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EA Science and Technology

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17 July 2018

## MEMORANDUM

**TO:** Girish Desai, P.E. NYSDEC

**FROM:** Joe Von Uderitz, P.G.

**SUBJECT:** Peerless Photo Products Site, Shoreham, New York

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The purpose of this memorandum is to summarize the field activities completed on 17 April 2018 associated with the Peerless Photo Products Site located in Shoreham, New York (**Figure 1**). On 13 December 2017, Agfa Graphics received a request from the New York State Department of Environmental Conservation (NYSDEC) to sample four site groundwater monitoring wells for per- and polyfluoroalkyl substances (PFAS) and 1, 4-Dioxane.

### SCOPE OF WORK

EA Engineering, P.C. and its affiliate EA Science and Technology (EA) on behalf of Agfa Graphics performed groundwater sampling for PFAS by U.S. Environmental Protection Agency (EPA) Method 537 and 1,4-Dioxane by EPA Method 8260 SIM on four monitoring wells (MW-2, MW-5, MW-6R, and MW-10). Monitoring well locations are included on **Figure 2**.

Monitoring wells were sampled using stainless steel bailers and transferred directly into sample bottles. Sampling protocol for PFAS was adhered to during sample collection and custody. No low-density polyethylene, glass, or polytetrafluoroethylene (including Teflon) materials were used during sample collection. Samples were collected in 250 milliliters high-density polyethylene (HDPE) bottles with lined HDPE caps.

In addition to the monitoring well samples collected three quality control samples were collected: a field duplicate (FD-01), a field blank (FB-01), and a reagent blank (RB-01). Samples were preserved with ice, packed, and shipped to SGS North America, Inc. in Dayton, New Jersey for analysis.

Sample results for PFAS were not above the EPA health advisory level of 70 nanograms per liter (ng/L) total combined PFAS in three of the four sampled wells. Monitoring well MW-10 exceeded this level with a result of 127.7 ng/L total PFCs. Results for 1,4-Dioxane did not exceed the EPA health advisory level of 350 ng/L in any of the four wells. Complete results are included in **Table 1**. The analytical report from SGS is included as **Attachment A**. A data usability summary report was compiled by SGS and is included as **Attachment B**.

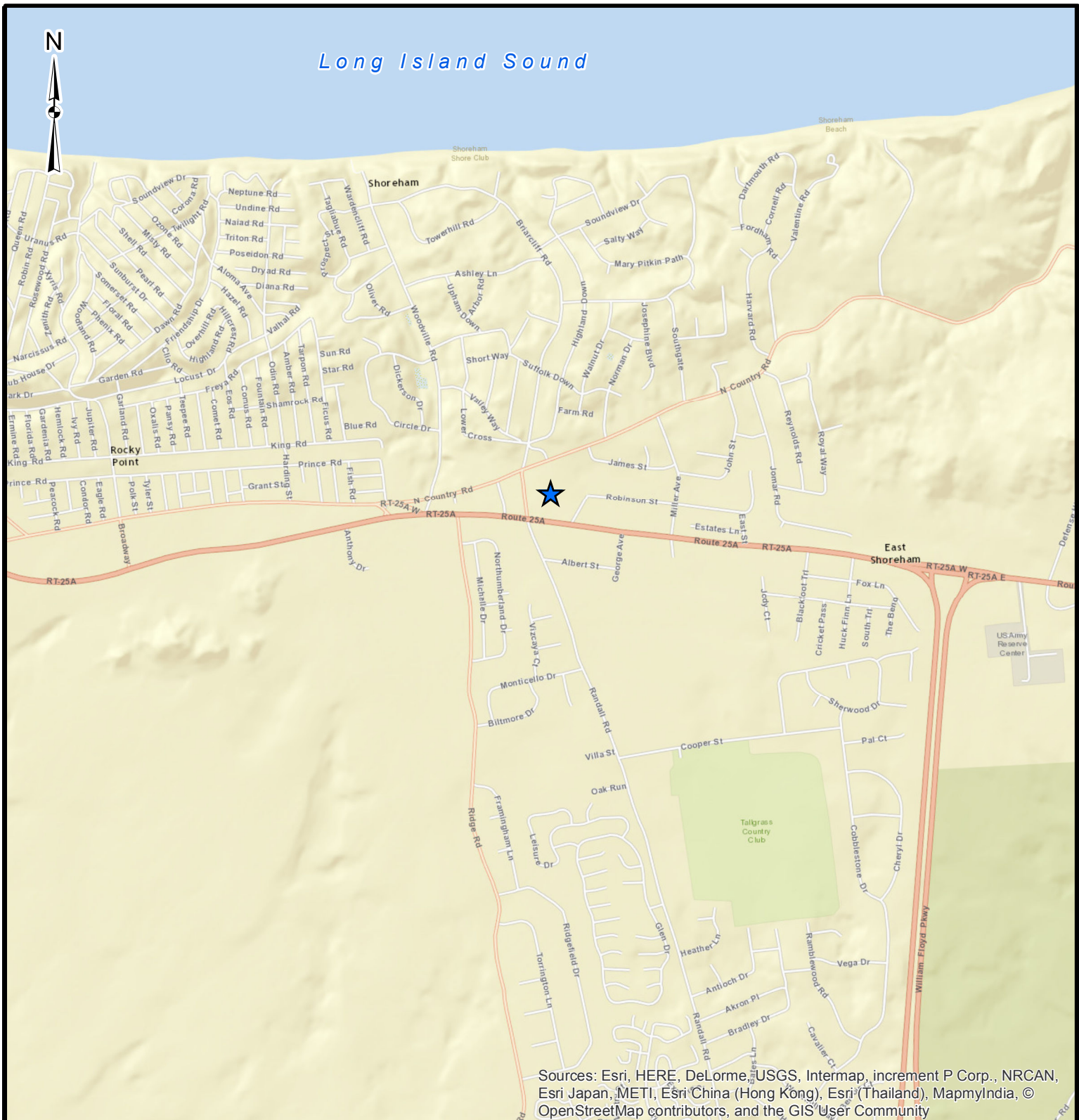
#### Attachments

cc: J. Colabella, Agfa Graphics  
C. Kerlish, EA Program Manager  
G. Desai, NYSDEC Project Manager  
Friends of Science, Inc.

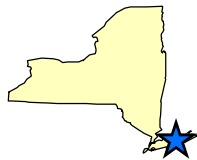
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## **Figures**

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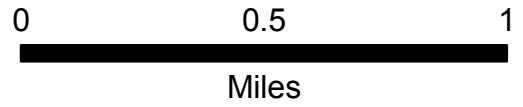


Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



**Legend**

★ Site Location



Source: ESRI Streets 2010

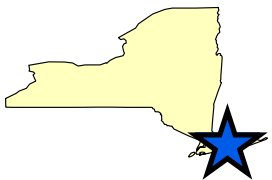


PEERLESS PHOTO PRODUCTS  
SHOREHAM, NEW YORK



FIGURE 1  
SITE LOCATION

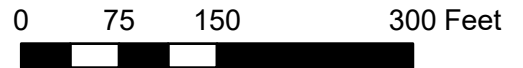
PROJECT MGR: JAV	DESIGNED BY: JCP	CREATED BY: JCP	CHECKED BY: JAV	SCALE: AS SHOWN	DATE: JULY 2018	PROJECT NO: 1371257	FILE NO: GIS/PROJECTS/ FIGURE1.MXD
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**Legend**

-  Site Location
-  Monitoring Well



Map Date: 06/20/2018  
 Projection: NAD 1983 State Plane New York Long Island FIPS 3104 Feet



PEERLESS PHOTO PRODUCTS  
 SAMPLE LOCATION MAP  
 EAST SHOREHAM, NEW YORK

FIGURE 2  
 SAMPLE LOCATION MAP

PROJECT MGR:  
JAV

DESIGNED BY:  
MJS

CREATED BY:  
SGS

CHECKED BY:  
JAV

SCALE:  
AS SHOWN

DATE:  
JULY 2018

PROJECT NO:  
1371248

FILE NO:  
AGFA/PFOA Sampling 2018/  
FIGURE2.MXD

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## **Tables**

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**Table 1 Summary of Detected Per-/Poly-Fluorinated Alkyl Substances (PFAS) Compounds in Groundwater**

Parameter List E537	Location ID	MW-2		MW-5		MW-6R		MW-10		FD-01		FB-01		RB-01		Guidance Values
	Lab ID	JC64541-4		JC64541-1		JC64541-2		JC64541-3		JC64541-7		JC64541-5		JC64541-6		
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		
	Sample Date	4/17/2018		4/17/2018		4/17/2018		4/17/2018		4/17/2018		4/17/2018		4/17/2018		
1,4-Dioxane	ng/l	(<290)	U	(<290)	U	340	J	(<290)	U	(<290)	U	---		(<290)	U	350 <sup>1</sup>
6:2 Fluorotelomer sulfonate	ng/l	(<11)	U	(<8)	U	(<7.7)	U	(<8.7)	U	(<10)	U	(<7.7)	U	(<7.7)	U	---
8:2 Fluorotelomer sulfonate	ng/l	(<11)	U	(<8)	U	(<7.7)	U	(<8.7)	U	(<10)	U	(<7.7)	U	(<7.7)	U	---
EtFOSAA	ng/l	(<11)	U	(<8)	U	(<7.7)	U	(<8.7)	U	(<11)	Uc	(<7.7)	U	(<7.7)	U	---
MeFOSAA	ng/l	(<11)	U	(<8)	U	(<7.7)	U	(<8.7)	U	(<11)	Uc	(<7.7)	U	(<7.7)	U	---
PFOSA	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	(<4.3)	U	(<5.6)	Uc	(<3.8)	U	(<3.8)	U	---
Perfluorobutanesulfonic acid (PFBS)	ng/l	(<5.3)	U	5.43	J	9.75	U	4.91	J	5.97	J	(<3.8)	U	(<3.8)	U	---
Perfluorobutanoic acid	ng/l	(<5.3)	U	5.81	J	(<3.8)	U	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorodecanesulfonic acid	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorodecanoic acid (PFDA)	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorododecanoic acid (PFDoA)8	ng/l	(<53)	Uc	(<4)	U	(<1.9)	Uc	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluoroheptanesulfonic acid	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluoroheptanoic acid (PFHpA)	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	5.21	J	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorohexanesulfonic acid (PFHxS)	ng/l	(<5.3)	U	(<4)	U	(<3.8)	U	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorohexanoic acid (PFHxA)	ng/l	8.54	J	6.85	J	4.03	J	8	J	7.72	J	(<3.8)	U	(<3.8)	U	---
Perfluorononanoic acid (PFNA)	ng/l	(<2.6)	U	(<2)	U	(<1.9)	U	(<2.2)	U	(<2.5)	U	(<1.9)	U	(<1.9)	U	---
Perfluorooctanesulfonic acid (PFOS)	ng/l	5.22	J	(<2)	U	(<1.9)	U	(<2.2)	U	(<2.5)	U	(<1.9)	U	(<1.9)	U	70 <sup>1</sup>
Perfluorooctanoic acid (PFOA)	ng/l	(<2.6)	U	2.1	J	3.31	J	<b>103</b>		<b>83.8</b>		(<1.9)	U	(<1.9)	U	70 <sup>1</sup>
Perfluoropentanoic acid	ng/l	(<5.3)	U	5.41	J	(<3.8)	U	6.58	J	7.24	J	(<3.8)	U	(<3.8)	U	---
Perfluorotetradecanoic acid (PFTA)	ng/l	(<53)	Uc	(<4)	U	(<1.9)	Uc	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluorotridecanoic Acid (PFTrIA)	ng/l	(<53)	Uc	(<4)	U	(<1.9)	Uc	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
Perfluoroundecanoic Acid (PFUnA)	ng/l	(<53)	Uc	(<4)	U	(<1.9)	Uc	(<4.3)	U	(<5)	U	(<3.8)	U	(<3.8)	U	---
<b>Total combined PFOA and PFAS</b>	ng/l	<b>13.76</b>		<b>25.6</b>		<b>17.09</b>		<b>127.7</b>		<b>104.73</b>						<b>70<sup>1</sup></b>

<sup>1</sup> EPA health advisory level for drinking water - combined concentrations of PFOA and PFAS.

**NOTE:**

J = Result is an estimated concentration.  
U = The analyte was analyzed for, but was not detected above the sample reporting limit.

Values shown in bold exceed the guidance value indicated.  
Data provided by SGS Analytical.

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**Attachment A**  
**Analytical Results**

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

*e-Hardcopy 2.0*  
*Automated Report*

## Technical Report for

### EA Engineering

AGFA Peerless Photo Products Shoreham, NY

1371257

SGS Job Number: JC64541

Sampling Date: 04/17/18

### Report to:

EA Engineering  
6712 Brooklawn Parkway Suite 104  
Syracuse, NY 13211  
JVonUderitz@EAEst.com

ATTN: Joe Von Uderitz

Total number of pages in report: 577



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 that reads "Nancy Cole".

Nancy Cole  
Laboratory Director

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

EA Engineering

**Job No:** JC64541

AGFA Peerless Photo Products Shoreham, NY  
 Project No: 1371257

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC64541-1	04/17/18	10:30 EC	04/19/18	AQ	Ground Water	MW-5
JC64541-2	04/17/18	11:40 EC	04/19/18	AQ	Ground Water	MW-6R
JC64541-3	04/17/18	12:40 EC	04/19/18	AQ	Ground Water	MW-10
JC64541-3D	04/17/18	12:40 EC	04/19/18	AQ	Water Dup/MSD	MW-10
JC64541-3S	04/17/18	12:40 EC	04/19/18	AQ	Water Matrix Spike	MW-10
JC64541-4	04/17/18	13:20 EC	04/19/18	AQ	Ground Water	MW-2
JC64541-5	04/17/18	14:20 EC	04/19/18	AQ	Field Blank Water	FB-01
JC64541-6	04/17/18	14:10 EC	04/19/18	AQ	Ground Water	RB-01
JC64541-7	04/17/18	00:00 EC	04/19/18	AQ	Ground Water	FD-01

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** EA Engineering

**Job No** JC64541

**Site:** AGFA Peerless Photo Products Shoreham, NY

**Report Date** 5/4/2018 1:02:43 PM

On 04/19/2018, 6 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC64541 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 Volatiles By Method SW846 8260C BY SIM

**Matrix:** AQ **Batch ID:** V3A6878

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC64541-3MS, JC64541-3MSD were used as the QC samples indicated.
- JC64541-2 for 1,4-Dioxane-d8: Outside control limits due to matrix interference.

**Matrix:** AQ **Batch ID:** V3A6879

- The data for SW846 8260C BY SIM meets quality control requirements.
- JC64541-2: Confirmation run.
- JC64541-2 for 1,4-Dioxane-d8: Outside control limits due to matrix interference.

### MS Semi-volatiles By Method EPA 537 MOD

**Matrix:** AQ **Batch ID:** F:OP69752

- The data for EPA 537 MOD meets quality control requirements.
- JC64541-6: Analysis performed at SGS Orlando, FL.
- JC64541-2: Dilution required due to matrix interference (internal standard failure). Analysis performed at SGS Orlando, FL.
- JC64541-7: Analysis performed at SGS Orlando, FL.
- JC64541-5: Analysis performed at SGS Orlando, FL.
- JC64541-4: Dilution required due to matrix interference (internal standard failure). Analysis performed at SGS Orlando, FL.
- JC64541-4: Analysis performed at SGS Orlando, FL.
- JC64541-3: Analysis performed at SGS Orlando, FL.
- JC64541-2: Analysis performed at SGS Orlando, FL.

**Matrix:** AQ **Batch ID:** F:OP69812

- The data for EPA 537 MOD meets quality control requirements.
- JC64541-1: Analysis performed at SGS Orlando, FL.
- JC64541-7: Analysis performed at SGS Orlando, FL.

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** JC64541  
**Site:** EAENYS: AGFA Peerless Photo Products Shoreham, NY **Report** 5/4/2018 11:46:25

6 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were collected on 04/17/2018 and were received at SGS North America Inc - Orlando on 04/19/2018 properly preserved, at 3.8 Deg. C and intact. These Samples received an SGS Orlando job number of JC64541. 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 537 MOD

**Matrix:** AQ **Batch ID:** OP69752

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC64541-3MS, JC64541-3MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for 8:2 Fluorotelomer sulfonate are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for 8:2 Fluorotelomer sulfonate, Perfluoroundecanoic acid are outside control limits. Probable cause is due to matrix interference.

RPD(s) for MSD for PFOSA are outside control limits for sample OP69752-MSD. Probable cause is due to sample non-homogeneity.

JC64541-4: Dilution required due to matrix interference (internal standard failure).

JC64541-2: Dilution required due to matrix interference (internal standard failure).

**Matrix:** AQ **Batch ID:** OP69812

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

OP69812-BS: Insufficient sample for MS/MSD.

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:

Date: May 4, 2018

\_\_\_\_\_  
Ellen Pampel, LogIn Supervisor (signature on file)

## Summary of Hits

**Job Number:** JC64541  
**Account:** EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY  
**Collected:** 04/17/18



Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method	
<b>JC64541-1</b>	<b>MW-5</b>						
		Perfluorobutanoic acid <sup>a</sup>	0.00581 J	0.0080	0.0040	ug/l	EPA 537 MOD
		Perfluoropentanoic acid <sup>a</sup>	0.00541 J	0.0080	0.0040	ug/l	EPA 537 MOD
		Perfluorohexanoic acid <sup>a</sup>	0.00685 J	0.0080	0.0040	ug/l	EPA 537 MOD
		Perfluorooctanoic acid <sup>a</sup>	0.00210 J	0.0080	0.0020	ug/l	EPA 537 MOD
		Perfluorobutanesulfonic acid <sup>a</sup>	0.00543 J	0.0080	0.0040	ug/l	EPA 537 MOD
<b>JC64541-2</b>	<b>MW-6R</b>						
		1,4-Dioxane	0.34 J	0.40	0.29	ug/l	SW846 8260C BY SIM
		Perfluorohexanoic acid <sup>a</sup>	0.00403 J	0.0077	0.0038	ug/l	EPA 537 MOD
		Perfluorooctanoic acid <sup>a</sup>	0.00331 J	0.0077	0.0019	ug/l	EPA 537 MOD
		Perfluorobutanesulfonic acid <sup>a</sup>	0.00975	0.0077	0.0038	ug/l	EPA 537 MOD
<b>JC64541-3</b>	<b>MW-10</b>						
		Perfluoropentanoic acid <sup>a</sup>	0.00658 J	0.0087	0.0043	ug/l	EPA 537 MOD
		Perfluorohexanoic acid <sup>a</sup>	0.00800 J	0.0087	0.0043	ug/l	EPA 537 MOD
		Perfluoroheptanoic acid <sup>a</sup>	0.00521 J	0.0087	0.0043	ug/l	EPA 537 MOD
		Perfluorooctanoic acid <sup>a</sup>	0.103	0.0087	0.0022	ug/l	EPA 537 MOD
		Perfluorobutanesulfonic acid <sup>a</sup>	0.00491 J	0.0087	0.0043	ug/l	EPA 537 MOD
<b>JC64541-4</b>	<b>MW-2</b>						
		Perfluorohexanoic acid <sup>a</sup>	0.00854 J	0.011	0.0053	ug/l	EPA 537 MOD
		Perfluorooctanesulfonic acid <sup>a</sup>	0.00522 J	0.011	0.0026	ug/l	EPA 537 MOD
<b>JC64541-5</b>	<b>FB-01</b>	No hits reported in this sample.					
<b>JC64541-6</b>	<b>RB-01</b>	No hits reported in this sample.					
<b>JC64541-7</b>	<b>FD-01</b>						
		Perfluoropentanoic acid <sup>a</sup>	0.00724 J	0.010	0.0050	ug/l	EPA 537 MOD
		Perfluorohexanoic acid <sup>a</sup>	0.00772 J	0.010	0.0050	ug/l	EPA 537 MOD
		Perfluorooctanoic acid <sup>a</sup>	0.0838	0.010	0.0025	ug/l	EPA 537 MOD
		Perfluorobutanesulfonic acid <sup>a</sup>	0.00597 J	0.010	0.0050	ug/l	EPA 537 MOD

(a) Analysis performed at SGS Orlando, FL.

Sample Results

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Report of Analysis

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SGS North America Inc.

### Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> MW-5		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-1		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159531.D	1	04/24/18 19:15	HT	n/a	n/a	V3A6878
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17647-74-4	1,4-Dioxane-d8	151%		51-175%		

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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## Report of Analysis

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<b>Client Sample ID:</b> MW-5		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-1		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	Q45662.D	1	04/30/18 13:45	AFL	04/27/18 09:00	F:OP69812	F:SQ1123
Run #2							

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

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	0.00581	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.00541	0.0080	0.0040	ug/l	J
307-24-4	Perfluorohexanoic acid	0.00685	0.0080	0.0040	ug/l	J
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0040	ug/l	
335-67-1	Perfluorooctanoic acid	0.00210	0.0080	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0040	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0040	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0040	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0040	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0040	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.00543	0.0080	0.0040	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0040	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0040	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0040	ug/l	
2355-31-9	MeFOSAA	ND	0.020	0.0080	ug/l	
2991-50-6	EtFOSAA	ND	0.020	0.0080	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0080	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0080	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	87%		61-134%
	13C2-PFDA	75%		62-128%
	d5-EtFOSAA	65%		57-135%

(a) Analysis performed at SGS Orlando, FL.

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.

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<b>Client Sample ID:</b> MW-6R		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-2		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159532.D	1	04/24/18 19:41	HT	n/a	n/a	V3A6878
Run #2 <sup>a</sup>	3A159547.D	1	04/25/18 14:18	HT	n/a	n/a	V3A6879

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.34	0.40	0.29	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	200% <sup>b</sup>	251% <sup>b</sup>	51-175%

(a) Confirmation run.

(b) Outside control limits due to matrix interference.

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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<b>Client Sample ID:</b> MW-6R		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-2		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13582.D	1	04/25/18 19:22	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2 <sup>b</sup>	2Q13646.D	5	04/26/18 15:39	AFL	04/24/18 10:30	F:OP69752	F:S2Q253

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0077	0.0038	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0077	0.0038	ug/l	
307-24-4	Perfluorohexanoic acid	0.00403	0.0077	0.0038	ug/l	J
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0038	ug/l	
335-67-1	Perfluorooctanoic acid	0.00331	0.0077	0.0019	ug/l	J
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0038	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND <sup>c</sup>	0.038	0.019	ug/l	
307-55-1	Perfluorododecanoic acid	ND <sup>c</sup>	0.038	0.019	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND <sup>c</sup>	0.038	0.019	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND <sup>c</sup>	0.038	0.019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.00975	0.0077	0.0038	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0038	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0077	0.0019	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0077	0.0038	ug/l	
754-91-6	PFOSA	ND	0.0077	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.019	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.019	0.0077	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	76%	78%	61-134%
	13C2-PFDA	108%	86%	62-128%
	d5-EtFOSAA	89%	81%	57-135%

(a) Analysis performed at SGS Orlando, FL.

(b) Dilution required due to matrix interference (internal standard failure). Analysis performed at SGS Orlando, FL.

(c) Result is from Run# 2

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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<b>Client Sample ID:</b> MW-10		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-3		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159520.D	1	04/24/18 14:24	HT	n/a	n/a	V3A6878
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17647-74-4	1,4-Dioxane-d8	79%		51-175%		

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.

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<b>Client Sample ID:</b> MW-10		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-3		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13583.D	1	04/25/18 19:41	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0087	0.0043	ug/l	
2706-90-3	Perfluoropentanoic acid	0.00658	0.0087	0.0043	ug/l	J
307-24-4	Perfluorohexanoic acid	0.00800	0.0087	0.0043	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.00521	0.0087	0.0043	ug/l	J
335-67-1	Perfluorooctanoic acid	0.103	0.0087	0.0022	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0087	0.0022	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0087	0.0043	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0087	0.0043	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0087	0.0043	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0087	0.0043	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0087	0.0043	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.00491	0.0087	0.0043	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	ND	0.0087	0.0043	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0087	0.0043	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0087	0.0022	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0087	0.0043	ug/l	
754-91-6	PFOSA	ND	0.0087	0.0043	ug/l	
2355-31-9	MeFOSAA	ND	0.022	0.0087	ug/l	
2991-50-6	EtFOSAA	ND	0.022	0.0087	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.022	0.0087	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.022	0.0087	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	69%		61-134%
	13C2-PFDA	102%		62-128%
	d5-EtFOSAA	83%		57-135%

(a) Analysis performed at SGS Orlando, FL.

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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<b>Client Sample ID:</b> MW-2		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-4		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159533.D	1	04/24/18 20:07	HT	n/a	n/a	V3A6878
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17647-74-4	1,4-Dioxane-d8	154%		51-175%		

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

<b>Client Sample ID:</b> MW-2		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-4		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13588.D	1	04/25/18 21:15	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2 <sup>b</sup>	Q45552.D	10	04/27/18 10:57	AFL	04/24/18 10:30	F:OP69752	F:SQ1120

Run #	Initial Volume	Final Volume
Run #1	190 ml	1.0 ml
Run #2	190 ml	1.0 ml

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.011	0.0053	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.011	0.0053	ug/l	
307-24-4	Perfluorohexanoic acid	0.00854	0.011	0.0053	ug/l	J
375-85-9	Perfluoroheptanoic acid	ND	0.011	0.0053	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.011	0.0026	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.011	0.0026	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.011	0.0053	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND <sup>c</sup>	0.11	0.053	ug/l	
307-55-1	Perfluorododecanoic acid	ND <sup>c</sup>	0.11	0.053	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND <sup>c</sup>	0.11	0.053	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND <sup>c</sup>	0.11	0.053	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.011	0.0053	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.011	0.0053	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.011	0.0053	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.00522	0.011	0.0026	ug/l	J
335-77-3	Perfluorodecanesulfonic acid	ND	0.011	0.0053	ug/l	
754-91-6	PFOSA	ND	0.011	0.0053	ug/l	
2355-31-9	MeFOSAA	ND	0.026	0.011	ug/l	
2991-50-6	EtFOSAA	ND	0.026	0.011	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.026	0.011	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.026	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	67%	70%	61-134%
	13C2-PFDA	71%	69%	62-128%
	d5-EtFOSAA	66%	74%	57-135%

(a) Analysis performed at SGS Orlando, FL.

(b) Dilution required due to matrix interference (internal standard failure). Analysis performed at SGS Orlando, FL.

(c) Result is from Run# 2

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

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## Report of Analysis

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<b>Client Sample ID:</b> FB-01		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-5		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Field Blank Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13589.D	1	04/25/18 21:34	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2							

Run #	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0077	0.0038	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0077	0.0038	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0038	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0038	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0038	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0038	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0038	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0038	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0038	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0038	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0038	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0077	0.0019	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0077	0.0038	ug/l	
754-91-6	PFOSA	ND	0.0077	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.019	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.019	0.0077	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	70%		61-134%
	13C2-PFDA	67%		62-128%
	d5-EtFOSAA	71%		57-135%

(a) Analysis performed at SGS Orlando, FL.

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.

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<b>Client Sample ID:</b> RB-01		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-6		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159534.D	1	04/24/18 20:34	HT	n/a	n/a	V3A6878
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17647-74-4	1,4-Dioxane-d8	154%		51-175%		

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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## Report of Analysis

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<b>Client Sample ID:</b> RB-01		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-6		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13590.D	1	04/25/18 21:53	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

## PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0077	0.0038	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0077	0.0038	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0077	0.0038	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0077	0.0038	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0077	0.0019	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0077	0.0038	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0077	0.0038	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0077	0.0038	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0077	0.0038	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0077	0.0038	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0038	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0077	0.0038	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0077	0.0019	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0077	0.0038	ug/l	
754-91-6	PFOSA	ND	0.0077	0.0038	ug/l	
2355-31-9	MeFOSAA	ND	0.019	0.0077	ug/l	
2991-50-6	EtFOSAA	ND	0.019	0.0077	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.019	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	73%		61-134%
	13C2-PFDA	65%		62-128%
	d5-EtFOSAA	72%		57-135%

(a) Analysis performed at SGS Orlando, FL.

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 1

<b>Client Sample ID:</b> FD-01		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-7		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260C BY SIM		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A159535.D	1	04/24/18 21:01	HT	n/a	n/a	V3A6878
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17647-74-4	1,4-Dioxane-d8	154%		51-175%		

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

<b>Client Sample ID:</b> FD-01		<b>Date Sampled:</b> 04/17/18
<b>Lab Sample ID:</b> JC64541-7		<b>Date Received:</b> 04/19/18
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 537 MOD EPA 537 MOD		
<b>Project:</b> AGFA Peerless Photo Products Shoreham, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	2Q13591.D	1	04/25/18 22:12	AFL	04/24/18 10:30	F:OP69752	F:S2Q251
Run #2 <sup>a</sup>	Q45663.D	1	04/30/18 14:05	AFL	04/27/18 09:00	F:OP69812	F:SQ1123

Run #	Initial Volume	Final Volume
Run #1	200 ml	1.0 ml
Run #2	180 ml	1.0 ml

### PFAS Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.010	0.0050	ug/l	
2706-90-3	Perfluoropentanoic acid	0.00724	0.010	0.0050	ug/l	J
307-24-4	Perfluorohexanoic acid	0.00772	0.010	0.0050	ug/l	J
375-85-9	Perfluoroheptanoic acid	ND	0.010	0.0050	ug/l	
335-67-1	Perfluorooctanoic acid	0.0838	0.010	0.0025	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.010	0.0025	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.010	0.0050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.010	0.0050	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.010	0.0050	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.010	0.0050	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.010	0.0050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	0.00597	0.010	0.0050	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	ND	0.010	0.0050	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.010	0.0050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.010	0.0025	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.010	0.0050	ug/l	
754-91-6	PFOSA	ND <sup>b</sup>	0.011	0.0056	ug/l	
2355-31-9	MeFOSAA	ND <sup>b</sup>	0.028	0.011	ug/l	
2991-50-6	EtFOSAA	ND <sup>b</sup>	0.028	0.011	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.025	0.010	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.025	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFHxA	63%	75%	61-134%
	13C2-PFDA	87%	73%	62-128%
	d5-EtFOSAA		77%	57-135%

(a) Analysis performed at SGS Orlando, FL.  
 (b) Result is from Run# 2

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

Custody Documents and Other Forms

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Includes the following where applicable:

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



ACCUTEST

SGS Accutest Southeast Chain of Custody

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

SGS ACCUTEST JOB #:

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SGS Accutest Quote #

SKIFF #

Client / Reporting Information				Project Information				Analytical Information												Matrix Codes																																							
Company Name: <u>EA Engineering</u>				Project Name: <u>ACIFA - Peerless</u>				PECS EPA 537 141-D-Orange - 8260 JEM												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge LIQ - Other Liquid AIR - Air SOL - Other Solid																																							
Address: <u>6712 Brooklawn Plwy</u>				Street																LAB USE ONLY																																							
City: <u>Syracuse</u> State: <u>NY</u> Zip: <u>13211</u>				City: <u>Shoreham</u> State: <u>NY</u>																																																							
Project Contact: <u>Joe VonDuntz</u> Email: <u>vonDuntz</u>				Project # <u>137257</u>																																																							
Phone #: <u>315-431-4610</u>				Fax #																																																							
Sampler(s) Name(s) (Printed): Sampler 1: Sampler 2: <u>Emily Cumming</u>				Client Purchase Order #																																																							
SGS Accutest Sample #				COLLECTION																CONTAINER INFORMATION																																							
Field ID / Point of Collection				DATE				TIME				SAMPLED BY:				MTRX				TOTAL # OF BOTTLES				OTHER				NONE				PBI				NH3				PHOS				HPO4				NH4OH-ZN/C				DI-WATER				MEDI			
1 MW-5				4/17/18				1030				EC				GW				5				2				3				X				X																							
2 MW-6R								1140												5				2				3				X				X																							
3 MW-10								1240												15				6				9				X				X																							
4 MW-2								1320												5				2				3				X				X																							
5 FB-01								1420												5				2				X				X																											
6 RB-01								1410												5				2				3				X				X																							
7 FD-01								-												5				2				3				X				X																							
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks																																																			
<input type="radio"/> 10 Day (Business) <input type="radio"/> 7 Day <input type="radio"/> 5 Day <input type="radio"/> 3 Day RUSH <input type="radio"/> 2 Day RUSH <input type="radio"/> 1 Day RUSH <input type="radio"/> Other				Approved By: / Date:				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input checked="" type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input type="checkbox"/> FULLT1 (EPA LEVEL 4) <input type="checkbox"/> EDD'S												SPLIT MW-10 w/ MS/MSD  INITIAL ASSESSMENT <u>SEA</u> LABEL VERIFICATION																																							
Rush T/A Data Available VIA Email or Lablink				Sample Custody must be documented below each time samples change possession, including courier delivery.																																																							
Relinquished by Sampler/Affiliation				Date Time: <u>04/18/18</u>				Received By/Affiliation				Date Time: <u>4/18/18 10:50</u>				Relinquished By/Affiliation				Date Time: <u>4/18/18 14:54</u>				Received By/Affiliation																																			
<u>John Moran</u>				<u>04/18/18</u>				<u>M. Escamez</u>				<u>4/18/18 10:50</u>				<u>M. Escamez</u>				<u>4/18/18 10:50</u>				<u>14:54</u>																																			
Relinquished by/Affiliation				Date Time: <u>17:28</u>				Received By/Affiliation				Date Time: <u>4/19/18 9:20</u>				Relinquished By/Affiliation				Date Time: <u>4/19/18 9:20</u>				Received By/Affiliation																																			
<u>John Moran</u>				<u>4/18/18</u>				<u>FX</u>				<u>4/19/18 9:20</u>				<u>FX</u>				<u>4/19/18 9:20</u>				<u>8</u>																																			

SGS COC Florida new art 5 2 17.xls rev 042417 SI

ICEV 2.40

Effective Date 04/24/2017

JC64541: Chain of Custody

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## SGS Sample Receipt Summary

Job Number: JC64541

Client: \_\_\_\_\_

Project: \_\_\_\_\_

Date / Time Received: 4/19/2018 9:30:00 AM

Delivery Method: \_\_\_\_\_

Airbill #'s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.9);

**Cooler Security**

- |  |   |
|--|---|
| <u>Y or N</u>  | <u>Y or N</u>   |
| 1. Custody Seals Present: <input checked="" type="checkbox"/> <input type="checkbox"/> | 3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/>        |
| 2. Custody Seals Intact: <input checked="" type="checkbox"/> <input type="checkbox"/>  | 4. Smpl Dates/Time OK: <input checked="" type="checkbox"/> <input type="checkbox"/> |

**Cooler Temperature**

- |   |           |
|---|-----------|
| <u>Y or N</u>   |           |
| 1. Temp criteria achieved: <input checked="" type="checkbox"/> <input type="checkbox"/> |           |
| 2. Cooler temp verification: _____  | IR Gun    |
| 3. Cooler media: _____  | Ice (Bag) |
| 4. No. Coolers: _____   | 1         |

**Quality Control Preservation**

- |                                 |   |            |
|---------------------------------|---|------------|
|                                 | <u>Y or N</u>   | <u>N/A</u> |
| 1. Trip Blank present / cooler: | <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> |            |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> |            |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |            |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |            |

**Sample Integrity - Documentation**

- |  |  |
|--|--|
|  | <u>Y or N</u>  |
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> <input type="checkbox"/> |

**Sample Integrity - Condition**

- |                                  |  |
|----------------------------------|--|
|                                  | <u>Y or N</u>  |
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 3. Condition of sample:          | Intact   |

**Sample Integrity - Instructions**

- |  |  |                                     |
|--|--|-------------------------------------|
|  | <u>Y or N</u>  | <u>N/A</u>                          |
| 1. Analysis requested is clear:            | <input checked="" type="checkbox"/> <input type="checkbox"/> |                                     |
| 2. Bottles received for unspecified tests: | <input type="checkbox"/> <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:   | <input checked="" type="checkbox"/> <input type="checkbox"/> |                                     |
| 4. Compositing instructions clear:         | <input type="checkbox"/> <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:           | <input type="checkbox"/> <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Test Strip Lot #s:      pH 1-12: 216017      pH 12+: 208717      Other: (Specify) \_\_\_\_\_

Comments

SM089-03  
Rev. Date 12/7/17

JC64541: Chain of Custody

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## Internal Sample Tracking Chronicle

EA Engineering

**Job No:** JC64541

AGFA Peerless Photo Products Shoreham, NY  
Project No: 1371257

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC64541-1 Collected: 17-APR-18 10:30 By: EC Received: 19-APR-18 By: GE MW-5						
JC64541-1	SW846 8260C BY SIM	24-APR-18 19:15	HT			V8260SIMDIOX
JC64541-1	EPA 537 MOD	30-APR-18 13:45	AFL	27-APR-18		LC537SL
JC64541-2 Collected: 17-APR-18 11:40 By: EC Received: 19-APR-18 By: GE MW-6R						
JC64541-2	SW846 8260C BY SIM	24-APR-18 19:41	HT			V8260SIMDIOX
JC64541-2	SW846 8260C BY SIM	25-APR-18 14:18	HT			
JC64541-2	EPA 537 MOD	25-APR-18 19:22	AFL	24-APR-18		LC537SL
JC64541-2	EPA 537 MOD	26-APR-18 15:39	AFL	24-APR-18		LC537SL
JC64541-3 Collected: 17-APR-18 12:40 By: EC Received: 19-APR-18 By: GE MW-10						
JC64541-3	SW846 8260C BY SIM	24-APR-18 14:24	HT			V8260SIMDIOX
JC64541-3	EPA 537 MOD	25-APR-18 19:41	AFL	24-APR-18		LC537SL
JC64541-4 Collected: 17-APR-18 13:20 By: EC Received: 19-APR-18 By: GE MW-2						
JC64541-4	SW846 8260C BY SIM	24-APR-18 20:07	HT			V8260SIMDIOX
JC64541-4	EPA 537 MOD	25-APR-18 21:15	AFL	24-APR-18		LC537SL
JC64541-4	EPA 537 MOD	27-APR-18 10:57	AFL	24-APR-18		LC537SL
JC64541-5 Collected: 17-APR-18 14:20 By: EC Received: 19-APR-18 By: GE FB-01						
JC64541-5	EPA 537 MOD	25-APR-18 21:34	AFL	24-APR-18		LC537SL
JC64541-6 Collected: 17-APR-18 14:10 By: EC Received: 19-APR-18 By: GE RB-01						
JC64541-6	SW846 8260C BY SIM	24-APR-18 20:34	HT			V8260SIMDIOX
JC64541-6	EPA 537 MOD	25-APR-18 21:53	AFL	24-APR-18		LC537SL

### Internal Sample Tracking Chronicle

EA Engineering

Job No: JC64541

AGFA Peerless Photo Products Shoreham, NY  
Project No: 1371257

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
---------------	--------	----------	----	---------	----	------------

JC64541-7 Collected: 17-APR-18 00:00 By: EC Received: 19-APR-18 By: GE  
FD-01

JC64541-7	SW846 8260C BY SIM	24-APR-18 21:01	HT			V8260SIMDIOX
JC64541-7	EPA 537 MOD	25-APR-18 22:12	AFL	24-APR-18		LC537SL
JC64541-7	EPA 537 MOD	30-APR-18 14:05	AFL	27-APR-18		LC537SL



# SGS Internal Chain of Custody

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY  
**Received:** 04/19/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC64541-1.3	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-1.3	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-1.3	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-1.3	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-2.3	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-2.3	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-2.3	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-2.3	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-2.3	Secured Storage	Hueanh Tran	04/26/18 13:39	Retrieve from Storage
JC64541-2.3	Hueanh Tran	GCMS3A	04/26/18 13:40	Load on Instrument
JC64541-2.3	GCMS3A	Hueanh Tran	05/03/18 10:10	Unload from Instrument
JC64541-2.3	Hueanh Tran	Secured Storage	05/03/18 10:10	Return to Storage
JC64541-2.4	Secured Storage	Hueanh Tran	04/25/18 12:12	Retrieve from Storage
JC64541-2.4	Hueanh Tran	GCMS3A	04/25/18 12:12	Load on Instrument
JC64541-2.4	GCMS3A	Hueanh Tran	04/26/18 10:57	Unload from Instrument
JC64541-2.4	Hueanh Tran	Secured Storage	04/26/18 10:57	Return to Storage
JC64541-3.9	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-3.9	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-3.9	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-3.9	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-3.11	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-3.11	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-3.11	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-3.11	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-3.12	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-3.12	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-3.12	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-3.12	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-4.3	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-4.3	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-4.3	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-4.3	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage
JC64541-6.4	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-6.4	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-6.4	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-6.4	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage

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5

# SGS Internal Chain of Custody

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY  
**Received:** 04/19/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC64541-7.4	Secured Storage	Hueanh Tran	04/24/18 12:15	Retrieve from Storage
JC64541-7.4	Hueanh Tran	GCMS3A	04/24/18 12:15	Load on Instrument
JC64541-7.4	GCMS3A	Hueanh Tran	04/25/18 09:41	Unload from Instrument
JC64541-7.4	Hueanh Tran	Secured Storage	04/25/18 10:46	Return to Storage

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5

## MS Volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

**Method Blank Summary**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6878-MB	3A159517.D	1	04/24/18	HT	n/a	n/a	V3A6878

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC64541-1, JC64541-2, JC64541-3, JC64541-4, JC64541-6, JC64541-7

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	92% 51-175%

**Blank Spike Summary**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6878-BS	3A159515.D	1	04/24/18	HT	n/a	n/a	V3A6878

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC64541-1, JC64541-2, JC64541-3, JC64541-4, JC64541-6, JC64541-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	14.8	74	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	86%	51-175%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC64541-3MS	3A159524.D	1	04/24/18	HT	n/a	n/a	V3A6878
JC64541-3MSD	3A159525.D	1	04/24/18	HT	n/a	n/a	V3A6878
JC64541-3	3A159520.D	1	04/24/18	HT	n/a	n/a	V3A6878

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC64541-1, JC64541-2, JC64541-3, JC64541-4, JC64541-6, JC64541-7

CAS No.	Compound	JC64541-3 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	ND	20	23.7	119	20	18.7	94	24	36-166/26

CAS No.	Surrogate Recoveries	MS	MSD	JC64541-3	Limits
17647-74-4	1,4-Dioxane-d8	145%	107%	79%	51-175%

\* = Outside of Control Limits.

**Instrument Performance Check (BFB)**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Sample:</b> V3A6845-BFB	<b>Injection Date:</b> 02/26/18
<b>Lab File ID:</b> 3A158978.D	<b>Injection Time:</b> 10:39
<b>Instrument ID:</b> GCMS3A	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	12675	20.0	Pass
75	30.0 - 60.0% of mass 95	30581	48.1	Pass
95	Base peak, 100% relative abundance	63517	100.0	Pass
96	5.0 - 9.0% of mass 95	3746	5.90	Pass
173	Less than 2.0% of mass 174	364	0.57 (0.68) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	53424	84.1	Pass
175	5.0 - 9.0% of mass 174	4094	6.45 (7.66) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	52872	83.2 (99.0) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	3577	5.63 (6.77) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

**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
V3A6845-IC6845	3A158982.D	02/26/18	12:27	01:48	Initial cal 2
V3A6845-IC6845	3A158983.D	02/26/18	12:53	02:14	Initial cal 5
V3A6845-ICC6845	3A158984.D	02/26/18	13:19	02:40	Initial cal 20
V3A6845-IC6845	3A158985.D	02/26/18	13:46	03:07	Initial cal 50
V3A6845-IC6845	3A158986.D	02/26/18	14:13	03:34	Initial cal 100
V3A6845-IC6845	3A158987.D	02/26/18	14:39	04:00	Initial cal 200
V3A6845-IC6845	3A158993.D	02/26/18	18:57	08:18	Initial cal 1
V3A6845-IC6845	3A158994.D	02/26/18	19:24	08:45	Initial cal 0.4
V3A6845-IC6845	3A158995.D	02/26/18	19:50	09:11	Initial cal 0.25
V3A6845-ICV6845	3A158996.D	02/26/18	20:17	09:38	Initial cal verification 20

**Instrument Performance Check (BFB)**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Sample:</b> V3A6878-BFB	<b>Injection Date:</b> 04/24/18
<b>Lab File ID:</b> 3A159512.D	<b>Injection Time:</b> 10:06
<b>Instrument ID:</b> GCMS3A	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	30493	19.3	Pass
75	30.0 - 60.0% of mass 95	76357	48.2	Pass
95	Base peak, 100% relative abundance	158357	100.0	Pass
96	5.0 - 9.0% of mass 95	10976	6.93	Pass
173	Less than 2.0% of mass 174	1797	1.13 (1.26) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	142626	90.1	Pass
175	5.0 - 9.0% of mass 174	10870	6.86 (7.62) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	137136	86.6 (96.2) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	8694	5.49 (6.34) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

**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
V3A6878-CC6845	3A159514.D	04/24/18	11:31	01:25	Continuing cal 5
V3A6878-BS	3A159515.D	04/24/18	12:05	01:59	Blank Spike
V3A6877-BS2	3A159515A.D	04/24/18	12:05	01:59	Blank Spike
V3A6877-MB2	3A159517A.D	04/24/18	12:59	02:53	Method Blank
V3A6878-MB	3A159517.D	04/24/18	12:59	02:53	Method Blank
JC64490-5DUP	3A159518.D	04/24/18	13:31	03:25	Duplicate
ZZZZZZ	3A159519.D	04/24/18	13:57	03:51	(unrelated sample)
JC64541-3	3A159520.D	04/24/18	14:24	04:18	MW-10
ZZZZZZ	3A159521.D	04/24/18	14:51	04:45	(unrelated sample)
ZZZZZZ	3A159522.D	04/24/18	15:17	05:11	(unrelated sample)
JC64541-3MS	3A159524.D	04/24/18	16:09	06:03	Matrix Spike
JC64541-3MSD	3A159525.D	04/24/18	16:36	06:30	Matrix Spike Duplicate
ZZZZZZ	3A159527.D	04/24/18	17:28	07:22	(unrelated sample)
ZZZZZZ	3A159528.D	04/24/18	17:55	07:49	(unrelated sample)
ZZZZZZ	3A159529.D	04/24/18	18:22	08:16	(unrelated sample)
ZZZZZZ	3A159530.D	04/24/18	18:49	08:43	(unrelated sample)
JC64541-1	3A159531.D	04/24/18	19:15	09:09	MW-5
JC64541-2	3A159532.D	04/24/18	19:41	09:35	MW-6R
JC64541-4	3A159533.D	04/24/18	20:07	10:01	MW-2
JC64541-6	3A159534.D	04/24/18	20:34	10:28	RB-01
JC64541-7	3A159535.D	04/24/18	21:01	10:55	FD-01
ZZZZZZ	3A159536.D	04/24/18	21:27	11:21	(unrelated sample)



**Instrument Performance Check (BFB)**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Sample:</b> V3A6879-BFB	<b>Injection Date:</b> 04/25/18
<b>Lab File ID:</b> 3A159538.D	<b>Injection Time:</b> 09:31
<b>Instrument ID:</b> GCMS3A	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	29000	19.2	Pass
75	30.0 - 60.0% of mass 95	73941	49.0	Pass
95	Base peak, 100% relative abundance	150866	100.0	Pass
96	5.0 - 9.0% of mass 95	10154	6.73	Pass
173	Less than 2.0% of mass 174	1149	0.76 (0.87) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	132592	87.9	Pass
175	5.0 - 9.0% of mass 174	10129	6.71 (7.64) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	127213	84.3 (95.9) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	9116	6.04 (7.17) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

**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
V3A6879-CC6845	3A159540.D	04/25/18	10:53	01:22	Continuing cal 20
V3A6879-BS	3A159541.D	04/25/18	11:23	01:52	Blank Spike
V3A6872-BS3	3A159541A.D	04/25/18	11:23	01:52	Blank Spike
V3A6879-MB	3A159543.D	04/25/18	12:17	02:46	Method Blank
V3A6872-MB3	3A159543A.D	04/25/18	12:17	02:46	Method Blank
JC64033-15	3A159544.D	04/25/18	12:49	03:18	(used for QC only; not part of job JC64541)
JC64033-15MSD	3A159545.D	04/25/18	13:26	03:55	Matrix Spike Duplicate
JC64541-2	3A159547.D	04/25/18	14:18	04:47	MW-6R
ZZZZZZ	3A159550.D	04/25/18	15:38	06:07	(unrelated sample)
JC64538-11	3A159559.D	04/25/18	19:23	09:52	(used for QC only; not part of job JC64541)
JC64538-12	3A159560.D	04/25/18	19:50	10:19	(used for QC only; not part of job JC64541)
JC64538-11DUP	3A159561.D	04/25/18	20:38	11:07	Duplicate
JC64538-12MS	3A159562.D	04/25/18	21:04	11:33	Matrix Spike

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> V3A6878-CC6845	<b>Injection Date:</b> 04/24/18
<b>Lab File ID:</b> 3A159514.D	<b>Injection Time:</b> 11:31
<b>Instrument ID:</b> GCMS3A	<b>Method:</b> SW846 8260C BY SIM

**IS 1**  
**AREA RT**

Check Std	12790	15.80
Upper Limit <sup>a</sup>	25580	16.30
Lower Limit <sup>b</sup>	6395	15.30

Lab Sample ID	IS 1 AREA	RT
V3A6877-BS2	12260	15.80
V3A6878-BS	12260	15.80
V3A6877-MB2	11475	15.81
V3A6878-MB	11475	15.81
JC64490-5DUP	10914	15.80
ZZZZZZ	10876	15.80
JC64541-3	10818	15.80
ZZZZZZ	6598	15.80
ZZZZZZ	5248 <sup>c</sup>	15.80
JC64541-3MS	7164	15.80
JC64541-3MSD	9167	15.80
ZZZZZZ	8705	15.80
ZZZZZZ	10594	15.81
ZZZZZZ	5992 <sup>c</sup>	15.81
ZZZZZZ	6813	15.80
JC64541-1	7952	15.80
JC64541-2	6752	15.80
JC64541-4	8268	15.81
JC64541-6	9260	15.80
JC64541-7	7816	15.81
ZZZZZZ	10398	15.80

**IS 1** = 4-Bromofluorobenzene

- (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) Outside control limits due to matrix interference.

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> V3A6879-CC6845	<b>Injection Date:</b> 04/25/18
<b>Lab File ID:</b> 3A159540.D	<b>Injection Time:</b> 10:53
<b>Instrument ID:</b> GCMS3A	<b>Method:</b> SW846 8260C BY SIM

**IS 1**  
**AREA RT**

Check Std	11795	15.80
Upper Limit <sup>a</sup>	23590	16.30
Lower Limit <sup>b</sup>	5898	15.30

Lab Sample ID	IS 1 AREA	RT
V3A6879-BS	11282	15.81
V3A6872-BS3	11282	15.81
V3A6879-MB	10556	15.80
V3A6872-MB3	10556	15.80
JC64033-15	10198	15.80
JC64033-15MSD	10433	15.80
JC64541-2 <sup>c</sup>	6366	15.80
ZZZZZZ	9310	15.80
JC64538-11	11374	15.80
JC64538-12	10590	15.80
JC64538-11DUP	11886	15.81
JC64538-12MS	11105	15.80

**IS 1** = 4-Bromofluorobenzene

- (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) Confirmation run.

6.5.2  
6

# Surrogate Recovery Summary

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

<b>Method:</b> SW846 8260C BY SIM	<b>Matrix:</b> AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC64541-1	3A159531.D	151
JC64541-2	3A159532.D	200* a
JC64541-2	3A159547.D	251* a
JC64541-3	3A159520.D	79
JC64541-4	3A159533.D	154
JC64541-6	3A159534.D	154
JC64541-7	3A159535.D	154
JC64541-3MS	3A159524.D	145
JC64541-3MSD	3A159525.D	107
V3A6878-BS	3A159515.D	86
V3A6878-MB	3A159517.D	92

Surrogate Compounds	Recovery Limits
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S1 = 1,4-Dioxane-d8	51-175%
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(a) Outside control limits due to matrix interference.

6.6.1  
6

# Initial Calibration Summary

**Job Number:** JC64541 **Sample:** V3A6845-ICC6845  
**Account:** EAENYS EA Engineering **Lab FileID:** 3A158984.D  
**Project:** AGFA Peerless Photo Products Shoreham, NY

## Response Factor Report MS3A

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)  
 Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 Last Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

### Calibration Files

0.4 =3A158994.D 1 =3A158993.D 2 =3A158982.D 5 =3A158983.D  
 0.25=3A158995.D 20 =3A158984.D 50 =3A158985.D 200 =3A158987.D  
 100 =3A158986.D = = =

Compound	0.4	1	2	5	0.25	20	50	200	100	Avg	%RSD
1) I 4-bromofluorobenzene -----ISTD-----											
2) 1,4-dioxane-d8											
	0.042	0.046	0.044	0.042	0.046	0.043	0.041	0.046	0.047	0.044	4.87
3) 1,4-dioxane											
	0.045	0.042	0.045	0.041	0.056	0.040	0.038	0.043	0.044	0.044	11.49

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

M3A6845.M Tue Feb 27 11:00:48 2018 ACCUNJ

**Initial Calibration Verification**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

**Sample:** V3A6845-ICV6845  
**Lab FileID:** 3A158996.D

## Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\V3A6845\3A158996.D Vial: 17  
Acq On : 26 Feb 2018 8:17 pm Operator: Roberts  
Sample : ICV6845-20 Inst : MS3A  
Misc : MS23688,V3A6845,5.0,,,,,1 Multiplr: 1.00  
MS Integration Params: 14D...NE.P

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)  
Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
Last Update : Tue Feb 27 06:38:01 2018  
Response via : Multiple Level Calibration

Min. RRF : 0.010 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	4-bromofluorobenzene	1.000	1.000	0.0	101	0.00	15.80
2 S	1,4-dioxane-d8	0.044	0.041	6.8	97	0.00	12.09
3 M	1,4-dioxane	0.044	0.039	11.4	97	-0.01	12.15

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
3A158984.D M3A6845.M Tue Feb 27 11:01:13 2018 ACCUNJ

**Continuing Calibration Summary**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

**Sample:** V3A6878-CC6845  
**Lab FileID:** 3A159514.D

## Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\V3A6878\3A159514.D Vial: 4  
 Acq On : 24 Apr 2018 11:31 am Operator: HueanhT  
 Sample : cc6845-5 Inst : MS3A  
 Misc : MS25780,V3A6878,5.0,,,,,1 Multiplr: 1.00  
 MS Integration Params: 14D...NE.P

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)  
 Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 Last Update : Tue Feb 27 06:38:01 2018  
 Response via : Multiple Level Calibration

Min. RRF : 0.010 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	4-bromofluorobenzene	1.000	1.000	0.0	134	0.00	15.80
2 S	1,4-dioxane-d8	0.044	0.037	15.9	116	0.00	12.09
3 M	1,4-dioxane	0.044	0.041	6.8	135	-0.01	12.15

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
 3A158983.D M3A6845.M Wed Apr 25 15:02:48 2018 ACCUNJ

**Continuing Calibration Summary**

**Job Number:** JC64541  
**Account:** EAENYS EA Engineering  
**Project:** AGFA Peerless Photo Products Shoreham, NY

**Sample:** V3A6879-CC6845  
**Lab FileID:** 3A159540.D

## Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\V3A6879\3A159540.D Vial: 4  
Acq On : 25 Apr 2018 10:53 am Operator: HueanhT  
Sample : cc6845-20 Inst : MS3A  
Misc : MS25758,V3A6879,5.0,,,,,1 Multiplr: 1.00  
MS Integration Params: 14D...NE.P

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)  
Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
Last Update : Tue Feb 27 06:38:01 2018  
Response via : Multiple Level Calibration

Min. RRF : 0.010 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	4-bromofluorobenzene	1.000	1.000	0.0	124	0.00	15.80
2 S	1,4-dioxane-d8	0.044	0.048	-9.1	139	0.00	12.09
3 M	1,4-dioxane	0.044	0.044	0.0	137	0.00	12.16

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
3A158984.D M3A6845.M Wed Apr 25 14:29:28 2018 ACCUNJ



MS Volatiles

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Raw Data

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## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159531.D  
 Acq On : 24 Apr 2018 7:15 pm  
 Operator : HueanhT  
 Sample : jc64541-1  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 25 15:00:36 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	7952	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	5328	15.13	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	151.30%

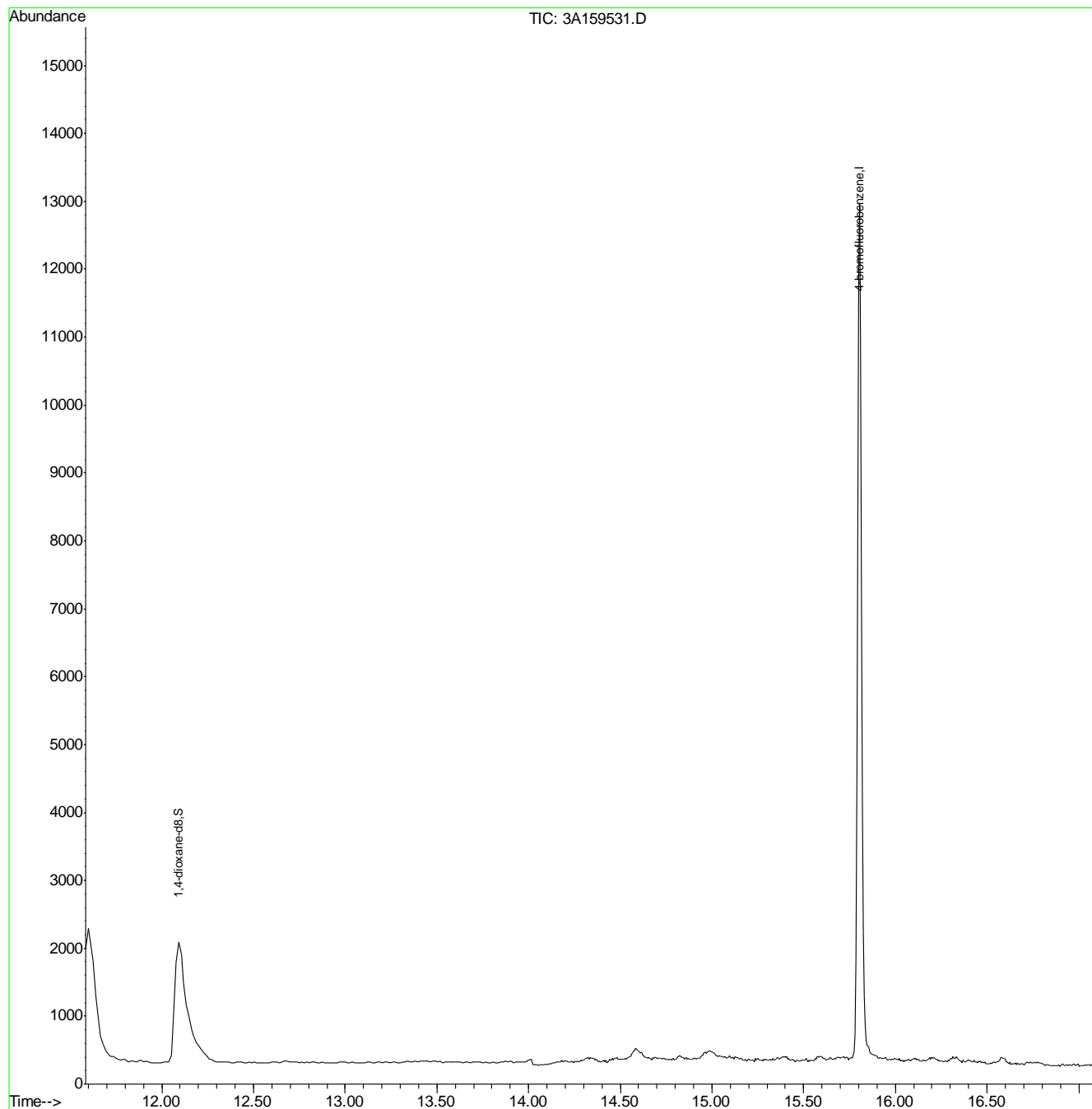
Target Compounds	Qvalue
-----	

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159531.D  
Acq On : 24 Apr 2018 7:15 pm  
Operator : HueanhT  
Sample : jc64541-1  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 25 15:00:36 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159532.D  
 Acq On : 24 Apr 2018 7:41 pm  
 Operator : HueanhT  
 Sample : jc64541-2  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 25 15:00:37 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

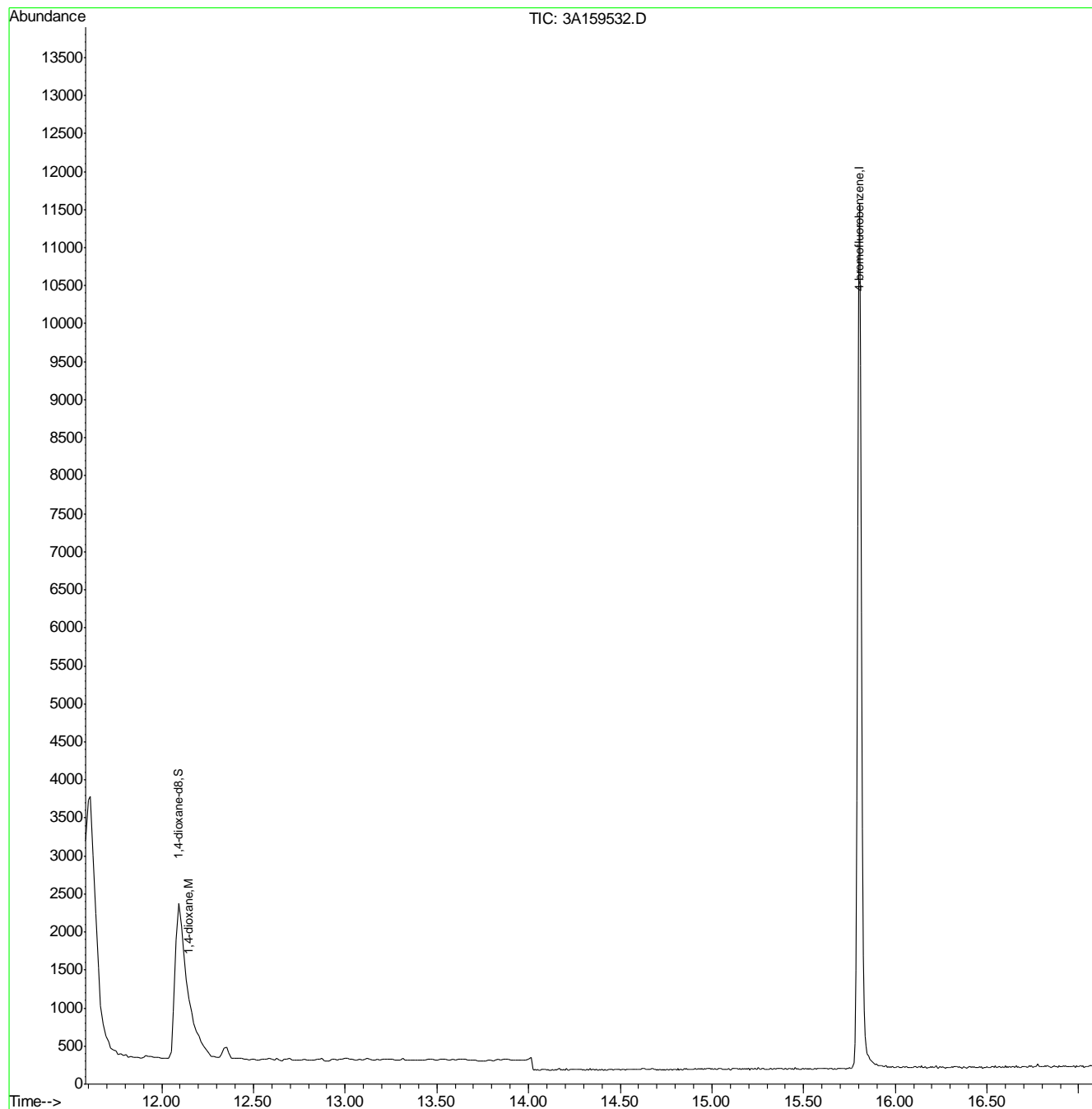
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	6752	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	5978	19.99	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	199.90%#
Target Compounds						Qvalue
3) 1,4-dioxane	12.15	88	101	0.34	ug/L #	31

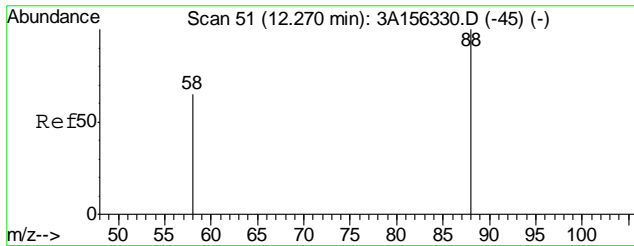
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159532.D  
Acq On : 24 Apr 2018 7:41 pm  
Operator : HueanhT  
Sample : jc64541-2  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 22 Sample Multiplier: 1

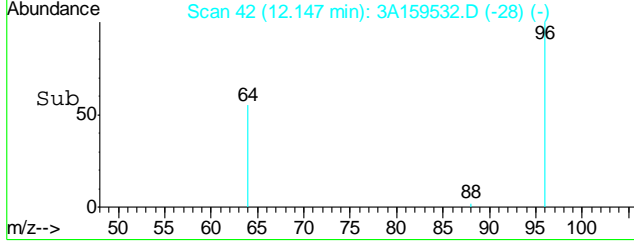
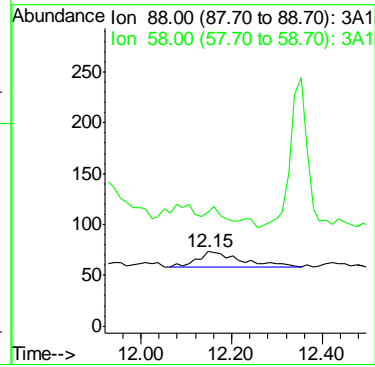
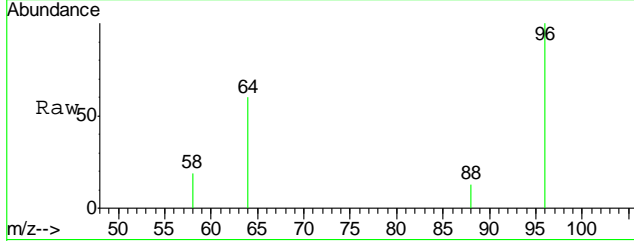
Quant Time: Apr 25 15:00:37 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration





#3  
 1,4-dioxane  
 Concen: 0.34 ug/L  
 RT: 12.15 min Scan# 42  
 Delta R.T. -0.01 min  
 Lab File: 3A159532.D  
 Acq: 24 Apr 2018 7:41 pm

Tgt Ion: 88 Resp: 101  
 Ion Ratio Lower Upper  
 88 100  
 58 6.7 28.0 88.0#



7.12  
 7

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6879\  
 Data File : 3A159547.D  
 Acq On : 25 Apr 2018 2:18 pm  
 Operator : HueanhT  
 Sample : jc64541-2  
 Misc : MS25758,V3A6879,5.0,,,,1  
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 25 15:20:36 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

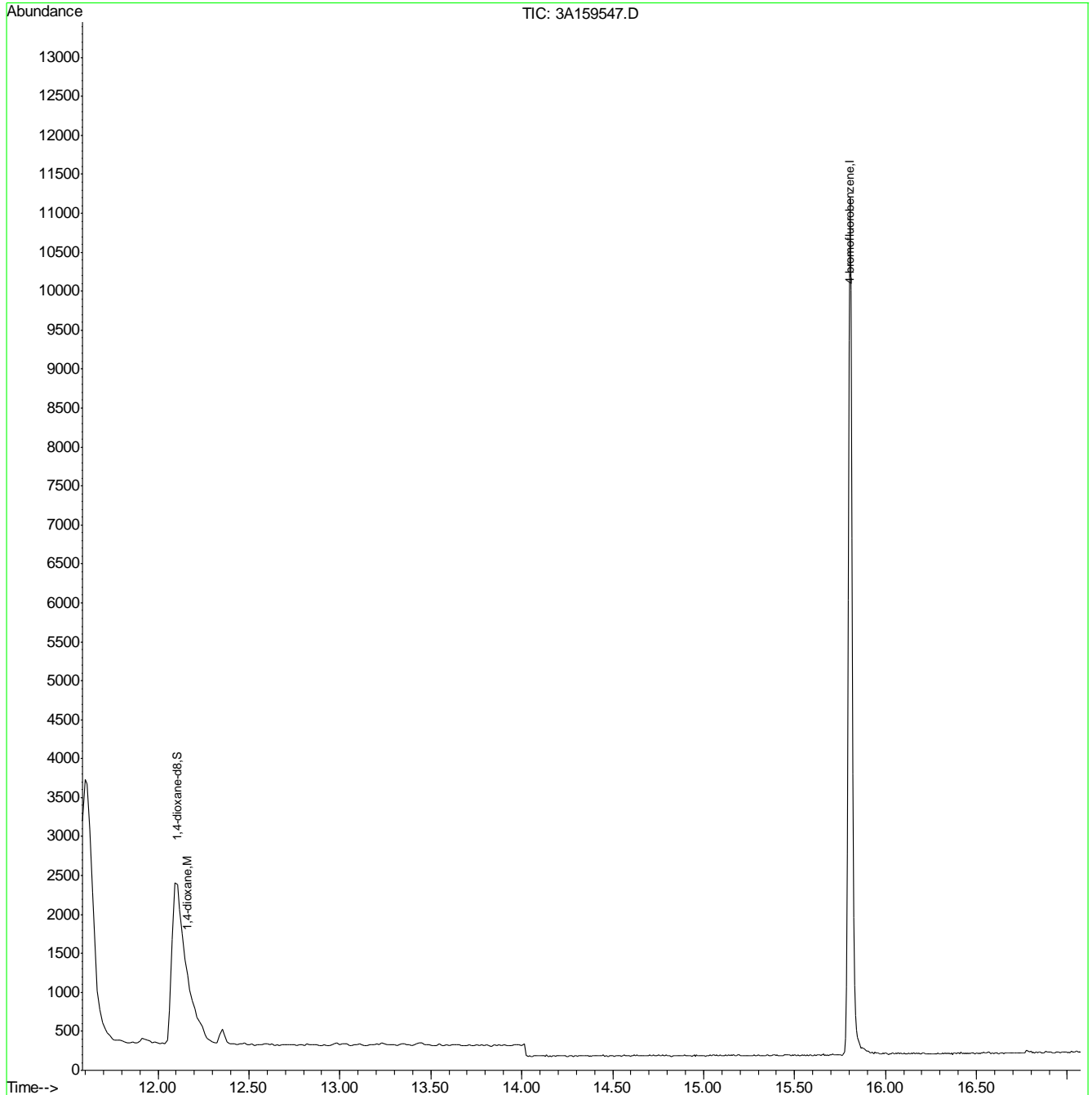
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	6366	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.11	96	7066	25.06	ug/L	0.01
Spiked Amount	10.000	Range	51 - 175	Recovery	=	250.60%#
Target Compounds						Qvalue
3) 1,4-dioxane	12.16	88	137	0.49	ug/L #	33

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

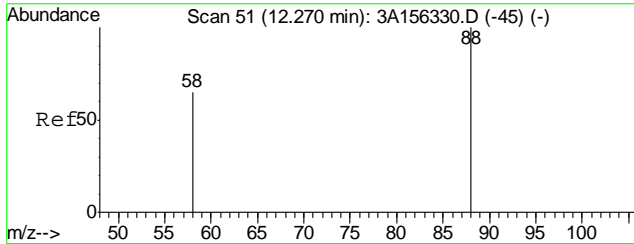
## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6879\  
Data File : 3A159547.D  
Acq On : 25 Apr 2018 2:18 pm  
Operator : HueanhT  
Sample : jc64541-2  
Misc : MS25758,V3A6879,5.0,,,,1  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 25 15:20:36 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration

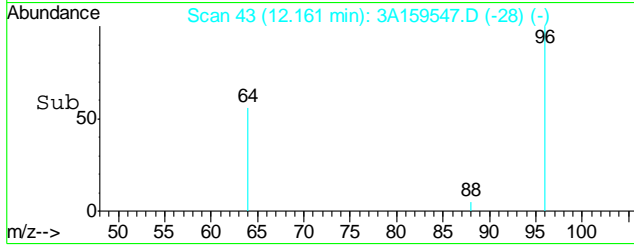
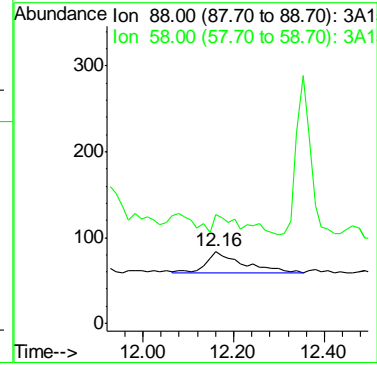
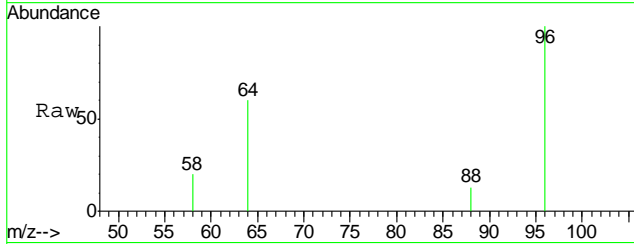






#3  
 1,4-dioxane  
 Concen: 0.49 ug/L  
 RT: 12.16 min Scan# 43  
 Delta R.T. -0.00 min  
 Lab File: 3A159547.D  
 Acq: 25 Apr 2018 2:18 pm

Tgt Ion: 88 Resp: 137  
 Ion Ratio Lower Upper  
 88 100  
 58 8.0 28.0 88.0#



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159520.D  
 Acq On : 24 Apr 2018 2:24 pm  
 Operator : HueanhT  
 Sample : jc64541-3  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 25 15:00:25 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	10818	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	3780	7.89	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	78.90%

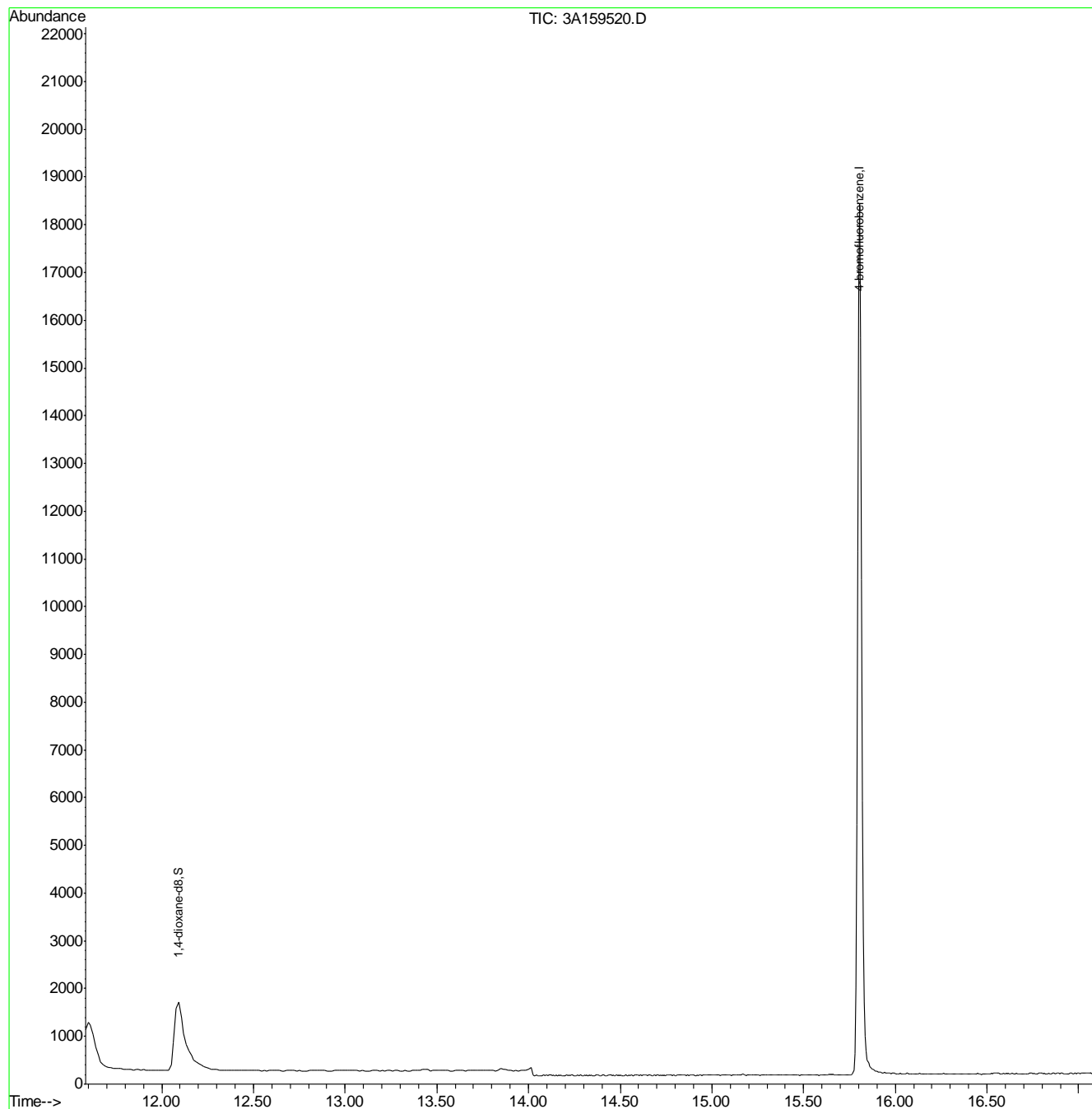
Target Compounds	Qvalue
-----	

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159520.D  
Acq On : 24 Apr 2018 2:24 pm  
Operator : HueanhT  
Sample : jc64541-3  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 25 15:00:25 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159533.D  
 Acq On : 24 Apr 2018 8:07 pm  
 Operator : HueanhT  
 Sample : jc64541-4  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 25 15:00:38 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.81	95	8268	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	5635	15.39	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	153.90%

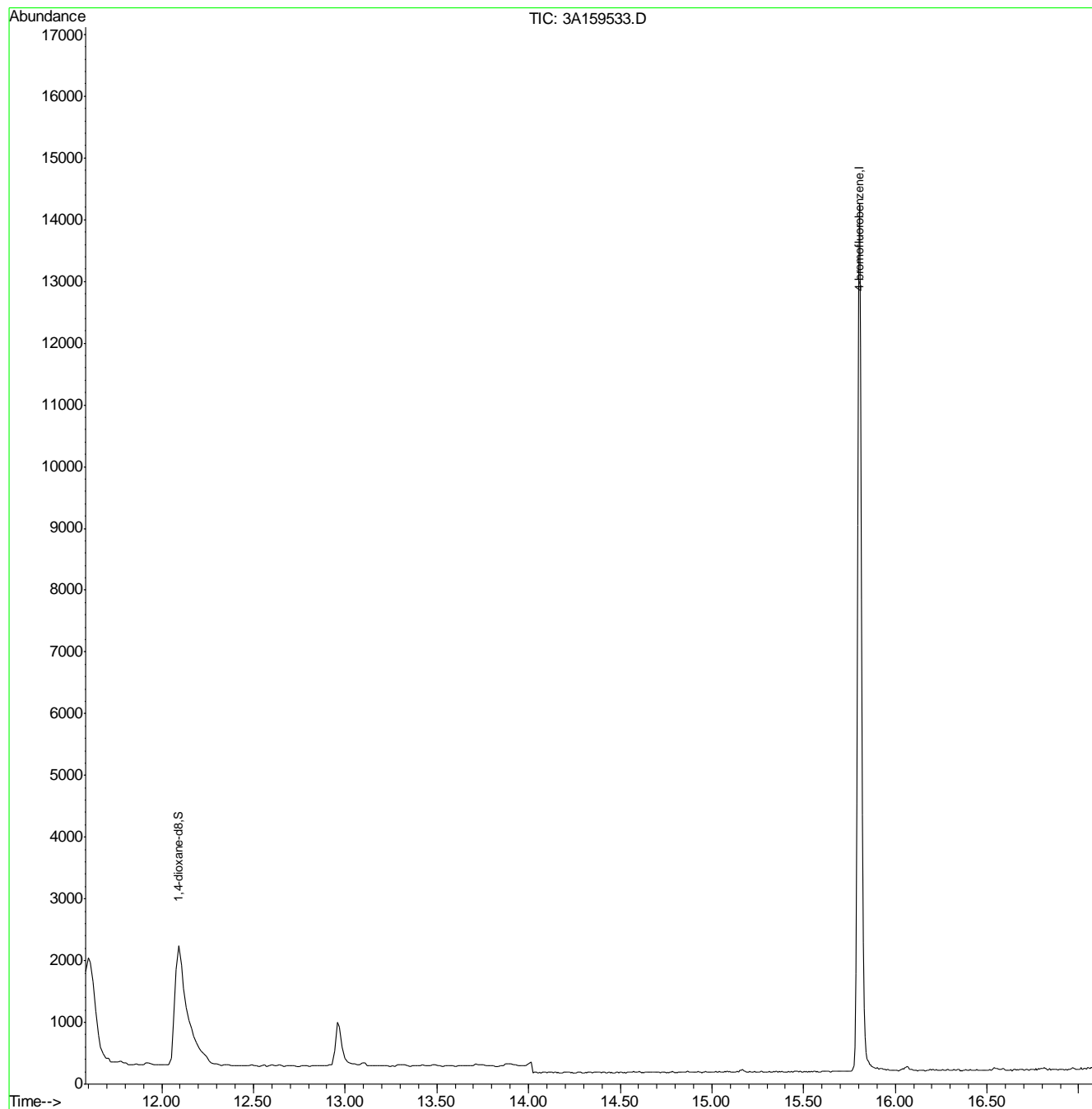
Target Compounds	Qvalue
-----	-----

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159533.D  
Acq On : 24 Apr 2018 8:07 pm  
Operator : HueanhT  
Sample : jc64541-4  
Misc : MS25758,V3A6878,5.0,,,1  
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 25 15:00:38 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159534.D  
 Acq On : 24 Apr 2018 8:34 pm  
 Operator : HueanhT  
 Sample : jc64541-6  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 25 15:00:39 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9260	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	6314	15.40	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	154.00%

Target Compounds	Qvalue
-----	

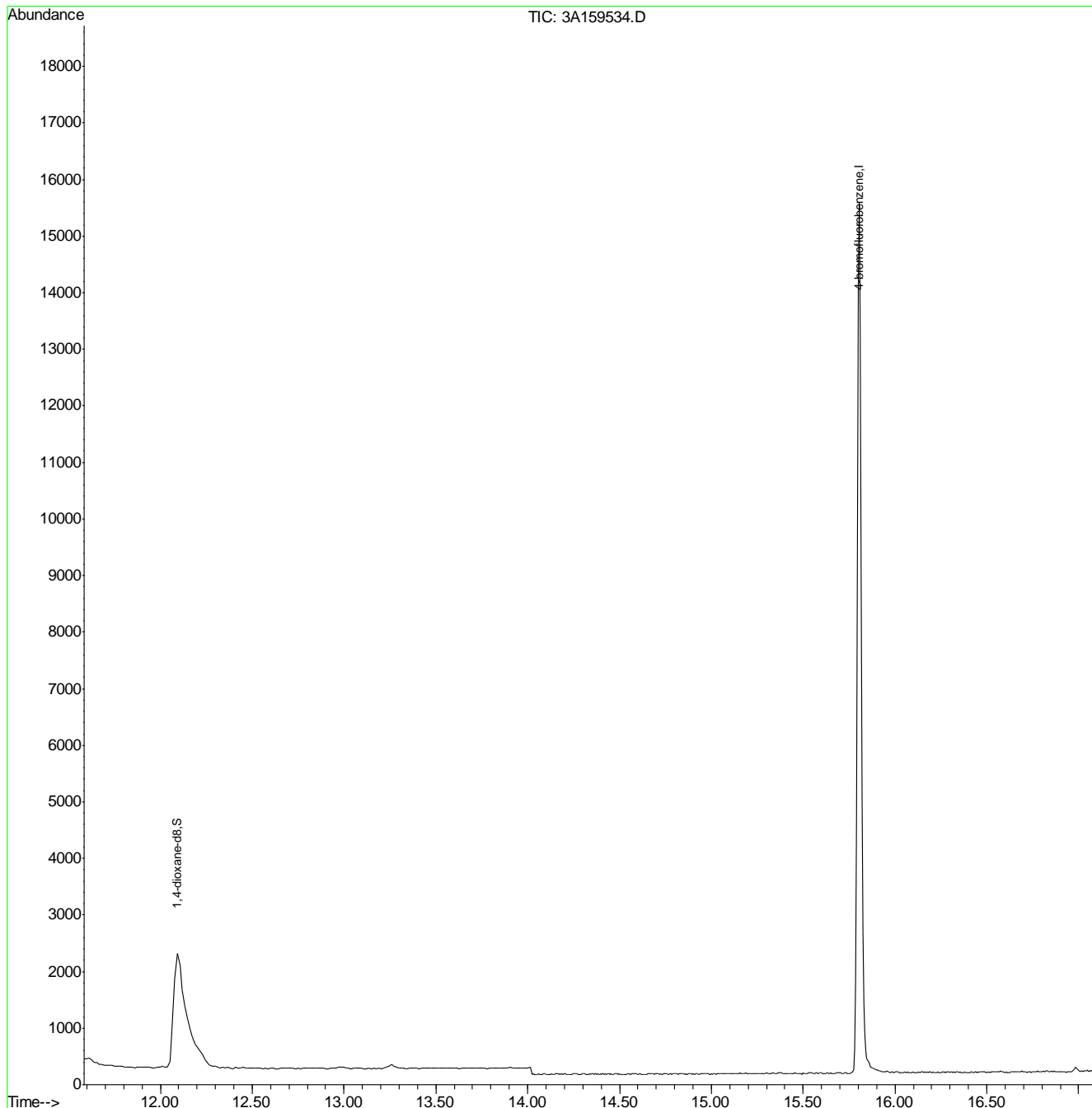
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.6  
7

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159534.D  
Acq On : 24 Apr 2018 8:34 pm  
Operator : HueanhT  
Sample : jc64541-6  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 25 15:00:39 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



7.1.6  
7



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159535.D  
 Acq On : 24 Apr 2018 9:01 pm  
 Operator : HueanhT  
 Sample : jc64541-7  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 25 15:00:40 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.81	95	7816	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	5315	15.35	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	153.50%

Target Compounds	Qvalue
-----	-----

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

7.17

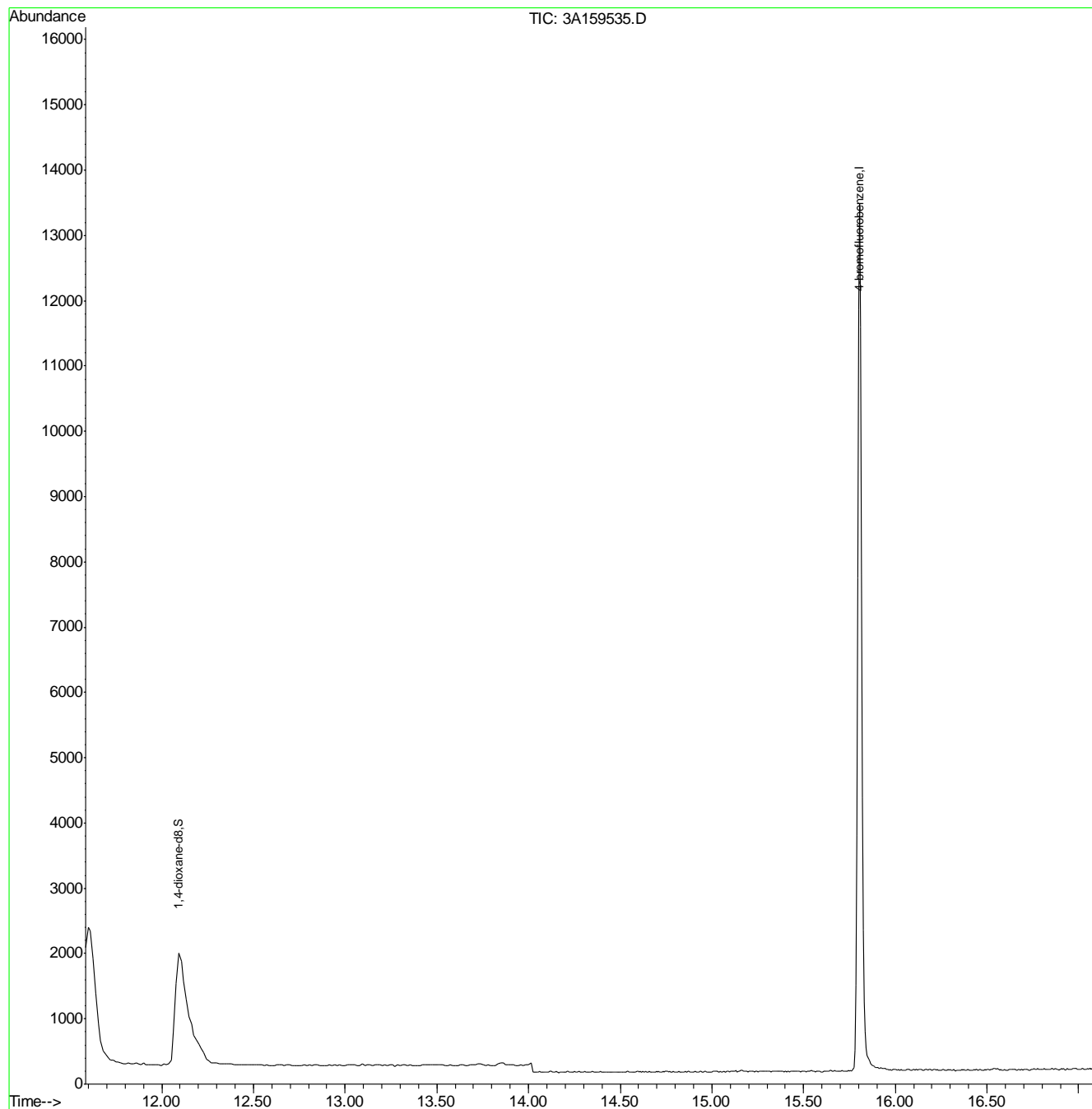
7



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159535.D  
Acq On : 24 Apr 2018 9:01 pm  
Operator : HueanhT  
Sample : jc64541-7  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 25 15:00:40 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



7.17  
7



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159517.D  
 Acq On : 24 Apr 2018 12:59 pm  
 Operator : HueanhT  
 Sample : mb  
 Misc : MS25780,V3A6878,5.0,,,,1  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 25 15:00:22 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.81	95	11475	1.00	ug/L	0.00

System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4686	9.22	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	92.20%

Target Compounds	Qvalue
-----	-----

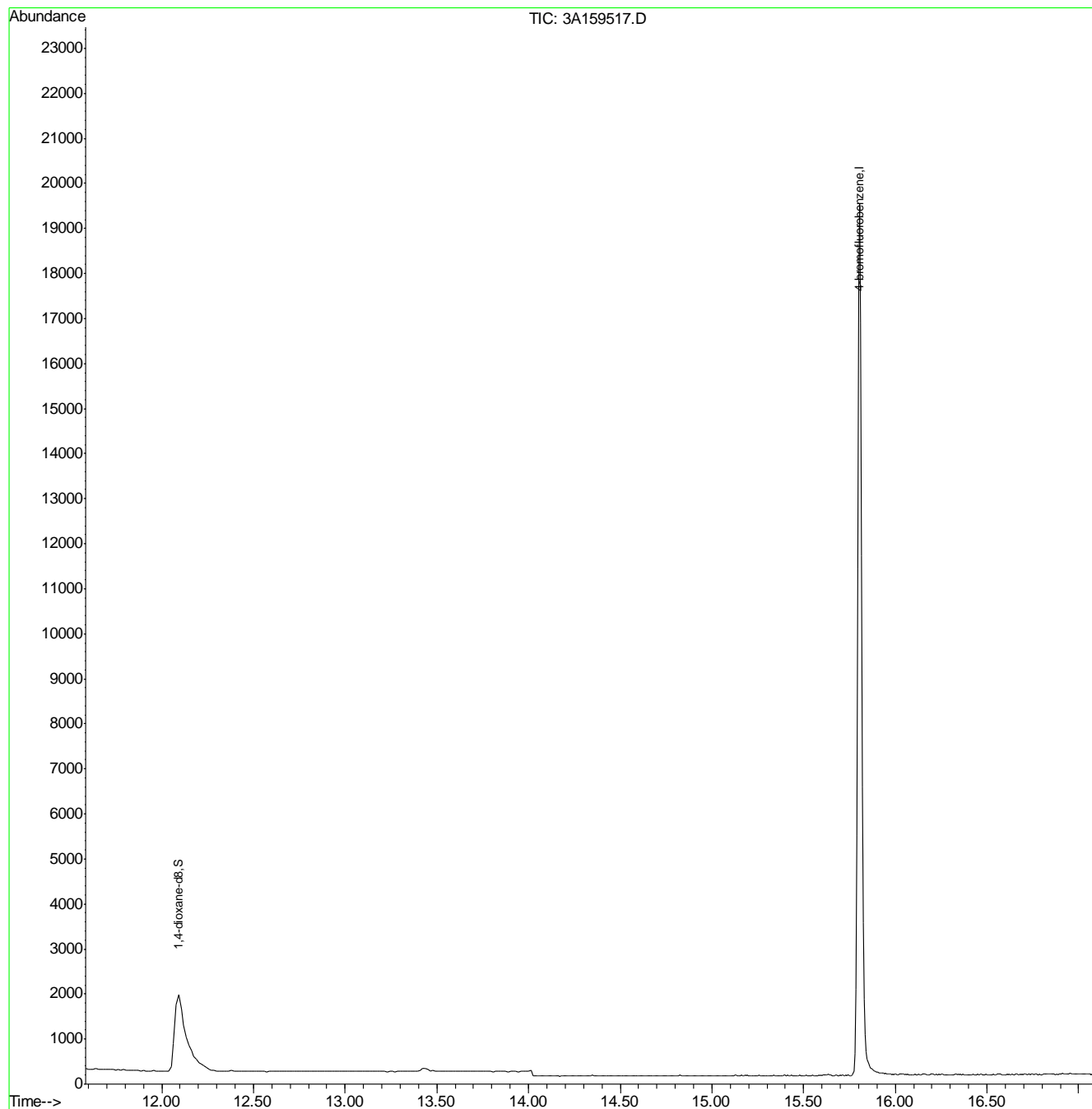
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.2.1  
7

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159517.D  
Acq On : 24 Apr 2018 12:59 pm  
Operator : HueanhT  
Sample : mb  
Misc : MS25780,V3A6878,5.0,,,,1  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 25 15:00:22 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159515.D  
 Acq On : 24 Apr 2018 12:05 pm  
 Operator : HueanhT  
 Sample : bs  
 Misc : MS25780,V3A6878,5.0,,,,,1  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 25 15:00:20 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

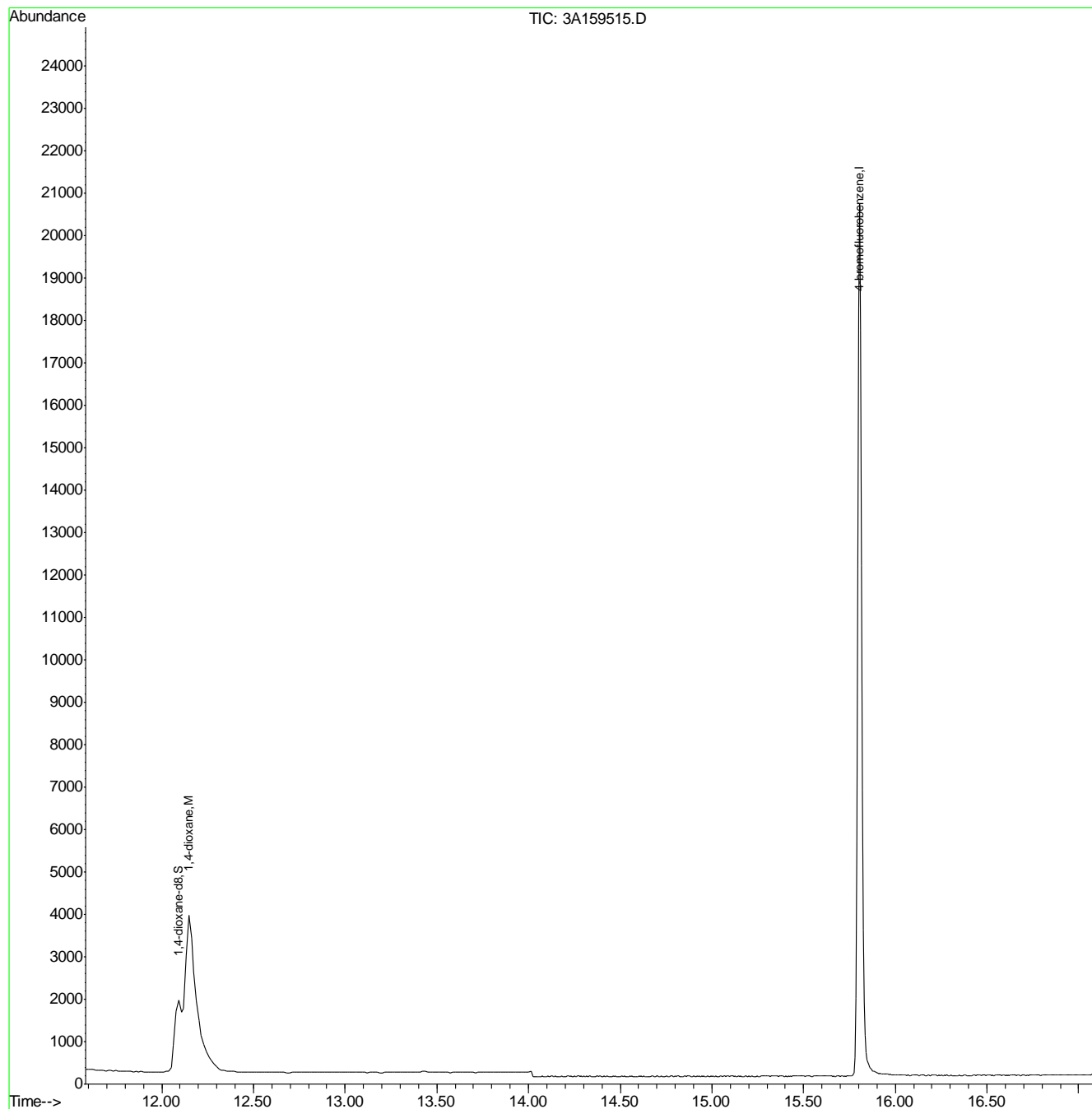
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	12260	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4690	8.64	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	86.40%
Target Compounds						
3) 1,4-dioxane	12.15	88	7958	14.85	ug/L	Qvalue 90

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159515.D  
Acq On : 24 Apr 2018 12:05 pm  
Operator : HueanhT  
Sample : bs  
Misc : MS25780,V3A6878,5.0,,,,1  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 25 15:00:20 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159524.D  
 Acq On : 24 Apr 2018 4:09 pm  
 Operator : HueanhT  
 Sample : jc64541-3ms  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 25 15:00:29 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	7164	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4594	14.48	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	144.80%
Target Compounds						
3) 1,4-dioxane	12.16	88	7423	23.70	ug/L	Qvalue 98

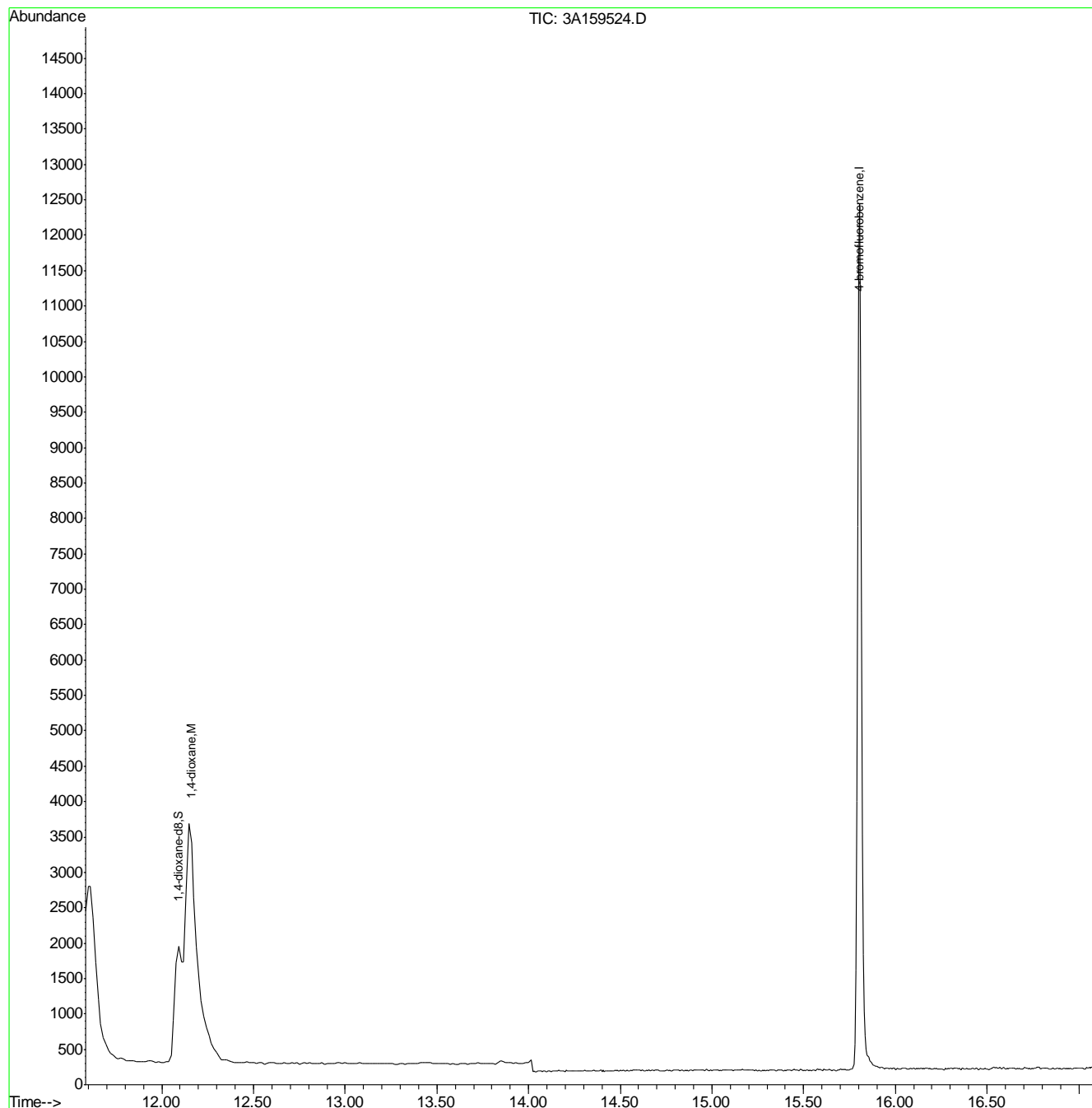
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.4.1  
7

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159524.D  
Acq On : 24 Apr 2018 4:09 pm  
Operator : HueanhT  
Sample : jc64541-3ms  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 25 15:00:29 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159525.D  
 Acq On : 24 Apr 2018 4:36 pm  
 Operator : HueanhT  
 Sample : jc64541-3msd  
 Misc : MS25758,V3A6878,5.0,,,,1  
 ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 25 15:00:30 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9167	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4330	10.67	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	106.70%
Target Compounds						Qvalue
3) 1,4-dioxane	12.15	88	7503	18.72	ug/L	85

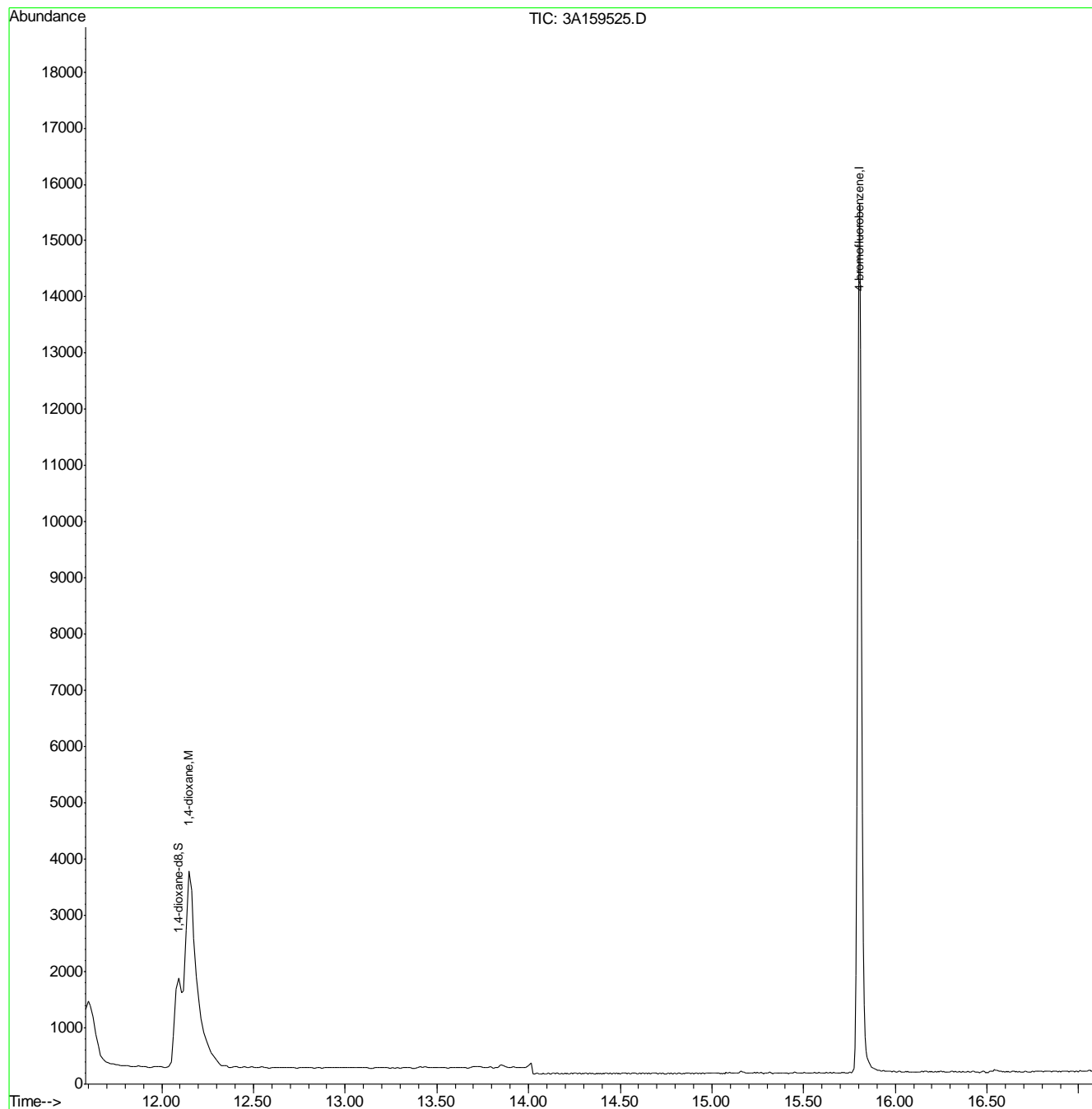
(#) = qualifier out of range (m) = manual integration (+) = signals summed



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159525.D  
Acq On : 24 Apr 2018 4:36 pm  
Operator : HueanhT  
Sample : jc64541-3msd  
Misc : MS25758,V3A6878,5.0,,,,1  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 25 15:00:30 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



SW-846 Method 8260

Data File : C:\MSDCHEM\1\DATA\V3A6845\3A158978.D

Vial: 1

Acq On : 26 Feb 2018 10:39 am

Operator: RobertS

Sample : BFB

Inst : MS3A

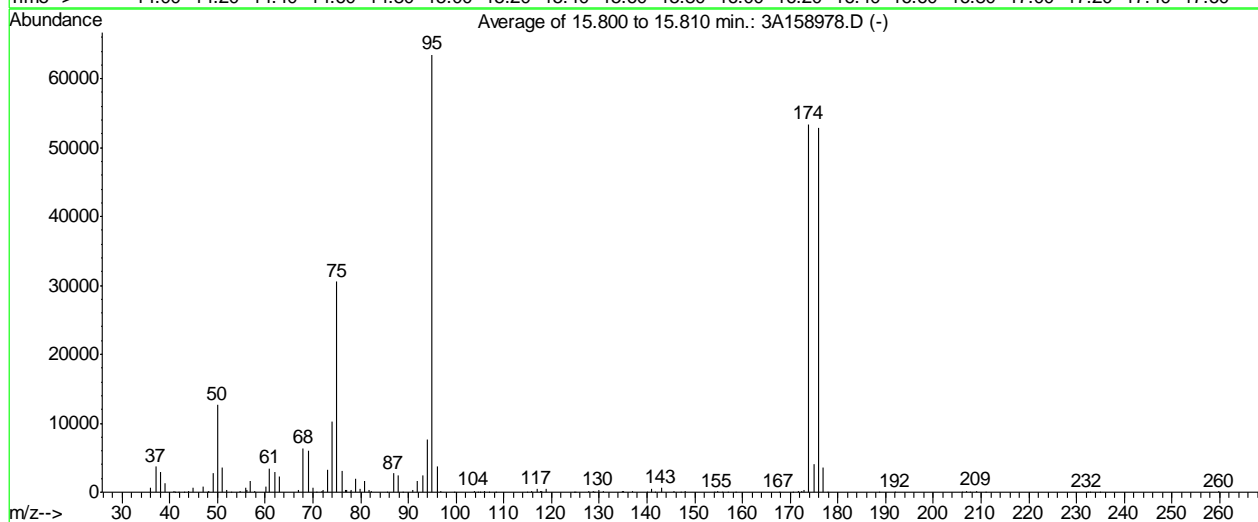
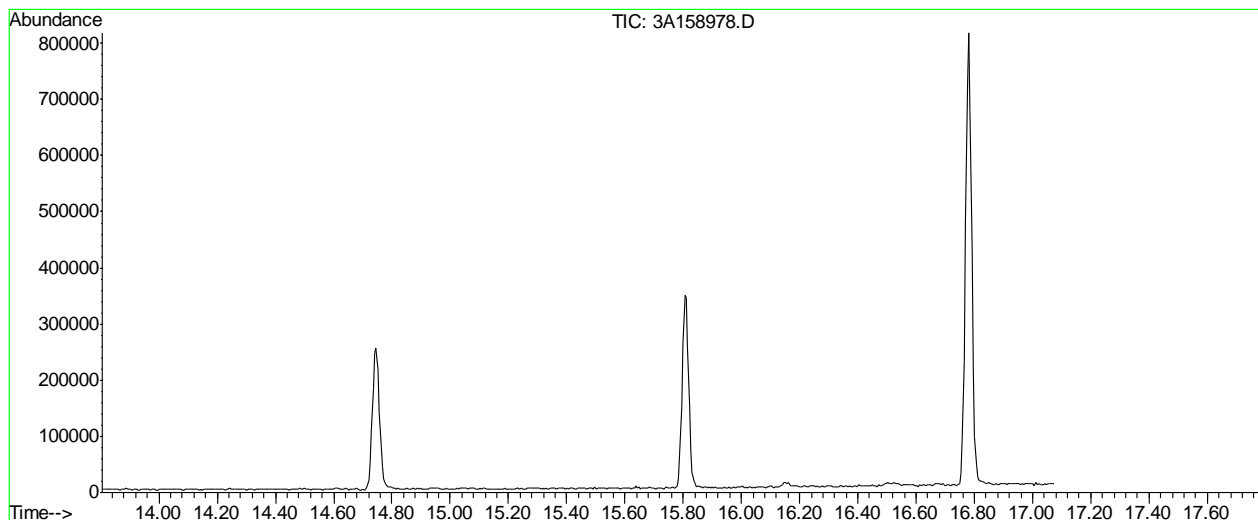
Misc : MS23688,V3A6845,5.0,,,1

Multiplr: 1.00

MS Integration Params: 14D...NE.P

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)

Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um



AutoFind: Scans 805, 806, 807; Background Corrected with Scan 795

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.0	12675	PASS
75	95	30	60	48.1	30581	PASS
95	95	100	100	100.0	63517	PASS
96	95	5	9	5.9	3746	PASS
173	174	0.00	2	0.7	364	PASS
174	95	50	120	84.1	53424	PASS
175	174	5	9	7.7	4094	PASS
176	174	95	101	99.0	52872	PASS
177	176	5	9	6.8	3577	PASS

3A158978.D M3A6845.M

Tue Feb 27 10:58:03 2018 ACCUNJ

Average of 15.800 to 15.810 min.: 3A158978.D

BFB

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.90	642	47.90	68	57.90	110	72.10	375
37.00	3694	48.05	246	60.05	793	72.95	3214
38.00	2883	49.00	2790	60.95	3416	74.00	10245
39.05	1253	50.00	12675	61.95	2987	75.00	30581
40.90	135	50.95	3535	62.95	2232	76.00	3036
41.10	51	51.90	299	66.90	291	76.75	252
41.70	70	52.90	51	67.95	6400	77.05	270
43.10	63	54.80	153	68.95	6007	77.70	62
43.90	146	55.90	680	69.90	733	77.95	410
44.90	664	56.10	289	70.70	74	78.85	1919
46.95	852	56.95	1610	71.90	111	79.85	528

Average of 15.800 to 15.810 min.: 3A158978.D

BFB

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
80.85	1614	95.00	63517	115.85	207	130.95	109
81.85	277	96.00	3746	116.95	461	134.80	94
82.10	117	96.85	122	117.65	156	135.05	117
85.60	50	99.50	54	117.85	216	136.95	119
86.85	2735	103.80	196	118.90	415	140.10	76
87.90	2388	104.60	80	124.70	86	140.85	526
88.70	72	104.90	51	124.90	70	141.60	75
90.80	358	105.90	179	127.75	222	142.95	624
91.95	1635	106.90	51	128.65	127	145.75	114
92.95	2438	108.30	63	128.90	50	147.00	54
93.90	7603	114.90	67	129.85	253	147.95	140

Average of 15.800 to 15.810 min.: 3A158978.D

BFB

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
154.20	54	174.90	4094	232.20	71		
154.80	144	175.90	52872	232.80	57		
155.80	55	176.90	3577	234.90	53		
156.80	50	177.80	79	259.90	116		
158.60	74	188.70	55				
167.60	68	192.00	71				
170.50	60	206.00	54				
171.80	191	206.95	151				
172.30	95	207.70	61				
173.00	364	208.95	171				
173.90	53424	210.90	52				

SW-846 Method 8260

Data File : C:\MSDCHEM\1\DATA\V3A6878\3A159512.D

Vial: 2

Acq On : 24 Apr 2018 10:06 am

Operator: HueanhT

Sample : bfb

Inst : MS3A

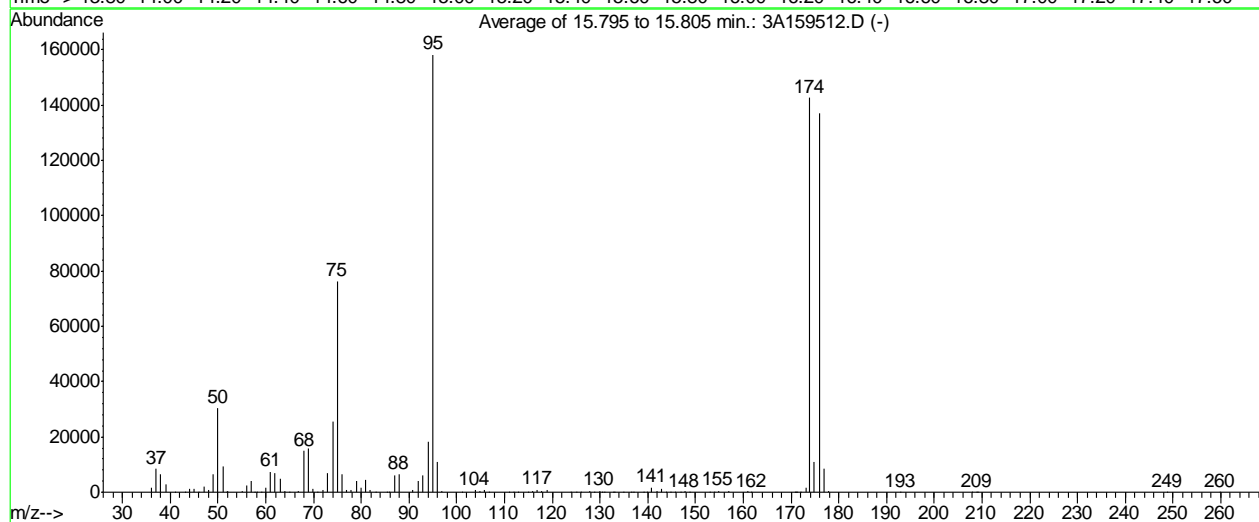
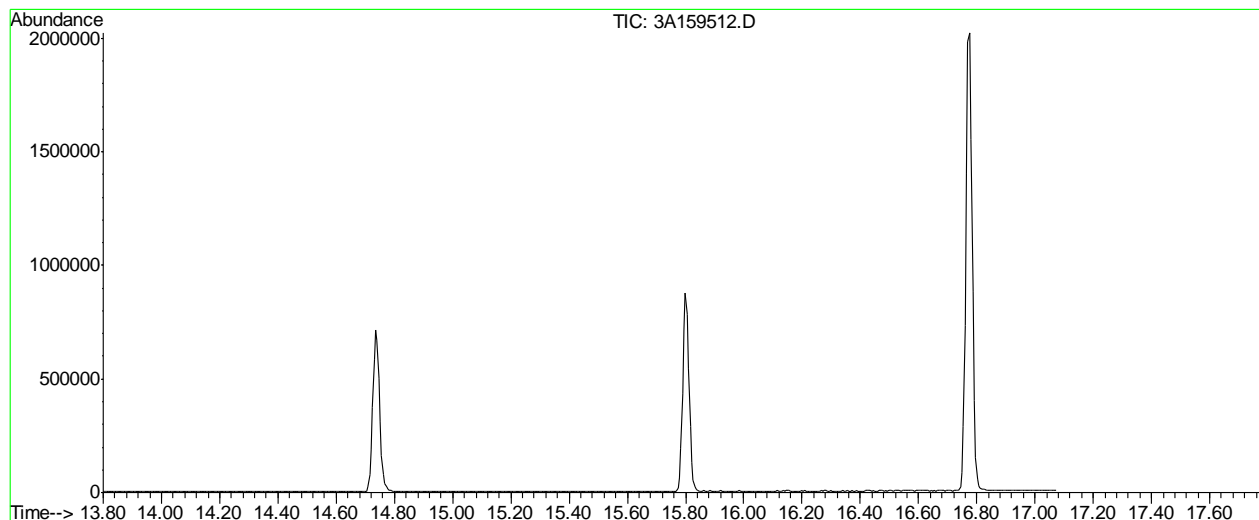
Misc : MS25780,V3A6878,5.0,,,,,1

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)

Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um



AutoFind: Scans 804, 805, 806; Background Corrected with Scan 796

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	30493	PASS
75	95	30	60	48.2	76357	PASS
95	95	100	100	100.0	158357	PASS
96	95	5	9	6.9	10976	PASS
173	174	0.00	2	1.3	1797	PASS
174	95	50	120	90.1	142626	PASS
175	174	5	9	7.6	10870	PASS
176	174	95	101	96.2	137136	PASS
177	176	5	9	6.3	8694	PASS

3A159512.D M3A6845.M

Wed Apr 25 15:01:35 2018 ACCUNJ

Average of 15.795 to 15.805 min.: 3A159512.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.95	1451	49.00	6452	59.95	1465	72.00	843
37.00	8453	50.00	30493	61.00	7415	72.95	6880
38.00	6556	51.00	9267	61.95	6974	74.00	25648
39.00	2869	51.80	114	62.95	4897	75.00	76357
41.00	134	52.00	241	63.90	584	76.00	6322
43.00	132	55.05	463	64.90	65	76.95	793
43.95	1301	56.00	2315	66.90	464	77.90	730
44.95	1175	57.00	4106	68.00	14989	78.90	4010
46.00	84	57.70	70	69.00	15911	79.90	1458
47.00	1840	58.00	140	69.95	1264	80.90	4440
47.95	1030	59.00	53	70.80	139	81.85	913

Average of 15.795 to 15.805 min.: 3A159512.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.90	111	96.85	339	116.85	820	132.85	137
85.40	58	101.00	63	117.85	526	133.10	62
85.85	147	103.85	671	118.85	769	135.00	139
86.90	5984	104.85	291	123.90	58	136.60	77
87.90	6590	105.75	670	124.95	123	136.90	115
90.80	673	106.75	132	126.00	73	139.10	72
91.95	4176	110.90	52	127.95	564	139.75	144
92.95	6258	111.80	61	128.85	166	140.85	1663
94.00	18234	112.75	157	129.85	571	141.85	227
95.00	158357	114.85	131	130.50	66	142.85	1437
95.90	10976	115.85	610	130.90	149	143.70	75

Average of 15.795 to 15.805 min.: 3A159512.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
144.75	165	170.70	62	208.00	60		
145.80	166	171.00	67	208.90	88		
146.80	131	171.30	118	209.10	61		
147.80	337	171.90	78	248.80	53		
148.70	73	173.05	1797	259.90	54		
152.90	161	173.90	142626				
154.00	51	174.90	10870				
154.85	480	175.90	137136				
156.85	284	176.90	8694				
160.95	251	177.90	240				
161.70	51	192.90	101				

SW-846 Method 8260

Data File : C:\MSDCHEM\1\DATA\V3A6879\3A159538.D

Vial: 2

Acq On : 25 Apr 2018 9:31 am

Operator: HueanhT

Sample : bfb

Inst : MS3A

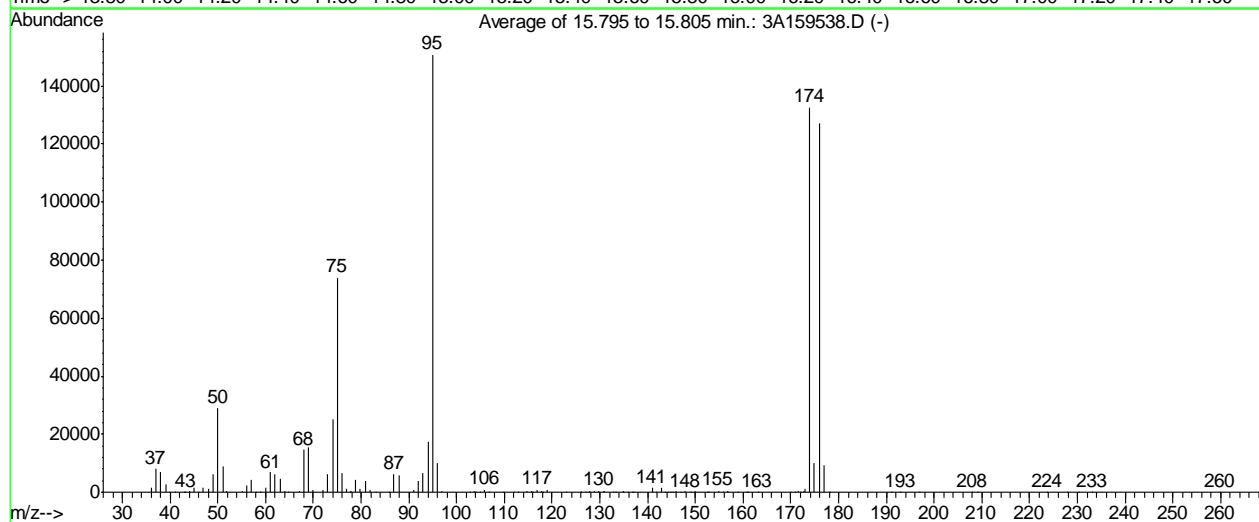
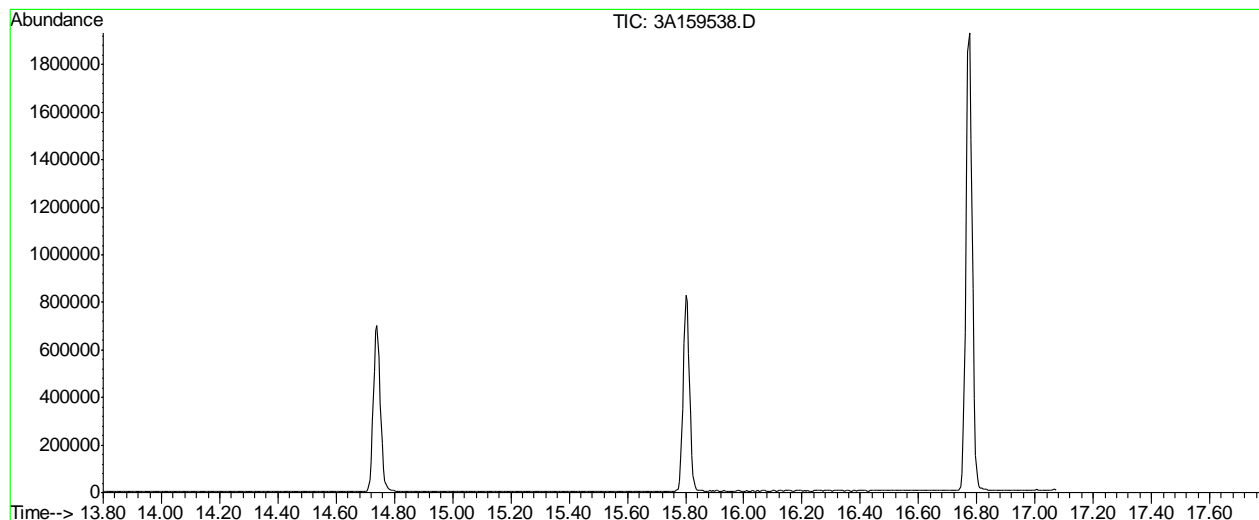
Misc : MS25758,V3A6879,5.0,,,1

Multiplr: 1.00

MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3A6845.M (RTE Integrator)

Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um



AutoFind: Scans 804, 805, 806; Background Corrected with Scan 796

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	29000	PASS
75	95	30	60	49.0	73941	PASS
95	95	100	100	100.0	150866	PASS
96	95	5	9	6.7	10154	PASS
173	174	0.00	2	0.9	1149	PASS
174	95	50	120	87.9	132592	PASS
175	174	5	9	7.6	10129	PASS
176	174	95	101	95.9	127213	PASS
177	176	5	9	7.2	9116	PASS

3A159538.D M3A6845.M

Wed Apr 25 14:23:42 2018 ACCUNJ

Average of 15.795 to 15.805 min.: 3A159538.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	1464	46.95	1468	59.95	1381	72.95	6043
37.00	7968	48.00	1001	61.00	6925	74.00	25258
38.00	7140	49.00	6191	62.00	6349	75.00	73941
39.05	2763	50.00	29000	63.00	4708	76.00	6661
39.90	81	51.00	9073	63.95	490	76.85	1010
41.05	127	51.90	404	64.80	61	77.70	93
43.00	102	55.00	443	67.05	542	77.95	416
43.20	54	55.95	2330	68.00	14511	78.90	4361
44.00	481	57.00	4204	68.95	15489	79.85	1088
44.95	1570	57.95	194	69.95	897	80.90	3821
46.00	117	58.80	80	71.95	747	81.90	943

Average of 15.795 to 15.805 min.: 3A159538.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
83.00	124	102.75	137	116.00	196	128.85	217
85.80	88	103.80	443	116.85	950	129.85	565
86.90	6249	104.00	166	117.75	402	130.60	64
87.90	5652	104.80	79	118.00	140	130.85	210
90.90	741	105.85	796	118.90	743	132.90	63
92.00	3895	106.85	158	123.00	57	133.20	65
92.95	6449	109.80	93	125.90	58	134.80	155
94.00	17254	112.00	55	126.10	59	134.95	222
95.00	150866	112.90	115	126.90	73	135.90	65
95.95	10154	114.80	246	127.70	166	136.70	117
96.95	352	115.75	371	127.90	521	136.95	157

Average of 15.795 to 15.805 min.: 3A159538.D

bfb

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
140.95	1444	149.85	257	169.90	67	191.00	96
141.80	164	152.50	75	170.90	57	192.95	144
142.80	1436	152.80	58	171.60	394	196.90	56
143.60	62	154.85	435	172.00	149	207.95	143
144.40	70	155.90	54	172.80	486	209.00	65
144.80	88	156.70	75	173.05	1149	223.70	51
145.30	60	156.85	244	173.90	132592	227.80	51
145.85	245	158.95	199	174.90	10129	230.30	59
147.00	71	160.70	86	175.90	127213	233.10	114
147.85	329	160.90	121	176.90	9116	259.90	123
148.90	62	163.00	54	178.00	184		

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158982.D  
 Acq On : 26 Feb 2018 12:27 pm  
 Operator : RobertS  
 Sample : IC6845-2  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 26 13:27:21 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 12:33:12 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9367	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4129	8.30	ug/L	-0.03
Spiked Amount	10.000	Range	51 - 175	Recovery	=	83.00%
Target Compounds						
3) 1,4-dioxane	12.16	88	849	1.45	ug/L	Qvalue 99

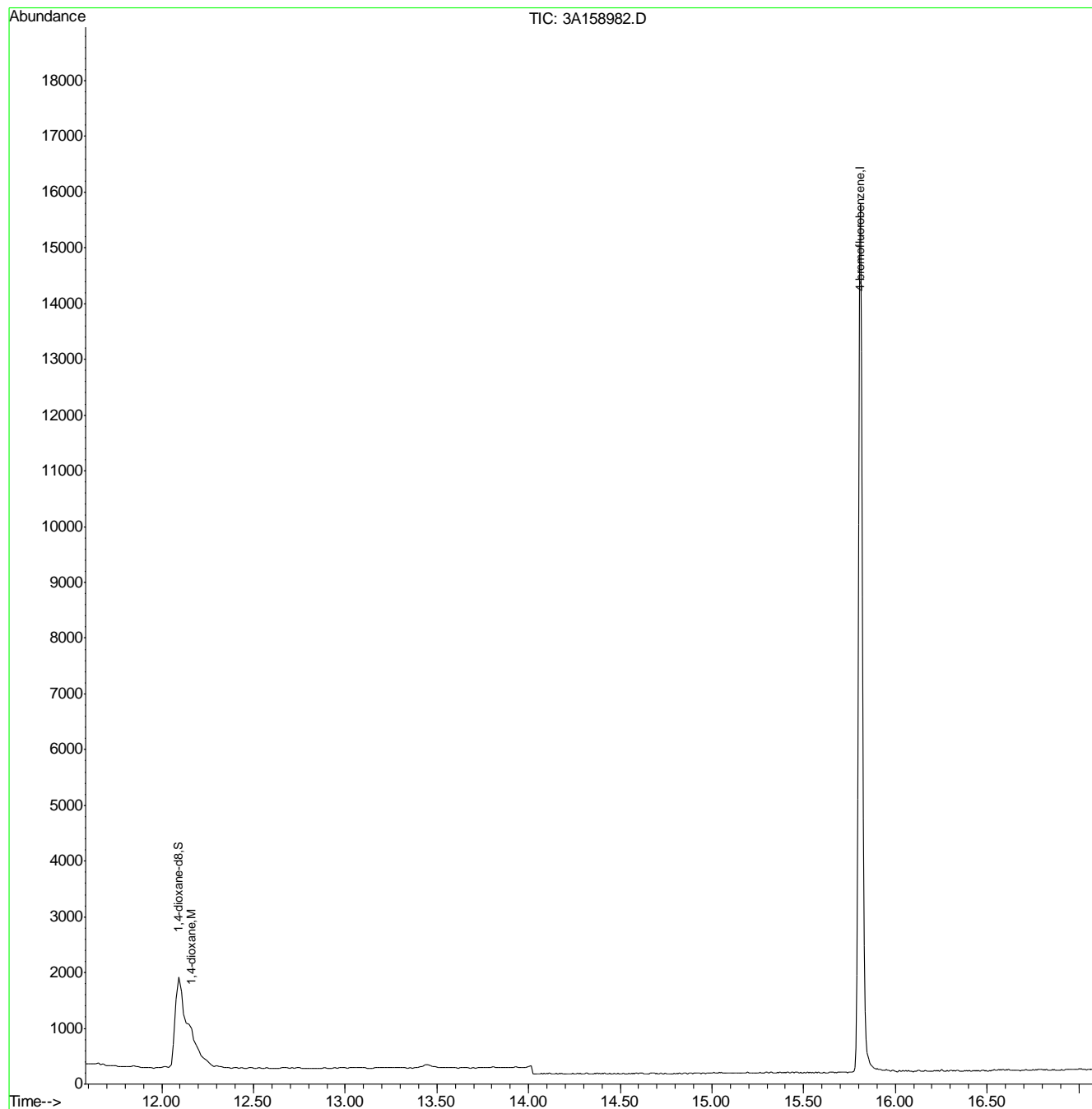
(#) = qualifier out of range (m) = manual integration (+) = signals summed



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158982.D  
Acq On : 26 Feb 2018 12:27 pm  
Operator : RobertS  
Sample : IC6845-2  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 26 13:27:21 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 12:33:12 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158983.D  
 Acq On : 26 Feb 2018 12:53 pm  
 Operator : RobertS  
 Sample : IC6845-5  
 Misc : MS23688,V3A6845,5.0,,,,,1  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 26 13:27:29 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 13:27:26 2018  
 Response via : Initial Calibration

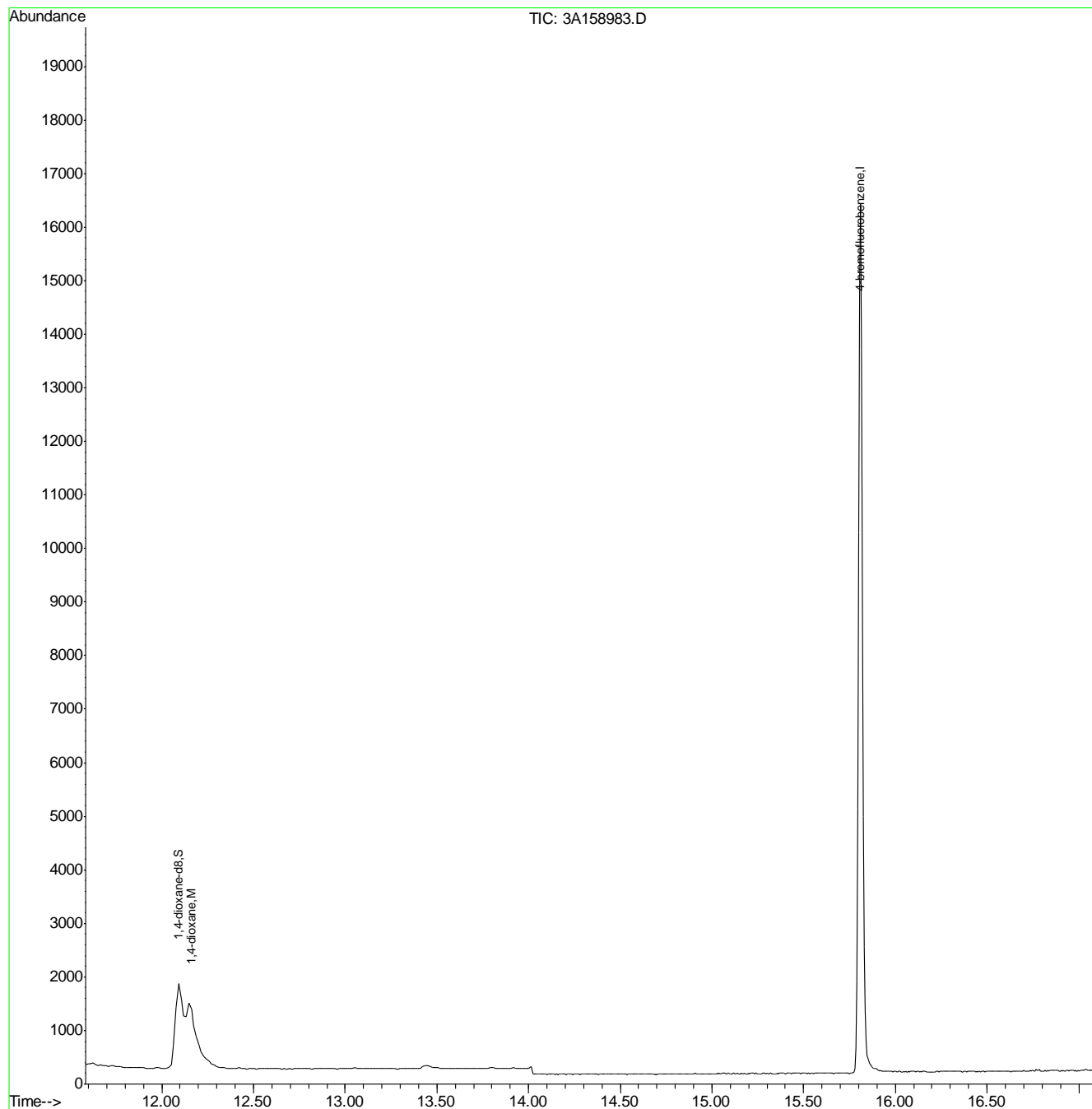
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.81	95	9574	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4036	8.29	ug/L	-0.03
Spiked Amount	10.000	Range	51 - 175	Recovery	=	82.90%
Target Compounds						
3) 1,4-dioxane	12.16	88	1947	3.50	ug/L	Qvalue 94

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158983.D  
Acq On : 26 Feb 2018 12:53 pm  
Operator : RobertS  
Sample : IC6845-5  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 26 13:27:29 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 13:27:26 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158984.D  
 Acq On : 26 Feb 2018 1:19 pm  
 Operator : RobertS  
 Sample : ICC6845-20  
 Misc : MS23688,V3A6845,5.0,,,,,1  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 26 13:44:17 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 13:27:36 2018  
 Response via : Initial Calibration

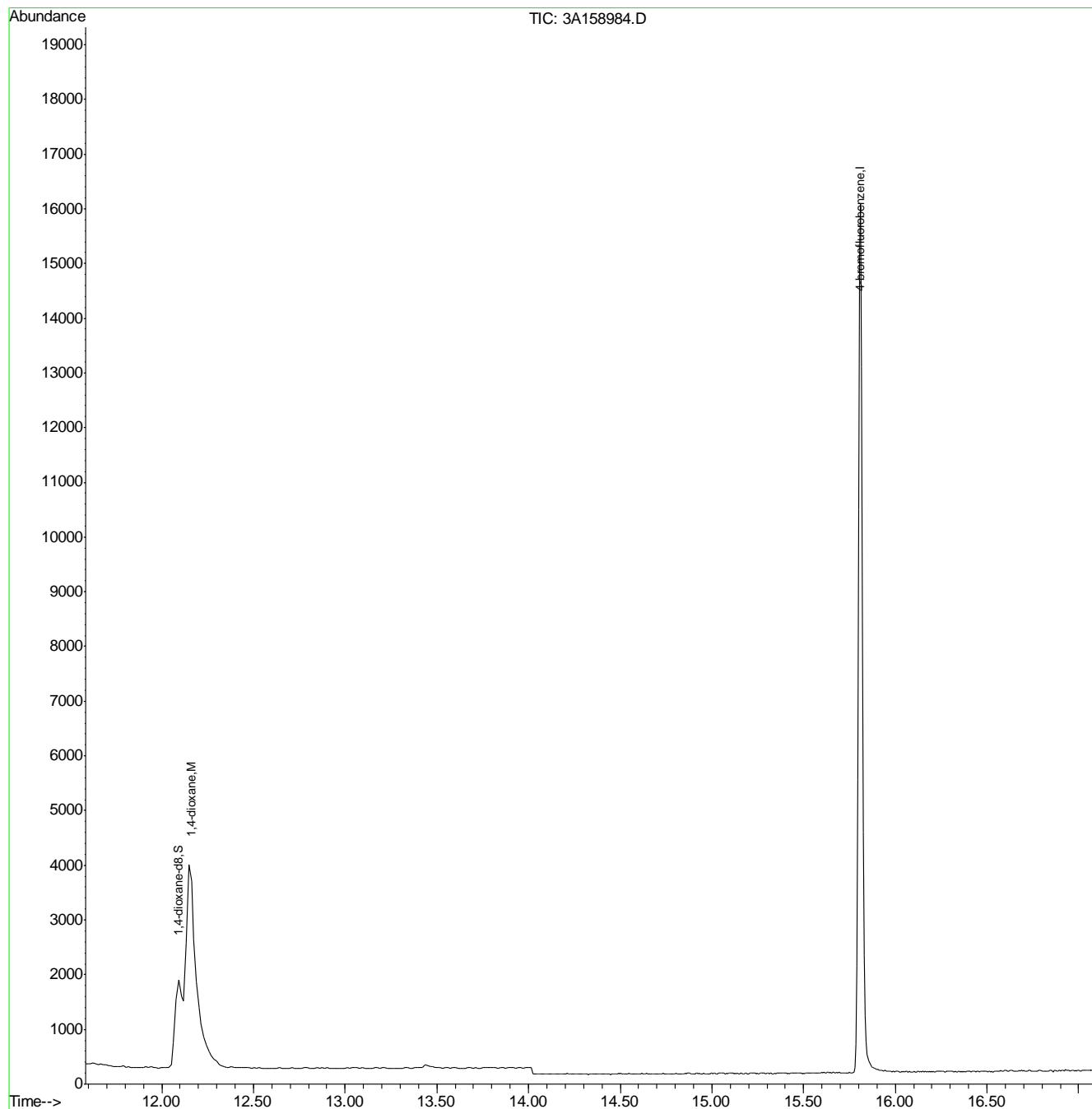
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9502	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4093	8.77	ug/L	-0.03
Spiked Amount	10.000	Range	51 - 175	Recovery	=	87.70%
Target Compounds						
3) 1,4-dioxane	12.16	88	7620	14.68	ug/L	Qvalue 91

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158984.D  
Acq On : 26 Feb 2018 1:19 pm  
Operator : RobertS  
Sample : ICC6845-20  
Misc : MS23688,V3A6845,5.0,,,1  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 26 13:44:17 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 13:27:36 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158985.D  
 Acq On : 26 Feb 2018 1:46 pm  
 Operator : RobertS  
 Sample : IC6845-50  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 26 14:26:31 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 13:44:28 2018  
 Response via : Initial Calibration

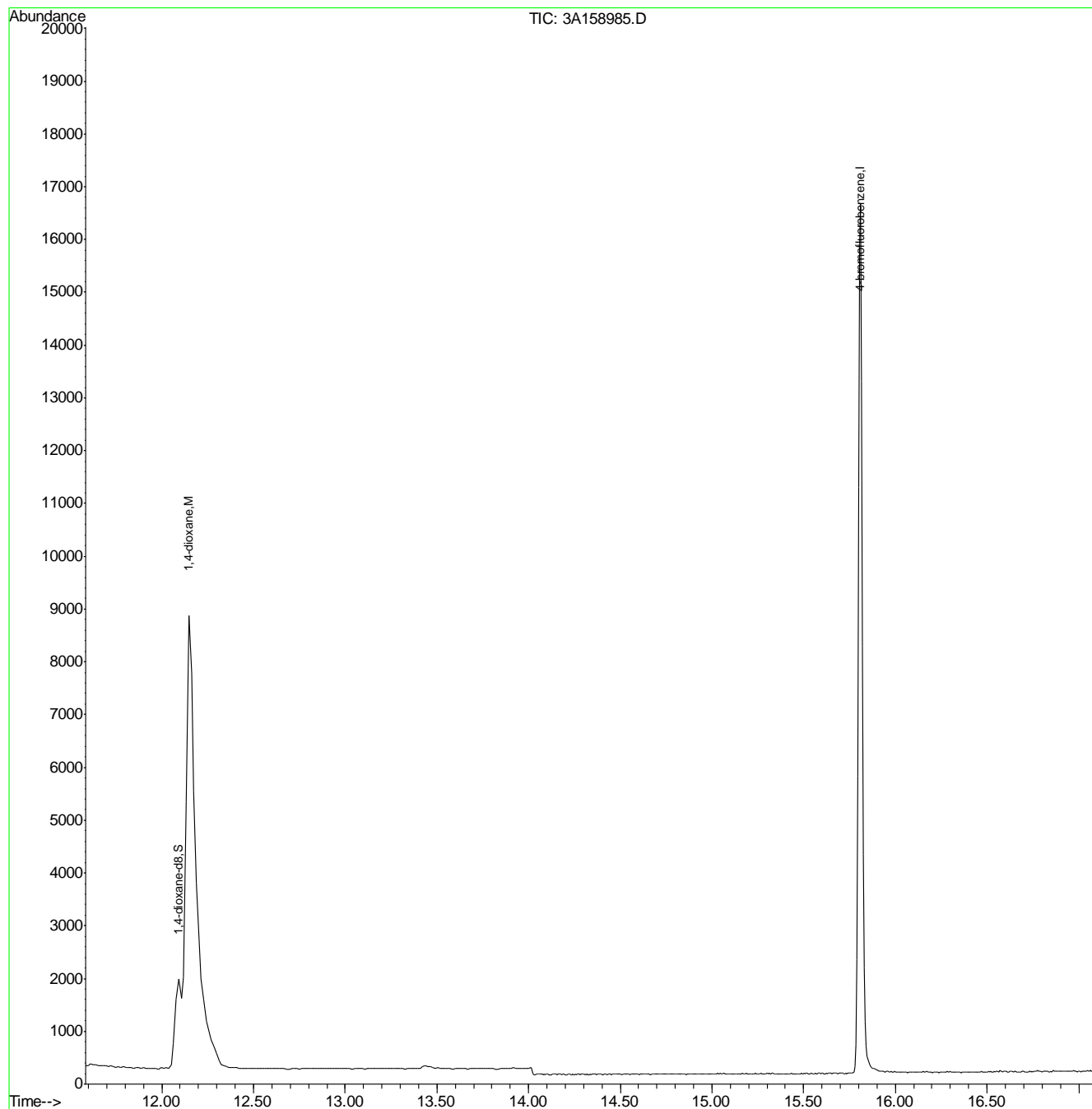
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9774	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4046	8.61	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	86.10%
Target Compounds						Qvalue
3) 1,4-dioxane	12.15	88	18549	36.35	ug/L	85

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158985.D  
Acq On : 26 Feb 2018 1:46 pm  
Operator : RobertS  
Sample : IC6845-50  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 26 14:26:31 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 13:44:28 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158986.D  
 Acq On : 26 Feb 2018 2:13 pm  
 Operator : RobertS  
 Sample : IC6845-100  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 26 20:47:51 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 20:47:41 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9133	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4328	11.10	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	111.00%
Target Compounds						
3) 1,4-dioxane	12.15	88	40230	107.41	ug/L	Qvalue 83

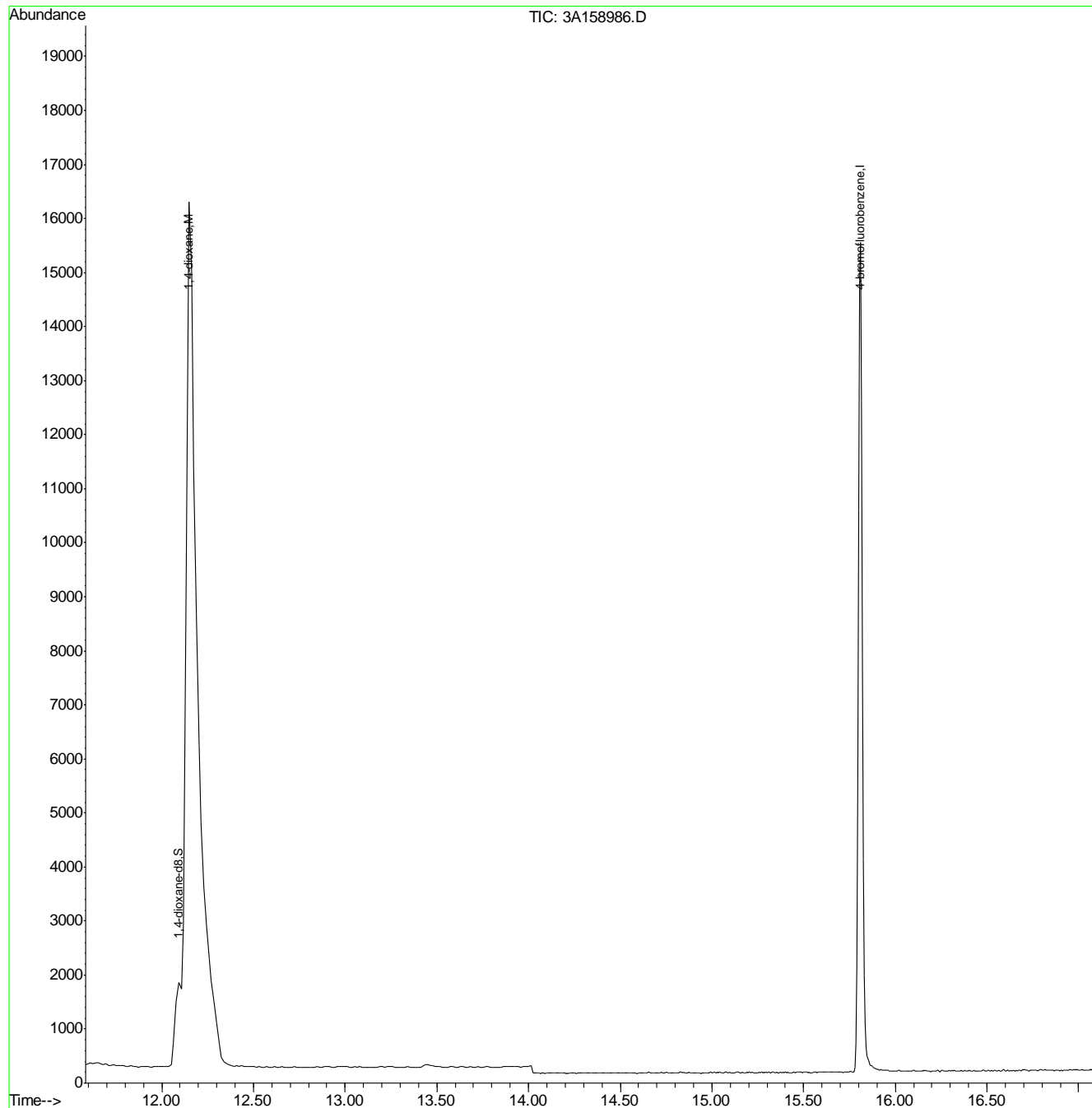
(#) = qualifier out of range (m) = manual integration (+) = signals summed



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158986.D  
Acq On : 26 Feb 2018 2:13 pm  
Operator : RobertS  
Sample : IC6845-100  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 26 20:47:51 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 20:47:41 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158987.D  
 Acq On : 26 Feb 2018 2:39 pm  
 Operator : RobertS  
 Sample : IC6845-200  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 26 20:47:56 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 20:47:41 2018  
 Response via : Initial Calibration

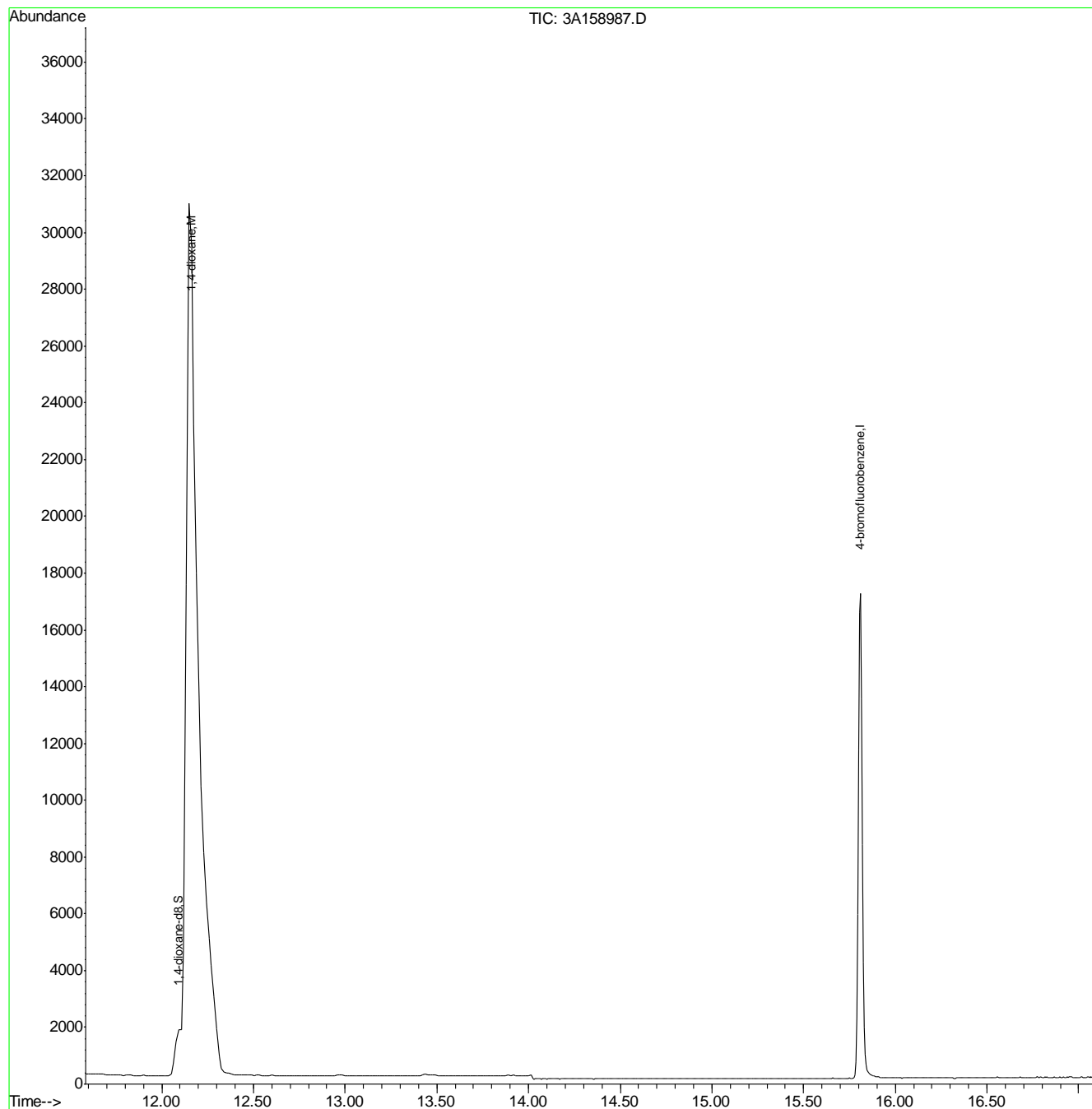
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9918	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4567	10.79	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	107.90%
Target Compounds						
3) 1,4-dioxane	12.16	88	84722	208.29	ug/L	Qvalue 97

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158987.D  
Acq On : 26 Feb 2018 2:39 pm  
Operator : RobertS  
Sample : IC6845-200  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 26 20:47:56 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 20:47:41 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158993.D  
 Acq On : 26 Feb 2018 6:57 pm  
 Operator : RobertS  
 Sample : IC6845-1  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 26 20:48:29 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 20:48:18 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9287	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4293	10.50	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	105.00%
Target Compounds						
3) 1,4-dioxane	12.16	88	393	1.01	ug/L	Qvalue 95

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

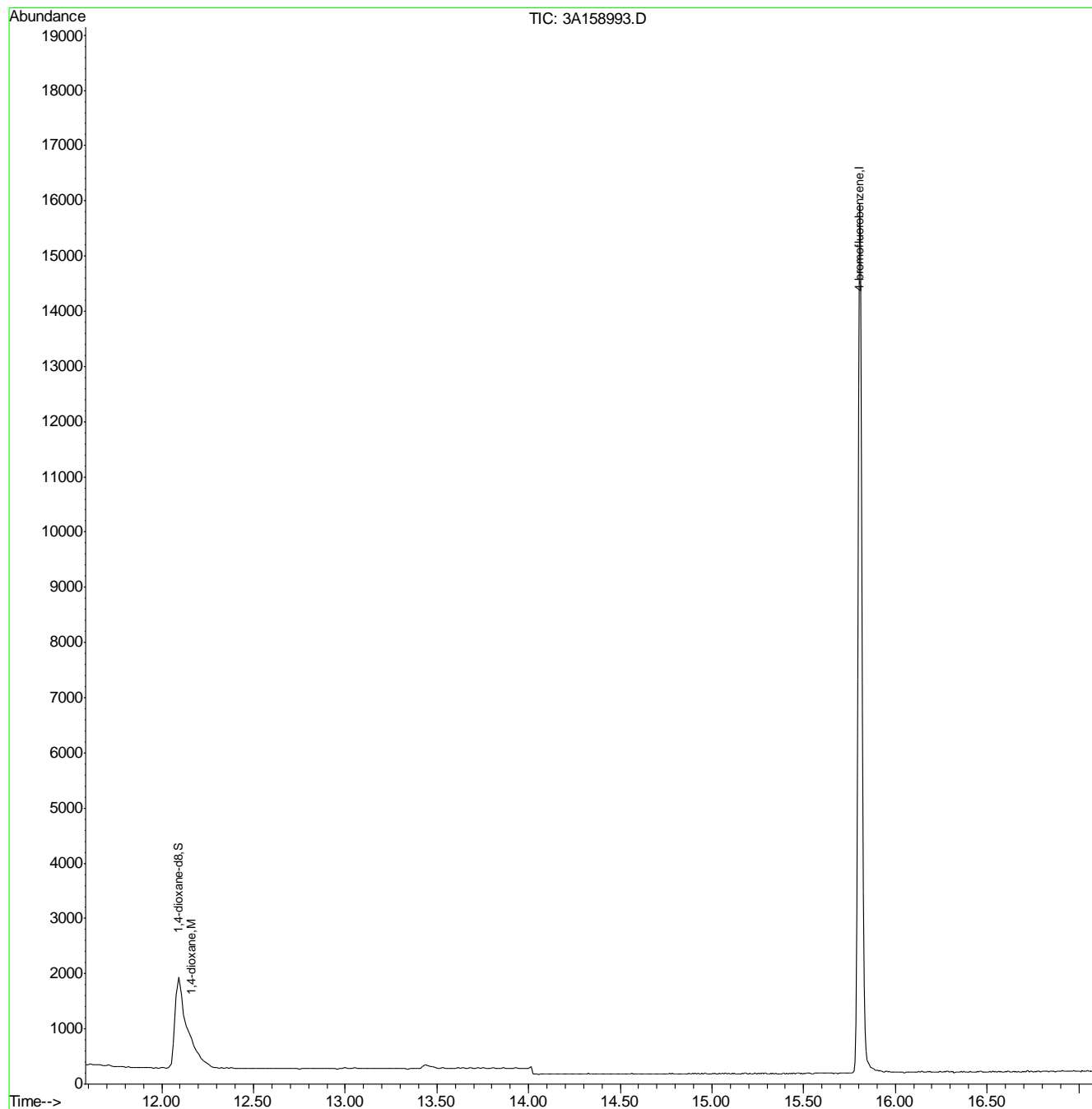
7.6.7

7

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158993.D  
Acq On : 26 Feb 2018 6:57 pm  
Operator : RobertS  
Sample : IC6845-1  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 26 20:48:29 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 20:48:18 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158994.D  
 Acq On : 26 Feb 2018 7:24 pm  
 Operator : RobertS  
 Sample : IC6845-0.4  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 26 20:48:41 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 20:48:34 2018  
 Response via : Initial Calibration

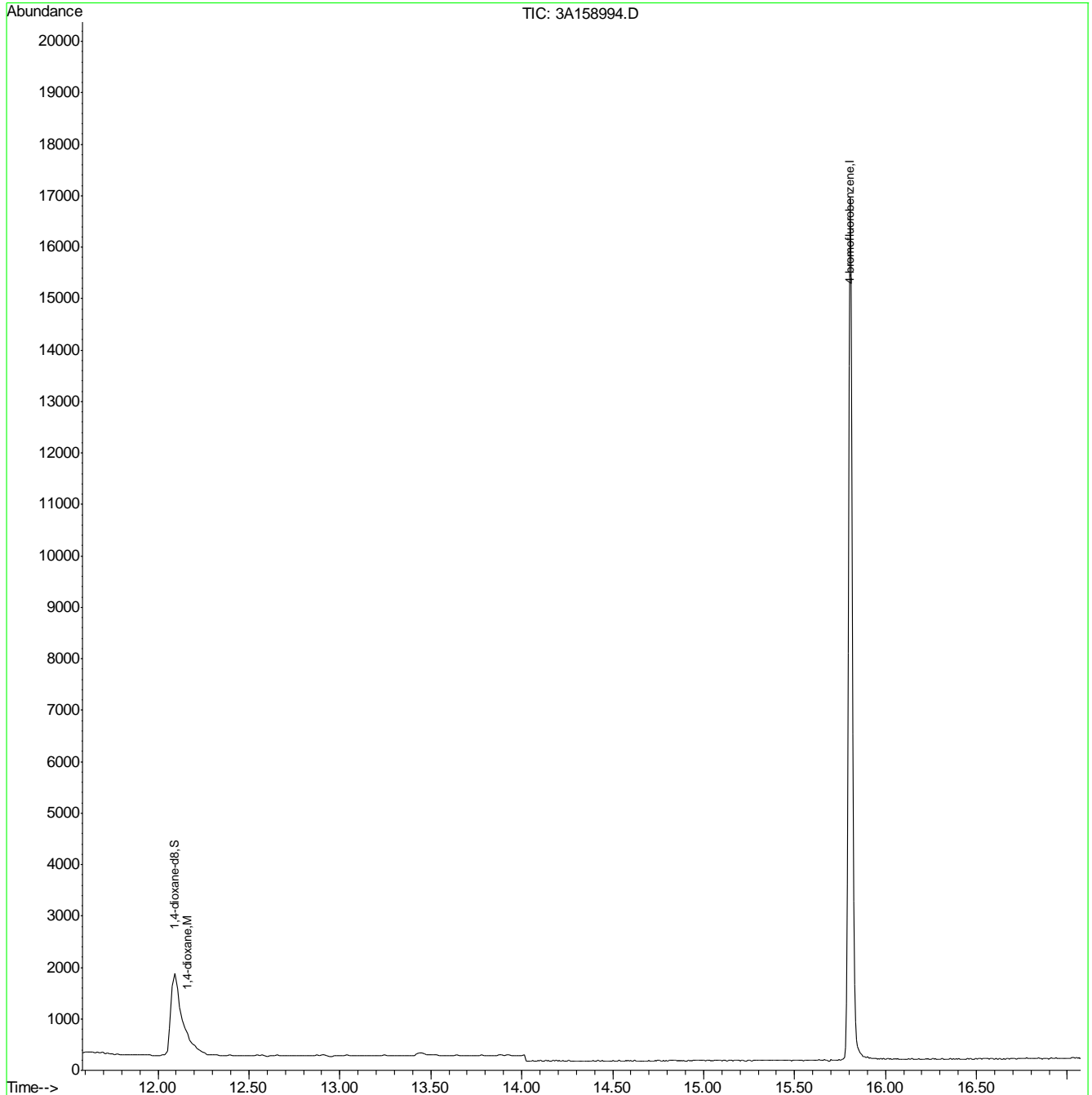
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9772	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4139	9.55	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	95.50%
Target Compounds						
3) 1,4-dioxane	12.16	88	175	0.43	ug/L	Qvalue 81

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158994.D  
Acq On : 26 Feb 2018 7:24 pm  
Operator : RobertS  
Sample : IC6845-0.4  
Misc : MS23688,V3A6845,5.0,,,,,1  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 26 20:48:41 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 20:48:34 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158995.D  
 Acq On : 26 Feb 2018 7:50 pm  
 Operator : RobertS  
 Sample : IC6845-0.25  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 26 20:48:49 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Mon Feb 26 20:48:46 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9148	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4197	10.41	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	104.10%
Target Compounds						
3) 1,4-dioxane	12.16	88	127	0.33	ug/L	Qvalue 87

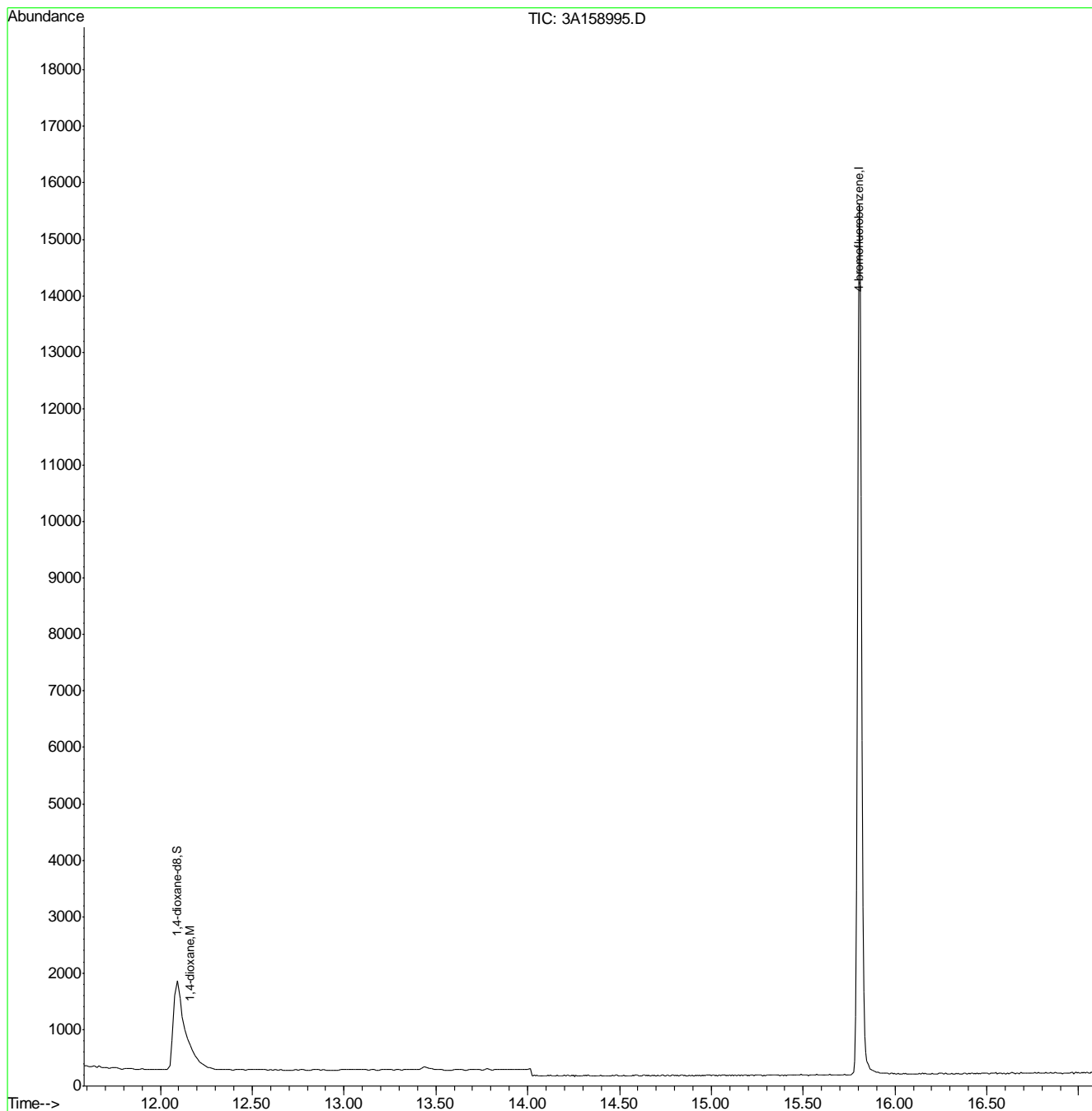
(#) = qualifier out of range (m) = manual integration (+) = signals summed



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158995.D  
Acq On : 26 Feb 2018 7:50 pm  
Operator : RobertS  
Sample : IC6845-0.25  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 26 20:48:49 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Mon Feb 26 20:48:46 2018  
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
 Data File : 3A158996.D  
 Acq On : 26 Feb 2018 8:17 pm  
 Operator : RobertS  
 Sample : ICV6845-20  
 Misc : MS23688,V3A6845,5.0,,,,1  
 ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 27 06:38:10 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	9606	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	3959	9.31	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	93.10%
Target Compounds						Qvalue
3) 1,4-dioxane	12.15	88	7415	17.66	ug/L	80

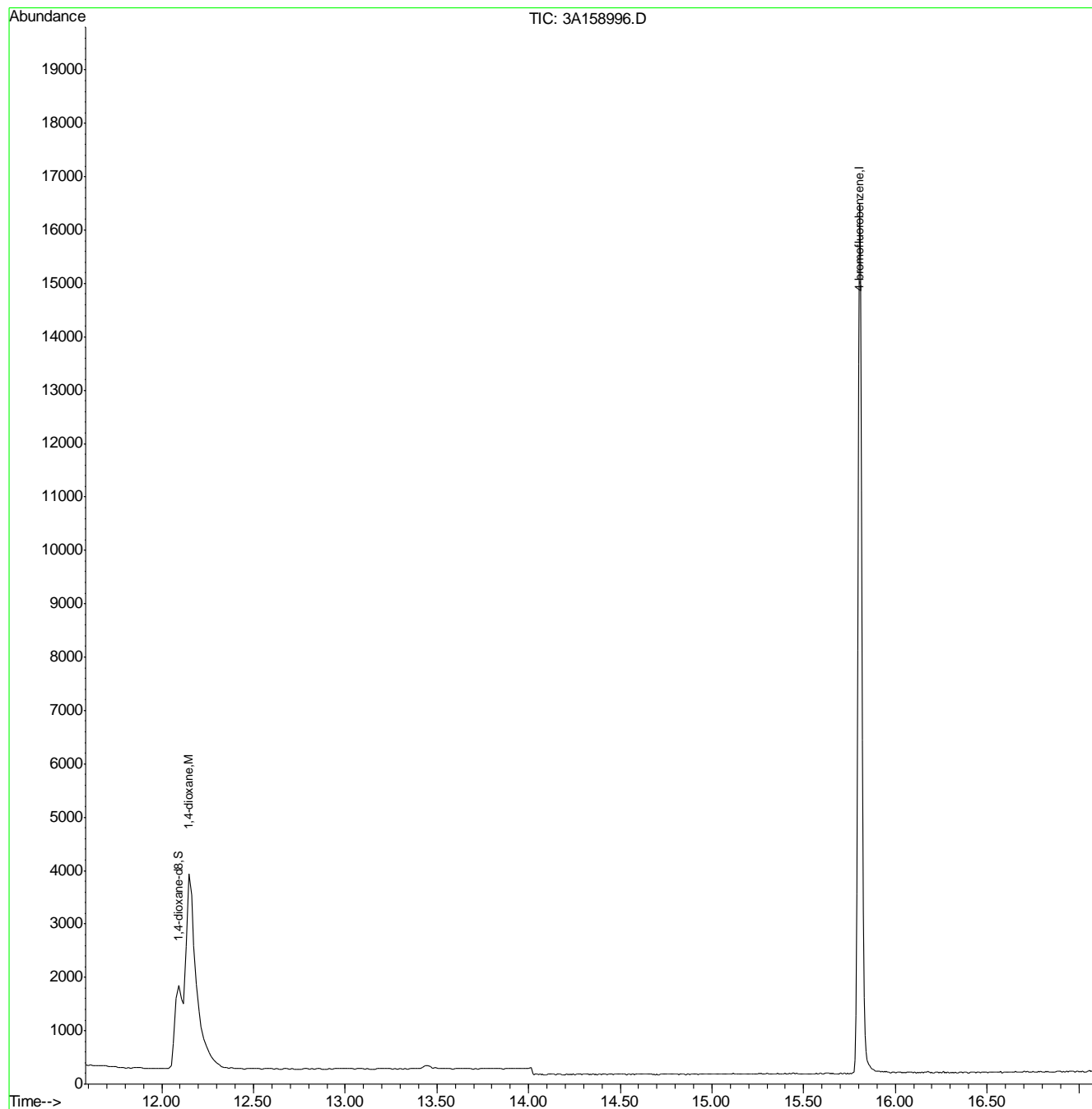
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.6.10  
7

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6845\  
Data File : 3A158996.D  
Acq On : 26 Feb 2018 8:17 pm  
Operator : RobertS  
Sample : ICV6845-20  
Misc : MS23688,V3A6845,5.0,,,,1  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 27 06:38:10 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
 Data File : 3A159514.D  
 Acq On : 24 Apr 2018 11:31 am  
 Operator : HueanhT  
 Sample : cc6845-5  
 Misc : MS25780,V3A6878,5.0,,,,1  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 25 15:00:19 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

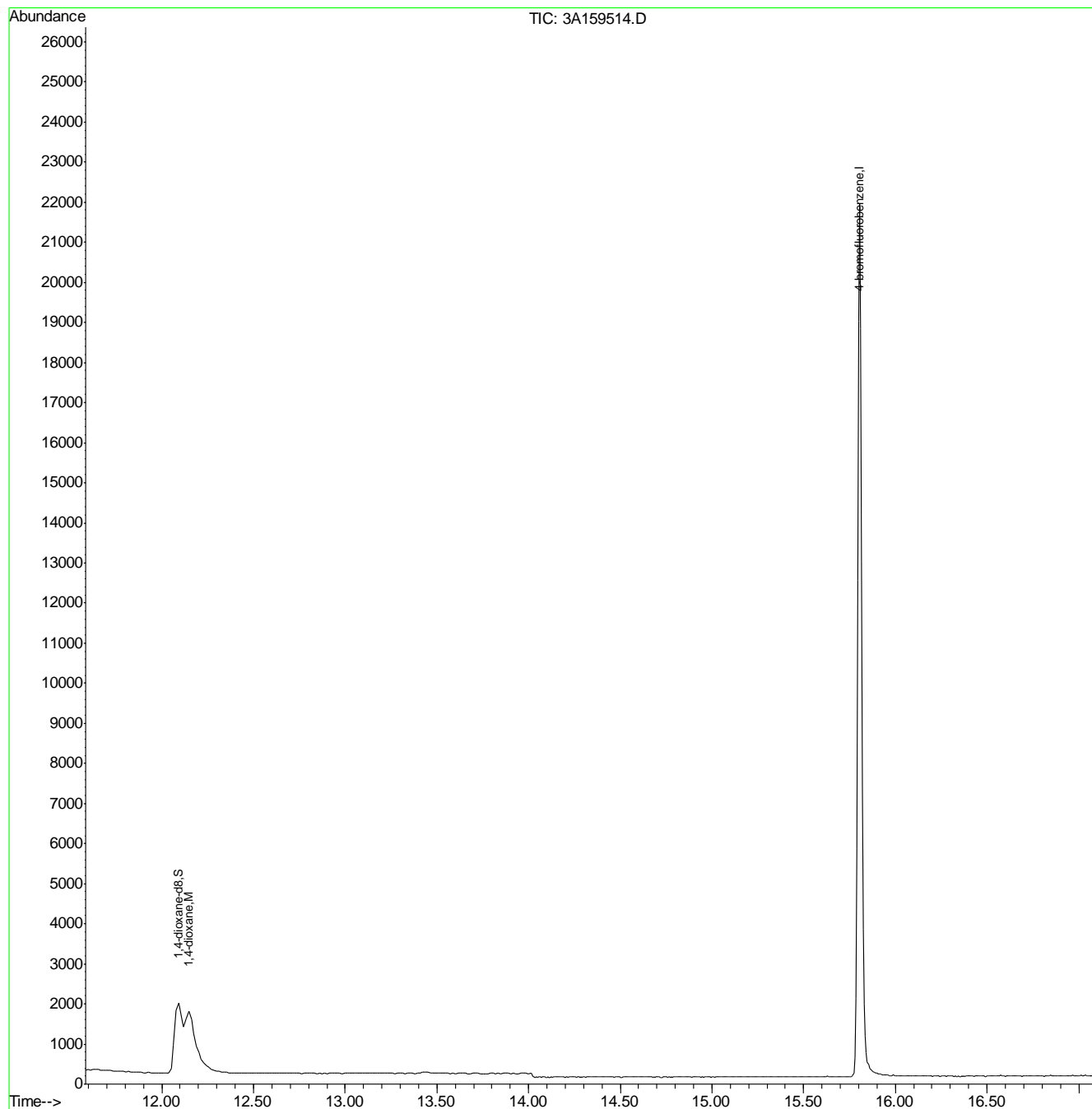
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	12790	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	4686	8.27	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	82.70%
Target Compounds						
3) 1,4-dioxane	12.15	88	2620	4.69	ug/L	Qvalue 89

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6878\  
Data File : 3A159514.D  
Acq On : 24 Apr 2018 11:31 am  
Operator : HueanhT  
Sample : cc6845-5  
Misc : MS25780,V3A6878,5.0,,,1  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 25 15:00:19 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6879\  
 Data File : 3A159540.D  
 Acq On : 25 Apr 2018 10:53 am  
 Operator : HueanhT  
 Sample : cc6845-20  
 Misc : MS25758,V3A6879,5.0,,,,,1  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 25 14:22:16 2018  
 Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
 Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
 QLast Update : Tue Feb 27 06:38:01 2018  
 Response via : Initial Calibration

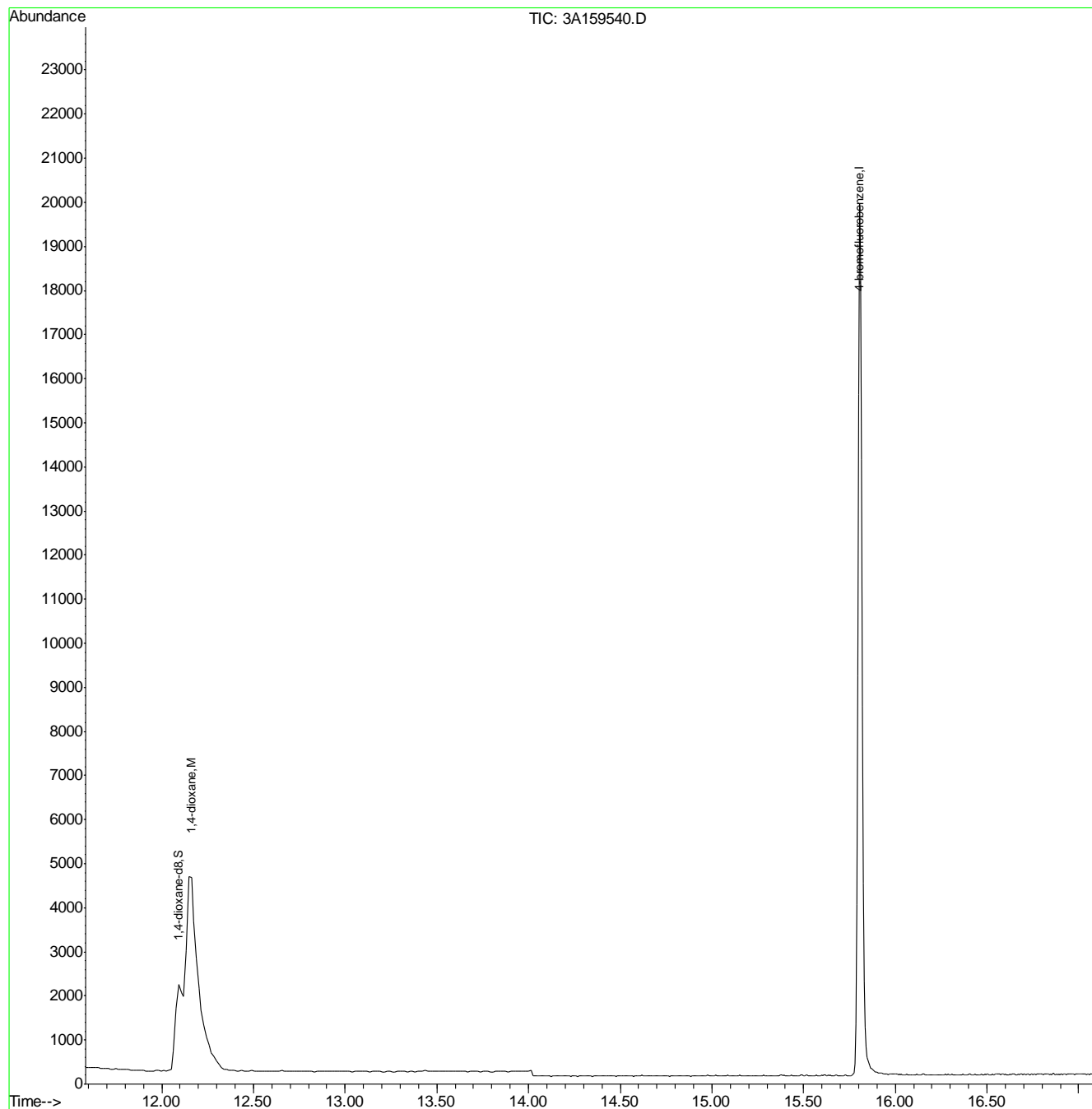
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 4-bromofluorobenzene	15.80	95	11795	1.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-dioxane-d8	12.09	96	5687	10.89	ug/L	0.00
Spiked Amount	10.000	Range	51 - 175	Recovery	=	108.90%
Target Compounds						Qvalue
3) 1,4-dioxane	12.16	88	10412	20.19	ug/L	97

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

## Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\V3A6879\  
Data File : 3A159540.D  
Acq On : 25 Apr 2018 10:53 am  
Operator : HueanhT  
Sample : cc6845-20  
Misc : MS25758,V3A6879,5.0,,,,1  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 25 14:22:16 2018  
Quant Method : C:\MSDCHEM\1\METHODS\M3A6845.M  
Quant Title : Method SW846 8260B, ZB624 60mx0.25mmx1.4um  
QLast Update : Tue Feb 27 06:38:01 2018  
Response via : Initial Calibration



# GCMS Volatile Run Log

Standard / Reagents		Lot #		Column
Standards	1,4-dioxane V018-2615-47. 15.62	Ext 1,4-dioxane V018-26		Rxi-624 (60m x 0.25mm x 1.4um)
Concentration	100 ppm	100 ppm		Method V8260C SIM
				Init Calib Date 2/26/18
Internal Standard/Surrogate	V018-2615-48			
Concentration	5/50 ppm			Analysis Date 2/26/2018
				Sequence loaded by Robert Szot
				Data processed by Robert Szot
				Batch ID V3A6845
				Matrix AQ
				Approved By: JESSICA
				Approved Date: 3/8/2018 5:43:30 PM

Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
3A 158978	BFB		NA			5			1	OK	
3A 158979	IC6845-0.25		NA		8260 IC	5			2	NG	1.25 uL 1,4-dioxane / 500 mL DI H2O
3A 158980	IC6845-0.4		NA		8260 IC	5			3	NG	2 uL 1,4-dioxane / 500 mL DI H2O
3A 158981	IC6845-1		NA		8260 IC	5			4	NG	2 uL 1,4-dioxane / 200 mL DI H2O
3A 158982	IC6845-2		NA		8260 IC	5			5	OK	4 uL 1,4-dioxane / 200 mL DI H2O
3A 158983	IC6845-5		NA		8260 IC	5			6	OK	5 uL 1,4-dioxane / 100 mL DI H2O
3A 158984	ICC6845-20		NA		8260 IC	5			7	OK	10 uL 1,4-dioxane / 50 mL DI H2O
3A 158985	IC6845-50		NA		8260 IC	5			8	OK	25 uL 1,4-dioxane / 50 mL DI H2O
3A 158986	IC6845-100		NA		8260 IC	5			9	OK	50 uL 1,4-dioxane / 50 mL DI H2O
3A 158987	IC6845-200		NA		8260 IC	5			10	OK	100 uL 1,4-dioxane / 50 mL DI H2O
3A 158988	IB		NA			5			11	OK	
3A 158989	IB		NA			5			12	NG	GC problem



Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
3A 158990	IB		NA			5			13	no data	no data collected, GC problem
3A 158991	IB		NA			5			14	OK	
3A 158992	IB		NA			5			14	OK	
3A 158993	IC6845-1		NA		8260 IC	5			16	OK	2 uL 1,4-dioxane / 200 mL DI H2O
3A 158994	IC6845-0.4		NA		8260 IC	5			17	OK	2 uL 1,4-dioxane / 500 mL DI H2O
3A 158995	IC6845-0.25		NA		8260 IC	5			18	OK	1.25 uL 1,4-dioxane / 500 mL DI H2O
3A 158996	ICV6845-20		NA		8260 IC	5			19	OK	10 uL Ext 1,4-dioxane / 50 mL DI H2O

# GCMS Volatile Run Log

Standard / Reagents		Lot #		Column
Standards	14 DIOXANE	V016-2615-144.2		RX1624 (60m x 0.25mm x 1.4um)
Standard Concentration	100PPM			Method V8260C SIM Init Calib Date 03/15/2018
Internal Standard	V018-2615-145			Rough reviewed by Hueanh Tran(4/25/18)
Internal Surrogate Concentration	5/50PPM			Analysis Date 4/24/2018
				Sequence loaded by Hueanh Tran
				Data processed by EddieH/KanyaV
				Batch ID V3A6878
				Matrix AQ
Initial Cal. Method	M3A6845			Approved By: JESSICA
pH Paper Lot#	215316			Approved Date: 5/4/2018 4:46:31 PM

Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
3A 159511	IB		NA			5			1	ok	
3A 159512	BFB		NA			5			2	ok	10:06am, 4/24/18.
3A 159513	CC6845-5		NA			5			3	NG	5ul 1,4 dioxane/100ml
3A 159514	CC6845-5		NA			5			4	ok	20ul 1,4 dioxane/100ml
3A 159515	BS		NA			5			5	ok	
3A 159516	IB		NA			5			6	ok	
3A 159517	MB		NA			5			1	ok	
R 159518	JC64490-5DUP	1	NA	MS25780	V8260SIMDIOX	5		7	2	ok	V3A6877. UNPR
R 159519	JC64489-7	2	NA	MS25728	V8260SIMDIOX	5		6	3	ok	V3A6878. UNPR
3A 159520	JC64541-3	9	NA	MS25758	V8260SIMDIOX	5		1	4	ok	
R 159521	JC64490-1	2	5	MS25780	V8260SIMDIOX	10/50		6	5	ok	head space as CF UNPR. CTRCP



Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
R 159522	JC64487-1	7	200	MS25773	V8260SIMDIOX	0.25/50		6	6	RR	I/S & SUR OUT. FOAMING. UNPR. CTRCP. Tried 100x
3A 159523	IB	12	NA	MS25758	V8260SIMDIOX	5			7	ok	
3A 159524	JC64541-3MS	11	NA	MS25758	V8260SIMDIOX	5		1	8	ok	8ul 1,4 dioxane/40ml sample
3A 159525	JC64541-3MSD	12	NA	MS25758	V8260SIMDIOX	5		1	9	ok	8ul 1,4 dioxane/40ml sample
3A 159526	IB		NA			5			1	ok	
R 159527	JC64490-10	2	NA	MS25780	V8260SIMDIOX	5		5	2	ok	
R 159528	JC64490-8	2	NA	MS25780	V8260SIMDIOX	5		5	3	ok	
R 159529	JC64487-1	7	500	MS25773	V8260SIMDIOX	0.1/50		6	4	rr	I/S HIGH
R 159530	JC64487-1	7	1000	MS25773	V8260SIMDIOX	0.05/50		6	5	ok	
3A 159531	JC64541-1	3	NA	MS25758	V8260SIMDIOX	5		1	6	ok	
3A 159532	JC64541-2	3	NA	MS25758	V8260SIMDIOX	5		1	7	RR	RR- SUR HIGH
3A 159533	JC64541-4	3	NA	MS25758	V8260SIMDIOX	5		1	8	ok	
3A 159534	JC64541-6	4	NA	MS25758	V8260SIMDIOX	5		1	9	ok	
3A 159535	JC64541-7	4	NA	MS25758	V8260SIMDIOX	5		1	10	ok	
3A 159536	JC64559-1	5	NA	MS25758	V8260SIMDIOX	5		1	11	ok	9:27PM, 4/24/18.

# GCMS Volatile Run Log

Standard / Reagents		Lot #		Column
Standards	ABK V018-2615-120.9	C V018-2615-135.1	E V018-2615-121.8	RX1624(60mx0.25mmx1.4um)
Standard Concentration	100-10,000ppm	100ppm	100ppm	Method V8260C SIM Init Calib Date 04/16/2018
Internal Standard/Surrogate	V018-2615-113			Rough reviewed by Hueanh Tran(4/26/18)
Internal Surrogate Concentration	250/2500ppm			Analysis Date 4/25/2018
				Sequence loaded by Hueanh Tran
				Data processed by Eddie Huang
				Batch ID V3A6879
				Matrix AQ
Initial Cal. Method	M3A6845			Approved By: JESSICA
pH Paper Lot#	215316			Approved Date: 5/4/2018 4:47:38 PM

Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
3A 159537	IB		NA			5			1	ok	
3A 159538	BFB		NA			5			2	ok	9:31AM, 4/25/18.
3A 159539	CC6845-20		NA			5			3	NG	
3A 159540	CC6845-20		NA			5			4	ok	10 ul 1,4 dioxane/50ml.
3A 159541	BS		NA			5			5	ok	10ul 1,4 dioxane/50ml.
3A 159542	IB		NA			5			6	ok	
3A 159543	MB		NA			5			7	ok	
R 159544	JC64033-15	8	NA	MS25550	V8260SIMDIOX	5		1	8	ok	V3A6872.
R 159545	JC64033-15MSD	7	NA	MS25550	V8260SIMDIOX	5		1	9	ok	8 ul 1,4 dioxane/40ml sample. V3A6872.
3A 159546	IB		NA			5			10	ok	
R 159547	JC64541-2	4	NA	MS25758	V8260SIMDIOX	5		1	1	RR	SUR HIGH.

OR048-01  
Rev Date: 12/18/2017

Page 1 of 2

Data File	Sample ID	Bot #	Dil	Workgroup #	Test	Purge Vol (ml)	CL	pH	ALS #	Status	Comments
3A 159548	JC64538-1	16	NA	MS25761	V8260SIMDIOX	5		1	2	RR	SUR HIGH.
3A 159549	JC64538-3	5	NA	MS25761	V8260SIMDIOX	5		1	3	RR	SUR HIGH.
3A 159550	JC64538-6	3	NA	MS25761	V8260SIMDIOX	5		1	4	RR	SUR HIGH.
3A 159551	JC64538-11	4	NA	MS25761	V8260SIMDIOX	5			5	NR	
3A 159552	IB		NA			5			6	ok	I/S DROP. TRAP WAS CHANGED
3A 159553	IB		NA			5			7	ok	
3A 159554	IB		NA			5			8	ok	
3A 159555	IB		NA			5			1	ok	
3A 159556	IB		NA			5			2	ok	
3A 159557	IB		NA			5			3	ok	
R 159558	JC64541-2	4	NA	MS25758	V8260SIMDIOX	5		1	4	RR	head space, approved by Jessica. SUR HIGH,I/S LOW
3A 159559	JC64538-11	4	NA	MS25761	V8260SIMDIOX	5		1	5	ok	
3A 159560	JC64538-12	3	NA	MS25761	V8260SIMDIOX	5		1	6	ok	
3A 159561	JC64538-11DUP	5	NA	MS25761	V8260SIMDIOX	5		1	7	ok	
3A 159562	JC64538-12MS	4	NA	MS25761	V8260SIMDIOX	5		1	1	ok	8ul 1,4 dioxane/40ml sample. 9:04pm, 4/25/18.
3A 159563	IB		NA			5			2	ok	

Misc. Forms

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Custody Documents and Other Forms

(SGS Orlando, FL)

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Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle



CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810  
TEL: 732-329-0200 FAX: 732-329-3499/3480

FED-EX Tracking #  
Bottle Order Control #  
SGS Quote #  
SGS Job # **JC64541**

<b>Client / Reporting Information</b>		<b>Project Information</b>				<b>Requested Analysis (see TEST CODE sheet)</b>										<b>Matrix Codes</b>	
Company Name: <b>SGS North America Inc.</b>		Project Name: <b>AGFA Peerless Photo Products Shoreham, NY</b>														DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Tap Blank	
Street Address <b>2235 Route 130</b>		Street <b>Dayton NJ 08810</b>															
City State Zip <b>Dayton NJ 08810</b>		Billing Information (if different from Report to) City State Company Name															
Project Contact E-mail <b>michelle.jenkins@sgs.com</b>		Project # Street Address															
Phone # <b>732-329-0200</b>		Fax # Client Purchase Order # City State Zip															
Sampler(s) Name(s) <b>EC</b>		Project Manager Attention:															

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection		Sampled by	Matrix	# of bottles	Number of preserved Bottles										LAB USE ONLY						
			Date	Time				HCl	NH4Cl	HNO3	H2SO4	NOAc	D1 Water	MEDH	EN-COPE									
1	MW-5		4/17/18	10:30:00 AM	EC	AQ																X		
2	MW-6R		4/17/18	11:40:00 AM	EC	AQ																	X	
3	MW-10		4/17/18	12:40:00 PM	EC	AQ																	X	
3D	MW-10		4/17/18	12:40:00 PM	EC	AQ																	X	
3S	MW-10		4/17/18	12:40:00 PM	EC	AQ																	X	
4	MW-2		4/17/18	1:20:00 PM	EC	AQ																	X	
5	FB-01		4/17/18	2:20:00 PM	EC	AQ																	X	
6	RB-01		4/17/18	2:10:00 PM	EC	AQ																	X	
7	FD-01		4/17/18	12:00:00 AM	EC	AQ																	X	

Turnaround Time ( Business days)		Data Deliverable Information				Comments / Special Instructions	
<input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input checked="" type="checkbox"/> other 14 <small>Emergency &amp; Rush TIA data available VIA Lablink</small>		Approved By (SGS PM) / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input type="checkbox"/> EDD Format <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other NYASPB <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>		MS/MSD added to -3	

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

Relinquished by Sampler: <i>[Signature]</i>	Date/Time: 4/20/18 17:00	Received By: <i>FX</i>	Relinquished By: <i>FX</i>	Date/Time: 04-21-18	Received By: <i>[Signature]</i> 10:45		
Relinquished by Sampler:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:		
Relinquished by:	Date/Time:	Received By:	Custody Seal #	<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Preserved where applicable <input type="checkbox"/>	On Ice <input checked="" type="checkbox"/>	Cooler Temp. 3.8

JC64541: Chain of Custody  
Page 1 of 2  
SGS Orlando, FL



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## SGS Sample Receipt Summary

Job Number: JC64541

Client: SGSNJ

Project: AGFA

Date / Time Received: 4/21/2018 10:45:00 AM

Delivery Method: FX

Airbill #s: 1001893373010003281100563393515960

Therm ID: IR 1;

Therm CF: 0.4;

# of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

**Cooler Information**

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

**Trip Blank Information**

Y or N N/A

- 1. Trip Blank present / cooler
  - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

**Sample Information**

Y or N N/A

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

**Misc. Information**

Number of Encores: 25-Gram \_\_\_\_\_ 5-Gram \_\_\_\_\_ Number of 5035 Field Kits: \_\_\_\_\_ Number of Lab Filtered Metals: \_\_\_\_\_  
 Test Strip Lot #: pH 0-3 230315 pH 10-12 219813A Other: (Specify) \_\_\_\_\_  
 Residual Chlorine Test Strip Lot #: \_\_\_\_\_

Comments

SM001  
Rev. Date 05/24/17

Technician: JORGE C

Date: 4/21/2018 10:45:00 A

Reviewer: TL

Date: 4/23/2018

**JC64541: Chain of Custody**

**Page 2 of 2**



### Internal Sample Tracking Chronicle

SGS Dayton, NJ

Job No: JC64541

EAENYS: AGFA Peerless Photo Products Shoreham, NY  
 Project No: 1371257

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC64541-1 MW-5	Collected: 17-APR-18 10:30	By: EC	Received: 19-APR-18	By: JC		
JC64541-1	EPA 537 MOD	30-APR-18 13:45	NAF	27-APR-18	MB	LC537SL
JC64541-2 MW-6R	Collected: 17-APR-18 11:40	By: EC	Received: 19-APR-18	By: JC		
JC64541-2	EPA 537 MOD	25-APR-18 19:22	NG	24-APR-18	MB	LC537SL
JC64541-2	EPA 537 MOD	26-APR-18 15:39	NG	24-APR-18	MB	LC537SL
JC64541-3 MW-10	Collected: 17-APR-18 12:40	By: EC	Received: 19-APR-18	By: JC		
JC64541-3	EPA 537 MOD	25-APR-18 19:41	NG	24-APR-18	MB	LC537SL
JC64541-4 MW-2	Collected: 17-APR-18 13:20	By: EC	Received: 19-APR-18	By: JC		
JC64541-4	EPA 537 MOD	25-APR-18 21:15	NG	24-APR-18	MB	LC537SL
JC64541-4	EPA 537 MOD	27-APR-18 10:57	NAF	24-APR-18	MB	LC537SL
JC64541-5 FB-01	Collected: 17-APR-18 14:20	By: EC	Received: 19-APR-18	By: JC		
JC64541-5	EPA 537 MOD	25-APR-18 21:34	NG	24-APR-18	MB	LC537SL
JC64541-6 RB-01	Collected: 17-APR-18 14:10	By: EC	Received: 19-APR-18	By: JC		
JC64541-6	EPA 537 MOD	25-APR-18 21:53	NG	24-APR-18	MB	LC537SL
JC64541-7 FD-01	Collected: 17-APR-18 00:00	By: EC	Received: 19-APR-18	By: JC		
JC64541-7	EPA 537 MOD	25-APR-18 22:12	NG	24-APR-18	MB	LC537SL
JC64541-7	EPA 537 MOD	30-APR-18 14:05	NAF	27-APR-18	MB	LC537SL

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## MS Semi-volatiles

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### QC Data Summaries

(SGS Orlando, FL)

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

**Method Blank Summary****Job Number:** JC64541**Account:** ALNJ SGS Dayton, NJ**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP69752-MB	2Q13580.D	1	04/25/18	NG	04/24/18	OP69752	S2Q251

**The QC reported here applies to the following samples:****Method:** EPA 537 MOD

JC64541-2, JC64541-3, JC64541-4, JC64541-5, JC64541-6, JC64541-7

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

CAS No.	Surrogate Recoveries	Limits	
	13C2-PFHxA	84%	61-134%
	13C2-PFDA	82%	62-128%
	d5-EtFOSAA	80%	57-135%

**Method Blank Summary****Job Number:** JC64541**Account:** ALNJ SGS Dayton, NJ**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP69812-MB	Q45661.D	1	04/30/18	NAF	04/27/18	OP69812	SQ1123

**The QC reported here applies to the following samples:****Method:** EPA 537 MOD

JC64541-1, JC64541-7

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

CAS No.	Surrogate Recoveries	Limits	
	13C2-PFHxA	93%	61-134%
	13C2-PFDA	88%	62-128%
	d5-EtFOSAA	74%	57-135%

**Blank Spike Summary****Job Number:** JC64541**Account:** ALNJ SGS Dayton, NJ**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP69752-BS	2Q13579.D	1	04/25/18	NG	04/24/18	OP69752	S2Q251

**The QC reported here applies to the following samples:****Method:** EPA 537 MOD

JC64541-2, JC64541-3, JC64541-4, JC64541-5, JC64541-6, JC64541-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0836	105	20-120
2706-90-3	Perfluoropentanoic acid	0.08	0.0932	117	40-131
307-24-4	Perfluorohexanoic acid	0.08	0.0798	100	63-146
375-85-9	Perfluoroheptanoic acid	0.08	0.0933	117	71-138
335-67-1	Perfluorooctanoic acid	0.08	0.0934	117	74-137
375-95-1	Perfluorononanoic acid	0.08	0.0830	104	76-140
335-76-2	Perfluorodecanoic acid	0.08	0.0815	102	65-148
2058-94-8	Perfluoroundecanoic acid	0.08	0.0877	110	57-138
307-55-1	Perfluorododecanoic acid	0.08	0.0851	106	58-118
72629-94-8	Perfluorotridecanoic acid	0.08	0.0852	107	52-120
376-06-7	Perfluorotetradecanoic acid	0.08	0.0723	90	49-122
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0774	97	73-148
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0795	99	74-142
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0880	110	74-123
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0894	112	70-134
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0748	94	56-127
754-91-6	PFOSA	0.08	0.0946	118	40-142
2355-31-9	MeFOSAA	0.08	0.0856	107	57-128
2991-50-6	EtFOSAA	0.08	0.0810	101	55-135
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0881	110	70-153
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0808	101	61-154

CAS No.	Surrogate Recoveries	BSP	Limits
	13C2-PFHxA	82%	61-134%
	13C2-PFDA	82%	62-128%
	d5-EtFOSAA	75%	57-135%

\* = Outside of Control Limits.

**Blank Spike Summary****Job Number:** JC64541**Account:** ALNJ SGS Dayton, NJ**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP69812-BS <sup>a</sup>	Q45660.D	1	04/30/18	NAF	04/27/18	OP69812	SQ1123

**The QC reported here applies to the following samples:****Method:** EPA 537 MOD

JC64541-1, JC64541-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0937	117	20-120
2706-90-3	Perfluoropentanoic acid	0.08	0.0877	110	40-131
307-24-4	Perfluorohexanoic acid	0.08	0.0826	103	63-146
375-85-9	Perfluoroheptanoic acid	0.08	0.0873	109	71-138
335-67-1	Perfluorooctanoic acid	0.08	0.0871	109	74-137
375-95-1	Perfluorononanoic acid	0.08	0.0873	109	76-140
335-76-2	Perfluorodecanoic acid	0.08	0.0937	117	65-148
2058-94-8	Perfluoroundecanoic acid	0.08	0.0776	97	57-138
307-55-1	Perfluorododecanoic acid	0.08	0.0740	93	58-118
72629-94-8	Perfluorotridecanoic acid	0.08	0.0726	91	52-120
376-06-7	Perfluorotetradecanoic acid	0.08	0.0667	83	49-122
375-73-5	Perfluorobutanesulfonic acid	0.0708	0.0804	114	73-148
355-46-4	Perfluorohexanesulfonic acid	0.0728	0.0765	105	74-142
375-92-8	Perfluoroheptanesulfonic acid	0.076	0.0834	110	74-123
1763-23-1	Perfluorooctanesulfonic acid	0.074	0.0864	117	70-134
335-77-3	Perfluorodecanesulfonic acid	0.0772	0.0620	80	56-127
754-91-6	PFOSA	0.08	0.0523	65	40-142
2355-31-9	MeFOSAA	0.08	0.0790	99	57-128
2991-50-6	EtFOSAA	0.08	0.0778	97	55-135
27619-97-2	6:2 Fluorotelomer sulfonate	0.076	0.0893	118	70-153
39108-34-4	8:2 Fluorotelomer sulfonate	0.0768	0.0960	125	61-154

CAS No.	Surrogate Recoveries	BSP	Limits
	13C2-PFHxA	94%	61-134%
	13C2-PFDA	93%	62-128%
	d5-EtFOSAA	81%	57-135%

(a) Insufficient sample for MS/MSD.

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP69752-MS	2Q13584.D	1	04/25/18	NG	04/24/18	OP69752	S2Q251
OP69752-MSD	2Q13585.D	1	04/25/18	NG	04/24/18	OP69752	S2Q251
JC64541-3	2Q13583.D	1	04/25/18	NG	04/24/18	OP69752	S2Q251

The QC reported here applies to the following samples:

Method: EPA 537 MOD

JC64541-2, JC64541-3, JC64541-4, JC64541-5, JC64541-6, JC64541-7

CAS No.	Compound	JC64541-3 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND	0.087	0.0762	88	0.1	0.0883	88	15	20-120/30
2706-90-3	Perfluoropentanoic acid	0.00658 J	0.087	0.0981	105	0.1	0.113	106	14	40-131/30
307-24-4	Perfluorohexanoic acid	0.00800 J	0.087	0.0795	82	0.1	0.0910	83	13	63-146/30
375-85-9	Perfluoroheptanoic acid	0.00521 J	0.087	0.0917	99	0.1	0.101	96	10	71-138/30
335-67-1	Perfluorooctanoic acid	0.103	0.087	0.212	125	0.1	0.193	90	9	74-137/30
375-95-1	Perfluorononanoic acid	ND	0.087	0.0930	107	0.1	0.102	102	9	76-140/30
335-76-2	Perfluorodecanoic acid	ND	0.087	0.115	132	0.1	0.125	125	8	65-148/30
2058-94-8	Perfluoroundecanoic acid	ND	0.087	0.114	131	0.1	0.145	145*	24	57-138/30
307-55-1	Perfluorododecanoic acid	ND	0.087	0.0744	86	0.1	0.0915	92	21	58-118/30
72629-94-8	Perfluorotridecanoic acid	ND	0.087	0.0690	79	0.1	0.0848	85	21	52-120/30
376-06-7	Perfluorotetradecanoic acid	ND	0.087	0.0627	72	0.1	0.0736	74	16	49-122/30
375-73-5	Perfluorobutanesulfonic acid	0.00491 J	0.087	0.0742	80	0.1	0.0880	83	17	73-148/30
355-46-4	Perfluorohexanesulfonic acid	ND	0.087	0.0751	86	0.1	0.0877	88	15	74-142/30
375-92-8	Perfluoroheptanesulfonic acid	ND	0.087	0.0793	91	0.1	0.0917	92	15	74-123/30
1763-23-1	Perfluorooctanesulfonic acid	ND	0.087	0.0817	94	0.1	0.0966	97	17	70-134/30
335-77-3	Perfluorodecanesulfonic acid	ND	0.087	0.0728	84	0.1	0.0987	99	30	56-127/30
754-91-6	PFOSA	ND	0.087	0.0428	49	0.1	0.0613	61	36*	40-142/30
2355-31-9	MeFOSAA	ND	0.087	0.0757	87	0.1	0.0932	93	21	57-128/30
2991-50-6	EtFOSAA	ND	0.087	0.0876	101	0.1	0.108	108	21	55-135/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.087	0.0893	103	0.1	0.103	103	14	70-153/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.087	0.219	252*	0.1	0.236	236*	7	61-154/30

CAS No.	Surrogate Recoveries	MS	MSD	JC64541-3	Limits
	13C2-PFHxA	68%	65%	69%	61-134%
	13C2-PFDA	104%	92%	102%	62-128%
	d5-EtFOSAA	75%	76%	83%	57-135%

\* = Outside of Control Limits.

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> S2Q251-CC249	<b>Injection Date:</b> 04/25/18
<b>Lab File ID:</b> 2Q13577.D	<b>Injection Time:</b> 17:48
<b>Instrument ID:</b> GCMS2Q	<b>Method:</b> EPA 537 MOD

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal <sup>a</sup>	41093	4.66	49562	6.99	33089	6.98	20800	7.50	10536	7.90	23166	10.47
Check Std <sup>b</sup>	40114	4.65	53386	6.96	34863	6.95	21936	7.48	10542	7.90	26791	10.36
Upper Limit <sup>c</sup>	61640	5.65	74343	7.96	49634	7.95	31200	8.48	15804	8.90	34749	11.36
Lower Limit <sup>d</sup>	20547	3.65	24781	5.96	16545	5.95	10400	6.48	5268	6.90	11583	9.36

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP69752-BS	36215	4.66	48609	6.98	31521	6.97	19791	7.48	9984	7.90	23735	10.37
OP69752-MB	35731	4.66	44854	6.98	31746	6.97	19374	7.48	9422	7.90	23082	10.38
JC64541-2	34354	4.66	50200	6.98	33059	6.97	20835	7.48	12808	7.90	0*	0.00*
JC64541-3	34695	4.66	50338	6.98	34870	6.97	21474	7.48	17912 <sup>e</sup>	7.90	26355	10.34
OP69752-MS	34167	4.66	52706	6.98	33767	6.97	21121	7.48	18255 <sup>f</sup>	7.90	26652	10.33
OP69752-MSD	34683	4.66	50609	6.98	34138	6.97	20705	7.49	15797	7.90	25940	10.36

- IS 1** = 13C3-PFPeA
- IS 2** = 13C2-6:2FTS
- IS 3** = 13C2-PFOA
- IS 4** = 13C4-PFOS
- IS 5** = d3-MeFOSAA
- IS 6** = 13C2-PFDoDA

- (a) Initial Cal is: S2Q249-ICC249 2Q13440.D 04/23/18 13:33. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
- (e) Outside control limits due to matrix interference. Confirmed by MS/MSD.
- (f) Outside control limits.

9.4.1  
9



# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> S2Q251-CC249	<b>Injection Date:</b> 04/25/18
<b>Lab File ID:</b> 2Q13586.D	<b>Injection Time:</b> 20:38
<b>Instrument ID:</b> GCMS2Q	<b>Method:</b> EPA 537 MOD

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal <sup>a</sup>	41093	4.66	49562	6.99	33089	6.98	20800	7.50	10536	7.90	23166	10.47
Check Std <sup>b</sup>	41448	4.66	55700	6.98	35940	6.97	22159	7.48	11345	7.90	27033	10.39
Upper Limit <sup>c</sup>	61640	5.66	74343	7.98	49634	7.97	31200	8.48	15804	8.90	34749	11.39
Lower Limit <sup>d</sup>	20547	3.66	24781	5.98	16545	5.97	10400	6.48	5268	6.90	11583	9.39

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
JC64541-4	31694	4.66	43844	6.95	24202	6.94	15108	7.44	11712	7.90	0 <sup>e</sup>	0.00*
JC64541-5	34912	4.67	47838	6.99	33984	6.98	18920	7.49	10141	7.92	22787	10.42
JC64541-6	34295	4.68	46599	6.99	32803	6.98	18593	7.49	10046	7.92	22318	10.40
JC64541-7	36013	4.67	53890	6.99	37120	6.98	22378	7.49	21048 <sup>e</sup>	7.92	26483	10.39

- IS 1** = 13C3-PFPeA
- IS 2** = 13C2-6:2FTS
- IS 3** = 13C2-PFOA
- IS 4** = 13C4-PFOS
- IS 5** = d3-MeFOSAA
- IS 6** = 13C2-PFDoDA

- (a) Initial Cal is: S2Q249-ICC249 2Q13440.D 04/23/18 13:33. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
- (e) Response outside of control limits; ISTD does not reference any reported target analytes.

9.4.2  
9

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> S2Q253-CC249	<b>Injection Date:</b> 04/26/18
<b>Lab File ID:</b> 2Q13643.D	<b>Injection Time:</b> 14:42
<b>Instrument ID:</b> GCMS2Q	<b>Method:</b> EPA 537 MOD

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal <sup>a</sup>	41093	4.66	49562	6.99	33089	6.98	20800	7.50	10536	7.90	23166	10.47
Check Std <sup>b</sup>	38515	4.65	51366	6.96	32650	6.95	20525	7.48	10619	7.90	28088	10.32
Upper Limit <sup>c</sup>	61640	5.65	74343	7.96	49634	7.95	31200	8.48	15804	8.90	34749	11.32
Lower Limit <sup>d</sup>	20547	3.65	24781	5.96	16545	5.95	10400	6.48	5268	6.90	11583	9.32

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
JC64541-2 <sup>e</sup>	35326	4.65	45427	6.96	31410	6.95	19537	7.46	10502	7.90	25708	10.22

- IS 1** = 13C3-PFPeA
- IS 2** = 13C2-6:2FTS
- IS 3** = 13C2-PFOA
- IS 4** = 13C4-PFOS
- IS 5** = d3-MeFOSAA
- IS 6** = 13C2-PFDoDA

- (a) Initial Cal is: S2Q249-ICC249 2Q13440.D 04/23/18 13:33. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
- (e) Dilution required due to matrix interference (internal standard failure).

9.4.3  
9

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> SQ1120-CC1119	<b>Injection Date:</b> 04/27/18
<b>Lab File ID:</b> Q45551.D	<b>Injection Time:</b> 10:21
<b>Instrument ID:</b> GCMSQ	<b>Method:</b> EPA 537 MOD

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal <sup>a</sup>	57948	4.86	48871	7.29	126096	7.28	57418	7.81	22395	8.10	148264	11.28
Check Std <sup>b</sup>	59496	4.92	46580	7.34	117329	7.33	57608	7.86	22313	8.12	131585	11.28
Upper Limit <sup>c</sup>	86922	5.92	73307	8.34	189144	8.33	86127	8.86	33593	9.12	222396	12.28
Lower Limit <sup>d</sup>	28974	3.92	24436	6.34	63048	6.33	28709	6.86	11198	7.12	74132	10.28

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
JC64541-4 <sup>e</sup>	52864	4.91	43789	7.32	109416	7.32	50309	7.85	22491	8.12	123211	11.19
ZZZZZZ	55501	4.95	43503	7.32	118996	7.32	52693	7.85	25651	8.11	141629	11.31
ZZZZZZ	59047	4.95	43753	7.34	120421	7.33	55992	7.85	22832	8.11	132169	11.43

- IS 1** = 13C3-PFPeA
- IS 2** = 13C2-6:2FTS
- IS 3** = 13C2-PFOA
- IS 4** = 13C4-PFOS
- IS 5** = d3-MeFOSAA
- IS 6** = 13C2-PFDoDA

- (a) Initial Cal is: SQ1119-ICC1119 Q45504.D 04/26/18 18:31. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
- (e) Dilution required due to matrix interference (internal standard failure).

9.4.4  
9

# Internal Standard Area Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

<b>Check Std:</b> SQ1123-CC1119	<b>Injection Date:</b> 04/30/18
<b>Lab File ID:</b> Q45651.D	<b>Injection Time:</b> 08:19
<b>Instrument ID:</b> GCMSQ	<b>Method:</b> EPA 537 MOD

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Initial Cal <sup>a</sup>	57948	4.86	48871	7.29	126096	7.28	57418	7.81	22395	8.10	148264	11.28
Check Std <sup>b</sup>	66197	4.86	45751	7.26	133787	7.25	62288	7.79	22878	8.06	151323	11.15
Upper Limit <sup>c</sup>	86922	5.86	73307	8.26	189144	8.25	86127	8.79	33593	9.06	222396	12.15
Lower Limit <sup>d</sup>	28974	3.86	24436	6.26	63048	6.25	28709	6.79	11198	7.06	74132	10.15

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP69812-BS <sup>e</sup>	49252	4.83	40112	7.25	110149	7.24	49019	7.78	23089	8.05	130004	11.18
OP69812-MB	58839	4.82	41332	7.24	124467	7.23	53982	7.76	21568	8.05	140606	11.14
JC64541-1	55722	4.81	40579	7.24	122126	7.23	50220	7.75	23276	8.05	138076	10.90
JC64541-7	59595	4.80	42429	7.22	130792	7.22	56916	7.71	25979	8.01	0 <sup>f</sup>	0.00*

- IS 1** = 13C3-PFPeA
- IS 2** = 13C2-6:2FTS
- IS 3** = 13C2-PFOA
- IS 4** = 13C4-PFOS
- IS 5** = d3-MeFOSAA
- IS 6** = 13C2-PFDoDA

- (a) Initial Cal is: SQ1119-ICC1119 Q45504.D 04/26/18 18:31. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.
- (e) Insufficient sample for MS/MSD.
- (f) Response outside of control limits; ISTD does not reference any reported target analytes.

9.4.5  
9

# Surrogate Recovery Summary

**Job Number:** JC64541  
**Account:** ALNJ SGS Dayton, NJ  
**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

**Method:** EPA 537 MOD **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JC64541-1	Q45662.D	87	75	65
JC64541-2	2Q13646.D	78	86	81
JC64541-2	2Q13582.D	76	108	89
JC64541-3	2Q13583.D	69	102	83
JC64541-4	Q45552.D	70	69	74
JC64541-4	2Q13588.D	67	71	66
JC64541-5	2Q13589.D	70	67	71
JC64541-6	2Q13590.D	73	65	72
JC64541-7	Q45663.D	75	73	77
JC64541-7	2Q13591.D	63	87	
OP69752-BS	2Q13579.D	82	82	75
OP69752-MB	2Q13580.D	84	82	80
OP69752-MS	2Q13584.D	68	104	75
OP69752-MSD	2Q13585.D	65	92	76
OP69812-BS	Q45660.D	94	93	81
OP69812-MB	Q45661.D	93	88	74

Surrogate Compounds	Recovery Limits
S1 = 13C2-PFHxA	61-134%
S2 = 13C2-PFDA	62-128%
S3 = d5-EtFOSAA	57-135%

9.5.1  
9

# Initial Calibration Summary

**Job Number:** JC64541

**Sample:** S2Q249-ICC249

**Account:** ALNJ SGS Dayton, NJ

**Lab FileID:** 2Q13440.D

**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0423\_PFC\_S2Q249\S2Q249.batch.bin

Level ID : Calibration File

- 1 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d
- 2 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d
- 3 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d
- 4 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d
- 5 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d
- 6 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d
- 7 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d
- 8 : D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-6:2FTS	-----ISTD-----										
8) 4:2FTS	0.9395	0.7716	0.7639	0.7699	0.7373	0.6988	0.6717	0.6010	0.7442	13.225	0.9999
9) 6:2FTS	1.2162	1.2627	1.0143	1.0108	0.9836	0.9228	0.8904	0.7998	1.0126	15.532	0.9997
10) 8:2FTS	1.0335	0.9748	0.9214	0.9072	0.8821	0.8424	0.8161	0.7443	0.8902	10.233	0.9999
3) 13C2-PFDoDA	-----ISTD-----										
19) PFDoDA	1.0577	0.8519	0.8720	0.8698	0.8602	0.8624	0.8334	0.8454	0.8816	8.202	0.9999
31) PFTeDA	0.5853	0.5185	0.5102	0.5296	0.5243	0.5288	0.5183	0.5127	0.5285	4.540	0.9999
32) PFTrDA	0.7796	0.6655	0.7070	0.6920	0.6726	0.7055	0.6879	0.6838	0.6992	5.076	0.9999
33) PFUnDA	1.0878	1.1667	1.0425	1.0242	1.0150	1.0166	0.9562	0.9668	1.0345	6.526	0.9993
5) 13C2-PFOA	-----ISTD-----										
2) 13C2-PFDA	1.5398	1.2871	1.3189	1.2735	1.2827	1.2471	1.2413	1.2785	1.3086	7.372	0.9997
4) 13C2-PFHxA	1.5726	1.3145	1.2995	1.2860	1.3087	1.2463	1.2266	1.2323	1.3108	8.492	0.9997
16) PFBA	0.6160	0.5185	0.5173	0.4953	0.4985	0.4816	0.4707	0.4863	0.5105	8.949	0.9997
18) PFDA	0.8428	0.7910	0.7509	0.7273	0.7427	0.7183	0.7135	0.7218	0.7510	5.950	0.9999
21) PFHpA	1.7829	1.4833	1.4828	1.4593	1.5066	1.4784	1.4389	1.4656	1.5122	7.352	0.9998
23) PFHxA	0.5868	0.5004	0.5033	0.4994	0.5062	0.4842	0.4788	0.4829	0.5053	6.839	0.9998
25) PFNA	0.8859	0.8403	0.8079	0.7913	0.8081	0.8265	0.8148	0.8124	0.8234	3.526	0.9999
27) PFOA	0.9428	0.8544	0.8338	0.7899	0.8207	0.8040	0.7970	0.8171	0.8325	5.904	0.9998
6) 13C3-PFPeA	-----ISTD-----										
29) PFPeA	1.7682	1.6336	1.5373	1.5428	1.5513	1.5734	1.5719	1.5578	1.5921	4.852	1.0000
30) PFPeS	0.5071	0.4792	0.4424	0.4420	0.4412	0.4560	0.4539	0.4525	0.4593	4.993	0.9999
7) 13C4-PFOS	-----ISTD-----										
17) PFBS	1.3616	1.1863	1.1775	1.1830	1.1656	1.1766	1.1650	1.1886	1.2005	5.469	0.9999
20) PFDS	0.4157	0.3844	0.3871	0.3855	0.3924	0.3949	0.3947	0.4033	0.3947	2.657	0.9998
22) PFHpS	1.2389	1.1818	1.0534	1.0646	1.0700	1.0884	1.0836	1.1123	1.1116	5.870	0.9997
24) PFHxS	1.4883	1.2979	1.2736	1.2959	1.2700	1.3004	1.2899	1.3073	1.3154	5.400	0.9999
26) PFNS	0.8076	0.7531	0.7377	0.7182	0.7097	0.7112	0.7048	0.7045	0.7308	4.852	1.0000
28) PFOS	1.3460	1.2208	1.1816	1.1898	1.1735	1.2024	1.1779	1.2056	1.2122	4.648	0.9998
11) d3-MeFOSAA	-----ISTD-----										
12) d5-EtFOSAA	1.5443	1.4609	1.3475	1.3338	1.3326	1.3207	1.3101	1.2786	1.3661	6.553	1.0000
13) EtFOSAA	1.1585	1.0629	0.9771	0.9792	0.9650	0.9644	0.9388	0.9278	0.9967	7.716	0.9999
14) FOSA	4.6257	3.6767	3.7692	3.8138	3.7246	3.5898	3.4941	3.2428	3.7421	10.714	1.0000
15) MeFOSAA	1.3910	1.1464	1.1422	1.1264	1.1402	1.1289	1.1172	1.1466	1.1674	7.794	0.9998

\*(value) - Average RF below (value)

**Initial Calibration Verification****Job Number:** JC64541**Sample:** S2Q249-ICV249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13445.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0423\_PFC\_S2Q249\S2Q249.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13445

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.004	-5.0	95.0
6:2FTS	20.000	19.797	-1.0	99.0
8:2FTS	20.000	20.101	0.5	100.5
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	20.936	4.7	104.7
FOSA	20.000	19.402	-3.0	97.0
MeFOSAA	20.000	20.108	0.5	100.5
PFBA	20.000	20.576	2.9	102.9
PFBS	20.000	17.255	-13.7	86.3
PFDA	20.000	20.023	0.1	100.1
PFDoDA	20.000	22.074	10.4	110.4
PFDS	20.000	19.728	-1.4	98.6
PFHpA	20.000	20.756	3.8	103.8
PFHpS	20.000	19.033	-4.8	95.2
PFHxA	20.000	19.092	-4.5	95.5
PFHxS	20.000	17.453	-12.7	87.3
PFNA	20.000	19.790	-1.1	98.9
PFNS	20.000	20.198	1.0	101.0
PFOA	20.000	21.684	8.4	108.4
PFOS	20.000	20.371	1.9	101.9
PFPeA	20.000	20.739	3.7	103.7
PFPeS	20.000	19.863	-0.7	99.3
PFTeDA	20.000	20.240	1.2	101.2
PFTTrDA	20.000	22.076	10.4	110.4
PFUnDA	20.000	22.652	13.3	113.3

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** S2Q251-CC249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13577.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0425\_PFC\_S2Q251\s2q251.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13577

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.431	-2.8	97.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	19.206	-4.0	96.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.739	-1.3	98.7
6:2FTS	20.000	19.892	-0.5	99.5
8:2FTS	20.000	19.130	-4.4	95.6
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.726	-1.4	98.6
EtFOSAA	20.000	19.379	-3.1	96.9
FOSA	20.000	21.485	7.4	107.4
MeFOSAA	20.000	19.596	-2.0	98.0
PFBA	20.000	17.726	-11.4	88.6
PFBS	20.000	19.024	-4.9	95.1
PFDA	20.000	19.047	-4.8	95.2
PFDoDA	20.000	20.697	3.5	103.5
PFDS	20.000	20.199	1.0	101.0
PFHpA	20.000	20.029	0.1	100.1
PFHpS	20.000	20.883	4.4	104.4
PFHxA	20.000	19.109	-4.5	95.5
PFHxS	20.000	19.926	-0.4	99.6
PFNA	20.000	19.830	-0.9	99.1
PFNS	20.000	18.309	-8.5	91.5
PFOA	20.000	19.871	-0.6	99.4
PFOS	20.000	19.440	-2.8	97.2
PFPeA	20.000	20.327	1.6	101.6
PFPeS	20.000	19.983	-0.1	99.9
PFTeDA	20.000	18.885	-5.6	94.4
PFTTrDA	20.000	19.782	-1.1	98.9
PFUnDA	20.000	18.982	-5.1	94.9

CC Criteria: +/- 25%



**Continuing Calibration Summary****Job Number:** JC64541**Sample:** S2Q251-CC249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13586.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0425\_PFC\_S2Q251\s2q251.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13586

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.341	-3.3	96.7
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	19.280	-3.6	96.4
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.565	-2.2	97.8
6:2FTS	20.000	20.367	1.8	101.8
8:2FTS	20.000	18.469	-7.7	92.3
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.162	-4.2	95.8
EtFOSAA	20.000	19.268	-3.7	96.3
FOSA	20.000	20.685	3.4	103.4
MeFOSAA	20.000	19.911	-0.4	99.6
PFBA	20.000	17.892	-10.5	89.5
PFBS	20.000	19.638	-1.8	98.2
PFDA	20.000	18.488	-7.6	92.4
PFDoDA	20.000	20.547	2.7	102.7
PFDS	20.000	20.939	4.7	104.7
PFHpA	20.000	19.698	-1.5	98.5
PFHpS	20.000	20.573	2.9	102.9
PFHxA	20.000	18.493	-7.5	92.5
PFHxS	20.000	20.250	1.3	101.3
PFNA	20.000	19.668	-1.7	98.3
PFNS	20.000	18.356	-8.2	91.8
PFOA	20.000	19.586	-2.1	97.9
PFOS	20.000	19.635	-1.8	98.2
PFPeA	20.000	20.374	1.9	101.9
PFPeS	20.000	19.858	-0.7	99.3
PFTeDA	20.000	19.035	-4.8	95.2
PFTTrDA	20.000	19.845	-0.8	99.2
PFUnDA	20.000	19.319	-3.4	96.6

CC Criteria: +/- 25%

**Continuing Calibration Summary**

Page 1 of 1

**Job Number:** JC64541**Sample:** S2Q251-CC249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13592.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0425\_PFC\_S2Q251\s2q251.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13592

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.428	-2.9	97.1
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.970	-5.2	94.8
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.875	-0.6	99.4
6:2FTS	20.000	20.060	0.3	100.3
8:2FTS	20.000	19.071	-4.6	95.4
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.171	0.9	100.9
EtFOSAA	20.000	19.967	-0.2	99.8
FOSA	20.000	20.945	4.7	104.7
MeFOSAA	20.000	20.003	0.0	100.0
PFBA	20.000	18.065	-9.7	90.3
PFBS	20.000	19.702	-1.5	98.5
PFDA	20.000	18.362	-8.2	91.8
PFDoDA	20.000	20.899	4.5	104.5
PFDS	20.000	21.214	6.1	106.1
PFHpA	20.000	19.487	-2.6	97.4
PFHpS	20.000	19.993	0.0	100.0
PFHxA	20.000	18.394	-8.0	92.0
PFHxS	20.000	20.371	1.9	101.9
PFNA	20.000	19.056	-4.7	95.3
PFNS	20.000	18.090	-9.6	90.4
PFOA	20.000	19.793	-1.0	99.0
PFOS	20.000	19.642	-1.8	98.2
PFPeA	20.000	20.530	2.7	102.7
PFPeS	20.000	19.818	-0.9	99.1
PFTeDA	20.000	18.826	-5.9	94.1
PFTTrDA	20.000	20.136	0.7	100.7
PFUnDA	20.000	19.187	-4.1	95.9

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** S2Q253-CC249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13643.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0425\_PFC\_S2Q251\s2q253.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13643

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.190	0.9	100.9
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	19.423	-2.9	97.1
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.516	-2.4	97.6
6:2FTS	20.000	19.972	-0.1	99.9
8:2FTS	20.000	19.433	-2.8	97.2
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.520	-2.4	97.6
EtFOSAA	20.000	19.196	-4.0	96.0
FOSA	20.000	20.671	3.4	103.4
MeFOSAA	20.000	20.044	0.2	100.2
PFBA	20.000	18.496	-7.5	92.5
PFBS	20.000	19.727	-1.4	98.6
PFDA	20.000	19.403	-3.0	97.0
PFDoDA	20.000	20.888	4.4	104.4
PFDS	20.000	21.152	5.8	105.8
PFHpA	20.000	20.092	0.5	100.5
PFHpS	20.000	21.204	6.0	106.0
PFHxA	20.000	19.026	-4.9	95.1
PFHxS	20.000	19.119	-4.4	95.6
PFNA	20.000	19.415	-2.9	97.1
PFNS	20.000	18.601	-7.0	93.0
PFOA	20.000	19.846	-0.8	99.2
PFOS	20.000	19.850	-0.8	99.2
PFPeA	20.000	20.154	0.8	100.8
PFPeS	20.000	19.567	-2.2	97.8
PFTeDA	20.000	17.312	-13.4	86.6
PFTTrDA	20.000	18.772	-6.1	93.9
PFUnDA	20.000	17.798	-11.0	89.0

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** S2Q253-CC249**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** 2Q13649.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0425\_PFC\_S2Q251\s2q253.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13436.d  
 2:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13437.d  
 3:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13438.d  
 4:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13439.d  
 5:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13440.d  
 6:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13441.d  
 7:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13442.d  
 8:D:\MassHunter\Data\0423\_PFC\_S2Q249\2Q13443.d

Data File: 2Q13649

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.025	0.1	100.1
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.697	-6.5	93.5
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.694	-1.5	98.5
6:2FTS	20.000	20.436	2.2	102.2
8:2FTS	20.000	19.939	-0.3	99.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.559	-2.2	97.8
EtFOSAA	20.000	19.430	-2.8	97.2
FOSA	20.000	20.862	4.3	104.3
MeFOSAA	20.000	19.268	-3.7	96.3
PFBA	20.000	17.247	-13.8	86.2
PFBS	20.000	19.168	-4.2	95.8
PFDA	20.000	19.338	-3.3	96.7
PFDoDA	20.000	20.586	2.9	102.9
PFDS	20.000	20.974	4.9	104.9
PFHpA	20.000	19.285	-3.6	96.4
PFHpS	20.000	20.874	4.4	104.4
PFHxA	20.000	18.196	-9.0	91.0
PFHxS	20.000	19.877	-0.6	99.4
PFNA	20.000	18.718	-6.4	93.6
PFNS	20.000	18.567	-7.2	92.8
PFOA	20.000	19.950	-0.3	99.7
PFOS	20.000	19.664	-1.7	98.3
PFPeA	20.000	20.232	1.2	101.2
PFPeS	20.000	19.838	-0.8	99.2
PFTeDA	20.000	17.183	-14.1	85.9
PFTTrDA	20.000	18.818	-5.9	94.1
PFUnDA	20.000	17.985	-10.1	89.9

CC Criteria: +/- 25%

# Initial Calibration Summary

**Job Number:** JC64541

**Sample:** SQ1119-ICC1119

**Account:** ALNJ SGS Dayton, NJ

**Lab FileID:** Q45504.D

**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0426\_PFC\_SQ1119\SQ1119.batch.bin

Level ID : Calibration File

- 1 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d
- 2 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d
- 3 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d
- 4 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d
- 5 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d
- 6 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d
- 7 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d
- 8 : D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Compound	1	2	3	4	5	6	7	8	AvgRF	%RSD	r^2
1) 13C2-6:2FTS	-----ISTD-----										
7) 6:2FTS	1.0415	0.9948	1.0014	1.0017	0.9759	0.9650	0.9261	0.8297	0.9670	6.693	0.9999
8) 8:2FTS	0.9685	0.9527	0.9474	0.9212	0.9086	0.9122	0.8788	0.8263	0.9145	4.993	0.9999
31) 4:2FTS	0.9925	0.9002	0.9436	0.9324	0.9067	0.9118	0.8893	0.8244	0.9126	5.280	0.9999
3) 13C2-PFDoDA	-----ISTD-----										
17) PFDoDA	0.8996	0.8971	0.8899	0.9008	0.8741	0.9297	0.8916	0.9173	0.9000	1.894	0.9999
27) PFTeDA	0.5477	0.5142	0.5251	0.5192	0.5049	0.5565	0.5499	0.5509	0.5335	3.729	0.9999
28) PFTrDA	0.7768	0.7468	0.7550	0.7560	0.7353	0.7830	0.7694	0.7804	0.7628	2.258	0.9999
29) PFUnDA	0.9142	0.8505	0.8737	0.9013	0.8786	0.8658	0.8412	0.9216	0.8809	3.315	0.9977
5) 13C2-PFOA	-----ISTD-----										
2) 13C2-PFDA	1.3293	1.2270	1.2427	1.2696	1.2522	1.3010	1.2888	1.2812	1.2740	2.610	0.9999
4) 13C2-PFHxA	0.8974	0.8599	0.8517	0.8703	0.8419	0.8799	0.8798	0.8782	0.8699	2.056	0.9999
16) PFDA	0.8940	0.8300	0.8374	0.8708	0.8454	0.8867	0.8705	0.8653	0.8625	2.663	0.9999
19) PFHpA	0.9425	0.8785	0.9040	0.9149	0.8784	0.9336	0.9129	0.9239	0.9111	2.578	0.9998
21) PFHxA	0.5232	0.4965	0.4981	0.5130	0.4930	0.5160	0.5110	0.5174	0.5085	2.195	0.9999
23) PFNA	0.7334	0.6756	0.6732	0.7020	0.6749	0.7286	0.7160	0.7317	0.7044	3.788	0.9996
24) PFOA	1.0200	0.9231	0.9203	0.9309	0.9055	0.9415	0.9335	0.9354	0.9388	3.688	0.9999
6) 13C4-PFOS	-----ISTD-----										
15) PFBS	0.4166	0.4073	0.4155	0.4175	0.4068	0.4274	0.4256	0.4304	0.4184	2.113	0.9998
18) PFDS	0.4496	0.4322	0.4254	0.4340	0.4142	0.4155	0.4302	0.4509	0.4315	3.166	0.9984
20) PFHpS	0.6676	0.6079	0.5748	0.5902	0.5709	0.5866	0.5918	0.5908	0.5976	5.099	0.9999
22) PFHxS	0.7112	0.6194	0.6390	0.6554	0.6162	0.6377	0.6414	0.6410	0.6451	4.571	0.9999
25) PFOS	1.0675	1.0667	1.0610	1.0782	1.0275	1.0745	1.0732	1.0956	1.0680	1.814	0.9997
32) PFNS	0.3190	0.3279	0.3239	0.3278	0.3206	0.3344	0.3320	0.3372	0.3279	1.978	0.9998
33) PFPeS	0.1600	0.1518	0.1448	0.1480	0.1417	0.1446	0.1455	0.1479	0.1480	3.851	0.9998
9) d3-MeFOSAA	-----ISTD-----										
10) d5-EtFOSAA	1.5054	1.3910	1.4405	1.4625	1.4054	1.4580	1.4562	1.4471	1.4458	2.446	0.9999
11) EtFOSAA	1.1295	1.0879	1.0346	1.0653	1.0474	1.0590	1.0630	1.0590	1.0682	2.722	1.0000
12) FOSA	3.7097	3.3967	3.3581	3.4039	3.1137	3.1093	3.0793	2.7137	3.2355	9.211	0.9998
13) MeFOSAA	1.2135	1.0935	1.1138	1.1263	1.0886	1.1123	1.1188	1.1422	1.1261	3.482	0.9997
30) 13C3-PFPeA	-----ISTD-----										
14) PFBA	0.6553	0.5989	0.6160	0.6084	0.6004	0.6415	0.6311	0.6490	0.6251	3.549	0.9995
26) PFPeA	0.9434	0.8810	0.8897	0.8948	0.8724	0.9214	0.9164	0.9237	0.9053	2.705	0.9998

\*(value) - Average RF below (value)

**Initial Calibration Verification****Job Number:** JC64541**Sample:** SQ1119-ICV1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45509.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0426\_PFC\_SQ1119\SQ1119.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45509

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	21.290	6.5	106.5
8:2FTS	20.000	21.581	7.9	107.9
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	22.301	11.5	111.5
FOSA	20.000	20.654	3.3	103.3
MeFOSAA	20.000	21.185	5.9	105.9
PFBA	20.000	21.806	9.0	109.0
PFBS	20.000	18.606	-7.0	93.0
PFDA	20.000	21.824	9.1	109.1
PFDoDA	20.000	22.766	13.8	113.8
PFDS	20.000	19.481	-2.6	97.4
PFHpA	20.000	22.584	12.9	112.9
PFHpS	20.000	20.493	2.5	102.5
PFHxA	20.000	20.737	3.7	103.7
PFHxS	20.000	17.914	-10.4	89.6
PFNA	20.000	20.292	1.5	101.5
PFOA	20.000	22.566	12.8	112.8
PFOS	20.000	21.704	8.5	108.5
PFPeA	20.000	21.372	6.9	106.9
PFTeDA	20.000	20.376	1.9	101.9
PFTTrDA	20.000	23.827	19.1	119.1
PFUnDA	20.000	22.691	13.5	113.5
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	21.395	7.0	107.0
PFNS	20.000	20.419	2.1	102.1
PFPeS	20.000	20.136	0.7	100.7

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** SQ1120-CC1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45551.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0427\_PFC\_SQ1120\SQ1120.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45551

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.038	0.2	100.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.300	1.5	101.5
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	18.929	-5.4	94.6
8:2FTS	20.000	19.741	-1.3	98.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.006	0.0	100.0
EtFOSAA	20.000	19.673	-1.6	98.4
FOSA	20.000	19.082	-4.6	95.4
MeFOSAA	20.000	20.078	0.4	100.4
PFBA	20.000	19.197	-4.0	96.0
PFBS	20.000	19.591	-2.0	98.0
PFDA	20.000	19.877	-0.6	99.4
PFDoDA	20.000	19.083	-4.6	95.4
PFDS	20.000	17.612	-11.9	88.1
PFHpA	20.000	19.769	-1.2	98.8
PFHpS	20.000	18.554	-7.2	92.8
PFHxA	20.000	19.917	-0.4	99.6
PFHxS	20.000	18.803	-6.0	94.0
PFNA	20.000	19.004	-5.0	95.0
PFOA	20.000	19.160	-4.2	95.8
PFOS	20.000	19.134	-4.3	95.7
PFPeA	20.000	18.985	-5.1	94.9
PFTeDA	20.000	18.821	-5.9	94.1
PFTTrDA	20.000	18.894	-5.5	94.5
PFUnDA	20.000	18.190	-9.0	91.0
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	19.630	-1.9	98.1
PFNS	20.000	18.722	-6.4	93.6
PFPeS	20.000	18.504	-7.5	92.5

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** SQ1120-CC1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45560.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0427\_PFC\_SQ1120\SQ1120.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45560

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.378	1.9	101.9
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.435	2.2	102.2
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	19.607	-2.0	98.0
8:2FTS	20.000	20.767	3.8	103.8
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.280	-3.6	96.4
EtFOSAA	20.000	19.719	-1.4	98.6
FOSA	20.000	20.893	4.5	104.5
MeFOSAA	20.000	19.121	-4.4	95.6
PFBA	20.000	18.543	-7.3	92.7
PFBS	20.000	19.681	-1.6	98.4
PFDA	20.000	20.346	1.7	101.7
PFDoDA	20.000	19.096	-4.5	95.5
PFDS	20.000	17.349	-13.3	86.7
PFHpA	20.000	19.783	-1.1	98.9
PFHpS	20.000	19.125	-4.4	95.6
PFHxA	20.000	20.322	1.6	101.6
PFHxS	20.000	18.747	-6.3	93.7
PFNA	20.000	18.609	-7.0	93.0
PFOA	20.000	19.474	-2.6	97.4
PFOS	20.000	18.855	-5.7	94.3
PFPeA	20.000	18.933	-5.3	94.7
PFTeDA	20.000	18.962	-5.2	94.8
PFTTrDA	20.000	19.000	-5.0	95.0
PFUnDA	20.000	20.041	0.2	100.2
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	19.615	-1.9	98.1
PFNS	20.000	19.332	-3.3	96.7
PFPeS	20.000	18.635	-6.8	93.2

CC Criteria: +/- 25%



**Continuing Calibration Summary****Job Number:** JC64541**Sample:** SQ1123-CC1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45651.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0430\_PFC\_SQ1123\SQ1123.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45651

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.763	-1.2	98.8
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.943	4.7	104.7
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	19.983	-0.1	99.9
8:2FTS	20.000	19.691	-1.5	98.5
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.581	-2.1	97.9
EtFOSAA	20.000	20.112	0.6	100.6
FOSA	20.000	19.930	-0.3	99.7
MeFOSAA	20.000	19.635	-1.8	98.2
PFBA	20.000	19.748	-1.3	98.7
PFBS	20.000	20.265	1.3	101.3
PFDA	20.000	20.439	2.2	102.2
PFDoDA	20.000	19.847	-0.8	99.2
PFDS	20.000	17.855	-10.7	89.3
PFHpA	20.000	20.452	2.3	102.3
PFHpS	20.000	20.080	0.4	100.4
PFHxA	20.000	20.920	4.6	104.6
PFHxS	20.000	19.329	-3.4	96.6
PFNA	20.000	19.690	-1.5	98.5
PFOA	20.000	19.399	-3.0	97.0
PFOS	20.000	19.950	-0.3	99.7
PFPeA	20.000	20.016	0.1	100.1
PFTeDA	20.000	19.352	-3.2	96.8
PFTTrDA	20.000	19.685	-1.6	98.4
PFUnDA	20.000	20.584	2.9	102.9
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	21.100	5.5	105.5
PFNS	20.000	19.478	-2.6	97.4
PFPeS	20.000	20.406	2.0	102.0

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** SQ1123-CC1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45656.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0430\_PFC\_SQ1123\SQ1123.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45656

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.676	-1.6	98.4
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.628	3.1	103.1
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	20.047	0.2	100.2
8:2FTS	20.000	20.182	0.9	100.9
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.536	-2.3	97.7
EtFOSAA	20.000	19.885	-0.6	99.4
FOSA	20.000	19.409	-3.0	97.0
MeFOSAA	20.000	20.244	1.2	101.2
PFBA	20.000	20.248	1.2	101.2
PFBS	20.000	20.647	3.2	103.2
PFDA	20.000	20.490	2.4	102.4
PFDoDA	20.000	19.670	-1.6	98.4
PFDS	20.000	18.824	-5.9	94.1
PFHpA	20.000	20.178	0.9	100.9
PFHpS	20.000	20.061	0.3	100.3
PFHxA	20.000	20.738	3.7	103.7
PFHxS	20.000	19.406	-3.0	97.0
PFNA	20.000	19.869	-0.7	99.3
PFOA	20.000	19.408	-3.0	97.0
PFOS	20.000	19.562	-2.2	97.8
PFPeA	20.000	19.845	-0.8	99.2
PFTeDA	20.000	19.747	-1.3	98.7
PFTrDA	20.000	19.258	-3.7	96.3
PFUnDA	20.000	21.027	5.1	105.1
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	20.677	3.4	103.4
PFNS	20.000	19.935	-0.3	99.7
PFPeS	20.000	19.655	-1.7	98.3

CC Criteria: +/- 25%

**Continuing Calibration Summary****Job Number:** JC64541**Sample:** SQ1123-CC1119**Account:** ALNJ SGS Dayton, NJ**Lab FileID:** Q45666.D**Project:** EAENYS: AGFA Peerless Photo Products Shoreham, NY

## Continuing Calibration Report

Batch: D:\MassHunter\Data\0430\_PFC\_SQ1123\SQ1123.batch.bin

## Level ID: Calibration File

1:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d  
 2:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d  
 3:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d  
 4:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d  
 5:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d  
 6:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d  
 7:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d  
 8:D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d

Data File: Q45666

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.930	-0.3	99.7
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	19.895	-0.5	99.5
13C2-PFOA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
6:2FTS	20.000	20.017	0.1	100.1
8:2FTS	20.000	20.087	0.4	100.4
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.459	-2.7	97.3
EtFOSAA	20.000	19.877	-0.6	99.4
FOSA	20.000	21.387	6.9	106.9
MeFOSAA	20.000	19.553	-2.2	97.8
PFBA	20.000	19.242	-3.8	96.2
PFBS	20.000	21.000	5.0	105.0
PFDA	20.000	20.913	4.6	104.6
PFDoDA	20.000	19.449	-2.8	97.2
PFDS	20.000	20.040	0.2	100.2
PFHpA	20.000	20.298	1.5	101.5
PFHpS	20.000	20.832	4.2	104.2
PFHxA	20.000	20.295	1.5	101.5
PFHxS	20.000	20.227	1.1	101.1
PFNA	20.000	19.741	-1.3	98.7
PFOA	20.000	19.543	-2.3	97.7
PFOS	20.000	19.745	-1.3	98.7
PFPeA	20.000	19.519	-2.4	97.6
PFTeDA	20.000	19.455	-2.7	97.3
PFTTrDA	20.000	19.330	-3.3	96.7
PFUnDA	20.000	19.883	-0.6	99.4
13C3-PFPeA	---	--ISTD--		
4:2FTS	20.000	20.554	2.8	102.8
PFNS	20.000	20.145	0.7	100.7
PFPeS	20.000	20.592	3.0	103.0

CC Criteria: +/- 25%

MS Semi-volatiles

Raw Data

(SGS Orlando, FL)

Perfluorinated Compounds by LC/MS/MS

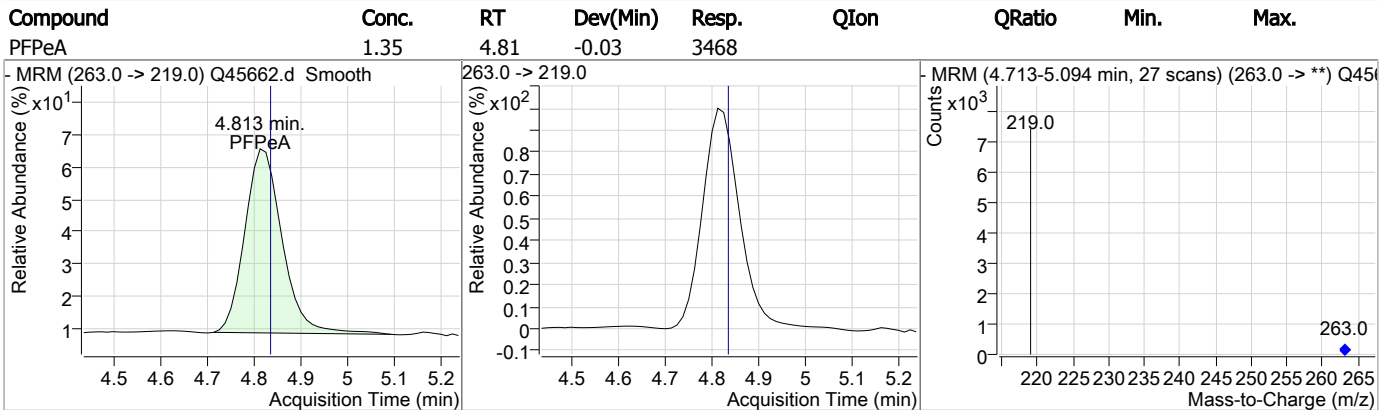
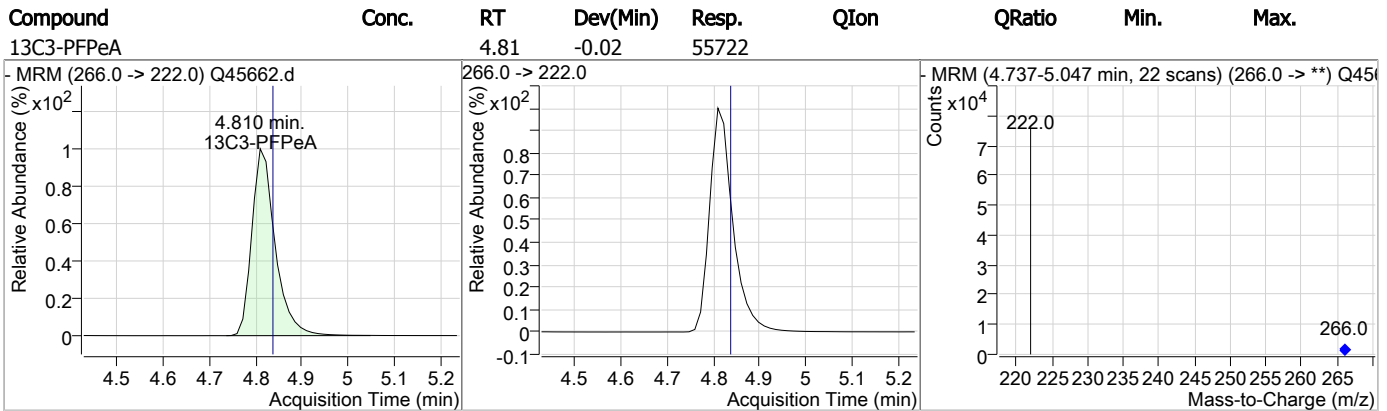
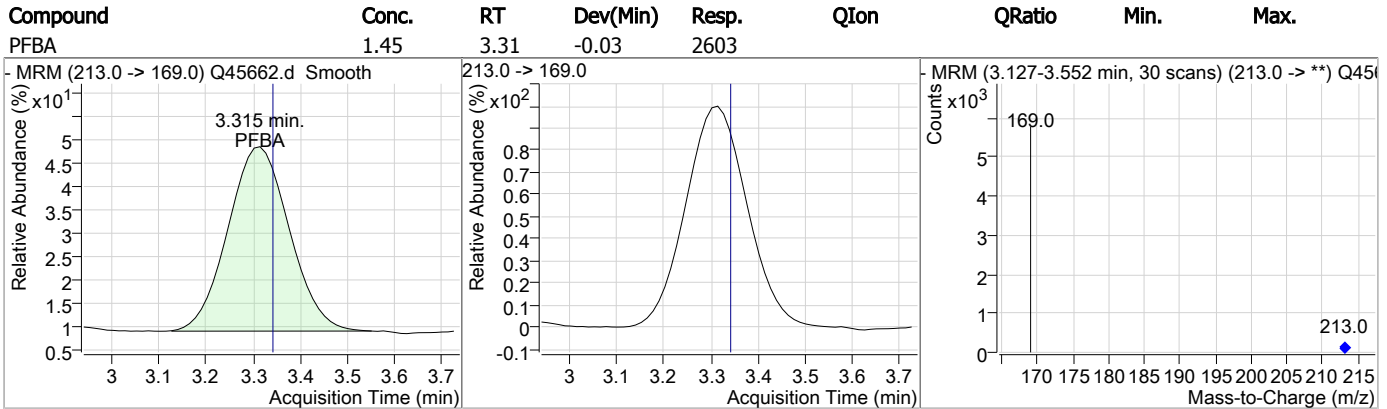
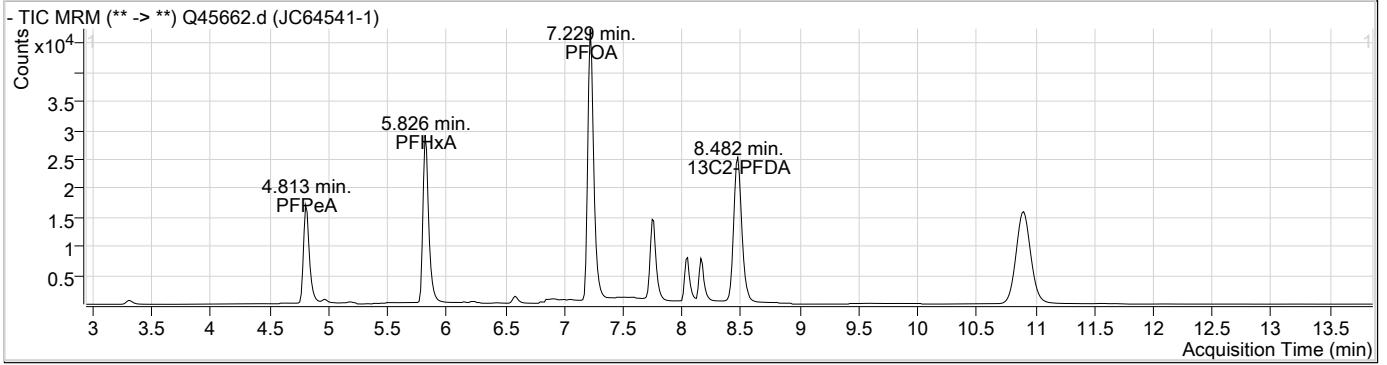
Data File : Q45662.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 1:45:54 PM  
 Sample Name : JC64541-1  
 Vial : Vial 10  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69812,SQ1123,250,,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)	QValue
<b>Internal Standards</b>							
13C2-6:2FTS	7.237	429.0 -> 409.0	40579	20.00	µg/L	-0.011	
13C2-PFDoDA	10.900	615.0 -> 570.0	138076	20.00	µg/L	-0.288	
13C2-PFOA	7.228	415.0 -> 370.0	122126	20.00	µg/L	-0.012	
13C4-PFOS	7.749	503.0 -> 80.0	50220	20.00	µg/L	-0.025	
d3-MeFOSAA	8.049	573.0 -> 419.0	23276	20.00	µg/L	0.000	
13C3-PFPeA	4.810	266.0 -> 222.0	55722	20.00	µg/L	-0.025	
<b>System Monitoring Compounds</b>							
13C2-PFDA	8.482	515.0 -> 470.0	116867	14.91	µg/L	-0.050	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 74.5%			
13C2-PFHxA	5.837	315.0 -> 270.0	92827	17.32	µg/L	-0.013	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 86.6%			
d5-EtFOSAA	8.159	589.0 -> 419.0	21799	12.93	µg/L	-0.012	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 64.6%			
<b>Target Compounds</b>							
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	3.315	213.0 -> 169.0	2603	1.45	µg/L	100	
PFBS	4.966	299.0 -> 80.0	1460	1.36	µg/L	92	
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.587	363.0 -> 319.0	3274	0.58	µg/L	75	
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.826	313.0 -> 269.0	5386	1.71	µg/L	100	
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFOA	7.229	413.0 -> 369.0	2992	0.52	µg/L	m 90	
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.813	263.0 -> 219.0	3468	1.35	µg/L	100	
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
4:2FTS	-	327.0 -> 307.0	-	N.D.			
PFNS	-	549.0 -> 99.0	-	N.D.			
PFPeS	-	349.0 -> 99.0	-	N.D.			

