sample : ic3756-0.01
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 01:06:17 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Nov 26 09:39:13 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	40123	4.00	ppm	-0.03
12) Fluorene-d10	8.727	176	39728	4.00	ppm	#-0.03
22) Fluoranthene-d10	10.856	212	61323	4.00	ppm	-0.02
28) Benzo(a)pyrene-d12	13.575	264	40106	4.00	ppm	-0.03
35) 1-Methylnaphthalene-d10a	7.252	152	40123	4.00	ppm	-0.03
38) Fluorene-d10a	8.727	176	39728	4.00	ppm	#-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	4.069	112	1322	0.20	ppm	-0.03
Spiked Amount 50.000	Range 11 - 58		Recovery	=	0.40%#	
3) Phenol-d5	4.966	99	1363	0.19	ppm	-0.03
Spiked Amount 50.000			Recovery	=	0.38%	
6) Nitrobenzene-d5	5.813	82	994	0.18	ppm	-0.02
Spiked Amount 50.000			Recovery	=	0.36%	
11) 2-Fluorobiphenyl	7.562	172	3403	0.21	ppm	-0.02
Spiked Amount 50.000			Recovery	=	0.42%	
17) 2,4,6-Tribromophenol	8.991	330	229	0.08	ppm	-0.03
Spiked Amount 50.000			Recovery	=	0.16%	
25) Terphenyl-d14	11.255	244	2570	0.20	ppm	-0.03
Spiked Amount 50.000			Recovery	=	0.40%	
Target Compounds						
						Qvalue
4) Phenol	4.973	94	392	0.05	ppm	92
5) bis(2-Chloroethyl)ether	5.031	93	69	0.01	ppm	85
7) Naphthalene	6.516	128	232	0.01	ppm	96
8) Hexachlorobutadiene	6.651	225	35	0.01	ppm	67
9) 2-Methylnaphthalene	7.190	142	143	0.01	ppm	96
10) Hexachlorocyclopentadiene	7.355	237	53	0.02	ppm	98
13) Acenaphthylene	8.078	152	123	0.01	ppm	92
14) Acenaphthene	8.244	153	126	0.01	ppm	92
15) Dibenzofuran	8.421	168	192m	0.01	ppm	
16) Fluorene	8.753	166	140	0.01	ppm	80
18) Hexachlorobenzene	9.300	284	43	0.01	ppm	93
19) Pentachlorophenol	9.499	266	38	0.35	ppm	96
20) Phenanthrene	9.698	178	214	0.01	ppm	95
21) Anthracene	9.746	178	139	0.01	ppm	96
23) Fluoranthene	10.874	202	289	0.01	ppm	96
24) Pyrene	11.093	202	200	0.01	ppm	94
26) Benzo[a]anthracene	12.278	228	141	0.01	ppm	95
27) Chrysene	12.312	228	192	0.01	ppm	96
29) Benzo[b]fluoranthene	13.283	252	206	0.01	ppm	76
30) Benzo[k]fluoranthene	13.305	252	172	0.01	ppm	75
31) Benzo[a]pyrene	13.596	252	189	0.01	ppm	98
32) Indeno[1,2,3-cd]pyrene	14.826	276	198	0.01	ppm	82
33) Dibenz[a,h]anthracene	14.843	278	173	0.01	ppm	97
34) Benzo[g,h,i]perylene	15.170	276	187	0.01	ppm	97
37) 1-Methylnaphthalene	7.190	142	143	0.01	ppm	97
39) 4,6-dinitro-2-methylph...	8.813	198	35	0.57	ppm	# 41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80119.D
Acq On : 26 Nov 2018 8:25 pm
Operator : christc2
Sample : ic3756-0.01
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 01:06:17 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

7.6.22

7

Manual Integration Approval Summary

Sample Number: E4M3756-IC3756

Method: SW846 8270D BY SIM

Lab FileID: 4M80119.D

Analyst approved: 11/27/18 01:53 Christopher Sowa

Injection Time: 11/26/18 20:25

Supervisor approved: 11/27/18 15:52 Nina Pandya

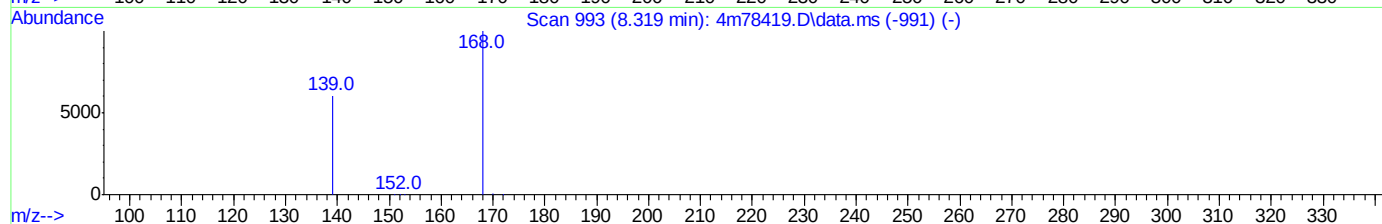
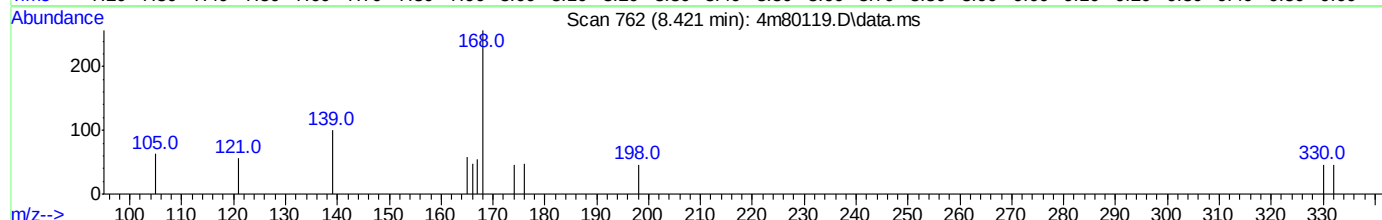
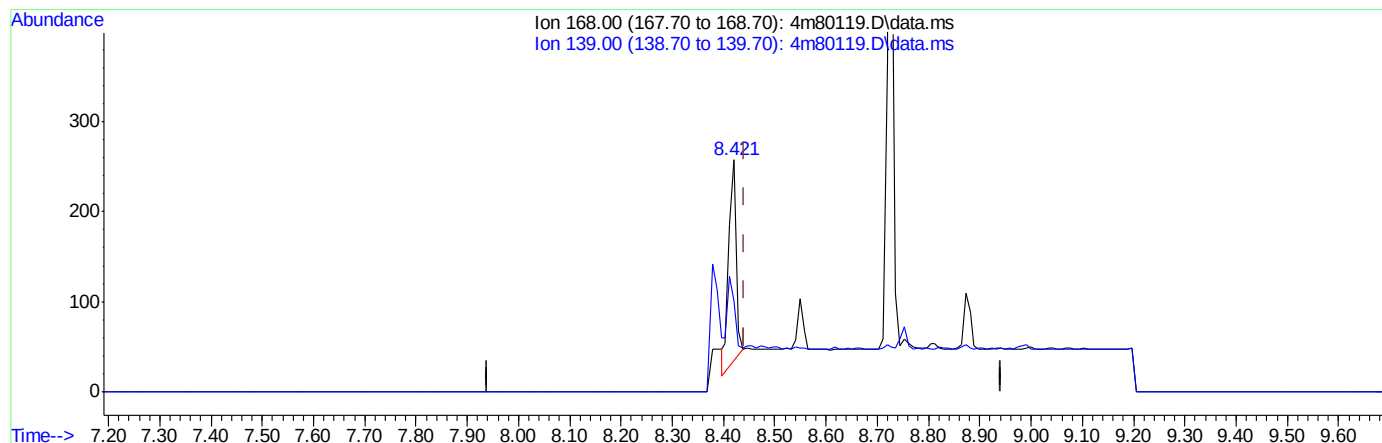
Parameter	CAS	Sig#	R.T. (min.)	Reason
Dibenzofuran	132-64-9		8.42	Poor instrument integration

7.6.22.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80119.D
Acq On : 26 Nov 2018 8:25 pm
Operator : christc2
Sample : ic3756-0.01
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 01:05:37 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80119.D\data.ms

(15) Dibenzofuran (t)

8.421min (-0.020) 0.01ppm

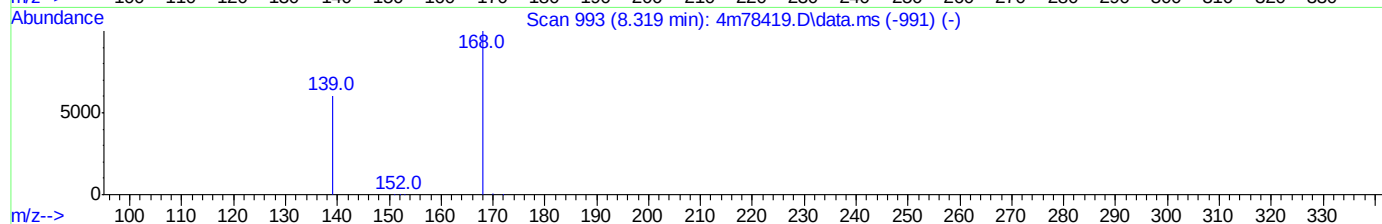
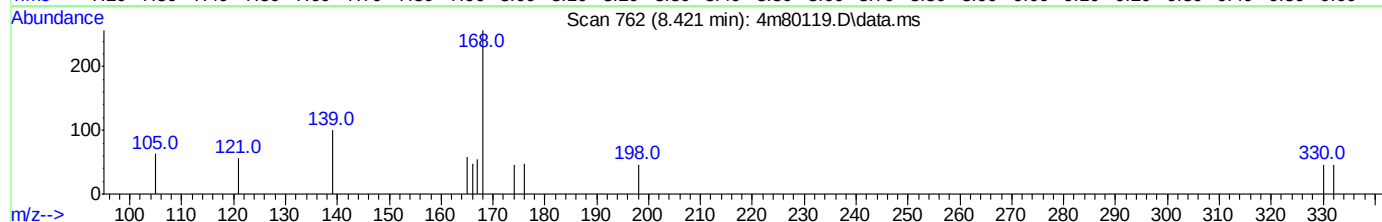
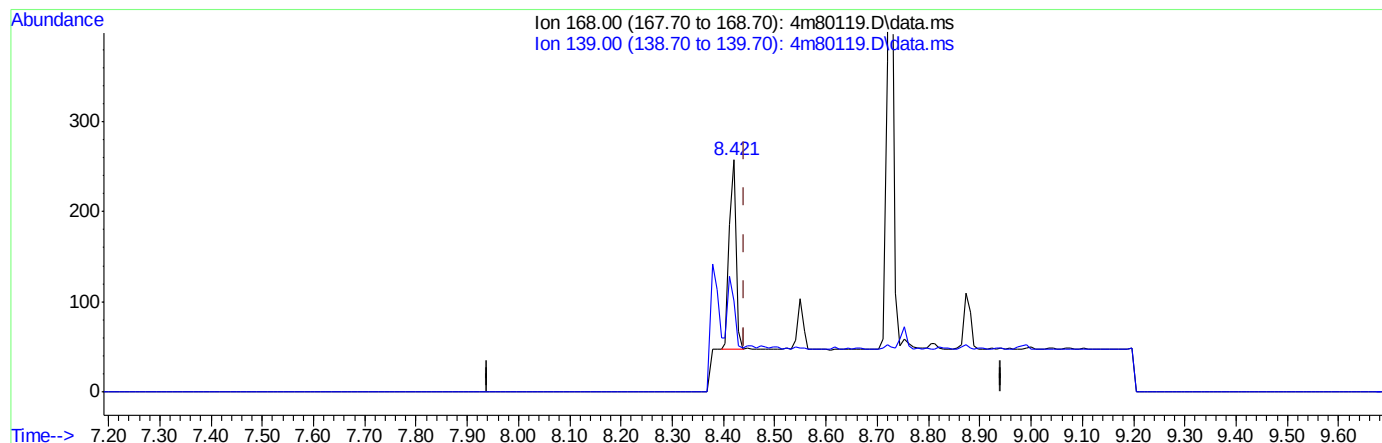
response 229

Ion	Exp%	Act%
168.00	100	100
139.00	0.00	22.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80119.D
Acq On : 26 Nov 2018 8:25 pm
Operator : christc2
Sample : ic3756-0.01
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 27 01:05:37 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Nov 26 09:39:13 2018
Response via : Initial Calibration



TIC: 4m80119.D\data.ms

(15) Dibenzofuran (t)
8.421min (-0.020) 0.01ppm m
response 192

Ion	Exp%	Act%
168.00	100	100
139.00	0.00	39.30#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80120.D
 Acq On : 26 Nov 2018 8:47 pm
 Operator : christc2
 Sample : icv3756-5.0
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 01:20:14 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Tue Nov 27 01:19:38 2018
 Response via : Initial Calibration

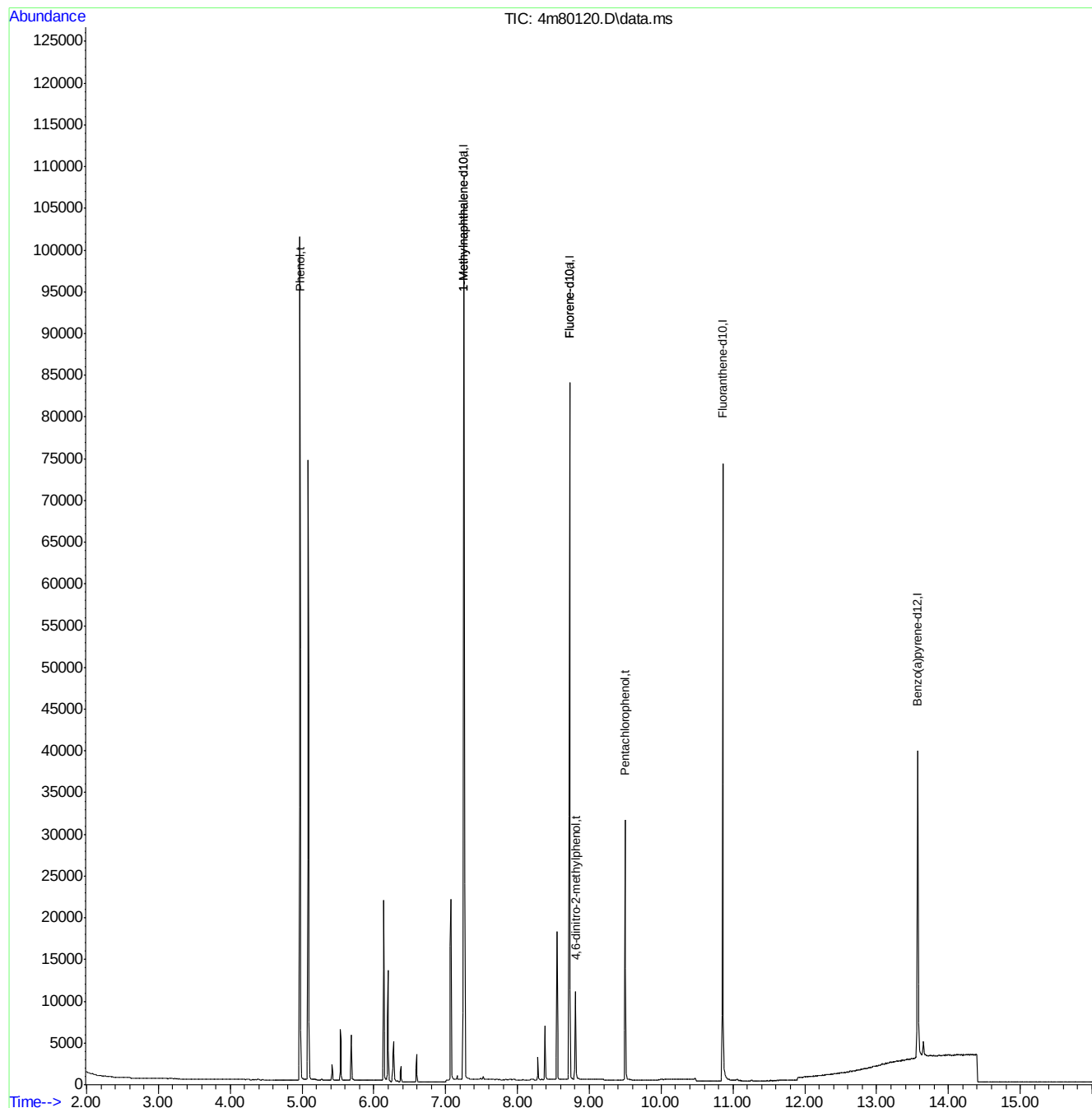
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	33512	4.00	ppm	0.00
12) Fluorene-d10	8.727	176	32937	4.00	ppm	0.00
22) Fluoranthene-d10	10.856	212	48220	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.572	264	30547	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.252	152	33512	4.00	ppm	0.00
38) Fluorene-d10a	8.727	176	32937	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						
4) Phenol	4.973	94	39516	5.56	ppm	55
19) Pentachlorophenol	9.499	266	10800	5.27	ppm	96
39) 4,6-dinitro-2-methylph...	8.813	198	5221	4.61	ppm	87

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80120.D
Acq On : 26 Nov 2018 8:47 pm
Operator : christc2
Sample : icv3756-5.0
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 27 01:20:14 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Nov 27 01:19:38 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
 Data File : 4m80121.D
 Acq On : 26 Nov 2018 9:08 pm
 Operator : christc2
 Sample : icv3756-1.0
 Misc : op13576a,e4m3756,1000,,,1,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 01:21:13 2018
 Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Tue Nov 27 01:19:38 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.252	152	43893	4.00	ppm	0.00
12) Fluorene-d10	8.727	176	43081	4.00	ppm	0.00
22) Fluoranthene-d10	10.856	212	59137	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.572	264	35797	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.252	152	43893	4.00	ppm	0.00
38) Fluorene-d10a	8.727	176	43081	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

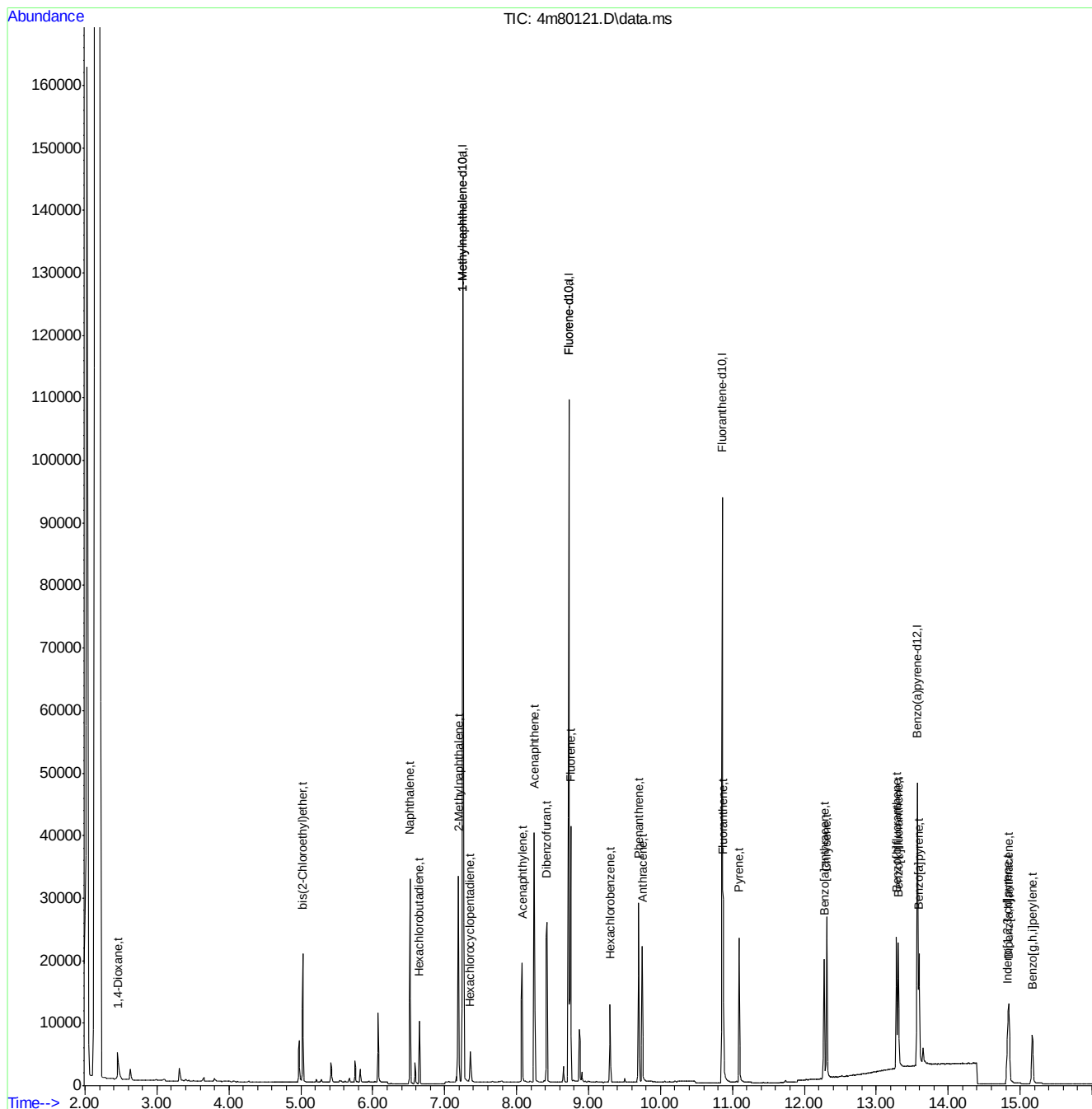
						Qvalue
5) bis(2-Chloroethyl)ether	5.031	93	6718	0.98	ppm	96
7) Naphthalene	6.516	128	21387	0.96	ppm	99
8) Hexachlorobutadiene	6.644	225	3781	1.00	ppm	64
9) 2-Methylnaphthalene	7.190	142	13343	0.95	ppm	100
10) Hexachlorocyclopentadiene	7.355	237	2302	0.79	ppm	99
13) Acenaphthylene	8.078	152	13756	0.97	ppm	99
14) Acenaphthene	8.244	153	12582	0.97	ppm	96
15) Dibenzofuran	8.421	168	17962	0.94	ppm	100
16) Fluorene	8.753	166	13520	0.94	ppm	99
18) Hexachlorobenzene	9.300	284	4163	0.95	ppm	99
20) Phenanthrene	9.698	178	18129	0.91	ppm	99
21) Anthracene	9.746	178	12949	0.90	ppm	99
23) Fluoranthene	10.874	202	18032	0.89	ppm	99
24) Pyrene	11.093	202	16288	0.94	ppm	94
26) Benzo[a]anthracene	12.278	228	10757	0.86	ppm	98
27) Chrysene	12.313	228	15027	0.91	ppm	99
29) Benzo[b]fluoranthene	13.283	252	13040	0.89	ppm	99
30) Benzo[k]fluoranthene	13.308	252	13075	1.01	ppm	98
31) Benzo[a]pyrene	13.593	252	11544	0.93	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.826	276	13465	0.97	ppm	99
33) Dibenz[a,h]anthracene	14.843	278	12202	0.99	ppm	96
34) Benzo[g,h,i]perylene	15.170	276	12293	1.00	ppm	100
36) 1,4-Dioxane	2.455	88	2978	0.99	ppm	80

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3756\
Data File : 4m80121.D
Acq On : 26 Nov 2018 9:08 pm
Operator : christc2
Sample : icv3756-1.0
Misc : op13576a,e4m3756,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 27 01:21:13 2018
Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Nov 27 01:19:38 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\data_aimeel\4m3762\
 Data File : 4m80259.d
 Acq On : 30 Nov 2018 10:07 am
 Operator : christc2
 Sample : cc3756-1.0 Inst : GCMS4M
 Misc : op13576a,e4m3762,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
 Quant Results File: M4M3756SIM.RES
 Quant Time: Dec 03 13:17:53 2018
 Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
 QLast Update : Mon Dec 03 13:17:44 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.384	152	47705	4.00	ppm	0.00
12) Fluorene-d10	8.851	176	49110	4.00	ppm	0.00
22) Fluoranthene-d10	10.982	212	81724	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.720	264	63292	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.384	152	47705	4.00	ppm	# 0.00
38) Fluorene-d10a	8.851	176	49110	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	4.202	112	152600	19.30	ppm	0.06
Spiked Amount 50.000	Range 11 - 58		Recovery =	38.60%		
3) Phenol-d5	5.086	99	180292	20.84	ppm	0.03
Spiked Amount 50.000			Recovery =	41.68%		
6) Nitrobenzene-d5	5.934	82	169353	24.81	ppm	0.01
Spiked Amount 50.000			Recovery =	49.62%		
11) 2-Fluorobiphenyl	7.687	172	380471	19.64	ppm	-0.01
Spiked Amount 50.000			Recovery =	39.28%		
17) 2,4,6-Tribromophenol	9.119	330	51906	24.56	ppm	0.00
Spiked Amount 50.000			Recovery =	49.12%		
25) Terphenyl-d14	11.375	244	339629	19.78	ppm	-0.02
Spiked Amount 50.000			Recovery =	39.56%		
Target Compounds						Qvalue
4) Phenol	5.099	94	50411	4.98	ppm	100
5) bis(2-Chloroethyl)ether	5.106	93	11394	1.53	ppm	# 48
7) Naphthalene	6.642	128	23236	0.96	ppm	100
8) Hexachlorobutadiene	6.771	225	4616	1.12	ppm	100
9) 2-Methylnaphthalene	7.317	142	14333	0.94	ppm	100
10) Hexachlorocyclopentadiene	7.485	237	9366	2.97	ppm	100
13) Acenaphthylene	8.202	152	20599	1.27	ppm	100
14) Acenaphthene	8.370	153	15180	1.02	ppm	100
15) Dibenzofuran	8.549	168	19885	0.92	ppm	100
16) Fluorene	8.880	166	16098	0.98	ppm	100
18) Hexachlorobenzene	9.425	284	5448	1.09	ppm	100
19) Pentachlorophenol	9.624	266	8090	2.79	ppm	100
20) Phenanthrene	9.823	178	21596	0.96	ppm	100
21) Anthracene	9.871	178	20044	1.23	ppm	100
23) Fluoranthene	10.993	202	24340	0.87	ppm	100
24) Pyrene	11.219	202	24651	1.03	ppm	100
26) Benzo[a]anthracene	12.402	228	19944	1.15	ppm	99
27) Chrysene	12.437	228	23176	1.02	ppm	100
29) Benzo[b]fluoranthene	13.417	252	22166	0.86	ppm	100
30) Benzo[k]fluoranthene	13.444	252	23641	1.03	ppm	100
31) Benzo[a]pyrene	13.742	252	20490	0.93	ppm	100
32) Indeno[1,2,3-cd]pyrene	15.031	276	23463	0.96	ppm	100
33) Dibenz[a,h]anthracene	15.047	278	19903	0.91	ppm	100
34) Benzo[g,h,i]perylene	15.395	276	19026	0.87	ppm	100
36) 1,4-Dioxane	2.589	88	3271	1.00	ppm	100
37) 1-Methylnaphthalene	7.407	142	15235	0.98	ppm	100
39) 4,6-dinitro-2-methylph...	8.933	198	7739	4.59	ppm	100

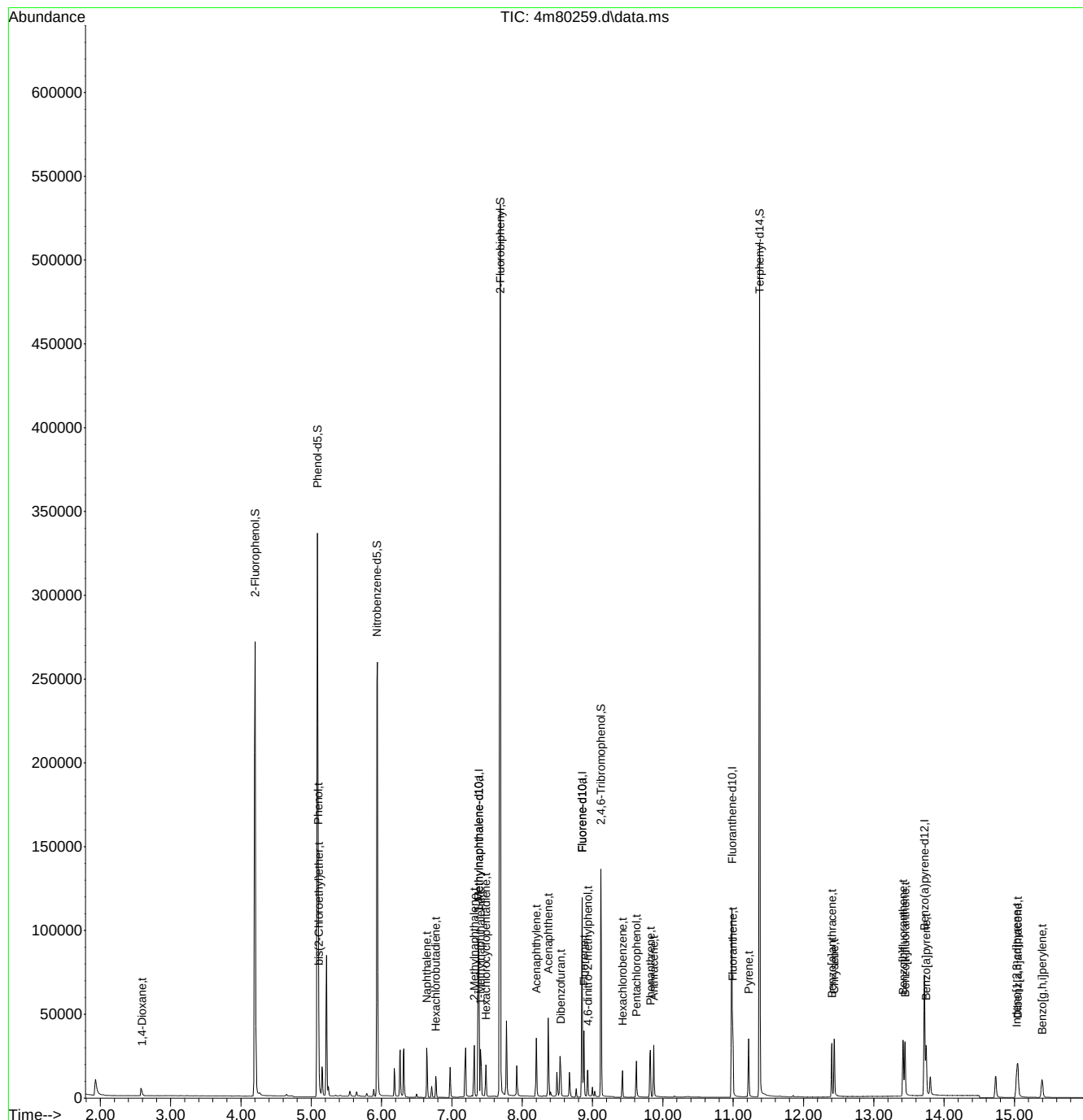
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\data_aimeel\e4m3762\
Data File : 4m80259.d
Acq On : 30 Nov 2018 10:07 am
Operator : christc2
Sample : cc3756-1.0
Misc : op13576a,e4m3762,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : GCMS4M

Quant Method : C:\msdchem\1\METHODS\M4M3756SIM.M
Quant Results File: M4M3756SIM.RES
Quant Time: Dec 03 13:17:53 2018
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Dec 03 13:17:44 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30898.D
 Acq On : 21 Nov 2018 11:12 pm
 Operator : christc2
 Sample : ic1702-5
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 22 02:20:48 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	70931	4.00	ppm	0.00
13) Fluorene-d10	8.570	176	91746	4.00	ppm	0.00
20) Fluoranthene-d10	10.697	212	132829	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	94405	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.805	112	1505840	125.43	ppm	0.00
Spiked Amount 50.000			Recovery	=	250.86%	
4) Phenol-d5	4.754	99	2446793	110.18	ppm	0.00
Spiked Amount 50.000			Recovery	=	220.36%	
7) Nitrobenzene-d5	5.620	82	2491930	130.80	ppm	0.00
Spiked Amount 50.000			Recovery	=	261.60%	
14) 2-Fluorobiphenyl	7.398	172	2444316	75.60	ppm	0.00
Spiked Amount 50.000			Recovery	=	151.20%	
19) 2,4,6-Tribromophenol	8.843	330	698834	110.32	ppm	0.00
Spiked Amount 50.000			Recovery	=	220.64%	
27) Terphenyl-d14	11.105	244	2007049	104.14	ppm	0.00
Spiked Amount 50.000			Recovery	=	208.28%	
Target Compounds						
					Qvalue	
2) 1,4-Dioxane	2.090	88	42156	7.38	ppm	79
5) Phenol	4.762	94	846988	33.72	ppm	91
6) bis(2-Chloroethyl)ether	4.823	93	123038	5.91	ppm	93
8) Naphthalene	6.332	128	232330	3.78	ppm	98
9) Hexachlorobutadiene	6.470	225	60800	5.06	ppm	91
10) 2-Methylnaphthalene	7.023	141	123418	4.15	ppm	98
11) 1-Methylnaphthalene	7.121	141	136902	4.18	ppm	89
12) Hexachlorocyclopentadiene	7.190	237	39997	4.54	ppm	99
15) Acenaphthylene	7.903	152	217134	4.07	ppm	90
16) Acenaphthene	8.082	153	143965	4.09	ppm	98
17) Fluorene	8.595	166	163913	4.33	ppm	91
18) 4,6-dinitro-2-methylph...	8.658	198	152918	27.89	ppm	94
21) Hexachlorobenzene	9.143	284	71264	4.52	ppm	83
22) Pentachlorophenol	9.338	266	156270	22.87	ppm	90
23) Phenanthrene	9.537	178	218803	4.02	ppm	98
24) Anthracene	9.585	178	217348	4.09	ppm	96
25) Fluoranthene	10.711	202	232261	3.87	ppm	97
26) Pyrene	10.932	202	246597	3.97	ppm	98
28) Benzo[a]anthracene	12.111	228	206236	4.38	ppm	96
29) Chrysene	12.141	228	217362	4.46	ppm	97
31) Benzo[b]fluoranthene	13.100	252	206032	3.88	ppm	91
32) Benzo[k]fluoranthene	13.124	252	204112	4.70	ppm	96
33) Benzo[a]pyrene	13.398	252	185243	4.20	ppm	97
34) Indeno[1,2,3-cd]pyrene	14.553	276	231242	4.62	ppm	99
35) Dibenz[a,h]anthracene	14.567	278	192602	4.81	ppm	96
36) Benzo[g,h,i]perylene	14.872	276	190220	4.53	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30899.D
 Acq On : 21 Nov 2018 11:35 pm
 Operator : christc2
 Sample : ic1702-2.5
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 22 02:22:03 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

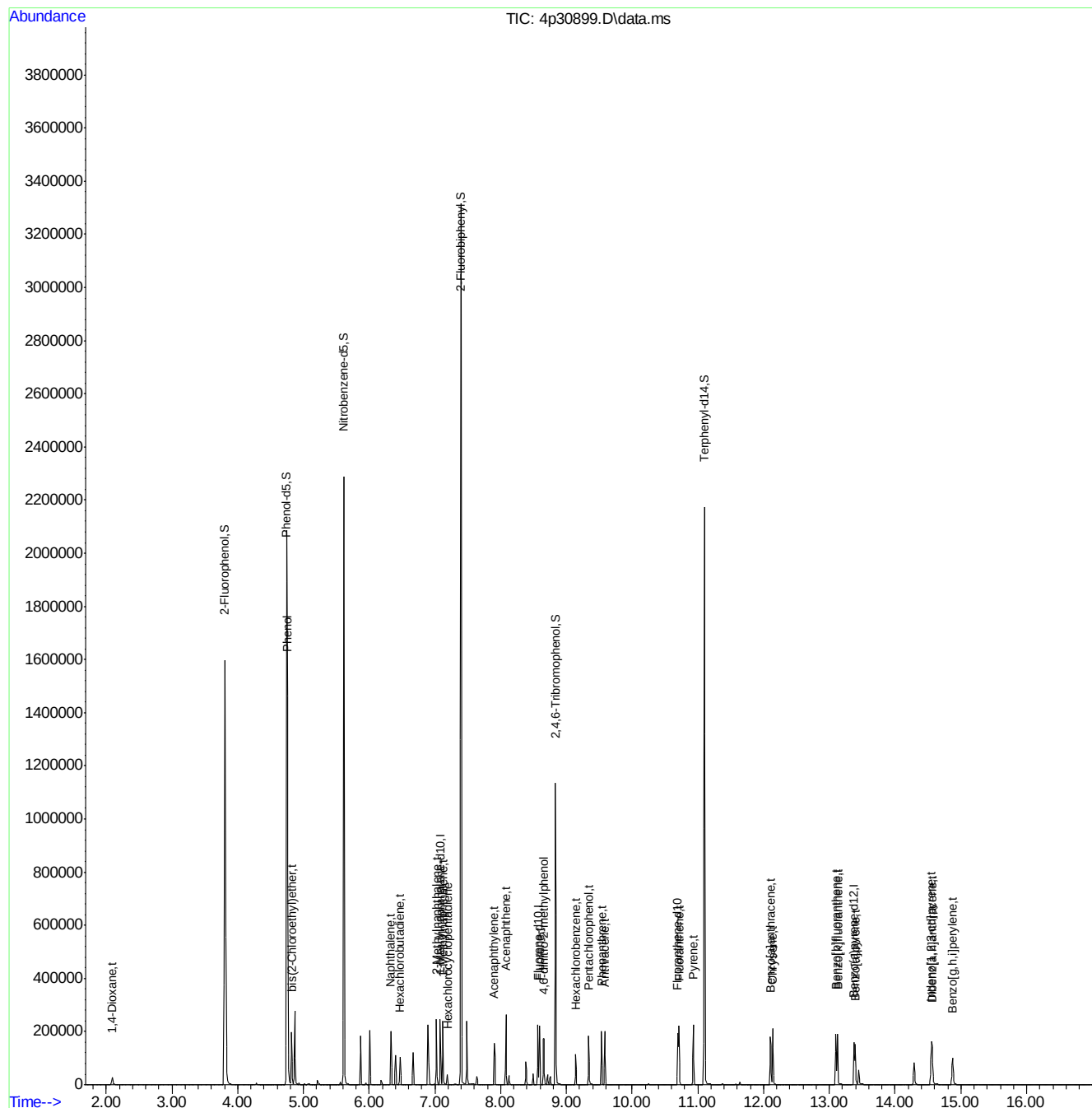
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	75143	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	95400	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	141169	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	102038	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.805	112	854316	67.17	ppm	0.00
Spiked Amount 50.000			Recovery =	134.34%		
4) Phenol-d5	4.746	99	1408508	59.87	ppm	0.00
Spiked Amount 50.000			Recovery =	119.74%		
7) Nitrobenzene-d5	5.616	82	1498712	74.25	ppm	0.00
Spiked Amount 50.000			Recovery =	148.50%		
14) 2-Fluorobiphenyl	7.398	172	1543545	45.91	ppm	0.00
Spiked Amount 50.000			Recovery =	91.82%		
19) 2,4,6-Tribromophenol	8.836	330	367639	55.82	ppm	0.00
Spiked Amount 50.000			Recovery =	111.64%		
27) Terphenyl-d14	11.098	244	1179518	57.59	ppm	0.00
Spiked Amount 50.000			Recovery =	115.18%		
Target Compounds						
2) 1,4-Dioxane	2.090	88	23632	3.90	ppm	84
5) Phenol	4.758	94	464435	17.46	ppm	99
6) bis(2-Chloroethyl)ether	4.823	93	67232	3.05	ppm	83
8) Naphthalene	6.332	128	131219	2.02	ppm	99
9) Hexachlorobutadiene	6.470	225	33320	2.62	ppm	91
10) 2-Methylnaphthalene	7.023	141	68993	2.19	ppm	94
11) 1-Methylnaphthalene	7.121	141	74862	2.16	ppm	86
12) Hexachlorocyclopentadiene	7.190	237	14600	1.56	ppm	98
15) Acenaphthylene	7.903	152	116142	2.09	ppm	92
16) Acenaphthene	8.081	153	79415	2.17	ppm	99
17) Fluorene	8.595	166	89909	2.28	ppm	90
18) 4,6-dinitro-2-methylph...	8.658	198	72836	15.06	ppm	80
21) Hexachlorobenzene	9.143	284	39214	2.34	ppm	87
22) Pentachlorophenol	9.338	266	66633	10.04	ppm	94
23) Phenanthrene	9.536	178	120353	2.08	ppm	98
24) Anthracene	9.585	178	117903	2.09	ppm	97
25) Fluoranthene	10.711	202	130068	2.04	ppm	98
26) Pyrene	10.932	202	134029	2.03	ppm	97
28) Benzo[a]anthracene	12.105	228	113302	2.27	ppm	99
29) Chrysene	12.141	228	123189	2.38	ppm	97
31) Benzo[b]fluoranthene	13.100	252	118702	2.07	ppm	93
32) Benzo[k]fluoranthene	13.124	252	110258	2.35	ppm	97
33) Benzo[a]pyrene	13.398	252	106383	2.23	ppm	96
34) Indeno[1,2,3-cd]pyrene	14.553	276	126617	2.34	ppm	99
35) Dibenz[a,h]anthracene	14.567	278	105697	2.44	ppm	94
36) Benzo[g,h,i]perylene	14.872	276	105341	2.32	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30899.D
Acq On : 21 Nov 2018 11:35 pm
Operator : christc2
Sample : ic1702-2.5
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 22 02:22:03 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30900.D
 Acq On : 21 Nov 2018 11:57 pm
 Operator : christc2
 Sample : icc1702-1.0
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 22 02:24:00 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

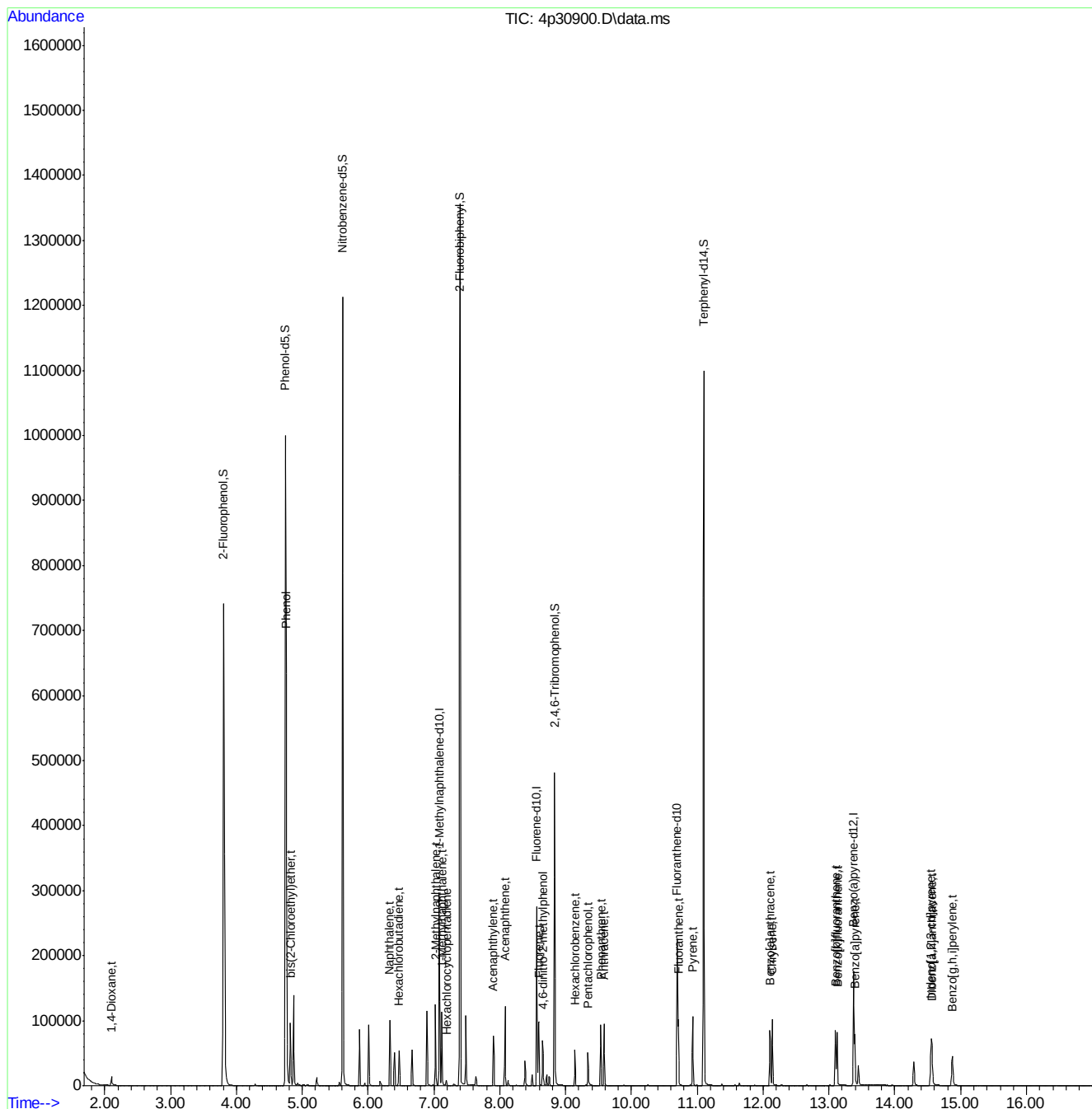
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	89588	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	112111	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	165972	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	117259	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.805	112	408202	26.92	ppm	0.00
Spiked Amount 50.000			Recovery =	53.84%		
4) Phenol-d5	4.746	99	711990	25.38	ppm	0.00
Spiked Amount 50.000			Recovery =	50.76%		
7) Nitrobenzene-d5	5.616	82	767501	31.89	ppm	0.00
Spiked Amount 50.000			Recovery =	63.78%		
14) 2-Fluorobiphenyl	7.398	172	797837	20.19	ppm	0.00
Spiked Amount 50.000			Recovery =	40.38%		
19) 2,4,6-Tribromophenol	8.836	330	163796	21.16	ppm	0.00
Spiked Amount 50.000			Recovery =	42.32%		
27) Terphenyl-d14	11.098	244	568549	23.61	ppm	0.00
Spiked Amount 50.000			Recovery =	47.22%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	11050m	1.53	ppm	
5) Phenol	4.758	94	225050	7.09	ppm	95
6) bis(2-Chloroethyl)ether	4.819	93	32957	1.25	ppm	94
8) Naphthalene	6.332	128	65849	0.85	ppm	100
9) Hexachlorobutadiene	6.470	225	16950	1.12	ppm	92
10) 2-Methylnaphthalene	7.023	141	33853	0.90	ppm	90
11) 1-Methylnaphthalene	7.121	141	36715	0.89	ppm	84
12) Hexachlorocyclopentadiene	7.190	237	3009	0.27	ppm	96
15) Acenaphthylene	7.903	152	55629	0.85	ppm	94
16) Acenaphthene	8.081	153	37260	0.87	ppm	94
17) Fluorene	8.595	166	43072	0.93	ppm	89
18) 4,6-dinitro-2-methylph...	8.658	198	26304	5.50	ppm	# 67
21) Hexachlorobenzene	9.143	284	18373	0.93	ppm	89
22) Pentachlorophenol	9.338	266	19826	2.80	ppm	91
23) Phenanthrene	9.536	178	57858	0.85	ppm	98
24) Anthracene	9.585	178	55158	0.83	ppm	98
25) Fluoranthene	10.711	202	60539	0.81	ppm	99
26) Pyrene	10.932	202	63813	0.82	ppm	97
28) Benzo[a]anthracene	12.105	228	53096	0.90	ppm	98
29) Chrysene	12.141	228	57988	0.95	ppm	95
31) Benzo[b]fluoranthene	13.100	252	55966	0.85	ppm	94
32) Benzo[k]fluoranthene	13.124	252	50317	0.93	ppm	97
33) Benzo[a]pyrene	13.392	252	49062	0.90	ppm	100
34) Indeno[1,2,3-cd]pyrene	14.553	276	57475	0.92	ppm	99
35) Dibenz[a,h]anthracene	14.567	278	47694	0.96	ppm	92
36) Benzo[g,h,i]perylene	14.872	276	47606	0.91	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30900.D
Acq On : 21 Nov 2018 11:57 pm
Operator : christc2
Sample : icc1702-1.0
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 22 02:24:00 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-ICC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30900.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/21/18 23:57

Supervisor approved: 11/26/18 13:58 Nina Pandya

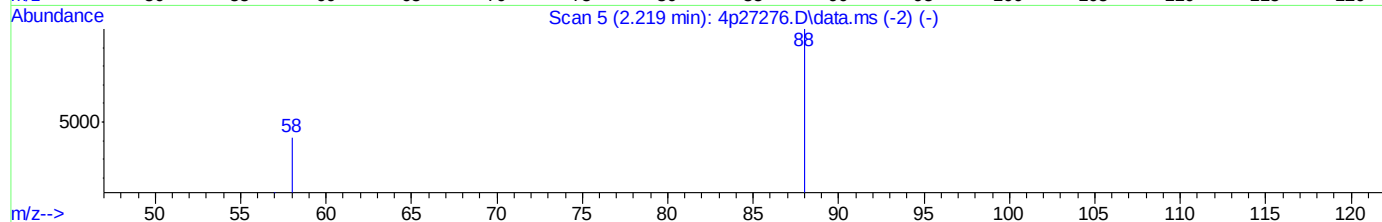
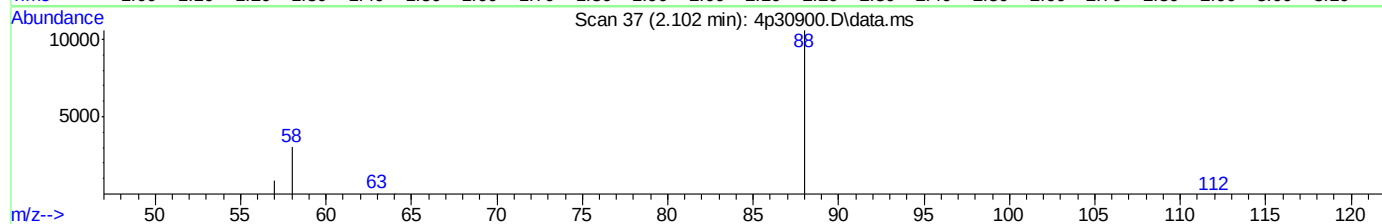
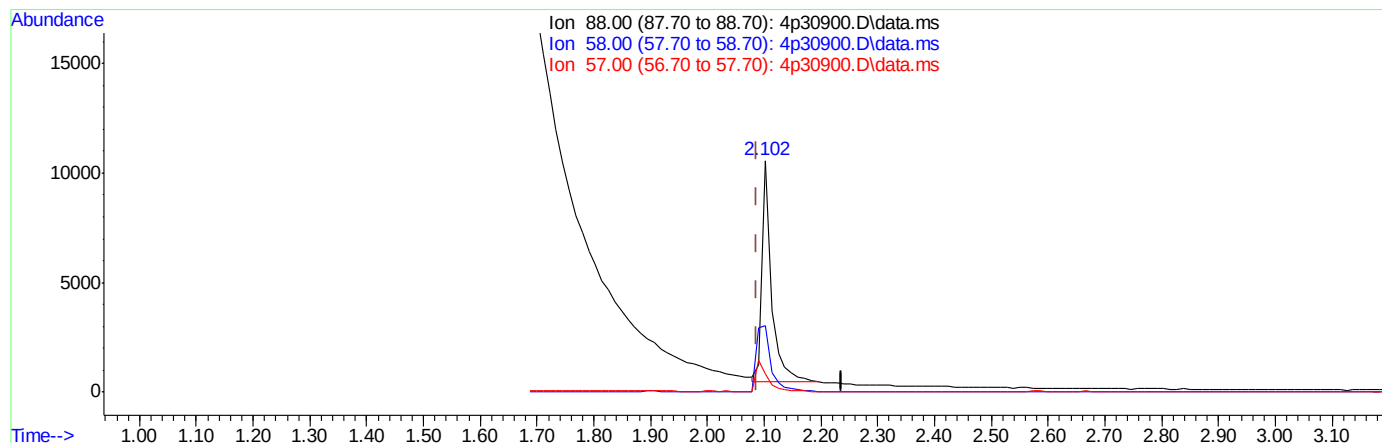
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration

7.6.28.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30900.D
Acq On : 21 Nov 2018 11:57 pm
Operator : christc2
Sample : ic1702-1.0
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 22 02:23:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30900.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 1.62ppm

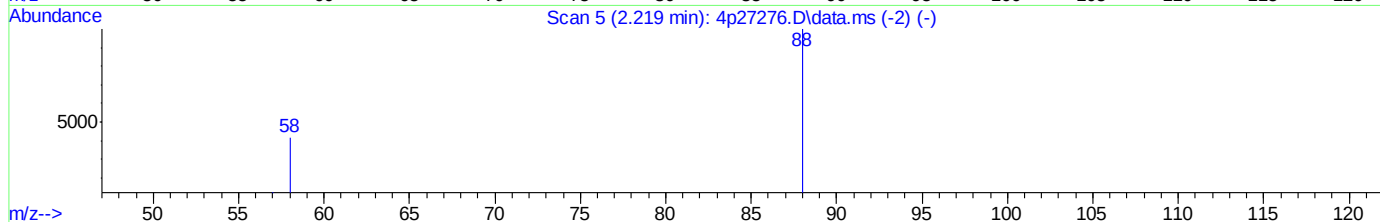
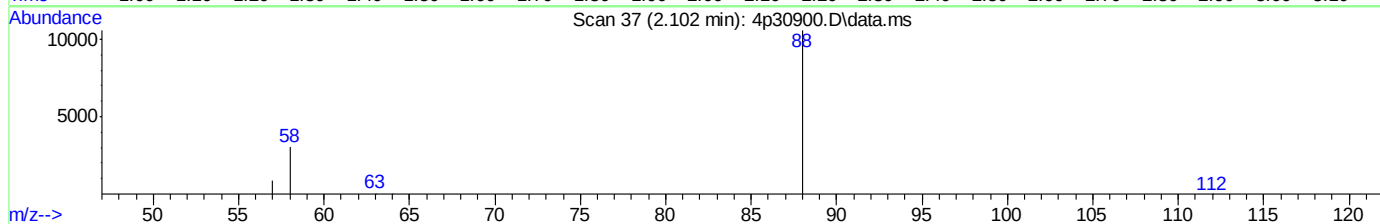
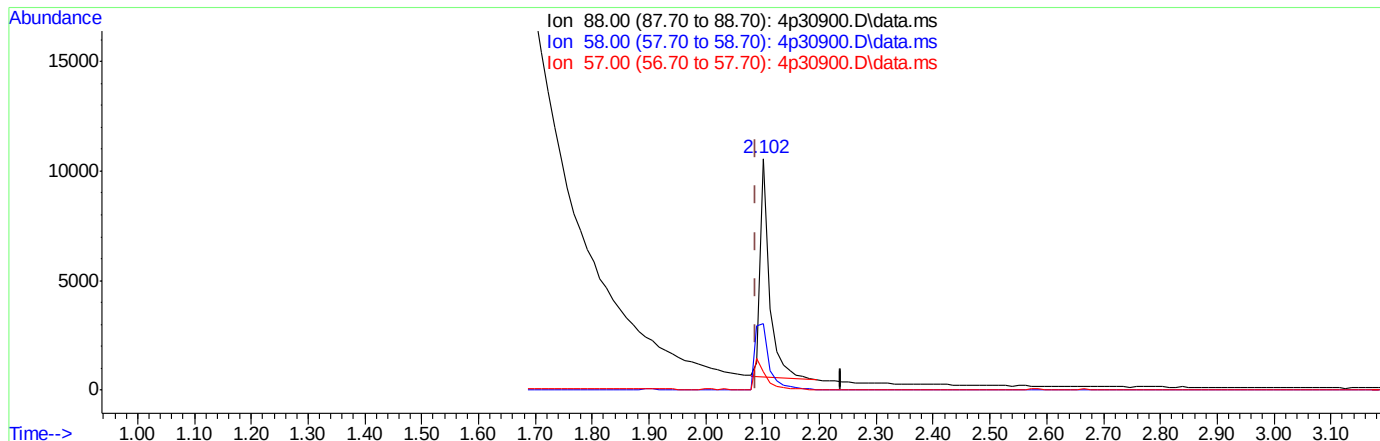
response 11668

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	30.13
57.00	14.50	8.02
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30900.D
Acq On : 21 Nov 2018 11:57 pm
Operator : christc2
Sample : ic1702-1.0
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 22 02:23:23 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30900.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 1.53ppm m

response 11050

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	28.73
57.00	14.50	7.94
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30901.D
 Acq On : 22 Nov 2018 12:20 am
 Operator : christc2
 Sample : ic1702-0.5
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 22 02:26:13 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

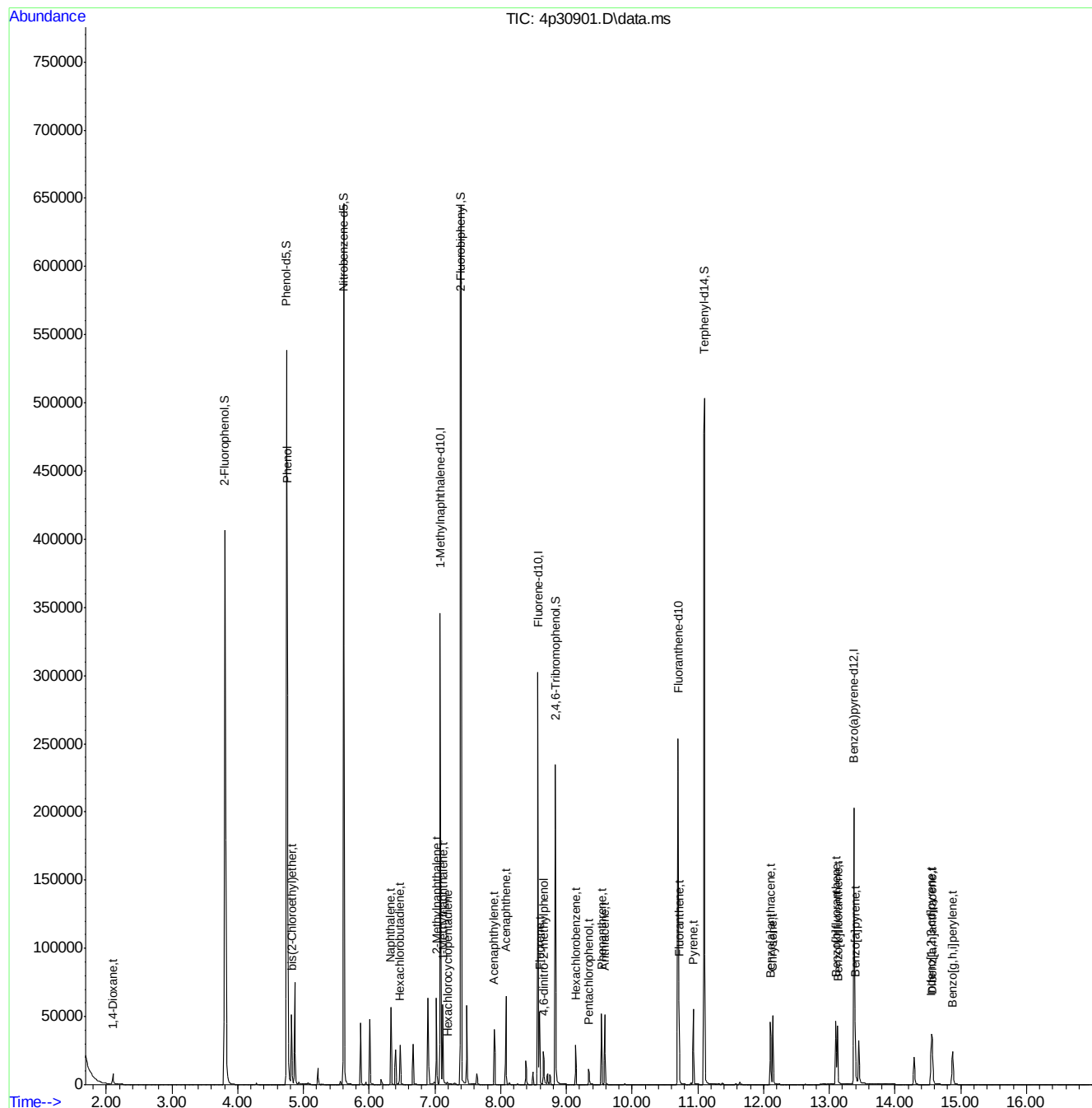
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	100292	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	126795	4.00	ppm	0.00
20) Fluoranthene-d10	10.697	212	184472	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	132394	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.805	112	216920	12.78	ppm	0.00
Spiked Amount 50.000			Recovery	=	25.56%	
4) Phenol-d5	4.746	99	380153	12.11	ppm	0.00
Spiked Amount 50.000			Recovery	=	24.22%	
7) Nitrobenzene-d5	5.612	82	415390	15.42	ppm	0.00
Spiked Amount 50.000			Recovery	=	30.84%	
14) 2-Fluorobiphenyl	7.398	172	428907	9.60	ppm	0.00
Spiked Amount 50.000			Recovery	=	19.20%	
19) 2,4,6-Tribromophenol	8.836	330	85325	9.75	ppm	0.00
Spiked Amount 50.000			Recovery	=	19.50%	
27) Terphenyl-d14	11.098	244	302527	11.30	ppm	0.00
Spiked Amount 50.000			Recovery	=	22.60%	
Target Compounds					Qvalue	
2) 1,4-Dioxane	2.102	88	5782m	0.72	ppm	
5) Phenol	4.754	94	119115	3.35	ppm	95
6) bis(2-Chloroethyl)ether	4.819	93	17654	0.60	ppm	97
8) Naphthalene	6.332	128	36352	0.42	ppm	98
9) Hexachlorobutadiene	6.470	225	8891	0.52	ppm	92
10) 2-Methylnaphthalene	7.023	141	17849	0.42	ppm	88
11) 1-Methylnaphthalene	7.121	141	19303	0.42	ppm	82
12) Hexachlorocyclopentadiene	7.190	237	672	0.05	ppm	95
15) Acenaphthylene	7.903	152	29281	0.40	ppm	94
16) Acenaphthene	8.082	153	19629	0.40	ppm	94
17) Fluorene	8.595	166	23259	0.44	ppm	86
18) 4,6-dinitro-2-methylph...	8.658	198	9581	2.08	ppm	# 72
21) Hexachlorobenzene	9.143	284	9975	0.46	ppm	89
22) Pentachlorophenol	9.338	266	5734	0.88	ppm	88
23) Phenanthrene	9.537	178	31047	0.41	ppm	98
24) Anthracene	9.585	178	29178	0.40	ppm	99
25) Fluoranthene	10.711	202	32271	0.39	ppm	99
26) Pyrene	10.932	202	33486	0.39	ppm	97
28) Benzo[a]anthracene	12.105	228	27377	0.42	ppm	98
29) Chrysene	12.141	228	30407	0.45	ppm	95
31) Benzo[b]fluoranthene	13.100	252	29526	0.40	ppm	95
32) Benzo[k]fluoranthene	13.124	252	26943	0.44	ppm	98
33) Benzo[a]pyrene	13.392	252	25953	0.42	ppm	98
34) Indeno[1,2,3-cd]pyrene	14.553	276	30420	0.43	ppm	98
35) Dibenz[a,h]anthracene	14.567	278	25332	0.45	ppm	94
36) Benzo[g,h,i]perylene	14.872	276	25614	0.44	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30901.D
Acq On : 22 Nov 2018 12:20 am
Operator : christc2
Sample : ic1702-0.5
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 22 02:26:13 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-IC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30901.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/22/18 00:20

Supervisor approved: 11/26/18 13:58 Nina Pandya

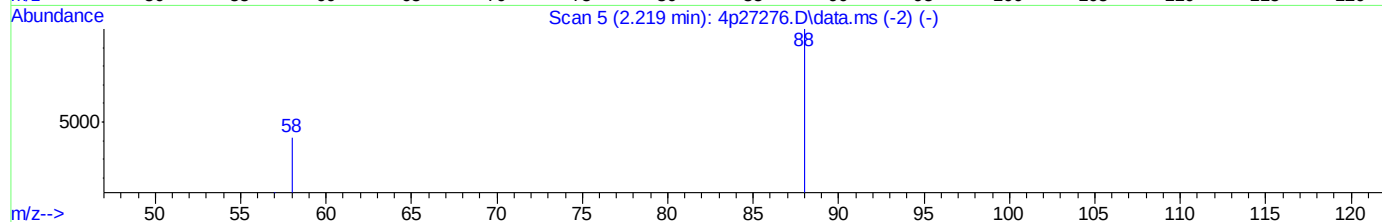
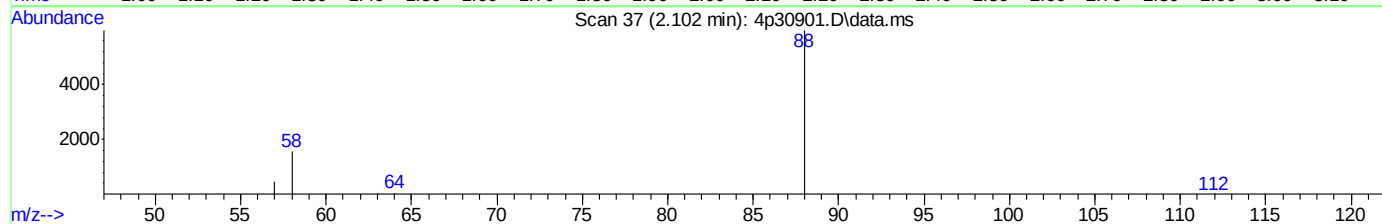
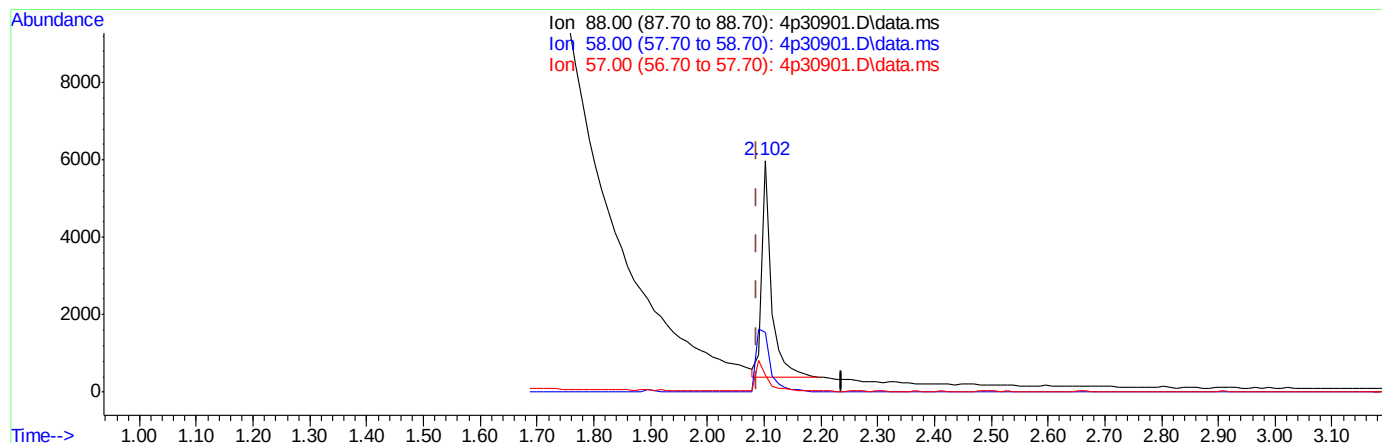
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration

7.6.29.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30901.D
Acq On : 22 Nov 2018 12:20 am
Operator : christc2
Sample : ic1702-0.5
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 22 02:24:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30901.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.79ppm

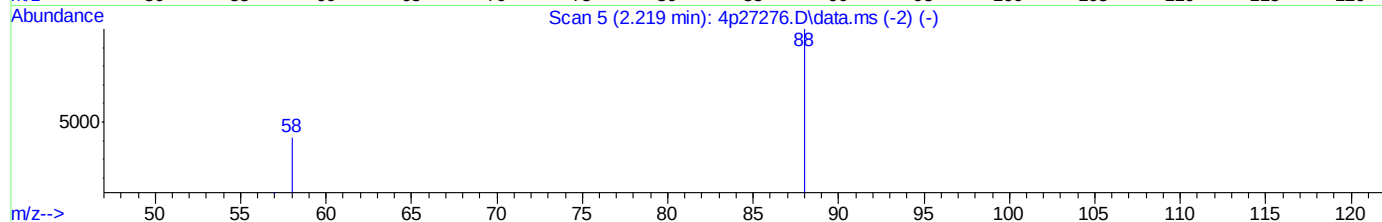
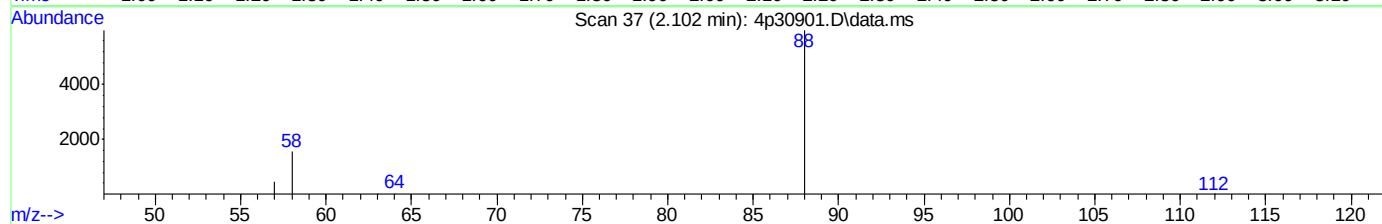
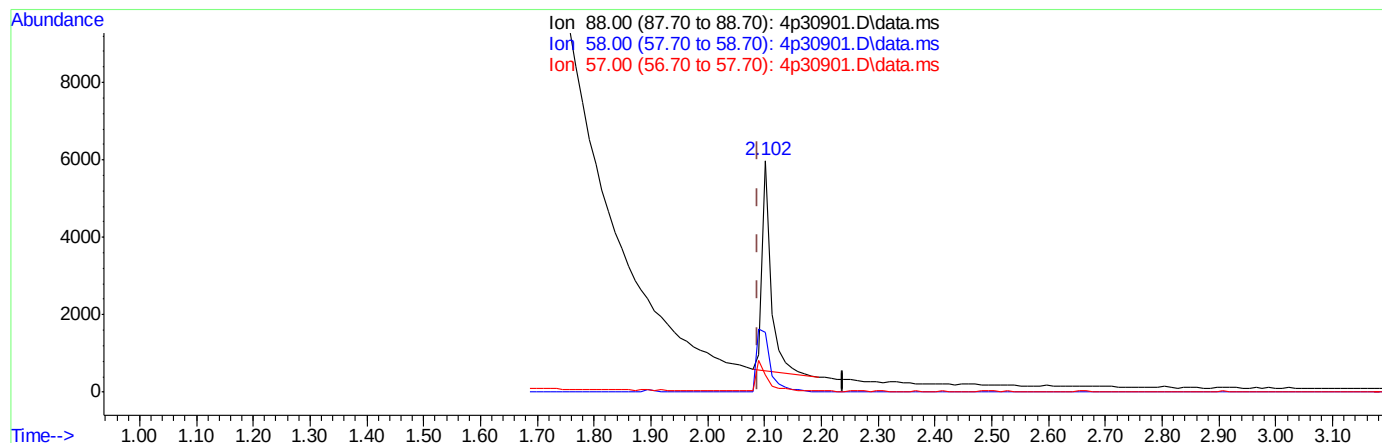
response 6382

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	28.09
57.00	14.50	7.45
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30901.D
Acq On : 22 Nov 2018 12:20 am
Operator : christc2
Sample : ic1702-0.5
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 22 02:24:37 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30901.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.72ppm m

response 5782

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	25.99
57.00	14.50	7.57
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30902.D
 Acq On : 22 Nov 2018 12:43 am
 Operator : christc2
 Sample : ic1702-0.2
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 22 02:52:54 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

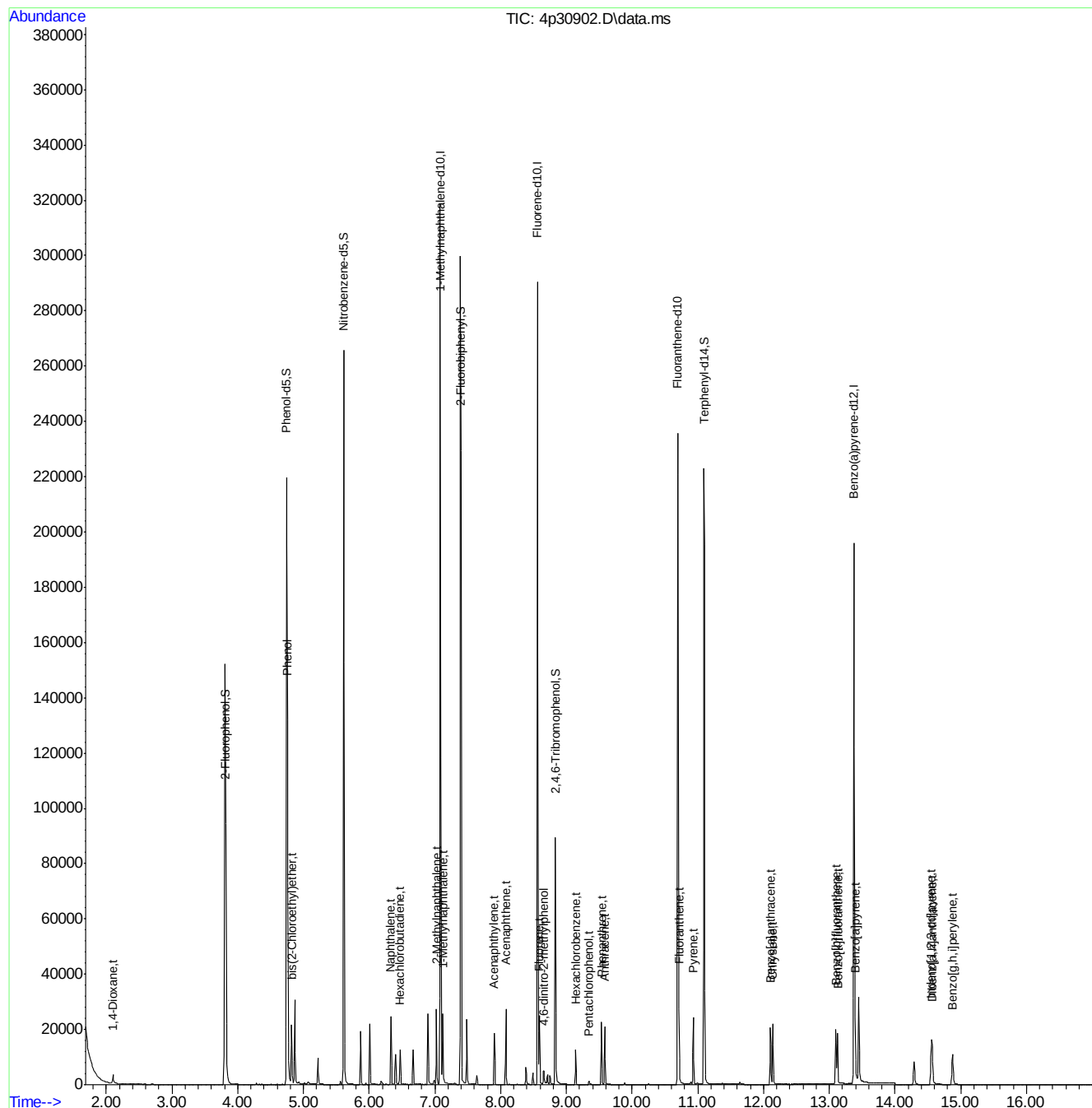
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	93655	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	118106	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	173510	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	125271	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.816	112	89897	5.67	ppm	0.01
Spiked Amount 50.000			Recovery	=	11.34%	
4) Phenol-d5	4.746	99	162878	5.55	ppm	0.00
Spiked Amount 50.000			Recovery	=	11.10%	
7) Nitrobenzene-d5	5.612	82	176075	7.00	ppm	0.00
Spiked Amount 50.000			Recovery	=	14.00%	
14) 2-Fluorobiphenyl	7.398	172	186903	4.49	ppm	0.00
Spiked Amount 50.000			Recovery	=	8.98%	
19) 2,4,6-Tribromophenol	8.836	330	34061	4.18	ppm	0.00
Spiked Amount 50.000			Recovery	=	8.36%	
27) Terphenyl-d14	11.091	244	130297	5.18	ppm	-0.01
Spiked Amount 50.000			Recovery	=	10.36%	
Target Compounds						
						Qvalue
2) 1,4-Dioxane	2.102	88	2247m	0.30	ppm	
5) Phenol	4.758	94	50633	1.53	ppm	92
6) bis(2-Chloroethyl)ether	4.819	93	7561	0.28	ppm	96
8) Naphthalene	6.332	128	15803	0.19	ppm	97
9) Hexachlorobutadiene	6.470	225	3788	0.24	ppm	93
10) 2-Methylnaphthalene	7.023	141	7601	0.19	ppm	89
11) 1-Methylnaphthalene	7.121	141	8150	0.19	ppm	80
15) Acenaphthylene	7.903	152	12563	0.18	ppm	97
16) Acenaphthene	8.081	153	8406	0.19	ppm	91
17) Fluorene	8.589	166	9878	0.20	ppm	95
18) 4,6-dinitro-2-methylph...	8.658	198	2316	0.80	ppm	78
21) Hexachlorobenzene	9.143	284	4322	0.21	ppm	91
22) Pentachlorophenol	9.345	266	848	0.29	ppm	92
23) Phenanthrene	9.537	178	13865	0.19	ppm	97
24) Anthracene	9.585	178	12410	0.18	ppm	98
25) Fluoranthene	10.711	202	14332	0.18	ppm	99
26) Pyrene	10.932	202	14272	0.18	ppm	98
28) Benzo[a]anthracene	12.105	228	12104	0.20	ppm	95
29) Chrysene	12.141	228	13305	0.21	ppm	95
31) Benzo[b]fluoranthene	13.100	252	12974	0.18	ppm	96
32) Benzo[k]fluoranthene	13.124	252	10981	0.19	ppm	96
33) Benzo[a]pyrene	13.392	252	11264	0.19	ppm	97
34) Indeno[1,2,3-cd]pyrene	14.553	276	13337	0.20	ppm	99
35) Dibenzo[a,h]anthracene	14.567	278	11059	0.21	ppm	92
36) Benzo[g,h,i]perylene	14.872	276	11255	0.20	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30902.D
Acq On : 22 Nov 2018 12:43 am
Operator : christc2
Sample : ic1702-0.2
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 22 02:52:54 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-IC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30902.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/22/18 00:43

Supervisor approved: 11/26/18 13:58 Nina Pandya

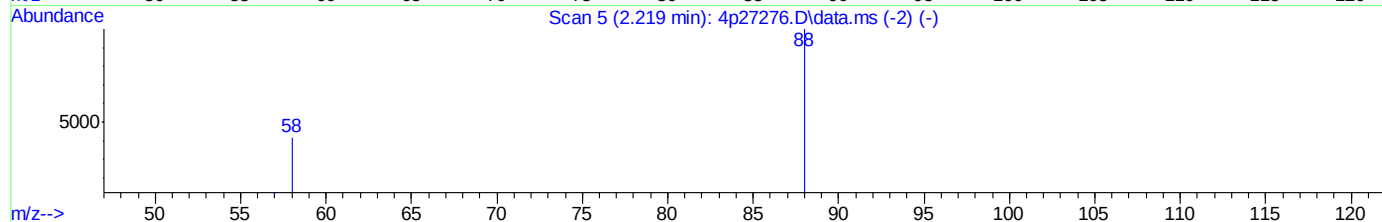
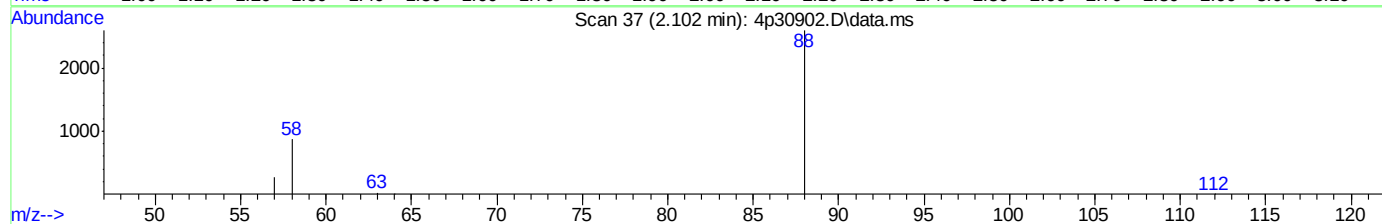
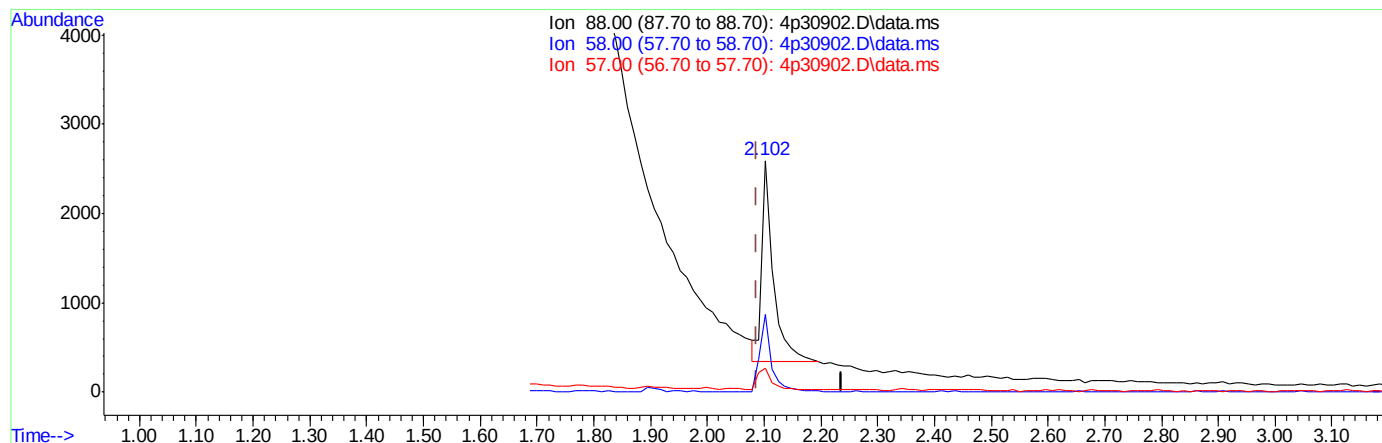
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration

7.6.30.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30902.D
Acq On : 22 Nov 2018 12:43 am
Operator : christc2
Sample : ic1702-0.2
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 22 02:26:41 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30902.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.42ppm

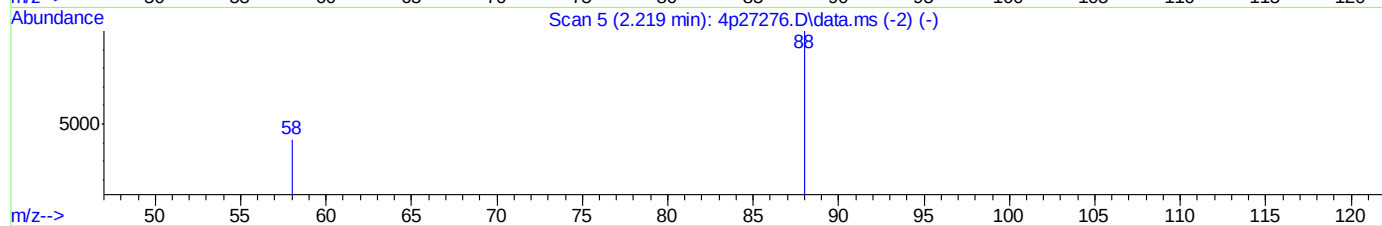
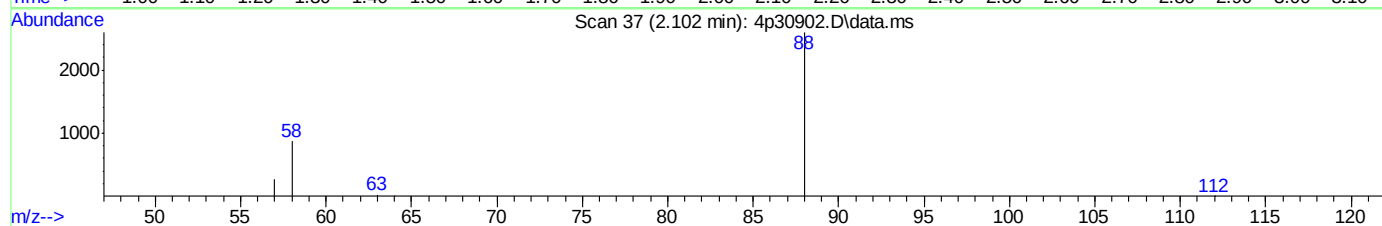
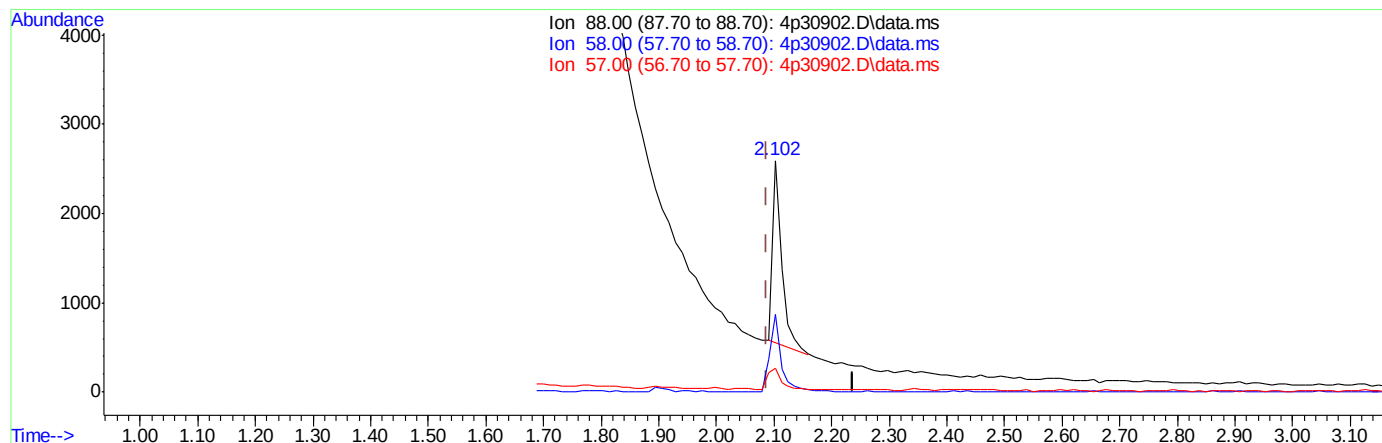
response 3133

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	40.13
57.00	14.50	11.10
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30902.D
Acq On : 22 Nov 2018 12:43 am
Operator : christc2
Sample : ic1702-0.2
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 22 02:26:41 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30902.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.30ppm m

response 2247

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	33.41
57.00	14.50	10.25
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30903.D
 Acq On : 22 Nov 2018 1:06 am
 Operator : christc2
 Sample : ic1702-0.1
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 22 02:54:15 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:20:30 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	95575	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	118214	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	173827	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	126179	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.816	112	44201	2.73	ppm	0.01
Spiked Amount 50.000			Recovery =		5.46%	
4) Phenol-d5	4.746	99	82161	2.75	ppm	0.00
Spiked Amount 50.000			Recovery =		5.50%	
7) Nitrobenzene-d5	5.616	82	86411	3.37	ppm	0.00
Spiked Amount 50.000			Recovery =		6.74%	
14) 2-Fluorobiphenyl	7.398	172	95012	2.28	ppm	0.00
Spiked Amount 50.000			Recovery =		4.56%	
19) 2,4,6-Tribromophenol	8.836	330	15842	1.94	ppm	0.00
Spiked Amount 50.000			Recovery =		3.88%	
27) Terphenyl-d14	11.091	244	67148	2.66	ppm	-0.01
Spiked Amount 50.000			Recovery =		5.32%	
Target Compounds						
2) 1,4-Dioxane	2.102	88	1025m	0.13	ppm	Qvalue
5) Phenol	4.758	94	24954	0.74	ppm	92
6) bis(2-Chloroethyl)ether	4.819	93	3739	0.13	ppm	96
8) Naphthalene	6.332	128	7895	0.10	ppm	98
9) Hexachlorobutadiene	6.470	225	1859	0.11	ppm	92
10) 2-Methylnaphthalene	7.023	141	3829	0.10	ppm	88
11) 1-Methylnaphthalene	7.121	141	4301	0.10	ppm	82
15) Acenaphthylene	7.903	152	6159	0.09	ppm	96
16) Acenaphthene	8.081	153	4255	0.09	ppm	95
17) Fluorene	8.588	166	4871	0.10	ppm	97
18) 4,6-dinitro-2-methylph...	8.658	198	646	0.46	ppm	95
21) Hexachlorobenzene	9.142	284	2085	0.10	ppm	89
22) Pentachlorophenol	9.345	266	256	0.22	ppm	93
23) Phenanthrene	9.536	178	6776	0.10	ppm	98
24) Anthracene	9.585	178	5961	0.09	ppm	100
25) Fluoranthene	10.711	202	7223	0.09	ppm	95
26) Pyrene	10.932	202	7008	0.09	ppm	97
28) Benzo[a]anthracene	12.105	228	5920	0.10	ppm	95
29) Chrysene	12.141	228	6493	0.10	ppm	95
31) Benzo[b]fluoranthene	13.100	252	6307	0.09	ppm	95
32) Benzo[k]fluoranthene	13.124	252	5662	0.10	ppm	97
33) Benzo[a]pyrene	13.392	252	5482	0.09	ppm	95
34) Indeno[1,2,3-cd]pyrene	14.553	276	6688	0.10	ppm	99
35) Dibenzo[a,h]anthracene	14.567	278	5445	0.10	ppm	94
36) Benzo[g,h,i]perylene	14.872	276	5729	0.10	ppm	99

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

(QT Reviewed)

Quant Time: Nov 22 02:54:15 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-IC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30903.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/22/18 01:06

Supervisor approved: 11/26/18 13:58 Nina Pandya

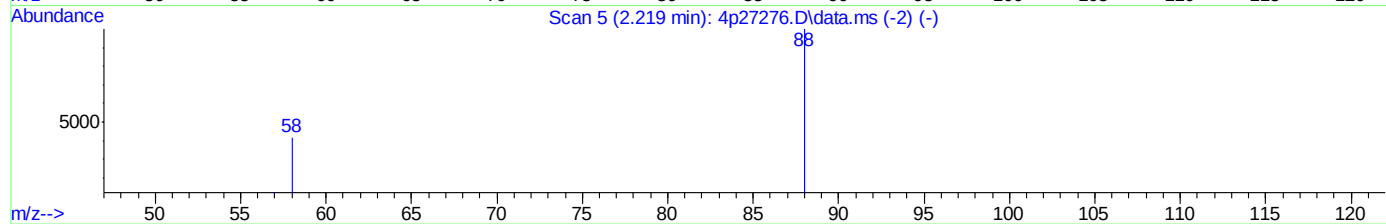
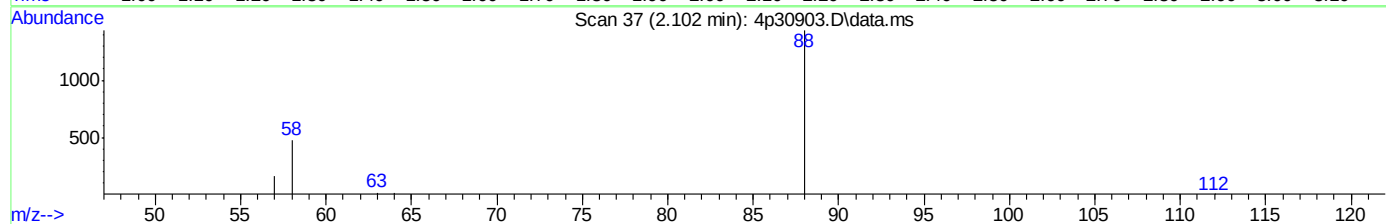
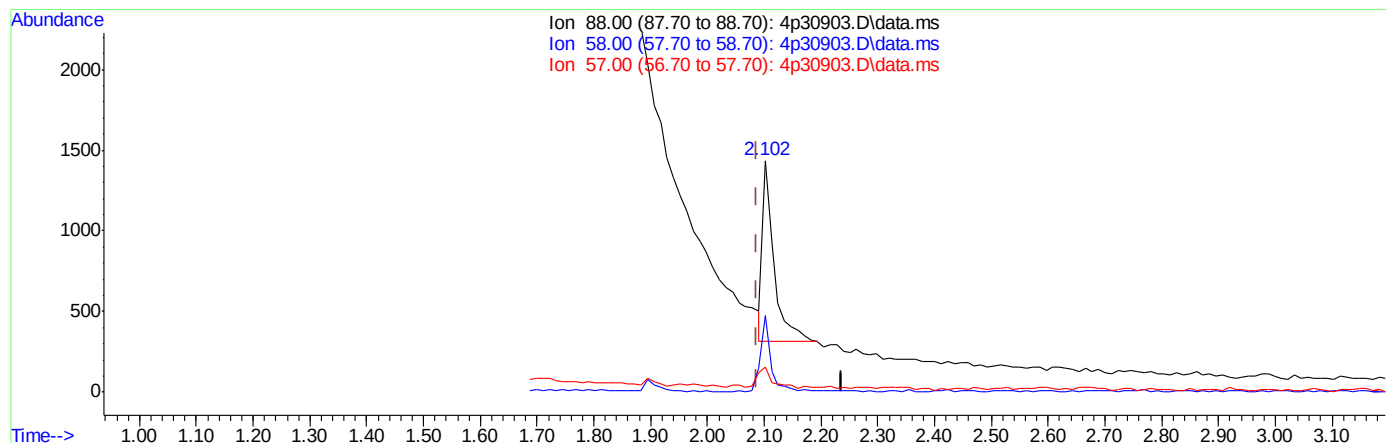
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration

7.6.31.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30903.D
Acq On : 22 Nov 2018 1:06 am
Operator : christc2
Sample : ic1702-0.1
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 22 02:53:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30903.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.21ppm

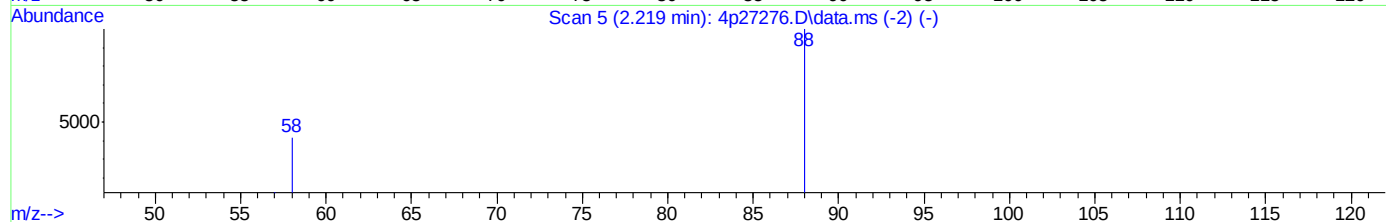
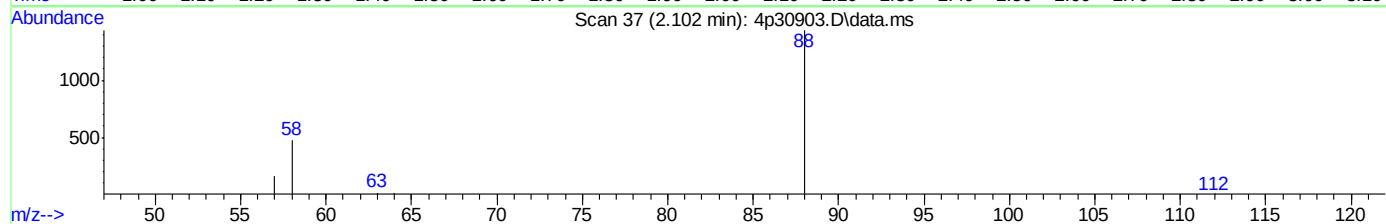
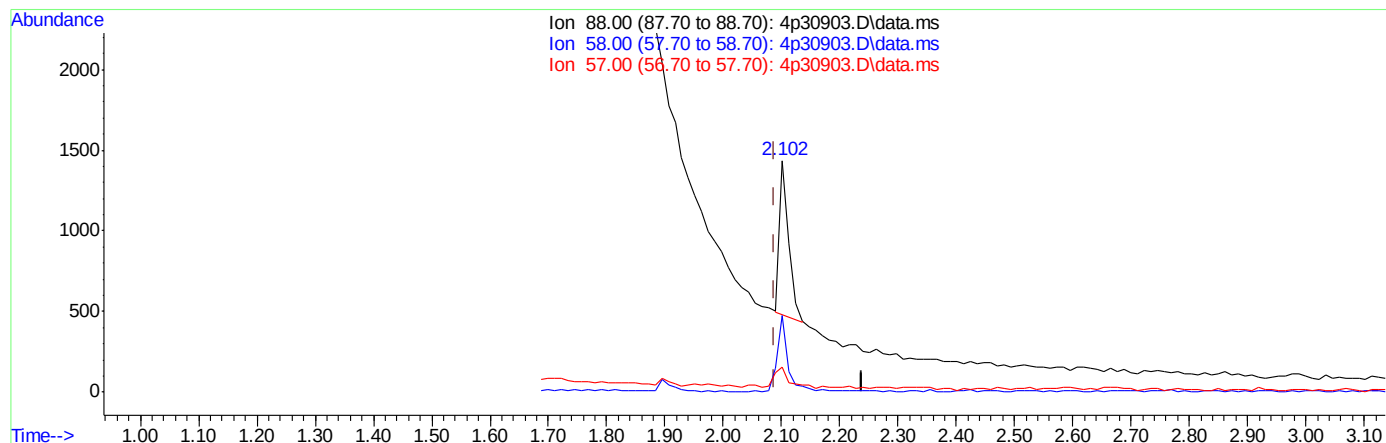
response 1591

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	38.74
57.00	14.50	8.16
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30903.D
Acq On : 22 Nov 2018 1:06 am
Operator : christc2
Sample : ic1702-0.1
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 22 02:53:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:20:30 2018
Response via : Initial Calibration



TIC: 4p30903.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.13ppm m

response 1025

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	33.26
57.00	14.50	11.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30904.D
 Acq On : 22 Nov 2018 1:30 am
 Operator : christc2
 Sample : ic1702-0.05
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 8 Sample Multiplier: 1

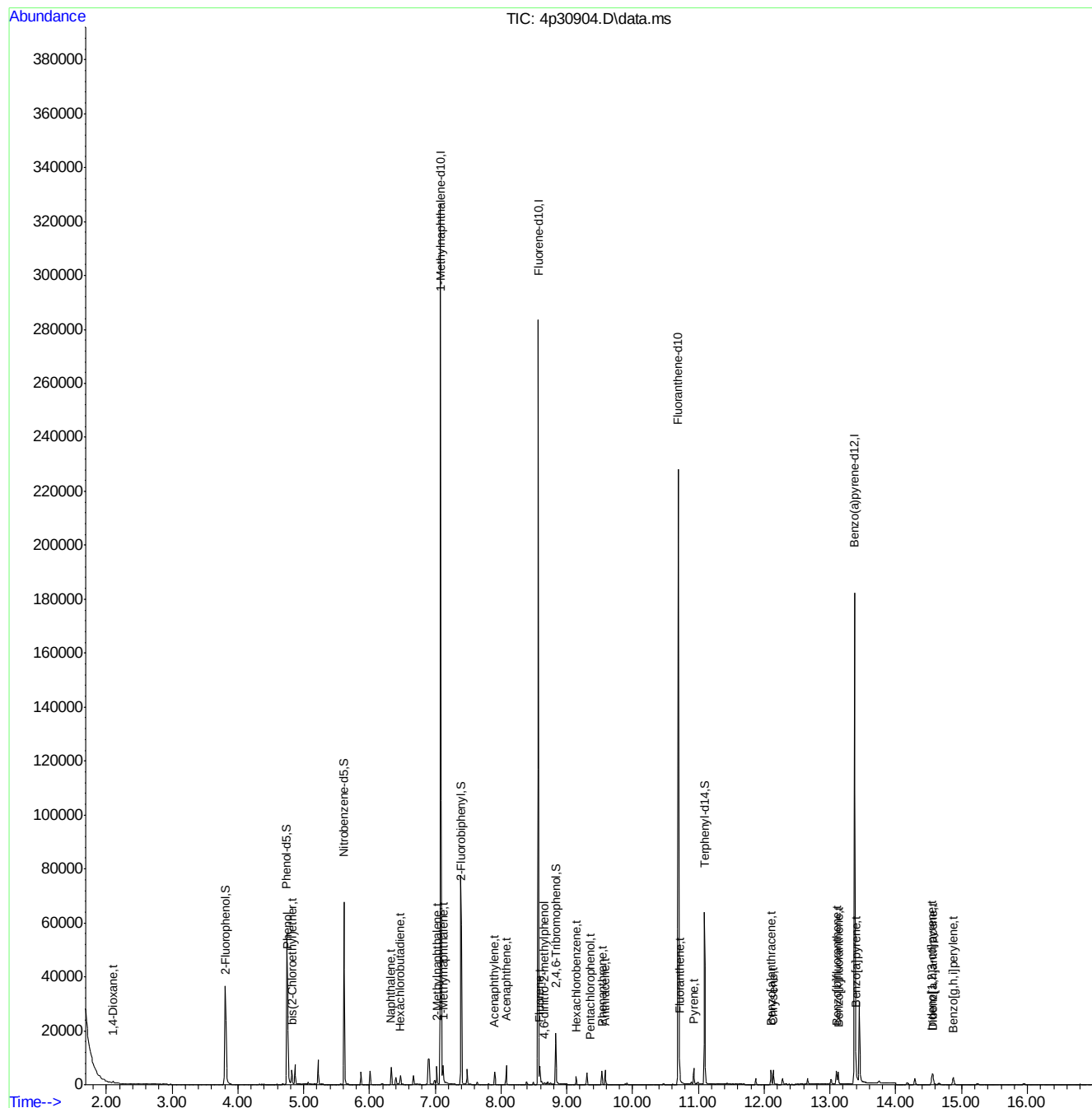
Quant Time: Nov 22 02:56:39 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:55:23 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	93661	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	114504	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	167798	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	119636	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.816	112	22900	1.44	ppm	0.01
Spiked Amount 50.000			Recovery	=	2.88%	
4) Phenol-d5	4.746	99	41066	1.40	ppm	0.00
Spiked Amount 50.000			Recovery	=	2.80%	
7) Nitrobenzene-d5	5.616	82	44460	1.77	ppm	0.00
Spiked Amount 50.000			Recovery	=	3.54%	
14) 2-Fluorobiphenyl	7.398	172	49336	1.22	ppm	0.00
Spiked Amount 50.000			Recovery	=	2.44%	
19) 2,4,6-Tribromophenol	8.836	330	7357	0.93	ppm	0.00
Spiked Amount 50.000			Recovery	=	1.86%	
27) Terphenyl-d14	11.091	244	34660	1.42	ppm	-0.01
Spiked Amount 50.000			Recovery	=	2.84%	
Target Compounds						
2) 1,4-Dioxane	2.102	88	421m	0.06	ppm	Qvalue
5) Phenol	4.758	94	12450	0.38	ppm	93
6) bis(2-Chloroethyl)ether	4.819	93	2039	0.07	ppm	96
8) Naphthalene	6.332	128	4105	0.05	ppm	96
9) Hexachlorobutadiene	6.470	225	1003	0.06	ppm	86
10) 2-Methylnaphthalene	7.023	141	2005	0.05	ppm	92
11) 1-Methylnaphthalene	7.121	141	2163	0.05	ppm	# 80
15) Acenaphthylene	7.903	152	3239	0.05	ppm	96
16) Acenaphthene	8.081	153	2182	0.05	ppm	93
17) Fluorene	8.589	166	2450	0.05	ppm	96
18) 4,6-dinitro-2-methylph...	8.658	198	218	0.38	ppm	88
21) Hexachlorobenzene	9.143	284	1049	0.05	ppm	88
22) Pentachlorophenol	9.353	266	75m	0.20	ppm	
23) Phenanthrene	9.536	178	3471	0.05	ppm	96
24) Anthracene	9.585	178	3114	0.05	ppm	98
25) Fluoranthene	10.711	202	3569	0.05	ppm	95
26) Pyrene	10.932	202	3717	0.05	ppm	96
28) Benzo[a]anthracene	12.105	228	3049	0.05	ppm	95
29) Chrysene	12.141	228	3387	0.06	ppm	93
31) Benzo[b]fluoranthene	13.100	252	3317	0.05	ppm	96
32) Benzo[k]fluoranthene	13.124	252	2670	0.05	ppm	96
33) Benzo[a]pyrene	13.392	252	2688	0.05	ppm	96
34) Indeno[1,2,3-cd]pyrene	14.553	276	3407	0.05	ppm	95
35) Dibenzo[a,h]anthracene	14.567	278	2692	0.05	ppm	90
36) Benzo[g,h,i]perylene	14.872	276	2879	0.05	ppm	99

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

(QT Reviewed)

Quant Time: Nov 22 02:56:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-IC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30904.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/22/18 01:30

Supervisor approved: 11/26/18 13:58 Nina Pandya

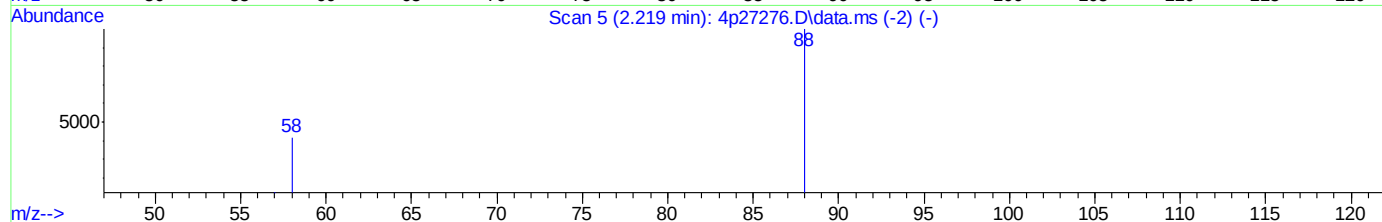
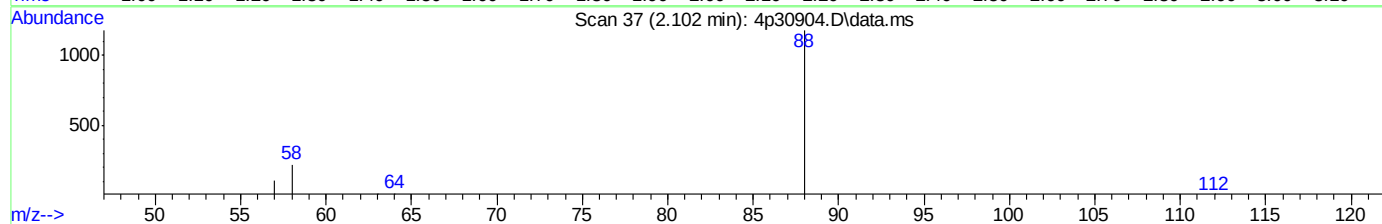
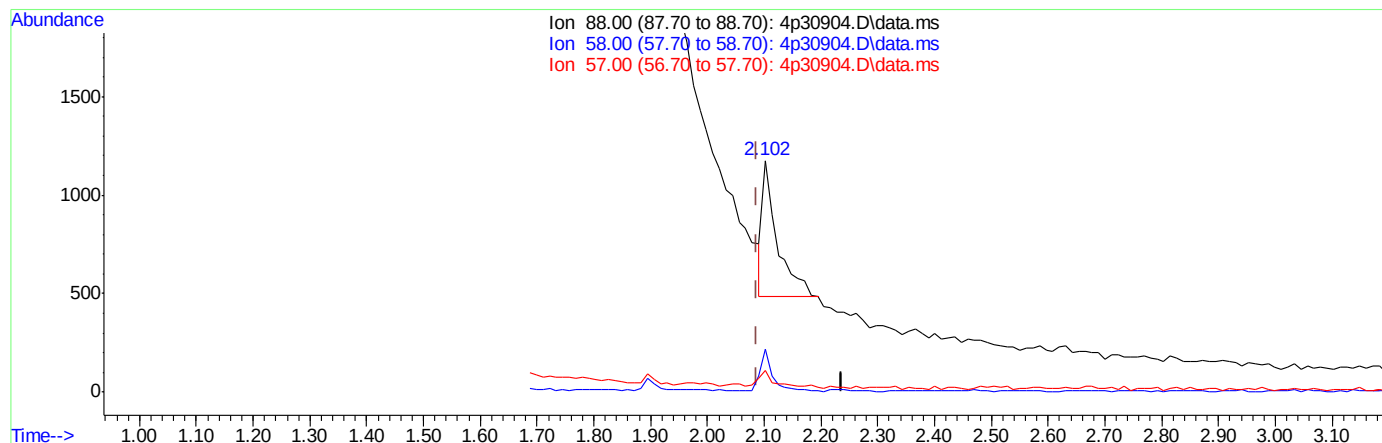
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration
Pentachlorophenol	87-86-5		9.35	Poor instrument integration

7.6.32.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30904.D
Acq On : 22 Nov 2018 1:30 am
Operator : christc2
Sample : ic1702-0.05
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 22 02:55:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



TIC: 4p30904.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.17ppm

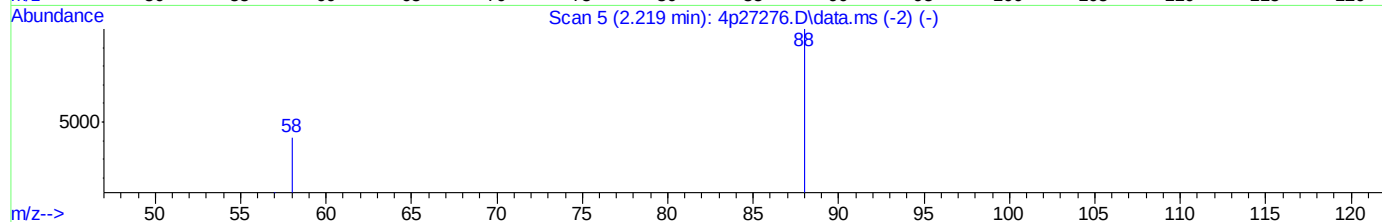
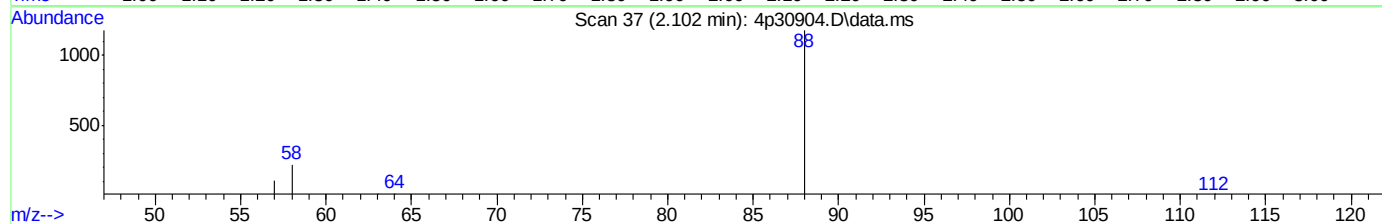
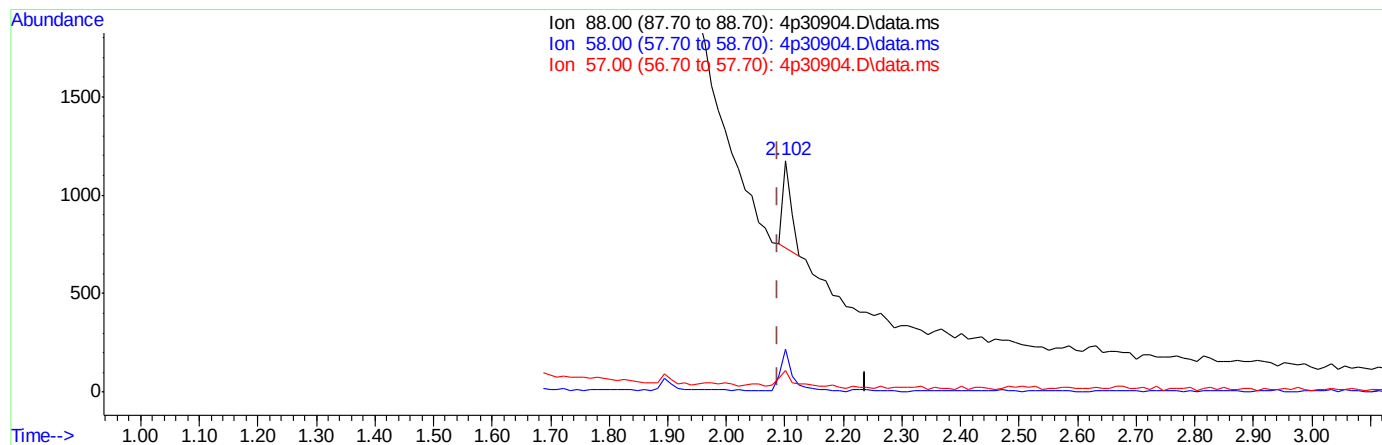
response 1252

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	31.54
57.00	14.50	11.02
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30904.D
Acq On : 22 Nov 2018 1:30 am
Operator : christc2
Sample : ic1702-0.05
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 22 02:55:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



TIC: 4p30904.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.06ppm m

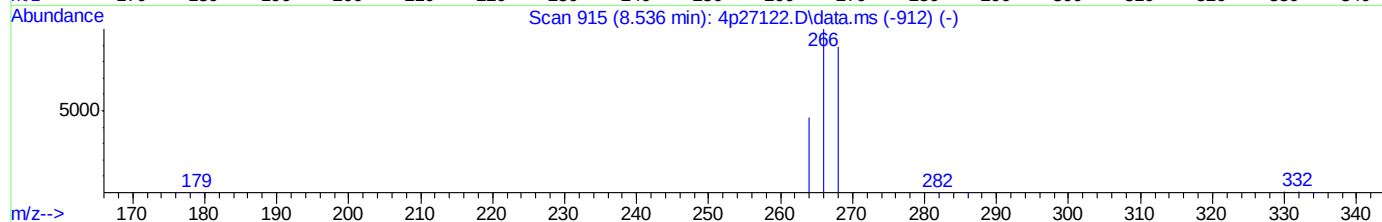
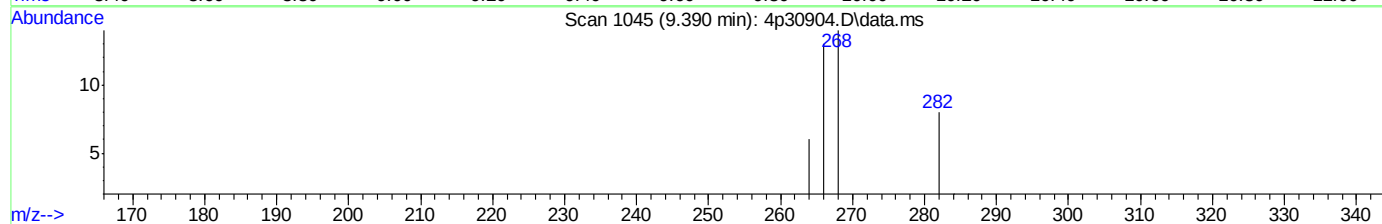
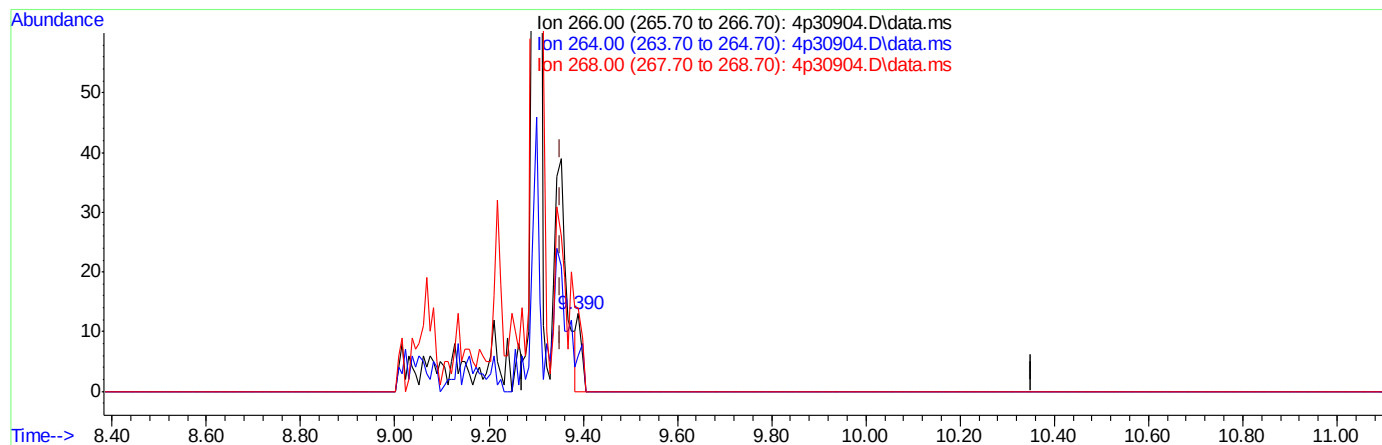
response 421

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	18.54#
57.00	14.50	9.27
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30904.D
Acq On : 22 Nov 2018 1:30 am
Operator : christc2
Sample : ic1702-0.05
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 22 02:55:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



TIC: 4p30904.D\data.ms

(22) Pentachlorophenol (t)

9.390min (+0.038) 0.19ppm

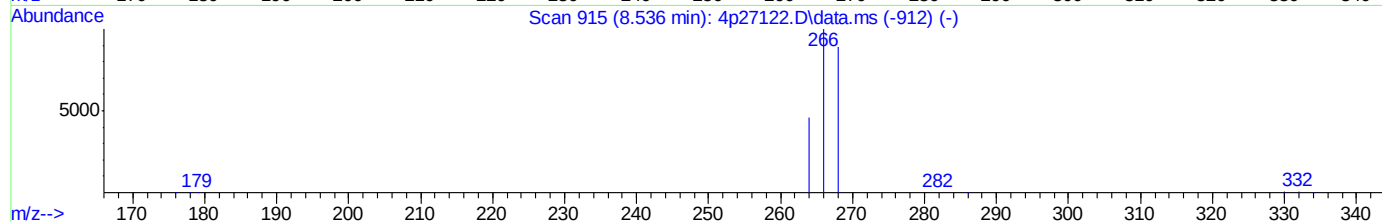
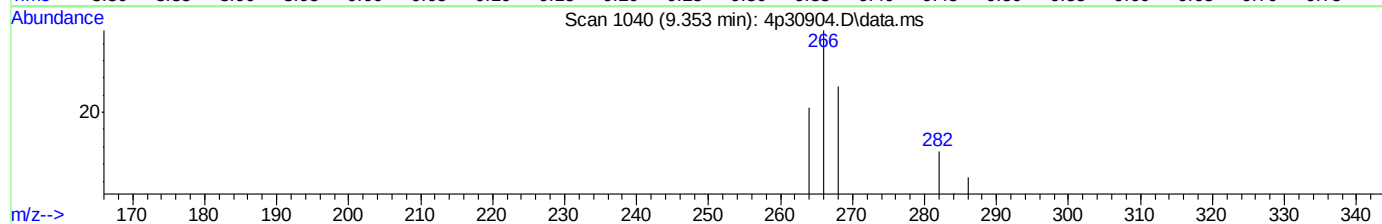
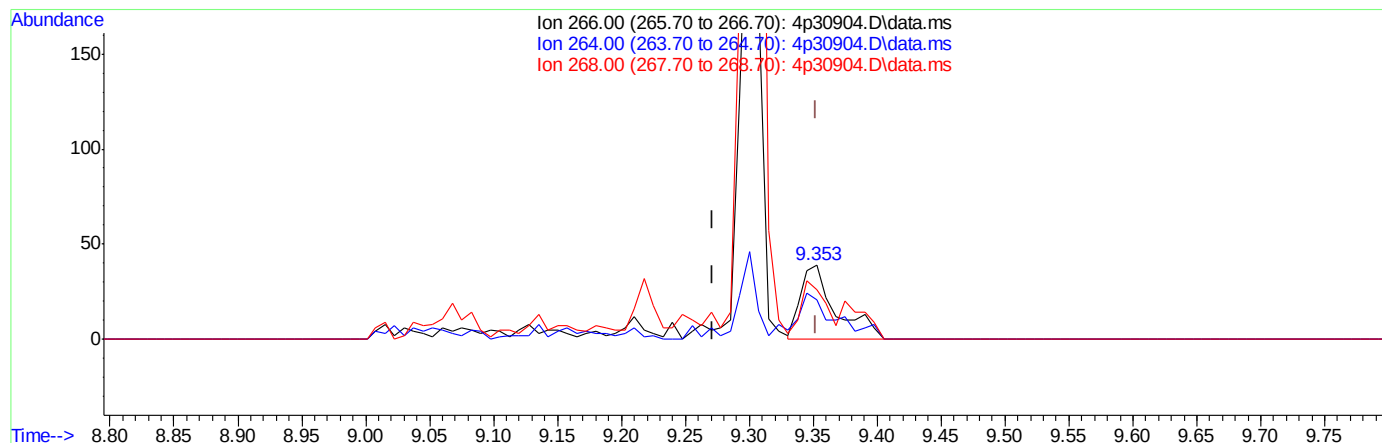
response 9

Ion	Exp%	Act%
266.00	100	100
264.00	53.80	50.00
268.00	66.70	87.50
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30904.D
Acq On : 22 Nov 2018 1:30 am
Operator : christc2
Sample : ic1702-0.05
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 22 02:55:29 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



TIC: 4p30904.D\data.ms

(22) Pentachlorophenol (t)

9.353min (0.000) 0.20ppm m

response 75

Ion	Exp%	Act%
266.00	100	100
264.00	53.80	53.85
268.00	66.70	66.67
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30905.D
 Acq On : 22 Nov 2018 1:53 am
 Operator : christc2
 Sample : ic1702-0.02
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 22 02:57:59 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Wed Nov 21 21:02:27 2018
 Response via : Initial Calibration

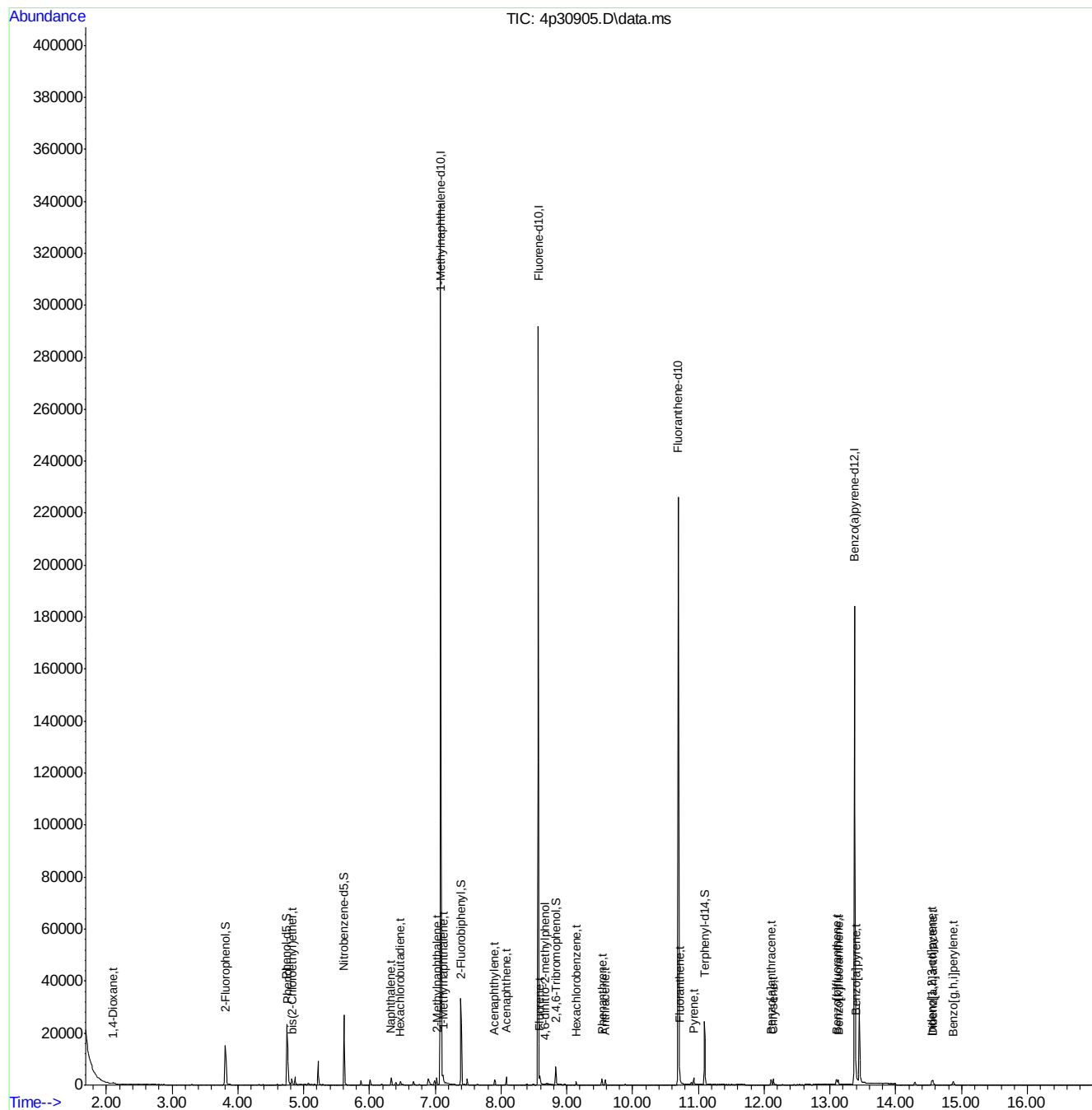
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	95810	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	116022	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	168432	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	121272	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.816	112	9394	0.58	ppm	0.01
Spiked Amount 50.000			Recovery	=	1.16%	
4) Phenol-d5	4.746	99	17439	0.58	ppm	0.00
Spiked Amount 50.000			Recovery	=	1.16%	
7) Nitrobenzene-d5	5.616	82	17783	0.69	ppm	0.00
Spiked Amount 50.000			Recovery	=	1.38%	
14) 2-Fluorobiphenyl	7.398	172	20973	0.26	ppm	0.00
Spiked Amount 50.000			Recovery	=	0.52%	
19) 2,4,6-Tribromophenol	8.836	330	2719	0.34	ppm	0.00
Spiked Amount 50.000			Recovery	=	0.68%	
27) Terphenyl-d14	11.091	244	13732	0.56	ppm	-0.01
Spiked Amount 50.000			Recovery	=	1.12%	
Target Compounds						
2) 1,4-Dioxane	2.102	88	147m	0.02	ppm	Qvalue
5) Phenol	4.758	94	5069	0.15	ppm	93
6) bis(2-Chloroethyl)ether	4.819	93	820	0.03	ppm	96
8) Naphthalene	6.332	128	1708	0.02	ppm	96
9) Hexachlorobutadiene	6.470	225	430	0.03	ppm	92
10) 2-Methylnaphthalene	7.023	141	788	0.02	ppm	85
11) 1-Methylnaphthalene	7.121	141	880	0.02	ppm	# 81
15) Acenaphthylene	7.903	152	1353	0.02	ppm	96
16) Acenaphthene	8.081	153	944	0.02	ppm	94
17) Fluorene	8.588	166	1041	0.02	ppm	92
18) 4,6-dinitro-2-methylph...	8.671	198	41	0.34	ppm	# 63
21) Hexachlorobenzene	9.142	284	458	0.02	ppm	94
23) Phenanthrene	9.536	178	1526	0.02	ppm	95
24) Anthracene	9.585	178	1287	0.02	ppm	99
25) Fluoranthene	10.711	202	1481	0.02	ppm	94
26) Pyrene	10.932	202	1502	0.02	ppm	95
28) Benzo[a]anthracene	12.105	228	1369	0.02	ppm	95
29) Chrysene	12.141	228	1438	0.02	ppm	95
31) Benzo[b]fluoranthene	13.100	252	1407	0.02	ppm	91
32) Benzo[k]fluoranthene	13.124	252	1277	0.02	ppm	97
33) Benzo[a]pyrene	13.392	252	1249	0.02	ppm	96
34) Indeno[1,2,3-cd]pyrene	14.553	276	1631	0.03	ppm	96
35) Dibenz[a,h]anthracene	14.567	278	1306	0.03	ppm	90
36) Benzo[g,h,i]perylene	14.872	276	1341	0.02	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30905.D
Acq On : 22 Nov 2018 1:53 am
Operator : christc2
Sample : ic1702-0.02
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 22 02:57:59 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Nov 21 21:02:27 2018
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: E4P1702-IC1702

Method: SW846 8270D BY SIM

Lab FileID: 4P30905.D

Analyst approved: 11/26/18 13:36 Dipa Patel

Injection Time: 11/22/18 01:53

Supervisor approved: 11/26/18 13:58 Nina Pandya

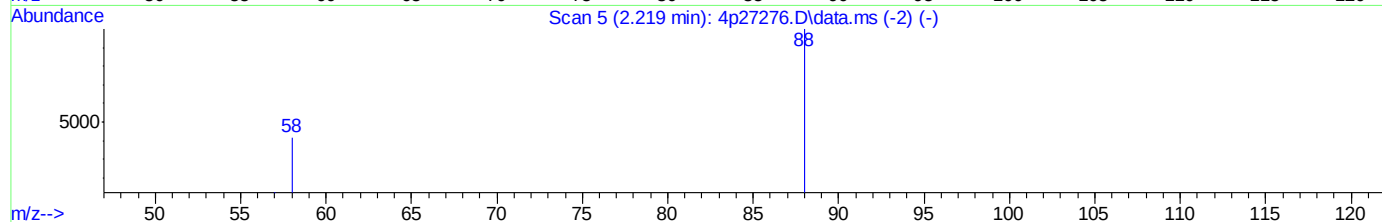
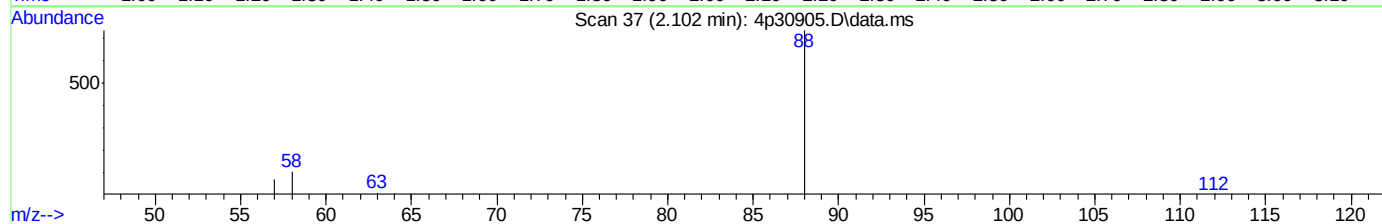
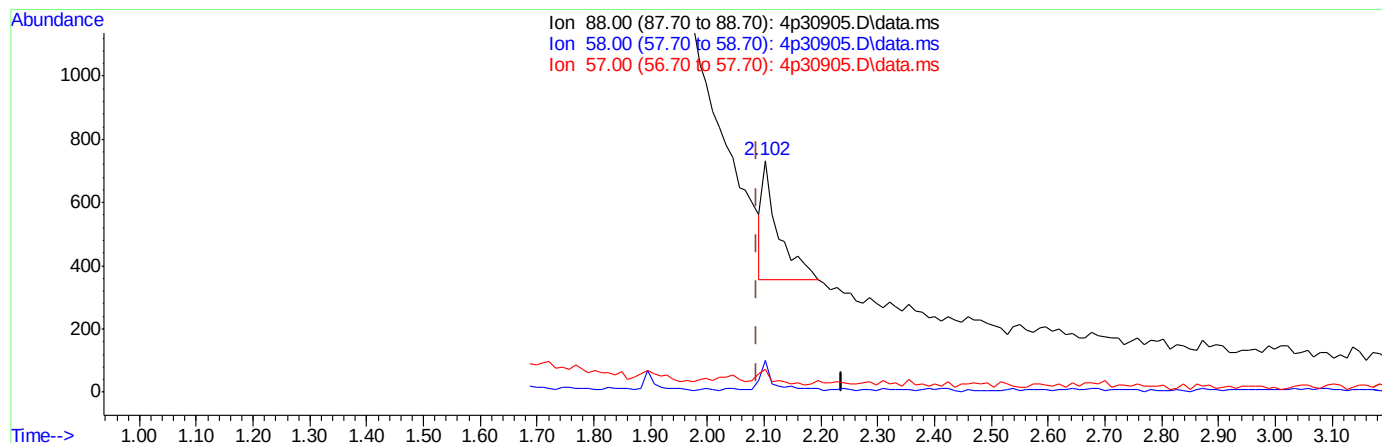
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.10	Poor instrument integration

7.6.33.1
7

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30905.D
Acq On : 22 Nov 2018 1:53 am
Operator : christc2
Sample : ic1702-0.02
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 22 02:10:51 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Nov 21 21:02:27 2018
Response via : Initial Calibration



TIC: 4p30905.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.09ppm

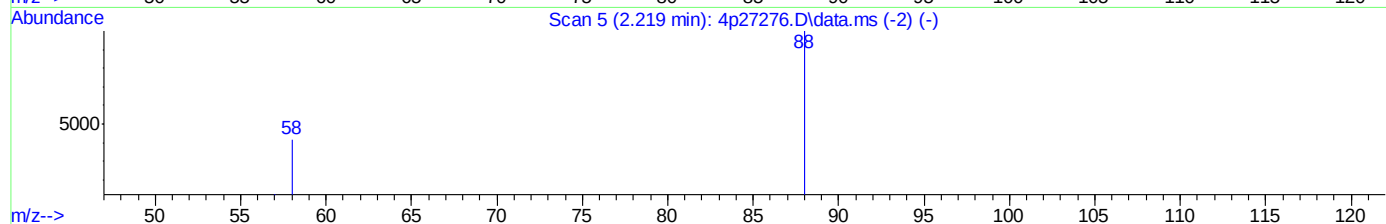
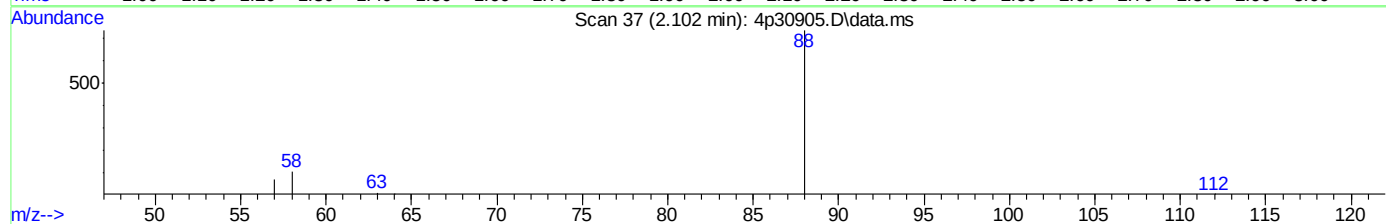
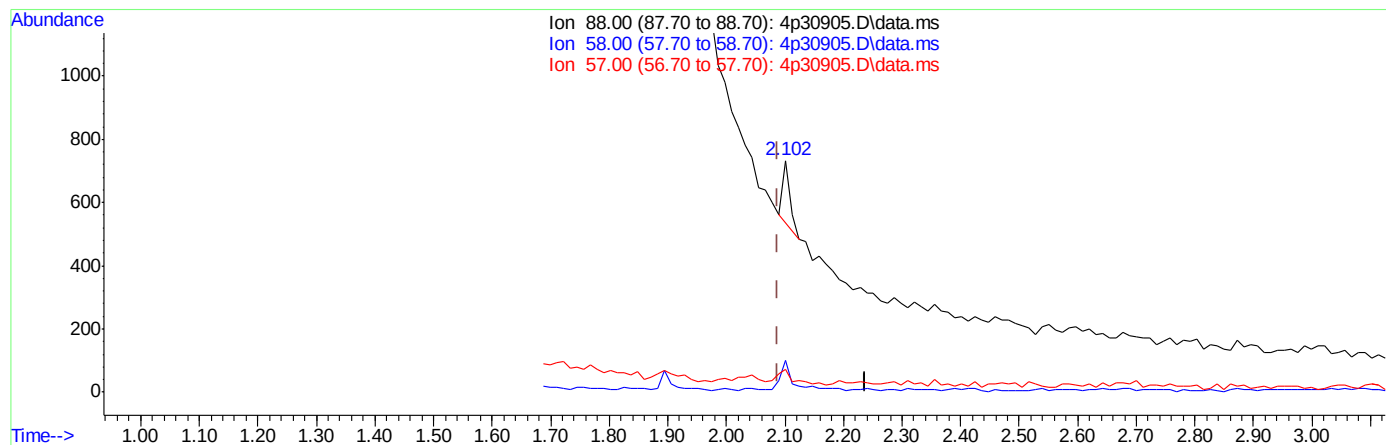
response 716

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	28.28
57.00	14.50	8.21
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30905.D
Acq On : 22 Nov 2018 1:53 am
Operator : christc2
Sample : ic1702-0.02
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 22 02:10:51 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Nov 21 21:02:27 2018
Response via : Initial Calibration



TIC: 4p30905.D\data.ms

(2) 1,4-Dioxane (t)

2.102min (+0.014) 0.02ppm m

response 147

Ion	Exp%	Act%
88.00	100	100
58.00	43.00	13.92#
57.00	14.50	9.69
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30906.D
 Acq On : 22 Nov 2018 2:16 am
 Operator : christc2
 Sample : ic1702-0.01
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 22 02:59:18 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 02:55:23 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

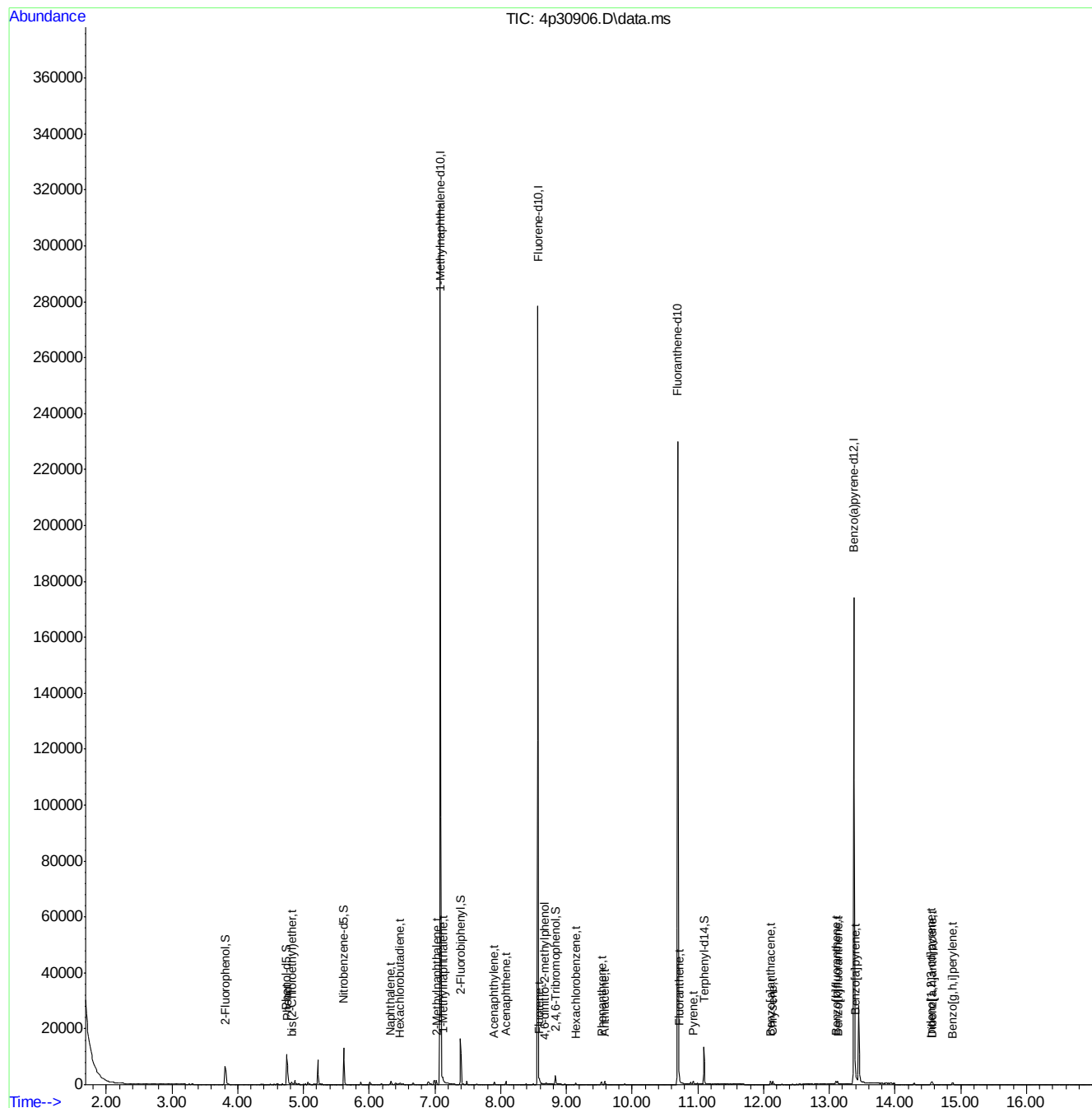
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	88659	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	108750	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	159507	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	115209	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.816	112	4581	0.31	ppm	0.01
Spiked Amount 50.000			Recovery	=	0.62%	
4) Phenol-d5	4.746	99	8276	0.30	ppm	0.00
Spiked Amount 50.000			Recovery	=	0.60%	
7) Nitrobenzene-d5	5.616	82	8849	0.37	ppm	0.00
Spiked Amount 50.000			Recovery	=	0.74%	
14) 2-Fluorobiphenyl	7.388	172	10136	0.26	ppm	-0.01
Spiked Amount 50.000			Recovery	=	0.52%	
19) 2,4,6-Tribromophenol	8.836	330	1273	0.17	ppm	0.00
Spiked Amount 50.000			Recovery	=	0.34%	
27) Terphenyl-d14	11.091	244	7029	0.30	ppm	-0.01
Spiked Amount 50.000			Recovery	=	0.60%	
Target Compounds						Qvalue
5) Phenol	4.758	94	2447	0.08	ppm	93
6) bis(2-Chloroethyl)ether	4.819	93	388	0.01	ppm	96
8) Naphthalene	6.332	128	872	0.01	ppm	96
9) Hexachlorobutadiene	6.470	225	223	0.01	ppm	93
10) 2-Methylnaphthalene	7.023	141	422	0.01	ppm	89
11) 1-Methylnaphthalene	7.121	141	395	0.01	ppm	# 66
15) Acenaphthylene	7.903	152	679	0.01	ppm	98
16) Acenaphthene	8.082	153	438	0.01	ppm	92
17) Fluorene	8.589	166	511	0.01	ppm	93
18) 4,6-dinitro-2-methylph...	8.665	198	41	0.34	ppm	# 44
21) Hexachlorobenzene	9.143	284	225	0.01	ppm	94
23) Phenanthrene	9.537	178	724	0.01	ppm	97
24) Anthracene	9.585	178	699	0.01	ppm	97
25) Fluoranthene	10.711	202	1017	0.01	ppm	90
26) Pyrene	10.932	202	764	0.01	ppm	94
28) Benzo[a]anthracene	12.105	228	711	0.01	ppm	89
29) Chrysene	12.141	228	779	0.01	ppm	90
31) Benzo[b]fluoranthene	13.100	252	760	0.01	ppm	98
32) Benzo[k]fluoranthene	13.124	252	661	0.01	ppm	93
33) Benzo[a]pyrene	13.392	252	665	0.01	ppm	89
34) Indeno[1,2,3-cd]pyrene	14.553	276	869	0.01	ppm	93
35) Dibenz[a,h]anthracene	14.567	278	700	0.01	ppm	90
36) Benzo[g,h,i]perylene	14.873	276	740	0.01	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30906.D
Acq On : 22 Nov 2018 2:16 am
Operator : christc2
Sample : ic1702-0.01
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 22 02:59:18 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 02:55:23 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30907.D
 Acq On : 22 Nov 2018 2:40 am
 Operator : christc2
 Sample : icv1702-5
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 22 05:40:39 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 03:03:48 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	88038	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	110331	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	155577	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	109605	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%	
14) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
19) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
27) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
Target Compounds						
5) Phenol	4.754	94	185640	4.10	ppm	Qvalue 91

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

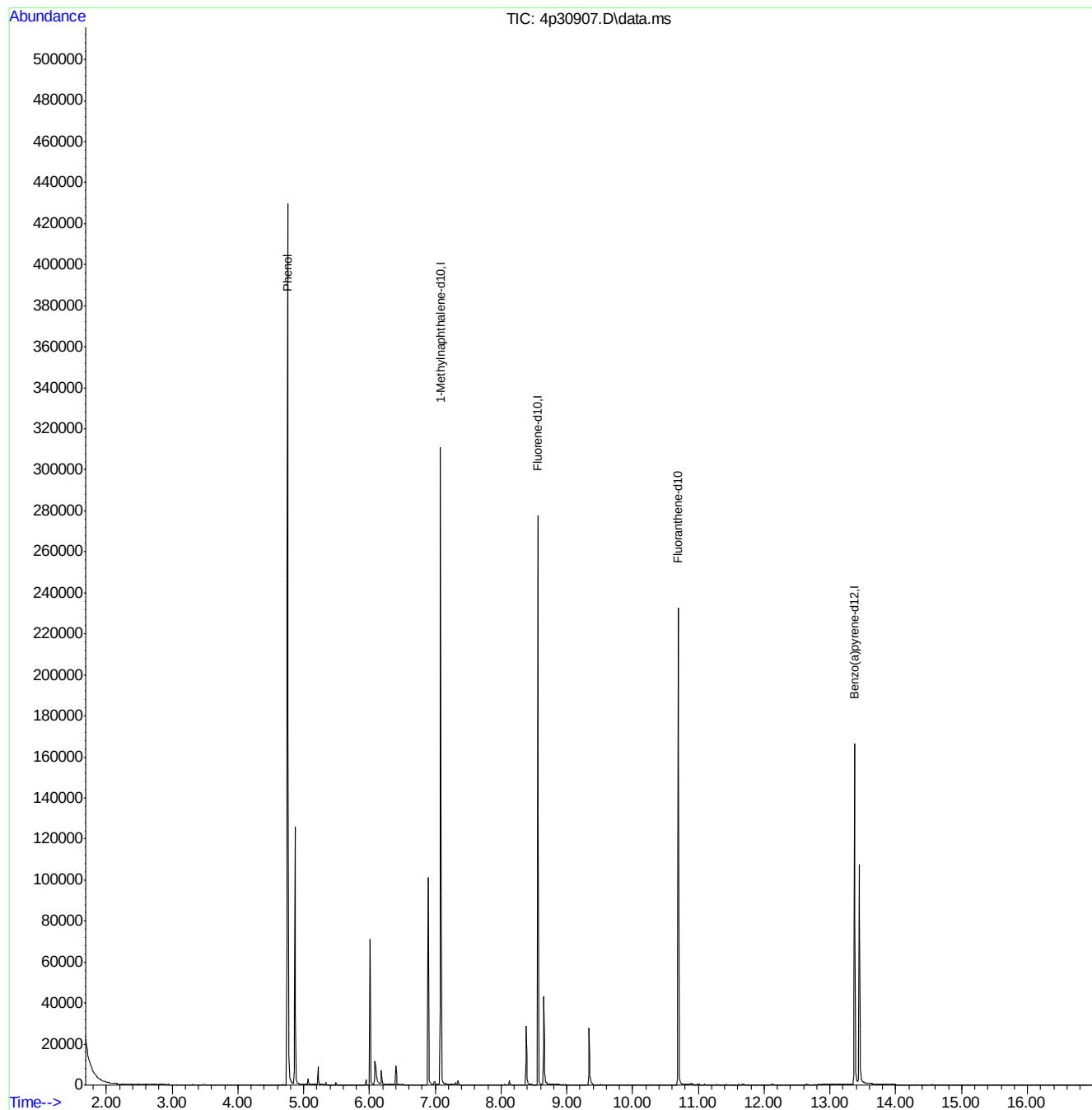
7.6.35

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30907.D
Acq On : 22 Nov 2018 2:40 am
Operator : christc2
Sample : icv1702-5
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 22 05:40:39 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 03:03:48 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
 Data File : 4p30908.D
 Acq On : 22 Nov 2018 3:03 am
 Operator : christc2
 Sample : icv1702-1
 Misc : op16720,e4p1702,30.0,,,1,1
 ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 22 03:22:21 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Thu Nov 22 03:03:48 2018
 Response via : Initial Calibration

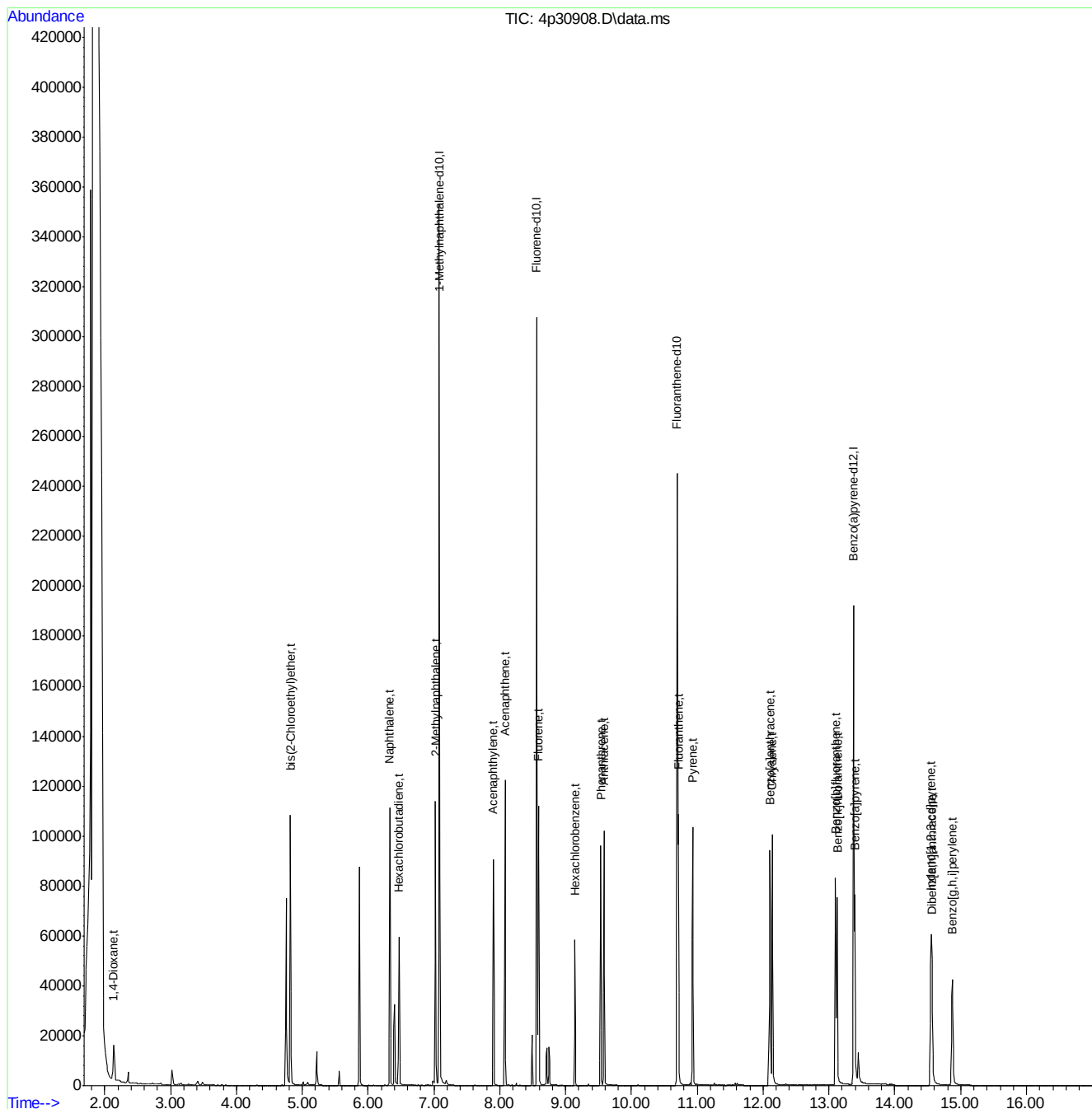
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.082	150	99619	4.00	ppm	0.00
13) Fluorene-d10	8.563	176	124576	4.00	ppm	0.00
20) Fluoranthene-d10	10.690	212	179590	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.374	264	123976	4.00	ppm	0.00
System Monitoring 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%	
14) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
19) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
27) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery	=	0.00%	
Target Compounds						
						Qvalue
2) 1,4-Dioxane	2.136	88	11200	1.03	ppm	# 36
6) bis(2-Chloroethyl)ether	4.819	93	37228	0.96	ppm	95
8) Naphthalene	6.332	128	69514	0.87	ppm	98
9) Hexachlorobutadiene	6.470	225	17594	0.88	ppm	94
10) 2-Methylnaphthalene	7.023	141	35504	0.90	ppm	93
15) Acenaphthylene	7.903	152	58668	0.89	ppm	98
16) Acenaphthene	8.081	153	39514	0.89	ppm	97
17) Fluorene	8.588	166	45287	0.89	ppm	89
21) Hexachlorobenzene	9.142	284	19688	0.91	ppm	97
23) Phenanthrene	9.536	178	62196	0.90	ppm	99
24) Anthracene	9.585	178	58653	0.92	ppm	99
25) Fluoranthene	10.711	202	64078	0.91	ppm	99
26) Pyrene	10.932	202	64894	0.88	ppm	100
28) Benzo[a]anthracene	12.105	228	54335	0.86	ppm	99
29) Chrysene	12.141	228	58690	0.86	ppm	98
31) Benzo[b]fluoranthene	13.100	252	53861	0.84	ppm	99
32) Benzo[k]fluoranthene	13.124	252	49119	0.86	ppm	98
33) Benzo[a]pyrene	13.392	252	48362	0.87	ppm	99
34) Indeno[1,2,3-cd]pyrene	14.553	276	54302	0.79	ppm	99
35) Dibenz[a,h]anthracene	14.567	278	43610	0.78	ppm	97
36) Benzo[g,h,i]perylene	14.872	276	46942	0.81	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1702\
Data File : 4p30908.D
Acq On : 22 Nov 2018 3:03 am
Operator : christc2
Sample : icv1702-1
Misc : op16720,e4p1702,30.0,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 22 03:22:21 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Nov 22 03:03:48 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1711\
 Data File : 4p31137.D
 Acq On : 30 Nov 2018 12:49 pm
 Operator : christc2
 Sample : cc1702-1.0
 Misc : op16718a,e4p1711,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 30 14:33:58 2018
 Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Fri Nov 30 14:33:54 2018
 Response via : Initial Calibration

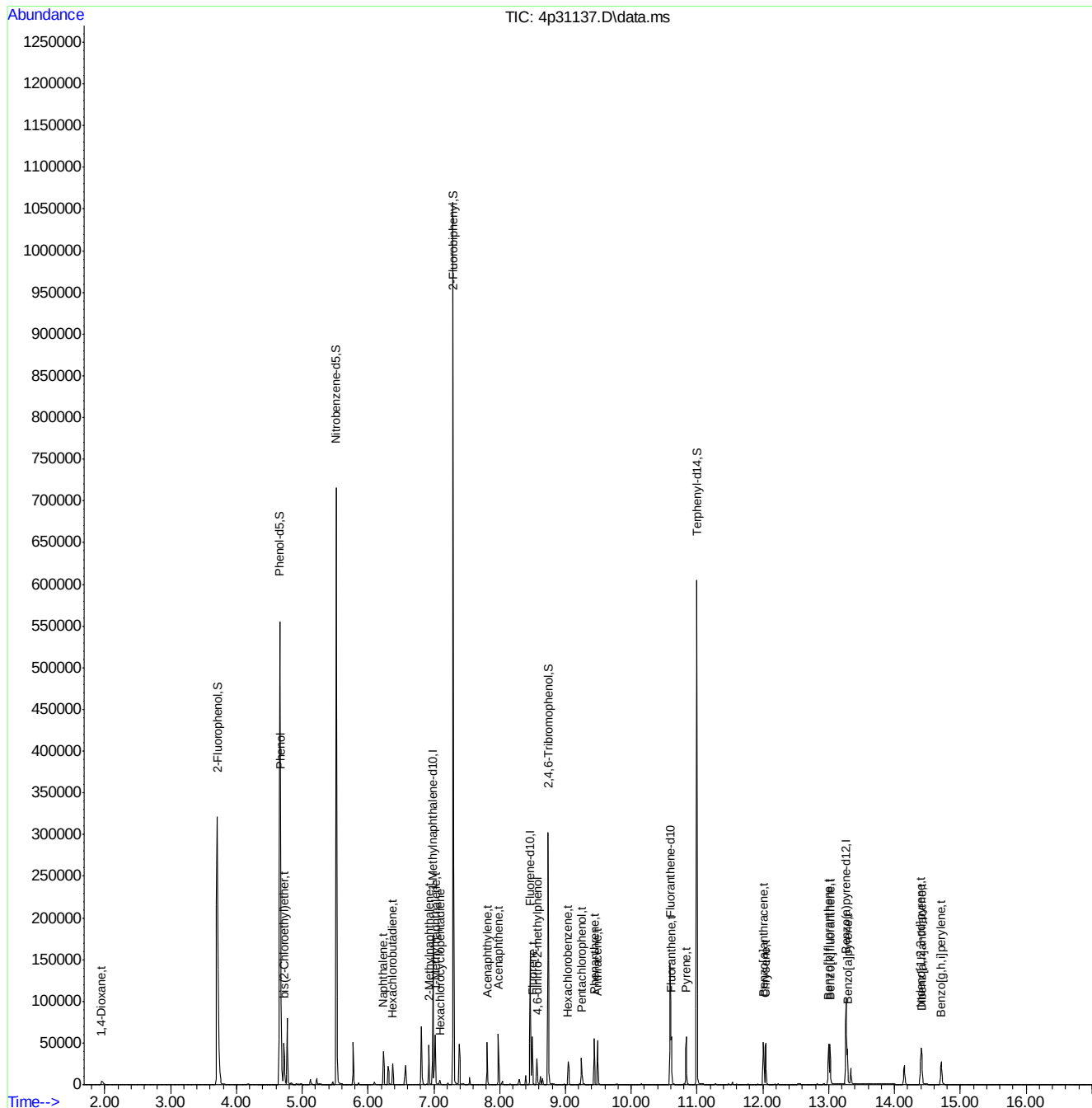
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	52148	4.00	ppm	-0.03
13) Fluorene-d10	8.466	176	64840	4.00	ppm	-0.02
20) Fluoranthene-d10	10.592	212	96091	4.00	ppm	-0.02
30) Benzo(a)pyrene-d12	13.265	264	65732	4.00	ppm	-0.03
System Monitoring Compounds						
3) 2-Fluorophenol	3.713	112	216147	17.74	ppm	-0.07
Spiked Amount 50.000			Recovery	=	35.48%	
4) Phenol-d5	4.660	99	402292	18.66	ppm	-0.04
Spiked Amount 50.000			Recovery	=	37.32%	
7) Nitrobenzene-d5	5.518	82	461310	20.14	ppm	-0.04
Spiked Amount 50.000			Recovery	=	40.28%	
14) 2-Fluorobiphenyl	7.295	172	550084	22.26	ppm	-0.03
Spiked Amount 50.000			Recovery	=	44.52%	
19) 2,4,6-Tribromophenol	8.738	330	94708	21.41	ppm	-0.02
Spiked Amount 50.000			Recovery	=	42.82%	
27) Terphenyl-d14	10.999	244	339770	19.11	ppm	-0.01
Spiked Amount 50.000			Recovery	=	38.22%	
Target Compounds						
2) 1,4-Dioxane	1.952	88	5954	1.04	ppm	# 62
5) Phenol	4.673	94	126751	4.73	ppm	# 91
6) bis(2-Chloroethyl)ether	4.726	93	18090	0.89	ppm	90
8) Naphthalene	6.231	128	34272	0.82	ppm	98
9) Hexachlorobutadiene	6.373	225	8909	0.85	ppm	96
10) 2-Methylnaphthalene	6.928	141	17989	0.87	ppm	88
11) 1-Methylnaphthalene	7.023	141	20196	0.91	ppm	97
12) Hexachlorocyclopentadiene	7.094	237	2116	1.37	ppm	96
15) Acenaphthylene	7.812	152	31112	0.91	ppm	88
16) Acenaphthene	7.980	153	20586	0.89	ppm	82
17) Fluorene	8.497	166	24898	0.94	ppm	97
18) 4,6-dinitro-2-methylph...	8.567	198	12618	4.96	ppm	84
21) Hexachlorobenzene	9.043	284	10510	0.91	ppm	92
22) Pentachlorophenol	9.245	266	12904	7.19	ppm	91
23) Phenanthrene	9.438	178	33410	0.90	ppm	98
24) Anthracene	9.486	178	31130	0.91	ppm	98
25) Fluoranthene	10.613	202	35922	0.96	ppm	99
26) Pyrene	10.834	202	36836	0.94	ppm	99
28) Benzo[a]anthracene	12.008	228	30908	0.92	ppm	97
29) Chrysene	12.044	228	31871	0.87	ppm	96
31) Benzo[b]fluoranthene	12.997	252	29516	0.87	ppm	98
32) Benzo[k]fluoranthene	13.021	252	29055	0.96	ppm	98
33) Benzo[a]pyrene	13.283	252	27327	0.92	ppm	97
34) Indeno[1,2,3-cd]pyrene	14.402	276	33533	0.92	ppm	99
35) Dibenz[a,h]anthracene	14.416	278	27985	0.94	ppm	96
36) Benzo[g,h,i]perylene	14.707	276	27445	0.90	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P1711\
Data File : 4p31137.D
Acq On : 30 Nov 2018 12:49 pm
Operator : christc2
Sample : cc1702-1.0
Misc : op16718a,e4p1711,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 30 14:33:58 2018
Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Nov 30 14:33:54 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jeryllr\4p1712\
 Data File : 4p31164.d
 Acq On : 1 Dec 2018 1:37 am
 Operator : sufiyana
 Sample : cc1702-0.5 Inst : MS4P
 Misc : op16718a,e4p1712,1000,,,1,1
 ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
 Quant Results File: M4P1702SIM.RES
 Quant Time: Dec 02 21:39:52 2018
 Quant Title : Semi Volatile Extractables by GC/MS
 QLast Update : Sun Dec 02 21:39:47 2018
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.987	150	84824	4.00	ppm	# 0.00
13) Fluorene-d10	8.459	176	115852	4.00	ppm	0.00
20) Fluoranthene-d10	10.585	212	171316	4.00	ppm	0.00
30) Benzo(a)pyrene-d12	13.253	264	121911	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.713	112	184878	9.33	ppm	-0.05
Spiked Amount 50.000			Recovery	=	18.66%	
4) Phenol-d5	4.660	99	332658	9.49	ppm	-0.02
Spiked Amount 50.000			Recovery	=	18.98%	
7) Nitrobenzene-d5	5.515	82	381702	10.25	ppm	-0.03
Spiked Amount 50.000			Recovery	=	20.50%	
14) 2-Fluorobiphenyl	7.295	172	364741	8.26	ppm	0.00
Spiked Amount 50.000			Recovery	=	16.52%	
19) 2,4,6-Tribromophenol	8.732	330	78887	9.98	ppm	0.00
Spiked Amount 50.000			Recovery	=	19.96%	
27) Terphenyl-d14	10.993	244	272841	8.61	ppm	0.01
Spiked Amount 50.000			Recovery	=	17.22%	
Target Compounds						
2) 1,4-Dioxane	1.975	88	4600	0.49	ppm	# 30
5) Phenol	4.673	94	103370	2.37	ppm	# 89
6) bis(2-Chloroethyl)ether	4.726	93	14679	0.44	ppm	98
8) Naphthalene	6.231	128	31288	0.46	ppm	99
9) Hexachlorobutadiene	6.373	225	7761	0.46	ppm	92
10) 2-Methylnaphthalene	6.916	141	14956	0.44	ppm	# 81
11) 1-Methylnaphthalene	7.011	141	16103	0.45	ppm	# 65
12) Hexachlorocyclopentadiene	7.094	237	1656	0.66	ppm	95
15) Acenaphthylene	7.802	152	25306	0.41	ppm	98
16) Acenaphthene	7.980	153	16999	0.41	ppm	95
17) Fluorene	8.491	166	19766	0.42	ppm	95
18) 4,6-dinitro-2-methylph...	8.561	198	10036	2.21	ppm	# 58
21) Hexachlorobenzene	9.043	284	8435	0.41	ppm	81
22) Pentachlorophenol	9.238	266	12435	3.89	ppm	98
23) Phenanthrene	9.431	178	27150	0.41	ppm	98
24) Anthracene	9.479	178	26189	0.43	ppm	97
25) Fluoranthene	10.606	202	28282	0.42	ppm	98
26) Pyrene	10.827	202	29907	0.43	ppm	99
28) Benzo[a]anthracene	12.002	228	25207	0.42	ppm	97
29) Chrysene	12.038	228	25630	0.39	ppm	96
31) Benzo[b]fluoranthene	12.991	252	25916	0.41	ppm	99
32) Benzo[k]fluoranthene	13.015	252	23045	0.41	ppm	98
33) Benzo[a]pyrene	13.277	252	22202	0.41	ppm	97
34) Indeno[1,2,3-cd]pyrene	14.387	276	26459	0.39	ppm	100
35) Dibenz[a,h]anthracene	14.402	278	21800	0.39	ppm	97
36) Benzo[g,h,i]perylene	14.693	276	21796	0.38	ppm	99

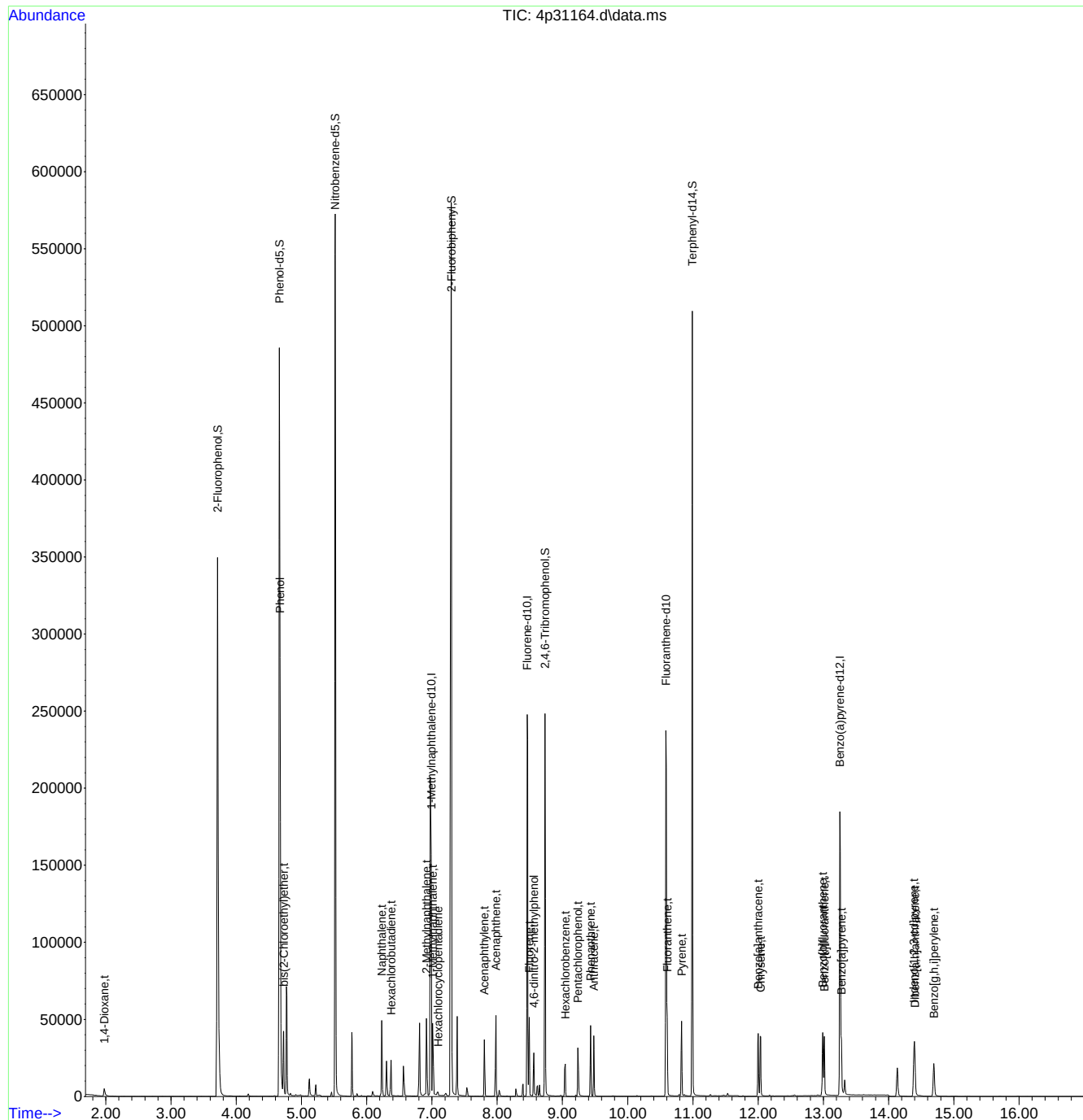
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\jeryllr\4p1712\
Data File : 4p31164.d
Acq On : 1 Dec 2018 1:37 am
Operator : sufiyana
Sample : cc1702-0.5
Misc : op16718a,e4p1712,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Inst : MS4P

Quant Method : C:\MSDCHEM\1\METHODS\M4P1702SIM.M
Quant Results File: M4P1702SIM.RES
Quant Time: Dec 02 21:39:52 2018
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Sun Dec 02 21:39:47 2018
Response via : Initial Calibration



Instrument ID: GCMS3P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv182490-5	50ppm			
sim	sv182451-61b	1.0ppm			
			SIM ISTD	sv182490-56	400ppm
			dcm/fisher		

Column	lms 30m x 0.25mm x 0.1	Initial Calib Date	8-29-18	Sequence Loaded By:	sufiyana	Quant Method/s	M3P3408SIM	☐ SW846 8270 D ☐ EPA 625
Batch ID	E3P3408	Analysis Date	10/29/2018	Data Processed By:	ying li	Injection Volume	1.0ul	
Approved By:	NINAP	Approved Date	31/2018 1:02:42 PM					

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P 71961	DFTPP				1					ng	7:43pm
3P 71962	CC3394-0.5				2					ng	
3P 71963	DFTPP				1					ok	12:03am
3P 71964	IC3408-5				2					ok	sv182490-18A
3P 71965	IC3408-2.5				3					ok	-18B
3P 71966	ICC3408-1				4					ok	-27B
3P 71967	IC3408-0.5				5					ok	-27E
3P 71968	IC3408-0.2				6					ok	-18E
3P 71969	IC3408-0.1				7					ok	-18F
3P 71970	IC3408-0.05				8					ok	-18C



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 71971	IC3408-0.02				9					ok	-18H
3P 71972	IC3408-0.01				10					ok	-18l
3P 71973	ICV3408-5		Acids		11					ok	op182237-12
3P 71974	ICV3408-1		Bsim		12					ok	op18233125 4:06am

Instrument ID: GCMS3P

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P 72897	DFTPP				1					ok	8:55pm
3P 72898	CC3408-1				2					ok	
3P 72899	BSIM				3				x	reviewed	op182160086
72900	OP16629A-MB1	OP16629A	AB8270SIMNJ.B8270SIM14DIOX.BSIM+14DIOX	AQ	4		X	x	x	ok	
72901	OP16629A-BS12	OP16629A	AB8270SIMNJ.B8270SIM14DIOX.BSIM+14DIOX	AQ	5		X	x	x	ok	
72902	OP16734A-MB1	OP16734A		AQ	6			x	x	ok	
72903	OP16734A-BS12	OP16734A		AQ	7			x	#3high	rr	
3P 72904	OP16734A-BSD12				8			x	#3,4high	rr	rr, can't transfer to LIMS, need to update in LIMS
3P 72905	JC76416-16	OP16734A	B8270SIMPAH	AQ	9			x	x	ok	
3P 72906	JC76416-17	OP16734A	B8270SIMPAH	AQ	10			x	x	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 72907	JC76416-18	OP16734A	B8270SIMPAH	AQ	11			x	x	ok	
72908	OP16734A-MS	OP16734A		AQ	12			x	x	ok	
72909	OP16734A-MSD	OP16734A		AQ	13			x	x	ok	
3P 72910	JC78016-4	OP16734A	B8270SIM14DIOX	AQ	14			x	x	ok	
72911	JC77749-1	OP16629A	AB8270SIMNJ,BSIM+14DIOX	AQ	15		X	x	x	ok	
72912	JC77749-2	OP16629A	AB8270SIMNJ,BSIM+14DIOX	AQ	16		X	x	x	ok	
3P 72913	JC77749-3	OP16629A	AB8270SIMNJ,BSIM+14DIOX	AQ	17		X	x	x	ok	
72914	JC77749-4	OP16629A	AB8270SIMNJ,BSIM+14DIOX	AQ	18		X	x	x	ok	
72915	JC77749-5	OP16629A	AB8270SIMNJ,BSIM+14DIOX	AQ	19		X	x	x	ok	
72916	OP16629A-MS	OP16629A	AB8270SIMNJ,B8270SIM14DIOX, BSIM+14DIOX	AQ	20		X	x	x	ok	
72917	OP16629A-MSD	OP16629A	AB8270SIMNJ,B8270SIM14DIOX, BSIM+14DIOX	AQ	21		X	x	x	ok	
3P 72918A	JC77556-6	OP16629A	B8270SIM14DIOX	AQ	22			x	x	ok/dl	software shutdown, rr as "A" file
72919	JC77229-2	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	23		X	x	x	ok	8.41am
72920	JC77229-3	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	24		X				cut off, not ran
72921	JC77229-4	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	25		X				cut off, not ran
72922	JC77229-5	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	26		X				cut off, not ran
72923	JC77229-6	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	27		X				cut off, not ran
72924	JC77229-7	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	28		X				cut off, not ran
3P 72925	JC77231-1	OP16444A	B8270SIM14DIOX	AQ	29						cut off, not ran

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	72926	JC77231-2	OP16444A	B8270SIM14DIOX	AQ	30						cut off, not ran
3P	72927	JC77231-3	OP16444A	B8270SIM14DIOX	AQ	31						cut off, not ran
3P	72928	JC77231-4	OP16444A	B8270SIM14DIOX	AQ	32						cut off, not ran
3P	72929	JC77231-5	OP16444A	B8270SIM14DIOX	AQ	33						cut off, not ran
3P	72930	JC77231-6	OP16444A	B8270SIM14DIOX	AQ	34						cut off, not ran