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

10.1.1  
10

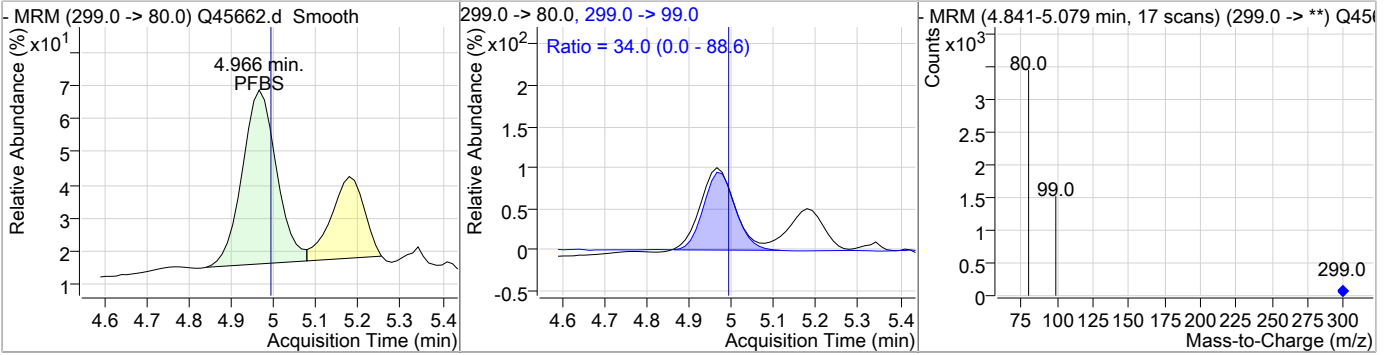
### Perfluorinated Compounds by LC/MS/MS



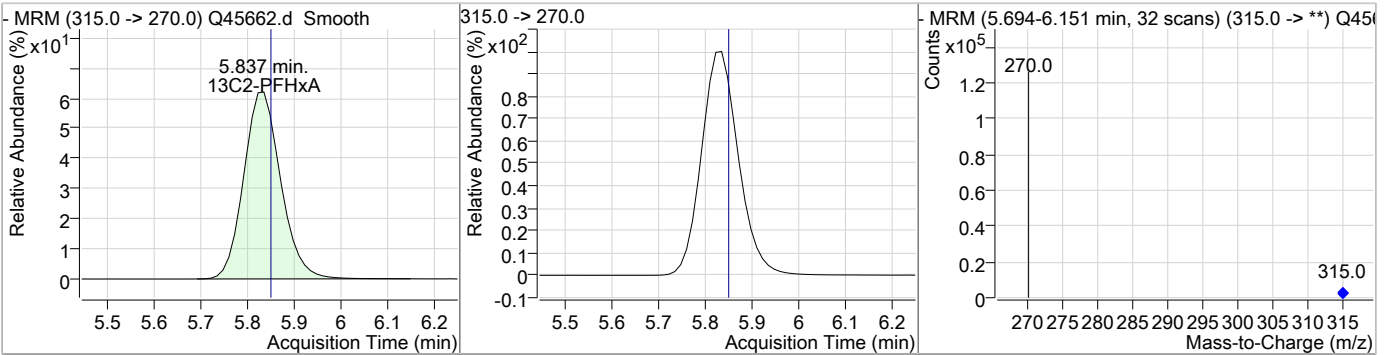
10.1.1 10

### Perfluorinated Compounds by LC/MS/MS

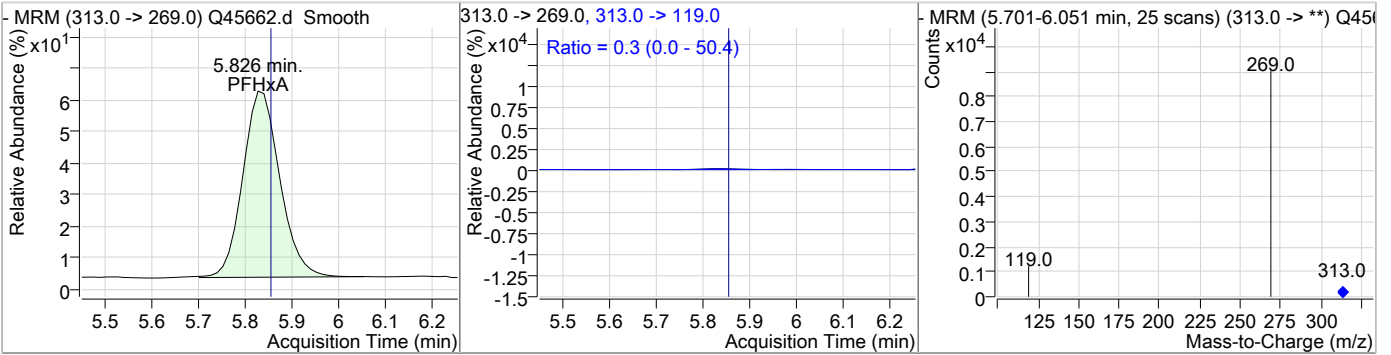
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.36	4.97	-0.02	1460	299.0 -> 99.0	34.0	0.0	88.6



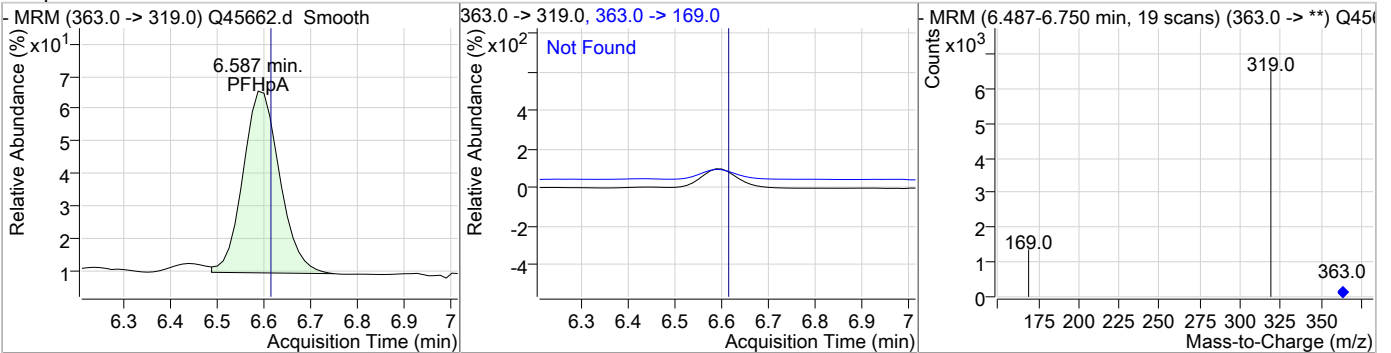
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	17.32	5.84	-0.01	92827				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.71	5.83	-0.03	5386	313.0 -> 119.0	0.3	0.0	50.4



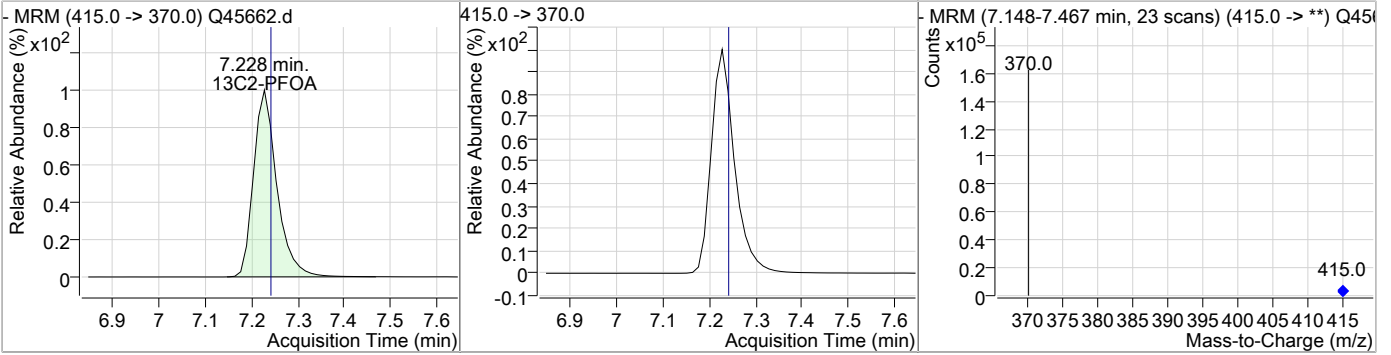
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.58	6.59	-0.03	3274	363.0 -> 169.0		0.0	59.0



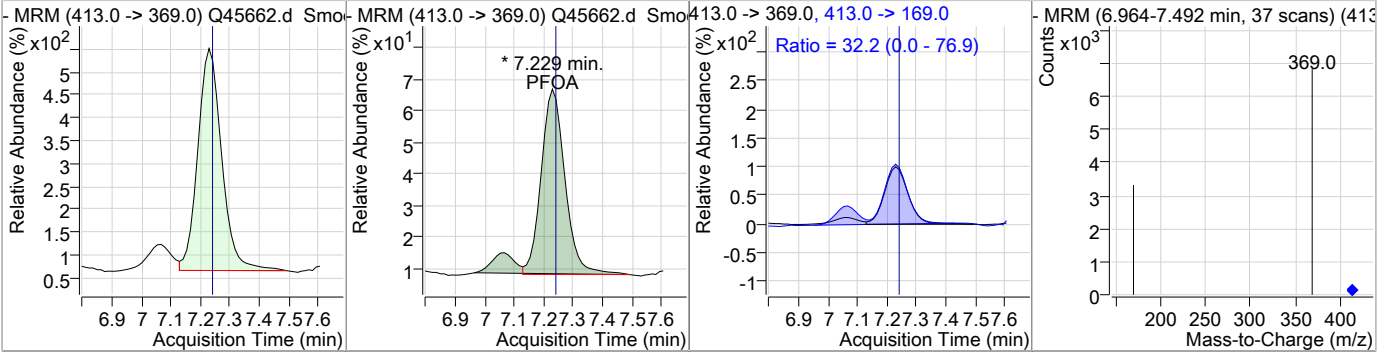
10.1.1 10

### Perfluorinated Compounds by LC/MS/MS

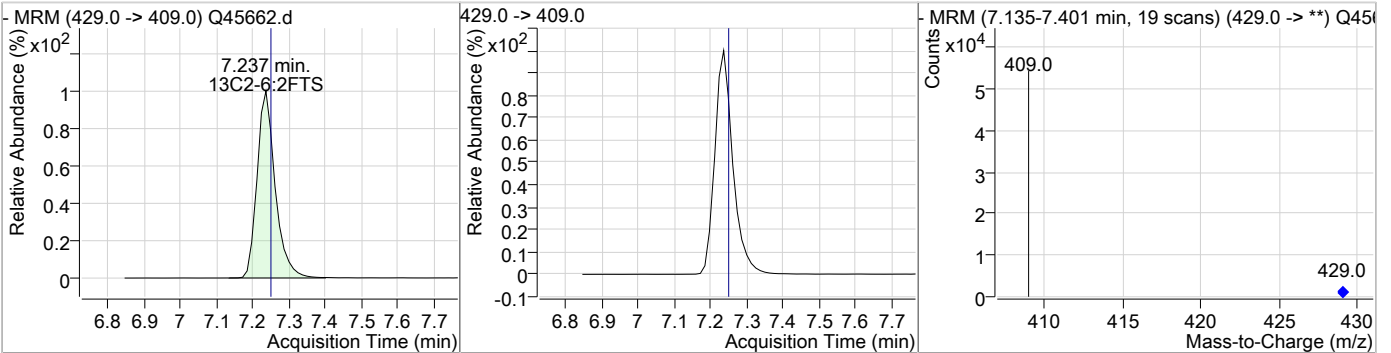
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.23	-0.01	122126				



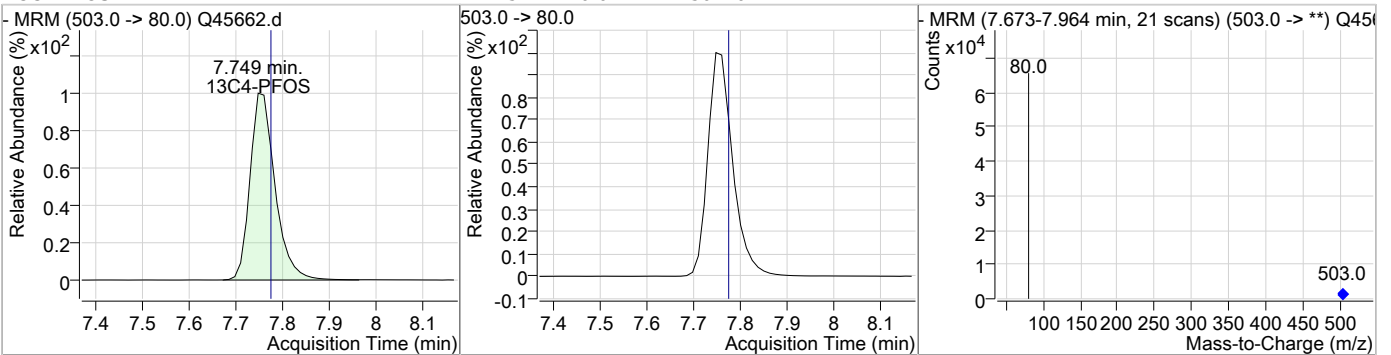
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.52	7.23	-0.01	2992 (m)	413.0 -> 169.0	32.2	0.0	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		7.24	-0.01	40579				



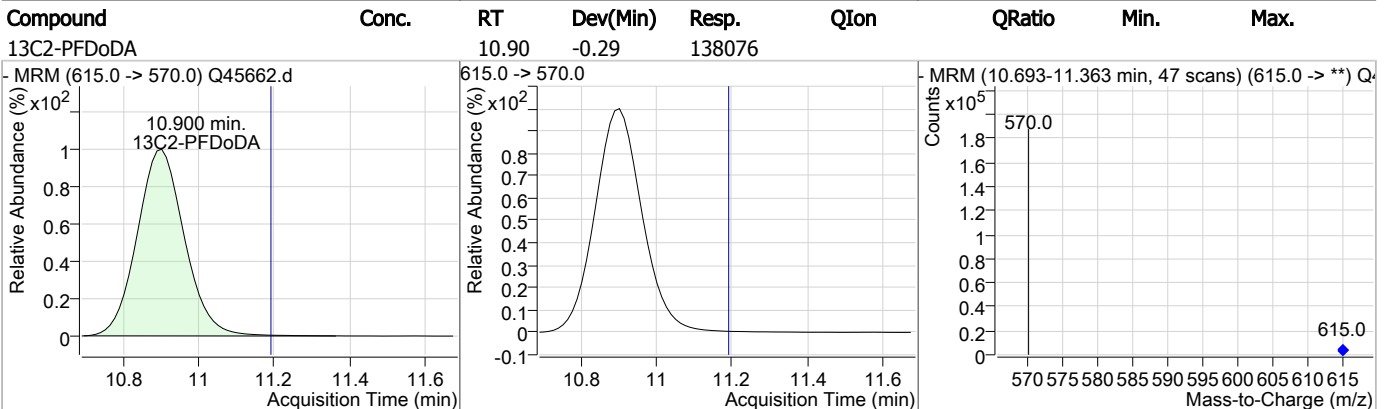
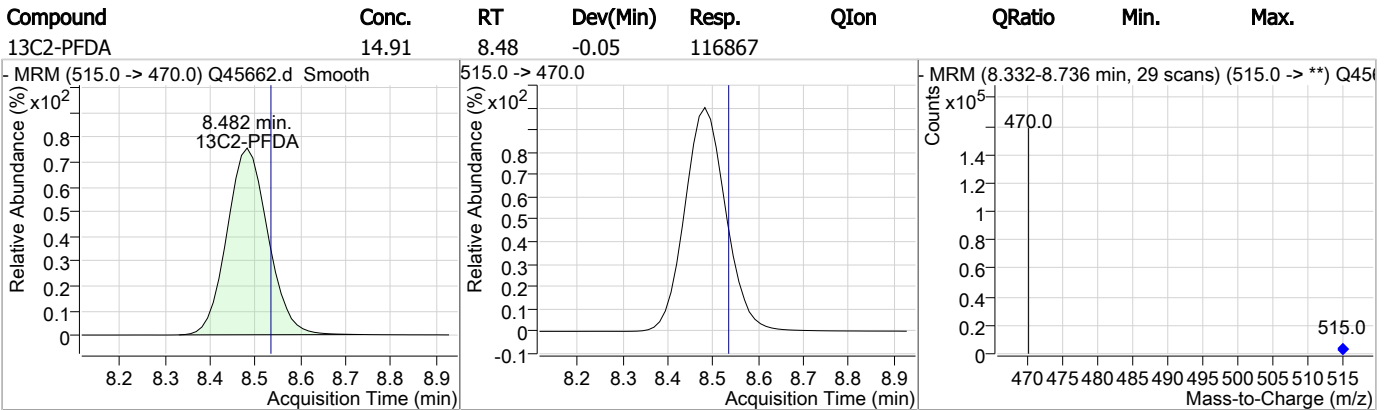
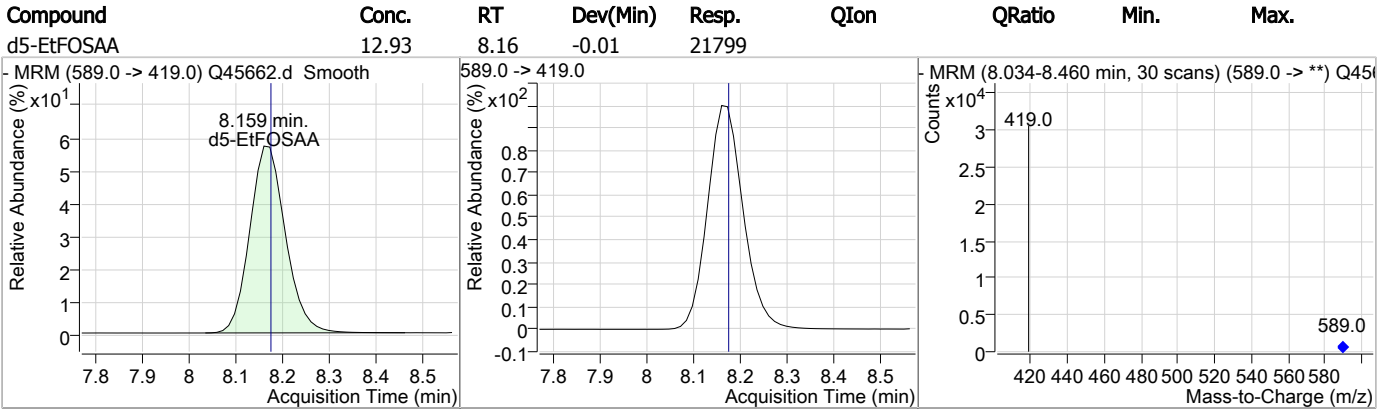
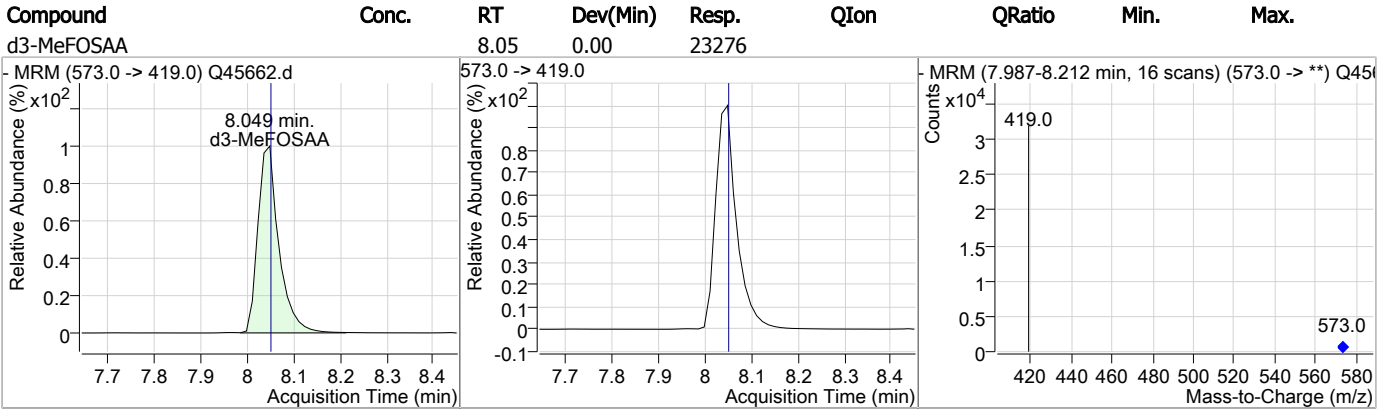
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.75	-0.02	50220				



10.1.1 10



### Perfluorinated Compounds by LC/MS/MS



10.1.1 10

# Manual Integration Approval Summary

**Sample Number:** JC64541-1      **Method:** EPA 537 MOD  
**Lab FileID:** Q45662.D      **Analyst approved:** 05/01/18 08:17 Nancy Saunders  
**Injection Time:** 04/30/18 13:45      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.23	Split peak

10.1.1.1  
10

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13582.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 7:22:48 PM  
 Sample Name : jc64541-2  
 Vial : Vial 30  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,260,,,,1.0,1,water

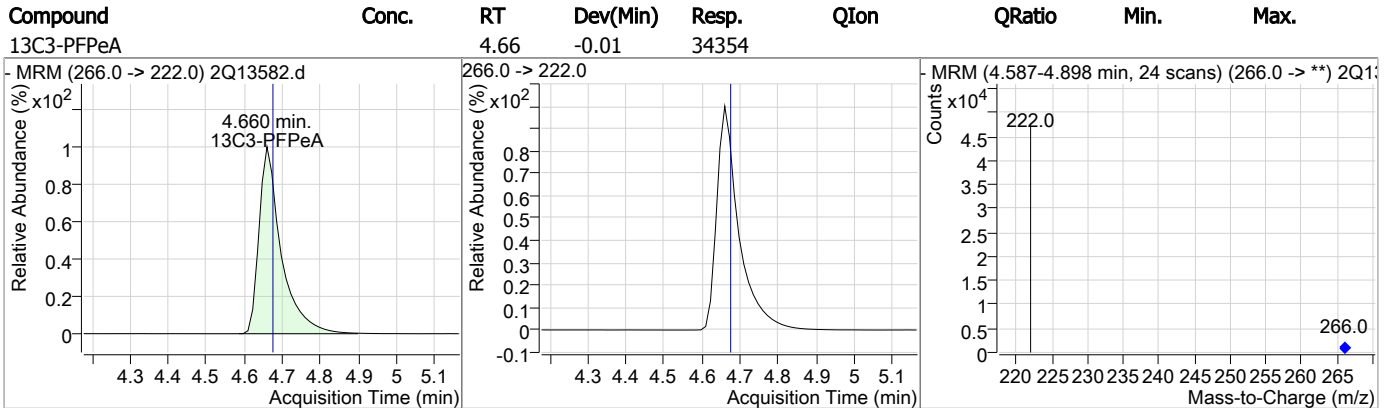
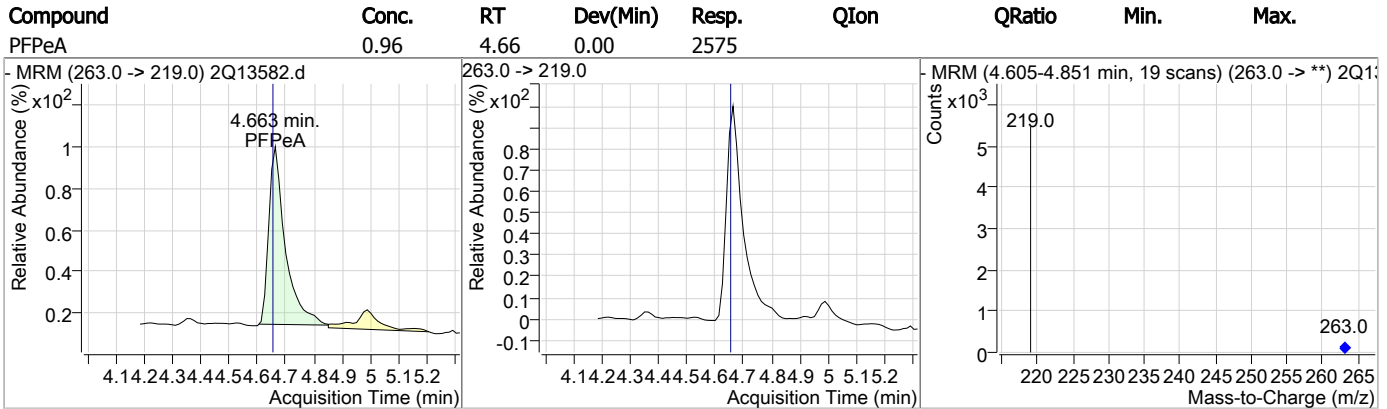
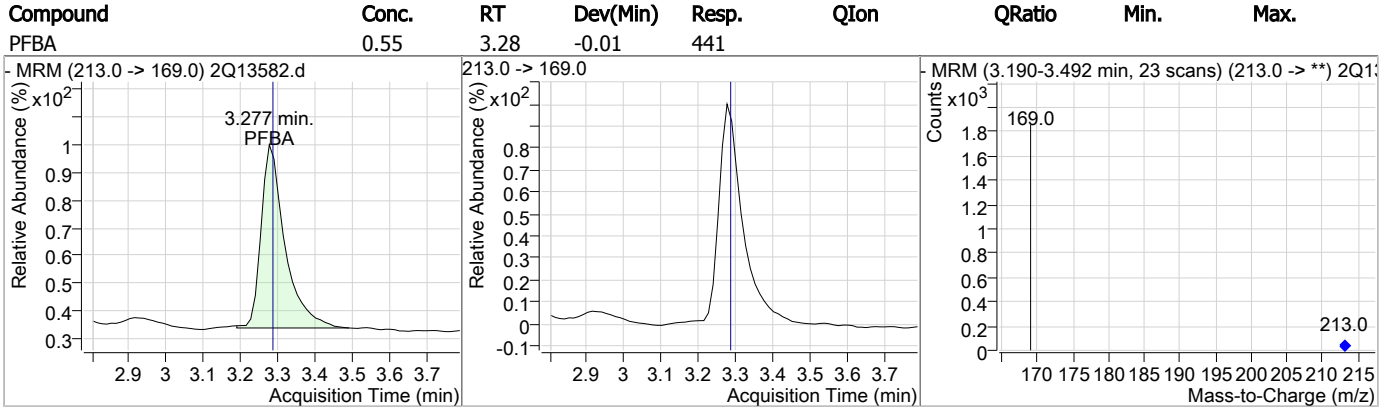
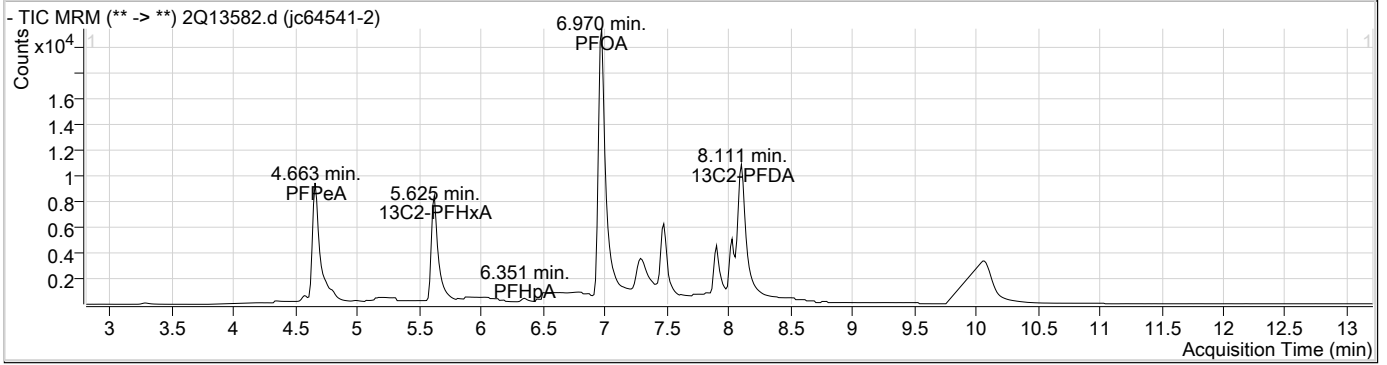
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)	QValue
<b>Internal Standards</b>							
13C2-6:2FTS	6.978	429.0 -> 409.0	50200	20.00	µg/L	-0.013	
13C2-PFDoDA	-	615.0 -> 570.0	-	N.D.			
13C2-PFOA	6.968	415.0 -> 370.0	33059	20.00	µg/L	-0.013	
13C3-PFPeA	4.660	266.0 -> 222.0	34354	20.00	µg/L	-0.013	
13C4-PFOS	7.476	503.0 -> 80.0	20835	20.00	µg/L	-0.013	
d3-MeFOSAA	7.902	573.0 -> 419.0	12808	20.00	µg/L	0.000	
<b>System Monitoring Compounds</b>							
13C2-PFDA	8.111	515.0 -> 470.0	45420	21.66	µg/L	-0.038	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 108.3%			
13C2-PFHxA	5.625	315.0 -> 270.0	31031	15.19	µg/L	0.000	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 76.0%			
d5-EtFOSAA	8.026	589.0 -> 419.0	15275	17.89	µg/L	0.000	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 89.4%			
<b>Target Compounds</b>							
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.979	427.0 -> 407.0	1198	0.47	µg/L	57	
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	3.277	213.0 -> 169.0	441	0.55	µg/L	100	
PFBS	4.741	299.0 -> 80.0	3123	2.54	µg/L	63	
PFDA	8.112	513.0 -> 469.0	591	0.50	µg/L	77	
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.351	363.0 -> 319.0	605	0.25	µg/L	m 98	
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.627	313.0 -> 269.0	836	1.05	µg/L	95	
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.970	413.0 -> 369.0	1155	0.86	µg/L	m 88	
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.663	263.0 -> 219.0	2575	0.96	µg/L	100	
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			

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

10.1.2  
10



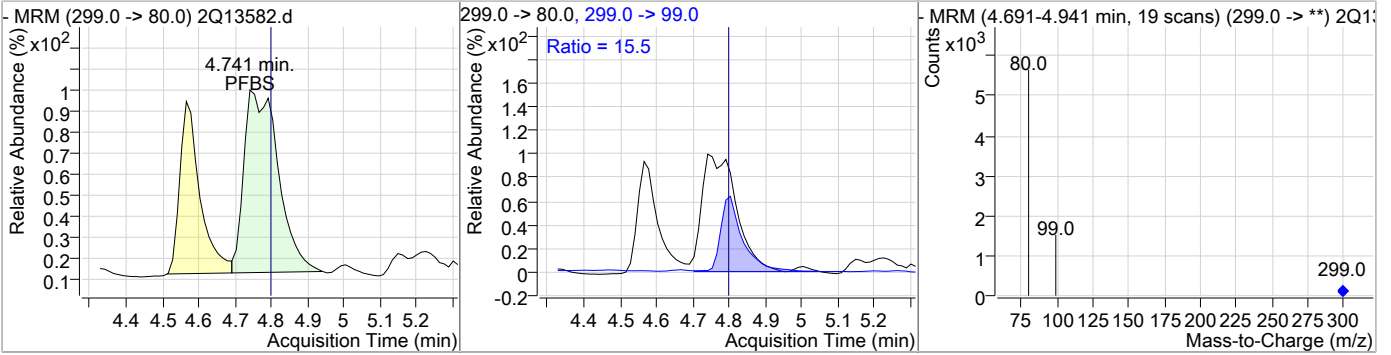
### Perfluorinated Compounds by LC/MS/MS



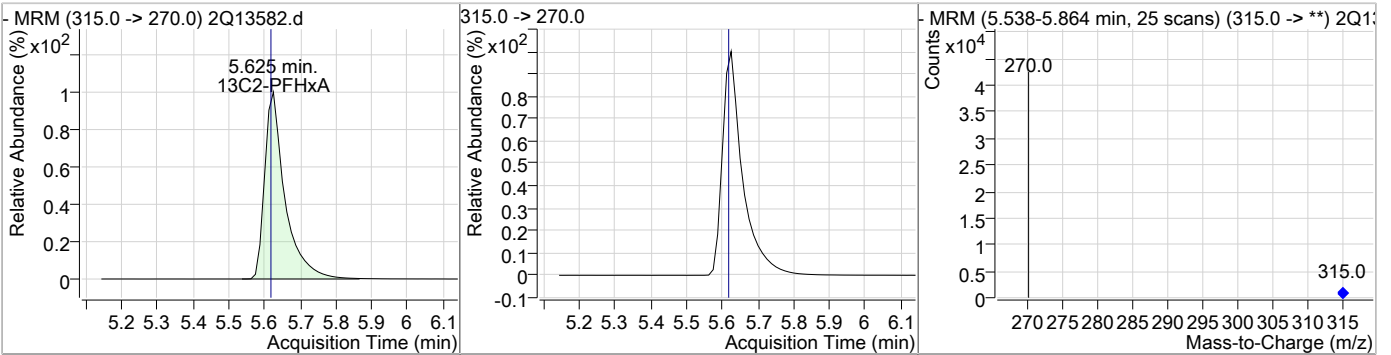
10.1.2 10

### Perfluorinated Compounds by LC/MS/MS

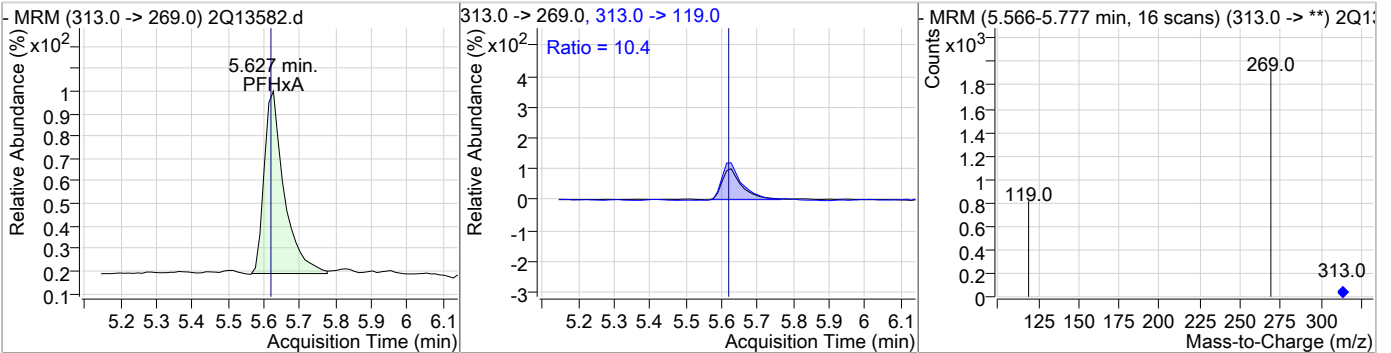
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.54	4.74	-0.06	3123	299.0 -> 99.0	15.5	7.8	67.8



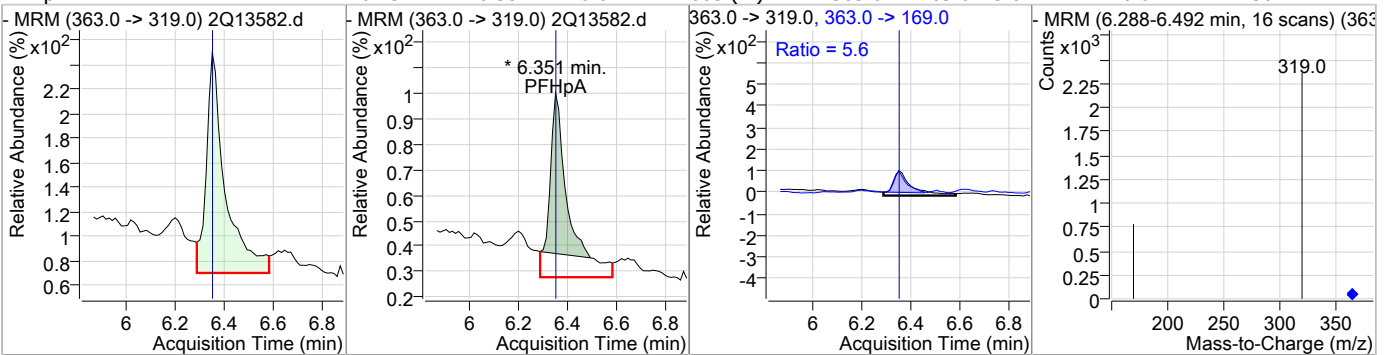
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	15.19	5.63	0.00	31031				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.05	5.63	0.00	836	313.0 -> 119.0	10.4	0.0	38.7



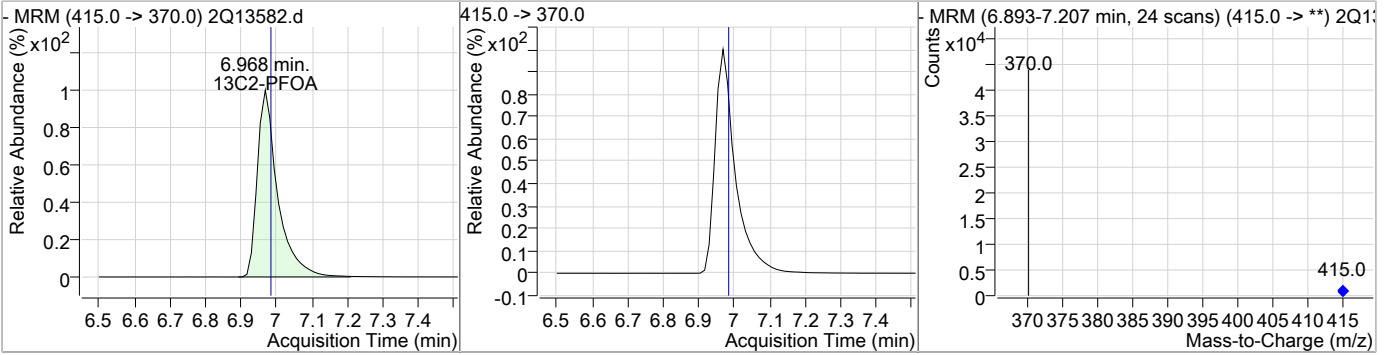
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.25	6.35	-0.01	605 (m)	363.0 -> 169.0	5.6	0.0	36.1



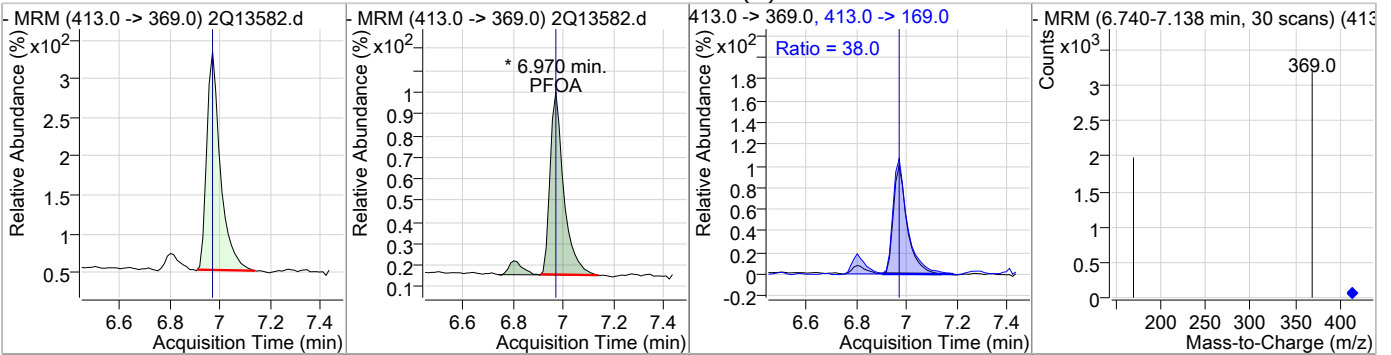
10.1.2 10

### Perfluorinated Compounds by LC/MS/MS

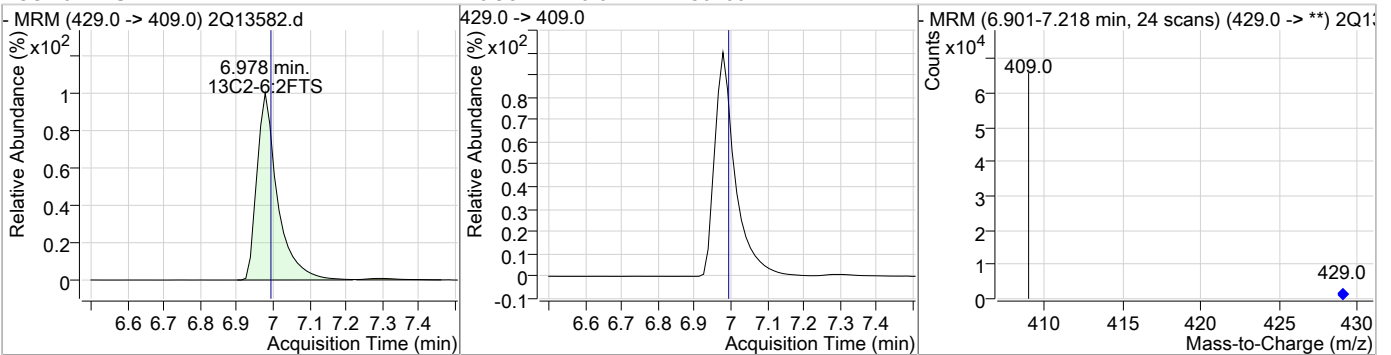
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		6.97	-0.01	33059				



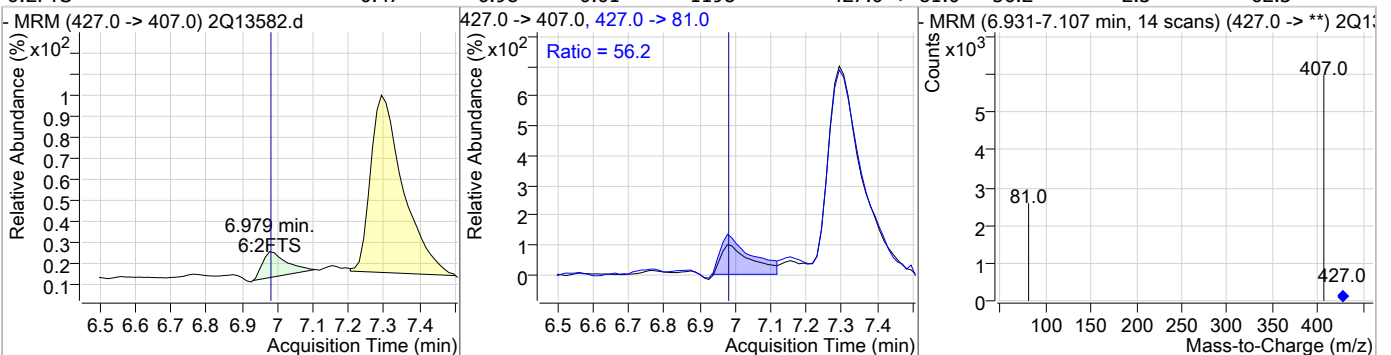
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.86	6.97	-0.01	1155 (m)	413.0 -> 169.0	38.0	1.6	61.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		6.98	-0.01	50200				

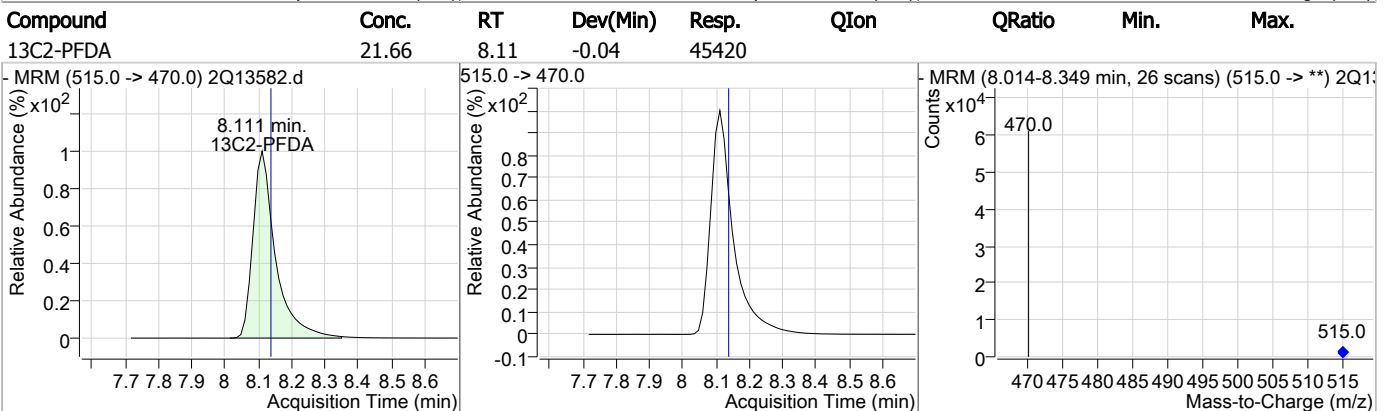
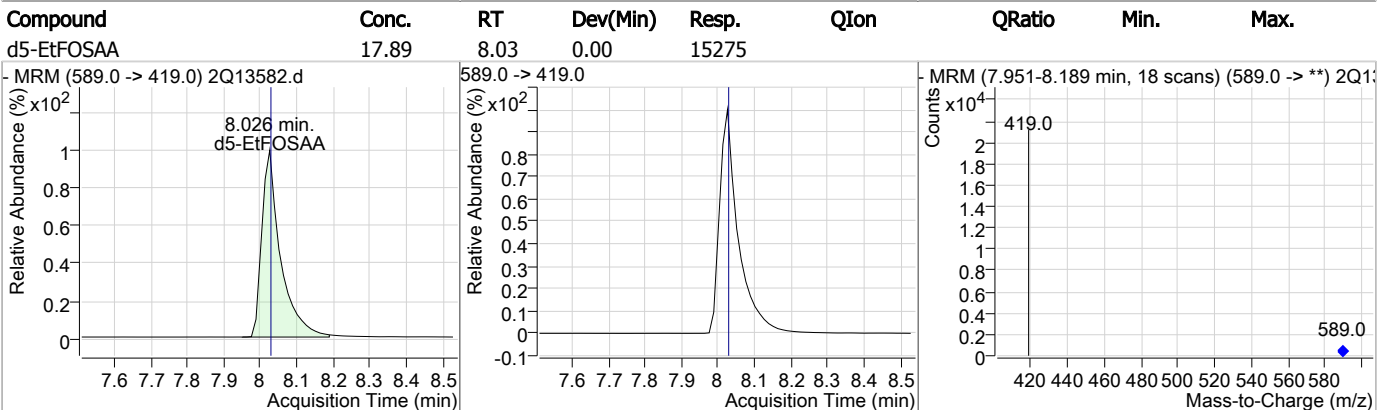
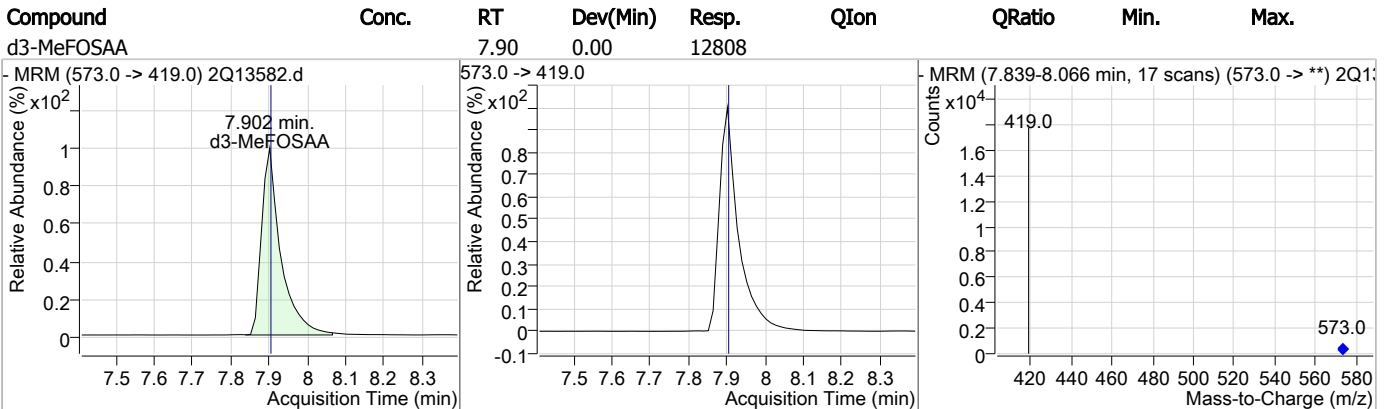
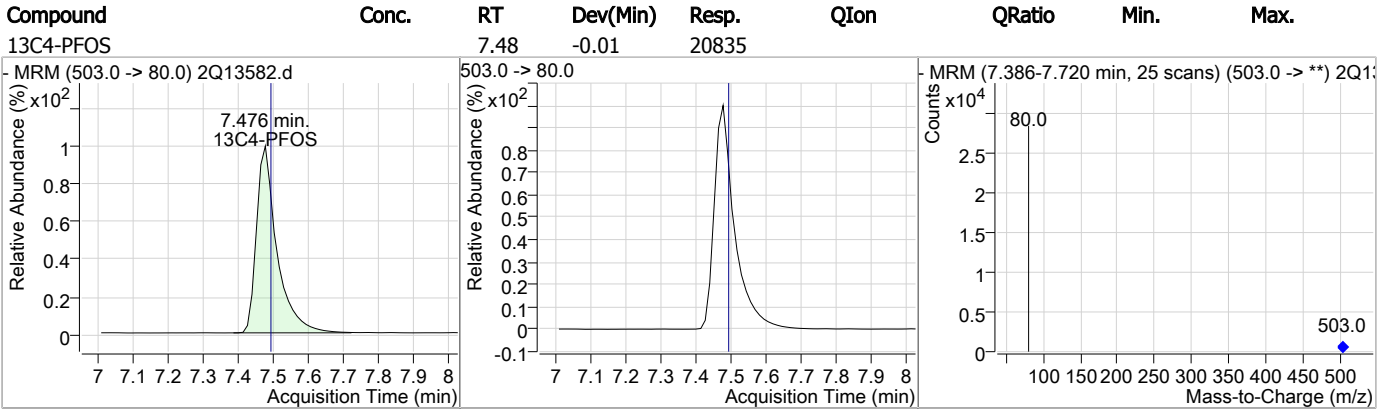


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.47	6.98	-0.01	1198	427.0 -> 81.0	56.2	2.3	62.3



10.1.2 10

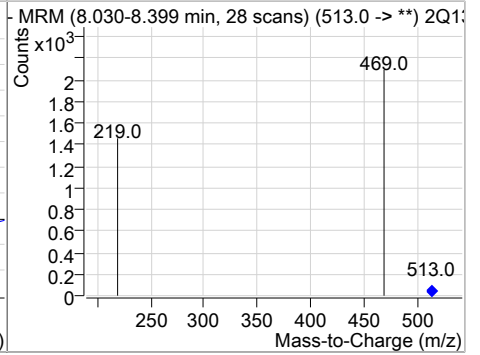
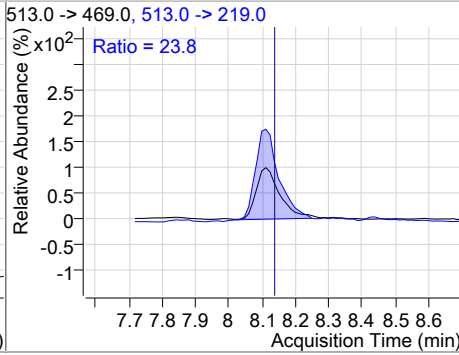
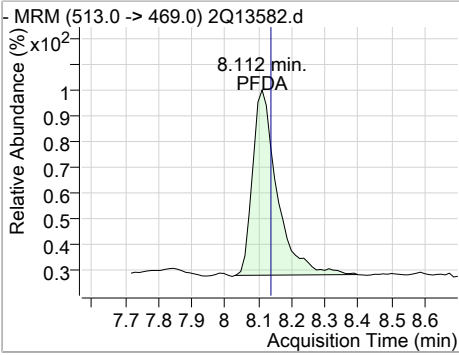
Perfluorinated Compounds by LC/MS/MS



10.1.2 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.50	8.11	-0.04	591	513.0 -> 219.0	23.8	0.0	44.5



10.1.2 10



# Manual Integration Approval Summary

**Sample Number:** JC64541-2      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13582.D      **Analyst approved:** 04/27/18 09:42 Natasha Gumtie  
**Injection Time:** 04/25/18 19:22      **Supervisor approved:** 04/27/18 15:27 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.35	Split peak
Perfluorooctanoic acid	335-67-1		6.97	Split peak

10.1.2.1  
10

## Perfluorinated Compounds by LC/MS/MS

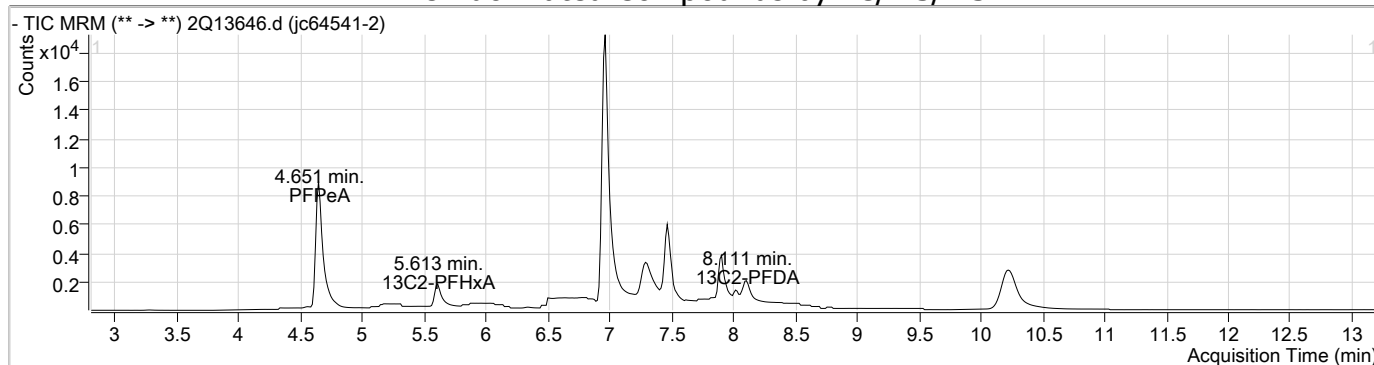
Data File : 2Q13646.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 3:39:06 PM  
 Sample Name : jc64541-2  
 Vial : Vial 73  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q253.batch.bin  
 Sample Information : op69752,S2Q253,260,,,,1.0,5,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
<b>Internal Standards</b>						
13C2-6:2FTS	6.965	429.0 -> 409.0	45427	20.00	µg/L	-0.025
13C2-PFDoDA	10.218	615.0 -> 570.0	25708	20.00	µg/L	-0.200
13C2-PFOA	6.954	415.0 -> 370.0	31410	20.00	µg/L	-0.027
13C3-PFPeA	4.647	266.0 -> 222.0	35326	20.00	µg/L	-0.025
13C4-PFOS	7.463	503.0 -> 80.0	19537	20.00	µg/L	-0.025
d3-MeFOSAA	7.902	573.0 -> 419.0	10502	20.00	µg/L	0.000
<b>System Monitoring Compounds</b>						
13C2-PFDA	8.111	515.0 -> 470.0	6827	3.43	µg/L	-0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 17.1%		
13C2-PFHxA	5.613	315.0 -> 270.0	6056	3.12	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 15.6%		
d5-EtFOSAA	8.026	589.0 -> 419.0	2279	3.23	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 16.1%		
<b>Target Compounds</b>						
4:2FTS	-	327.0 -> 307.0	-	N.D.		QValue
6:2FTS	6.966	427.0 -> 407.0	0	0.00	µg/L m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	4.779	299.0 -> 80.0	0	0.00	µg/L m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	4.651	263.0 -> 219.0	595	0.22	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

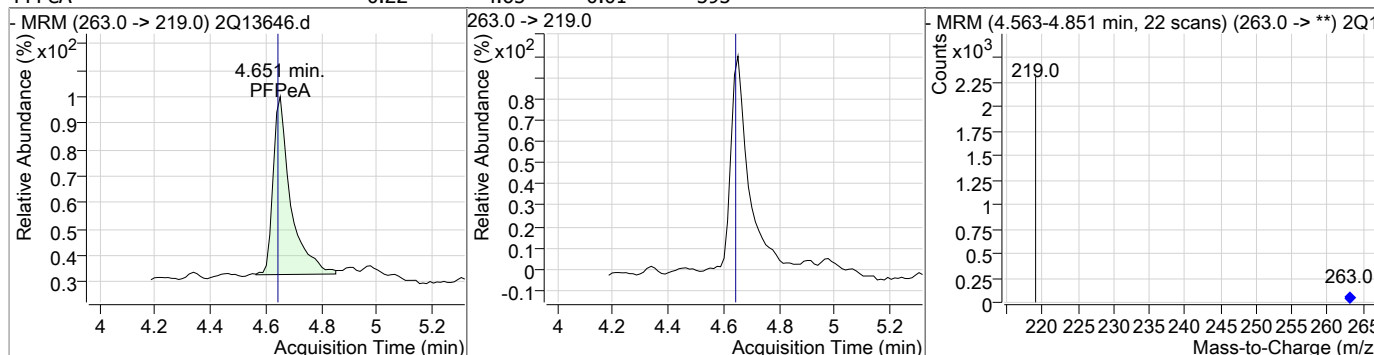
# = Qualifier out of range, m = manually integrated, + = Area summed

10.1.3  
10

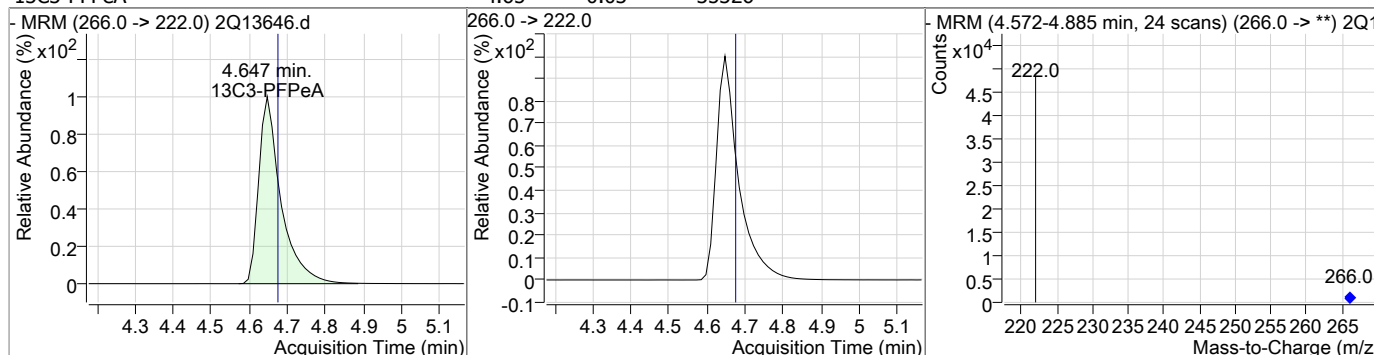
### Perfluorinated Compounds by LC/MS/MS



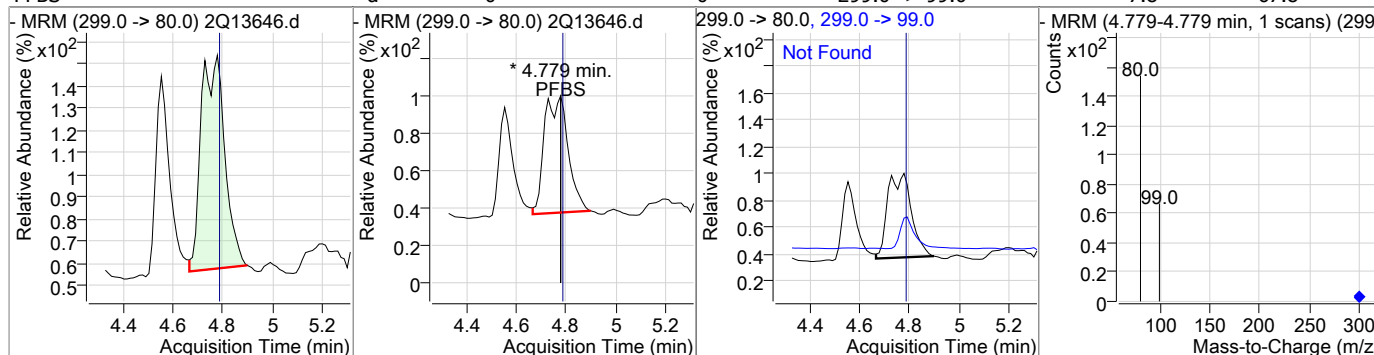
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.22	4.65	-0.01	595				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.65	-0.03	35326				

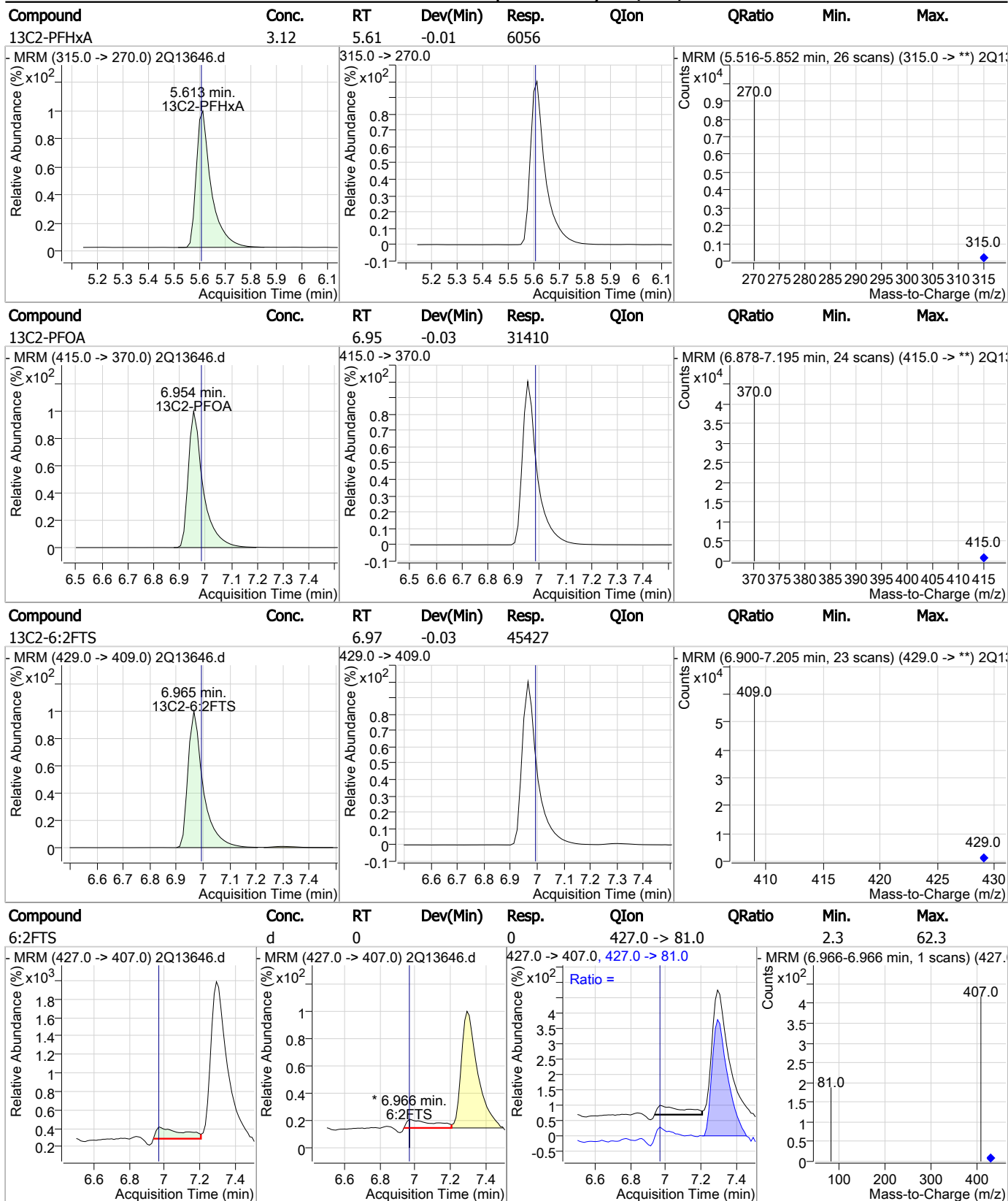


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	d	0		0	299.0 -> 99.0		7.8	67.8



10.1.3 10

### Perfluorinated Compounds by LC/MS/MS



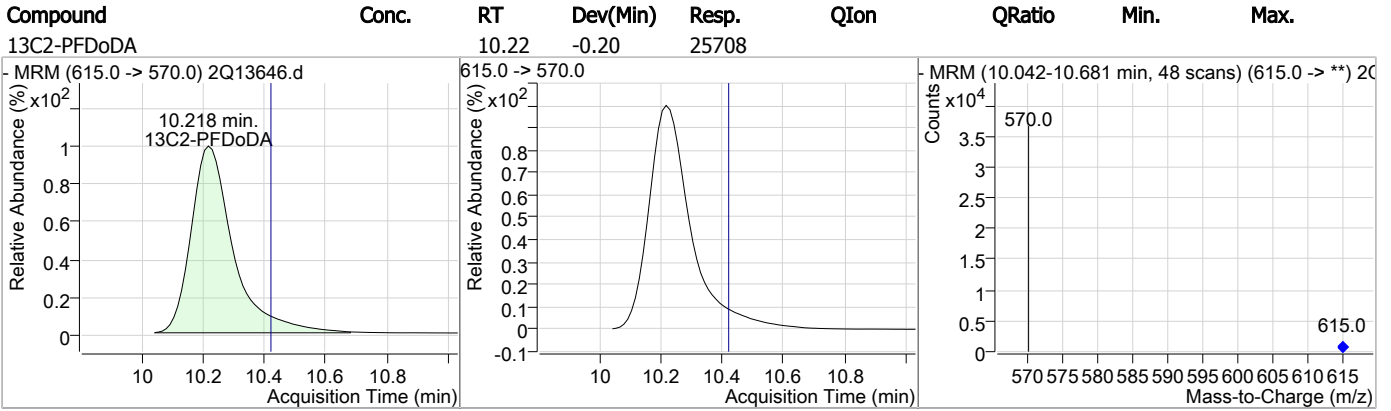
10.1.3 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.46	-0.03	19537				
MRM (503.0 -> 80.0) 2Q13646.d			503.0 -> 80.0			MRM (7.388-7.706 min, 24 scans) (503.0 -> **) 2Q1:		
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10502				
MRM (573.0 -> 419.0) 2Q13646.d			573.0 -> 419.0			MRM (7.802-8.066 min, 20 scans) (573.0 -> **) 2Q1:		
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.23	8.03	0.00	2279				
MRM (589.0 -> 419.0) 2Q13646.d			589.0 -> 419.0			MRM (7.951-8.189 min, 18 scans) (589.0 -> **) 2Q1:		
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	3.43	8.11	-0.04	6827				
MRM (515.0 -> 470.0) 2Q13646.d			515.0 -> 470.0			MRM (7.996-8.349 min, 27 scans) (515.0 -> **) 2Q1:		

10.1.3 10

Perfluorinated Compounds by LC/MS/MS



10.1.3  
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### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13583.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 7:41:37 PM  
 Sample Name : jc64541-3  
 Vial : Vial 31  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,230,,,1.0,1,water

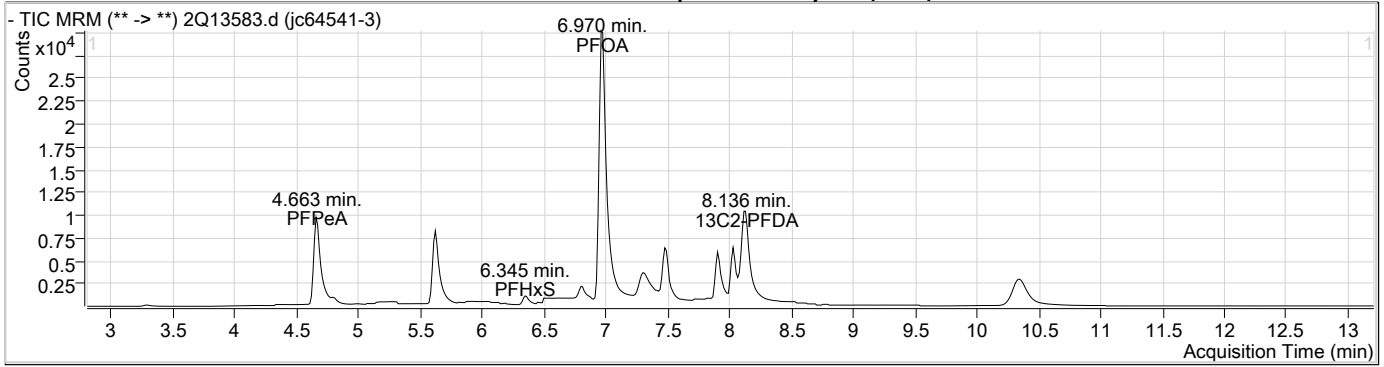
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	50338	20.00 µg/L	-0.013
13C2-PFDoDA	10.343	615.0 -> 570.0	26355	20.00 µg/L	-0.075
13C2-PFOA	6.968	415.0 -> 370.0	34870	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	34695	20.00 µg/L	-0.013
13C4-PFOS	7.476	503.0 -> 80.0	21474	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	17912	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.136	515.0 -> 470.0	44945	20.32 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.6%	
13C2-PFHxA	5.625	315.0 -> 270.0	29556	13.72 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 68.6%	
d5-EtFOSAA	8.026	589.0 -> 419.0	19885	16.64 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 83.2%	
<b>Target Compounds</b>					
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.979	427.0 -> 407.0	1187	0.46 µg/L	90
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	3.277	213.0 -> 169.0	581	0.69 µg/L	100
PFBS	4.804	299.0 -> 80.0	1433	1.13 µg/L	96
PFDA	8.137	513.0 -> 469.0	701	0.56 µg/L	79
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	6.351	363.0 -> 319.0	3058	1.20 µg/L	m 97
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.627	313.0 -> 269.0	1551	1.84 µg/L	98
PFHxS	6.345	399.0 -> 80.0	532	0.38 µg/L	m 99
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	6.970	413.0 -> 369.0	33492	23.65 µg/L	m 95
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	4.663	263.0 -> 219.0	4102	1.51 µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

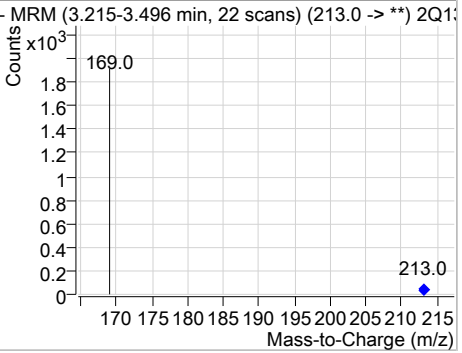
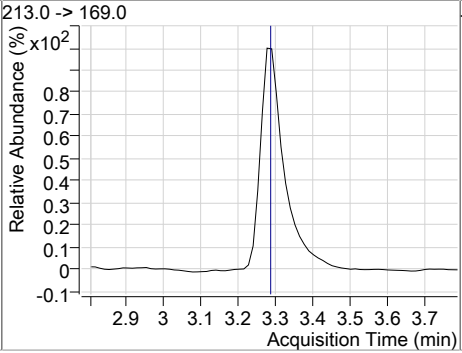
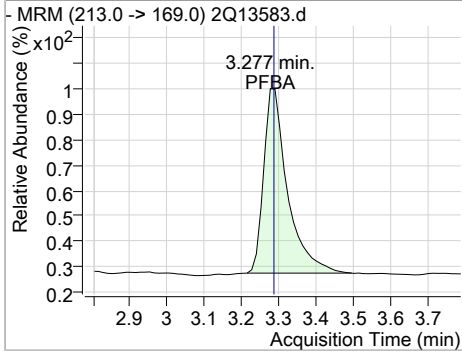
10.1.4  
10



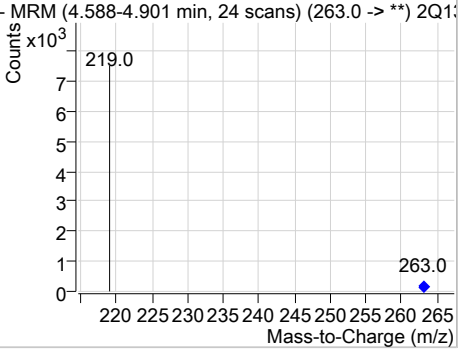
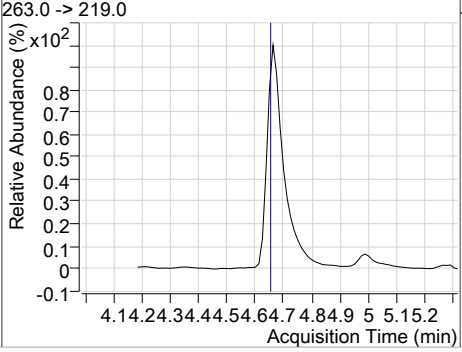
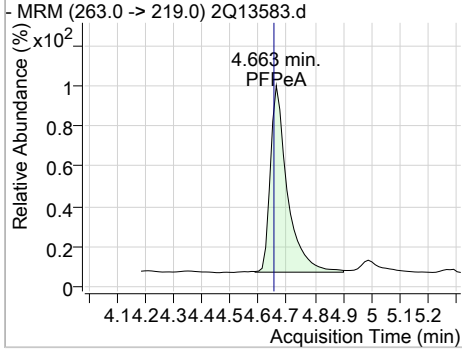
### Perfluorinated Compounds by LC/MS/MS



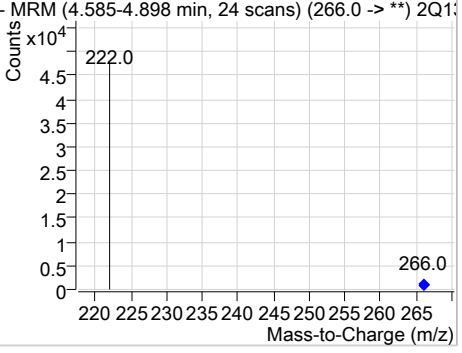
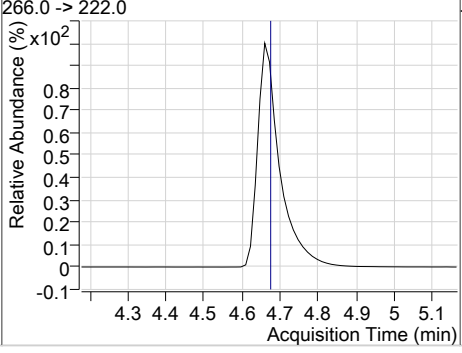
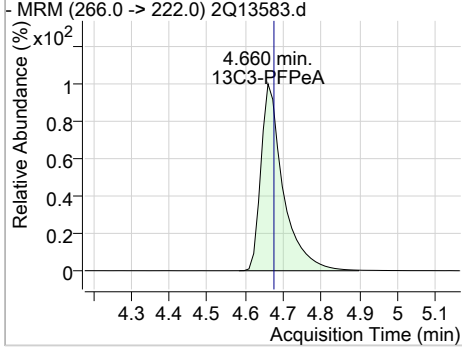
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.69	3.28	-0.01	581				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.51	4.66	0.00	4102				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	-0.01	34695				

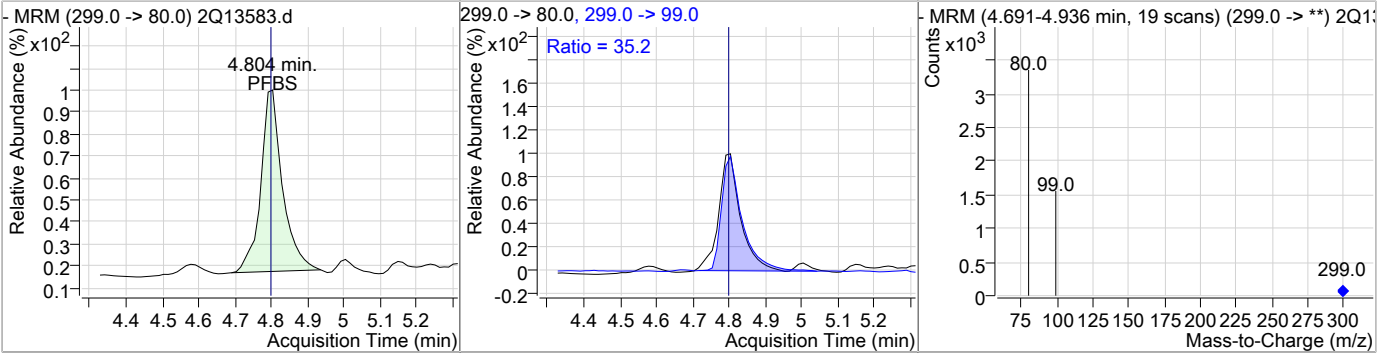


10.1.4 10

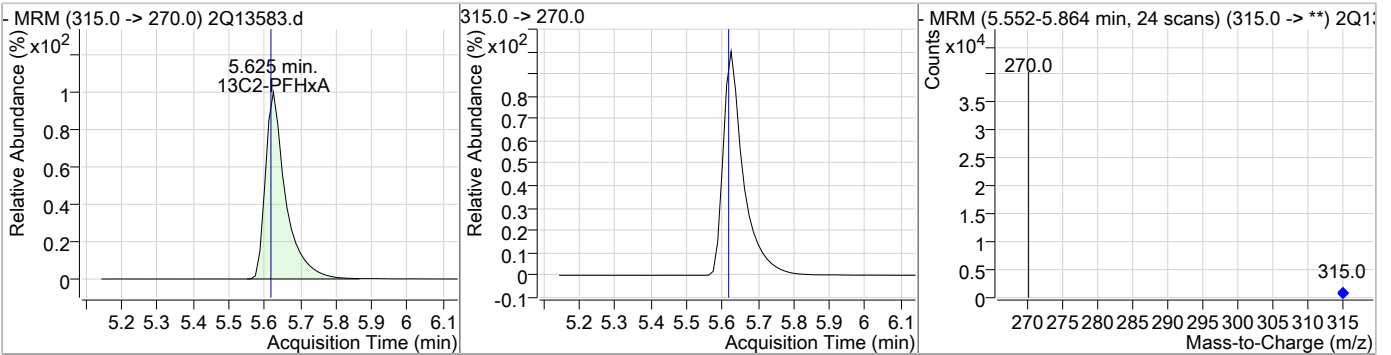


### Perfluorinated Compounds by LC/MS/MS

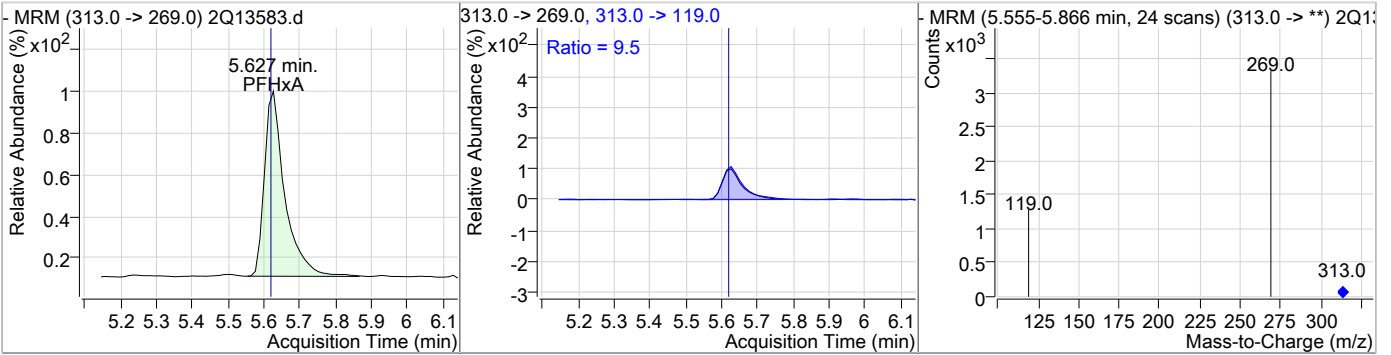
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.13	4.80	0.00	1433	299.0 -> 99.0	35.2	7.8	67.8



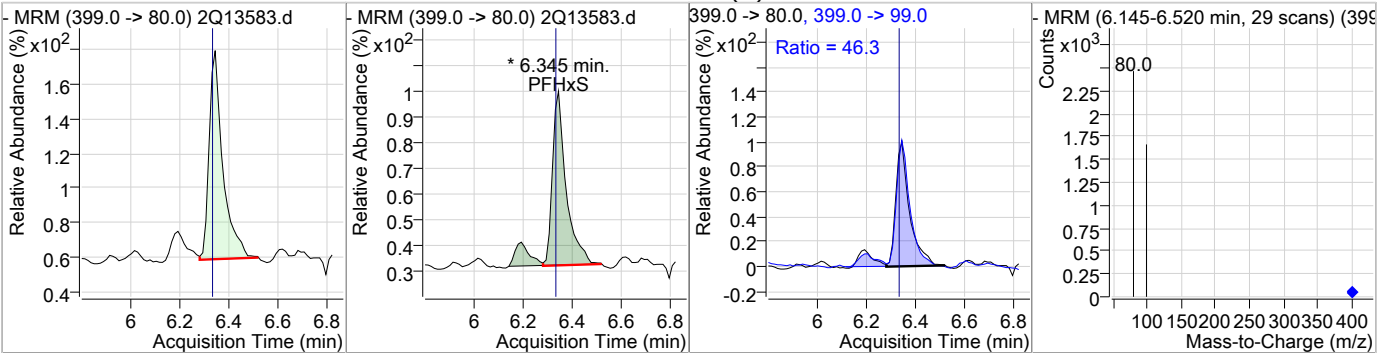
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	13.72	5.63	0.00	29556				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.84	5.63	0.00	1551	313.0 -> 119.0	9.5	0.0	38.7

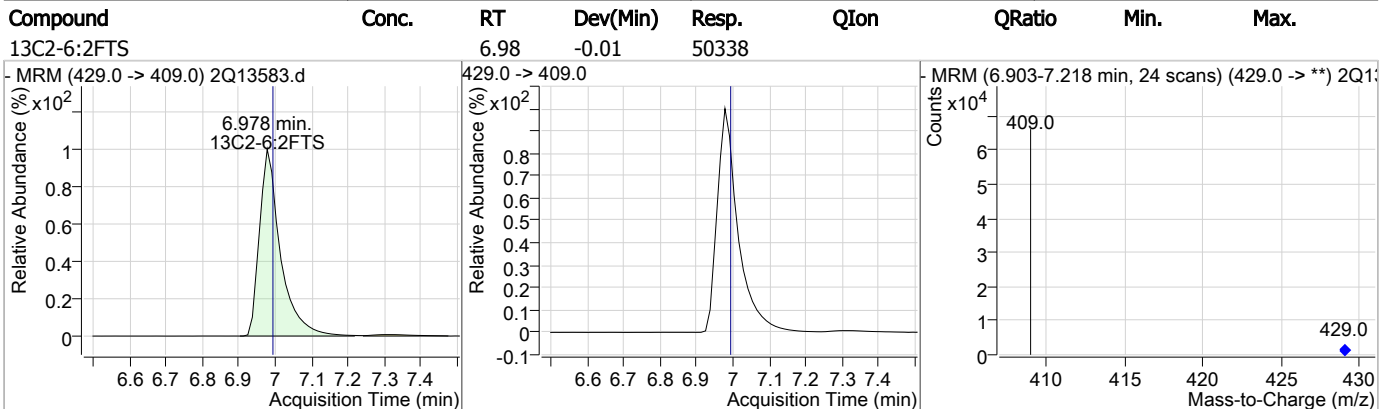
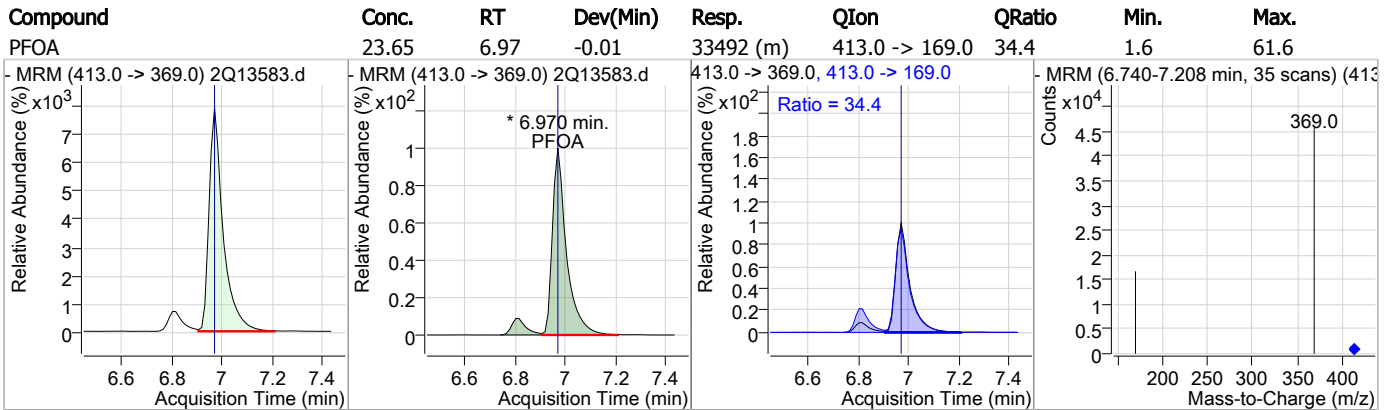
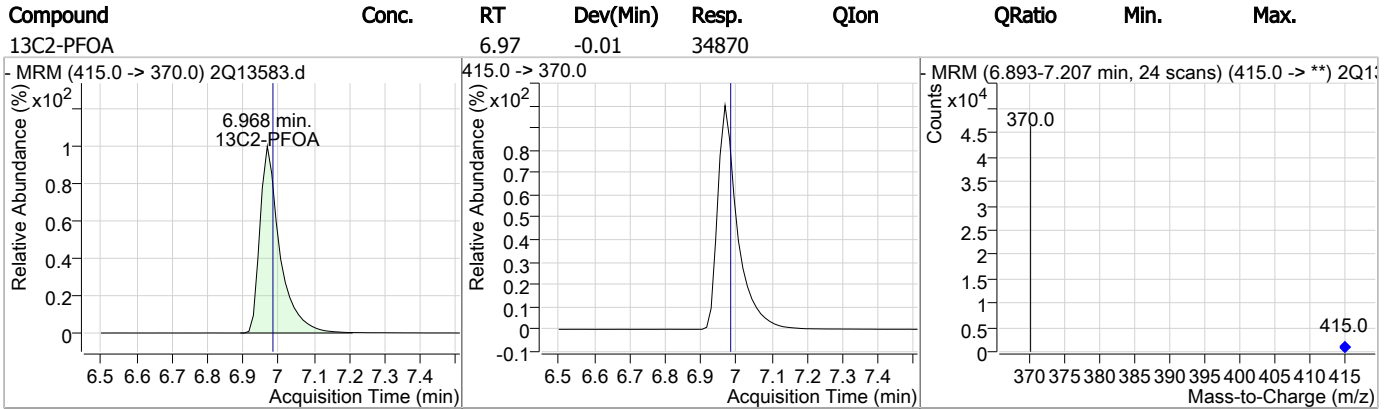
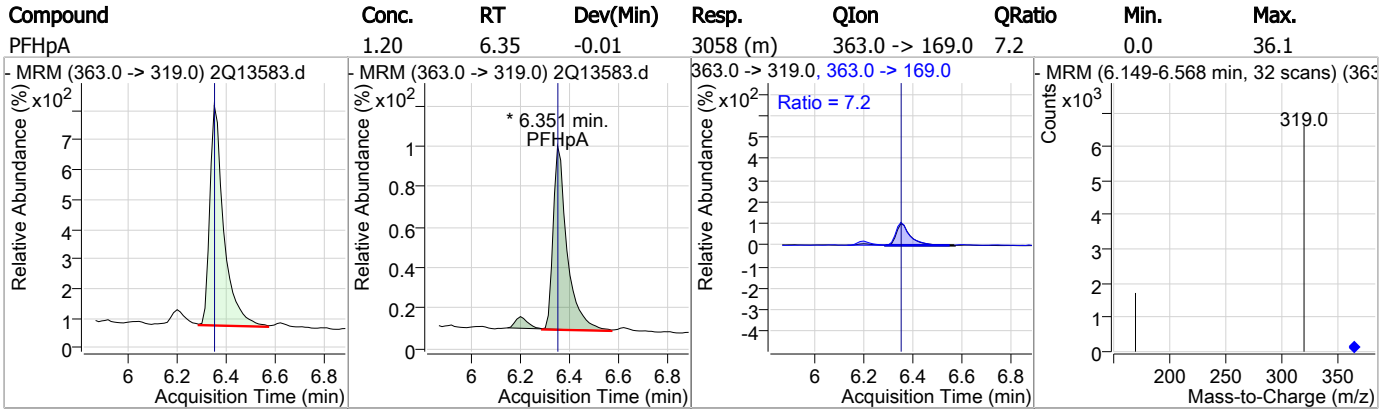


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.38	6.34	0.00	532 (m)	399.0 -> 99.0	46.3	17.0	77.0



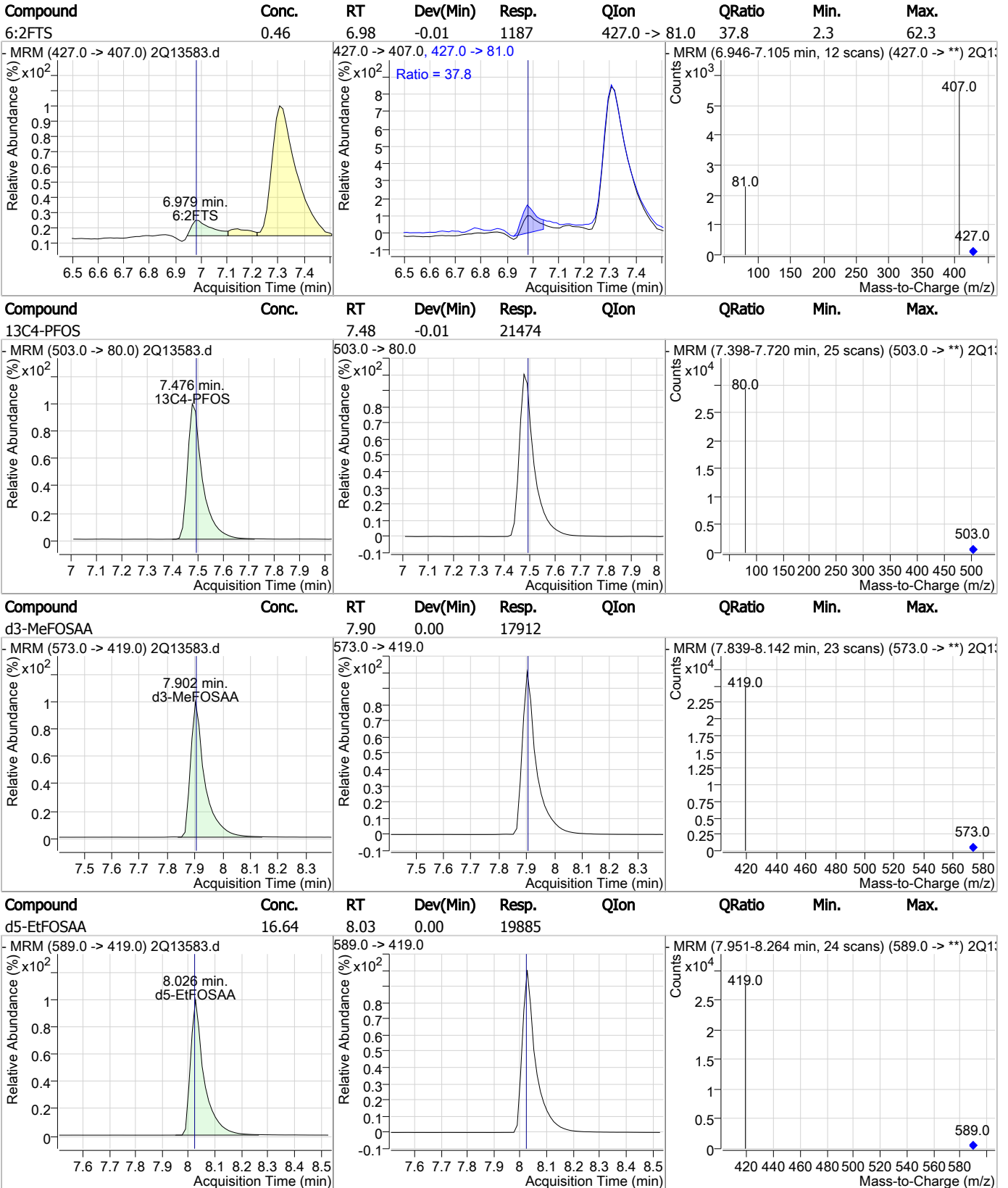
10.1.4 10

### Perfluorinated Compounds by LC/MS/MS



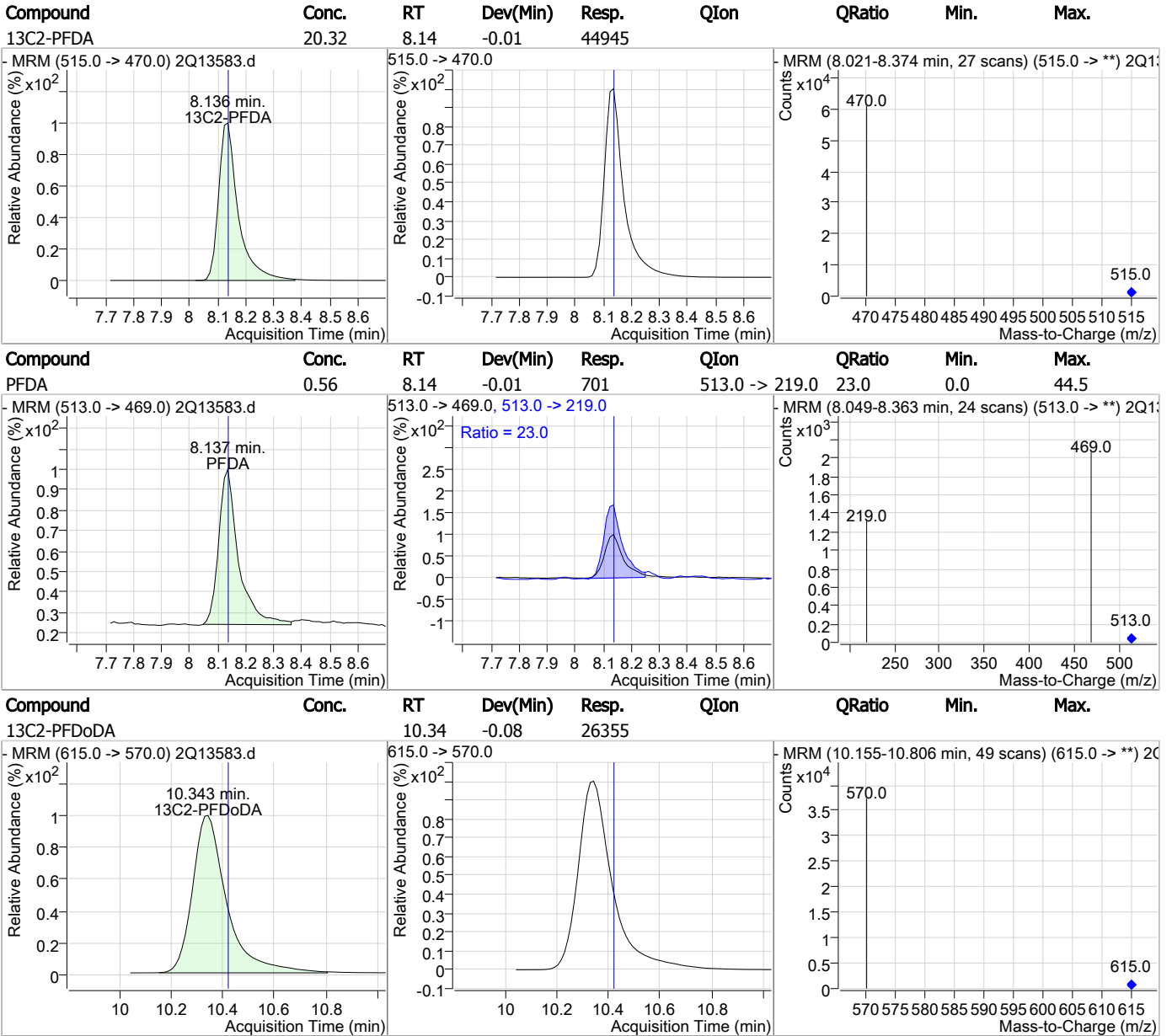
10.1.4 10

### Perfluorinated Compounds by LC/MS/MS



10.1.4 10

### Perfluorinated Compounds by LC/MS/MS



10.1.4 10

# Manual Integration Approval Summary

**Sample Number:** JC64541-3      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13583.D      **Analyst approved:** 04/26/18 12:50 Natasha Gumtie  
**Injection Time:** 04/25/18 19:41      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluoroheptanoic acid	375-85-9		6.35	Split peak
Perfluorooctanoic acid	335-67-1		6.97	Split peak

10.1.4.1

10

Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)  
 Mike Eger  
 04/30/18 14:03

### Perfluorinated Compounds by LC/MS/MS

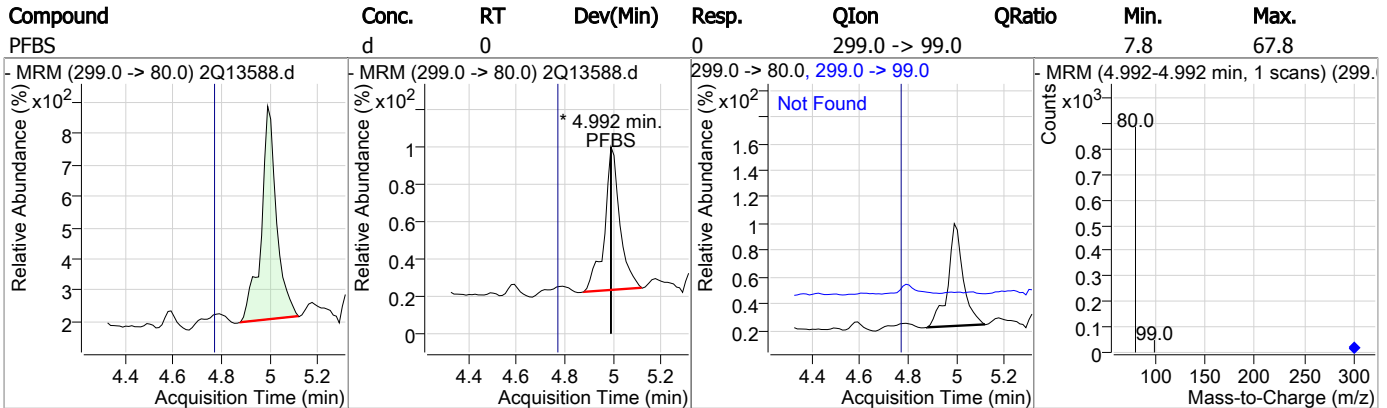
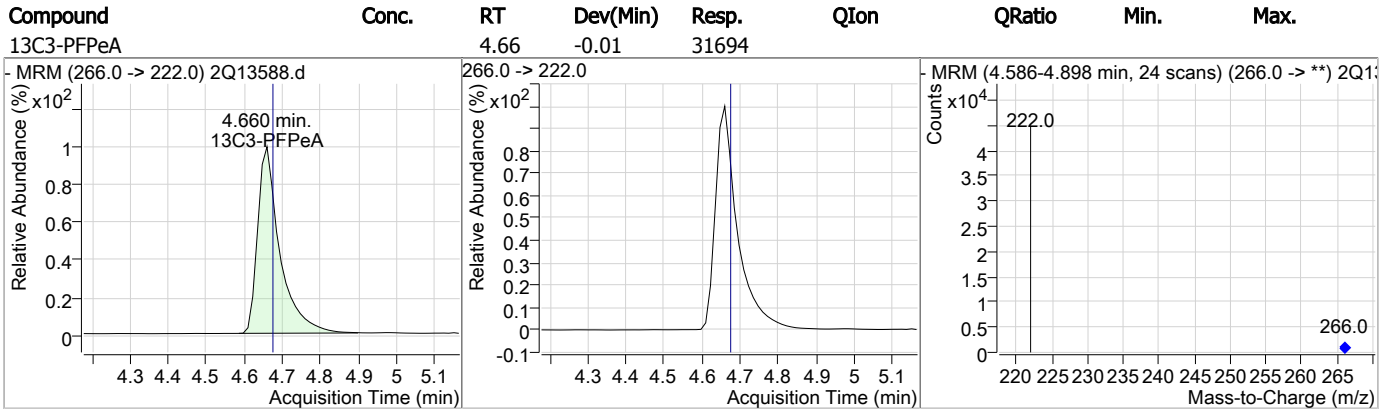
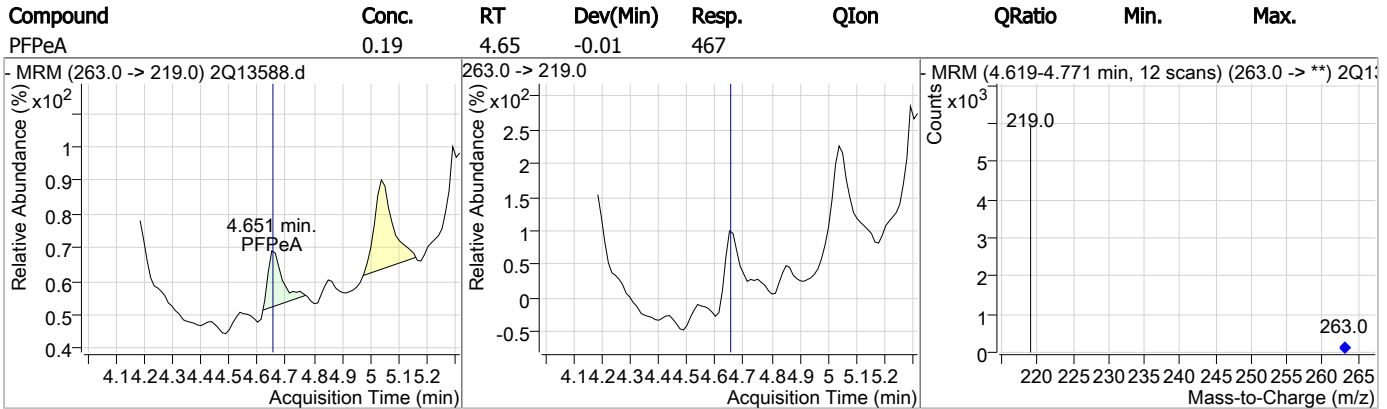
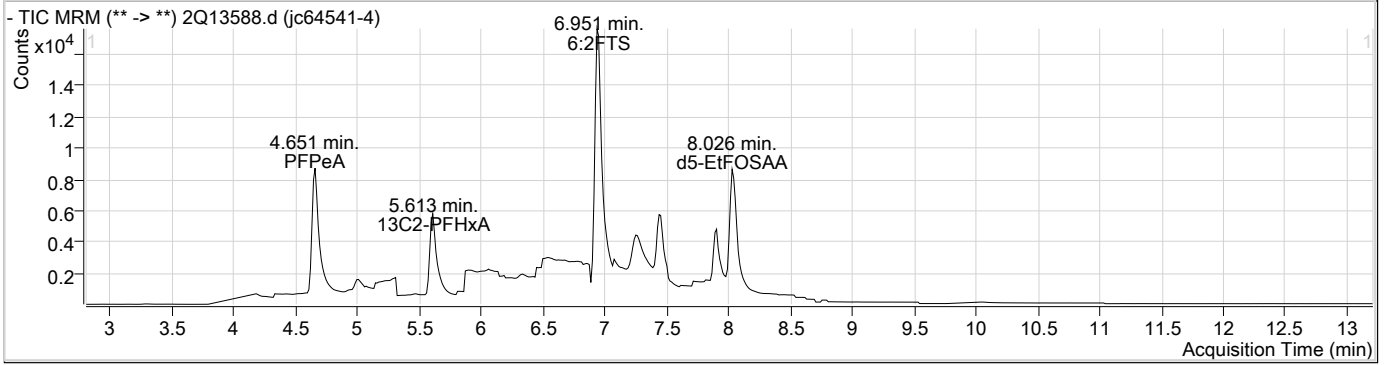
Data File : 2Q13588.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 9:15:45 PM  
 Sample Name : jc64541-4  
 Vial : Vial 34  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,190,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)	
<b>Internal Standards</b>							
13C2-6:2FTS	6.950	429.0 -> 409.0	43844	20.00	µg/L	-0.041	
13C2-PFDoDA	-	615.0 -> 570.0	-	N.D.			
13C2-PFOA	6.942	415.0 -> 370.0	24202	20.00	µg/L	-0.039	
13C3-PFPeA	4.660	266.0 -> 222.0	31694	20.00	µg/L	-0.013	
13C4-PFOS	7.438	503.0 -> 80.0	15108	20.00	µg/L	-0.051	
d3-MeFOSAA	7.902	573.0 -> 419.0	11712	20.00	µg/L	0.000	
<b>System Monitoring Compounds</b>							
13C2-PFDA	8.047	515.0 -> 470.0	21684	14.12	µg/L	-0.102	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 70.6%			
13C2-PFHxA	5.613	315.0 -> 270.0	20161	13.48	µg/L	-0.013	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 67.4%			
d5-EtFOSAA	8.026	589.0 -> 419.0	10330	13.20	µg/L	0.000	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 66.0%			
<b>Target Compounds</b>							
4:2FTS	-	327.0 -> 307.0	-	N.D.			QValue
6:2FTS	6.951	427.0 -> 407.0	1455	0.65	µg/L		89
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	4.992	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	8.048	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	6.339	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.665	313.0 -> 269.0	949	1.62	µg/L	m	90
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.943	413.0 -> 369.0	0	0.00	µg/L	m	1
PFOS	7.439	499.0 -> 80.0	899	0.99	µg/L	m	99
PFPeA	4.651	263.0 -> 219.0	467	0.19	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

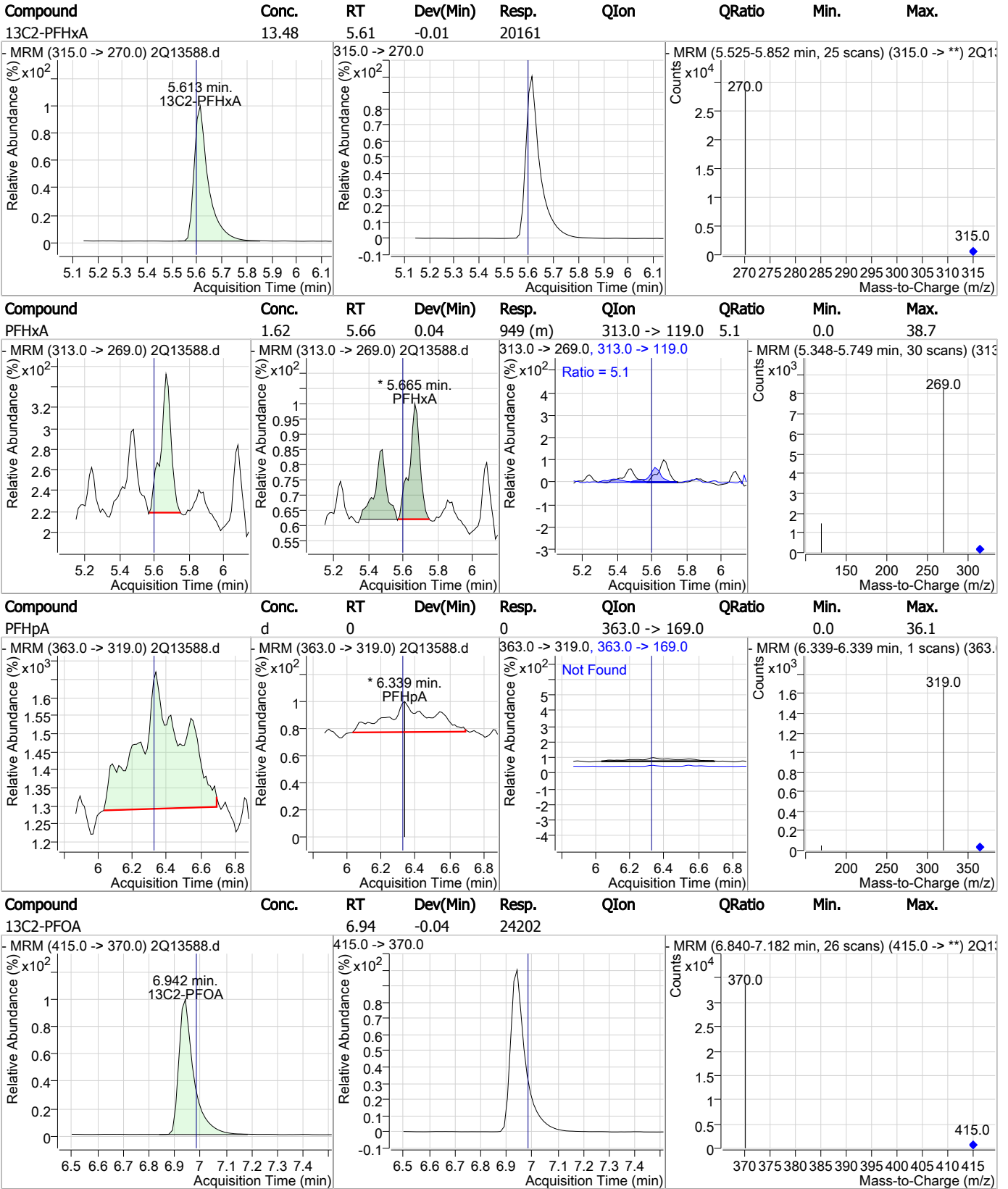
10.1.5  
10

### Perfluorinated Compounds by LC/MS/MS



10.1.5 10

### Perfluorinated Compounds by LC/MS/MS

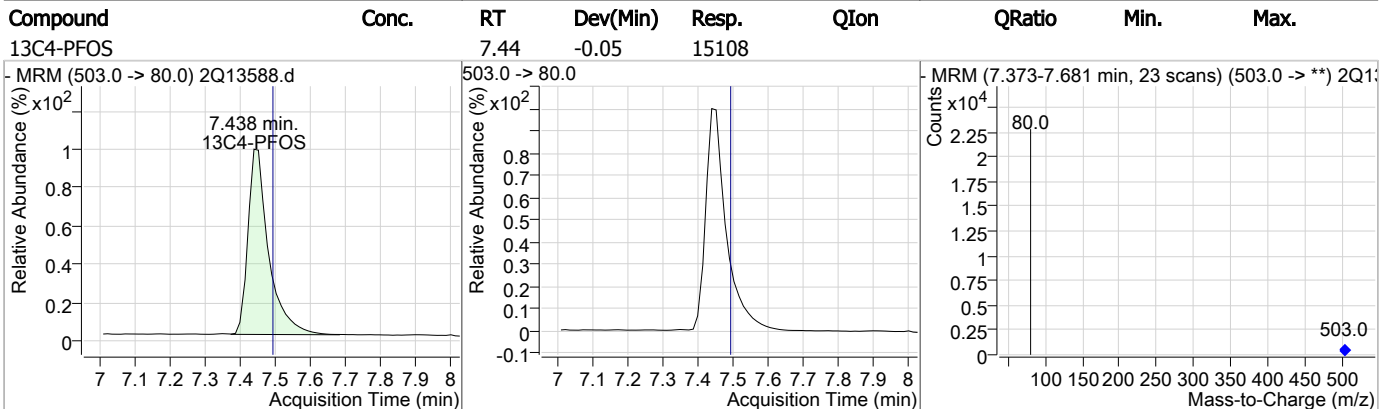
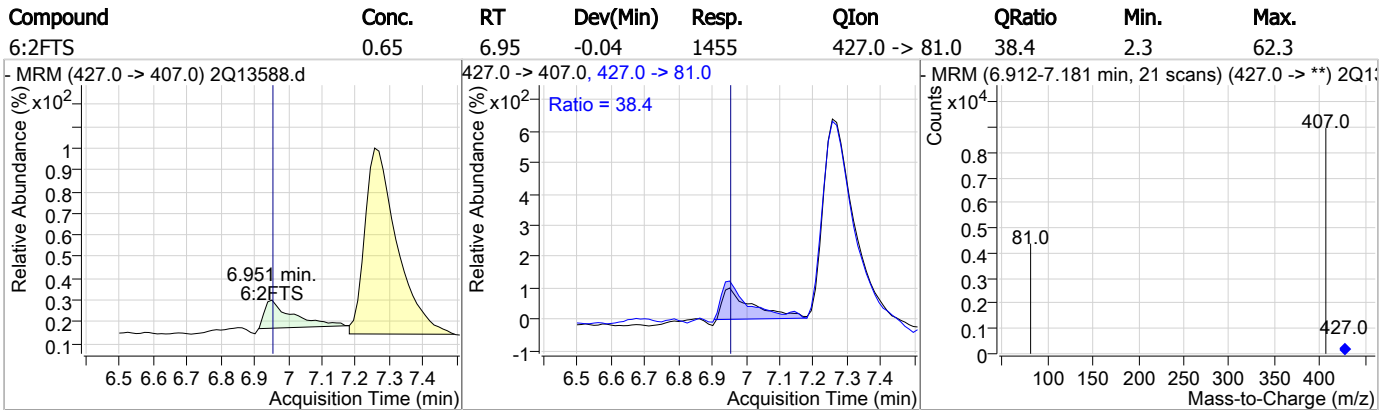
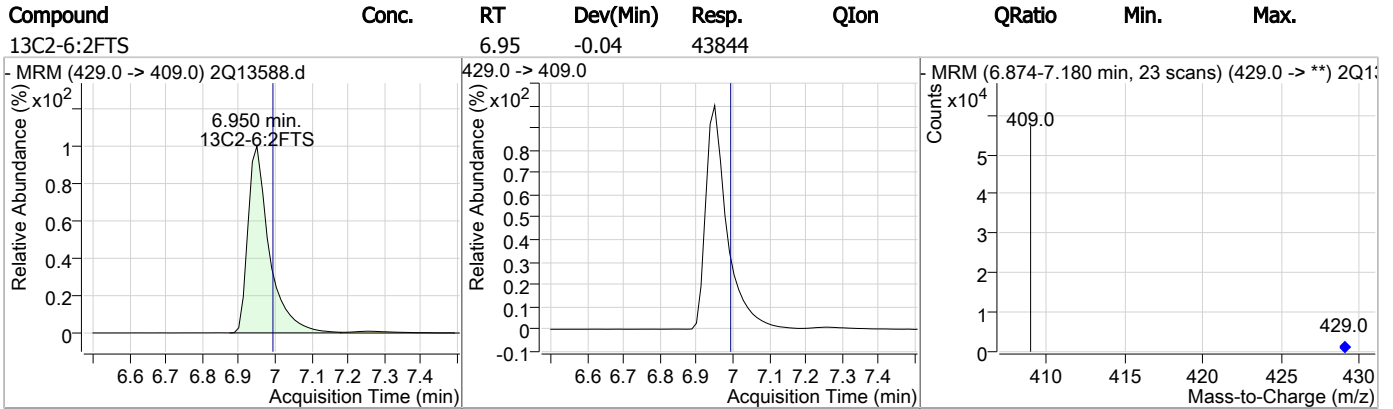
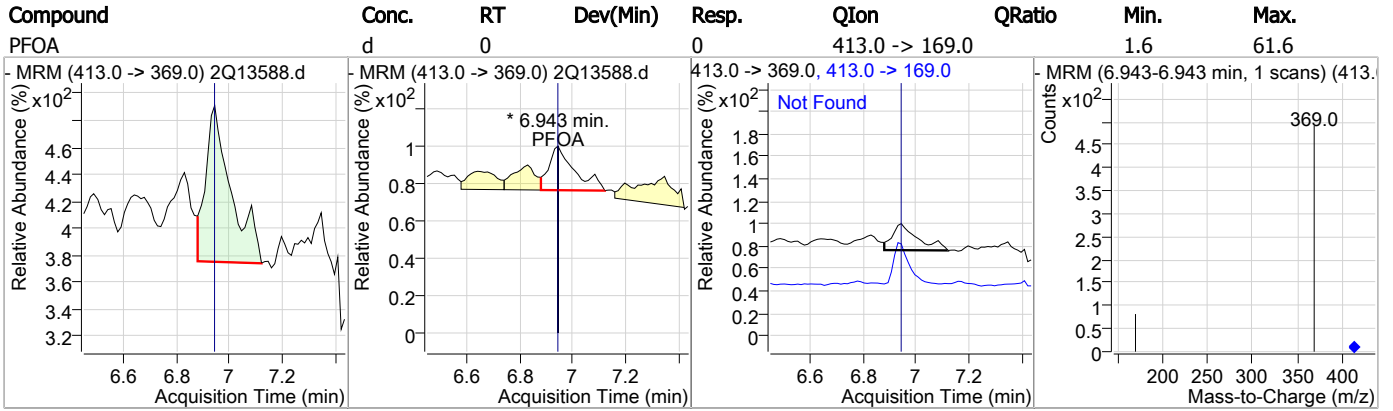


10.1.5 10



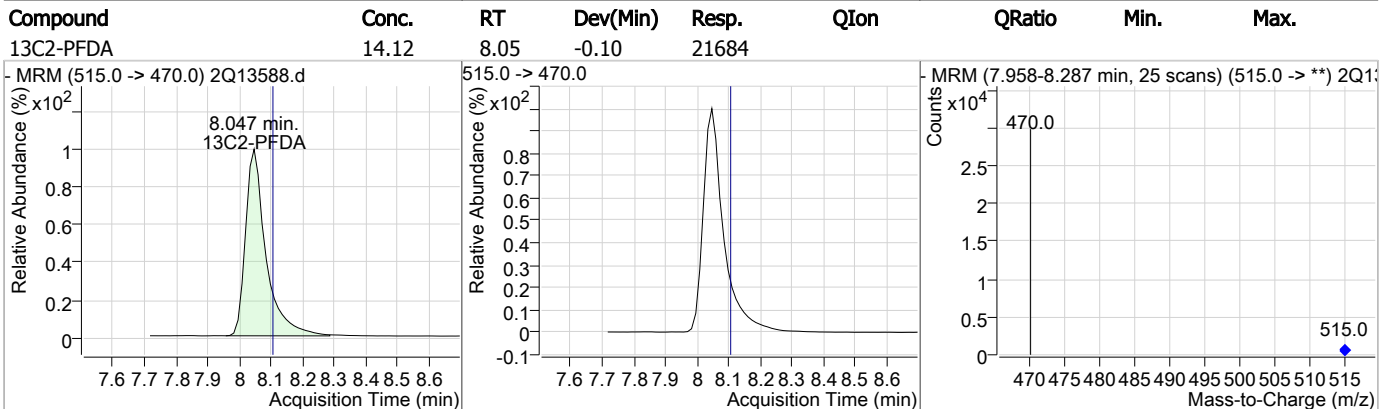
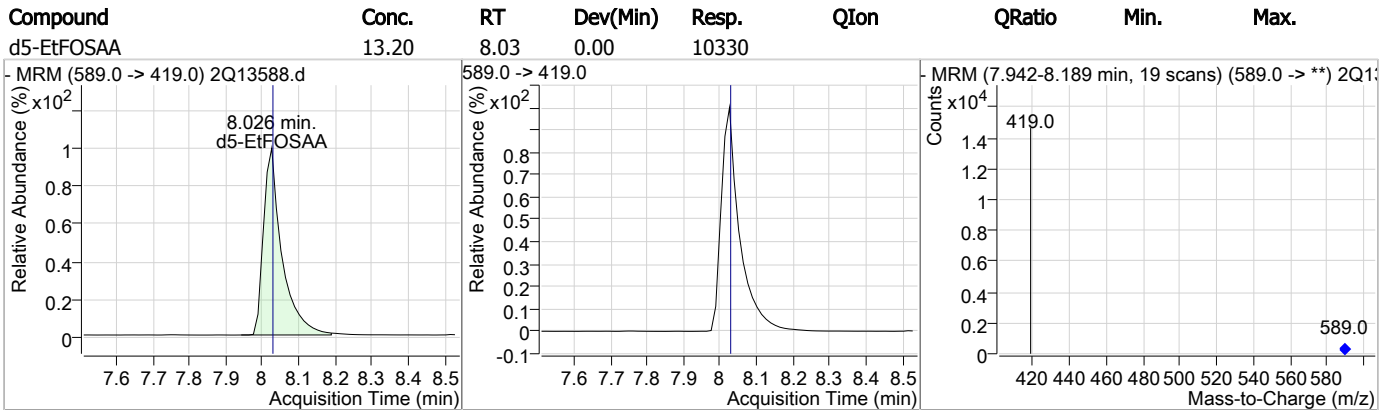
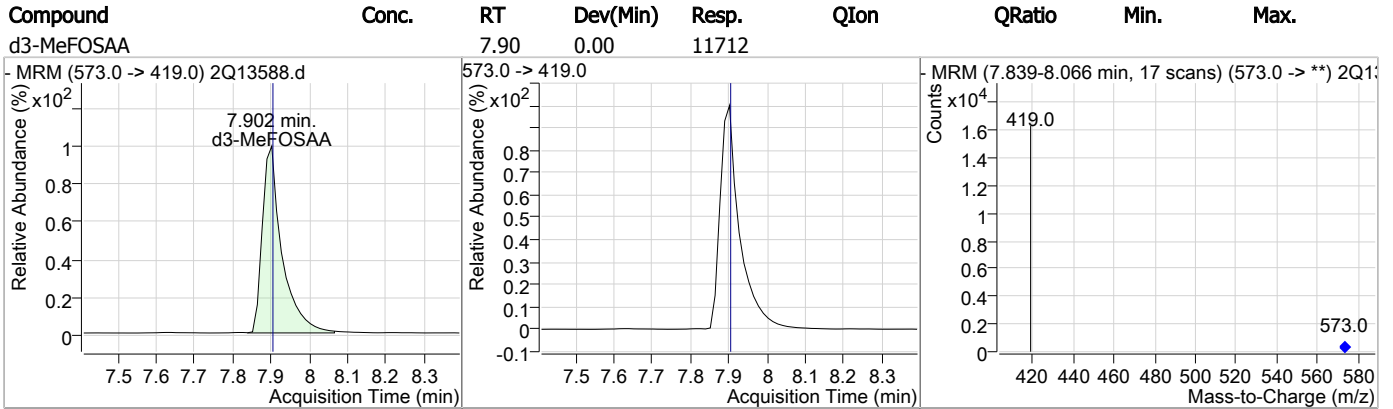
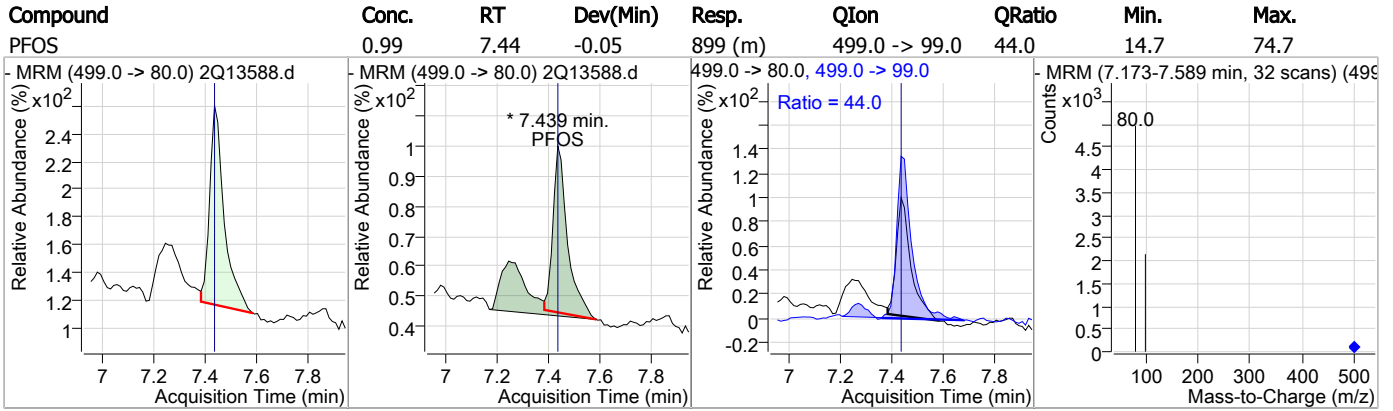


### Perfluorinated Compounds by LC/MS/MS



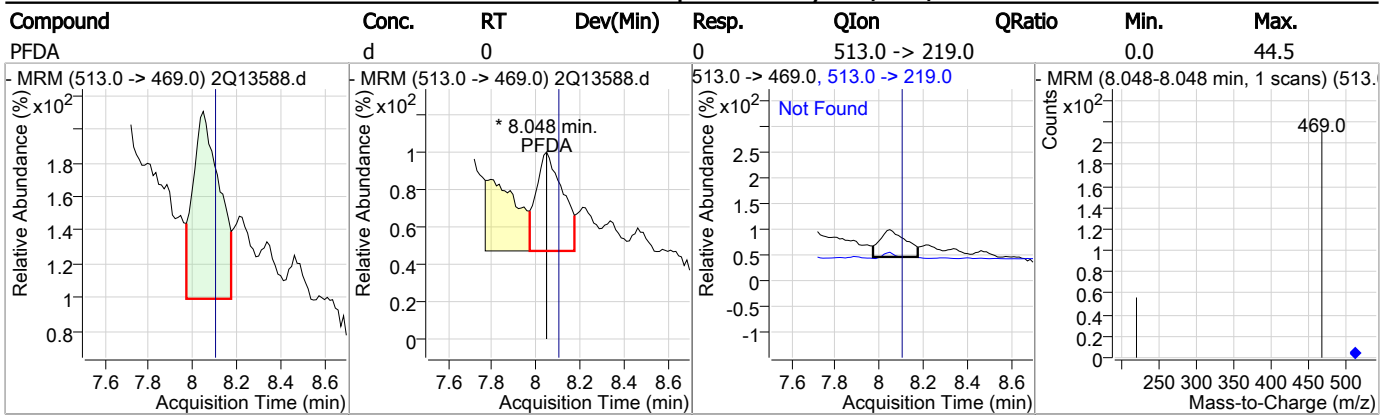
10.1.5 10

### Perfluorinated Compounds by LC/MS/MS



10.1.5 10

### Perfluorinated Compounds by LC/MS/MS



10.1.5 10

# Manual Integration Approval Summary

**Sample Number:** JC64541-4      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13588.D      **Analyst approved:** 04/29/18 13:47 Nancy Saunders  
**Injection Time:** 04/25/18 21:15      **Supervisor approved:** 04/30/18 14:03 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.67	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.44	Split peak

10.1.5.1  
10

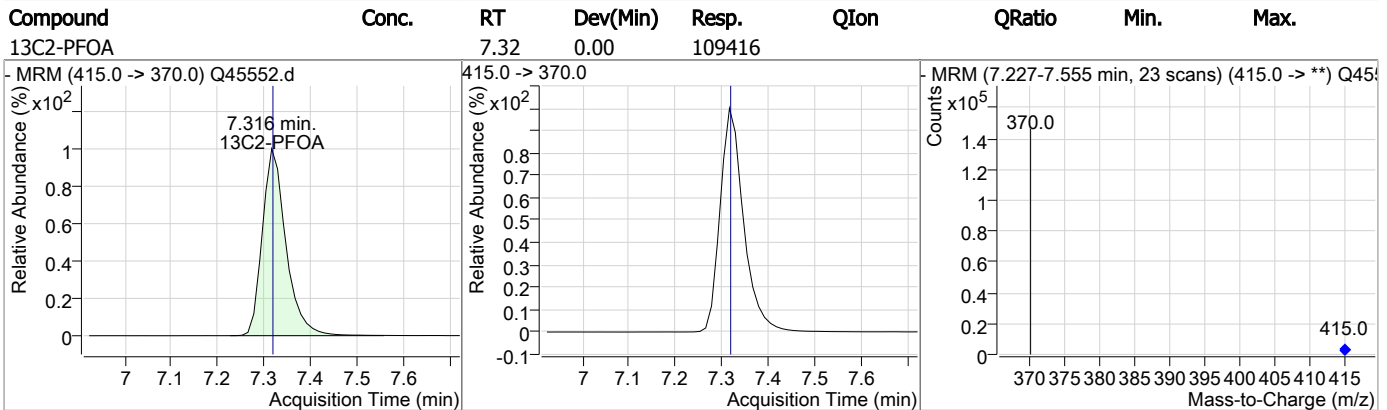
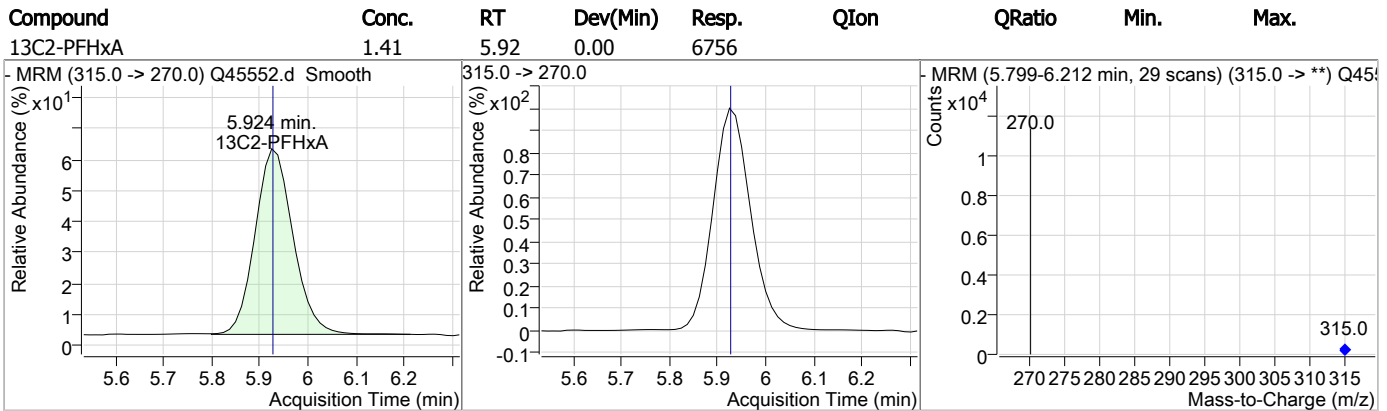
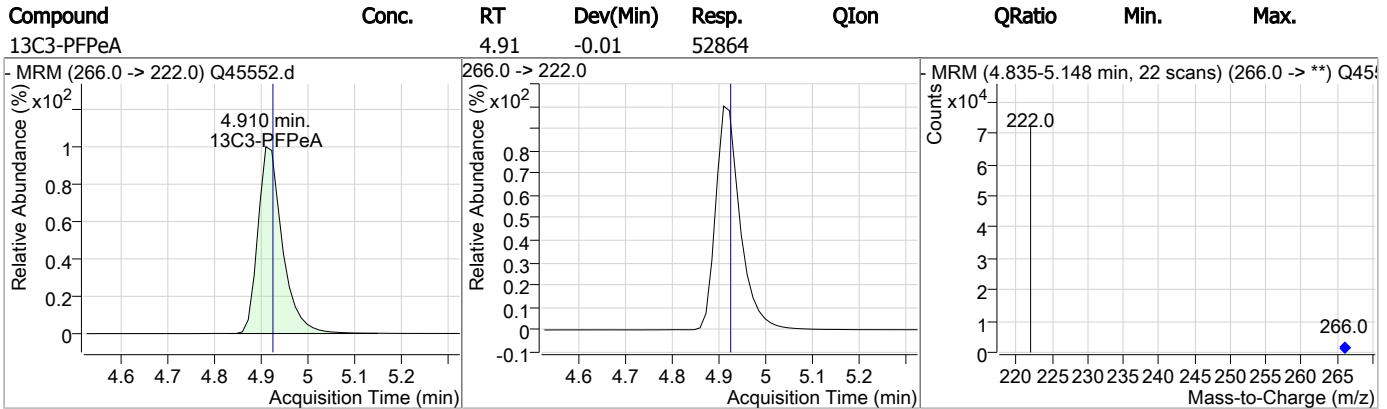
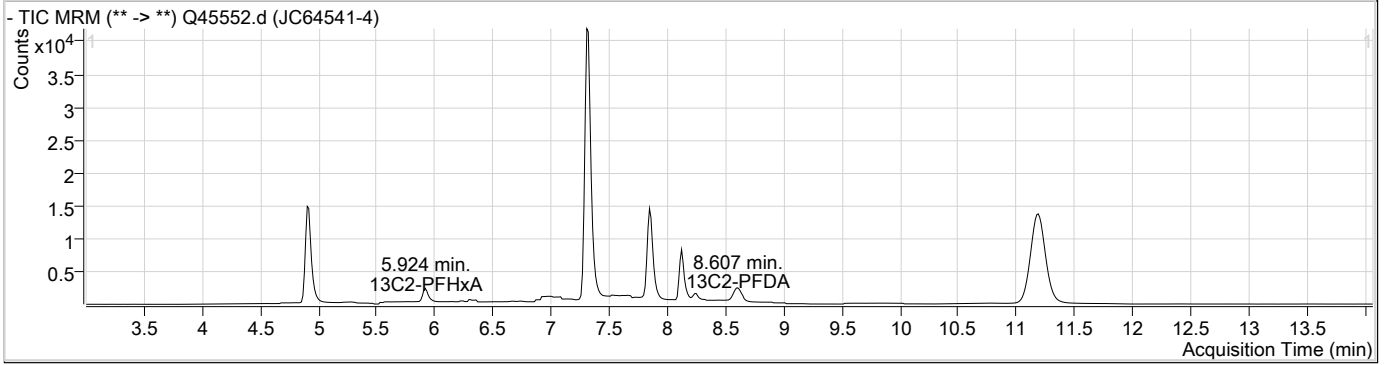
## Perfluorinated Compounds by LC/MS/MS

Data File : Q45552.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/27/2018 10:57:37 AM  
 Sample Name : JC64541-4  
 Vial : Vial 3  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1120.batch.bin  
 Sample Information : OP69752,SQ1120,190,,,1.0,10,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.324	429.0 -> 409.0	43789	20.00 µg/L	-0.001
13C2-PFDoDA	11.188	615.0 -> 570.0	123211	20.00 µg/L	-0.088
13C2-PFOA	7.316	415.0 -> 370.0	109416	20.00 µg/L	0.000
13C4-PFOS	7.852	503.0 -> 80.0	50309	20.00 µg/L	-0.013
d3-MeFOSAA	8.124	573.0 -> 419.0	22491	20.00 µg/L	0.000
13C3-PFPeA	4.910	266.0 -> 222.0	52864	20.00 µg/L	-0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.607	515.0 -> 470.0	9669	1.38 µg/L	-0.023
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 6.9%	
13C2-PFHxA	5.924	315.0 -> 270.0	6756	1.41 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 7.0%	
d5-EtFOSAA	8.247	589.0 -> 419.0	2404	1.48 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 7.4%	
<b>Target Compounds</b>					
					<b>QValue</b>
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	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
4:2FTS	-	327.0 -> 307.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	

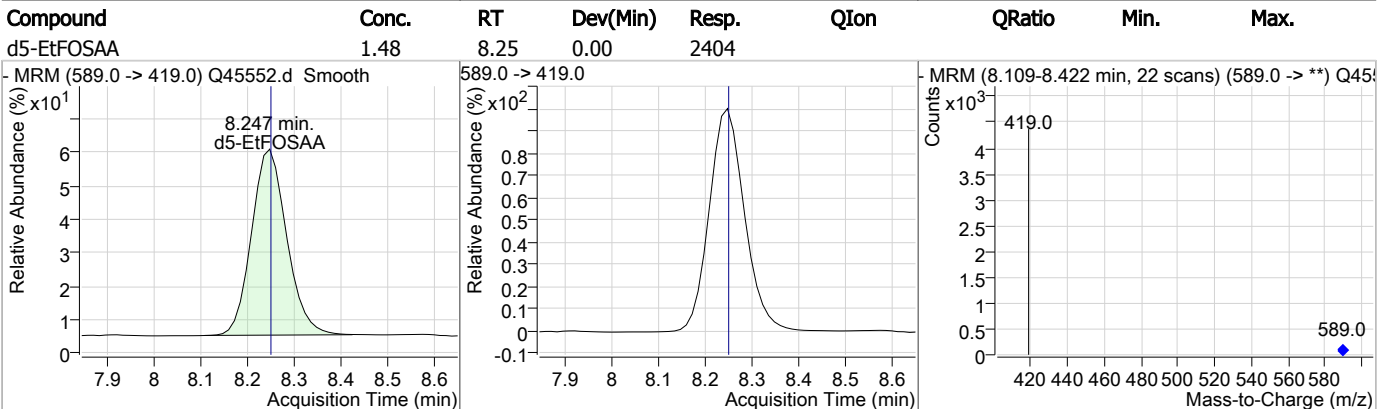
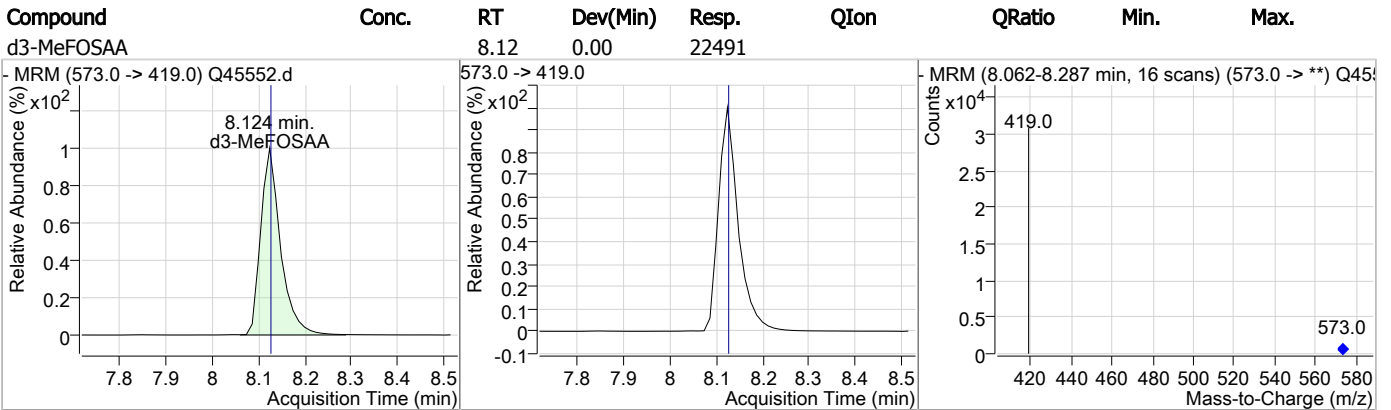
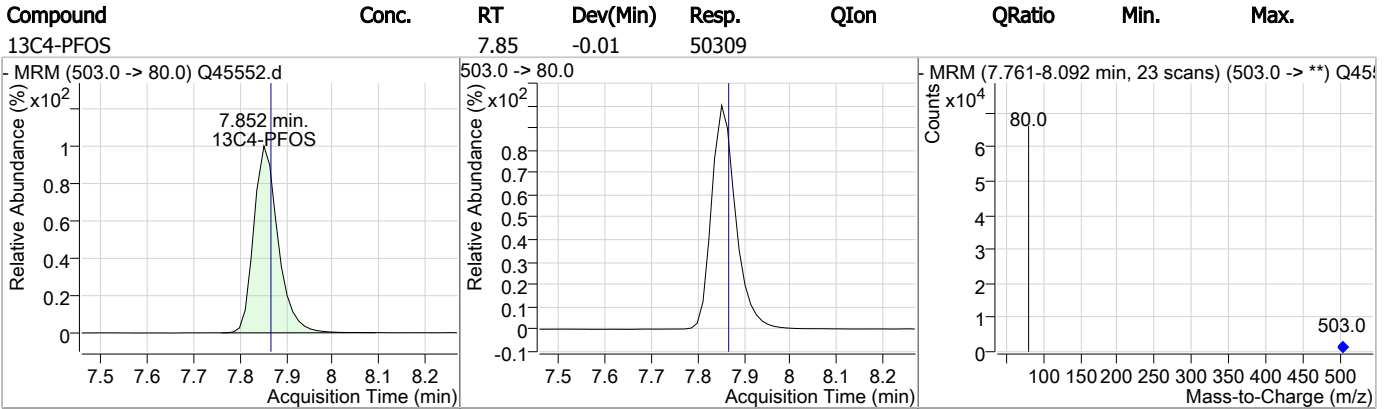
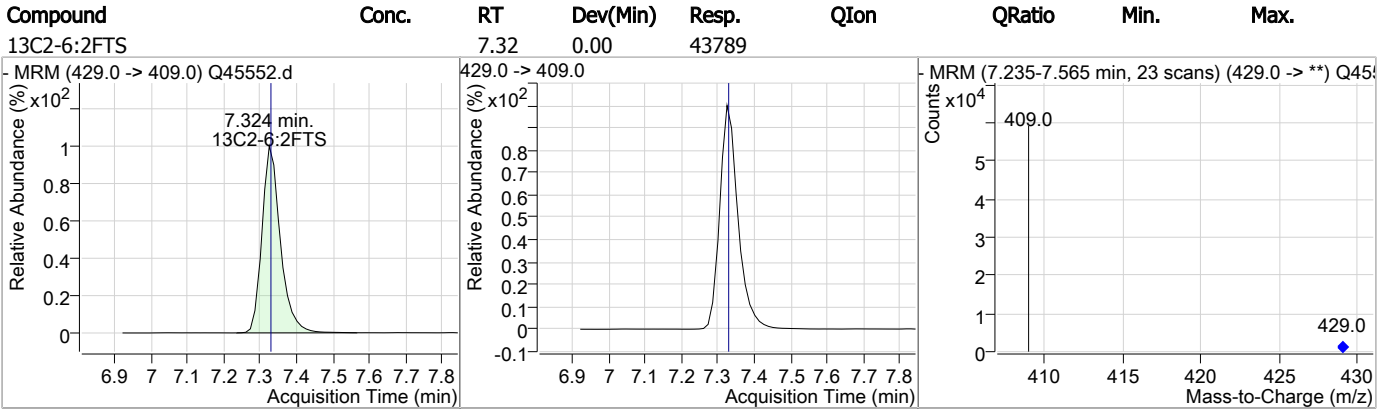
# = Qualifier out of range, m = manually integrated, + = Area summed

### Perfluorinated Compounds by LC/MS/MS



10.1.6 10

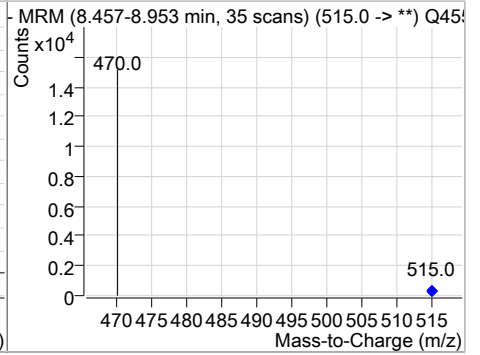
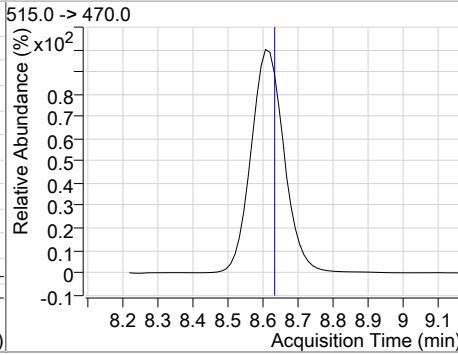
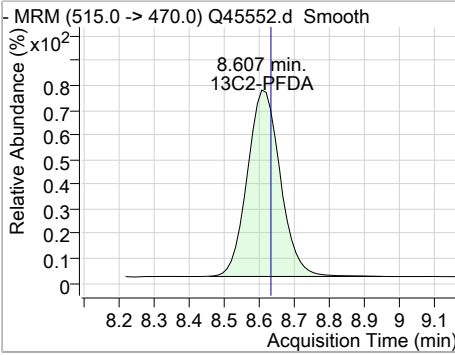
### Perfluorinated Compounds by LC/MS/MS



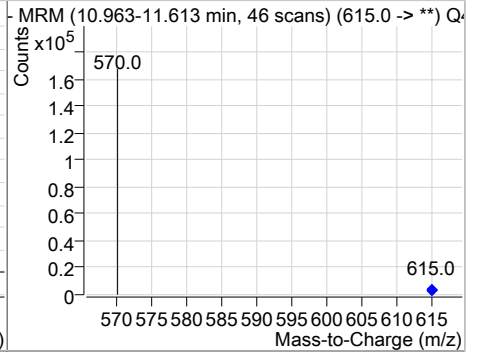
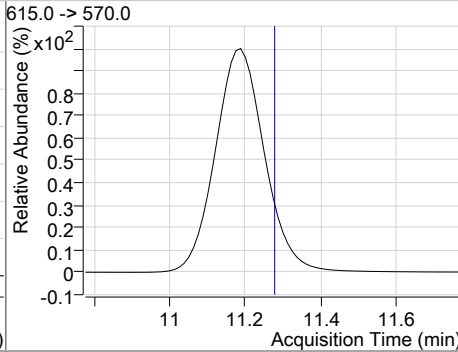
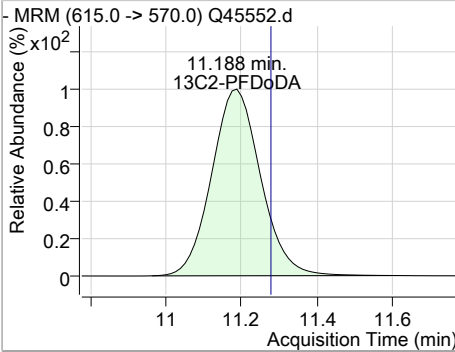
10.1.6 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	1.38	8.61	-0.02	9669				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.19	-0.09	123211				



10.1.6 10



Perfluorinated Compounds by LC/MS/MS

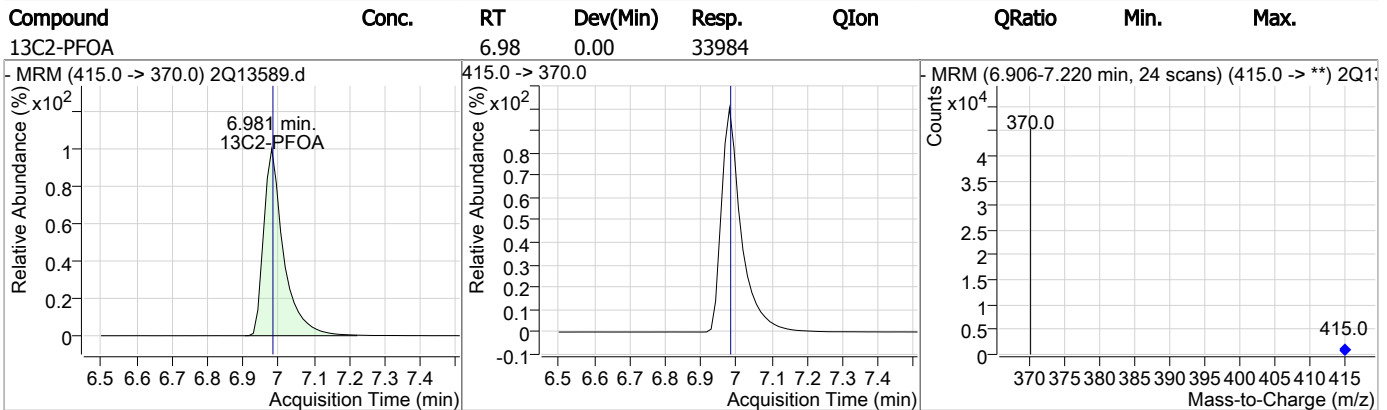
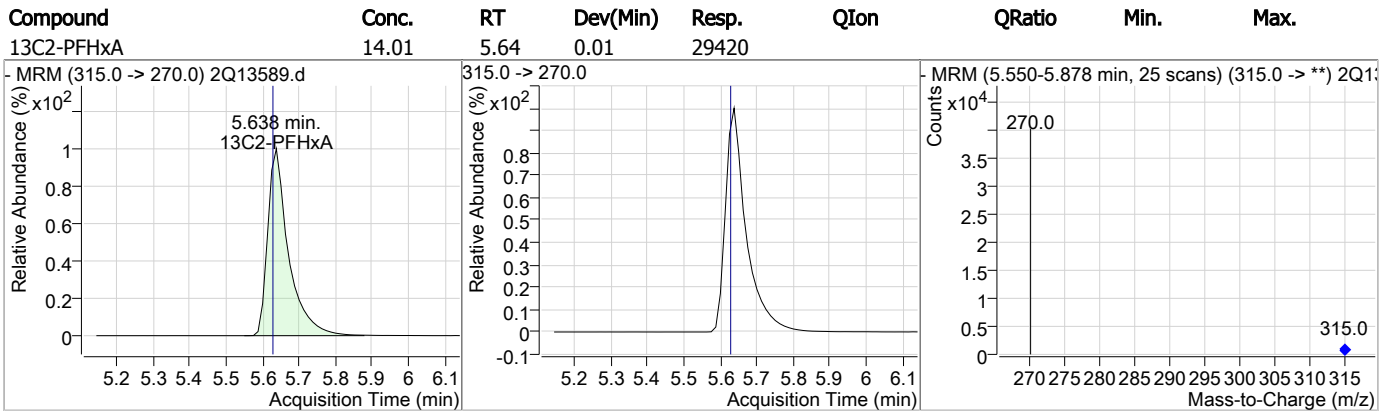
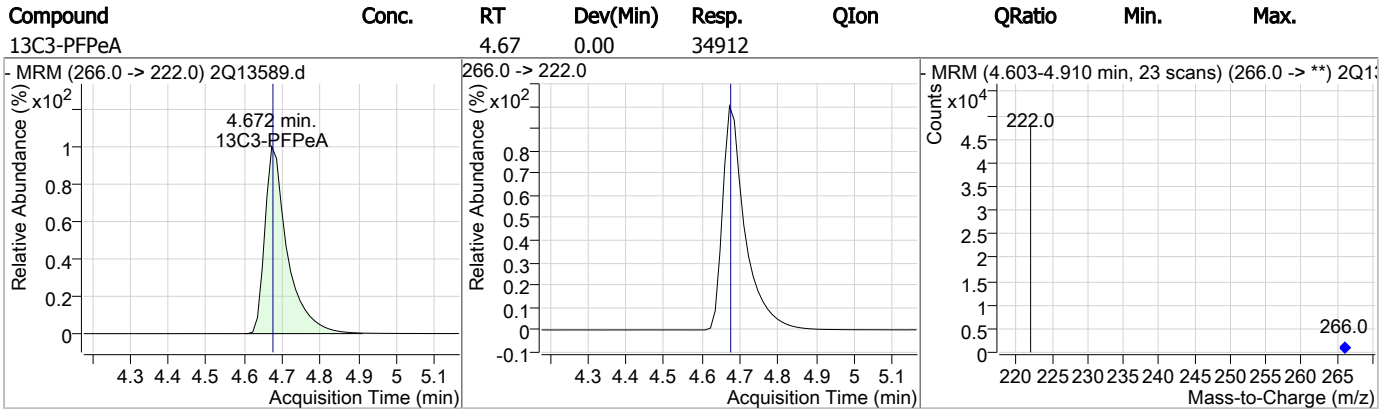
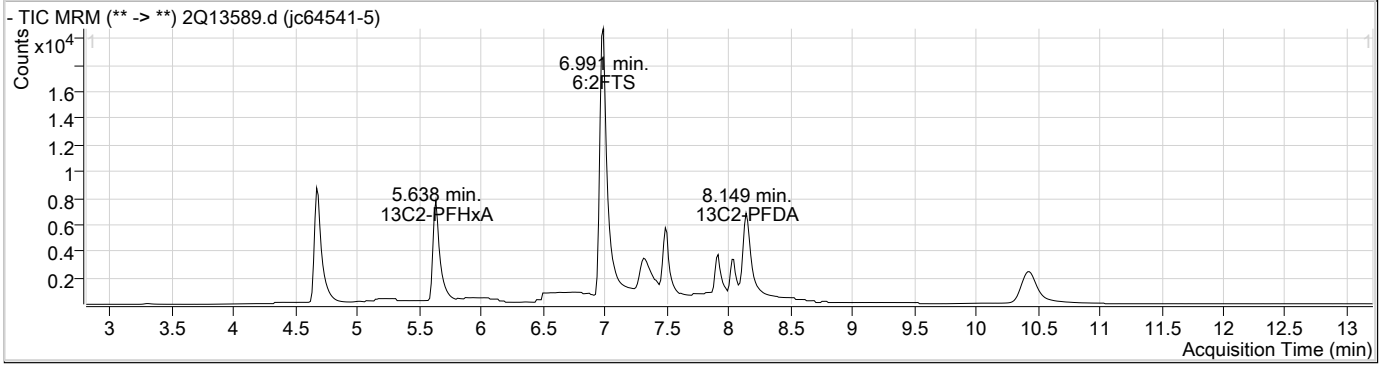
Data File : 2Q13589.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 9:34:34 PM  
 Sample Name : jc64541-5  
 Vial : Vial 35  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,260,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	47838	20.00 µg/L	0.000
13C2-PFDoDA	10.418	615.0 -> 570.0	22787	20.00 µg/L	0.000
13C2-PFOA	6.981	415.0 -> 370.0	33984	20.00 µg/L	0.000
13C3-PFPeA	4.672	266.0 -> 222.0	34912	20.00 µg/L	0.000
13C4-PFOS	7.489	503.0 -> 80.0	18920	20.00 µg/L	0.000
d3-MeFOSAA	7.915	573.0 -> 419.0	10141	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.149	515.0 -> 470.0	28951	13.43 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 67.1%	
13C2-PFHxA	5.638	315.0 -> 270.0	29420	14.01 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 70.1%	
d5-EtFOSAA	8.039	589.0 -> 419.0	9685	14.30 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 71.5%	
<b>Target Compounds</b>					
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.991	427.0 -> 407.0	813	0.33 µg/L	56
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

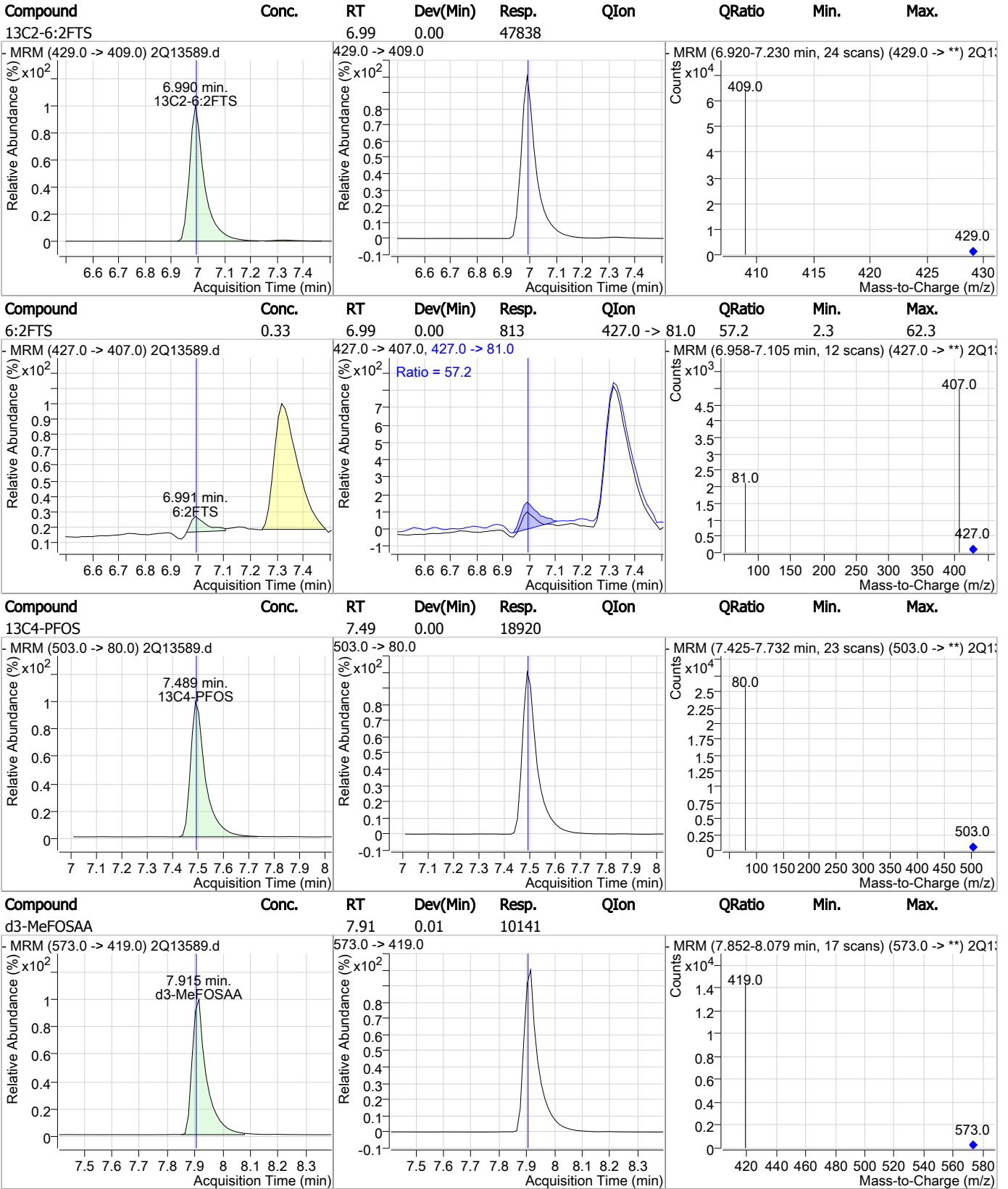
10.1.7  
10

### Perfluorinated Compounds by LC/MS/MS



10.1.7 10

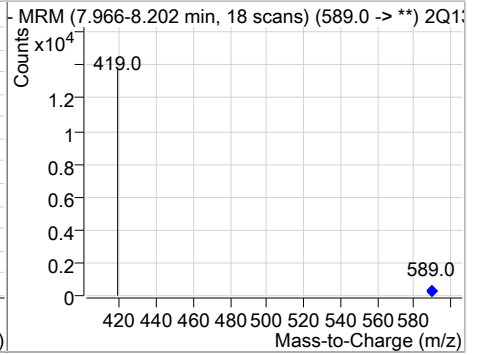
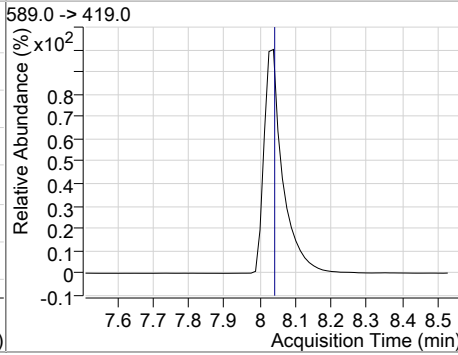
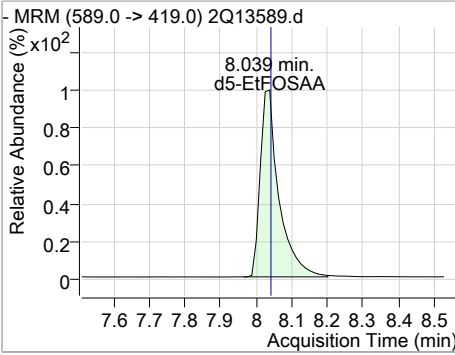
### Perfluorinated Compounds by LC/MS/MS



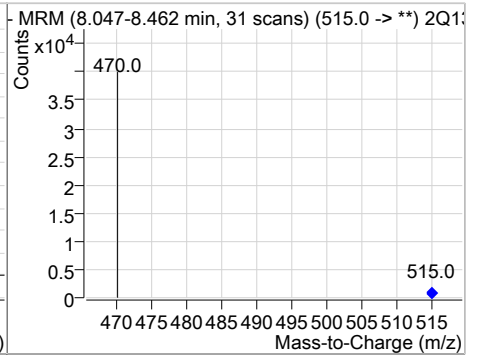
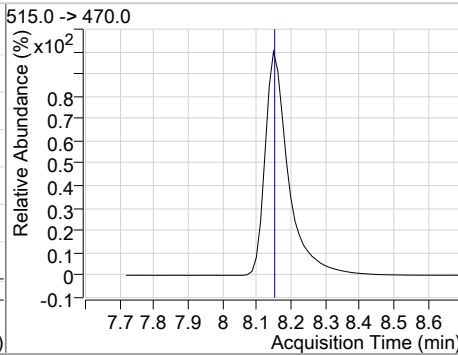
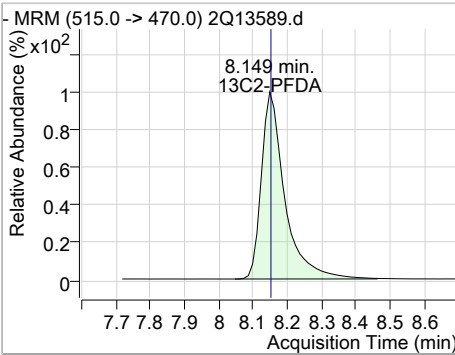
10.1.7 10

Perfluorinated Compounds by LC/MS/MS

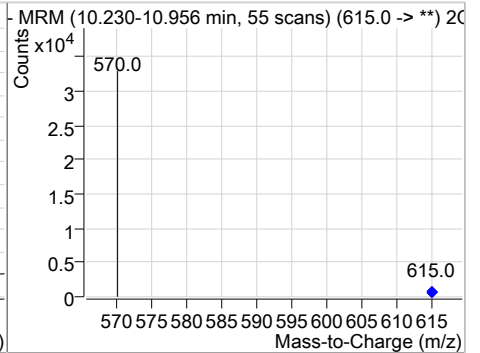
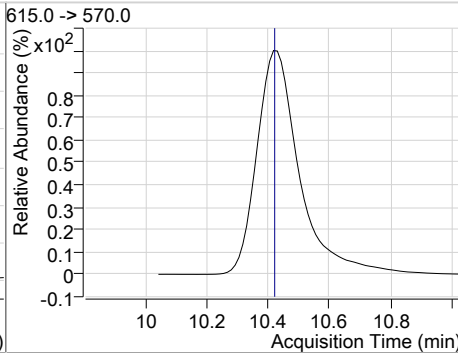
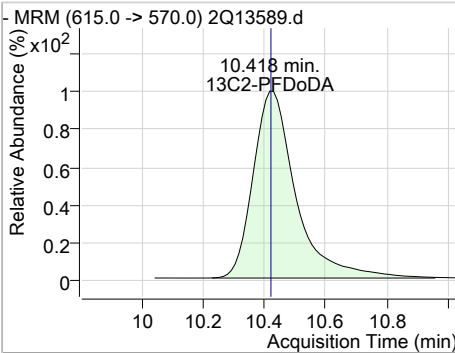
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.30	8.04	0.01	9685				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	13.43	8.15	0.00	28951				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.42	0.00	22787				



10.1.7 10

### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13590.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 9:53:24 PM  
 Sample Name : jc64541-6  
 Vial : Vial 36  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,260,,,1.0,1,water

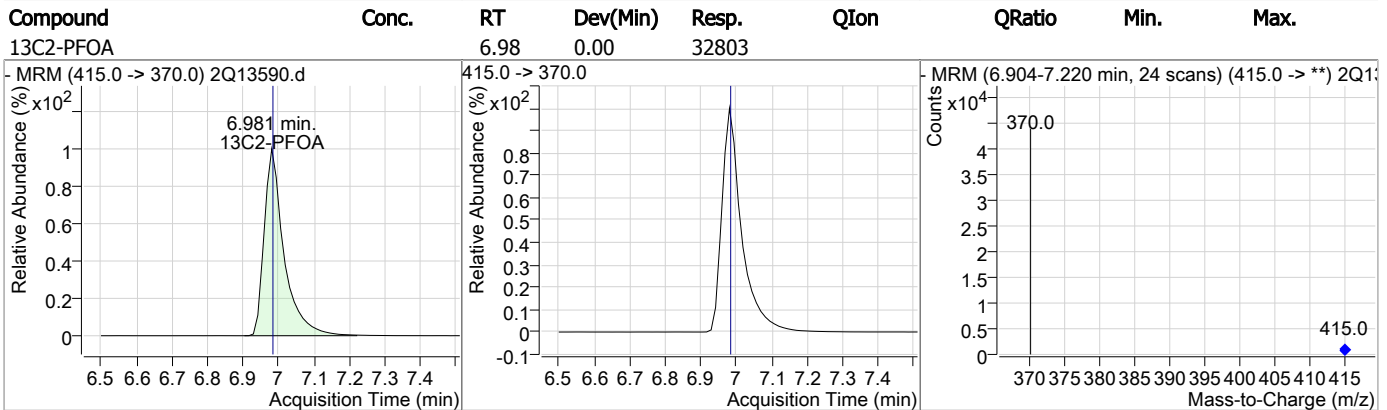
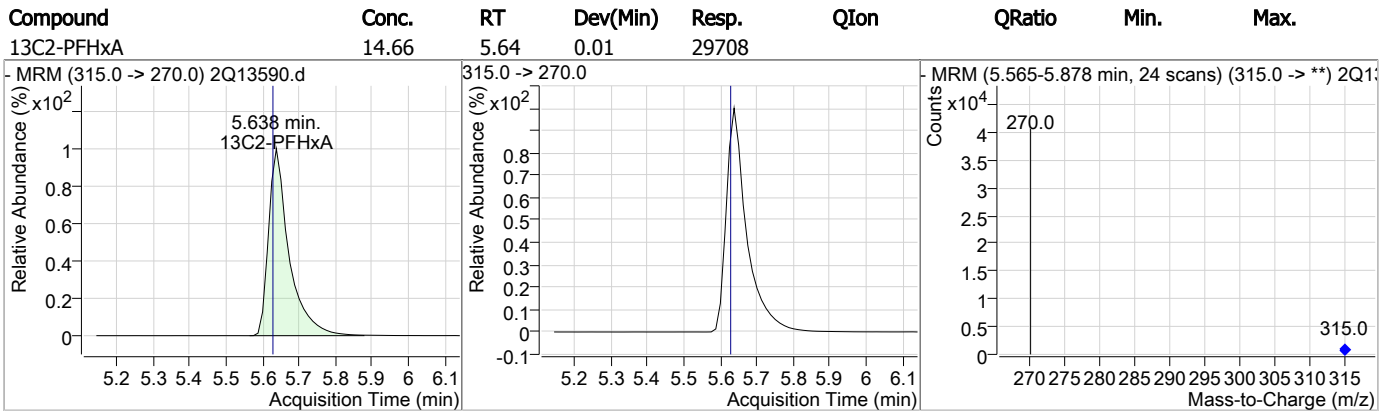
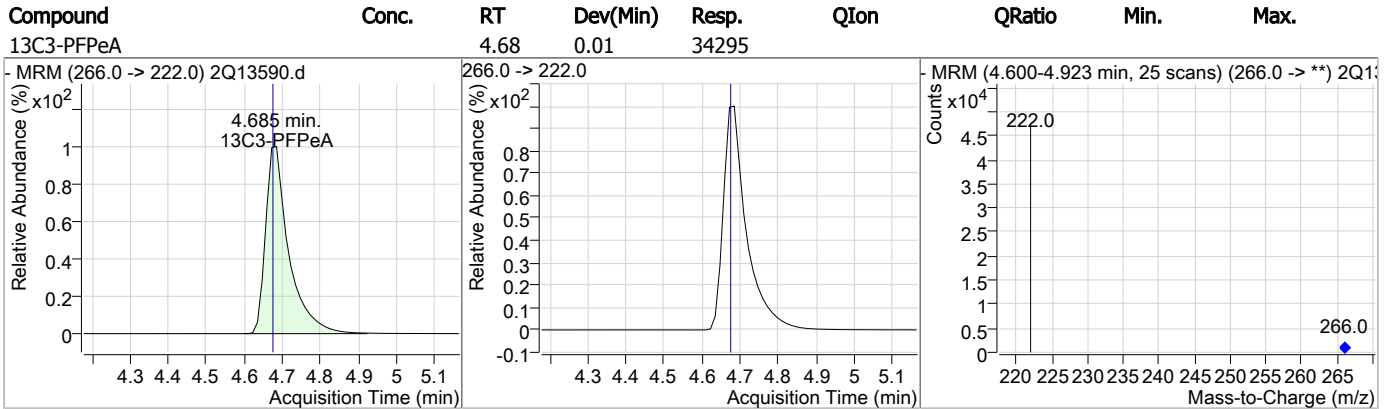
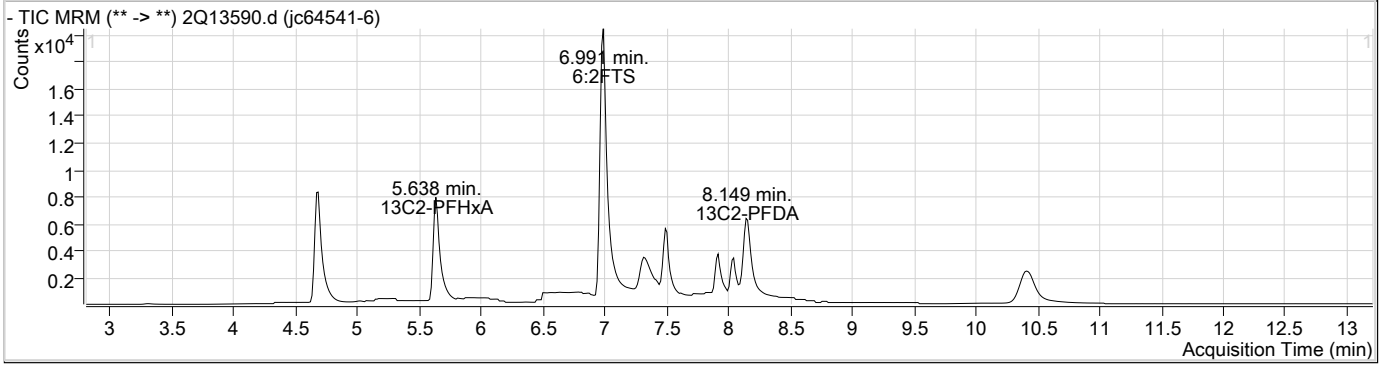
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
<b>Internal Standards</b>						
13C2-6:2FTS	6.990	429.0 -> 409.0	46599	20.00	µg/L	0.000
13C2-PFDoDA	10.405	615.0 -> 570.0	22318	20.00	µg/L	-0.013
13C2-PFOA	6.981	415.0 -> 370.0	32803	20.00	µg/L	0.000
13C3-PFPeA	4.685	266.0 -> 222.0	34295	20.00	µg/L	0.013
13C4-PFOS	7.489	503.0 -> 80.0	18593	20.00	µg/L	0.000
d3-MeFOSAA	7.915	573.0 -> 419.0	10046	20.00	µg/L	0.013
<b>System Monitoring Compounds</b>						
13C2-PFDA	8.149	515.0 -> 470.0	27224	13.08	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 65.4%		
13C2-PFHxA	5.638	315.0 -> 270.0	29708	14.66	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 73.3%		
d5-EtFOSAA	8.039	589.0 -> 419.0	9685	14.43	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 72.2%		
<b>Target Compounds</b>						
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.991	427.0 -> 407.0	842	0.35	µg/L	# 26
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		

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

10.1.8  
10



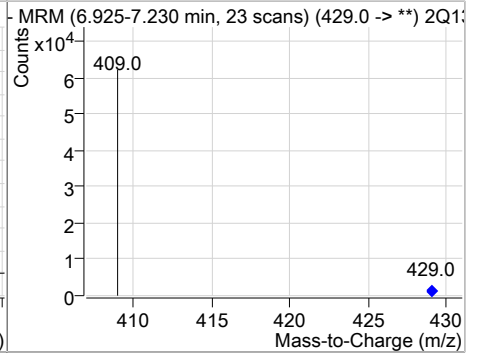
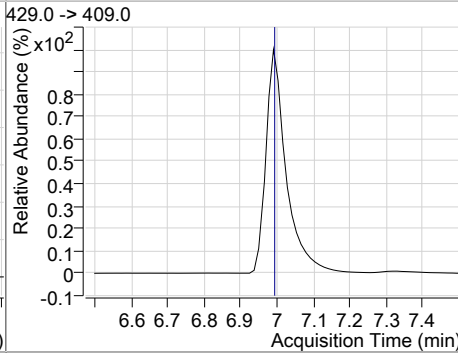
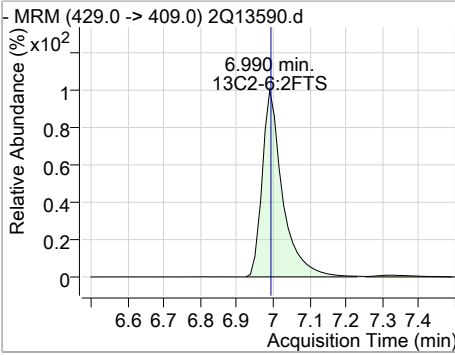
### Perfluorinated Compounds by LC/MS/MS



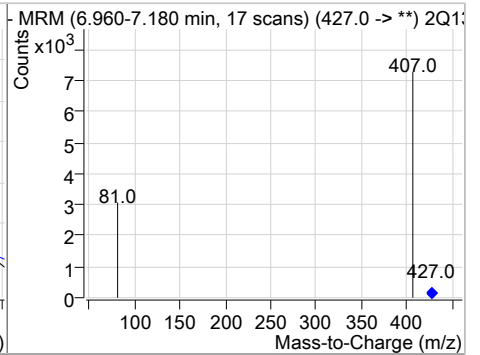
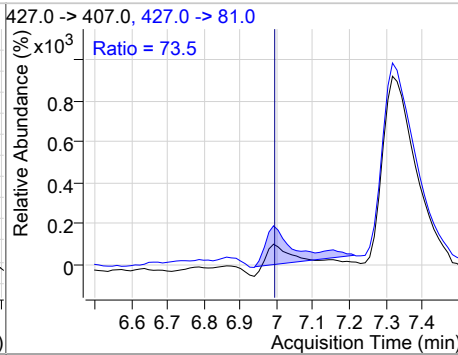
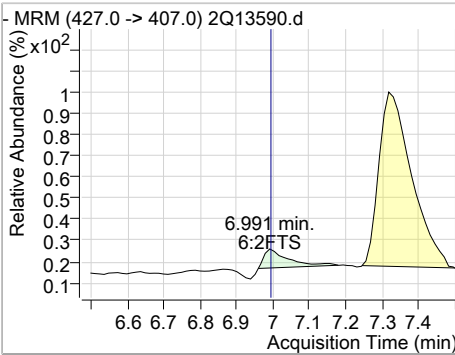
10.1.8 10

### Perfluorinated Compounds by LC/MS/MS

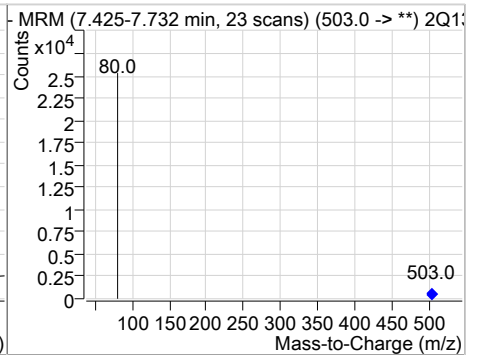
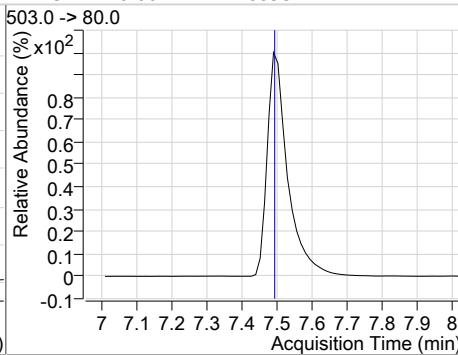
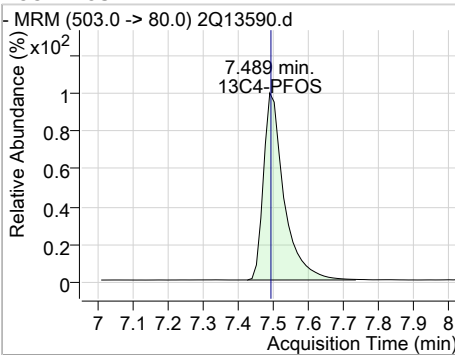
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		6.99	0.00	46599				



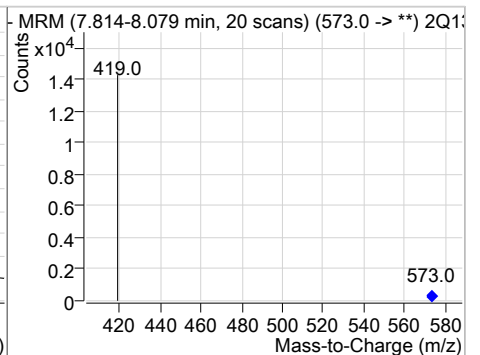
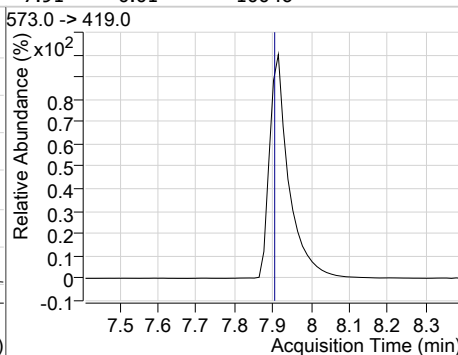
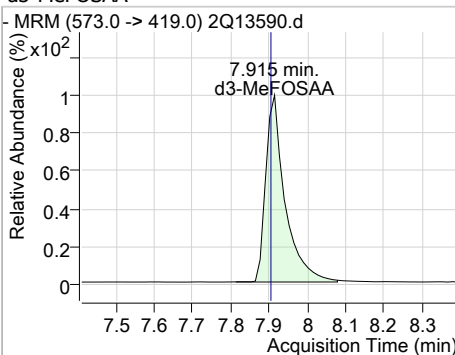
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.35	6.99	0.00	842	427.0 -> 81.0	73.5	2.3	62.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	18593				



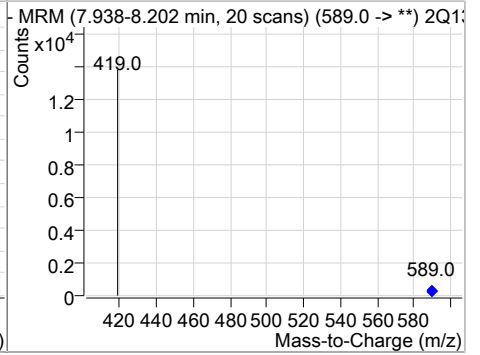
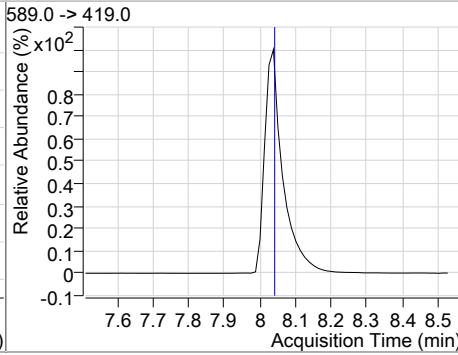
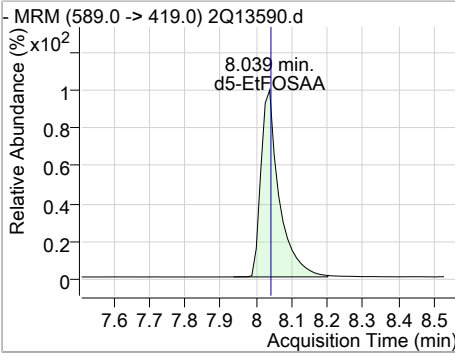
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.91	0.01	10046				



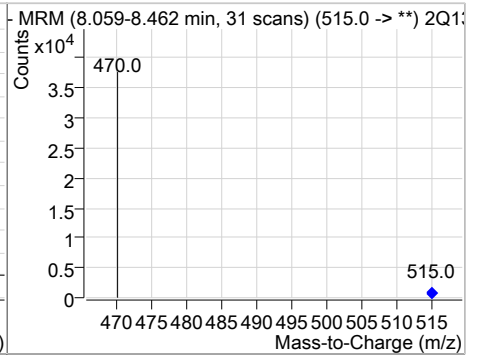
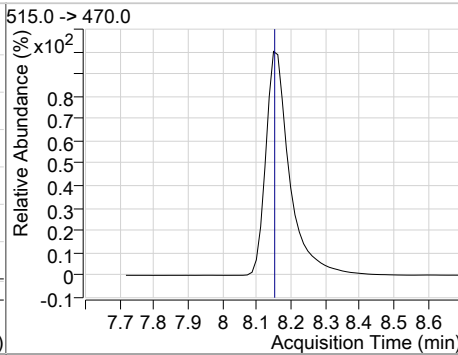
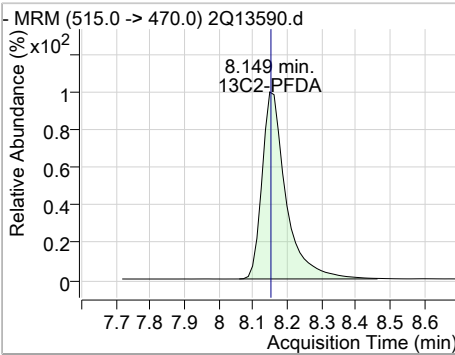
10.1.8 10

### Perfluorinated Compounds by LC/MS/MS

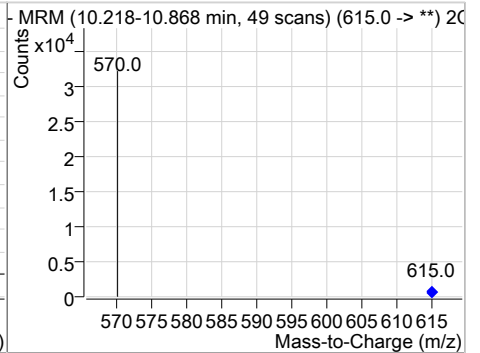
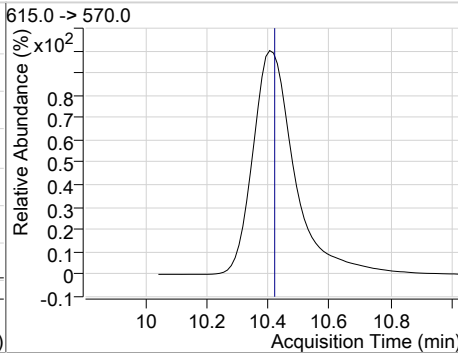
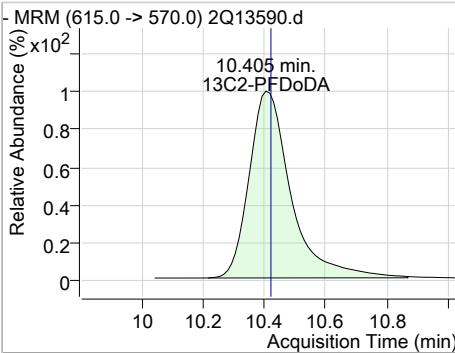
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.43	8.04	0.01	9685				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	13.08	8.15	0.00	27224				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.41	-0.01	22318				



10.1.8 10



Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)  
 Mike Eger  
 05/01/18 16:32

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13591.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 10:12:15 PM  
 Sample Name : jc64541-7  
 Vial : Vial 37  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,200,,,1.0,1,water

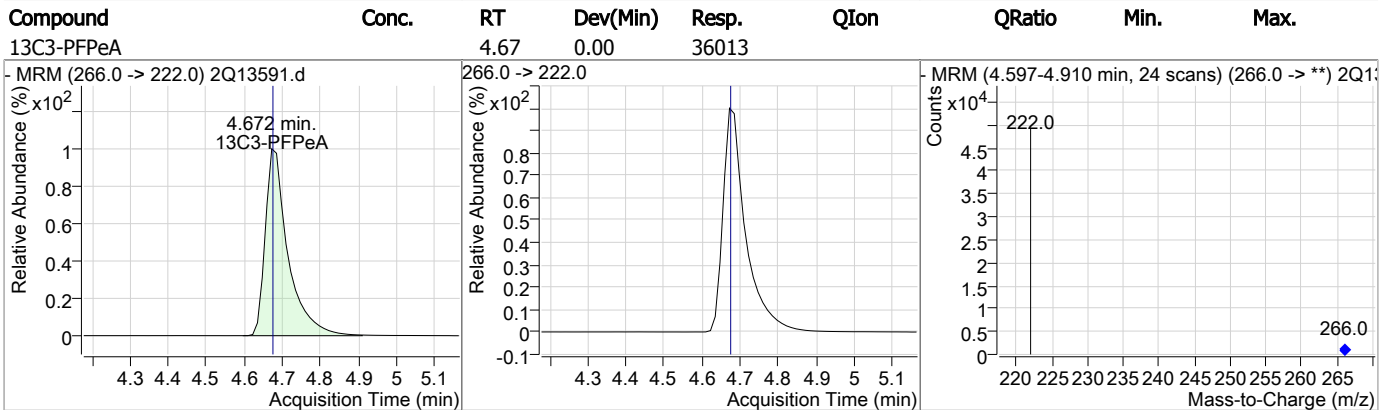
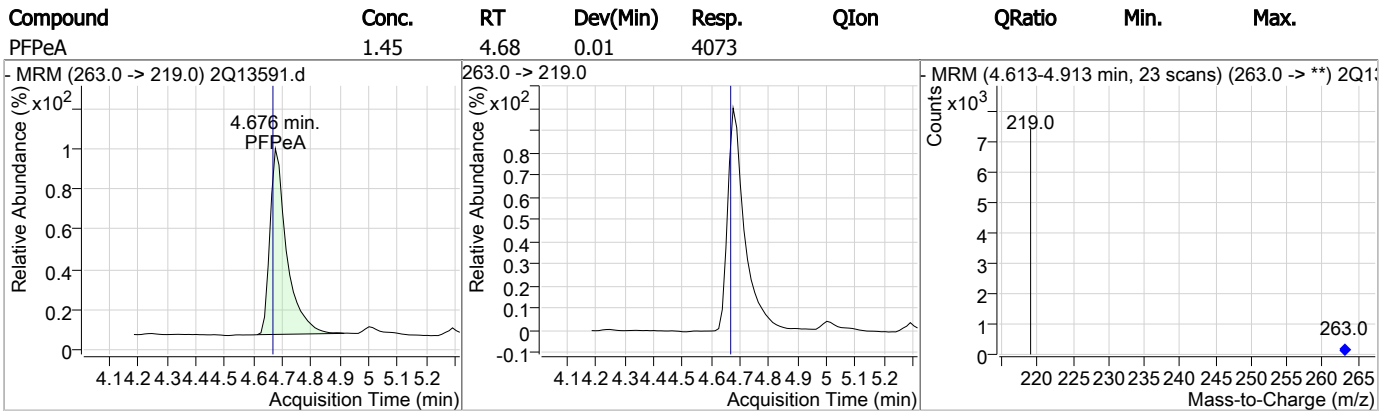
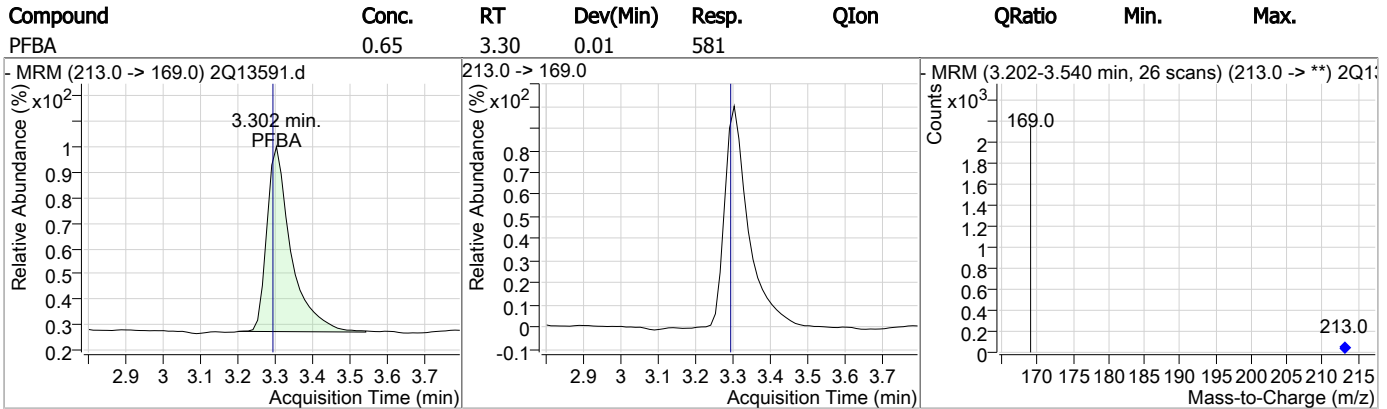
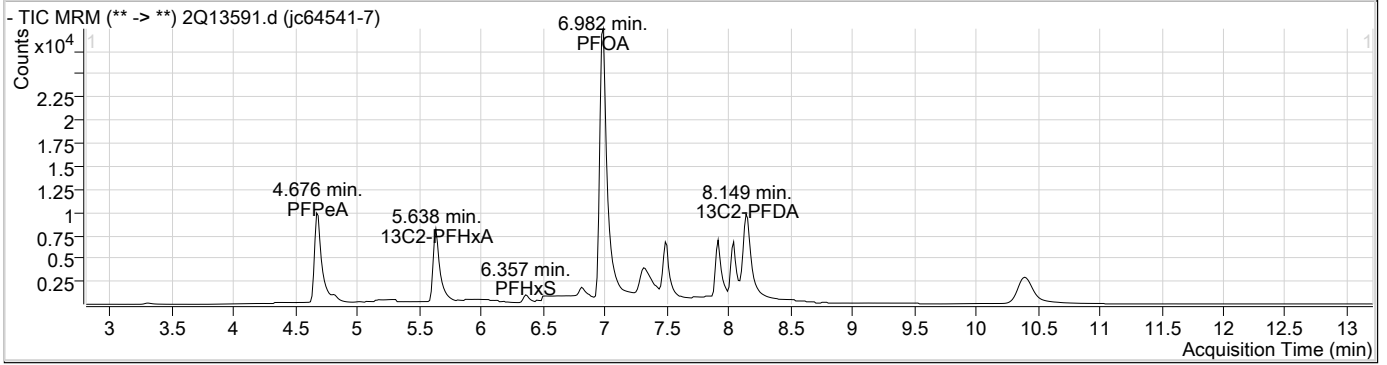
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
<b>Internal Standards</b>						
13C2-6:2FTS	6.990	429.0 -> 409.0	53890	20.00	µg/L	0.000
13C2-PFDoDA	10.393	615.0 -> 570.0	26483	20.00	µg/L	-0.025
13C2-PFOA	6.981	415.0 -> 370.0	37120	20.00	µg/L	0.000
13C3-PFPeA	4.672	266.0 -> 222.0	36013	20.00	µg/L	0.000
13C4-PFOS	7.489	503.0 -> 80.0	22378	20.00	µg/L	0.000
d3-MeFOSAA	7.915	573.0 -> 419.0	21048	20.00	µg/L	0.013
<b>System Monitoring Compounds</b>						
13C2-PFDA	8.149	515.0 -> 470.0	41154	17.47	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 87.4%		
13C2-PFHxA	5.638	315.0 -> 270.0	28903	12.60	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 63.0%		
d5-EtFOSAA	8.039	589.0 -> 419.0	20914	14.88	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 74.4%		
<b>Target Compounds</b>						
4:2FTS	-	327.0 -> 307.0	-	N.D.		<b>QValue</b>
6:2FTS	6.991	427.0 -> 407.0	1197	0.43	µg/L	76
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	3.302	213.0 -> 169.0	581	0.65	µg/L	100
PFBS	4.816	299.0 -> 80.0	1581	1.19	µg/L	96
PFDA	8.150	513.0 -> 469.0	677	0.51	µg/L	77
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.364	363.0 -> 319.0	2428	0.89	µg/L	m 99
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.640	313.0 -> 269.0	1384	1.54	µg/L	98
PFHxS	6.357	399.0 -> 80.0	514	0.35	µg/L	m 86
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.982	413.0 -> 369.0	25268	16.76	µg/L	m 94
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	4.676	263.0 -> 219.0	4073	1.45	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

10.1.9  
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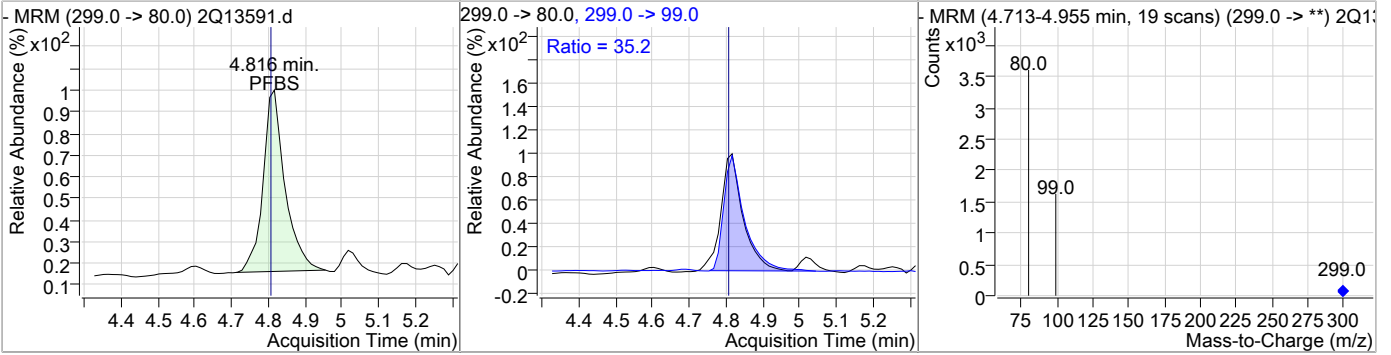
### Perfluorinated Compounds by LC/MS/MS



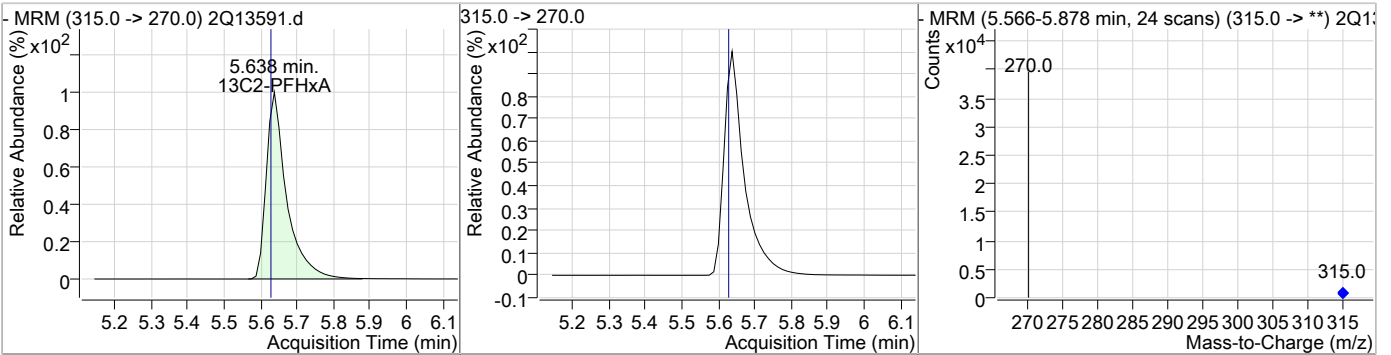
10.1.9 10

### Perfluorinated Compounds by LC/MS/MS

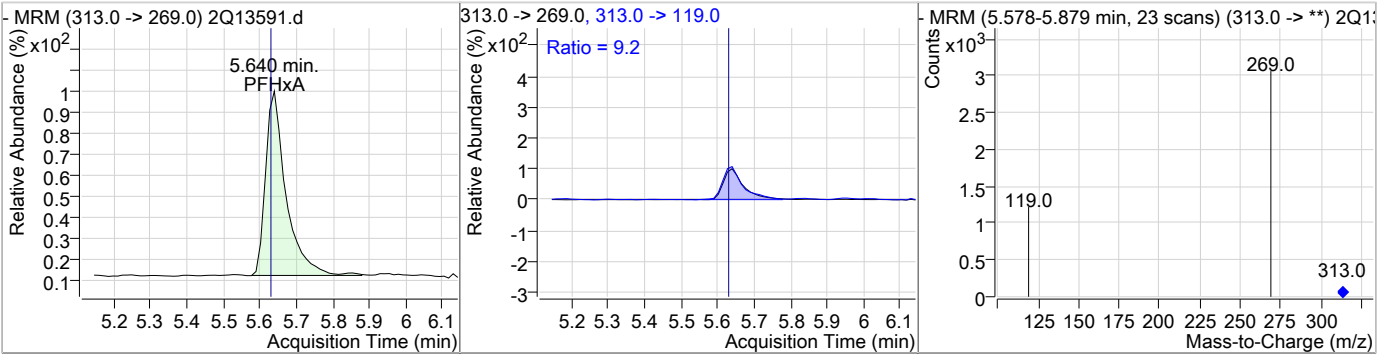
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.19	4.82	0.01	1581	299.0 -> 99.0	35.2	7.8	67.8



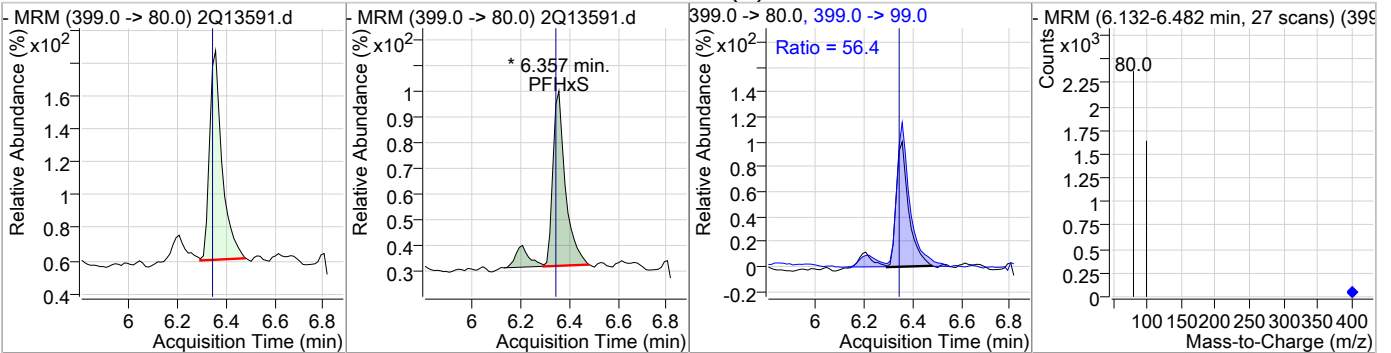
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	12.60	5.64	0.01	28903				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.54	5.64	0.01	1384	313.0 -> 119.0	9.2	0.0	38.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.35	6.36	0.01	514 (m)	399.0 -> 99.0	56.4	17.0	77.0

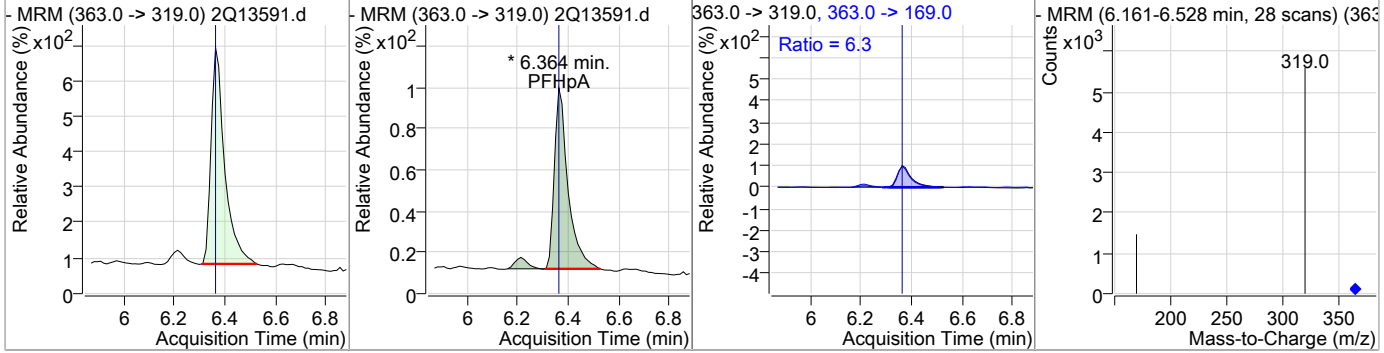


10.1.9 10

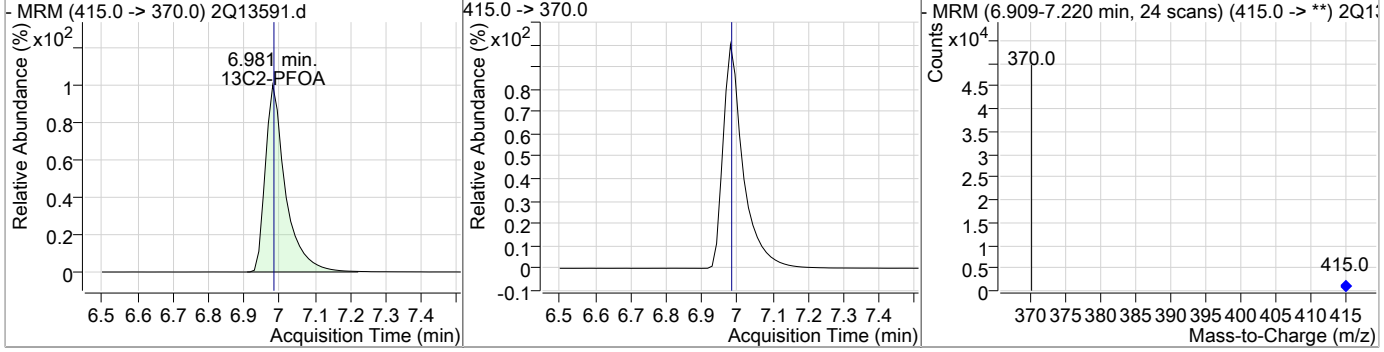


### Perfluorinated Compounds by LC/MS/MS

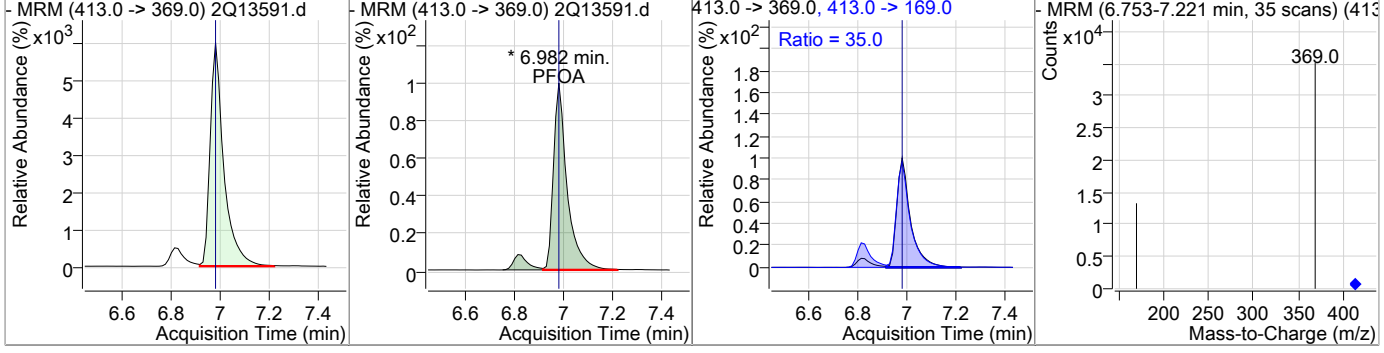
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.89	6.36	0.00	2428 (m)	363.0 -> 169.0	6.3	0.0	36.1



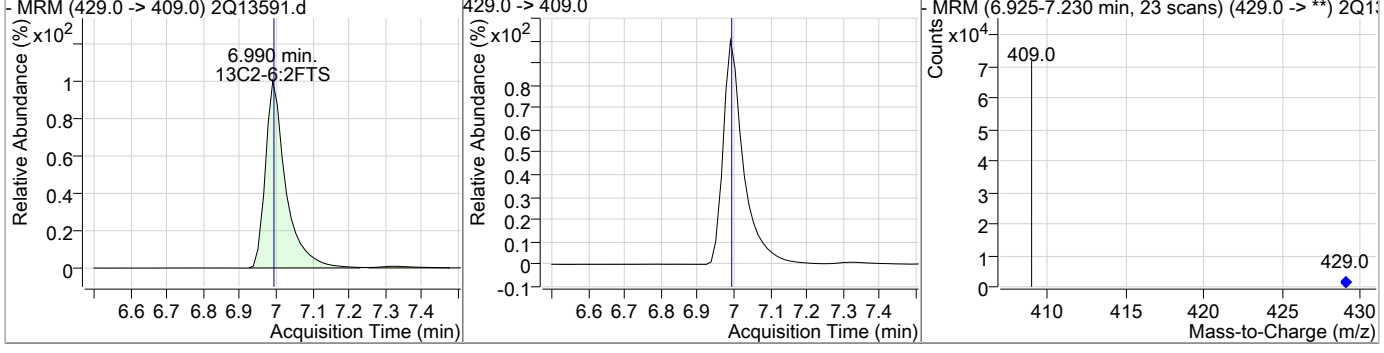
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		6.98	0.00	37120				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.76	6.98	0.00	25268 (m)	413.0 -> 169.0	35.0	1.6	61.6



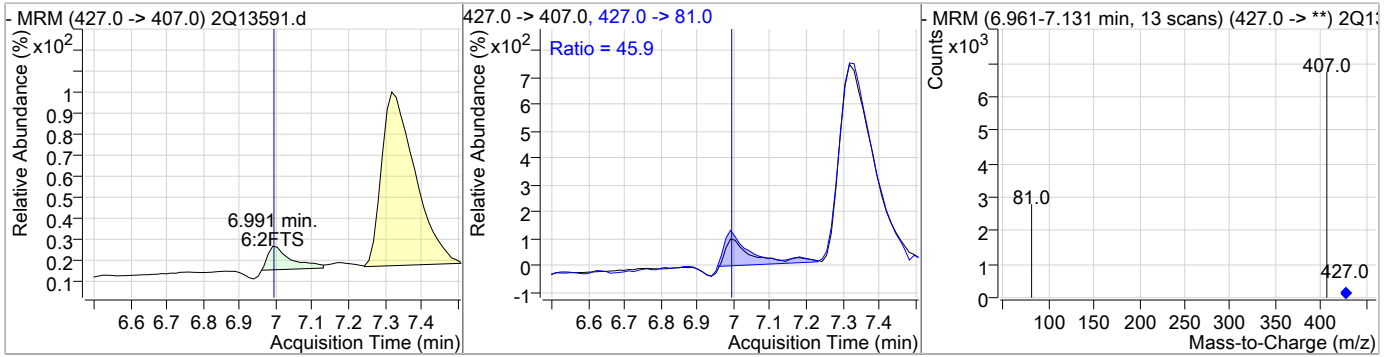
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		6.99	0.00	53890				



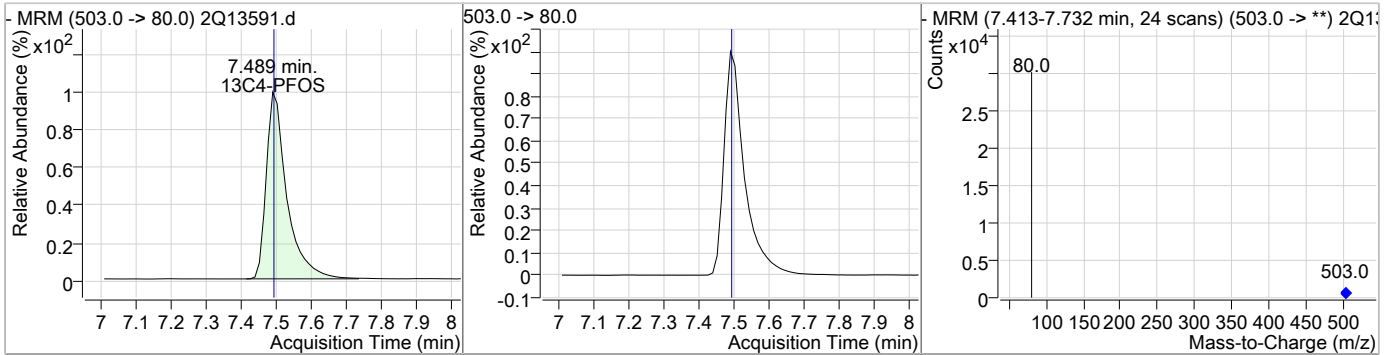
10.1.9 10

### Perfluorinated Compounds by LC/MS/MS

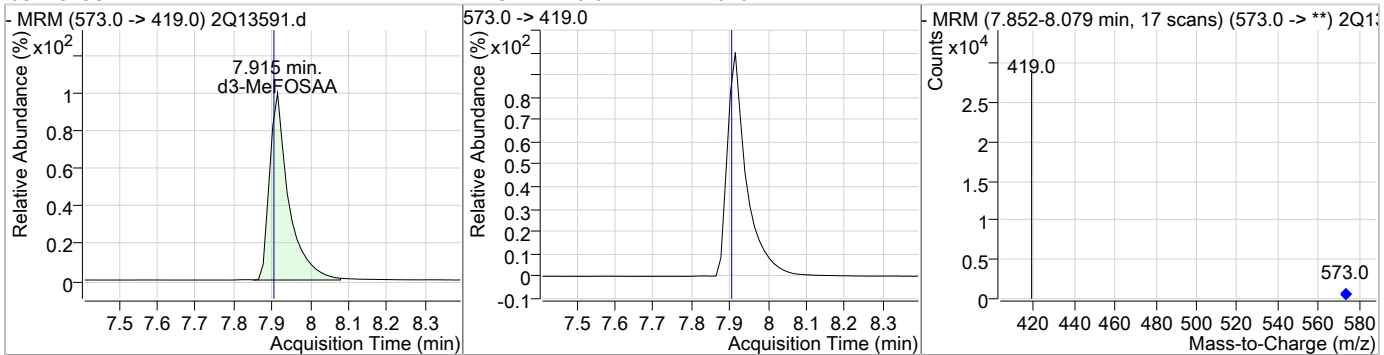
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.43	6.99	0.00	1197	427.0 -> 81.0	45.9	2.3	62.3



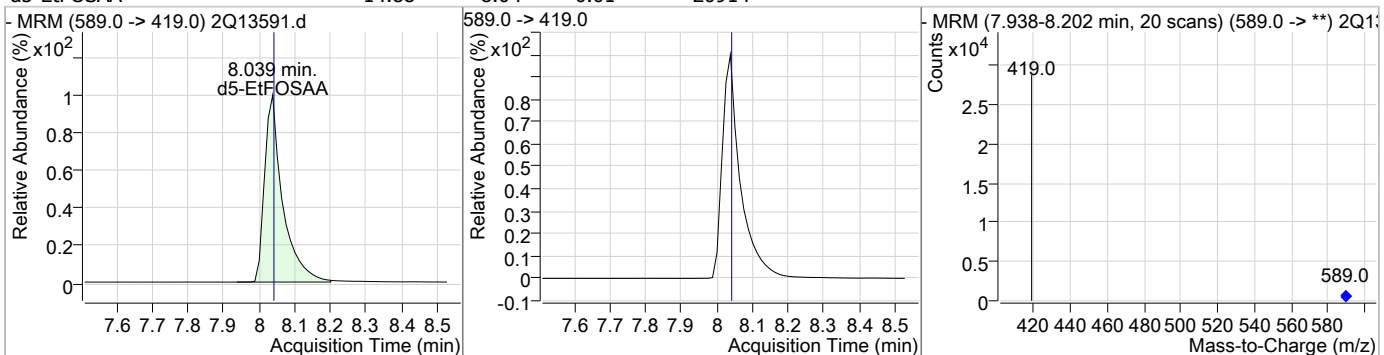
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	22378				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.91	0.01	21048				



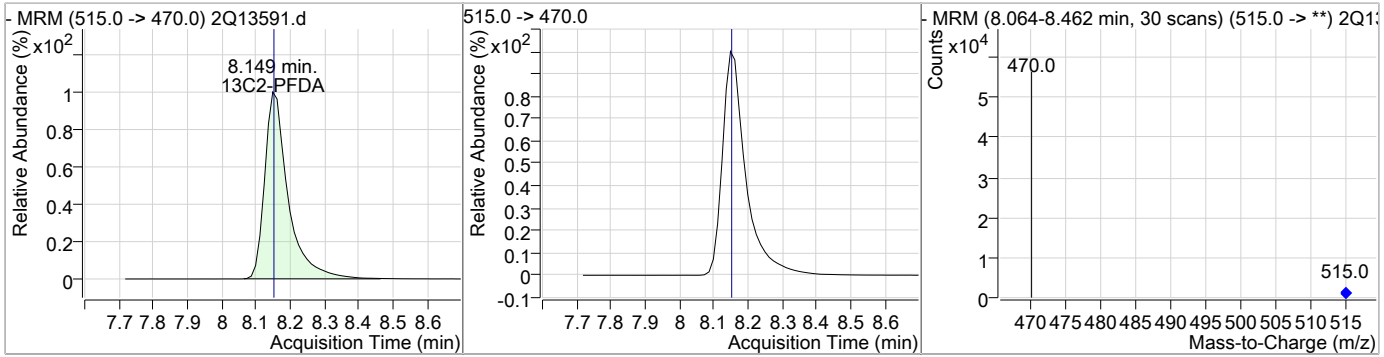
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.88	8.04	0.01	20914				



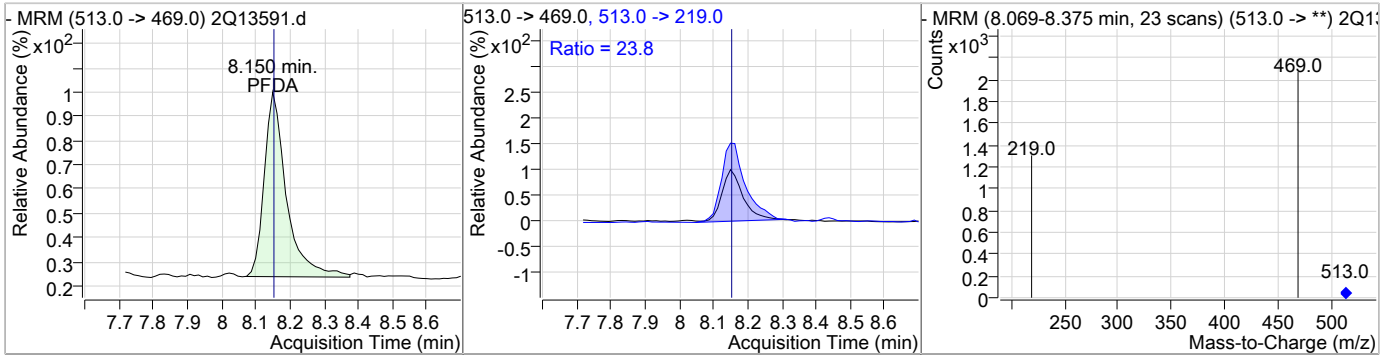
10.1.9 10

### Perfluorinated Compounds by LC/MS/MS

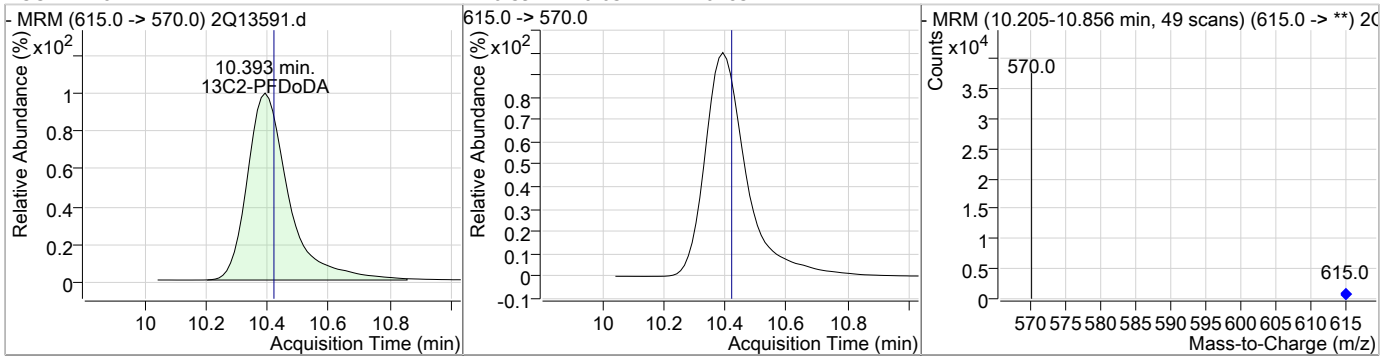
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	17.47	8.15	0.00	41154				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.51	8.15	0.00	677	513.0 -> 219.0	23.8	0.0	44.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.39	-0.03	26483				



10.1.9 10



# Manual Integration Approval Summary

**Sample Number:** JC64541-7      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13591.D      **Analyst approved:** 05/01/18 08:19 Nancy Saunders  
**Injection Time:** 04/25/18 22:12      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.36	Split peak
Perfluoroheptanoic acid	375-85-9		6.36	Split peak
Perfluorooctanoic acid	335-67-1		6.98	Split peak

10.1.9.1  
10

## Perfluorinated Compounds by LC/MS/MS

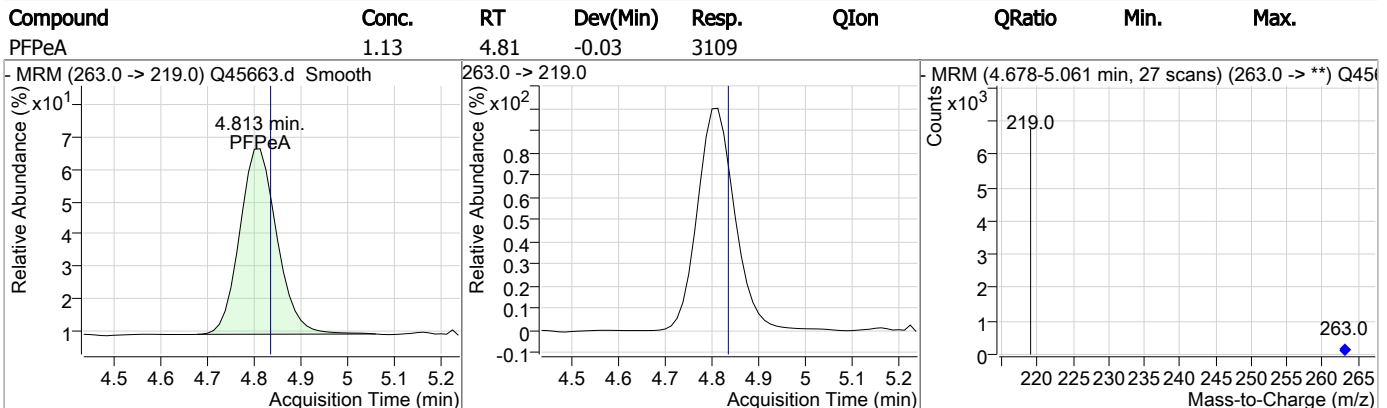
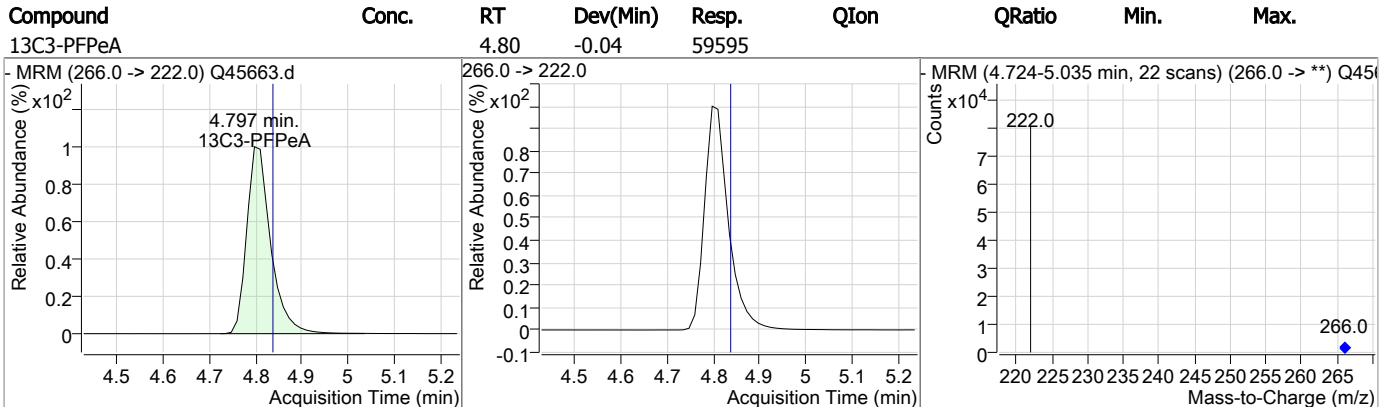
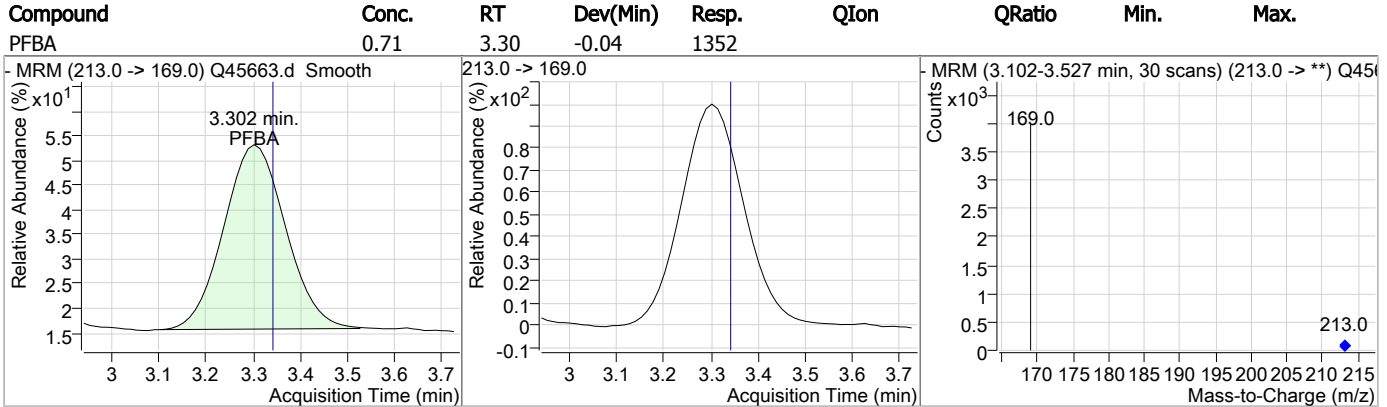
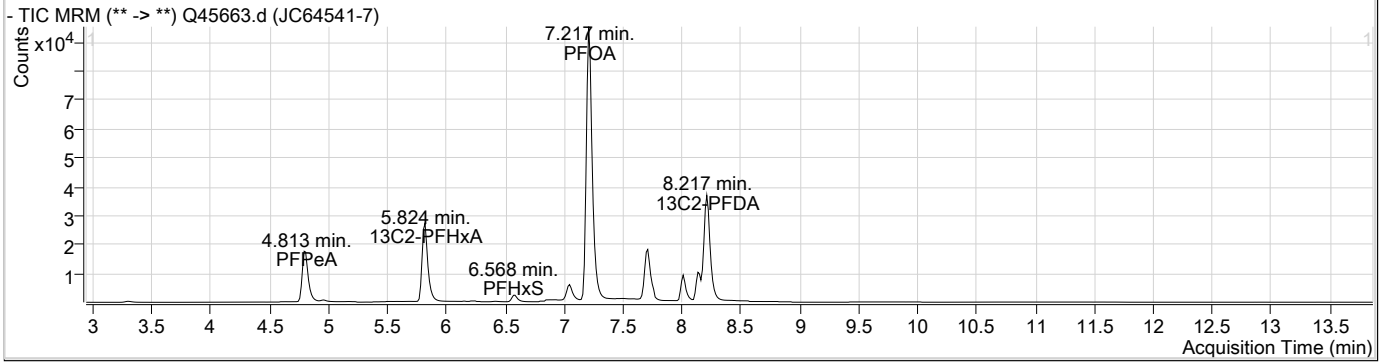
Data File : Q45663.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 2:05:45 PM  
 Sample Name : JC64541-7  
 Vial : Vial 11  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69812,SQ1123,250,,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.224	429.0 -> 409.0	42429	20.00 µg/L	-0.023
13C2-PFDoDA	-	615.0 -> 570.0	-	N.D.	
13C2-PFOA	7.216	415.0 -> 370.0	130792	20.00 µg/L	-0.024
13C4-PFOS	7.711	503.0 -> 80.0	56916	20.00 µg/L	-0.063
d3-MeFOSAA	8.012	573.0 -> 419.0	25979	20.00 µg/L	-0.037
13C3-PFPeA	4.797	266.0 -> 222.0	59595	20.00 µg/L	-0.038
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.217	515.0 -> 470.0	121803	14.51 µg/L	-0.315
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 72.5%	
13C2-PFHxA	5.824	315.0 -> 270.0	86576	15.09 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 75.4%	
d5-EtFOSAA	8.134	589.0 -> 419.0	29043	15.43 µg/L	-0.037
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 77.2%	
<b>Target Compounds</b>					
6:2FTS	7.238	427.0 -> 407.0	1539	0.70 µg/L	26
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	3.302	213.0 -> 169.0	1352	0.71 µg/L	100
PFBS	4.954	299.0 -> 80.0	1387	1.14 µg/L	94
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	6.587	363.0 -> 319.0	6971	1.16 µg/L	m 98
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.826	313.0 -> 269.0	6014	1.78 µg/L	100
PFHxS	6.568	399.0 -> 80.0	560	0.31 µg/L	m 100
PFNA	-	463.0 -> 419.0	-	N.D.	
PFOA	7.217	413.0 -> 369.0	137831	22.55 µg/L	m 93
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	4.813	263.0 -> 219.0	3109	1.13 µg/L	100
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
4:2FTS	-	327.0 -> 307.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	

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



### Perfluorinated Compounds by LC/MS/MS

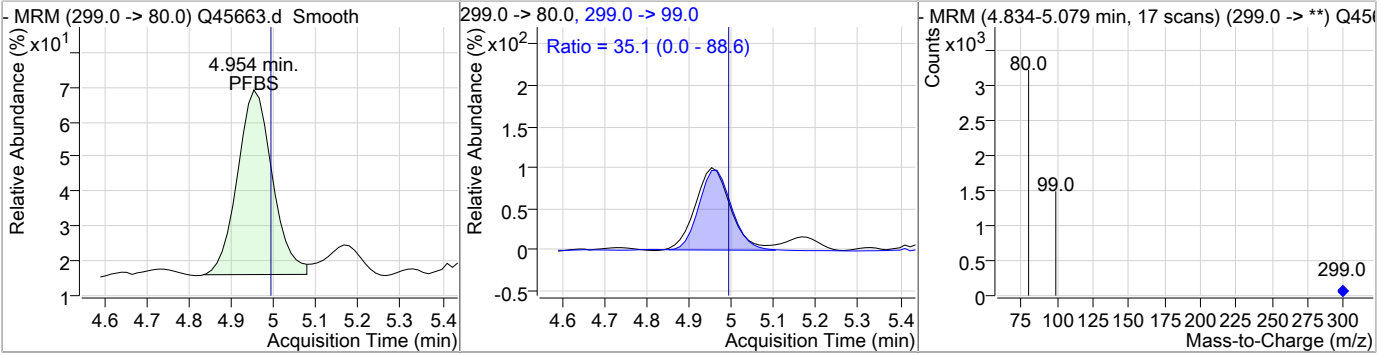


10.1.10 10

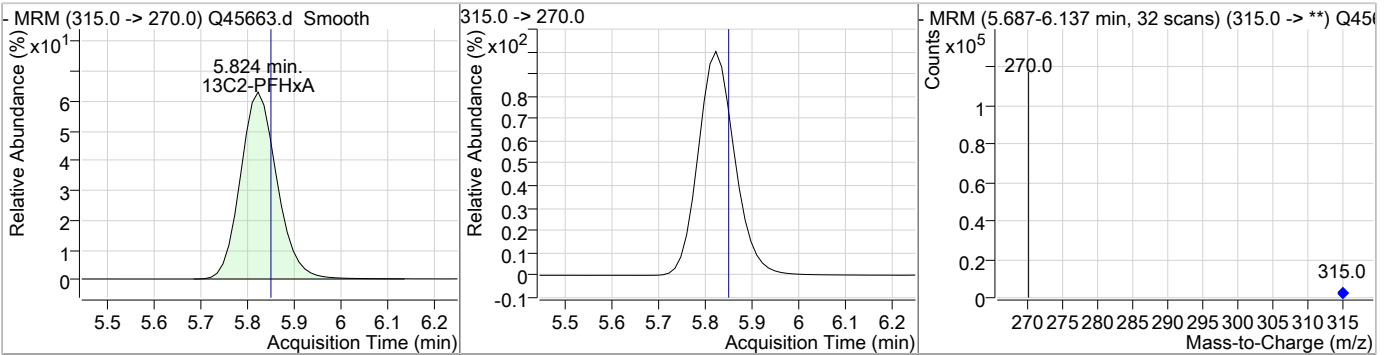


### Perfluorinated Compounds by LC/MS/MS

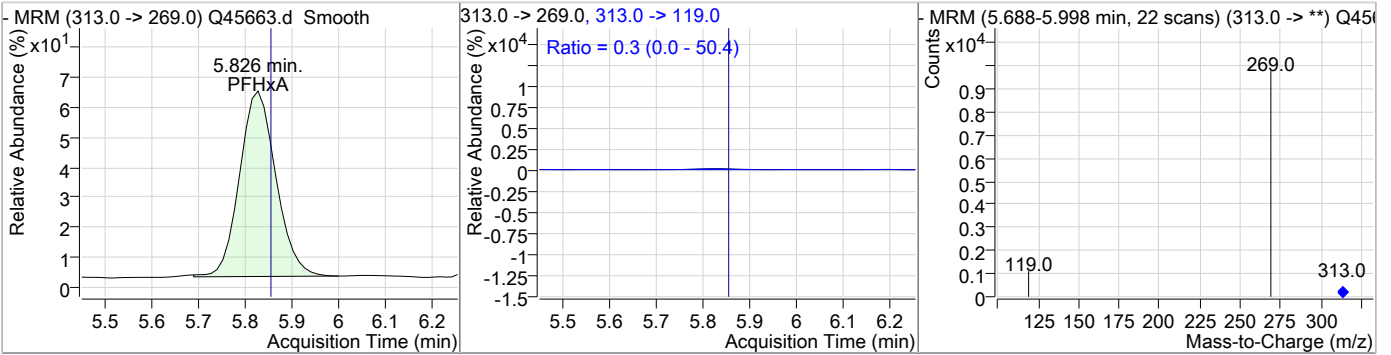
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.14	4.95	-0.04	1387	299.0 -> 99.0	35.1	0.0	88.6



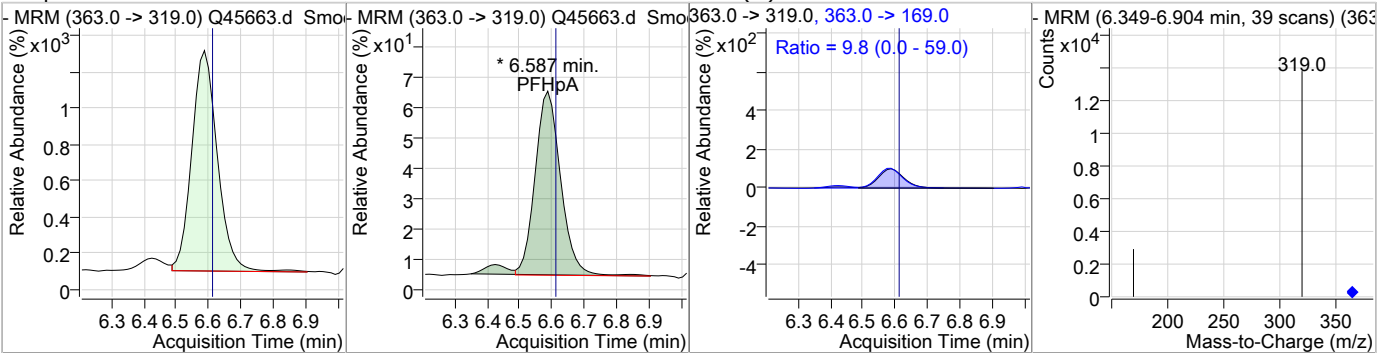
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	15.09	5.82	-0.03	86576				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.78	5.83	-0.03	6014	313.0 -> 119.0	0.3	0.0	50.4

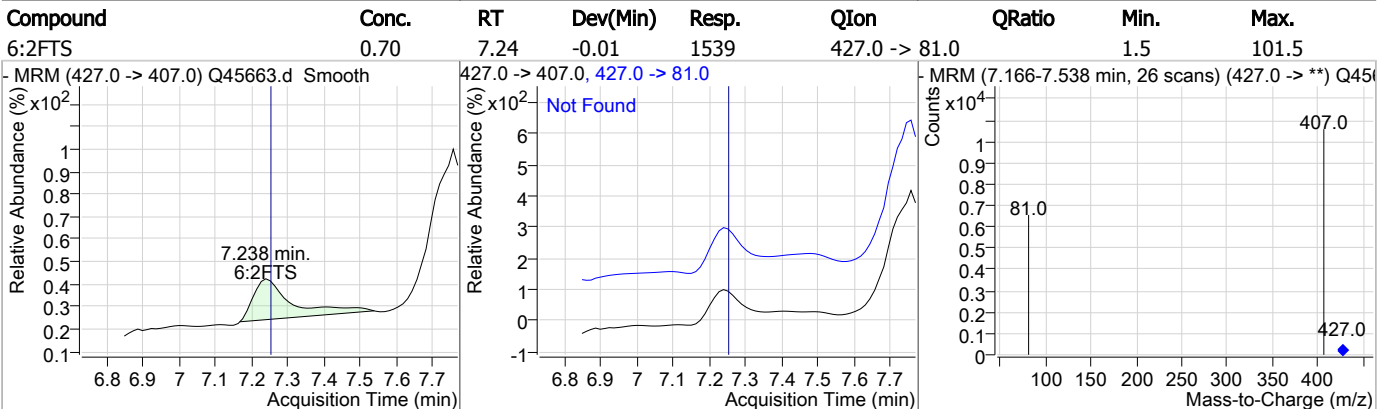
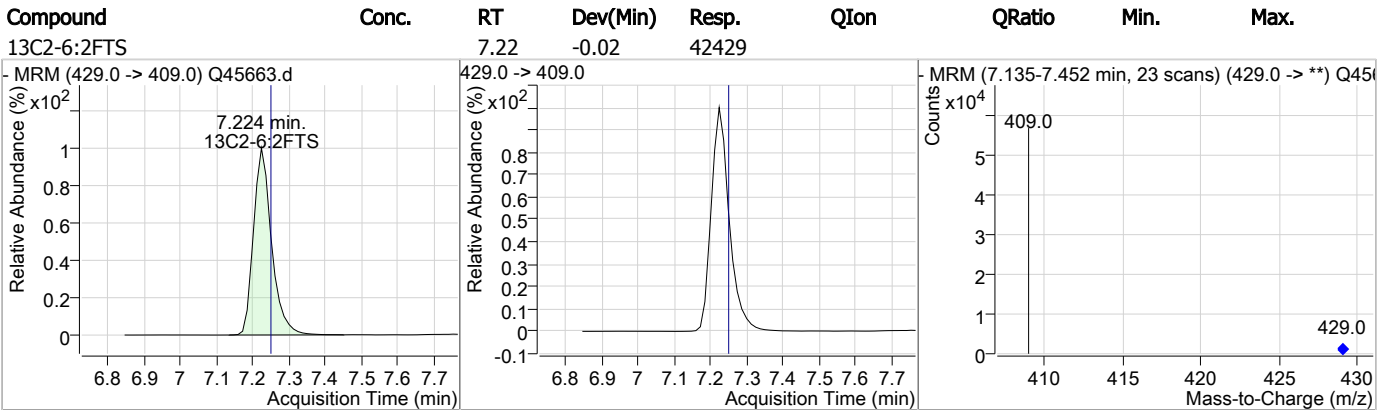
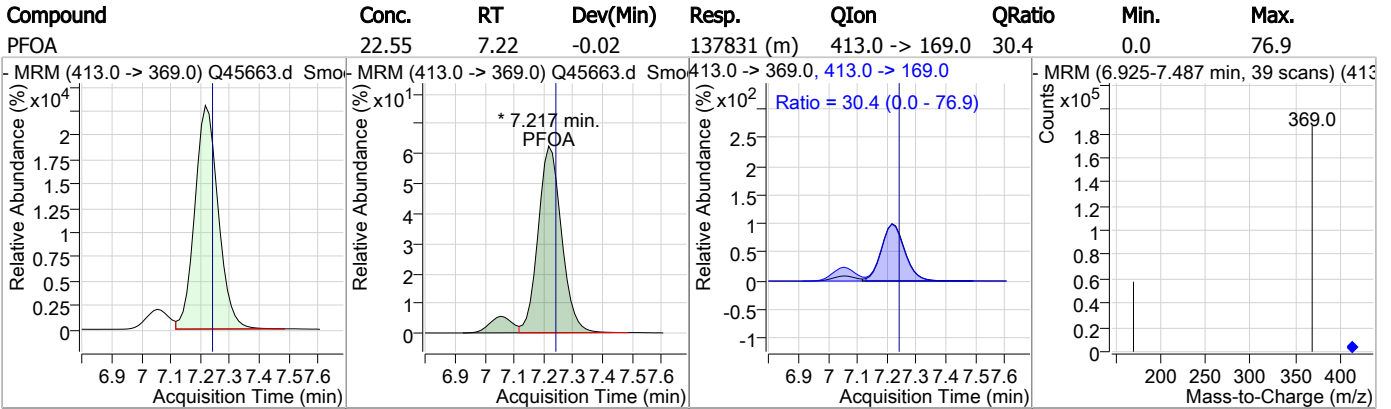
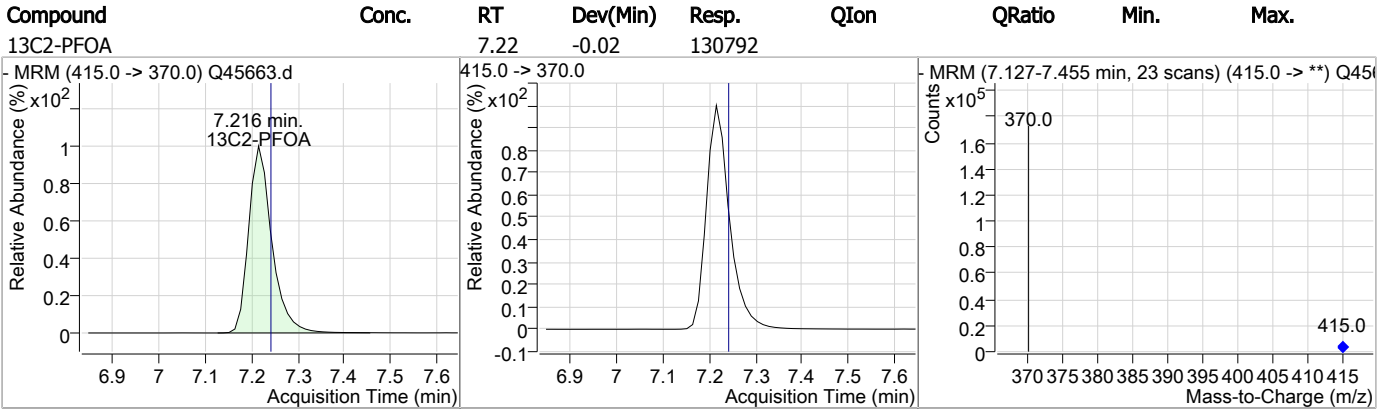


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.16	6.59	-0.03	6971 (m)	363.0 -> 169.0	9.8	0.0	59.0



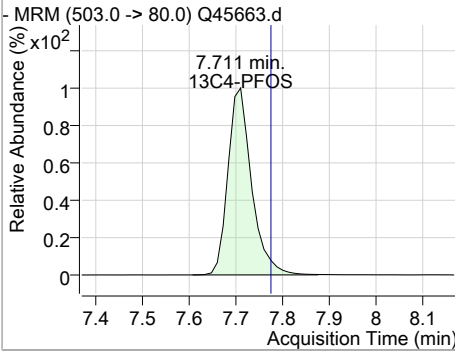
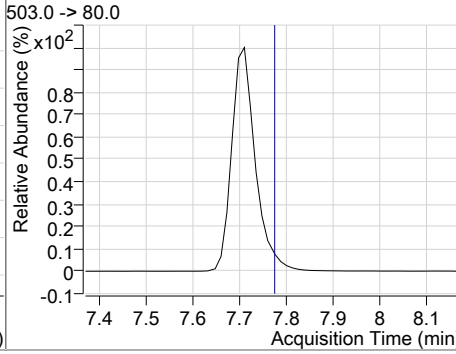
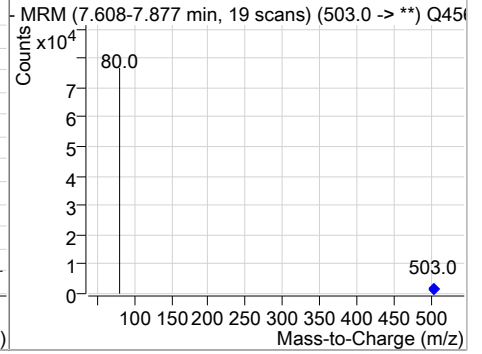
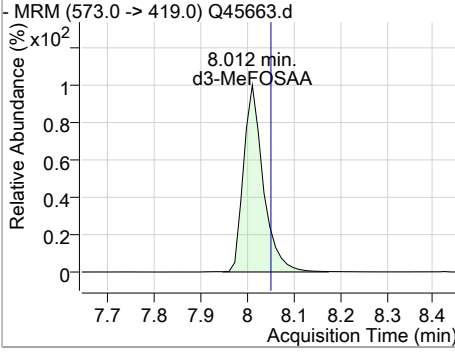
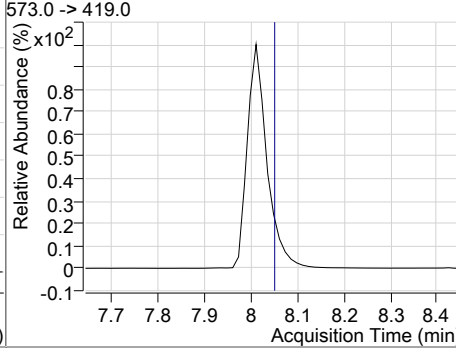
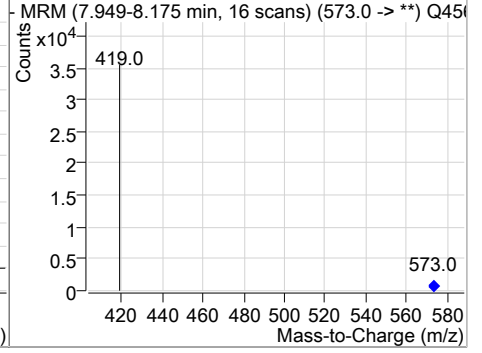
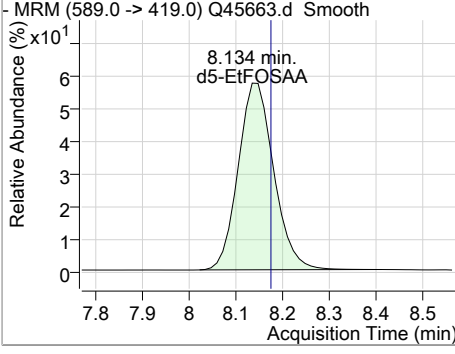
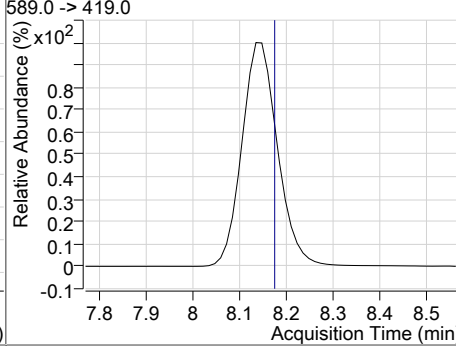
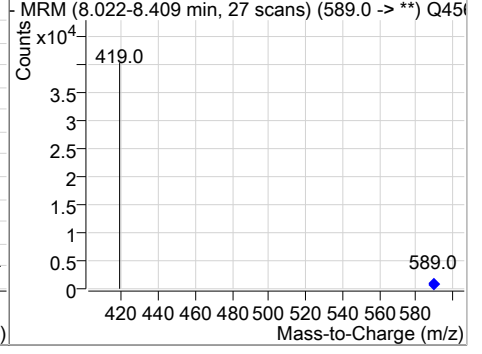
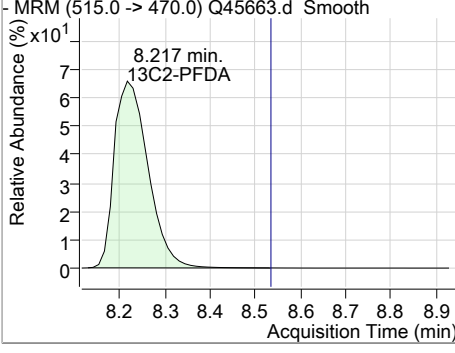
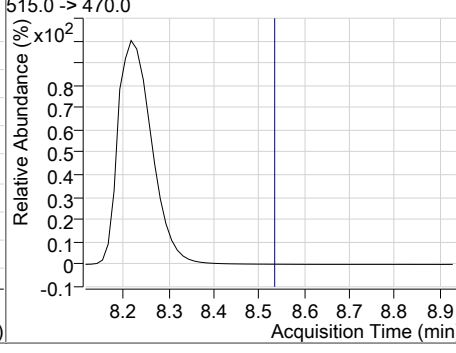
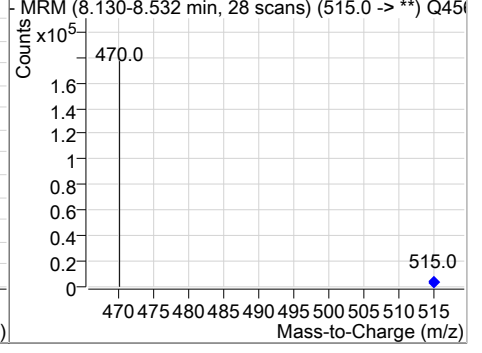
10.1.10 10

Perfluorinated Compounds by LC/MS/MS



10.1.10 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.71	-0.06	56916				
- MRM (503.0 -> 80.0) Q45663.d			503.0 -> 80.0			- MRM (7.608-7.877 min, 19 scans) (503.0 -> **) Q45		
								
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.01	-0.04	25979				
- MRM (573.0 -> 419.0) Q45663.d			573.0 -> 419.0			- MRM (7.949-8.175 min, 16 scans) (573.0 -> **) Q45		
								
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.43	8.13	-0.04	29043				
- MRM (589.0 -> 419.0) Q45663.d Smooth			589.0 -> 419.0			- MRM (8.022-8.409 min, 27 scans) (589.0 -> **) Q45		
								
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	14.51	8.22	-0.31	121803				
- MRM (515.0 -> 470.0) Q45663.d Smooth			515.0 -> 470.0			- MRM (8.130-8.532 min, 28 scans) (515.0 -> **) Q45		
								

10.1.10 10

# Manual Integration Approval Summary

**Sample Number:** JC64541-7      **Method:** EPA 537 MOD  
**Lab FileID:** Q45663.D      **Analyst approved:** 05/01/18 08:19 Nancy Saunders  
**Injection Time:** 04/30/18 14:05      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.57	Split peak
Perfluoroheptanoic acid	375-85-9		6.59	Split peak
Perfluorooctanoic acid	335-67-1		7.22	Split peak

10.1.10.1  
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### Perfluorinated Compounds by LC/MS/MS

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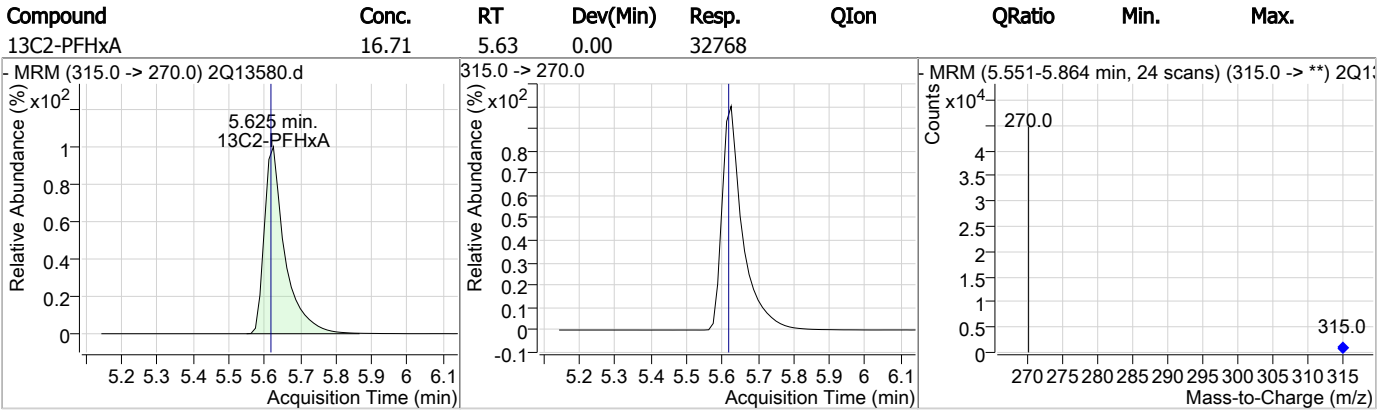
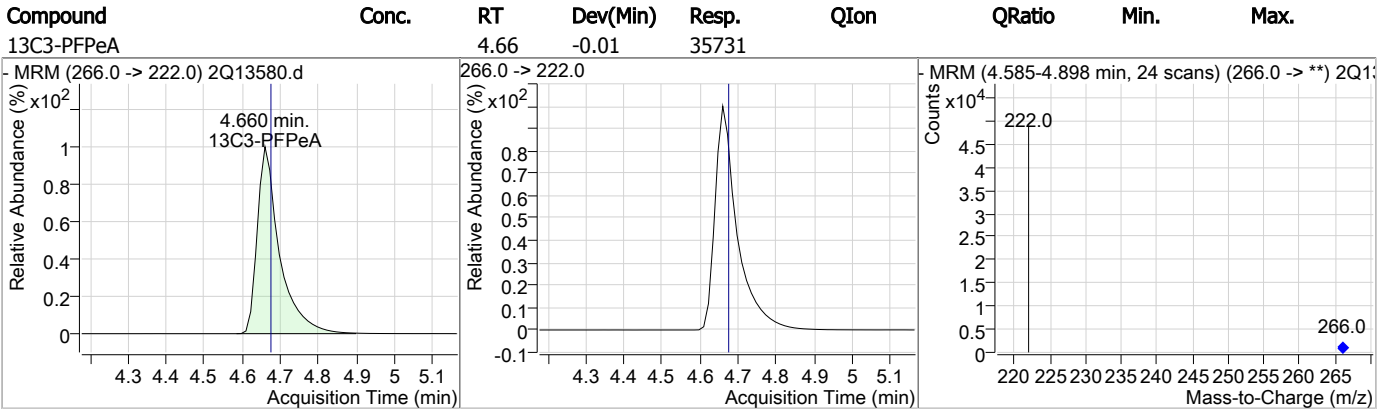
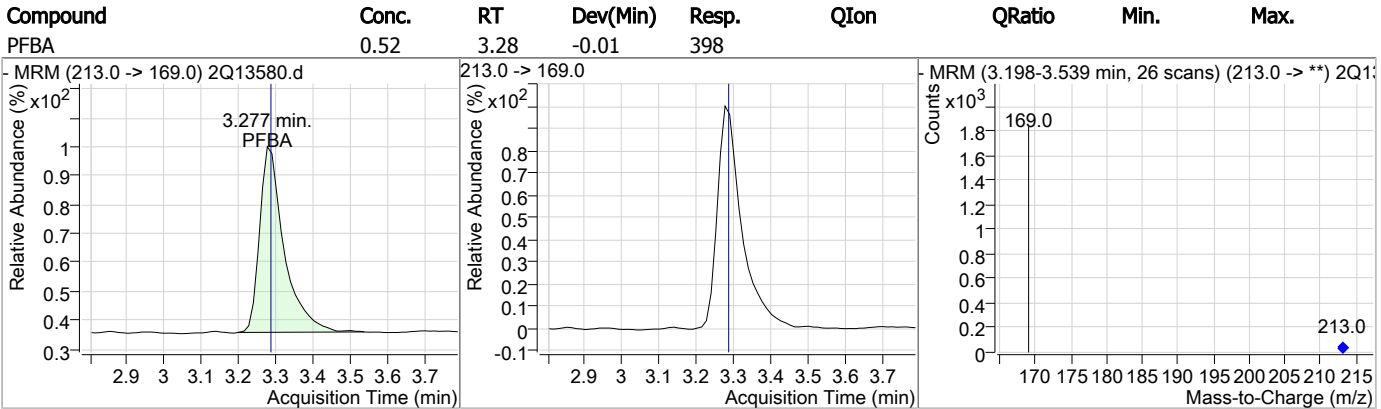
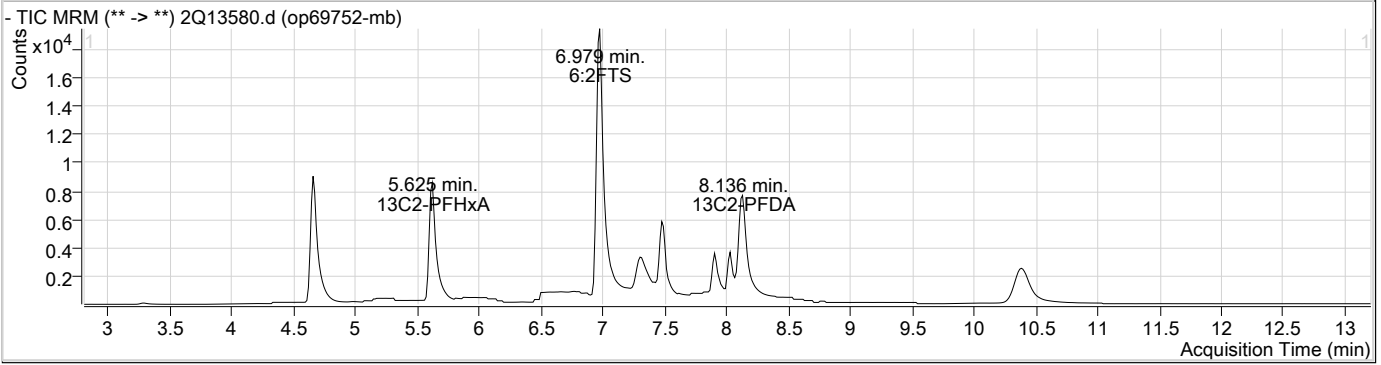
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Operator        : NATASHAG
Acq. Method     : 537_LIST.m
Acq. Date-Time  : 4/25/2018 6:45:07 PM
Sample Name     : op69752-mb
Vial            : Vial 28
DA Method File  : PFC_042318_S2Q249.quantmethod.xml
Batch Name      : s2q251.batch.bin
Sample Information : op69752,S2Q251,250,,,1.0,1,water
    
```

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	44854	20.00 µg/L	-0.013
13C2-PFDoDA	10.380	615.0 -> 570.0	23082	20.00 µg/L	-0.038
13C2-PFOA	6.968	415.0 -> 370.0	31746	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	35731	20.00 µg/L	-0.013
13C4-PFOS	7.476	503.0 -> 80.0	19374	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	9422	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.136	515.0 -> 470.0	33169	16.47 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 82.3%	
13C2-PFHxA	5.625	315.0 -> 270.0	32768	16.71 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 83.5%	
d5-EtFOSAA	8.026	589.0 -> 419.0	10101	16.06 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 80.3%	
<b>Target Compounds</b>					
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.979	427.0 -> 407.0	792	0.34 µg/L	68
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	3.277	213.0 -> 169.0	398	0.52 µg/L	100
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

10.2.1 10

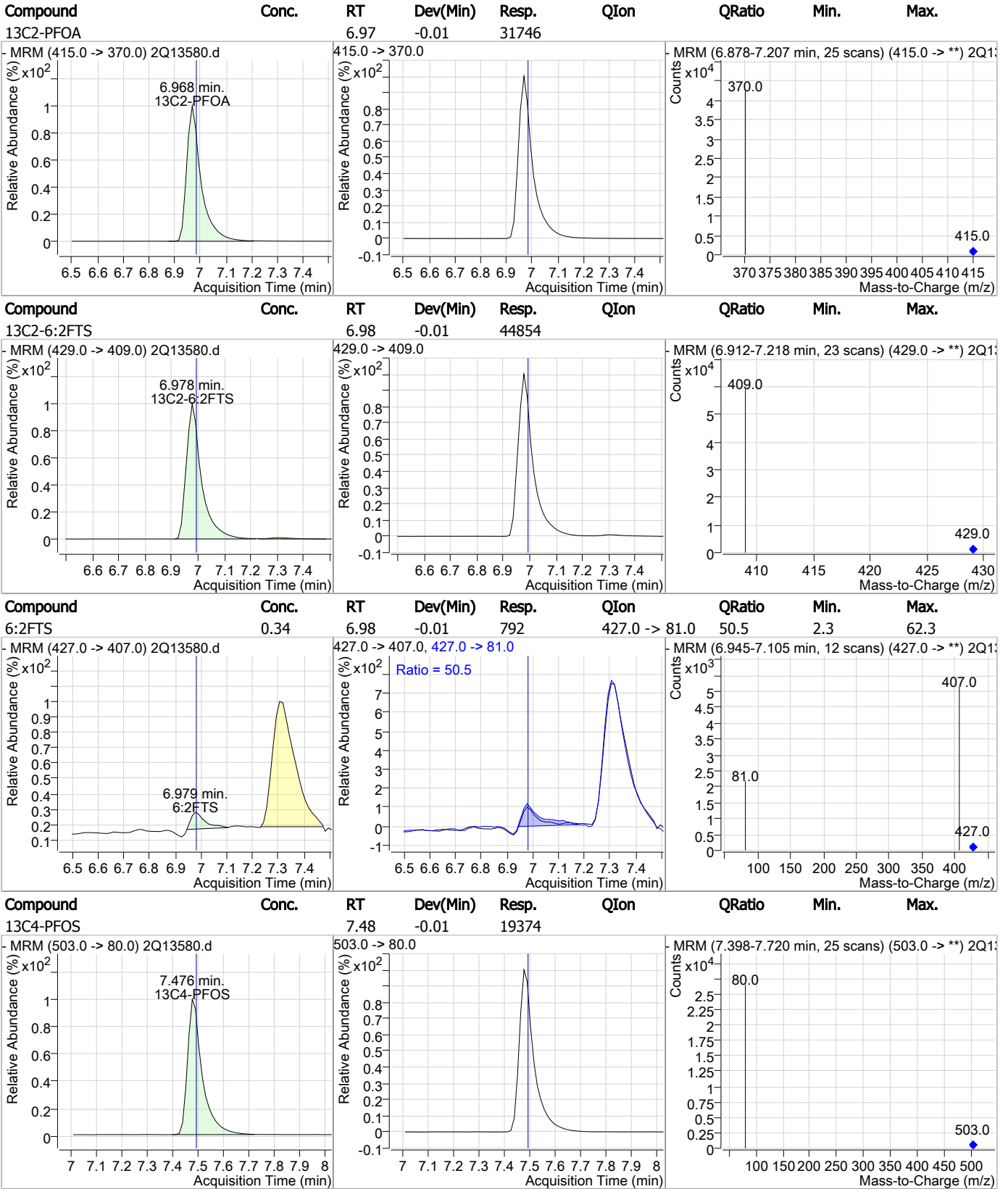
### Perfluorinated Compounds by LC/MS/MS



10.2.1 10



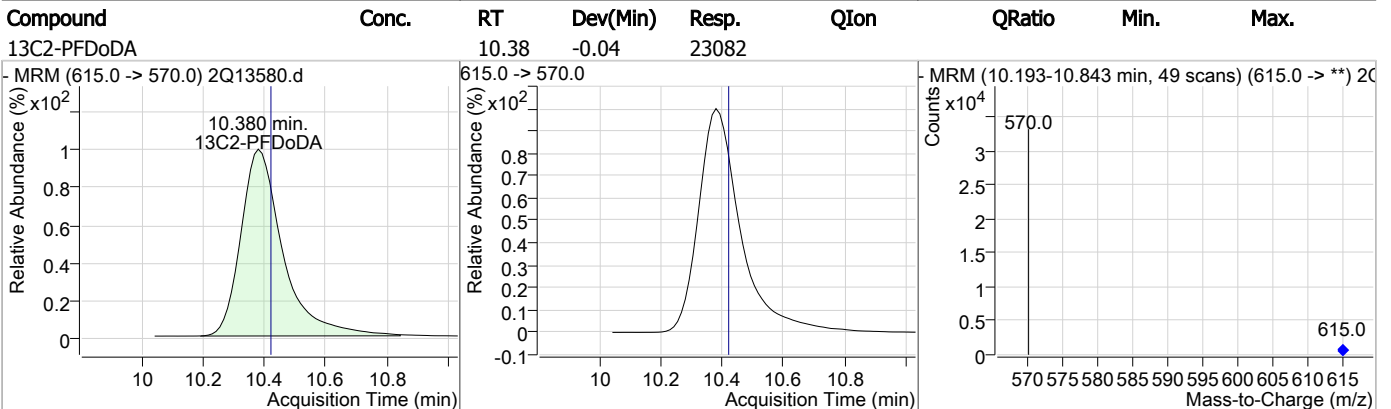
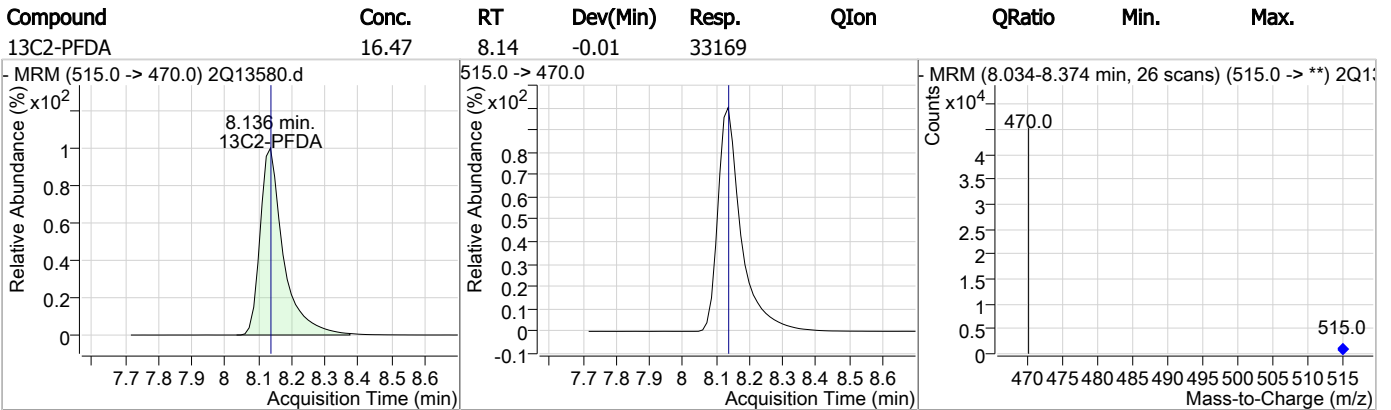
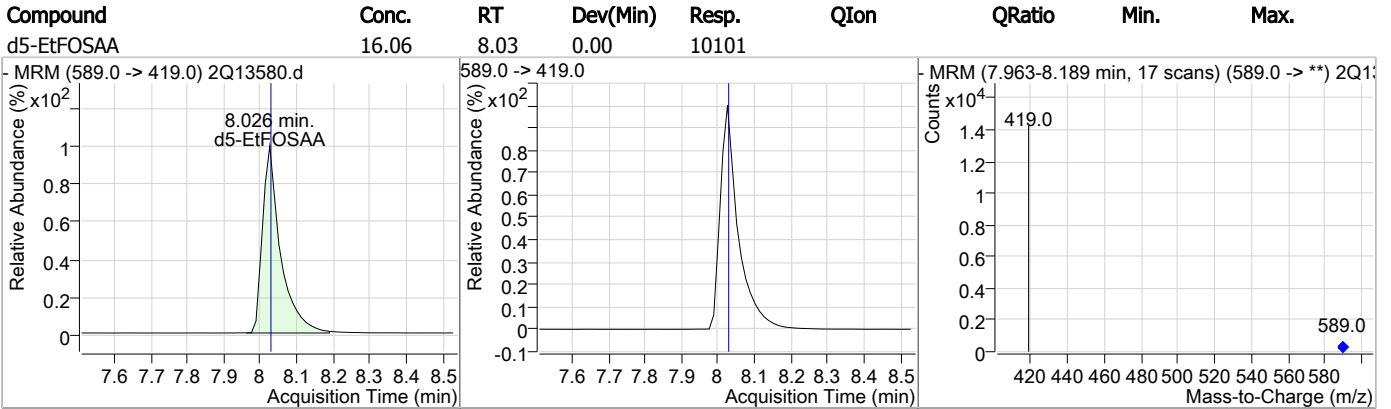
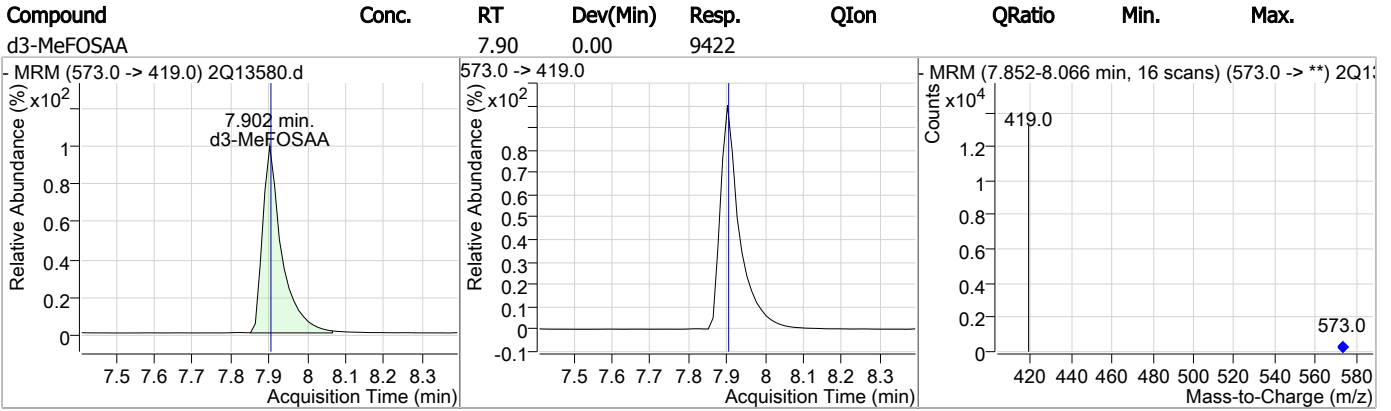
### Perfluorinated Compounds by LC/MS/MS



10.2.1 10



### Perfluorinated Compounds by LC/MS/MS



10.2.1 10



### Perfluorinated Compounds by LC/MS/MS

```

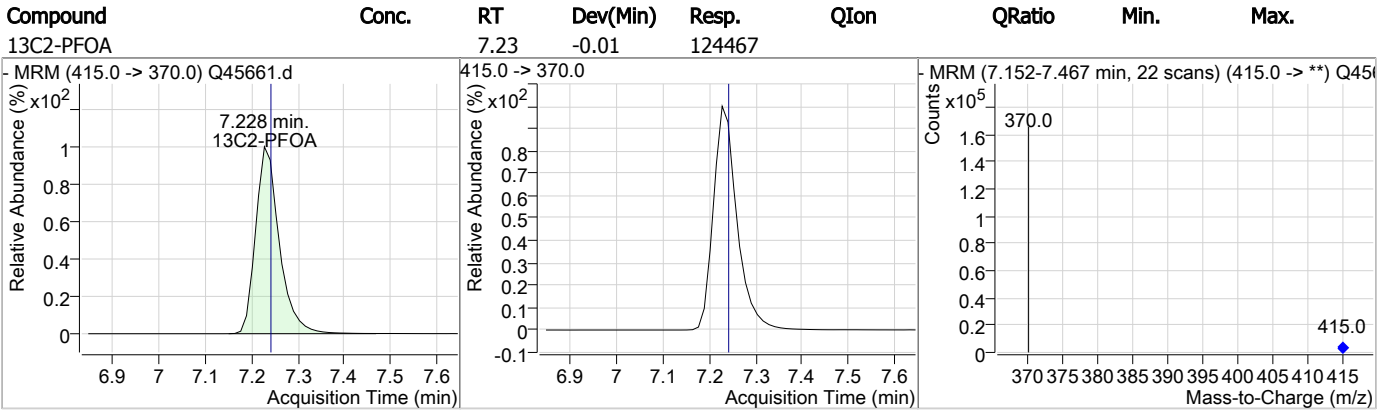
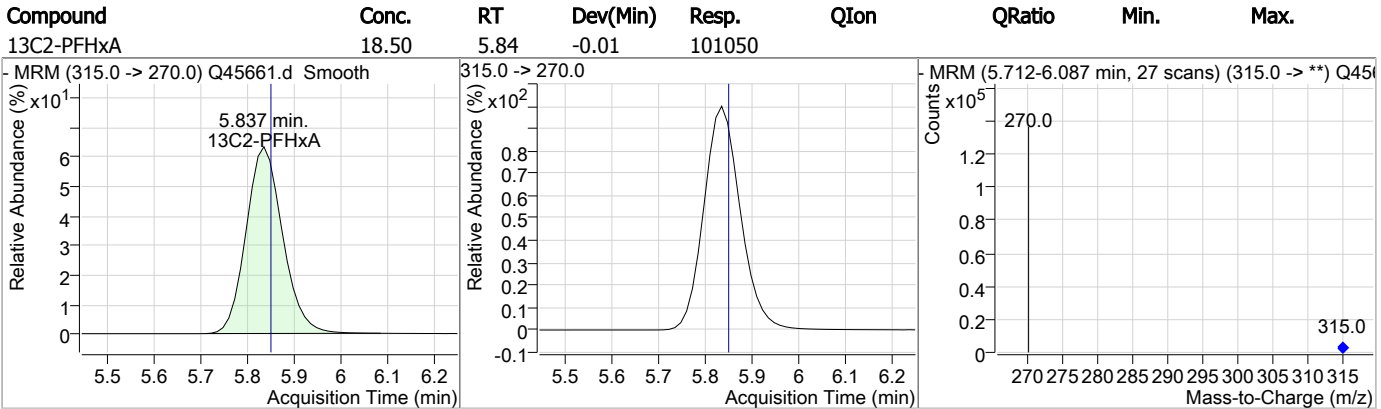
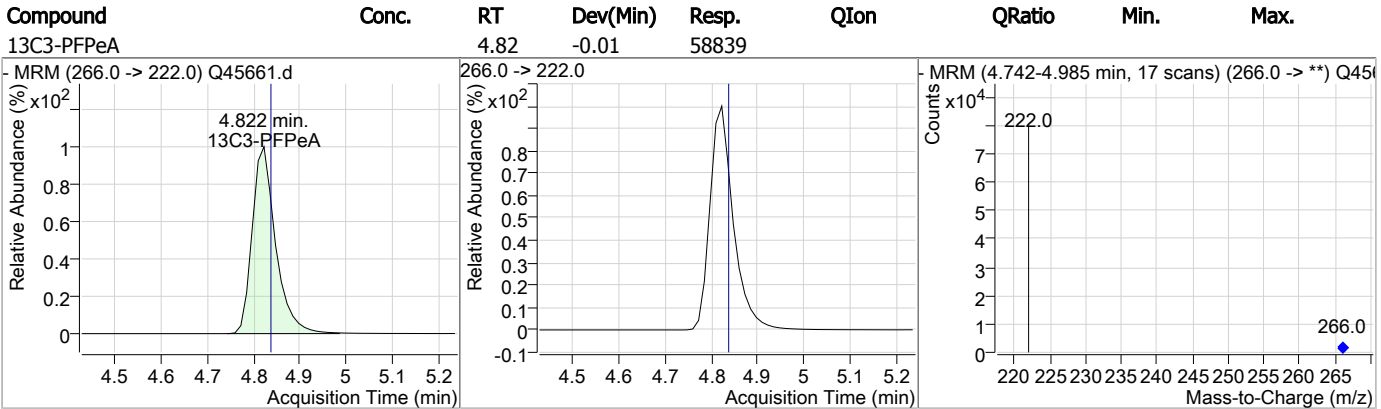
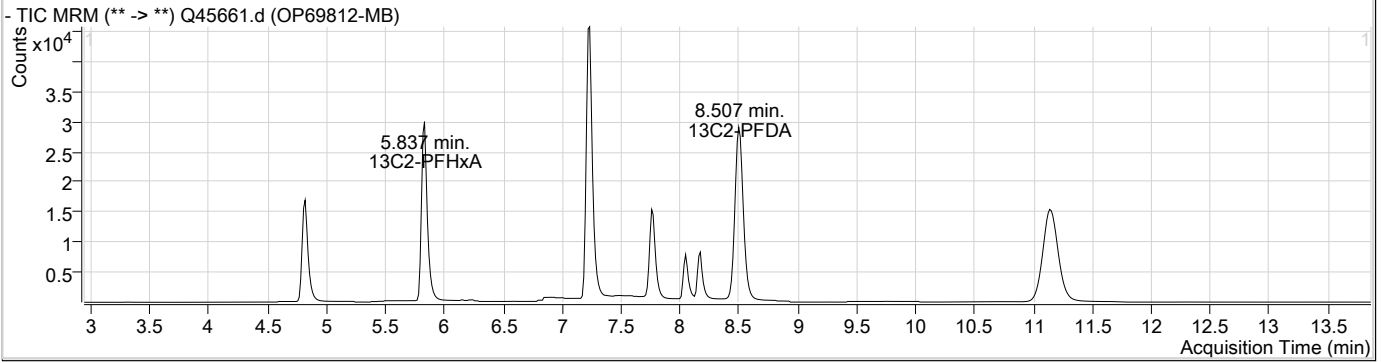
Data File       : Q45661.d
Operator        : NANCYF
Acq. Method     : 537_LIST.m
Acq. Date-Time  : 4/30/2018 1:25:57 PM
Sample Name     : OP69812-MB
Vial            : Vial 9
DA Method File  : PFC_0426_SQ1119.quantmethod.xml
Batch Name      : SQ1123.batch.bin
Sample Information : OP69812,SQ1123,250,,,1.0,1,WATER
    