Instrument ID: GCMS3P

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P 72920	DFTPP				1						
3P 72921	CC3408-0.5				2						areas out, raise em
3P 72922	DFTPP				1					OK	10:33am
3P 72923	CC3408-0.5				2					OK	
72924	OP16734A-BS12	OP16734A		AQ	3			Y	Y		
3P 72925	OP16734A-BSD12	OP16734A			4						not in LIMS / not included in OP16734A
3P 72926	OP16644A-MB1	OP16644A	B8270SIM14DIOX	AQ	5			Y	Y	OK	
3P 72927	OP16644A-BS12	OP16644A	B8270SIM14DIOX	AQ	6			Y	Y	OK	
3P 72928	OP16644A-BSD12	OP16644A	B8270SIM14DIOX	AQ	7			Y	all low	CORR	ISTD OUT
72929	JC77611-24	OP16621A	B8270SIMSL	AQ	8			Y	all low	CORR	FD / ISTD OUT

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
72930	JC77229-3	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	9		X	Y	Y	OK	
72931	JC77229-4	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	10		X	Y	Y	OK	
3P	72932	JC77229-5	AB8270SIMNJ,BSIM+14DIOX	AQ	11		X	Y	Y	OK	
72933	JC77229-6	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	12		X	Y	Y	OK	
72934	JC77229-7	OP16444A	AB8270SIMNJ,BSIM+14DIOX	AQ	13		X	Y	Y	OK	
72935	JC77660-8A	OP16644A	AB8270SIMNJ,BSIM+14DIOX	AQ	14		X	Y	Y	OK	
3P	72936	JC76358-24	B8270SIM14DIOX	AQ	15			Y	Y	OK	
3P	72937	JC76358-25	B8270SIM14DIOX	AQ	16			Y	Y	OK	
3P	72938	JC76358-26	B8270SIM14DIOX	AQ	17			Y	Y	OK	
3P	72939	JC76358-27	B8270SIM14DIOX	AQ	18			#6 low	#1 low	CORR	SURR/ISTD OUT
3P	72940	JC76358-28	B8270SIM14DIOX	AQ	19			#6 low	all low	CORR	SURR/ISTD OUT
3P	72941	JC77556-6	B8270SIM14DIOX	AQ	20	10		Y	all low	CORR	ISTD OUT
3P	72942	JC77374-1	B8270SIM14DIOX	AQ	21			Y	Y	OK	
3P	72943	JC77374-2	B8270SIM14DIOX	AQ	22			Y	Y	OK	
3P	72944	JC77374-3	B8270SIM14DIOX	AQ	23			Y	Y	OK	
3P	72945	JC77374-5	B8270SIM14DIOX	AQ	24			Y	Y	OK	
72946	JC77453-1	OP16564A	AB8270SIMNJ,BSIM+14DIOX	AQ	25		X	Y	all low	CORR	FD / ISTD OUT
72947	JC77453-2	OP16564A	AB8270SIMNJ,BSIM+14DIOX	AQ	26		X	Y	Y	OK	
72948	JC77453-3	OP16564A	AB8270SIMNJ,BSIM+14DIOX	AQ	27		X	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
3P 72949	JC77300-15	OP16489A	B8270SIMPAH	AQ	28	20		Y	Y	OK	
3P 72950	JC77300-15	OP16489A	B8270SIMPAH	AQ	29			#5.6 low	#2 out	CORR	
3P 72951	JC77300-5	OP16458A	B8270SIMPAH	AQ	30			Y	Y	OK	
3P 72952	JC77300-16	OP16458A	B8270SIMPAH	AQ	31						NOT IN FOLDER
	JC76640-15	OP16224A	B8270SIMNJ/BSIM+14DIOX	AQ	32	5	X				diluted for matrix / NOT IN FOLDER

GCMS Semi Volatile Run Log

Instrument ID: GCMS4M

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv182490-5	50ppm			
ISTD	sv182490-56	400ppm			
DCM/fisher	187002	---			

Column S plus 30x0.25mmIDx0

Batch ID E4M3756

Approved By: NINAP

Initial Calib Date 11/26/2018

Analysis Date 11/26/2018

Approved Date 30/2018 11:34:06

Sequence Loaded By: wb

Data Processed By: chriss2

Quant Method/s M4M3756SIM

Injection Volume 1 ul

☐ 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
4M 80110	DFTPP				1					OK	5:06pm
4M 80111	IC3756-5.0				2					OK	sv182490-62a
4M 80112	IC3756-2.5				3					OK	sv182490-63b
4M 80113	IC3756-1				4					OK	sv182490-62c
4M 80114	IC3756- 5				5					OK	sv182490-62d
4M 80115	IC3756- 2				6					OK	sv182490-62e
4M 80116	IC3756- 1				7					OK	sv182490-62f
4M 80117	IC3756-0.05				8					OK	sv182490-62g
4M 80118	IC3756-0.02				9					OK	sv182490-62h
4M 80119	IC3756-0.01				10					OK	sv182490-62i

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 80120	ICV3756-5.0				11					OK	op192160-72
4M 80121	IC3756-1.0				12					OK	op182160-84

GCMS Semi Volatile Run Log

Instrument ID: GCMS4M

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dfpp	sv182490-5	50ppm			
sim	sv182490-61c	1.0ppm			
sim verf	sv182490-62g	0.05 ppm			
ISTD	sv182490-56	400ppm			
DCM/fisher	187003				

Column S plus 30x0.25mmIDx0

Batch ID E4M3762

Approved By: KRISTIS

Initial Calib Date 11/26/2018

Analysis Date 11/30/2018

Approved Date /5/2018 2:32:17 P

Sequence Loaded By: christc2

Data Processed By: aimeel

Quant Method/s M4M3756SIM

Injection Volume 1 ul

☐ 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
4M 80258	DFTPP				1					OK	9:53am
4M 80259	CC3756-1.0				2					OK	19 low; 5,6,10,13,17,21 High
4M 80260	SIM VERF				3					OK	
4M 80261	OP16734A-MB1	OP16734A		AQ	4			y	Y	OK	
4M 80262	JC78203-3F	OP16841A	B8270SIMPAH+2MNAP	AQ	5		X	y	Y	OK	
4M 80263	JC77524-5	OP16621A	AB8270SIMNJ,BSIM+14DIOX	AQ	6		X	y	Y	OK	
4M 80264	OP16629A-MB1	OP16629A	AB8270SIMNJ,B8270SIM14DIOX,BSIM+14DIOX	AQ	7		X	y	Y	OK	
4M 80265	JC77556-1	OP16629A	B8270SIM14DIOX	AQ	8			y	Y	OK	
4M 80266	JC77556-2	OP16629A	B8270SIM14DIOX	AQ	9			y	Y	OK	
4M 80267	JC77556-3	OP16629A	B8270SIM14DIOX	AQ	10			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 80268	JC77556-4	OP16629A	B8270SIM14DIOX	AQ	11			y	Y	OK	
4M 80269	JC77556-5	OP16629A	B8270SIM14DIOX	AQ	12			y	Y	OK	
4M 80270	JC77556-7	OP16629A	B8270SIM14DIOX	AQ	13			y	Y	OK	
4M 80271	JC775561-2	OP16629A	B8270SIM14DIOX	AQ	14			y	Y	OK	
4M 80272	OP16498-MB1	OP16498	B8270SPLPXH	SO	15			y	Y	ok	
4M 80273	OP16498-LB28	OP16498	B8270SPLPXH	SO	16			y	Y	ok	
4M 80274	OP16498-BS1	OP16498	B8270SPLPXH	SO	17	50		y	Y	ok	
4M 80275	JC78225-10	OP16857A	B8270SIMPAH+2MNAP	AQ	18	10	X	y	Y	OK	
4M 80276	JC76417-1	OP16734A	AB8270SIMPAP	AQ	19	20		y	Y	OK	
4M 80277	JC76417-1	OP16734A	AB8270SIMPAP	AQ	20	5		y	Y	N	CORR: Needs Dilution
4M 80278	JC76417-2	OP16734A	AB8270SIMPAP	AQ	21	100		y	Y	OK	
4M 80279	JC76417-2	OP16734A	AB8270SIMPAP	AQ	22	10		y	Y	N	CORR: Needs Dilution
4M 80280	JC775561-3	OP16629A	B8270SIM14DIOX	AQ	23			y	Y	OK	
4M 80281	JC775561-1	OP16629A	B8270SIM14DIOX	AQ	24			y	Y	OK	
4M 80282	JC77468-2	OP165569A	B8270SIMNJ.BSIM+14DIOX	AQ	25		X	y	2, 6 high	RR	dirty matrix; RR 10 for matrix
4M 80283	OP16498-LS15	OP16498	B8270SPLPXH	SO	26	50		y	Y	ok	
4M 80284	OP16498-MSD	OP16498	B8270SPLPXH	SO	27	50		y	Y	ok	
4M 80285	JC76962-3	OP16498	B8270SPLPXH	SO	28			y	Y	ok	
4M 80286	JC76962-6A	OP16498	B8270SPLPXH	SO	29			y	Y	ok	9:34 pm

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	80287	JC76962-7A	OP16498	B8270SPLPXH	SO	30			y	Y	ok	out of clock; RR
4M	80288	JC76962-8A	OP16498	B8270SPLPXH	SO	31			y	Y	ok	out of clock; RR
4M	80289	JC76962-9A	OP16498	B8270SPLPXH	SO	32			y	Y	ok	out of clock; RR
4M	80290	OP16569A-MS	OP16569A		AQ	33		X	y	Y	OK	ran after 4m80277
4M	80291	OP16569A-MSD	OP16569A		AQ	34		X	y	Y	OK	ran after 4m80277
4M	80292	OP16569A-MS2	OP16569A		AQ	35		X	y	Y	OK	ran after 4m80277
4M	80293	OP16569A-MSD2	OP16569A		AQ	36		X	y	Y	ok	ran after 4m80277

GCMS Semi Volatile Run Log

Instrument ID: GCMS4P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv182451-112	50ppm	sim std	sv182490-55	40ppm
			dcm fisher	187002	

Column
SIIMS30mx0.25mmX0.2

Batch ID
E4P1702

Approved By:
NINAP

Initial Calib Date
11/21/2018

Analysis Date
11/21/2018

Approved Date
30/2018 11:33:36

Sequence Loaded By:
chriss2

Data Processed By:
chriss2

Quant Method/s
m4p1702sim

Injection Volume
1.0 uL

☐ SW846 8270 D

☐ EPA 625

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+ OK?	Surr OK?	IS OK?	Data OK?	Comment
4P 30894	DFTPP				1					N	
4P 30895	DFTPP				1					N	
4P 30896	DFTPP				1					N	
4P 30897	DFTPP				1					OK	11:01pm
4P 30898	IC1702-5		SIM		2					OK	sv182490-63a
4P 30899	IC1702-2.5				3					OK	sv182490-63b
4P 30900	ICC1702-1				4					OK	sv182490-62c
4P 30901	IC1702-0.5				5					OK	sv182490-62d
4P 30902	IC1702-0.2				6					OK	sv182490-62e
4P 30903	IC1702-0.1				7					OK	sv182490-62f

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
4P 30904	IC1702-0.05				8					OK	sv182490-62g
4P 30905	IC1702-0.02				9					OK	sv182490-62h
4P 30906	IC1702-0.01				10					OK	sv182490-62i
4P 30907	ICV1702-5		Acid 2nd		11					OK	sv182490-94, Phenol only
4P 30908	ICV1702-1		BSIM		12					OK	op182160-84, 3:03am

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dfpp	sv182451-112	50ppm	sim std	sv182490-73	400ppm
sim	sv182490-62c	1.0ppm	dcm fisher	187003	-----

Column
SIIMS30mx0.25mmX0.2

Batch ID
E4P1711

Approved By:
NINAP

Initial Calib Date
11/21/2018

Analysis Date
11/30/2018

Approved Date
/4/2018 1:05:24 P

Sequence Loaded By:
chrisc2

Data Processed By:
michellc

Quant Method/s
m4p1702sim

Injection Volume
1.0 uL

☐ SW846 8270 D

☐ EPA 625

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+ OK?	Surr OK?	IS OK?	Data OK?	Comment
4P 31130	DFTPP				1					no	9:34am
4P 31131	CC1702-1.0				2					no	14 out of window
4P 31132	CC1702-1.0				2					no	areas low raise em
4P 31133	DFTPP				1					not run	rr
4P 31134	DFTPP				1					no	127out; rr
4P 31135	DFTPP				1					ok	11:58am
4P 31136	CC1702-1.0				2					ok	insturment shutdown
4P 31137	CC1702-1.0				2					ok	
4P 31138	JC78115-3	OP16740A	B8270SIM14DIOX	AQ	3			y	y	ok	
4P 31139	JC76415-10	OP16490A	AB8270SIMPAAH	AQ	4	500		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
31140	JC78001-1	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	5		X	y	y	ok	
31141	JC78001-2	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	6		X	y	y	ok	
4P 31142	JC78001-3	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	7		X	y	y	ok	
31143	JC78001-4	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	8		X	y	y	ok	
31144	JC78001-5	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	9		X	y	y	ok	
4P 31145	JC78001-7	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	10		X	y	y	ok	
31146	JC78001-6	OP16738A	B8270SIMNJ.BSIM+14DIOX	AQ	11		X	y	y	ok	
4P 31147	OP16739A-MB1	OP16739A	AB8270SIMNJ.B8270SIMNJ.BMS +MNAP.BSIM+14DIOX	AQ	12		X	y	y	ok	
31148	OP16734A-MB1	OP16734A		AQ	13			y	y	ok	
31149	JC77901-1	OP16718A	B8270SIMNJ.BSIM+14DIOX	AQ	14		X	y	y	ok	
31150	JC78001-8	OP16739A	B8270SIMNJ.BSIM+14DIOX	AQ	15		X	y	y	ok	
31151	JC78001-9	OP16739A	B8270SIMNJ.BSIM+14DIOX	AQ	16		X	y	y	ok	
31152	JC78001-10	OP16739A	B8270SIMNJ.BSIM+14DIOX	AQ	17		X	y	y	ok	
31153	JC78001-11	OP16739A	B8270SIMNJ.BSIM+14DIOX	AQ	18		X	y	y	ok	
4P 31154	JC78016-1	OP16734A	B8270SIM14DIOX	AQ	19			y	y	ok	
4P 31155	JC78016-2	OP16734A	B8270SIM14DIOX	AQ	20			y	y	ok	
4P 31156	JC78016-3	OP16734A	B8270SIM14DIOX	AQ	21			y	y	ok	
4P 31157	JC78016-5	OP16734A	B8270SIM14DIOX	AQ	22			y	y	ok	
4P 31158	JC78016-6	OP16734A	B8270SIM14DIOX	AQ	23			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
4P 31159	JC78016-7	OP16734A	B8270SIM14DIOX	AQ	24			y	y	ok	
4P 31160a	JC78016-8	OP16734A	B8270SIM14DIOX	AQ	25			y	y	ok	turrent error, rerun as "A" file

GCMS Semi Volatile Run Log

Instrument ID: GCMS4P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dfpp	sv182451-112	50ppm	sim std	sv182490-73	400ppm
sim	sv182490-18D	0.5ppm	dcm fisher	187003	---
sim ver	sv182490-18c	0.05			

Column
Batch ID
Approved By:

SIIMS30mx0.25mmX0.2
E4P1712
KRISTIS

Initial Calib Date
Analysis Date
Approved Date

11/21/2018
11/30/2018
/5/2018 2:55:55 P

Sequence Loaded By:
Data Processed By:

sufiyana
Injection Volume

Quant Method/s
m4p1702sim
1.0 uL

☐ 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
4P 31161	DFTPP				1					ok	11:44pm
4P 31162	CC1702-0.5				2					not using	software froze, RR as A file
4P 31163	CC1702-0.5				2					not run	software shutdown
4P 31164	CC1702-0.5				2					ok	
4P 31165	SIM VER 0				3					ok	
31166	OP16734A-MB1	OP16734A	AQ		4			y	y	ok	
31167	OP16734A-BS12	OP16734A	AQ		5			y	y	ok	
4P 31168	OP16734A-BSD12				6			y	y	ok	
4P 31169	OP16899A-MB1	OP16899A	B8270SIMPAH+2MNAP	AQ	7		X	y	y	ok	
4P 31170	OP16899A-BS12				8			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
4P 31171	OP16899A- BSD12				9			y	y	ok	
4P 31172	JC77952-15	OP16734A	B8270SIM14DIOX	AQ	10			y	y	ok	
4P 31173	JC77952-16	OP16734A	B8270SIM14DIOX	AQ	11			y	y	ok	
4P 31174	JC78016-2	OP16734A	B8270SIM14DIOX	AQ	12			y	y	ok	
4P 31175	JC78016-3	OP16734A	B8270SIM14DIOX	AQ	13			y	y	ok	
4P 31176	JC78016-5	OP16734A	B8270SIM14DIOX	AQ	14			y	y	ok	
4P 31177	JC78016-6	OP16734A	B8270SIM14DIOX	AQ	15			y	y	ok	6:42 am
4P 31178	JC78016-7	OP16734A	B8270SIM14DIOX	AQ	16					not run	sequence stopped
4P 31179	JC78016-8	OP16734A	B8270SIM14DIOX	AQ	17					not run	sequence stopped
4P 31180	JC78473-2	OP16899A	B8270SIM14DIOX	AQ	18					not run	sequence stopped
4P 31181	JC78473-3	OP16899A	B8270SIM14DIOX	AQ	19					not run	sequence stopped
4P 31182	JC78473-4	OP16899A	B8270SIM14DIOX	AQ	20					not run	sequence stopped
4P 31183	JC78473-5	OP16899A	B8270SIM14DIOX	AQ	21					not run	sequence stopped
4P 31184	JC78473-7	OP16899A	B8270SIM14DIOX	AQ	22					not run	sequence stopped
4P 31185	JC78473-8	OP16899A	B8270SIM14DIOX	AQ	23					not run	sequence stopped
4P 31186	JC78473-9	OP16899A	B8270SIM14DIOX	AQ	24					not run	sequence stopped
4P 31187	CC1692-1				25					not run	Run under M4P1692SIMDOD, reference only
4P 31188	SIM DOD SURR				26					not run	Run under M4P1692SIMDOD, reference only, op182160-093

- No bottles per sample management

[illegible]

Misc. Forms

Custody Documents and Other Forms

(SGS Orlando, FL)

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle

~~FA54378~~

Sp 11/16/18
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.acctest.com

FA54378 Sp 11/16/18 2325 Route 130, Dayton, NJ 08810 TEL: 732-329-0200 FAX: 732-329-3499/3480 www.acctest.com		FED-EX Tracking # _____ Accotest Quote # _____		Bottle Order Control # _____ Accotest Job # _____																																																																																																																																																																							
Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE SHEET)		Matrix Codes																																																																																																																																																																					
Company Name O'Brien & Gere Engineers, Inc. Street Address 333 West Washington St City Syracuse, NY 13221 Project Contact Mr. David Carnevale david.carnevale@obg.com Phone # 315.956.6571 Sampler(s) Name(s) _____ Phone # _____		Project Name: RHRL Emerging Contaminant Sampling Richardson Hill Road Landfill/Amphenol Corporation Street 2211 Richardson Hill Road City Sidney Carlier NY Project # 68804 Client Purchase Order # 11800650 Project Manager _____ Attention: _____		LCID537NY21		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment CI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank Equipment Blank Rinse Blank Trip Blank																																																																																																																																																																					
Accotest Sample # _____ Field ID / Point of Collection _____		MECHID Vial # _____		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Collection</th> <th colspan="8">Number of preserved Bottles</th> </tr> <tr> <th>Date</th> <th>Time</th> <th>Sampled by</th> <th>Matrix</th> <th># of bottles</th> <th>HCl</th> <th>NaOH</th> <th>HNO3</th> <th>H2SO4</th> <th>NONE</th> <th>DI Water</th> <th>MEOH</th> <th>ENCORE</th> </tr> </thead> <tbody> <tr><td>11/12/18</td><td>1520</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1443</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1400</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>0945</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>0945</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>0945</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1305</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1143</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1020</td><td></td><td>EB</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1305</td><td></td><td>GW</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> <tr><td>11/12/18</td><td>1010</td><td></td><td>RB</td><td>2</td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td>X</td></tr> </tbody> </table>		Collection		Number of preserved Bottles								Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	11/12/18	1520		GW	2					2			X	11/12/18	1443		GW	2					2			X	11/12/18	1400		GW	2					2			X	11/12/18	0945		GW	2					2			X	11/12/18	0945		GW	2					2			X	11/12/18	0945		GW	2					2			X	11/12/18	1305		GW	2					2			X	11/12/18	1143		GW	2					2			X	11/12/18	1020		EB	2					2			X	11/12/18	1305		GW	2					2			X	11/12/18	1010		RB	2					2			X
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Turnaround Time (Business day) _____		Date Deliverable Information _____		Comments / Special Instructions																																																																																																																																																																							
☒ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day RUSH ☐ 2 Day RUSH ☐ 1 Day RUSH ☐ other _____ Emergency & Rush TIA data available VA Lablink		Approved By (Accotest PM): I Date: _____ 		☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NJ Date of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		☐ NYASP Category A ☒ NYASP Category B ☐ State Forms ☐ EDD Format ☐ Other <u>COMMON</u>																																																																																																																																																																					
				questions? 575-410-1207																																																																																																																																																																							
Relinquished by Sampler: _____ Relinquished by Sampler: _____ Relinquished by: _____		Date Time: 11/14/18 1000 Date Time: _____ Date Time: _____		Received By: Fed Ex Received By: _____ Received By: _____ Custody Seal # _____		Received By: _____ Received By: _____ Received By: _____ Preserved where applicable ☐ Ice ☐ Cooler Temp ☐ Cooler Temp.																																																																																																																																																																					

3.0

JC78016: Chain of Custody

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SGS Orlando, FL



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08819
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 1

Client / Reporting Information		Project Information		Requested Analysis		Matrix Codes	
Company Name:	Richardson Hill Road Landfill, Syosset, NY	Project Name:	Richardson Hill Road Landfill, Syosset, NY			DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LID - Other Liquid AIR - Air SOL - Other Solid WIP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address:		Street:					
City:	State:	Zip:	City:	State:	Zip:		
Project Contact:	E-mail:	Project #:	Street Address:				
Phone #:		Client Purchase Order #:	City:	State:	Zip:		
Sample(s) Name(s):	Phone:	Project Manager:	Attention:				
SGS Sample #	Field ID / Point of Collection	MEQ/MDL Val #	Date	Time	Sampled by	Matrix	# of bottles
1	RH-07S		11/12/18	3:20:00 PM	AQ		
2	RH-08S		11/12/18	2:43:00 PM	AQ		
3	RH-09D		11/12/18	2:00:00 PM	AQ		
4	RH-02		11/12/18	9:45:00 AM	AQ		
4D	RH-02 MSD		11/12/18	9:45:00 AM	AQ		
4S	RH-02 MS		11/12/18	9:45:00 AM	AQ		
5	RH-08D		11/12/18	1:05:00 PM	AQ		
6	MW-12DD		11/12/18	11:43:00 AM	AQ		
7	EQUIPMENT BLANK		11/12/18	10:20:00 AM	AQ		
8	X-1		11/12/18	1:05:00 PM	AQ		
9	FIELD REAGENT BLANK		11/12/18	10:10:00 AM	AQ		
Turnaround Time (Business days):		Approved By (SGS PM) / Date:		Data Deliverable Information		Comments / Special Instructions	
☐ Standard 10 Business Days ☐ 5 Business Days RUSH ☐ 3 Business Days RUSH ☐ 2 Business Days RUSH ☐ 1 Business Day EMERGENCY ☒ Other: 14		☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NYASP Category A ☐ NYASP Category B ☐ State Forms ☐ EDD Format ☒ Other: NYASPB		Client direct sub?			
Emergency: Rush TAT data available via Lablink. Approval needed for RUSH/Emergency TAT		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw data		http://www.sgs.com/en/terms-and-conditions		1345	
Relinquished by:	Date / Time:	Received By:	1	Relinquished By:	2	Date / Time:	Received By:
3		Received By:	3	Relinquished By:	4	Date / Time:	Received By:
5		Received By:	5	Custody Seal #		Intact	Preserved where applicable
						Not intact	Therm ID:

JC78016.16
Rev. Date: 4/10/18

JC78016: Chain of Custody

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JC78016

SGS Sample Receipt Summary

Job Number: JC78016 **Client:** ALNJ **Project:** RHRL EMERGING CONTAMINANT
Date / Time Received: 11/15/2018 1:45:00 PM **Delivery Method:** FED EX **Airbill #s:** 1001910562110003281100464890803220

Therm ID: IR 1; **Therm CF:** -0.2; **# of Coolers:** 1
Cooler Temps (Raw Measured) °C: Cooler 1: (3.2);
Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Information

	<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present	☒		☐
2. Custody Seals Intact	☒		☐
3. Temp criteria achieved	☒		☐
4. Cooler temp verification	<u>IR Gun</u>		
5. Cooler media	<u>Ice (Bag)</u>		

Trip Blank Information

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler	☐		☐	☒
2. Trip Blank listed on COC	☐		☐	☒
	<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>
3. Type Of TB Received	☐		☐	☒

Sample Information

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Sample labels present on bottles	☒		☐	
2. Samples preserved properly	☒		☐	
3. Sufficient volume/containers recvd for analysis:	☒		☐	
4. Condition of sample	<u>Intact</u>			
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 _____
 Test Strip Lot #s: pH 0-3 _____ 230315 _____
 Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____
 pH 10-12 _____ 219813A _____

Number of Lab Filtered Metals: _____
 Other: (Specify) _____

Comments

SM001
 Rev. Date 05/24/17

Technician: SHAYLAP Date: 11/15/2018 1:45:00 P

Reviewer: SP Date: 11/16/2018

JC78016: Chain of Custody

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Internal Sample Tracking Chronicle

SGS Dayton, NJ

Job No: JC78016

OBGNYS: Richardson Hill Road Landfill, Syndey, NY
 Project No: 68804 PO# 11800650

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC78016-1 RH-07S	Collected: 12-NOV-18 15:20	By:		Received: 15-NOV-18	By: SP	
JC78016-1	EPA 537M BY ID	28-NOV-18 14:02	NAF	24-NOV-18 MV		LCID537NY21
JC78016-2 RH-06S	Collected: 12-NOV-18 14:43	By:		Received: 15-NOV-18	By: SP	
JC78016-2	EPA 537M BY ID	28-NOV-18 14:17	NAF	24-NOV-18 MV		LCID537NY21
JC78016-3 RH-05D	Collected: 12-NOV-18 14:00	By:		Received: 15-NOV-18	By: SP	
JC78016-3	EPA 537M BY ID	28-NOV-18 11:09	NAF	24-NOV-18 MV		LCID537NY21
JC78016-4 RH-02	Collected: 12-NOV-18 09:45	By:		Received: 15-NOV-18	By: SP	
JC78016-4	EPA 537M BY ID	28-NOV-18 11:24	NAF	24-NOV-18 MV		LCID537NY21
JC78016-5 RH-08D	Collected: 12-NOV-18 13:05	By:		Received: 15-NOV-18	By: SP	
JC78016-5	EPA 537M BY ID	28-NOV-18 13:14	NAF	24-NOV-18 MV		LCID537NY21
JC78016-6 MW-12DD	Collected: 12-NOV-18 11:43	By:		Received: 15-NOV-18	By: SP	
JC78016-6	EPA 537M BY ID	28-NOV-18 13:30	NAF	24-NOV-18 MV		LCID537NY21
JC78016-7 EQUIPMENT BLANK	Collected: 12-NOV-18 10:20	By:		Received: 15-NOV-18	By: SP	
JC78016-7	EPA 537M BY ID	28-NOV-18 12:43	NAF	24-NOV-18 MV		LCID537NY21
JC78016-8 X-1	Collected: 12-NOV-18 13:05	By:		Received: 15-NOV-18	By: SP	
JC78016-8	EPA 537M BY ID	28-NOV-18 13:46	NAF	24-NOV-18 MV		LCID537NY21

Internal Sample Tracking Chronicle

SGS Dayton, NJ

Job No: JC78016

OBGNYS: Richardson Hill Road Landfill, Syndey, NY
Project No: 68804 PO# 11800650

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC78016-9	Collected: 12-NOV-18 10:10	By:	Received: 15-NOV-18	By: SP		
FIELD REAGENT BLANK						
JC78016-9	EPA 537M BY ID	28-NOV-18 12:59	NAF	24-NOV-18 MV		LCID537NY21

828

MS Semi-volatiles

QC Data Summaries

(SGS Orlando, FL)

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: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-MB	2Q24173.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

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	108% 30-140%
	13C5-PFPeA	112% 40-140%
	13C5-PFHxA	111% 50-150%
	13C4-PFHpA	109% 50-150%
	13C8-PFOA	116% 50-150%
	13C9-PFNA	108% 50-150%
	13C6-PFDA	112% 50-150%
	13C7-PFUnDA	121% 50-150%
	13C2-PFDoDA	79% 50-150%
	13C2-PFTeDA	56% 40-150%
	13C3-PFBS	107% 50-150%

Method Blank Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-MB	2Q24173.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	ID Standard Recoveries	Limits
13C3-PFHxS	103%	50-150%
13C8-PFOS	106%	50-150%
13C8-FOSA	98%	30-140%
d3-MeFOSAA	84%	50-150%
13C2-6:2FTS	109%	50-150%
13C2-8:2FTS	97%	50-150%

Instrument Blank

Page 1 of 2

Job Number: JC78016

Account: ALNJ SGS Dayton, NJ

Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q377-IBLK	2Q24168.D	1	11/28/18	NAF	n/a	n/a	S2Q377

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

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	0.0080	0.0020	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
	13C5-PFHxA	107% 50-150%
	13C4-PFHpA	104% 50-150%
	13C8-PFOA	105% 50-150%
	13C9-PFNA	105% 50-150%
	13C6-PFDA	115% 50-150%
	13C7-PFUnDA	106% 50-150%
	13C2-PFDoDA	102% 50-150%
	13C2-PFTeDA	102% 50-150%
	13C3-PFBS	103% 50-150%
	13C3-PFHxS	100% 50-150%
	13C8-PFOS	105% 50-150%

Instrument Blank

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q377-IBLK	2Q24168.D	1	11/28/18	NAF	n/a	n/a	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	ID	Standard Recoveries	Limits
	d3-MeFOSAA	105%	50-150%

Blank Spike Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-BS	2Q24172.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0752	94	70-130
2706-90-3	Perfluoropentanoic acid	0.08	0.0705	88	70-130
307-24-4	Perfluorohexanoic acid	0.08	0.0675	84	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0700	88	71-130
335-67-1	Perfluorooctanoic acid	0.08	0.0721	90	74-130
375-95-1	Perfluorononanoic acid	0.08	0.0665	83	76-130
335-76-2	Perfluorodecanoic acid	0.08	0.0626	78	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0719	90	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0769	96	70-130
72629-94-8	Perfluorotridecanoic acid	0.08	0.0976	122	70-139
376-06-7	Perfluorotetradecanoic acid	0.08	0.0654	82	70-130
375-73-5	Perfluorobutanesulfonic acid	0.0708	0.0616	87	73-130
355-46-4	Perfluorohexanesulfonic acid	0.0728	0.0631	87	74-130
375-92-8	Perfluoroheptanesulfonic acid	0.076	0.0714	94	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.074	0.0684	92	70-130
335-77-3	Perfluorodecanesulfonic acid	0.0772	0.0502	65* a	70-130
754-91-6	PFOSA	0.08	0.0750	94	70-131
2355-31-9	MeFOSAA	0.08	0.0737	92	70-130
2991-50-6	EtFOSAA	0.08	0.0606	76	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	0.076	0.0687	90	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	0.0768	0.0663	86	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	30-140%
	13C5-PFPeA	114%	40-140%
	13C5-PFHxA	113%	50-150%
	13C4-PFHpA	113%	50-150%
	13C8-PFOA	108%	50-150%
	13C9-PFNA	109%	50-150%
	13C6-PFDA	114%	50-150%
	13C7-PFUnDA	113%	50-150%
	13C2-PFDoDA	109%	50-150%
	13C2-PFTeDA	79%	40-150%
	13C3-PFBS	112%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-BS	2Q24172.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	ID Standard Recoveries	BSP	Limits
	13C3-PFHxS	105%	50-150%
	13C8-PFOS	105%	50-150%
	13C8-FOSA	107%	30-140%
	d3-MeFOSAA	99%	50-150%
	13C2-6:2FTS	107%	50-150%
	13C2-8:2FTS	103%	50-150%

(a) Sporadic marginal failure.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 2

Job Number: JC78016

Account: ALNJ SGS Dayton, NJ

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-MS	2Q24179.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377
OP72753-MSD	2Q24180.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377
JC78016-4	2Q24178.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	Compound	JC78016-4 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND		0.08	95	0.08	0.0723	90	5	70-130/30
2706-90-3	Perfluoropentanoic acid	ND		0.08	90	0.08	0.0675	84	7	70-130/30
307-24-4	Perfluorohexanoic acid	ND		0.08	86	0.08	0.0649	81	5	70-130/30
375-85-9	Perfluoroheptanoic acid	ND		0.08	93	0.08	0.0683	85	8	71-130/30
335-67-1	Perfluorooctanoic acid	0.00276		0.08	92	0.08	0.0713	86	7	74-130/30
375-95-1	Perfluorononanoic acid	ND		0.08	89	0.08	0.0650	81	9	76-130/30
335-76-2	Perfluorodecanoic acid	ND		0.08	88	0.08	0.0607	76	15	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND		0.08	88	0.08	0.0671	84	5	70-130/30
307-55-1	Perfluorododecanoic acid	ND		0.08	96	0.08	0.0712	89	7	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND		0.08	109	0.08	0.0763	95	14	70-139/30
376-06-7	Perfluorotetradecanoic acid	ND		0.08	91	0.08	0.0671	84	8	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND		0.0708	90	0.0708	0.0594	84	7	73-130/30
355-46-4	Perfluorohexanesulfonic acid	ND		0.0728	89	0.0728	0.0613	84	6	74-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND		0.076	99	0.076	0.0702	92	7	74-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.00174 J		0.074	95	0.074	0.0666	88	8	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND		0.0772	63*	0.0772	0.0448	58*	8	70-130/30
754-91-6	PFOSA	ND		0.08	95	0.08	0.0710	89	7	70-131/30
2355-31-9	MeFOSAA	ND		0.08	93	0.08	0.0721	90	3	70-130/30
2991-50-6	EtFOSAA	ND		0.08	86	0.08	0.0683	85	1	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND		0.076	91	0.076	0.0648	85	7	70-133/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND		0.0768	90	0.0768	0.0628	82	10	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	JC78016-4	Limits
	13C4-PFBA	101%	115%	94%	30-140%
	13C5-PFPeA	105%	122%	100%	40-140%
	13C5-PFHxA	105%	120%	99%	50-150%
	13C4-PFHpA	102%	120%	98%	50-150%
	13C8-PFOA	107%	123%	109%	50-150%
	13C9-PFNA	103%	124%	106%	50-150%
	13C6-PFDA	107%	124%	113%	50-150%
	13C7-PFUnDA	98%	110%	102%	50-150%
	13C2-PFDoDA	94%	103%	106%	50-150%
	13C2-PFTeDA	80%	89%	86%	40-150%
	13C3-PFBS	104%	117%	100%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP72753-MS	2Q24179.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377
OP72753-MSD	2Q24180.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377
JC78016-4	2Q24178.D	1	11/28/18	NAF	11/24/18	OP72753	S2Q377

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

JC78016-1, JC78016-2, JC78016-3, JC78016-4, JC78016-5, JC78016-6, JC78016-7, JC78016-8, JC78016-9

CAS No.	ID Standard Recoveries	MS	MSD	JC78016-4	Limits
13C3-PFHxS		98%	111%	95%	50-150%
13C8-PFOS		96%	111%	91%	50-150%
13C8-FOSA		93%	115%	101%	30-140%
d3-MeFOSAA		84%	95%	87%	50-150%
13C2-6:2FTS		105%	121%	102%	50-150%
13C2-8:2FTS		105%	119%	100%	50-150%

* = Outside of Control Limits.

Isotope Dilution Standard Recovery Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, 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
JC78016-1	2Q24188.D	85	93	103	107	137	129	109	136
JC78016-2	2Q24189.D	96	104	111	113	143	137	127	154* a
JC78016-3	2Q24177.D	99	101	102	102	113	108	115	106
JC78016-4	2Q24178.D	94	100	99	98	109	106	113	102
JC78016-5	2Q24185.D	90	96	101	102	104	101	99	84
JC78016-6	2Q24186.D	91	102	102	101	106	108	122	117
JC78016-7	2Q24183.D	87	96	94	95	107	104	108	94
JC78016-8	2Q24187.D	98	105	109	114	122	120	113	108
JC78016-9	2Q24184.D	96	105	105	104	115	110	124	105
OP72753-BS	2Q24172.D	111	114	113	113	108	109	114	113
OP72753-MB	2Q24173.D	108	112	111	109	116	108	112	121
OP72753-MS	2Q24179.D	101	105	105	102	107	103	107	98
OP72753-MSD	2Q24180.D	115	122	120	120	123	124	124	110

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%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, 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
JC78016-1	2Q24188.D	127	83	92	83	81	72	69	199* a
JC78016-2	2Q24189.D	139	79	100	87	93	106	79	199* a
JC78016-3	2Q24177.D	100	95	101	99	102	109	87	108
JC78016-4	2Q24178.D	106	86	100	95	91	101	87	102
JC78016-5	2Q24185.D	88	74	92	89	81	83	67	98
JC78016-6	2Q24186.D	96	80	96	94	98	106	94	97
JC78016-7	2Q24183.D	82	77	95	87	80	64	75	101
JC78016-8	2Q24187.D	109	94	100	102	86	93	80	112
JC78016-9	2Q24184.D	95	66	101	97	97	113	87	104
OP72753-BS	2Q24172.D	109	79	112	105	105	107	99	107
OP72753-MB	2Q24173.D	79	56	107	103	106	98	84	109
OP72753-MS	2Q24179.D	94	80	104	98	96	93	84	105
OP72753-MSD	2Q24180.D	103	89	117	111	111	115	95	121

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: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYs: Richardson Hill Road Landfill, Syndey, 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
JC78016-1	2Q24188.D	106
JC78016-2	2Q24189.D	116
JC78016-3	2Q24177.D	107
JC78016-4	2Q24178.D	100
JC78016-5	2Q24185.D	84
JC78016-6	2Q24186.D	103
JC78016-7	2Q24183.D	94
JC78016-8	2Q24187.D	98
JC78016-9	2Q24184.D	105
OP72753-BS	2Q24172.D	103
OP72753-MB	2Q24173.D	97
OP72753-MS	2Q24179.D	105
OP72753-MSD	2Q24180.D	119

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

Initial Calibration Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICC374
Lab FileID: 2Q24012.D

Initial Calibration Report												
Method Path		D:\MassHunter\damethods										
Method File		PFC_ID_112618_S2Q374.quantmethod.xml										
Batch Name		D:\MassHunter\Data\1126_PFC_ID_S2Q374\QuantResults\S2Q374.batch.hbin										
Last Calib Update		11/27/2018 7:35:00 AM										
Level Name	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
1	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24007.d	Linear	14934	15425	15393	16262	16098	15897	15703	16059	15721	2.839
2	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24008.d	Linear	6294	6508	6597	7496	7467	7379	7251	7353	7043	6.963
3	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d	Linear	2249	2296	2294	2413	2383	2363	2306	2376	2335	2.418
4	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d	Linear	5609	5772	5932	6882	6870	6999	7291	8104	6682	12.785
5	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d	Linear	6144	6384	6484	7425	7418	7187	6659	6473	6772	7.376
6	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d	Linear	6202	6344	6479	7549	7500	7160	6790	6670	6837	7.531
7	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d	Linear	2191	2227	2251	2376	2334	2301	2231	2192	2263	2.976
8	D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d	Linear	5321	5475	5670	6766	6745	6488	6377	6829	6209	10.012
Compound												
S 13C4-PFBA		Linear	4434	4591	4743	5520	5518	5134	4804	4526	4909	8.804
S 13C5-PFPeA		Linear	8148	8248	8582	9661	9400	8945	7901	6985	8484	10.162
S 13C3-PFBS		Linear	2732	2752	2823	3057	3020	2898	2744	2686	2839	4.897
S 13C2-4:2FTS		Linear	3292	3399	3454	4106	4171	4006	3729	3468	3703	9.418
S 13C5-PFHA		Linear	2460	2524	2702	3158	3132	2968	2868	2798	2826	9.138
S d3-MeFOsAA		Linear	3504	3724	3946	4666	4721	4209	3518	3232	3940	13.987
S 13C6-PFDA		Linear	2738	2880	3064	3912	3909	3605	3564	3841	3439	13.876
S 13C2-8:2FTS		Linear	3784	3966	4446	5224	5184	4796	4379	3918	4462	12.630
S 13C7-PFUnDA		Linear	3349	3432	3869	4712	4624	4380	4016	3857	4030	12.644
S 13C2-PFDODA		Linear	2023	2102	2276	2716	2711	2609	2443	2380	2407	10.968
S 13C2-PFtEDA												
I 13C2-PFOA												
S M2-PFOA		Linear	0.9979	1.0044	0.9974	1.0000	0.9933	0.9943	1.0050	1.0006	0.9991	0.428
I 13C4-PFOS												
S M4-PFOS		Linear	0.9910	1.0048	1.0000	0.9902	0.9924	0.9915	1.0053	1.0063	0.9977	0.713
I M4-PFBA												
T PFBA		Linear	0.2193	0.1884	0.1893	0.1832	0.1833	0.1844	0.1924	0.1878	0.1910	6.210
I M5-PFPeA												
T PFPeA		Linear	1.0053	0.8782	0.8566	0.8259	0.8260	0.8349	0.8720	0.8392	0.8672	6.833
Generated at 7:35 AM on 11/27/2018												

Initial Calibration Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICC374
Lab FileID: 2Q24012.D

Page 2 of 5

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA T PFHxA	Linear	0.3507	0.2946	0.2893	0.2863	0.2852	0.2896	0.3070	0.2971	0.3000	7.219
I M4-PFHpA T PFHpA	Linear	0.8943	0.7769	0.7824	0.7732	0.7854	0.7793	0.8095	0.7776	0.7973	5.111
I M8-PFOA T PFOA	Linear	0.6557	0.5559	0.5489	0.5436	0.5368	0.5542	0.5545	0.5448	0.5618	6.851
I M9-PFNA T PFNA	Linear	0.6602	0.5926	0.5875	0.5648	0.5784	0.5524	0.5945	0.5789	0.5886	5.469
I M6-PFDA T PFDA	Quadratic	0.4346	0.4264	0.4214	0.4124	0.3929	0.3877	0.4155	0.4031	0.4118	3.953
I M7-PFUnDA T PFUnDA	Linear	0.4411	0.3834	0.3474	0.3512	0.3642	0.3489	0.3830	0.3865	0.3757	8.268
I M2-PFDoDA T PFDoDA	Linear	0.4927	0.4614	0.4265	0.4314	0.4344	0.4365	0.4525	0.4413	0.4471	4.847
I M2-PFTeDA T PFTeDA	Linear	0.8525	0.8195	0.7752	0.7598	0.7662	0.7652	0.8266	0.7565	0.7902	4.674
I M2-PFtEDA T PFtEDA	Quadratic	0.8414	0.6428	0.6418	0.5917	0.6063	0.6188	0.6390	0.6126	0.6493	12.286
I M8-FOSA T FOSA	Linear	0.5179	0.4755	0.4709	0.4664	0.4779	0.4733	0.4980	0.4807	0.4826	3.544
I M3-PFBS T PFBS	Linear	1.6564	1.4491	1.4615	1.3930	1.4119	1.4250	1.4926	1.4267	1.4645	5.696
I M3-PFPeS T PFPeS	Linear	0.9926	0.8727	0.8858	0.8533	0.8898	0.8938	0.9281	0.8671	0.8979	4.923
I M3-PFHxS T PFHxS	Linear	1.3922	1.2276	1.1927	1.2021	1.2176	1.2341	1.2815	1.2535	1.2502	5.115
I M3-PFHpS T PFHpS	Linear	1.2630	1.0831	1.0262	1.0362	1.0711	1.0672	1.0882	1.0286	1.0830	7.084
I M8-PFOS T PFOS	Linear	1.2630	1.0583	1.0451	1.0382	1.0098	1.0263	1.0717	1.0501	1.0703	7.486
I M2-6:2FTS T 6:2FTS	Quadratic	0.7745	0.6784	0.6901	0.6765	0.6793	0.6873	0.6850	0.6231	0.6868	6.028
I M2-8:2FTS T 8:2FTS	Linear	0.4733	0.4125	0.3999	0.3692	0.3718	0.3824	0.3906	0.3593	0.3949	9.135
I M2-4:2FTS T 4:2FTS	Quadratic	0.6307	0.5828	0.5568	0.5455	0.5490	0.5392	0.5216	0.4541	0.5475	9.187
I M2-6:2FTS T 6:2FTS	Quadratic	0.6448	0.5263	0.5050	0.5013	0.5110	0.4916	0.4742	0.4086	0.5079	12.979
I M2-8:2FTS T 8:2FTS	Quadratic	0.6062	0.6158	0.5776	0.5480	0.5478	0.5302	0.4955	0.4181	0.5424	11.778

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Generated at 7:35 AM on 11/27/2018

Initial Calibration Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICC374
Lab FileID: 2Q24012.D

Initial Calibration Report									
Compound	Curve Fit	1	2	3	4	5	6	7	8
I M3-MeFOSAA	Linear Quadratic	0.6241	0.5282	0.5308	0.5165	0.5157	0.5141	0.5358	0.5161
T MeFOSAA		0.4922	0.4485	0.4414	0.4412	0.4235	0.4391	0.4221	0.4005
T EtFOSAA									

Avg RF 0.5352
6.885
0.4386
6.056

%RSD 6.885
6.056

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

Initial Calibration Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICC374
Lab FileID: 2Q24012.D

Page 4 of 5

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Curve Fit R2

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	$y = 15721.25862 * x$	0.000000
T PFBA	Linear	$y = 0.188521 * x$	0.999824
S 13C5-PFPeA	Linear	$y = 7043.160023 * x$	0.000000
T PFPeA	Linear	$y = 0.845204 * x$	0.999632
S 13C3-PFBS	Linear	$y = 2335.025772 * x$	0.000000
T PFBS	Linear	$y = 1.439108 * x$	0.999498
S 13C2-4:2FTS	Linear	$y = 6682.454930 * x$	0.000000
T 4:2FTS	Quadratic	$y = -0.024656 * x^2 + 0.577932 * x$	0.999890
S 13C5-PFHxA	Linear	$y = 6771.649946 * x$	0.000000
T PFHxA	Linear	$y = 0.298665 * x$	0.999669
T PFPeS	Linear	$y = 0.879790 * x$	0.998854
S 13C4-PFHpA	Linear	$y = 6836.845654 * x$	0.000000
T PFHpA	Linear	$y = 0.783797 * x$	0.999609
T PFHxS	Linear	$y = 1.257863 * x$	0.999847
S 13C3-PFHxS	Linear	$y = 2262.843553 * x$	0.000000
S 13C2-6:2FTS	Linear	$y = 6208.928167 * x$	0.000000
T 6:2FTS	Quadratic	$y = -0.024216 * x^2 + 0.530109 * x$	0.999892
S 13C8-PFOA	Linear	$y = 4908.868206 * x$	0.000000
S M2-PFOA	Linear	$y = 0.999100 * x$	0.000000
T PFOA	Linear	$y = 0.546892 * x$	0.999913
T PFHpS	Linear	$y = 1.041562 * x$	0.999189
S 13C8-FOSA	Linear	$y = 8483.803571 * x$	0.000000
T FOSA	Linear	$y = 0.483765 * x$	0.999673
S 13C8-PFOS	Linear	$y = 2838.985734 * x$	0.000000
S M4-PFOS	Linear	$y = 0.997694 * x$	0.000000
T PFOS	Linear	$y = 1.053187 * x$	0.999848
S 13C9-PFNA	Linear	$y = 3703.339645 * x$	0.000000
T PFNA	Linear	$y = 0.581017 * x$	0.999712
T MeFOSAA	Linear	$y = 2826.255492 * x$	0.000000
T MeFOSAA	Linear	$y = 0.519825 * x$	0.999655
T PFNS	Quadratic	$y = -0.020830 * x^2 + 0.728184 * x$	0.999831
S 13C6-PFDA	Linear	$y = 3940.059784 * x$	0.000000
T PFDA	Linear	$y = -0.001771 * x^2 + 0.412699 * x$	0.999723
T EtFOSAA	Quadratic	$y = -0.008604 * x^2 + 0.443574 * x$	0.999977
S 13C2-8:2FTS	Linear	$y = 3439.251772 * x$	0.000000
T 8:2FTS	Quadratic	$y = -0.029886 * x^2 + 0.567753 * x$	0.999969
T PFDS	Linear	$y = 0.366177 * x$	0.999174
S 13C7-PFUnDA	Linear	$y = 4462.057099 * x$	0.000000
T PFUnDA	Linear	$y = 0.384436 * x$	0.999511
S 13C2-PFDoDA	Linear	$y = 4029.713287 * x$	0.000000
T PFDoDA	Linear	$y = 0.443217 * x$	0.999831
T PFTdA	Linear	$y = 0.770336 * x$	0.998058
T PFTeDA	Quadratic	$y = -0.006592 * x^2 + 0.646486 * x$	0.999814

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Generated at 7:35 AM on 11/27/2018

Initial Calibration Summary

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICC374
Lab FileID: 2Q24012.D

Initial Calibration Report

S 13C2-PFTeDA

Linear

$$Y = 2407.448168 * X$$

0.000000

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

Initial Calibration Verification

Page 1 of 2

Job Number: JC78016

Sample: S2Q374-ICV374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24016.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\1126_PFC_ID_S2Q374\S2Q374.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24007.d
2:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24008.d
3:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d
4:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d
5:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d
6:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d
7:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d
8:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d

Data File: 2q24016

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.170	0.8	100.8
13C2-6:2FTS	20.000	19.464	-2.7	97.3
13C2-8:2FTS	20.000	19.392	-3.0	97.0
13C2-PFDoDA	20.000	20.236	1.2	101.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.889	-0.6	99.4
13C3-PFBS	20.000	20.429	2.1	102.1
13C3-PFHxS	20.000	20.367	1.8	101.8
13C4-PFBA	20.000	19.852	-0.7	99.3
13C4-PFHpA	20.000	20.082	0.4	100.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.745	3.7	103.7
13C5-PFPeA	20.000	20.779	3.9	103.9
13C6-PFDA	20.000	20.643	3.2	103.2
13C7-PFUnDA	20.000	20.779	3.9	103.9
13C8-FOSA	20.000	20.180	0.9	100.9
13C8-PFOA	20.000	19.867	-0.7	99.3
13C8-PFOS	20.000	19.997	0.0	100.0
13C9-PFNA	20.000	20.198	1.0	101.0
4:2FTS	20.000	18.802	-6.0	94.0
6:2FTS	20.000	18.812	-5.9	94.1
8:2FTS	20.000	18.753	-6.2	93.8
d3-MeFOSAA	20.000	19.789	-1.1	98.9
M2-PFOA	20.000	19.874	-0.6	99.4
EtFOSAA	20.000	19.322	-3.4	96.6
FOSA	20.000	20.363	1.8	101.8
MeFOSAA	20.000	20.407	2.0	102.0
PFBA	20.000	20.170	0.9	100.9
PFBS	20.000	17.149	-14.3	85.7
PFDA	20.000	18.168	-9.2	90.8
PFDoDA	20.000	20.191	1.0	101.0
PFDS	20.000	19.768	-1.2	98.8
PFHpA	20.000	20.132	0.7	100.7
PFHpS	20.000	19.138	-4.3	95.7
PFHxA	20.000	18.022	-9.9	90.1
PFHxS	20.000	16.919	-15.4	84.6
PFNA	20.000	17.560	-12.2	87.8

Initial Calibration Verification

Job Number: JC78016
Account: ALNJ SGS Dayton, NJ
Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

Sample: S2Q374-ICV374
Lab FileID: 2Q24016.D

PFNS	20.000	18.466	-7.7	92.3
PF0A	20.000	20.572	2.9	102.9
PF0S	20.000	19.457	-2.7	97.3
PFPeA	20.000	19.768	-1.2	98.8
PFPeS	20.000	18.549	-7.3	92.7
PFTeDA	20.000	17.771	-11.1	88.9
PFTrDA	20.000	22.923	14.6	114.6
PFUnDA	20.000	18.595	-7.0	93.0
M4-PF0S	20.000	20.022	0.1	100.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PF0A	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-F0SA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PF0S	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016

Sample: S2Q377-CC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24169.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\1128_PFC_ID_S2Q377\S2Q377.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24007.d
2:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24008.d
3:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d
4:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d
5:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d
6:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d
7:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d
8:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d

Data File: 2q24169

Type : QC

Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.809	-1.0	99.0
13C2-6:2FTS	20.000	20.549	2.7	102.7
13C2-8:2FTS	20.000	20.552	2.8	102.8
13C2-PFDoDA	20.000	21.174	5.9	105.9
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	21.272	6.4	106.4
13C3-PFBS	20.000	21.820	9.1	109.1
13C3-PFHxS	20.000	21.138	5.7	105.7
13C4-PFBA	20.000	22.743	13.7	113.7
13C4-PFHpA	20.000	21.952	9.8	109.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	22.272	11.4	111.4
13C5-PFPeA	20.000	22.362	11.8	111.8
13C6-PFDA	20.000	24.606	23.0	123.0
13C7-PFUnDA	20.000	21.666	8.3	108.3
13C8-FOSA	20.000	22.650	13.3	113.3
13C8-PFOA	20.000	22.191	11.0	111.0
13C8-PFOS	20.000	21.932	9.7	109.7
13C9-PFNA	20.000	21.785	8.9	108.9
4:2FTS	1.000	0.971	-2.9	97.1
6:2FTS	1.000	1.010	1.0	101.0
8:2FTS	1.000	0.955	-4.5	95.5
d3-MeFOSAA	20.000	21.831	9.2	109.2
M2-PFOA	20.000	20.086	0.4	100.4
EtFOSAA	1.000	1.019	1.9	101.9
FOSA	1.000	0.965	-3.5	96.5
MeFOSAA	1.000	1.095	9.5	109.5
PFBA	1.000	1.015	1.5	101.5
PFBS	1.000	0.991	-0.9	99.1
PFDA	1.000	0.936	-6.4	93.6
PFDoDA	1.000	1.062	6.2	106.2
PFDS	1.000	1.007	0.7	100.7
PFHpA	1.000	0.936	-6.4	93.6
PFHpS	1.000	1.093	9.3	109.3
PFHxA	1.000	0.993	-0.7	99.3
PFHxS	1.000	1.006	0.6	100.6
PFNA	1.000	1.018	1.8	101.8

Continuing Calibration Summary

Page 2 of 2

Job Number: JC78016

Sample: S2Q377-CC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24169.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

PFNS	1.000	0.993	-0.7	99.3
PFOA	1.000	1.013	1.3	101.3
PFOS	1.000	1.005	0.5	100.5
PFPeA	1.000	0.963	-3.7	96.3
PFPeS	1.000	1.023	2.3	102.3
PFTeDA	1.000	1.079	7.9	107.9
PFTTrDA	1.000	1.013	1.3	101.3
PFUnDA	1.000	0.925	-7.5	92.5
M4-PFOS	20.000	20.033	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--		

CC Criteria: +/- 30%

9.5.3

9

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016**Sample:** S2Q377-CC374**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q24170.D**Project:** OBGNY: Richardson Hill Road Landfill, Syndey, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\1128_PFC_ID_S2Q377\S2Q377.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24007.d
2:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24008.d
3:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d
4:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d
5:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d
6:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d
7:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d
8:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d

Data File: 2q24170

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.274	1.4	101.4
13C2-6:2FTS	20.000	20.361	1.8	101.8
13C2-8:2FTS	20.000	20.248	1.2	101.2
13C2-PFDoDA	20.000	20.139	0.7	100.7
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.262	1.3	101.3
13C3-PFBS	20.000	21.117	5.6	105.6
13C3-PFHxS	20.000	20.755	3.8	103.8
13C4-PFBA	20.000	22.093	10.5	110.5
13C4-PFHpA	20.000	21.141	5.7	105.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	21.305	6.5	106.5
13C5-PFPeA	20.000	21.537	7.7	107.7
13C6-PFDA	20.000	21.705	8.5	108.5
13C7-PFUnDA	20.000	20.290	1.5	101.5
13C8-FOSA	20.000	20.483	2.4	102.4
13C8-PFOA	20.000	20.800	4.0	104.0
13C8-PFOS	20.000	21.572	7.9	107.9
13C9-PFNA	20.000	20.423	2.1	102.1
4:2FTS	20.000	19.116	-4.4	95.6
6:2FTS	20.000	19.490	-2.5	97.5
8:2FTS	20.000	19.371	-3.1	96.9
d3-MeFOSAA	20.000	20.749	3.7	103.7
M2-PFOA	20.000	20.008	0.0	100.0
EtFOSAA	20.000	19.966	-0.2	99.8
FOSA	20.000	20.036	0.2	100.2
MeFOSAA	20.000	20.867	4.3	104.3
PFBA	20.000	19.594	-2.0	98.0
PFBS	20.000	19.232	-3.8	96.2
PFDA	20.000	18.786	-6.1	93.9
PFDoDA	20.000	19.790	-1.0	99.0
PFDS	20.000	19.564	-2.2	97.8
PFHpA	20.000	19.230	-3.8	96.2
PFHpS	20.000	20.124	0.6	100.6
PFHxA	20.000	19.786	-1.1	98.9
PFHxS	20.000	19.498	-2.5	97.5
PFNA	20.000	20.629	3.1	103.1

Continuing Calibration Summary

Page 2 of 2

Job Number: JC78016

Sample: S2Q377-CC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24170.D

Project: OBGNYS: Richardson Hill Road Landfill, Syndey, NY

PFNS	20.000	18.830	-5.8	94.2
PFOA	20.000	19.388	-3.1	96.9
PFOS	20.000	18.730	-6.4	93.6
PFPeA	20.000	18.836	-5.8	94.2
PFPeS	20.000	20.097	0.5	100.5
PFTeDA	20.000	18.929	-5.4	94.6
PFTrDA	20.000	19.776	-1.1	98.9
PFUnDA	20.000	18.795	-6.0	94.0
M4-PFOS	20.000	19.936	-0.3	99.7
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--		

CC Criteria: +/- 30%

9.5.4
9

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016

Sample: S2Q377-CC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24181.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\1128_PFC_ID_S2Q377\S2Q377.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24007.d
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3:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d
4:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d
5:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d
6:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d
7:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d
8:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d

Data File: 2q24181

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.410	2.0	102.0
13C2-6:2FTS	20.000	20.464	2.3	102.3
13C2-8:2FTS	20.000	21.829	9.1	109.1
13C2-PFDoDA	20.000	23.459	17.3	117.3
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	24.358	21.8	121.8
13C3-PFBS	20.000	21.721	8.6	108.6
13C3-PFHxS	20.000	20.893	4.5	104.5
13C4-PFBA	20.000	22.063	10.3	110.3
13C4-PFHpA	20.000	21.340	6.7	106.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	21.414	7.1	107.1
13C5-PFPeA	20.000	22.250	11.3	111.3
13C6-PFDA	20.000	23.531	17.7	117.7
13C7-PFUnDA	20.000	23.509	17.5	117.5
13C8-FOSA	20.000	22.032	10.2	110.2
13C8-PFOA	20.000	20.877	4.4	104.4
13C8-PFOS	20.000	22.095	10.5	110.5
13C9-PFNA	20.000	21.166	5.8	105.8
4:2FTS	20.000	19.407	-3.0	97.0
6:2FTS	20.000	19.218	-3.9	96.1
8:2FTS	20.000	19.800	-1.0	99.0
d3-MeFOSAA	20.000	21.380	6.9	106.9
M2-PFOA	20.000	20.012	0.1	100.1
EtFOSAA	20.000	19.963	-0.2	99.8
FOSA	20.000	19.984	-0.1	99.9
MeFOSAA	20.000	20.452	2.3	102.3
PFBA	20.000	19.547	-2.3	97.7
PFBS	20.000	19.437	-2.8	97.2
PFDA	20.000	18.289	-8.6	91.4
PFDoDA	20.000	19.333	-3.3	96.7
PFDS	20.000	20.046	0.2	100.2
PFHpA	20.000	19.772	-1.1	98.9
PFHpS	20.000	21.075	5.4	105.4
PFHxA	20.000	19.768	-1.2	98.8
PFHxS	20.000	19.871	-0.6	99.4
PFNA	20.000	20.817	4.1	104.1

Continuing Calibration Summary

Page 2 of 2

Job Number: JC78016

Sample: S2Q377-CC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24181.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

PFNS	20.000	19.278	-3.6	96.4
PFOA	20.000	19.456	-2.7	97.3
PFOS	20.000	18.882	-5.6	94.4
PFPeA	20.000	19.108	-4.5	95.5
PFPeS	20.000	20.025	0.1	100.1
PFTeDA	20.000	19.387	-3.1	96.9
PFTTrDA	20.000	19.948	-0.3	99.7
PFUnDA	20.000	18.005	-10.0	90.0
M4-PFOS	20.000	19.865	-0.7	99.3
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--		

CC Criteria: +/- 30%

9.5.5

6

Continuing Calibration Summary

Page 1 of 2

Job Number: JC78016

Sample: S2Q377-ECC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24193.D

Project: OBGNY: Richardson Hill Road Landfill, Syndey, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\1128_PFC_ID_S2Q377\S2Q377.batch.bin

Level ID: Calibration File

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3:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24009.d
4:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24010.d
5:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24011.d
6:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24012.d
7:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24013.d
8:D:\MassHunter\Data\1126_PFC_ID_S2Q374\2q24014.d

Data File: 2q24193

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.239	11.2	111.2
13C2-6:2FTS	20.000	21.649	8.2	108.2
13C2-8:2FTS	20.000	23.108	15.5	115.5
13C2-PFDoDA	20.000	25.108	25.5	125.5
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	24.859	24.3	124.3
13C3-PFBS	20.000	21.397	7.0	107.0
13C3-PFHxS	20.000	21.528	7.6	107.6
13C4-PFBA	20.000	20.718	3.6	103.6
13C4-PFHpA	20.000	22.515	12.6	112.6
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	22.133	10.7	110.7
13C5-PFPeA	20.000	22.575	12.9	112.9
13C6-PFDA	20.000	25.072	25.4	125.4
13C7-PFUnDA	20.000	24.988	24.9	124.9
13C8-FOSA	20.000	22.823	14.1	114.1
13C8-PFOA	20.000	22.368	11.8	111.8
13C8-PFOS	20.000	22.441	12.2	112.2
13C9-PFNA	20.000	23.117	15.6	115.6
4:2FTS	20.000	18.988	-5.1	94.9
6:2FTS	20.000	19.324	-3.4	96.6
8:2FTS	20.000	19.644	-1.8	98.2
d3-MeFOSAA	20.000	22.176	10.9	110.9
M2-PFOA	20.000	20.017	0.1	100.1
EtFOSAA	20.000	20.083	0.4	100.4
FOSA	20.000	19.633	-1.8	98.2
MeFOSAA	20.000	20.302	1.5	101.5
PFBA	20.000	19.375	-3.1	96.9
PFBS	20.000	19.322	-3.4	96.6
PFDA	20.000	18.066	-9.7	90.3
PFDoDA	20.000	19.279	-3.6	96.4
PFDS	20.000	20.157	0.8	100.8
PFHpA	20.000	19.375	-3.1	96.9
PFHpS	20.000	20.652	3.3	103.3
PFHxA	20.000	19.800	-1.0	99.0
PFHxS	20.000	19.467	-2.7	97.3
PFNA	20.000	19.033	-4.8	95.2

Continuing Calibration Summary

Page 2 of 2

Job Number: JC78016

Sample: S2Q377-ECC374

Account: ALNJ SGS Dayton, NJ

Lab FileID: 2Q24193.D

Project: OBGNY: Richardson Hill Road Landfill, Sydeny, NY

PFNS	20.000	19.432	-2.8	97.2
PFOA	20.000	19.069	-4.7	95.3
PFOS	20.000	18.790	-6.0	94.0
PFPeA	20.000	19.313	-3.4	96.6
PFPeS	20.000	20.567	2.8	102.8
PFTeDA	20.000	19.126	-4.4	95.6
PFTTrDA	20.000	19.813	-0.9	99.1
PFUnDA	20.000	18.574	-7.1	92.9
M4-PFOS	20.000	19.910	-0.4	99.6
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--		

CC Criteria: +/- 30%

9.5.6
6



Dayton, NJ

Section 10

MS Semi-volatiles

Raw Data

(SGS Orlando, FL)

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24188.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 2:02:10 PM
 Sample Name : JC78016-1
 Vial : Vial 34
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.947	415.0 -> 370.0	0	20.00	µg/L m	-0.049
13C4-PFOS	7.521	503.0 -> 80.0	0	20.00	µg/L m	-0.037
M4-PFBA	1.952	217.0 -> 172.0	267800	20.00	µg/L	-0.075
M5-PFPeA	3.937	268.0 -> 223.0	130587	20.00	µg/L	-0.075
M5-PFHxA	5.302	318.0 -> 273.0	139314	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	145568	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	134137	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	95655	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	86113	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	121010	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	102038	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	39732	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	121347	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	43276	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	37156	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	45668	20.00	µg/L	-0.037
M2-4:2FTS	5.197	329.0 -> 309.0	127143	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	246607	20.00	µg/L	-0.065
M2-8:2FTS	8.026	529.0 -> 509.0	73067	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	38865	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.197	329.0 -> 309.0	127144	19.03	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C2-6:2FTS	6.927	429.0 -> 409.0	246570	39.71	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 198.6%		
13C2-8:2FTS	8.026	529.0 -> 509.0	73083	21.25	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C2-PFDoDA	8.727	615.0 -> 570.0	102046	25.32	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.6%		
13C2-PFTeDA	9.402	715.0 -> 670.0	39874	16.56	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%		
13C3-PFBS	4.243	302.0 -> 99.0	43167	18.49	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C3-PFHxS	6.273	402.0 -> 99.0	37348	16.50	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
13C4-PFBA	1.952	217.0 -> 172.0	267680	17.03	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C4-PFHpA	6.229	367.0 -> 322.0	145668	21.31	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C5-PFHxA	5.302	318.0 -> 273.0	139314	20.57	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	3.937	268.0 -> 223.0	130456	18.52	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C6-PFDA	7.989	519.0 -> 474.0	86118	21.86	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	120954	27.11	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.5%		
13C8-FOSA	7.469	506.0 -> 78.0	121339	14.30	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%		
13C8-PFOA	6.946	421.0 -> 376.0	134219	27.34	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 136.7%		
13C8-PFOS	7.519	507.0 -> 99.0	45775	16.12	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C9-PFNA	7.524	472.0 -> 427.0	95638	25.82	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.1%		
d3-MeFOSAA	7.909	573.0 -> 419.0	38839	13.74	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.521	503.0 -> 80.0	0	0.00	ng/ml m	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

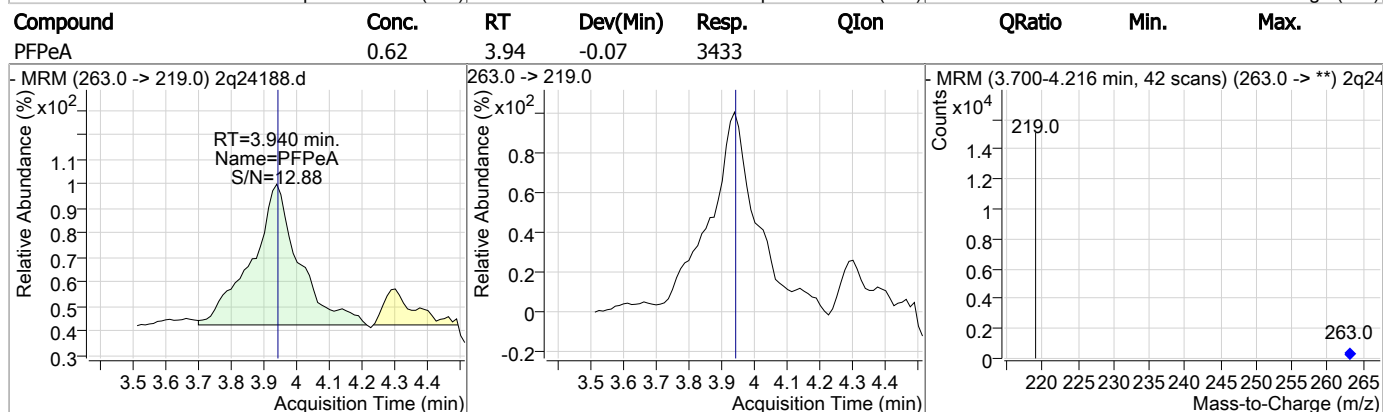
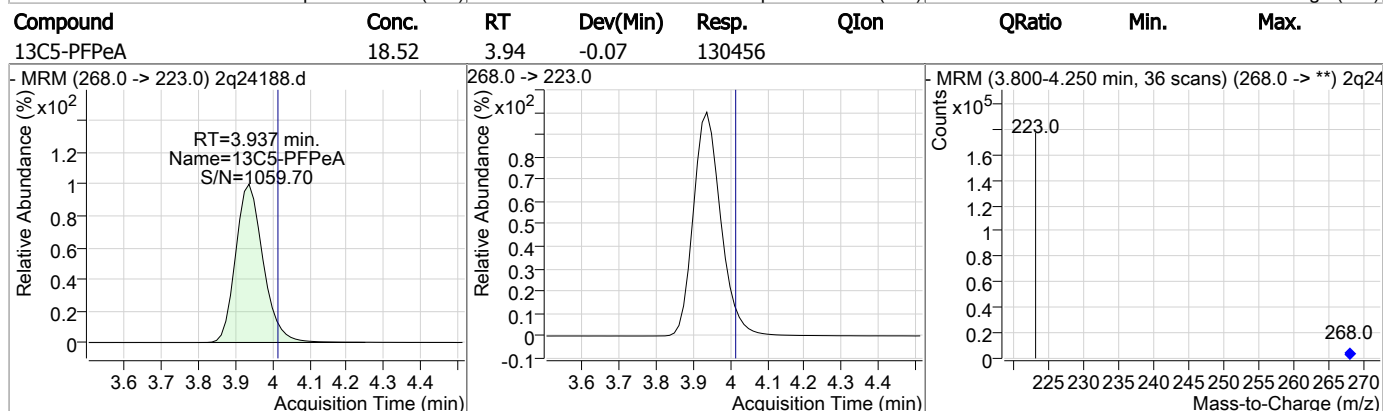
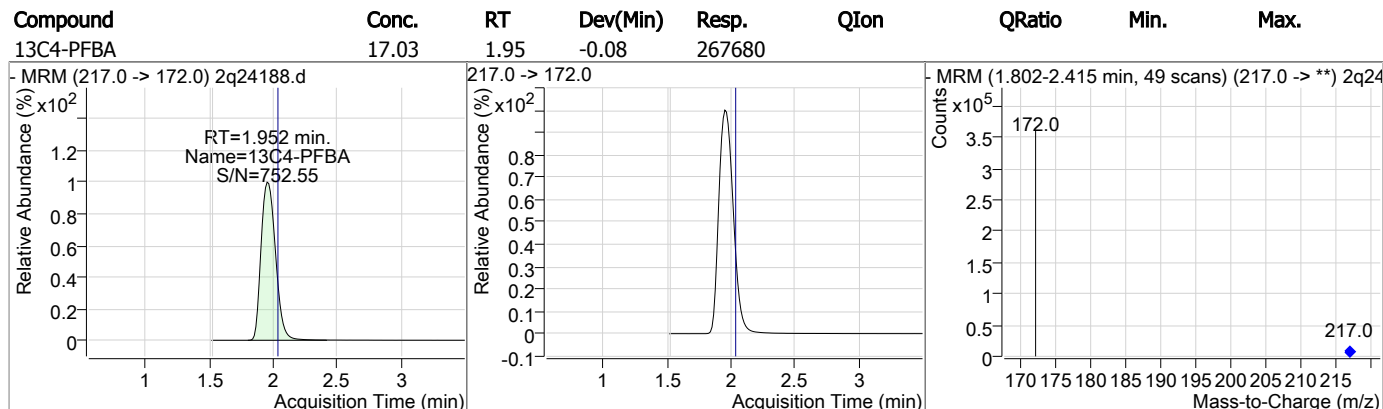
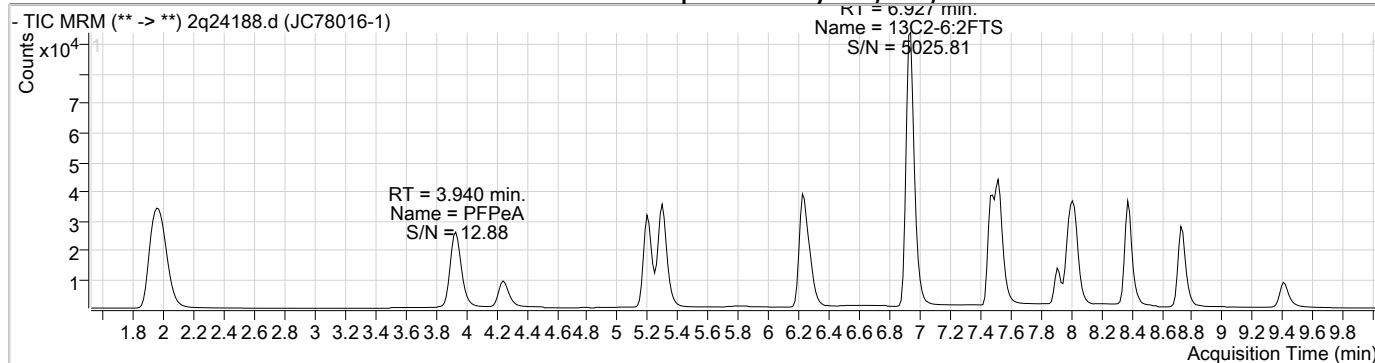
Target Compounds

						QValue
4:2FTS	5.601	327.0 -> 307.0	0	0.00	µg/L m	1
6:2FTS	6.928	427.0 -> 407.0	289	0.04	µg/L #	49
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.313	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.948	213.0 -> 169.0	991	0.39	µg/L	100
PFBS	4.246	299.0 -> 80.0	0	0.00	µg/L m	1
PFDA	8.015	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	8.667	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	1420	0.25	µg/L	96
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.305	313.0 -> 269.0	503	0.24	µg/L	91
PFHxS	6.263	399.0 -> 80.0	131	0.06	µg/L	88
PFNA	7.525	463.0 -> 419.0	237	0.09	µg/L m	88
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	2193	0.60	µg/L m	89
PFOS	7.331	499.0 -> 80.0	551	0.23	µg/L m	79
PFPeA	3.940	263.0 -> 219.0	3433	0.62	µg/L	100
PFPeS	5.408	349.0 -> 80.0	0	0.00	µg/L m	1
PFTeDA	9.406	713.0 -> 669.0	0	0.00	µg/L m	1
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

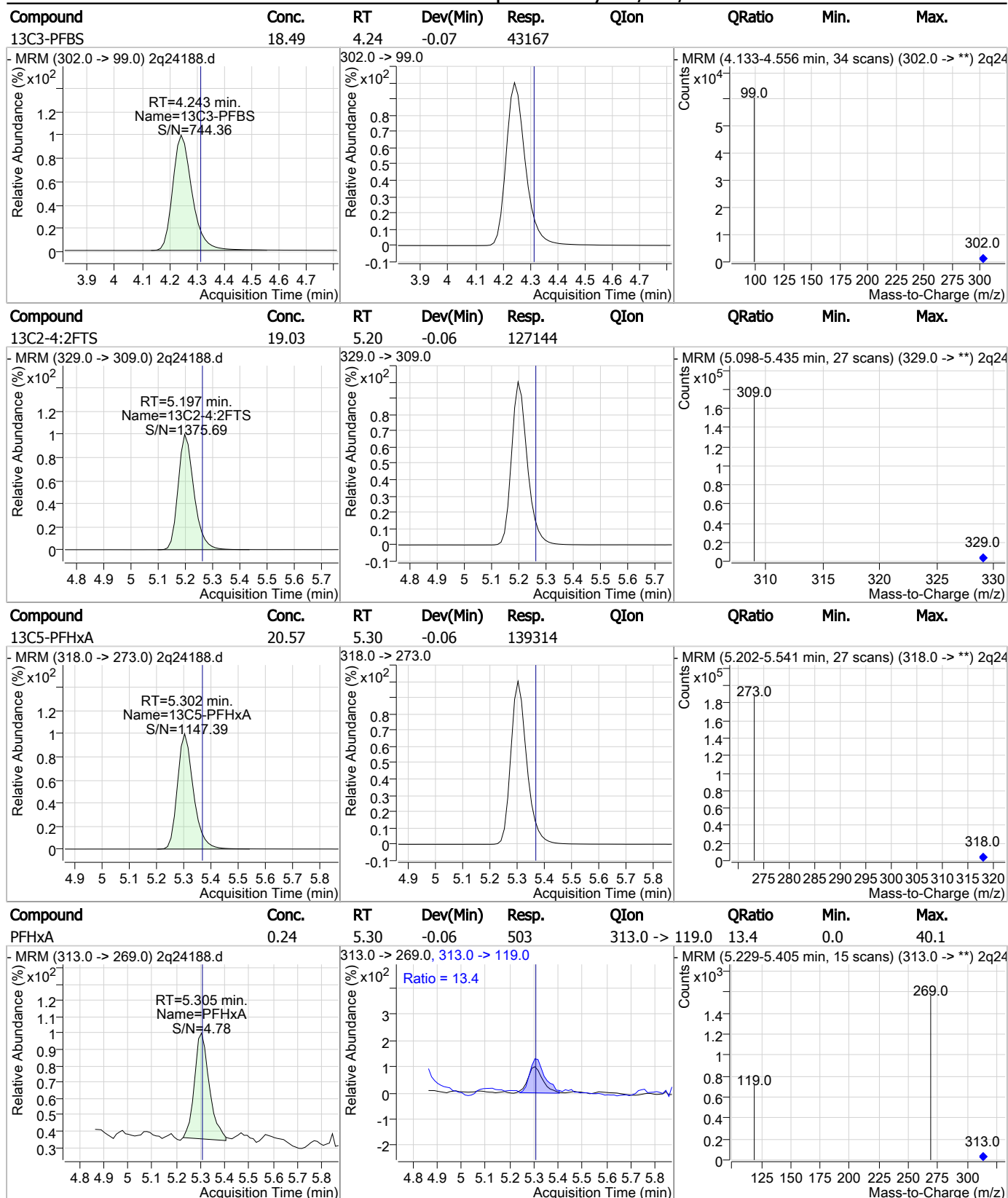
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10.1.1
10

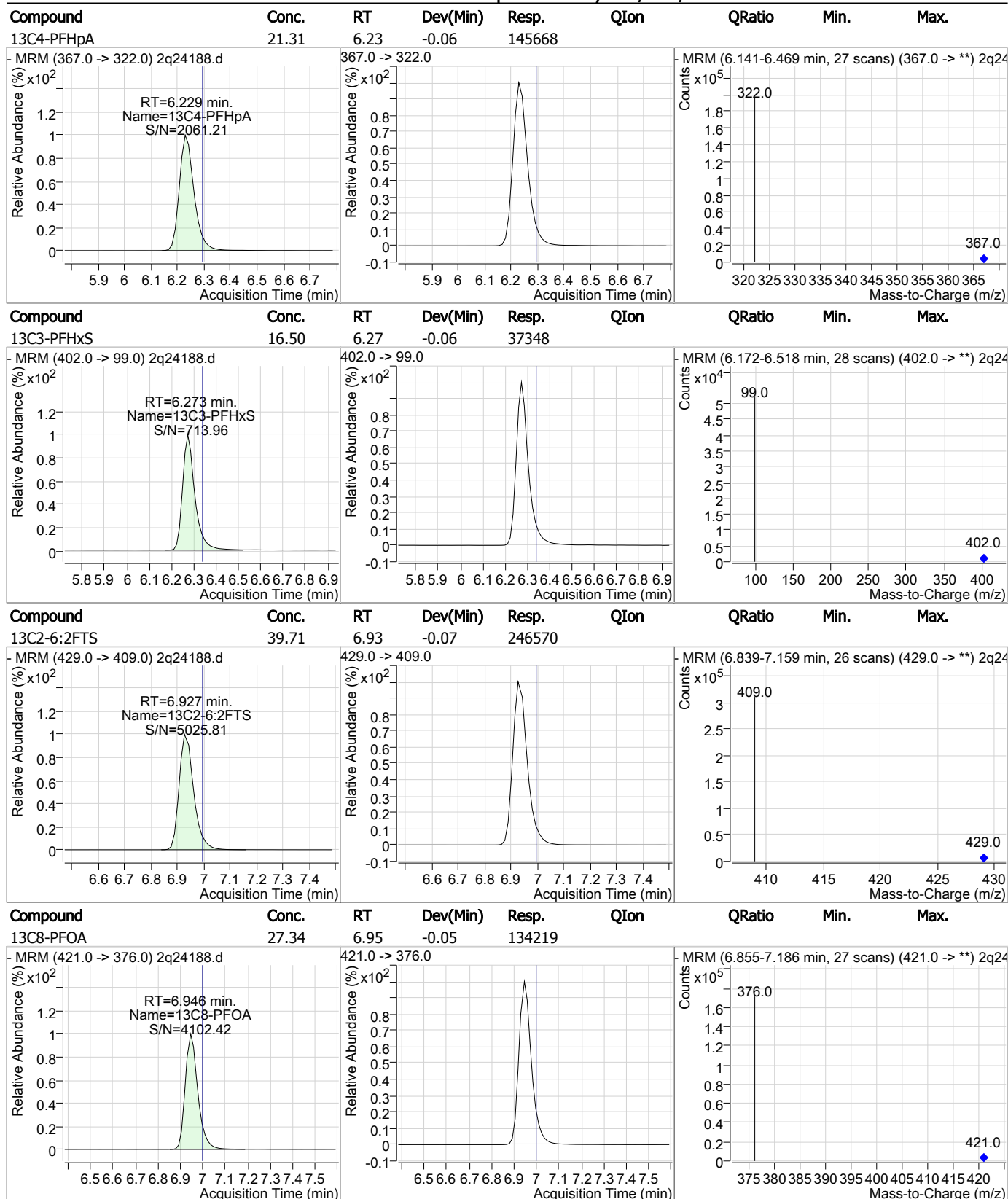
Perfluorinated Compounds by LC/MS/MS



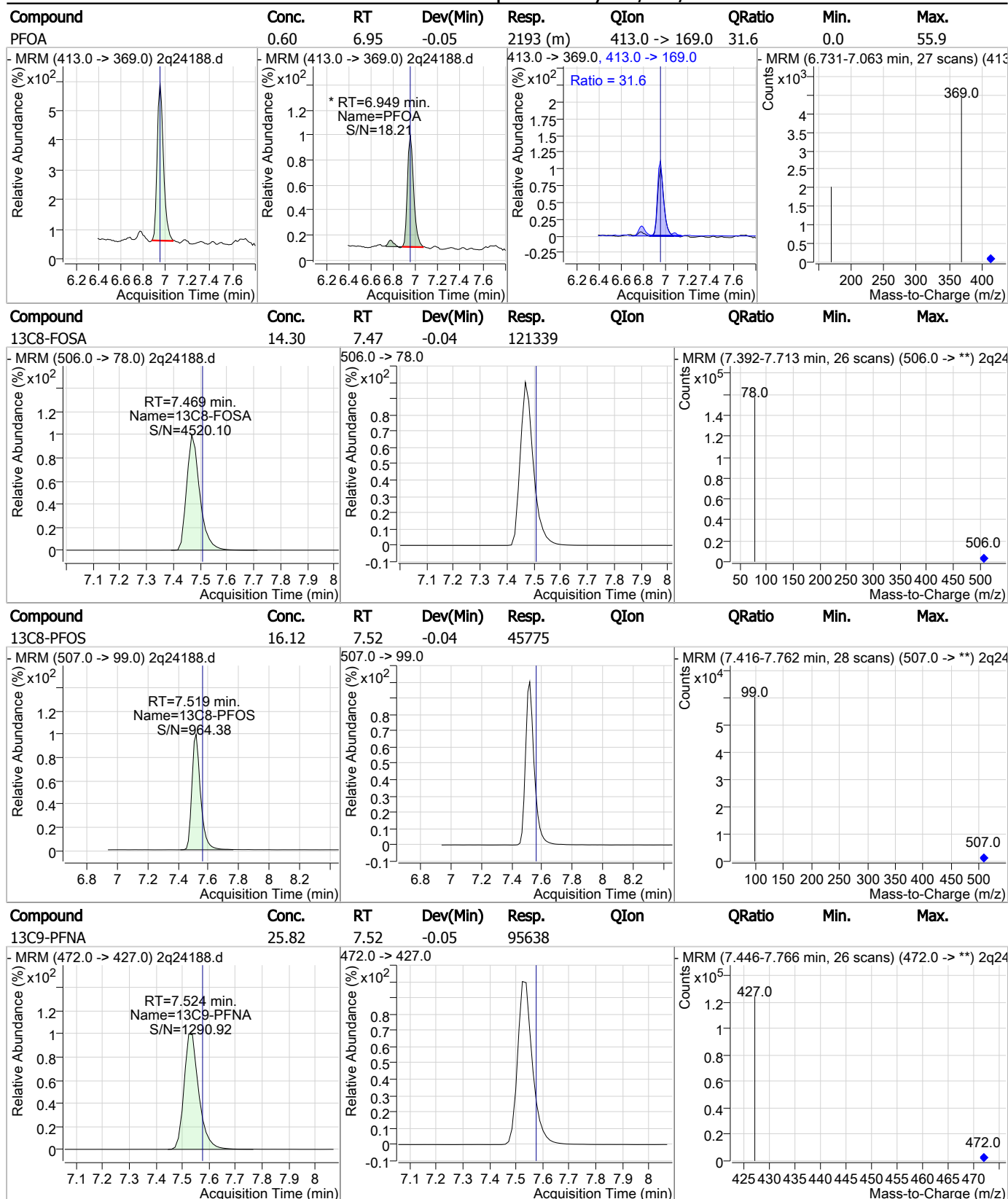
Perfluorinated Compounds by LC/MS/MS



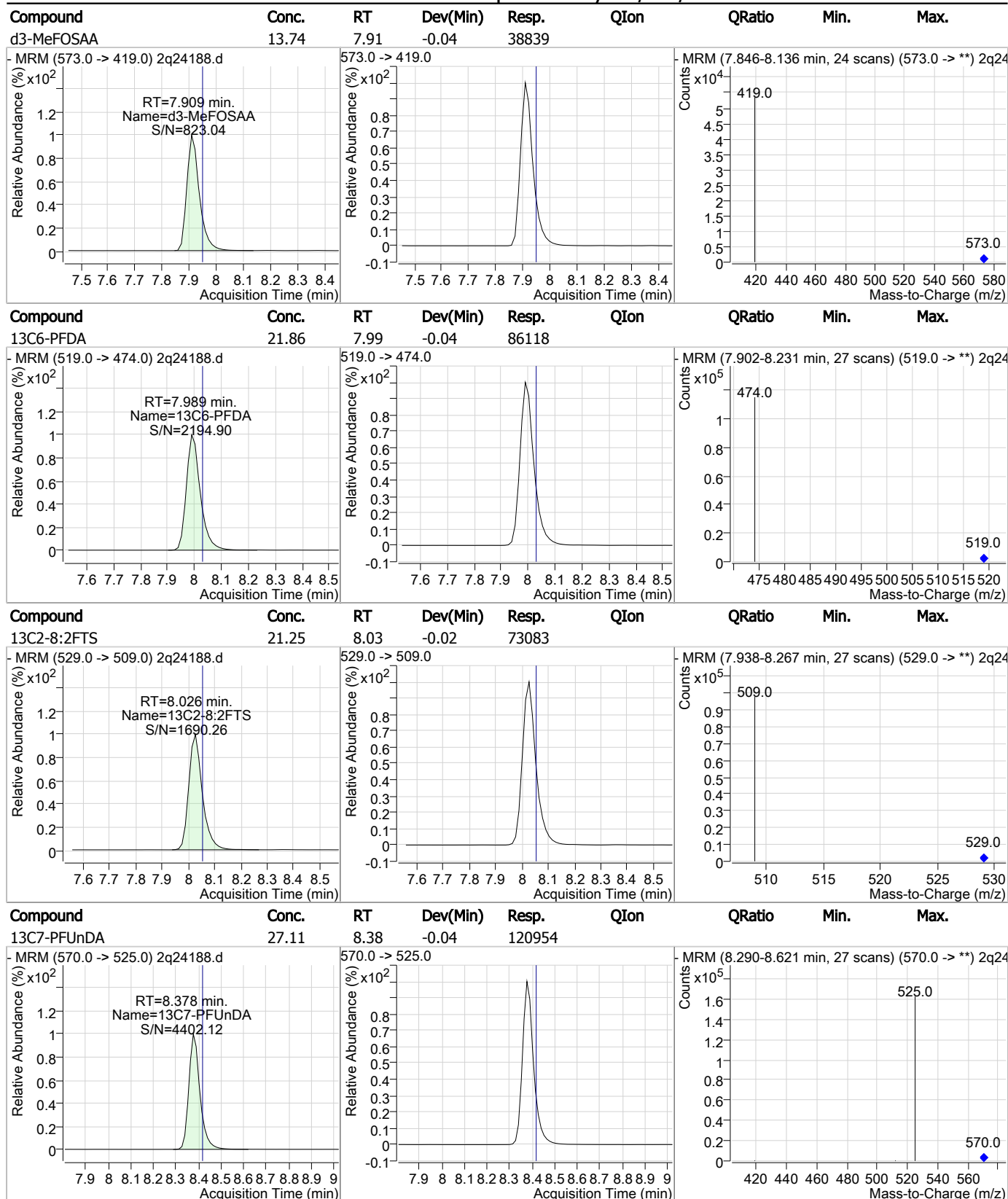
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Perfluorinated Compounds by LC/MS/MS



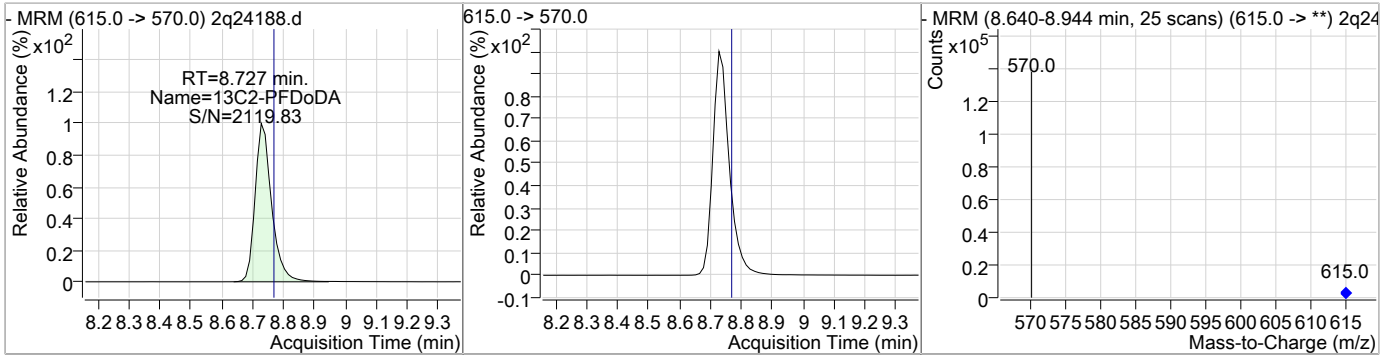
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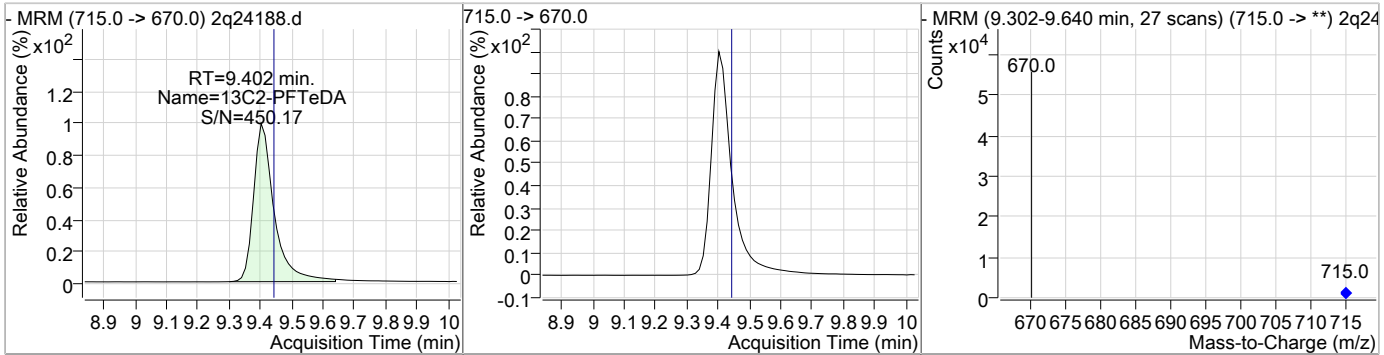
10.1.1 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	25.32	8.73	-0.04	102046				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.56	9.40	-0.04	39874				



10.1.1 10



Manual Integration Approval Summary

Sample Number: JC78016-1

Method: EPA 537M BY ID

Lab FileID: 2Q24188.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 14:02

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.33	Split peak
Perfluorononanoic acid	375-95-1		7.53	Split peak

10.1.1.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24189.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 2:17:54 PM
 Sample Name : JC78016-2
 Vial : Vial 35
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.301	415.0 -> 370.0	0	20.00	µg/L m	0.304
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.965	217.0 -> 172.0	301896	20.00	µg/L	-0.063
M5-PFPeA	3.937	268.0 -> 223.0	147026	20.00	µg/L	-0.075
M5-PFHxA	5.302	318.0 -> 273.0	150538	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	154453	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	139876	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	101197	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	99801	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	137356	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	111701	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	38330	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	179978	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	46591	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	39267	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	52790	20.00	µg/L	-0.037
M2-4:2FTS	5.197	329.0 -> 309.0	130003	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	247432	20.00	µg/L	-0.065
M2-8:2FTS	8.026	529.0 -> 509.0	80041	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	44434	20.00	µg/L	-0.037

System Monitoring Compounds

13C2-4:2FTS	5.197	329.0 -> 309.0	130463	19.52	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 97.6%			
13C2-6:2FTS	6.927	429.0 -> 409.0	247556	39.87	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 199.4%			
13C2-8:2FTS	8.026	529.0 -> 509.0	79959	23.25	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 116.2%			
13C2-PFDoDA	8.727	615.0 -> 570.0	111623	27.70	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 138.5%			
13C2-PFTeDA	9.402	715.0 -> 670.0	38225	15.88	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 79.4%			
13C3-PFBS	4.243	302.0 -> 99.0	46518	19.92	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.6%			
13C3-PFHxS	6.273	402.0 -> 99.0	39275	17.36	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 86.8%			
13C4-PFBA	1.965	217.0 -> 172.0	301846	19.20	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 96.0%			
13C4-PFHpA	6.229	367.0 -> 322.0	154446	22.59	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 113.0%			
13C5-PFHxA	5.302	318.0 -> 273.0	150498	22.22	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 111.1%			
13C5-PFPeA	3.937	268.0 -> 223.0	146921	20.86	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.3%			
13C6-PFDA	7.989	519.0 -> 474.0	99750	25.32	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 126.6%			

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	137307	30.77	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 153.9%		
13C8-FOSA	7.469	506.0 -> 78.0	180070	21.23	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C8-PFOA	6.946	421.0 -> 376.0	140013	28.52	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 142.6%		
13C8-PFOS	7.519	507.0 -> 99.0	52797	18.60	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C9-PFNA	7.524	472.0 -> 427.0	101377	27.37	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 136.9%		
d3-MeFOSAA	7.909	573.0 -> 419.0	44459	15.73	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
M2-PFOA	7.301	415.0 -> 370.0	0	0.00	ng/ml m	0.304
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.508	503.0 -> 80.0	0	0.00	ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

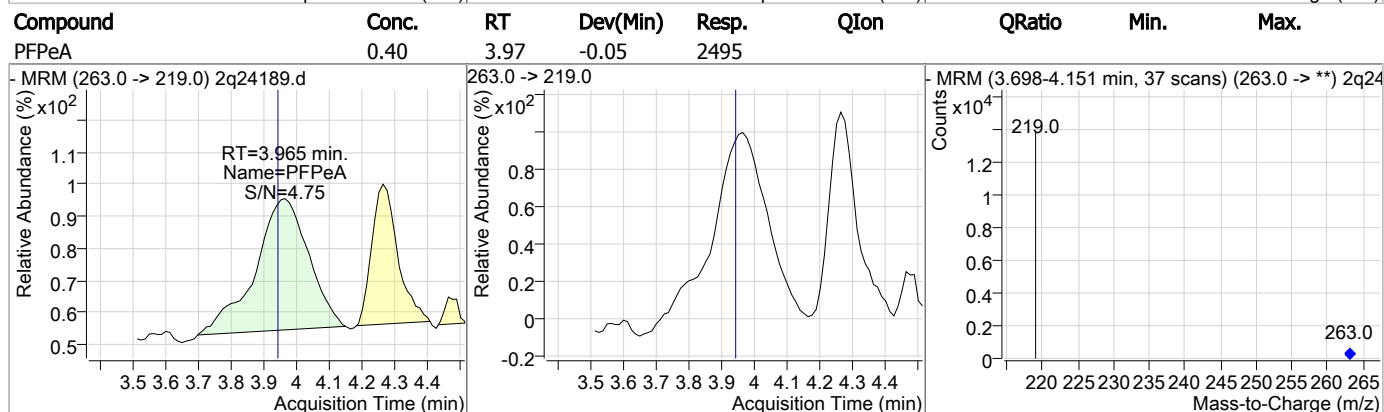
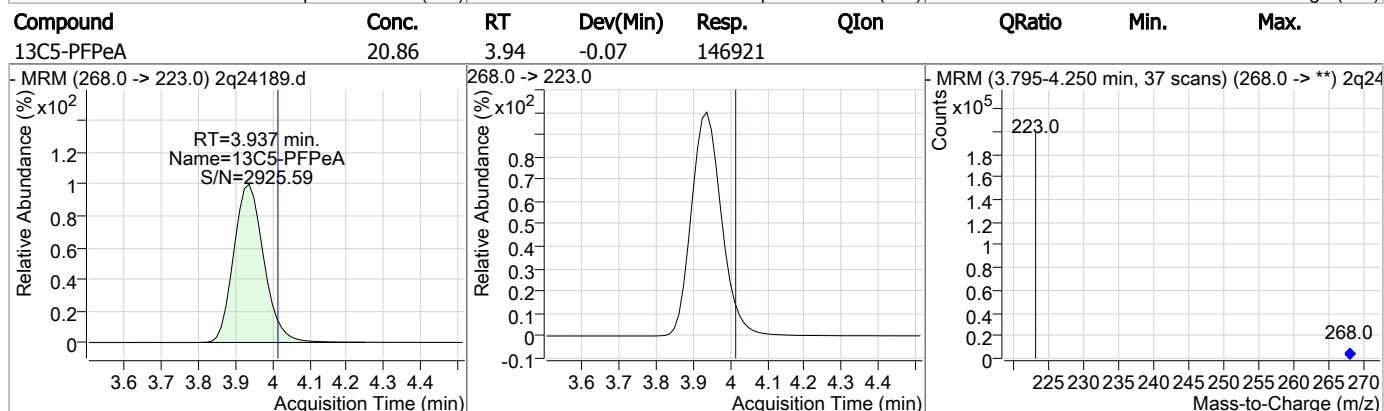
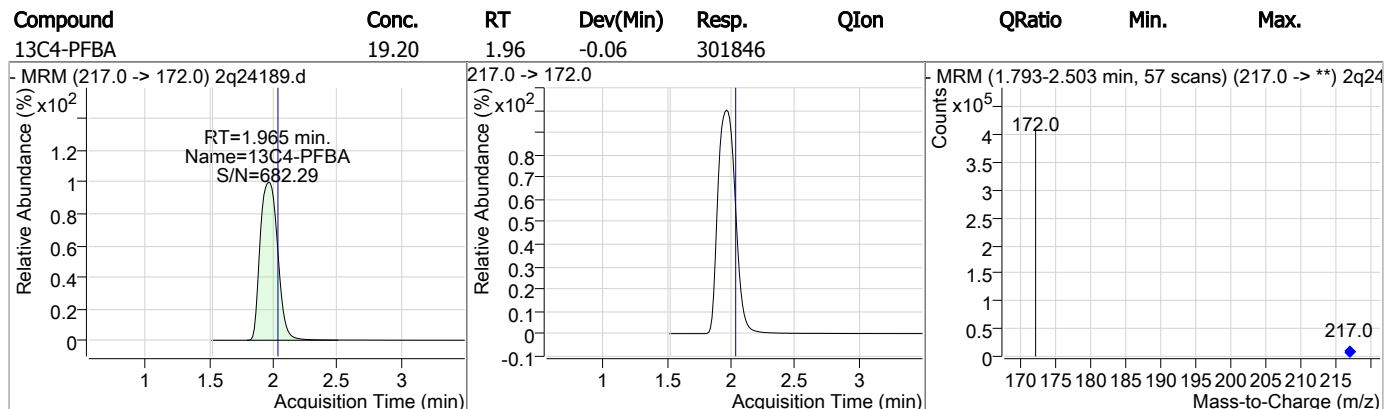
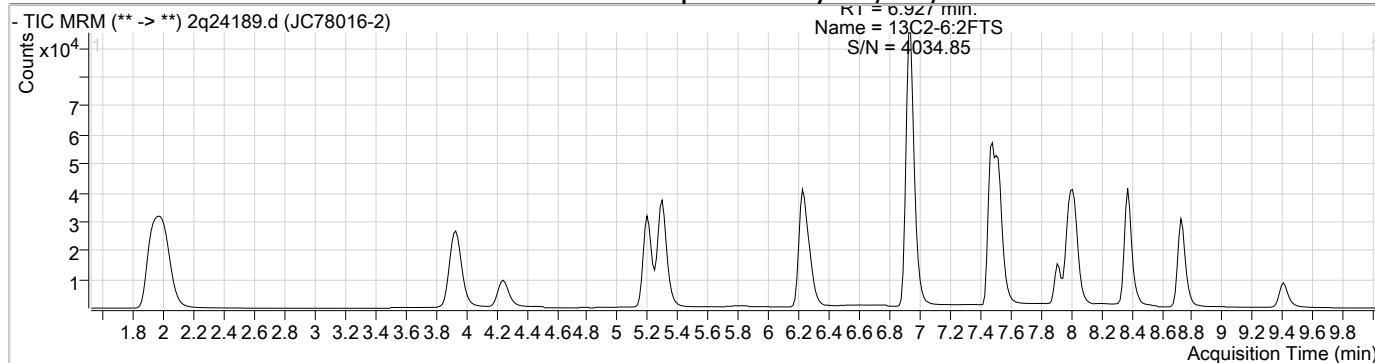
Target Compounds

						QValue
4:2FTS	5.601	327.0 -> 307.0	0	0.00	µg/L m	1
6:2FTS	6.928	427.0 -> 407.0	257	0.04	µg/L #	43
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.123	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.986	213.0 -> 169.0	1016	0.36	µg/L	100
PFBS	4.234	299.0 -> 80.0	284	0.08	µg/L	98
PFDA	7.851	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	8.729	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	817	0.14	µg/L	94
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.305	313.0 -> 269.0	300	0.13	µg/L	88
PFHxS	6.263	399.0 -> 80.0	109	0.04	µg/L	74
PFNA	7.525	463.0 -> 419.0	157	0.05	µg/L	82
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	1922	0.50	µg/L m	92
PFOS	7.509	499.0 -> 80.0	1265	0.46	µg/L m	68
PFPeA	3.965	263.0 -> 219.0	2495	0.40	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.394	713.0 -> 669.0	0	0.00	µg/L m	1
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

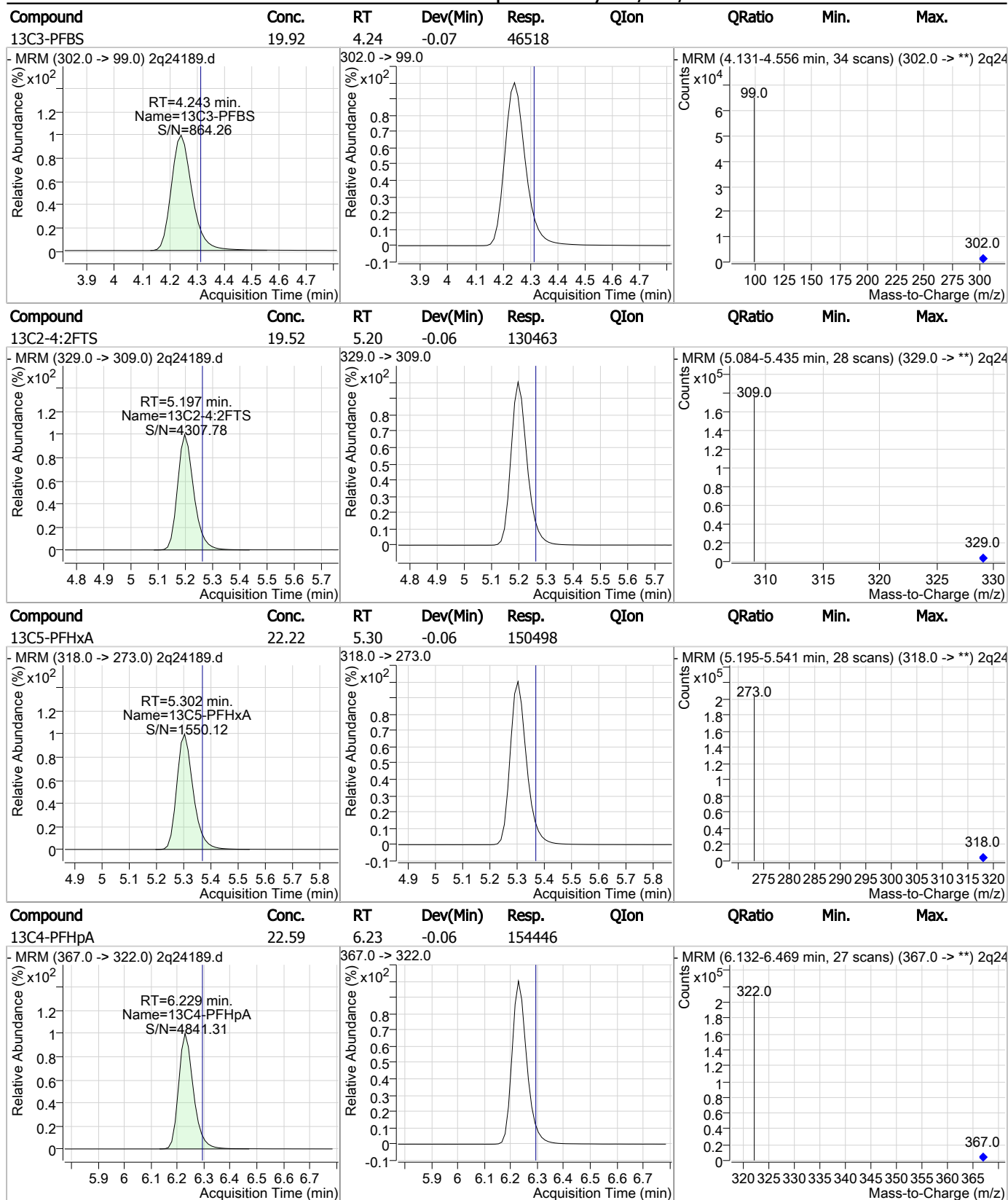
= Qualifier out of range, m = manually integrated, + = Area summed

10.1.2 10

Perfluorinated Compounds by LC/MS/MS

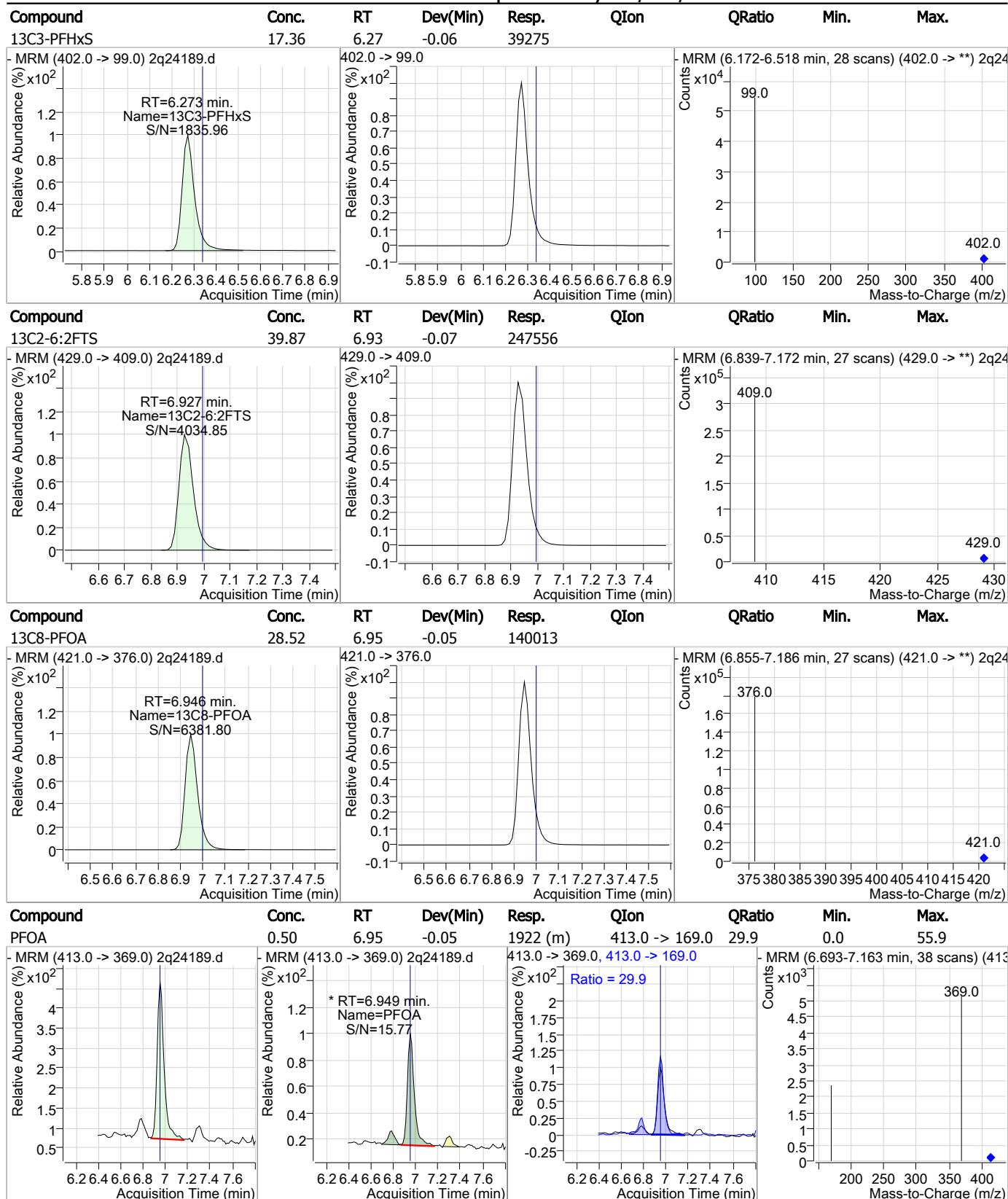


Perfluorinated Compounds by LC/MS/MS



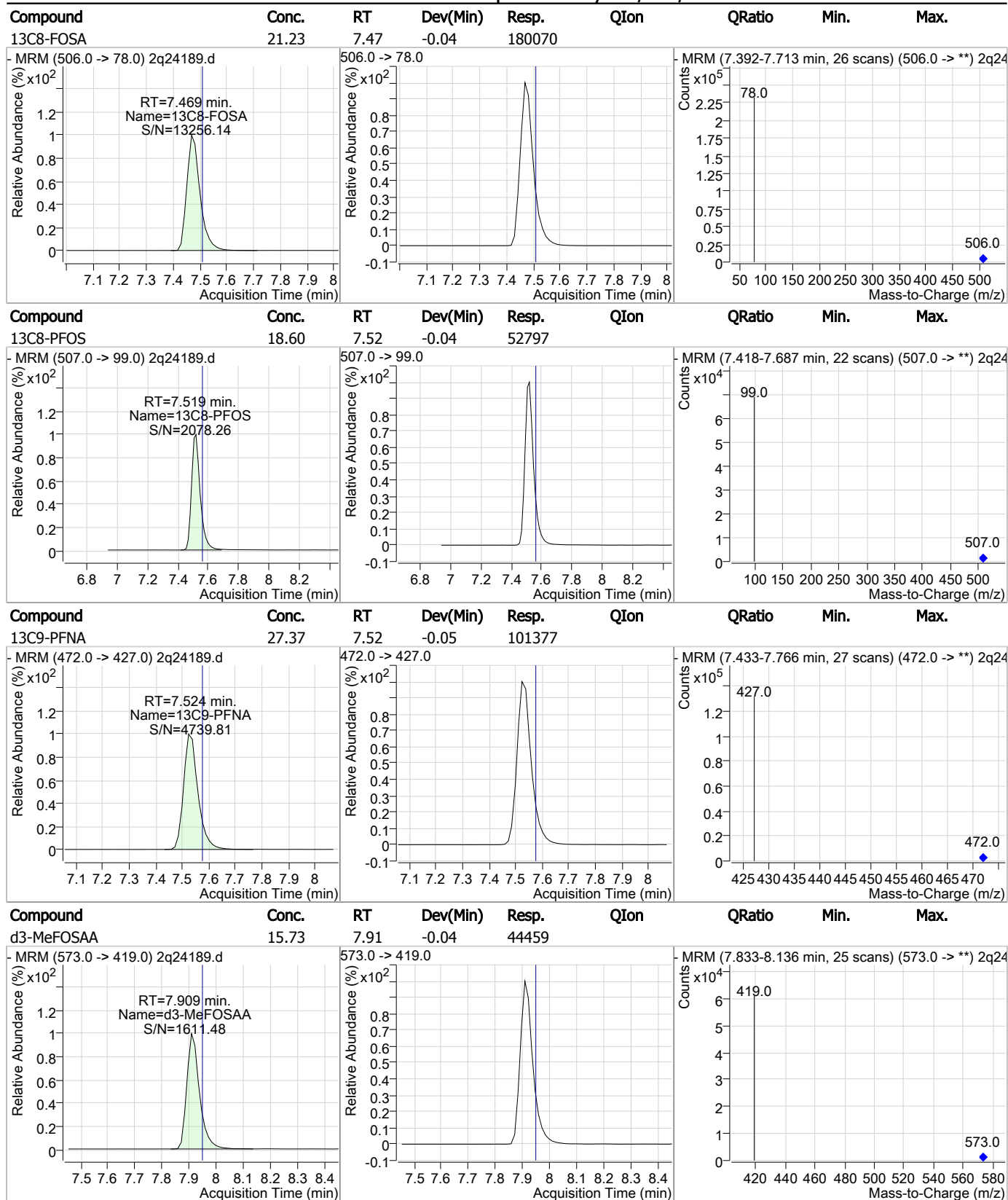
10.1.2 10

Perfluorinated Compounds by LC/MS/MS

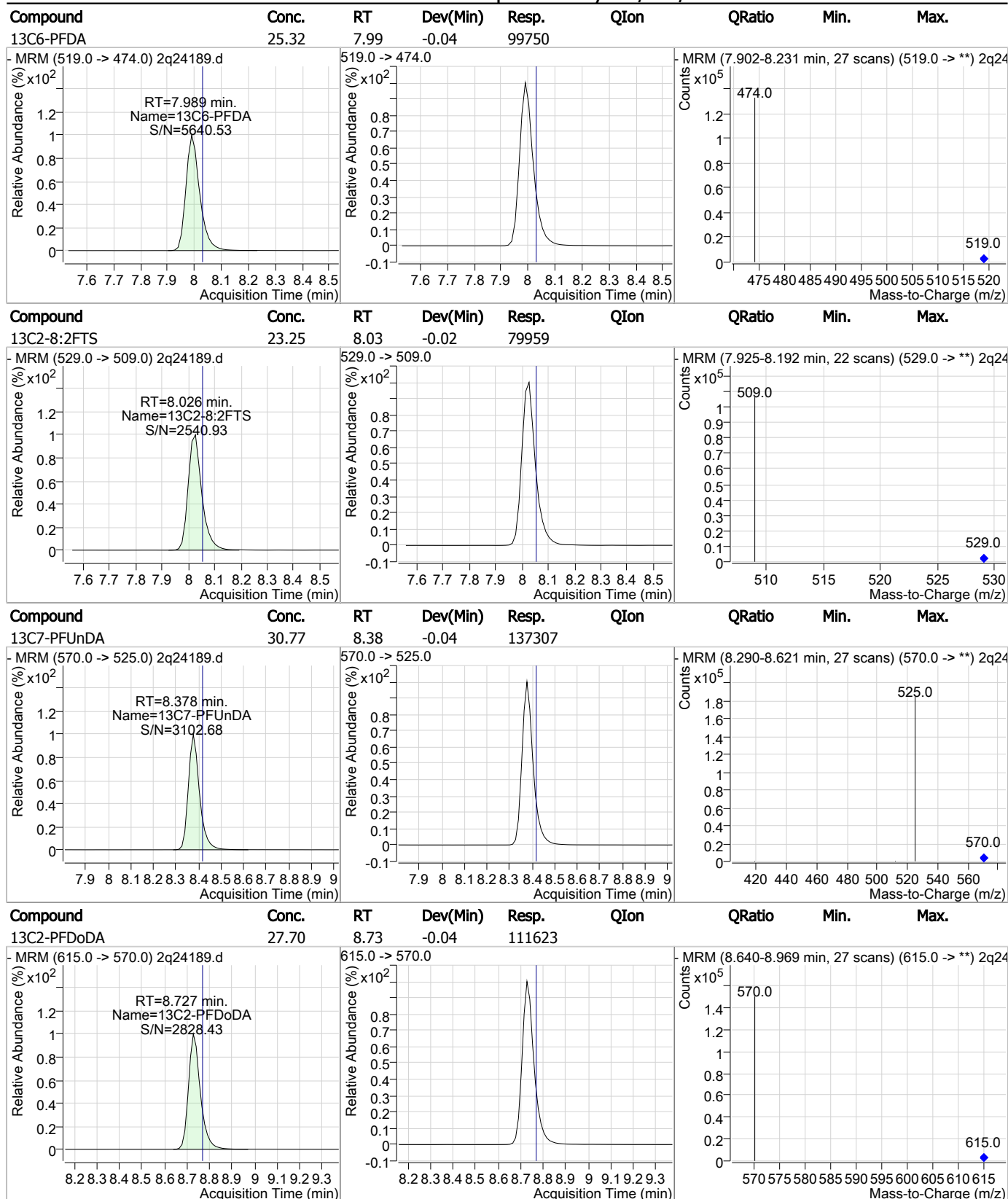


10.1.2 10

Perfluorinated Compounds by LC/MS/MS



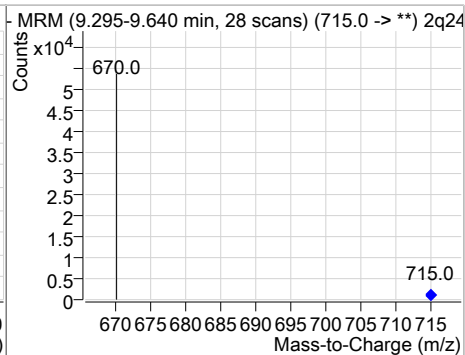
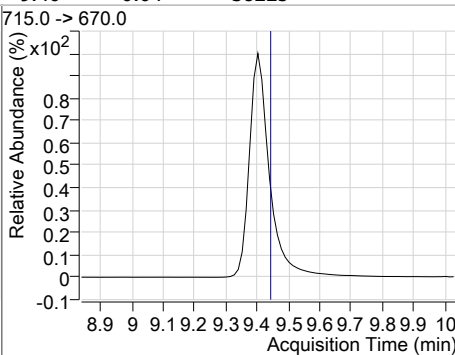
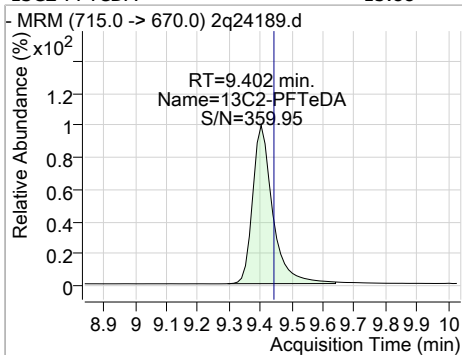
Perfluorinated Compounds by LC/MS/MS



10.1.2 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.88	9.40	-0.04	38225				



10.1.2
10

Manual Integration Approval Summary

Sample Number: JC78016-2

Method: EPA 537M BY ID

Lab FileID: 2Q24189.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 14:17

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24177.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 11:09:42 AM
 Sample Name : JC78016-3
 Vial : Vial 36
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.960	415.0 -> 370.0	0	20.00	µg/L m	-0.036
13C4-PFOS	7.521	503.0 -> 80.0	0	20.00	µg/L m	-0.037
M4-PFBA	1.940	217.0 -> 172.0	310748	20.00	µg/L	-0.088
M5-PFPeA	3.937	268.0 -> 223.0	142102	20.00	µg/L	-0.075
M5-PFHxA	5.302	318.0 -> 273.0	138004	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	139391	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	111060	20.00	µg/L	-0.049
M9-PFNA	7.538	472.0 -> 427.0	80176	20.00	µg/L	-0.035
M6-PFDA	7.989	519.0 -> 474.0	90310	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	94423	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	80767	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	45719	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	184872	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	47045	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	44759	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	57871	20.00	µg/L	-0.037
M2-4:2FTS	5.197	329.0 -> 309.0	127548	20.00	µg/L	-0.062
M2-6:2FTS	6.943	429.0 -> 409.0	134573	20.00	µg/L	-0.049
M2-8:2FTS	8.026	529.0 -> 509.0	73255	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	49063	20.00	µg/L	-0.037

System Monitoring Compounds

13C2-4:2FTS	5.197	329.0 -> 309.0	127703	19.11	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 95.6%			
13C2-6:2FTS	6.943	429.0 -> 409.0	134587	21.68	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 108.4%			
13C2-8:2FTS	8.026	529.0 -> 509.0	73274	21.31	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.5%			
13C2-PFDoDA	8.727	615.0 -> 570.0	80763	20.04	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.2%			
13C2-PFTeDA	9.402	715.0 -> 670.0	45959	19.09	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 95.5%			
13C3-PFBS	4.243	302.0 -> 99.0	47011	20.13	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.7%			
13C3-PFHxS	6.273	402.0 -> 99.0	44751	19.78	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.9%			
13C4-PFBA	1.940	217.0 -> 172.0	310570	19.75	µg/L	-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.8%			
13C4-PFHpA	6.229	367.0 -> 322.0	139347	20.38	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.9%			
13C5-PFHxA	5.302	318.0 -> 273.0	138166	20.40	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.0%			
13C5-PFPeA	3.937	268.0 -> 223.0	141955	20.16	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.8%			
13C6-PFDA	7.989	519.0 -> 474.0	90332	22.93	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 114.6%			

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	94443	21.17	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-FOSA	7.469	506.0 -> 78.0	184880	21.79	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C8-PFOA	6.946	421.0 -> 376.0	111078	22.63	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
13C8-PFOS	7.519	507.0 -> 99.0	57960	20.42	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C9-PFNA	7.538	472.0 -> 427.0	80154	21.64	µg/L	-0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
d3-MeFOSAA	7.909	573.0 -> 419.0	49103	17.37	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
M2-PFOA	6.960	415.0 -> 370.0	0	0.00	ng/ml m	-0.036
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%		

Target Compounds

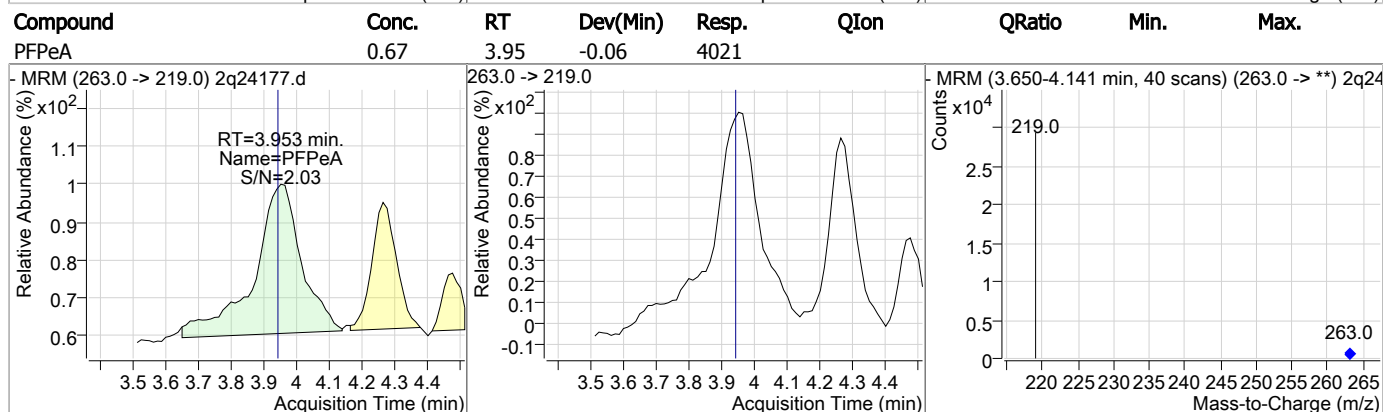
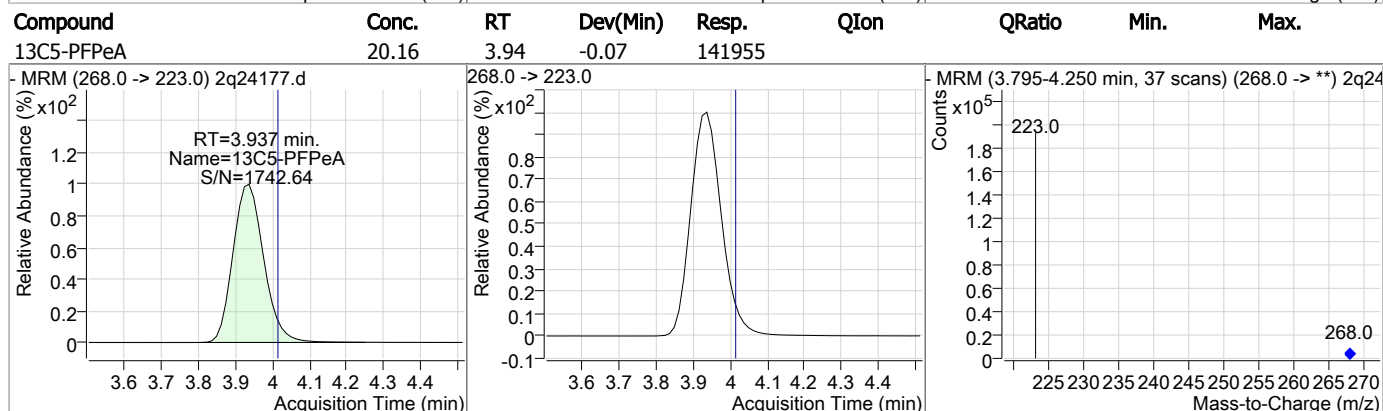
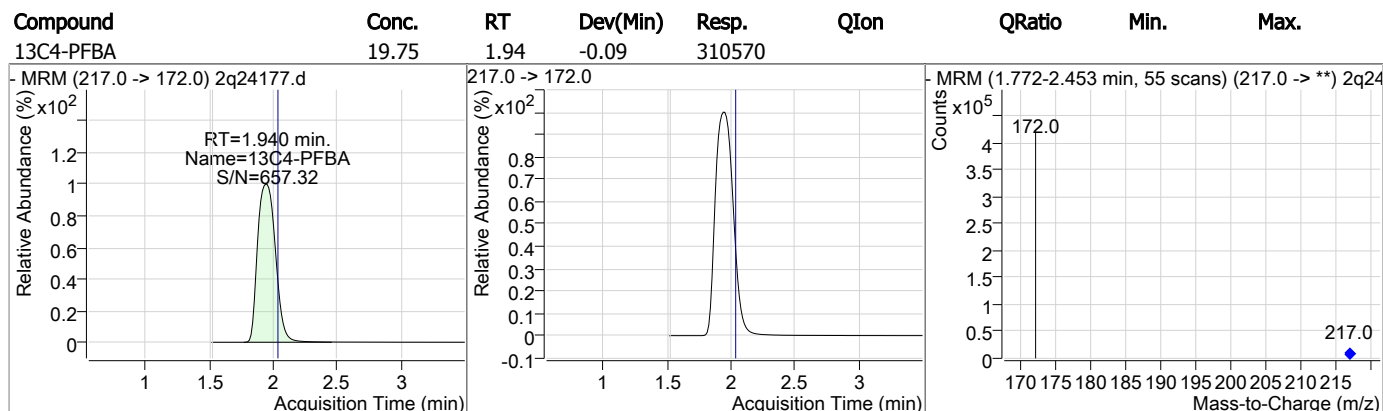
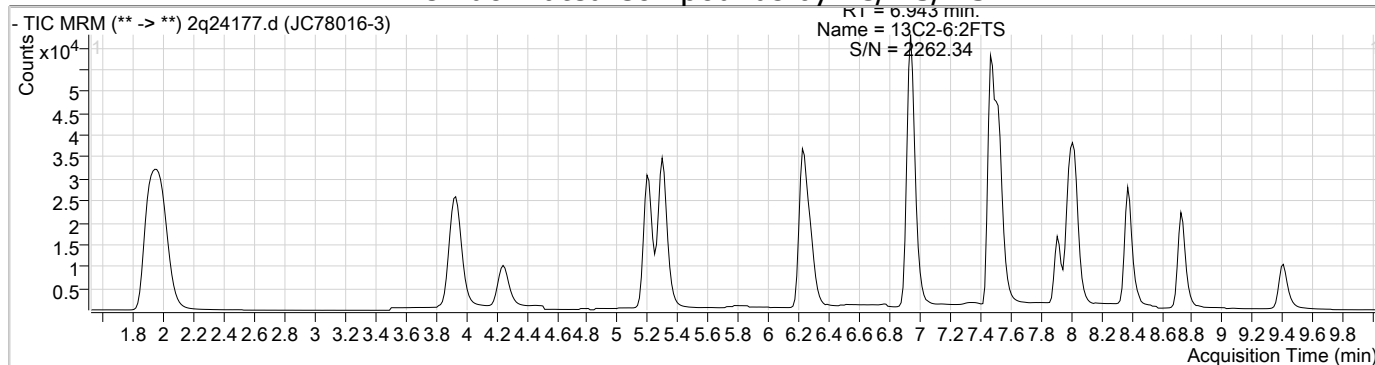
						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.009	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.948	213.0 -> 169.0	957	0.33	µg/L	100
PFBS	4.234	299.0 -> 80.0	152	0.04	µg/L #	5
PFDA	8.093	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	8.667	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	909	0.17	µg/L m	97
PFHpS	6.954	449.0 -> 80.0	137	0.06	µg/L	81
PFHxA	5.305	313.0 -> 269.0	629	0.30	µg/L m	87
PFHxS	6.276	399.0 -> 80.0	794	0.28	µg/L m	90
PFNA	7.525	463.0 -> 419.0	0	0.00	µg/L m	1
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	6716	2.21	µg/L m	95
PFOS	7.522	499.0 -> 80.0	5230	1.72	µg/L m	76
PFPeA	3.953	263.0 -> 219.0	4021	0.67	µg/L	100
PFPeS	5.433	349.0 -> 80.0	222	0.11	µg/L	85
PFTeDA	9.406	713.0 -> 669.0	154	0.10	µg/L	92
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

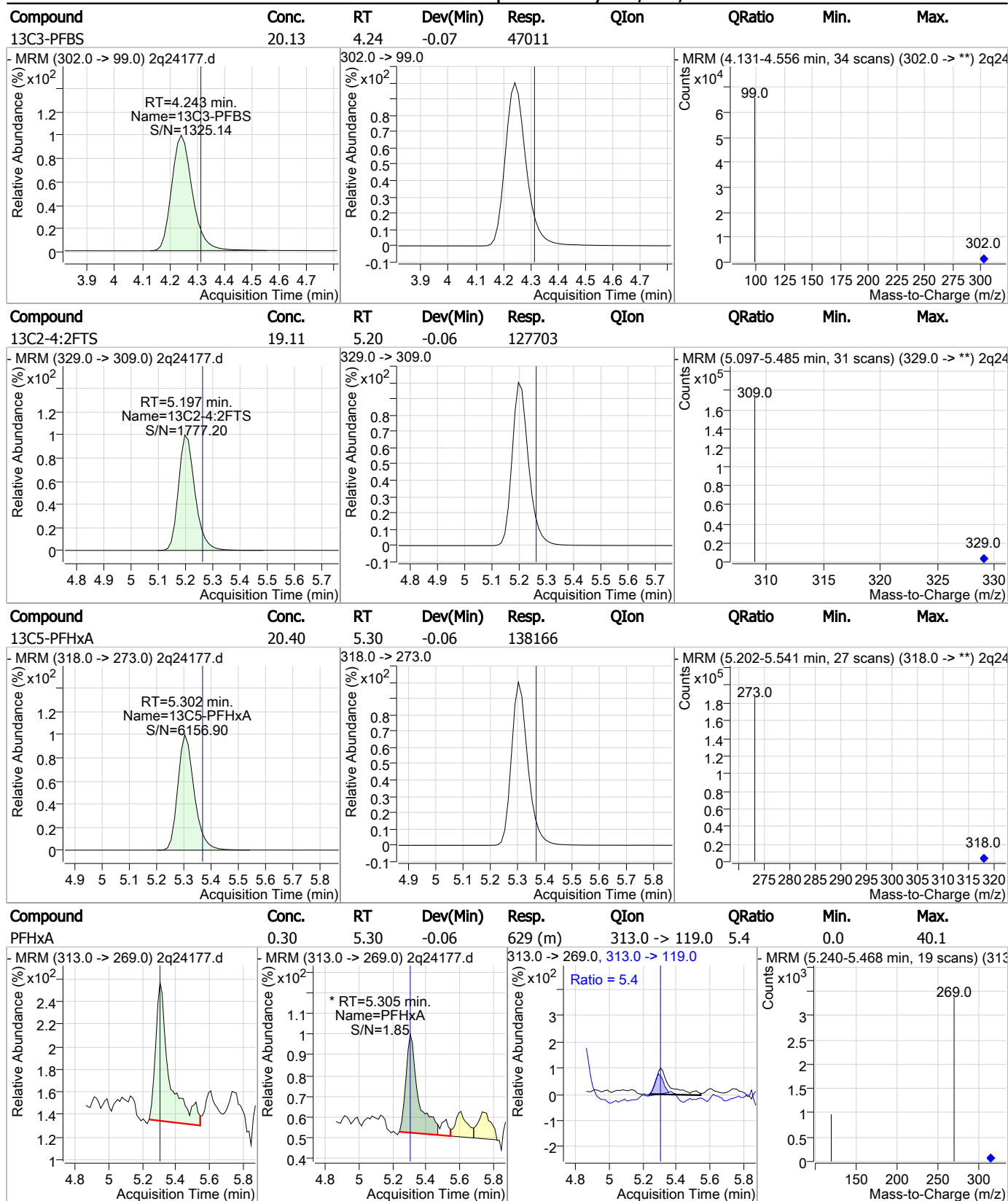
10.1.3
10



Perfluorinated Compounds by LC/MS/MS

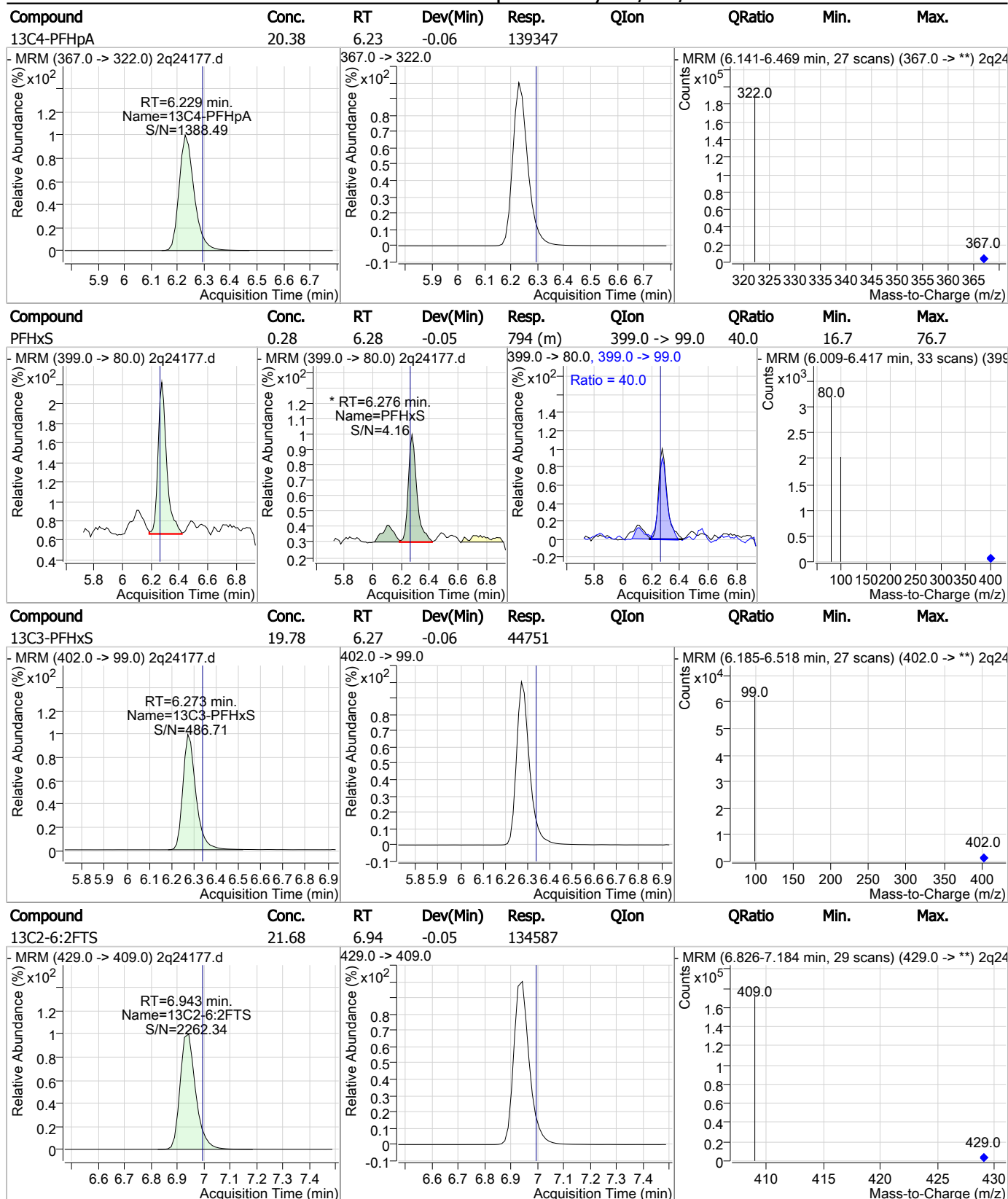


Perfluorinated Compounds by LC/MS/MS



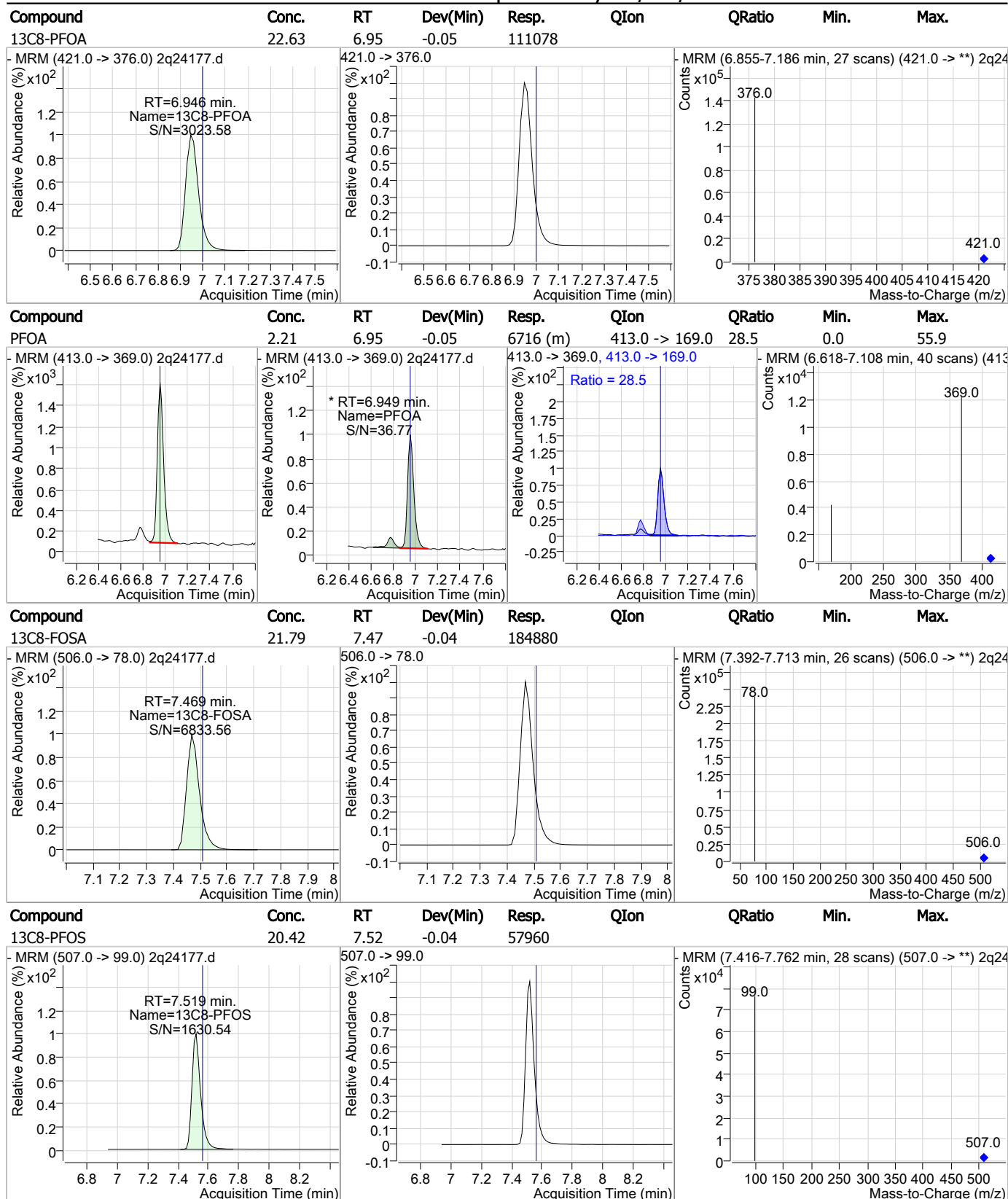
10.1.3 10

Perfluorinated Compounds by LC/MS/MS



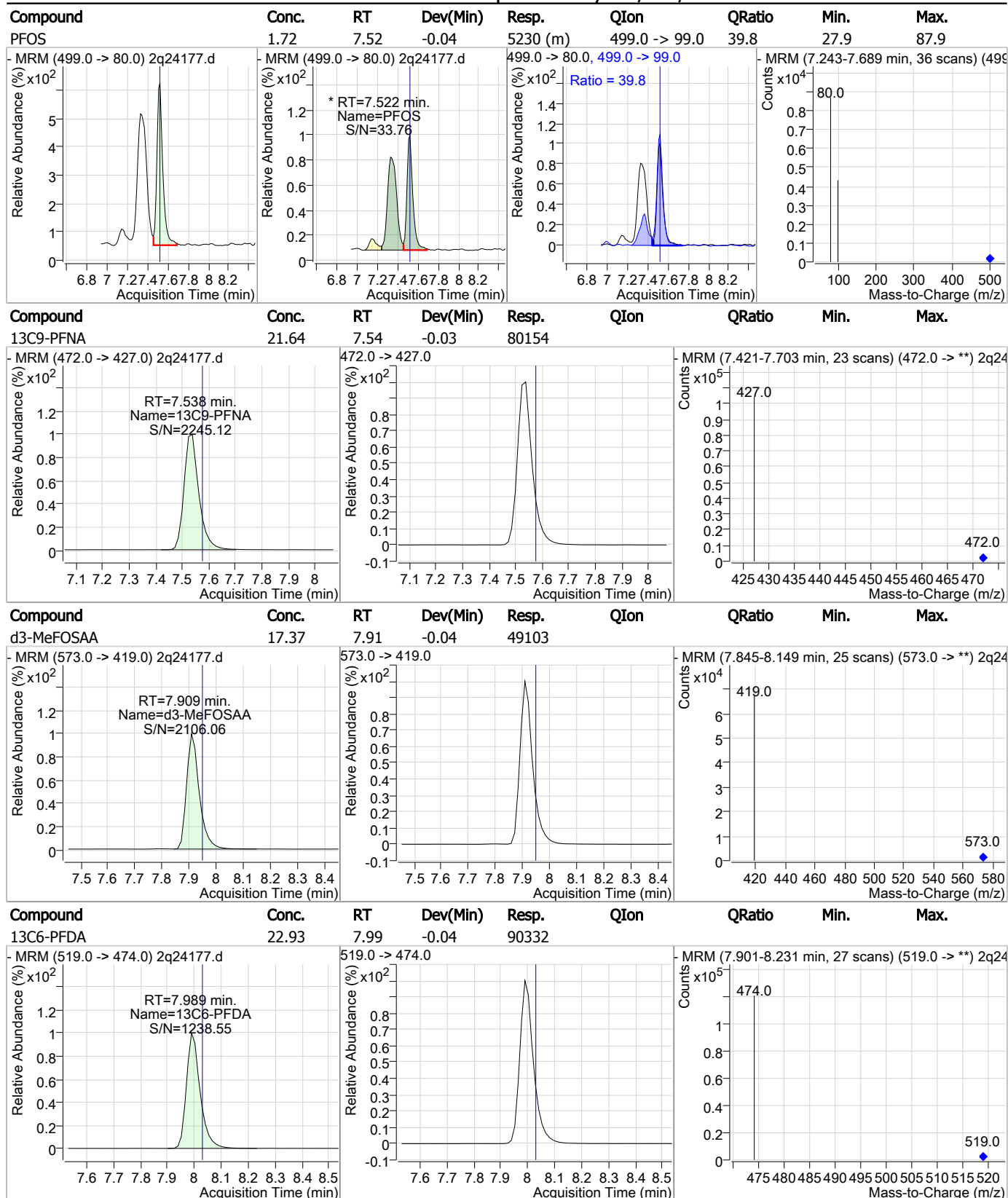
10.1.3 10

Perfluorinated Compounds by LC/MS/MS



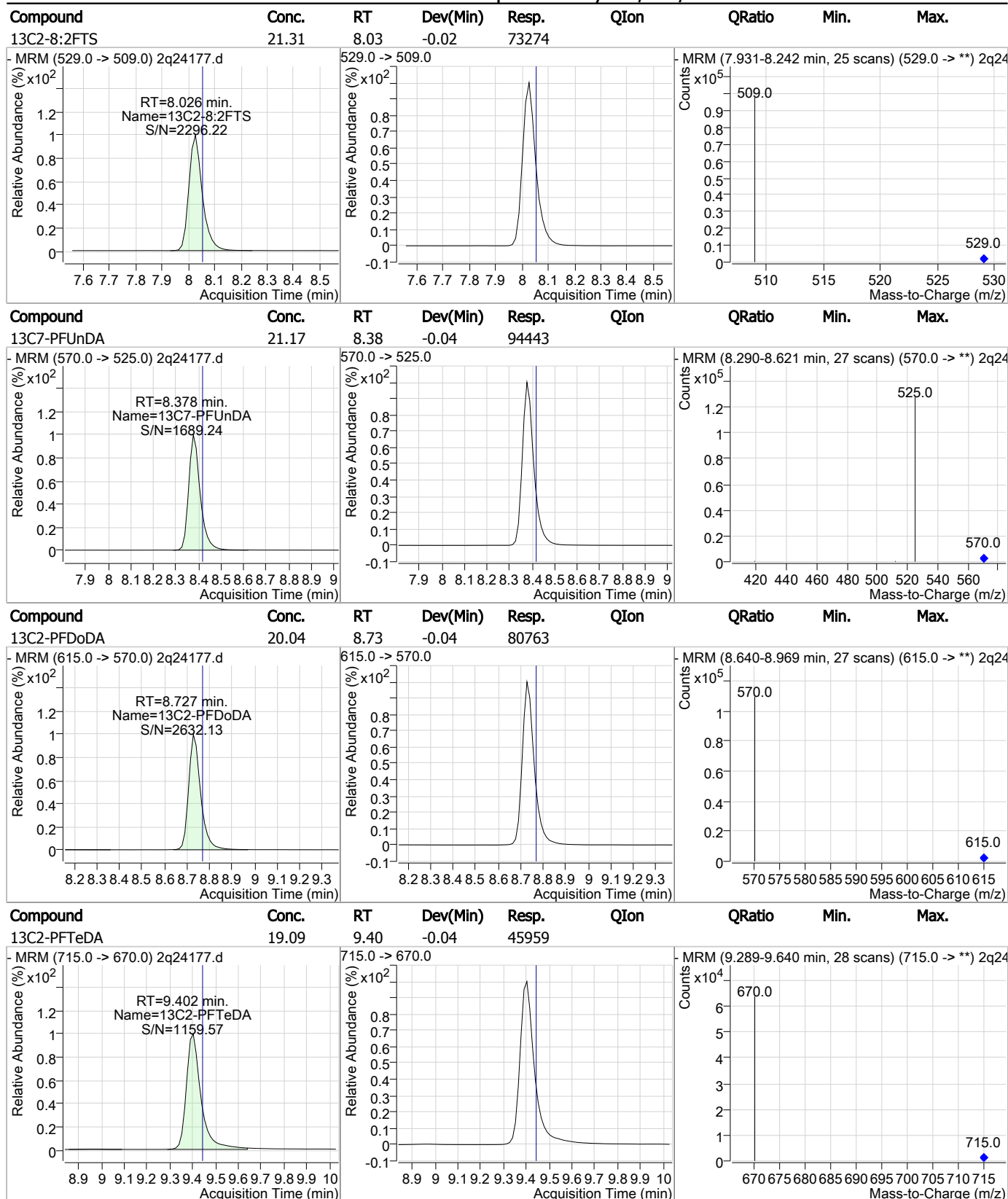
10.1.3 10

Perfluorinated Compounds by LC/MS/MS



10.1.3 10

Perfluorinated Compounds by LC/MS/MS



10.1.3 10

Manual Integration Approval Summary

Sample Number: JC78016-3

Method: EPA 537M BY ID

Lab FileID: 2Q24177.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 11:09

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.30	Poor instrument integration
Perfluoroheptanoic acid	375-85-9		6.23	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		6.28	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.52	Split peak

10.1.3.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24178.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 11:24:47 AM
 Sample Name : JC78016-4
 Vial : Vial 37
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.947	415.0 -> 370.0	0	20.00	µg/L m	-0.049
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.952	217.0 -> 172.0	295994	20.00	µg/L	-0.075
M5-PFPeA	3.924	268.0 -> 223.0	141850	20.00	µg/L	-0.087
M5-PFHxA	5.302	318.0 -> 273.0	134231	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	133500	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	106410	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	78643	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	88606	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	90937	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	84994	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	41646	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	171701	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	46815	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	42826	20.00	µg/L	-0.062
M8-PFOS	7.507	507.0 -> 99.0	51877	20.00	µg/L	-0.049
M2-4:2FTS	5.197	329.0 -> 309.0	125668	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	126908	20.00	µg/L	-0.065
M2-8:2FTS	8.013	529.0 -> 509.0	68471	20.00	µg/L	-0.037
M3-MeFOSAA	7.909	573.0 -> 419.0	49188	20.00	µg/L	-0.037

System Monitoring Compounds

13C2-4:2FTS	5.197	329.0 -> 309.0	125626	18.80	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.0%			
13C2-6:2FTS	6.927	429.0 -> 409.0	126914	20.44	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.2%			
13C2-8:2FTS	8.013	529.0 -> 509.0	68521	19.92	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.6%			
13C2-PFDoDA	8.727	615.0 -> 570.0	85159	21.13	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.7%			
13C2-PFTeDA	9.402	715.0 -> 670.0	41485	17.23	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 86.2%			
13C3-PFBS	4.243	302.0 -> 99.0	46803	20.04	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.2%			
13C3-PFHxS	6.273	402.0 -> 99.0	42787	18.91	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.5%			
13C4-PFBA	1.952	217.0 -> 172.0	295825	18.82	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.1%			
13C4-PFHpA	6.229	367.0 -> 322.0	133447	19.52	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 97.6%			
13C5-PFHxA	5.302	318.0 -> 273.0	134317	19.84	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.2%			
13C5-PFPeA	3.924	268.0 -> 223.0	141553	20.10	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.5%			
13C6-PFDA	7.989	519.0 -> 474.0	88694	22.51	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 112.6%			

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	90997	20.39	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C8-FOSA	7.469	506.0 -> 78.0	171710	20.24	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-PFOA	6.946	421.0 -> 376.0	106543	21.70	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C8-PFOS	7.507	507.0 -> 99.0	51904	18.28	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C9-PFNA	7.524	472.0 -> 427.0	78592	21.22	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
d3-MeFOSAA	7.909	573.0 -> 419.0	49183	17.40	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.508	503.0 -> 80.0	0	0.00	ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

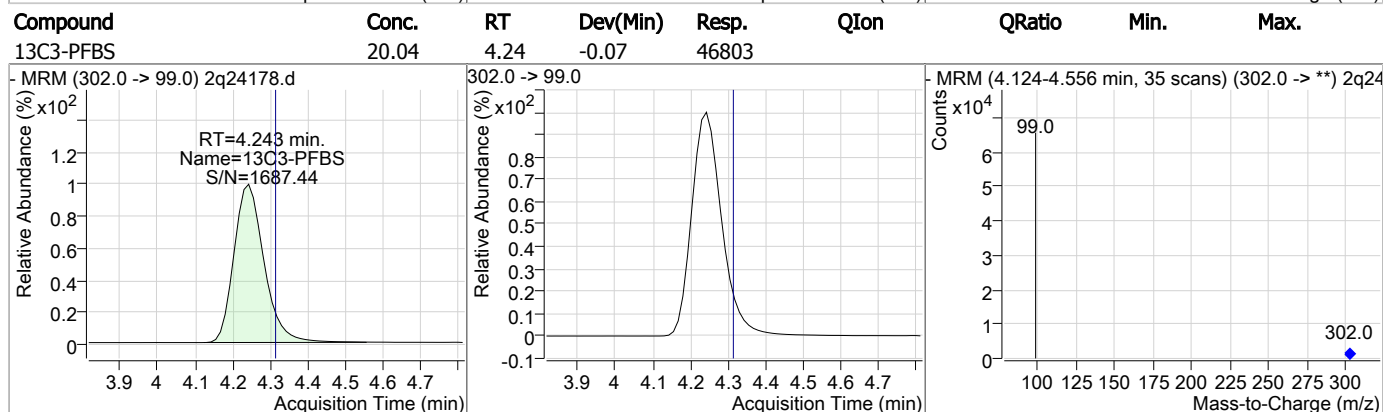
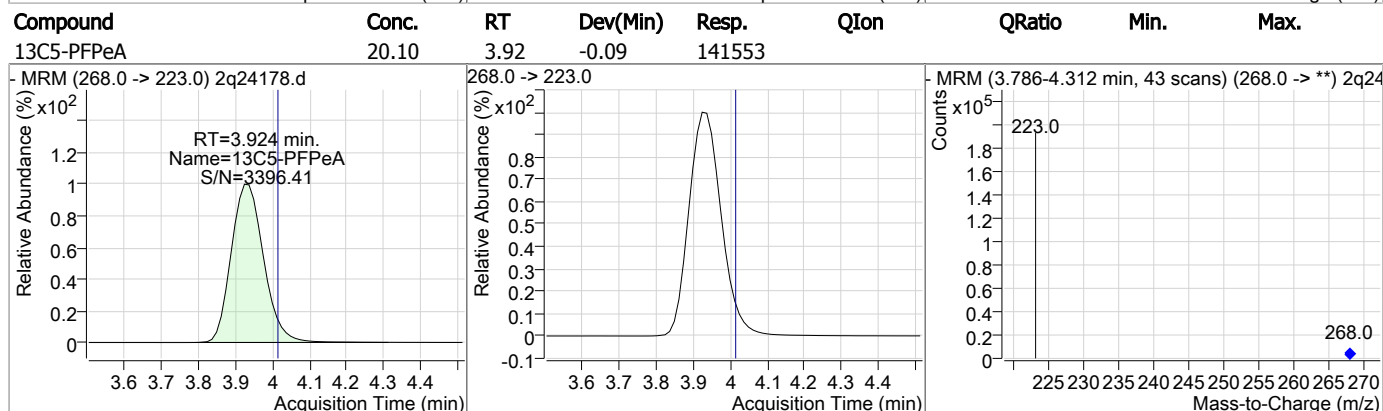
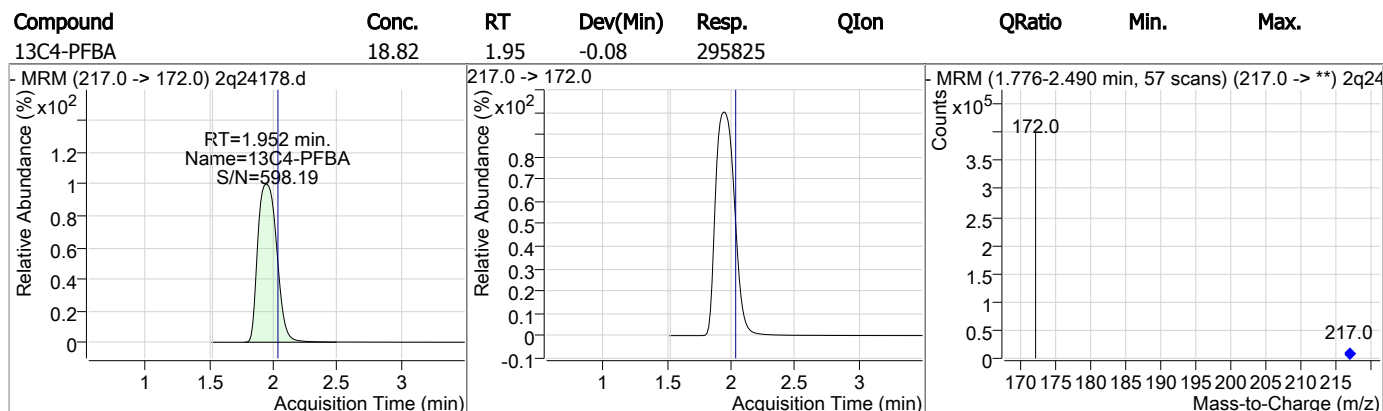
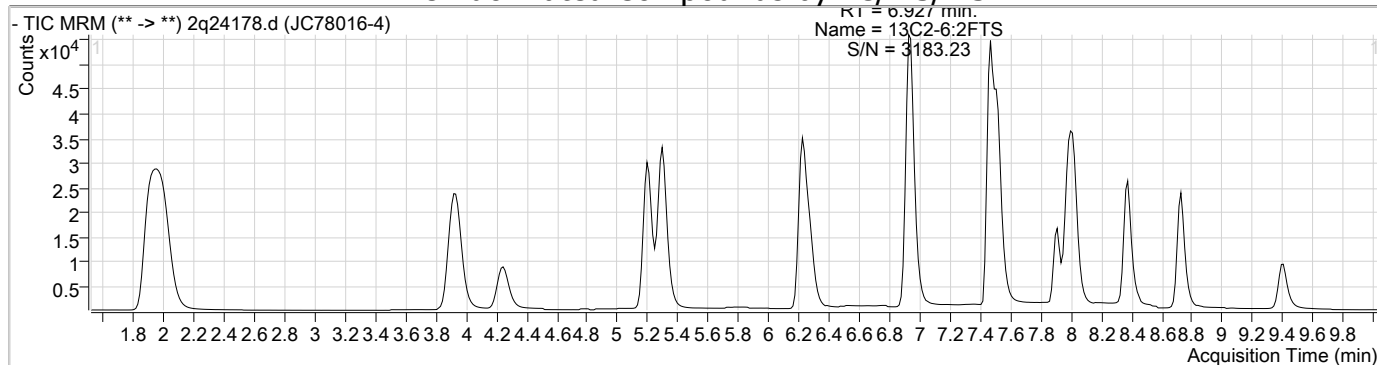
Target Compounds

						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	8.517	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.961	213.0 -> 169.0	481	0.17	µg/L	100
PFBS	4.259	299.0 -> 80.0	160	0.05	µg/L #	44
PFDA	8.207	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	9.074	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	394	0.08	µg/L	99
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.305	313.0 -> 269.0	240	0.12	µg/L	87
PFHxS	6.276	399.0 -> 80.0	266	0.10	µg/L	97
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	2007	0.69	µg/L m	94
PFOS	7.509	499.0 -> 80.0	1190	0.44	µg/L m	65
PFPeA	3.953	263.0 -> 219.0	900	0.15	µg/L	100
PFPeS	5.433	349.0 -> 80.0	0	0.00	µg/L m	1
PFTeDA	9.394	713.0 -> 669.0	157	0.12	µg/L	91
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

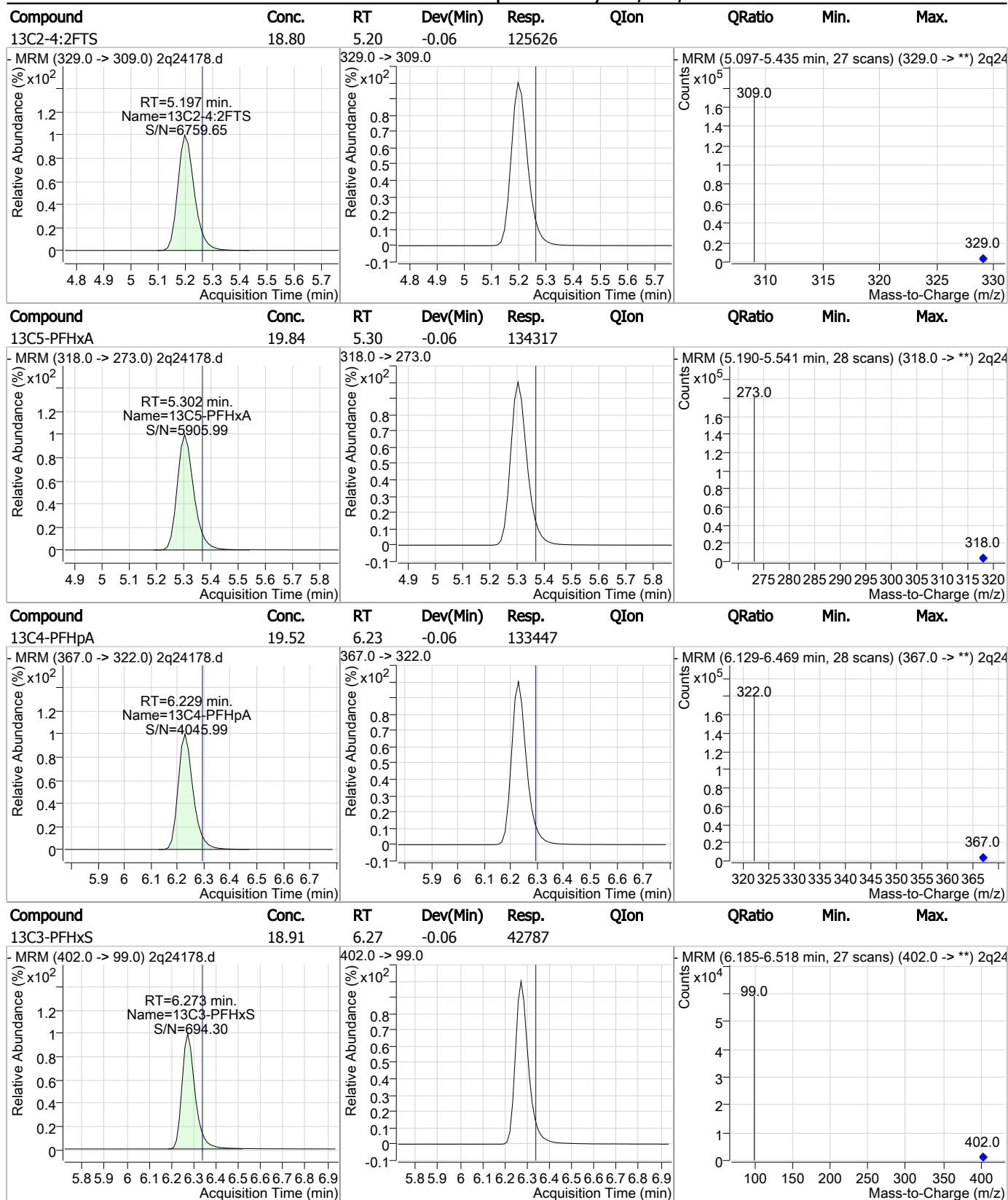
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10.1.4
10

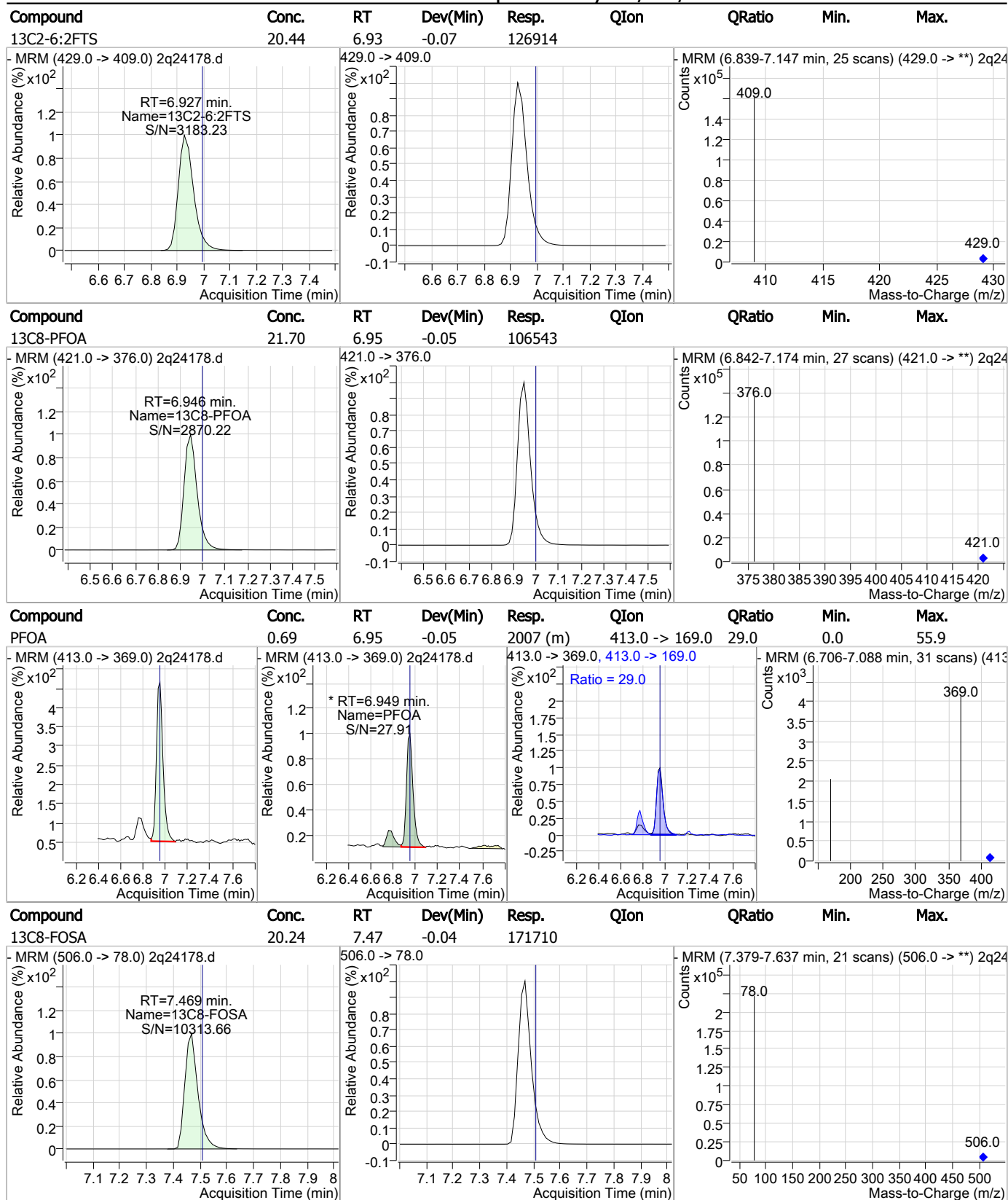
Perfluorinated Compounds by LC/MS/MS



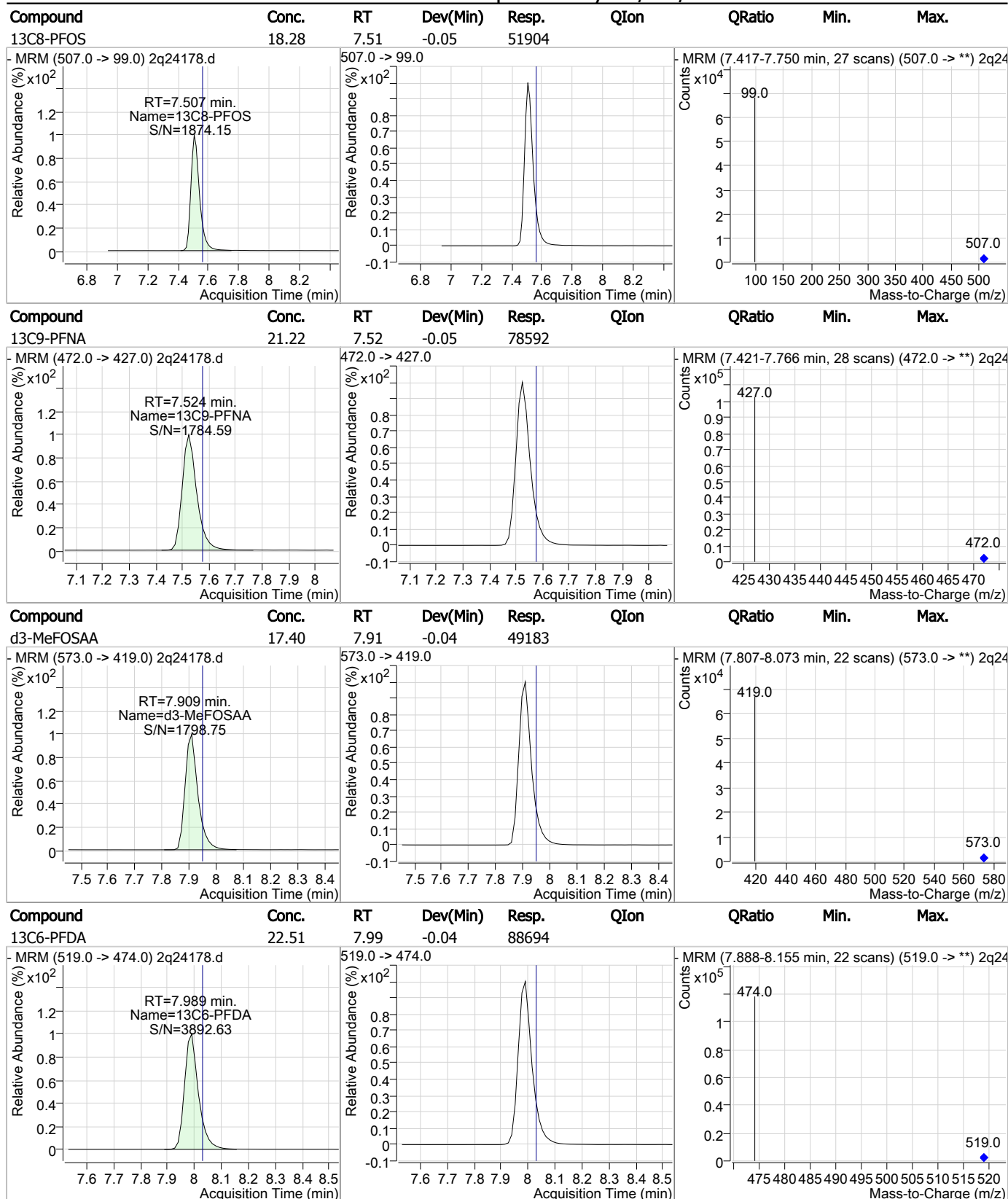
Perfluorinated Compounds by LC/MS/MS



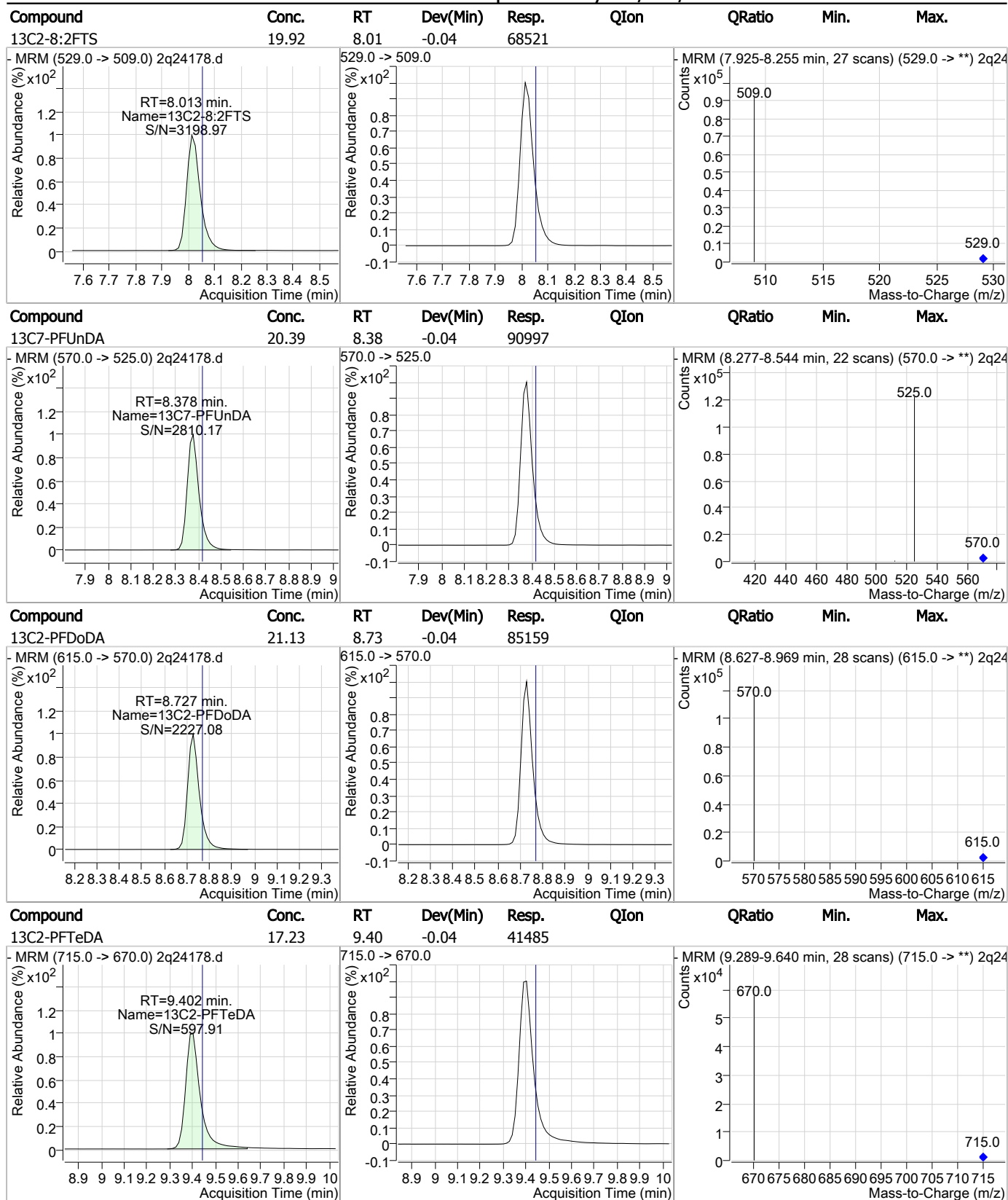
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: JC78016-4