```

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.237	429.0 -> 409.0	41332	20.00 µg/L	-0.011
13C2-PFDoDA	11.138	615.0 -> 570.0	140606	20.00 µg/L	-0.050
13C2-PFOA	7.228	415.0 -> 370.0	124467	20.00 µg/L	-0.012
13C4-PFOS	7.761	503.0 -> 80.0	53982	20.00 µg/L	-0.012
d3-MeFOSAA	8.049	573.0 -> 419.0	21568	20.00 µg/L	0.000
13C3-PFPeA	4.822	266.0 -> 222.0	58839	20.00 µg/L	-0.012
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.507	515.0 -> 470.0	140305	17.56 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 87.8%	
13C2-PFHxA	5.837	315.0 -> 270.0	101050	18.50 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 92.5%	
d5-EtFOSAA	8.172	589.0 -> 419.0	23128	14.80 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 74.0%	
<b>Target Compounds</b>					
					<b>QValue</b>
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	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.839	313.0 -> 269.0	600	0.19 µg/L	99
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
4:2FTS	-	327.0 -> 307.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFPeS	-	349.0 -> 99.0	-	N.D.	

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

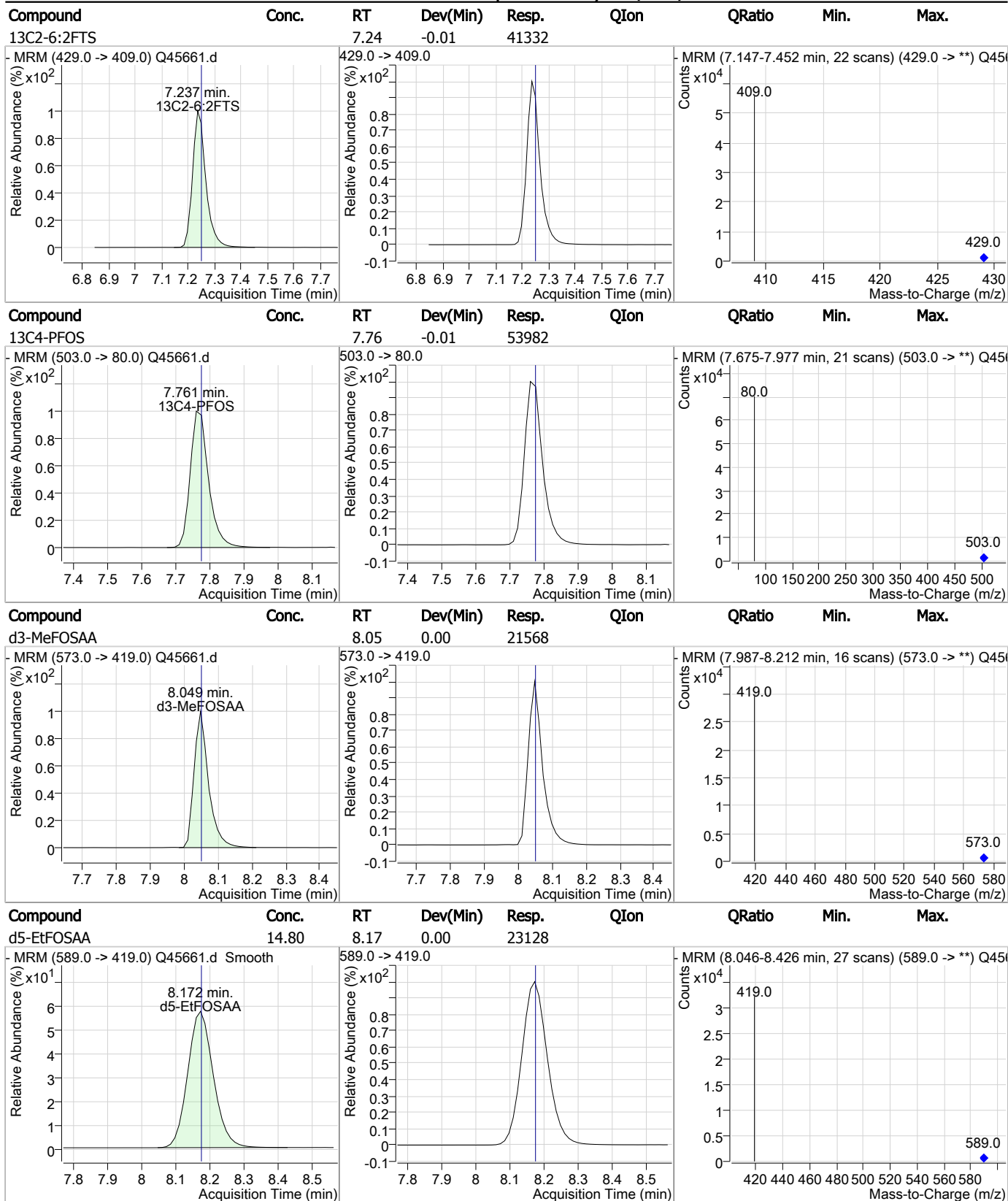
10.2.2 10

### Perfluorinated Compounds by LC/MS/MS



10.2.2 10

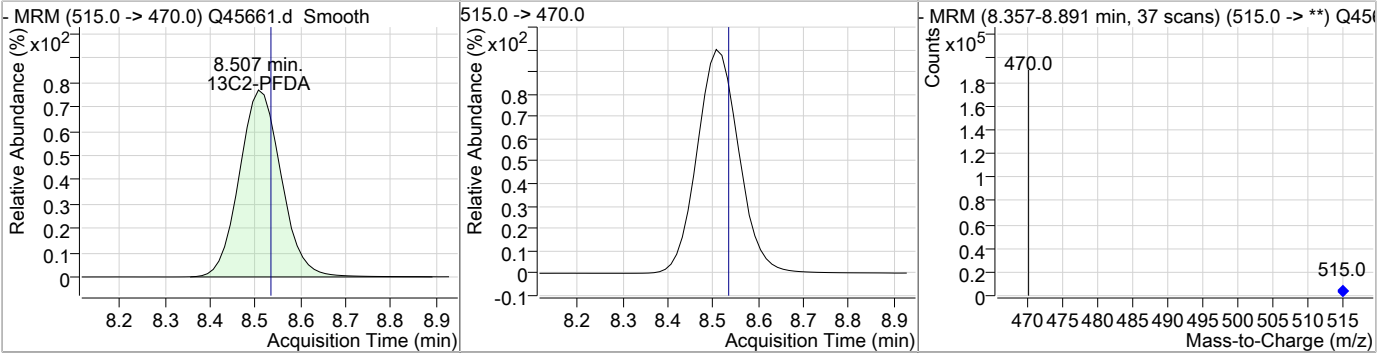
### Perfluorinated Compounds by LC/MS/MS



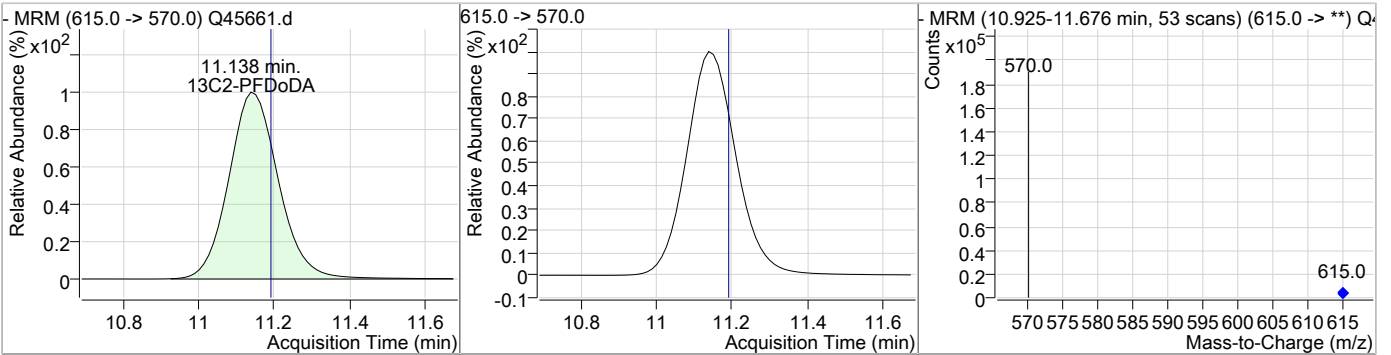
10.2.2 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	17.56	8.51	-0.02	140305				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.14	-0.05	140606				



10.2.2 10

## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13579.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 6:26:18 PM  
 Sample Name : op69752-bs  
 Vial : Vial 27  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,250,,,1.0,1,water

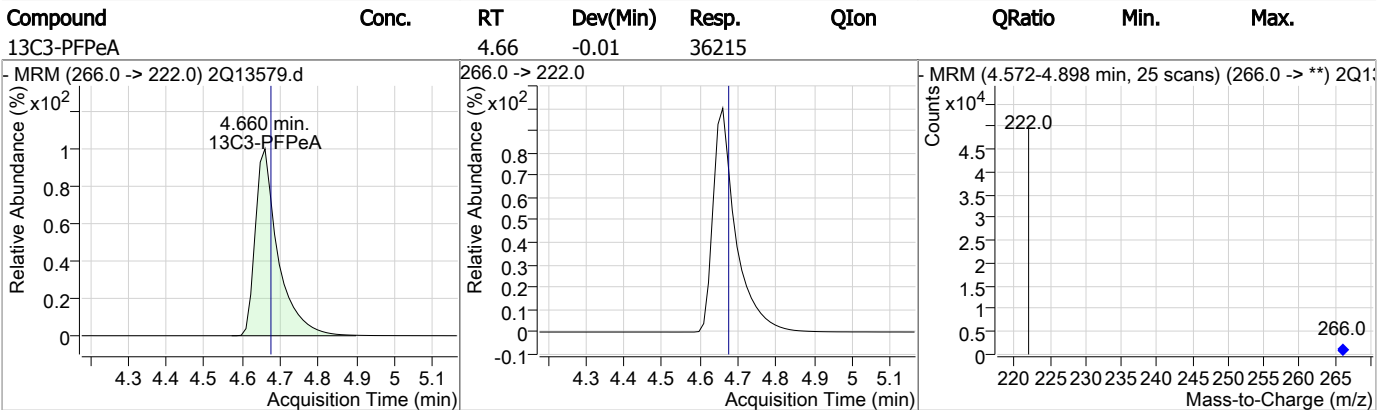
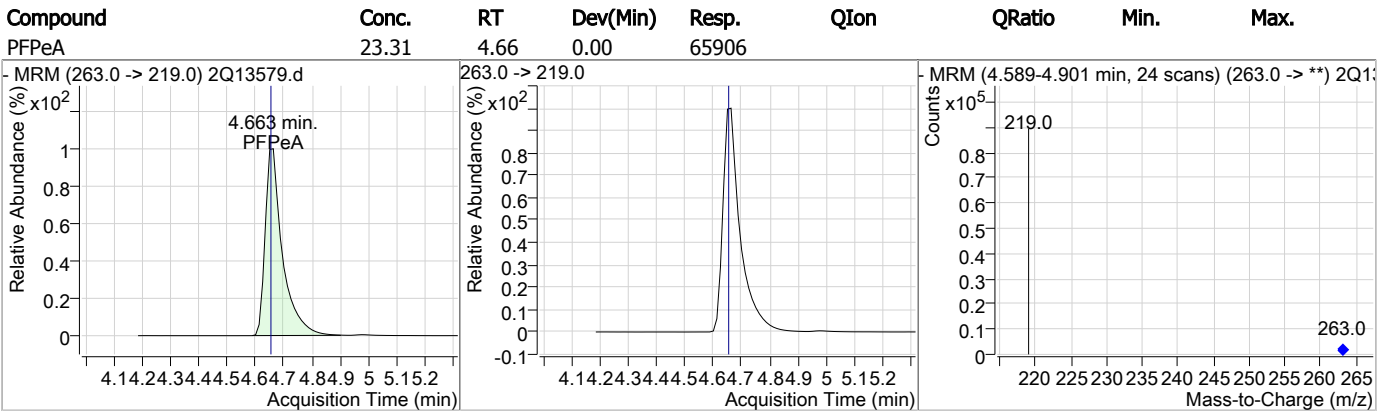
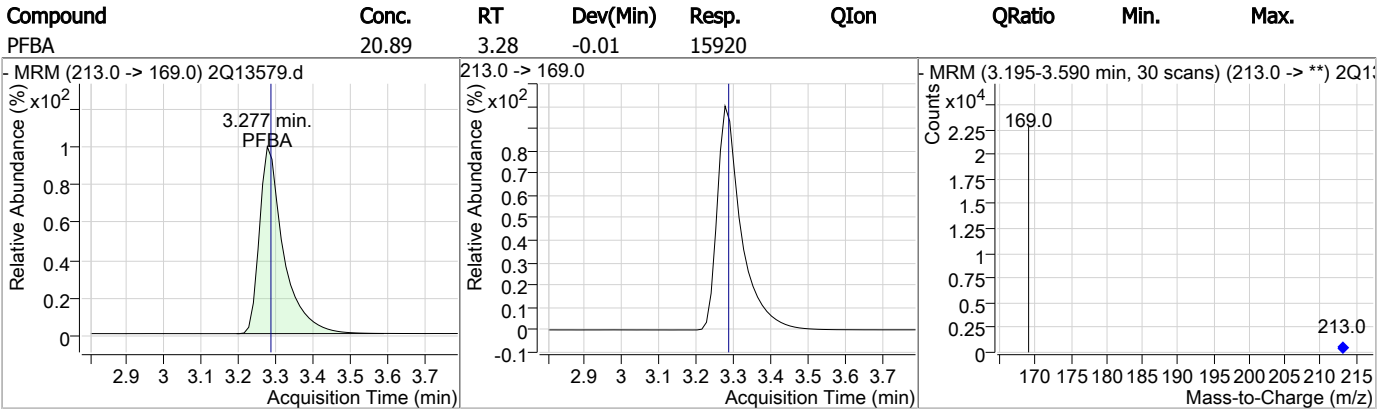
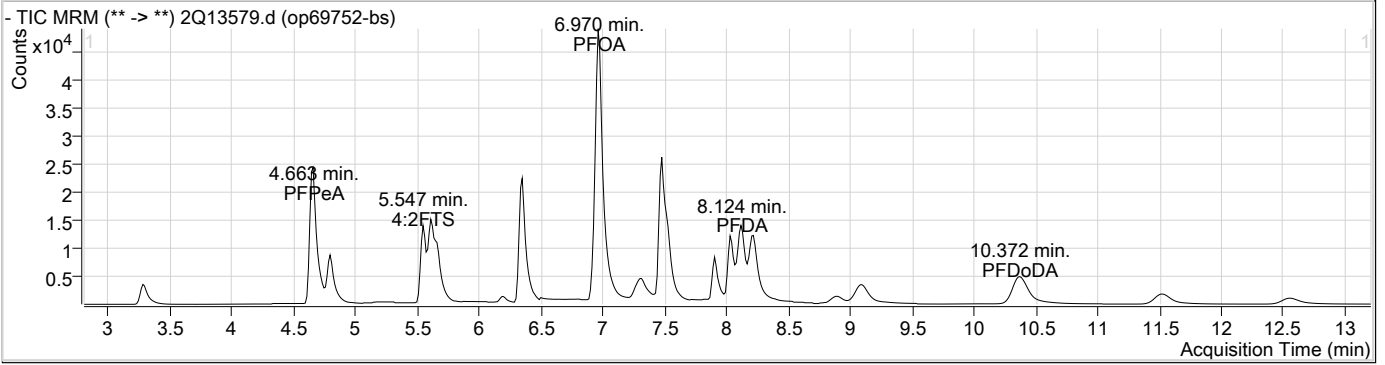
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	48609	20.00 µg/L	-0.013
13C2-PFDoDA	10.368	615.0 -> 570.0	23735	20.00 µg/L	-0.050
13C2-PFOA	6.968	415.0 -> 370.0	31521	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	36215	20.00 µg/L	-0.013
13C4-PFOS	7.476	503.0 -> 80.0	19791	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	9984	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.124	515.0 -> 470.0	32898	16.45 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 82.3%	
13C2-PFHxA	5.613	315.0 -> 270.0	31915	16.39 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 82.0%	
d5-EtFOSAA	8.026	589.0 -> 419.0	9991	14.99 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 74.9%	
<b>Target Compounds</b>					
4:2FTS	5.547	327.0 -> 307.0	37901	21.52 µg/L	QValue 98
6:2FTS	6.979	427.0 -> 407.0	52211	22.01 µg/L	100
8:2FTS	8.222	527.0 -> 507.0	42772	20.20 µg/L	100
EtFOSAA	8.027	584.0 -> 419.0	9723	20.24 µg/L	98
FOSA	7.479	498.0 -> 78.0	43271	23.64 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	12170	21.40 µg/L	98
PFBA	3.277	213.0 -> 169.0	15920	20.89 µg/L	100
PFBS	4.791	299.0 -> 80.0	22657	19.36 µg/L	100
PFDA	8.124	513.0 -> 469.0	23151	20.38 µg/L	99
PFDoDA	10.372	613.0 -> 569.0	21350	21.27 µg/L	99
PFDS	8.891	599.0 -> 80.0	7414	18.71 µg/L	98
PFHpA	6.351	363.0 -> 319.0	53775	23.31 µg/L	100
PFHpS	6.934	449.0 -> 80.0	24030	22.01 µg/L	100
PFHxA	5.615	313.0 -> 269.0	15197	19.96 µg/L	99
PFHxS	6.332	399.0 -> 80.0	25615	19.87 µg/L	m 99
PFNA	7.534	463.0 -> 419.0	26630	20.76 µg/L	100
PFNS	8.044	549.0 -> 80.0	13319	19.08 µg/L	99
PFOA	6.970	413.0 -> 369.0	29874	23.34 µg/L	100
PFOS	7.477	499.0 -> 80.0	26527	22.35 µg/L	m 94
PFPeA	4.663	263.0 -> 219.0	65906	23.31 µg/L	100
PFPeS	5.656	349.0 -> 80.0	17236	21.02 µg/L	100
PFTeDA	12.558	713.0 -> 669.0	11066	18.07 µg/L	100
PFTTrDA	11.519	663.0 -> 619.0	17367	21.31 µg/L	99
PFUnDA	9.098	563.0 -> 519.0	25309	21.93 µg/L	100

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

10.3.1 10

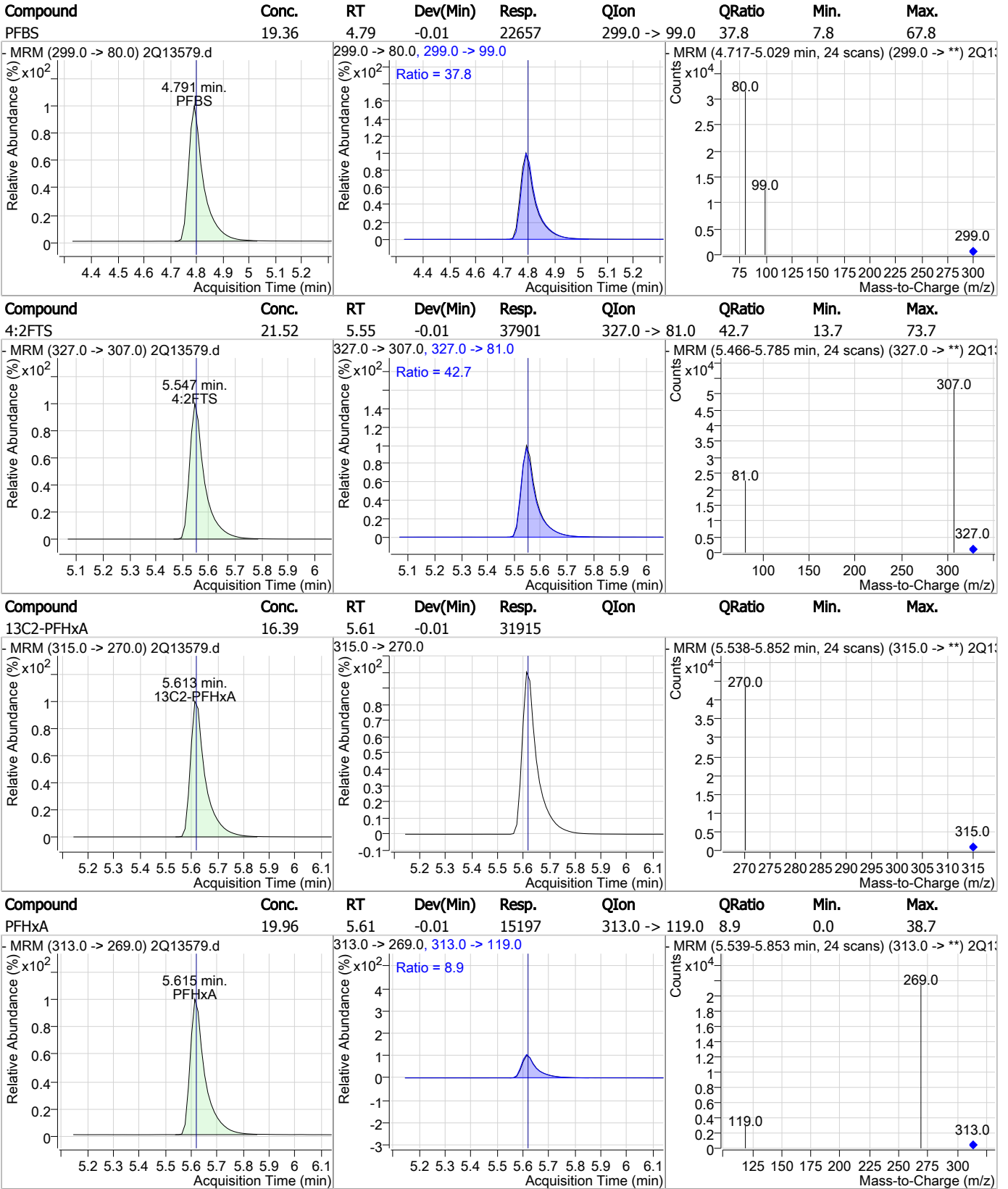


### Perfluorinated Compounds by LC/MS/MS



10.3.1 10

### Perfluorinated Compounds by LC/MS/MS

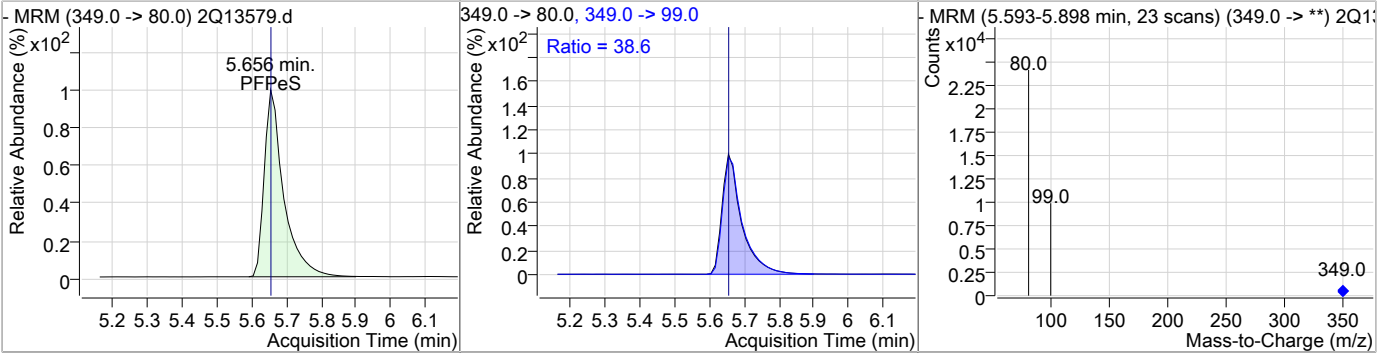


10.3.1 10

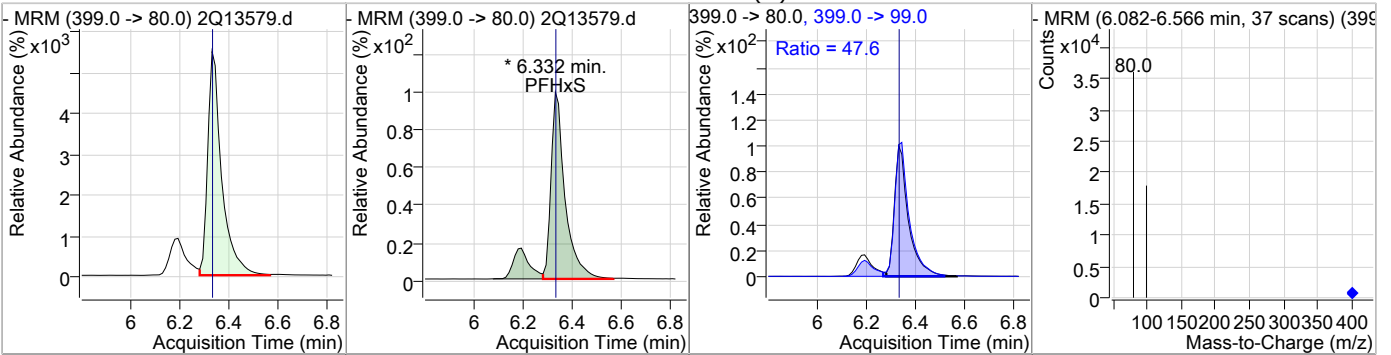


### Perfluorinated Compounds by LC/MS/MS

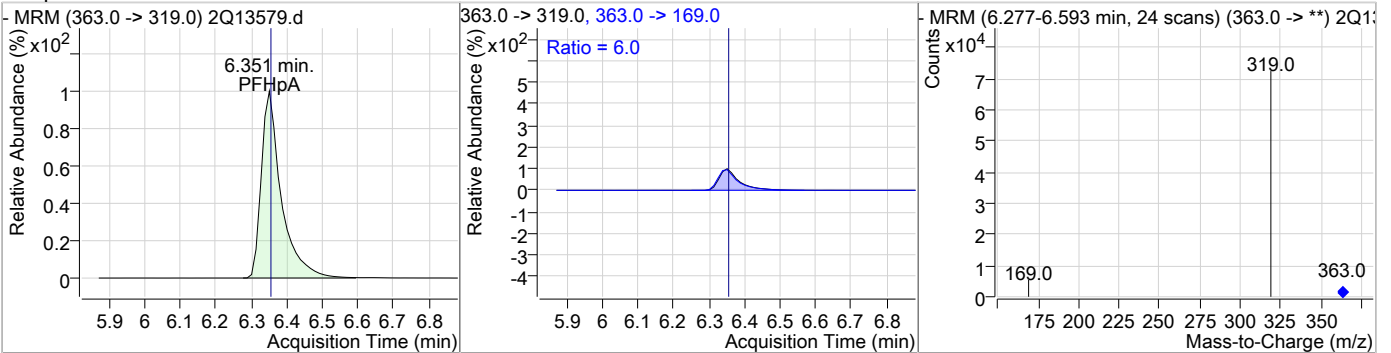
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.02	5.66	-0.01	17236	349.0 -> 99.0	38.6	8.8	68.8



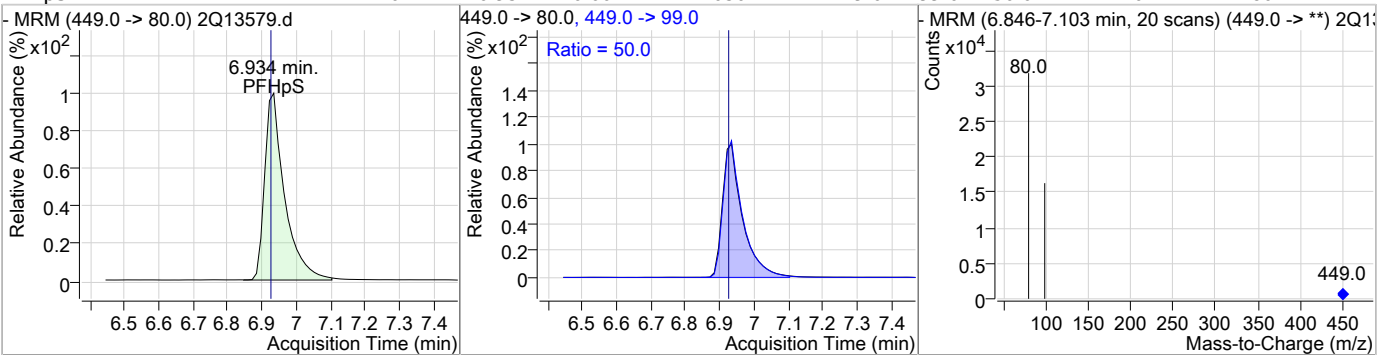
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.87	6.33	-0.01	25615 (m)	399.0 -> 99.0	47.6	17.0	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	23.31	6.35	-0.01	53775	363.0 -> 169.0	6.0	0.0	36.1

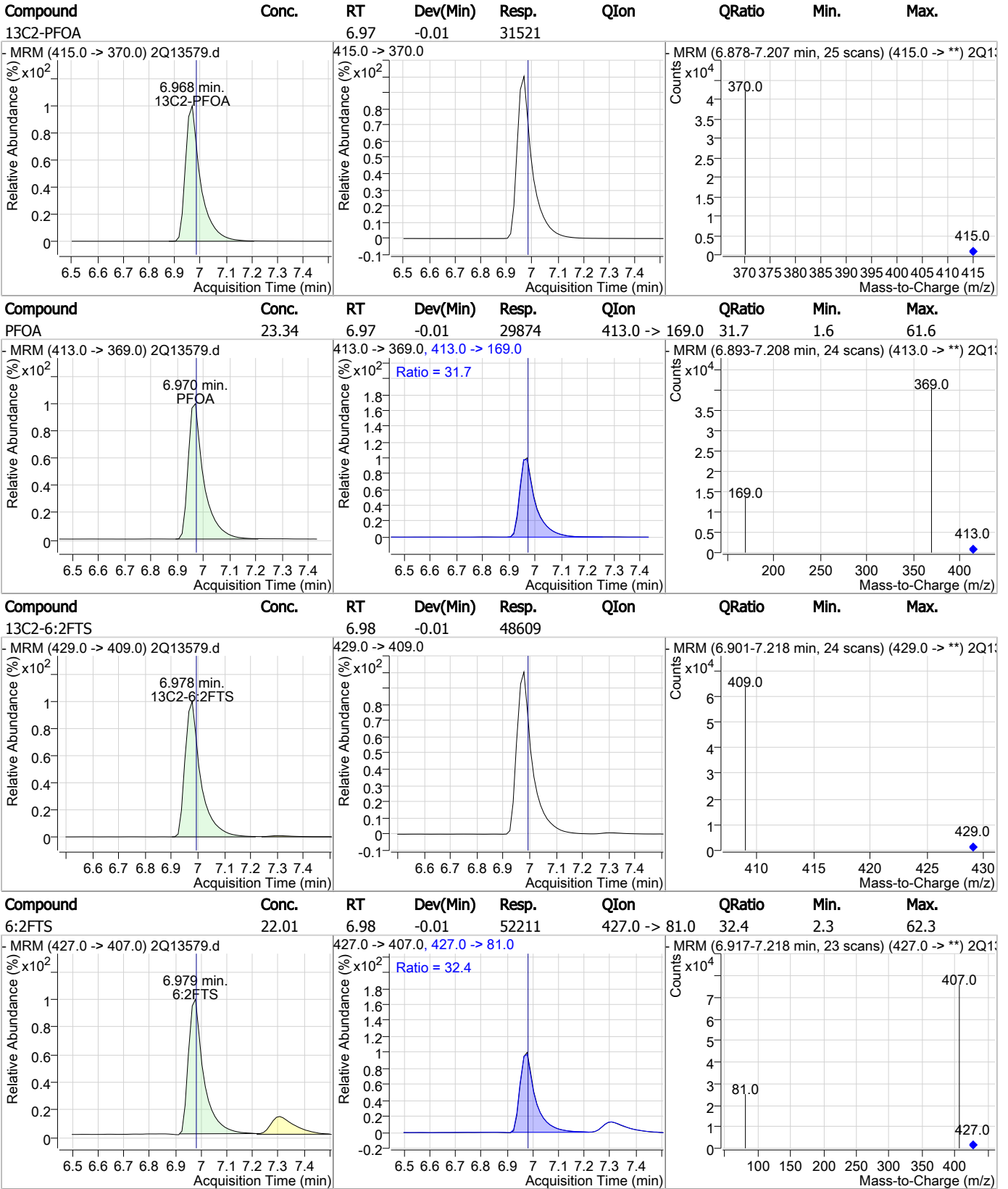


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.01	6.93	0.00	24030	449.0 -> 99.0	50.0	20.2	80.2



10.3.1 10

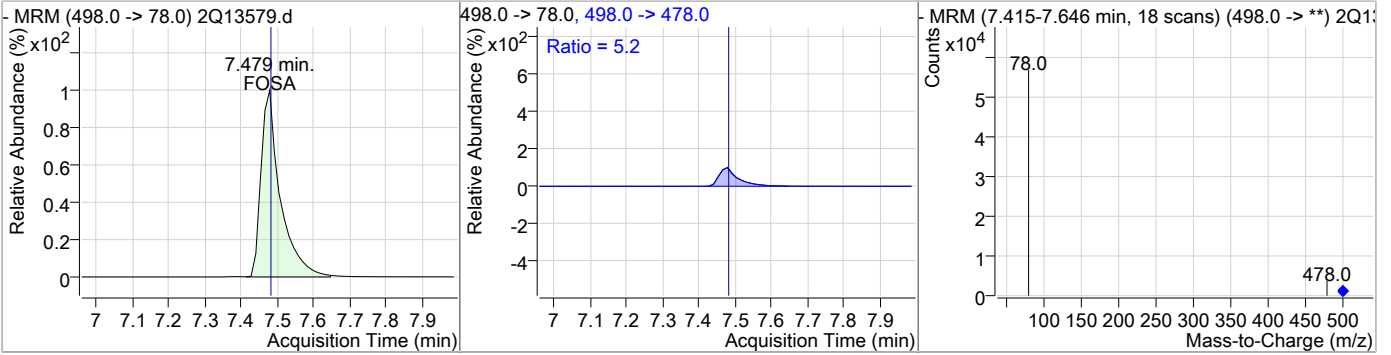
### Perfluorinated Compounds by LC/MS/MS



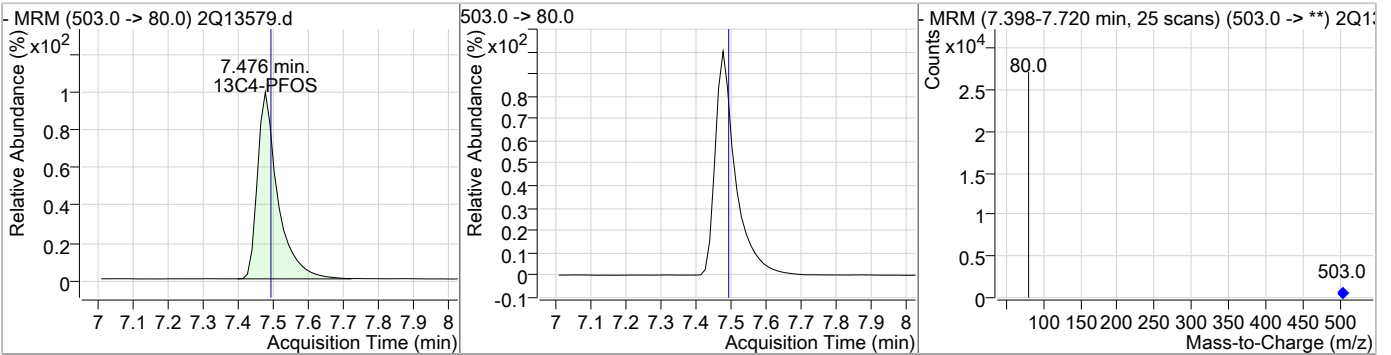
10.3.1 10

### Perfluorinated Compounds by LC/MS/MS

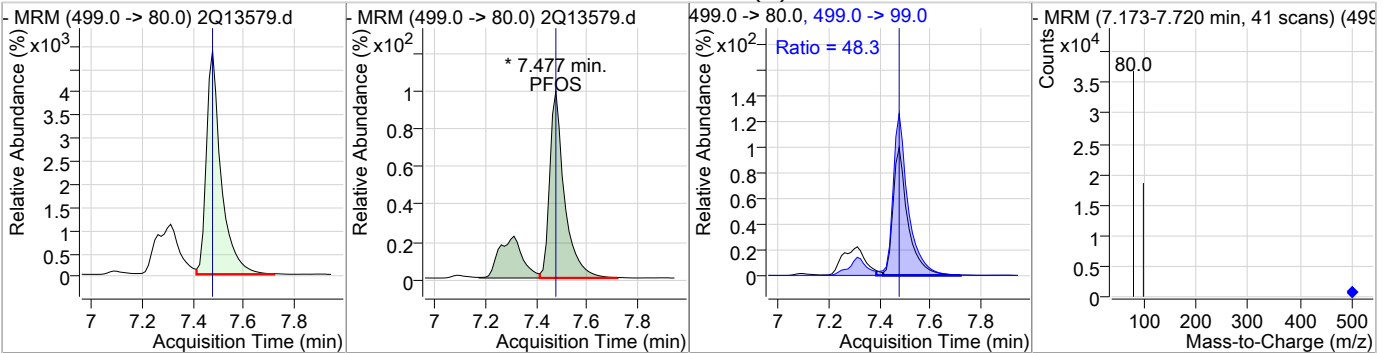
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	23.64	7.48	0.00	43271	498.0 -> 478.0	5.2	0.0	35.2



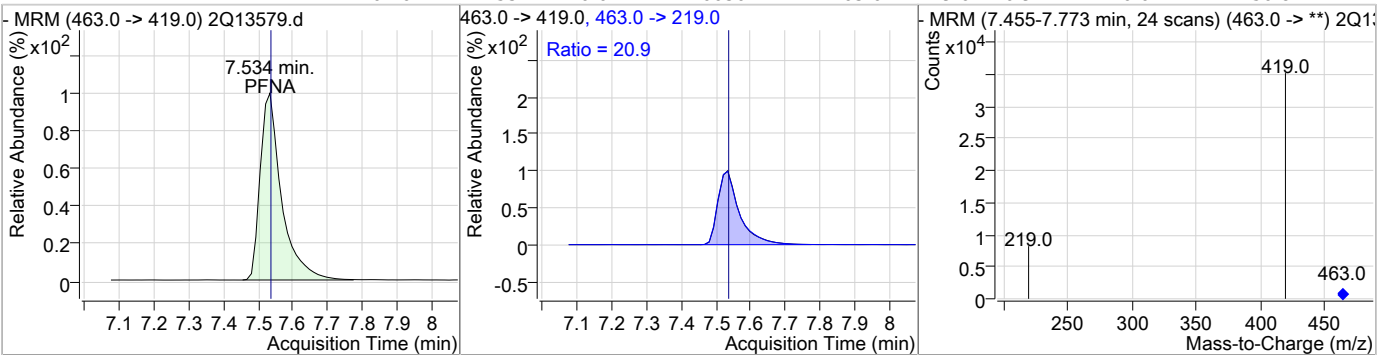
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.48	-0.01	19791				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.35	7.48	-0.01	26527 (m)	499.0 -> 99.0	48.3	14.7	74.7

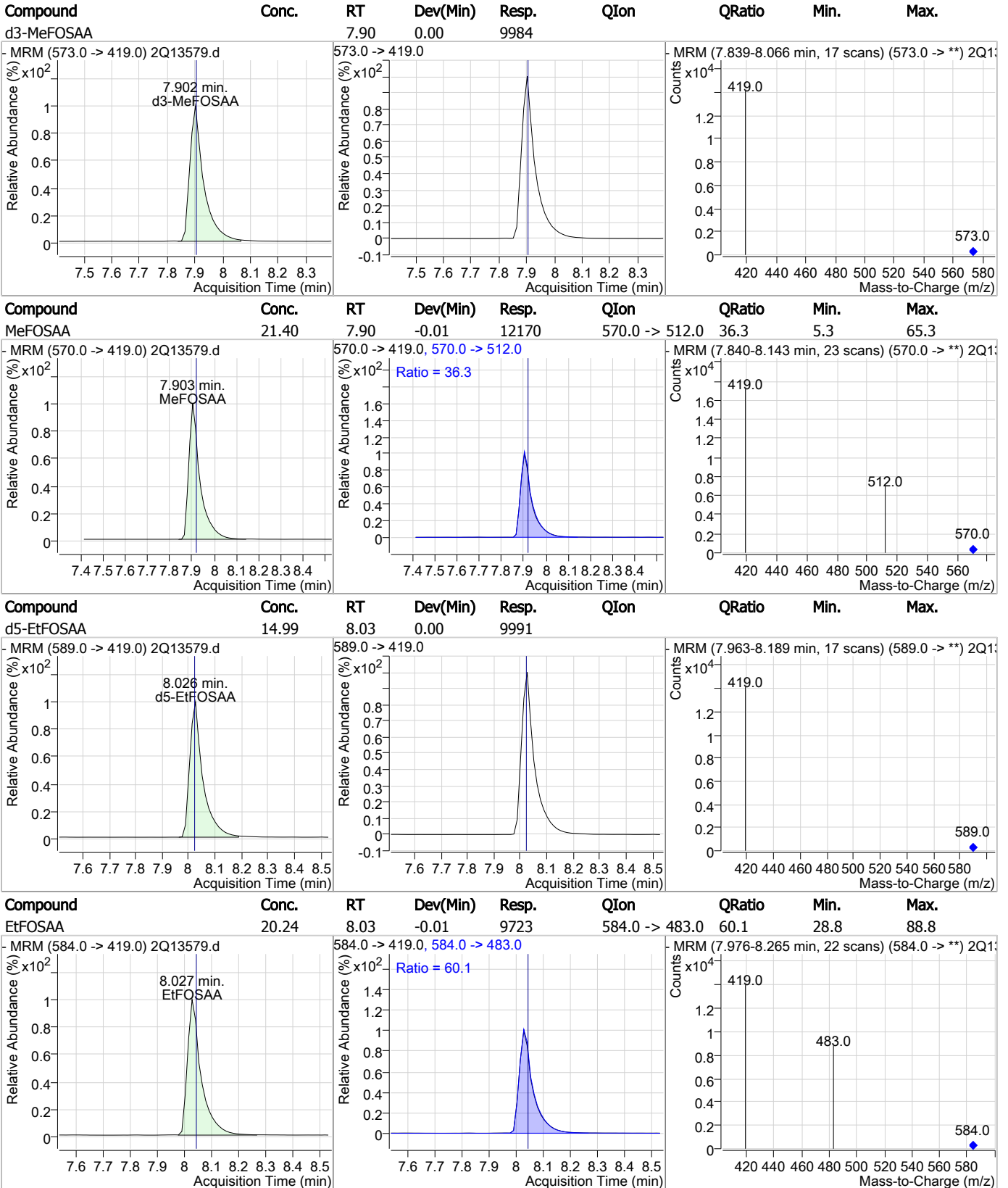


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.76	7.53	-0.01	26630	463.0 -> 219.0	20.9	0.0	50.8



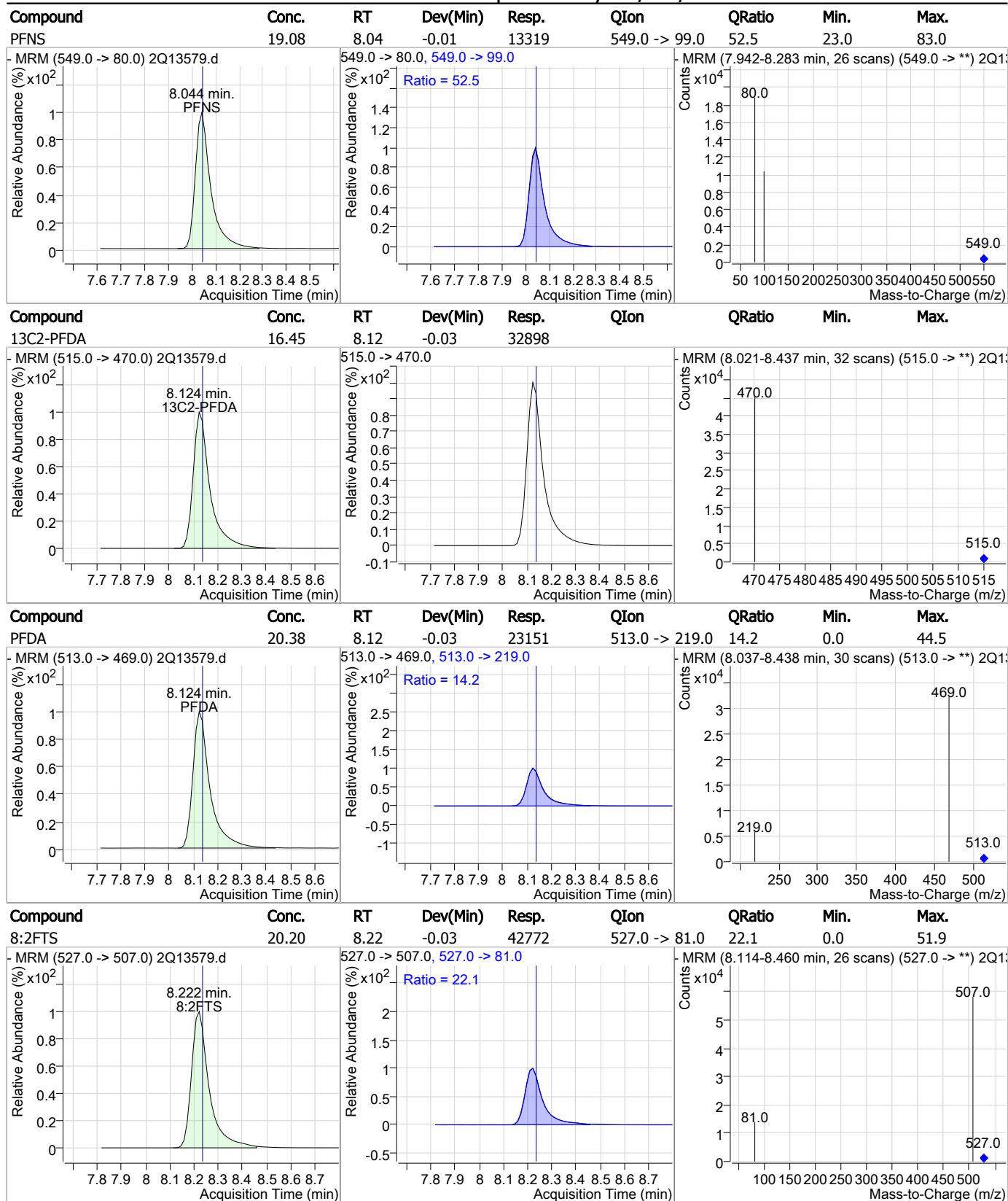
10.3.1 10

### Perfluorinated Compounds by LC/MS/MS



10.3.1 10

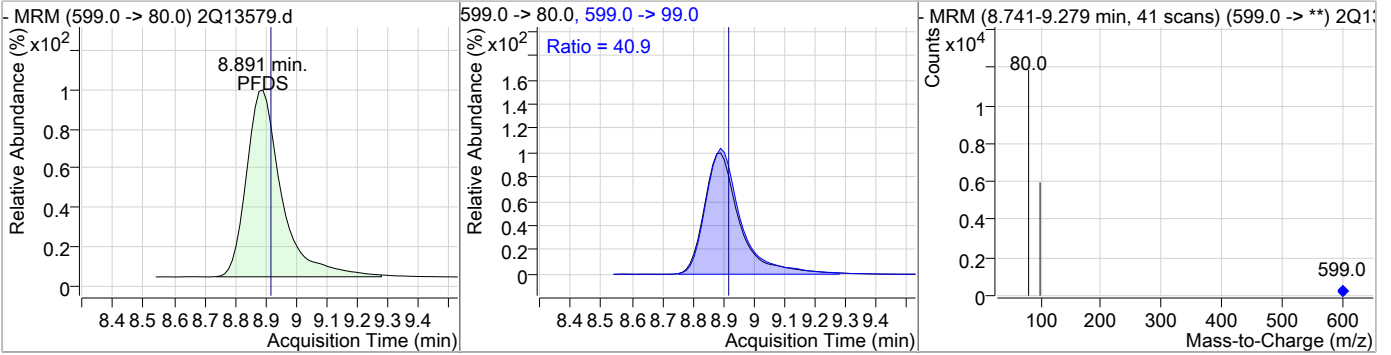
### Perfluorinated Compounds by LC/MS/MS



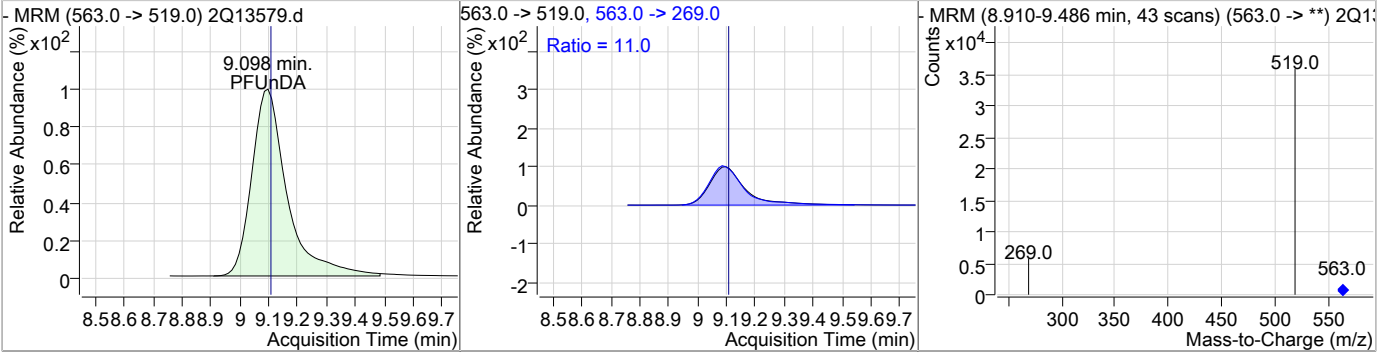
10.3.1 10

### Perfluorinated Compounds by LC/MS/MS

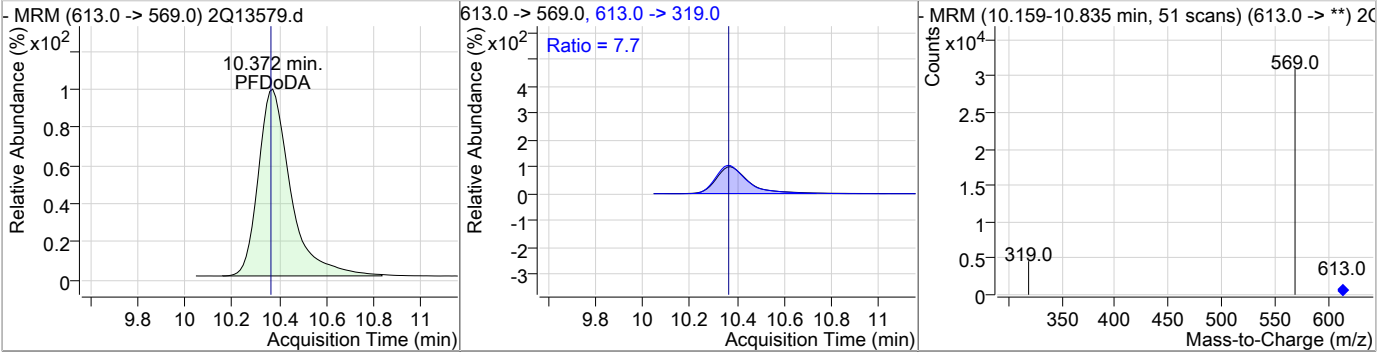
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.71	8.89	-0.04	7414	599.0 -> 99.0	40.9	9.6	69.6



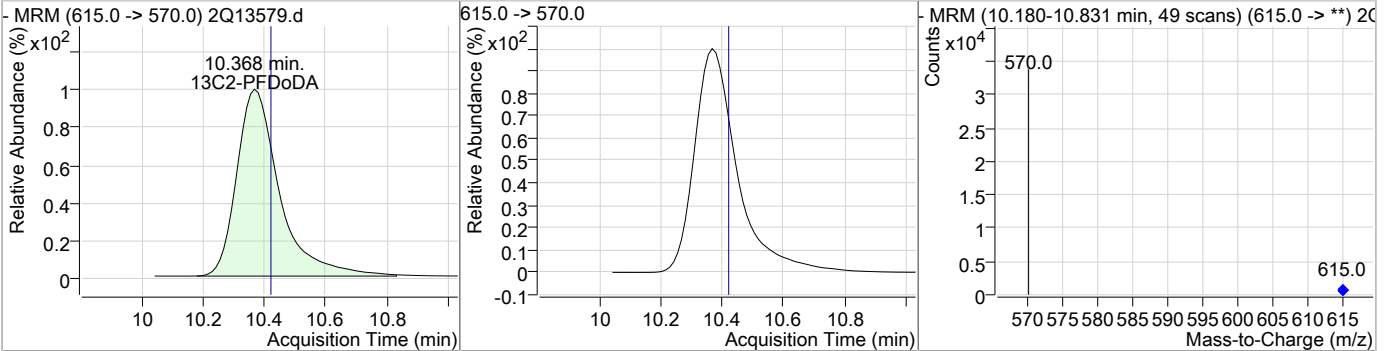
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.93	9.10	-0.05	25309	563.0 -> 269.0	11.0	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.27	10.37	-0.04	21350	613.0 -> 319.0	7.7	0.0	37.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.37	-0.05	23735				

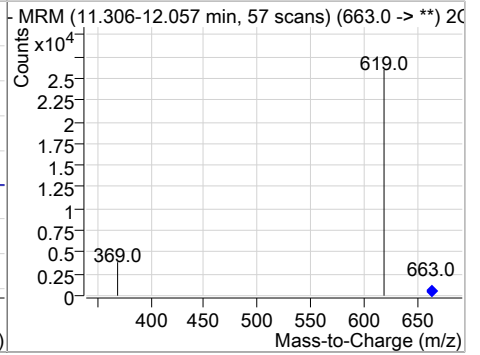
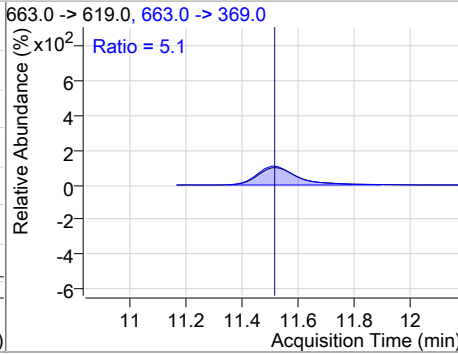
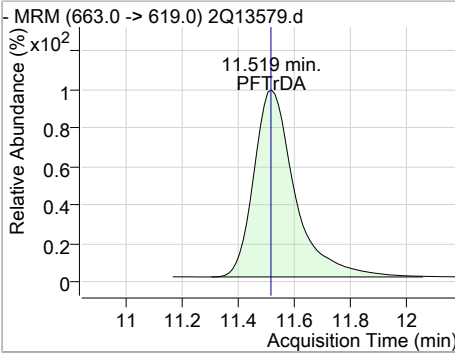


10.3.1 10

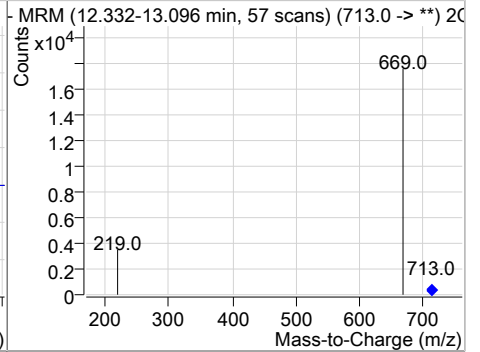
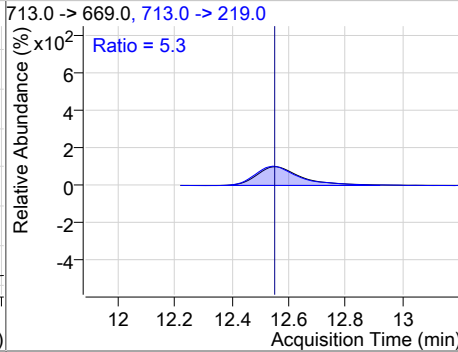
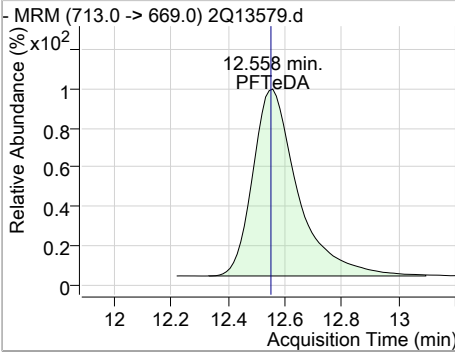


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	21.31	11.52	-0.05	17367	663.0 -> 369.0	5.1	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.07	12.56	-0.05	11066	713.0 -> 219.0	5.3	0.0	35.3



10.3.1 10

# Manual Integration Approval Summary

**Sample Number:** OP69752-BS      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13579.D      **Analyst approved:** 04/26/18 12:50 Natasha Gumtie  
**Injection Time:** 04/25/18 18:26      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.48	Split peak

10.3.1.1  
10



### Perfluorinated Compounds by LC/MS/MS

Data File : Q45660.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 1:06:05 PM  
 Sample Name : OP69812-BS  
 Vial : Vial 8  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69812,SQ1123,250,,,1.0,1,WATER

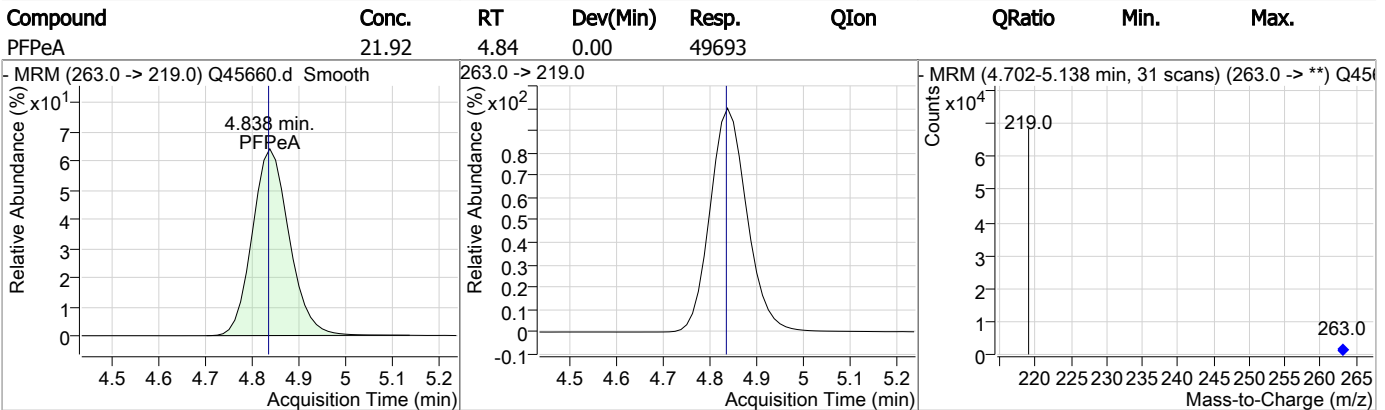
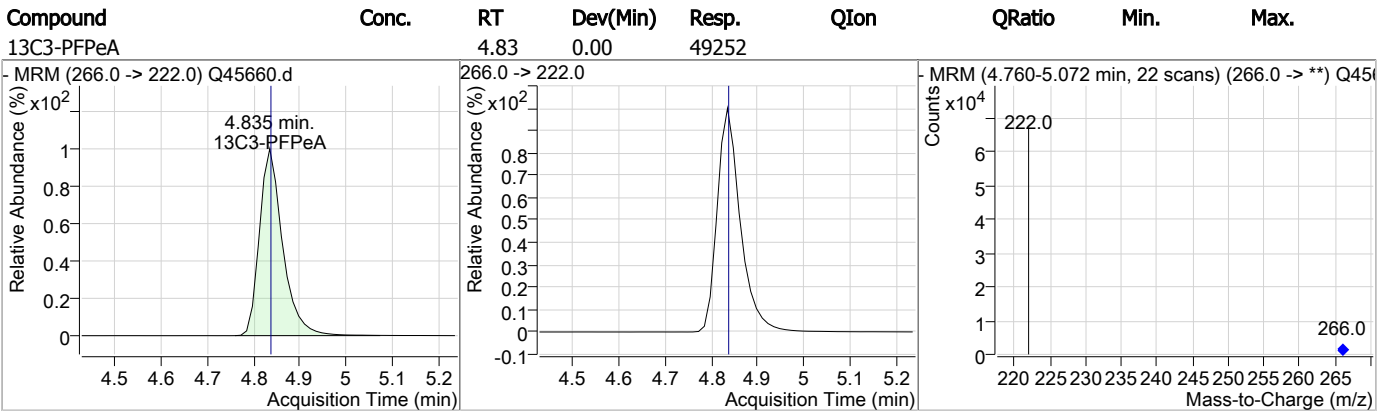
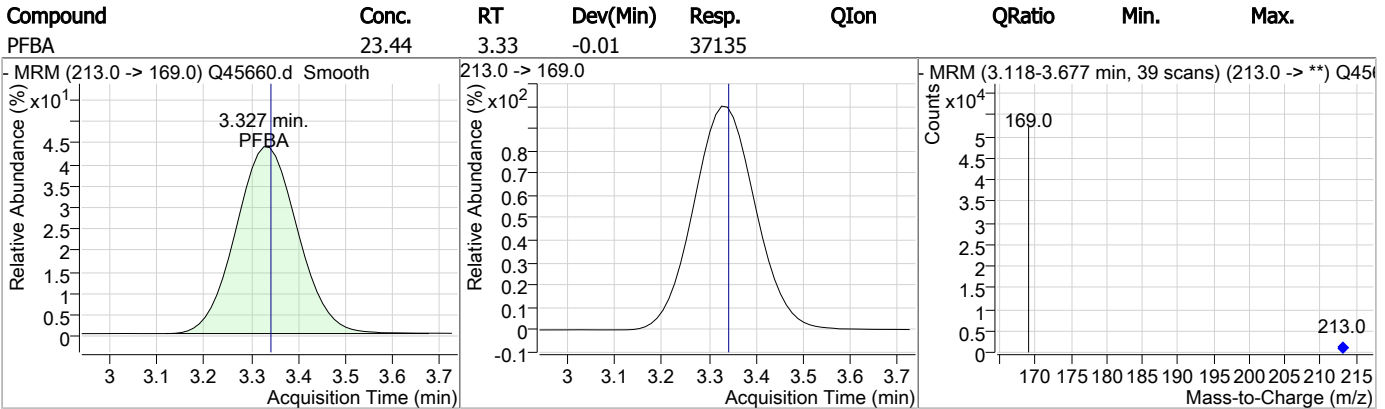
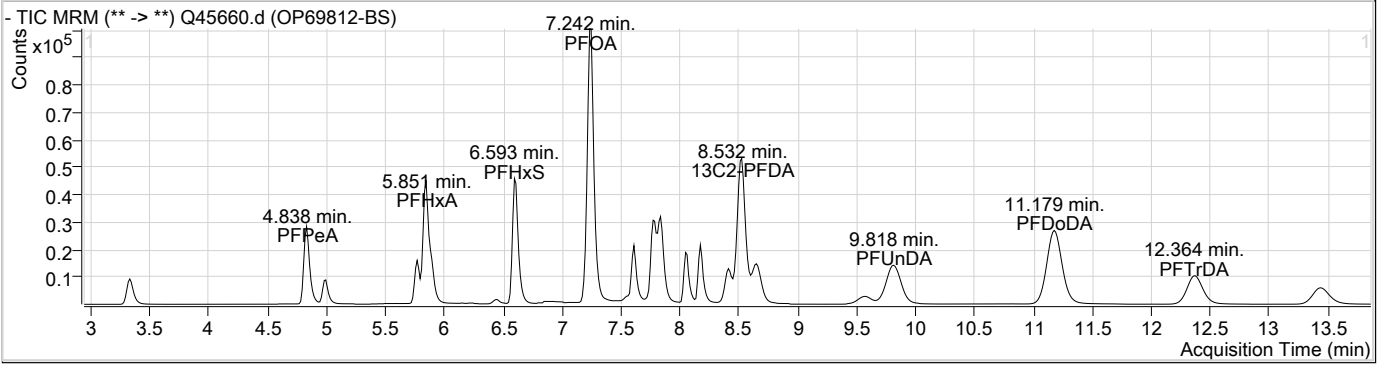
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.249	429.0 -> 409.0	40112	20.00 µg/L	0.002
13C2-PFDoDA	11.175	615.0 -> 570.0	130004	20.00 µg/L	-0.013
13C2-PFOA	7.241	415.0 -> 370.0	110149	20.00 µg/L	0.001
13C4-PFOS	7.777	503.0 -> 80.0	49019	20.00 µg/L	0.003
d3-MeFOSAA	8.049	573.0 -> 419.0	23089	20.00 µg/L	0.000
13C3-PFPeA	4.835	266.0 -> 222.0	49252	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.532	515.0 -> 470.0	131510	18.60 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 93.0%	
13C2-PFHxA	5.849	315.0 -> 270.0	90482	18.72 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 93.6%	
d5-EtFOSAA	8.172	589.0 -> 419.0	27240	16.29 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 81.4%	
<b>Target Compounds</b>					
6:2FTS	7.251	427.0 -> 407.0	44184	22.31 µg/L	QValue 98
8:2FTS	8.651	527.0 -> 507.0	44118	23.99 µg/L	99
EtFOSAA	8.173	584.0 -> 419.0	23793	19.45 µg/L	100
FOSA	7.611	498.0 -> 78.0	49707	13.07 µg/L	100
MeFOSAA	8.063	570.0 -> 419.0	25840	19.75 µg/L	99
PFBA	3.327	213.0 -> 169.0	37135	23.44 µg/L	100
PFBS	4.991	299.0 -> 80.0	21099	20.09 µg/L	99
PFDA	8.533	513.0 -> 469.0	111987	23.43 µg/L	100
PFDoDA	11.179	613.0 -> 569.0	109824	18.51 µg/L	100
PFDS	9.561	599.0 -> 80.0	16807	15.50 µg/L	100
PFHpA	6.612	363.0 -> 319.0	110817	21.83 µg/L	100
PFHpS	7.209	449.0 -> 80.0	30151	20.85 µg/L	99
PFHxA	5.851	313.0 -> 269.0	58621	20.65 µg/L	100
PFHxS	6.593	399.0 -> 80.0	30009	19.13 µg/L	m 97
PFNA	7.844	463.0 -> 419.0	87406	21.84 µg/L	100
PFOA	7.242	413.0 -> 369.0	112170	21.79 µg/L	99
PFOS	7.790	499.0 -> 80.0	57587	21.61 µg/L	m 97
PFPeA	4.838	263.0 -> 219.0	49693	21.92 µg/L	100
PFTeDA	13.440	713.0 -> 669.0	59578	16.67 µg/L	98
PFTrDA	12.364	663.0 -> 619.0	91719	18.15 µg/L	99
PFUnDA	9.818	563.0 -> 519.0	113563	19.40 µg/L	100
4:2FTS	5.771	327.0 -> 307.0	37373	20.07 µg/L	98
PFNS	8.416	549.0 -> 99.0	15809	19.23 µg/L	98
PFPeS	5.892	349.0 -> 99.0	7911	21.97 µg/L	100

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

10.3.2  
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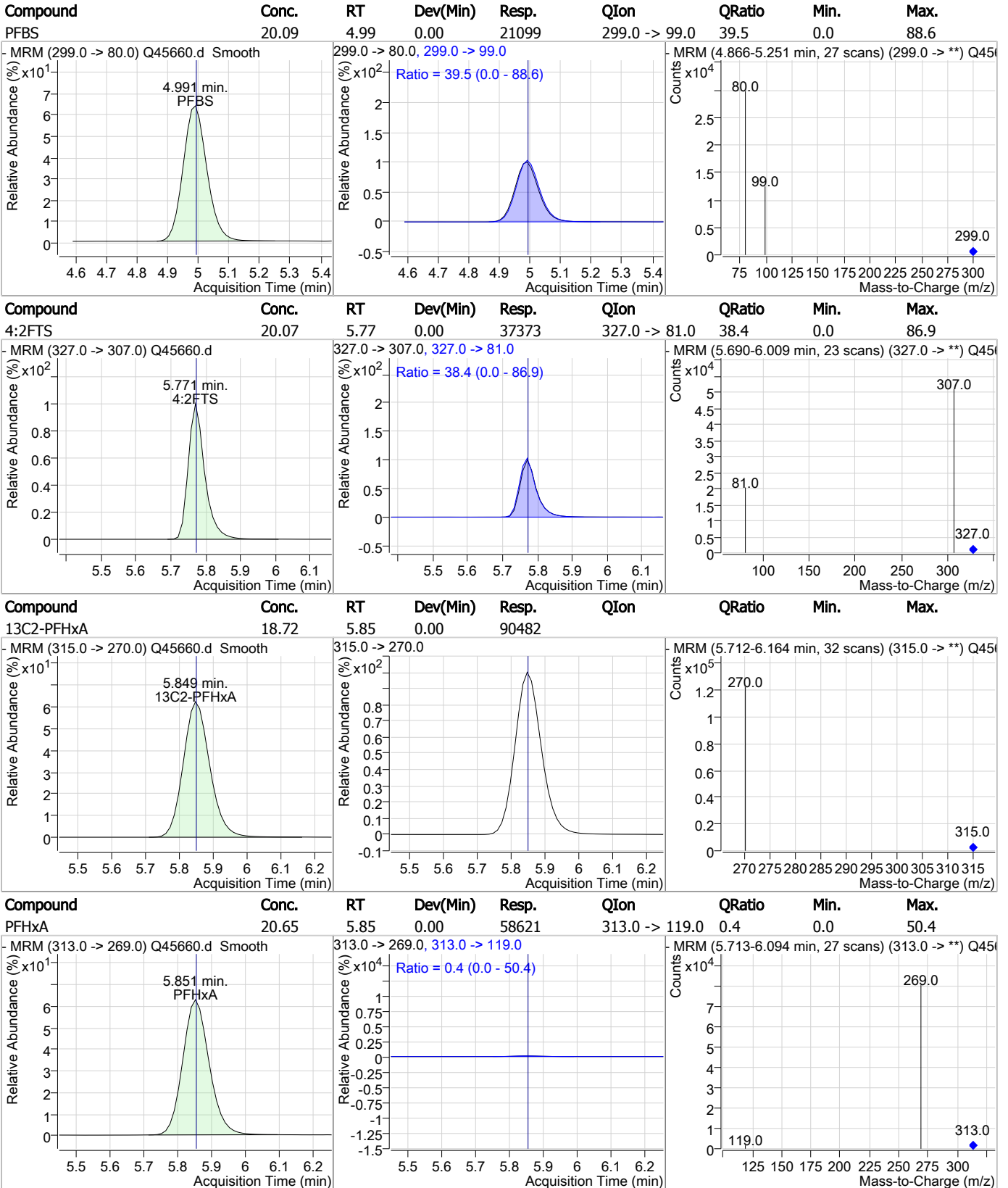


### Perfluorinated Compounds by LC/MS/MS



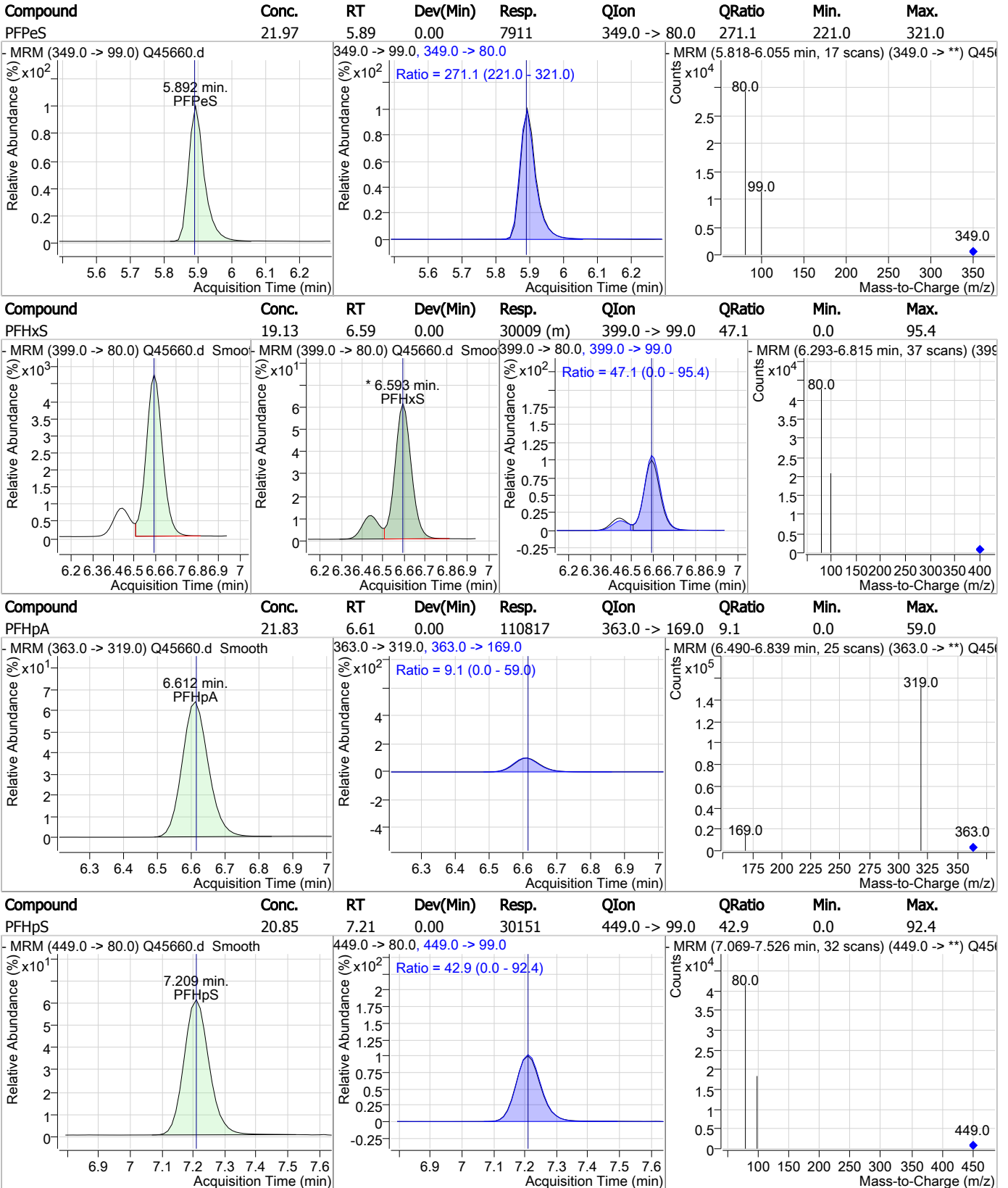
10.3.2 10

### Perfluorinated Compounds by LC/MS/MS



10.3.2 10

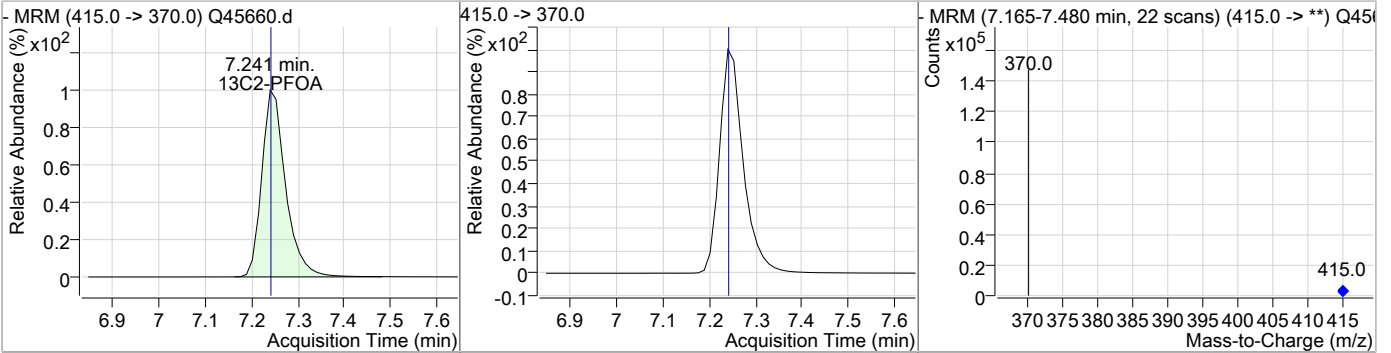
### Perfluorinated Compounds by LC/MS/MS



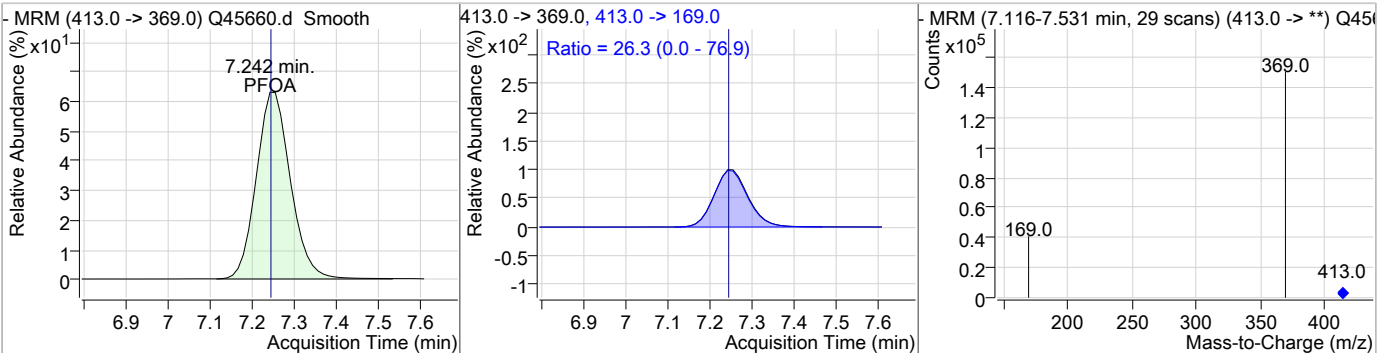
10.3.2 10

Perfluorinated Compounds by LC/MS/MS

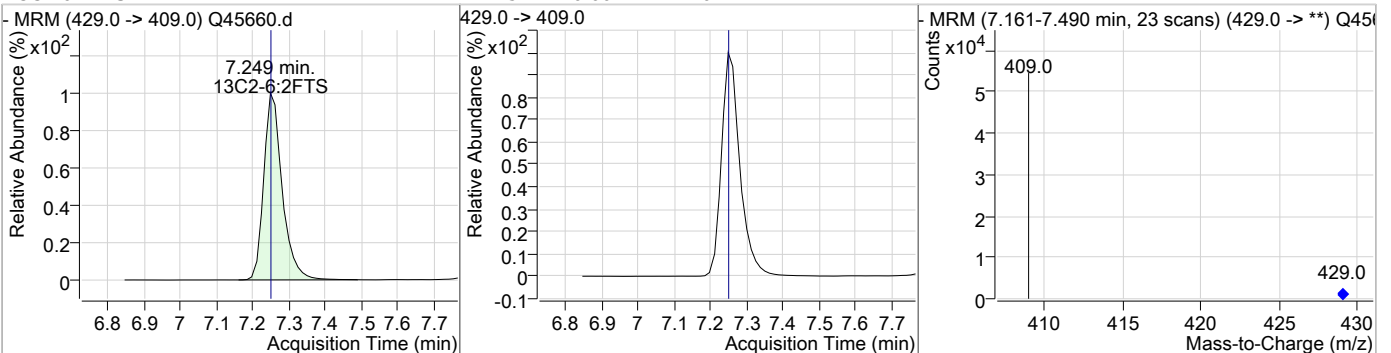
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.24	0.00	110149				



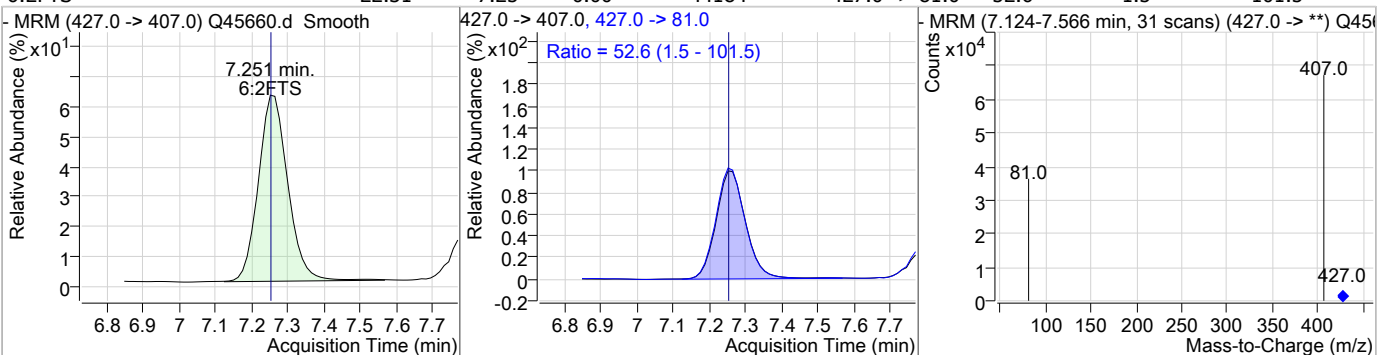
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.79	7.24	0.00	112170	413.0 ->	169.0 26.3	0.0	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		7.25	0.00	40112				



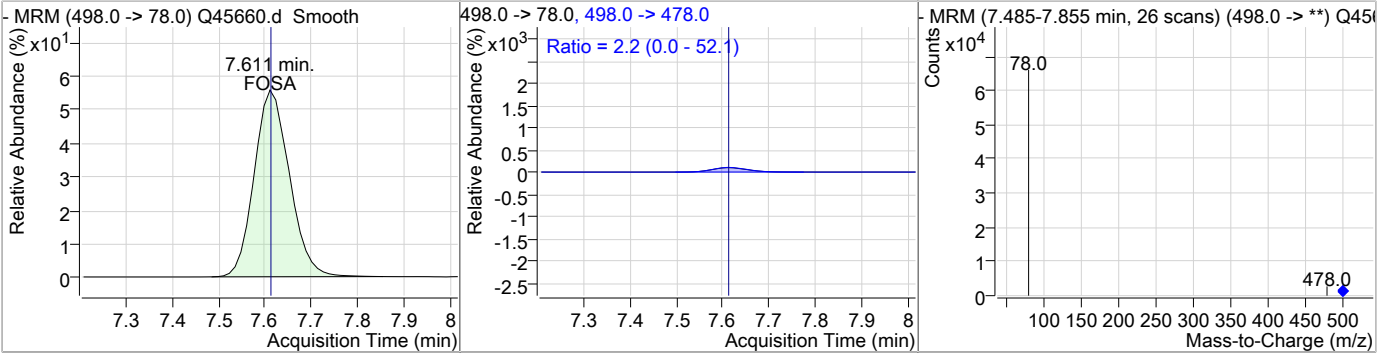
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.31	7.25	0.00	44184	427.0 ->	81.0 52.6	1.5	101.5



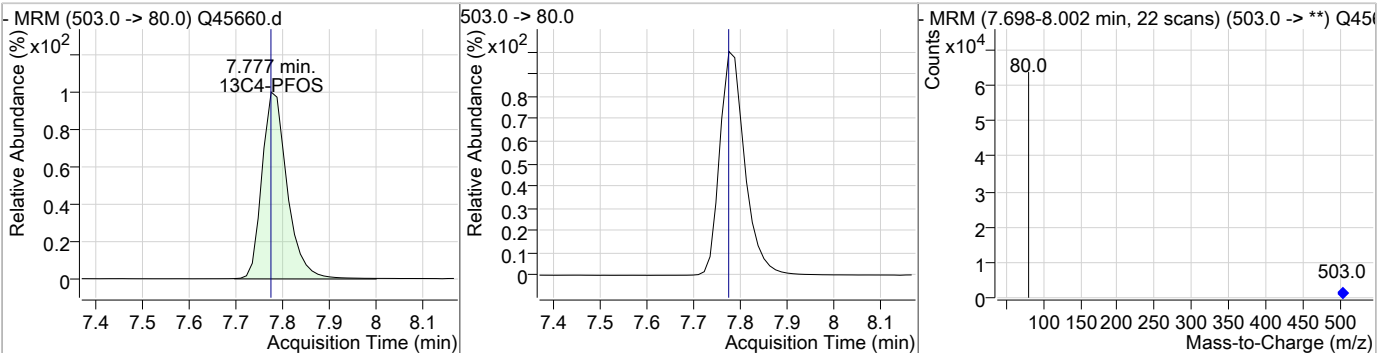
10.3.2 10

### Perfluorinated Compounds by LC/MS/MS

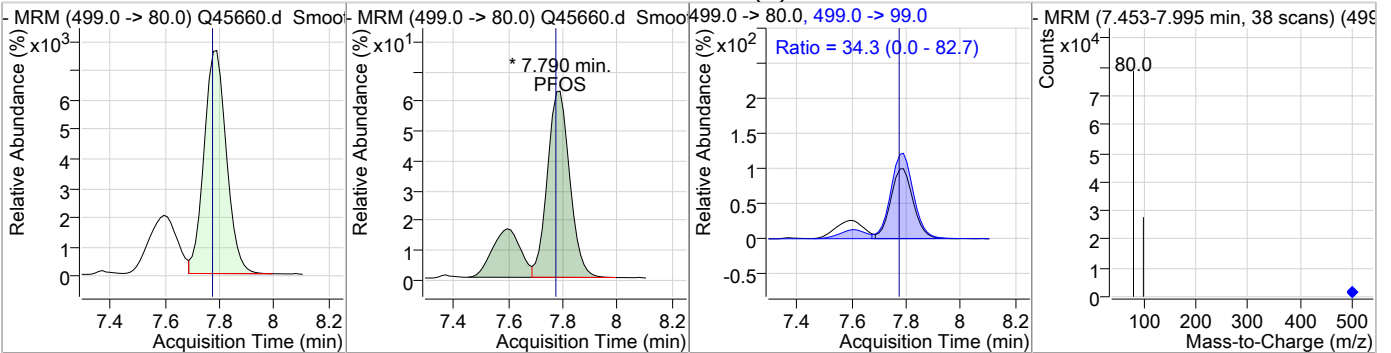
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	13.07	7.61	0.00	49707	498.0 -> 478.0	2.2	0.0	52.1



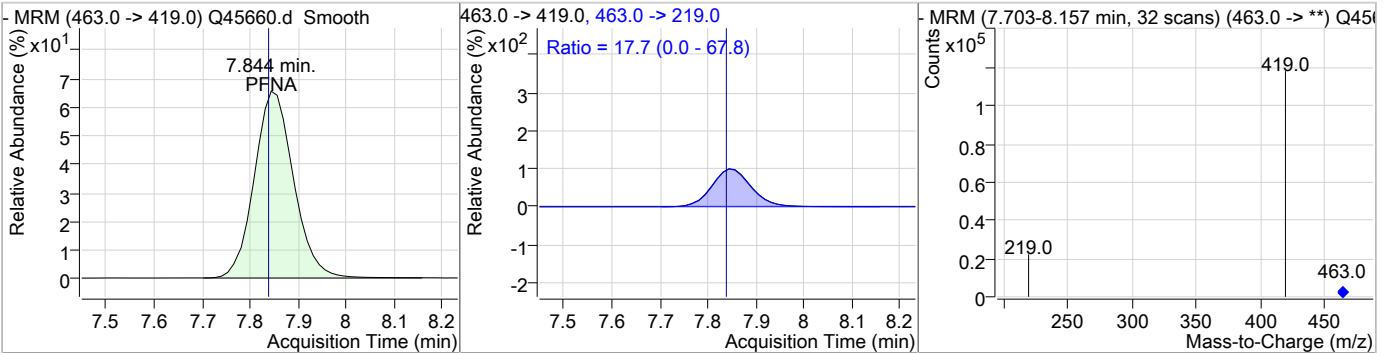
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.78	0.00	49019				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.61	7.79	0.02	57587 (m)	499.0 -> 99.0	34.3	0.0	82.7

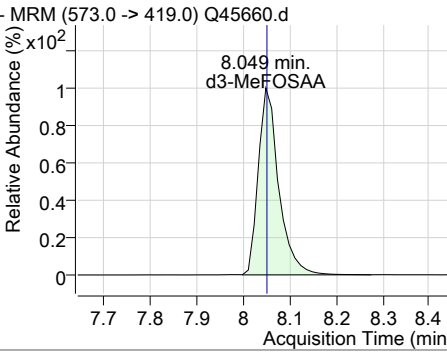
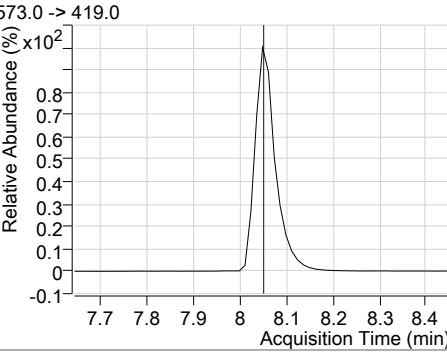
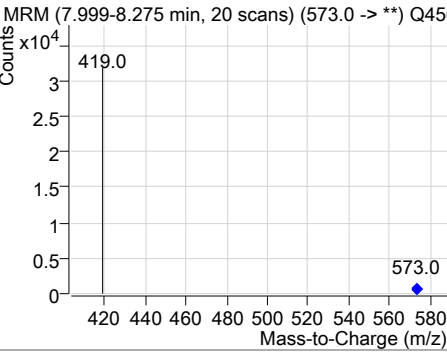
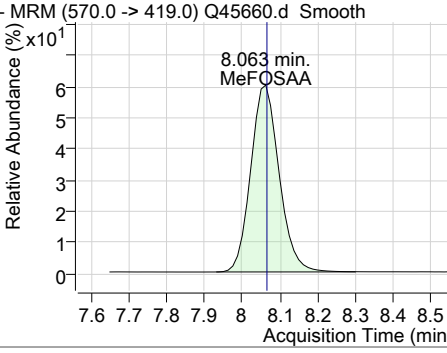
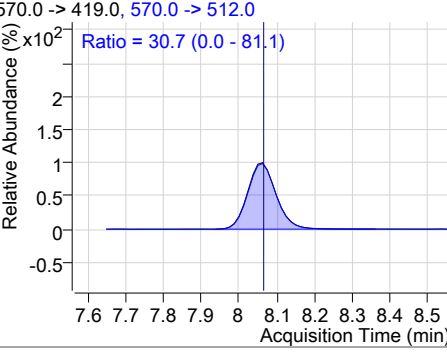
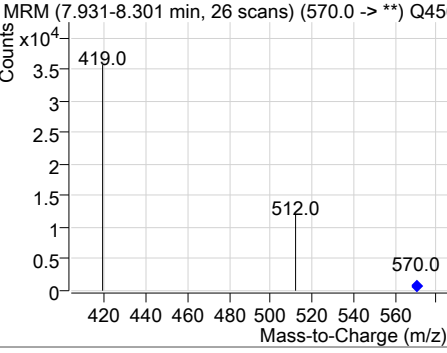
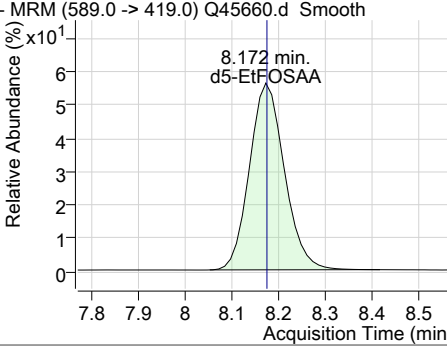
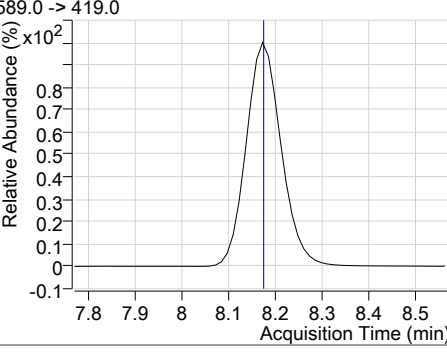
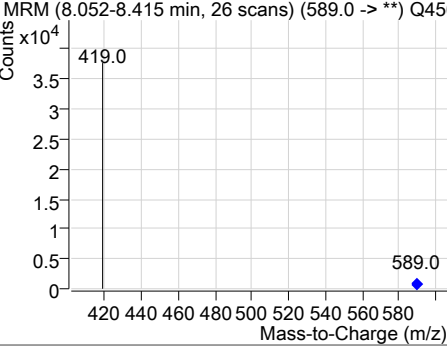
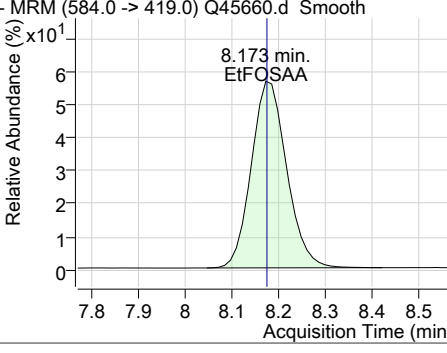
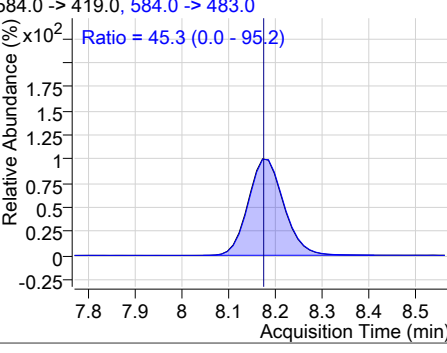
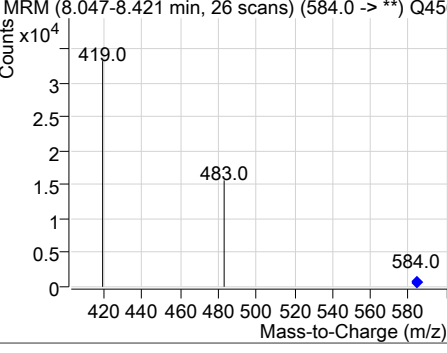


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.84	7.84	0.00	87406	463.0 -> 219.0	17.7	0.0	67.8



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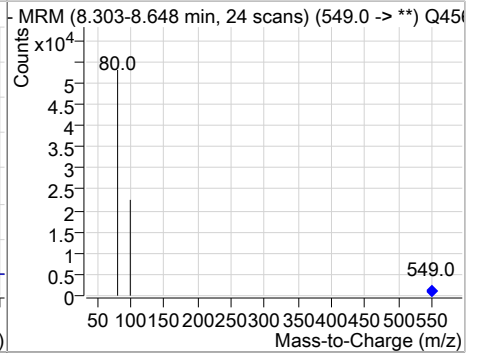
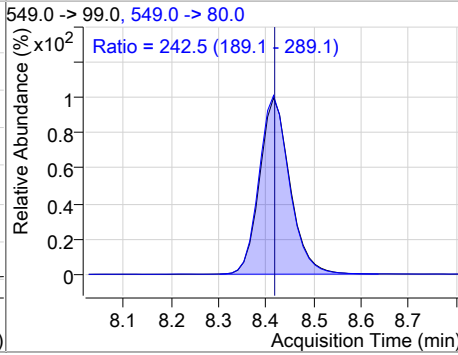
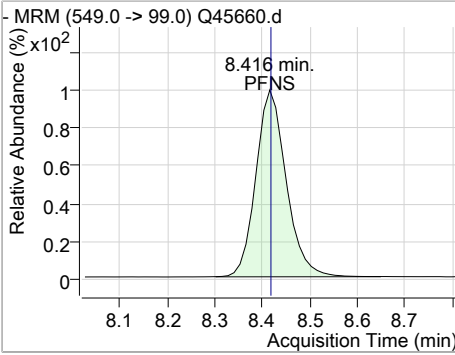
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.05	0.00	23089				
- MRM (573.0 -> 419.0) Q45660.d			573.0 -> 419.0		- MRM (7.999-8.275 min, 20 scans) (573.0 -> **) Q45			
								
MeFOSAA	19.75	8.06	0.00	25840	570.0 -> 512.0	30.7	0.0	81.1
- MRM (570.0 -> 419.0) Q45660.d Smooth			570.0 -> 419.0, 570.0 -> 512.0		- MRM (7.931-8.301 min, 26 scans) (570.0 -> **) Q45			
								
d5-EtFOSAA	16.29	8.17	0.00	27240				
- MRM (589.0 -> 419.0) Q45660.d Smooth			589.0 -> 419.0		- MRM (8.052-8.415 min, 26 scans) (589.0 -> **) Q45			
								
EtFOSAA	19.45	8.17	0.00	23793	584.0 -> 483.0	45.3	0.0	95.2
- MRM (584.0 -> 419.0) Q45660.d Smooth			584.0 -> 419.0, 584.0 -> 483.0		- MRM (8.047-8.421 min, 26 scans) (584.0 -> **) Q45			
								

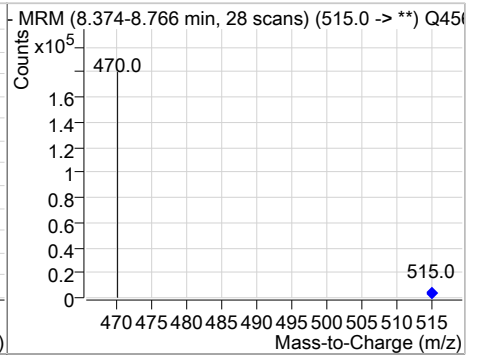
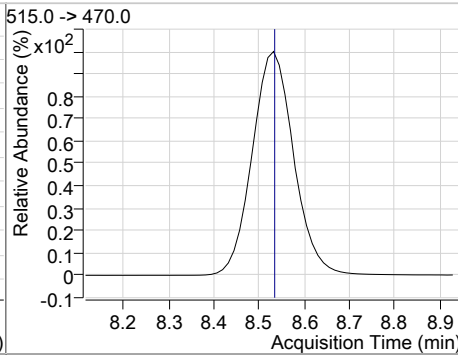
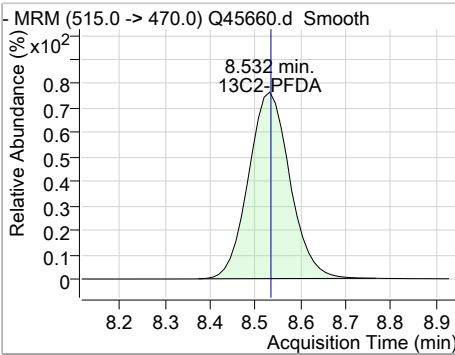
10.3.2 10

### Perfluorinated Compounds by LC/MS/MS

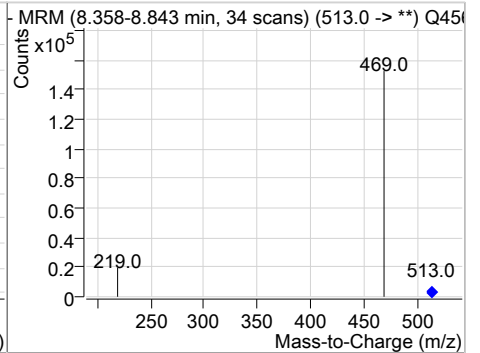
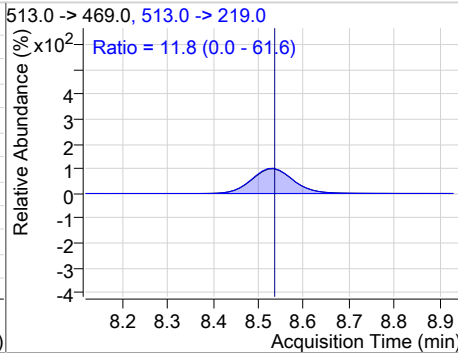
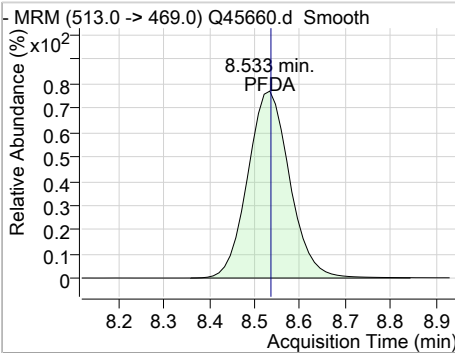
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.23	8.42	0.00	15809	549.0 -> 80.0	242.5	189.1	289.1



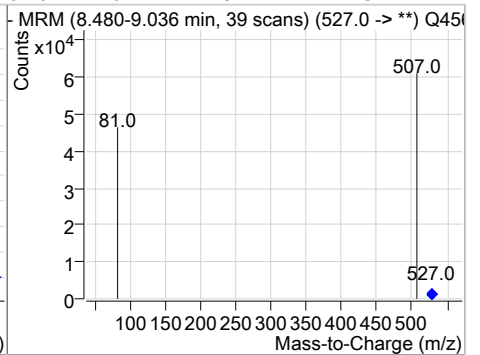
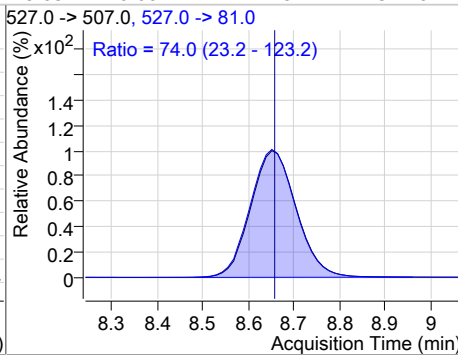
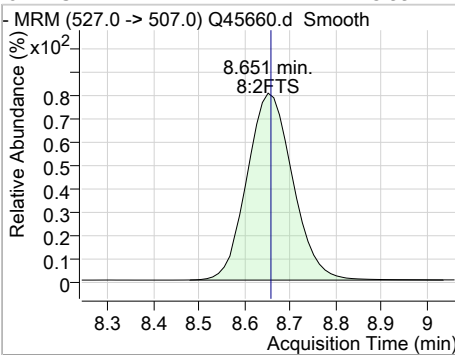
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	18.60	8.53	0.00	131510	515.0 -> 470.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	23.43	8.53	0.00	111987	513.0 -> 219.0	11.8	0.0	61.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	23.99	8.65	0.00	44118	527.0 -> 81.0	74.0	23.2	123.2

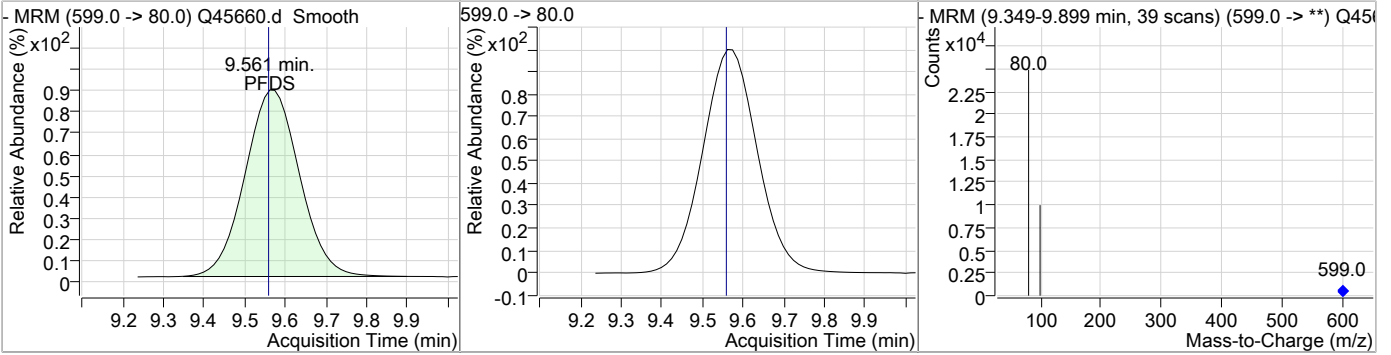


10.3.2 10

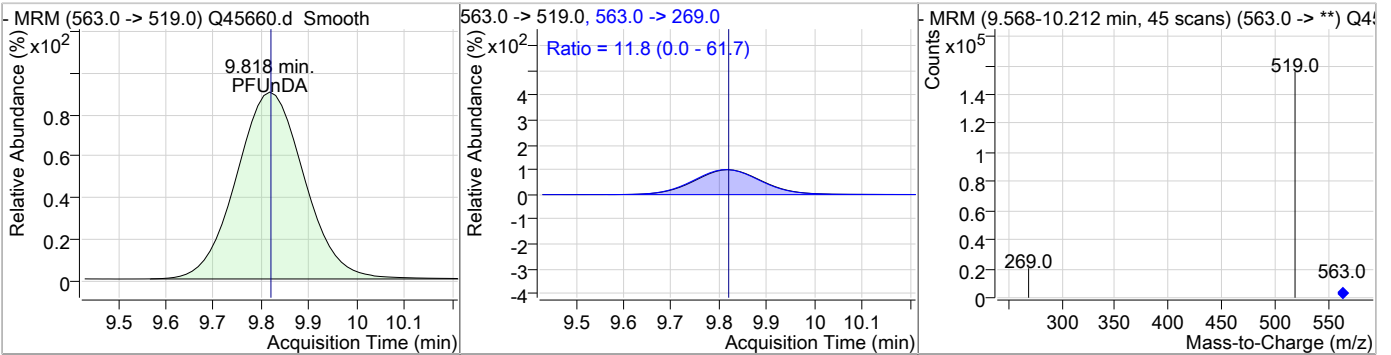


Perfluorinated Compounds by LC/MS/MS

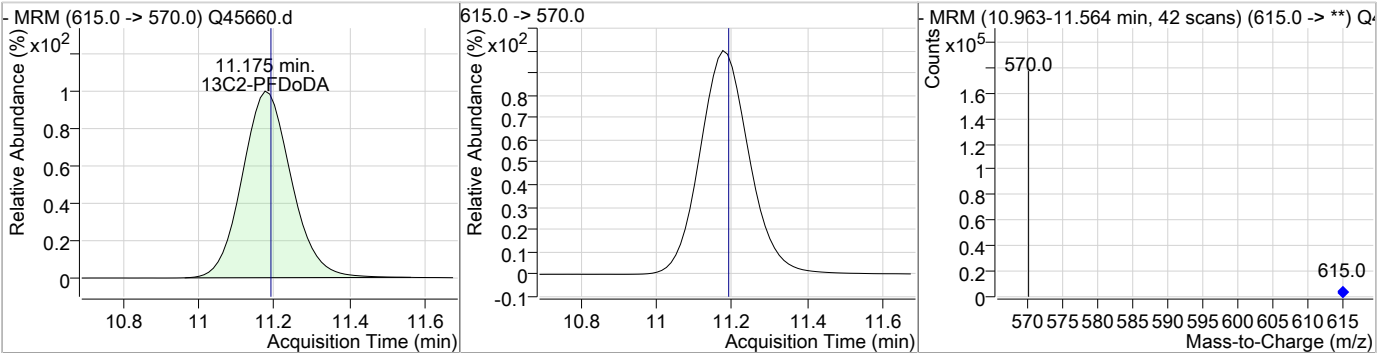
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.50	9.56	0.00	16807				



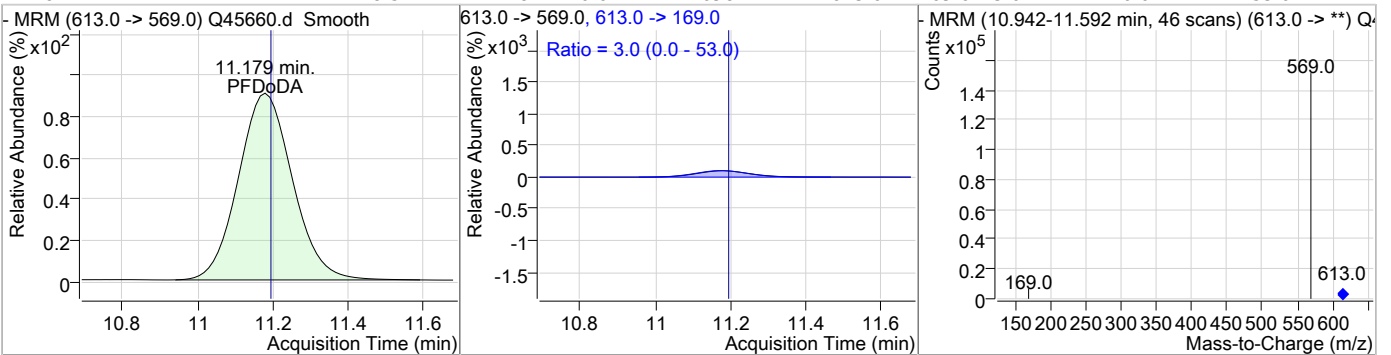
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.40	9.82	0.00	113563	563.0 -> 269.0	11.8	0.0	61.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.18	-0.01	130004				



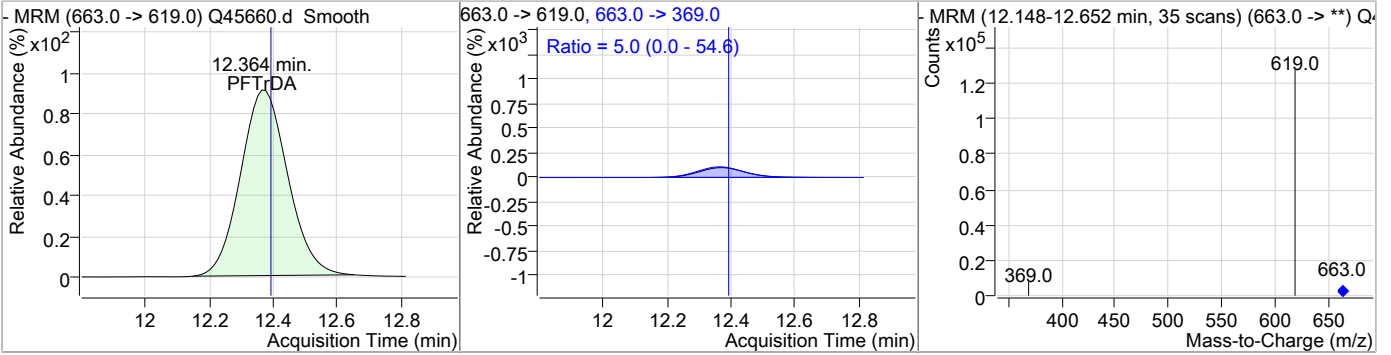
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.51	11.18	-0.01	109824	613.0 -> 169.0	3.0	0.0	53.0



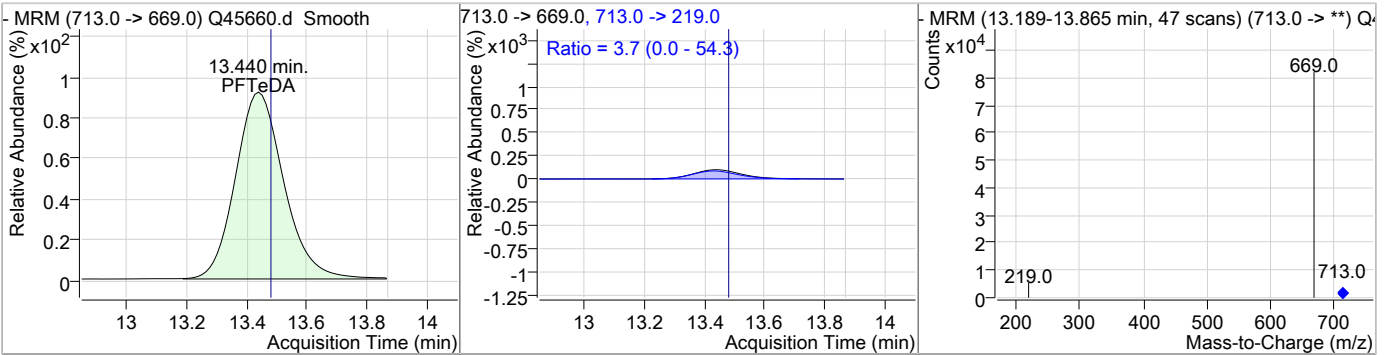
10.3.2 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	18.15	12.36	-0.03	91719	663.0 -> 369.0	5.0	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.67	13.44	-0.04	59578	713.0 -> 219.0	3.7	0.0	54.3



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# Manual Integration Approval Summary

**Sample Number:** OP69812-BS      **Method:** EPA 537 MOD  
**Lab FileID:** Q45660.D      **Analyst approved:** 05/01/18 08:14 Nancy Saunders  
**Injection Time:** 04/30/18 13:06      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.59	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.79	Split peak

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## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13584.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 8:00:27 PM  
 Sample Name : op69752-ms  
 Vial : Vial 32  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,230,,,1.0,1,water

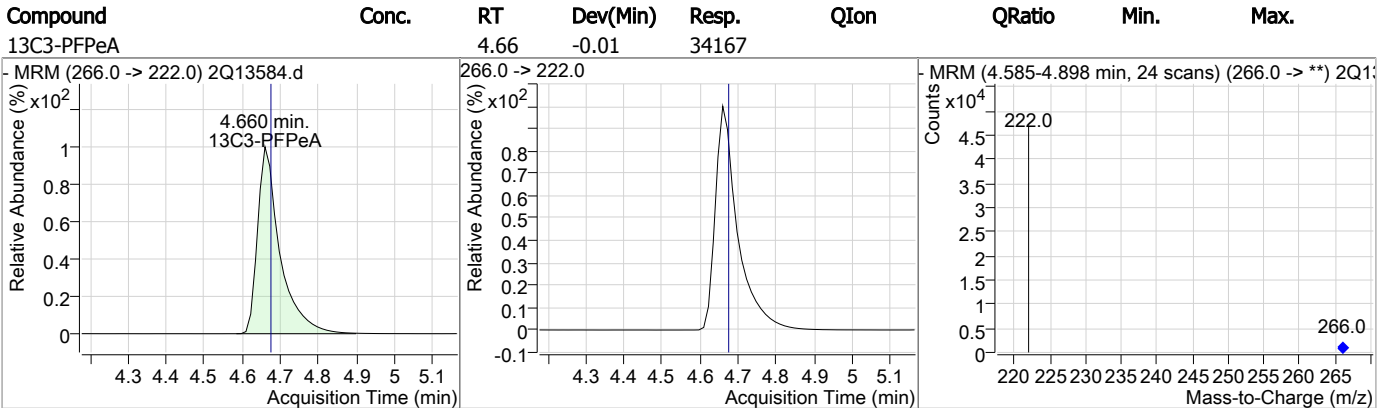
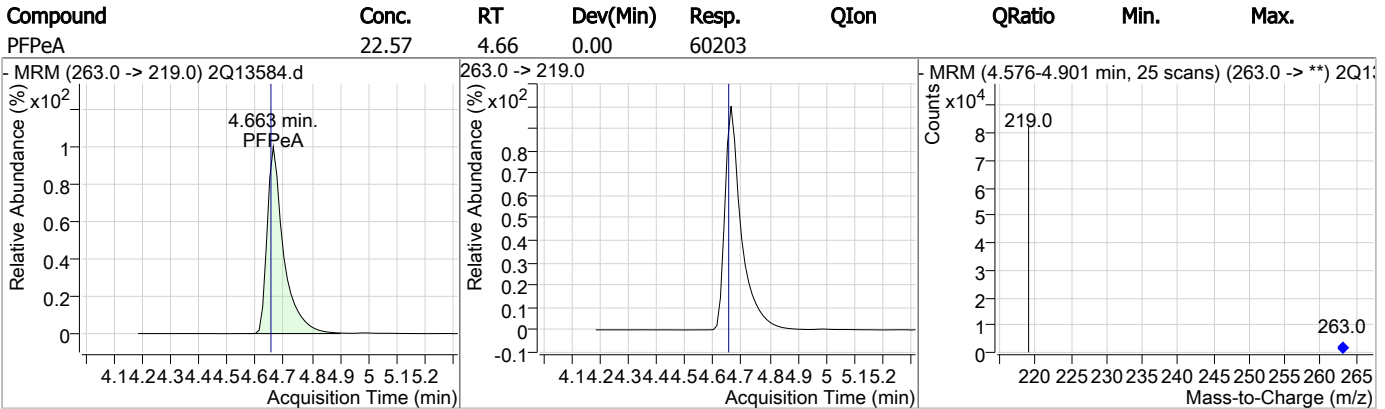
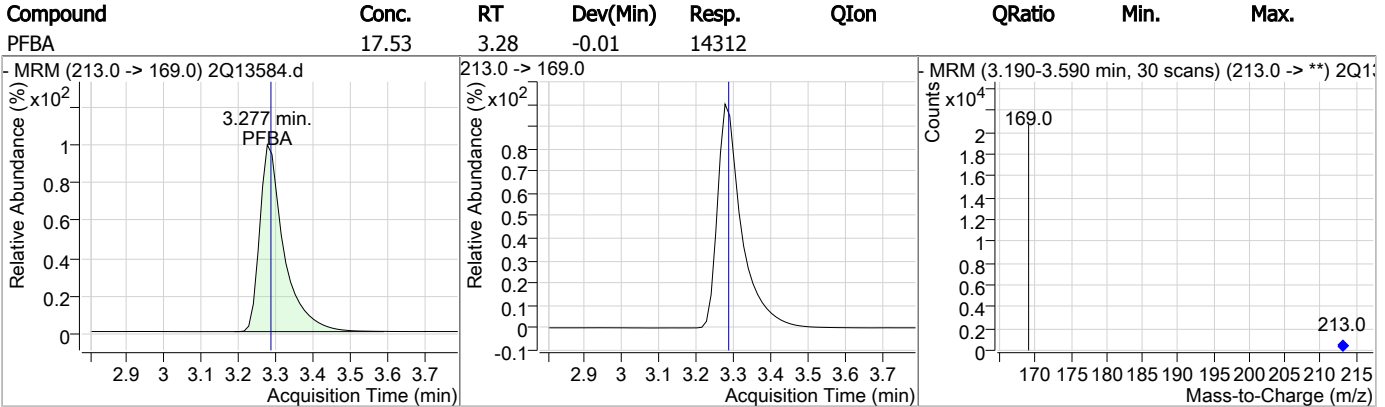
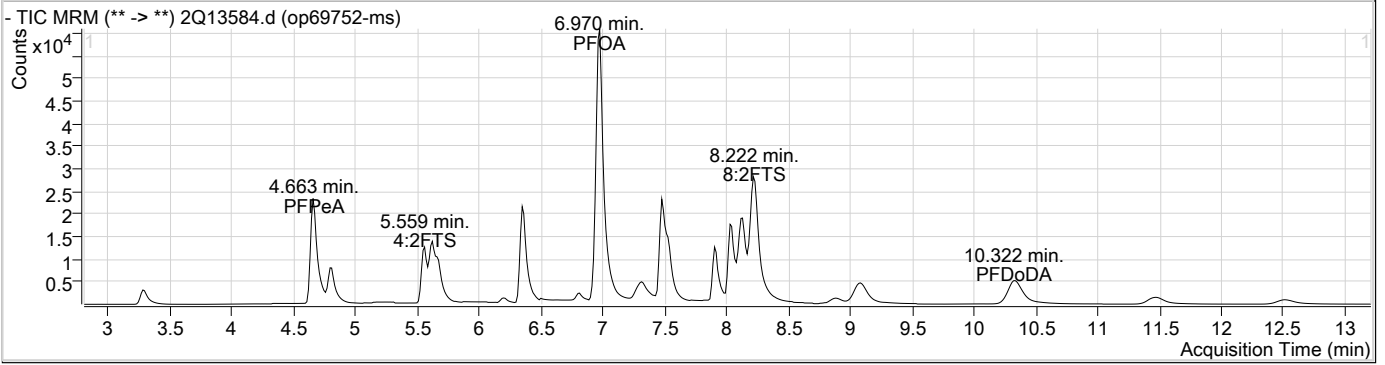
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	52706	20.00 µg/L	-0.013
13C2-PFDoDA	10.330	615.0 -> 570.0	26652	20.00 µg/L	-0.088
13C2-PFOA	6.968	415.0 -> 370.0	33767	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	34167	20.00 µg/L	-0.013
13C4-PFOS	7.476	503.0 -> 80.0	21121	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	18255	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.136	515.0 -> 470.0	44730	20.88 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 104.4%	
13C2-PFHxA	5.625	315.0 -> 270.0	28427	13.63 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 68.1%	
d5-EtFOSAA	8.026	589.0 -> 419.0	18370	15.07 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 75.4%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	34614	17.99 µg/L	QValue 98
6:2FTS	6.979	427.0 -> 407.0	52988	20.53 µg/L	100
8:2FTS	8.222	527.0 -> 507.0	109105	50.31 µg/L	99
EtFOSAA	8.027	584.0 -> 419.0	17702	20.15 µg/L	100
FOSA	7.479	498.0 -> 78.0	33675	9.85 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	18115	17.42 µg/L	98
PFBA	3.277	213.0 -> 169.0	14312	17.53 µg/L	100
PFBS	4.804	299.0 -> 80.0	21316	17.07 µg/L	99
PFDA	8.137	513.0 -> 469.0	32099	26.38 µg/L	99
PFDoDA	10.322	613.0 -> 569.0	19294	17.12 µg/L	99
PFDS	8.879	599.0 -> 80.0	7077	16.73 µg/L	100
PFHpA	6.351	363.0 -> 319.0	52112	21.09 µg/L	100
PFHpS	6.934	449.0 -> 80.0	21241	18.23 µg/L	99
PFHxA	5.627	313.0 -> 269.0	14910	18.28 µg/L	99
PFHxS	6.345	399.0 -> 80.0	23760	17.27 µg/L	m 99
PFNA	7.534	463.0 -> 419.0	29409	21.40 µg/L	98
PFNS	8.044	549.0 -> 80.0	14615	19.61 µg/L	100
PFOA	6.970	413.0 -> 369.0	66751	48.68 µg/L	m 94
PFOS	7.477	499.0 -> 80.0	23807	18.79 µg/L	m 92
PFPeA	4.663	263.0 -> 219.0	60203	22.57 µg/L	100
PFPeS	5.668	349.0 -> 80.0	16073	20.78 µg/L	100
PFTeDA	12.508	713.0 -> 669.0	9920	14.43 µg/L	99
PFTrDA	11.469	663.0 -> 619.0	14529	15.88 µg/L	100
PFUnDA	9.085	563.0 -> 519.0	34061	26.29 µg/L	100

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

10.4.1  
10



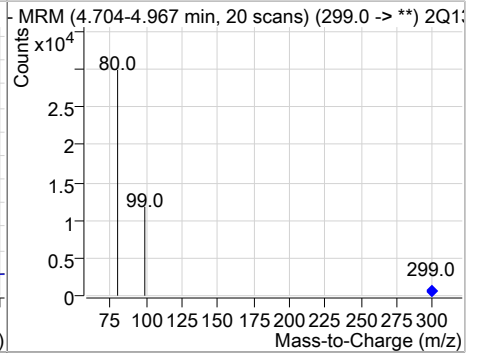
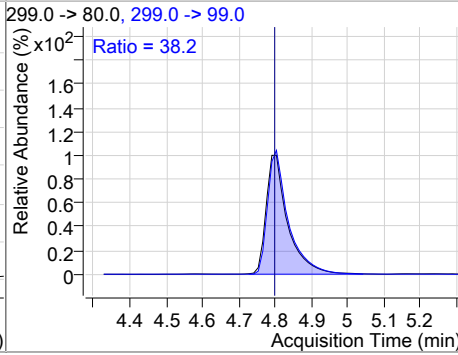
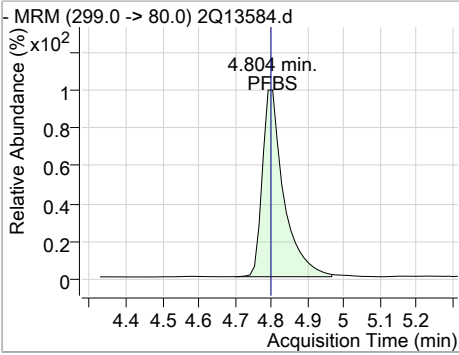
### Perfluorinated Compounds by LC/MS/MS



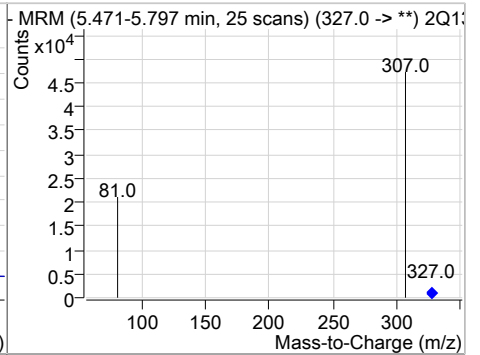
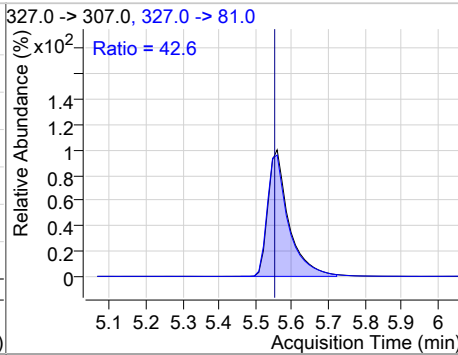
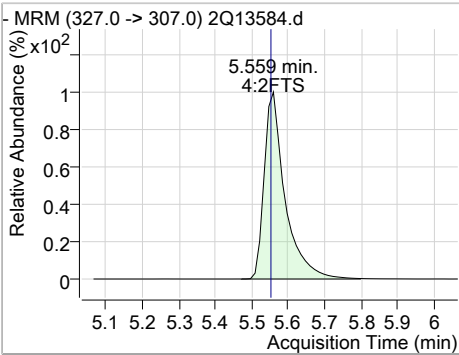
10.4.1 10

### Perfluorinated Compounds by LC/MS/MS

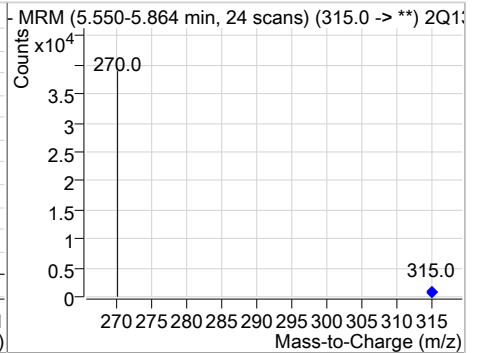
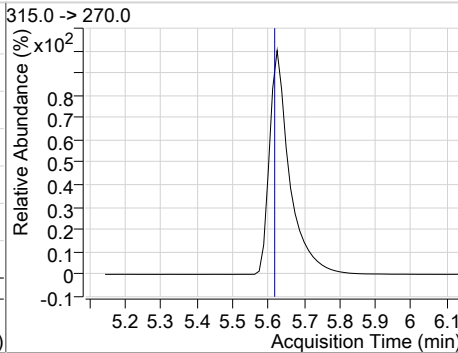
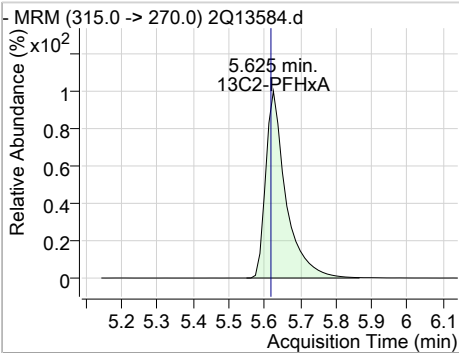
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.07	4.80	0.00	21316	299.0 -> 99.0	38.2	7.8	67.8



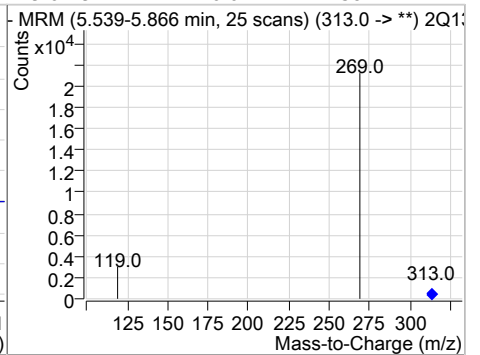
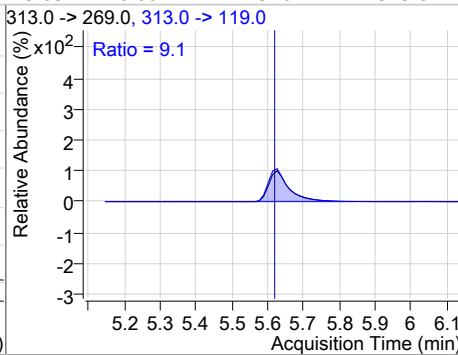
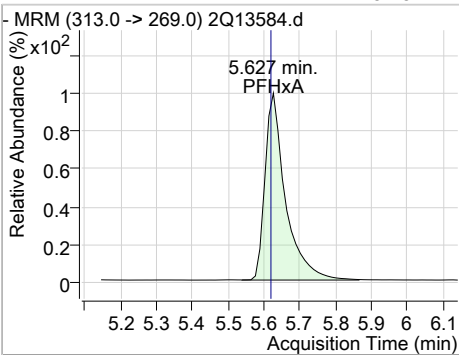
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.99	5.56	0.00	34614	327.0 -> 81.0	42.6	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	13.63	5.63	0.00	28427	315.0 -> 270.0			

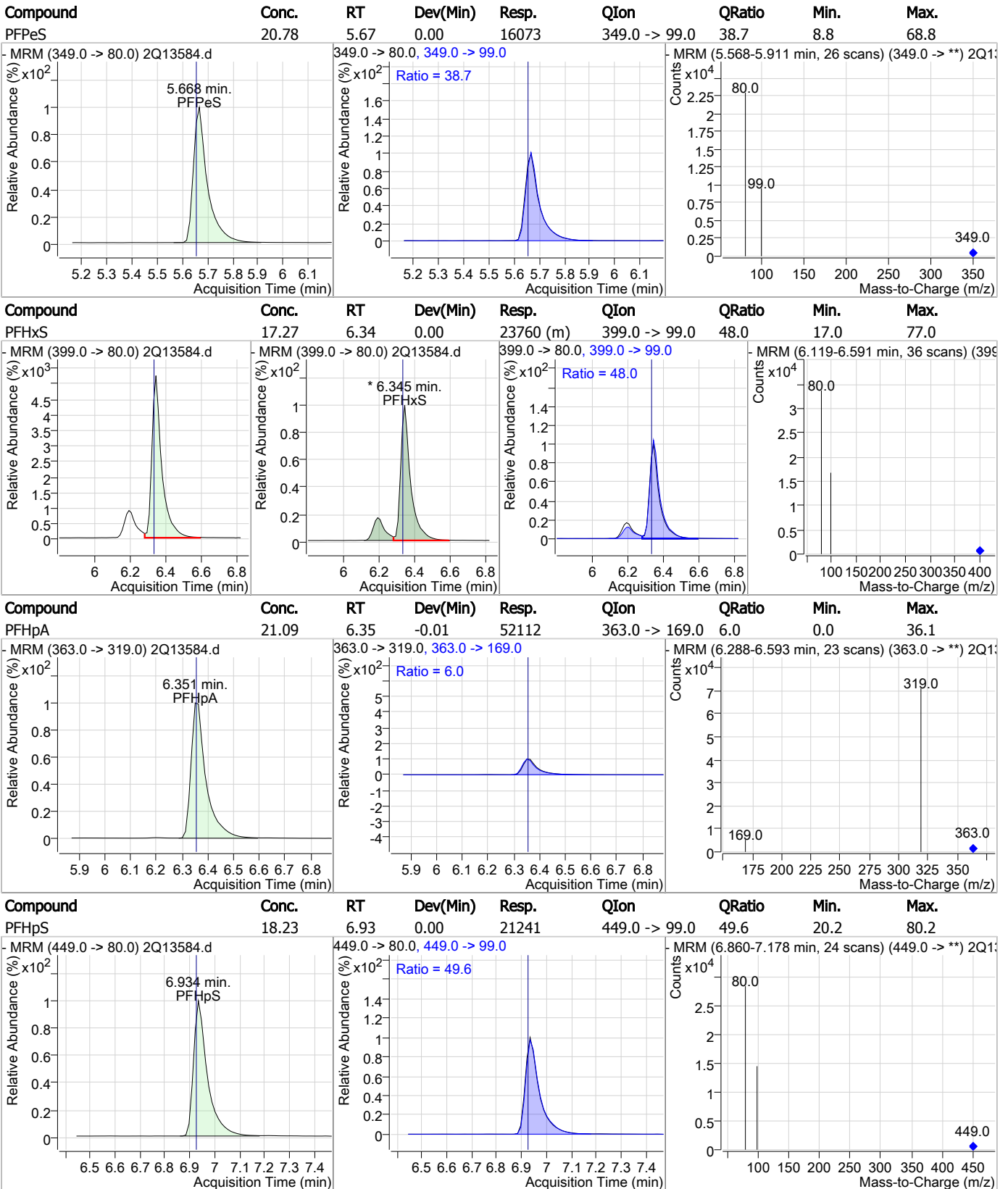


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.28	5.63	0.00	14910	313.0 -> 119.0	9.1	0.0	38.7



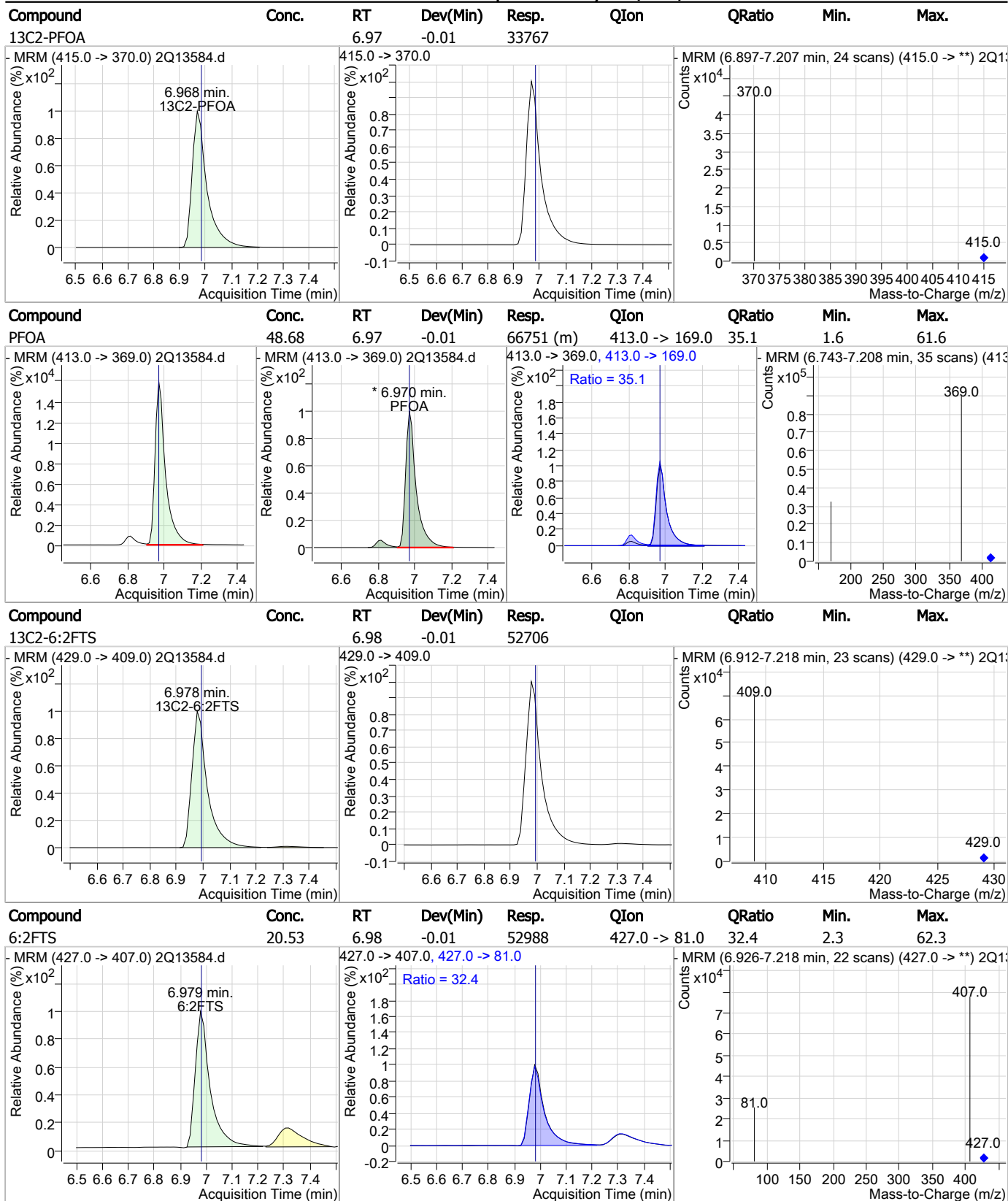
10.4.1 10

### Perfluorinated Compounds by LC/MS/MS



10.4.1 10

### Perfluorinated Compounds by LC/MS/MS

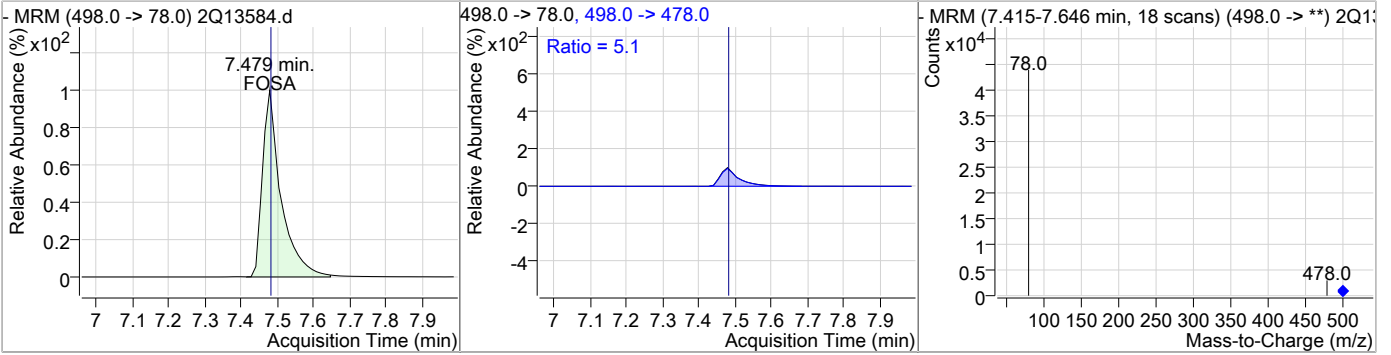


10.4.1 10

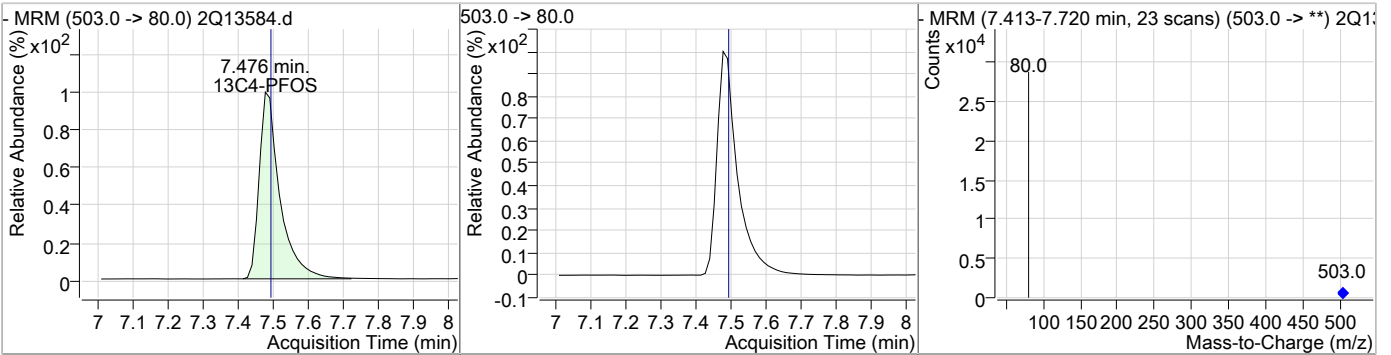


### Perfluorinated Compounds by LC/MS/MS

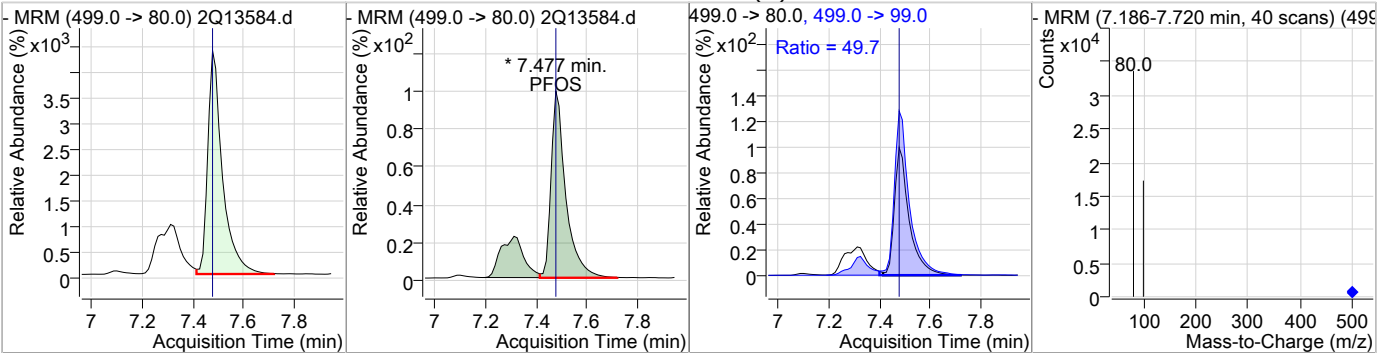
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.85	7.48	0.00	33675	498.0 -> 478.0	5.1	0.0	35.2



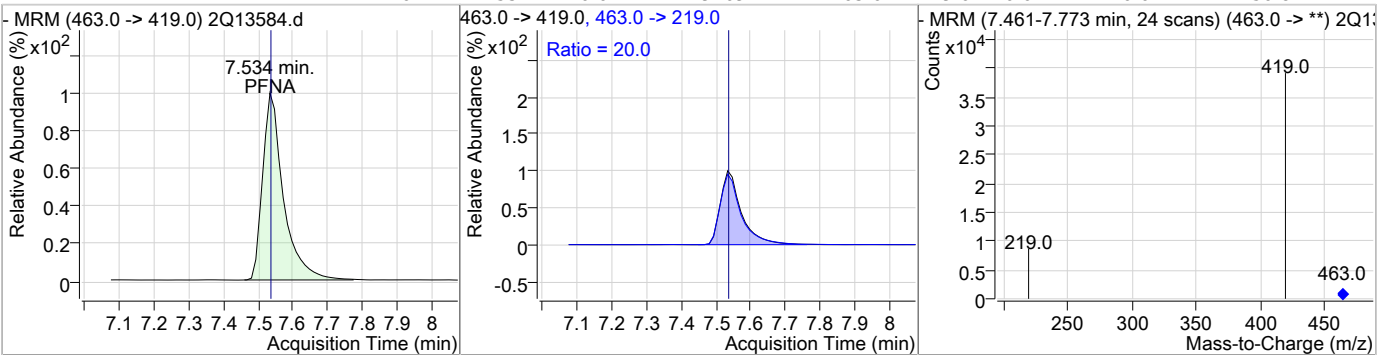
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.48	-0.01	21121				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.79	7.48	-0.01	23807 (m)	499.0 -> 99.0	49.7	14.7	74.7

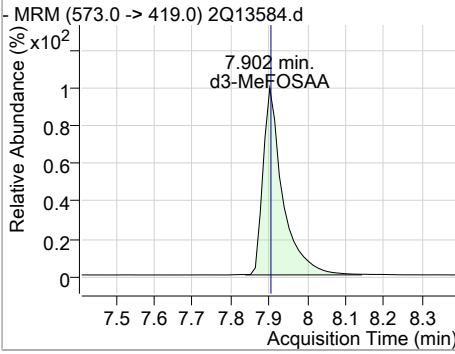
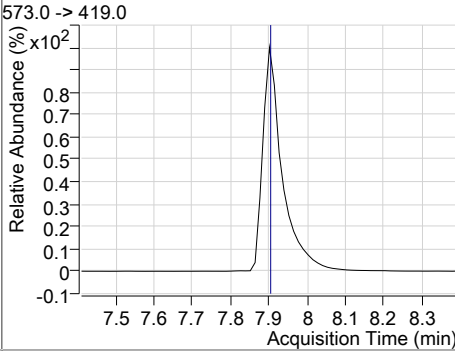
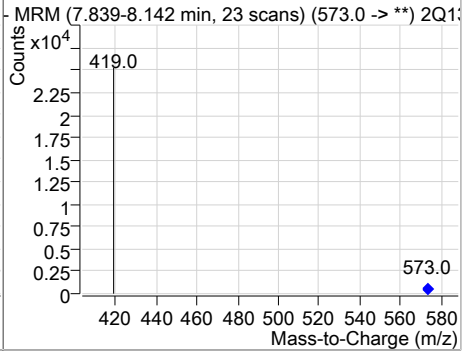
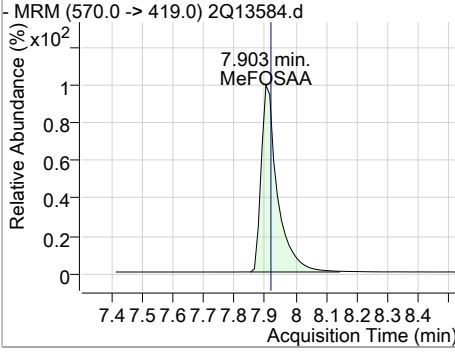
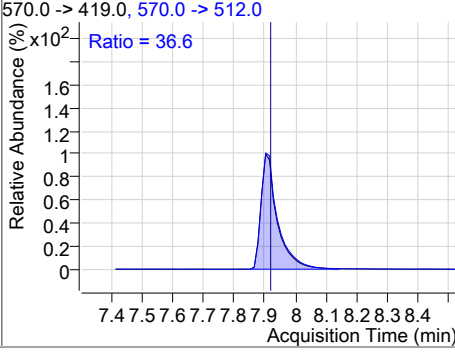
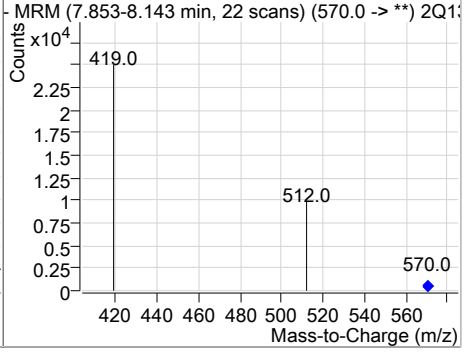
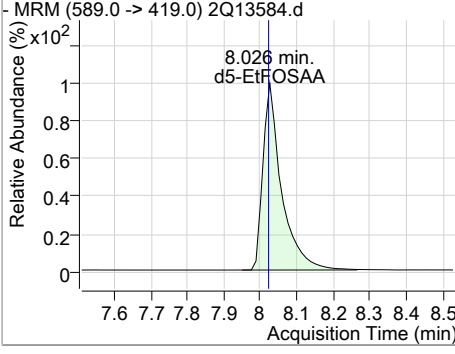
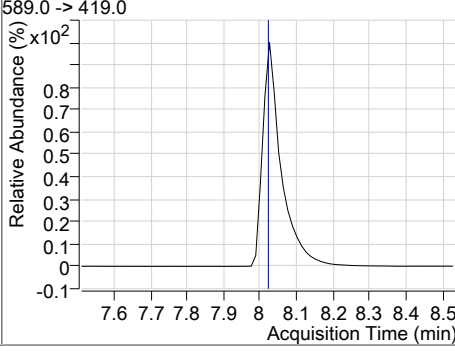
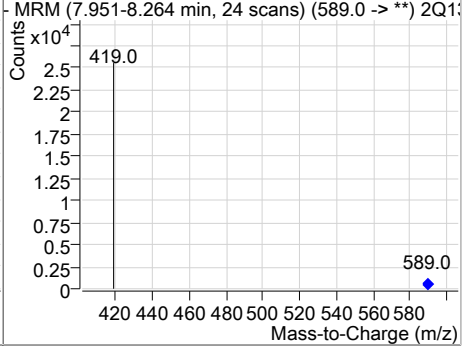
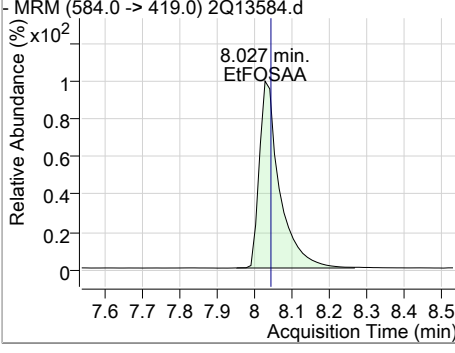
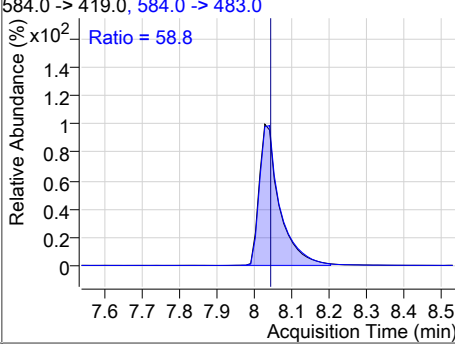
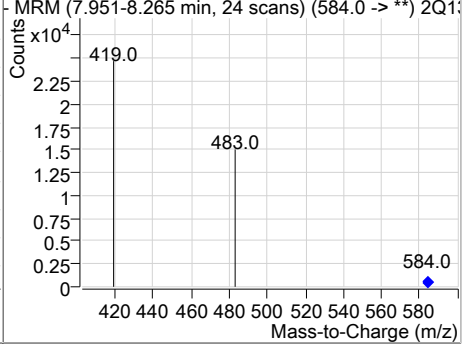


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.40	7.53	-0.01	29409	463.0 -> 219.0	20.0	0.0	50.8



10.4.1 10

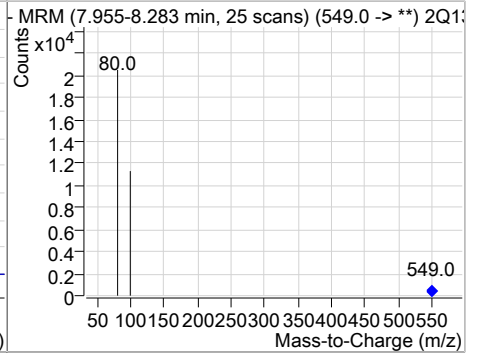
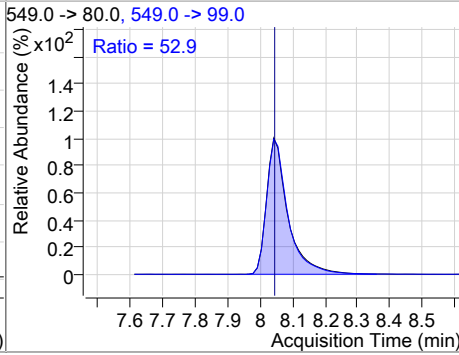
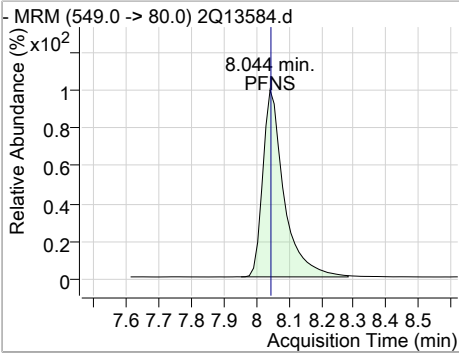
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	18255				
-MRM (573.0 -> 419.0) 2Q13584.d			573.0 -> 419.0			-MRM (7.839-8.142 min, 23 scans) (573.0 -> **) 2Q13584.d		
								
MeFOSAA	17.42	7.90	-0.01	18115	570.0 -> 512.0	36.6	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13584.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.853-8.143 min, 22 scans) (570.0 -> **) 2Q13584.d		
								
d5-EtFOSAA	15.07	8.03	0.00	18370				
-MRM (589.0 -> 419.0) 2Q13584.d			589.0 -> 419.0			-MRM (7.951-8.264 min, 24 scans) (589.0 -> **) 2Q13584.d		
								
EtFOSAA	20.15	8.03	-0.01	17702	584.0 -> 483.0	58.8	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13584.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.951-8.265 min, 24 scans) (584.0 -> **) 2Q13584.d		
								

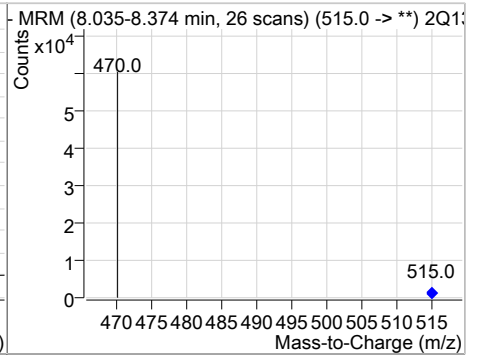
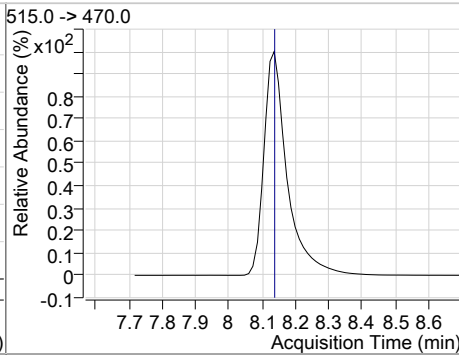
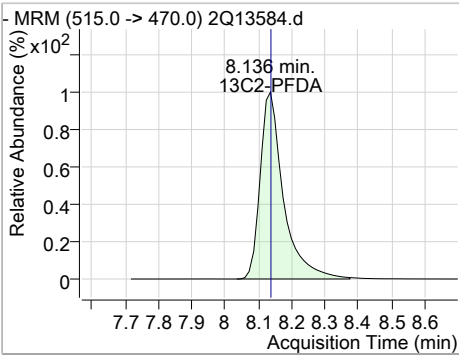
10.4.1 10

Perfluorinated Compounds by LC/MS/MS

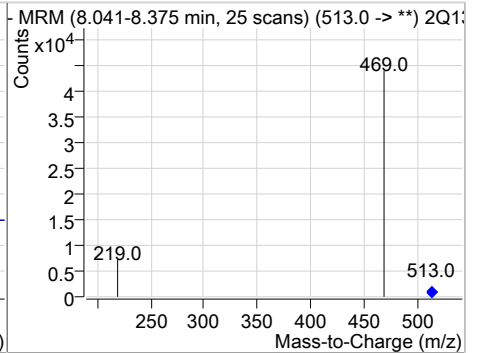
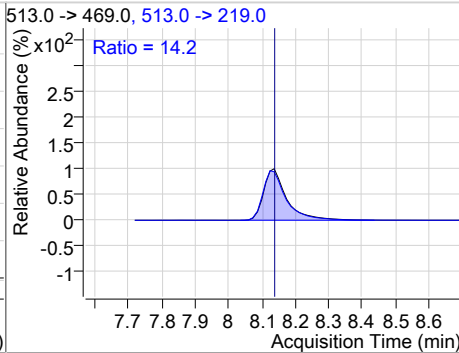
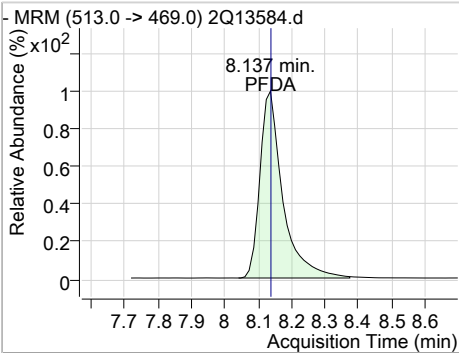
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.61	8.04	-0.01	14615	549.0 -> 99.0	52.9	23.0	83.0



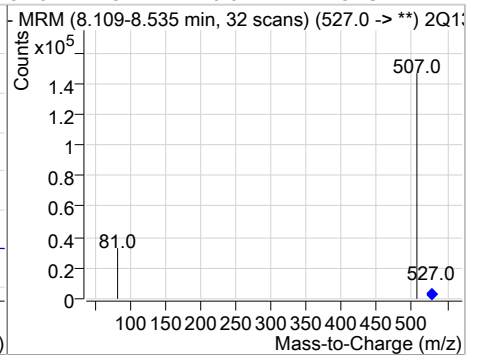
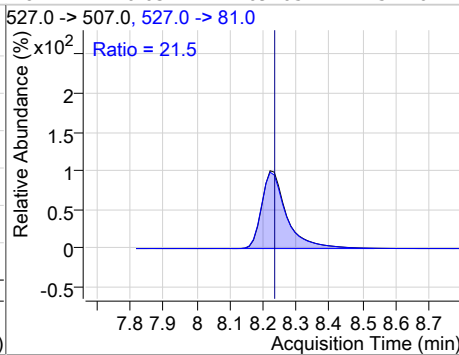
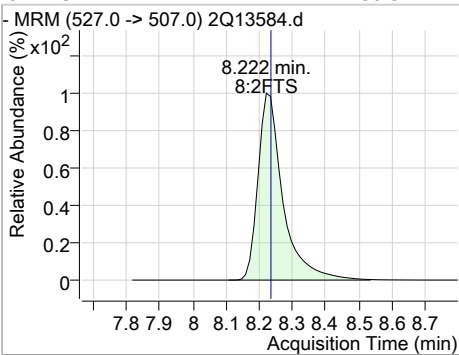
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	20.88	8.14	-0.01	44730				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	26.38	8.14	-0.01	32099	513.0 -> 219.0	14.2	0.0	44.5



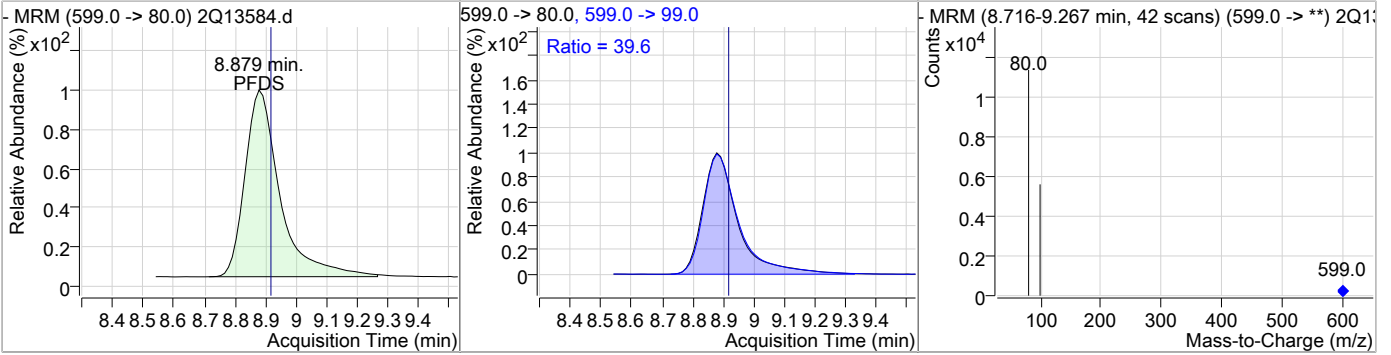
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	50.31	8.22	-0.03	109105	527.0 -> 81.0	21.5	0.0	51.9



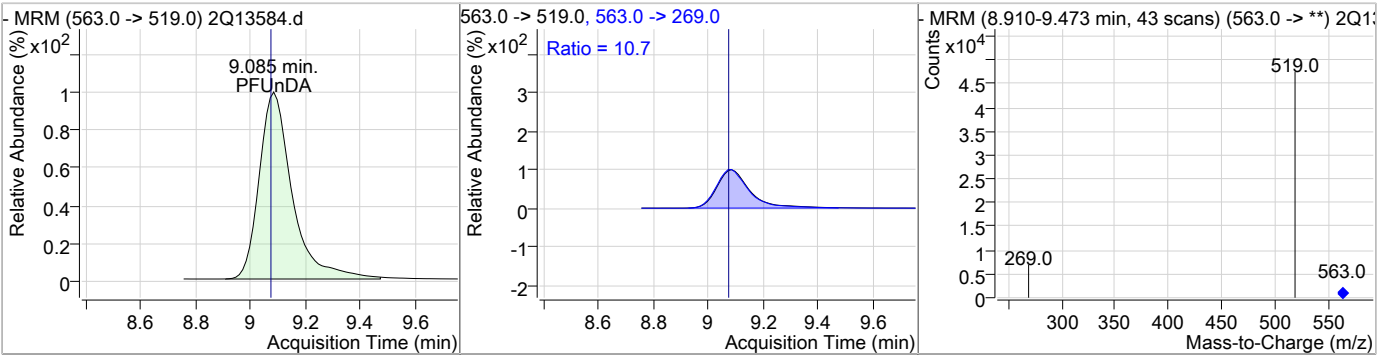
10.4.1 10

### Perfluorinated Compounds by LC/MS/MS

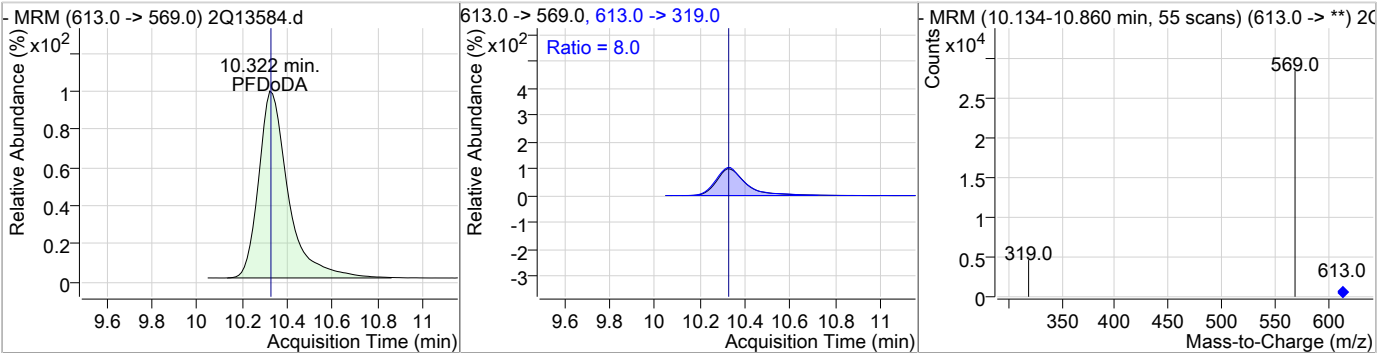
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.73	8.88	-0.05	7077	599.0 -> 99.0	39.6	9.6	69.6



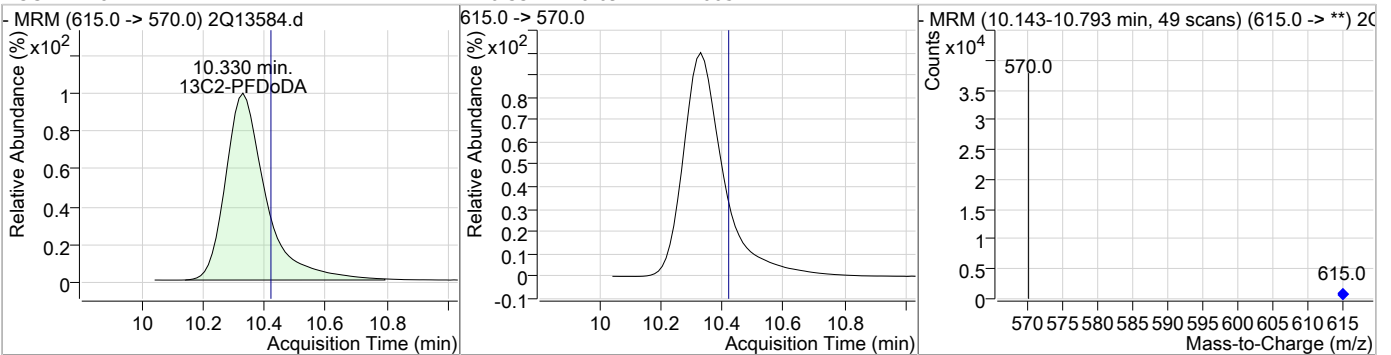
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	26.29	9.09	-0.06	34061	563.0 -> 269.0	10.7	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.12	10.32	-0.09	19294	613.0 -> 319.0	8.0	0.0	37.5



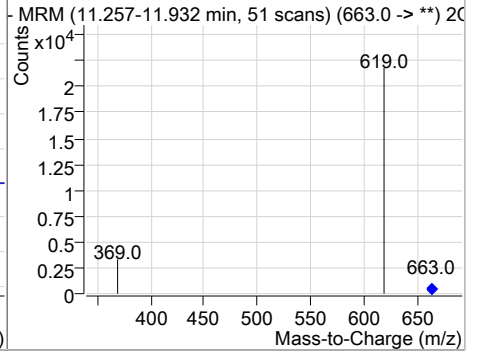
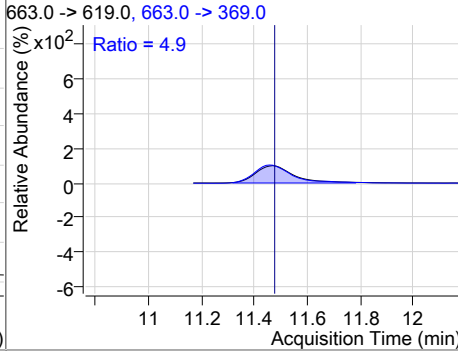
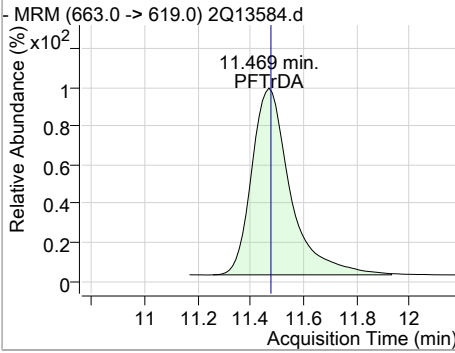
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.33	-0.09	26652				



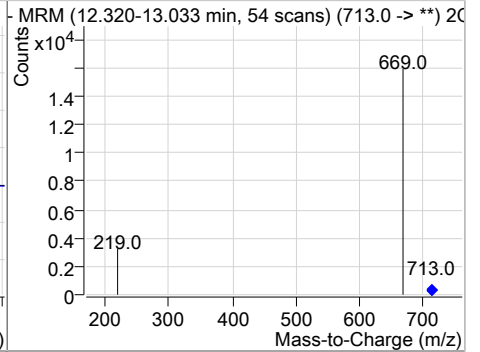
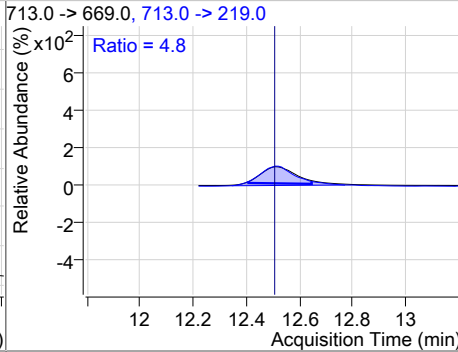
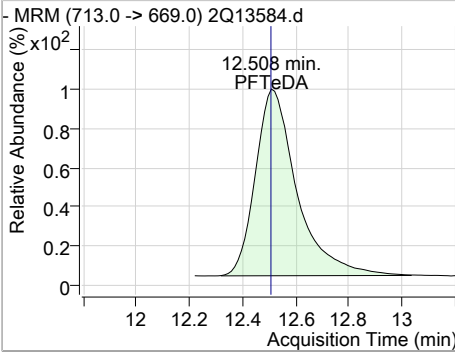
10.4.1 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	15.88	11.47	-0.10	14529	663.0 -> 369.0	4.9	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	14.43	12.51	-0.10	9920	713.0 -> 219.0	4.8	0.0	35.3



10.4.1 10

# Manual Integration Approval Summary

**Sample Number:** OP69752-MS      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13584.D      **Analyst approved:** 04/26/18 12:50 Natasha Gumtie  
**Injection Time:** 04/25/18 20:00      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanoic acid	335-67-1		6.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.48	Split peak

10.4.1.1  
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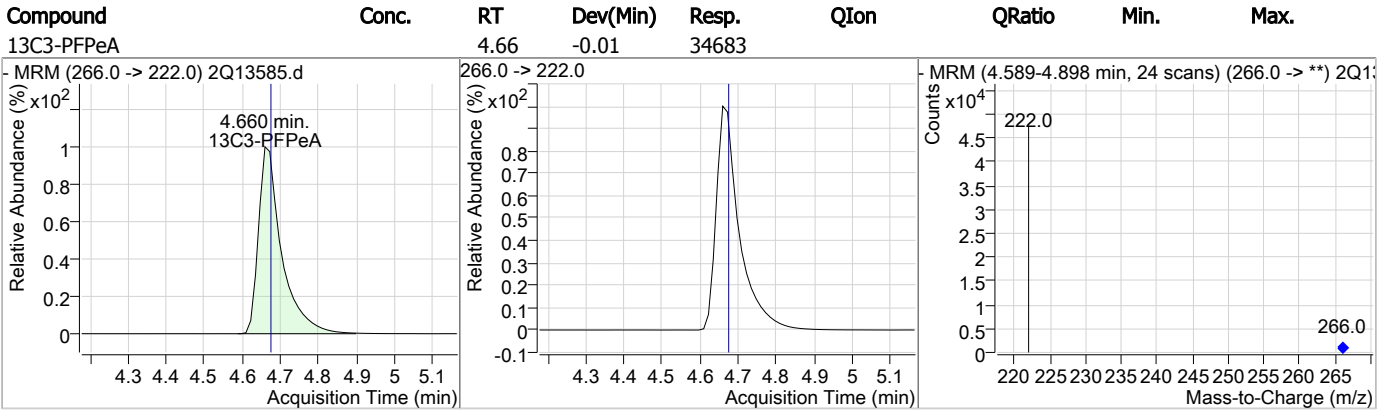
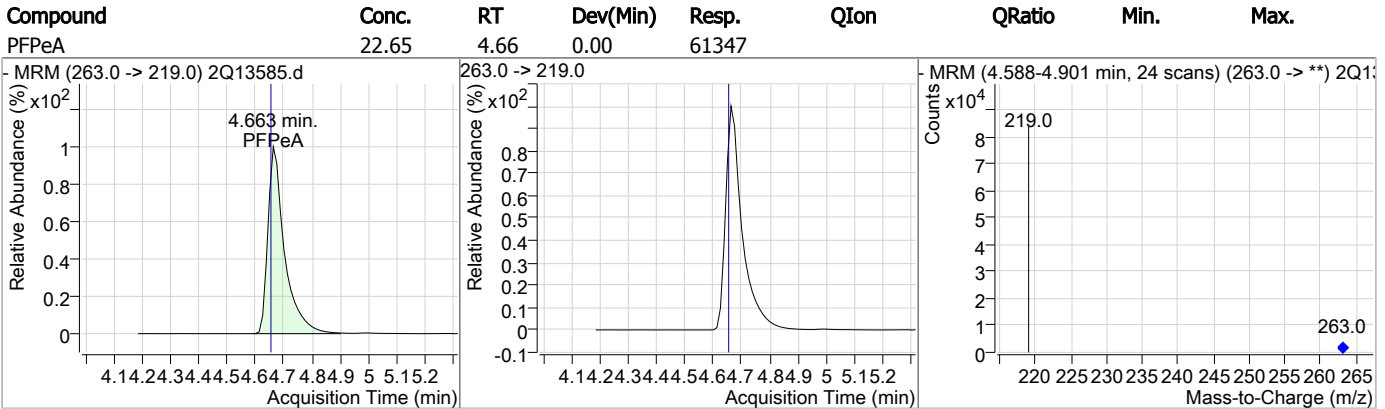
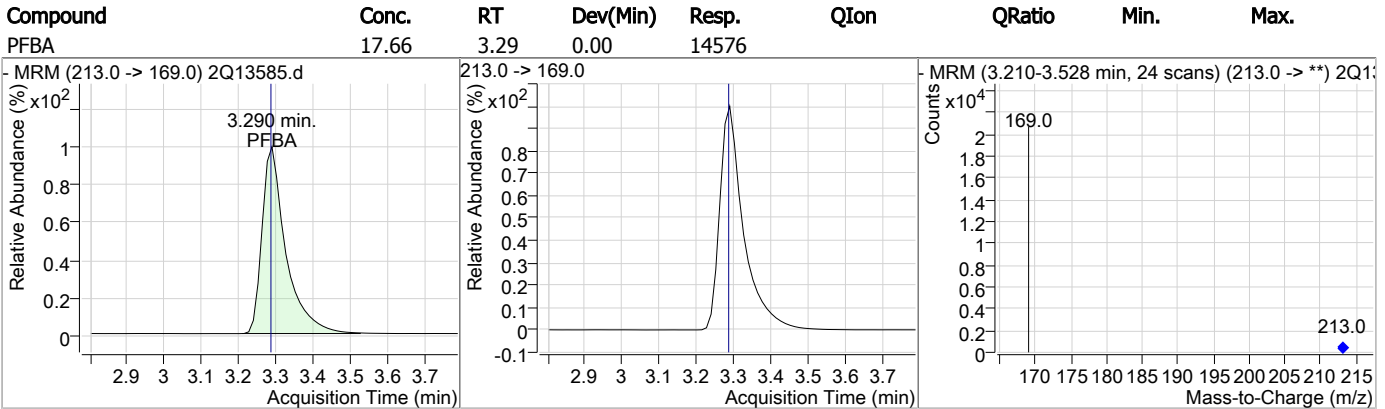
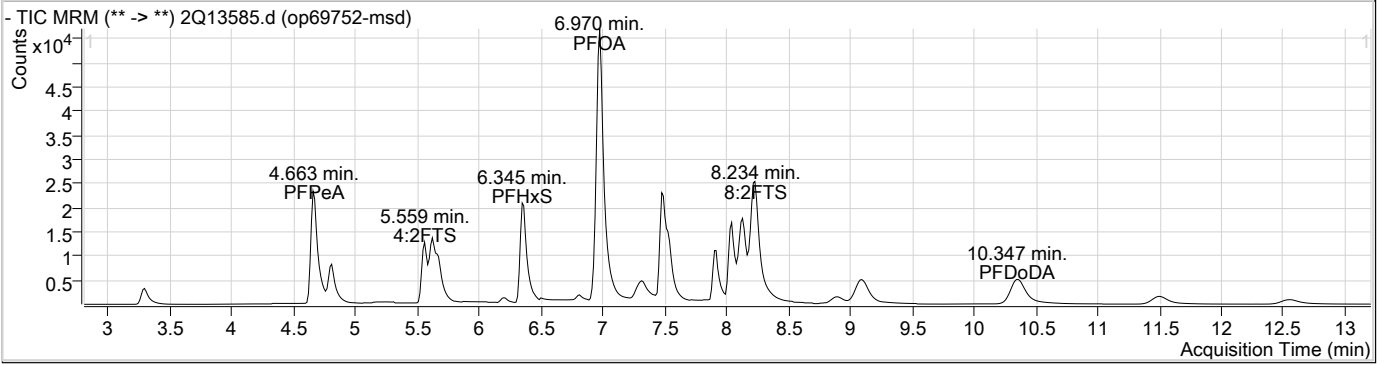
## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13585.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 8:19:17 PM  
 Sample Name : op69752-msd  
 Vial : Vial 33  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69752,S2Q251,200,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	50609	20.00 µg/L	-0.013
13C2-PFDoDA	10.355	615.0 -> 570.0	25940	20.00 µg/L	-0.063
13C2-PFOA	6.968	415.0 -> 370.0	34138	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	34683	20.00 µg/L	-0.013
13C4-PFOS	7.489	503.0 -> 80.0	20705	20.00 µg/L	0.000
d3-MeFOSAA	7.902	573.0 -> 419.0	15797	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.136	515.0 -> 470.0	39843	18.40 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 92.0%	
13C2-PFHxA	5.625	315.0 -> 270.0	27293	12.94 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 64.7%	
d5-EtFOSAA	8.026	589.0 -> 419.0	16073	15.24 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 76.2%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	34397	18.65 µg/L	QValue 99
6:2FTS	6.979	427.0 -> 407.0	51105	20.63 µg/L	99
8:2FTS	8.234	527.0 -> 507.0	98813	47.16 µg/L	100
EtFOSAA	8.039	584.0 -> 419.0	16468	21.68 µg/L	96
FOSA	7.479	498.0 -> 78.0	36118	12.26 µg/L	100
MeFOSAA	7.915	570.0 -> 419.0	16778	18.64 µg/L	100
PFBA	3.290	213.0 -> 169.0	14576	17.66 µg/L	100
PFBS	4.804	299.0 -> 80.0	21538	17.59 µg/L	100
PFDA	8.137	513.0 -> 469.0	30714	24.97 µg/L	99
PFDoDA	10.347	613.0 -> 569.0	20070	18.29 µg/L	99
PFDS	8.891	599.0 -> 80.0	8183	19.74 µg/L	99
PFHpA	6.364	363.0 -> 319.0	50501	20.22 µg/L	100
PFHpS	6.934	449.0 -> 80.0	20951	18.34 µg/L	99
PFHxA	5.627	313.0 -> 269.0	15015	18.21 µg/L	99
PFHxS	6.345	399.0 -> 80.0	23650	17.54 µg/L	m 98
PFNA	7.534	463.0 -> 419.0	28250	20.33 µg/L	99
PFNS	8.056	549.0 -> 80.0	14258	19.52 µg/L	99
PFOA	6.970	413.0 -> 369.0	53454	38.56 µg/L	m 96
PFOS	7.490	499.0 -> 80.0	23992	19.32 µg/L	m 95
PFPeA	4.663	263.0 -> 219.0	61347	22.65 µg/L	100
PFPeS	5.668	349.0 -> 80.0	15996	20.37 µg/L	99
PFTeDA	12.545	713.0 -> 669.0	9849	14.72 µg/L	98
PFTTrDA	11.494	663.0 -> 619.0	15101	16.96 µg/L	99
PFUnDA	9.098	563.0 -> 519.0	36657	29.07 µg/L	100

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

### Perfluorinated Compounds by LC/MS/MS

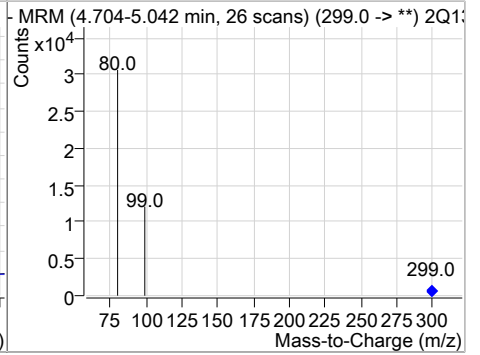
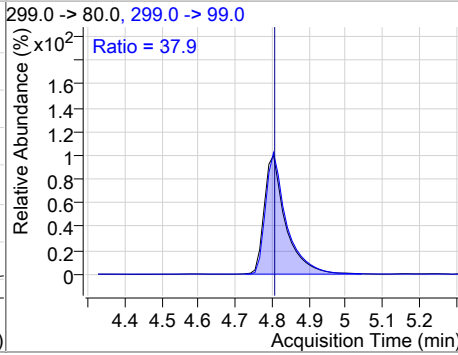
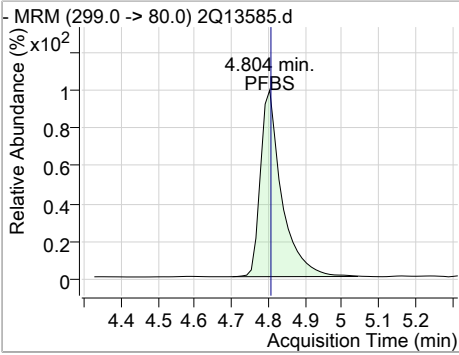


10.4.2 10

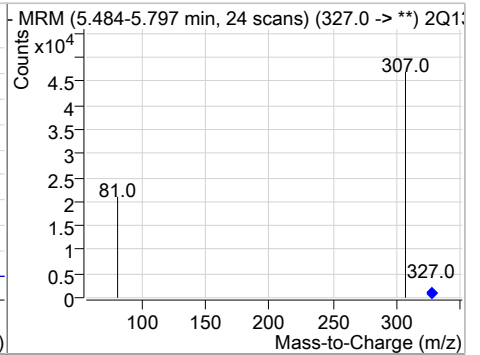
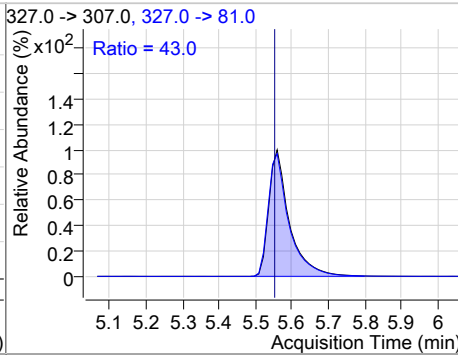
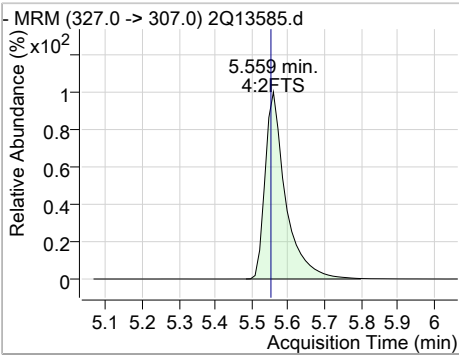


Perfluorinated Compounds by LC/MS/MS

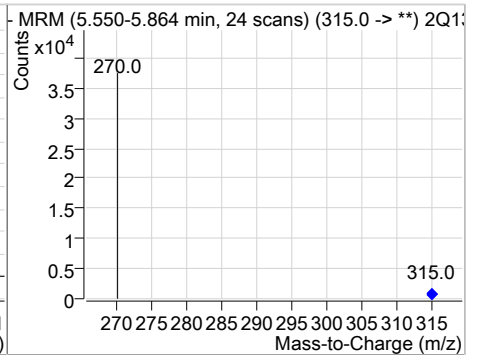
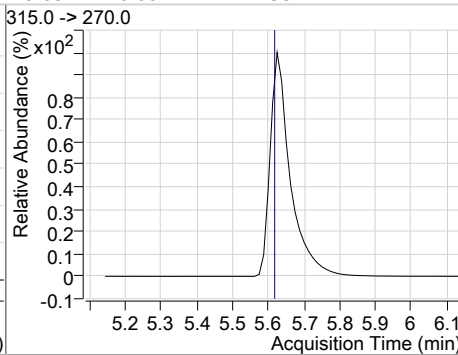
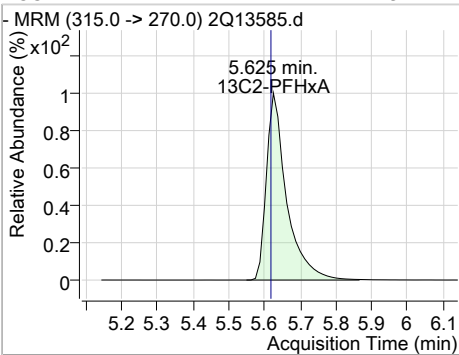
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.59	4.80	0.00	21538	299.0 -> 99.0	37.9	7.8	67.8



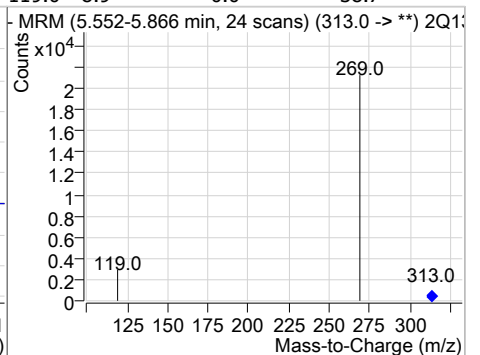
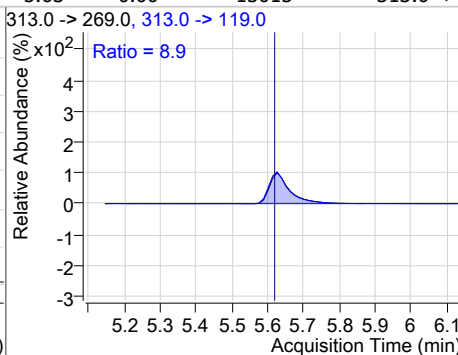
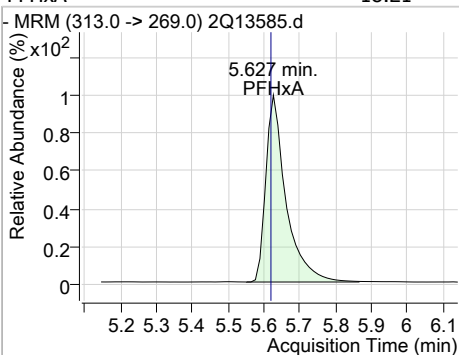
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.65	5.56	0.00	34397	327.0 -> 81.0	43.0	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	12.94	5.63	0.00	27293	315.0 -> 270.0			

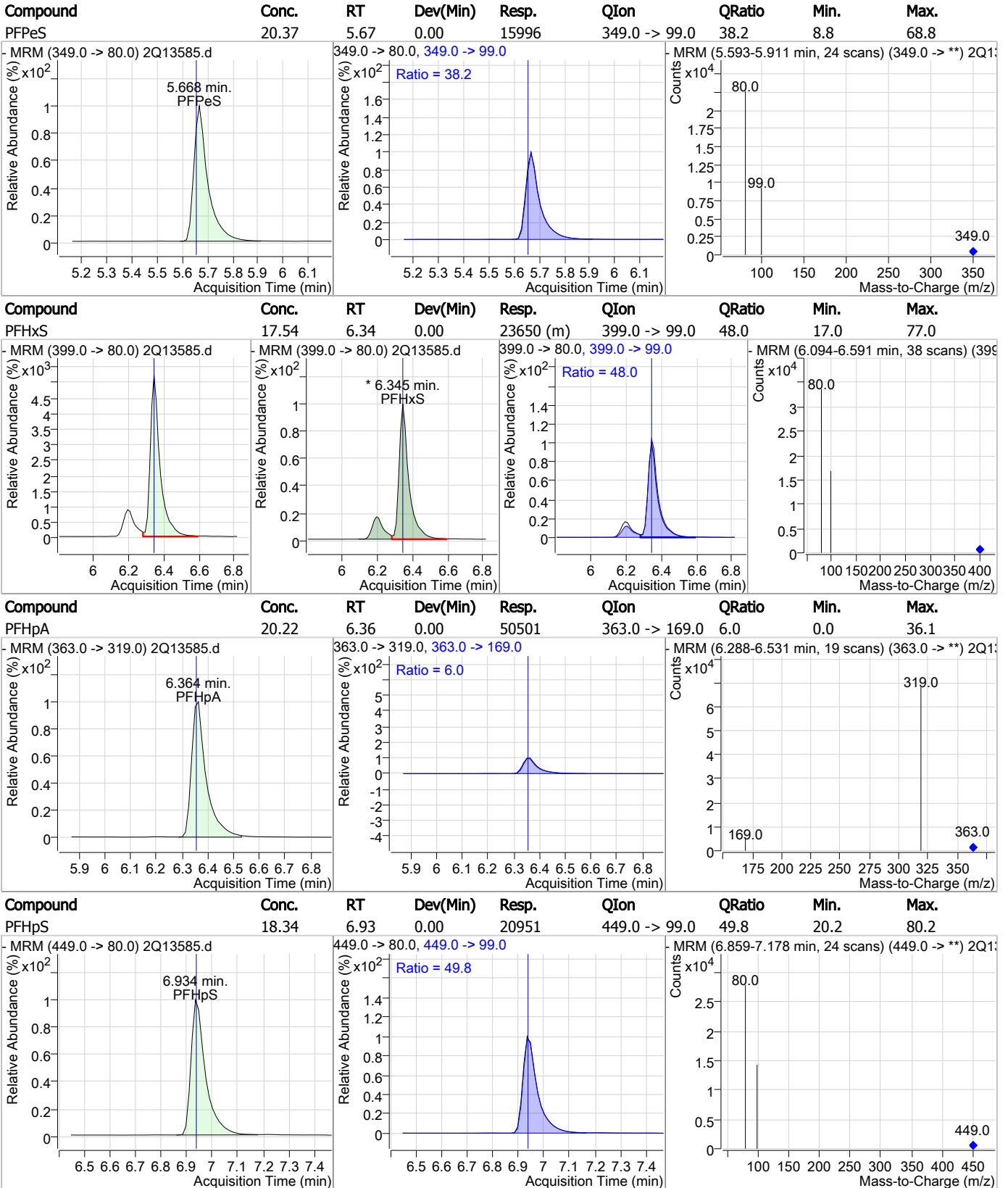


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.21	5.63	0.00	15015	313.0 -> 119.0	8.9	0.0	38.7



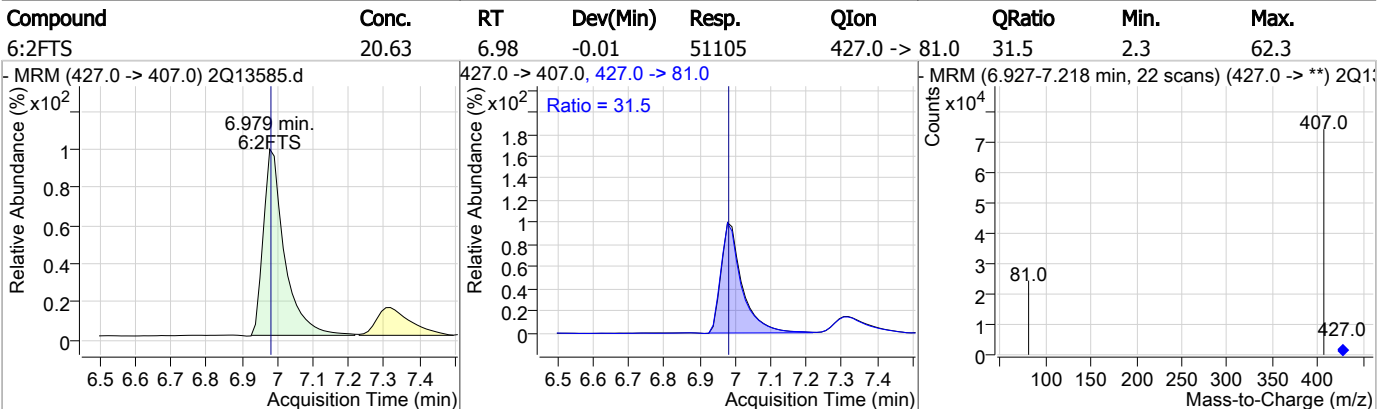
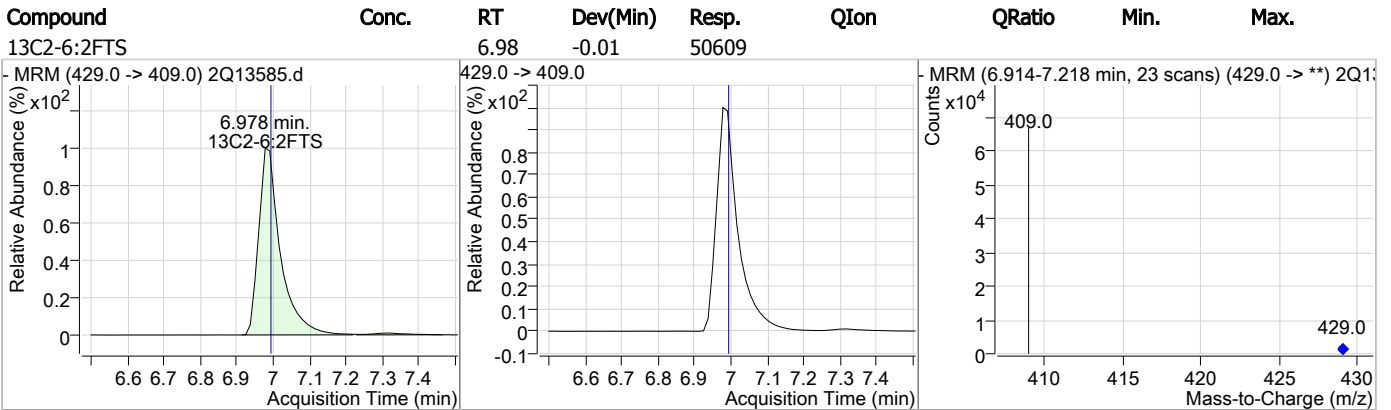
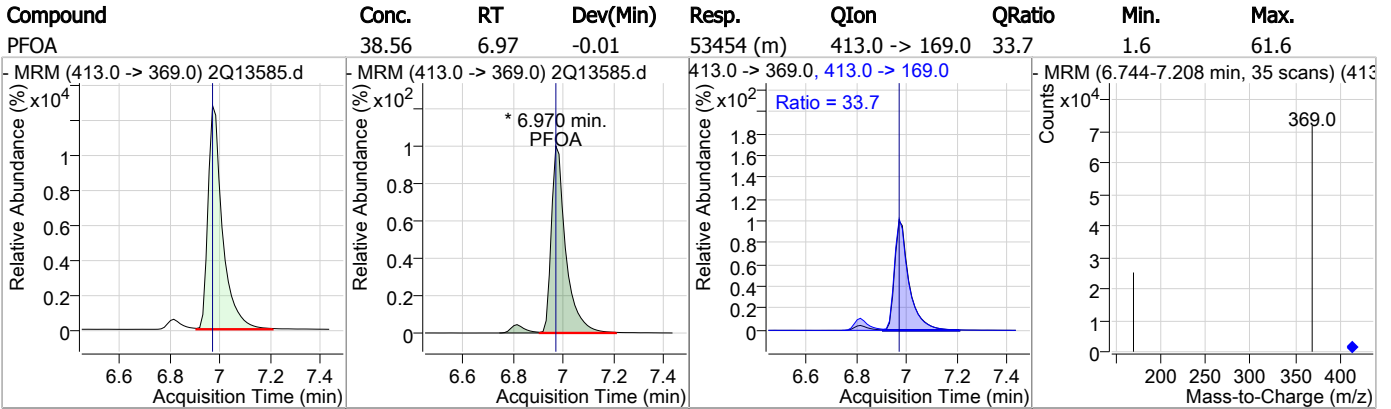
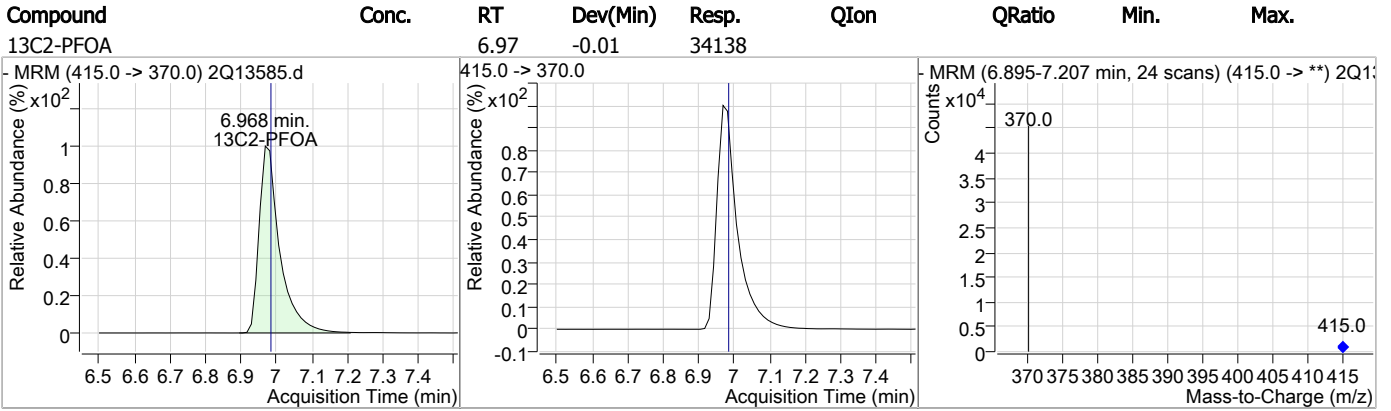
10.4.2 10

### Perfluorinated Compounds by LC/MS/MS



10.4.2 10

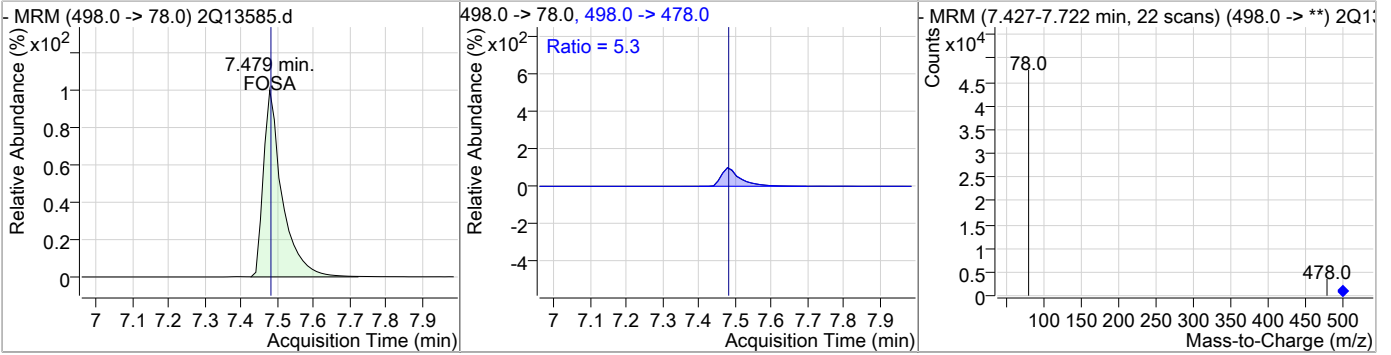
Perfluorinated Compounds by LC/MS/MS



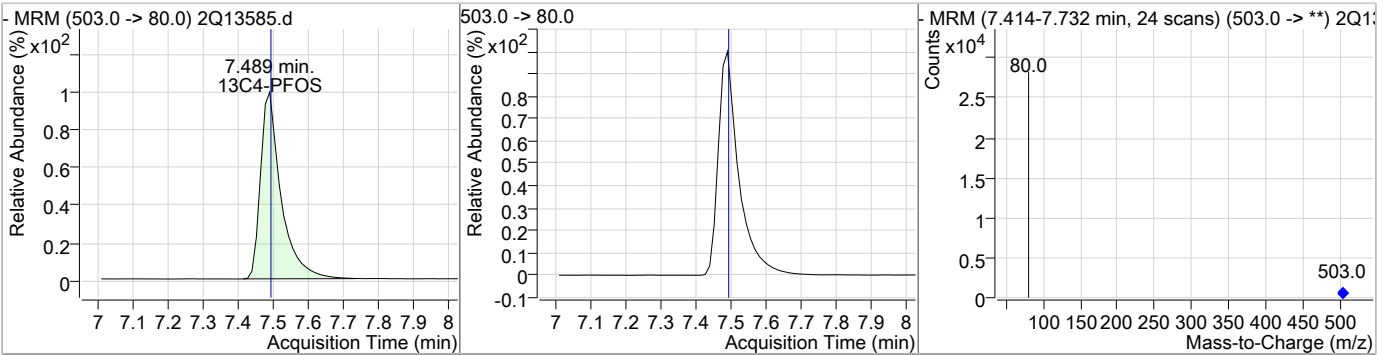
10.4.2 10

Perfluorinated Compounds by LC/MS/MS

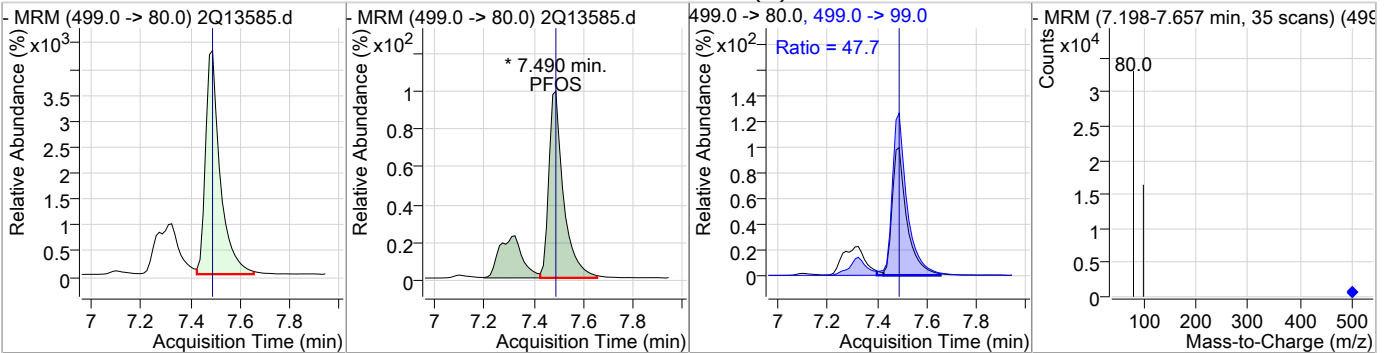
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	12.26	7.48	0.00	36118	498.0 -> 478.0	5.3	0.0	35.2



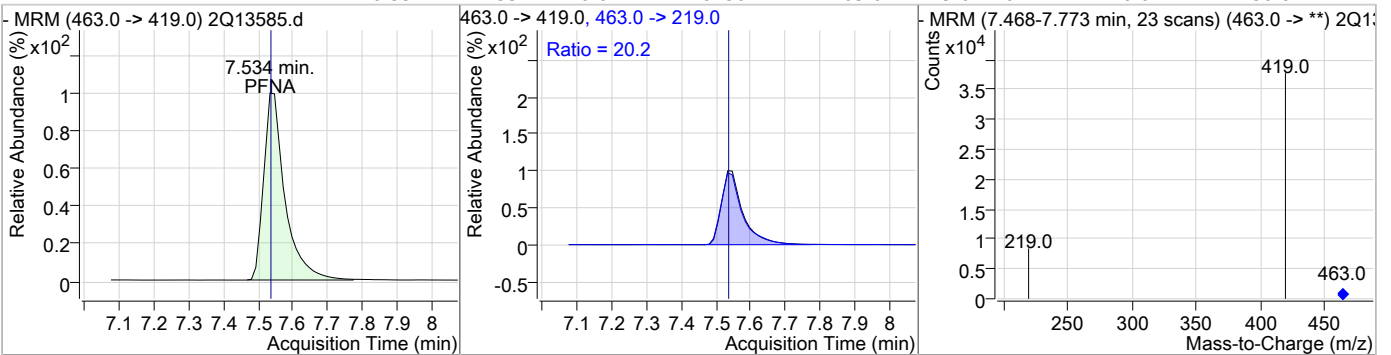
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	20705				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.32	7.49	0.00	23992 (m)	499.0 -> 99.0	47.7	14.7	74.7

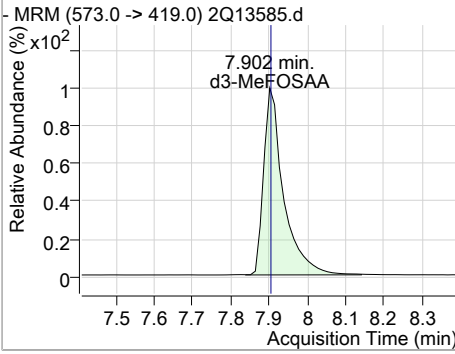
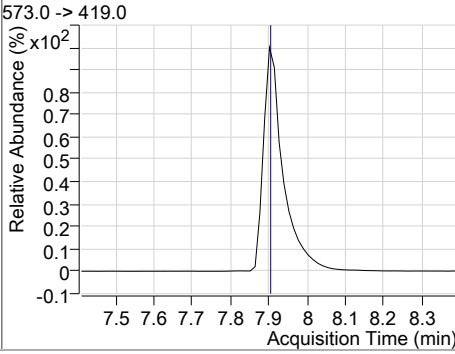
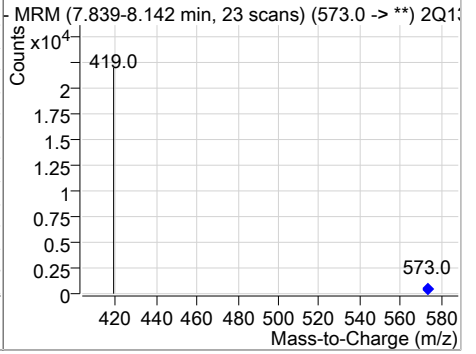
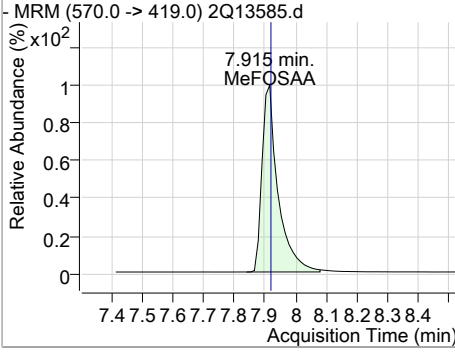
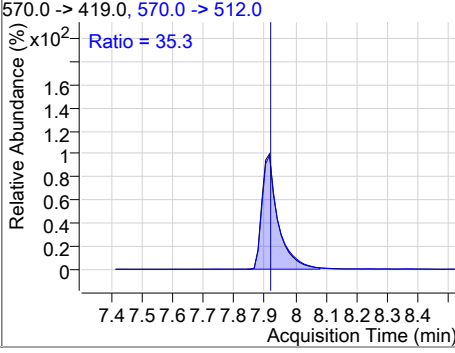
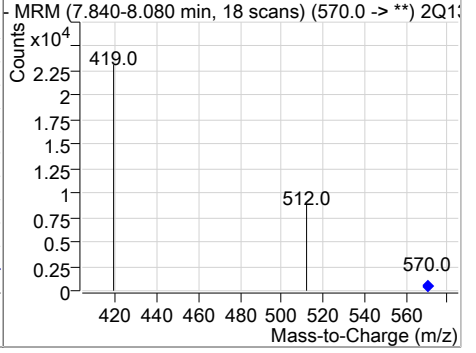
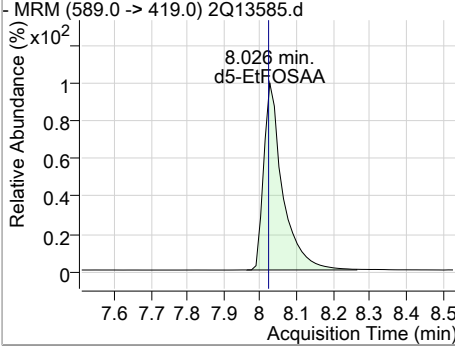
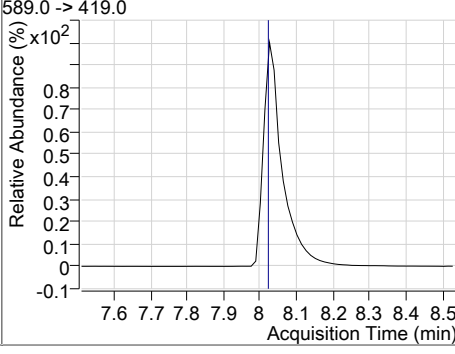
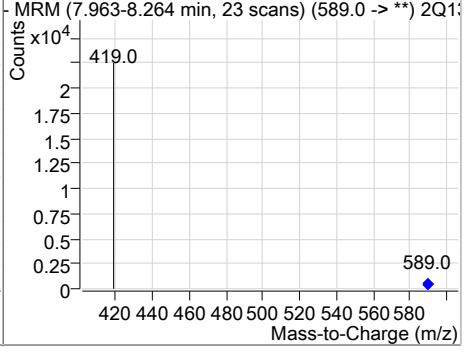
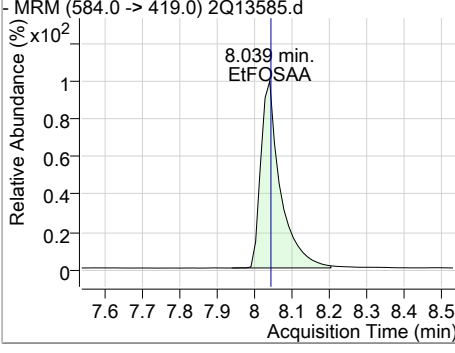
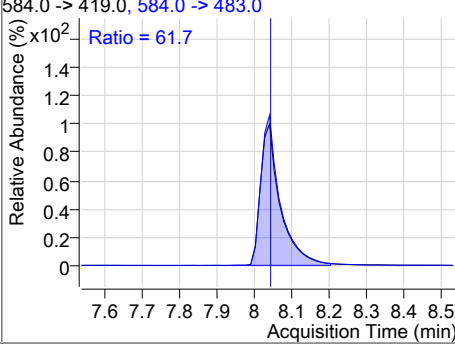
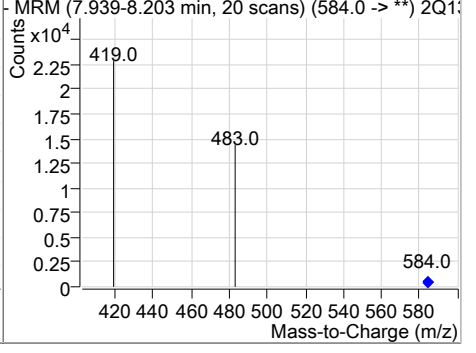


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.33	7.53	-0.01	28250	463.0 -> 219.0	20.2	0.0	50.8



10.4.2 10

Perfluorinated Compounds by LC/MS/MS

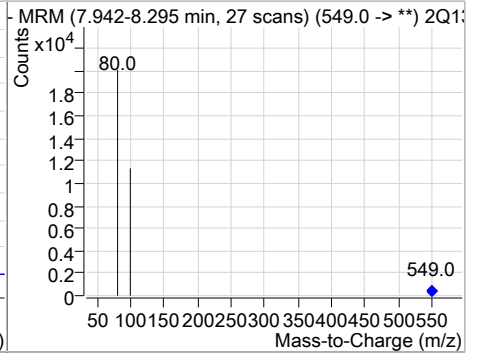
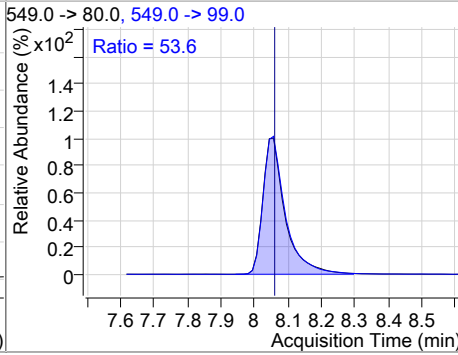
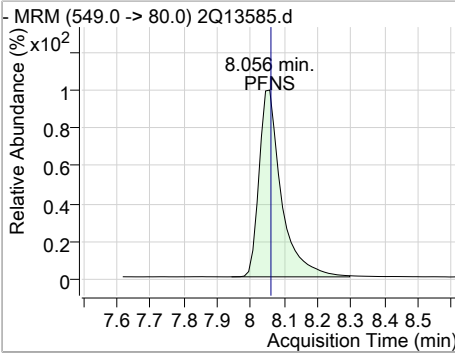
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	15797				
- MRM (573.0 -> 419.0) 2Q13585.d			573.0 -> 419.0			- MRM (7.839-8.142 min, 23 scans) (573.0 -> **) 2Q13585.d		
								
MeFOSAA	18.64	7.92	0.00	16778	570.0 -> 512.0	35.3	5.3	65.3
- MRM (570.0 -> 419.0) 2Q13585.d			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.840-8.080 min, 18 scans) (570.0 -> **) 2Q13585.d		
								
d5-EtFOSAA	15.24	8.03	0.00	16073				
- MRM (589.0 -> 419.0) 2Q13585.d			589.0 -> 419.0			- MRM (7.963-8.264 min, 23 scans) (589.0 -> **) 2Q13585.d		
								
EtFOSAA	21.68	8.04	0.00	16468	584.0 -> 483.0	61.7	28.8	88.8
- MRM (584.0 -> 419.0) 2Q13585.d			584.0 -> 419.0, 584.0 -> 483.0			- MRM (7.939-8.203 min, 20 scans) (584.0 -> **) 2Q13585.d		
								

10.4.2 10

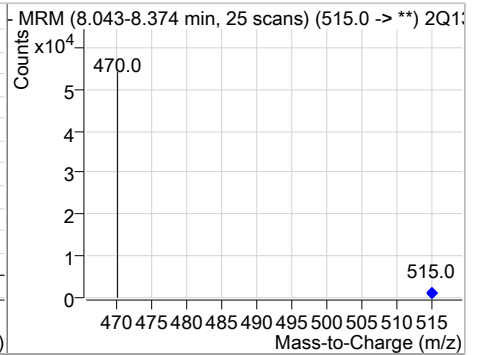
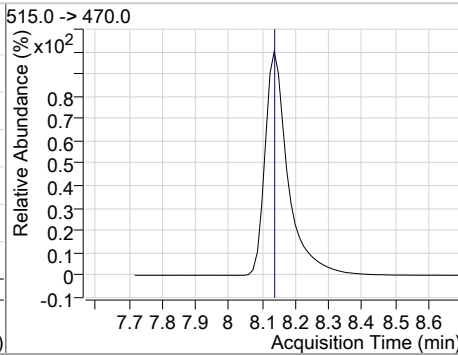
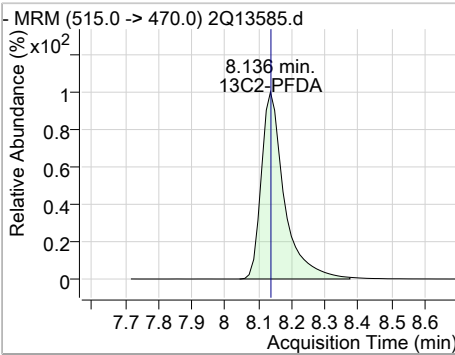


Perfluorinated Compounds by LC/MS/MS

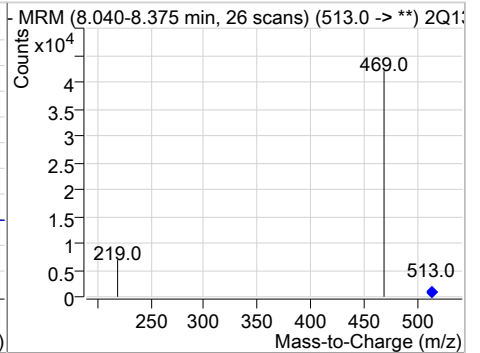
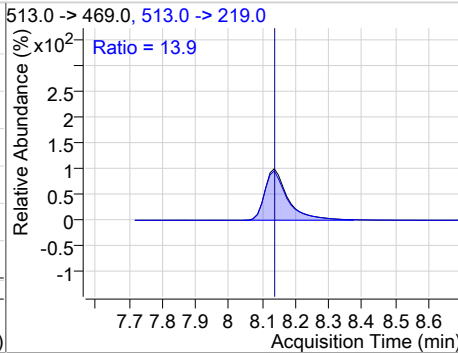
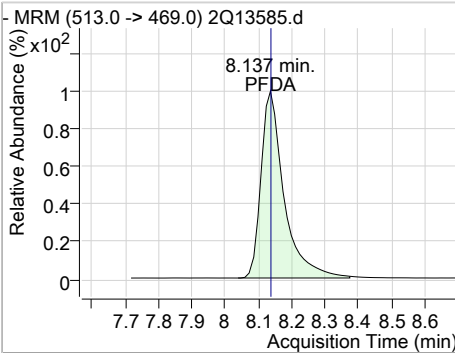
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.52	8.06	0.00	14258	549.0 -> 99.0	53.6	23.0	83.0



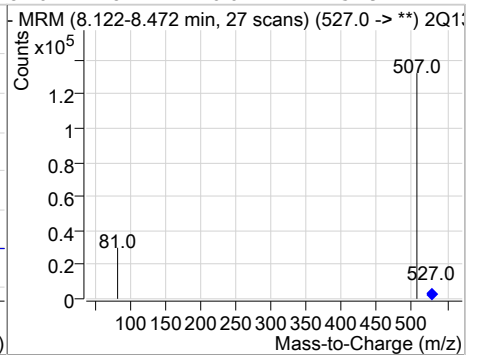
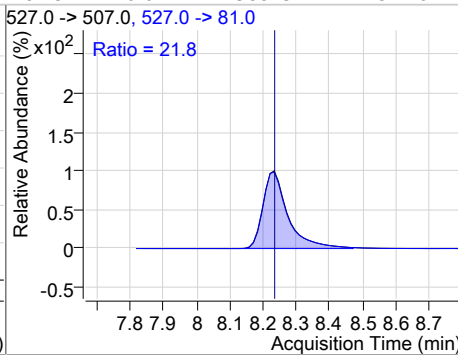
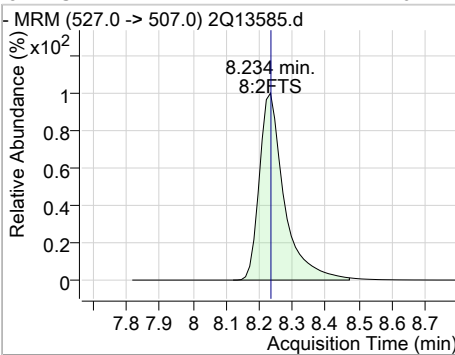
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	18.40	8.14	-0.01	39843				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	24.97	8.14	-0.01	30714	513.0 -> 219.0	13.9	0.0	44.5

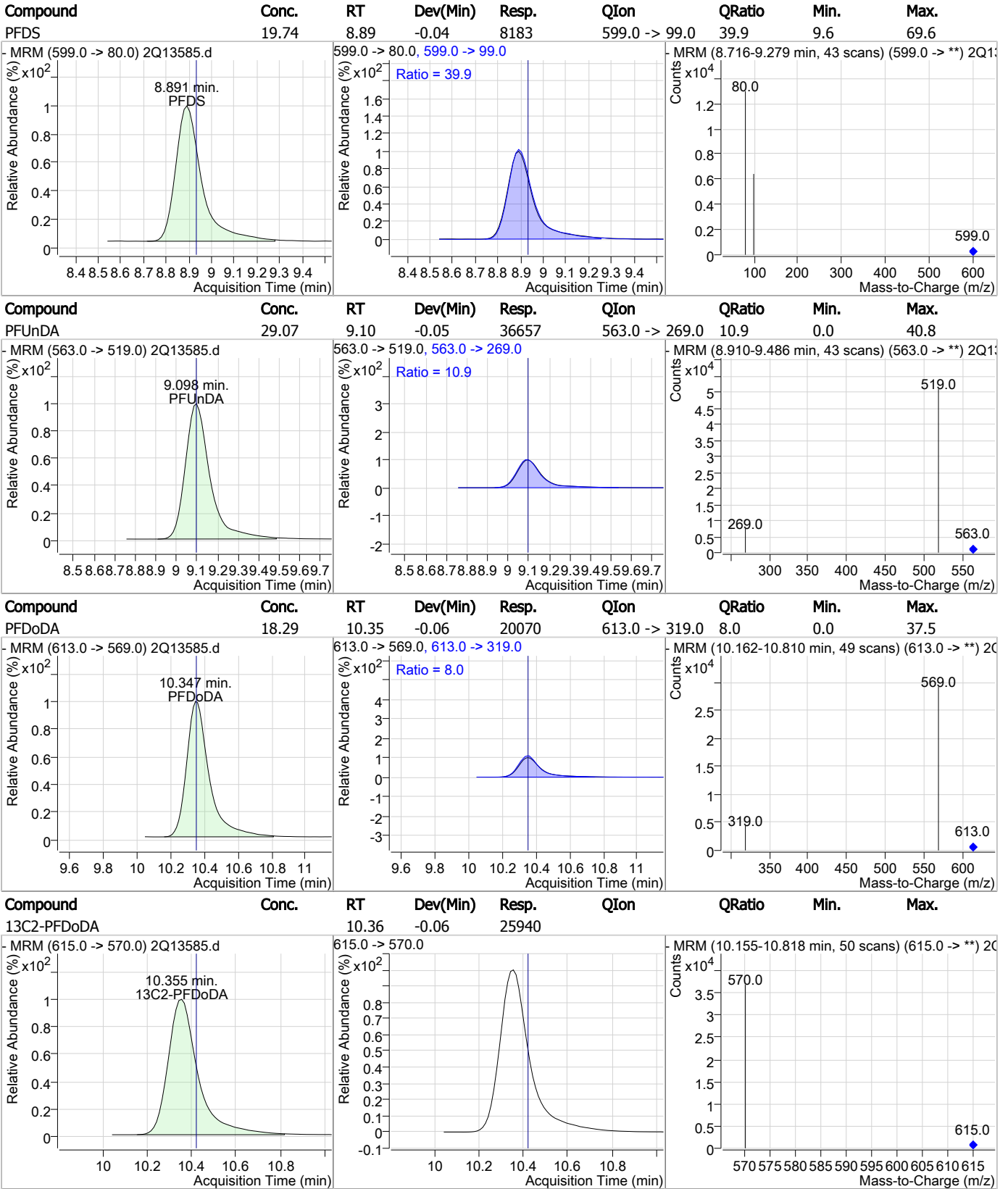


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	47.16	8.23	-0.01	98813	527.0 -> 81.0	21.8	0.0	51.9



10.4.2 10

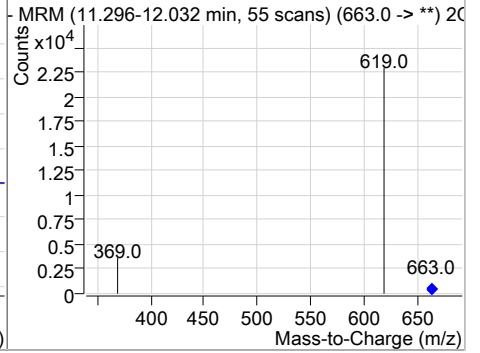
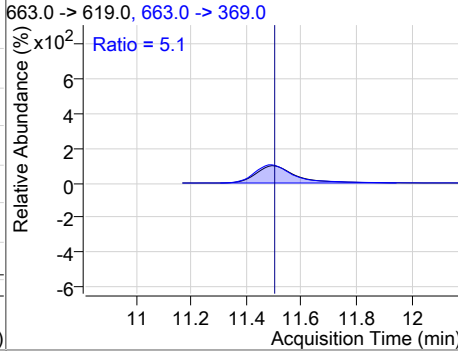
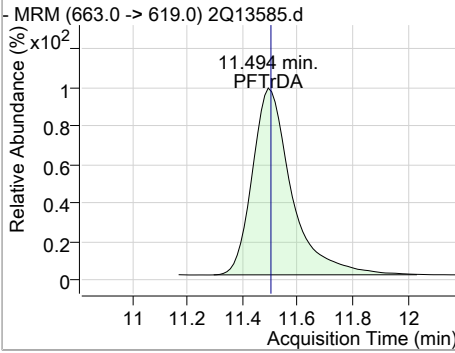
Perfluorinated Compounds by LC/MS/MS



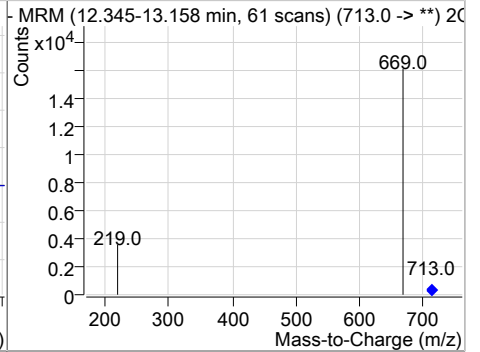
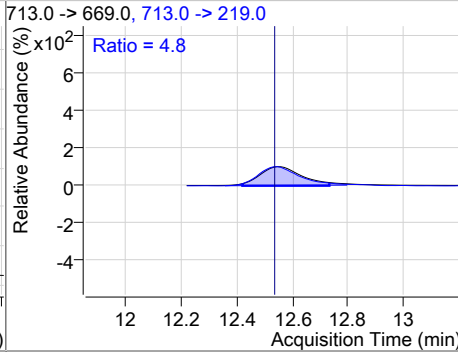
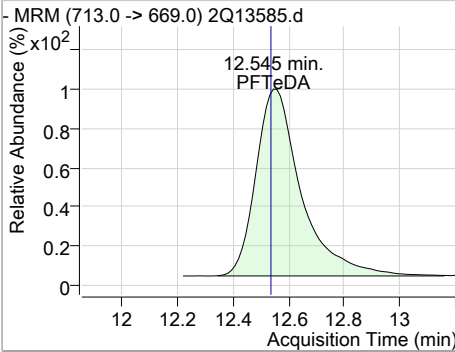
10.4.2 10

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	16.96	11.49	-0.08	15101	663.0 -> 369.0	5.1	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	14.72	12.55	-0.06	9849	713.0 -> 219.0	4.8	0.0	35.3



10.4.2 10



# Manual Integration Approval Summary

**Sample Number:** OP69752-MSD      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13585.D      **Analyst approved:** 04/26/18 12:50 Natasha Gumtie  
**Injection Time:** 04/25/18 20:19      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanoic acid	335-67-1		6.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.4.2.1

10

### Perfluorinated Compounds by LC/MS/MS

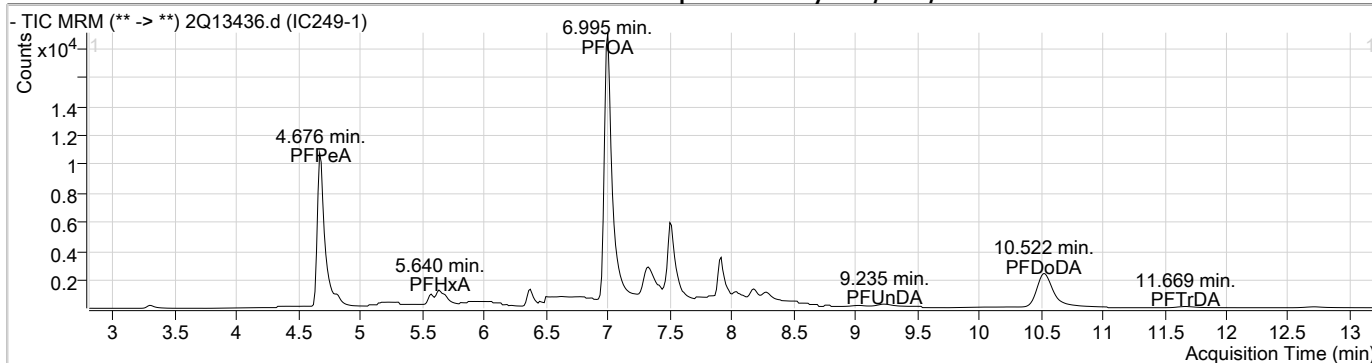
Data File : 2Q13436.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 12:02:44 PM  
 Sample Name : IC249-1  
 Vial : Vial 2  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.003	429.0 -> 409.0	41704	20.00 µg/L	0.013
13C2-PFDoDA	10.531	615.0 -> 570.0	20932	20.00 µg/L	0.100
13C2-PFOA	6.994	415.0 -> 370.0	30352	20.00 µg/L	0.025
13C3-PFPeA	4.672	266.0 -> 222.0	40714	20.00 µg/L	0.013
13C4-PFOS	7.516	503.0 -> 80.0	19832	20.00 µg/L	0.027
d3-MeFOSAA	7.915	573.0 -> 419.0	9190	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.186	515.0 -> 470.0	2337	1.21 µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 6.1%	
13C2-PFHxA	5.638	315.0 -> 270.0	2387	1.27 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 6.4%	
d5-EtFOSAA	8.026	589.0 -> 419.0	710	1.15 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 5.7%	
<b>Target Compounds</b>					
4:2FTS	5.572	327.0 -> 307.0	1959	1.24 µg/L	100
6:2FTS	7.004	427.0 -> 407.0	2536	1.19 µg/L	94
8:2FTS	8.285	527.0 -> 507.0	2155	1.15 µg/L	94
EtFOSAA	8.039	584.0 -> 419.0	532	1.19 µg/L	21
FOSA	7.479	498.0 -> 78.0	2125	1.22 µg/L	99
MeFOSAA	7.915	570.0 -> 419.0	639	1.22 µg/L	97
PFBA	3.290	213.0 -> 169.0	935	1.27 µg/L	100
PFBS	4.816	299.0 -> 80.0	1350	1.15 µg/L	100
PFDA	8.187	513.0 -> 469.0	1279	1.17 µg/L	96
PFDoDA	10.522	613.0 -> 569.0	1107	1.25 µg/L	78
PFDS	9.016	599.0 -> 80.0	412	1.04 µg/L	99
PFHpA	6.376	363.0 -> 319.0	2706	1.22 µg/L	100
PFHpS	6.963	449.0 -> 80.0	1229	1.12 µg/L	98
PFHxA	5.640	313.0 -> 269.0	891	1.21 µg/L	98
PFHxS	6.357	399.0 -> 80.0	1476	1.14 µg/L	96
PFNA	7.572	463.0 -> 419.0	1344	1.09 µg/L	97
PFNS	8.095	549.0 -> 80.0	801	1.14 µg/L	91
PFOA	6.995	413.0 -> 369.0	1431	1.16 µg/L	99
PFOS	7.517	499.0 -> 80.0	1335	1.12 µg/L	98
PFPeA	4.676	263.0 -> 219.0	3600	1.13 µg/L	100
PFPeS	5.681	349.0 -> 80.0	1032	1.12 µg/L	97
PFTeDA	12.708	713.0 -> 669.0	613	1.13 µg/L	100
PFTTrDA	11.669	663.0 -> 619.0	816	1.14 µg/L	100
PFUnDA	9.235	563.0 -> 519.0	1138	1.12 µg/L	99

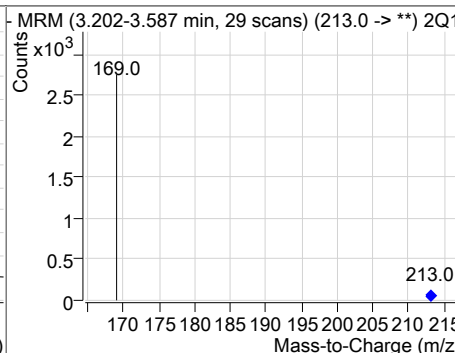
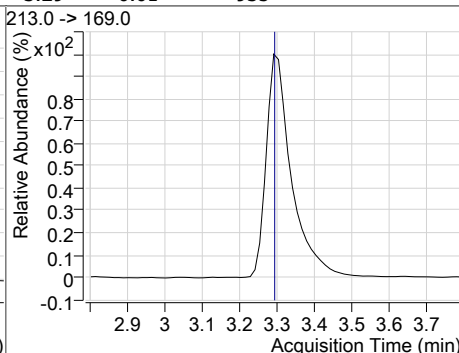
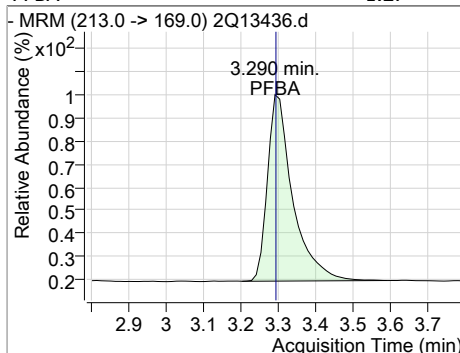
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.1  
**10**

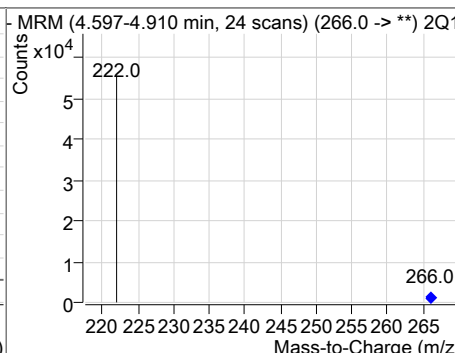
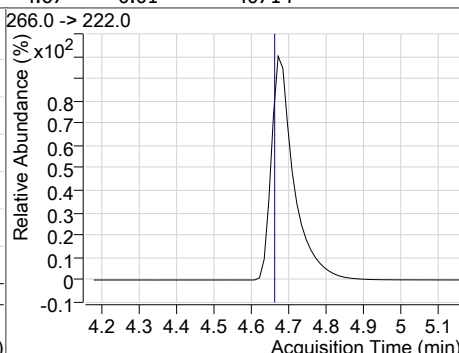
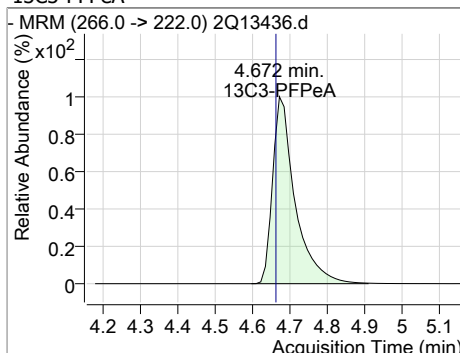
### Perfluorinated Compounds by LC/MS/MS



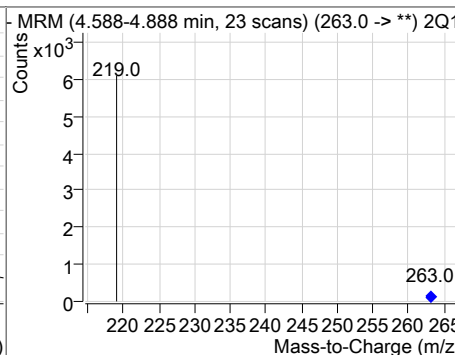
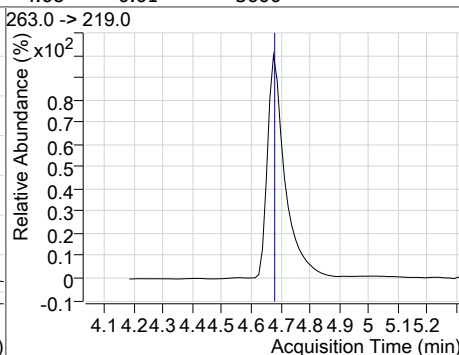
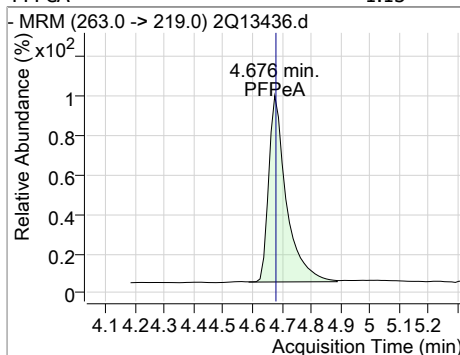
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.27	3.29	0.01	935				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.67	0.01	40714				

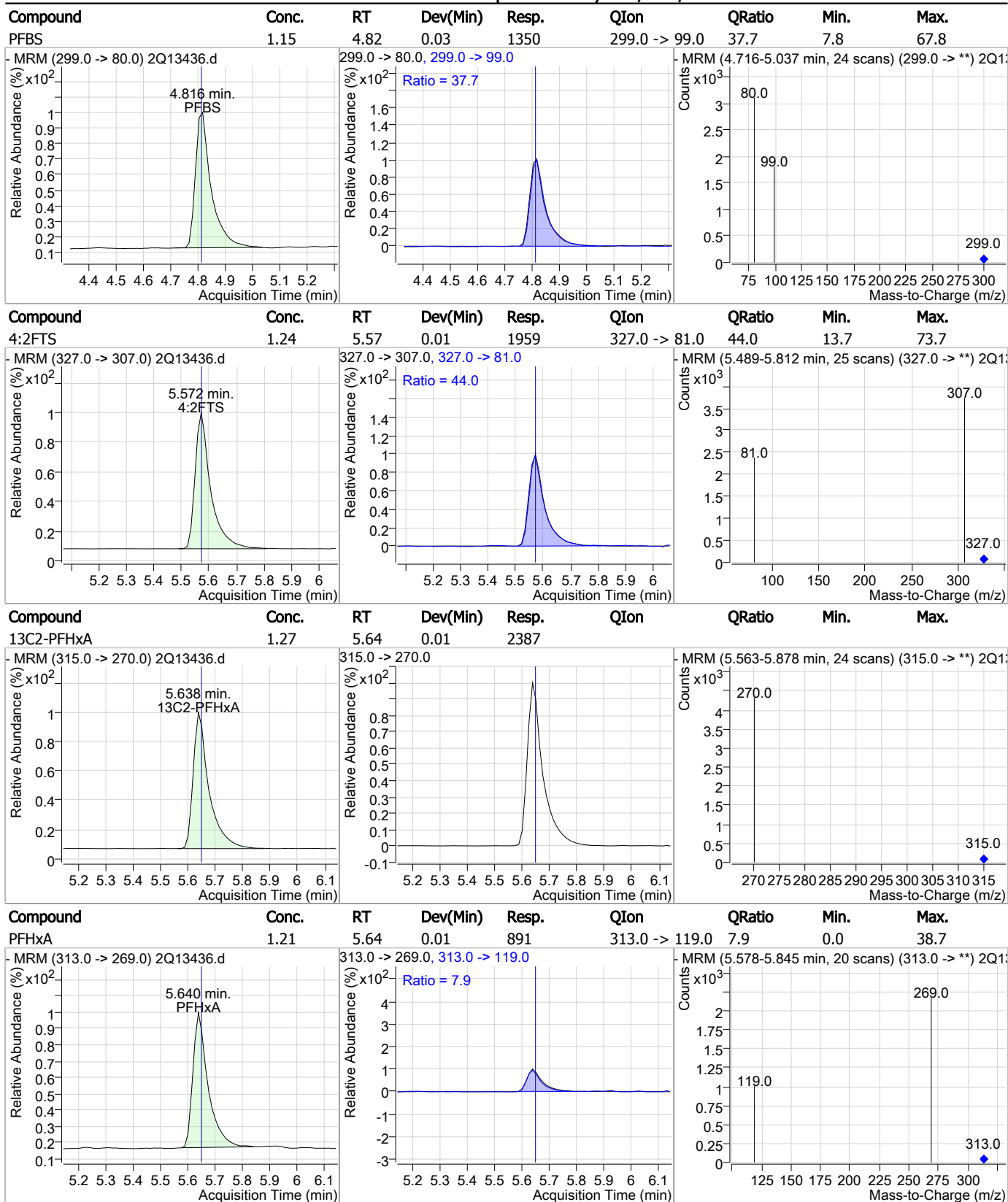


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.13	4.68	0.01	3600				



10.5.1 10

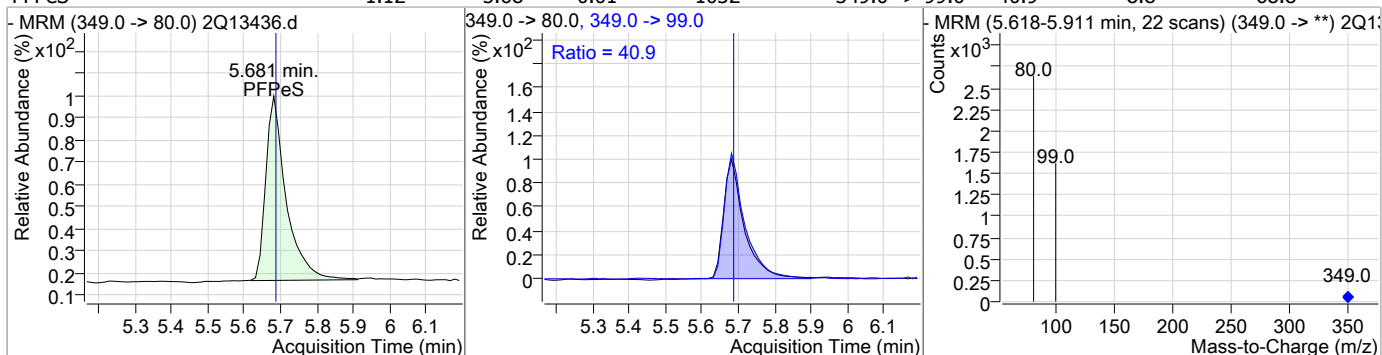
### Perfluorinated Compounds by LC/MS/MS



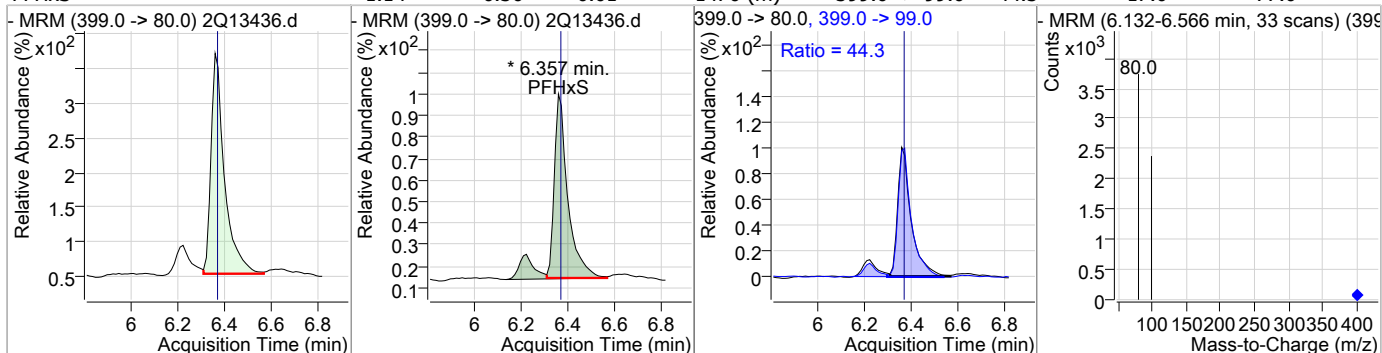
10.5.1 10

### Perfluorinated Compounds by LC/MS/MS

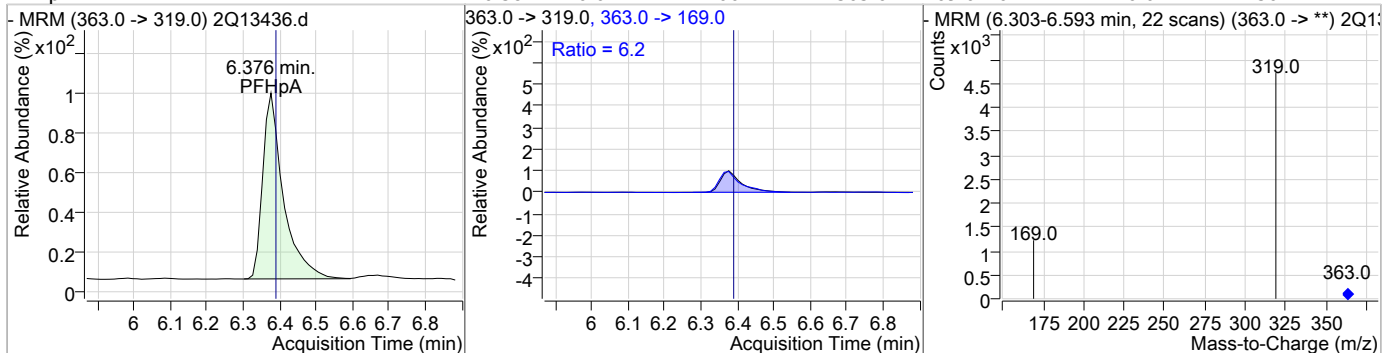
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.12	5.68	0.01	1032	349.0 -> 99.0	40.9	8.8	68.8



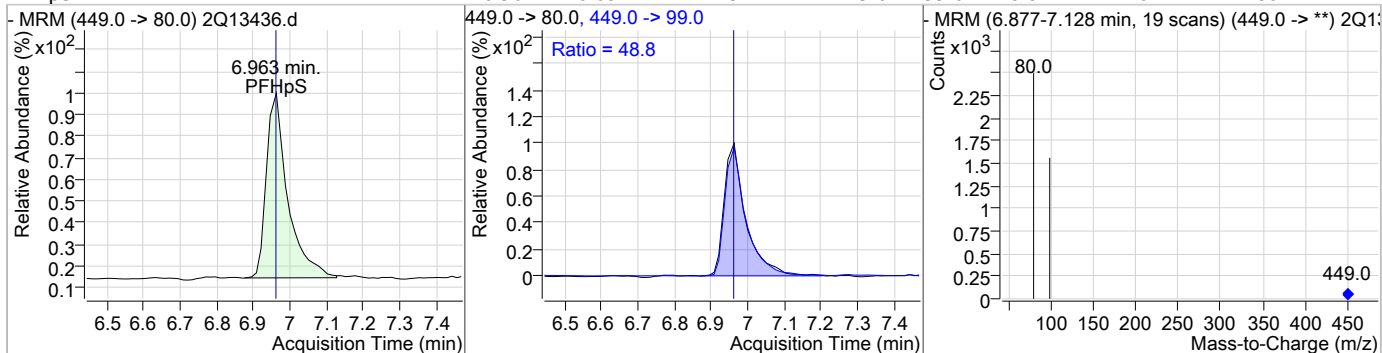
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFhS	1.14	6.36	0.01	1476 (m)	399.0 -> 99.0	44.3	17.0	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFhPA	1.22	6.38	0.01	2706	363.0 -> 169.0	6.2	0.0	36.1

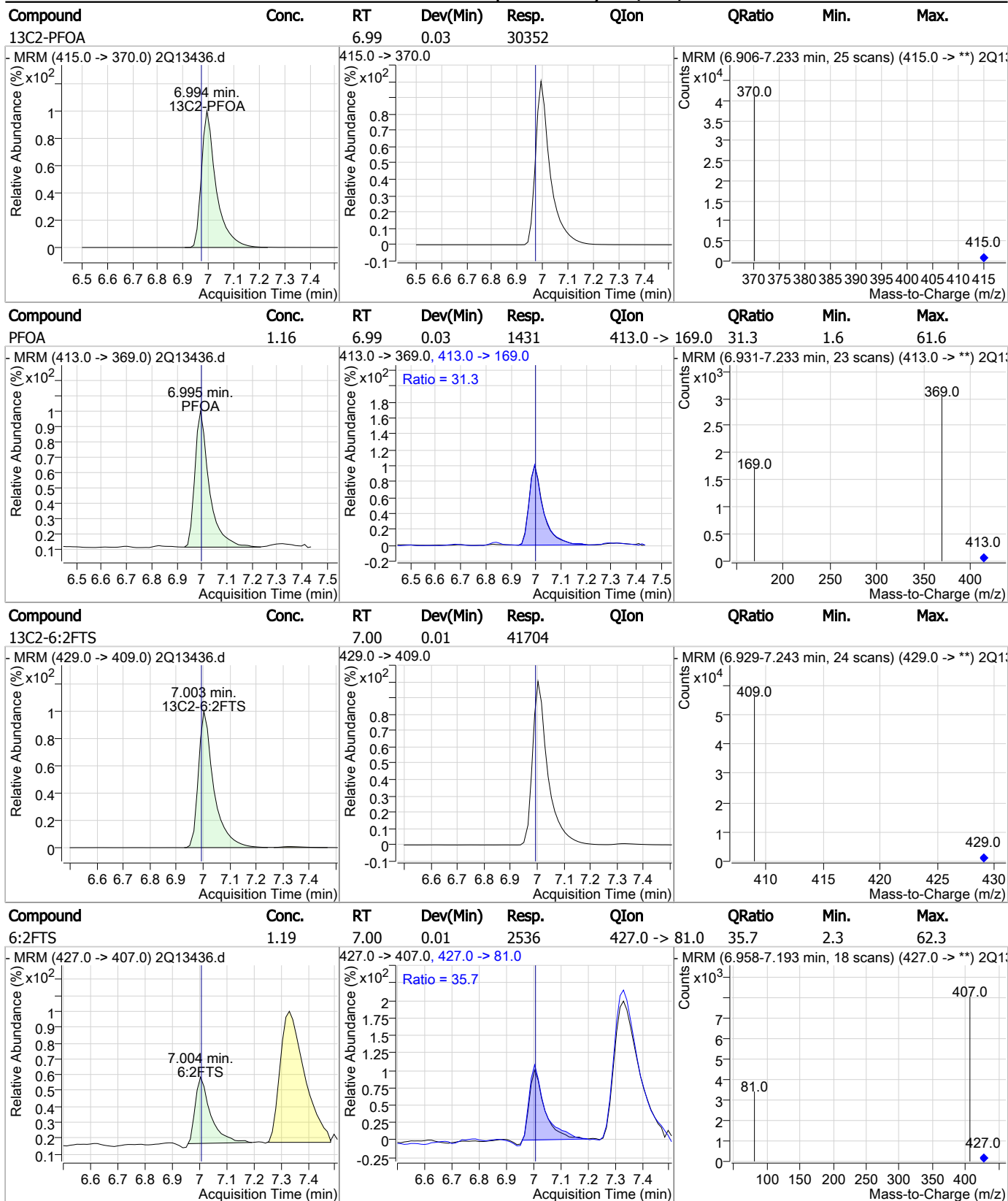


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFhPS	1.12	6.96	0.03	1229	449.0 -> 99.0	48.8	20.2	80.2



10.5.1 10

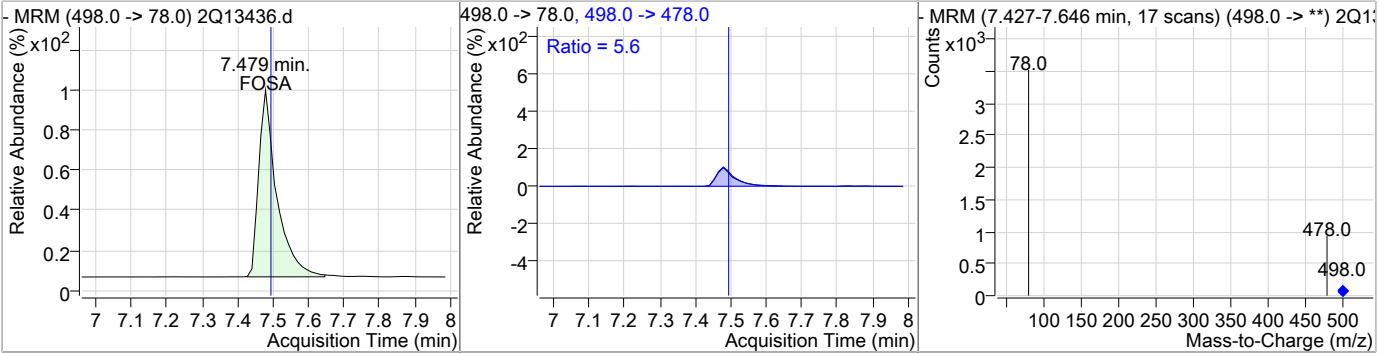
### Perfluorinated Compounds by LC/MS/MS



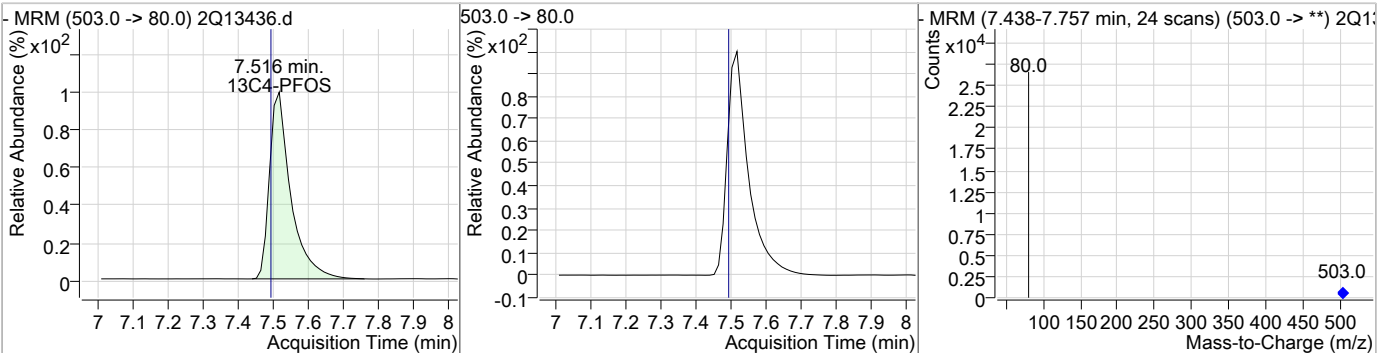
10.5.1 10

### Perfluorinated Compounds by LC/MS/MS

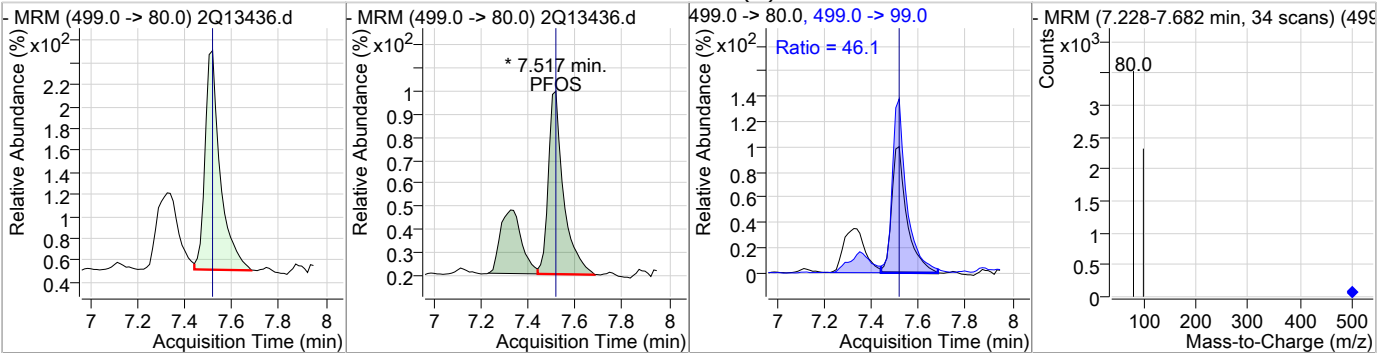
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.22	7.48	0.00	2125	498.0 -> 478.0	5.6	0.0	35.2



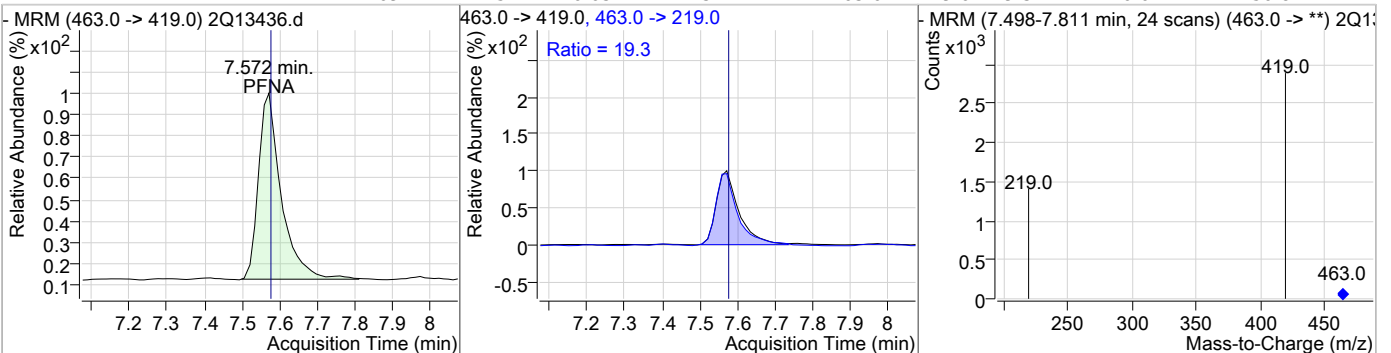
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.52	0.03	19832				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.12	7.52	0.03	1335 (m)	499.0 -> 99.0	46.1	14.7	74.7

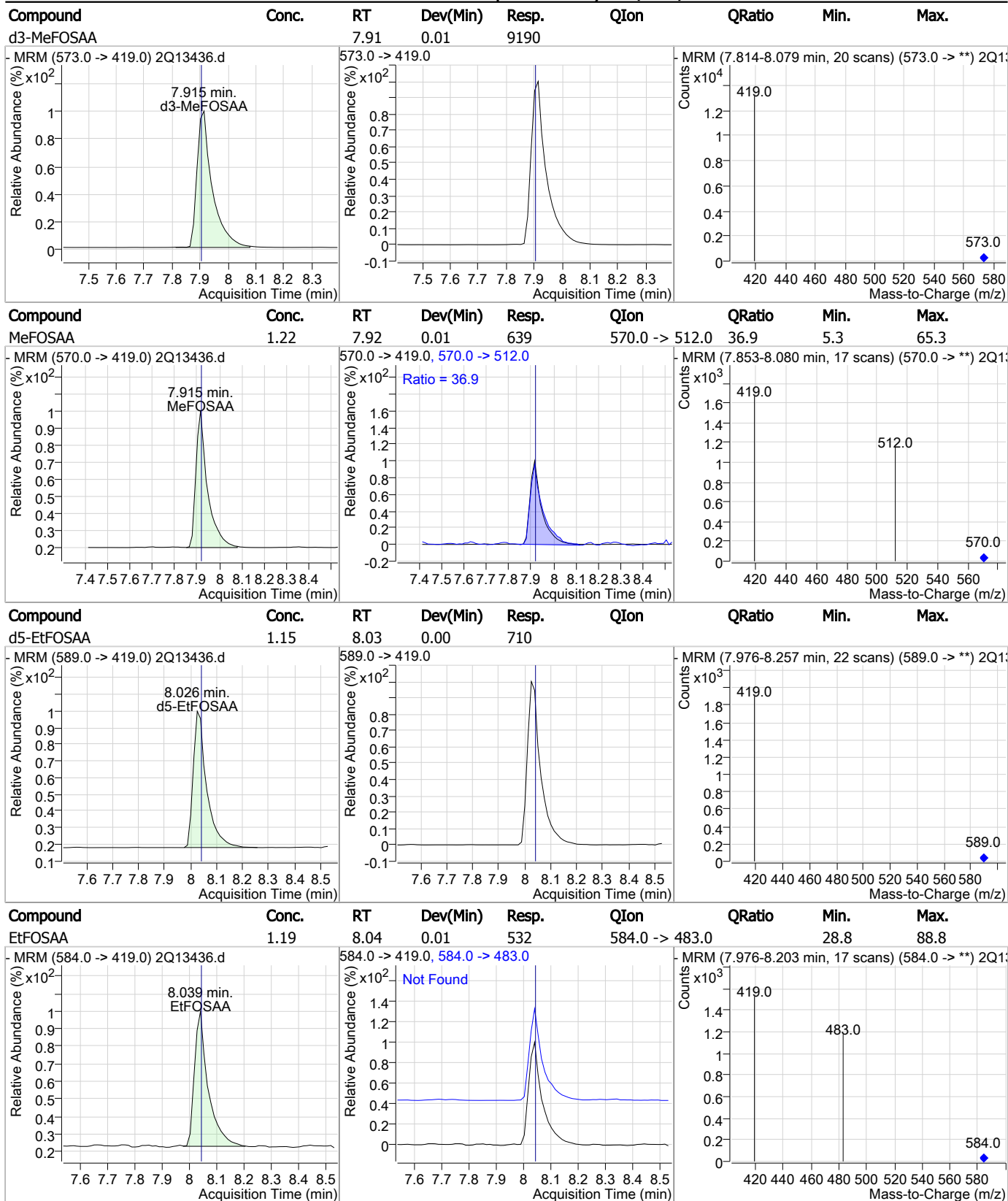


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.09	7.57	0.03	1344	463.0 -> 219.0	19.3	0.0	50.8



10.5.1 10

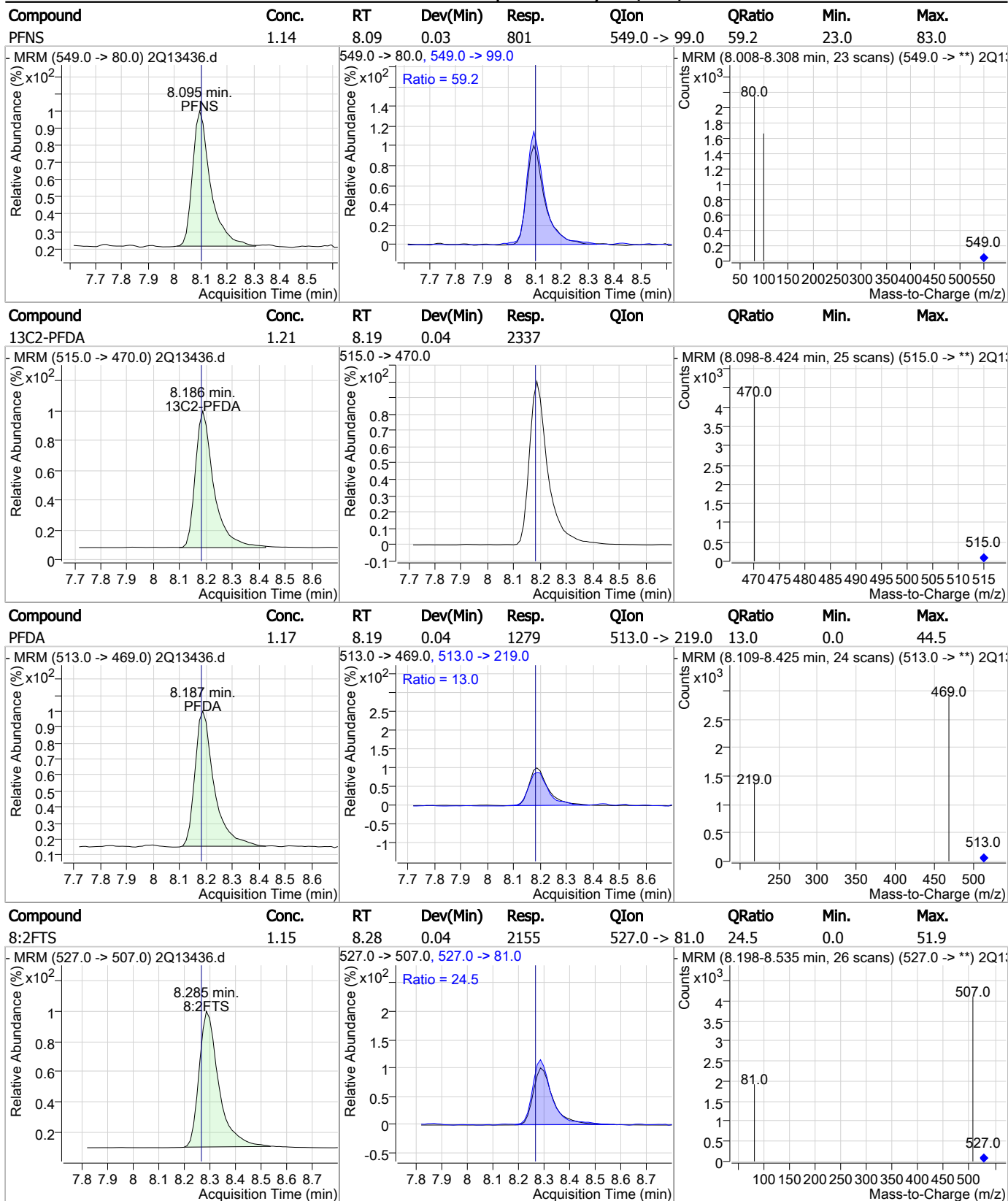
### Perfluorinated Compounds by LC/MS/MS



10.5.1 10

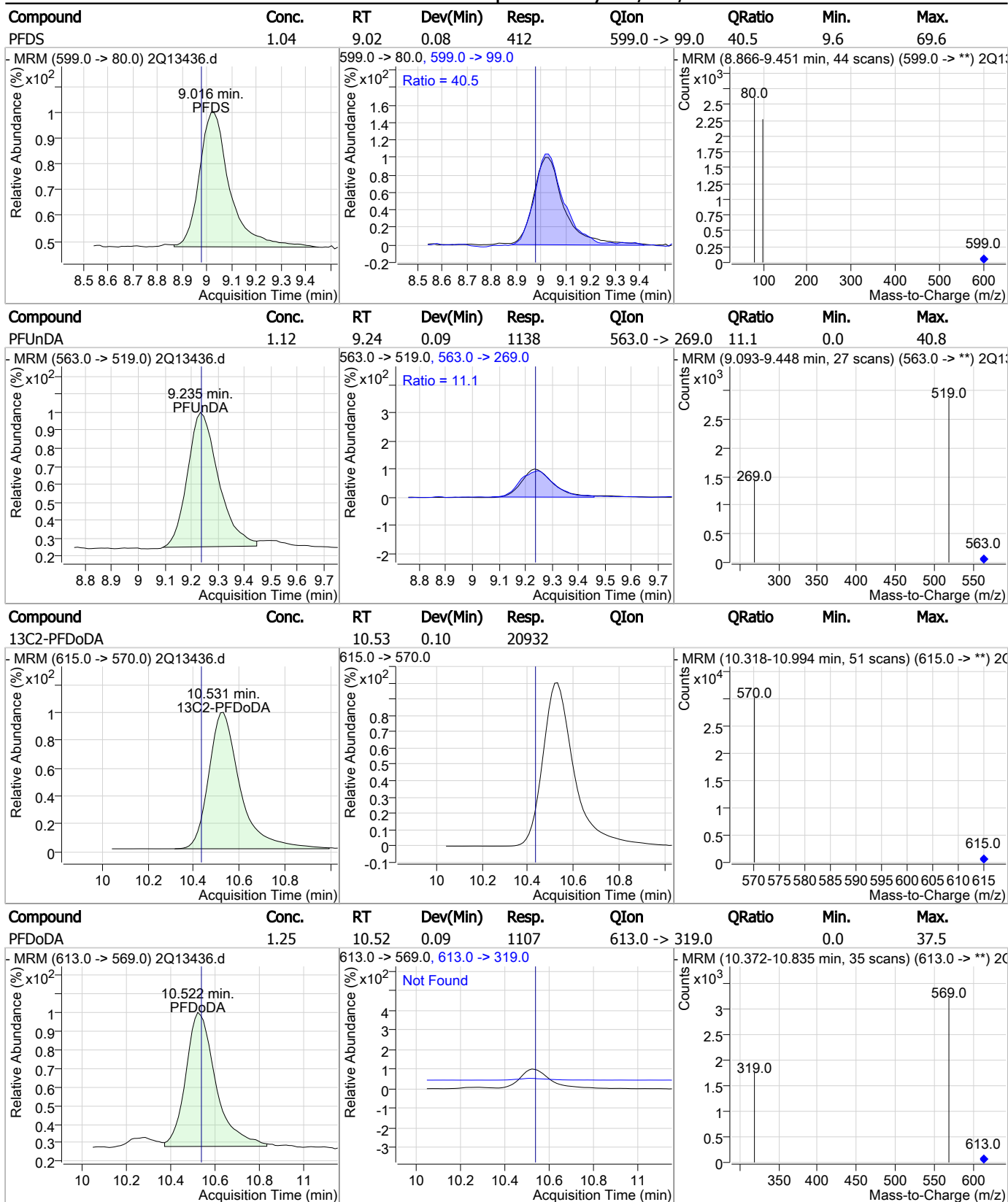


### Perfluorinated Compounds by LC/MS/MS



10.5.1 10

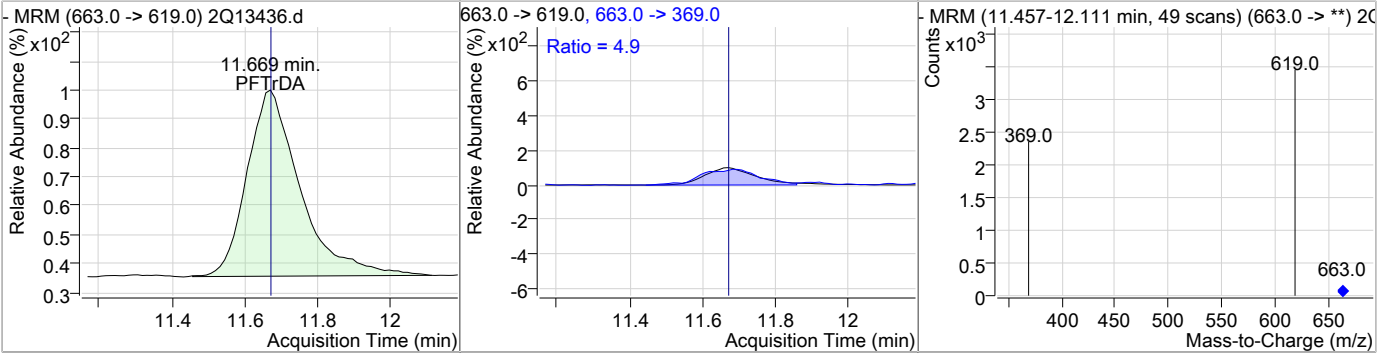
### Perfluorinated Compounds by LC/MS/MS



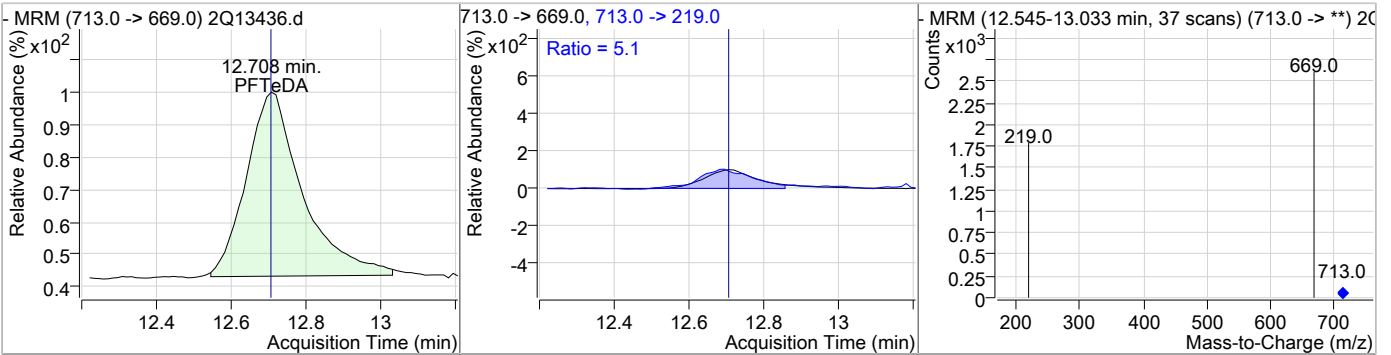
10.5.1 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	1.14	11.67	0.11	816	663.0 -> 369.0	4.9	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.13	12.71	0.13	613	713.0 -> 219.0	5.1	0.0	35.3



10.5.1 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13436.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 12:02      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.52	Split peak

10.5.1.1  
10

Perfluorinated Compounds by LC/MS/MS

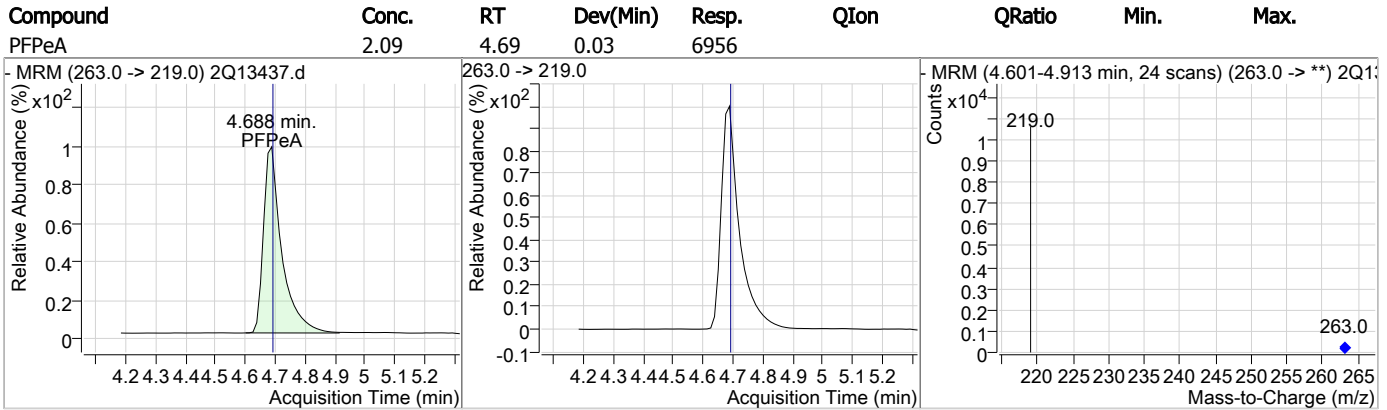
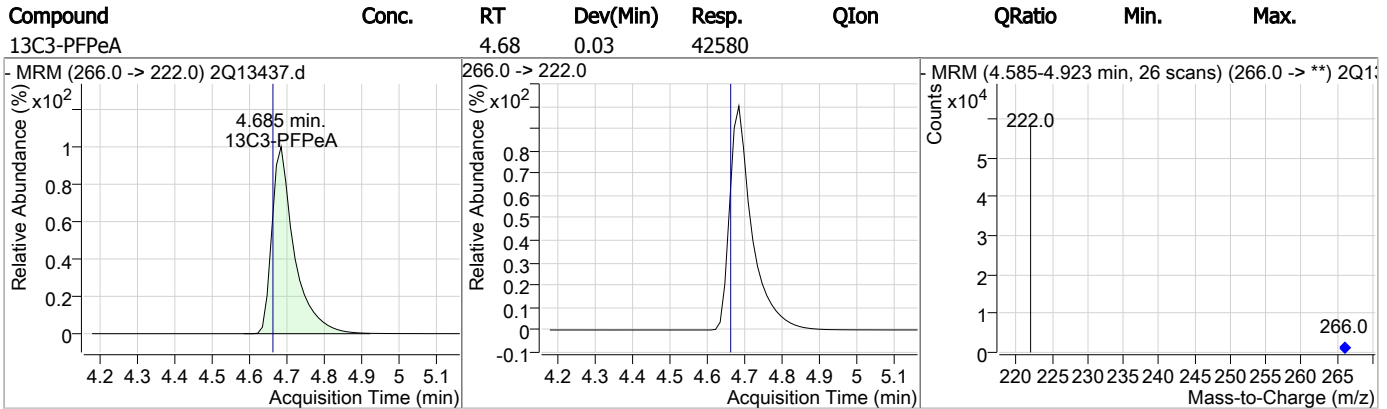
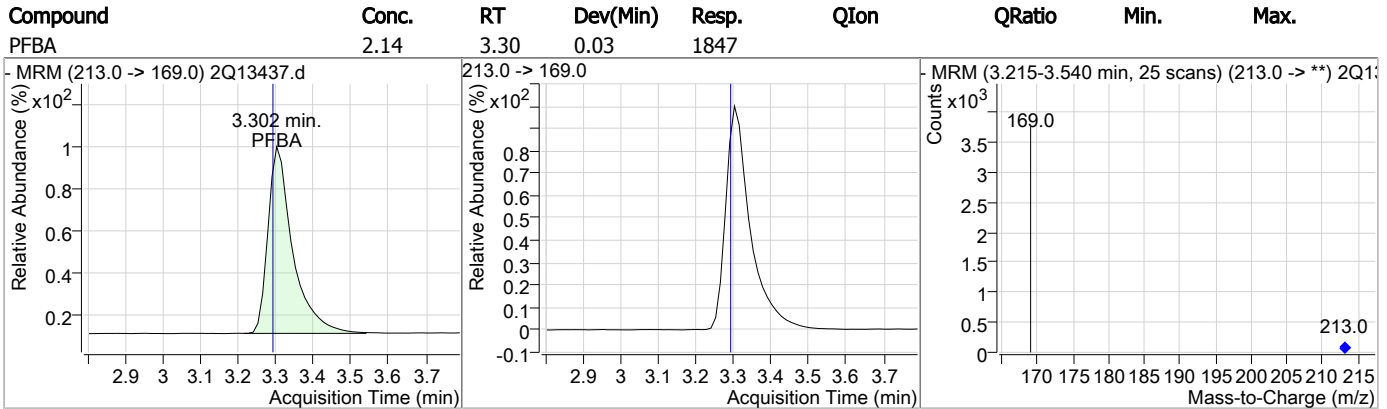
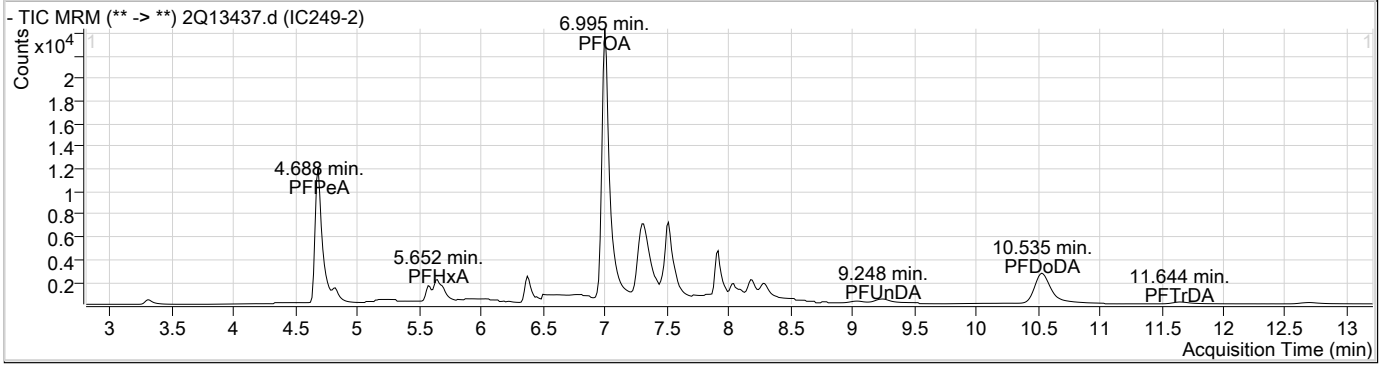
Data File : 2Q13437.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 12:36:34 PM  
 Sample Name : IC249-2  
 Vial : Vial 3  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.016	429.0 -> 409.0	49506	20.00 µg/L	0.026
13C2-PFDoDA	10.531	615.0 -> 570.0	23188	20.00 µg/L	0.100
13C2-PFOA	6.994	415.0 -> 370.0	35629	20.00 µg/L	0.025
13C3-PFPeA	4.685	266.0 -> 222.0	42580	20.00 µg/L	0.025
13C4-PFOS	7.516	503.0 -> 80.0	22862	20.00 µg/L	0.027
d3-MeFOSAA	7.915	573.0 -> 419.0	12332	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.186	515.0 -> 470.0	4586	2.03 µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.1%	
13C2-PFHxA	5.650	315.0 -> 270.0	4683	2.13 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.6%	
d5-EtFOSAA	8.026	589.0 -> 419.0	1802	2.17 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.9%	
<b>Target Compounds</b>					
4:2FTS	5.572	327.0 -> 307.0	3820	2.04 µg/L	QValue 98
6:2FTS	7.004	427.0 -> 407.0	6251	2.47 µg/L	97
8:2FTS	8.297	527.0 -> 507.0	4826	2.17 µg/L	95
EtFOSAA	8.039	584.0 -> 419.0	1311	2.19 µg/L	99
FOSA	7.479	498.0 -> 78.0	4534	1.94 µg/L	100
MeFOSAA	7.915	570.0 -> 419.0	1414	2.01 µg/L	92
PFBA	3.302	213.0 -> 169.0	1847	2.14 µg/L	100
PFBS	4.816	299.0 -> 80.0	2712	2.01 µg/L	100
PFDA	8.187	513.0 -> 469.0	2818	2.19 µg/L	100
PFDoDA	10.535	613.0 -> 569.0	1975	2.01 µg/L	98
PFDS	9.041	599.0 -> 80.0	879	1.92 µg/L	95
PFHpA	6.376	363.0 -> 319.0	5285	2.03 µg/L	99
PFHpS	6.963	449.0 -> 80.0	2702	2.14 µg/L	95
PFHxA	5.652	313.0 -> 269.0	1783	2.07 µg/L	97
PFHxS	6.370	399.0 -> 80.0	2967	1.99 µg/L	m 99
PFNA	7.572	463.0 -> 419.0	2994	2.06 µg/L	99
PFNS	8.095	549.0 -> 80.0	1722	2.13 µg/L	96
PFOA	6.995	413.0 -> 369.0	3044	2.10 µg/L	97
PFOS	7.517	499.0 -> 80.0	2791	2.04 µg/L	m 100
PFPeA	4.688	263.0 -> 219.0	6956	2.09 µg/L	100
PFPeS	5.681	349.0 -> 80.0	2040	2.12 µg/L	98
PFTeDA	12.695	713.0 -> 669.0	1202	2.01 µg/L	99
PFTTrDA	11.644	663.0 -> 619.0	1543	1.94 µg/L	99
PFUnDA	9.248	563.0 -> 519.0	2705	2.40 µg/L	96

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

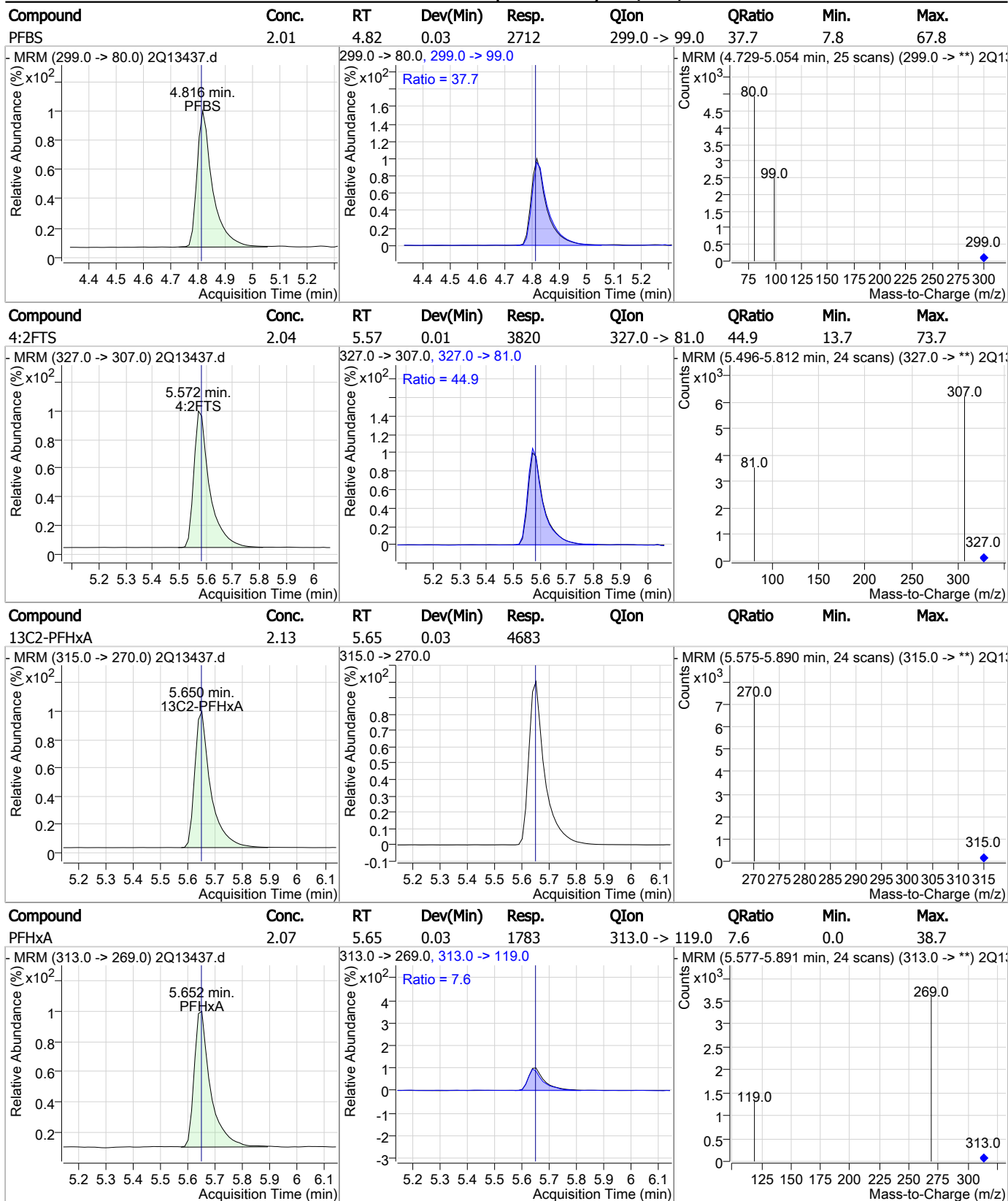
10.5.2  
 10

### Perfluorinated Compounds by LC/MS/MS



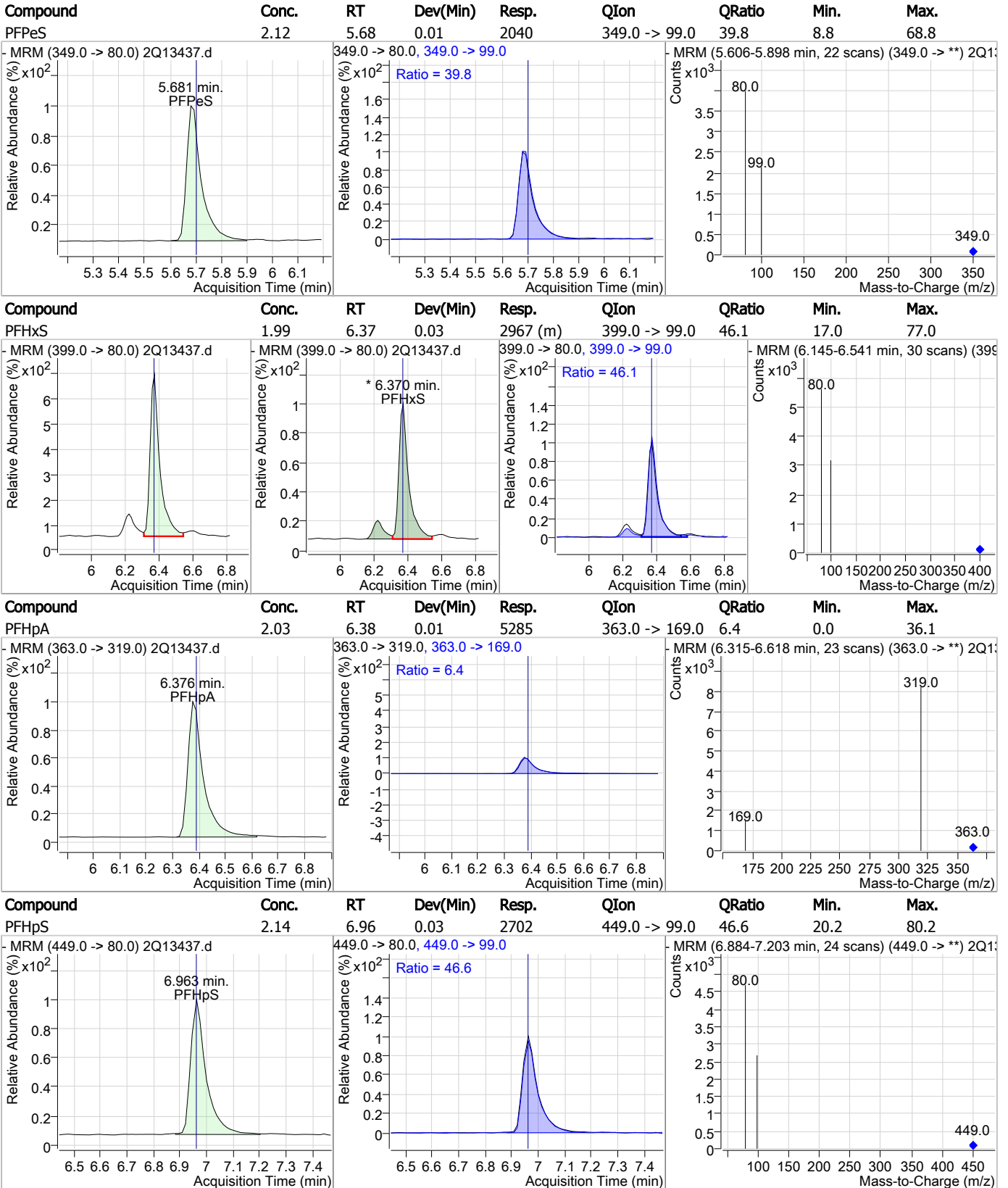
10.5.2 10

### Perfluorinated Compounds by LC/MS/MS



10.5.2 10

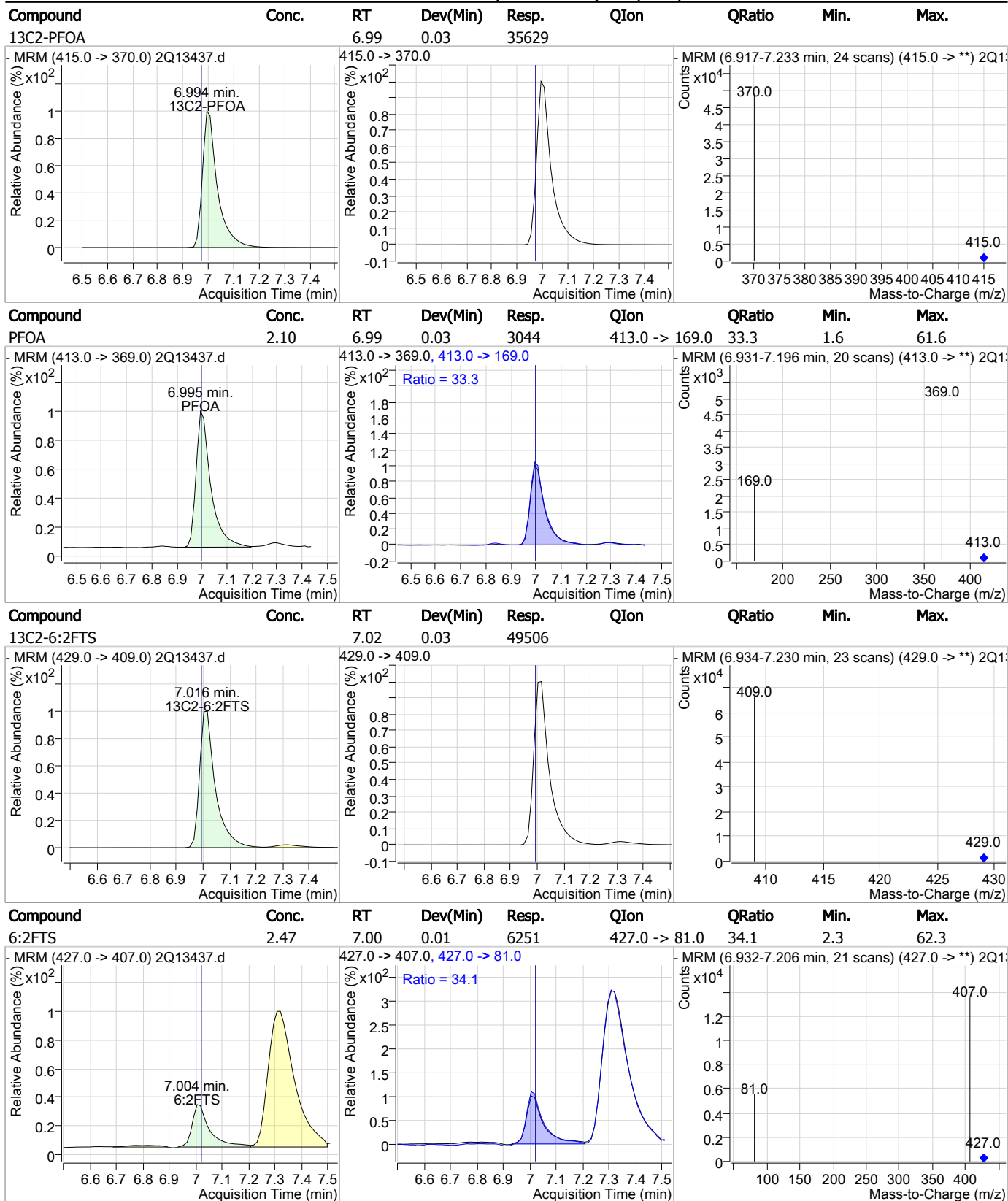
### Perfluorinated Compounds by LC/MS/MS



10.5.2 10

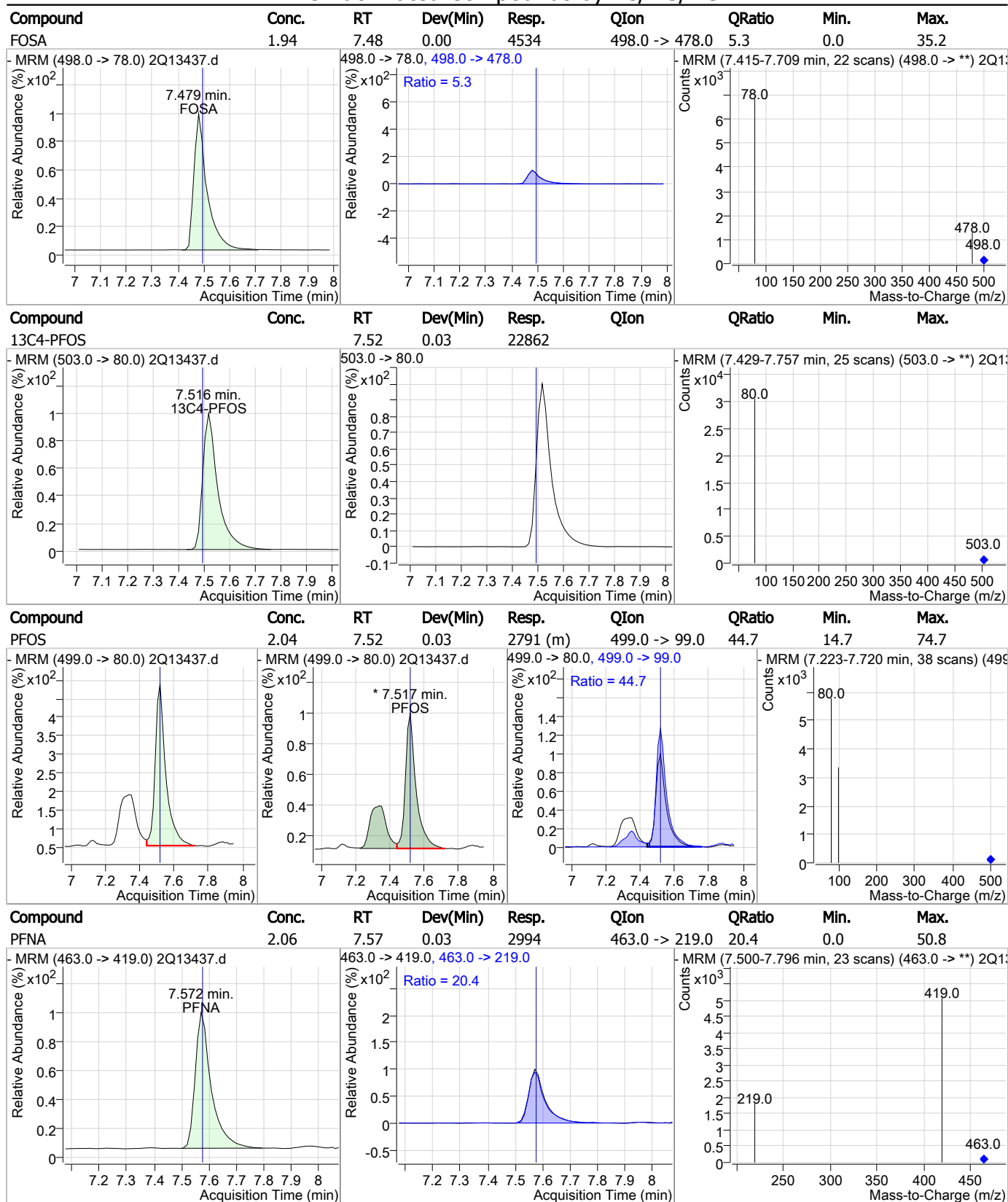


### Perfluorinated Compounds by LC/MS/MS



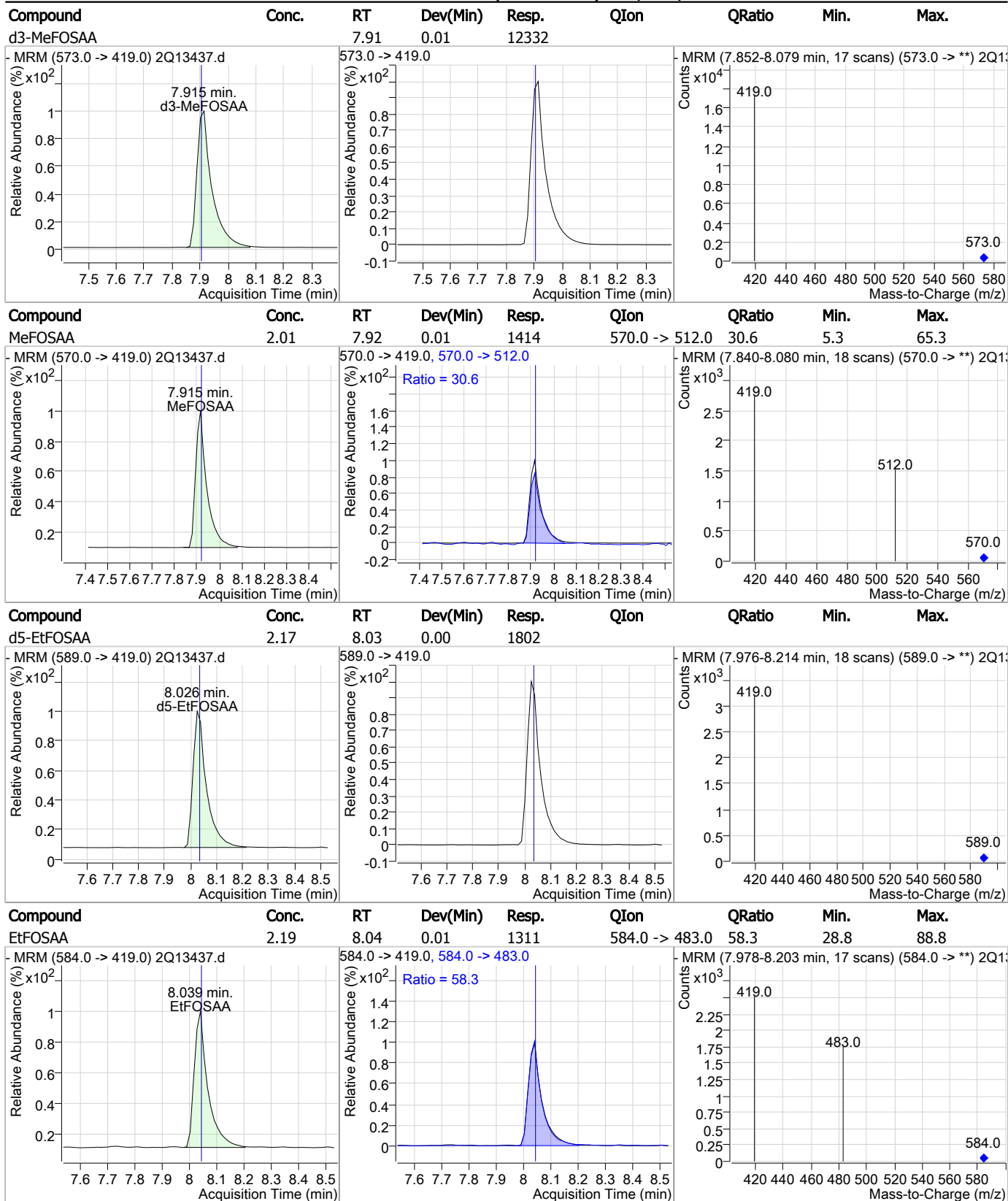
10.5.2 10

### Perfluorinated Compounds by LC/MS/MS



10.5.2 10

### Perfluorinated Compounds by LC/MS/MS



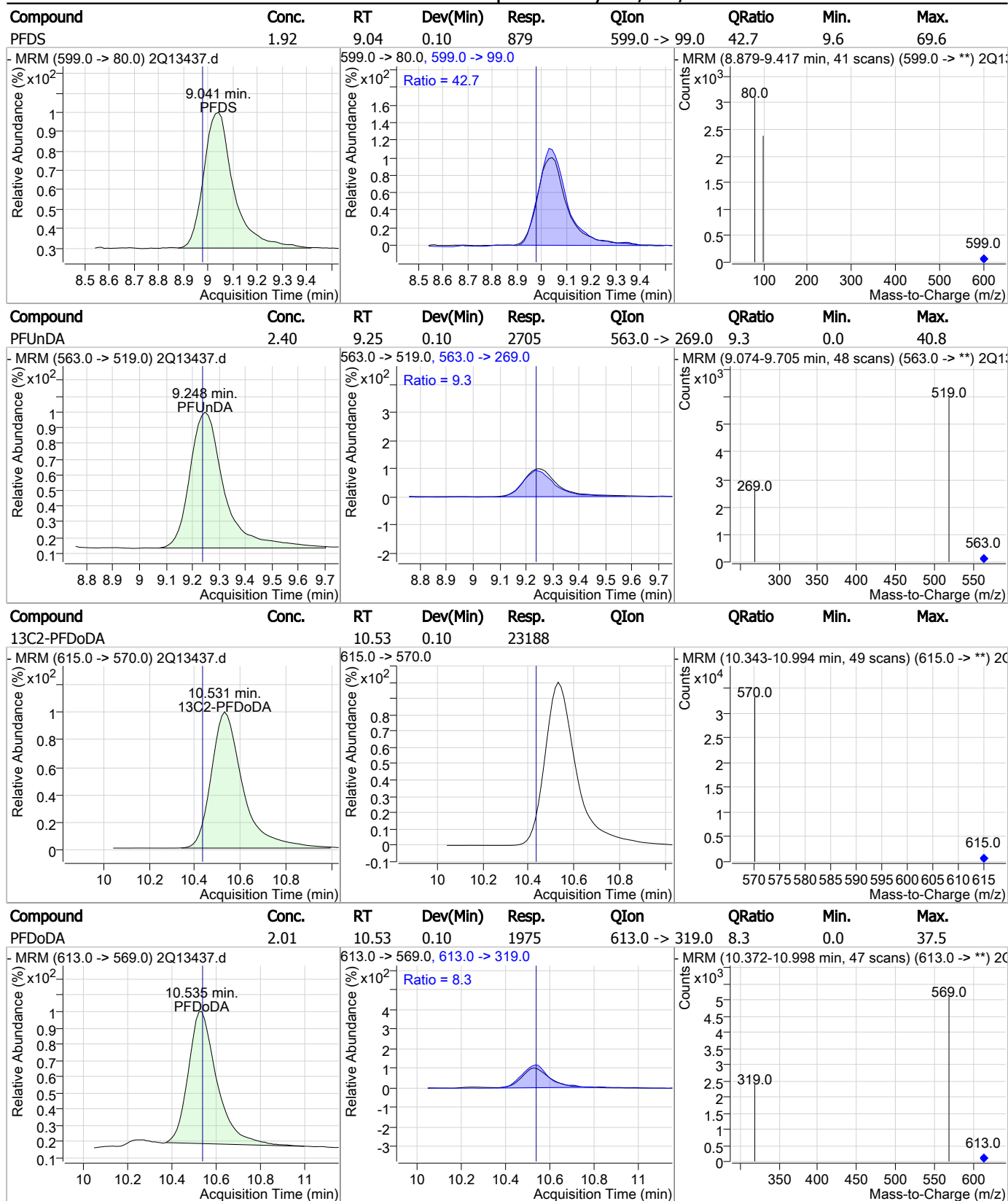
10.5.2 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.13	8.09	0.03	1722	549.0 -> 99.0	56.1	23.0	83.0
13C2-PFDA	2.03	8.19	0.04	4586				
PFDA	2.19	8.19	0.04	2818	513.0 -> 219.0	14.3	0.0	44.5
8:2FTS	2.17	8.30	0.05	4826	527.0 -> 81.0	24.4	0.0	51.9

10.5.2 10

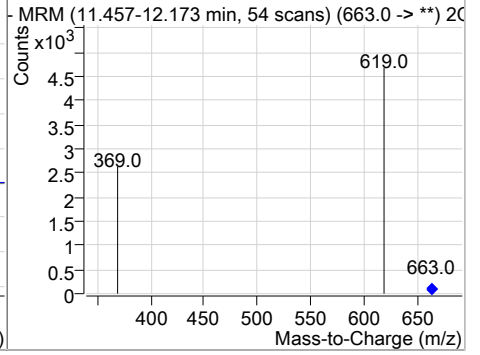
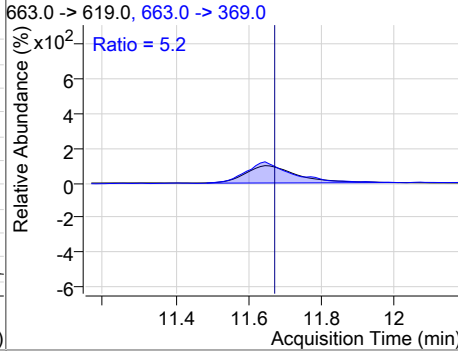
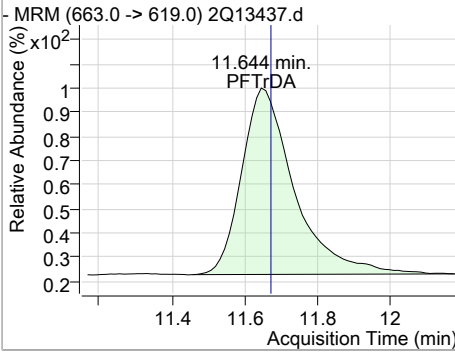
### Perfluorinated Compounds by LC/MS/MS



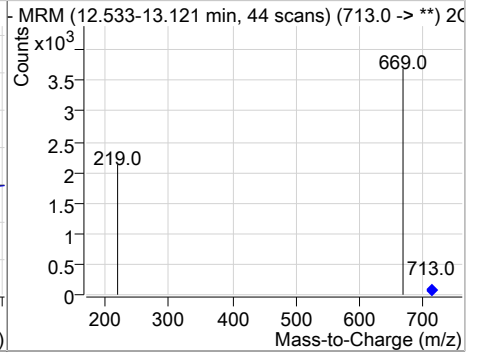
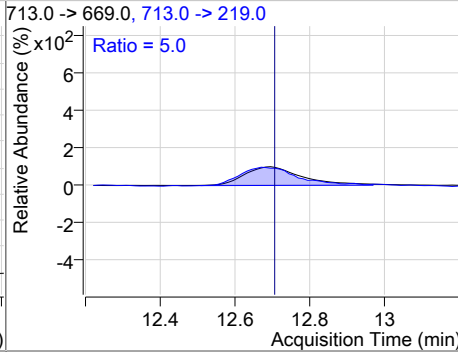
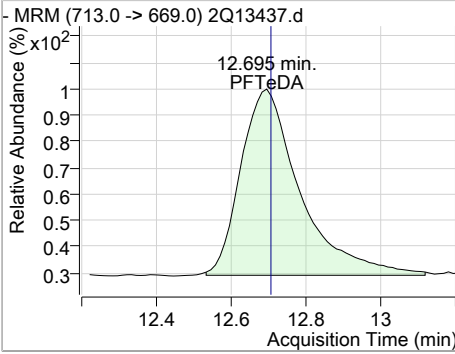
10.5.2 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	1.94	11.64	0.09	1543	663.0 -> 369.0	5.2	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.01	12.70	0.11	1202	713.0 -> 219.0	5.0	0.0	35.3



10.5.2 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13437.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 12:36      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.37	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.52	Split peak

10.5.2.1  
10

### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13438.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 12:55:23 PM  
 Sample Name : IC249-5  
 Vial : Vial 4  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.003	429.0 -> 409.0	45242	20.00 µg/L	0.013
13C2-PFDoDA	10.506	615.0 -> 570.0	21757	20.00 µg/L	0.075
13C2-PFOA	6.994	415.0 -> 370.0	31864	20.00 µg/L	0.025
13C3-PFPeA	4.672	266.0 -> 222.0	40574	20.00 µg/L	0.013
13C4-PFOS	7.501	503.0 -> 80.0	20182	20.00 µg/L	0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	10171	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.174	515.0 -> 470.0	10506	5.20 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 26.0%		
13C2-PFHxA	5.638	315.0 -> 270.0	10352	5.26 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 26.3%		
d5-EtFOSAA	8.026	589.0 -> 419.0	3427	5.02 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 25.1%		
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	8641	5.09 µg/L	99
6:2FTS	7.004	427.0 -> 407.0	11472	4.99 µg/L	97
8:2FTS	8.272	527.0 -> 507.0	10421	5.15 µg/L	97
EtFOSAA	8.039	584.0 -> 419.0	2485	5.04 µg/L	98
FOSA	7.479	498.0 -> 78.0	9584	5.00 µg/L	98
MeFOSAA	7.915	570.0 -> 419.0	2904	5.01 µg/L	98
PFBA	3.290	213.0 -> 169.0	4120	5.35 µg/L	100
PFBS	4.804	299.0 -> 80.0	5941	4.98 µg/L	99
PFDA	8.175	513.0 -> 469.0	5982	5.21 µg/L	99
PFDoDA	10.497	613.0 -> 569.0	4743	5.15 µg/L	99
PFDS	9.004	599.0 -> 80.0	1953	4.83 µg/L	99
PFHpA	6.364	363.0 -> 319.0	11812	5.07 µg/L	100
PFHpS	6.947	449.0 -> 80.0	5315	4.77 µg/L	100
PFHxA	5.627	313.0 -> 269.0	4009	5.21 µg/L	98
PFHxS	6.357	399.0 -> 80.0	6426	4.89 µg/L	m 99
PFNA	7.559	463.0 -> 419.0	6435	4.96 µg/L	100
PFNS	8.082	549.0 -> 80.0	3722	5.23 µg/L	97
PFOA	6.982	413.0 -> 369.0	6642	5.13 µg/L	99
PFOS	7.502	499.0 -> 80.0	5962	4.93 µg/L	m 99
PFPeA	4.676	263.0 -> 219.0	15594	4.92 µg/L	100
PFPeS	5.668	349.0 -> 80.0	4487	4.89 µg/L	99
PFTeDA	12.670	713.0 -> 669.0	2775	4.94 µg/L	98
PFTTrDA	11.632	663.0 -> 619.0	3846	5.15 µg/L	100
PFUnDA	9.223	563.0 -> 519.0	5671	5.36 µg/L	100

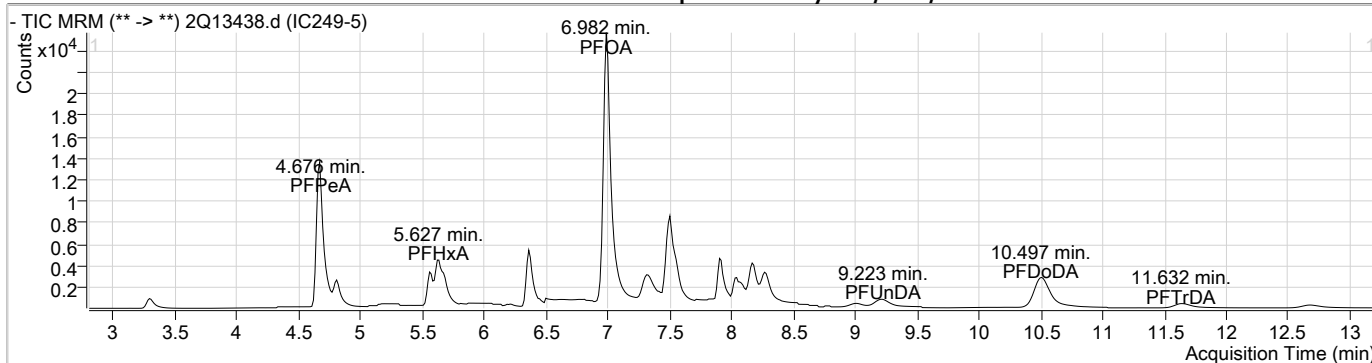
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.3  
**10**

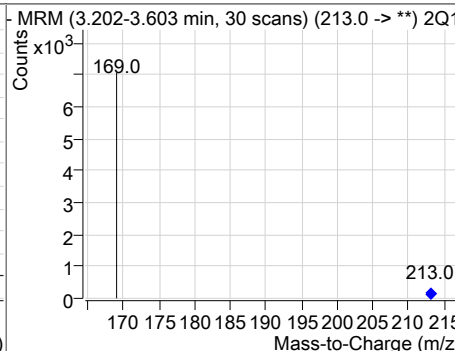
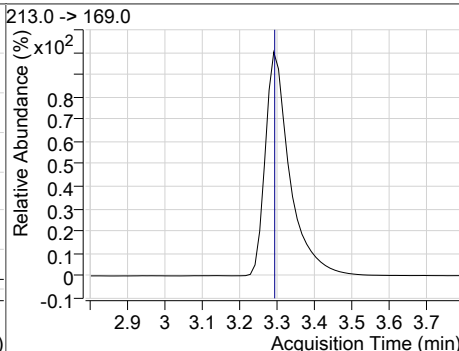
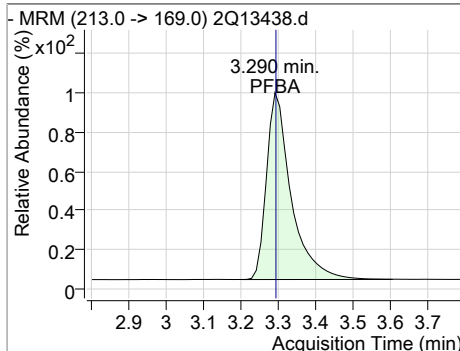




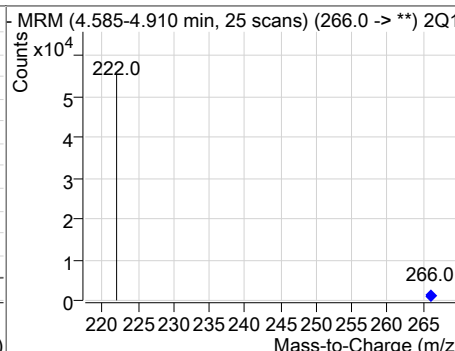
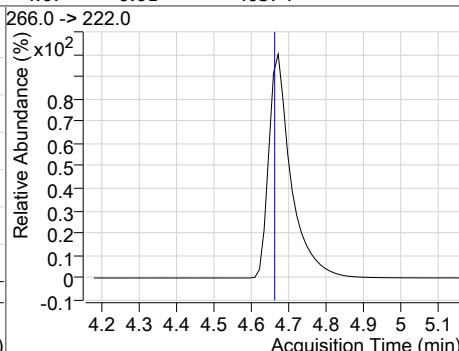
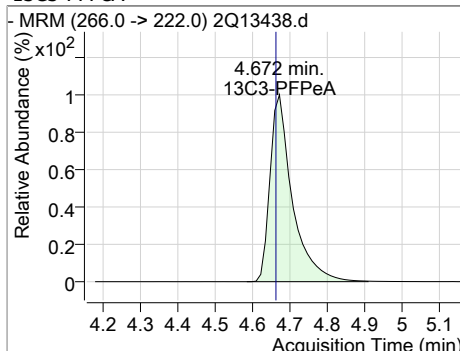
### Perfluorinated Compounds by LC/MS/MS



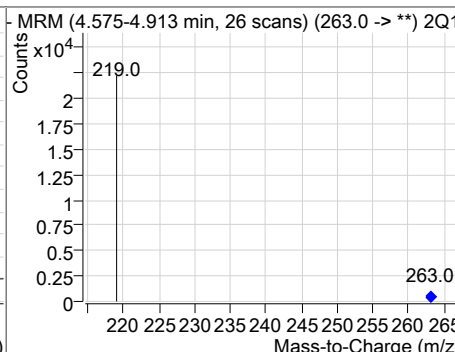
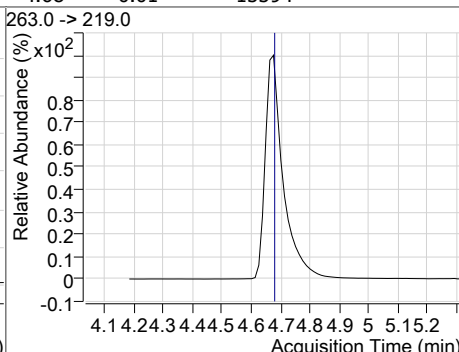
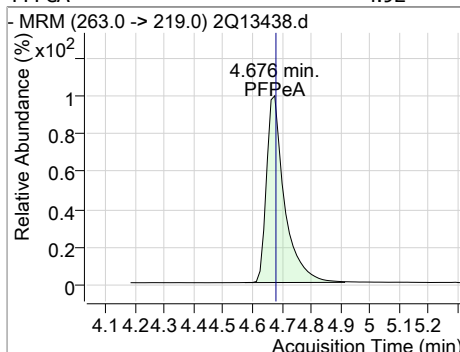
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.35	3.29	0.01	4120				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.67	0.01	40574				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.92	4.68	0.01	15594				



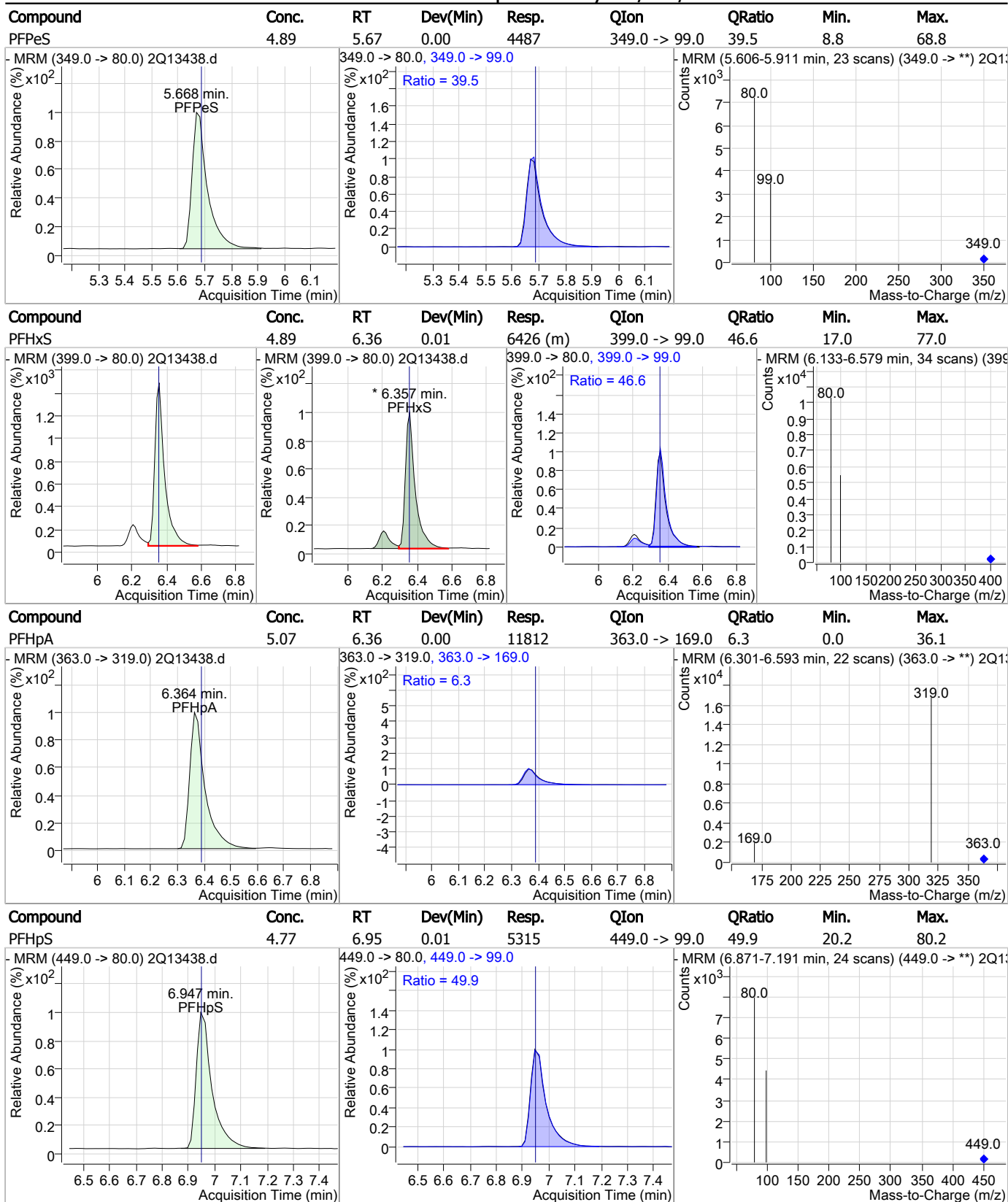
10.5.3 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.98	4.80	0.01	5941	299.0 -> 99.0	38.1	7.8	67.8
4:2FTS	5.09	5.56	0.00	8641	327.0 -> 81.0	44.5	13.7	73.7
13C2-PFHxA	5.26	5.64	0.01	10352	315.0 -> 270.0			
PFHxA	5.21	5.63	0.00	4009	313.0 -> 119.0	9.3	0.0	38.7

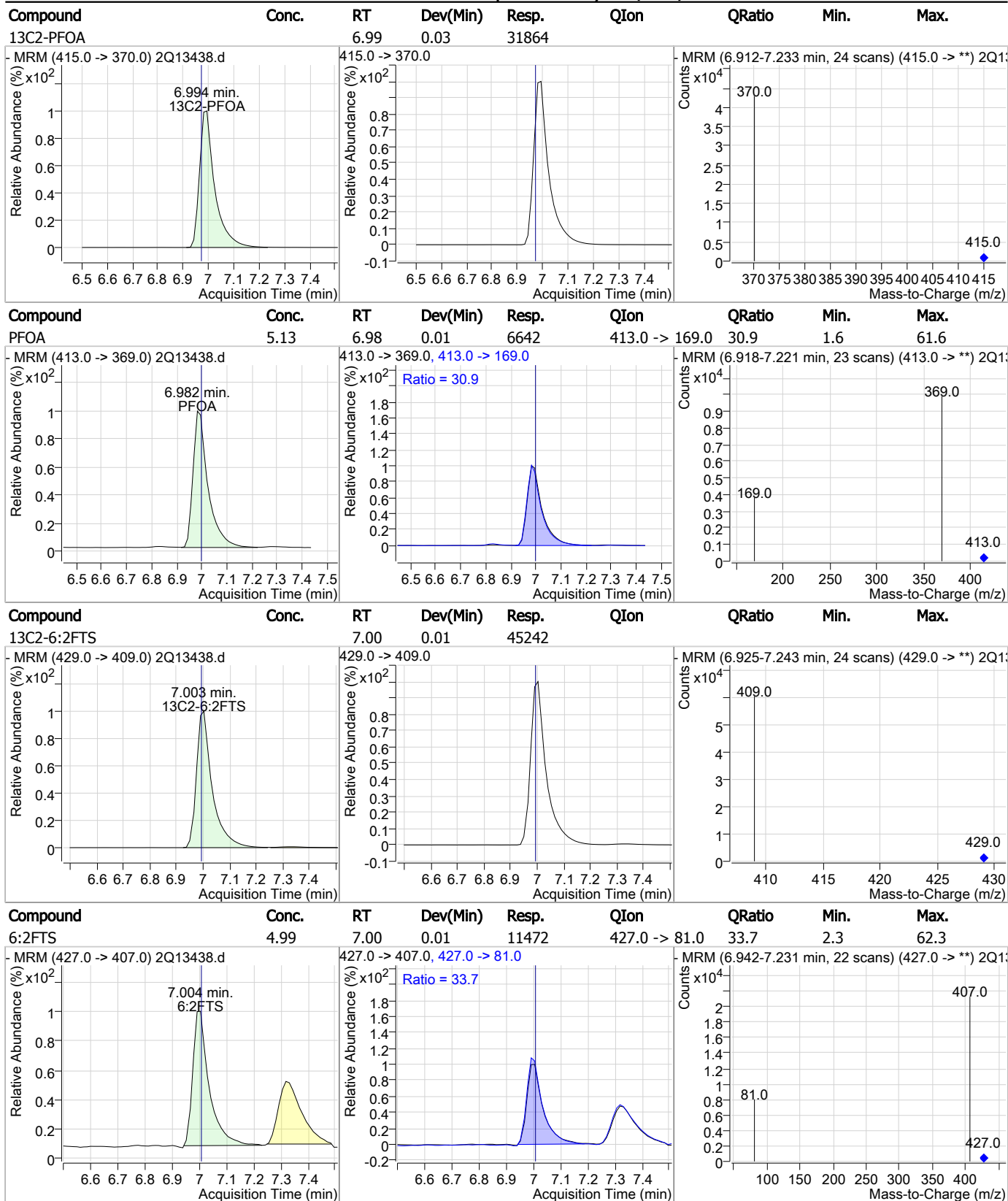
10.5.3 10

### Perfluorinated Compounds by LC/MS/MS



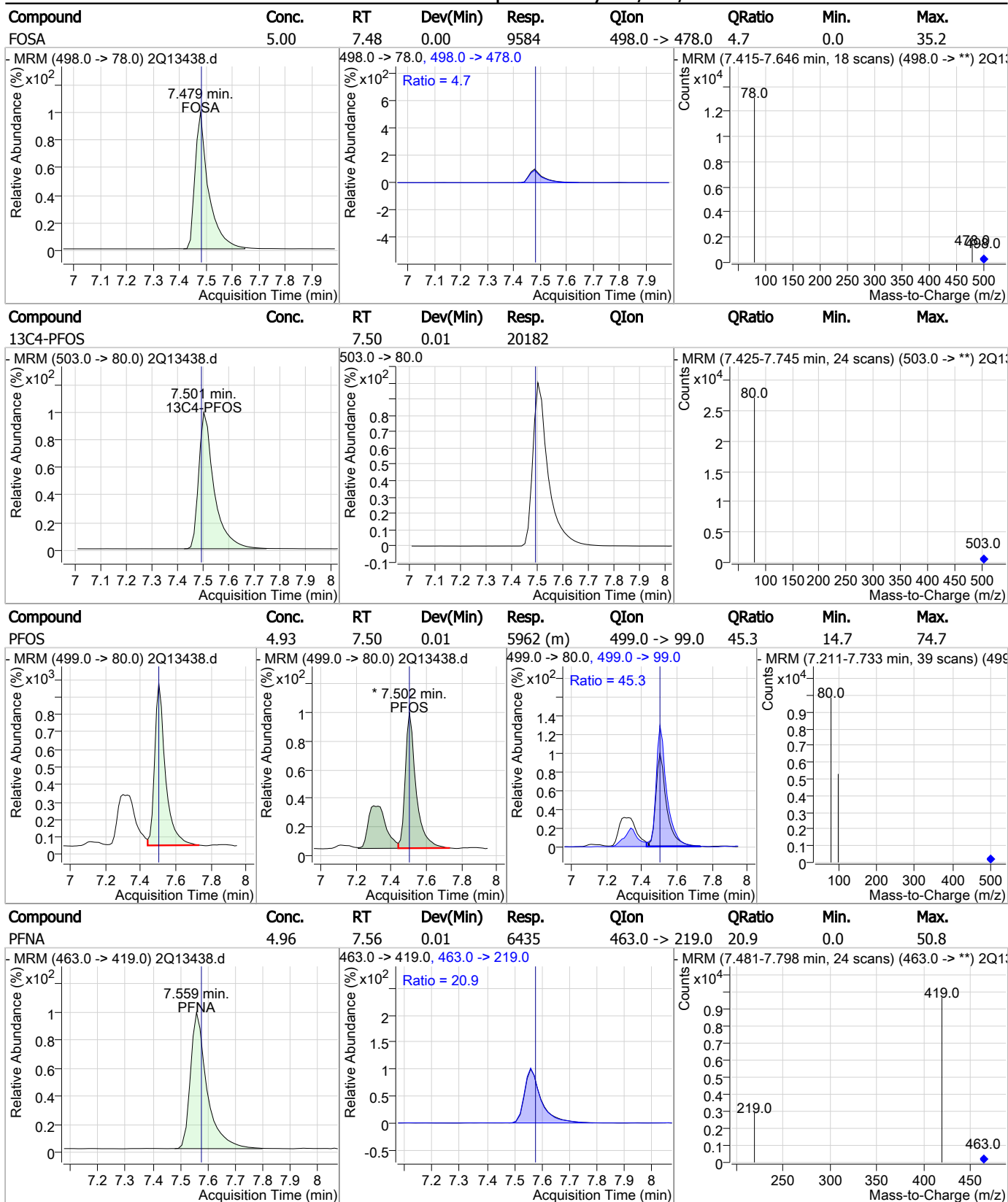
10.5.3 10

### Perfluorinated Compounds by LC/MS/MS



10.5.3 10

### Perfluorinated Compounds by LC/MS/MS



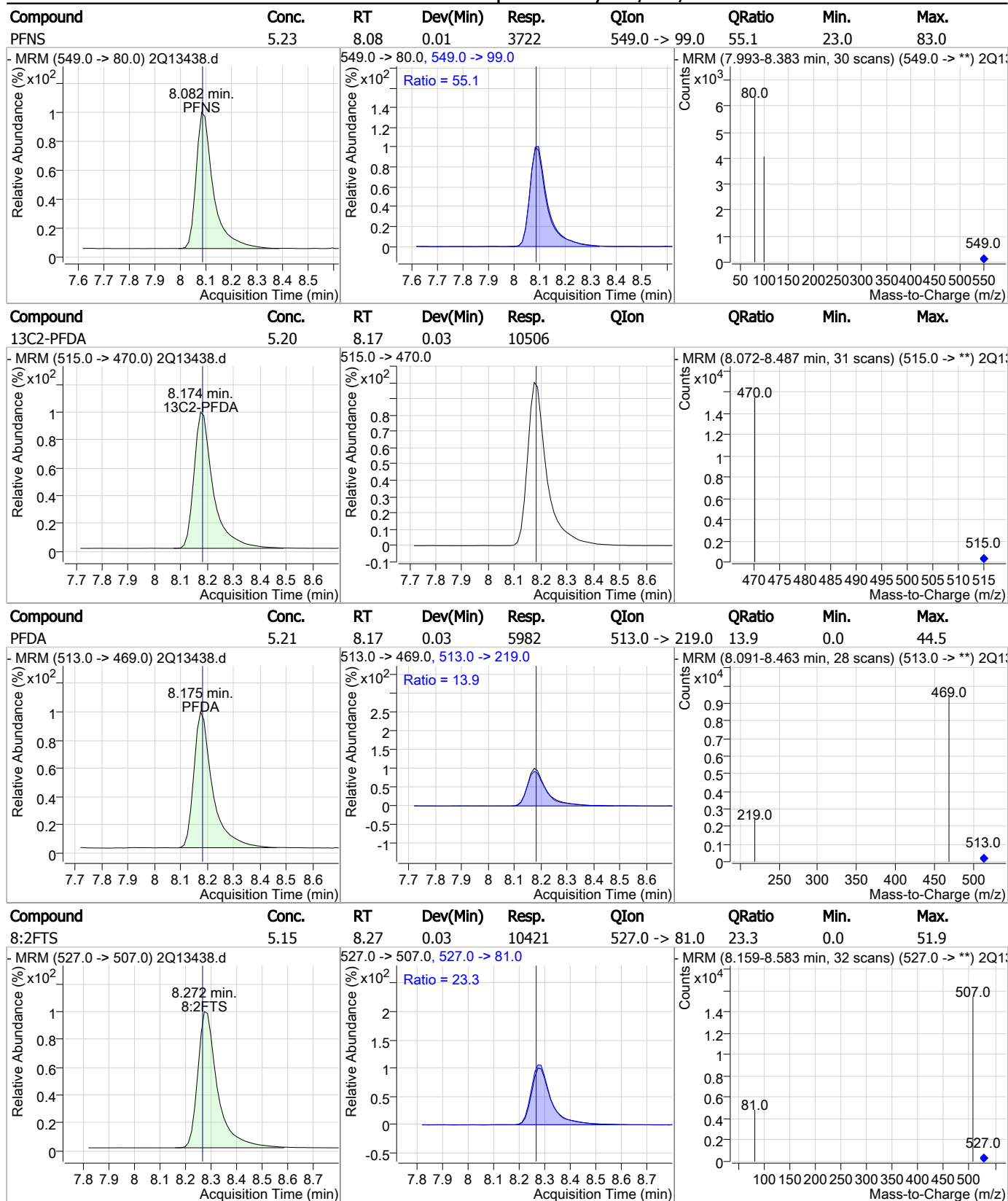
10.5.3 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10171				
MeFOSAA	5.01	7.92	0.01	2904	570.0 -> 512.0	36.3	5.3	65.3
d5-EtFOSAA	5.02	8.03	0.00	3427				
EtFOSAA	5.04	8.04	0.01	2485	584.0 -> 483.0	57.0	28.8	88.8

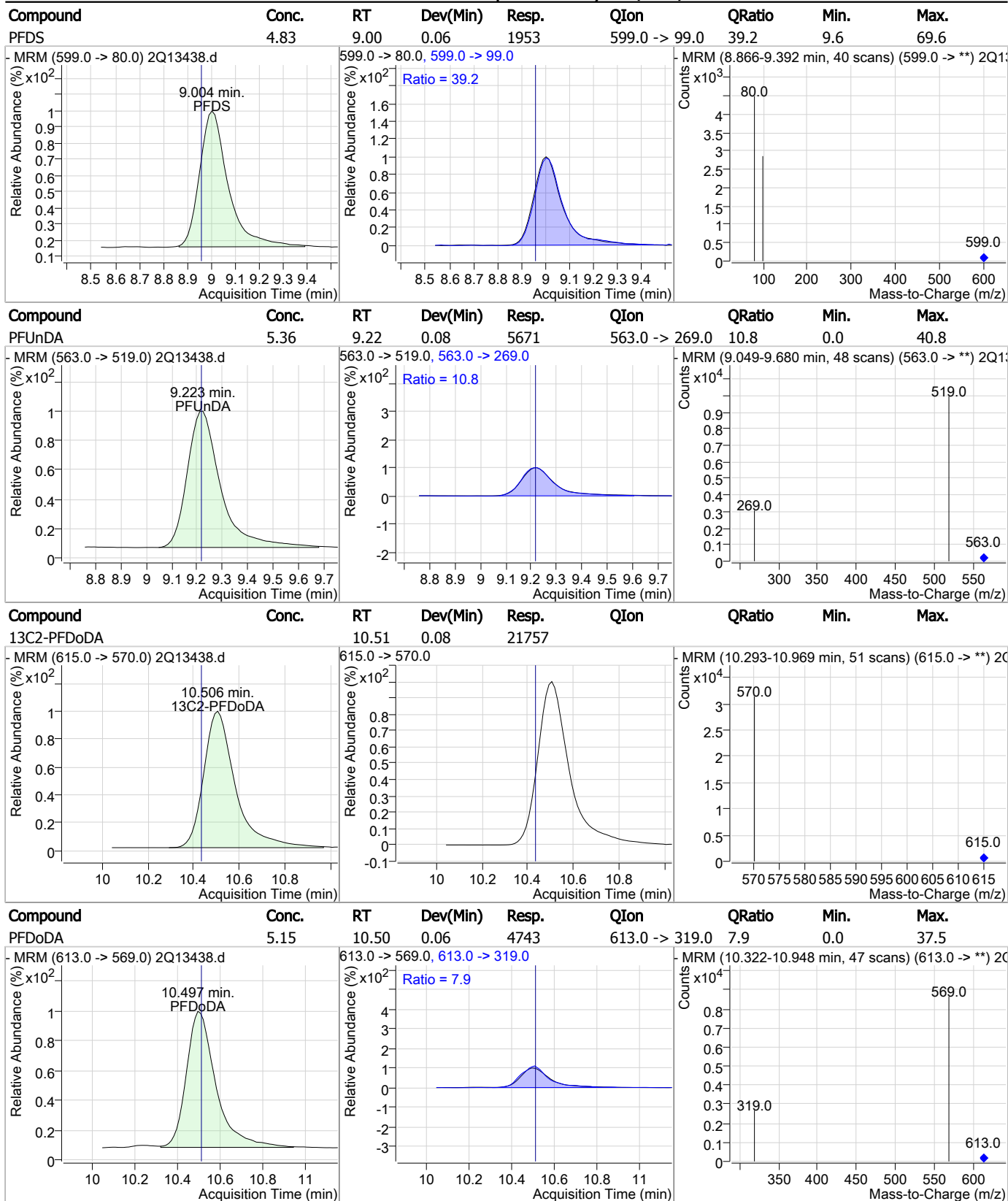
10.5.3 10

### Perfluorinated Compounds by LC/MS/MS



10.5.3 10

### Perfluorinated Compounds by LC/MS/MS

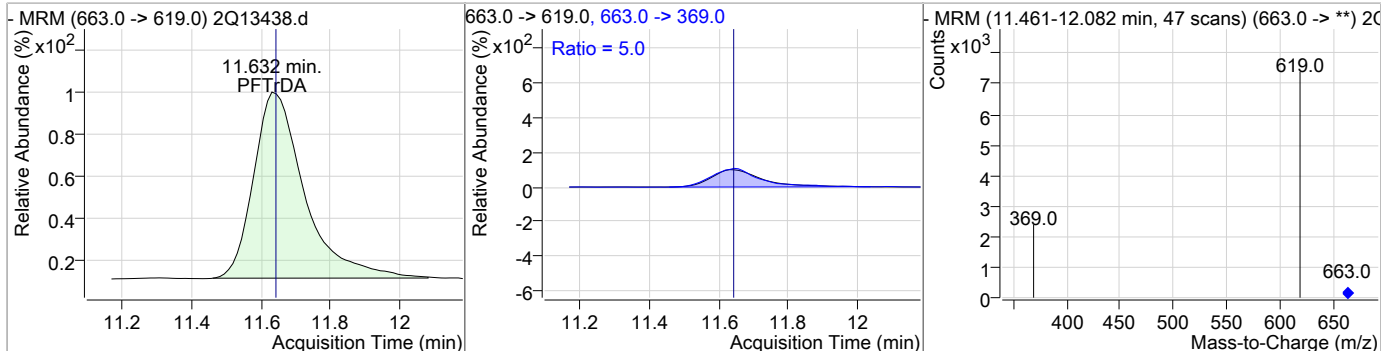


10.5.3 10

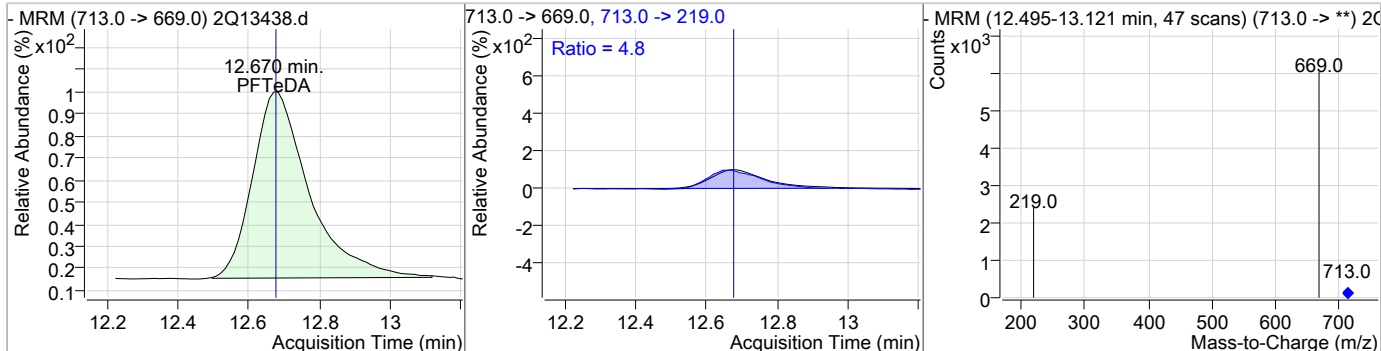


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.15	11.63	0.08	3846	663.0 -> 369.0	5.0	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.94	12.67	0.09	2775	713.0 -> 219.0	4.8	0.0	35.3



10.5.3 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13438.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 12:55      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.50	Split peak

10.5.3.1

10

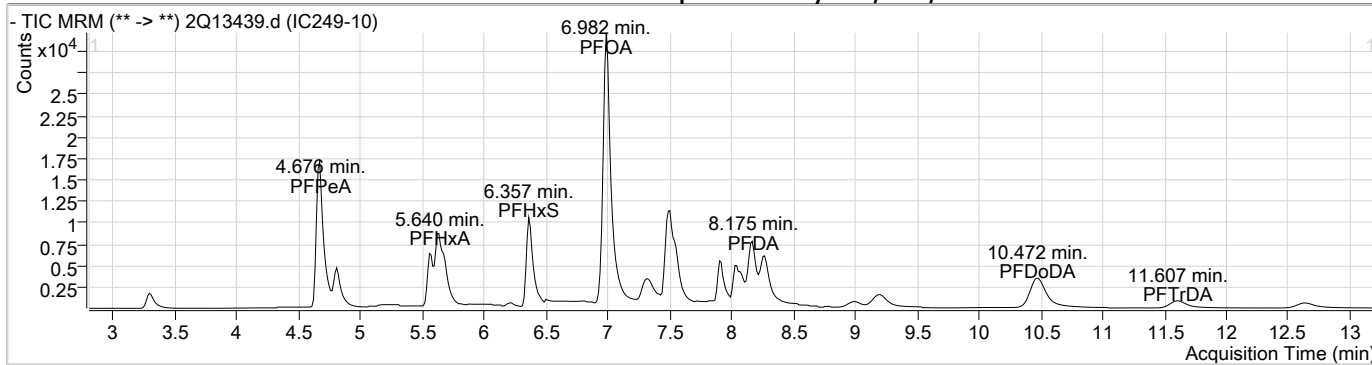
## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13439.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 1:14:13 PM  
 Sample Name : IC249-10  
 Vial : Vial 5  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

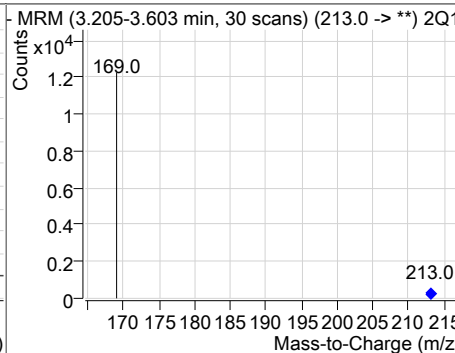
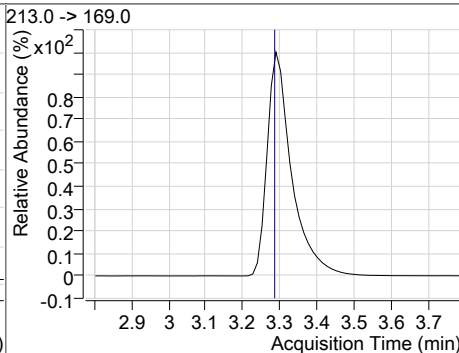
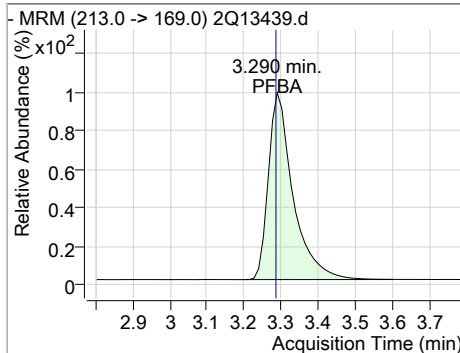
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.003	429.0 -> 409.0	45255	20.00 µg/L	0.013
13C2-PFDoDA	10.468	615.0 -> 570.0	22560	20.00 µg/L	0.038
13C2-PFOA	6.981	415.0 -> 370.0	32463	20.00 µg/L	0.013
13C3-PFPeA	4.672	266.0 -> 222.0	40552	20.00 µg/L	0.013
13C4-PFOS	7.501	503.0 -> 80.0	19914	20.00 µg/L	0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	10007	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.174	515.0 -> 470.0	20671	10.04 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 50.2%	
13C2-PFHxA	5.638	315.0 -> 270.0	20874	10.41 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 52.0%	
d5-EtFOSAA	8.026	589.0 -> 419.0	6674	9.96 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.8%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	17420	10.37 µg/L	100
6:2FTS	6.991	427.0 -> 407.0	22873	10.07 µg/L	98
8:2FTS	8.272	527.0 -> 507.0	20527	10.23 µg/L	96
EtFOSAA	8.027	584.0 -> 419.0	4899	10.13 µg/L	100
FOSA	7.479	498.0 -> 78.0	19083	10.19 µg/L	100
MeFOSAA	7.915	570.0 -> 419.0	5636	9.89 µg/L	100
PFBA	3.290	213.0 -> 169.0	8040	10.24 µg/L	100
PFBS	4.804	299.0 -> 80.0	11779	10.00 µg/L	99