Method: EPA 537M BY ID

Lab FileID: 2Q24178.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 11:24

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

10.1.4.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24185.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 1:14:57 PM
 Sample Name : JC78016-5
 Vial : Vial 40
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.275	415.0 -> 370.0	0	20.00	µg/L m	0.279
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.952	217.0 -> 172.0	283899	20.00	µg/L	-0.075
M5-PFPeA	3.924	268.0 -> 223.0	135569	20.00	µg/L	-0.087
M5-PFHxA	5.290	318.0 -> 273.0	136638	20.00	µg/L	-0.075
M4-PFHpA	6.229	367.0 -> 322.0	139960	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	102214	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	74410	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	77704	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	74864	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	70552	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	35849	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	141146	20.00	µg/L	-0.037
M3-PFBS	4.230	302.0 -> 99.0	43102	20.00	µg/L	-0.087
M3-PFHxS	6.273	402.0 -> 99.0	40500	20.00	µg/L	-0.062
M8-PFOS	7.507	507.0 -> 99.0	45839	20.00	µg/L	-0.049
M2-4:2FTS	5.197	329.0 -> 309.0	120134	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	121641	20.00	µg/L	-0.065
M2-8:2FTS	8.013	529.0 -> 509.0	57571	20.00	µg/L	-0.037
M3-MeFOSAA	7.909	573.0 -> 419.0	37842	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.197	329.0 -> 309.0	120235	17.99	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C2-6:2FTS	6.927	429.0 -> 409.0	121670	19.60	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-8:2FTS	8.013	529.0 -> 509.0	57616	16.75	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%		
13C2-PFDoDA	8.727	615.0 -> 570.0	70546	17.51	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%		
13C2-PFTeDA	9.402	715.0 -> 670.0	35762	14.85	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C3-PFBS	4.230	302.0 -> 99.0	43033	18.43	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C3-PFHxS	6.273	402.0 -> 99.0	40487	17.89	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C4-PFBA	1.952	217.0 -> 172.0	283718	18.05	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C4-PFHpA	6.229	367.0 -> 322.0	139875	20.46	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C5-PFHxA	5.290	318.0 -> 273.0	136884	20.21	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C5-PFPeA	3.924	268.0 -> 223.0	135499	19.24	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C6-PFDA	7.989	519.0 -> 474.0	77692	19.72	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	74905	16.79	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%		
13C8-FOSA	7.469	506.0 -> 78.0	141121	16.63	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%		
13C8-PFOA	6.946	421.0 -> 376.0	102225	20.82	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C8-PFOS	7.507	507.0 -> 99.0	45836	16.15	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%		
13C9-PFNA	7.524	472.0 -> 427.0	74531	20.13	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
d3-MeFOSAA	7.909	573.0 -> 419.0	37882	13.40	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%		
M2-PFOA	6.919	415.0 -> 370.0	0	0.00	ng/ml m	-0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.508	503.0 -> 80.0	0	0.00	ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

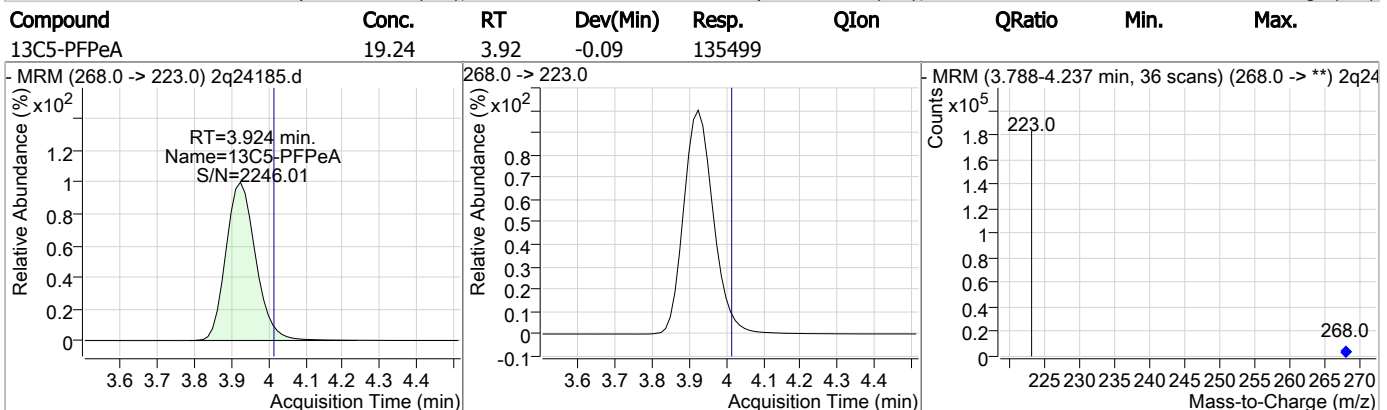
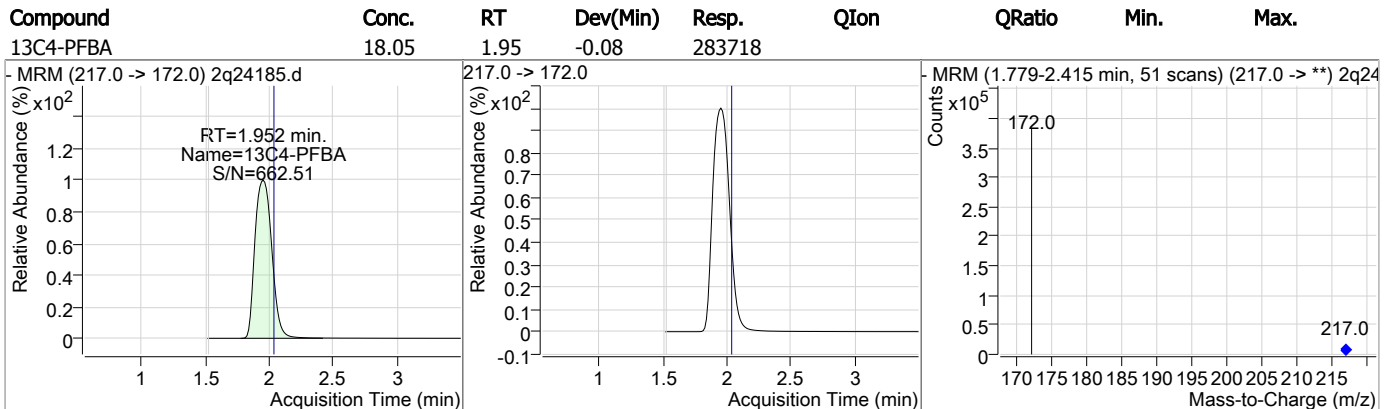
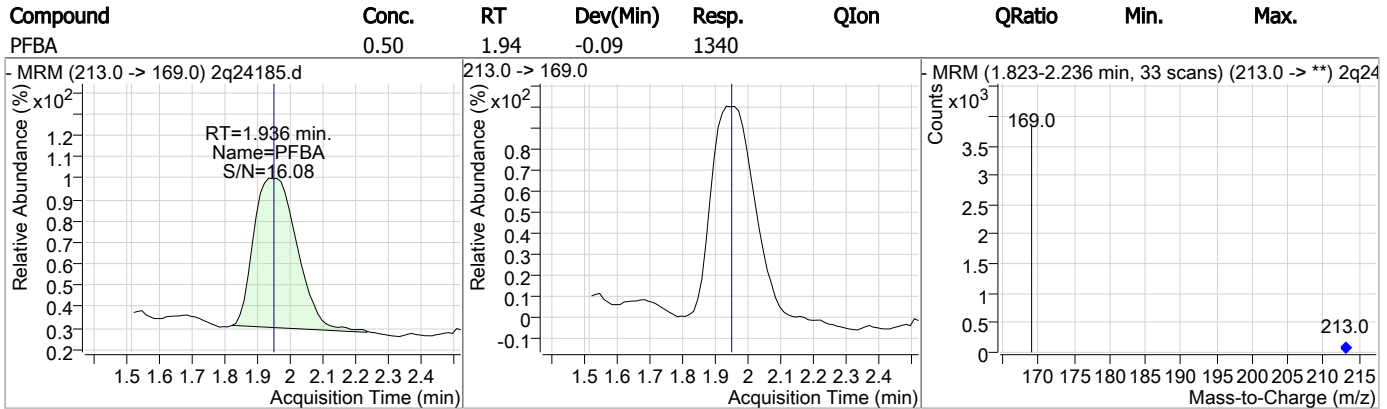
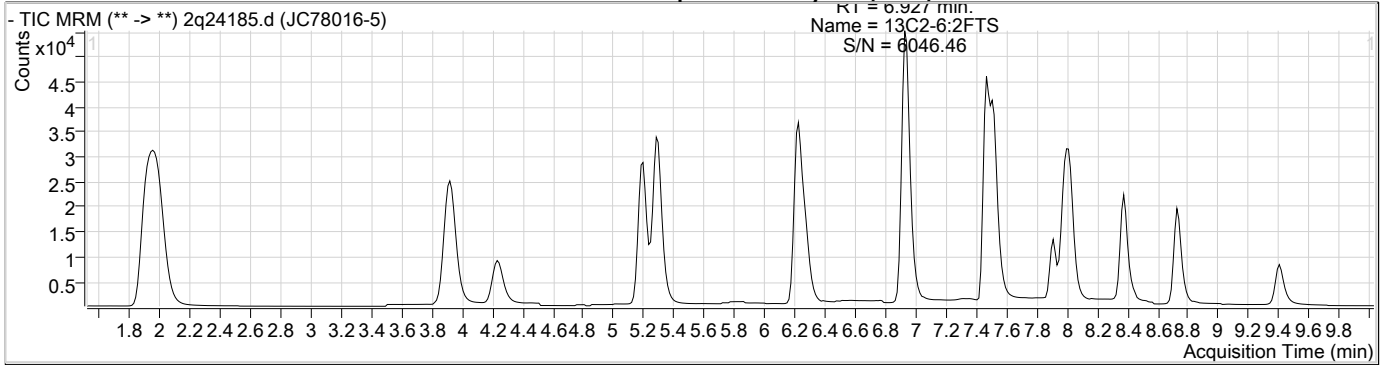
Target Compounds

						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	7.845	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.936	213.0 -> 169.0	1340	0.50	µg/L	100
PFBS	4.234	299.0 -> 80.0	318	0.10	µg/L	72
PFDA	7.927	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	8.667	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.219	363.0 -> 319.0	910	0.17	µg/L m	99
PFHpS	6.954	449.0 -> 80.0	0	0.00	µg/L m	1
PFHxA	5.292	313.0 -> 269.0	299	0.15	µg/L m	92
PFHxS	6.276	399.0 -> 80.0	254	0.10	µg/L	87
PFNA	7.525	463.0 -> 419.0	163	0.08	µg/L	73
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	2604	0.93	µg/L m	93
PFOS	7.509	499.0 -> 80.0	3656	1.51	µg/L m	84
PFPeA	3.940	263.0 -> 219.0	2592	0.45	µg/L	100
PFPeS	5.433	349.0 -> 80.0	93	0.05	µg/L m	61
PFTeDA	9.394	713.0 -> 669.0	118	0.10	µg/L	78
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

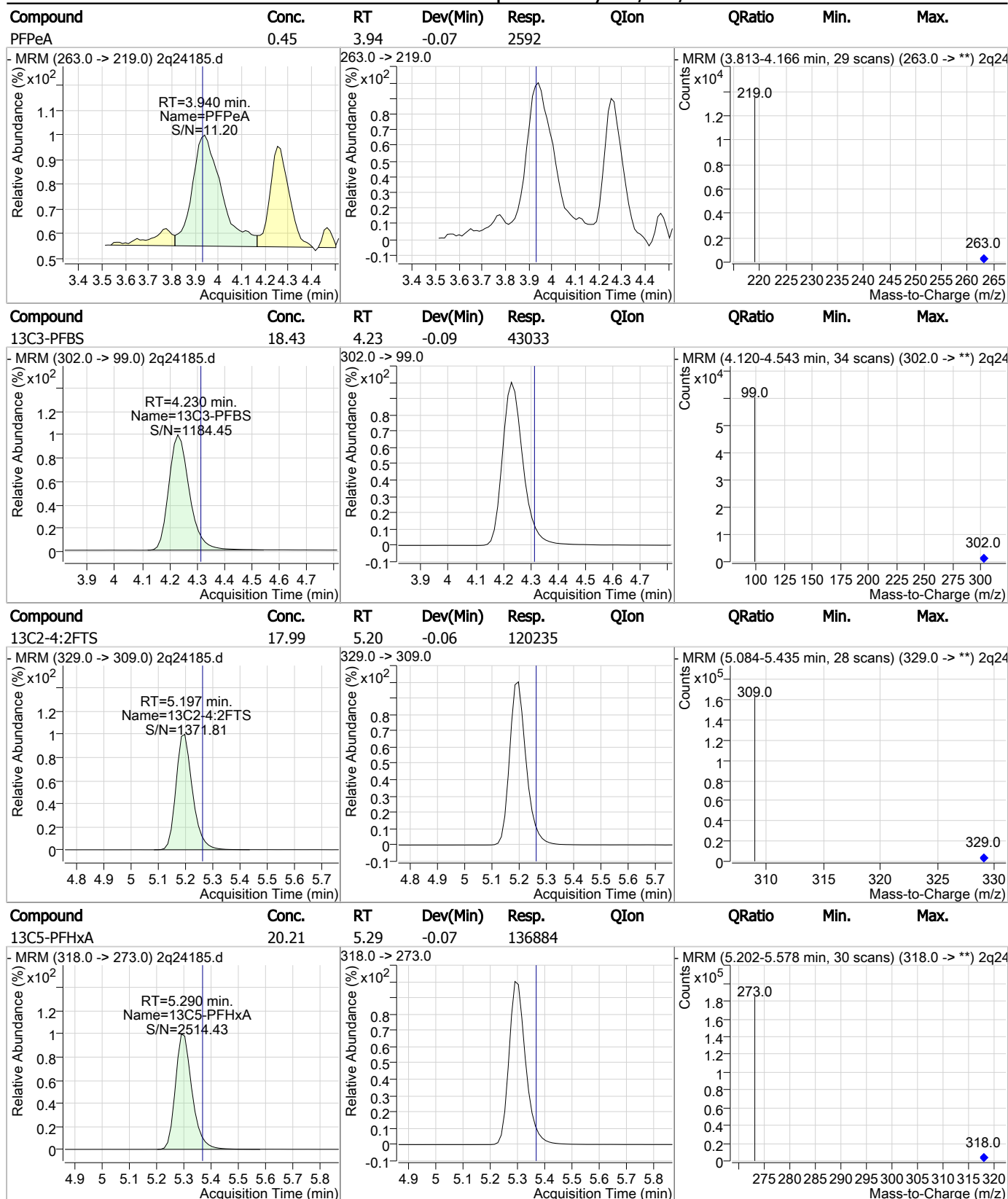
10.1.5
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Perfluorinated Compounds by LC/MS/MS

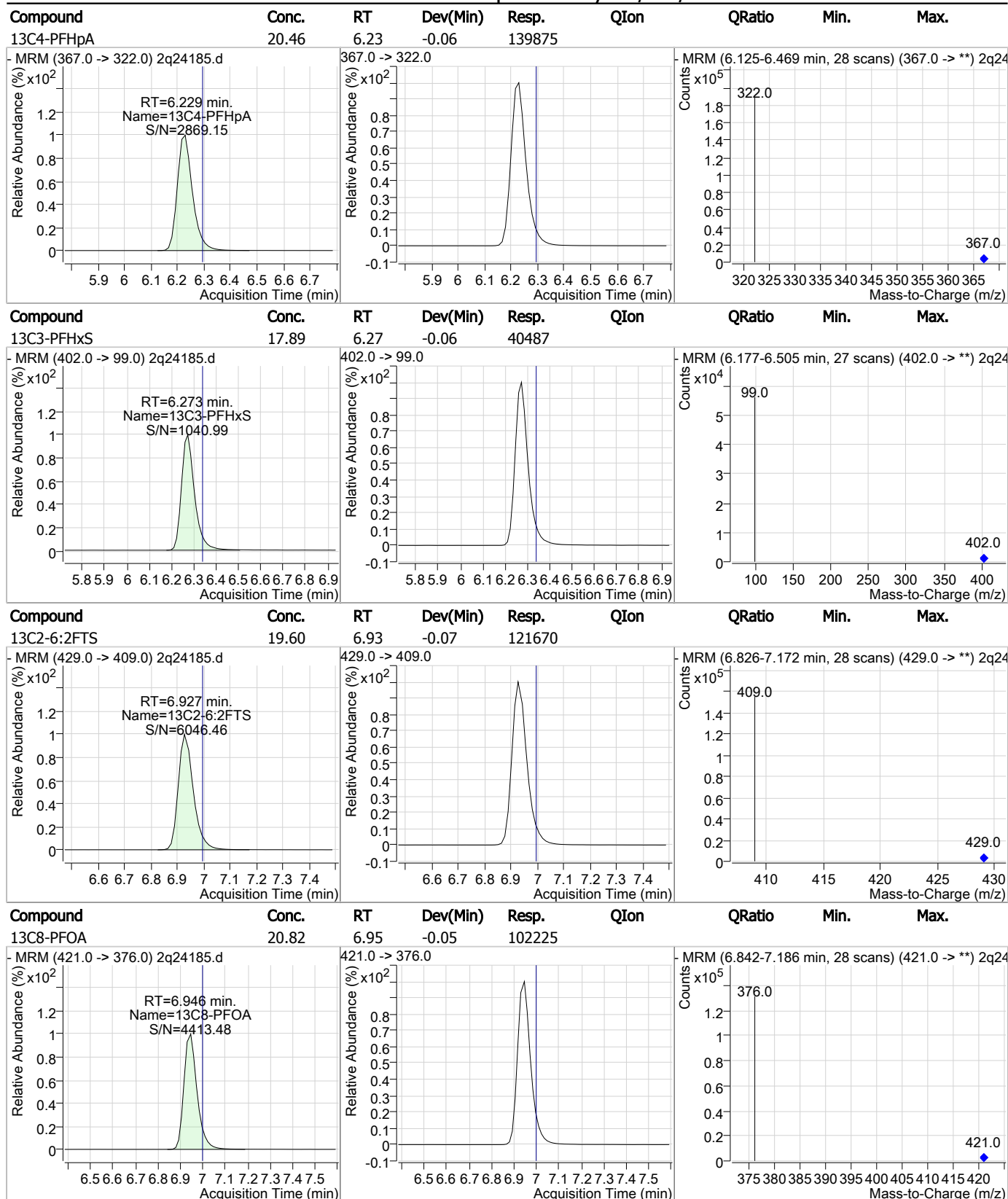


10.1.5 10

Perfluorinated Compounds by LC/MS/MS

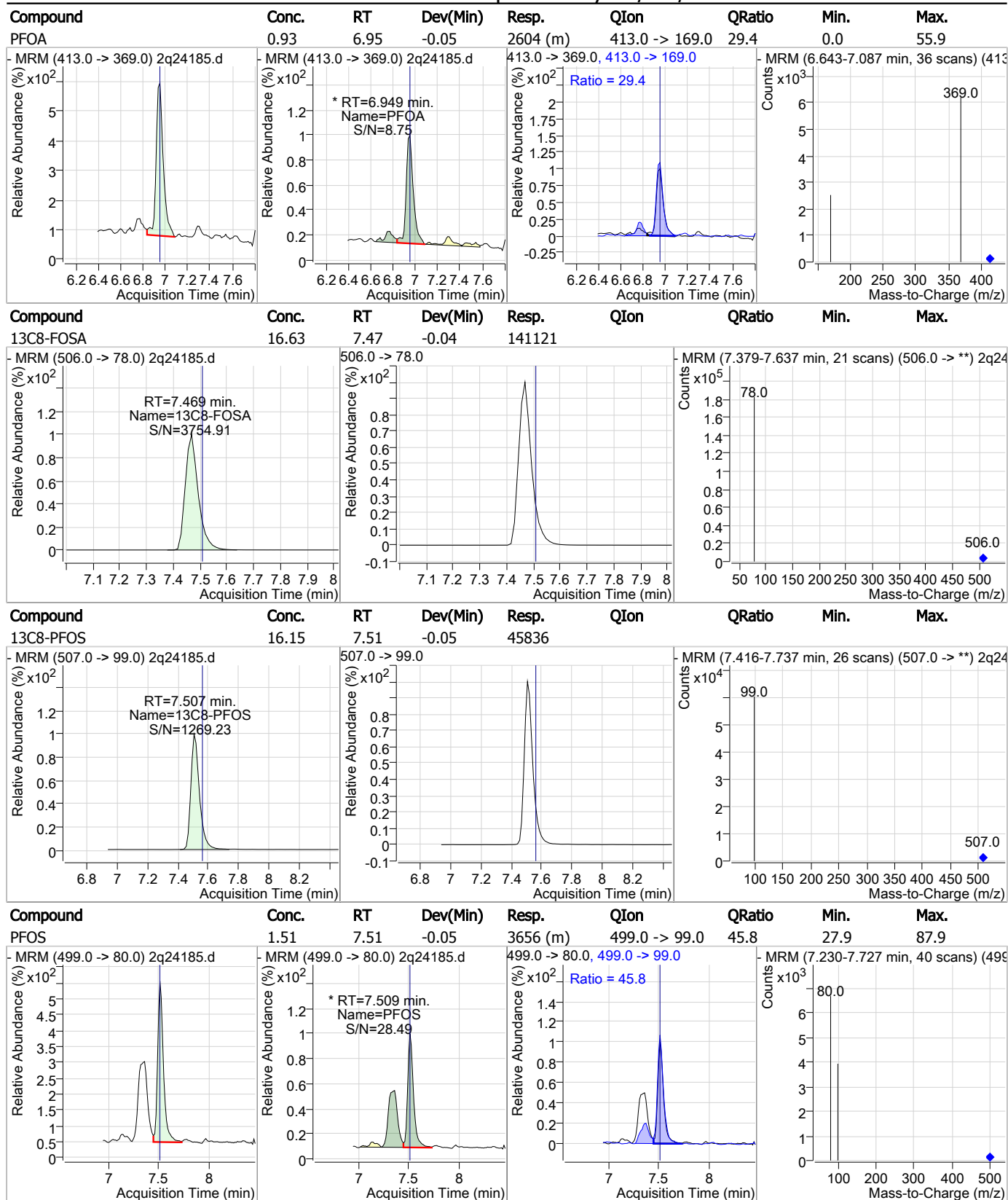


Perfluorinated Compounds by LC/MS/MS

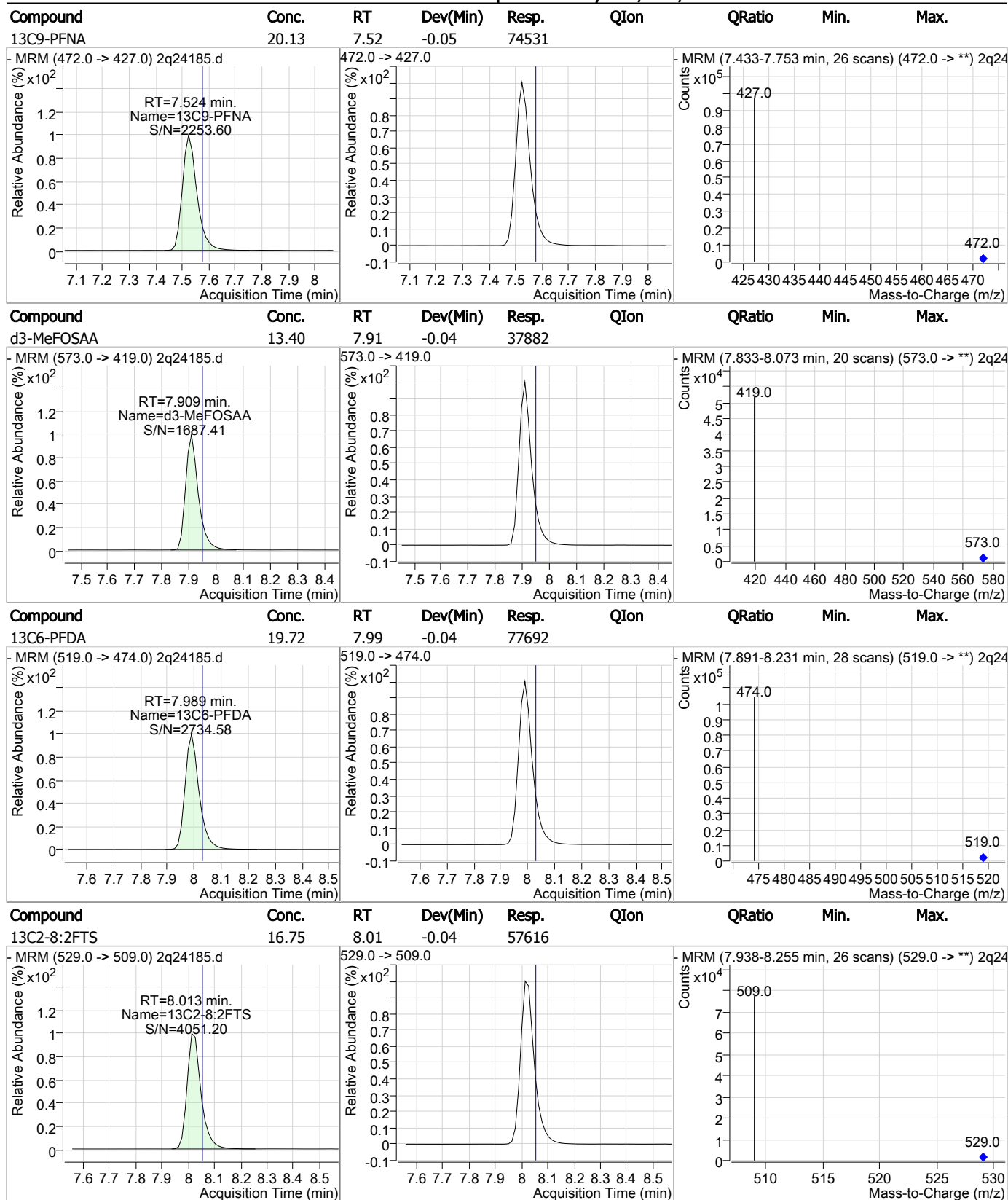


10.1.5
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Perfluorinated Compounds by LC/MS/MS

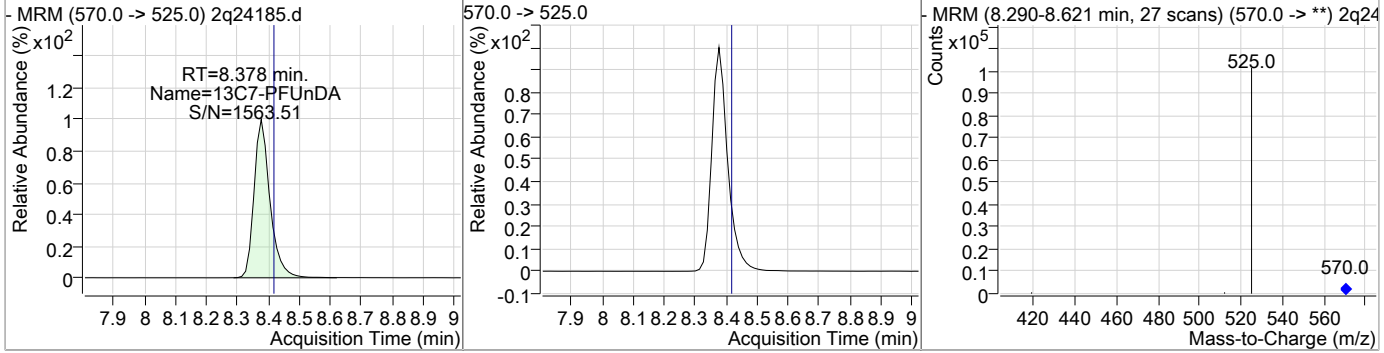


Perfluorinated Compounds by LC/MS/MS

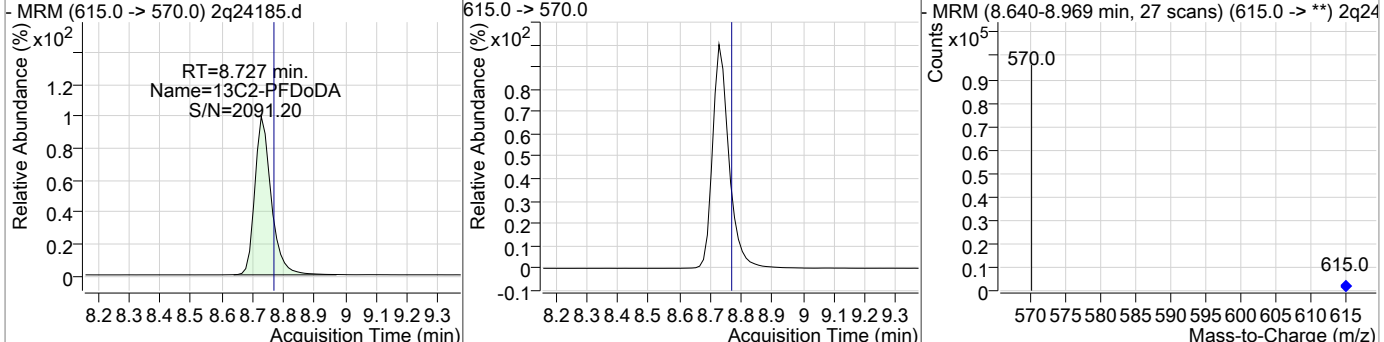


Perfluorinated Compounds by LC/MS/MS

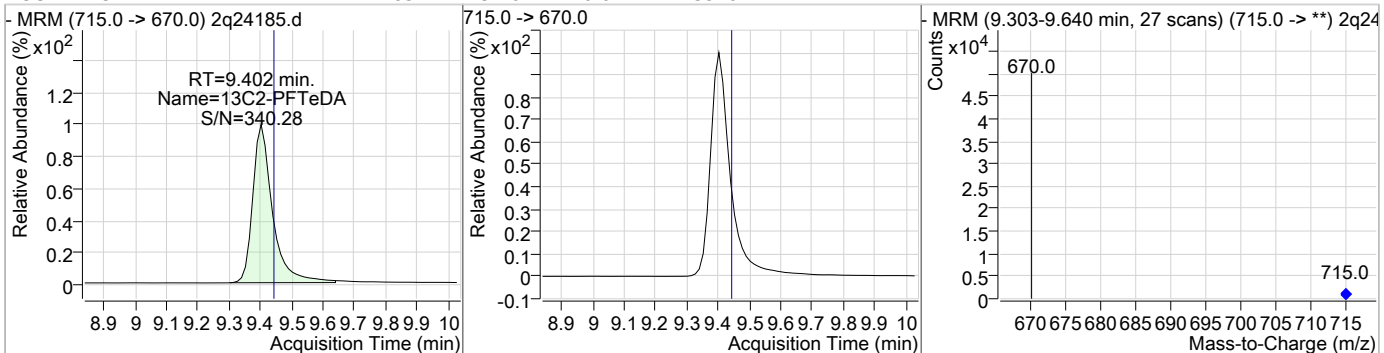
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



Manual Integration Approval Summary

Sample Number: JC78016-5

Method: EPA 537M BY ID

Lab FileID: 2Q24185.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 13:14

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.29	Poor instrument integration
Perfluoropentanesulfonic acid	2706-91-4		5.43	Split peak
Perfluoroheptanoic acid	375-85-9		6.22	Poor instrument integration
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

10.1.5.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24186.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 1:30:42 PM
 Sample Name : JC78016-6
 Vial : Vial 41
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.960	415.0 -> 370.0	0	20.00	µg/L m	-0.036
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.990	217.0 -> 172.0	287018	20.00	µg/L	-0.038
M5-PFPeA	3.949	268.0 -> 223.0	143886	20.00	µg/L	-0.062
M5-PFHxA	5.302	318.0 -> 273.0	138239	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	138470	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	104010	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	79881	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	96580	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	104275	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	77286	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	39103	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	180199	20.00	µg/L	-0.037
M3-PFBS	4.255	302.0 -> 99.0	45159	20.00	µg/L	-0.062
M3-PFHxS	6.273	402.0 -> 99.0	42475	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	55608	20.00	µg/L	-0.037
M2-4:2FTS	5.210	329.0 -> 309.0	128335	20.00	µg/L	-0.050
M2-6:2FTS	6.943	429.0 -> 409.0	120392	20.00	µg/L	-0.049
M2-8:2FTS	8.026	529.0 -> 509.0	71115	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	53147	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.210	329.0 -> 309.0	128087	19.17	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-6:2FTS	6.943	429.0 -> 409.0	120442	19.40	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-8:2FTS	8.026	529.0 -> 509.0	71064	20.66	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-PFDoDA	8.727	615.0 -> 570.0	77213	19.16	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-PFTeDA	9.402	715.0 -> 670.0	38629	16.05	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C3-PFBS	4.255	302.0 -> 99.0	44869	19.22	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C3-PFHxS	6.273	402.0 -> 99.0	42427	18.75	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C4-PFBA	1.990	217.0 -> 172.0	287240	18.27	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C4-PFHpA	6.229	367.0 -> 322.0	138356	20.24	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFHxA	5.302	318.0 -> 273.0	137925	20.37	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C5-PFPeA	3.949	268.0 -> 223.0	143831	20.42	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C6-PFDA	7.989	519.0 -> 474.0	96464	24.48	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.4%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	104265	23.37	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.8%		
13C8-FOSA	7.469	506.0 -> 78.0	180152	21.23	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C8-PFOA	6.946	421.0 -> 376.0	103984	21.18	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C8-PFOS	7.519	507.0 -> 99.0	55697	19.62	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C9-PFNA	7.524	472.0 -> 427.0	79938	21.59	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
d3-MeFOSAA	7.909	573.0 -> 419.0	53113	18.79	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.508	503.0 -> 80.0	0	0.00	ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

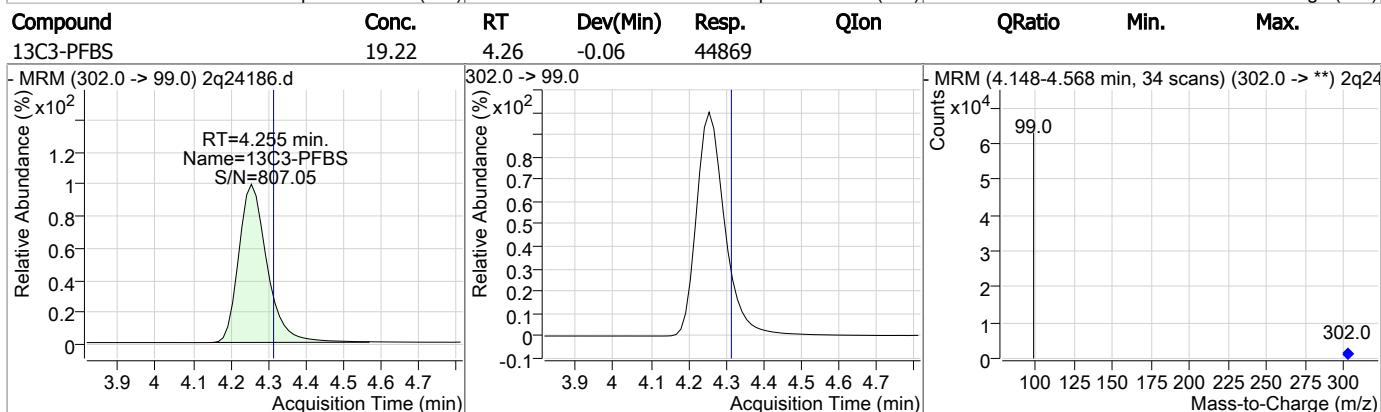
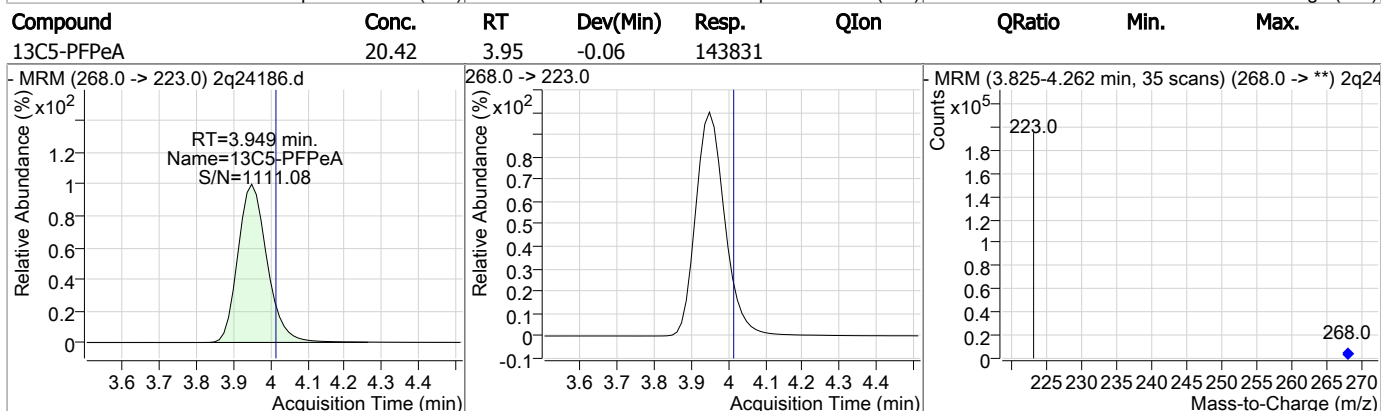
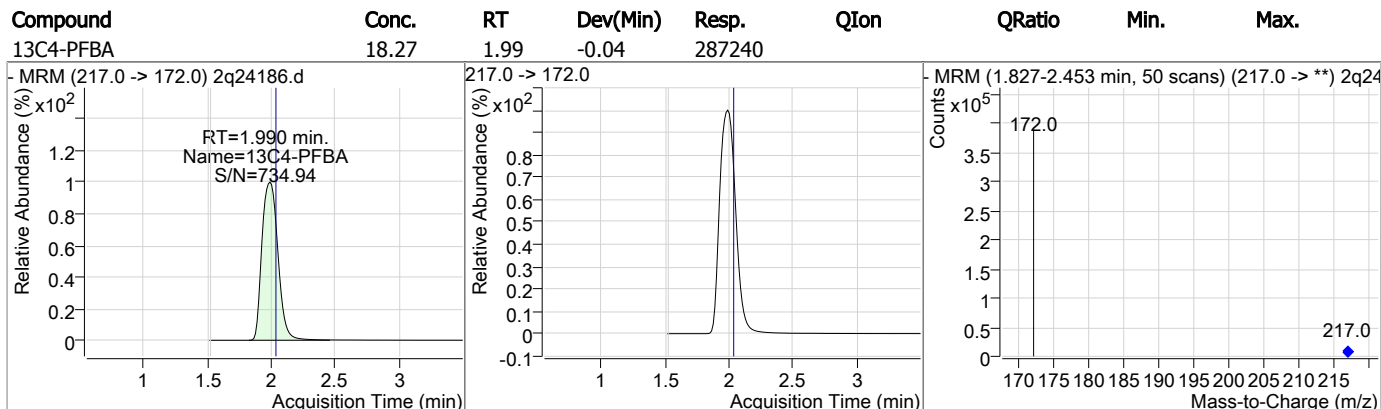
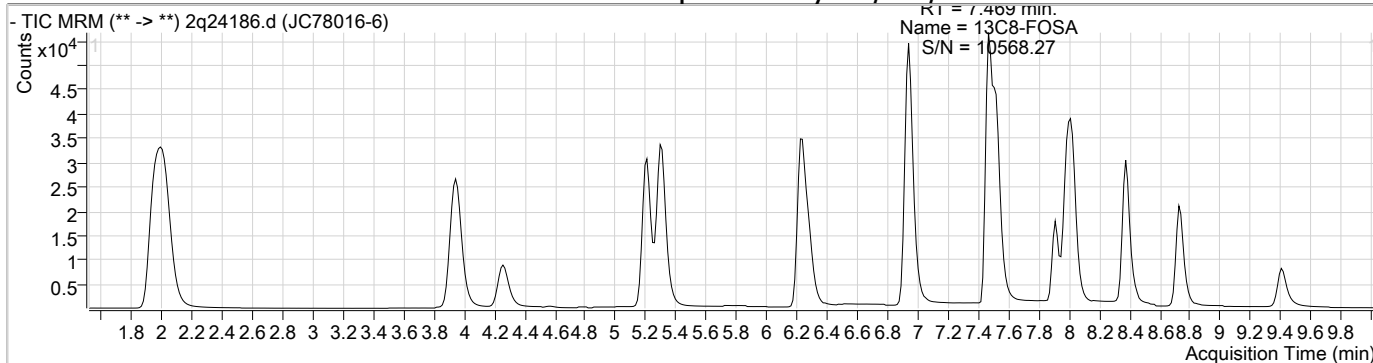
Target Compounds

						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	4.575	299.0 -> 80.0	0	0.00	µg/L m	1
PFDA	8.003	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	9.074	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.244	363.0 -> 319.0	62	0.01	µg/L m	71
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	6.949	413.0 -> 369.0	141	0.05	µg/L	97
PFOS	7.368	499.0 -> 80.0	166	0.06	µg/L m	71
PFPeA	4.003	263.0 -> 219.0	559	0.09	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.406	713.0 -> 669.0	0	0.00	µg/L m	1
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

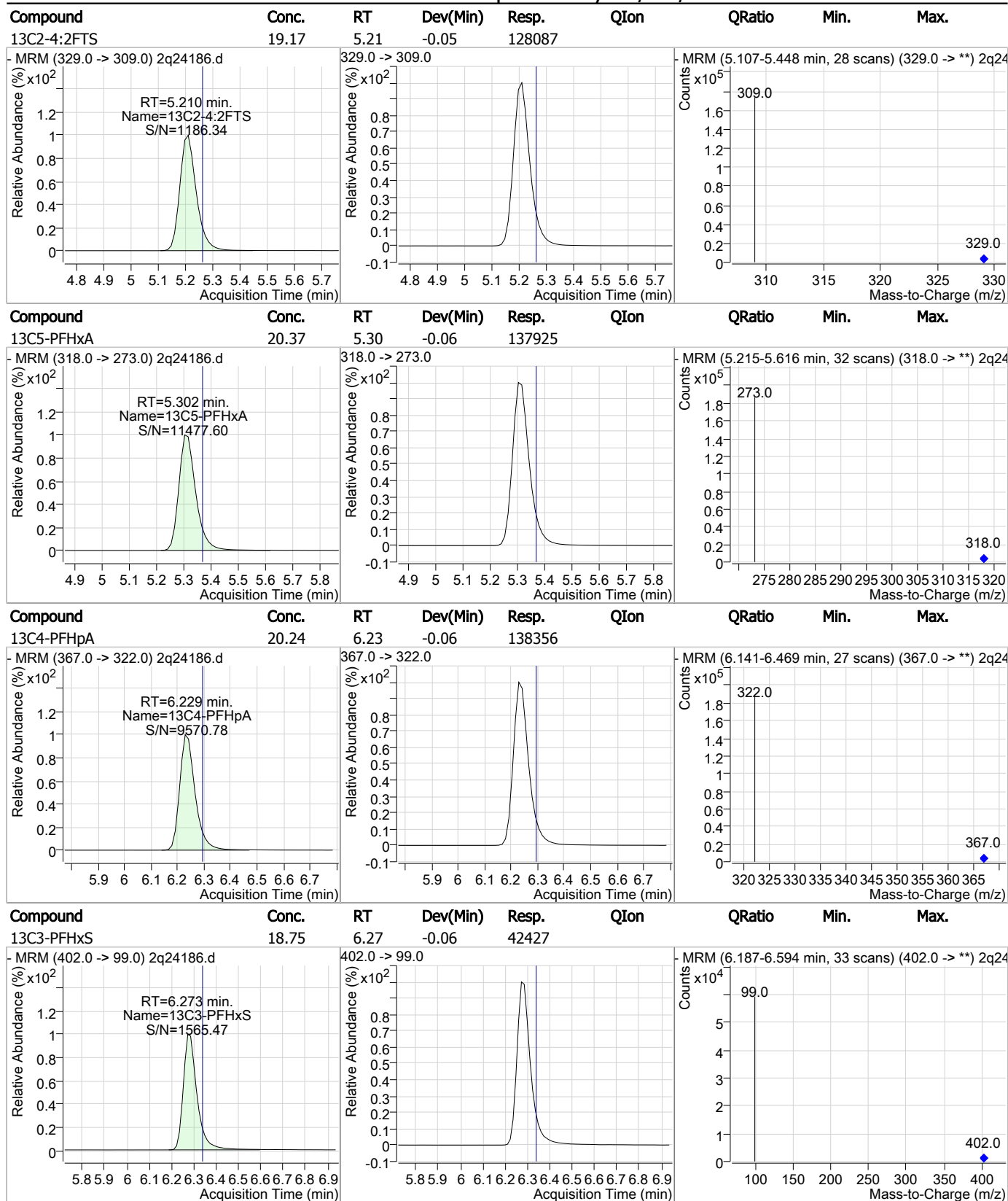
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10.1.6
10

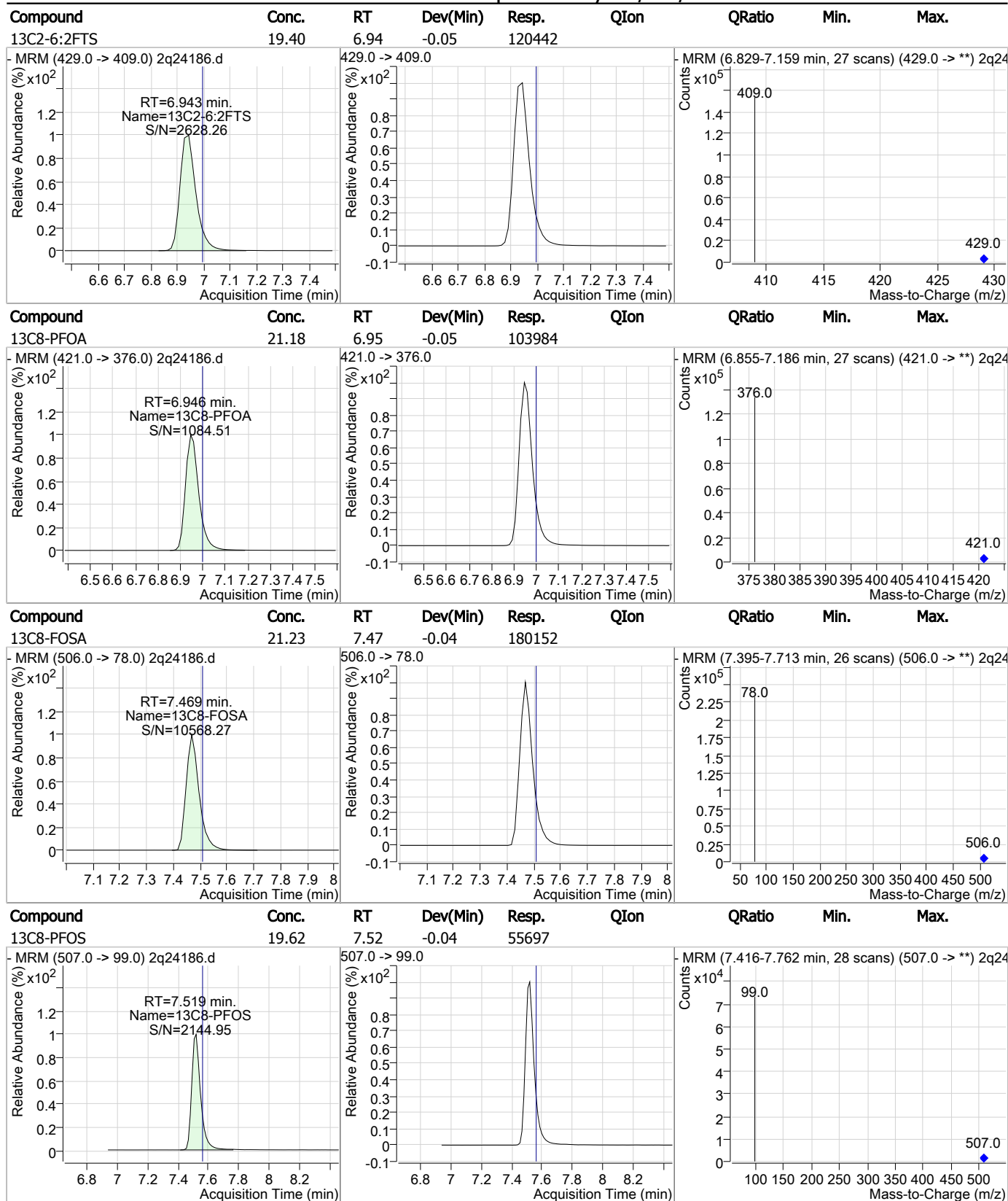
Perfluorinated Compounds by LC/MS/MS



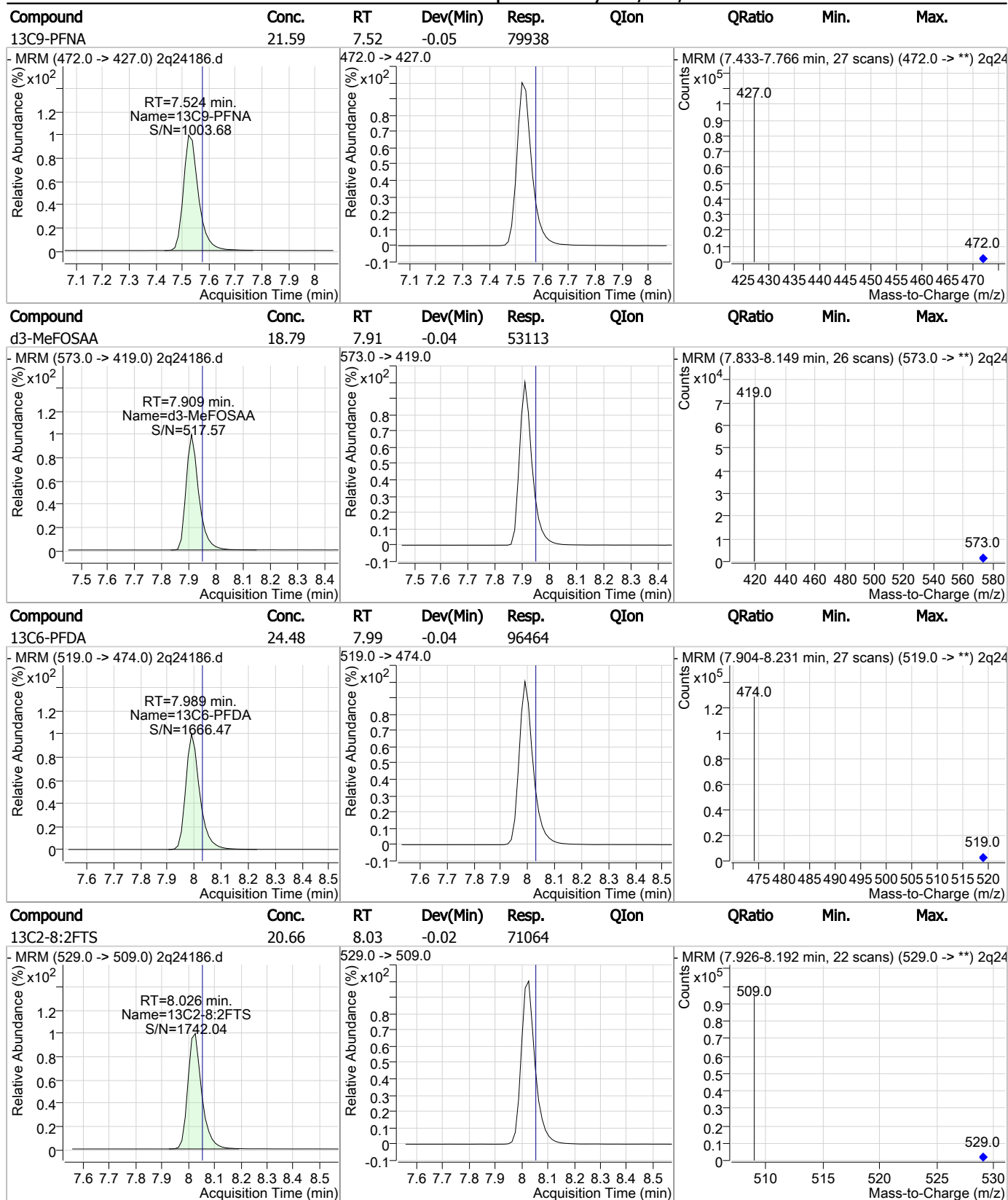
Perfluorinated Compounds by LC/MS/MS



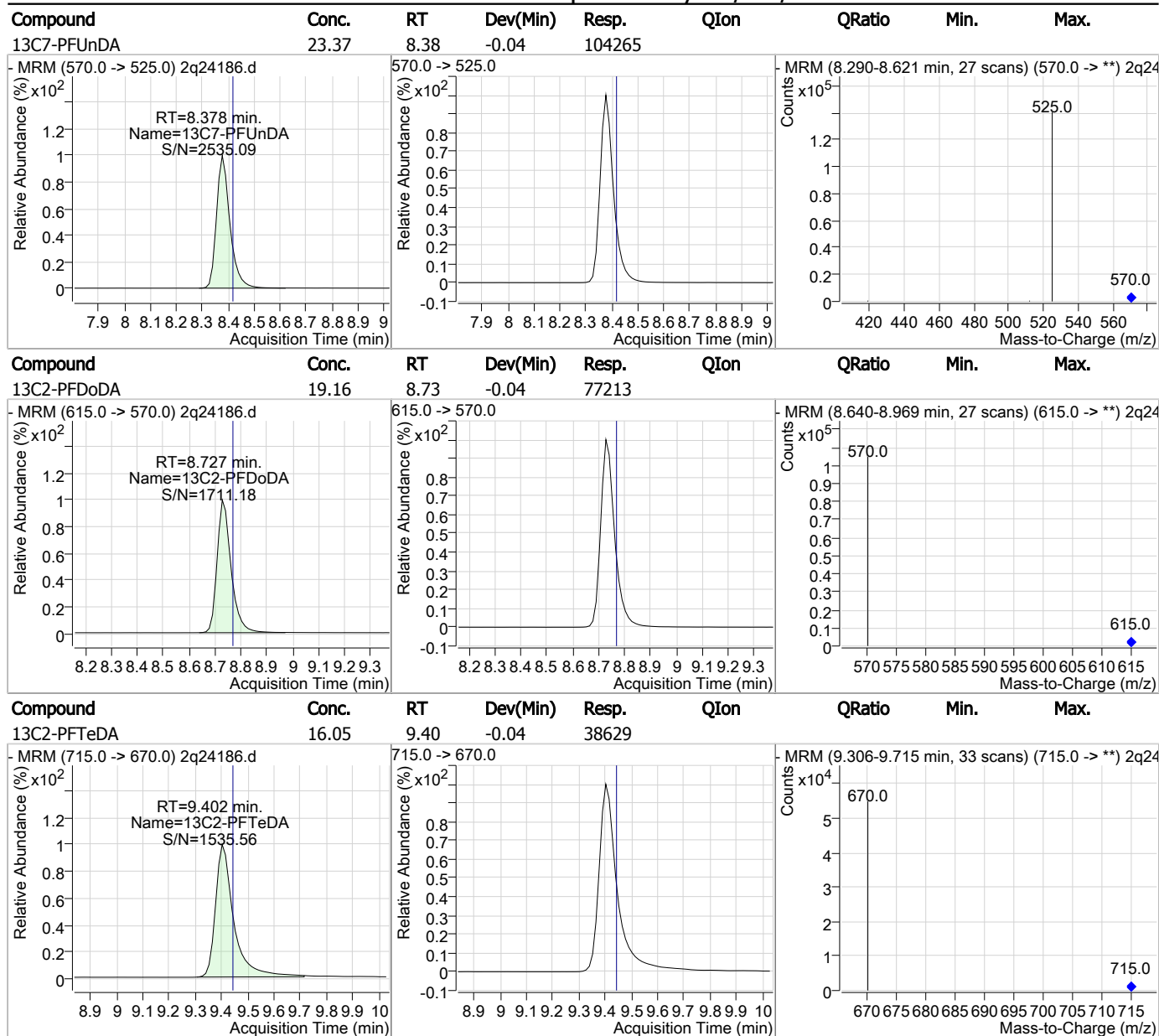
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: JC78016-6

Method: EPA 537M BY ID

Lab FileID: 2Q24186.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 13:30

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.24	Poor instrument integration
Perfluorooctanesulfonic acid	1763-23-1		7.37	Poor instrument integration

10.1.6.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24183.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 12:43:28 PM
 Sample Name : JC78016-7
 Vial : Vial 42
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.960	415.0 -> 370.0	0	20.00	µg/L m	-0.036
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.990	217.0 -> 172.0	272420	20.00	µg/L	-0.038
M5-PFPeA	3.949	268.0 -> 223.0	135936	20.00	µg/L	-0.062
M5-PFHxA	5.302	318.0 -> 273.0	127556	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	129765	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	105105	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	76792	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	84788	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	83747	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	65852	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	37213	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	108526	20.00	µg/L	-0.037
M3-PFBS	4.255	302.0 -> 99.0	44233	20.00	µg/L	-0.062
M3-PFHxS	6.273	402.0 -> 99.0	39281	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	45374	20.00	µg/L	-0.037
M2-4:2FTS	5.210	329.0 -> 309.0	131251	20.00	µg/L	-0.050
M2-6:2FTS	6.943	429.0 -> 409.0	125090	20.00	µg/L	-0.049
M2-8:2FTS	8.026	529.0 -> 509.0	64774	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	42444	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.210	329.0 -> 309.0	131370	19.66	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-6:2FTS	6.943	429.0 -> 409.0	125057	20.14	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-8:2FTS	8.026	529.0 -> 509.0	64763	18.83	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-PFDoDA	8.727	615.0 -> 570.0	65802	16.33	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%		
13C2-PFTeDA	9.402	715.0 -> 670.0	37135	15.43	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%		
13C3-PFBS	4.255	302.0 -> 99.0	44189	18.92	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C3-PFHxS	6.273	402.0 -> 99.0	39301	17.37	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%		
13C4-PFBA	1.990	217.0 -> 172.0	272389	17.33	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C4-PFHpA	6.229	367.0 -> 322.0	129885	19.00	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C5-PFHxA	5.302	318.0 -> 273.0	127365	18.81	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C5-PFPeA	3.949	268.0 -> 223.0	135613	19.25	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C6-PFDA	7.989	519.0 -> 474.0	84786	21.52	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	83724	18.76	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C8-FOSA	7.469	506.0 -> 78.0	108527	12.79	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.0%		
13C8-PFOA	6.946	421.0 -> 376.0	105130	21.42	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C8-PFOS	7.519	507.0 -> 99.0	45539	16.04	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C9-PFNA	7.524	472.0 -> 427.0	76821	20.74	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
d3-MeFOSAA	7.909	573.0 -> 419.0	42433	15.01	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
M2-PFOA	6.960	415.0 -> 370.0	0	0.00	ng/ml m	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.508	503.0 -> 80.0	0	0.00	ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

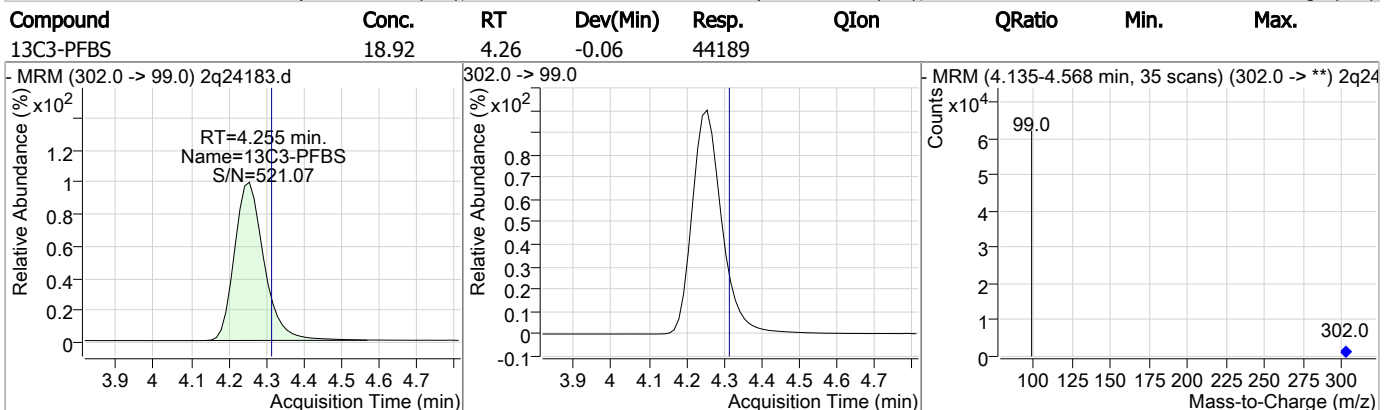
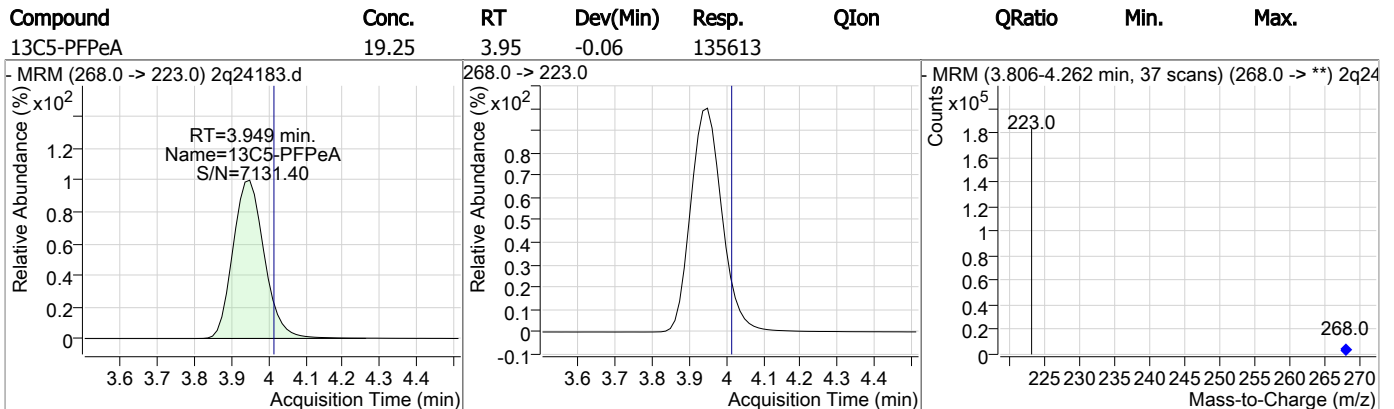
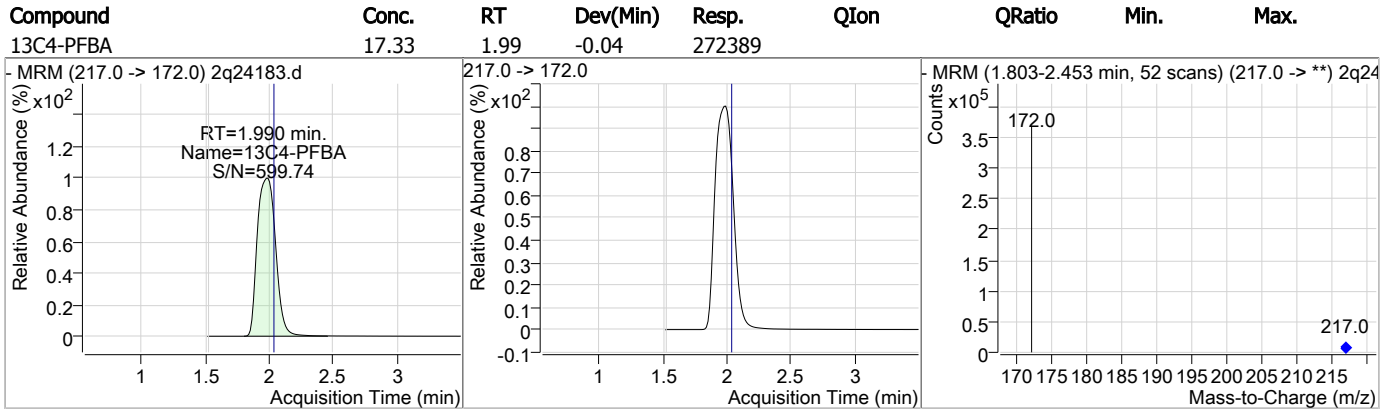
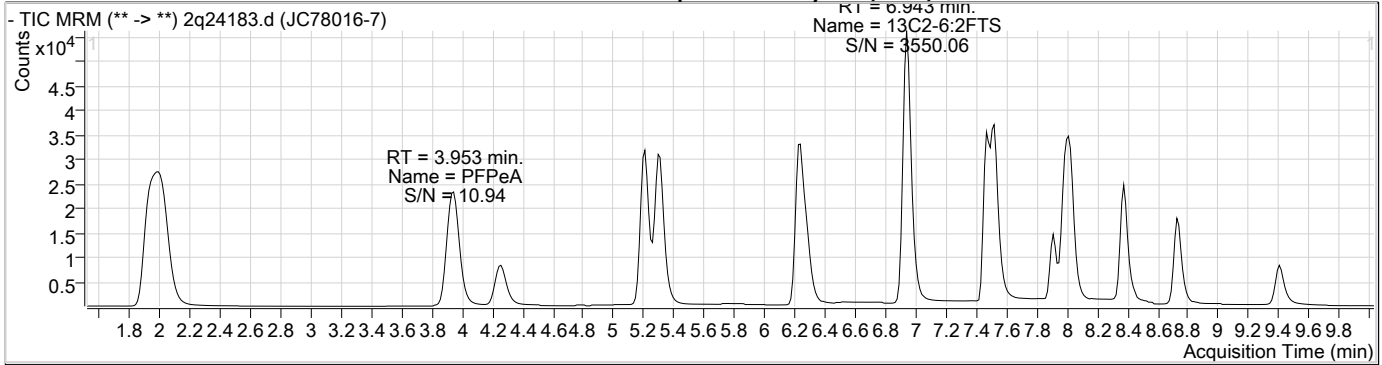
Target Compounds

						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	-	299.0 -> 80.0	-	N.D.		
PFDA	8.308	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	0	0.00	µg/L m	1
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	6.961	413.0 -> 369.0	0	0.00	µg/L m	1
PFOS	7.368	499.0 -> 80.0	0	0.00	µg/L m	1
PFPeA	3.953	263.0 -> 219.0	397	0.07	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.406	713.0 -> 669.0	0	0.00	µg/L m	1
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

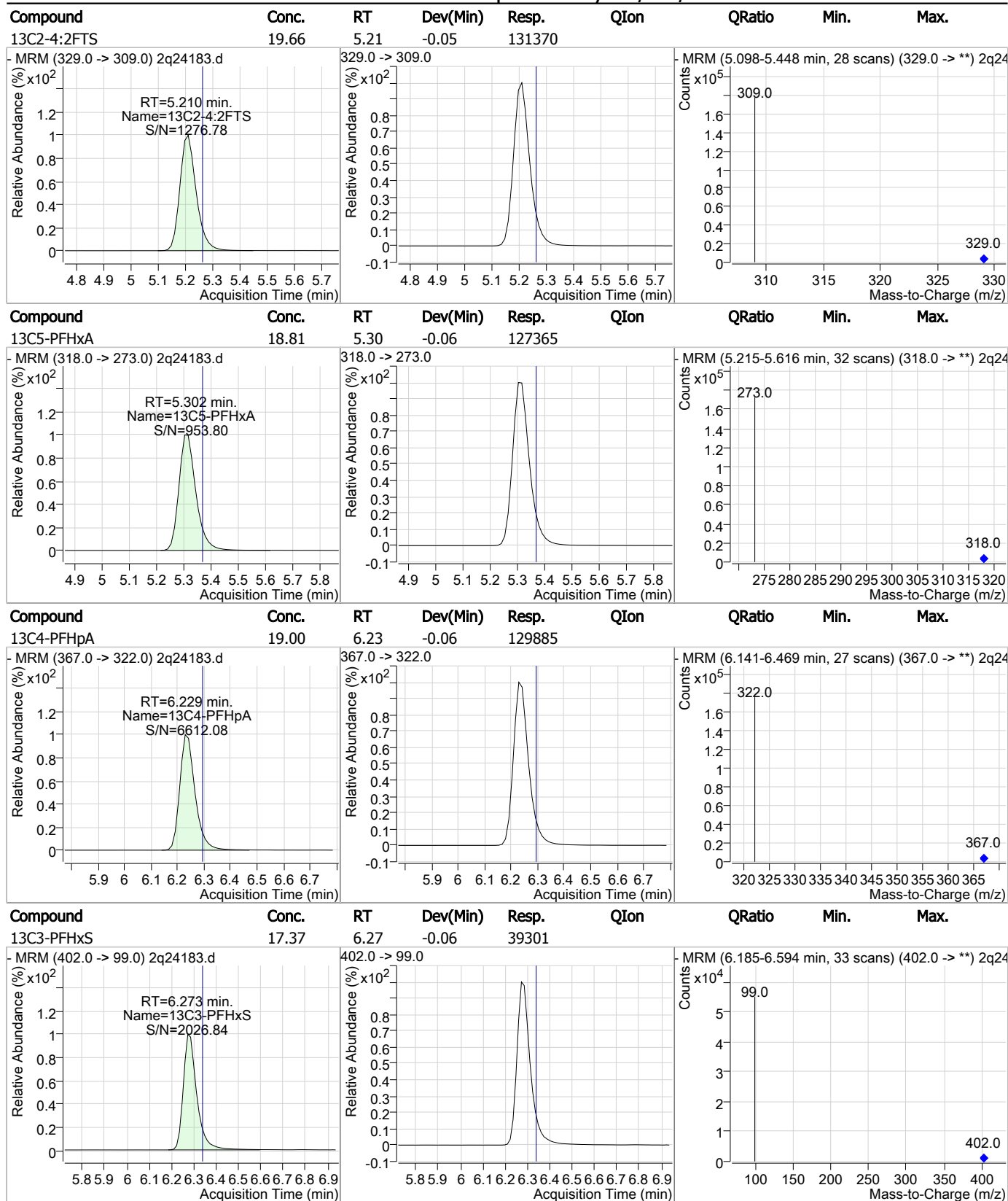
10.1.7
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Perfluorinated Compounds by LC/MS/MS

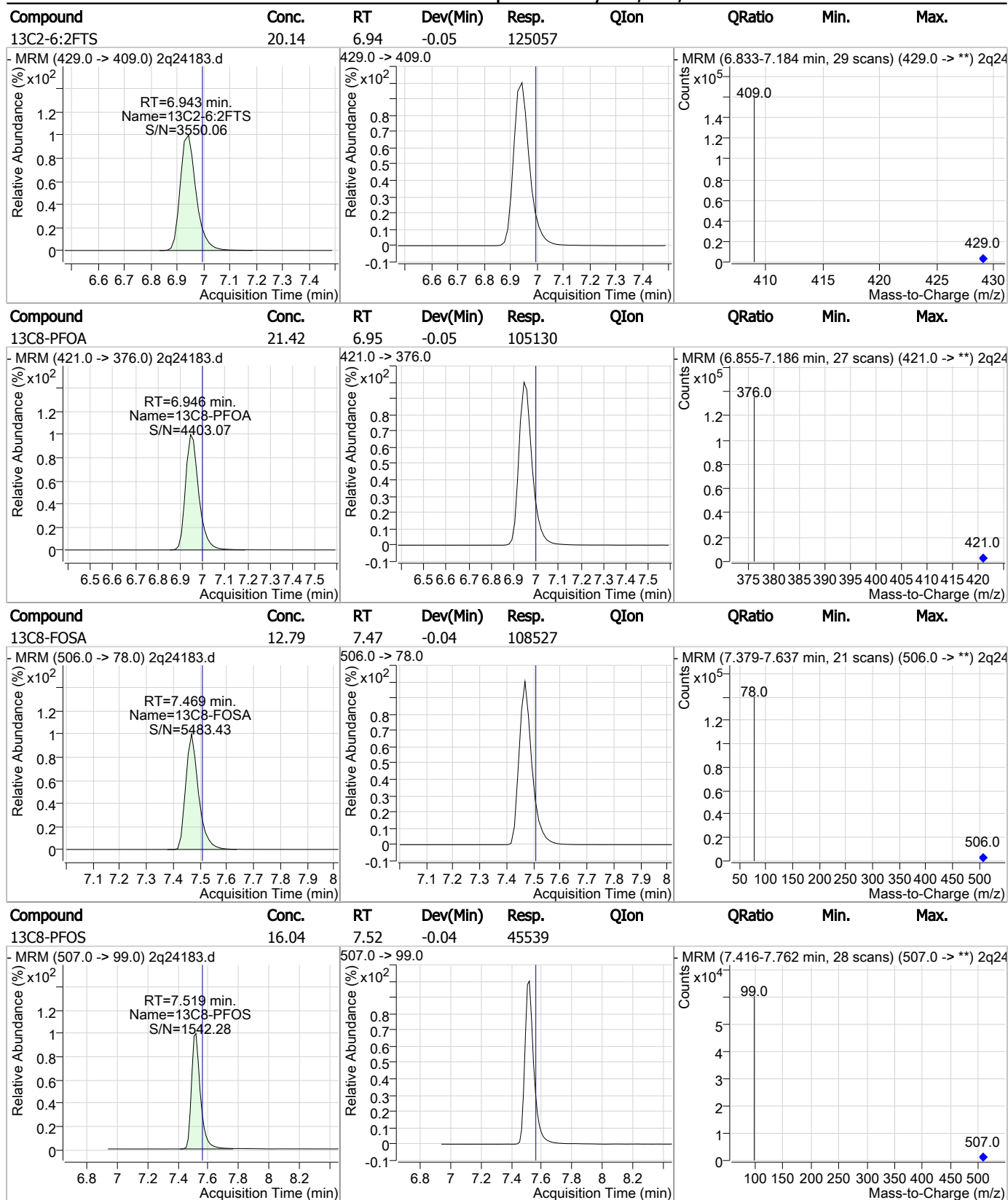


10.1.7 10

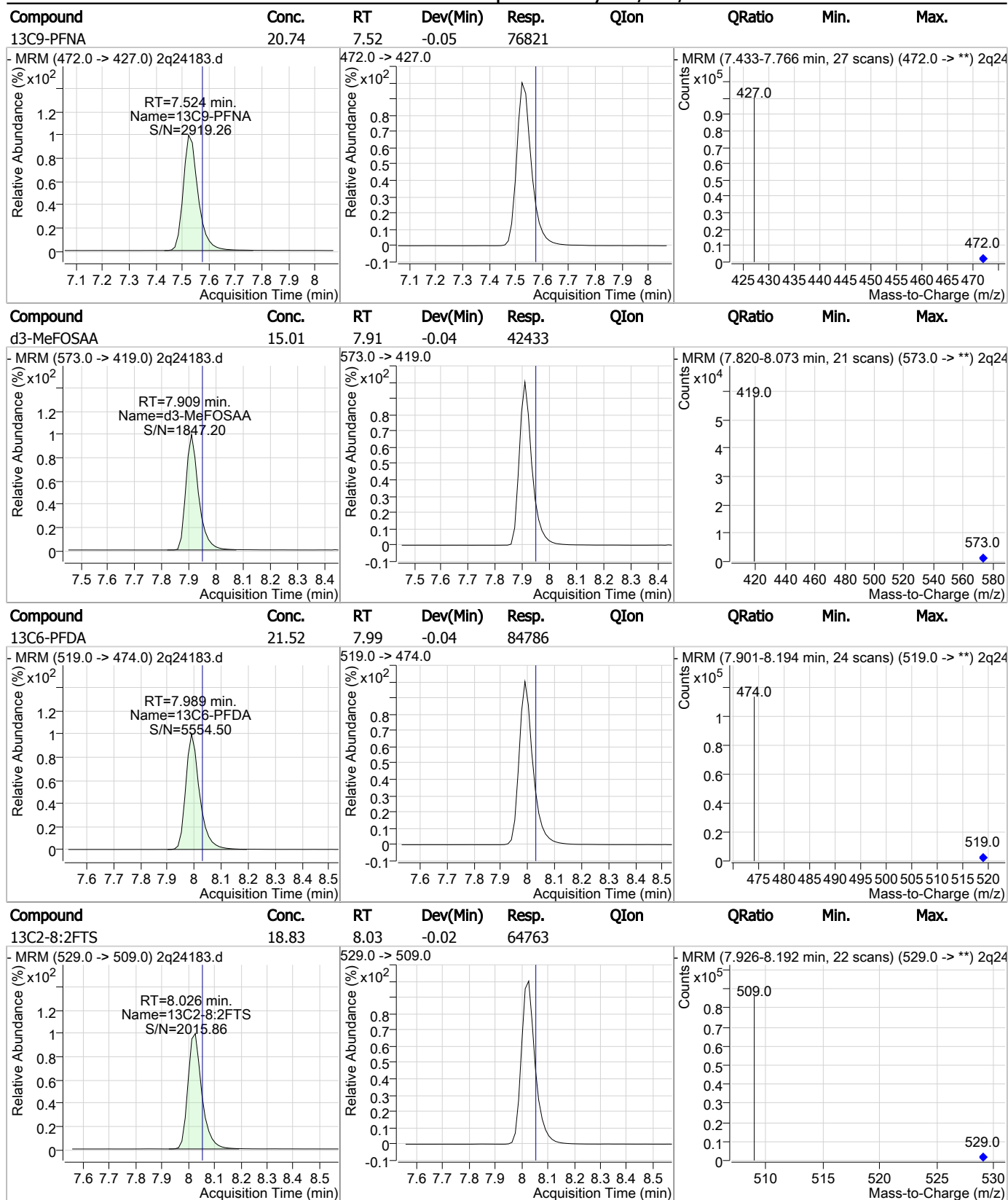
Perfluorinated Compounds by LC/MS/MS



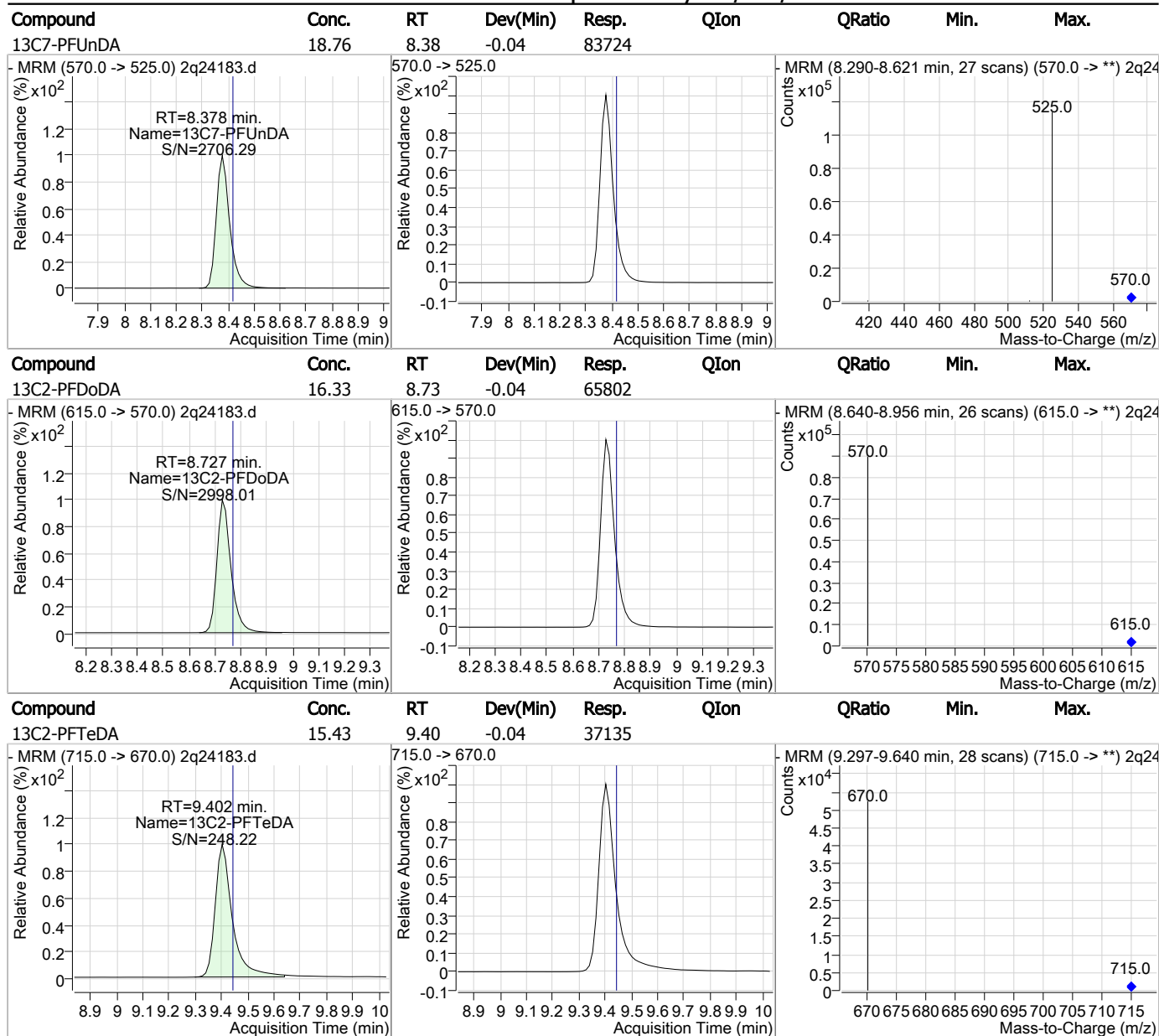
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.1.7 10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24187.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 1:46:26 PM
 Sample Name : JC78016-8
 Vial : Vial 43
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.947	415.0 -> 370.0	0	20.00	µg/L m	-0.049
13C4-PFOS	7.521	503.0 -> 80.0	0	20.00	µg/L m	-0.037
M4-PFBA	1.952	217.0 -> 172.0	308775	20.00	µg/L	-0.075
M5-PFPeA	3.924	268.0 -> 223.0	147955	20.00	µg/L	-0.087
M5-PFHxA	5.302	318.0 -> 273.0	148157	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	156407	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	120003	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	88865	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	89428	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	96213	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	88064	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	45349	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	158378	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	46945	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	46203	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	49041	20.00	µg/L	-0.037
M2-4:2FTS	5.197	329.0 -> 309.0	131677	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	139343	20.00	µg/L	-0.065
M2-8:2FTS	8.026	529.0 -> 509.0	67438	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	44873	20.00	µg/L	-0.037

System Monitoring Compounds

13C2-4:2FTS	5.197	329.0 -> 309.0	131663	19.70	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.5%			
13C2-6:2FTS	6.927	429.0 -> 409.0	139338	22.44	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 112.2%			
13C2-8:2FTS	8.026	529.0 -> 509.0	67444	19.61	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.1%			
13C2-PFDoDA	8.727	615.0 -> 570.0	88072	21.86	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.3%			
13C2-PFTeDA	9.402	715.0 -> 670.0	45220	18.78	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 93.9%			
13C3-PFBS	4.243	302.0 -> 99.0	46918	20.09	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.5%			
13C3-PFHxS	6.273	402.0 -> 99.0	46229	20.43	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.1%			
13C4-PFBA	1.952	217.0 -> 172.0	308707	19.64	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.2%			
13C4-PFHpA	6.229	367.0 -> 322.0	156465	22.89	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 114.4%			
13C5-PFHxA	5.302	318.0 -> 273.0	148268	21.90	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.5%			
13C5-PFPeA	3.924	268.0 -> 223.0	147921	21.00	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.0%			
13C6-PFDA	7.989	519.0 -> 474.0	89428	22.70	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 113.5%			

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	96282	21.58	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C8-FOSA	7.469	506.0 -> 78.0	158398	18.67	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C8-PFOA	6.946	421.0 -> 376.0	120029	24.45	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C8-PFOS	7.519	507.0 -> 99.0	49051	17.28	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C9-PFNA	7.524	472.0 -> 427.0	88875	24.00	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.0%		
d3-MeFOSAA	7.909	573.0 -> 419.0	44968	15.91	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
M2-PFOA	6.947	415.0 -> 370.0	0	0.00	ng/ml m	-0.049
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%		

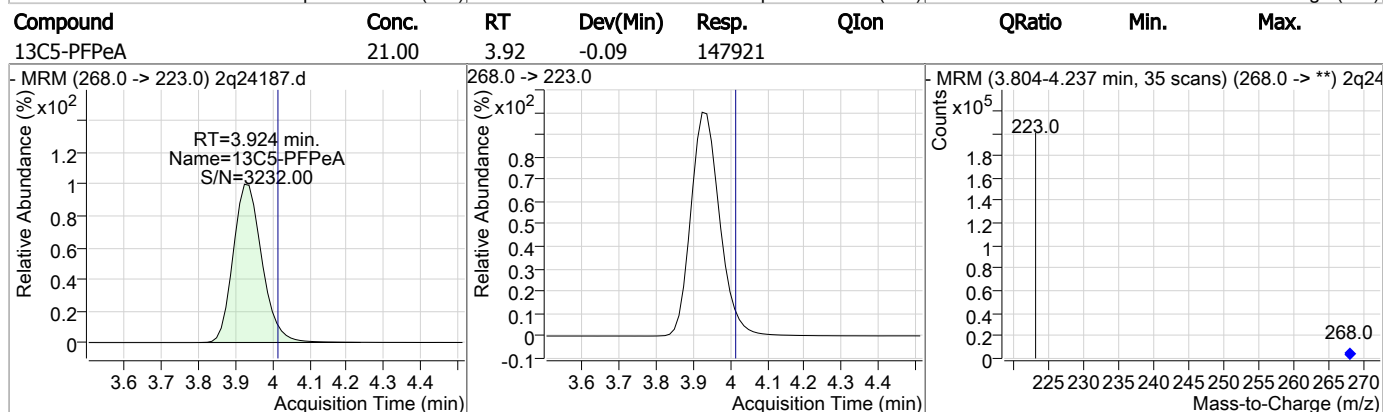
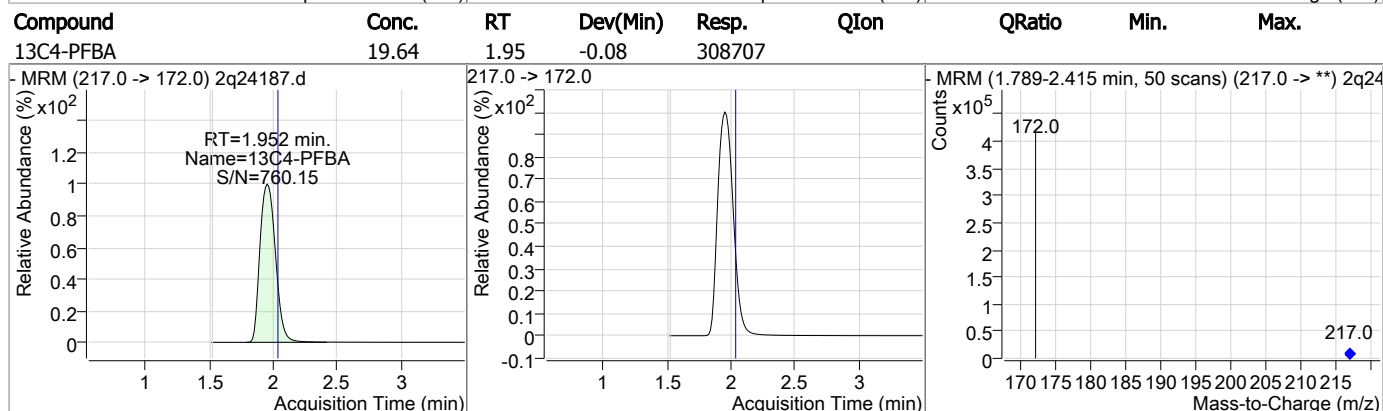
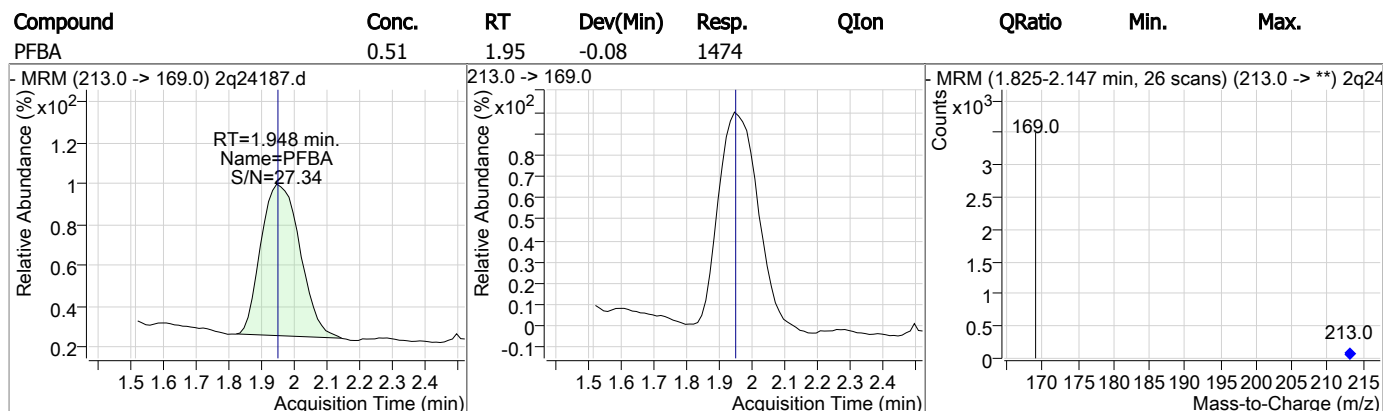
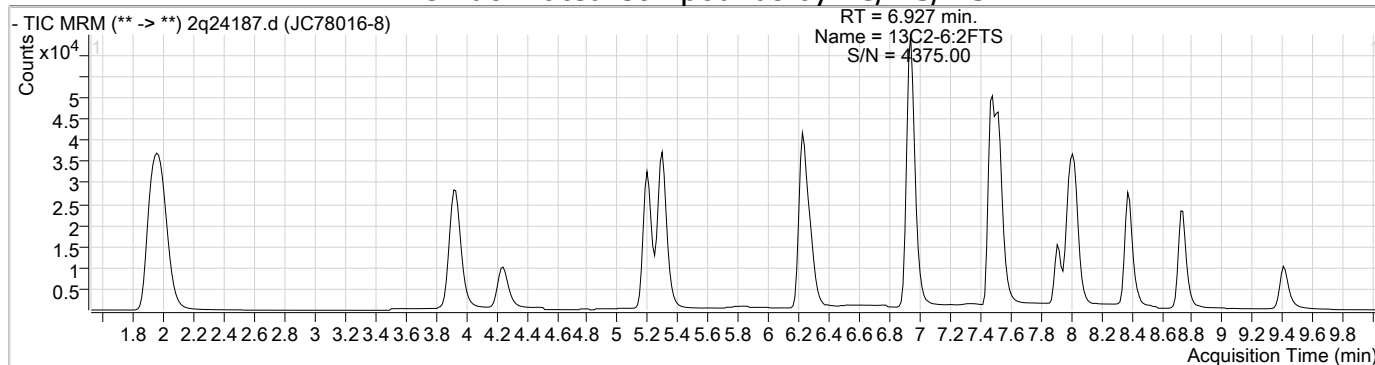
Target Compounds

						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	7.593	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.948	213.0 -> 169.0	1474	0.51	µg/L	100
PFBS	4.234	299.0 -> 80.0	362	0.11	µg/L	100
PFDA	8.156	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	8.679	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.232	363.0 -> 319.0	986	0.16	µg/L m	99
PFHpS	6.954	449.0 -> 80.0	117	0.05	µg/L	99
PFHxA	5.305	313.0 -> 269.0	451	0.20	µg/L	94
PFHxS	6.276	399.0 -> 80.0	379	0.13	µg/L	95
PFNA	7.525	463.0 -> 419.0	233	0.09	µg/L	96
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.949	413.0 -> 369.0	2810	0.86	µg/L m	86
PFOS	7.522	499.0 -> 80.0	3912	1.52	µg/L m	82
PFPeA	3.940	263.0 -> 219.0	3287	0.53	µg/L	100
PFPeS	5.433	349.0 -> 80.0	103	0.05	µg/L m	86
PFTeDA	9.406	713.0 -> 669.0	0	0.00	µg/L m	1
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

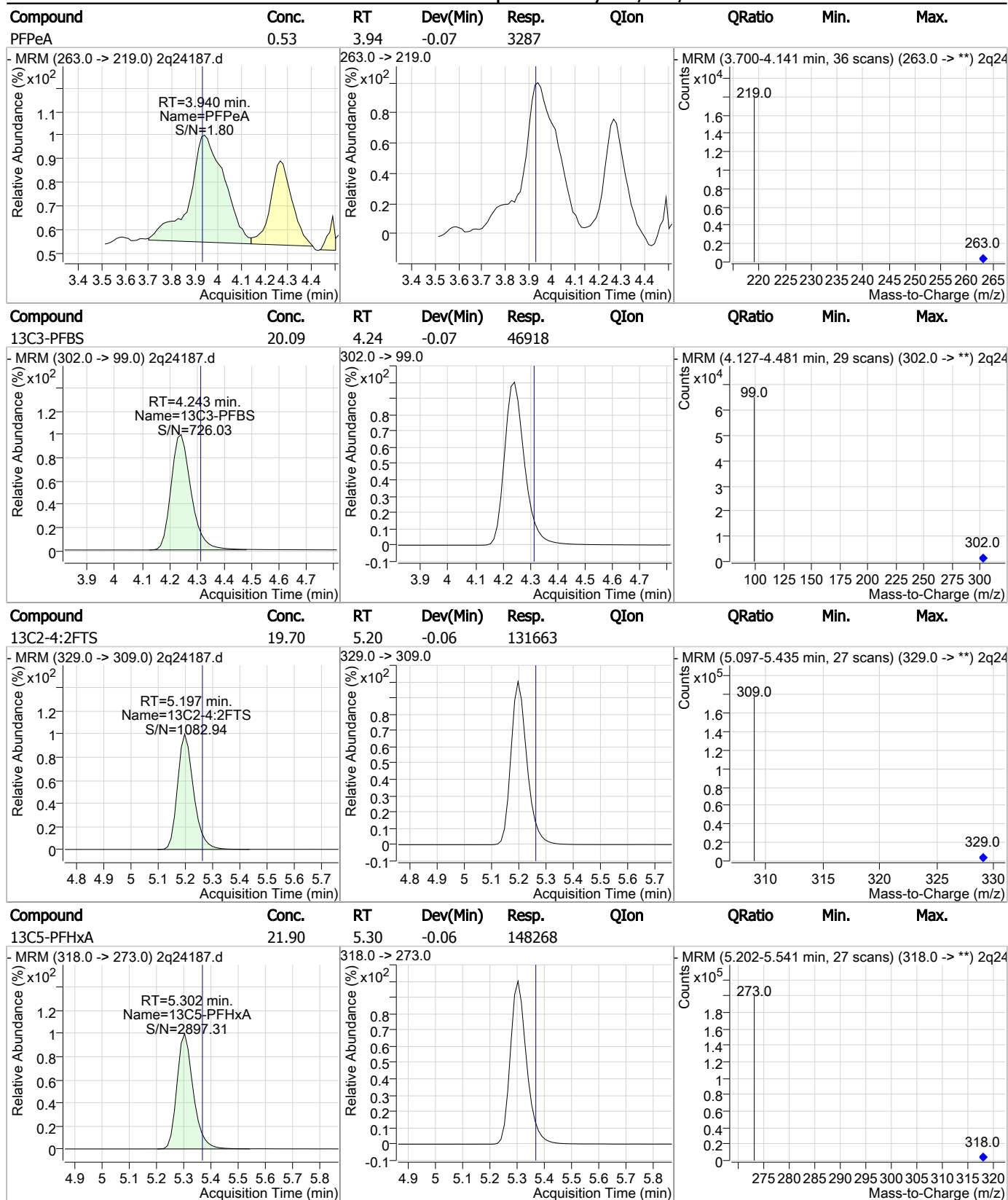
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10.1.8
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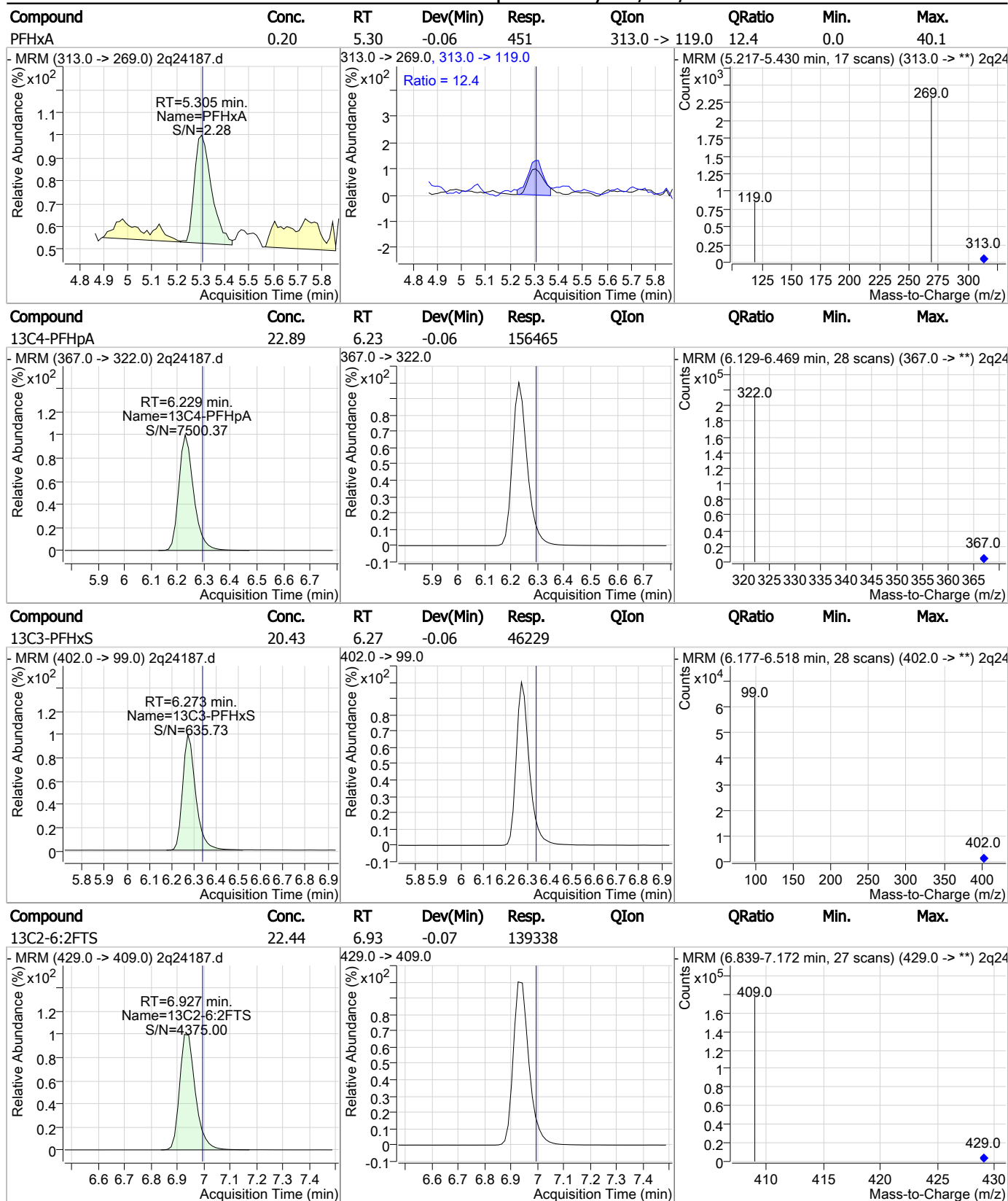
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

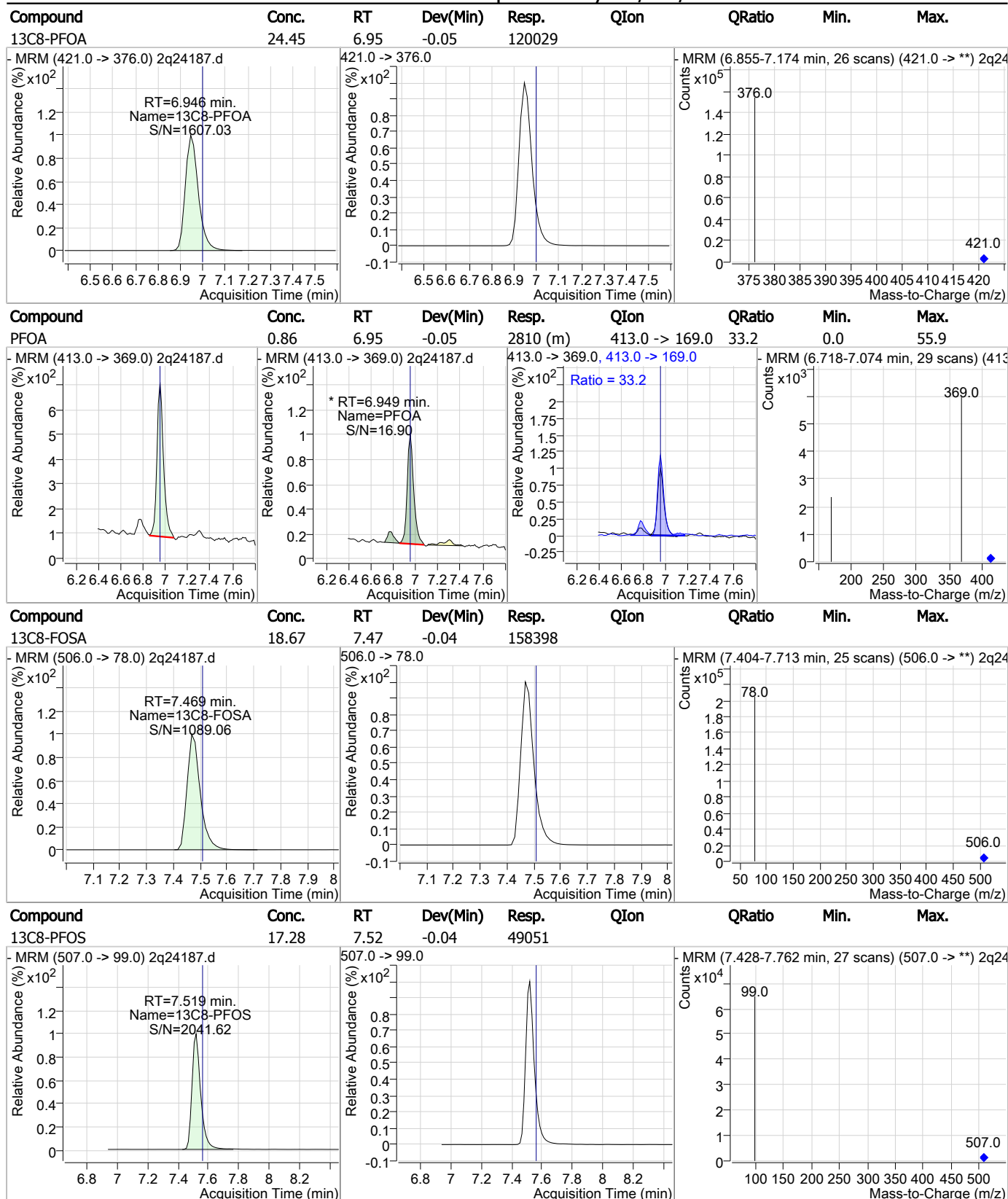


Perfluorinated Compounds by LC/MS/MS



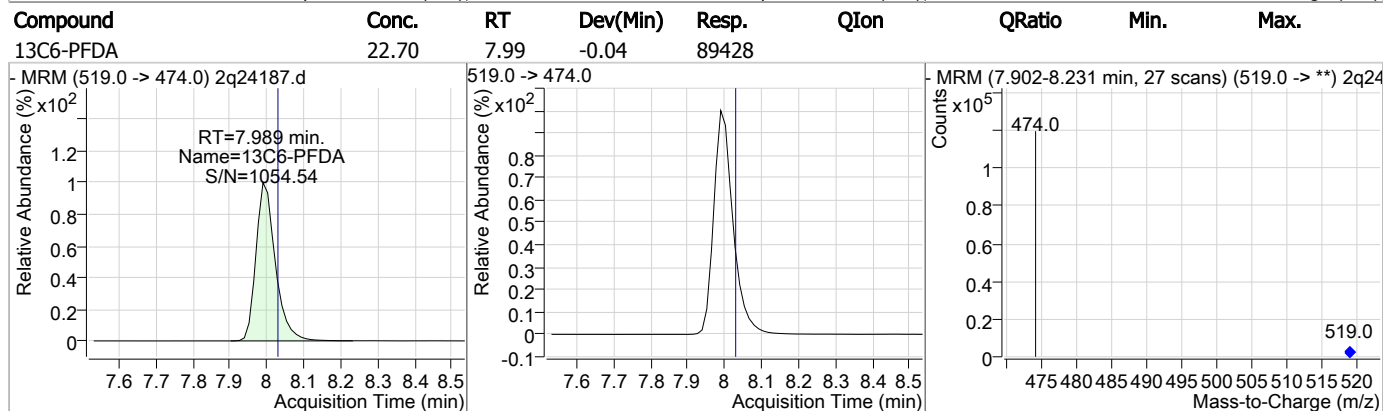
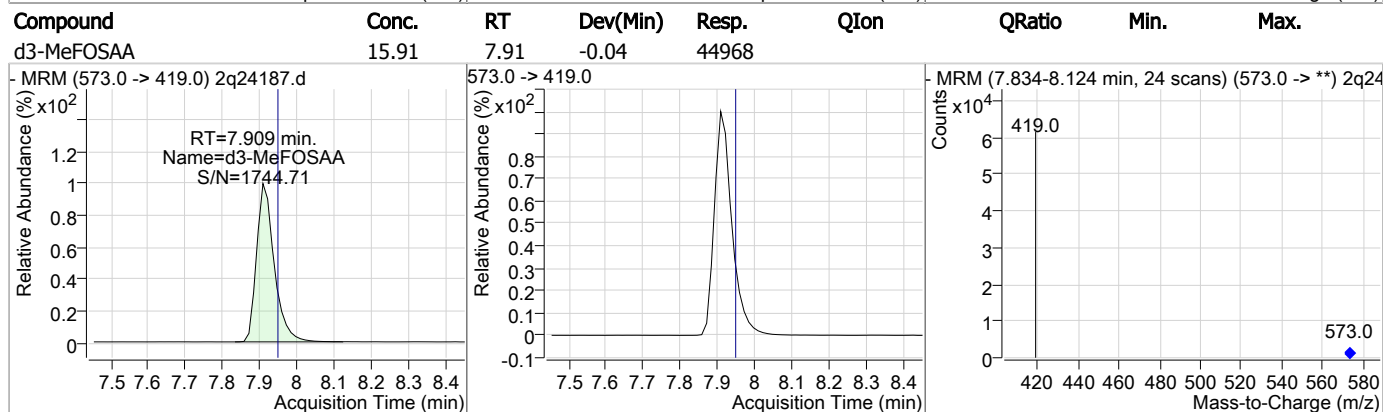
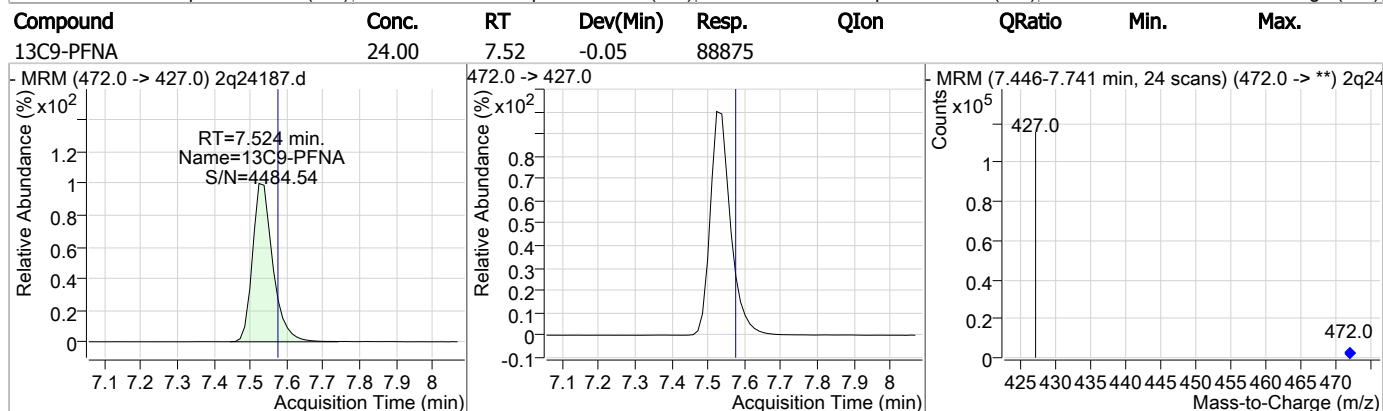
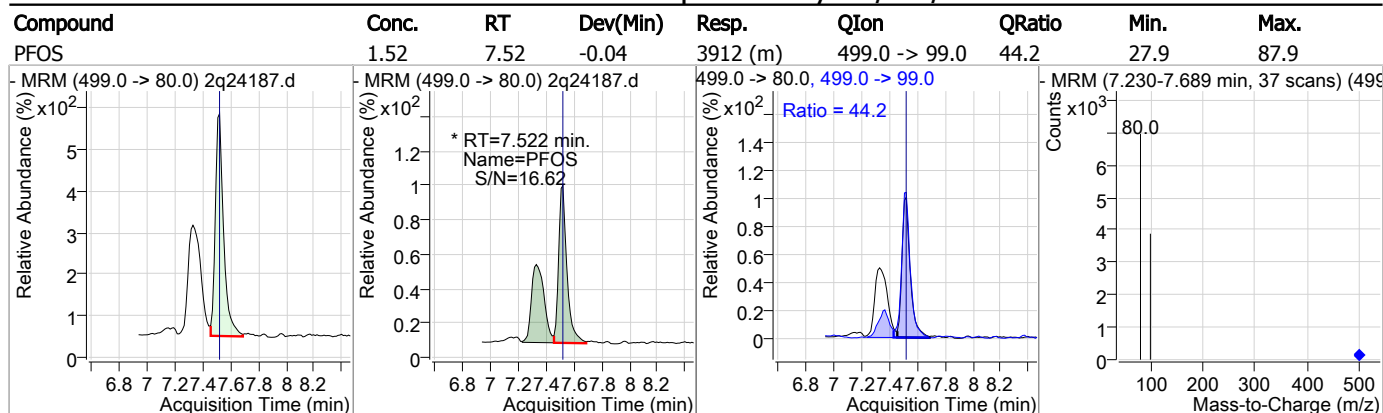
10.1.8 10

Perfluorinated Compounds by LC/MS/MS

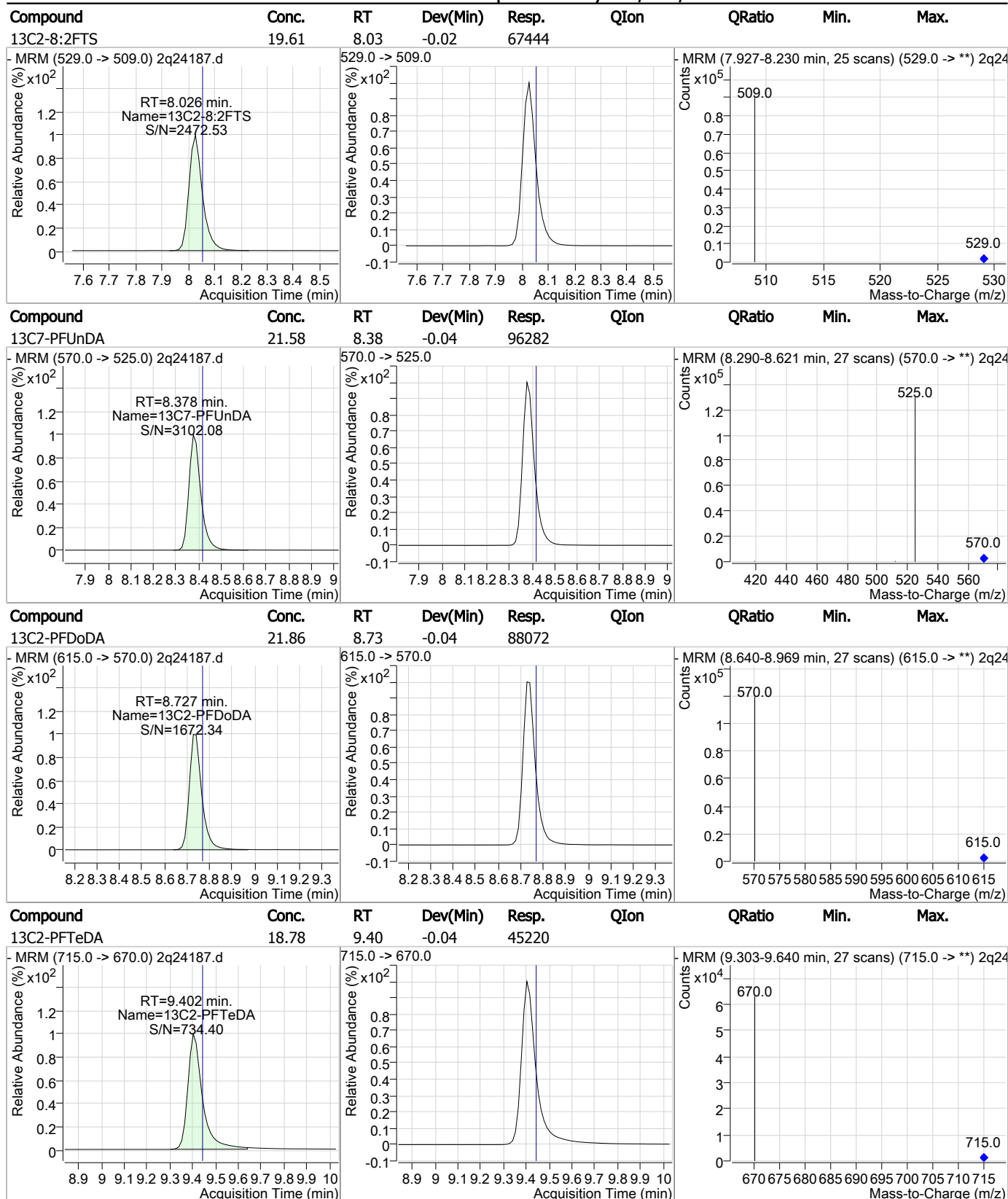


10.1.8 10

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number:

JC78016-8

Lab FileID:

2Q24187.D

Injection Time:

11/28/18 13:46

Method:

EPA 537M BY ID

Analyst approved:

11/28/18 16:02 Nancy Saunders

Supervisor approved:

11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.43	Split peak
Perfluoroheptanoic acid	375-85-9		6.23	Split peak
Perfluorooctanoic acid	335-67-1		6.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.52	Split peak

10.1.8.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24184.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 12:59:12 PM
 Sample Name : JC78016-9
 Vial : Vial 44
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.960	415.0 -> 370.0	0	20.00	µg/L m	-0.036
13C4-PFOS	7.521	503.0 -> 80.0	0	20.00	µg/L m	-0.037
M4-PFBA	1.977	217.0 -> 172.0	300571	20.00	µg/L	-0.050
M5-PFPeA	3.949	268.0 -> 223.0	148184	20.00	µg/L	-0.062
M5-PFHxA	5.315	318.0 -> 273.0	141650	20.00	µg/L	-0.050
M4-PFHpA	6.229	367.0 -> 322.0	141683	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	112659	20.00	µg/L	-0.049
M9-PFNA	7.538	472.0 -> 427.0	81688	20.00	µg/L	-0.035
M6-PFDA	7.989	519.0 -> 474.0	97993	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	93218	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	76363	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	31669	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	191300	20.00	µg/L	-0.037
M3-PFBS	4.255	302.0 -> 99.0	47471	20.00	µg/L	-0.062
M3-PFHxS	6.285	402.0 -> 99.0	43679	20.00	µg/L	-0.050
M8-PFOS	7.519	507.0 -> 99.0	54912	20.00	µg/L	-0.037
M2-4:2FTS	5.210	329.0 -> 309.0	130528	20.00	µg/L	-0.050
M2-6:2FTS	6.943	429.0 -> 409.0	129235	20.00	µg/L	-0.049
M2-8:2FTS	8.026	529.0 -> 509.0	72117	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	49230	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.210	329.0 -> 309.0	130315	19.50	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-6:2FTS	6.943	429.0 -> 409.0	129177	20.80	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-8:2FTS	8.026	529.0 -> 509.0	72101	20.96	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C2-PFDoDA	8.727	615.0 -> 570.0	76331	18.94	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-PFTeDA	9.402	715.0 -> 670.0	31787	13.20	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.0%		
13C3-PFBS	4.255	302.0 -> 99.0	47378	20.29	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C3-PFHxS	6.285	402.0 -> 99.0	43705	19.31	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C4-PFBA	1.977	217.0 -> 172.0	300499	19.11	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C4-PFHpA	6.229	367.0 -> 322.0	141807	20.74	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C5-PFHxA	5.315	318.0 -> 273.0	141599	20.91	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C5-PFPeA	3.949	268.0 -> 223.0	148034	21.02	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C6-PFDA	7.989	519.0 -> 474.0	97983	24.87	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	93303	20.91	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-FOSA	7.469	506.0 -> 78.0	191309	22.55	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
13C8-PFOA	6.946	421.0 -> 376.0	112694	22.96	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%		
13C8-PFOS	7.519	507.0 -> 99.0	55015	19.38	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C9-PFNA	7.538	472.0 -> 427.0	81728	22.07	µg/L	-0.035
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
d3-MeFOSAA	7.909	573.0 -> 419.0	49243	17.42	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.521	503.0 -> 80.0	0	0.00	ng/ml m	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

Target Compounds

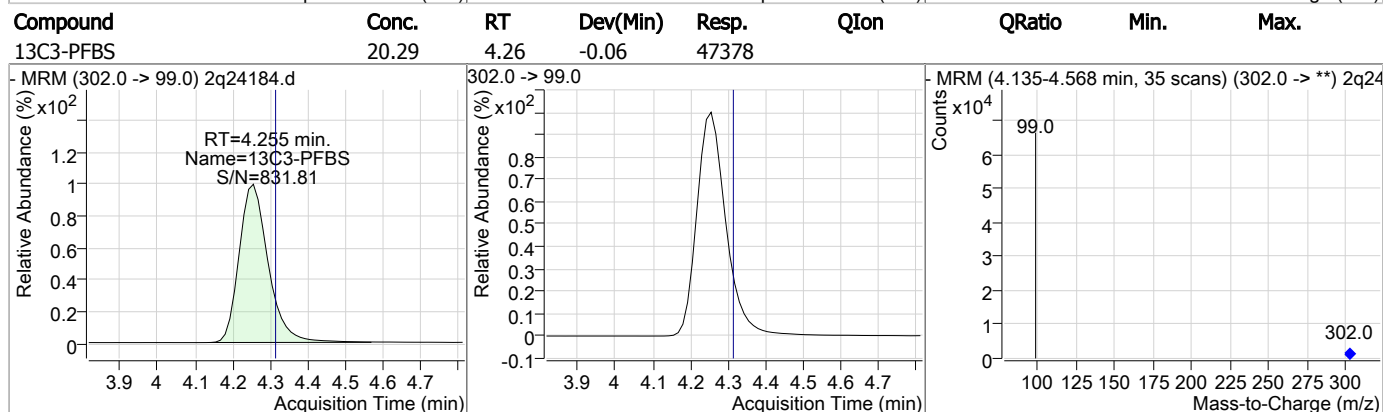
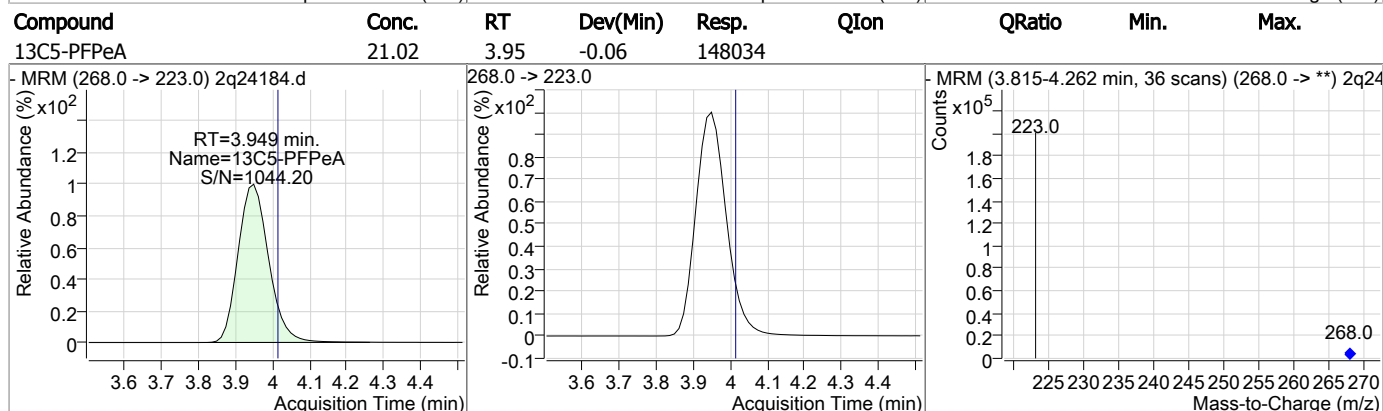
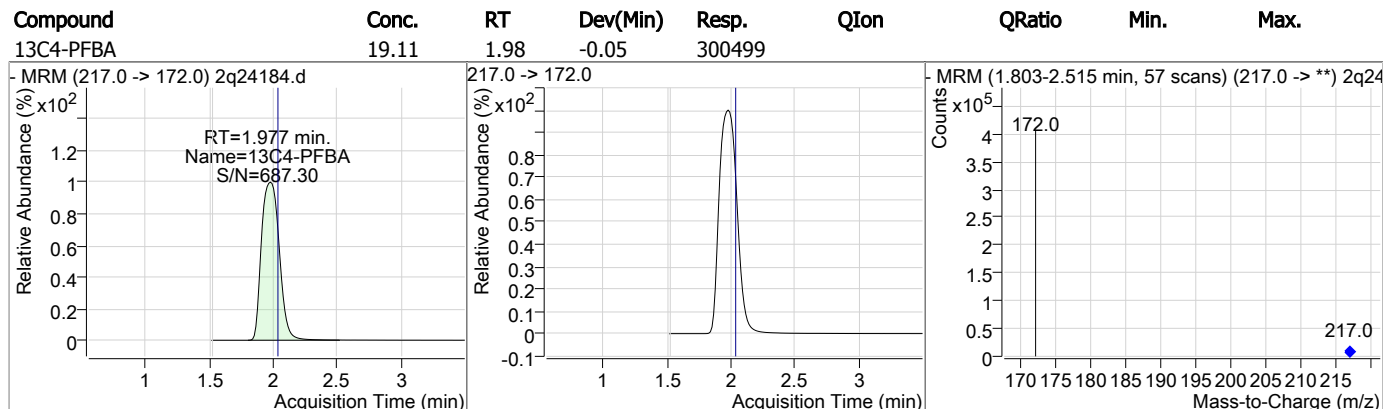
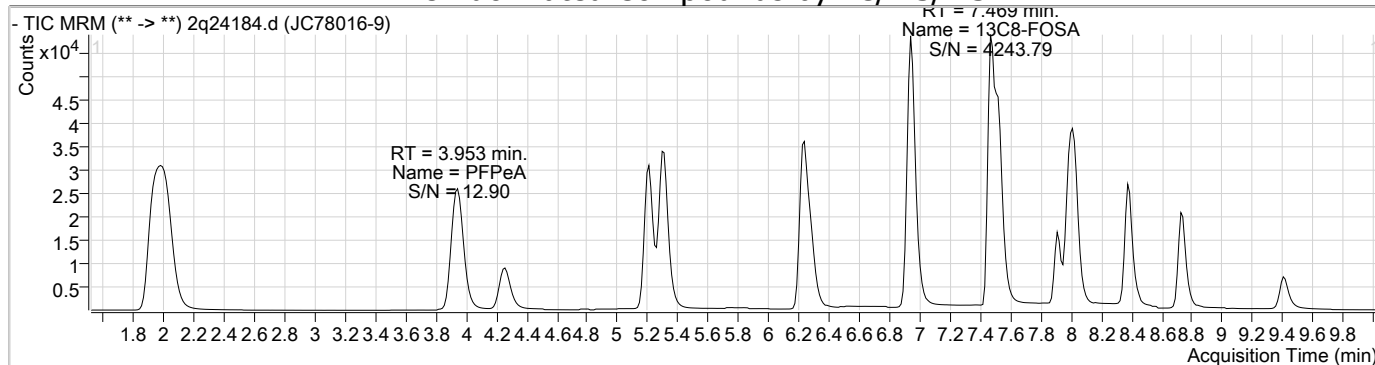
						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	8.015	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	9.074	613.0 -> 569.0	0	0.00	µg/L m	1
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.244	363.0 -> 319.0	89	0.02	µg/L m	94
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	6.949	413.0 -> 369.0	127	0.04	µg/L	84
PFOS	7.368	499.0 -> 80.0	159	0.05	µg/L m	87
PFPeA	3.953	263.0 -> 219.0	532	0.08	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.406	713.0 -> 669.0	101	0.10	µg/L	61
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

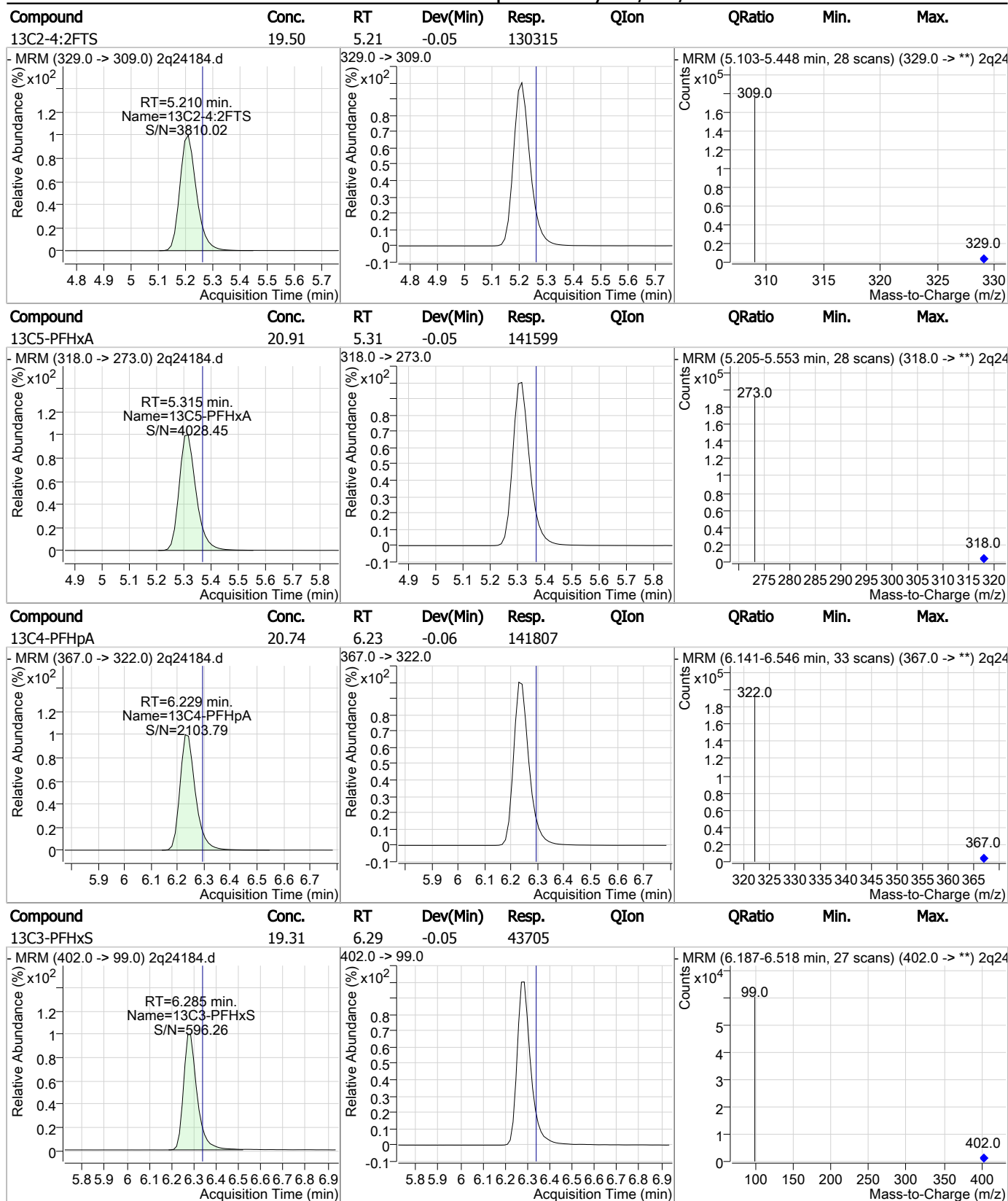
10.1.9
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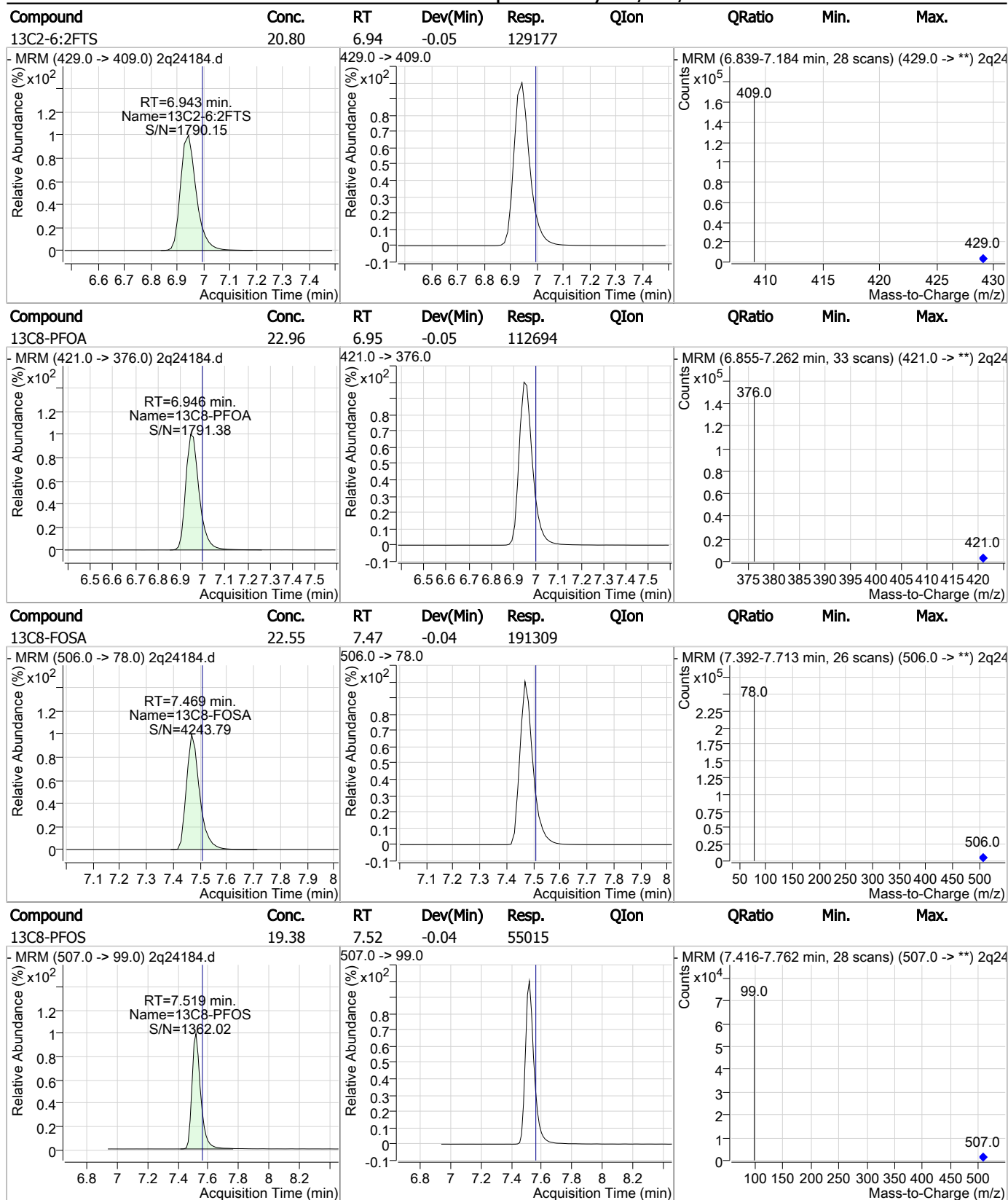
Perfluorinated Compounds by LC/MS/MS



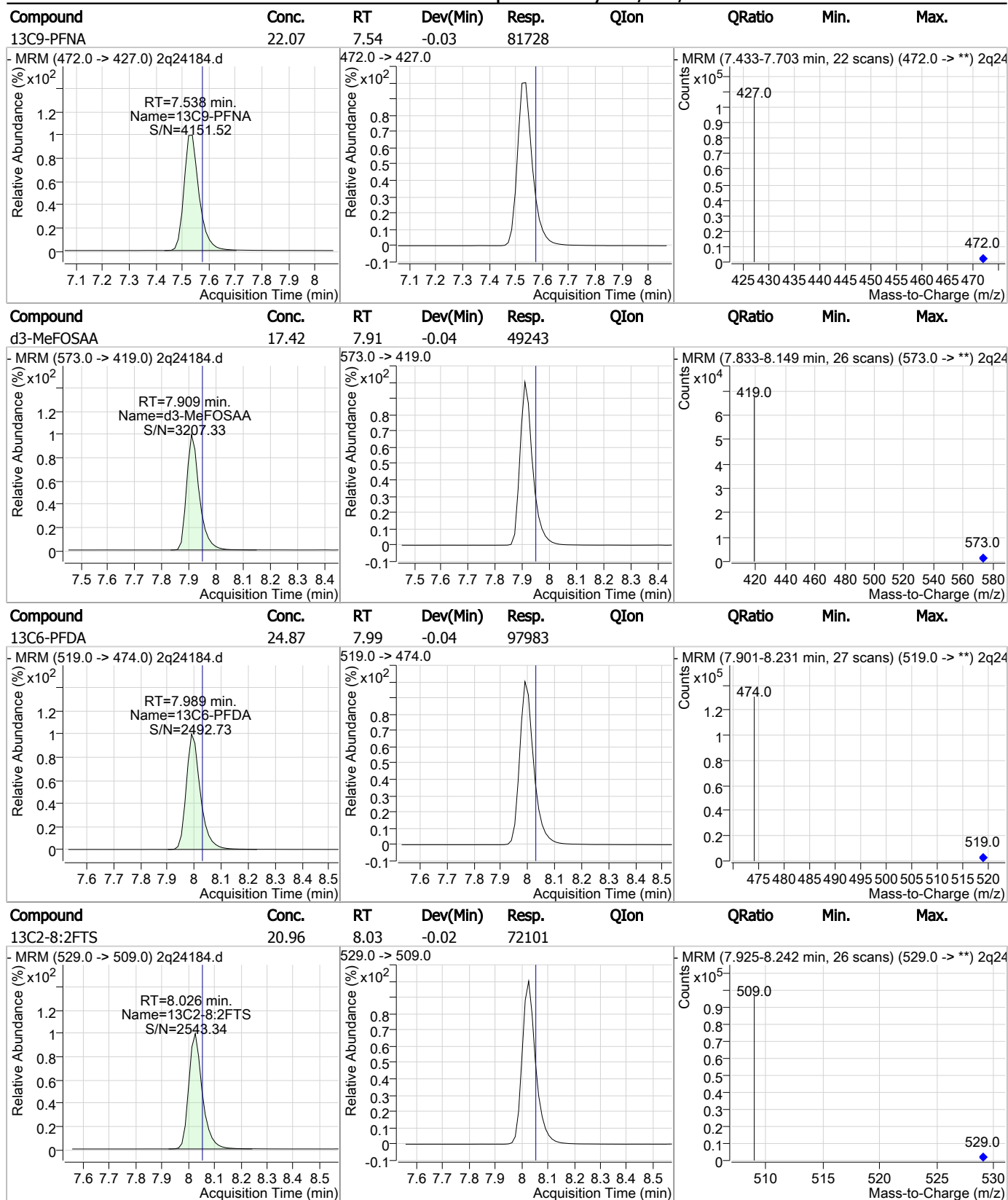
Perfluorinated Compounds by LC/MS/MS



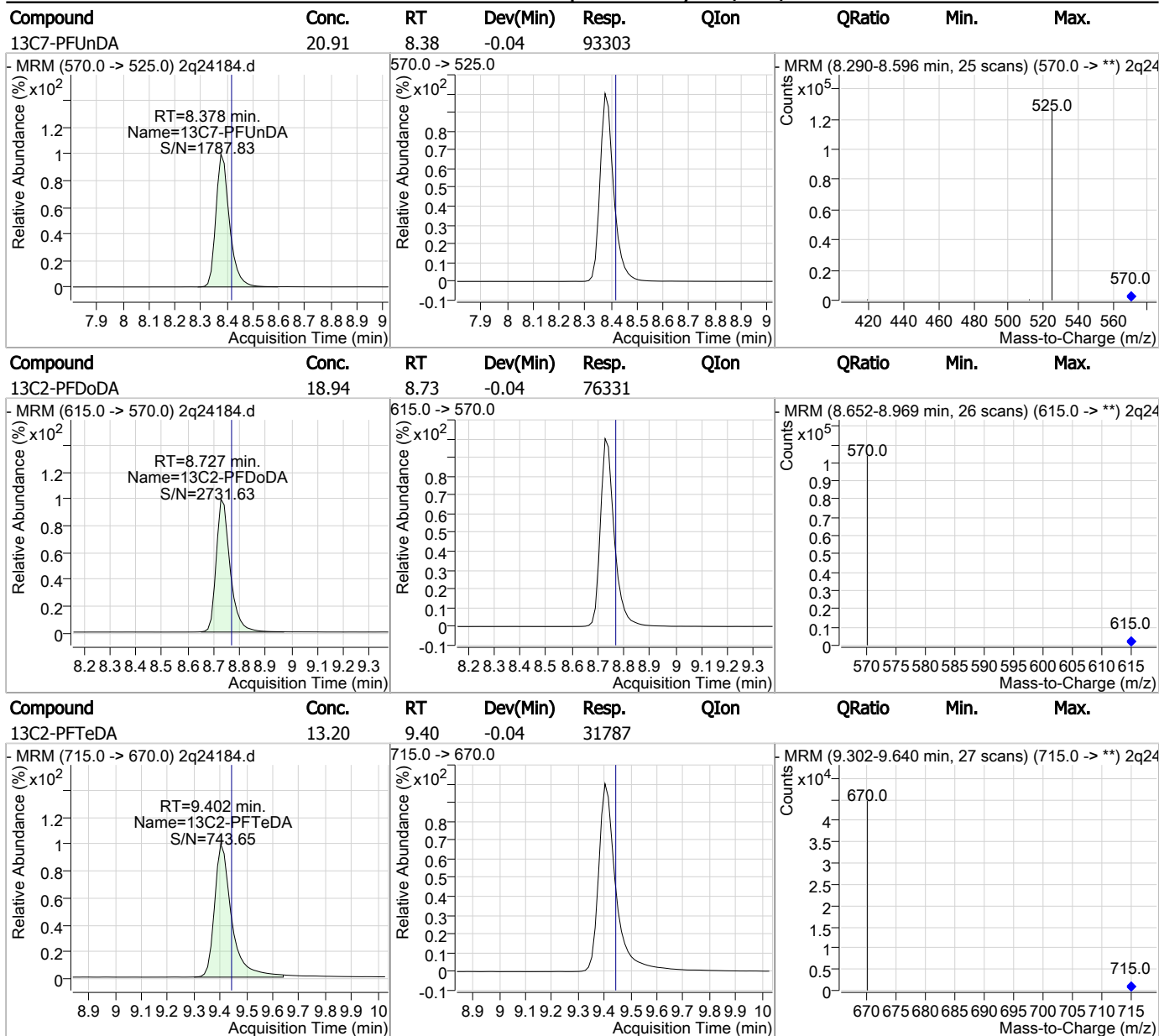
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.1.9 10

Manual Integration Approval Summary

Sample Number: JC78016-9

Method: EPA 537M BY ID

Lab FileID: 2Q24184.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 12:59

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.24	Poor instrument integration
Perfluorooctanesulfonic acid	1763-23-1		7.37	Split peak

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24173.d
Operator : NANCYF
Acq. Method : dMRM_ID_PFC_2.1.m
Acq. Date-Time : 11/28/2018 9:25:05 AM
Sample Name : OP72753-MB
Vial : Vial 33
DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
Batch Name : S2Q377.batch.bin
Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.137	415.0 -> 370.0	0	20.00	µg/L m	0.141
13C4-PFOS	7.676	503.0 -> 80.0	0	20.00	µg/L m	0.118
M4-PFBA	2.152	217.0 -> 172.0	340974	20.00	µg/L	0.125
M5-PFPeA	4.212	268.0 -> 223.0	158042	20.00	µg/L	0.201
M5-PFHxA	5.553	318.0 -> 273.0	149666	20.00	µg/L	0.188
M4-PFHpA	6.444	367.0 -> 322.0	149423	20.00	µg/L	0.153
M8-PFOA	7.136	421.0 -> 376.0	113224	20.00	µg/L	0.141
M9-PFNA	7.678	472.0 -> 427.0	80031	20.00	µg/L	0.105
M6-PFDA	8.117	519.0 -> 474.0	88310	20.00	µg/L	0.091
M7-PFUnDA	8.492	570.0 -> 525.0	108260	20.00	µg/L	0.077
M2-PFDoDA	8.843	615.0 -> 570.0	63806	20.00	µg/L	0.078
M2-PFTeDA	9.502	715.0 -> 670.0	27654	20.00	µg/L	0.063
M8-FOSA	7.599	506.0 -> 78.0	167042	20.00	µg/L	0.093
M3-PFBS	4.518	302.0 -> 99.0	50053	20.00	µg/L	0.201
M3-PFHxS	6.492	402.0 -> 99.0	46729	20.00	µg/L	0.158
M8-PFOS	7.674	507.0 -> 99.0	60155	20.00	µg/L	0.118
M2-4:2FTS	5.448	329.0 -> 309.0	138954	20.00	µg/L	0.188
M2-6:2FTS	7.122	429.0 -> 409.0	134824	20.00	µg/L	0.129
M2-8:2FTS	8.153	529.0 -> 509.0	66508	20.00	µg/L	0.103
M3-MeFOSAA	8.023	573.0 -> 419.0	47351	20.00	µg/L	0.077

System Monitoring Compounds

13C2-4:2FTS	5.448	329.0 -> 309.0	138998	20.80	µg/L	0.188
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-6:2FTS	7.122	429.0 -> 409.0	134817	21.71	µg/L	0.129
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-8:2FTS	8.153	529.0 -> 509.0	66447	19.32	µg/L	0.103
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-PFDoDA	8.843	615.0 -> 570.0	63878	15.85	µg/L	0.078
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%		
13C2-PFTeDA	9.502	715.0 -> 670.0	27128	11.27	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.3%		
13C3-PFBS	4.518	302.0 -> 99.0	50033	21.43	µg/L	0.201
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C3-PFHxS	6.492	402.0 -> 99.0	46733	20.65	µg/L	0.158
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFBA	2.152	217.0 -> 172.0	340839	21.68	µg/L	0.125
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C4-PFHpA	6.444	367.0 -> 322.0	149425	21.86	µg/L	0.153
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C5-PFHxA	5.553	318.0 -> 273.0	150067	22.16	µg/L	0.188
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C5-PFPeA	4.212	268.0 -> 223.0	158048	22.44	µg/L	0.201
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C6-PFDA	8.117	519.0 -> 474.0	88088	22.36	µg/L	0.091
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%		

Perfluorinated Compounds by LC/MS/MS

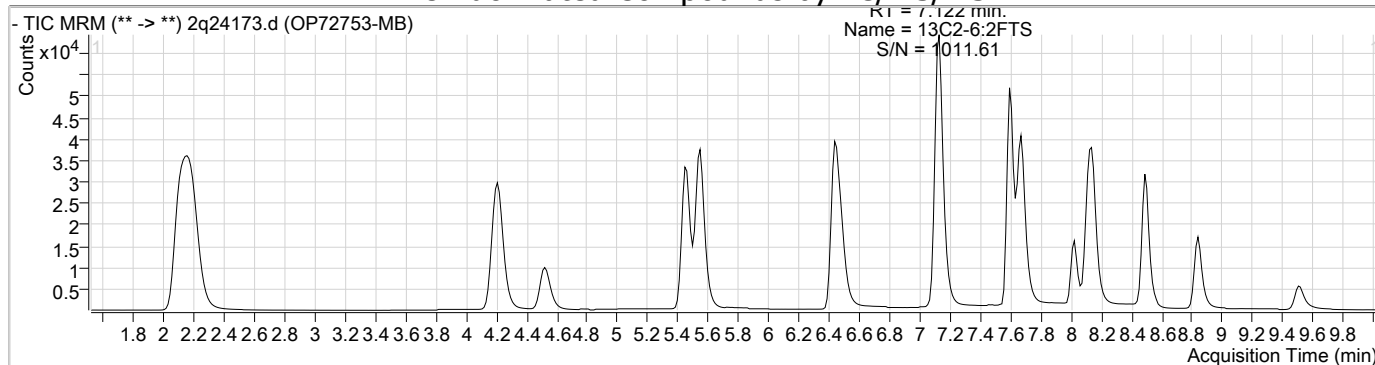
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
13C7-PFUnDA	8.492	570.0 -> 525.0	108324	24.28	µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C8-FOSA	7.599	506.0 -> 78.0	166906	19.67	µg/L	0.093
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C8-PFOA	7.136	421.0 -> 376.0	113521	23.13	µg/L	0.141
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.6%		
13C8-PFOS	7.674	507.0 -> 99.0	60253	21.22	µg/L	0.118
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C9-PFNA	7.678	472.0 -> 427.0	80084	21.62	µg/L	0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
d3-MeFOSAA	8.023	573.0 -> 419.0	47314	16.74	µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	7.676	503.0 -> 80.0	0	0.00	ng/ml m	0.118
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		

Target Compounds

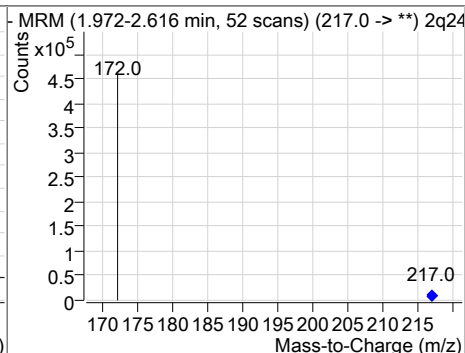
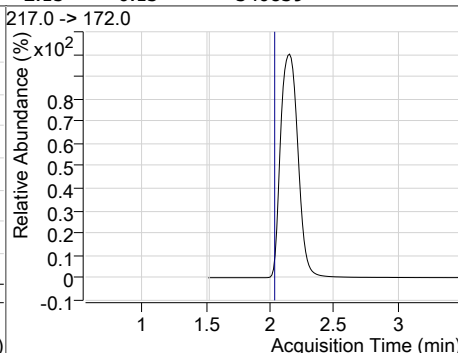
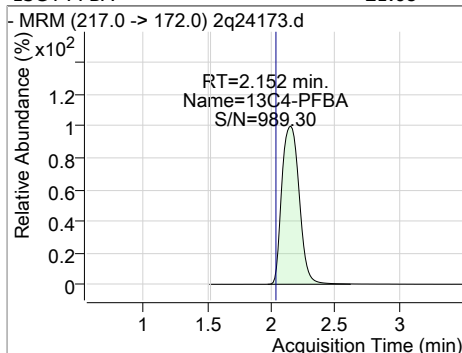
						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.135	584.0 -> 419.0	0	0.00	µg/L m	1
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	8.106	513.0 -> 469.0	0	0.00	µg/L m	1
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.446	363.0 -> 319.0	0	0.00	µg/L m	1
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	7.138	413.0 -> 369.0	202	0.07	µg/L	51
PFOS	7.536	499.0 -> 80.0	258	0.08	µg/L m	67
PFPeA	4.216	263.0 -> 219.0	588	0.09	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

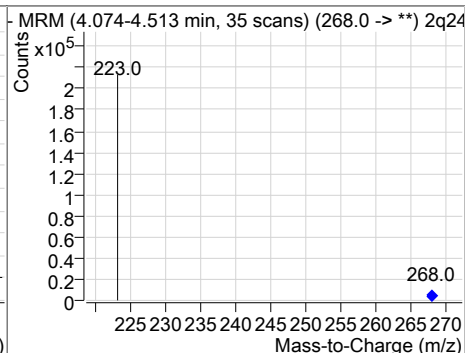
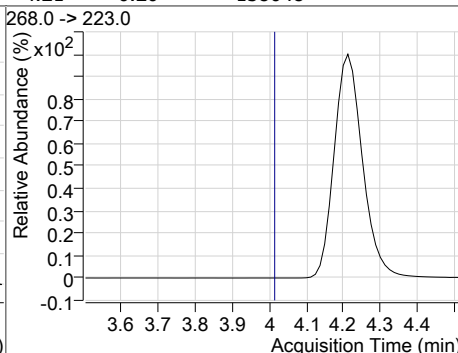
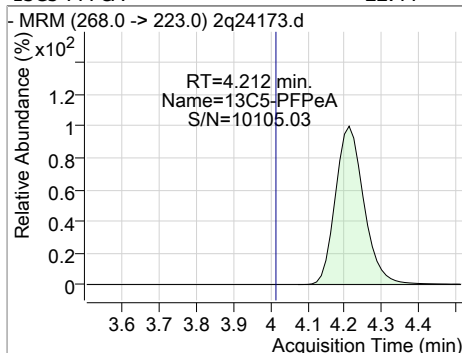
Perfluorinated Compounds by LC/MS/MS



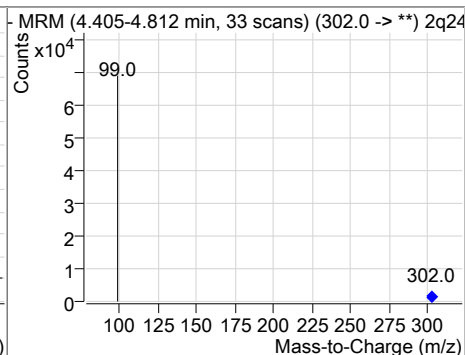
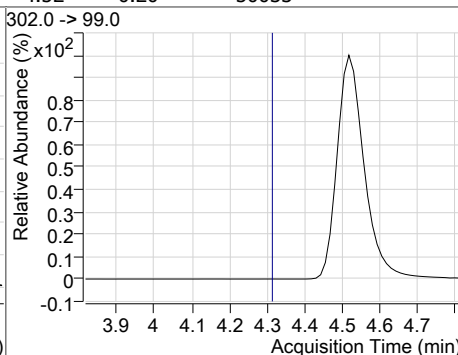
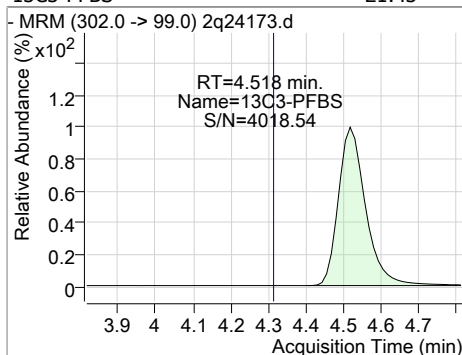
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.68	2.15	0.13	340839				



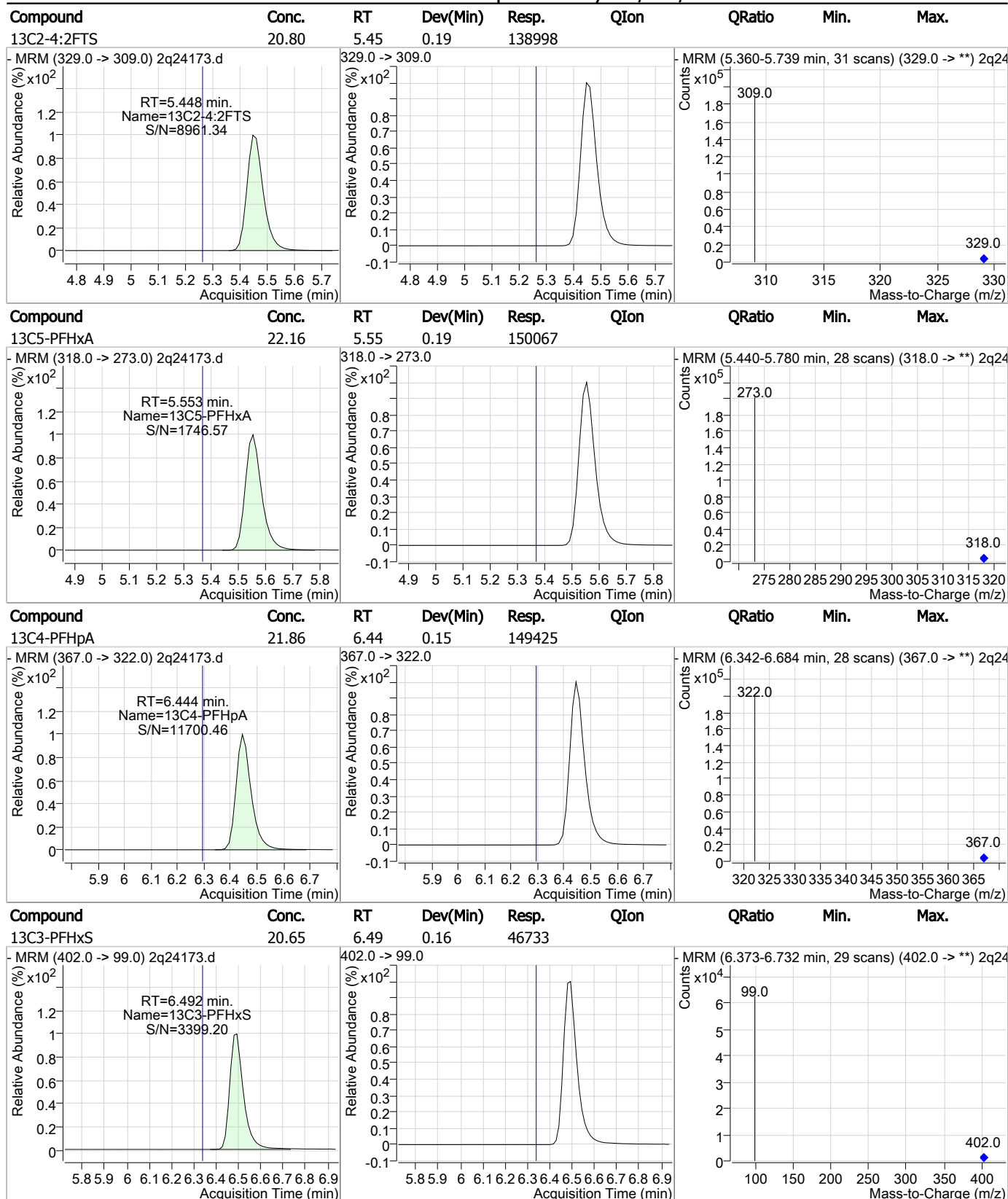
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.44	4.21	0.20	158048				



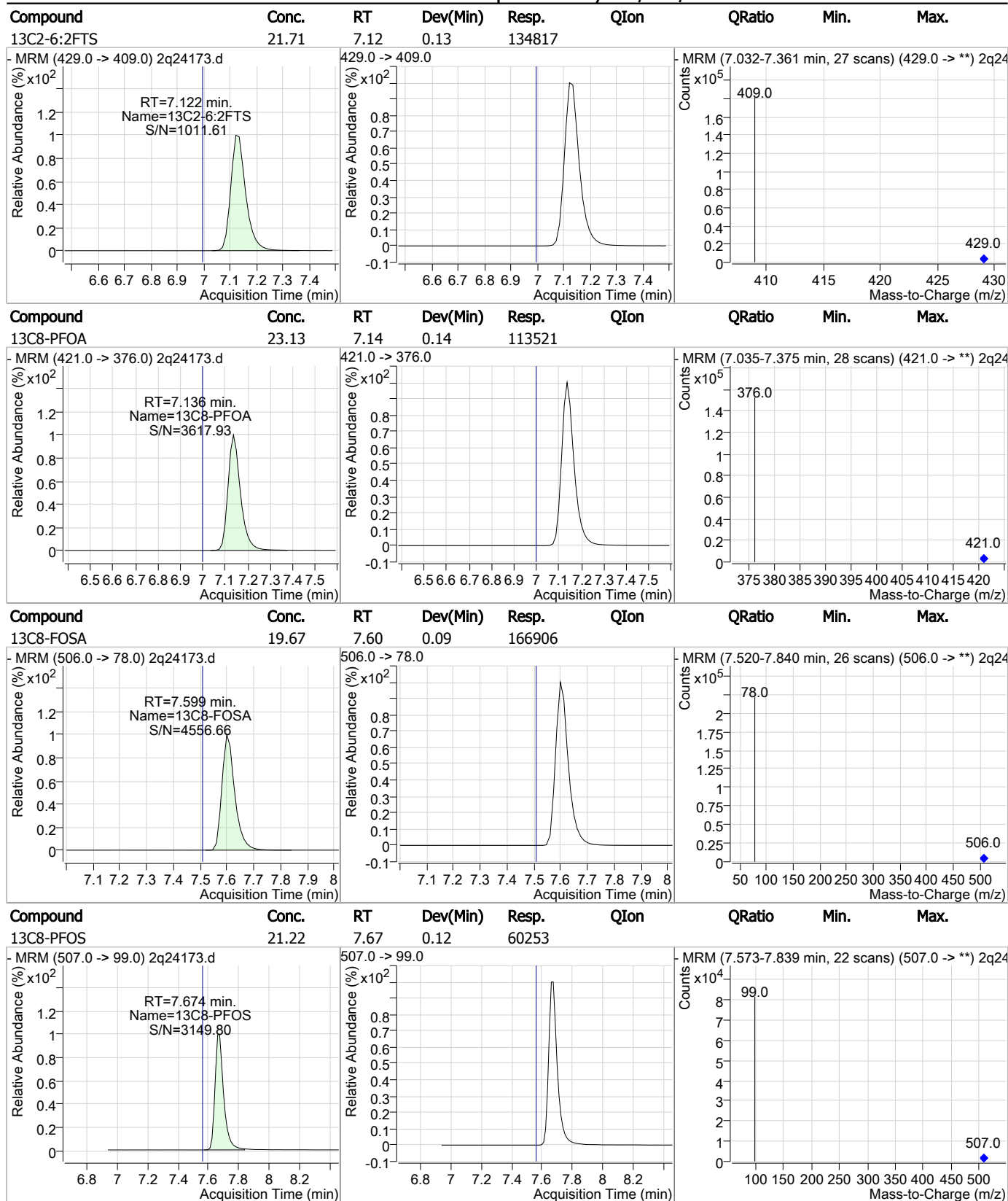
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.43	4.52	0.20	50033				



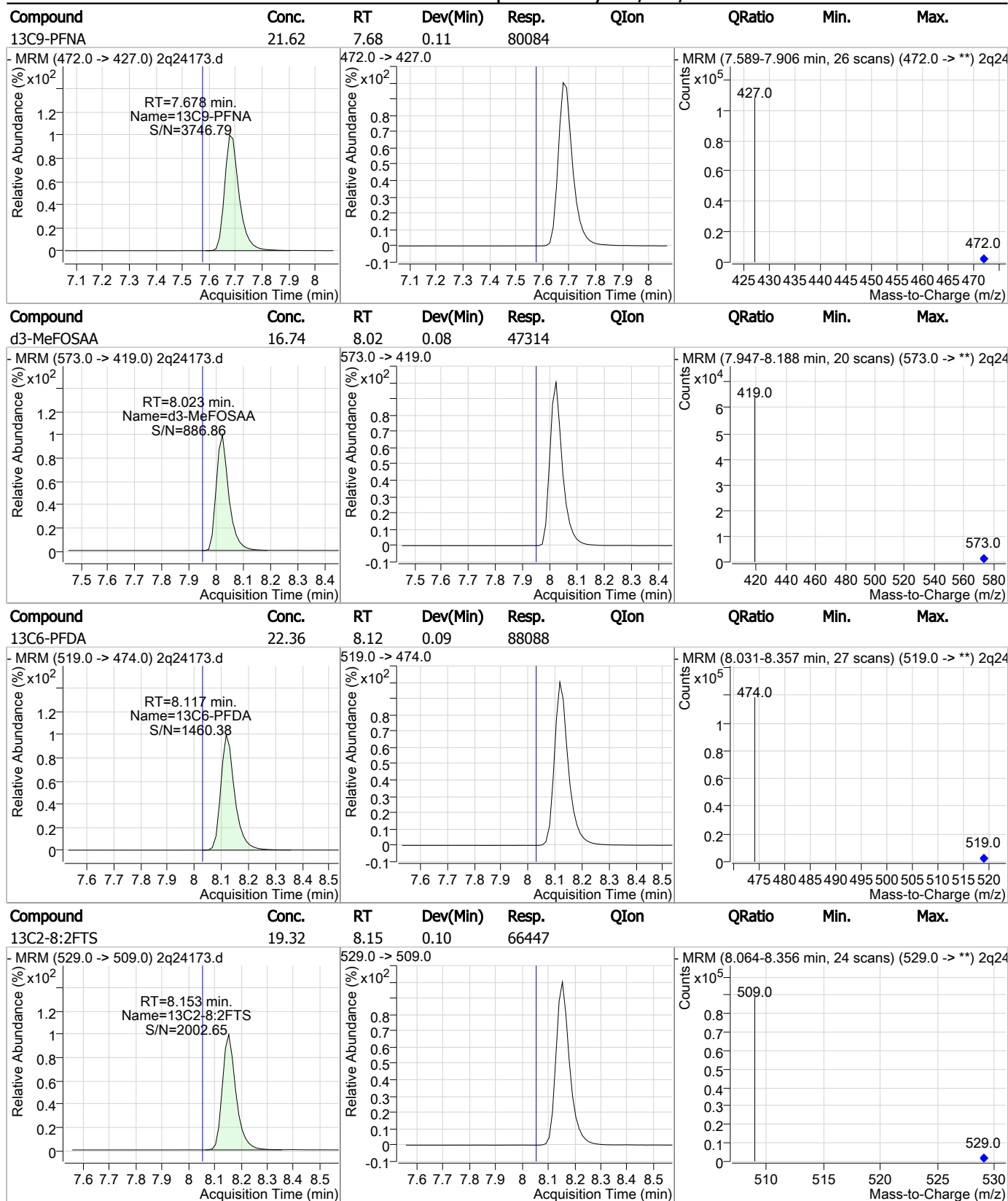
Perfluorinated Compounds by LC/MS/MS



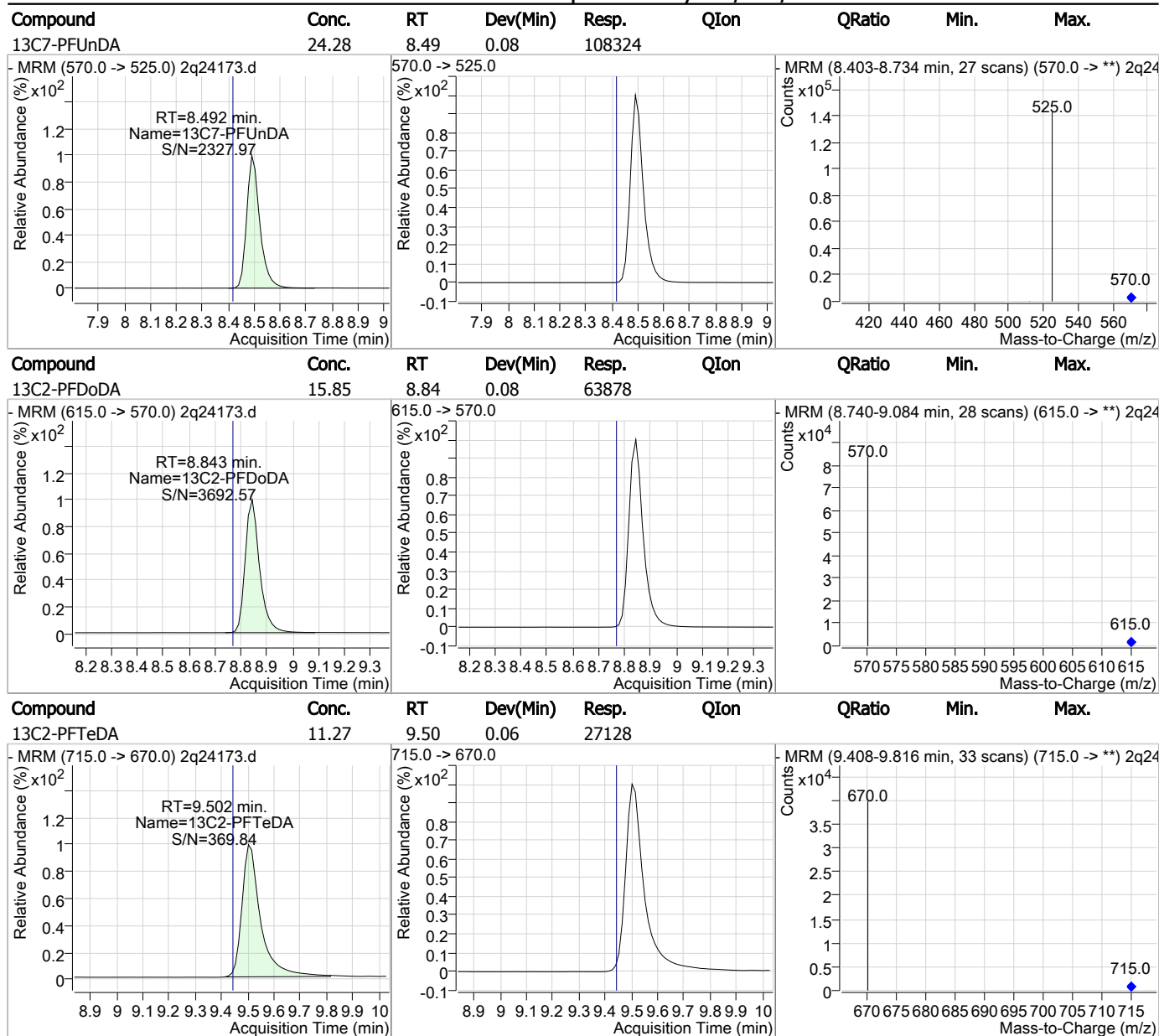
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.2.1 10

Manual Integration Approval Summary

Sample Number: OP72753-MB

Method: EPA 537M BY ID

Lab FileID: 2Q24173.D

Analyst approved: 11/28/18 14:44 Nancy Saunders

Injection Time: 11/28/18 09:25

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.2.1.1
10

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24168.d
Operator : NANCYF
Acq. Method : dMRM_ID_PFC_2.1.m
Acq. Date-Time : 11/28/2018 8:05:02 AM
Sample Name : IBLK
Vial : Vial 1
DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
Batch Name : S2Q377.batch.bin
Sample Information : op72749,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.985	415.0 -> 370.0	141188	20.00 µg/L	-0.011
13C4-PFOS	7.548	503.0 -> 80.0	105810	20.00 µg/L	-0.010
M4-PFBA	2.027	217.0 -> 172.0	341713	20.00 µg/L	0.000
M5-PFPeA	3.999	268.0 -> 223.0	149055	20.00 µg/L	-0.012
M5-PFHxA	5.353	318.0 -> 273.0	145362	20.00 µg/L	-0.012
M4-PFHpA	6.279	367.0 -> 322.0	142313	20.00 µg/L	-0.012
M8-PFOA	6.984	421.0 -> 376.0	103515	20.00 µg/L	-0.011
M9-PFNA	7.564	472.0 -> 427.0	77318	20.00 µg/L	-0.009
M6-PFDA	8.028	519.0 -> 474.0	90281	20.00 µg/L	0.001
M7-PFUnDA	8.403	570.0 -> 525.0	94753	20.00 µg/L	-0.012
M2-PFDoDA	8.765	615.0 -> 570.0	82143	20.00 µg/L	0.000
M2-PFTeDA	9.440	715.0 -> 670.0	49590	20.00 µg/L	0.000
M8-FOSA	7.495	506.0 -> 78.0	187273	20.00 µg/L	-0.011
M3-PFBS	4.305	302.0 -> 99.0	48882	20.00 µg/L	-0.012
M3-PFHxS	6.323	402.0 -> 99.0	45526	20.00 µg/L	-0.012
M8-PFOS	7.546	507.0 -> 99.0	59515	20.00 µg/L	-0.010
M2-4:2FTS	5.260	329.0 -> 309.0	126194	20.00 µg/L	0.000
M2-6:2FTS	6.981	429.0 -> 409.0	122133	20.00 µg/L	-0.012
M2-8:2FTS	8.052	529.0 -> 509.0	68217	20.00 µg/L	0.001
M3-MeFOSAA	7.934	573.0 -> 419.0	59449	20.00 µg/L	-0.012

System Monitoring Compounds

13C2-4:2FTS	5.260	329.0 -> 309.0	125782	18.82 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C2-6:2FTS	6.981	429.0 -> 409.0	122091	19.66 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C2-8:2FTS	8.052	529.0 -> 509.0	68273	19.85 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C2-PFDoDA	8.765	615.0 -> 570.0	82097	20.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C2-PFTeDA	9.440	715.0 -> 670.0	49195	20.43 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C3-PFBS	4.305	302.0 -> 99.0	48250	20.66 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C3-PFHxS	6.323	402.0 -> 99.0	45372	20.05 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFBA	2.027	217.0 -> 172.0	341386	21.71 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C4-PFHpA	6.279	367.0 -> 322.0	142208	20.80 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C5-PFHxA	5.353	318.0 -> 273.0	144686	21.37 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C5-PFPeA	3.999	268.0 -> 223.0	148051	21.02 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C6-PFDA	8.028	519.0 -> 474.0	90264	22.91 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	94800	21.25 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C8-FOSA	7.495	506.0 -> 78.0	187358	22.08 µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C8-PFOA	6.984	421.0 -> 376.0	103480	21.08 µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	7.546	507.0 -> 99.0	59836	21.08 µg/L	-0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C9-PFNA	7.564	472.0 -> 427.0	77504	20.93 µg/L	-0.009
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d3-MeFOSAA	7.934	573.0 -> 419.0	59451	21.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
M2-PFOA	6.985	415.0 -> 370.0	141073	20.00 ng/ml	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
M4-PFOS	7.548	503.0 -> 80.0	105079	19.91 ng/ml	-0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	