PFDA	8.175	513.0 -> 469.0	11805	10.09 µg/L	100
PFDoDA	10.472	613.0 -> 569.0	9812	10.28 µg/L	98
PFDS	8.991	599.0 -> 80.0	3838	9.63 µg/L	98
PFHpA	6.364	363.0 -> 319.0	23687	9.97 µg/L	100
PFHpS	6.947	449.0 -> 80.0	10600	9.65 µg/L	100
PFHxA	5.640	313.0 -> 269.0	8107	10.34 µg/L	99
PFHxS	6.357	399.0 -> 80.0	12903	9.95 µg/L	m 99
PFNA	7.559	463.0 -> 419.0	12844	9.72 µg/L	100
PFNS	8.082	549.0 -> 80.0	7151	10.18 µg/L	97
PFOA	6.982	413.0 -> 369.0	12822	9.73 µg/L	97
PFOS	7.502	499.0 -> 80.0	11847	9.92 µg/L	m 98
PFPeA	4.676	263.0 -> 219.0	31282	9.88 µg/L	100
PFPeS	5.681	349.0 -> 80.0	8961	9.76 µg/L	98
PFTeDA	12.633	713.0 -> 669.0	5974	10.26 µg/L	100
PFTrDA	11.607	663.0 -> 619.0	7806	10.08 µg/L	99
PFUnDA	9.198	563.0 -> 519.0	11554	10.53 µg/L	100

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

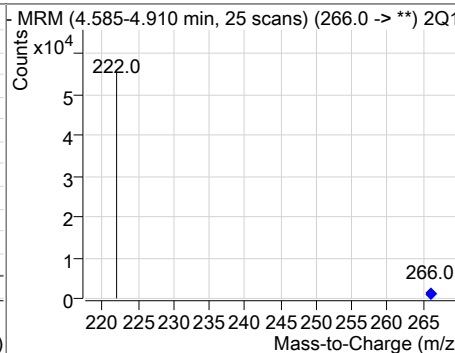
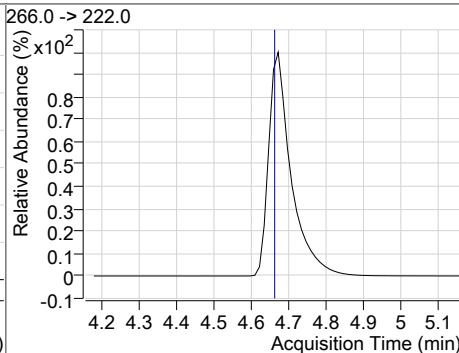
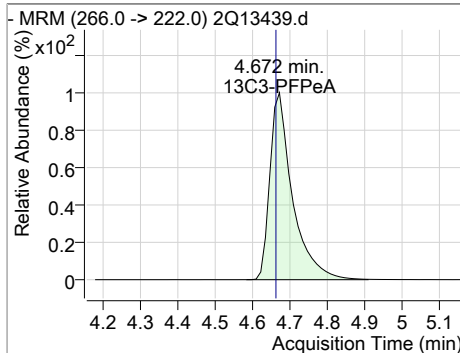
### Perfluorinated Compounds by LC/MS/MS



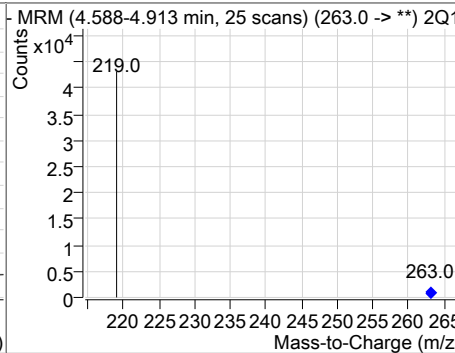
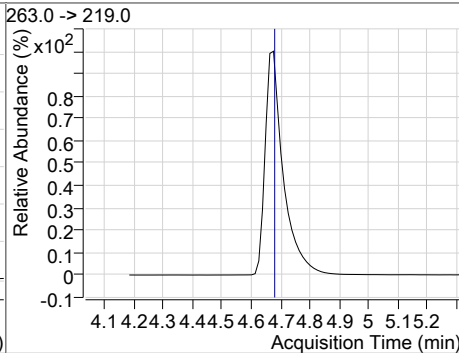
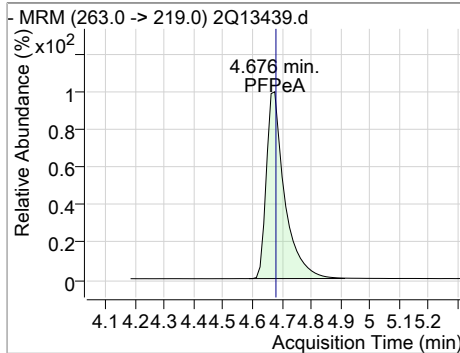
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.24	3.29	0.01	8040				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.67	0.01	40552				

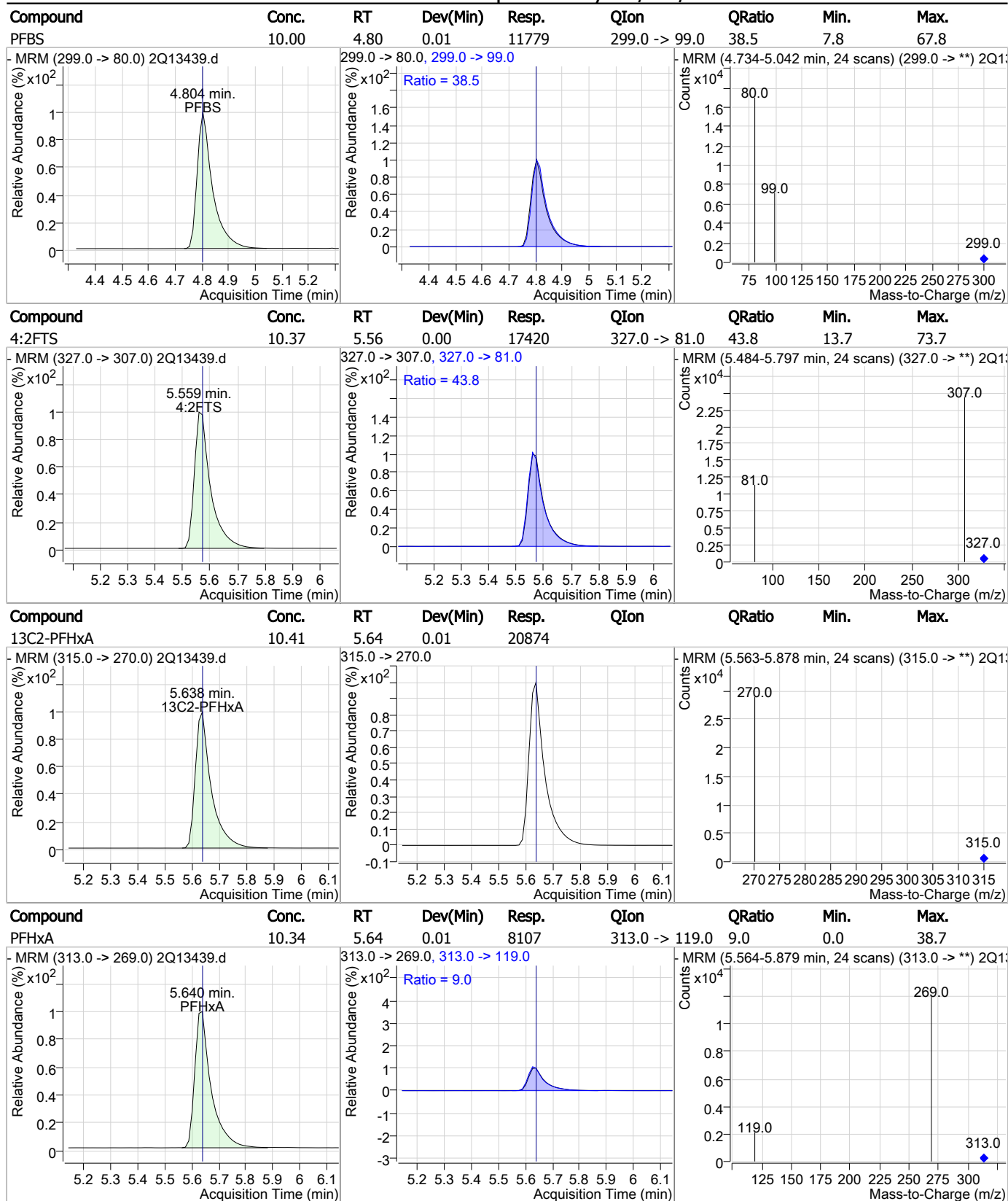


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.88	4.68	0.01	31282				



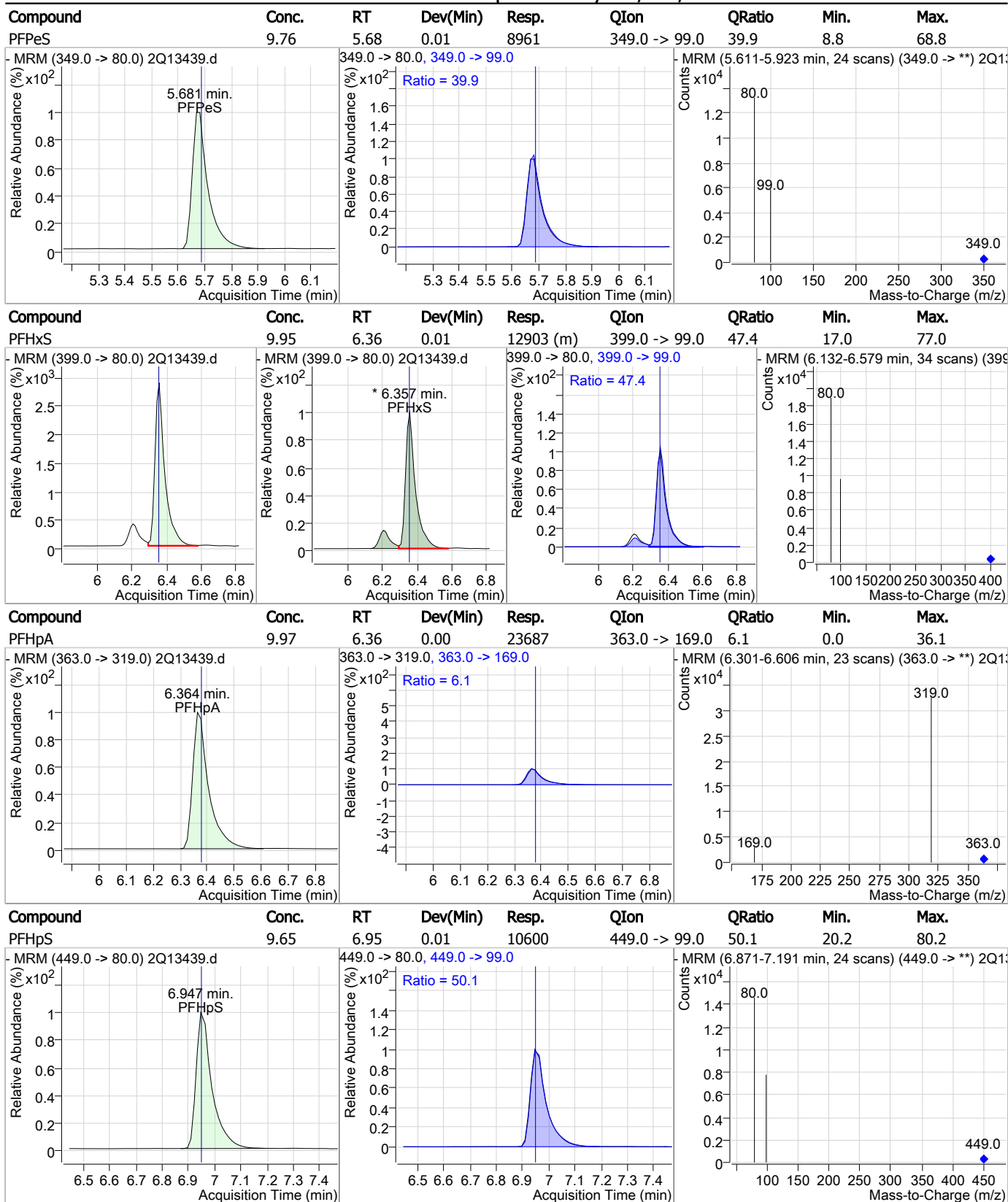
10.5.4 10

### Perfluorinated Compounds by LC/MS/MS



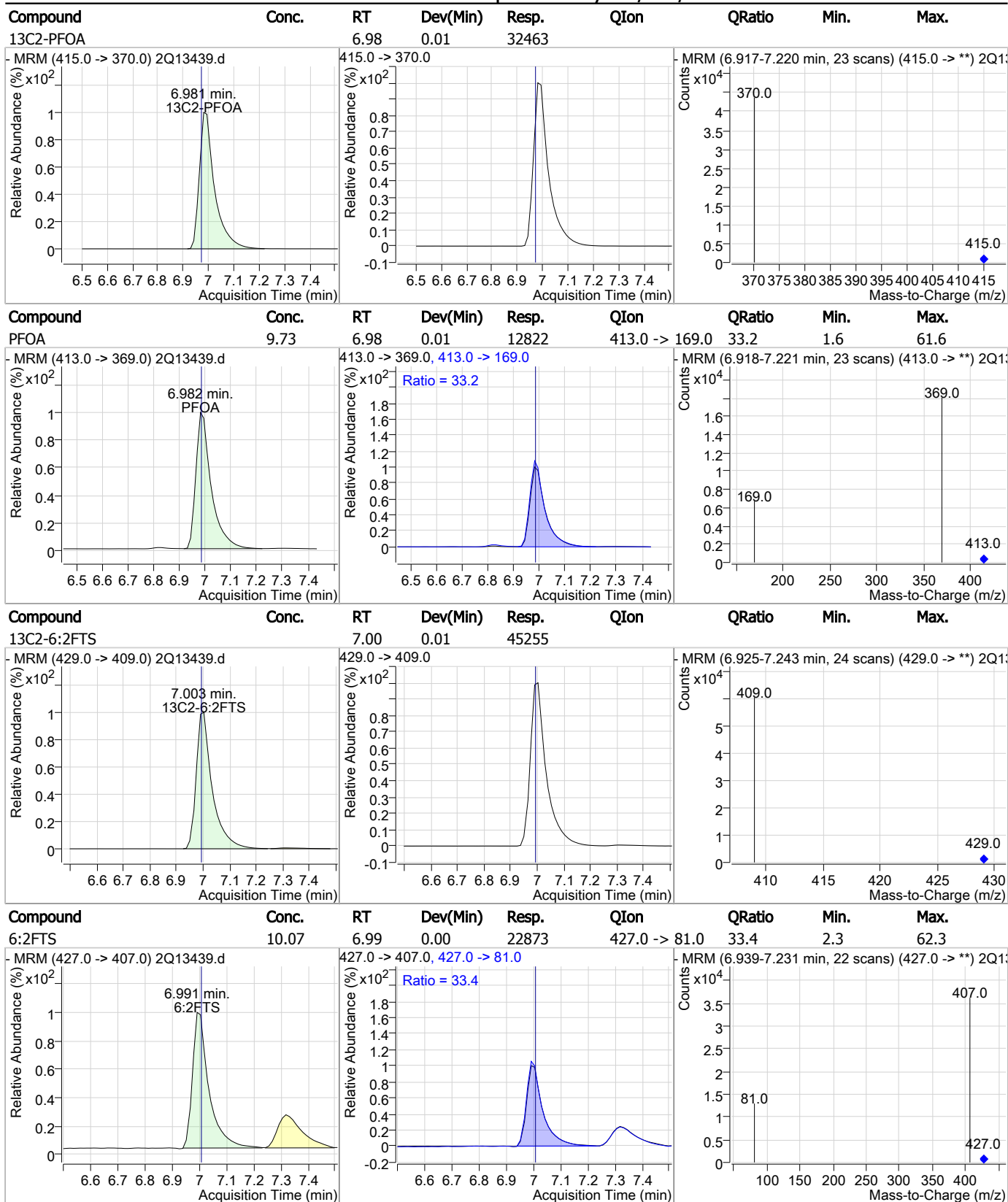
10.5.4 10

### Perfluorinated Compounds by LC/MS/MS



10.5.4  
10

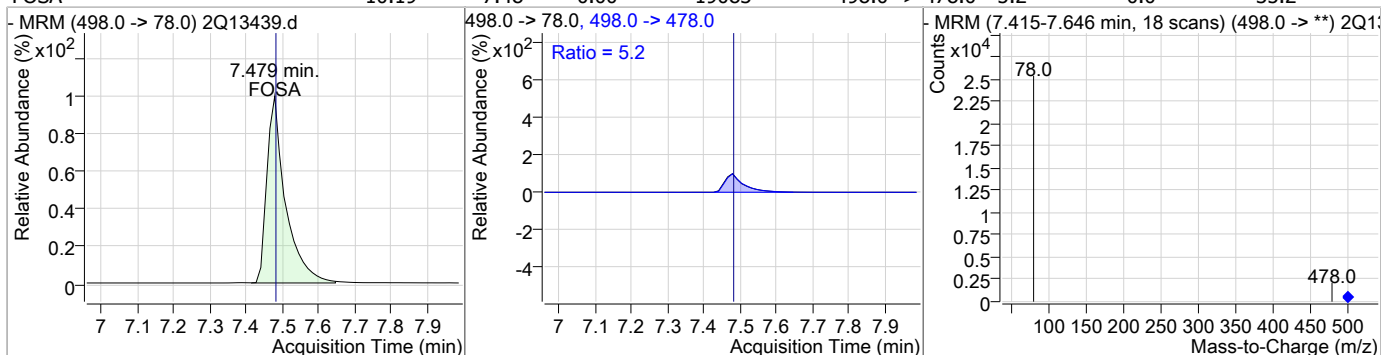
### Perfluorinated Compounds by LC/MS/MS



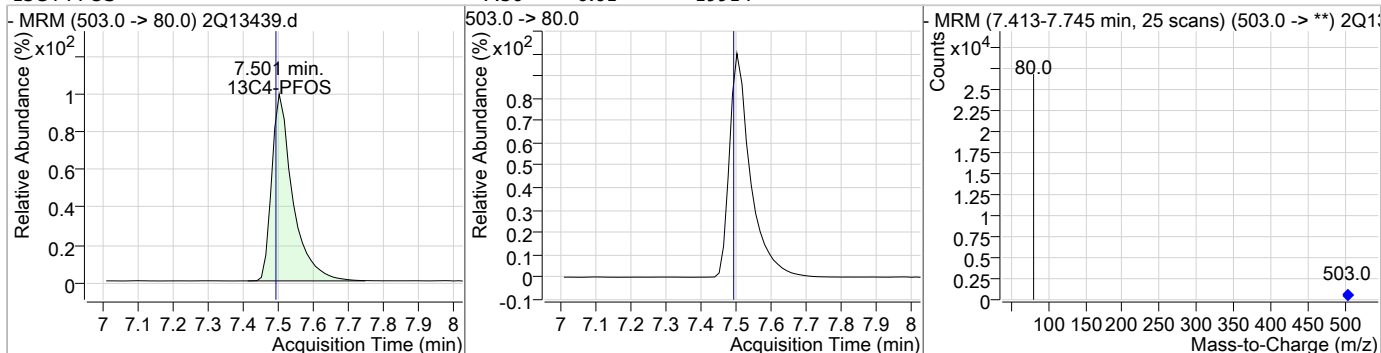
10.5.4 10

### Perfluorinated Compounds by LC/MS/MS

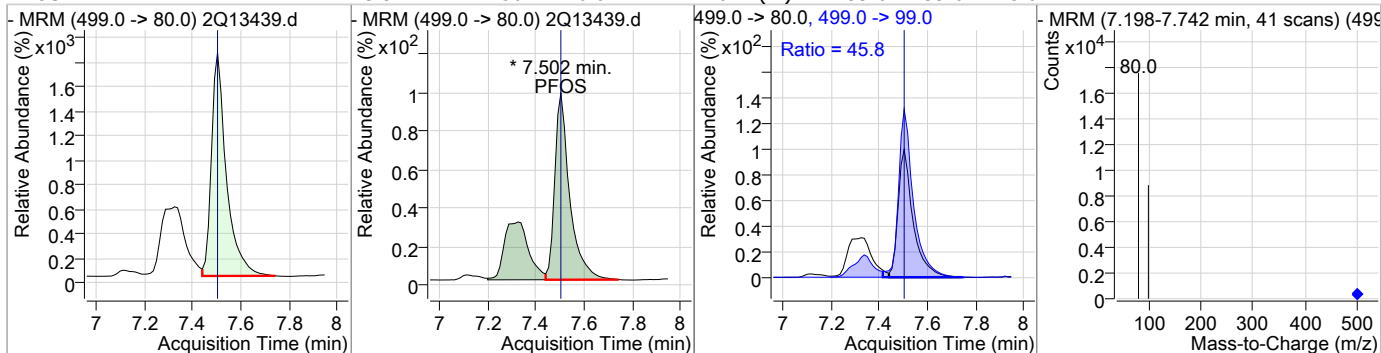
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.19	7.48	0.00	19083	498.0 -> 478.0	5.2	0.0	35.2



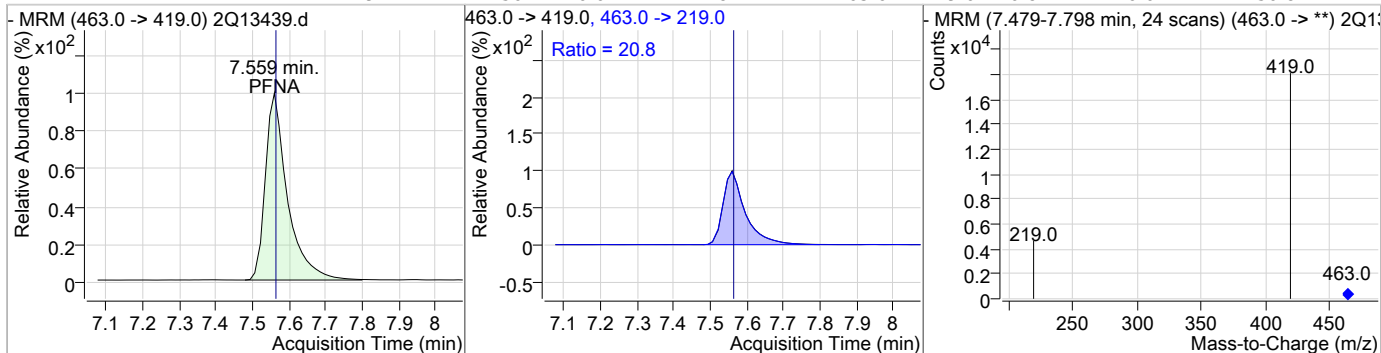
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.50	0.01	19914				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.92	7.50	0.01	11847 (m)	499.0 -> 99.0	45.8	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.72	7.56	0.01	12844	463.0 -> 219.0	20.8	0.0	50.8



10.5.4 10

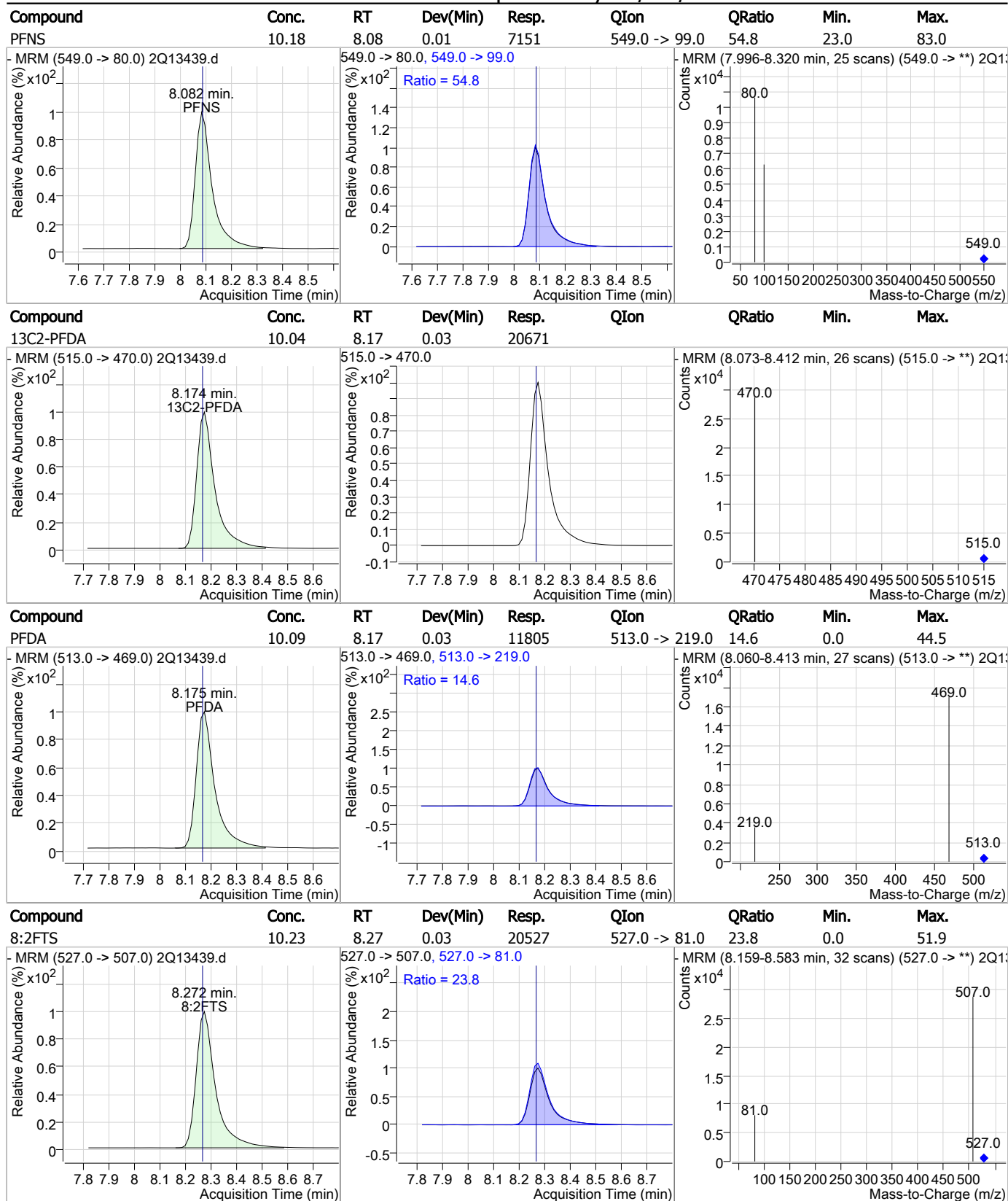


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10007				
-MRM (573.0 -> 419.0) 2Q13439.d			573.0 -> 419.0			-MRM (7.852-8.142 min, 22 scans) (573.0 -> **) 2Q13439.d		
MeFOSAA	9.89	7.92	0.01	5636	570.0 -> 512.0	35.5	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13439.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.853-8.080 min, 17 scans) (570.0 -> **) 2Q13439.d		
d5-EtFOSAA	9.96	8.03	0.00	6674				
-MRM (589.0 -> 419.0) 2Q13439.d			589.0 -> 419.0			-MRM (7.976-8.264 min, 22 scans) (589.0 -> **) 2Q13439.d		
EtFOSAA	10.13	8.03	0.00	4899	584.0 -> 483.0	59.2	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13439.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.977-8.253 min, 21 scans) (584.0 -> **) 2Q13439.d		

10.5.4 10

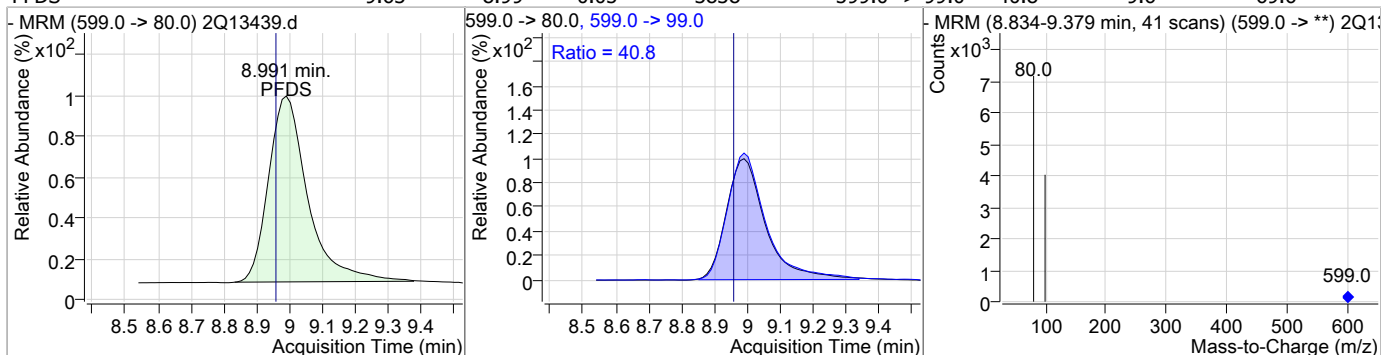
### Perfluorinated Compounds by LC/MS/MS



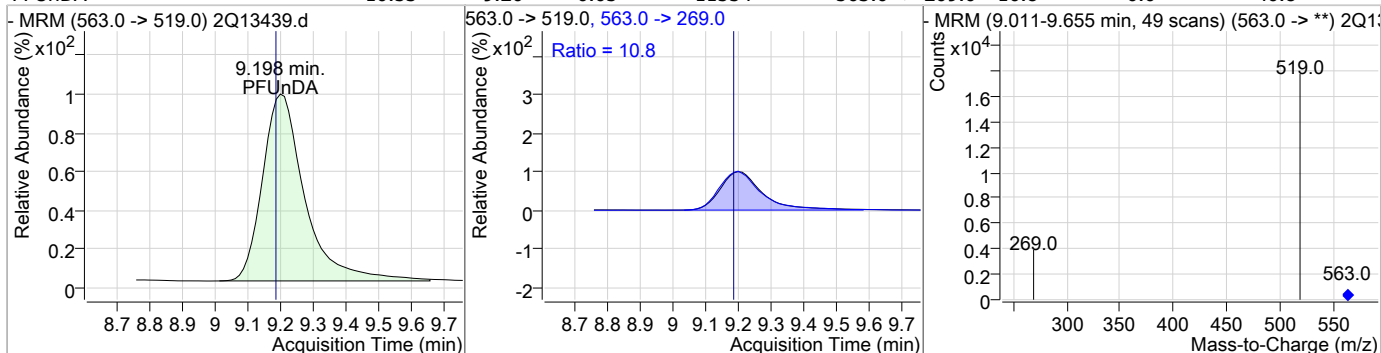
10.5.4 10

### Perfluorinated Compounds by LC/MS/MS

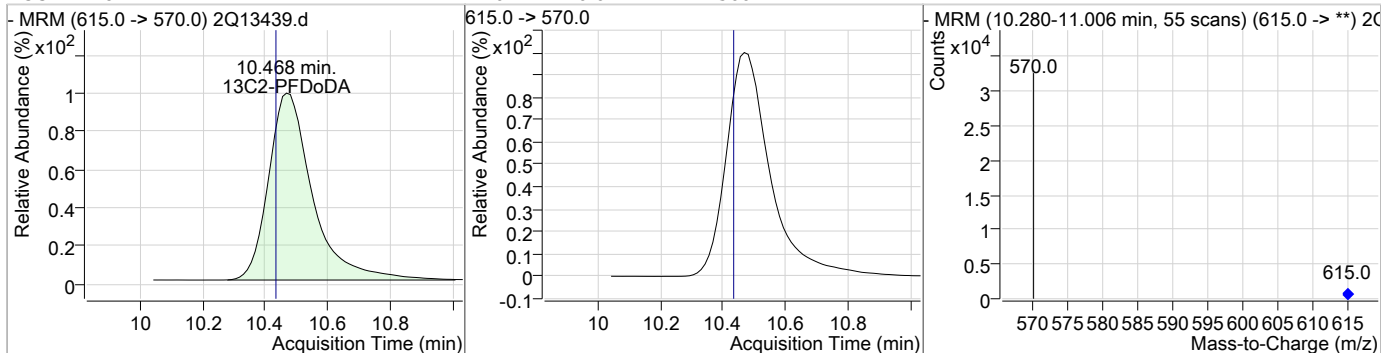
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.63	8.99	0.05	3838	599.0 -> 99.0	40.8	9.6	69.6



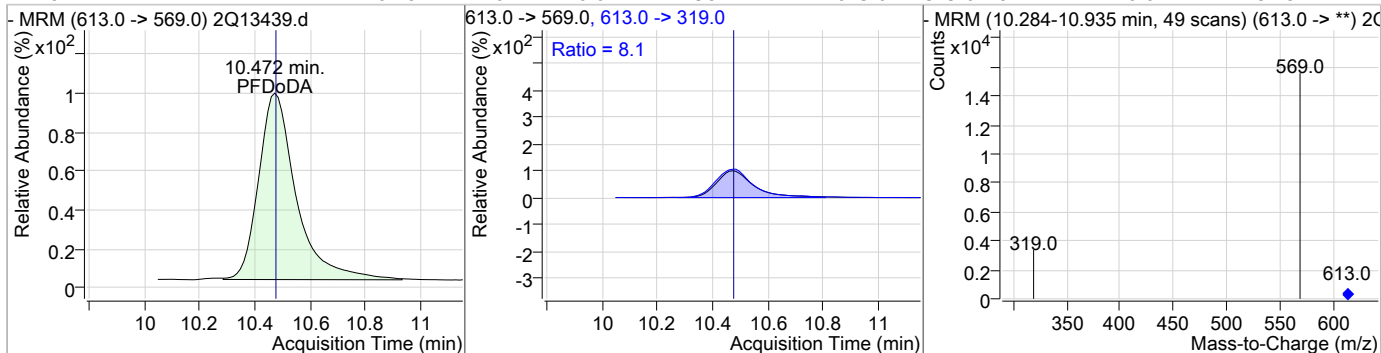
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.53	9.20	0.05	11554	563.0 -> 269.0	10.8	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.47	10.47	0.04	22560	615.0 -> 570.0	8.1	0.0	37.5



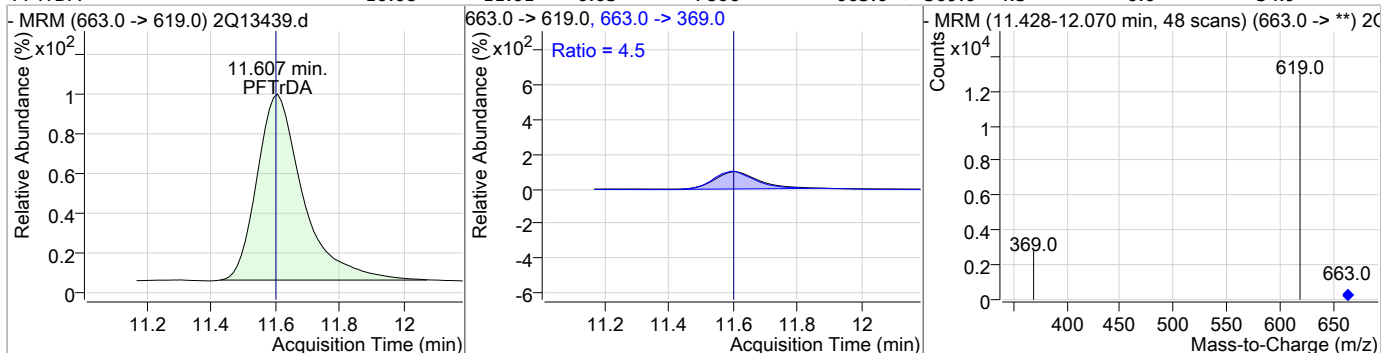
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.28	10.47	0.04	9812	613.0 -> 319.0	8.1	0.0	37.5



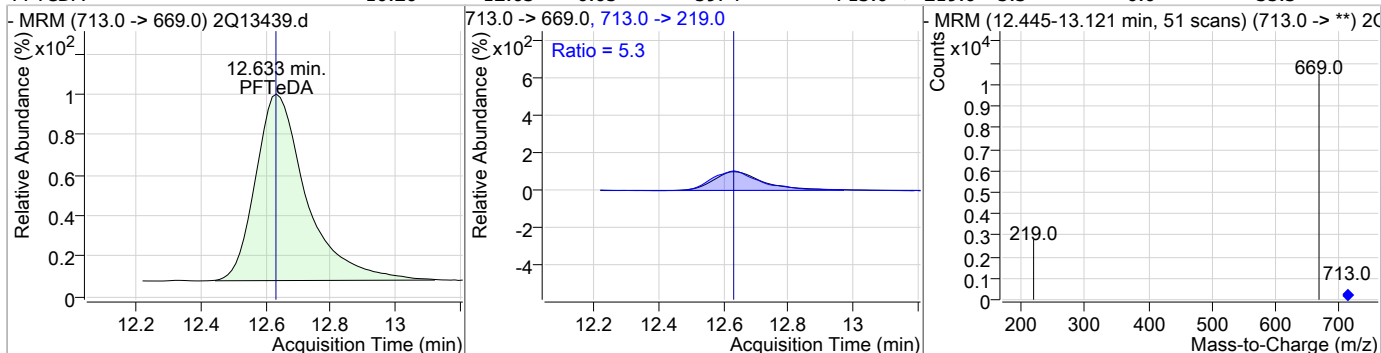
10.5.4 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	10.08	11.61	0.05	7806	663.0 -> 369.0	4.5	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.26	12.63	0.05	5974	713.0 -> 219.0	5.3	0.0	35.3



10.5.4 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13439.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 13:14      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.50	Split peak

10.5.4.1  
10

### Perfluorinated Compounds by LC/MS/MS

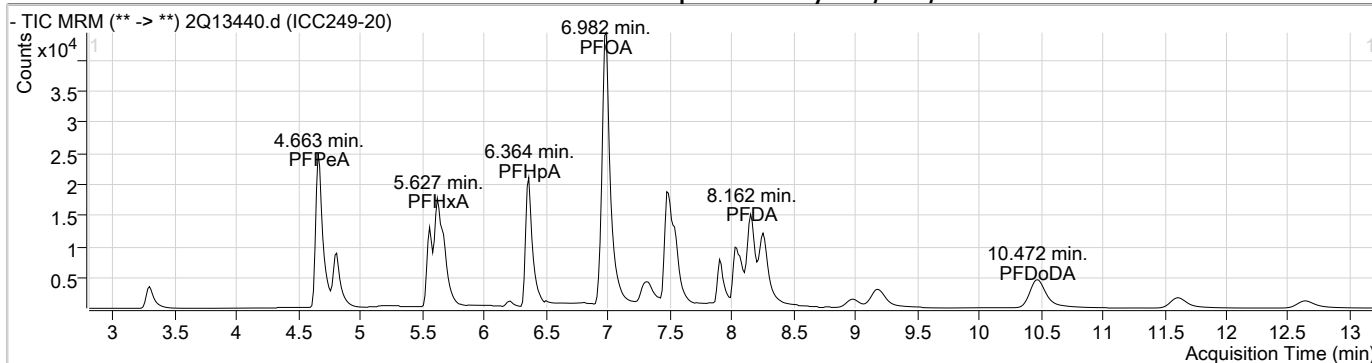
Data File : 2Q13440.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 1:33:17 PM  
 Sample Name : ICC249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	47539	20.00 µg/L	0.000
13C2-PFDoDA	10.468	615.0 -> 570.0	22847	20.00 µg/L	0.038
13C2-PFOA	6.981	415.0 -> 370.0	31984	20.00 µg/L	0.013
13C3-PFPeA	4.660	266.0 -> 222.0	40324	20.00 µg/L	0.000
13C4-PFOS	7.501	503.0 -> 80.0	20392	20.00 µg/L	0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	10107	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.161	515.0 -> 470.0	41026	20.22 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.1%	
13C2-PFHxA	5.625	315.0 -> 270.0	41858	21.19 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 105.9%	
d5-EtFOSAA	8.026	589.0 -> 419.0	13468	20.01 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 100.0%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	35052	20.30 µg/L	QValue 100
6:2FTS	6.991	427.0 -> 407.0	46759	20.06 µg/L	99
8:2FTS	8.260	527.0 -> 507.0	41934	20.26 µg/L	97
EtFOSAA	8.027	584.0 -> 419.0	9753	20.05 µg/L	96
FOSA	7.479	498.0 -> 78.0	37644	20.21 µg/L	99
MeFOSAA	7.903	570.0 -> 419.0	11523	20.02 µg/L	98
PFBA	3.290	213.0 -> 169.0	15944	20.62 µg/L	100
PFBS	4.804	299.0 -> 80.0	23768	19.71 µg/L	100
PFDA	8.162	513.0 -> 469.0	23753	20.61 µg/L	100
PFDoDA	10.472	613.0 -> 569.0	19652	20.34 µg/L	98
PFDS	8.979	599.0 -> 80.0	8002	19.60 µg/L	98
PFHpA	6.364	363.0 -> 319.0	48186	20.59 µg/L	100
PFHpS	6.947	449.0 -> 80.0	21820	19.40 µg/L	98
PFHxA	5.627	313.0 -> 269.0	16190	20.95 µg/L	100
PFHxS	6.345	399.0 -> 80.0	25899	19.50 µg/L	m 100
PFNA	7.547	463.0 -> 419.0	25845	19.85 µg/L	99
PFNS	8.082	549.0 -> 80.0	14472	20.12 µg/L	99
PFOA	6.982	413.0 -> 369.0	26250	20.21 µg/L	99
PFOS	7.490	499.0 -> 80.0	23930	19.57 µg/L	m 99
PFPeA	4.663	263.0 -> 219.0	62554	19.87 µg/L	100
PFPeS	5.668	349.0 -> 80.0	17789	19.49 µg/L	99
PFTeDA	12.633	713.0 -> 669.0	11978	20.32 µg/L	99
PFTTrDA	11.607	663.0 -> 619.0	15366	19.59 µg/L	100
PFUnDA	9.185	563.0 -> 519.0	23189	20.88 µg/L	99

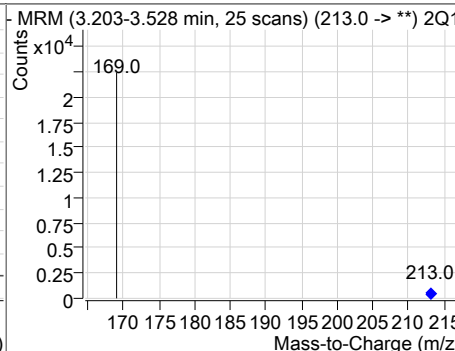
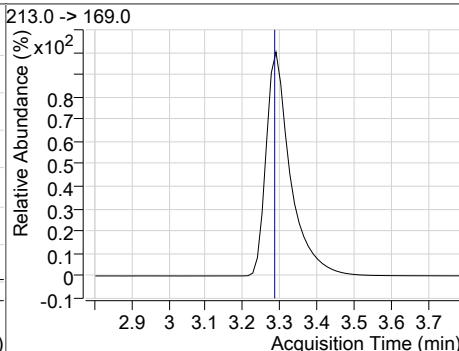
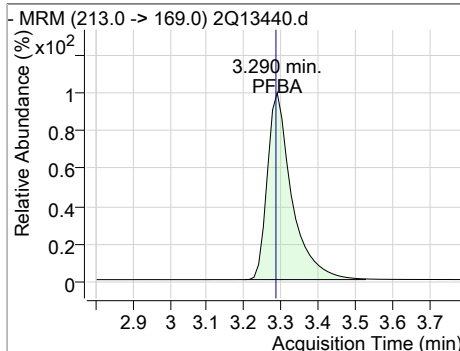
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.5  
**10**

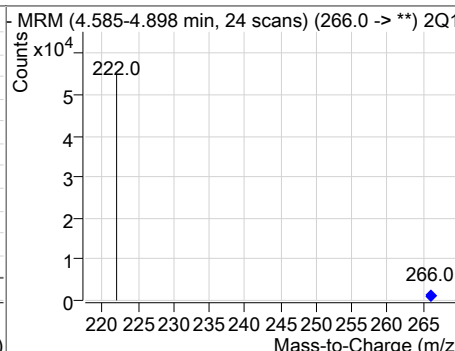
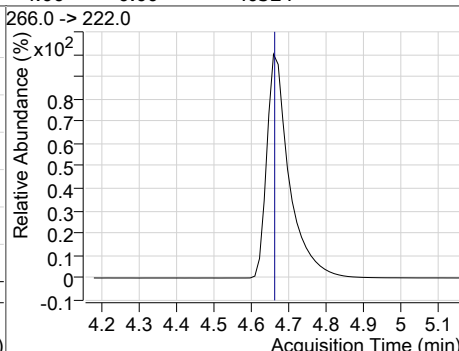
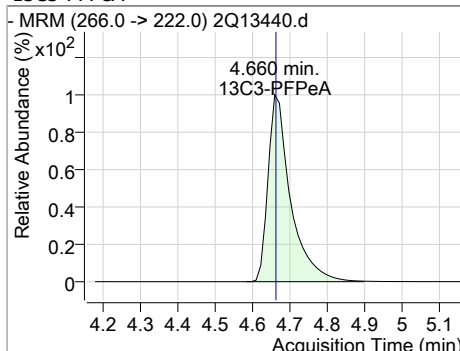
### Perfluorinated Compounds by LC/MS/MS



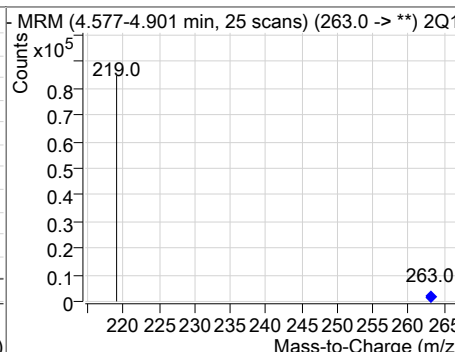
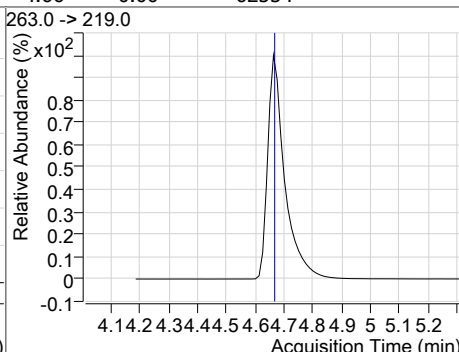
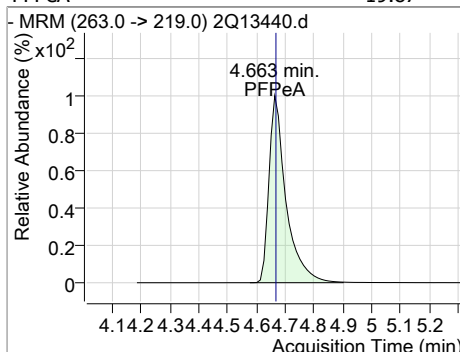
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.62	3.29	0.01	15944				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	0.00	40324				

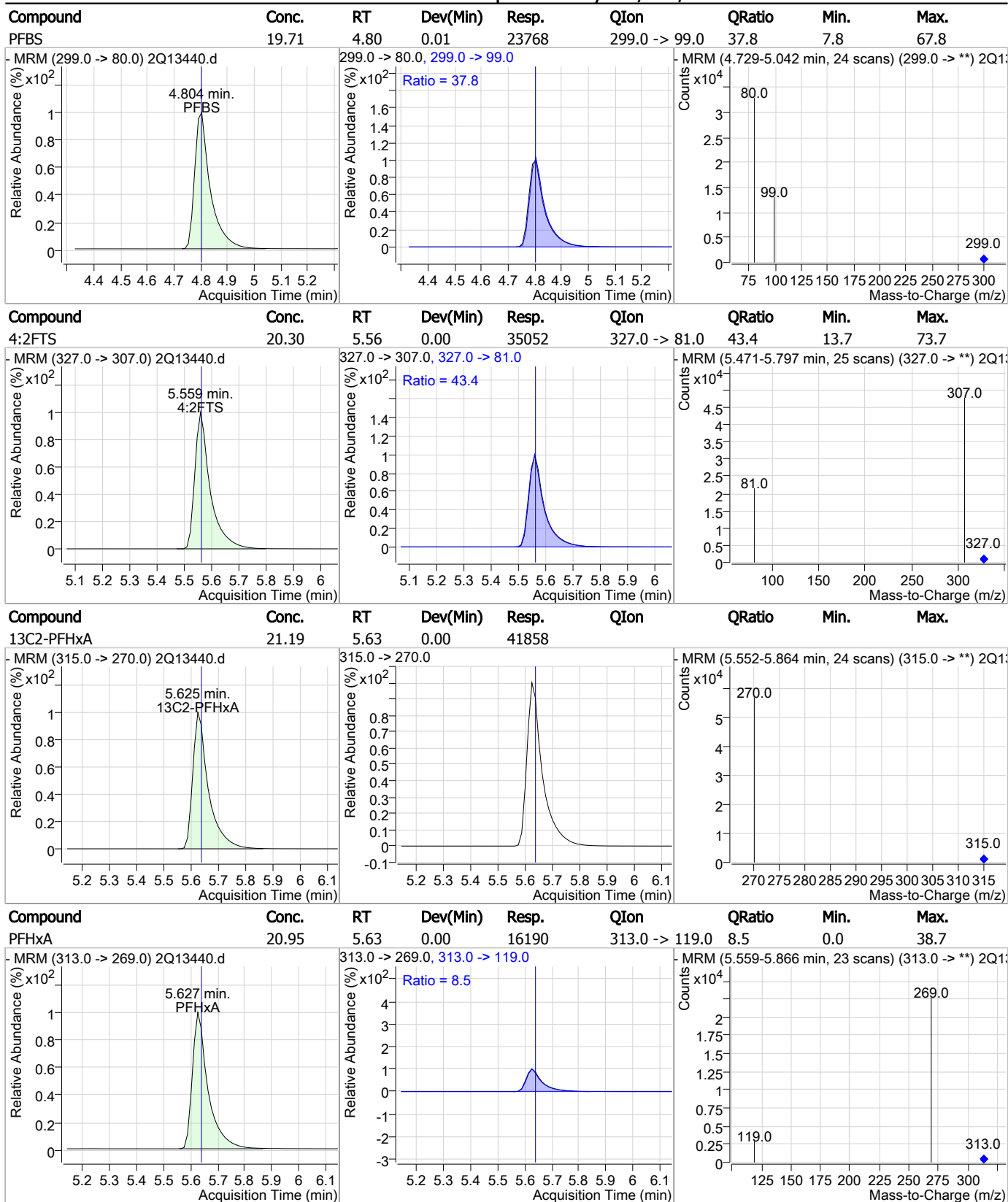


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.87	4.66	0.00	62554				



10.5.5 10

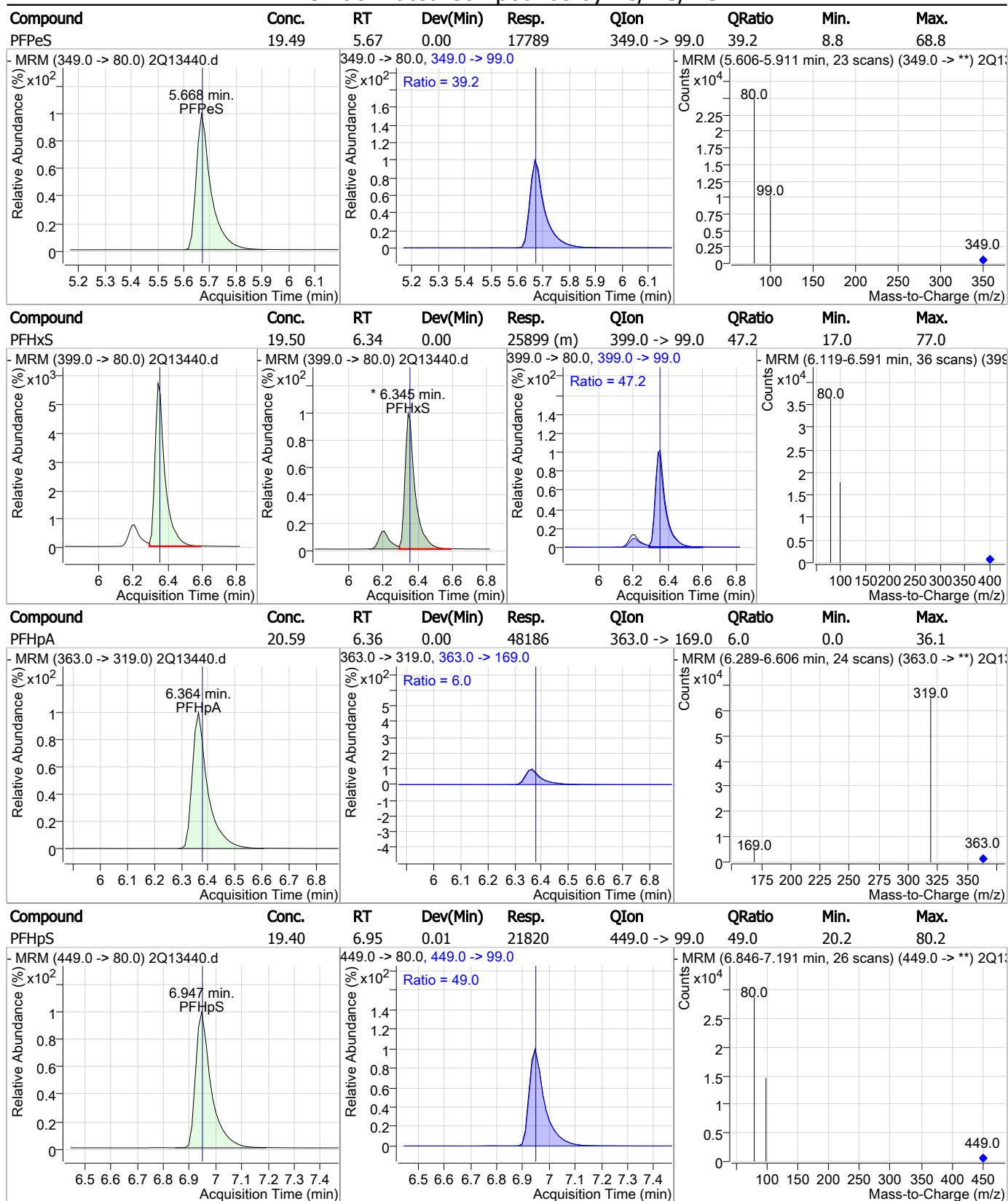
### Perfluorinated Compounds by LC/MS/MS



10.5.5 10

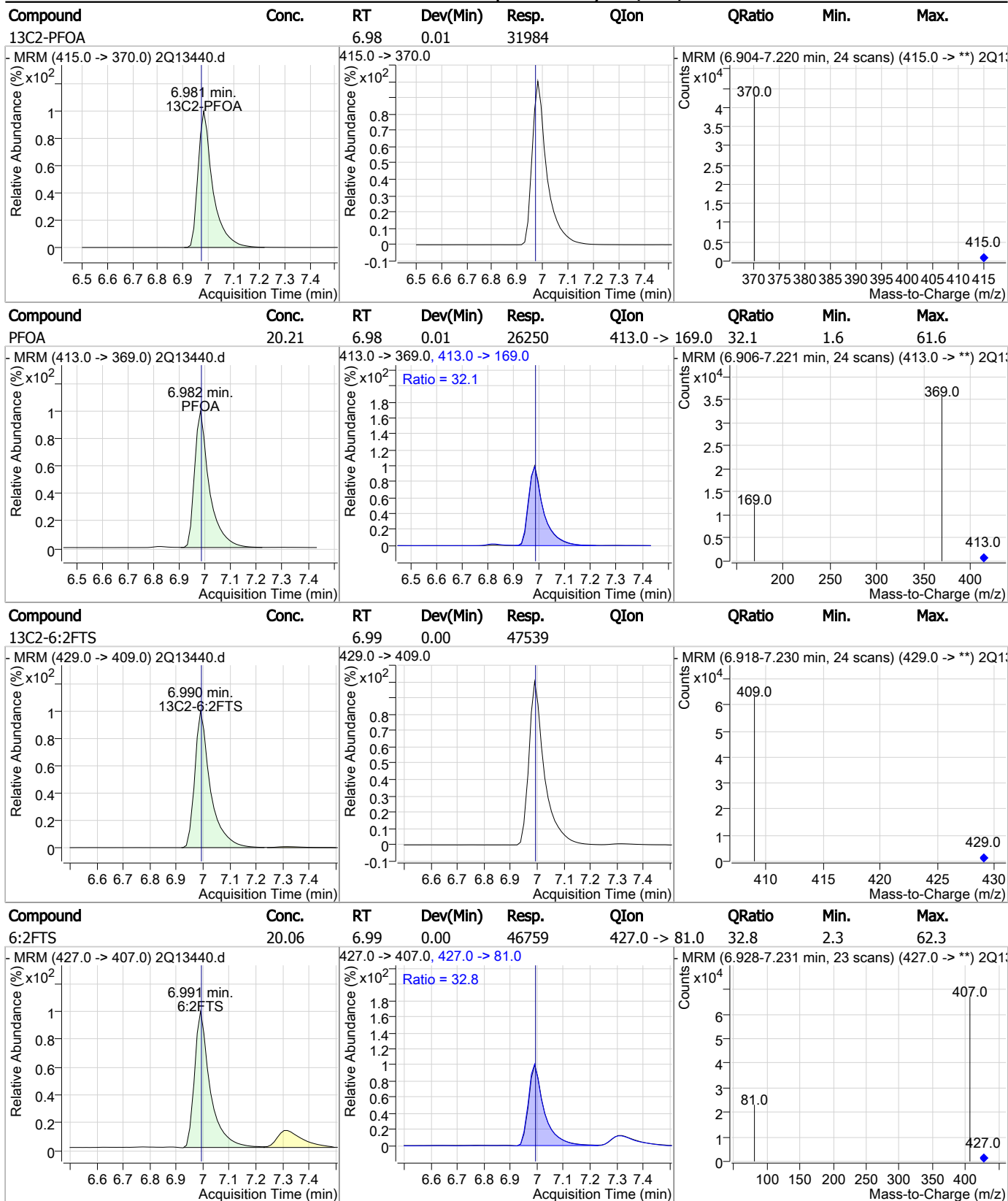


### Perfluorinated Compounds by LC/MS/MS



10.5.5 10

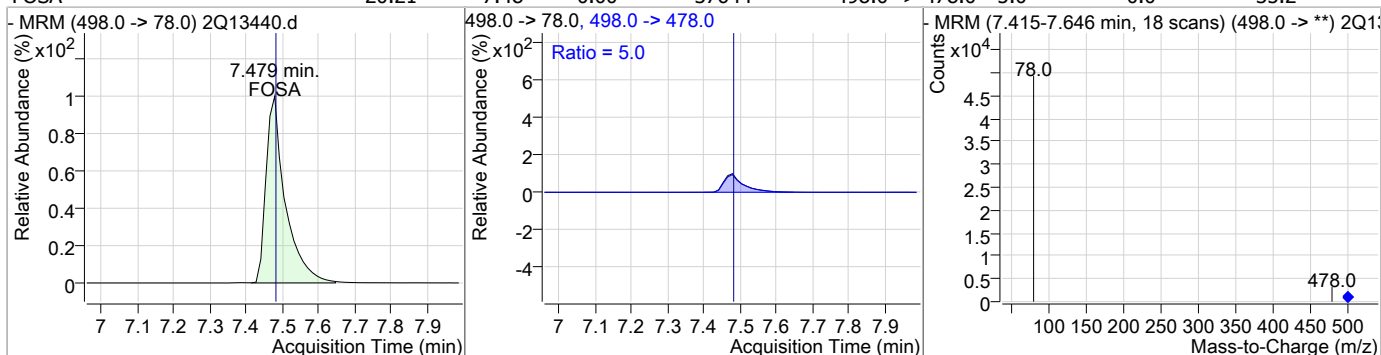
### Perfluorinated Compounds by LC/MS/MS



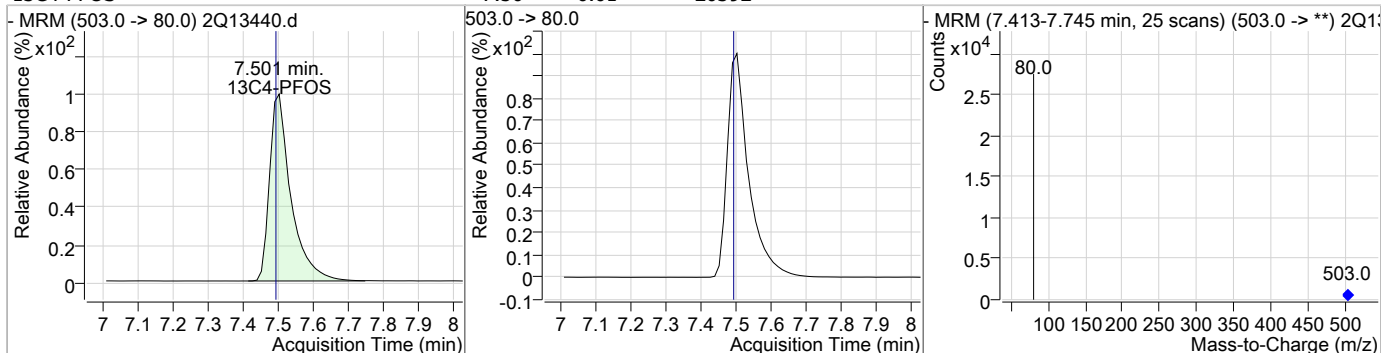
10.5.5 10

### Perfluorinated Compounds by LC/MS/MS

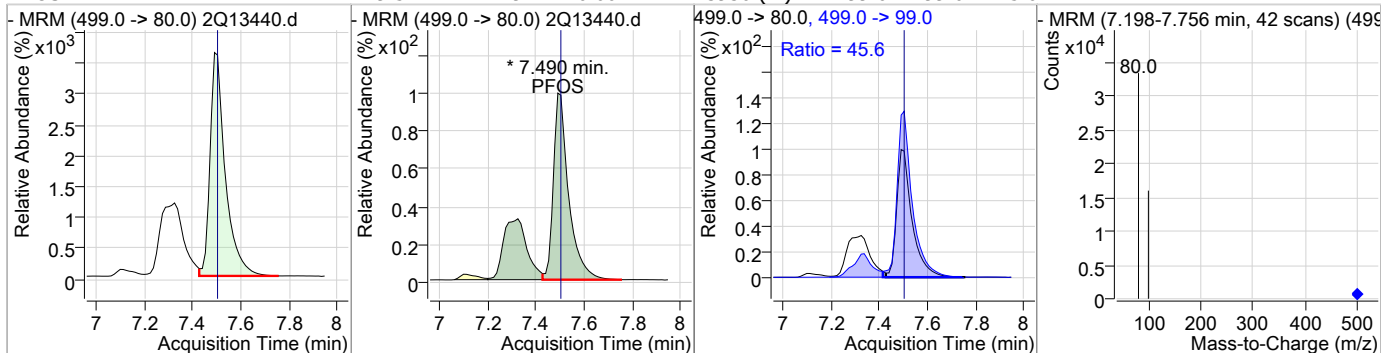
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.21	7.48	0.00	37644	498.0 -> 478.0	5.0	0.0	35.2



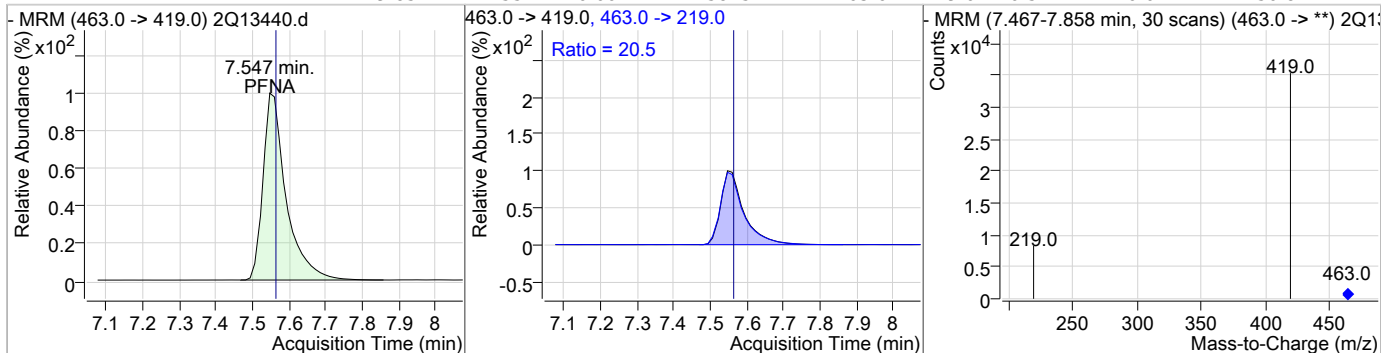
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.50	0.01	20392				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.57	7.49	0.00	23930 (m)	499.0 -> 99.0	45.6	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.85	7.55	0.00	25845	463.0 -> 219.0	20.5	0.0	50.8



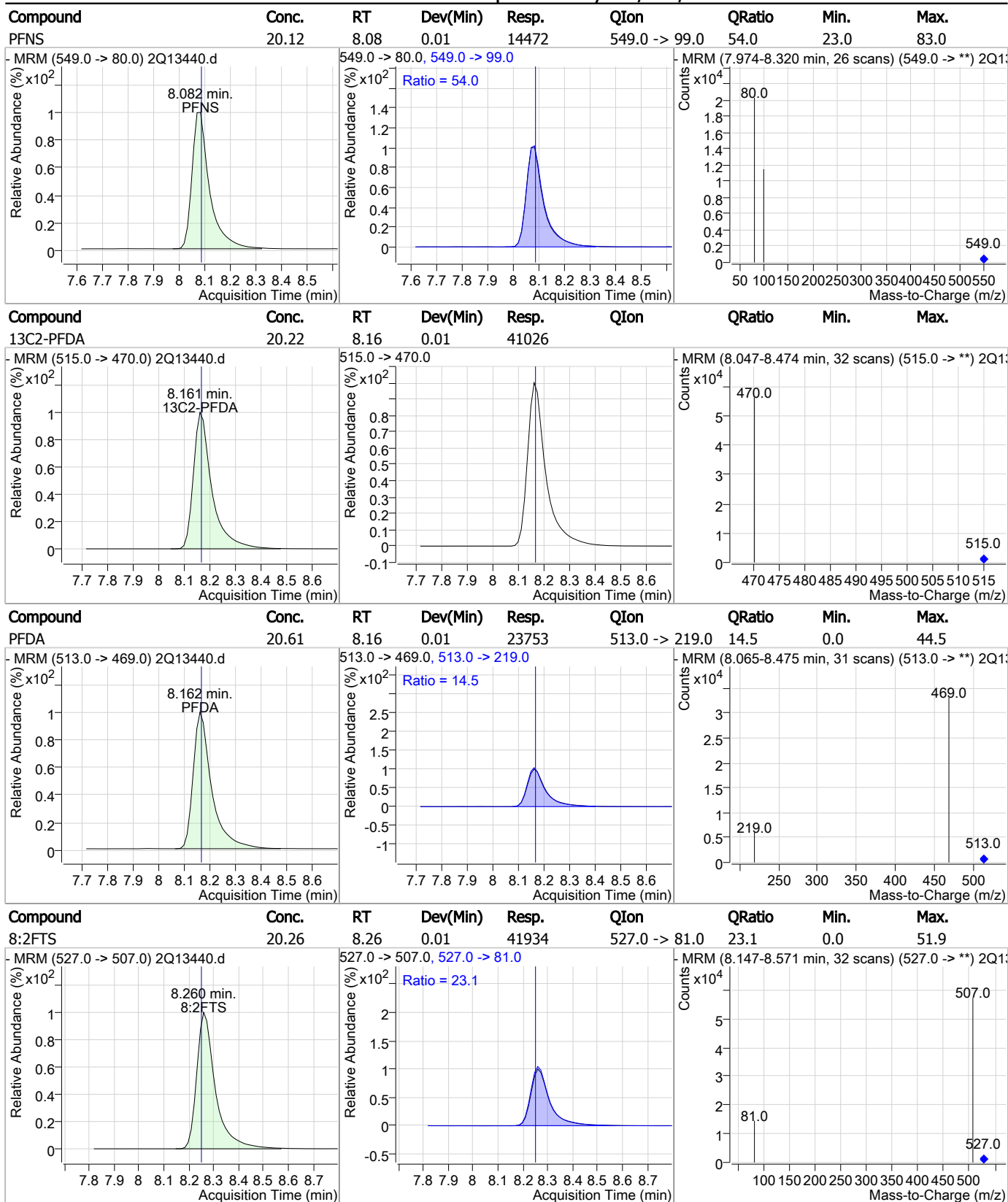
10.5.5 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10107				
-MRM (573.0 -> 419.0) 2Q13440.d			573.0 -> 419.0			-MRM (7.839-8.142 min, 23 scans) (573.0 -> **) 2Q1:		
MeFOSAA	20.02	7.90	0.00	11523	570.0 -> 512.0	36.7	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13440.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.828-8.143 min, 24 scans) (570.0 -> **) 2Q1:		
d5-EtFOSAA	20.01	8.03	0.00	13468				
-MRM (589.0 -> 419.0) 2Q13440.d			589.0 -> 419.0			-MRM (7.951-8.189 min, 18 scans) (589.0 -> **) 2Q1:		
EtFOSAA	20.05	8.03	0.00	9753	584.0 -> 483.0	62.1	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13440.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.951-8.265 min, 24 scans) (584.0 -> **) 2Q1:		

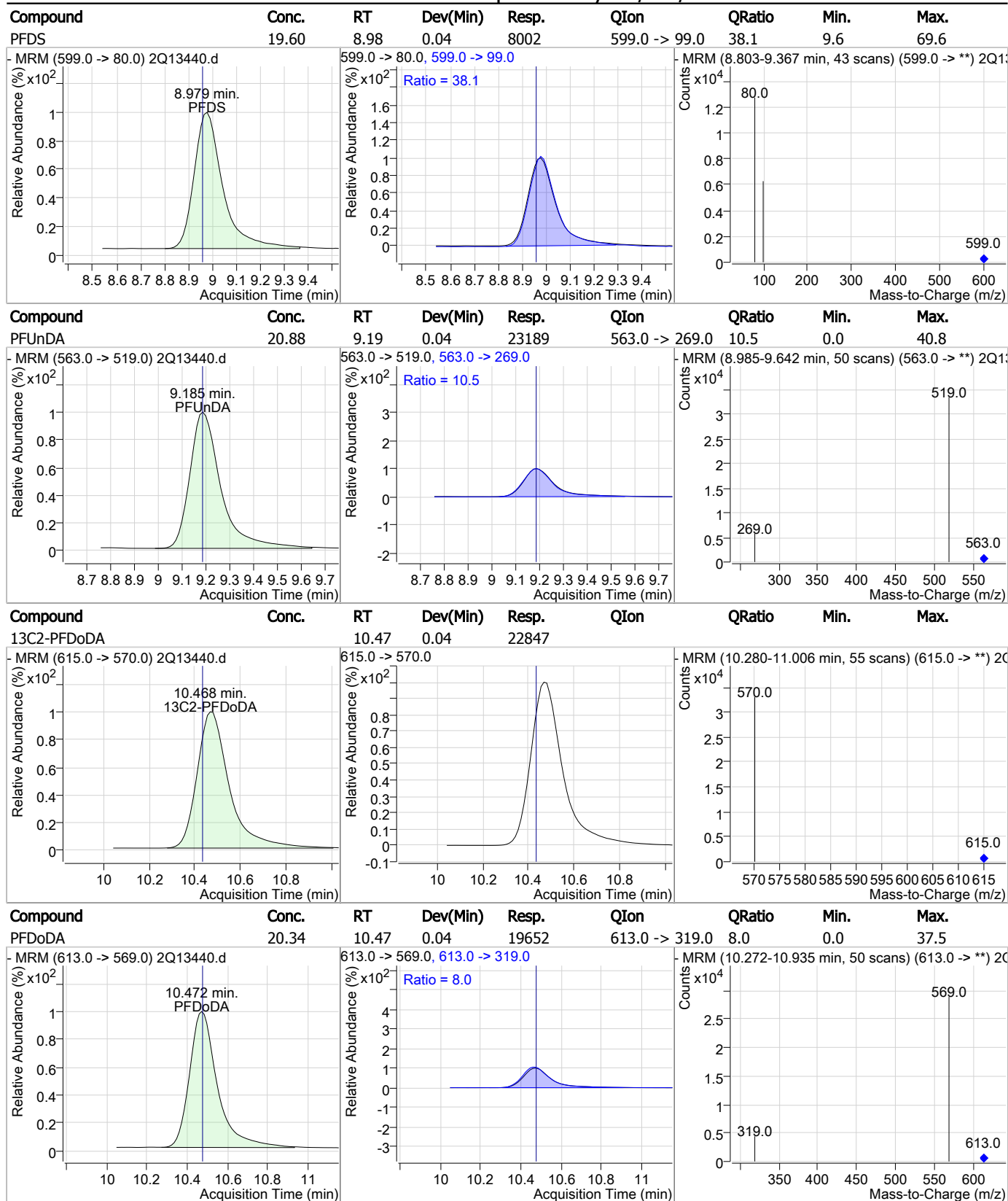
10.5.5 10

### Perfluorinated Compounds by LC/MS/MS



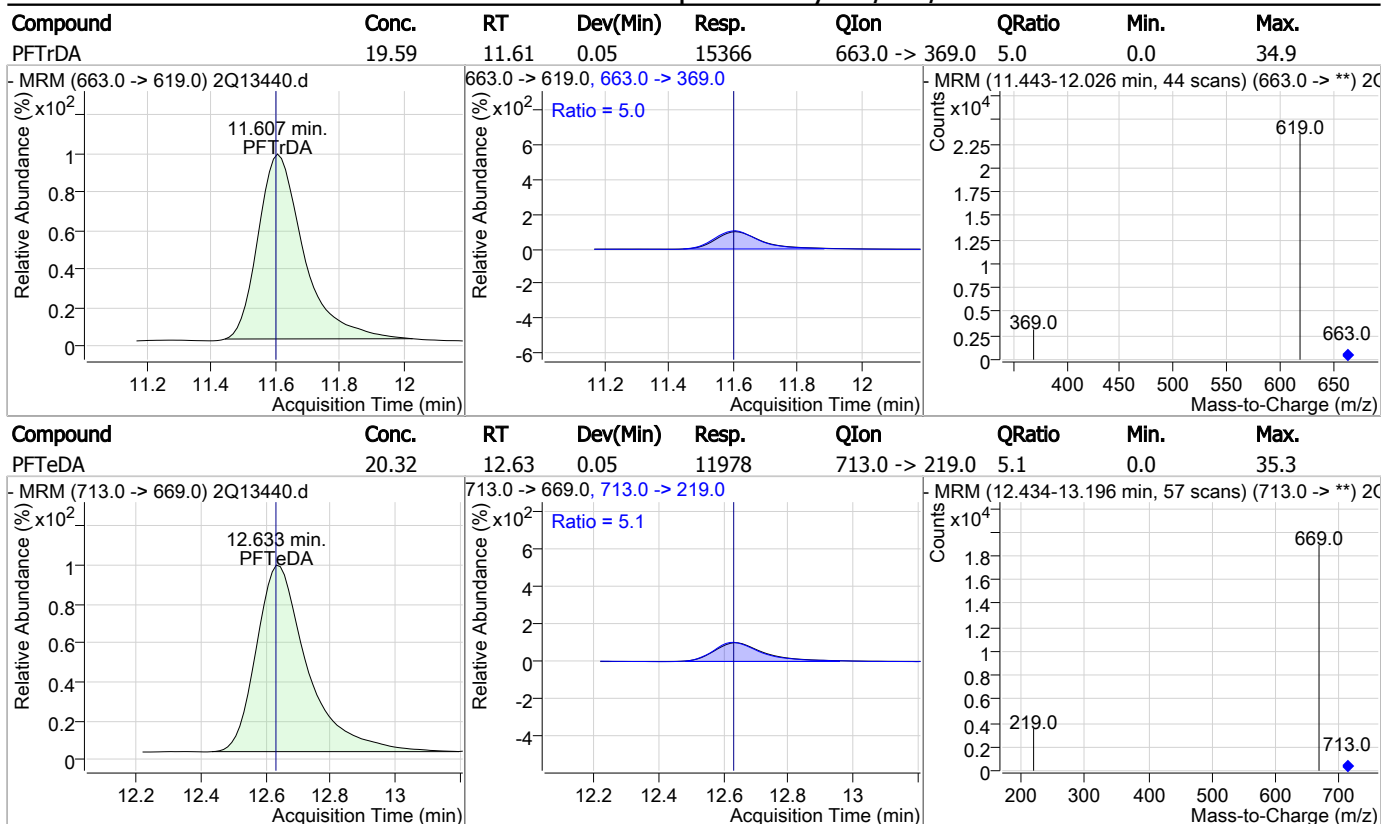
10.5.5 10

### Perfluorinated Compounds by LC/MS/MS



10.5.5 10

### Perfluorinated Compounds by LC/MS/MS



10.5.5  
10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-ICC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13440.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 13:33      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.5.1  
10



Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

**Mike Eger**  
 04/25/18 16:35

### Perfluorinated Compounds by LC/MS/MS

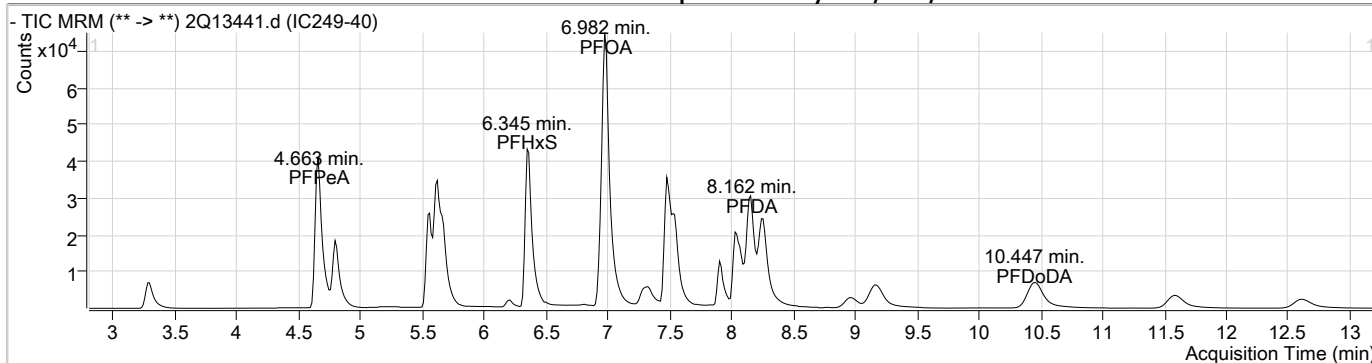
Data File : 2Q13441.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 1:52:07 PM  
 Sample Name : IC249-40  
 Vial : Vial 7  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	52008	20.00 µg/L	0.000
13C2-PFDoDA	10.455	615.0 -> 570.0	23837	20.00 µg/L	0.025
13C2-PFOA	6.981	415.0 -> 370.0	33978	20.00 µg/L	0.013
13C3-PFPeA	4.660	266.0 -> 222.0	41093	20.00 µg/L	0.000
13C4-PFOS	7.489	503.0 -> 80.0	20970	20.00 µg/L	0.000
d3-MeFOSAA	7.902	573.0 -> 419.0	10731	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.161	515.0 -> 470.0	84748	39.31 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 196.6%	
13C2-PFHxA	5.625	315.0 -> 270.0	84695	40.35 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 201.8%	
d5-EtFOSAA	8.026	589.0 -> 419.0	28347	40.06 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 200.3%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	72684	40.22 µg/L	100
6:2FTS	6.991	427.0 -> 407.0	95983	39.48 µg/L	98
8:2FTS	8.260	527.0 -> 507.0	87624	40.15 µg/L	98
EtFOSAA	8.027	584.0 -> 419.0	20699	40.46 µg/L	98
FOSA	7.479	498.0 -> 78.0	77047	40.17 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	24230	39.64 µg/L	98
PFBA	3.277	213.0 -> 169.0	32729	39.84 µg/L	100
PFBS	4.791	299.0 -> 80.0	49345	39.80 µg/L	100
PFDA	8.162	513.0 -> 469.0	48811	39.86 µg/L	100
PFDoDA	10.447	613.0 -> 569.0	41116	40.78 µg/L	98
PFDS	8.966	599.0 -> 80.0	16561	39.44 µg/L	98
PFHpA	6.364	363.0 -> 319.0	100462	40.40 µg/L	100
PFHpS	6.947	449.0 -> 80.0	45646	39.46 µg/L	99
PFHxA	5.627	313.0 -> 269.0	32901	40.08 µg/L	99
PFHxS	6.345	399.0 -> 80.0	54537	39.94 µg/L	m 100
PFNA	7.547	463.0 -> 419.0	56165	40.61 µg/L	100
PFNS	8.069	549.0 -> 80.0	29825	40.31 µg/L	98
PFOA	6.982	413.0 -> 369.0	54639	39.60 µg/L	99
PFOS	7.490	499.0 -> 80.0	50429	40.10 µg/L	m 96
PFPeA	4.663	263.0 -> 219.0	129314	40.30 µg/L	100
PFPeS	5.668	349.0 -> 80.0	37480	40.29 µg/L	100
PFTeDA	12.608	713.0 -> 669.0	25212	41.00 µg/L	100
PFTTrDA	11.582	663.0 -> 619.0	33632	41.10 µg/L	99
PFUnDA	9.173	563.0 -> 519.0	48463	41.82 µg/L	100

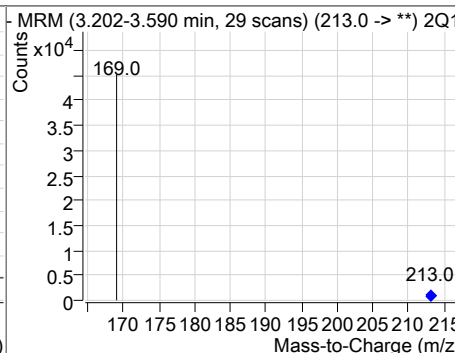
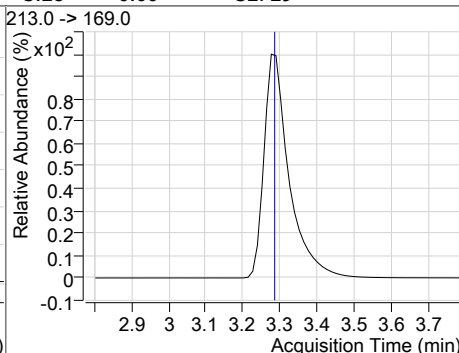
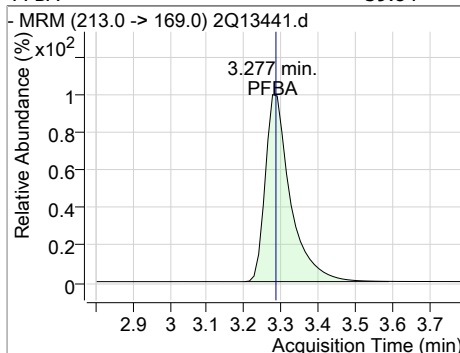
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.6  
**10**

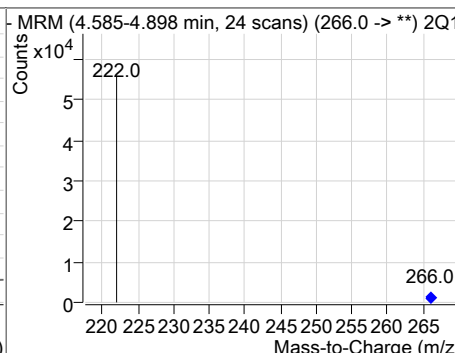
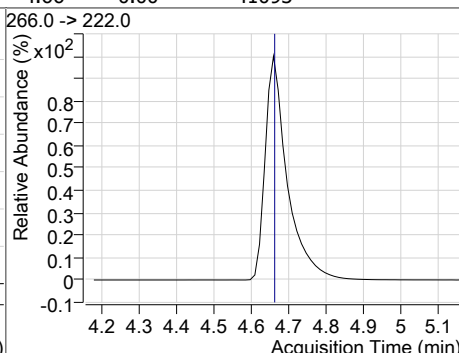
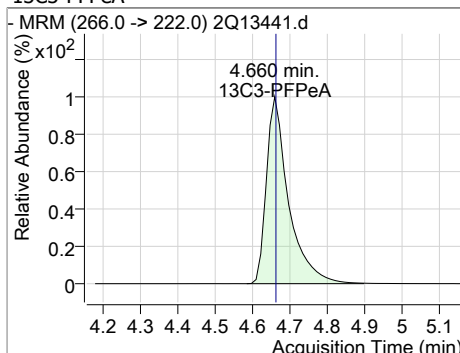
### Perfluorinated Compounds by LC/MS/MS



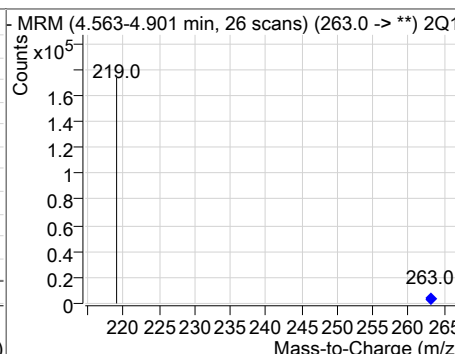
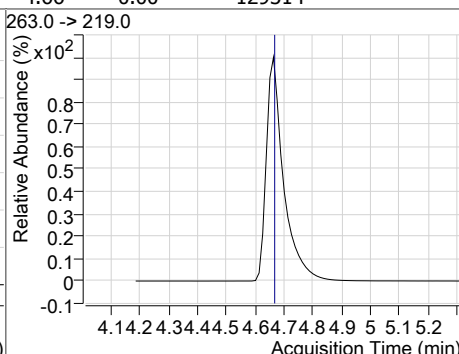
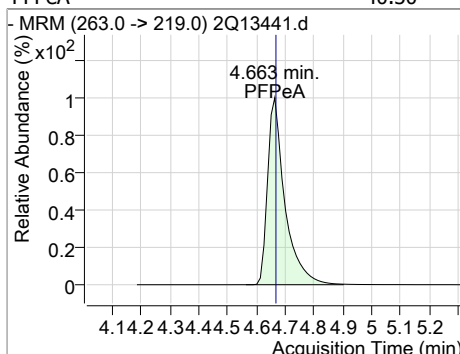
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	39.84	3.28	0.00	32729				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	0.00	41093				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	40.30	4.66	0.00	129314				



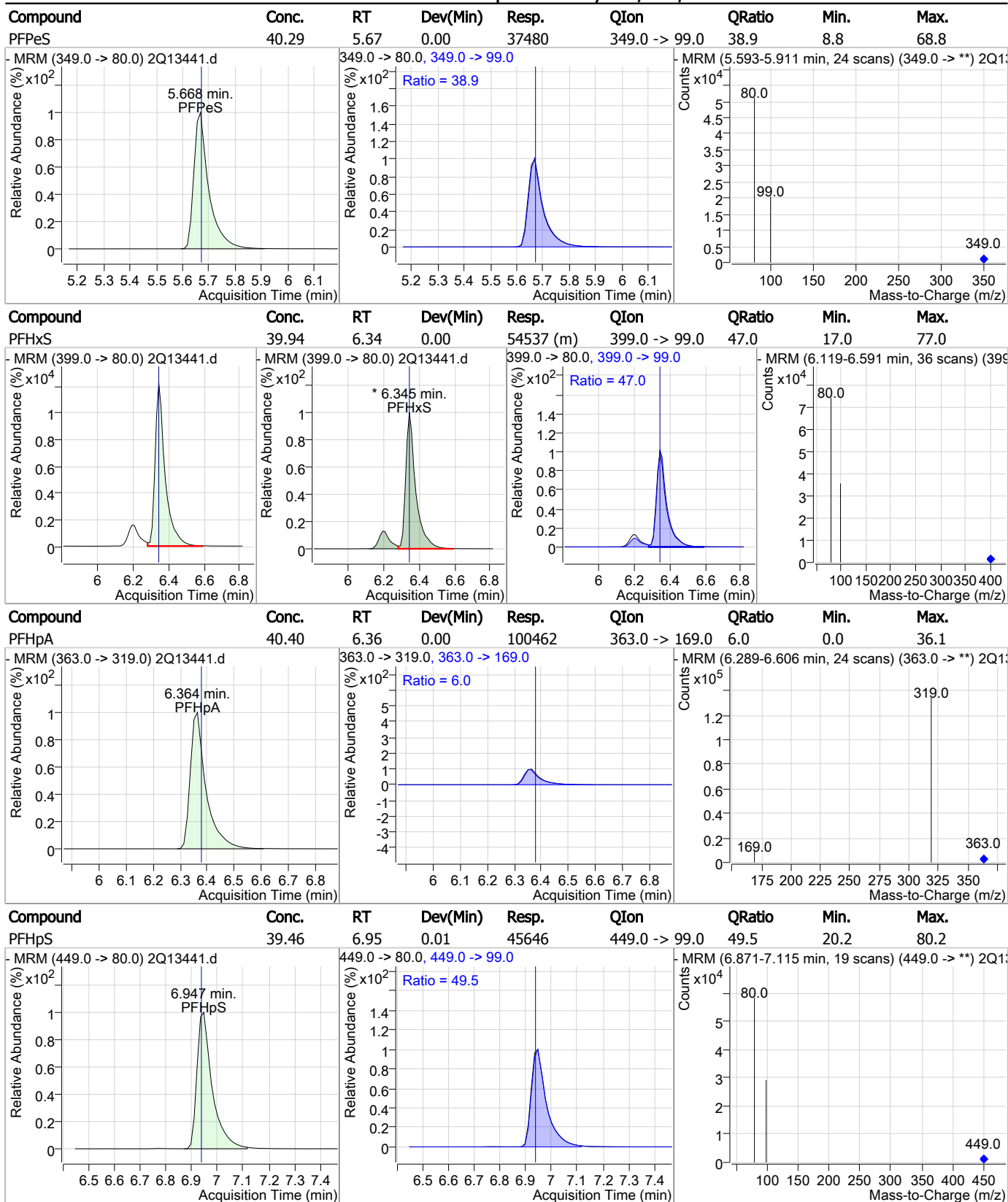
10.5.6 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	39.80	4.79	0.00	49345	299.0 -> 99.0	37.8	7.8	67.8
4:2FTS	40.22	5.56	0.00	72684	327.0 -> 81.0	43.5	13.7	73.7
13C2-PFHxA	40.35	5.63	0.00	84695	315.0 -> 270.0			
PFHxA	40.08	5.63	0.00	32901	313.0 -> 119.0	8.5	0.0	38.7

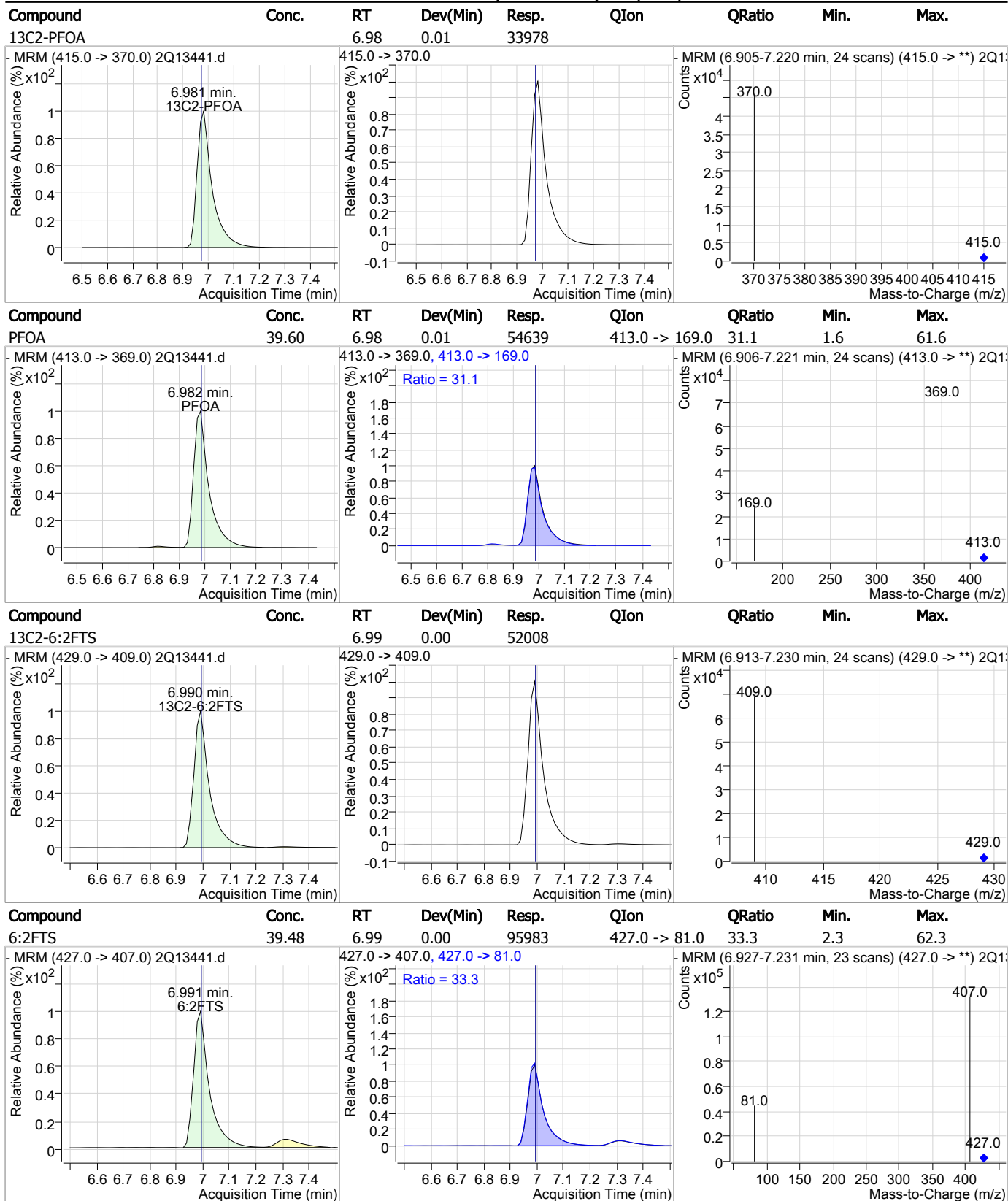
10.5.6 10

### Perfluorinated Compounds by LC/MS/MS



10.5.6 10

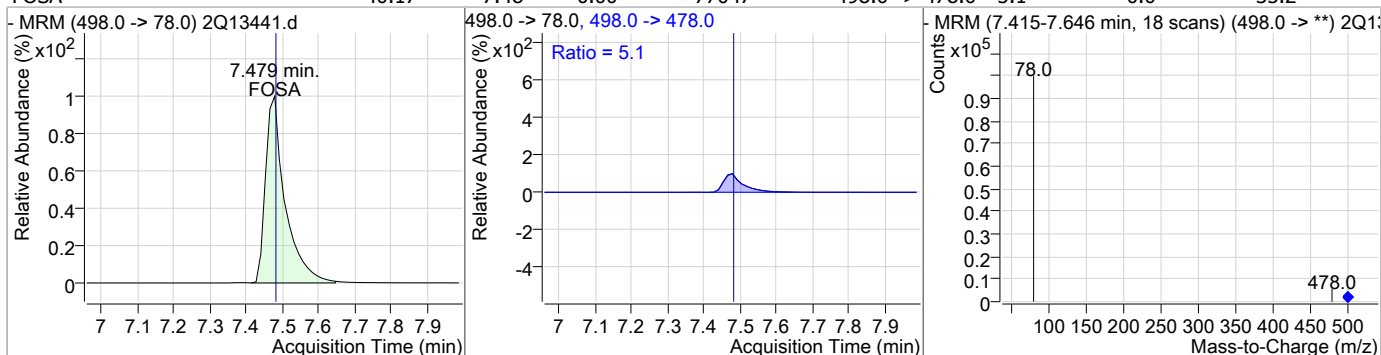
### Perfluorinated Compounds by LC/MS/MS



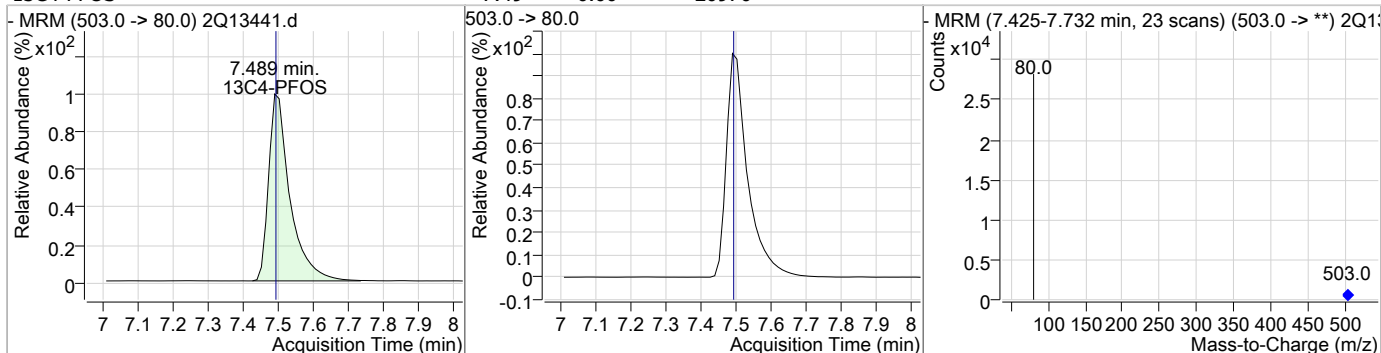
10.5.6 10

### Perfluorinated Compounds by LC/MS/MS

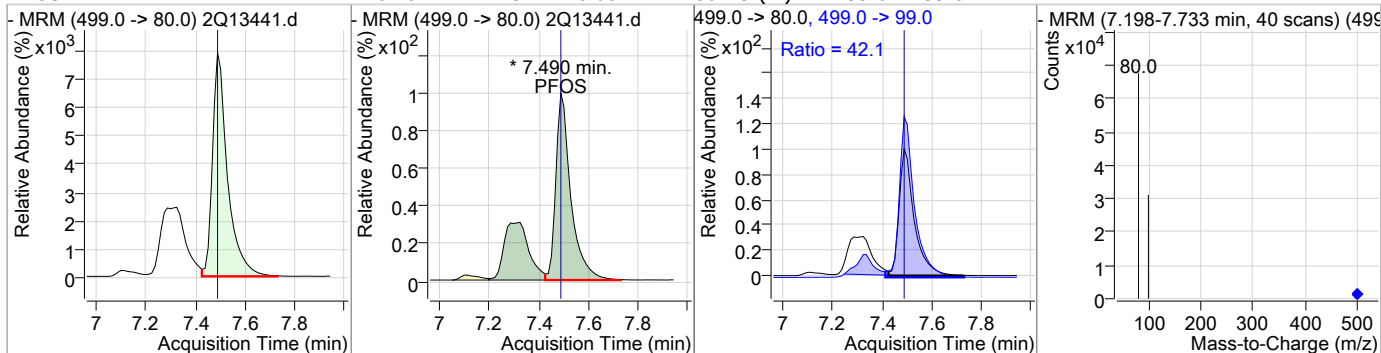
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	40.17	7.48	0.00	77047	498.0 -> 478.0	5.1	0.0	35.2



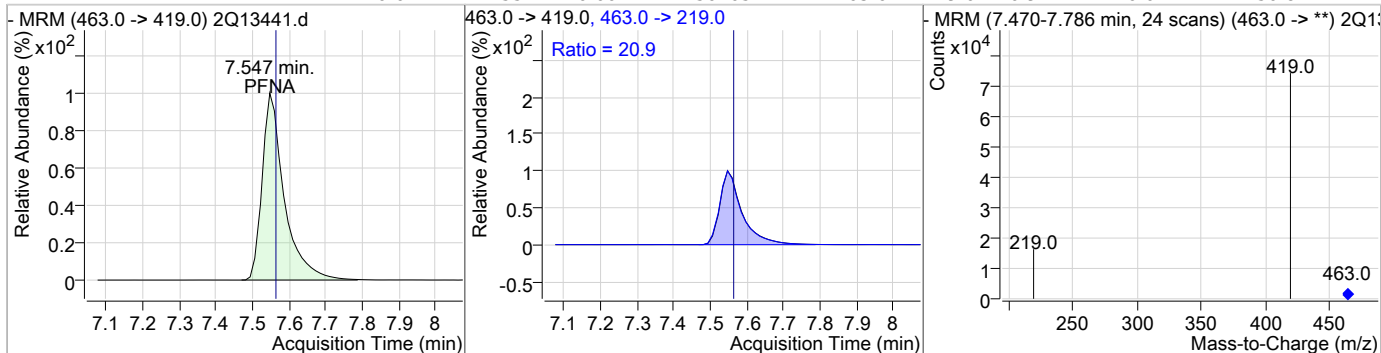
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	20970				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	40.10	7.49	0.00	50429 (m)	499.0 -> 99.0	42.1	14.7	74.7

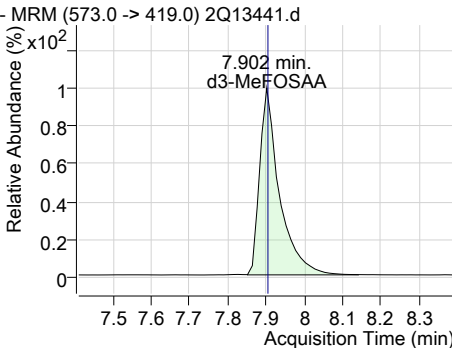
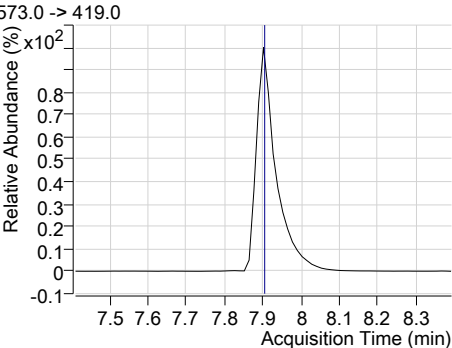
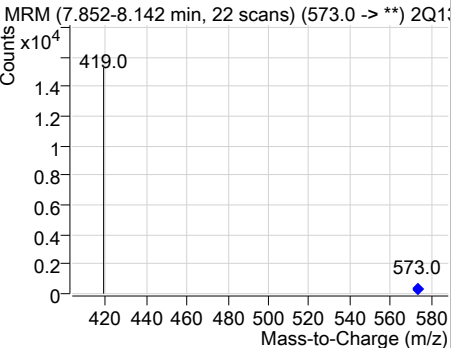
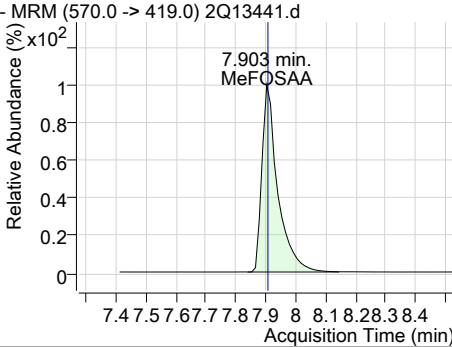
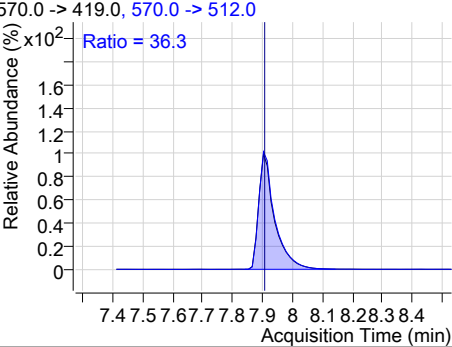
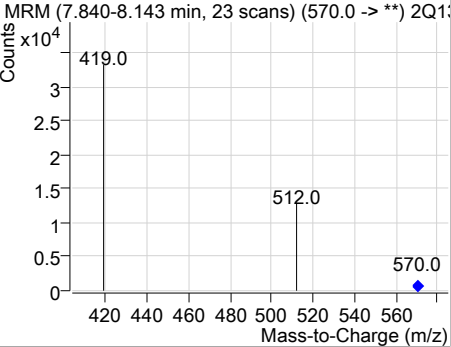
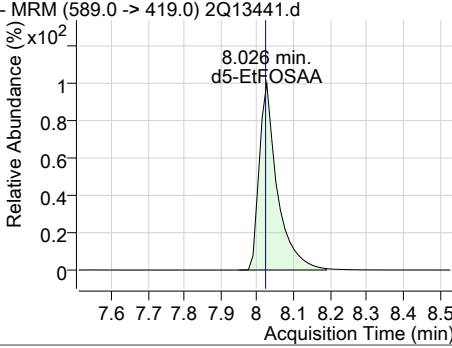
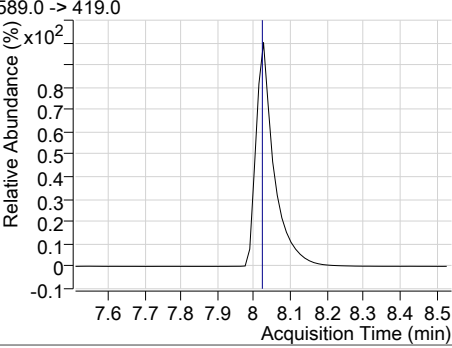
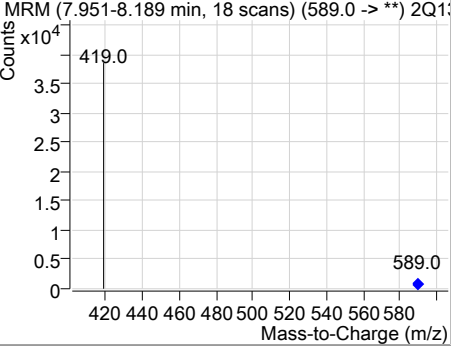
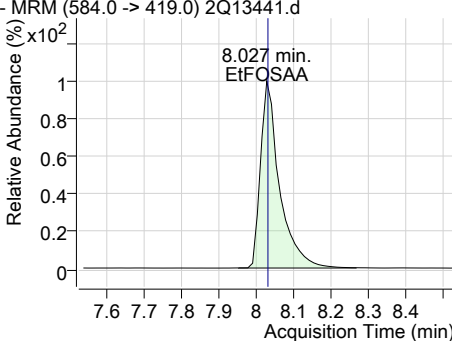
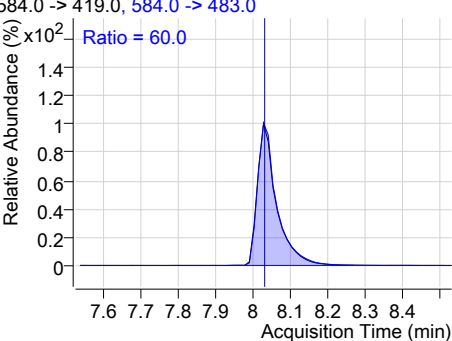
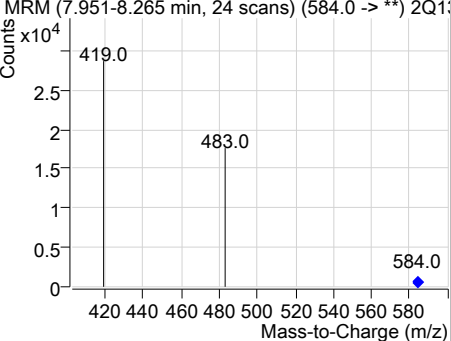


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	40.61	7.55	0.00	56165	463.0 -> 219.0	20.9	0.0	50.8



10.5.6 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10731				
-MRM (573.0 -> 419.0) 2Q13441.d			573.0 -> 419.0			-MRM (7.852-8.142 min, 22 scans) (573.0 -> **) 2Q13441.d		
								
MeFOSAA	39.64	7.90	0.00	24230	570.0 -> 512.0	36.3	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13441.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.840-8.143 min, 23 scans) (570.0 -> **) 2Q13441.d		
								
d5-EtFOSAA	40.06	8.03	0.00	28347				
-MRM (589.0 -> 419.0) 2Q13441.d			589.0 -> 419.0			-MRM (7.951-8.189 min, 18 scans) (589.0 -> **) 2Q13441.d		
								
EtFOSAA	40.46	8.03	0.00	20699	584.0 -> 483.0	60.0	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13441.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.951-8.265 min, 24 scans) (584.0 -> **) 2Q13441.d		
								

10.5.6 10

### Perfluorinated Compounds by LC/MS/MS

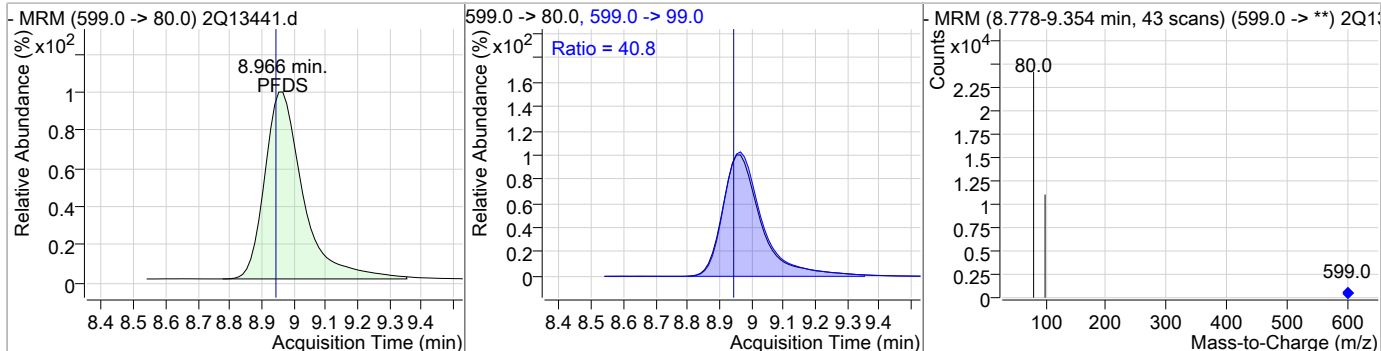
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	40.31	8.07	0.00	29825	549.0 -> 99.0	54.6	23.0	83.0
-MRM (549.0 -> 80.0) 2Q13441.d			549.0 -> 80.0, 549.0 -> 99.0		-MRM (7.981-8.383 min, 31 scans) (549.0 -> **) 2Q1:			
13C2-PFDA	39.31	8.16	0.01	84748				
-MRM (515.0 -> 470.0) 2Q13441.d			515.0 -> 470.0		-MRM (8.047-8.399 min, 27 scans) (515.0 -> **) 2Q1:			
PFDA	39.86	8.16	0.01	48811	513.0 -> 219.0	14.4	0.0	44.5
-MRM (513.0 -> 469.0) 2Q13441.d			513.0 -> 469.0, 513.0 -> 219.0		-MRM (8.063-8.400 min, 26 scans) (513.0 -> **) 2Q1:			
8:2FTS	40.15	8.26	0.01	87624	527.0 -> 81.0	22.8	0.0	51.9
-MRM (527.0 -> 507.0) 2Q13441.d			527.0 -> 507.0, 527.0 -> 81.0		-MRM (8.147-8.497 min, 27 scans) (527.0 -> **) 2Q1:			

10.5.6 10

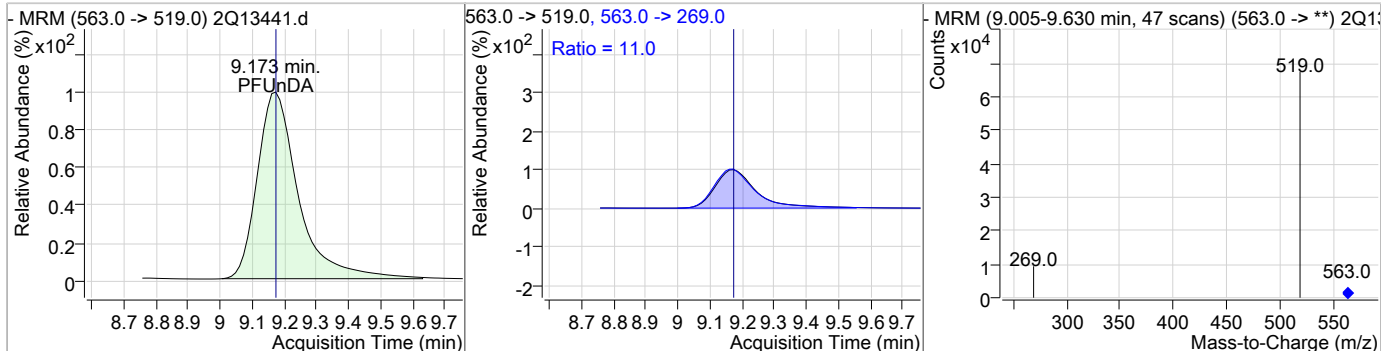


### Perfluorinated Compounds by LC/MS/MS

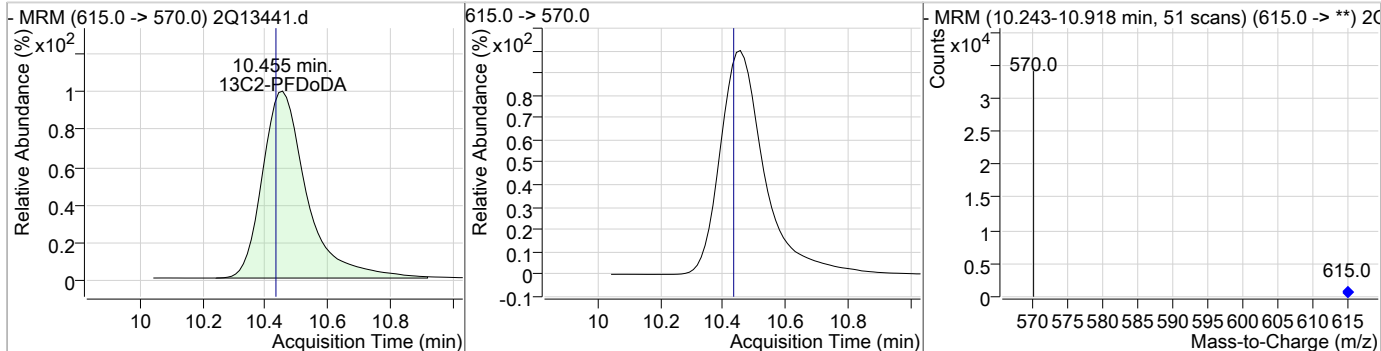
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	39.44	8.97	0.03	16561	599.0 -> 99.0	40.8	9.6	69.6



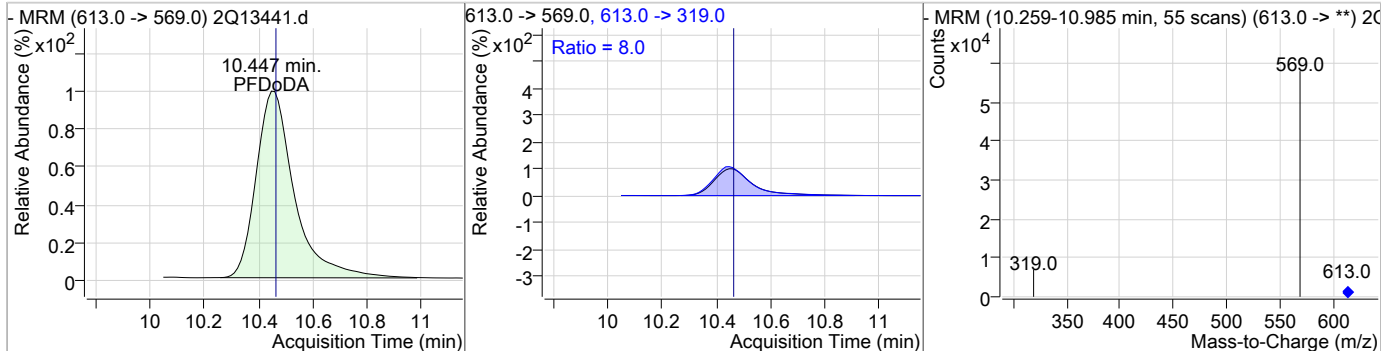
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	41.82	9.17	0.03	48463	563.0 -> 269.0	11.0	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.46	0.03	23837				

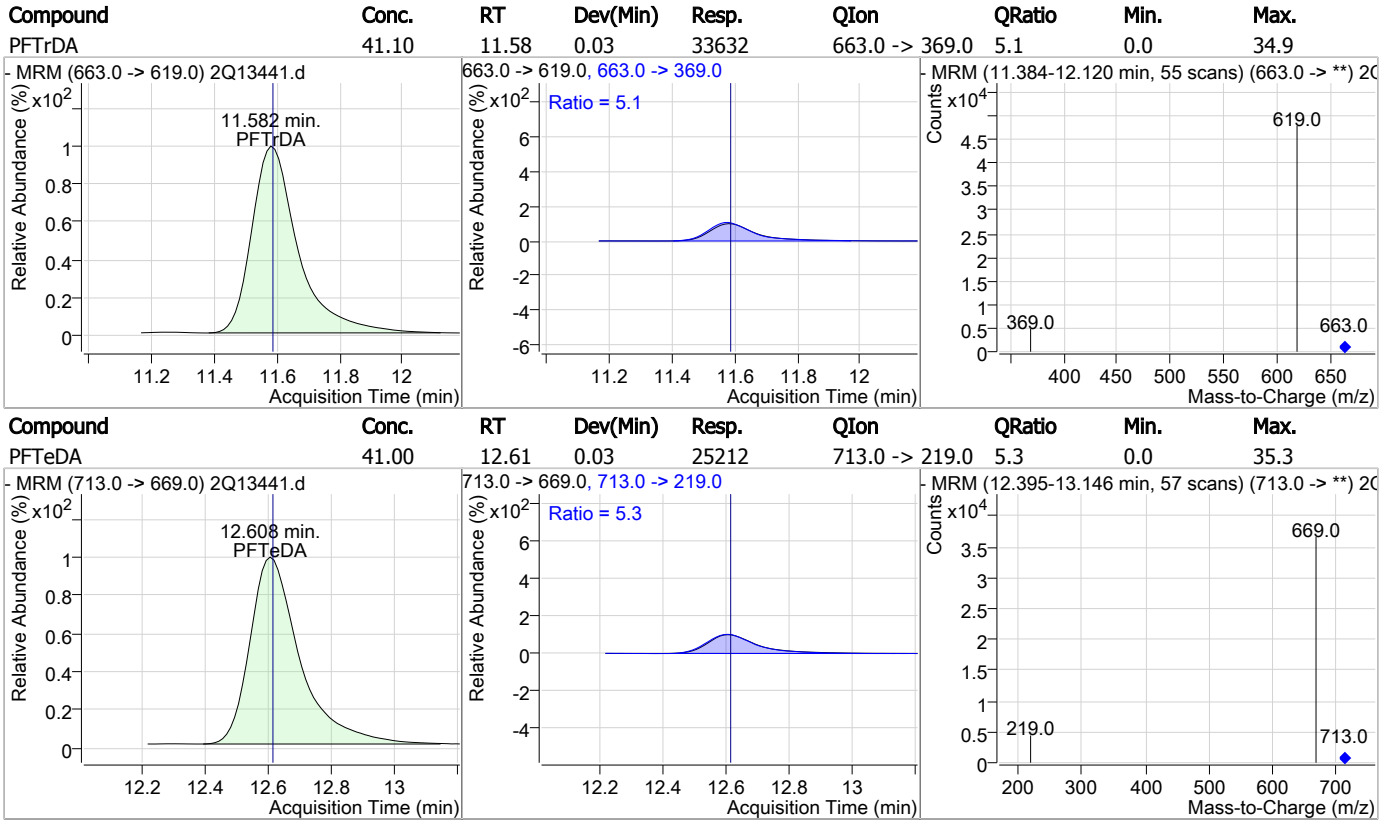


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	40.78	10.45	0.01	41116	613.0 -> 319.0	8.0	0.0	37.5



10.5.6 10

### Perfluorinated Compounds by LC/MS/MS



10.5.6 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13441.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 13:52      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.6.1  
10

Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

Mike Eger  
 04/25/18 16:35

### Perfluorinated Compounds by LC/MS/MS

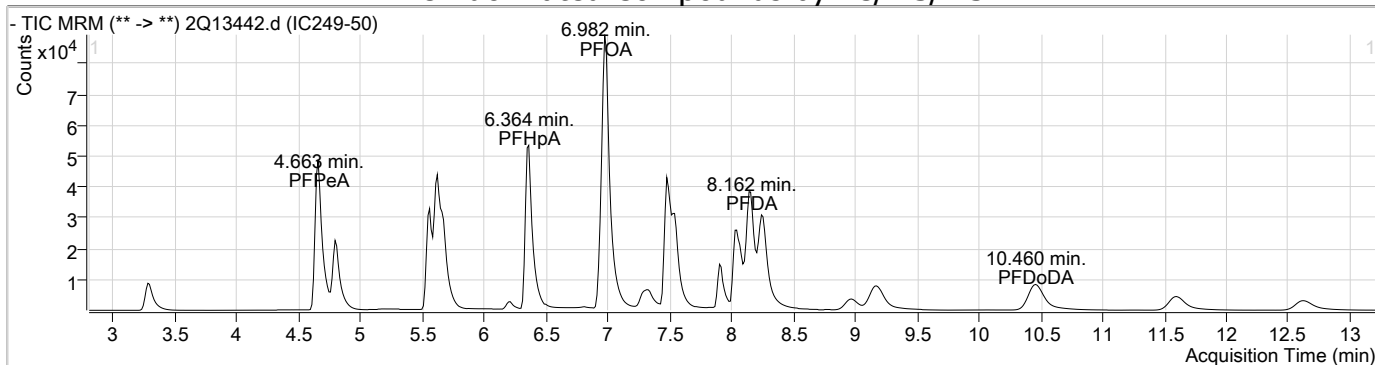
Data File : 2Q13442.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 2:10:57 PM  
 Sample Name : IC249-50  
 Vial : Vial 8  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	54465	20.00 µg/L	0.000
13C2-PFDoDA	10.455	615.0 -> 570.0	24848	20.00 µg/L	0.025
13C2-PFOA	6.981	415.0 -> 370.0	34744	20.00 µg/L	0.013
13C3-PFPeA	4.660	266.0 -> 222.0	41360	20.00 µg/L	0.000
13C4-PFOS	7.489	503.0 -> 80.0	21260	20.00 µg/L	0.000
d3-MeFOSAA	7.902	573.0 -> 419.0	10866	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.161	515.0 -> 470.0	107817	48.91 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 244.6%	
13C2-PFHxA	5.625	315.0 -> 270.0	106543	49.64 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 248.2%	
d5-EtFOSAA	8.026	589.0 -> 419.0	35588	49.92 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 249.6%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	91455	49.35 µg/L	100
6:2FTS	6.991	427.0 -> 407.0	121242	48.75 µg/L	99
8:2FTS	8.260	527.0 -> 507.0	111126	49.51 µg/L	98
EtFOSAA	8.027	584.0 -> 419.0	25502	49.44 µg/L	98
FOSA	7.479	498.0 -> 78.0	94914	49.60 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	30349	49.03 µg/L	99
PFBA	3.277	213.0 -> 169.0	40886	48.67 µg/L	100
PFBS	4.791	299.0 -> 80.0	61919	49.26 µg/L	100
PFDA	8.162	513.0 -> 469.0	61978	49.50 µg/L	99
PFDoDA	10.460	613.0 -> 569.0	51769	49.26 µg/L	98
PFDS	8.966	599.0 -> 80.0	20978	49.28 µg/L	98
PFHpA	6.364	363.0 -> 319.0	124984	49.16 µg/L	100
PFHpS	6.947	449.0 -> 80.0	57591	49.11 µg/L	99
PFHxA	5.627	313.0 -> 269.0	41593	49.55 µg/L	99
PFHxS	6.345	399.0 -> 80.0	68557	49.52 µg/L	m 97
PFNA	7.547	463.0 -> 419.0	70774	50.04 µg/L	98
PFNS	8.069	549.0 -> 80.0	37460	49.94 µg/L	98
PFOA	6.982	413.0 -> 369.0	69228	49.07 µg/L	100
PFOS	7.490	499.0 -> 80.0	62607	49.10 µg/L	m 98
PFPeA	4.663	263.0 -> 219.0	162539	50.33 µg/L	100
PFPeS	5.668	349.0 -> 80.0	46934	50.13 µg/L	99
PFTeDA	12.620	713.0 -> 669.0	32199	50.24 µg/L	100
PFTTrDA	11.594	663.0 -> 619.0	42729	50.09 µg/L	100
PFUnDA	9.173	563.0 -> 519.0	59395	49.17 µg/L	99

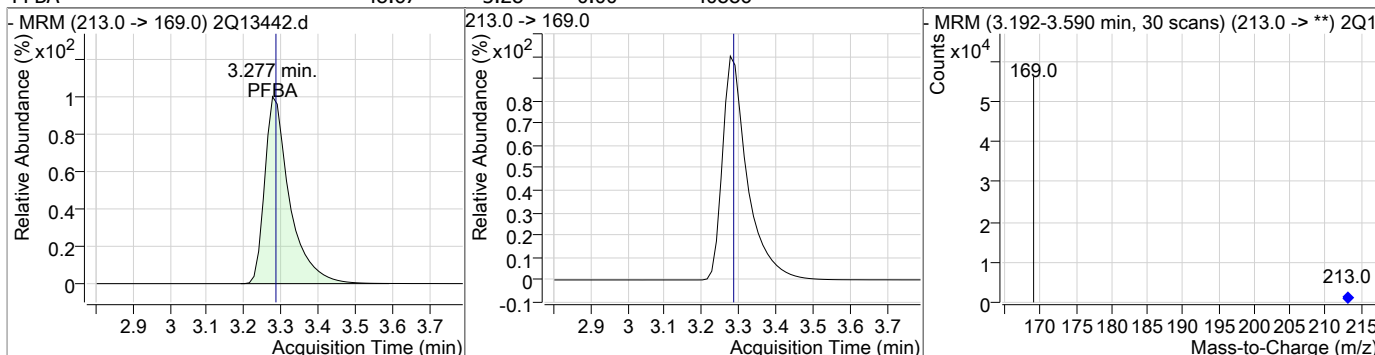
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.7  
**10**

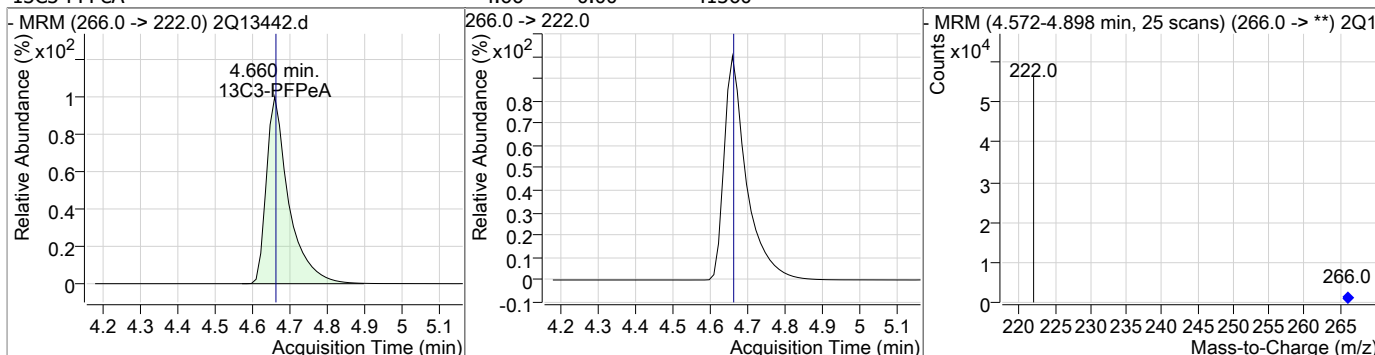
### Perfluorinated Compounds by LC/MS/MS



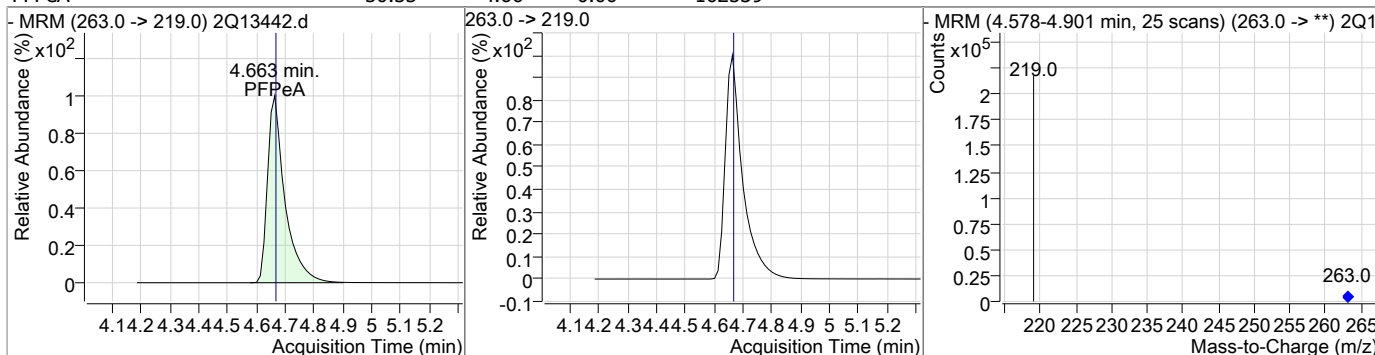
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	48.67	3.28	0.00	40886				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	0.00	41360				

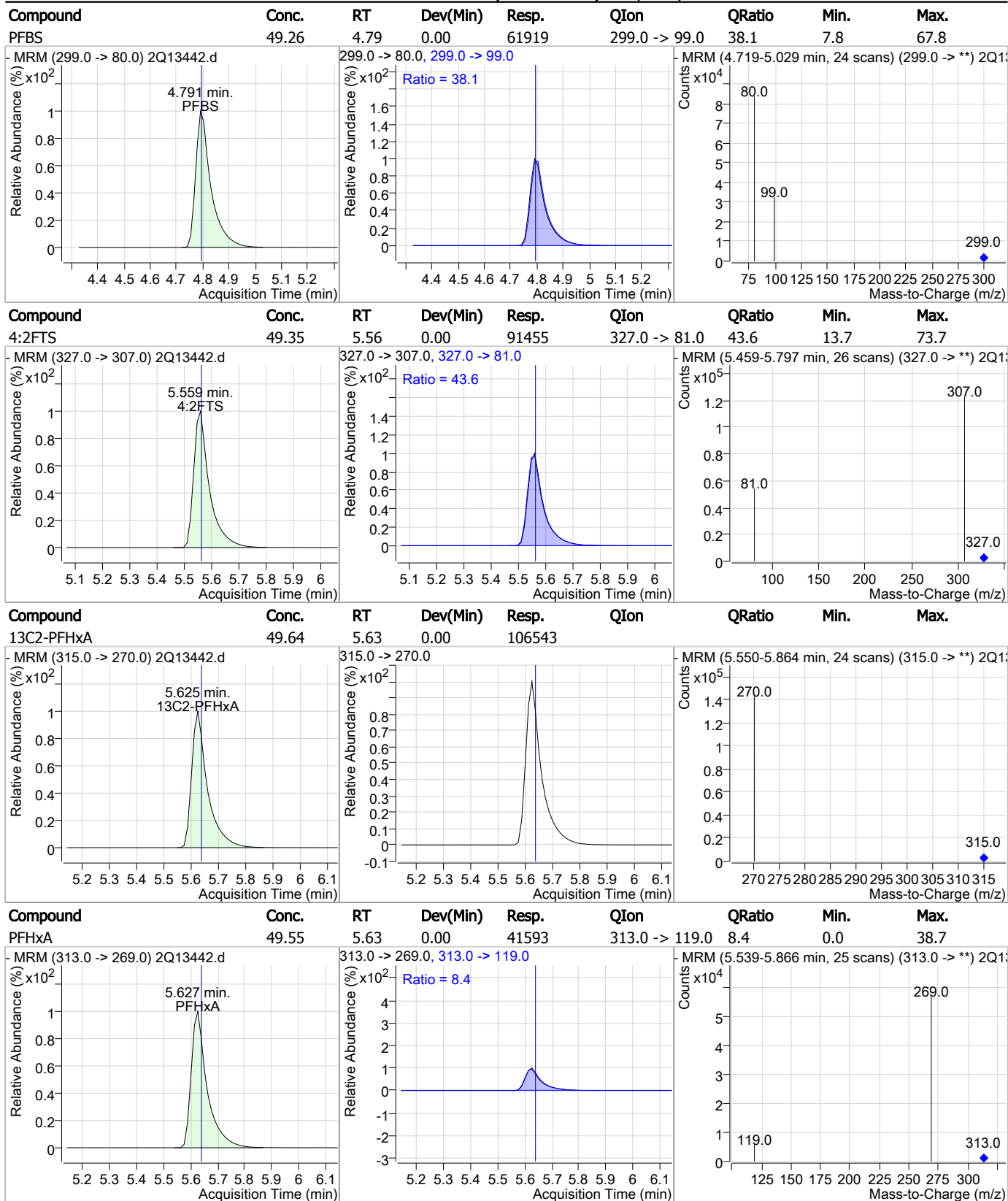


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.33	4.66	0.00	162539				



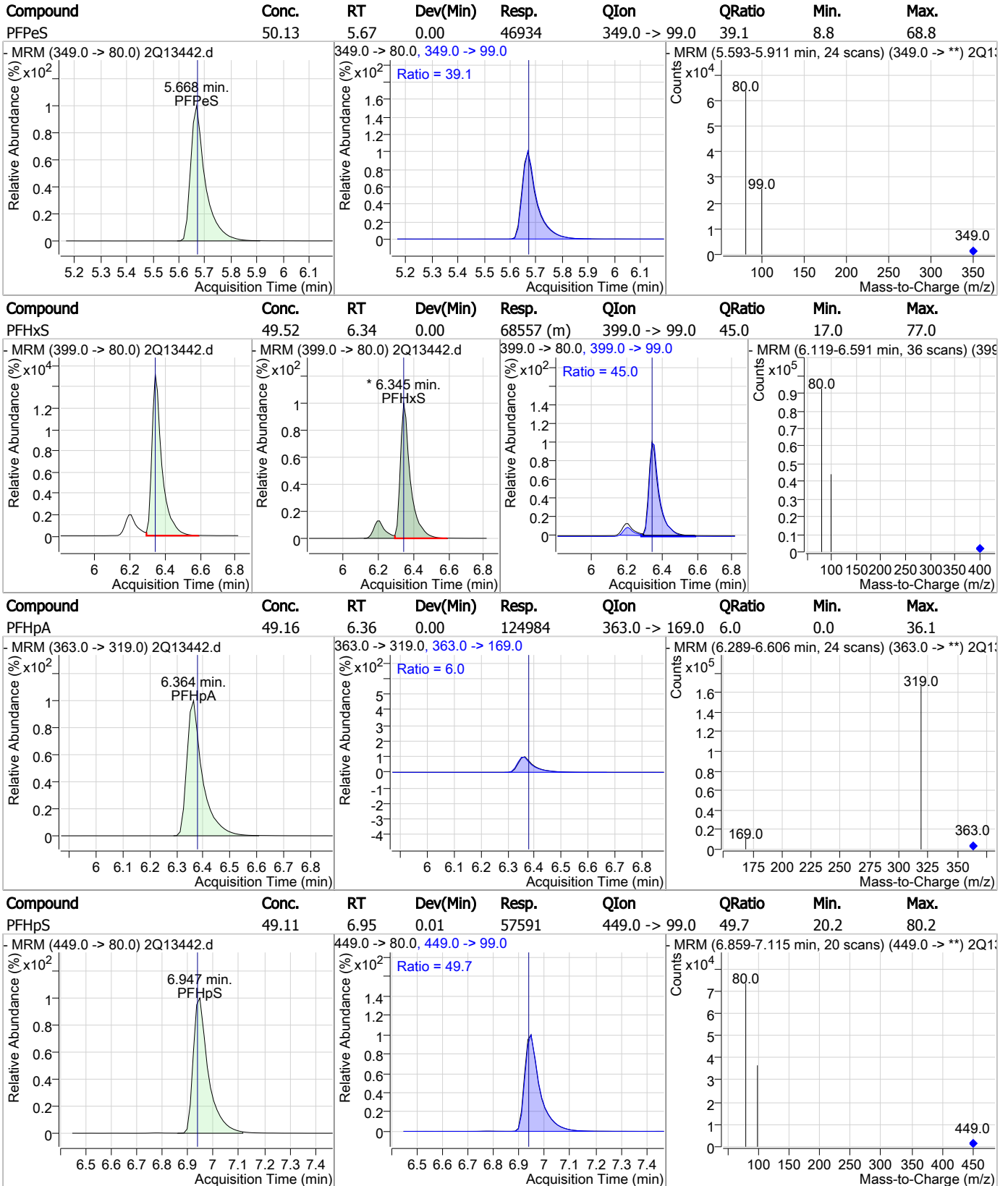
10.5.7 10

### Perfluorinated Compounds by LC/MS/MS



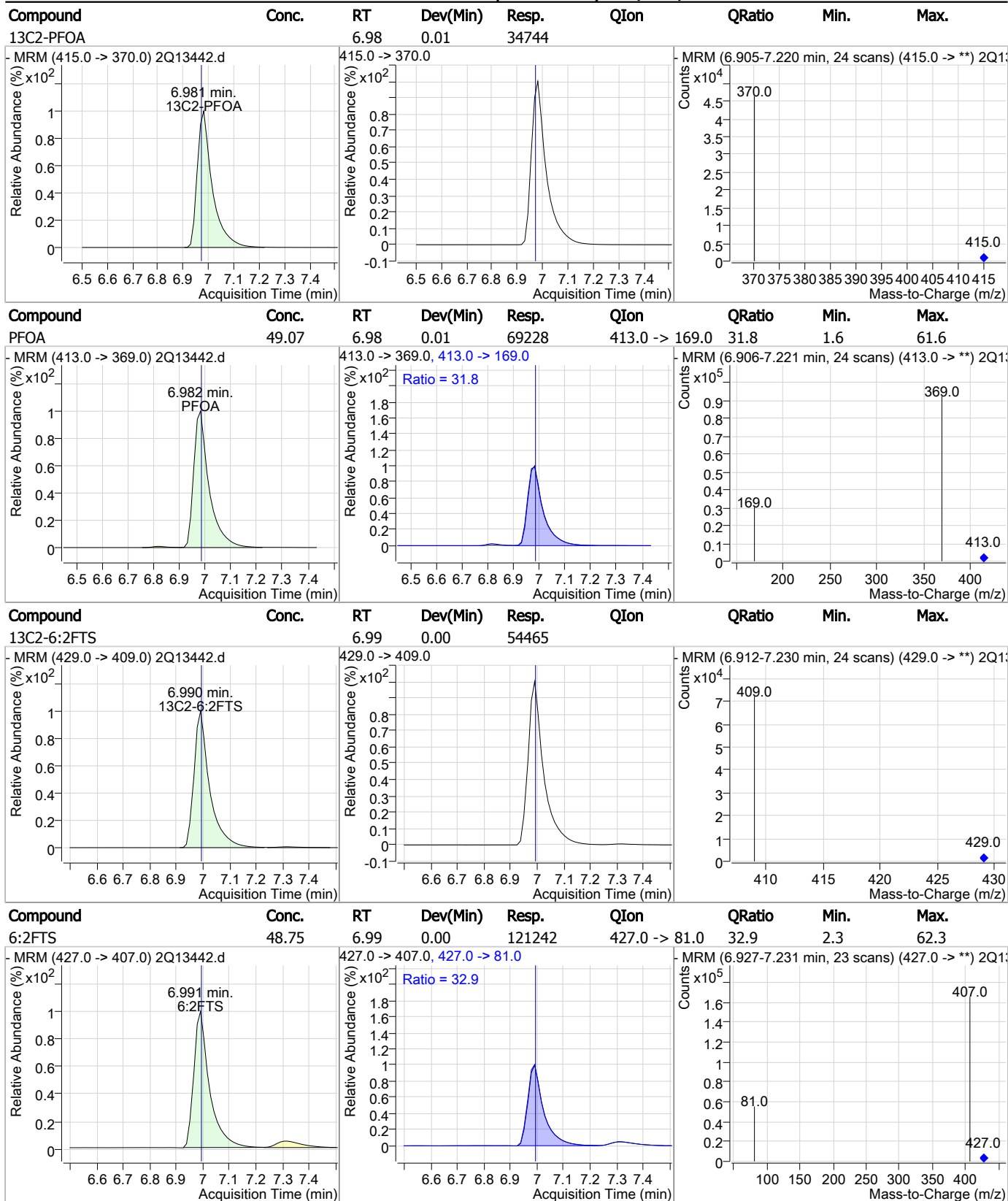
10.5.7 10

### Perfluorinated Compounds by LC/MS/MS



10.5.7 10

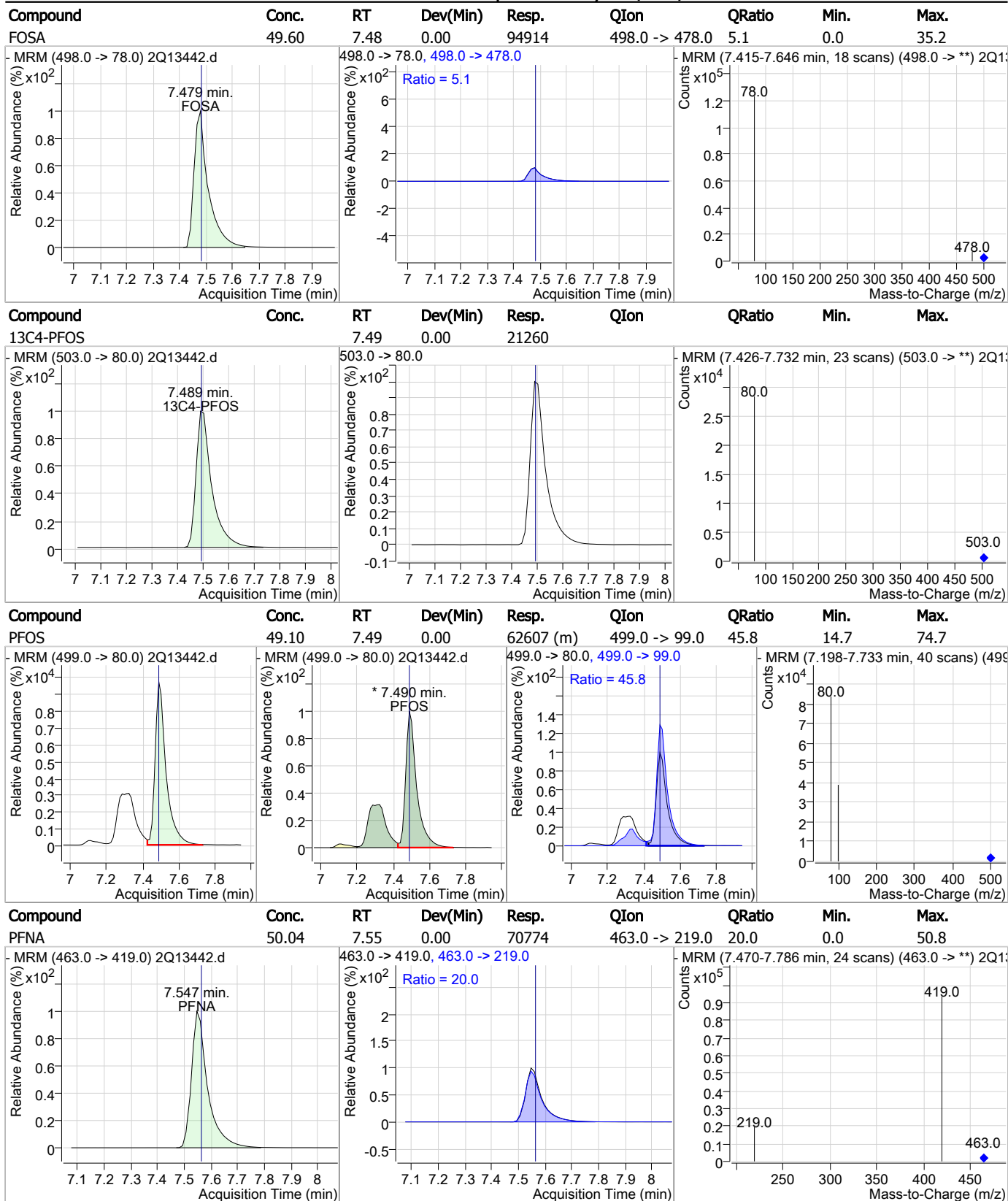
### Perfluorinated Compounds by LC/MS/MS



10.5.7 10

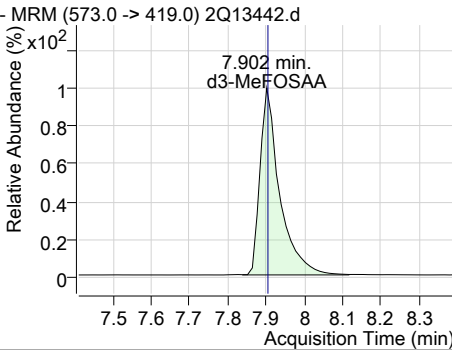
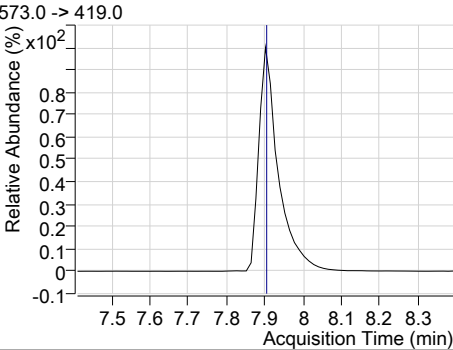
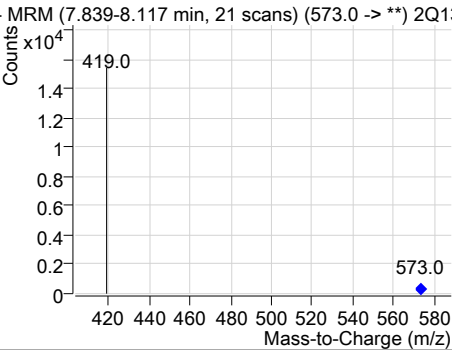
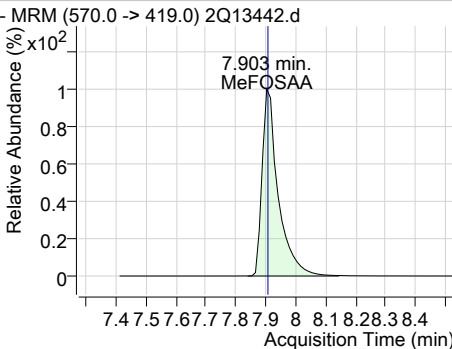
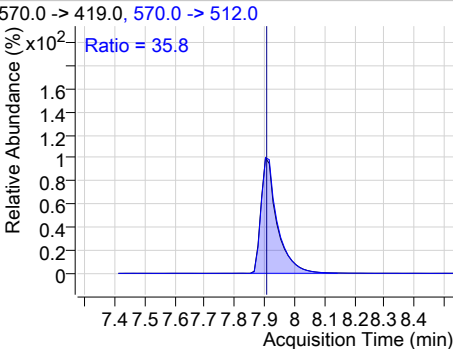
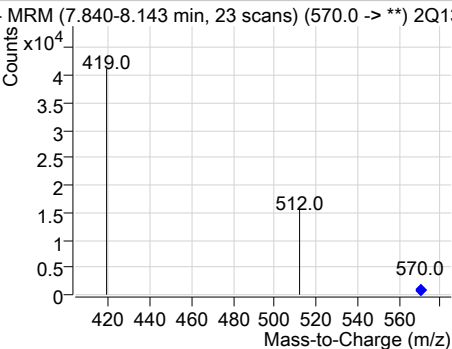
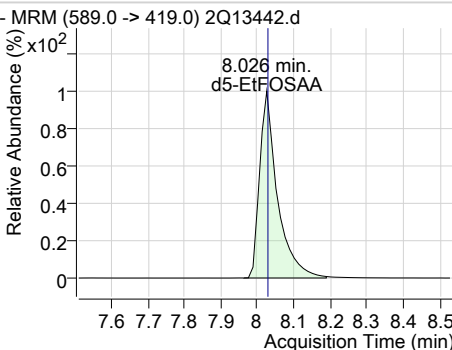
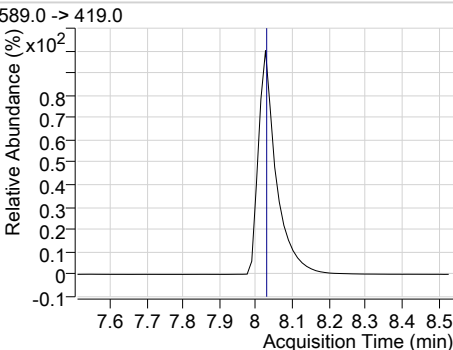
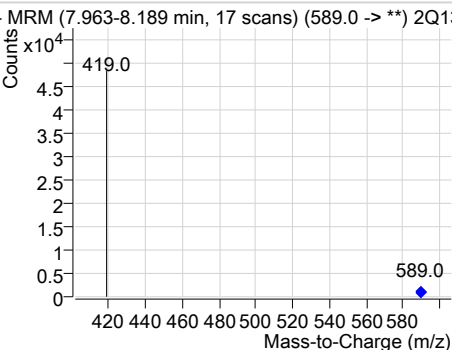
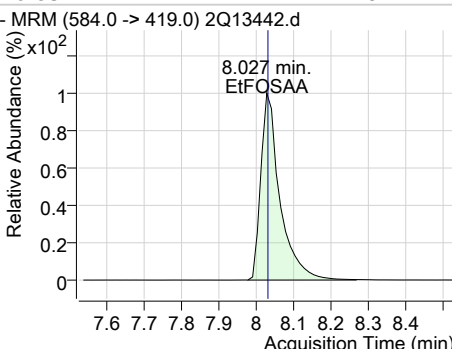
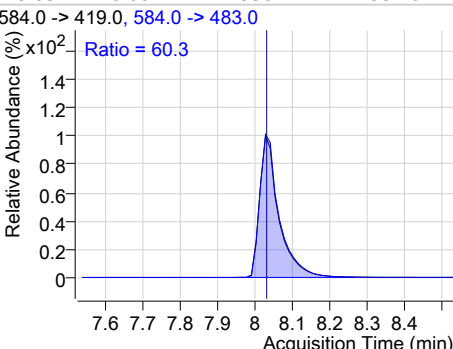
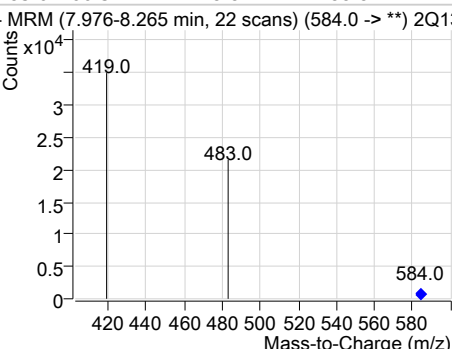


### Perfluorinated Compounds by LC/MS/MS



10.5.7 10

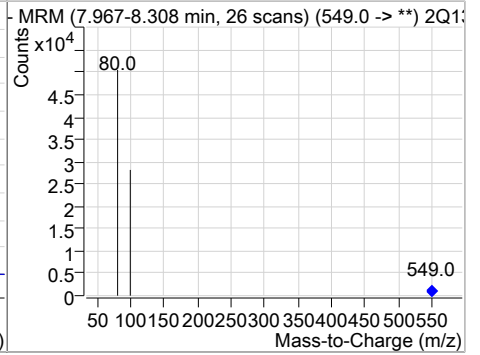
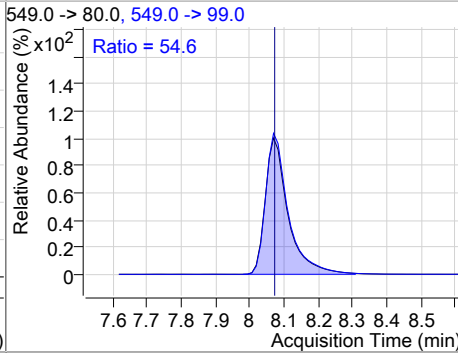
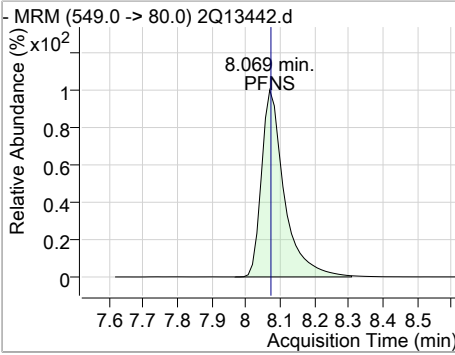
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10866				
- MRM (573.0 -> 419.0) 2Q13442.d			573.0 -> 419.0			- MRM (7.839-8.117 min, 21 scans) (573.0 -> **) 2Q1:		
								
MeFOSAA	49.03	7.90	0.00	30349	570.0 -> 512.0	35.8	5.3	65.3
- MRM (570.0 -> 419.0) 2Q13442.d			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.840-8.143 min, 23 scans) (570.0 -> **) 2Q1:		
								
d5-EtFOSAA	49.92	8.03	0.00	35588				
- MRM (589.0 -> 419.0) 2Q13442.d			589.0 -> 419.0			- MRM (7.963-8.189 min, 17 scans) (589.0 -> **) 2Q1:		
								
EtFOSAA	49.44	8.03	0.00	25502	584.0 -> 483.0	60.3	28.8	88.8
- MRM (584.0 -> 419.0) 2Q13442.d			584.0 -> 419.0, 584.0 -> 483.0			- MRM (7.976-8.265 min, 22 scans) (584.0 -> **) 2Q1:		
								

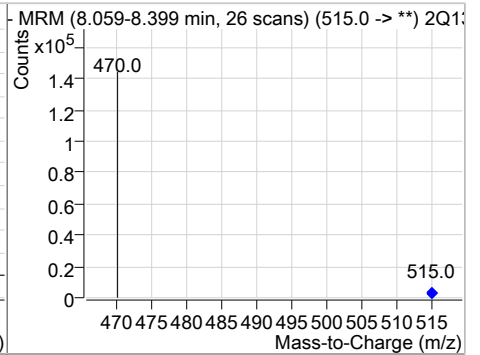
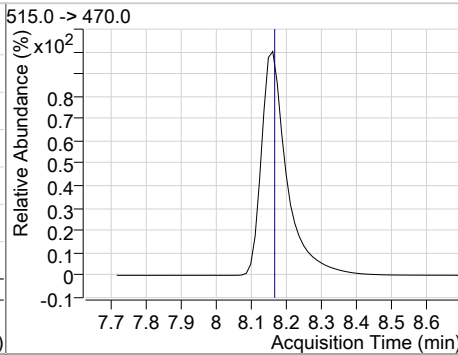
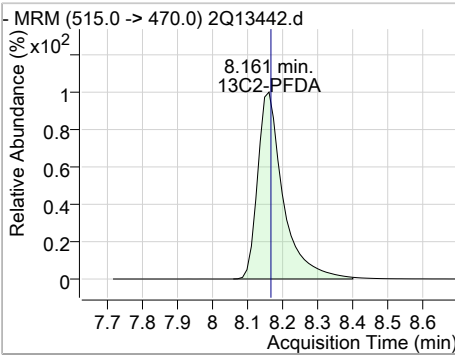
10.5.7 10

### Perfluorinated Compounds by LC/MS/MS

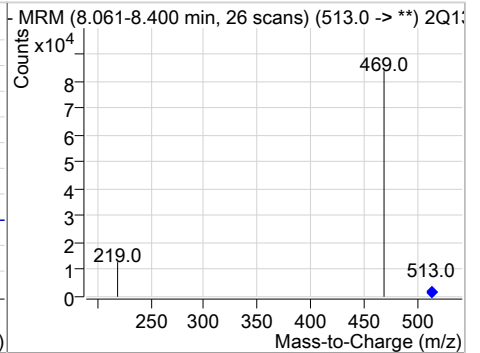
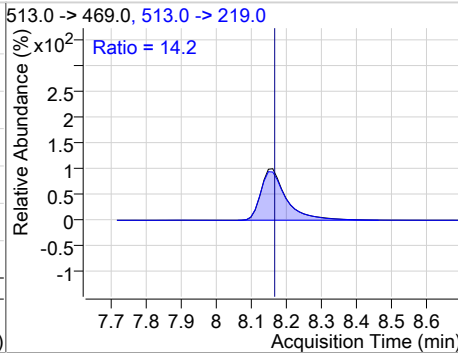
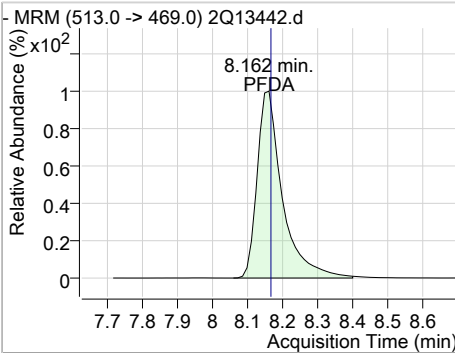
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.94	8.07	0.00	37460	549.0 -> 99.0	54.6	23.0	83.0



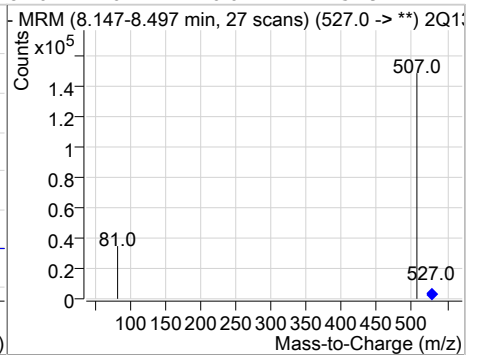
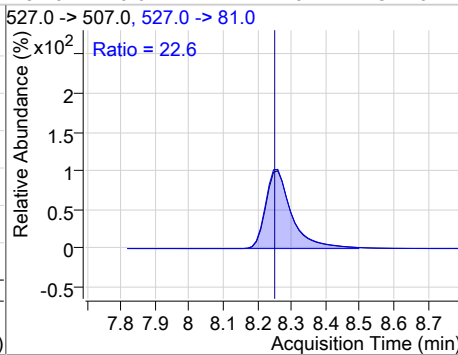
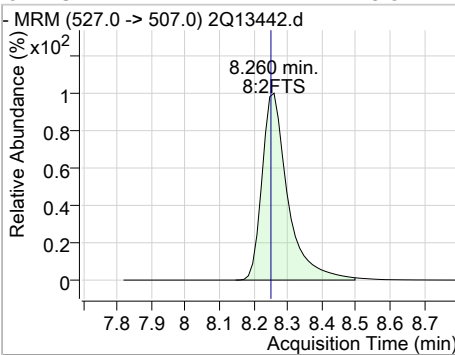
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	48.91	8.16	0.01	107817				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.50	8.16	0.01	61978	513.0 -> 219.0	14.2	0.0	44.5

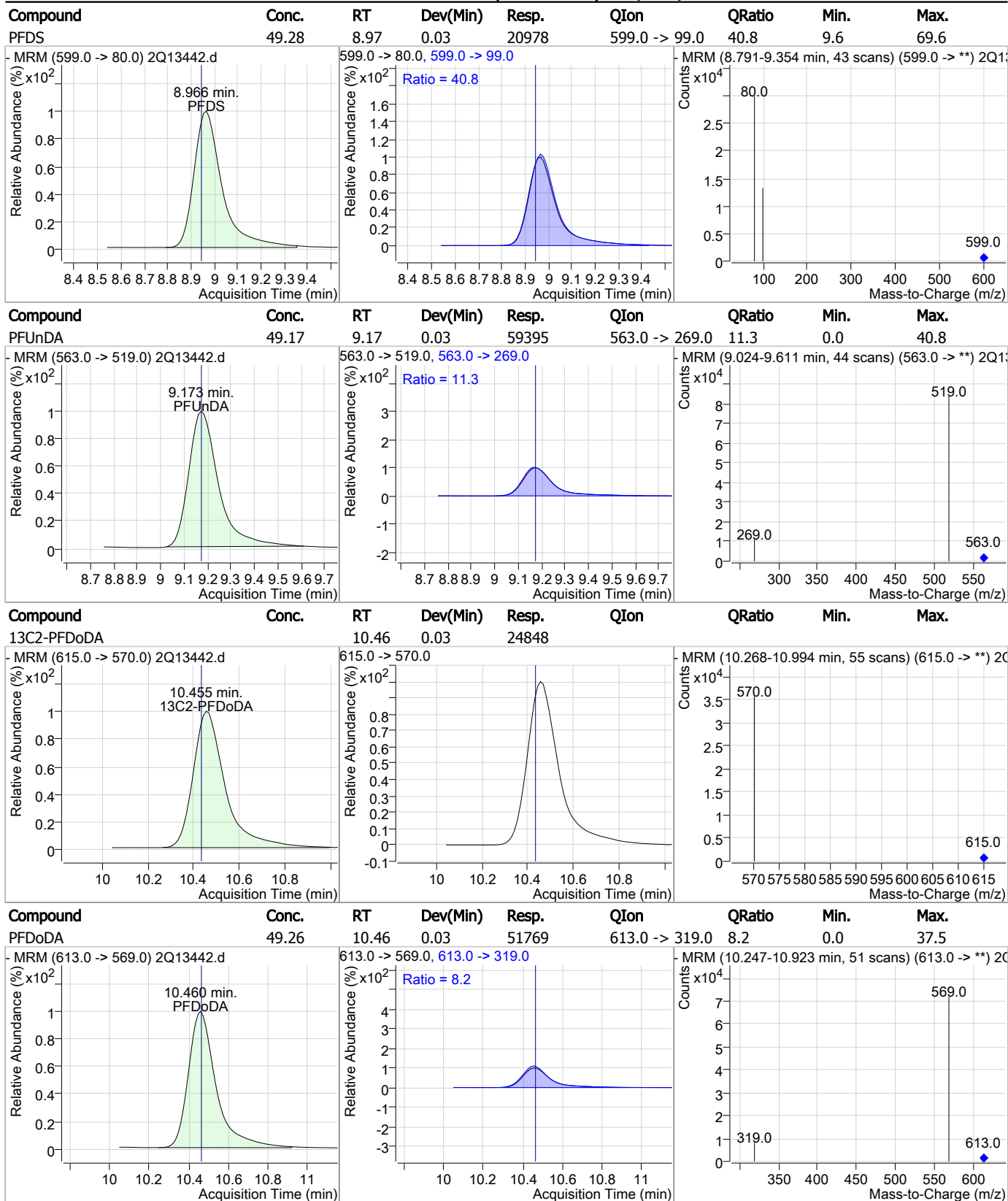


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	49.51	8.26	0.01	11126	527.0 -> 81.0	22.6	0.0	51.9



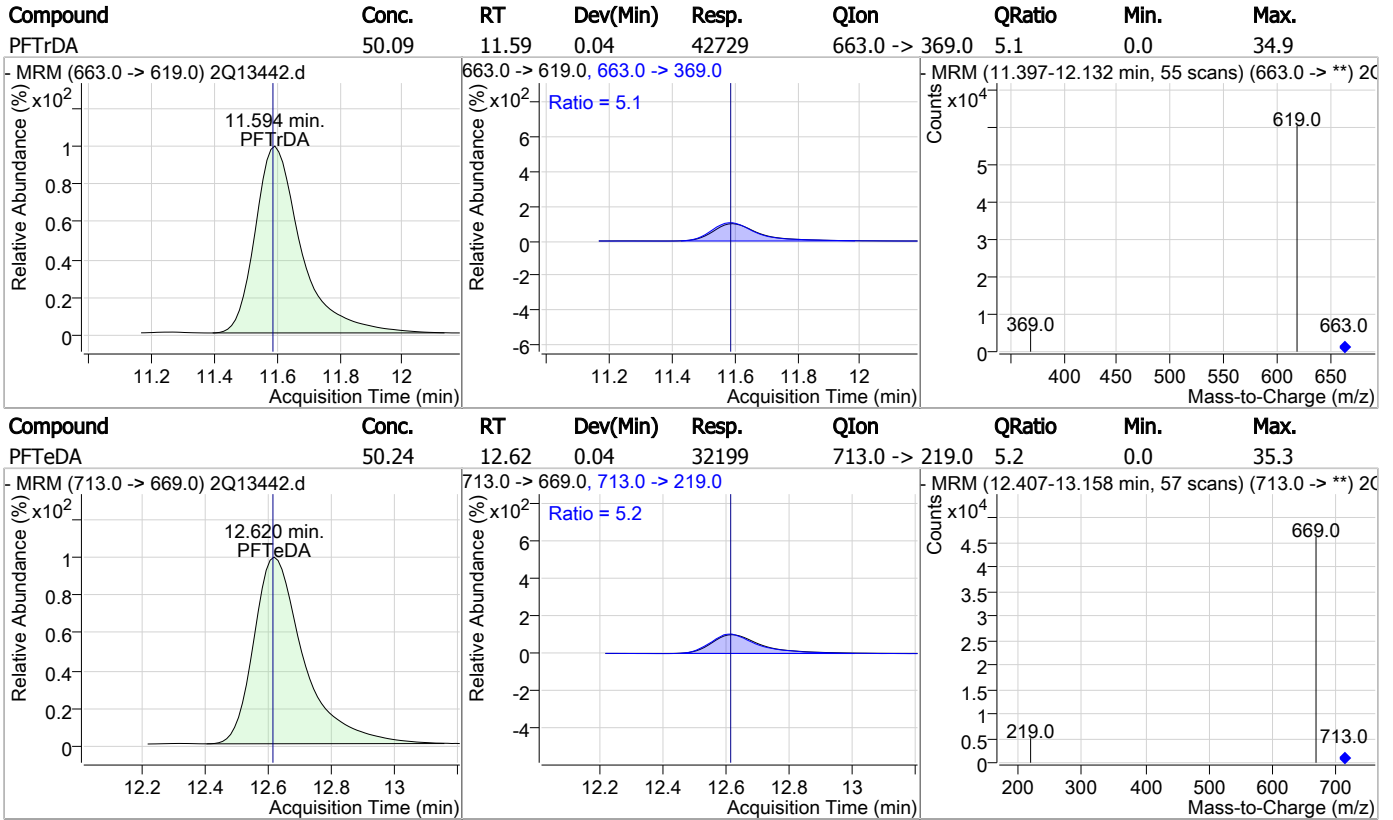
10.5.7 10

### Perfluorinated Compounds by LC/MS/MS



10.5.7 10

### Perfluorinated Compounds by LC/MS/MS



10.5.7  
10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13442.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 14:10      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.7.1  
10

Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

Mike Eger  
 04/25/18 16:35

## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13443.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 2:29:46 PM  
 Sample Name : IC249-100  
 Vial : Vial 9  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

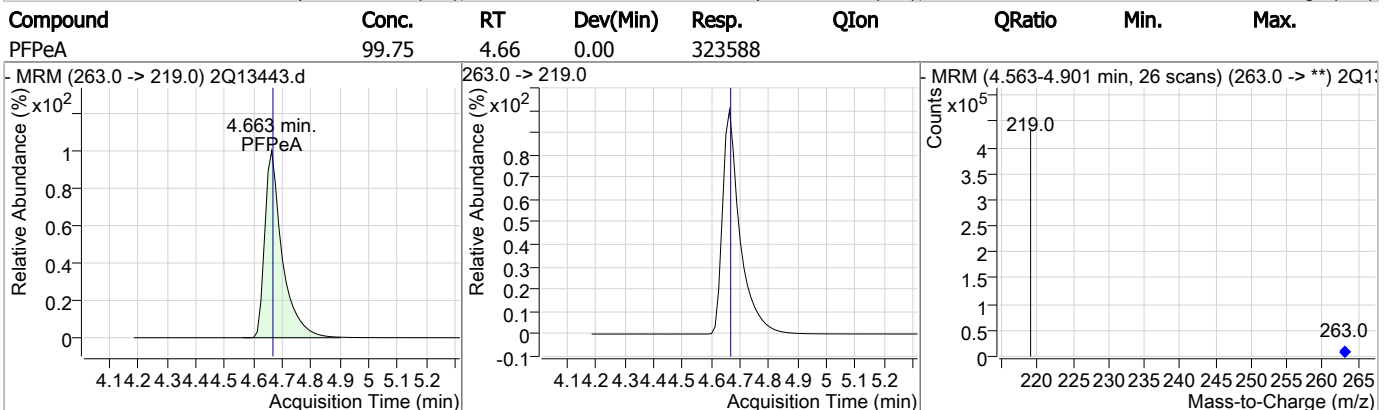
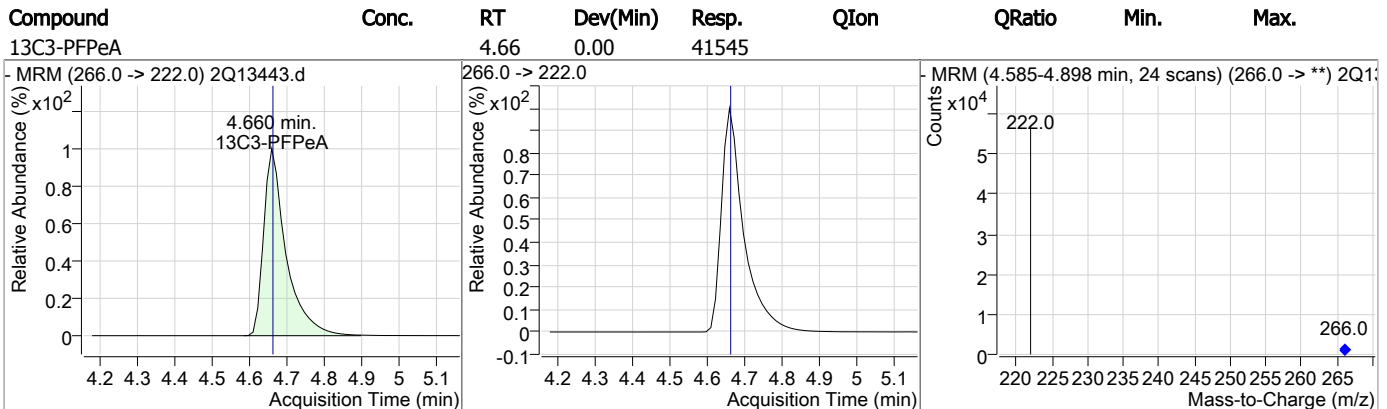
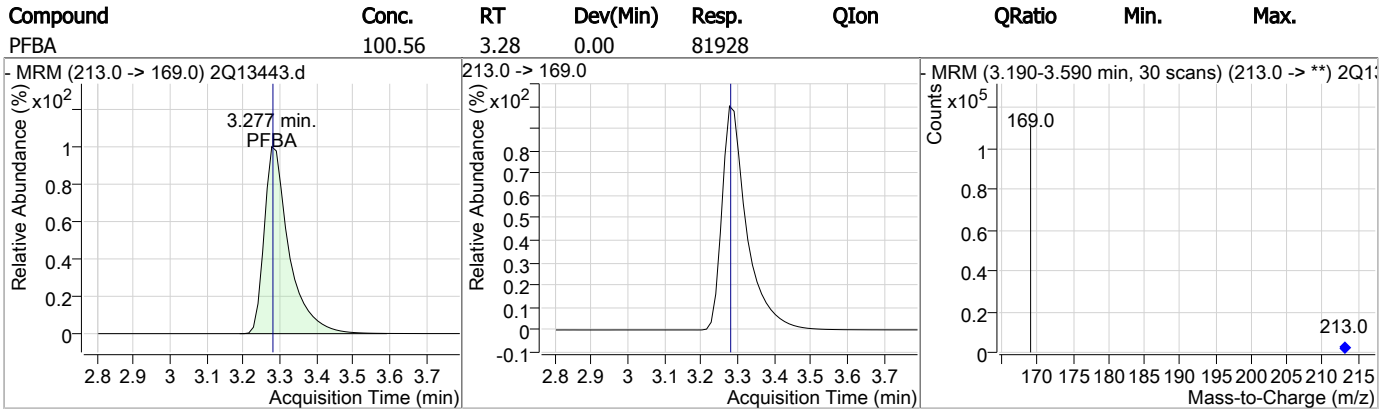
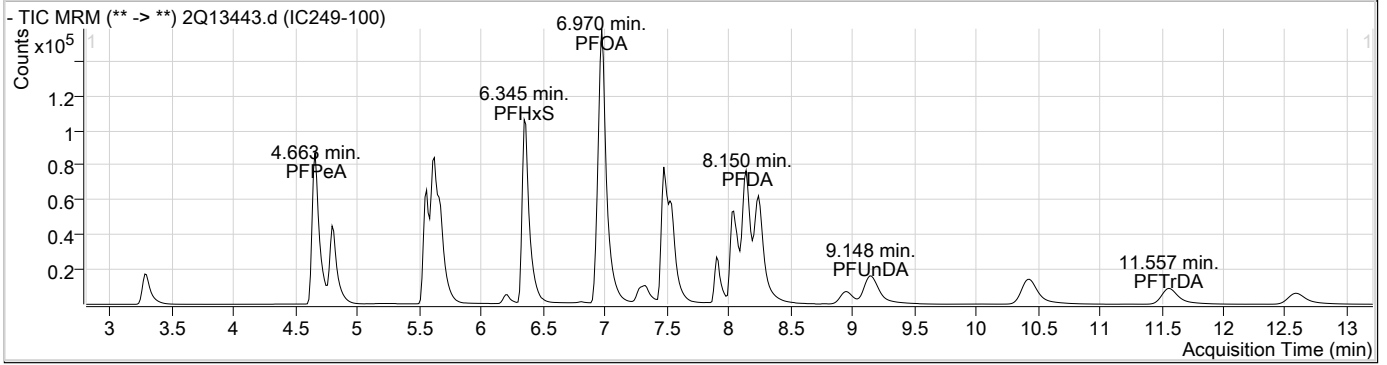
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	60773	20.00 µg/L	0.000
13C2-PFDoDA	10.430	615.0 -> 570.0	25355	20.00 µg/L	0.000
13C2-PFOA	6.968	415.0 -> 370.0	33694	20.00 µg/L	0.000
13C3-PFPeA	4.660	266.0 -> 222.0	41545	20.00 µg/L	0.000
13C4-PFOS	7.489	503.0 -> 80.0	20988	20.00 µg/L	0.000
d3-MeFOSAA	7.902	573.0 -> 419.0	10882	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.149	515.0 -> 470.0	215387	100.76 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 503.8%	
13C2-PFHxA	5.625	315.0 -> 270.0	207609	99.74 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 498.7%	
d5-EtFOSAA	8.026	589.0 -> 419.0	69566	100.01 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 500.0%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	182626	100.14 µg/L	QValue 99
6:2FTS	6.991	427.0 -> 407.0	243037	101.16 µg/L	99
8:2FTS	8.247	527.0 -> 507.0	226153	100.11 µg/L	98
EtFOSAA	8.027	584.0 -> 419.0	50478	100.07 µg/L	98
FOSA	7.479	498.0 -> 78.0	176435	100.07 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	62382	100.64 µg/L	99
PFBA	3.277	213.0 -> 169.0	81928	100.56 µg/L	100
PFBS	4.791	299.0 -> 80.0	124732	100.51 µg/L	100
PFDA	8.150	513.0 -> 469.0	121610	100.16 µg/L	99
PFDoDA	10.435	613.0 -> 569.0	107178	99.95 µg/L	99
PFDS	8.941	599.0 -> 80.0	42326	100.71 µg/L	99
PFHpA	6.364	363.0 -> 319.0	246906	100.14 µg/L	100
PFHpS	6.934	449.0 -> 80.0	116723	100.82 µg/L	98
PFHxA	5.627	313.0 -> 269.0	81358	99.95 µg/L	99
PFHxS	6.345	399.0 -> 80.0	137196	100.38 µg/L	m 100
PFNA	7.547	463.0 -> 419.0	136861	99.79 µg/L	100
PFNS	8.069	549.0 -> 80.0	73934	99.85 µg/L	99
PFOA	6.970	413.0 -> 369.0	137652	100.60 µg/L	99
PFOS	7.490	499.0 -> 80.0	126515	100.51 µg/L	m 93
PFPeA	4.663	263.0 -> 219.0	323588	99.75 µg/L	100
PFPeS	5.668	349.0 -> 80.0	93997	99.95 µg/L	99
PFTeDA	12.583	713.0 -> 669.0	65004	99.39 µg/L	100
PFTrDA	11.557	663.0 -> 619.0	86690	99.58 µg/L	100
PFUnDA	9.148	563.0 -> 519.0	122563	99.43 µg/L	99

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

10.5.8  
10



### Perfluorinated Compounds by LC/MS/MS

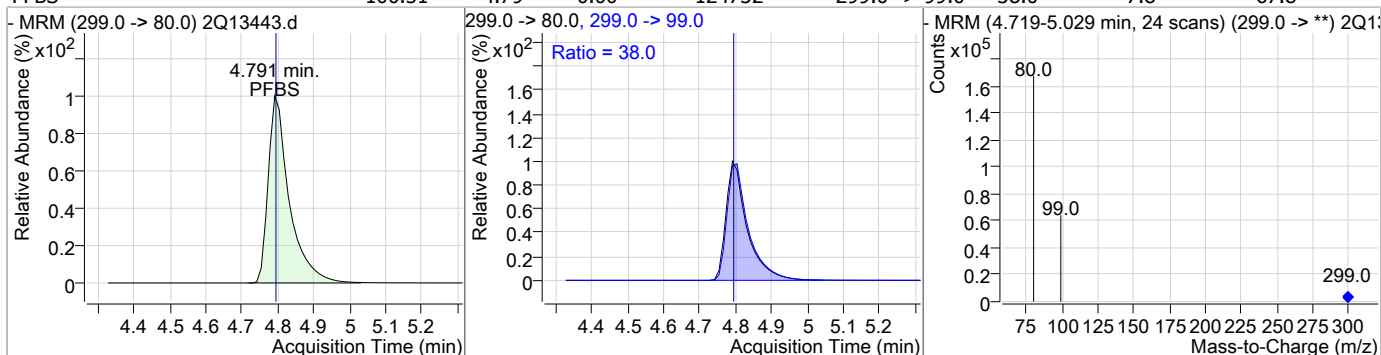


10.5.8 10

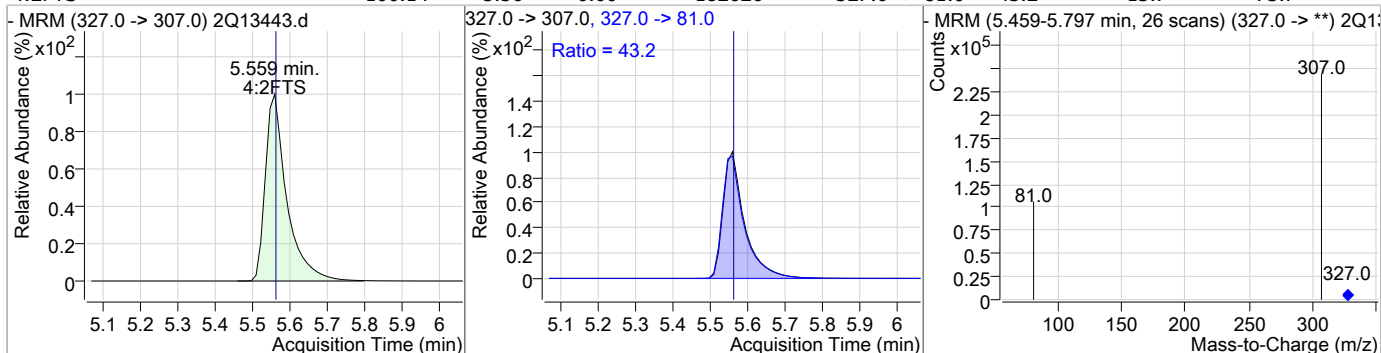


### Perfluorinated Compounds by LC/MS/MS

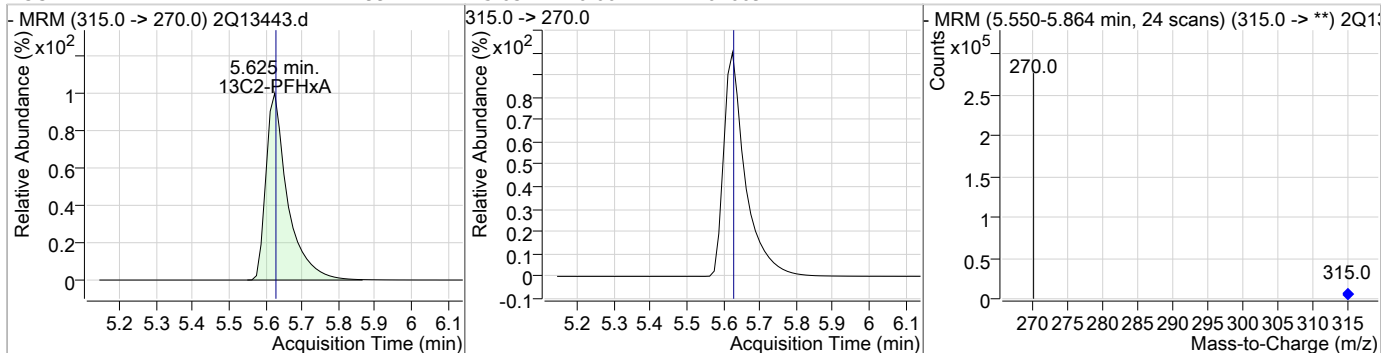
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.51	4.79	0.00	124732	299.0 -> 99.0	38.0	7.8	67.8



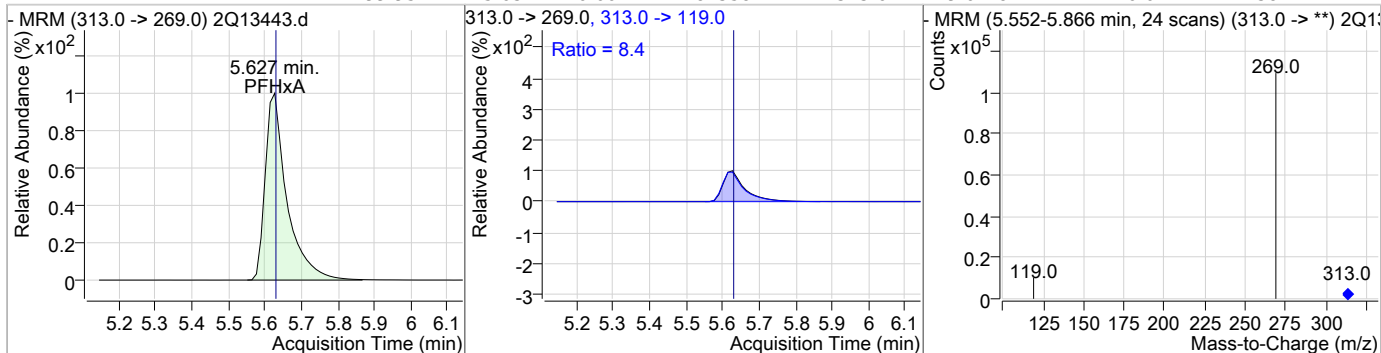
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	100.14	5.56	0.00	182626	327.0 -> 81.0	43.2	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	99.74	5.63	0.00	207609	315.0 -> 270.0			

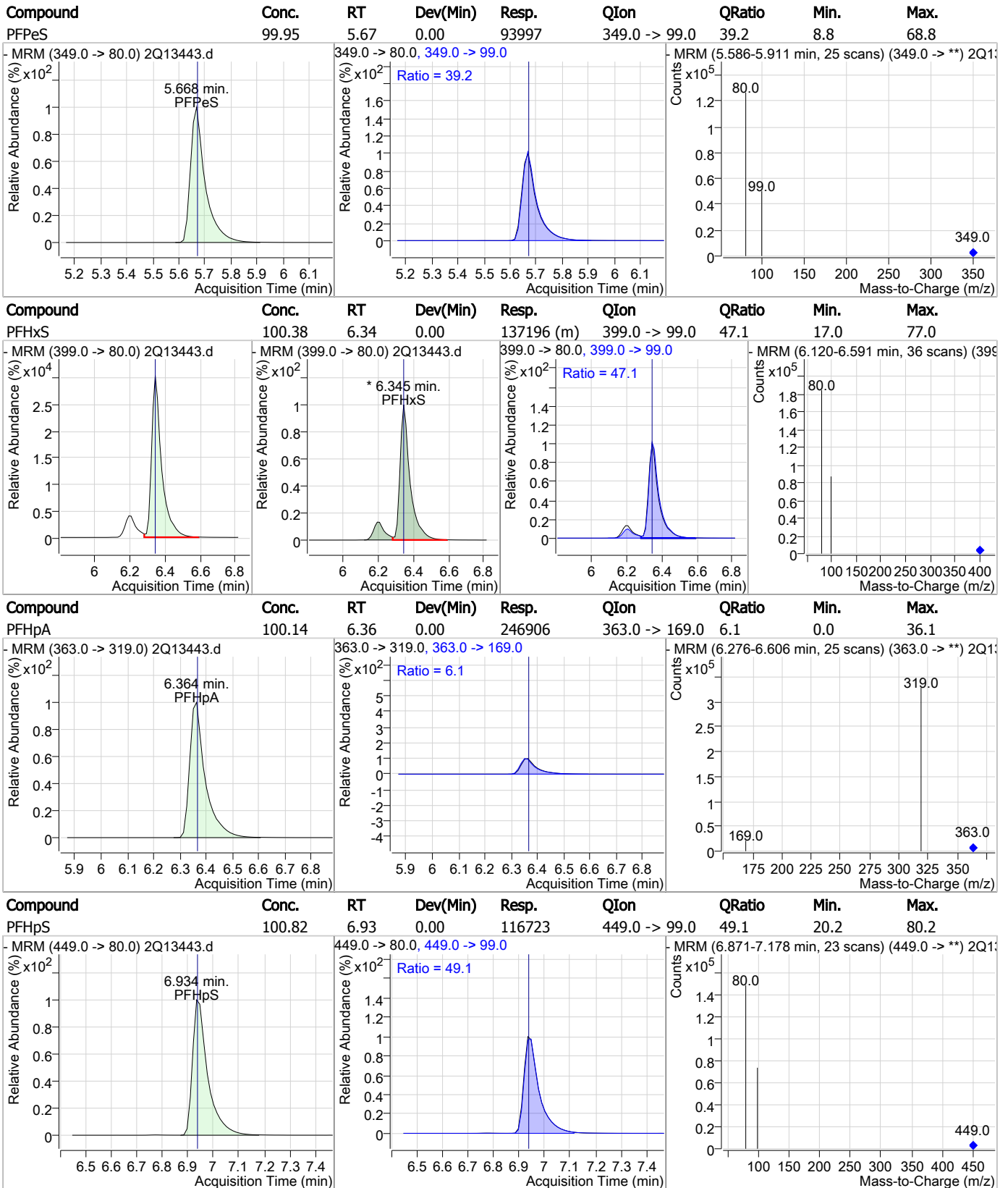


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.95	5.63	0.00	81358	313.0 -> 119.0	8.4	0.0	38.7



10.5.8 10

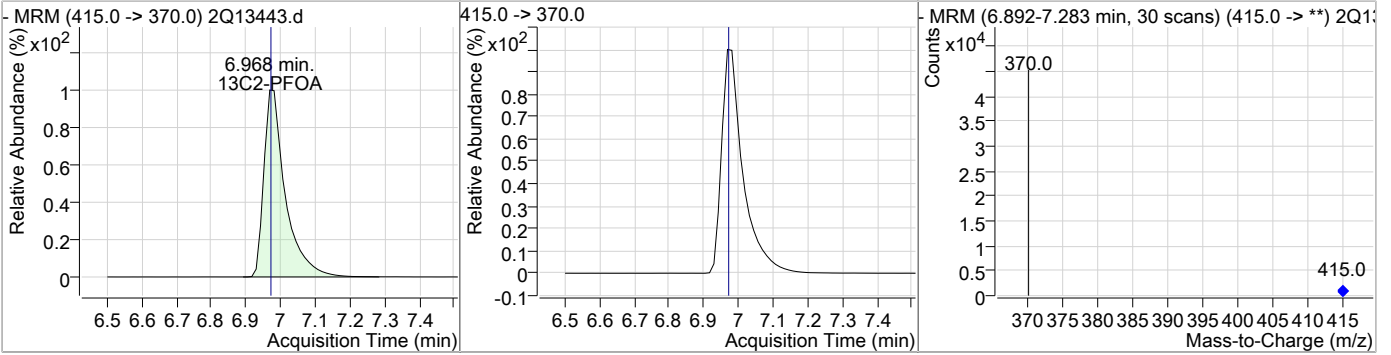
### Perfluorinated Compounds by LC/MS/MS



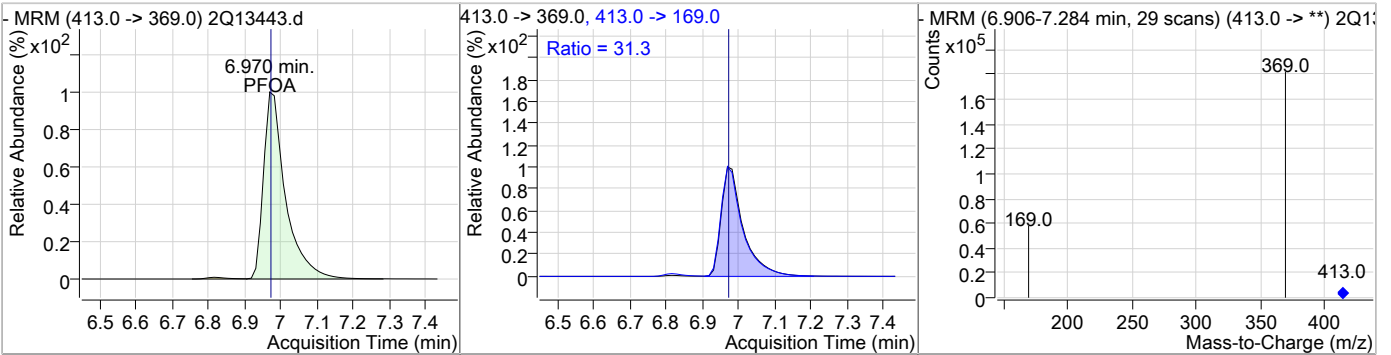
10.5.8 10

### Perfluorinated Compounds by LC/MS/MS

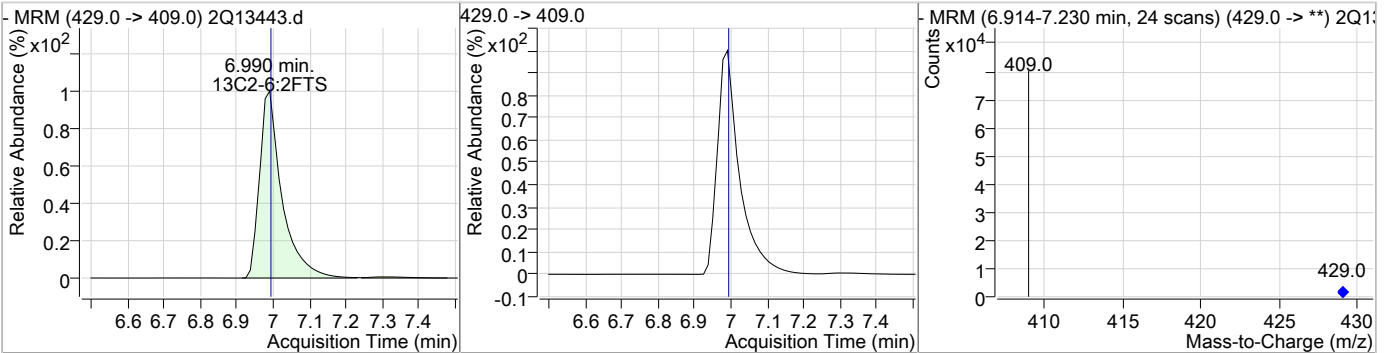
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		6.97	0.00	33694				



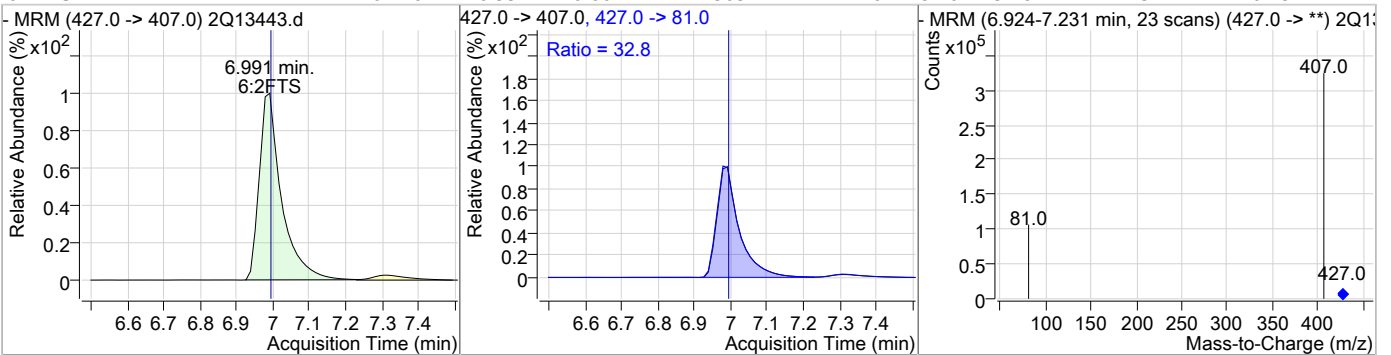
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.	
PFOA	100.60	6.97	0.00	137652	413.0 ->	169.0	31.3	1.6	61.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		6.99	0.00	60773				



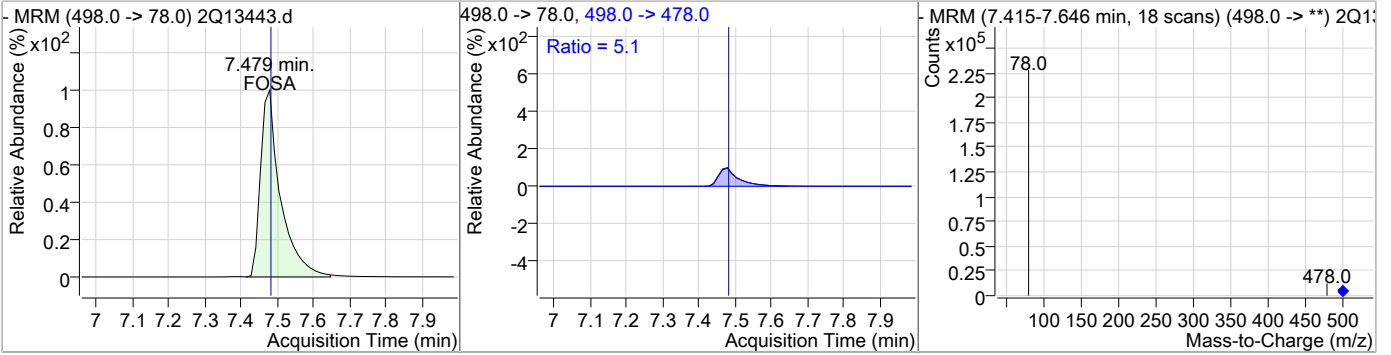
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.	
6:2FTS	101.16	6.99	0.00	243037	427.0 ->	81.0	32.8	2.3	62.3



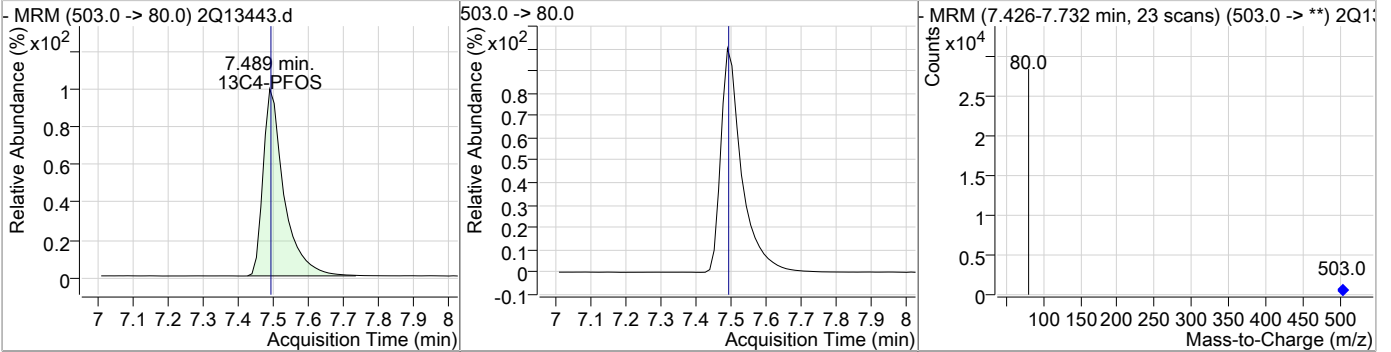
10.5.8 10

### Perfluorinated Compounds by LC/MS/MS

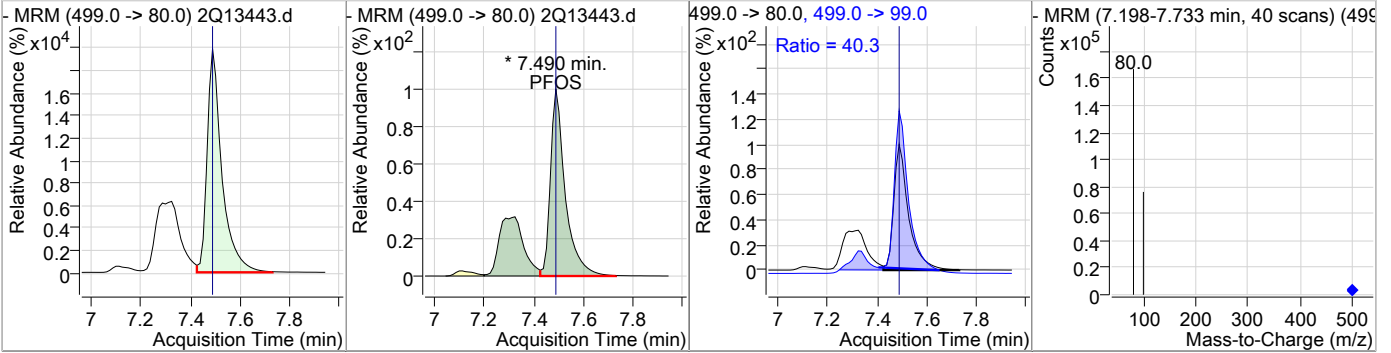
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.07	7.48	0.00	176435	498.0 -> 478.0	5.1	0.0	35.2



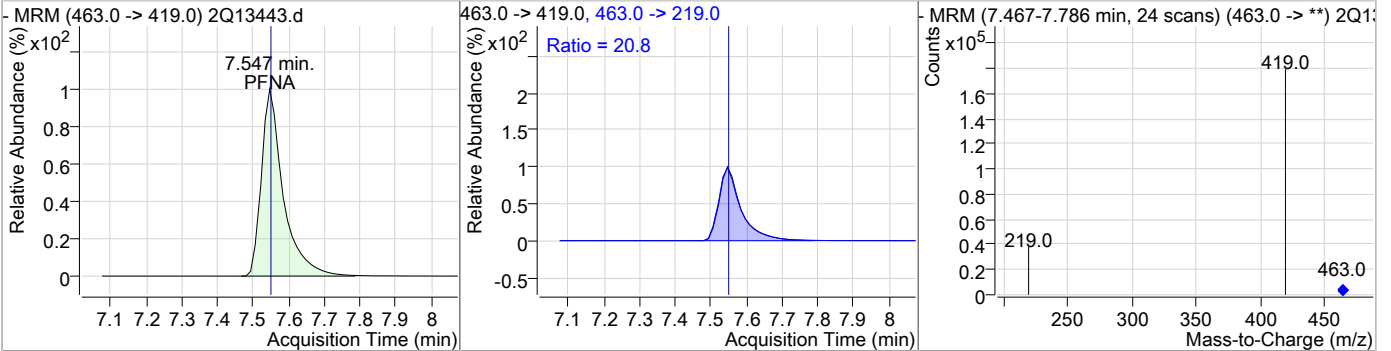
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	20988				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.51	7.49	0.00	126515 (m)	499.0 -> 99.0	40.3	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	99.79	7.55	0.00	136861	463.0 -> 219.0	20.8	0.0	50.8



10.5.8 10

### Perfluorinated Compounds by LC/MS/MS

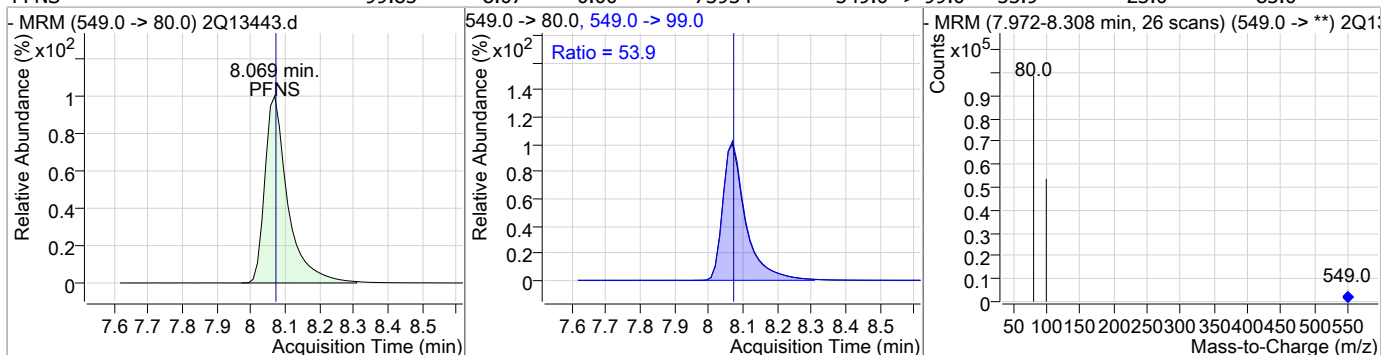
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10882				
- MRM (573.0 -> 419.0) 2Q13443.d			573.0 -> 419.0			- MRM (7.852-8.142 min, 22 scans) (573.0 -> **) 2Q1:		
MeFOSAA	100.64	7.90	0.00	62382	570.0 -> 512.0	35.8	5.3	65.3
- MRM (570.0 -> 419.0) 2Q13443.d			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.840-8.143 min, 23 scans) (570.0 -> **) 2Q1:		
d5-EtFOSAA	100.01	8.03	0.00	69566				
- MRM (589.0 -> 419.0) 2Q13443.d			589.0 -> 419.0			- MRM (7.963-8.189 min, 17 scans) (589.0 -> **) 2Q1:		
EtFOSAA	100.07	8.03	0.00	50478	584.0 -> 483.0	60.2	28.8	88.8
- MRM (584.0 -> 419.0) 2Q13443.d			584.0 -> 419.0, 584.0 -> 483.0			- MRM (7.976-8.265 min, 22 scans) (584.0 -> **) 2Q1:		

10.5.8 10

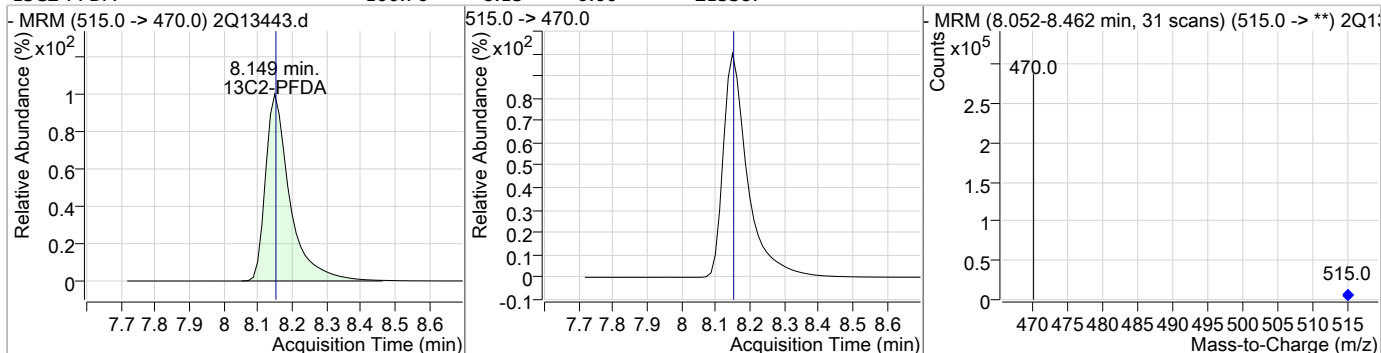


### Perfluorinated Compounds by LC/MS/MS

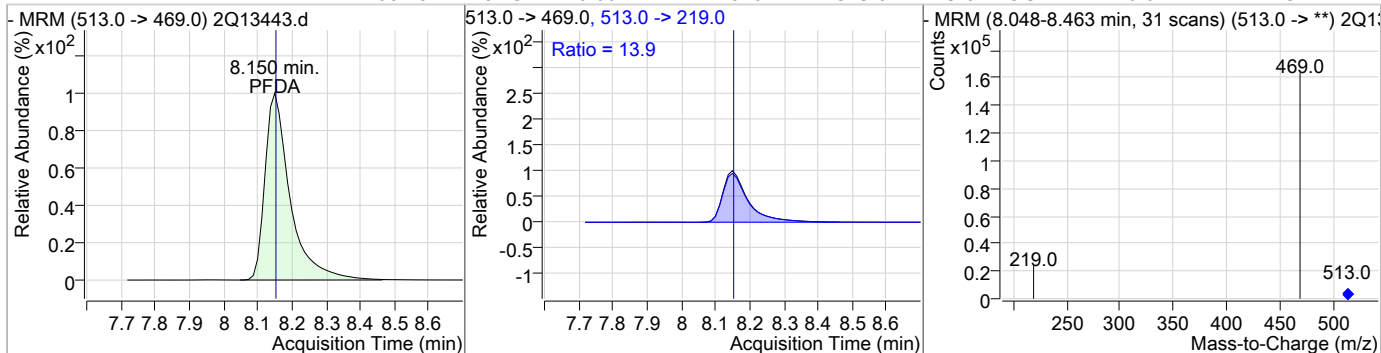
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.85	8.07	0.00	73934	549.0 -> 99.0	53.9	23.0	83.0



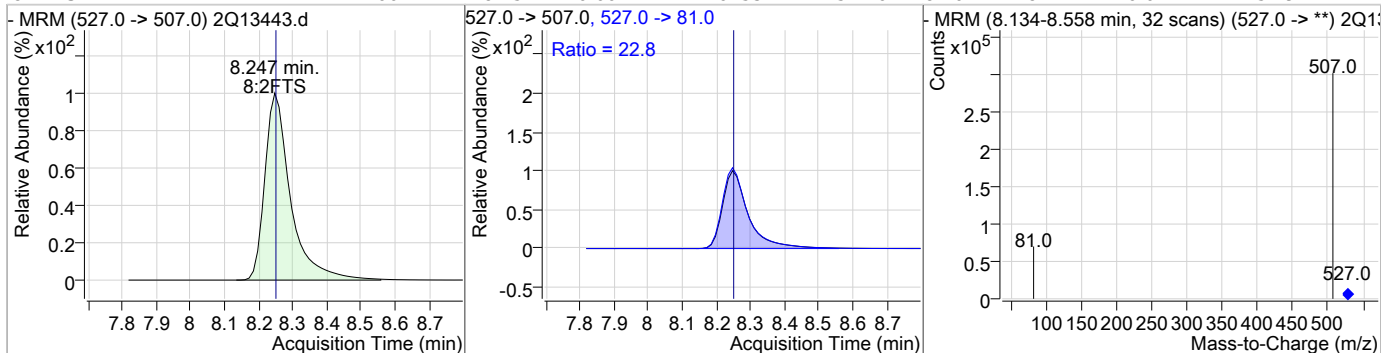
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	100.76	8.15	0.00	215387				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.16	8.15	0.00	121610	513.0 -> 219.0	13.9	0.0	44.5



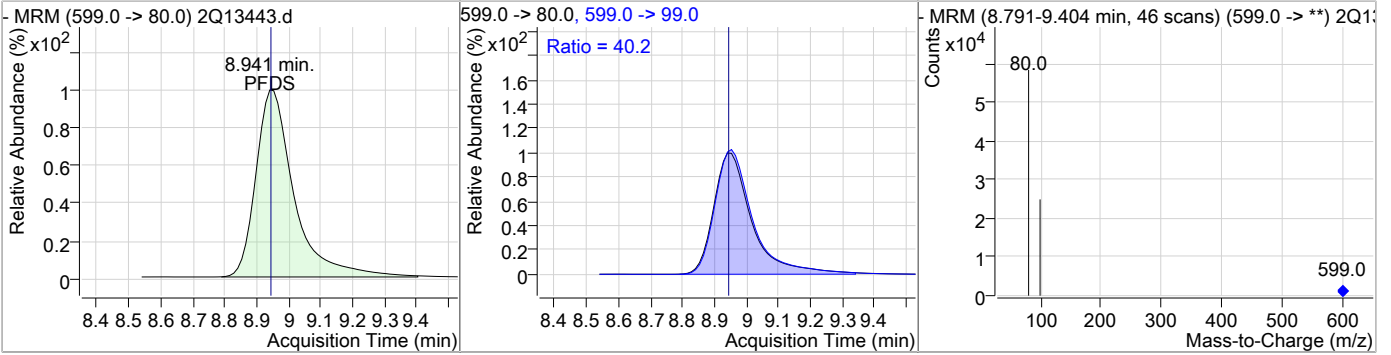
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	100.11	8.25	0.00	226153	527.0 -> 81.0	22.8	0.0	51.9



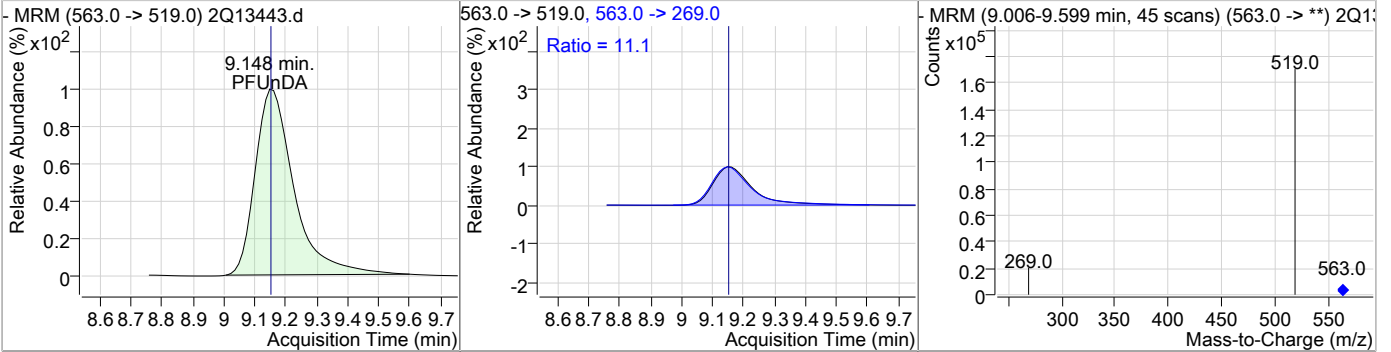
10.5.8 10

### Perfluorinated Compounds by LC/MS/MS

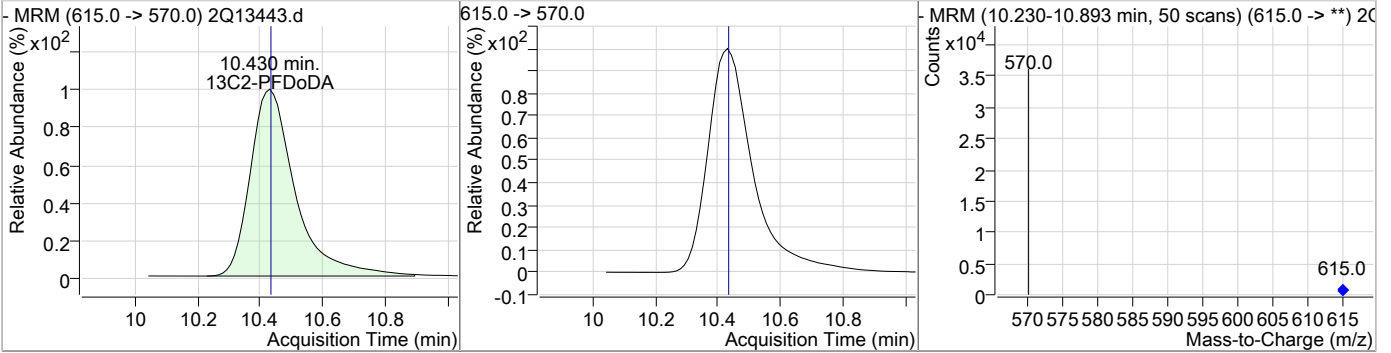
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.71	8.94	0.00	42326	599.0 -> 99.0	40.2	9.6	69.6



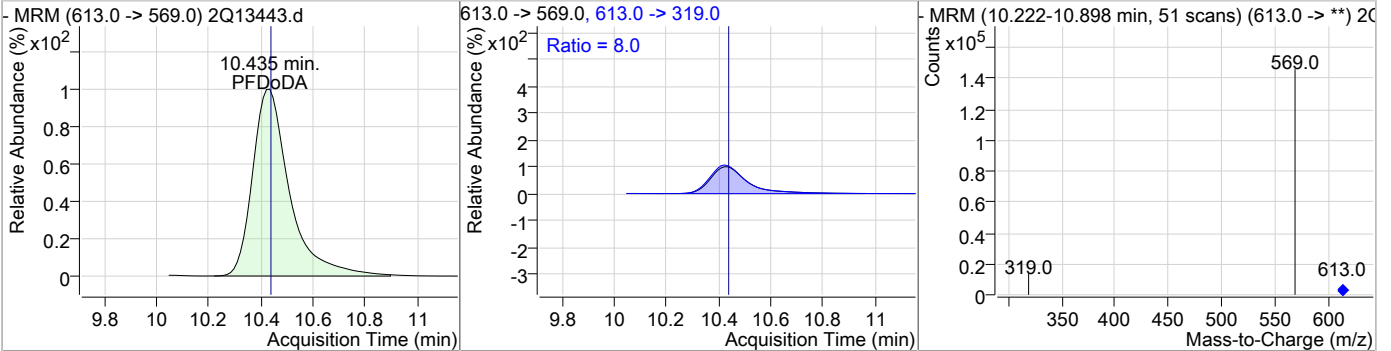
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.43	9.15	0.00	122563	563.0 -> 269.0	11.1	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.43	0.00	25355				



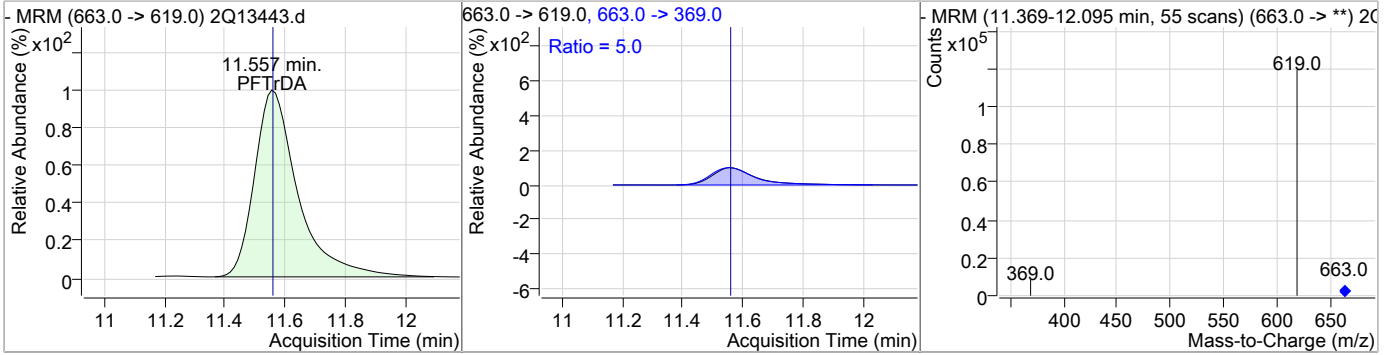
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.95	10.43	0.00	107178	613.0 -> 319.0	8.0	0.0	37.5



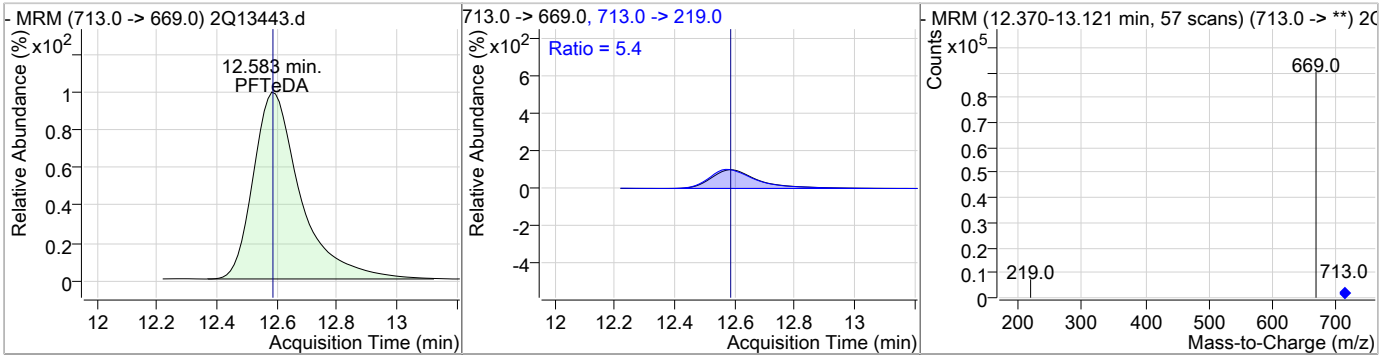
10.5.8 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	99.58	11.56	0.00	86690	663.0 -> 369.0	5.0	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.39	12.58	0.00	65004	713.0 -> 219.0	5.4	0.0	35.3



10.5.8  
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# Manual Integration Approval Summary

**Sample Number:** S2Q249-IC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13443.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 14:29      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.8.1  
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## Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13445.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/23/2018 3:15:07 PM  
 Sample Name : ICV249-20  
 Vial : Vial 11  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : S2Q249.batch.bin  
 Sample Information : op69711,S2Q249,120,,,1.0,1,water

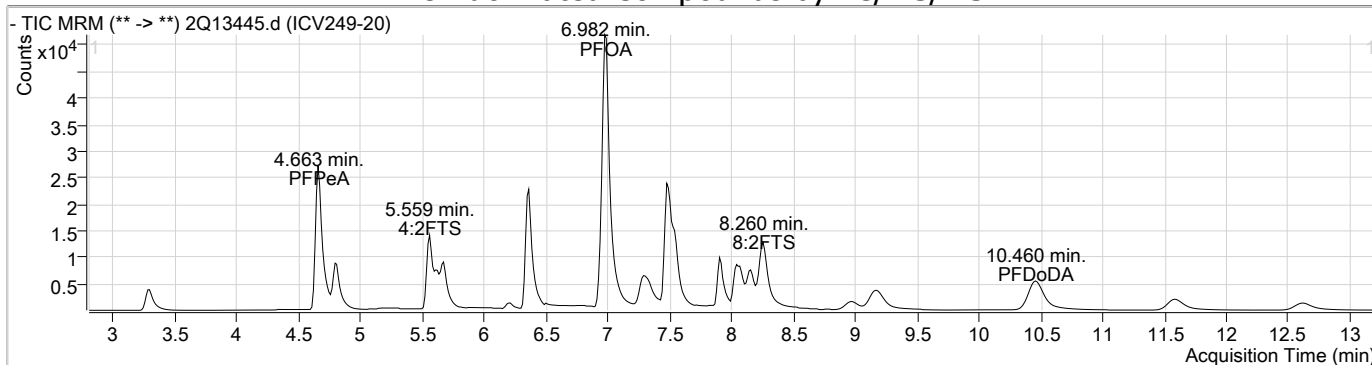
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	54725	20.00 µg/L	0.000
13C2-PFDoDA	10.455	615.0 -> 570.0	26020	20.00 µg/L	0.025
13C2-PFOA	6.981	415.0 -> 370.0	36264	20.00 µg/L	0.013
13C3-PFPeA	4.660	266.0 -> 222.0	42048	20.00 µg/L	0.000
13C4-PFOS	7.501	503.0 -> 80.0	22796	20.00 µg/L	0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	12880	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	-	515.0 -> 470.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
d5-EtFOSAA	-	589.0 -> 419.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
<b>Target Compounds</b>					
4:2FTS	5.559	327.0 -> 307.0	37879	19.00 µg/L	QValue 99
6:2FTS	6.991	427.0 -> 407.0	53142	19.80 µg/L	99
8:2FTS	8.260	527.0 -> 507.0	47915	20.10 µg/L	98
EtFOSAA	8.027	584.0 -> 419.0	12970	20.94 µg/L	96
FOSA	7.479	498.0 -> 78.0	46113	19.40 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	14754	20.11 µg/L	98
PFBA	3.290	213.0 -> 169.0	18042	20.58 µg/L	100
PFBS	4.791	299.0 -> 80.0	23257	17.25 µg/L	99
PFDA	8.162	513.0 -> 469.0	26166	20.02 µg/L	100
PFDoDA	10.460	613.0 -> 569.0	24292	22.07 µg/L	99
PFDS	8.966	599.0 -> 80.0	9005	19.73 µg/L	98
PFHpA	6.364	363.0 -> 319.0	55080	20.76 µg/L	99
PFHpS	6.947	449.0 -> 80.0	23932	19.03 µg/L	100
PFHxA	5.627	313.0 -> 269.0	16725	19.09 µg/L	99
PFHxS	6.345	399.0 -> 80.0	25909	17.45 µg/L	m 99
PFNA	7.547	463.0 -> 419.0	29211	19.79 µg/L	99
PFNS	8.069	549.0 -> 80.0	16244	20.20 µg/L	98
PFOA	6.982	413.0 -> 369.0	31932	21.68 µg/L	97
PFOS	7.490	499.0 -> 80.0	27851	20.37 µg/L	m 94
PFPeA	4.663	263.0 -> 219.0	68089	20.74 µg/L	100
PFPeS	5.668	349.0 -> 80.0	18906	19.86 µg/L	100
PFTeDA	12.620	713.0 -> 669.0	13585	20.24 µg/L	100
PFTTrDA	11.582	663.0 -> 619.0	19721	22.08 µg/L	99
PFUnDA	9.173	563.0 -> 519.0	28654	22.65 µg/L	100

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

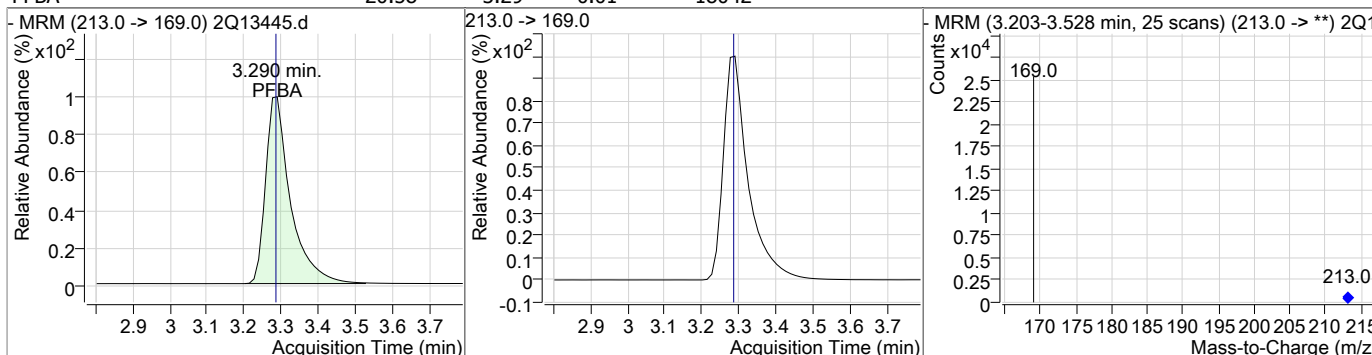
10.5.9  
10



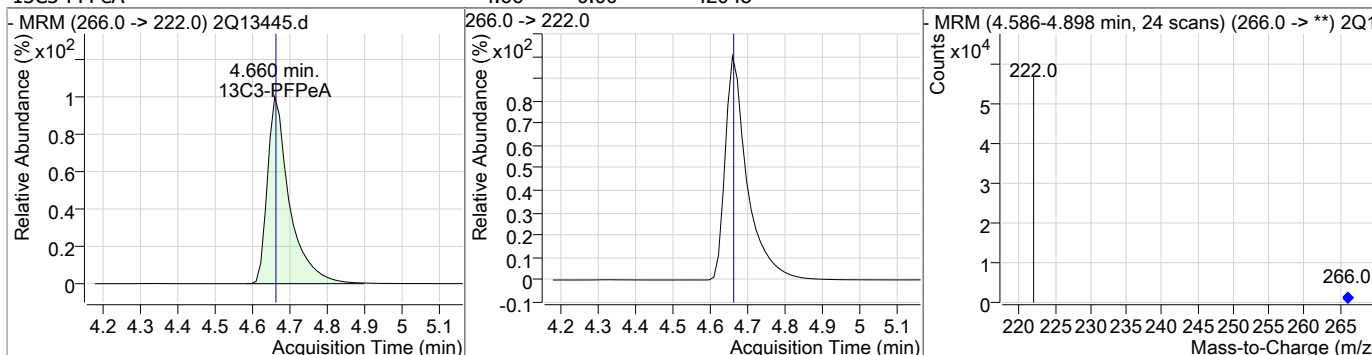
### Perfluorinated Compounds by LC/MS/MS



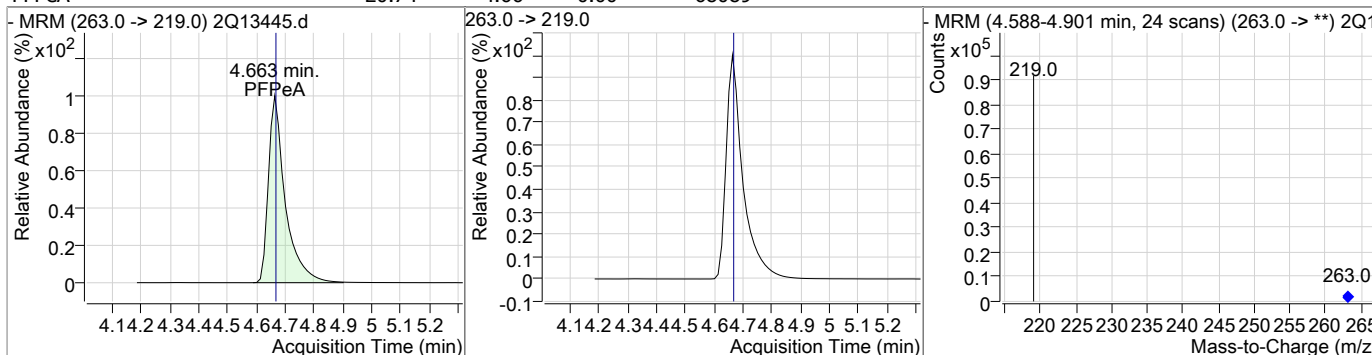
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.58	3.29	0.01	18042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	0.00	42048				

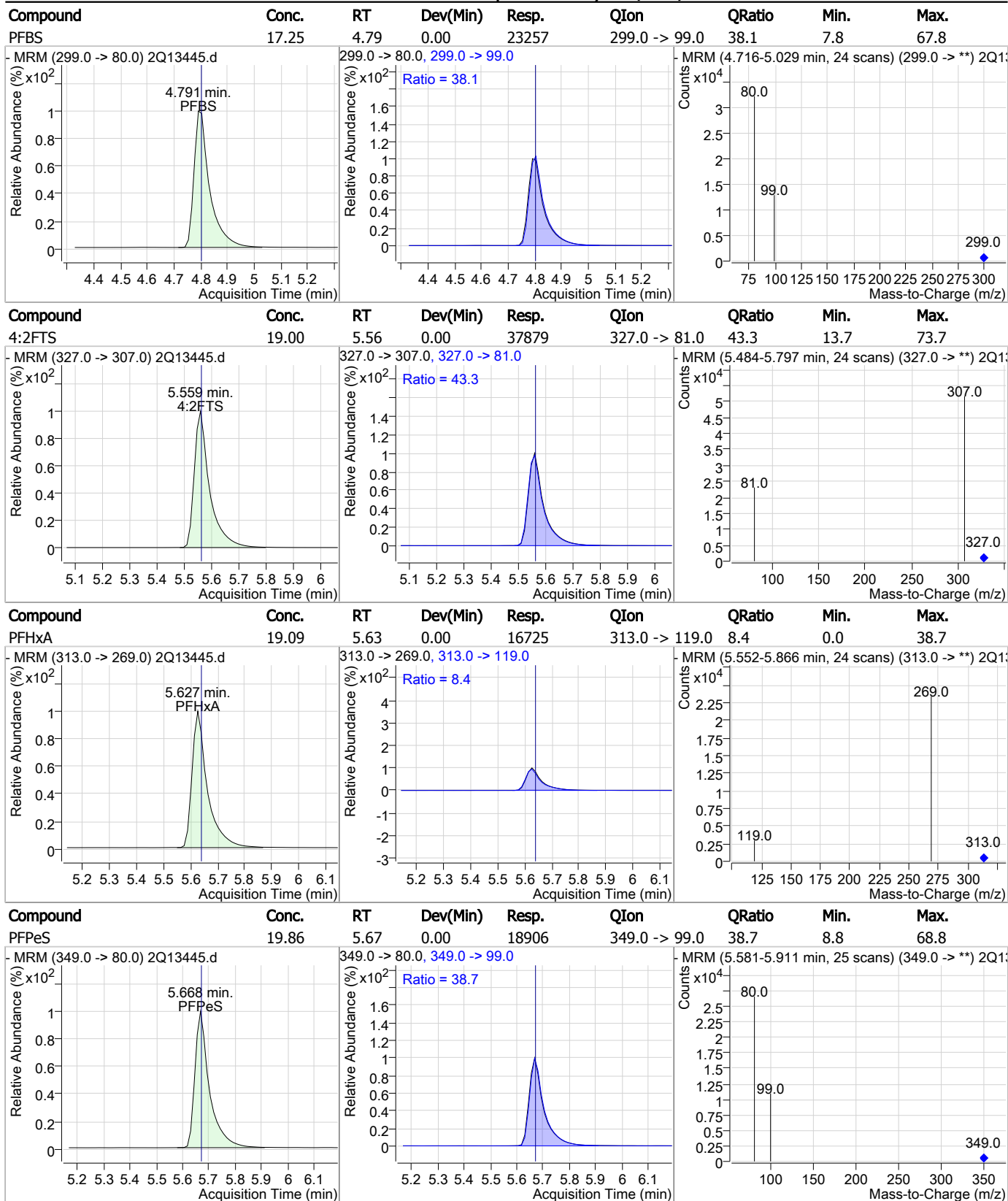


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.74	4.66	0.00	68089				



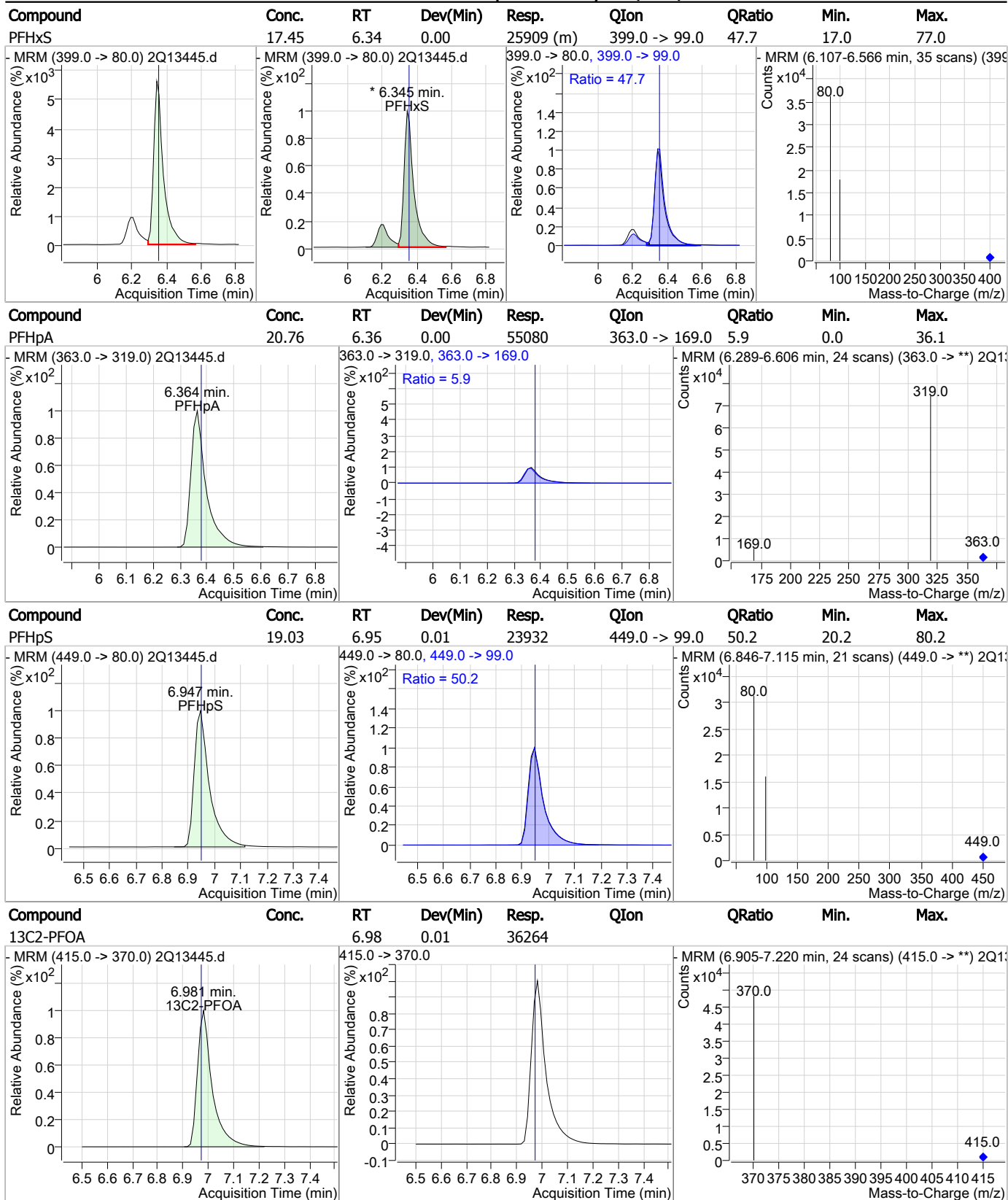
10.5.9 10

### Perfluorinated Compounds by LC/MS/MS



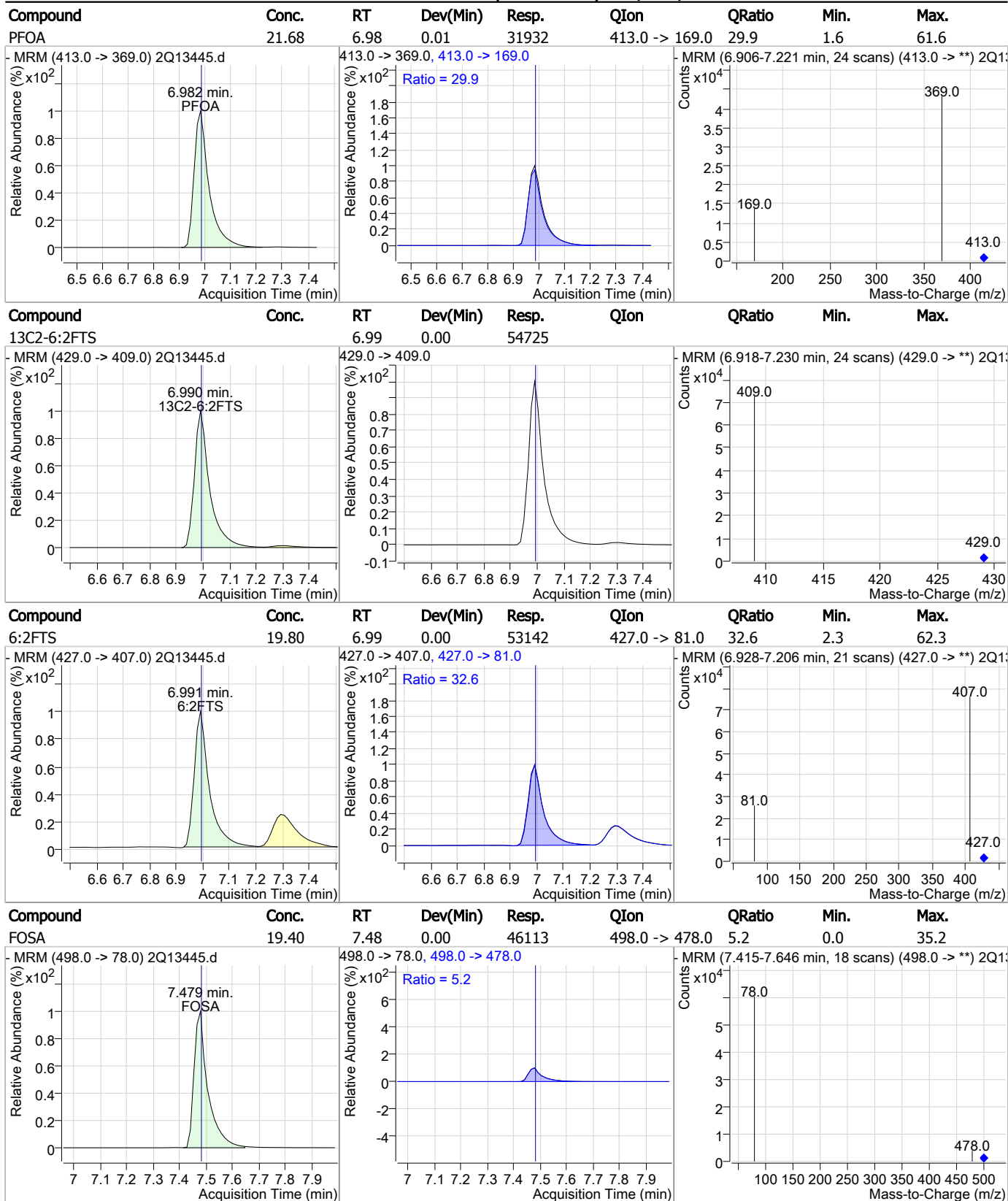
10.5.9 10

### Perfluorinated Compounds by LC/MS/MS



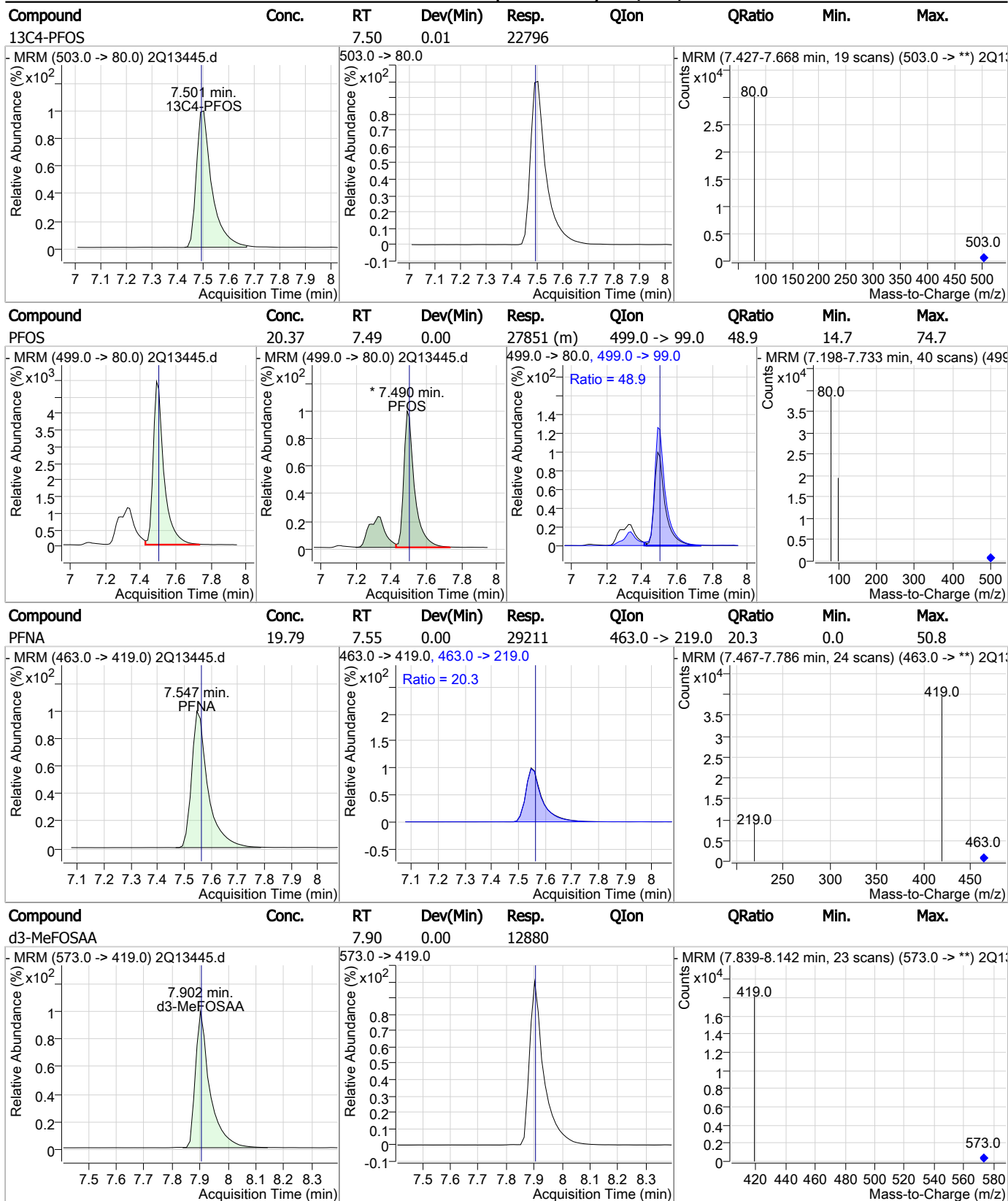
10.5.9 10

### Perfluorinated Compounds by LC/MS/MS



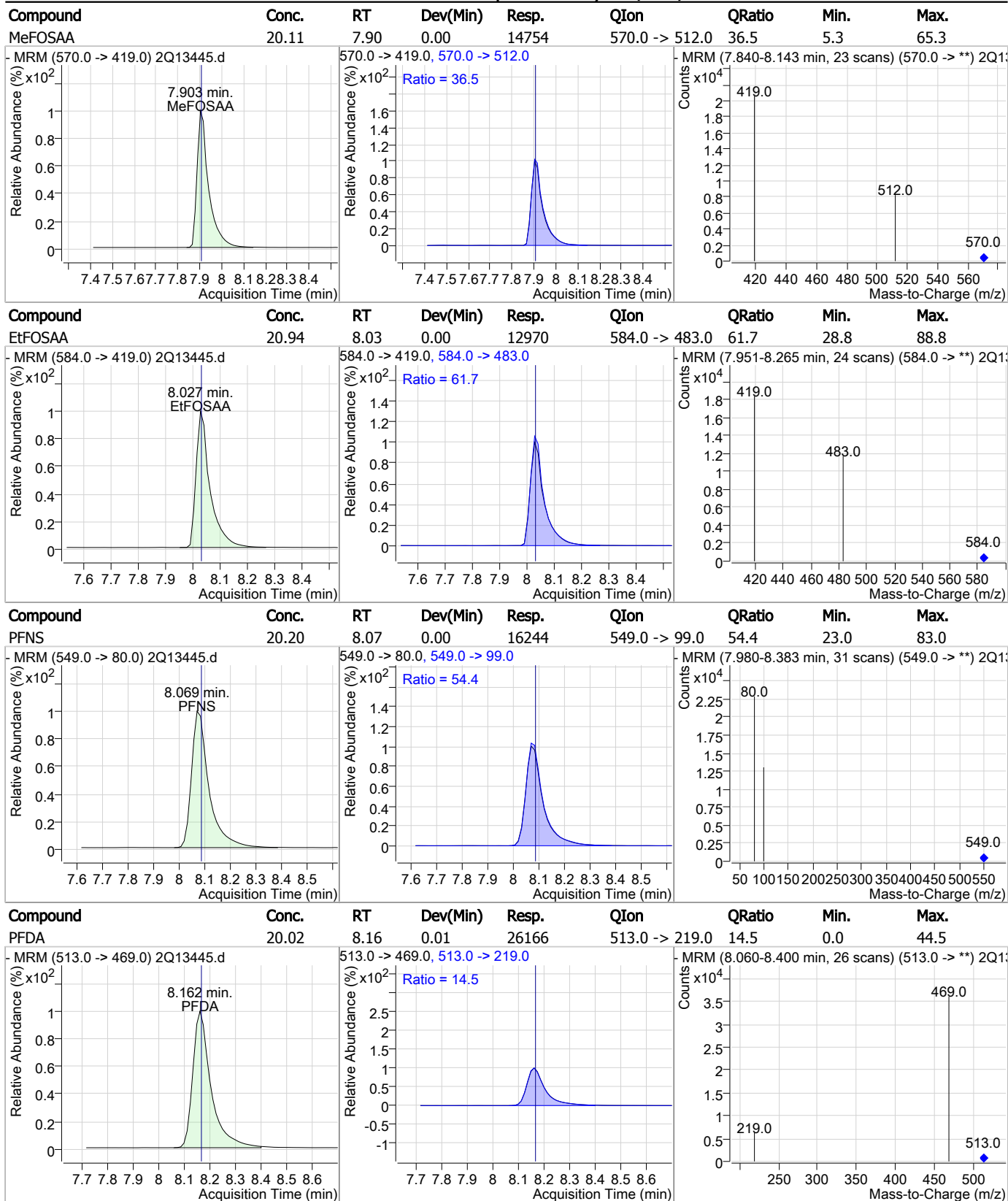
10.5.9 10

### Perfluorinated Compounds by LC/MS/MS



10.5.9 10

### Perfluorinated Compounds by LC/MS/MS

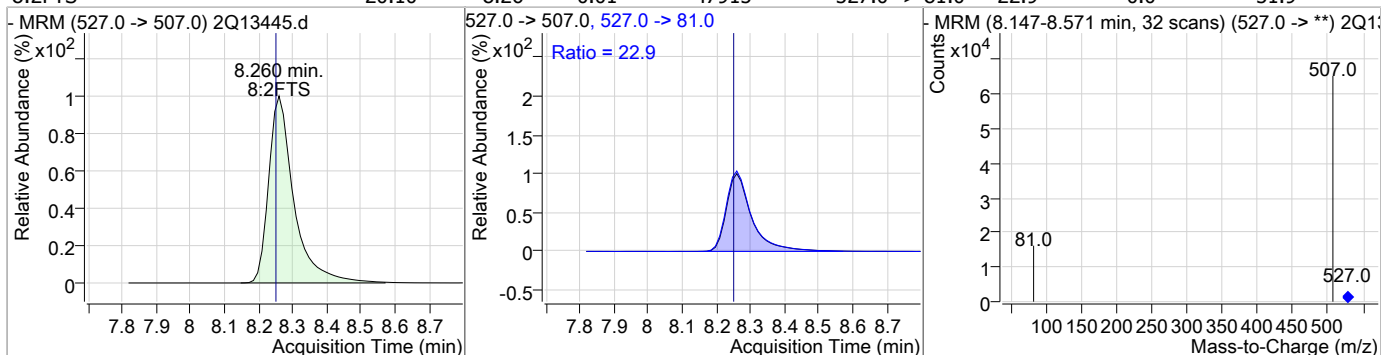


10.5.9 10

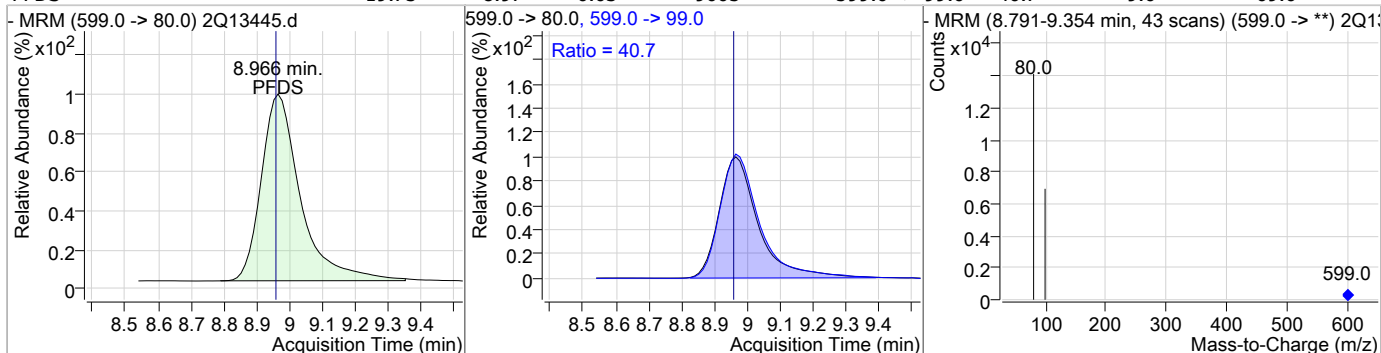


### Perfluorinated Compounds by LC/MS/MS

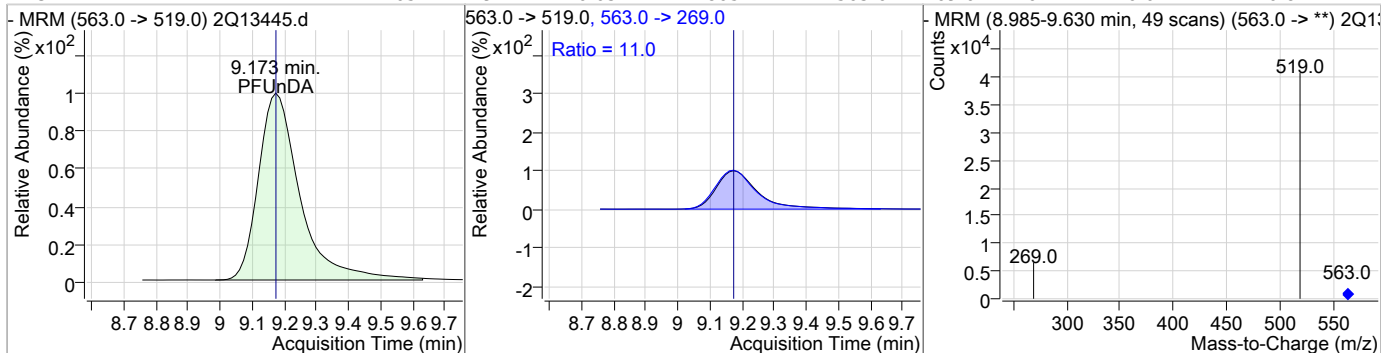
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.10	8.26	0.01	47915	527.0 -> 81.0	22.9	0.0	51.9



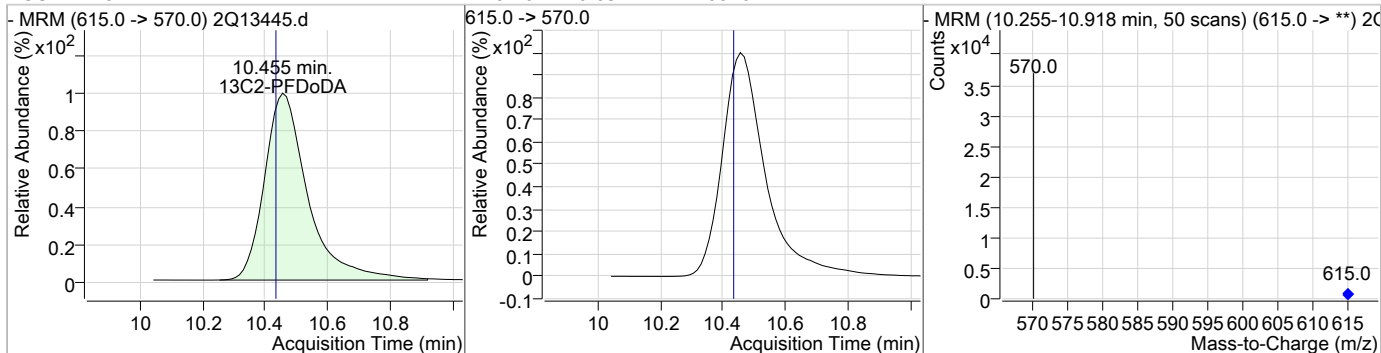
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.73	8.97	0.03	9005	599.0 -> 99.0	40.7	9.6	69.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.65	9.17	0.03	28654	563.0 -> 269.0	11.0	0.0	40.8



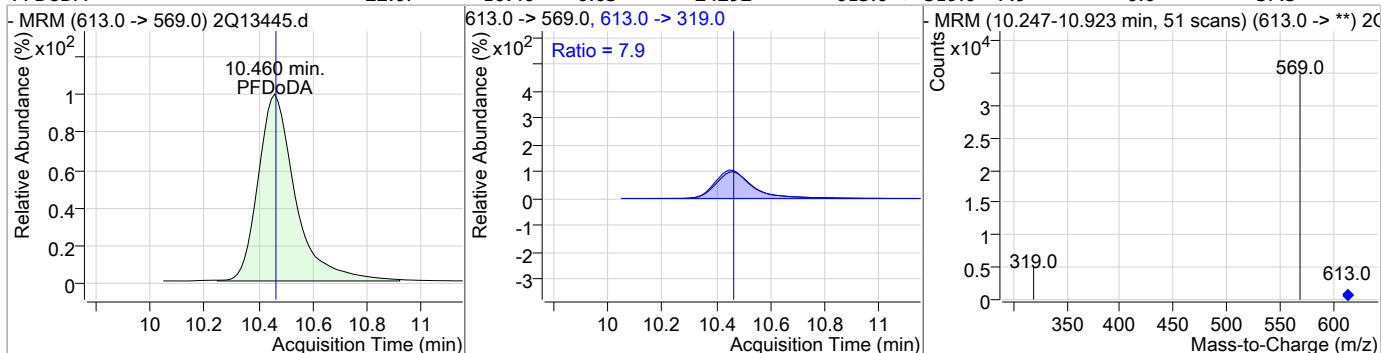
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.46	0.03	26020				



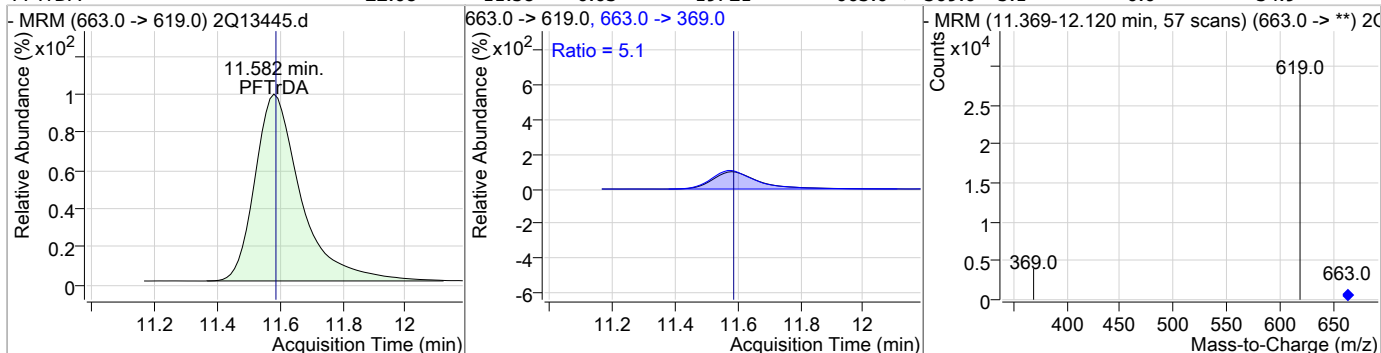
10.5.9 10

### Perfluorinated Compounds by LC/MS/MS

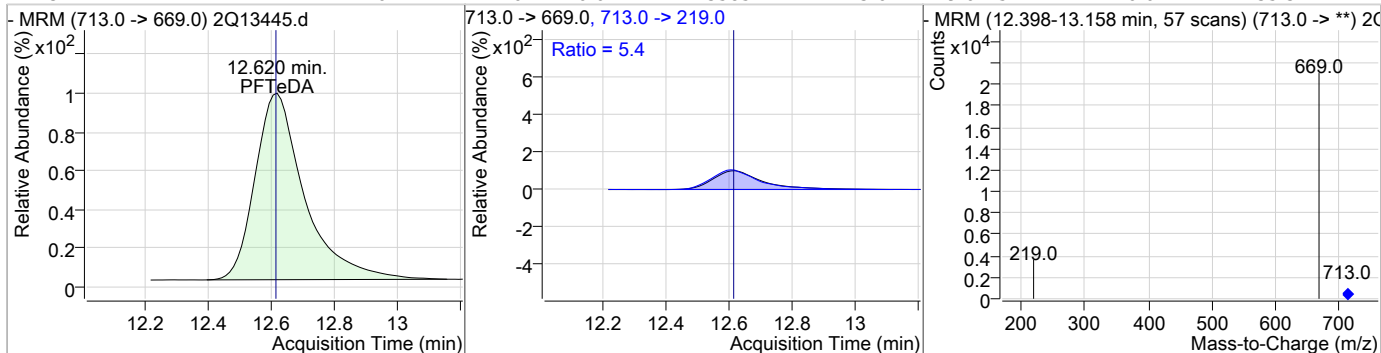
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.07	10.46	0.03	24292	613.0 -> 319.0	7.9	0.0	37.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.08	11.58	0.03	19721	663.0 -> 369.0	5.1	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.24	12.62	0.04	13585	713.0 -> 219.0	5.4	0.0	35.3



10.5.9 10

# Manual Integration Approval Summary

**Sample Number:** S2Q249-ICV249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13445.D      **Analyst approved:** 04/25/18 07:30 Nancy Saunders  
**Injection Time:** 04/23/18 15:15      **Supervisor approved:** 04/25/18 16:35 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.9.1  
10

Perfluorinated Compounds by LC/MS/MS

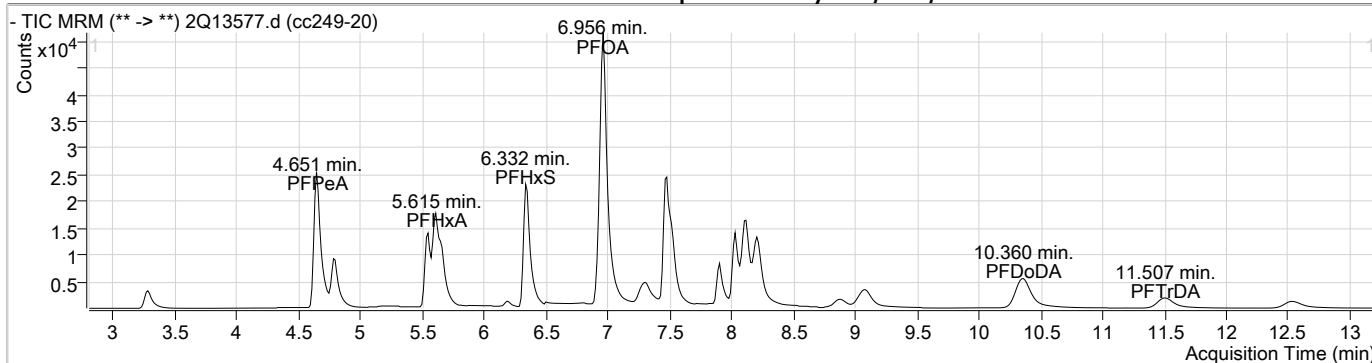
Data File : 2Q13577.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 5:48:39 PM  
 Sample Name : cc249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69745,S2Q251,130,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.965	429.0 -> 409.0	53386	20.00 µg/L	-0.025
13C2-PFDoDA	10.355	615.0 -> 570.0	26791	20.00 µg/L	-0.063
13C2-PFOA	6.954	415.0 -> 370.0	34863	20.00 µg/L	-0.027
13C3-PFPeA	4.647	266.0 -> 222.0	40114	20.00 µg/L	-0.025
13C4-PFOS	7.476	503.0 -> 80.0	21936	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	10542	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.124	515.0 -> 470.0	42979	19.43 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.2%	
13C2-PFHxA	5.613	315.0 -> 270.0	41362	19.21 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 96.0%	
d5-EtFOSAA	8.026	589.0 -> 419.0	13854	19.73 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 98.6%	
<b>Target Compounds</b>					
4:2FTS	5.547	327.0 -> 307.0	38321	19.74 µg/L	QValue 98
6:2FTS	6.966	427.0 -> 407.0	52080	19.89 µg/L	99
8:2FTS	8.209	527.0 -> 507.0	44564	19.13 µg/L	99
EtFOSAA	8.027	584.0 -> 419.0	9834	19.38 µg/L	96
FOSA	7.466	498.0 -> 78.0	41665	21.49 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	11768	19.60 µg/L	99
PFBA	3.277	213.0 -> 169.0	14942	17.73 µg/L	100
PFBS	4.779	299.0 -> 80.0	24674	19.02 µg/L	100
PFDA	8.124	513.0 -> 469.0	23929	19.05 µg/L	99
PFDoDA	10.360	613.0 -> 569.0	23451	20.70 µg/L	99
PFDS	8.866	599.0 -> 80.0	8872	20.20 µg/L	99
PFHpA	6.351	363.0 -> 319.0	51098	20.03 µg/L	100
PFHpS	6.921	449.0 -> 80.0	25267	20.88 µg/L	100
PFHxA	5.615	313.0 -> 269.0	16094	19.11 µg/L	100
PFHxS	6.332	399.0 -> 80.0	28464	19.93 µg/L	m 100
PFNA	7.521	463.0 -> 419.0	28139	19.83 µg/L	100
PFNS	8.031	549.0 -> 80.0	14169	18.31 µg/L	99
PFOA	6.956	413.0 -> 369.0	28132	19.87 µg/L	100
PFOS	7.477	499.0 -> 80.0	25575	19.44 µg/L	m 99
PFPeA	4.651	263.0 -> 219.0	63667	20.33 µg/L	100
PFPeS	5.656	349.0 -> 80.0	18146	19.98 µg/L	100
PFTeDA	12.533	713.0 -> 669.0	13051	18.89 µg/L	99
PFTrDA	11.507	663.0 -> 619.0	18195	19.78 µg/L	100
PFUnDA	9.085	563.0 -> 519.0	24723	18.98 µg/L	100

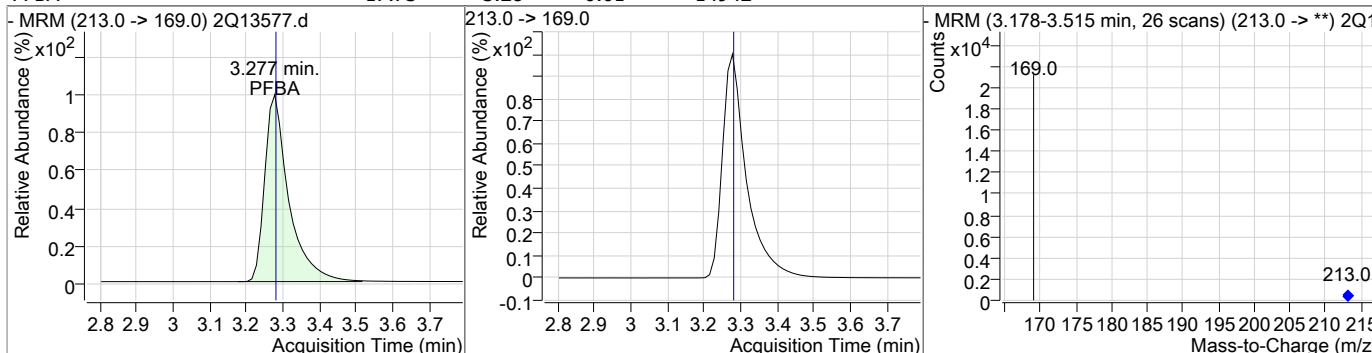
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.10  
**10**

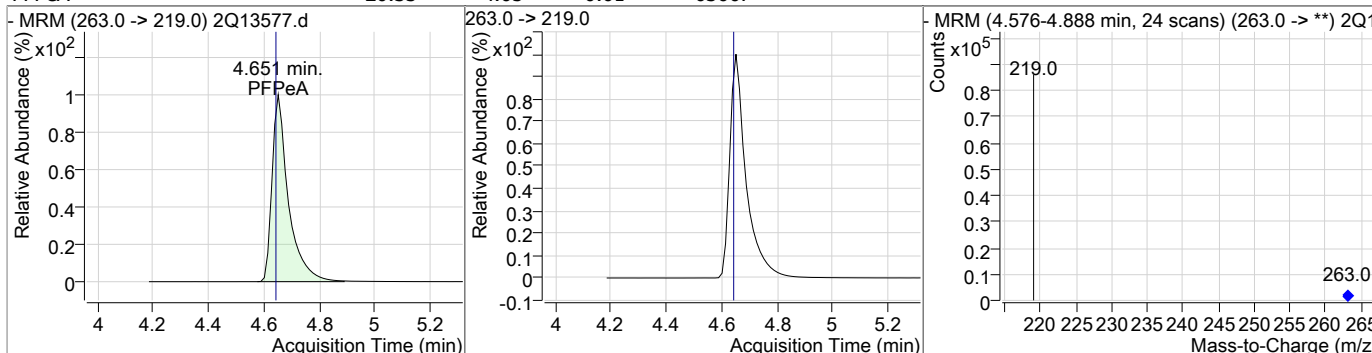
### Perfluorinated Compounds by LC/MS/MS



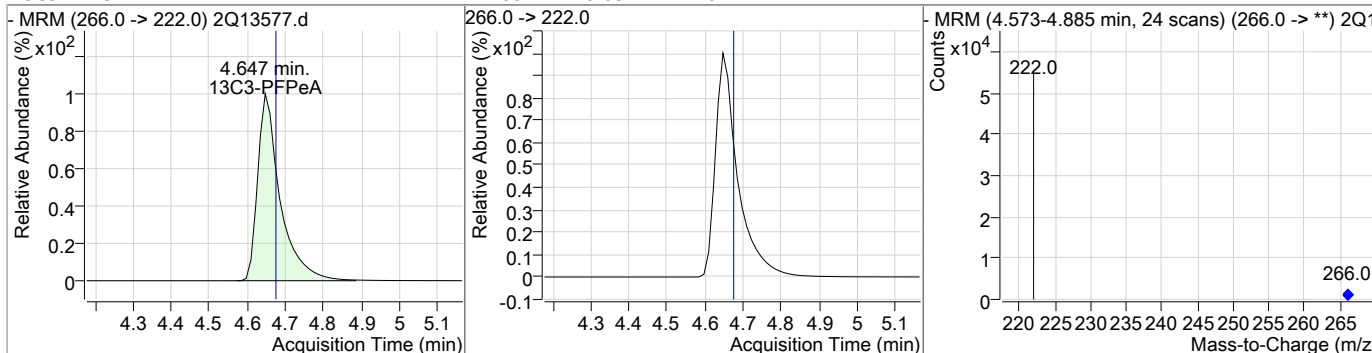
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.73	3.28	-0.01	14942				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.33	4.65	-0.01	63667				



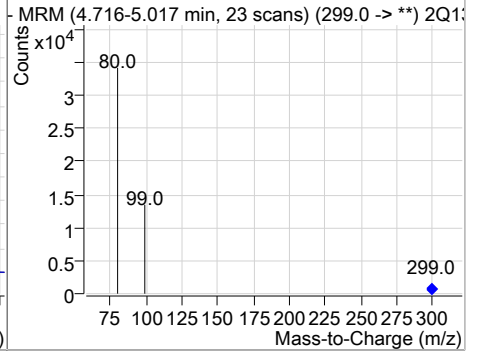
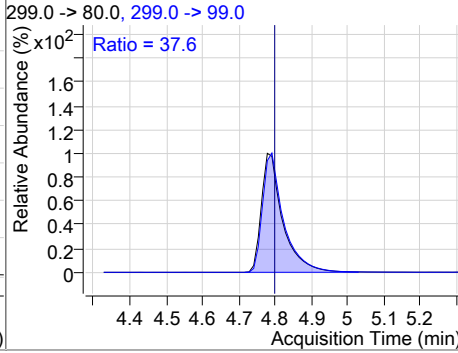
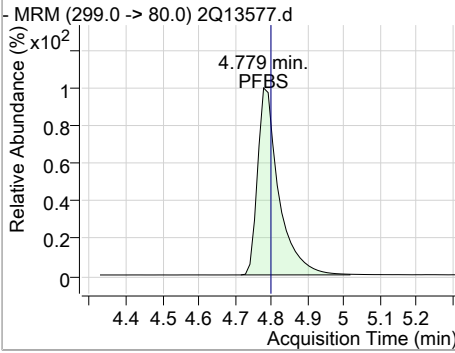
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.65	-0.03	40114				



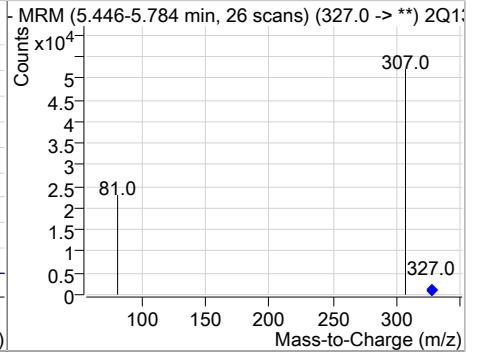
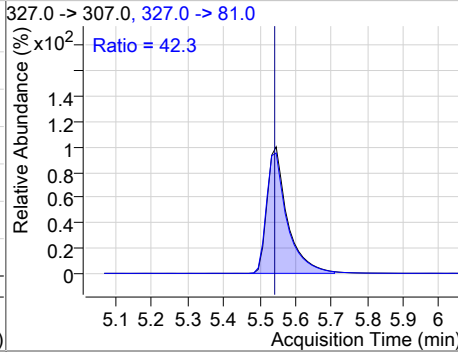
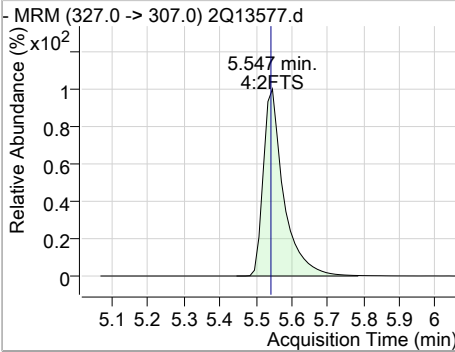
10.5.10 10

### Perfluorinated Compounds by LC/MS/MS

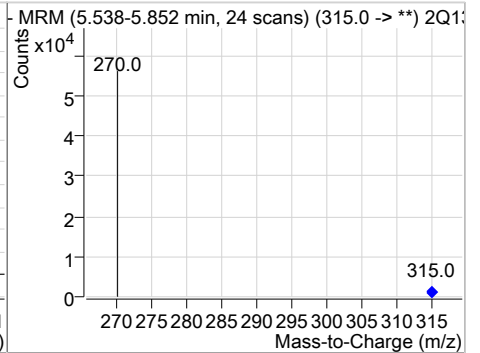
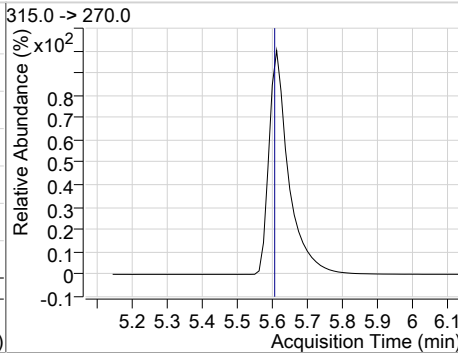
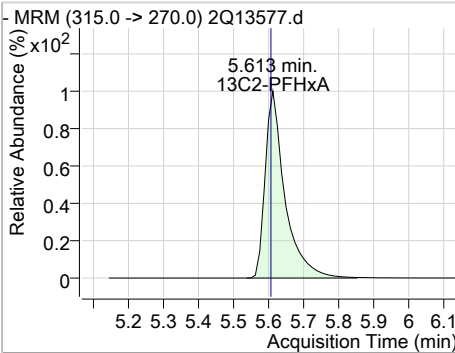
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.02	4.78	-0.03	24674	299.0 -> 99.0	37.6	7.8	67.8



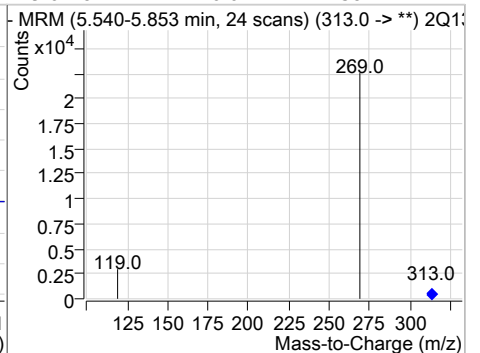
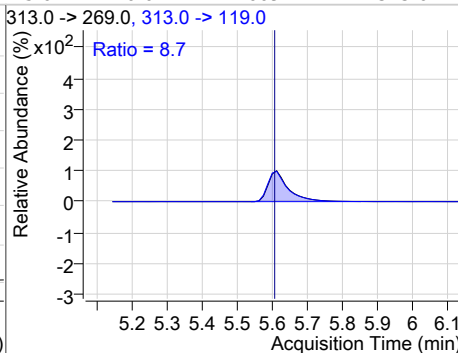
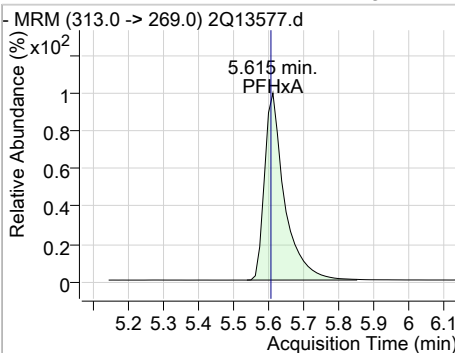
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.74	5.55	-0.01	38321	327.0 -> 81.0	42.3	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	19.21	5.61	-0.01	41362				



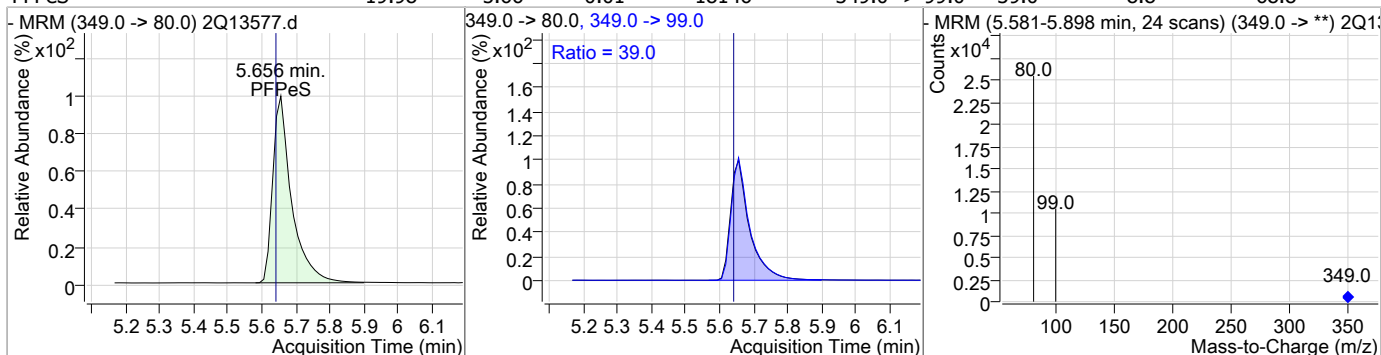
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.11	5.61	-0.01	16094	313.0 -> 119.0	8.7	0.0	38.7



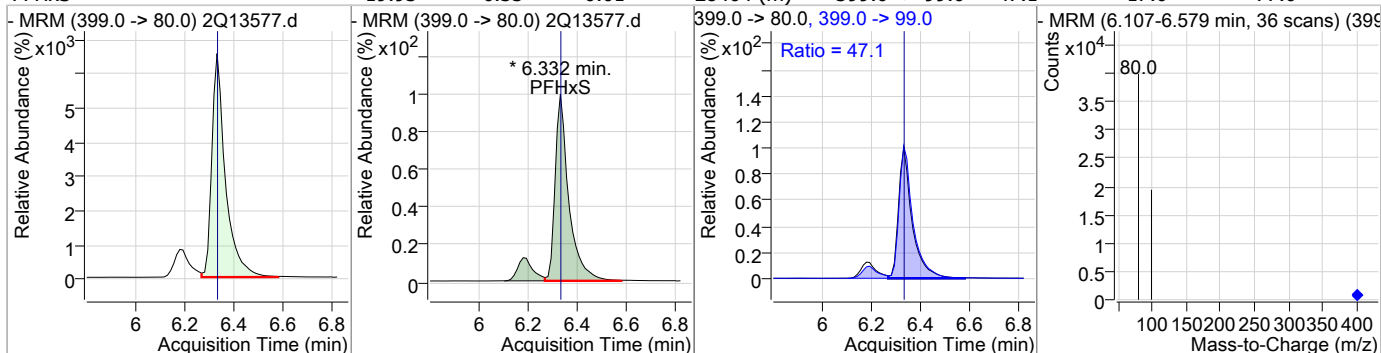
10.5.10 10

### Perfluorinated Compounds by LC/MS/MS

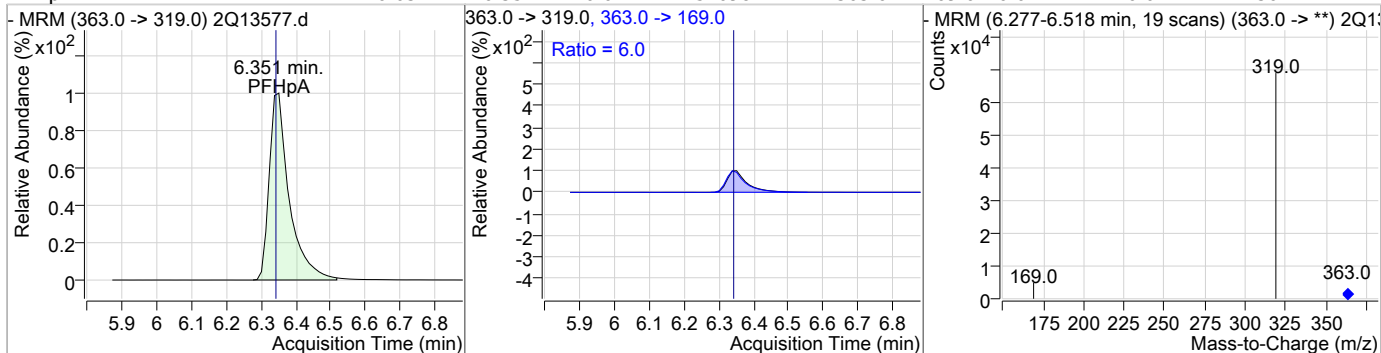
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.98	5.66	-0.01	18146	349.0 -> 99.0	39.0	8.8	68.8



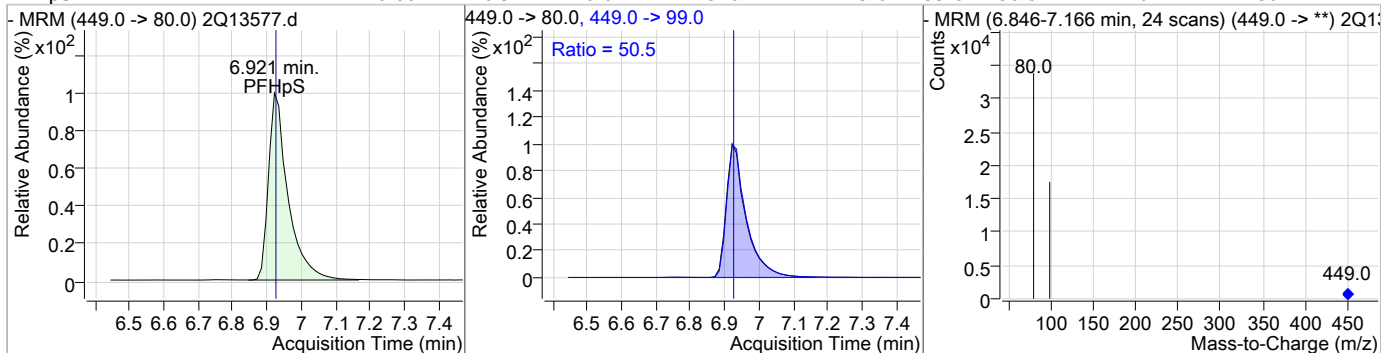
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.93	6.33	-0.01	28464 (m)	399.0 -> 99.0	47.1	17.0	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.03	6.35	-0.01	51098	363.0 -> 169.0	6.0	0.0	36.1

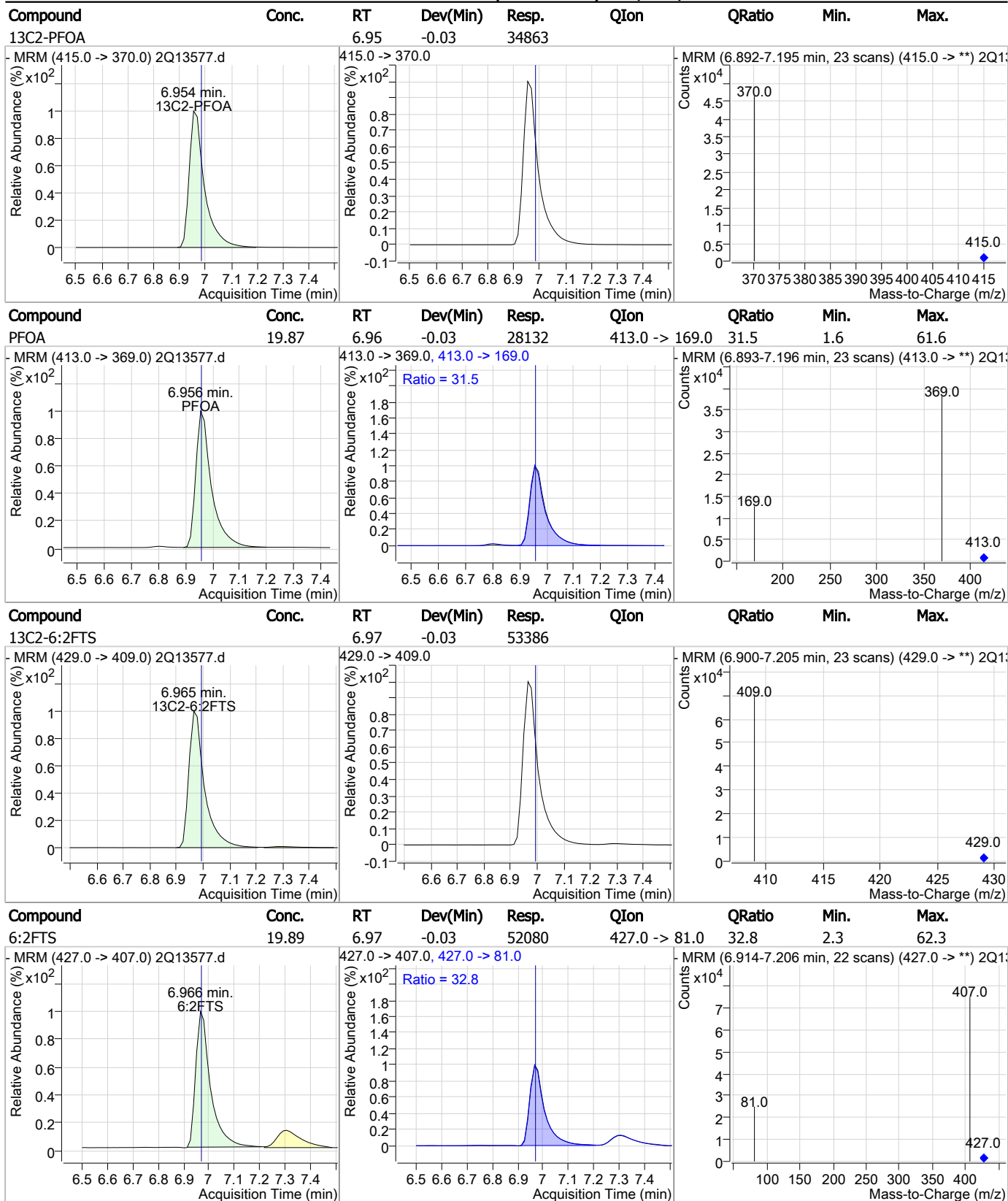


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.88	6.92	-0.01	25267	449.0 -> 99.0	50.5	20.2	80.2



10.5.10 10

### Perfluorinated Compounds by LC/MS/MS

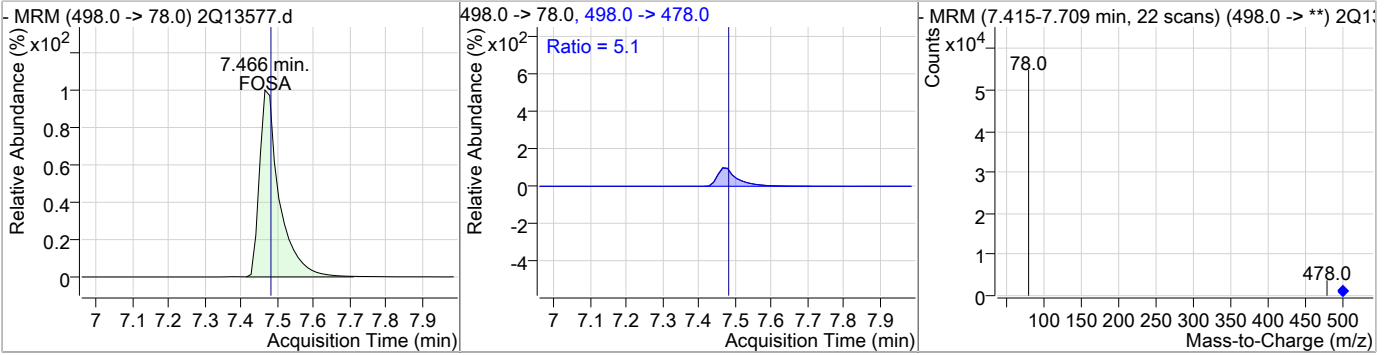


10.5.10 10

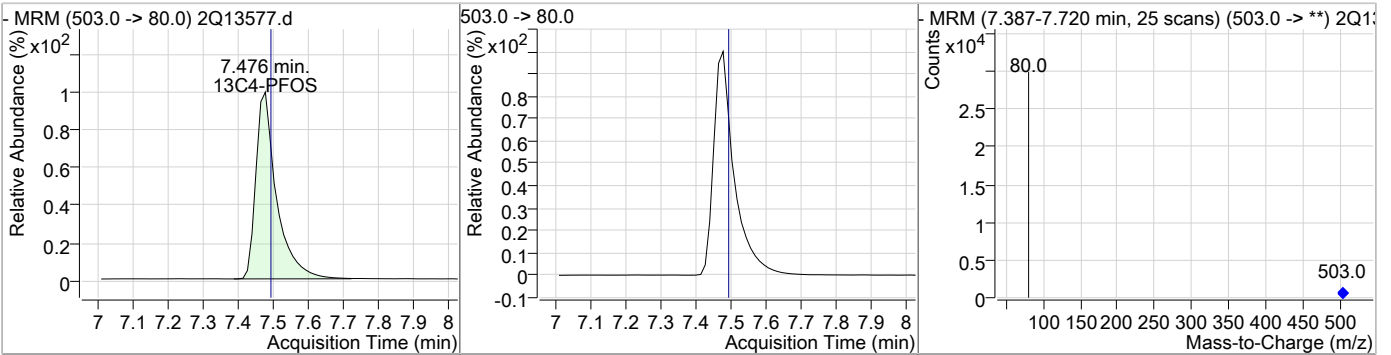


### Perfluorinated Compounds by LC/MS/MS

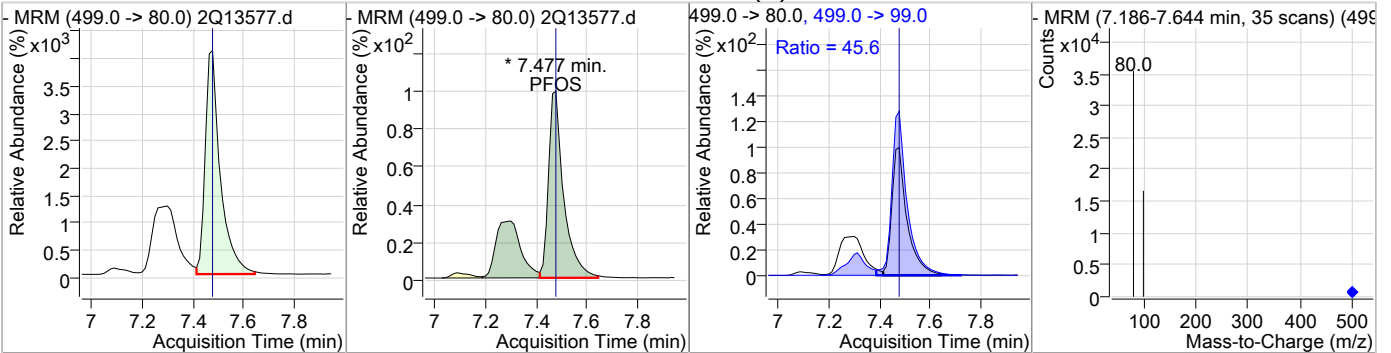
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.49	7.47	-0.01	41665	498.0 -> 478.0	5.1	0.0	35.2



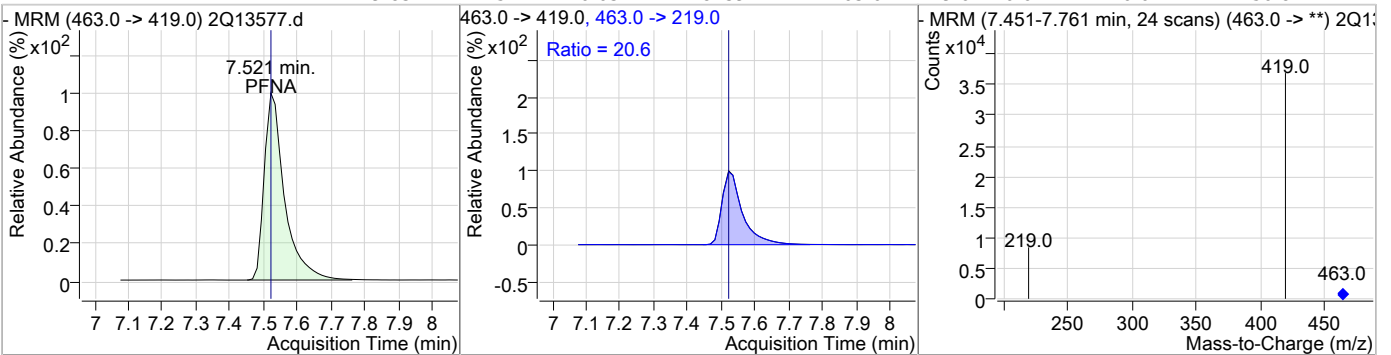
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.48	-0.01	21936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.44	7.48	-0.01	25575 (m)	499.0 -> 99.0	45.6	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.83	7.52	-0.03	28139	463.0 -> 219.0	20.6	0.0	50.8



10.5.10 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10542				
-MRM (573.0 -> 419.0) 2Q13577.d			573.0 -> 419.0			-MRM (7.802-8.066 min, 20 scans) (573.0 -> **) 2Q13577.d		
MeFOSAA	19.60	7.90	-0.01	11768	570.0 -> 512.0	35.9	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13577.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.828-8.067 min, 18 scans) (570.0 -> **) 2Q13577.d		
d5-EtFOSAA	19.73	8.03	0.00	13854				
-MRM (589.0 -> 419.0) 2Q13577.d			589.0 -> 419.0			-MRM (7.926-8.189 min, 20 scans) (589.0 -> **) 2Q13577.d		
EtFOSAA	19.38	8.03	-0.01	9834	584.0 -> 483.0	61.7	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13577.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.967-8.190 min, 17 scans) (584.0 -> **) 2Q13577.d		

10.5.10 10

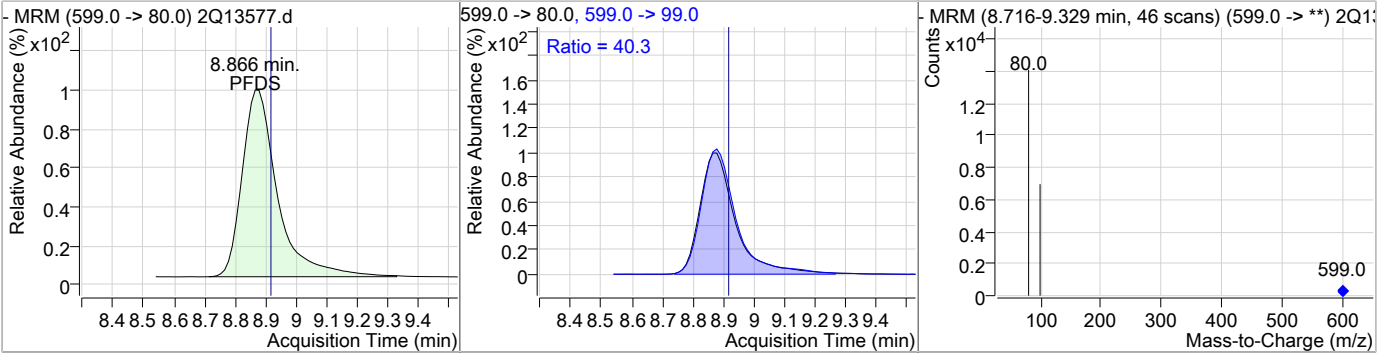
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.31	8.03	-0.03	14169	549.0 -> 99.0	53.5	23.0	83.0
13C2-PFDA	19.43	8.12	-0.03	42979				
PFDA	19.05	8.12	-0.03	23929	513.0 -> 219.0	14.2	0.0	44.5
8:2FTS	19.13	8.21	-0.04	44564	527.0 -> 81.0	22.2	0.0	51.9

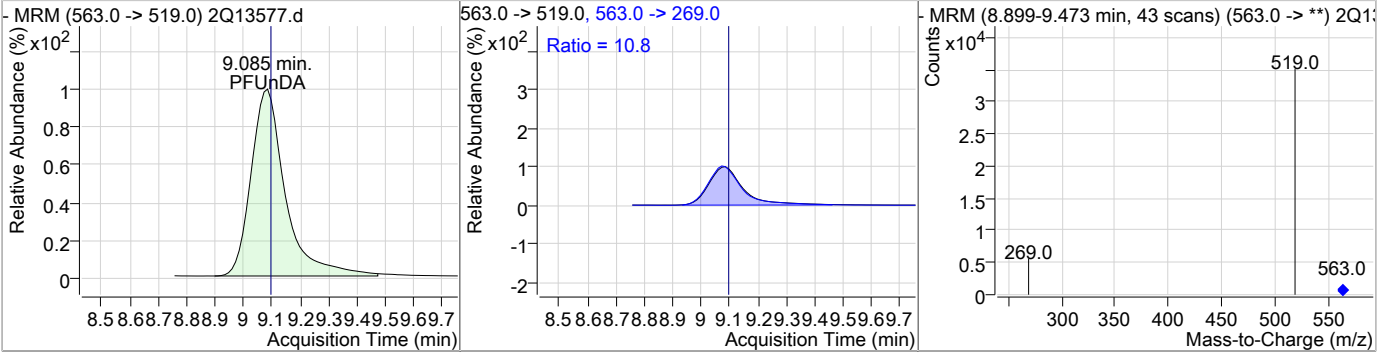
10.5.10 10

### Perfluorinated Compounds by LC/MS/MS

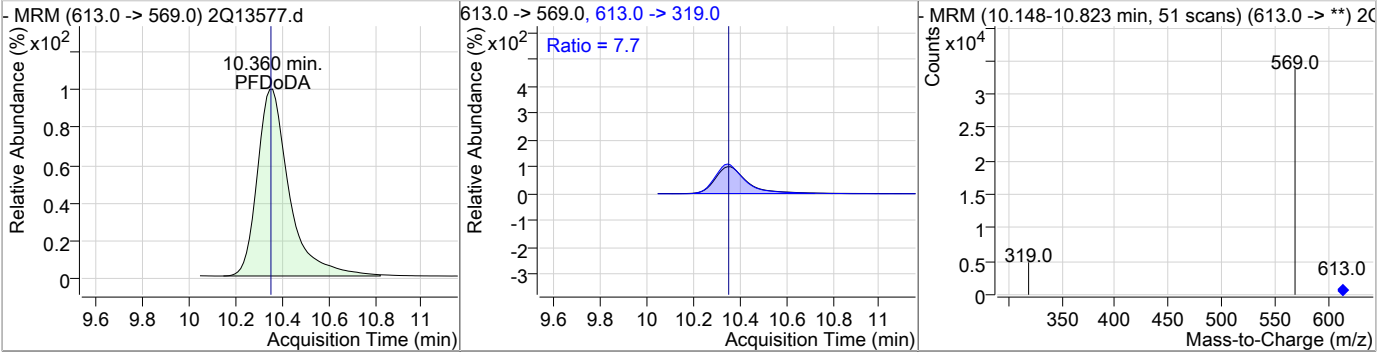
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.20	8.87	-0.06	8872	599.0 -> 99.0	40.3	9.6	69.6



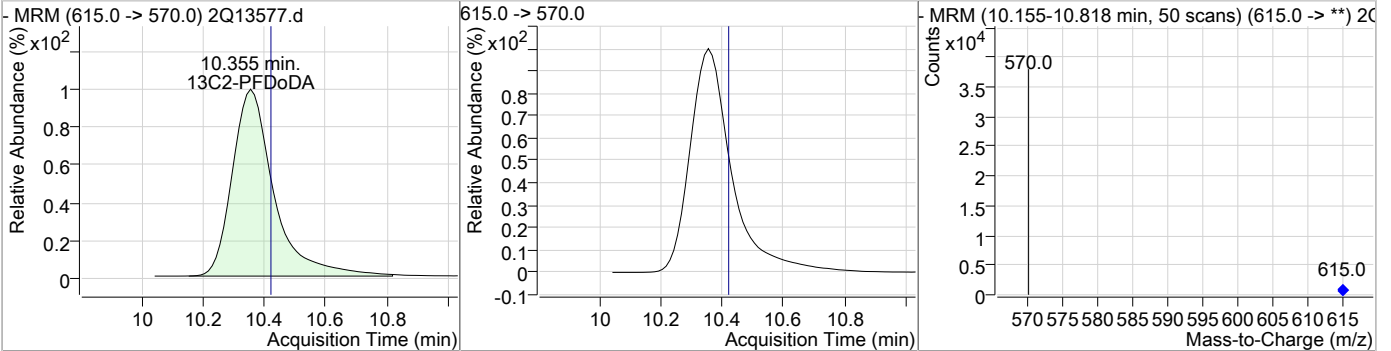
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.98	9.09	-0.06	24723	563.0 -> 269.0	10.8	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.70	10.36	-0.05	23451	613.0 -> 319.0	7.7	0.0	37.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.36	-0.06	26791	615.0 -> 570.0			

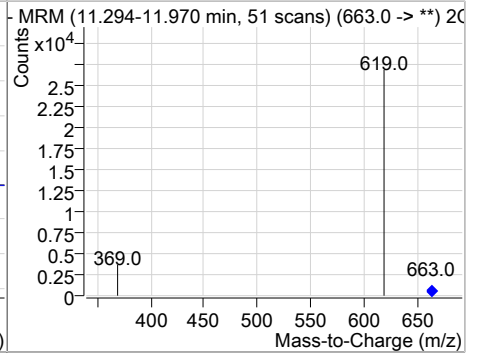
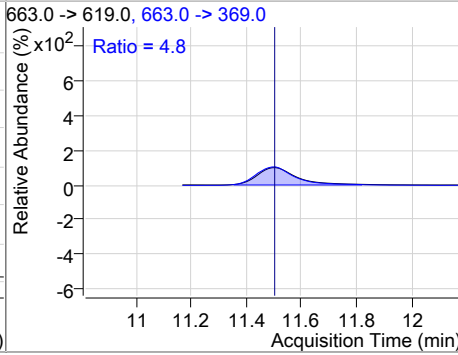
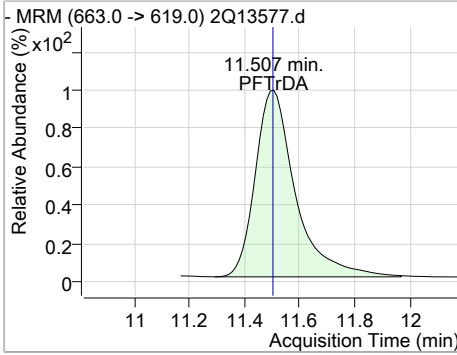


10.5.10 10

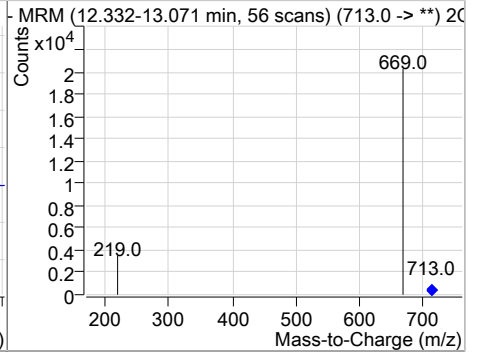
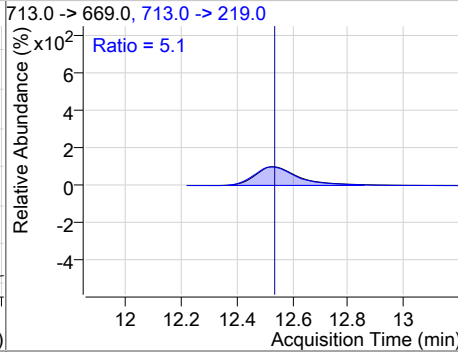
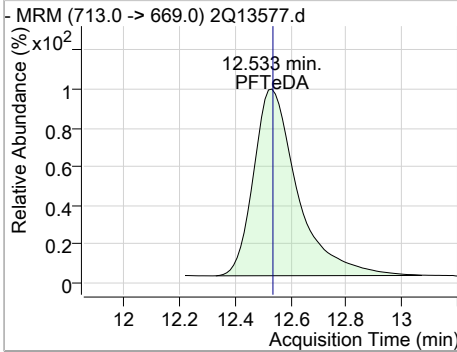


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.78	11.51	-0.06	18195	663.0 -> 369.0	4.8	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.89	12.53	-0.08	13051	713.0 -> 219.0	5.1	0.0	35.3



10.5.10 10

# Manual Integration Approval Summary

**Sample Number:** S2Q251-CC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13577.D      **Analyst approved:** 04/26/18 12:34 Natasha Gumtie  
**Injection Time:** 04/25/18 17:48      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.48	Split peak

10.5.10.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13586.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 8:38:06 PM  
 Sample Name : cc249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69745,S2Q251,130,,,1.0,1,water

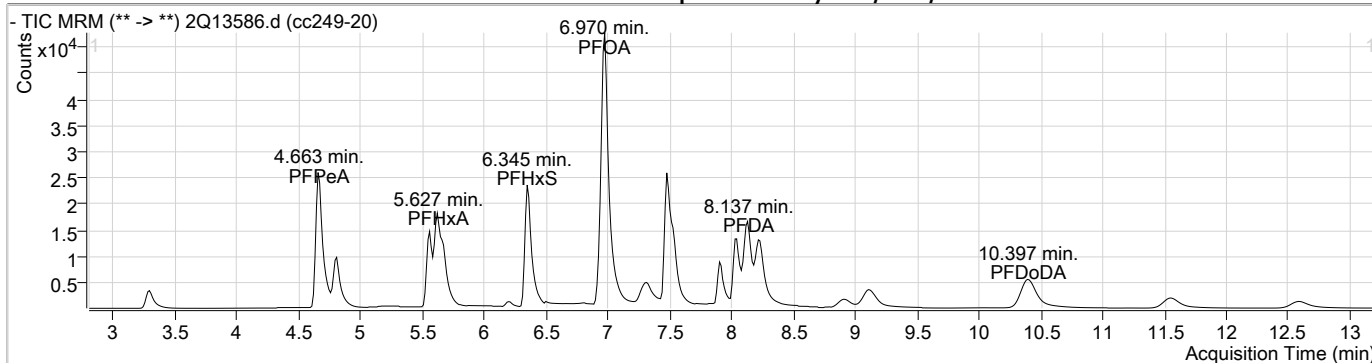
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.978	429.0 -> 409.0	55700	20.00 µg/L	-0.013
13C2-PFDoDA	10.393	615.0 -> 570.0	27033	20.00 µg/L	-0.025
13C2-PFOA	6.968	415.0 -> 370.0	35940	20.00 µg/L	-0.013
13C3-PFPeA	4.660	266.0 -> 222.0	41448	20.00 µg/L	-0.013
13C4-PFOS	7.476	503.0 -> 80.0	22159	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	11345	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.136	515.0 -> 470.0	44102	19.34 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.7%		
13C2-PFHxA	5.625	315.0 -> 270.0	42805	19.28 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.4%		
d5-EtFOSAA	8.026	589.0 -> 419.0	14486	19.16 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 95.8%		
<b>Target Compounds</b>					
					<b>QValue</b>
4:2FTS	5.559	327.0 -> 307.0	39645	19.57 µg/L	99
6:2FTS	6.979	427.0 -> 407.0	55572	20.37 µg/L	99
8:2FTS	8.234	527.0 -> 507.0	44943	18.47 µg/L	99
EtFOSAA	8.027	584.0 -> 419.0	10522	19.27 µg/L	98
FOSA	7.479	498.0 -> 78.0	43219	20.69 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	12867	19.91 µg/L	99
PFBA	3.290	213.0 -> 169.0	15548	17.89 µg/L	100
PFBS	4.804	299.0 -> 80.0	25729	19.64 µg/L	100
PFDA	8.137	513.0 -> 469.0	23944	18.49 µg/L	100
PFDoDA	10.397	613.0 -> 569.0	23491	20.55 µg/L	99
PFDS	8.904	599.0 -> 80.0	9290	20.94 µg/L	99
PFHpA	6.351	363.0 -> 319.0	51805	19.70 µg/L	100
PFHpS	6.934	449.0 -> 80.0	25146	20.57 µg/L	100
PFHxA	5.627	313.0 -> 269.0	16057	18.49 µg/L	100
PFHxS	6.345	399.0 -> 80.0	29222	20.25 µg/L	m 100
PFNA	7.534	463.0 -> 419.0	28773	19.67 µg/L	99
PFNS	8.044	549.0 -> 80.0	14350	18.36 µg/L	99
PFOA	6.970	413.0 -> 369.0	28586	19.59 µg/L	99
PFOS	7.477	499.0 -> 80.0	26094	19.63 µg/L	m 99
PFPeA	4.663	263.0 -> 219.0	65936	20.37 µg/L	100
PFPeS	5.668	349.0 -> 80.0	18632	19.86 µg/L	100
PFTeDA	12.583	713.0 -> 669.0	13273	19.03 µg/L	100
PFTTrDA	11.544	663.0 -> 619.0	18419	19.85 µg/L	99
PFUnDA	9.110	563.0 -> 519.0	25389	19.32 µg/L	100

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

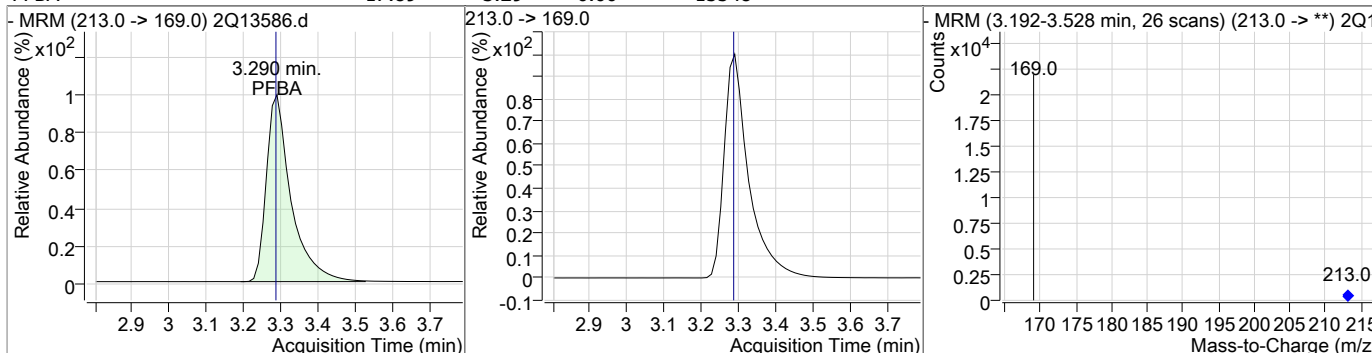
10.5.11  
**10**



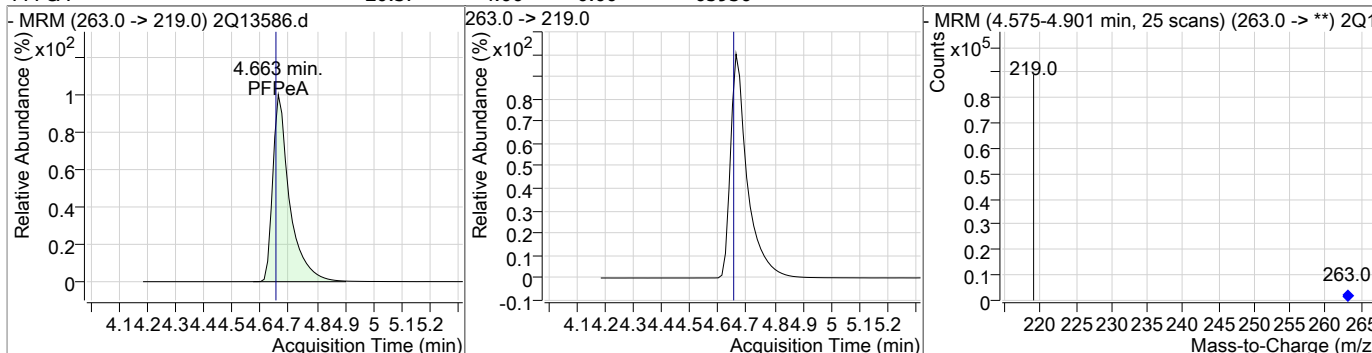
### Perfluorinated Compounds by LC/MS/MS



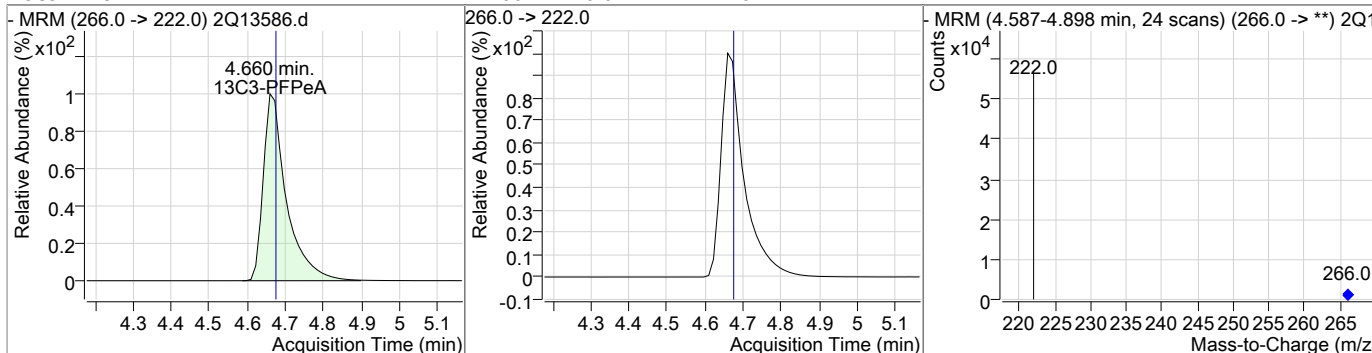
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.89	3.29	0.00	15548				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.37	4.66	0.00	65936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.66	-0.01	41448				



10.5.11 10



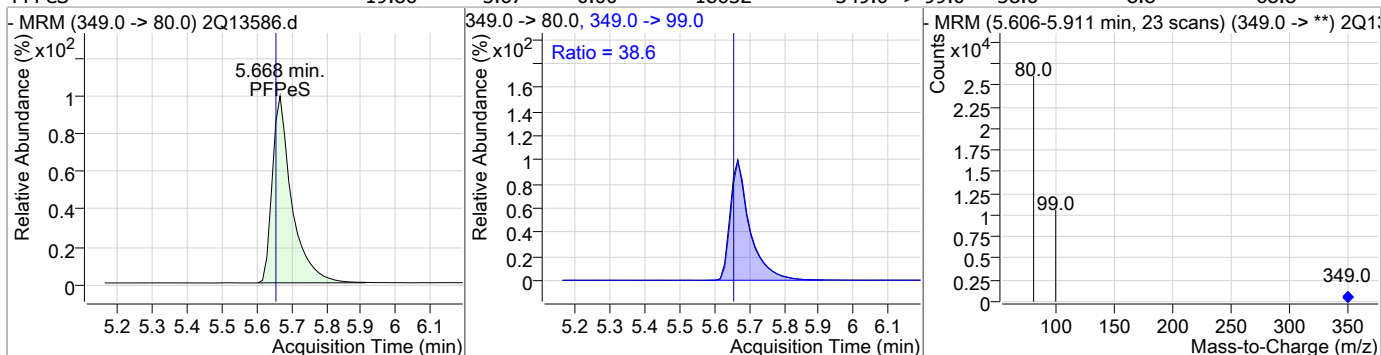
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.64	4.80	0.00	25729	299.0 -> 99.0	37.9	7.8	67.8
4:2FTS	19.57	5.56	0.00	39645	327.0 -> 81.0	42.9	13.7	73.7
13C2-PFHxA	19.28	5.63	0.00	42805	315.0 -> 270.0			
PFHxA	18.49	5.63	0.00	16057	313.0 -> 119.0	8.8	0.0	38.7

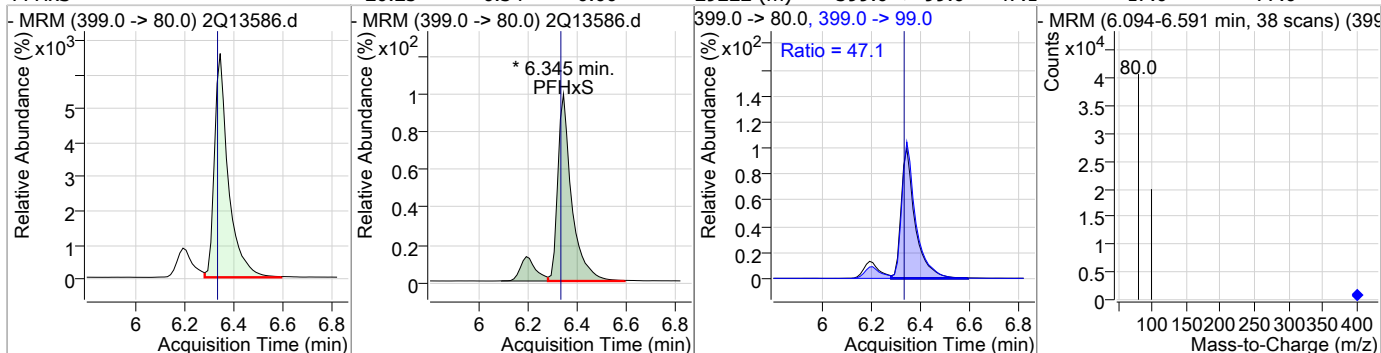
10.5.11 10

### Perfluorinated Compounds by LC/MS/MS

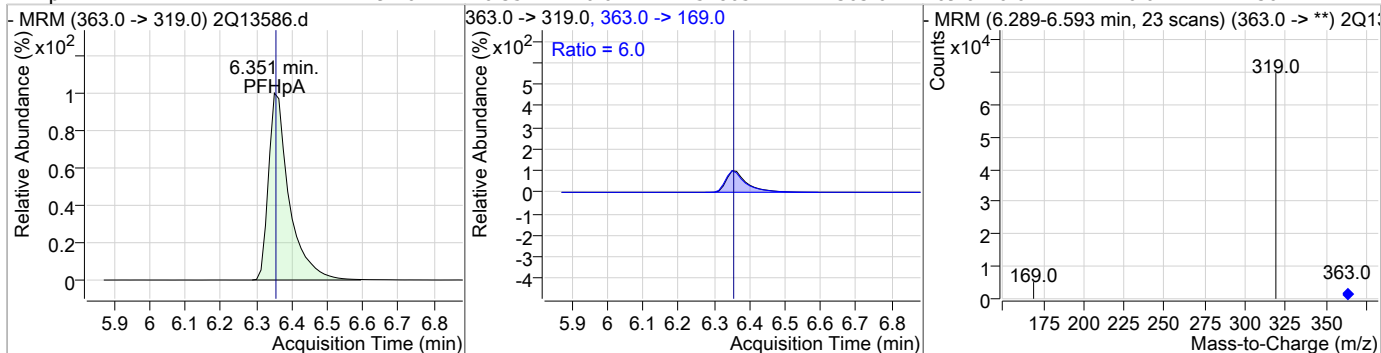
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.86	5.67	0.00	18632	349.0 -> 99.0	38.6	8.8	68.8



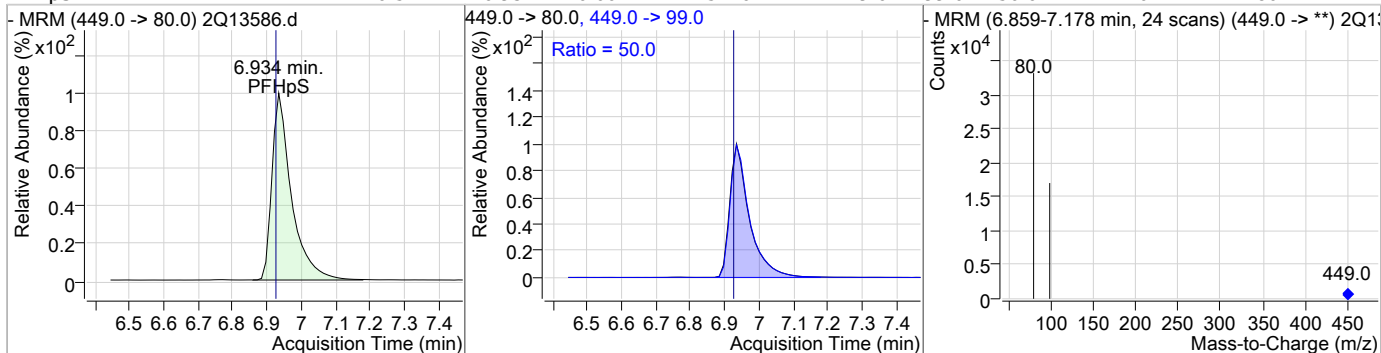
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.25	6.34	0.00	29222 (m)	399.0 -> 99.0	47.1	17.0	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.70	6.35	-0.01	51805	363.0 -> 169.0	6.0	0.0	36.1

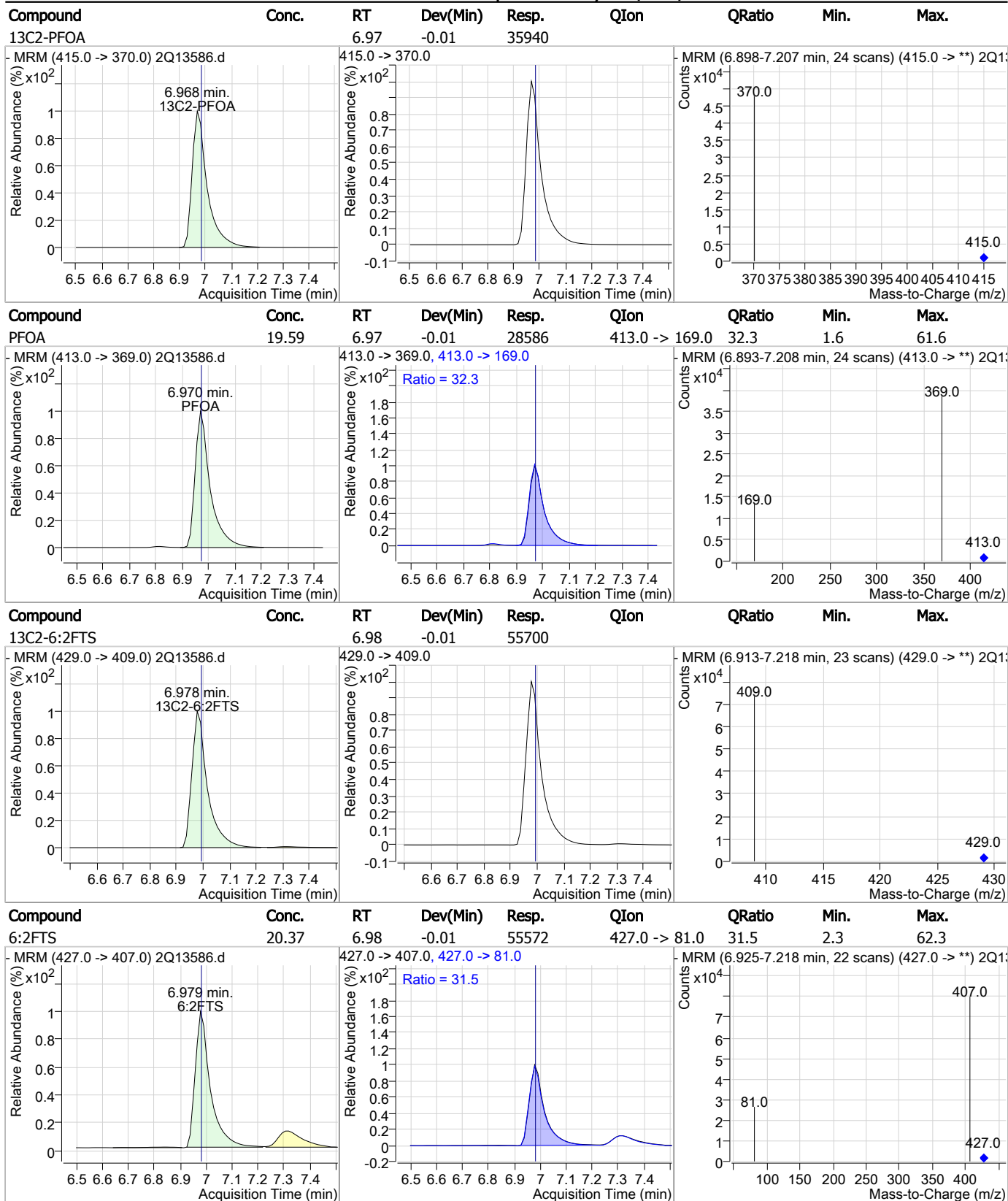


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.57	6.93	0.00	25146	449.0 -> 99.0	50.0	20.2	80.2



10.5.11 10

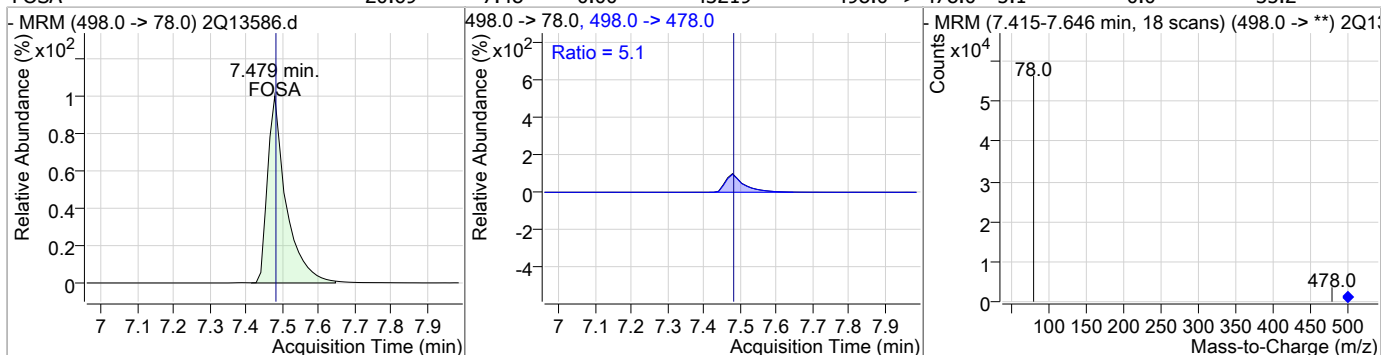
### Perfluorinated Compounds by LC/MS/MS



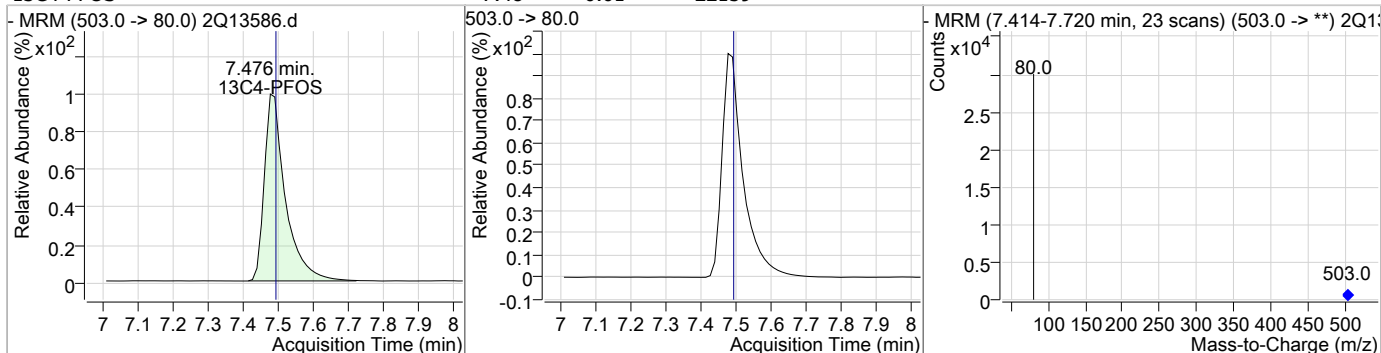
10.5.11 10

### Perfluorinated Compounds by LC/MS/MS

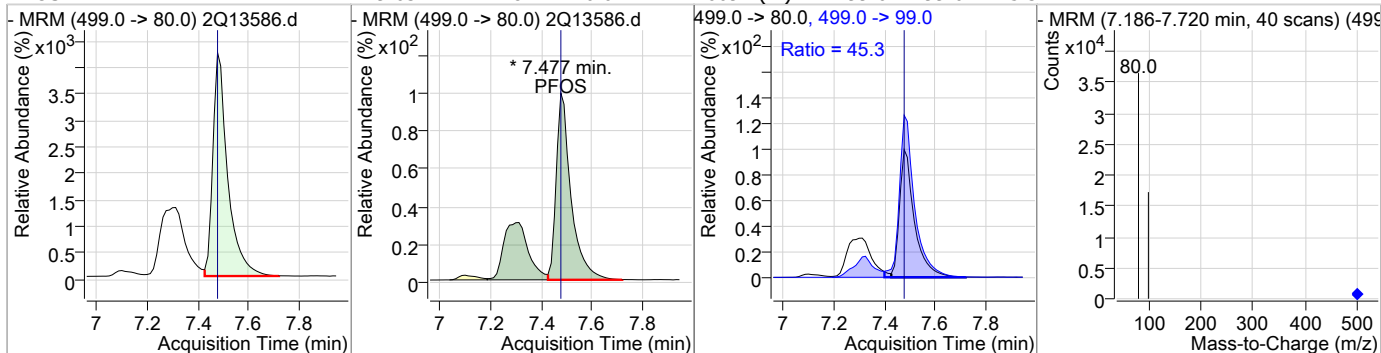