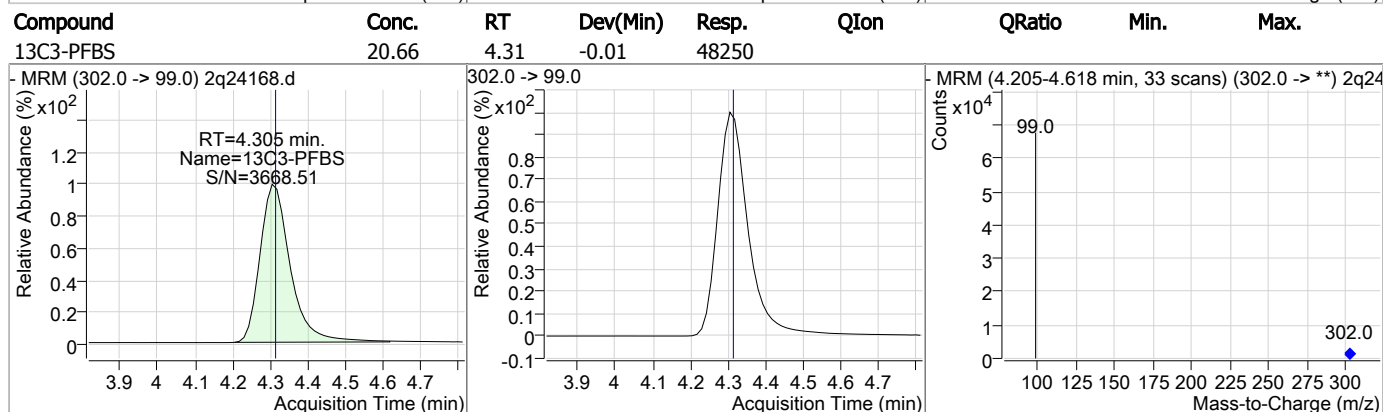
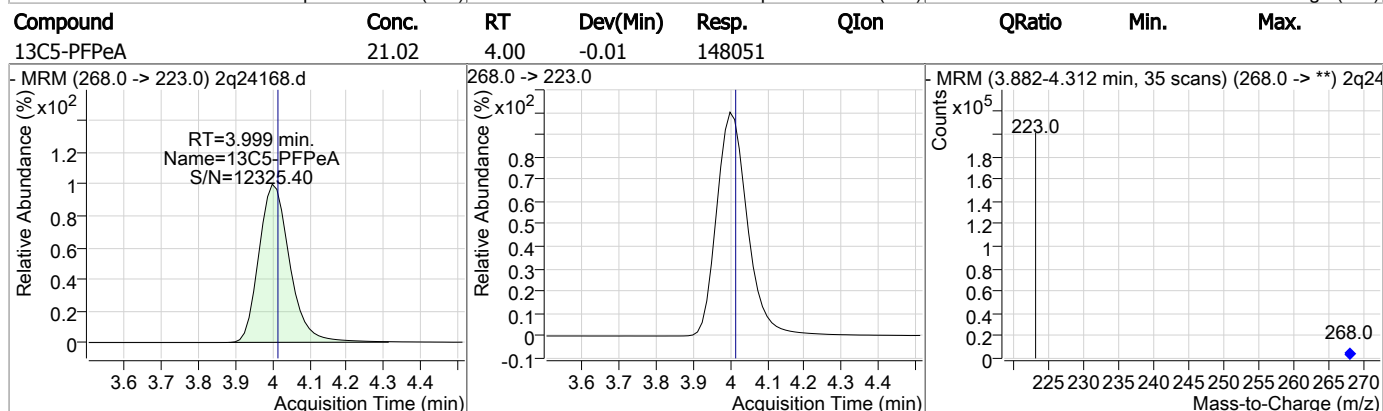
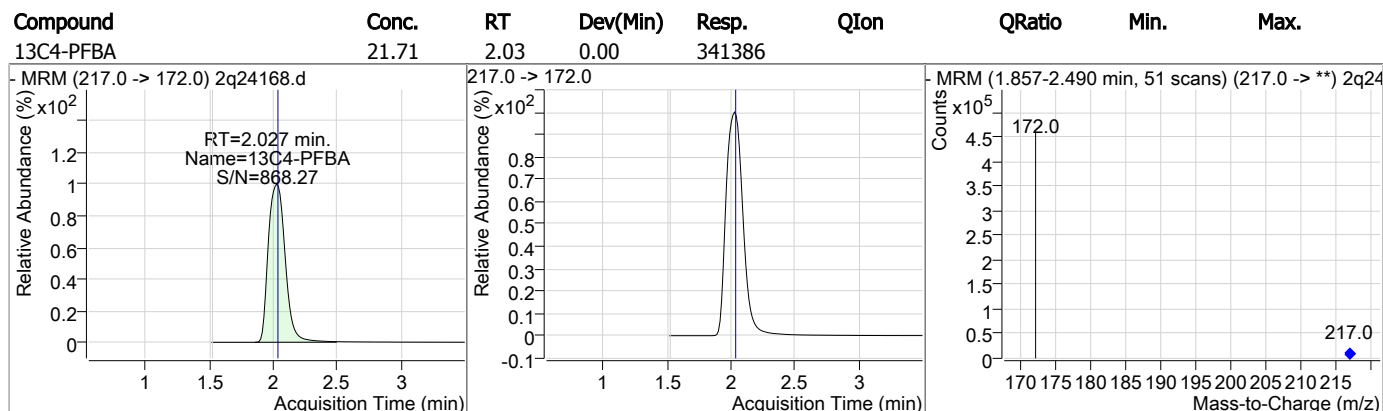
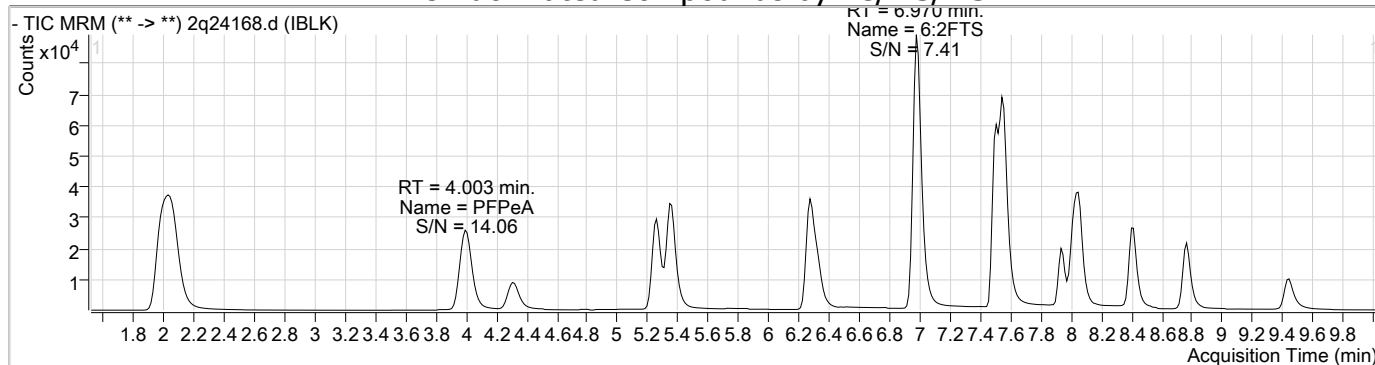
Target Compounds

						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.970	427.0 -> 407.0	121	0.04 µg/L	#	1
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.073	584.0 -> 419.0	329	0.25 µg/L		95
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.947	570.0 -> 419.0	295	0.19 µg/L		95
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	8.041	513.0 -> 469.0	262	0.14 µg/L	m	89
PFDoDA	8.767	613.0 -> 569.0	133	0.07 µg/L		99
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.282	363.0 -> 319.0	233	0.04 µg/L		93
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	6.987	413.0 -> 369.0	255	0.09 µg/L		100
PFOS	7.406	499.0 -> 80.0	321	0.10 µg/L	m	75
PFPeA	4.003	263.0 -> 219.0	293	0.05 µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.432	713.0 -> 669.0	260	0.16 µg/L		96
PFTTrDA	9.107	663.0 -> 619.0	165	0.09 µg/L		94
PFUnDA	8.417	563.0 -> 519.0	122	0.07 µg/L		78

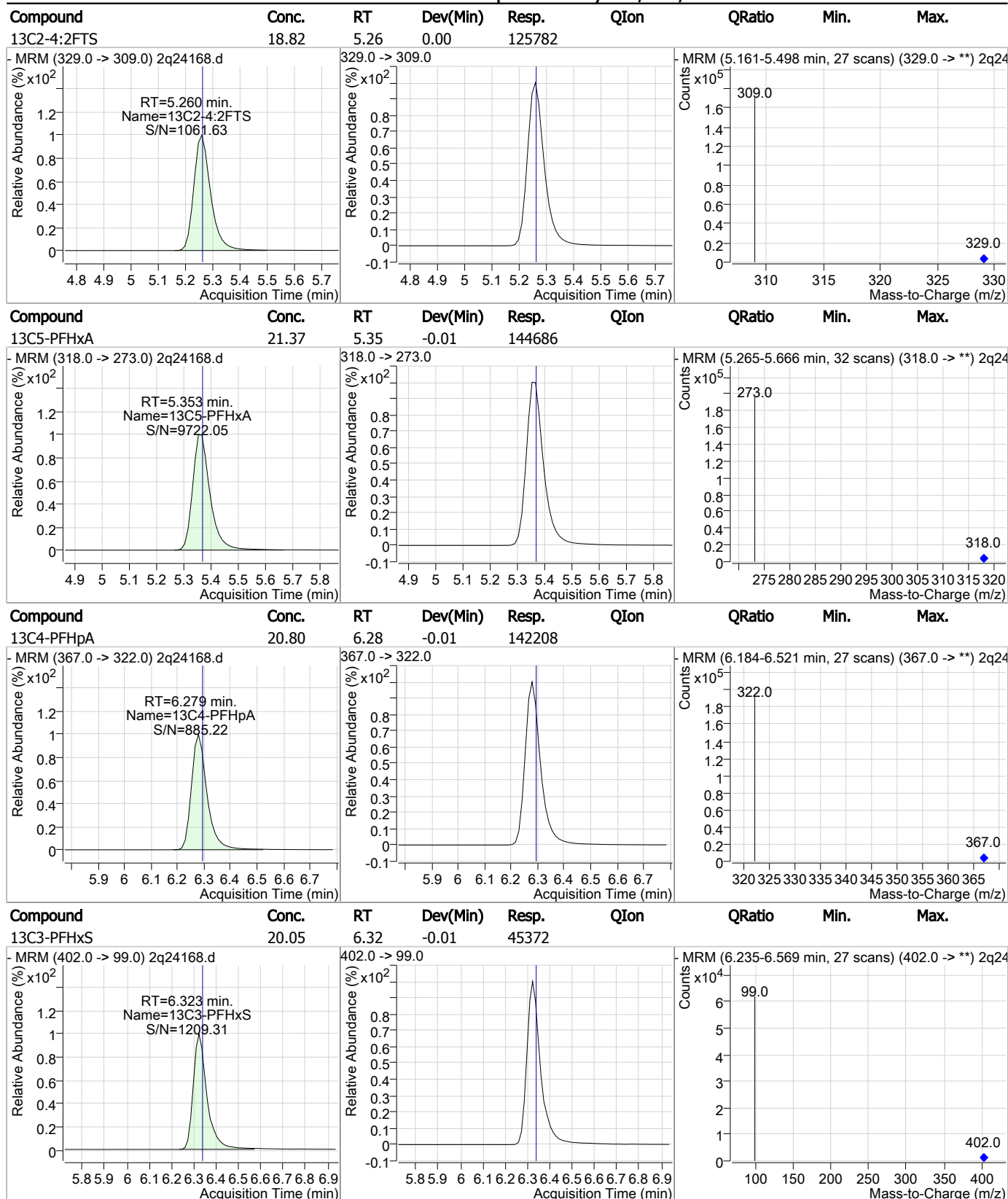
= Qualifier out of range, m = manually integrated, + = Area summed

10.2.2 10

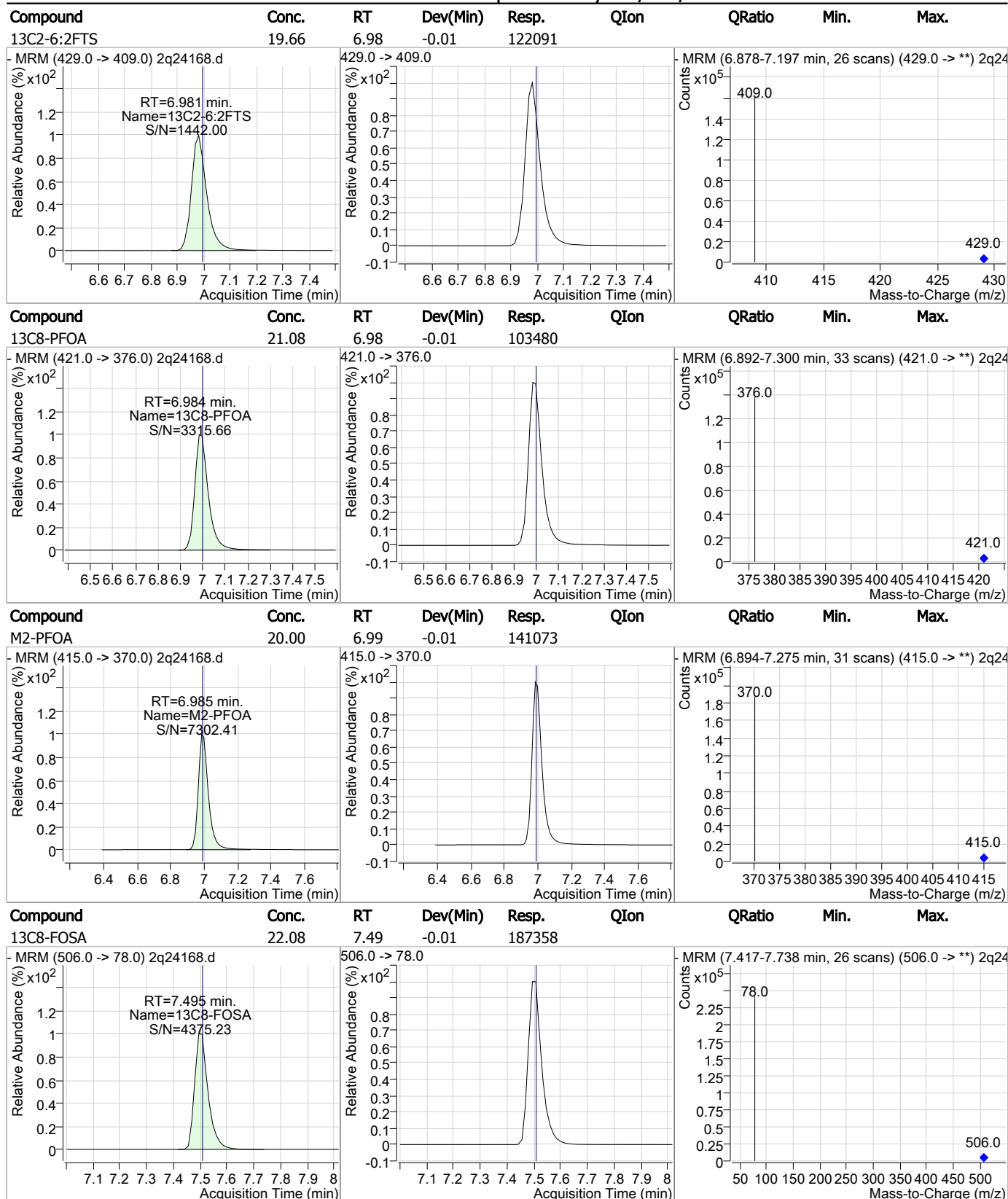
Perfluorinated Compounds by LC/MS/MS



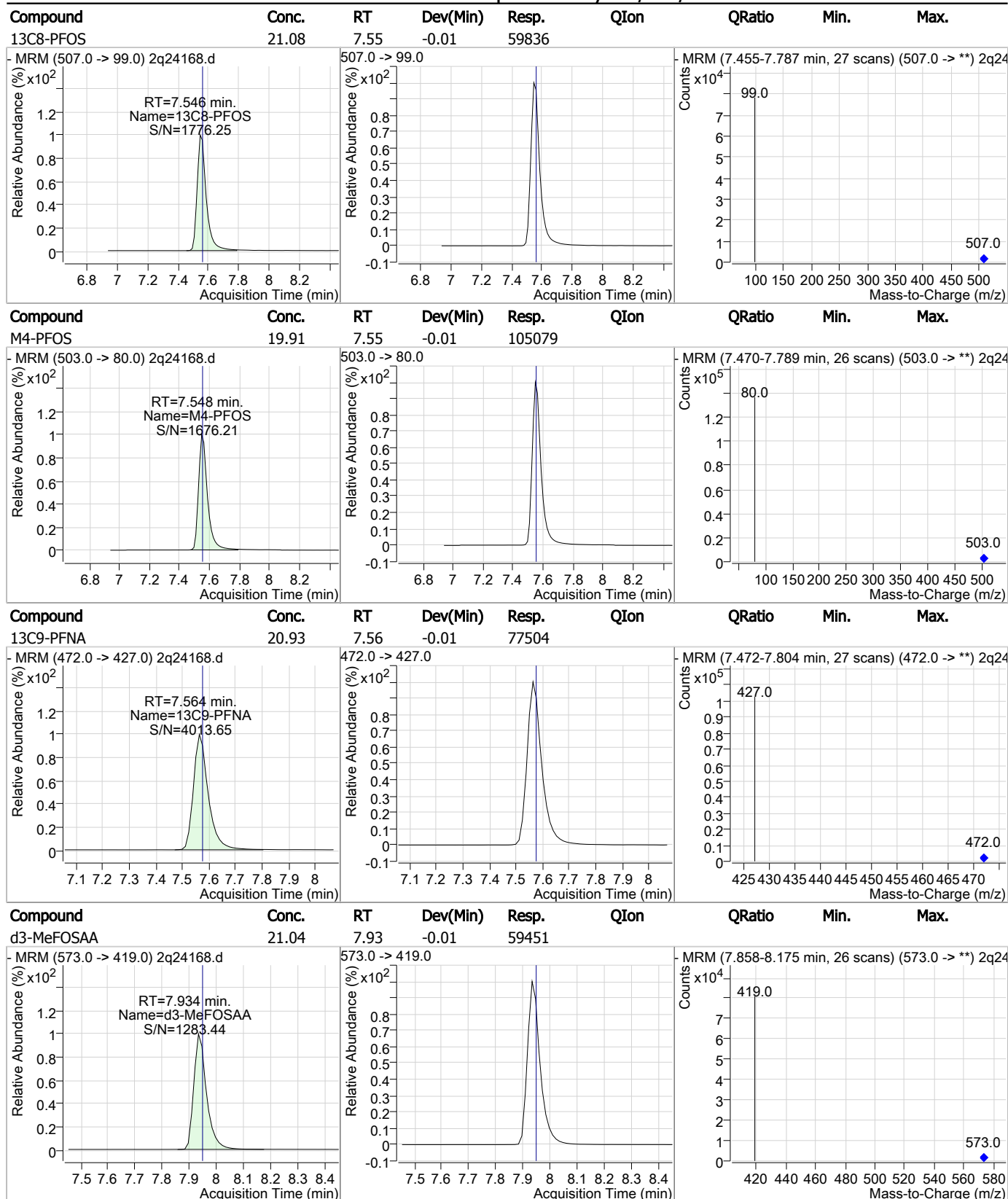
Perfluorinated Compounds by LC/MS/MS



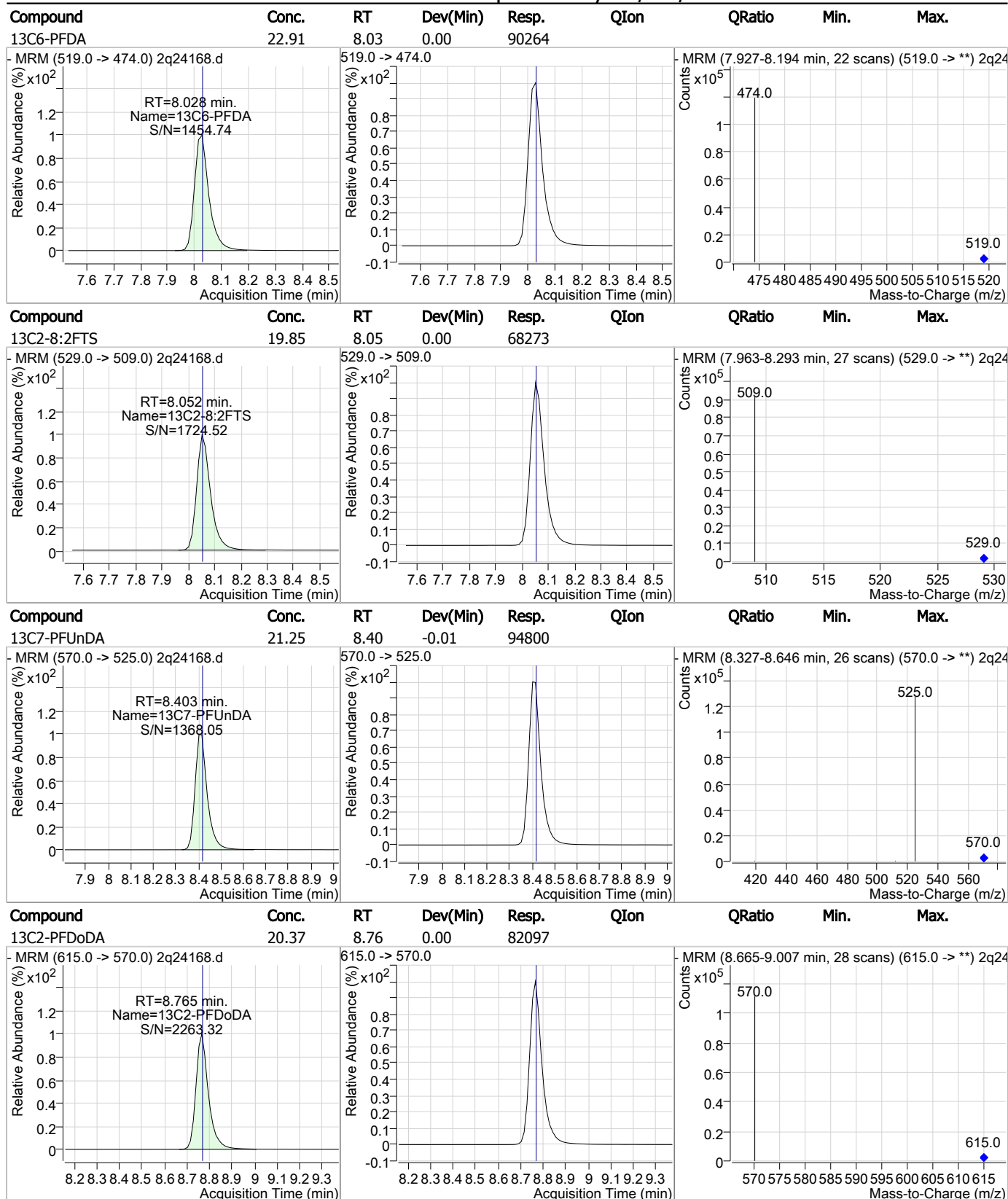
Perfluorinated Compounds by LC/MS/MS



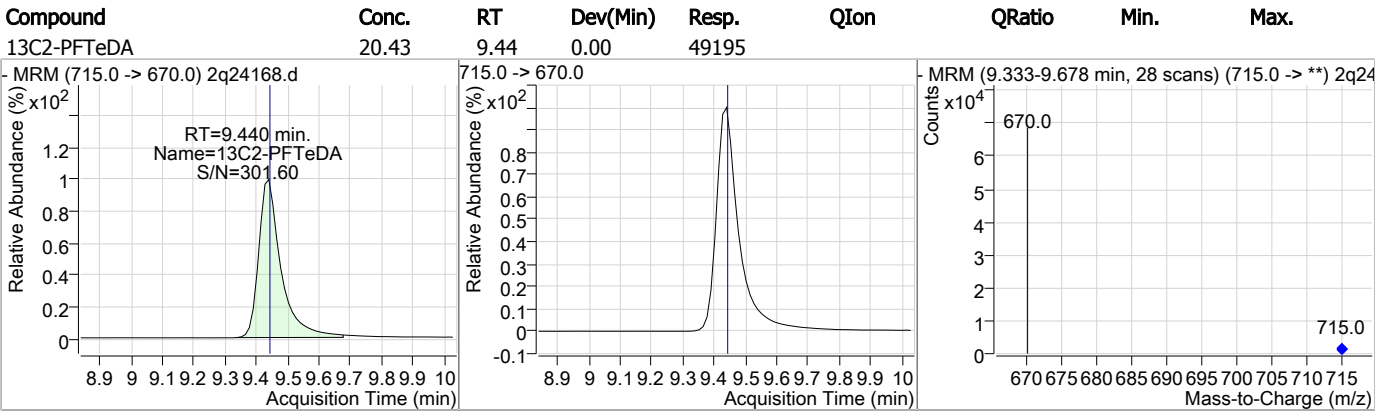
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.2.2
10

Manual Integration Approval Summary

Sample Number:

S2Q377-IBLK

Lab FileID:

2Q24168.D

Injection Time:

11/28/18 08:05

Method:

EPA 537M QSM5.1 B-15

Analyst approved:

11/28/18 16:01 Nancy Saunders

Supervisor approved:

11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak
Perfluorodecanoic acid	335-76-2		8.04	Poor instrument integration

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24172.d
Operator : NANCYF
Acq. Method : dMRM_ID_PFC_2.1.m
Acq. Date-Time : 11/28/2018 9:09:21 AM
Sample Name : OP72753-BS
Vial : Vial 32
DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
Batch Name : S2Q377.batch.bin
Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	7.137	415.0 -> 370.0	0	20.00	µg/L m	0.141
13C4-PFOS	7.663	503.0 -> 80.0	0	20.00	µg/L m	0.105
M4-PFBA	2.115	217.0 -> 172.0	349836	20.00	µg/L	0.088
M5-PFPeA	4.162	268.0 -> 223.0	161004	20.00	µg/L	0.151
M5-PFHxA	5.515	318.0 -> 273.0	153536	20.00	µg/L	0.151
M4-PFHpA	6.419	367.0 -> 322.0	154121	20.00	µg/L	0.128
M8-PFOA	7.123	421.0 -> 376.0	106492	20.00	µg/L	0.129
M9-PFNA	7.678	472.0 -> 427.0	80665	20.00	µg/L	0.105
M6-PFDA	8.117	519.0 -> 474.0	89749	20.00	µg/L	0.091
M7-PFUnDA	8.492	570.0 -> 525.0	101101	20.00	µg/L	0.077
M2-PFDoDA	8.843	615.0 -> 570.0	87525	20.00	µg/L	0.078
M2-PFTeDA	9.502	715.0 -> 670.0	38111	20.00	µg/L	0.063
M8-FOSA	7.599	506.0 -> 78.0	181588	20.00	µg/L	0.093
M3-PFBS	4.468	302.0 -> 99.0	52236	20.00	µg/L	0.151
M3-PFHxS	6.465	402.0 -> 99.0	47523	20.00	µg/L	0.131
M8-PFOS	7.661	507.0 -> 99.0	59747	20.00	µg/L	0.105
M2-4:2FTS	5.410	329.0 -> 309.0	150343	20.00	µg/L	0.151
M2-6:2FTS	7.122	429.0 -> 409.0	132659	20.00	µg/L	0.129
M2-8:2FTS	8.153	529.0 -> 509.0	70791	20.00	µg/L	0.103
M3-MeFOSAA	8.023	573.0 -> 419.0	56022	20.00	µg/L	0.077
System Monitoring Compounds						
13C2-4:2FTS	5.410	329.0 -> 309.0	150337	22.50	µg/L	0.151
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C2-6:2FTS	7.122	429.0 -> 409.0	132653	21.36	µg/L	0.129
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C2-8:2FTS	8.153	529.0 -> 509.0	70786	20.58	µg/L	0.103
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C2-PFDoDA	8.843	615.0 -> 570.0	87524	21.72	µg/L	0.078
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-PFTeDA	9.502	715.0 -> 670.0	37889	15.74	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C3-PFBS	4.468	302.0 -> 99.0	52252	22.38	µg/L	0.151
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
13C3-PFHxS	6.465	402.0 -> 99.0	47707	21.08	µg/L	0.131
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C4-PFBA	2.115	217.0 -> 172.0	350063	22.27	µg/L	0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C4-PFHpA	6.419	367.0 -> 322.0	154151	22.55	µg/L	0.128
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
13C5-PFHxA	5.515	318.0 -> 273.0	153540	22.67	µg/L	0.151
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
13C5-PFPeA	4.162	268.0 -> 223.0	161002	22.86	µg/L	0.151
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.3%		
13C6-PFDA	8.117	519.0 -> 474.0	89679	22.76	µg/L	0.091
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.8%		

Perfluorinated Compounds by LC/MS/MS

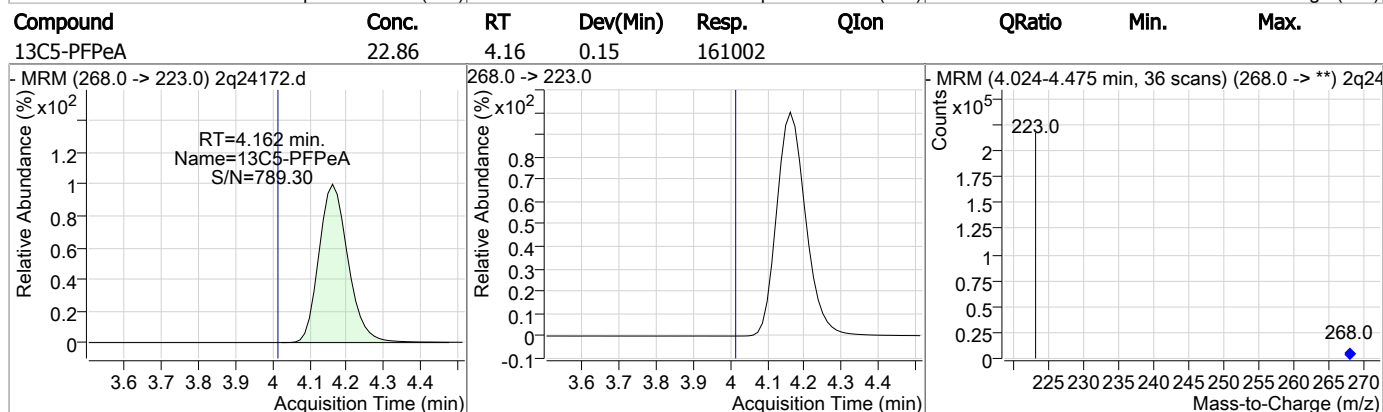
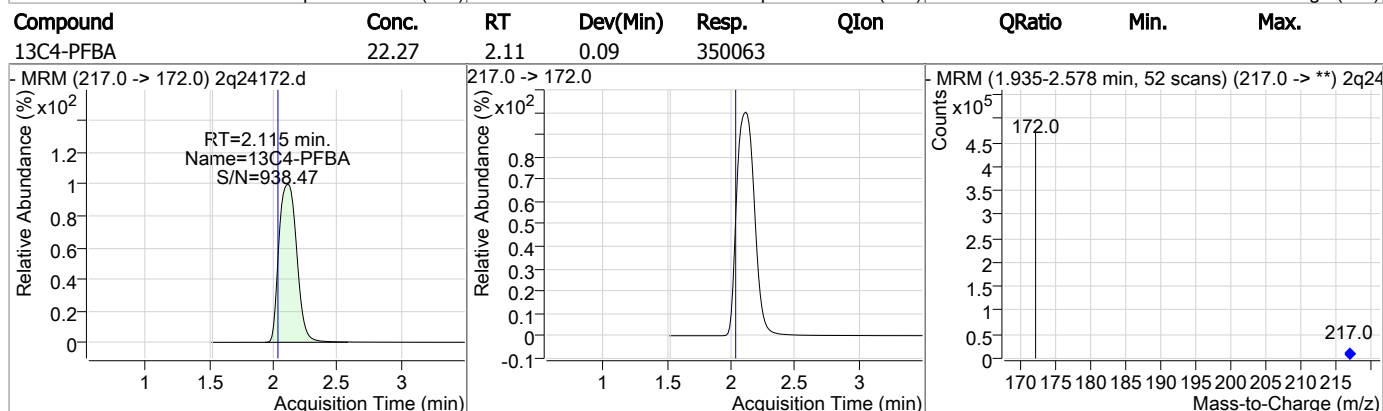
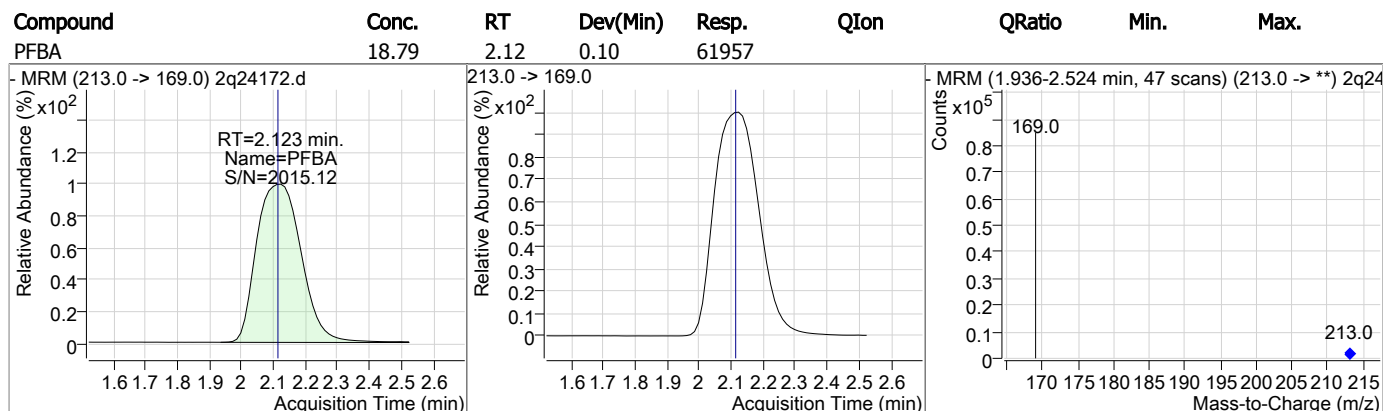
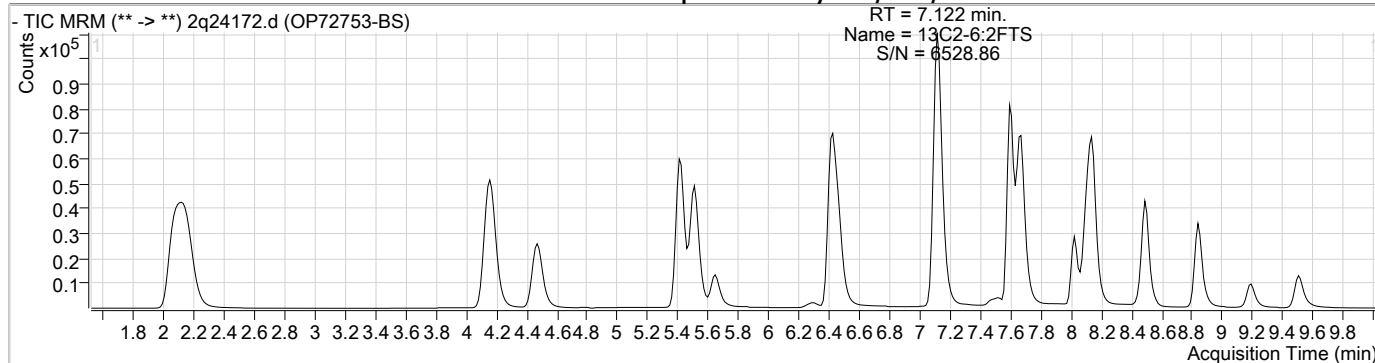
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.492	570.0 -> 525.0	101030	22.64 µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%	
13C8-FOSA	7.599	506.0 -> 78.0	181430	21.39 µg/L	0.093
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C8-PFOA	7.123	421.0 -> 376.0	106479	21.69 µg/L	0.129
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C8-PFOS	7.661	507.0 -> 99.0	59743	21.04 µg/L	0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C9-PFNA	7.678	472.0 -> 427.0	80556	21.75 µg/L	0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%	
d3-MeFOSAA	8.023	573.0 -> 419.0	56022	19.82 µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
M2-PFOA	-	415.0 -> 370.0	-	N.D.	
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	
M4-PFOS	7.663	503.0 -> 80.0	0	0.00 ng/ml m	0.105
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	

Target Compounds

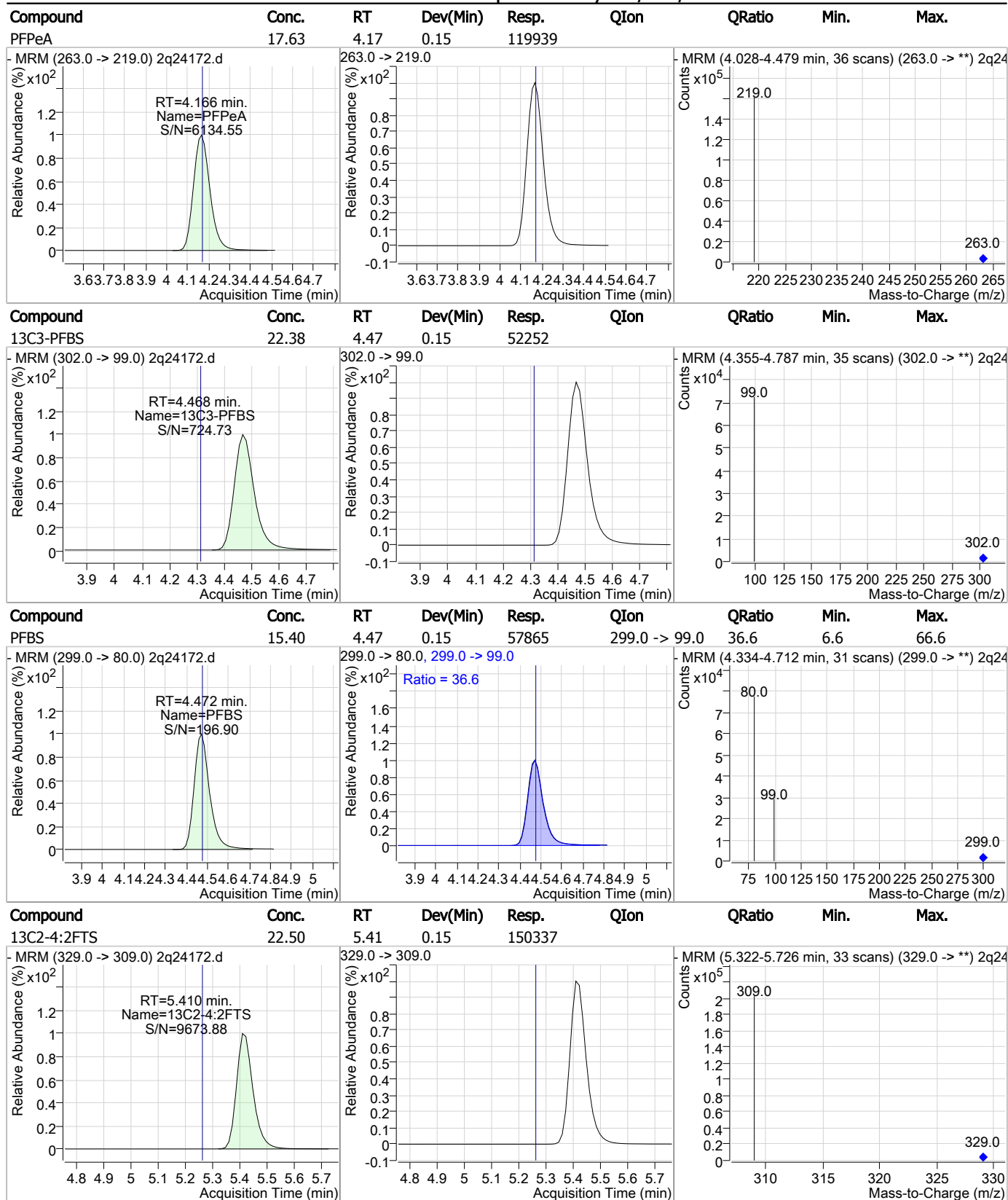
					QValue
4:2FTS	5.413	327.0 -> 307.0	70783	16.90 µg/L	98
6:2FTS	7.123	427.0 -> 407.0	58039	17.18 µg/L	96
8:2FTS	8.154	527.0 -> 507.0	31863	16.58 µg/L	95
EtFOSAA	8.135	584.0 -> 419.0	18556	15.16 µg/L	100
FOSA	7.601	498.0 -> 78.0	82335	18.75 µg/L	98
MeFOSAA	8.023	570.0 -> 419.0	26826	18.42 µg/L	98
PFBA	2.123	213.0 -> 169.0	61957	18.79 µg/L	100
PFBS	4.472	299.0 -> 80.0	57865	15.40 µg/L	100
PFDA	8.118	513.0 -> 469.0	28888	15.65 µg/L	97
PFDoDA	8.844	613.0 -> 569.0	37282	19.22 µg/L	99
PFDS	8.464	599.0 -> 80.0	13722	12.54 µg/L	99
PFHpA	6.421	363.0 -> 319.0	105741	17.51 µg/L	100
PFHpS	7.133	449.0 -> 80.0	44206	17.86 µg/L	97
PFHxA	5.518	313.0 -> 269.0	38672	16.87 µg/L	98
PFHxS	6.467	399.0 -> 80.0	47182	15.79 µg/L m	97
PFNA	7.678	463.0 -> 419.0	38977	16.63 µg/L	99
PFNS	8.090	549.0 -> 80.0	30570	14.35 µg/L	97
PFOA	7.125	413.0 -> 369.0	52459	18.01 µg/L	98
PFOS	7.664	499.0 -> 80.0	53774	17.09 µg/L m	88
PFPeA	4.166	263.0 -> 219.0	119939	17.63 µg/L	100
PFPeS	5.646	349.0 -> 80.0	39167	17.04 µg/L	100
PFTeDA	9.507	713.0 -> 669.0	19987	16.36 µg/L	99
PFTTrDA	9.194	663.0 -> 619.0	35816	24.40 µg/L	100
PFUnDA	8.493	563.0 -> 519.0	34932	17.98 µg/L	98

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

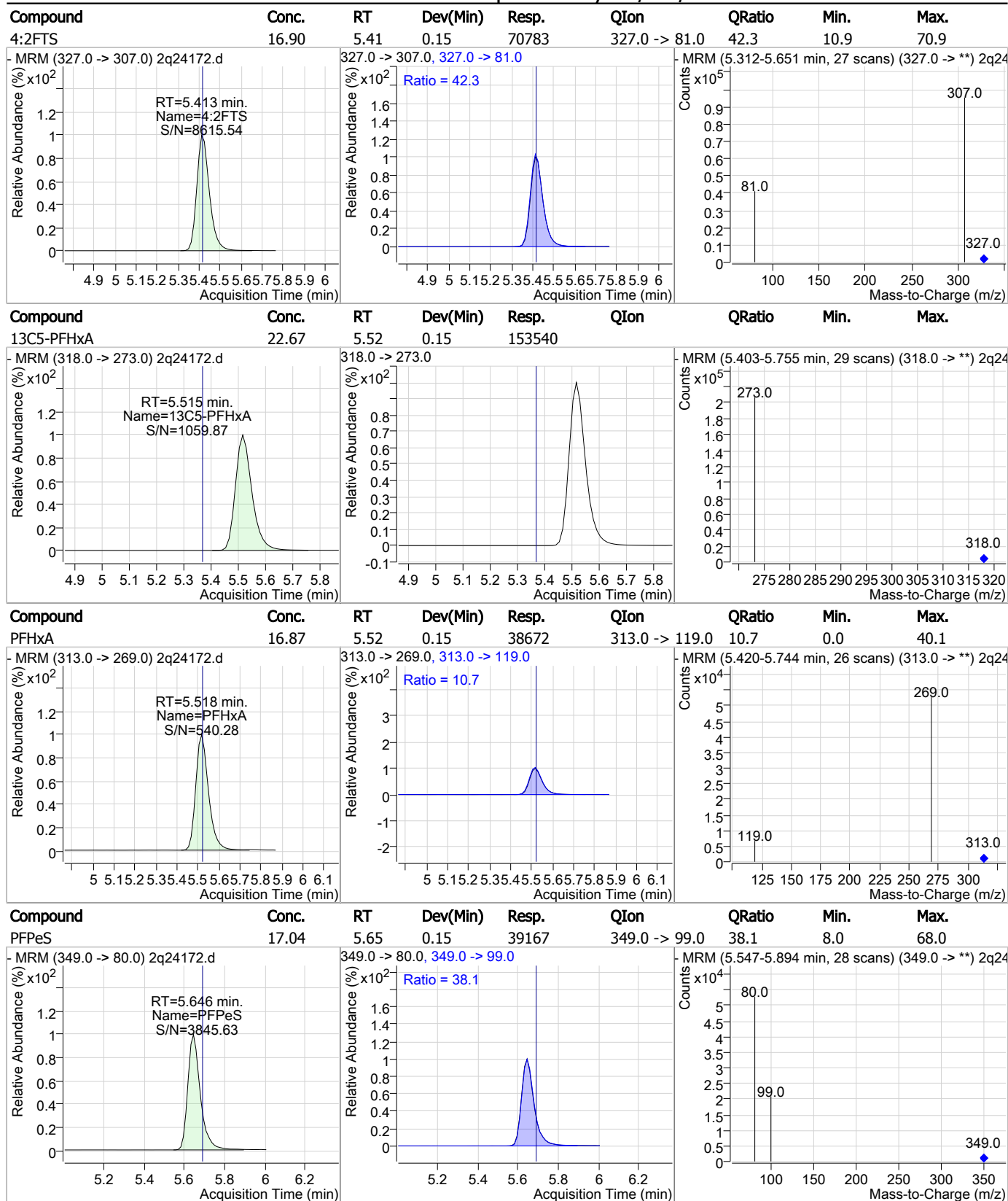
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

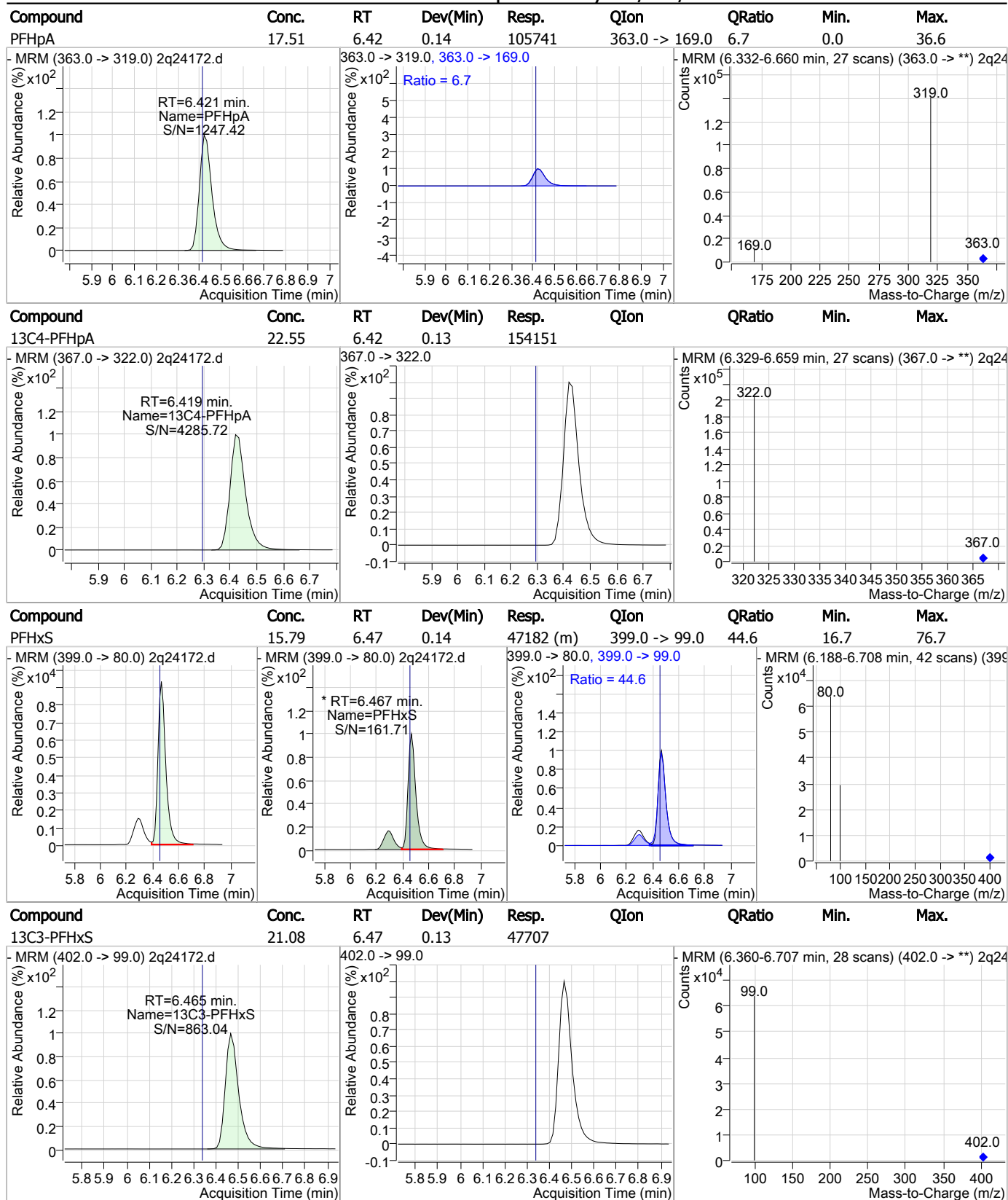


Perfluorinated Compounds by LC/MS/MS

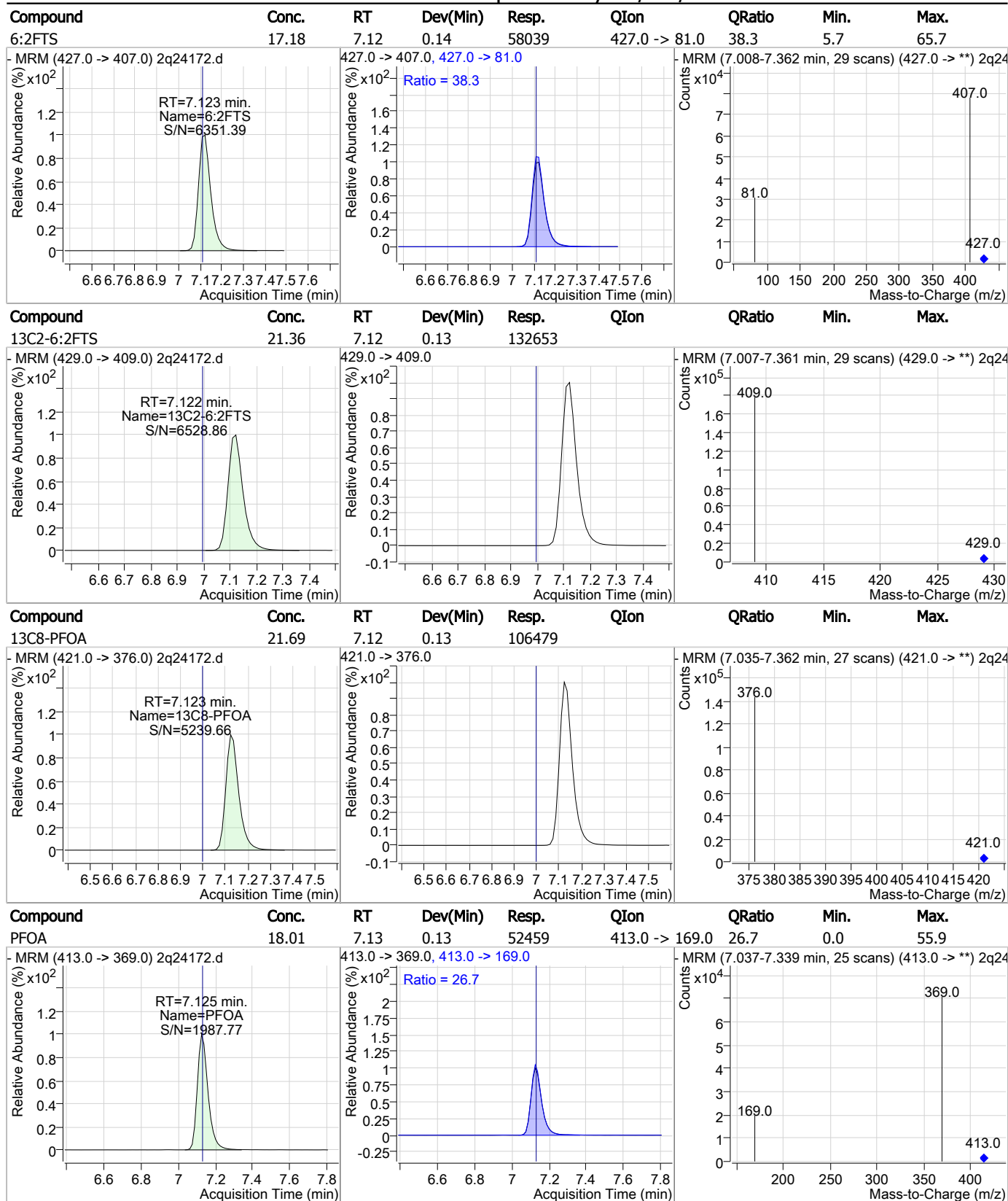


10.3.1 10

Perfluorinated Compounds by LC/MS/MS

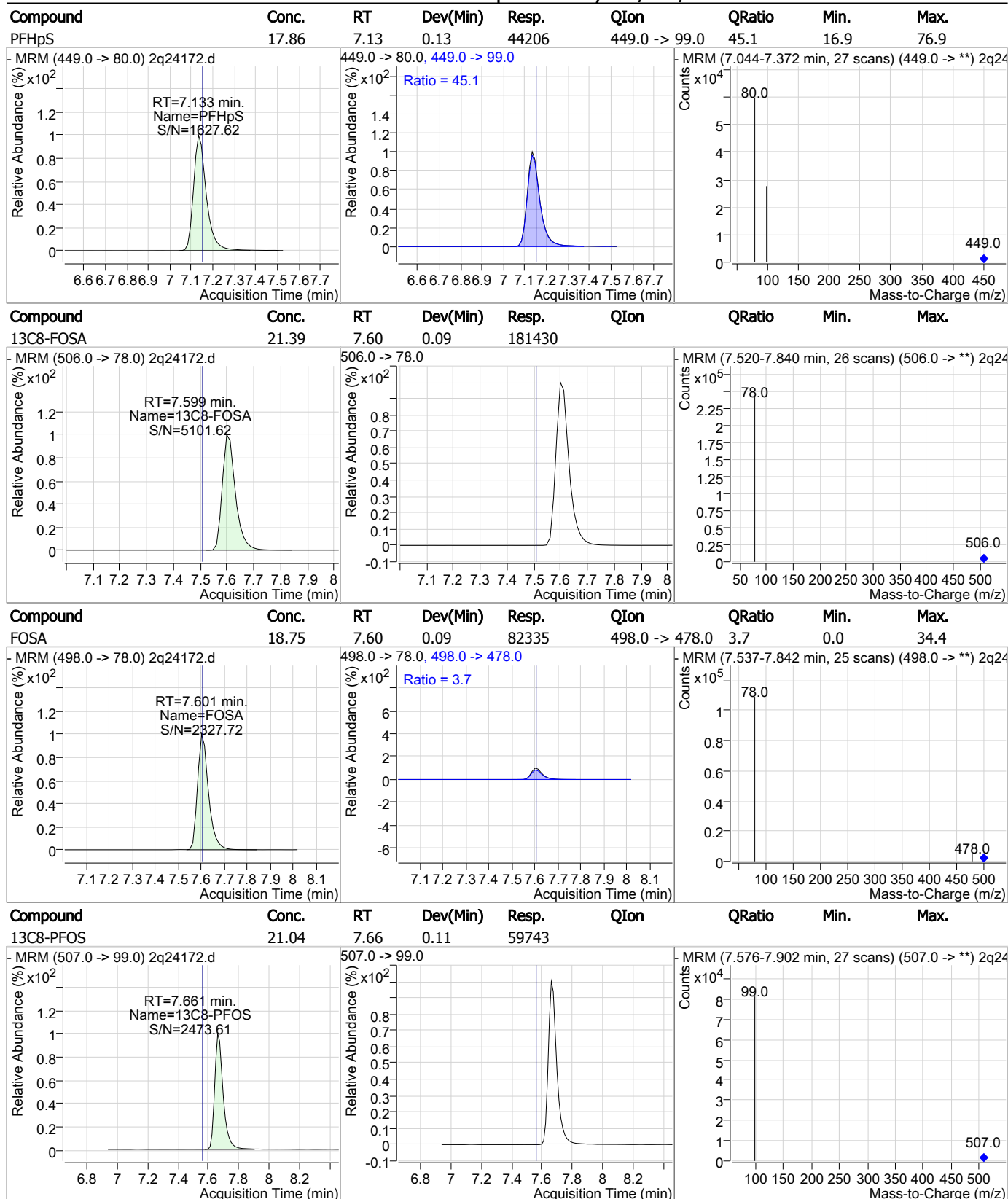


Perfluorinated Compounds by LC/MS/MS



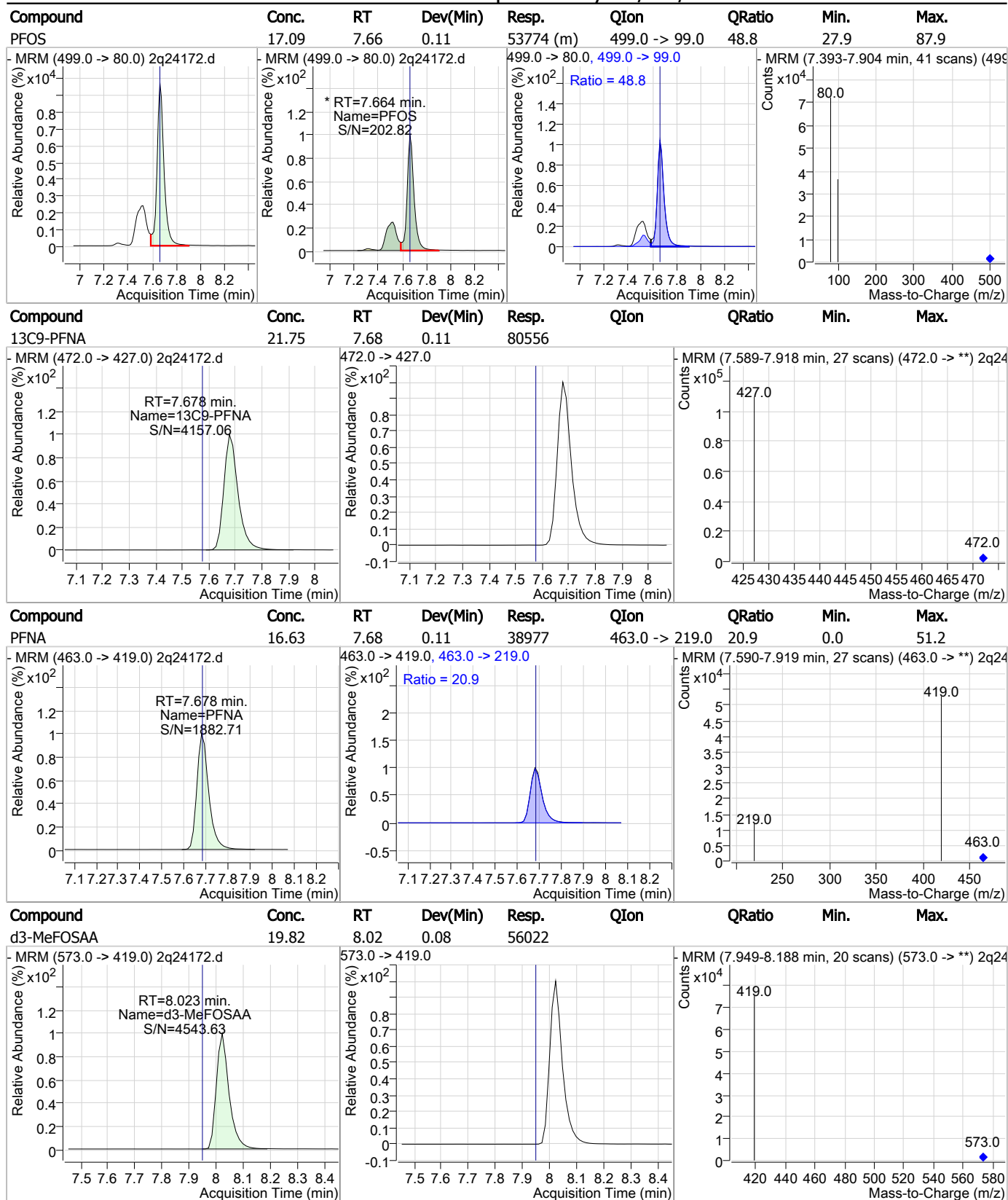
10.3.1 10

Perfluorinated Compounds by LC/MS/MS

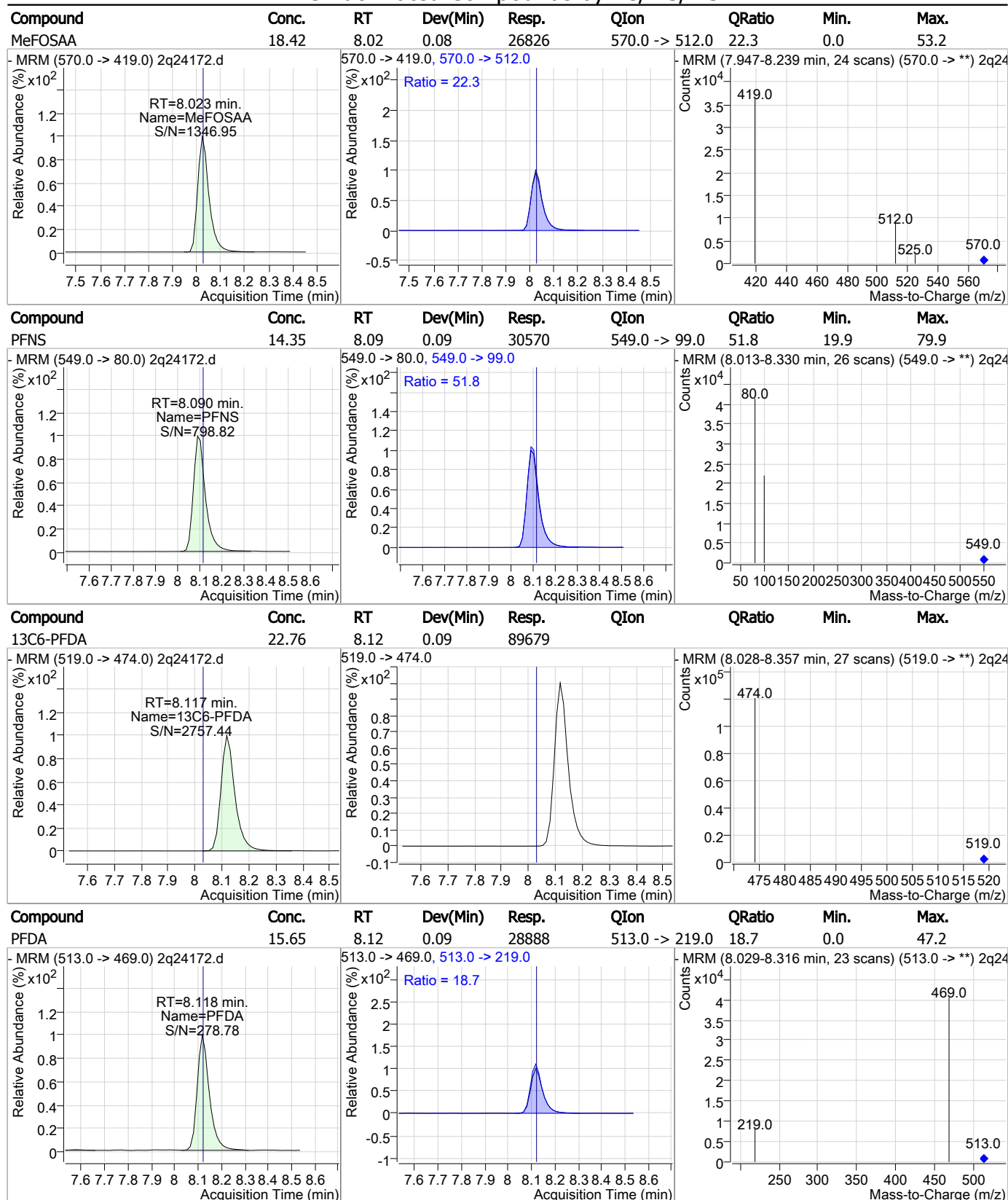


10.3.1 10

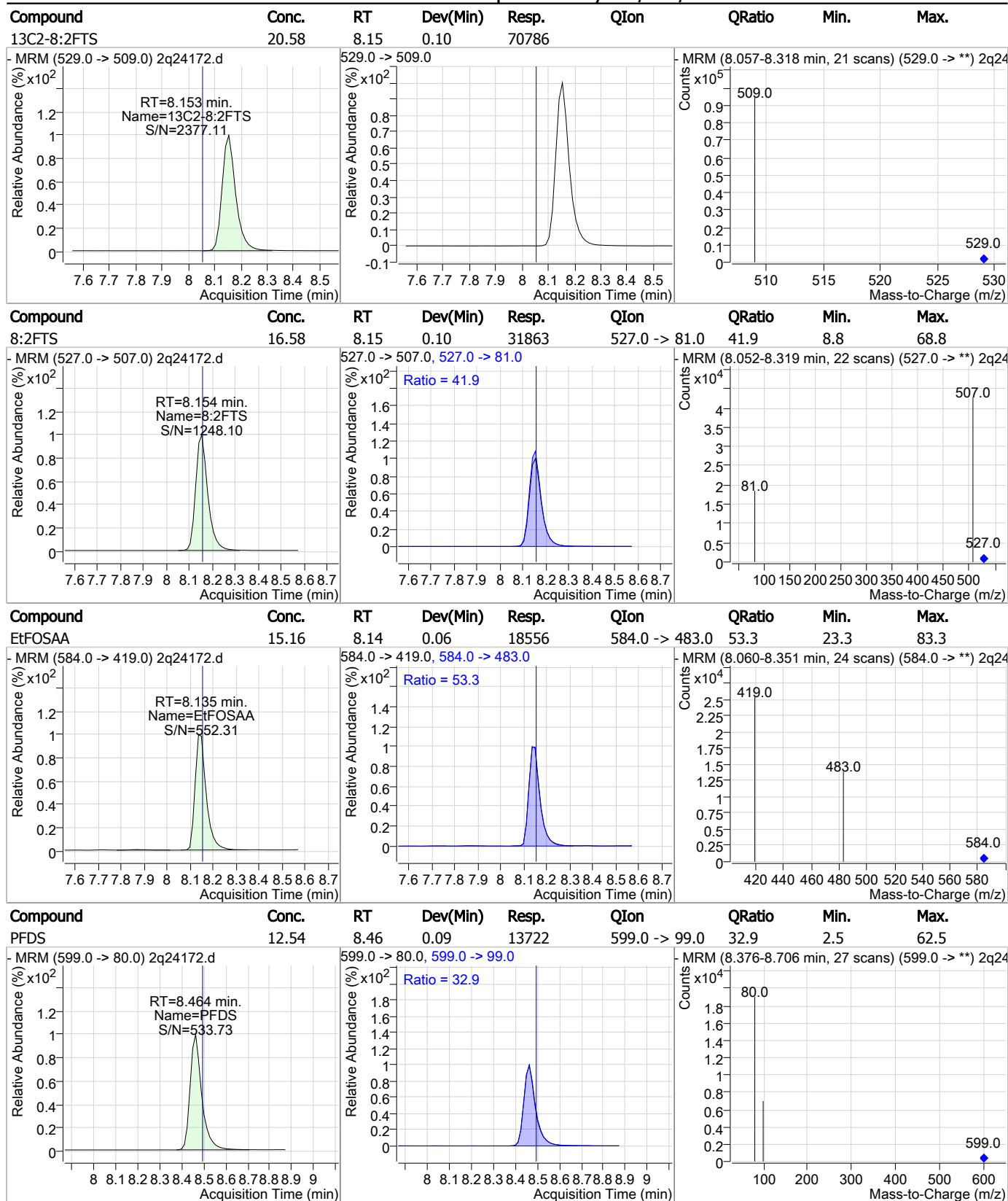
Perfluorinated Compounds by LC/MS/MS



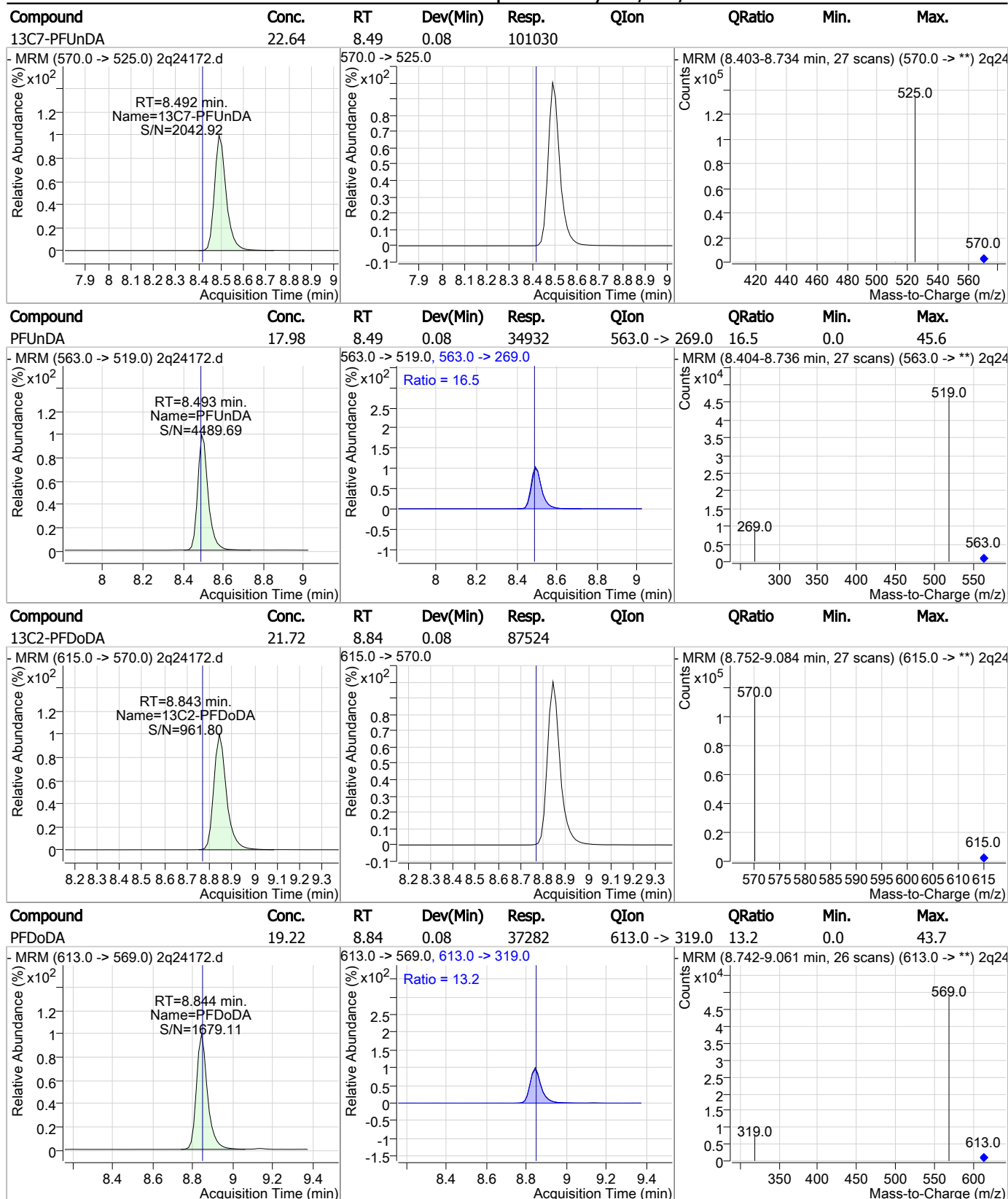
Perfluorinated Compounds by LC/MS/MS



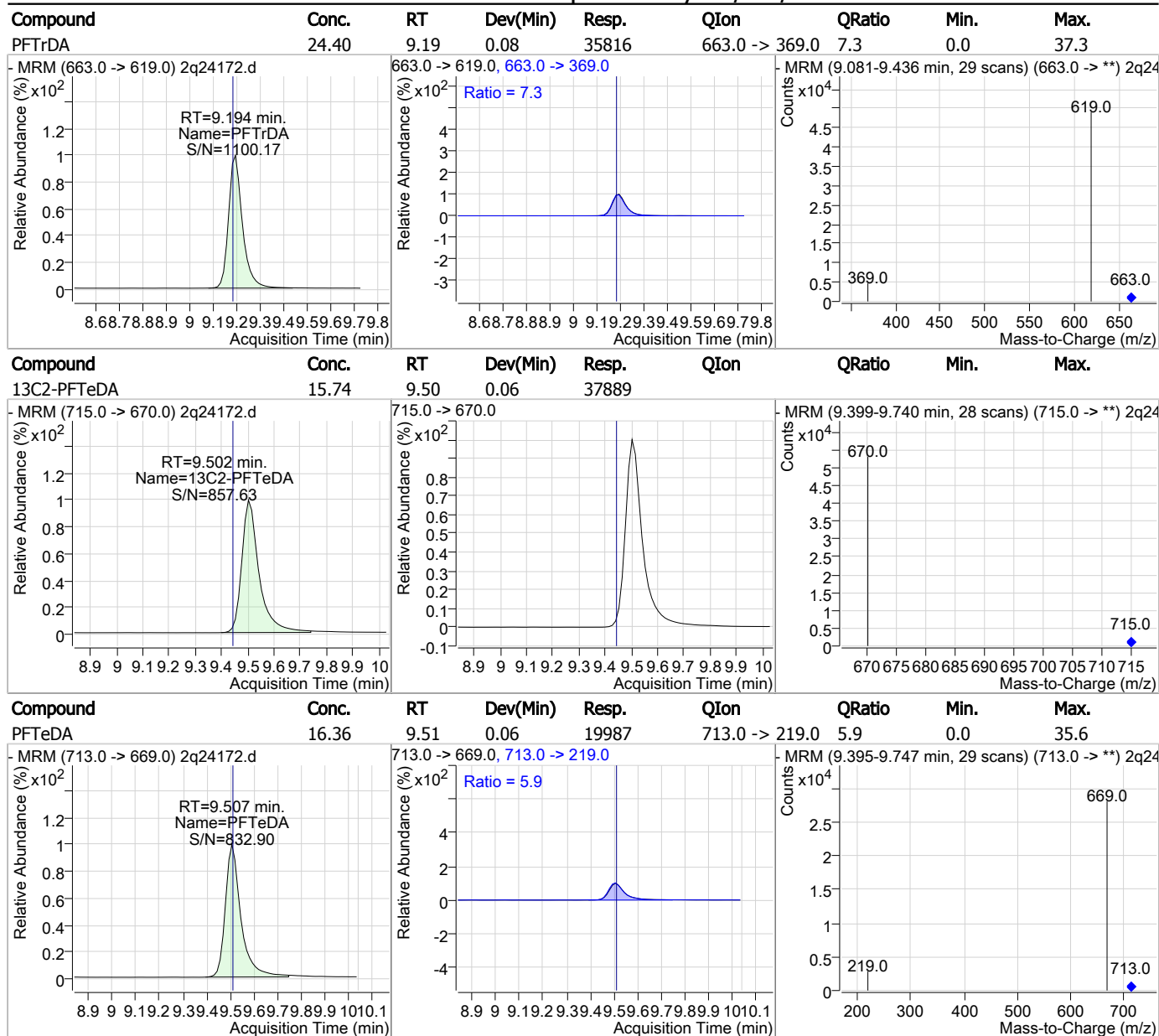
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: OP72753-BS

Method: EPA 537M BY ID

Lab FileID: 2Q24172.D

Analyst approved: 11/28/18 14:44 Nancy Saunders

Injection Time: 11/28/18 09:09

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.47	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.66	Split peak

10.3.1.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24179.d
Operator : NANCYF
Acq. Method : dMRM_ID_PFC_2.1.m
Acq. Date-Time : 11/28/2018 11:40:32 AM
Sample Name : OP72753-MS
Vial : Vial 38
DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
Batch Name : S2Q377.batch.bin
Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.960	415.0 -> 370.0	0	20.00	µg/L m	-0.036
13C4-PFOS	7.521	503.0 -> 80.0	0	20.00	µg/L m	-0.037
M4-PFBA	1.965	217.0 -> 172.0	316704	20.00	µg/L	-0.063
M5-PFPeA	3.937	268.0 -> 223.0	148587	20.00	µg/L	-0.075
M5-PFHxA	5.302	318.0 -> 273.0	142063	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	139898	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	105285	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	76308	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	84702	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	87327	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	75878	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	38604	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	157334	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	48585	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	44354	20.00	µg/L	-0.062
M8-PFOS	7.519	507.0 -> 99.0	54178	20.00	µg/L	-0.037
M2-4:2FTS	5.210	329.0 -> 309.0	138272	20.00	µg/L	-0.050
M2-6:2FTS	6.943	429.0 -> 409.0	130760	20.00	µg/L	-0.049
M2-8:2FTS	8.026	529.0 -> 509.0	72232	20.00	µg/L	-0.024
M3-MeFOSAA	7.909	573.0 -> 419.0	47682	20.00	µg/L	-0.037

System Monitoring Compounds

13C2-4:2FTS	5.210	329.0 -> 309.0	138265	20.69	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.5%			
13C2-6:2FTS	6.943	429.0 -> 409.0	130777	21.06	µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.3%			
13C2-8:2FTS	8.026	529.0 -> 509.0	72225	21.00	µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.0%			
13C2-PFDoDA	8.727	615.0 -> 570.0	75873	18.83	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.1%			
13C2-PFTeDA	9.402	715.0 -> 670.0	38564	16.02	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 80.1%			
13C3-PFBS	4.243	302.0 -> 99.0	48540	20.79	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.9%			
13C3-PFHxS	6.273	402.0 -> 99.0	44367	19.61	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.0%			
13C4-PFBA	1.965	217.0 -> 172.0	316560	20.14	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.7%			
13C4-PFHpA	6.229	367.0 -> 322.0	139751	20.44	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.2%			
13C5-PFHxA	5.302	318.0 -> 273.0	142111	20.99	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.9%			
13C5-PFPeA	3.937	268.0 -> 223.0	148480	21.08	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.4%			
13C6-PFDA	7.989	519.0 -> 474.0	84692	21.50	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 107.5%			

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	87330	19.57 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-FOSA	7.469	506.0 -> 78.0	157359	18.55 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
13C8-PFOA	6.946	421.0 -> 376.0	105373	21.47 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOS	7.519	507.0 -> 99.0	54268	19.12 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C9-PFNA	7.524	472.0 -> 427.0	76524	20.66 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSAA	7.909	573.0 -> 419.0	47708	16.88 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%	
M2-PFOA	6.960	415.0 -> 370.0	0	0.00 ng/ml m	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	
M4-PFOS	7.521	503.0 -> 80.0	0	0.00 ng/ml m	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	

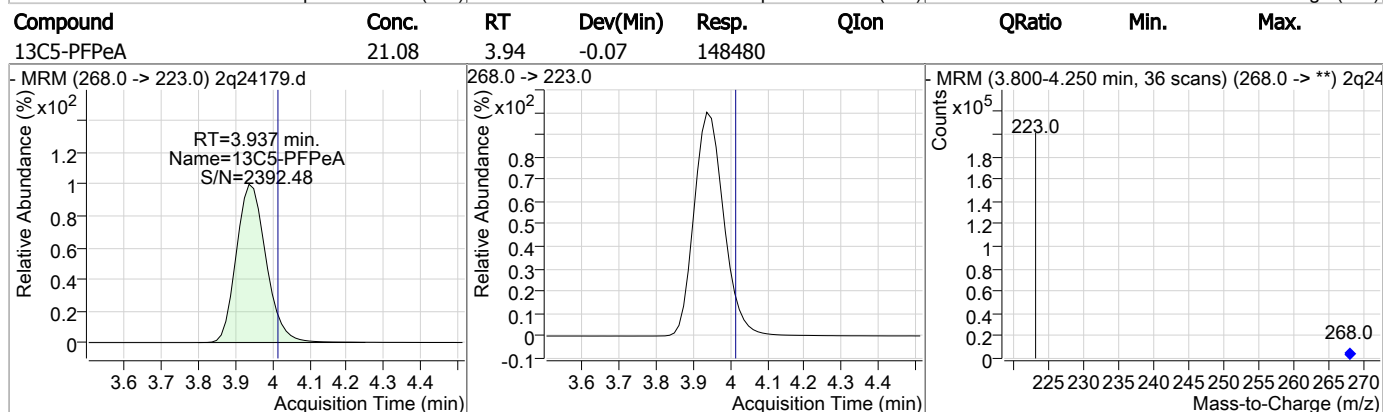
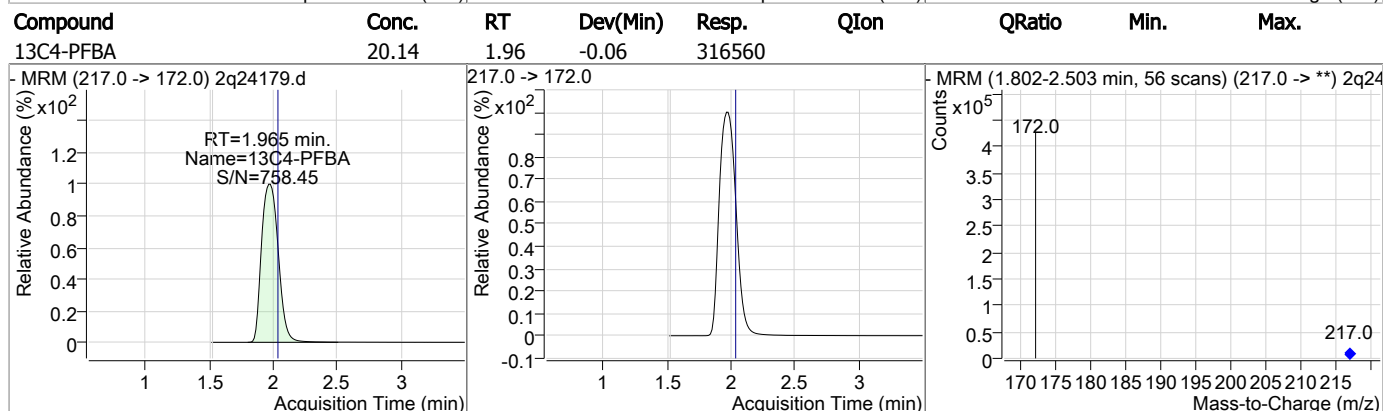
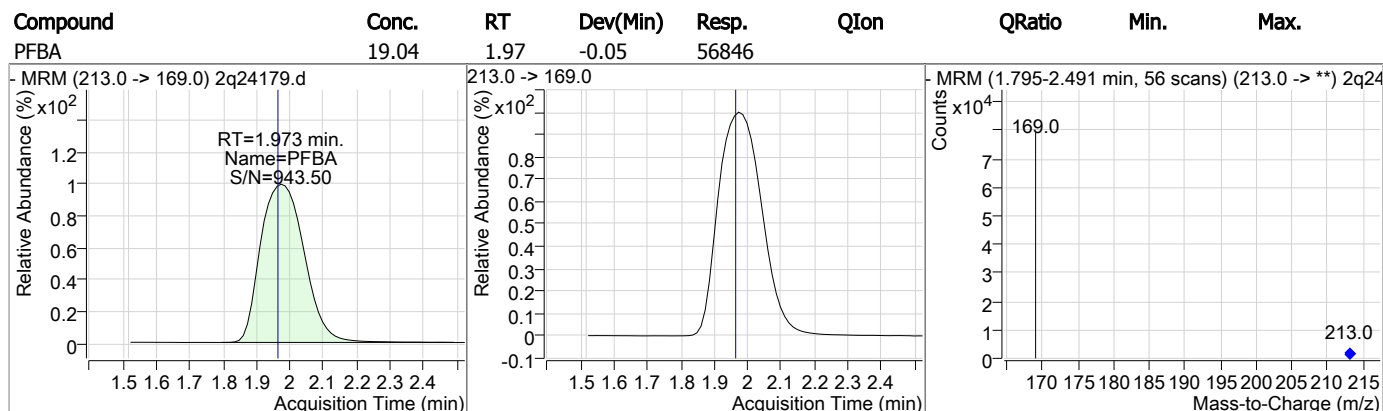
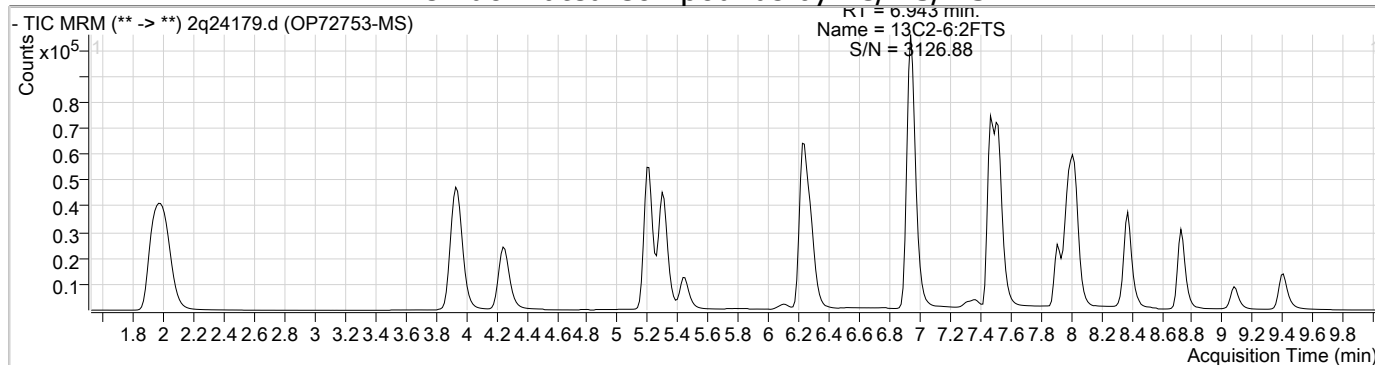
Target Compounds

					QValue
4:2FTS	5.200	327.0 -> 307.0	66302	17.23 µg/L	97
6:2FTS	6.928	427.0 -> 407.0	57745	17.35 µg/L	95
8:2FTS	8.014	527.0 -> 507.0	33821	17.28 µg/L	98
EtFOSAA	8.034	584.0 -> 419.0	17952	17.26 µg/L	97
FOSA	7.471	498.0 -> 78.0	72168	18.96 µg/L	98
MeFOSAA	7.910	570.0 -> 419.0	23092	18.63 µg/L	100
PFBA	1.973	213.0 -> 169.0	56846	19.04 µg/L	100
PFBS	4.246	299.0 -> 80.0	55859	15.98 µg/L	98
PFDA	7.990	513.0 -> 469.0	30572	17.56 µg/L	99
PFDoDA	8.729	613.0 -> 569.0	32255	19.18 µg/L	98
PFDS	8.350	599.0 -> 80.0	12056	12.15 µg/L	97
PFHpA	6.232	363.0 -> 319.0	101731	18.56 µg/L	99
PFHpS	6.954	449.0 -> 80.0	43573	18.86 µg/L	99
PFHxA	5.305	313.0 -> 269.0	36339	17.13 µg/L	98
PFHxS	6.276	399.0 -> 80.0	45271	16.23 µg/L m	98
PFNA	7.525	463.0 -> 419.0	39507	17.82 µg/L	100
PFNS	7.962	549.0 -> 80.0	27774	14.38 µg/L	99
PFOA	6.949	413.0 -> 369.0	55063	19.13 µg/L	97
PFOS	7.509	499.0 -> 80.0	51596	18.09 µg/L m	86
PFPeA	3.940	263.0 -> 219.0	113399	18.06 µg/L	100
PFPeS	5.433	349.0 -> 80.0	37346	17.47 µg/L	99
PFTeDA	9.394	713.0 -> 669.0	22466	18.17 µg/L	100
PFTTrDA	9.081	663.0 -> 619.0	32540	21.88 µg/L	100
PFUnDA	8.379	563.0 -> 519.0	29490	17.57 µg/L	97

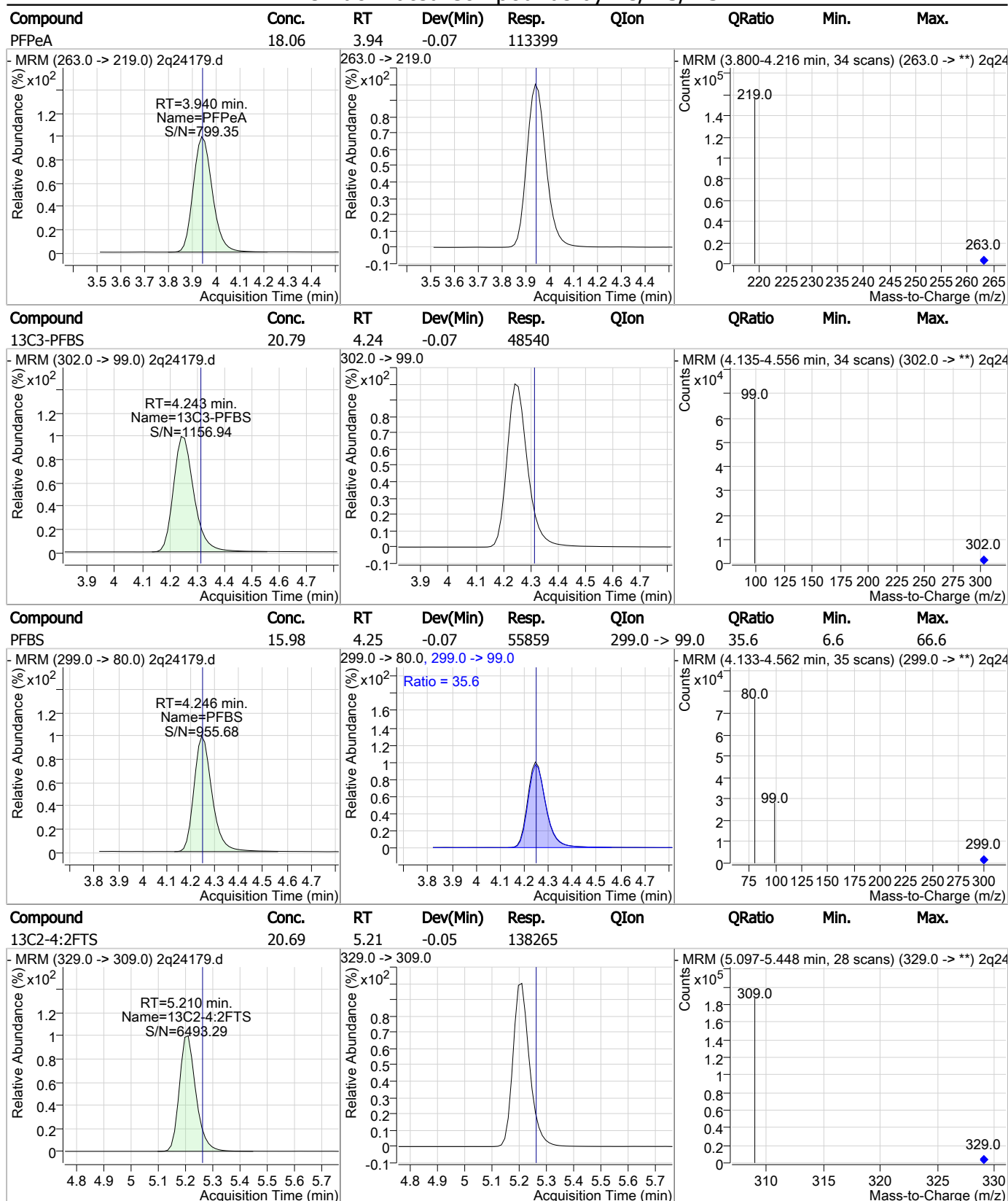
= Qualifier out of range, m = manually integrated, + = Area summed

10.4.1 10

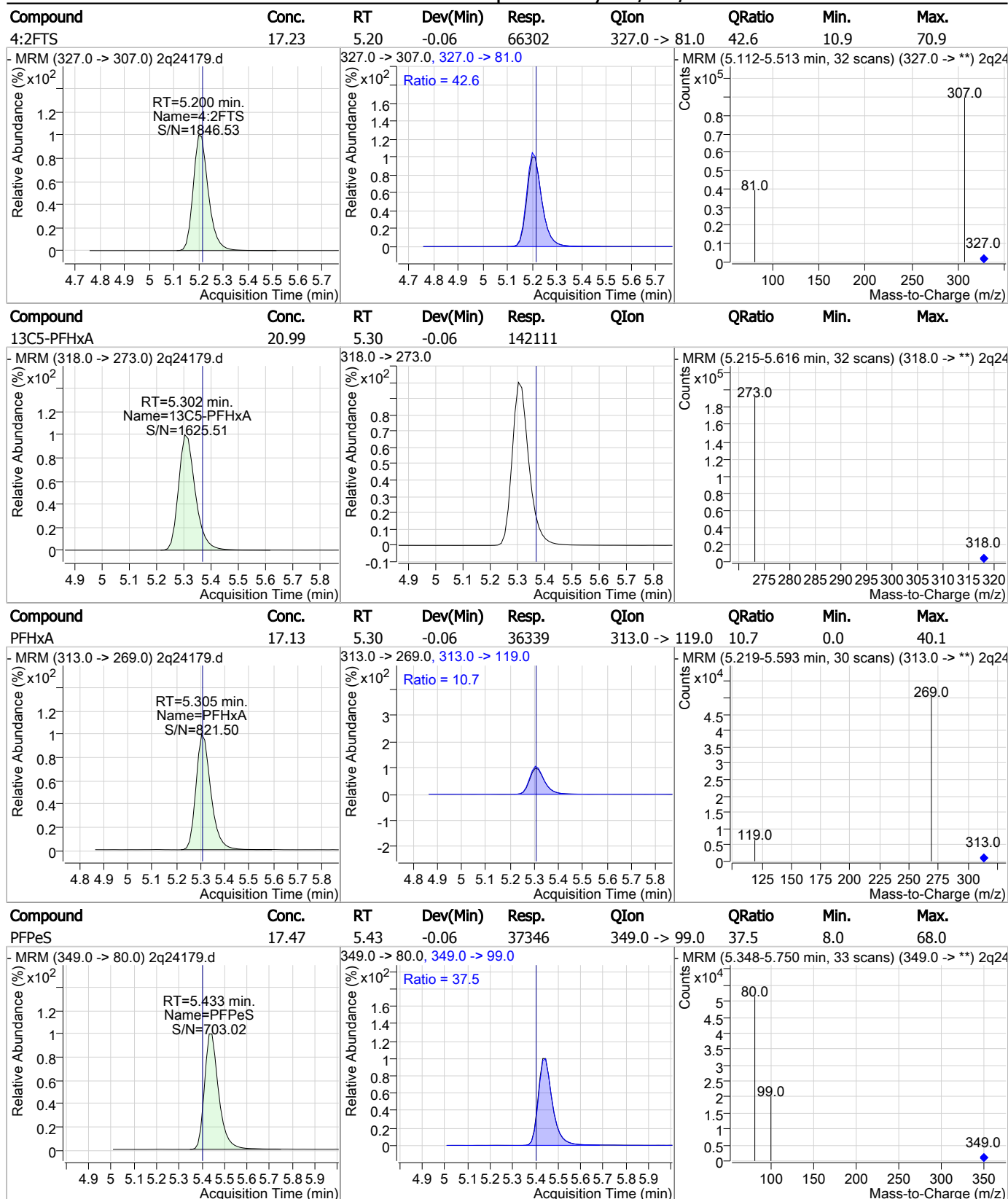
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

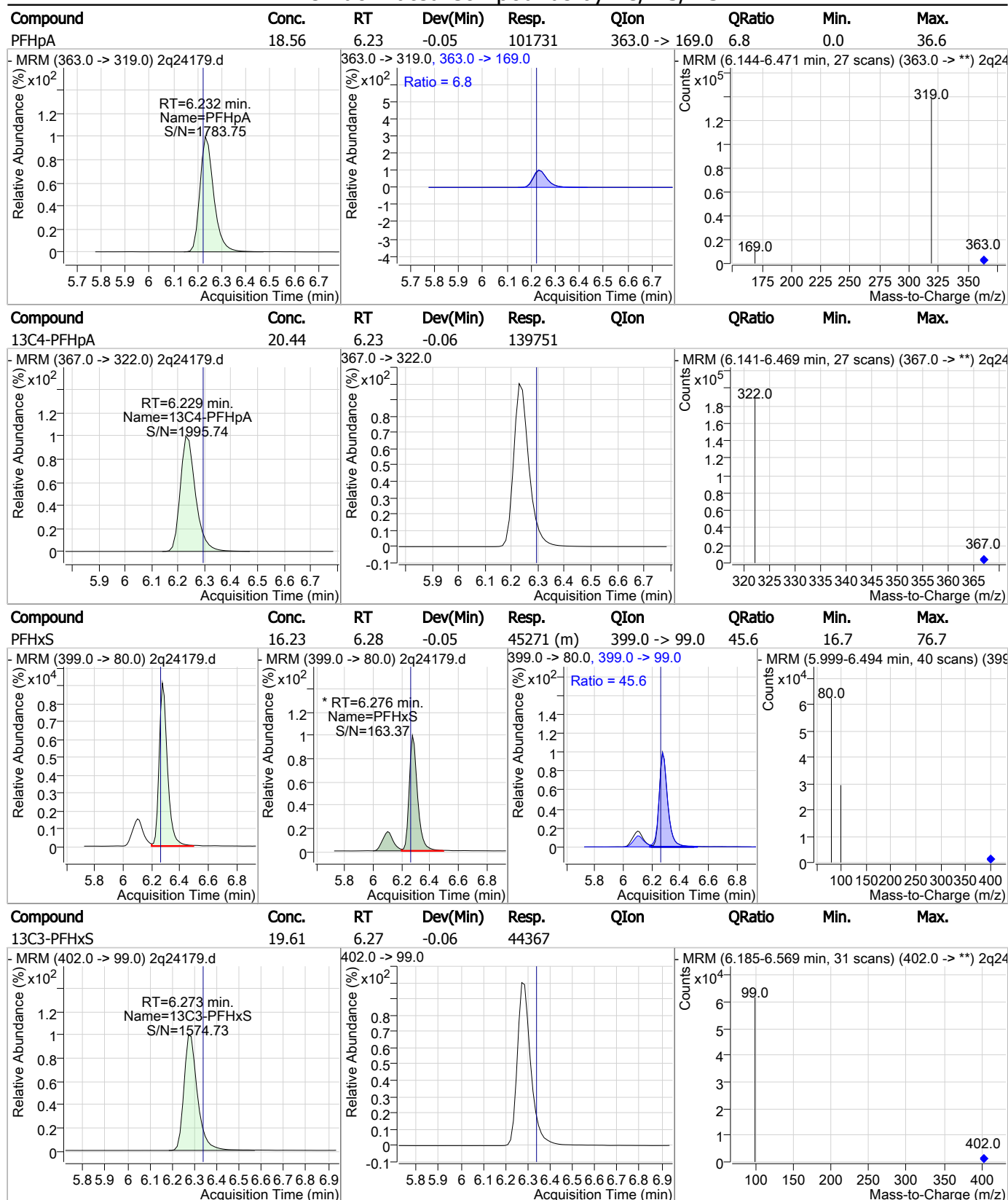


Perfluorinated Compounds by LC/MS/MS

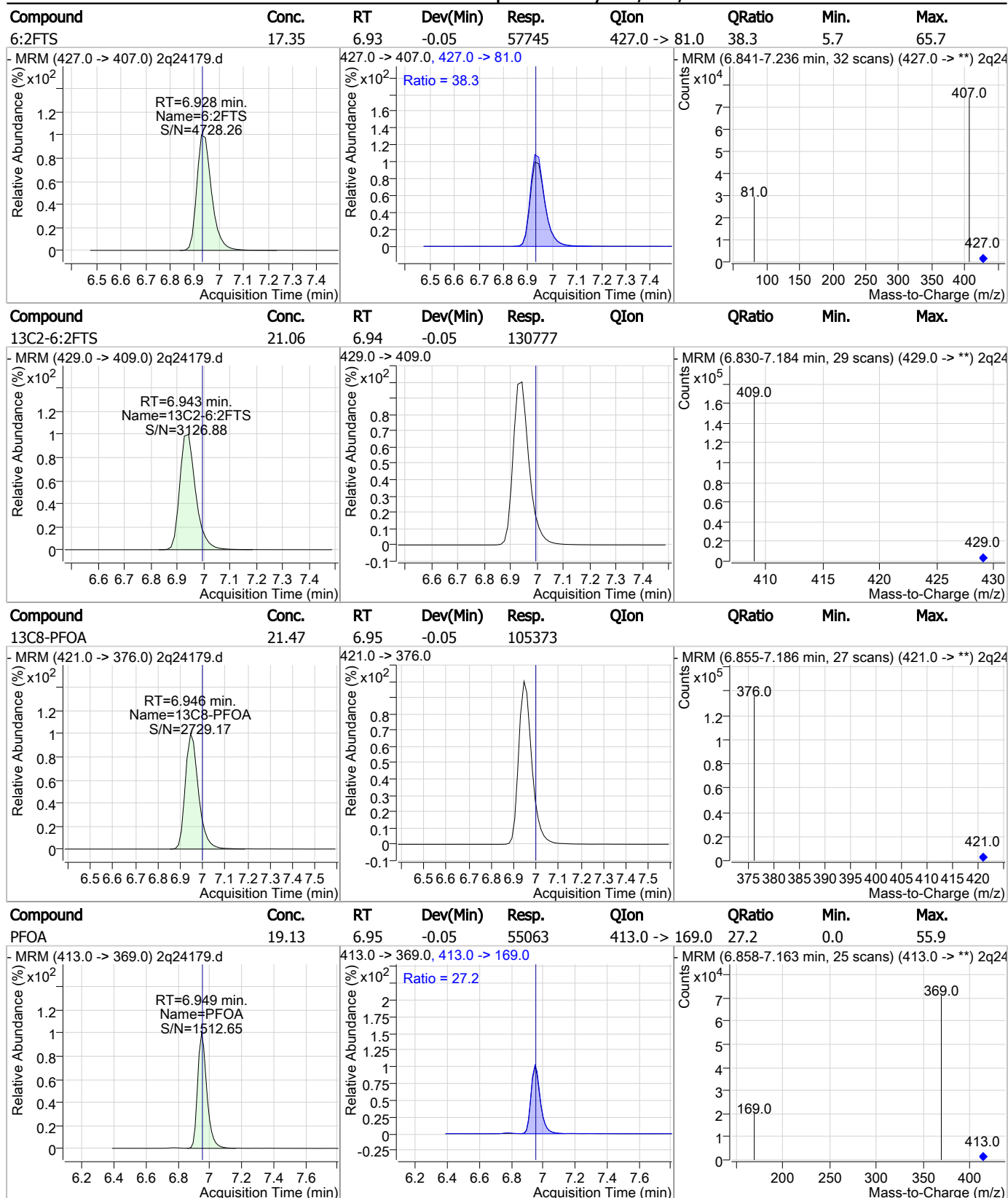


10.4.1 10

Perfluorinated Compounds by LC/MS/MS

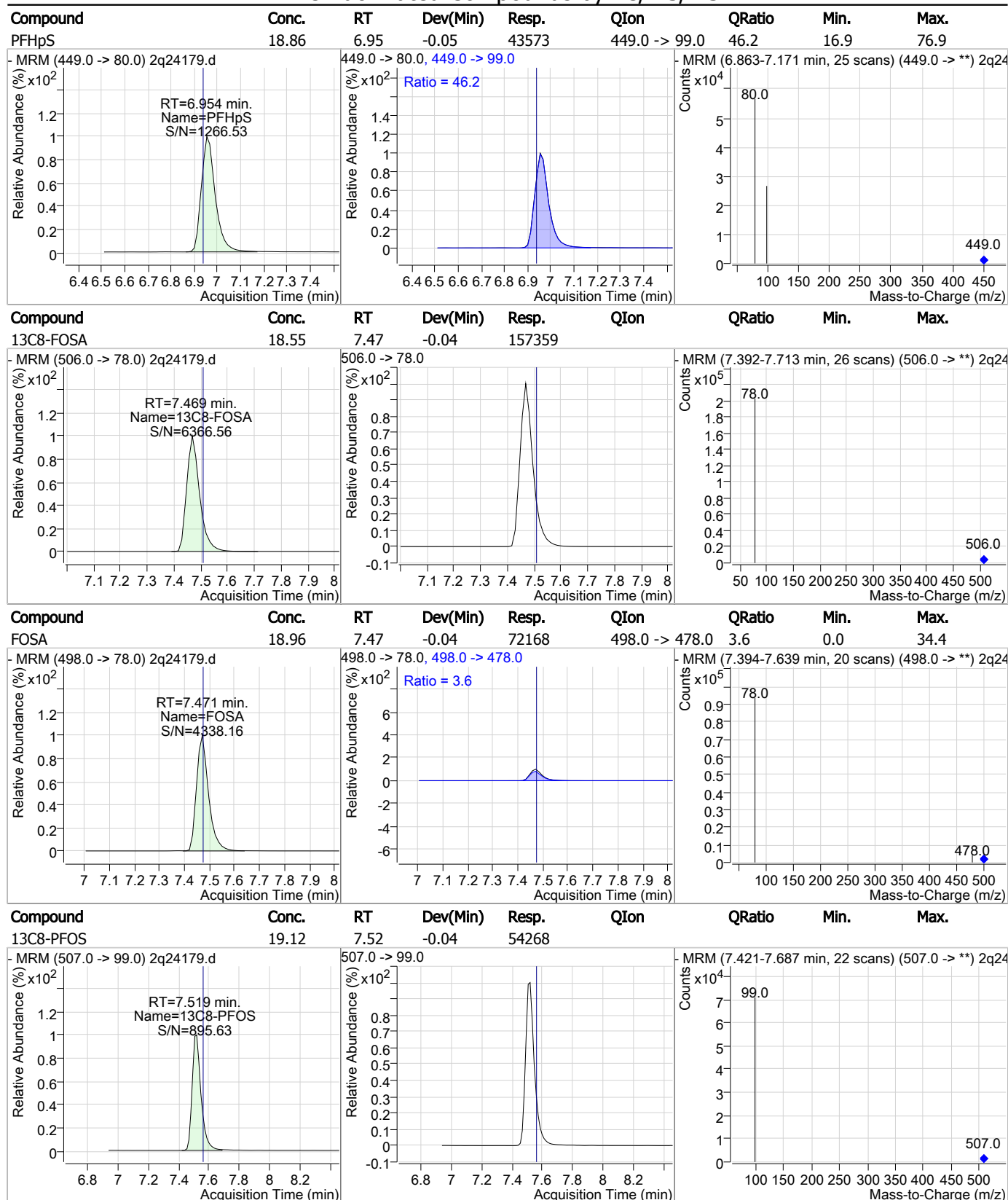


Perfluorinated Compounds by LC/MS/MS

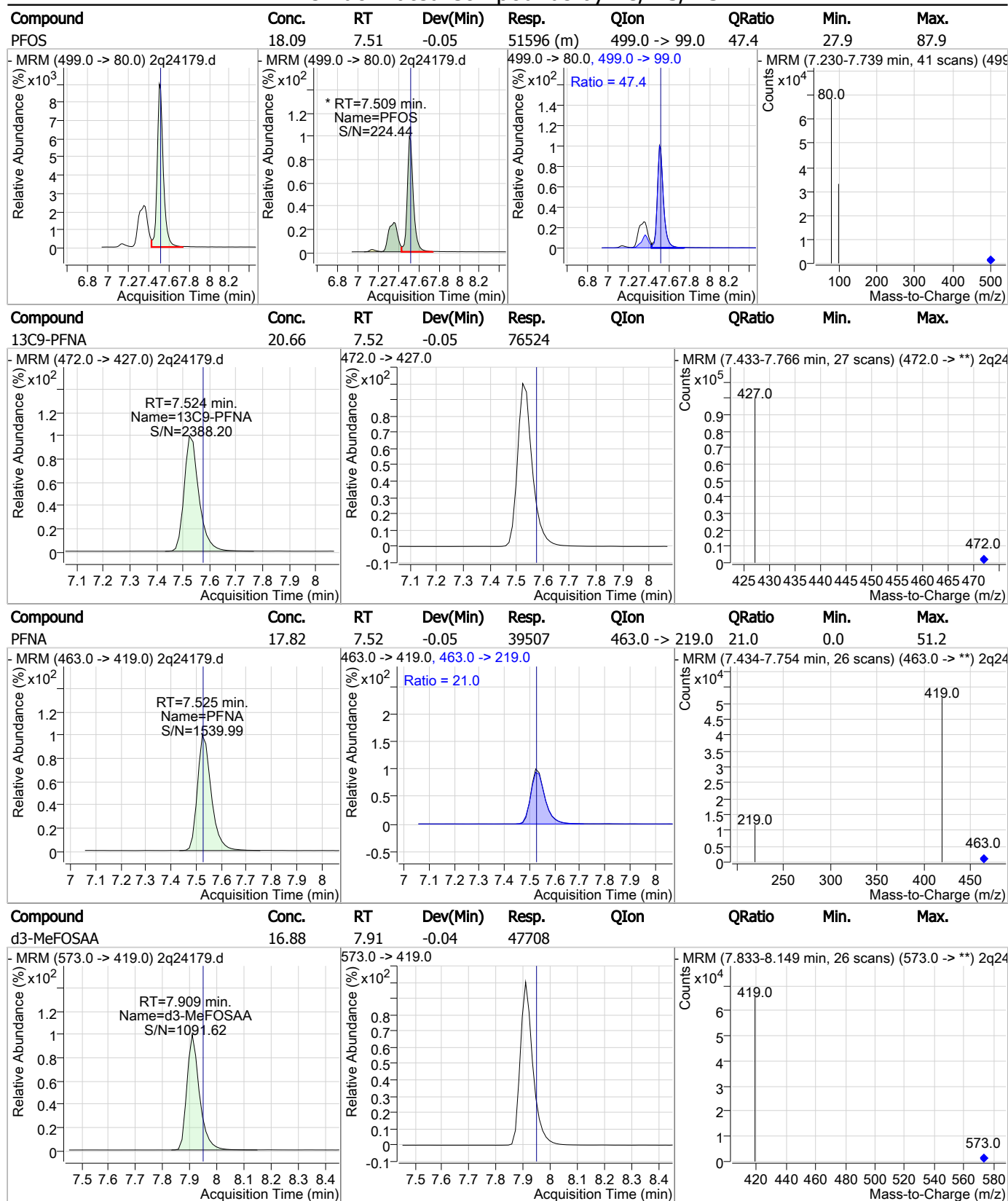


10.4.1 10

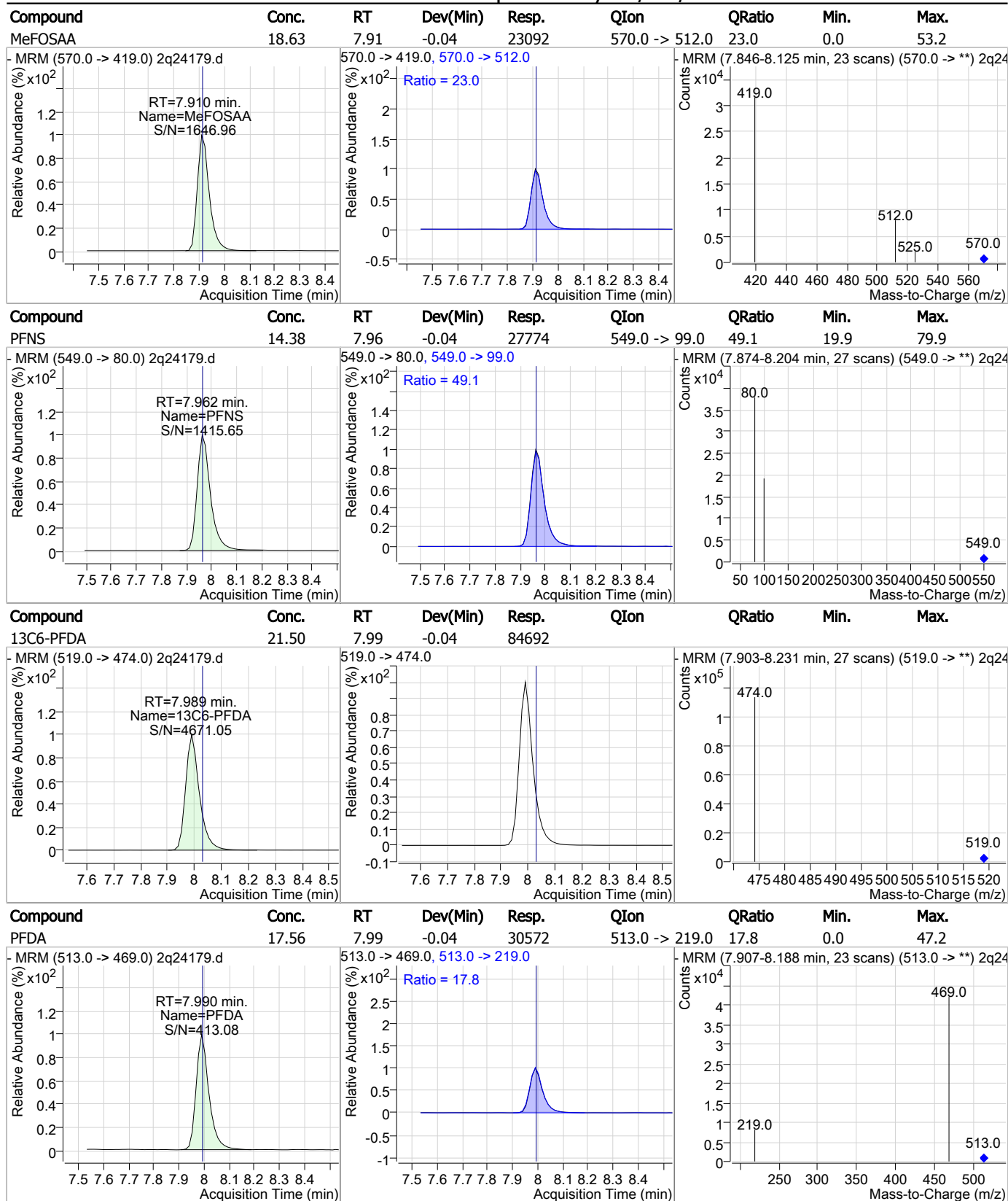
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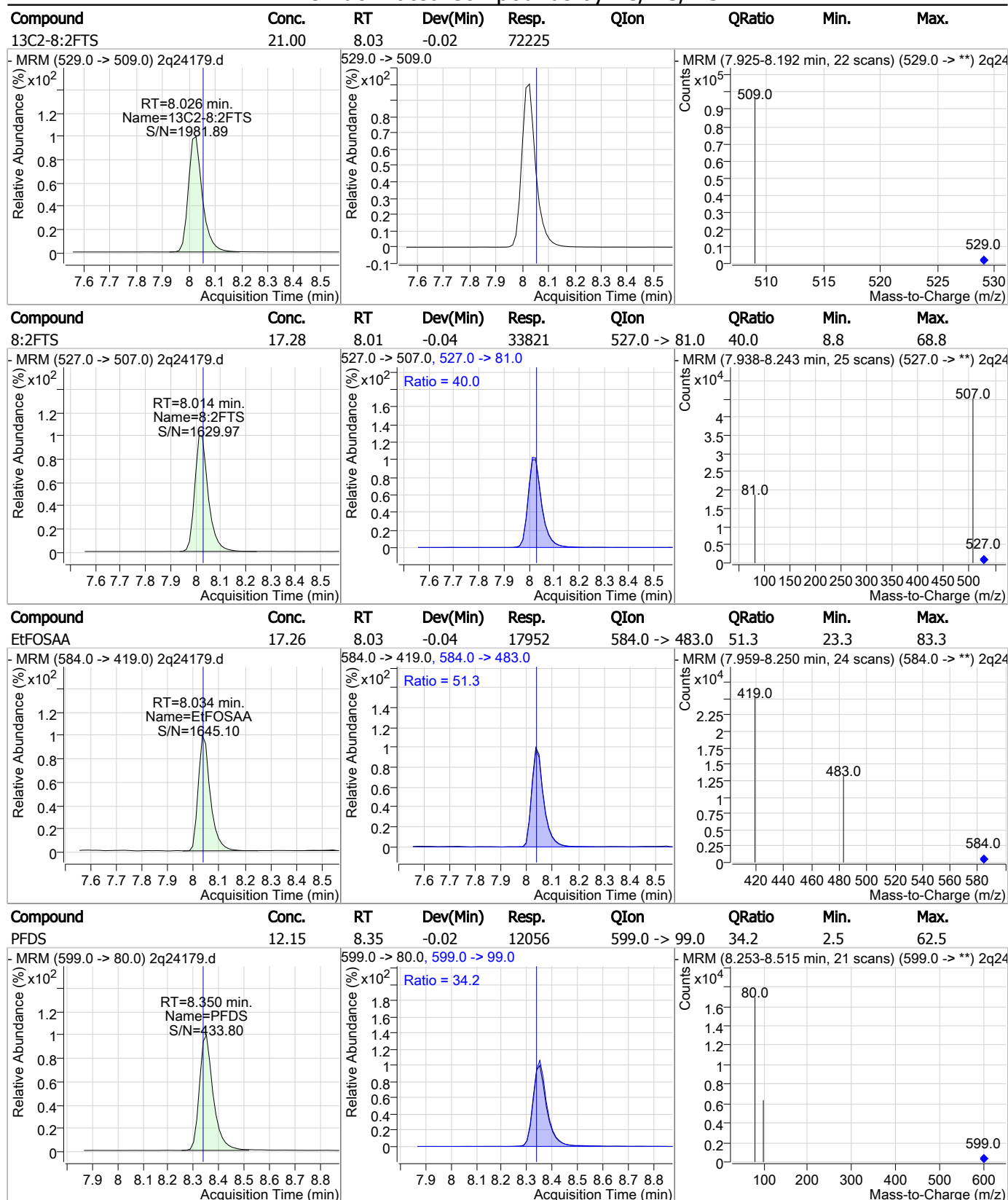
Perfluorinated Compounds by LC/MS/MS



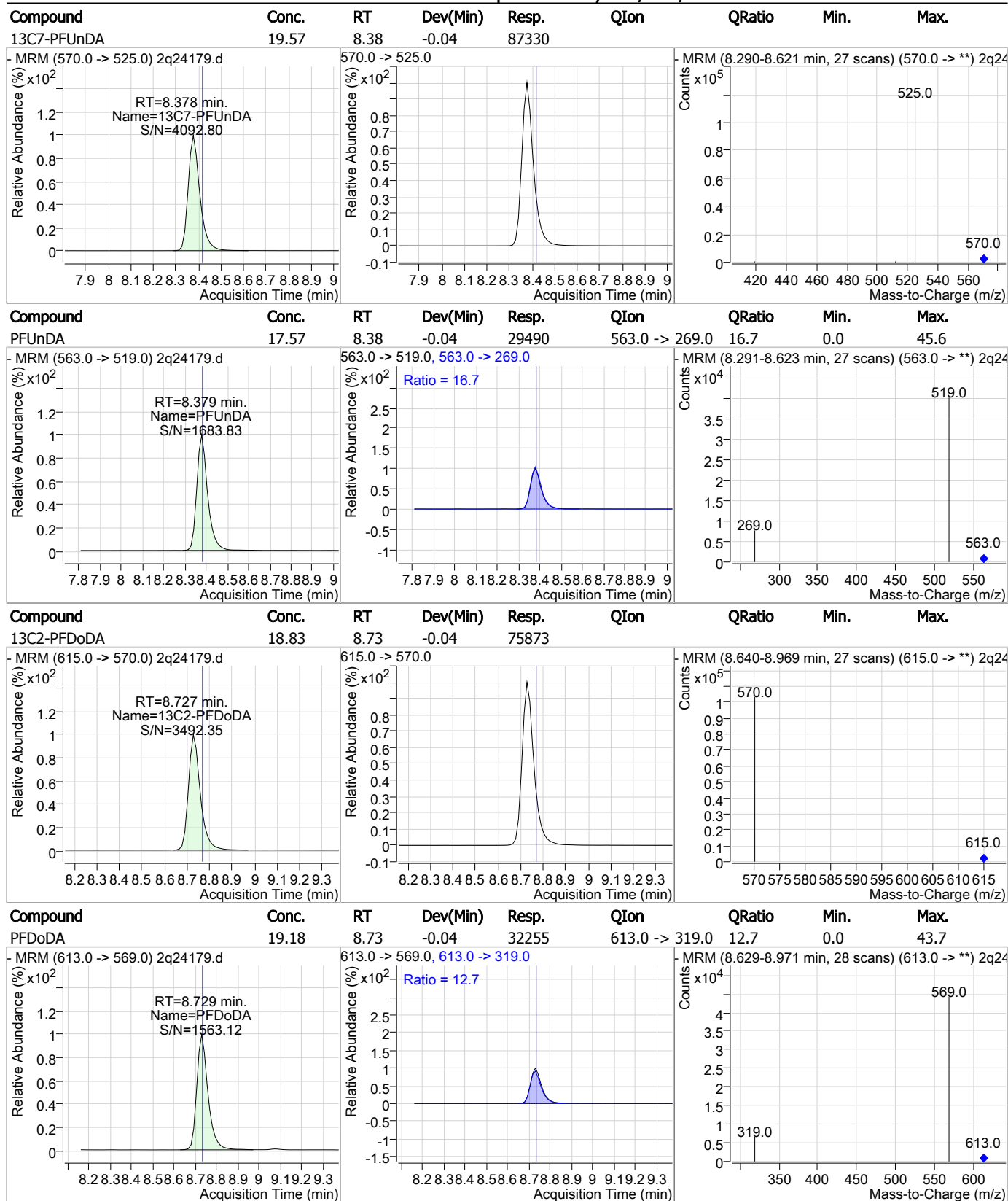
Perfluorinated Compounds by LC/MS/MS



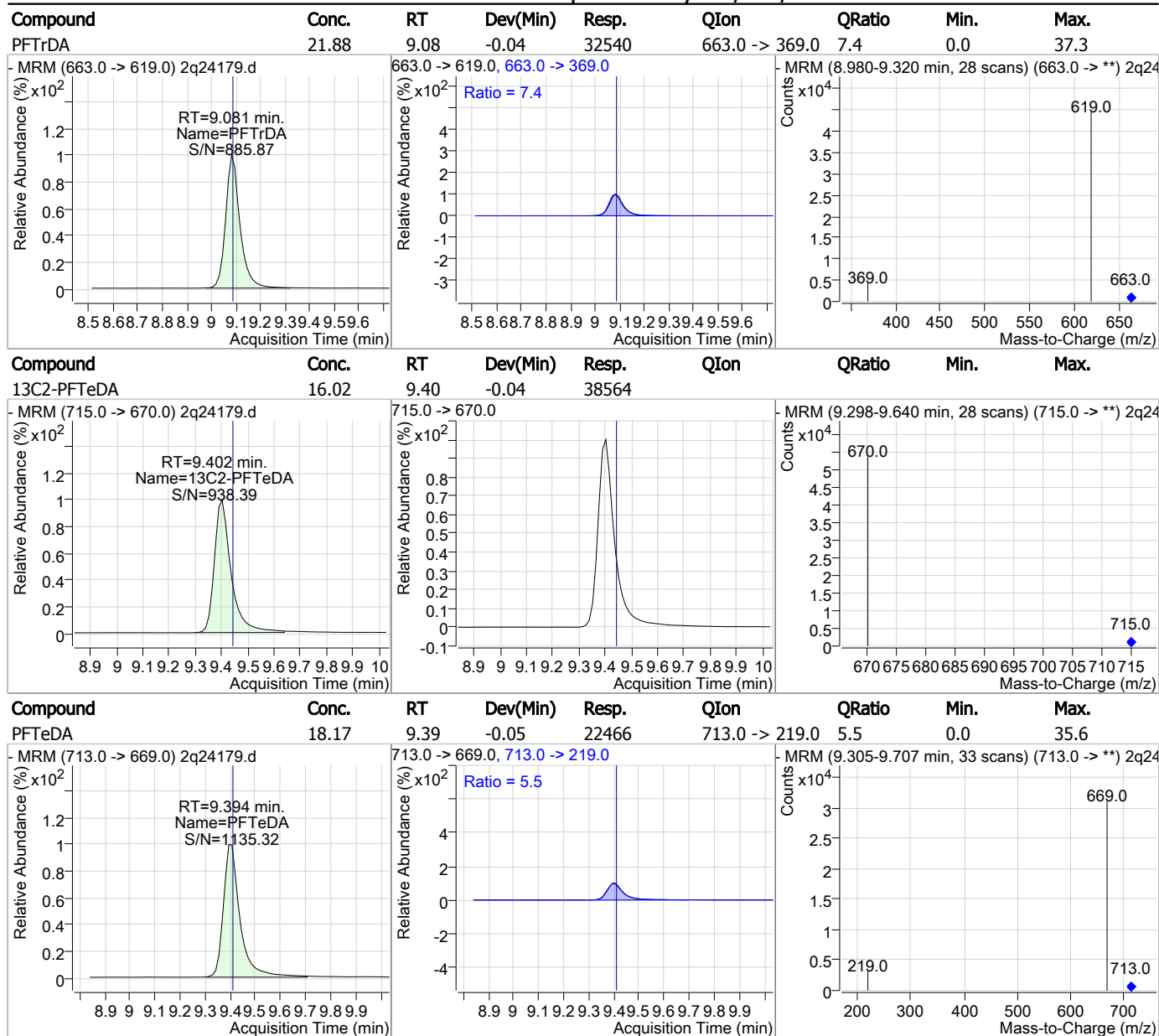
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.4.1 10

Manual Integration Approval Summary

Sample Number: OP72753-MS

Method: EPA 537M BY ID

Lab FileID: 2Q24179.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 11:40

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

10.4.1.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24180.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 11:56:17 AM
 Sample Name : OP72753-MSD
 Vial : Vial 39
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.947	415.0 -> 370.0	0	20.00	µg/L m	-0.049
13C4-PFOS	7.508	503.0 -> 80.0	0	20.00	µg/L m	-0.049
M4-PFBA	1.965	217.0 -> 172.0	362874	20.00	µg/L	-0.063
M5-PFPeA	3.937	268.0 -> 223.0	172371	20.00	µg/L	-0.075
M5-PFHxA	5.302	318.0 -> 273.0	163361	20.00	µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	164150	20.00	µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	120734	20.00	µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	92107	20.00	µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	97402	20.00	µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	98101	20.00	µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	83208	20.00	µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	43223	20.00	µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	195842	20.00	µg/L	-0.037
M3-PFBS	4.243	302.0 -> 99.0	54837	20.00	µg/L	-0.075
M3-PFHxS	6.273	402.0 -> 99.0	50335	20.00	µg/L	-0.062
M8-PFOS	7.507	507.0 -> 99.0	62607	20.00	µg/L	-0.049
M2-4:2FTS	5.197	329.0 -> 309.0	154792	20.00	µg/L	-0.062
M2-6:2FTS	6.927	429.0 -> 409.0	150587	20.00	µg/L	-0.065
M2-8:2FTS	8.013	529.0 -> 509.0	81951	20.00	µg/L	-0.037
M3-MeFOSAA	7.909	573.0 -> 419.0	53748	20.00	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.197	329.0 -> 309.0	154785	23.16	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.8%		
13C2-6:2FTS	6.927	429.0 -> 409.0	150581	24.25	µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%		
13C2-8:2FTS	8.013	529.0 -> 509.0	81946	23.83	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.1%		
13C2-PFDoDA	8.727	615.0 -> 570.0	83217	20.65	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-PFTeDA	9.402	715.0 -> 670.0	43043	17.88	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C3-PFBS	4.243	302.0 -> 99.0	54802	23.47	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.3%		
13C3-PFHxS	6.273	402.0 -> 99.0	50234	22.20	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C4-PFBA	1.965	217.0 -> 172.0	362711	23.07	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%		
13C4-PFHpA	6.229	367.0 -> 322.0	164119	24.01	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.0%		
13C5-PFHxA	5.302	318.0 -> 273.0	163172	24.10	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%		
13C5-PFPeA	3.937	268.0 -> 223.0	172211	24.45	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C6-PFDA	7.989	519.0 -> 474.0	97627	24.78	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.9%		

Perfluorinated Compounds by LC/MS/MS

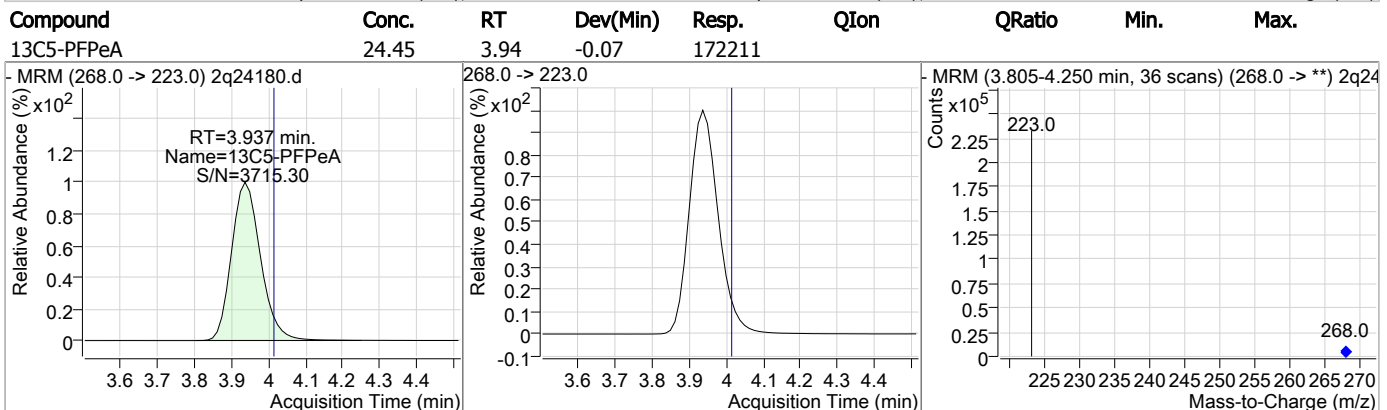
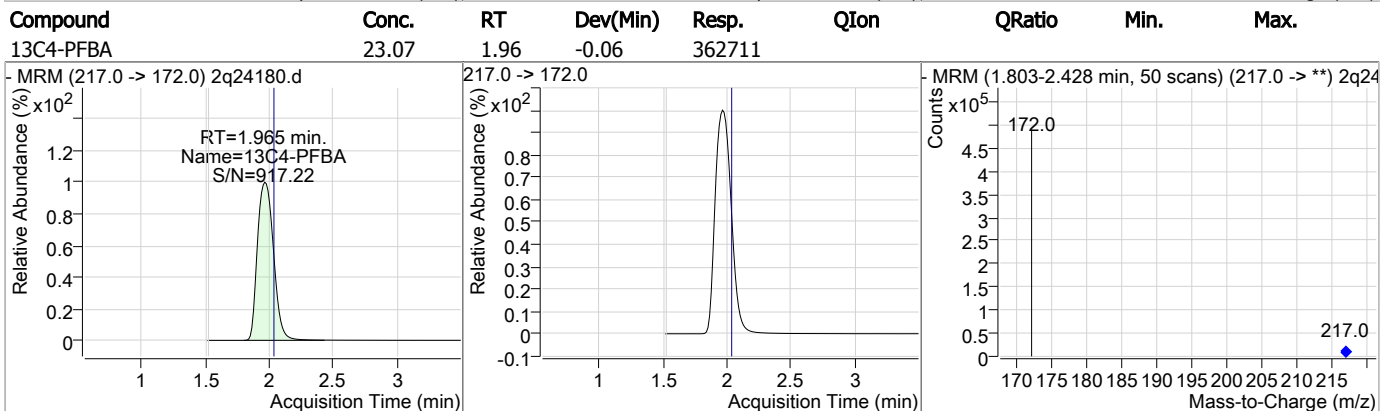
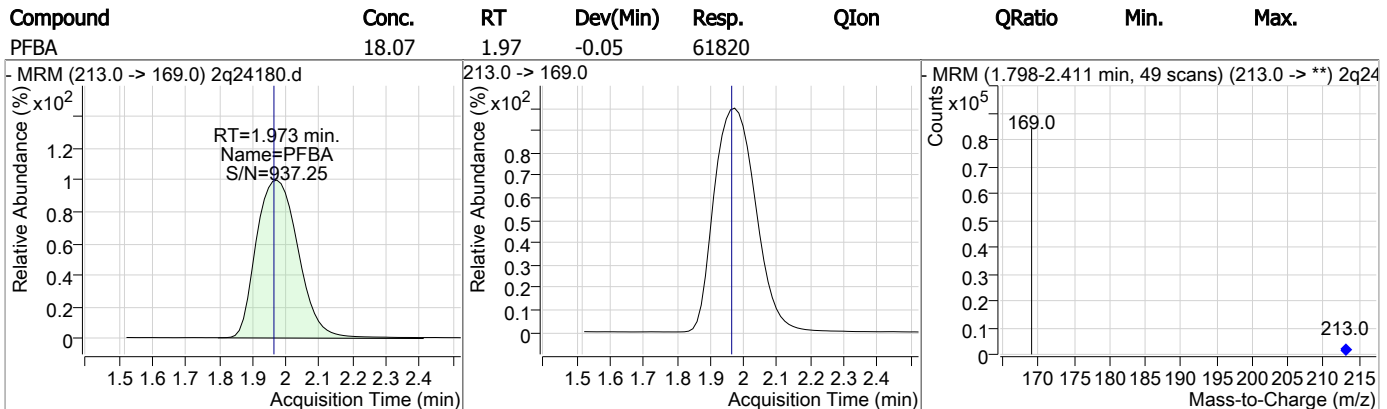
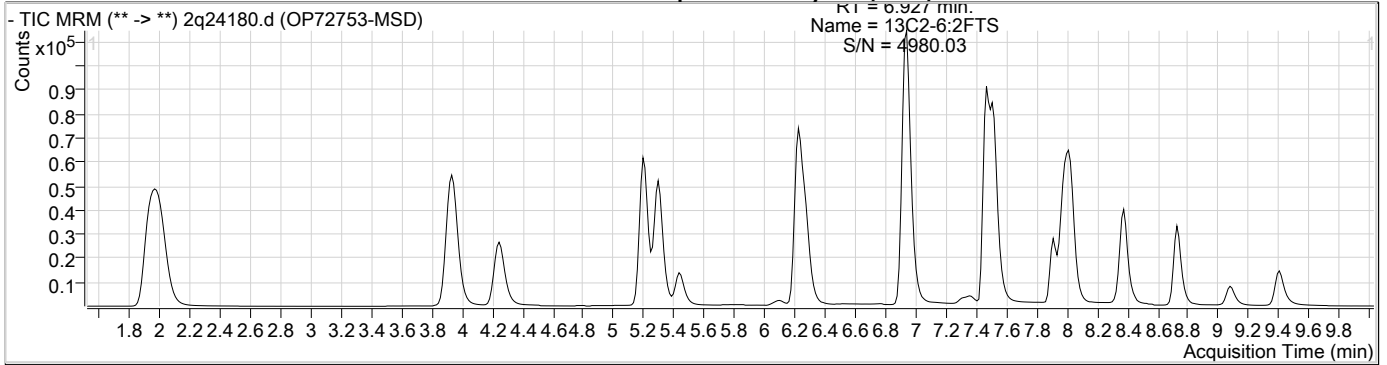
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	98104	21.99 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C8-FOSA	7.469	506.0 -> 78.0	195907	23.09 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.5%	
13C8-PFOA	6.946	421.0 -> 376.0	120782	24.60 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.0%	
13C8-PFOS	7.507	507.0 -> 99.0	62782	22.11 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C9-PFNA	7.524	472.0 -> 427.0	92051	24.86 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%	
d3-MeFOSAA	7.909	573.0 -> 419.0	53737	19.01 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
M2-PFOA	-	415.0 -> 370.0	-	N.D.	
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	
M4-PFOS	7.508	503.0 -> 80.0	0	0.00 ng/ml m	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	

Target Compounds

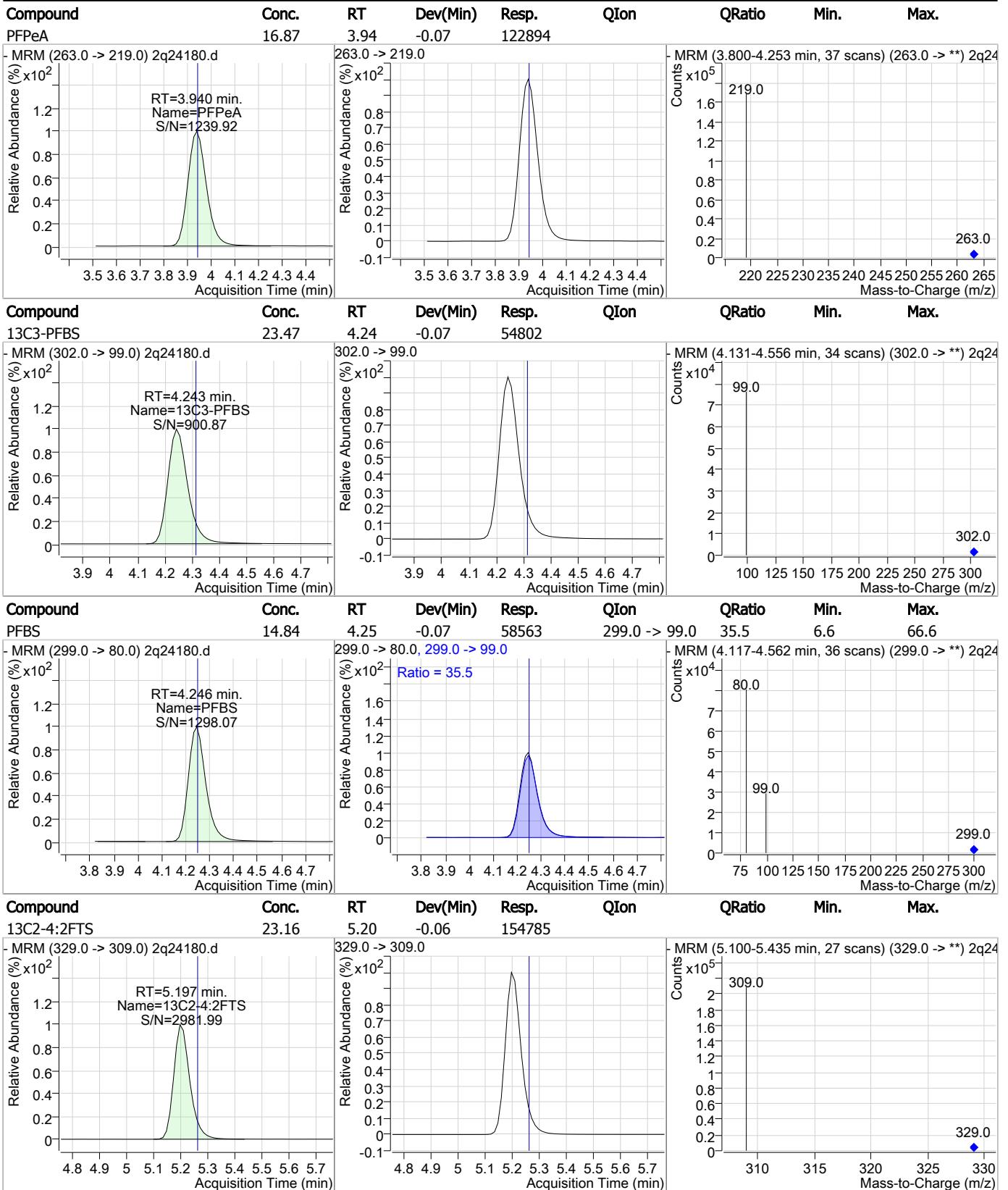
					QValue
4:2FTS	5.200	327.0 -> 307.0	69599	16.11 µg/L	96
6:2FTS	6.928	427.0 -> 407.0	62293	16.21 µg/L	97
8:2FTS	8.014	527.0 -> 507.0	35032	15.71 µg/L	99
EtFOSAA	8.034	584.0 -> 419.0	20022	17.08 µg/L	98
FOSA	7.471	498.0 -> 78.0	84098	17.75 µg/L	97
MeFOSAA	7.910	570.0 -> 419.0	25191	18.03 µg/L	98
PFBA	1.973	213.0 -> 169.0	61820	18.07 µg/L	100
PFBS	4.246	299.0 -> 80.0	58563	14.84 µg/L	98
PFDA	7.990	513.0 -> 469.0	30419	15.18 µg/L	95
PFDoDA	8.729	613.0 -> 569.0	32837	17.81 µg/L	99
PFDS	8.350	599.0 -> 80.0	12842	11.20 µg/L	98
PFHpA	6.232	363.0 -> 319.0	109833	17.07 µg/L	100
PFHpS	6.954	449.0 -> 80.0	45979	17.54 µg/L	99
PFHxA	5.305	313.0 -> 269.0	39581	16.22 µg/L	98
PFHxS	6.276	399.0 -> 80.0	48541	15.33 µg/L m	96
PFNA	7.525	463.0 -> 419.0	43470	16.25 µg/L	99
PFNS	7.962	549.0 -> 80.0	27841	12.44 µg/L	99
PFOA	6.949	413.0 -> 369.0	58880	17.83 µg/L	98
PFOS	7.509	499.0 -> 80.0	54870	16.64 µg/L m	85
PFPeA	3.940	263.0 -> 219.0	122894	16.87 µg/L	100
PFPeS	5.433	349.0 -> 80.0	40181	16.66 µg/L	99
PFTeDA	9.406	713.0 -> 669.0	23247	16.78 µg/L	99
PFTTrDA	9.081	663.0 -> 619.0	31770	19.08 µg/L	99
PFUnDA	8.379	563.0 -> 519.0	31613	16.77 µg/L	100

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

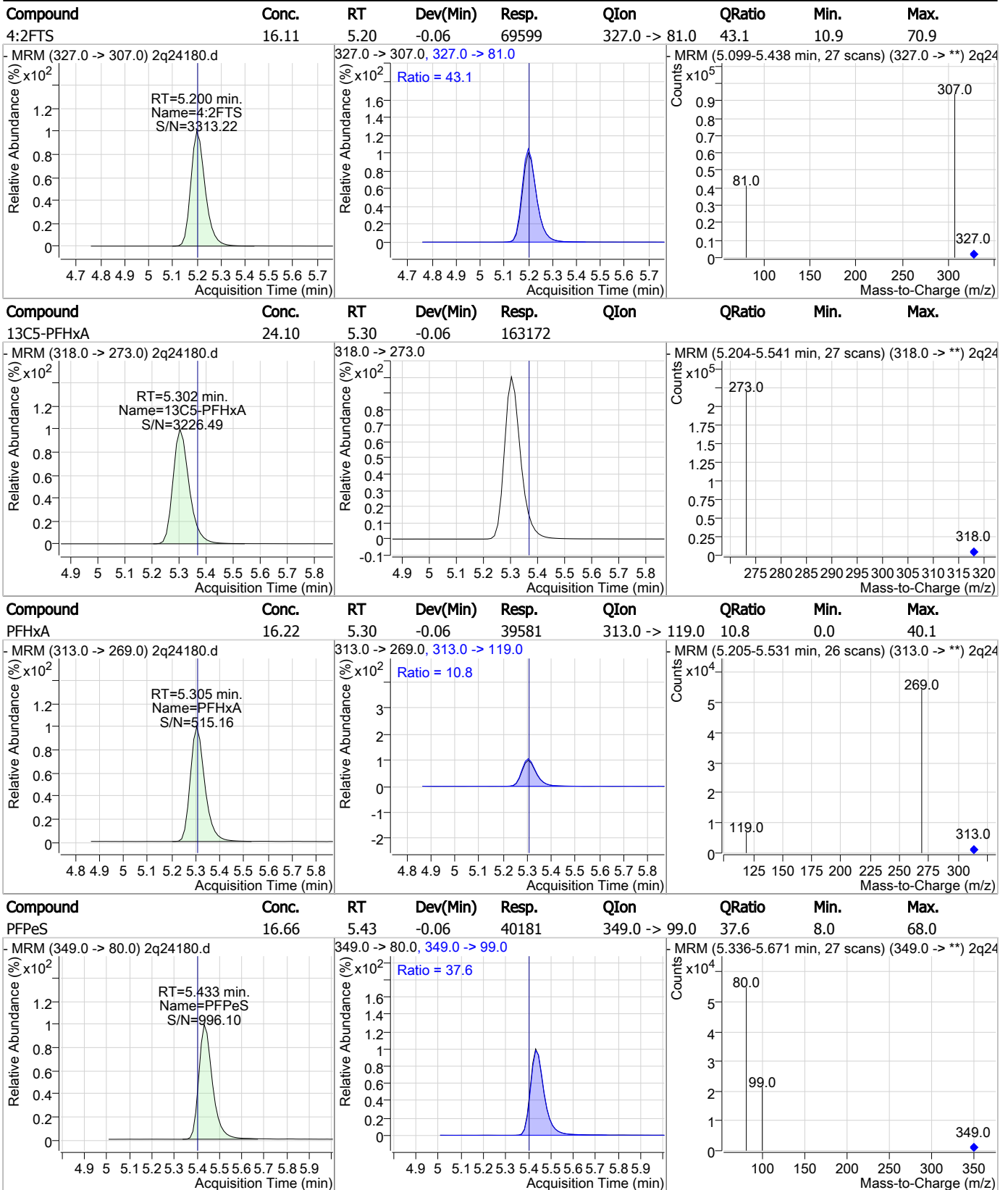
Perfluorinated Compounds by LC/MS/MS



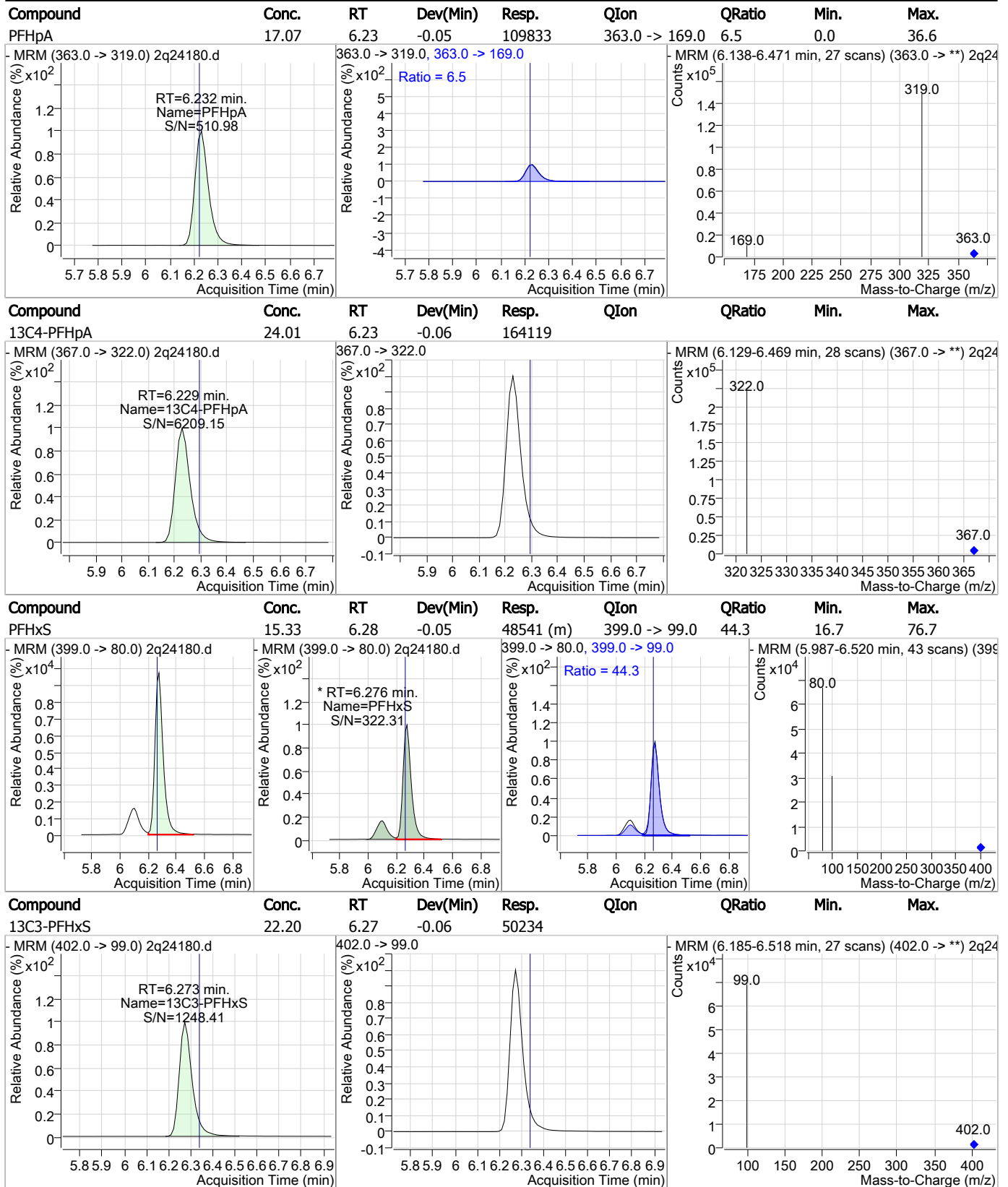
Perfluorinated Compounds by LC/MS/MS



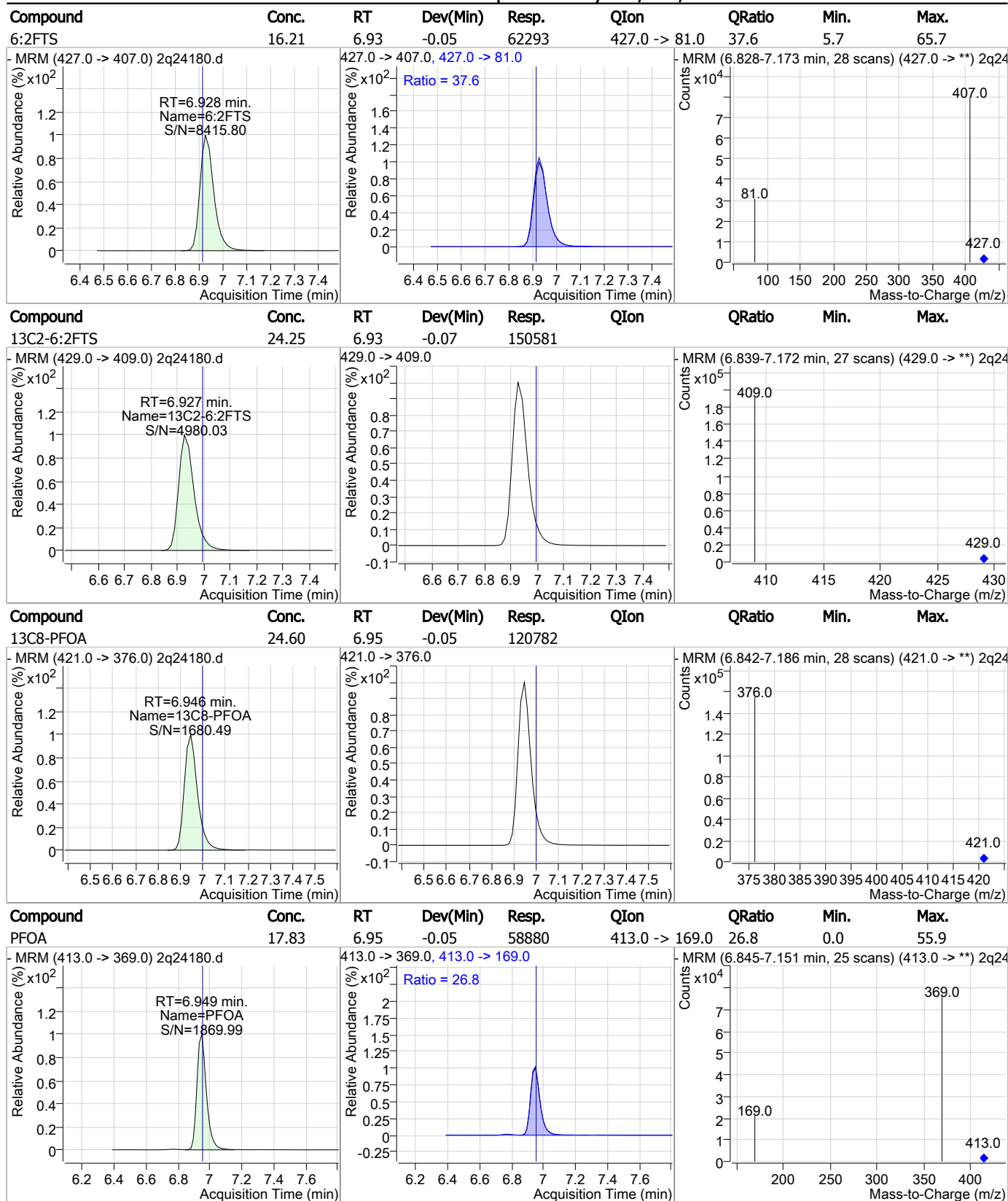
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

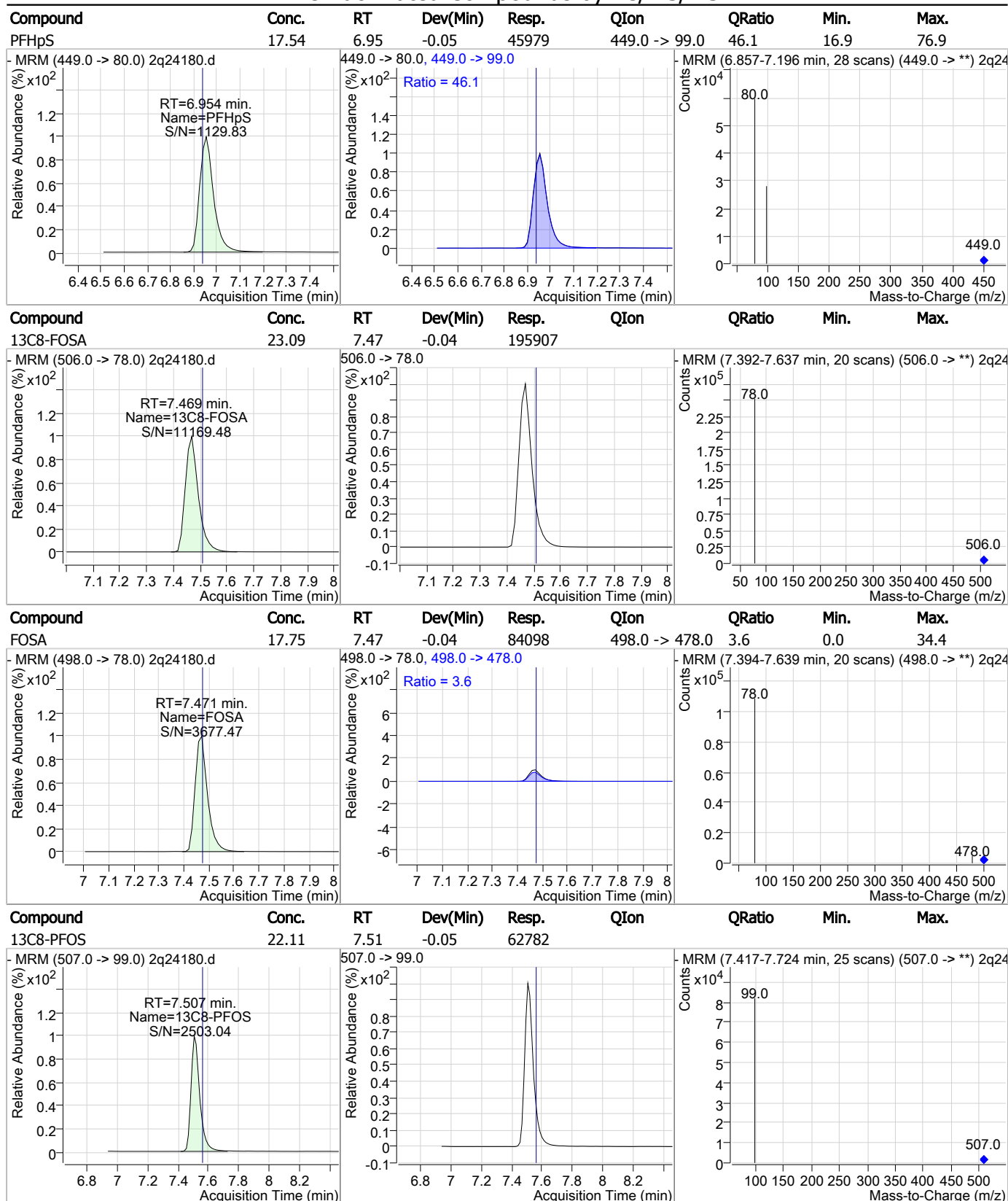


Perfluorinated Compounds by LC/MS/MS



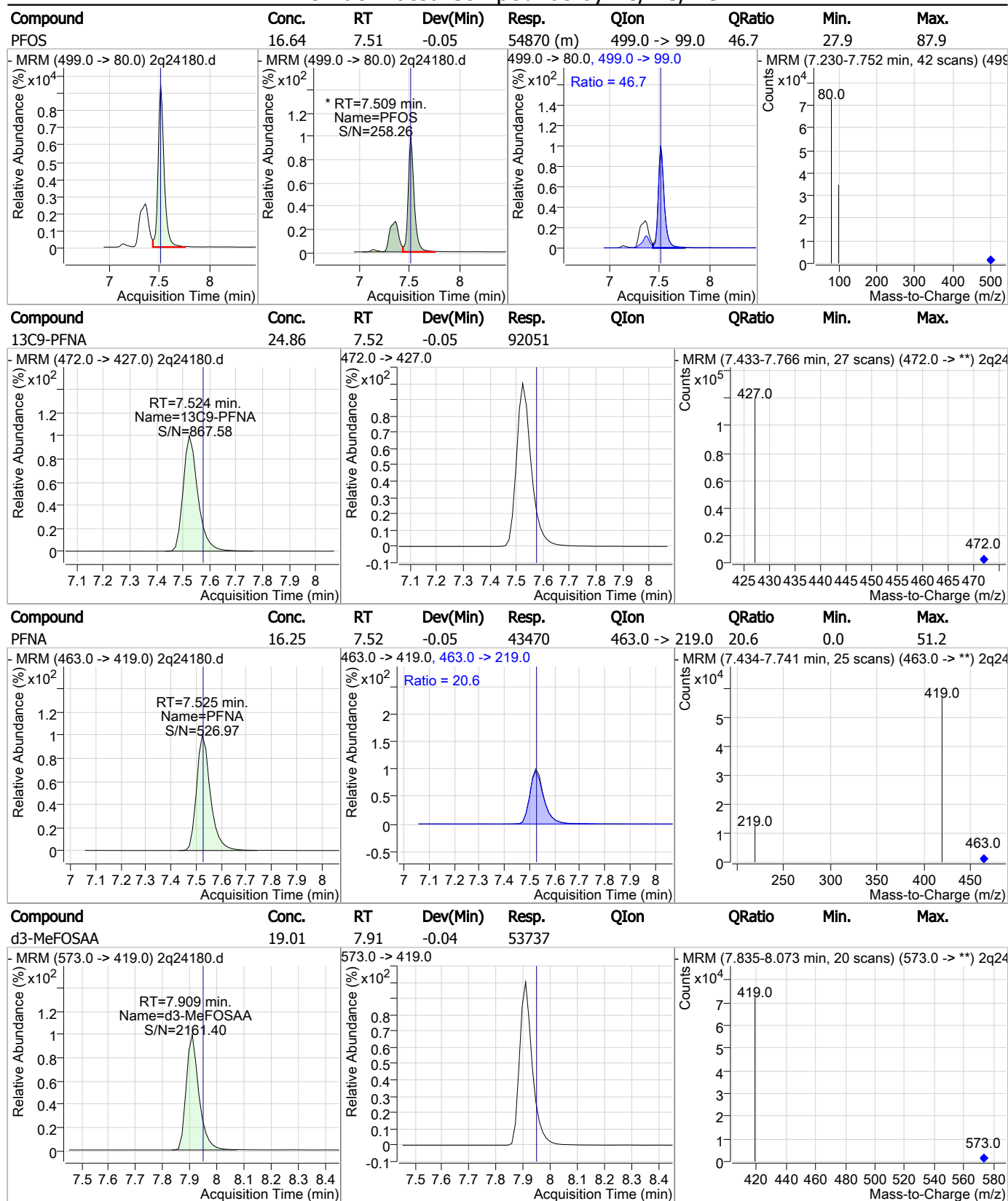
10.4.2 10

Perfluorinated Compounds by LC/MS/MS



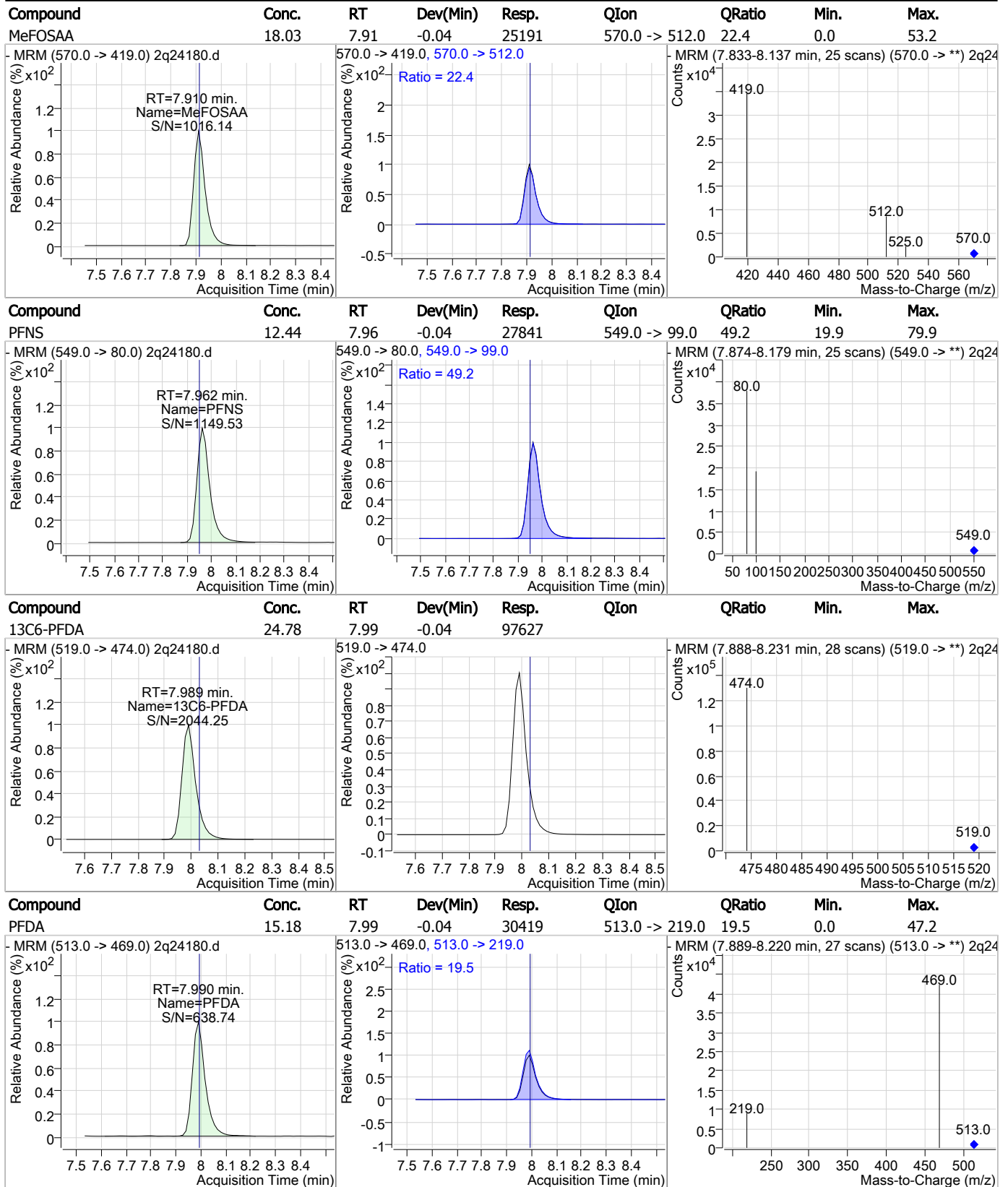
10.4.2 10

Perfluorinated Compounds by LC/MS/MS

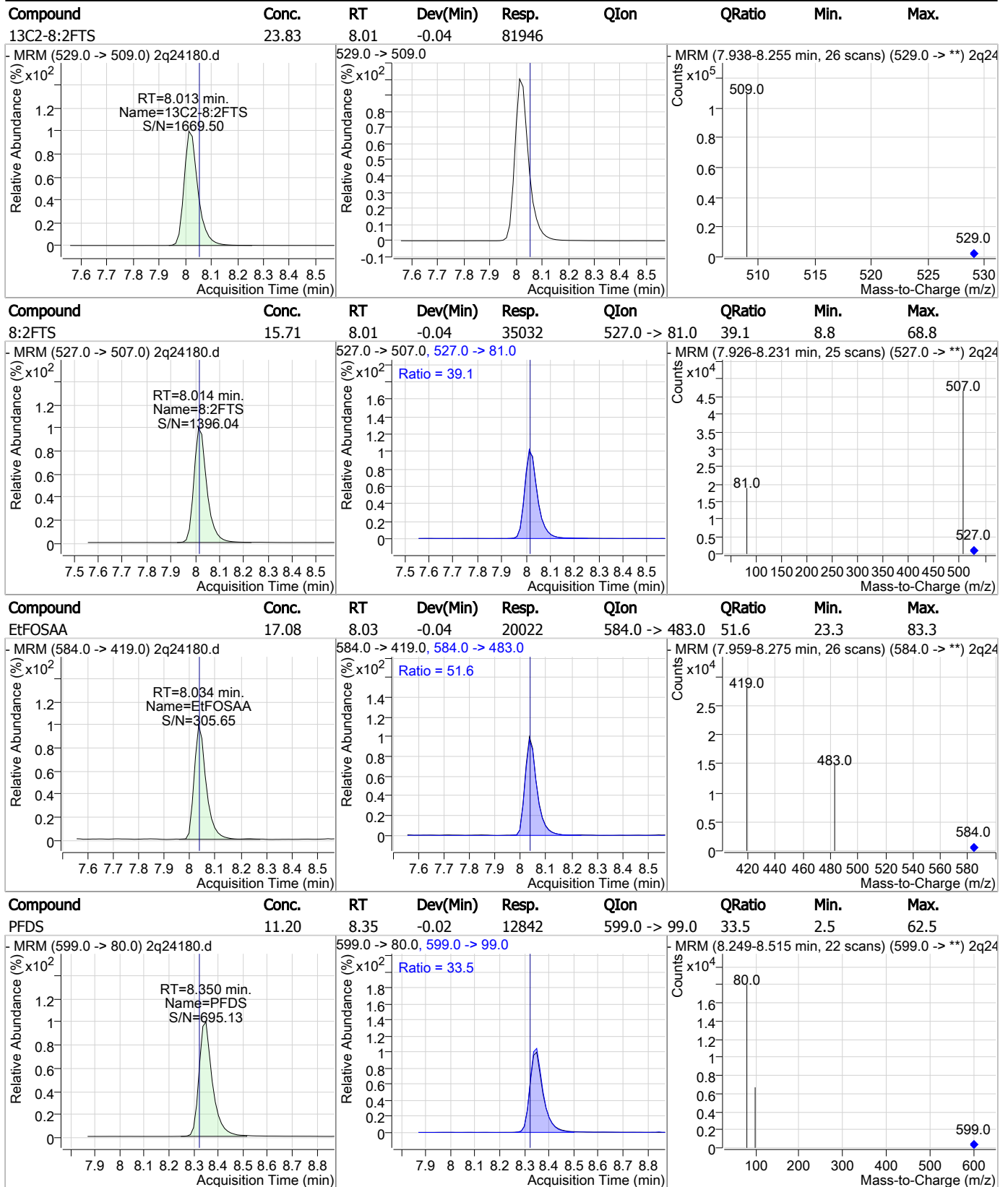


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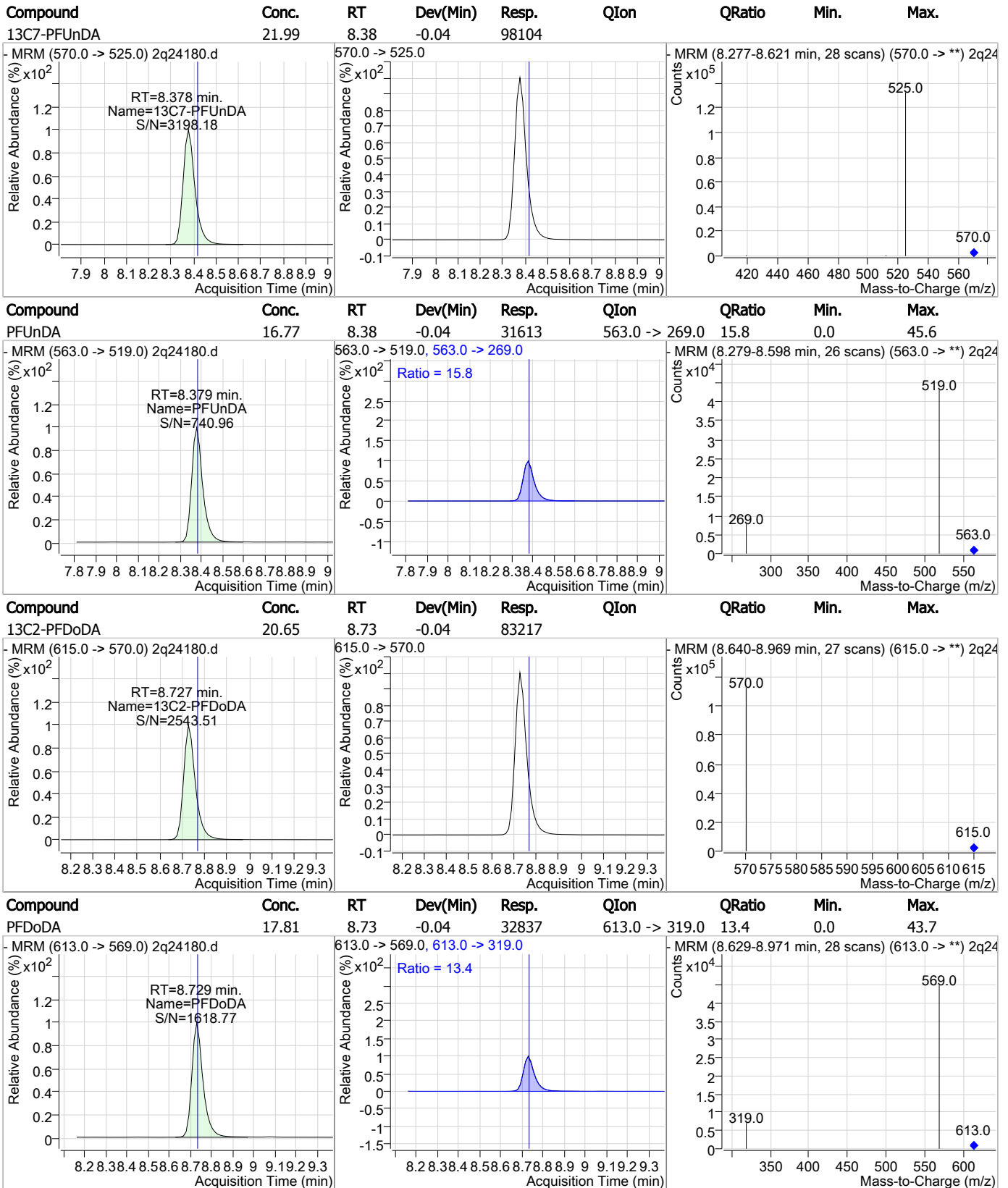
Perfluorinated Compounds by LC/MS/MS



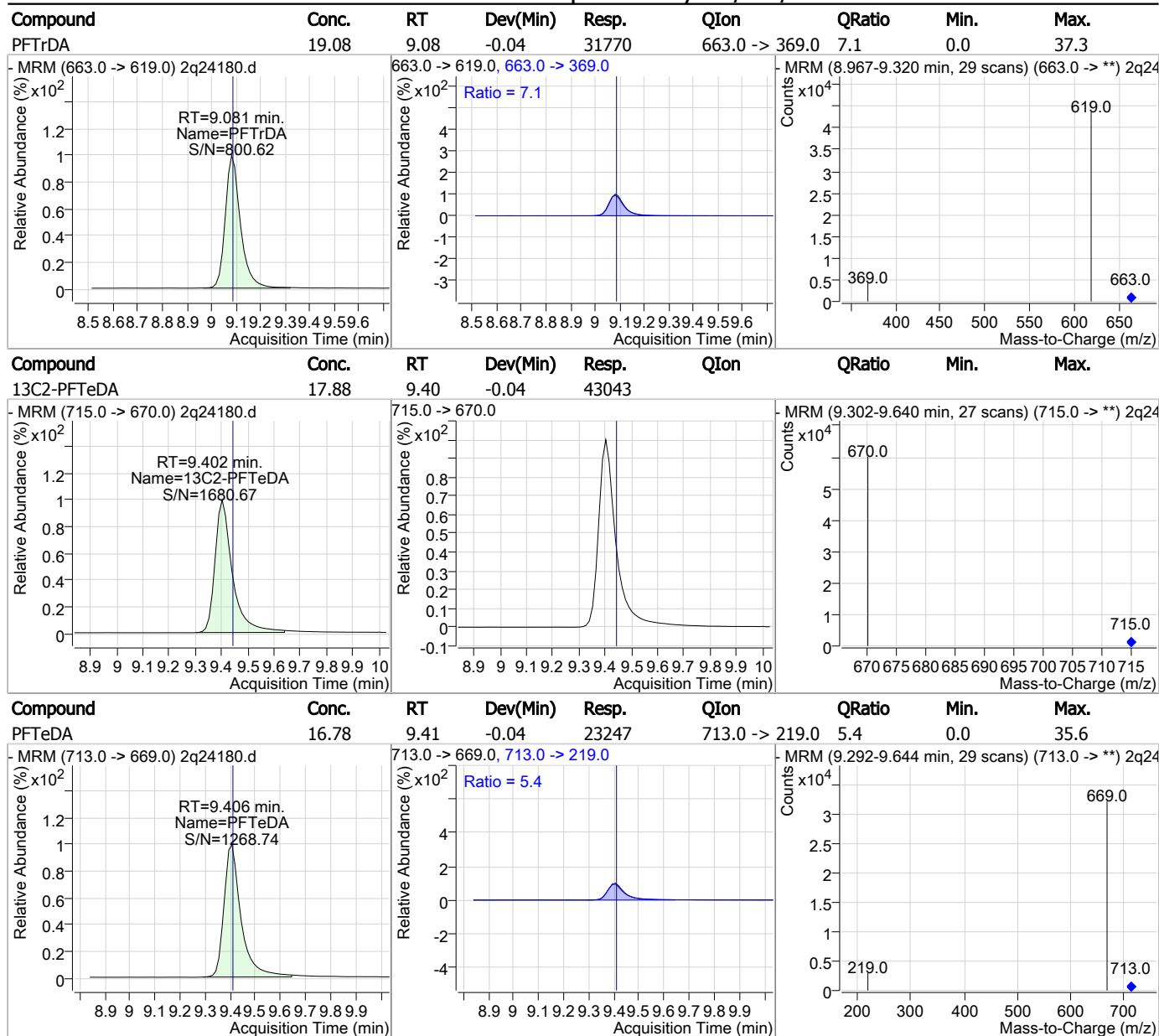
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: OP72753-MSD

Method: EPA 537M BY ID

Lab FileID: 2Q24180.D

Analyst approved: 11/28/18 16:02 Nancy Saunders

Injection Time: 11/28/18 11:56

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

Mike Eger
11/27/18 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24007.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 1:05:44 PM
 Sample Name : IC374-0.5
 Vial : Vial 2
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	125751	20.00 µg/L	-0.027
13C4-PFOS	7.547	503.0 -> 80.0	95053	20.00 µg/L	-0.016
M4-PFBA	2.027	217.0 -> 172.0	300668	20.00 µg/L	-0.013
M5-PFPeA	3.987	268.0 -> 223.0	126190	20.00 µg/L	-0.026
M5-PFHxA	5.340	318.0 -> 273.0	122979	20.00 µg/L	-0.026
M4-PFHpA	6.266	367.0 -> 322.0	124172	20.00 µg/L	-0.028
M8-PFOA	6.971	421.0 -> 376.0	88494	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	65817	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	69942	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	75649	20.00 µg/L	-0.027
M2-PFDoDA	8.764	615.0 -> 570.0	67004	20.00 µg/L	-0.016
M2-PFTeDA	9.439	715.0 -> 670.0	40426	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	162914	20.00 µg/L	-0.017
M3-PFBS	4.293	302.0 -> 99.0	45073	20.00 µg/L	-0.026
M3-PFHxS	6.310	402.0 -> 99.0	43783	20.00 µg/L	-0.030
M8-PFOS	7.545	507.0 -> 99.0	54680	20.00 µg/L	-0.016
M2-4:2FTS	5.235	329.0 -> 309.0	112121	20.00 µg/L	-0.038
M2-6:2FTS	6.968	429.0 -> 409.0	106448	20.00 µg/L	-0.028
M2-8:2FTS	8.051	529.0 -> 509.0	54767	20.00 µg/L	-0.014
M3-MeFOSAA	7.921	573.0 -> 419.0	49204	20.00 µg/L	-0.014

System Monitoring Compounds

13C2-4:2FTS	5.235	329.0 -> 309.0	112181	16.79 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
13C2-6:2FTS	6.968	429.0 -> 409.0	106416	17.14 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%	
13C2-8:2FTS	8.051	529.0 -> 509.0	54759	15.92 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%	
13C2-PFDoDA	8.764	615.0 -> 570.0	66978	16.62 µg/L	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
13C2-PFTeDA	9.439	715.0 -> 670.0	40465	16.81 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.0%	
13C3-PFBS	4.293	302.0 -> 99.0	44979	19.26 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C3-PFHxS	6.310	402.0 -> 99.0	43823	19.37 µg/L	-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C4-PFBA	2.027	217.0 -> 172.0	298687	19.00 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C4-PFHpA	6.266	367.0 -> 322.0	124039	18.14 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C5-PFHxA	5.340	318.0 -> 273.0	122873	18.15 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C5-PFPeA	3.987	268.0 -> 223.0	125885	17.87 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%	
13C6-PFDA	8.015	519.0 -> 474.0	70074	17.78 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	75673	16.96 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%	
13C8-FOSA	7.481	506.0 -> 78.0	162957	19.21 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	6.971	421.0 -> 376.0	88674	18.06 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%	
13C8-PFOS	7.545	507.0 -> 99.0	54639	19.25 µg/L	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C9-PFNA	7.550	472.0 -> 427.0	65849	17.78 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
d3-MeFOSAA	7.921	573.0 -> 419.0	49202	17.41 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%	
M2-PFOA	6.972	415.0 -> 370.0	125482	19.98 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
M4-PFOS	7.547	503.0 -> 80.0	94201	19.87 ng/ml	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	

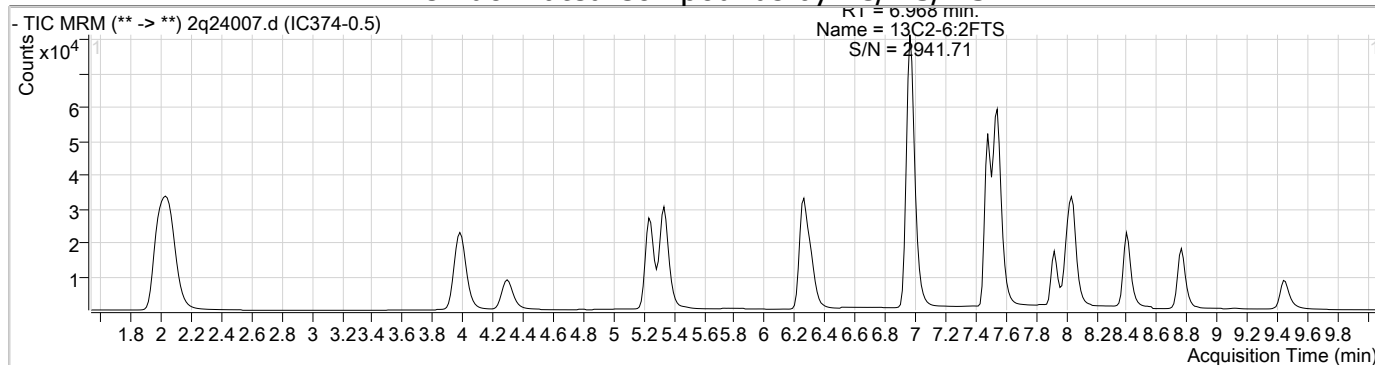
Target Compounds

					QValue
4:2FTS	5.237	327.0 -> 307.0	1768	0.55 µg/L	88
6:2FTS	6.969	427.0 -> 407.0	1716	0.61 µg/L	91
8:2FTS	8.052	527.0 -> 507.0	830	0.53 µg/L	79
EtFOSAA	8.047	584.0 -> 419.0	605	0.56 µg/L	92
FOSA	7.483	498.0 -> 78.0	2109	0.54 µg/L	98
MeFOSAA	7.922	570.0 -> 419.0	768	0.60 µg/L	99
PFBA	2.036	213.0 -> 169.0	1648	0.58 µg/L	100
PFBS	4.296	299.0 -> 80.0	1866	0.58 µg/L	100
PFDA	8.016	513.0 -> 469.0	760	0.53 µg/L	80
PFDoDA	8.766	613.0 -> 569.0	825	0.56 µg/L	92
PFDS	8.375	599.0 -> 80.0	647	0.65 µg/L	97
PFHpA	6.257	363.0 -> 319.0	2776	0.57 µg/L	98
PFHpS	6.979	449.0 -> 80.0	1382	0.61 µg/L	89
PFHxA	5.342	313.0 -> 269.0	1078	0.59 µg/L	98
PFHxS	6.301	399.0 -> 80.0	1524	0.55 µg/L	97
PFNA	7.550	463.0 -> 419.0	1086	0.57 µg/L	97
PFNS	7.987	549.0 -> 80.0	1059	0.53 µg/L	93
PFOA	6.974	413.0 -> 369.0	1451	0.60 µg/L	92
PFOS	7.535	499.0 -> 80.0	1726	0.60 µg/L	98
PFPeA	3.990	263.0 -> 219.0	3172	0.59 µg/L	100
PFPeS	5.470	349.0 -> 80.0	1118	0.56 µg/L	97
PFTeDA	9.443	713.0 -> 669.0	850	0.65 µg/L	97
PFTTrDA	9.118	663.0 -> 619.0	862	0.55 µg/L	100
PFUnDA	8.405	563.0 -> 519.0	834	0.57 µg/L	96

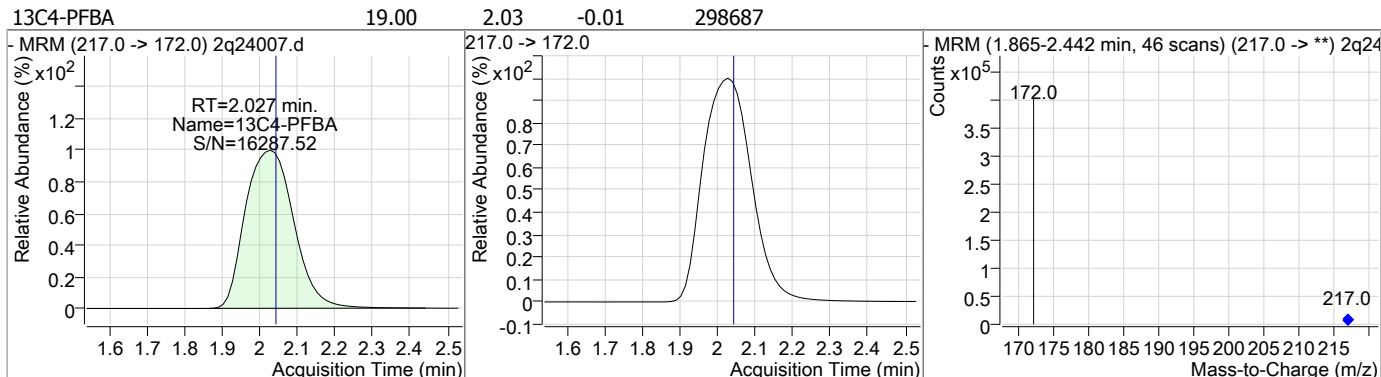
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.1
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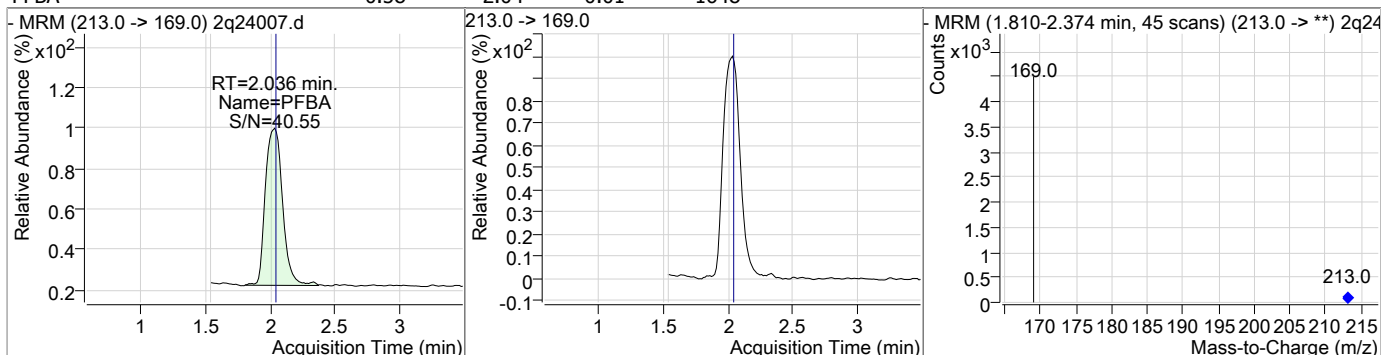
Perfluorinated Compounds by LC/MS/MS



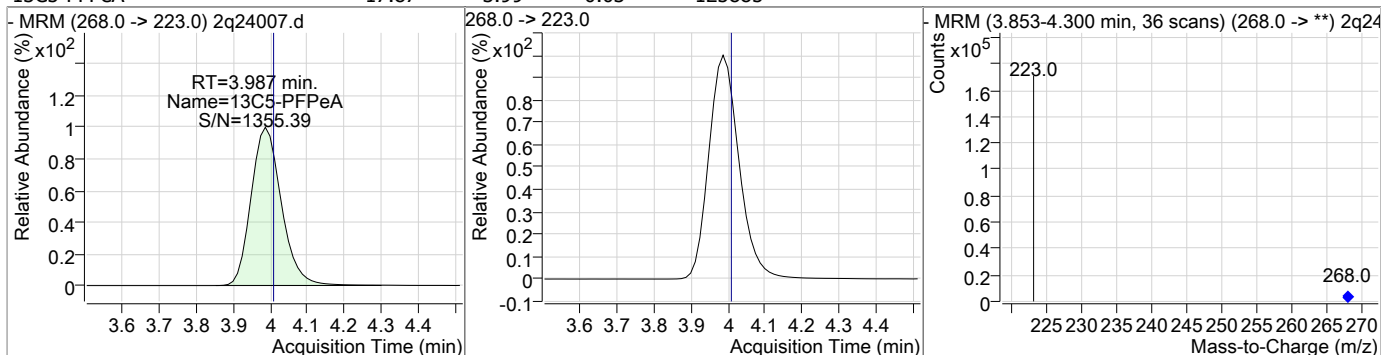
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



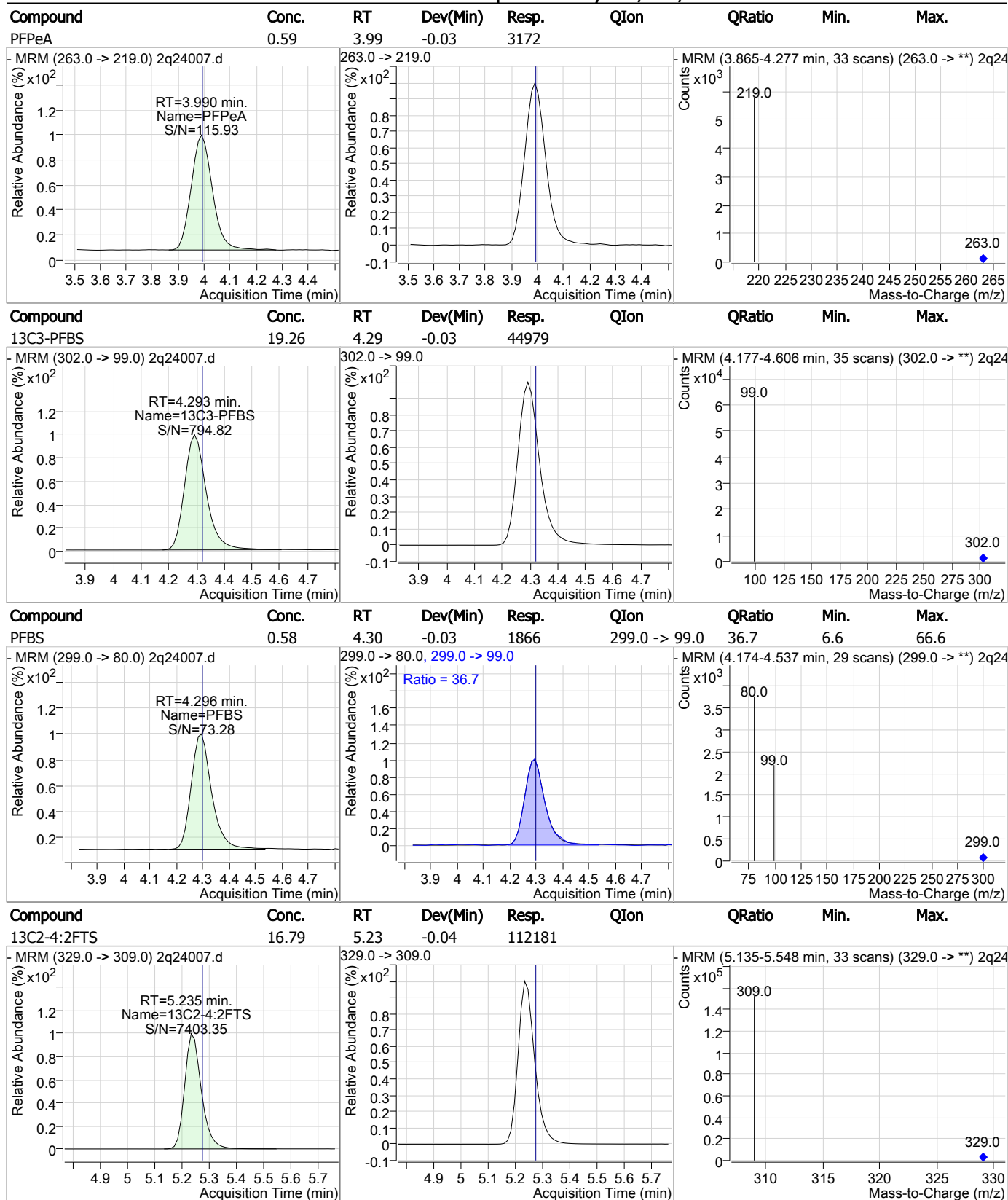
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



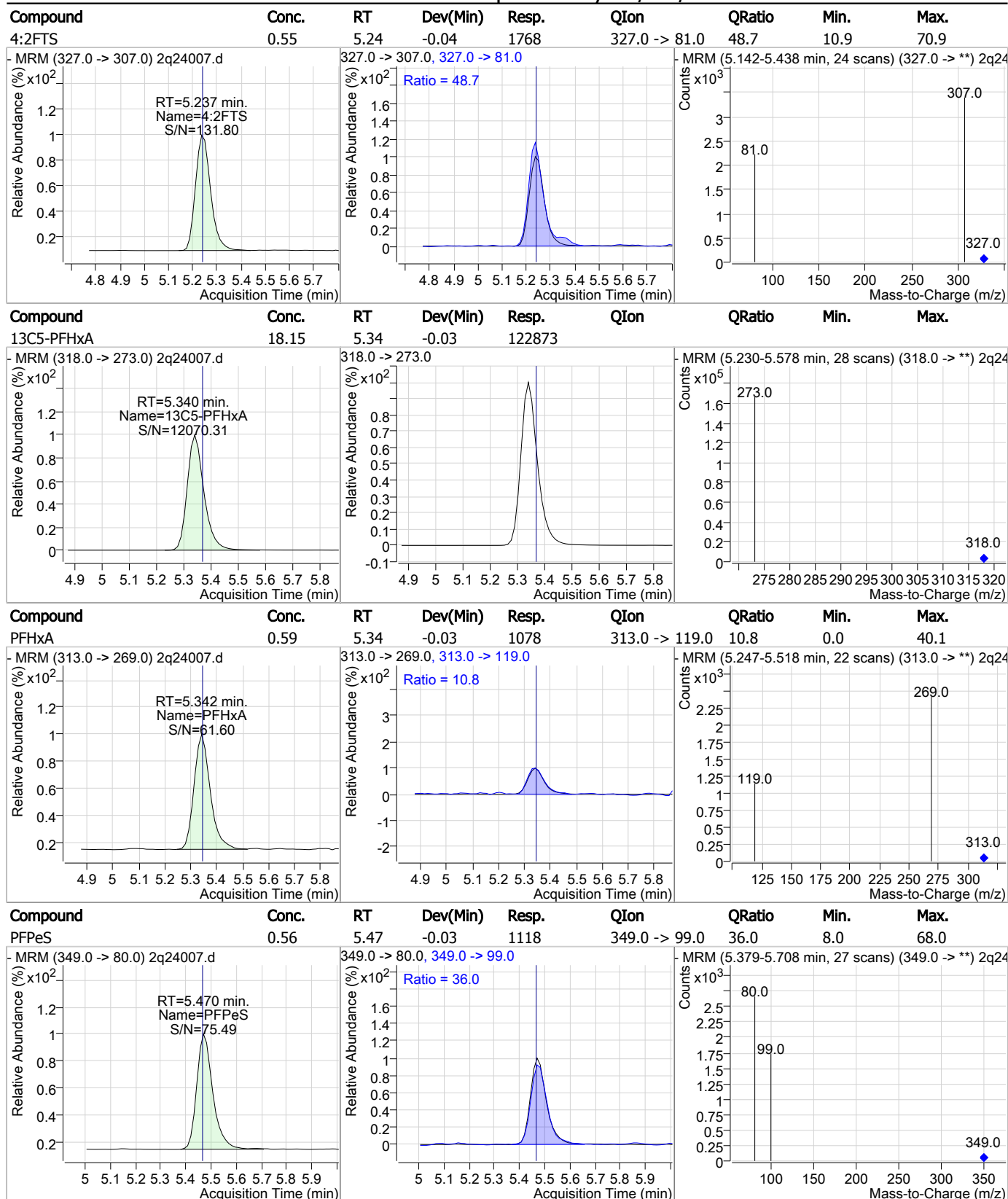
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



Perfluorinated Compounds by LC/MS/MS

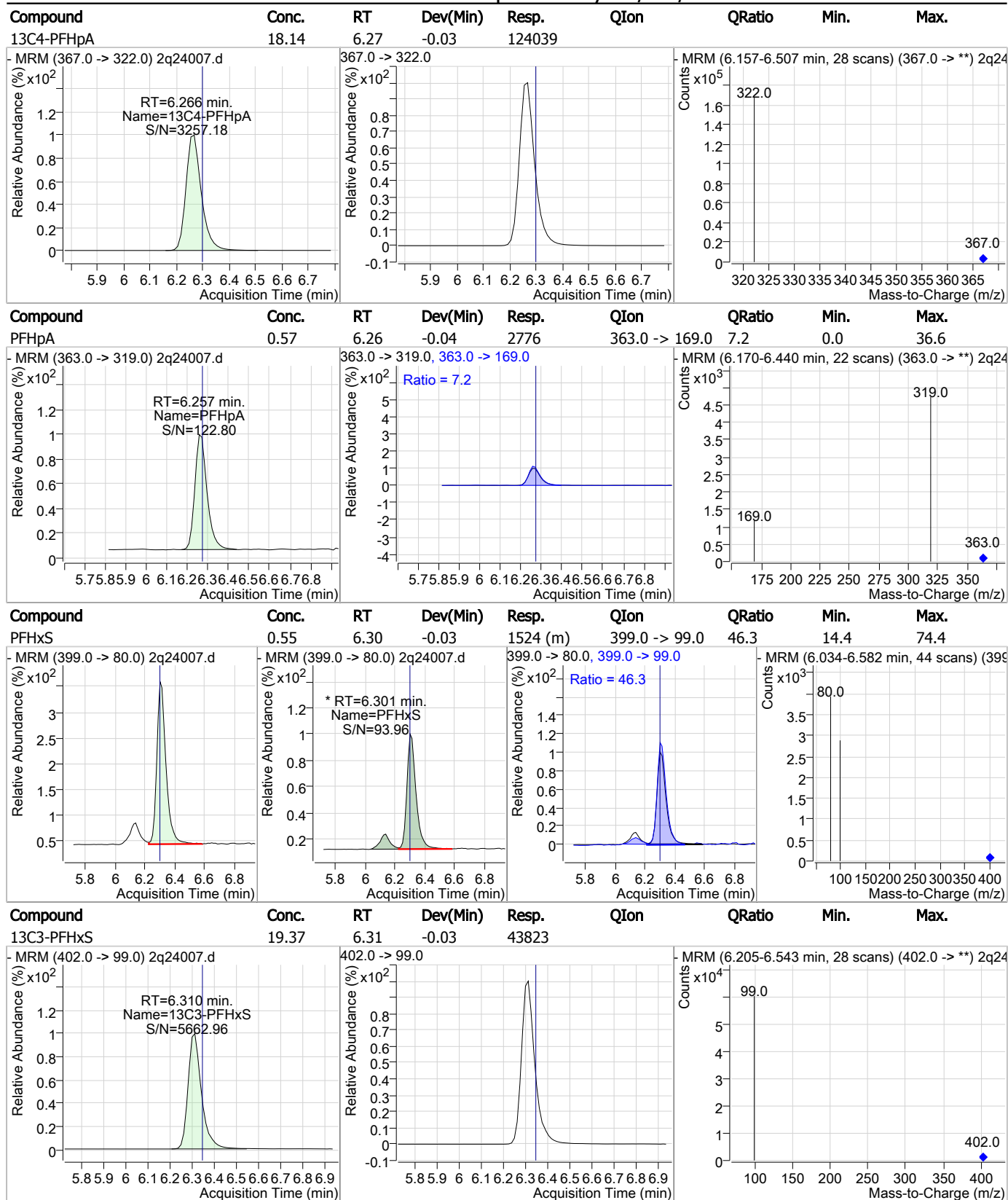


Perfluorinated Compounds by LC/MS/MS

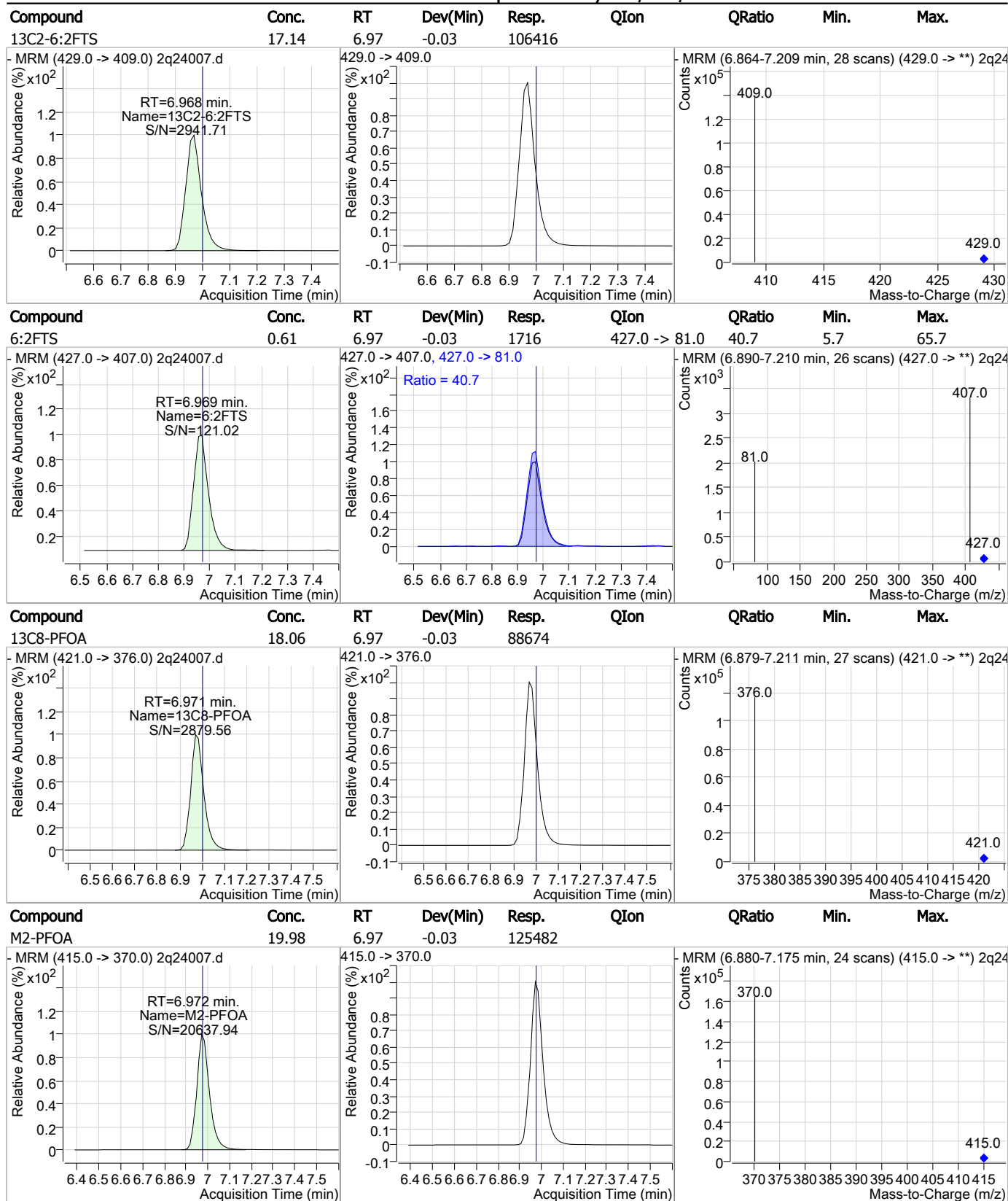


10.5.1 10

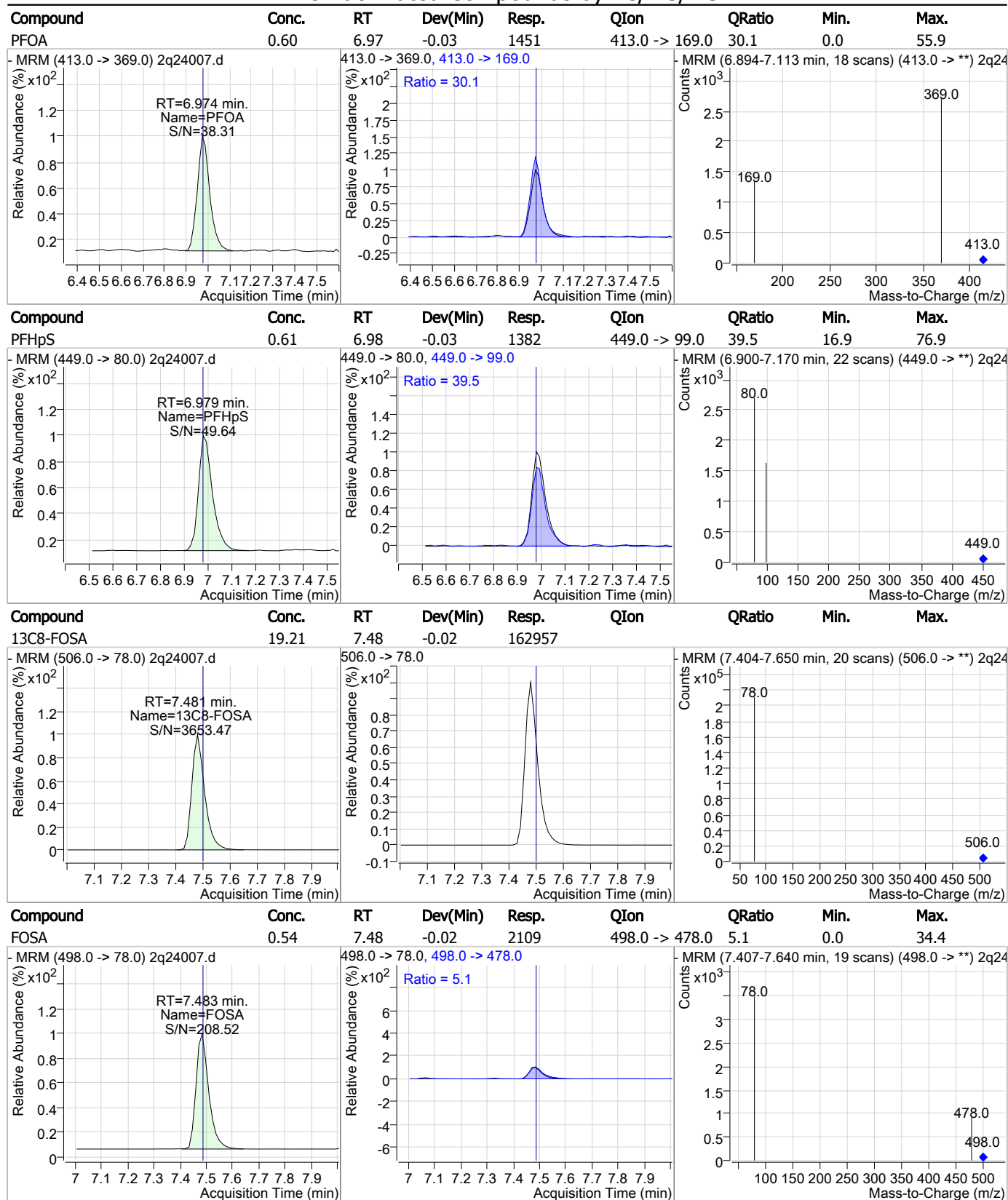
Perfluorinated Compounds by LC/MS/MS



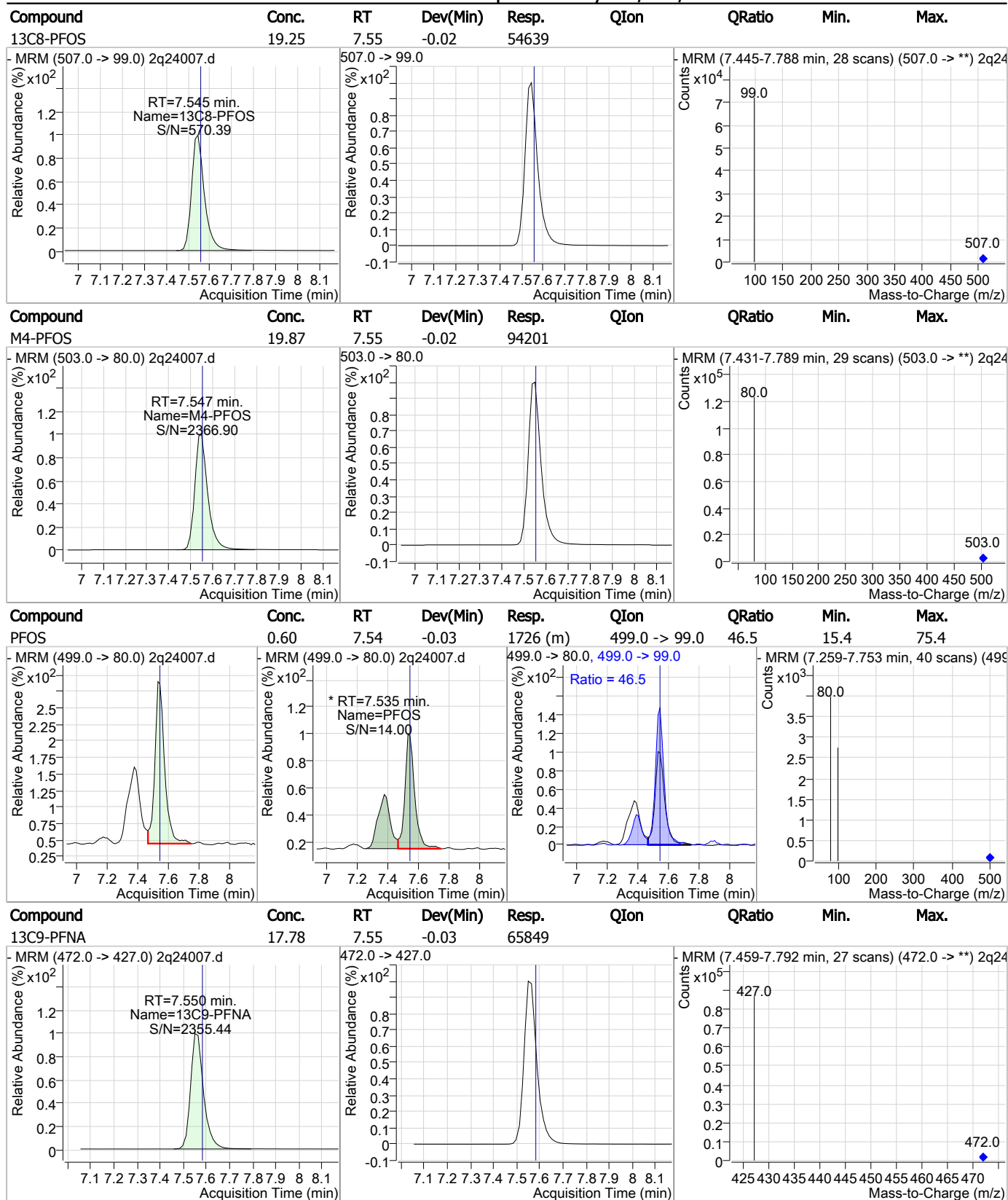
Perfluorinated Compounds by LC/MS/MS



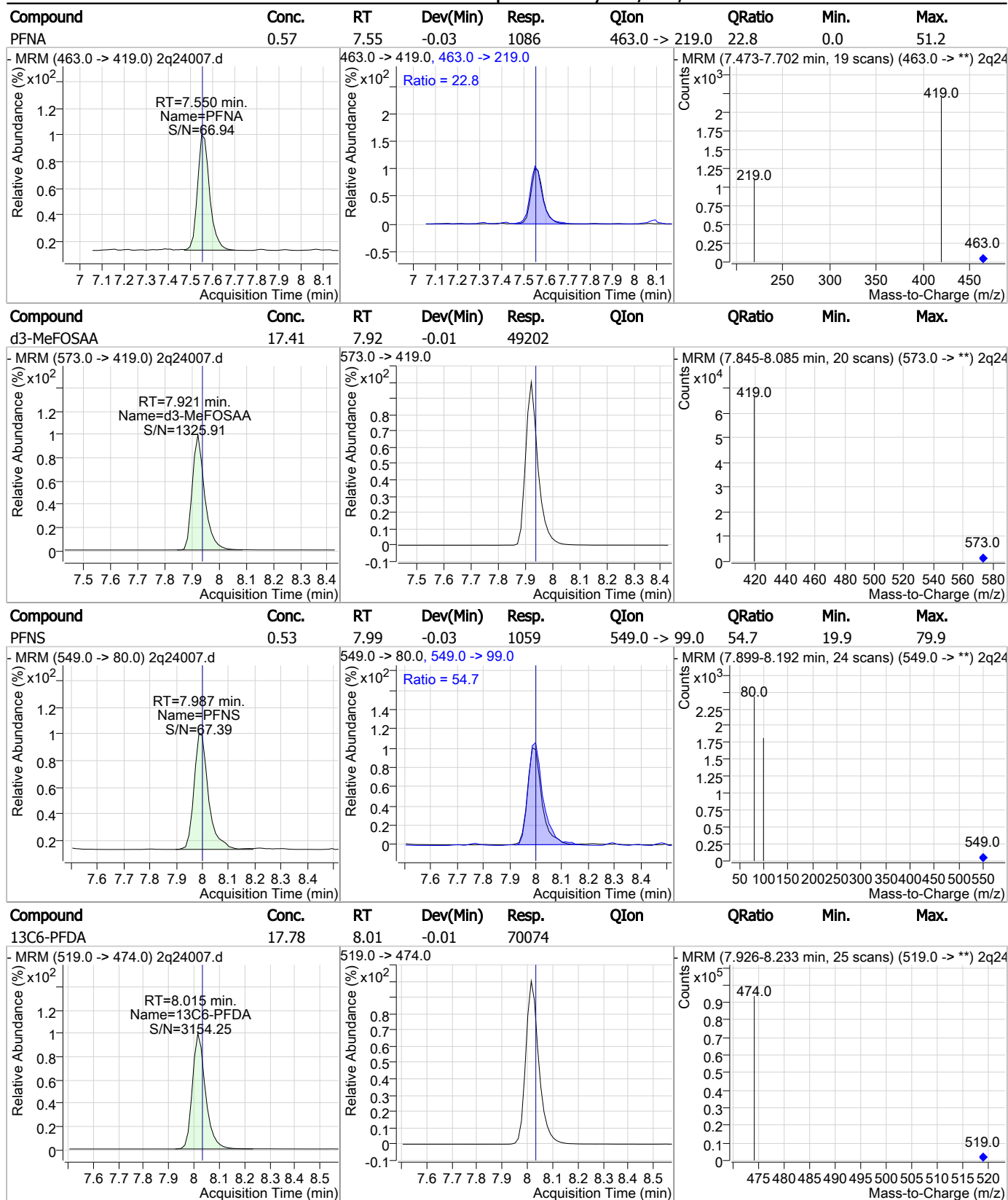
Perfluorinated Compounds by LC/MS/MS

10.5.1
10

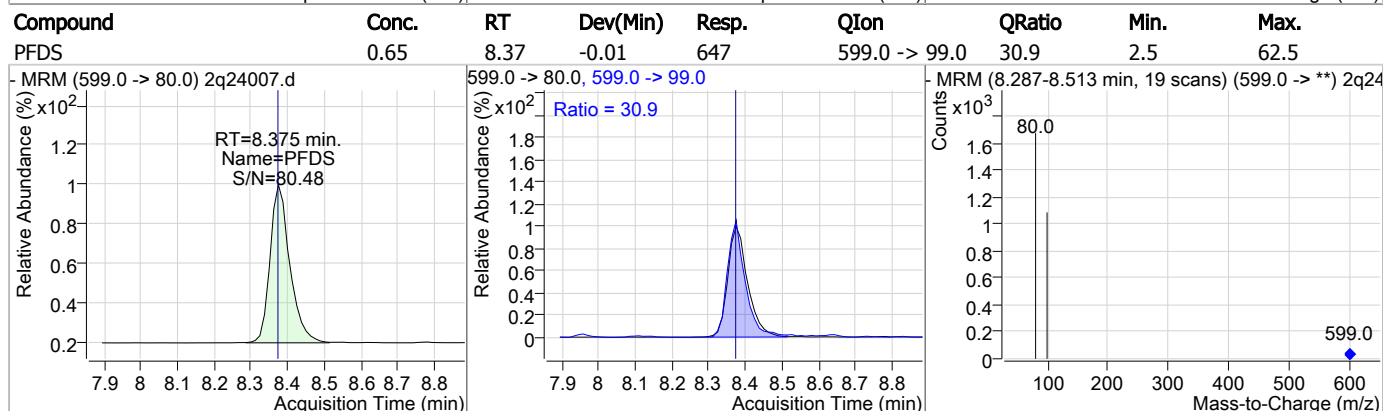
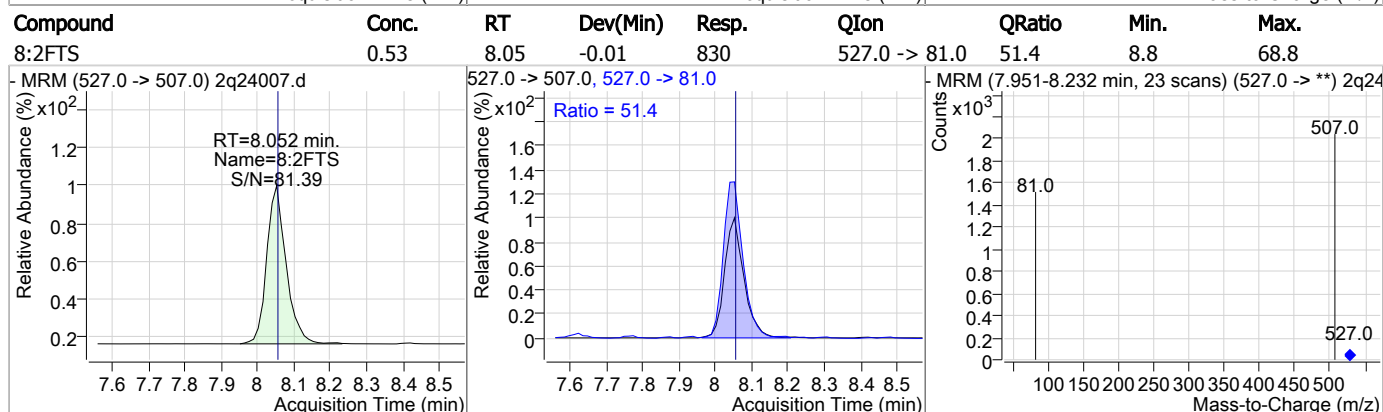
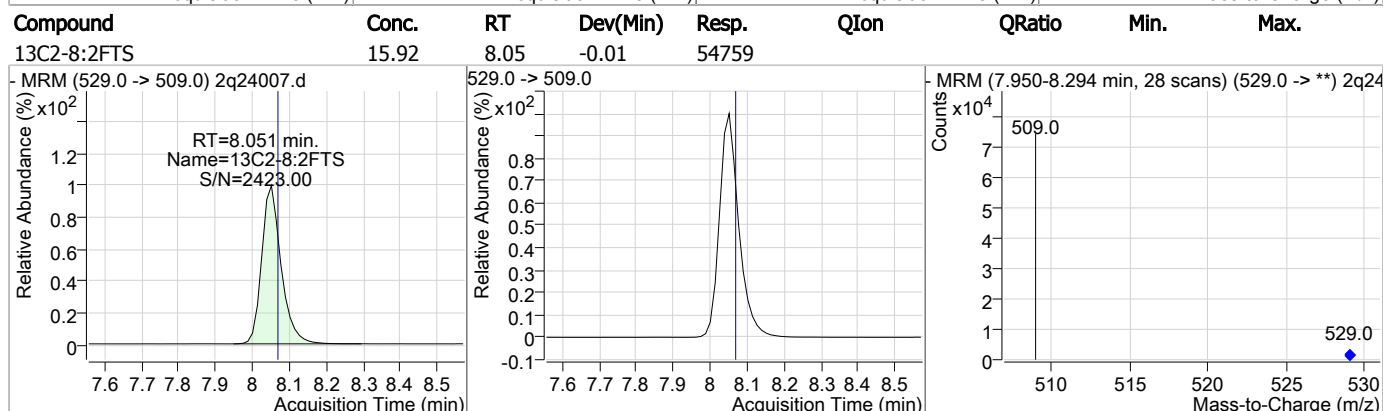
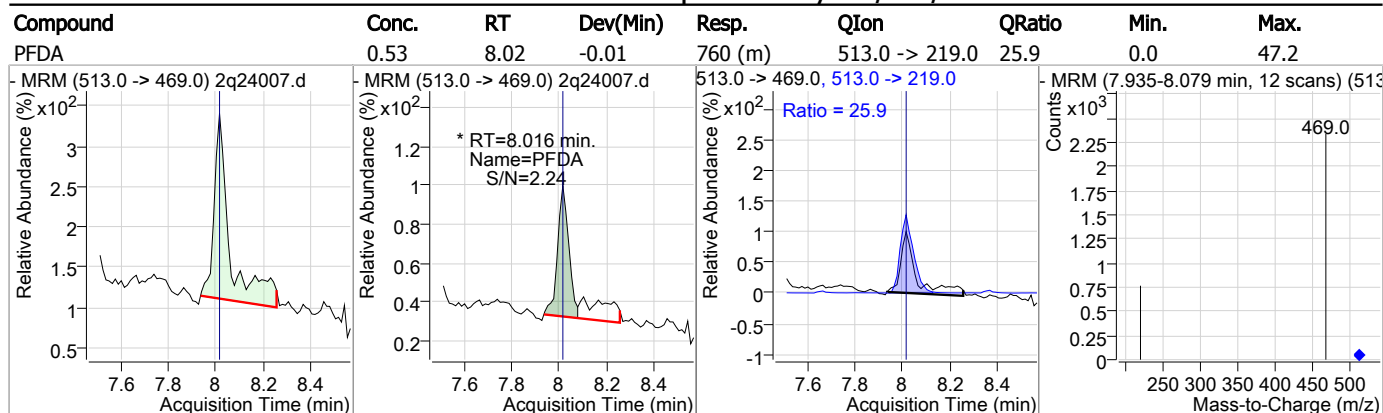
Perfluorinated Compounds by LC/MS/MS



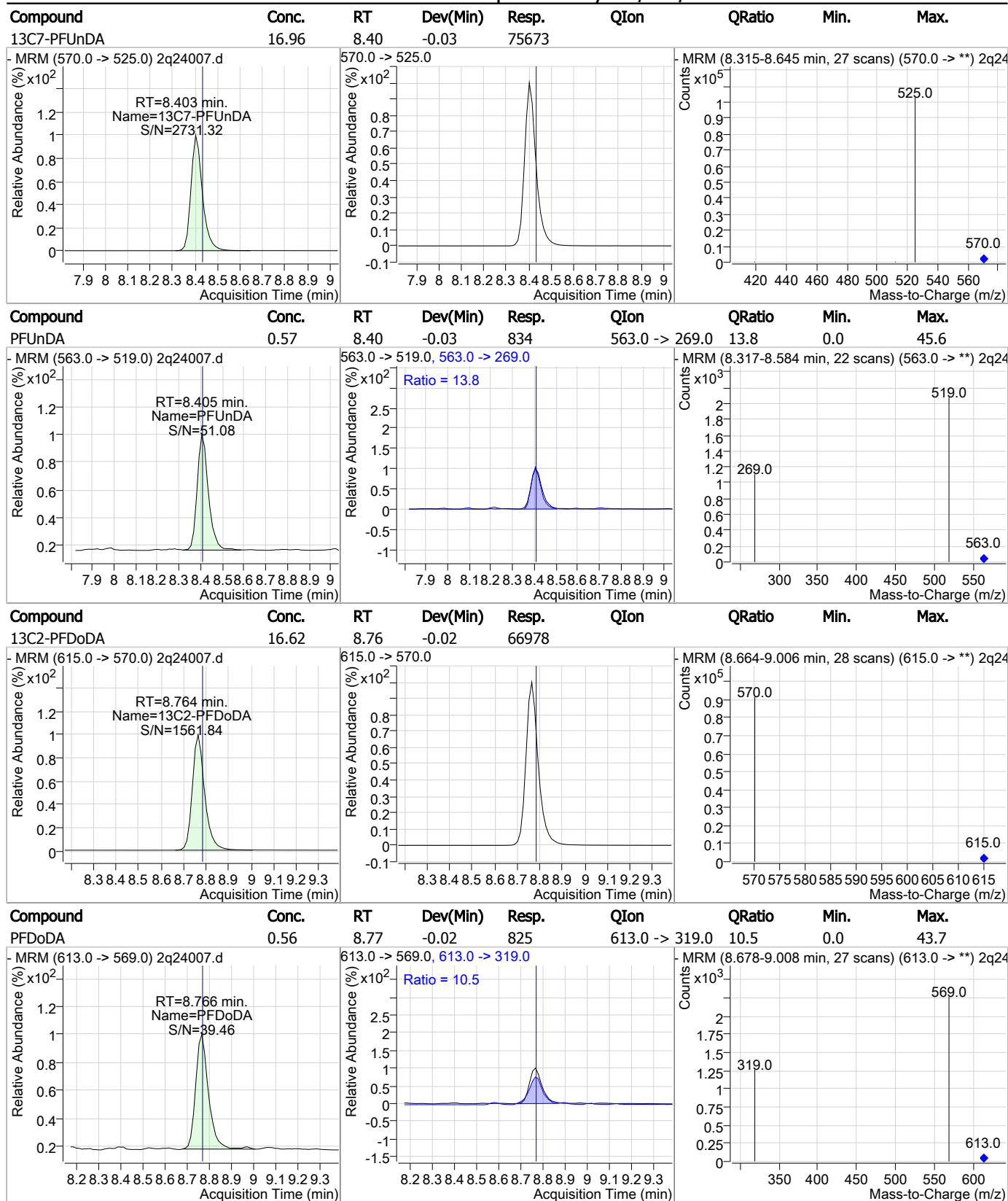
Perfluorinated Compounds by LC/MS/MS



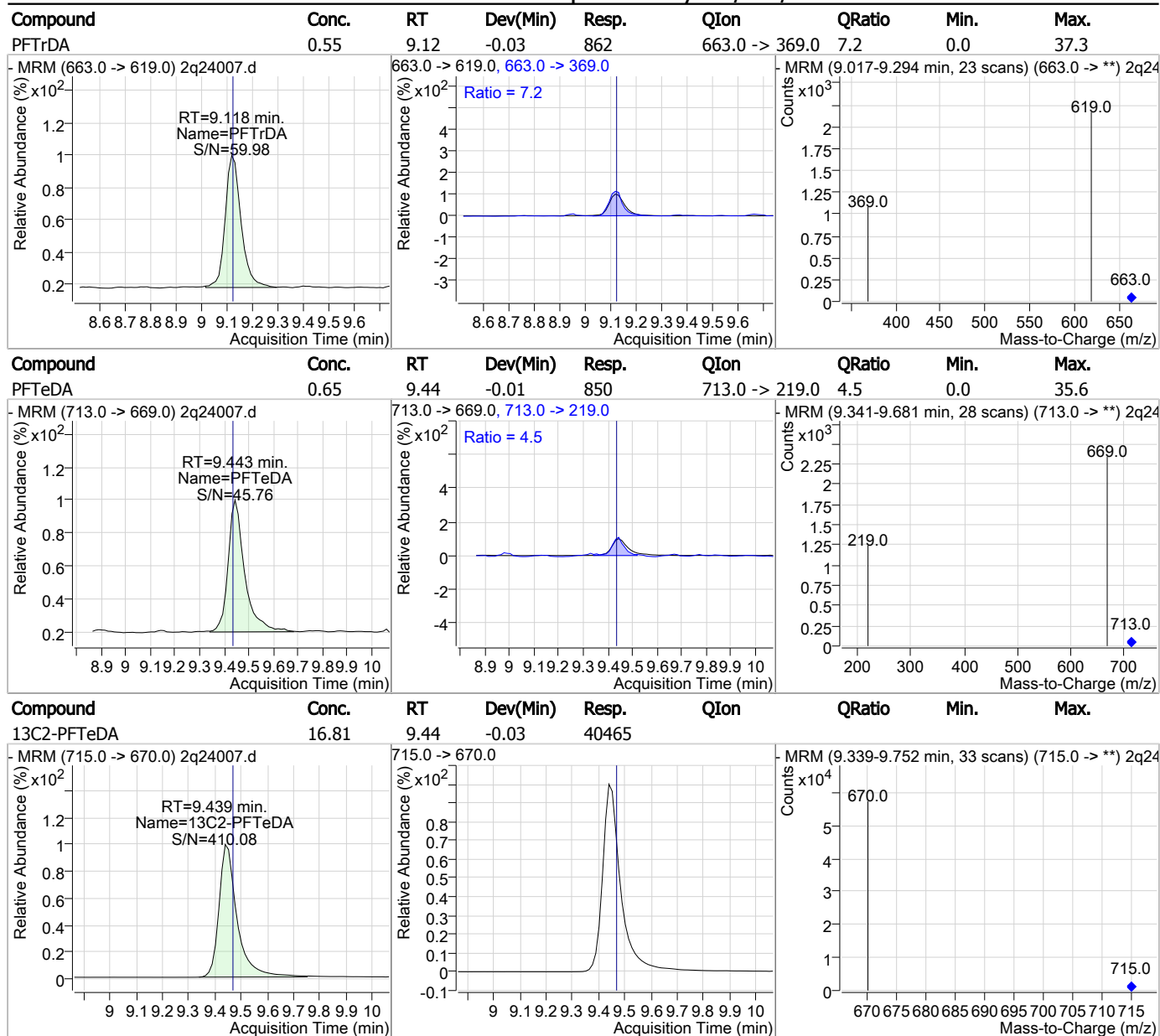
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24007.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 13:05

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak
Perfluorodecanoic acid	335-76-2		8.02	Overlapping peak

10.5.1.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24008.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 1:21:38 PM
 Sample Name : IC374-1.0
 Vial : Vial 3
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	124341	20.00 µg/L	-0.027
13C4-PFOS	7.547	503.0 -> 80.0	94419	20.00 µg/L	-0.016
M4-PFBA	2.002	217.0 -> 172.0	310496	20.00 µg/L	-0.038
M5-PFPeA	3.961	268.0 -> 223.0	130422	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	127750	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	126910	20.00 µg/L	-0.041
M8-PFOA	6.971	421.0 -> 376.0	91807	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	67957	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	74532	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	79325	20.00 µg/L	-0.027
M2-PFDoDA	8.764	615.0 -> 570.0	68662	20.00 µg/L	-0.016
M2-PFTeDA	9.439	715.0 -> 670.0	42169	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	165099	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	46156	20.00 µg/L	-0.051
M3-PFHxS	6.297	402.0 -> 99.0	44518	20.00 µg/L	-0.043
M8-PFOS	7.545	507.0 -> 99.0	55054	20.00 µg/L	-0.016
M2-4:2FTS	5.235	329.0 -> 309.0	115520	20.00 µg/L	-0.038
M2-6:2FTS	6.968	429.0 -> 409.0	109494	20.00 µg/L	-0.028
M2-8:2FTS	8.051	529.0 -> 509.0	57638	20.00 µg/L	-0.014
M3-MeFOSAA	7.921	573.0 -> 419.0	50422	20.00 µg/L	-0.013

System Monitoring Compounds

13C2-4:2FTS	5.235	329.0 -> 309.0	115436	17.27 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%	
13C2-6:2FTS	6.968	429.0 -> 409.0	109510	17.64 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C2-8:2FTS	8.051	529.0 -> 509.0	57610	16.75 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C2-PFDoDA	8.764	615.0 -> 570.0	68647	17.04 µg/L	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%	
13C2-PFTeDA	9.439	715.0 -> 670.0	42044	17.46 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%	
13C3-PFBS	4.267	302.0 -> 99.0	45912	19.66 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C3-PFHxS	6.297	402.0 -> 99.0	44546	19.69 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C4-PFBA	2.002	217.0 -> 172.0	308495	19.62 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C4-PFHpA	6.254	367.0 -> 322.0	126872	18.56 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C5-PFHxA	5.327	318.0 -> 273.0	127671	18.85 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C5-PFPeA	3.961	268.0 -> 223.0	130154	18.48 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C6-PFDA	8.015	519.0 -> 474.0	74487	18.90 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	79316	17.78 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C8-FOSA	7.481	506.0 -> 78.0	164969	19.45 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-PFOA	6.971	421.0 -> 376.0	91828	18.71 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C8-PFOS	7.545	507.0 -> 99.0	55050	19.39 µg/L	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C9-PFNA	7.550	472.0 -> 427.0	67989	18.36 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d3-MeFOSAA	7.921	573.0 -> 419.0	50486	17.86 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
M2-PFOA	6.972	415.0 -> 370.0	124886	20.11 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
M4-PFOS	7.547	503.0 -> 80.0	94873	20.14 ng/ml	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	

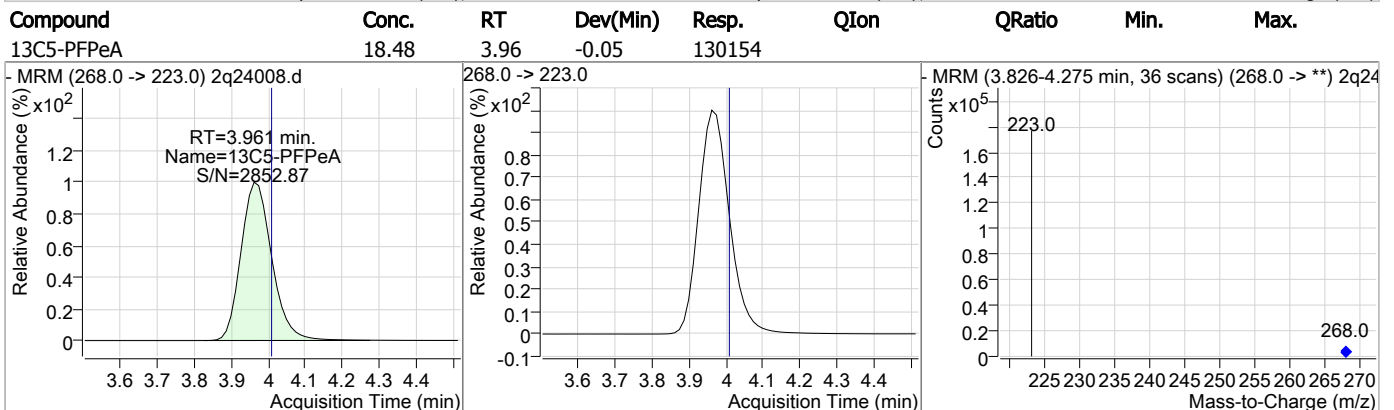
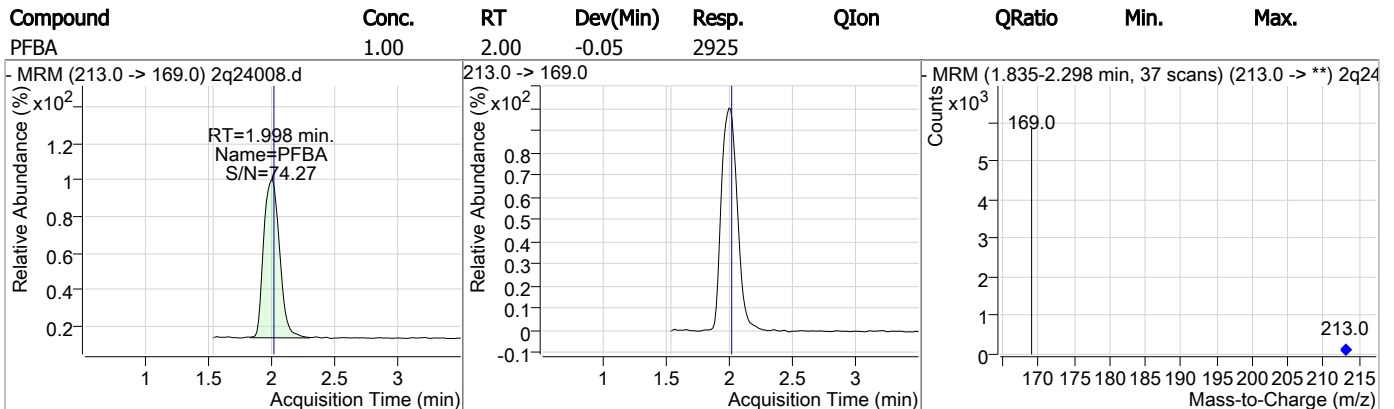
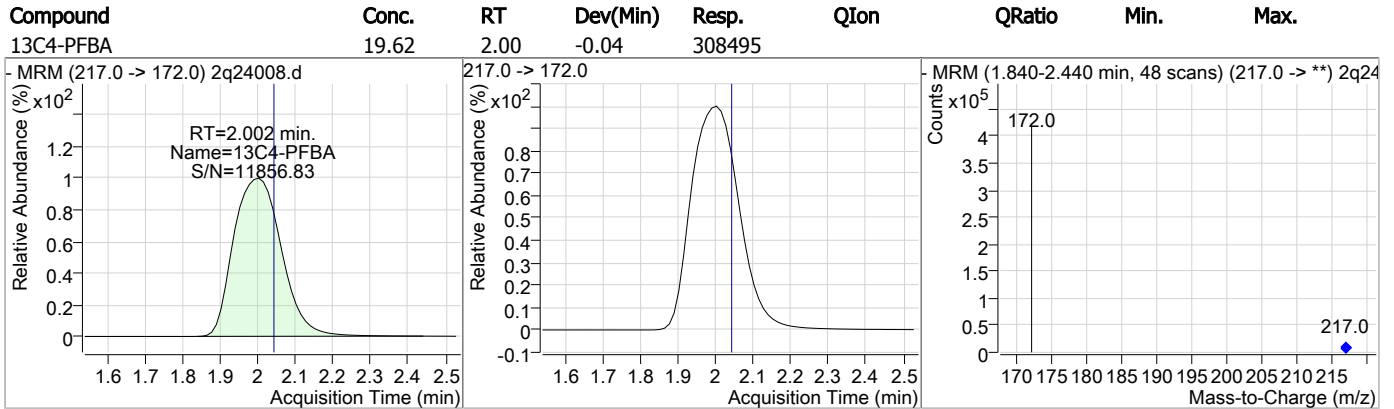
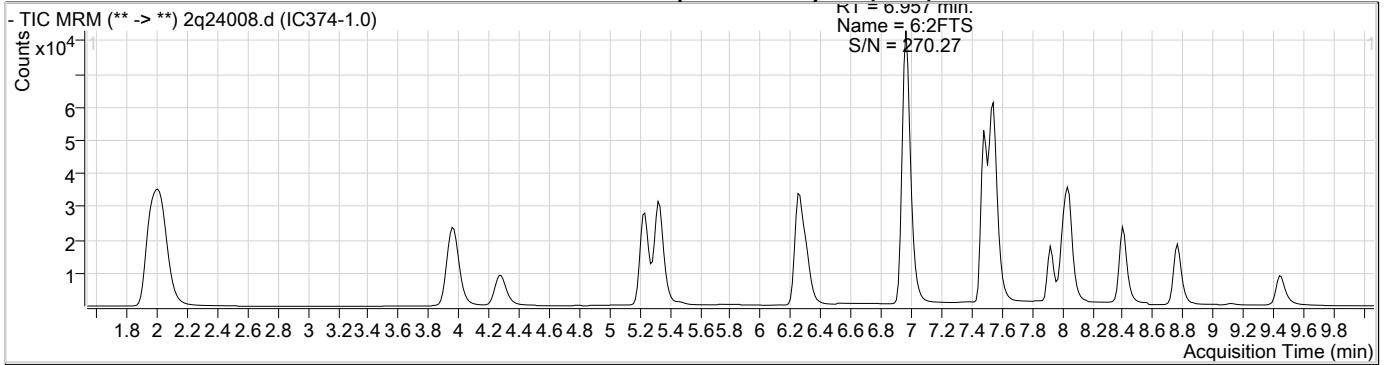
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	3366	1.01 µg/L	92
6:2FTS	6.957	427.0 -> 407.0	2881	1.00 µg/L	90
8:2FTS	8.052	527.0 -> 507.0	1775	1.09 µg/L	88
EtFOSAA	8.047	584.0 -> 419.0	1131	1.01 µg/L	92
FOSA	7.483	498.0 -> 78.0	3925	0.98 µg/L	96
MeFOSAA	7.922	570.0 -> 419.0	1332	1.02 µg/L	97
PFBA	1.998	213.0 -> 169.0	2925	1.00 µg/L	100
PFBS	4.271	299.0 -> 80.0	3344	1.01 µg/L	97
PFDA	8.016	513.0 -> 469.0	1589	1.03 µg/L	100
PFDoDA	8.766	613.0 -> 569.0	1584	1.04 µg/L	97
PFDS	8.375	599.0 -> 80.0	1135	1.13 µg/L	92
PFHpA	6.257	363.0 -> 319.0	4930	0.99 µg/L	98
PFHpS	6.979	449.0 -> 80.0	2411	1.04 µg/L	97
PFHxA	5.330	313.0 -> 269.0	1882	0.99 µg/L	94
PFHxS	6.301	399.0 -> 80.0	2732	0.98 µg/L	99
PFNA	7.564	463.0 -> 419.0	2013	1.02 µg/L	98
PFNS	7.999	549.0 -> 80.0	1868	0.93 µg/L	96
PFOA	6.974	413.0 -> 369.0	2552	1.02 µg/L	98
PFOS	7.535	499.0 -> 80.0	2913	1.00 µg/L	99
PFPeA	3.965	263.0 -> 219.0	5727	1.04 µg/L	100
PFPeS	5.470	349.0 -> 80.0	2014	0.99 µg/L	100
PFTeDA	9.443	713.0 -> 669.0	1355	0.99 µg/L	99
PFTTrDA	9.118	663.0 -> 619.0	1728	1.06 µg/L	98
PFUnDA	8.405	563.0 -> 519.0	1521	1.00 µg/L	96

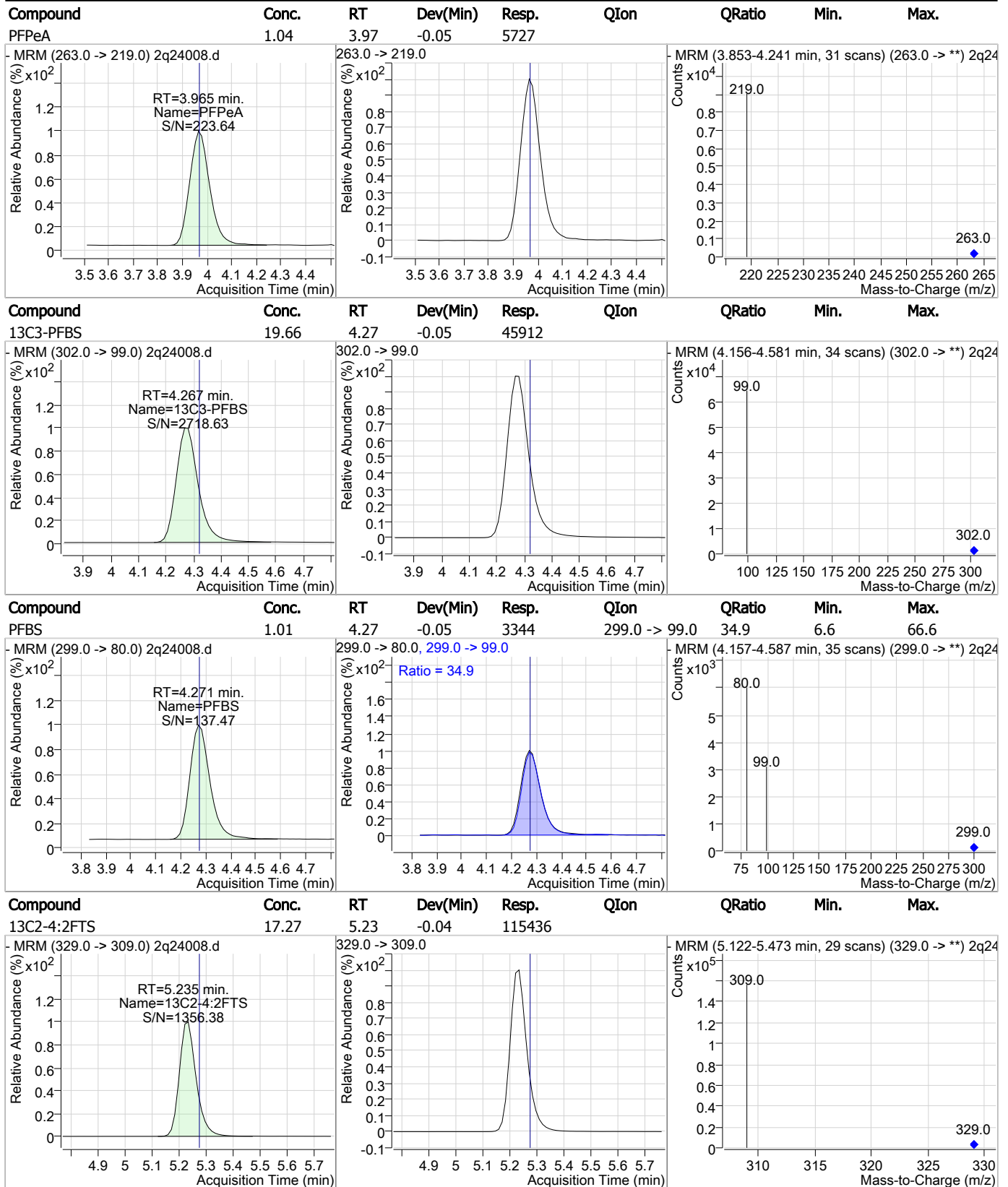
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.2
10

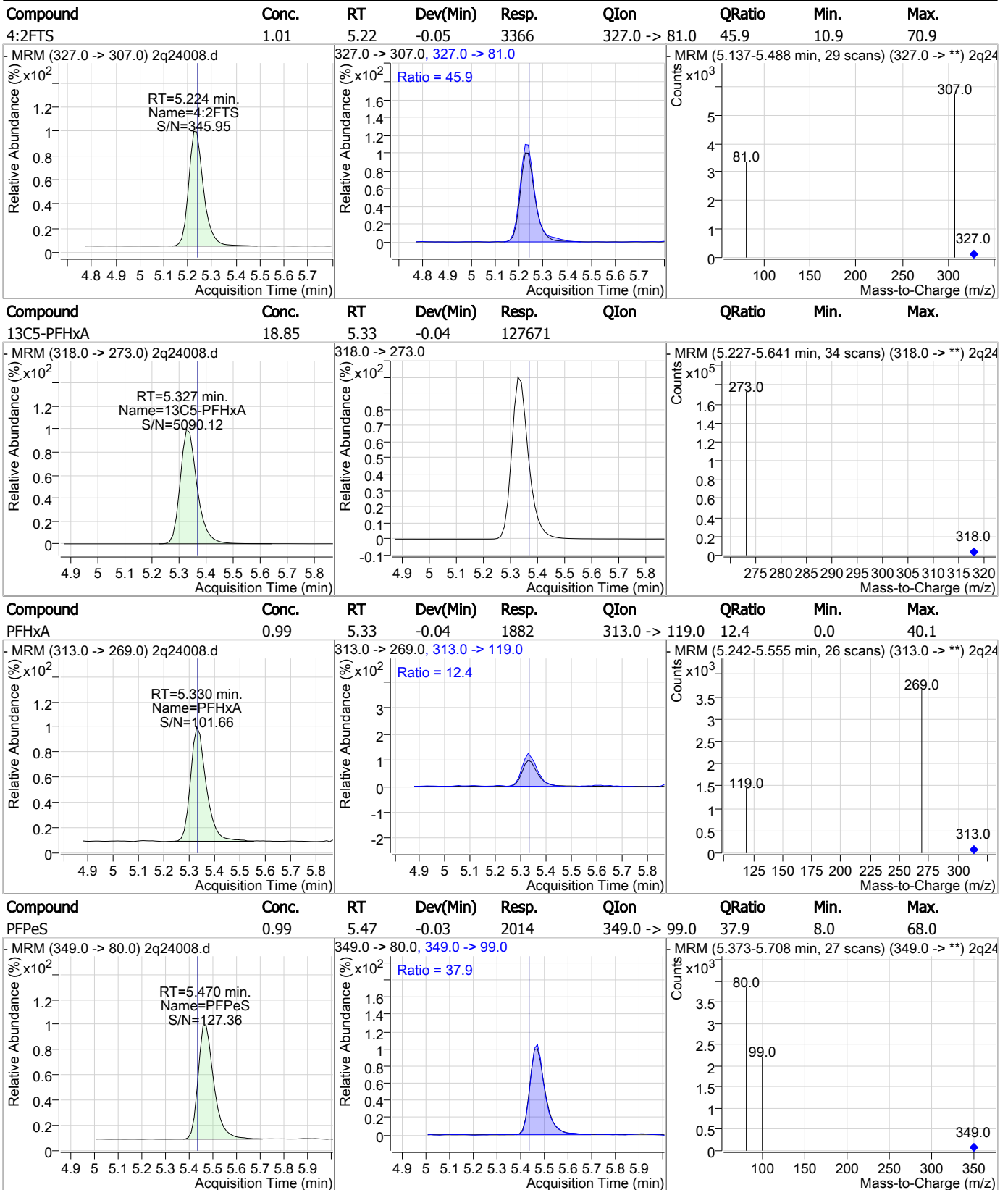
Perfluorinated Compounds by LC/MS/MS



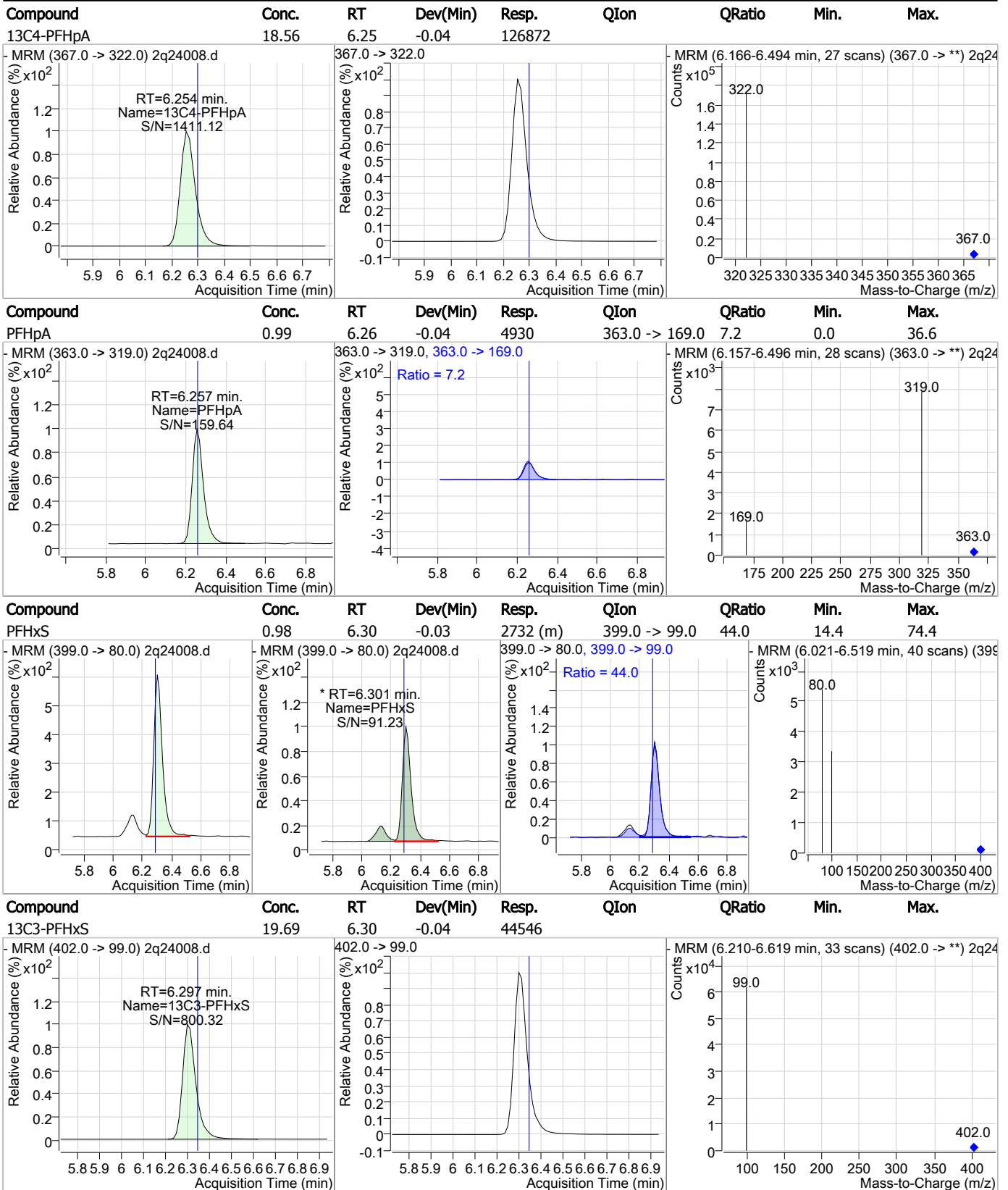
Perfluorinated Compounds by LC/MS/MS



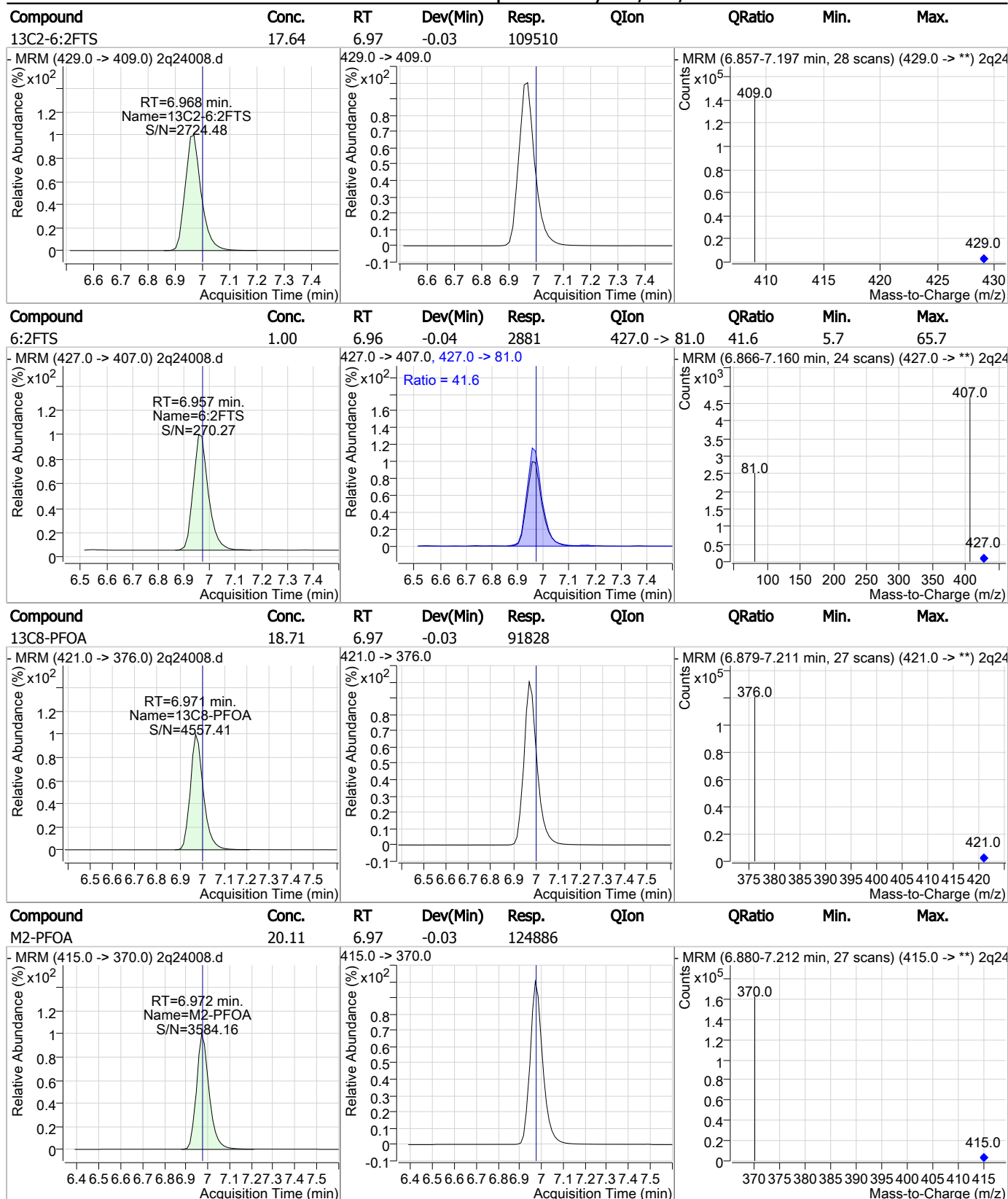
Perfluorinated Compounds by LC/MS/MS



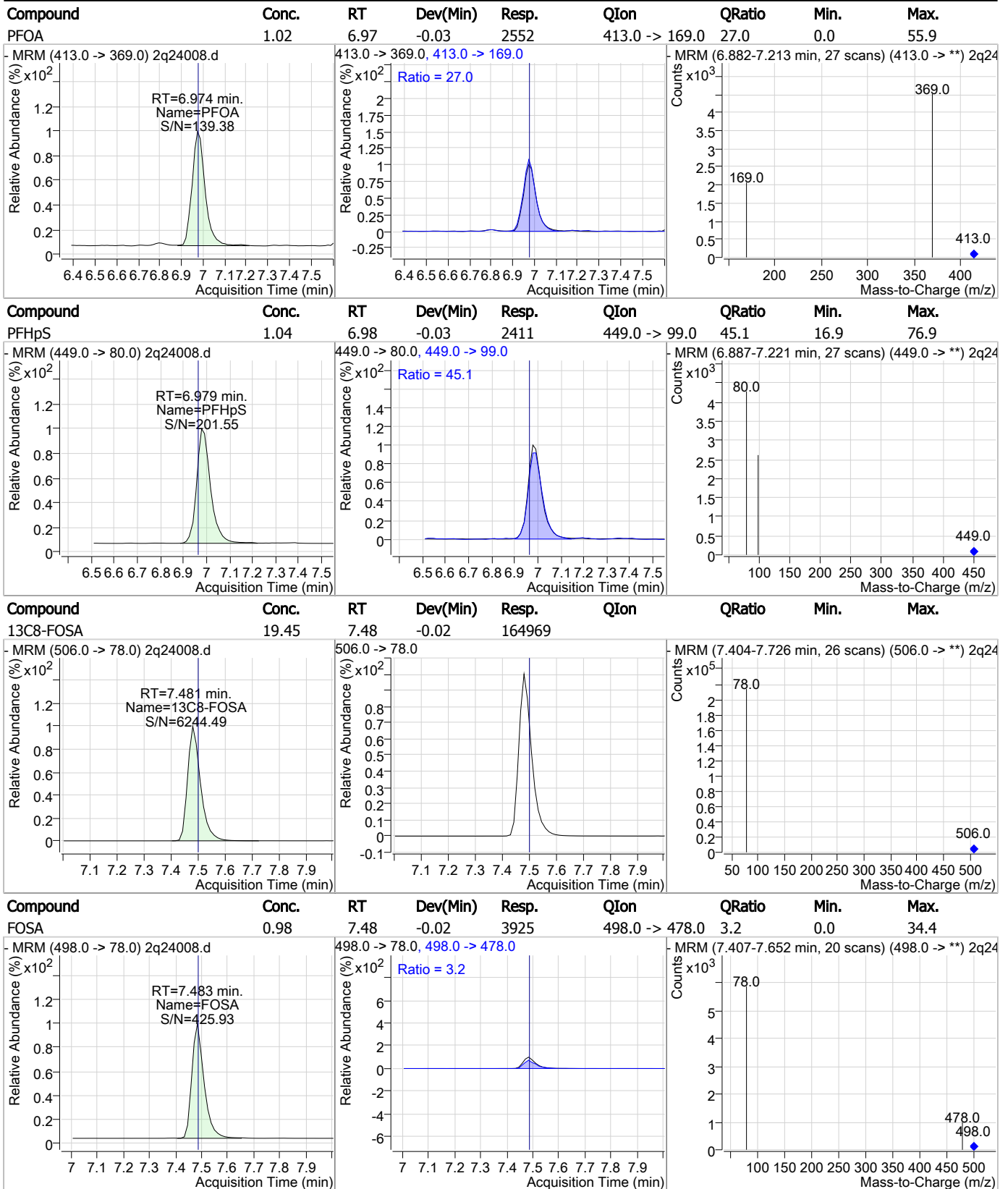
Perfluorinated Compounds by LC/MS/MS



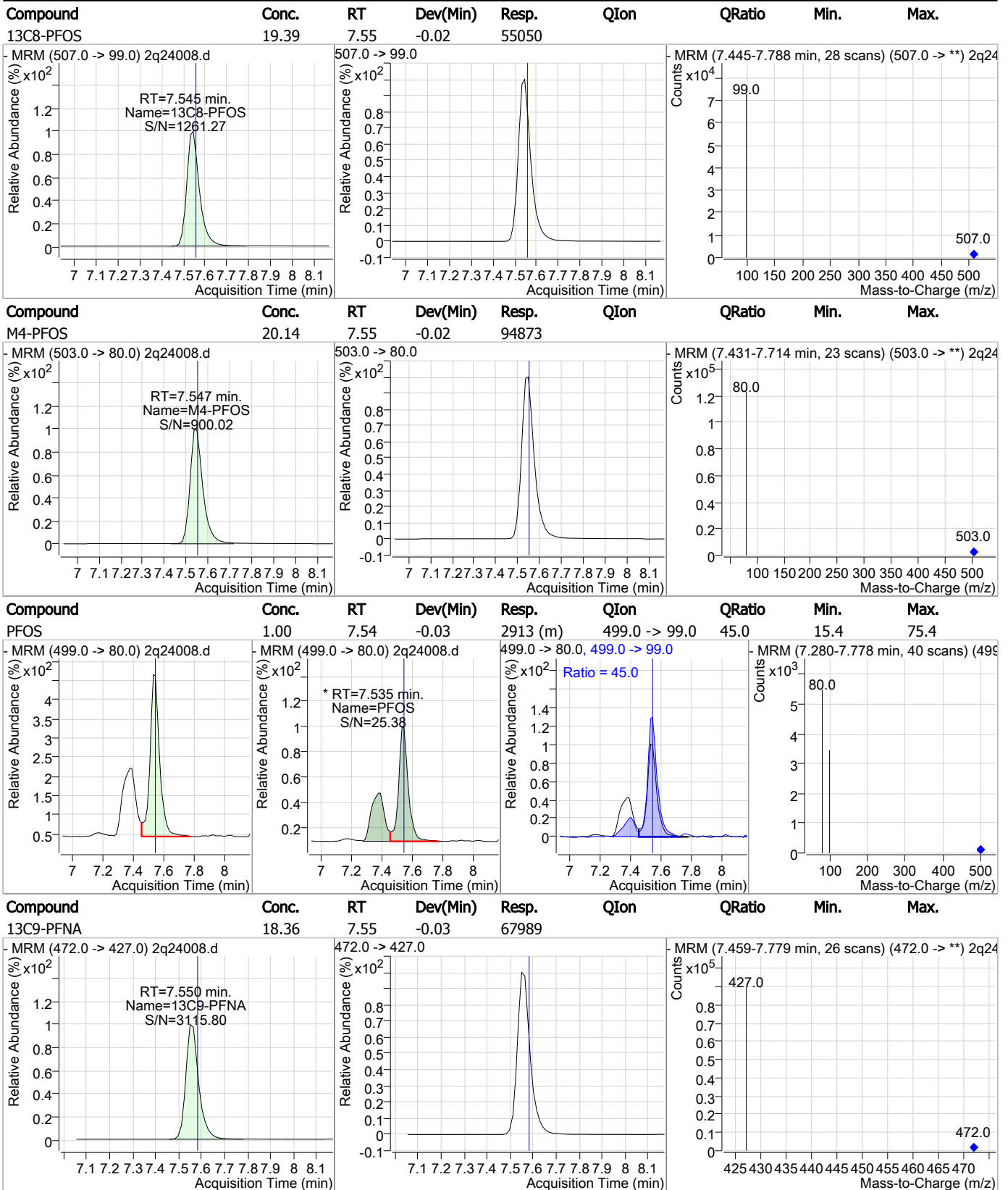
Perfluorinated Compounds by LC/MS/MS



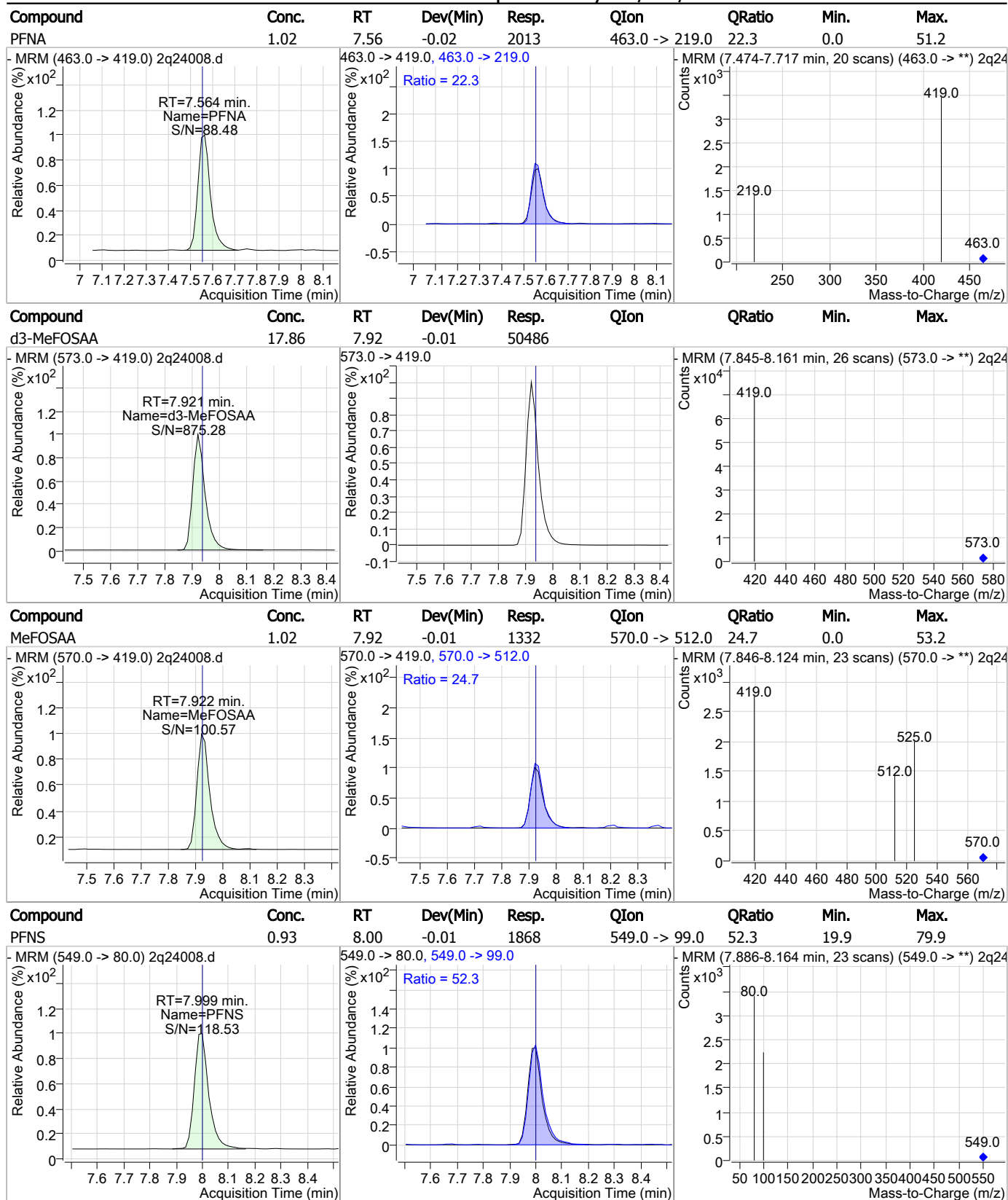
Perfluorinated Compounds by LC/MS/MS



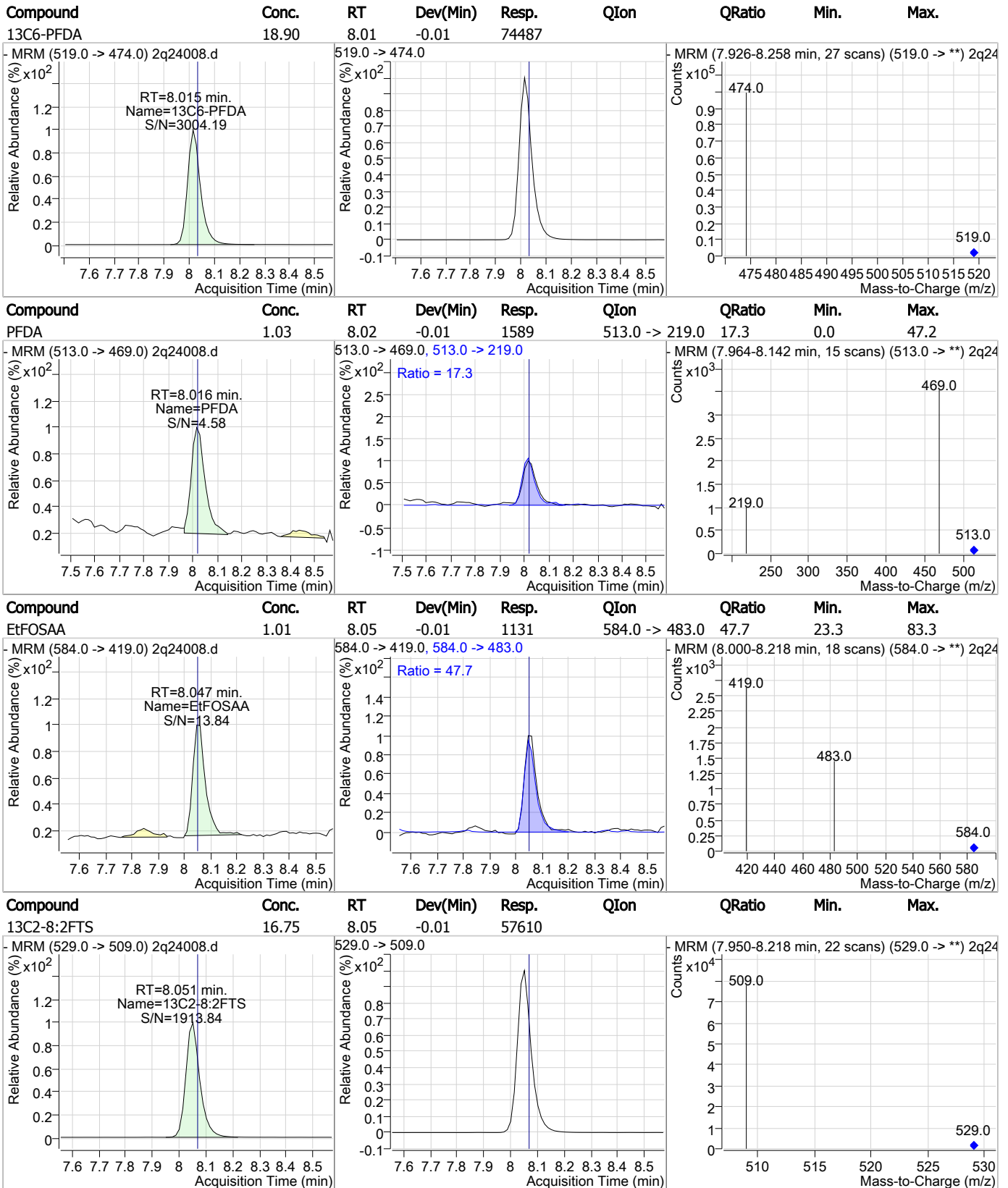
Perfluorinated Compounds by LC/MS/MS



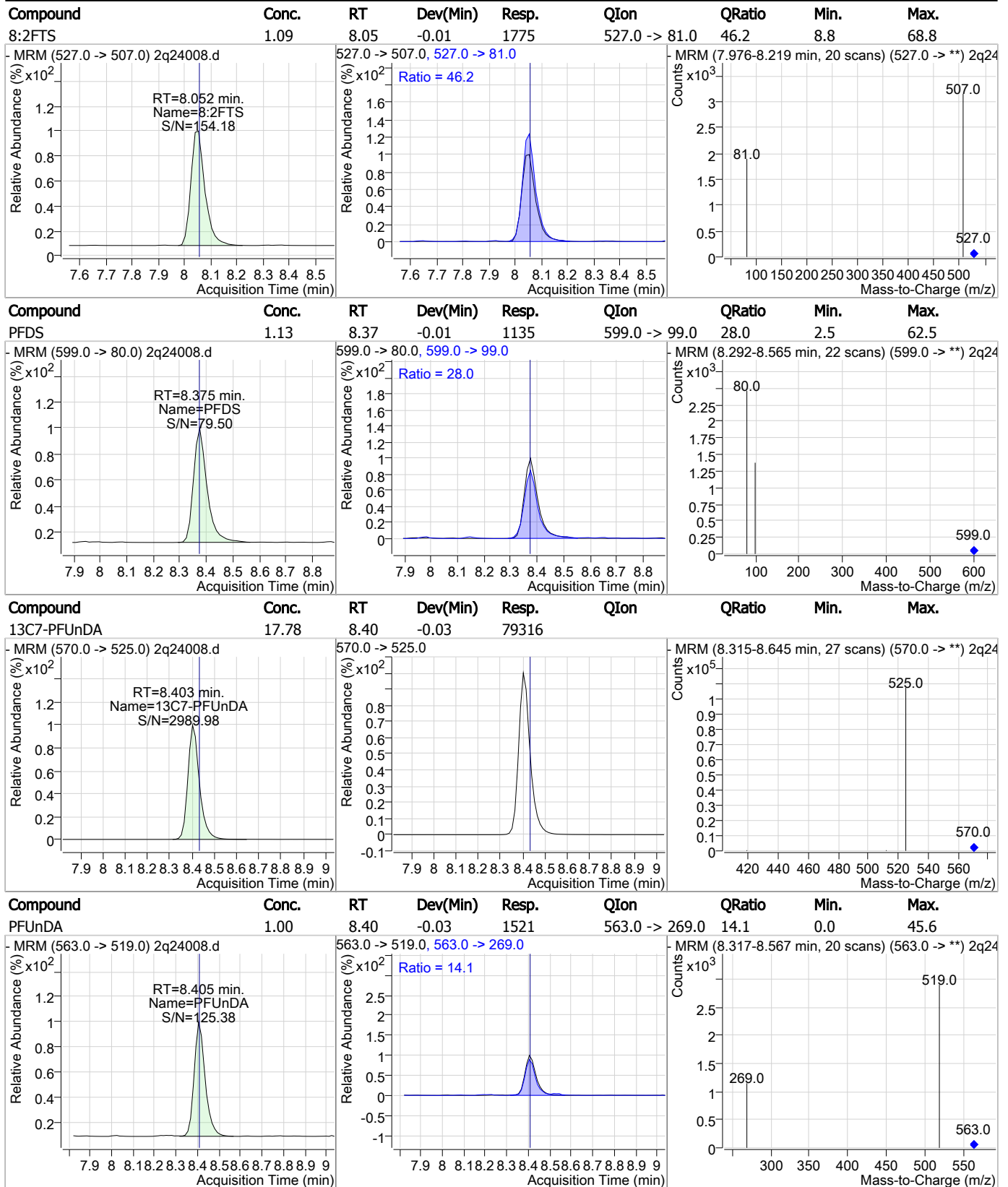
Perfluorinated Compounds by LC/MS/MS



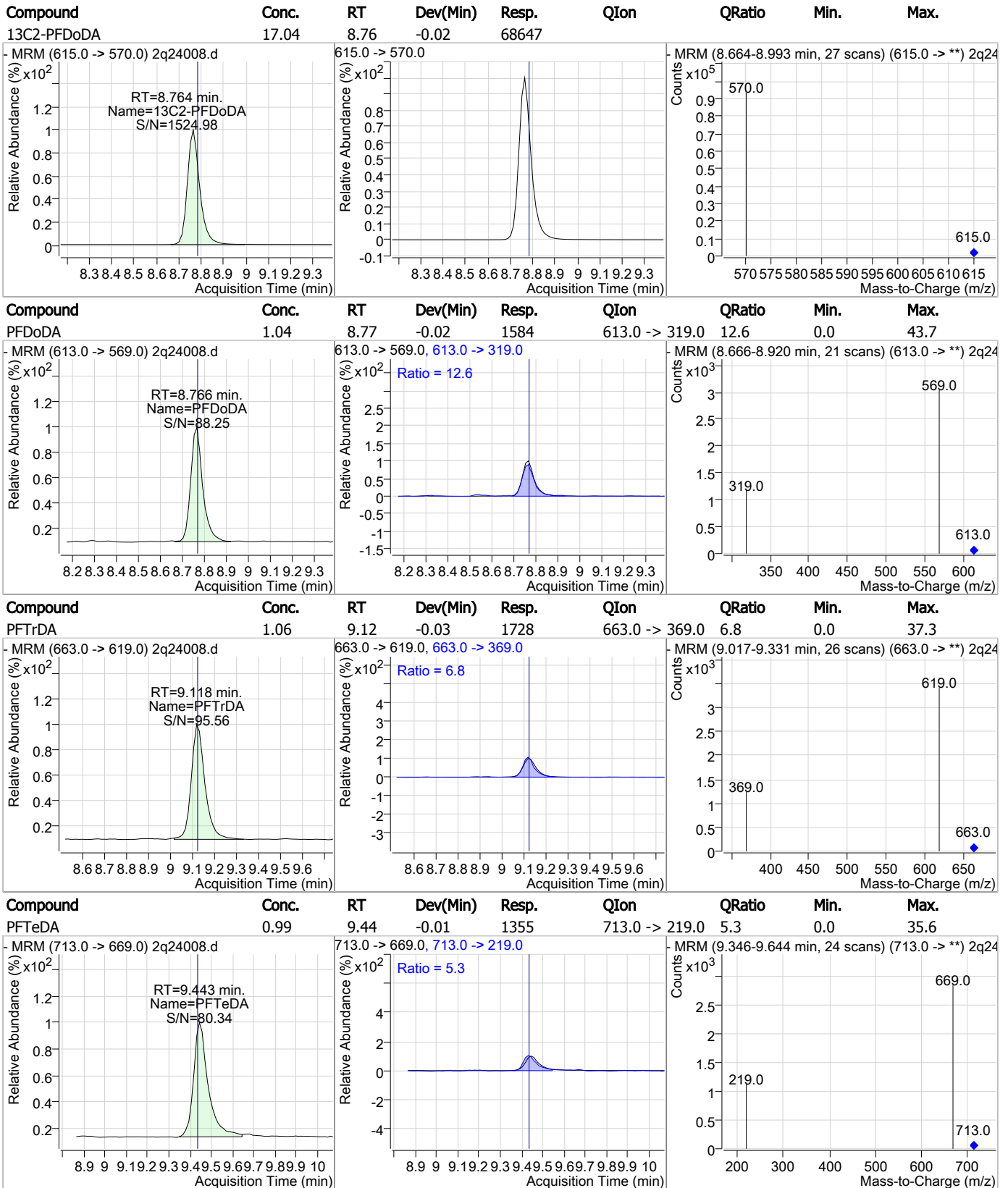
Perfluorinated Compounds by LC/MS/MS



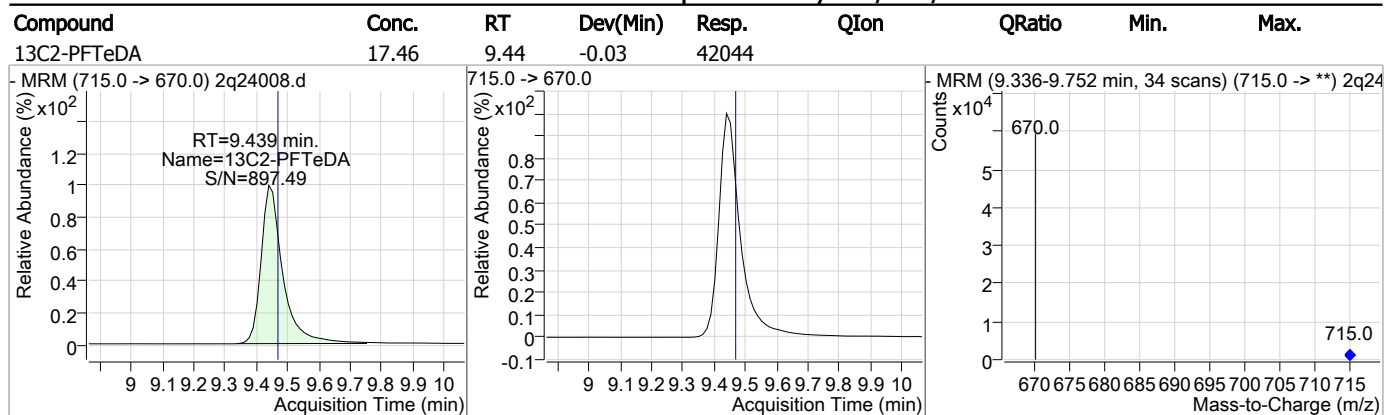
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

10.5.2
10

Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24008.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 13:21

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24009.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 1:37:37 PM
 Sample Name : IC374-2.0
 Vial : Vial 4
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	130039	20.00 µg/L	-0.027
13C4-PFOS	7.535	503.0 -> 80.0	97260	20.00 µg/L	-0.029
M4-PFBA	2.015	217.0 -> 172.0	309577	20.00 µg/L	-0.025
M5-PFPeA	3.974	268.0 -> 223.0	132205	20.00 µg/L	-0.038
M5-PFHxA	5.327	318.0 -> 273.0	129841	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	129671	20.00 µg/L	-0.041
M8-PFOA	6.971	421.0 -> 376.0	94804	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	69086	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	78917	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	88929	20.00 µg/L	-0.027
M2-PFDoDA	8.764	615.0 -> 570.0	77415	20.00 µg/L	-0.016
M2-PFTeDA	9.439	715.0 -> 670.0	45797	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	171578	20.00 µg/L	-0.017
M3-PFBS	4.280	302.0 -> 99.0	45892	20.00 µg/L	-0.038
M3-PFHxS	6.297	402.0 -> 99.0	45035	20.00 µg/L	-0.043
M8-PFOS	7.533	507.0 -> 99.0	56447	20.00 µg/L	-0.029
M2-4:2FTS	5.235	329.0 -> 309.0	118596	20.00 µg/L	-0.038
M2-6:2FTS	6.968	429.0 -> 409.0	113352	20.00 µg/L	-0.028
M2-8:2FTS	8.051	529.0 -> 509.0	61257	20.00 µg/L	-0.014
M3-MeFOSAA	7.921	573.0 -> 419.0	54038	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.235	329.0 -> 309.0	118647	17.76 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C2-6:2FTS	6.968	429.0 -> 409.0	113407	18.27 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C2-8:2FTS	8.051	529.0 -> 509.0	61271	17.82 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 89.1%		
13C2-PFDoDA	8.764	615.0 -> 570.0	77371	19.20 µg/L	-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-PFTeDA	9.439	715.0 -> 670.0	45514	18.91 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.5%		
13C3-PFBS	4.280	302.0 -> 99.0	45882	19.65 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C3-PFHxS	6.297	402.0 -> 99.0	45026	19.90 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C4-PFBA	2.015	217.0 -> 172.0	307851	19.58 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C4-PFHpA	6.254	367.0 -> 322.0	129584	18.95 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C5-PFHxA	5.327	318.0 -> 273.0	129687	19.15 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C5-PFPeA	3.974	268.0 -> 223.0	131939	18.73 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C6-PFDA	8.015	519.0 -> 474.0	78917	20.03 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.1%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	88927	19.93 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-FOSA	7.481	506.0 -> 78.0	171638	20.23 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	6.971	421.0 -> 376.0	94863	19.32 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-PFOS	7.533	507.0 -> 99.0	56456	19.89 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C9-PFNA	7.550	472.0 -> 427.0	69085	18.65 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d3-MeFOSAA	7.921	573.0 -> 419.0	54038	19.12 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
M2-PFOA	6.972	415.0 -> 370.0	129703	19.97 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
M4-PFOS	7.535	503.0 -> 80.0	97258	20.05 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%	

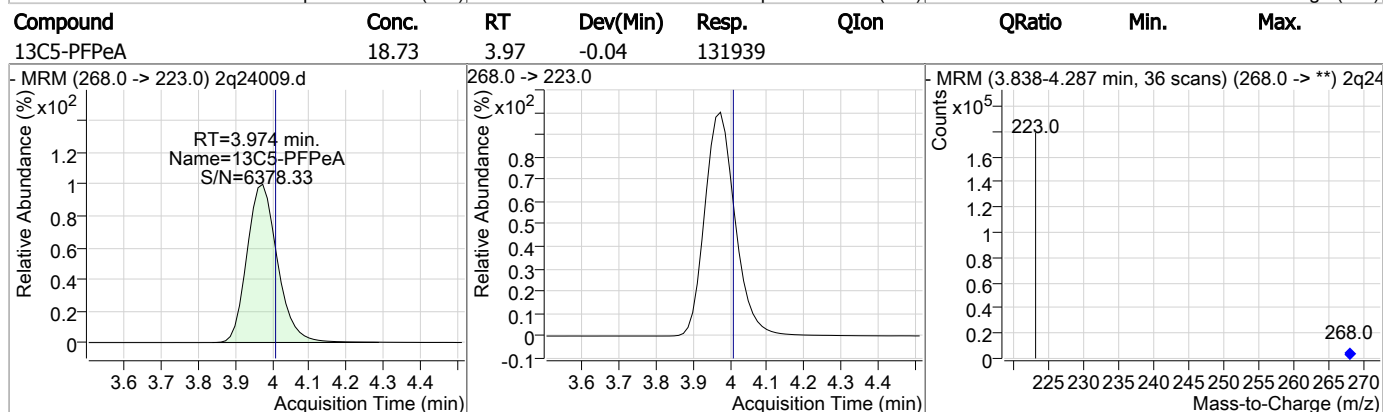
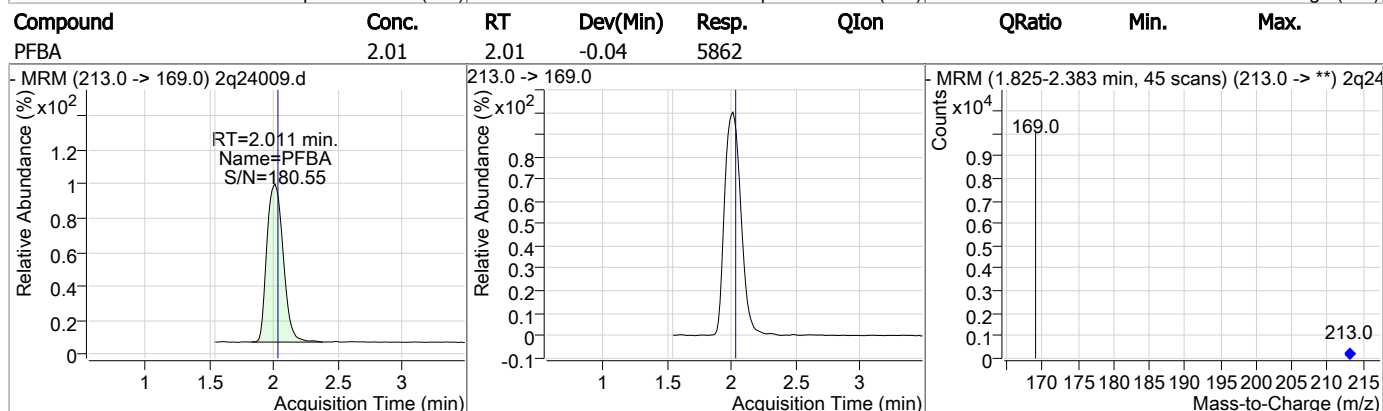
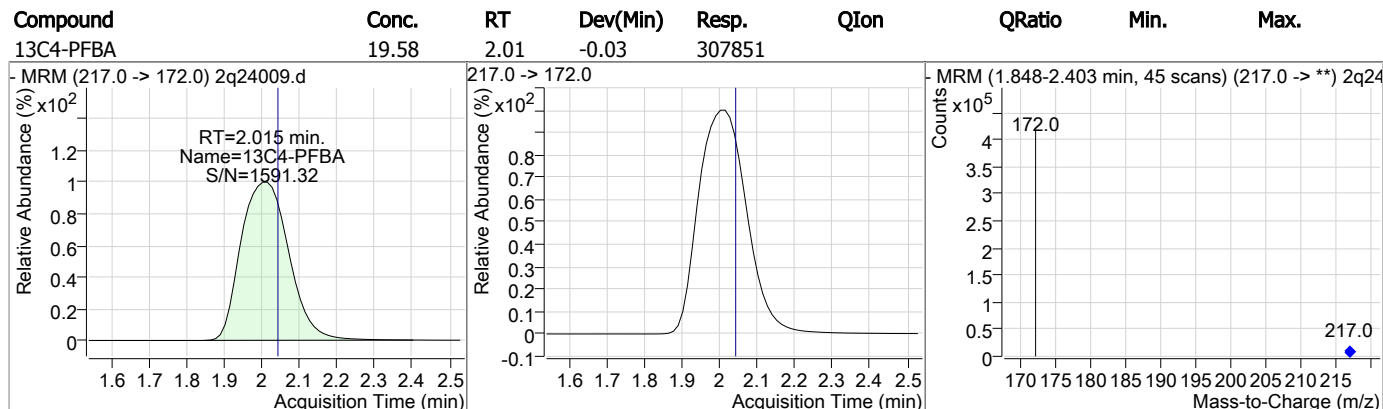
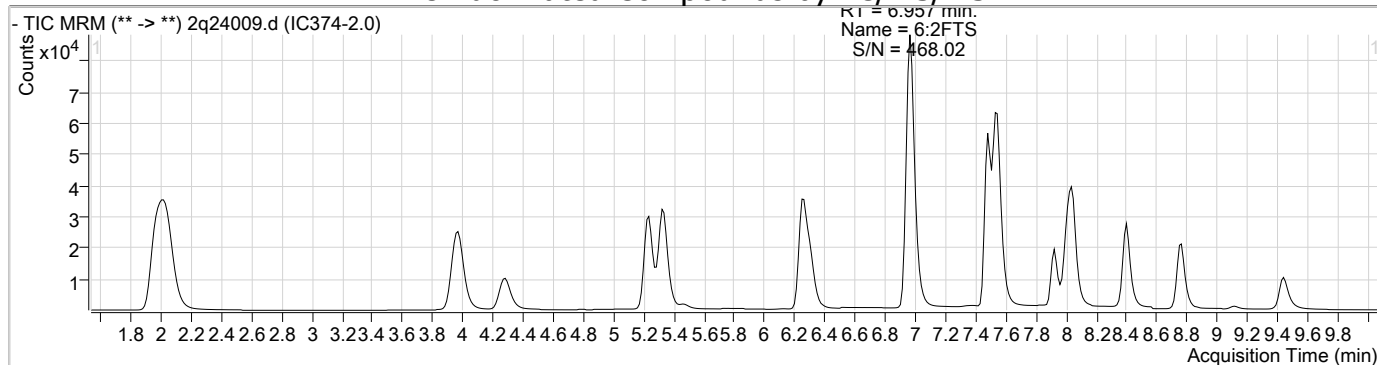
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	6604	1.93 µg/L	93
6:2FTS	6.957	427.0 -> 407.0	5724	1.91 µg/L	92
8:2FTS	8.052	527.0 -> 507.0	3538	2.05 µg/L	92
EtFOSAA	8.047	584.0 -> 419.0	2385	1.99 µg/L	94
FOSA	7.483	498.0 -> 78.0	8079	1.95 µg/L	97
MeFOSAA	7.922	570.0 -> 419.0	2868	2.04 µg/L	96
PFBA	2.011	213.0 -> 169.0	5862	2.01 µg/L	100
PFBS	4.271	299.0 -> 80.0	6707	2.03 µg/L	96
PFDA	8.016	513.0 -> 469.0	3326	2.04 µg/L	100
PFDoDA	8.754	613.0 -> 569.0	3302	1.92 µg/L	96
PFDS	8.375	599.0 -> 80.0	2257	2.18 µg/L	96
PFHpA	6.257	363.0 -> 319.0	10146	2.00 µg/L	99
PFHpS	6.979	449.0 -> 80.0	4621	1.97 µg/L	99
PFHxA	5.330	313.0 -> 269.0	3756	1.94 µg/L	96
PFHxS	6.301	399.0 -> 80.0	5371	1.90 µg/L	96
PFNA	7.550	463.0 -> 419.0	4059	2.02 µg/L	92
PFNS	7.987	549.0 -> 80.0	3896	1.90 µg/L	99
PFOA	6.974	413.0 -> 369.0	5204	2.01 µg/L	90
PFOS	7.535	499.0 -> 80.0	5899	1.98 µg/L	99
PFPeA	3.978	263.0 -> 219.0	11325	2.03 µg/L	100
PFPeS	5.470	349.0 -> 80.0	4065	2.01 µg/L	99
PFTeDA	9.443	713.0 -> 669.0	2939	1.99 µg/L	99
PFTTrDA	9.118	663.0 -> 619.0	3550	2.01 µg/L	100
PFUnDA	8.405	563.0 -> 519.0	3090	1.81 µg/L	98

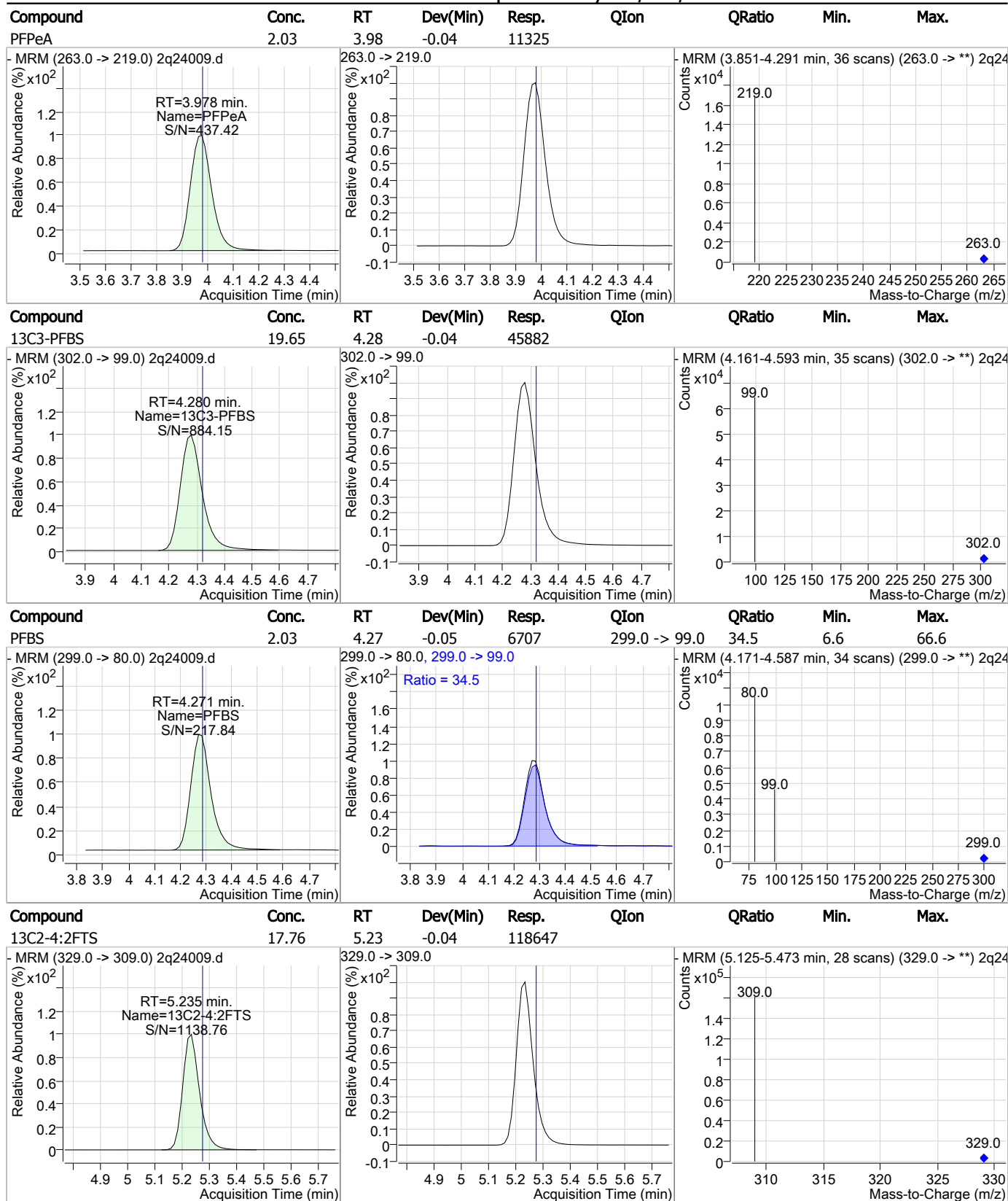
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.3
10

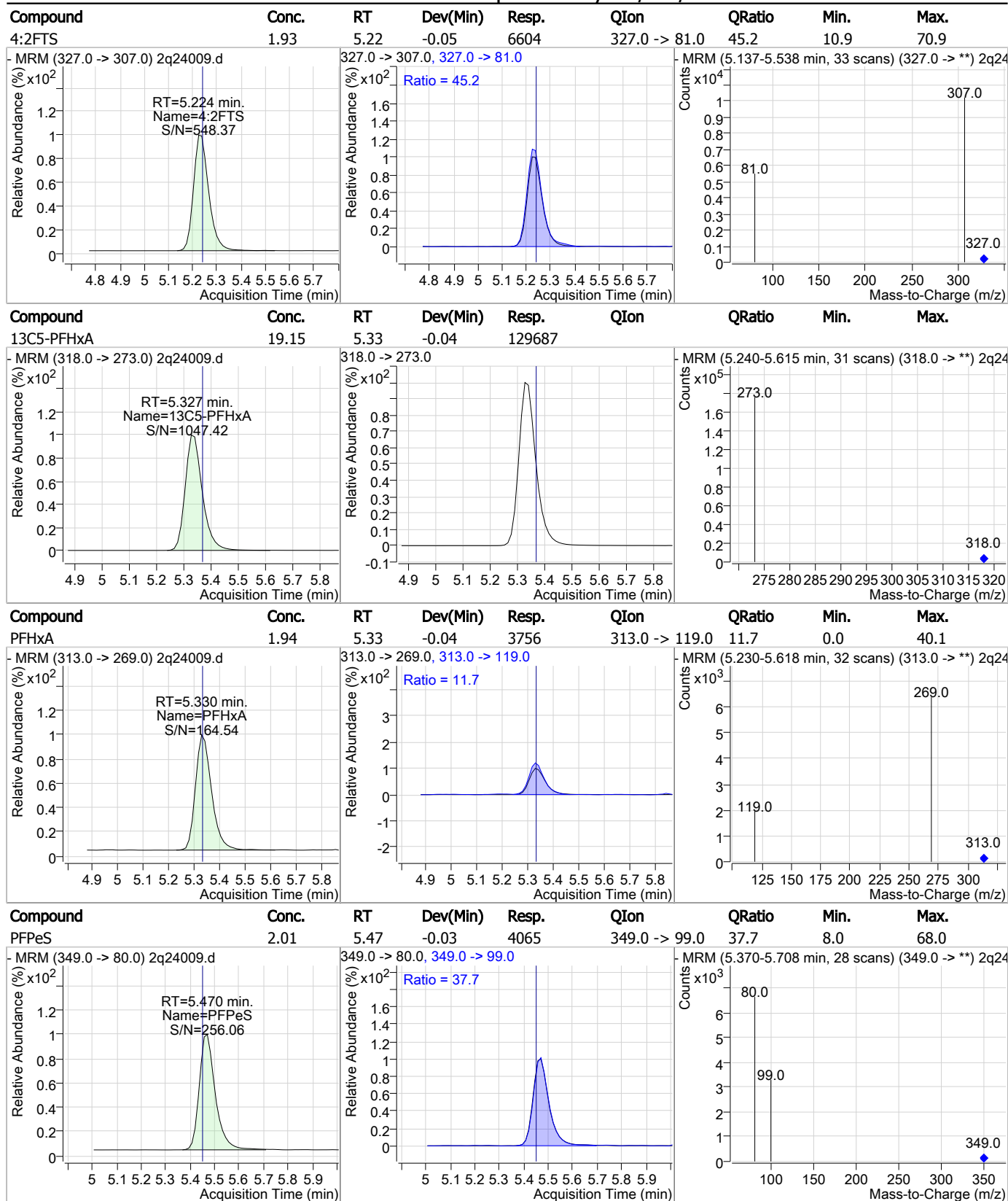
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

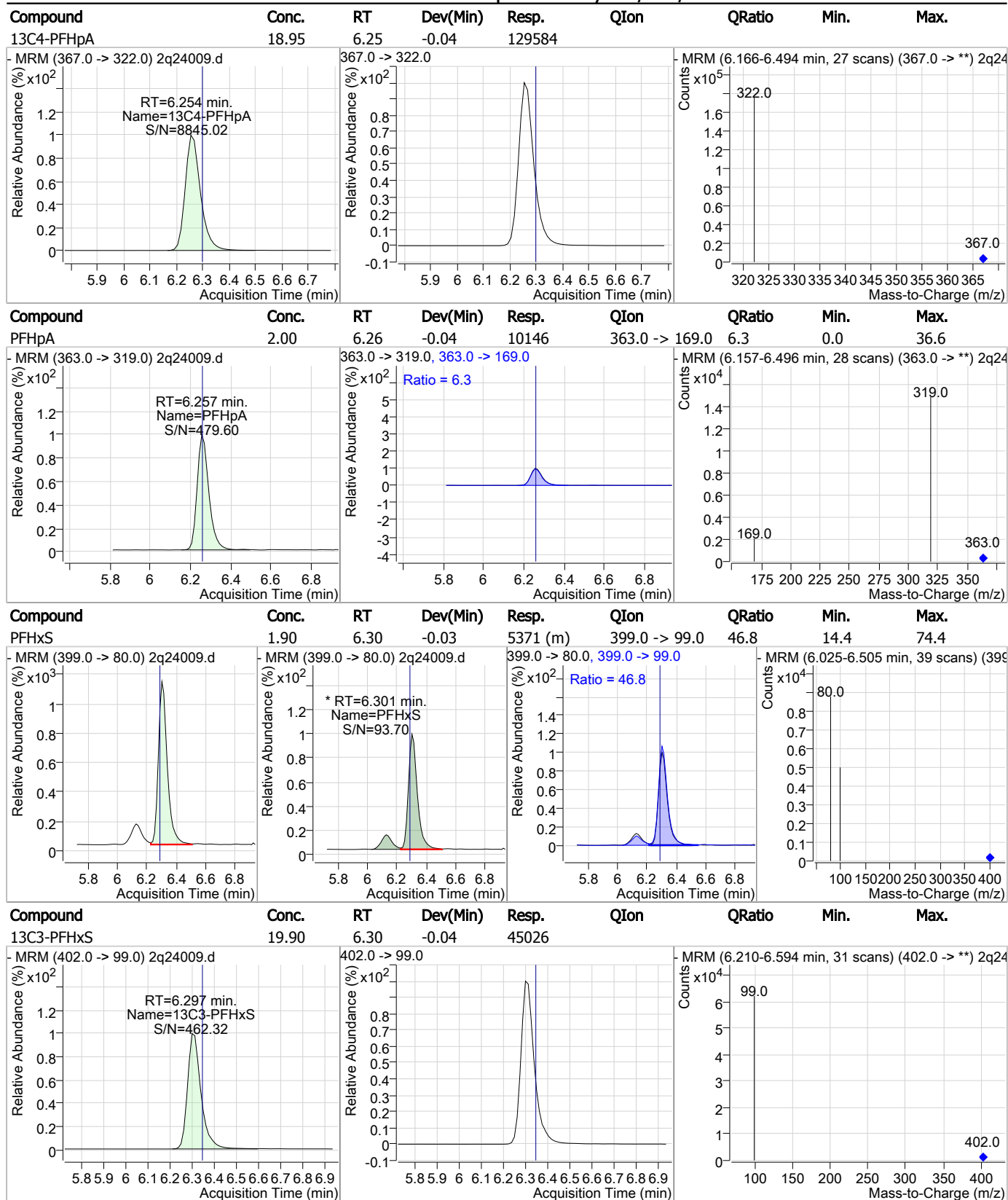


Perfluorinated Compounds by LC/MS/MS

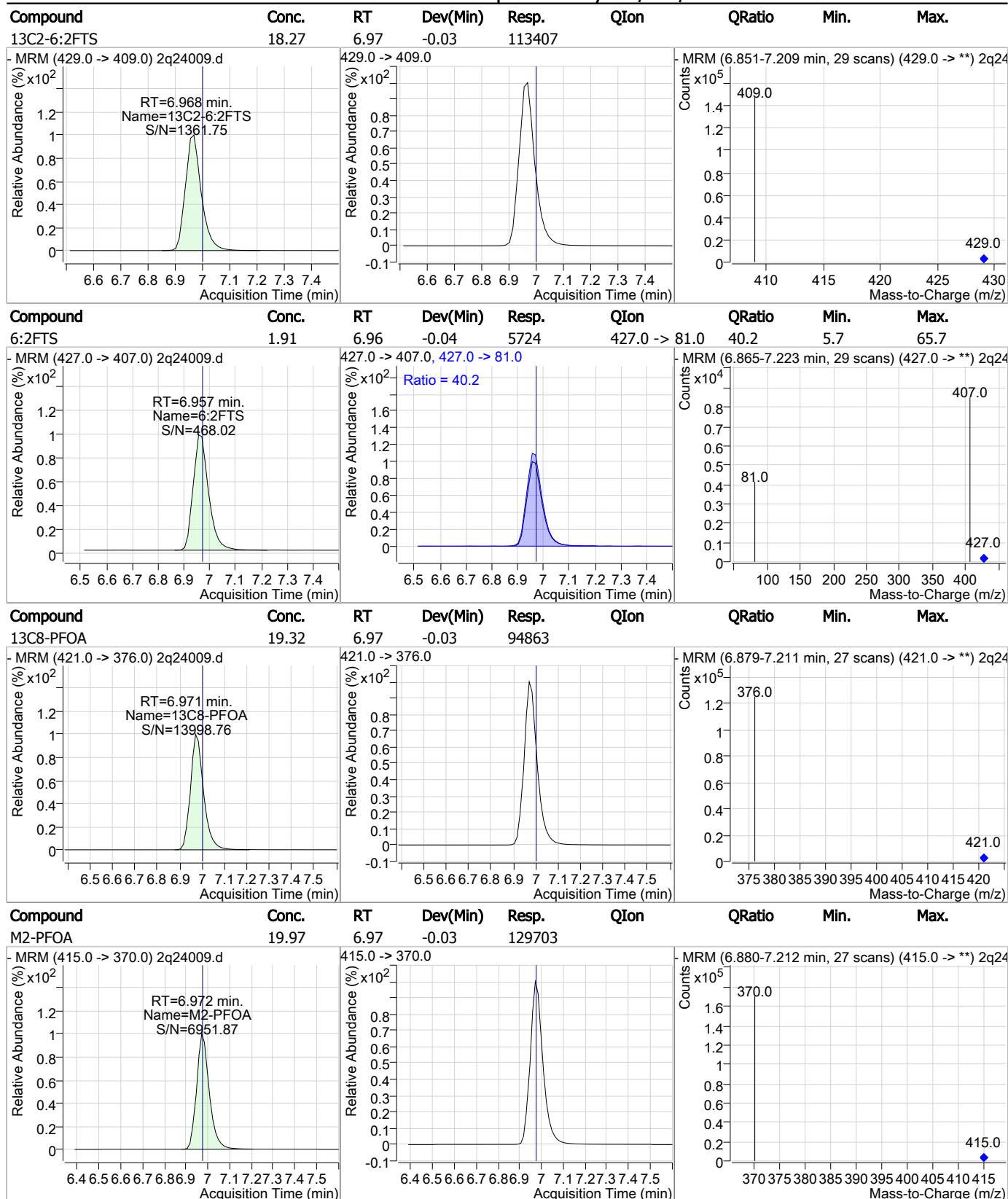


10.5.3 10

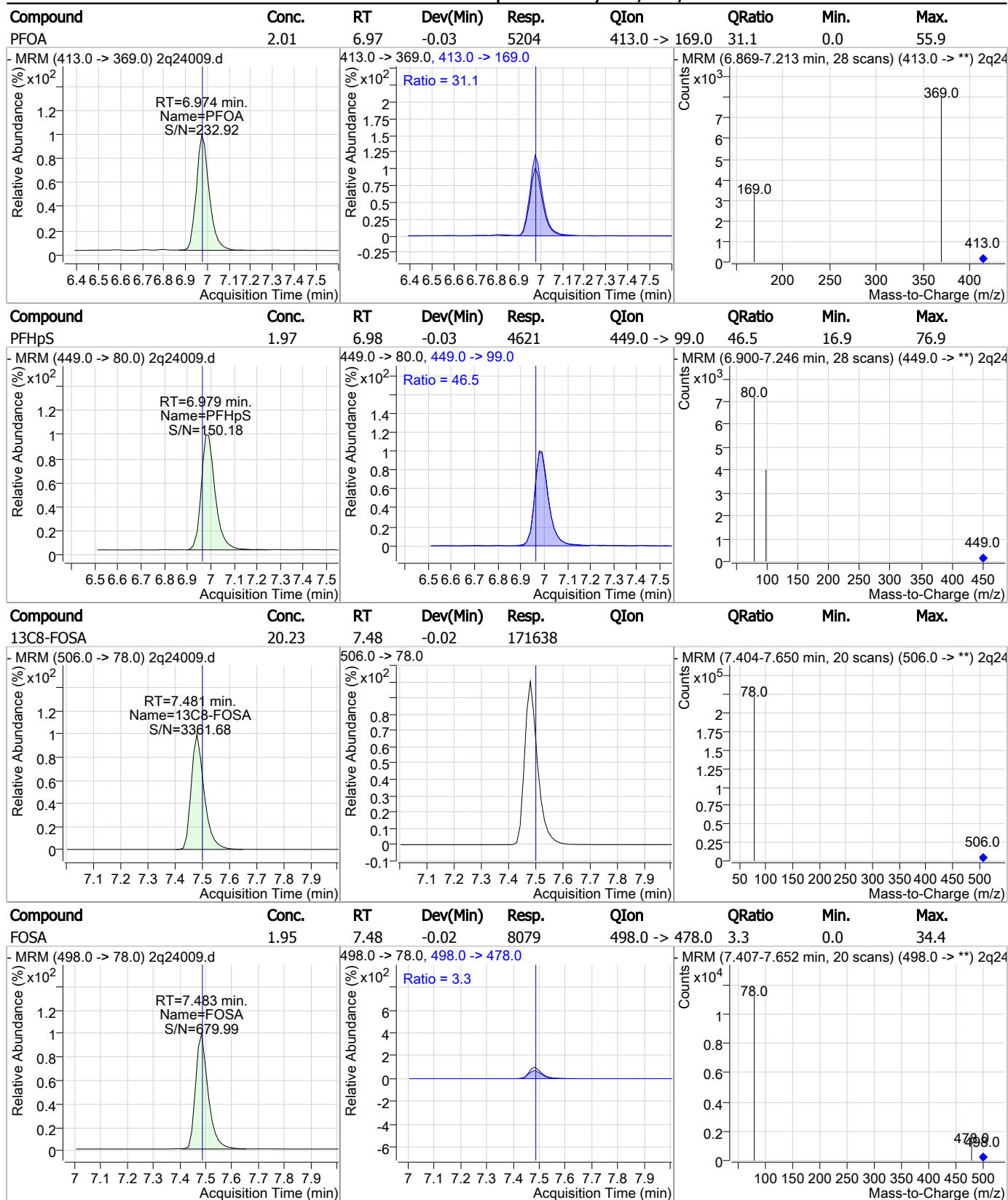
Perfluorinated Compounds by LC/MS/MS



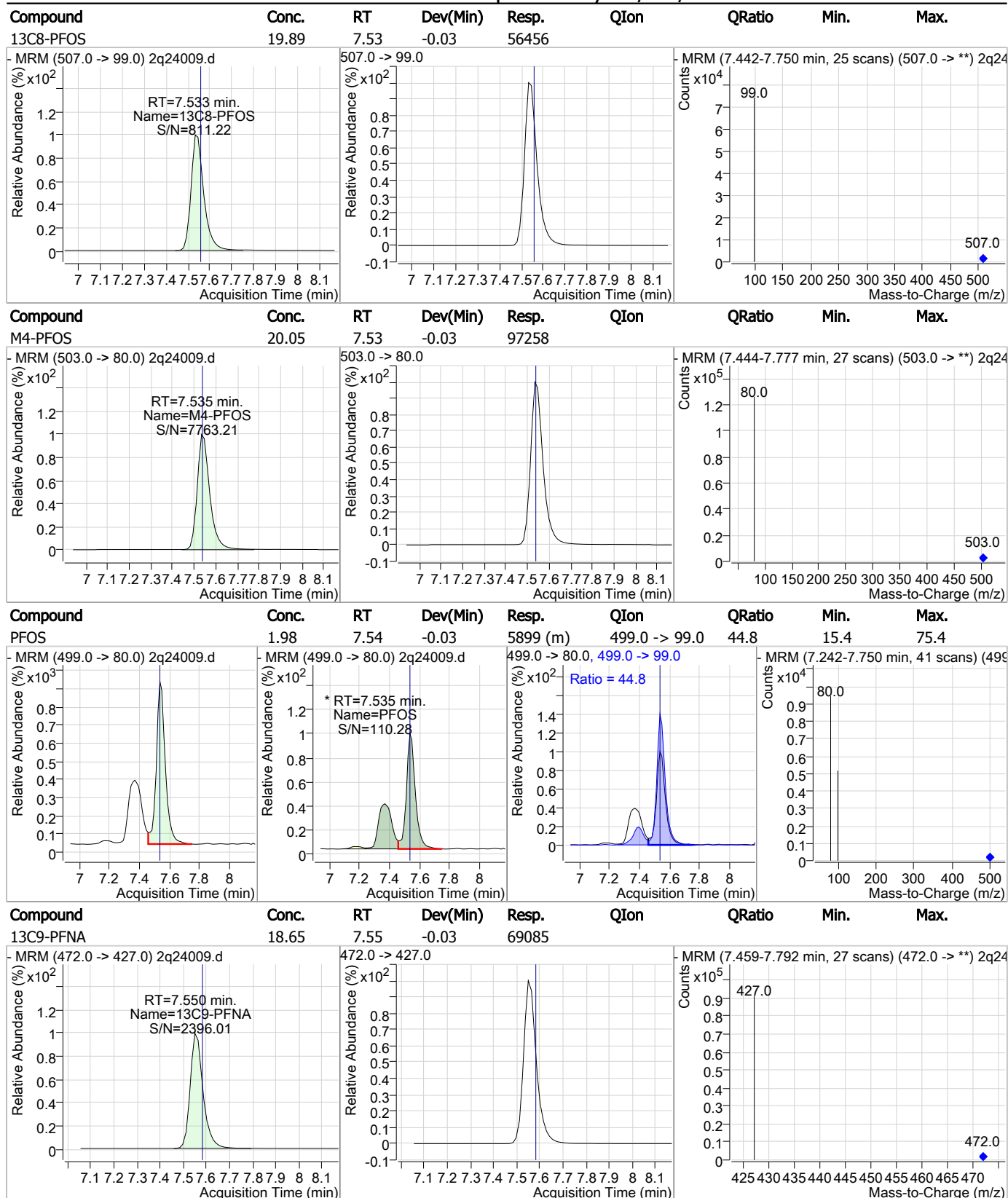
Perfluorinated Compounds by LC/MS/MS



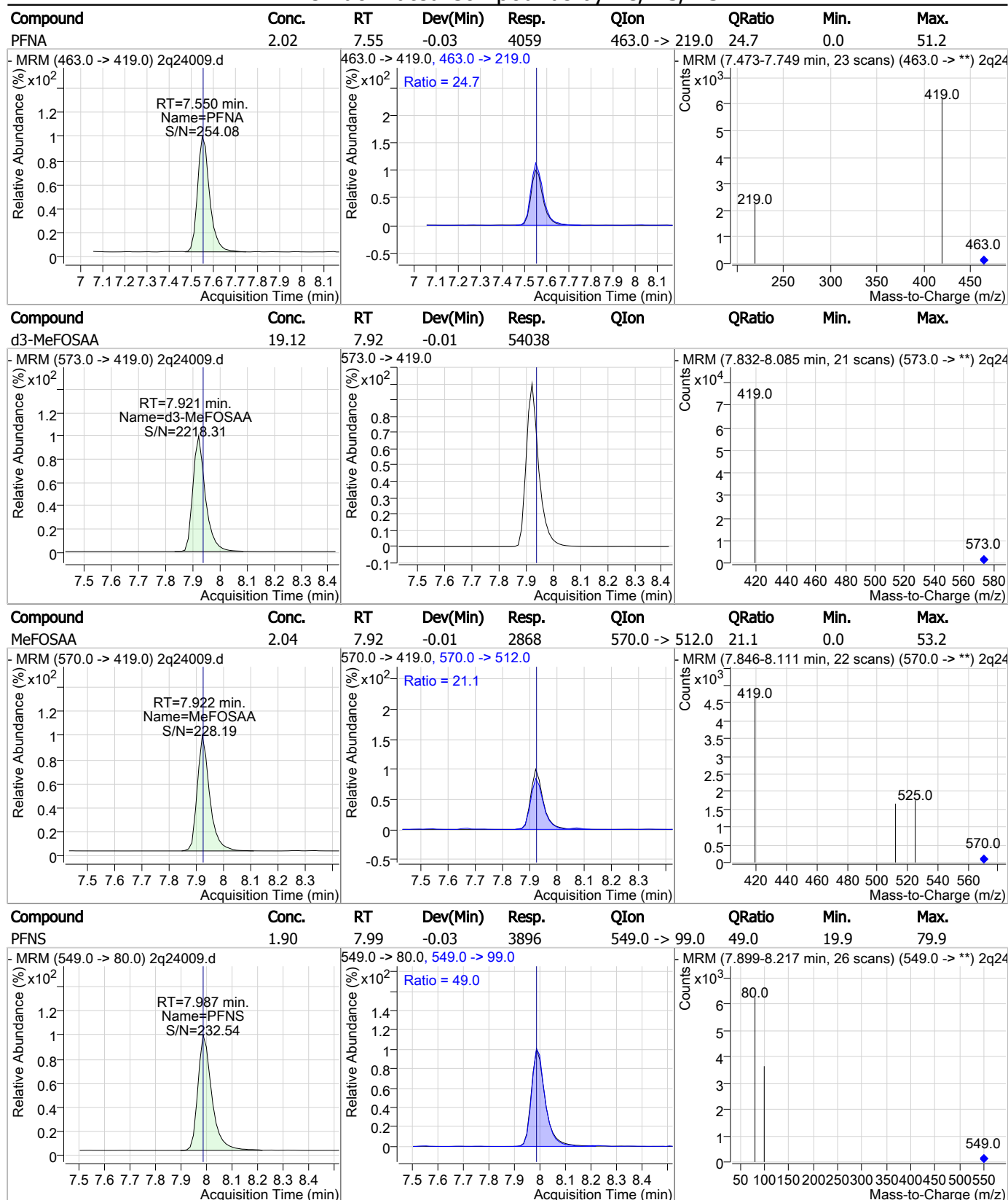
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

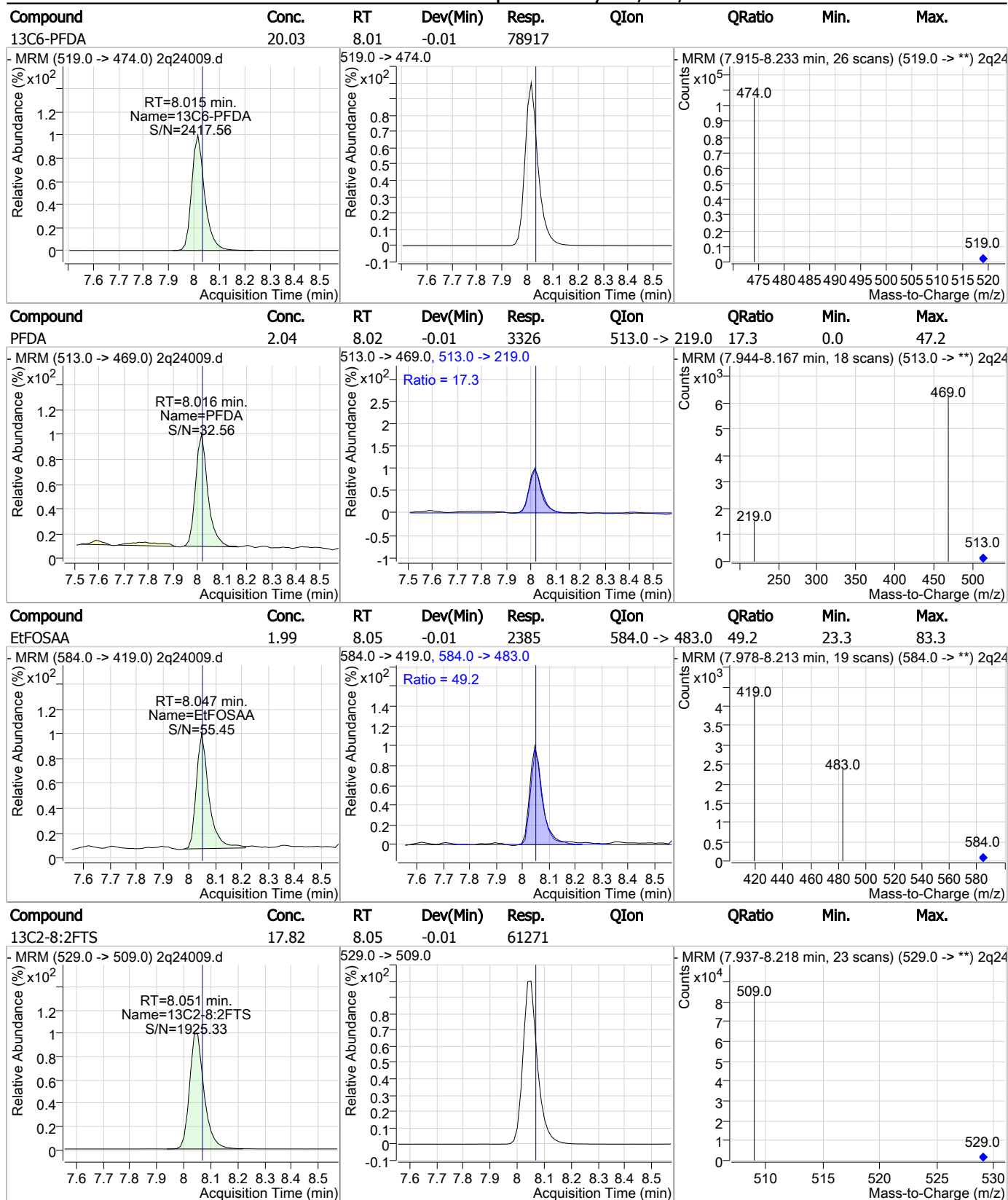


Perfluorinated Compounds by LC/MS/MS



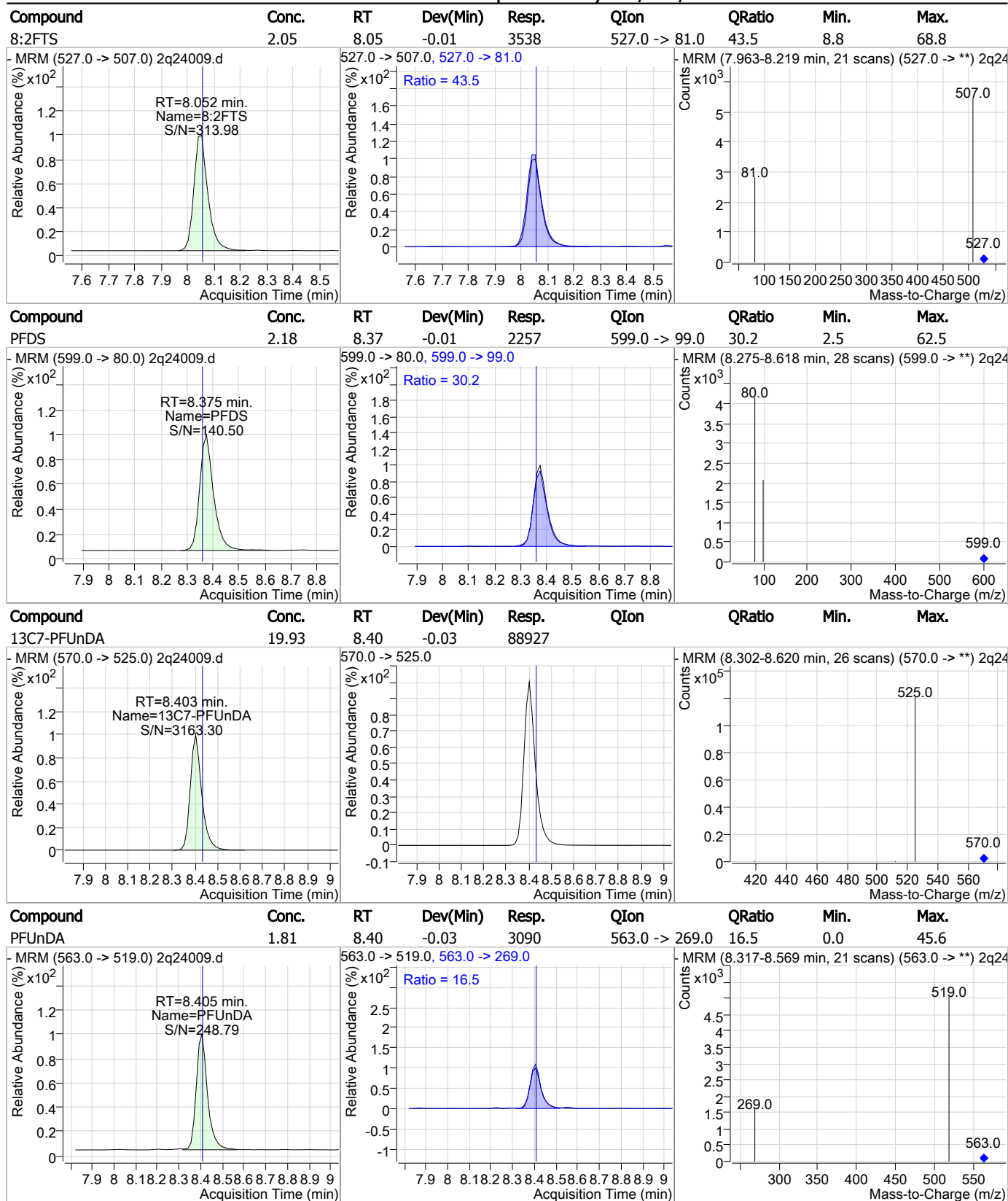
10.5.3 10

Perfluorinated Compounds by LC/MS/MS

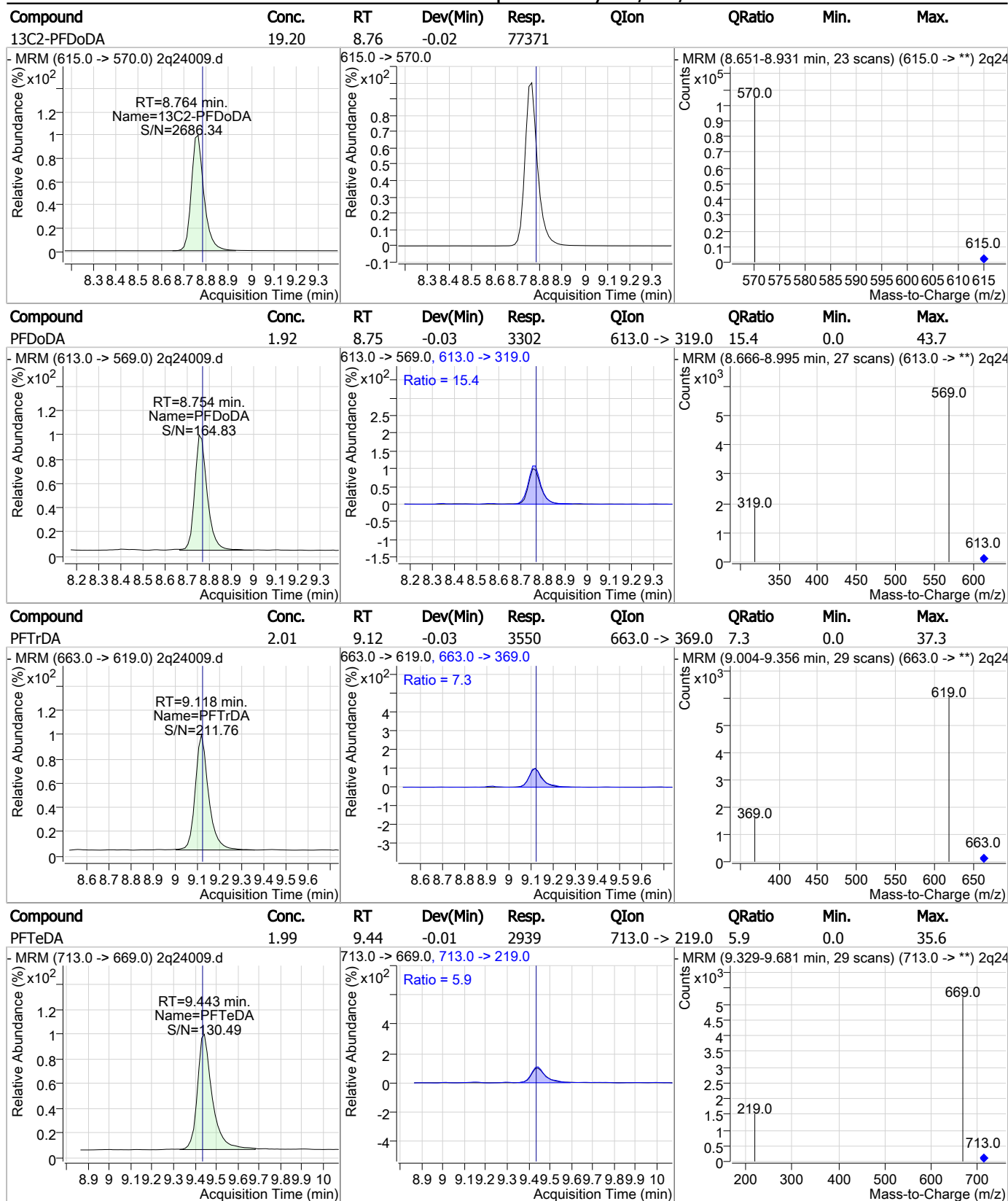


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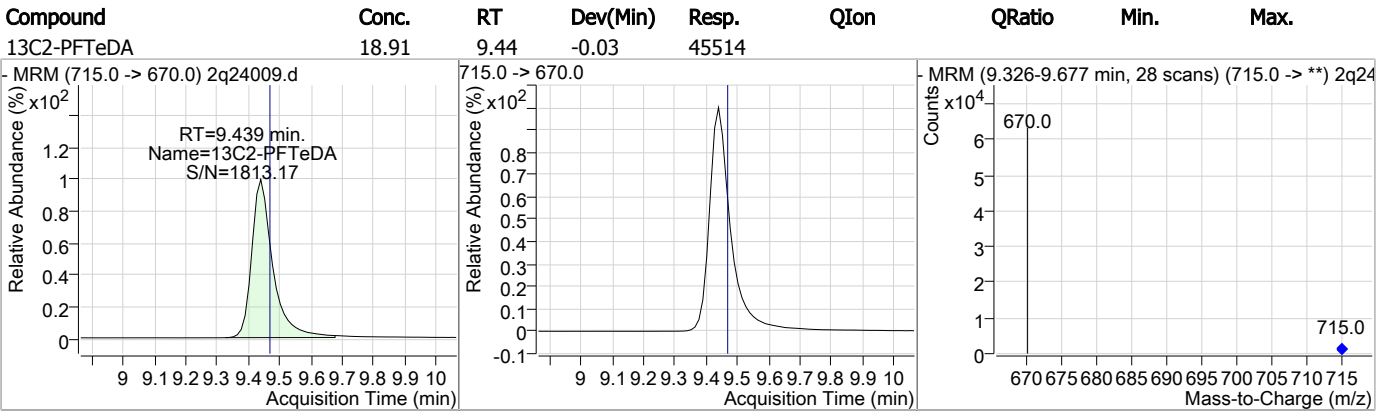
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.3
10

Manual Integration Approval Summary

Sample Number:

S2Q374-IC374

Lab FileID:

2Q24009.D

Injection Time:

11/26/18 13:37

Method:

EPA 537M QSM5.1 B-15

Analyst approved:

11/27/18 10:33 Nancy Saunders

Supervisor approved:

11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.3.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24010.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 1:53:22 PM
 Sample Name : IC374-5.0
 Vial : Vial 5
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	150413	20.00 µg/L	-0.027
13C4-PFOS	7.535	503.0 -> 80.0	104310	20.00 µg/L	-0.029
M4-PFBA	2.015	217.0 -> 172.0	327337	20.00 µg/L	-0.025
M5-PFPeA	3.974	268.0 -> 223.0	150046	20.00 µg/L	-0.038
M5-PFHxA	5.340	318.0 -> 273.0	148707	20.00 µg/L	-0.026
M4-PFHpA	6.254	367.0 -> 322.0	150961	20.00 µg/L	-0.040
M8-PFOA	6.971	421.0 -> 376.0	110393	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	82121	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	93347	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	104396	20.00 µg/L	-0.027
M2-PFDoDA	8.752	615.0 -> 570.0	94263	20.00 µg/L	-0.028
M2-PFTeDA	9.439	715.0 -> 670.0	54462	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	193218	20.00 µg/L	-0.017
M3-PFBS	4.280	302.0 -> 99.0	48506	20.00 µg/L	-0.038
M3-PFHxS	6.310	402.0 -> 99.0	47508	20.00 µg/L	-0.030
M8-PFOS	7.533	507.0 -> 99.0	61144	20.00 µg/L	-0.029
M2-4:2FTS	5.235	329.0 -> 309.0	137871	20.00 µg/L	-0.038
M2-6:2FTS	6.968	429.0 -> 409.0	135255	20.00 µg/L	-0.028
M2-8:2FTS	8.039	529.0 -> 509.0	78231	20.00 µg/L	-0.027
M3-MeFOSAA	7.921	573.0 -> 419.0	63138	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.235	329.0 -> 309.0	137645	20.60 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-6:2FTS	6.968	429.0 -> 409.0	135324	21.79 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-8:2FTS	8.039	529.0 -> 509.0	78239	22.75 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-PFDoDA	8.752	615.0 -> 570.0	94236	23.39 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 116.9%		
13C2-PFTeDA	9.439	715.0 -> 670.0	54312	22.56 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C3-PFBS	4.280	302.0 -> 99.0	48255	20.67 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	6.310	402.0 -> 99.0	47515	21.00 µg/L	-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C4-PFBA	2.015	217.0 -> 172.0	325232	20.69 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C4-PFHpA	6.254	367.0 -> 322.0	150986	22.08 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 110.4%		
13C5-PFHxA	5.340	318.0 -> 273.0	148498	21.93 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C5-PFPeA	3.974	268.0 -> 223.0	149926	21.29 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C6-PFDA	8.015	519.0 -> 474.0	93312	23.68 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 118.4%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	104476	23.41 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C8-FOSA	7.481	506.0 -> 78.0	193220	22.78 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%	
13C8-PFOA	6.971	421.0 -> 376.0	110403	22.49 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%	
13C8-PFOS	7.533	507.0 -> 99.0	61134	21.53 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C9-PFNA	7.550	472.0 -> 427.0	82129	22.18 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
d3-MeFOSAA	7.921	573.0 -> 419.0	63165	22.35 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
M2-PFOA	6.972	415.0 -> 370.0	150413	20.02 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
M4-PFOS	7.535	503.0 -> 80.0	103291	19.85 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	

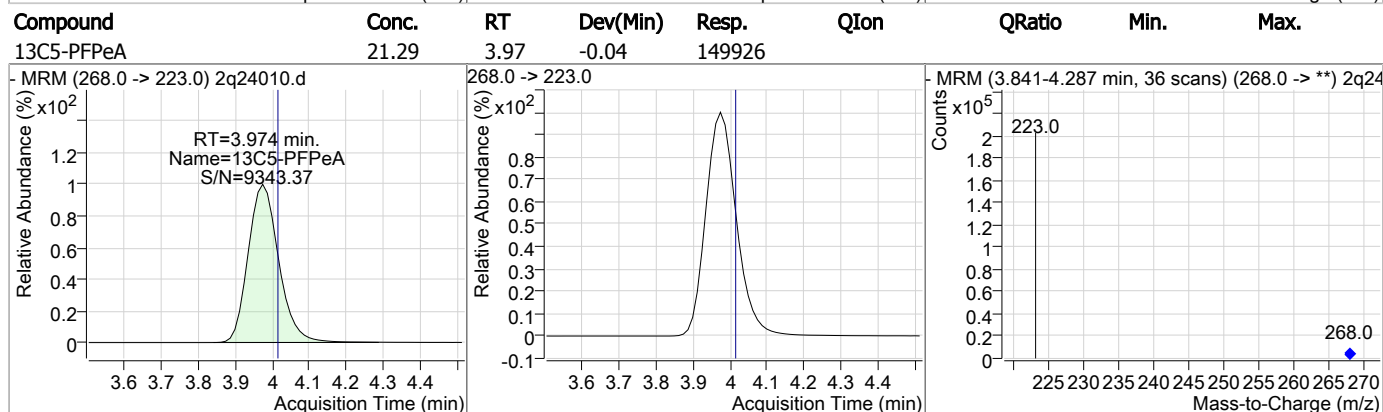
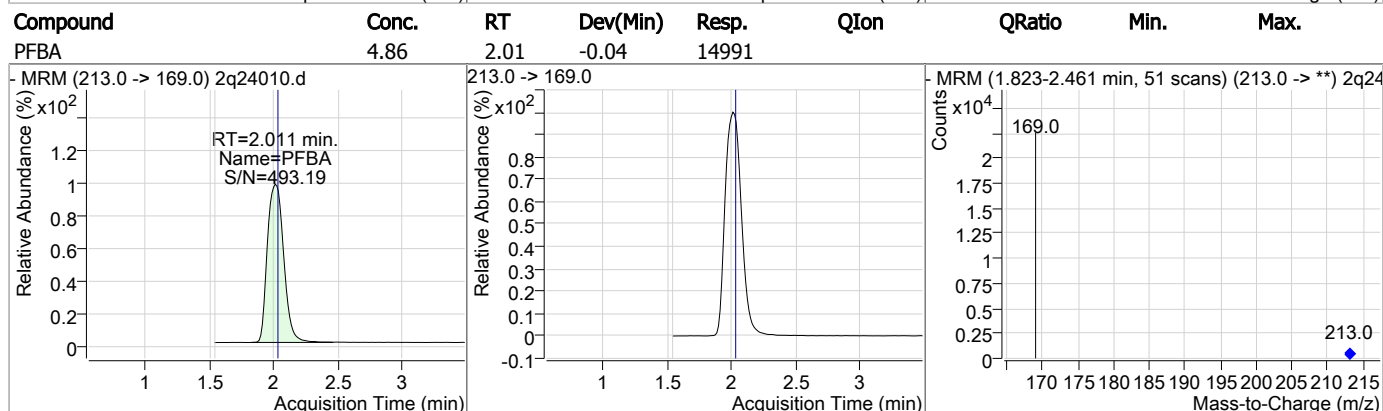
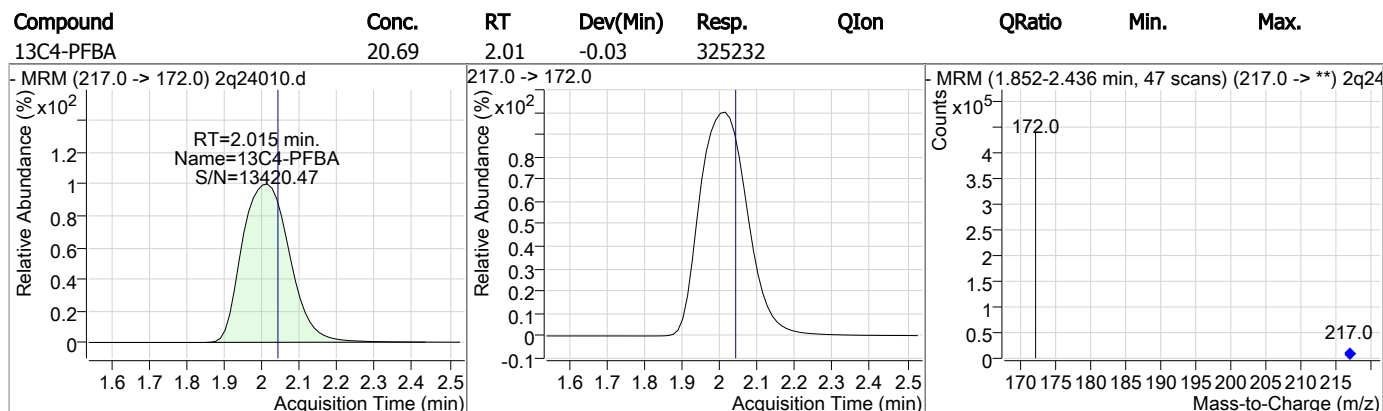
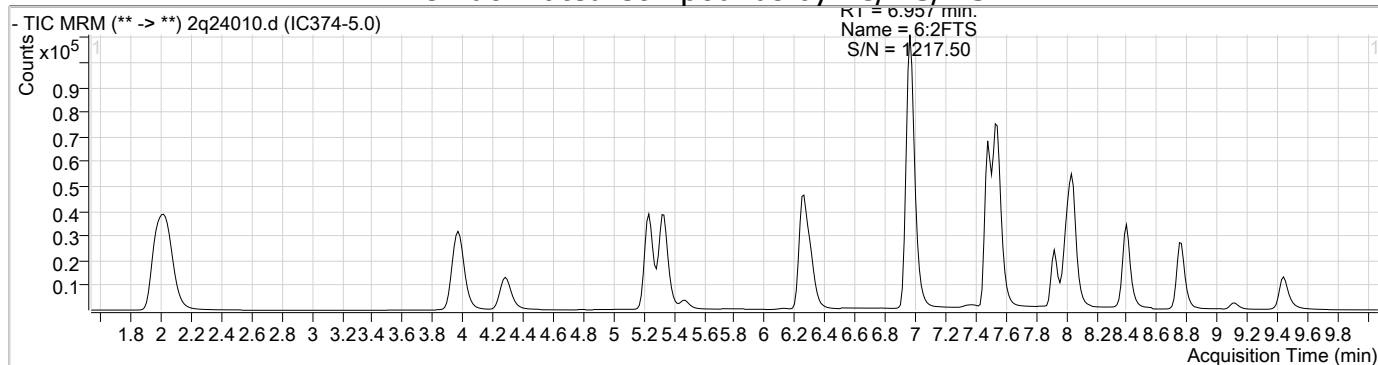
Target Compounds

					QValue
4:2FTS	5.237	327.0 -> 307.0	18803	4.77 µg/L	95
6:2FTS	6.957	427.0 -> 407.0	16950	4.78 µg/L	90
8:2FTS	8.039	527.0 -> 507.0	10718	4.89 µg/L	94
EtFOSAA	8.047	584.0 -> 419.0	6963	5.00 µg/L	96
FOSA	7.484	498.0 -> 78.0	22530	4.82 µg/L	97
MeFOSAA	7.922	570.0 -> 419.0	8153	4.97 µg/L	98
PFBA	2.011	213.0 -> 169.0	14991	4.86 µg/L	100
PFBS	4.284	299.0 -> 80.0	16893	4.84 µg/L	99
PFDA	8.016	513.0 -> 469.0	9624	5.00 µg/L	98
PFDoDA	8.754	613.0 -> 569.0	10167	4.87 µg/L	98
PFDS	8.375	599.0 -> 80.0	5644	5.04 µg/L	98
PFHpA	6.257	363.0 -> 319.0	29180	4.93 µg/L	99
PFHpS	6.979	449.0 -> 80.0	12307	4.97 µg/L	99
PFHxA	5.330	313.0 -> 269.0	10644	4.79 µg/L	94
PFHxS	6.301	399.0 -> 80.0	14277	4.78 µg/L	99
PFNA	7.550	463.0 -> 419.0	11596	4.86 µg/L	98
PFNS	7.987	549.0 -> 80.0	10341	4.68 µg/L	97
PFOA	6.974	413.0 -> 369.0	15001	4.97 µg/L	98
PFOS	7.535	499.0 -> 80.0	15870	4.93 µg/L	97
PFPeA	3.978	263.0 -> 219.0	30981	4.89 µg/L	100
PFPeS	5.470	349.0 -> 80.0	10348	4.85 µg/L	99
PFTeDA	9.443	713.0 -> 669.0	8056	4.59 µg/L	100
PFTTrDA	9.118	663.0 -> 619.0	10345	4.93 µg/L	98
PFUnDA	8.405	563.0 -> 519.0	9167	4.57 µg/L	96

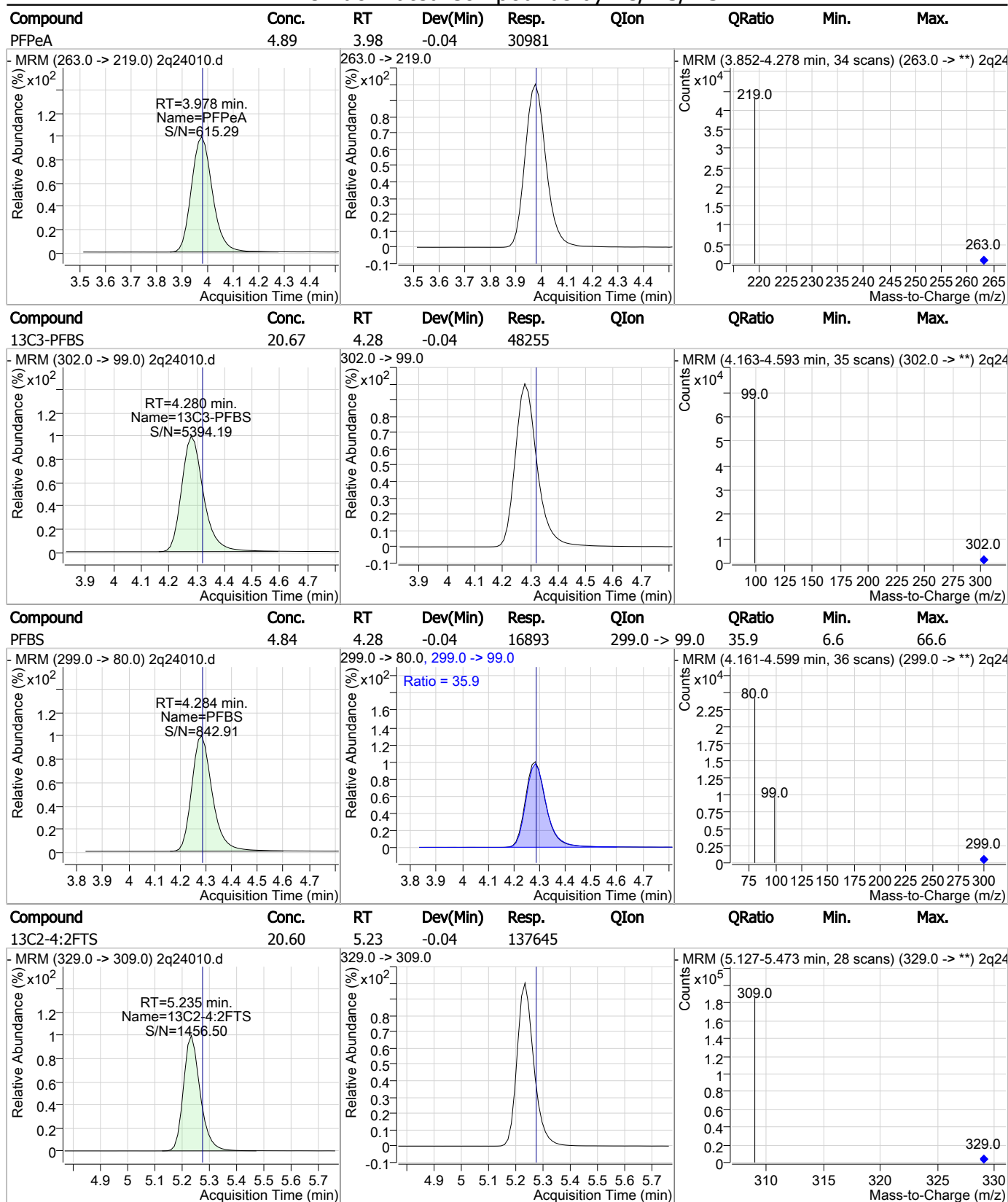
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.4
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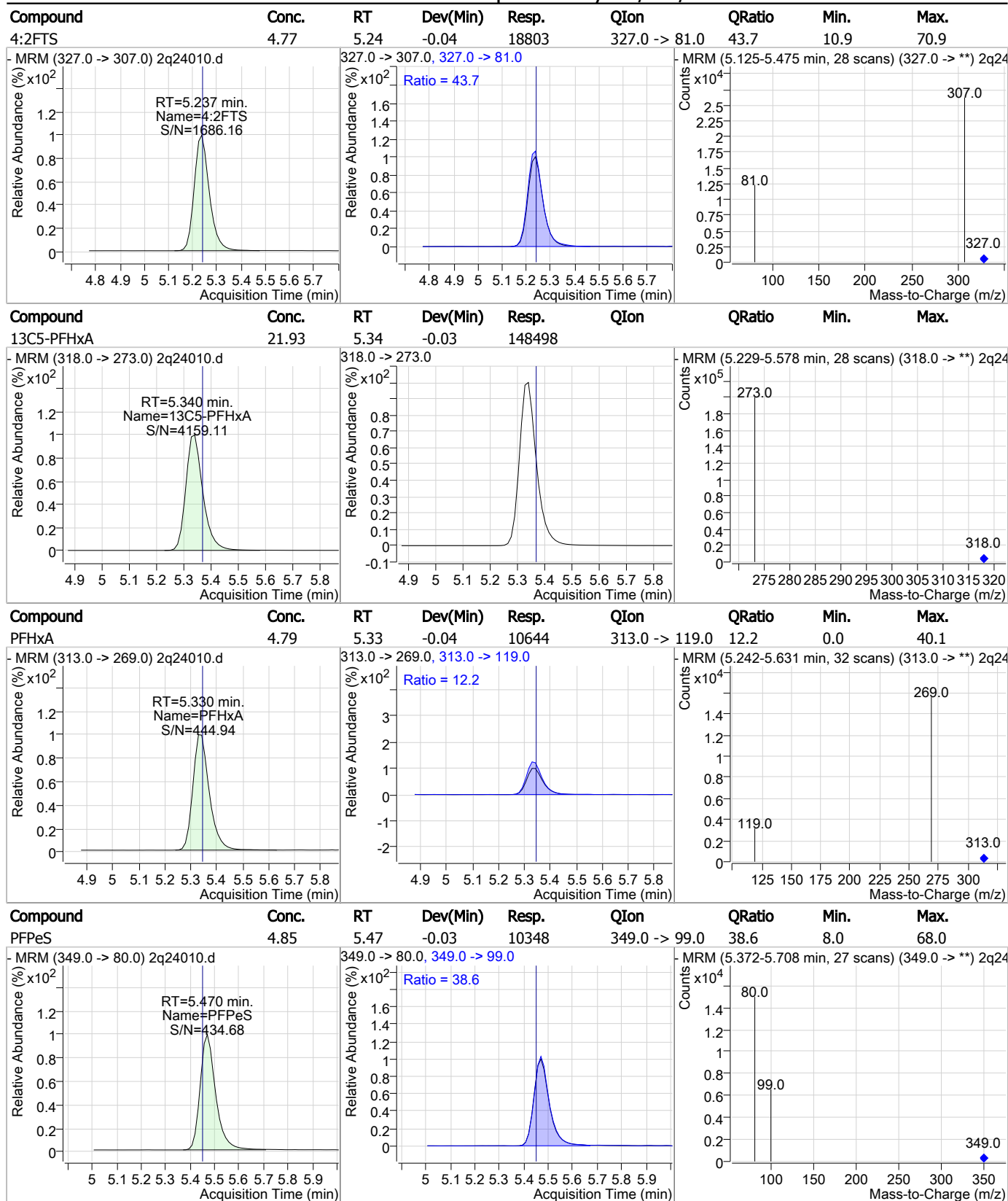
Perfluorinated Compounds by LC/MS/MS