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.69	7.48	0.00	43219	498.0 -> 478.0	5.1	0.0	35.2



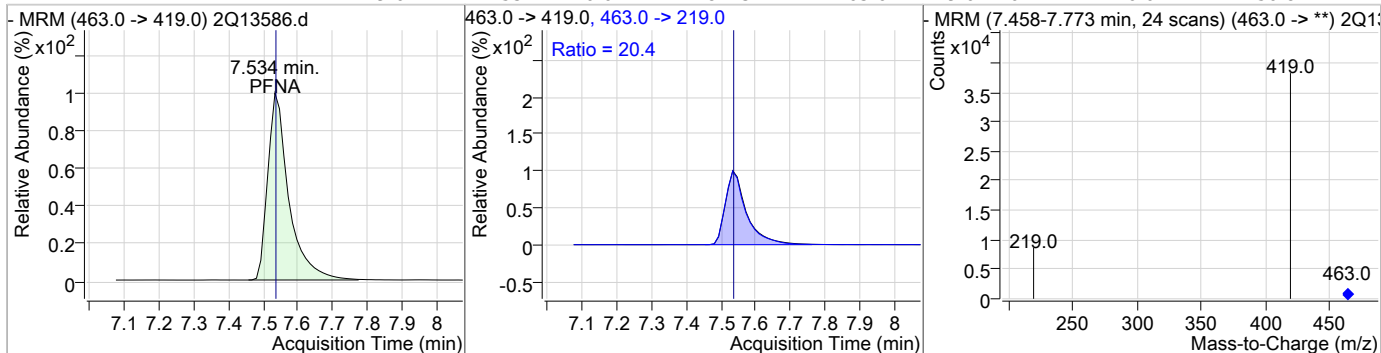
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.48	-0.01	22159				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.63	7.48	-0.01	26094 (m)	499.0 -> 99.0	45.3	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.67	7.53	-0.01	28773	463.0 -> 219.0	20.4	0.0	50.8



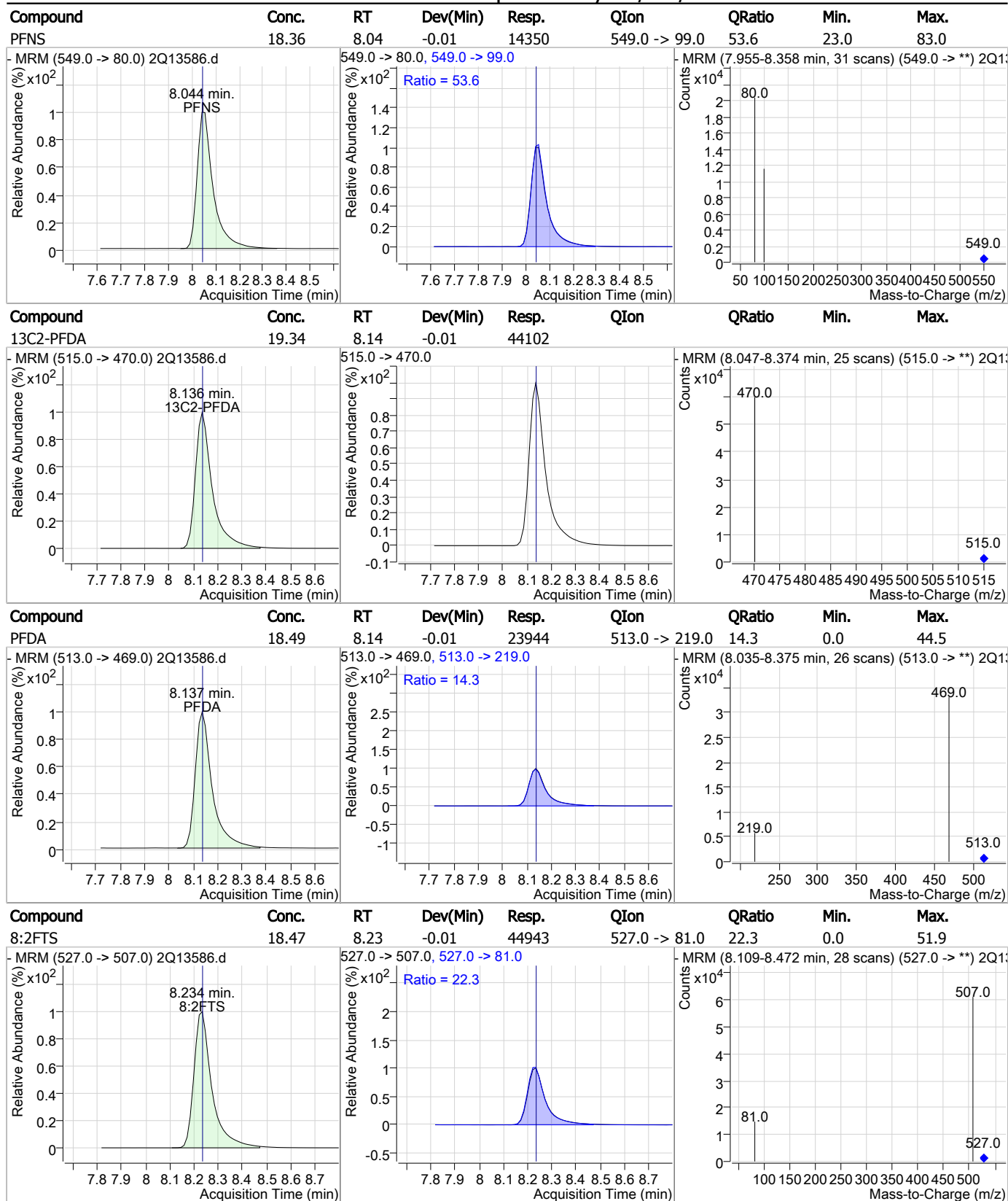
10.5.11 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	11345				
-MRM (573.0 -> 419.0) 2Q13586.d			573.0 -> 419.0			-MRM (7.839-8.142 min, 23 scans) (573.0 -> **) 2Q13586.d		
MeFOSAA	19.91	7.90	-0.01	12867	570.0 -> 512.0	36.1	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13586.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.853-8.143 min, 22 scans) (570.0 -> **) 2Q13586.d		
d5-EtFOSAA	19.16	8.03	0.00	14486				
-MRM (589.0 -> 419.0) 2Q13586.d			589.0 -> 419.0			-MRM (7.976-8.189 min, 16 scans) (589.0 -> **) 2Q13586.d		
EtFOSAA	19.27	8.03	-0.01	10522	584.0 -> 483.0	60.3	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13586.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.976-8.265 min, 22 scans) (584.0 -> **) 2Q13586.d		

10.5.11 10

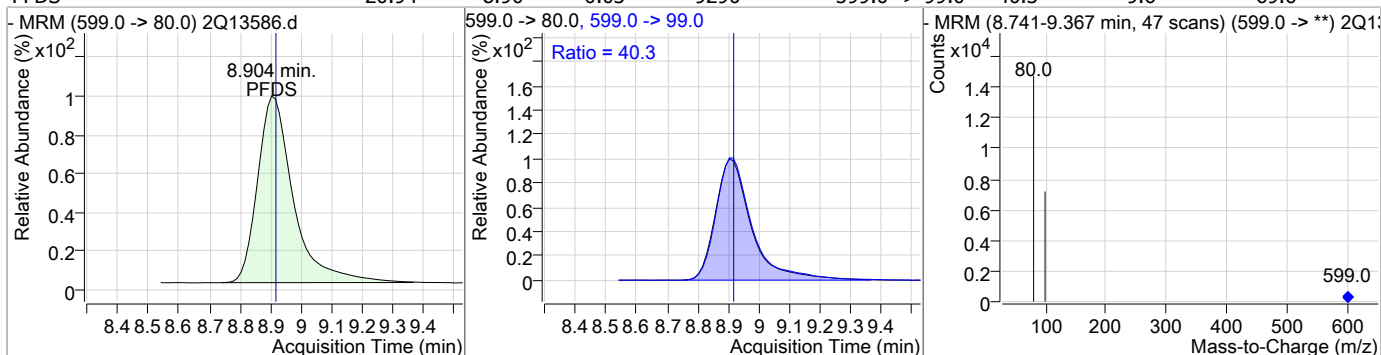
### Perfluorinated Compounds by LC/MS/MS



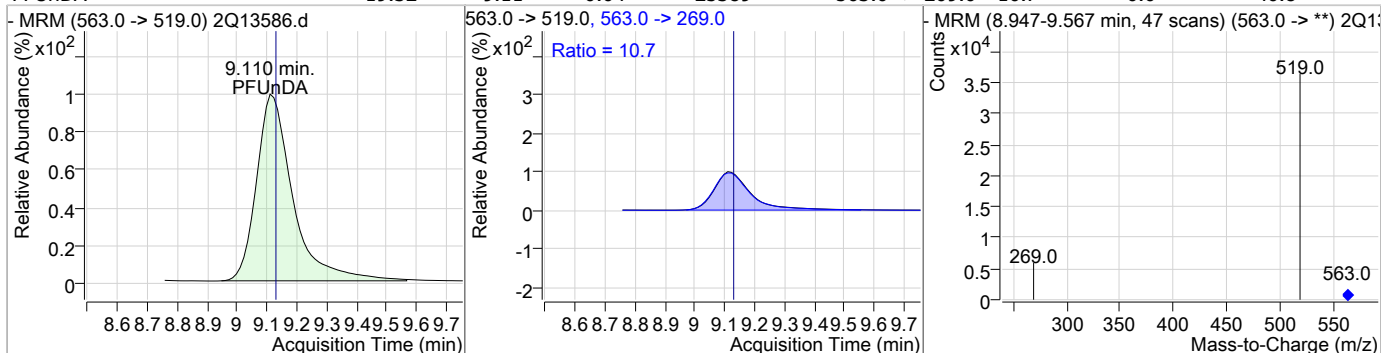
10.5.11 10

### Perfluorinated Compounds by LC/MS/MS

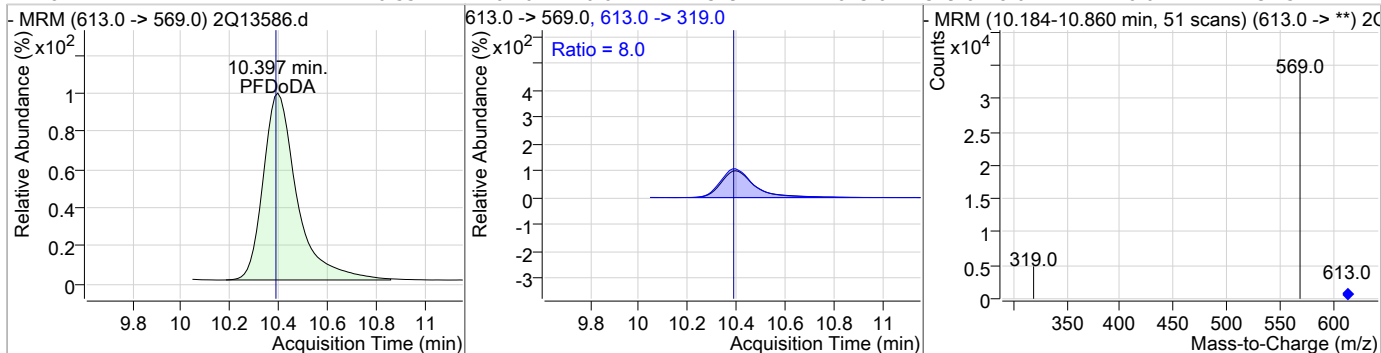
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.94	8.90	-0.03	9290	599.0 -> 99.0	40.3	9.6	69.6



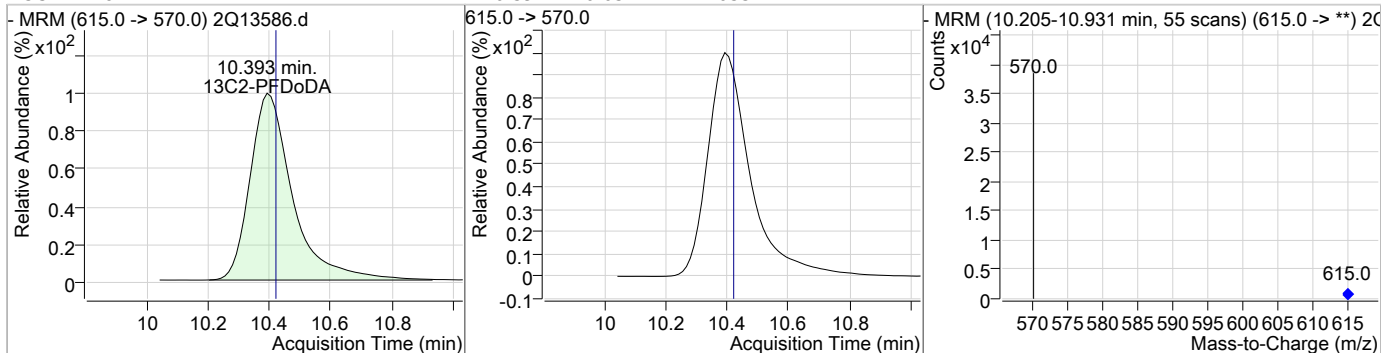
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.32	9.11	-0.04	25389	563.0 -> 269.0	10.7	0.0	40.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.55	10.40	-0.01	23491	613.0 -> 319.0	8.0	0.0	37.5



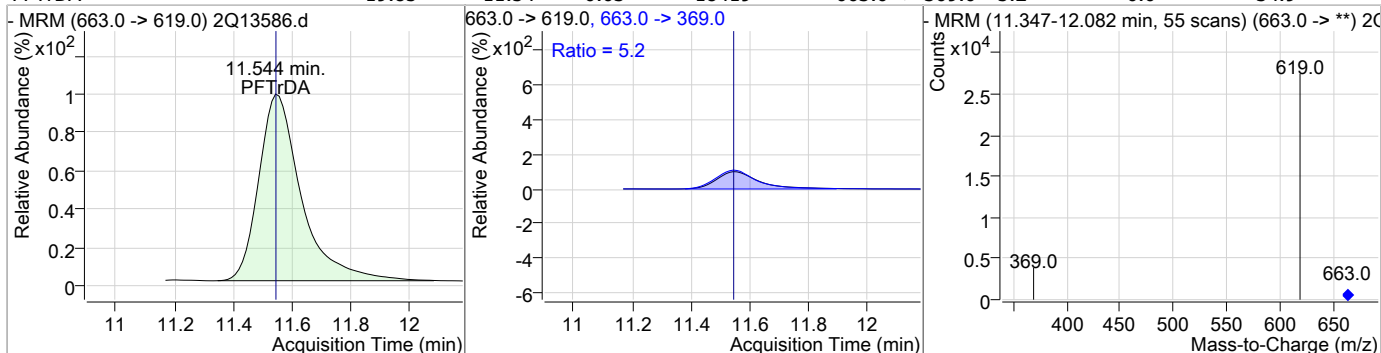
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		10.39	-0.03	27033				



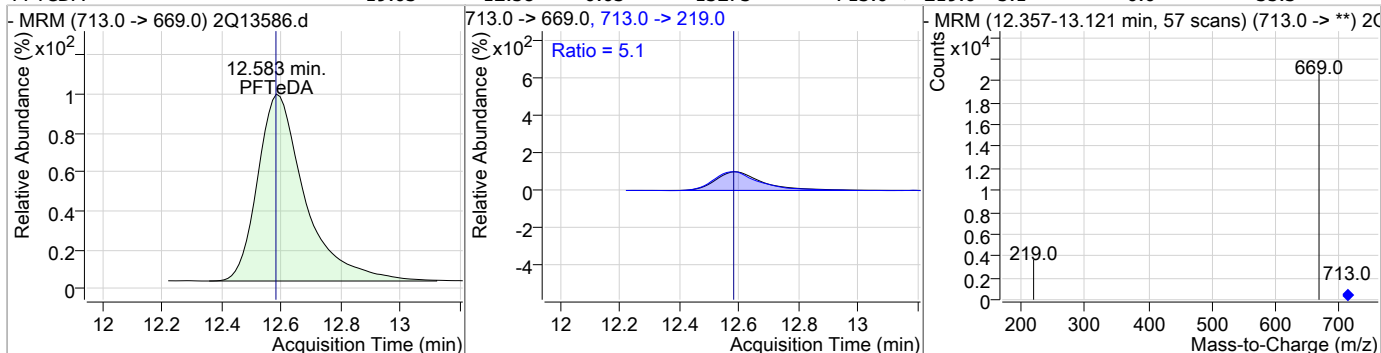
10.5.11 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.85	11.54	-0.03	18419	663.0 -> 369.0	5.2	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.03	12.58	-0.03	13273	713.0 -> 219.0	5.1	0.0	35.3



10.5.11  
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# Manual Integration Approval Summary

**Sample Number:** S2Q251-CC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13586.D      **Analyst approved:** 04/26/18 12:34 Natasha Gumtie  
**Injection Time:** 04/25/18 20:38      **Supervisor approved:** 04/26/18 17:17 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.48	Split peak

10.5.11.1

10

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13592.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/25/2018 10:31:04 PM  
 Sample Name : cc249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q251.batch.bin  
 Sample Information : op69745,S2Q251,130,,,1.0,1,water

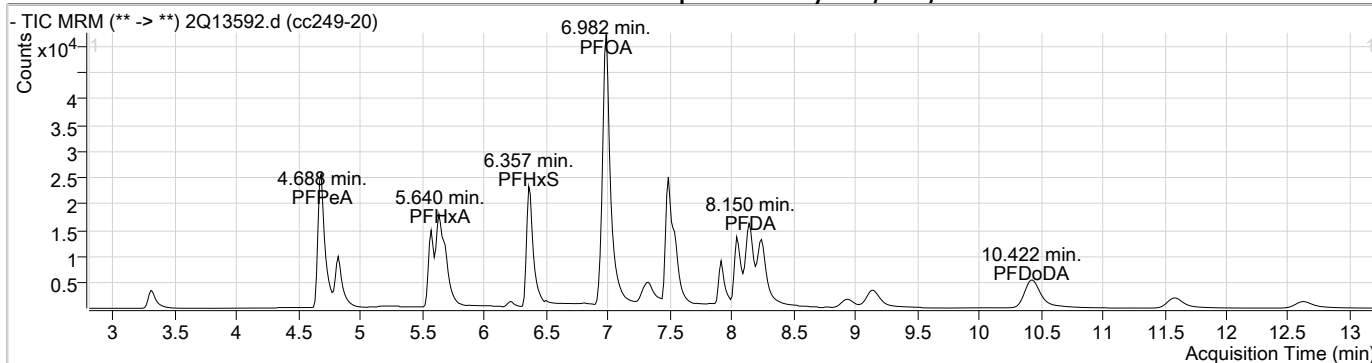
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.990	429.0 -> 409.0	54994	20.00 µg/L	0.000
13C2-PFDoDA	10.430	615.0 -> 570.0	26443	20.00 µg/L	0.013
13C2-PFOA	6.981	415.0 -> 370.0	35725	20.00 µg/L	0.000
13C3-PFPeA	4.685	266.0 -> 222.0	40925	20.00 µg/L	0.013
13C4-PFOS	7.489	503.0 -> 80.0	21932	20.00 µg/L	0.000
d3-MeFOSAA	7.915	573.0 -> 419.0	11249	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.149	515.0 -> 470.0	44032	19.43 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.1%		
13C2-PFHxA	5.638	315.0 -> 270.0	41864	18.97 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 94.8%		
d5-EtFOSAA	8.039	589.0 -> 419.0	15112	20.17 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 100.9%		
<b>Target Compounds</b>					
4:2FTS	5.572	327.0 -> 307.0	39736	19.88 µg/L	99
6:2FTS	6.991	427.0 -> 407.0	54081	20.06 µg/L	99
8:2FTS	8.247	527.0 -> 507.0	45770	19.07 µg/L	100
EtFOSAA	8.039	584.0 -> 419.0	10809	19.97 µg/L	98
FOSA	7.491	498.0 -> 78.0	43376	20.94 µg/L	100
MeFOSAA	7.915	570.0 -> 419.0	12818	20.00 µg/L	99
PFBA	3.302	213.0 -> 169.0	15605	18.06 µg/L	100
PFBS	4.816	299.0 -> 80.0	25550	19.70 µg/L	100
PFDA	8.150	513.0 -> 469.0	23639	18.36 µg/L	99
PFDoDA	10.422	613.0 -> 569.0	23372	20.90 µg/L	99
PFDS	8.929	599.0 -> 80.0	9317	21.21 µg/L	99
PFHpA	6.376	363.0 -> 319.0	50943	19.49 µg/L	100
PFHpS	6.947	449.0 -> 80.0	24186	19.99 µg/L	100
PFHxA	5.640	313.0 -> 269.0	15875	18.39 µg/L	99
PFHxS	6.357	399.0 -> 80.0	29095	20.37 µg/L	m 100
PFNA	7.547	463.0 -> 419.0	27710	19.06 µg/L	99
PFNS	8.069	549.0 -> 80.0	13997	18.09 µg/L	98
PFOA	6.982	413.0 -> 369.0	28714	19.79 µg/L	99
PFOS	7.490	499.0 -> 80.0	25836	19.64 µg/L	m 100
PFPeA	4.688	263.0 -> 219.0	65605	20.53 µg/L	100
PFPeS	5.681	349.0 -> 80.0	18360	19.82 µg/L	100
PFTeDA	12.620	713.0 -> 669.0	12841	18.83 µg/L	100
PFTTrDA	11.582	663.0 -> 619.0	18280	20.14 µg/L	99
PFUnDA	9.148	563.0 -> 519.0	24665	19.19 µg/L	100

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

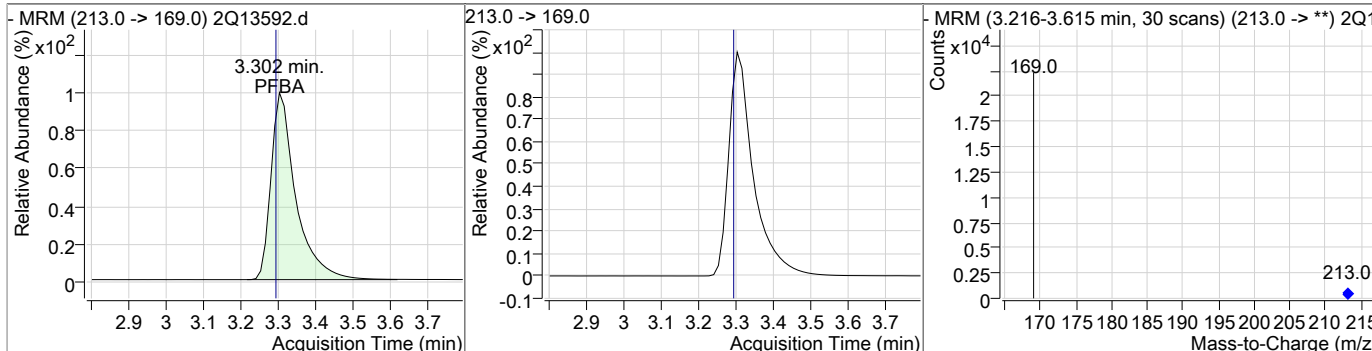
10.5.12  
**10**



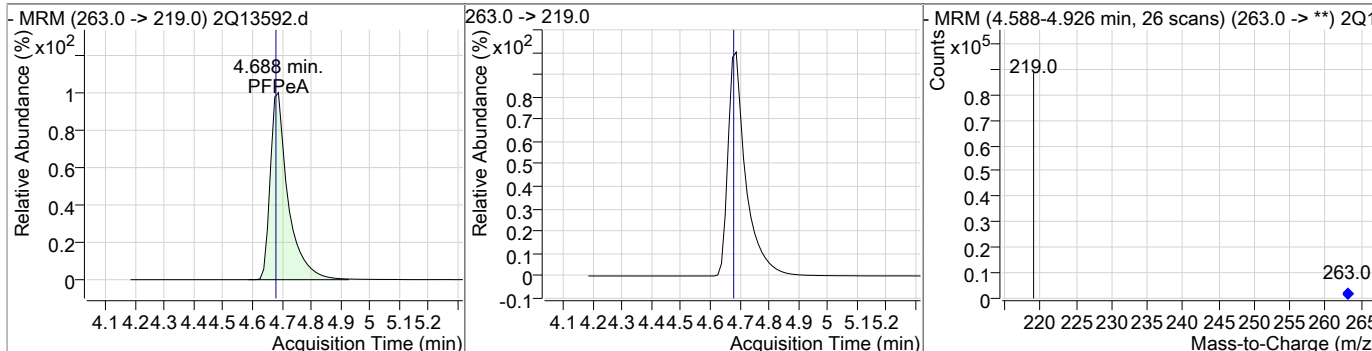
### Perfluorinated Compounds by LC/MS/MS



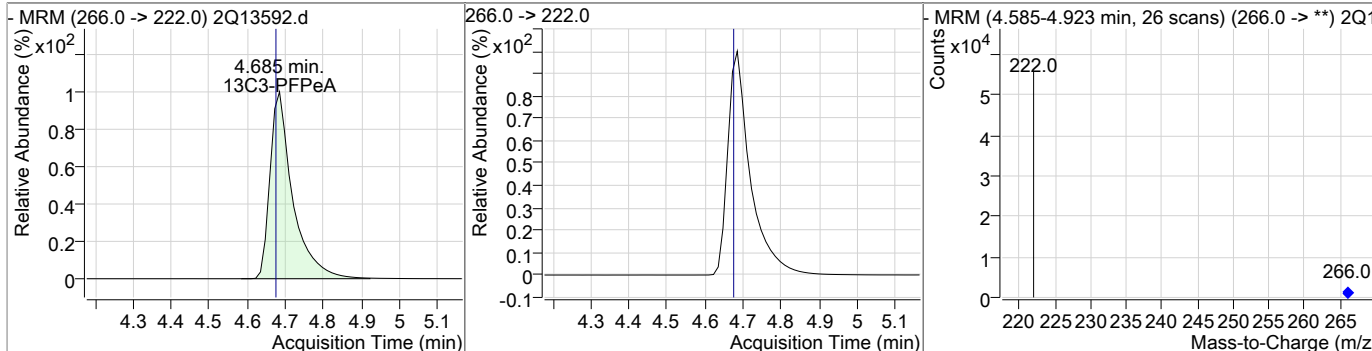
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.06	3.30	0.01	15605				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.53	4.69	0.03	65605				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.68	0.01	40925				



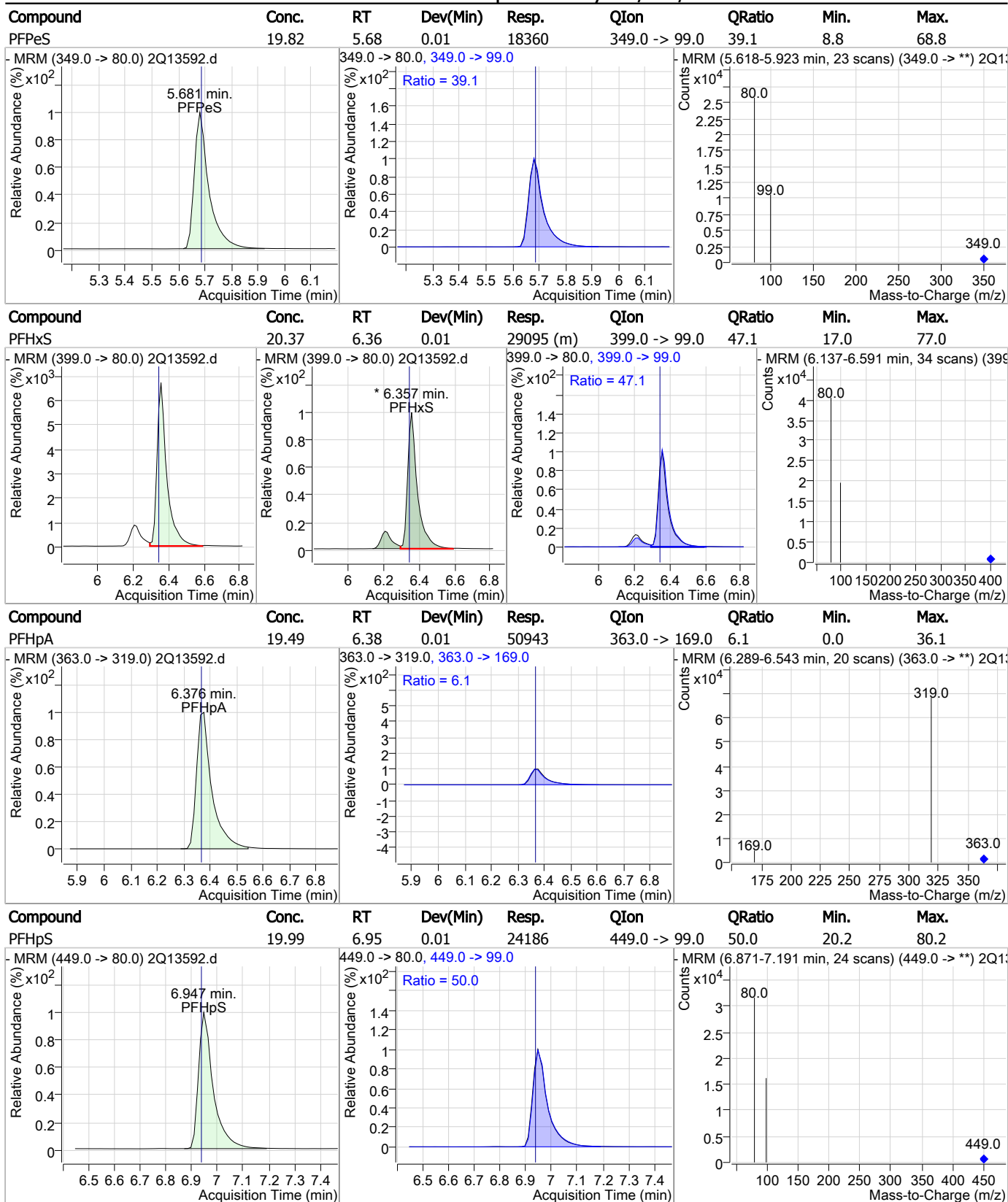
10.5.12 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.70	4.82	0.01	25550	299.0 -> 99.0	37.7	7.8	67.8
4:2FTS	19.88	5.57	0.01	39736	327.0 -> 81.0	42.8	13.7	73.7
13C2-PFHxA	18.97	5.64	0.01	41864	315.0 -> 270.0			
PFHxA	18.39	5.64	0.01	15875	313.0 -> 119.0	9.0	0.0	38.7

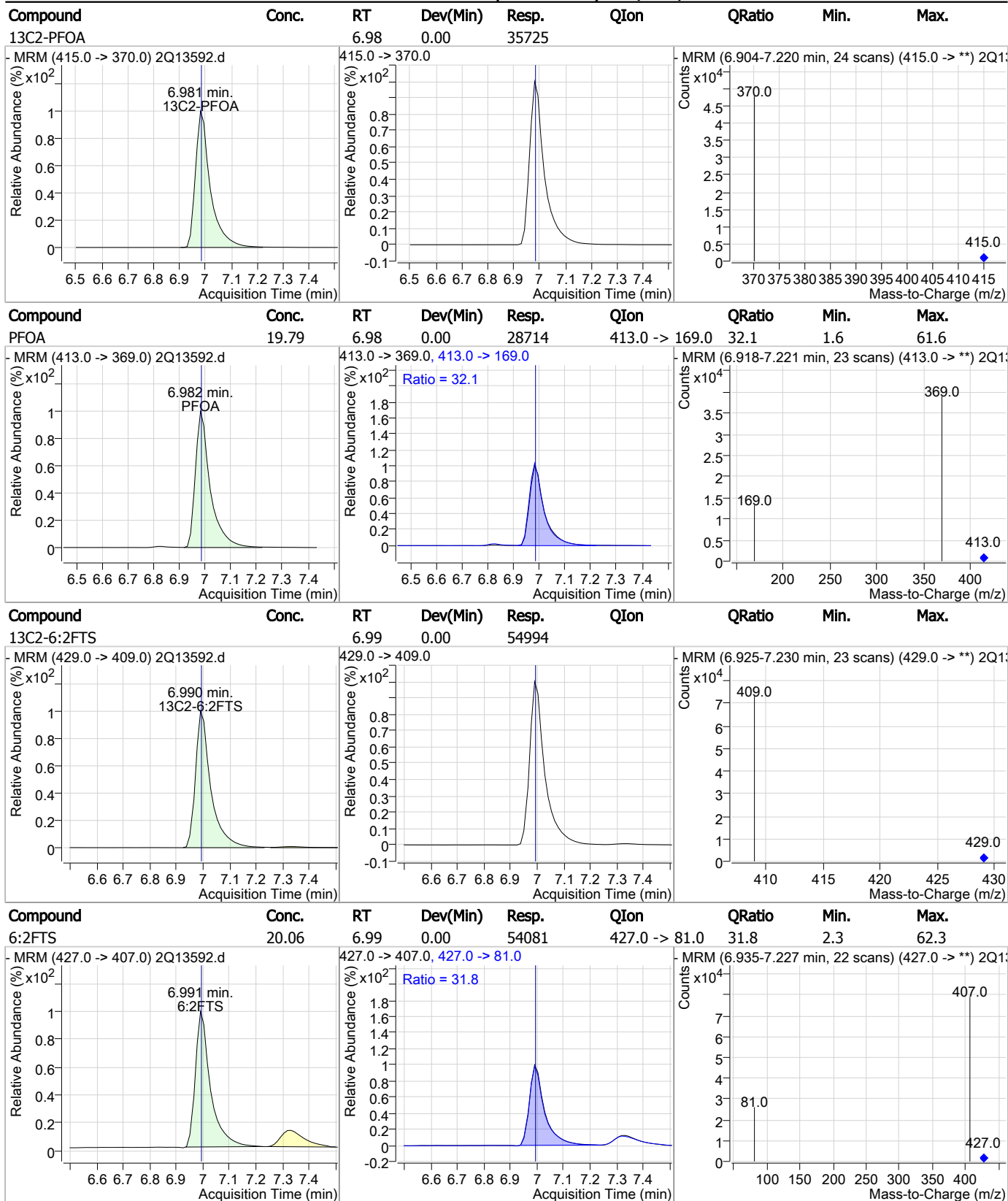
10.5.12 10

### Perfluorinated Compounds by LC/MS/MS



10.5.12 10

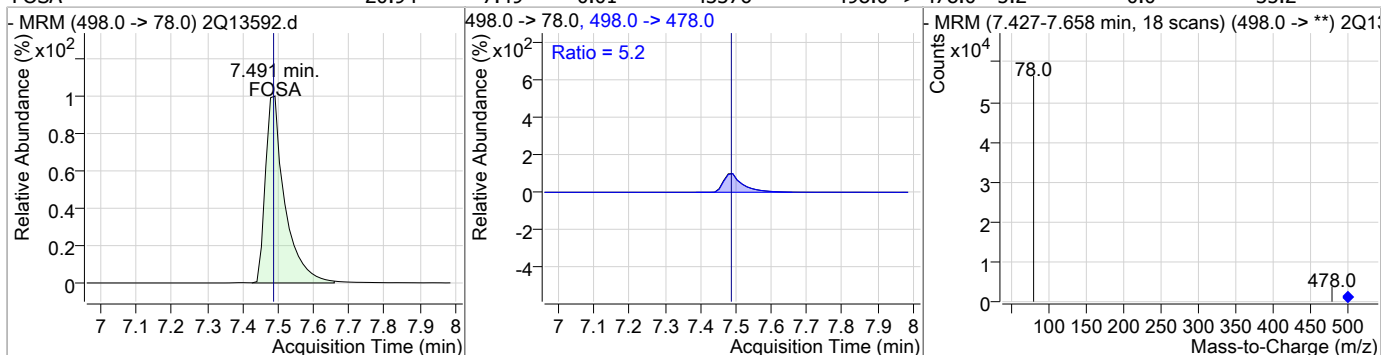
### Perfluorinated Compounds by LC/MS/MS



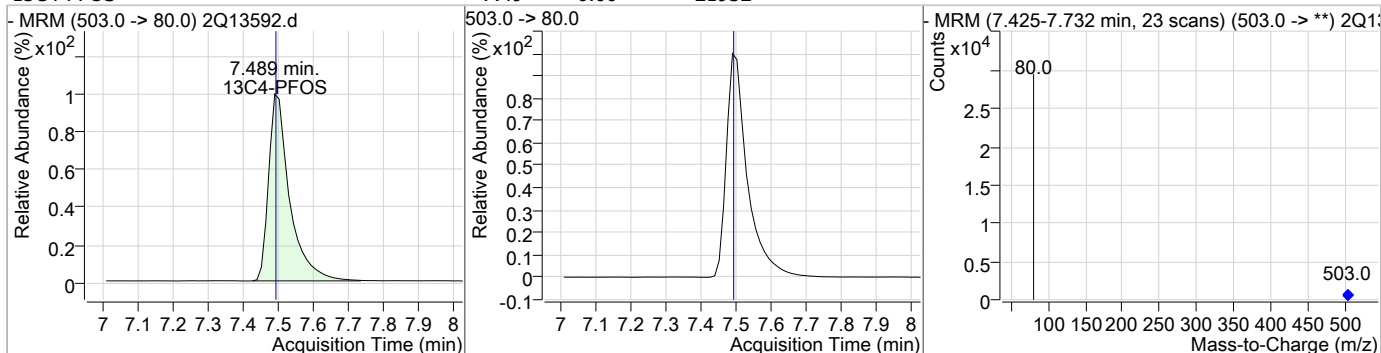
10.5.12 10

### Perfluorinated Compounds by LC/MS/MS

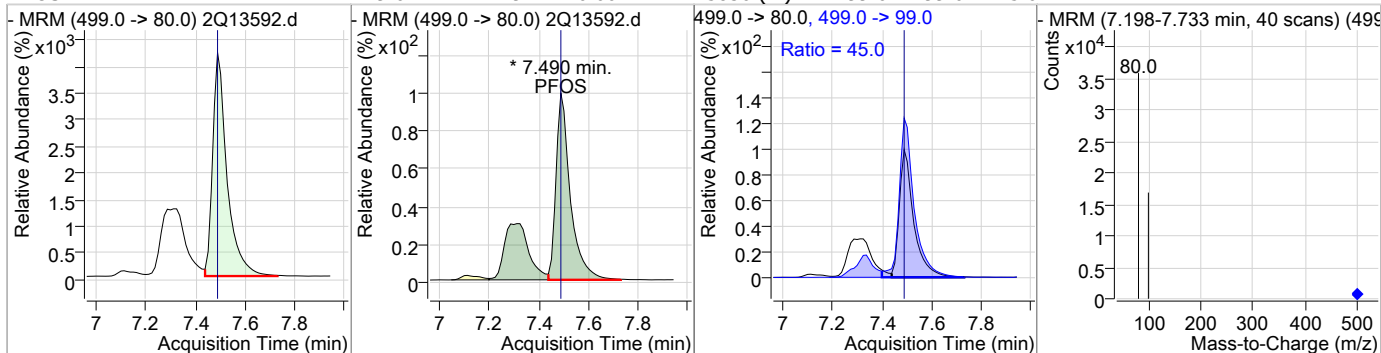
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.94	7.49	0.01	43376	498.0 -> 478.0	5.2	0.0	35.2



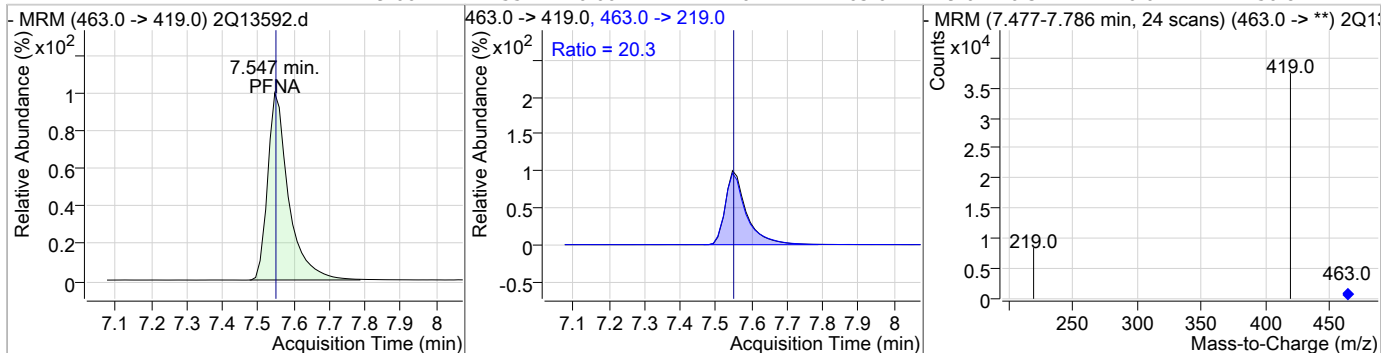
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.49	0.00	21932				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.64	7.49	0.00	25836 (m)	499.0 -> 99.0	45.0	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.06	7.55	0.00	27710	463.0 -> 219.0	20.3	0.0	50.8



10.5.12 10

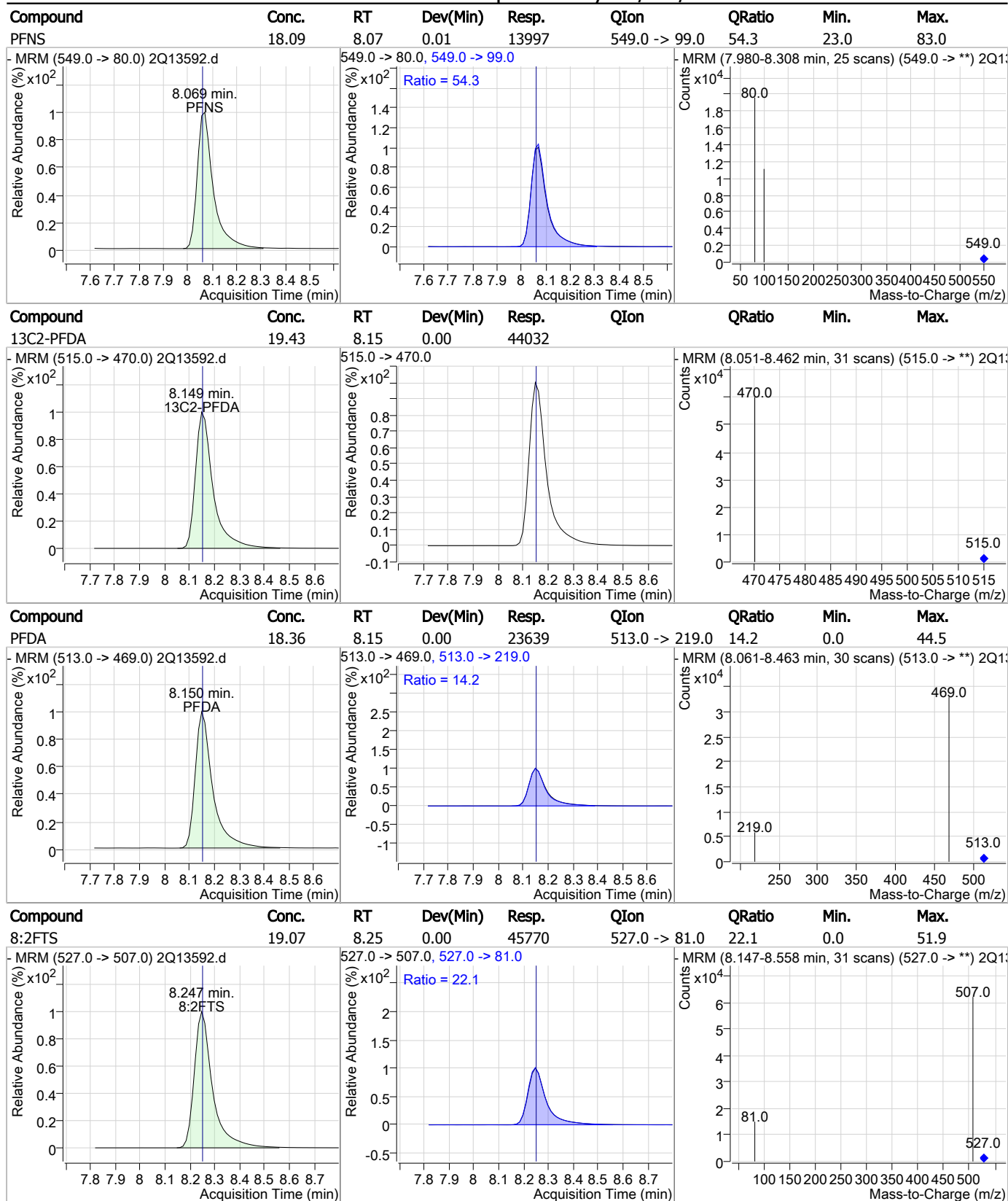
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.91	0.01	11249				
- MRM (573.0 -> 419.0) 2Q13592.d			573.0 -> 419.0			- MRM (7.852-8.079 min, 17 scans) (573.0 -> **) 2Q1:		
MeFOSAA	20.00	7.92	0.00	12818	570.0 -> 512.0	36.0	5.3	65.3
- MRM (570.0 -> 419.0) 2Q13592.d			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.857-8.155 min, 23 scans) (570.0 -> **) 2Q1:		
d5-EtFOSAA	20.17	8.04	0.01	15112				
- MRM (589.0 -> 419.0) 2Q13592.d			589.0 -> 419.0			- MRM (7.938-8.202 min, 20 scans) (589.0 -> **) 2Q1:		
EtFOSAA	19.97	8.04	0.00	10809	584.0 -> 483.0	60.6	28.8	88.8
- MRM (584.0 -> 419.0) 2Q13592.d			584.0 -> 419.0, 584.0 -> 483.0			- MRM (7.964-8.203 min, 18 scans) (584.0 -> **) 2Q1:		

10.5.12 10

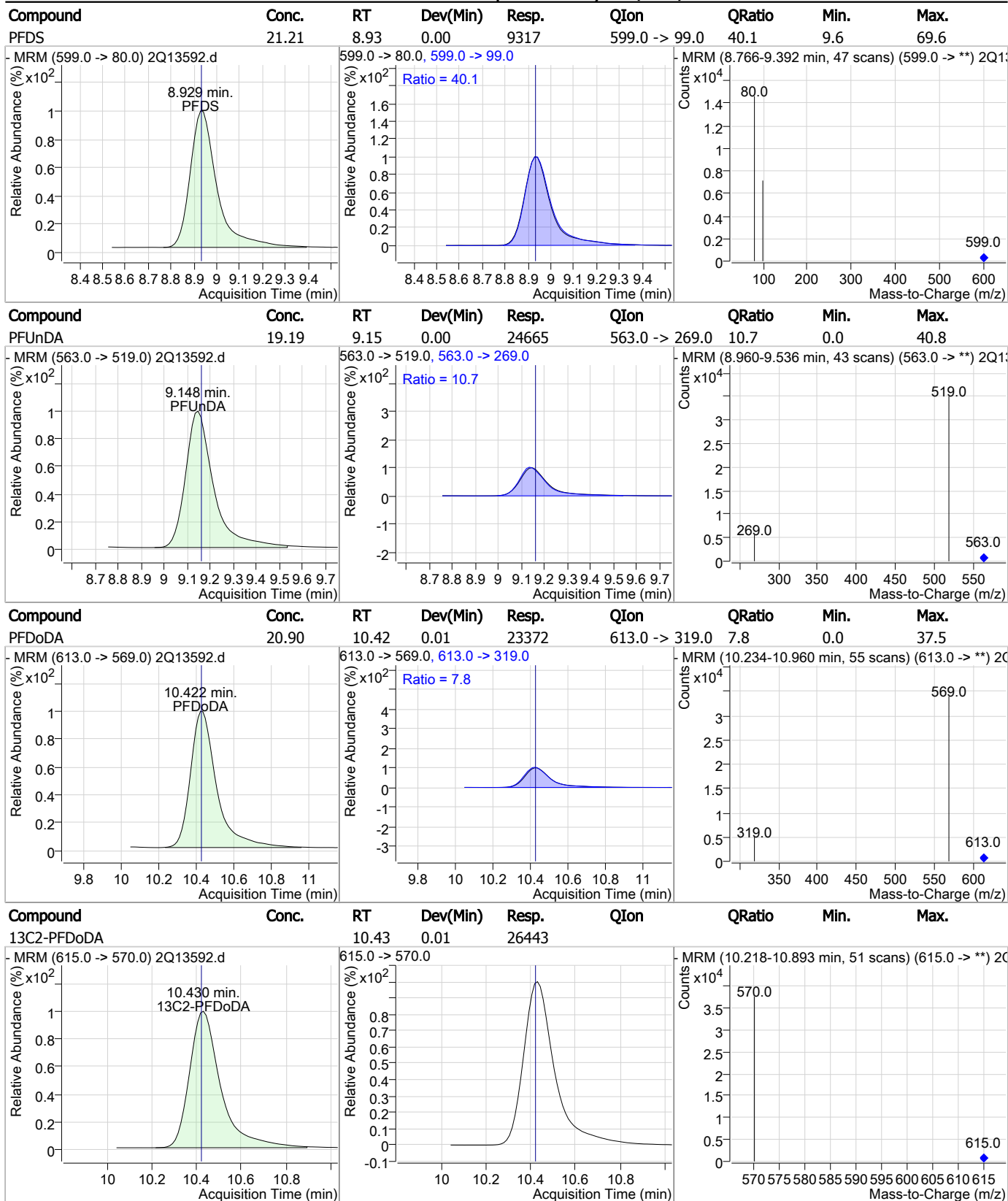


### Perfluorinated Compounds by LC/MS/MS



10.5.12 10

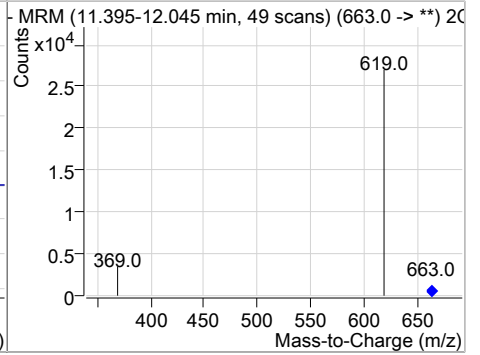
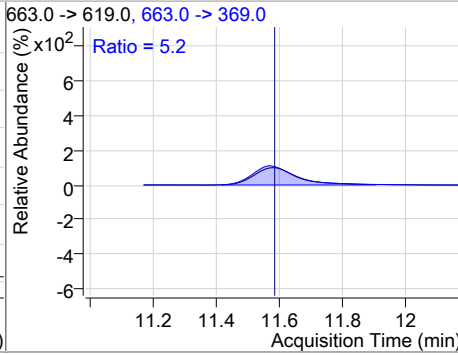
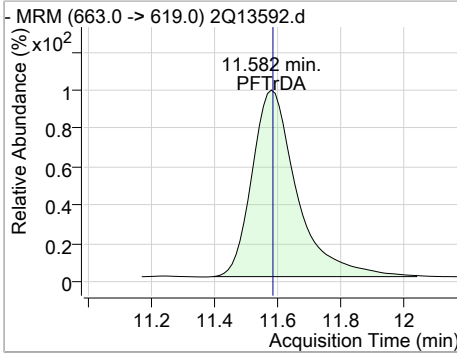
### Perfluorinated Compounds by LC/MS/MS



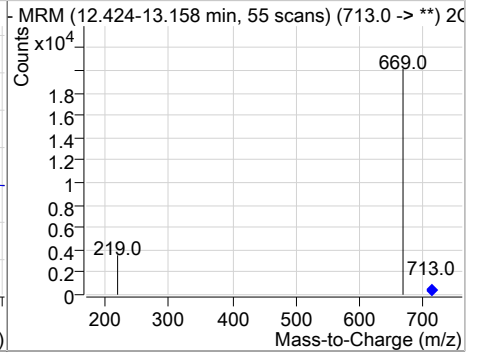
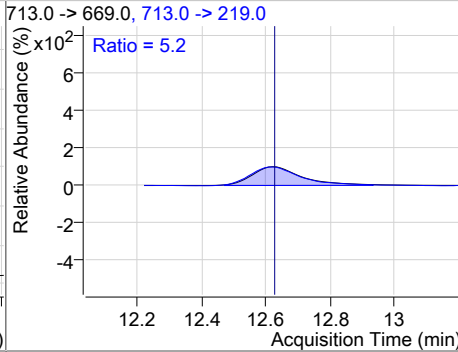
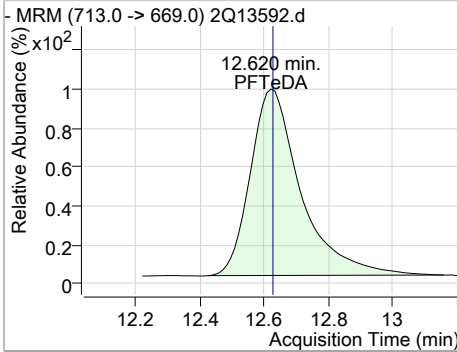
10.5.12 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	20.14	11.58	0.01	18280	663.0 -> 369.0	5.2	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.83	12.62	0.01	12841	713.0 -> 219.0	5.2	0.0	35.3



10.5.12 10

# Manual Integration Approval Summary

**Sample Number:** S2Q251-CC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13592.D      **Analyst approved:** 04/26/18 12:34 Natasha Gumtie  
**Injection Time:** 04/25/18 22:31      **Supervisor approved:** 04/26/18 17:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.49	Split peak

10.5.12.1

10

### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13643.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 2:42:07 PM  
 Sample Name : cc249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q253.batch.bin  
 Sample Information : op69769,S2Q253,1.18,,,1.0,1,soil

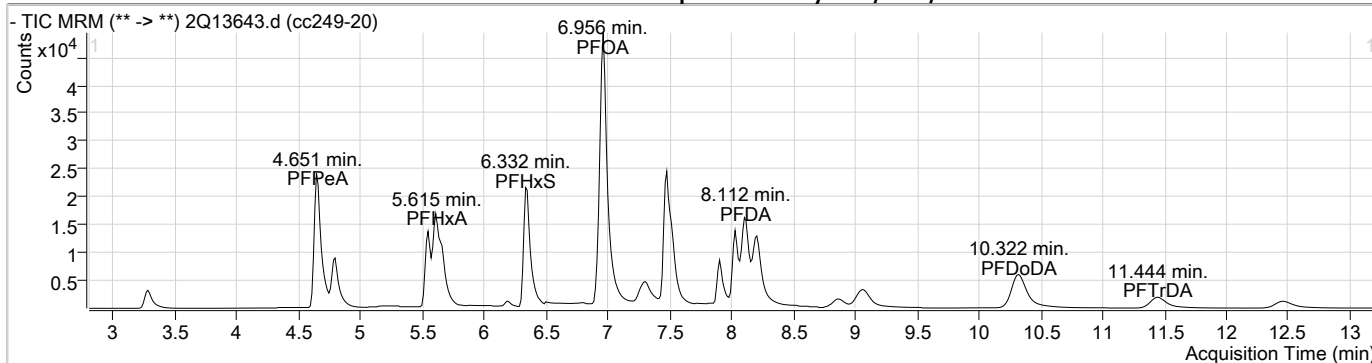
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.965	429.0 -> 409.0	51366	20.00 µg/L	-0.025
13C2-PFDoDA	10.318	615.0 -> 570.0	28088	20.00 µg/L	-0.100
13C2-PFOA	6.954	415.0 -> 370.0	32650	20.00 µg/L	-0.027
13C3-PFPeA	4.647	266.0 -> 222.0	38515	20.00 µg/L	-0.025
13C4-PFOS	7.476	503.0 -> 80.0	20525	20.00 µg/L	-0.013
d3-MeFOSAA	7.902	573.0 -> 419.0	10619	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.124	515.0 -> 470.0	41821	20.19 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 100.9%		
13C2-PFHxA	5.613	315.0 -> 270.0	39175	19.42 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.1%		
d5-EtFOSAA	8.026	589.0 -> 419.0	13810	19.52 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.6%		
<b>Target Compounds</b>					
4:2FTS	5.547	327.0 -> 307.0	36472	19.52 µg/L	QValue 100
6:2FTS	6.966	427.0 -> 407.0	50301	19.97 µg/L	99
8:2FTS	8.209	527.0 -> 507.0	43533	19.43 µg/L	100
EtFOSAA	8.027	584.0 -> 419.0	9813	19.20 µg/L	96
FOSA	7.479	498.0 -> 78.0	40428	20.67 µg/L	100
MeFOSAA	7.903	570.0 -> 419.0	12125	20.04 µg/L	99
PFBA	3.277	213.0 -> 169.0	14602	18.50 µg/L	100
PFBS	4.791	299.0 -> 80.0	23941	19.73 µg/L	100
PFDA	8.112	513.0 -> 469.0	22829	19.40 µg/L	100
PFDoDA	10.322	613.0 -> 569.0	24814	20.89 µg/L	99
PFDS	8.853	599.0 -> 80.0	8693	21.15 µg/L	100
PFHpA	6.351	363.0 -> 319.0	48005	20.09 µg/L	100
PFHpS	6.921	449.0 -> 80.0	24007	21.20 µg/L	100
PFHxA	5.615	313.0 -> 269.0	15007	19.03 µg/L	100
PFHxS	6.332	399.0 -> 80.0	25555	19.12 µg/L	m 95
PFNA	7.521	463.0 -> 419.0	25802	19.42 µg/L	99
PFNS	8.031	549.0 -> 80.0	13470	18.60 µg/L	99
PFOA	6.956	413.0 -> 369.0	26314	19.85 µg/L	98
PFOS	7.464	499.0 -> 80.0	24435	19.85 µg/L	m 100
PFPeA	4.651	263.0 -> 219.0	60609	20.15 µg/L	100
PFPeS	5.656	349.0 -> 80.0	17060	19.57 µg/L	100
PFTeDA	12.458	713.0 -> 669.0	12543	17.31 µg/L	100
PFTTrDA	11.444	663.0 -> 619.0	18103	18.77 µg/L	99
PFUnDA	9.060	563.0 -> 519.0	24304	17.80 µg/L	99

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

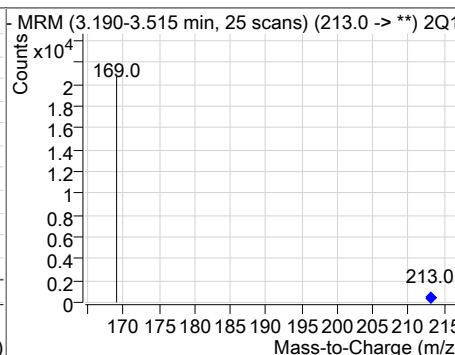
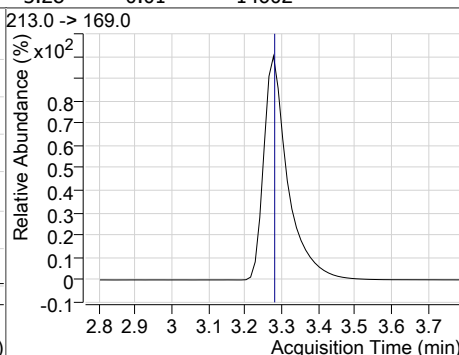
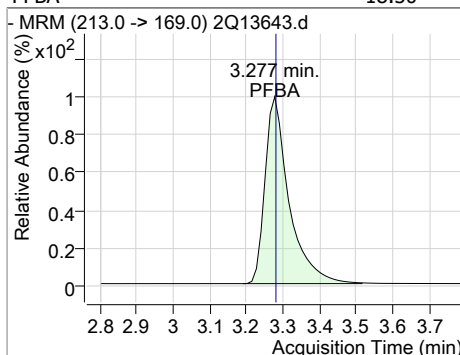
10.5.13  
**10**



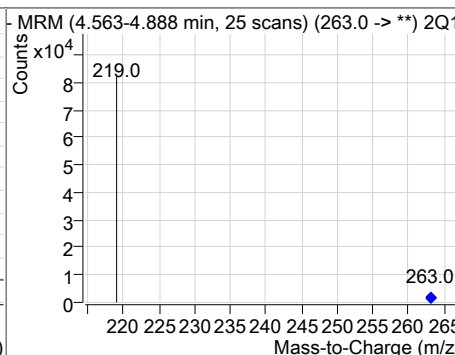
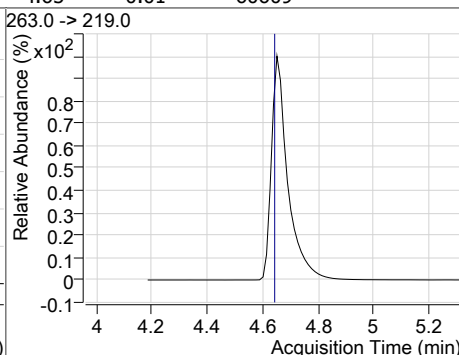
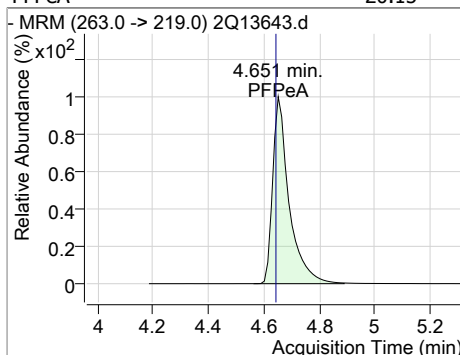
### Perfluorinated Compounds by LC/MS/MS



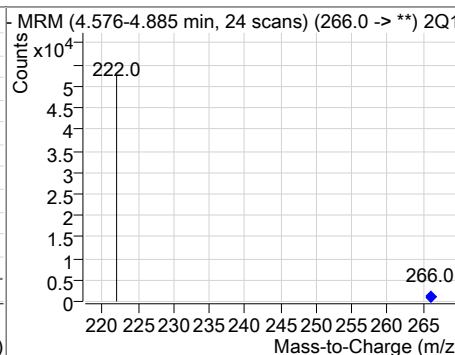
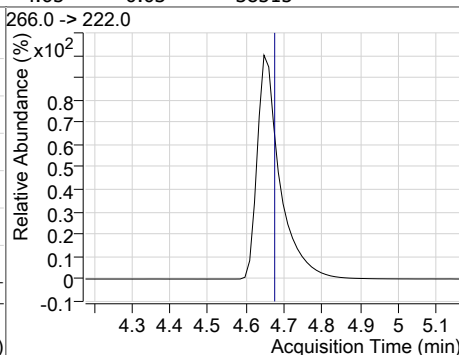
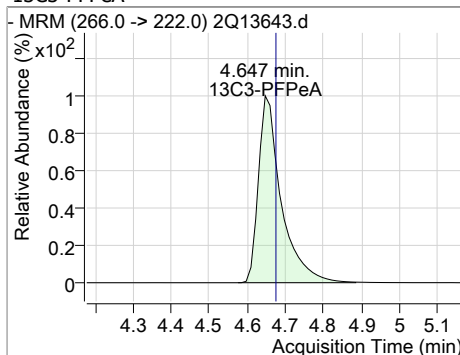
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.50	3.28	-0.01	14602				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.15	4.65	-0.01	60609				



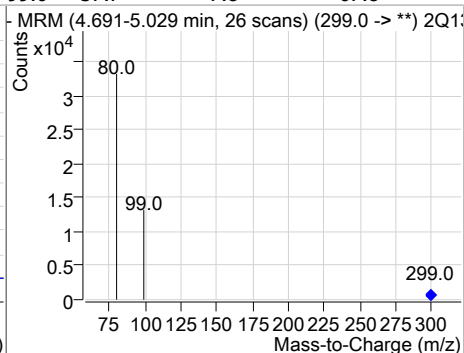
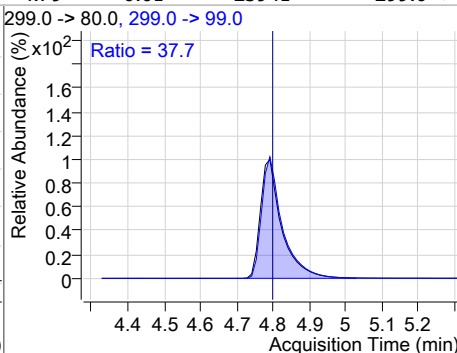
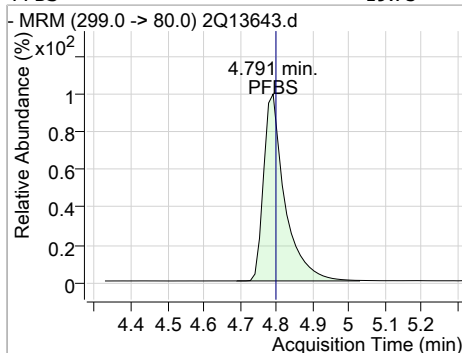
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.65	-0.03	38515				



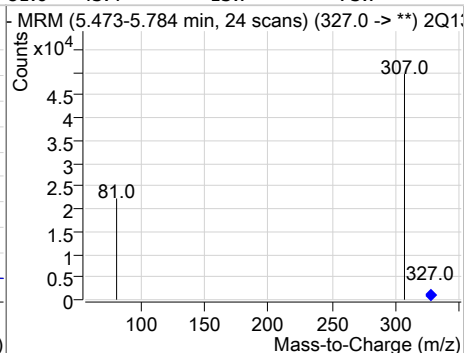
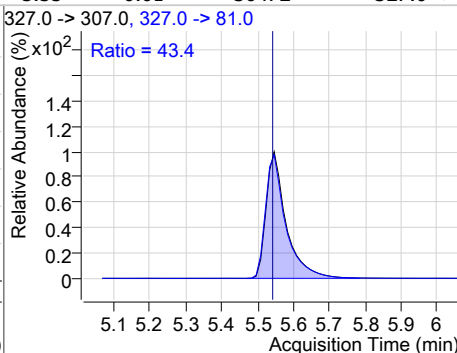
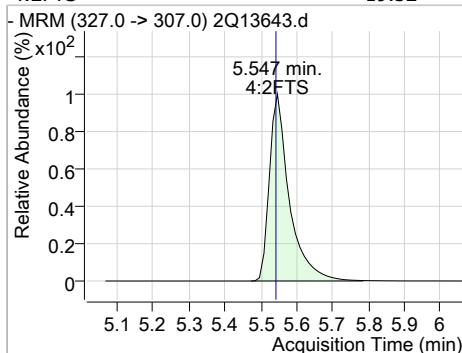
10.5.13 10

### Perfluorinated Compounds by LC/MS/MS

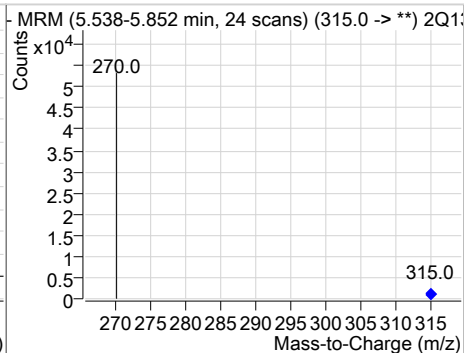
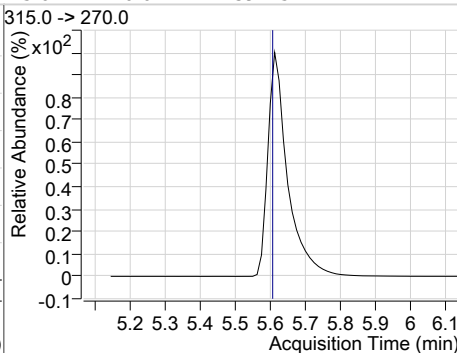
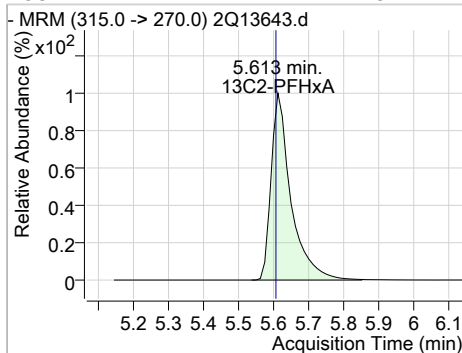
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.73	4.79	-0.01	23941	299.0 -> 99.0	37.7	7.8	67.8



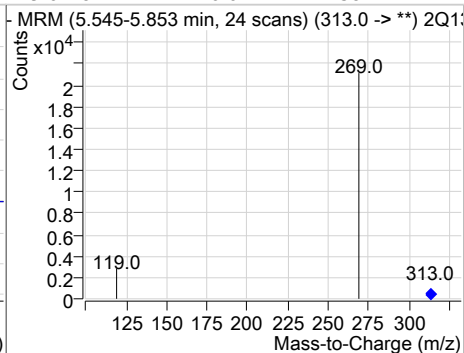
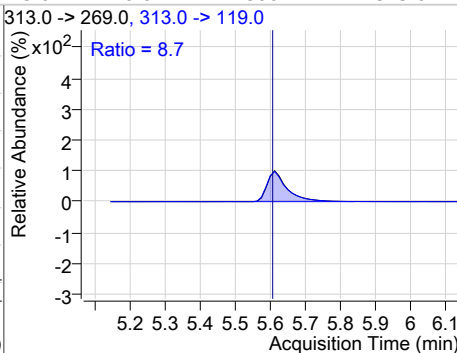
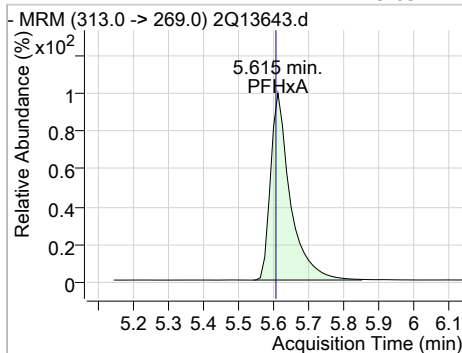
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.52	5.55	-0.01	36472	327.0 -> 81.0	43.4	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	19.42	5.61	-0.01	39175	315.0 -> 270.0	8.7	0.0	38.7



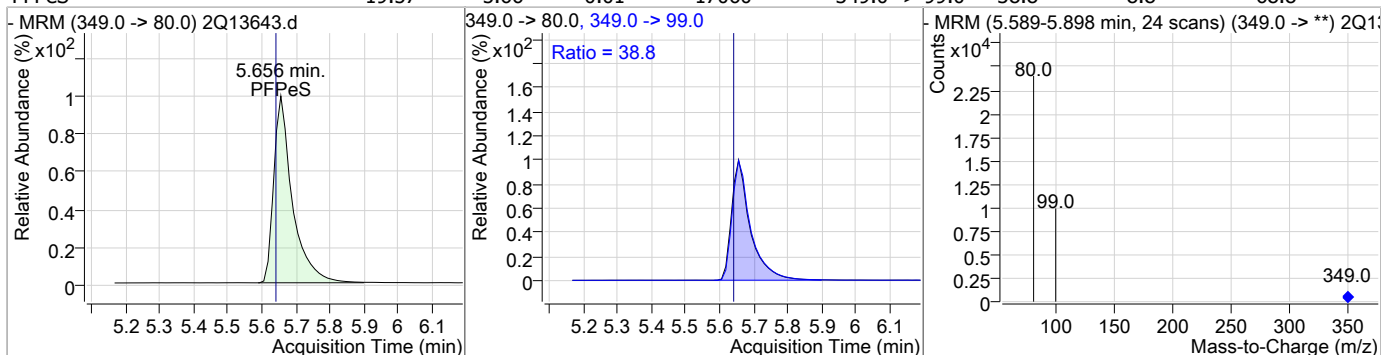
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.03	5.61	-0.01	15007	313.0 -> 119.0	8.7	0.0	38.7



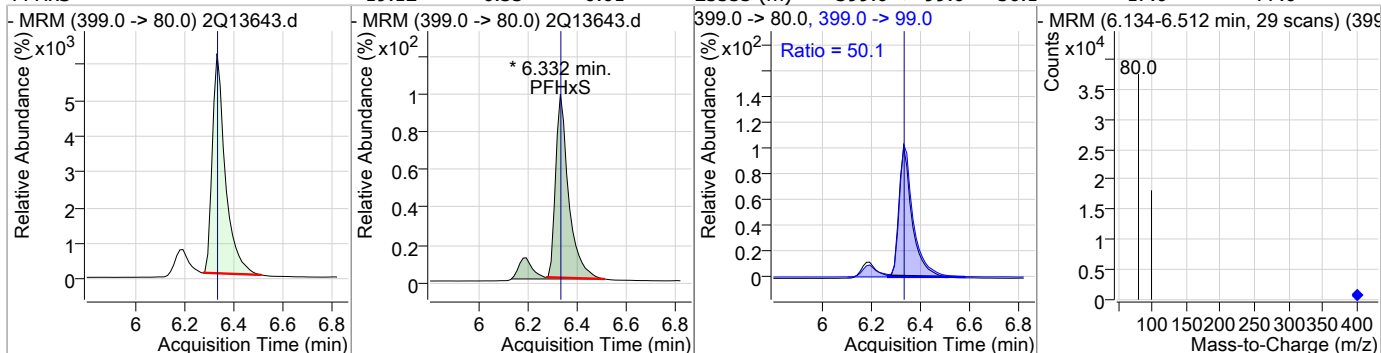
10.5.13 10

### Perfluorinated Compounds by LC/MS/MS

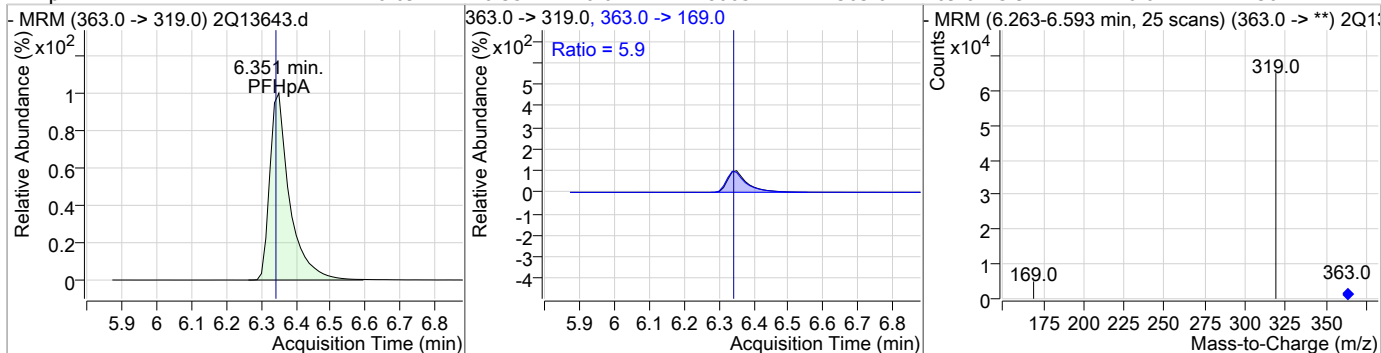
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.57	5.66	-0.01	17060	349.0 -> 99.0	38.8	8.8	68.8



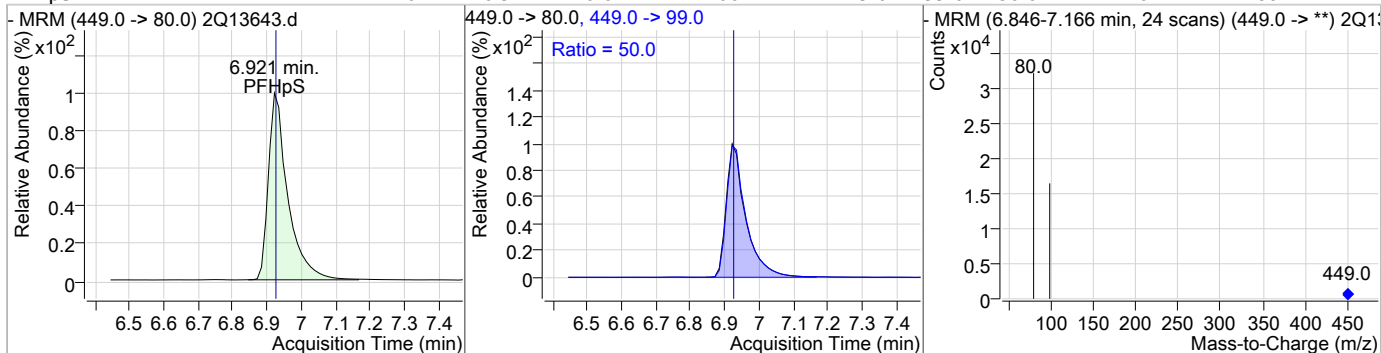
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.12	6.33	-0.01	25555 (m)	399.0 -> 99.0	50.1	17.0	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.09	6.35	-0.01	48005	363.0 -> 169.0	5.9	0.0	36.1



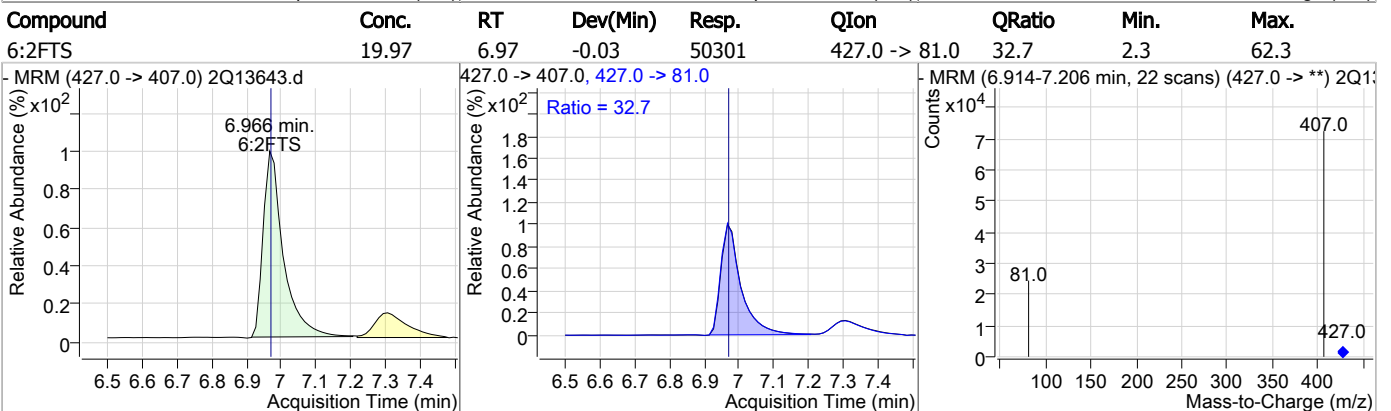
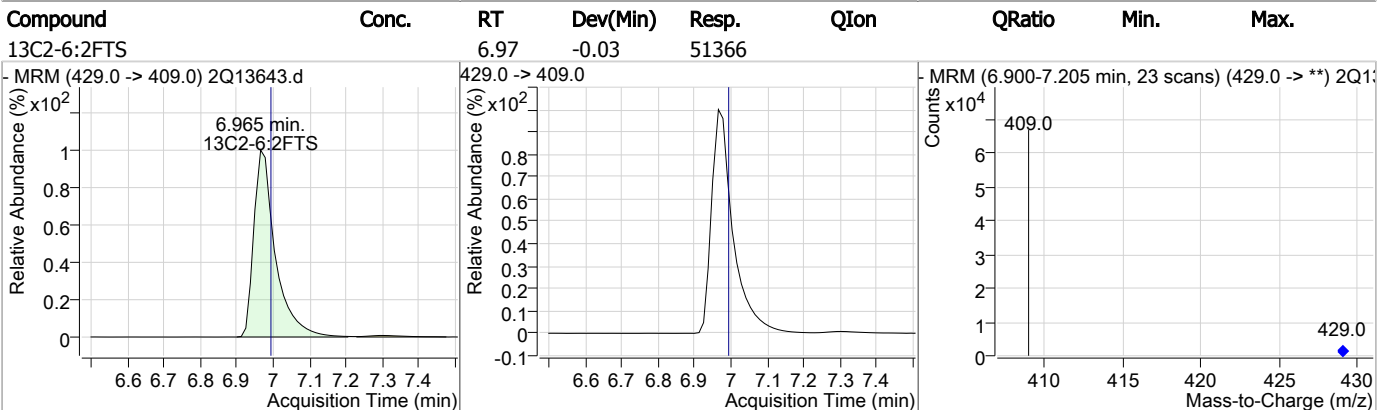
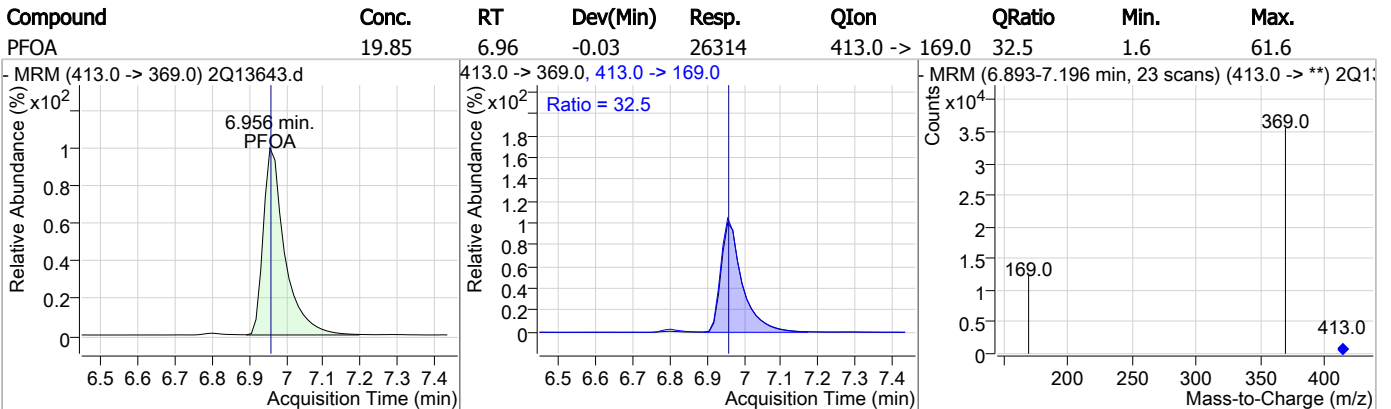
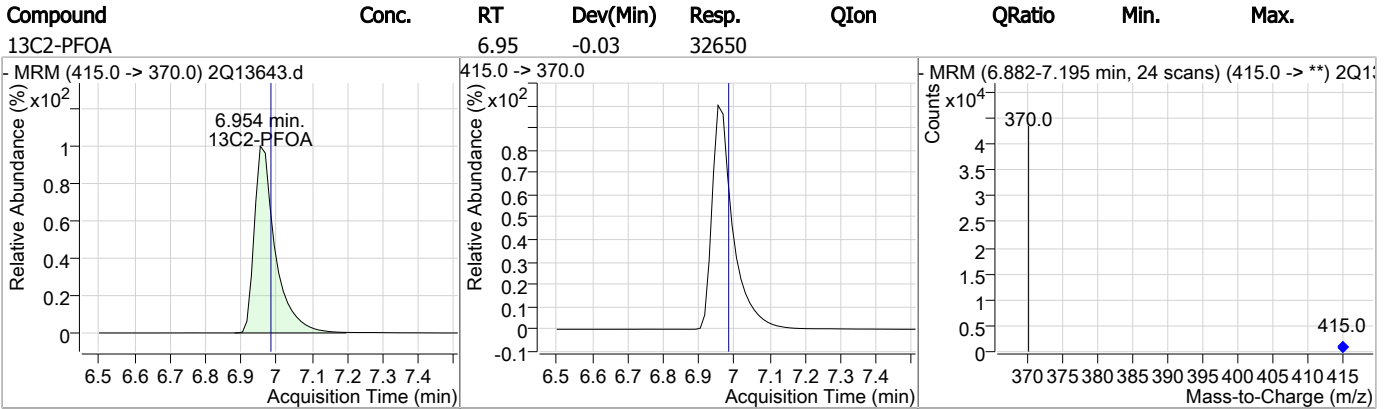
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.20	6.92	-0.01	24007	449.0 -> 99.0	50.0	20.2	80.2



10.5.13 10



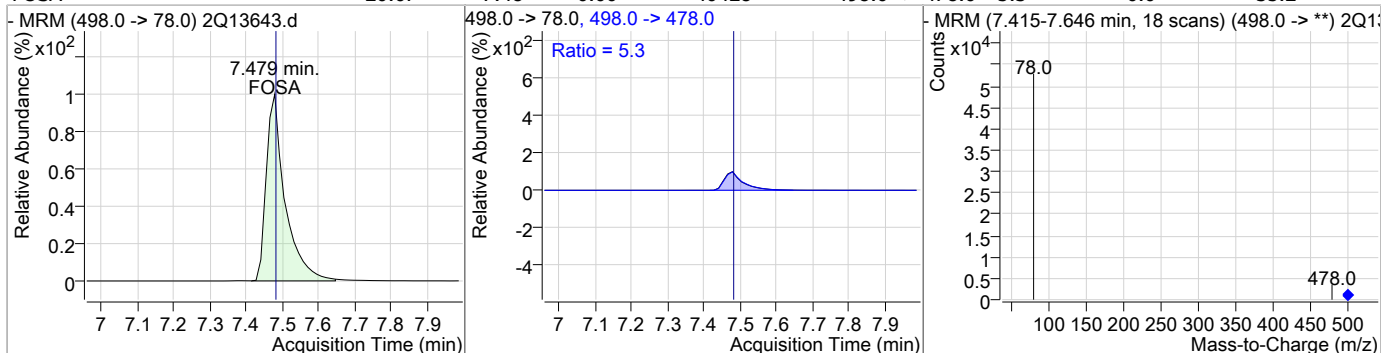
### Perfluorinated Compounds by LC/MS/MS



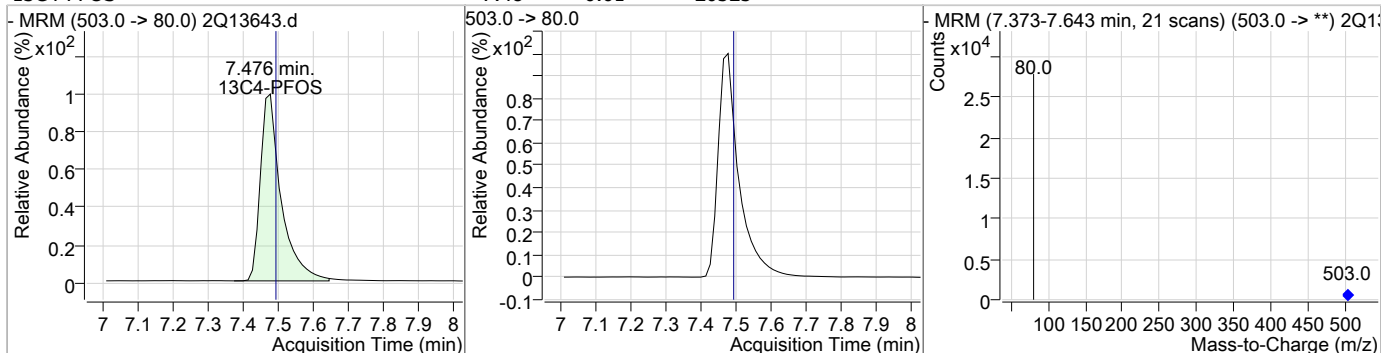
10.5.13 10

### Perfluorinated Compounds by LC/MS/MS

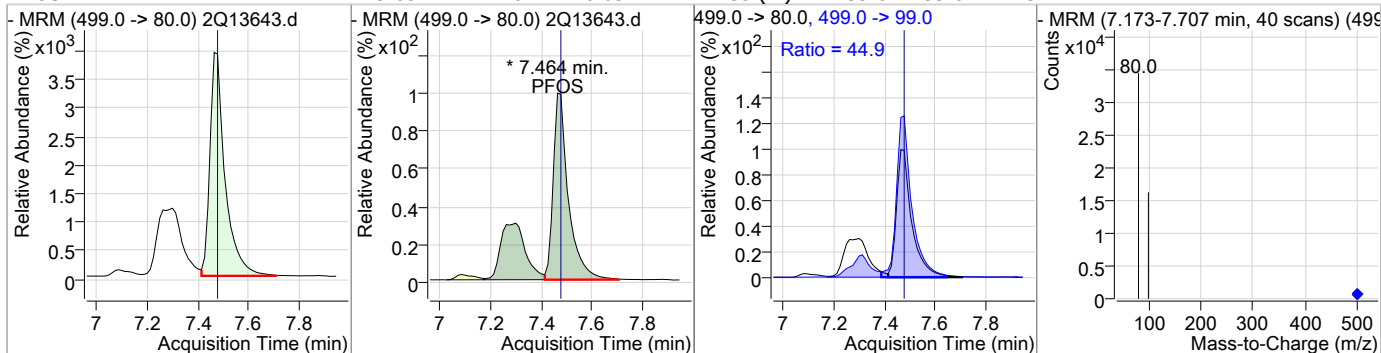
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.67	7.48	0.00	40428	498.0 -> 478.0	5.3	0.0	35.2



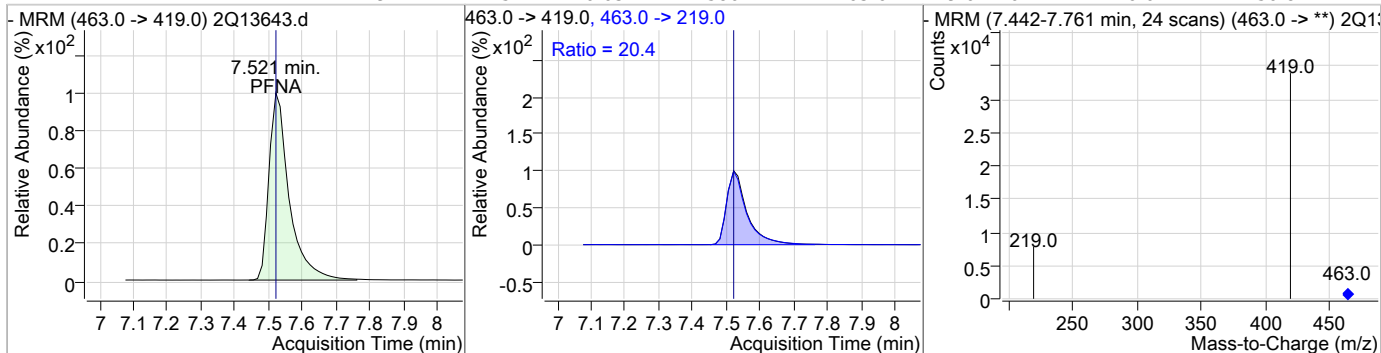
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.48	-0.01	20525				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.85	7.46	-0.03	24435 (m)	499.0 -> 99.0	44.9	14.7	74.7

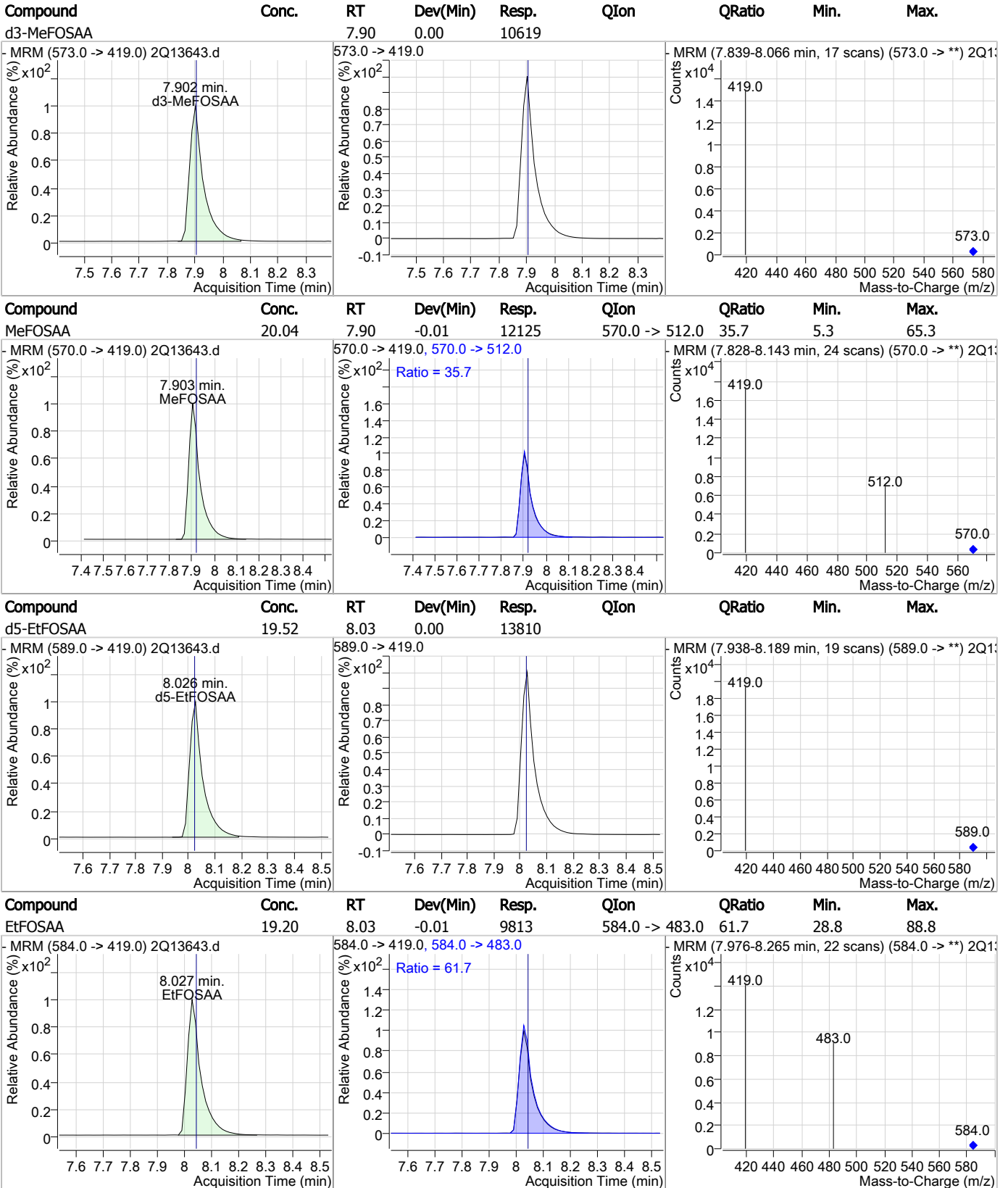


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.42	7.52	-0.03	25802	463.0 -> 219.0	20.4	0.0	50.8



10.5.13 10

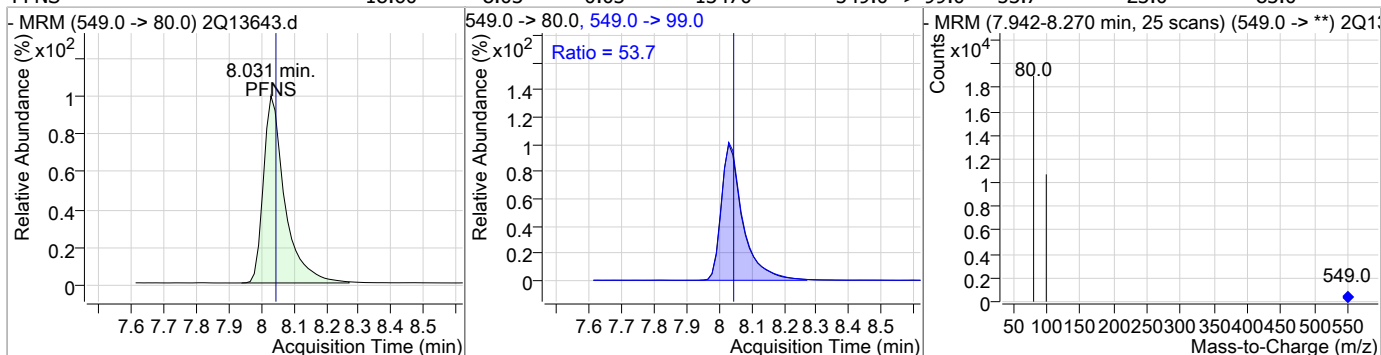
### Perfluorinated Compounds by LC/MS/MS



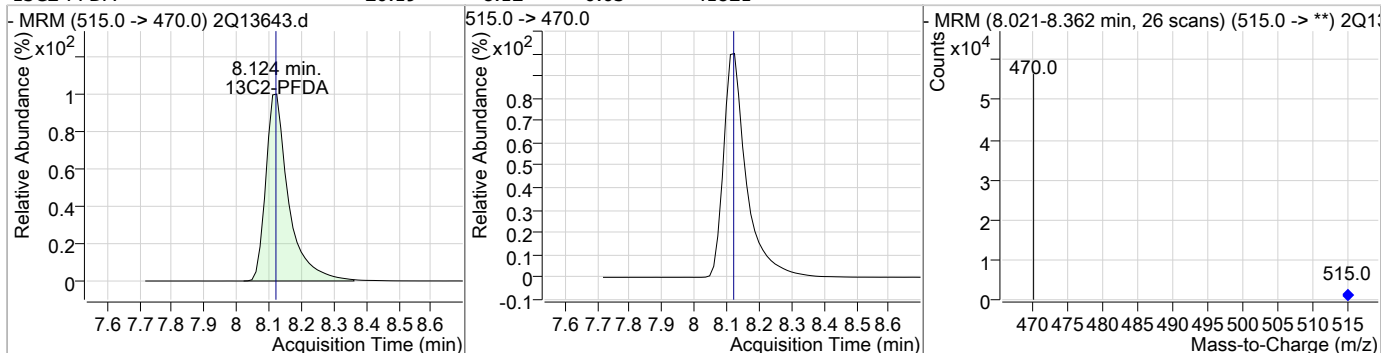
10.5.13 10

### Perfluorinated Compounds by LC/MS/MS

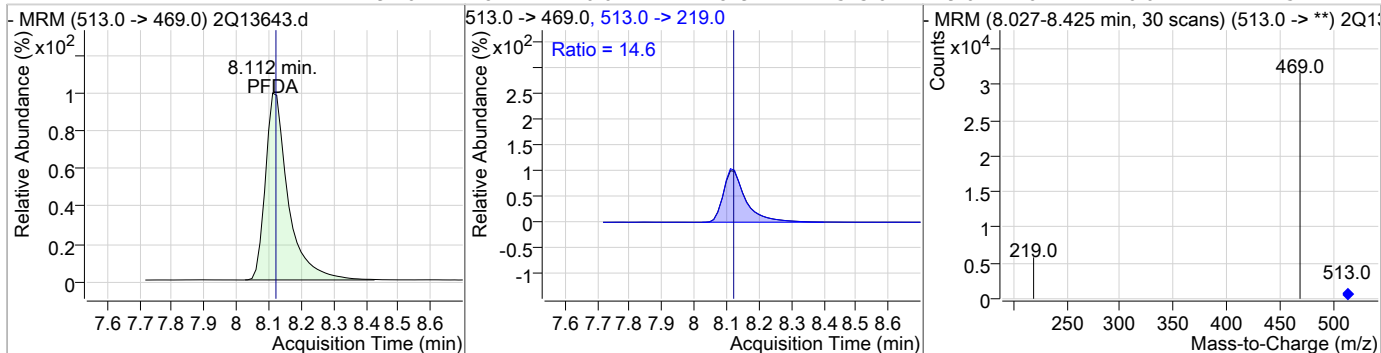
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.60	8.03	-0.03	13470	549.0 -> 99.0	53.7	23.0	83.0



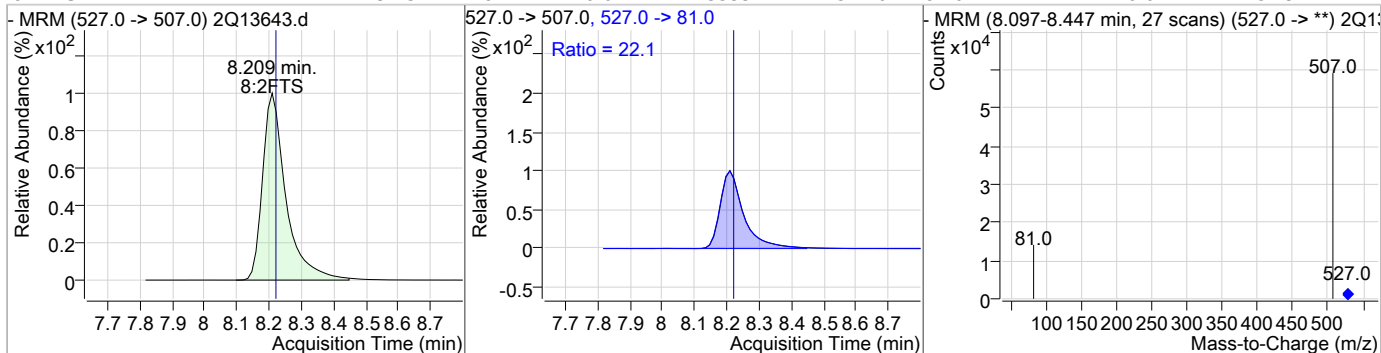
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDA	20.19	8.12	-0.03	41821				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.40	8.11	-0.04	22829	513.0 -> 219.0	14.6	0.0	44.5

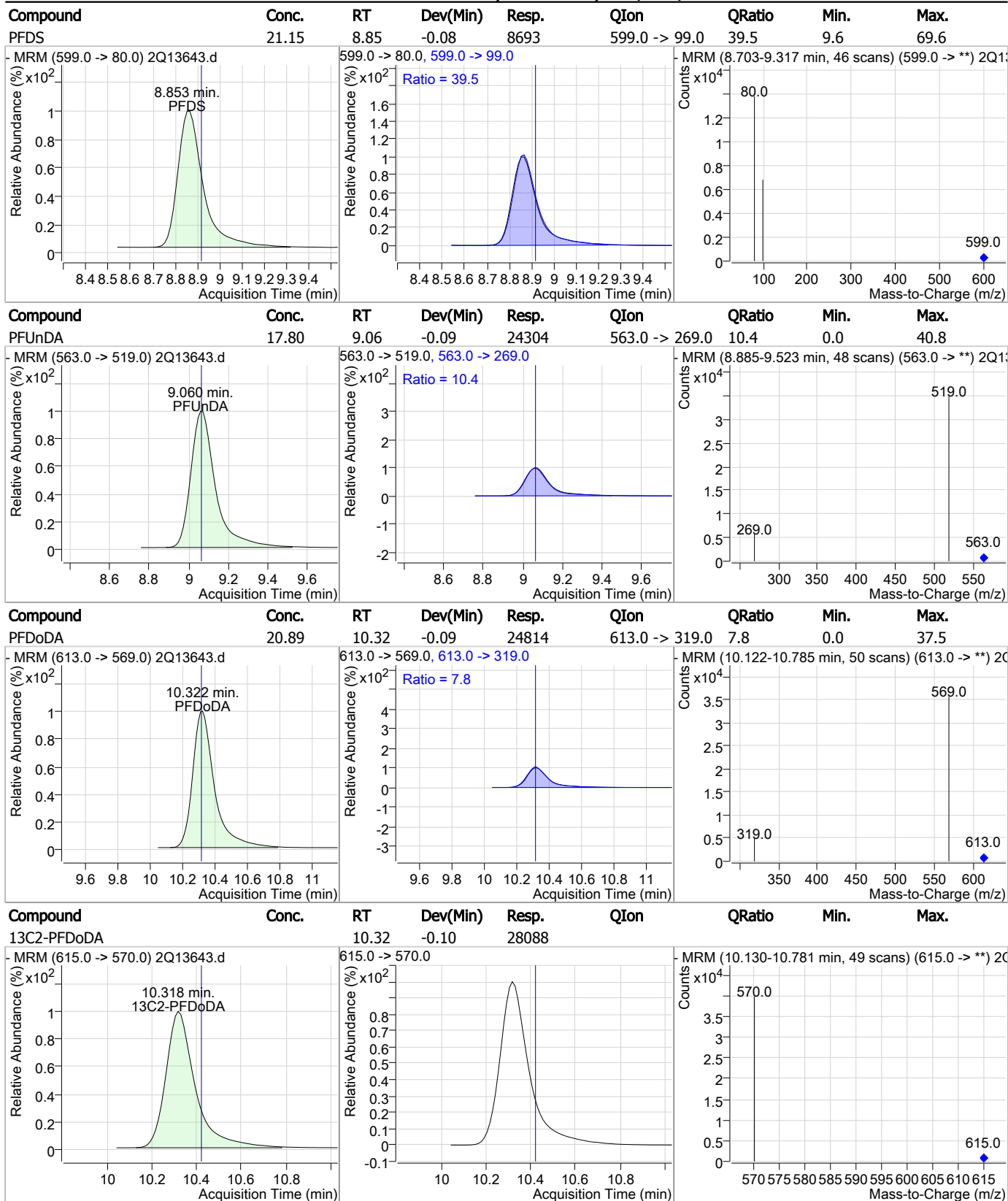


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.43	8.21	-0.04	43533	527.0 -> 81.0	22.1	0.0	51.9



10.5.13 10

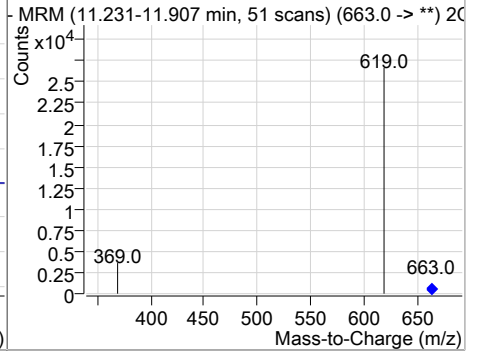
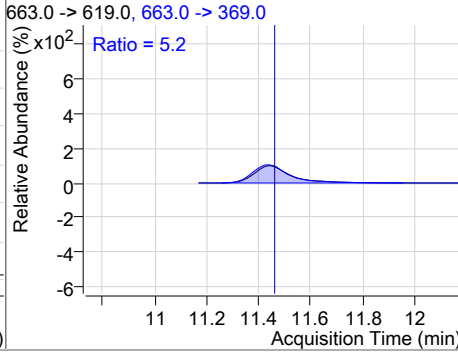
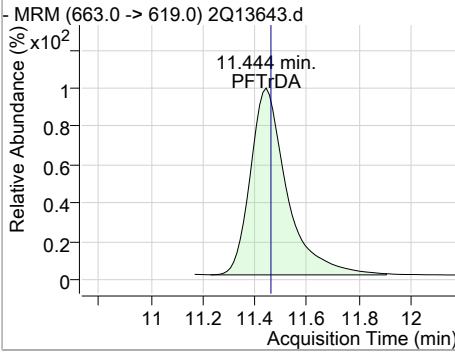
### Perfluorinated Compounds by LC/MS/MS



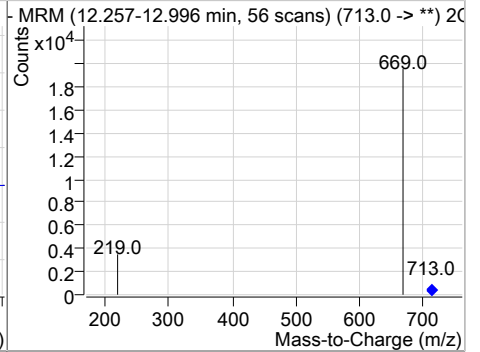
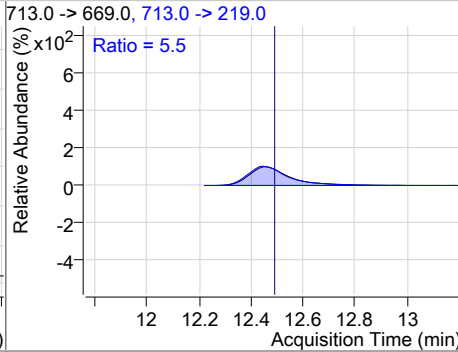
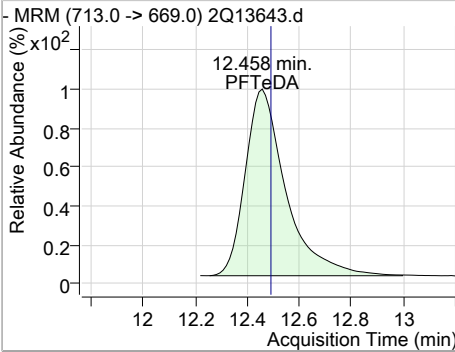
10.5.13 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	18.77	11.44	-0.13	18103	663.0 -> 369.0	5.2	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.31	12.46	-0.15	12543	713.0 -> 219.0	5.5	0.0	35.3



10.5.13 10

# Manual Integration Approval Summary

**Sample Number:** S2Q253-CC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13643.D      **Analyst approved:** 04/27/18 09:41 Natasha Gumtie  
**Injection Time:** 04/26/18 14:42      **Supervisor approved:** 04/27/18 15:23 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.46	Split peak

10.5.13.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : 2Q13649.d  
 Operator : NATASHAG  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 4:35:35 PM  
 Sample Name : cc249-20  
 Vial : Vial 6  
 DA Method File : PFC\_042318\_S2Q249.quantmethod.xml  
 Batch Name : s2q253.batch.bin  
 Sample Information : op69752,S2Q253,200,,,1.0,1,water

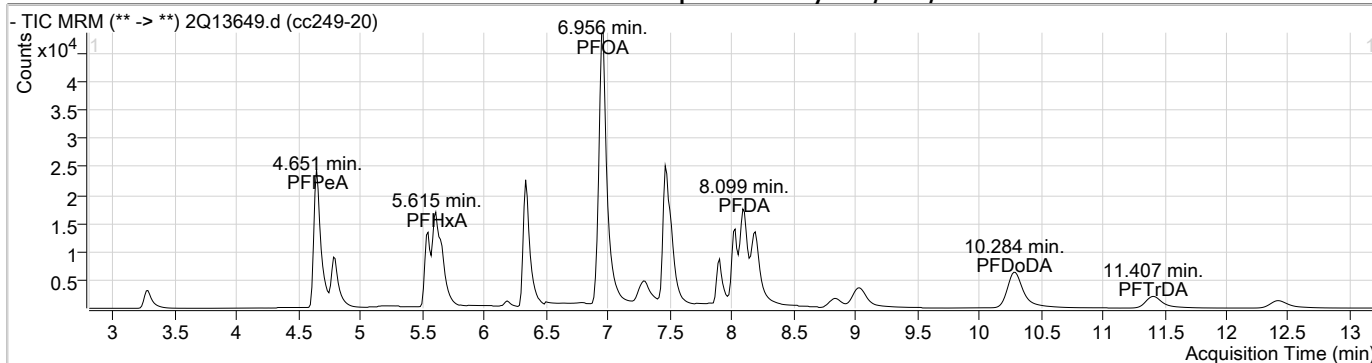
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	6.965	429.0 -> 409.0	51491	20.00 µg/L	-0.025
13C2-PFDoDA	10.293	615.0 -> 570.0	30090	20.00 µg/L	-0.125
13C2-PFOA	6.954	415.0 -> 370.0	34990	20.00 µg/L	-0.027
13C3-PFPeA	4.647	266.0 -> 222.0	38829	20.00 µg/L	-0.025
13C4-PFOS	7.463	503.0 -> 80.0	21326	20.00 µg/L	-0.025
d3-MeFOSAA	7.902	573.0 -> 419.0	10973	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.111	515.0 -> 470.0	44452	20.02 µg/L	-0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 100.1%	
13C2-PFHxA	5.613	315.0 -> 270.0	40414	18.70 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 93.5%	
d5-EtFOSAA	8.013	589.0 -> 419.0	14298	19.56 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.8%	
<b>Target Compounds</b>					
4:2FTS	5.547	327.0 -> 307.0	36880	19.69 µg/L	QValue 99
6:2FTS	6.966	427.0 -> 407.0	51537	20.44 µg/L	99
8:2FTS	8.197	527.0 -> 507.0	44734	19.94 µg/L	99
EtFOSAA	8.027	584.0 -> 419.0	10262	19.43 µg/L	98
FOSA	7.466	498.0 -> 78.0	42148	20.86 µg/L	99
MeFOSAA	7.903	570.0 -> 419.0	12044	19.27 µg/L	94
PFBA	3.277	213.0 -> 169.0	14592	17.25 µg/L	100
PFBS	4.779	299.0 -> 80.0	24170	19.17 µg/L	100
PFDA	8.099	513.0 -> 469.0	24383	19.34 µg/L	100
PFDoDA	10.284	613.0 -> 569.0	26198	20.59 µg/L	98
PFDS	8.828	599.0 -> 80.0	8957	20.97 µg/L	98
PFHpA	6.339	363.0 -> 319.0	49378	19.29 µg/L	100
PFHpS	6.921	449.0 -> 80.0	24555	20.87 µg/L	100
PFHxA	5.615	313.0 -> 269.0	15380	18.20 µg/L	99
PFHxS	6.332	399.0 -> 80.0	27606	19.88 µg/L	m 100
PFNA	7.521	463.0 -> 419.0	26658	18.72 µg/L	99
PFNS	8.018	549.0 -> 80.0	13970	18.57 µg/L	99
PFOA	6.956	413.0 -> 369.0	28346	19.95 µg/L	100
PFOS	7.464	499.0 -> 80.0	25151	19.66 µg/L	m 99
PFPeA	4.651	263.0 -> 219.0	61339	20.23 µg/L	100
PFPeS	5.656	349.0 -> 80.0	17437	19.84 µg/L	100
PFTeDA	12.420	713.0 -> 669.0	13337	17.18 µg/L	99
PFTTrDA	11.407	663.0 -> 619.0	19441	18.82 µg/L	99
PFUnDA	9.035	563.0 -> 519.0	26310	17.99 µg/L	100

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

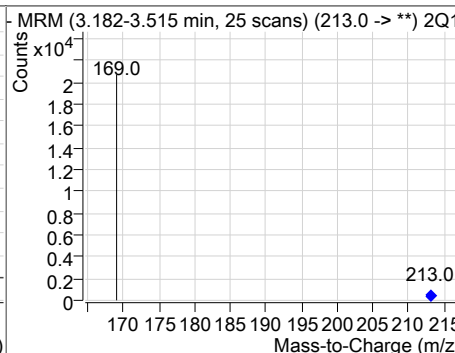
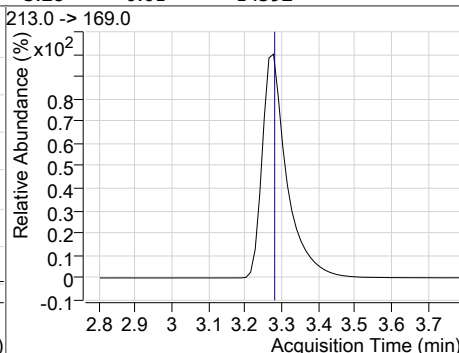
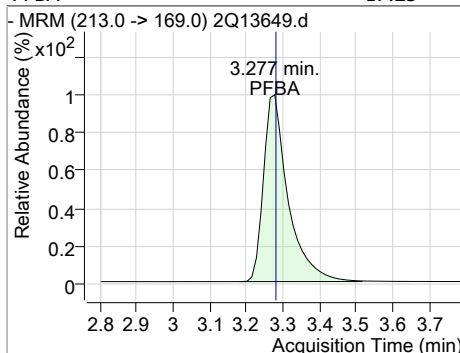
10.5.14  
**10**



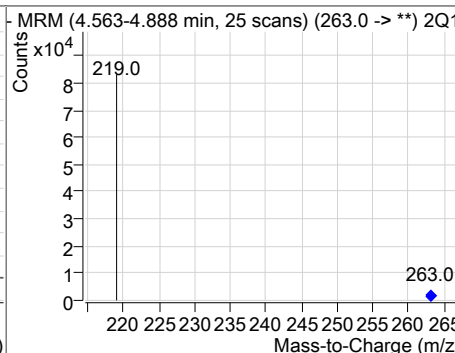
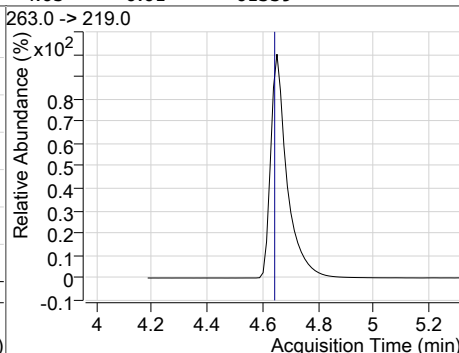
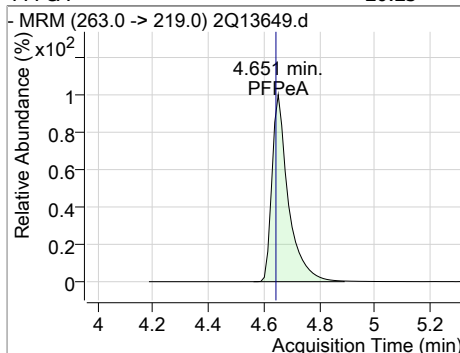
### Perfluorinated Compounds by LC/MS/MS



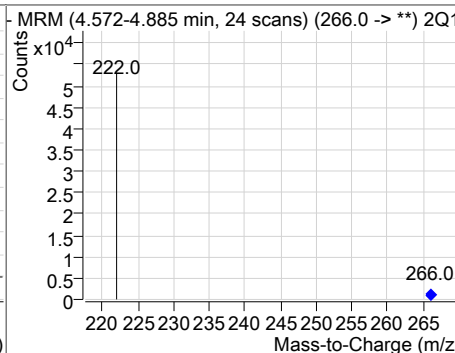
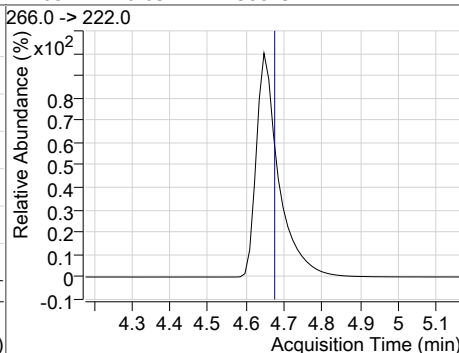
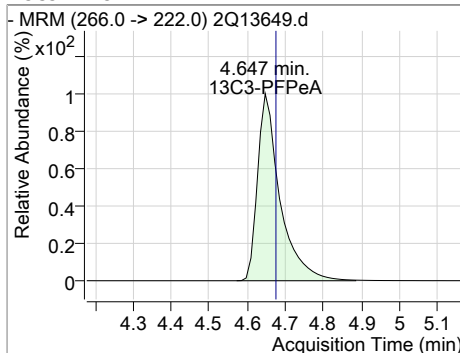
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.25	3.28	-0.01	14592				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.23	4.65	-0.01	61339				



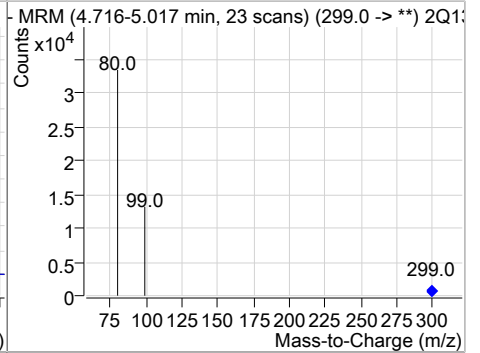
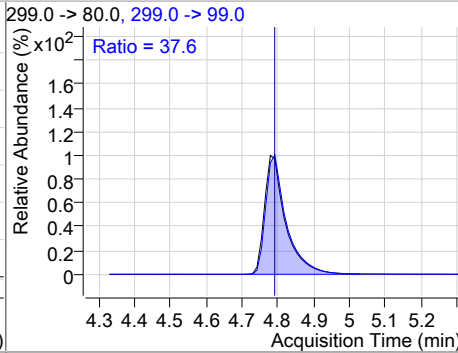
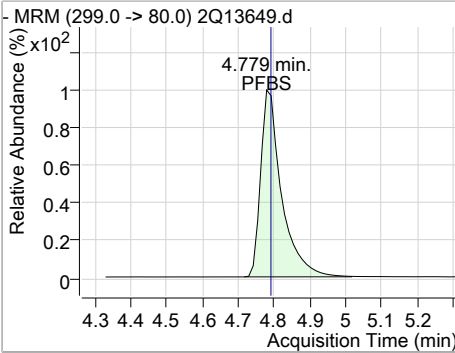
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.65	-0.03	38829				



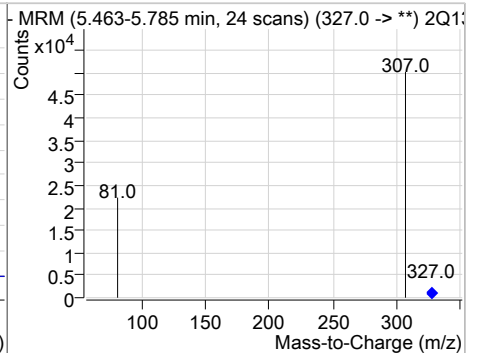
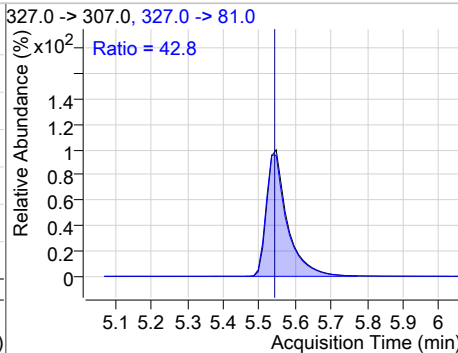
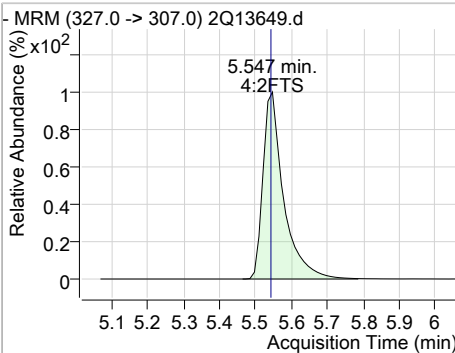
10.5.14 10

### Perfluorinated Compounds by LC/MS/MS

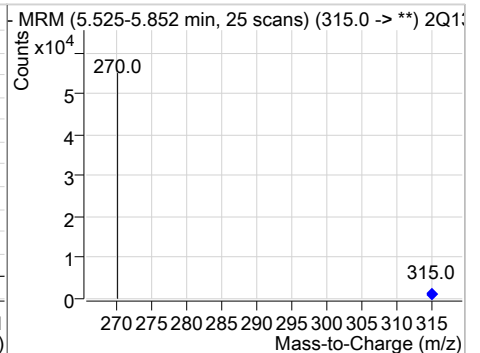
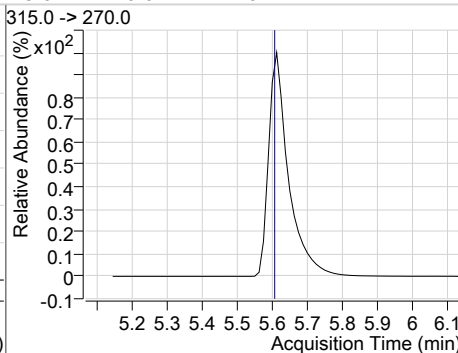
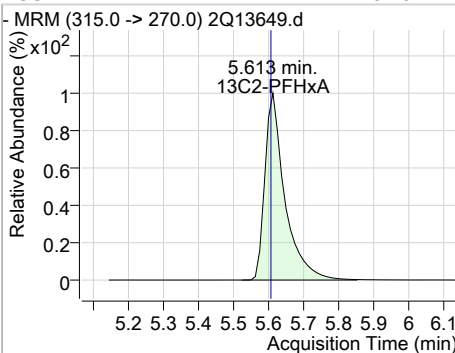
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.17	4.78	-0.03	24170	299.0 -> 99.0	37.6	7.8	67.8



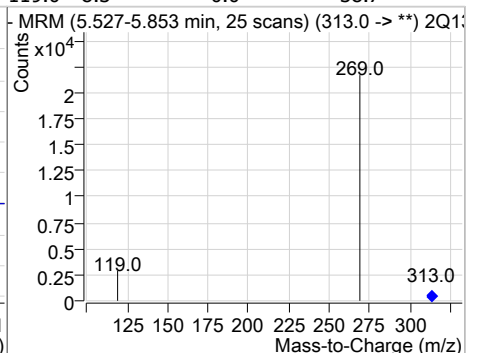
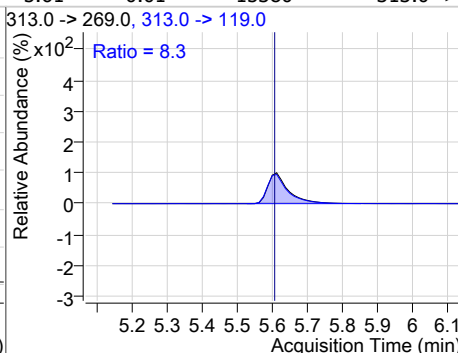
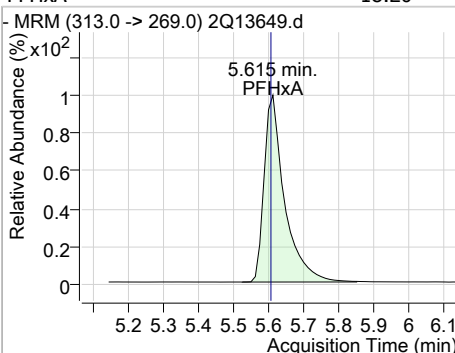
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.69	5.55	-0.01	36880	327.0 -> 81.0	42.8	13.7	73.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	18.70	5.61	-0.01	40414				

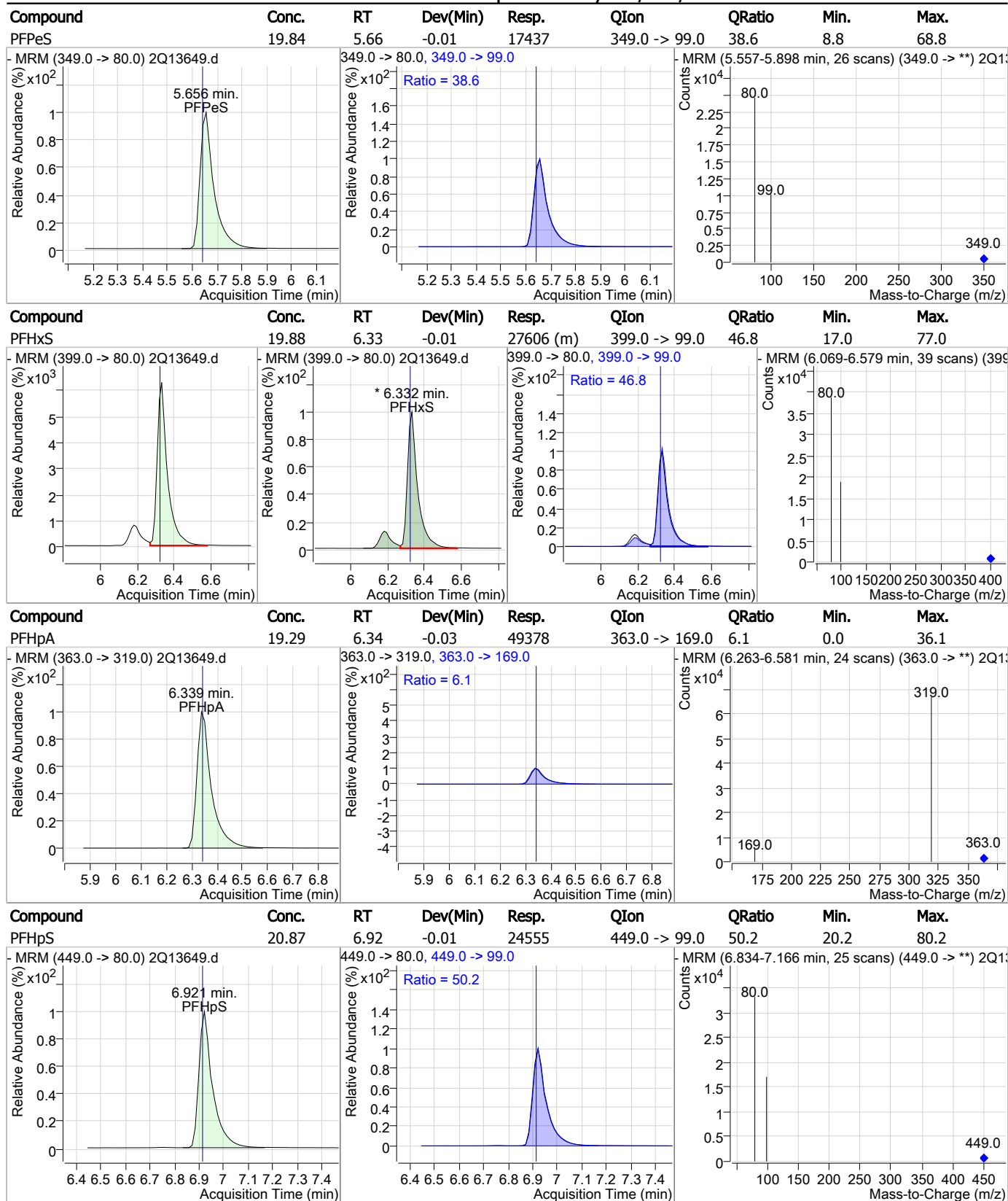


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.20	5.61	-0.01	15380	313.0 -> 119.0	8.3	0.0	38.7



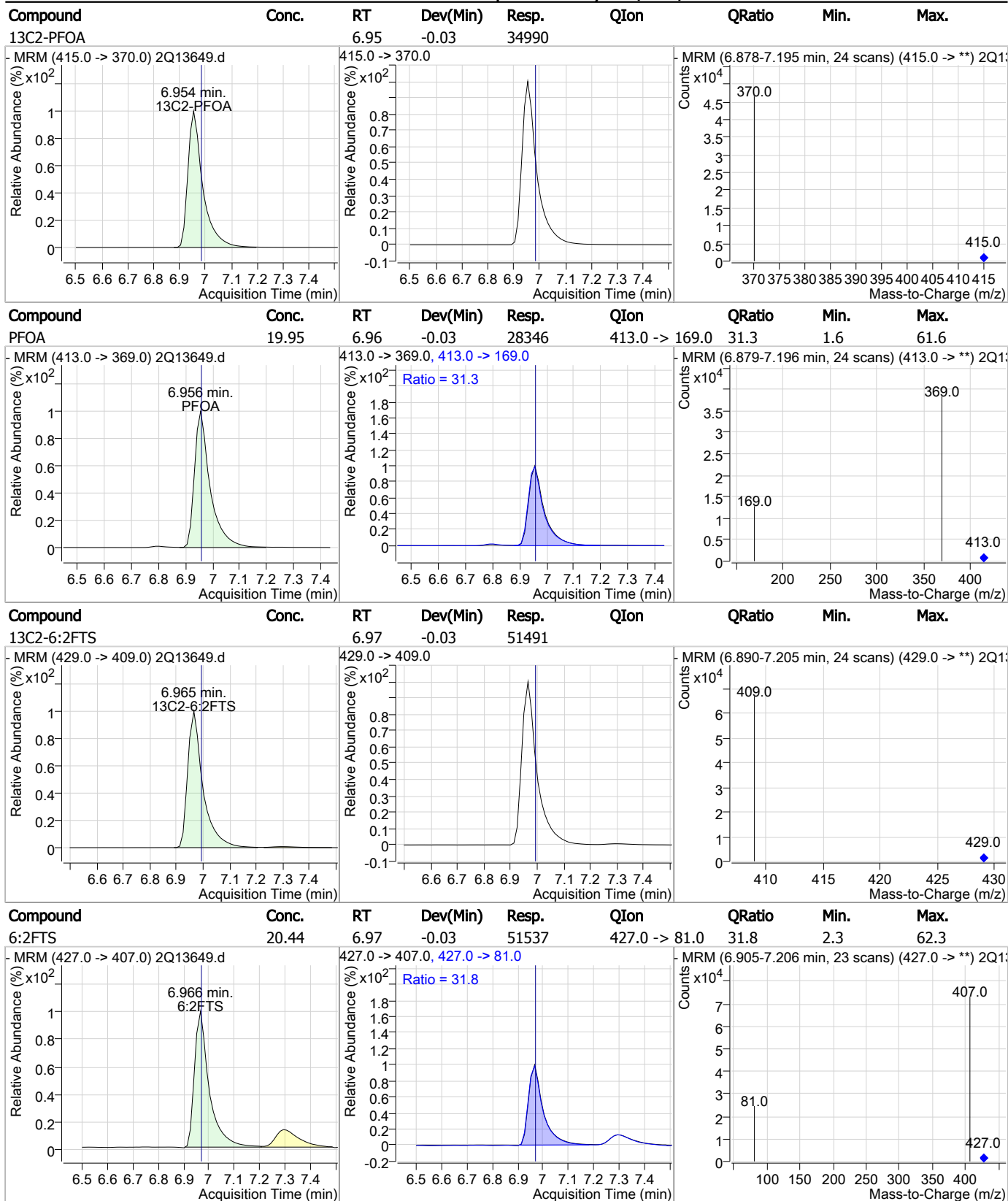
10.5.14 10

### Perfluorinated Compounds by LC/MS/MS



10.5.14 10

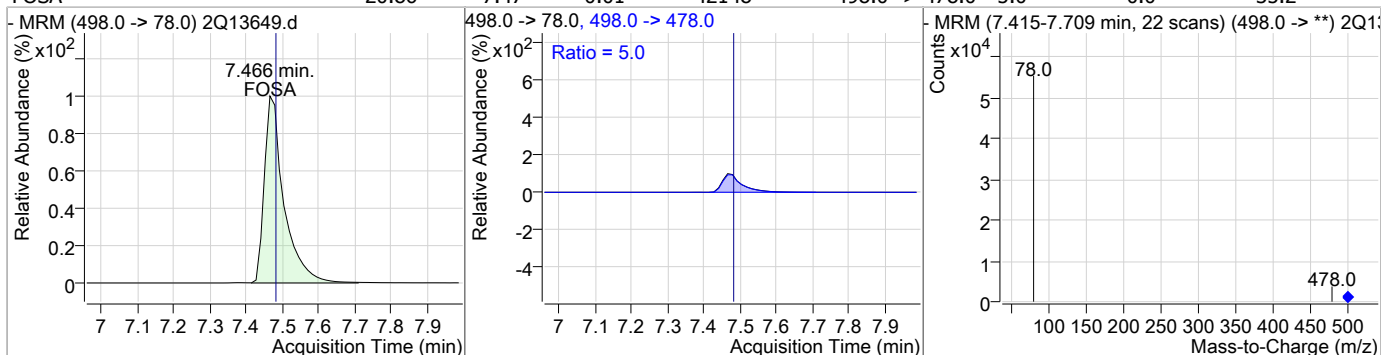
### Perfluorinated Compounds by LC/MS/MS



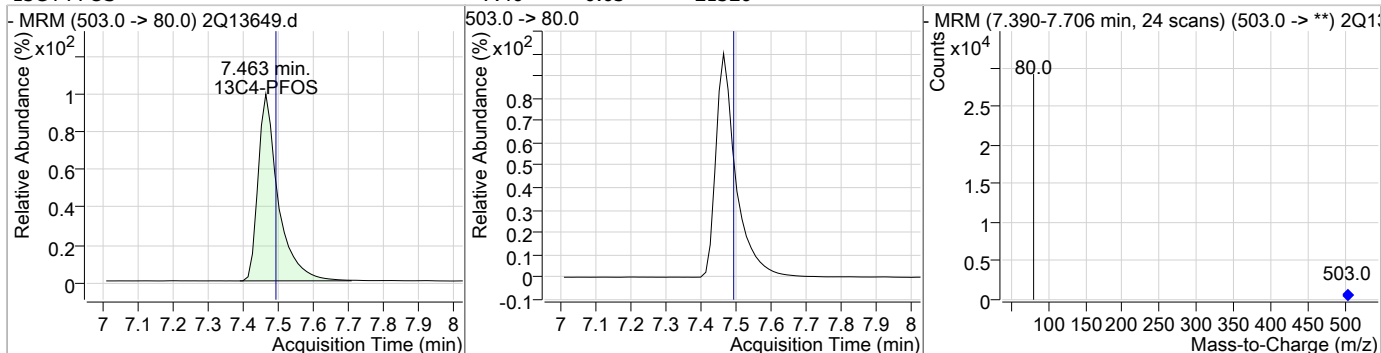
10.5.14 10

### Perfluorinated Compounds by LC/MS/MS

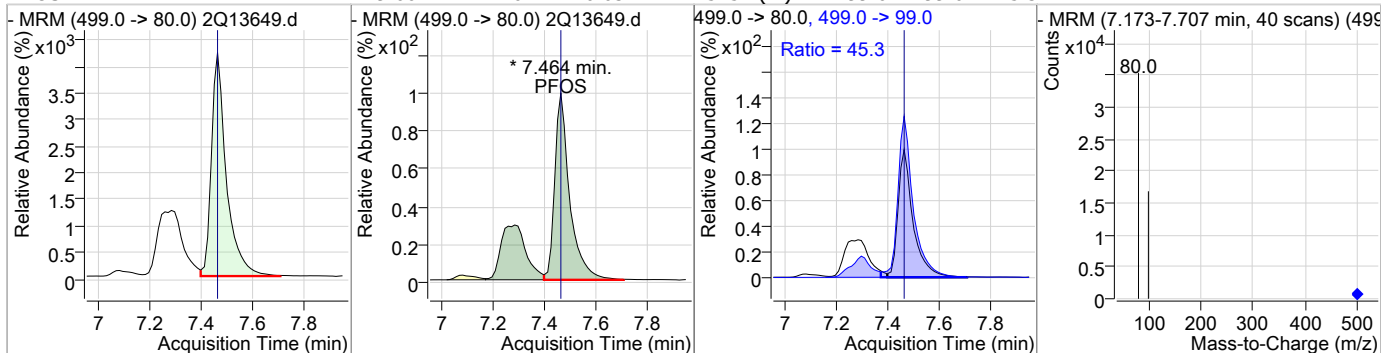
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.86	7.47	-0.01	42148	498.0 -> 478.0	5.0	0.0	35.2



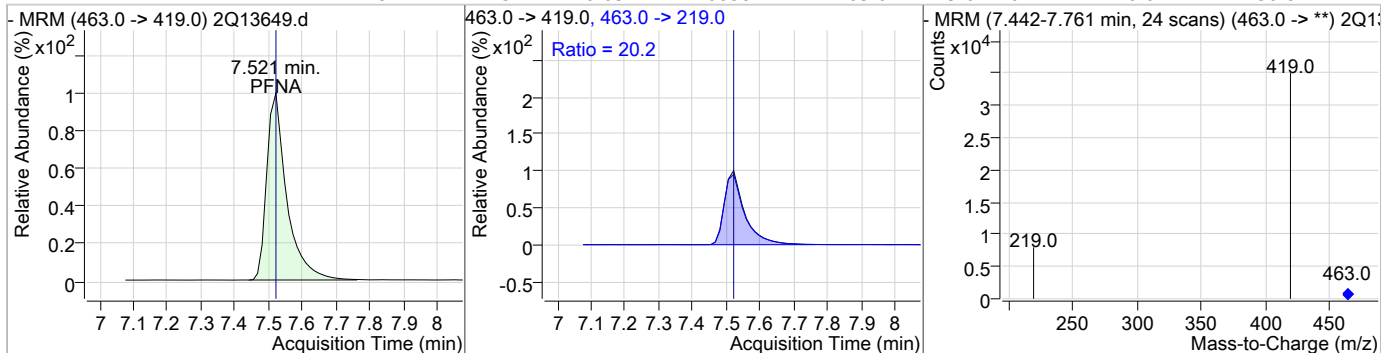
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.46	-0.03	21326				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.66	7.46	-0.03	25151 (m)	499.0 -> 99.0	45.3	14.7	74.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.72	7.52	-0.03	26658	463.0 -> 219.0	20.2	0.0	50.8



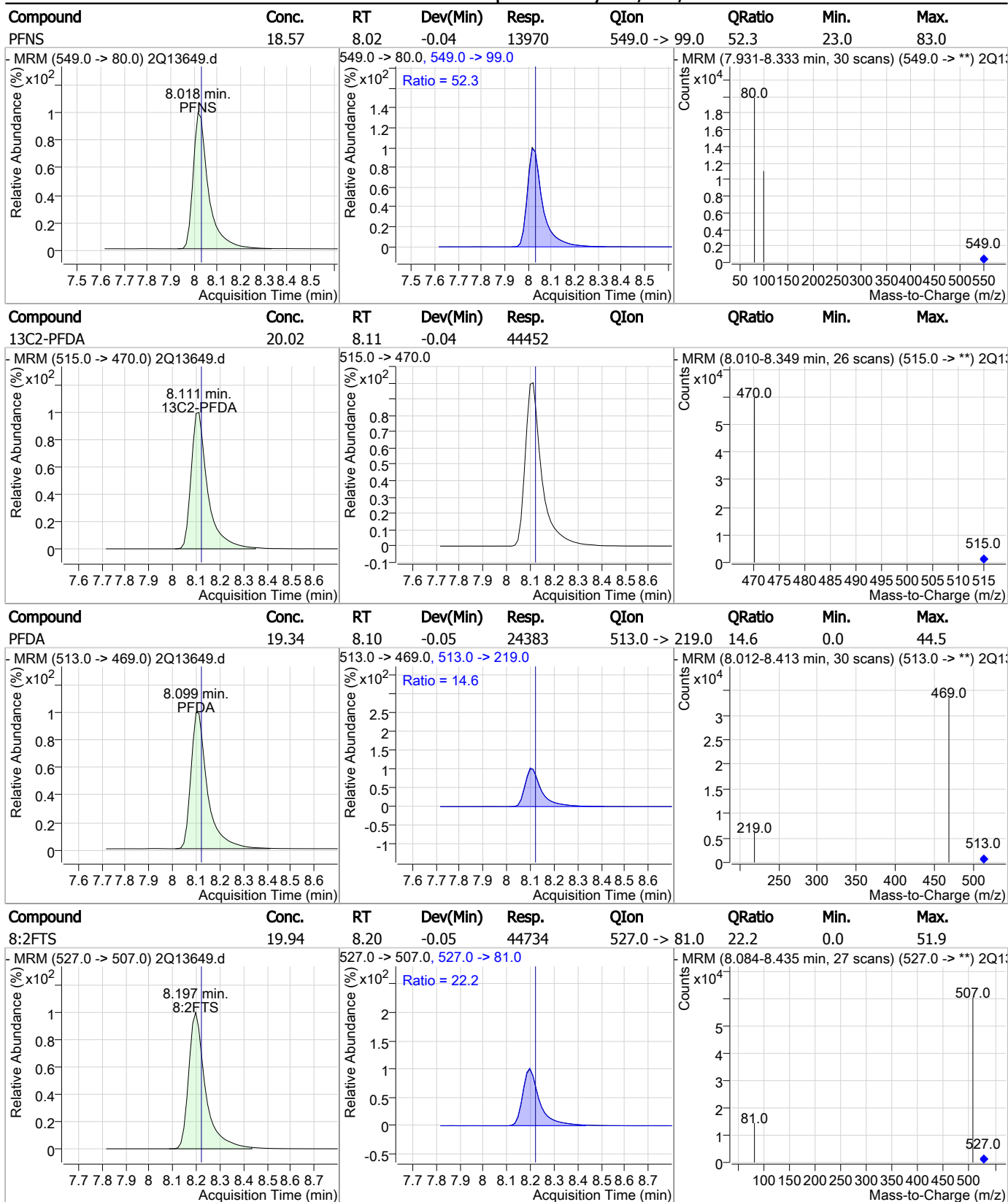
10.5.14 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		7.90	0.00	10973				
-MRM (573.0 -> 419.0) 2Q13649.d			573.0 -> 419.0			-MRM (7.802-8.066 min, 20 scans) (573.0 -> **) 2Q13649.d		
MeFOSAA	19.27	7.90	-0.01	12044	570.0 -> 512.0	38.6	5.3	65.3
-MRM (570.0 -> 419.0) 2Q13649.d			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.840-8.067 min, 17 scans) (570.0 -> **) 2Q13649.d		
d5-EtFOSAA	19.56	8.01	-0.01	14298				
-MRM (589.0 -> 419.0) 2Q13649.d			589.0 -> 419.0			-MRM (7.951-8.252 min, 23 scans) (589.0 -> **) 2Q13649.d		
EtFOSAA	19.43	8.03	-0.01	10262	584.0 -> 483.0	60.2	28.8	88.8
-MRM (584.0 -> 419.0) 2Q13649.d			584.0 -> 419.0, 584.0 -> 483.0			-MRM (7.964-8.190 min, 17 scans) (584.0 -> **) 2Q13649.d		

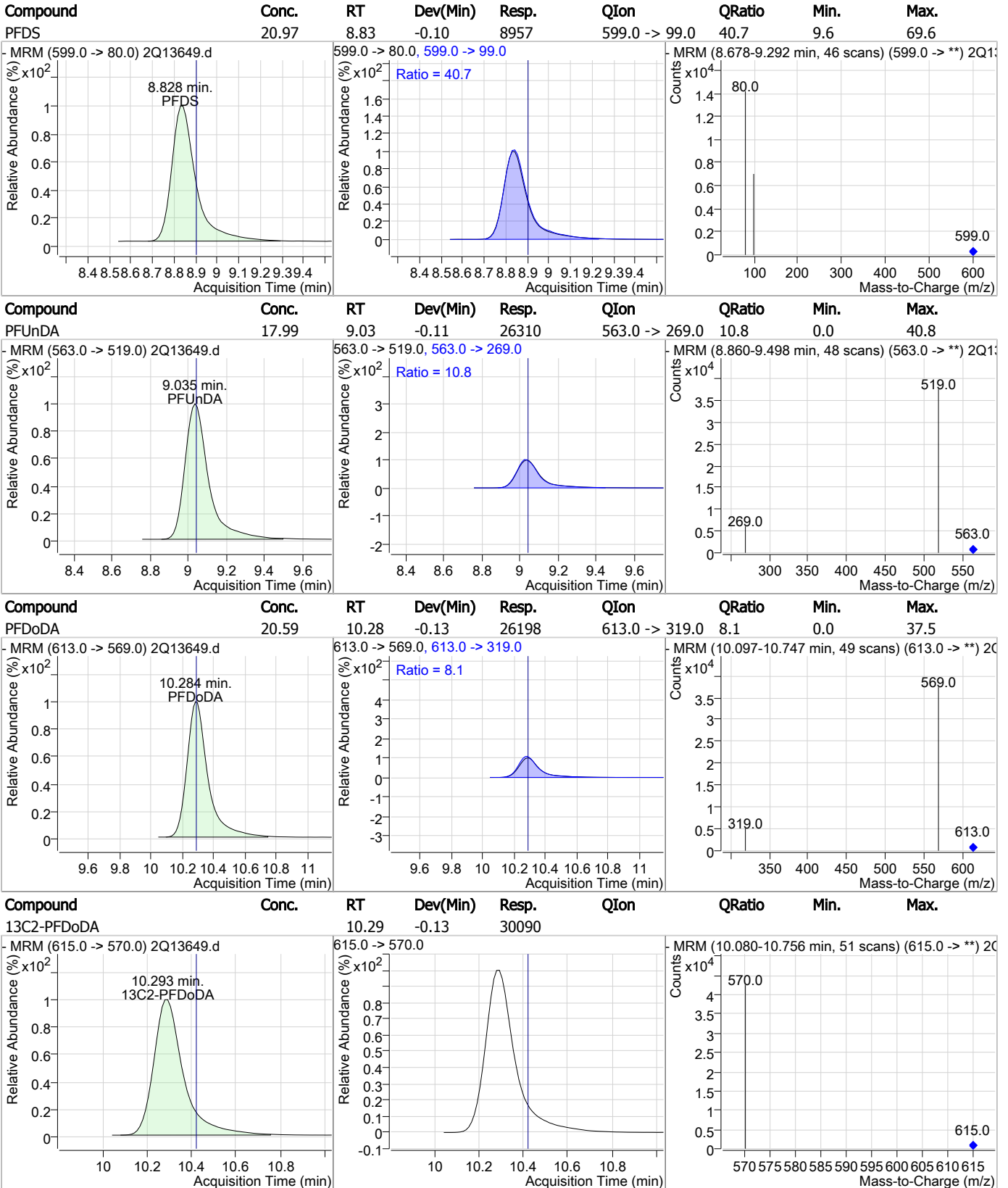
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### Perfluorinated Compounds by LC/MS/MS



10.5.14 10

### Perfluorinated Compounds by LC/MS/MS

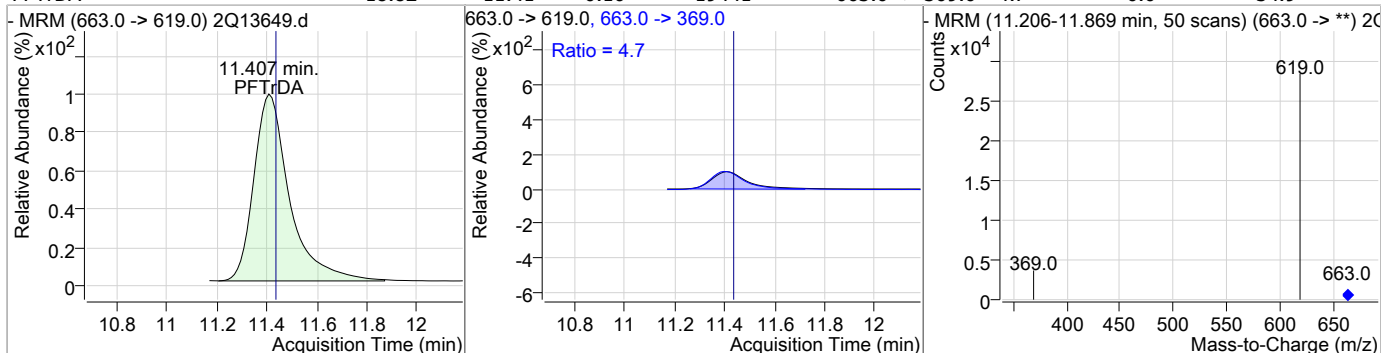


10.5.14 10

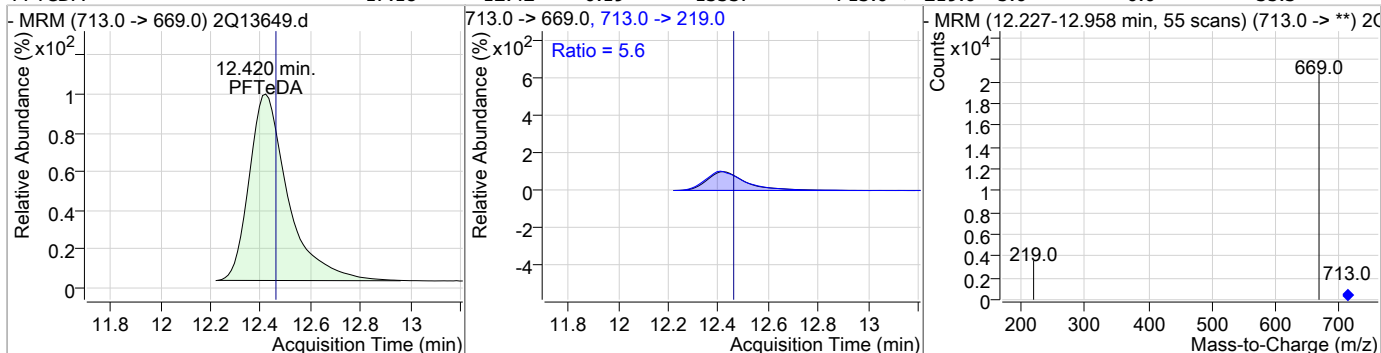


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	18.82	11.41	-0.16	19441	663.0 -> 369.0	4.7	0.0	34.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.18	12.42	-0.19	13337	713.0 -> 219.0	5.6	0.0	35.3



10.5.14 10

# Manual Integration Approval Summary

**Sample Number:** S2Q253-CC249      **Method:** EPA 537 MOD  
**Lab FileID:** 2Q13649.D      **Analyst approved:** 04/27/18 09:41 Natasha Gumtie  
**Injection Time:** 04/26/18 16:35      **Supervisor approved:** 04/27/18 15:23 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.46	Split peak

10.5.14.1

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## Perfluorinated Compounds by LC/MS/MS

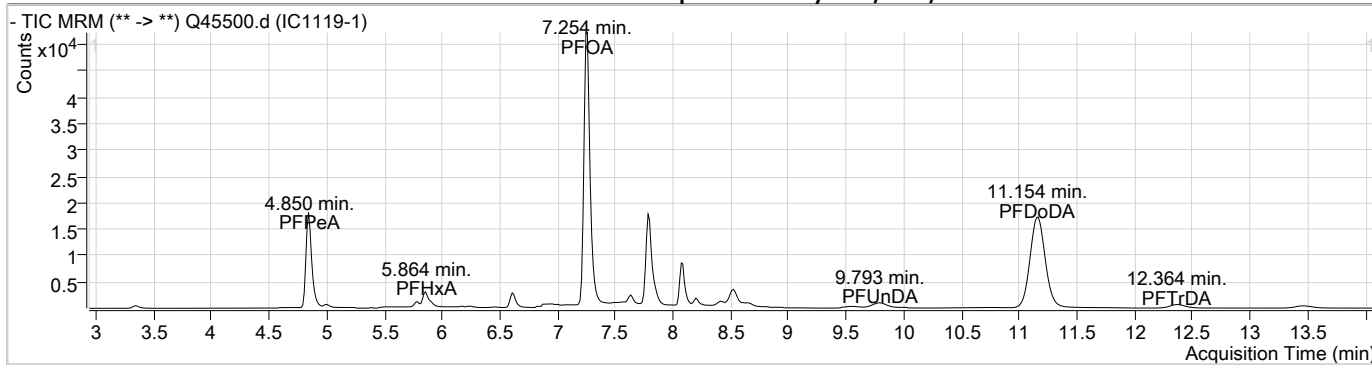
Data File : Q45500.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 5:11:44 PM  
 Sample Name : IC1119-1  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.262	429.0 -> 409.0	47895	20.00 µg/L	-0.013
13C2-PFDoDA	11.163	615.0 -> 570.0	149986	20.00 µg/L	-0.100
13C2-PFOA	7.253	415.0 -> 370.0	131208	20.00 µg/L	-0.013
13C4-PFOS	7.786	503.0 -> 80.0	59058	20.00 µg/L	-0.015
d3-MeFOSAA	8.074	573.0 -> 419.0	23010	20.00 µg/L	-0.013
13C3-PFPeA	4.847	266.0 -> 222.0	59910	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.531	515.0 -> 470.0	8721	1.04 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.2%		
13C2-PFHxA	5.862	315.0 -> 270.0	5887	1.02 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.1%		
d5-EtFOSAA	8.197	589.0 -> 419.0	1732	1.04 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.2%		
<b>Target Compounds</b>					
6:2FTS	7.263	427.0 -> 407.0	2494	1.01 µg/L	26
8:2FTS	8.651	527.0 -> 507.0	2319	1.03 µg/L	99
EtFOSAA	8.210	584.0 -> 419.0	1300	1.07 µg/L	94
FOSA	7.636	498.0 -> 78.0	4268	1.10 µg/L	99
MeFOSAA	8.087	570.0 -> 419.0	1396	1.07 µg/L	96
PFBA	3.352	213.0 -> 169.0	1963	1.02 µg/L	100
PFBS	5.004	299.0 -> 80.0	1230	0.97 µg/L	96
PFDA	8.533	513.0 -> 469.0	5865	1.03 µg/L	98
PFDoDA	11.154	613.0 -> 569.0	6746	0.99 µg/L	100
PFDS	9.549	599.0 -> 80.0	1328	1.02 µg/L	100
PFHpA	6.625	363.0 -> 319.0	6183	1.02 µg/L	99
PFHpS	7.219	449.0 -> 80.0	1971	1.13 µg/L	98
PFHxA	5.864	313.0 -> 269.0	3432	1.02 µg/L	100
PFHxS	6.606	399.0 -> 80.0	2100	1.11 µg/L	m 97
PFNA	7.856	463.0 -> 419.0	4812	1.01 µg/L	99
PFOA	7.254	413.0 -> 369.0	6691	1.09 µg/L	98
PFOS	7.787	499.0 -> 80.0	3152	0.98 µg/L	m 98
PFPeA	4.850	263.0 -> 219.0	2826	1.02 µg/L	100
PFTeDA	13.465	713.0 -> 669.0	4108	1.00 µg/L	98
PFTTrDA	12.364	663.0 -> 619.0	5826	1.00 µg/L	98
PFUnDA	9.793	563.0 -> 519.0	6856	1.02 µg/L	99
4:2FTS	5.783	327.0 -> 307.0	2377	1.04 µg/L	98
PFNS	8.416	549.0 -> 99.0	942	0.95 µg/L	87
PFPeS	5.905	349.0 -> 99.0	473	1.09 µg/L	90

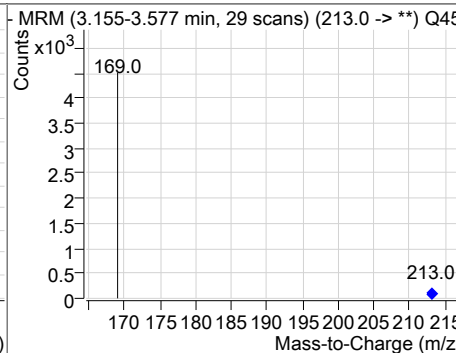
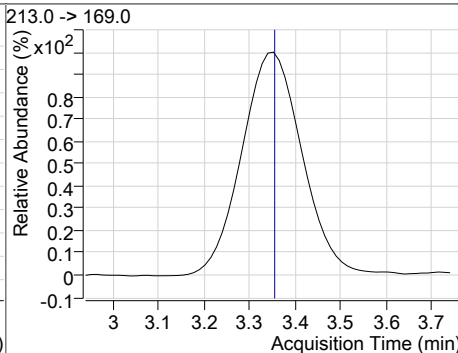
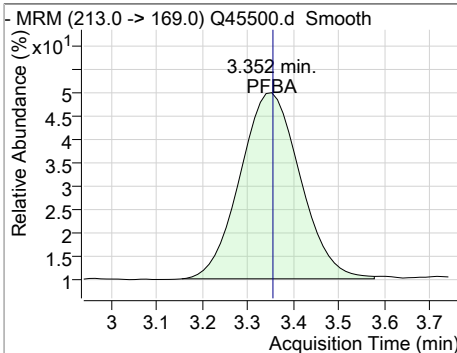
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.15  
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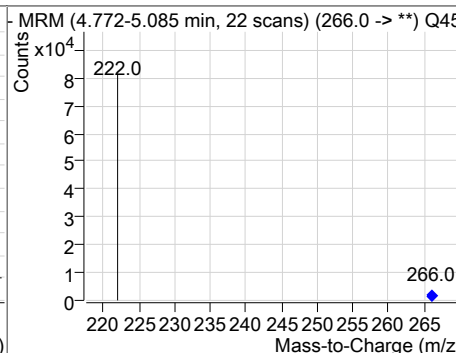
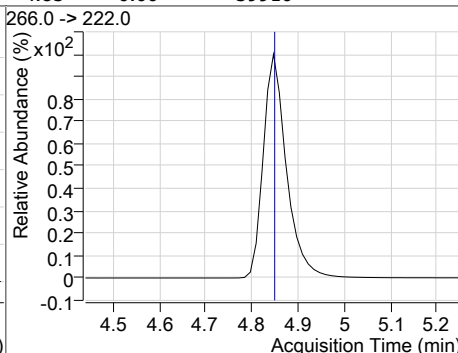
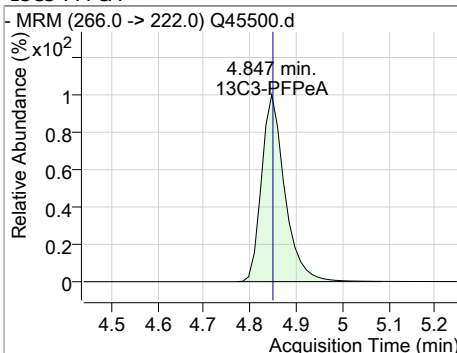
### Perfluorinated Compounds by LC/MS/MS



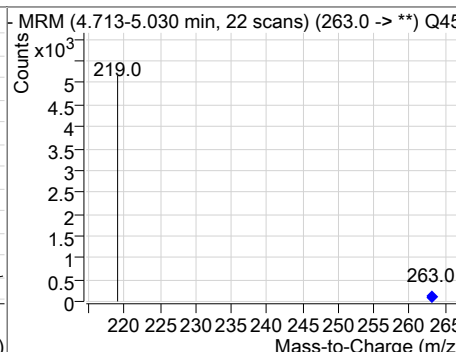
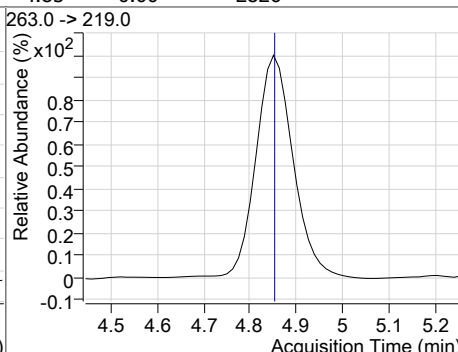
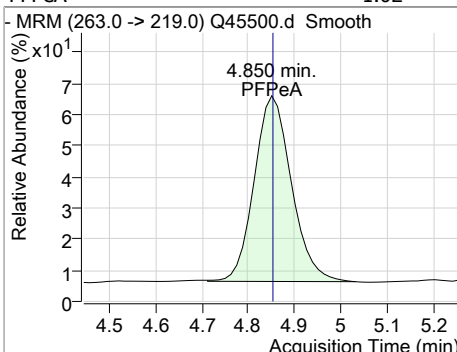
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.02	3.35	0.00	1963				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.85	0.00	59910				

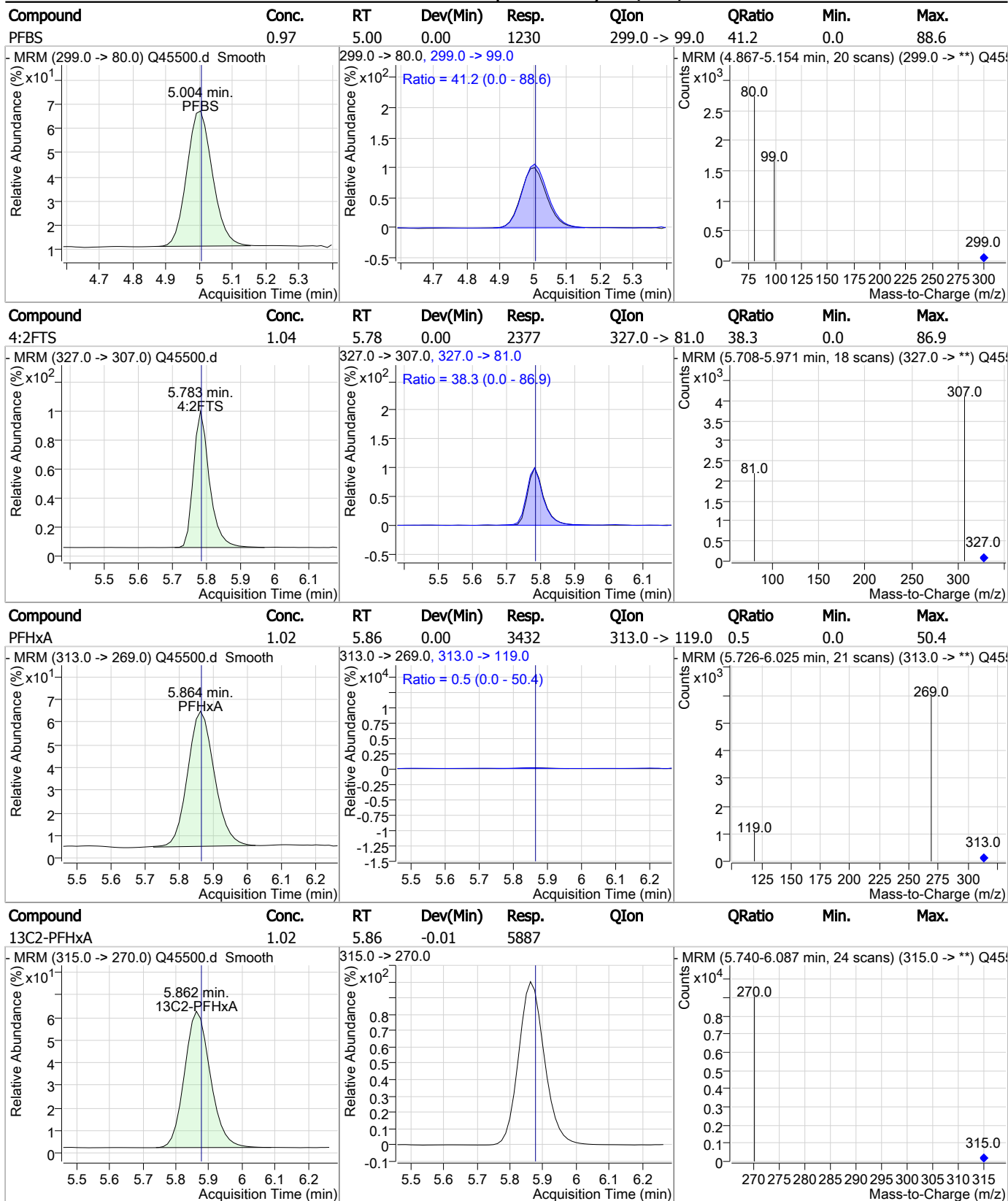


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.02	4.85	0.00	2826				



10.5.15 10

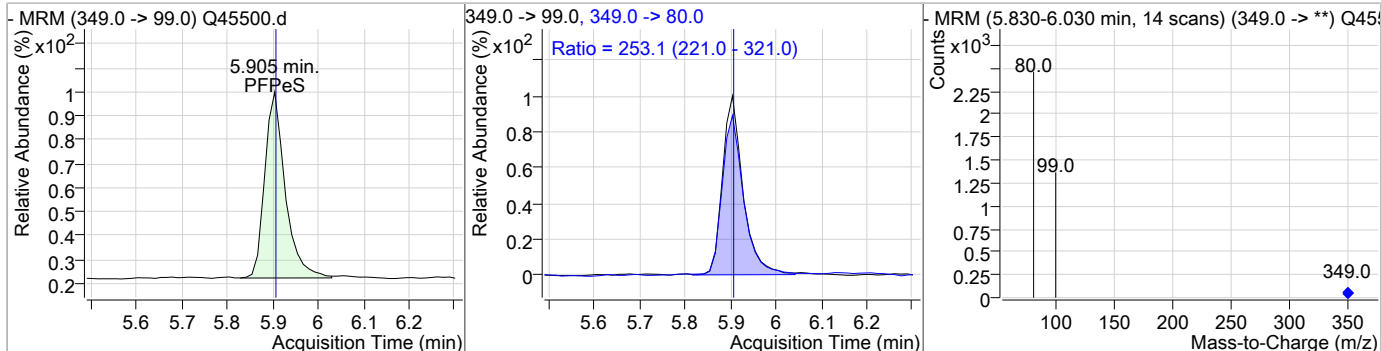
### Perfluorinated Compounds by LC/MS/MS



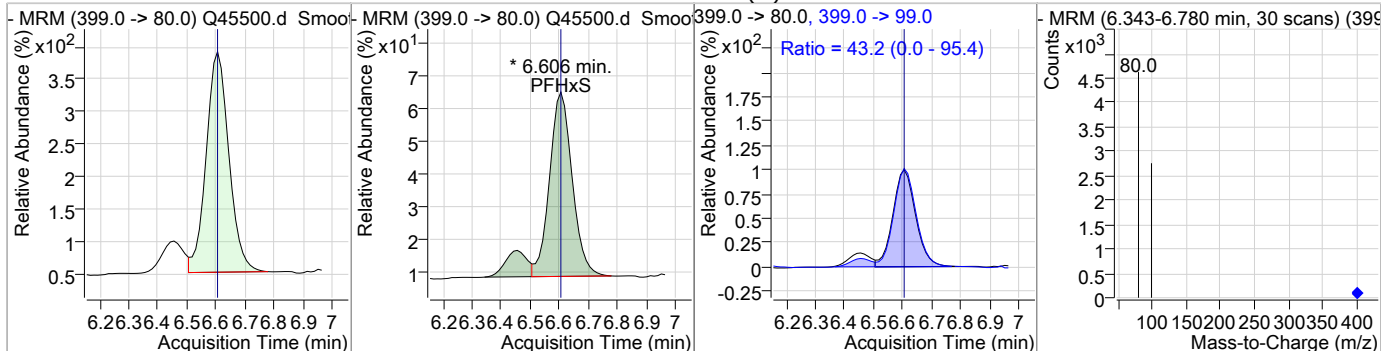
10.5.15 10

### Perfluorinated Compounds by LC/MS/MS

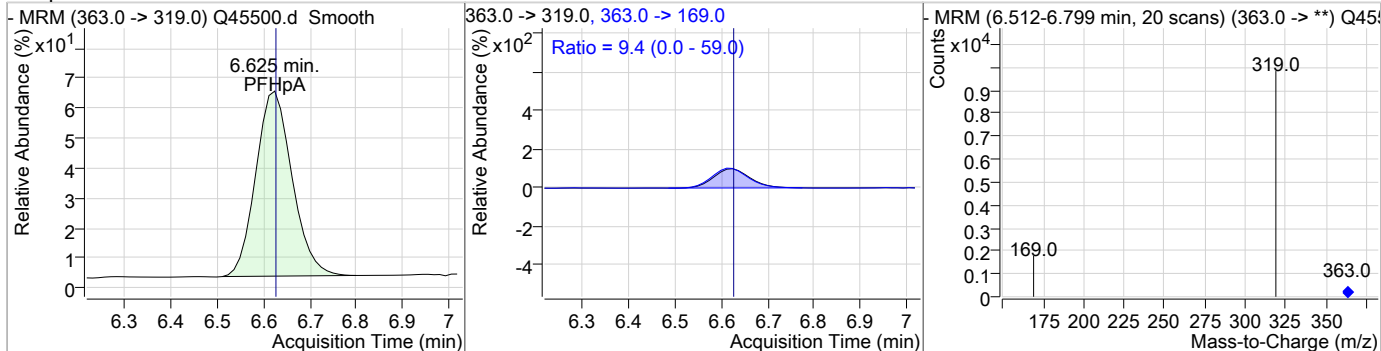
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.09	5.90	0.00	473	349.0 -> 80.0	253.1	221.0	321.0



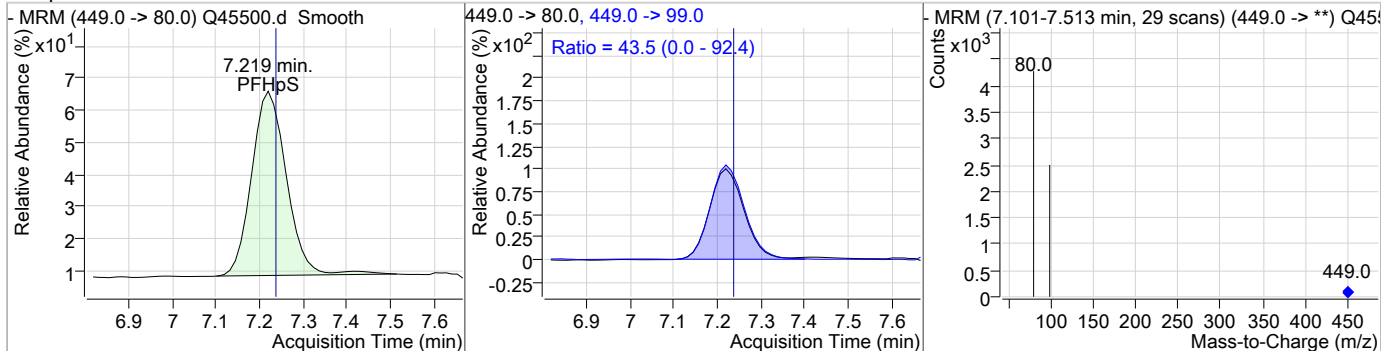
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.11	6.61	0.00	2100 (m)	399.0 -> 99.0	43.2	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.02	6.62	0.00	6183	363.0 -> 169.0	9.4	0.0	59.0

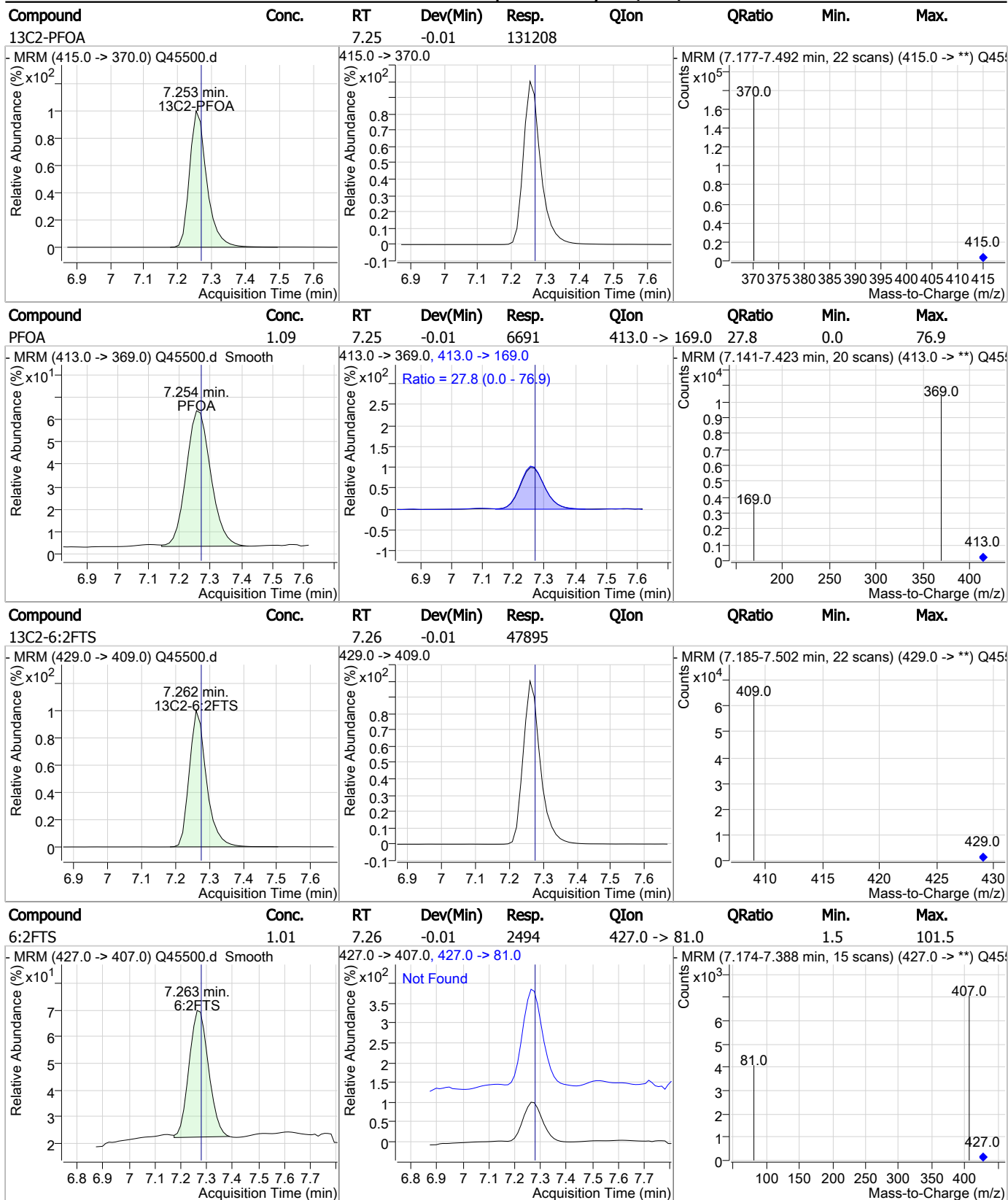


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.13	7.22	-0.02	1971	449.0 -> 99.0	43.5	0.0	92.4



10.5.15 10

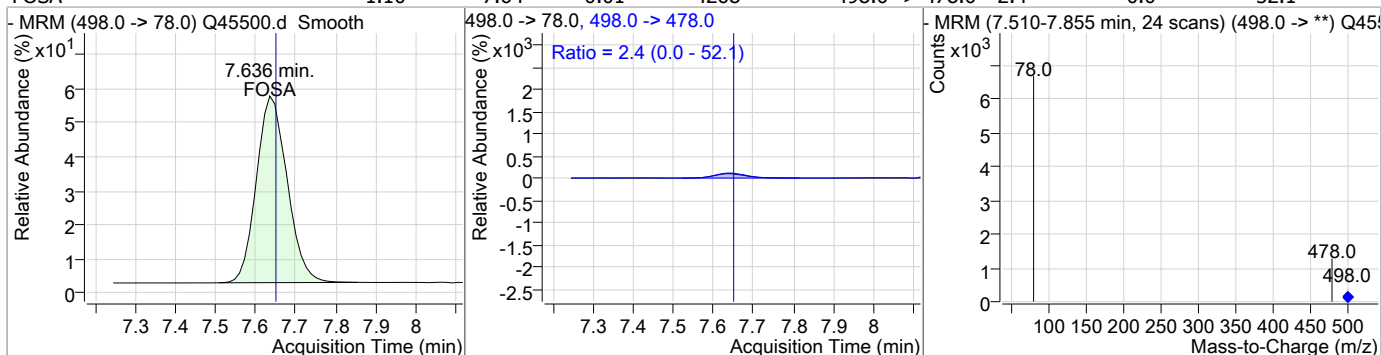
### Perfluorinated Compounds by LC/MS/MS



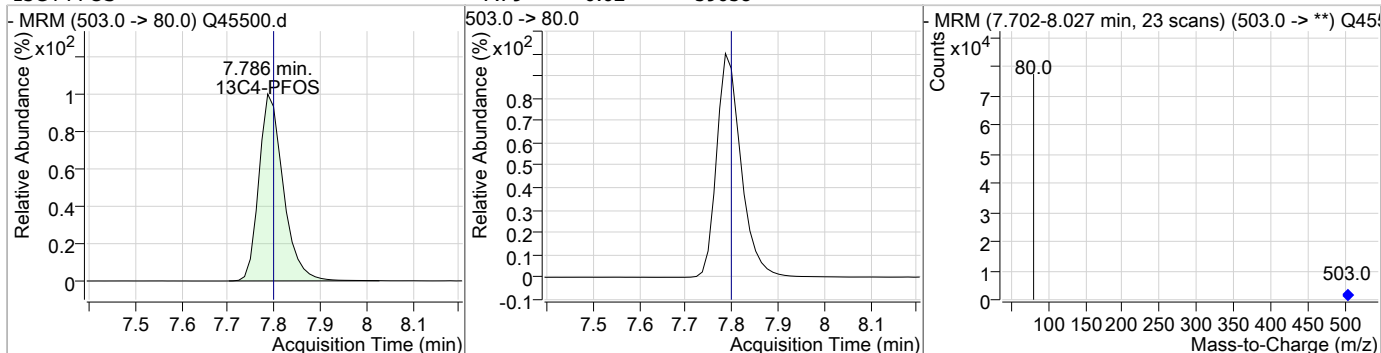
10.5.15 10

### Perfluorinated Compounds by LC/MS/MS

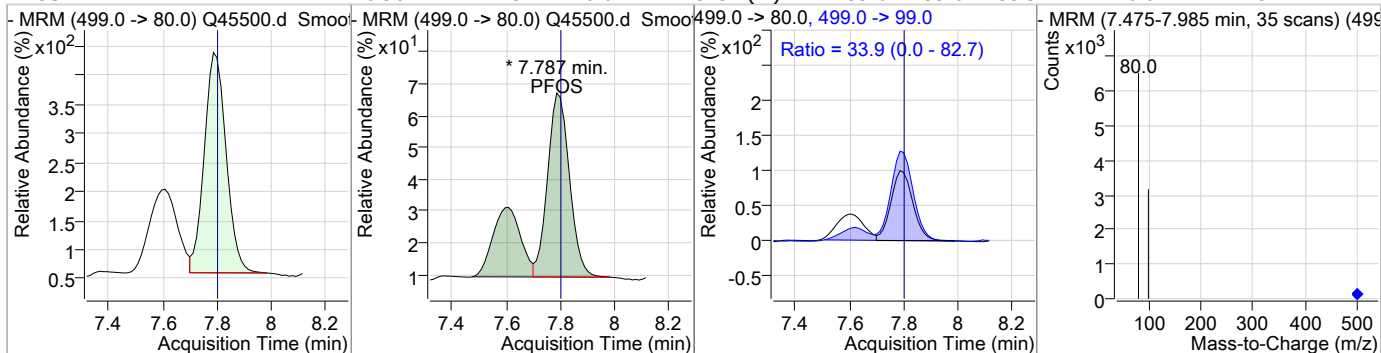
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.10	7.64	-0.01	4268	498.0 -> 478.0	2.4	0.0	52.1



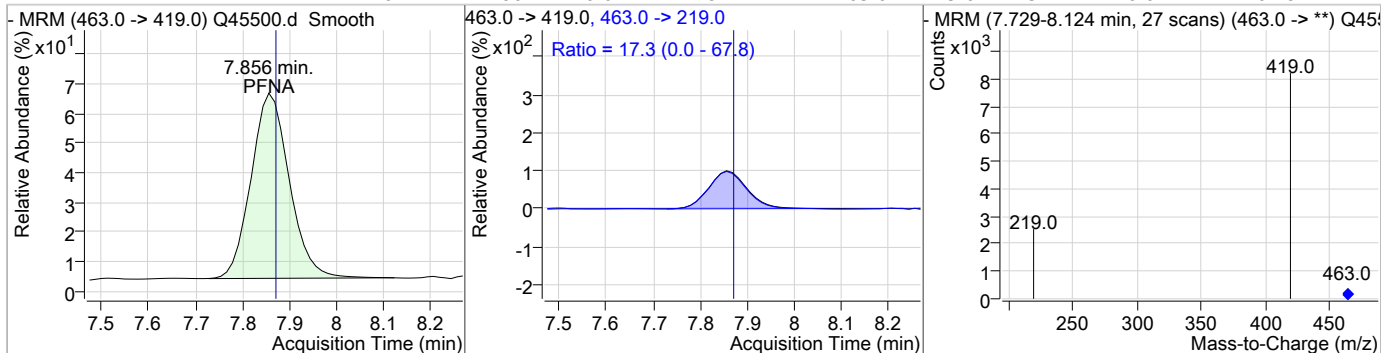
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.79	-0.02	59058				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.98	7.79	-0.02	3152 (m)	499.0 -> 99.0	33.9	0.0	82.7



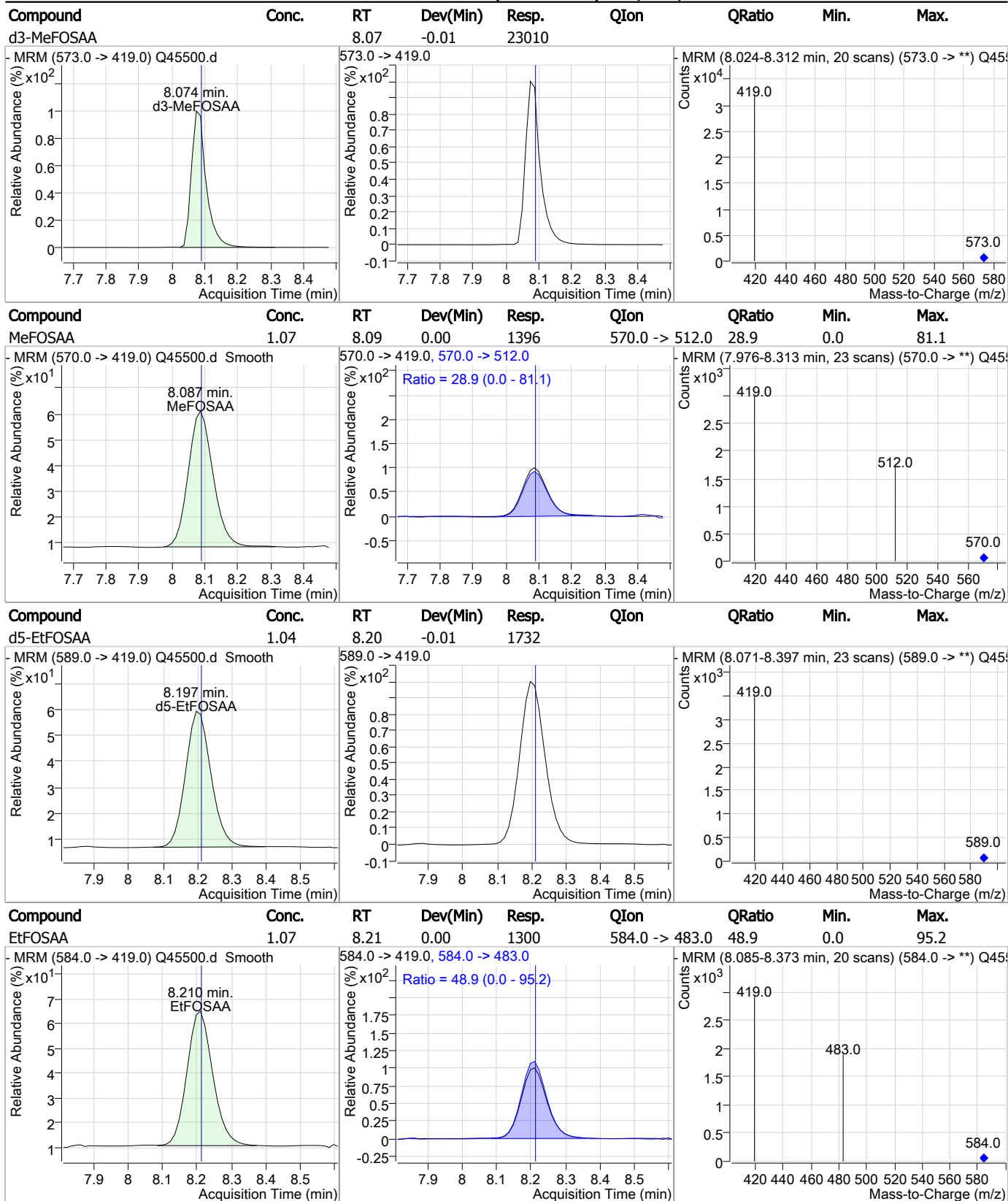
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.01	7.86	-0.01	4812	463.0 -> 219.0	17.3	0.0	67.8



10.5.15 10

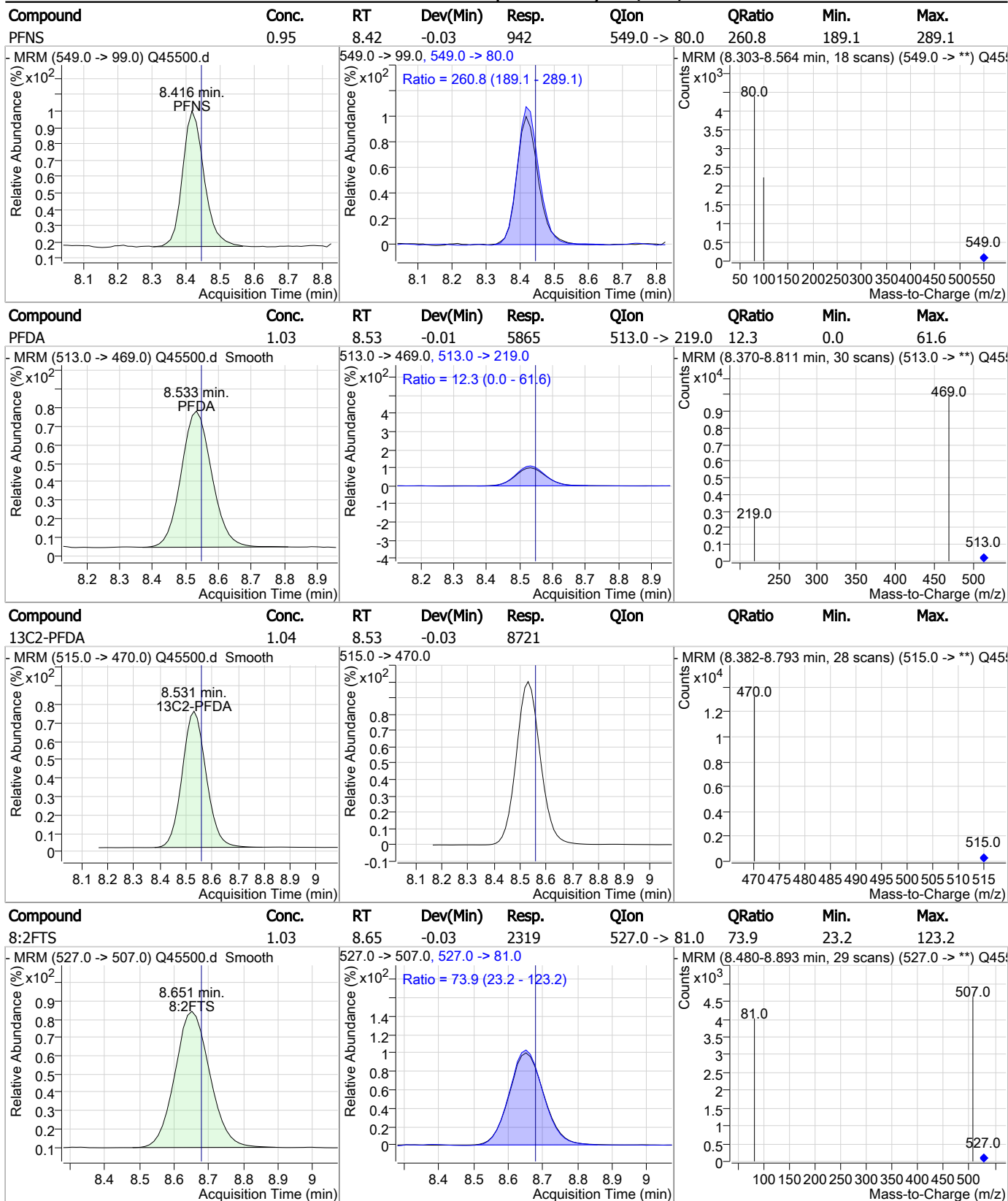


### Perfluorinated Compounds by LC/MS/MS



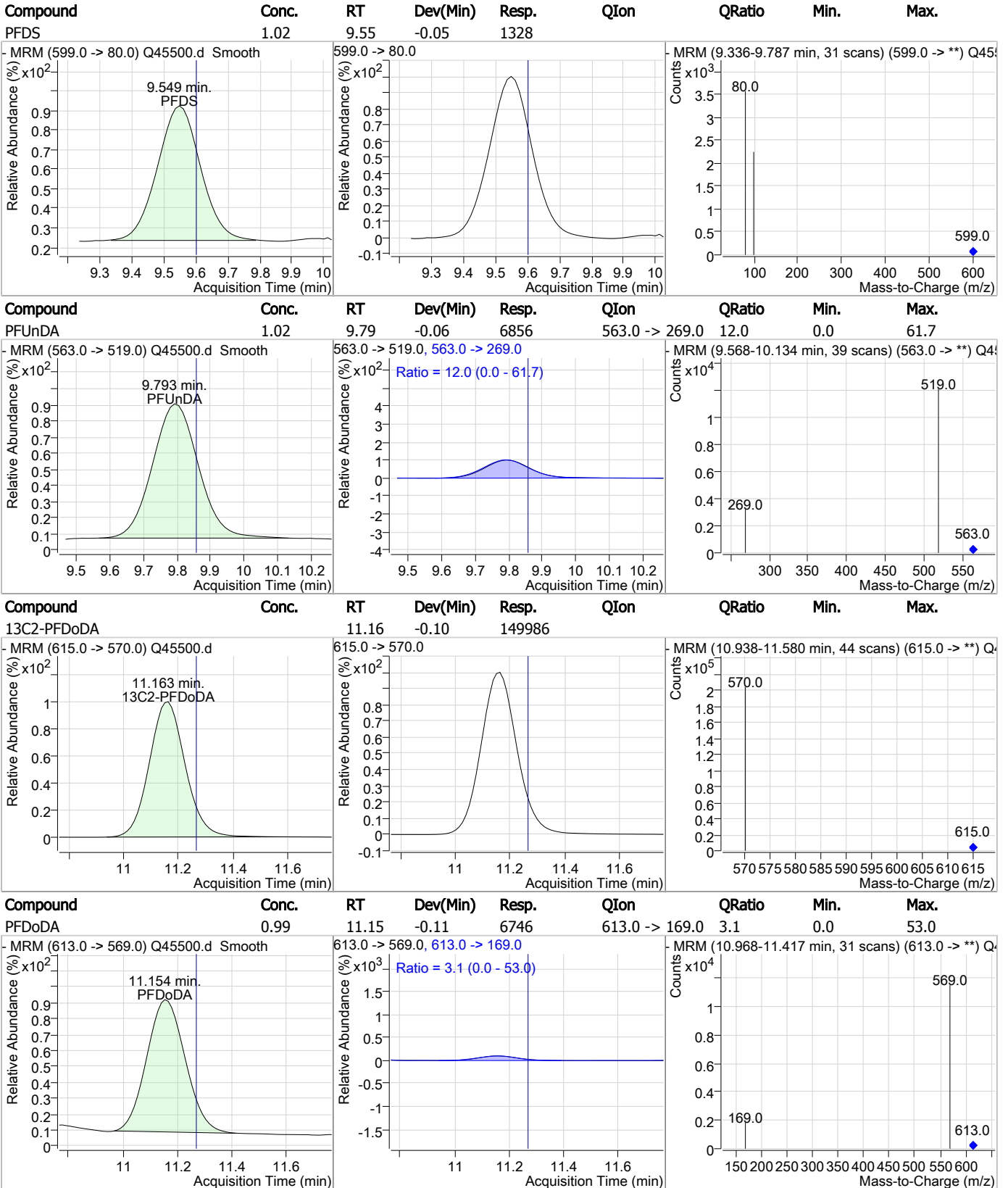
10.5.15 10

### Perfluorinated Compounds by LC/MS/MS



10.5.15 10

### Perfluorinated Compounds by LC/MS/MS

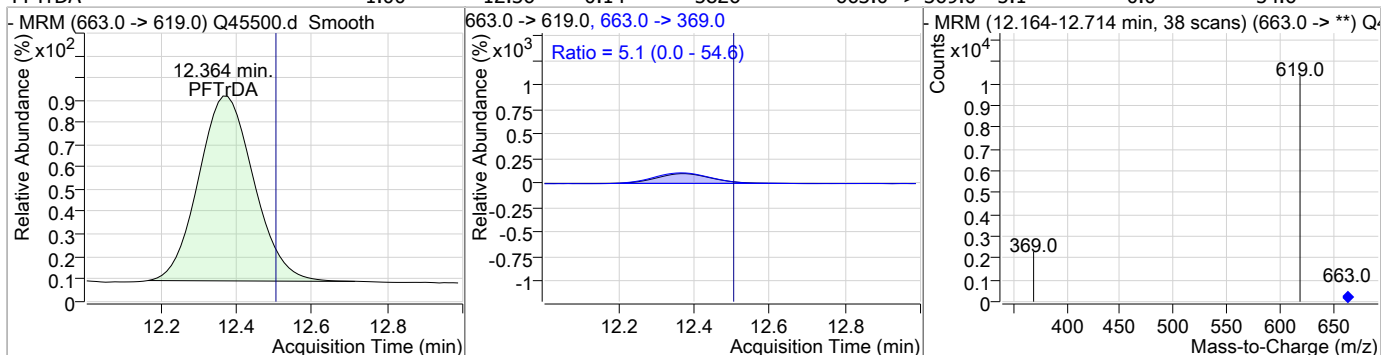


10.5.15 10

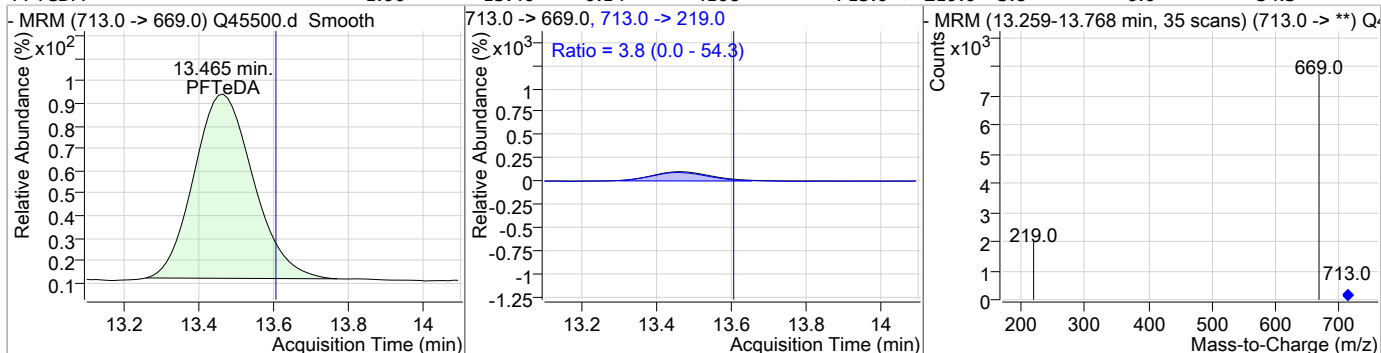


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	1.00	12.36	-0.14	5826	663.0 -> 369.0	5.1	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.00	13.46	-0.14	4108	713.0 -> 219.0	3.8	0.0	54.3



10.5.15 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45500.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 17:11      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.61	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.79	Split peak

10.5.15.1

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### Perfluorinated Compounds by LC/MS/MS

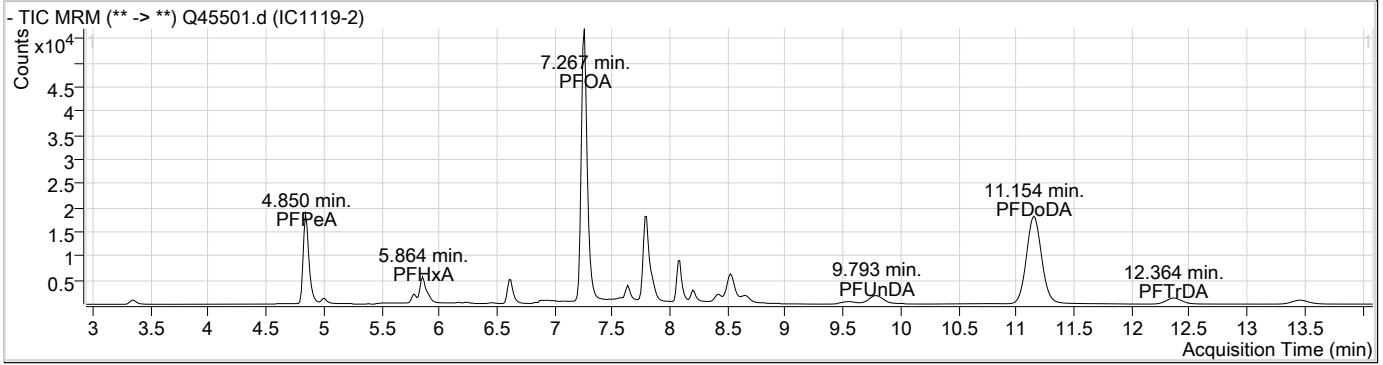
Data File : Q45501.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 5:31:35 PM  
 Sample Name : IC1119-2  
 Vial : Vial 3  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.262	429.0 -> 409.0	48364	20.00 µg/L	-0.013
13C2-PFDoDA	11.150	615.0 -> 570.0	151012	20.00 µg/L	-0.113
13C2-PFOA	7.253	415.0 -> 370.0	131959	20.00 µg/L	-0.013
13C4-PFOS	7.786	503.0 -> 80.0	59084	20.00 µg/L	-0.015
d3-MeFOSAA	8.074	573.0 -> 419.0	23150	20.00 µg/L	-0.013
13C3-PFPeA	4.847	266.0 -> 222.0	59402	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.531	515.0 -> 470.0	16191	1.91 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 9.6%		
13C2-PFHxA	5.862	315.0 -> 270.0	11348	1.96 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 9.8%		
d5-EtFOSAA	8.197	589.0 -> 419.0	3220	1.92 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 9.6%		
<b>Target Compounds</b>					
6:2FTS	7.276	427.0 -> 407.0	4811	1.93 µg/L	100
8:2FTS	8.651	527.0 -> 507.0	4608	2.02 µg/L	97
EtFOSAA	8.210	584.0 -> 419.0	2519	2.05 µg/L	100
FOSA	7.636	498.0 -> 78.0	7863	2.02 µg/L	100
MeFOSAA	8.087	570.0 -> 419.0	2531	1.93 µg/L	100
PFBA	3.352	213.0 -> 169.0	3557	1.86 µg/L	100
PFBS	5.004	299.0 -> 80.0	2406	1.90 µg/L	95
PFDA	8.533	513.0 -> 469.0	10953	1.91 µg/L	99
PFDoDA	11.154	613.0 -> 569.0	13547	1.97 µg/L	100
PFDS	9.549	599.0 -> 80.0	2554	1.95 µg/L	100
PFHpA	6.625	363.0 -> 319.0	11592	1.91 µg/L	99
PFHpS	7.219	449.0 -> 80.0	3592	2.06 µg/L	99
PFHxA	5.864	313.0 -> 269.0	6551	1.93 µg/L	100
PFHxS	6.606	399.0 -> 80.0	3660	1.94 µg/L	m 99
PFNA	7.856	463.0 -> 419.0	8915	1.86 µg/L	99
PFOA	7.267	413.0 -> 369.0	12182	1.97 µg/L	100
PFOS	7.800	499.0 -> 80.0	6303	1.96 µg/L	m 96
PFPeA	4.850	263.0 -> 219.0	5234	1.91 µg/L	100
PFTeDA	13.465	713.0 -> 669.0	7764	1.87 µg/L	99
PFTTrDA	12.364	663.0 -> 619.0	11277	1.92 µg/L	99
PFUnDA	9.793	563.0 -> 519.0	12844	1.89 µg/L	100
4:2FTS	5.783	327.0 -> 307.0	4354	1.89 µg/L	95
PFNS	8.416	549.0 -> 99.0	1938	1.96 µg/L	99
PFPeS	5.905	349.0 -> 99.0	897	2.07 µg/L	91

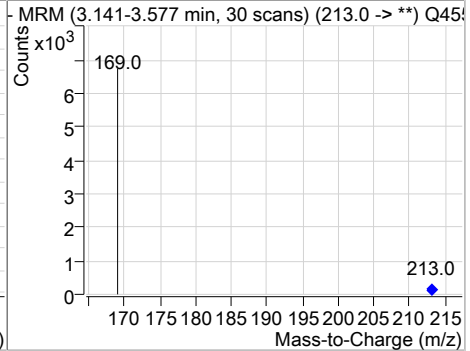
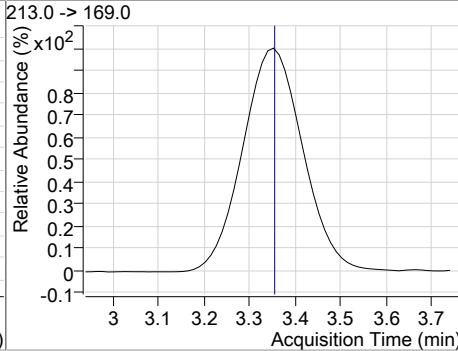
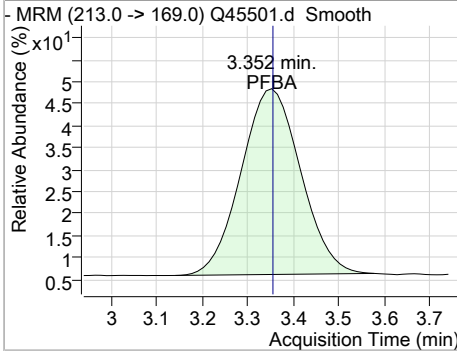
# = Qualifier out of range, m = manually integrated, + = Area summed

105.16  
**10**

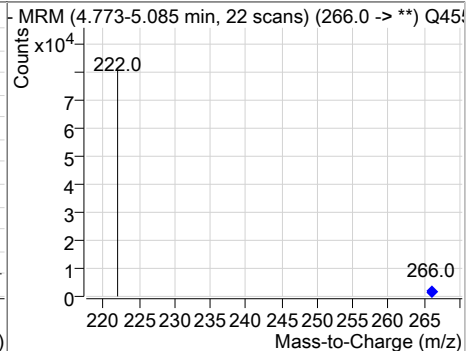
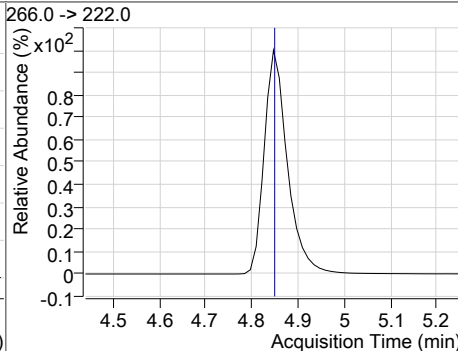
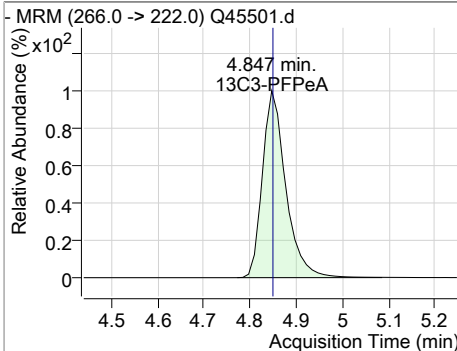
### Perfluorinated Compounds by LC/MS/MS



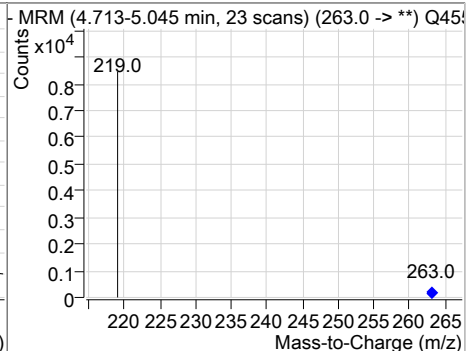
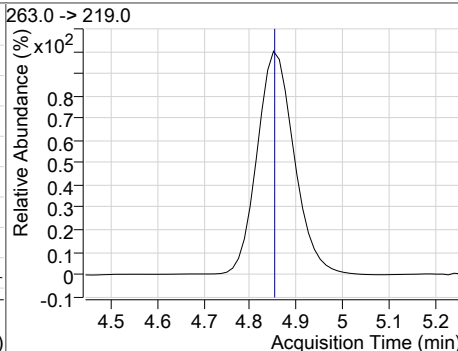
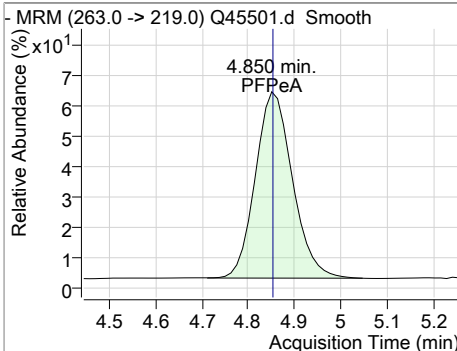
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.86	3.35	0.00	3557				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.85	0.00	59402				

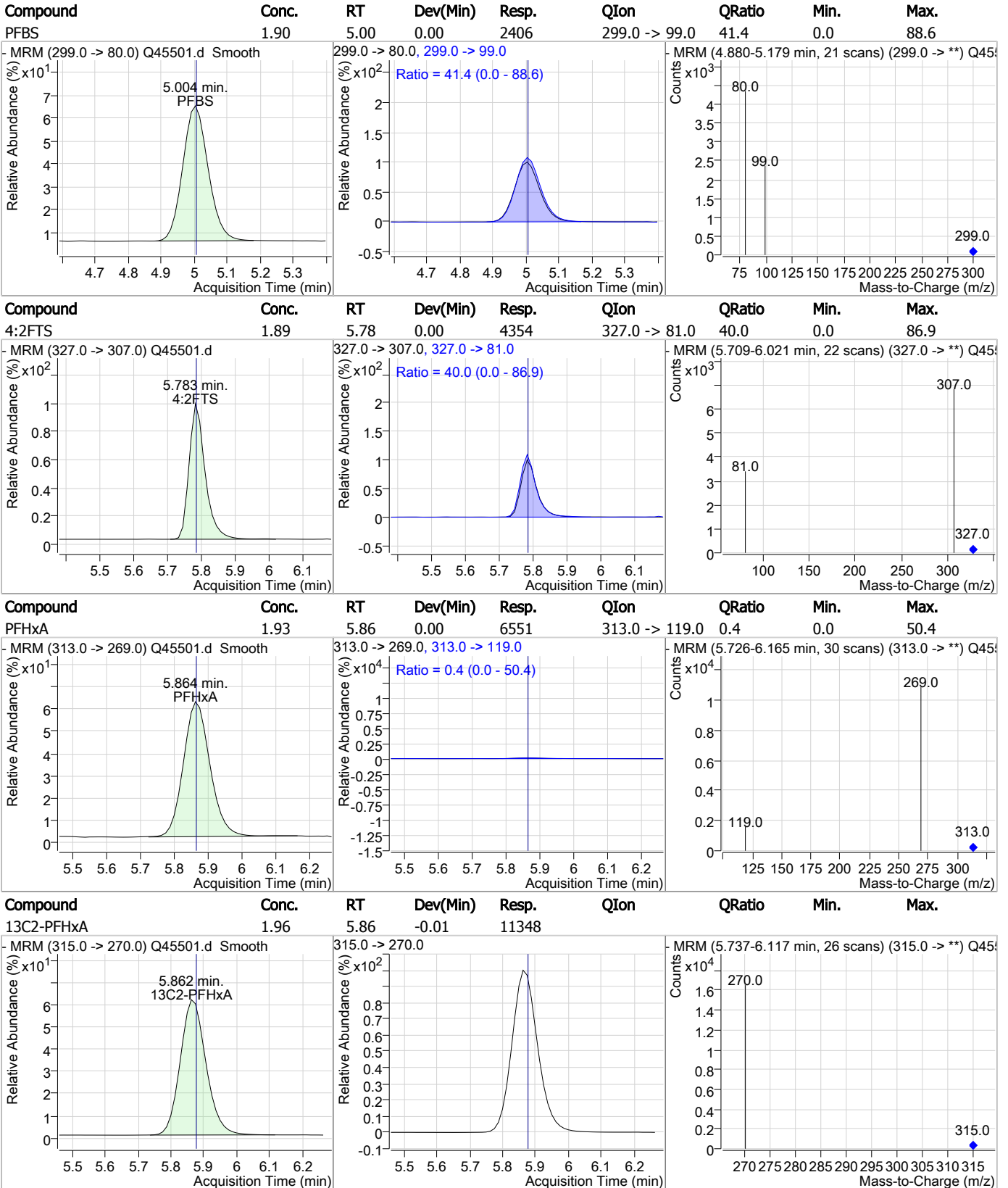


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.91	4.85	0.00	5234				



10.5.16 10

### Perfluorinated Compounds by LC/MS/MS

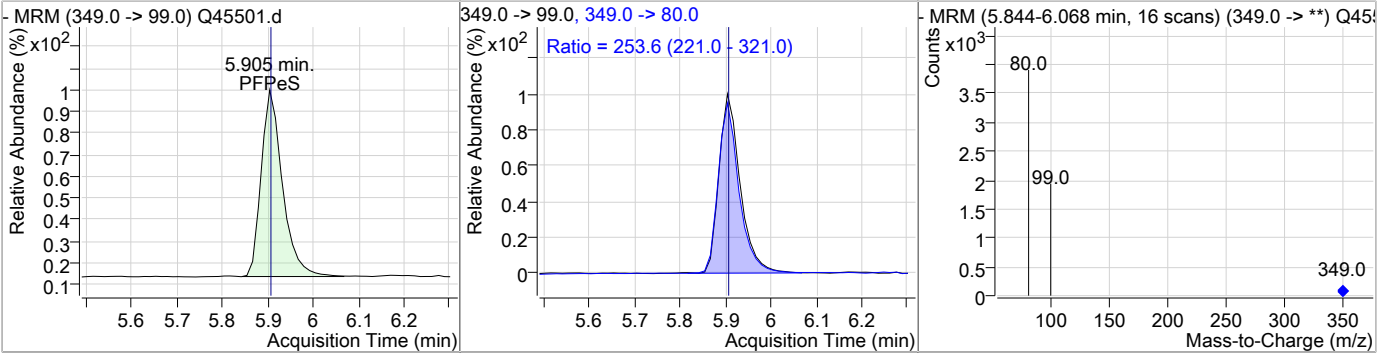


10.5.16 10

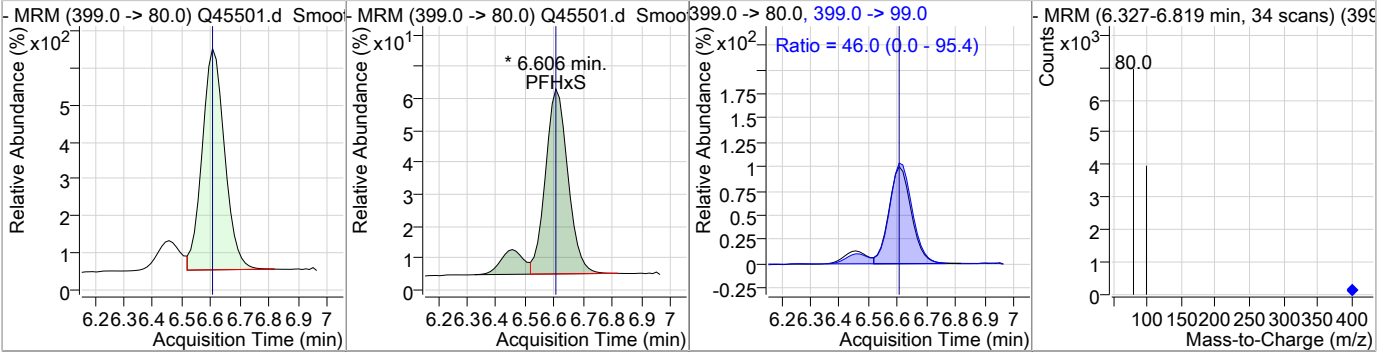


### Perfluorinated Compounds by LC/MS/MS

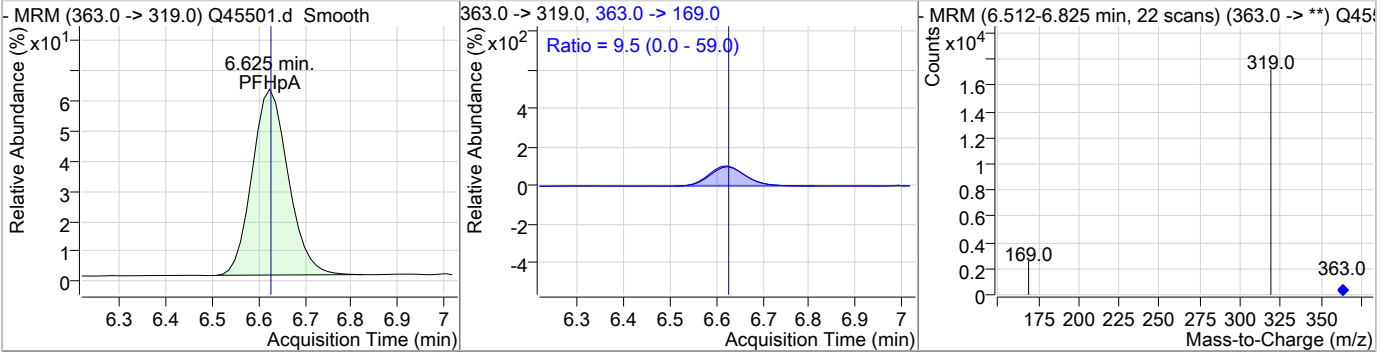
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.07	5.90	0.00	897	349.0 -> 80.0	253.6	221.0	321.0



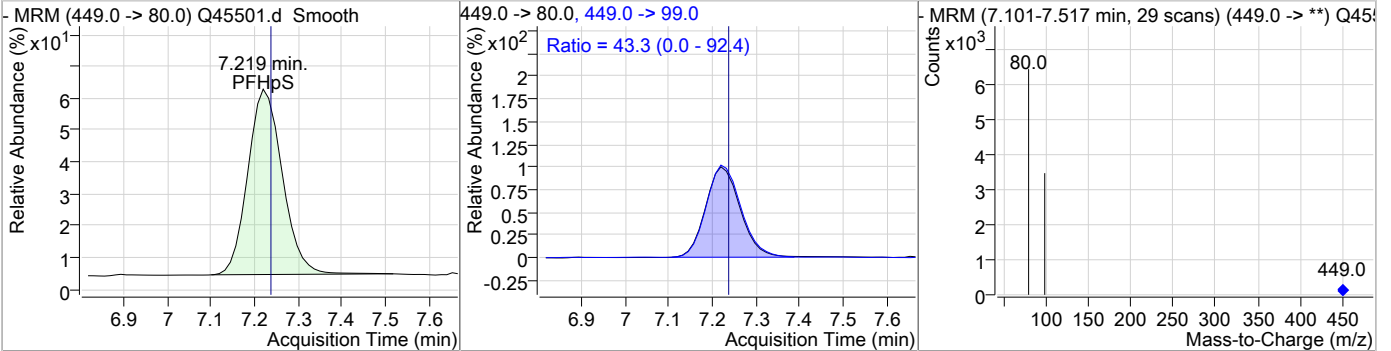
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.94	6.61	0.00	3660 (m)	399.0 -> 99.0	46.0	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.91	6.62	0.00	11592	363.0 -> 169.0	9.5	0.0	59.0

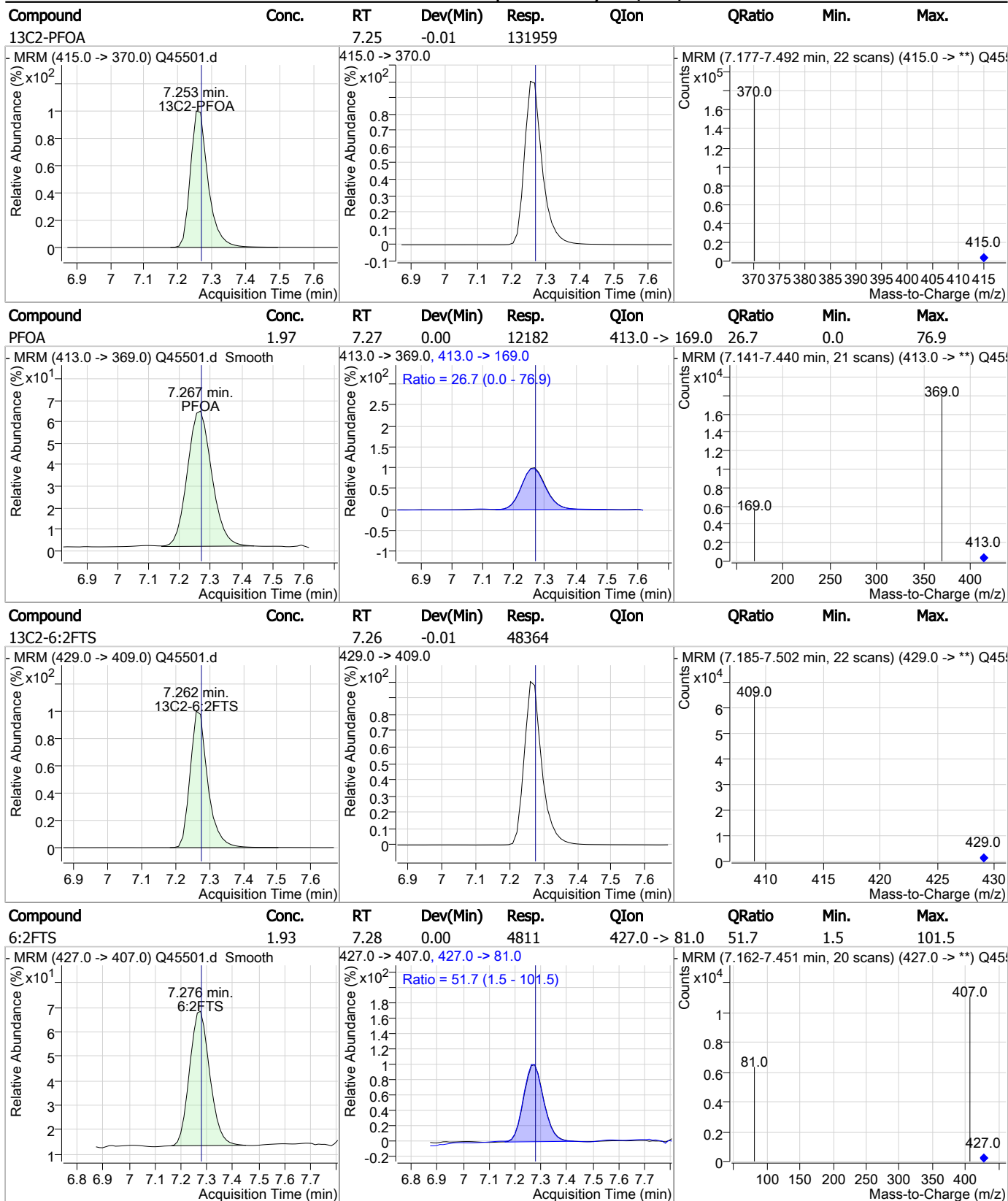


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.06	7.22	-0.02	3592	449.0 -> 99.0	43.3	0.0	92.4



10.5.16 10

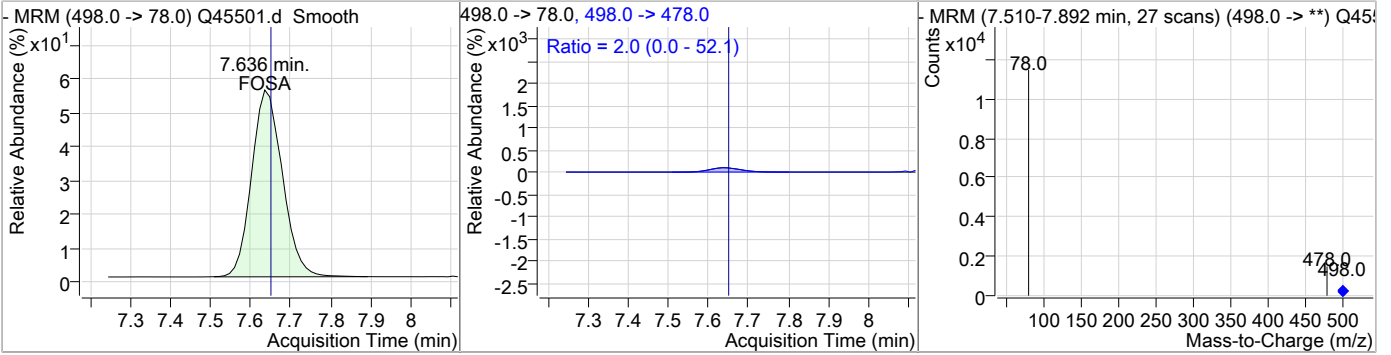
### Perfluorinated Compounds by LC/MS/MS



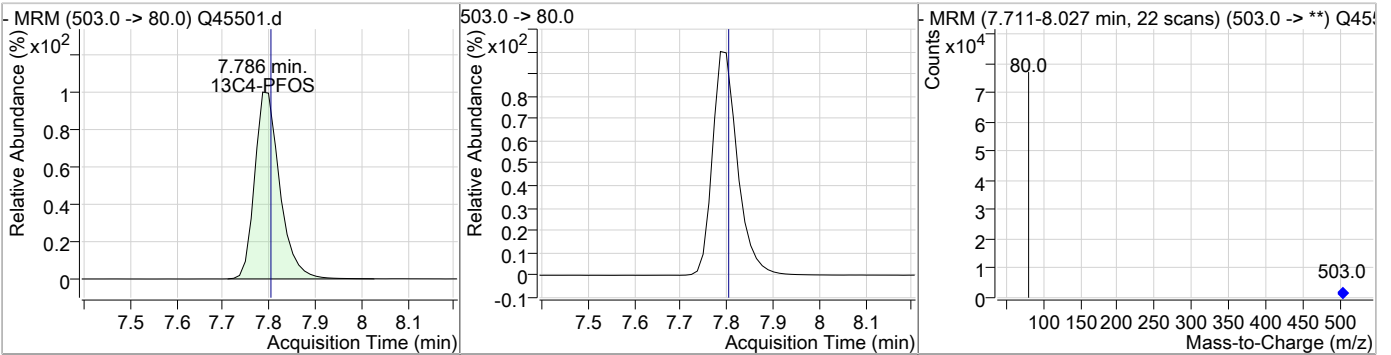
10.5.16 10

### Perfluorinated Compounds by LC/MS/MS

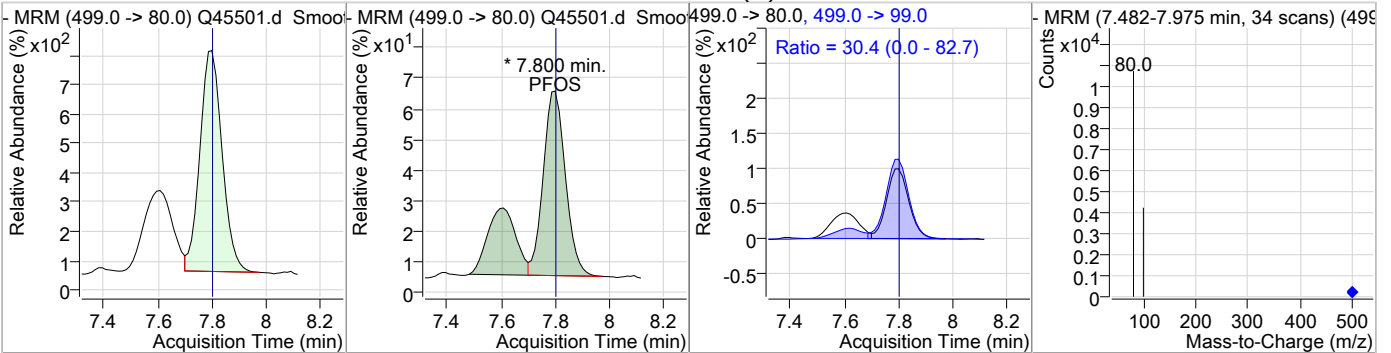
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.02	7.64	-0.01	7863	498.0 -> 478.0	2.0	0.0	52.1



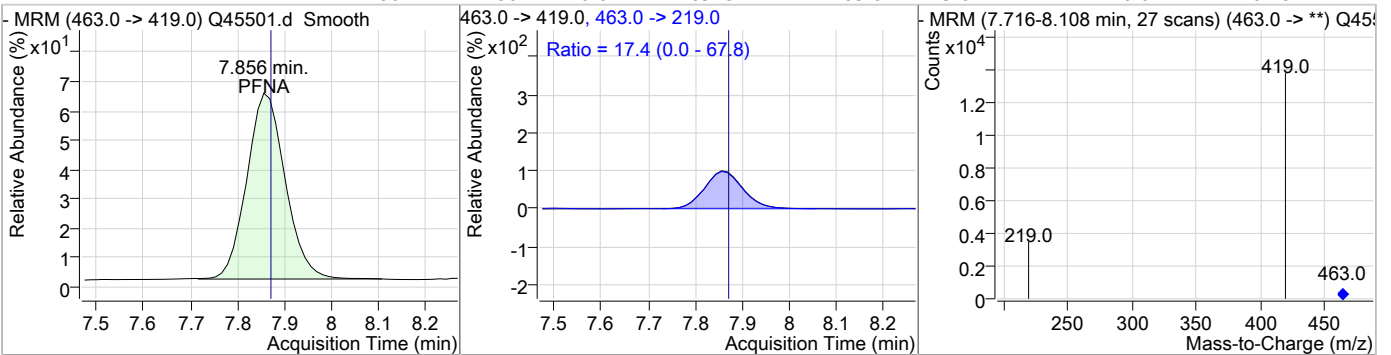
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.79	-0.02	59084				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.96	7.80	0.00	6303 (m)	499.0 -> 99.0	30.4	0.0	82.7

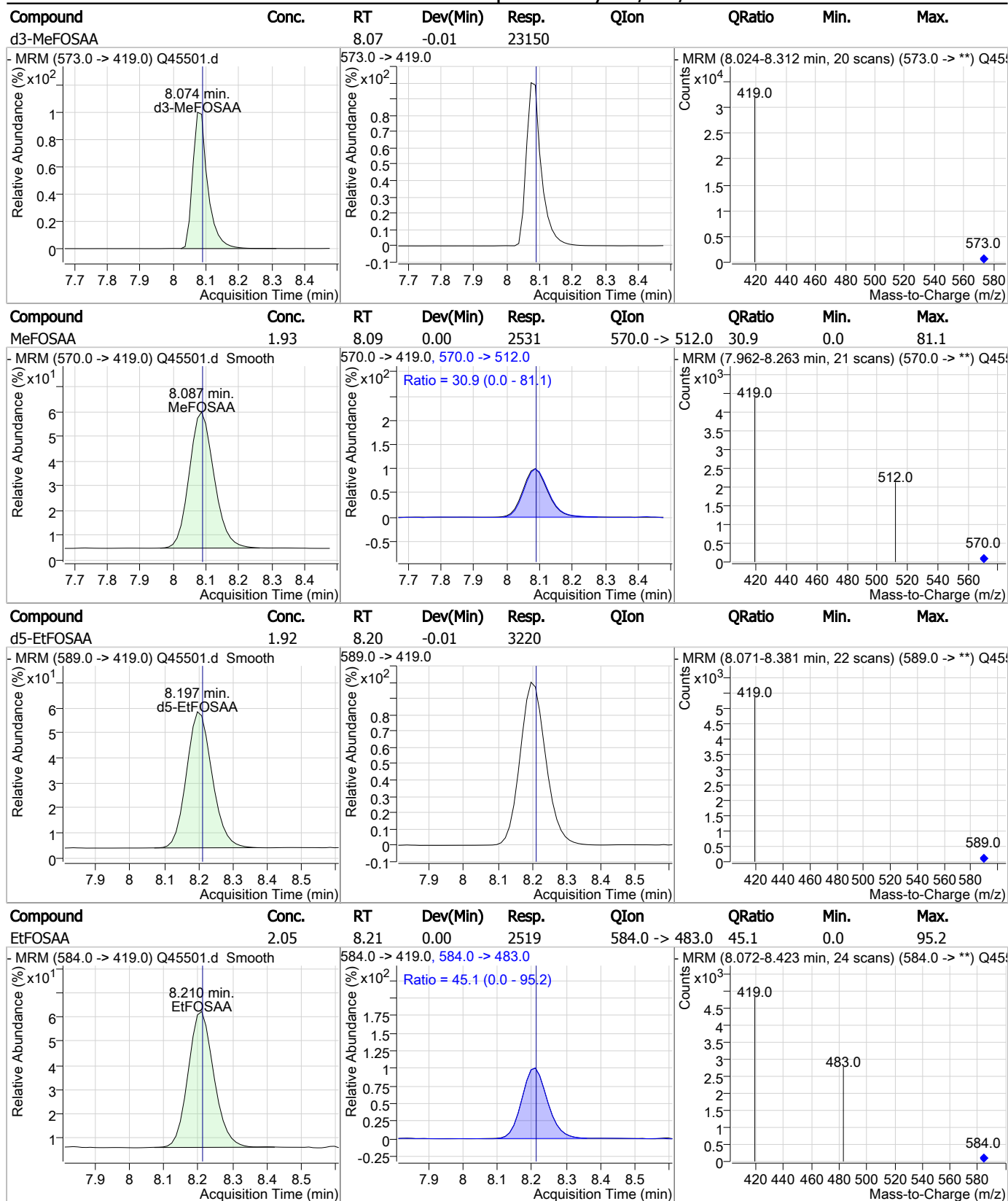


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.86	7.86	-0.01	8915	463.0 -> 219.0	17.4	0.0	67.8



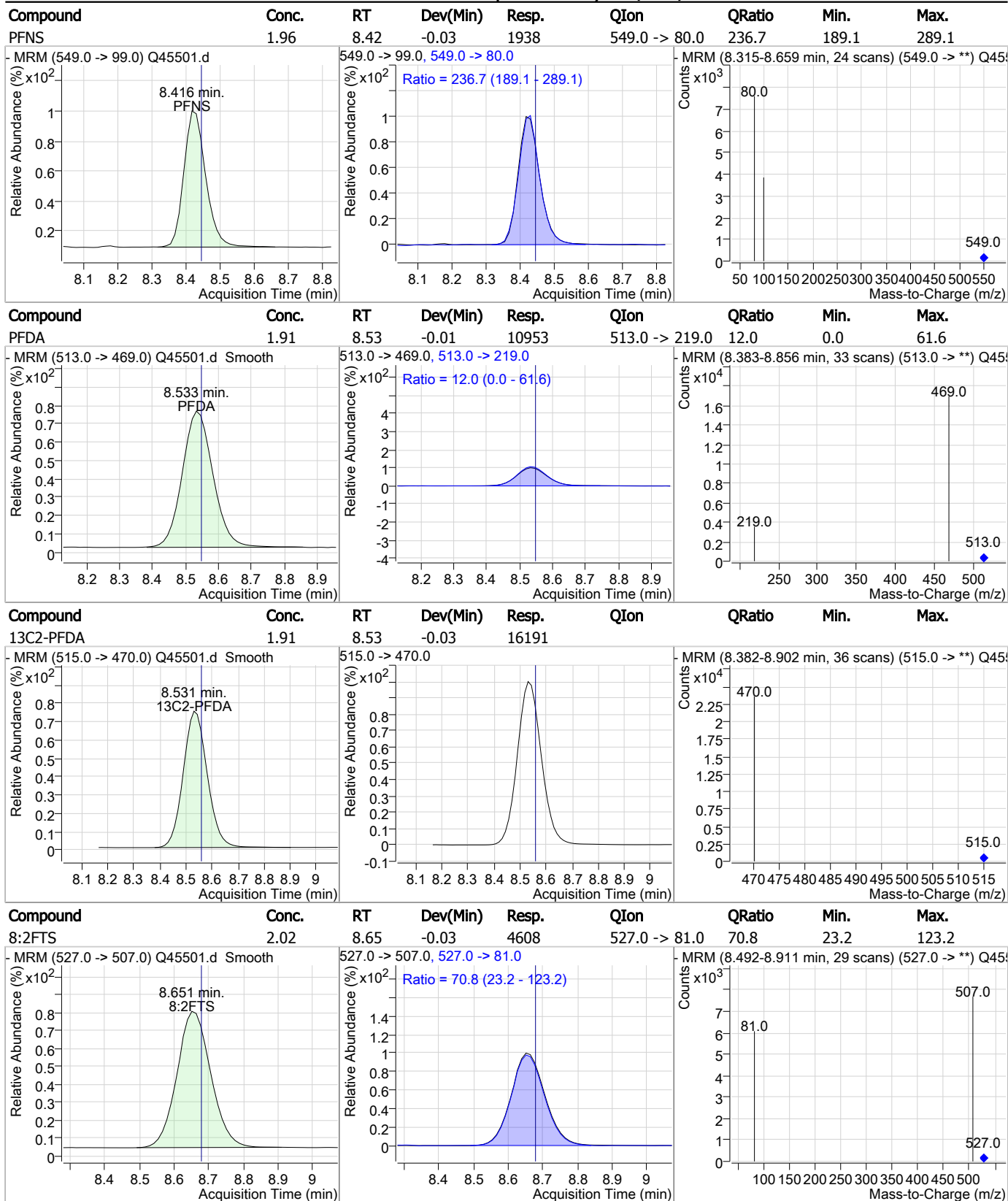
10.5.16 10

### Perfluorinated Compounds by LC/MS/MS



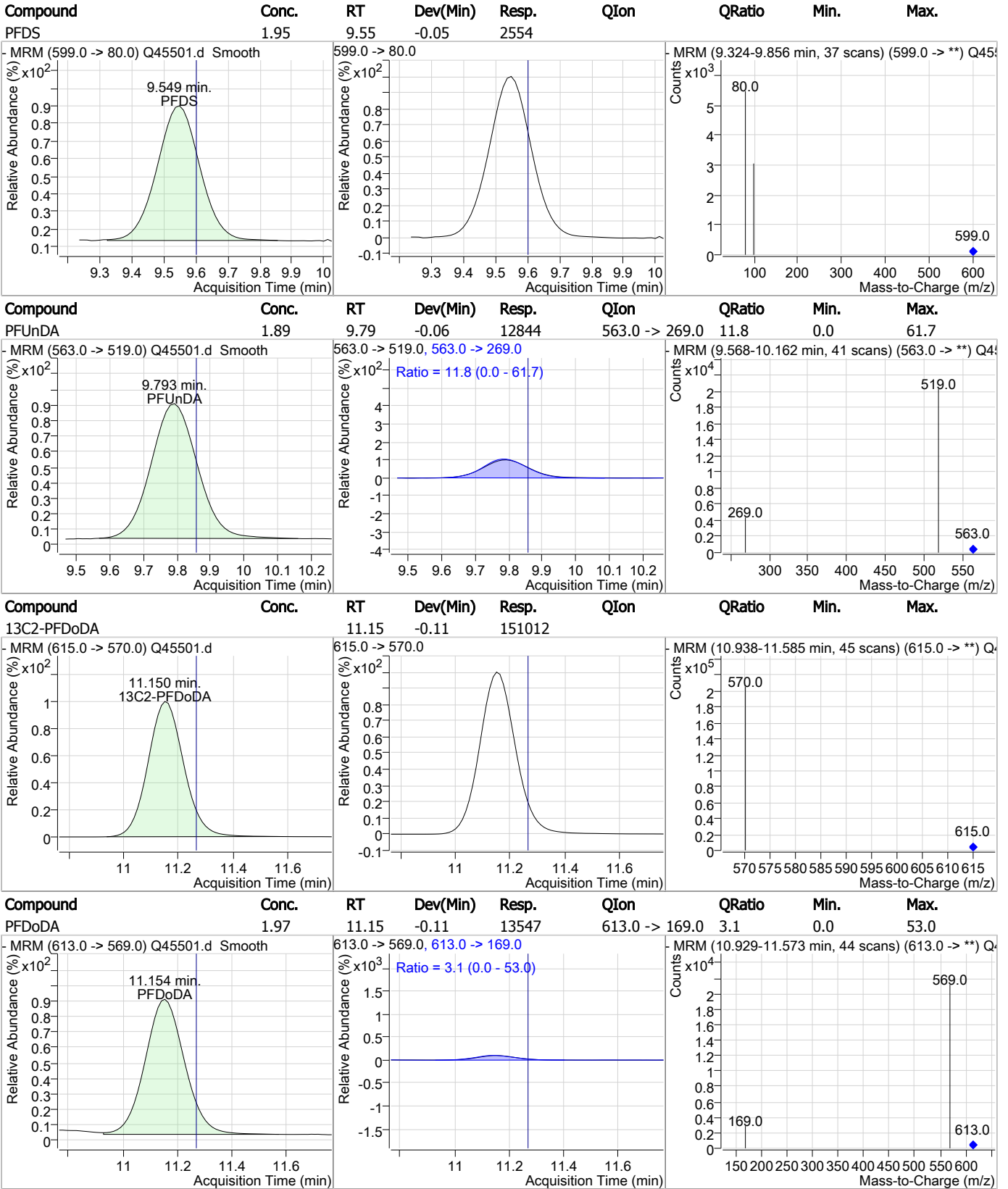
10.5.16 10

### Perfluorinated Compounds by LC/MS/MS



10.5.16 10

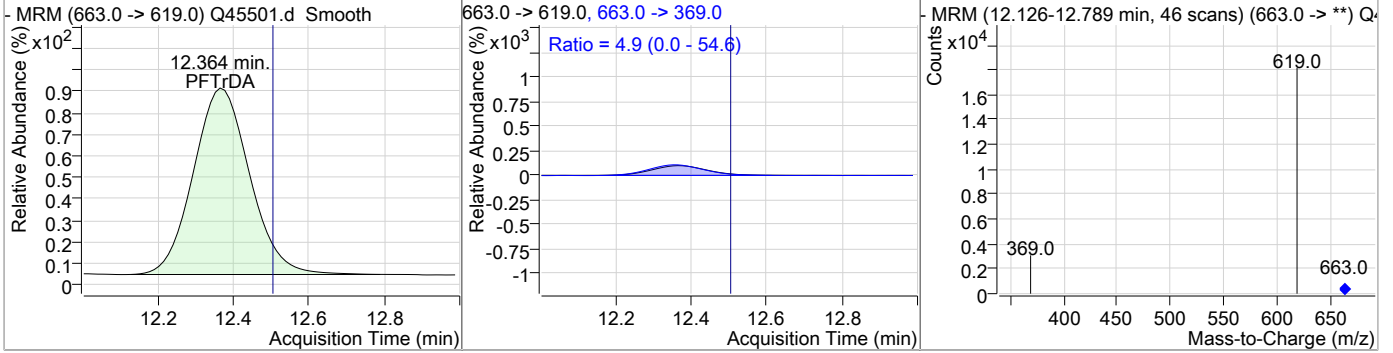
### Perfluorinated Compounds by LC/MS/MS



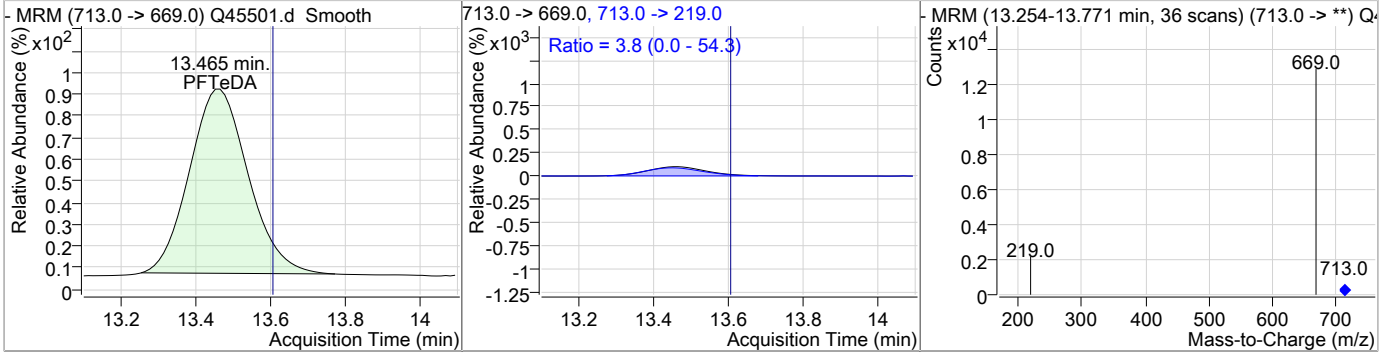
10.5.16 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	1.92	12.36	-0.14	11277	663.0 -> 369.0	4.9	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.87	13.46	-0.14	7764	713.0 -> 219.0	3.8	0.0	54.3



10.5.16 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45501.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 17:31      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.61	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.80	Split peak

10.5.16.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45502.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 5:51:26 PM  
 Sample Name : IC1119-5  
 Vial : Vial 4  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,,1.0,1,WATER

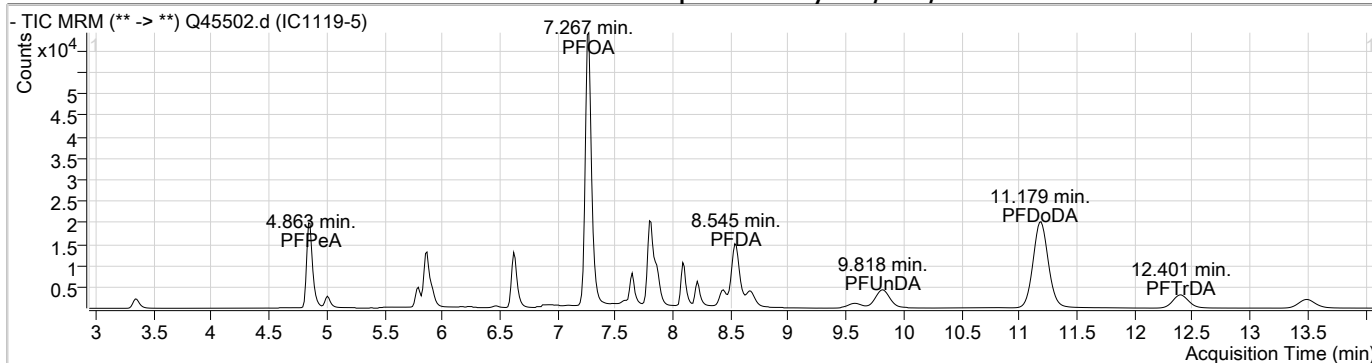
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.274	429.0 -> 409.0	47459	20.00 µg/L	0.000
13C2-PFDoDA	11.188	615.0 -> 570.0	149059	20.00 µg/L	-0.075
13C2-PFOA	7.266	415.0 -> 370.0	129787	20.00 µg/L	0.000
13C4-PFOS	7.799	503.0 -> 80.0	58734	20.00 µg/L	-0.003
d3-MeFOSAA	8.086	573.0 -> 419.0	22486	20.00 µg/L	0.000
13C3-PFPeA	4.860	266.0 -> 222.0	58743	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.544	515.0 -> 470.0	40322	4.84 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 24.2%		
13C2-PFHxA	5.874	315.0 -> 270.0	27633	4.85 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 24.3%		
d5-EtFOSAA	8.209	589.0 -> 419.0	8098	4.97 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 24.9%		
<b>Target Compounds</b>					
6:2FTS	7.276	427.0 -> 407.0	11881	4.90 µg/L	100
8:2FTS	8.676	527.0 -> 507.0	11240	5.04 µg/L	100
EtFOSAA	8.210	584.0 -> 419.0	5816	4.88 µg/L	92
FOSA	7.648	498.0 -> 78.0	18878	5.02 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	6261	4.91 µg/L	96
PFBA	3.352	213.0 -> 169.0	9047	4.79 µg/L	100
PFBS	5.004	299.0 -> 80.0	6101	4.85 µg/L	97
PFDA	8.545	513.0 -> 469.0	27172	4.82 µg/L	98
PFDoDA	11.179	613.0 -> 569.0	33160	4.87 µg/L	100
PFDS	9.574	599.0 -> 80.0	6247	4.81 µg/L	100
PFHpA	6.637	363.0 -> 319.0	29331	4.90 µg/L	99
PFHpS	7.232	449.0 -> 80.0	8440	4.87 µg/L	96
PFHxA	5.876	313.0 -> 269.0	16163	4.83 µg/L	100
PFHxS	6.618	399.0 -> 80.0	9382	4.99 µg/L	m 100
PFNA	7.869	463.0 -> 419.0	21842	4.63 µg/L	99
PFOA	7.267	413.0 -> 369.0	29862	4.92 µg/L	99
PFOS	7.815	499.0 -> 80.0	15579	4.88 µg/L	m 100
PFPeA	4.863	263.0 -> 219.0	13065	4.83 µg/L	100
PFTeDA	13.490	713.0 -> 669.0	19567	4.78 µg/L	99
PFTTrDA	12.401	663.0 -> 619.0	28135	4.86 µg/L	99
PFUnDA	9.818	563.0 -> 519.0	32556	4.85 µg/L	100
4:2FTS	5.796	327.0 -> 307.0	11196	4.98 µg/L	97
PFNS	8.441	549.0 -> 99.0	4755	4.83 µg/L	97
PFPeS	5.917	349.0 -> 99.0	2126	4.93 µg/L	99

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

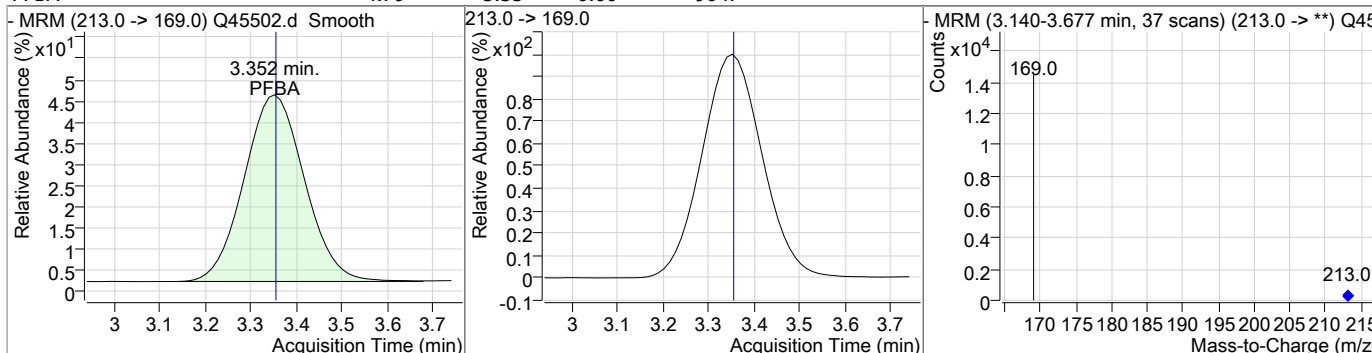
10.5.17  
**10**



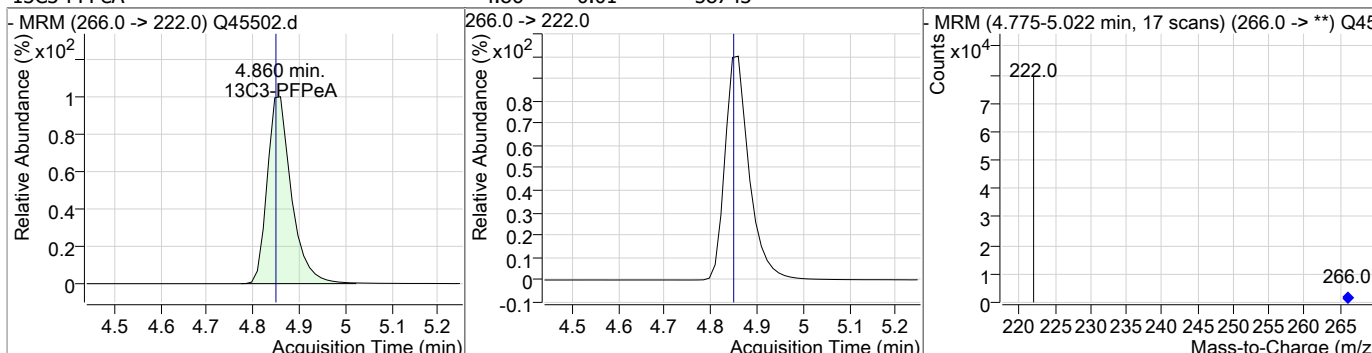
### Perfluorinated Compounds by LC/MS/MS



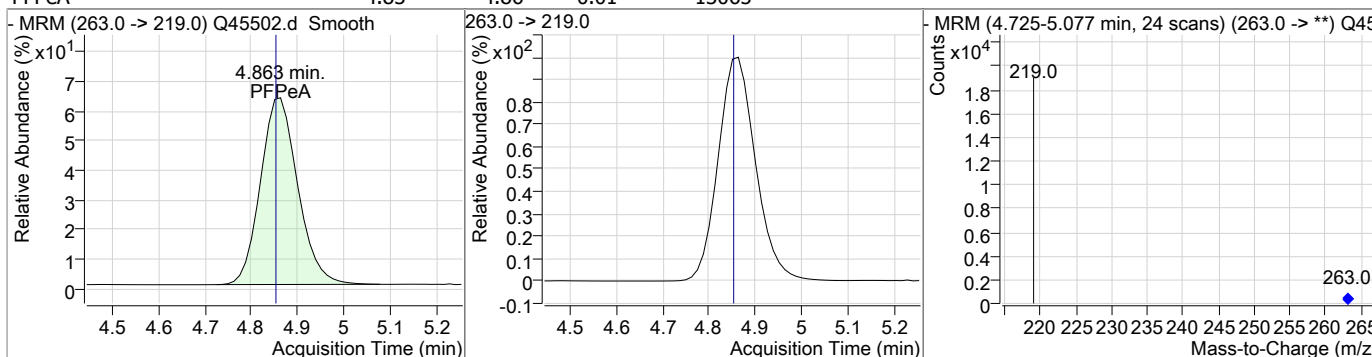
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.79	3.35	0.00	9047				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.86	0.01	58743				

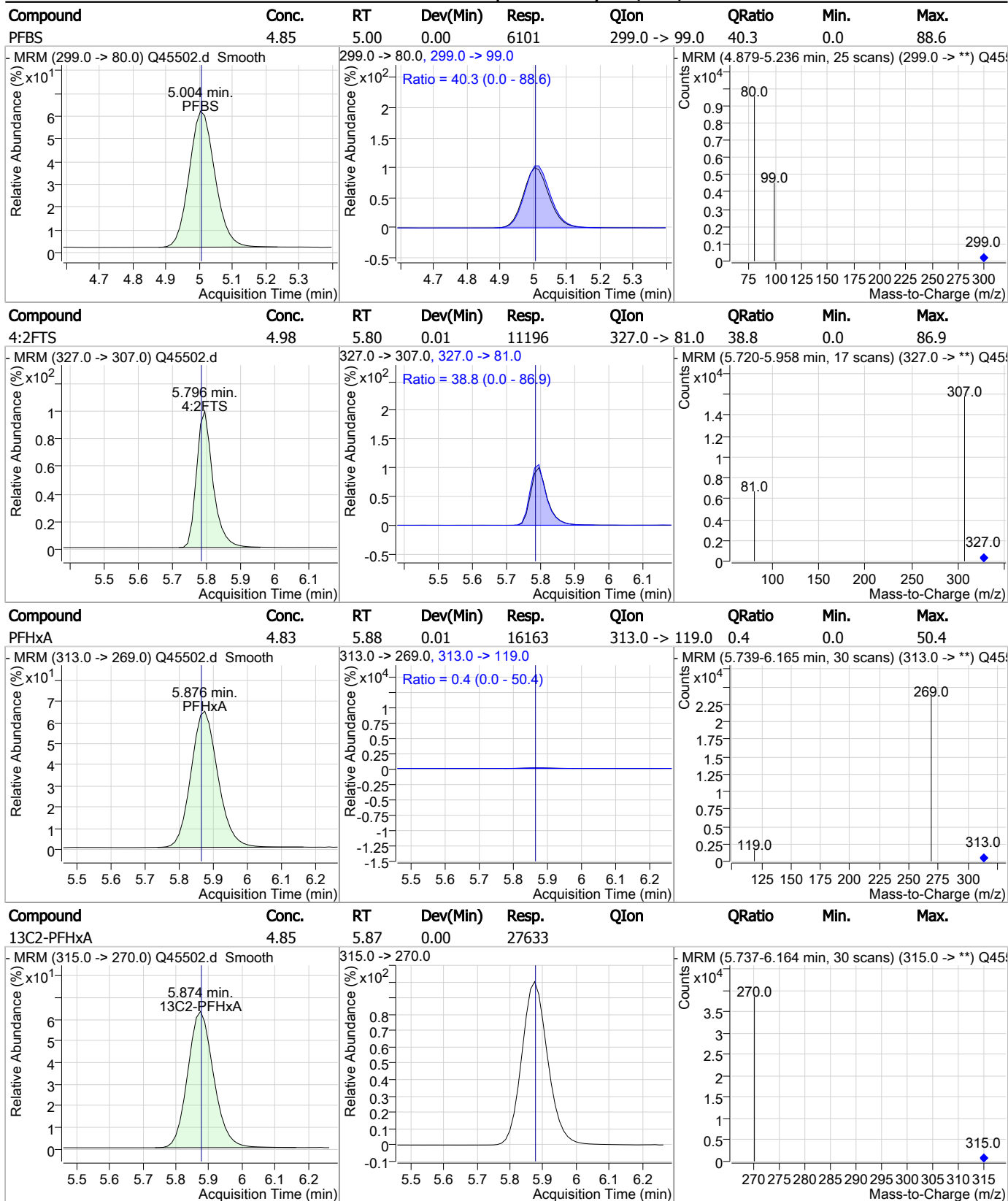


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.83	4.86	0.01	13065				



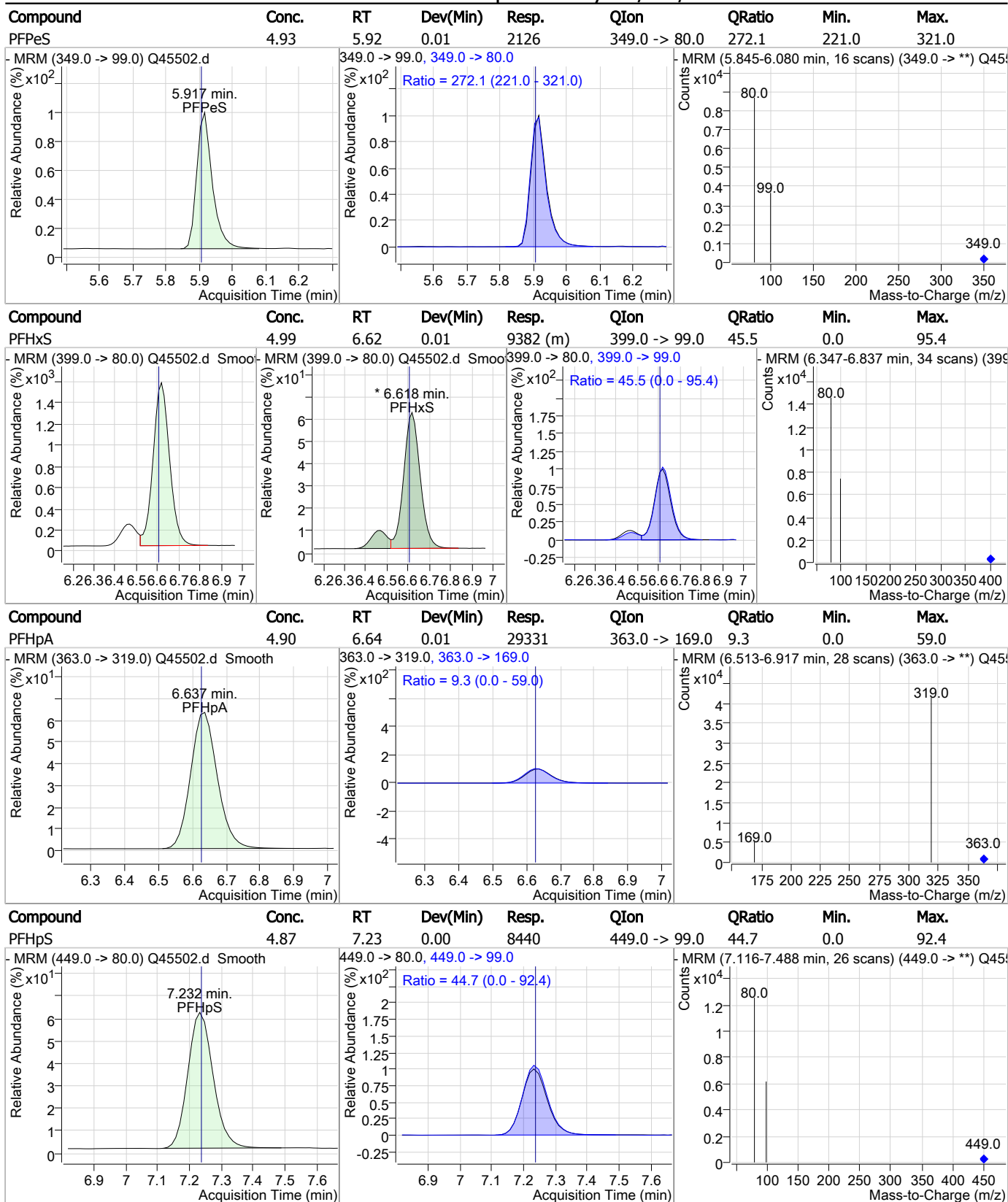
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### Perfluorinated Compounds by LC/MS/MS



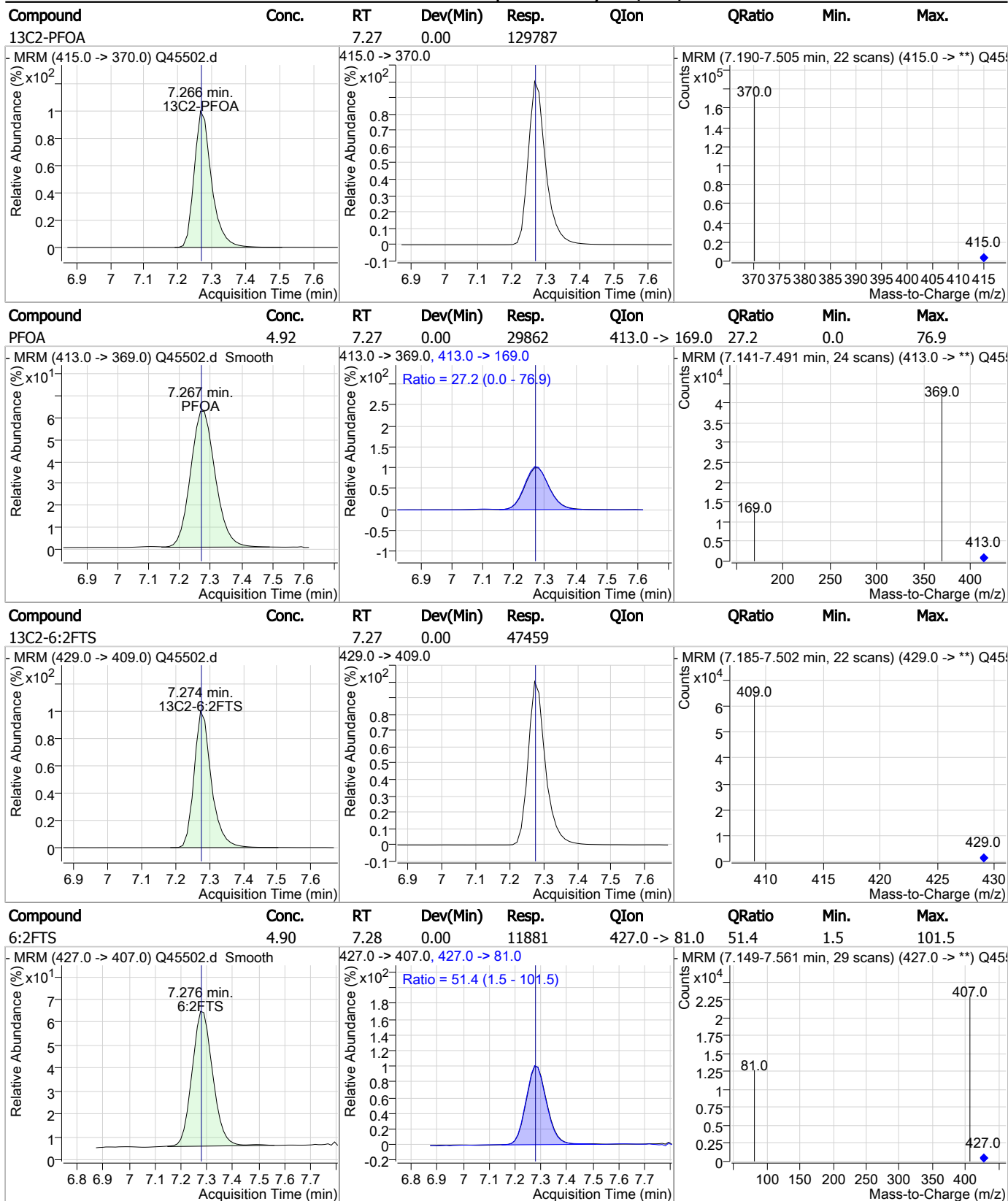
10.5.17 10

### Perfluorinated Compounds by LC/MS/MS



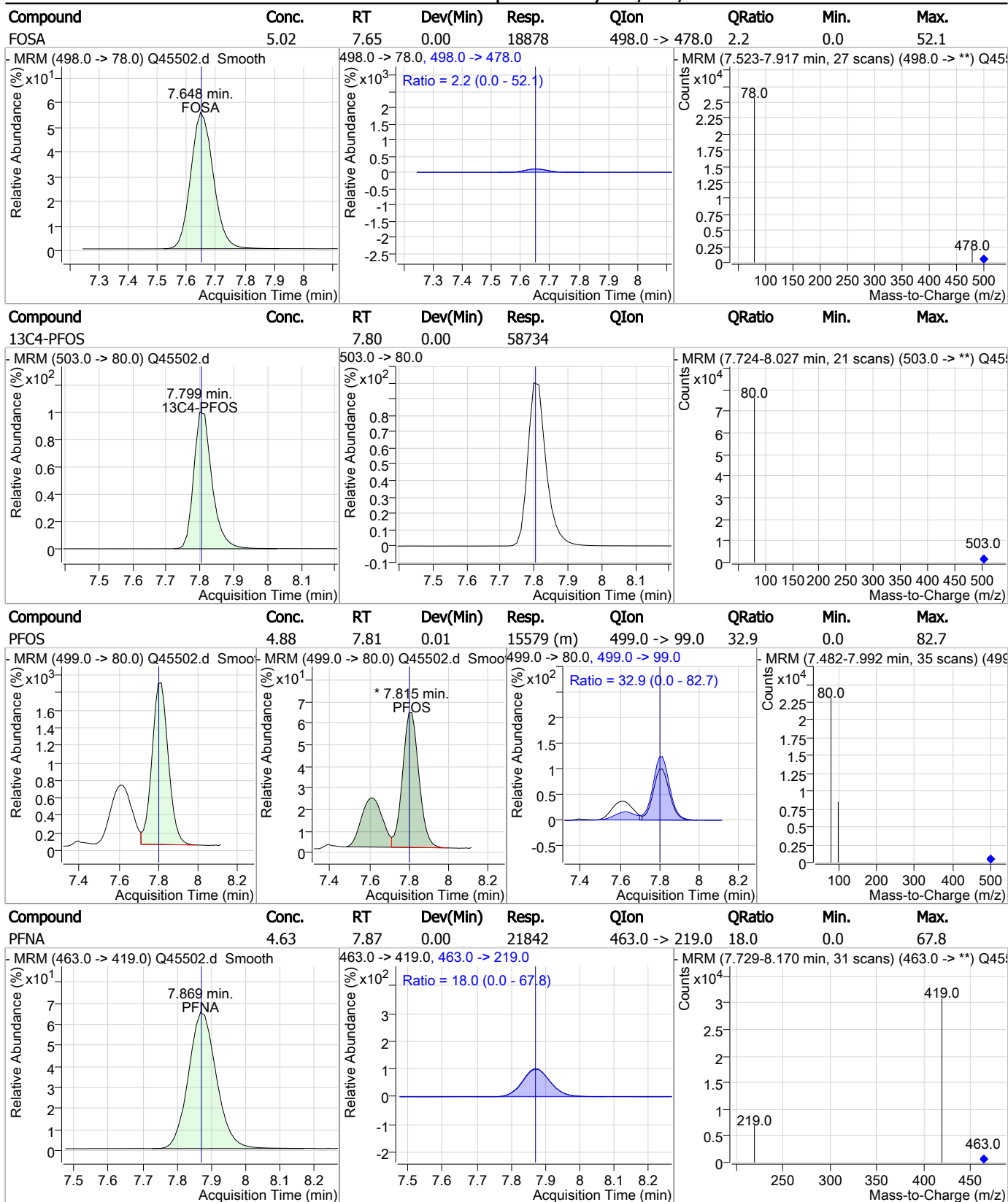
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### Perfluorinated Compounds by LC/MS/MS



10.5.17 10

### Perfluorinated Compounds by LC/MS/MS



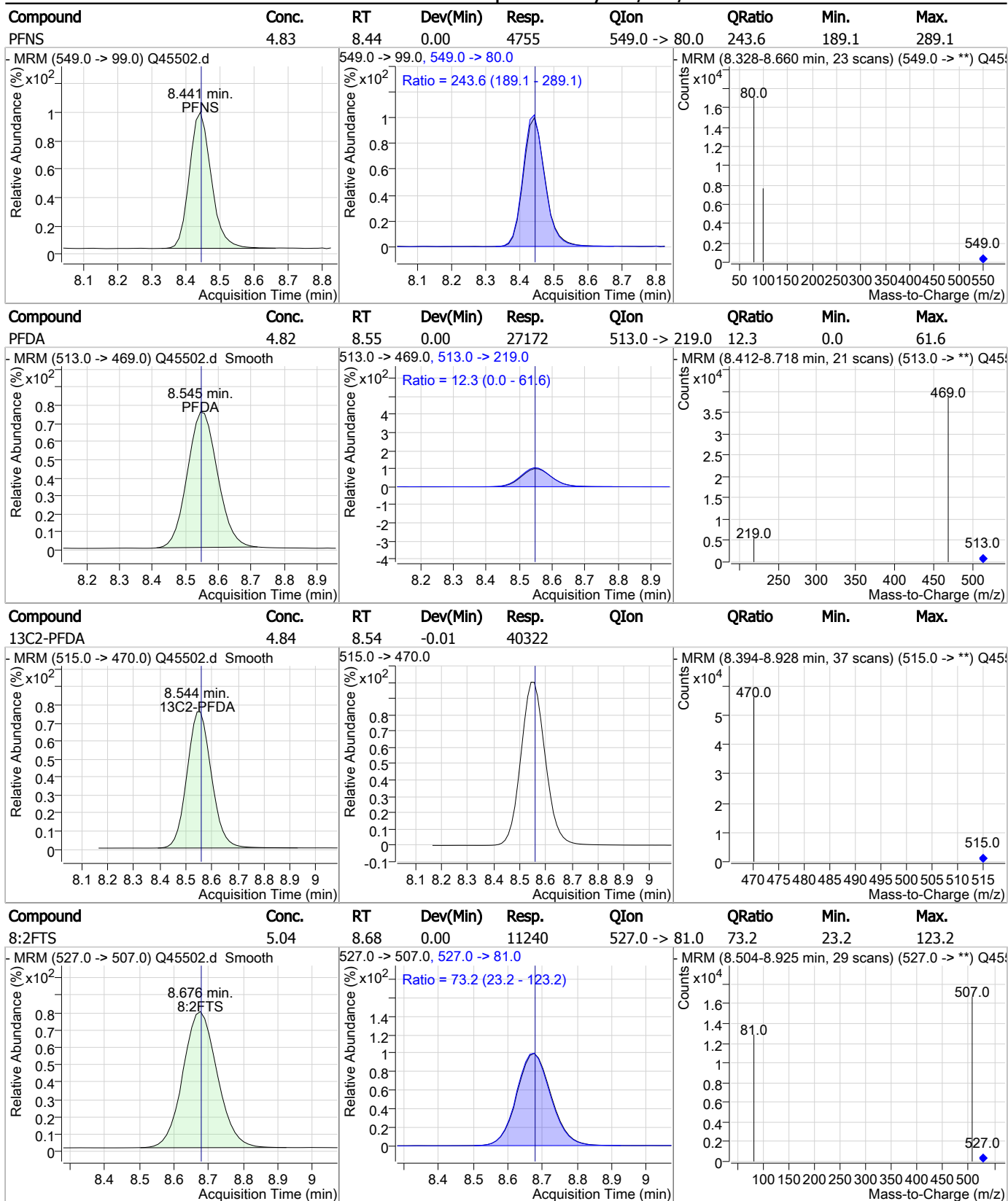
10.5.17 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.09	0.00	22486				
- MRM (573.0 -> 419.0) Q45502.d			573.0 -> 419.0			- MRM (8.036-8.250 min, 15 scans) (573.0 -> **) Q45		
MeFOSAA	4.91	8.10	0.01	6261	570.0 -> 512.0	29.1	0.0	81.1
- MRM (570.0 -> 419.0) Q45502.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.977-8.312 min, 23 scans) (570.0 -> **) Q45		
d5-EtFOSAA	4.97	8.21	0.00	8098				
- MRM (589.0 -> 419.0) Q45502.d Smooth			589.0 -> 419.0			- MRM (8.087-8.457 min, 26 scans) (589.0 -> **) Q45		
EtFOSAA	4.88	8.21	0.00	5816	584.0 -> 483.0	50.5	0.0	95.2
- MRM (584.0 -> 419.0) Q45502.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			- MRM (8.099-8.398 min, 21 scans) (584.0 -> **) Q45		

10.5.17 10

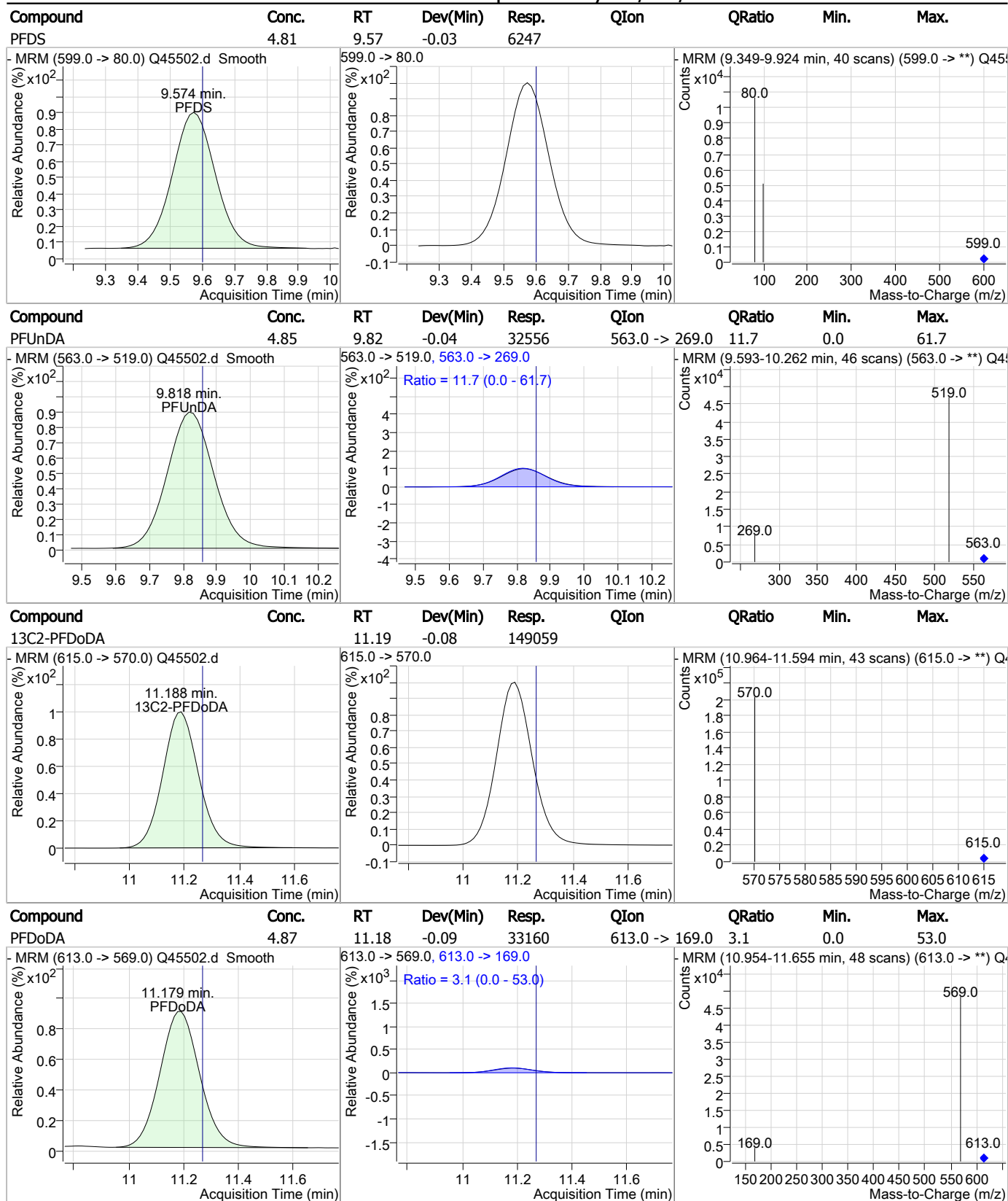
### Perfluorinated Compounds by LC/MS/MS



10.5.17 10



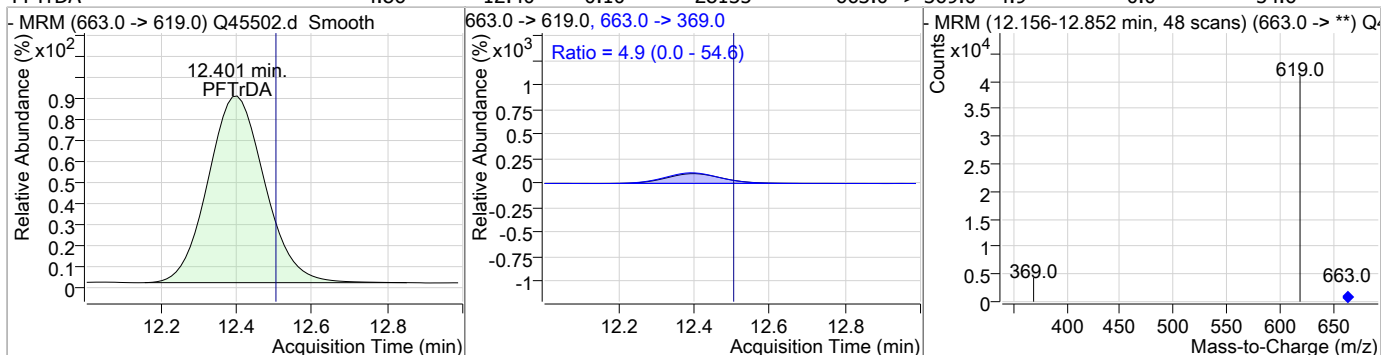
### Perfluorinated Compounds by LC/MS/MS



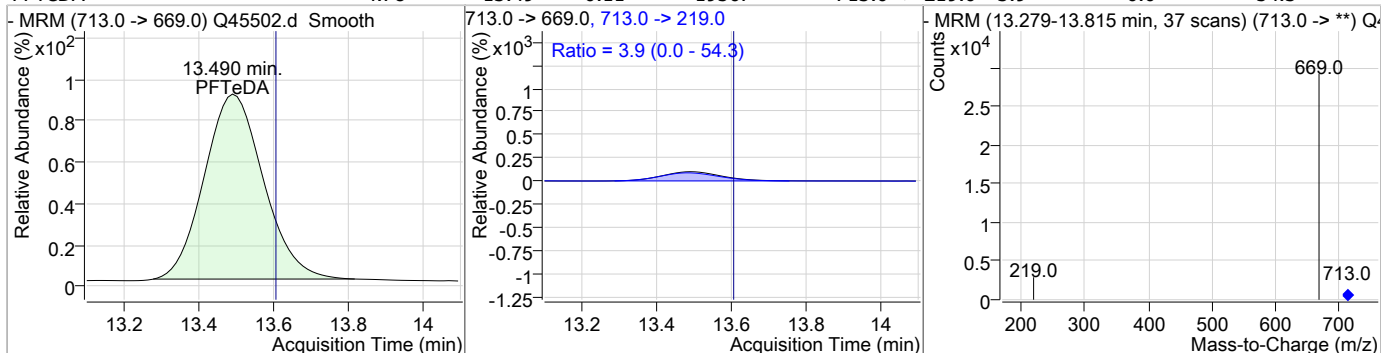
10.5.17 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	4.86	12.40	-0.10	28135	663.0 -> 369.0	4.9	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.78	13.49	-0.11	19567	713.0 -> 219.0	3.9	0.0	54.3



10.5.17 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45502.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 17:51      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

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Perfluorinated Compounds by LC/MS/MS

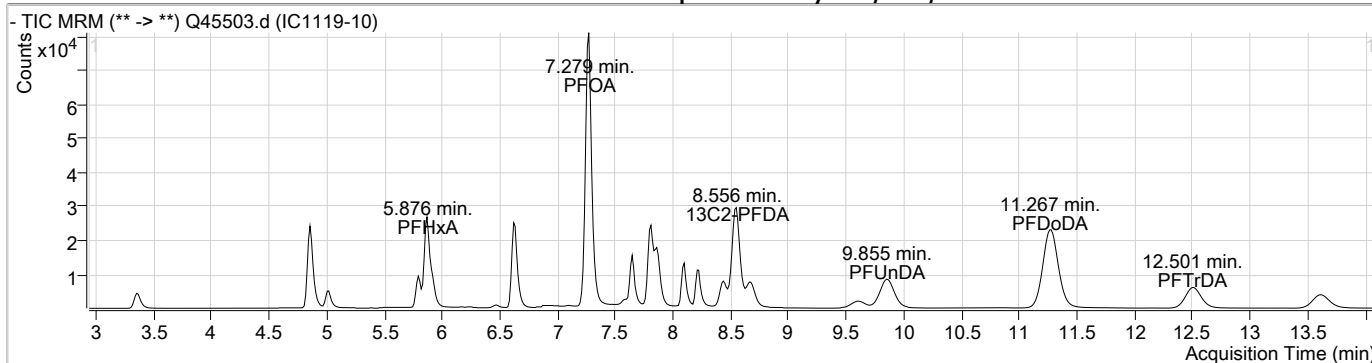
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 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 6:11:18 PM  
 Sample Name : IC1119-10  
 Vial : Vial 5  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.274	429.0 -> 409.0	47397	20.00 µg/L	0.000
13C2-PFDoDA	11.275	615.0 -> 570.0	149036	20.00 µg/L	0.013
13C2-PFOA	7.278	415.0 -> 370.0	127306	20.00 µg/L	0.012
13C4-PFOS	7.814	503.0 -> 80.0	57483	20.00 µg/L	0.012
d3-MeFOSAA	8.099	573.0 -> 419.0	22142	20.00 µg/L	0.012
13C3-PFPeA	4.860	266.0 -> 222.0	58009	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.556	515.0 -> 470.0	80814	9.89 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.5%	
13C2-PFHxA	5.874	315.0 -> 270.0	55394	9.92 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.6%	
d5-EtFOSAA	8.209	589.0 -> 419.0	16191	10.09 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 50.5%	
<b>Target Compounds</b>					
6:2FTS	7.288	427.0 -> 407.0	23739	9.89 µg/L	99
8:2FTS	8.676	527.0 -> 507.0	21830	9.87 µg/L	100
EtFOSAA	8.223	584.0 -> 419.0	11793	10.06 µg/L	97
FOSA	7.648	498.0 -> 78.0	37684	10.28 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	12469	9.94 µg/L	98
PFBA	3.365	213.0 -> 169.0	17646	9.46 µg/L	100
PFBS	5.016	299.0 -> 80.0	12001	9.74 µg/L	98
PFDA	8.558	513.0 -> 469.0	55431	10.03 µg/L	100
PFDoDA	11.267	613.0 -> 569.0	67125	9.87 µg/L	100
PFDS	9.599	599.0 -> 80.0	12475	9.81 µg/L	100
PFHpA	6.637	363.0 -> 319.0	58236	9.93 µg/L	99
PFHpS	7.232	449.0 -> 80.0	16964	10.00 µg/L	98
PFHxA	5.876	313.0 -> 269.0	32652	9.95 µg/L	100
PFHxS	6.618	399.0 -> 80.0	18836	10.24 µg/L	98
PFNA	7.881	463.0 -> 419.0	44685	9.66 µg/L	100
PFOA	7.279	413.0 -> 369.0	59258	9.96 µg/L	100
PFOS	7.815	499.0 -> 80.0	30990	9.92 µg/L	99
PFPeA	4.863	263.0 -> 219.0	25952	9.72 µg/L	100
PFTeDA	13.615	713.0 -> 669.0	38690	9.44 µg/L	98
PFTTrDA	12.501	663.0 -> 619.0	56336	9.73 µg/L	99
PFUnDA	9.855	563.0 -> 519.0	67160	10.01 µg/L	100
4:2FTS	5.796	327.0 -> 307.0	22096	9.90 µg/L	99
PFNS	8.441	549.0 -> 99.0	9422	9.77 µg/L	95
PFPeS	5.917	349.0 -> 99.0	4253	10.07 µg/L	98

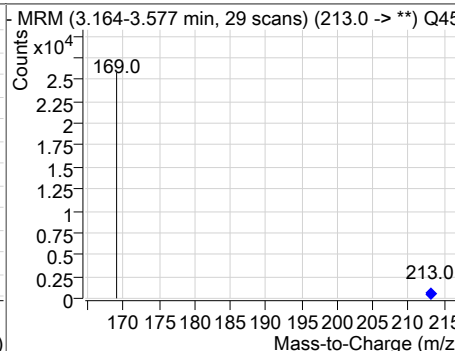
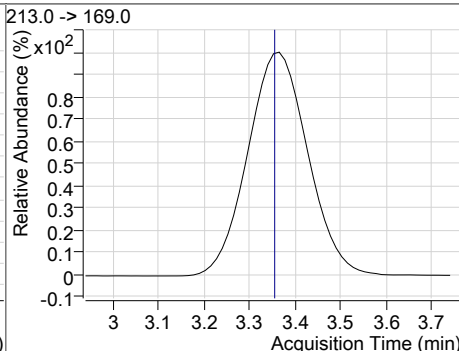
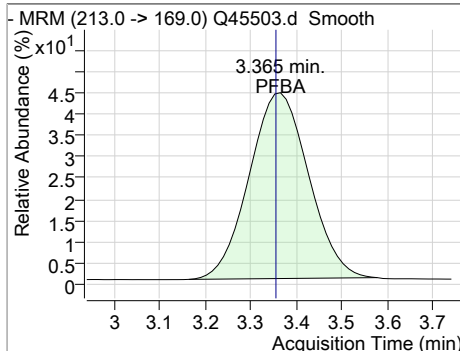
# = Qualifier out of range, m = manually integrated, + = Area summed

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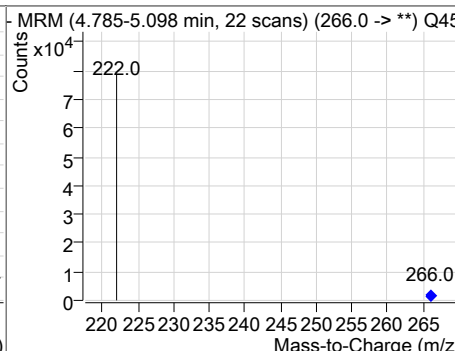
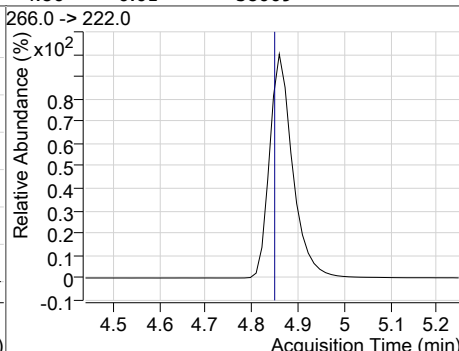
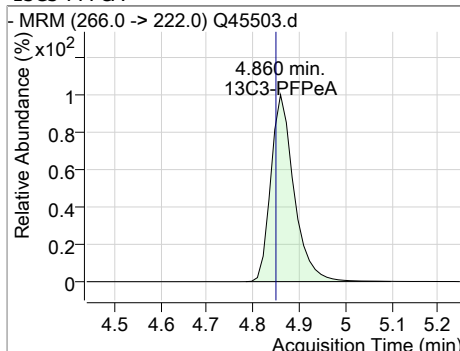
### Perfluorinated Compounds by LC/MS/MS



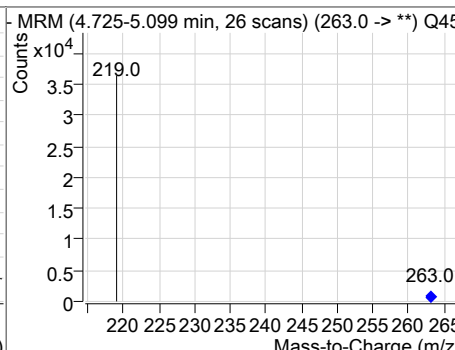
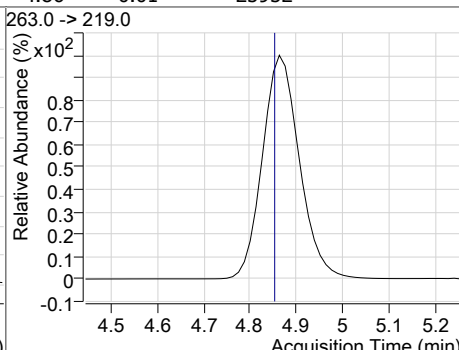
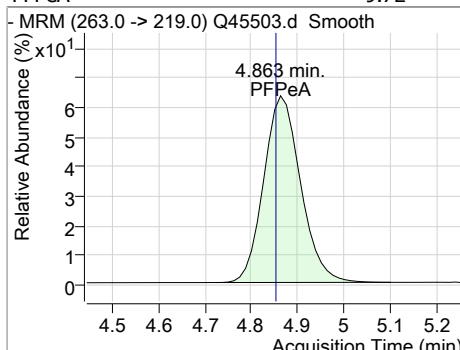
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.46	3.36	0.01	17646				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.86	0.01	58009				

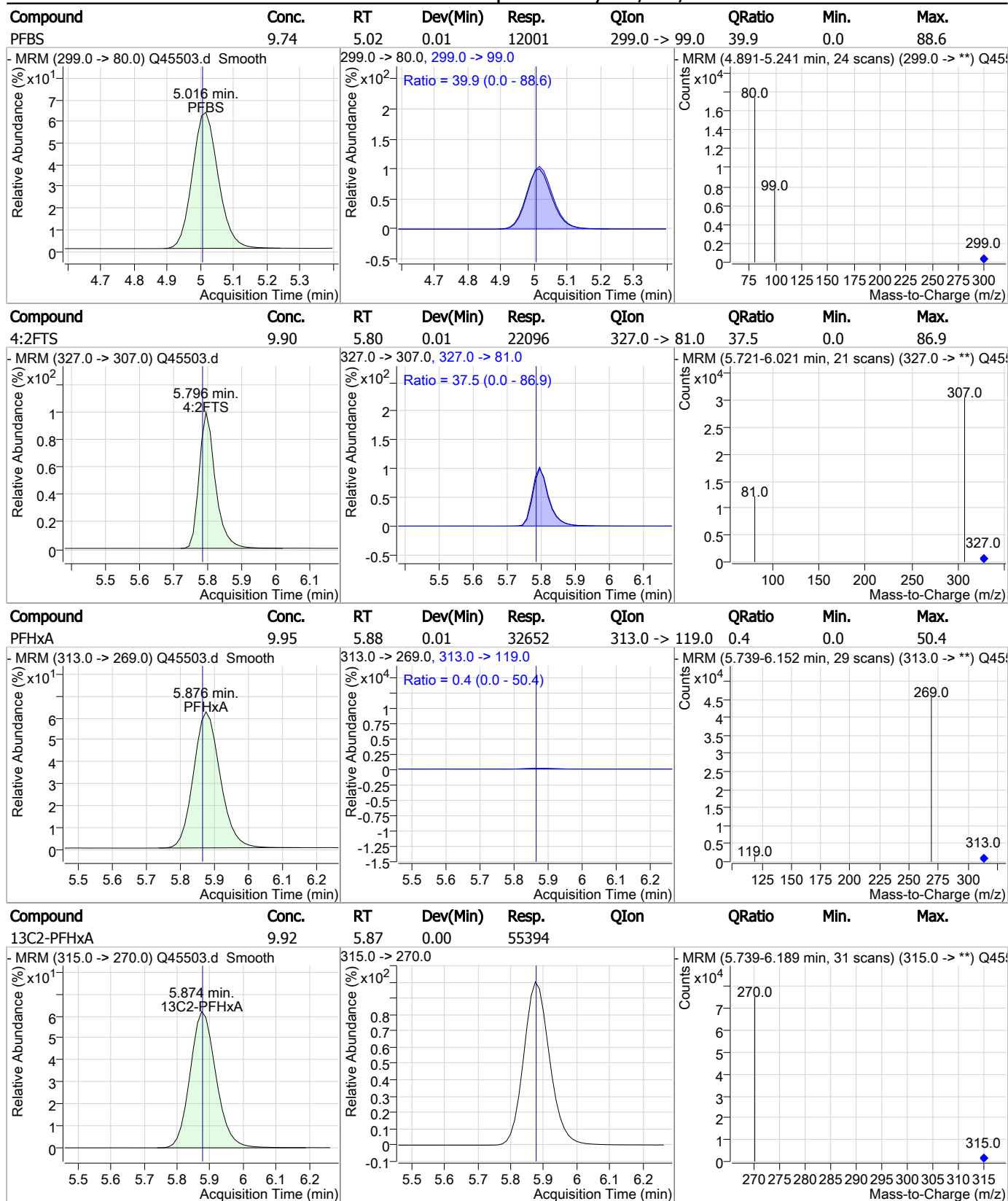


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.72	4.86	0.01	25952				



10.5.18 10

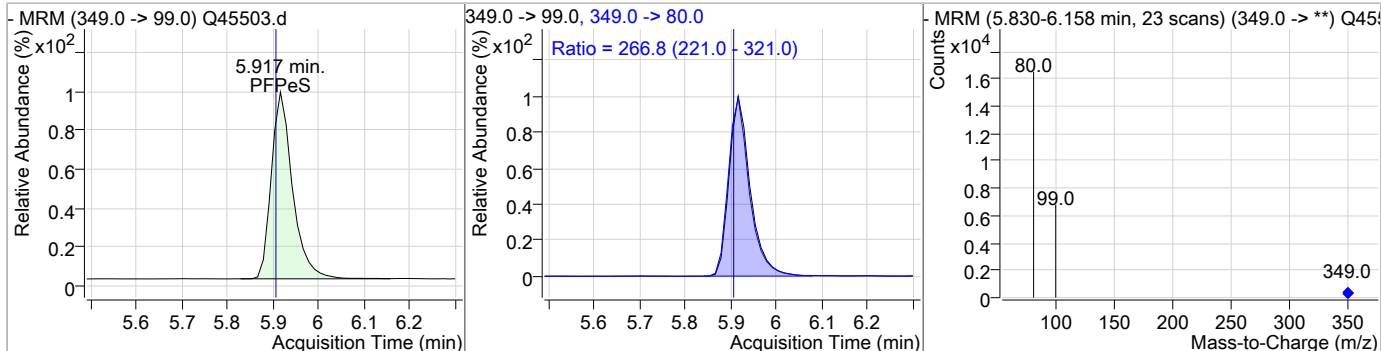
### Perfluorinated Compounds by LC/MS/MS



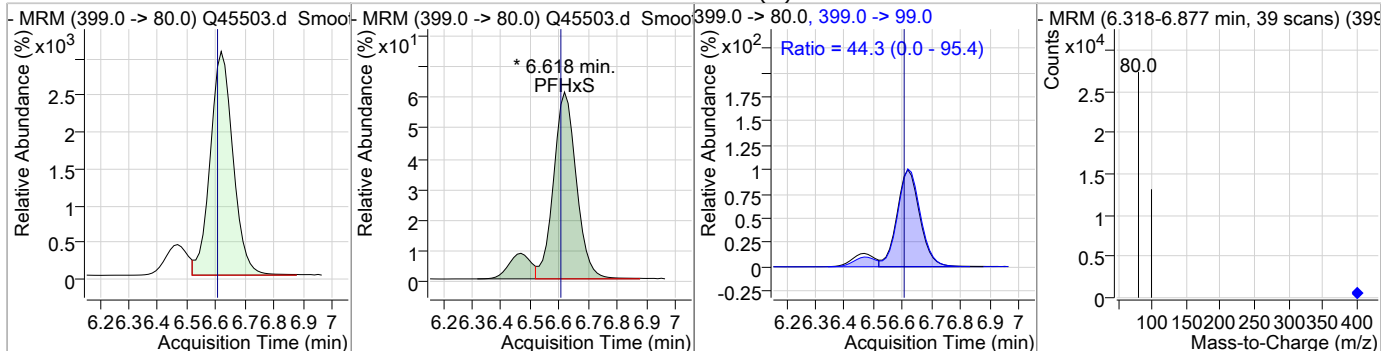
10.5.18 10

### Perfluorinated Compounds by LC/MS/MS

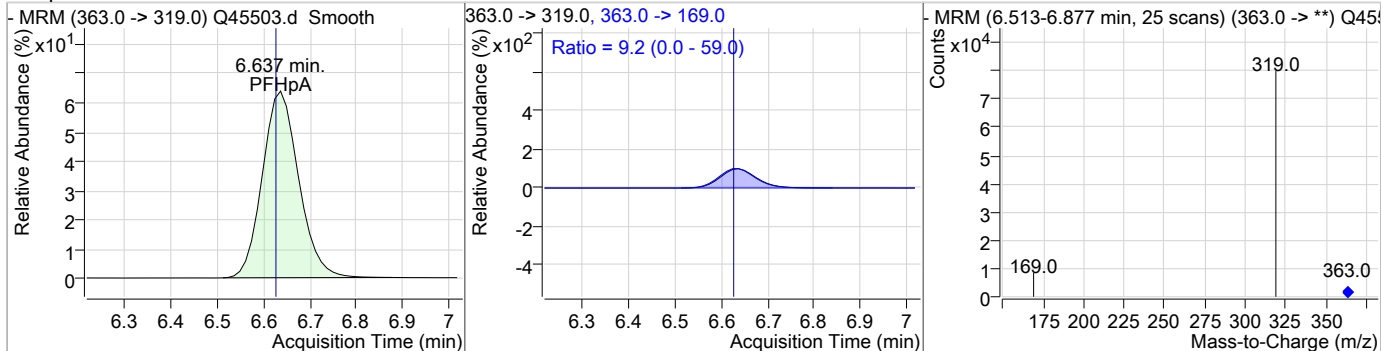
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.07	5.92	0.01	4253	349.0 -> 80.0	266.8	221.0	321.0



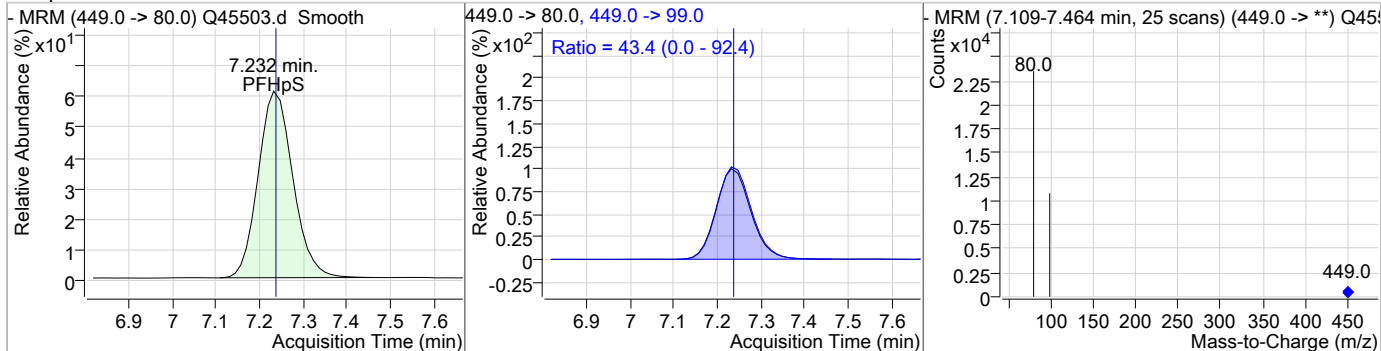
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.24	6.62	0.01	18836 (m)	399.0 -> 99.0	44.3	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.93	6.64	0.01	58236	363.0 -> 169.0	9.2	0.0	59.0

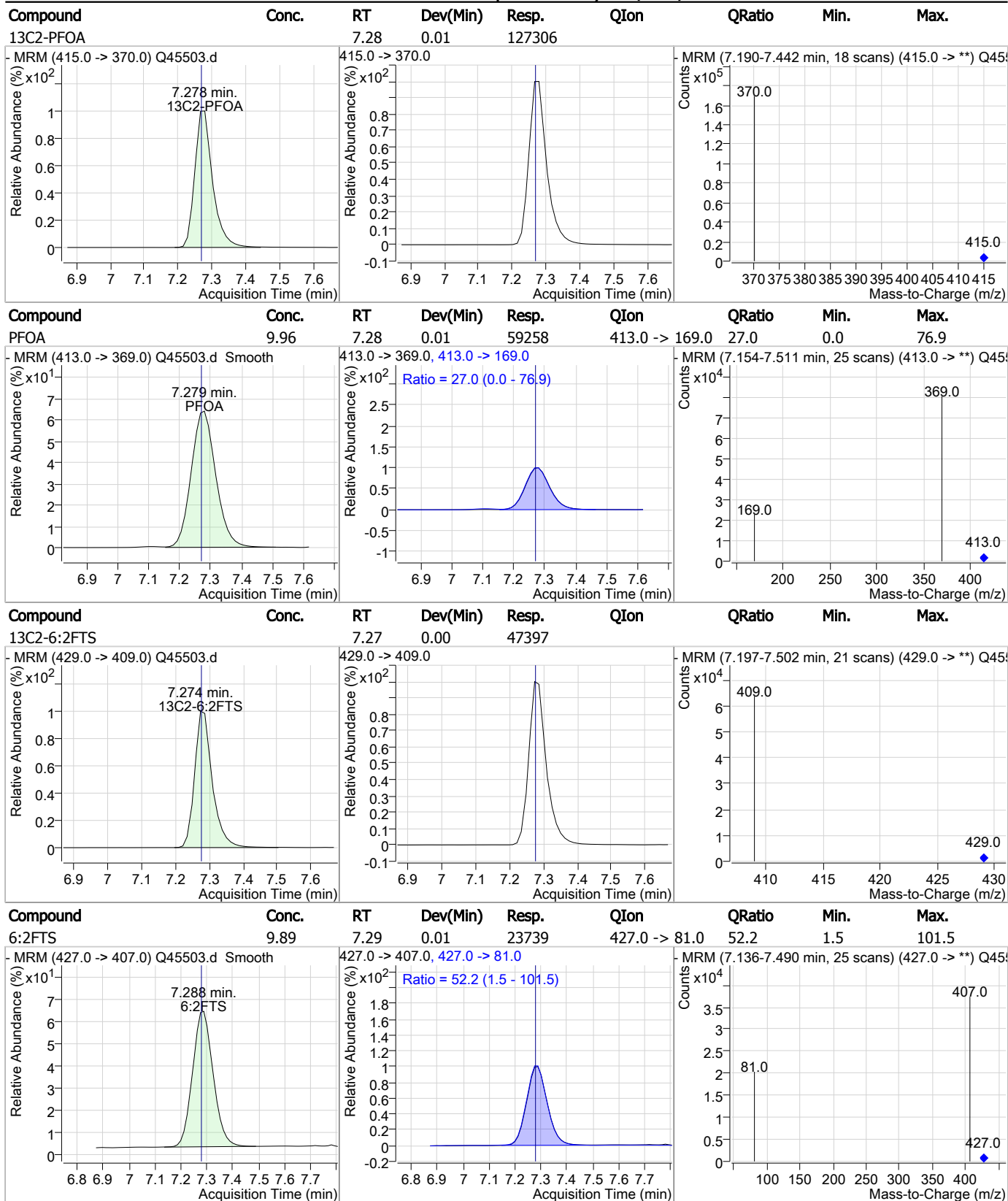


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.00	7.23	0.00	16964	449.0 -> 99.0	43.4	0.0	92.4



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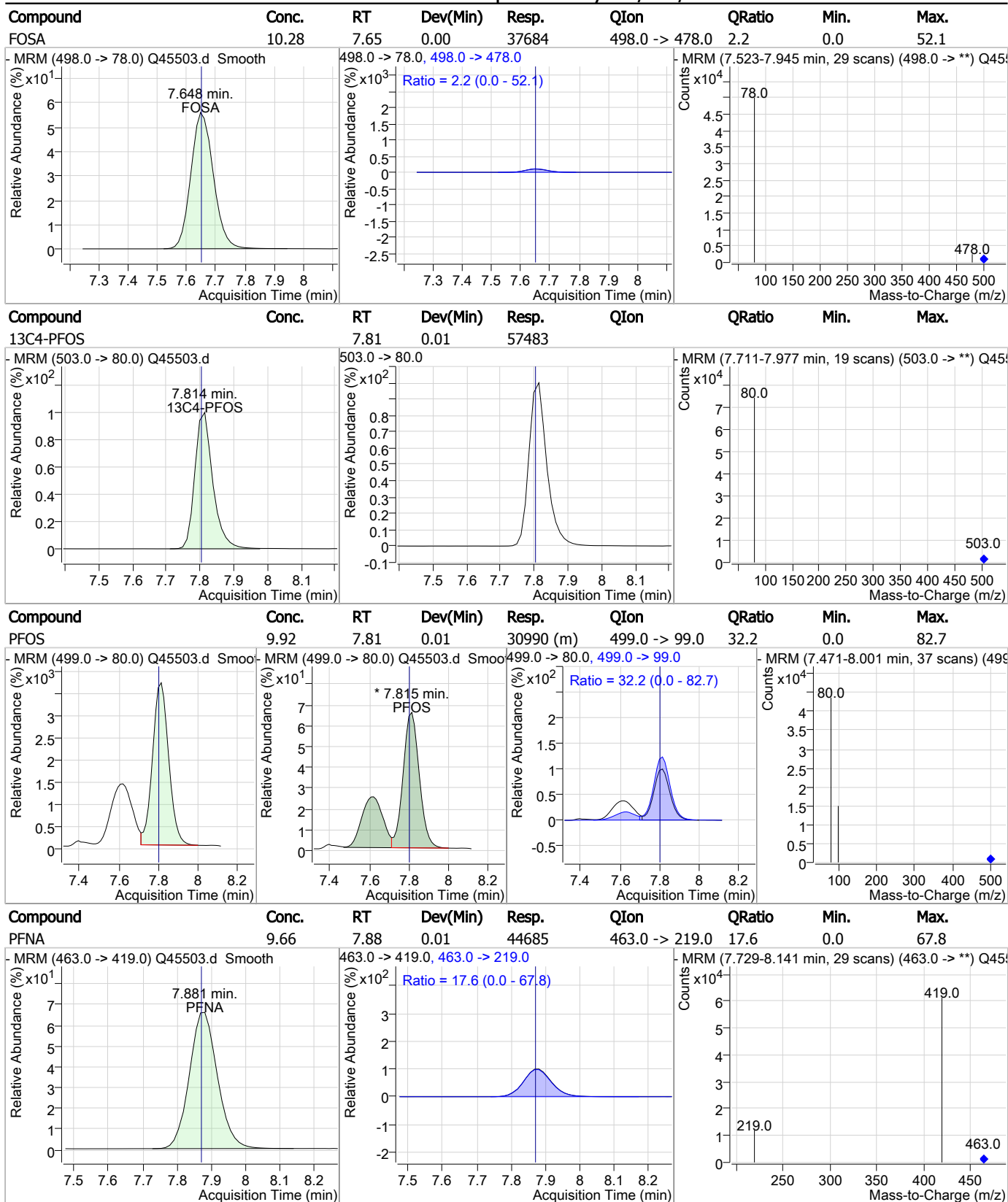
### Perfluorinated Compounds by LC/MS/MS



10.5.18 10



### Perfluorinated Compounds by LC/MS/MS



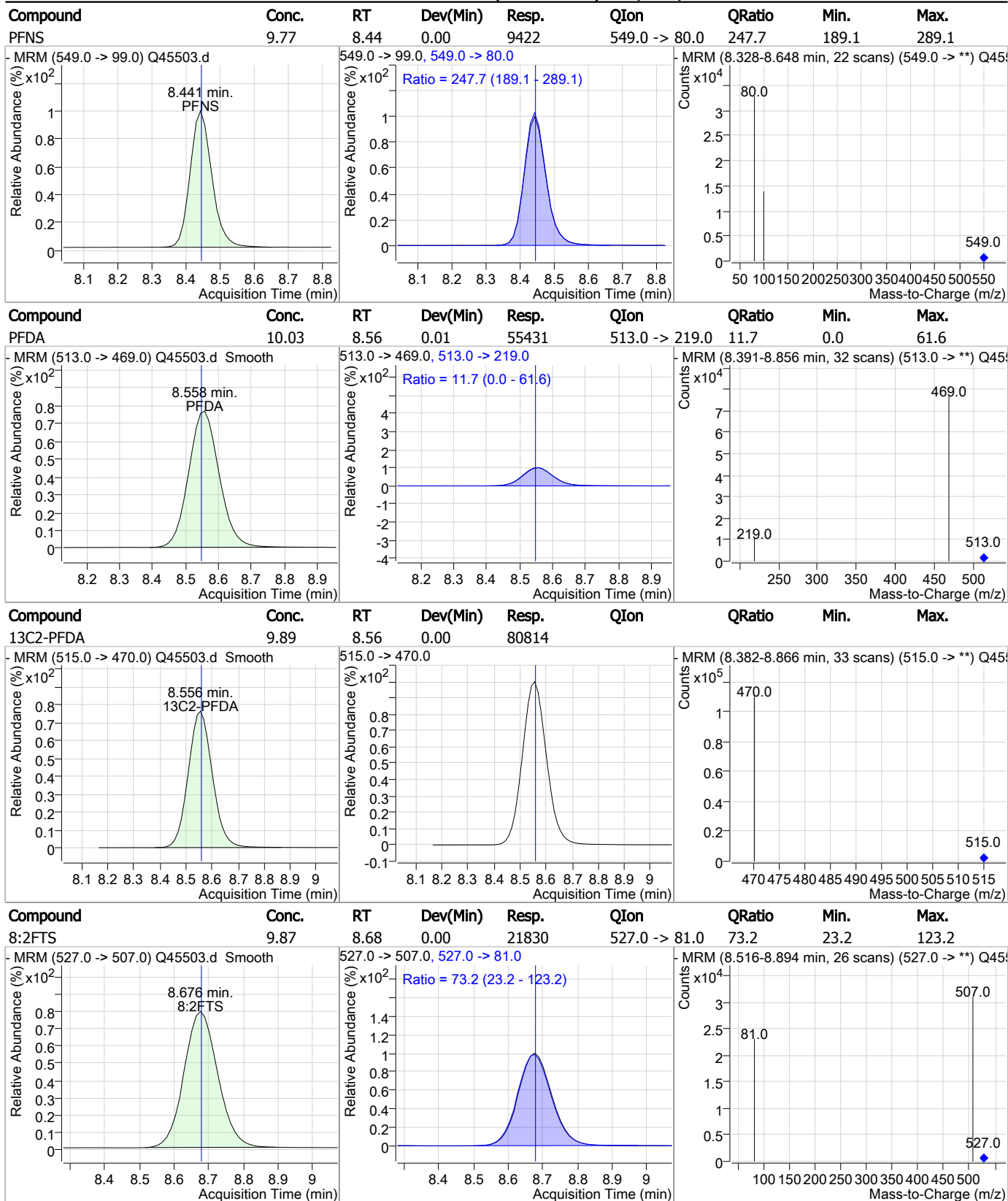
10.5.18 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.10	0.01	22142				
- MRM (573.0 -> 419.0) Q45503.d			573.0 -> 419.0			- MRM (7.999-8.262 min, 18 scans) (573.0 -> **) Q45		
MeFOSAA	9.94	8.10	0.01	12469	570.0 -> 512.0	30.1	0.0	81.1
- MRM (570.0 -> 419.0) Q45503.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.977-8.311 min, 23 scans) (570.0 -> **) Q45		
d5-EtFOSAA	10.09	8.21	0.00	16191				
- MRM (589.0 -> 419.0) Q45503.d Smooth			589.0 -> 419.0			- MRM (8.084-8.455 min, 26 scans) (589.0 -> **) Q45		
EtFOSAA	10.06	8.22	0.01	11793	584.0 -> 483.0	47.5	0.0	95.2
- MRM (584.0 -> 419.0) Q45503.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			- MRM (8.098-8.456 min, 25 scans) (584.0 -> **) Q45		

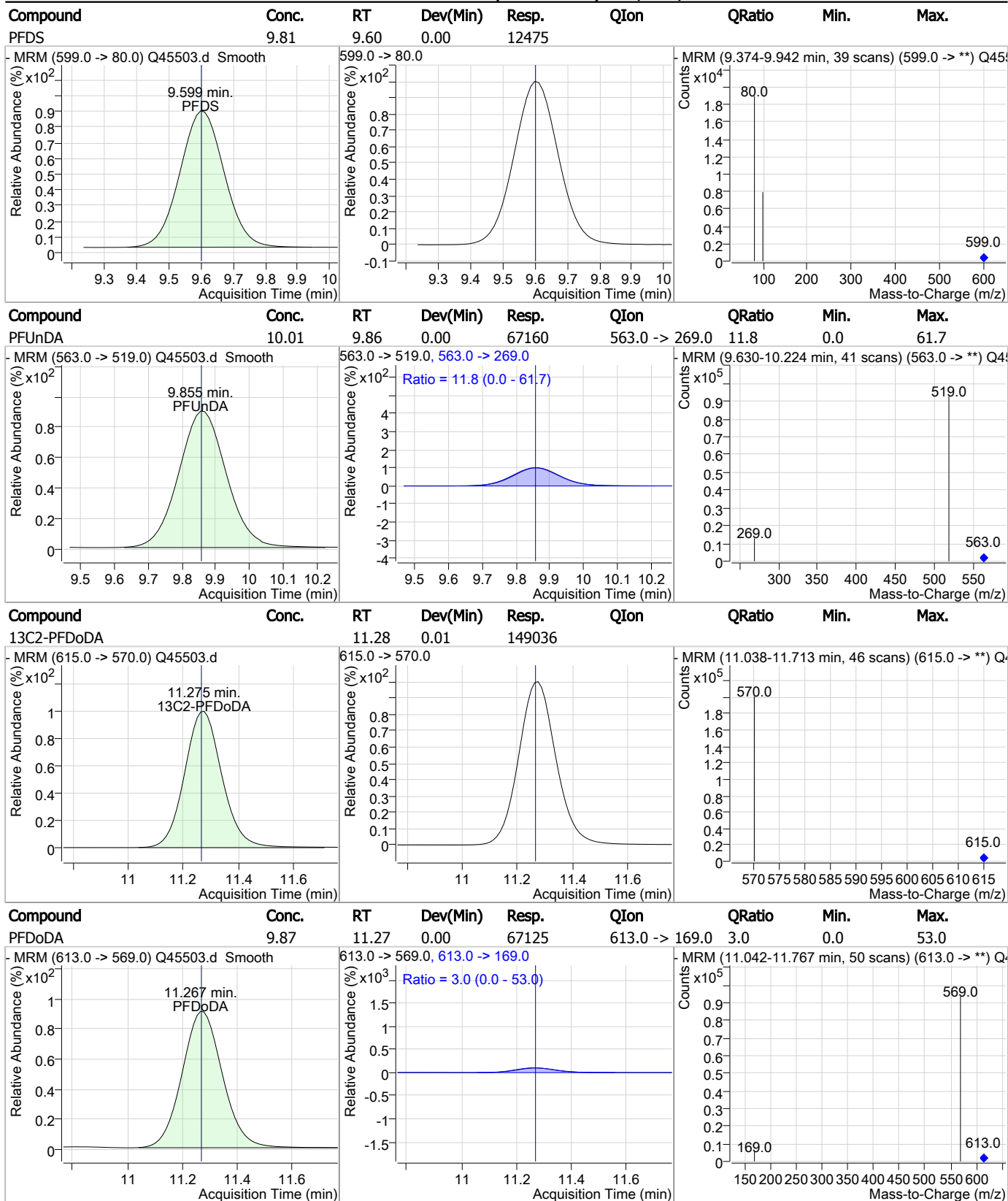
10.5.18 10

### Perfluorinated Compounds by LC/MS/MS



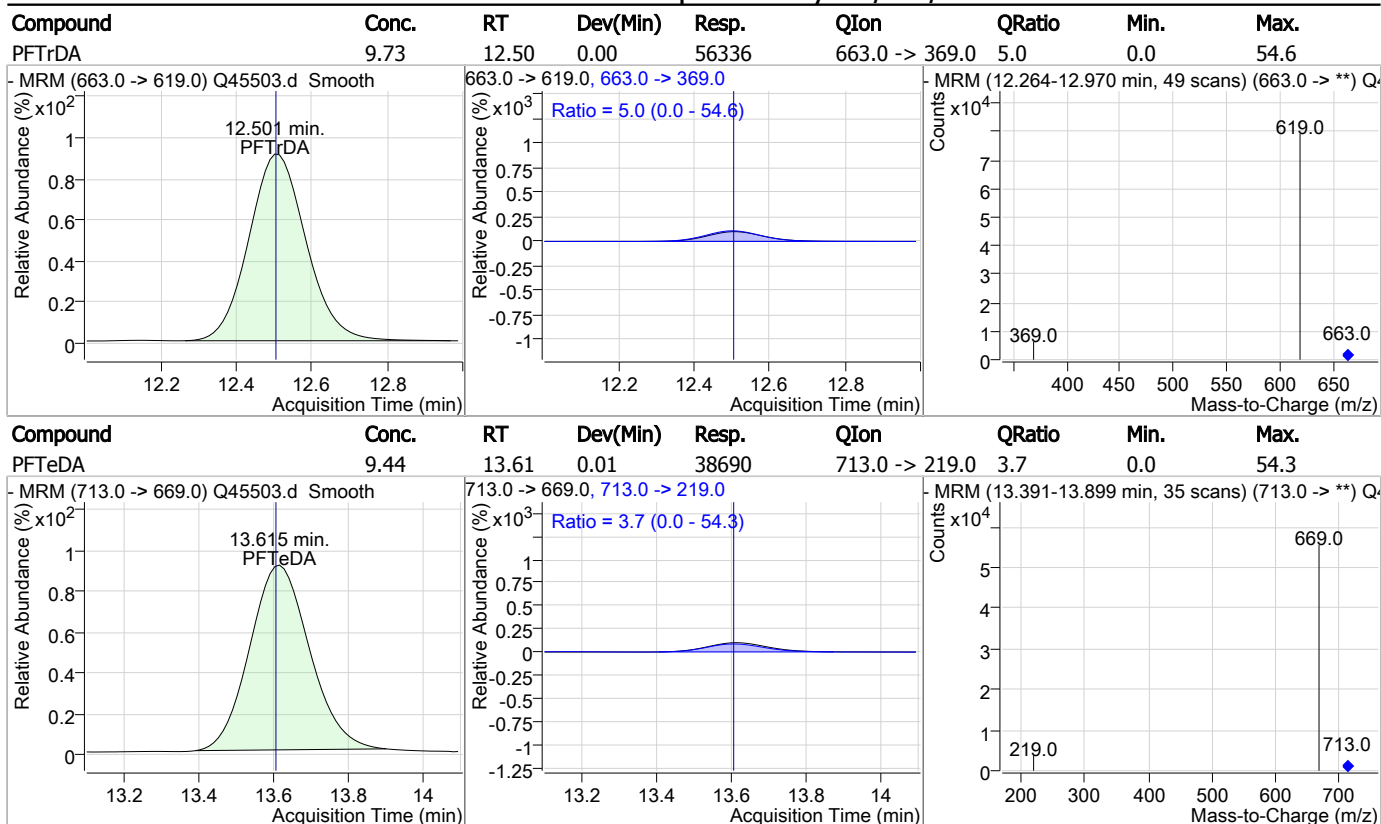
10.5.18 10

### Perfluorinated Compounds by LC/MS/MS



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### Perfluorinated Compounds by LC/MS/MS



10.5.18 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45503.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 18:11      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

10.5.18.1

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Perfluorinated Compounds by LC/MS/MS

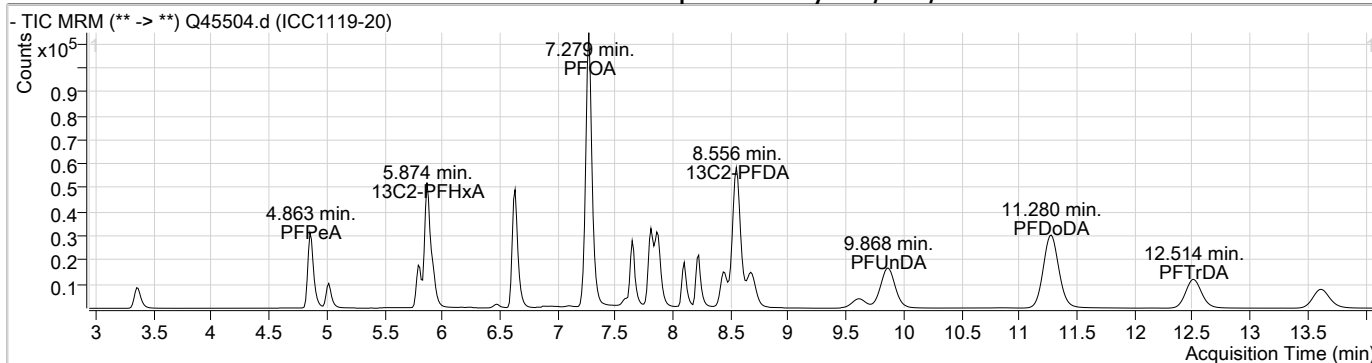
Data File : Q45504.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 6:31:10 PM  
 Sample Name : ICC1119-20  
 Vial : Vial 6  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.287	429.0 -> 409.0	47936	20.00 µg/L	0.013
13C2-PFDoDA	11.275	615.0 -> 570.0	150426	20.00 µg/L	0.013
13C2-PFOA	7.278	415.0 -> 370.0	128394	20.00 µg/L	0.012
13C4-PFOS	7.814	503.0 -> 80.0	58269	20.00 µg/L	0.012
d3-MeFOSAA	8.099	573.0 -> 419.0	22617	20.00 µg/L	0.012
13C3-PFPeA	4.860	266.0 -> 222.0	58736	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.556	515.0 -> 470.0	160776	19.51 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.5%	
13C2-PFHxA	5.874	315.0 -> 270.0	108094	19.19 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 95.9%	
d5-EtFOSAA	8.222	589.0 -> 419.0	31787	19.40 µg/L	0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.0%	
<b>Target Compounds</b>					
6:2FTS	7.288	427.0 -> 407.0	46782	19.66 µg/L	99
8:2FTS	8.676	527.0 -> 507.0	43557	19.71 µg/L	99
EtFOSAA	8.223	584.0 -> 419.0	23689	19.77 µg/L	99
FOSA	7.648	498.0 -> 78.0	70422	19.14 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	24621	19.21 µg/L	99
PFBA	3.365	213.0 -> 169.0	35266	18.66 µg/L	100
PFBS	5.016	299.0 -> 80.0	23705	18.99 µg/L	98
PFDA	8.558	513.0 -> 469.0	108549	19.48 µg/L	100
PFDoDA	11.280	613.0 -> 569.0	131492	19.15 µg/L	100
PFDS	9.611	599.0 -> 80.0	24134	18.73 µg/L	100
PFHpA	6.637	363.0 -> 319.0	112781	19.06 µg/L	99
PFHpS	7.232	449.0 -> 80.0	33265	19.35 µg/L	99
PFHxA	5.876	313.0 -> 269.0	63293	19.13 µg/L	100
PFHxS	6.618	399.0 -> 80.0	35904	19.25 µg/L	m 99
PFNA	7.881	463.0 -> 419.0	86655	18.57 µg/L	100
PFOA	7.279	413.0 -> 369.0	116267	19.37 µg/L	99
PFOS	7.815	499.0 -> 80.0	59875	18.90 µg/L	m 98
PFPeA	4.863	263.0 -> 219.0	51243	18.95 µg/L	100
PFTeDA	13.615	713.0 -> 669.0	75944	18.37 µg/L	98
PFTTrDA	12.514	663.0 -> 619.0	110611	18.92 µg/L	99
PFUnDA	9.868	563.0 -> 519.0	132165	19.52 µg/L	100
4:2FTS	5.796	327.0 -> 307.0	43464	19.51 µg/L	100
PFNS	8.441	549.0 -> 99.0	18679	19.11 µg/L	97
PFPeS	5.917	349.0 -> 99.0	8256	19.29 µg/L	98

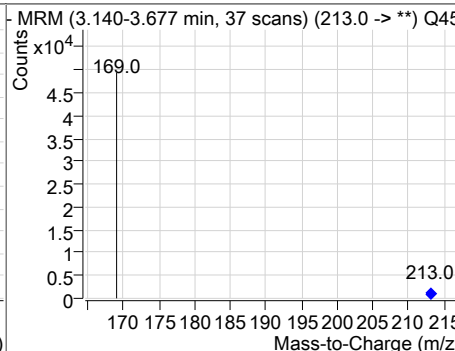
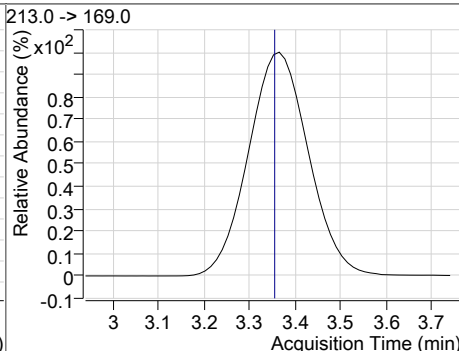
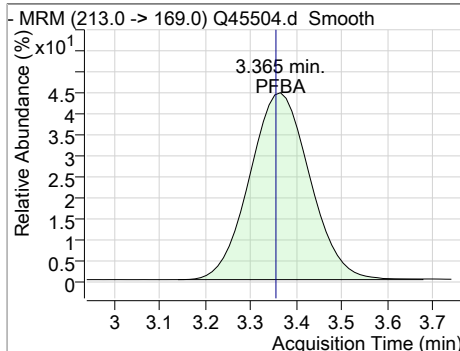
# = Qualifier out of range, m = manually integrated, + = Area summed

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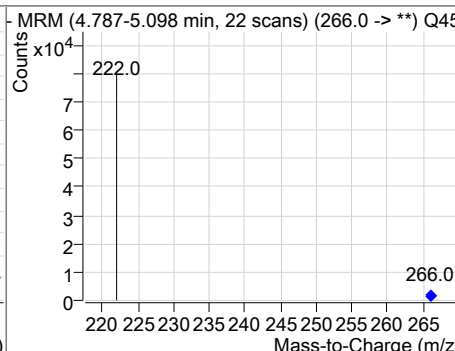
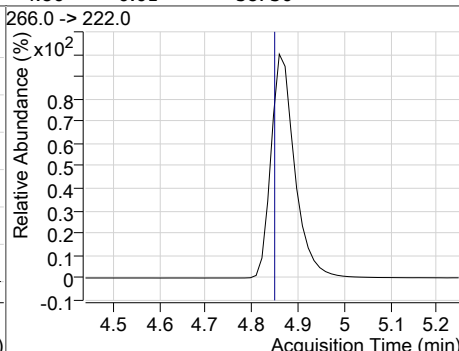
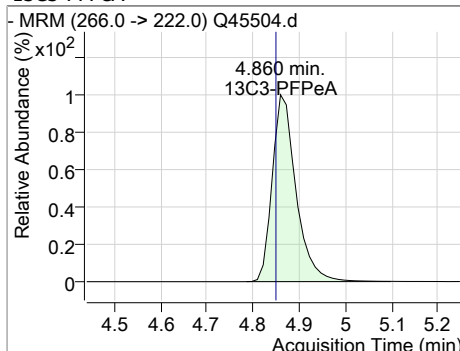
### Perfluorinated Compounds by LC/MS/MS



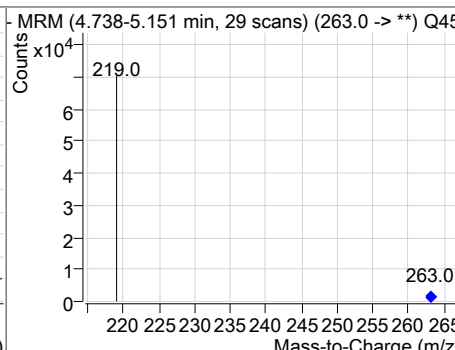
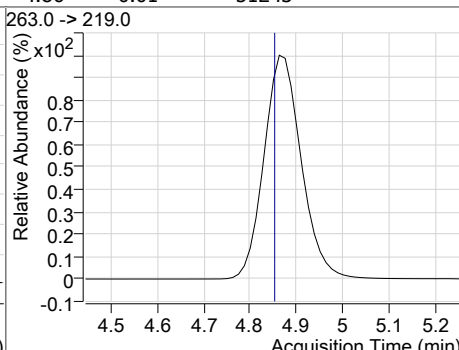
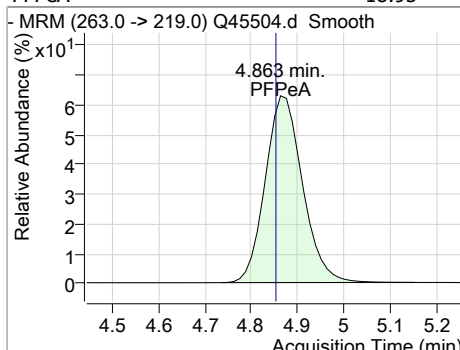
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.66	3.36	0.01	35266				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.86	0.01	58736				



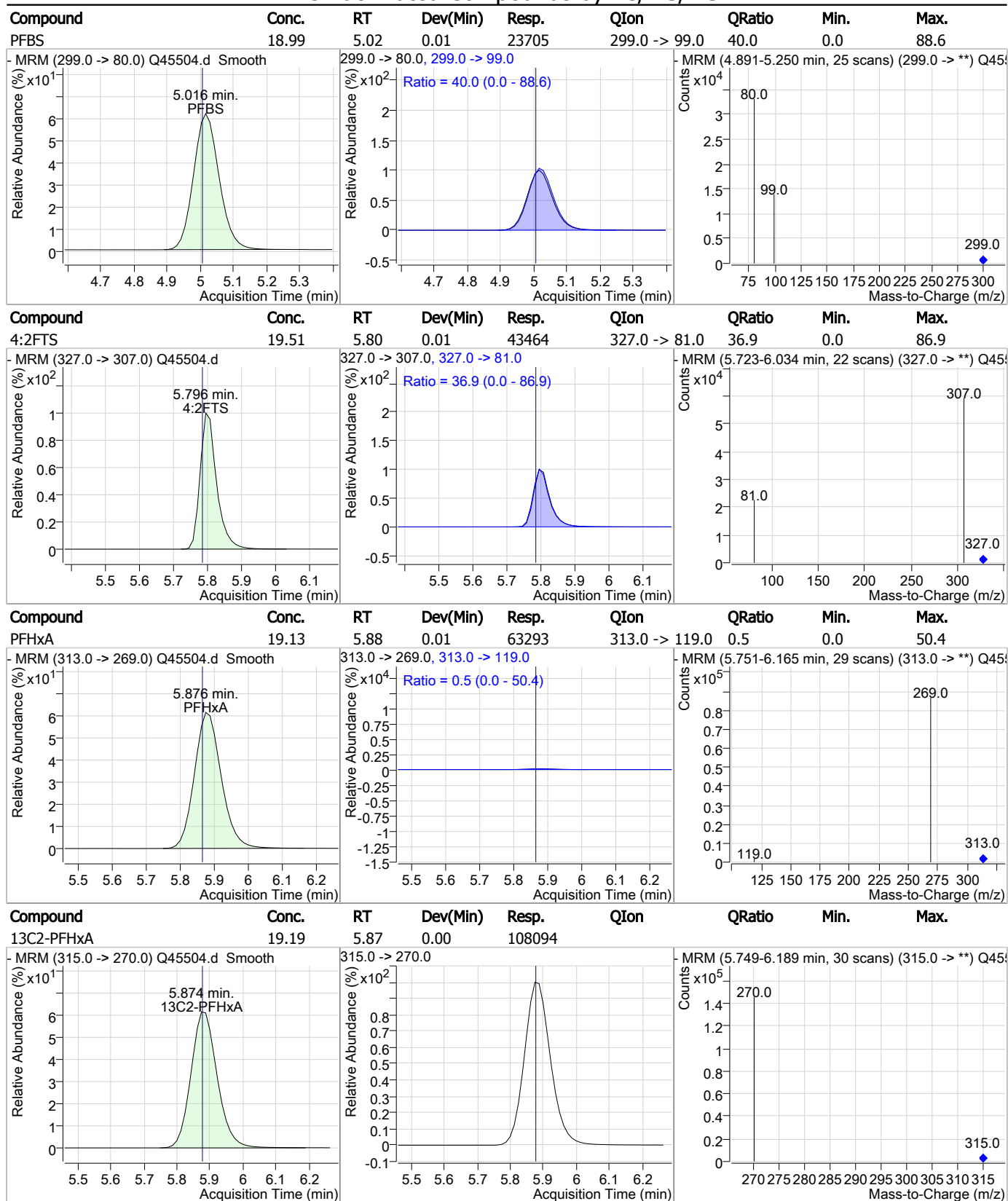
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.95	4.86	0.01	51243				



10.5.19 10

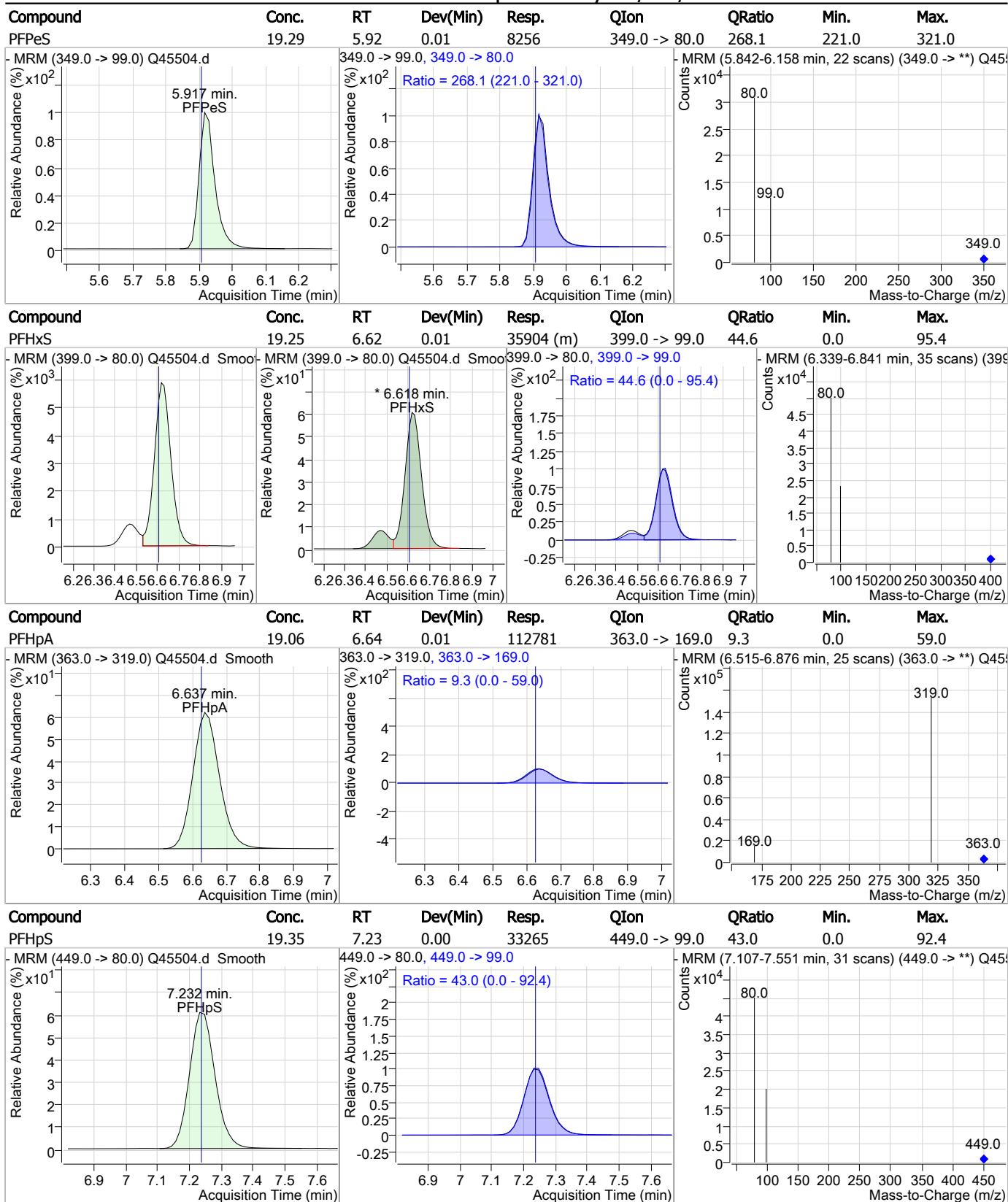