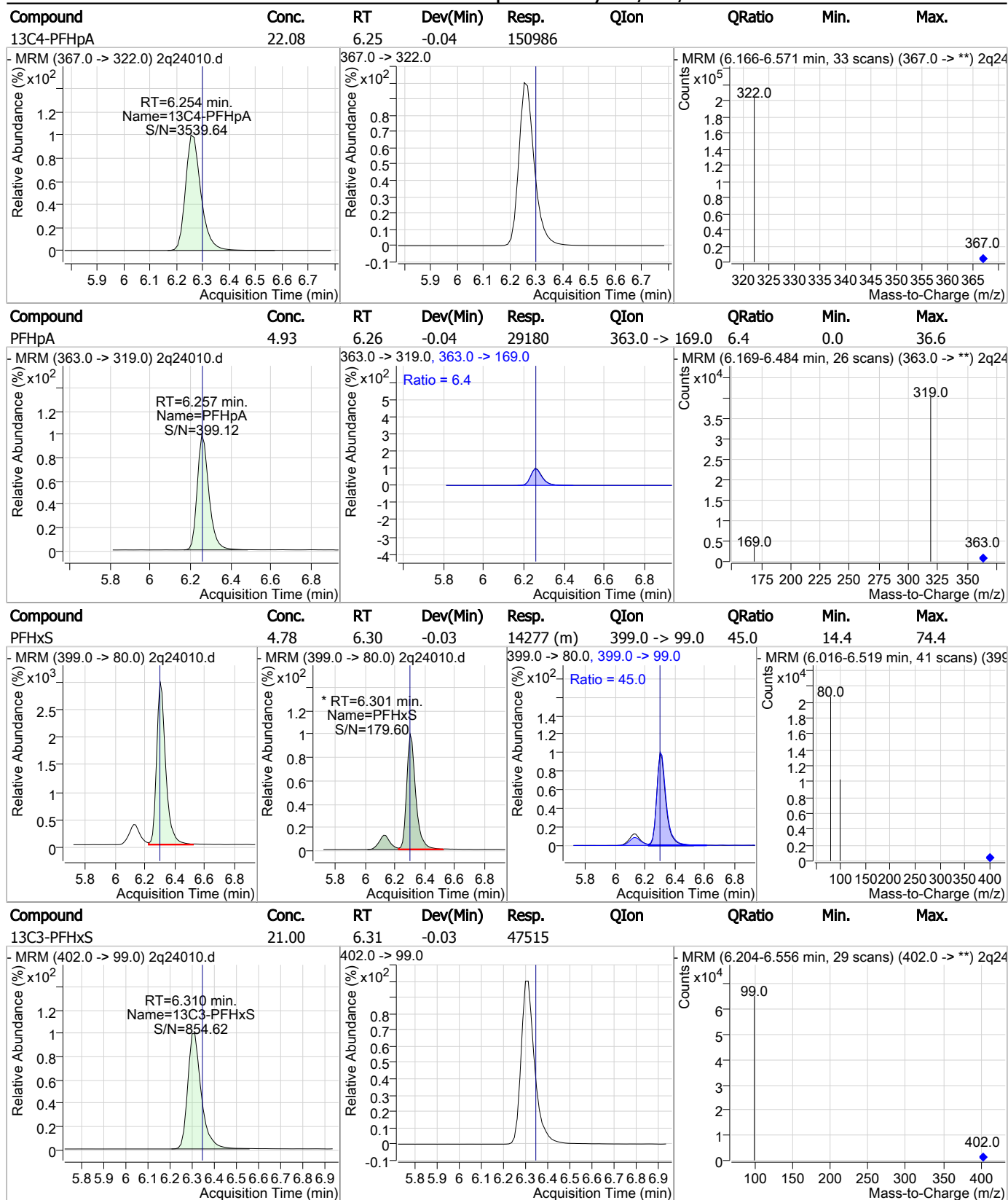
Perfluorinated Compounds by LC/MS/MS



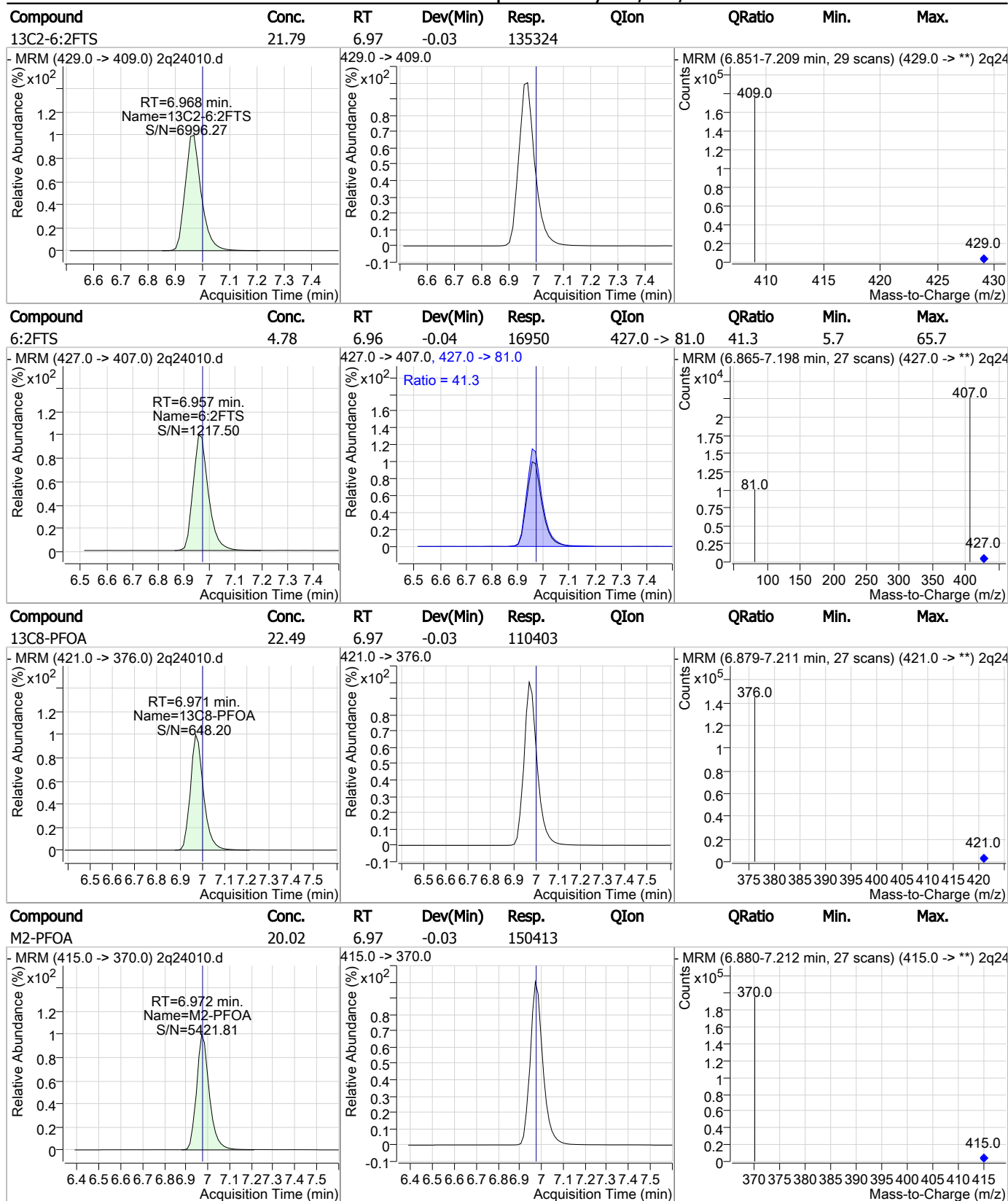
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

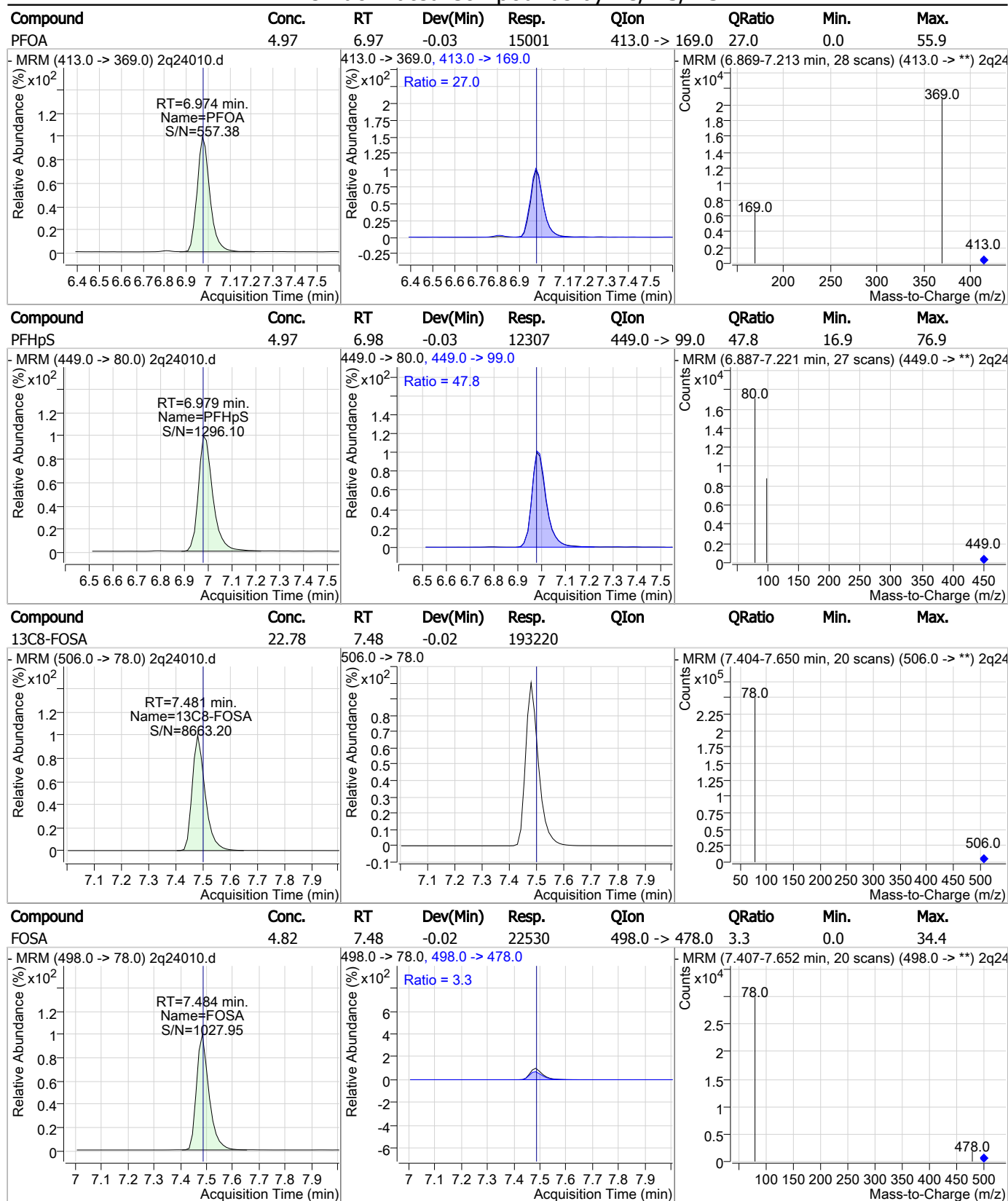


Perfluorinated Compounds by LC/MS/MS

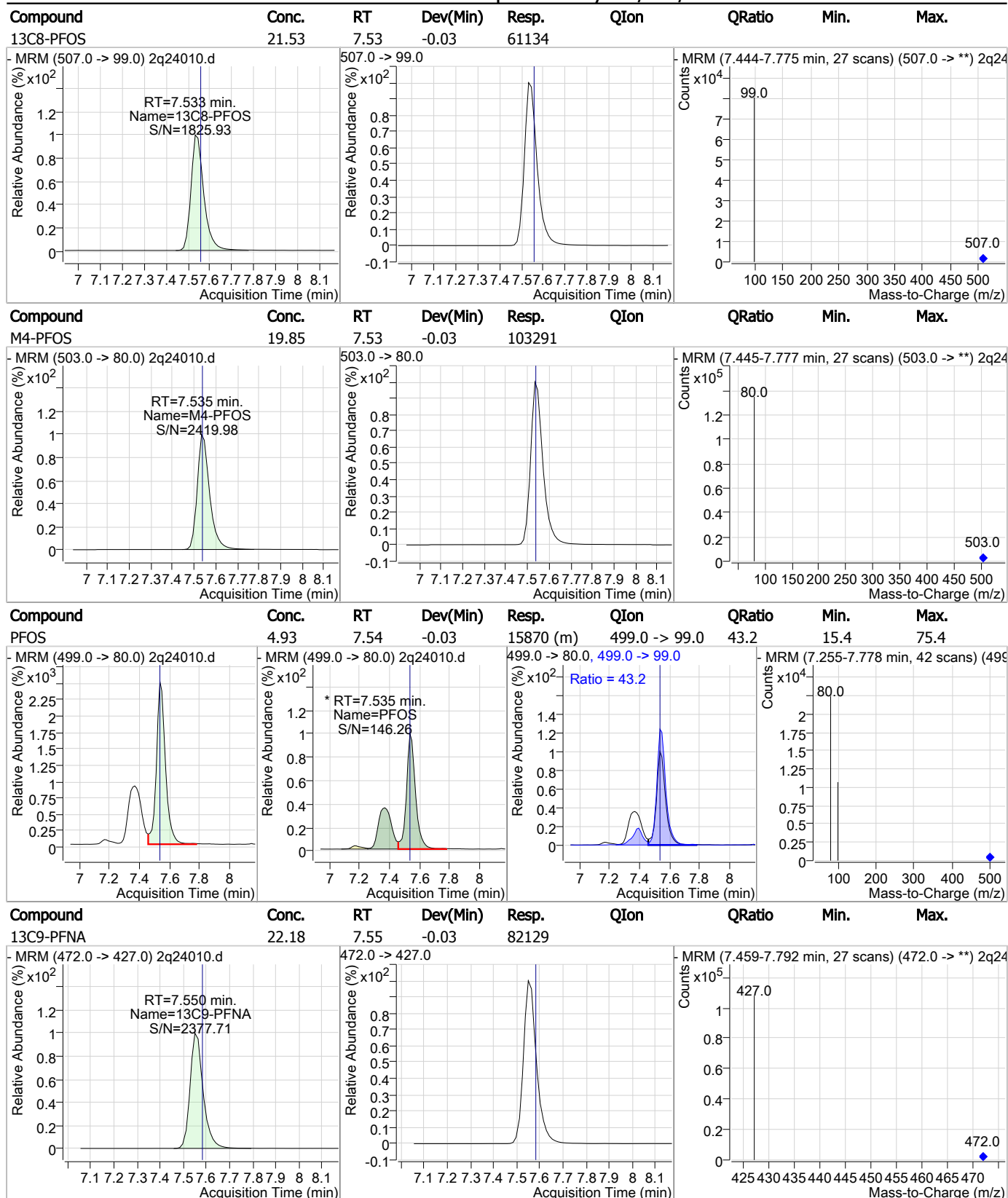


10.5.4 10

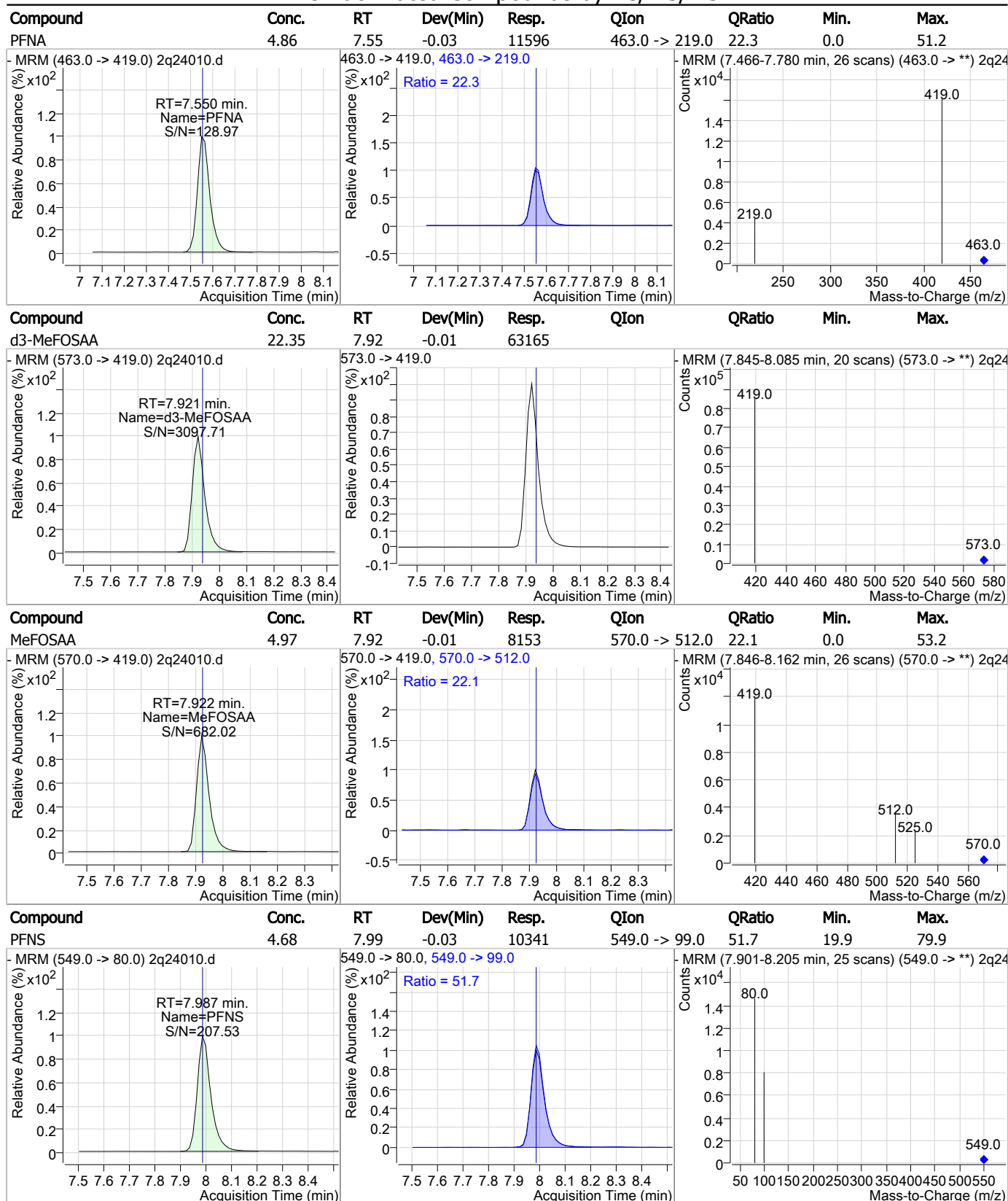
Perfluorinated Compounds by LC/MS/MS



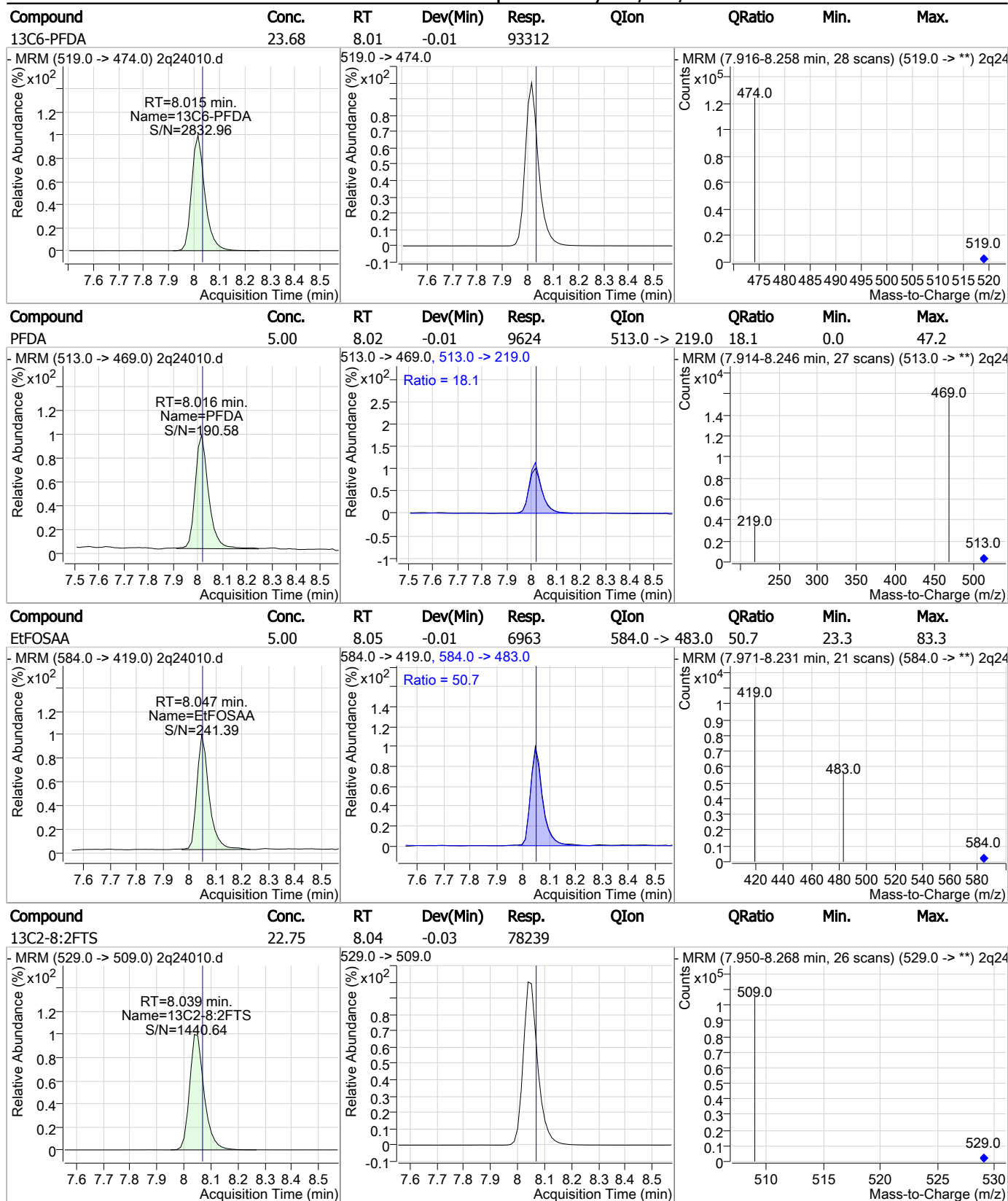
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

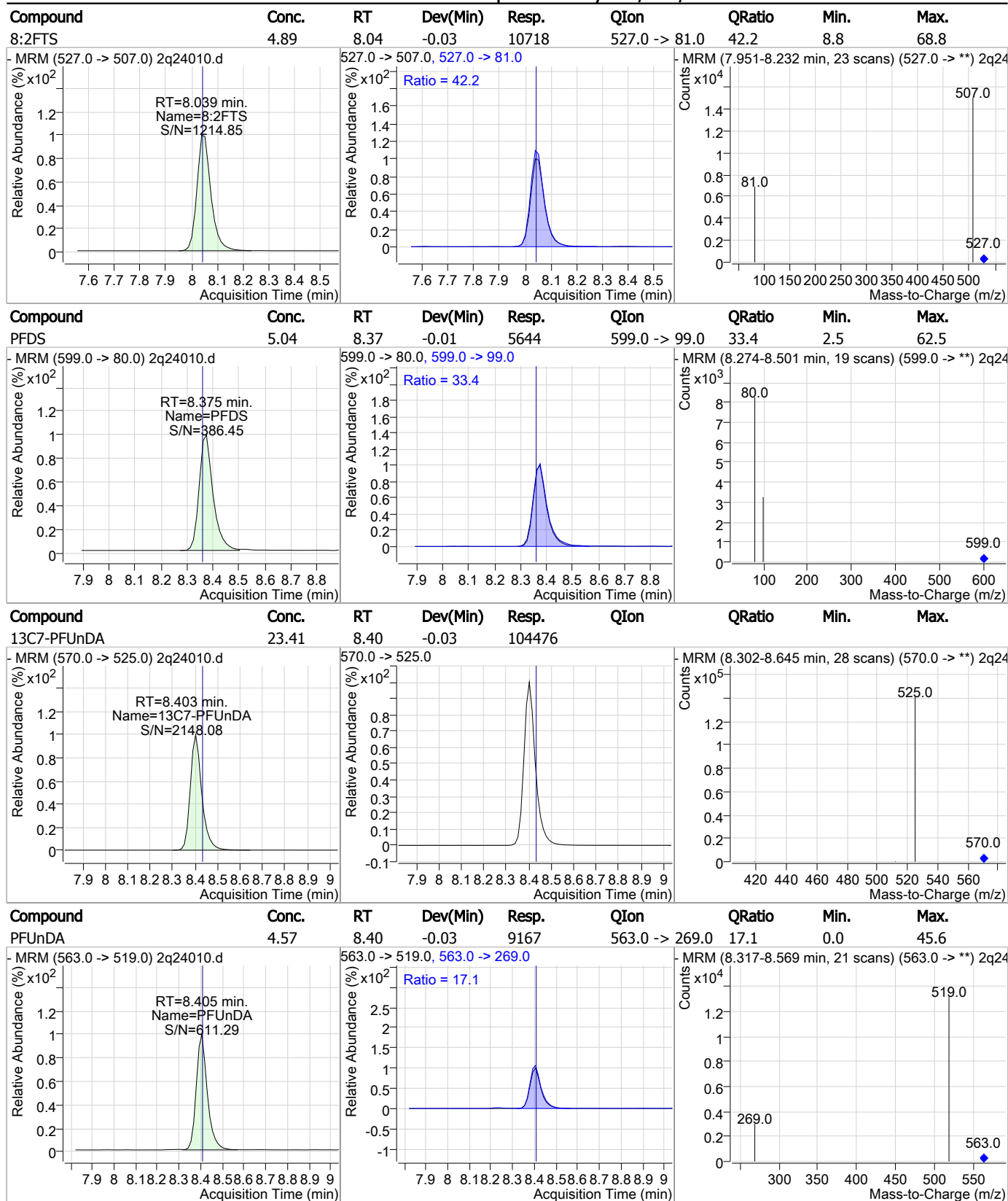


Perfluorinated Compounds by LC/MS/MS

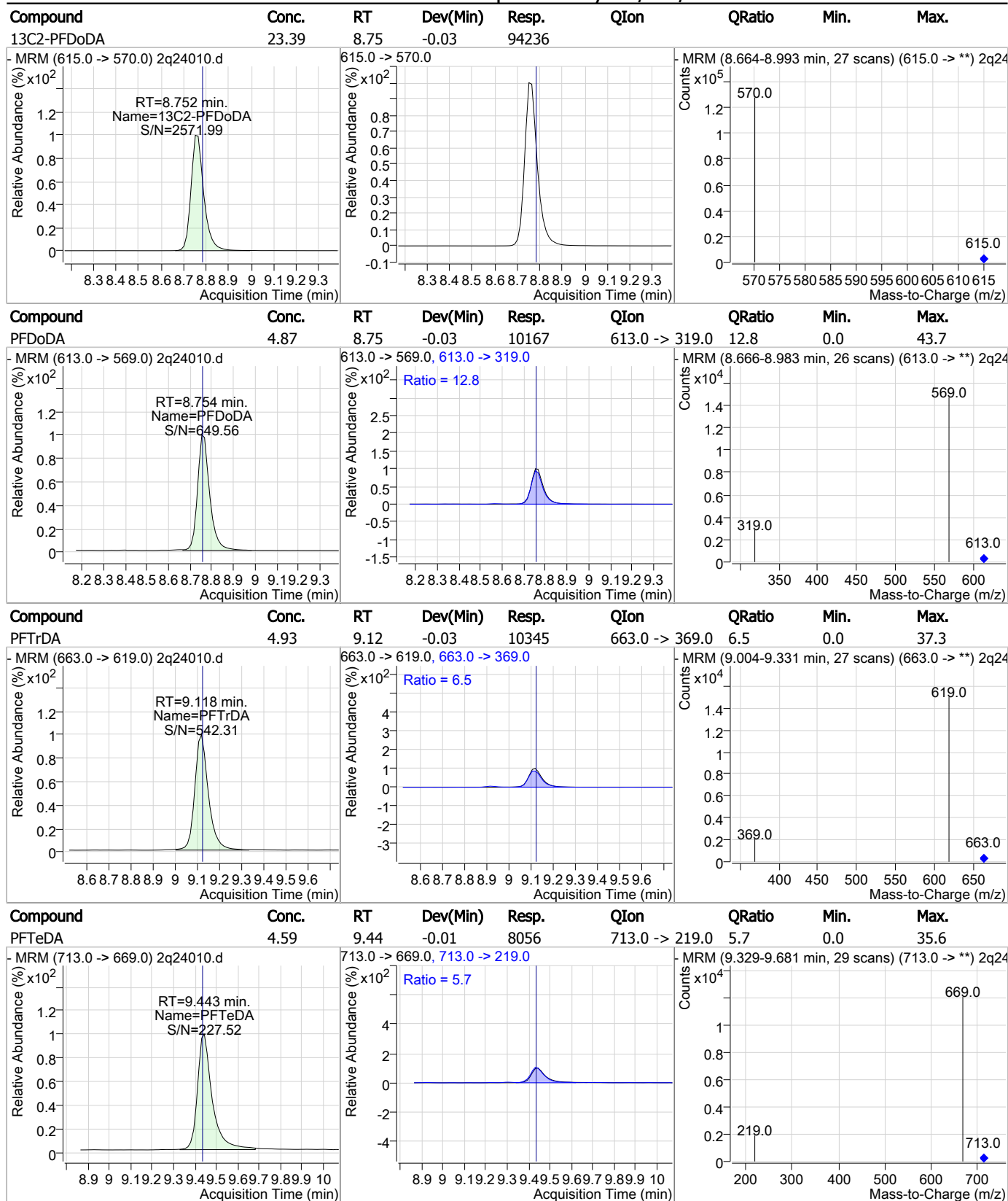


10.5.4 10

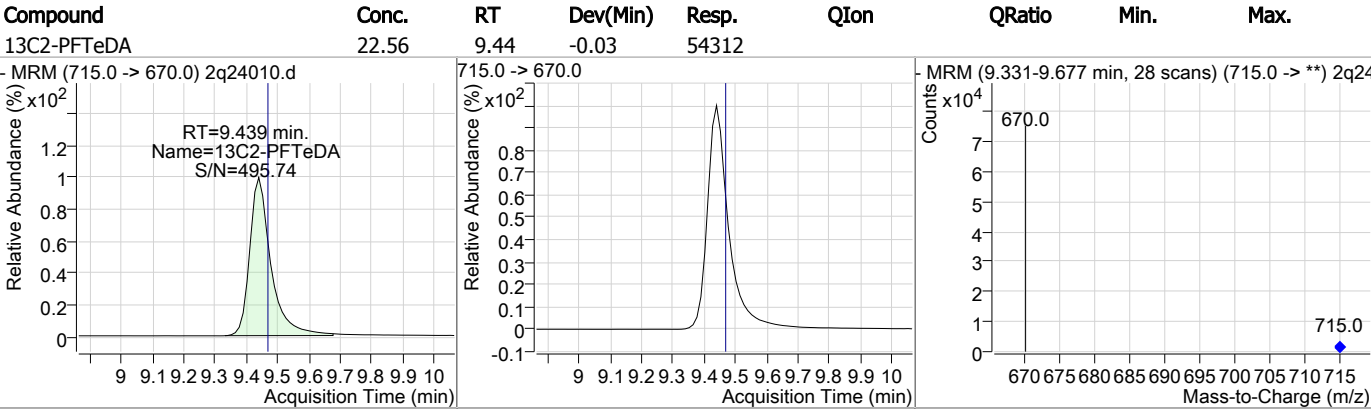
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.4
10

Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24010.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 13:53

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.4.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24011.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 2:09:46 PM
 Sample Name : IC374-10
 Vial : Vial 6
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	152557	20.00 µg/L	-0.027
13C4-PFOS	7.535	503.0 -> 80.0	105184	20.00 µg/L	-0.029
M4-PFBA	1.977	217.0 -> 172.0	324073	20.00 µg/L	-0.063
M5-PFPeA	3.961	268.0 -> 223.0	149443	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	148398	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	150026	20.00 µg/L	-0.040
M8-PFOA	6.971	421.0 -> 376.0	110214	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	83426	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	94425	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	103684	20.00 µg/L	-0.027
M2-PFDoDA	8.752	615.0 -> 570.0	92487	20.00 µg/L	-0.028
M2-PFTeDA	9.439	715.0 -> 670.0	54350	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	188007	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	47724	20.00 µg/L	-0.051
M3-PFHxS	6.297	402.0 -> 99.0	46680	20.00 µg/L	-0.043
M8-PFOS	7.533	507.0 -> 99.0	60403	20.00 µg/L	-0.029
M2-4:2FTS	5.222	329.0 -> 309.0	137547	20.00 µg/L	-0.051
M2-6:2FTS	6.955	429.0 -> 409.0	134947	20.00 µg/L	-0.041
M2-8:2FTS	8.039	529.0 -> 509.0	78130	20.00 µg/L	-0.027
M3-MeFOSAA	7.921	573.0 -> 419.0	62659	20.00 µg/L	-0.013

System Monitoring Compounds

13C2-4:2FTS	5.222	329.0 -> 309.0	137407	20.56 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C2-6:2FTS	6.955	429.0 -> 409.0	134897	21.73 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C2-8:2FTS	8.039	529.0 -> 509.0	78183	22.73 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C2-PFDoDA	8.752	615.0 -> 570.0	92478	22.95 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C2-PFTeDA	9.439	715.0 -> 670.0	54221	22.52 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C3-PFBS	4.267	302.0 -> 99.0	47661	20.41 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C3-PFHxS	6.297	402.0 -> 99.0	46672	20.63 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C4-PFBA	1.977	217.0 -> 172.0	321950	20.48 µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C4-PFHpA	6.254	367.0 -> 322.0	150000	21.94 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C5-PFHxA	5.327	318.0 -> 273.0	148361	21.91 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C5-PFPeA	3.961	268.0 -> 223.0	149340	21.20 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C6-PFDA	8.015	519.0 -> 474.0	94427	23.97 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.8%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	103684	23.24 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C8-FOSA	7.481	506.0 -> 78.0	188003	22.16 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
13C8-PFOA	6.971	421.0 -> 376.0	110367	22.48 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.4%	
13C8-PFOS	7.533	507.0 -> 99.0	60395	21.27 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C9-PFNA	7.550	472.0 -> 427.0	83415	22.52 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
d3-MeFOSAA	7.921	573.0 -> 419.0	62638	22.16 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
M2-PFOA	6.972	415.0 -> 370.0	151529	19.88 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
M4-PFOS	7.535	503.0 -> 80.0	104381	19.89 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	

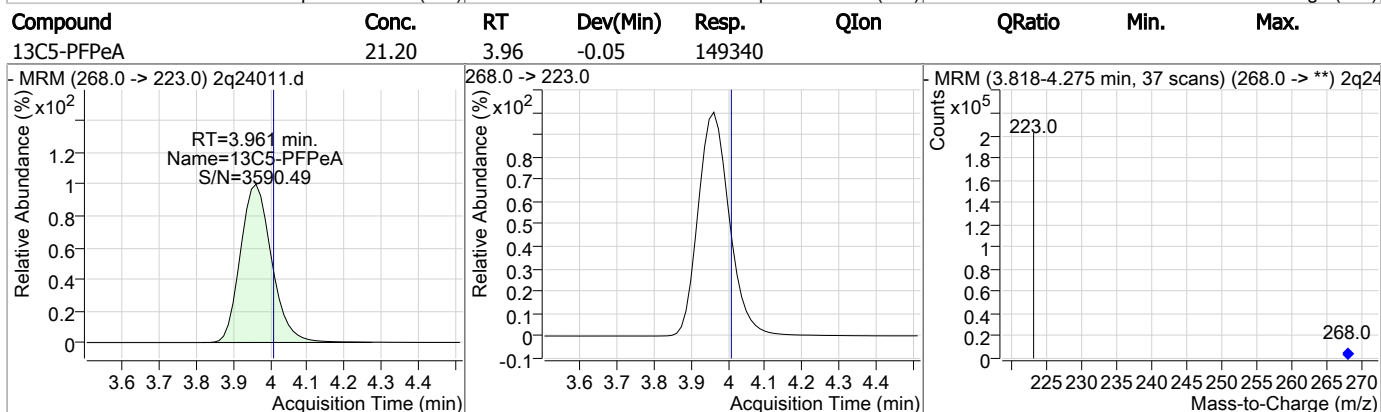
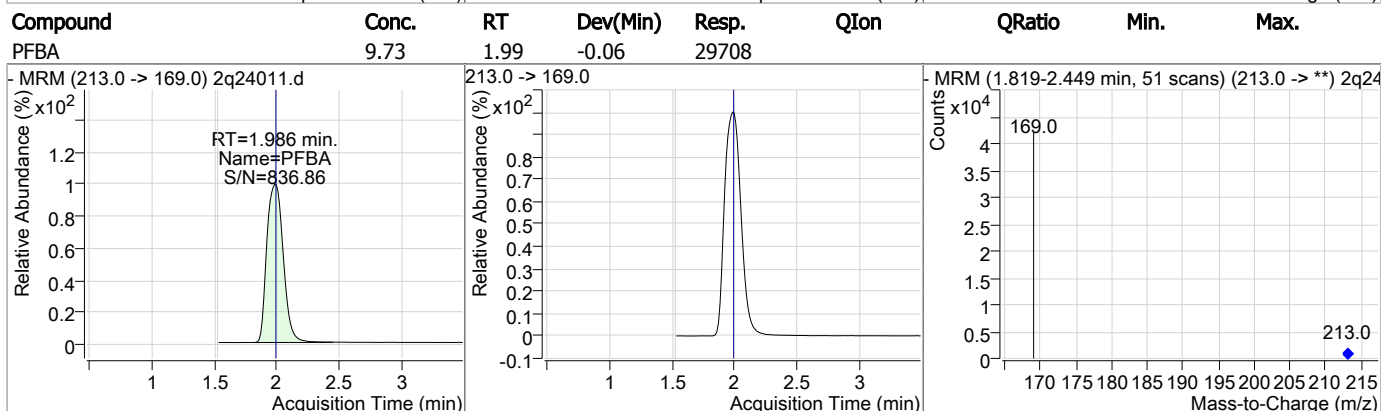
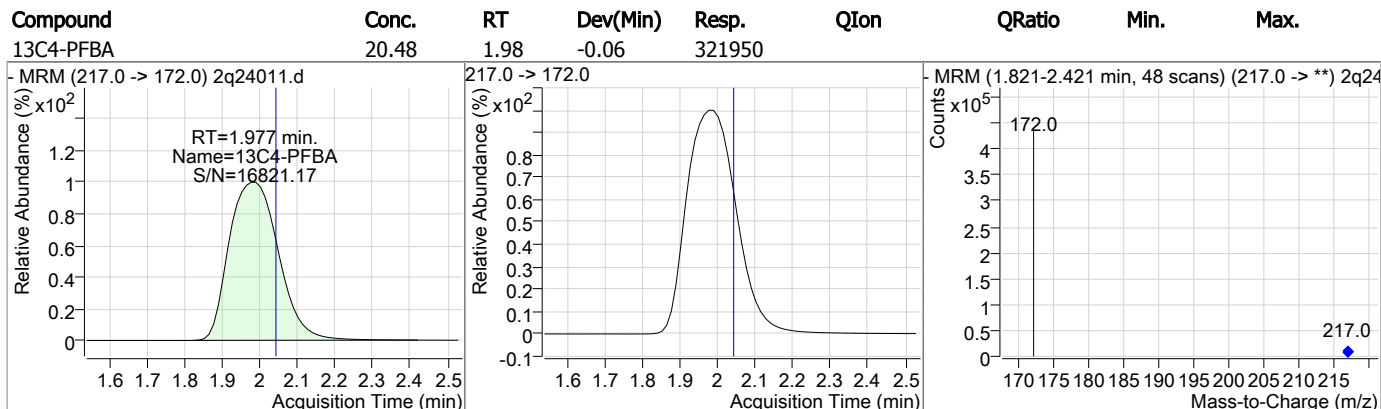
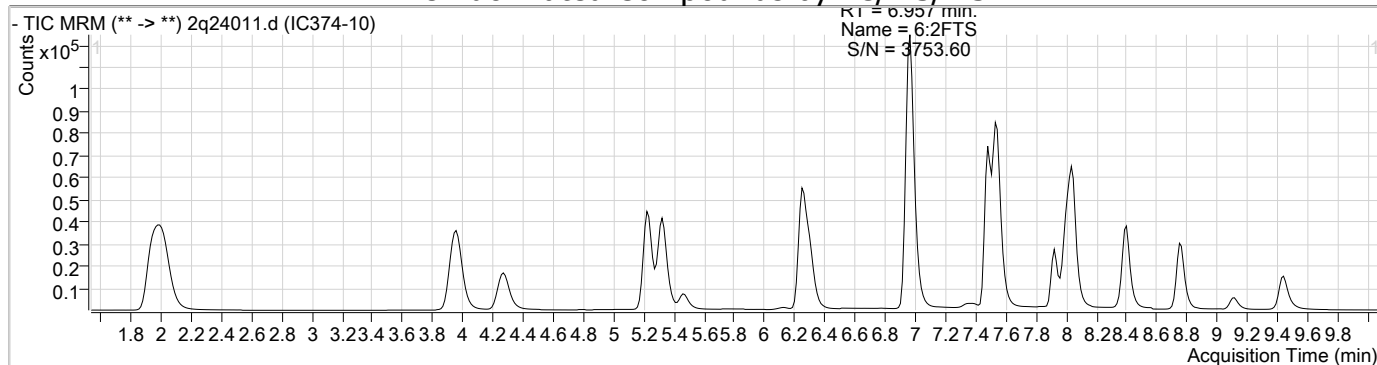
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	37758	9.70 µg/L	97
6:2FTS	6.957	427.0 -> 407.0	34480	9.86 µg/L	96
8:2FTS	8.039	527.0 -> 507.0	21402	9.91 µg/L	96
EtFOSAA	8.047	584.0 -> 419.0	13266	9.64 µg/L	97
FOSA	7.483	498.0 -> 78.0	44926	9.88 µg/L	98
MeFOSAA	7.922	570.0 -> 419.0	16156	9.92 µg/L	98
PFBA	1.986	213.0 -> 169.0	29708	9.73 µg/L	100
PFBS	4.271	299.0 -> 80.0	33691	9.81 µg/L	99
PFDA	8.016	513.0 -> 469.0	18549	9.54 µg/L	99
PFDoDA	8.754	613.0 -> 569.0	20087	9.80 µg/L	98
PFDS	8.375	599.0 -> 80.0	11228	10.15 µg/L	99
PFHpA	6.257	363.0 -> 319.0	58917	10.02 µg/L	99
PFHpS	6.979	449.0 -> 80.0	25000	10.28 µg/L	100
PFHxA	5.330	313.0 -> 269.0	21165	9.55 µg/L	96
PFHxS	6.301	399.0 -> 80.0	28419	9.68 µg/L	99
PFNA	7.550	463.0 -> 419.0	24125	9.95 µg/L	98
PFNS	7.987	549.0 -> 80.0	20517	9.46 µg/L	99
PFOA	6.974	413.0 -> 369.0	29582	9.82 µg/L	98
PFOS	7.535	499.0 -> 80.0	30496	9.59 µg/L	98
PFPeA	3.965	263.0 -> 219.0	61717	9.77 µg/L	100
PFPeS	5.458	349.0 -> 80.0	21231	10.11 µg/L	100
PFTeDA	9.443	713.0 -> 669.0	16477	9.42 µg/L	100
PFTTrDA	9.118	663.0 -> 619.0	20822	9.95 µg/L	99
PFUnDA	8.405	563.0 -> 519.0	18880	9.47 µg/L	96

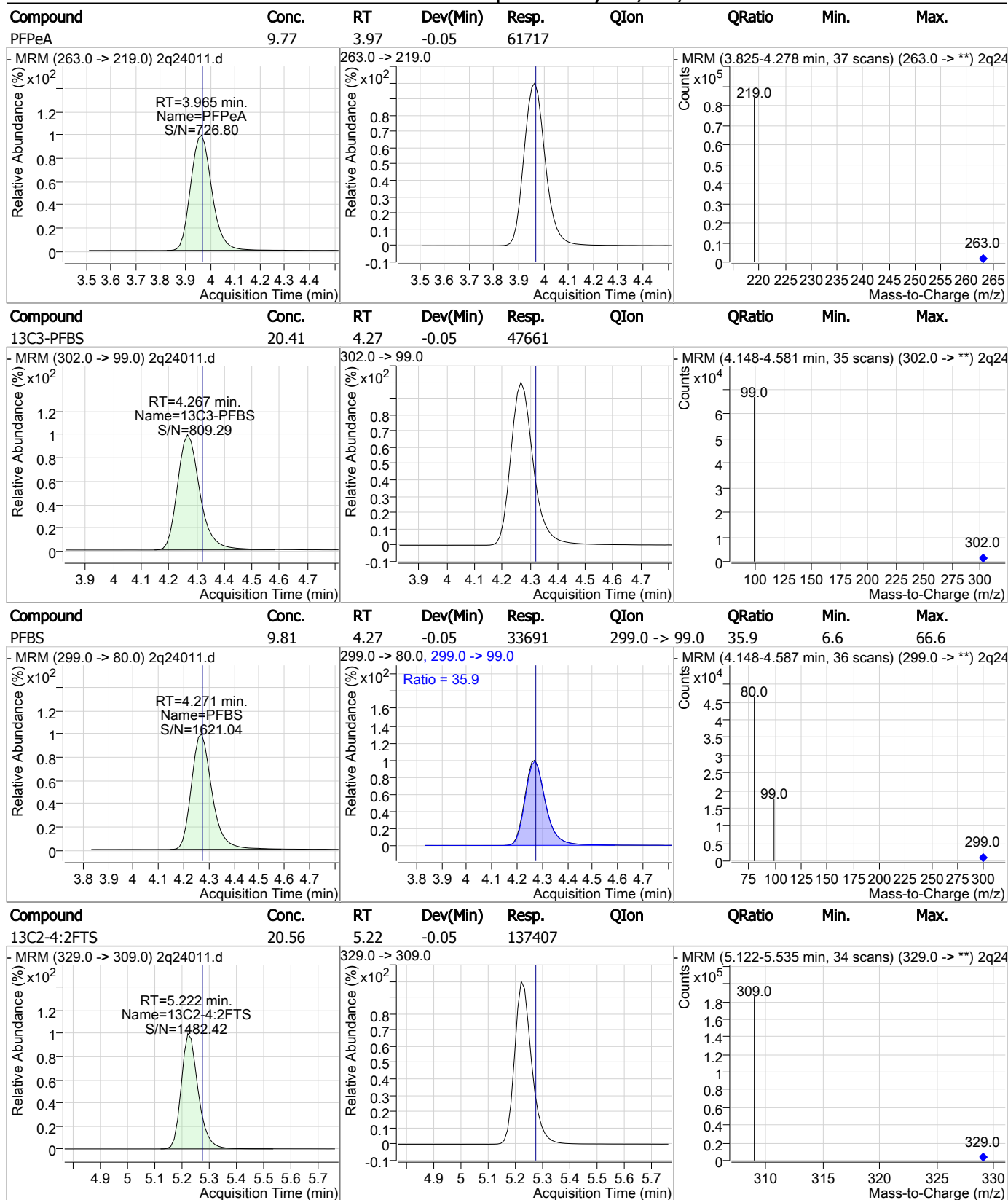
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.5
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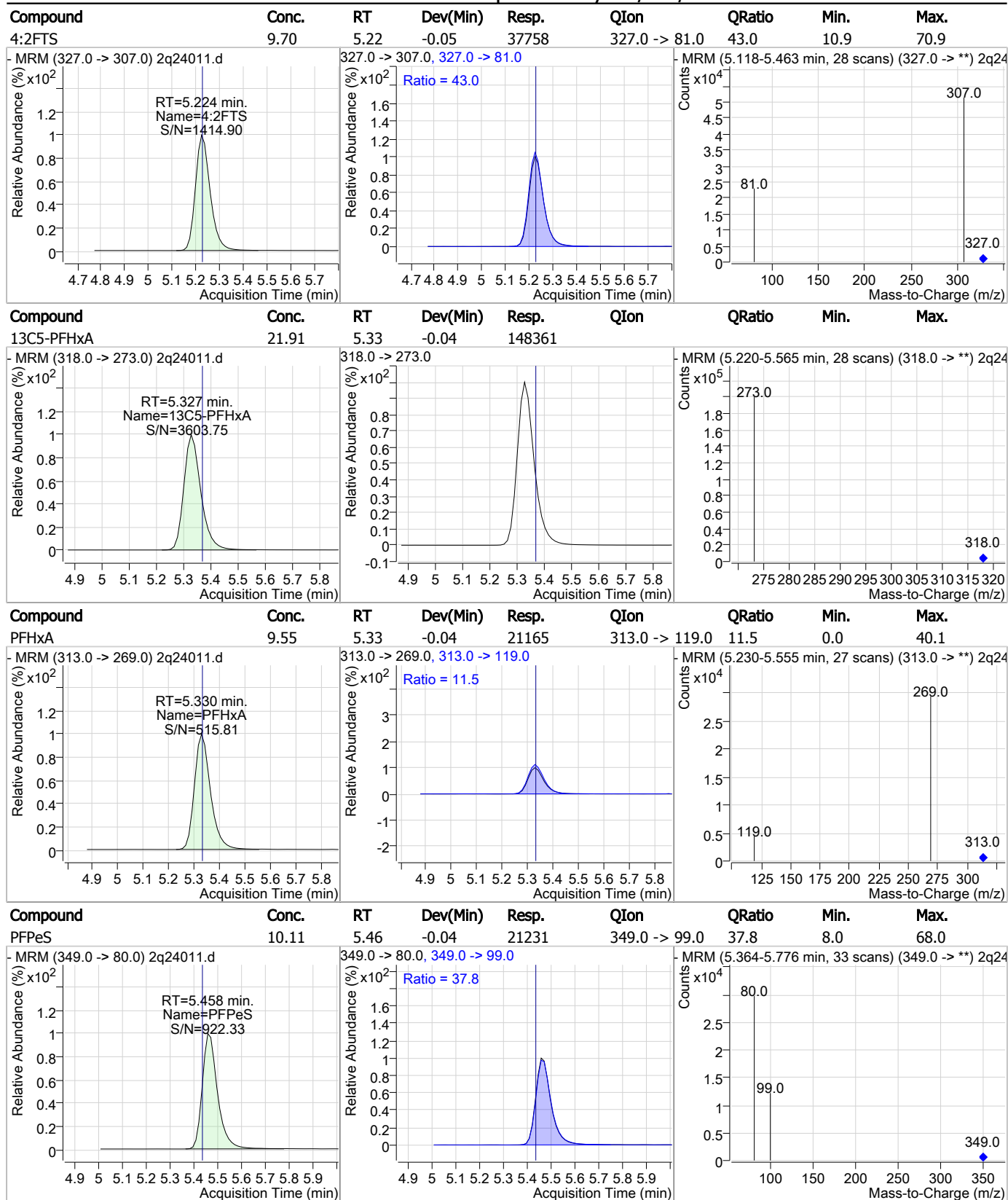
Perfluorinated Compounds by LC/MS/MS



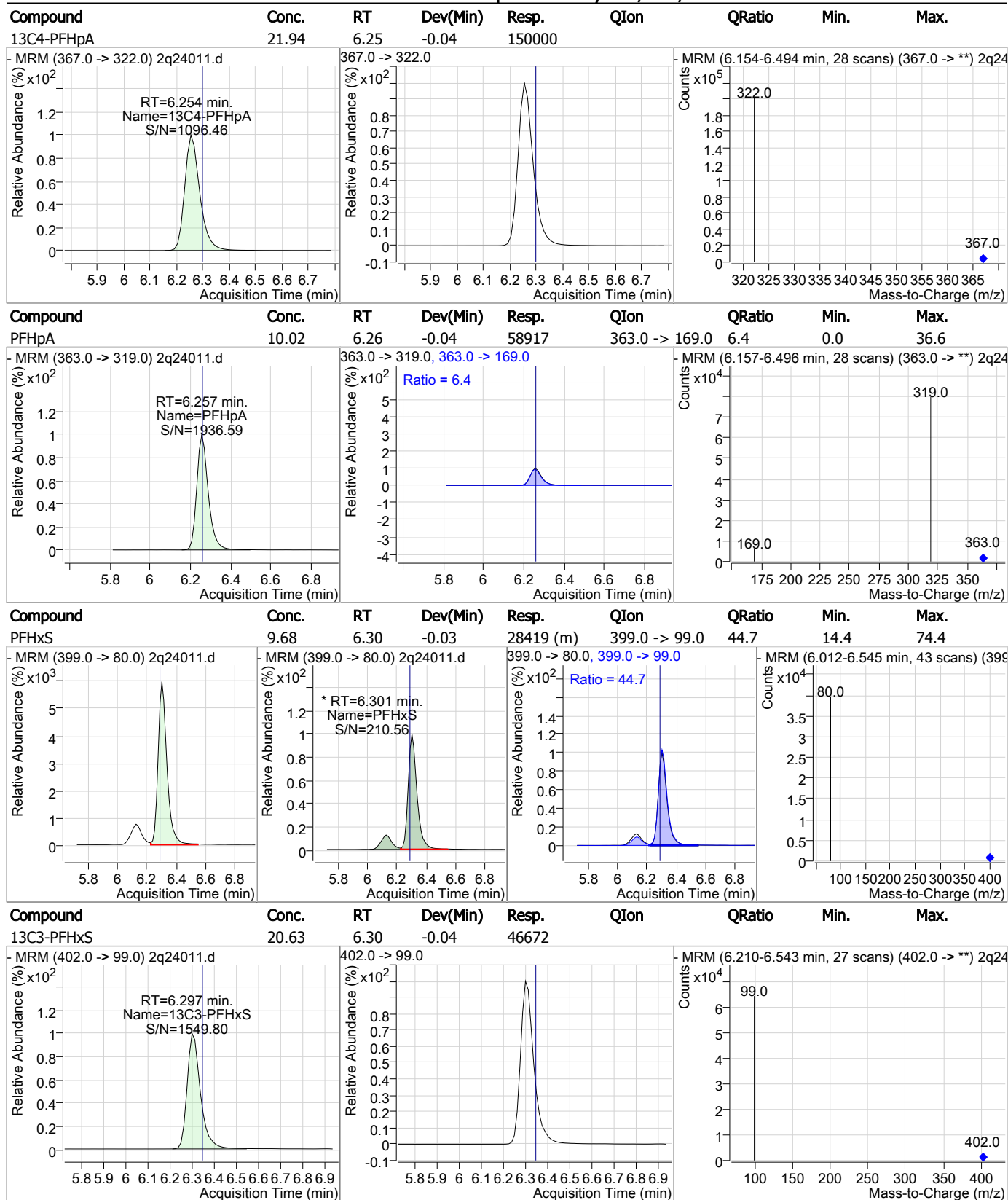
Perfluorinated Compounds by LC/MS/MS

10.5.5
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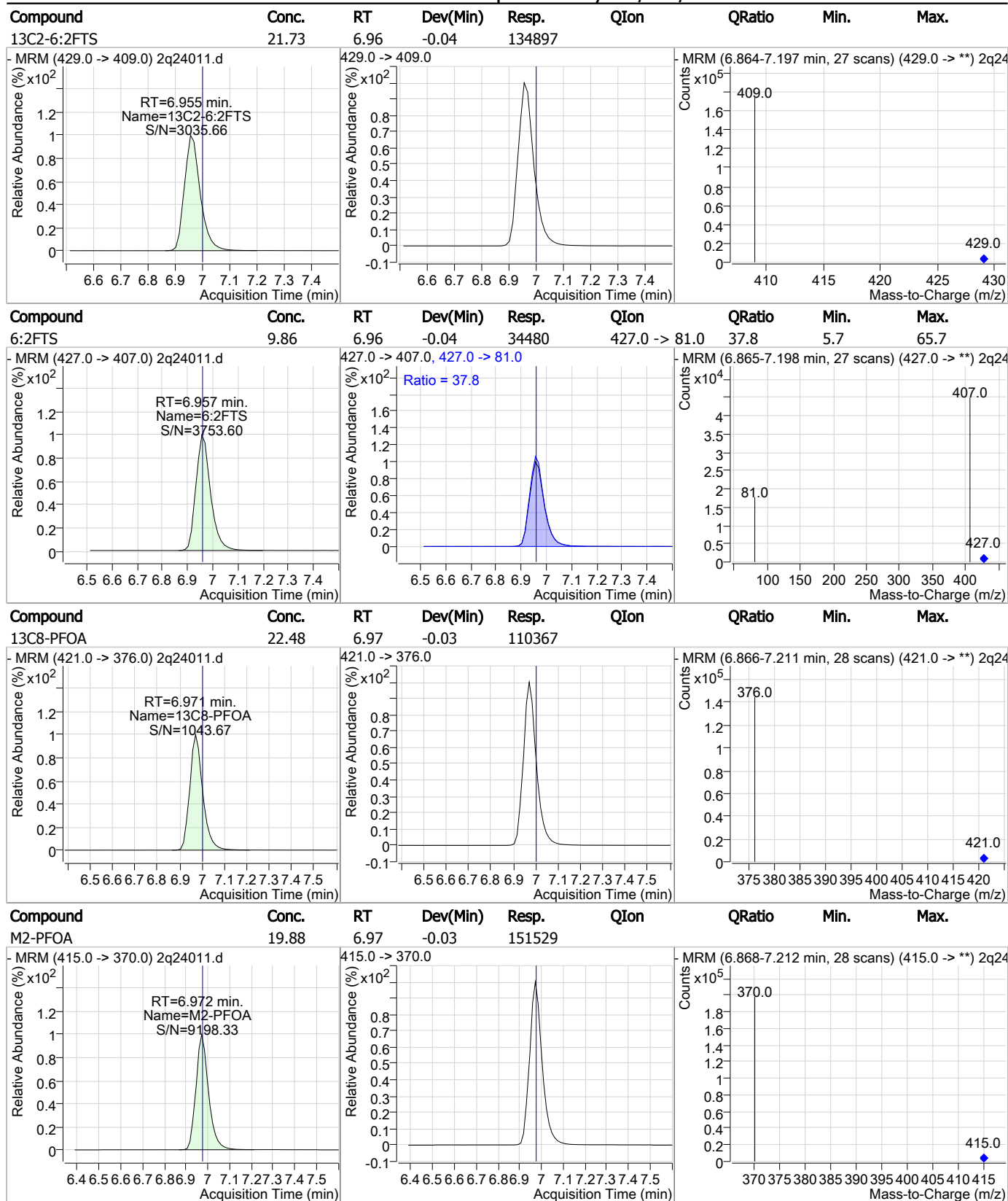
Perfluorinated Compounds by LC/MS/MS

10.5.5
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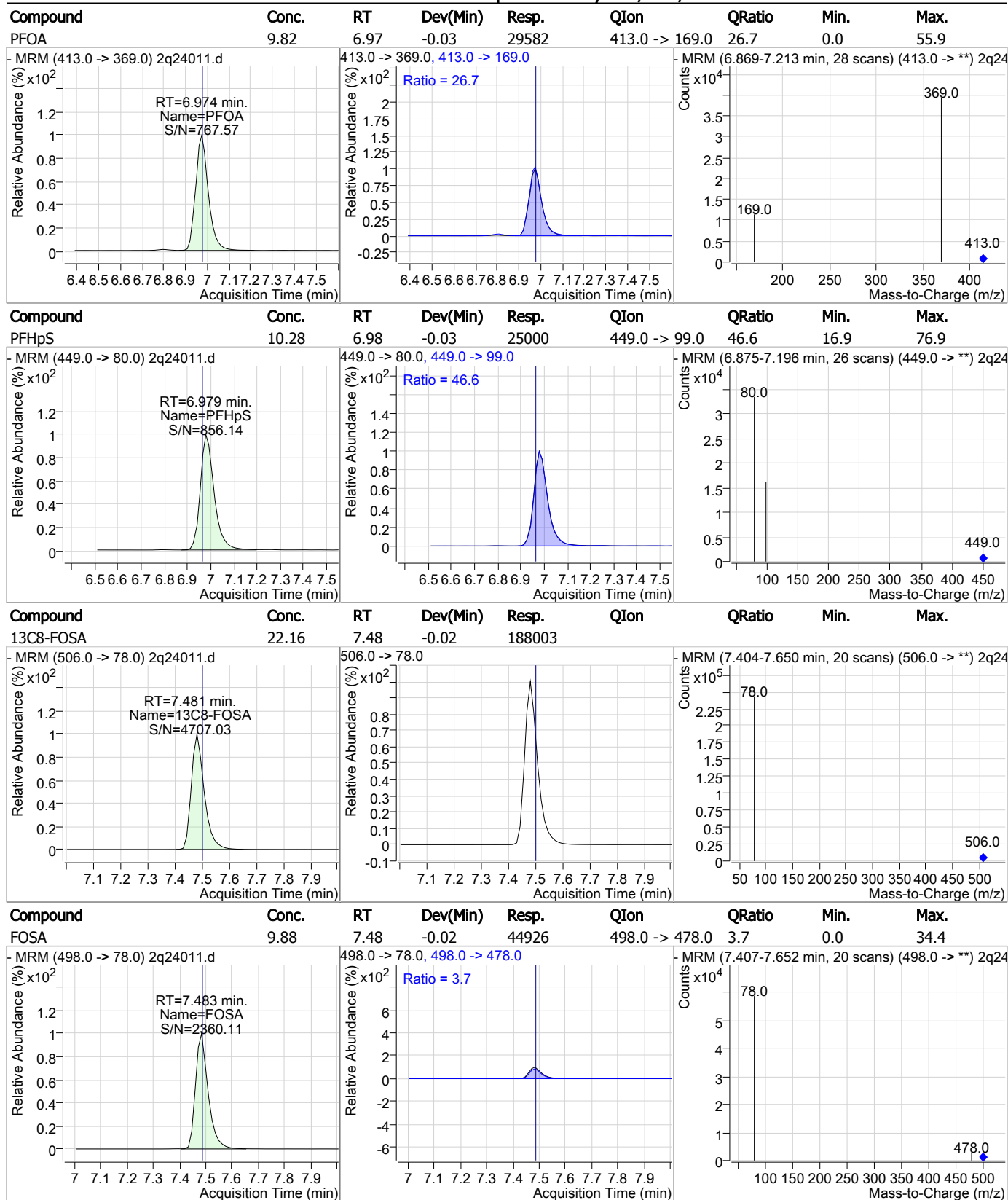
Perfluorinated Compounds by LC/MS/MS



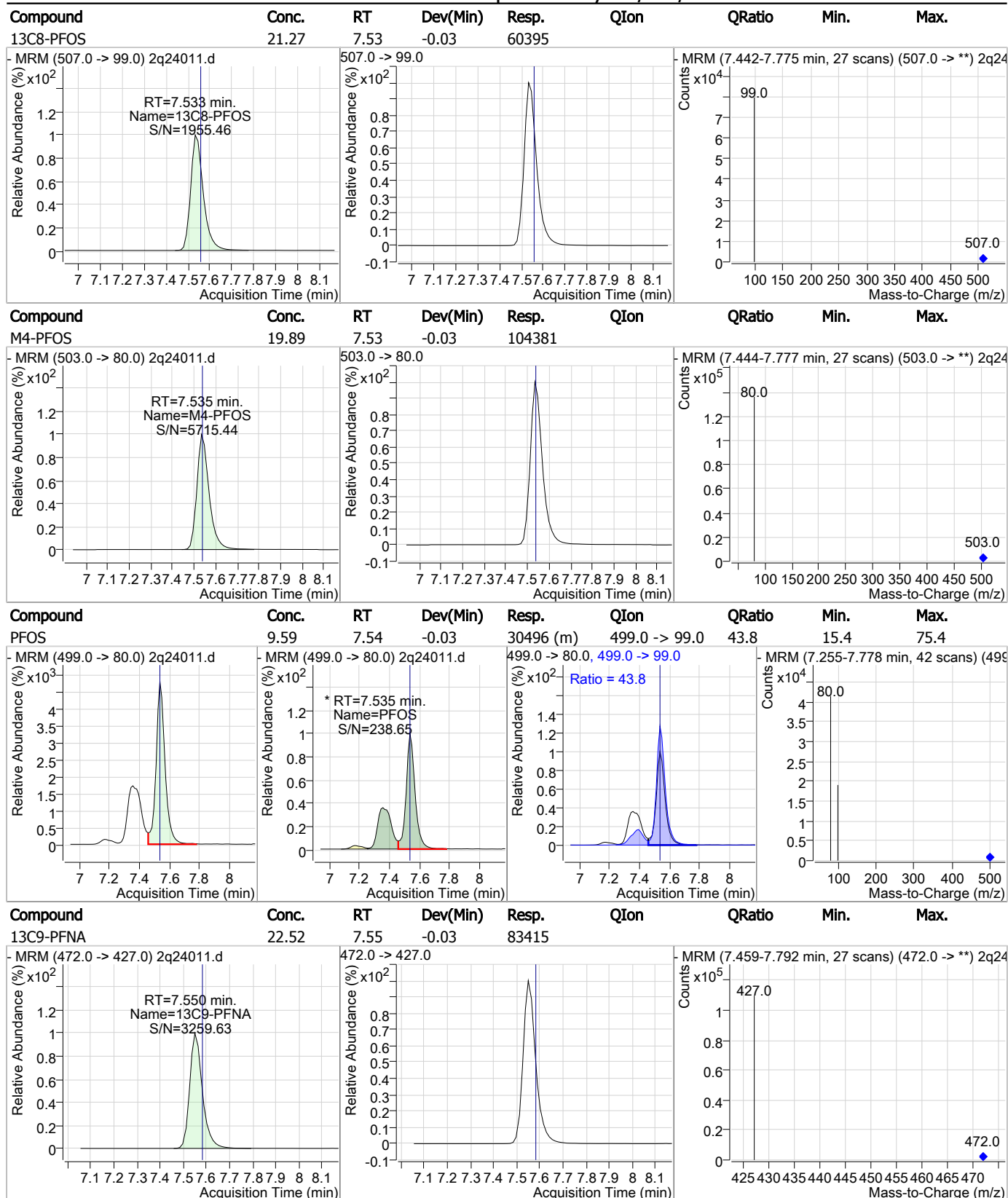
Perfluorinated Compounds by LC/MS/MS

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Perfluorinated Compounds by LC/MS/MS

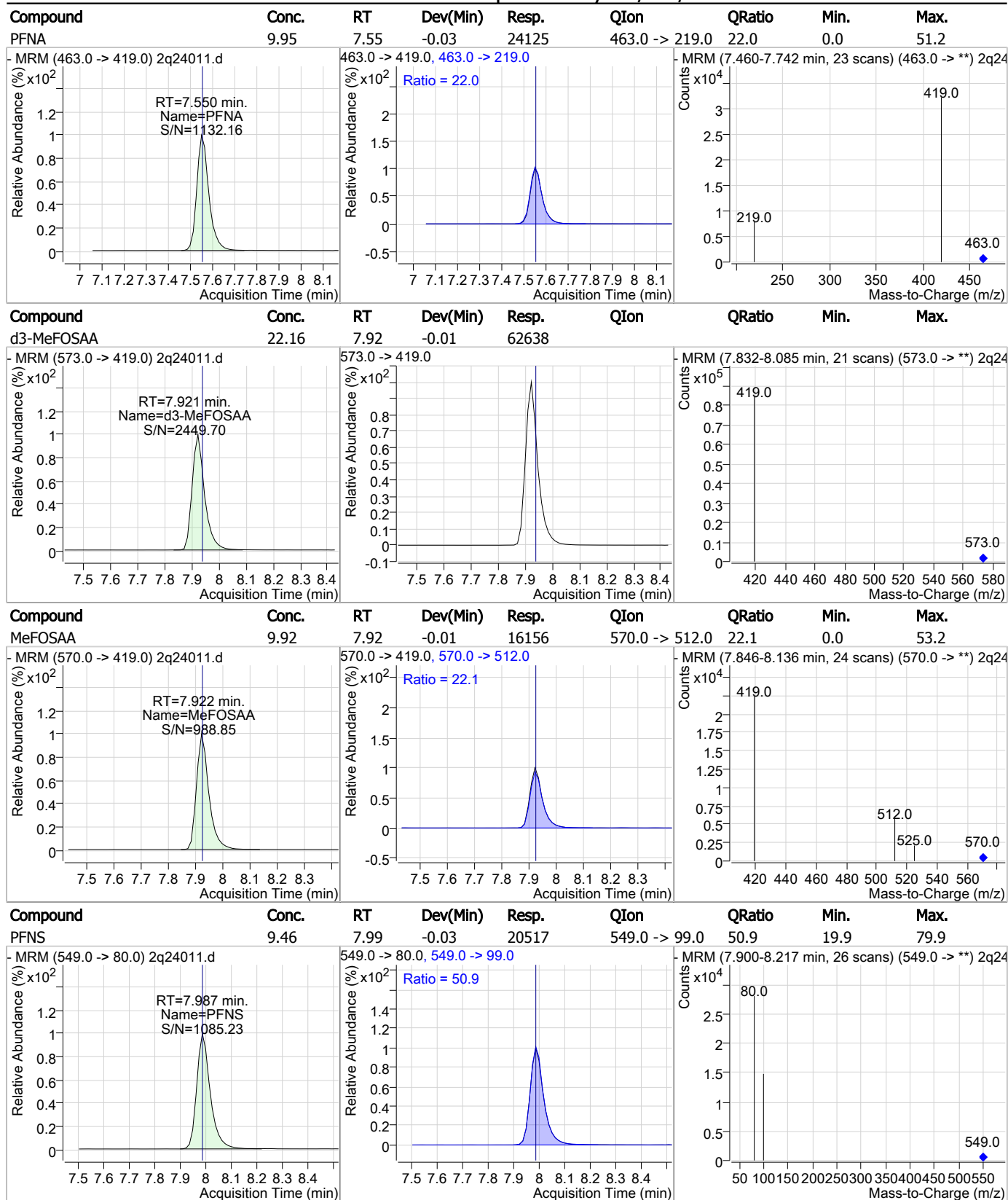
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Perfluorinated Compounds by LC/MS/MS

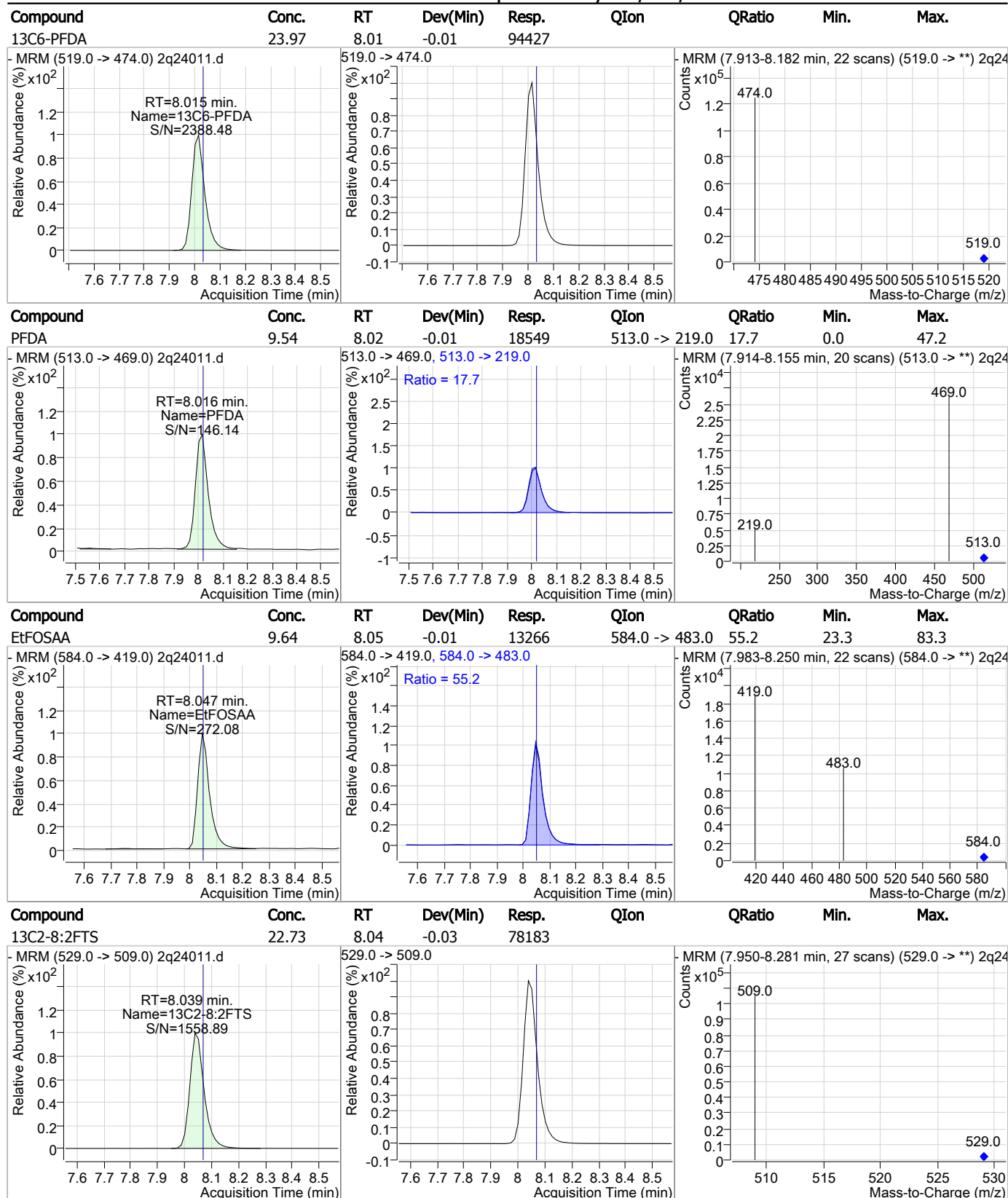


10.5.5 10

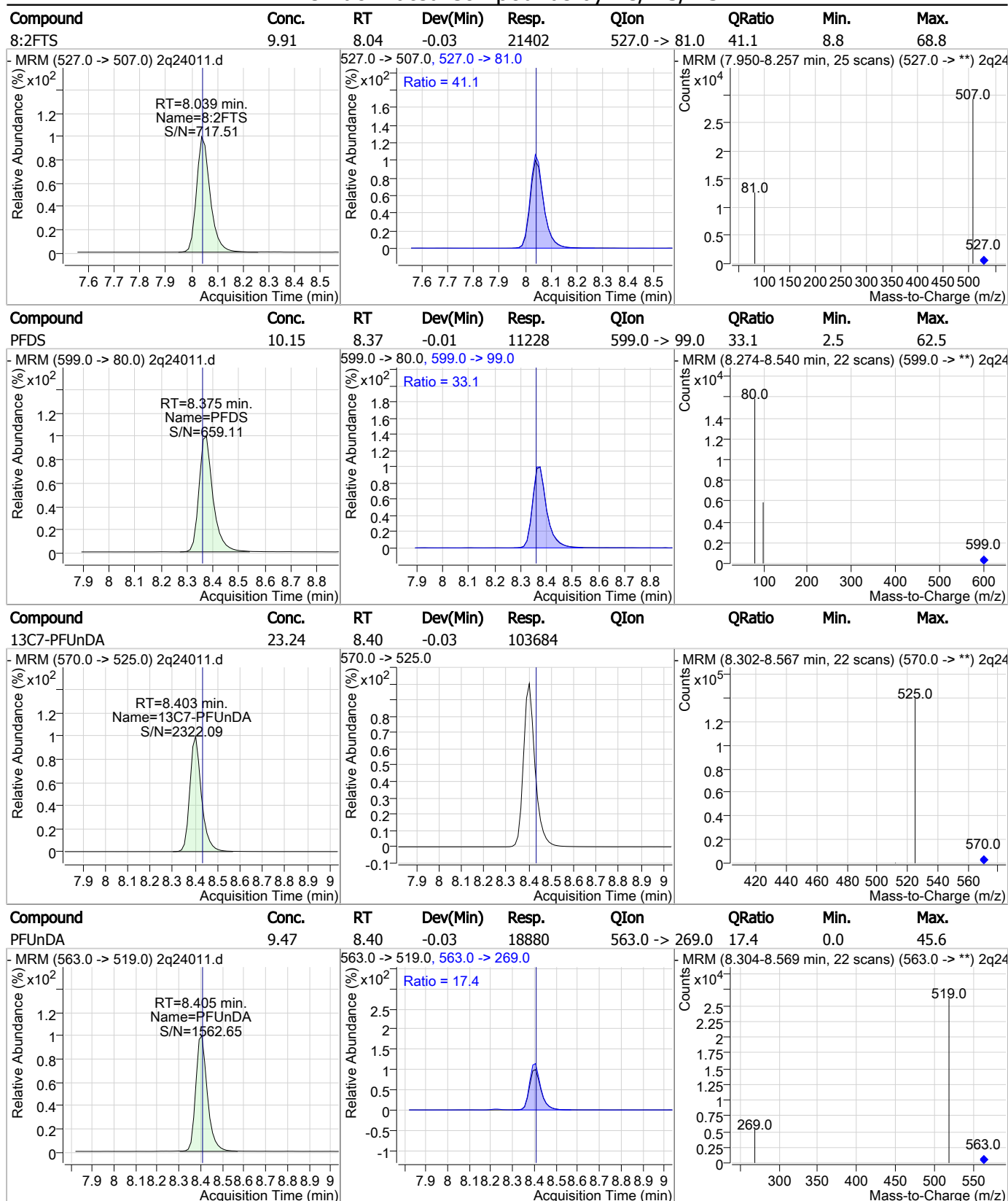
Perfluorinated Compounds by LC/MS/MS

10.5.5
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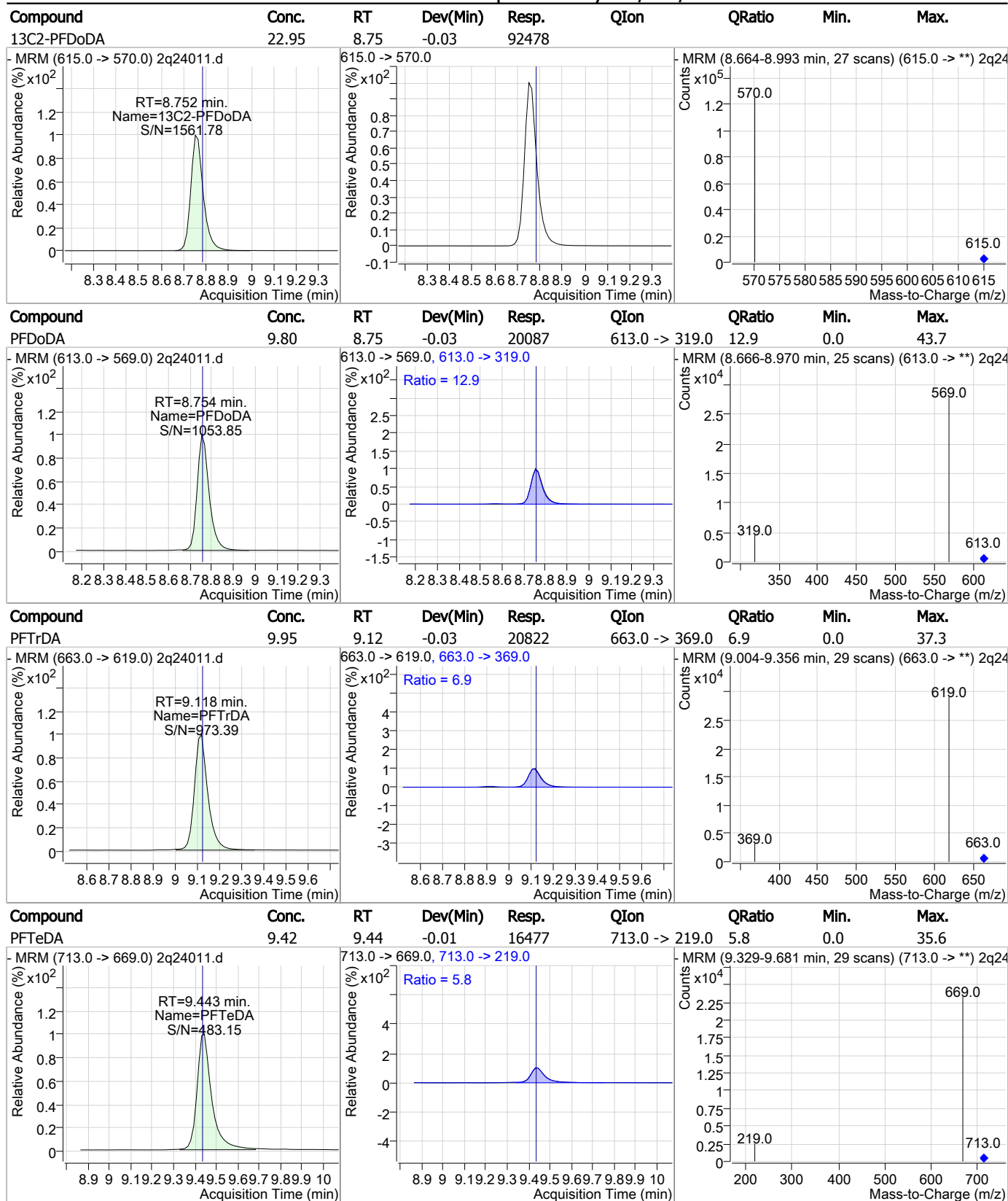
Perfluorinated Compounds by LC/MS/MS



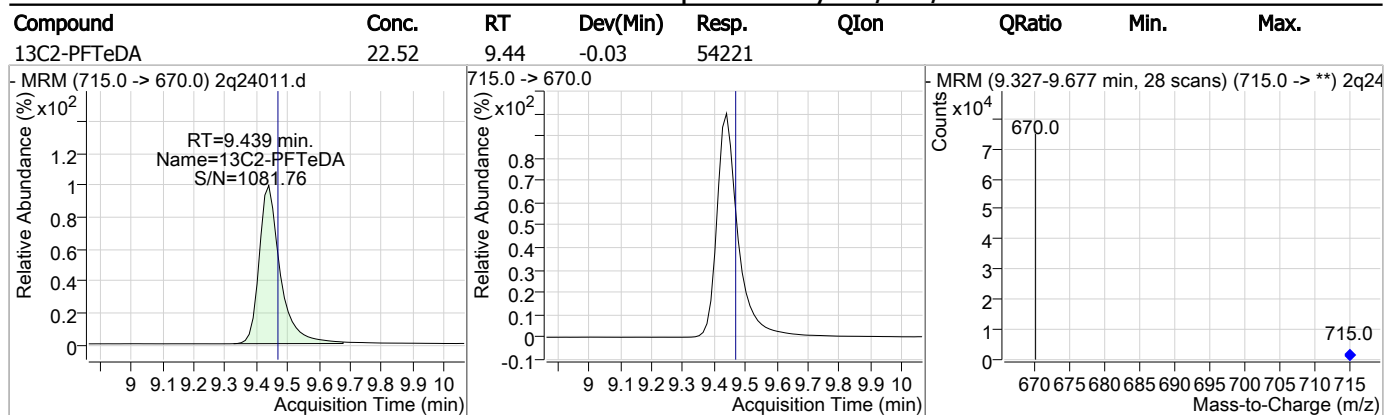
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

10.5.5
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Perfluorinated Compounds by LC/MS/MS

10.5.5
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Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24011.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 14:09

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24012.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 2:25:29 PM
 Sample Name : ICC374-20
 Vial : Vial 7
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	144014	20.00 µg/L	-0.027
13C4-PFOS	7.535	503.0 -> 80.0	102046	20.00 µg/L	-0.029
M4-PFBA	2.002	217.0 -> 172.0	319885	20.00 µg/L	-0.038
M5-PFPeA	3.961	268.0 -> 223.0	147928	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	143769	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	143310	20.00 µg/L	-0.041
M8-PFOA	6.971	421.0 -> 376.0	102586	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	80122	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	84181	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	95907	20.00 µg/L	-0.027
M2-PFDoDA	8.752	615.0 -> 570.0	87609	20.00 µg/L	-0.028
M2-PFTeDA	9.439	715.0 -> 670.0	52262	20.00 µg/L	-0.026
M8-FOSA	7.481	506.0 -> 78.0	178957	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	47341	20.00 µg/L	-0.051
M3-PFHxS	6.310	402.0 -> 99.0	46081	20.00 µg/L	-0.030
M8-PFOS	7.533	507.0 -> 99.0	57780	20.00 µg/L	-0.029
M2-4:2FTS	5.222	329.0 -> 309.0	139872	20.00 µg/L	-0.051
M2-6:2FTS	6.968	429.0 -> 409.0	129783	20.00 µg/L	-0.028
M2-8:2FTS	8.039	529.0 -> 509.0	72065	20.00 µg/L	-0.027
M3-MeFOSAA	7.921	573.0 -> 419.0	59341	20.00 µg/L	-0.014
System Monitoring Compounds					
13C2-4:2FTS	5.222	329.0 -> 309.0	139988	20.95 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-6:2FTS	6.968	429.0 -> 409.0	129758	20.90 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-8:2FTS	8.039	529.0 -> 509.0	72108	20.97 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C2-PFDoDA	8.752	615.0 -> 570.0	87595	21.74 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-PFTeDA	9.439	715.0 -> 670.0	52182	21.68 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C3-PFBS	4.267	302.0 -> 99.0	47268	20.24 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C3-PFHxS	6.310	402.0 -> 99.0	46014	20.33 µg/L	-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C4-PFBA	2.002	217.0 -> 172.0	317933	20.22 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFHpA	6.254	367.0 -> 322.0	143199	20.95 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C5-PFHxA	5.327	318.0 -> 273.0	143740	21.23 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C5-PFPeA	3.961	268.0 -> 223.0	147577	20.95 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C6-PFDA	8.015	519.0 -> 474.0	84190	21.37 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.8%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	95919	21.50 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-FOSA	7.481	506.0 -> 78.0	178901	21.09 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOA	6.971	421.0 -> 376.0	102681	20.92 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-PFOS	7.533	507.0 -> 99.0	57969	20.42 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C9-PFNA	7.550	472.0 -> 427.0	80118	21.63 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
d3-MeFOSAA	7.921	573.0 -> 419.0	59352	21.00 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
M2-PFOA	6.972	415.0 -> 370.0	143188	19.90 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
M4-PFOS	7.535	503.0 -> 80.0	101182	19.88 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	

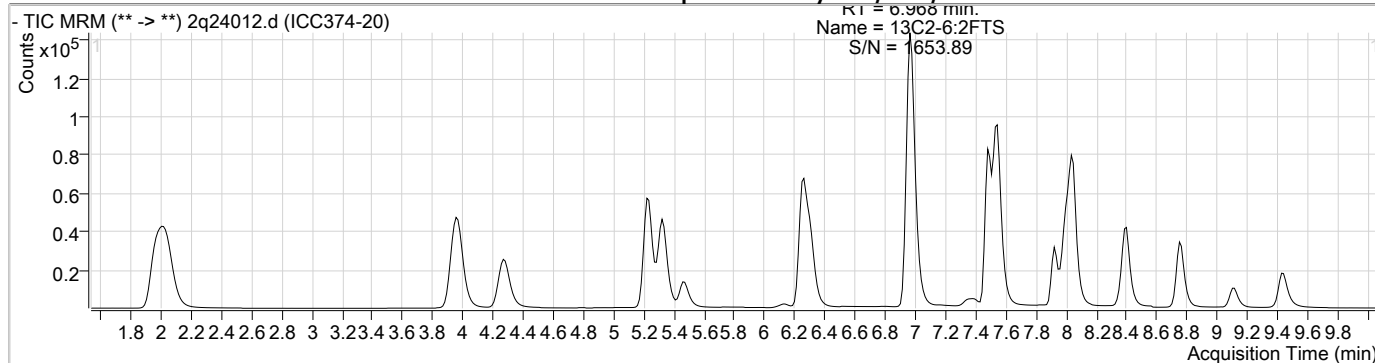
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	75419	19.47 µg/L	96
6:2FTS	6.969	427.0 -> 407.0	63806	19.41 µg/L	94
8:2FTS	8.039	527.0 -> 507.0	38211	19.70 µg/L	95
EtFOSAA	8.047	584.0 -> 419.0	26055	20.19 µg/L	96
FOSA	7.483	498.0 -> 78.0	84695	19.57 µg/L	98
MeFOSAA	7.922	570.0 -> 419.0	30507	19.78 µg/L	96
PFBA	2.011	213.0 -> 169.0	58977	19.56 µg/L	100
PFBS	4.271	299.0 -> 80.0	67460	19.80 µg/L	99
PFDA	8.016	513.0 -> 469.0	32634	18.86 µg/L	98
PFDoDA	8.754	613.0 -> 569.0	38243	19.70 µg/L	97
PFDS	8.362	599.0 -> 80.0	22096	20.89 µg/L	98
PFHpA	6.257	363.0 -> 319.0	111677	19.88 µg/L	100
PFHpS	6.992	449.0 -> 80.0	49180	20.49 µg/L	98
PFHxA	5.330	313.0 -> 269.0	41641	19.40 µg/L	98
PFHxS	6.301	399.0 -> 80.0	56867	19.62 µg/L	100
PFNA	7.550	463.0 -> 419.0	44257	19.01 µg/L	100
PFNS	7.987	549.0 -> 80.0	39714	19.42 µg/L	98
PFOA	6.974	413.0 -> 369.0	56853	20.27 µg/L	97
PFOS	7.535	499.0 -> 80.0	59300	19.49 µg/L	97
PFPeA	3.965	263.0 -> 219.0	123498	19.76 µg/L	100
PFPeS	5.458	349.0 -> 80.0	42312	20.32 µg/L	98
PFTeDA	9.431	713.0 -> 669.0	32342	19.34 µg/L	100
PFTTrDA	9.118	663.0 -> 619.0	39990	19.87 µg/L	100
PFUnDA	8.405	563.0 -> 519.0	33461	18.15 µg/L	97

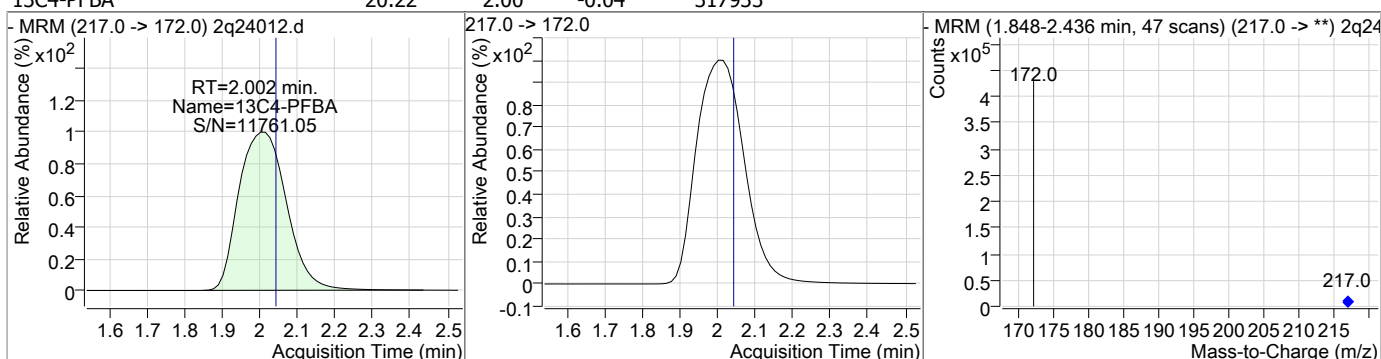
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.6
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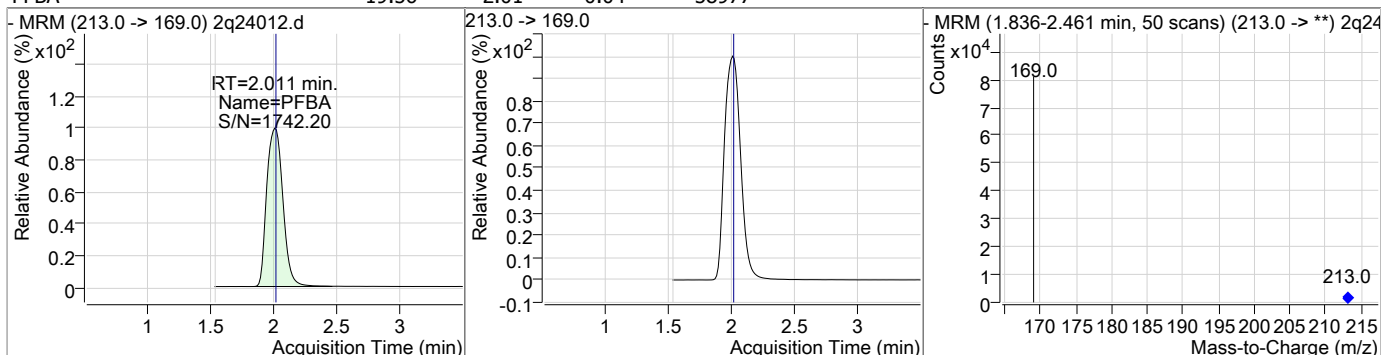
Perfluorinated Compounds by LC/MS/MS



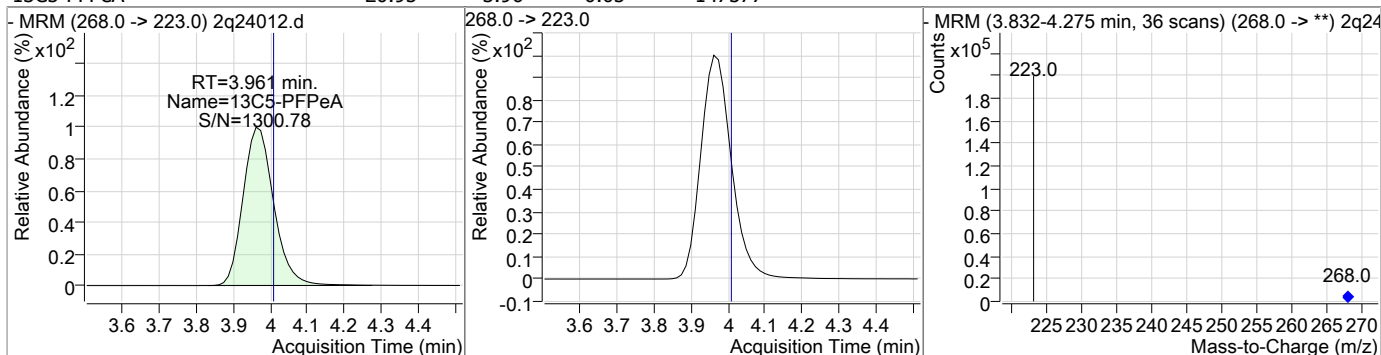
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



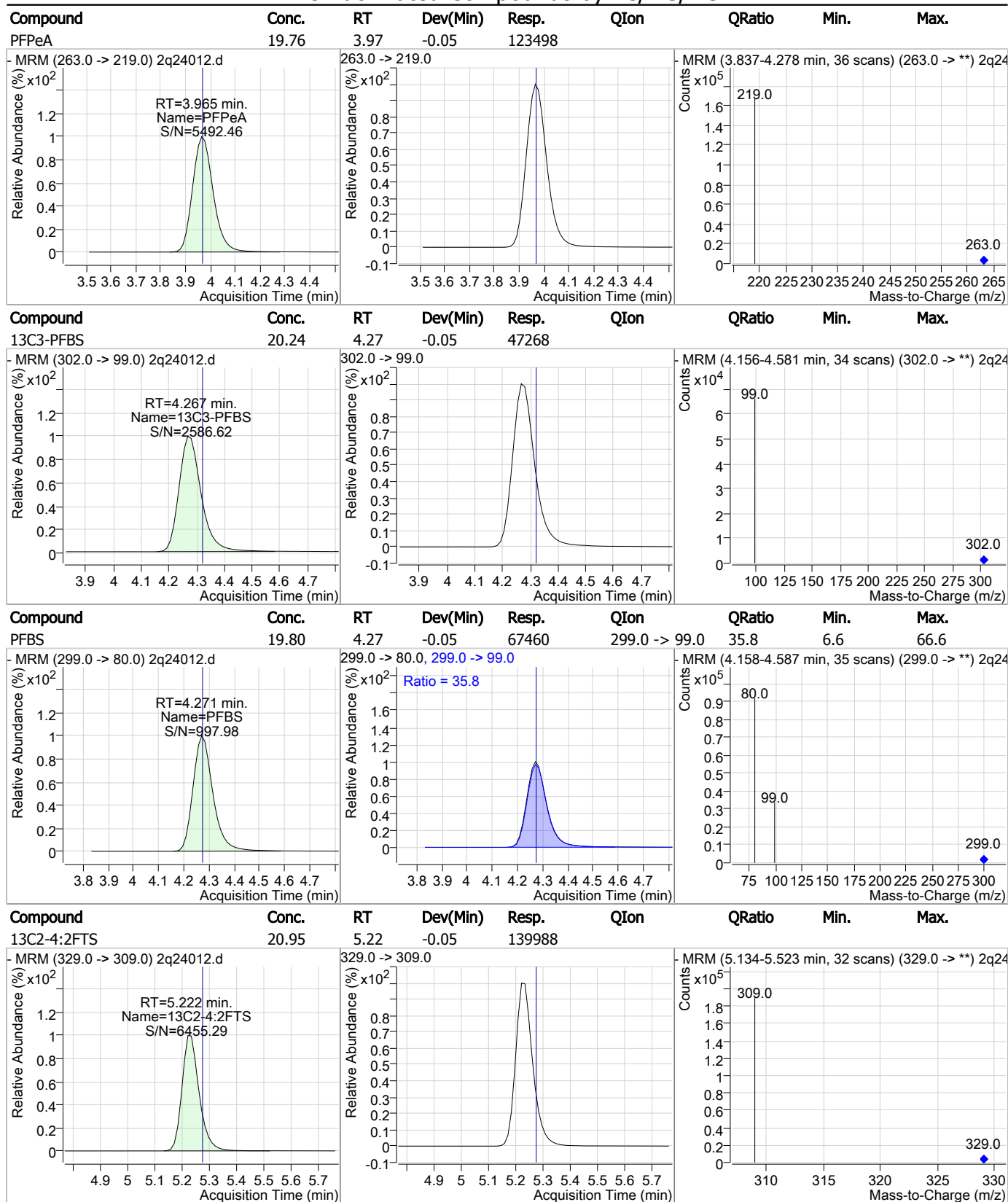
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



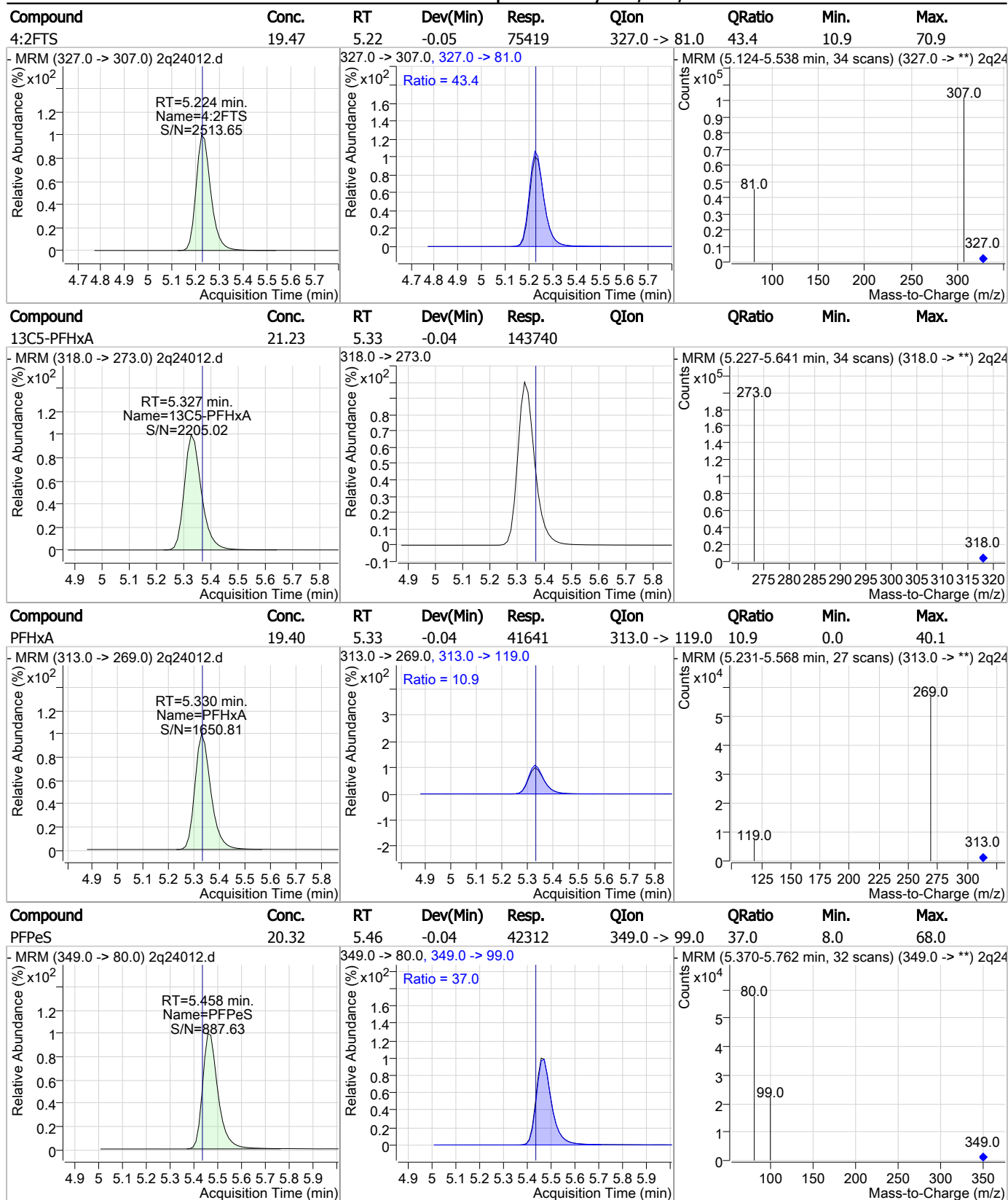
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.



Perfluorinated Compounds by LC/MS/MS

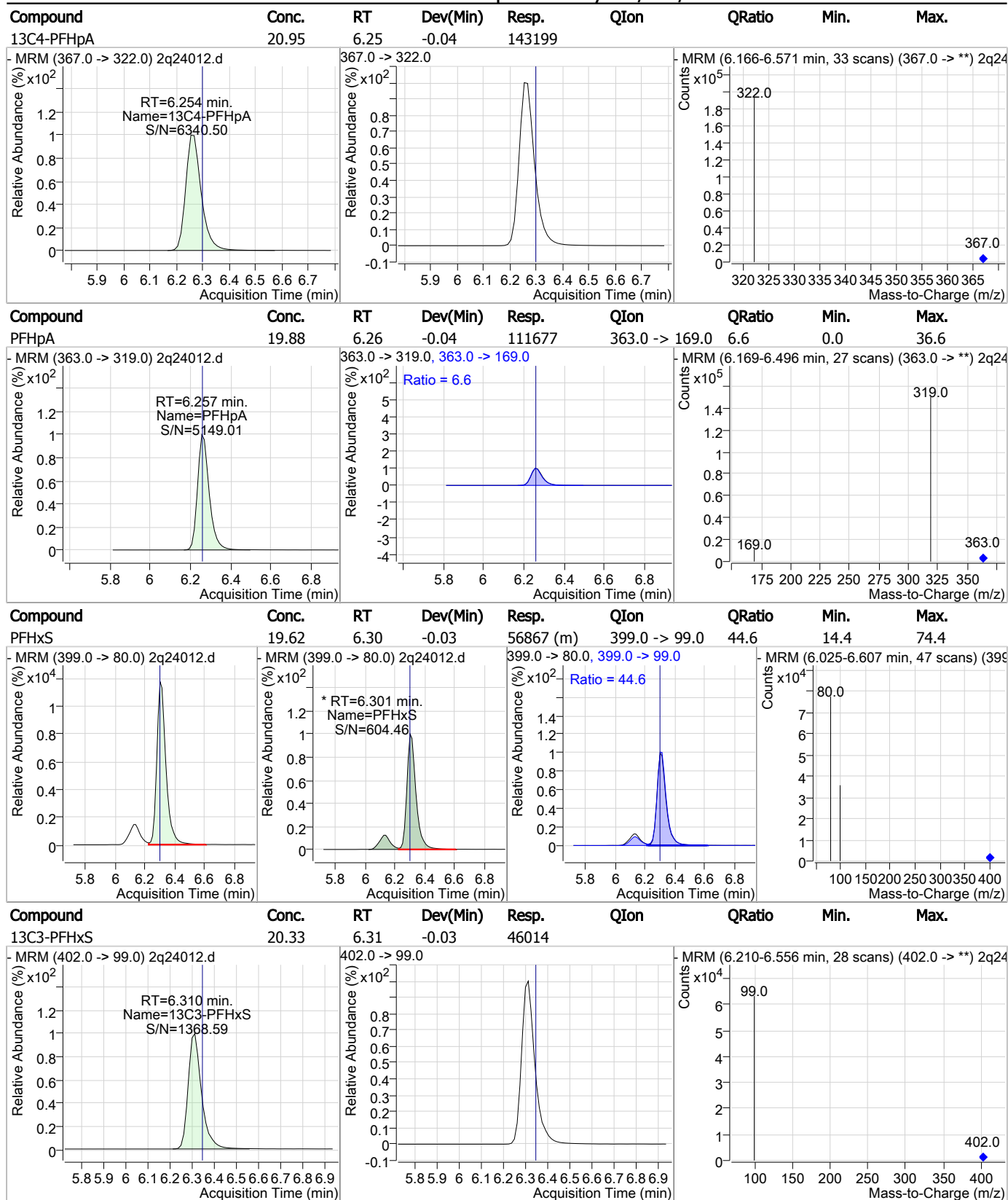


Perfluorinated Compounds by LC/MS/MS

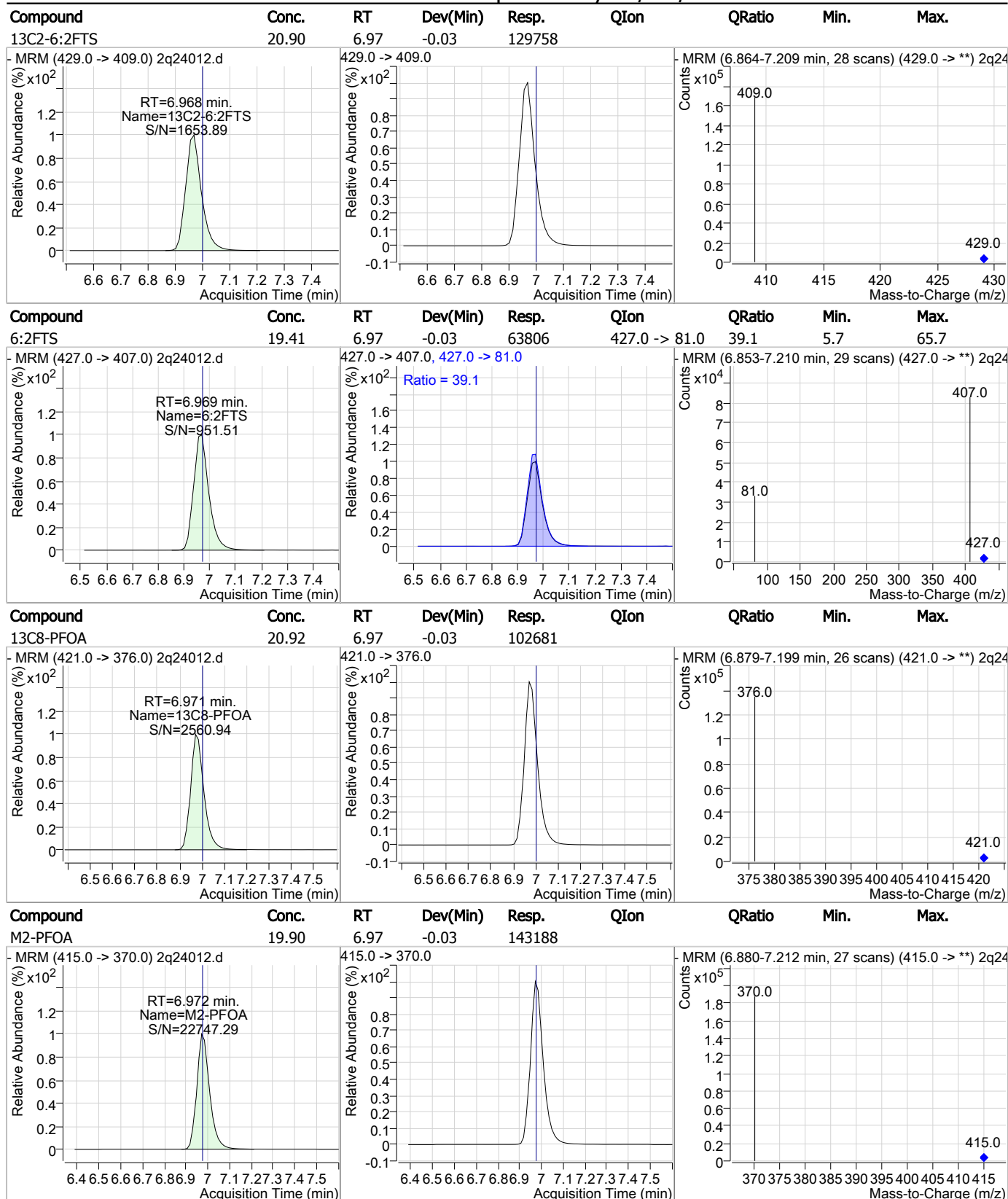


10.5.6 10

Perfluorinated Compounds by LC/MS/MS

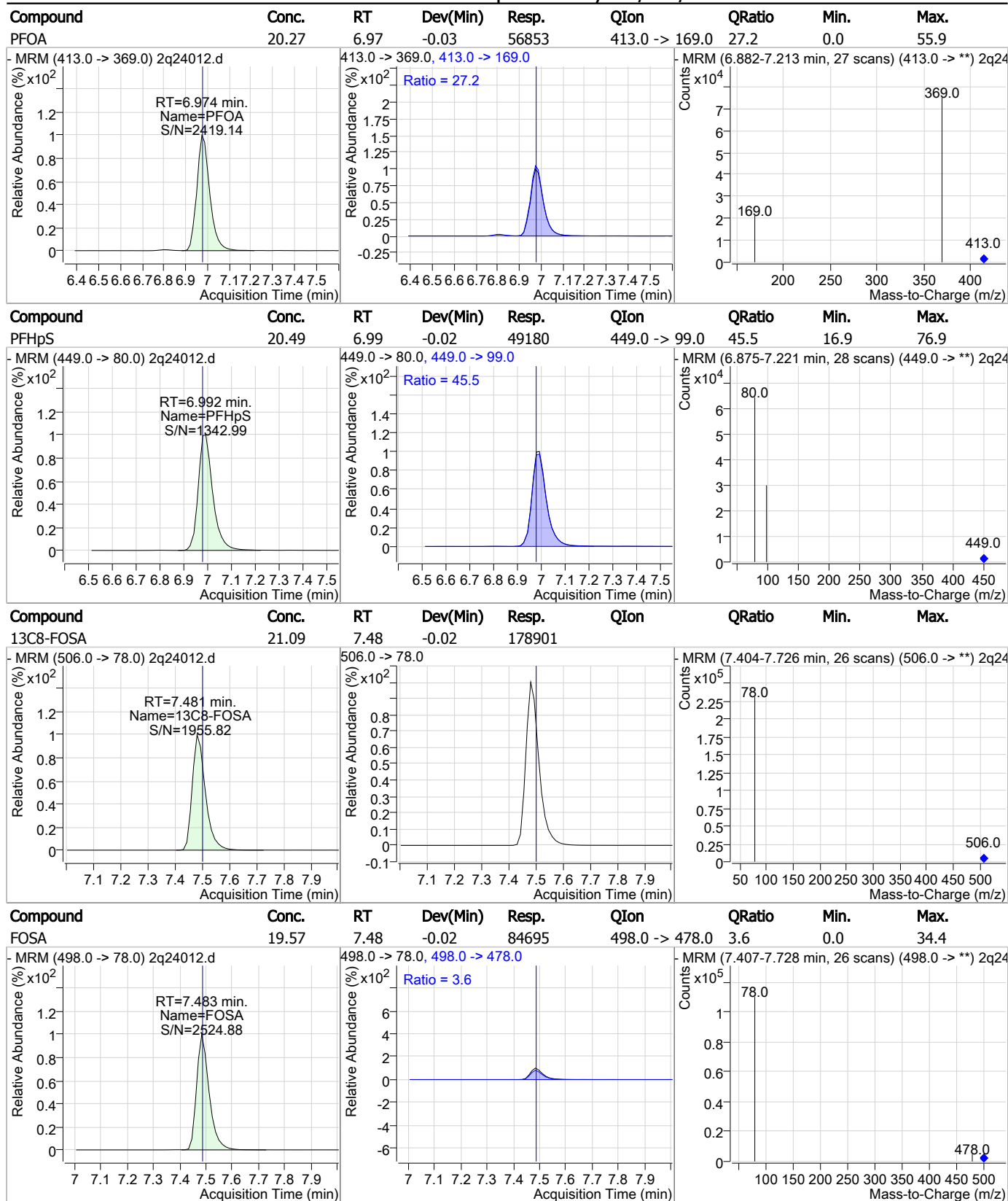


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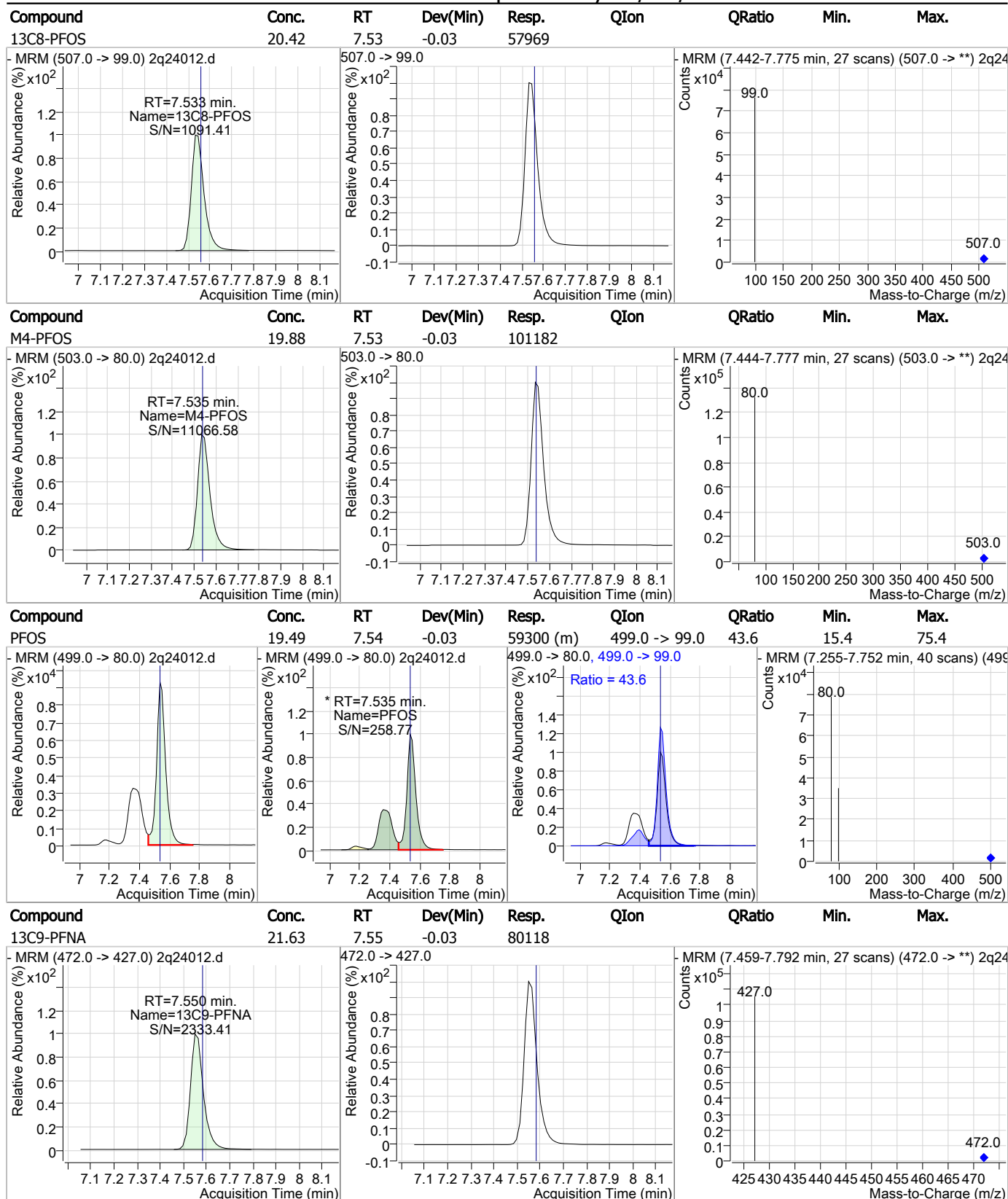


10.5.6 10

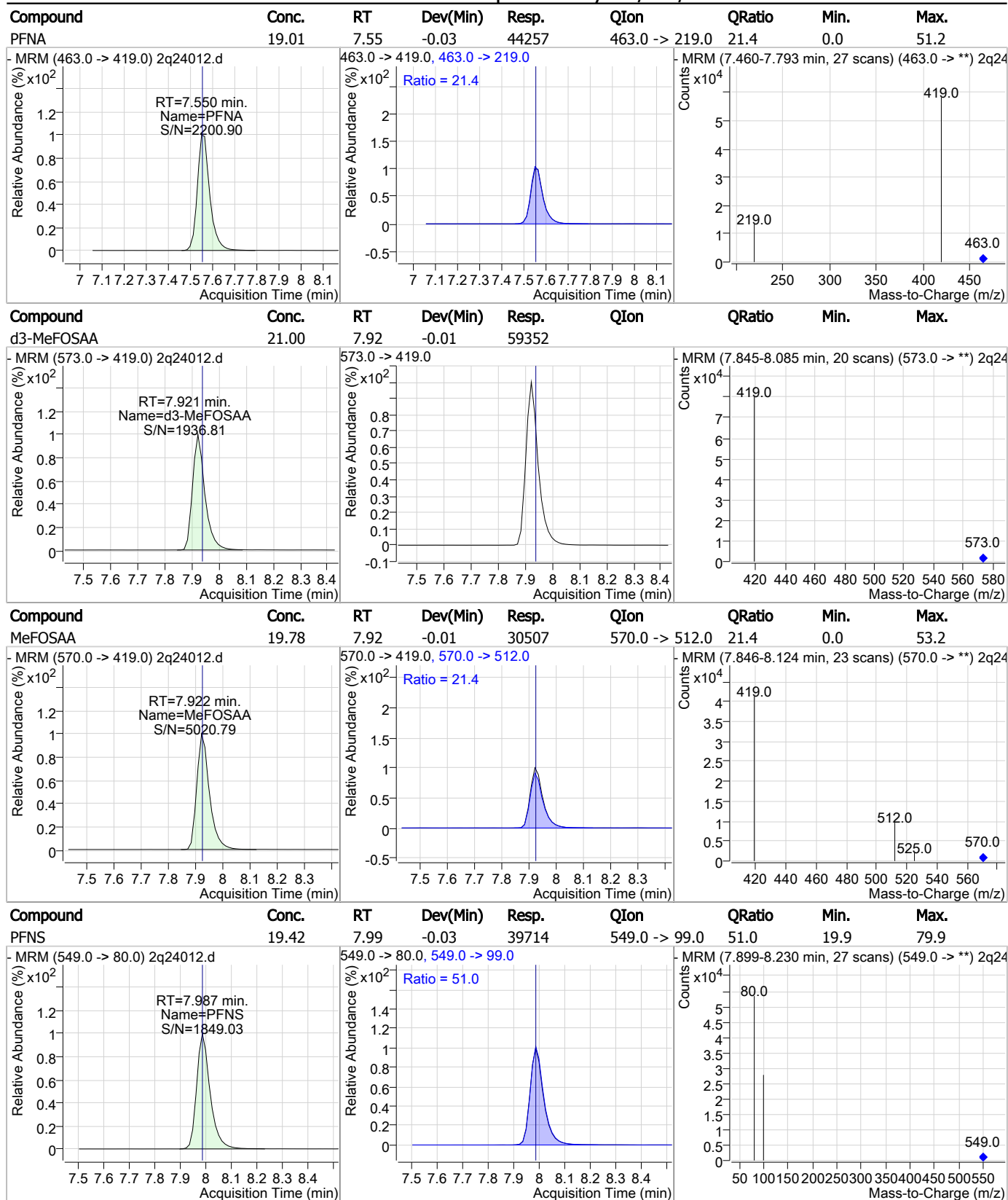
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

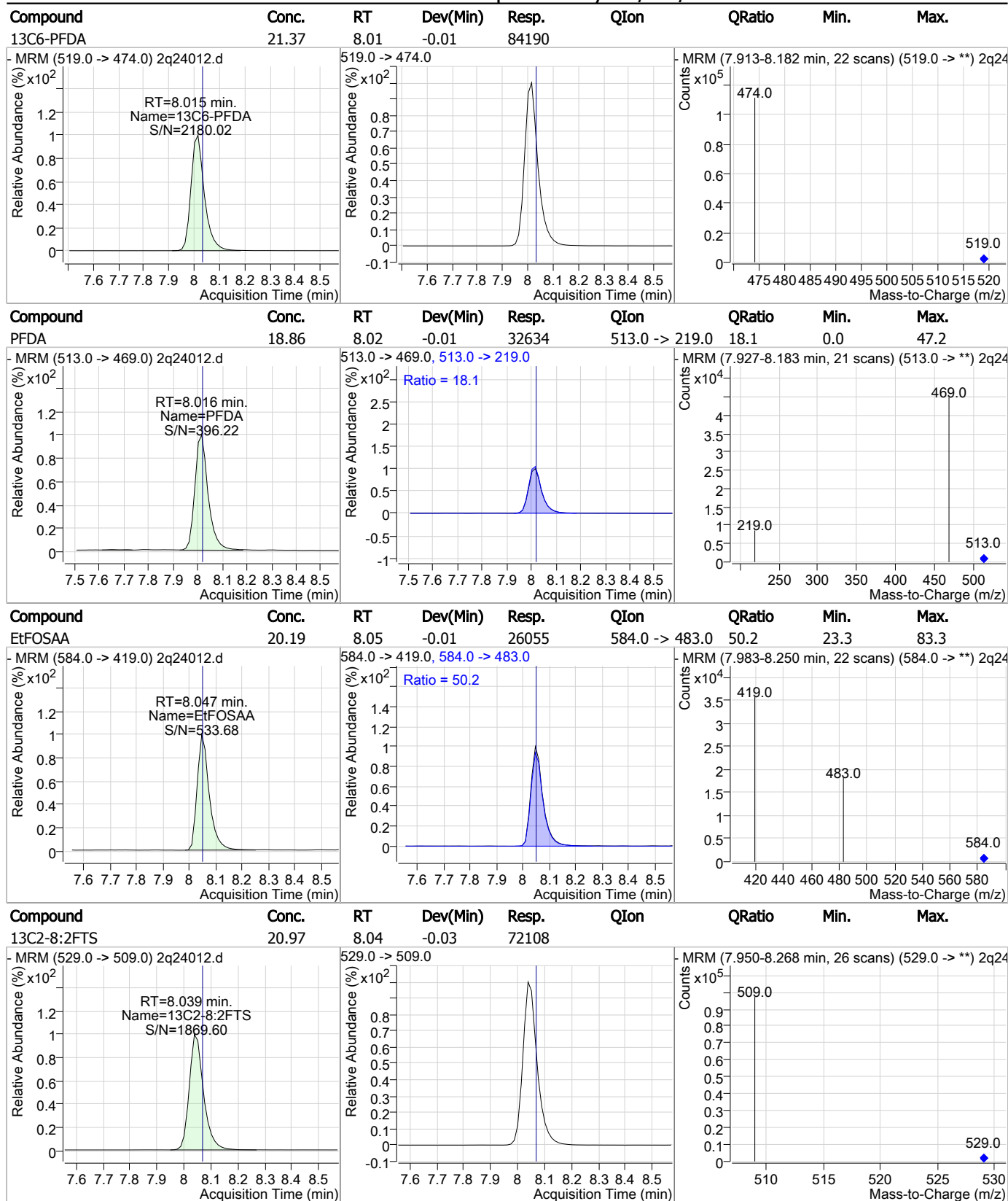


Perfluorinated Compounds by LC/MS/MS

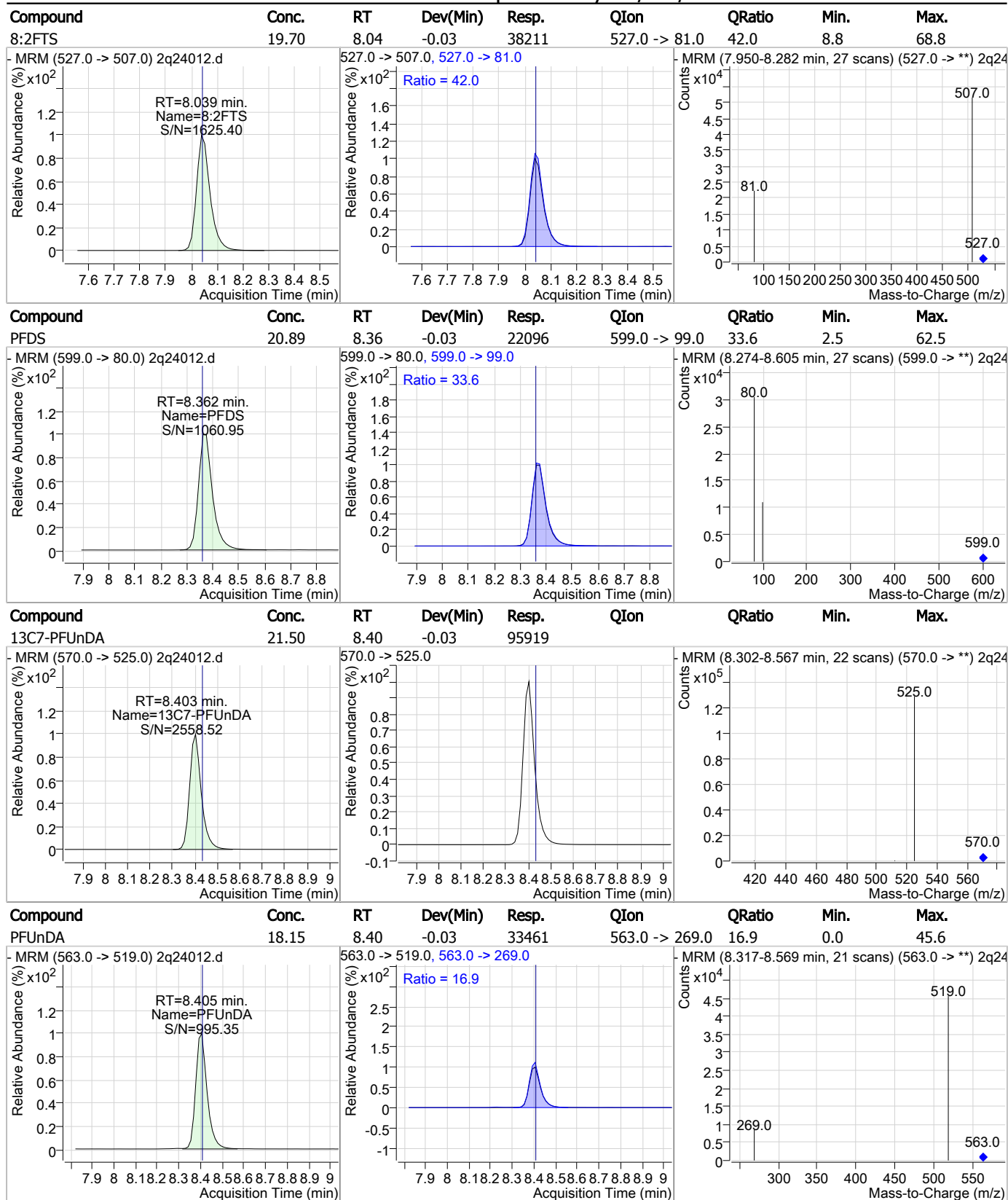


10.5.6 10

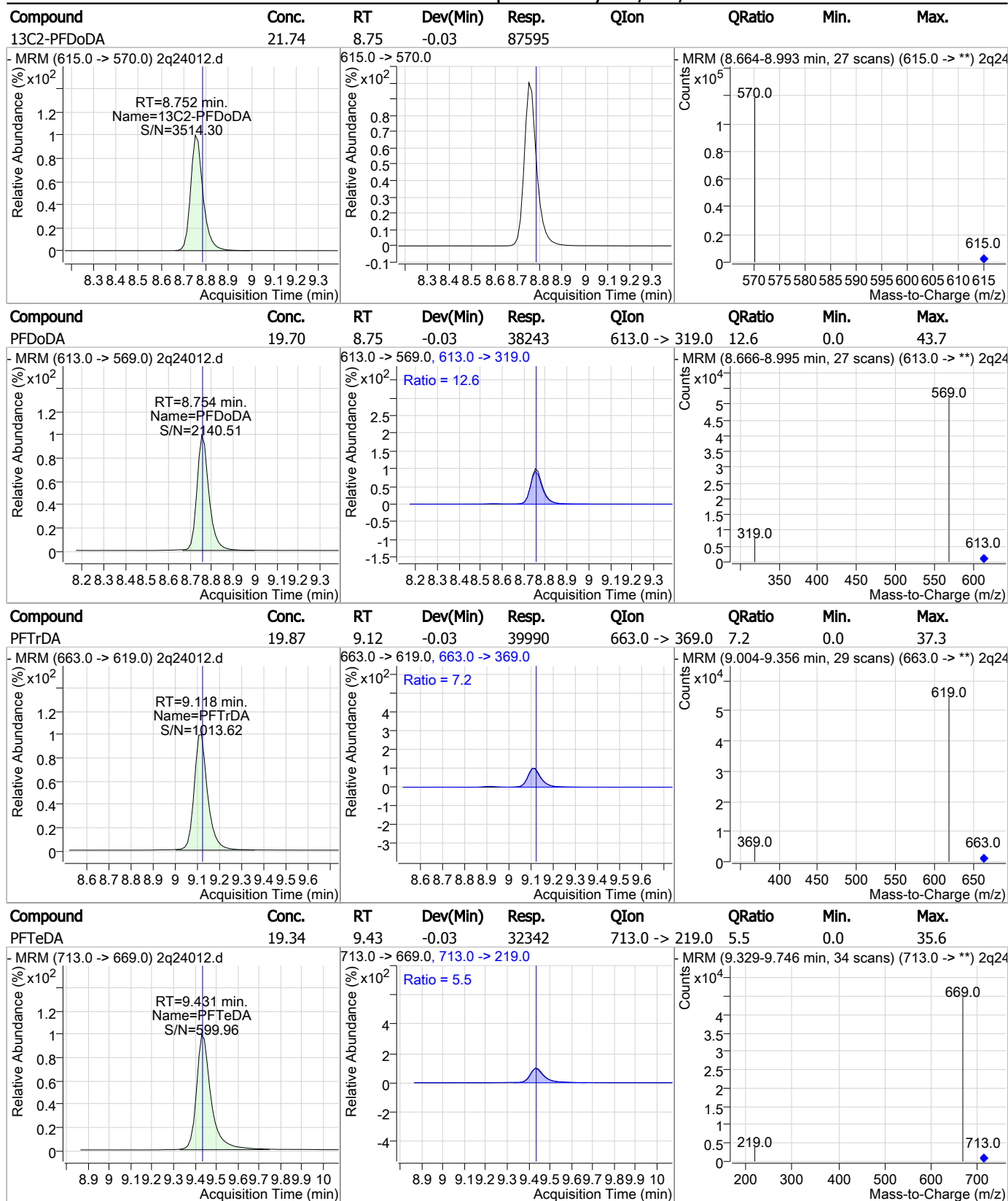
Perfluorinated Compounds by LC/MS/MS



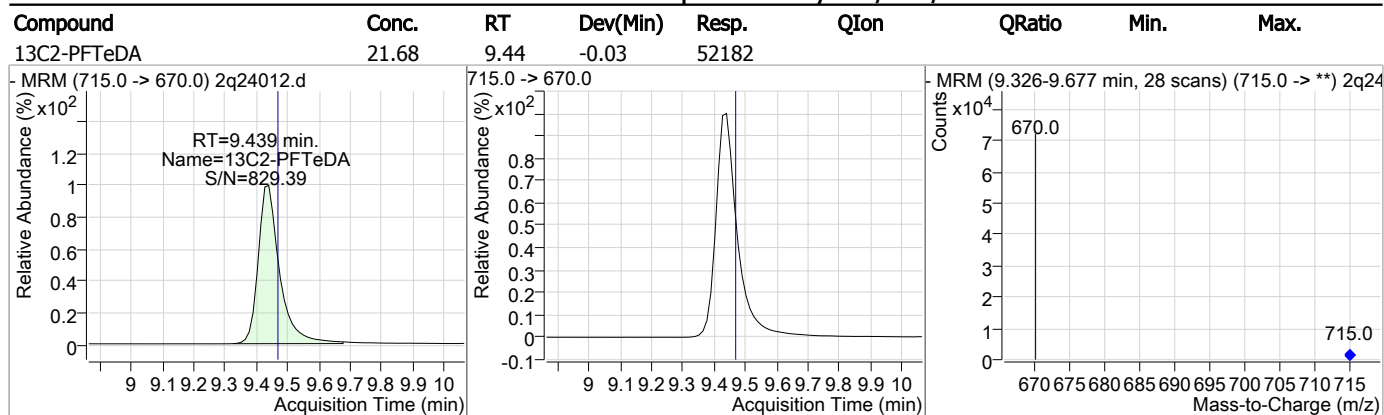
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q374-ICC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24012.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 14:25

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.6.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24013.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 2:41:15 PM
 Sample Name : IC374-50
 Vial : Vial 8
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.960	415.0 -> 370.0	129816	20.00 µg/L	-0.039
13C4-PFOS	7.535	503.0 -> 80.0	97389	20.00 µg/L	-0.029
M4-PFBA	2.002	217.0 -> 172.0	316056	20.00 µg/L	-0.038
M5-PFPeA	3.961	268.0 -> 223.0	145226	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	133275	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	135794	20.00 µg/L	-0.041
M8-PFOA	6.958	421.0 -> 376.0	95916	20.00 µg/L	-0.040
M9-PFNA	7.550	472.0 -> 427.0	74594	20.00 µg/L	-0.029
M6-PFDA	8.002	519.0 -> 474.0	70321	20.00 µg/L	-0.028
M7-PFUnDA	8.391	570.0 -> 525.0	87598	20.00 µg/L	-0.039
M2-PFDoDA	8.752	615.0 -> 570.0	80303	20.00 µg/L	-0.028
M2-PFTeDA	9.427	715.0 -> 670.0	49029	20.00 µg/L	-0.038
M8-FOSA	7.481	506.0 -> 78.0	157980	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	46335	20.00 µg/L	-0.051
M3-PFHxS	6.297	402.0 -> 99.0	44551	20.00 µg/L	-0.043
M8-PFOS	7.533	507.0 -> 99.0	54894	20.00 µg/L	-0.029
M2-4:2FTS	5.222	329.0 -> 309.0	145834	20.00 µg/L	-0.051
M2-6:2FTS	6.955	429.0 -> 409.0	127472	20.00 µg/L	-0.041
M2-8:2FTS	8.039	529.0 -> 509.0	71267	20.00 µg/L	-0.027
M3-MeFOSAA	7.921	573.0 -> 419.0	57370	20.00 µg/L	-0.014

System Monitoring Compounds

13C2-4:2FTS	5.222	329.0 -> 309.0	145814	21.82 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C2-6:2FTS	6.955	429.0 -> 409.0	127536	20.54 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C2-8:2FTS	8.039	529.0 -> 509.0	71288	20.73 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C2-PFDoDA	8.752	615.0 -> 570.0	80317	19.93 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C2-PFTeDA	9.427	715.0 -> 670.0	48864	20.30 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFBS	4.267	302.0 -> 99.0	46125	19.75 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-PFHxS	6.297	402.0 -> 99.0	44618	19.72 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFBA	2.002	217.0 -> 172.0	314063	19.98 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.254	367.0 -> 322.0	135808	19.86 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.327	318.0 -> 273.0	133174	19.67 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	3.961	268.0 -> 223.0	145026	20.59 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C6-PFDA	8.002	519.0 -> 474.0	70368	17.86 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.391	570.0 -> 525.0	87582	19.63 µg/L	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-FOSA	7.481	506.0 -> 78.0	158028	18.63 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C8-PFOA	6.958	421.0 -> 376.0	96076	19.57 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOS	7.533	507.0 -> 99.0	54876	19.33 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C9-PFNA	7.550	472.0 -> 427.0	74582	20.14 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSAA	7.921	573.0 -> 419.0	57367	20.30 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
M2-PFOA	6.960	415.0 -> 370.0	130470	20.12 ng/ml	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
M4-PFOS	7.535	503.0 -> 80.0	97910	20.15 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%	

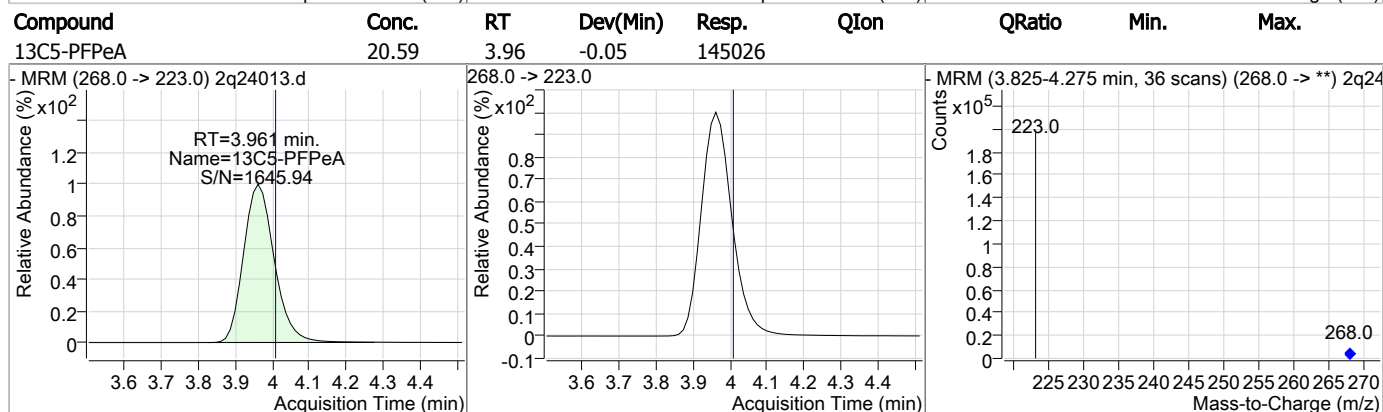
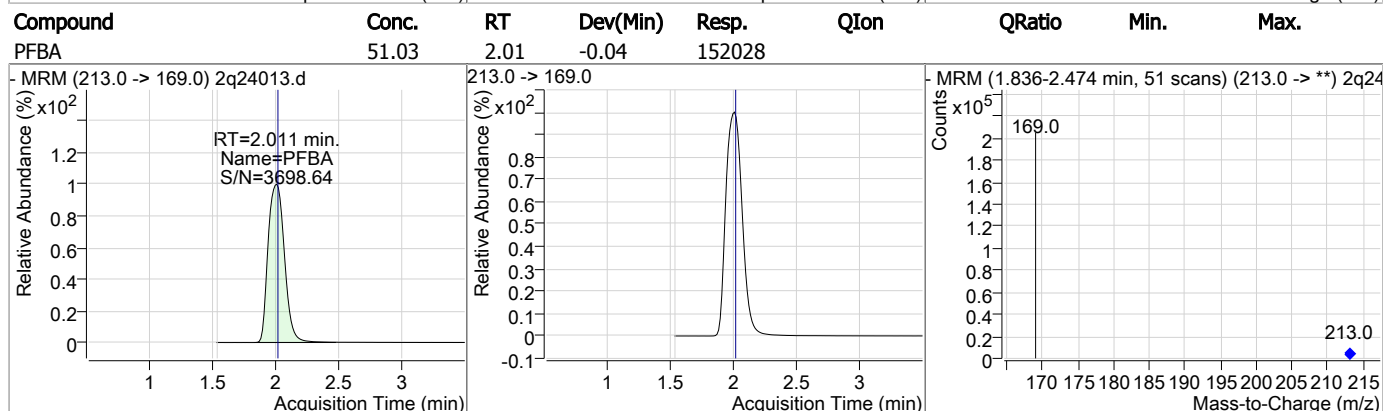
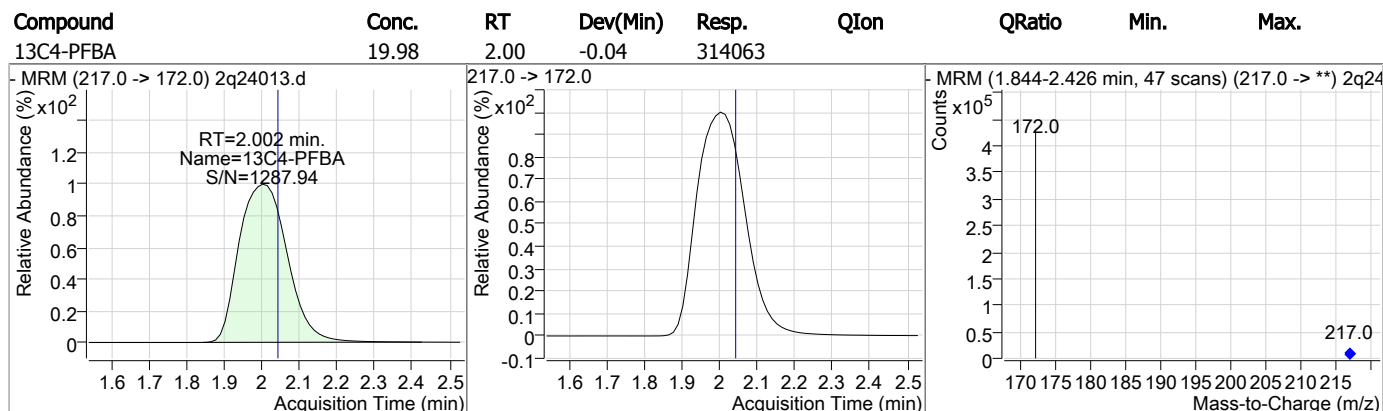
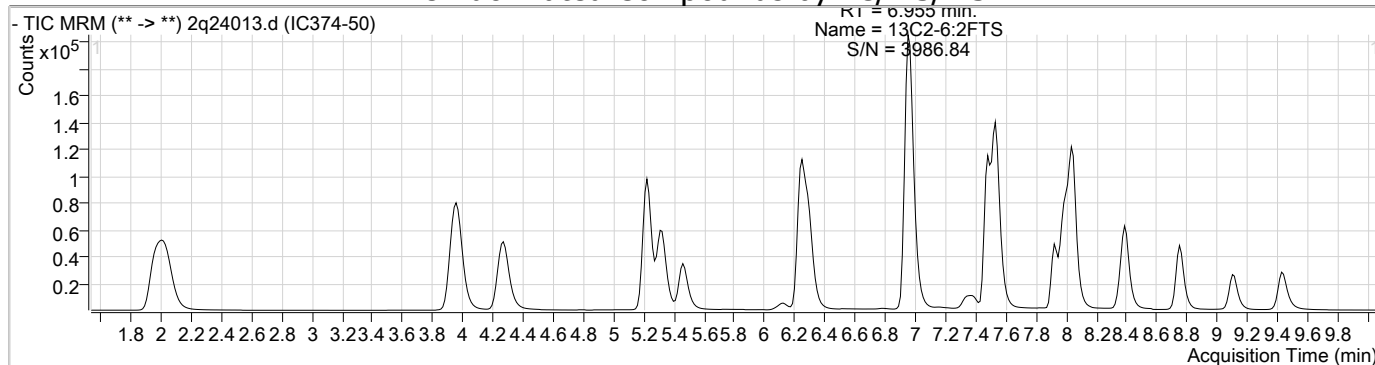
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	190179	50.59 µg/L	97
6:2FTS	6.957	427.0 -> 407.0	151119	50.57 µg/L	95
8:2FTS	8.039	527.0 -> 507.0	88281	50.29 µg/L	95
EtFOSAA	8.047	584.0 -> 419.0	60547	50.01 µg/L	99
FOSA	7.483	498.0 -> 78.0	196694	51.47 µg/L	98
MeFOSAA	7.922	570.0 -> 419.0	76852	51.54 µg/L	97
PFBA	2.011	213.0 -> 169.0	152028	51.03 µg/L	100
PFBS	4.271	299.0 -> 80.0	172896	51.86 µg/L	98
PFDA	8.002	513.0 -> 469.0	73054	50.90 µg/L	98
PFDoDA	8.754	613.0 -> 569.0	90849	51.05 µg/L	98
PFDS	8.362	599.0 -> 80.0	53599	53.33 µg/L	99
PFHpA	6.244	363.0 -> 319.0	274816	51.64 µg/L	100
PFHpS	6.979	449.0 -> 80.0	121200	52.24 µg/L	98
PFHxA	5.330	313.0 -> 269.0	102294	51.40 µg/L	98
PFHxS	6.301	399.0 -> 80.0	142734	50.94 µg/L	100
PFNA	7.550	463.0 -> 419.0	110863	51.16 µg/L	100
PFNS	7.974	549.0 -> 80.0	94010	50.72 µg/L	99
PFOA	6.961	413.0 -> 369.0	132956	50.69 µg/L	98
PFOS	7.535	499.0 -> 80.0	147077	50.88 µg/L	98
PFPeA	3.965	263.0 -> 219.0	316584	51.58 µg/L	100
PFPeS	5.458	349.0 -> 80.0	107511	52.75 µg/L	98
PFTeDA	9.431	713.0 -> 669.0	78328	50.74 µg/L	99
PFTTrDA	9.106	663.0 -> 619.0	101312	53.65 µg/L	99
PFUnDA	8.392	563.0 -> 519.0	83865	49.81 µg/L	100

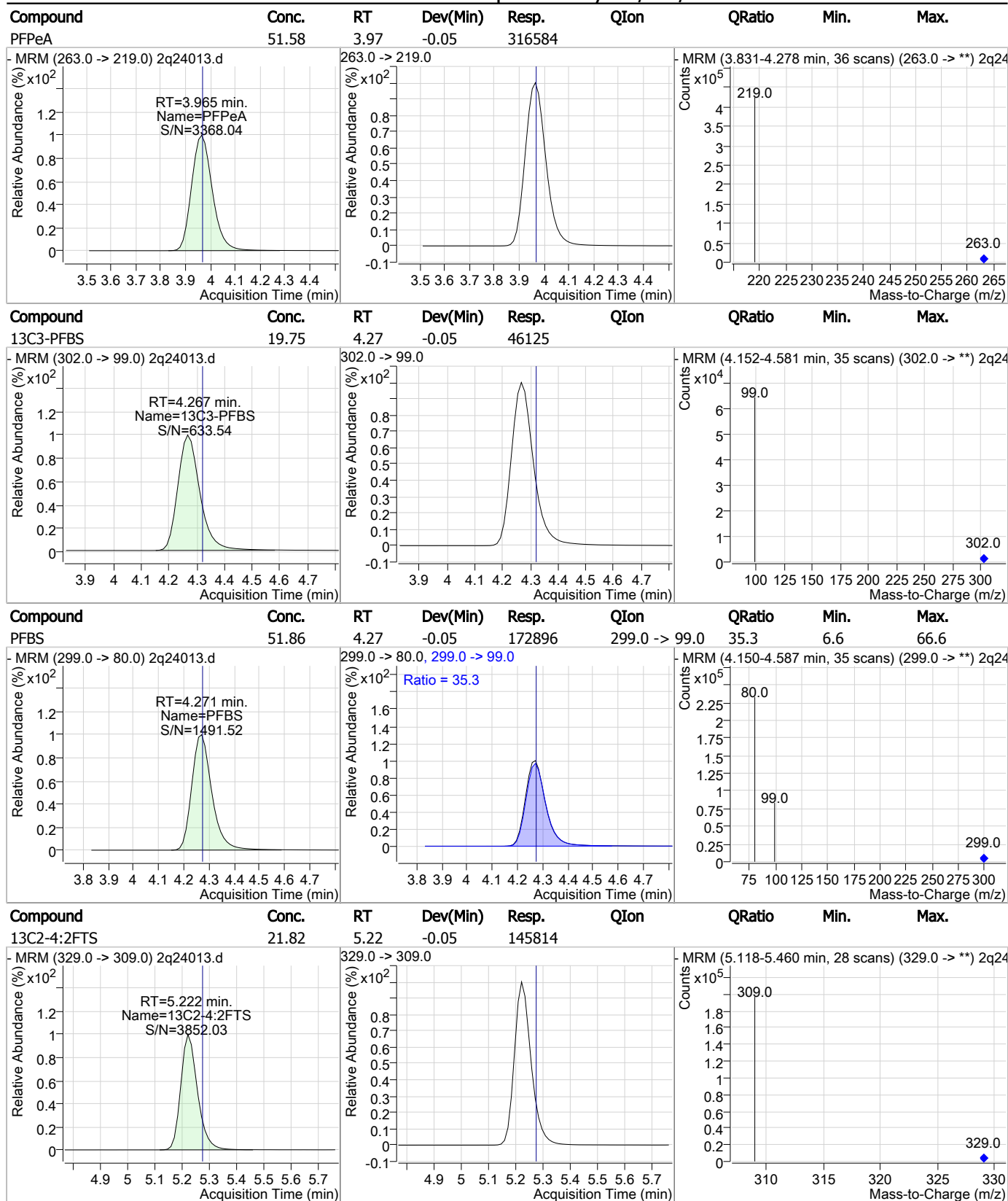
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.7
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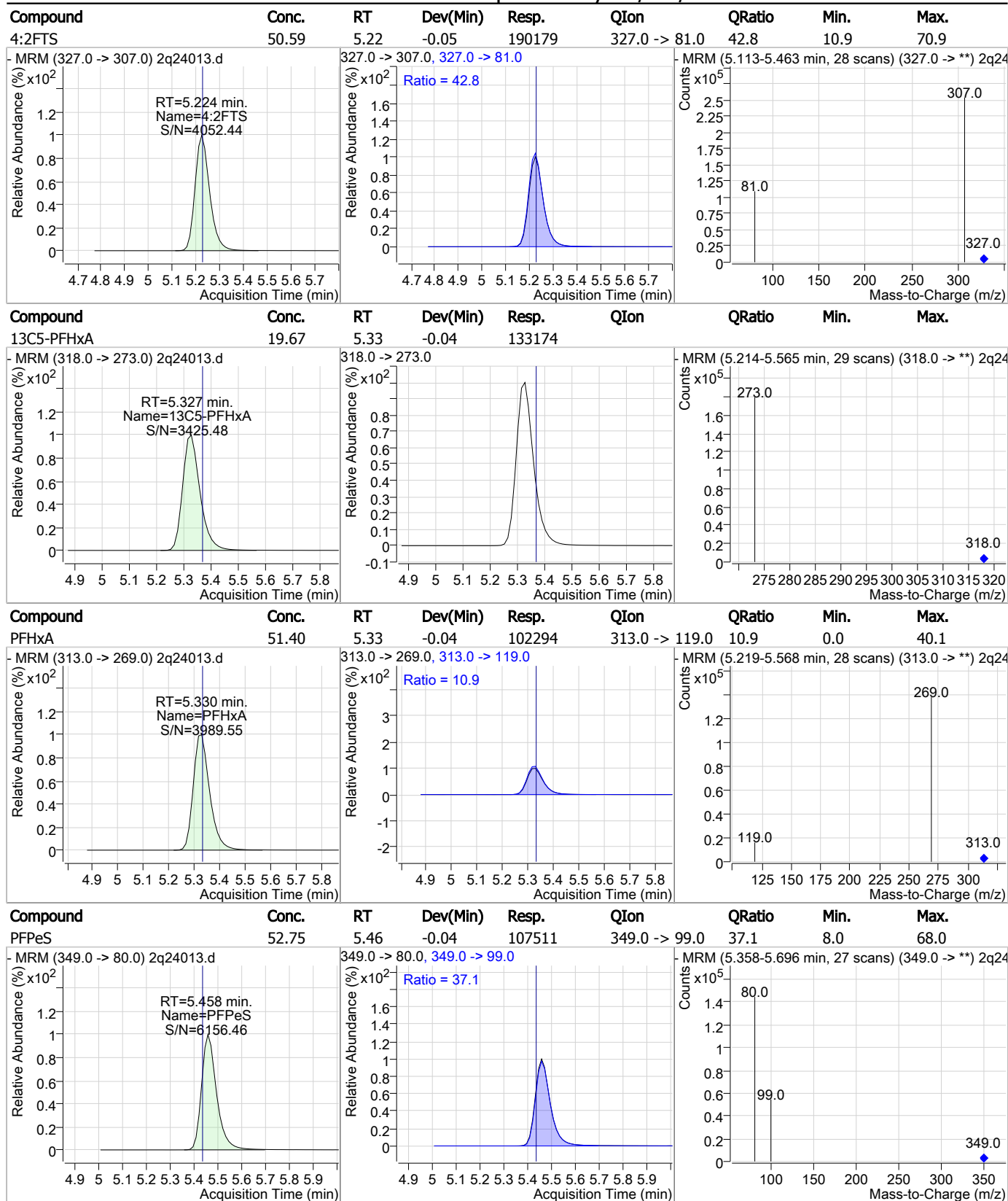
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

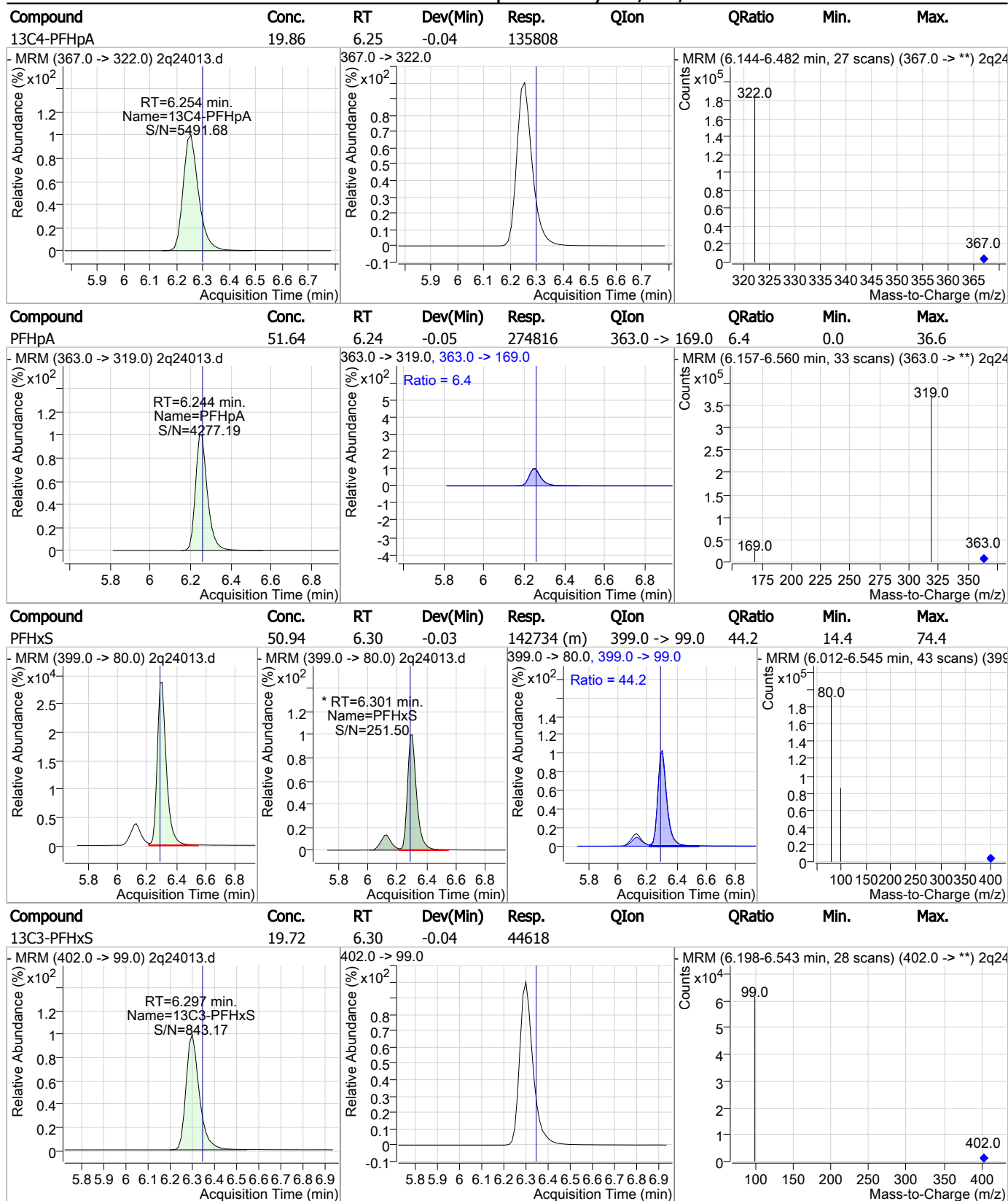


Perfluorinated Compounds by LC/MS/MS

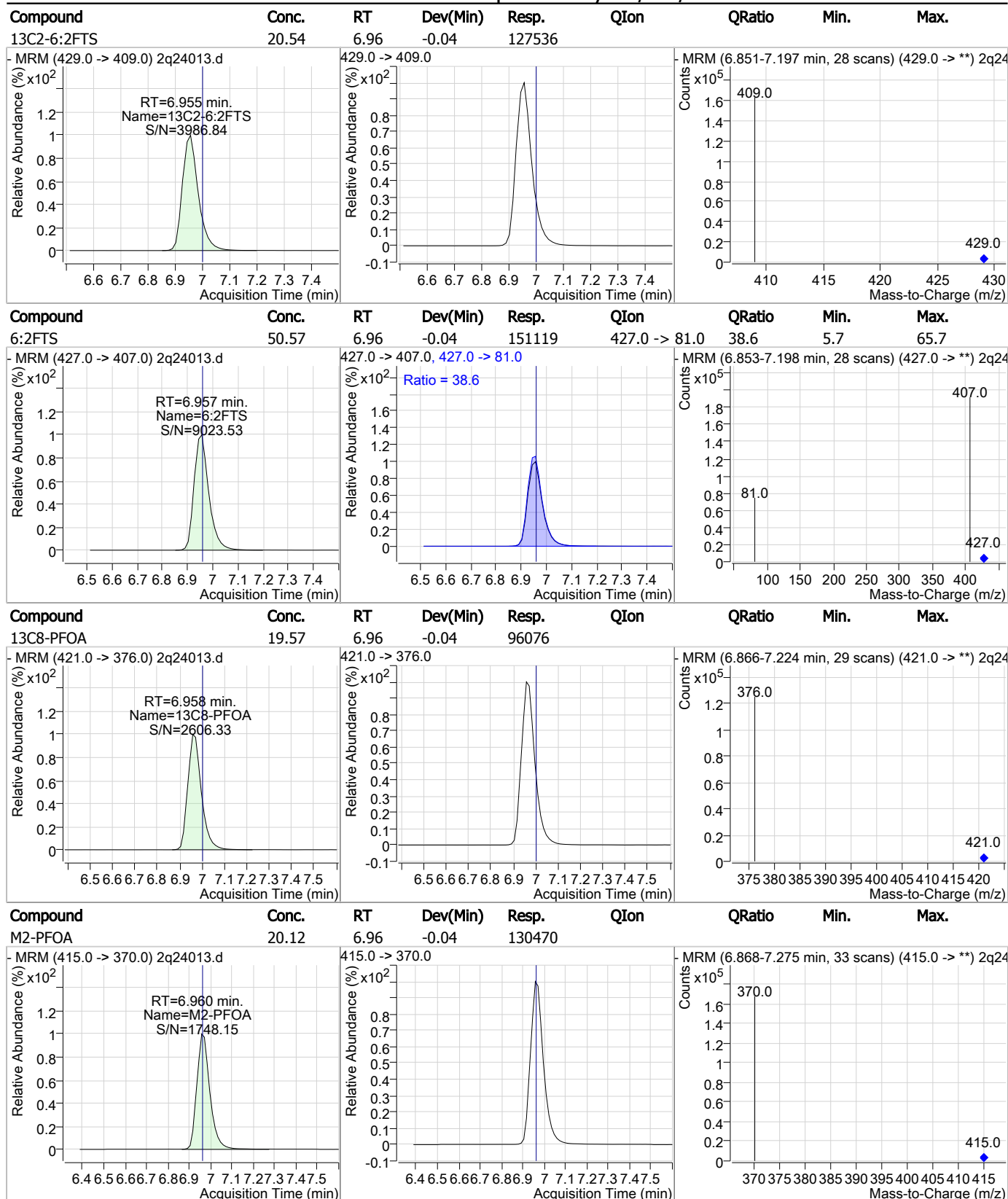


10.5.7 10

Perfluorinated Compounds by LC/MS/MS

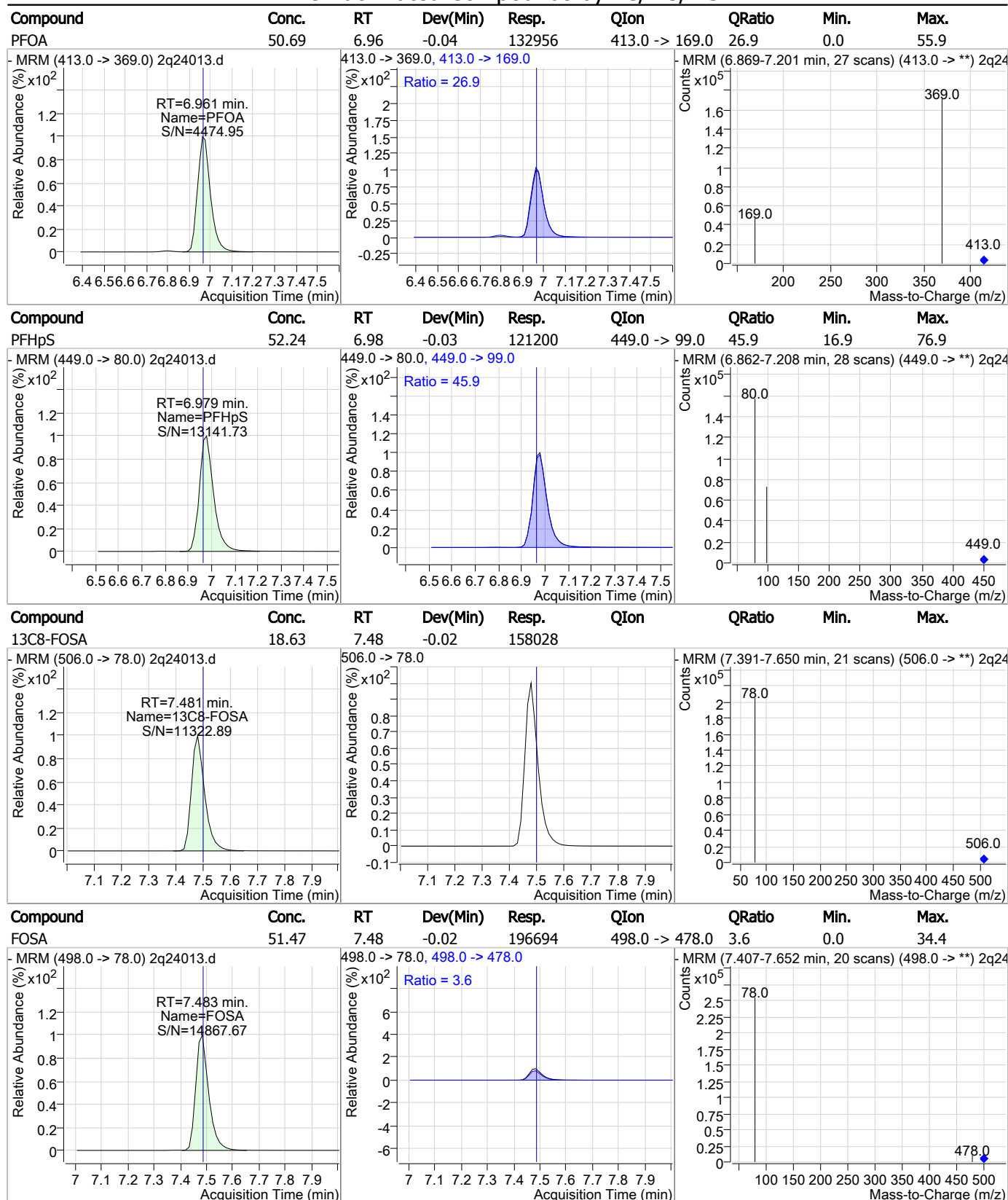


Perfluorinated Compounds by LC/MS/MS

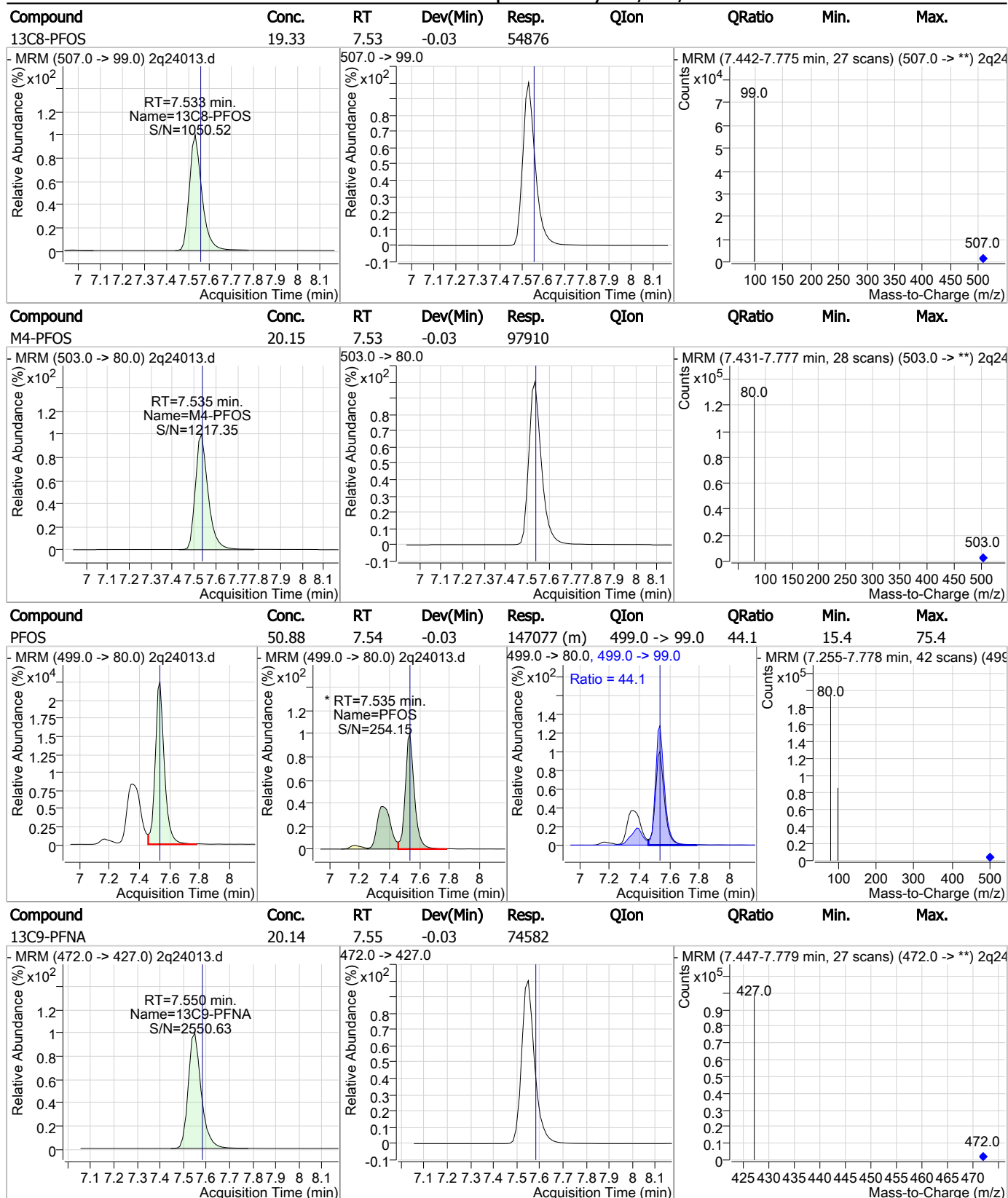


10.5.7 10

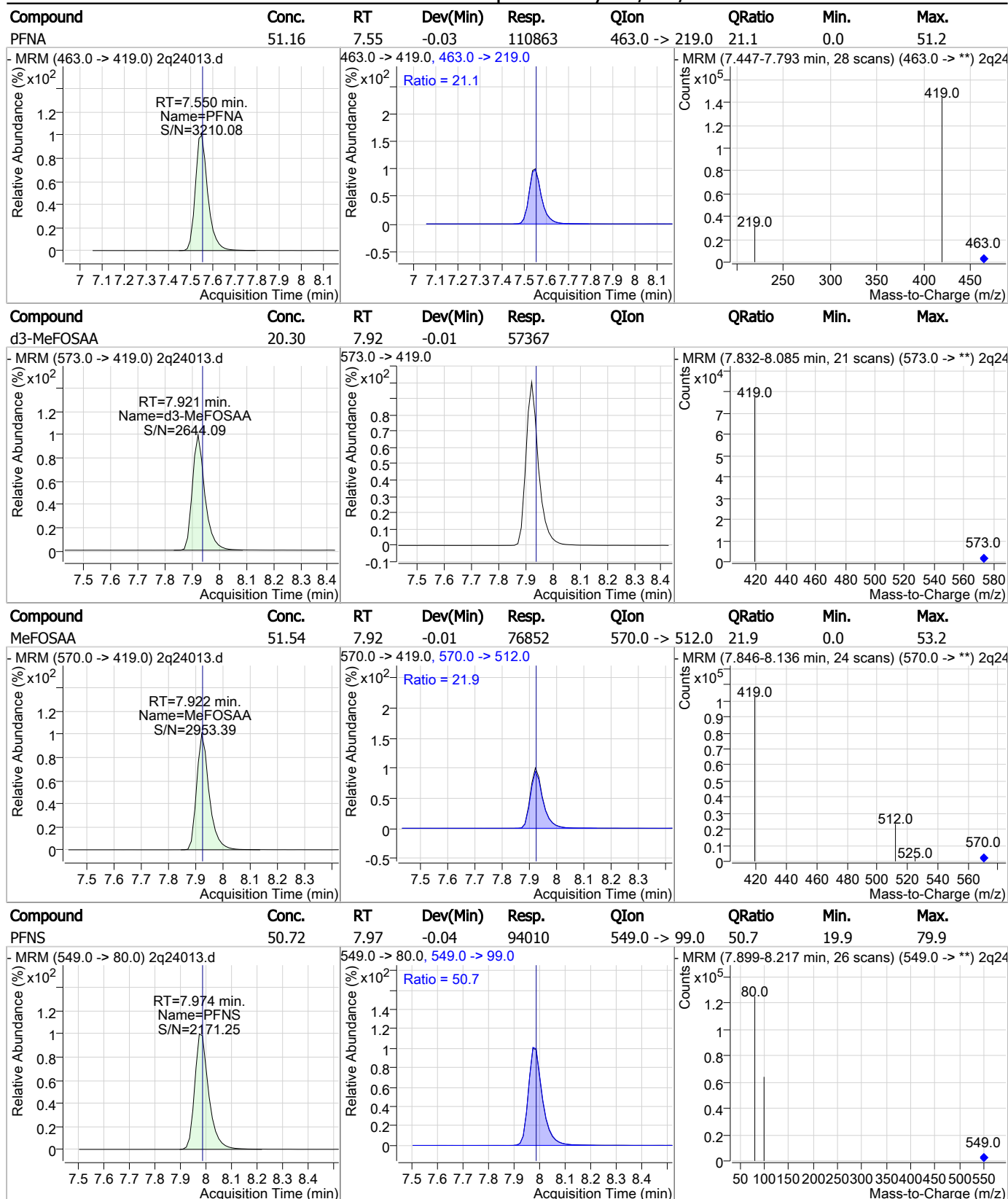
Perfluorinated Compounds by LC/MS/MS

10.5.7
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Perfluorinated Compounds by LC/MS/MS

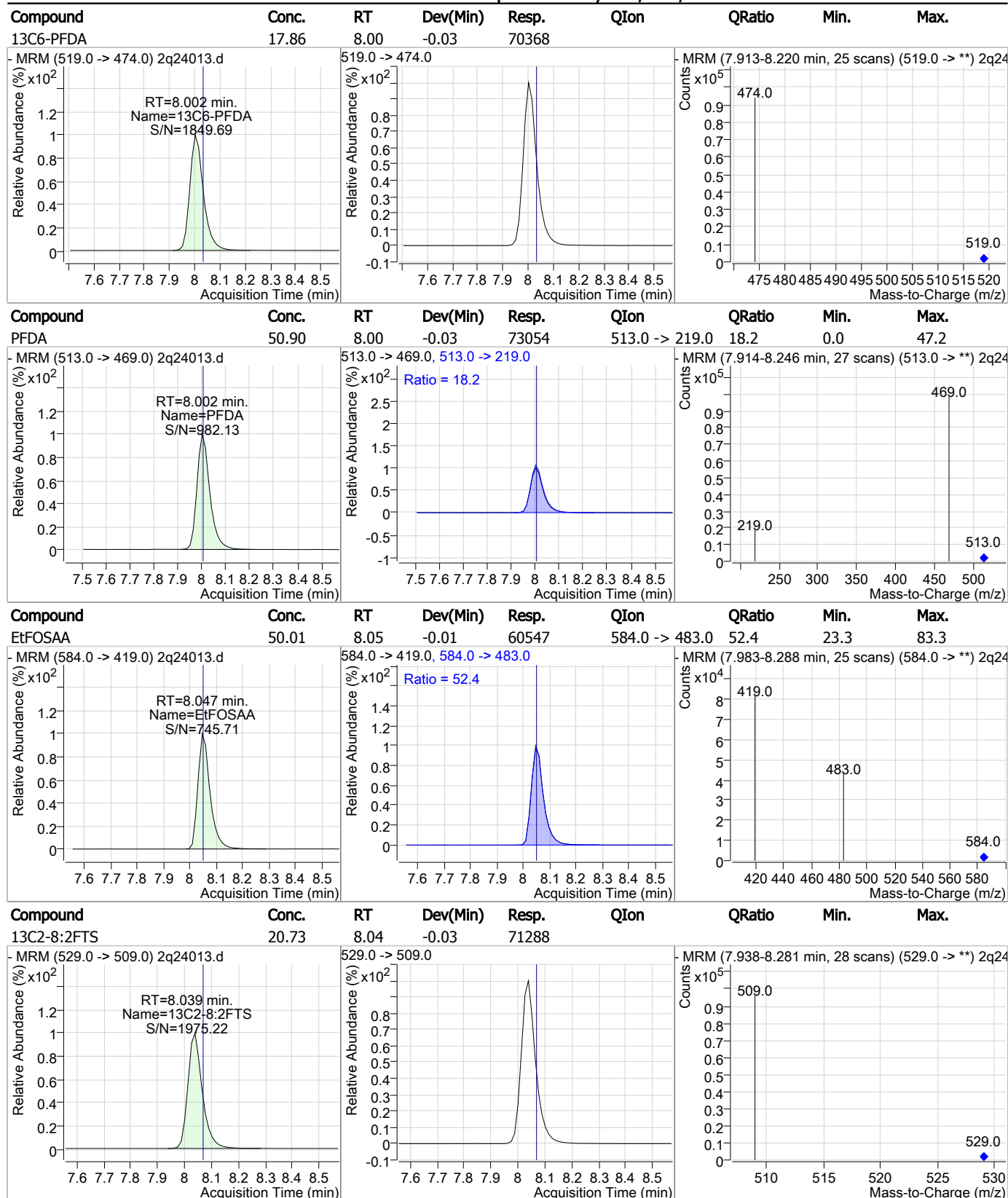


Perfluorinated Compounds by LC/MS/MS

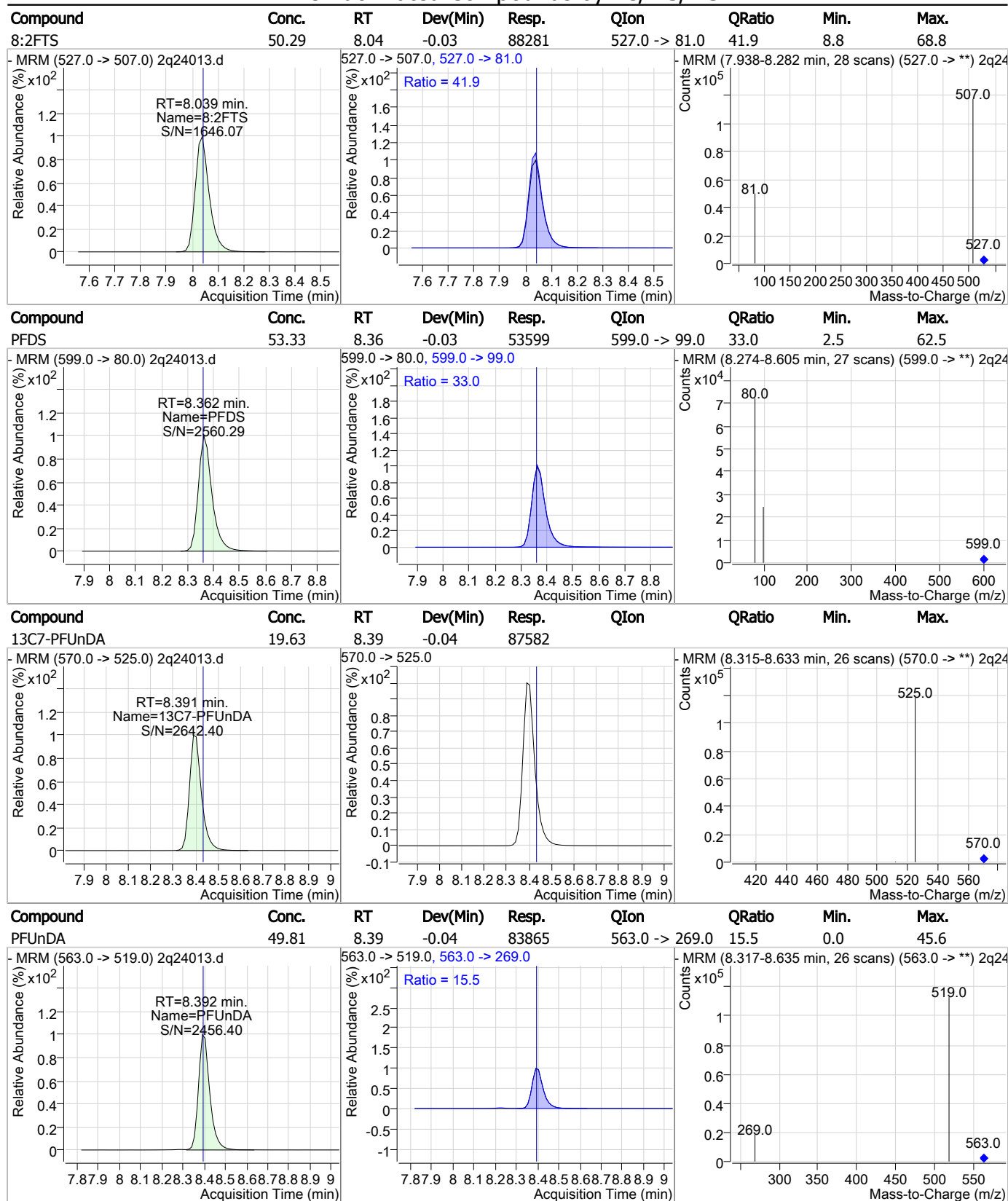


10.5.7 10

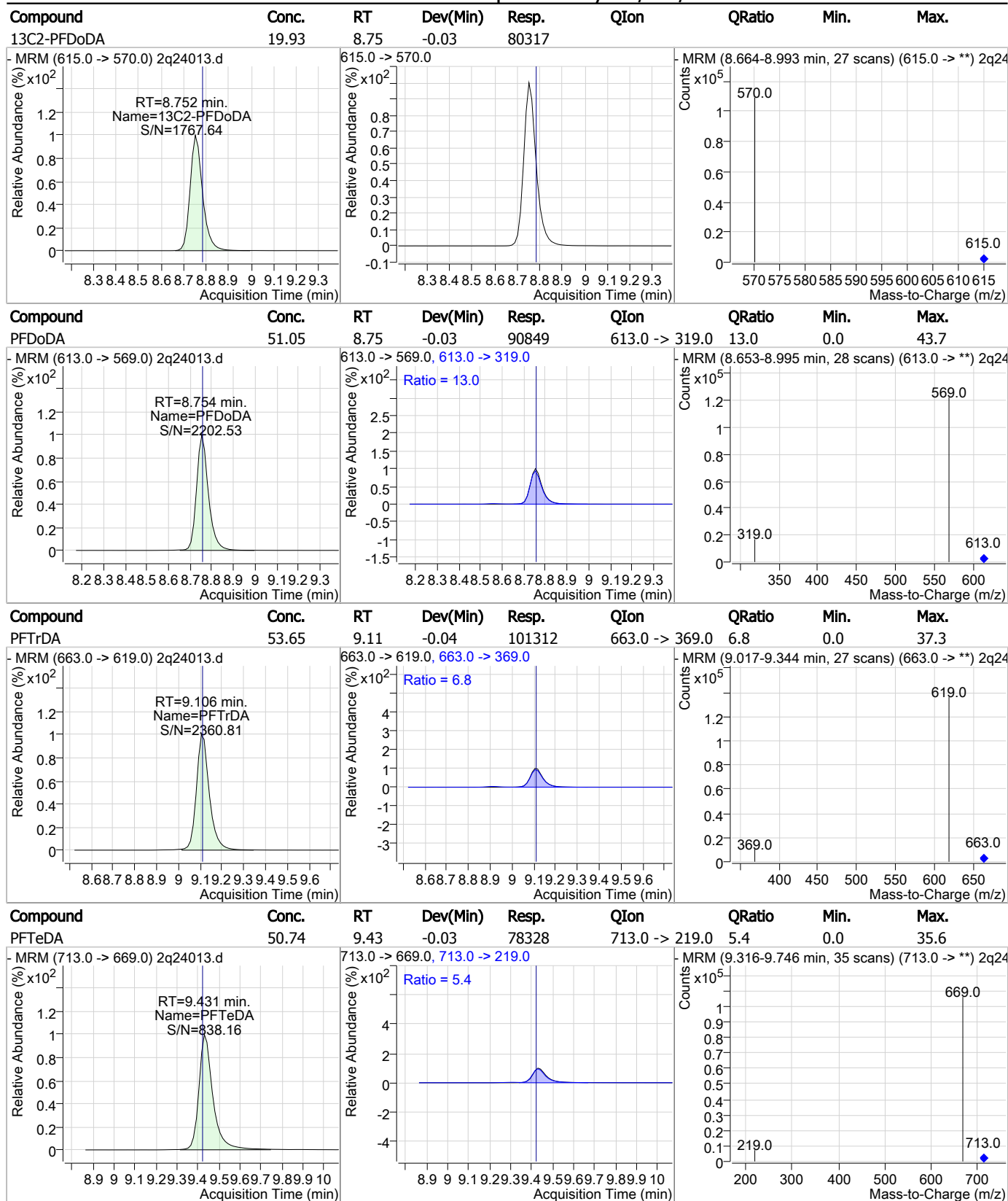
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

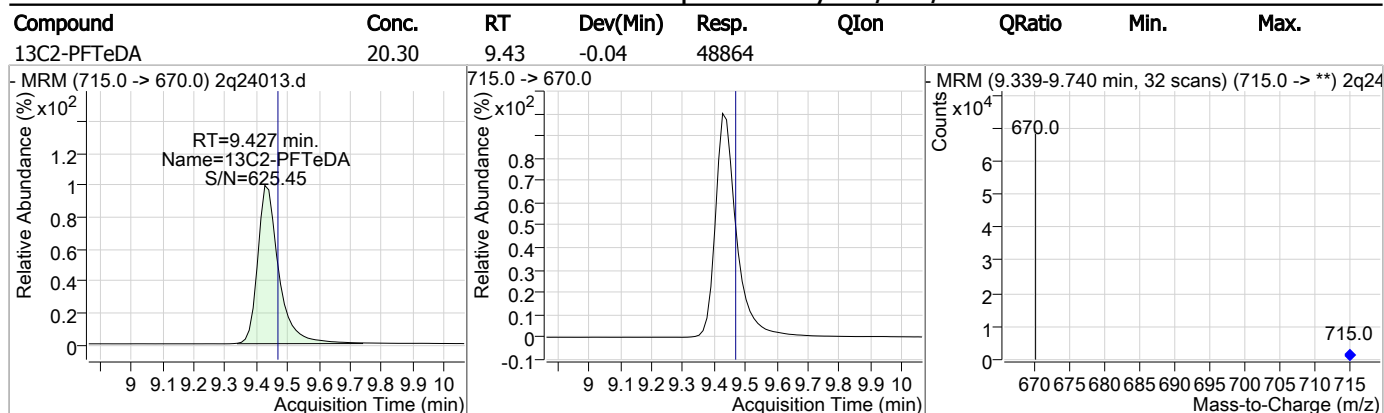


Perfluorinated Compounds by LC/MS/MS



10.5.7 10

Perfluorinated Compounds by LC/MS/MS

10.5.7
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Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24013.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 14:41

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.7.1
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24014.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 2:56:59 PM
 Sample Name : IC374-100
 Vial : Vial 9
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.960	415.0 -> 370.0	123713	20.00 µg/L	-0.039
13C4-PFOS	7.535	503.0 -> 80.0	92848	20.00 µg/L	-0.029
M4-PFBA	2.002	217.0 -> 172.0	323332	20.00 µg/L	-0.038
M5-PFPeA	3.961	268.0 -> 223.0	147441	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	129542	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	133423	20.00 µg/L	-0.041
M8-PFOA	6.958	421.0 -> 376.0	90420	20.00 µg/L	-0.040
M9-PFNA	7.550	472.0 -> 427.0	69368	20.00 µg/L	-0.029
M6-PFDA	8.002	519.0 -> 474.0	64639	20.00 µg/L	-0.028
M7-PFUnDA	8.391	570.0 -> 525.0	78344	20.00 µg/L	-0.039
M2-PFDoDA	8.752	615.0 -> 570.0	77170	20.00 µg/L	-0.028
M2-PFTeDA	9.427	715.0 -> 670.0	47697	20.00 µg/L	-0.038
M8-FOSA	7.481	506.0 -> 78.0	139695	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	47623	20.00 µg/L	-0.051
M3-PFHxS	6.297	402.0 -> 99.0	43821	20.00 µg/L	-0.043
M8-PFOS	7.533	507.0 -> 99.0	53600	20.00 µg/L	-0.029
M2-4:2FTS	5.222	329.0 -> 309.0	161935	20.00 µg/L	-0.051
M2-6:2FTS	6.955	429.0 -> 409.0	136475	20.00 µg/L	-0.041
M2-8:2FTS	8.026	529.0 -> 509.0	76830	20.00 µg/L	-0.040
M3-MeFOSAA	7.921	573.0 -> 419.0	55959	20.00 µg/L	-0.013

System Monitoring Compounds

13C2-4:2FTS	5.222	329.0 -> 309.0	162075	24.25 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%	
13C2-6:2FTS	6.955	429.0 -> 409.0	136582	22.00 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C2-8:2FTS	8.026	529.0 -> 509.0	76824	22.34 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C2-PFDoDA	8.752	615.0 -> 570.0	77132	19.14 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C2-PFTeDA	9.427	715.0 -> 670.0	47590	19.77 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-PFBS	4.267	302.0 -> 99.0	47524	20.35 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C3-PFHxS	6.297	402.0 -> 99.0	43841	19.37 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C4-PFBA	2.002	217.0 -> 172.0	321190	20.43 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C4-PFHpA	6.254	367.0 -> 322.0	133408	19.51 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFHxA	5.327	318.0 -> 273.0	129460	19.12 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C5-PFPeA	3.961	268.0 -> 223.0	147059	20.88 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C6-PFDA	8.002	519.0 -> 474.0	64635	16.40 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.0%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.391	570.0 -> 525.0	78353	17.56 µg/L	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C8-FOSA	7.481	506.0 -> 78.0	139693	16.47 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%	
13C8-PFOA	6.958	421.0 -> 376.0	90525	18.44 µg/L	-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C8-PFOS	7.533	507.0 -> 99.0	53719	18.92 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C9-PFNA	7.550	472.0 -> 427.0	69366	18.73 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%	
d3-MeFOSAA	7.921	573.0 -> 419.0	55952	19.80 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
M2-PFOA	6.960	415.0 -> 370.0	123784	20.03 ng/ml	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
M4-PFOS	7.535	503.0 -> 80.0	93429	20.17 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	

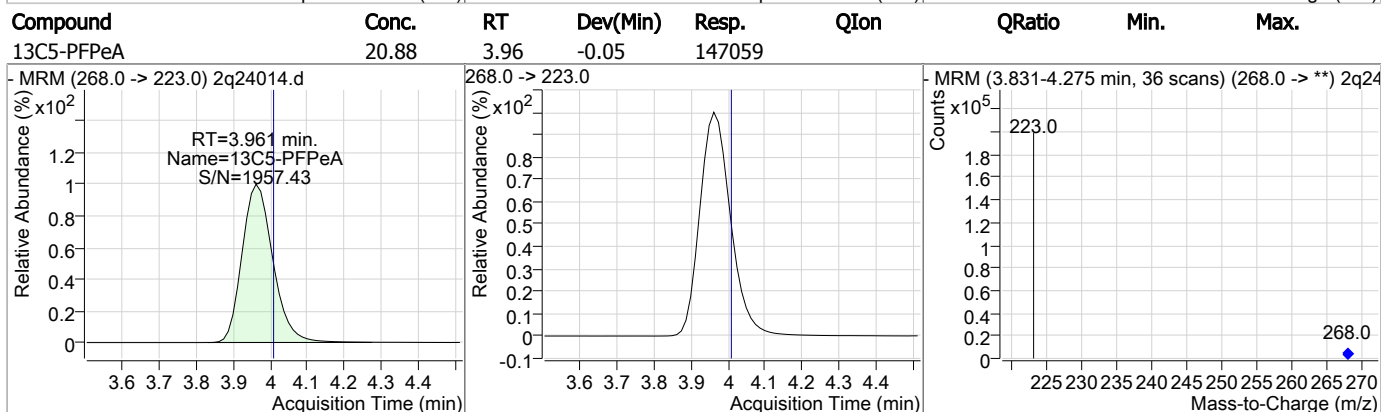
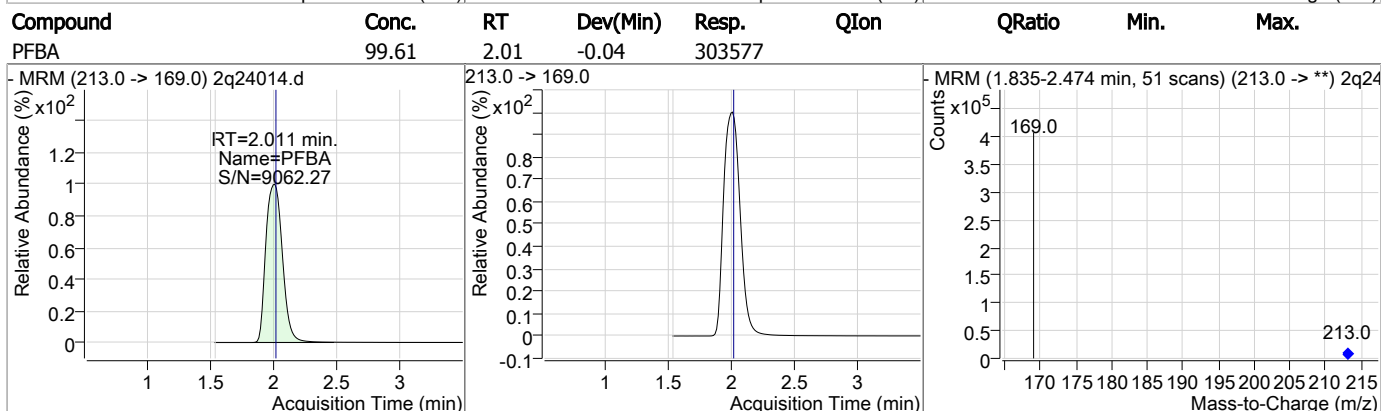
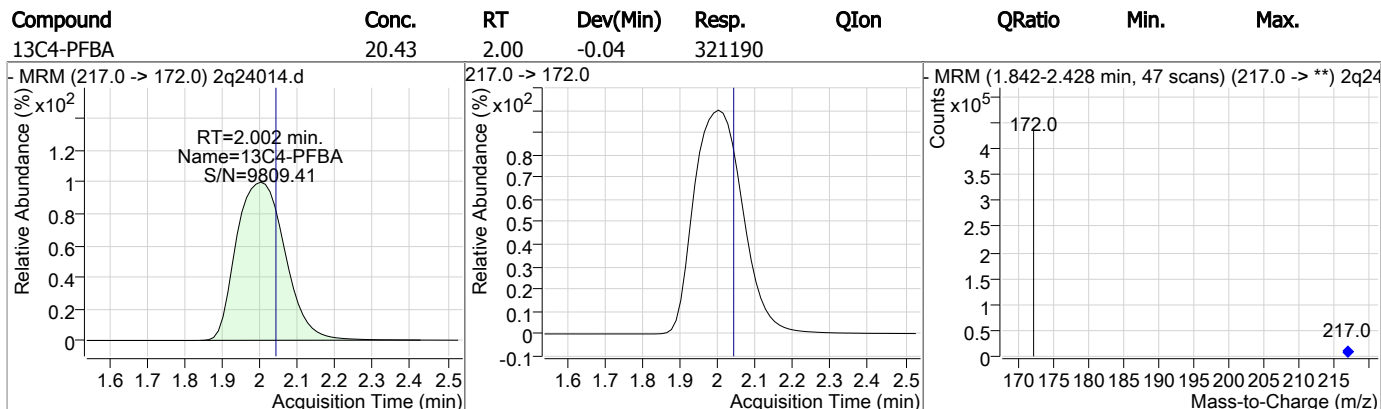
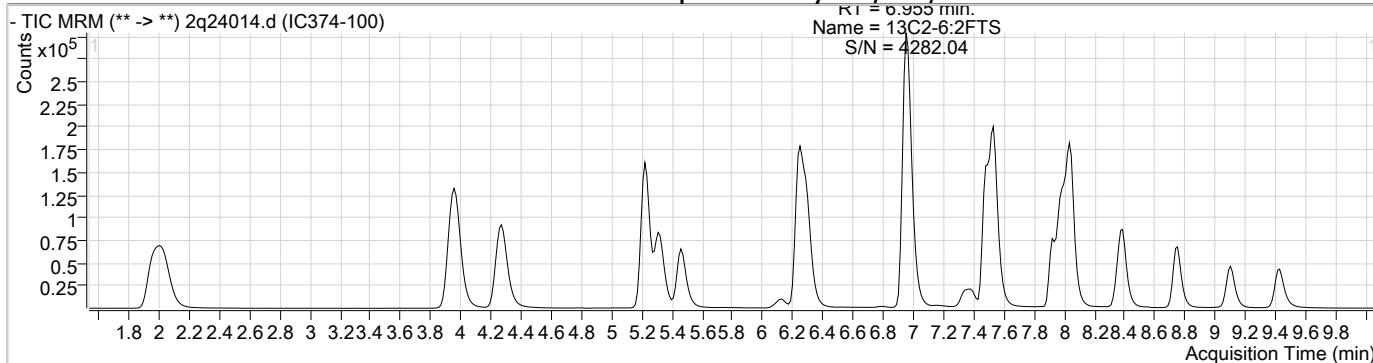
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	367688	99.84 µg/L	97
6:2FTS	6.957	427.0 -> 407.0	278800	99.84 µg/L	95
8:2FTS	8.027	527.0 -> 507.0	160606	99.91 µg/L	95
EtFOSAA	8.047	584.0 -> 419.0	112066	99.99 µg/L	98
FOSA	7.483	498.0 -> 78.0	335777	99.37 µg/L	98
MeFOSAA	7.922	570.0 -> 419.0	144401	99.28 µg/L	98
PFBA	2.011	213.0 -> 169.0	303577	99.61 µg/L	100
PFBS	4.271	299.0 -> 80.0	339711	99.14 µg/L	98
PFDA	8.002	513.0 -> 469.0	130291	99.82 µg/L	98
PFDoDA	8.754	613.0 -> 569.0	170266	99.56 µg/L	97
PFDS	8.362	599.0 -> 80.0	96304	98.13 µg/L	100
PFHpA	6.244	363.0 -> 319.0	518720	99.20 µg/L	100
PFHpS	6.979	449.0 -> 80.0	225371	98.75 µg/L	98
PFHxA	5.330	313.0 -> 269.0	192439	99.48 µg/L	99
PFHxS	6.301	399.0 -> 80.0	274642	99.65 µg/L	99
PFNA	7.550	463.0 -> 419.0	200770	99.63 µg/L	99
PFNS	7.974	549.0 -> 80.0	166996	99.83 µg/L	97
PFOA	6.961	413.0 -> 369.0	246307	99.62 µg/L	98
PFOS	7.535	499.0 -> 80.0	281425	99.71 µg/L	97
PFPeA	3.965	263.0 -> 219.0	618626	99.28 µg/L	100
PFPeS	5.458	349.0 -> 80.0	206470	98.56 µg/L	100
PFTeDA	9.431	713.0 -> 669.0	146097	99.84 µg/L	100
PFTTrDA	9.106	663.0 -> 619.0	180423	98.21 µg/L	99
PFUnDA	8.392	563.0 -> 519.0	151411	100.54 µg/L	100

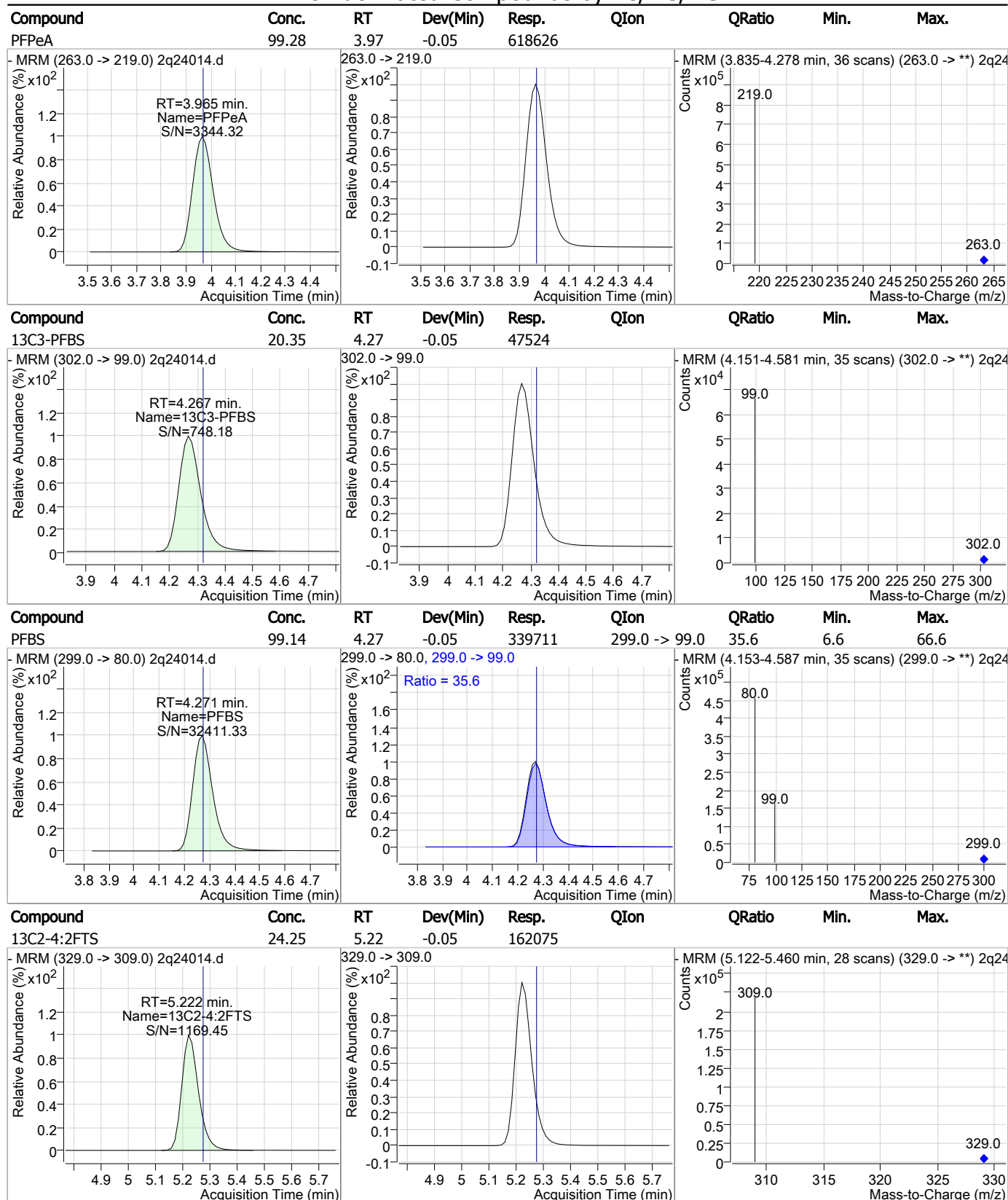
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.8
10

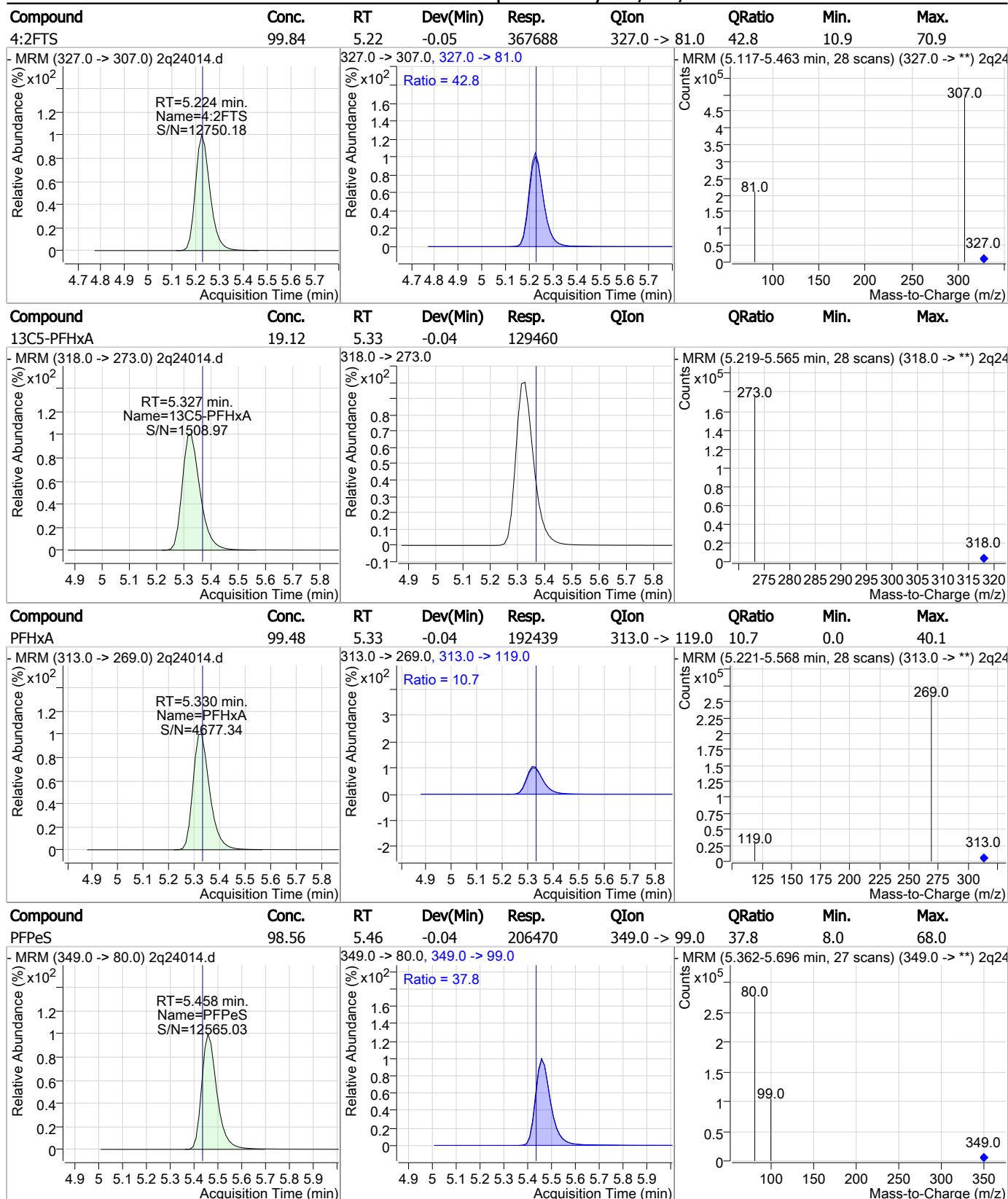
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

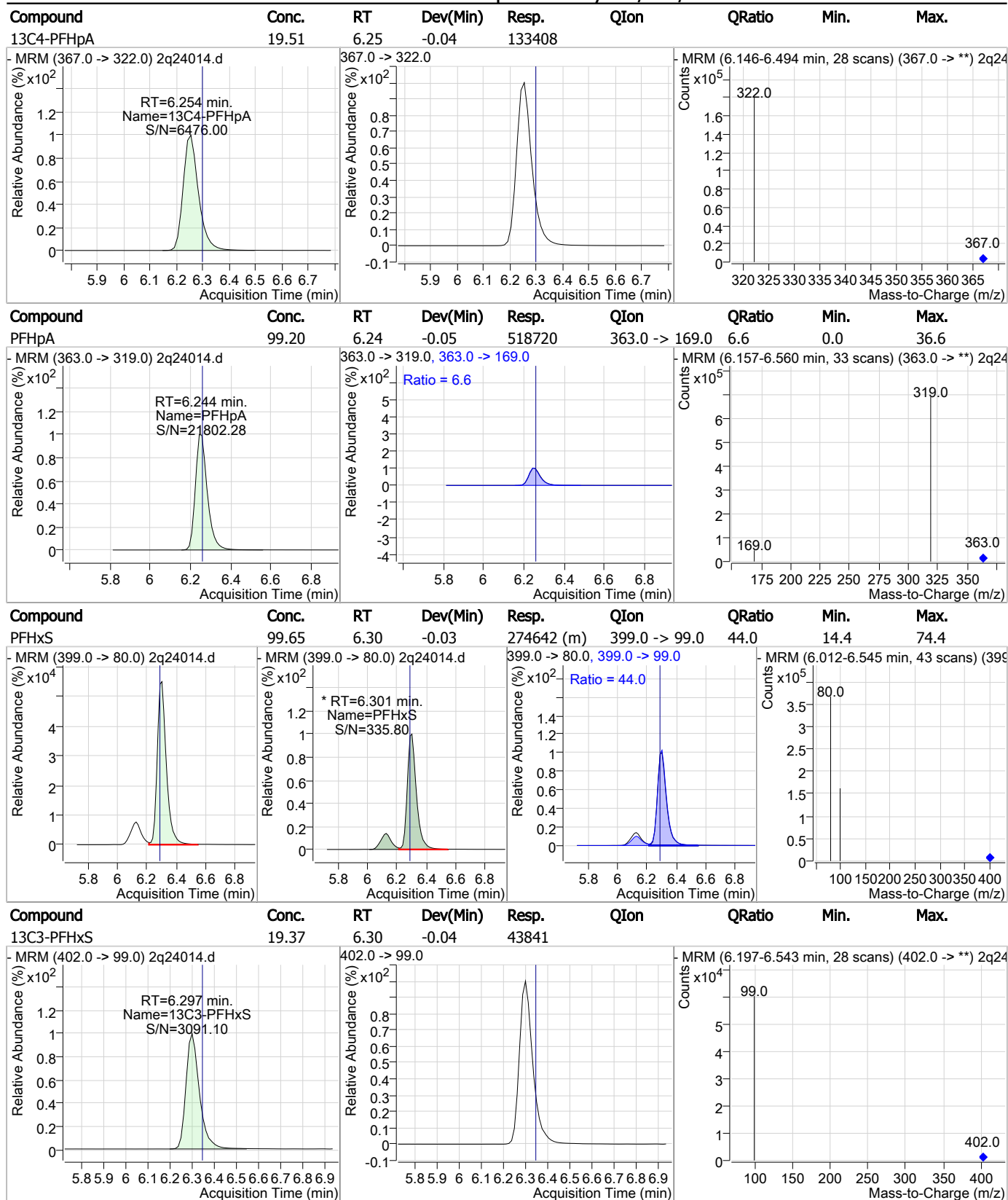


Perfluorinated Compounds by LC/MS/MS

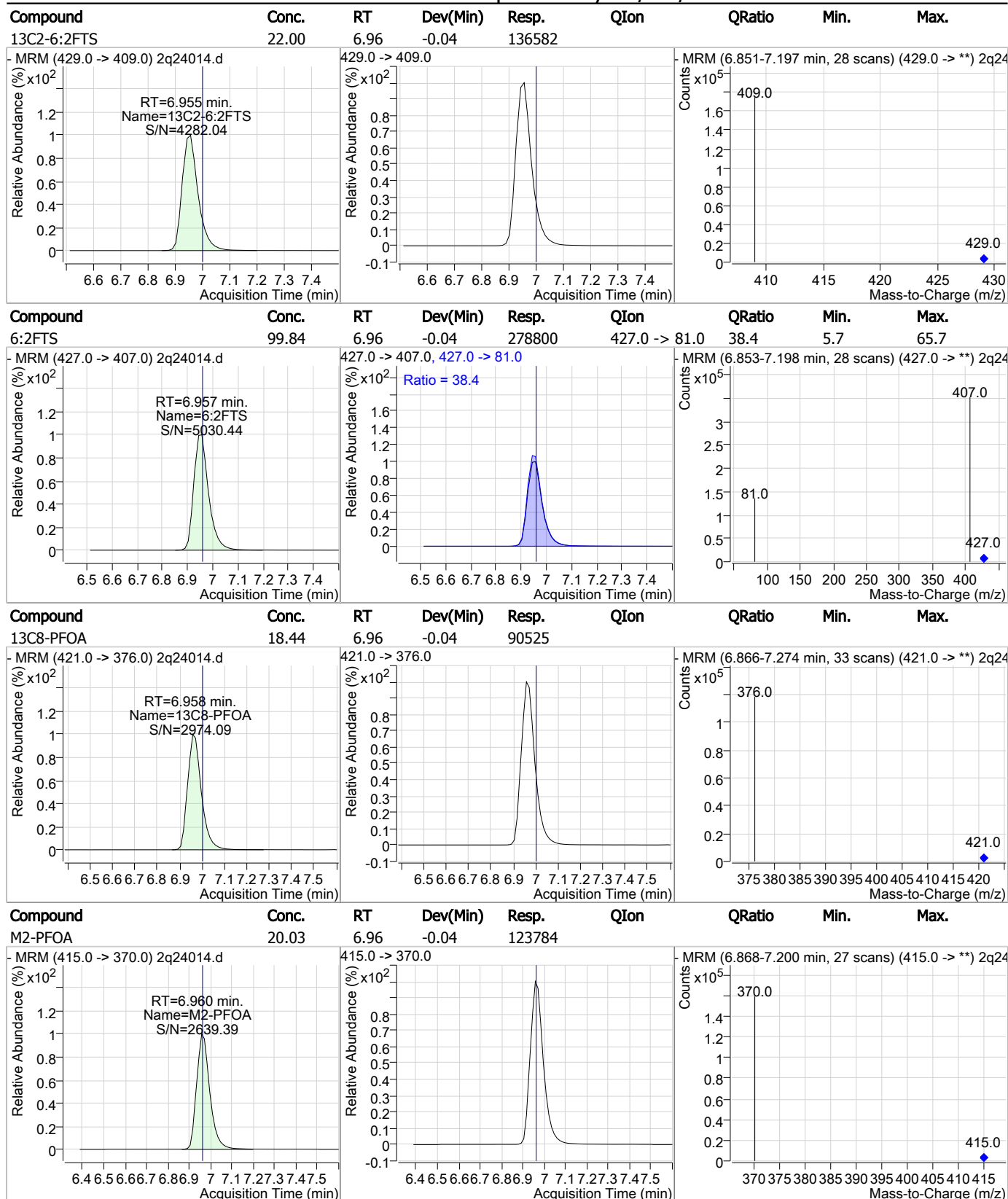


10.5.8 10

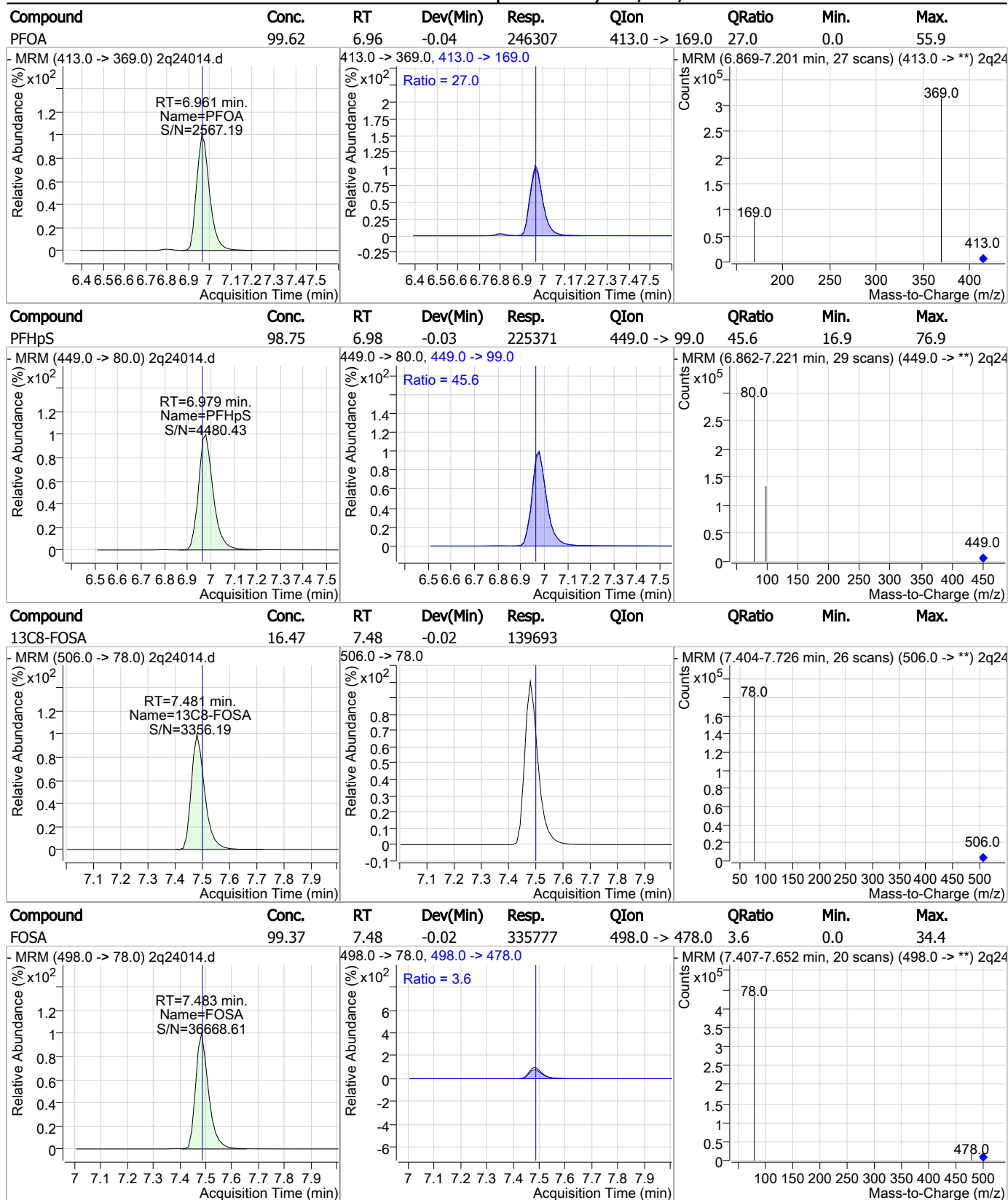
Perfluorinated Compounds by LC/MS/MS



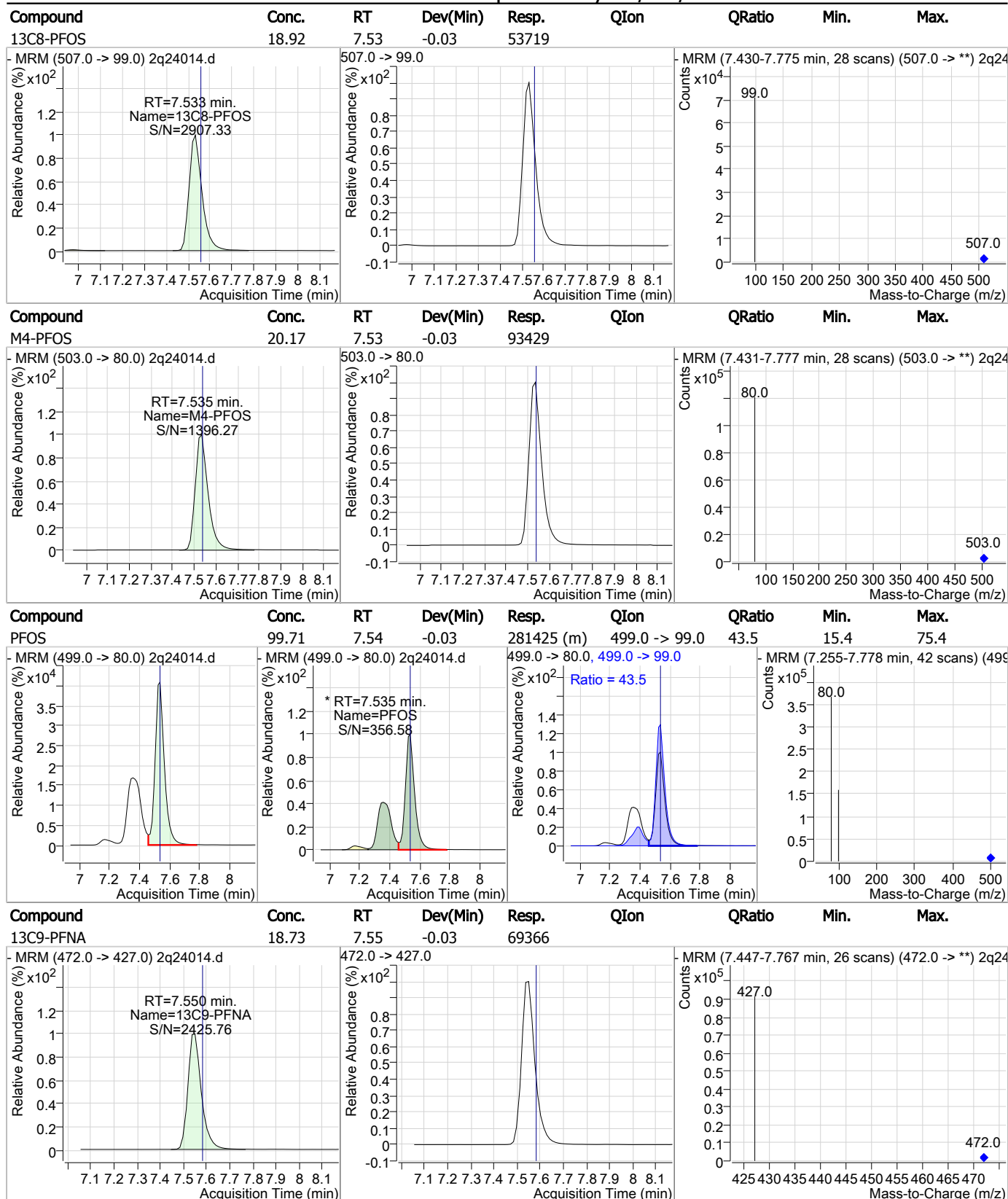
Perfluorinated Compounds by LC/MS/MS

10.5.8
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Perfluorinated Compounds by LC/MS/MS

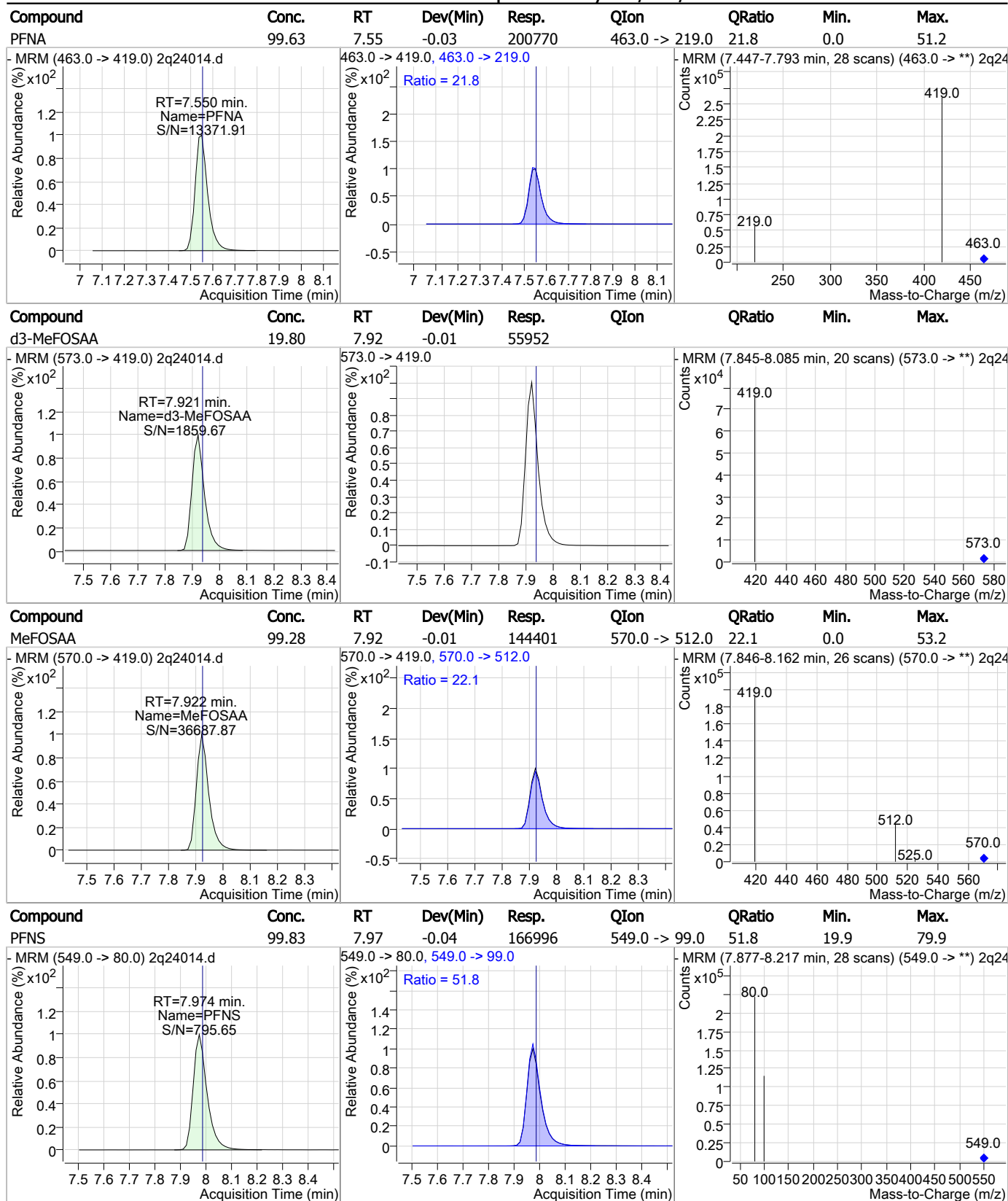


Perfluorinated Compounds by LC/MS/MS



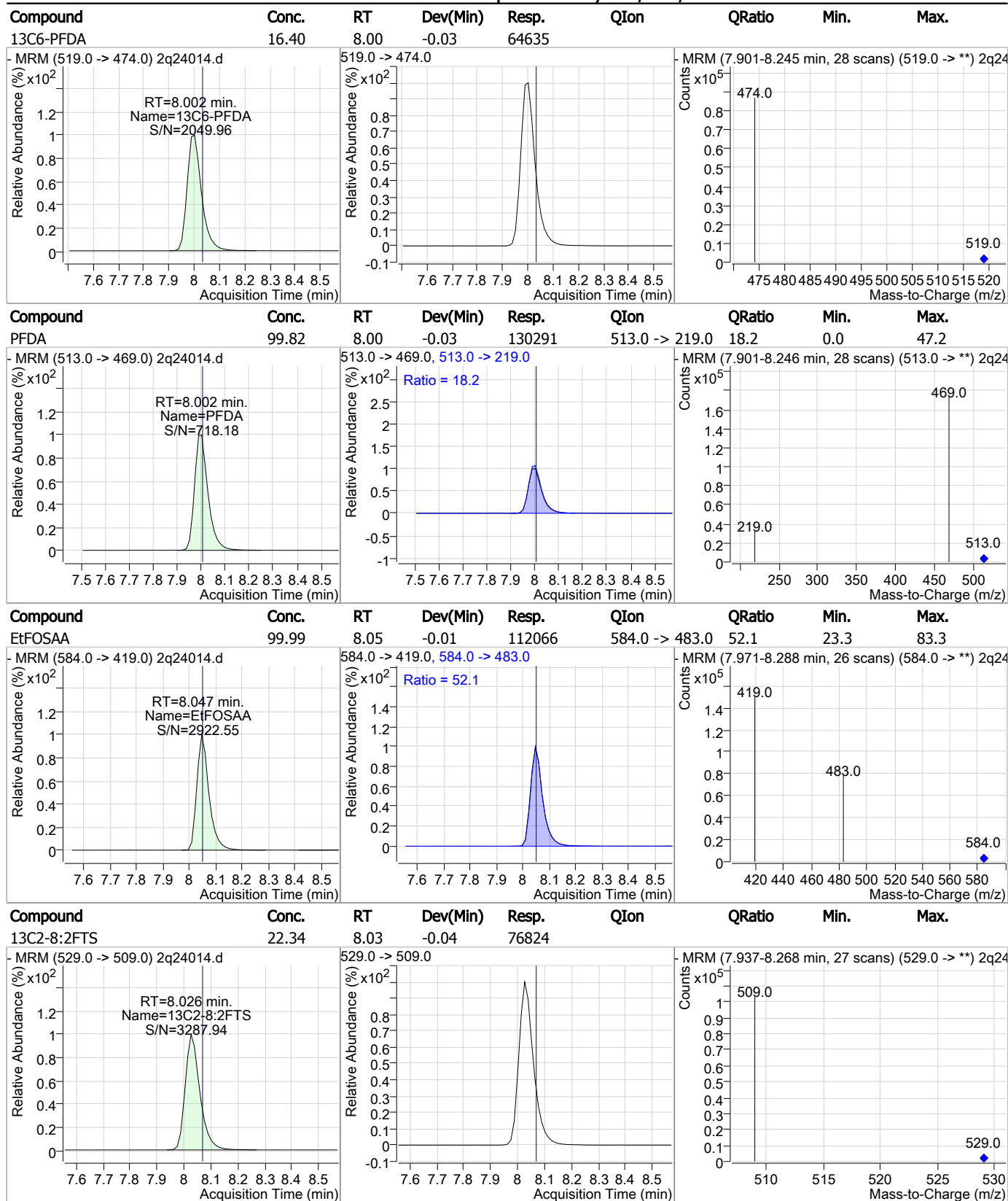
10.5.8 10

Perfluorinated Compounds by LC/MS/MS

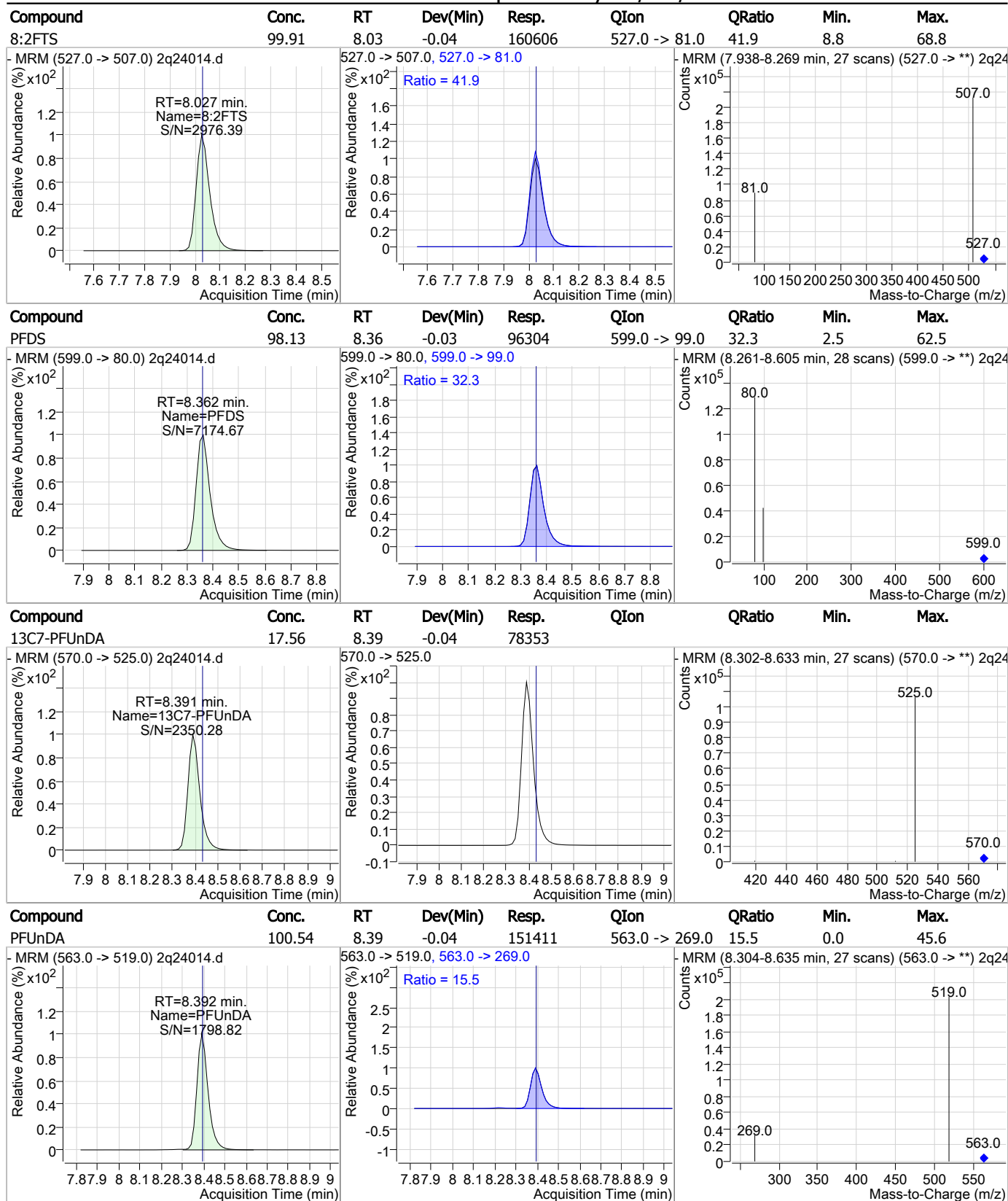


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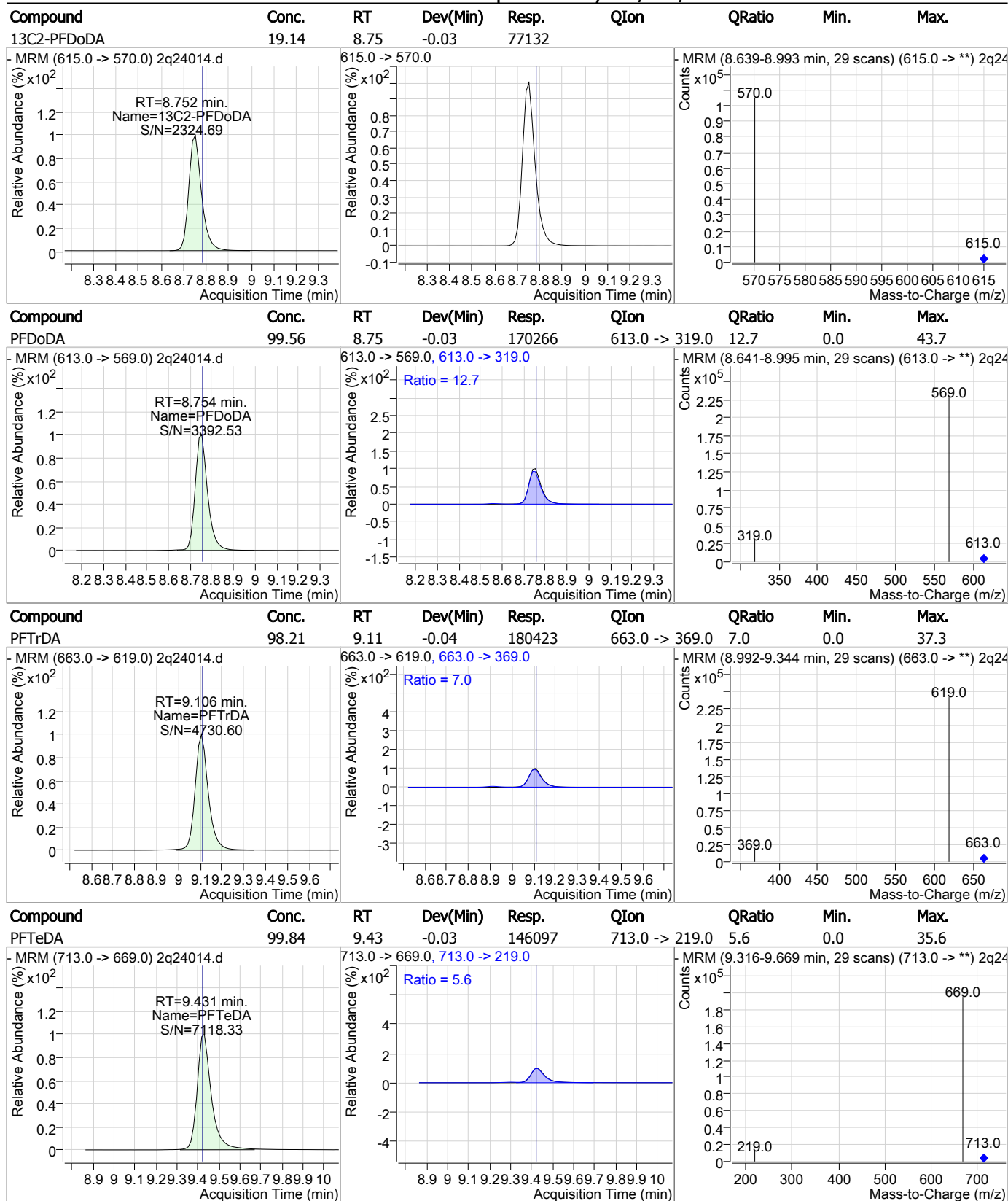
Perfluorinated Compounds by LC/MS/MS



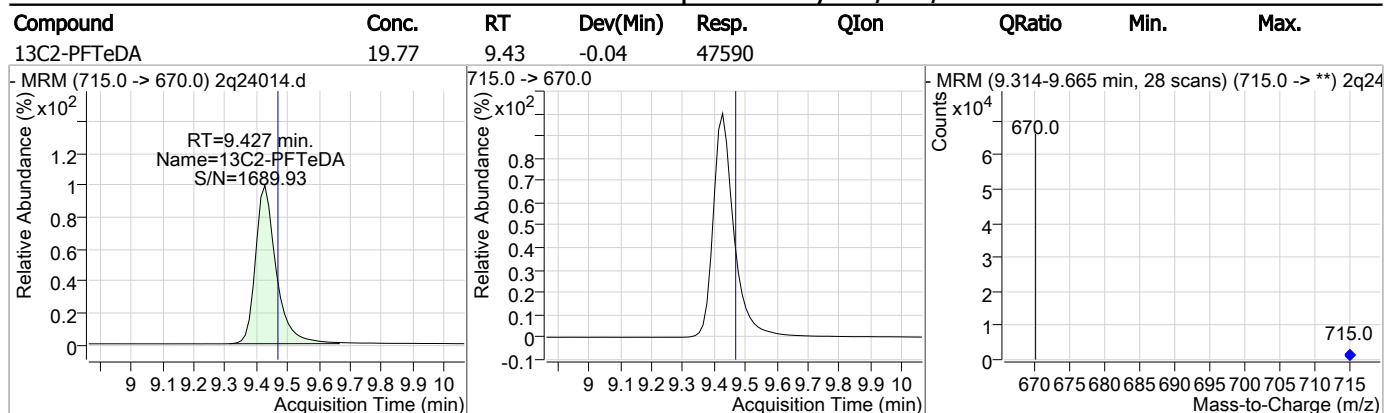
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

10.5.8
10

Manual Integration Approval Summary

Sample Number: S2Q374-IC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24014.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 14:56

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.8.1
10

Mike Eger
11/27/18 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24016.d
 Operator : NATASHAG
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/26/2018 3:28:28 PM
 Sample Name : ICV374-20
 Vial : Vial 10
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q374.batch.bin
 Sample Information : op72749,S2Q374,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.972	415.0 -> 370.0	136778	20.00 µg/L	-0.027
13C4-PFOS	7.535	503.0 -> 80.0	100610	20.00 µg/L	-0.029
M4-PFBA	2.002	217.0 -> 172.0	314104	20.00 µg/L	-0.038
M5-PFPeA	3.961	268.0 -> 223.0	146539	20.00 µg/L	-0.051
M5-PFHxA	5.327	318.0 -> 273.0	140474	20.00 µg/L	-0.038
M4-PFHpA	6.254	367.0 -> 322.0	137354	20.00 µg/L	-0.041
M8-PFOA	6.971	421.0 -> 376.0	97480	20.00 µg/L	-0.027
M9-PFNA	7.550	472.0 -> 427.0	74750	20.00 µg/L	-0.029
M6-PFDA	8.015	519.0 -> 474.0	81359	20.00 µg/L	-0.015
M7-PFUnDA	8.403	570.0 -> 525.0	92729	20.00 µg/L	-0.027
M2-PFDoDA	8.752	615.0 -> 570.0	81541	20.00 µg/L	-0.028
M2-PFTeDA	9.427	715.0 -> 670.0	48061	20.00 µg/L	-0.038
M8-FOSA	7.481	506.0 -> 78.0	171157	20.00 µg/L	-0.017
M3-PFBS	4.267	302.0 -> 99.0	47773	20.00 µg/L	-0.051
M3-PFHxS	6.297	402.0 -> 99.0	46108	20.00 µg/L	-0.043
M8-PFOS	7.533	507.0 -> 99.0	56772	20.00 µg/L	-0.029
M2-4:2FTS	5.222	329.0 -> 309.0	134837	20.00 µg/L	-0.051
M2-6:2FTS	6.955	429.0 -> 409.0	120848	20.00 µg/L	-0.041
M2-8:2FTS	8.039	529.0 -> 509.0	66662	20.00 µg/L	-0.027
M3-MeFOSAA	7.921	573.0 -> 419.0	55931	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.222	329.0 -> 309.0	134783	20.17 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-6:2FTS	6.955	429.0 -> 409.0	120848	19.46 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-8:2FTS	8.039	529.0 -> 509.0	66694	19.39 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-PFDoDA	8.752	615.0 -> 570.0	81546	20.24 µg/L	-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-PFTeDA	9.427	715.0 -> 670.0	47881	19.89 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C3-PFBS	4.267	302.0 -> 99.0	47702	20.43 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C3-PFHxS	6.297	402.0 -> 99.0	46088	20.37 µg/L	-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C4-PFBA	2.002	217.0 -> 172.0	312100	19.85 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C4-PFHpA	6.254	367.0 -> 322.0	137301	20.08 µg/L	-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C5-PFHxA	5.327	318.0 -> 273.0	140478	20.74 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C5-PFPeA	3.961	268.0 -> 223.0	146347	20.78 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C6-PFDA	8.015	519.0 -> 474.0	81333	20.64 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	92719	20.78 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C8-FOSA	7.481	506.0 -> 78.0	171201	20.18 µg/L	-0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	6.971	421.0 -> 376.0	97525	19.87 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOS	7.533	507.0 -> 99.0	56771	20.00 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.550	472.0 -> 427.0	74798	20.20 µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSAA	7.921	573.0 -> 419.0	55930	19.79 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
M2-PFOA	6.972	415.0 -> 370.0	135791	19.87 ng/ml	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
M4-PFOS	7.535	503.0 -> 80.0	100488	20.02 ng/ml	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	

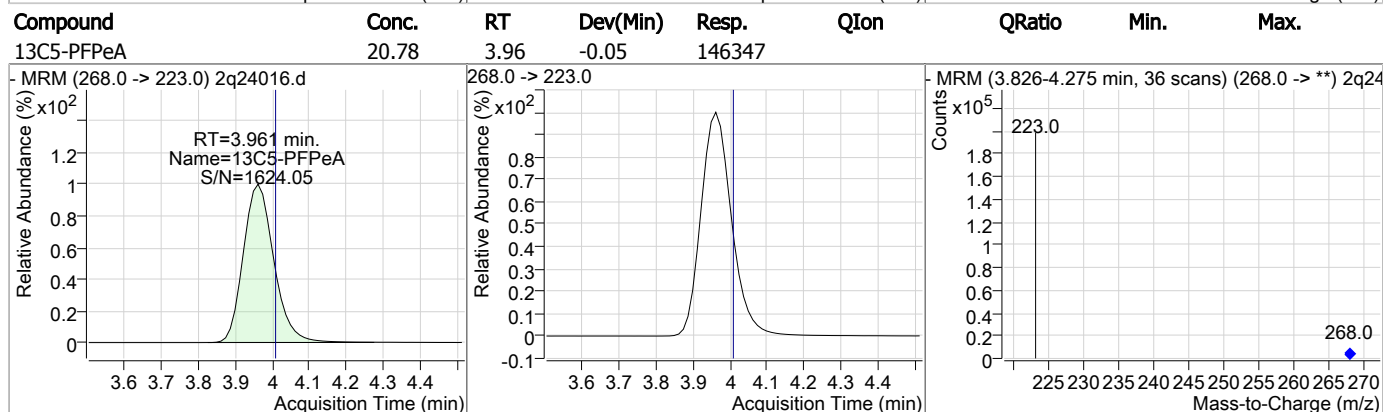
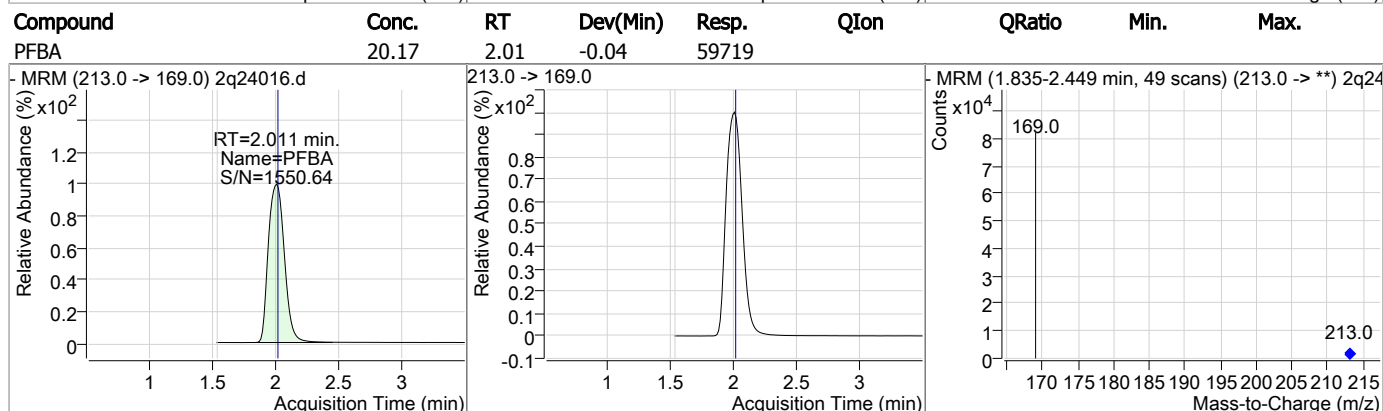
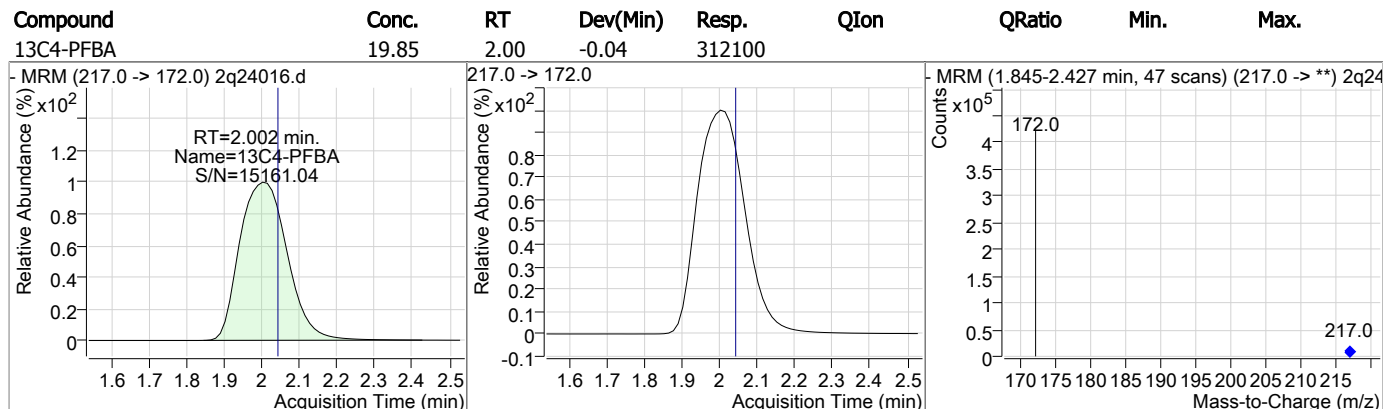
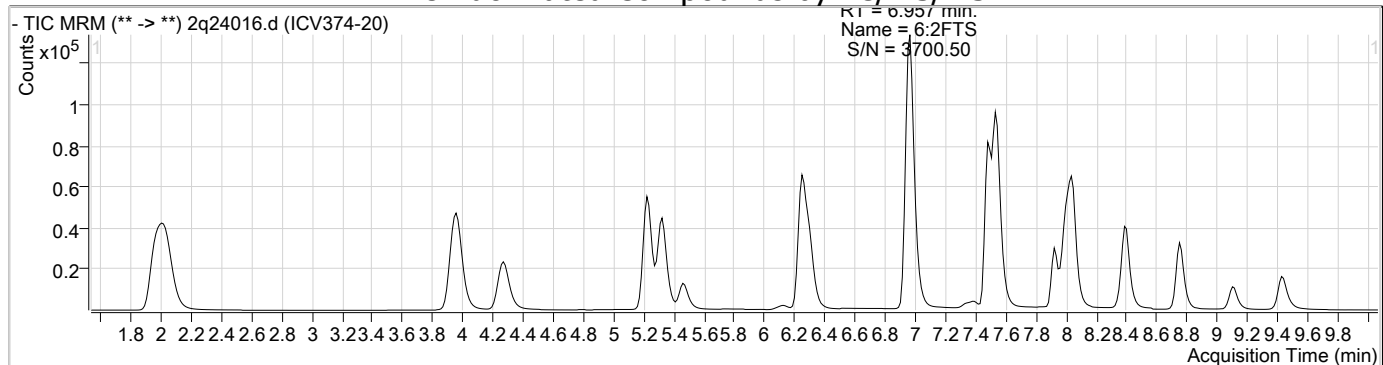
Target Compounds

					QValue
4:2FTS	5.224	327.0 -> 307.0	70320	18.80 µg/L	96
6:2FTS	6.957	427.0 -> 407.0	57669	18.81 µg/L	94
8:2FTS	8.039	527.0 -> 507.0	33736	18.75 µg/L	95
EtFOSAA	8.047	584.0 -> 419.0	23519	19.32 µg/L	100
FOSA	7.483	498.0 -> 78.0	84302	20.36 µg/L	97
MeFOSAA	7.922	570.0 -> 419.0	29666	20.41 µg/L	97
PFBA	2.011	213.0 -> 169.0	59719	20.17 µg/L	100
PFBS	4.271	299.0 -> 80.0	58948	17.15 µg/L	99
PFDA	8.016	513.0 -> 469.0	30382	18.17 µg/L	97
PFDoDA	8.754	613.0 -> 569.0	36485	20.19 µg/L	99
PFDS	8.362	599.0 -> 80.0	20547	19.77 µg/L	99
PFHpA	6.257	363.0 -> 319.0	108370	20.13 µg/L	100
PFHpS	6.979	449.0 -> 80.0	45954	19.14 µg/L	98
PFHxA	5.330	313.0 -> 269.0	37806	18.02 µg/L	97
PFHxS	6.301	399.0 -> 80.0	49064	16.92 µg/L	99
PFNA	7.550	463.0 -> 419.0	38133	17.56 µg/L	97
PFNS	7.987	549.0 -> 80.0	37161	18.47 µg/L	98
PFOA	6.974	413.0 -> 369.0	54836	20.57 µg/L	99
PFOS	7.535	499.0 -> 80.0	58169	19.46 µg/L	97
PFPeA	3.965	263.0 -> 219.0	122417	19.77 µg/L	100
PFPeS	5.458	349.0 -> 80.0	38980	18.55 µg/L	100
PFTeDA	9.431	713.0 -> 669.0	27358	17.77 µg/L	100
PFTTrDA	9.106	663.0 -> 619.0	42434	22.92 µg/L	99
PFUnDA	8.405	563.0 -> 519.0	33144	18.59 µg/L	97

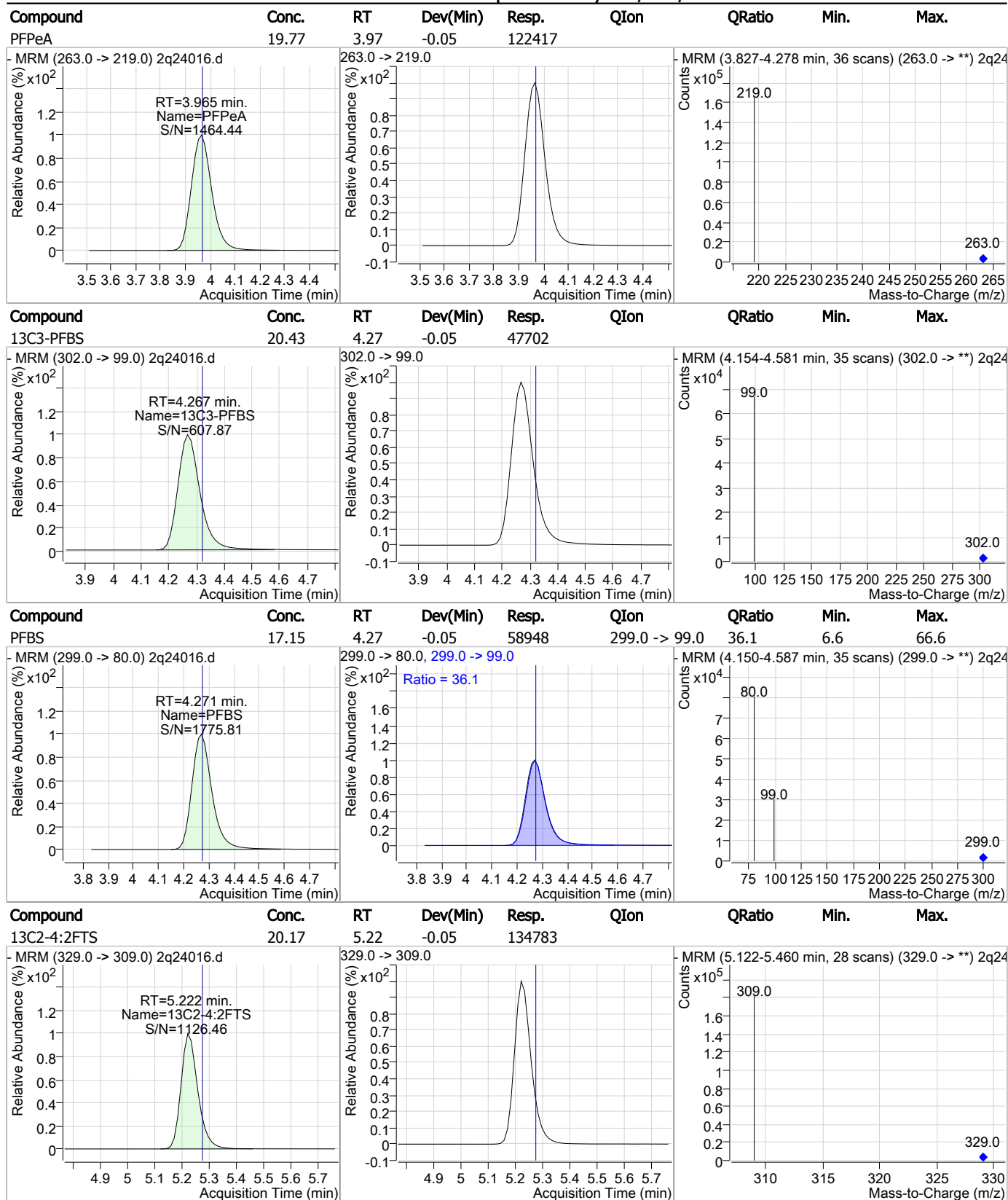
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.9
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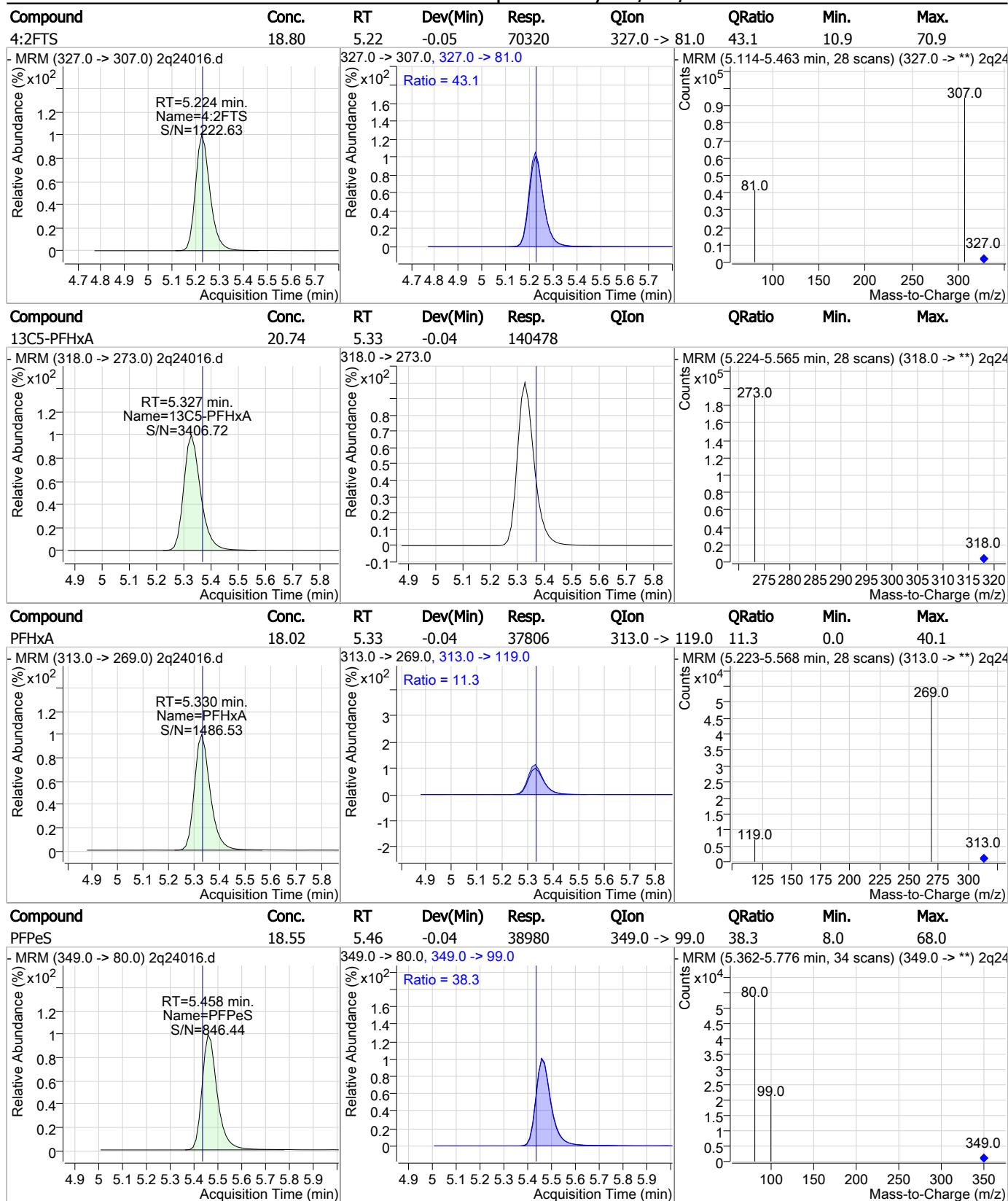
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

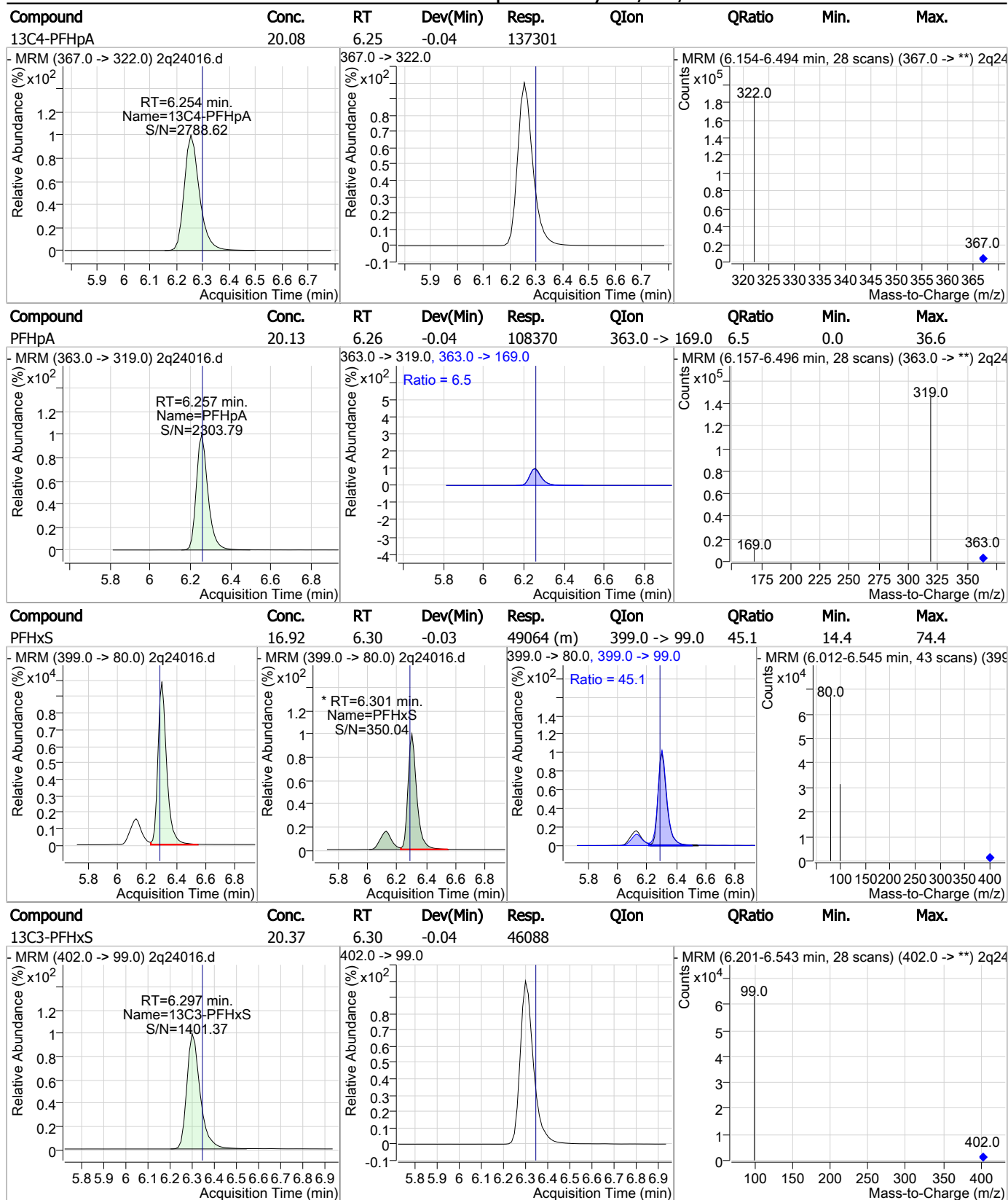


Perfluorinated Compounds by LC/MS/MS

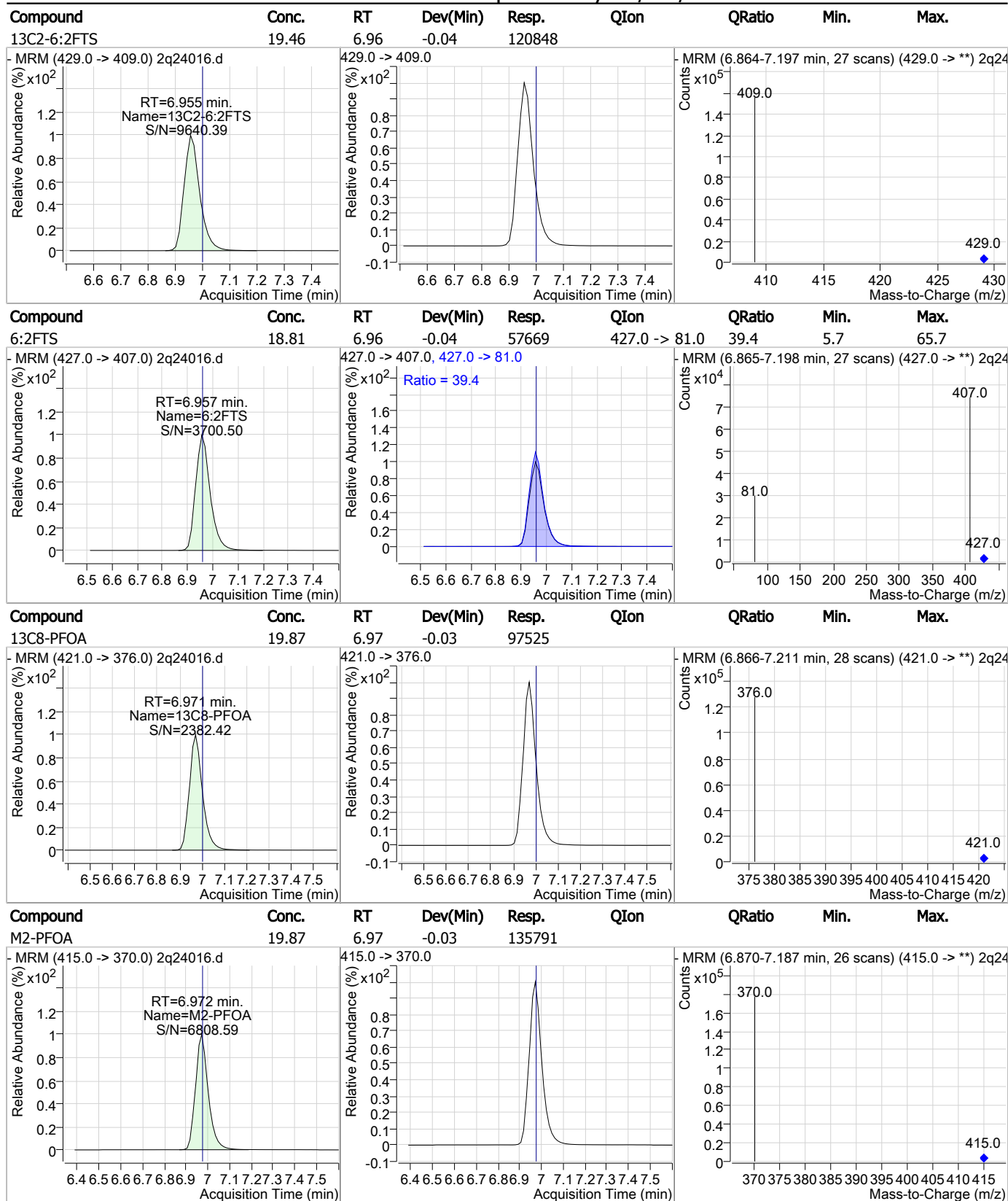


10.5.9 10

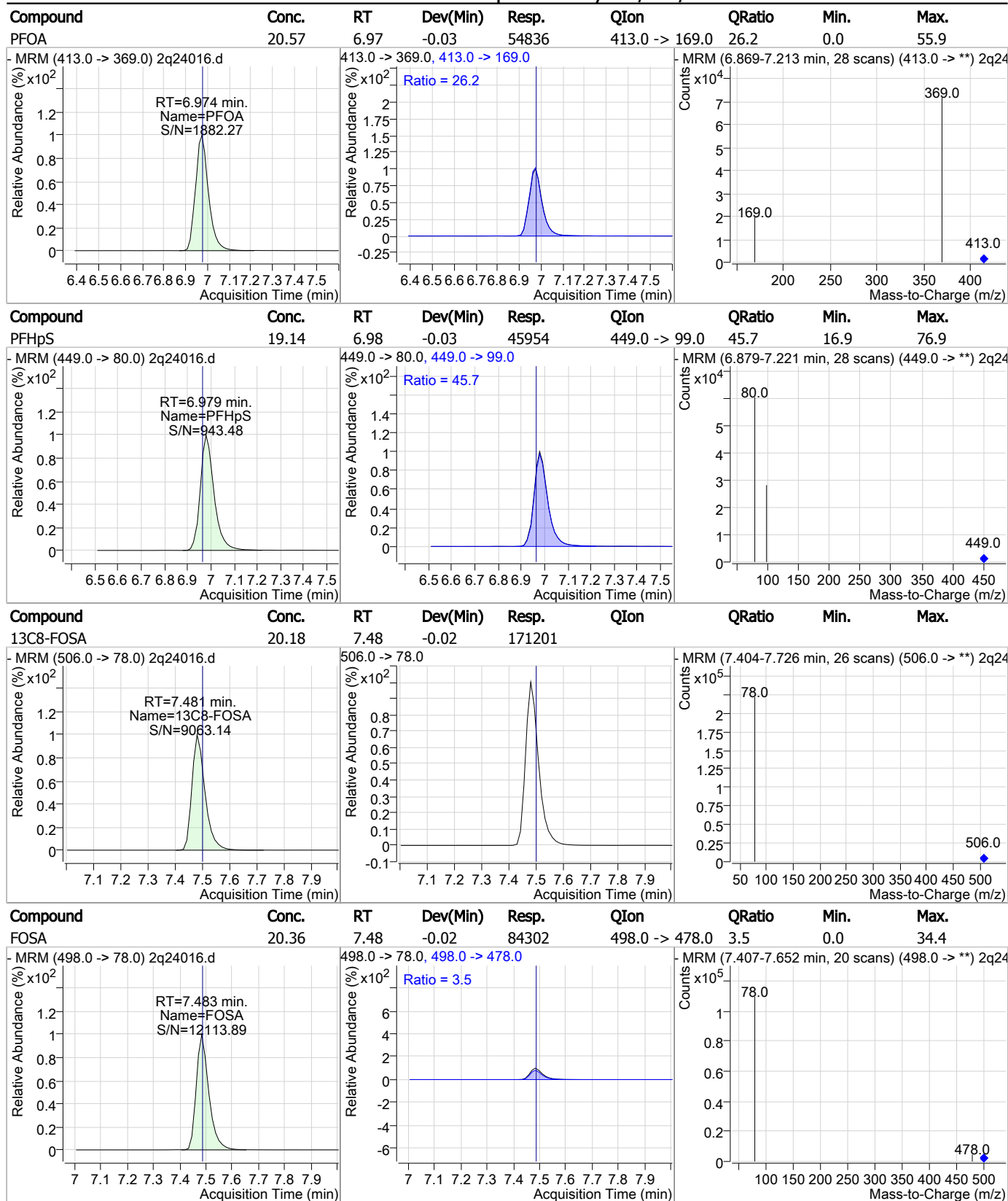
Perfluorinated Compounds by LC/MS/MS



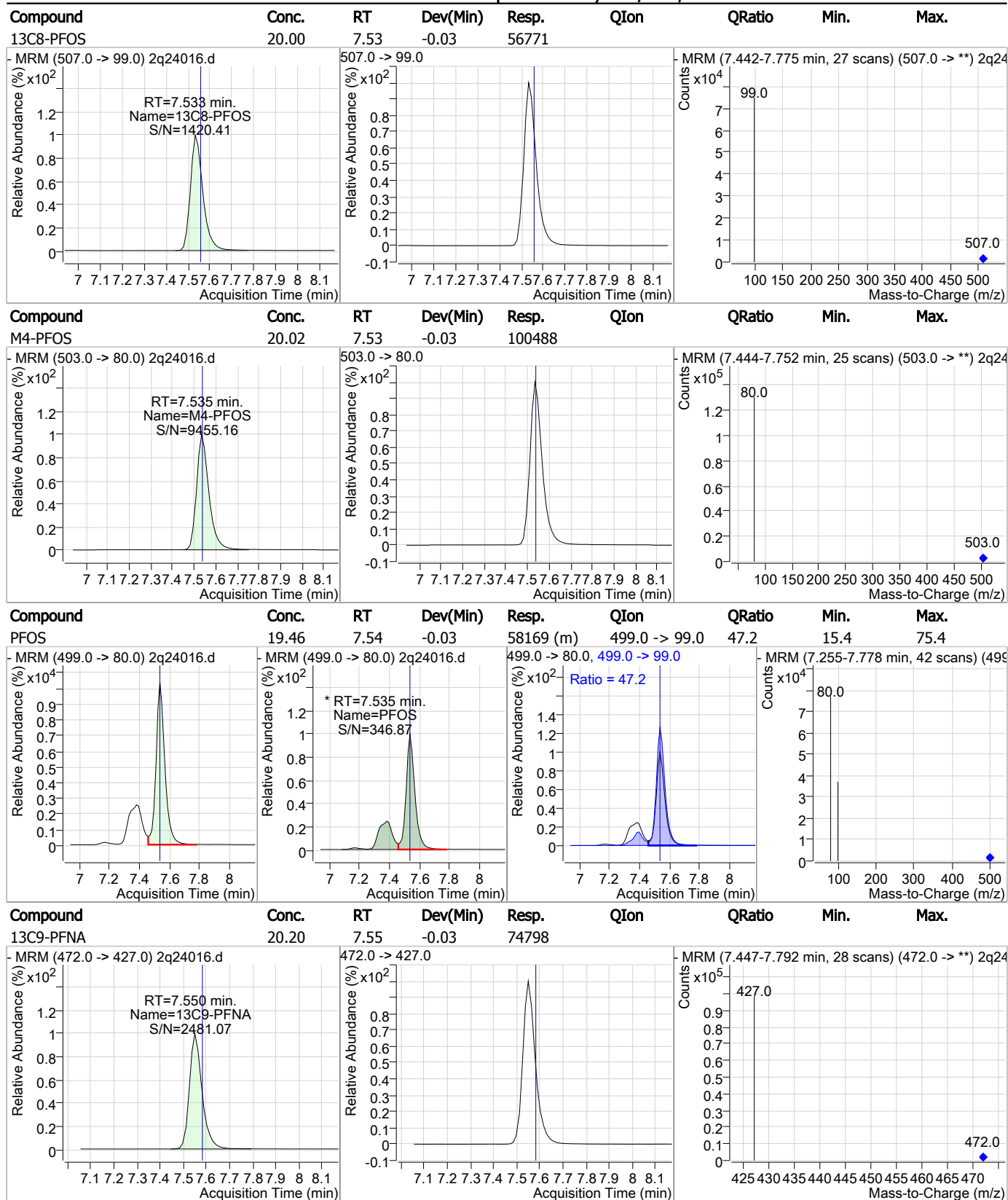
Perfluorinated Compounds by LC/MS/MS



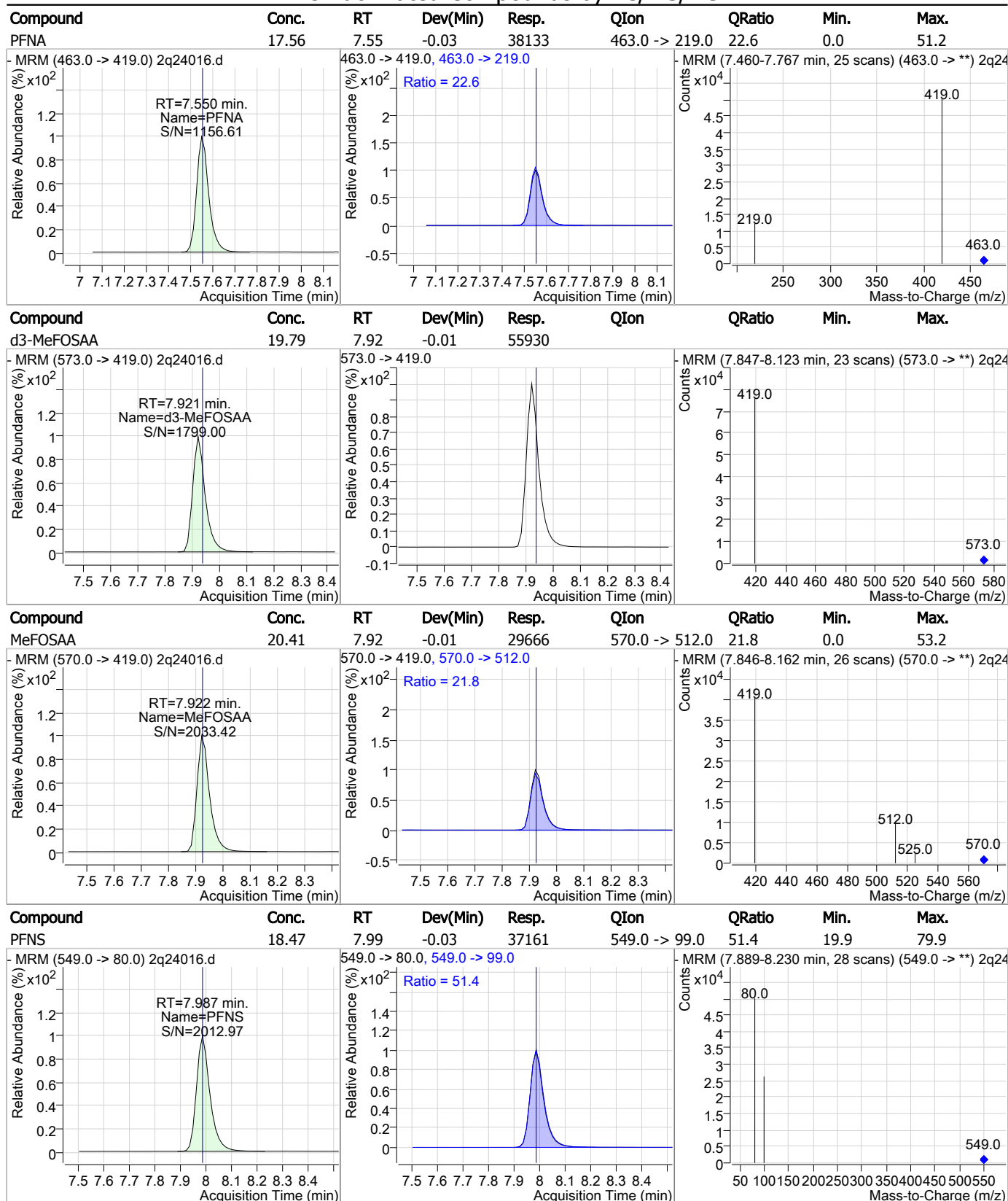
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

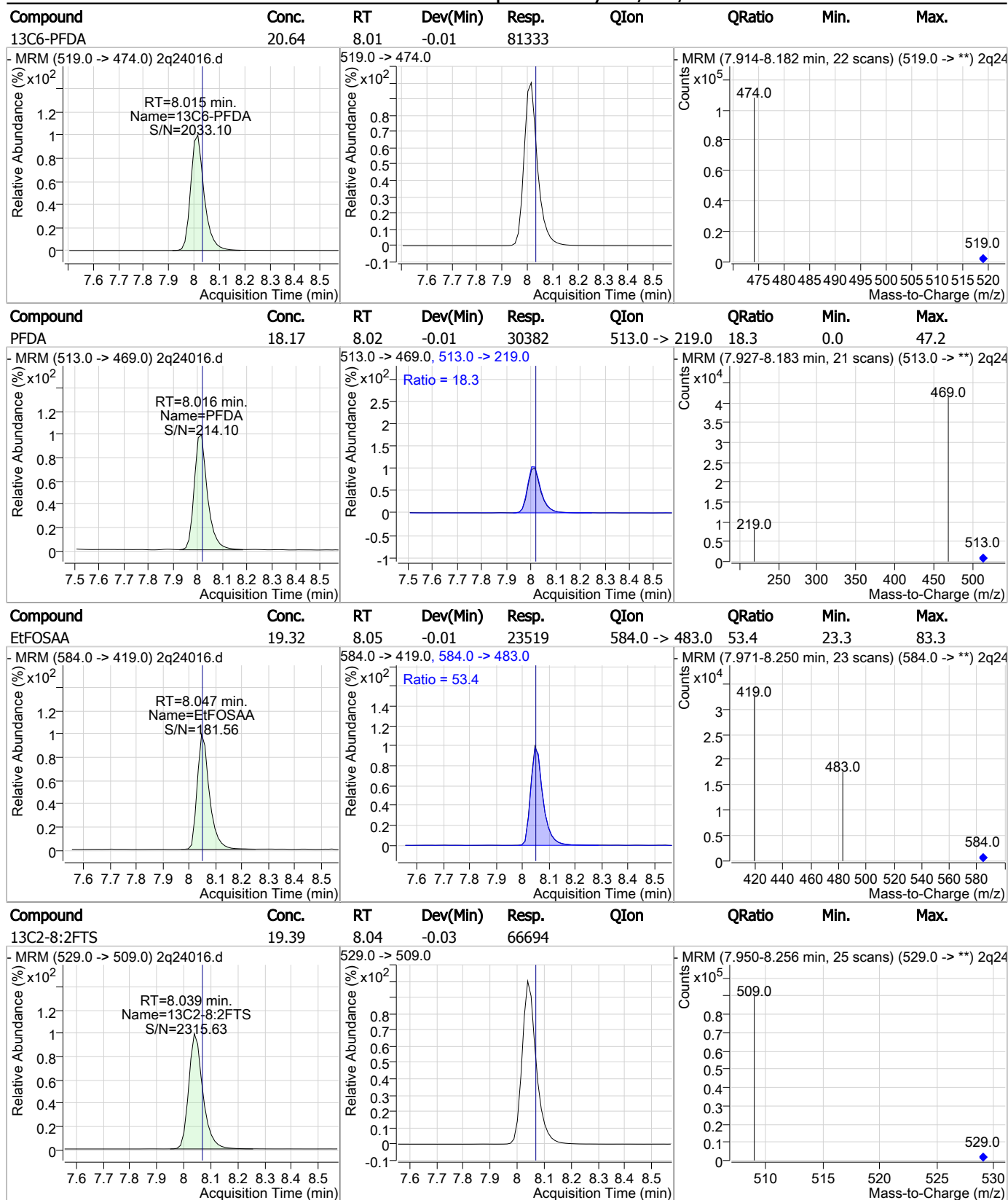


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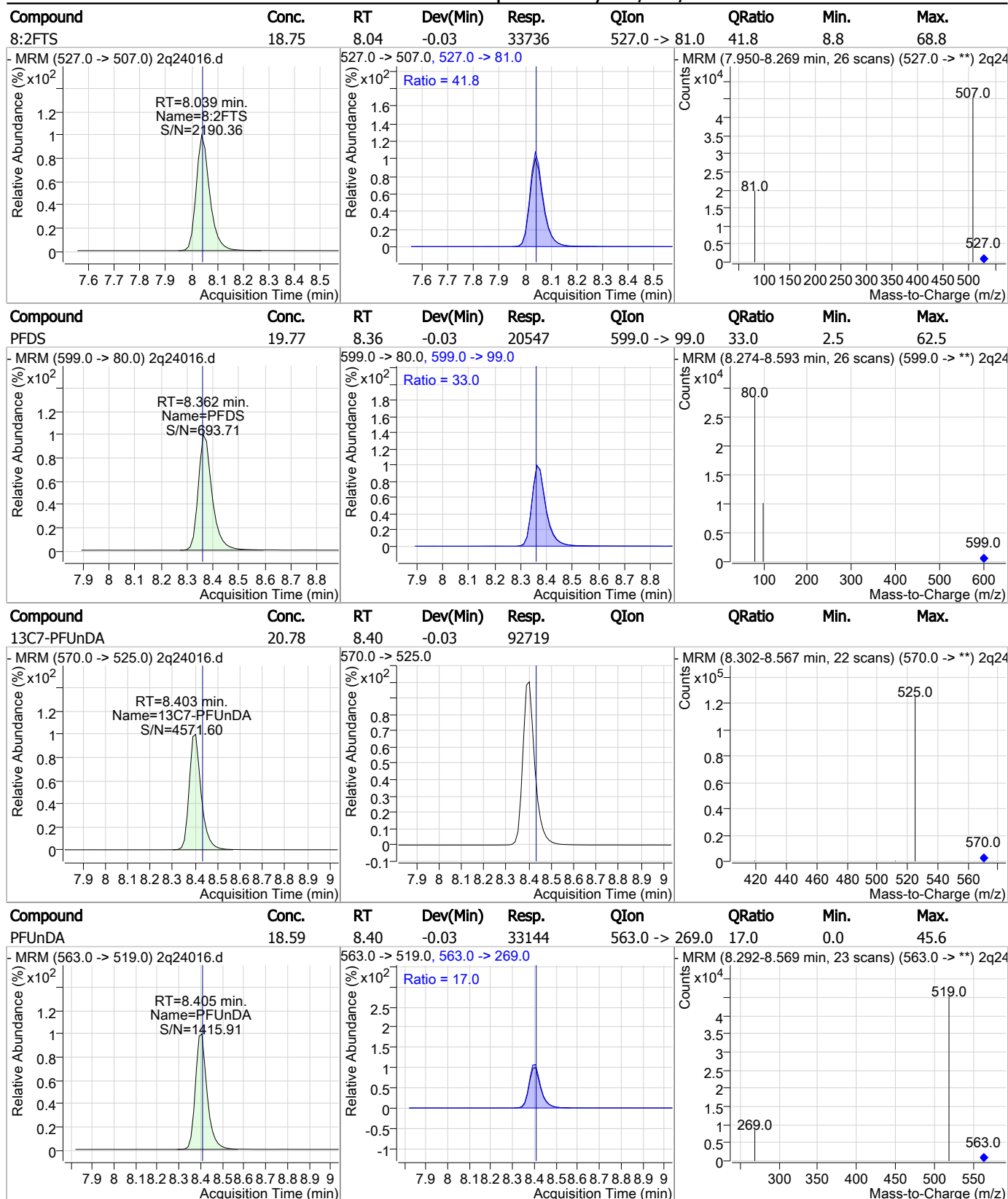


10.5.9 10

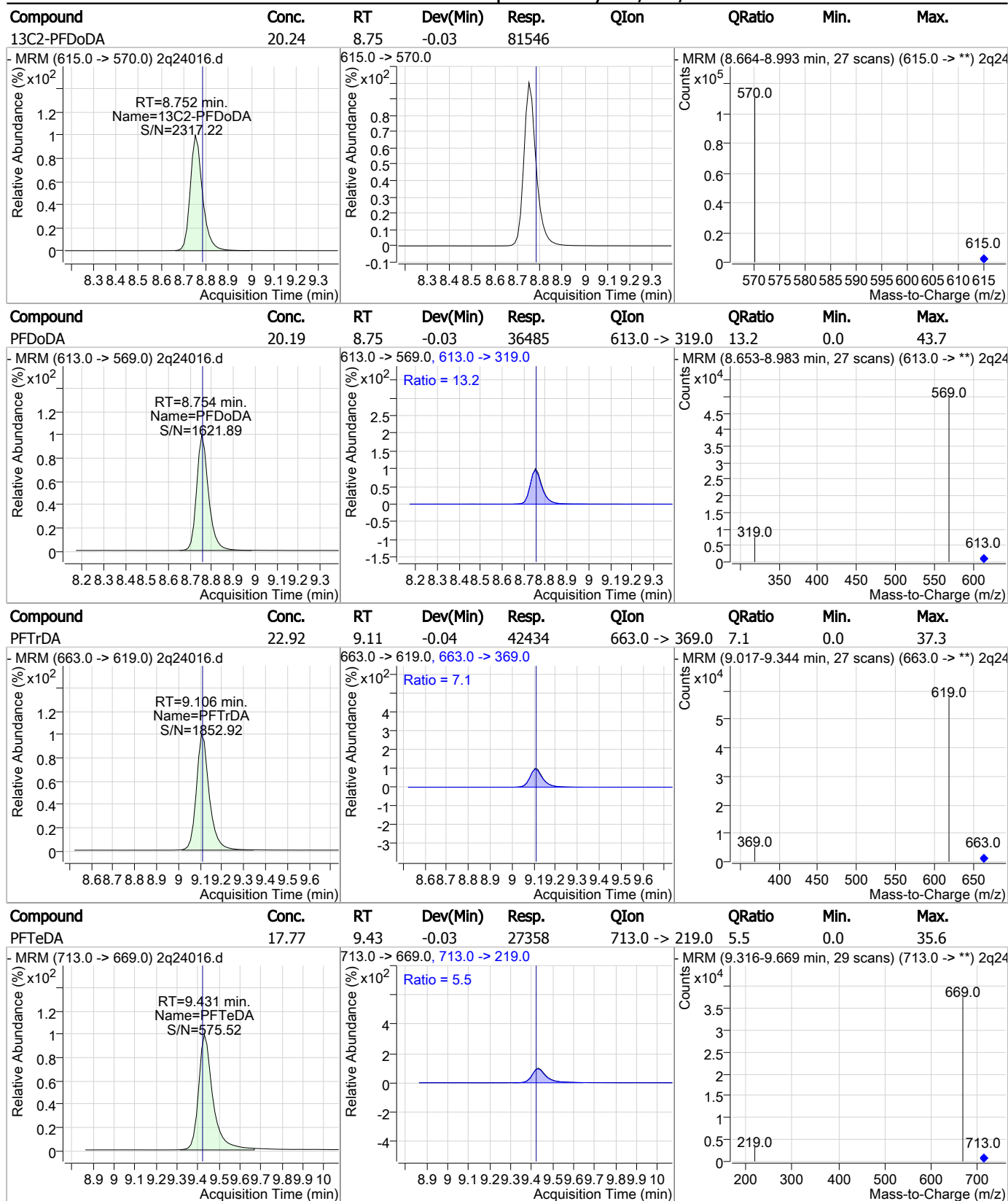
Perfluorinated Compounds by LC/MS/MS



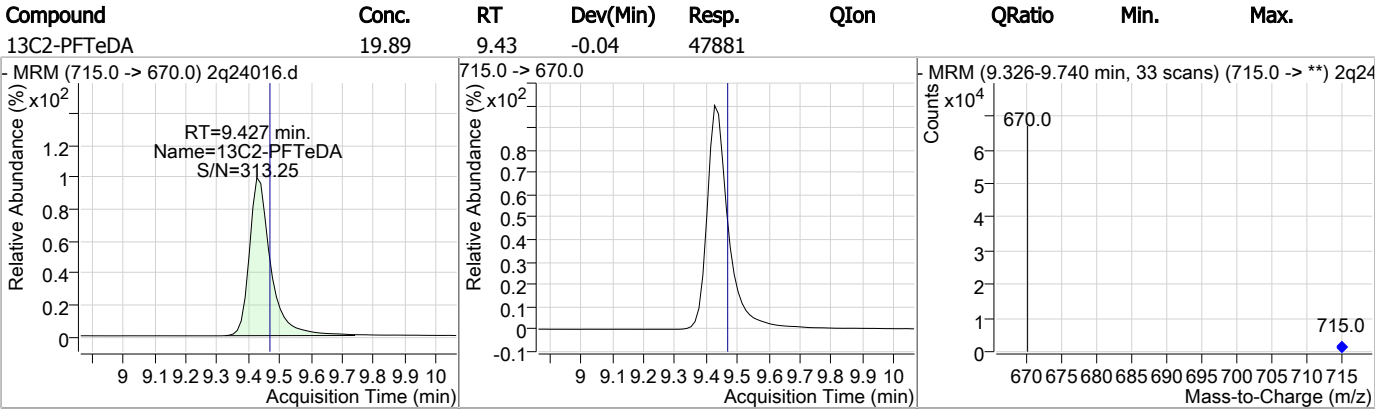
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.9
10

Manual Integration Approval Summary

Sample Number: S2Q374-ICV374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24016.D

Analyst approved: 11/27/18 10:33 Nancy Saunders

Injection Time: 11/26/18 15:28

Supervisor approved: 11/27/18 11:37 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.30	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.9.1
10

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24169.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 8:20:35 AM
 Sample Name : CC374-1.0
 Vial : Vial 3
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72749,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.998	415.0 -> 370.0	142361	20.00 µg/L	0.001
13C4-PFOS	7.562	503.0 -> 80.0	107134	20.00 µg/L	0.004
M4-PFBA	2.027	217.0 -> 172.0	357934	20.00 µg/L	0.000
M5-PFPeA	3.987	268.0 -> 223.0	158684	20.00 µg/L	-0.025
M5-PFHxA	5.353	318.0 -> 273.0	150947	20.00 µg/L	-0.012
M4-PFHpA	6.279	367.0 -> 322.0	150518	20.00 µg/L	-0.012
M8-PFOA	6.996	421.0 -> 376.0	109056	20.00 µg/L	0.001
M9-PFNA	7.576	472.0 -> 427.0	80655	20.00 µg/L	0.004
M6-PFDA	8.028	519.0 -> 474.0	96914	20.00 µg/L	0.001
M7-PFUnDA	8.416	570.0 -> 525.0	96501	20.00 µg/L	0.001
M2-PFDoDA	8.765	615.0 -> 570.0	85229	20.00 µg/L	0.000
M2-PFTeDA	9.440	715.0 -> 670.0	51183	20.00 µg/L	0.000
M8-FOSA	7.507	506.0 -> 78.0	192134	20.00 µg/L	0.002
M3-PFBS	4.305	302.0 -> 99.0	51632	20.00 µg/L	-0.012
M3-PFHxS	6.323	402.0 -> 99.0	48004	20.00 µg/L	-0.012
M8-PFOS	7.560	507.0 -> 99.0	62171	20.00 µg/L	0.004
M2-4:2FTS	5.247	329.0 -> 309.0	132998	20.00 µg/L	-0.012
M2-6:2FTS	6.981	429.0 -> 409.0	127674	20.00 µg/L	-0.012
M2-8:2FTS	8.064	529.0 -> 509.0	70691	20.00 µg/L	0.014
M3-MeFOSAA	7.947	573.0 -> 419.0	61687	20.00 µg/L	0.001

System Monitoring Compounds

13C2-4:2FTS	5.247	329.0 -> 309.0	132373	19.81 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C2-6:2FTS	6.981	429.0 -> 409.0	127589	20.55 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-8:2FTS	8.064	529.0 -> 509.0	70683	20.55 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFDoDA	8.765	615.0 -> 570.0	85323	21.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFTeDA	9.440	715.0 -> 670.0	51211	21.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C3-PFBS	4.305	302.0 -> 99.0	50951	21.82 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C3-PFHxS	6.323	402.0 -> 99.0	47832	21.14 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C4-PFBA	2.027	217.0 -> 172.0	357549	22.74 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C4-PFHpA	6.279	367.0 -> 322.0	150085	21.95 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C5-PFHxA	5.353	318.0 -> 273.0	150815	22.27 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C5-PFPeA	3.987	268.0 -> 223.0	157502	22.36 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 111.8%		
13C6-PFDA	8.028	519.0 -> 474.0	96950	24.61 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 123.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.416	570.0 -> 525.0	96676	21.67 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C8-FOSA	7.507	506.0 -> 78.0	192162	22.65 µg/L	0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.3%	
13C8-PFOA	6.996	421.0 -> 376.0	108931	22.19 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C8-PFOS	7.560	507.0 -> 99.0	62265	21.93 µg/L	0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C9-PFNA	7.576	472.0 -> 427.0	80677	21.79 µg/L	0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
d3-MeFOSAA	7.947	573.0 -> 419.0	61701	21.83 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
M2-PFOA	6.998	415.0 -> 370.0	142843	20.09 ng/ml	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
M4-PFOS	7.562	503.0 -> 80.0	107063	20.03 ng/ml	0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%	

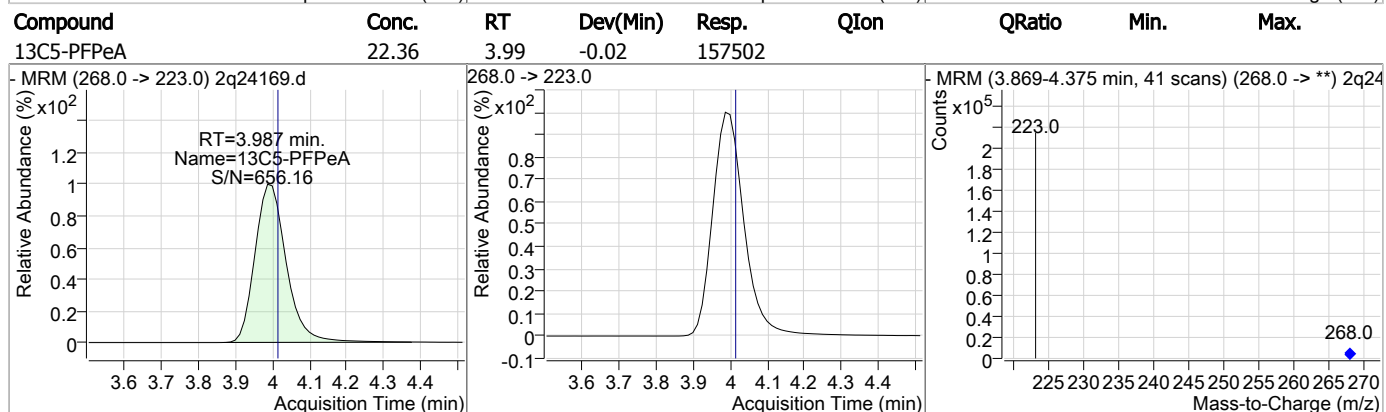
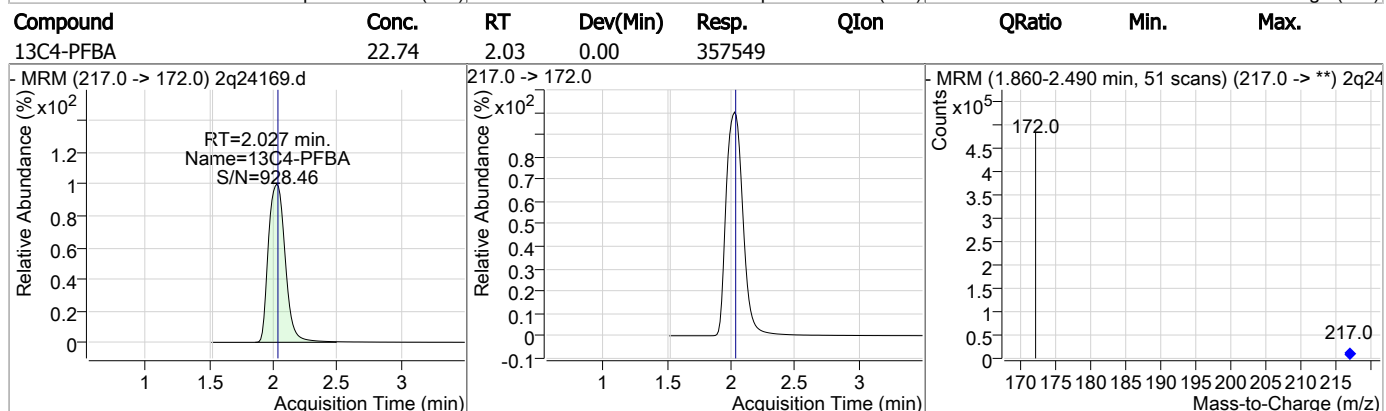
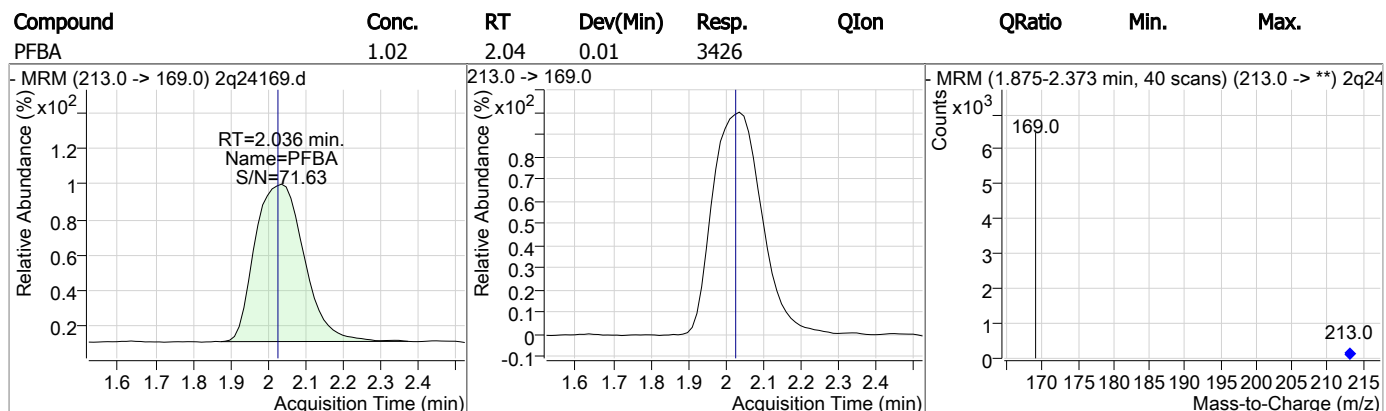
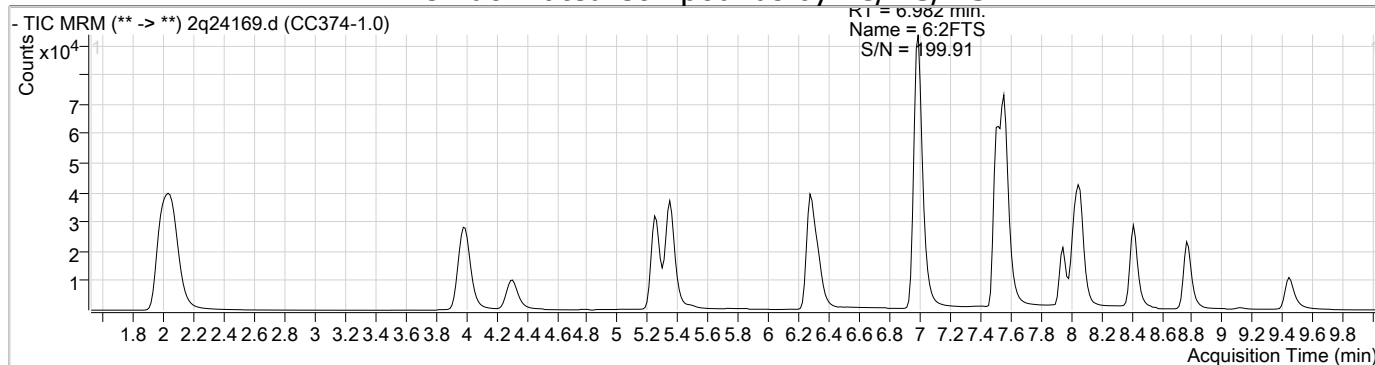
Target Compounds

					QValue
4:2FTS	5.250	327.0 -> 307.0	3723	0.97 µg/L	95
6:2FTS	6.982	427.0 -> 407.0	3411	1.01 µg/L	94
8:2FTS	8.065	527.0 -> 507.0	1911	0.95 µg/L	82
EtFOSAA	8.072	584.0 -> 419.0	1393	1.02 µg/L	94
FOSA	7.510	498.0 -> 78.0	4486	0.97 µg/L	96
MeFOSAA	7.947	570.0 -> 419.0	1756	1.10 µg/L	89
PFBA	2.036	213.0 -> 169.0	3426	1.02 µg/L	100
PFBS	4.296	299.0 -> 80.0	3683	0.99 µg/L	100
PFDA	8.029	513.0 -> 469.0	1872	0.94 µg/L	99
PFDoDA	8.767	613.0 -> 569.0	2006	1.06 µg/L	98
PFDS	8.388	599.0 -> 80.0	1146	1.01 µg/L	92
PFHpA	6.282	363.0 -> 319.0	5521	0.94 µg/L	98
PFHpS	7.006	449.0 -> 80.0	2731	1.09 µg/L	98
PFHxA	5.355	313.0 -> 269.0	2238	0.99 µg/L	94
PFHxS	6.326	399.0 -> 80.0	3038	1.01 µg/L	97
PFNA	7.577	463.0 -> 419.0	2384	1.02 µg/L	93
PFNS	8.000	549.0 -> 80.0	2245	0.99 µg/L	98
PFOA	6.999	413.0 -> 369.0	3021	1.01 µg/L	93
PFOS	7.562	499.0 -> 80.0	3289	1.00 µg/L	88
PFPeA	3.990	263.0 -> 219.0	6457	0.96 µg/L	100
PFPeS	5.483	349.0 -> 80.0	2324	1.02 µg/L	99
PFTeDA	9.444	713.0 -> 669.0	1785	1.08 µg/L	100
PFTTrDA	9.119	663.0 -> 619.0	1996	1.01 µg/L	98
PFUnDA	8.417	563.0 -> 519.0	1716	0.93 µg/L	81

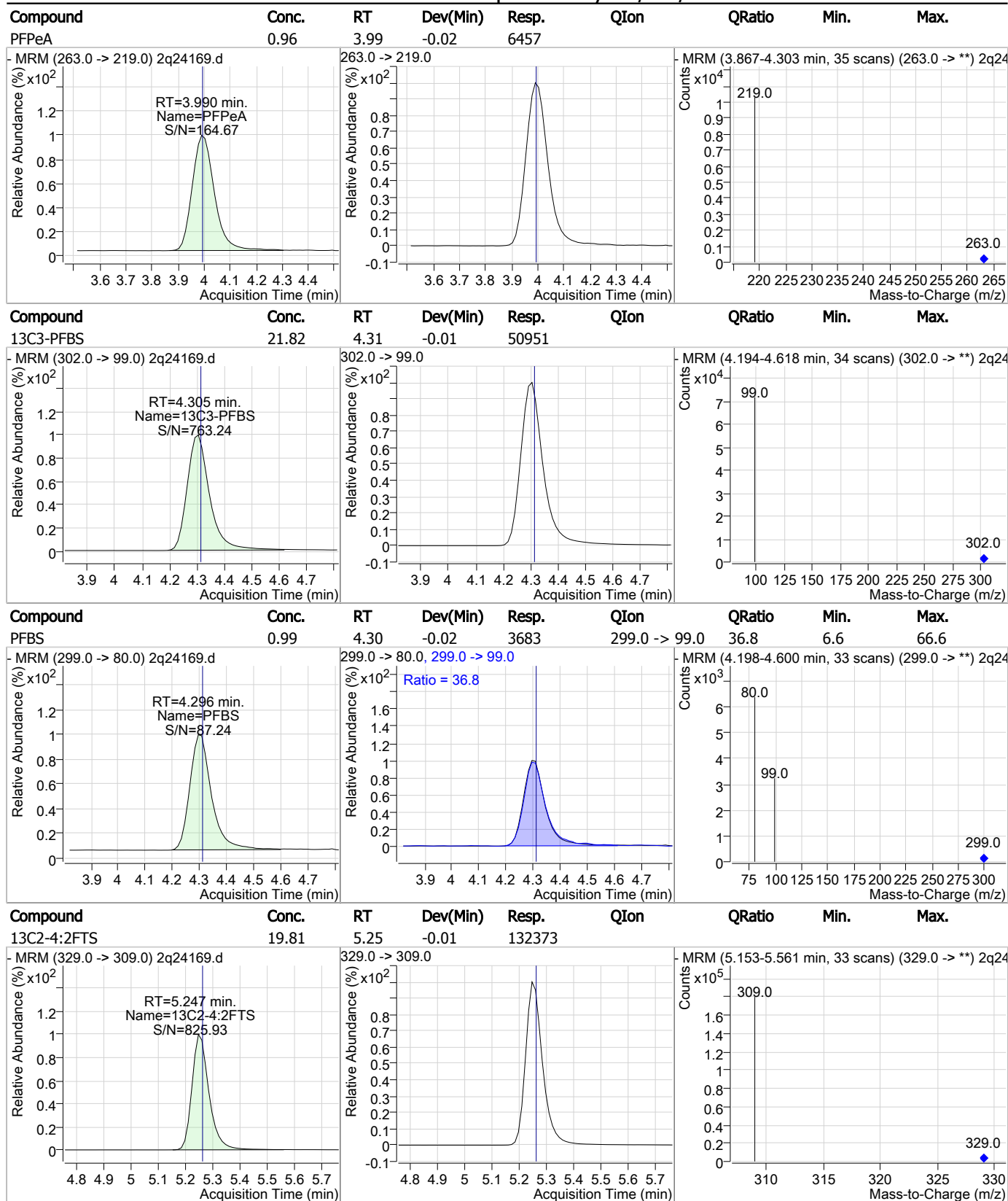
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.10 10

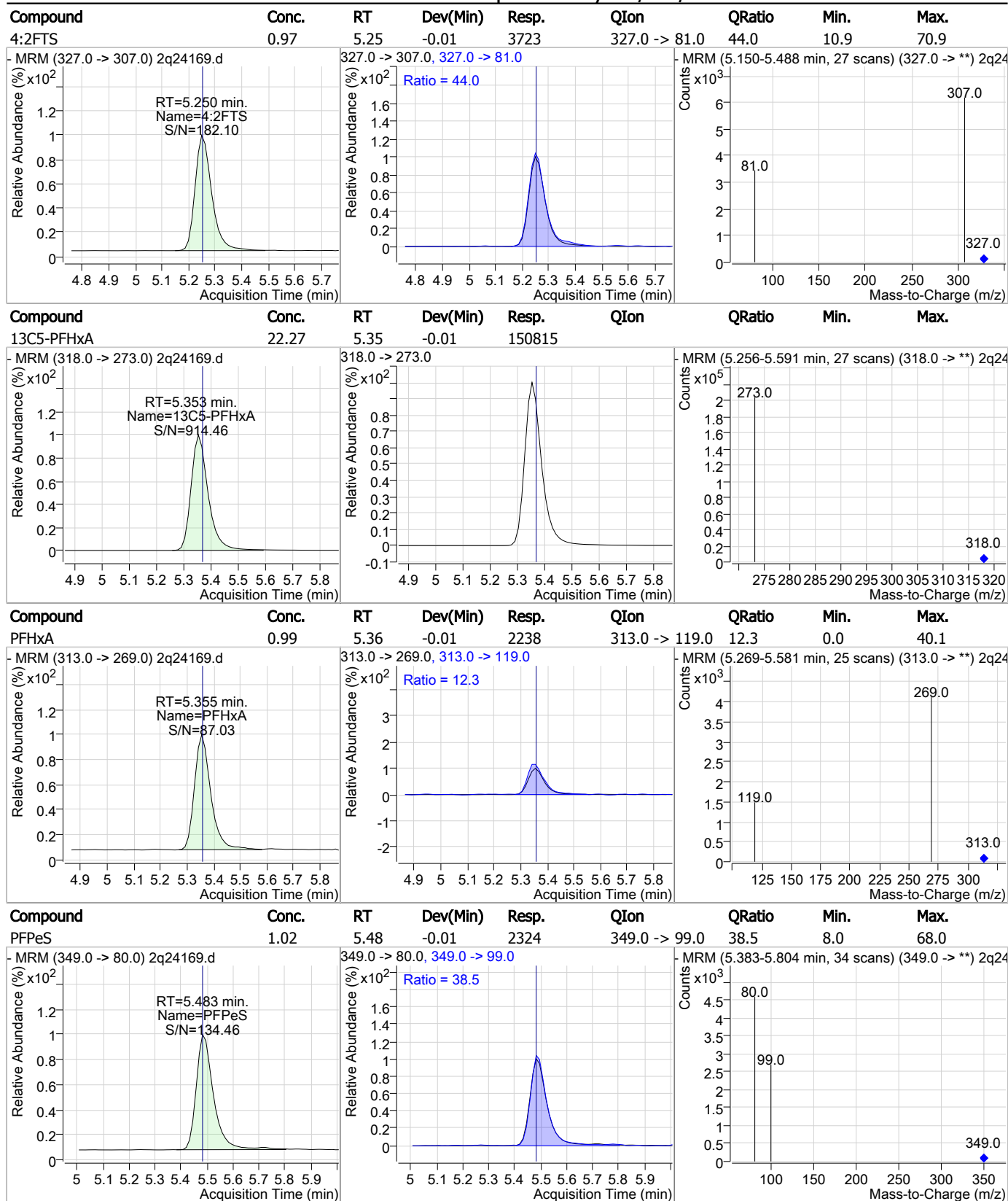
Perfluorinated Compounds by LC/MS/MS



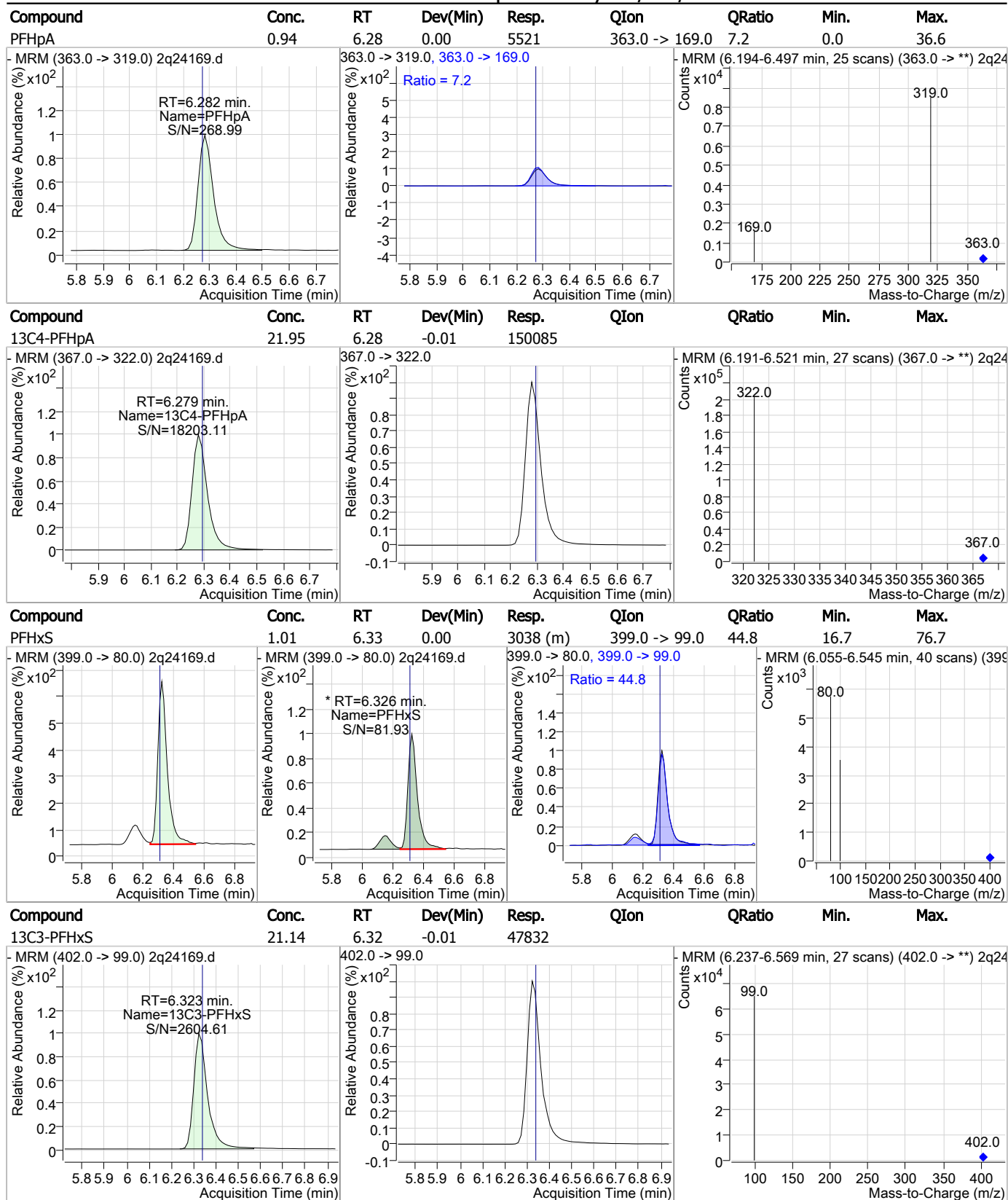
Perfluorinated Compounds by LC/MS/MS



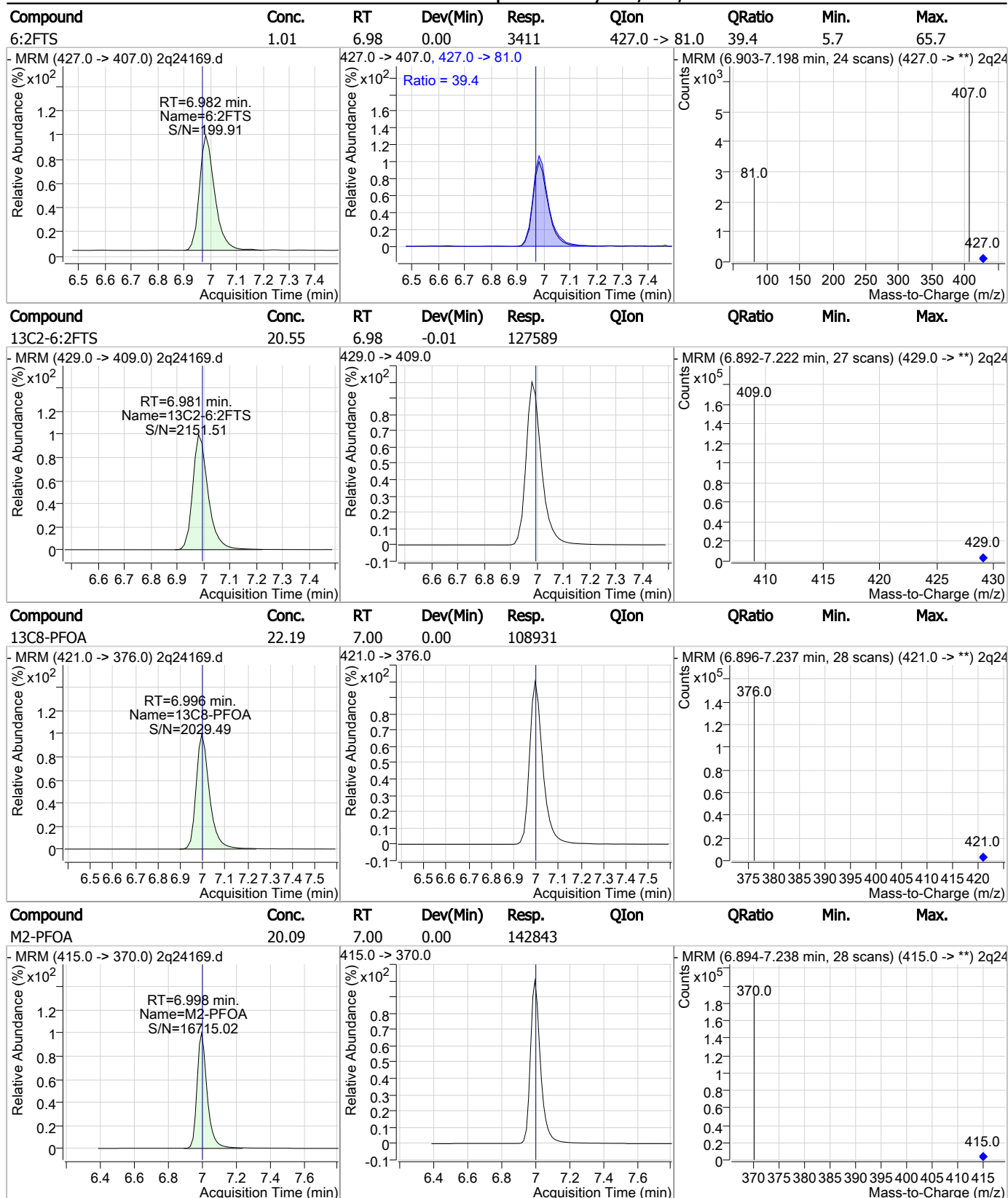
Perfluorinated Compounds by LC/MS/MS



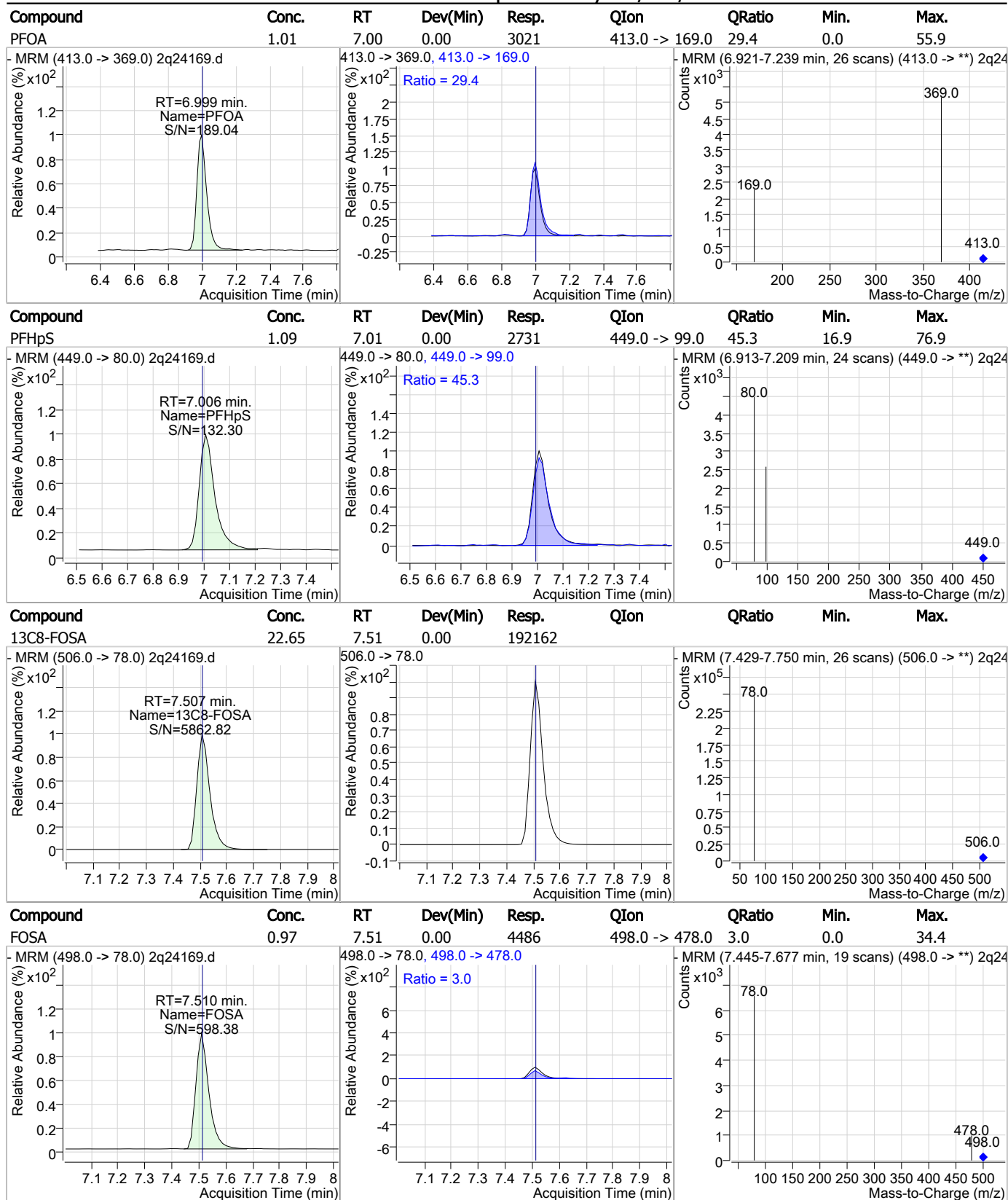
Perfluorinated Compounds by LC/MS/MS



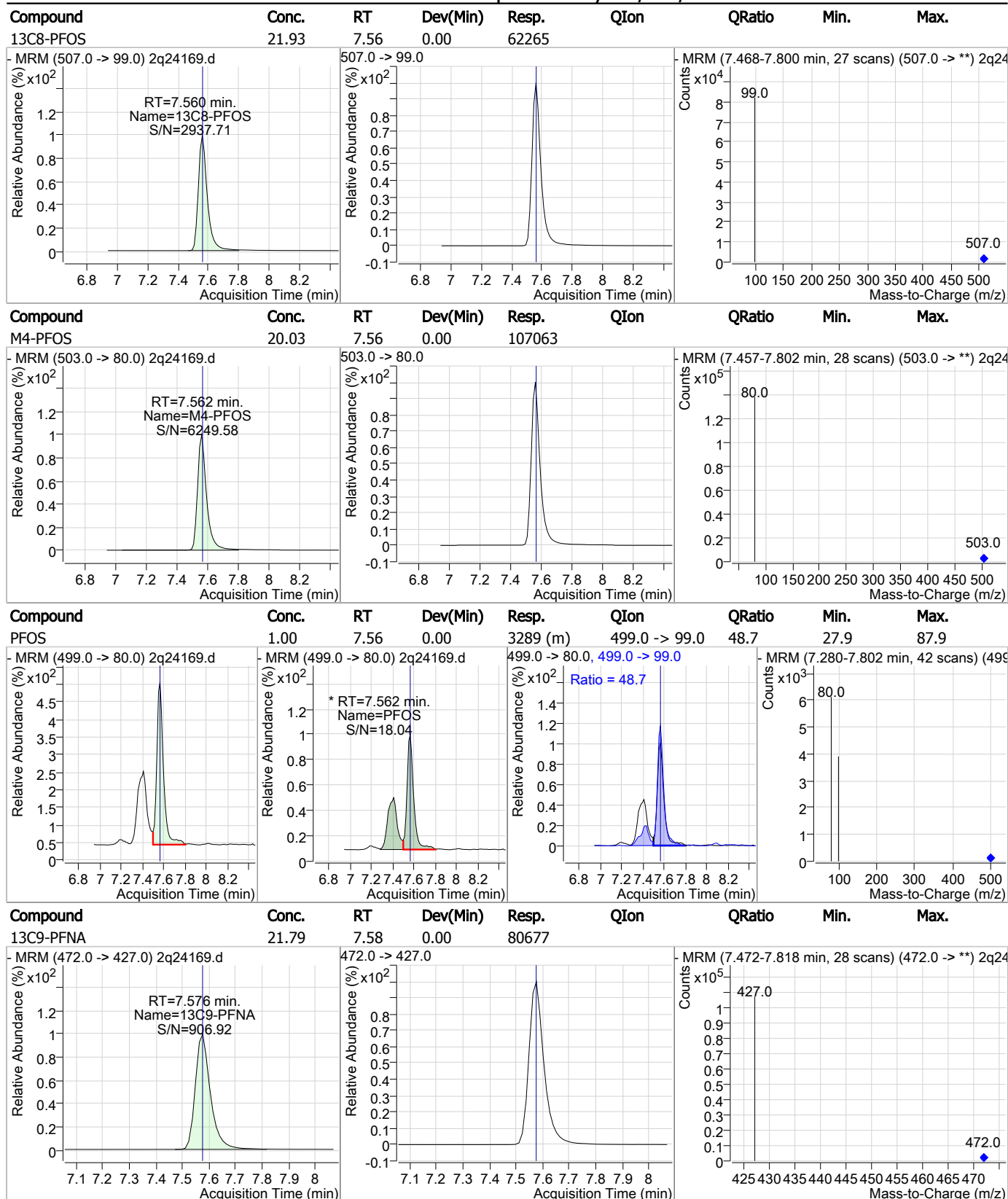
Perfluorinated Compounds by LC/MS/MS



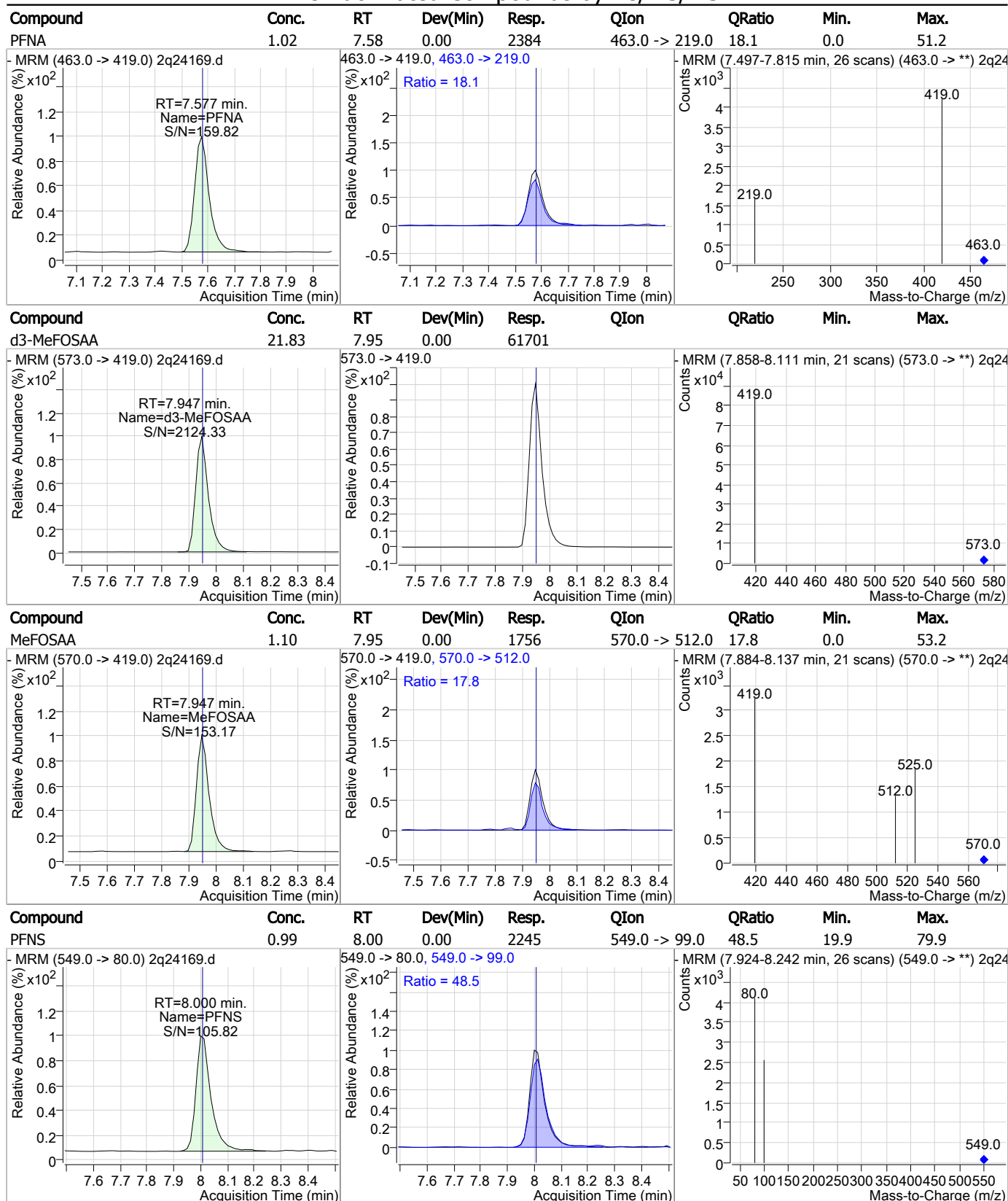
Perfluorinated Compounds by LC/MS/MS



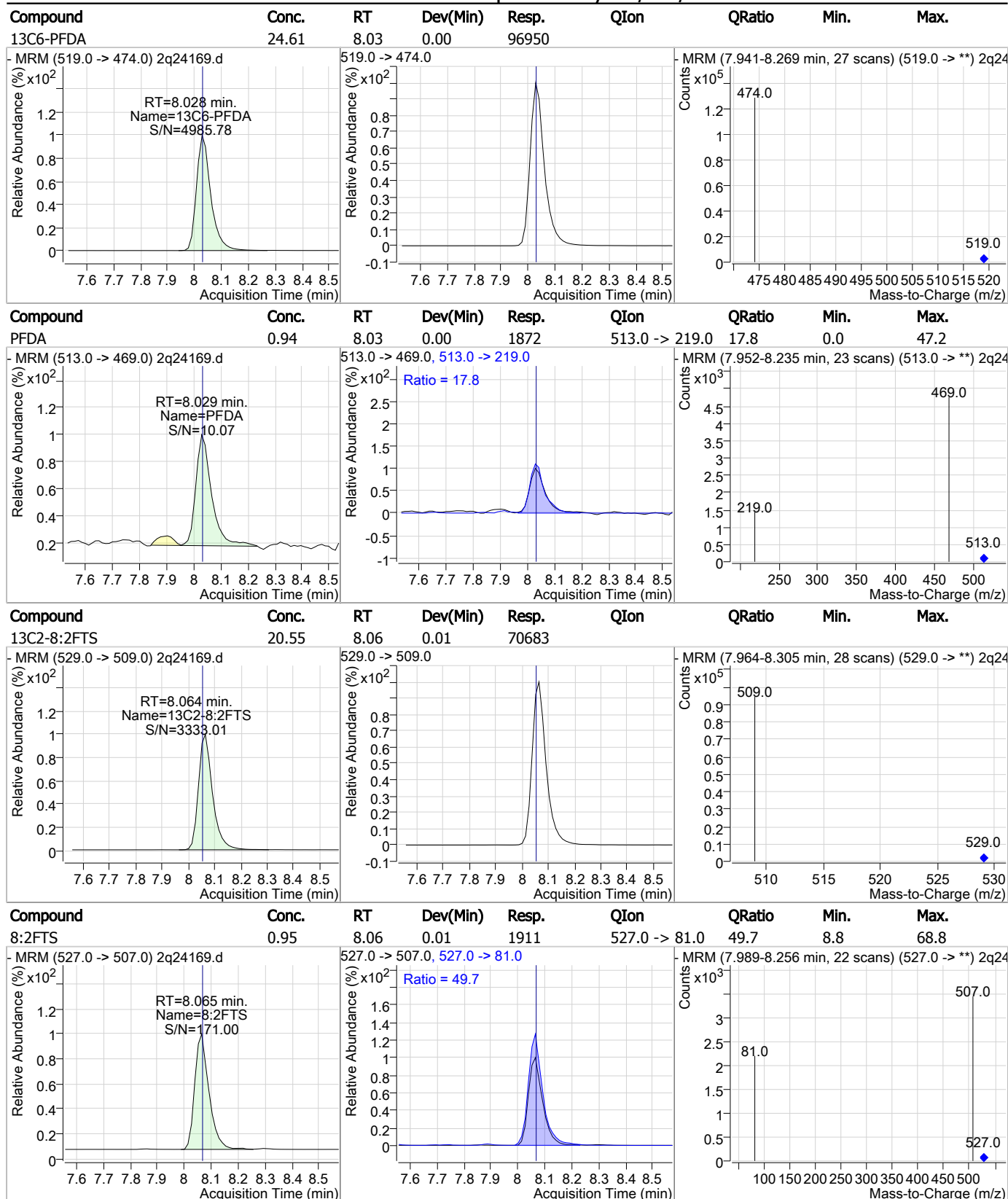
Perfluorinated Compounds by LC/MS/MS



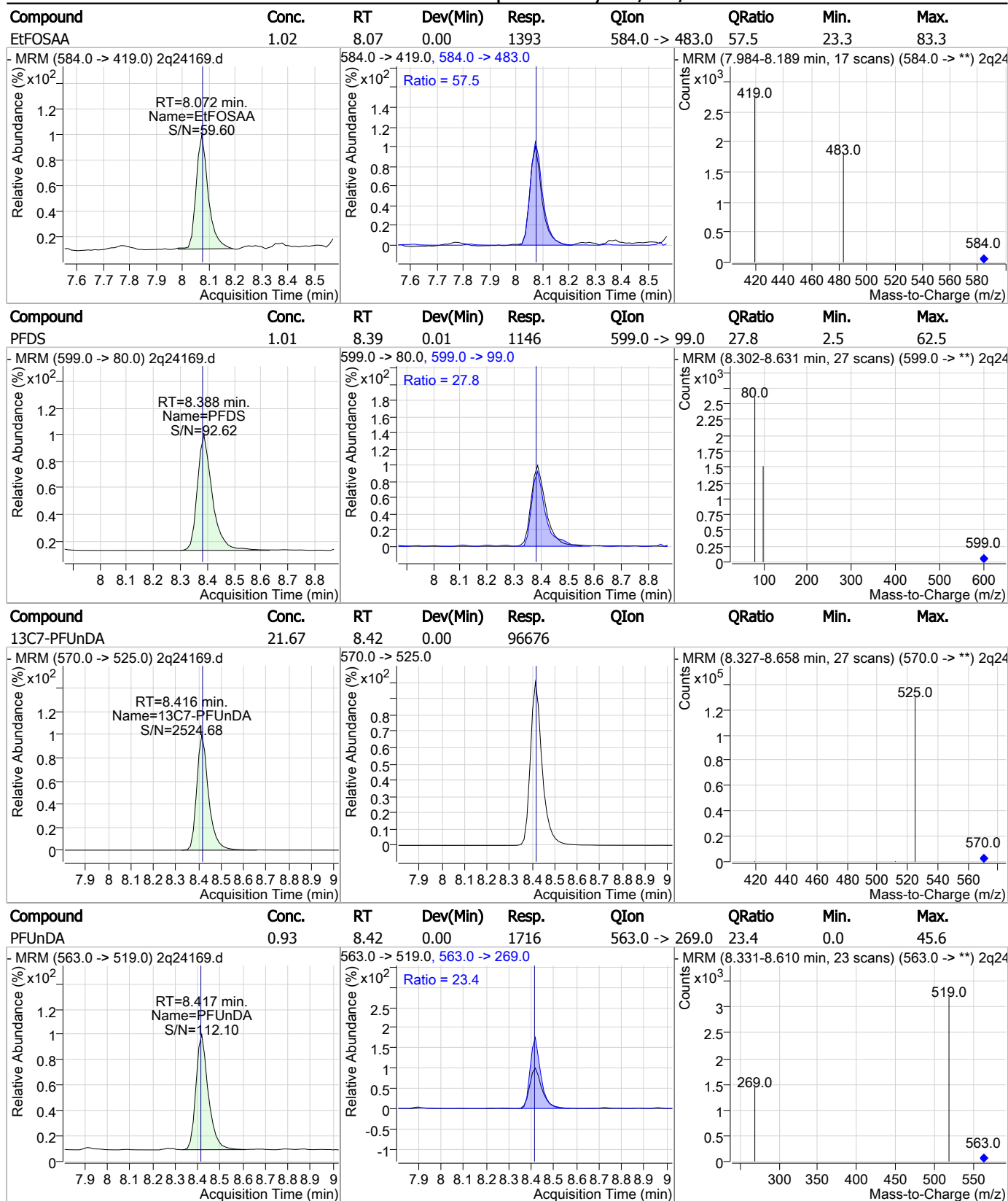
Perfluorinated Compounds by LC/MS/MS



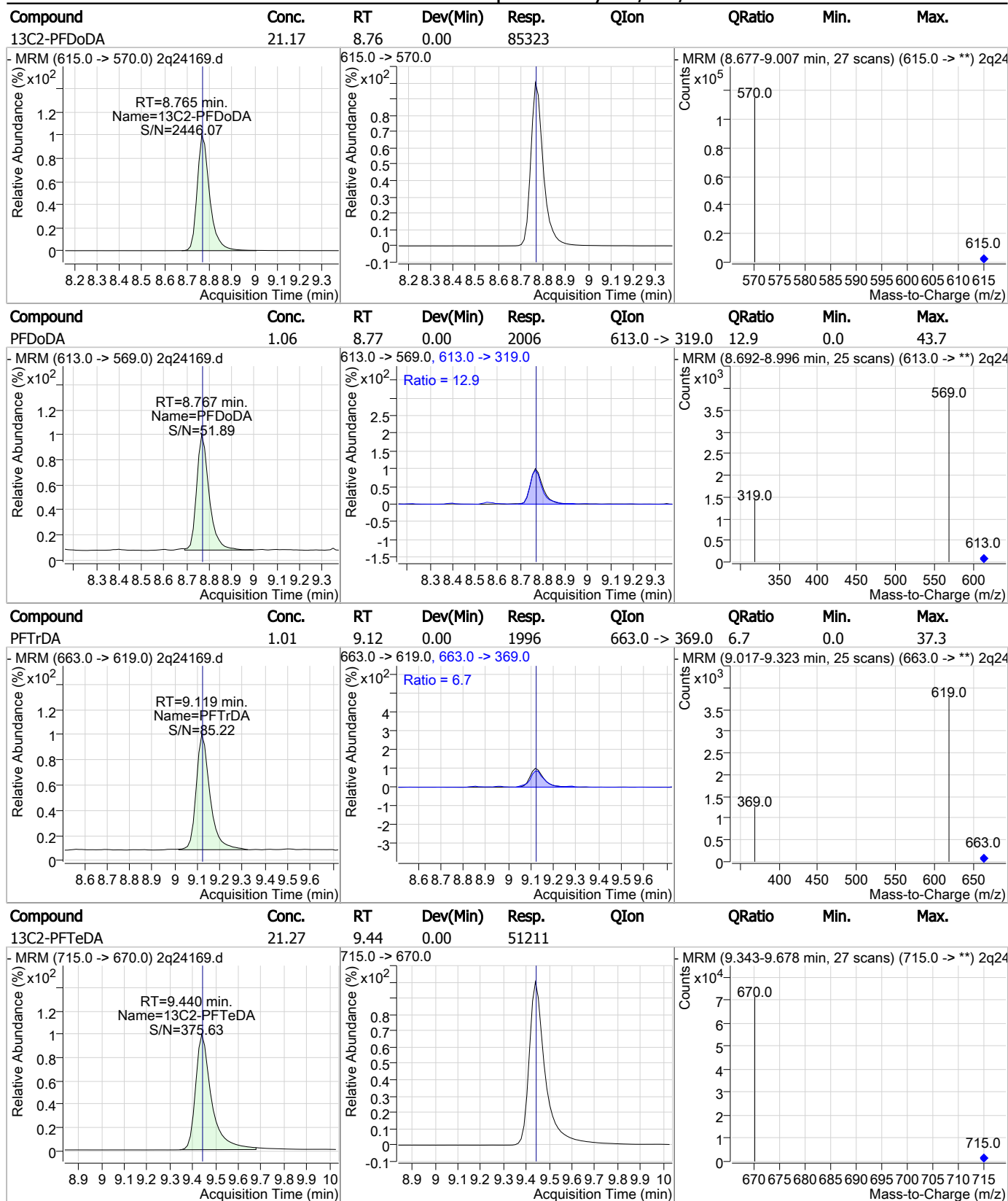
Perfluorinated Compounds by LC/MS/MS



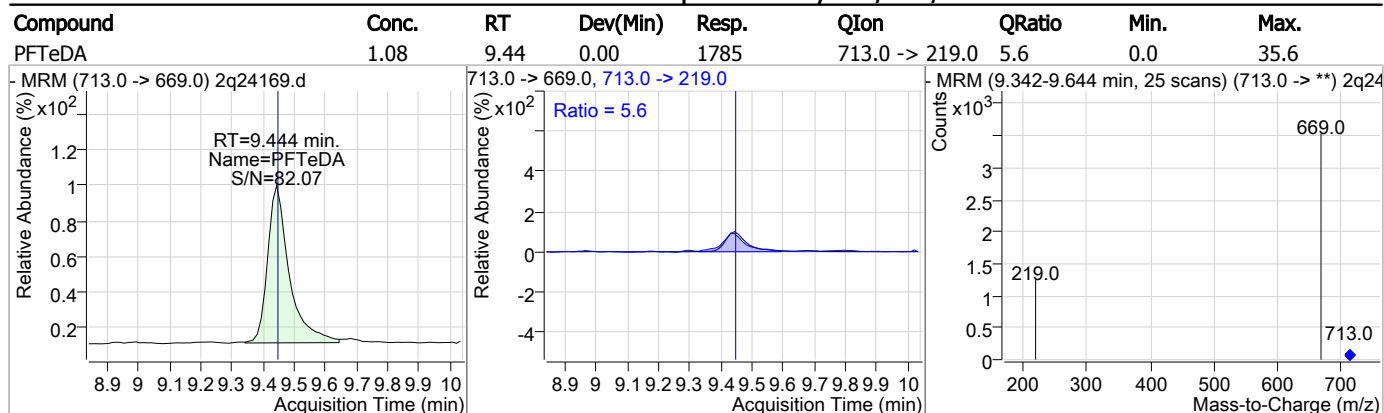
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

10.5.10
10

Manual Integration Approval Summary

Sample Number:

S2Q377-CC374

Lab FileID:

2Q24169.D

Injection Time:

11/28/18 08:20

Method:

EPA 537M QSM5.1 B-15

Analyst approved:

11/28/18 16:01 Nancy Saunders

Supervisor approved:

11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.56	Split peak

10.5.10.1
10

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24170.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 8:36:19 AM
 Sample Name : CC374-20
 Vial : Vial 7
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72749,S2Q377,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	7.011	415.0 -> 370.0	137735	20.00 µg/L	0.015
13C4-PFOS	7.574	503.0 -> 80.0	105567	20.00 µg/L	0.017
M4-PFBA	2.052	217.0 -> 172.0	347455	20.00 µg/L	0.025
M5-PFPeA	4.037	268.0 -> 223.0	152768	20.00 µg/L	0.025
M5-PFHxA	5.378	318.0 -> 273.0	144947	20.00 µg/L	0.013
M4-PFHpA	6.304	367.0 -> 322.0	144999	20.00 µg/L	0.013
M8-PFOA	7.010	421.0 -> 376.0	101978	20.00 µg/L	0.015
M9-PFNA	7.589	472.0 -> 427.0	75745	20.00 µg/L	0.016
M6-PFDA	8.041	519.0 -> 474.0	85538	20.00 µg/L	0.014
M7-PFUnDA	8.428	570.0 -> 525.0	90493	20.00 µg/L	0.013
M2-PFDoDA	8.777	615.0 -> 570.0	81160	20.00 µg/L	0.013
M2-PFTeDA	9.452	715.0 -> 670.0	49103	20.00 µg/L	0.013
M8-FOSA	7.520	506.0 -> 78.0	173787	20.00 µg/L	0.014
M3-PFBS	4.343	302.0 -> 99.0	49894	20.00 µg/L	0.025
M3-PFHxS	6.348	402.0 -> 99.0	46965	20.00 µg/L	0.013
M8-PFOS	7.573	507.0 -> 99.0	61157	20.00 µg/L	0.017
M2-4:2FTS	5.285	329.0 -> 309.0	135619	20.00 µg/L	0.025
M2-6:2FTS	6.993	429.0 -> 409.0	126588	20.00 µg/L	0.001
M2-8:2FTS	8.078	529.0 -> 509.0	69678	20.00 µg/L	0.028
M3-MeFOSAA	7.959	573.0 -> 419.0	58600	20.00 µg/L	0.013
System Monitoring Compounds					
13C2-4:2FTS	5.285	329.0 -> 309.0	135481	20.27 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-6:2FTS	6.993	429.0 -> 409.0	126418	20.36 µg/L	0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C2-8:2FTS	8.078	529.0 -> 509.0	69639	20.25 µg/L	0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-PFDoDA	8.777	615.0 -> 570.0	81154	20.14 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.452	715.0 -> 670.0	48780	20.26 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-PFBS	4.343	302.0 -> 99.0	49309	21.12 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C3-PFHxS	6.348	402.0 -> 99.0	46965	20.75 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C4-PFBA	2.052	217.0 -> 172.0	347331	22.09 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C4-PFHpA	6.304	367.0 -> 322.0	144540	21.14 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C5-PFHxA	5.378	318.0 -> 273.0	144271	21.31 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C5-PFPeA	4.037	268.0 -> 223.0	151690	21.54 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C6-PFDA	8.041	519.0 -> 474.0	85519	21.71 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 108.5%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.428	570.0 -> 525.0	90535	20.29 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-FOSA	7.520	506.0 -> 78.0	173774	20.48 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOA	7.010	421.0 -> 376.0	102106	20.80 µg/L	0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOS	7.573	507.0 -> 99.0	61242	21.57 µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C9-PFNA	7.589	472.0 -> 427.0	75633	20.42 µg/L	0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	7.959	573.0 -> 419.0	58642	20.75 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
M2-PFOA	7.011	415.0 -> 370.0	137662	20.01 ng/ml	0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
M4-PFOS	7.574	503.0 -> 80.0	104989	19.94 ng/ml	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	

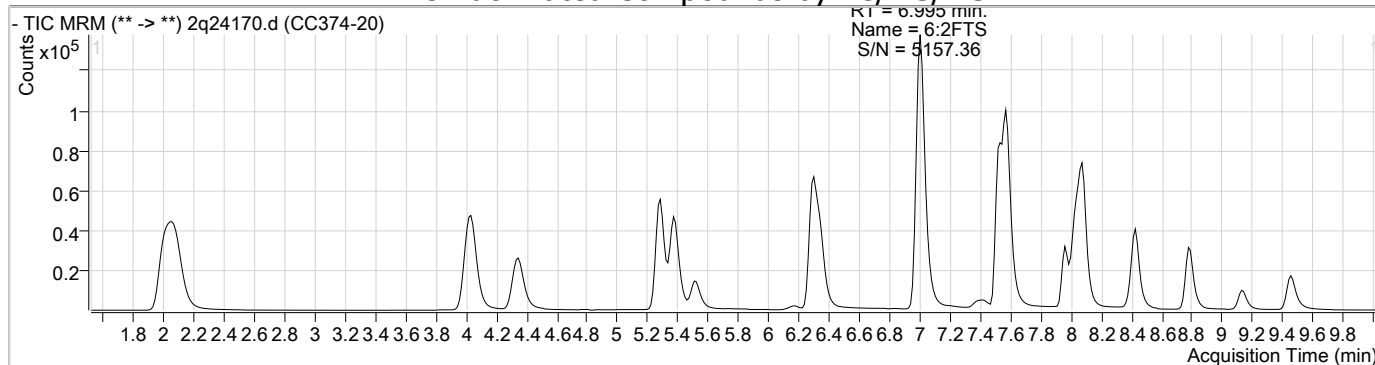
Target Compounds

					QValue
4:2FTS	5.287	327.0 -> 307.0	71858	19.12 µg/L	97
6:2FTS	6.995	427.0 -> 407.0	62484	19.49 µg/L	95
8:2FTS	8.079	527.0 -> 507.0	36363	19.37 µg/L	94
EtFOSAA	8.085	584.0 -> 419.0	25446	19.97 µg/L	97
FOSA	7.523	498.0 -> 78.0	84222	20.04 µg/L	97
MeFOSAA	7.960	570.0 -> 419.0	31783	20.87 µg/L	95
PFBA	2.048	213.0 -> 169.0	64173	19.59 µg/L	100
PFBS	4.346	299.0 -> 80.0	69047	19.23 µg/L	99
PFDA	8.041	513.0 -> 469.0	33024	18.79 µg/L	99
PFDoDA	8.780	613.0 -> 569.0	35594	19.79 µg/L	98
PFDS	8.400	599.0 -> 80.0	21906	19.56 µg/L	99
PFHpA	6.295	363.0 -> 319.0	109274	19.23 µg/L	100
PFHpS	7.019	449.0 -> 80.0	49219	20.12 µg/L	97
PFHxA	5.380	313.0 -> 269.0	42827	19.79 µg/L	99
PFHxS	6.338	399.0 -> 80.0	57592	19.50 µg/L	96
PFNA	7.590	463.0 -> 419.0	45392	20.63 µg/L	99
PFNS	8.012	549.0 -> 80.0	40800	18.83 µg/L	99
PFOA	7.012	413.0 -> 369.0	54065	19.39 µg/L	98
PFOS	7.575	499.0 -> 80.0	60319	18.73 µg/L	82
PFPeA	4.040	263.0 -> 219.0	121603	18.84 µg/L	100
PFPeS	5.508	349.0 -> 80.0	44109	20.10 µg/L	100
PFTeDA	9.457	713.0 -> 669.0	29755	18.93 µg/L	100
PFTTrDA	9.132	663.0 -> 619.0	37403	19.78 µg/L	100
PFUnDA	8.430	563.0 -> 519.0	32693	18.80 µg/L	99