### Perfluorinated Compounds by LC/MS/MS



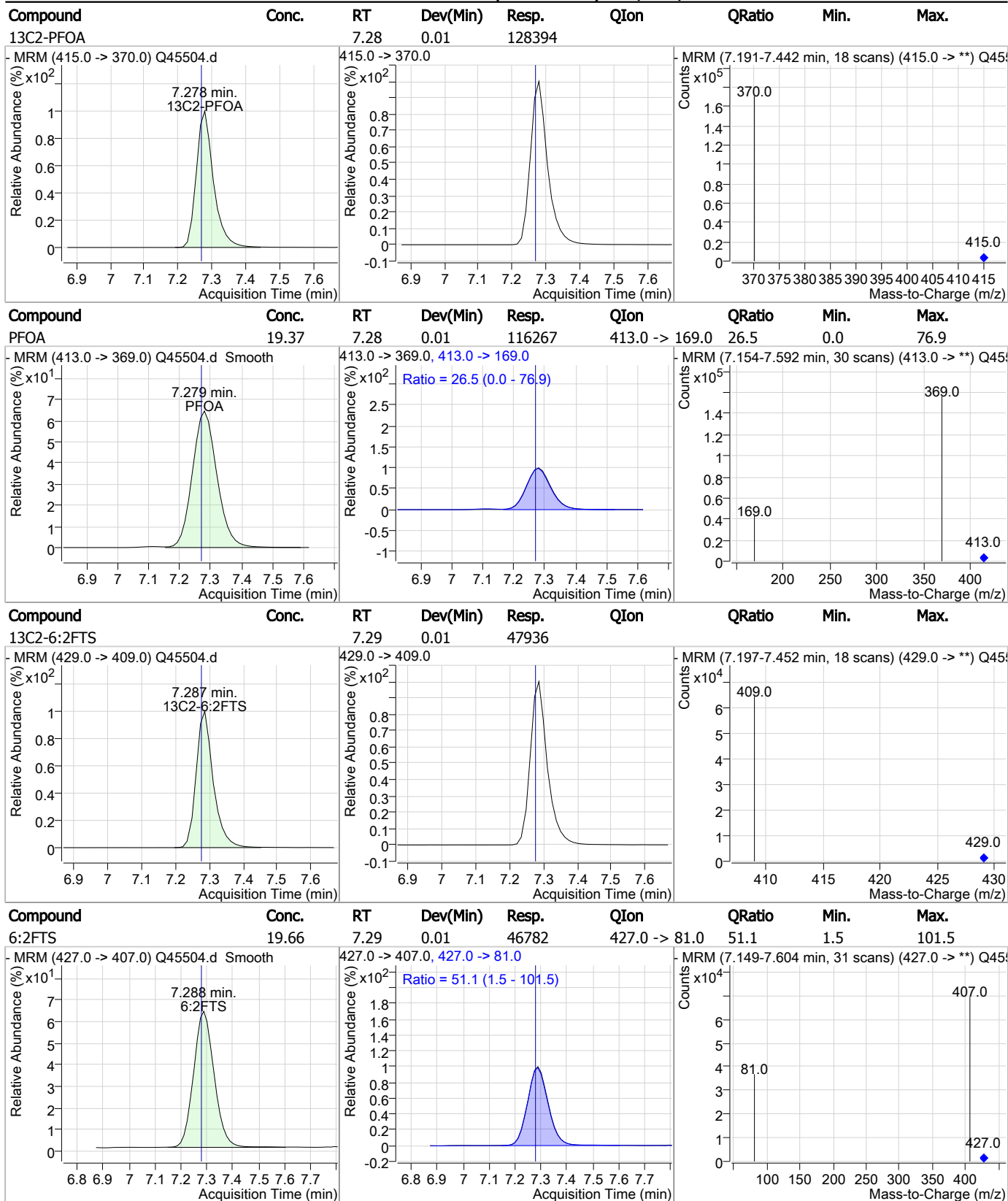
10.5.19 10

### Perfluorinated Compounds by LC/MS/MS



10.5.19 10

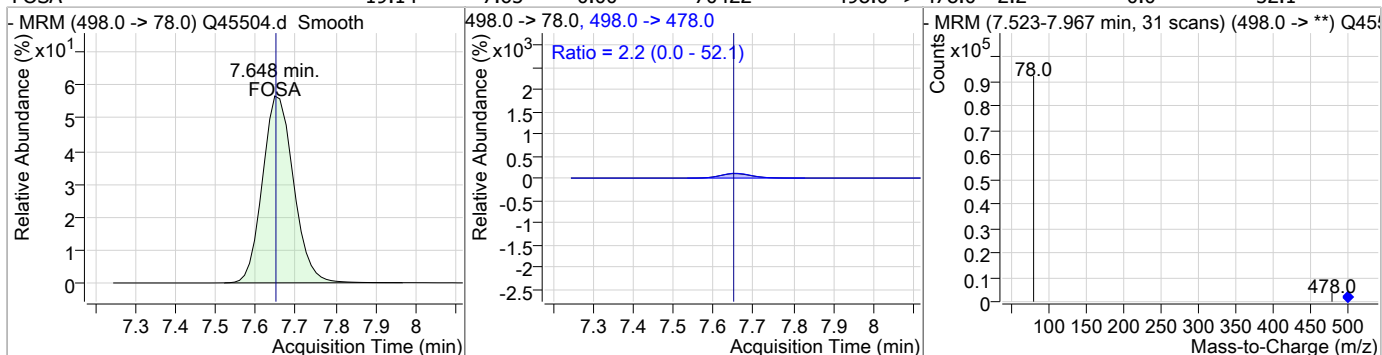
### Perfluorinated Compounds by LC/MS/MS



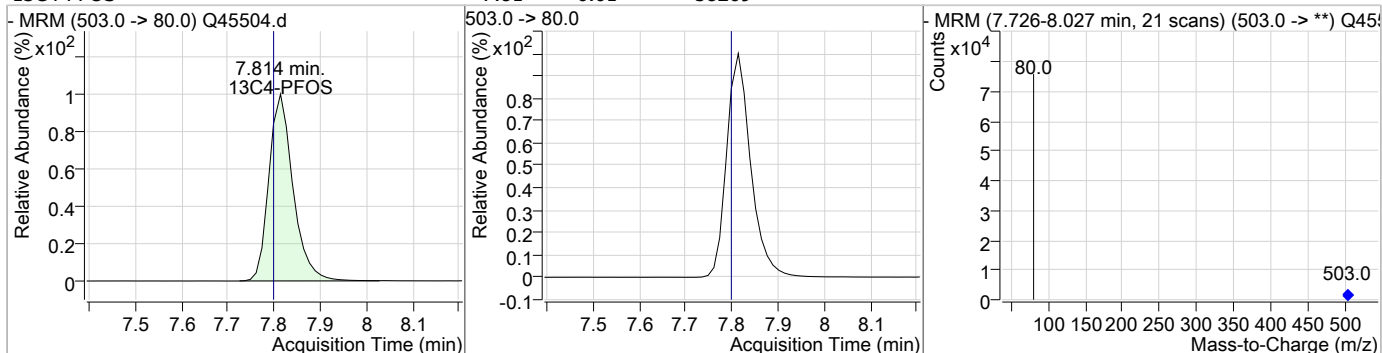
10.5.19 10

### Perfluorinated Compounds by LC/MS/MS

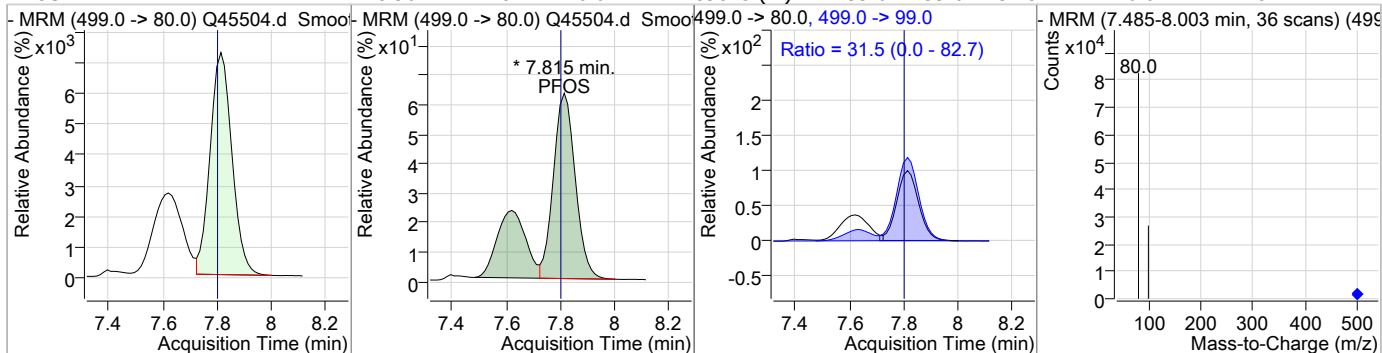
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.14	7.65	0.00	70422	498.0 -> 478.0	2.2	0.0	52.1



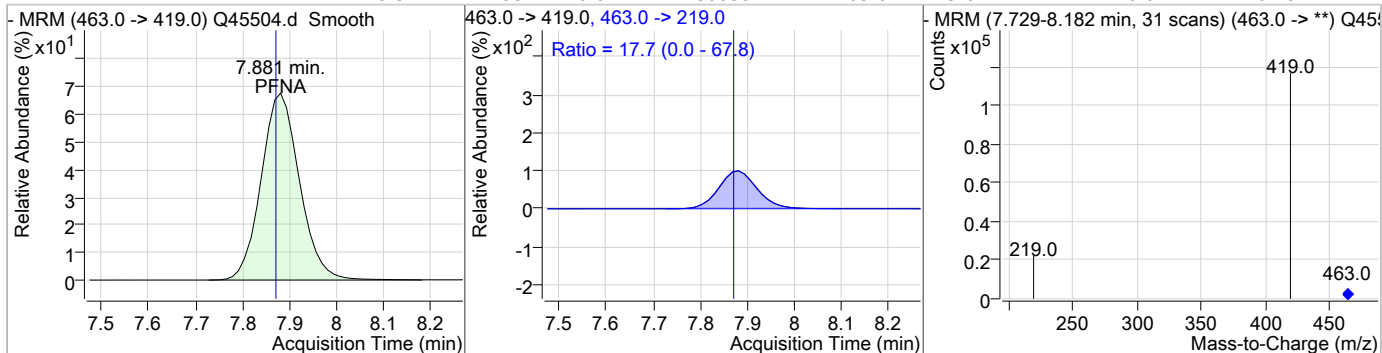
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.81	0.01	58269				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.90	7.81	0.01	59875 (m)	499.0 -> 99.0	31.5	0.0	82.7

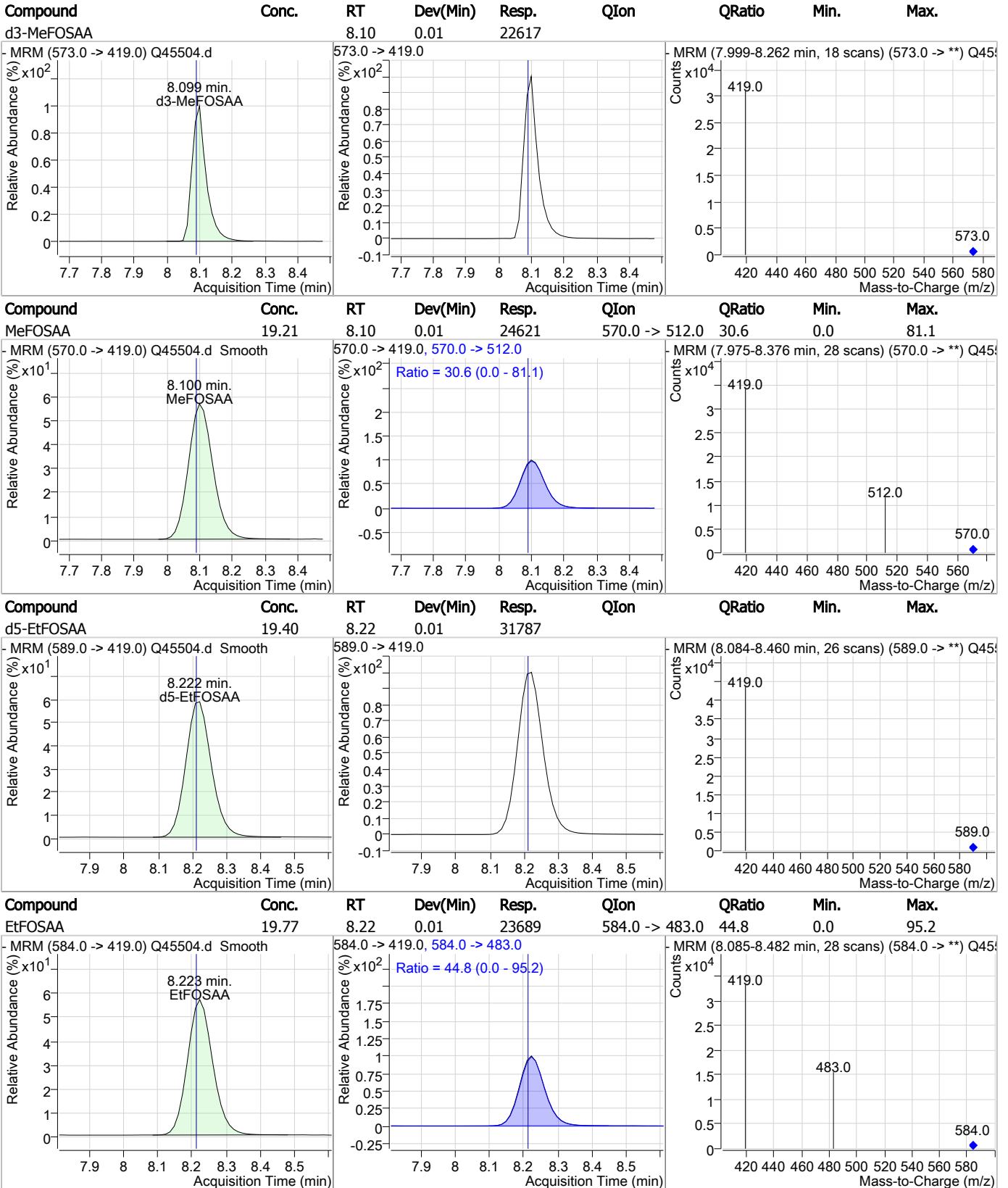


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.57	7.88	0.01	86655	463.0 -> 219.0	17.7	0.0	67.8



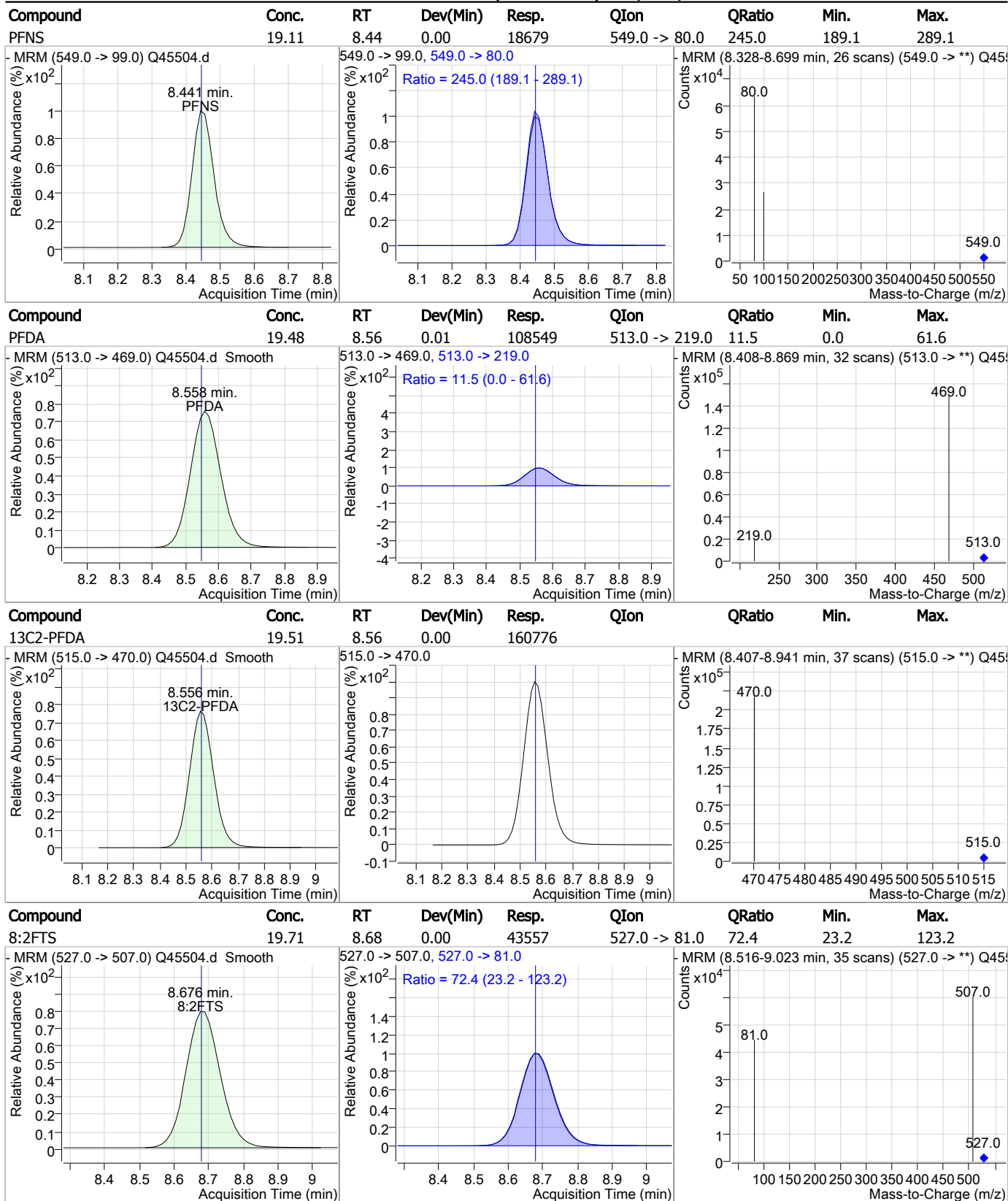
10.5.19 10

### Perfluorinated Compounds by LC/MS/MS



10.5.19 10

### Perfluorinated Compounds by LC/MS/MS



10.5.19 10

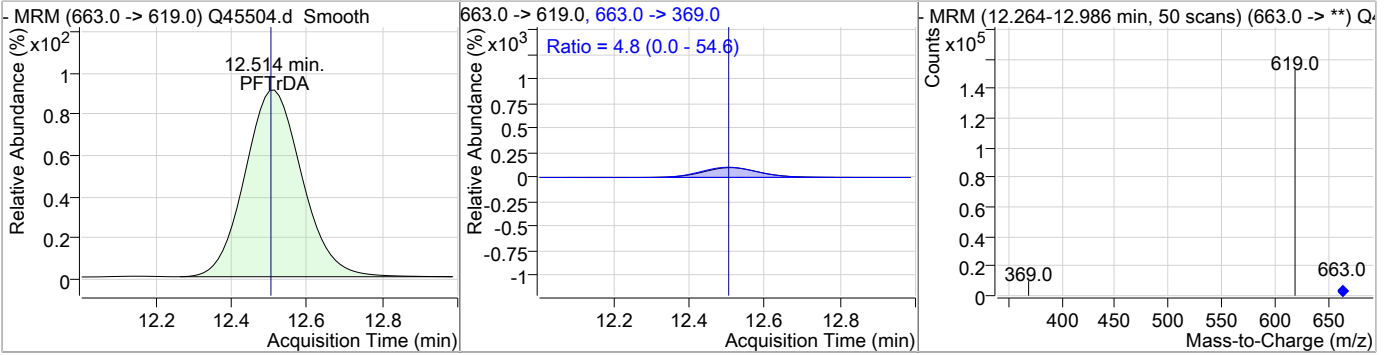
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.73	9.61	0.01	24134				
- MRM (599.0 -> 80.0) Q45504.d Smooth			599.0 -> 80.0		- MRM (9.386-9.924 min, 37 scans) (599.0 -> **) Q45			
PFUnDA	19.52	9.87	0.01	132165	563.0 -> 269.0	11.8	0.0	61.7
- MRM (563.0 -> 519.0) Q45504.d Smooth			563.0 -> 519.0, 563.0 -> 269.0		- MRM (9.618-10.262 min, 44 scans) (563.0 -> **) Q4			
			Ratio = 11.8 (0.0 - 61.7)					
13C2-PFDoDA		11.28	0.01	150426				
- MRM (615.0 -> 570.0) Q45504.d			615.0 -> 570.0		- MRM (11.050-11.738 min, 47 scans) (615.0 -> **) Q			
PFDoDA	19.15	11.28	0.01	131492	613.0 -> 169.0	3.0	0.0	53.0
- MRM (613.0 -> 569.0) Q45504.d Smooth			613.0 -> 569.0, 613.0 -> 169.0		- MRM (11.029-11.717 min, 47 scans) (613.0 -> **) Q4			
			Ratio = 3.0 (0.0 - 53.0)					

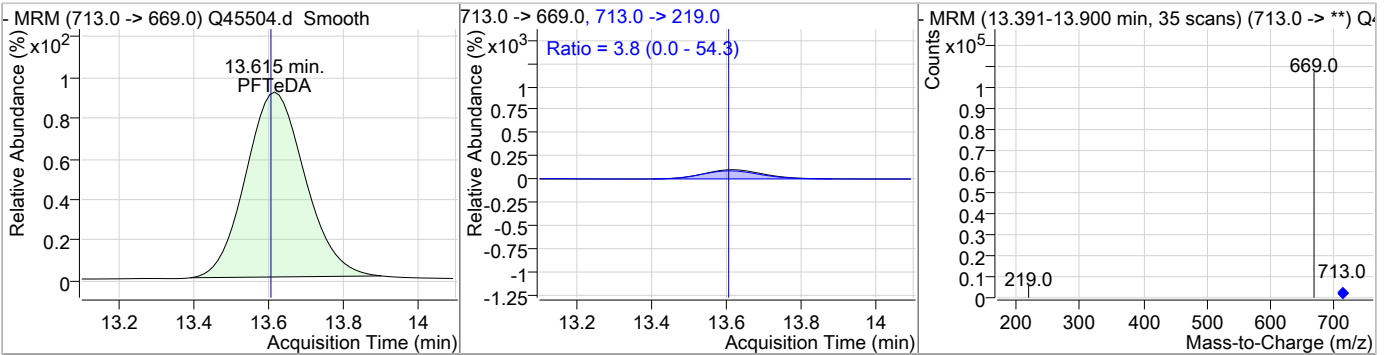
10.5.19 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	18.92	12.51	0.01	110611	663.0 -> 369.0	4.8	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.37	13.61	0.01	75944	713.0 -> 219.0	3.8	0.0	54.3



10.5.19 10



# Manual Integration Approval Summary

**Sample Number:** SQ1119-ICC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45504.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 18:31      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

10.5.19.1  
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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

**Norman Farmer**  
**04/27/18 12:12**

### Perfluorinated Compounds by LC/MS/MS

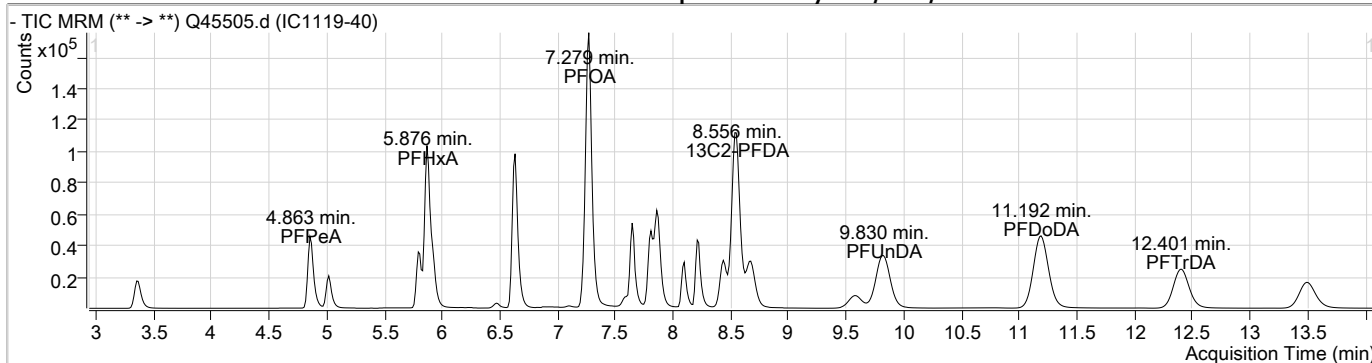
Data File : Q45505.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 6:51:03 PM  
 Sample Name : IC1119-40  
 Vial : Vial 7  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.287	429.0 -> 409.0	48578	20.00 µg/L	0.013
13C2-PFDoDA	11.188	615.0 -> 570.0	145487	20.00 µg/L	-0.075
13C2-PFOA	7.278	415.0 -> 370.0	122571	20.00 µg/L	0.012
13C4-PFOS	7.814	503.0 -> 80.0	56442	20.00 µg/L	0.012
d3-MeFOSAA	8.099	573.0 -> 419.0	22273	20.00 µg/L	0.012
13C3-PFPeA	4.860	266.0 -> 222.0	56530	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.556	515.0 -> 470.0	318930	40.54 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 202.7%	
13C2-PFHxA	5.874	315.0 -> 270.0	215692	40.10 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 200.5%	
d5-EtFOSAA	8.209	589.0 -> 419.0	64951	40.26 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 201.3%	
<b>Target Compounds</b>					
6:2FTS	7.288	427.0 -> 407.0	93756	40.62 µg/L	99
8:2FTS	8.676	527.0 -> 507.0	88629	40.68 µg/L	99
EtFOSAA	8.223	584.0 -> 419.0	47173	39.98 µg/L	99
FOSA	7.648	498.0 -> 78.0	138508	39.93 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	49550	39.26 µg/L	98
PFBA	3.365	213.0 -> 169.0	72527	39.88 µg/L	100
PFBS	5.016	299.0 -> 80.0	48248	39.90 µg/L	98
PFDA	8.558	513.0 -> 469.0	217367	40.86 µg/L	100
PFDoDA	11.192	613.0 -> 569.0	270513	40.73 µg/L	100
PFDS	9.574	599.0 -> 80.0	46906	37.57 µg/L	100
PFHpA	6.637	363.0 -> 319.0	228862	40.52 µg/L	99
PFHpS	7.232	449.0 -> 80.0	66215	39.77 µg/L	99
PFHxA	5.876	313.0 -> 269.0	126505	40.05 µg/L	100
PFHxS	6.618	399.0 -> 80.0	71981	39.84 µg/L	m 100
PFNA	7.881	463.0 -> 419.0	178602	40.10 µg/L	100
PFOA	7.279	413.0 -> 369.0	230810	40.29 µg/L	99
PFOS	7.815	499.0 -> 80.0	121293	39.52 µg/L	m 100
PFPeA	4.863	263.0 -> 219.0	104176	40.04 µg/L	100
PFTeDA	13.490	713.0 -> 669.0	161928	40.49 µg/L	98
PFTTrDA	12.401	663.0 -> 619.0	227830	40.29 µg/L	99
PFUnDA	9.830	563.0 -> 519.0	251915	38.46 µg/L	98
4:2FTS	5.796	327.0 -> 307.0	88586	40.43 µg/L	99
PFNS	8.441	549.0 -> 99.0	37750	39.87 µg/L	96
PFPeS	5.917	349.0 -> 99.0	16324	39.37 µg/L	99

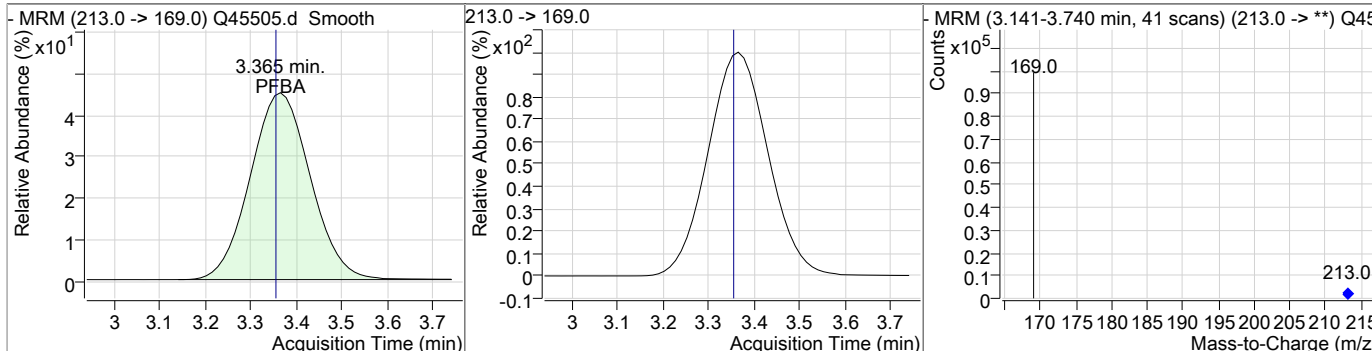
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.20  
**10**

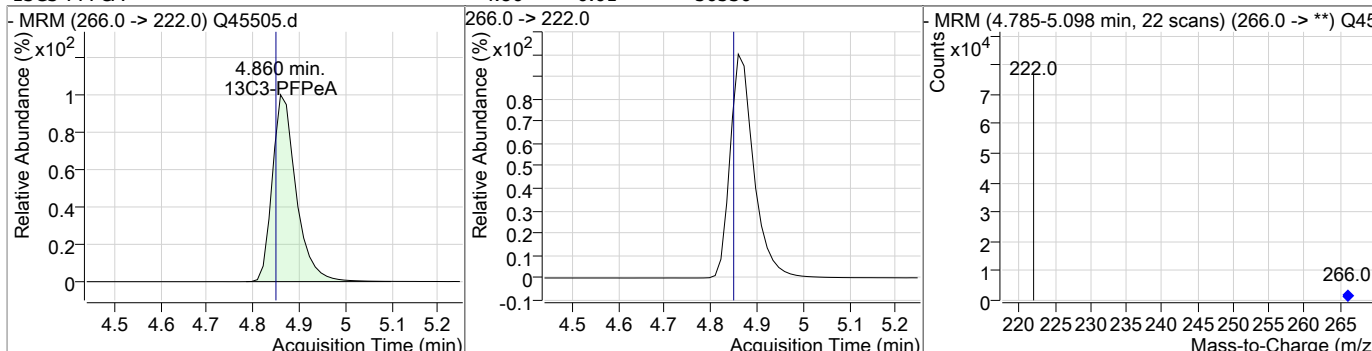
### Perfluorinated Compounds by LC/MS/MS



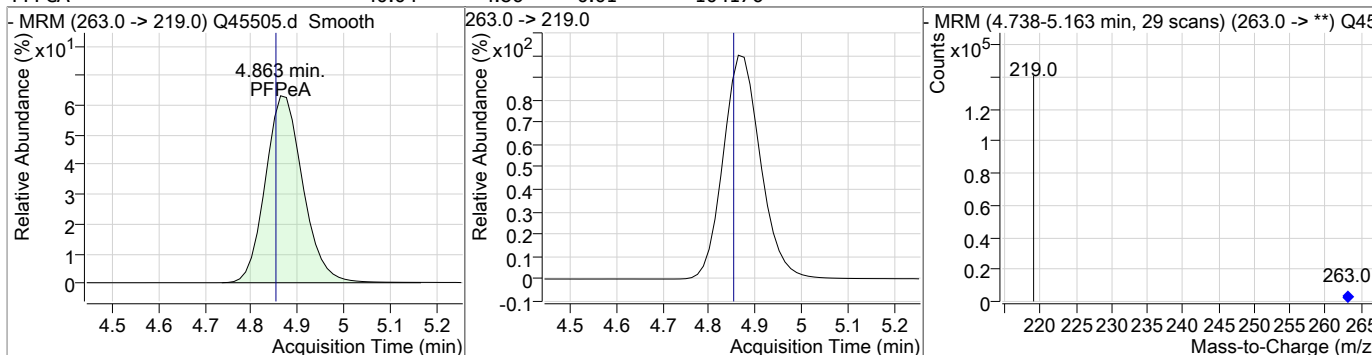
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	39.88	3.36	0.01	72527				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.86	0.01	56530				

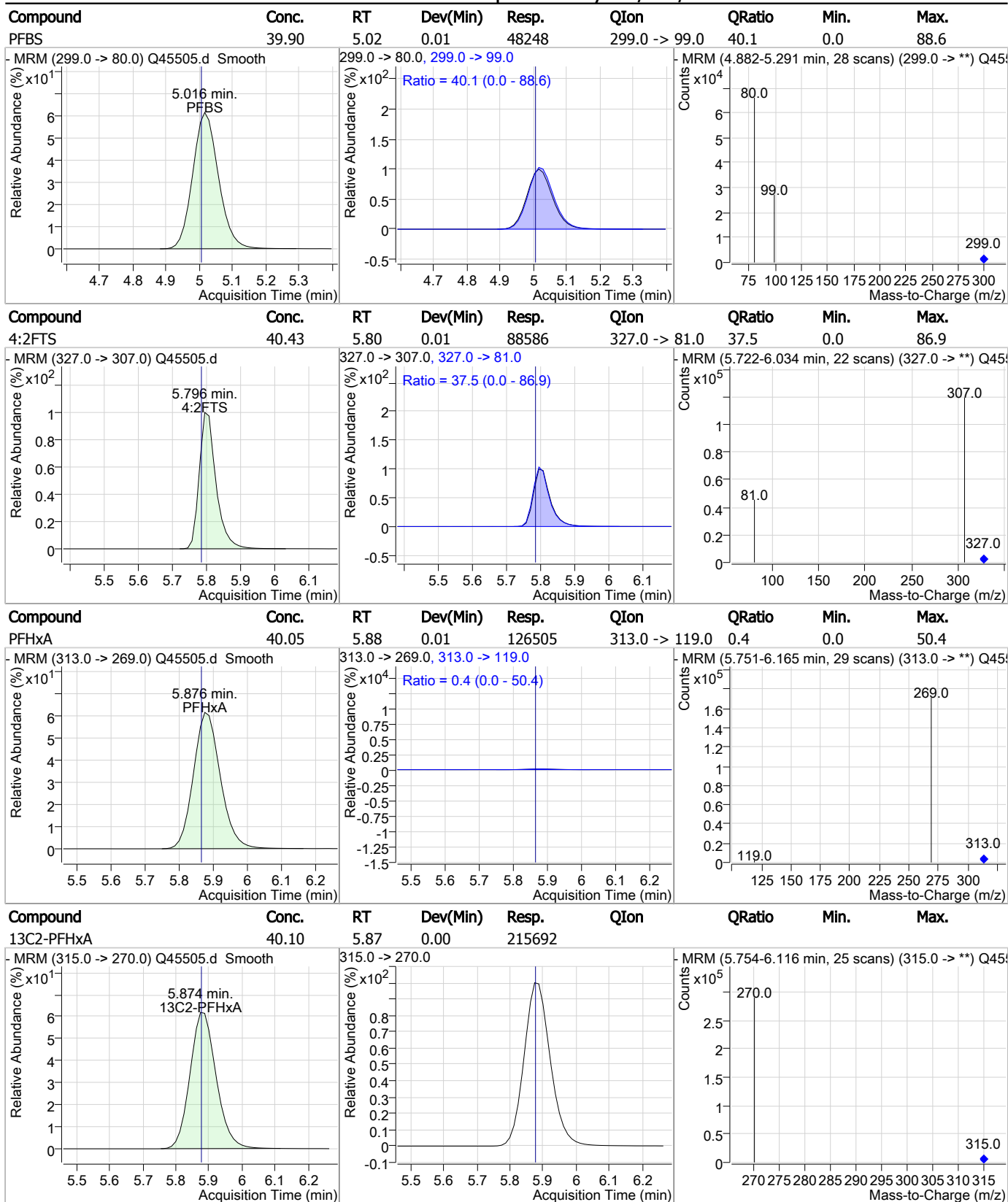


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	40.04	4.86	0.01	104176				



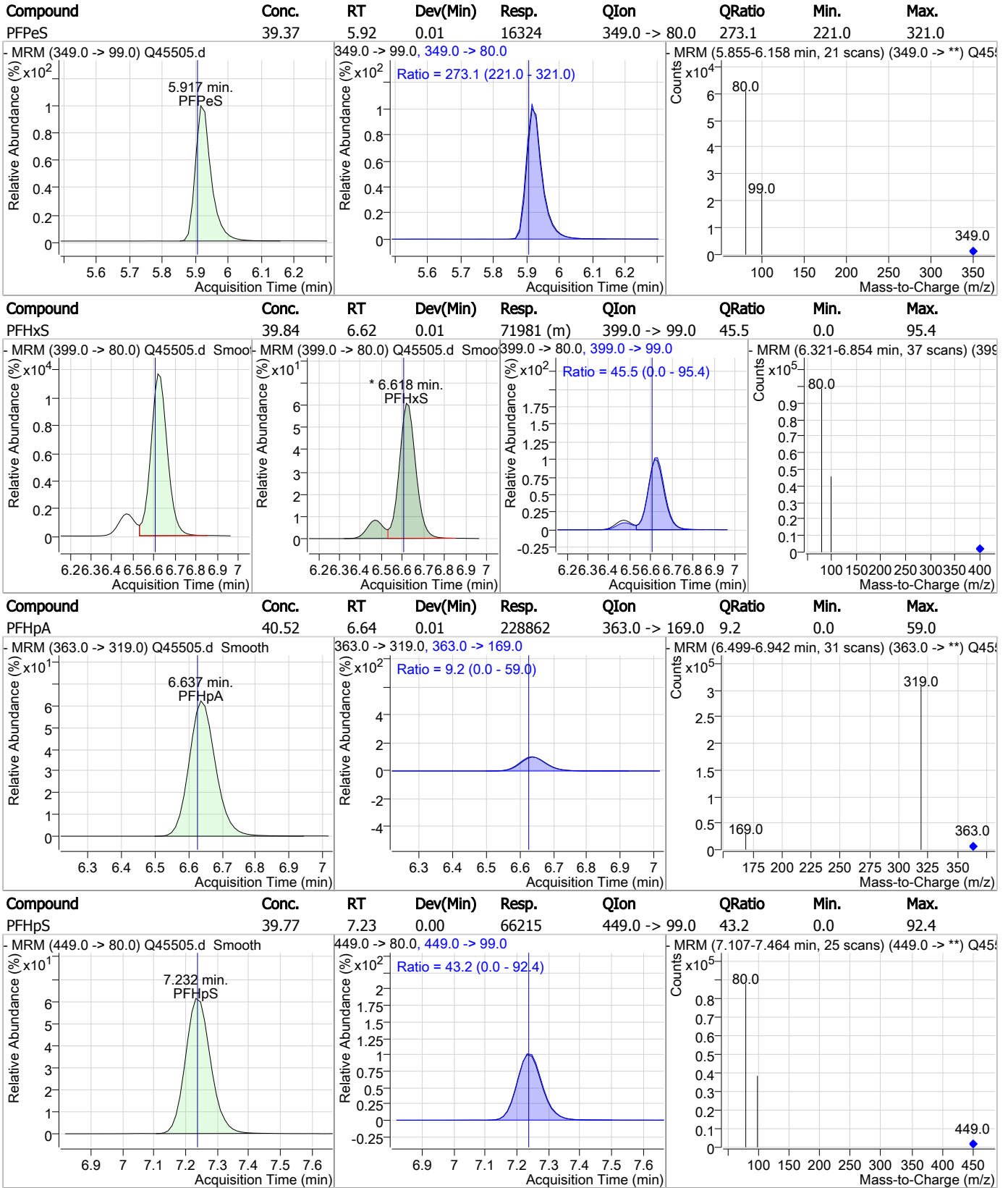
10.5.20 10

### Perfluorinated Compounds by LC/MS/MS



10.5.20 10

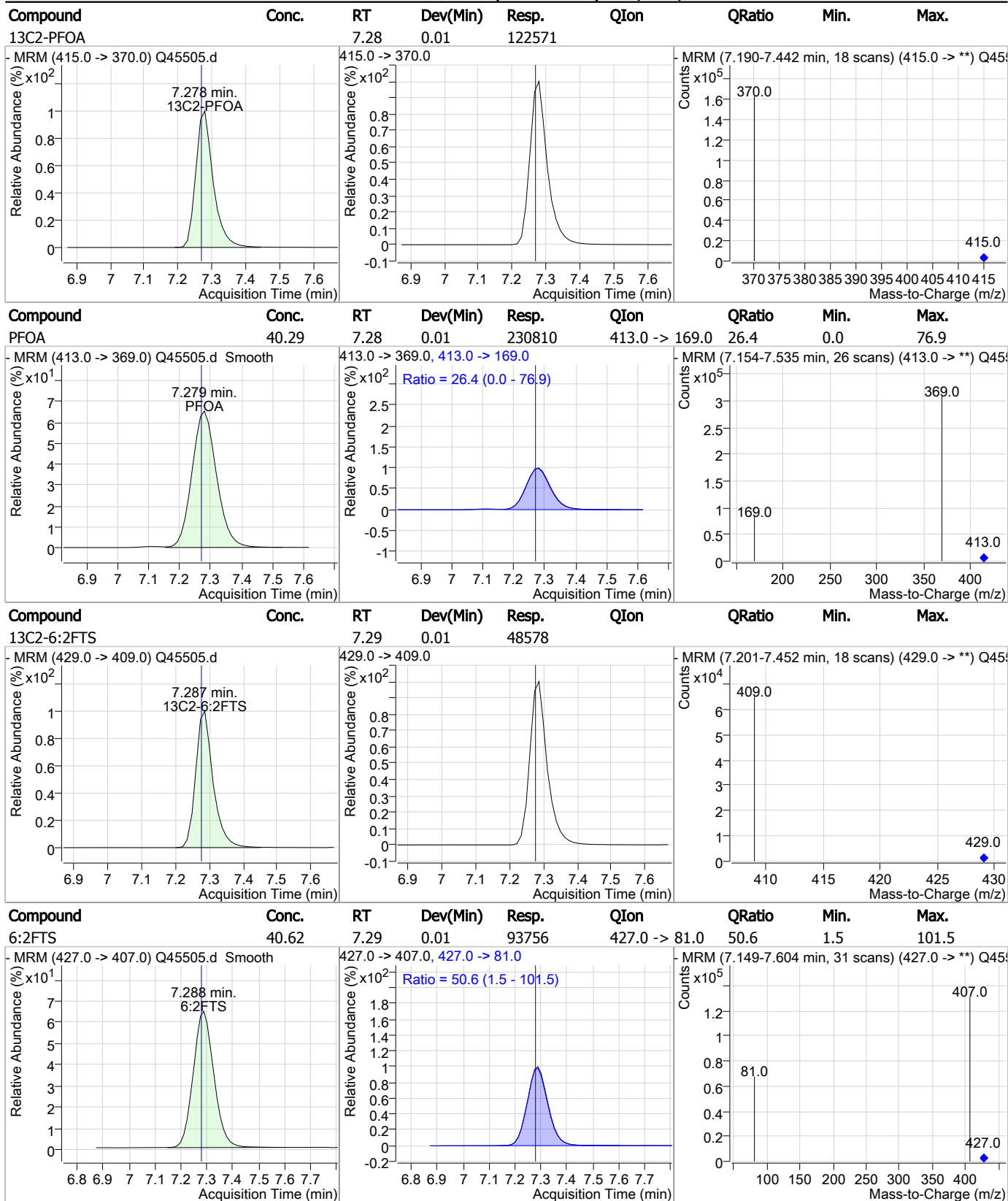
### Perfluorinated Compounds by LC/MS/MS



10.5.20 10

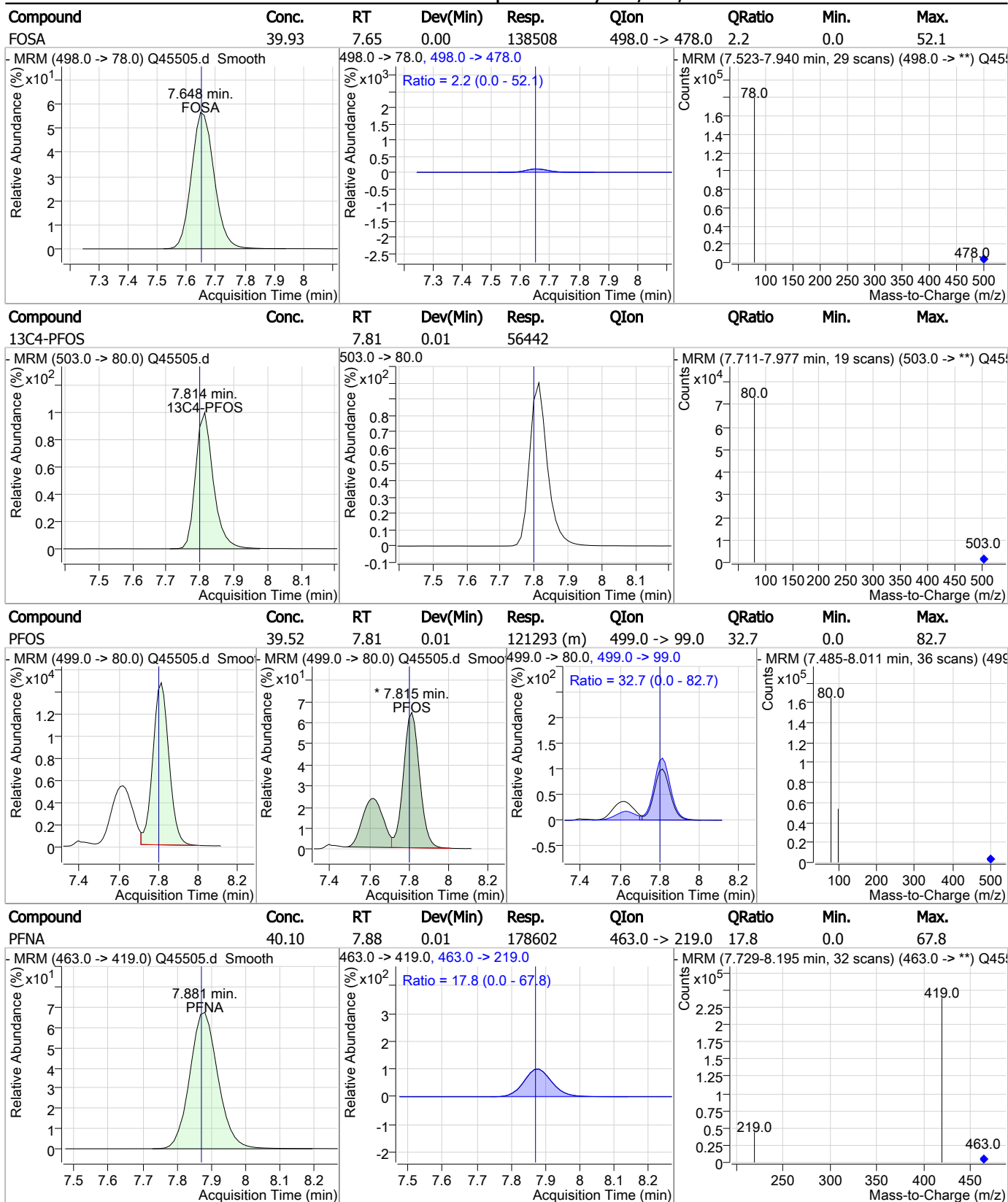


### Perfluorinated Compounds by LC/MS/MS



10.5.20 10

### Perfluorinated Compounds by LC/MS/MS



10.5.20 10

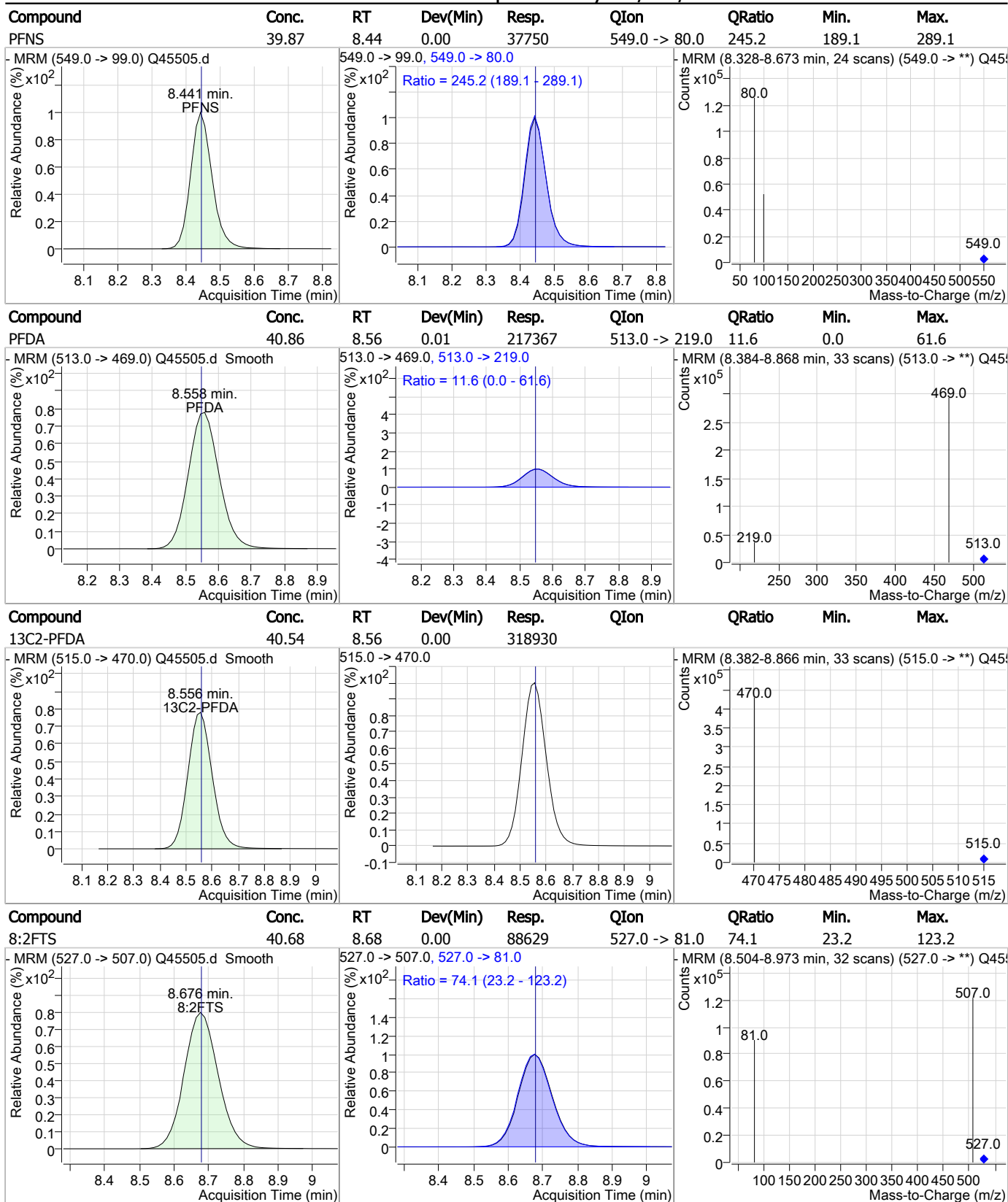
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.10	0.01	22273				
- MRM (573.0 -> 419.0) Q45505.d			573.0 -> 419.0			- MRM (8.036-8.262 min, 16 scans) (573.0 -> **) Q45		
MeFOSAA	39.26	8.10	0.01	49550	570.0 -> 512.0	30.0	0.0	81.1
- MRM (570.0 -> 419.0) Q45505.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.976-8.376 min, 28 scans) (570.0 -> **) Q45		
d5-EtFOSAA	40.26	8.21	0.00	64951				
- MRM (589.0 -> 419.0) Q45505.d Smooth			589.0 -> 419.0			- MRM (8.084-8.510 min, 30 scans) (589.0 -> **) Q45		
EtFOSAA	39.98	8.22	0.01	47173	584.0 -> 483.0	45.7	0.0	95.2
- MRM (584.0 -> 419.0) Q45505.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			- MRM (8.098-8.492 min, 27 scans) (584.0 -> **) Q45		

10.5.20 10

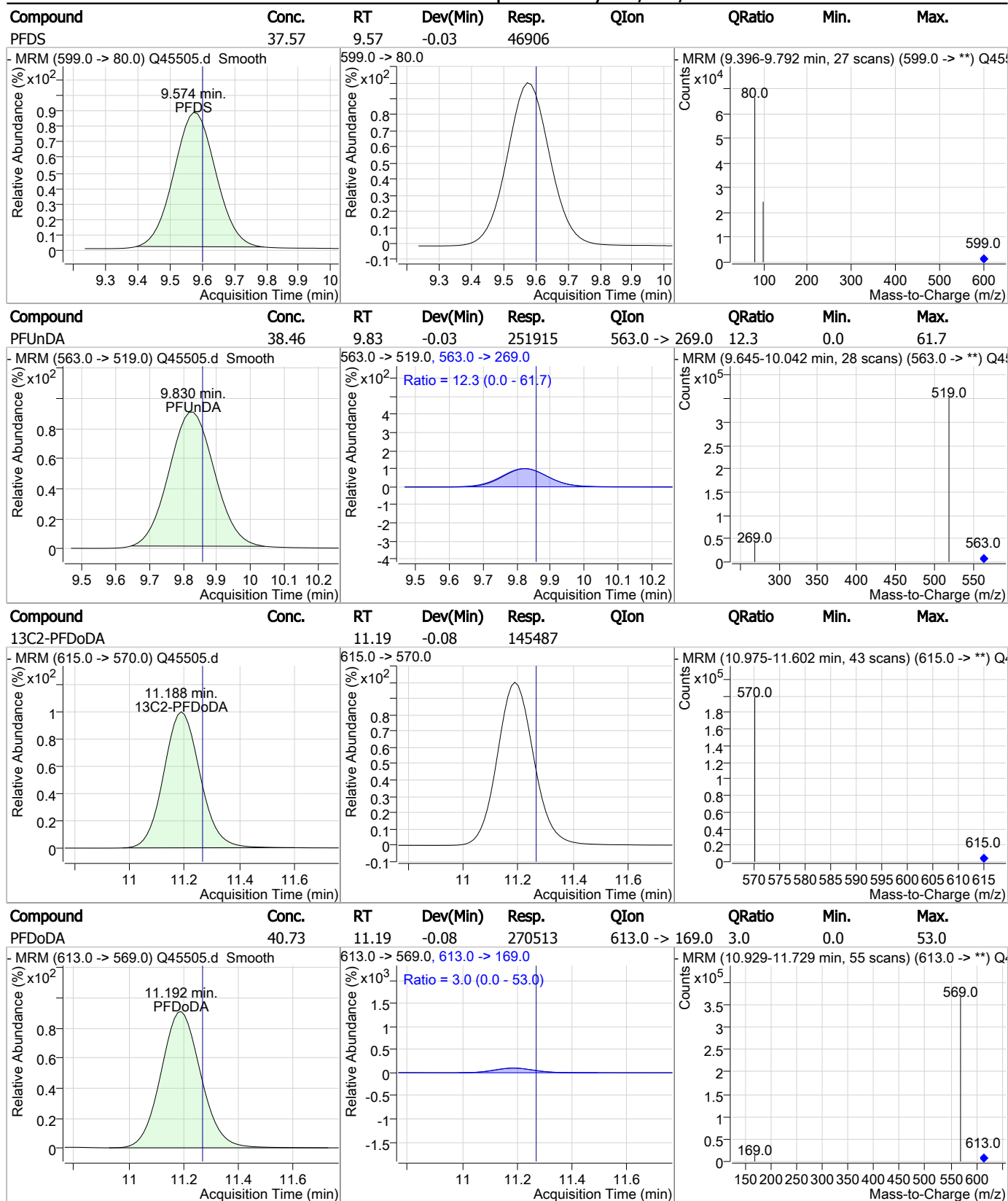


### Perfluorinated Compounds by LC/MS/MS



10.5.20 10

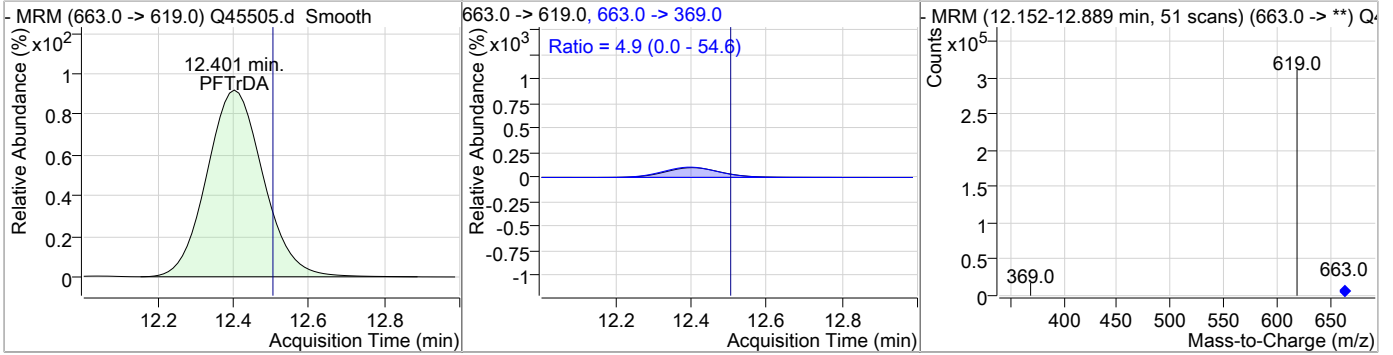
### Perfluorinated Compounds by LC/MS/MS



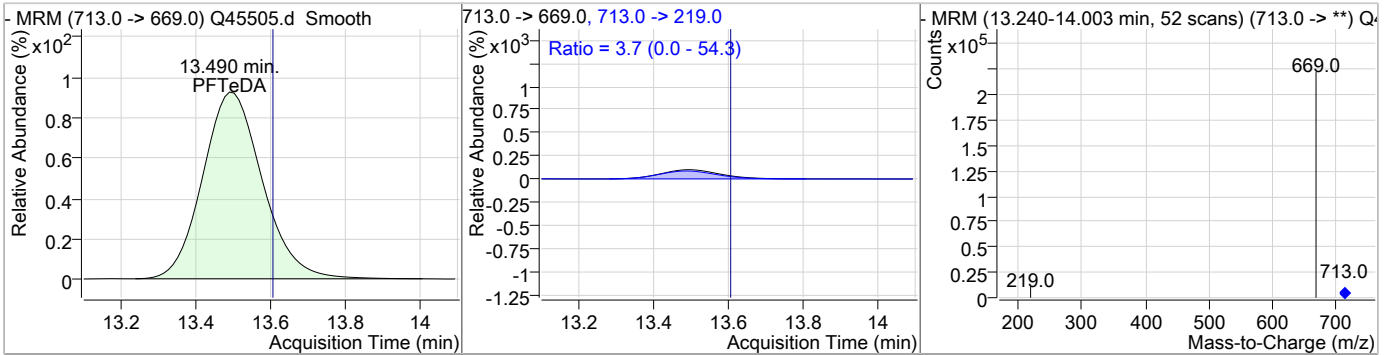
10.5.20 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	40.29	12.40	-0.10	227830	663.0 -> 369.0	4.9	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	40.49	13.49	-0.11	161928	713.0 -> 219.0	3.7	0.0	54.3



10.5.20 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45505.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 18:51      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

10.5.20.1

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Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

**Norman Farmer**  
**04/27/18 12:12**

### Perfluorinated Compounds by LC/MS/MS

Data File : Q45506.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 7:10:54 PM  
 Sample Name : IC1119-50  
 Vial : Vial 8  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,,1.0,1,WATER

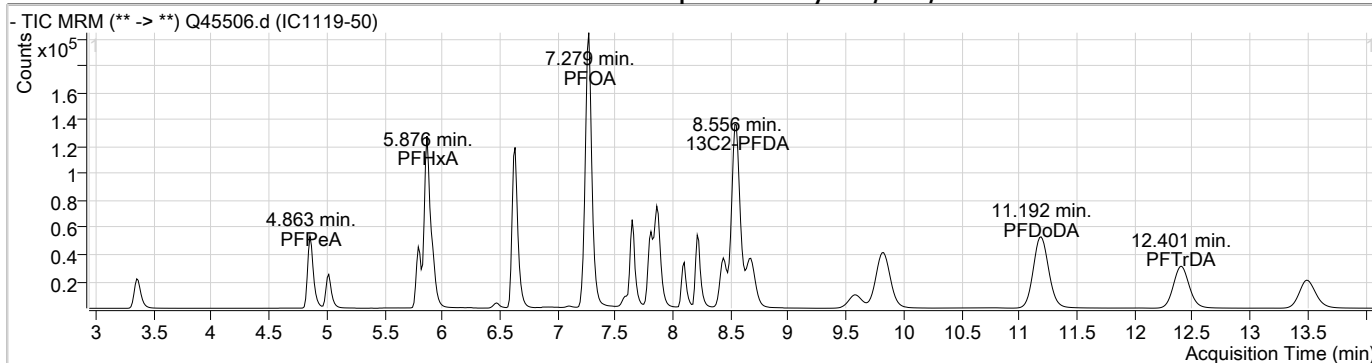
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.287	429.0 -> 409.0	49830	20.00 µg/L	0.013
13C2-PFDoDA	11.188	615.0 -> 570.0	147456	20.00 µg/L	-0.075
13C2-PFOA	7.278	415.0 -> 370.0	121705	20.00 µg/L	0.012
13C4-PFOS	7.814	503.0 -> 80.0	56049	20.00 µg/L	0.013
d3-MeFOSAA	8.086	573.0 -> 419.0	21960	20.00 µg/L	0.000
13C3-PFPeA	4.860	266.0 -> 222.0	57008	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.556	515.0 -> 470.0	392133	50.20 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 251.0%	
13C2-PFHxA	5.874	315.0 -> 270.0	267700	50.13 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 250.6%	
d5-EtFOSAA	8.209	589.0 -> 419.0	79945	50.26 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 251.3%	
<b>Target Compounds</b>					
6:2FTS	7.288	427.0 -> 407.0	115369	49.70 µg/L	QValue 100
8:2FTS	8.676	527.0 -> 507.0	109473	49.57 µg/L	99
EtFOSAA	8.223	584.0 -> 419.0	58360	50.17 µg/L	98
FOSA	7.648	498.0 -> 78.0	169050	50.57 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	61422	49.36 µg/L	98
PFBA	3.365	213.0 -> 169.0	89939	49.04 µg/L	100
PFBS	5.016	299.0 -> 80.0	59635	49.66 µg/L	98
PFDA	8.558	513.0 -> 469.0	264868	50.15 µg/L	99
PFDoDA	11.192	613.0 -> 569.0	328662	48.83 µg/L	100
PFDS	9.574	599.0 -> 80.0	60285	48.63 µg/L	100
PFHpA	6.637	363.0 -> 319.0	277764	49.52 µg/L	99
PFHpS	7.232	449.0 -> 80.0	82919	50.15 µg/L	98
PFHxA	5.876	313.0 -> 269.0	155464	49.57 µg/L	100
PFHxS	6.618	399.0 -> 80.0	89875	50.10 µg/L	m 99
PFNA	7.881	463.0 -> 419.0	217862	49.26 µg/L	100
PFOA	7.279	413.0 -> 369.0	284022	49.93 µg/L	100
PFOS	7.815	499.0 -> 80.0	150382	49.35 µg/L	m 99
PFPeA	4.863	263.0 -> 219.0	130603	49.77 µg/L	100
PFTeDA	13.490	713.0 -> 669.0	202703	50.01 µg/L	98
PFTTrDA	12.401	663.0 -> 619.0	283638	49.49 µg/L	100
PFUnDA	9.830	563.0 -> 519.0	310099	46.71 µg/L	98
4:2FTS	5.796	327.0 -> 307.0	110779	49.97 µg/L	100
PFNS	8.441	549.0 -> 99.0	46514	49.48 µg/L	95
PFPeS	5.917	349.0 -> 99.0	20385	49.51 µg/L	98

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

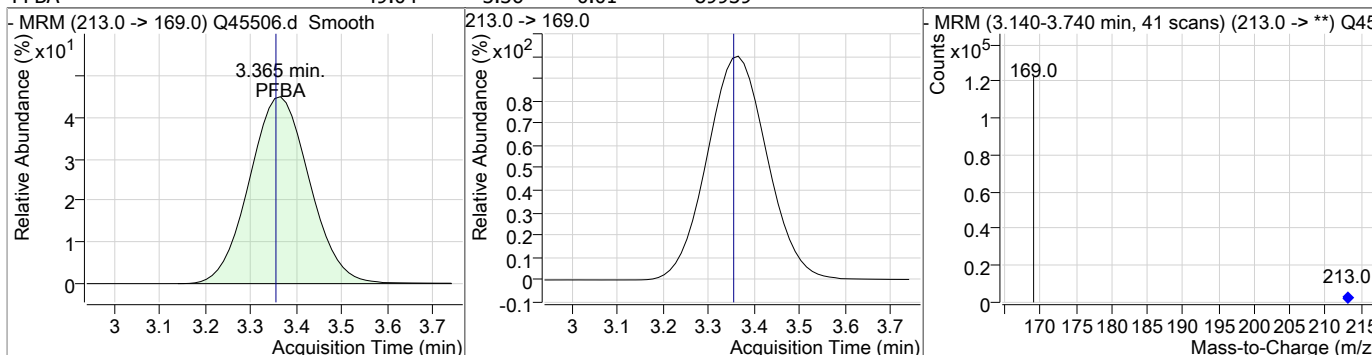
10.5.21  
**10**



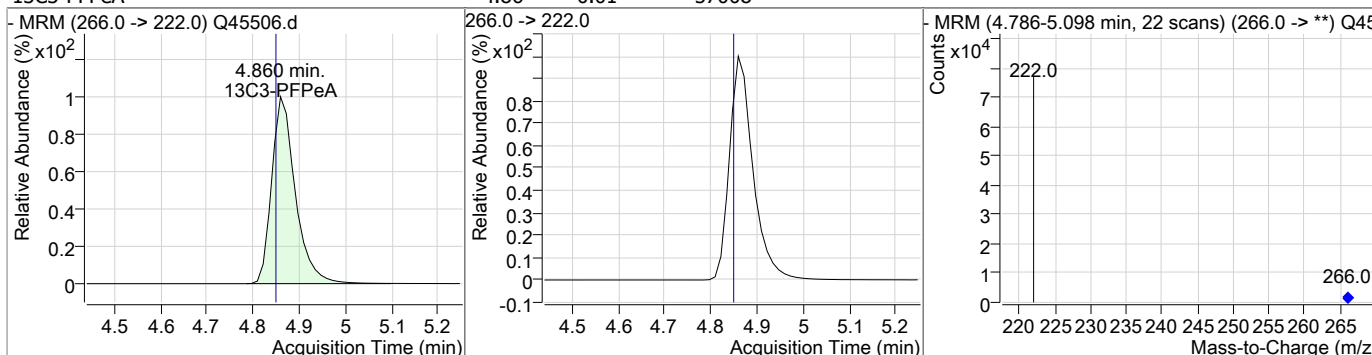
### Perfluorinated Compounds by LC/MS/MS



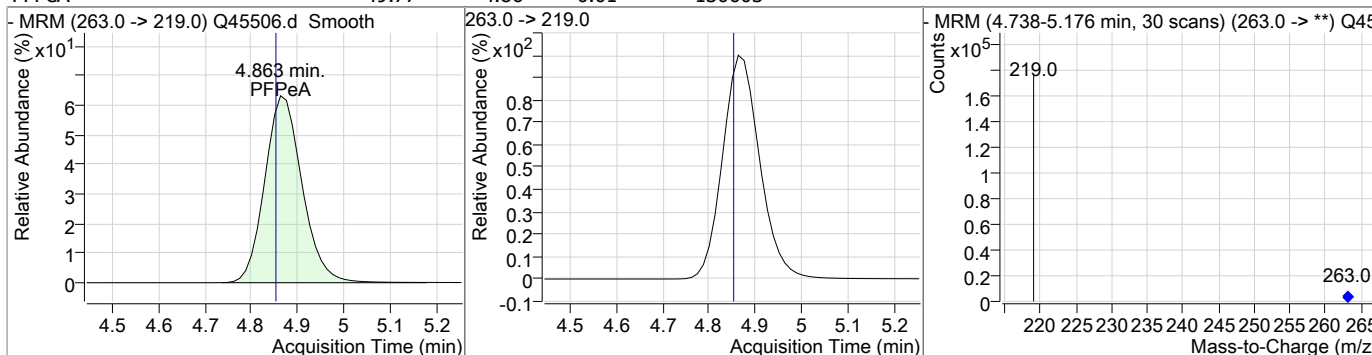
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.04	3.36	0.01	89939				



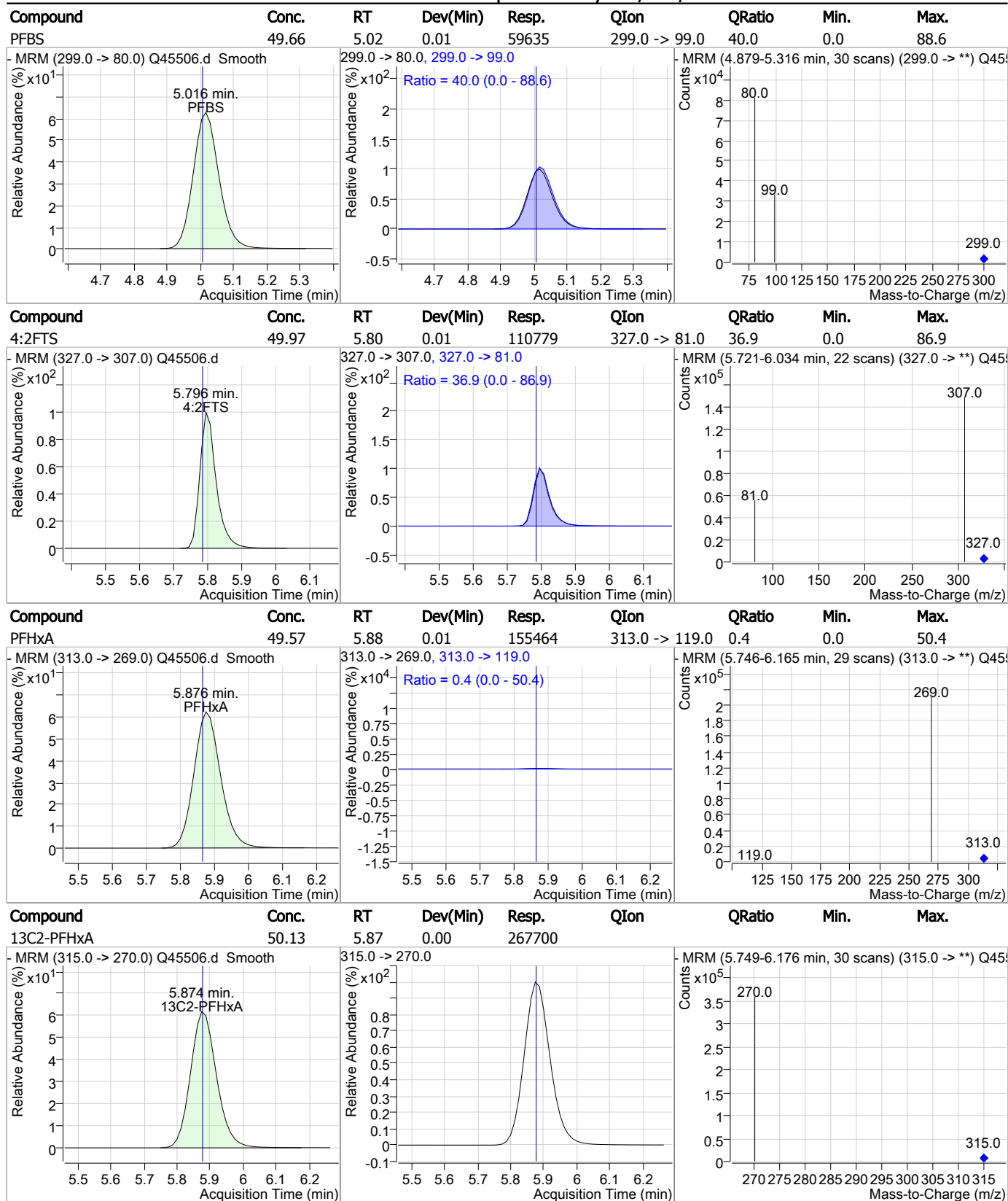
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA	49.77	4.86	0.01	57008				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.77	4.86	0.01	130603				

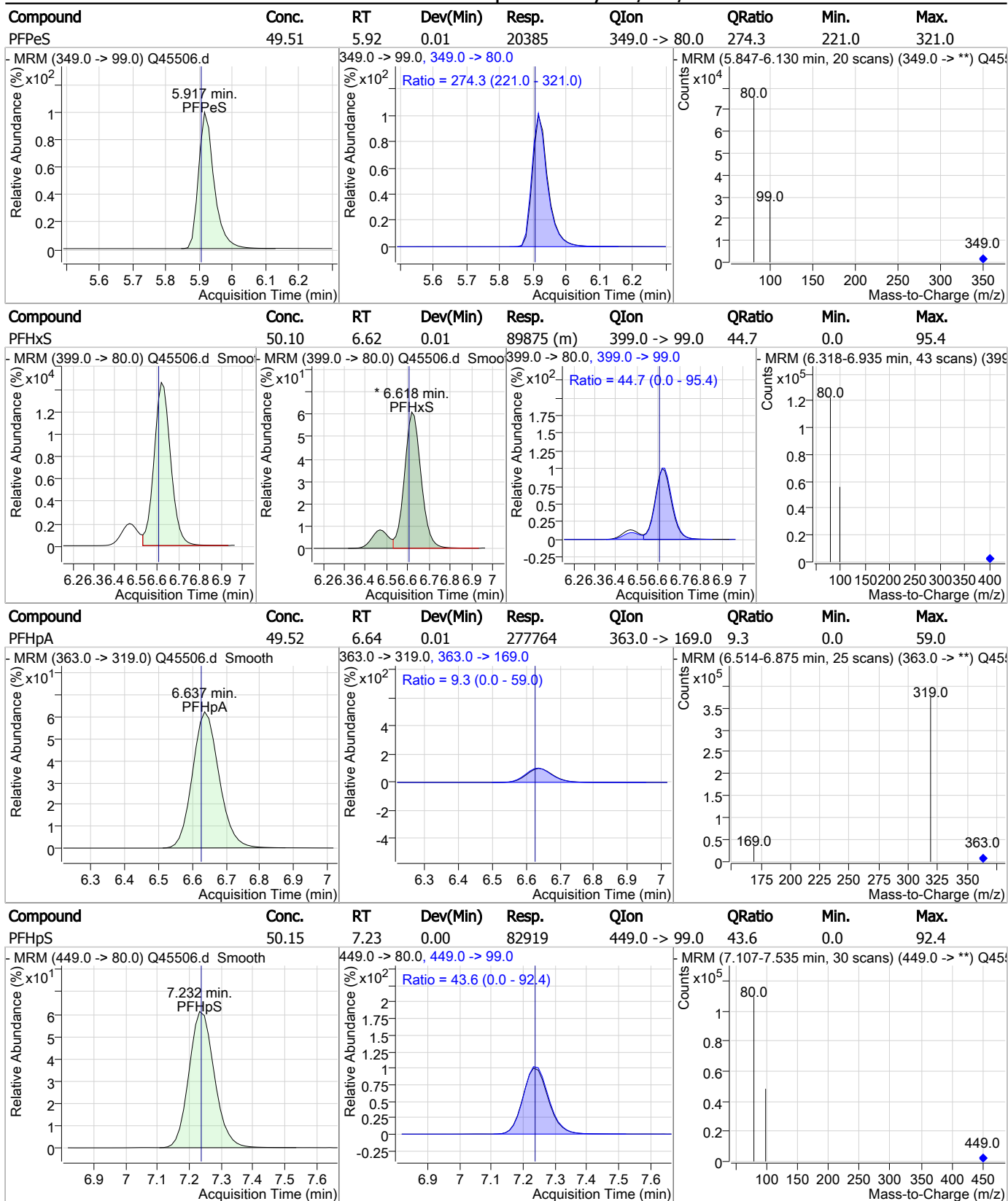


### Perfluorinated Compounds by LC/MS/MS



10.5.21 10

### Perfluorinated Compounds by LC/MS/MS

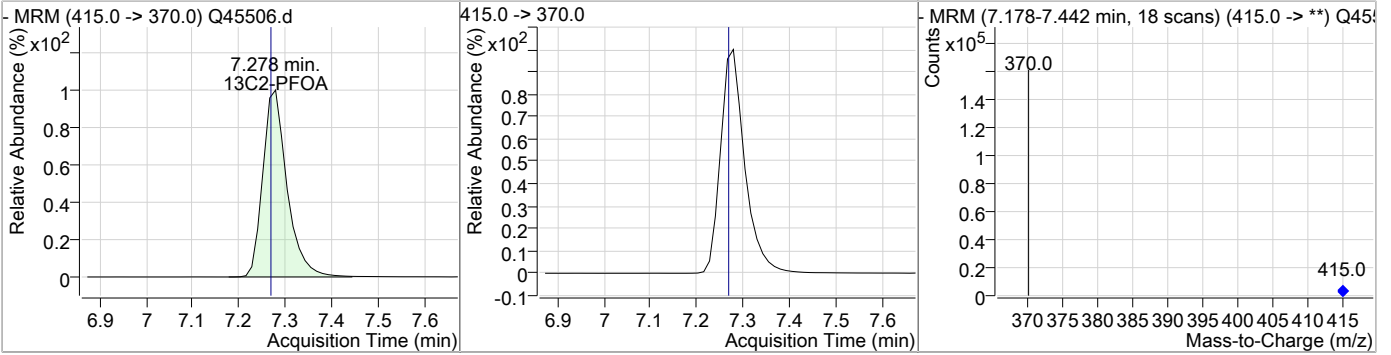


10.5.21 10

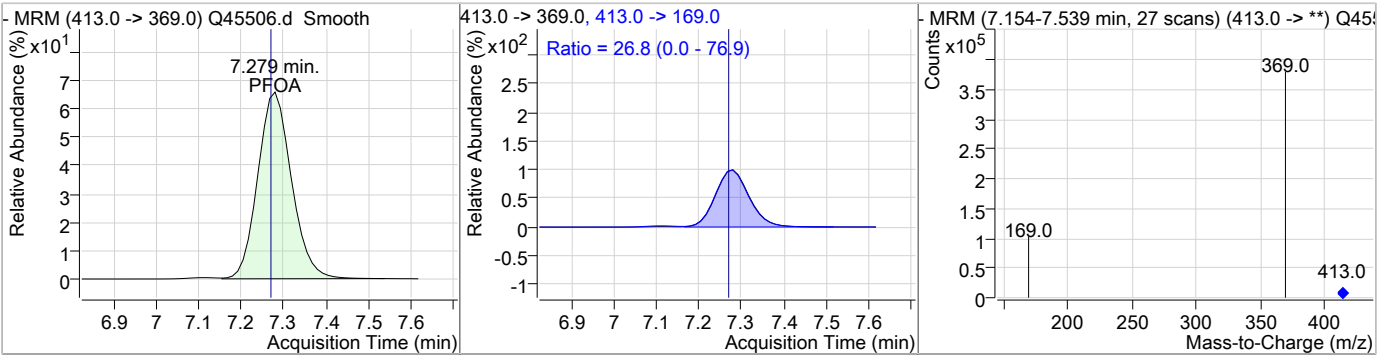


### Perfluorinated Compounds by LC/MS/MS

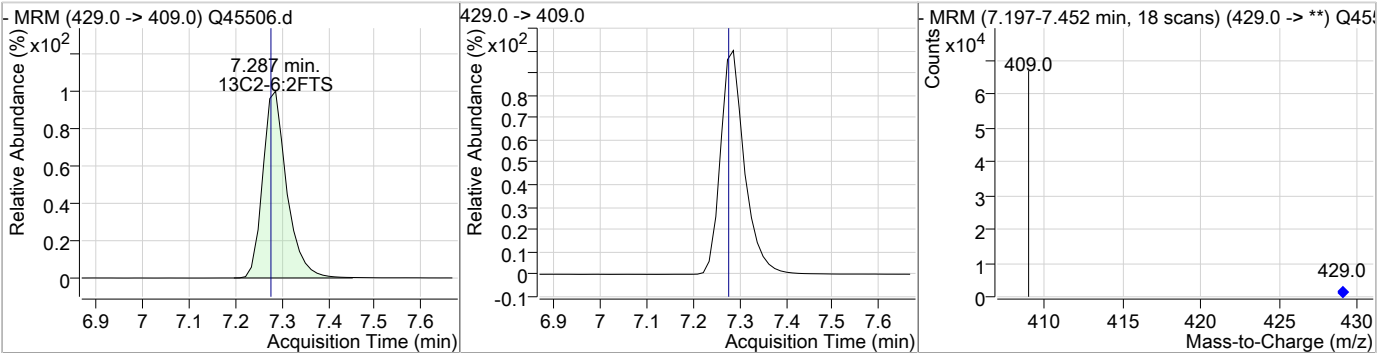
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.28	0.01	121705				



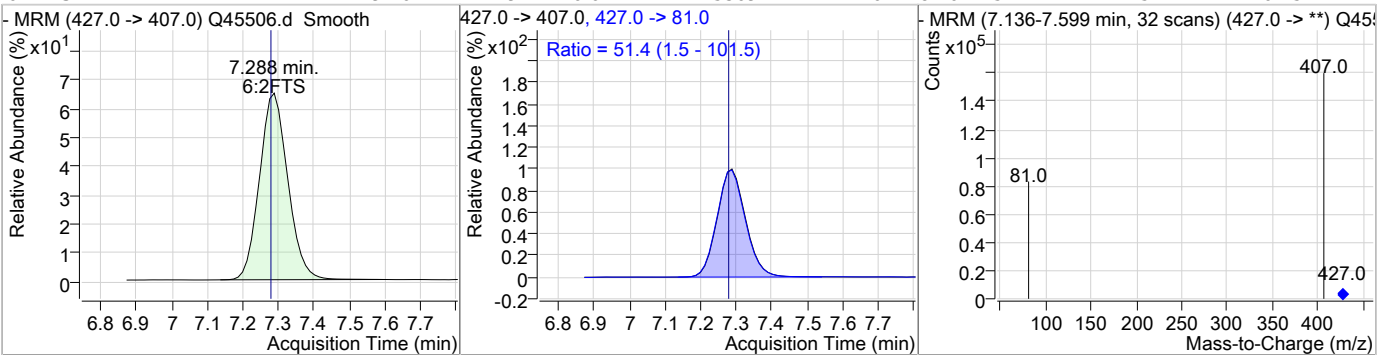
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.93	7.28	0.01	284022	413.0 ->	169.0 26.8	0.0	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		7.29	0.01	49830				



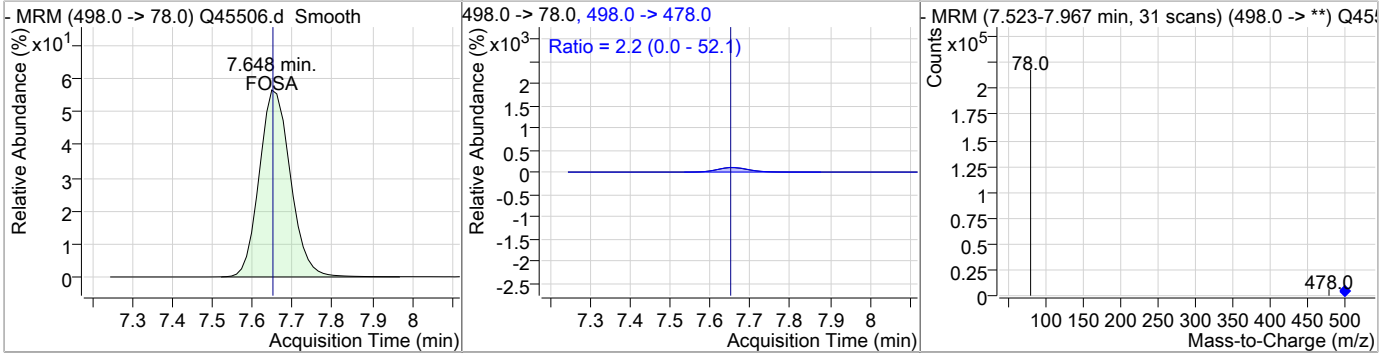
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	49.70	7.29	0.01	115369	427.0 ->	81.0 51.4	1.5	101.5



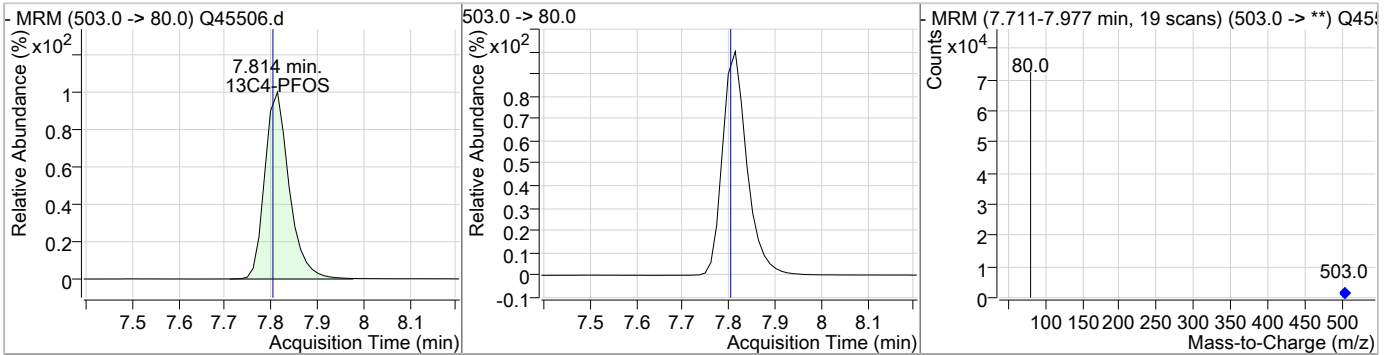
10.5.21 10

### Perfluorinated Compounds by LC/MS/MS

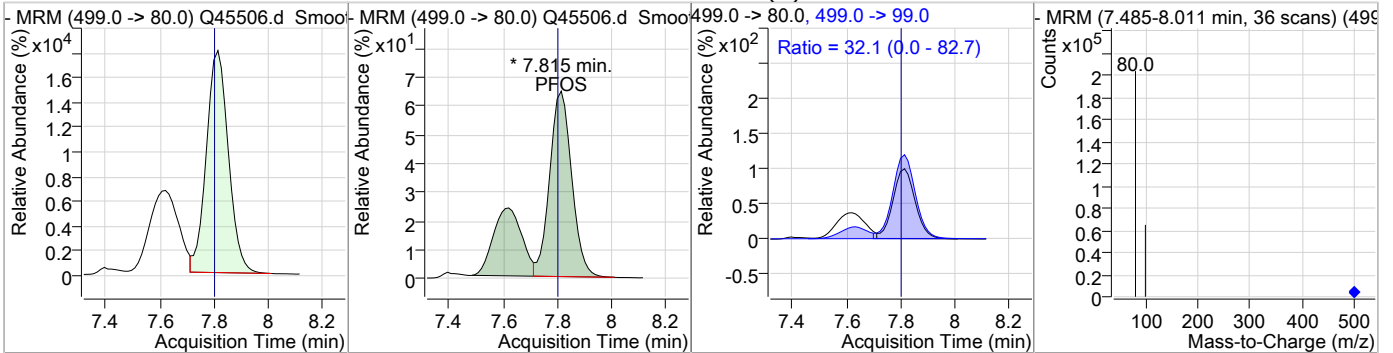
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	50.57	7.65	0.00	169050	498.0 -> 478.0	2.2	0.0	52.1



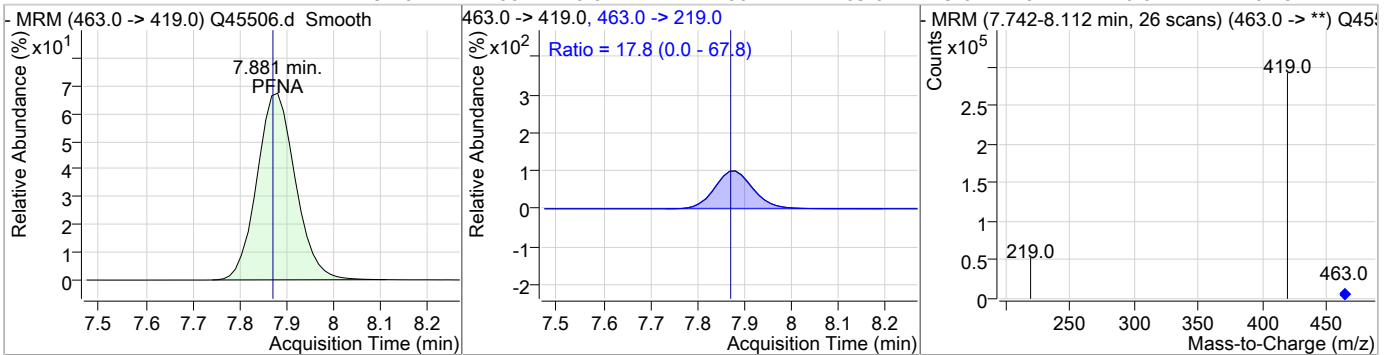
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.81	0.01	56049				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	49.35	7.82	0.01	150382 (m)	499.0 -> 99.0	32.1	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.26	7.88	0.01	217862	463.0 -> 219.0	17.8	0.0	67.8



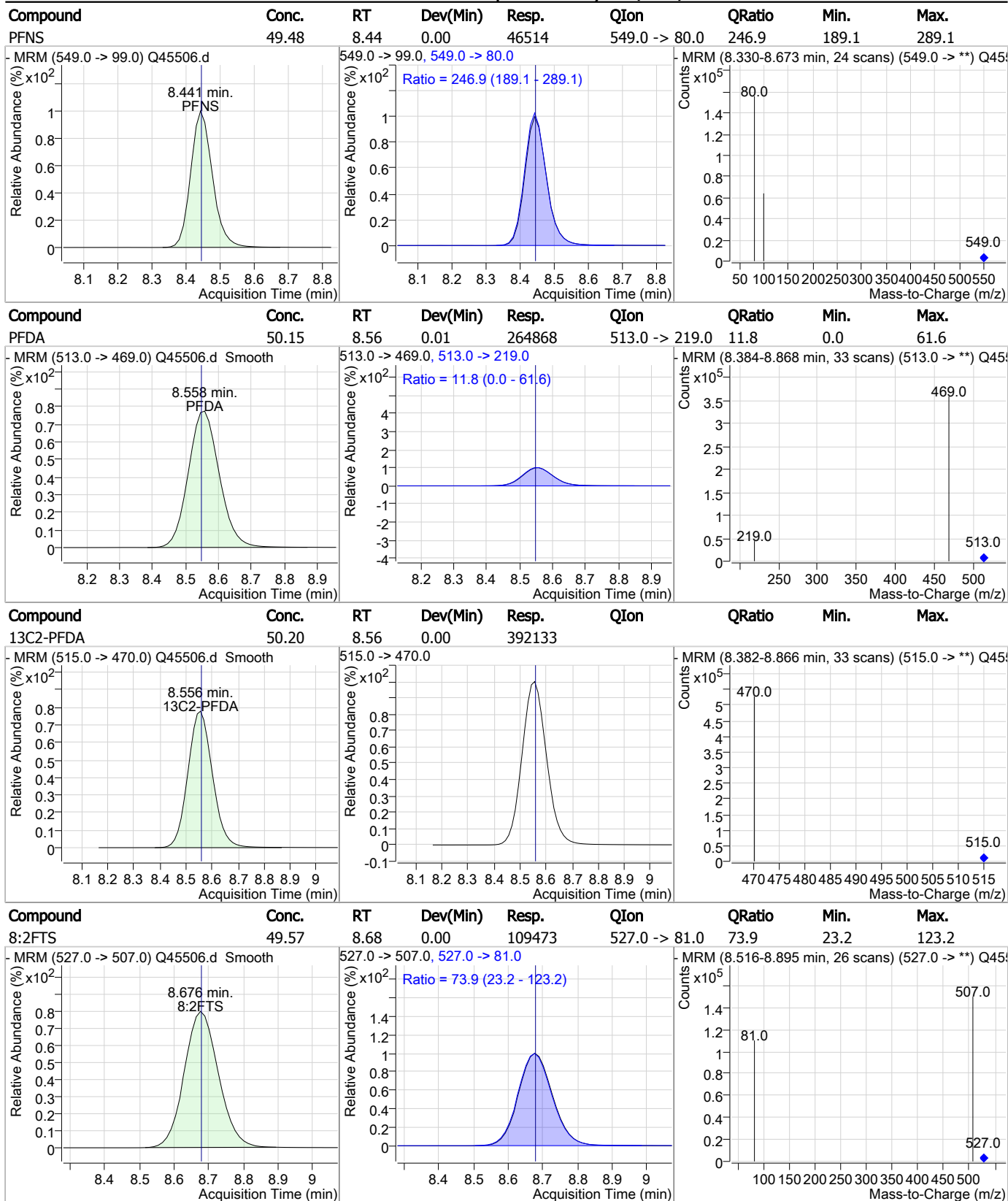
10.5.21 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.09	0.00	21960				
- MRM (573.0 -> 419.0) Q45506.d			573.0 -> 419.0			- MRM (8.036-8.325 min, 20 scans) (573.0 -> **) Q45		
MeFOSAA	49.36	8.10	0.01	61422	570.0 -> 512.0	30.0	0.0	81.1
- MRM (570.0 -> 419.0) Q45506.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.975-8.376 min, 28 scans) (570.0 -> **) Q45		
d5-EtFOSAA	50.26	8.21	0.00	79945				
- MRM (589.0 -> 419.0) Q45506.d Smooth			589.0 -> 419.0			- MRM (8.084-8.510 min, 30 scans) (589.0 -> **) Q45		
EtFOSAA	50.17	8.22	0.01	58360	584.0 -> 483.0	46.3	0.0	95.2
- MRM (584.0 -> 419.0) Q45506.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			- MRM (8.098-8.461 min, 25 scans) (584.0 -> **) Q45		

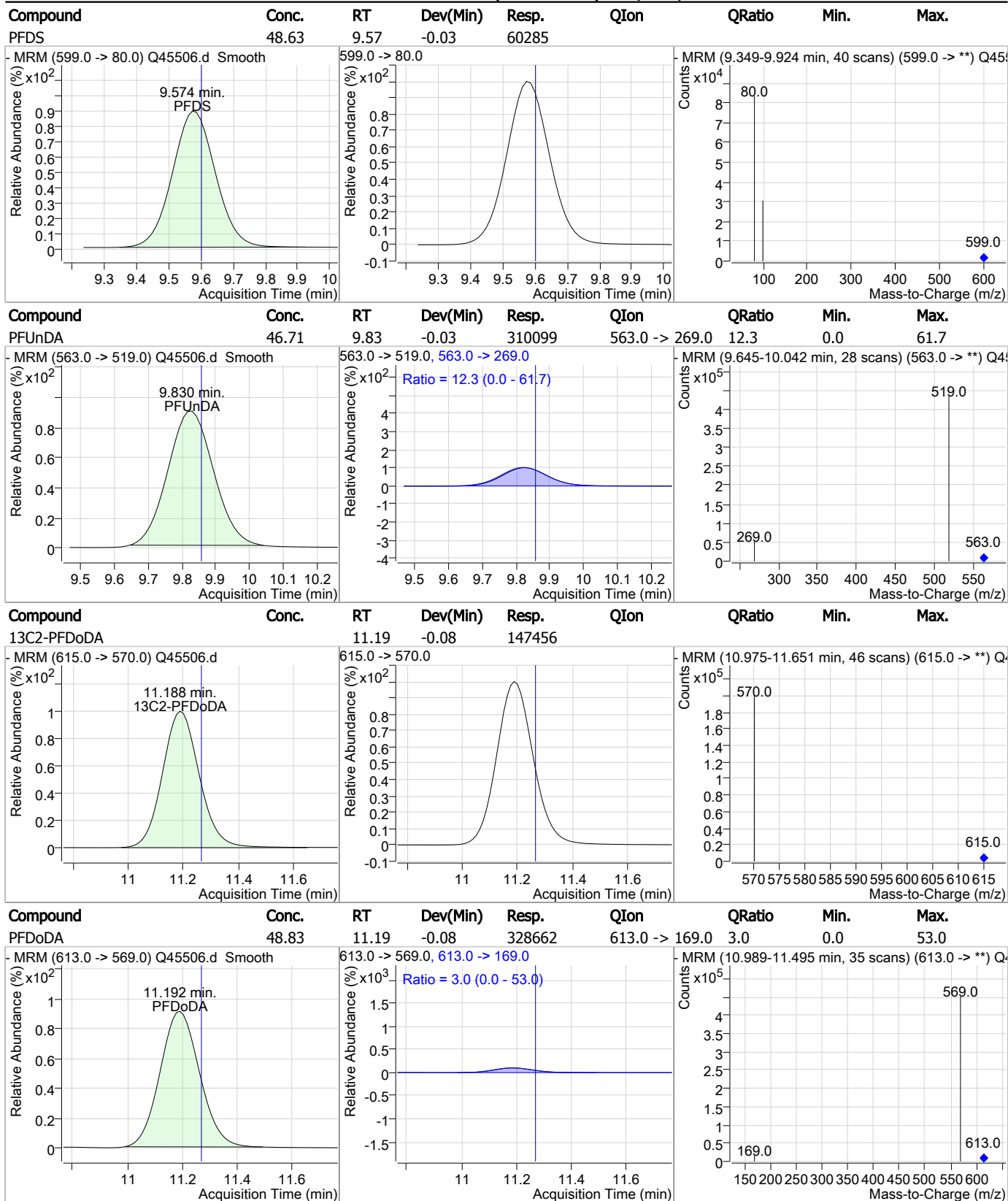
10.5.21 10

### Perfluorinated Compounds by LC/MS/MS



10.5.21 10

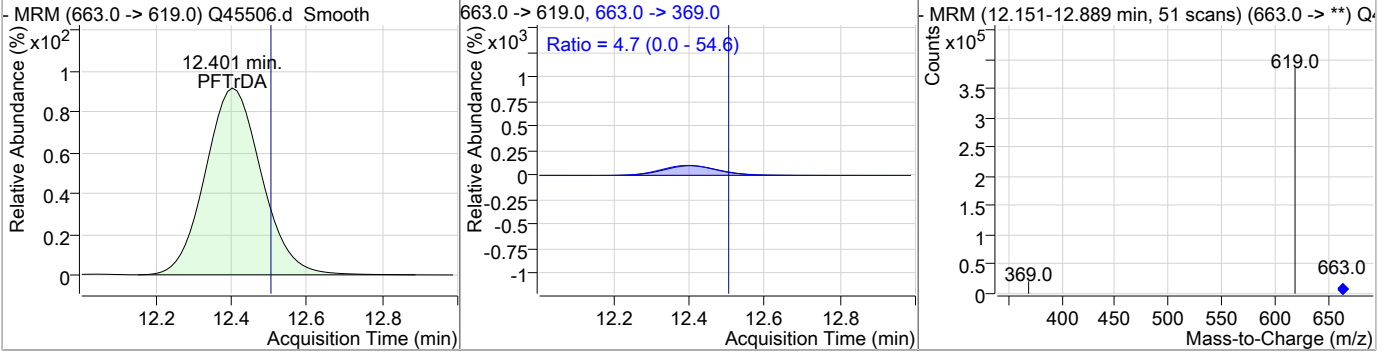
### Perfluorinated Compounds by LC/MS/MS



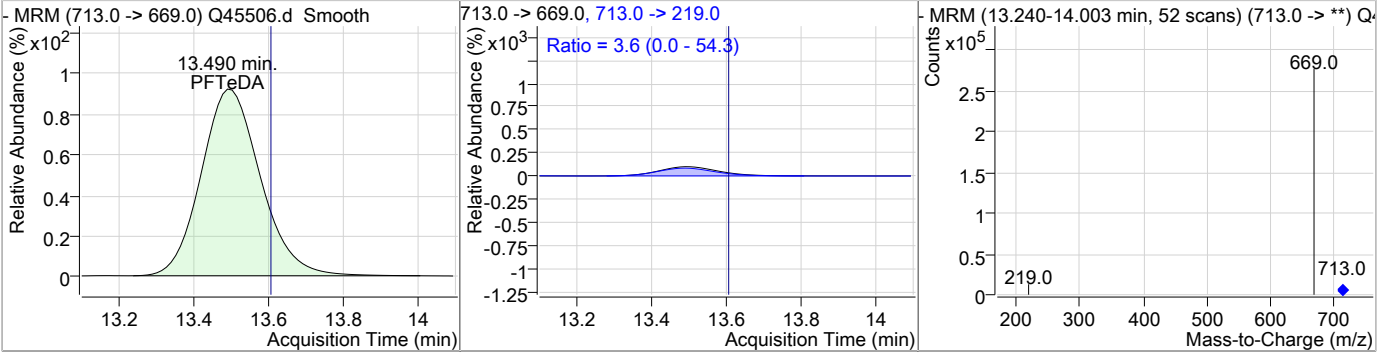
10.5.21 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	49.49	12.40	-0.10	283638	663.0 -> 369.0	4.7	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.01	13.49	-0.11	202703	713.0 -> 219.0	3.6	0.0	54.3



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# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45506.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 19:10      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

10.5.21.1

10

Manual Integrations  
**APPROVED**  
 (compounds with "m" flag)

**Norman Farmer**  
 04/27/18 12:12

### Perfluorinated Compounds by LC/MS/MS

Data File : Q45507.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 7:30:46 PM  
 Sample Name : IC1119-100  
 Vial : Vial 9  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.287	429.0 -> 409.0	53506	20.00 µg/L	0.013
13C2-PFDoDA	11.288	615.0 -> 570.0	143646	20.00 µg/L	0.025
13C2-PFOA	7.278	415.0 -> 370.0	115836	20.00 µg/L	0.012
13C4-PFOS	7.814	503.0 -> 80.0	54228	20.00 µg/L	0.012
d3-MeFOSAA	8.099	573.0 -> 419.0	21520	20.00 µg/L	0.012
13C3-PFPeA	4.872	266.0 -> 222.0	55249	20.00 µg/L	0.025
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.556	515.0 -> 470.0	742042	99.80 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 499.0%	
13C2-PFHxA	5.887	315.0 -> 270.0	508655	100.07 µg/L	0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 500.4%	
d5-EtFOSAA	8.222	589.0 -> 419.0	155705	99.88 µg/L	0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 499.4%	
<b>Target Compounds</b>					
6:2FTS	7.288	427.0 -> 407.0	221957	99.98 µg/L	100
8:2FTS	8.676	527.0 -> 507.0	221062	100.01 µg/L	99
EtFOSAA	8.223	584.0 -> 419.0	113952	99.97 µg/L	99
FOSA	7.661	498.0 -> 78.0	291986	99.87 µg/L	100
MeFOSAA	8.100	570.0 -> 419.0	122902	100.79 µg/L	98
PFBA	3.365	213.0 -> 169.0	179272	100.86 µg/L	100
PFBS	5.016	299.0 -> 80.0	116698	100.45 µg/L	98
PFDA	8.558	513.0 -> 469.0	501161	99.69 µg/L	100
PFDoDA	11.292	613.0 -> 569.0	658864	100.48 µg/L	100
PFDS	9.611	599.0 -> 80.0	122268	101.94 µg/L	100
PFHpA	6.637	363.0 -> 319.0	535102	100.23 µg/L	99
PFHpS	7.247	449.0 -> 80.0	160192	100.15 µg/L	98
PFHxA	5.876	313.0 -> 269.0	299682	100.39 µg/L	100
PFHxS	6.631	399.0 -> 80.0	173812	100.14 µg/L	m 99
PFNA	7.881	463.0 -> 419.0	423779	100.67 µg/L	99
PFOA	7.279	413.0 -> 369.0	541748	100.06 µg/L	99
PFOS	7.815	499.0 -> 80.0	297071	100.75 µg/L	m 100
PFPeA	4.875	263.0 -> 219.0	255169	100.34 µg/L	100
PFTeDA	13.627	713.0 -> 669.0	395662	100.20 µg/L	98
PFTTrDA	12.526	663.0 -> 619.0	560494	100.39 µg/L	100
PFUnDA	9.880	563.0 -> 519.0	661940	102.36 µg/L	100
4:2FTS	5.808	327.0 -> 307.0	220549	99.95 µg/L	100
PFNS	8.441	549.0 -> 99.0	91435	100.52 µg/L	96
PFPeS	5.930	349.0 -> 99.0	40093	100.64 µg/L	99

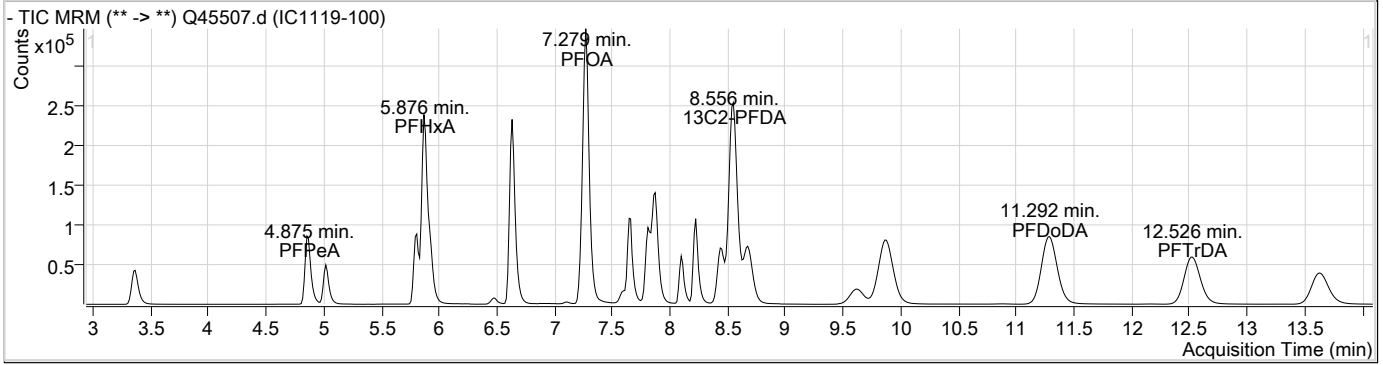
# = Qualifier out of range, m = manually integrated, + = Area summed

10.5.22 10

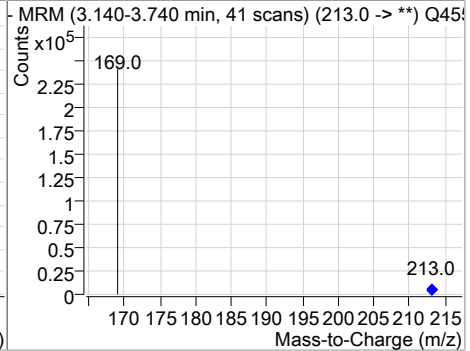
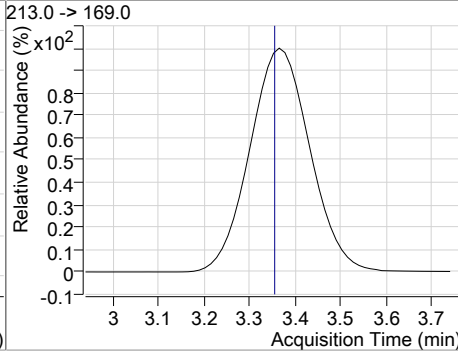
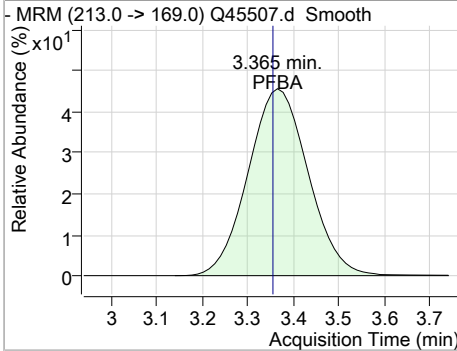




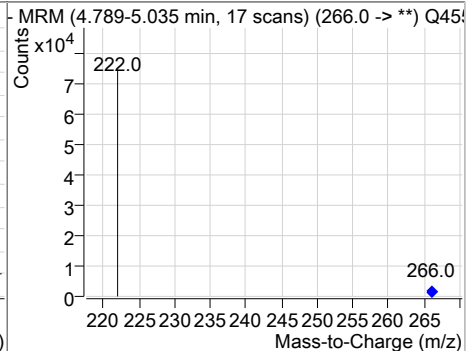
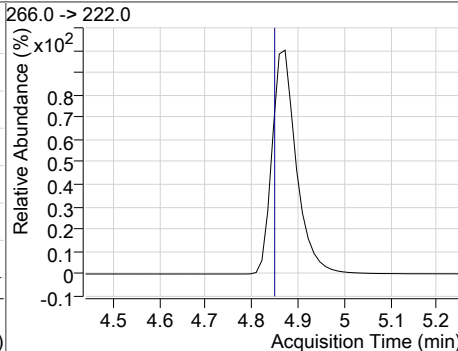
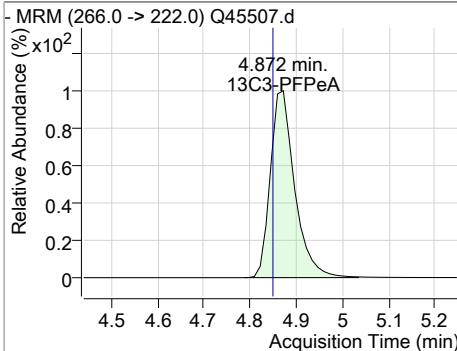
### Perfluorinated Compounds by LC/MS/MS



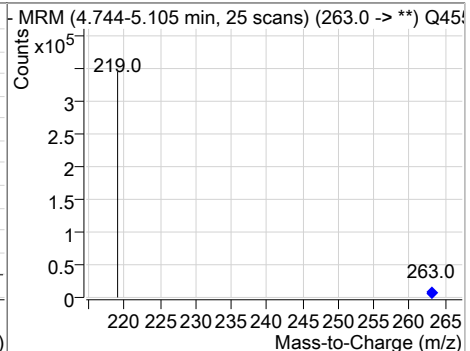
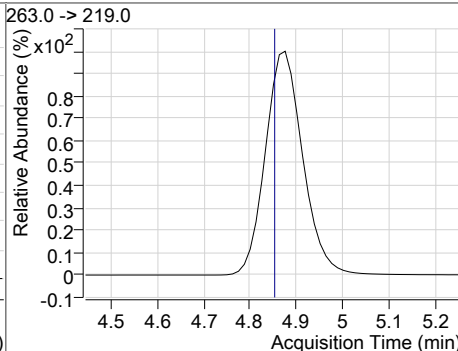
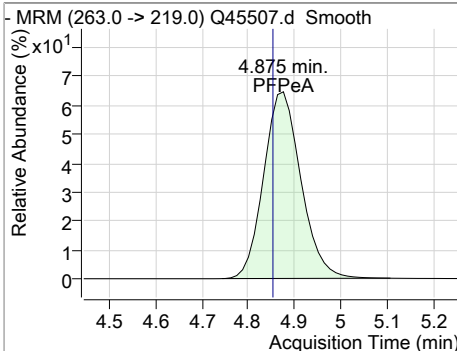
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.86	3.36	0.01	179272				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.87	0.03	55249				



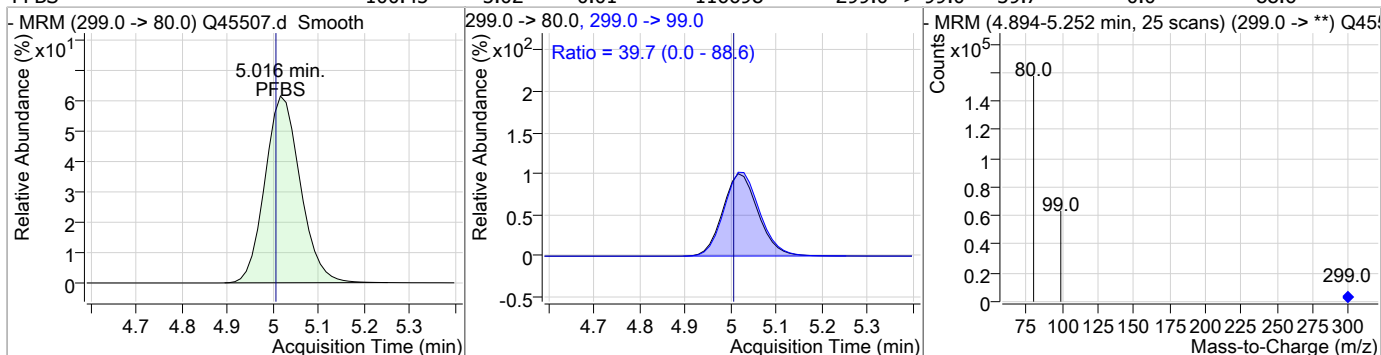
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.34	4.88	0.03	255169				



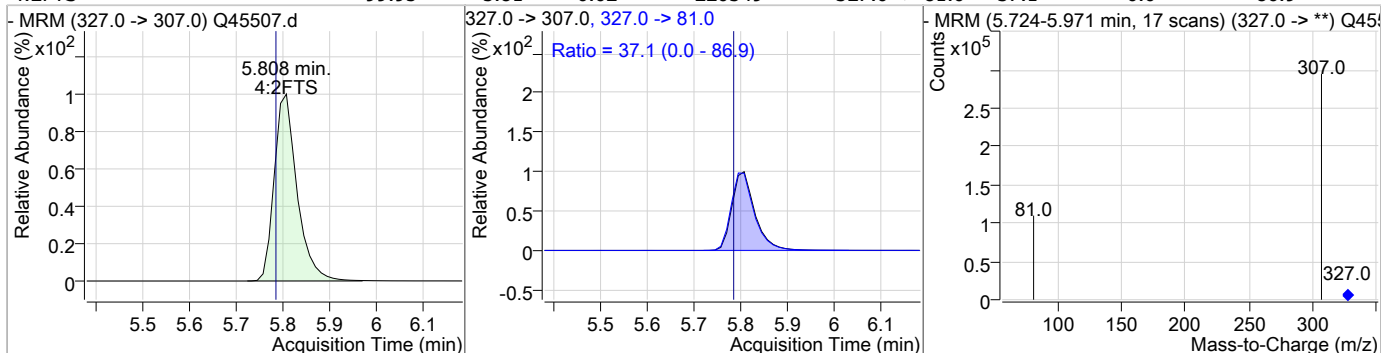
10.5.22 10

### Perfluorinated Compounds by LC/MS/MS

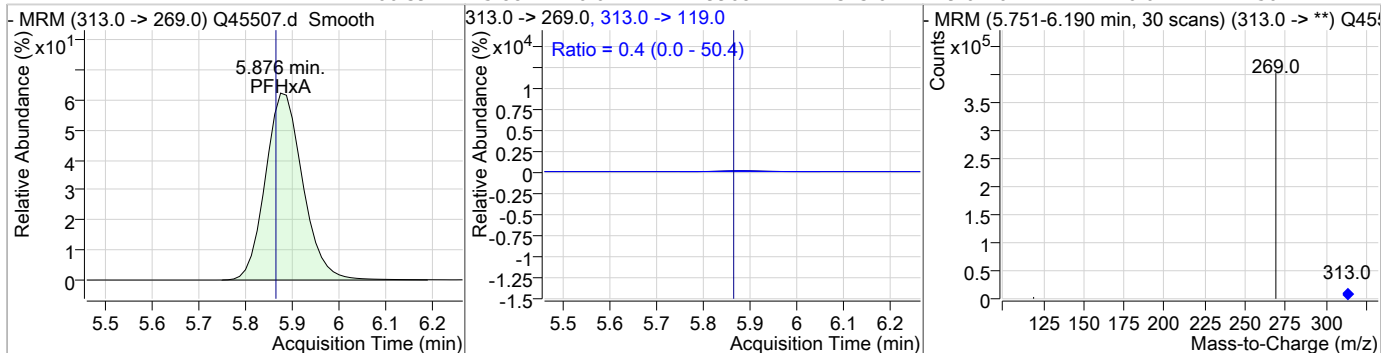
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.45	5.02	0.01	116698	299.0 -> 99.0	39.7	0.0	88.6



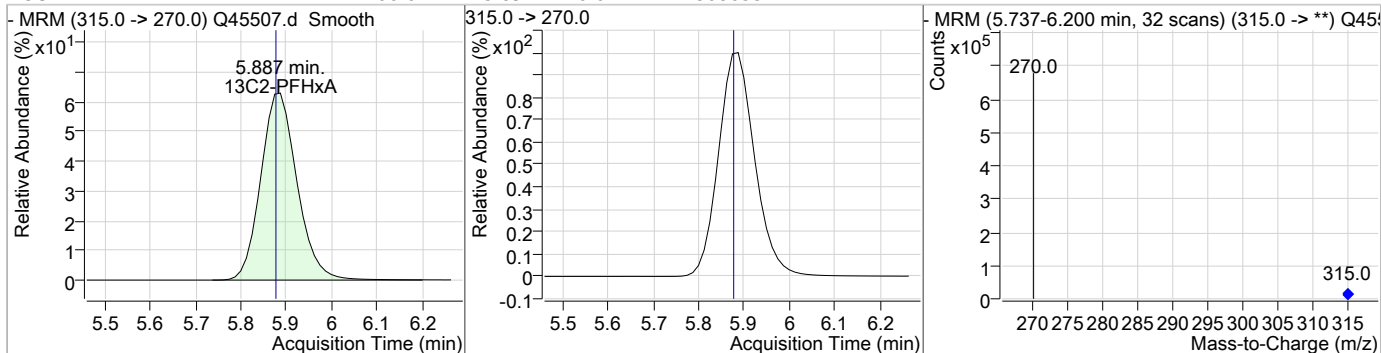
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	99.95	5.81	0.02	220549	327.0 -> 81.0	37.1	0.0	86.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.39	5.88	0.01	299682	313.0 -> 119.0	0.4	0.0	50.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	100.07	5.89	0.01	508655	315.0 -> 270.0			

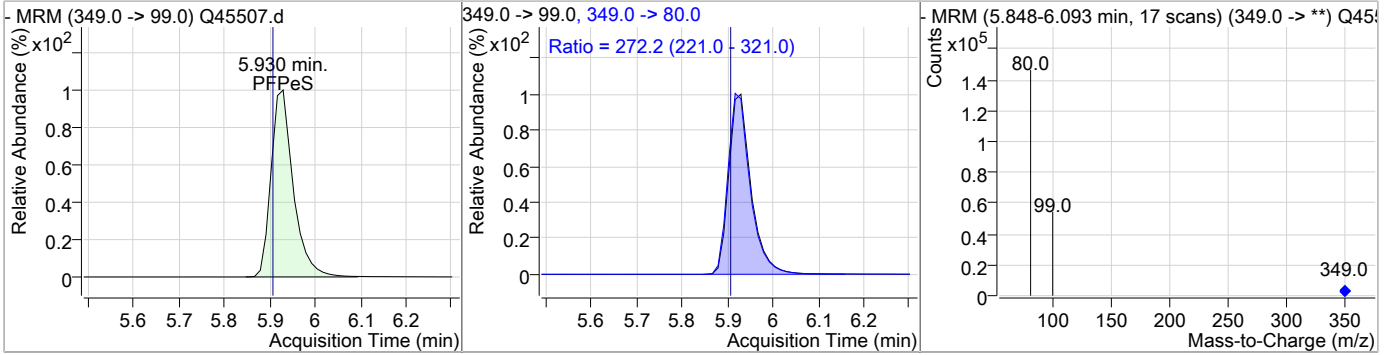


10.5.22 10

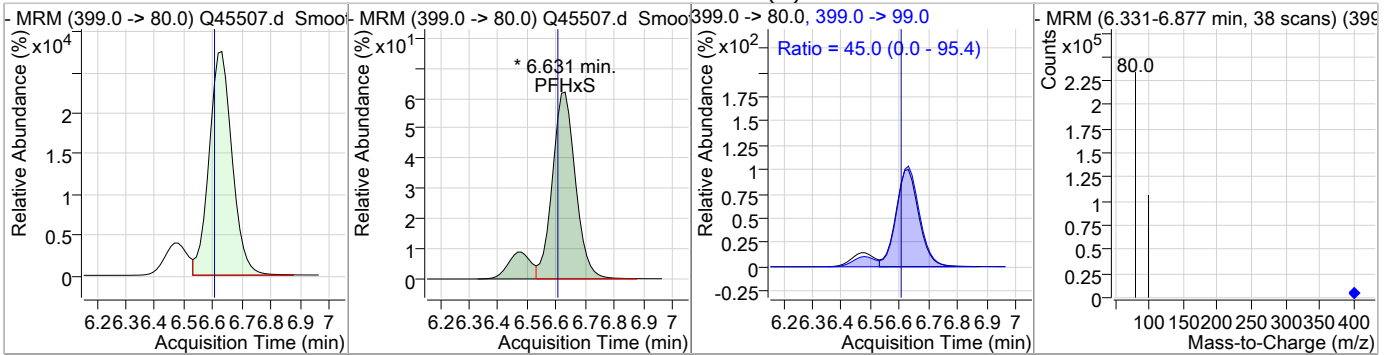


### Perfluorinated Compounds by LC/MS/MS

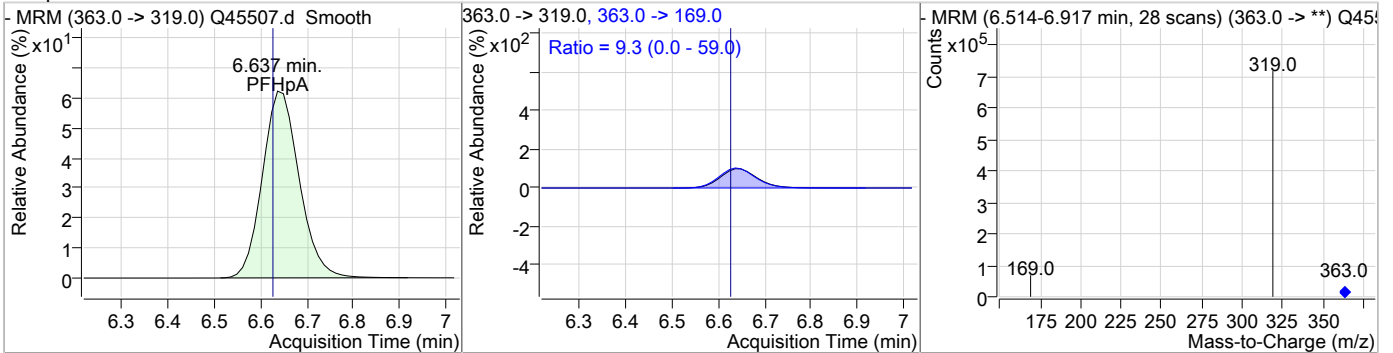
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.64	5.93	0.02	40093	349.0 -> 80.0	272.2	221.0	321.0



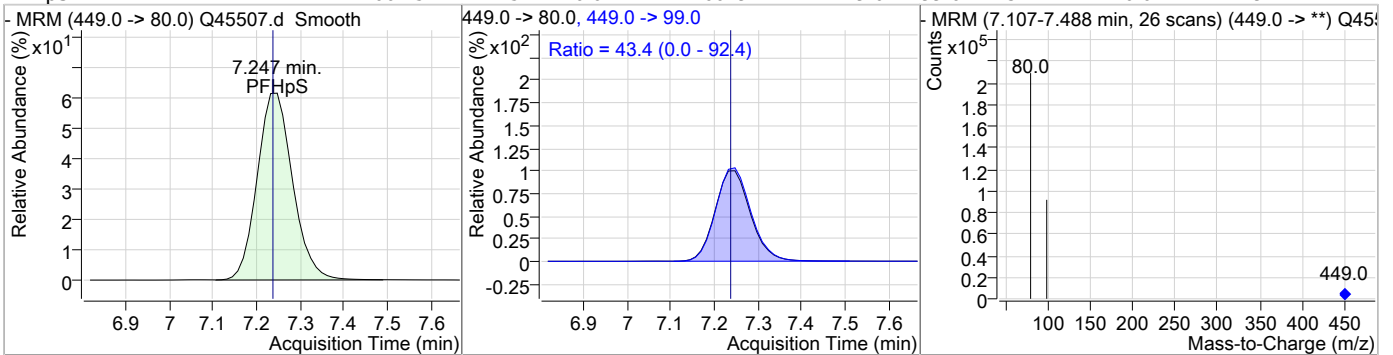
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.14	6.63	0.03	173812 (m)	399.0 -> 99.0	45.0	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.23	6.64	0.01	535102	363.0 -> 169.0	9.3	0.0	59.0



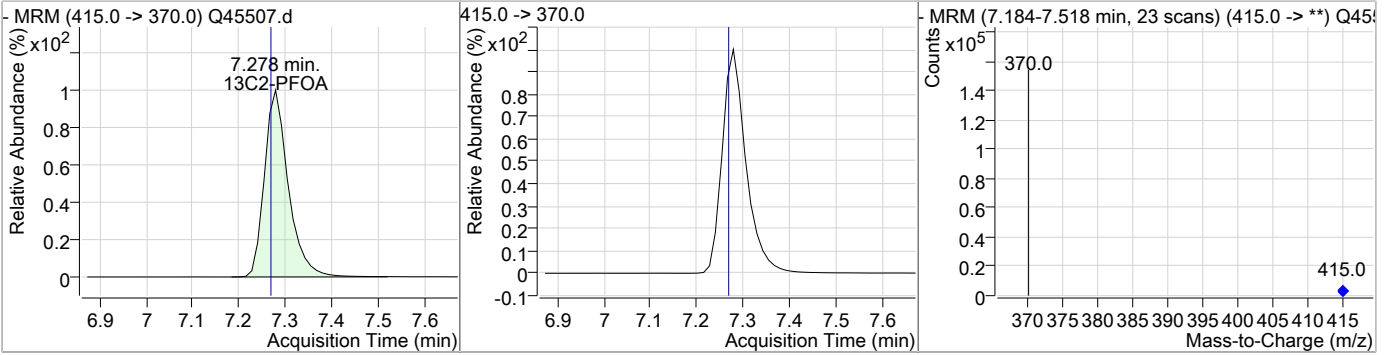
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.15	7.25	0.01	160192	449.0 -> 99.0	43.4	0.0	92.4



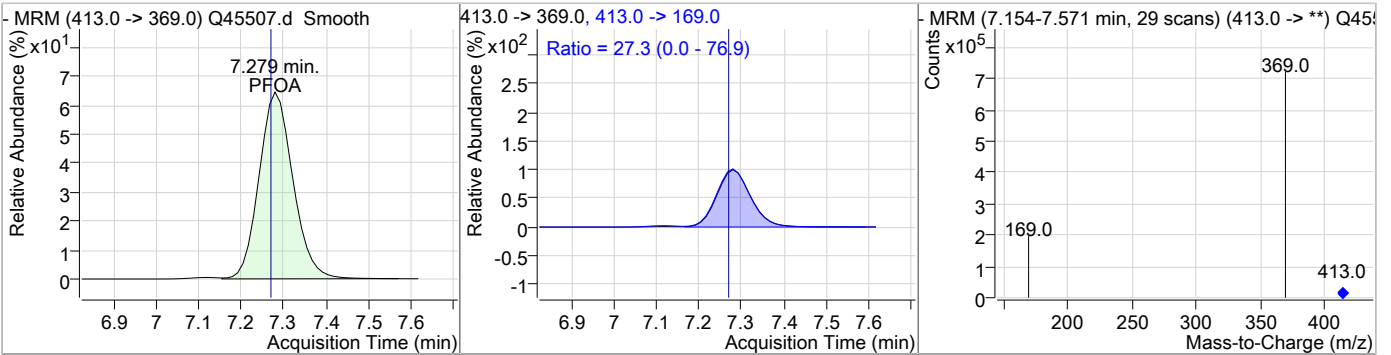
10.5.22 10

### Perfluorinated Compounds by LC/MS/MS

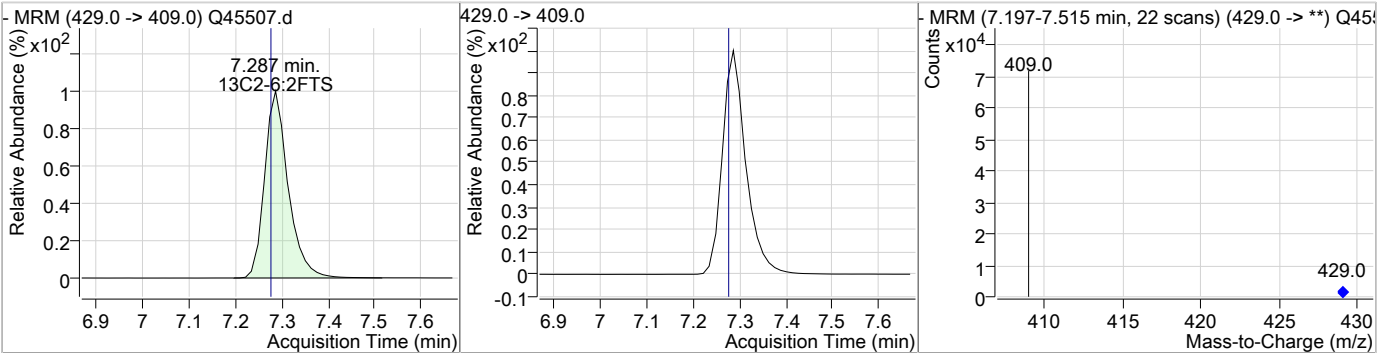
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.28	0.01	115836				



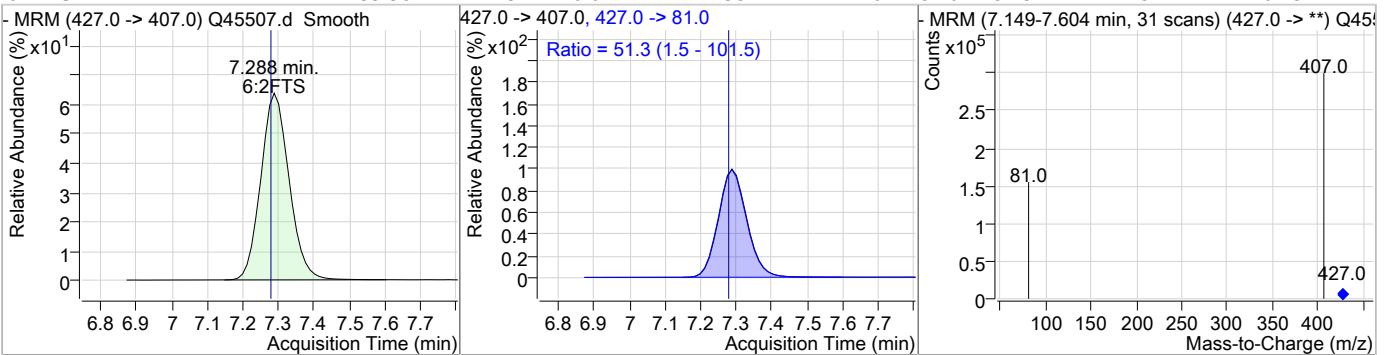
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.06	7.28	0.01	541748	413.0 ->	169.0 27.3	0.0	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		7.29	0.01	53506				



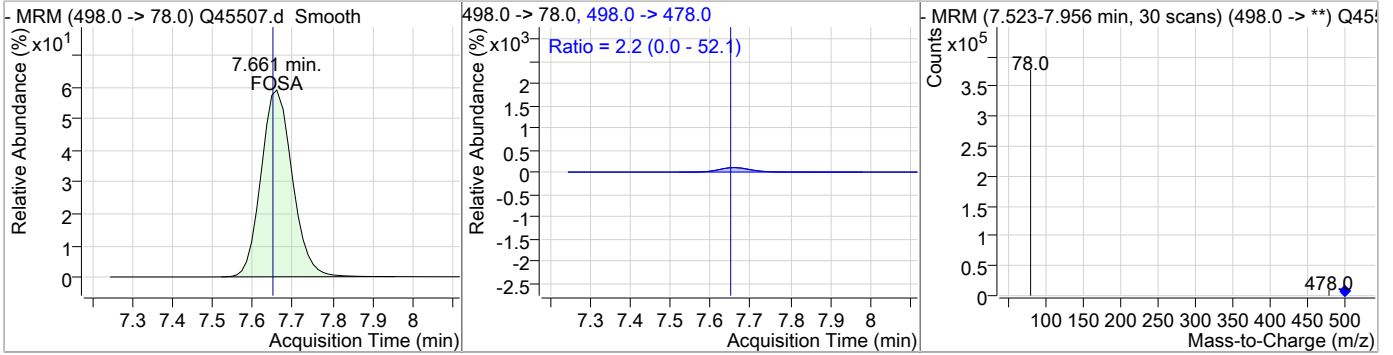
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	99.98	7.29	0.01	221957	427.0 ->	81.0 51.3	1.5	101.5



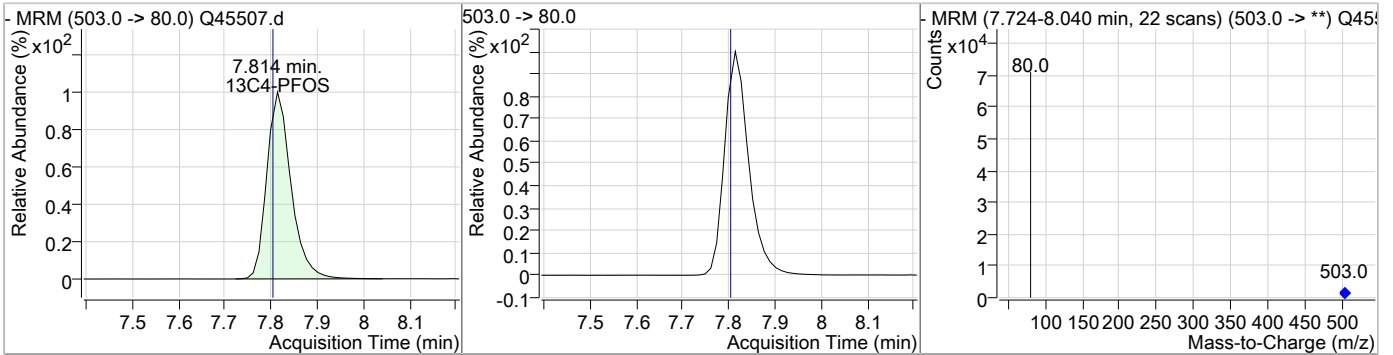
10.5.22 10

### Perfluorinated Compounds by LC/MS/MS

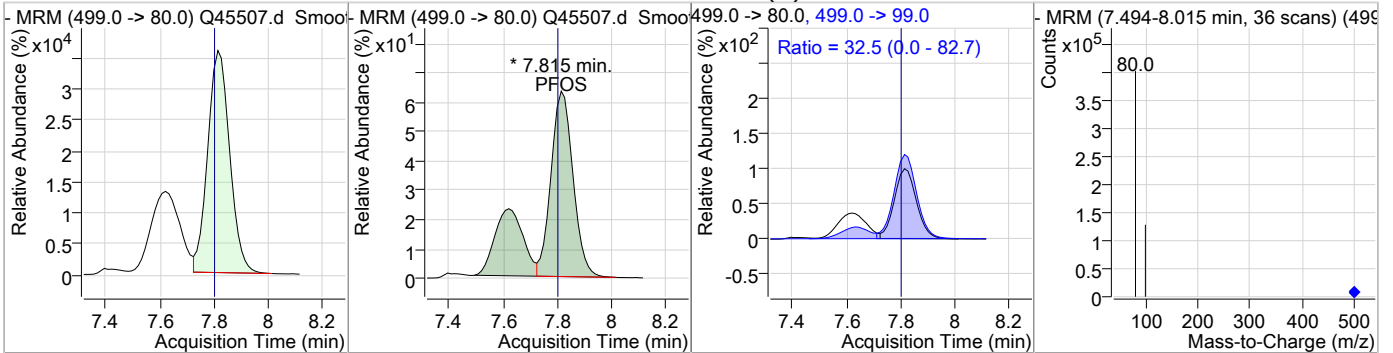
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	99.87	7.66	0.01	291986	498.0 -> 478.0	2.2	0.0	52.1



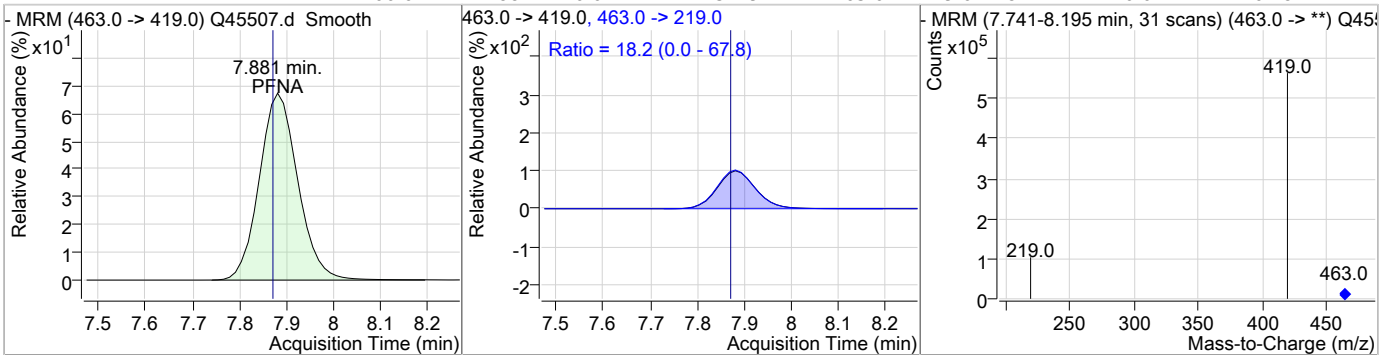
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.81	0.01	54228				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.75	7.81	0.01	297071 (m)	499.0 -> 99.0	32.5	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.67	7.88	0.01	423779	463.0 -> 219.0	18.2	0.0	67.8



10.5.22 10



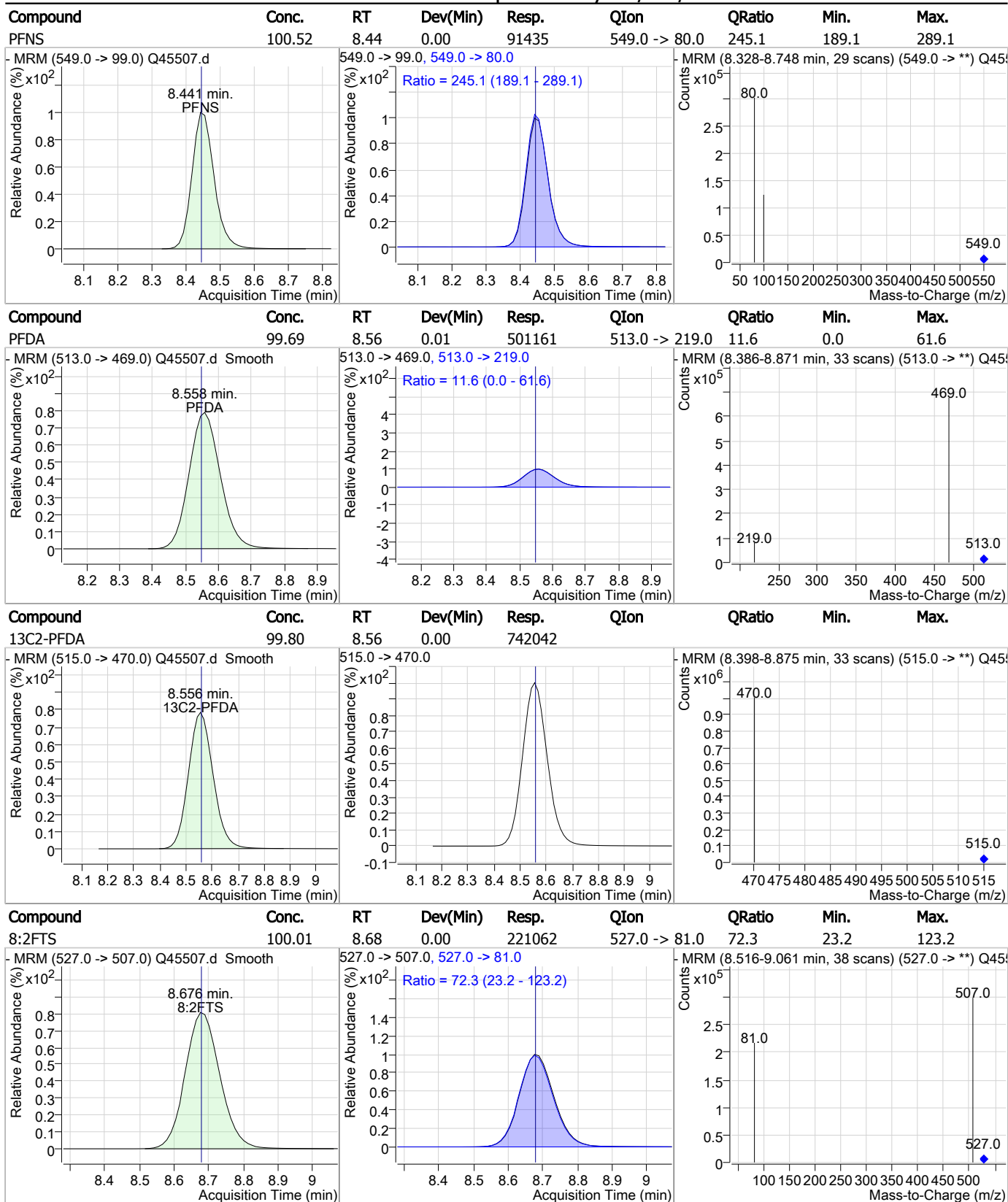
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.10	0.01	21520				
-MRM (573.0 -> 419.0) Q45507.d			573.0 -> 419.0			-MRM (8.036-8.262 min, 16 scans) (573.0 -> **) Q45		
MeFOSAA	100.79	8.10	0.01	122902	570.0 -> 512.0	30.2	0.0	81.1
-MRM (570.0 -> 419.0) Q45507.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.975-8.389 min, 29 scans) (570.0 -> **) Q45		
d5-EtFOSAA	99.88	8.22	0.01	155705				
-MRM (589.0 -> 419.0) Q45507.d Smooth			589.0 -> 419.0			-MRM (8.084-8.535 min, 31 scans) (589.0 -> **) Q45		
EtFOSAA	99.97	8.22	0.01	113952	584.0 -> 483.0	46.1	0.0	95.2
-MRM (584.0 -> 419.0) Q45507.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			-MRM (8.097-8.536 min, 30 scans) (584.0 -> **) Q45		

10.5.22 10



### Perfluorinated Compounds by LC/MS/MS

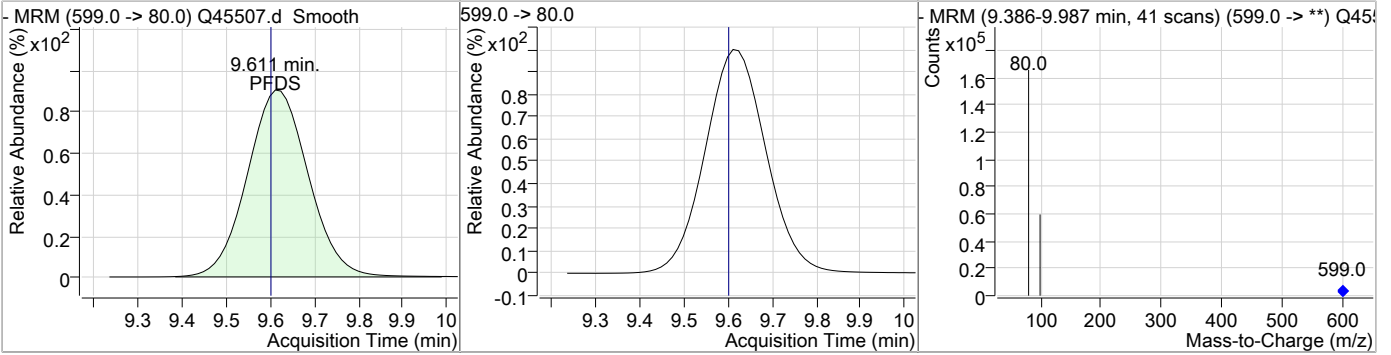


10.5.22 10

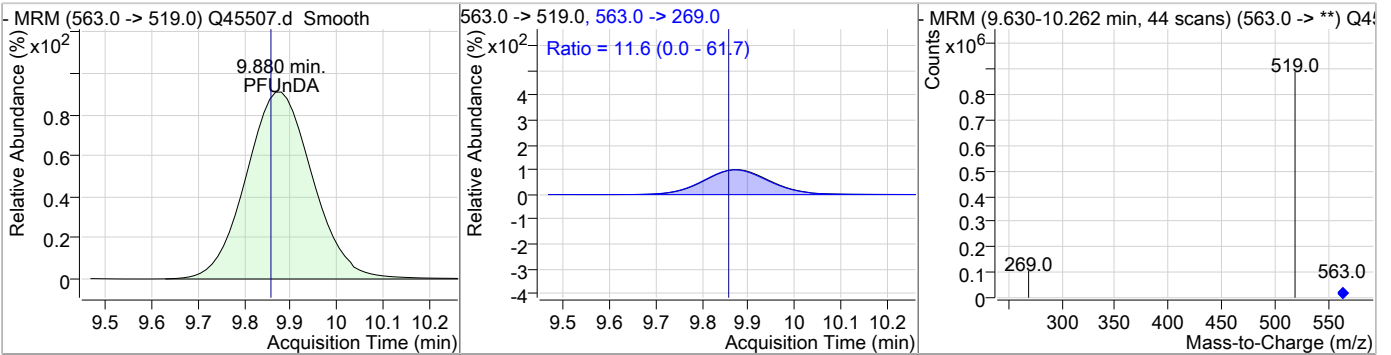


### Perfluorinated Compounds by LC/MS/MS

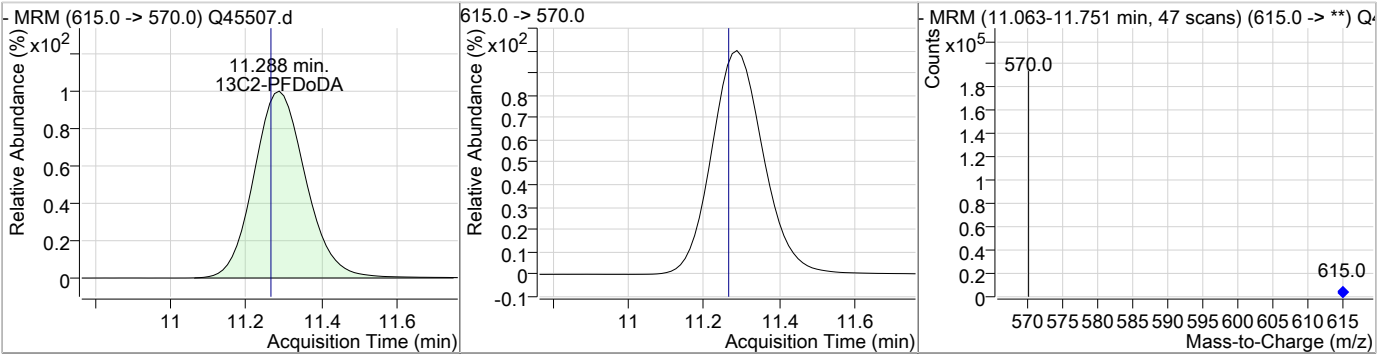
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	101.94	9.61	0.01	122268				



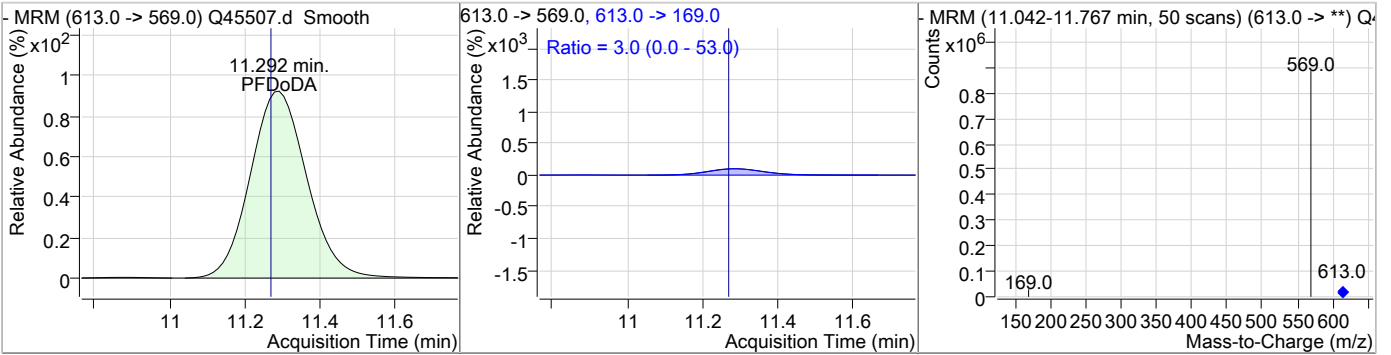
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	102.36	9.88	0.03	661940	563.0 -> 269.0	11.6	0.0	61.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.29	0.03	143646				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.48	11.29	0.03	658864	613.0 -> 169.0	3.0	0.0	53.0

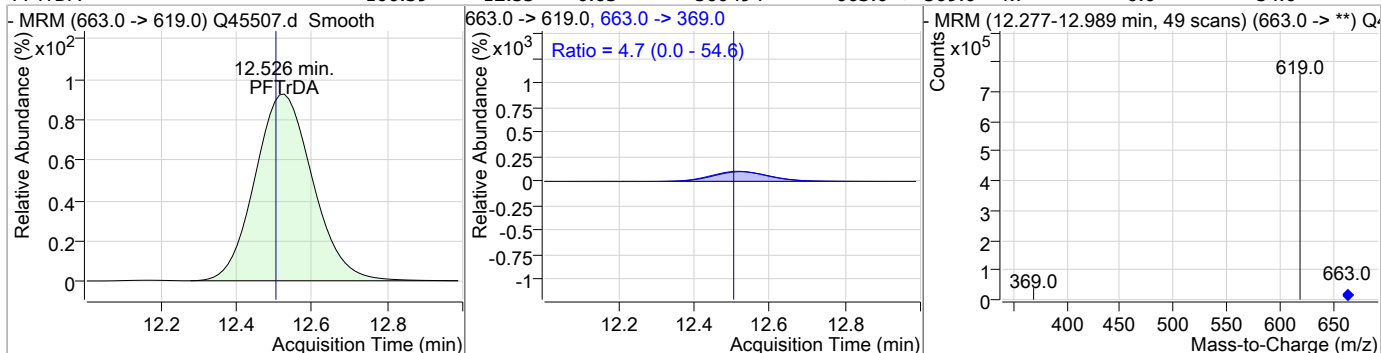


10.5.22 10

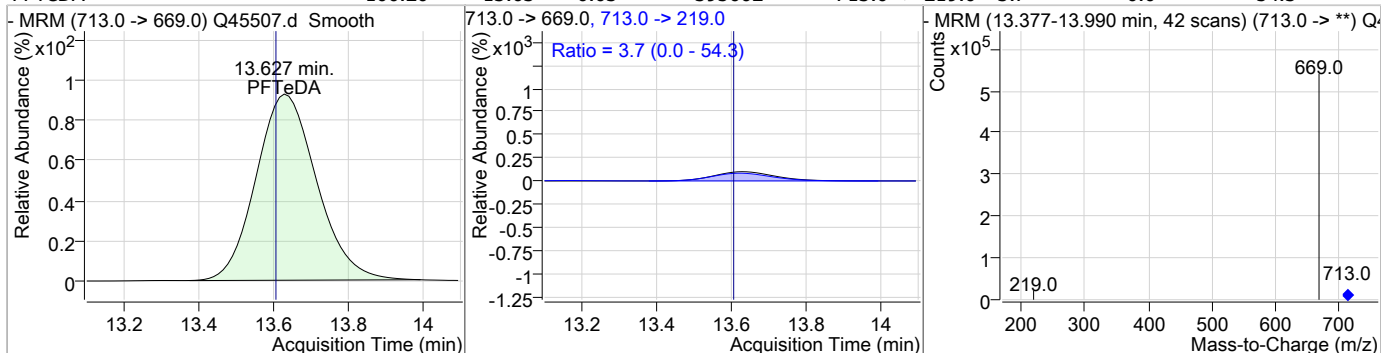


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	100.39	12.53	0.03	560494	663.0 -> 369.0	4.7	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.20	13.63	0.03	395662	713.0 -> 219.0	3.7	0.0	54.3



10.5.22 10

# Manual Integration Approval Summary

**Sample Number:** SQ1119-IC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45507.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 19:30      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.63	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.82	Split peak

10.5.22.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45509.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/26/2018 8:10:28 PM  
 Sample Name : ICV1119-20  
 Vial : Vial 11  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1119.batch.bin  
 Sample Information : OP69783,SQ1119,120,,,1.0,1,WATER

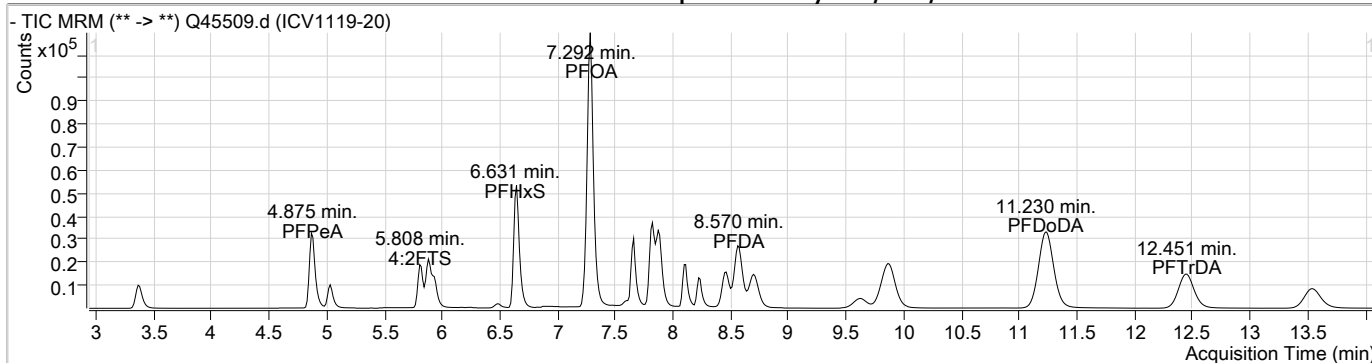
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.299	429.0 -> 409.0	46971	20.00 µg/L	0.025
13C2-PFDoDA	11.238	615.0 -> 570.0	147028	20.00 µg/L	-0.025
13C2-PFOA	7.291	415.0 -> 370.0	124740	20.00 µg/L	0.025
13C4-PFOS	7.827	503.0 -> 80.0	58897	20.00 µg/L	0.025
d3-MeFOSAA	8.099	573.0 -> 419.0	22687	20.00 µg/L	0.012
13C3-PFPeA	4.872	266.0 -> 222.0	58594	20.00 µg/L	0.025
<b>System Monitoring Compounds</b>					
13C2-PFDA	-	515.0 -> 470.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
d5-EtFOSAA	-	589.0 -> 419.0	-	N.D.	
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = NA%	
<b>Target Compounds</b>					
6:2FTS	7.301	427.0 -> 407.0	49469	21.29 µg/L	QValue 99
8:2FTS	8.701	527.0 -> 507.0	46617	21.58 µg/L	98
EtFOSAA	8.235	584.0 -> 419.0	26801	22.30 µg/L	100
FOSA	7.661	498.0 -> 78.0	75980	20.65 µg/L	100
MeFOSAA	8.112	570.0 -> 419.0	27236	21.19 µg/L	99
PFBA	3.377	213.0 -> 169.0	41104	21.81 µg/L	100
PFBS	5.029	299.0 -> 80.0	23477	18.61 µg/L	98
PFDA	8.570	513.0 -> 469.0	118147	21.82 µg/L	99
PFDoDA	11.230	613.0 -> 569.0	152789	22.77 µg/L	100
PFDS	9.624	599.0 -> 80.0	25378	19.48 µg/L	100
PFHpA	6.650	363.0 -> 319.0	129833	22.58 µg/L	100
PFHpS	7.247	449.0 -> 80.0	35603	20.49 µg/L	99
PFHxA	5.889	313.0 -> 269.0	66665	20.74 µg/L	100
PFHxS	6.631	399.0 -> 80.0	33771	17.91 µg/L	m 98
PFNA	7.894	463.0 -> 419.0	91985	20.29 µg/L	99
PFOA	7.292	413.0 -> 369.0	131573	22.57 µg/L	100
PFOS	7.828	499.0 -> 80.0	69505	21.70 µg/L	m 98
PFPeA	4.875	263.0 -> 219.0	57639	21.37 µg/L	100
PFTeDA	13.540	713.0 -> 669.0	82355	20.38 µg/L	99
PFTTrDA	12.451	663.0 -> 619.0	136161	23.83 µg/L	100
PFUnDA	9.868	563.0 -> 519.0	150188	22.69 µg/L	100
4:2FTS	5.808	327.0 -> 307.0	46573	21.39 µg/L	100
PFNS	8.466	549.0 -> 99.0	20172	20.42 µg/L	98
PFPeS	5.930	349.0 -> 99.0	8713	20.14 µg/L	97

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

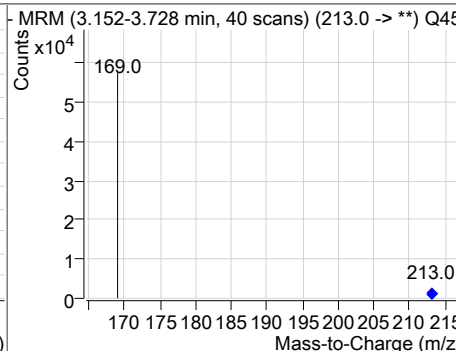
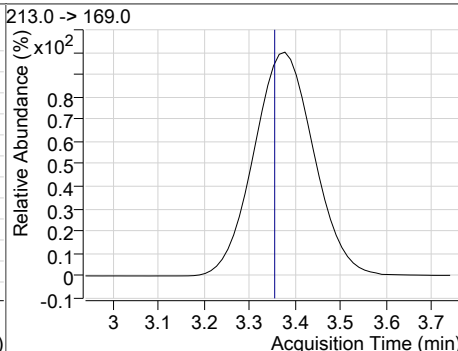
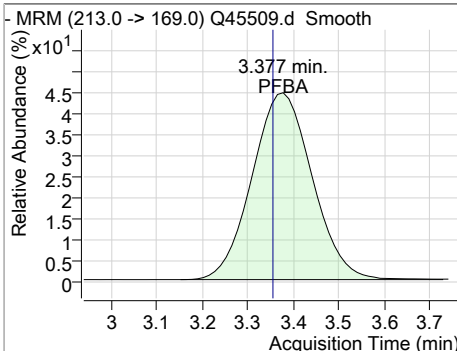
10.5.23  
**10**



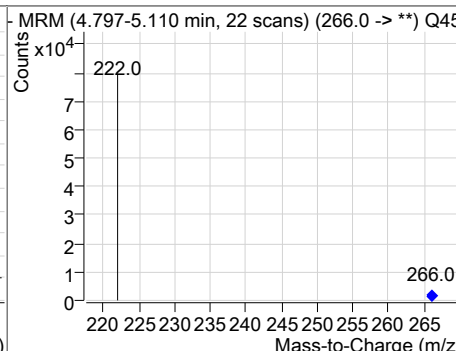
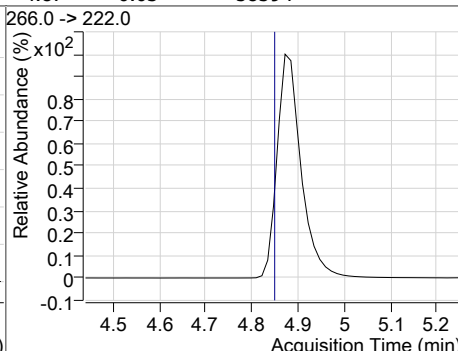
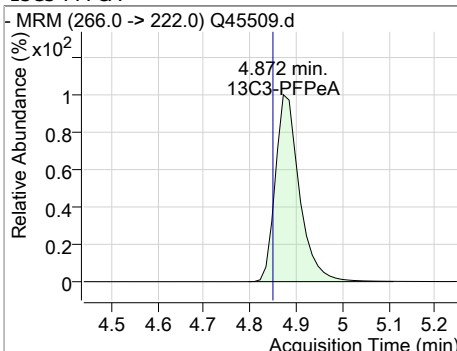
### Perfluorinated Compounds by LC/MS/MS



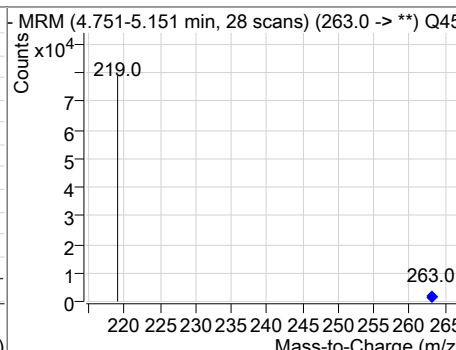
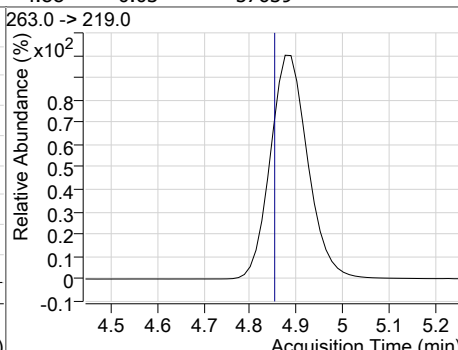
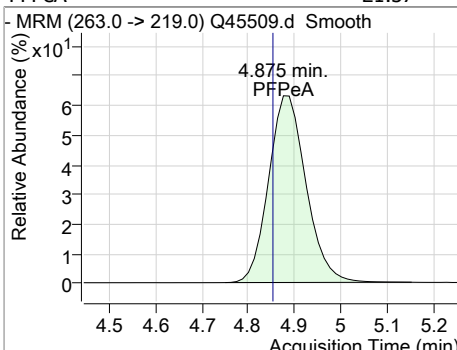
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.81	3.38	0.03	41104				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.87	0.03	58594				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.37	4.88	0.03	57639				



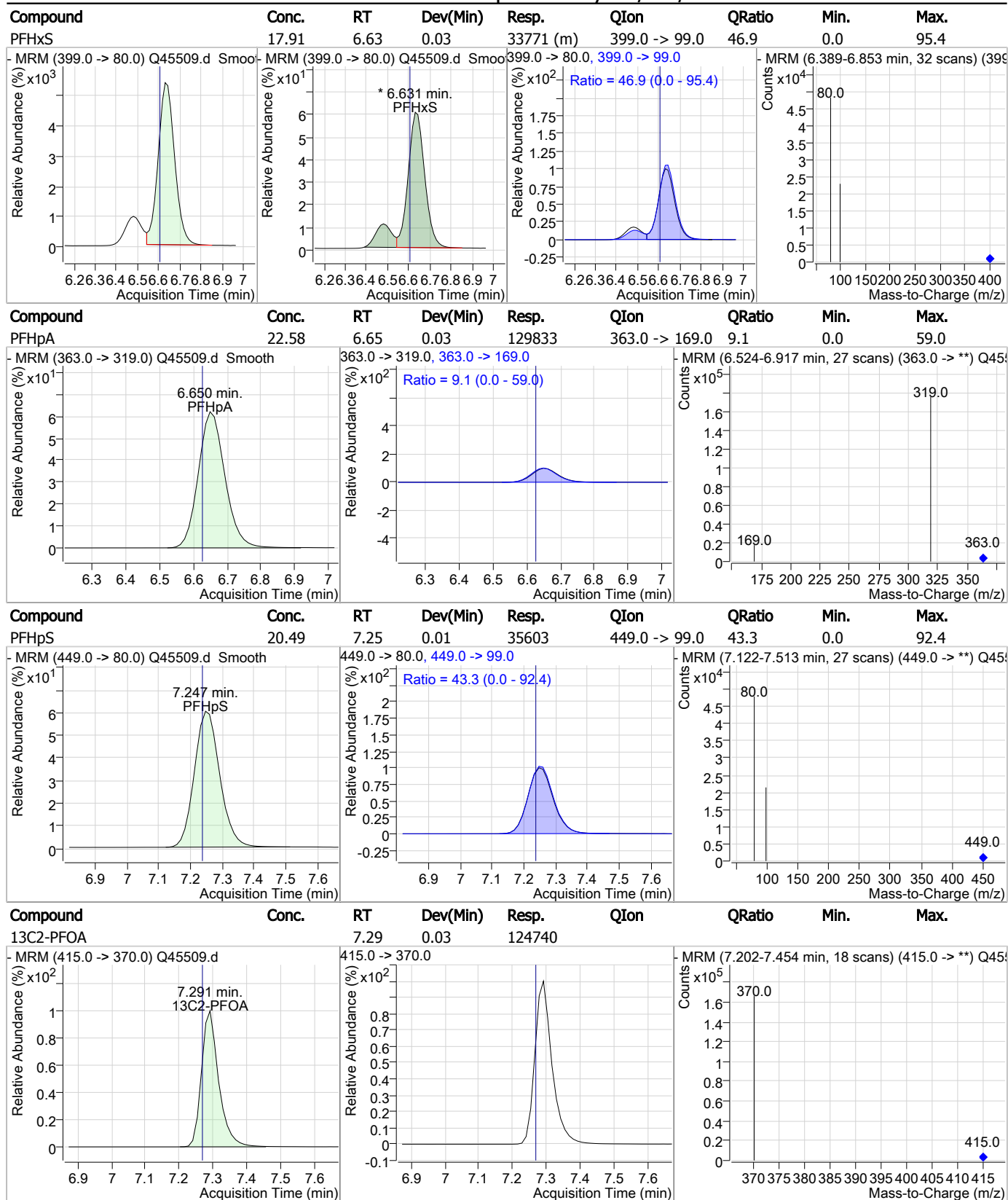
10.5.23 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.61	5.03	0.03	23477	299.0 -> 99.0	39.6	0.0	88.6
- MRM (299.0 -> 80.0) Q45509.d Smooth			299.0 -> 80.0, 299.0 -> 99.0			- MRM (4.891-5.291 min, 28 scans) (299.0 -> **) Q45		
4:2FTS	21.39	5.81	0.02	46573	327.0 -> 81.0	36.9	0.0	86.9
- MRM (327.0 -> 307.0) Q45509.d			327.0 -> 307.0, 327.0 -> 81.0			- MRM (5.733-6.046 min, 22 scans) (327.0 -> **) Q45		
PFHxA	20.74	5.89	0.02	66665	313.0 -> 119.0	0.4	0.0	50.4
- MRM (313.0 -> 269.0) Q45509.d Smooth			313.0 -> 269.0, 313.0 -> 119.0			- MRM (5.764-6.165 min, 28 scans) (313.0 -> **) Q45		
PFPeS	20.14	5.93	0.02	8713	349.0 -> 80.0	265.3	221.0	321.0
- MRM (349.0 -> 99.0) Q45509.d			349.0 -> 99.0, 349.0 -> 80.0			- MRM (5.856-6.170 min, 22 scans) (349.0 -> **) Q45		

10.5.23 10

### Perfluorinated Compounds by LC/MS/MS



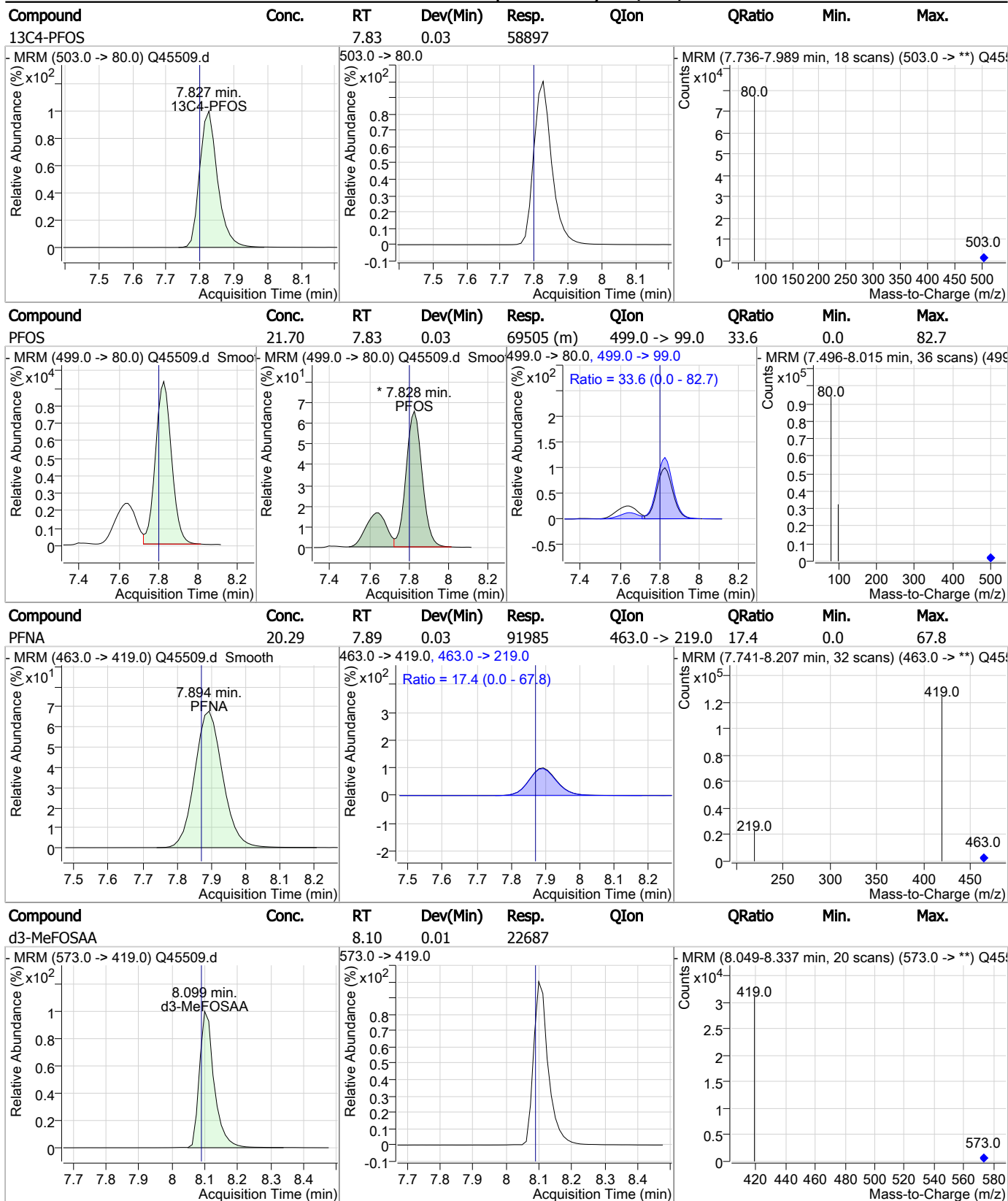
10.5.23 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.57	7.29	0.03	131573	413.0 -> 169.0	26.7	0.0	76.9
13C2-6:2FTS		7.30	0.03	46971				
6:2FTS	21.29	7.30	0.03	49469	427.0 -> 81.0	50.9	1.5	101.5
FOSA	20.65	7.66	0.01	75980	498.0 -> 478.0	2.1	0.0	52.1

10.5.23 10

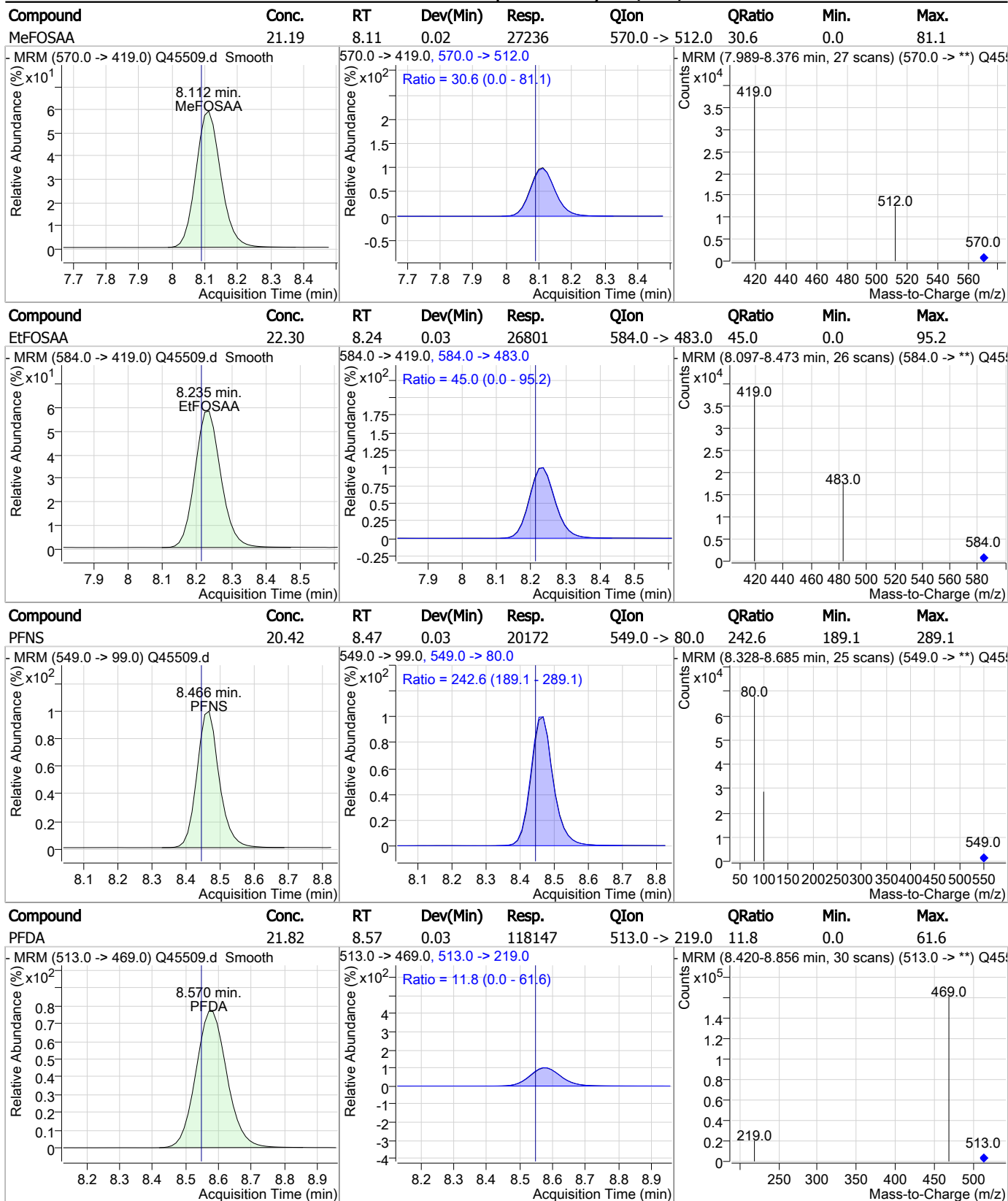
### Perfluorinated Compounds by LC/MS/MS



10.5.23 10



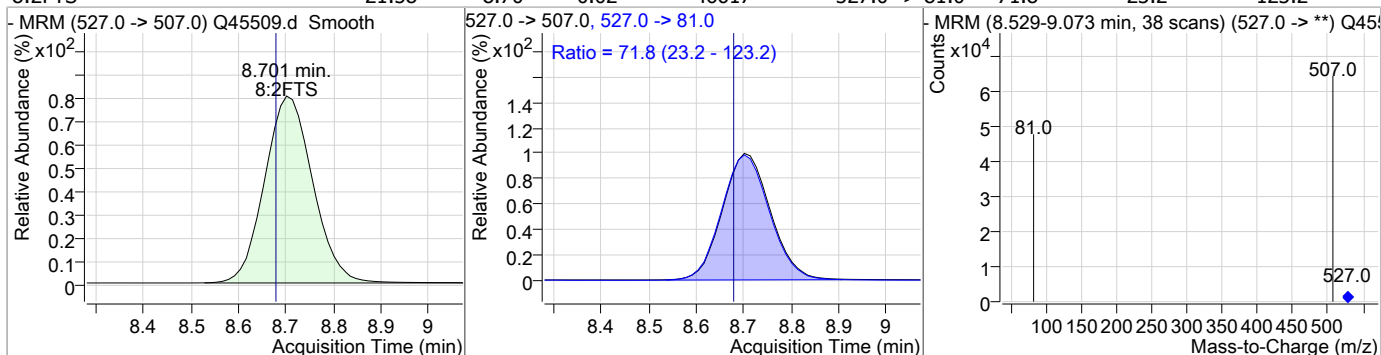
### Perfluorinated Compounds by LC/MS/MS



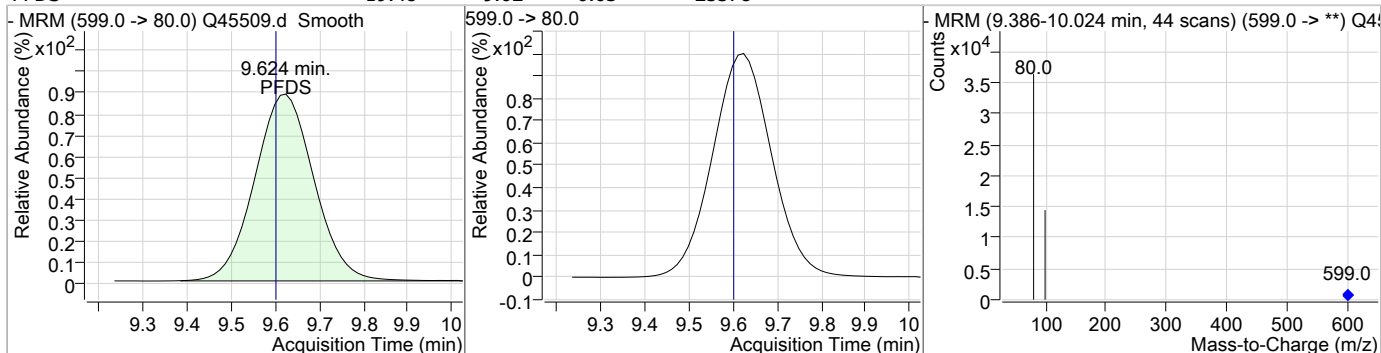
10.5.23 10

### Perfluorinated Compounds by LC/MS/MS

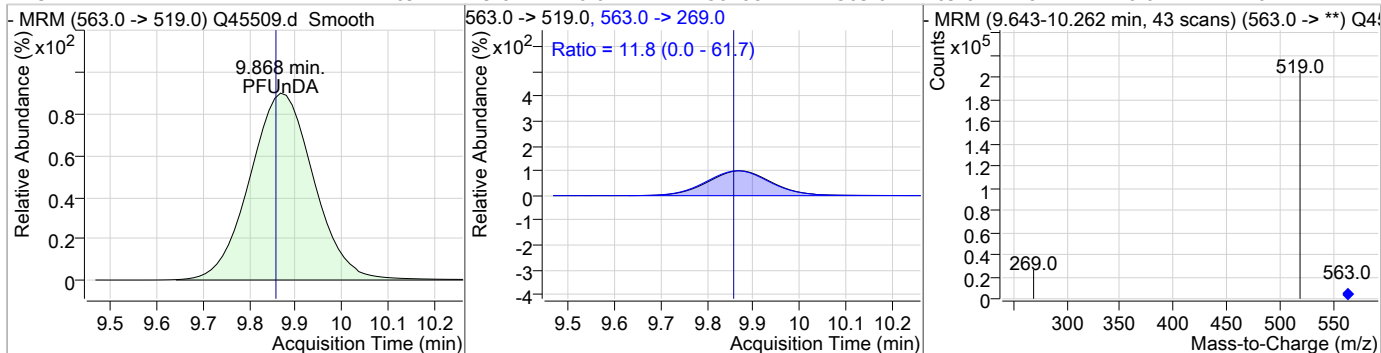
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.58	8.70	0.02	46617	527.0 -> 81.0	71.8	23.2	123.2



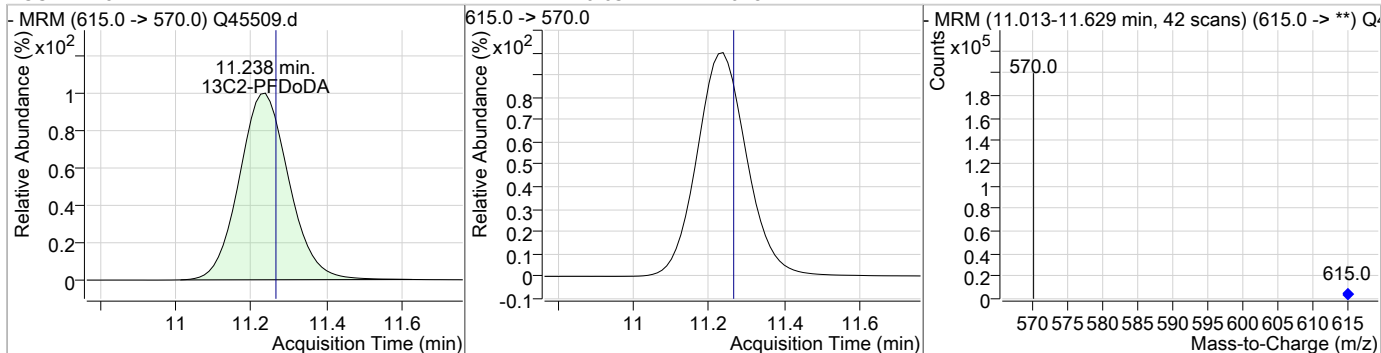
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.48	9.62	0.03	25378	599.0 -> 80.0	11.8	0.0	61.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.69	9.87	0.01	150188	563.0 -> 269.0	11.8	0.0	61.7

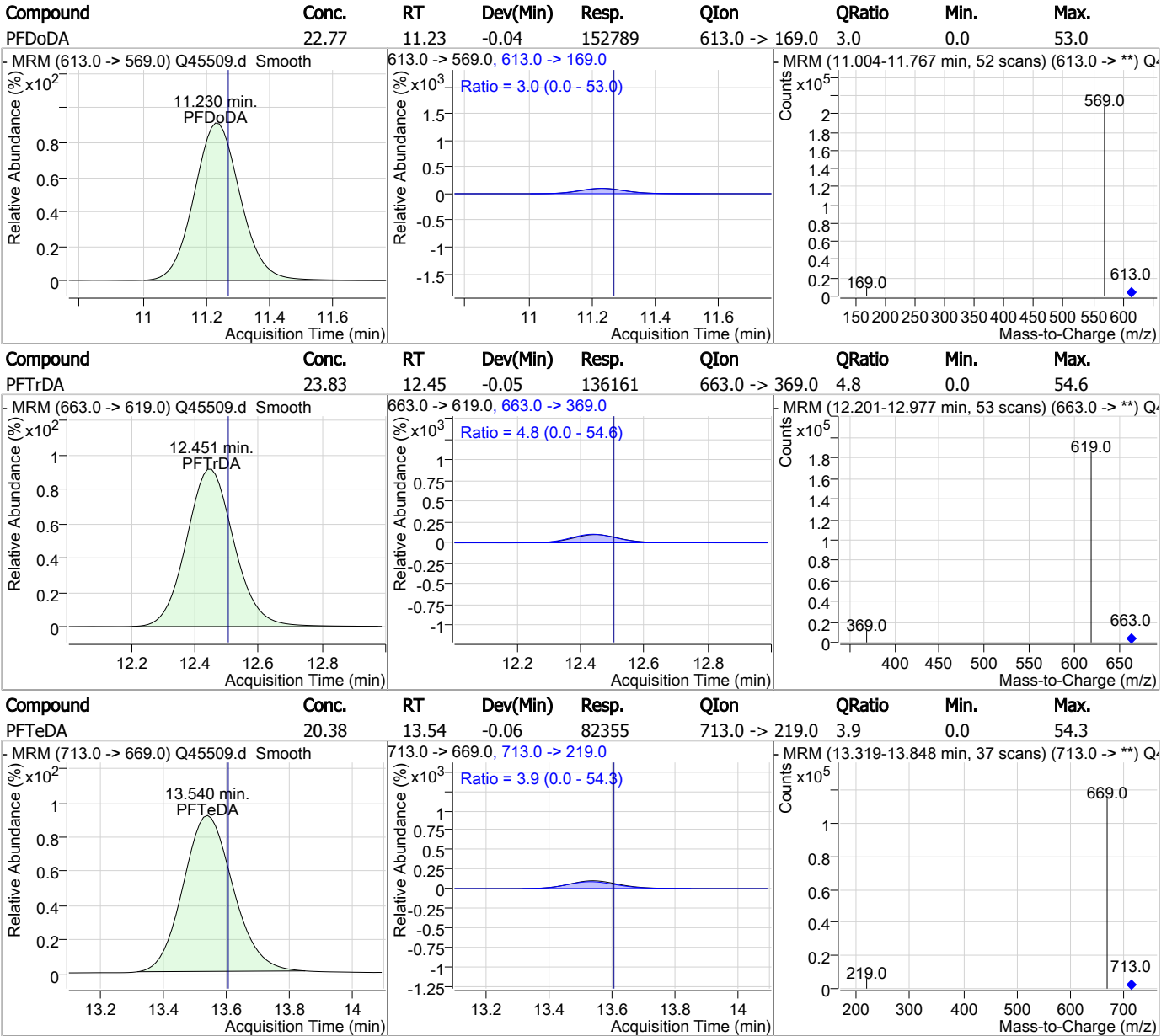


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.24	-0.03	147028	615.0 -> 570.0	11.8	0.0	61.7



10.5.23 10

### Perfluorinated Compounds by LC/MS/MS



10.5.23 10



# Manual Integration Approval Summary

**Sample Number:** SQ1119-ICV1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45509.D      **Analyst approved:** 04/27/18 10:01 Nancy Saunders  
**Injection Time:** 04/26/18 20:10      **Supervisor approved:** 04/27/18 12:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.63	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.83	Split peak

10.5.23.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45551.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/27/2018 10:21:11 AM  
 Sample Name : CC1119-20  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1120.batch.bin  
 Sample Information : OP69783,SQ1120,120,,,1.0,1,WATER

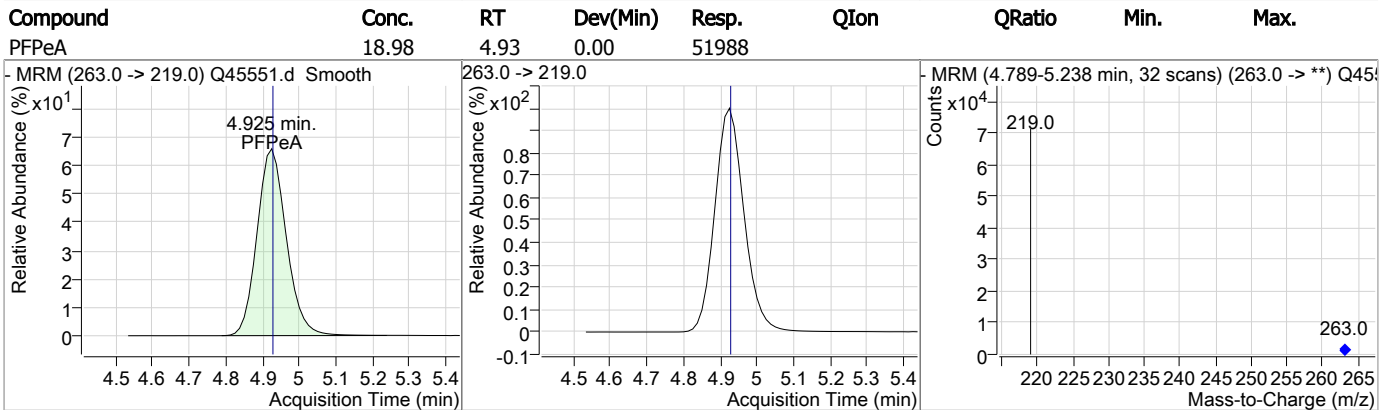
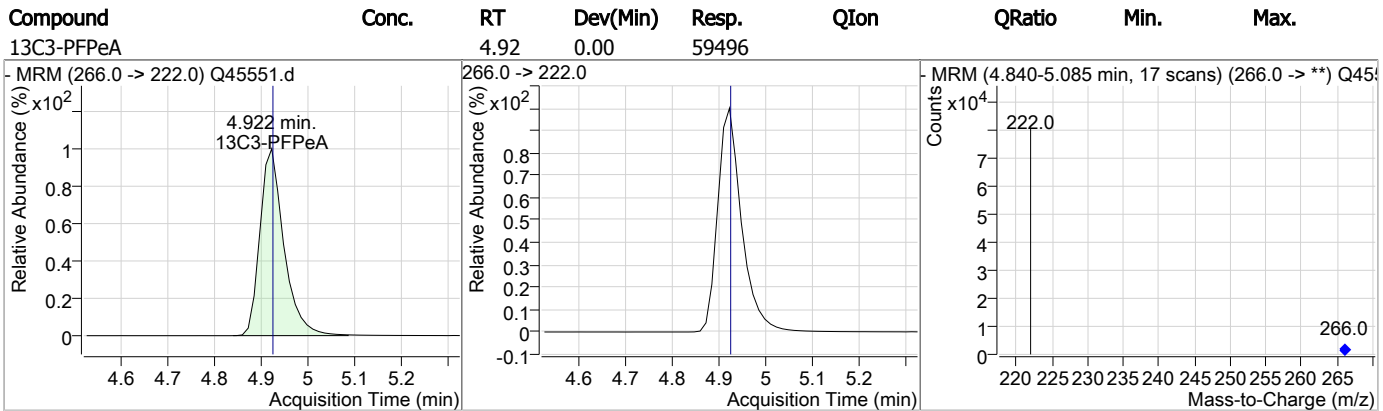
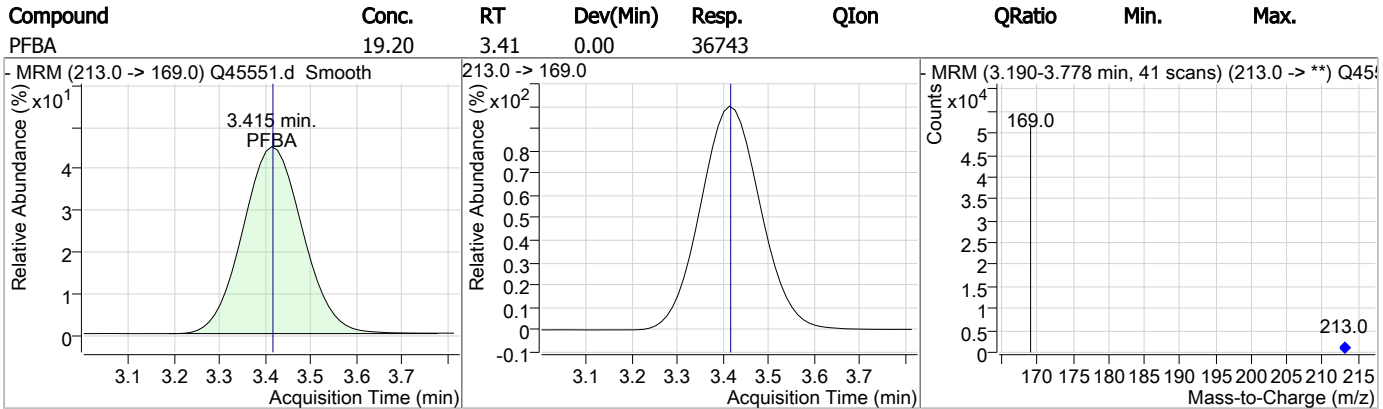
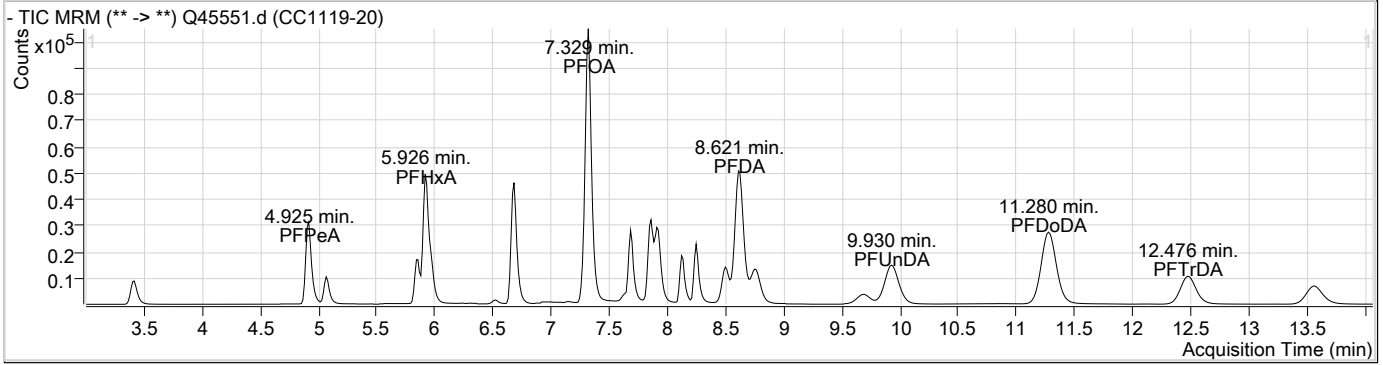
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.337	429.0 -> 409.0	46580	20.00 µg/L	0.011
13C2-PFDoDA	11.275	615.0 -> 570.0	131585	20.00 µg/L	0.000
13C2-PFOA	7.328	415.0 -> 370.0	117329	20.00 µg/L	0.012
13C4-PFOS	7.864	503.0 -> 80.0	57608	20.00 µg/L	0.000
d3-MeFOSAA	8.124	573.0 -> 419.0	22313	20.00 µg/L	0.000
13C3-PFPeA	4.922	266.0 -> 222.0	59496	20.00 µg/L	0.000
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.632	515.0 -> 470.0	150900	20.04 µg/L	0.002
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 100.2%	
13C2-PFHxA	5.937	315.0 -> 270.0	104511	20.30 µg/L	0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.5%	
d5-EtFOSAA	8.247	589.0 -> 419.0	32336	20.01 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 100.0%	
<b>Target Compounds</b>					
6:2FTS	7.338	427.0 -> 407.0	43828	18.93 µg/L	QValue 97
8:2FTS	8.764	527.0 -> 507.0	42387	19.74 µg/L	97
EtFOSAA	8.248	584.0 -> 419.0	23251	19.67 µg/L	98
FOSA	7.685	498.0 -> 78.0	69260	19.08 µg/L	100
MeFOSAA	8.138	570.0 -> 419.0	25386	20.08 µg/L	97
PFBA	3.415	213.0 -> 169.0	36743	19.20 µg/L	100
PFBS	5.066	299.0 -> 80.0	24180	19.59 µg/L	100
PFDA	8.621	513.0 -> 469.0	101210	19.88 µg/L	100
PFDoDA	11.280	613.0 -> 569.0	114622	19.08 µg/L	100
PFDS	9.686	599.0 -> 80.0	22441	17.61 µg/L	100
PFHpA	6.687	363.0 -> 319.0	106896	19.77 µg/L	100
PFHpS	7.282	449.0 -> 80.0	31528	18.55 µg/L	99
PFHxA	5.926	313.0 -> 269.0	60224	19.92 µg/L	100
PFHxS	6.668	399.0 -> 80.0	34671	18.80 µg/L	m 99
PFNA	7.932	463.0 -> 419.0	81028	19.00 µg/L	99
PFOA	7.329	413.0 -> 369.0	105078	19.16 µg/L	100
PFOS	7.865	499.0 -> 80.0	59933	19.13 µg/L	m 100
PFPeA	4.925	263.0 -> 219.0	51988	18.98 µg/L	100
PFTeDA	13.565	713.0 -> 669.0	68081	18.82 µg/L	98
PFTTrDA	12.476	663.0 -> 619.0	96632	18.89 µg/L	99
PFUnDA	9.930	563.0 -> 519.0	107754	18.19 µg/L	99
4:2FTS	5.858	327.0 -> 307.0	42481	19.63 µg/L	100
PFNS	8.503	549.0 -> 99.0	18091	18.72 µg/L	99
PFPeS	5.967	349.0 -> 99.0	7831	18.50 µg/L	95

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

10.5.24  
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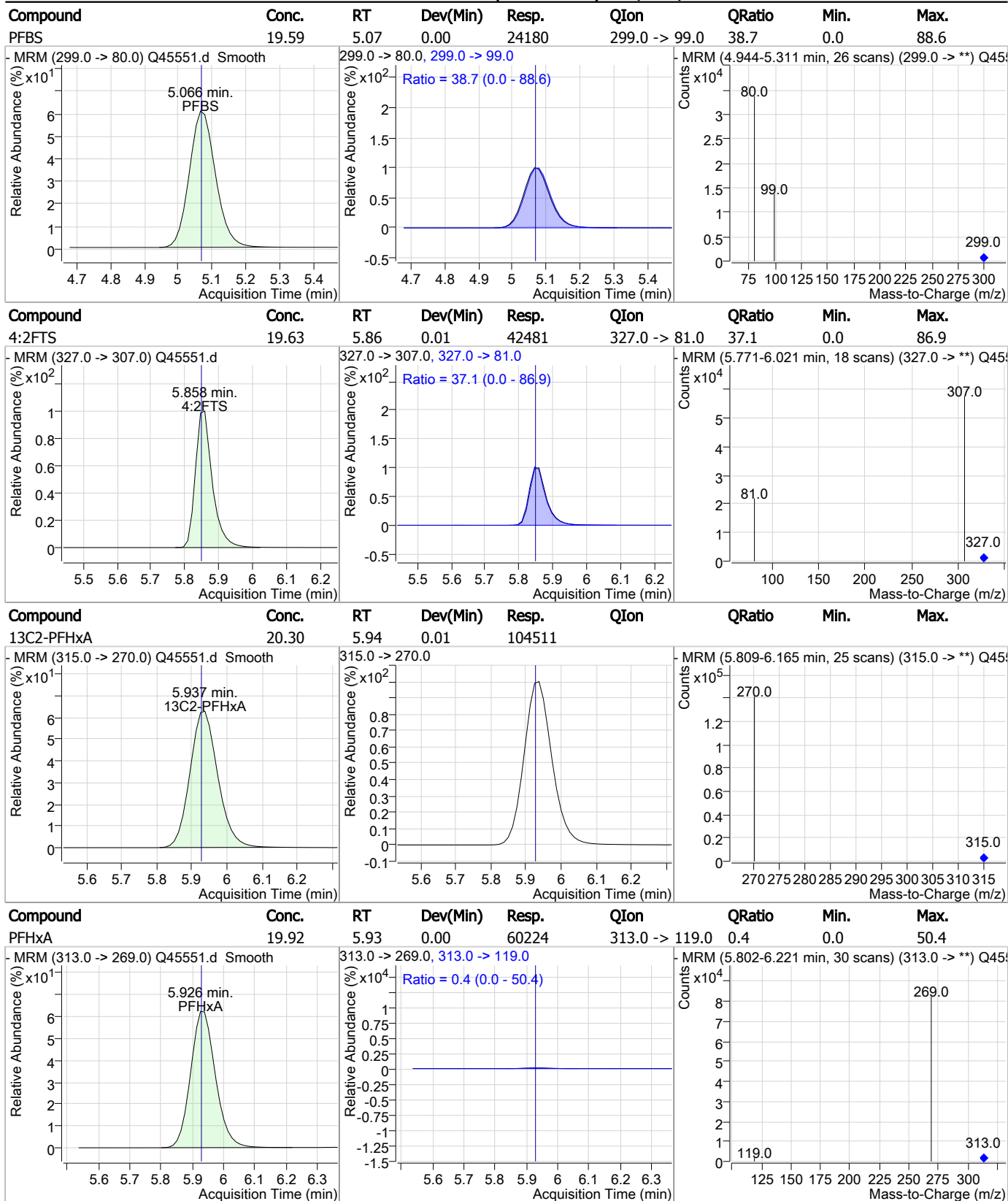
### Perfluorinated Compounds by LC/MS/MS



10.5.24 10

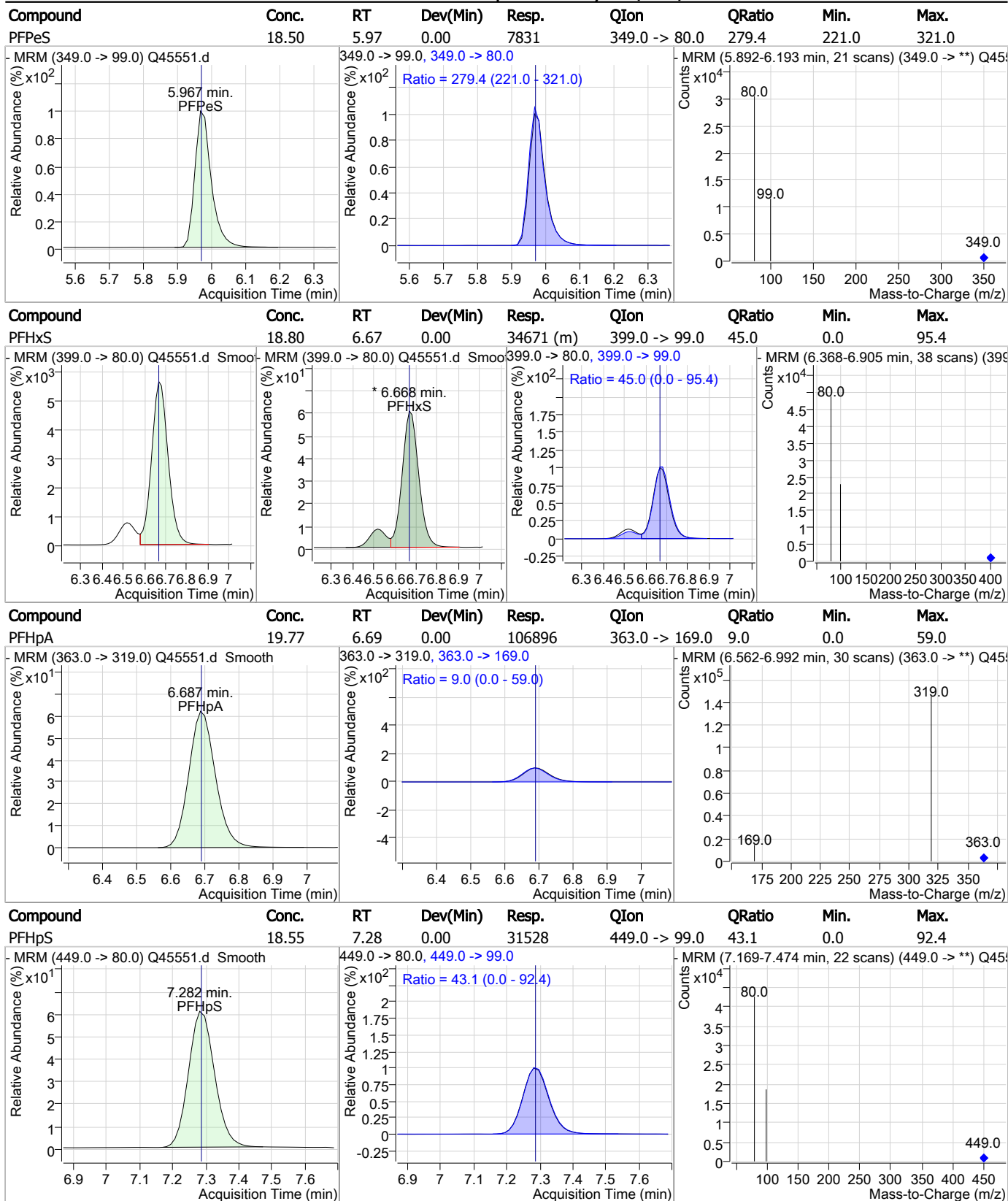


### Perfluorinated Compounds by LC/MS/MS



10.5.24 10

### Perfluorinated Compounds by LC/MS/MS



10.5.24 10





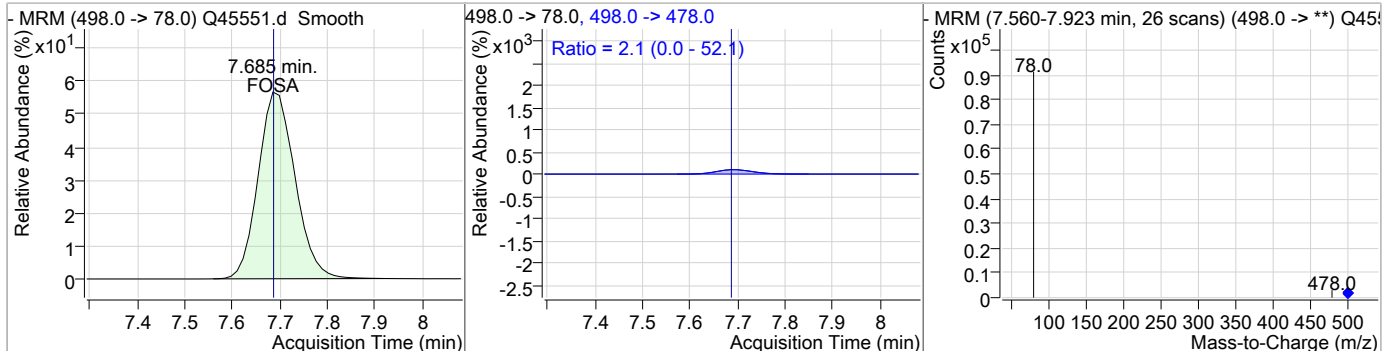
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.33	0.01	117329				
- MRM (415.0 -> 370.0) Q45551.d			415.0 -> 370.0			- MRM (7.240-7.492 min, 18 scans) (415.0 -> **) Q4551.d		
13C2-6:2FTS		7.34	0.01	46580				
- MRM (429.0 -> 409.0) Q45551.d			429.0 -> 409.0			- MRM (7.252-7.502 min, 18 scans) (429.0 -> **) Q4551.d		
PFOA	19.16	7.33	0.00	105078	413.0 -> 169.0	27.0	0.0	76.9
- MRM (413.0 -> 369.0) Q45551.d Smooth			413.0 -> 369.0, 413.0 -> 169.0			- MRM (7.204-7.593 min, 28 scans) (413.0 -> **) Q4551.d		
6:2FTS	18.93	7.34	0.00	43828	427.0 -> 81.0	53.6	1.5	101.5
- MRM (427.0 -> 407.0) Q45551.d Smooth			427.0 -> 407.0, 427.0 -> 81.0			- MRM (7.215-7.629 min, 29 scans) (427.0 -> **) Q4551.d		

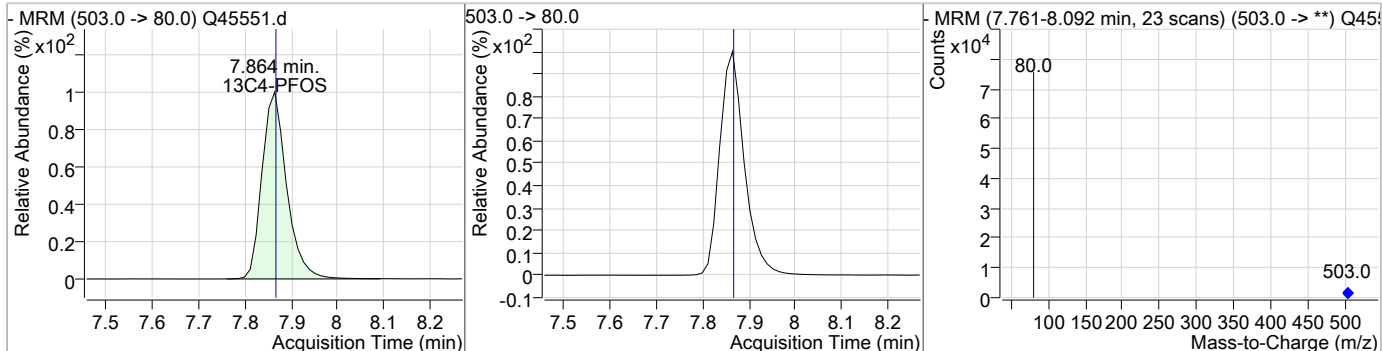
10.5.24 10

### Perfluorinated Compounds by LC/MS/MS

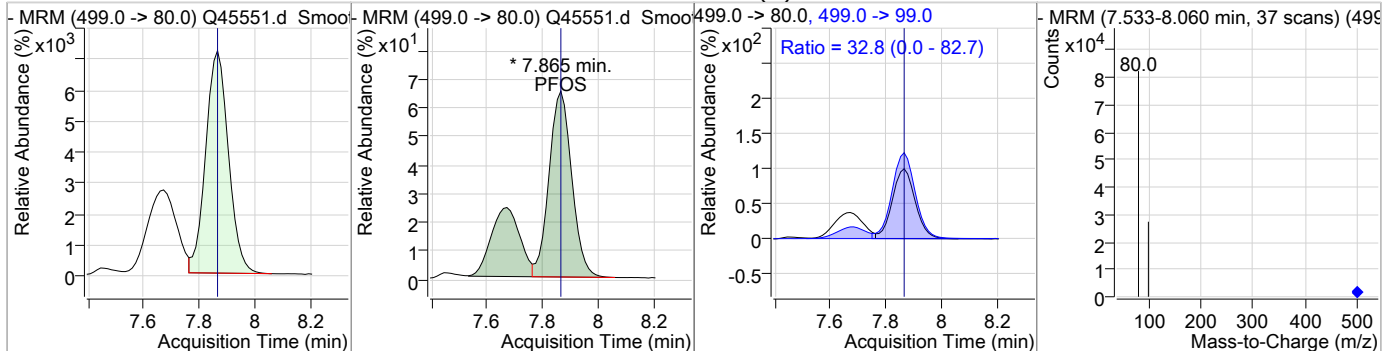
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.08	7.69	0.00	69260	498.0 -> 478.0	2.1	0.0	52.1



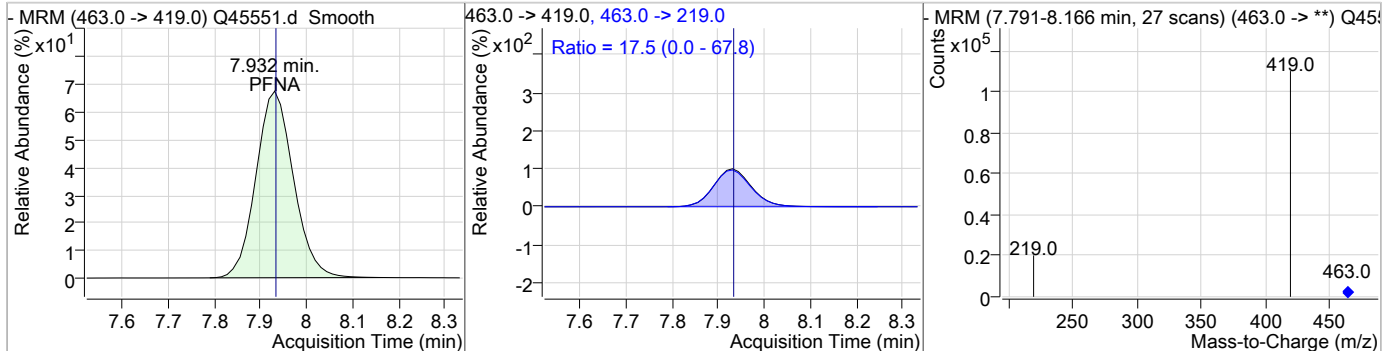
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.86	0.00	57608				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.13	7.87	0.00	59933 (m)	499.0 -> 99.0	32.8	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.00	7.93	0.00	81028	463.0 -> 219.0	17.5	0.0	67.8



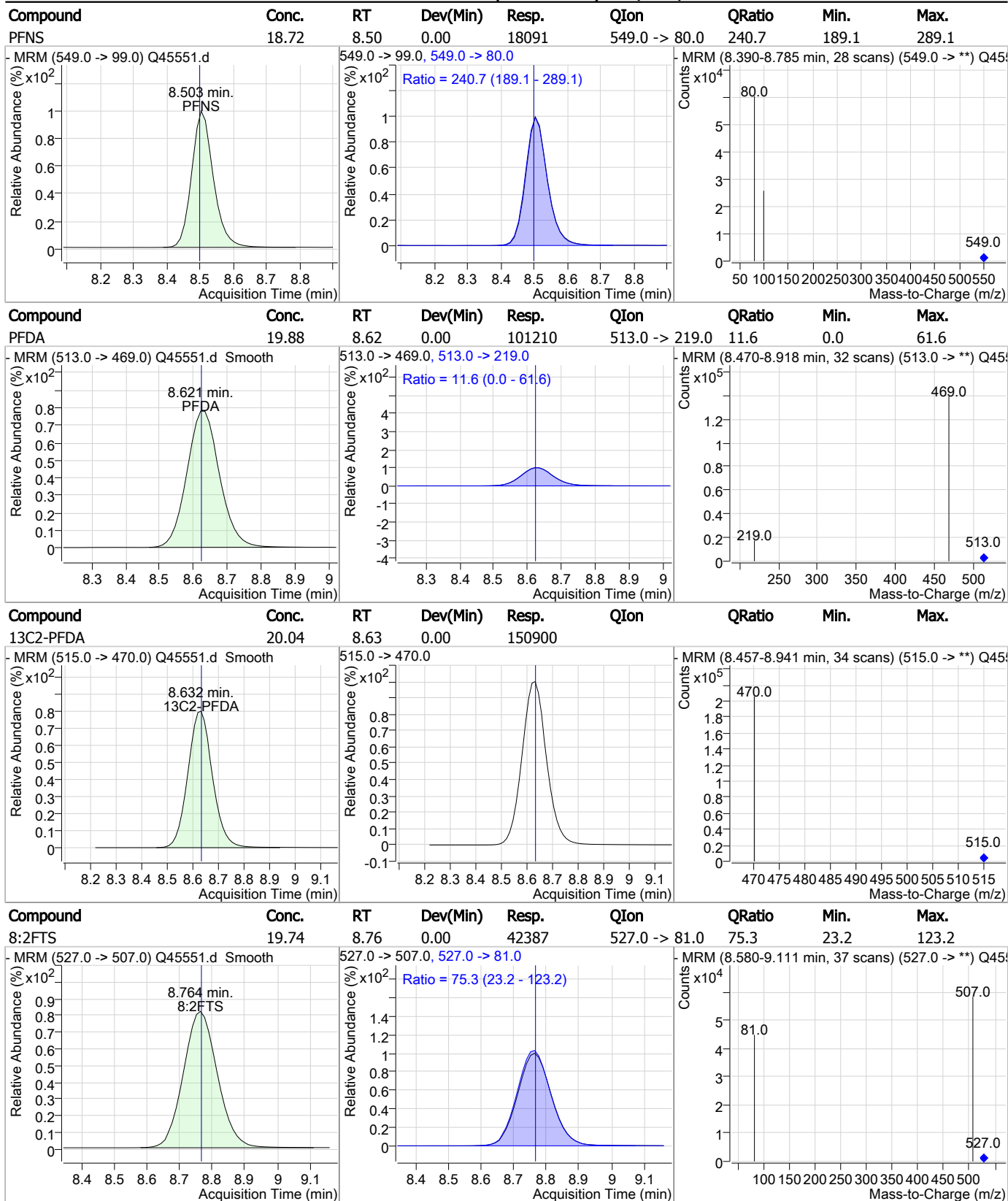
10.5.24 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.12	0.00	22313				
- MRM (573.0 -> 419.0) Q45551.d			573.0 -> 419.0		- MRM (8.062-8.287 min, 16 scans) (573.0 -> **) Q451			
MeFOSAA	20.08	8.14	0.00	25386	570.0 -> 512.0	29.7	0.0	81.1
- MRM (570.0 -> 419.0) Q45551.d Smooth			570.0 -> 419.0, 570.0 -> 512.0		- MRM (8.013-8.376 min, 26 scans) (570.0 -> **) Q451			
d5-EtFOSAA	20.01	8.25	0.00	32336				
- MRM (589.0 -> 419.0) Q45551.d Smooth			589.0 -> 419.0		- MRM (8.112-8.548 min, 31 scans) (589.0 -> **) Q451			
EtFOSAA	19.67	8.25	0.00	23251	584.0 -> 483.0	46.3	0.0	95.2
- MRM (584.0 -> 419.0) Q45551.d Smooth			584.0 -> 419.0, 584.0 -> 483.0		- MRM (8.123-8.492 min, 26 scans) (584.0 -> **) Q451			

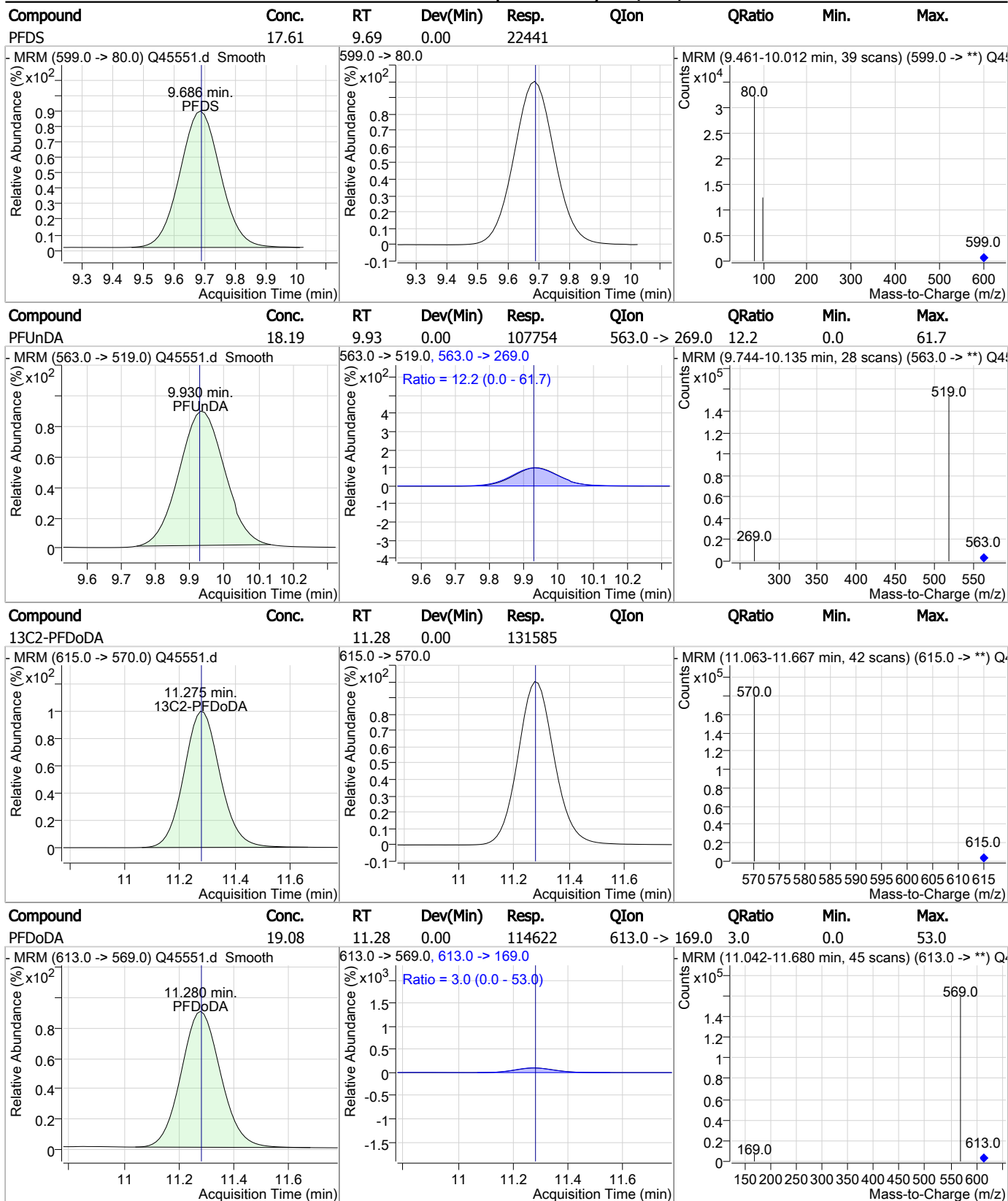
10.5.24 10

### Perfluorinated Compounds by LC/MS/MS



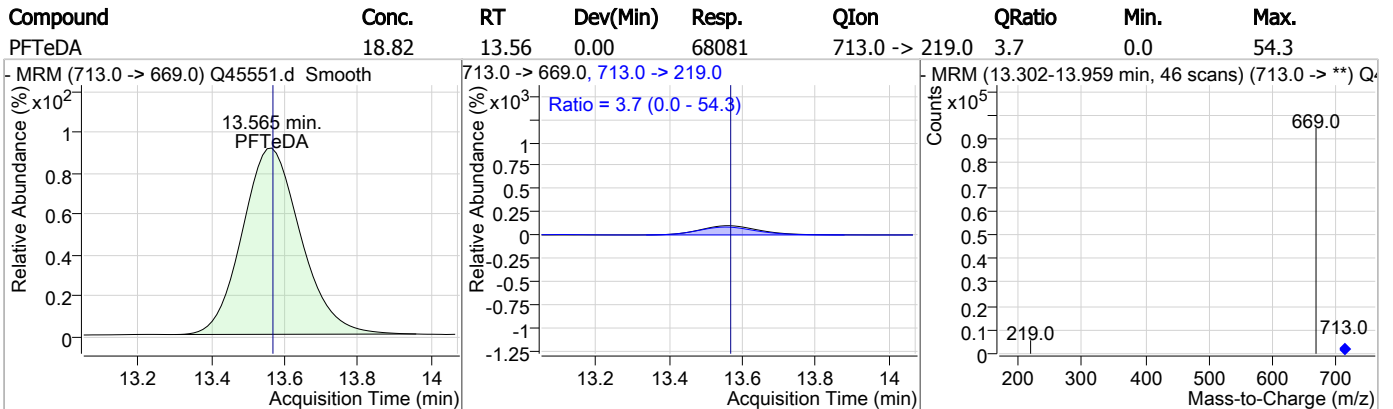
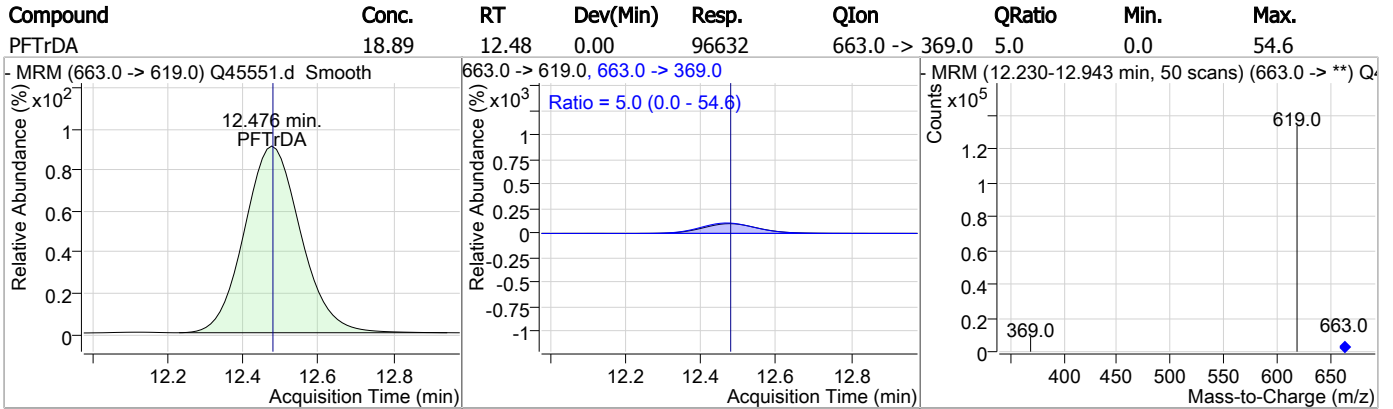
10.5.24 10

### Perfluorinated Compounds by LC/MS/MS



10.5.24 10

### Perfluorinated Compounds by LC/MS/MS



10.5.24 10



# Manual Integration Approval Summary

**Sample Number:** SQ1120-CC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45551.D      **Analyst approved:** 04/29/18 13:40 Nancy Saunders  
**Injection Time:** 04/27/18 10:21      **Supervisor approved:** 04/30/18 14:03 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.67	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.87	Split peak

10.5.24.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45560.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/27/2018 1:51:00 PM  
 Sample Name : CC1119-20  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1120.batch.bin  
 Sample Information : OP69783,SQ1120,120,,,1.0,1,WATER

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.337	429.0 -> 409.0	44903	20.00 µg/L	0.011
13C2-PFDoDA	11.338	615.0 -> 570.0	134986	20.00 µg/L	0.063
13C2-PFOA	7.328	415.0 -> 370.0	121688	20.00 µg/L	0.012
13C4-PFOS	7.852	503.0 -> 80.0	57933	20.00 µg/L	-0.013
d3-MeFOSAA	8.112	573.0 -> 419.0	21612	20.00 µg/L	-0.013
13C3-PFPeA	4.947	266.0 -> 222.0	61075	20.00 µg/L	0.025
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.645	515.0 -> 470.0	159165	20.38 µg/L	0.015
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.9%	
13C2-PFHxA	5.949	315.0 -> 270.0	109113	20.43 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 102.2%	
d5-EtFOSAA	8.234	589.0 -> 419.0	30184	19.28 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 96.4%	
<b>Target Compounds</b>					
					<b>QValue</b>
6:2FTS	7.338	427.0 -> 407.0	43703	19.61 µg/L	98
8:2FTS	8.789	527.0 -> 507.0	42927	20.77 µg/L	97
EtFOSAA	8.235	584.0 -> 419.0	22574	19.72 µg/L	100
FOSA	7.673	498.0 -> 78.0	73179	20.89 µg/L	100
MeFOSAA	8.125	570.0 -> 419.0	23417	19.12 µg/L	98
PFBA	3.452	213.0 -> 169.0	36434	18.54 µg/L	100
PFBS	5.104	299.0 -> 80.0	24427	19.68 µg/L	99
PFDA	8.646	513.0 -> 469.0	107448	20.35 µg/L	100
PFDoDA	11.342	613.0 -> 569.0	117664	19.10 µg/L	100
PFDS	9.724	599.0 -> 80.0	22231	17.35 µg/L	100
PFHpA	6.700	363.0 -> 319.0	110945	19.78 µg/L	100
PFHpS	7.282	449.0 -> 80.0	32683	19.13 µg/L	100
PFHxA	5.951	313.0 -> 269.0	63731	20.32 µg/L	100
PFHxS	6.681	399.0 -> 80.0	34761	18.75 µg/L	m 99
PFNA	7.932	463.0 -> 419.0	82293	18.61 µg/L	99
PFOA	7.329	413.0 -> 369.0	110768	19.47 µg/L	99
PFOS	7.853	499.0 -> 80.0	59391	18.85 µg/L	m 99
PFPeA	4.950	263.0 -> 219.0	53222	18.93 µg/L	100
PFTeDA	13.640	713.0 -> 669.0	70364	18.96 µg/L	98
PFTTrDA	12.539	663.0 -> 619.0	99682	19.00 µg/L	99
PFUnDA	9.993	563.0 -> 519.0	121782	20.04 µg/L	98
4:2FTS	5.871	327.0 -> 307.0	40921	19.62 µg/L	99
PFNS	8.503	549.0 -> 99.0	18786	19.33 µg/L	100
PFPeS	5.992	349.0 -> 99.0	7931	18.64 µg/L	94

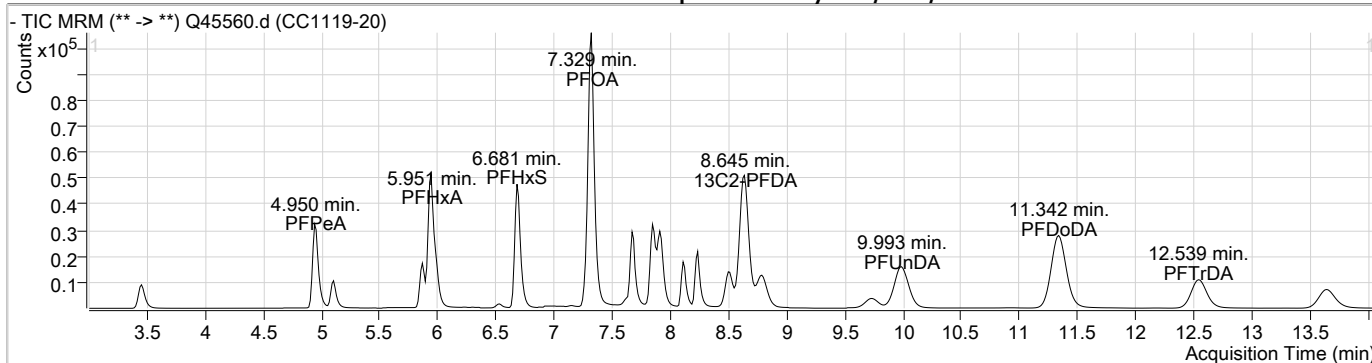
# = Qualifier out of range, m = manually integrated, + = Area summed

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**10**

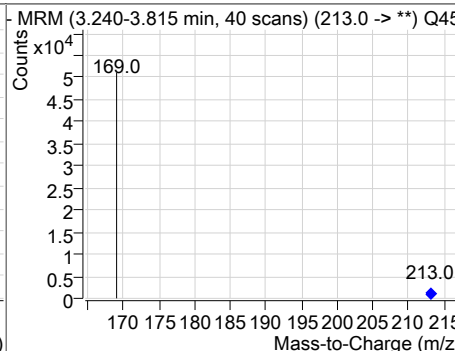
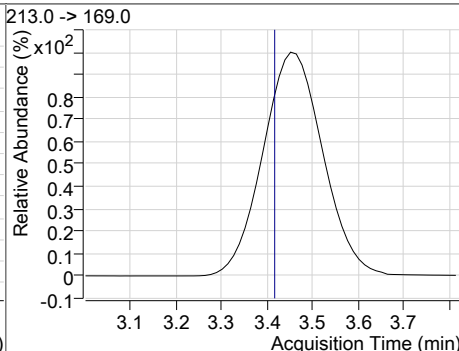
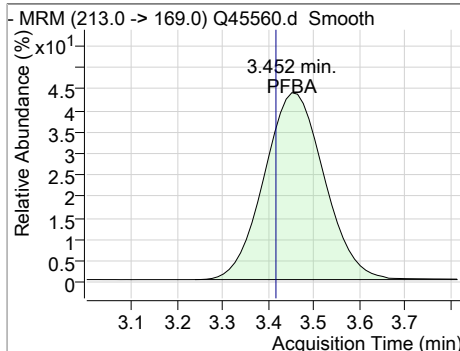




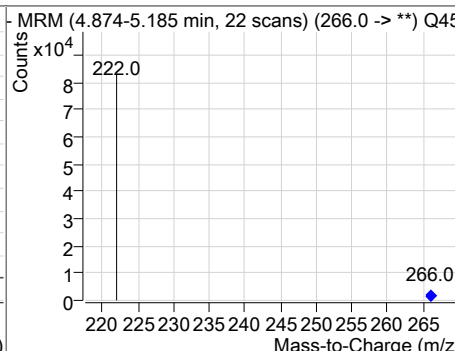
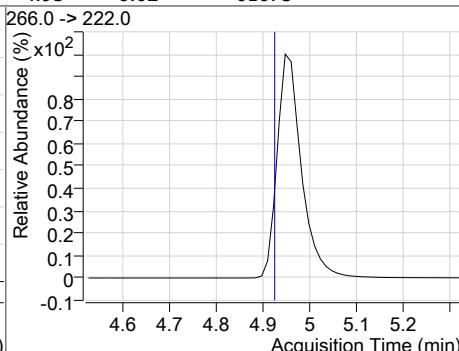
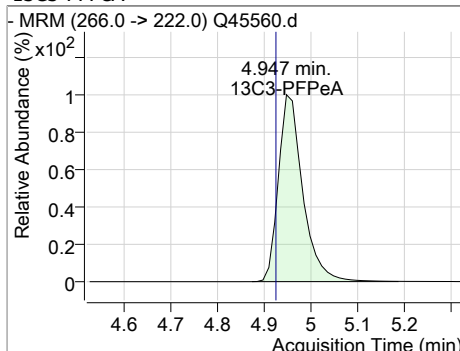
### Perfluorinated Compounds by LC/MS/MS



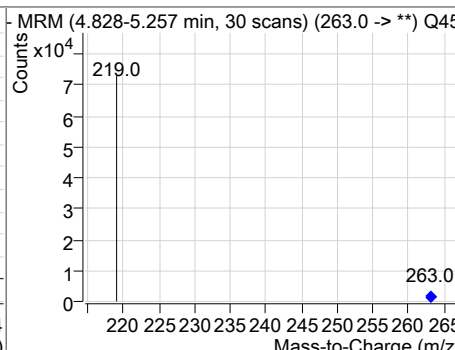
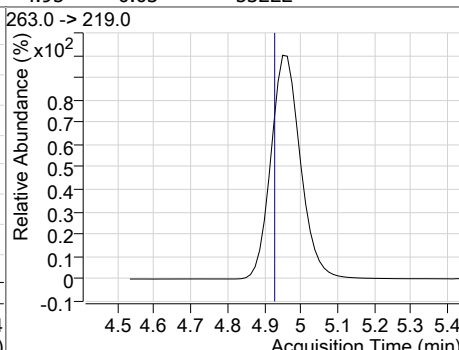
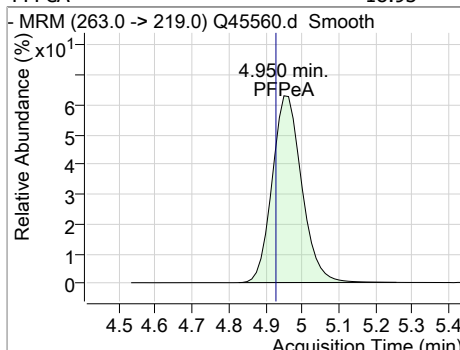
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.54	3.45	0.04	36434				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.95	0.02	61075				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.93	4.95	0.03	53222				



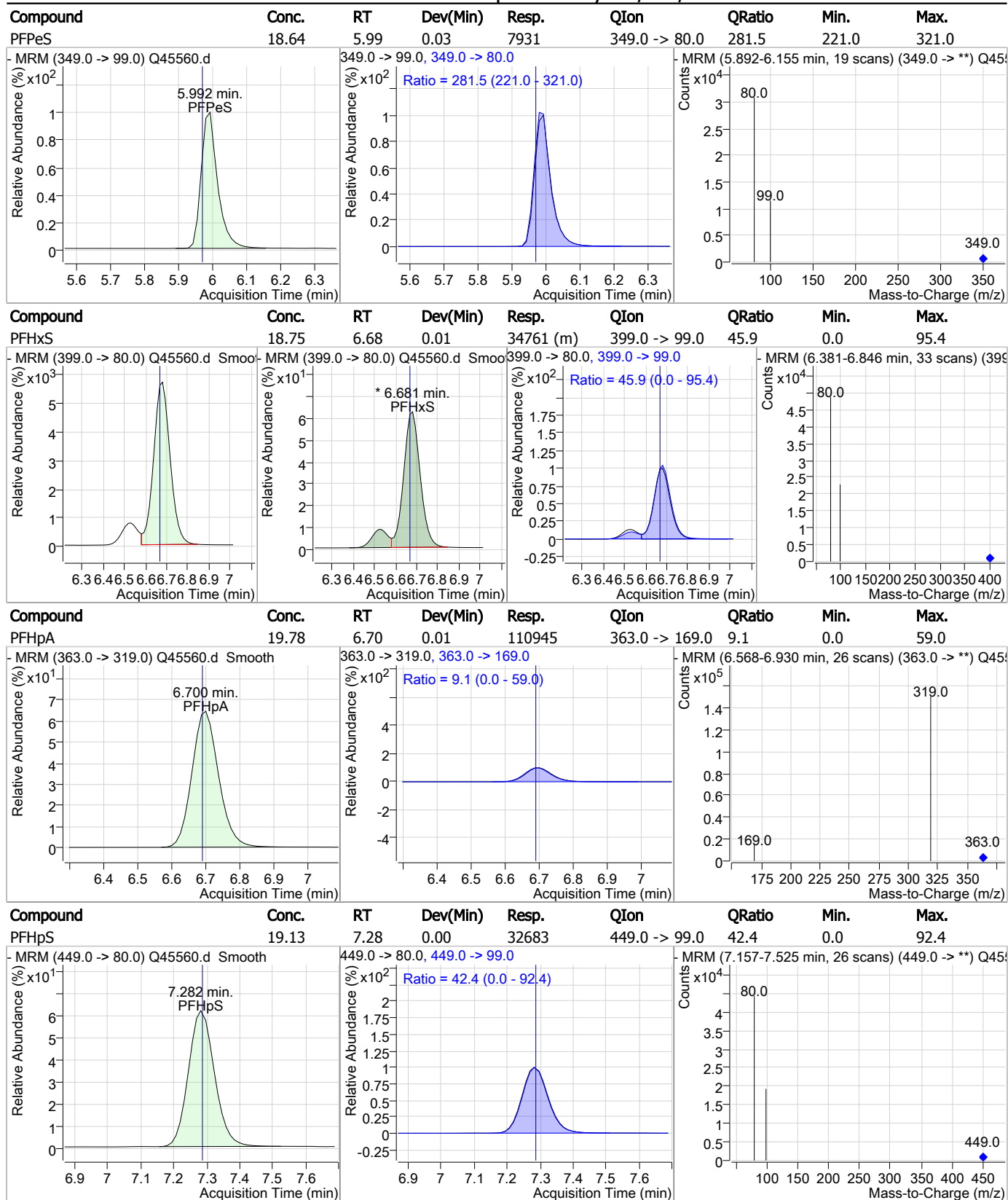
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### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.68	5.10	0.04	24427	299.0 -> 99.0	39.3	0.0	88.6
- MRM (299.0 -> 80.0) Q45560.d Smooth			299.0 -> 80.0, 299.0 -> 99.0			- MRM (4.979-5.367 min, 27 scans) (299.0 -> **) Q45		
4:2FTS	19.62	5.87	0.03	40921	327.0 -> 81.0	37.4	0.0	86.9
- MRM (327.0 -> 307.0) Q45560.d			327.0 -> 307.0, 327.0 -> 81.0			- MRM (5.793-6.034 min, 17 scans) (327.0 -> **) Q45		
13C2-PFHxA	20.43	5.95	0.03	109113				
- MRM (315.0 -> 270.0) Q45560.d Smooth			315.0 -> 270.0			- MRM (5.812-6.226 min, 29 scans) (315.0 -> **) Q45		
PFHxA	20.32	5.95	0.02	63731	313.0 -> 119.0	0.4	0.0	50.4
- MRM (313.0 -> 269.0) Q45560.d Smooth			313.0 -> 269.0, 313.0 -> 119.0			- MRM (5.814-6.264 min, 32 scans) (313.0 -> **) Q45		

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### Perfluorinated Compounds by LC/MS/MS



10.5.25 10



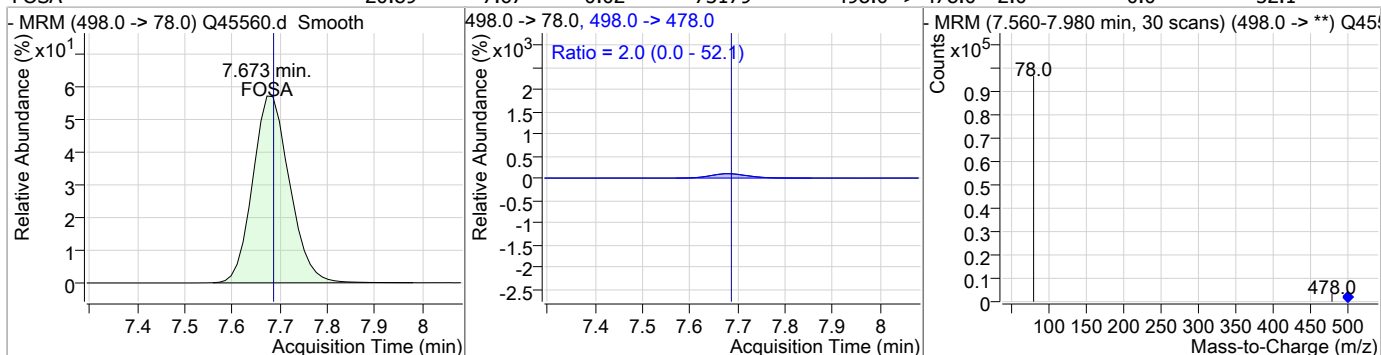
### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.33	0.01	121688				
-MRM (415.0 -> 370.0) Q45560.d			415.0 -> 370.0			-MRM (7.227-7.492 min, 19 scans) (415.0 -> **) Q45		
13C2-6:2FTS		7.34	0.01	44903				
-MRM (429.0 -> 409.0) Q45560.d			429.0 -> 409.0			-MRM (7.235-7.502 min, 19 scans) (429.0 -> **) Q45		
PFOA	19.47	7.33	0.00	110768	413.0 -> 169.0	26.2	0.0	76.9
-MRM (413.0 -> 369.0) Q45560.d Smooth			413.0 -> 369.0, 413.0 -> 169.0			-MRM (7.204-7.625 min, 30 scans) (413.0 -> **) Q45		
6:2FTS	19.61	7.34	0.00	43703	427.0 -> 81.0	52.9	1.5	101.5
-MRM (427.0 -> 407.0) Q45560.d Smooth			427.0 -> 407.0, 427.0 -> 81.0			-MRM (7.210-7.578 min, 26 scans) (427.0 -> **) Q45		

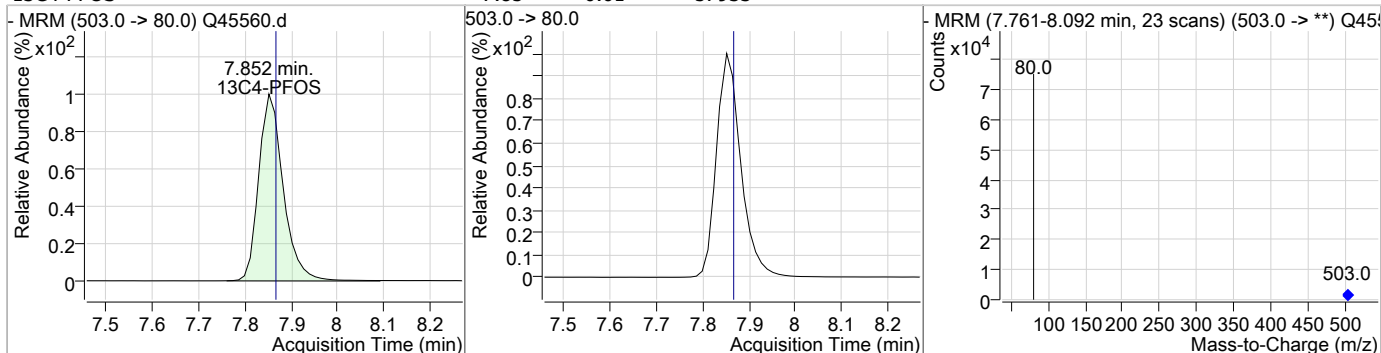
10.5.25 10

### Perfluorinated Compounds by LC/MS/MS

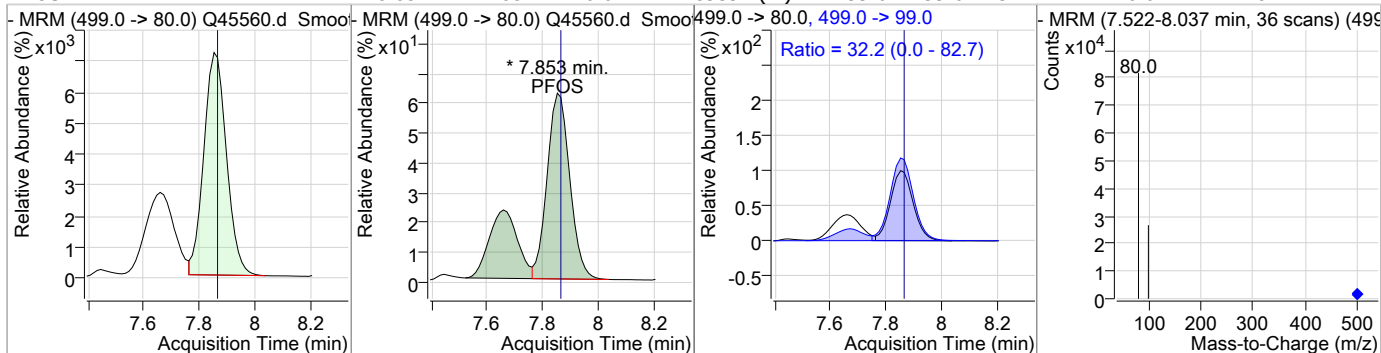
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.89	7.67	-0.02	73179	498.0 -> 478.0	2.0	0.0	52.1



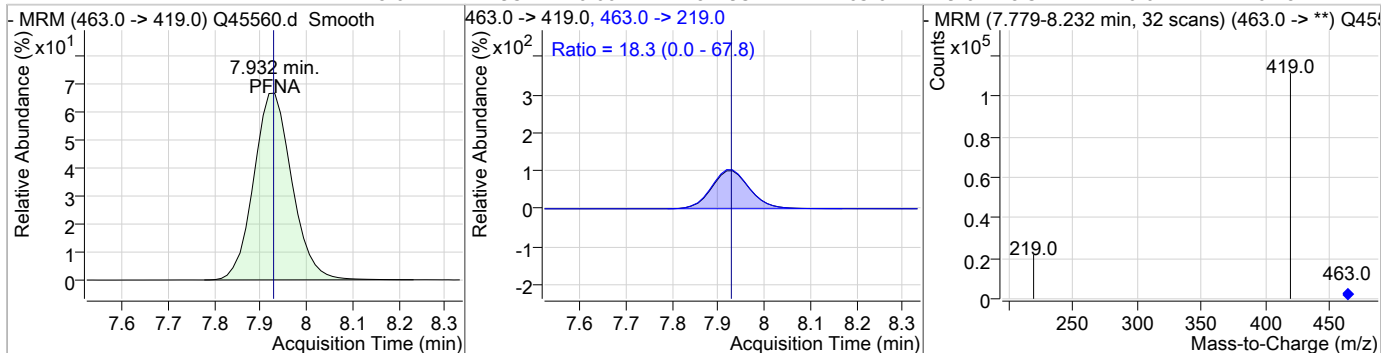
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.85	-0.01	57933				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.85	7.85	-0.01	59391 (m)	499.0 -> 99.0	32.2	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.61	7.93	0.00	82293	463.0 -> 219.0	18.3	0.0	67.8



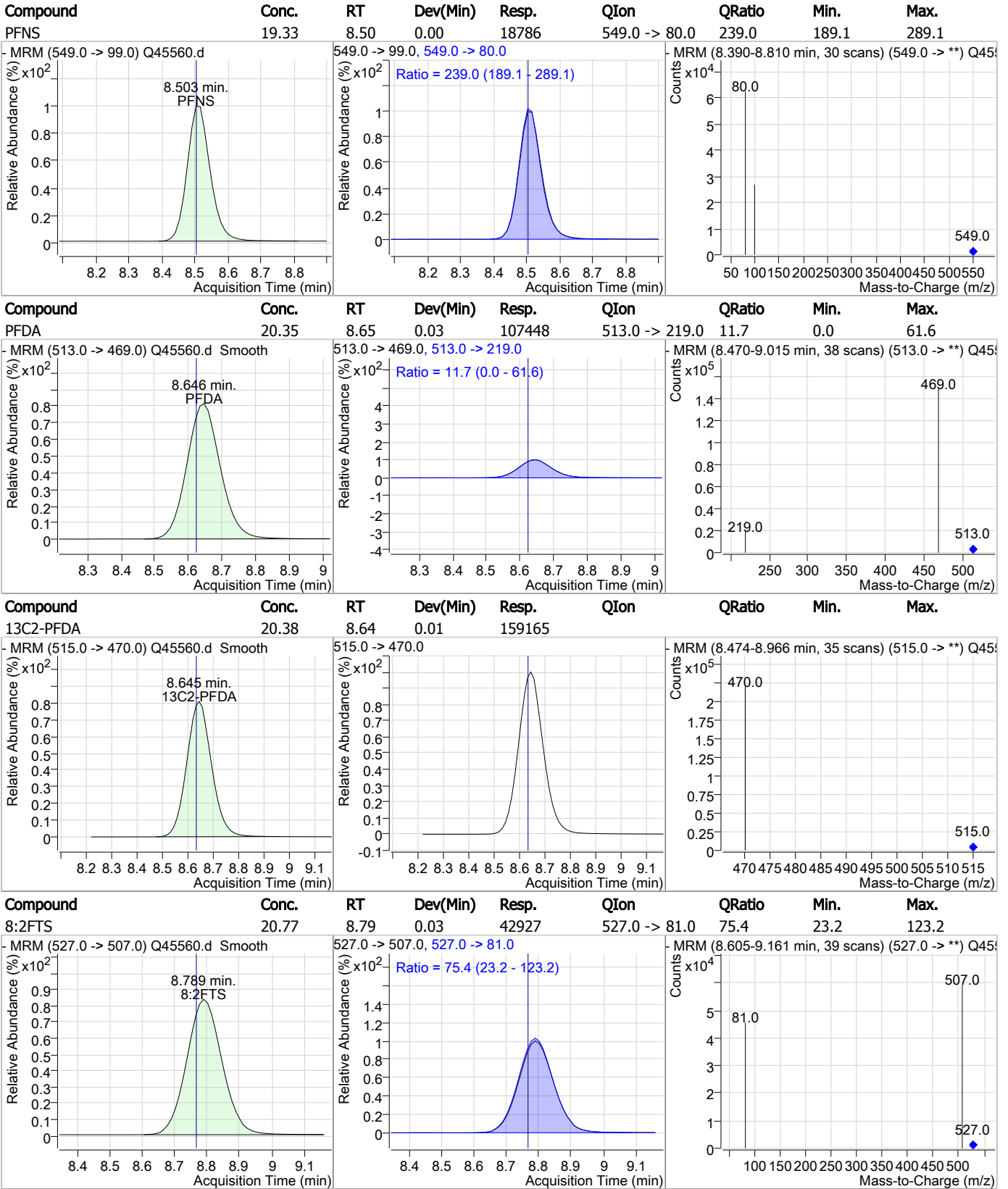
10.5.25 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.11	-0.01	21612				
-MRM (573.0 -> 419.0) Q45560.d			573.0 -> 419.0		-MRM (8.049-8.275 min, 16 scans) (573.0 -> **) Q45			
MeFOSAA	19.12	8.13	-0.01	23417	570.0 -> 512.0	30.0	0.0	81.1
-MRM (570.0 -> 419.0) Q45560.d Smooth			570.0 -> 419.0, 570.0 -> 512.0		-MRM (7.995-8.363 min, 26 scans) (570.0 -> **) Q45			
d5-EtFOSAA	19.28	8.23	-0.01	30184				
-MRM (589.0 -> 419.0) Q45560.d Smooth			589.0 -> 419.0		-MRM (8.109-8.548 min, 31 scans) (589.0 -> **) Q45			
EtFOSAA	19.72	8.24	-0.01	22574	584.0 -> 483.0	45.2	0.0	95.2
-MRM (584.0 -> 419.0) Q45560.d Smooth			584.0 -> 419.0, 584.0 -> 483.0		-MRM (8.110-8.485 min, 27 scans) (584.0 -> **) Q45			

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### Perfluorinated Compounds by LC/MS/MS



10.5.25 10



### Perfluorinated Compounds by LC/MS/MS

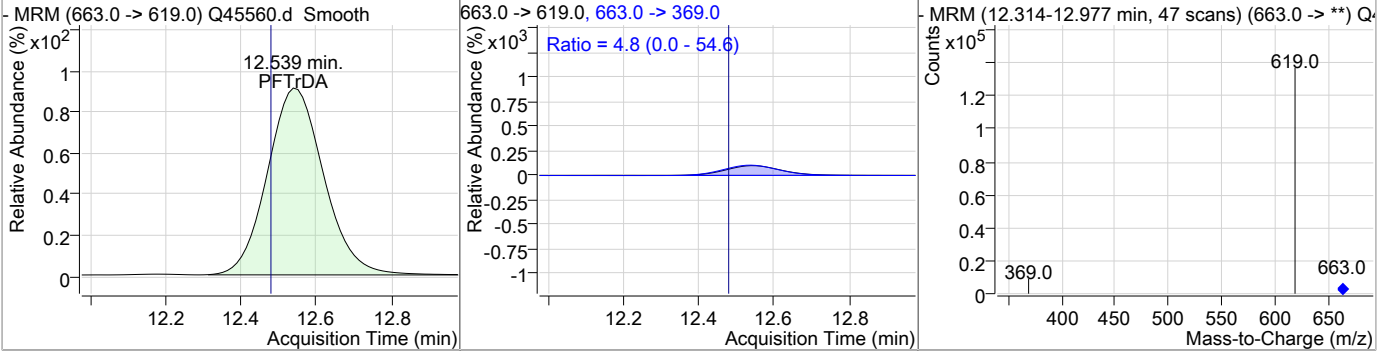
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.35	9.72	0.04	22231				
- MRM (599.0 -> 80.0) Q45560.d Smooth			599.0 -> 80.0			- MRM (9.511-10.012 min, 35 scans) (599.0 -> **) Q4		
PFUnDA	20.04	9.99	0.06	121782	563.0 -> 269.0	10.9	0.0	61.7
- MRM (563.0 -> 519.0) Q45560.d Smooth			563.0 -> 519.0, 563.0 -> 269.0			- MRM (9.768-10.325 min, 39 scans) (563.0 -> **) Q4		
13C2-PFDoDA		11.34	0.06	134986				
- MRM (615.0 -> 570.0) Q45560.d			615.0 -> 570.0			- MRM (11.125-11.776 min, 46 scans) (615.0 -> **) Q4		
PFDODA	19.10	11.34	0.06	117664	613.0 -> 169.0	2.9	0.0	53.0
- MRM (613.0 -> 569.0) Q45560.d Smooth			613.0 -> 569.0, 613.0 -> 169.0			- MRM (11.079-11.767 min, 48 scans) (613.0 -> **) Q4		

10.5.25 10

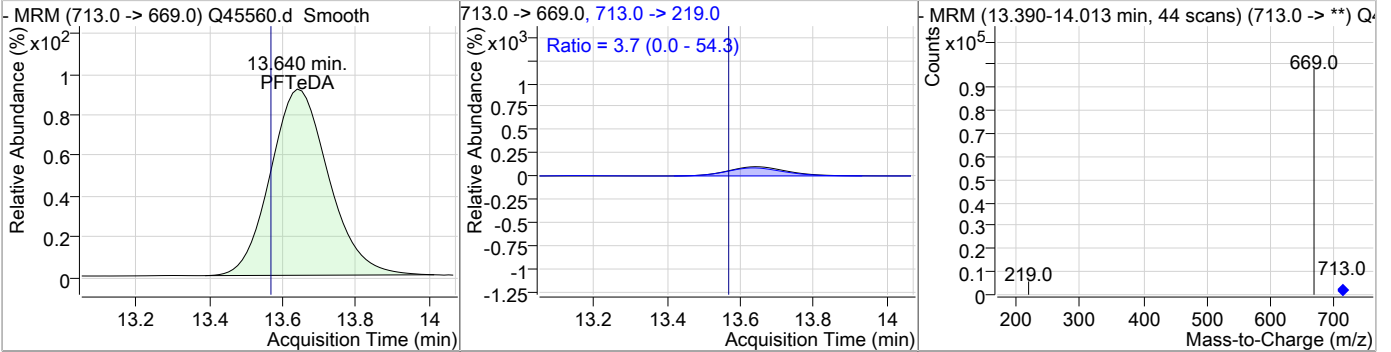


### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.00	12.54	0.06	99682	663.0 -> 369.0	4.8	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTeDA	18.96	13.64	0.08	70364	713.0 -> 219.0	3.7	0.0	54.3



10.5.25 10



# Manual Integration Approval Summary

**Sample Number:** SQ1120-CC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45560.D      **Analyst approved:** 04/29/18 13:40 Nancy Saunders  
**Injection Time:** 04/27/18 13:51      **Supervisor approved:** 04/30/18 14:03 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.68	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.85	Split peak

10.5.25.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45651.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 8:19:33 AM  
 Sample Name : CC1119-20  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69770,SQ1123,2.00,,,1.0,1,SOIL

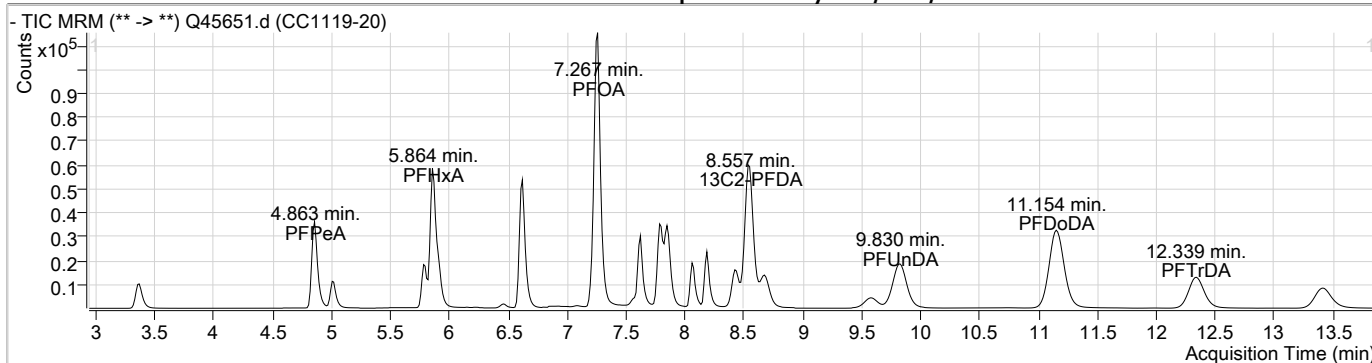
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.262	429.0 -> 409.0	45751	20.00 µg/L	0.014
13C2-PFDoDA	11.150	615.0 -> 570.0	151323	20.00 µg/L	-0.038
13C2-PFOA	7.253	415.0 -> 370.0	133787	20.00 µg/L	0.014
13C4-PFOS	7.789	503.0 -> 80.0	62288	20.00 µg/L	0.016
d3-MeFOSAA	8.062	573.0 -> 419.0	22878	20.00 µg/L	0.013
13C3-PFPeA	4.860	266.0 -> 222.0	66197	20.00 µg/L	0.025
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.557	515.0 -> 470.0	169710	19.76 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 98.8%		
13C2-PFHxA	5.874	315.0 -> 270.0	122945	20.94 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 104.7%		
d5-EtFOSAA	8.184	589.0 -> 419.0	32450	19.58 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.9%		
<b>Target Compounds</b>					
6:2FTS	7.276	427.0 -> 407.0	45347	19.98 µg/L	QValue 97
8:2FTS	8.676	527.0 -> 507.0	41531	19.69 µg/L	99
EtFOSAA	8.185	584.0 -> 419.0	24372	20.11 µg/L	98
FOSA	7.623	498.0 -> 78.0	74042	19.93 µg/L	100
MeFOSAA	8.075	570.0 -> 419.0	25455	19.63 µg/L	98
PFBA	3.365	213.0 -> 169.0	42055	19.75 µg/L	100
PFBS	5.016	299.0 -> 80.0	27043	20.26 µg/L	99
PFDA	8.558	513.0 -> 469.0	118669	20.44 µg/L	100
PFDoDA	11.154	613.0 -> 569.0	137094	19.85 µg/L	100
PFDS	9.574	599.0 -> 80.0	24599	17.86 µg/L	100
PFHpA	6.625	363.0 -> 319.0	126102	20.45 µg/L	100
PFHpS	7.222	449.0 -> 80.0	36894	20.08 µg/L	99
PFHxA	5.864	313.0 -> 269.0	72130	20.92 µg/L	100
PFHxS	6.606	399.0 -> 80.0	38537	19.33 µg/L	m 100
PFNA	7.856	463.0 -> 419.0	95731	19.69 µg/L	100
PFOA	7.267	413.0 -> 369.0	121313	19.40 µg/L	99
PFOS	7.790	499.0 -> 80.0	67565	19.95 µg/L	m 99
PFPeA	4.863	263.0 -> 219.0	60986	20.02 µg/L	100
PFTeDA	13.415	713.0 -> 669.0	80499	19.35 µg/L	99
PFTTrDA	12.339	663.0 -> 619.0	115778	19.69 µg/L	99
PFUnDA	9.830	563.0 -> 519.0	140220	20.58 µg/L	100
4:2FTS	5.783	327.0 -> 307.0	44756	21.10 µg/L	99
PFNS	8.428	549.0 -> 99.0	20351	19.48 µg/L	96
PFPeS	5.905	349.0 -> 99.0	9338	20.41 µg/L	96

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

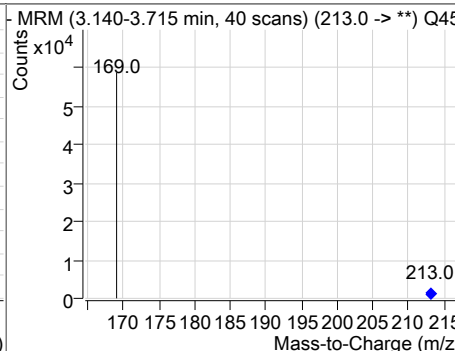
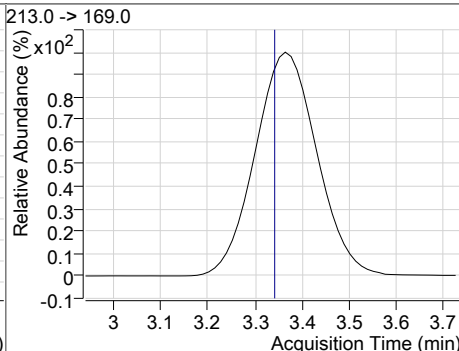
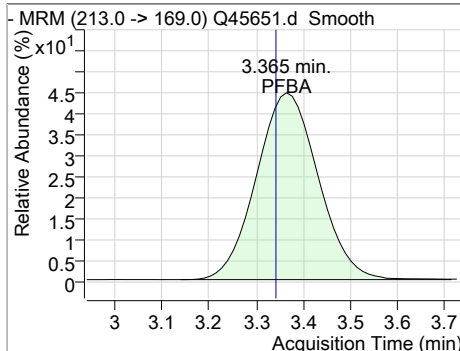
10.5.26 10



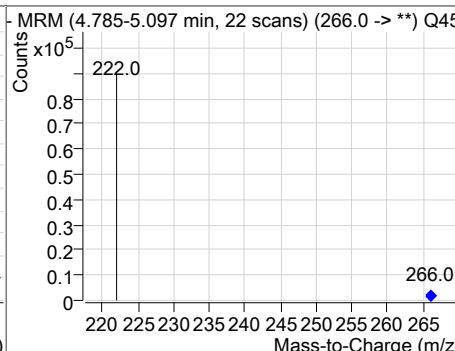
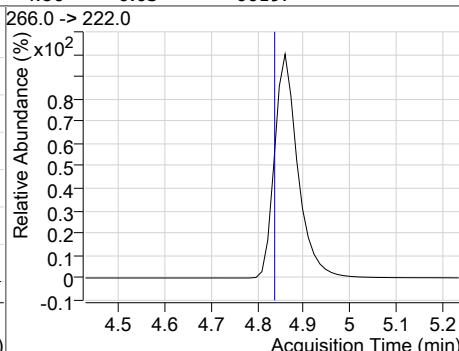
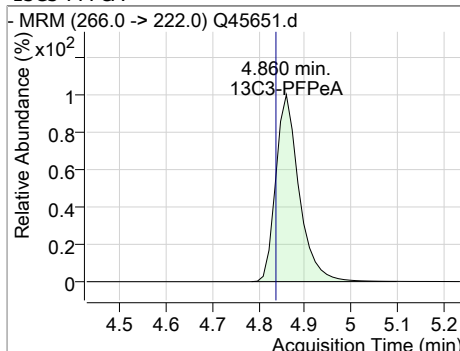
### Perfluorinated Compounds by LC/MS/MS



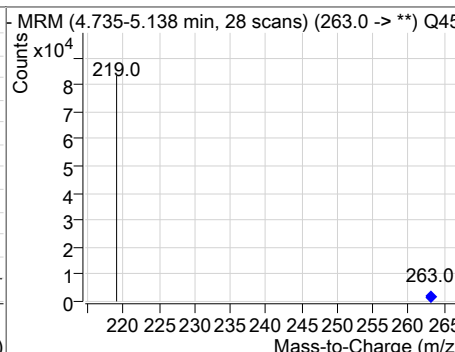
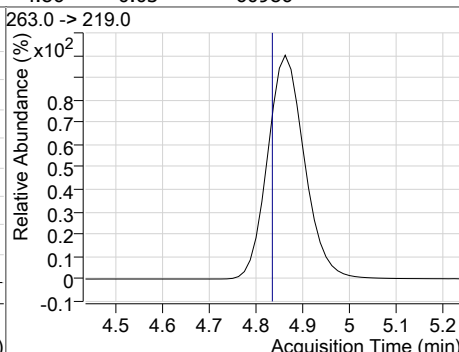
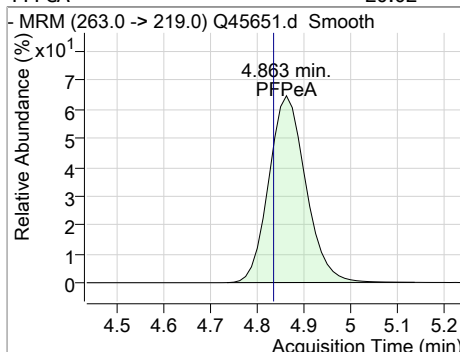
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.75	3.36	0.02	42055				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.86	0.03	66197				



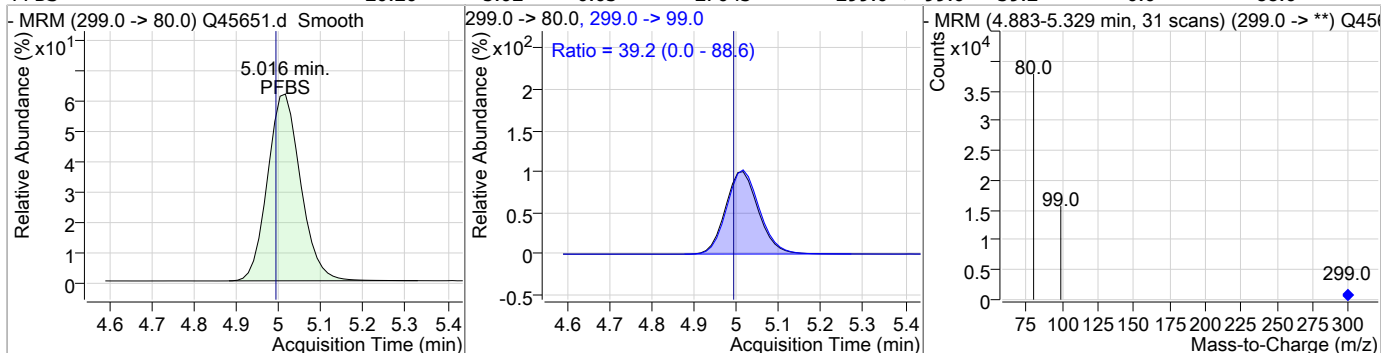
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.02	4.86	0.03	60986				



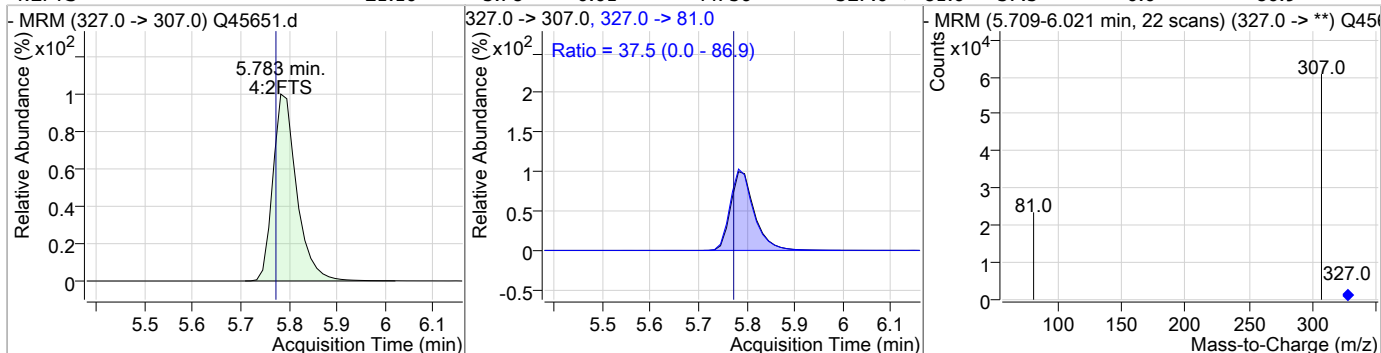
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### Perfluorinated Compounds by LC/MS/MS

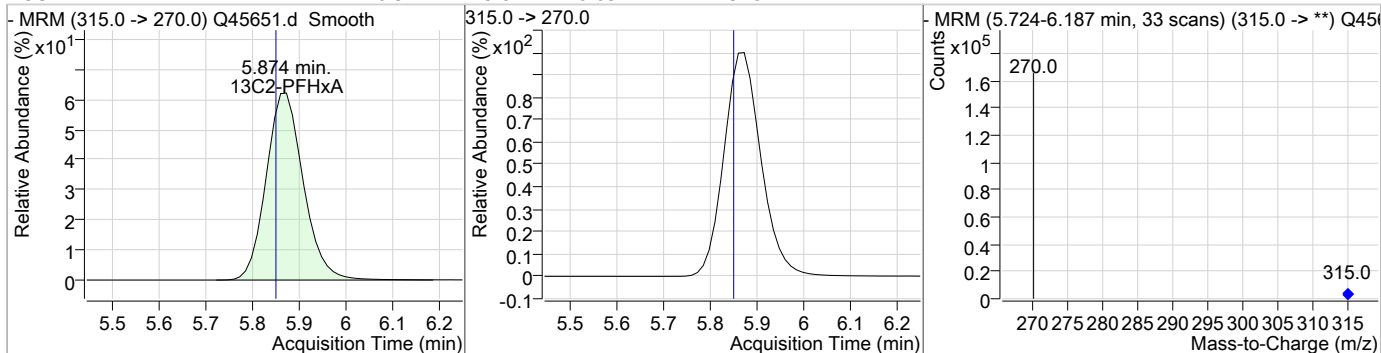
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.26	5.02	0.03	27043	299.0 -> 99.0	39.2	0.0	88.6



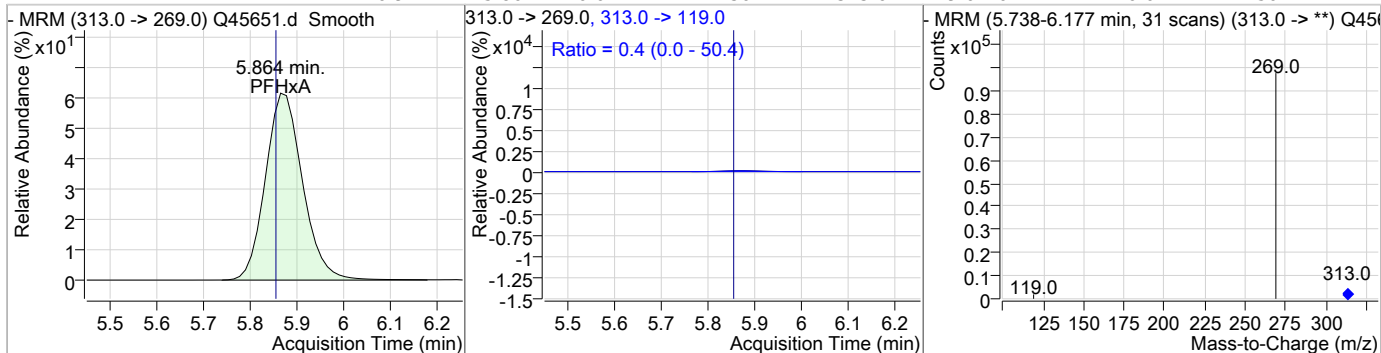
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.10	5.78	0.01	44756	327.0 -> 81.0	37.5	0.0	86.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	20.94	5.87	0.03	122945	315.0 -> 270.0	0.4	0.0	50.4

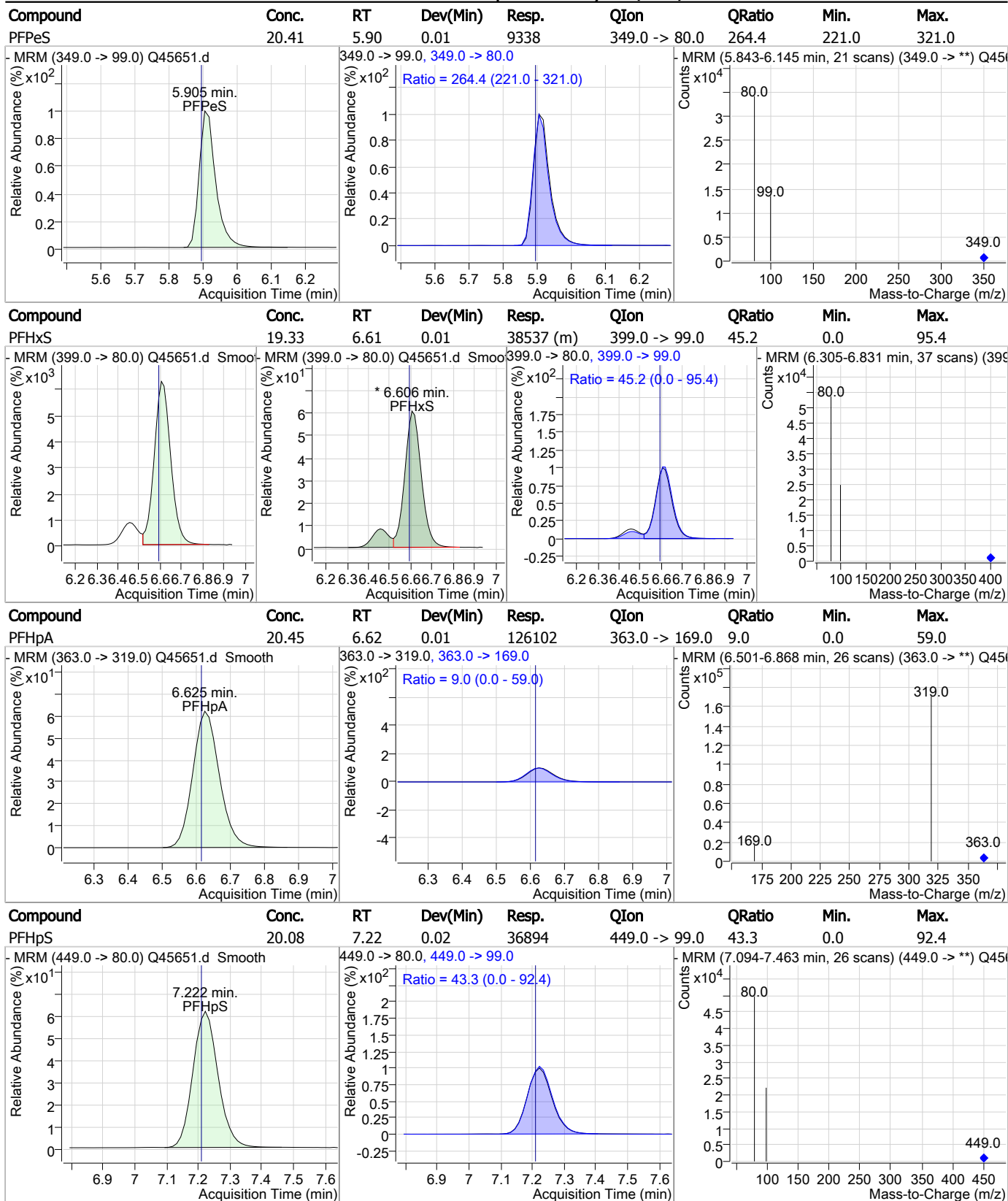


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.92	5.86	0.01	72130	313.0 -> 119.0	0.4	0.0	50.4



10.5.26 10

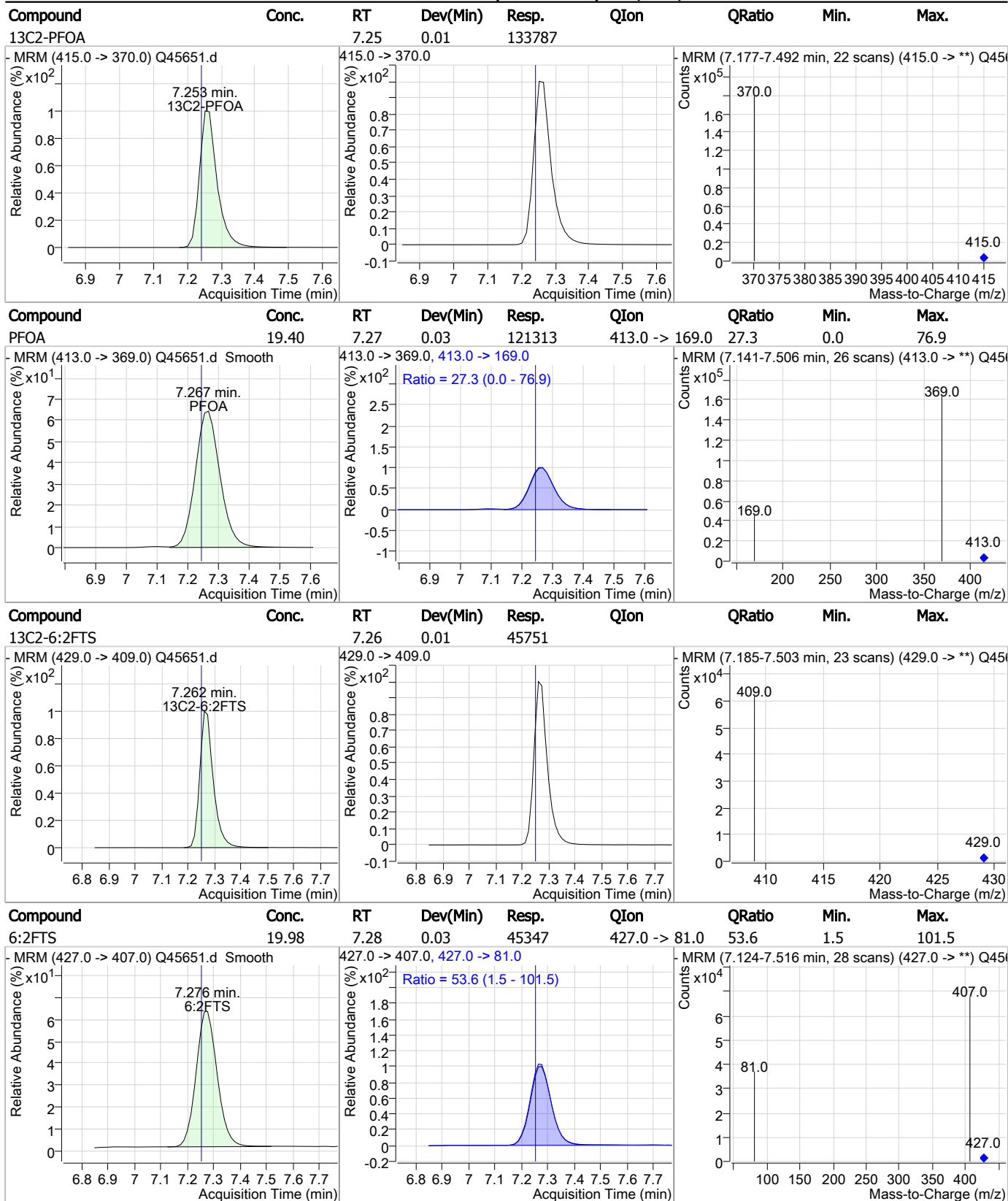
### Perfluorinated Compounds by LC/MS/MS



10.5.26 10



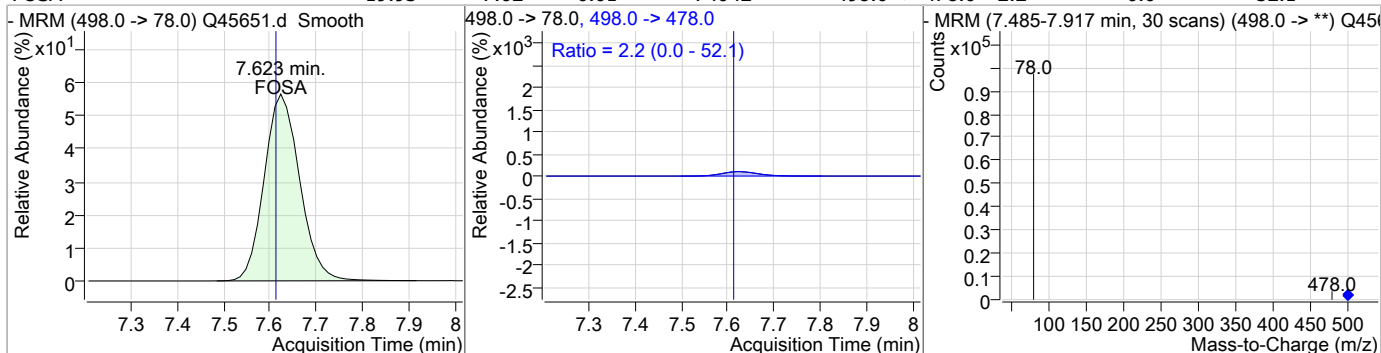
### Perfluorinated Compounds by LC/MS/MS



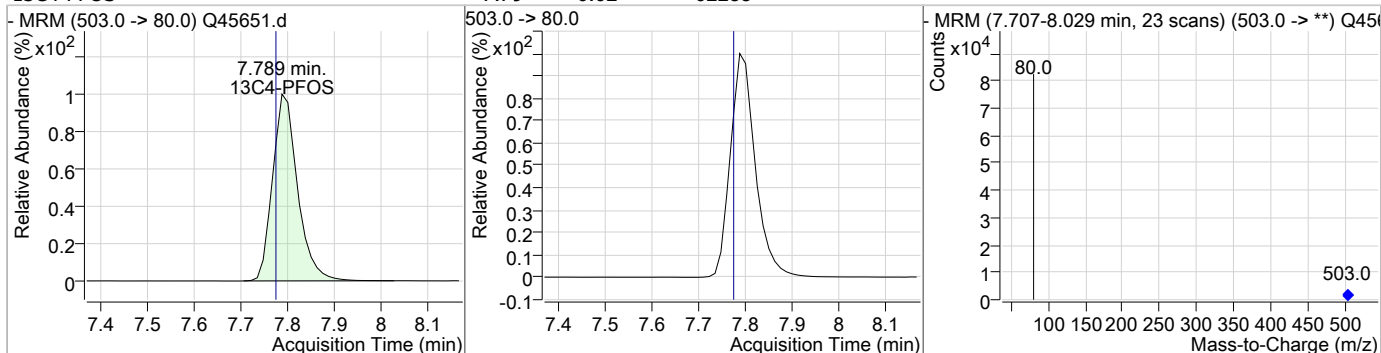
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### Perfluorinated Compounds by LC/MS/MS

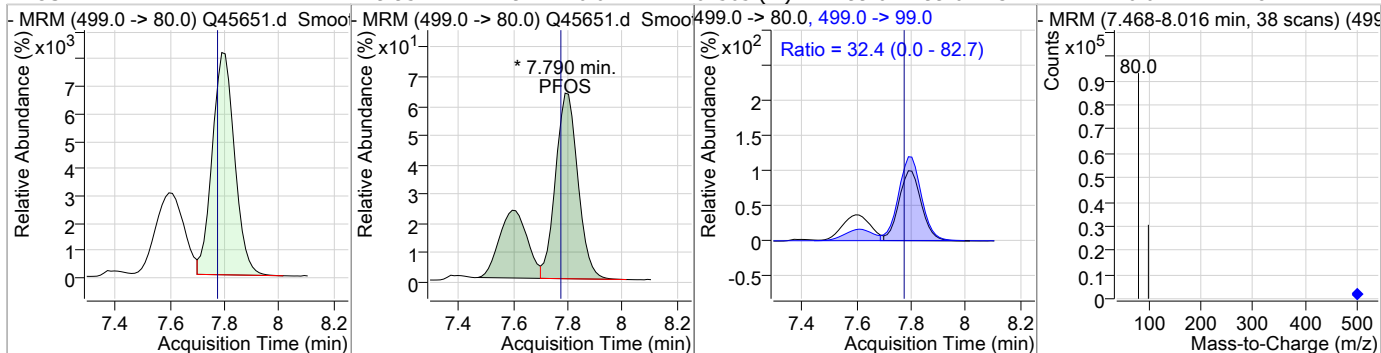
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.93	7.62	0.01	74042	498.0 -> 478.0	2.2	0.0	52.1



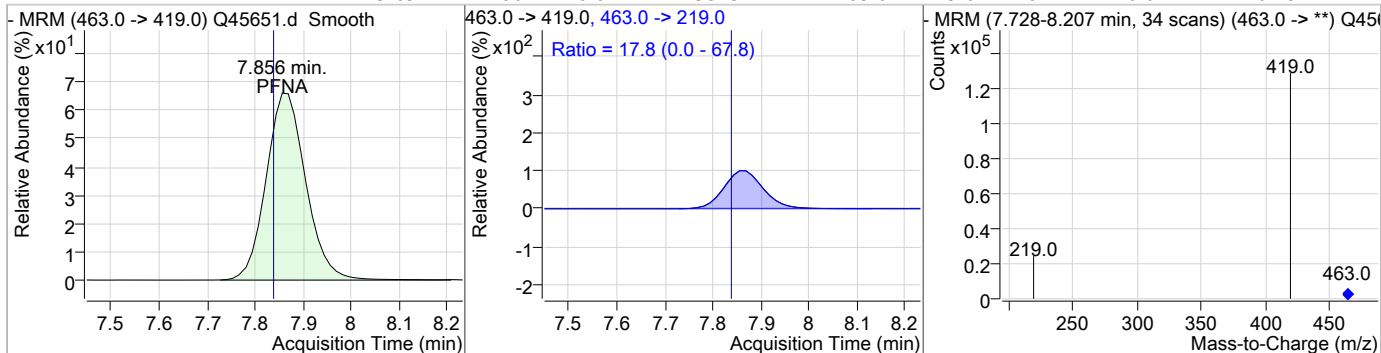
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.79	0.02	62288				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.95	7.79	0.02	67565 (m)	499.0 -> 99.0	32.4	0.0	82.7



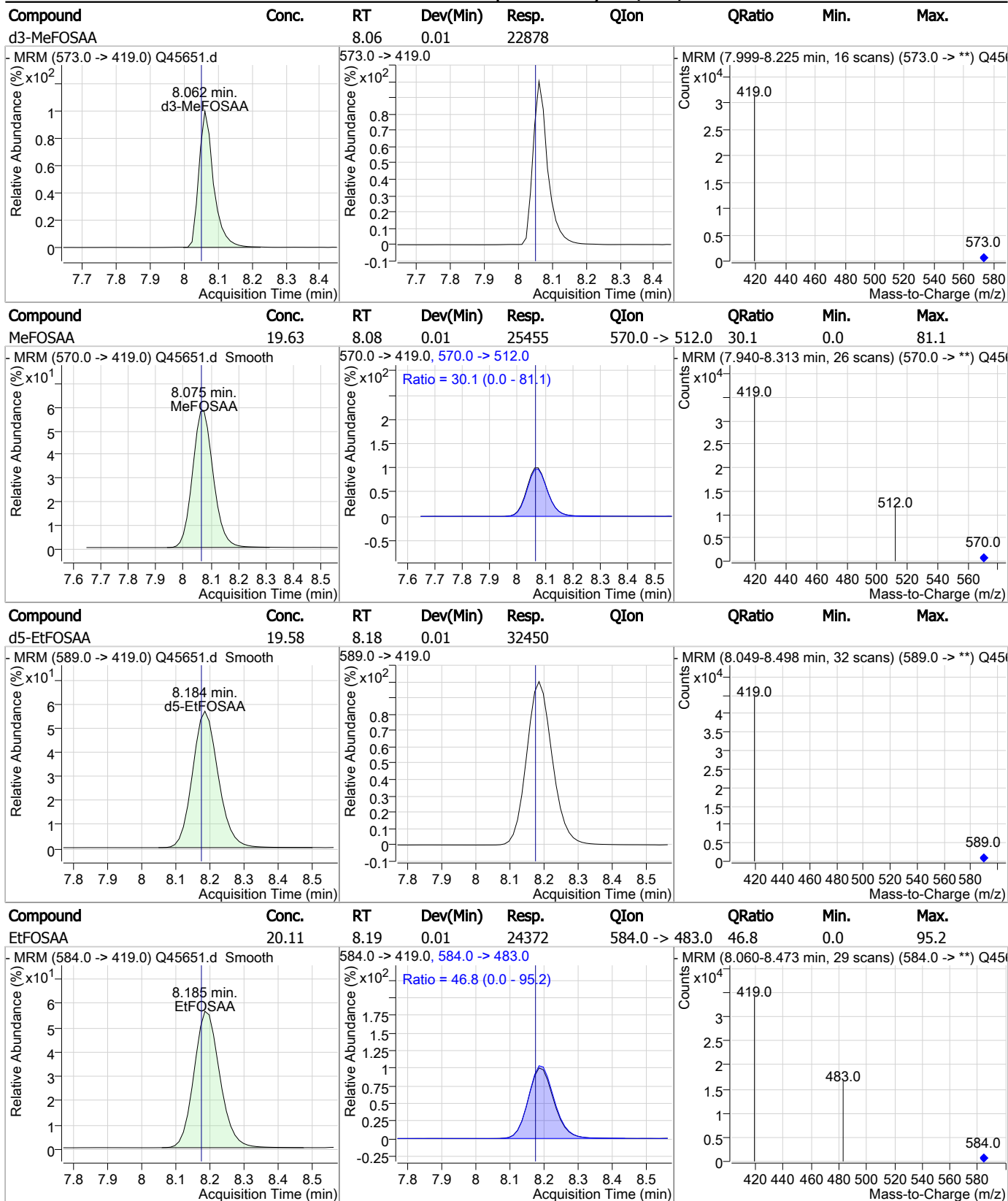
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.69	7.86	0.02	95731	463.0 -> 219.0	17.8	0.0	67.8



10.5.26 10

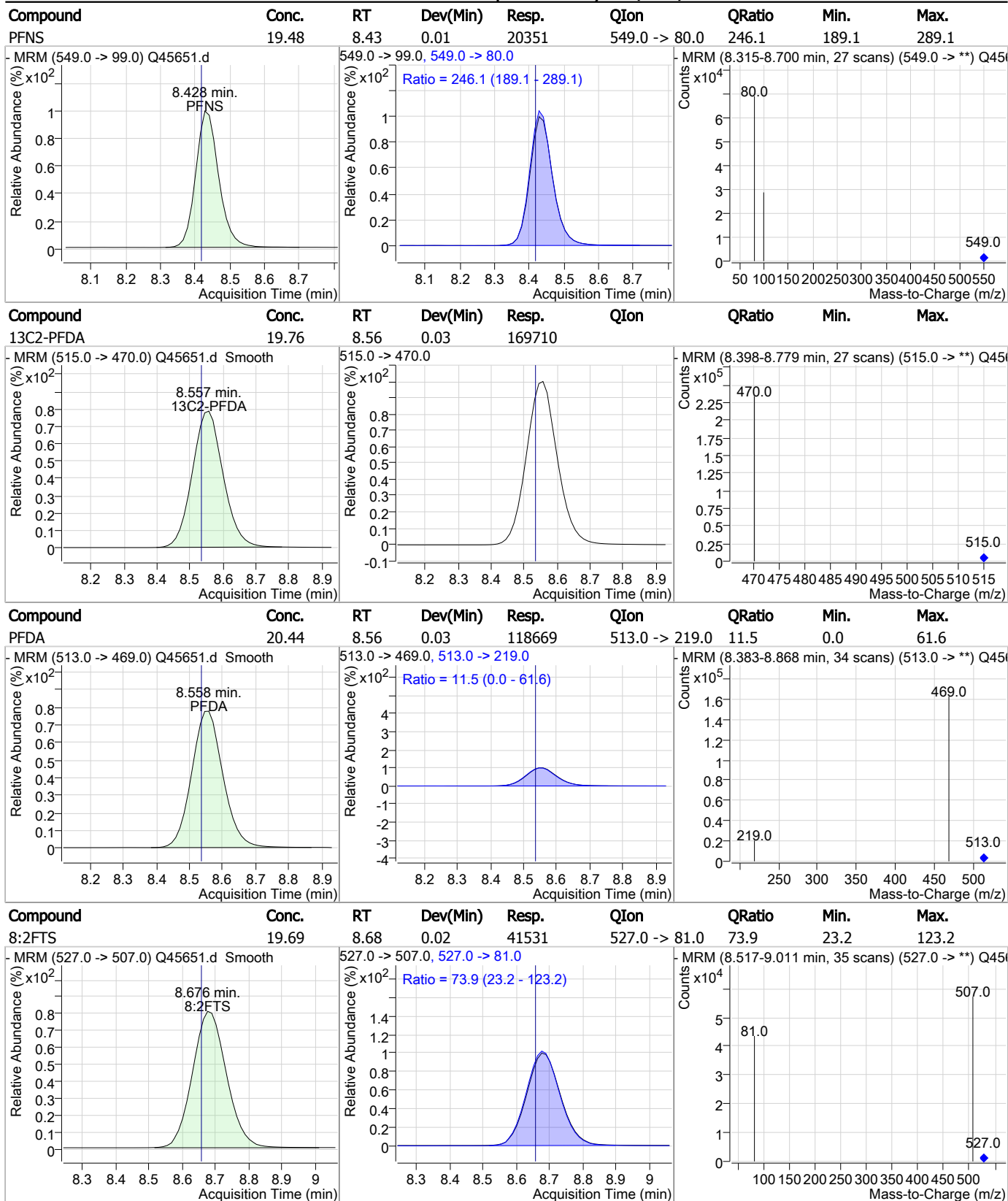


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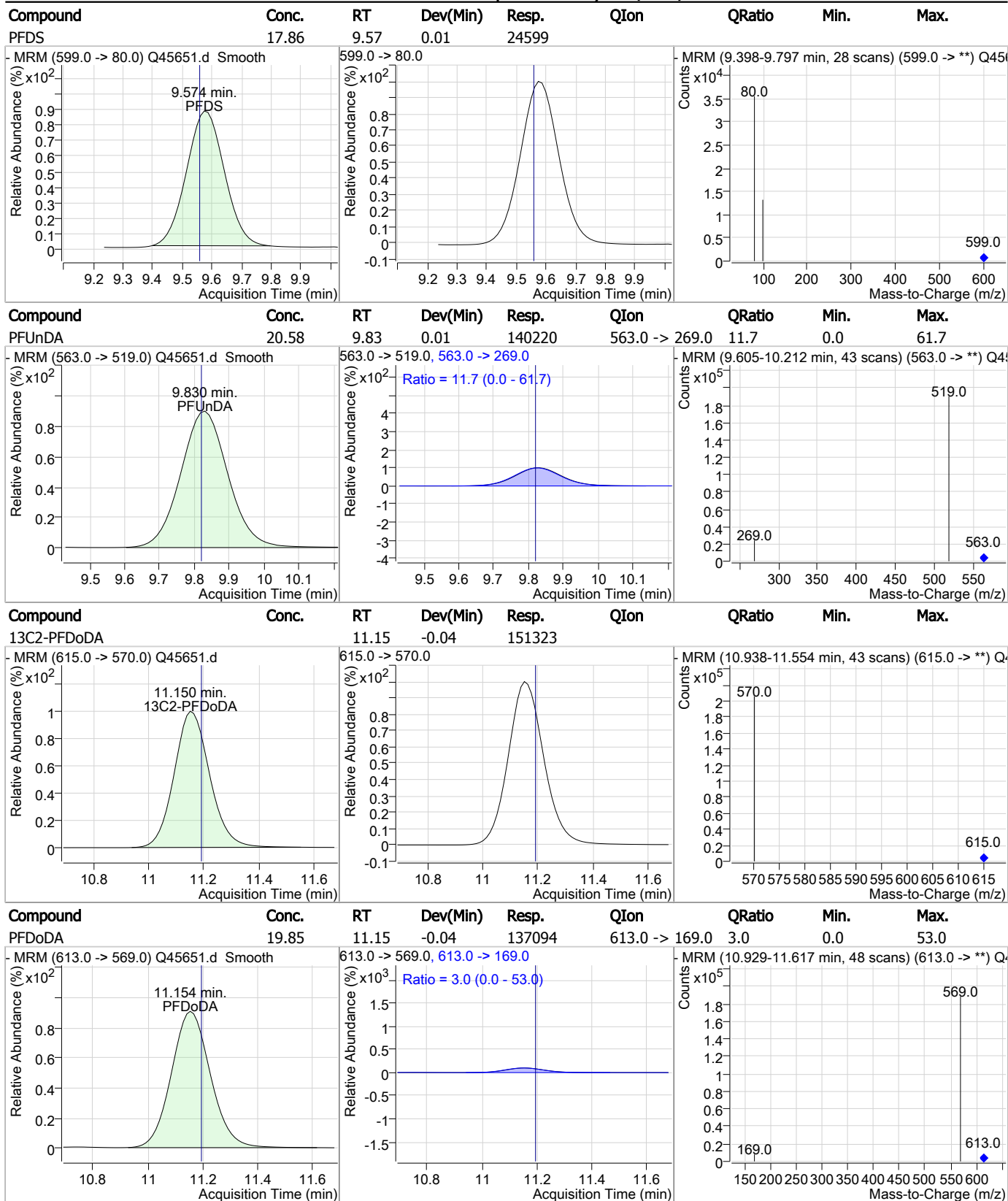
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### Perfluorinated Compounds by LC/MS/MS



10.5.26 10

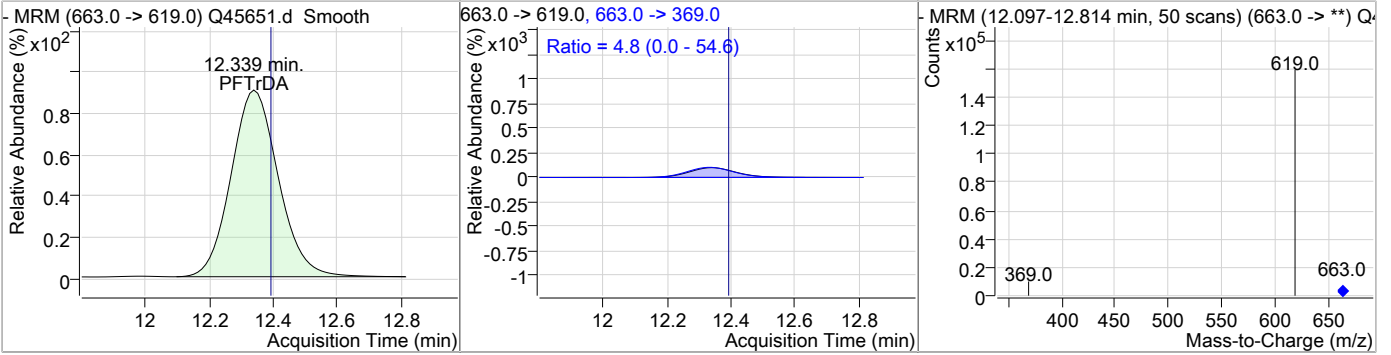
### Perfluorinated Compounds by LC/MS/MS



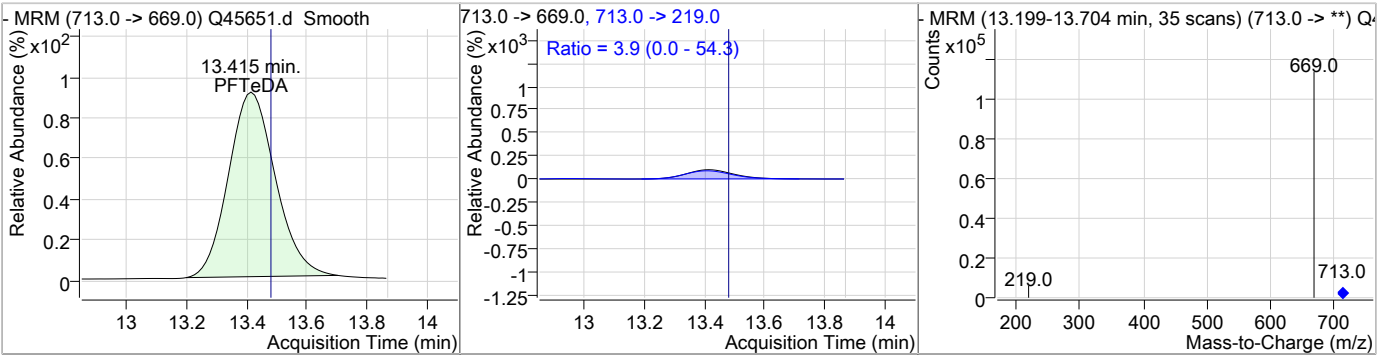
10.5.26 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.69	12.34	-0.05	115778	663.0 -> 369.0	4.8	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.35	13.41	-0.06	80499	713.0 -> 219.0	3.9	0.0	54.3



10.5.26 10

# Manual Integration Approval Summary

**Sample Number:** SQ1123-CC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45651.D      **Analyst approved:** 05/01/18 08:14 Nancy Saunders  
**Injection Time:** 04/30/18 08:19      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.61	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.79	Split peak

10.5.26.1

10

Perfluorinated Compounds by LC/MS/MS

Data File : Q45656.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 10:40:57 AM  
 Sample Name : CC1119-20  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69770,SQ1123,2.00,,,1.0,1,SOIL

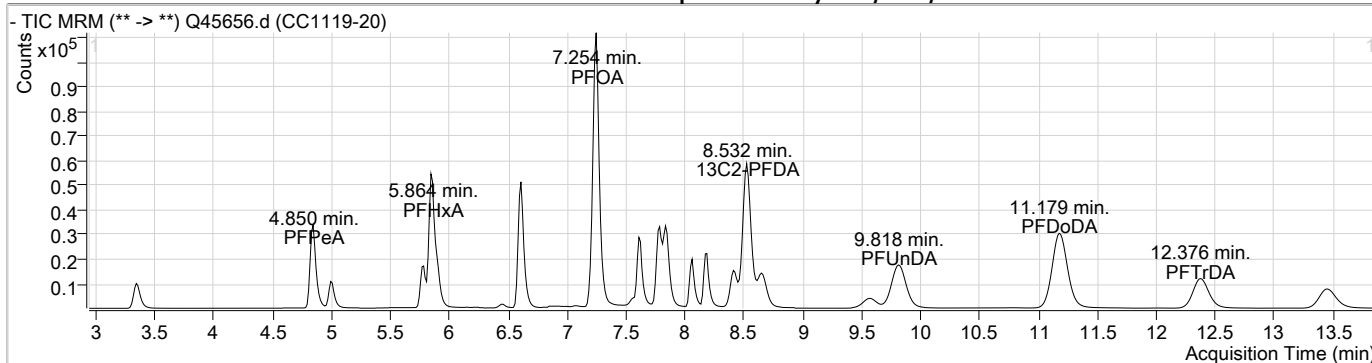
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.262	429.0 -> 409.0	44545	20.00 µg/L	0.014