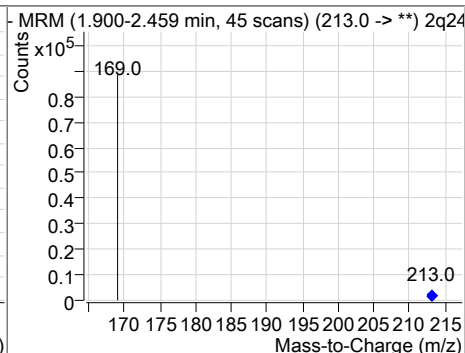
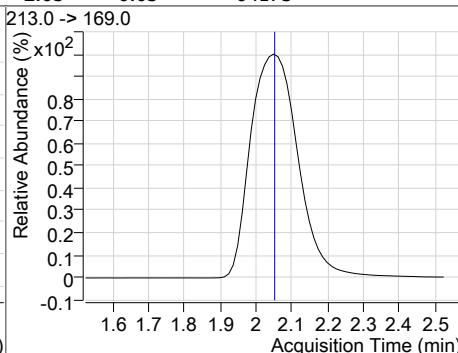
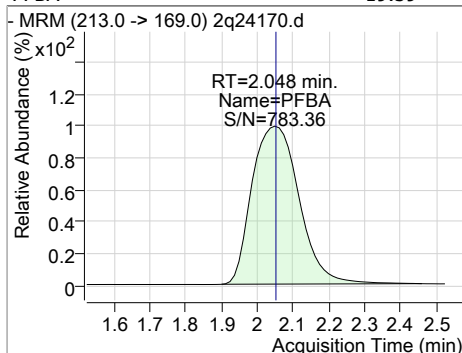
= Qualifier out of range, m = manually integrated, + = Area summed

10.5.11
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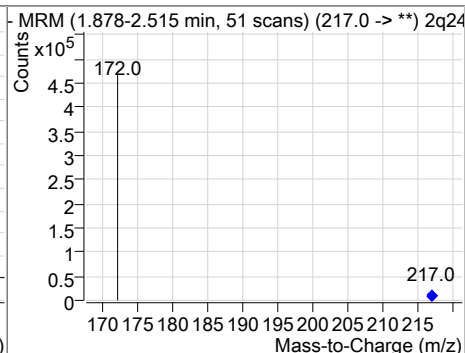
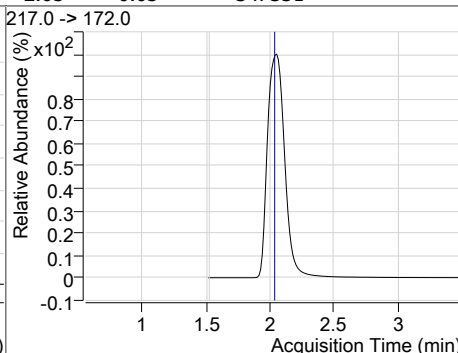
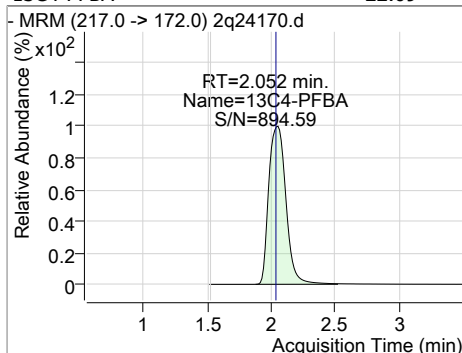
Perfluorinated Compounds by LC/MS/MS



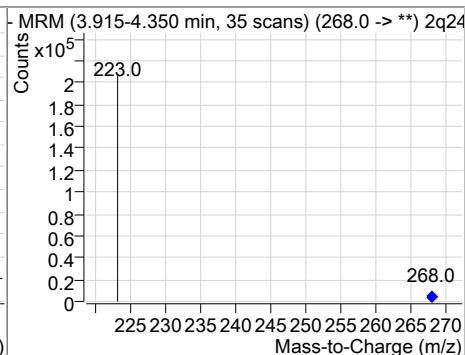
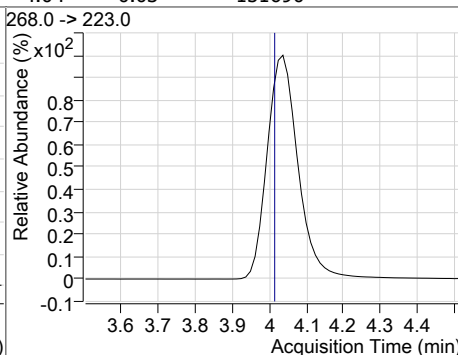
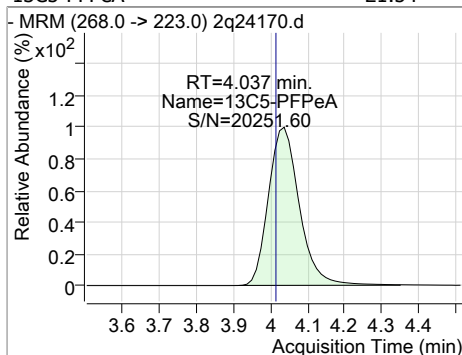
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.59	2.05	0.03	64173				



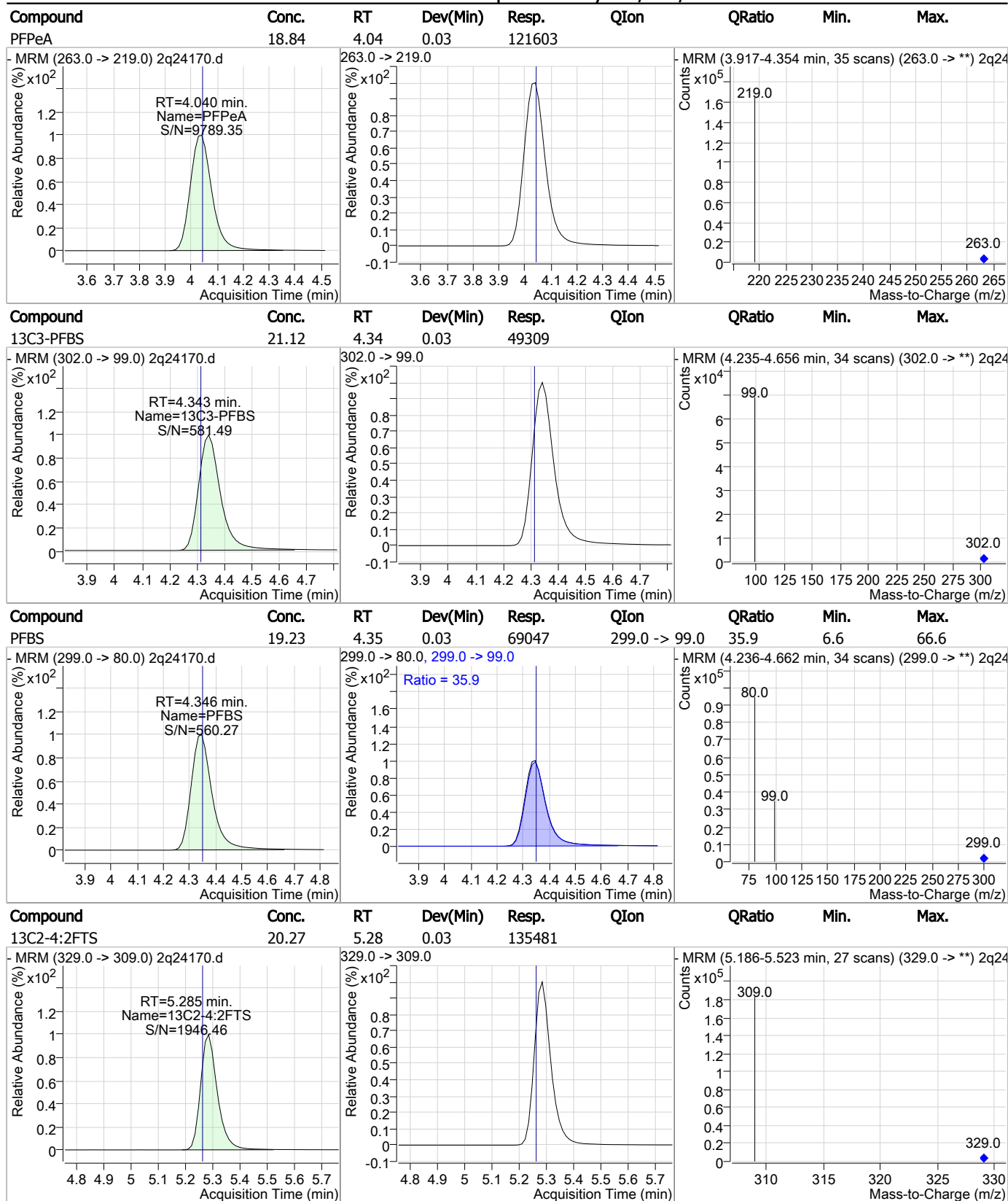
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.09	2.05	0.03	347331				



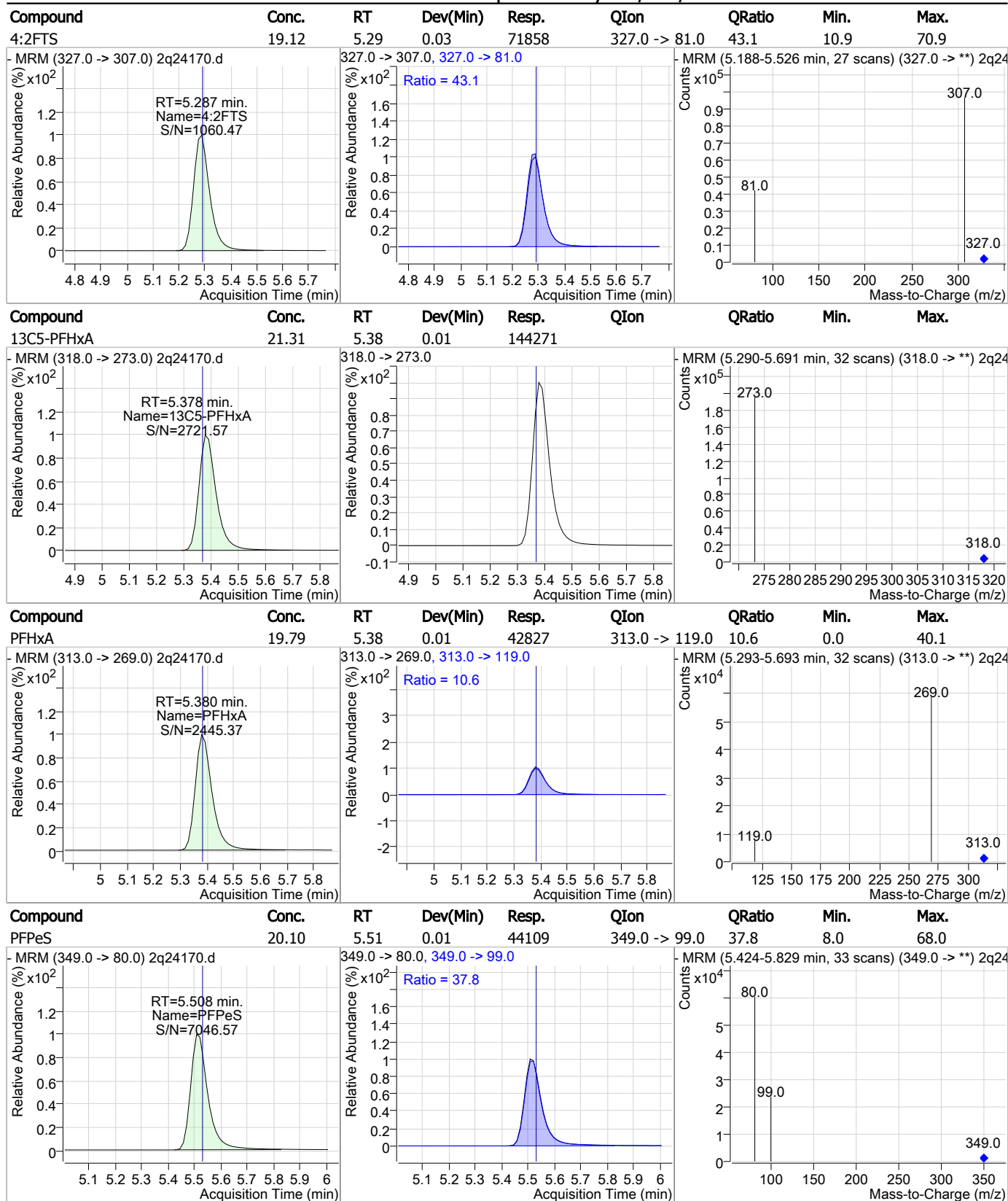
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.54	4.04	0.03	151690				



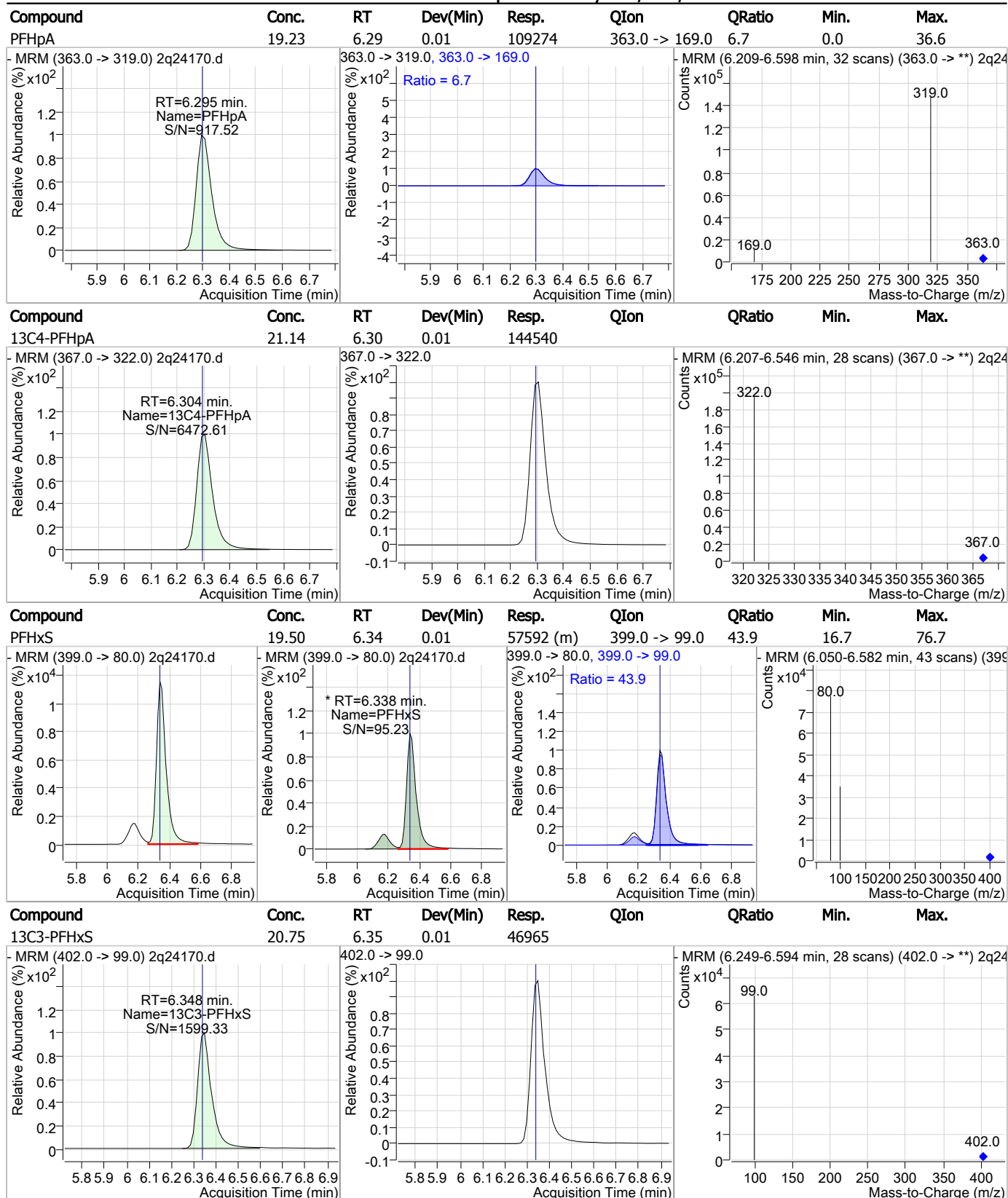
Perfluorinated Compounds by LC/MS/MS



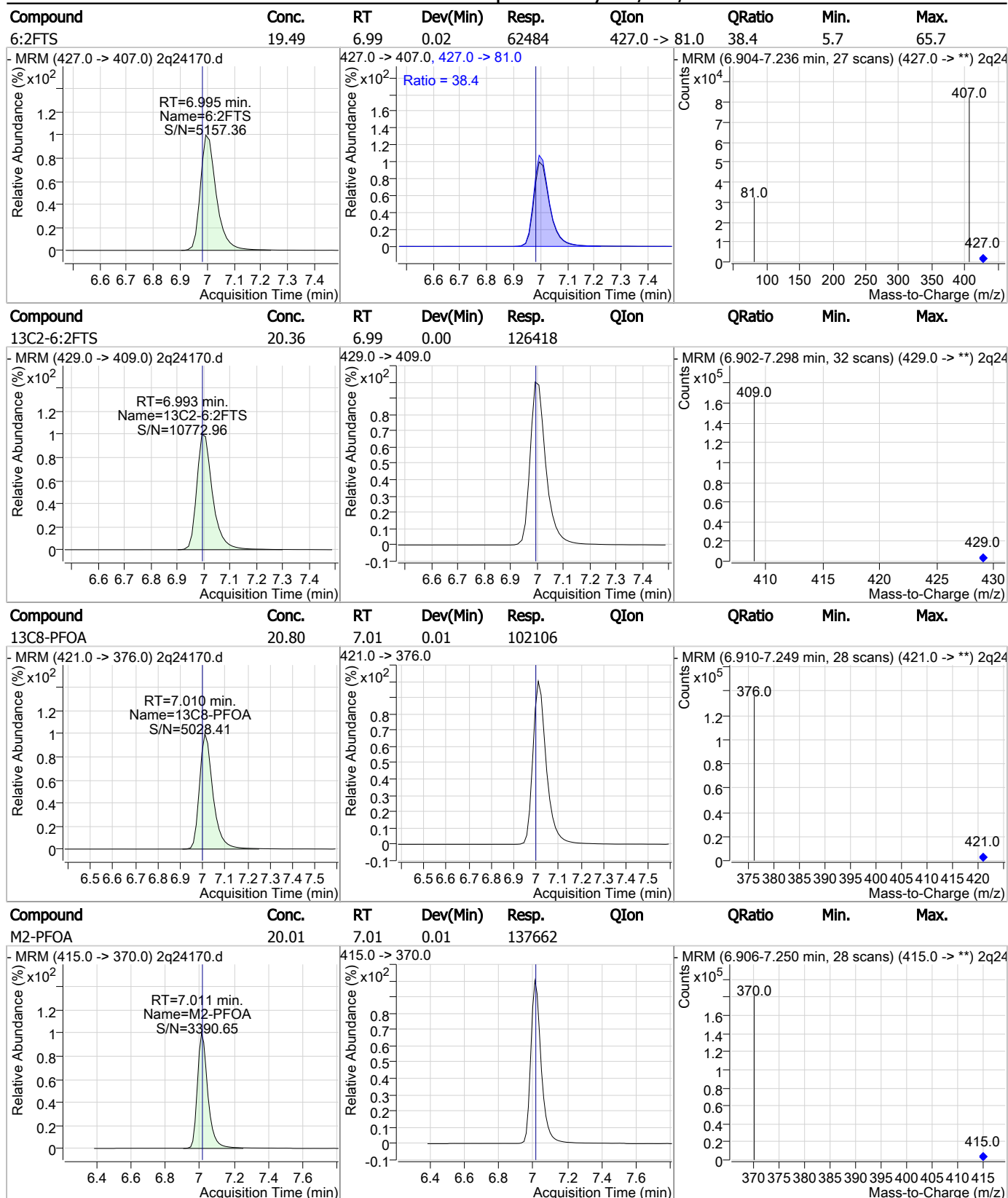
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

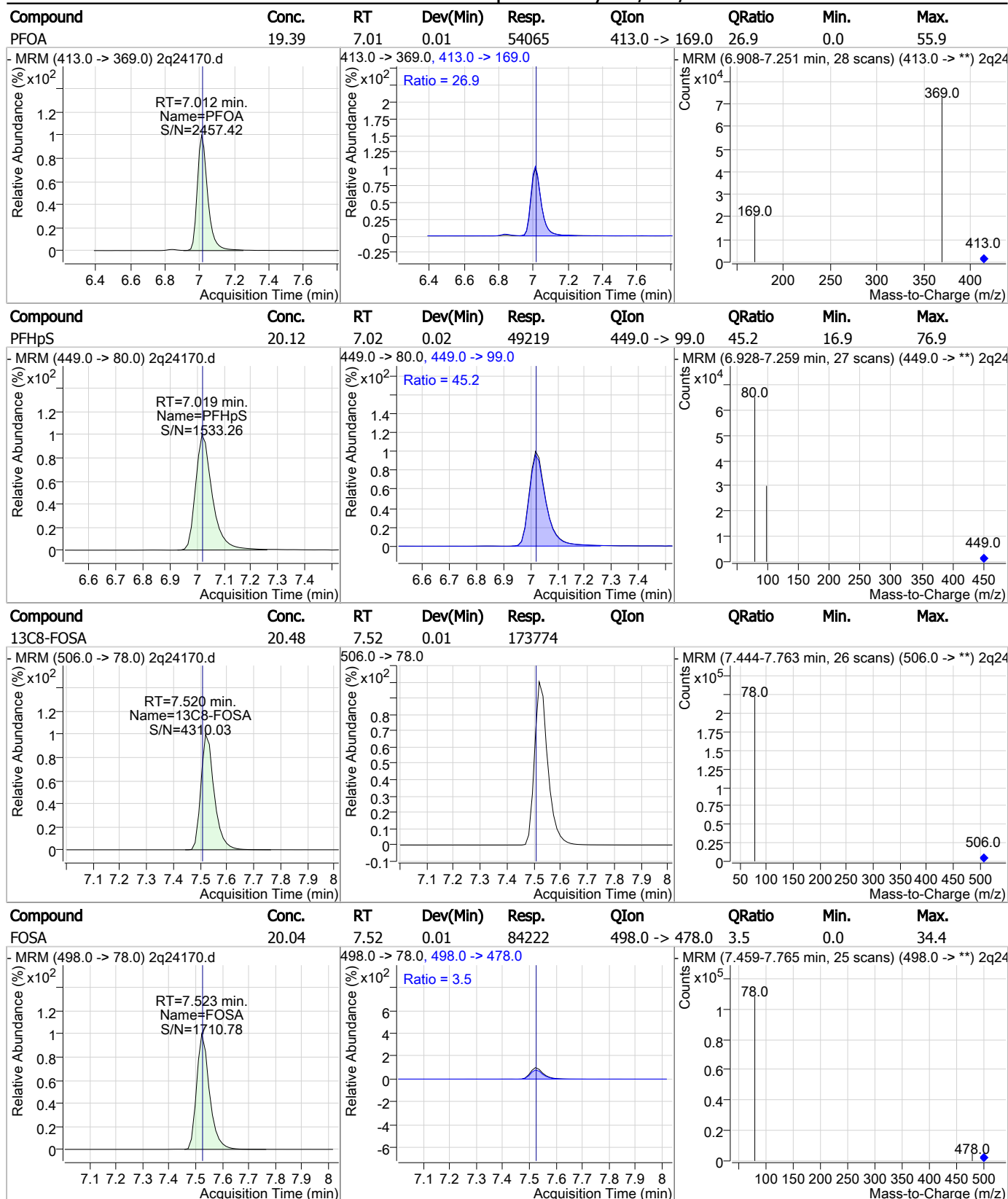


Perfluorinated Compounds by LC/MS/MS

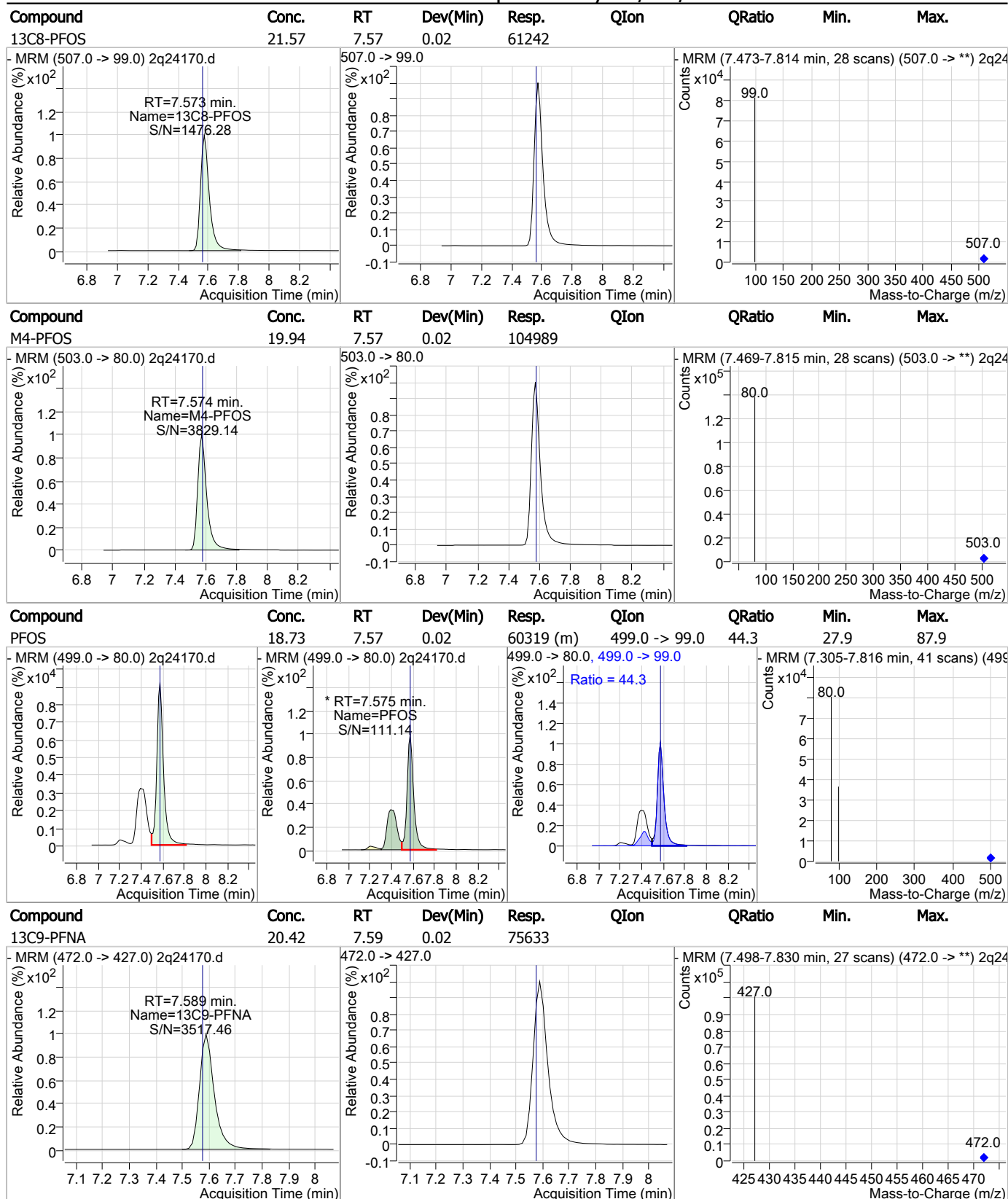


10.5.11 10

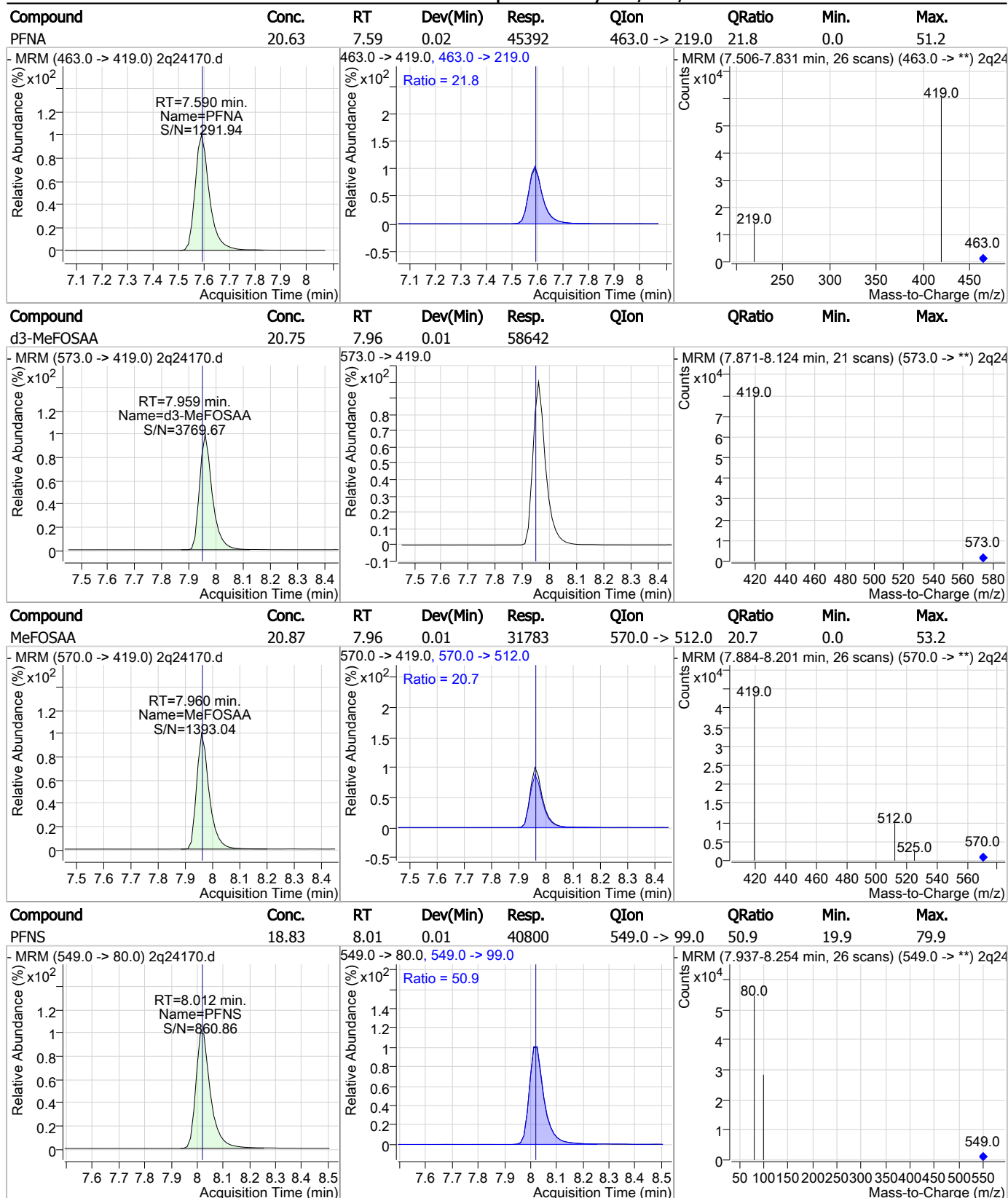
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

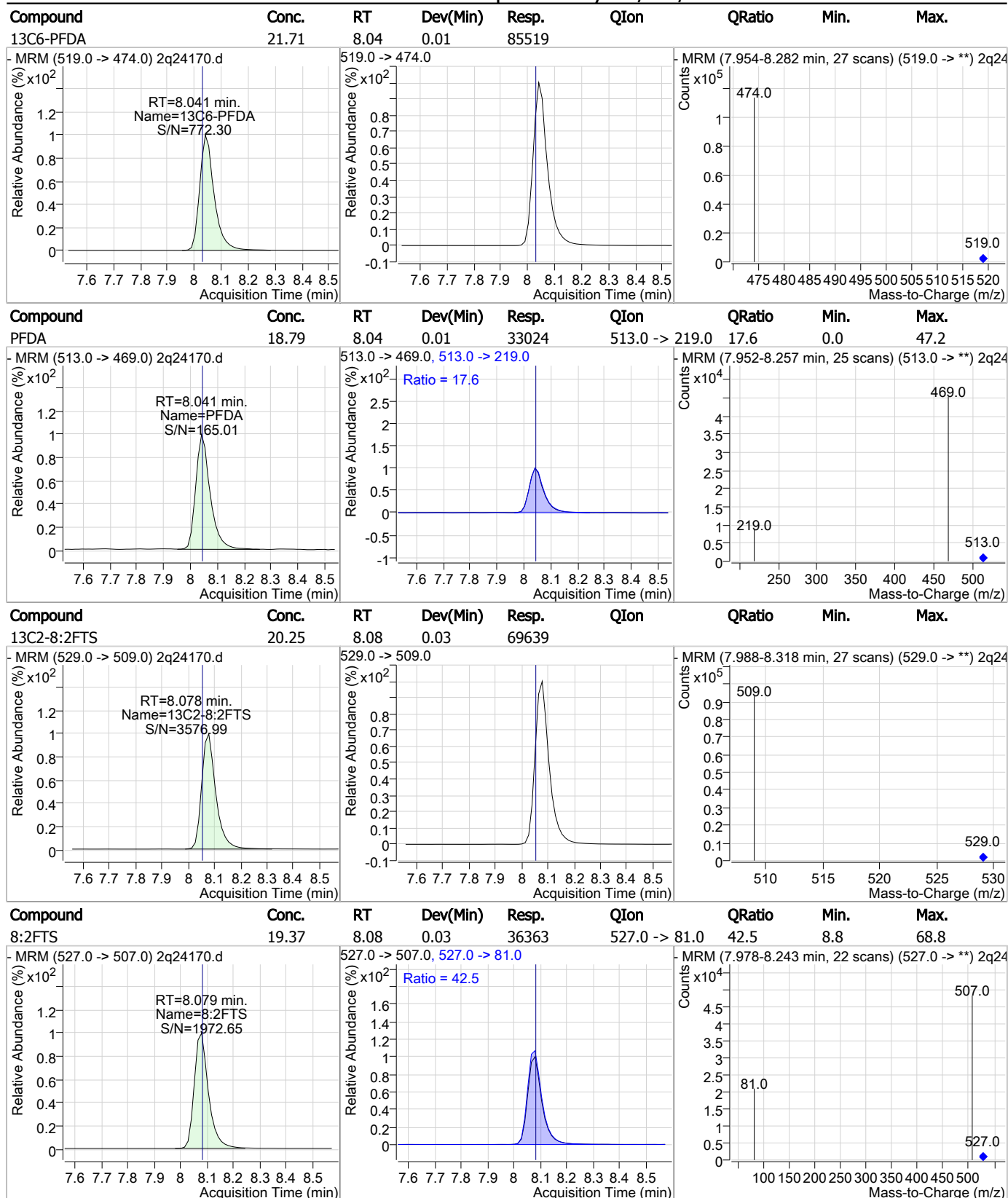


Perfluorinated Compounds by LC/MS/MS

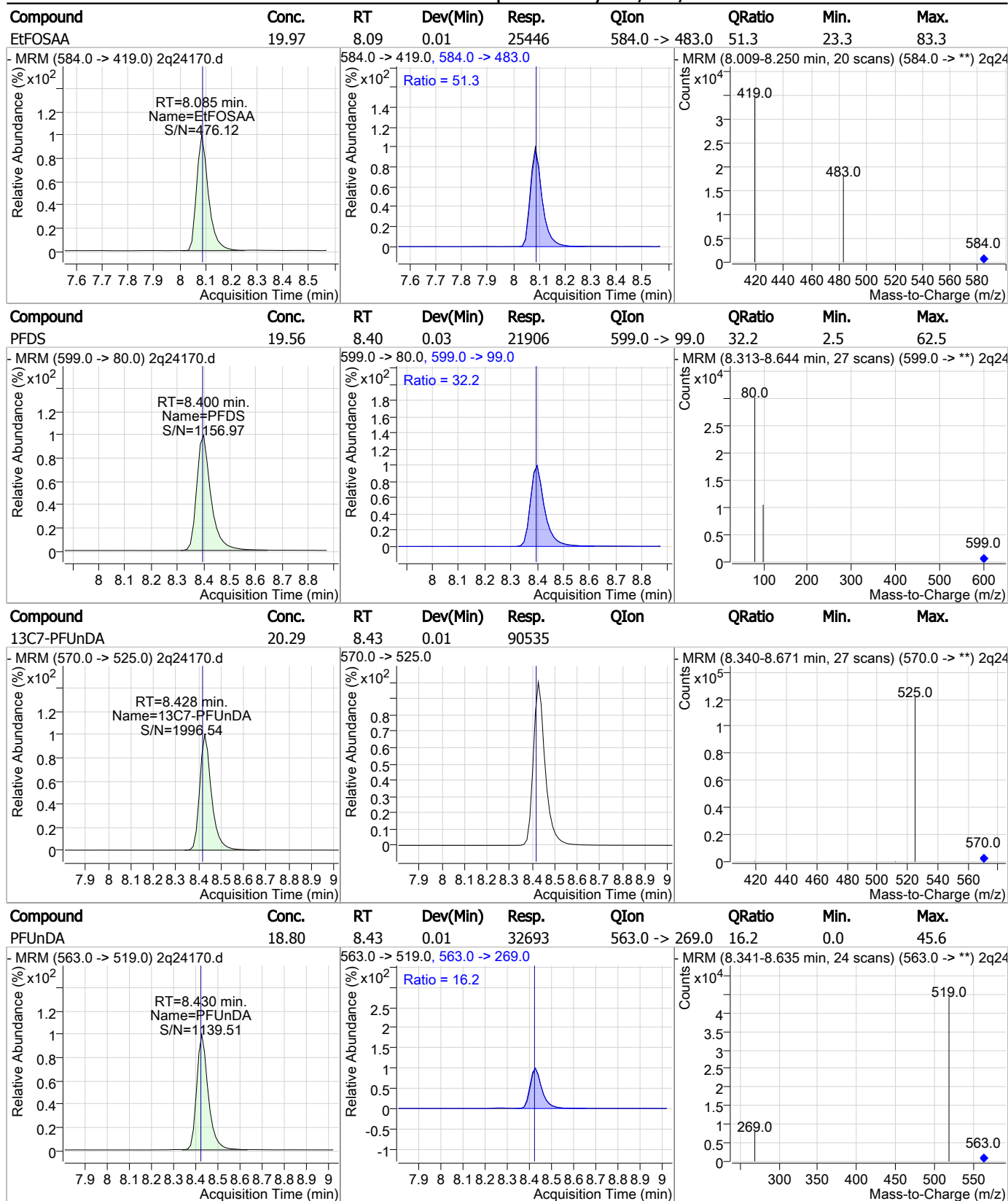


10.5.11 10

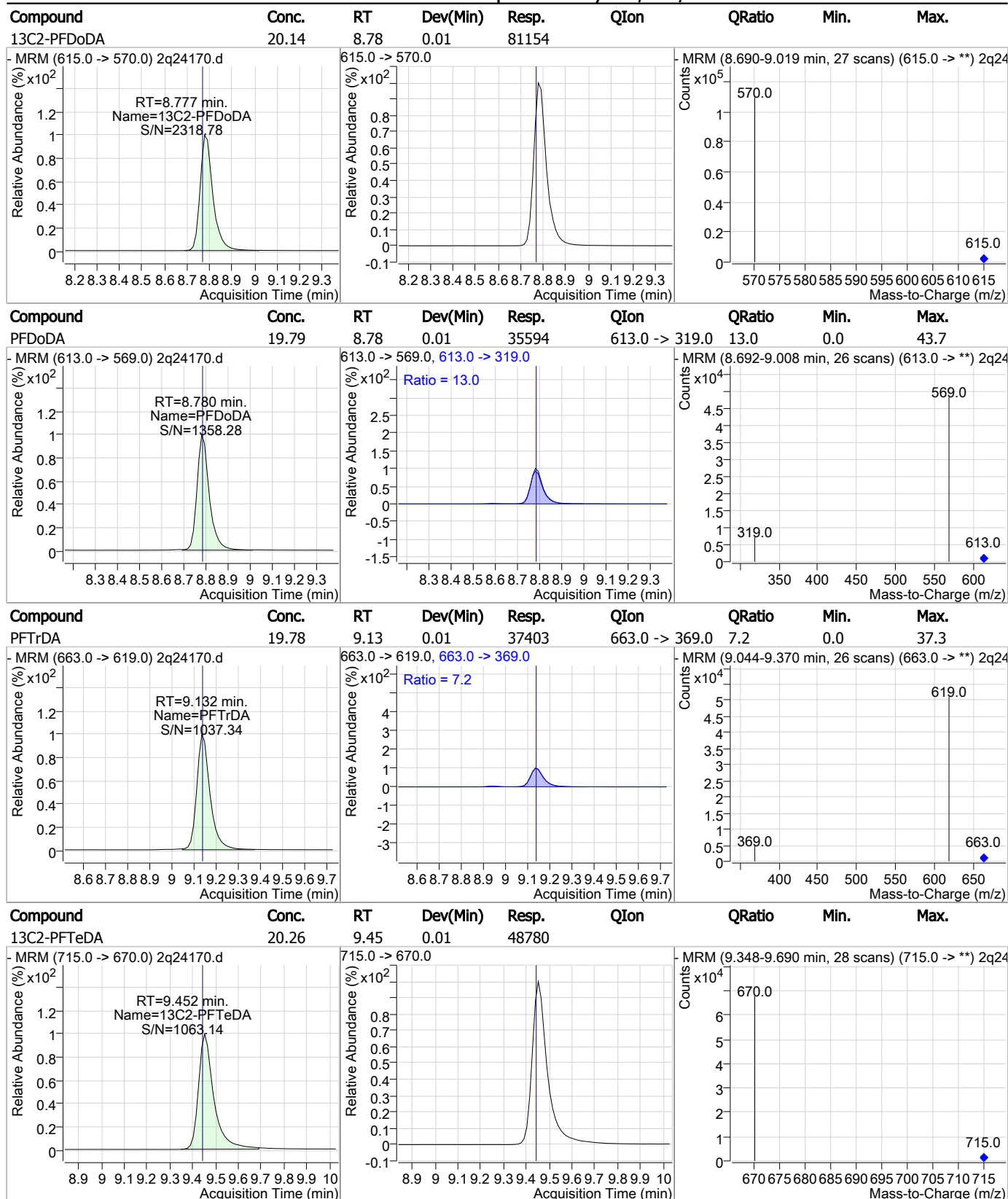
Perfluorinated Compounds by LC/MS/MS



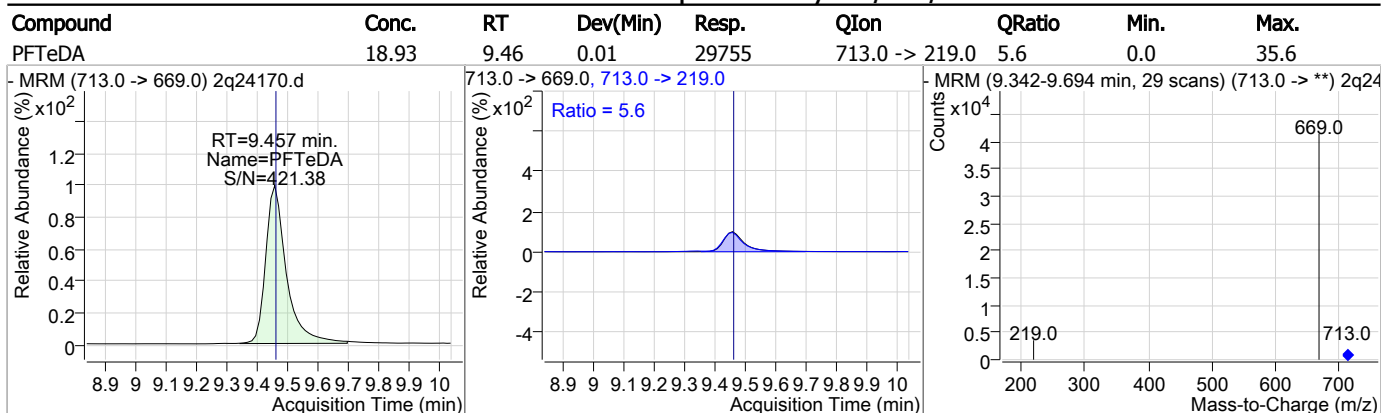
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.11 10

Manual Integration Approval Summary

Sample Number: S2Q377-CC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24170.D

Analyst approved: 11/28/18 16:01 Nancy Saunders

Injection Time: 11/28/18 08:36

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.58	Split peak

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24181.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 12:12:01 PM
 Sample Name : CC374-20
 Vial : Vial 7
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72749,S2Q377,250,,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.947	415.0 -> 370.0	138422	20.00 µg/L	-0.049
13C4-PFOS	7.508	503.0 -> 80.0	107433	20.00 µg/L	-0.049
M4-PFBA	2.002	217.0 -> 172.0	347112	20.00 µg/L	-0.025
M5-PFPeA	3.949	268.0 -> 223.0	157410	20.00 µg/L	-0.062
M5-PFHxA	5.302	318.0 -> 273.0	145126	20.00 µg/L	-0.062
M4-PFHpA	6.229	367.0 -> 322.0	146156	20.00 µg/L	-0.062
M8-PFOA	6.946	421.0 -> 376.0	102453	20.00 µg/L	-0.049
M9-PFNA	7.524	472.0 -> 427.0	78216	20.00 µg/L	-0.049
M6-PFDA	7.989	519.0 -> 474.0	92703	20.00 µg/L	-0.037
M7-PFUnDA	8.378	570.0 -> 525.0	104773	20.00 µg/L	-0.037
M2-PFDoDA	8.727	615.0 -> 570.0	94581	20.00 µg/L	-0.037
M2-PFTeDA	9.402	715.0 -> 670.0	58830	20.00 µg/L	-0.037
M8-FOSA	7.469	506.0 -> 78.0	186930	20.00 µg/L	-0.037
M3-PFBS	4.255	302.0 -> 99.0	51165	20.00 µg/L	-0.062
M3-PFHxS	6.273	402.0 -> 99.0	47167	20.00 µg/L	-0.062
M8-PFOS	7.507	507.0 -> 99.0	62727	20.00 µg/L	-0.049
M2-4:2FTS	5.210	329.0 -> 309.0	136545	20.00 µg/L	-0.050
M2-6:2FTS	6.927	429.0 -> 409.0	127127	20.00 µg/L	-0.065
M2-8:2FTS	8.013	529.0 -> 509.0	75101	20.00 µg/L	-0.037
M3-MeFOSAA	7.909	573.0 -> 419.0	60342	20.00 µg/L	-0.037
System Monitoring Compounds					
13C2-4:2FTS	5.210	329.0 -> 309.0	136387	20.41 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-6:2FTS	6.927	429.0 -> 409.0	127057	20.46 µg/L	-0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-8:2FTS	8.013	529.0 -> 509.0	75075	21.83 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	8.727	615.0 -> 570.0	94532	23.46 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 117.3%		
13C2-PFTeDA	9.402	715.0 -> 670.0	58641	24.36 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 121.8%		
13C3-PFBS	4.255	302.0 -> 99.0	50720	21.72 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C3-PFHxS	6.273	402.0 -> 99.0	47277	20.89 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C4-PFBA	2.002	217.0 -> 172.0	346852	22.06 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C4-PFHpA	6.229	367.0 -> 322.0	145896	21.34 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C5-PFHxA	5.302	318.0 -> 273.0	145010	21.41 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C5-PFPeA	3.949	268.0 -> 223.0	156712	22.25 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C6-PFDA	7.989	519.0 -> 474.0	92712	23.53 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%		Recovery = 117.7%		

Perfluorinated Compounds by LC/MS/MS

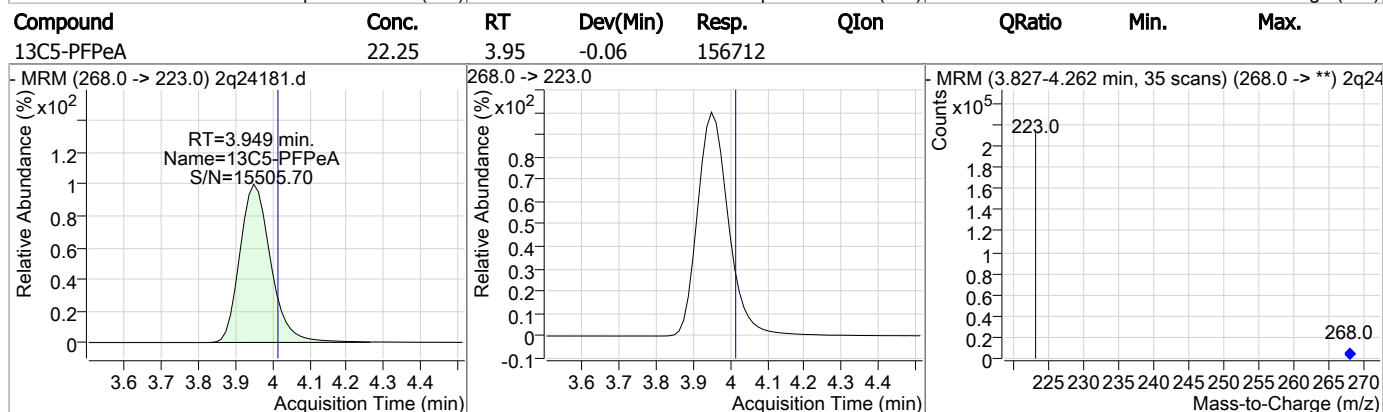
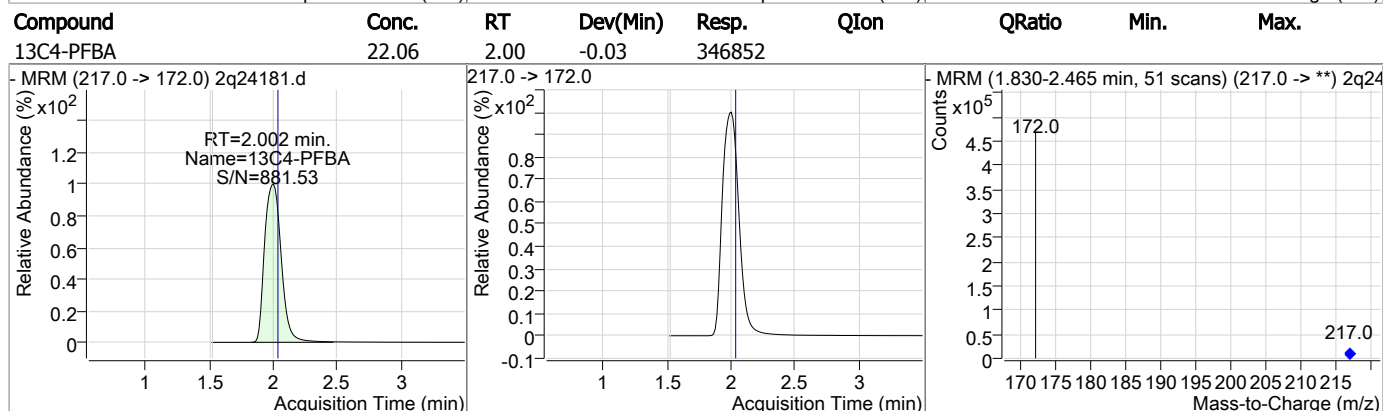
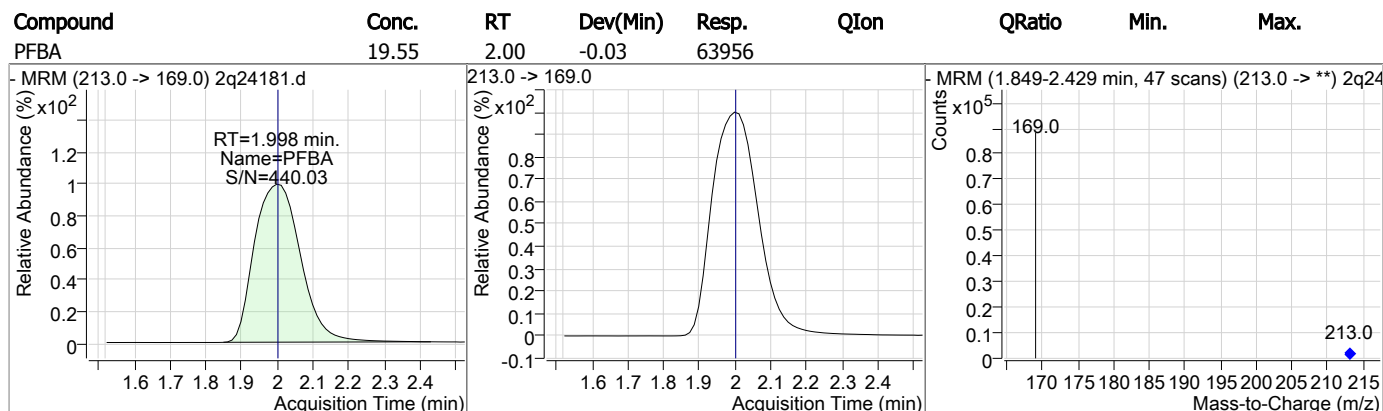
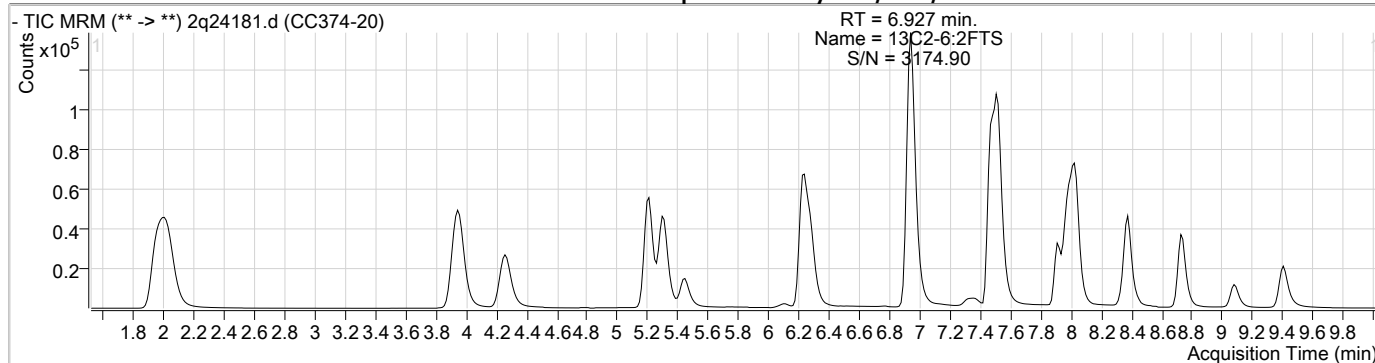
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.378	570.0 -> 525.0	104900	23.51 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.5%	
13C8-FOSA	7.469	506.0 -> 78.0	186919	22.03 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C8-PFOA	6.946	421.0 -> 376.0	102485	20.88 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C8-PFOS	7.507	507.0 -> 99.0	62727	22.09 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C9-PFNA	7.524	472.0 -> 427.0	78386	21.17 µg/L	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
d3-MeFOSAA	7.909	573.0 -> 419.0	60426	21.38 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
M2-PFOA	6.947	415.0 -> 370.0	138381	20.01 ng/ml	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
M4-PFOS	7.508	503.0 -> 80.0	106464	19.87 ng/ml	-0.049
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	

Target Compounds

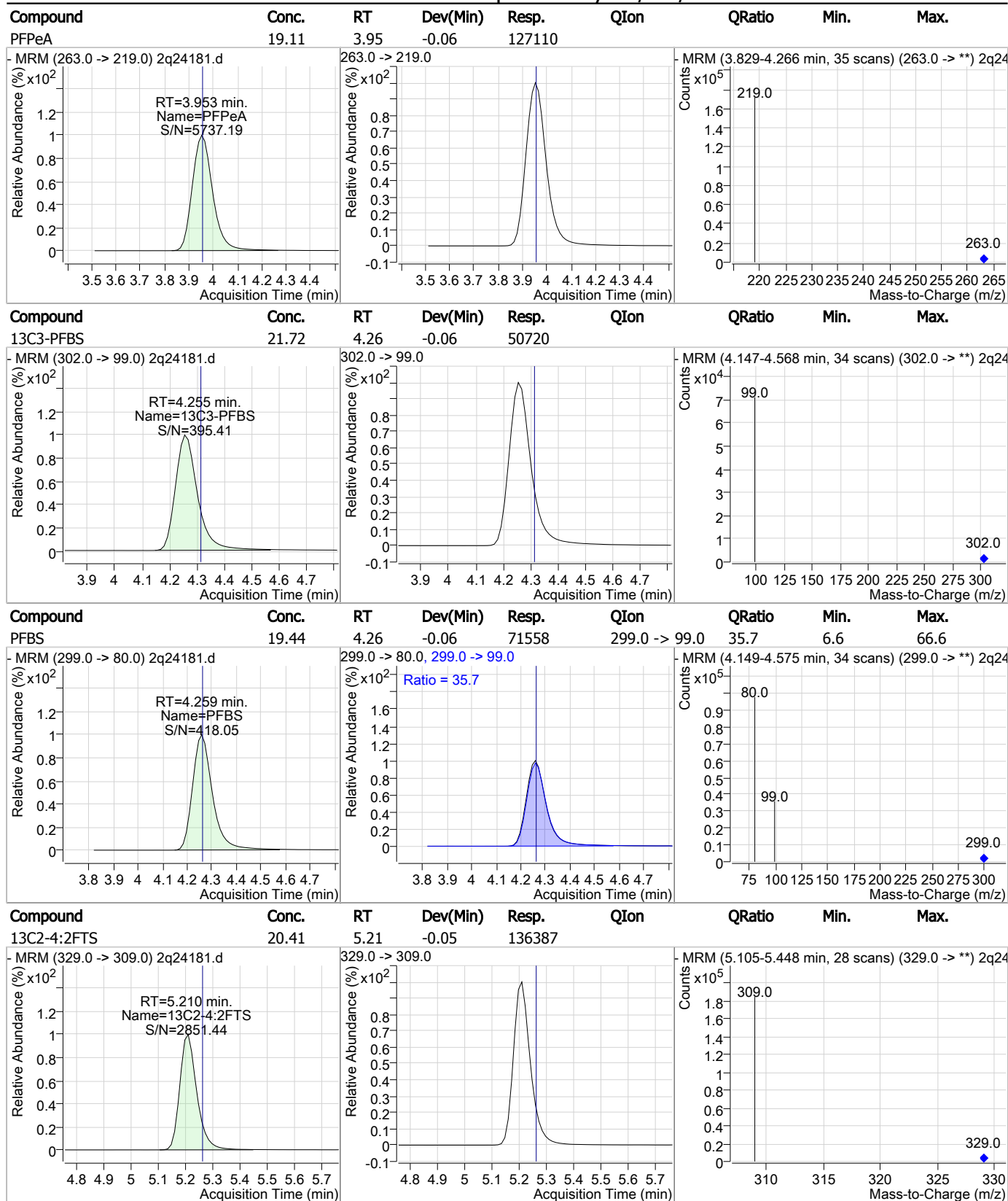
					QValue
4:2FTS	5.212	327.0 -> 307.0	73406	19.41 µg/L	97
6:2FTS	6.928	427.0 -> 407.0	61914	19.22 µg/L	94
8:2FTS	8.014	527.0 -> 507.0	40014	19.80 µg/L	96
EtFOSAA	8.034	584.0 -> 419.0	26200	19.96 µg/L	97
FOSA	7.471	498.0 -> 78.0	90357	19.98 µg/L	98
MeFOSAA	7.910	570.0 -> 419.0	32076	20.45 µg/L	98
PFBA	1.998	213.0 -> 169.0	63956	19.55 µg/L	100
PFBS	4.259	299.0 -> 80.0	71558	19.44 µg/L	99
PFDA	7.990	513.0 -> 469.0	34848	18.29 µg/L	96
PFDoDA	8.729	613.0 -> 569.0	40523	19.33 µg/L	99
PFDS	8.350	599.0 -> 80.0	23022	20.05 µg/L	100
PFHpA	6.232	363.0 -> 319.0	113249	19.77 µg/L	100
PFHpS	6.954	449.0 -> 80.0	51768	21.08 µg/L	100
PFHxA	5.305	313.0 -> 269.0	42841	19.77 µg/L	97
PFHxS	6.276	399.0 -> 80.0	58947	19.87 µg/L	96
PFNA	7.525	463.0 -> 419.0	47301	20.82 µg/L	100
PFNS	7.962	549.0 -> 80.0	42815	19.28 µg/L	98
PFOA	6.949	413.0 -> 369.0	54506	19.46 µg/L	96
PFOS	7.509	499.0 -> 80.0	62372	18.88 µg/L	81
PFPeA	3.953	263.0 -> 219.0	127110	19.11 µg/L	100
PFPeS	5.445	349.0 -> 80.0	45071	20.03 µg/L	99
PFTeDA	9.406	713.0 -> 669.0	36503	19.39 µg/L	100
PFTTrDA	9.081	663.0 -> 619.0	45200	19.95 µg/L	98
PFUnDA	8.379	563.0 -> 519.0	36260	18.00 µg/L	96

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

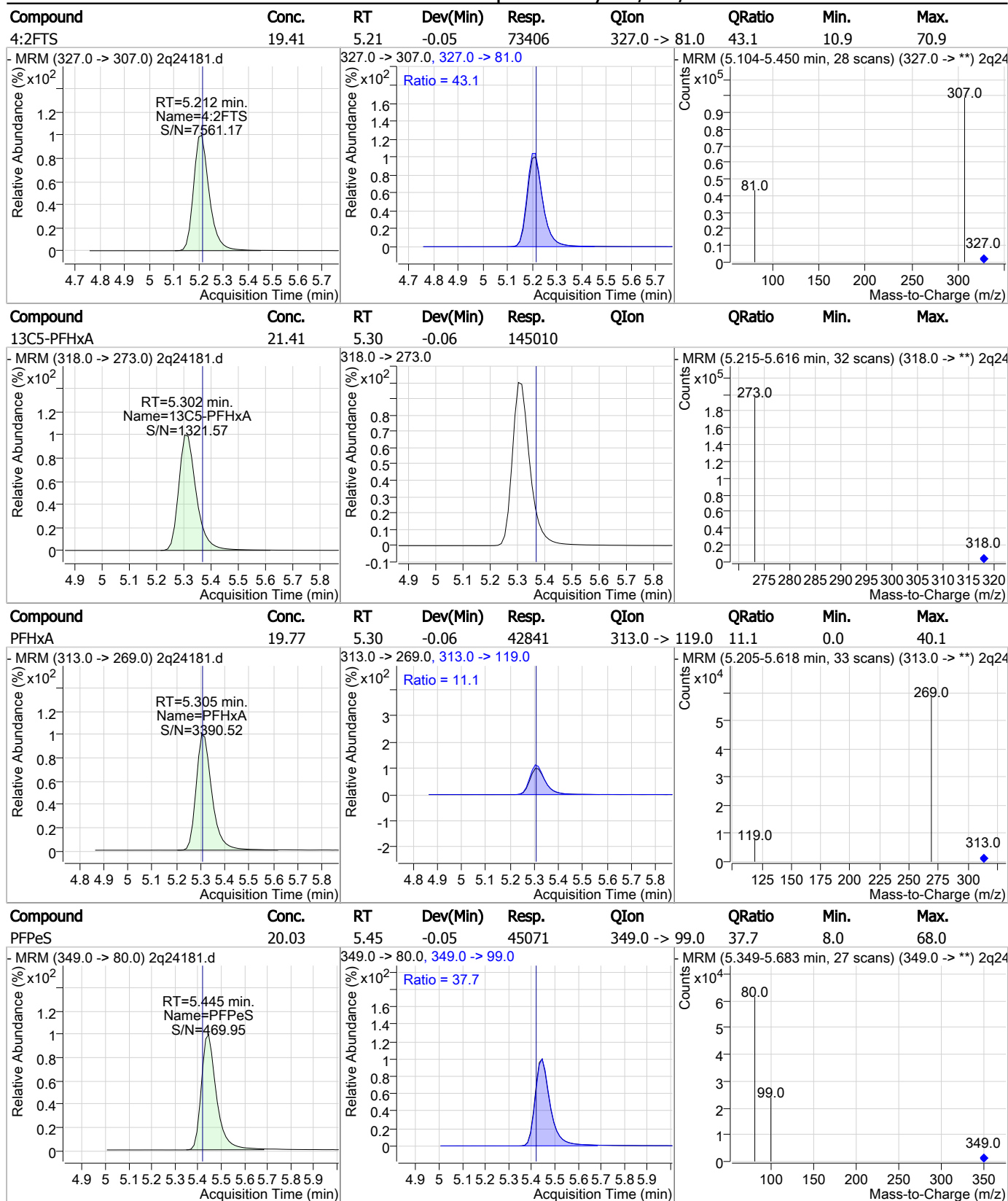
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

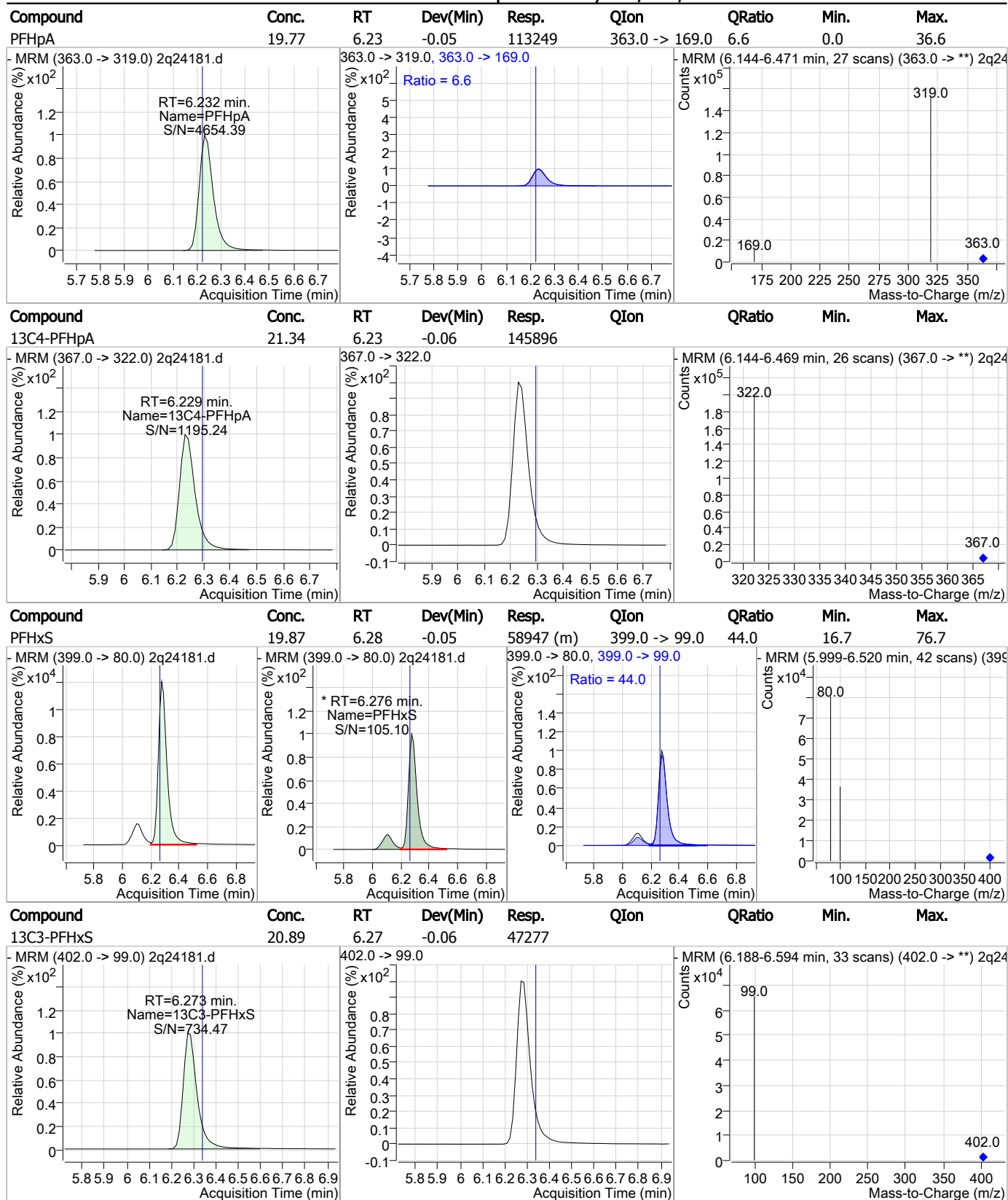


Perfluorinated Compounds by LC/MS/MS



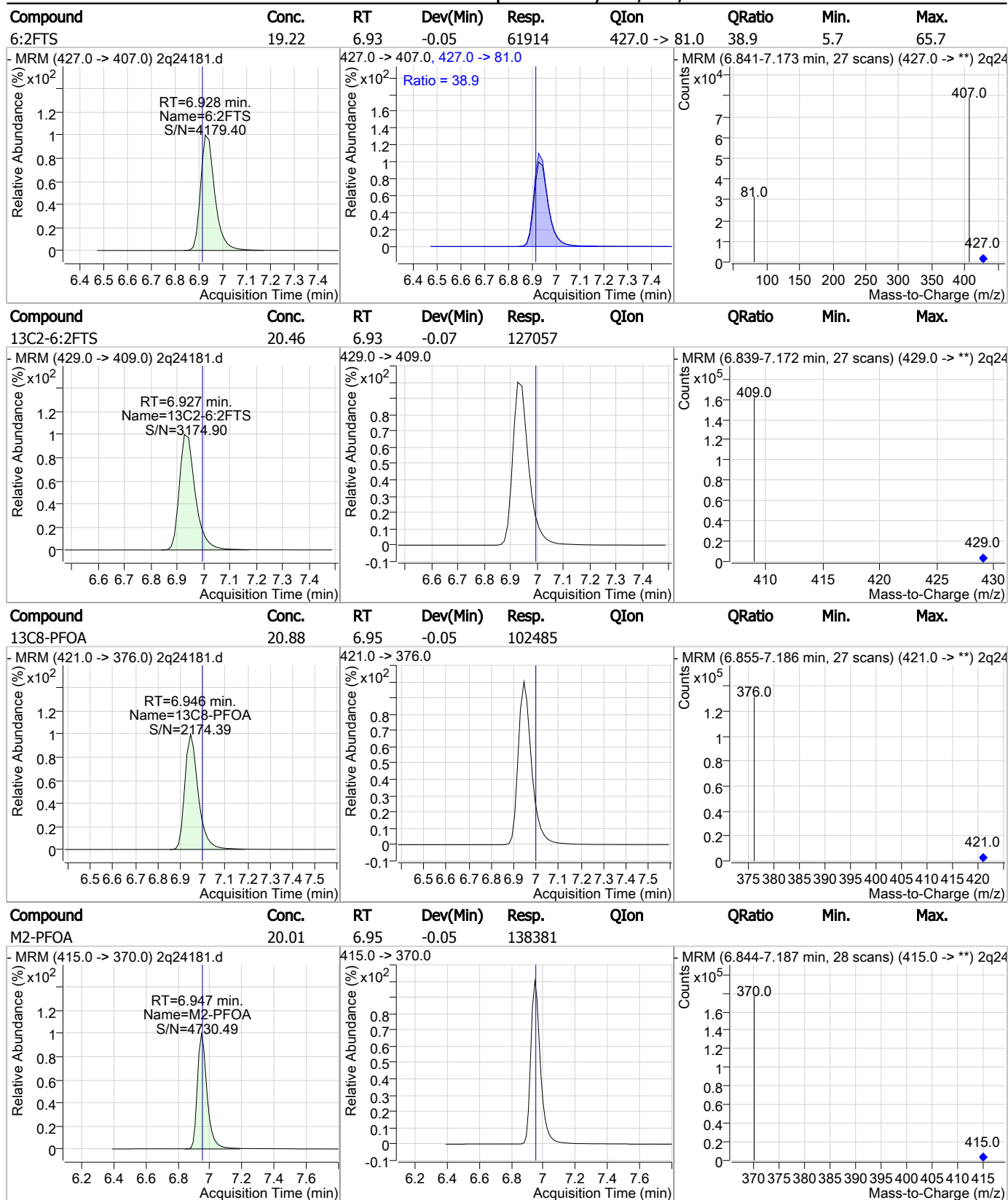
10.5.12 10

Perfluorinated Compounds by LC/MS/MS



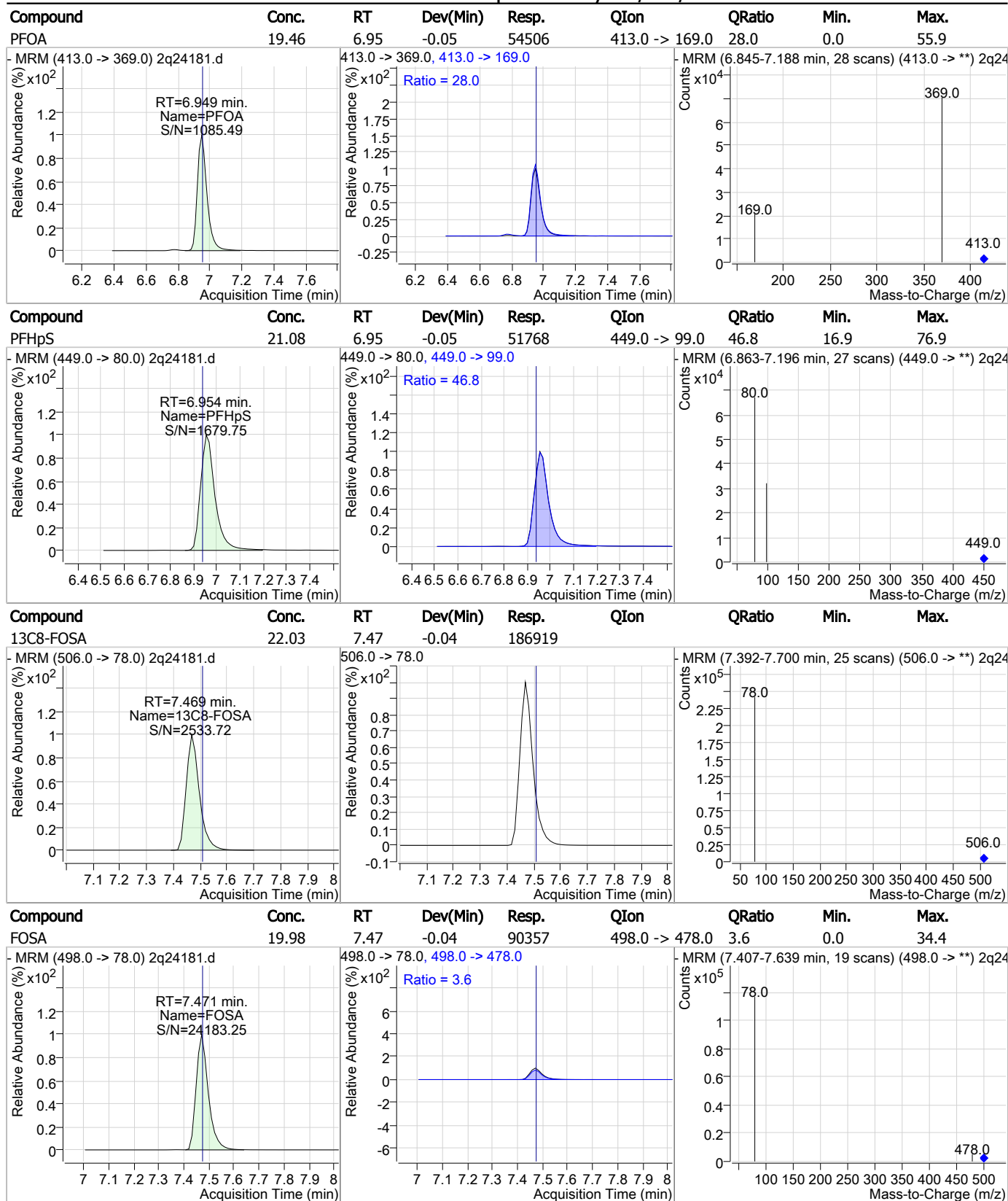
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Perfluorinated Compounds by LC/MS/MS

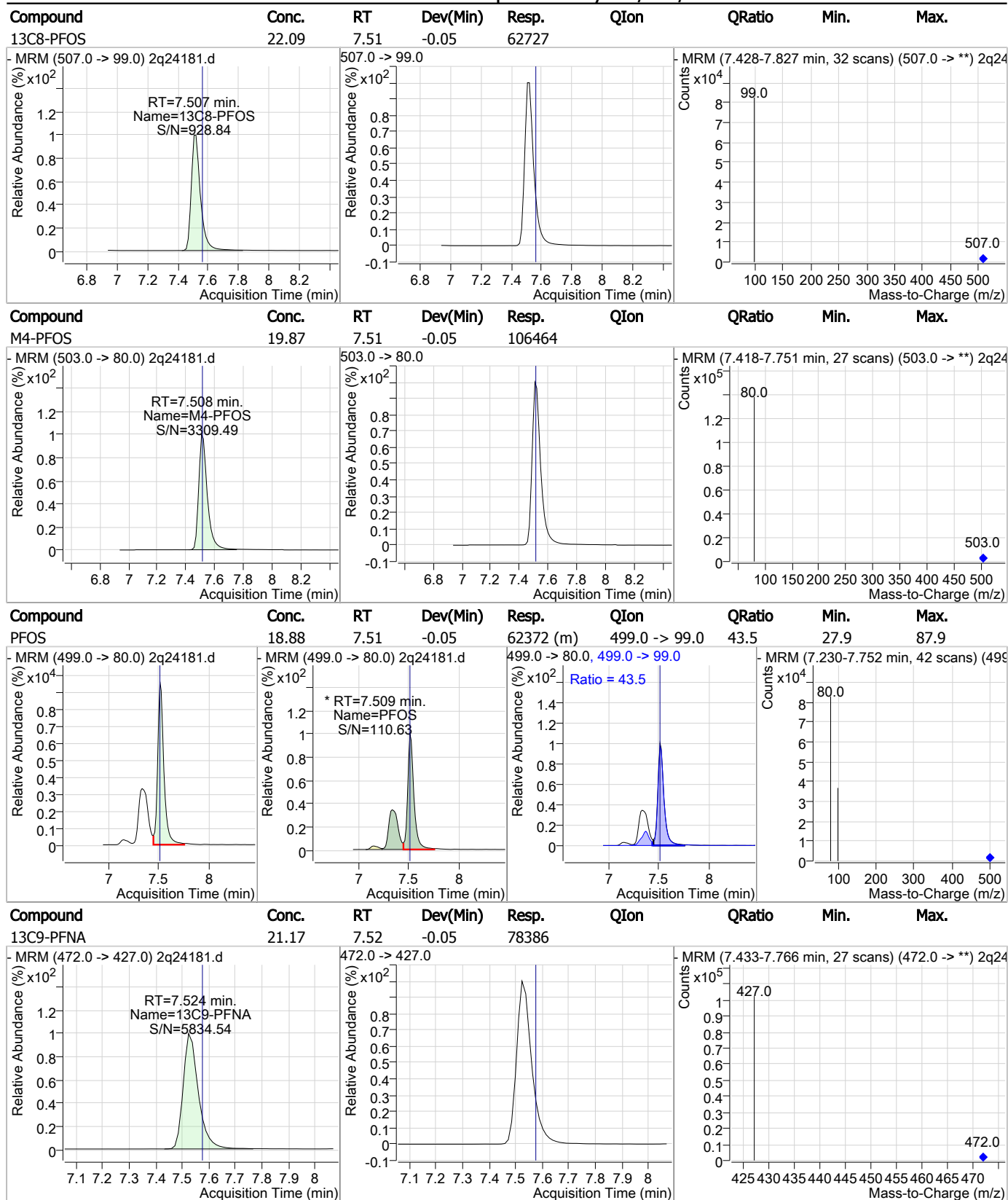


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Perfluorinated Compounds by LC/MS/MS

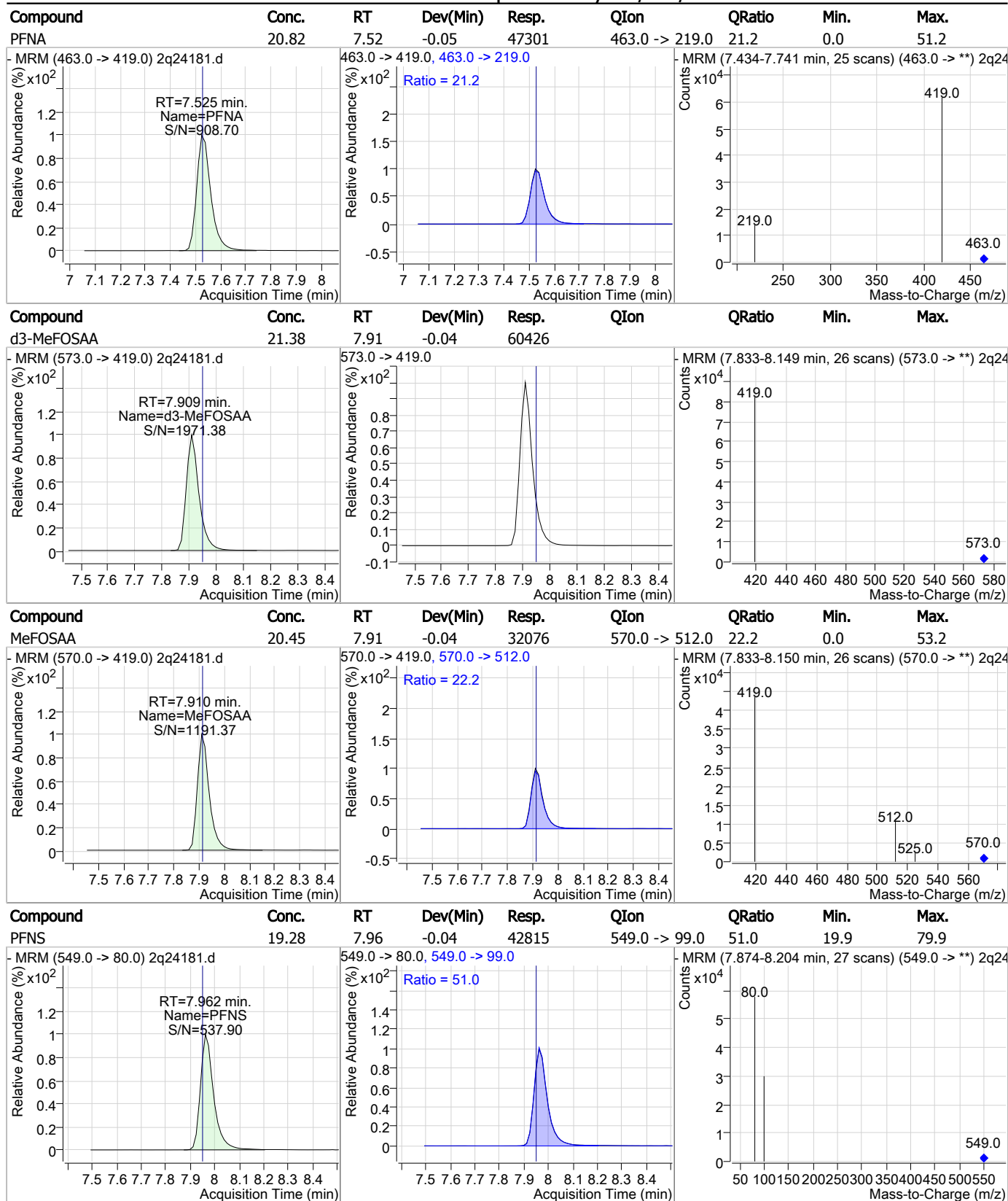


Perfluorinated Compounds by LC/MS/MS



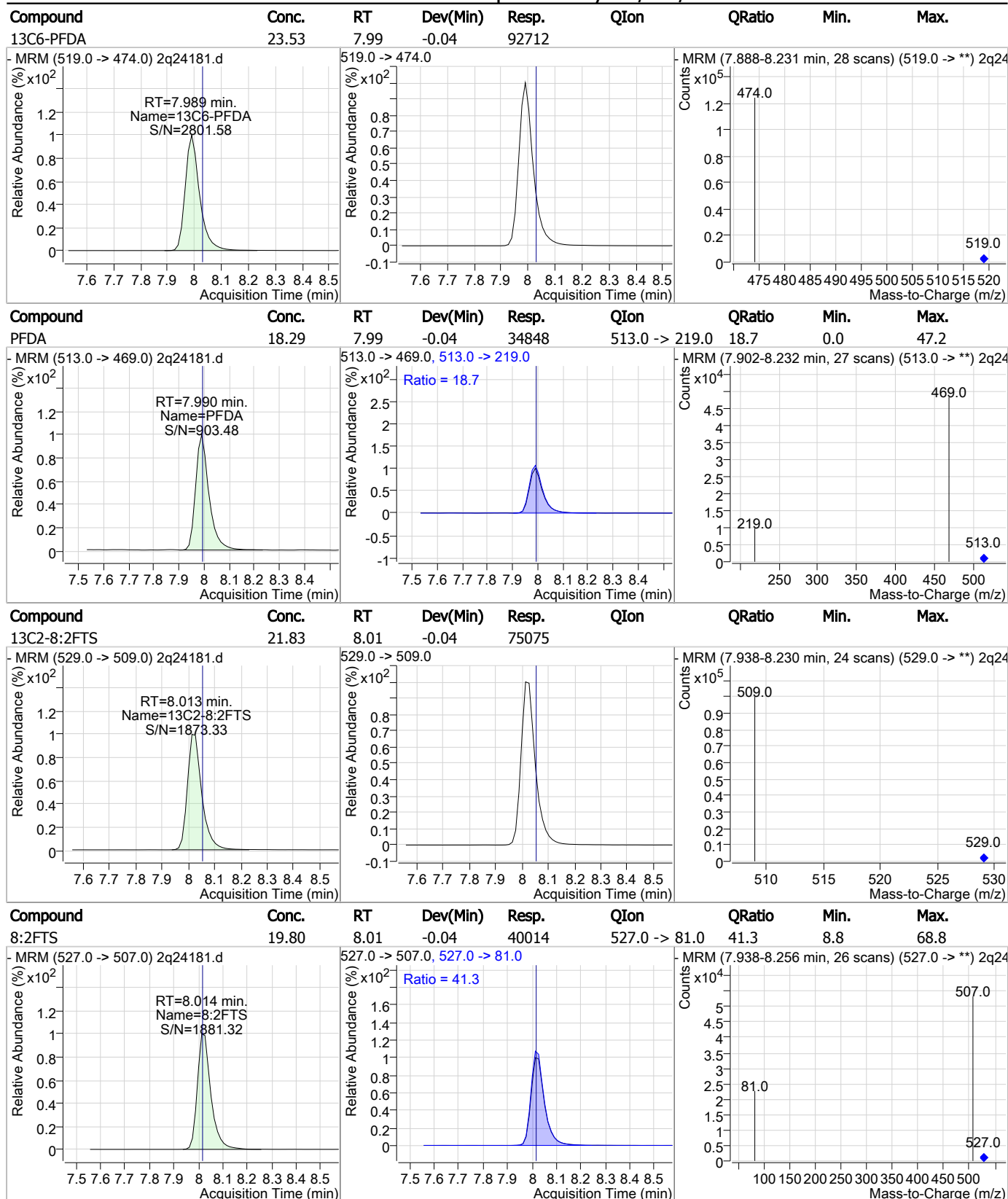
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Perfluorinated Compounds by LC/MS/MS

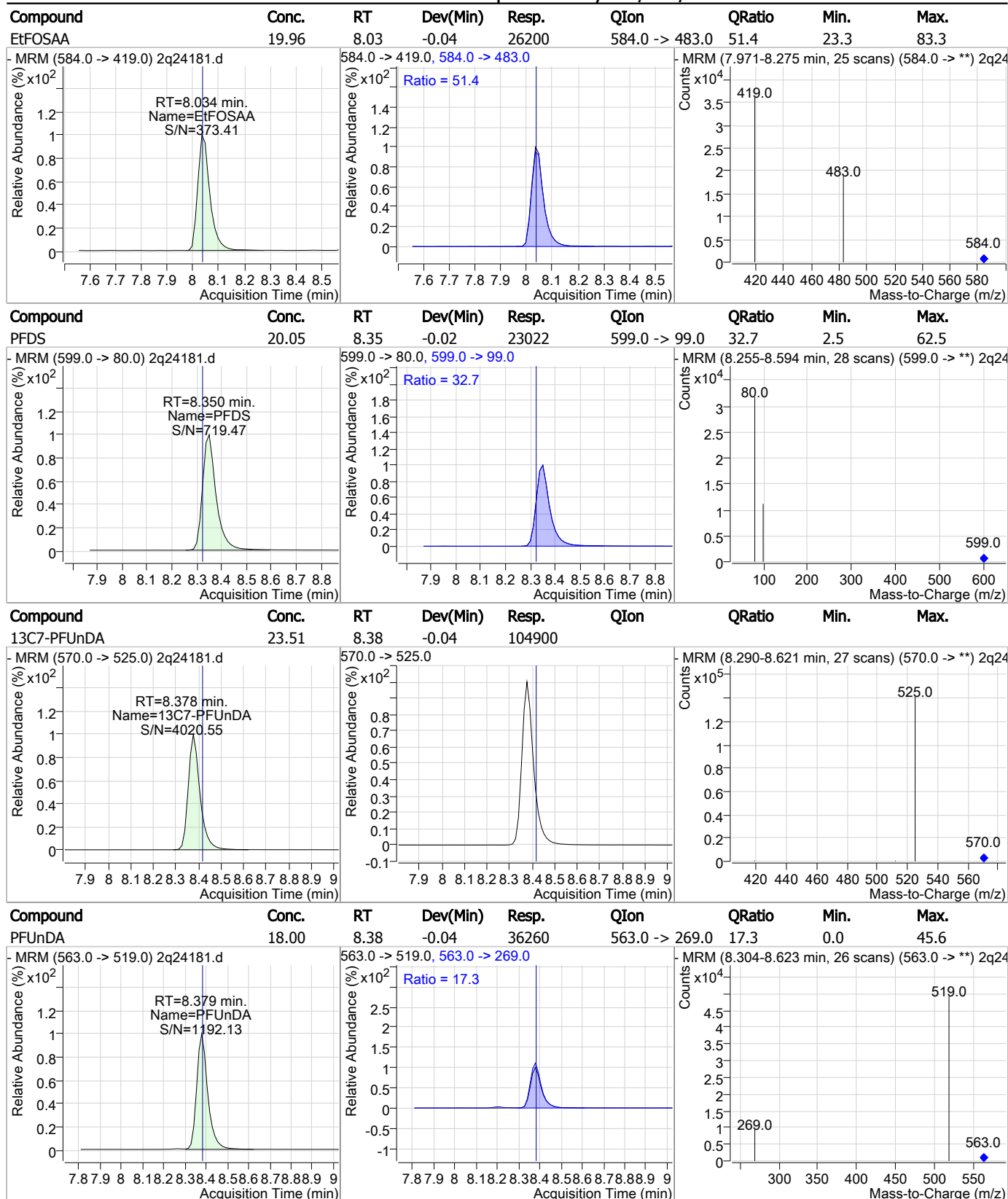


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Perfluorinated Compounds by LC/MS/MS

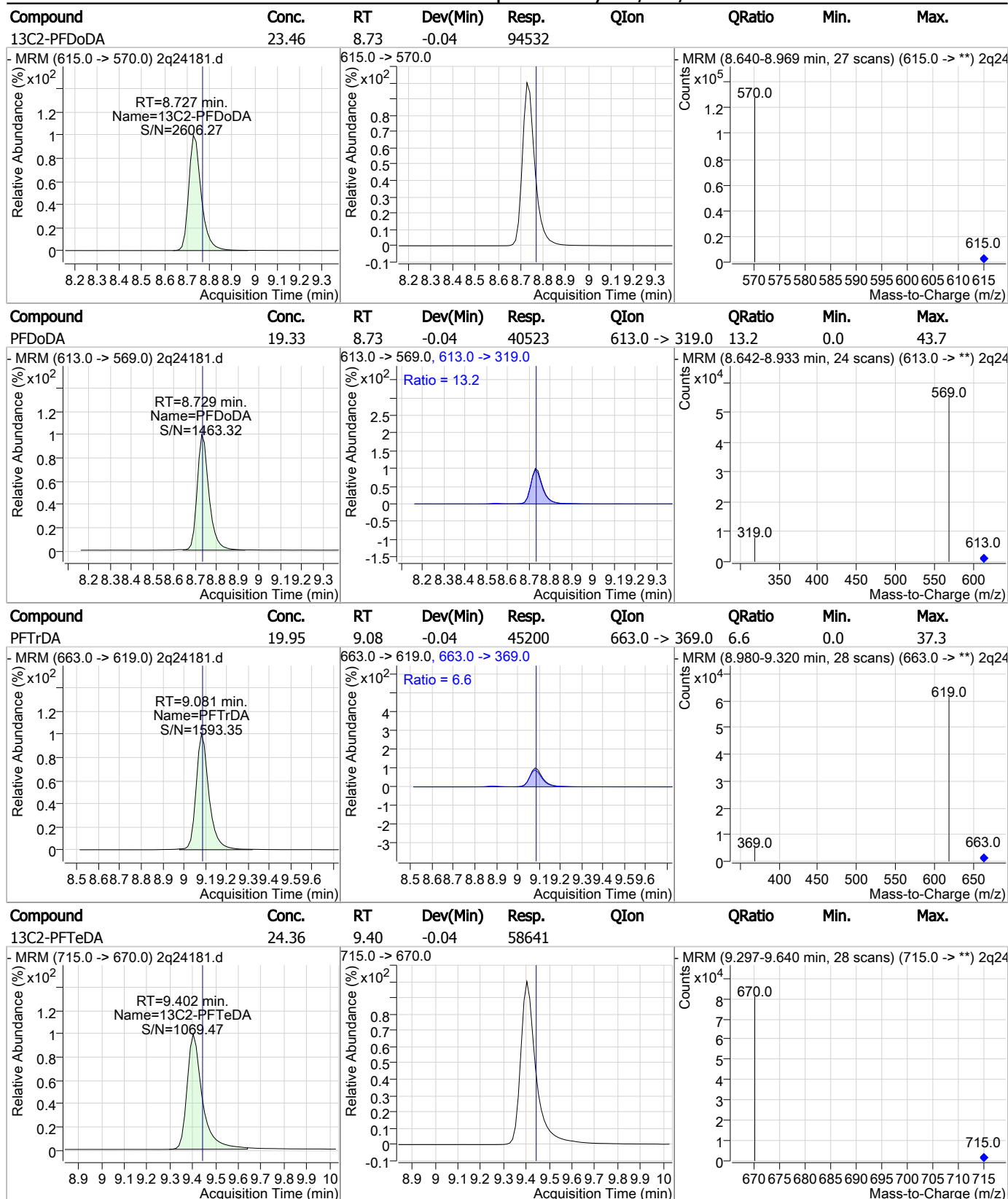


Perfluorinated Compounds by LC/MS/MS

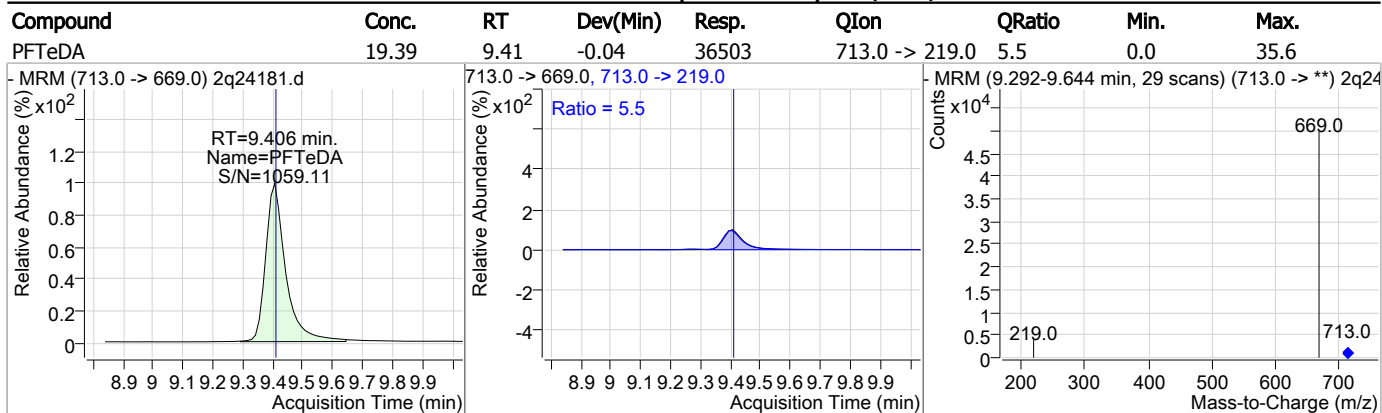


10.5.12 10

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.12
10

Manual Integration Approval Summary

Sample Number: S2Q377-CC374

Method: EPA 537M QSM5.1 B-15

Lab FileID: 2Q24181.D

Analyst approved: 11/28/18 16:01 Nancy Saunders

Injection Time: 11/28/18 12:12

Supervisor approved: 11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.28	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.51	Split peak

10.5.12.1
10

Mike Eger
11/28/18 17:54

Perfluorinated Compounds by LC/MS/MS

Data File : 2q24193.d
 Operator : NANCYF
 Acq. Method : dMRM_ID_PFC_2.1.m
 Acq. Date-Time : 11/28/2018 3:37:07 PM
 Sample Name : ECC374-20
 Vial : Vial 7
 DA Method File : PFC_ID_112618_S2Q374.quantmethod.xml
 Batch Name : S2Q377.batch.bin
 Sample Information : op72753,S2Q377,250,,,1.0,1,water

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.960	415.0 -> 370.0	149656	20.00 µg/L	-0.036
13C4-PFOS	7.535	503.0 -> 80.0	109709	20.00 µg/L	-0.022
M4-PFBA	1.965	217.0 -> 172.0	325948	20.00 µg/L	-0.063
M5-PFPeA	3.937	268.0 -> 223.0	159471	20.00 µg/L	-0.075
M5-PFHxA	5.315	318.0 -> 273.0	150328	20.00 µg/L	-0.050
M4-PFHpA	6.241	367.0 -> 322.0	154193	20.00 µg/L	-0.050
M8-PFOA	6.971	421.0 -> 376.0	109829	20.00 µg/L	-0.024
M9-PFNA	7.550	472.0 -> 427.0	85639	20.00 µg/L	-0.022
M6-PFDA	8.015	519.0 -> 474.0	98806	20.00 µg/L	-0.012
M7-PFUnDA	8.403	570.0 -> 525.0	111445	20.00 µg/L	-0.012
M2-PFDoDA	8.752	615.0 -> 570.0	101189	20.00 µg/L	-0.012
M2-PFTeDA	9.427	715.0 -> 670.0	60305	20.00 µg/L	-0.012
M8-FOSA	7.495	506.0 -> 78.0	193682	20.00 µg/L	-0.011
M3-PFBS	4.255	302.0 -> 99.0	50563	20.00 µg/L	-0.062
M3-PFHxS	6.285	402.0 -> 99.0	48650	20.00 µg/L	-0.050
M8-PFOS	7.533	507.0 -> 99.0	63478	20.00 µg/L	-0.023
M2-4:2FTS	5.210	329.0 -> 309.0	149088	20.00 µg/L	-0.050
M2-6:2FTS	6.956	429.0 -> 409.0	134457	20.00 µg/L	-0.037
M2-8:2FTS	8.039	529.0 -> 509.0	79558	20.00 µg/L	-0.011
M3-MeFOSAA	7.934	573.0 -> 419.0	62590	20.00 µg/L	-0.012

System Monitoring Compounds

13C2-4:2FTS	5.210	329.0 -> 309.0	148608	22.24 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C2-6:2FTS	6.956	429.0 -> 409.0	134416	21.65 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C2-8:2FTS	8.039	529.0 -> 509.0	79473	23.11 µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.5%	
13C2-PFDoDA	8.752	615.0 -> 570.0	101179	25.11 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.5%	
13C2-PFTeDA	9.427	715.0 -> 670.0	59847	24.86 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%	
13C3-PFBS	4.255	302.0 -> 99.0	49962	21.40 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C3-PFHxS	6.285	402.0 -> 99.0	48715	21.53 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C4-PFBA	1.965	217.0 -> 172.0	325708	20.72 µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFHpA	6.241	367.0 -> 322.0	153934	22.52 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C5-PFHxA	5.315	318.0 -> 273.0	149878	22.13 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C5-PFPeA	3.937	268.0 -> 223.0	159001	22.58 µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C6-PFDA	8.015	519.0 -> 474.0	98786	25.07 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.4%	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
13C7-PFUnDA	8.403	570.0 -> 525.0	111497	24.99 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.9%	
13C8-FOSA	7.495	506.0 -> 78.0	193628	22.82 µg/L	-0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C8-PFOA	6.971	421.0 -> 376.0	109802	22.37 µg/L	-0.024
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%	
13C8-PFOS	7.533	507.0 -> 99.0	63709	22.44 µg/L	-0.023
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%	
13C9-PFNA	7.550	472.0 -> 427.0	85612	23.12 µg/L	-0.022
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.6%	
d3-MeFOSAA	7.934	573.0 -> 419.0	62674	22.18 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
M2-PFOA	6.960	415.0 -> 370.0	149647	20.02 ng/ml	-0.036
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
M4-PFOS	7.535	503.0 -> 80.0	108965	19.91 ng/ml	-0.022
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	

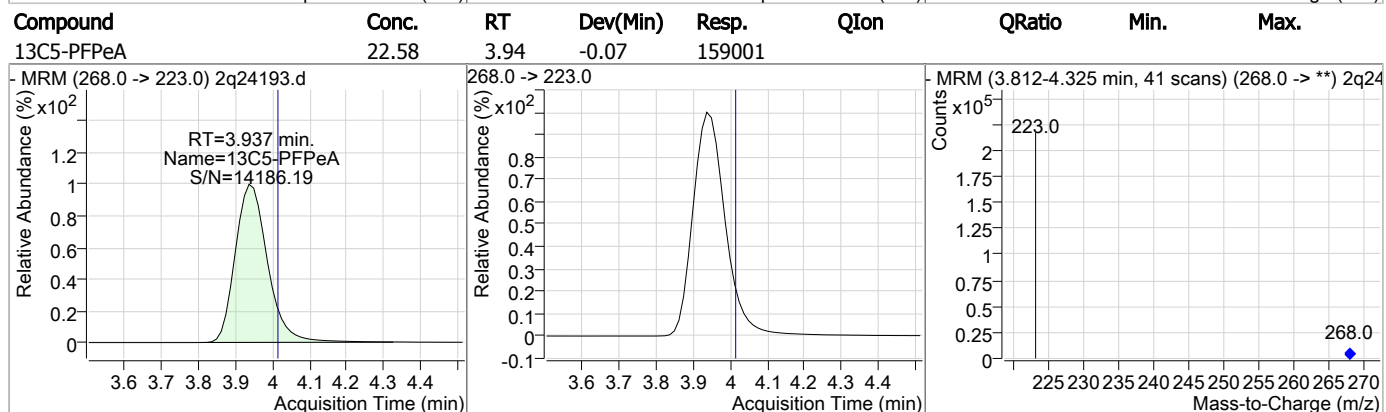
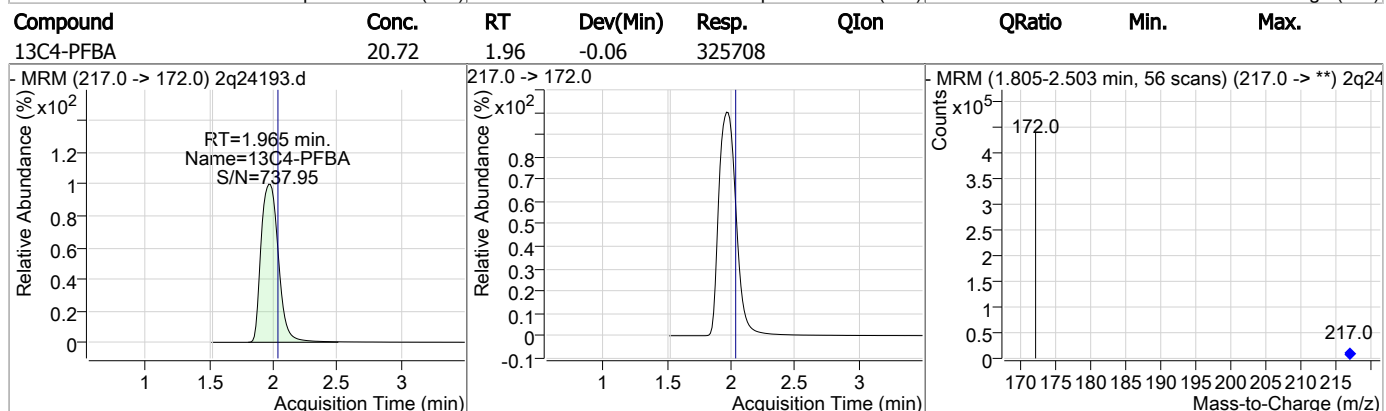
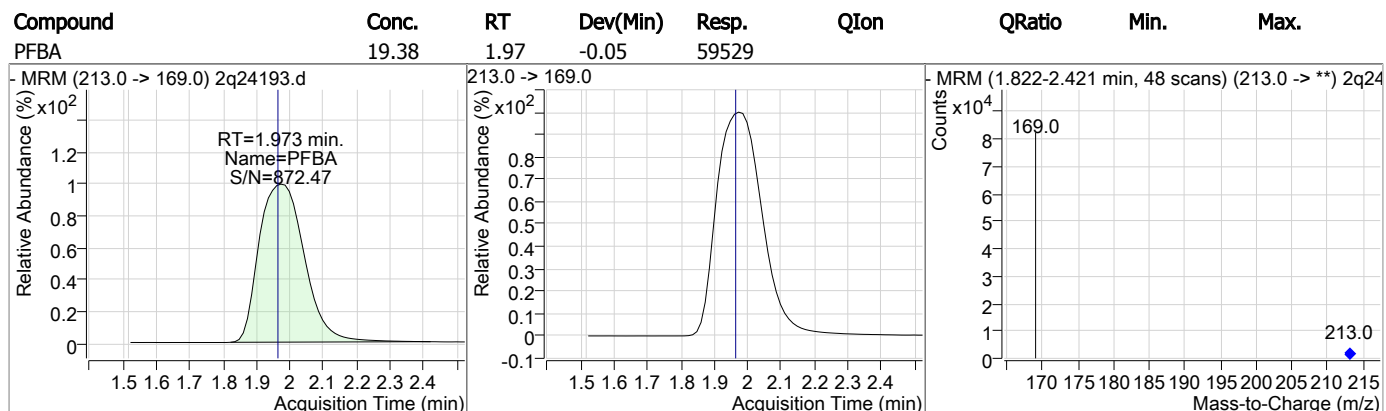
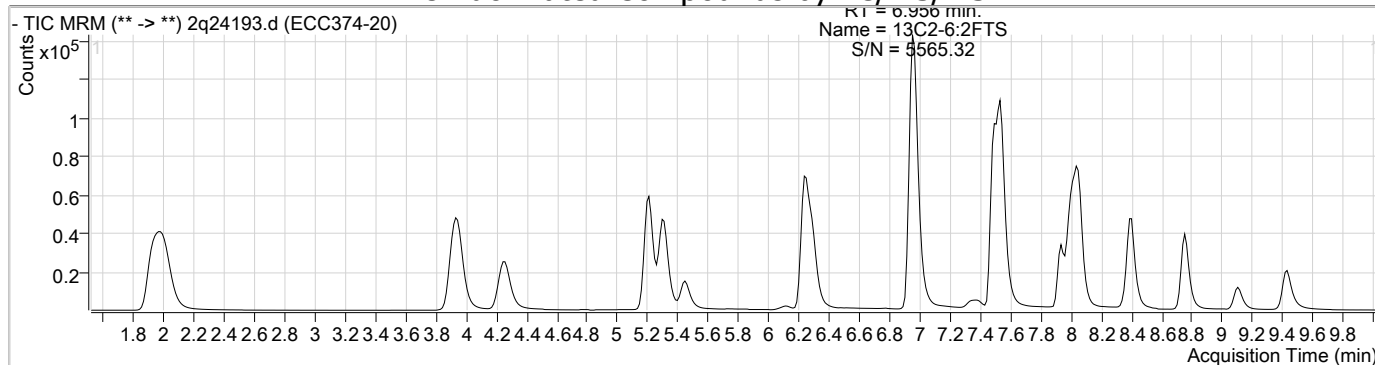
Target Compounds

					QValue
4:2FTS	5.212	327.0 -> 307.0	78489	18.99 µg/L	97
6:2FTS	6.957	427.0 -> 407.0	65827	19.32 µg/L	97
8:2FTS	8.040	527.0 -> 507.0	42072	19.64 µg/L	98
EtFOSAA	8.060	584.0 -> 419.0	27336	20.08 µg/L	100
FOSA	7.484	498.0 -> 78.0	91979	19.63 µg/L	97
MeFOSAA	7.935	570.0 -> 419.0	33027	20.30 µg/L	99
PFBA	1.973	213.0 -> 169.0	59529	19.38 µg/L	100
PFBS	4.246	299.0 -> 80.0	70299	19.32 µg/L	98
PFDA	8.015	513.0 -> 469.0	36690	18.07 µg/L	97
PFDoDA	8.754	613.0 -> 569.0	43232	19.28 µg/L	99
PFDS	8.362	599.0 -> 80.0	23427	20.16 µg/L	100
PFHpA	6.244	363.0 -> 319.0	117081	19.38 µg/L	100
PFHpS	6.979	449.0 -> 80.0	52324	20.65 µg/L	100
PFHxA	5.305	313.0 -> 269.0	44449	19.80 µg/L	97
PFHxS	6.288	399.0 -> 80.0	59565	19.47 µg/L	96
PFNA	7.551	463.0 -> 419.0	47351	19.03 µg/L	99
PFNS	7.987	549.0 -> 80.0	43662	19.43 µg/L	98
PFOA	6.961	413.0 -> 369.0	57269	19.07 µg/L	96
PFOS	7.536	499.0 -> 80.0	62810	18.79 µg/L	81
PFPeA	3.940	263.0 -> 219.0	130153	19.31 µg/L	100
PFPeS	5.445	349.0 -> 80.0	45745	20.57 µg/L	99
PFTeDA	9.431	713.0 -> 669.0	36920	19.13 µg/L	100
PFTTrDA	9.107	663.0 -> 619.0	46022	19.81 µg/L	99
PFUnDA	8.404	563.0 -> 519.0	39788	18.57 µg/L	100

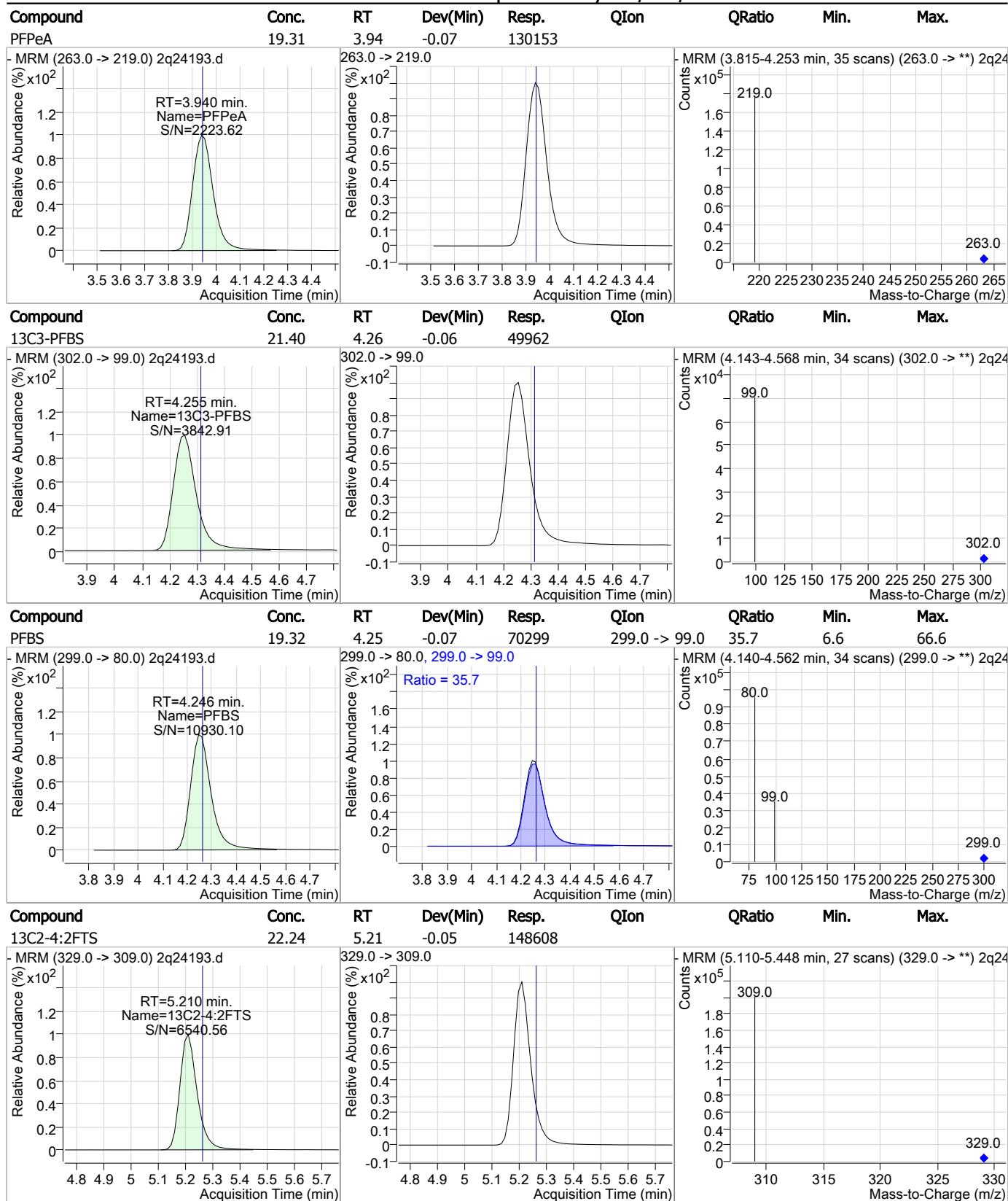
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10.5.13
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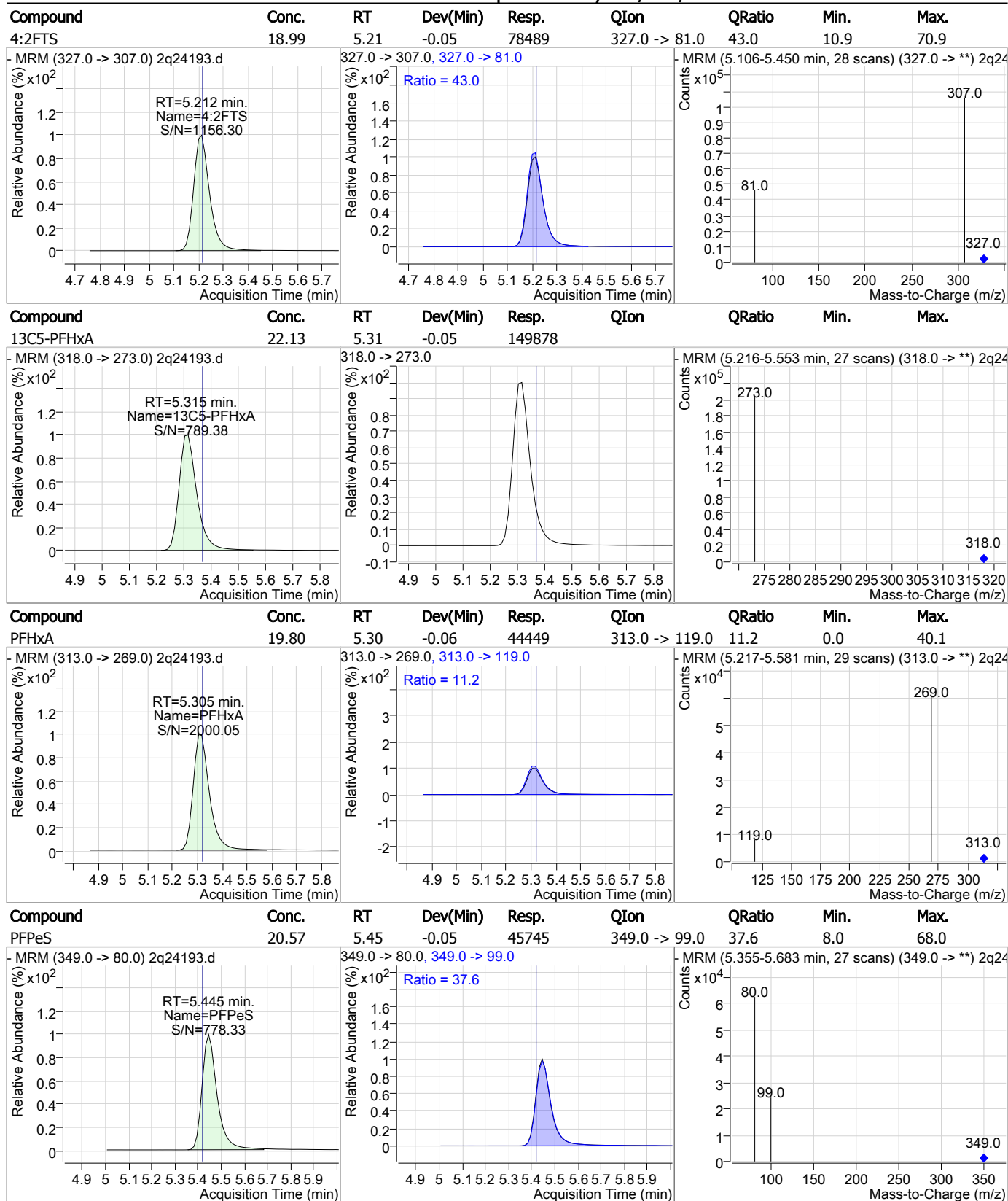
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

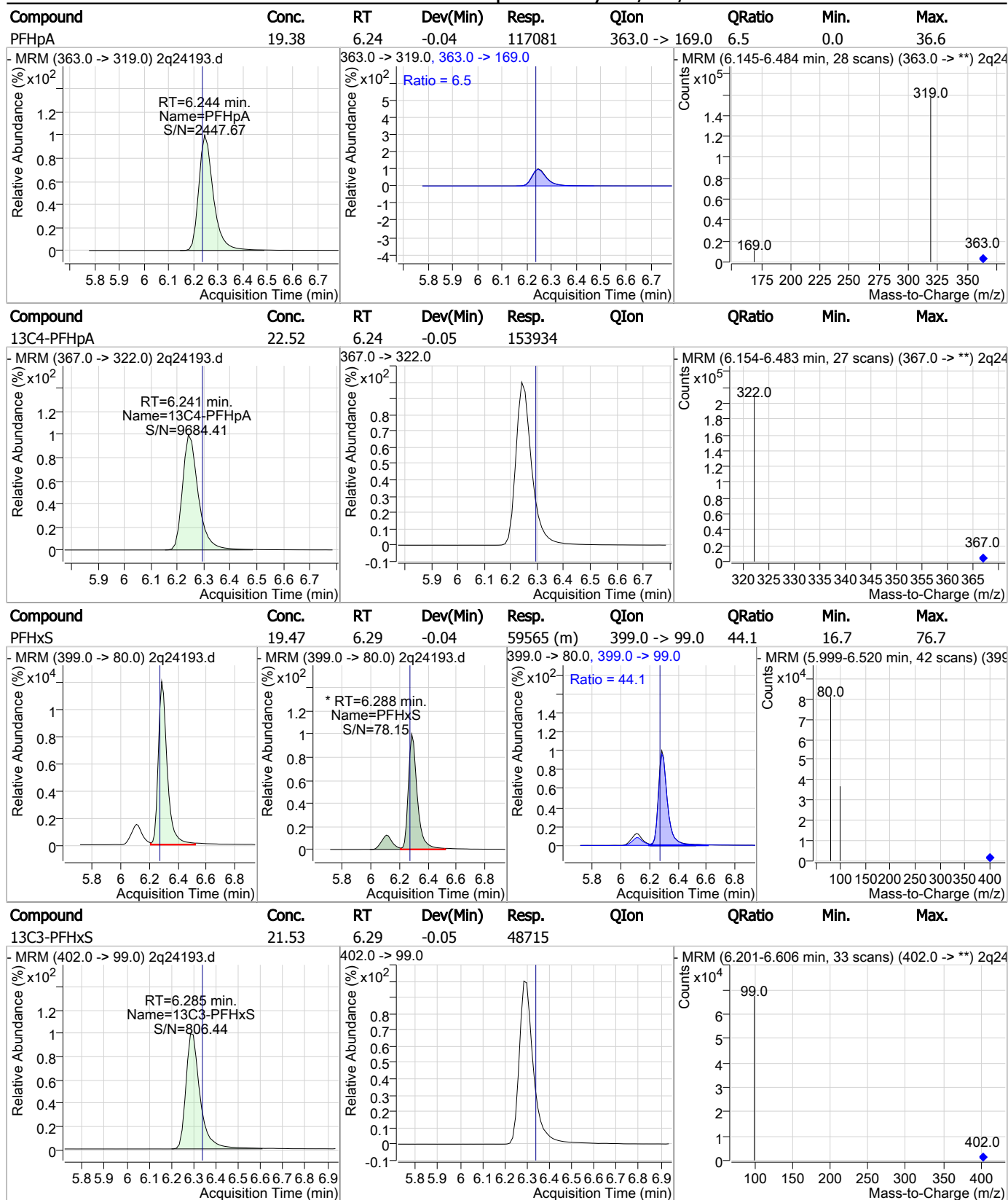


Perfluorinated Compounds by LC/MS/MS

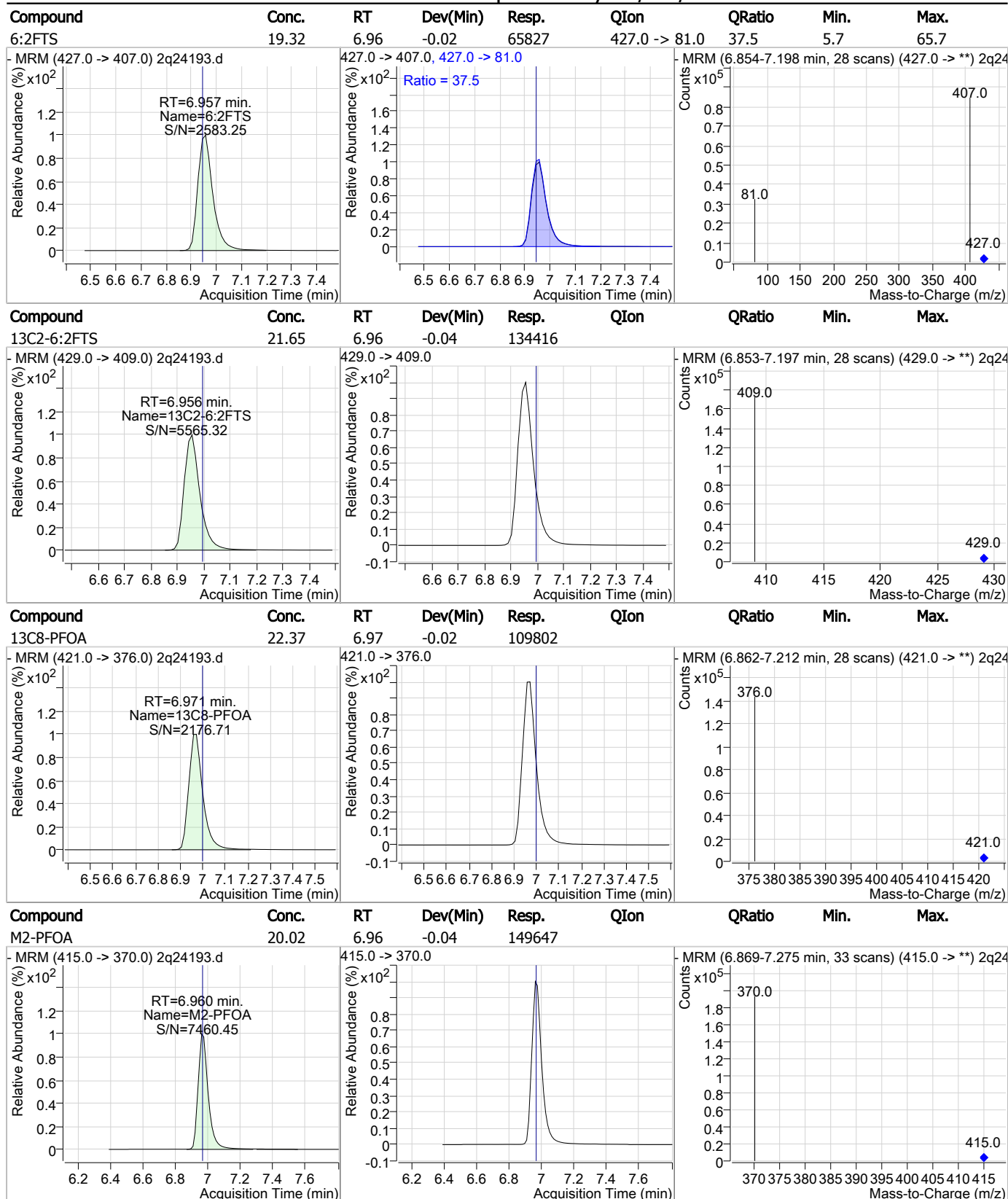


10.5.13 10

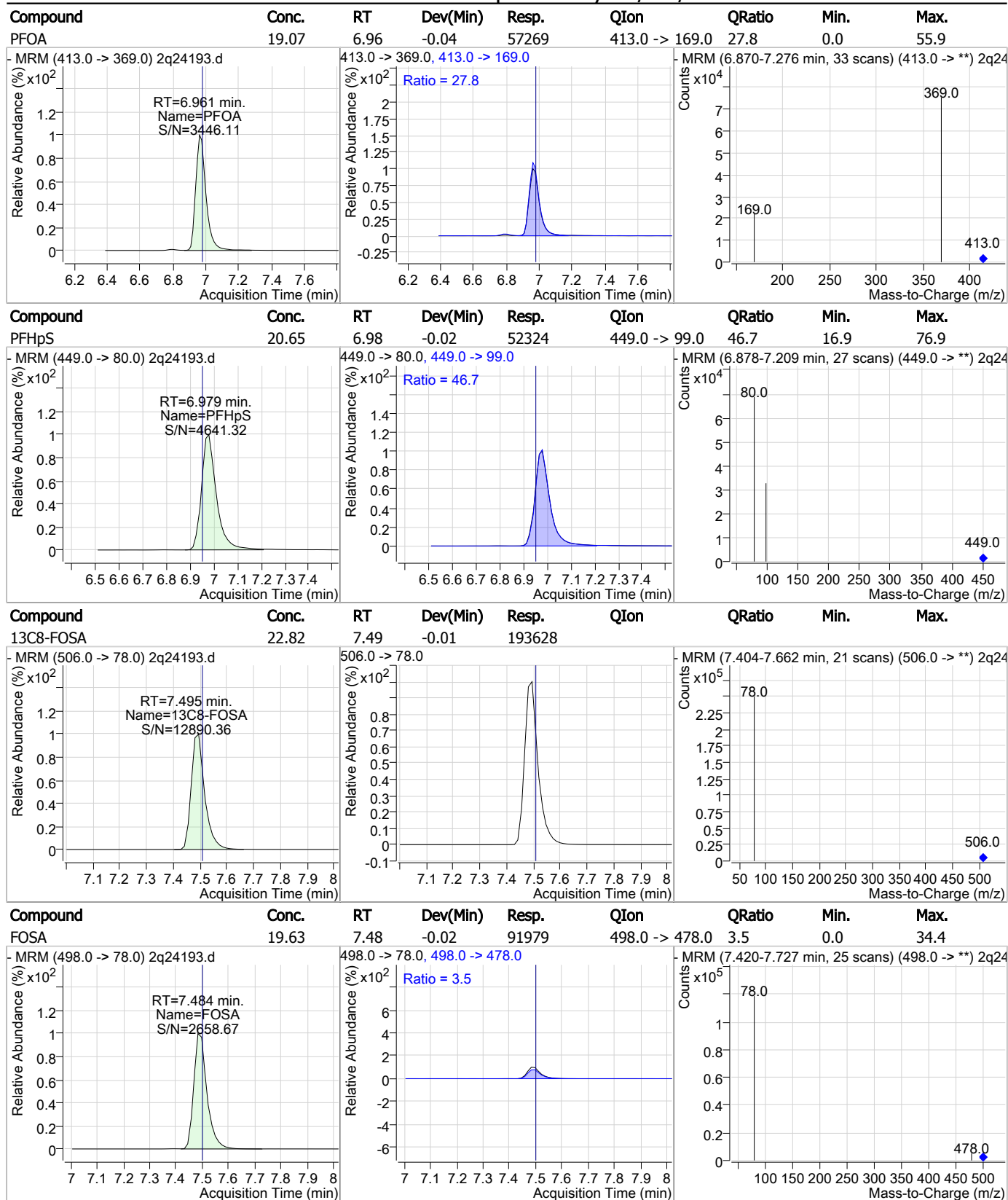
Perfluorinated Compounds by LC/MS/MS



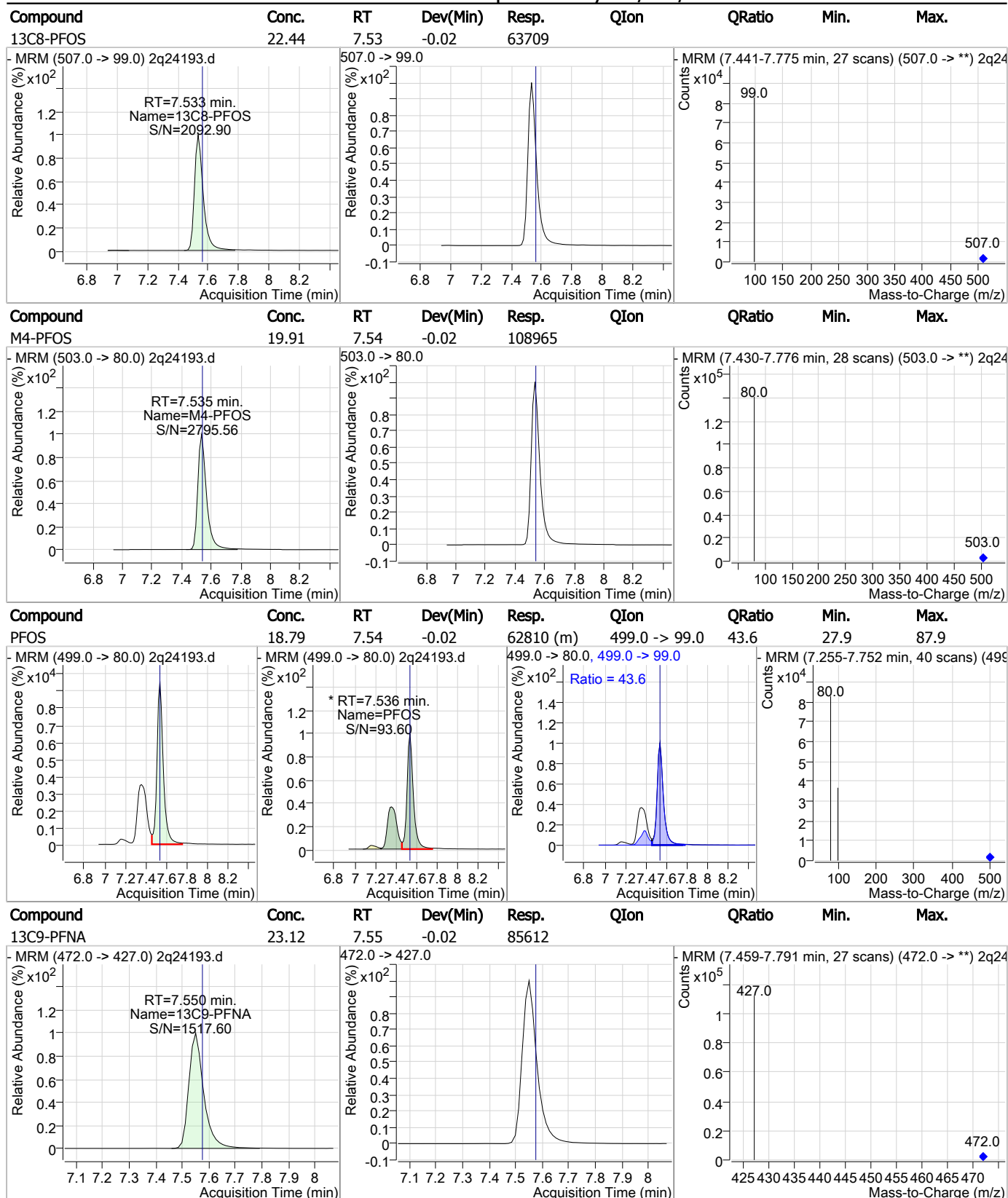
Perfluorinated Compounds by LC/MS/MS



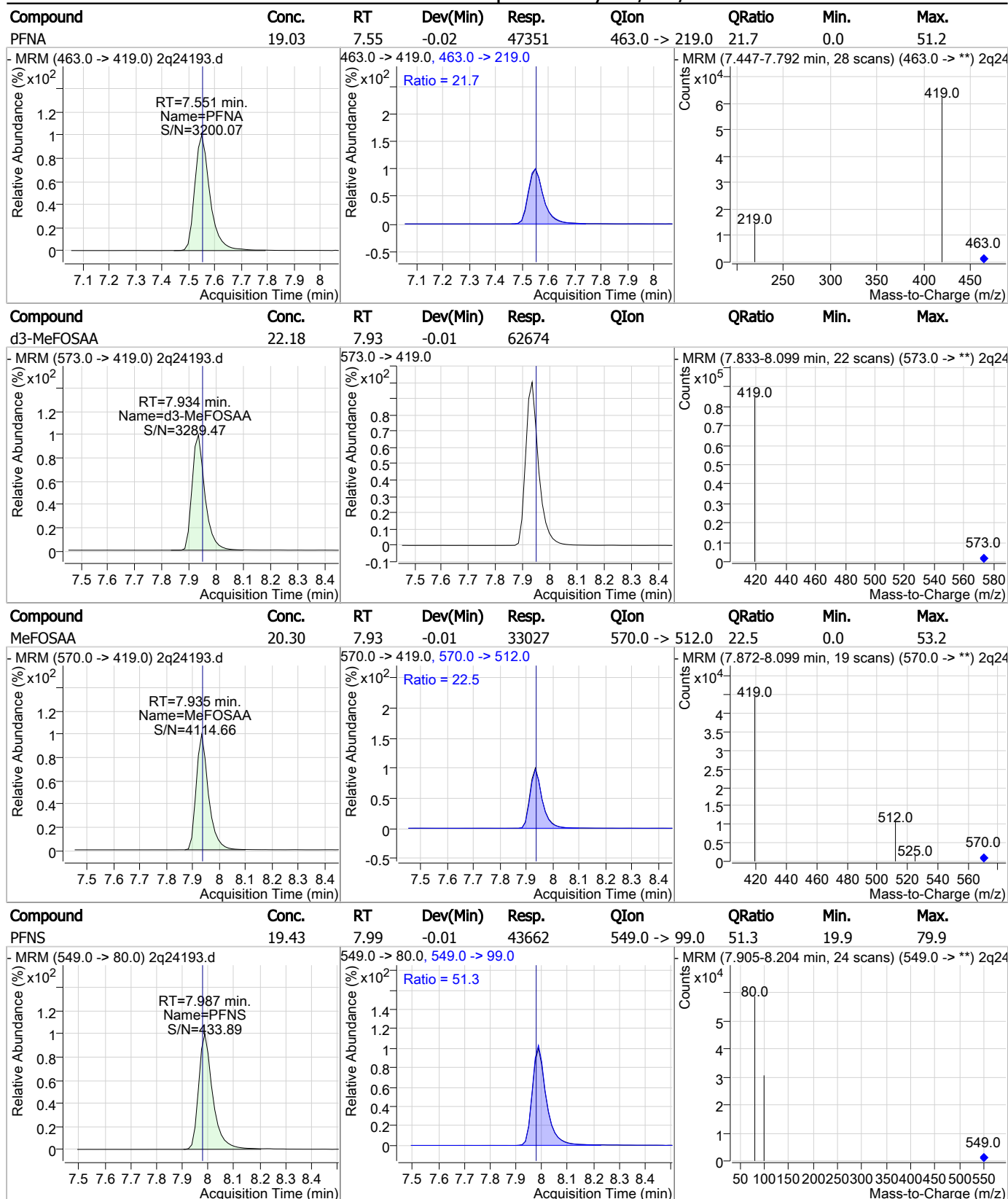
Perfluorinated Compounds by LC/MS/MS



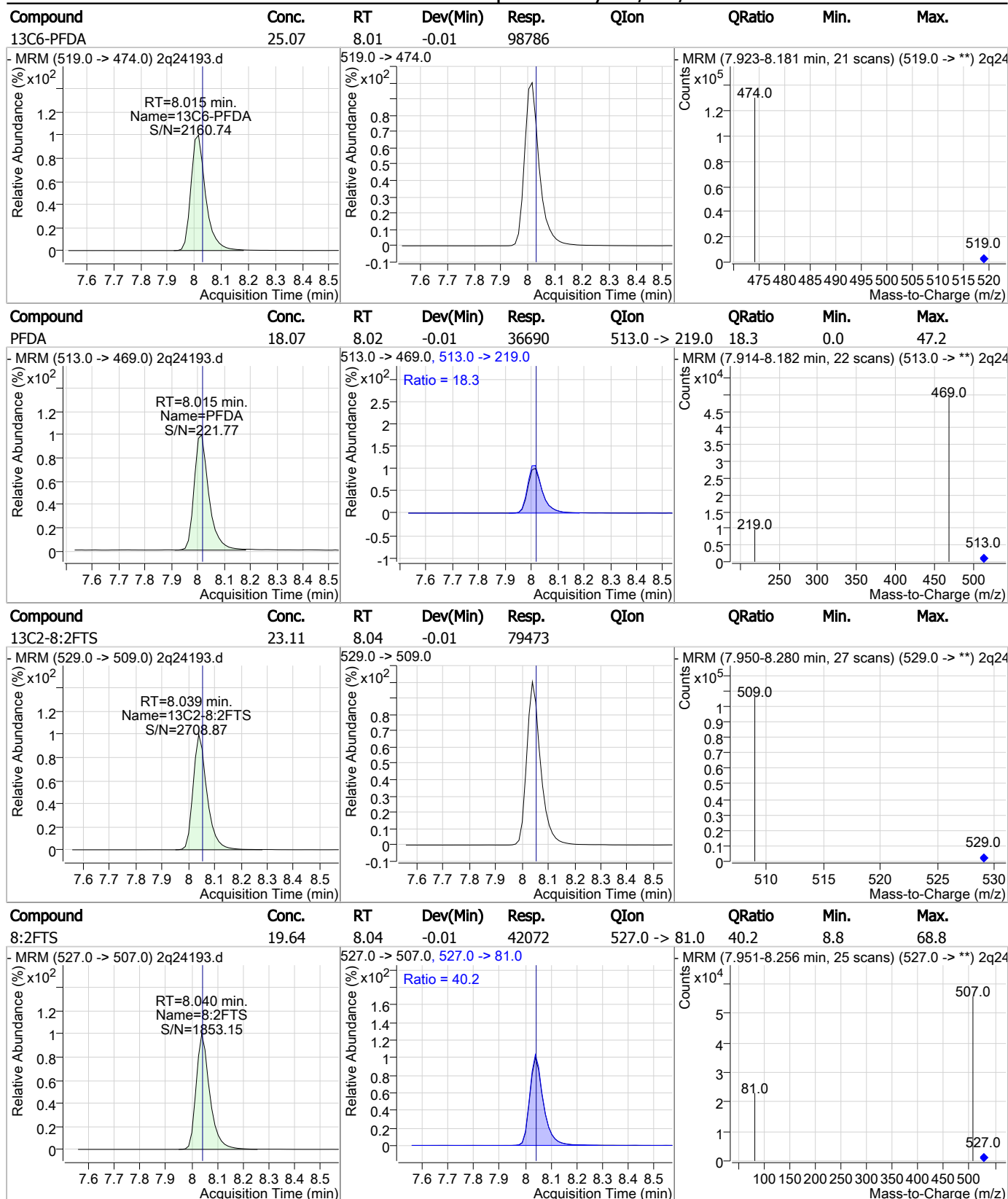
Perfluorinated Compounds by LC/MS/MS



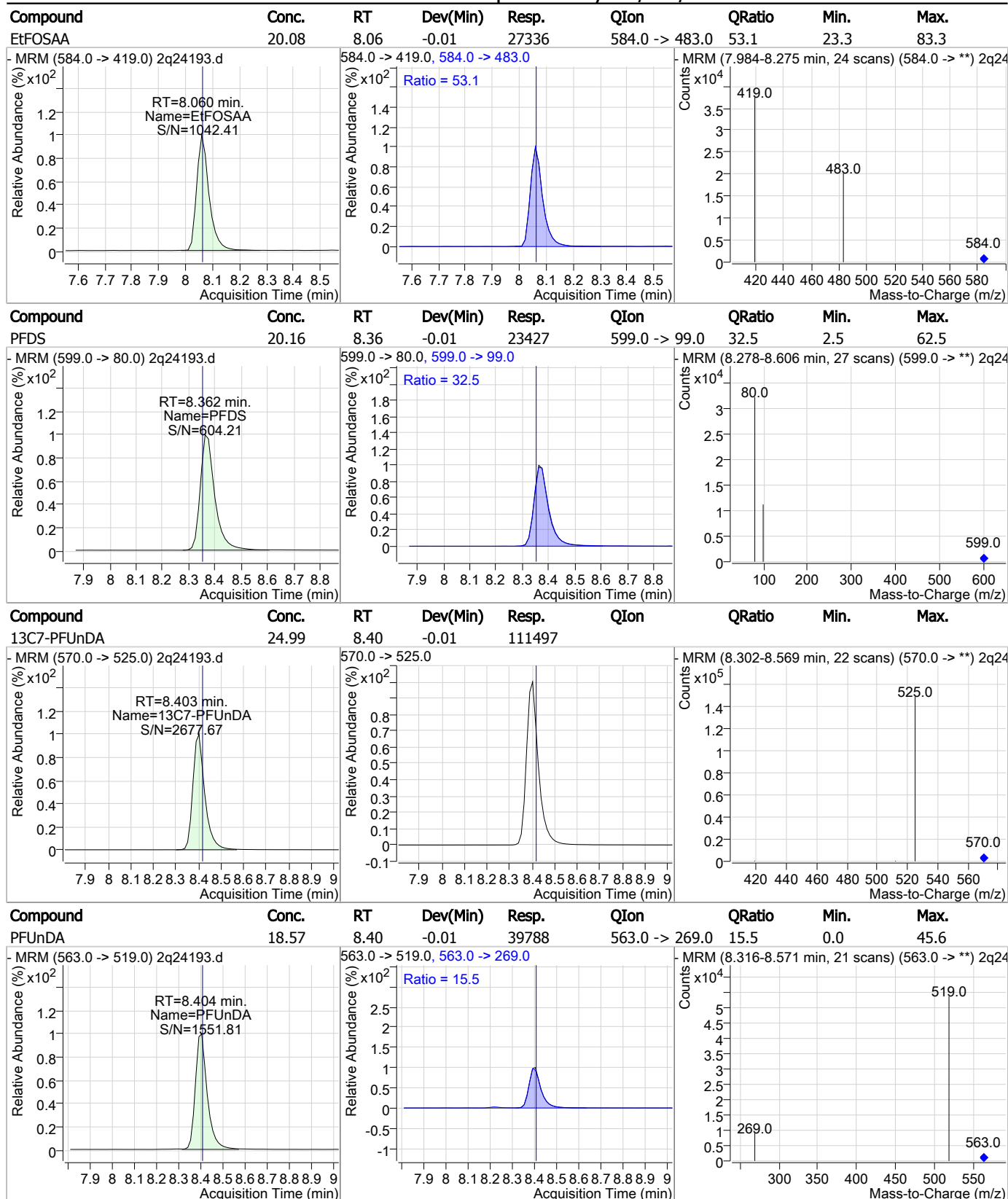
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

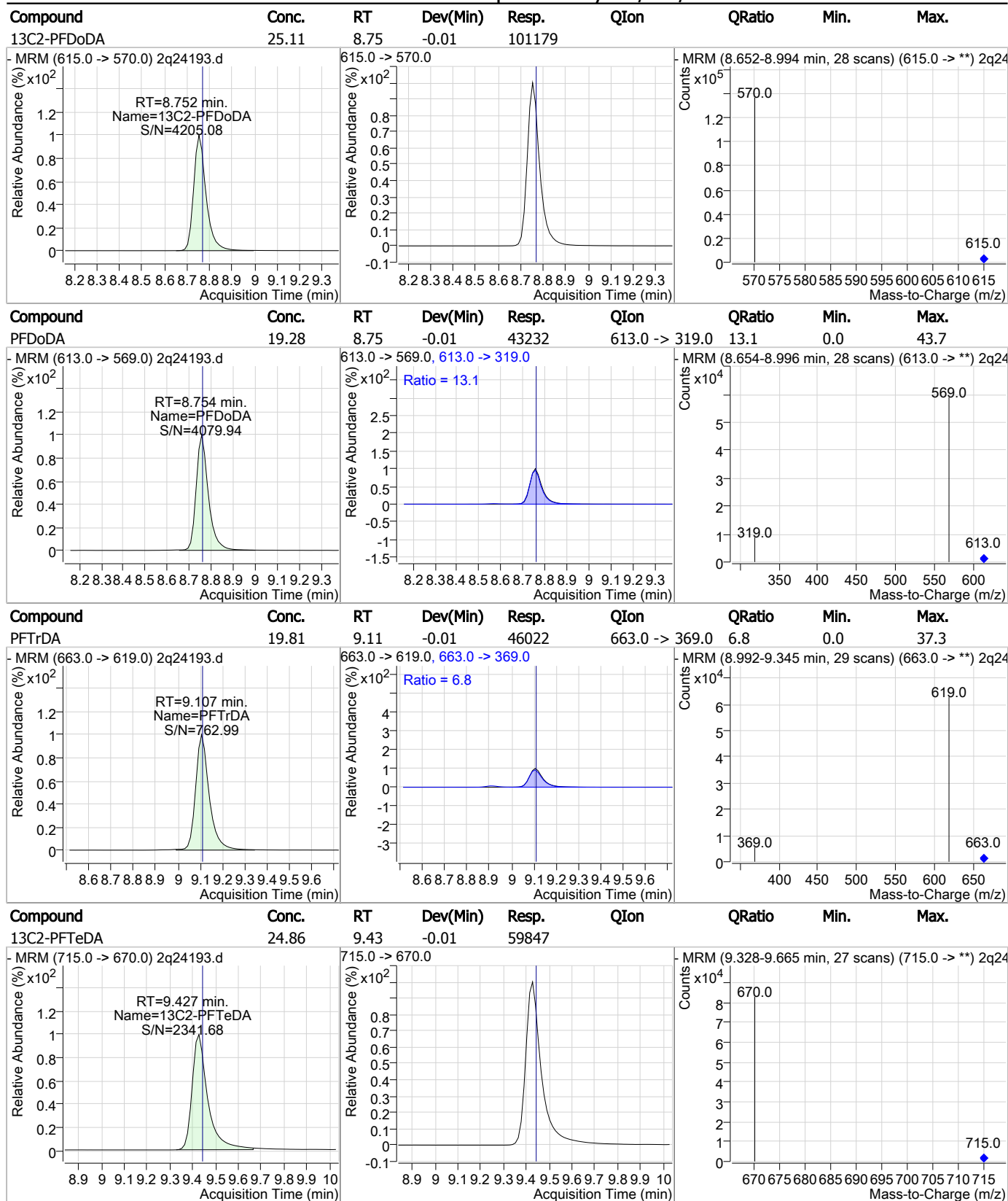


Perfluorinated Compounds by LC/MS/MS

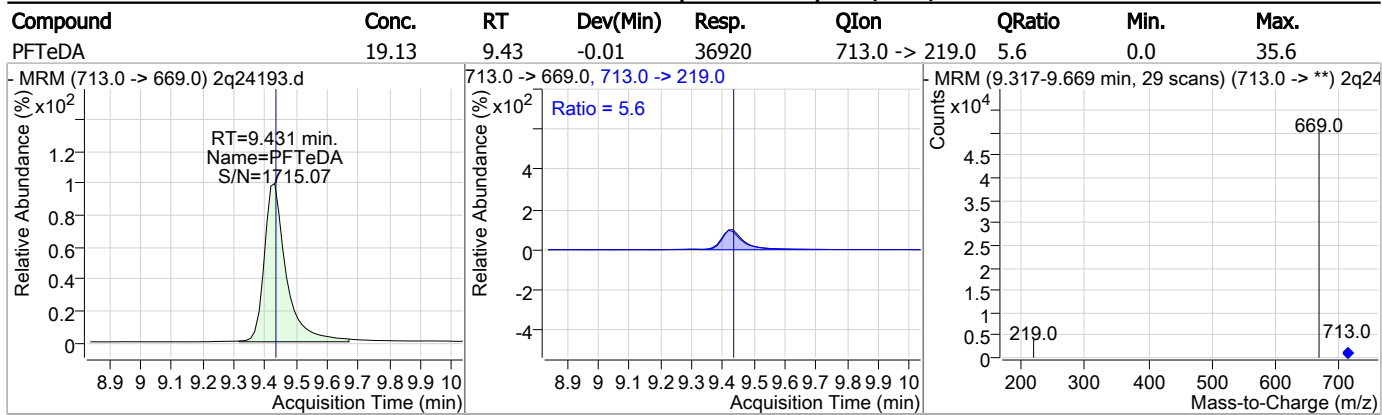


10.5.13 10

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



10.5.13
10

Manual Integration Approval Summary

Sample Number:

S2Q377-ECC374

Lab FileID:

2Q24193.D

Injection Time:

11/28/18 15:37

Method:

EPA 537M BY ID

Analyst approved:

11/28/18 16:01 Nancy Saunders

Supervisor approved:

11/28/18 17:54 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.29	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.54	Split peak

10.5.13.1
10

SGS ACCUTEST-ORLANDO

DATE:	11-26-18
COLUMN TYPE:	PERCUT 11 ECLB
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

LCMS2-2Q ANALYSIS LOG

METHODS:	S37 IO
ACQ. METHOD:	AMMAM IO PFC-2.1
PROC. METHOD:	PFC-2.0 112618322 374
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 374

ANALYST:	NAS
ELUENT A LOT #:	182514 w/Analytic Adv
ELUENT B LOT #:	183014
WATER LOT #:	182514
ISTD Lot #:	LC11750

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 24003	1	CEG	PFC-2.0						
2Q 04	1	CEB							80L
2Q 05	7	FT			100/100				80L
2Q 06	1	CEB		LC1173					80L
2Q 07	2	FC374-0.5		LC1173	25/100		50 0?		✓
2Q 08	3	-1.0			5/100		50		✓
2Q 09	4	-2.0			10/100		50		✓
2Q 10	5	-5.0			25/100		50		✓
2Q 11	6	-10			50/100		50		✓
2Q 12	7	DEC374-20			100/100		50		✓
2Q 13	8	FC374-50			250/100		50		✓
2Q 14	9	-100			14		50		✓
2Q 15	1	FB1K							80L
2Q 16	10	FCV374-LO		LC1181	25/100		50		80SS
2Q 17	11	T-ACOA		LC1167	100/100				RA wrong ESD
2Q 18	12	GM2744-05		082749	17		50		RA 100L
2Q 19	13	-mB							80L
2Q 20	14	FAS 4262-1					50		✓ me, 100L
2Q 21	15	-2					50		✓ 100L
2Q 22	16	FA 59313-1							80L

* < 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.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: _____

SGS ACCUTEST-ORLANDO

DATE:	11-26-18
COLUMN TYPE:	Percolite 5 ul
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

LCMS2-2Q ANALYSIS LOG

METHODS:	S2Q S2Q
ACQ. METHOD:	11/26/18 11:26:18
PROC. METHOD:	11-26-18
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 374

ANALYST:	NAS
ELUENT A LOT #:	102514
ELUENT B LOT #:	103010
WATER LOT #:	102514
ISTD Lot #:	2611753

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 24023	17	FA54313-2	PFC ID	0172749	17				ADL
2Q 24	18	-3							ADL
2Q 25	19	-4							ADL
2Q 26	20	-5							ADL
2Q 27	21	-6							ADL
2Q 28	22	CL374-5		161173	251500		SP		ADL
2Q 29	23	CL3							ADL
2Q 30	24	FA54313-7		0172749	17				ADL
2Q 31	25	-8							ADL
2Q 32	26	-9							ADL
2Q 33	27	0172744-105					SP		ADL
2Q 34	28	-105					SP		ADL
2Q 35	29	FA54313-10							ADL
2Q 36	30	-11							ADL
2Q 37	31	-12							ADL
2Q 38	32	-13							ADL
2Q 39	33	-14							ADL
2Q 40	34	CL374-5		161173	191500		SP		ADL
2Q 41	35	CL3							ADL
2Q 42	36	0172744-055		0172749	17		SP		ADL

*< 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, PI 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.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature:



SGS ACCUTEST-ORLANDO

DATE:	11-26-18
COLUMN TYPE:	Porosils 11 EL18
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

LCMS2-2Q ANALYSIS LOG

METHODS:	537 I.D
ACQ. METHOD:	AMRM I.D PFC 2.1
PROC. METHOD:	PFC I.D 112618 S2Q374
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 374

ANALYST:	NAS
ELUENT A LOT #:	102514 w/destatic Add
ELUENT B LOT #:	103018 J
WATER LOT #:	132514
ISTD Lot #:	261175B

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 24043	32	FA59313-15	PFC I.D	0172744	17				BDL
2Q 44	33	-16							BDL
2Q 45	34	-17							BDL
2Q 46	35	-18							BDL
2Q 47	11	T-PFOA-							✓
2Q 48	5	CC374-5.0		LC1167	100/500				Poss
2Q 49	1	CCB		LC1173	25/500				BDL
2Q 50	3	CC374-1.0		LC1167	5/500				Poss
2Q 51	36	OP72750-B5		OP7250	17				✓
2Q 52	37	-mB							BDL
2Q 53	38	FA59262-3							✓
2Q 54	39	-6							✓
2Q 55	40	FA59318-1							BDL
2Q 56	41	-L							BDL
2Q 57	42	OP72750-m5							✓
2Q 58	43	FA59318-3							BDL
2Q 59	44	-4							✓
2Q 60	45	-5							BDL
2Q 61	5	CC374-5.0		LC1173	25/500				Poss
2Q 62	1	CCB							BDL

*< 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, PI 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.

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Analyst's Signature: _____

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SGS ACCUTEST-ORLANDO

DATE:	11-26-18
COLUMN TYPE:	5 µm C ₁₈ 11 2618
AMOUNT INJECTED:	5 µl
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	330

LCMS2-2Q ANALYSIS LOG

METHODS:	537 ED
ACQ. METHOD:	MM1M ED DC1-2.1
PROC. METHOD:	96L ED 112618 S2-374
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 374

ANALYST:	NAS
ELUENT A LOT #:	182-514 w/ 11-26-18
ELUENT B LOT #:	183018 J
WATER LOT #:	182-514
ISTD Lot #:	LC11753

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 24063	46	FA59318-6	PFL ED	0072750	1X				
2Q 64	47	-7							ADL
2Q 65	48	-8							ADL
2Q 66	49	-9							ADL
2Q 67	50	-10							ADL
2Q 68	51	-11							ADL
2Q 69	52	NH ₄ ⁺ 112618							ADL
2Q 70	53	-13					SP		✓
2Q 71	54	-14							ADL
2Q 72	55	-15							ADL
2Q 73	5	EC374-5.0		LC1173	25/100		SP		POSS
2Q 74	1	CCB							ADL
2Q 75	56	15-459318-16	MAN2140	0172750	1X				ADL
2Q 76	57	0072750-045	Dup						ADL
2Q 77	58	15-459318-17							ADL
2Q 78	59	NH ₄ ⁺ 112618	MS 0274						ADL
2Q 79	60	EC374-5.0		LC1173	100/100-5X				✓
2Q 80	1	EC374-5.0		LC1173	100/100		SP		Pax
2Q 81	1	CCB							ADL 11-27-18
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.

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Analyst's Signature: _____

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SGS ACCUTEST-ORLANDO

DATE:	11-28-18
COLUMN TYPE:	P4005Hx11 E16
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	332

LCMS2-2Q ANALYSIS LOG

METHODS:	537 ID
ACQ. METHOD:	MPM ±0 PFC 2.1
PROC. METHOD:	PFC ±0 11261750-374
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 377

ANALYST:	NAS
ELUENT A LOT #:	182514 11/14/18 H.C.
ELUENT B LOT #:	183016
WATER LOT #:	182514
ISTD Lot #:	LC1175B

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 24166	7	RT	PFC ID	LC1173	100/500				✓
2Q 67	9	High std		+	17				✓
2Q 68	1	EBLK					SP PSE		BOL
2Q 69	3	66374-1.0		LC1173	5170		SP		Poss
2Q 70	7	-20		+	100/500		SP		Poss
2Q 71	24	5617452-6		UP72736	17		PSE SP		✓
2Q 72	32	0172753-B5		0072733			SP		✓ PFC 2.1
2Q 73	33	-ms					SP		BOL
2Q 74	34	5676816-1							BOL 6.27, 1.1
2Q 75	35	-2							BOL + I
2Q 76	36	-3					PSE SP		✓ CRACK
2Q 77	36	-3							SP
2Q 78	37	-4					PSE SP		BOL
2Q 79	38	0172753-m5					SP		✓
2Q 80	39	-ms					SP		✓
2Q 81	7	CC374-20		LC1173	100/500		SP		Poss
2Q 82	1	CLB							BOL
2Q 83	42	7676816-7		0072733	17				BOL
2Q 84	44	-9		+			PSE SP		BOL
2Q 85	40	-5		+			PSE SP		SP ✓

AM112818

* < 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 initiated and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: _____

LCMS2-2Q ANALYSIS LOG

DATE: 12-2-18
COLUMN TYPE: Supelco 11 C18
AMOUNT INJECTED: 5 ul
INSTRUMENT: LCMS2-2Q
HEAD PRESSURE: 300

METHODS:	537 PLO
ACQ. METHOD:	DMEM IO OFC 2.1
PROC. METHOD:	OFC IO 112618 S2374
CALIB. DATE:	11-26-18
RUN BATCH:	S2Q 377

ANALYST:	NAJ
ELUENT A LOT #:	182-519
ELUENT B LOT #:	183-013
WATER LOT #:	182-519
ISTD Lot #:	LC 1175 B

[illegible]

* < Conductivity Limit For Perchlorate by SW846 6850

* < Conductivity Limit For Perchlorate by SW846 6850

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2 2Q log.xls ME rev. 06/16

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Analyst's Signature: _____

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 11/24/18 0800
Started {mm/dd/yy 24:00}Prep Method: 3535A or 537 or (537MOD) (circle)Date/Time: 11/24/18 15:15
Finished {mm/dd/yy 24:00}Analytical Method: LC537 IDBatch#: OP-72753Ext. By: MVConc. By: MV

Viald By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 72753 MB		250	6	NA	20ul		1.0ml	B	
OP 72753 BS		250				50ul			
IC 78016-1	1	250							Hard to Filter
-2	1	250							Hard to Filter
-3	1	250							
-4	1	250							
-5	1	250							
-6	1	250							
-7	1	250							
-8	1	250							
-9	1	250							
<u>MV</u> <u>11/24/18</u>									
IC 78016-4MS	2	250	6	NA	20ul	50ul		B	
IC 78016-4MSD	3	250						B	
DUP									

Comments:

Surr.1 ID: LC1183 Conc: 1.0 ppm Exp. Date: 11-21-19 Inj. By: MV Ver. By: AF
 Spk.1 ID: LC1181 Conc: 400 ppb Exp. Date: 05-20-19 Inj. By: MV Ver. By: AF
 Spk.2 ID: ✓ Conc: ✓ Exp. Date: ✓ Inj. By: ✓ Ver. By: ✓
 Spk.3 ID: ✓ Conc: ✓ Exp. Date: ✓ Inj. By: ✓ Ver. By: ✓

TurboVap Temp (Therm ID): TU#12 N-Evap Temp (Therm ID): ✓
 Observed Temp °C: 45°C Corr. Temp °C: ✓ Observed Temp °C: ✓ Corr. Temp °C: ✓

Methanol Lot # 184032 SPE Lot # 6424575-01 pH Paper # 230017
 Acetonitrile Lot # - Syringe filter Lot # ✓ Reagent # 246 MEDH, 184032
 Water Lot# OP-21681 Pre-filter Lot# ✓ Reagent # 246 NH4OH, 7117051
 Solvent# ✓ Carbon Lot# ✓ Other ✓

Relinquished By: [Signature]Date: 11/24/18Accepted By: [Signature]Date: 11-26-18

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

10.7.1 10



Data Usability Summary Report

**Data Usability Summary Report
November 2018 Additional Monitoring Request
PFAS and 1,4-Dioxane Groundwater Sampling
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
(NYSDEC SITE 4-13-008)
SIDNEY, NEW YORK**

1.0 INTRODUCTION

Groundwater samples were collected at the Amphenol - RHLF Site in Sidney, New York, in November 2018 and submitted for off-site laboratory analysis. Samples were analyzed by SGS Accutest located in Orlando, Florida and Dayton, New Jersey. Samples were analyzed using the following methods:

- 1,4-Dioxane by USEPA Method 8270D-Selected Ion Monitoring (SIM)
- Per- and Polyfluorinated Alkyl Substances (PFAS) by Modified EPA Method 537

Results were reported in the following sample delivery group (SDG):

- JC78016

Data quality objectives are identified in the Richardson Hill Road Landfill – Emerging Contaminant Sampling Work Plan (OBG, 2018). A Data Usability Summary Report (DUSR) was completed for PFAS compounds and 1,4-dioxane laboratory data in accordance with New York State Department of Environmental Conservation (NYSDEC) guidelines (NYSDEC, 2010). Quality Control (QC) limits reported by the laboratory were used during the data review. The DUSR review includes raw data verification checks completed for 1,4-dioxane and PFAS methods. Sample event information included in this chemist review is presented in the following tables:

- Table 1 – Sample and Analytical Summary
- Table 2 – Validation Actions Summary
- Table 3 – Final Results
- Table 4 – Field Duplicate Summary

Laboratory deliverables included:

- Category B deliverable as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Surrogate/Labeled Internal Standard Spikes

- Field Duplicates
- Reporting Limits
- Raw data review and Calculation Verification
- Electronic Data Qualification and Verification

Control limits reported by the laboratory were used to evaluate quality control performance. Data qualification actions are applied when necessary based on general procedures in USEPA validation guidelines (USEPA, 2016) and the judgment of the project chemist. The following laboratory or data review qualifiers are used in the final data presentation:

U = The target compound was not detected at a concentration greater than, or equal to, the quantitation limit.

J = The reported concentration is considered an estimated value.

J+ = The reported concentration is considered an estimated value and may be biased high.

J- = The reported concentration is considered an estimated value and may be biased low.

UJ = The target compound was not detected and the reporting limit is considered to be estimated.

R = The reported value is rejected and is considered to be unusable

The validation qualification actions for this data set and associated validation reason codes are summarized on Table 2. The following data validation reason codes were applied to one or more sample results:

CCVL = Continuing calibration verification recovery less than lower control limit

LCSL= Laboratory control sample less than the lower limit

MSL= Matrix spike recovery less than the lower limit

MSDL= Matrix spike duplicate recovery less than the lower limit

MSDH = Matrix spike duplicate recovery greater than the upper limit

Sample results that are not included on Table 2 were interpreted to be usable as reported by the laboratory. A complete summary of final sample results is provided on Table 3.

2.0 VALIDATION ACTIONS

2.1 PFOA/PFOS

Data were evaluated based on the following parameters:

- * Collection and Preservation
- * Holding Times
- * Data Completeness
- * Blank Contamination
- * Instrument Calibration
- LCS
- MS/MSD
- * Field Duplicates

- * Surrogate Recoveries
- * Internal Standard Response and Retention Time
- * Reporting Limit
- * Electronic Data verification
- * Compound Identification and chromatogram review
- * Raw Data Checks and QC form Data Verification
- * Calculation Verification Checks for Samples and QC Parameters

* - QC criteria were met for this parameter.

LCS

The LCS percent recovery was less than the lab QC limit of 76 for perfluorodecanesulfonic acid (65) in batch OP72753, which may indicate low bias. Results for perfluorononanoic acid in associated batch samples were qualified as estimated (UJ) with reason code LCSL.

MS/MSD

Sample RH-02_111218 was submitted for MS/MSD analysis. The MS and MSD percent recoveries of perfluorodecanesulfonic acid (63/58) were less than the QC limit of 70, which may indicate low bias. The result of perfluorodecanesulfonic acid in sample RH-02_111218 was qualified as estimated (UJ) with reason code MSL,MSDL.

2.2 1,4-Dioxane

Data were evaluated based on the following parameters:

- * Collection and Preservation
- * Holding Times
- * Data Completeness
- * Blank Contamination
- * Instrument Calibration
- * LCS
- * MS/MSD
- * Field Duplicates
- * Surrogate Recoveries
- * Internal Standard Response and Retention Time
- * Reporting Limit
- * Electronic Data verification
- * Compound Identification and chromatogram review
- * Raw Data Checks and QC form Data Verification
- * Calculation Verification Checks for Samples and QC Parameters

* - QC criteria were met for this parameter.

Instrument Calibration

The percent difference of 1,4-dioxane (-23.9) exceeded the limit of 20 percent in the continuing calibration verification in batch E3P3447, indicating associated sample results are possibly biased low. The detected result of 1,4-dioxane in associated sample RH-

02_111218 was qualified as estimated (J) with reason code CCVL.

MS/MSD

Sample RH-02_111218 was submitted for MS/MSD analysis. The MSD percent recoveries of 1,4-dioxane (134) was greater than the QC limit of 125. The result of 1,4-dioxane in sample RH-02_111218 was qualified as estimated (J) with reason code MSDH.

Reference:

OBG, 2018. "Richardson Hill Road Landfill – Emerging Contaminant Sampling Work Plan"; October 22, 2018.

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

U.S. Environmental Protection Agency (USEPA), 2016. "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Data Review"; Office of Emergency and Remedial Response; EPA-540-/R-2016-002; September 2016.

Data Validator: Manasa Sri



January 16, 2019

Reviewed by: Chris Ricardi, NRCC-EAC



January 20, 2019

TABLE 1
SAMPLE AND ANALYTICAL SUMMARY
DATA USABILITY SUMMARY REPORT
NOVEMBER 2018 EMERGING CONTAMINANTS MONITORING
PFOA PFOS AND 1,4-DIOXANE GROUNDWATER SAMPLING
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
SIDNEY, NEW YORK

				Parameter	PFAS	1,4-Dioxane
				Method	EPA 537	SW8270D-SIM
SDG	Field Sample ID	Location ID	Type	Date		
JC78016	MW-12DD_111218	MW-12DD	REG	11/12/2018	21	1
JC78016	RH-02_111218	RH-02	REG	11/12/2018	21	1
JC78016	RH-05D_111218	RH-05D	REG	11/12/2018	21	1
JC78016	RH-06S_111218	RH-06S	REG	11/12/2018	21	1
JC78016	RH-07S_111218	RH-07S	REG	11/12/2018	21	1
JC78016	RH-08D_111218	RH-08D	REG	11/12/2018	21	1
JC78016	X-1_111218	RH-08D	FD	11/12/2018	21	1
JC78016	EQUIPMENT BLANK_111218	QC	EB	11/12/2018	21	1
JC78016	FIELD REAGENT BLANK_111218	QC	FB	11/12/2018	21	

Notes:

FD= Field Duplicate

REG= Regular Sample

TABLE 2
VALIDATON ACTIONS SUMMARY
DATA USABILITY SUMMARY REPORT
NOVEMBER 2018 EMERGING CONTAMINANTS MONITORING
PFOA PFOS AND 1,4-DIOXANE GROUNDWATER SAMPLING
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
SIDNEY, NEW YORK

SDG	Field Sample ID	Type	Method	Parameter	Lab Result	Lab Qual	Val Qual	Reason Codes	Units
JC78016	RH-02_111218	REG	SW8270-SIM	1,4-Dioxane	3.16		J	CCVL,MSDH	ng/L
JC78016	RH-02_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL,MSL,MSDL	ng/L
JC78016	MW-12DD_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L
JC78016	RH-05D_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L
JC78016	RH-06S_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L
JC78016	RH-07S_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L
JC78016	RH-08D_111218	REG	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L
JC78016	X-1_111218	FD	E537M	Perfluorodecanesulfonic acid	4.0	U	UJ	LCSL	ng/L

Notes:

J = Estimated
CCVL= Continuing calibration verification recovery less than lower control limit
LCSL= Laboratory control sample less than the lower limit
MSL= Matrix spike recovery less than the lower limit
MSDL= Matrix spike duplicate recovery less than the lower limit
MSDH= Matrix spike duplicate recovery greater than the upper limit
U= Undetected

TABLE 3
FINAL RESULTS
DATA USABILITY SUMMARY REPORT
NOVEMBER 2018 EMERGING CONTAMINANTS MONITORING
PFOA PFOS AND 1,4-DIOXANE GROUNDWATER SAMPLING
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
SIDNEY, NEW YORK

Field Sample ID Location Sample Date Sample Delivery Group			MW-12DD_111218 MW-12DD 11/12/2018 JC78016	RH-02_111218 RH-02 11/12/2018 JC78016	RH-05D_111218 RH-05D 11/12/2018 JC78016	RH-06S_111218 RH-06S 11/12/2018 JC78016	RH-07S_111218 RH-07S 11/12/2018 JC78016
Units	Method	Parameter Name					
ng/L	E537M	6:2 Fluorotelomer sulfonate	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
ng/L	E537M	8:2 Fluorotelomer sulfonate	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
ng/L	E537M	EtFOSAA	20 U	20 U	20 U	20 U	20 U
ng/L	E537M	MeFOSAA	20 U	20 U	20 U	20 U	20 U
ng/L	E537M	Perfluorobutanesulfonic acid	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorobutanoic acid	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
ng/L	E537M	Perfluorodecanesulfonic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorodecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorododecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroheptanesulfonic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroheptanoic acid	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorohexanesulfonic acid	2.0 U	2.0 U	1.13 J	2.0 U	2.0 U
ng/L	E537M	Perfluorohexanoic acid	4.0 U	4.0 U	1.22 J	4.0 U	4.0 U
ng/L	E537M	Perfluorononanoic acid	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorooctanesulfonic acid	2.0 U	1.74 J	6.86	1.82 J	2.0 U
ng/L	E537M	Perfluorooctanoic acid	2.0 U	2.76	8.85	2.01	2.39
ng/L	E537M	Perfluoropentanoic acid	4.0 U	4.0 U	2.68 J	1.61 J	2.49 J
ng/L	E537M	Perfluorotetradecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorotridecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroundecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	PFOSA	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
µg/l	SW8270-SIM	1,4-Dioxane	0.0658 J	3.16 J	2.57	0.991	0.098 U

Notes:

U = Undetected

J = Estimated value

TABLE 3
FINAL RESULTS
DATA USABILITY SUMMARY REPORT
NOVEMBER 2018 EMERGING CONTAMINANTS MONITORING
PFOA PFOS AND 1,4-DIOXANE GROUNDWATER SAMPLING
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
SIDNEY, NEW YORK

Field Sample ID Location Sample Date Sample Delivery Group			RH-08D_111218 RH-08D 11/12/2018 JC78016	X-1_111218 RH-08D 11/12/2018 JC78016	EQUIPMENT BLANK_111218 QC 11/12/2018 JC78016	FIELD REAGENT BLANK_111218 QC 11/12/2018 JC78016
Units	Method	Parameter Name				
ng/L	E537M	6:2 Fluorotelomer sulfonate	8.0 U	8.0 U	8.0 U	8.0 U
ng/L	E537M	8:2 Fluorotelomer sulfonate	8.0 U	8.0 U	8.0 U	8.0 U
ng/L	E537M	EtFOSAA	20 U	20 U	20 U	20 U
ng/L	E537M	MeFOSAA	20 U	20 U	20 U	20 U
ng/L	E537M	Perfluorobutanesulfonic acid	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorobutanoic acid	2.00 J	2.03 J	8.0 U	8.0 U
ng/L	E537M	Perfluorodecanesulfonic acid	4.0 UJ	4.0 UJ	4.0 U	4.0 U
ng/L	E537M	Perfluorodecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorododecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroheptanesulfonic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroheptanoic acid	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorohexanesulfonic acid	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorohexanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorononanoic acid	2.0 U	2.0 U	2.0 U	2.0 U
ng/L	E537M	Perfluorooctanesulfonic acid	6.06	6.06	2.0 U	2.0 U
ng/L	E537M	Perfluorooctanoic acid	3.73	3.43	2.0 U	2.0 U
ng/L	E537M	Perfluoropentanoic acid	1.81 J	2.10 J	4.0 U	4.0 U
ng/L	E537M	Perfluorotetradecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluorotridecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	Perfluoroundecanoic acid	4.0 U	4.0 U	4.0 U	4.0 U
ng/L	E537M	PFOSA	4.0 U	4.0 U	4.0 U	4.0 U
µg/l	SW8270-SIM	1,4-Dioxane	0.394	0.356	0.10 U	

Notes:

U = Undetected

J = Estimated value

TABLE 4
FIELD DUPLICATE RESULTS
DATA USABILITY SUMMARY REPORT
NOVEMBER 2018 EMERGING CONTAMINANTS MONITORING
PFOA PFOS AND 1,4-DIOXANE GROUNDWATER SAMPLING
R37184 AMPHENOL – RICHARDSON HILL LANDFILL SITE
SIDNEY, NEW YORK

Field Sample ID Location Sample Date Sample Delivery Group			RH-08D_111218 RH-08D 11/12/2018 JC78016	X-1_111218 RH-08D 11/12/2018 JC78016	
Units	Method	Parameter Name			RPD
ng/L	E537M	6:2 Fluorotelomer sulfonate	8.0 U	8.0 U	NC
ng/L	E537M	8:2 Fluorotelomer sulfonate	8.0 U	8.0 U	NC
ng/L	E537M	EtFOSAA	20 U	20 U	NC
ng/L	E537M	MeFOSAA	20 U	20 U	NC
ng/L	E537M	Perfluorobutanesulfonic acid	2.0 U	2.0 U	NC
ng/L	E537M	Perfluorobutanoic acid	2.00 J	2.03 J	1
ng/L	E537M	Perfluorodecanesulfonic acid	4.0 UJ	4.0 UJ	NC
ng/L	E537M	Perfluorodecanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluorododecanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluoroheptanesulfonic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluoroheptanoic acid	2.0 U	2.0 U	NC
ng/L	E537M	Perfluorohexanesulfonic acid	2.0 U	2.0 U	NC
ng/L	E537M	Perfluorohexanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluorononanoic acid	2.0 U	2.0 U	NC
ng/L	E537M	Perfluorooctanesulfonic acid	6.06	6.06	0
ng/L	E537M	Perfluorooctanoic acid	3.73	3.43	-8
ng/L	E537M	Perfluoropentanoic acid	1.81 J	2.10 J	NC
ng/L	E537M	Perfluorotetradecanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluorotridecanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	Perfluoroundecanoic acid	4.0 U	4.0 U	NC
ng/L	E537M	PFOSA	4.0 U	4.0 U	NC
µg/l	SW8270-SIM	1,4-Dioxane	0.394	0.356	-10

Notes:

U = Undetected

J = Estimated value

NC = not calculated for values < RL