13C2-PFDoDA	11.175	615.0 -> 570.0	145123	20.00 µg/L	-0.013
13C2-PFOA	7.253	415.0 -> 370.0	126828	20.00 µg/L	0.014
13C4-PFOS	7.789	503.0 -> 80.0	58358	20.00 µg/L	0.016
d3-MeFOSAA	8.062	573.0 -> 419.0	23327	20.00 µg/L	0.013
13C3-PFPeA	4.847	266.0 -> 222.0	62639	20.00 µg/L	0.013
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.532	515.0 -> 470.0	160171	19.68 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 98.4%		
13C2-PFHxA	5.862	315.0 -> 270.0	114796	20.63 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.1%		
d5-EtFOSAA	8.172	589.0 -> 419.0	33012	19.54 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.7%		
<b>Target Compounds</b>					
6:2FTS	7.263	427.0 -> 407.0	44288	20.05 µg/L	QValue 99
8:2FTS	8.651	527.0 -> 507.0	41418	20.18 µg/L	99
EtFOSAA	8.185	584.0 -> 419.0	24571	19.88 µg/L	100
FOSA	7.623	498.0 -> 78.0	73602	19.41 µg/L	100
MeFOSAA	8.063	570.0 -> 419.0	26760	20.24 µg/L	97
PFBA	3.352	213.0 -> 169.0	40803	20.25 µg/L	100
PFBS	5.004	299.0 -> 80.0	25814	20.65 µg/L	99
PFDA	8.533	513.0 -> 469.0	112778	20.49 µg/L	100
PFDoDA	11.179	613.0 -> 569.0	130305	19.67 µg/L	100
PFDS	9.561	599.0 -> 80.0	24297	18.82 µg/L	100
PFHpA	6.612	363.0 -> 319.0	117939	20.18 µg/L	99
PFHpS	7.209	449.0 -> 80.0	34533	20.06 µg/L	100
PFHxA	5.864	313.0 -> 269.0	67783	20.74 µg/L	100
PFHxS	6.593	399.0 -> 80.0	36248	19.41 µg/L	m 99
PFNA	7.856	463.0 -> 419.0	91574	19.87 µg/L	100
PFOA	7.254	413.0 -> 369.0	115054	19.41 µg/L	100
PFOS	7.790	499.0 -> 80.0	62071	19.56 µg/L	m 100
PFPeA	4.850	263.0 -> 219.0	57215	19.85 µg/L	100
PFTeDA	13.452	713.0 -> 669.0	78778	19.75 µg/L	98
PFTTrDA	12.376	663.0 -> 619.0	108624	19.26 µg/L	99
PFUnDA	9.818	563.0 -> 519.0	137371	21.03 µg/L	100
4:2FTS	5.783	327.0 -> 307.0	42729	20.68 µg/L	100
PFNS	8.416	549.0 -> 99.0	19514	19.93 µg/L	100
PFPeS	5.905	349.0 -> 99.0	8427	19.65 µg/L	96

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

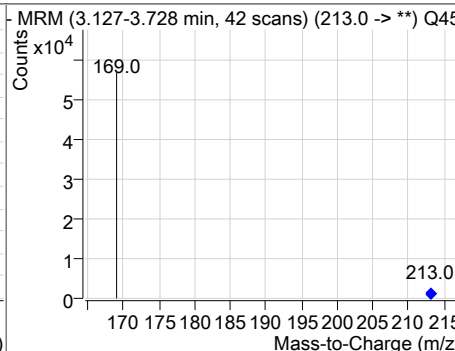
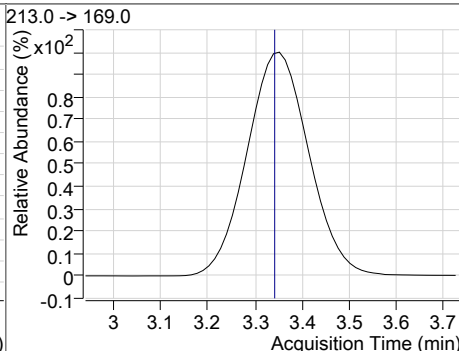
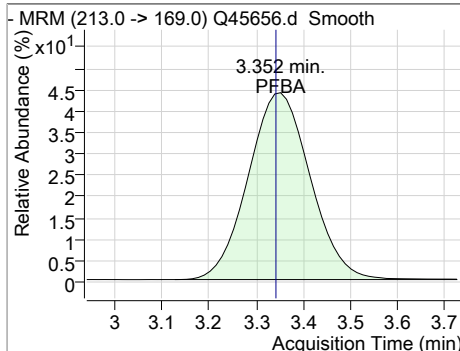
10.5.27  
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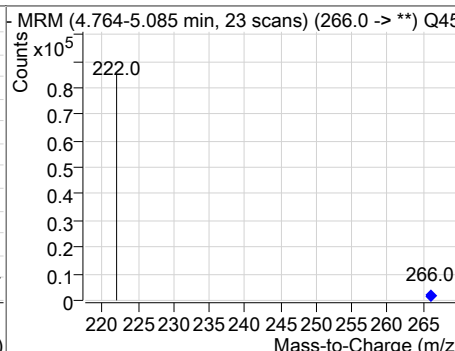
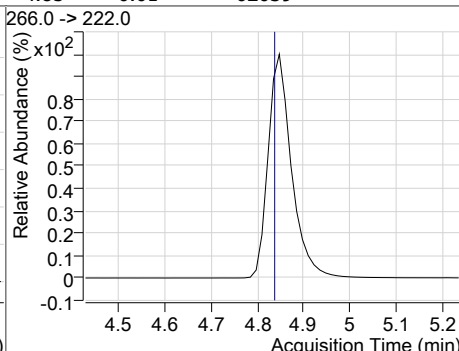
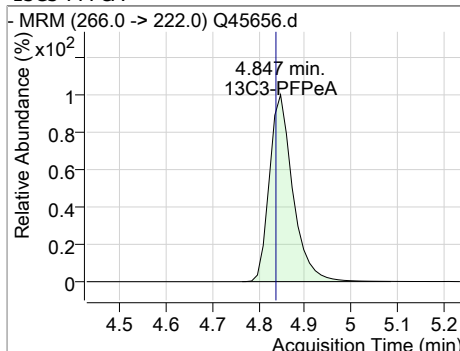
### Perfluorinated Compounds by LC/MS/MS



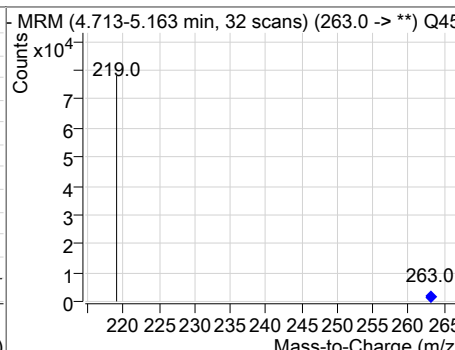
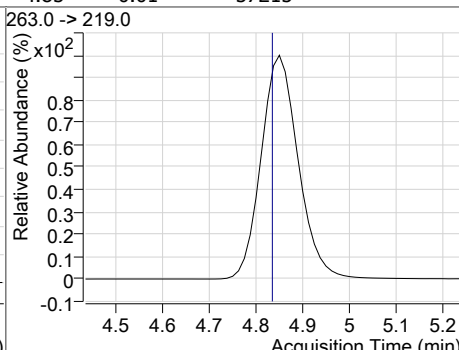
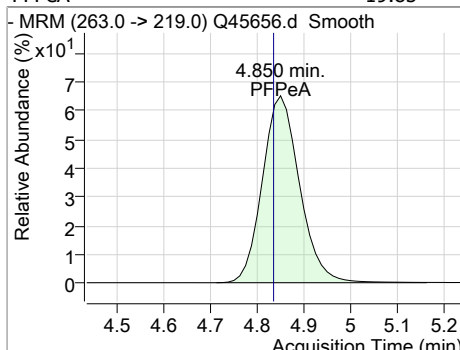
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.25	3.35	0.01	40803				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.85	0.01	62639				

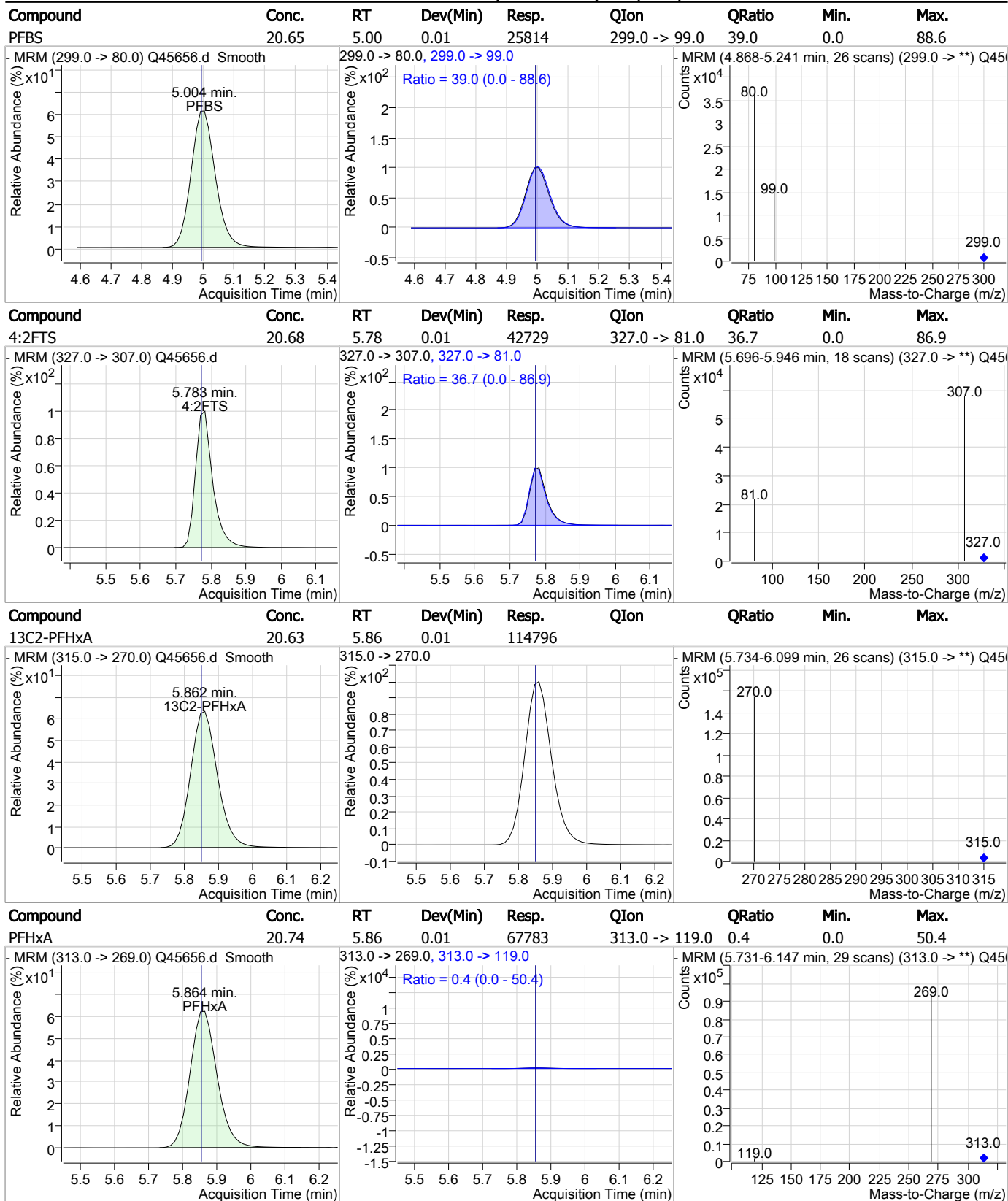


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.85	4.85	0.01	57215				



10.5.27 10

### Perfluorinated Compounds by LC/MS/MS

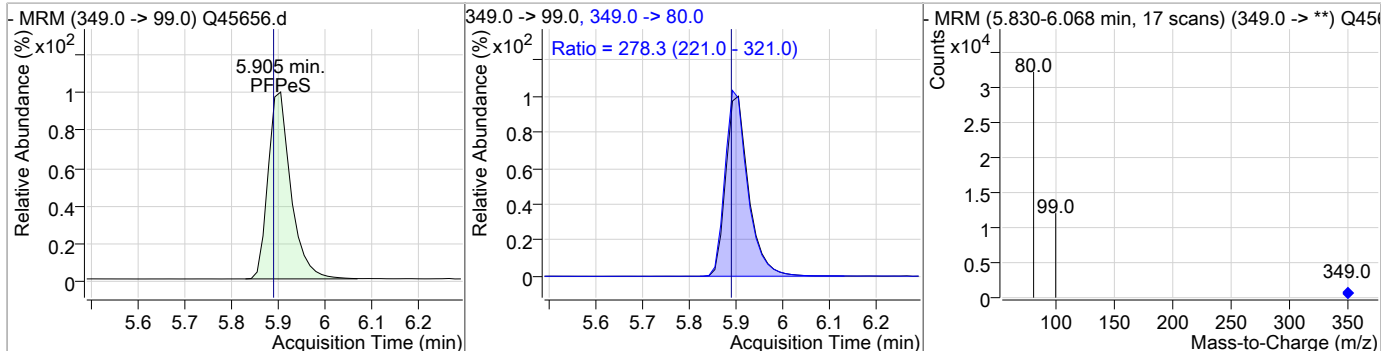


10.5.27 10

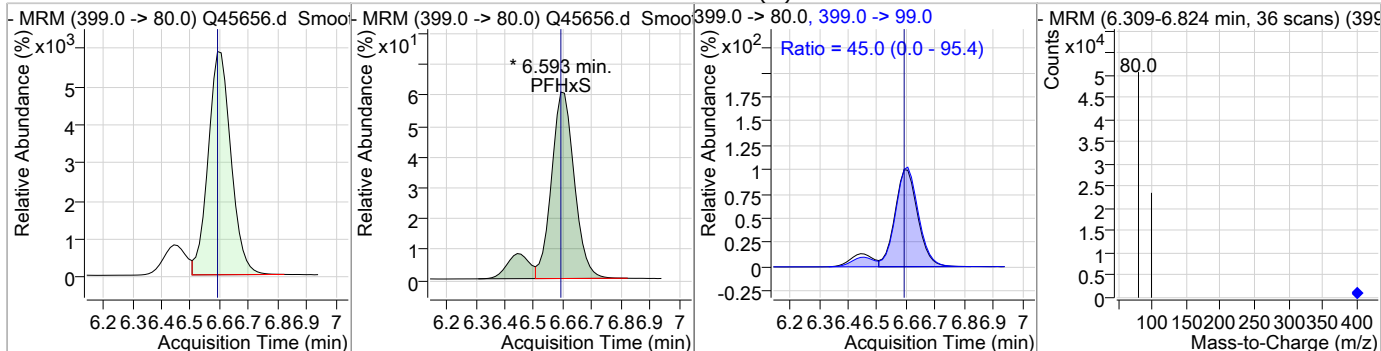


### Perfluorinated Compounds by LC/MS/MS

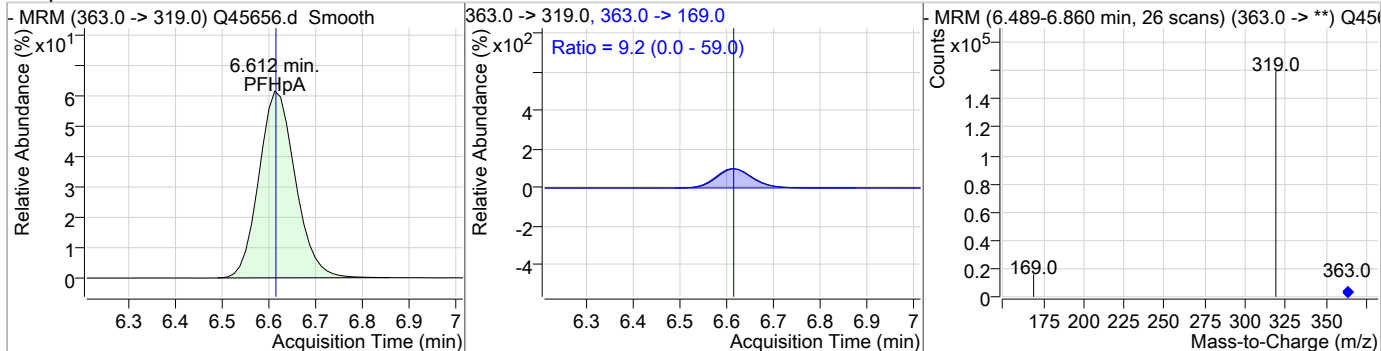
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.65	5.90	0.01	8427	349.0 -> 80.0	278.3	221.0	321.0



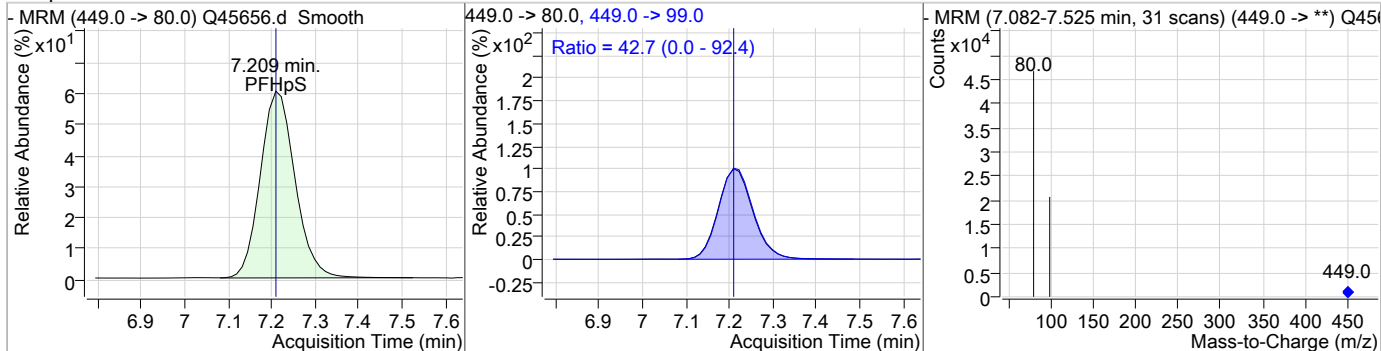
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.41	6.59	0.00	36248 (m)	399.0 -> 99.0	45.0	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.18	6.61	0.00	117939	363.0 -> 169.0	9.2	0.0	59.0



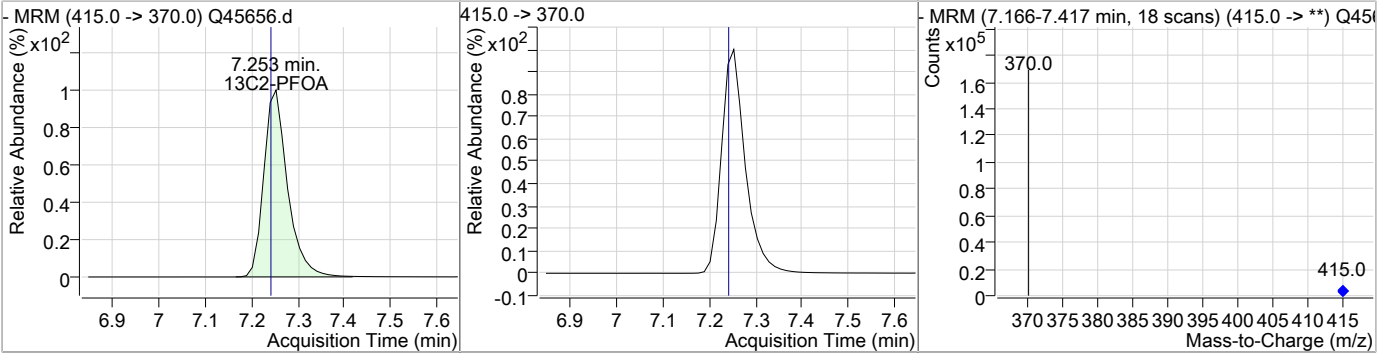
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.06	7.21	0.00	34533	449.0 -> 99.0	42.7	0.0	92.4



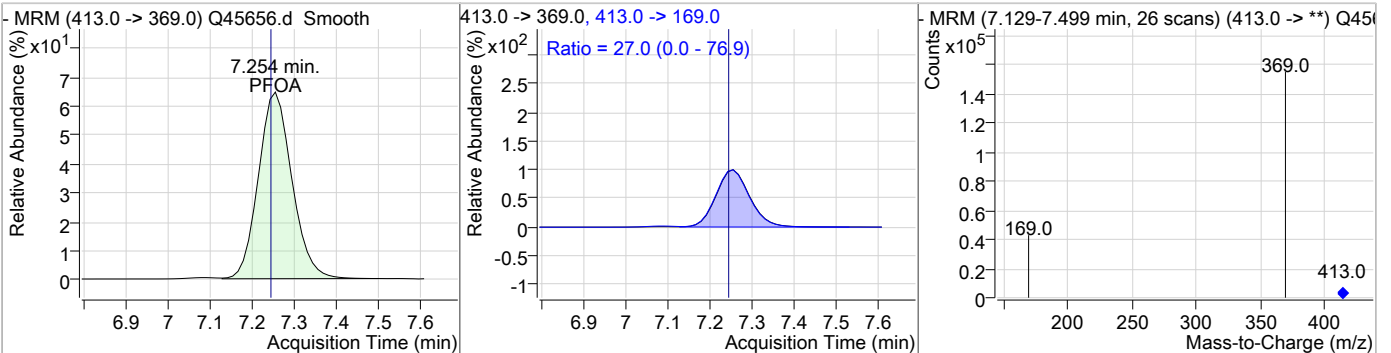
10.5.27 10

### Perfluorinated Compounds by LC/MS/MS

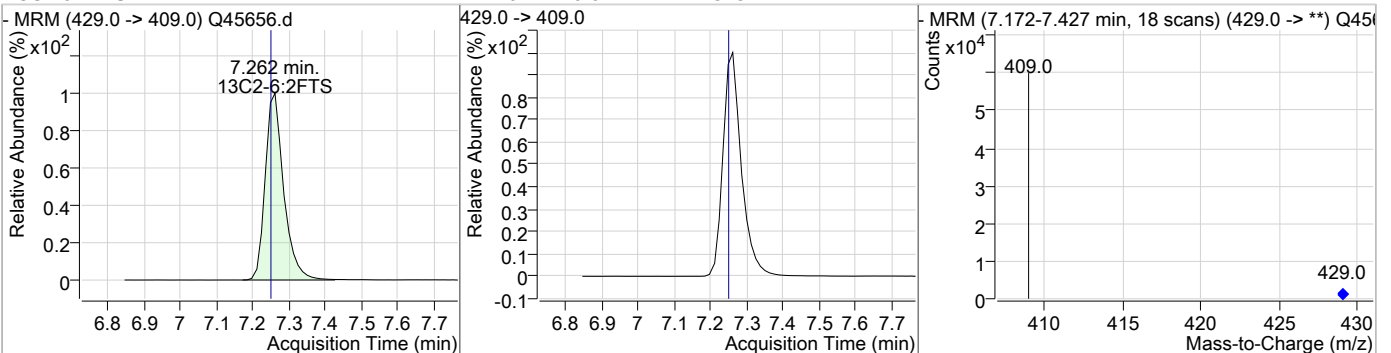
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFOA		7.25	0.01	126828				



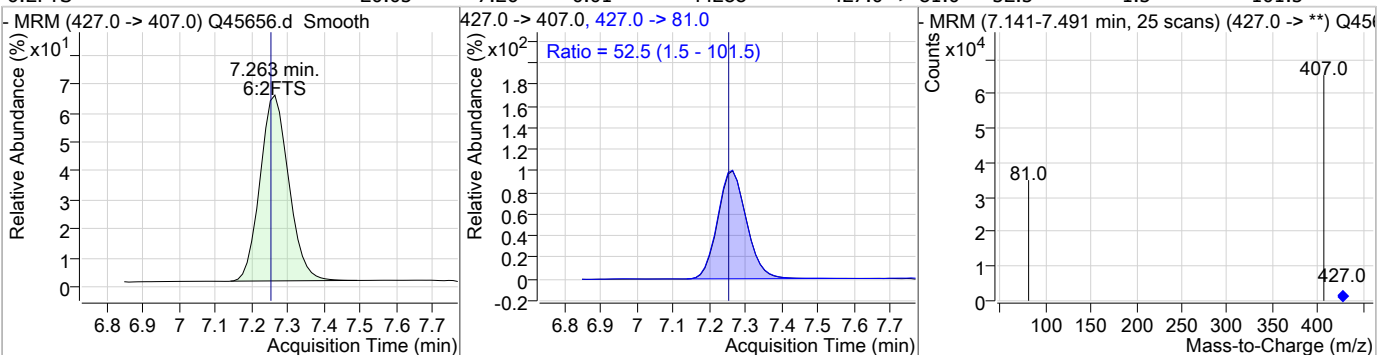
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.41	7.25	0.01	115054	413.0 ->	169.0 27.0	0.0	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS		7.26	0.01	44545				



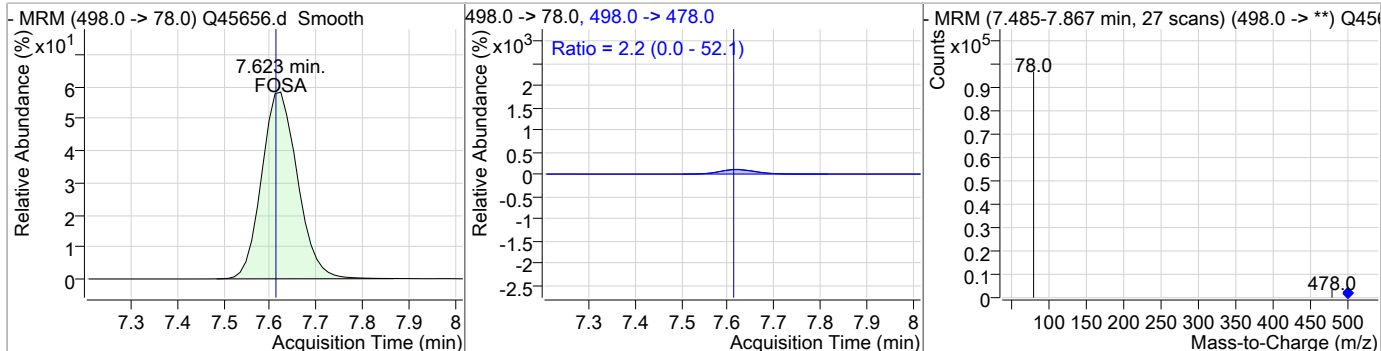
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.05	7.26	0.01	44288	427.0 ->	81.0 52.5	1.5	101.5



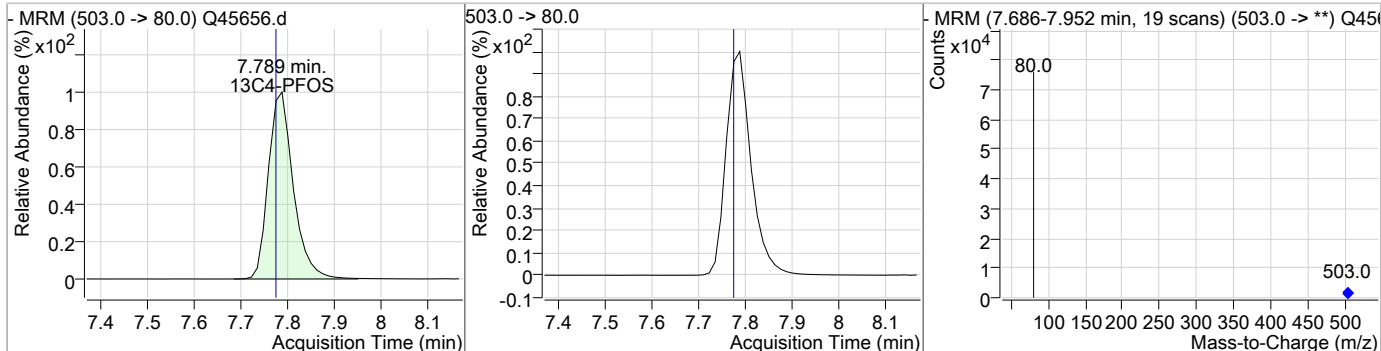
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### Perfluorinated Compounds by LC/MS/MS

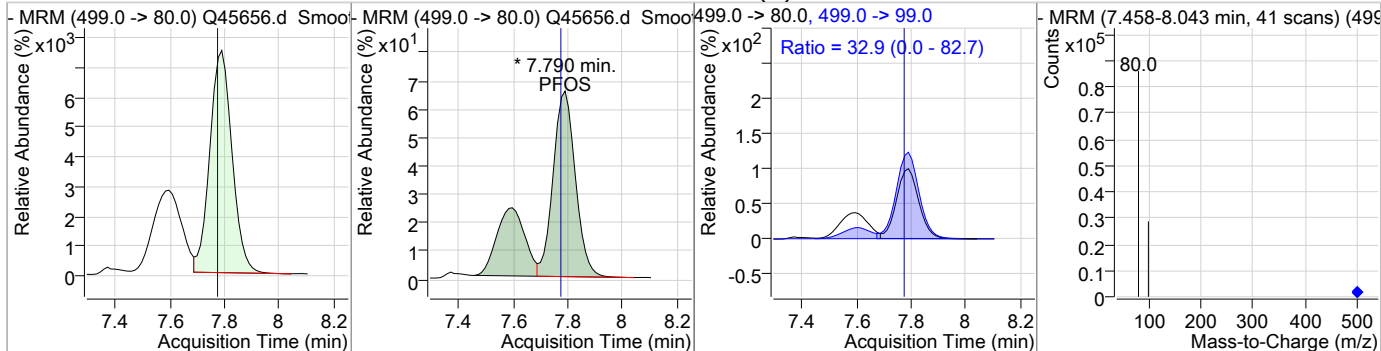
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.41	7.62	0.01	73602	498.0 -> 478.0	2.2	0.0	52.1



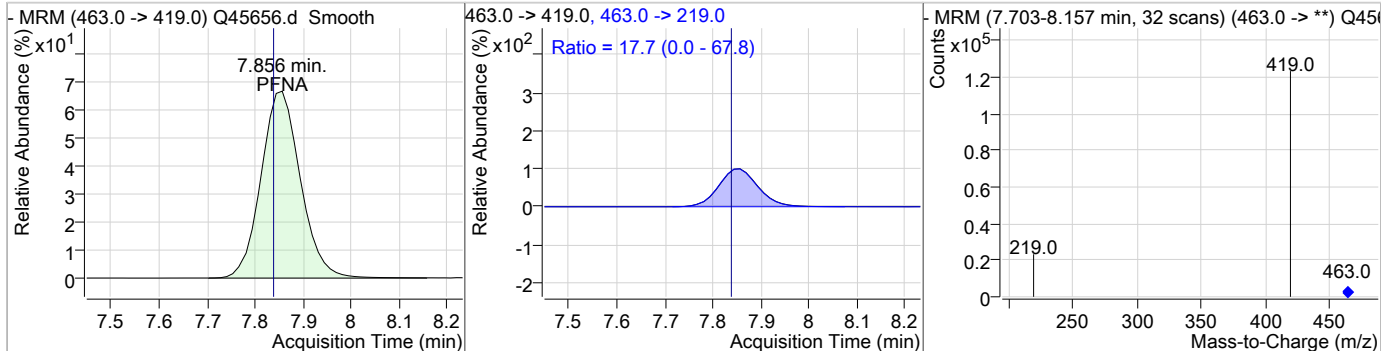
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.79	0.02	58358				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.56	7.79	0.02	62071 (m)	499.0 -> 99.0	32.9	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.87	7.86	0.02	91574	463.0 -> 219.0	17.7	0.0	67.8



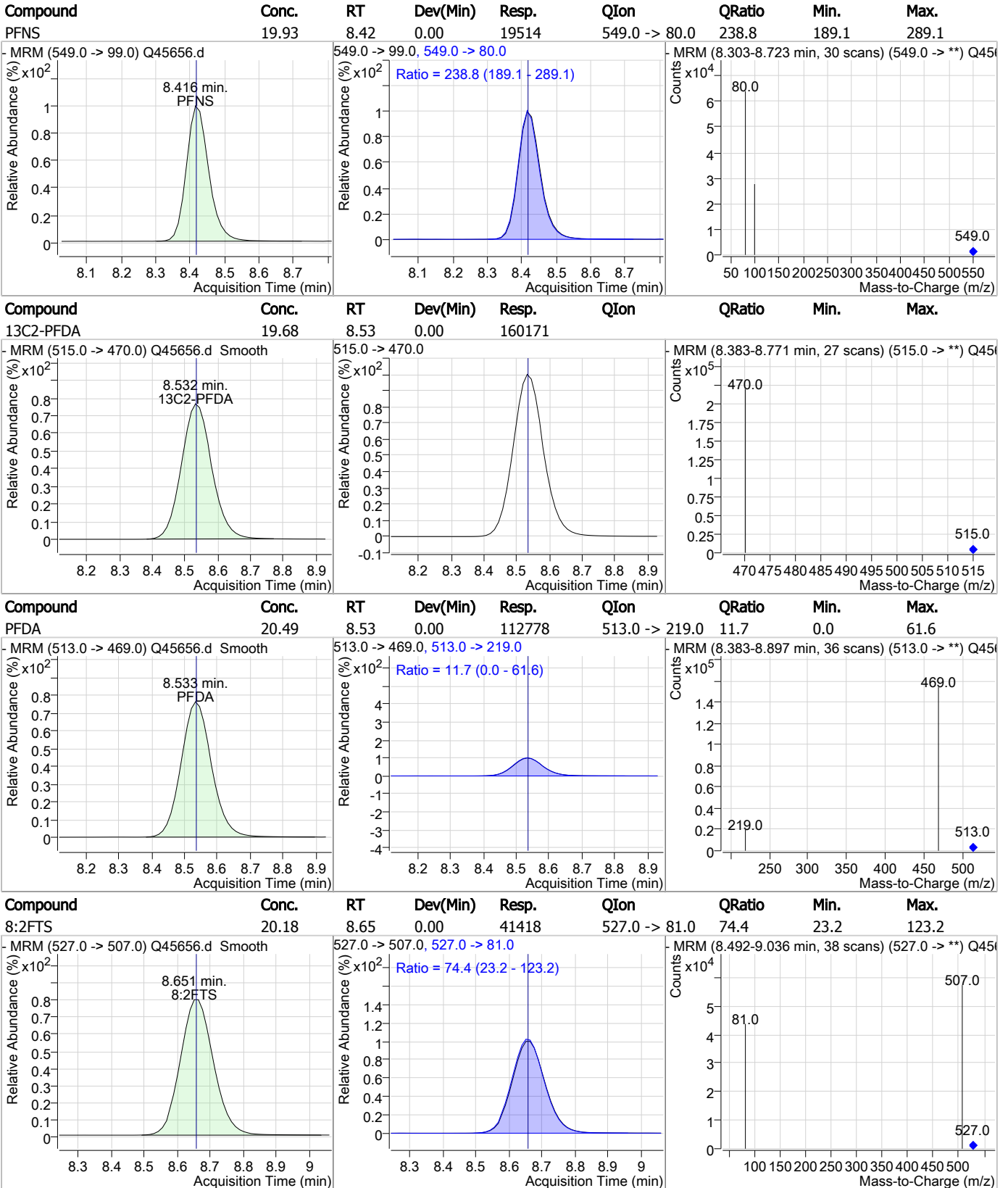
10.5.27 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.06	0.01	23327				
- MRM (573.0 -> 419.0) Q45656.d			573.0 -> 419.0			- MRM (7.962-8.225 min, 19 scans) (573.0 -> **) Q45		
MeFOSAA	20.24	8.06	0.00	26760	570.0 -> 512.0	29.6	0.0	81.1
- MRM (570.0 -> 419.0) Q45656.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			- MRM (7.937-8.351 min, 29 scans) (570.0 -> **) Q45		
d5-EtFOSAA	19.54	8.17	0.00	33012				
- MRM (589.0 -> 419.0) Q45656.d Smooth			589.0 -> 419.0			- MRM (8.059-8.472 min, 29 scans) (589.0 -> **) Q45		
EtFOSAA	19.88	8.19	0.01	24571	584.0 -> 483.0	45.1	0.0	95.2
- MRM (584.0 -> 419.0) Q45656.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			- MRM (8.062-8.499 min, 31 scans) (584.0 -> **) Q45		

10.5.27 10

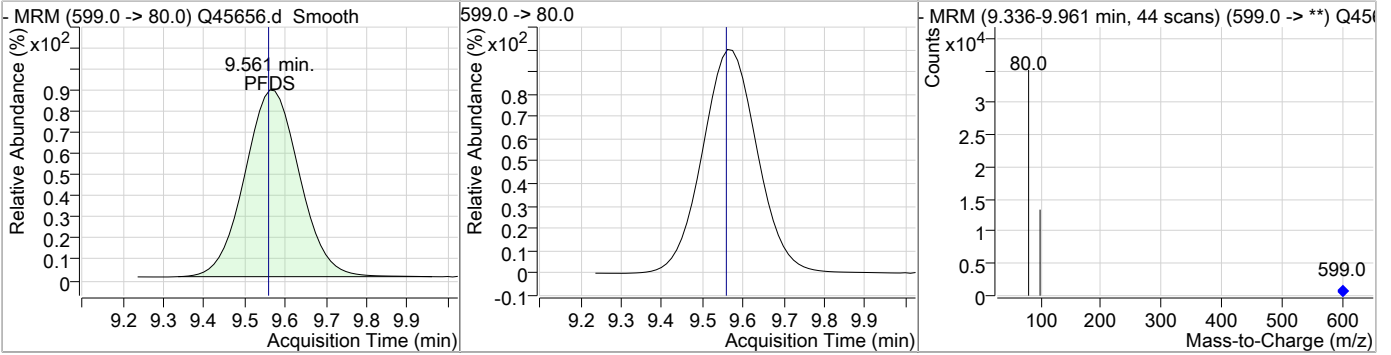
### Perfluorinated Compounds by LC/MS/MS



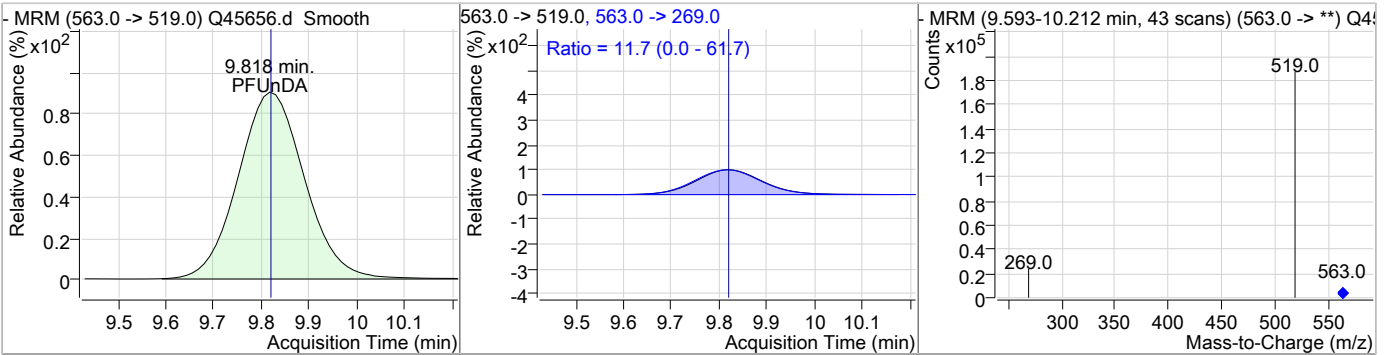
10.5.27 10

### Perfluorinated Compounds by LC/MS/MS

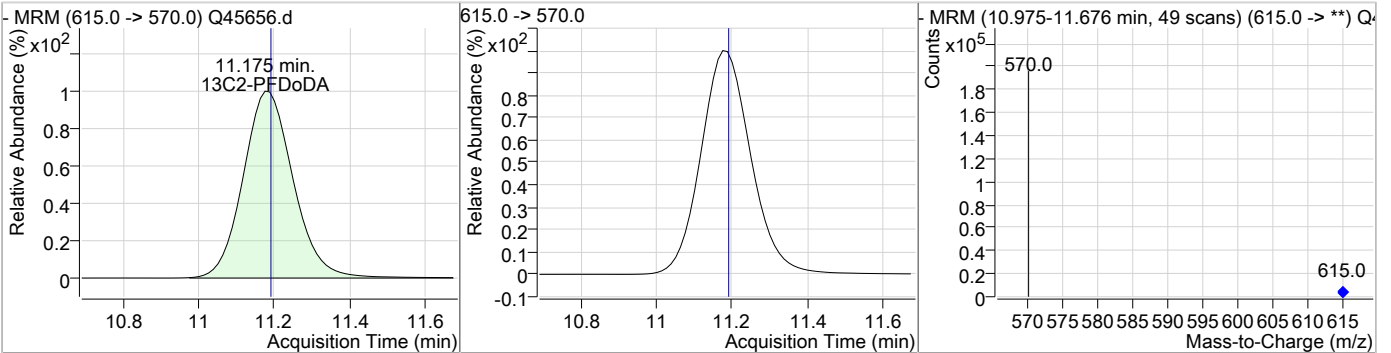
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.82	9.56	0.00	24297				



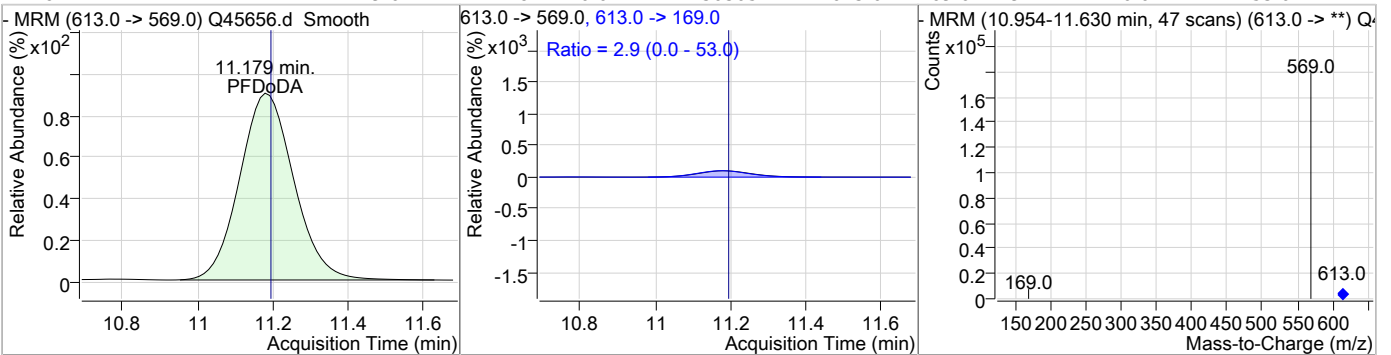
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.03	9.82	0.00	137371	563.0 -> 269.0	11.7	0.0	61.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA		11.18	-0.01	145123				



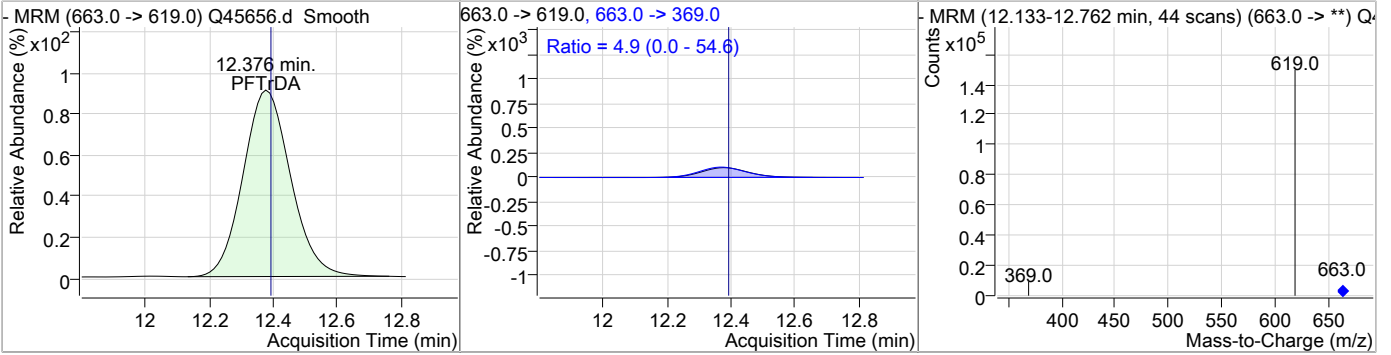
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.67	11.18	-0.01	130305	613.0 -> 169.0	2.9	0.0	53.0



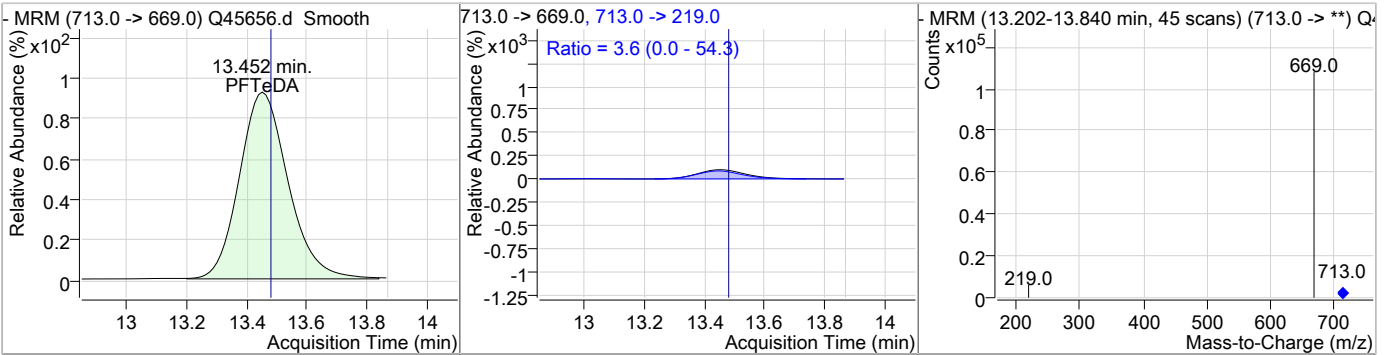
10.5.27 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.26	12.38	-0.01	108624	663.0 -> 369.0	4.9	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.75	13.45	-0.03	78778	713.0 -> 219.0	3.6	0.0	54.3



10.5.27 10

# Manual Integration Approval Summary

**Sample Number:** SQ1123-CC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45656.D      **Analyst approved:** 05/01/18 08:14 Nancy Saunders  
**Injection Time:** 04/30/18 10:40      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.59	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.79	Split peak

10.5.27.1

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### Perfluorinated Compounds by LC/MS/MS

Data File : Q45666.d  
 Operator : NANCYF  
 Acq. Method : 537\_LIST.m  
 Acq. Date-Time : 4/30/2018 3:05:19 PM  
 Sample Name : CC1119-20  
 Vial : Vial 2  
 DA Method File : PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name : SQ1123.batch.bin  
 Sample Information : OP69770,SQ1123,2.00,,,1.0,1,SOIL

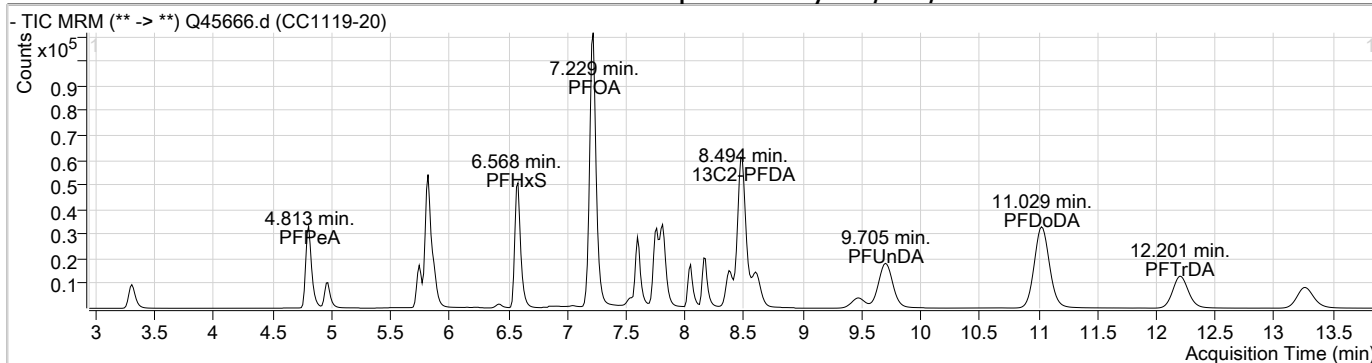
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
<b>Internal Standards</b>					
13C2-6:2FTS	7.224	429.0 -> 409.0	43101	20.00 µg/L	-0.023
13C2-PFDoDA	11.025	615.0 -> 570.0	152883	20.00 µg/L	-0.163
13C2-PFOA	7.228	415.0 -> 370.0	128628	20.00 µg/L	-0.012
13C4-PFOS	7.761	503.0 -> 80.0	55450	20.00 µg/L	-0.012
d3-MeFOSAA	8.049	573.0 -> 419.0	21081	20.00 µg/L	0.000
13C3-PFPeA	4.810	266.0 -> 222.0	61910	20.00 µg/L	-0.025
<b>System Monitoring Compounds</b>					
13C2-PFDA	8.494	515.0 -> 470.0	164545	19.93 µg/L	-0.037
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 99.7%	
13C2-PFHxA	5.824	315.0 -> 270.0	112288	19.89 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 99.5%	
d5-EtFOSAA	8.159	589.0 -> 419.0	29717	19.46 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 97.3%	
<b>Target Compounds</b>					
6:2FTS	7.238	427.0 -> 407.0	42790	20.02 µg/L	QValue 98
8:2FTS	8.601	527.0 -> 507.0	39892	20.09 µg/L	98
EtFOSAA	8.173	584.0 -> 419.0	22196	19.88 µg/L	99
FOSA	7.598	498.0 -> 78.0	72997	21.39 µg/L	100
MeFOSAA	8.050	570.0 -> 419.0	23358	19.55 µg/L	98
PFBA	3.302	213.0 -> 169.0	38324	19.24 µg/L	100
PFBS	4.966	299.0 -> 80.0	24948	21.00 µg/L	98
PFDA	8.495	513.0 -> 469.0	116742	20.91 µg/L	100
PFDoDA	11.029	613.0 -> 569.0	135730	19.45 µg/L	100
PFDS	9.474	599.0 -> 80.0	24578	20.04 µg/L	100
PFHpA	6.587	363.0 -> 319.0	120326	20.30 µg/L	100
PFHpS	7.182	449.0 -> 80.0	34073	20.83 µg/L	99
PFHxA	5.826	313.0 -> 269.0	67277	20.30 µg/L	100
PFHxS	6.568	399.0 -> 80.0	35900	20.23 µg/L	m 99
PFNA	7.819	463.0 -> 419.0	92278	19.74 µg/L	99
PFOA	7.229	413.0 -> 369.0	117501	19.54 µg/L	99
PFOS	7.762	499.0 -> 80.0	59530	19.75 µg/L	m 99
PFPeA	4.813	263.0 -> 219.0	55619	19.52 µg/L	100
PFTeDA	13.265	713.0 -> 669.0	81765	19.46 µg/L	98
PFTTrDA	12.201	663.0 -> 619.0	114863	19.33 µg/L	99
PFUnDA	9.705	563.0 -> 519.0	136841	19.88 µg/L	100
4:2FTS	5.746	327.0 -> 307.0	41105	20.55 µg/L	99
PFNS	8.378	549.0 -> 99.0	18736	20.14 µg/L	99
PFPeS	5.867	349.0 -> 99.0	8389	20.59 µg/L	99

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

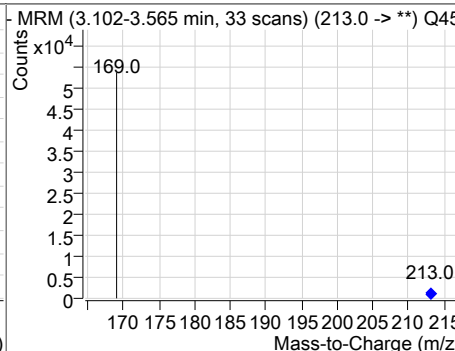
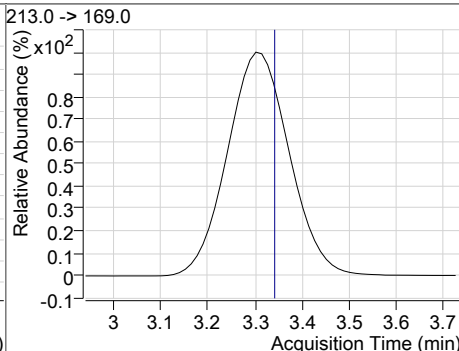
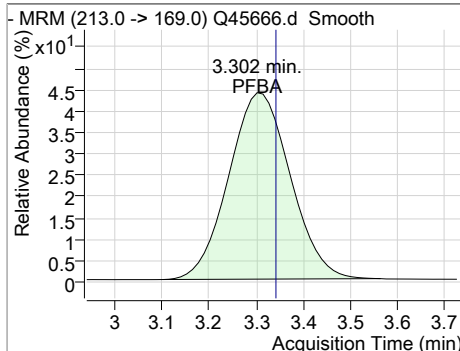
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**10**



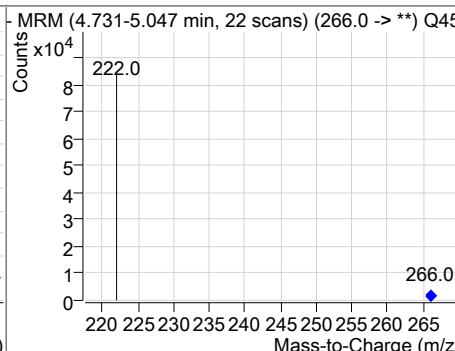
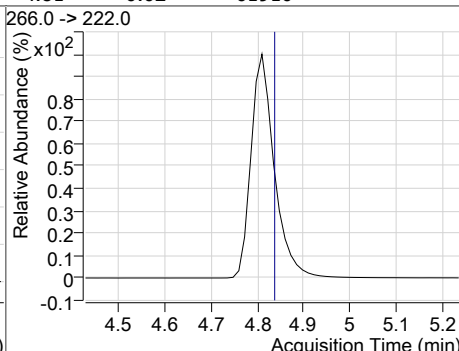
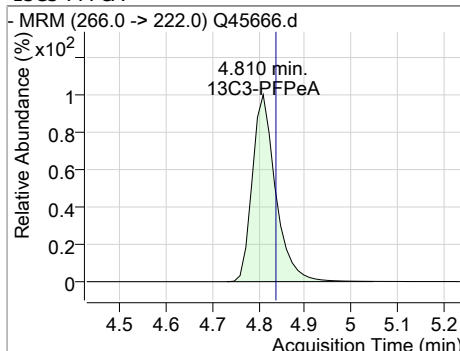
### Perfluorinated Compounds by LC/MS/MS



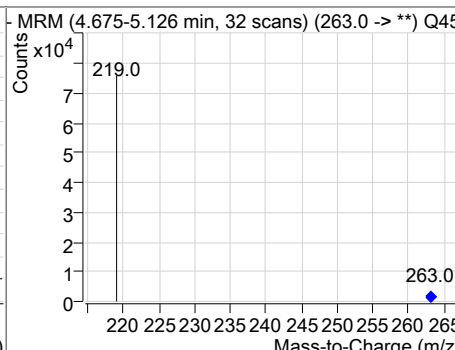
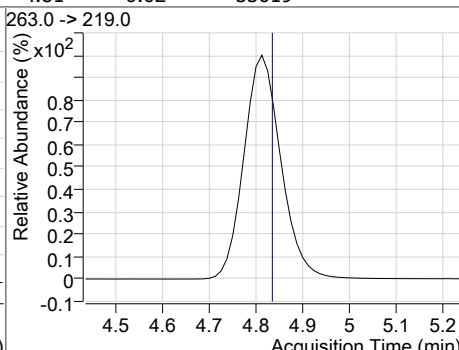
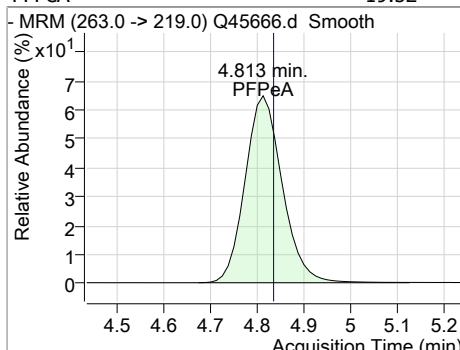
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.24	3.30	-0.04	38324				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFPeA		4.81	-0.02	61910				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.52	4.81	-0.02	55619				

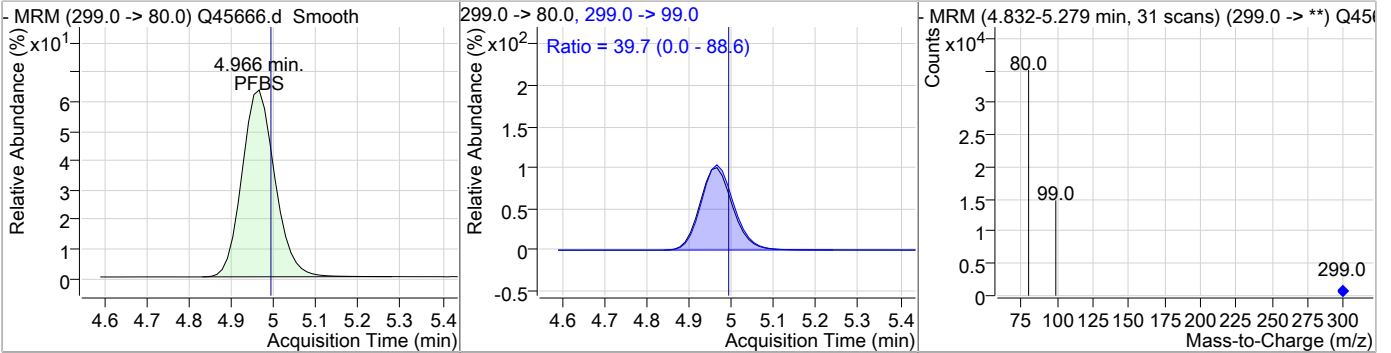


10.5.28 10

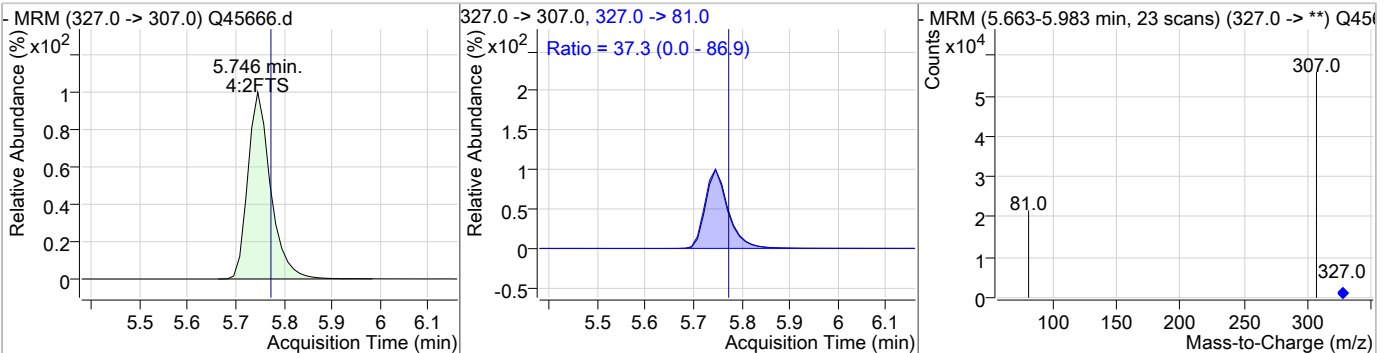


### Perfluorinated Compounds by LC/MS/MS

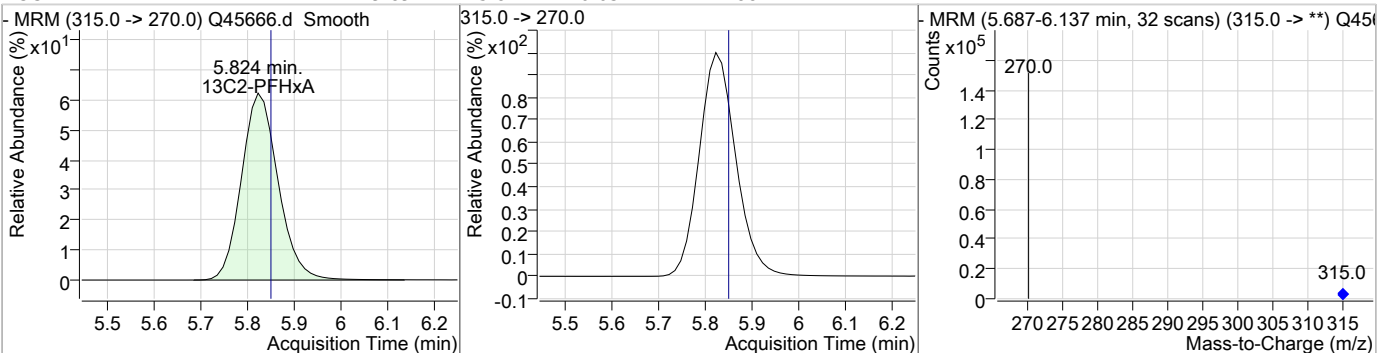
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.00	4.97	-0.02	24948	299.0 -> 99.0	39.7	0.0	88.6



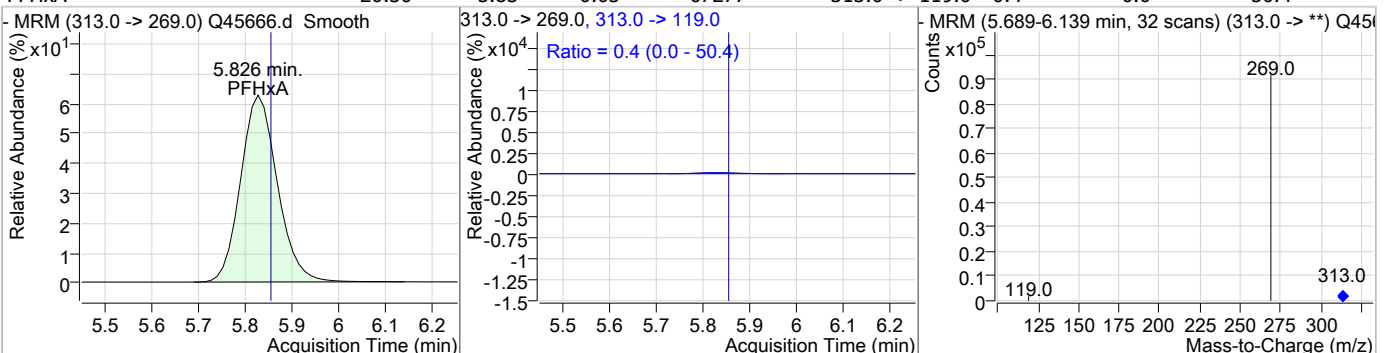
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.55	5.75	-0.02	41105	327.0 -> 81.0	37.3	0.0	86.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFHxA	19.89	5.82	-0.03	112288	315.0 -> 270.0	0.4	0.0	50.4



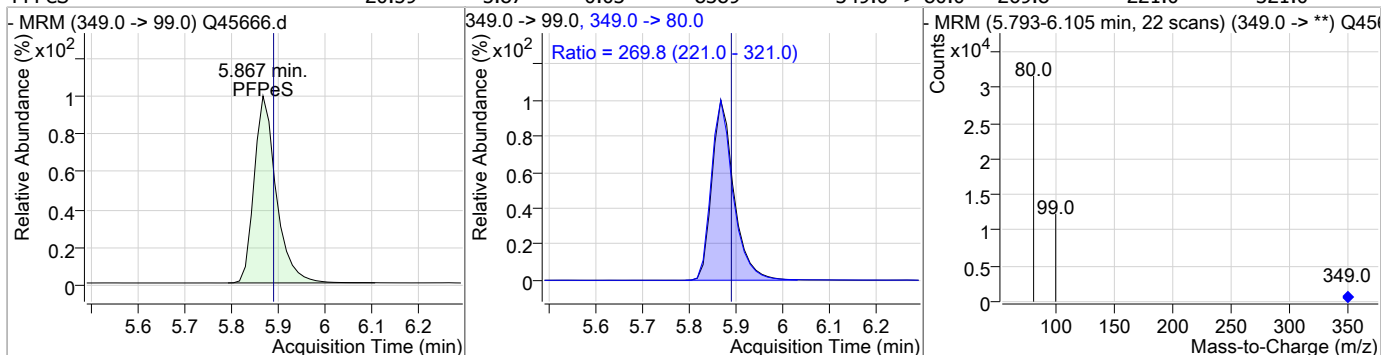
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.30	5.83	-0.03	67277	313.0 -> 119.0	0.4	0.0	50.4



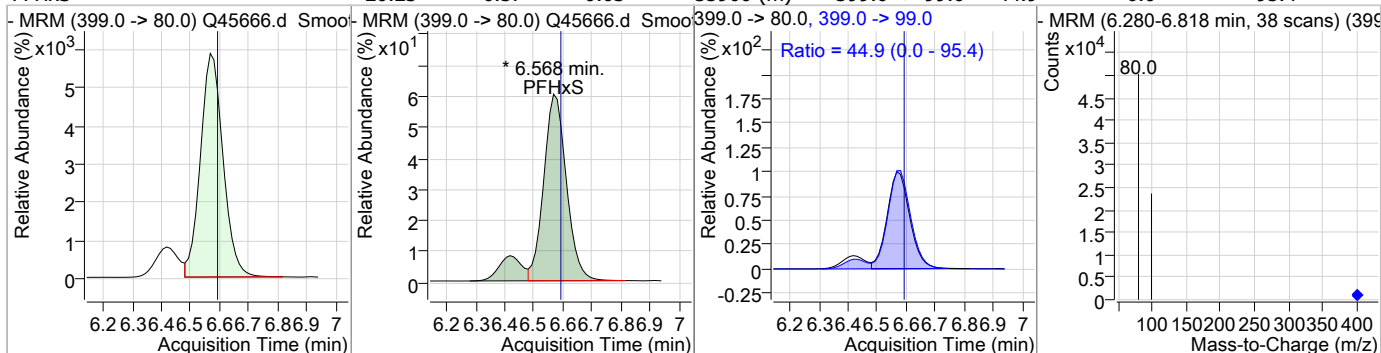
10.5.28 10

### Perfluorinated Compounds by LC/MS/MS

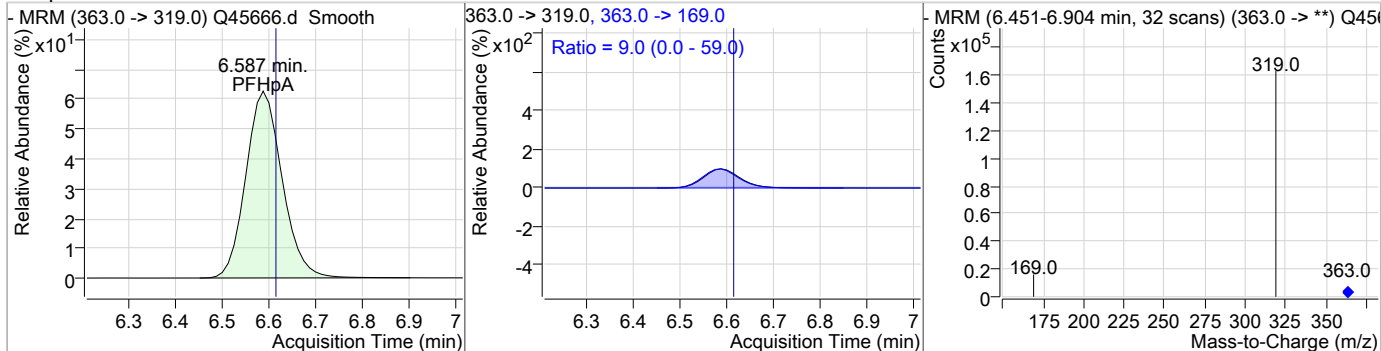
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.59	5.87	-0.03	8389	349.0 -> 80.0	269.8	221.0	321.0



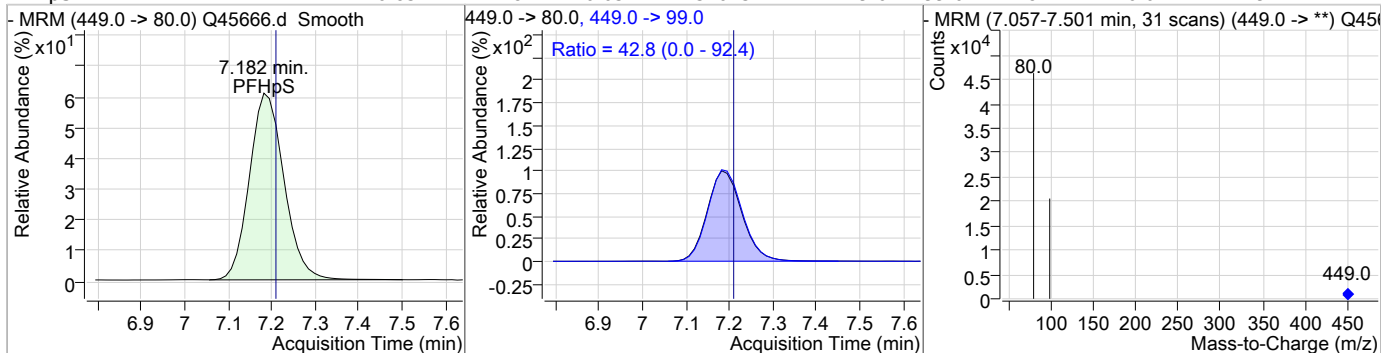
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFhXS	20.23	6.57	-0.03	35900 (m)	399.0 -> 99.0	44.9	0.0	95.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFHpA	20.30	6.59	-0.03	120326	363.0 -> 169.0	9.0	0.0	59.0

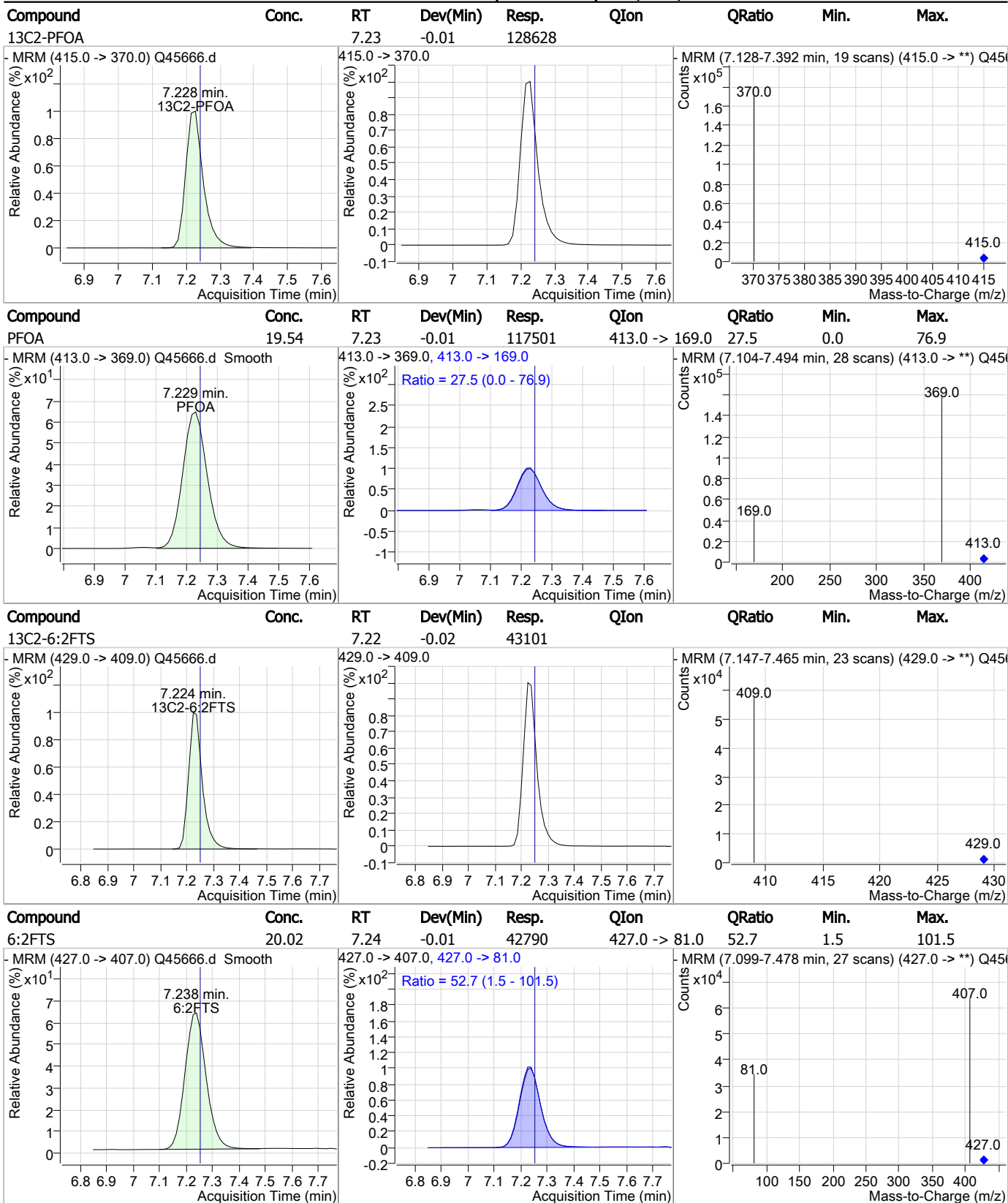


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFFHpS	20.83	7.18	-0.03	34073	449.0 -> 99.0	42.8	0.0	92.4



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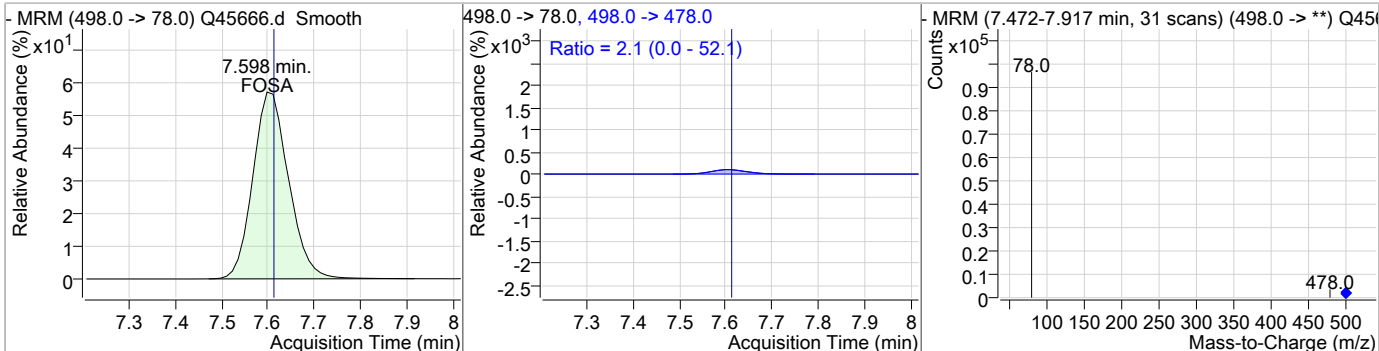
### Perfluorinated Compounds by LC/MS/MS



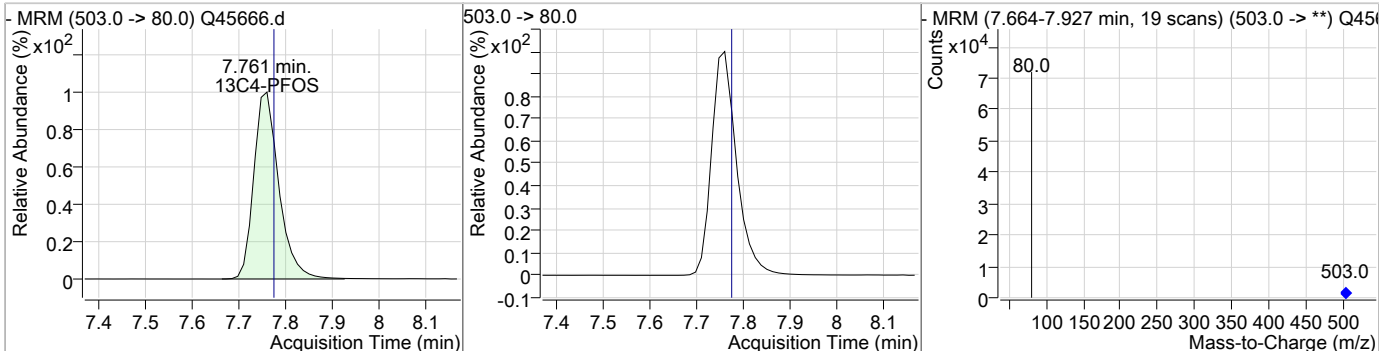
10.5.28 10

### Perfluorinated Compounds by LC/MS/MS

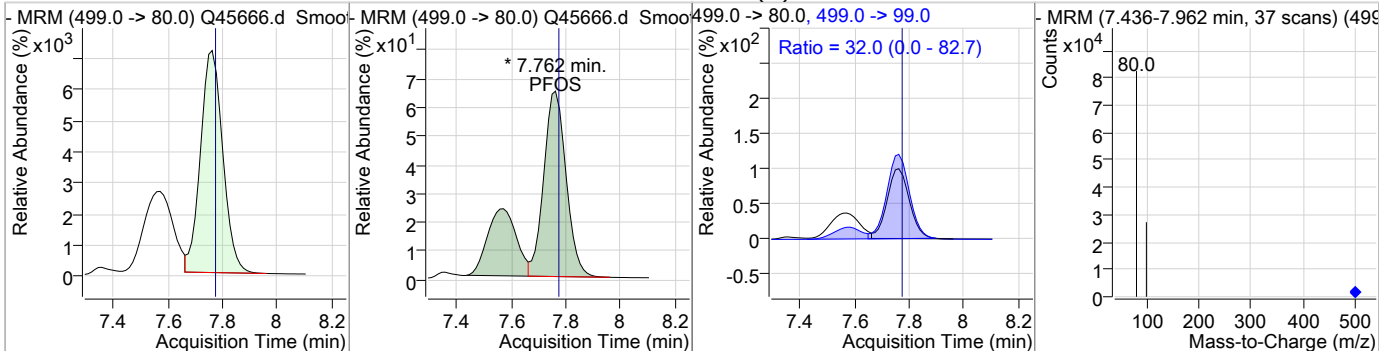
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.39	7.60	-0.01	72997	498.0 -> 478.0	2.1	0.0	52.1



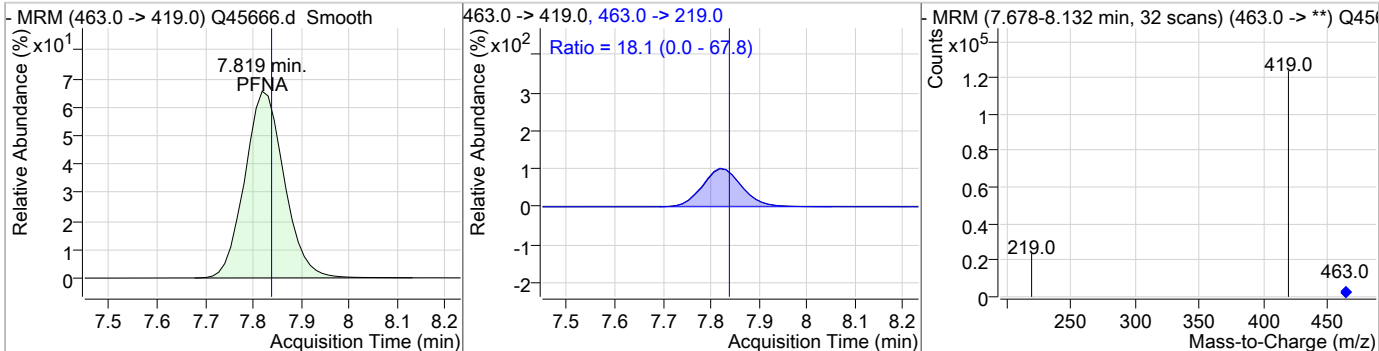
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFOS		7.76	-0.01	55450				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.75	7.76	-0.01	59530 (m)	499.0 -> 99.0	32.0	0.0	82.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.74	7.82	-0.02	92278	463.0 -> 219.0	18.1	0.0	67.8



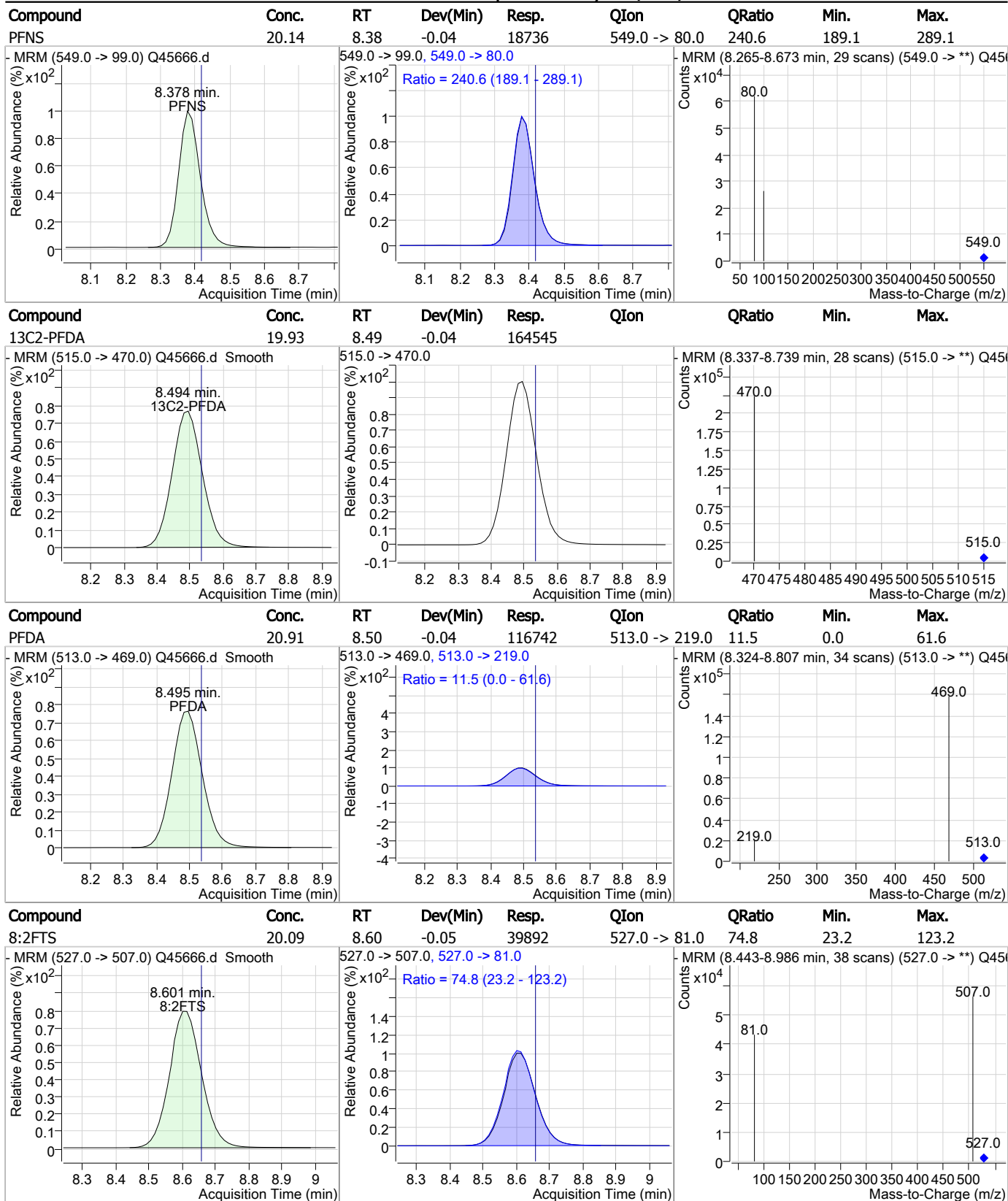
10.5.28 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA		8.05	0.00	21081				
-MRM (573.0 -> 419.0) Q45666.d			573.0 -> 419.0			-MRM (7.987-8.212 min, 16 scans) (573.0 -> **) Q45		
MeFOSAA	19.55	8.05	-0.01	23358	570.0 -> 512.0	30.1	0.0	81.1
-MRM (570.0 -> 419.0) Q45666.d Smooth			570.0 -> 419.0, 570.0 -> 512.0			-MRM (7.925-8.364 min, 31 scans) (570.0 -> **) Q45		
d5-EtFOSAA	19.46	8.16	-0.01	29717				
-MRM (589.0 -> 419.0) Q45666.d Smooth			589.0 -> 419.0			-MRM (8.039-8.420 min, 27 scans) (589.0 -> **) Q45		
EtFOSAA	19.88	8.17	0.00	22196	584.0 -> 483.0	45.5	0.0	95.2
-MRM (584.0 -> 419.0) Q45666.d Smooth			584.0 -> 419.0, 584.0 -> 483.0			-MRM (8.035-8.411 min, 27 scans) (584.0 -> **) Q45		

10.5.28 10

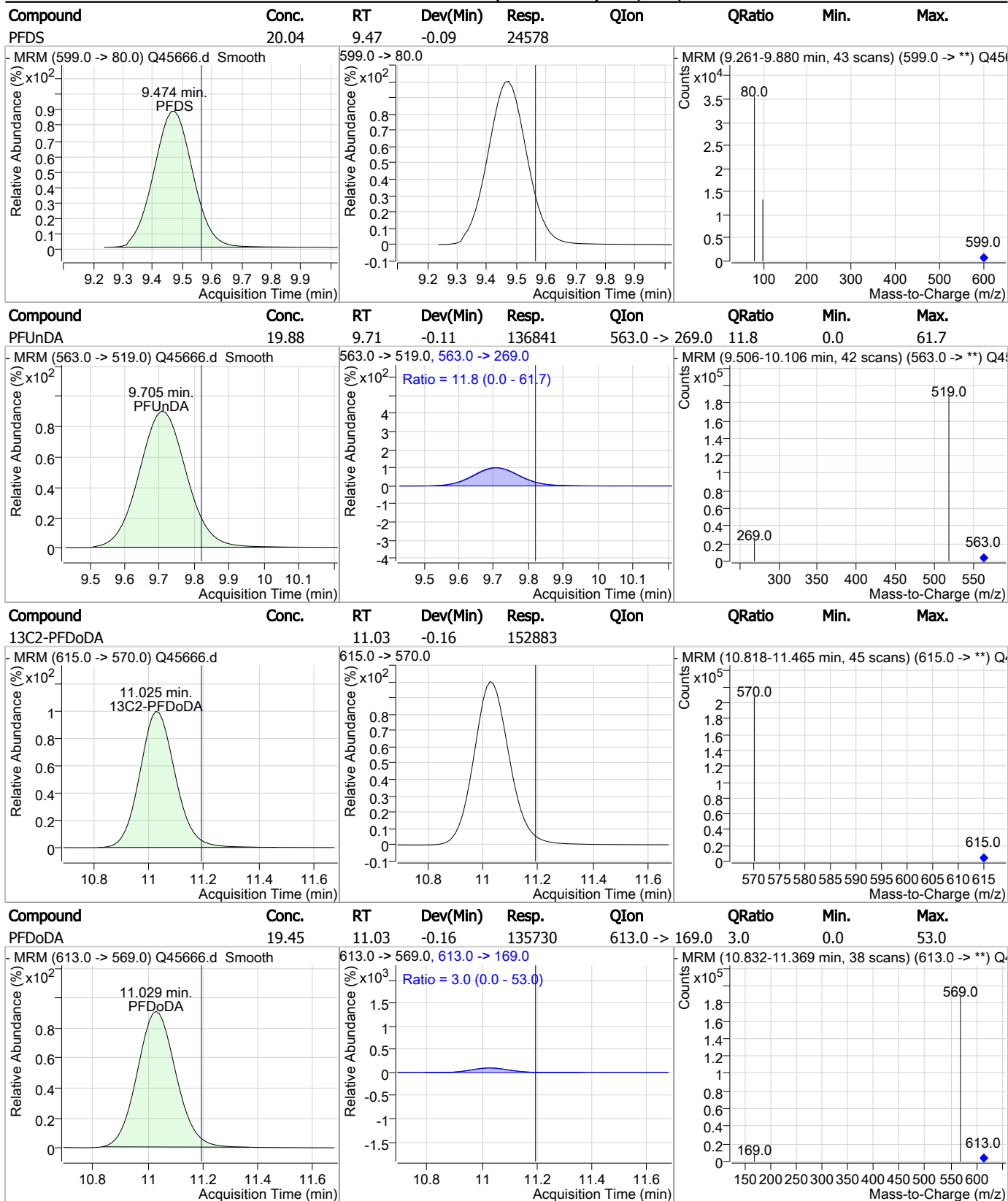
### Perfluorinated Compounds by LC/MS/MS



10.5.28 10



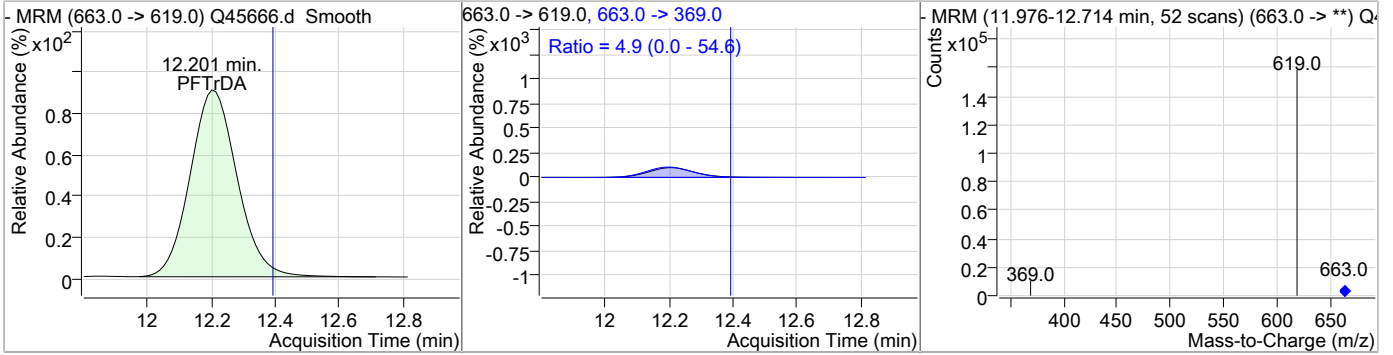
### Perfluorinated Compounds by LC/MS/MS



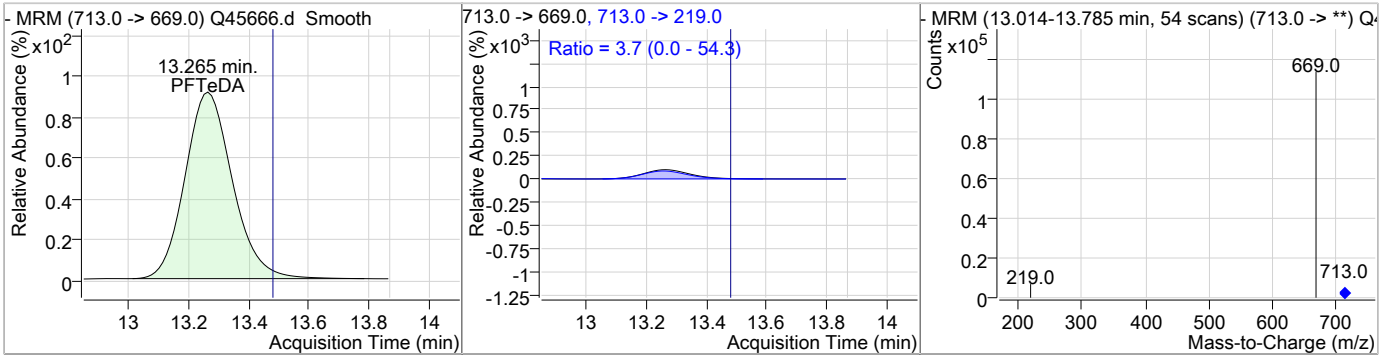
10.5.28 10

### Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTTrDA	19.33	12.20	-0.19	114863	663.0 -> 369.0	4.9	0.0	54.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.46	13.26	-0.21	81765	713.0 -> 219.0	3.7	0.0	54.3



10.5.28  
10



# Manual Integration Approval Summary

**Sample Number:** SQ1123-CC1119      **Method:** EPA 537 MOD  
**Lab FileID:** Q45666.D      **Analyst approved:** 05/01/18 08:14 Nancy Saunders  
**Injection Time:** 04/30/18 15:05      **Supervisor approved:** 05/01/18 16:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.57	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.76	Split peak

10.5.28.1

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SGS ACCUTEST-ORLANDO

DATE: 04-23-18  
 COLUMN TYPE: P20V1411 6000  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 249

LCMS2-2Q ANALYSIS LOG

METHODS: S37 MS  
 ACQ. METHOD: S37 MS  
 PROC. METHOD: SCL 042318 S60249  
 CALIB. DATE: 01-23-18  
 RUN BATCH: S2Q 249


ANALYST: JMS  
 ELUENT A LOT #: 180648  
 ELUENT B LOT #: 170600  
 WATER LOT #: 180648  
 ISTD Lot #: 180600

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13431	1	clb	DEC						✓
2Q 32	1	(cl)							✓
2Q 33	2	rt		LC1016	100/100				✓
2Q 34	2	CC249-20		L					✓
2Q 35	1	clb							✓
2Q 36	2	FC249-1		LC1016	5/100		SP		✓
2Q 37	3	-2			10/100		SP		✓
2Q 38	4	-5			25/100		SP		✓
2Q 39	5	-10			70/100		SP		✓
2Q 40	6	FC249-10			100/100		SP		✓
2Q 41	7	FC249-40			100/100		SP		✓
2Q 42	8	-50			100/100		SP		✓
2Q 43	9	-100			1X		SP		✓
2Q 44	10	T-100A		LC983	100/100				✓
2Q 45	11	FC249-20		LC1017	5/100		SP	Poss	✓
2Q 46	12	0169711-BS		0169711	1X		SP		✓
2Q 47	13	-MB							SPIL
2Q 48	14	FA53437-54					SP		✓
2Q 49	15	-55					SP		✓
2Q 50	16	-50							✓

\*< 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

69 of 100

Analyst's Signature: 



SGS ACCUTEST-ORLANDO

DATE: 09-23-16  
 COLUMN TYPE: FAS3437-68  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 449

LCMS2-2Q ANALYSIS LOG

METHODS: 537 mso  
 ACQ. METHOD: 537 6.157  
 PROC. METHOD: PFC 0423:16 520.244  
 CALIB. DATE: 09-23-16  
 RUN BATCH: S2Q 249

ANALYST: MBS  
 ELUENT A LOT #: 160648  
 ELUENT B LOT #: 170800  
 WATER LOT #: 120052  
 ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13451	17	FA53437-57	PFC	096711	17				✓
2Q 52	18	-52							✓
2Q 53	19	-65					SP		✓
2Q 54	20	-66					SP		✓
2Q 55	21	-67					SP		✓
2Q 56	6	CC244-20		LC1016	mso				Pass
2Q 57	1	CC03							BAL
2Q 58	22	FA53437-68		096711	17		SP		✓
2Q 59	23	-69					SP		✓
2Q 60	24	-70					SP		✓
2Q 61	25	0169711-m5					SP		✓
2Q 62	26	-m50					SP		✓
2Q 63	27	FA53437-73					SP		✓
2Q 64	28	-74					SP		✓
2Q 65	29	FA53520-2							✓
2Q 66	6	CC244-20		LC1016	mso				Pass
2Q 67	1	CC03							
2Q 68	30	FA53240-1A		096711	17				✓
2Q 69	31	-2A							✓
2Q 70	32	-4P							✓

\*< 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.

Analyst's Signature: 

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SGS ACCUTEST-ORLANDO

DATE:	04-23-16
COLUMN TYPE:	Porosilk II 5µm
AMOUNT INJECTED:	5 µl
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	449

LCMS2-2Q ANALYSIS LOG

METHODS:	S37 M08
ACQ. METHOD:	S37 LIT
PROC. METHOD:	PFC 04316 S2L 2V4
CALIB. DATE:	04-23-16
RUN BATCH:	S2Q 249

ANALYST:	MMS
ELUENT A LOT #:	180649
ELUENT B LOT #:	170800
WATER LOT #:	120688
ISTD Lot #:	LC1032

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13471	37	FA53240-50	PFC	DP6471	17				✓
2Q 72	34	FA53241-2A		+					✓
2Q 73	35	-30		+					✓
2Q 74	6	CC449-10		LC1016	100/mv		SP		POSS
2Q 75	1	CCB							BOL
2Q 76	36	OP69693-85		0164643	17		SP		✓
2Q 77	37	-m8							BOL
2Q 78	38	FA53442-6					SP		✓
2Q 79	34	-7					SP		✓
2Q 80	40	-8					SP		✓
2Q 81	41	-9					SP		✓
2Q 82	42	-10					SP		✓
2Q 83	43	-11					SP		✓
2Q 84	44	-12					SP		✓
2Q 85	45	-16					SP		✓
2Q 86	6	CC244-20		LC1016	100/mv		SP		POSS
2Q 87	1	CCB							BOL
2Q 88	46	FA53442-17		DP6463	17		SP		✓
2Q 89	47	OP69693-m5		+			SP		✓
2Q 90	48	-m8		+			SP		✓

\*< 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.

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Analyst's Signature: \_\_\_\_\_

SGS ACCUTEST-ORLANDO

DATE:	04-23-18
COLUMN TYPE:	PL0511E-01B
AMOUNT INJECTED:	5 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	1149

LCMS2-2Q ANALYSIS LOG

METHODS:	S2Q
ACQ. METHOD:	537 405
PROC. METHOD:	PFC 042318 532344
CALIB. DATE:	04-23-18
RUN BATCH:	S2Q 249

ANALYST:	MS
ELUENT A LOT #:	180648
ELUENT B LOT #:	174800
WATER LOT #:	120048
ISTD Lot #:	LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13441	6	CC244-20	PFC	LC1016	100/100		SP		Pass
2Q 92	1	CCB							SOI
2Q 93	44	OP69727-b5		OP69727	17		SP		✓
2Q 94	50	-mb							SOI
2Q 95	51	FAS3524-2							✓
2Q 96	52	OP69727-m5					SP		✓
2Q 97	6	CC244-20		LC1016	100/100		SP		Pass
2Q 98	1	CCB							SOI
2Q 99	53	FA53258-1F		OP69727	17				✓
2Q 500	54	-10r							✓
2Q 01	55	-16r							✓
2Q 02	56	-14r							✓
2Q 03	57	-20r							✓
2Q 04	58	-22r							✓
2Q 05	59	-31r							✓
2Q 06	60	-32r							✓
2Q 07	61	-37r							✓
2Q 08	62	-38r							✓
2Q 04	6	CC244-20		LC1011	100/100		SP		Pass
2Q 10	1	CCB							SOI

\* < 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: \_\_\_\_\_



SGS ACCUTEST-ORLANDO

DATE: 04-23-14  
 COLUMN TYPE: RP18 150x4.6mm  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 449

LCMS2-2Q ANALYSIS LOG

METHODS: 537 m10  
 ACQ. METHOD: 537 L15  
 PROC. METHOD: PCL 042314 326246  
 CALIB. DATE: 04-23-14  
 RUN BATCH: S2Q 249

ANALYST: AFB  
 ELUENT A LOT #: 12694  
 ELUENT B LOT #: 12680  
 WATER LOT #: 120694  
 ISTD Lot #: 661002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13511	63	FA53358-450	PCL	042314	17				✓
2Q 12	64	-460							✓
2Q 13	65	-510							✓
2Q 14	66	FA53344-10							✓
2Q 15	67	-30							✓
2Q 16	68	FA53365-10							✓
2Q 17	69	-20							✓
2Q 18	70	-30							✓
2Q 19	71	069727-dup							✓
2Q 20	4	ECC244-20		LC1016	100/100		SP		Pass
2Q 21	1	CCA							Pass
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

MS 04-24-14

\* < Conductivity Limit For Perchlorate by SW846 6850  
 Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.  
 Analyst's Signature: \_\_\_\_\_



# Initial Calibration Report - Instrument 1

Method Path D:\MassHunter\demethods  
 Method File PFC\_042318\_S2Q249\_quantmethod.xml  
 Batch Name D:\MassHunter\Data\0423\_PFC\_S2Q249\QuantResults\S2Q249.batch.bin  
 Last Calib Update 4/24/2018 7:57:11 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13434.d	4/23/2018 11:25:15 AM	4/24/2018 7:57:11 AM
1	D:\MassHunter\Data\0423_PFC_S2Q249\Q13436.d	4/23/2018 12:02:44 PM	4/24/2018 7:57:11 AM
2	D:\MassHunter\Data\0423_PFC_S2Q249\Q13437.d	4/23/2018 12:36:34 PM	4/24/2018 7:57:11 AM
3	D:\MassHunter\Data\0423_PFC_S2Q249\Q13438.d	4/23/2018 12:55:23 PM	4/24/2018 7:57:11 AM
4	D:\MassHunter\Data\0423_PFC_S2Q249\Q13439.d	4/23/2018 1:14:13 PM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13440.d	4/23/2018 1:52:07 PM	4/24/2018 7:57:11 AM
6	D:\MassHunter\Data\0423_PFC_S2Q249\Q13442.d	4/23/2018 2:10:57 PM	4/24/2018 7:57:11 AM
7	D:\MassHunter\Data\0423_PFC_S2Q249\Q13443.d	4/23/2018 2:29:46 PM	4/24/2018 7:57:11 AM
8	D:\MassHunter\Data\0423_PFC_S2Q249\Q13443.d	4/23/2018 3:15:07 PM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13445.d	4/23/2018 6:42:49 PM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13456.d	4/23/2018 9:51:16 PM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13466.d	4/24/2018 12:22:00 AM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13474.d	4/24/2018 4:07:57 AM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13486.d	4/24/2018 5:42:11 AM	4/24/2018 7:57:11 AM
5	D:\MassHunter\Data\0423_PFC_S2Q249\Q13491.d	4/24/2018 7:35:08 AM	4/24/2018 7:57:11 AM

Compound	5	1	2	3	4	5	6	7	8	5	5	5	5	5	5	Avg RF	%RSD		
I 13C2-6:2FTS																			
T 4:2FTS	0.7145	0.9395	0.7716	0.7639	0.7699	0.7145	0.6988	0.6717	0.6010	0.7145	0.7145	0.7145	0.7145	0.7145	0.7145	0.7145	0.7442	13.225	
T 6:2FTS	1.0187	1.2162	1.2627	1.0143	1.0108	1.0187	0.9228	0.8904	0.7998	1.0187	1.0187	1.0187	1.0187	1.0187	1.0187	1.0187	1.0187	1.0126	15.532
T 8:2FTS	0.9058	1.0335	0.9748	0.9214	0.9072	0.9058	0.8424	0.8161	0.7443	0.9058	0.9058	0.9058	0.9058	0.9058	0.9058	0.9058	0.9058	0.8902	10.233
I 13C2-PFDoDA																			
T PFDoDA	0.8784	1.0577	0.8519	0.8720	0.8698	0.8784	0.8624	0.8334	0.8454	0.8784	0.8784	0.8784	0.8784	0.8784	0.8784	0.8784	0.8784	0.8816	8.202
T PFTeDA	0.4918	0.5853	0.5185	0.5102	0.5296	0.4918	0.5288	0.5183	0.5127	0.4918	0.4918	0.4918	0.4918	0.4918	0.4918	0.4918	0.4918	0.5285	4.540
T PFTrDA	0.6758	0.7796	0.6655	0.7070	0.6920	0.6758	0.7055	0.6879	0.6838	0.6758	0.6758	0.6758	0.6758	0.6758	0.6758	0.6758	0.6758	0.6992	5.076
T PFUnDA	0.9201	1.0878	1.1667	1.0425	1.0242	0.9201	1.0166	0.9562	0.9668	0.9201	0.9201	0.9201	0.9201	0.9201	0.9201	0.9201	0.9201	1.0345	6.526
I 13C2-PFOA																			
S 13C2-PFDA	1.2771	1.5398	1.2871	1.3189	1.2735	1.2771	1.2471	1.2413	1.2785	1.2771	1.2771	1.2771	1.2771	1.2771	1.2771	1.2771	1.2771	1.3086	7.372
S 13C2-PFHxA	1.1697	1.5726	1.3145	1.2995	1.2860	1.1697	1.2463	1.2266	1.2323	1.1697	1.1697	1.1697	1.1697	1.1697	1.1697	1.1697	1.1697	1.3108	8.492
T PFBA	0.4370	0.6160	0.5185	0.5173	0.4953	0.4370	0.4816	0.4707	0.4863	0.4370	0.4370	0.4370	0.4370	0.4370	0.4370	0.4370	0.4370	0.5105	8.949
T PFDA	0.7152	0.8428	0.7910	0.7509	0.7273	0.7152	0.7183	0.7135	0.7218	0.7152	0.7152	0.7152	0.7152	0.7152	0.7152	0.7152	0.7152	0.7510	5.950
T PFHpA	1.4302	1.7829	1.4833	1.4828	1.4593	1.4302	1.4784	1.4389	1.4656	1.4302	1.4302	1.4302	1.4302	1.4302	1.4302	1.4302	1.4302	1.5122	7.352
T PFHxA	0.4385	0.5868	0.5004	0.5033	0.4994	0.4385	0.4842	0.4788	0.4829	0.4385	0.4385	0.4385	0.4385	0.4385	0.4385	0.4385	0.4385	0.5053	6.839
T PFNA	0.7913	0.8859	0.8403	0.8079	0.7913	0.7913	0.8265	0.8148	0.8124	0.7913	0.7913	0.7913	0.7913	0.7913	0.7913	0.7913	0.7913	0.8234	3.526
T PFOA	0.7986	0.9428	0.8544	0.8338	0.7899	0.7986	0.8040	0.7970	0.8171	0.7986	0.7986	0.7986	0.7986	0.7986	0.7986	0.7986	0.7986	0.8325	5.904

Initial Calibration Report - Instrument 1

Compound	1	2	3	4	5	6	7	8	5	5	5	5	5	5	Avg RF	%RSD
T PFPeA	1.5931	1.7682	1.6336	1.5373	1.5428	1.5734	1.5719	1.5578	1.5931	1.5931	1.5931	1.5931	1.5931	1.5931	1.5921	4.852
T PFPeS	0.4440	0.5071	0.4792	0.4424	0.4420	0.4560	0.4539	0.4525	0.4440	0.4440	0.4440	0.4440	0.4440	0.4440	0.4593	4.993
----- ISTD -----																
I 13C4-PFOS																
T PFBS	1.1718	1.3616	1.1863	1.1775	1.1830	1.1718	1.1766	1.1650	1.1886	1.1718	1.1718	1.1718	1.1718	1.1718	1.2005	5.469
T PFDS	0.4273	0.4157	0.3844	0.3871	0.3855	0.3947	0.3949	0.4033	0.4033	0.4273	0.4273	0.4273	0.4273	0.4273	0.3947	2.657
T PPHpS	1.1636	1.2389	1.1818	1.0534	1.0646	1.0884	1.0836	1.1123	1.1636	1.1636	1.1636	1.1636	1.1636	1.1636	1.1116	5.870
T PFHxS	1.1070	1.4883	1.2979	1.2736	1.2959	1.3004	1.2899	1.3073	1.1070	1.1070	1.1070	1.1070	1.1070	1.1070	1.3154	5.400
T PFNS	0.6769	0.8076	0.7531	0.7377	0.7182	0.6769	0.7112	0.7048	0.7045	0.6769	0.6769	0.6769	0.6769	0.6769	0.7308	4.852
T PFOS	0.7835	1.3460	1.2208	1.1816	1.1898	1.2024	1.1779	1.2056	0.7835	0.7835	0.7835	0.7835	0.7835	0.7835	1.2122	4.648
----- ISTD -----																
I d3-MeFOSAA																
S d5-EtFOSAA	1.3945	1.5443	1.4609	1.3475	1.3338	1.3207	1.3101	1.2786	1.3945	1.3945	1.3945	1.3945	1.3945	1.3945	1.3661	6.553
T EtFOSAA	0.9954	1.1585	1.0629	0.9771	0.9792	0.9644	0.9388	0.9278	0.9954	0.9954	0.9954	0.9954	0.9954	0.9954	0.9967	7.716
T FOSA	3.5808	4.6257	3.6767	3.7692	3.8138	3.5898	3.4941	3.2428	3.5808	3.5808	3.5808	3.5808	3.5808	3.5808	3.7421	10.714
T MeFOSAA	1.1475	1.3910	1.1464	1.1422	1.1264	1.1289	1.1172	1.1466	1.1475	1.1475	1.1475	1.1475	1.1475	1.1475	1.1674	7.794

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

# Initial Calibration Report - Instrument 1

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C2-PFDA	Linear	$y = 1.268862 * x$	0.999710
S 13C2-PFHxA	Linear	$y = 1.235486 * x$	0.999744
T 4:2FTS	Quadratic	$y = -0.031628 * x^2 + 0.758510 * x$	0.999899
T 6:2FTS	Quadratic	$y = -0.046805 * x^2 + 1.027388 * x$	0.998729
T 8:2FTS	Quadratic	$y = -0.031924 * x^2 + 0.903261 * x$	0.999935
S d5-EtFOSAA	Quadratic	$y = -0.013419 * x^2 + 1.345564 * x$	0.999991
T EtFOSAA	Quadratic	$y = -0.008813 * x^2 + 0.971244 * x$	0.999956
T FOSA	Quadratic	$y = -0.111607 * x^2 + 3.798855 * x$	0.999812
T MeFOSAA	Linear	$y = 1.139312 * x$	0.999658
T PFBA	Linear	$y = 0.483592 * x$	0.999883
T PFBS	Linear	$y = 1.182560 * x$	0.999903
T PFDA	Linear	$y = 0.720718 * x$	0.999821
T PFDoDA	Linear	$y = 0.845848 * x$	0.999796
T PFDS	Linear	$y = 0.400473 * x$	0.999841
T PFHpA	Linear	$y = 1.463542 * x$	0.999841
T PFHpS	Linear	$y = 1.103188 * x$	0.999717
T PFHxA	Linear	$y = 0.483154 * x$	0.999835
T PFHXS	Linear	$y = 1.302451 * x$	0.999919
T PFNA	Linear	$y = 0.814072 * x$	0.999935
T PFNS	Linear	$y = 0.705608 * x$	0.999968
T PFOA	Linear	$y = 0.812176 * x$	0.999808
T PFOs	Linear	$y = 1.199492 * x$	0.999842
T PFPeA	Linear	$y = 1.561636 * x$	0.999960
T PFPeS	Linear	$y = 0.452748 * x$	0.999943
T PFTeDA	Linear	$y = 0.515894 * x$	0.999797
T PFTfDA	Linear	$y = 0.686654 * x$	0.999802
T PFUnDA	Linear	$y = 0.972302 * x$	0.999287

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

SGS ACCUTEST-ORLANDO

DATE: 04 25 18  
 COLUMN TYPE: Poroshell EC18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S37-Mod  
 ACQ. METHOD: S37-List  
 PROC. METHOD: PFC-042318-S2Q251  
 CALIB. DATE: 042318  
 RUN BATCH: S2Q 251

ANALYST: NS  
 ELUENT A LOT #: 180698 w/ APPROX A C18  
 ELUENT B LOT #: 176800  
 WATER LOT #: 180698  
 ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13553	1	ccb	PFC						
2Q 154	1	ccb							
2Q 55	1	ccb							
2Q 56	6	PT							
2Q 57	6	CC249-20		LC1016	100	500			pass
2Q 58	12	FA53601-11		OP69769	1X				✓
2Q 59	13	↓ -12			2X				
2Q 60	14	↓ -12			5X				✓ ecomb 1X
2Q 61	15	FA53621-17			1X		sent to redo		↑ d3 MeFOSAA
2Q 62	16	↓ -17			2X		042518		↑ d3 MeFOSAA
2Q 63	13	FA53601-12			Spiked				
2Q 64	14	↓ -12			Spiked				
2Q 65	6	CC249-20		LC1016	100	500			pass
2Q 66	1	ccb							
2Q 67	17	OP69769-bs		OP69769	1X				pass
2Q 68	18	↓ -mb							✓
2Q 69	19	FA53256-1							✓
2Q 70	20	OP69769-ms							↓ surrs, r1X
2Q 71	21	↓ -msd							✓
2Q 72	22	FA53256-6							✓

\*< Conductivity Limit For Perchlorate by SW846 6850  
 Manual Integration Rationale SOP Q4029: 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

Analyst's Signature: *NS*

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SGS ACCUTEST-ORLANDO

DATE: 04/25/18  
 COLUMN TYPE: Poroshell/ECL18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S37-MOD  
 ACQ. METHOD: S37-LIST  
 PROC. METHOD: PFC-0422K-S2Q-249  
 CALIB. DATE: 04/23/18  
 RUN BATCH: S2Q 251

ANALYST: NG  
 ELUENT A LOT #: 180698 w/ Acetic Acid  
 ELUENT B LOT #: 176800  
 WATER LOT #: 150698  
 ISTD Lot #: LC-100A

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13573	23	FAS3256-8	PFC	040719	1X				✓
2Q 74	24	-10							✓
2Q 75	25	-17							✓
2Q 76	26	-21							✓
2Q 77	27	CC249-20							pass
2Q 78	1	ccb							—
2Q 79	27	0469752-25							pass
2Q 80	28	-16b							ND
2Q 81	29	JC64541-1							↑ d3 MeFosAA, r1X
2Q 82	30	-2							✓ r15X
2Q 83	31	-3							↑ d3 MeFosAA
2Q 84	32	0469752-MS							↑ d3 MeFosAA
2Q 85	23	-MSd							✓
2Q 86	2	CC249-20							pass
2Q 87	1	ccb							—
2Q 88	34	JC64541-4							✓ r15X
2Q 89	35	-5							✓
2Q 90	36	-6							✓
2Q 91	37	-7							✓
2Q 92	2	CC249-20							↑ d3 MeFosAA, r1X
2Q 93	2	CC249-20							pass

\* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
 All strikeouts must be 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:




SGS ACCUTEST-ORLANDO

DATE: 04/25/18  
 COLUMN TYPE: JOTOSHELL EC18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S27-MOD  
 ACQ. METHOD: S27-List  
 PROC. METHOD: PFC-042318-S27-249  
 CALIB. DATE: 04/23/18  
 RUN BATCH: S2Q 251

ANALYST: NS  
 ELUENT A LOT #: 180698 w/ Acetic Acid  
 ELUENT B LOT #: 176800  
 WATER LOT #: 180698  
 ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13593	1	CO6	PFC						
2Q 94	28	BS TEST		0169762	1x				✓
2Q 95	29	MB TEST							✓
2Q 96	40	0169765-BS		0169765			RASE		✓
2Q 97	41	↓ -MB					ND		✓
2Q 98	42	FAS3588-1							✓
2Q 99	43	↓ -2							✓
2Q 13600	44	↓ -3							✓
2Q 01	45	↓ -4							✓
2Q 02	46	↓ -5							✓
2Q 03	47	↓ -6							✓
2Q 04	6	CC209-20		LC1016	100/500				pass
2Q 05	1	CO6							✓
2Q 06	48	FAS3588-7		0169765	1x				✓
2Q 07	49	↓ -8							✓
2Q 08	50	↓ -13							✓
2Q 09	51	↓ -14							✓
2Q 10	52	↓ -15							✓
2Q 11	53	↓ -16							✓
2Q 12	54	↓ -17							✓

\*< 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.

Analyst's Signature: *[Signature]*

SGS ACCUTEST-ORLANDO

DATE: 04/25/18  
COLUMN TYPE: Poroshell/ECL  
AMOUNT INJECTED: 5 ul  
INSTRUMENT: LCMS2-2Q  
HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S37-MOD  
ACQ. METHOD: S37-List  
PROC. METHOD: PFC-042318-S2Q249  
CALIB. DATE: 04/23/18  
RUN BATCH: S2Q 251

ANALYST: NG  
ELUENT A LOT #: 180698 w/ Acetic Acid  
ELUENT B LOT #: 176800  
WATER LOT #: 180698  
ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 13613	55	FAS3588-18	PFC	0969765	1x				✓ xh
2Q 14	56	-19							✓
2Q 15	57	-20							✓ xh
2Q 16	6	CC249-20		LC1016	100/500				pass
2Q 17	1	Cob							-
2Q 18	56	FAS3588-21		0969765	1x				✓
2Q 19	59	0969765-MS							✓
2Q 20	60	-MSD							✓
2Q 21	61	FAS3588-2a							✓ xh
2Q 22	62	-25							✓
2Q 23	4	ECC249-20		LC1016	100/500				pass
2Q 24	1	Cob							-
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

NG outgated

\* < Conductivity Limit For Perchlorate by SW846 6850  
Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: NG

SGS ACCUTEST-ORLANDO

DATE: 04/25/18  
 COLUMN TYPE: POTOSHE/FC18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S37-Mod  
 ACQ. METHOD: S37-List  
 PROC. METHOD: PFC-042318-S2Q253  
 CALIB. DATE: 04/23/18  
 RUN BATCH: S2Q 253

ANALYST: NG  
 ELUENT A LOT #: 180698 ml Acceptable  
 ELUENT B LOT #: 170800  
 WATER LOT #: 180698  
 ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q13643	6	CC249-20	PFC	LC1016	100/500				pass
2Q44	19	FA532256-1		Op69770	1X		sent to redo		↑ d3 NeFOSAA Istd
2Q45	29	JC64541-1		Op69752	↓				√ ecomb 1X
2Q46	73	-2		↓	5X	04/25/18			rr 10X for DODA Istd RT Δ
2Q47	74	-4		↓	5X				↑ d3 NeFOSAA Istd
2Q48	37	-7		↓	↓		sent to redo		pass
2Q49	6	CC249-20		LC1016	100/500				pass
2Q50	1	CC6							
2Q51	75	Op69770-bs		Op69770	1X		PASS		√
2Q52	76	-mb		↓			ND		√
2Q53	77	FA53601-1							√
2Q54	78	-2							√
2Q55	79	-3							√
2Q56	80	-4							√
2Q57	81	-5							√
2Q58	82	-6							√
2Q59	83	-7							√
2Q60	84	-8							√
2Q61	4	CC249-20		LC1016	100/500				pass
2Q62	1	CC6							

\* < 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:

*Handwritten Signature*



SGS ACCUTEST-ORLANDO

DATE: 04/25/18  
 COLUMN TYPE: Poroshell EC18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS2-2Q  
 HEAD PRESSURE: 450

LCMS2-2Q ANALYSIS LOG

METHODS: S37-mod  
 ACQ. METHOD: S37-LIST  
 PROC. METHOD: PFC-042018-S2Q253  
 CALIB. DATE: 04/23/18  
 RUN BATCH: S2Q 253

ANALYST: US  
 ELUENT A LOT #: 180698 w/Acetic Anhyd  
 ELUENT B LOT #: 176800  
 WATER LOT #: 180698  
 ISTD Lot #: 2C1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q13663	85	FA53601-9	PFC	060170	1x				✓
2Q 64	86	↓ -10					sent to redo		↓ surrs, rrix
2Q 65	87	FA53620-1					sent to redo		↓ surrs, rrix
2Q 66	88	FA53621-5							✓
2Q 67	89	0469170-MS							✓
2Q 68	90	↓ -MSD							✓
2Q 69	91	FA53621-11					sent to redo		↓ surrs, rrix
2Q 70	92	↓ -12					sent to redo		↓ surrs, rrix
2Q 71	6	ecc209-20		LC1046	100/500				pass
2Q 72	1	cab							
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

NS 042518

\* < 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  
 Analyst's Signature: Statoshin

SGS ACCUTEST-ORLANDO

DATE:	04-26-18
COLUMN TYPE:	Porosil LC C18
AMOUNT INJECTED:	7 ul
INSTRUMENT:	LCMS1-Q
HEAD PRESSURE:	516

LCMS1-Q ANALYSIS LOG

METHODS:	537.M00
ACQ. METHOD:	537.F15T
PROC. METHOD:	PFC 0426.SD.1119
CALIB. DATE:	04-26-18
RUN BATCH:	SQ 1119

ANALYST:	NAS
ELUENT A LOT #:	180698 w/181481
ELUENT B LOT #:	178025
WATER LOT #:	180698
ISTD Lot #:	LC100L

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45494	1	CCB	PFC						✓
Q 95	1	CCB							✓
Q 96	4	AT		LC1021					✓
Q 97	1	CCB							✓
Q 98	11	TPST		LC10175	5/150				✓
Q 99	1	CCB							Boh
Q 500	2	FC1119-1		LC1021	5/150		SP		✓
Q 01	3	-2			100/150		SP		✓
Q 02	4	-5			25/150		SD		✓
Q 03	5	-10			50/150		SP		✓
Q 04	6	FC1119-20			10/510		SP		✓
Q 05	7	FC1119-40			200/150		SP		✓
Q 06	8	-50			270/500		SP		✓
Q 07	9	-100			17		SP		✓
Q 08	10	TP04							✓
Q 09	11	FC1119-20		LC983	100/150				Pass
Q 10	12	OP69783-85			5/150		SP		✓
Q 11	13	OP69783-85		0069783	17		SP		Pass
Q 12	14	FCAS3584-1							RDL
Q 13	15	-2							MEEST

\* < 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 initiated and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS1\_Q\_log.xls ME rev. 06/16

Analyst's Signature: \_\_\_\_\_



SGS ACCUTEST-ORLANDO

DATE: 04-26-18  
 COLUMN TYPE: Poragel C18  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 170


LCMS1-Q ANALYSIS LOG

METHODS: SQ  
 ACQ. METHOD: F27 List  
 PROC. METHOD: P2C 0 4 2 6 5 8-1119  
 CALIB. DATE: 04-26-18  
 RUN BATCH: SQ 1119

ANALYST: MJS  
 ELUENT A LOT #: 180698 or 181119  
 ELUENT B LOT #: 179825  
 WATER LOT #: 180648  
 ISTD Lot #: 221002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45514	16	0969783-05	FCL	0969783	17		SP		✓
Q 15	17	-M10					PFF SP		✓
Q 16	18	F453589-3					SP PFF		✓
Q 17	19	-4					PFF		✓
Q 18	20	-5							✓
Q 19	21	-6					SP		✓
Q 20	6	CC1114-20		221021	100/100		SP		Pass
Q 21	1	CCB							BDL
Q 22	22	F453589-7		0969783	17				✓
Q 23	23	-8							✓
Q 24	24	-9							✓
Q 25	25	-10							✓
Q 26	26	-11					SP		✓
Q 27	27	-12							✓
Q 28	28	-13							✓
Q 29	29	-14							✓
Q 30	30	-15							✓
Q 31	31	-16							✓
Q 32	6	CC1114-20		221021	100/100		SP		Pass
Q 33	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, PII Poor Instrument Integration  
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: 



SGS ACCUTEST-ORLANDO

DATE: 04-26-13  
 COLUMN TYPE: Porosil 11E68  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 512

LCMS1-Q ANALYSIS LOG

METHODS: PFC, SP, OP  
 ACQ. METHOD: SP, L-15  
 PROC. METHOD: PFC, OP, SP, S, O-114  
 CALIB. DATE: 04-26-13  
 RUN BATCH: SQ 119

ANALYST: PMS  
 ELUENT A LOT #: 10000000  
 ELUENT BLOT #: 10000000  
 WATER LOT #: 10000000  
 STD Lot #: LC 1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45534	32	FA53584-17	PFC	006473	17				✓
Q 35	33	75					SP		✓
Q 36	34	-19					SP		✓
Q 37	35	-20					SP		✓
Q 38	6	C-1114-20		LC1021	100/500		SP		POSS
Q 39	1	COB							
Q 40	36	FA53656-1		0064767	14		SP		✓ PGBA kit
Q 41	37	-2					SP		✓
Q 42	38	-3					SP		ADL 550 F+L
Q 43	39	-4					SP		✓ ADL 550 F+L
Q 44	40	-6					SP		ADL 550 F+L
Q 45	41	-8					SP		ADL 550 F+L
Q 46	42	-5			5X		SP		✓
Q 47	43	-7			20X		SP		✓
Q 48	6	FA1114-20		LC1021	100/500		SP		POSS
Q 49	1	COB							ADL
Q									
Q									
Q									
Q									

04-17-13

\* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
 All strikeouts must be initiated and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS1\_Q\_log.xls ME rev. 06/16

Analyst's Signature:



# Initial Calibration Report - LCMS1-Q

Method Path D:\MassHunter\damethods  
 Method File PFC\_0426\_SQ1119.quantmethod.xml  
 Batch Name D:\MassHunter\Data\0426\_PFC\_SQ1119\QuantResults\SQ1119.batch.bin  
 Last Calib Update 4/27/2018 7:51:54 AM

## Calibration Files

Level Name Acq. Date-Time Level Last Update Time  
 1 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45500.d 4/26/2018 5:11:44 PM 4/27/2018 7:51:54 AM  
 2 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45501.d 4/26/2018 5:31:35 PM 4/27/2018 7:51:54 AM  
 3 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45502.d 4/26/2018 5:51:26 PM 4/27/2018 7:51:54 AM  
 4 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45503.d 4/26/2018 6:11:18 PM 4/27/2018 7:51:54 AM  
 5 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45504.d 4/26/2018 6:31:10 PM 4/27/2018 7:51:54 AM  
 6 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45505.d 4/26/2018 6:51:03 PM 4/27/2018 7:51:54 AM  
 7 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45506.d 4/26/2018 7:10:54 PM 4/27/2018 7:51:54 AM  
 8 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45507.d 4/26/2018 7:30:46 PM 4/27/2018 7:51:54 AM  
 5 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45509.d 4/26/2018 8:10:28 PM 4/27/2018 7:51:54 AM  
 5 D:\MassHunter\Data\0426\_PFC\_SQ1119\Q45520.d 4/26/2018 11:48:58 PM 4/27/2018 7:51:54 AM

Compound	1	2	3	4	5	6	7	8	5	5	Avg RF	%RSD
I 13C2-6:2FTS												
T 6:2FTS	1.0415	0.9948	1.0014	1.0017	0.9455	0.9650	0.9261	0.8297	0.9455	0.9455	0.9670	6.693
T 8:2FTS	0.9685	0.9527	0.9474	0.9212	0.9507	0.9122	0.8788	0.8263	0.9507	0.9507	0.9145	4.993
T 4:2FTS	0.9925	0.9002	0.9436	0.9324	0.9454	0.9118	0.8893	0.8244	0.9454	0.9454	0.9126	5.280
I 13C2-PFDoDA												
T PFDoDA	0.8996	0.8971	0.8899	0.9008	0.8822	0.9297	0.8916	0.9173	0.8822	0.8822	0.9000	1.894
T PFTeDA	0.5477	0.5142	0.5251	0.5192	0.5116	0.5565	0.5499	0.5509	0.5116	0.5116	0.5335	3.729
T PFTrDA	0.7768	0.7468	0.7550	0.7560	0.7417	0.7830	0.7694	0.7804	0.7417	0.7417	0.7628	2.258
T PFUnDA	0.9142	0.8505	0.8737	0.9013	0.8809	0.8658	0.8412	0.9216	0.8809	0.8809	0.8809	3.315
I 13C2-PFOA												
S 13C2-PFDA	1.3293	1.2270	1.2427	1.2696	1.3300	1.3010	1.2888	1.2812	1.3300	1.3300	1.2740	2.610
S 13C2-PFHXA	0.8974	0.8599	0.8517	0.8703	0.8812	0.8799	0.8798	0.8782	0.8812	0.8812	0.8699	2.056
T PFDA	0.8940	0.8300	0.8374	0.8708	0.8766	0.8867	0.8705	0.8653	0.8766	0.8766	0.8625	2.663
T PFHpA	0.9425	0.8785	0.9040	0.9149	0.9058	0.9336	0.9129	0.9239	0.9058	0.9058	0.9111	2.578
T PFHXA	0.5232	0.4965	0.4981	0.5130	0.5086	0.5160	0.5110	0.5174	0.5086	0.5086	0.5085	2.195
T PFNA	0.7334	0.6756	0.6732	0.7020	0.6960	0.7286	0.7160	0.7317	0.6960	0.6960	0.7044	3.788
T PFOA	1.0200	0.9231	0.9203	0.9309	0.9081	0.9415	0.9335	0.9354	0.9081	0.9081	0.9388	3.688
I 13C4-PFOS												
T PFBS	0.4166	0.4073	0.4155	0.4175	0.4127	0.4274	0.4256	0.4304	0.4127	0.4127	0.4184	2.113
T PFDS	0.4496	0.4322	0.4254	0.4340	0.3990	0.4155	0.4302	0.4509	0.3990	0.3990	0.4315	3.166
T PFHpS	0.6676	0.6079	0.5748	0.5902	0.5930	0.5866	0.5918	0.5908	0.5930	0.5930	0.5976	5.099
T PFHS	0.7112	0.6194	0.6390	0.6554	0.5282	0.6377	0.6414	0.6410	0.5282	0.5282	0.6451	4.571
T PFOS	1.0675	1.0667	1.0610	1.0782	0.7167	1.0745	1.0732	1.0956	0.7167	0.7167	1.0680	1.814
T PFNS	0.3190	0.3279	0.3239	0.3278	0.3107	0.3344	0.3320	0.3372	0.3107	0.3107	0.3279	1.978
T PPFs	0.1600	0.1518	0.1448	0.1480	0.1368	0.1446	0.1455	0.1479	0.1368	0.1368	0.1480	3.851

Generated at 9:30 AM on 4/27/2018

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# Initial Calibration Report - LCMS1-Q

Compound	1	2	3	4	5	6	7	8	5	5	Avg RF	%RSD
I d3-MeFOSAA	1.5054	1.3910	1.4405	1.4625	1.4433	1.4580	1.4562	1.4471	1.4433	1.4433	1.4458	2.446
S d5-EFOSAA	1.1295	1.0879	1.0346	1.0653	1.0568	1.0590	1.0630	1.0590	1.0568	1.0568	1.0682	2.722
T EFOSAA	3.7097	3.3967	3.3581	3.4039	3.0775	3.1093	3.0793	2.7137	3.0775	3.0775	3.2355	9.211
T FOSA	1.2135	1.0935	1.1138	1.1263	1.0915	1.1123	1.1188	1.1422	1.0915	1.0915	1.1261	3.482
T MeFOSAA												
I 13C3-PFPeA	0.6553	0.5989	0.6160	0.6084	0.5987	0.6415	0.6311	0.6490	0.5987	0.5987	0.6251	3.549
T PFBA	0.9434	0.8810	0.8897	0.8948	0.8699	0.9214	0.9164	0.9237	0.8699	0.8699	0.9053	2.705
T PFPeA												

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

# Initial Calibration Report - LCMS1-Q

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C2-PFDA	Linear	$y = 1.283708 * x$	0.999920
S 13C2-PFHxA	Linear	$y = 0.877587 * x$	0.999911
T 6:2FTS	Quadratic	$y = -0.040559 * x^2 + 1.032550 * x$	0.999915
T 8:2FTS	Quadratic	$y = -0.023848 * x^2 + 0.945476 * x$	0.999903
S d5-EFOSAA	Linear	$y = 1.448792 * x$	0.999936
T E1FOSAA	Linear	$y = 1.059410 * x$	0.999987
T FOSA	Quadratic	$y = -0.132765 * x^2 + 3.380061 * x$	0.999827
T MeFOSAA	Linear	$y = 1.133323 * x$	0.999730
T PFBA	Linear	$y = 0.643410 * x$	0.999537
T PFBS	Linear	$y = 0.428486 * x$	0.999824
T PFDA	Linear	$y = 0.867967 * x$	0.999856
T PFDoDA	Linear	$y = 0.912940 * x$	0.999646
T PFDS	Linear	$y = 0.442361 * x$	0.998415
T PFHpA	Linear	$y = 0.921726 * x$	0.999822
T PFHpS	Linear	$y = 0.589944 * x$	0.999932
T PFHxA	Linear	$y = 0.515429 * x$	0.999861
T PFHXS	Linear	$y = 0.640149 * x$	0.999916
T PFNA	Linear	$y = 0.726800 * x$	0.999598
T PFOA	Linear	$y = 0.934851 * x$	0.999939
T PFOS	Linear	$y = 1.087450 * x$	0.999701
T PFPeA	Linear	$y = 0.920536 * x$	0.999832
T PFTeDA	Linear	$y = 0.549797 * x$	0.999596
T PFTrDA	Linear	$y = 0.777344 * x$	0.999785
T PFUnDA	Linear	$y = 0.900358 * x$	0.997719
T 4:2FTS	Quadratic	$y = -0.025992 * x^2 + 0.954695 * x$	0.999938
T PFNS	Linear	$y = 0.335471 * x$	0.999825
T PFPeS	Linear	$y = 0.146934 * x$	0.999807

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

SGS ACCUTEST-ORLANDO

DATE: 04-27-16  
 COLUMN TYPE: Porosil 11E-119  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 513

LCMS1-Q ANALYSIS LOG

METHODS: 537 MOD  
 ACQ. METHOD: 537 LIST  
 PROC. METHOD: PRC 0426 50-114  
 CALIB. DATE: 04-26-16  
 RUN BATCH: SQ 1120

ANALYST: NAB  
 ELUENT A LOT #: 150645  
 ELUENT B LOT #: 173931  
 WATER LOT #: 120645  
 STD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45550	1	RT	PRC	LC1021	100/500				✓
Q 51	2	CC1119-20		+			SP		POSS
Q 52	3	JC6451-14		0069752	10X				NO Matrix F510 sheet
Q 53	4	FA53601-3		0066770	5X				f leak run
Q 54	5	-3			5X		SD		✓
Q 55	6	-4			1X		SD		✓
Q 56	7	-10							ADL ssd re-ext
Q 57	8	FA53620-1							SSD re-ext
Q 58	9	FA53621-1							SSD re-ext
Q 59	10	-12							SSD re-ext
Q 60	11	CC1119-20		LC1021	100/500		SP		POSS
Q 61	12	CCB							ADL
Q 62	13	0069807-15		0069807	1X		SP		✓
Q 63	14	-m5							ADL
Q 64	15	FA53549-21					SP		✓
Q 65	16	-22					SD		✓
Q 66	17	-23					SD		✓
Q 67	18	-24					SD		✓
Q 68	19	-25					SD		✓
Q 69	20	0069807-m5					SD		✓
Q 70	21						SD		✓

\* < Conductivity Limit For Perchlorate by SW846 6850  
 Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: \_\_\_\_\_

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SGS ACCUTEST-ORLANDO

DATE: 04-27-16  
 COLUMN TYPE: P005111 P-C16  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 513


LCMS1-Q ANALYSIS LOG

METHODS: 537 MUD  
 ACQ. METHOD: 537 L33T  
 PROC. METHOD: P005111 P-C16  
 CALIB. DATE: 04-26-16  
 RUN BATCH: SQ 1120

ANALYST: A45  
 ELUENT A LOT #: 120648  
 ELUENT B LOT #: 120648  
 WATER LOT #: 120648  
 ISTD Lot #: LC 1001

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45330	18	FA53504-26	PF-C	0069007	17		SP		✓
Q 71	19	-27		+					✓
Q 72	2	CC1114-30		661021	100/100		SP		POSS
Q 73	1	CUB							ADL
Q 74	20	FA53504-29		0069007	17				✓
Q 75	21	-29							✓
Q 76	22	-30							✓
Q 77	23	0069607-14A					SP		✓
Q 78	24	FA53504-1A					SP		✓
Q 79	25	-2A							✓
Q 80	26	-3A							✓
Q 81	27	-6A							✓
Q 82	28	-13A							✓
Q 83	29	FA53437-13A							✓
Q 84	2	FA53437-10			100/100		SP		POSS
Q 85	1	CUB							✓
Q 86	30	FA53437-14A							✓
Q 87	31	-15A							✓
Q 88	32	-16A							✓
Q 89	33	-17A							Aug stopped

\*< 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: 

SGS ACCUTEST-ORLANDO

DATE: 04-30-16  
 COLUMN TYPE: Perchlorate  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 511

LCMS1-Q ANALYSIS LOG

METHODS: 537 M00  
 ACQ. METHOD: 537 L01+  
 PROC. METHOD: PFC 04-26-16 SQ1119  
 CALIB. DATE: 04-26-16  
 RUN BATCH: SQ 1123

ANALYST: MFS  
 ELUENT A LOT #: 180698  
 ELUENT B LOT #: 178825  
 WATER LOT #: 180698  
 ISTD Lot #: LC1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45644	1	CCB	AFC						✓
Q 50	1	CCB							Pass
Q 51	2	CC1119-20		100/500			SP		Pass
Q 52	3	OP69823 - MS		1X					✓
Q 53	4	OP69824 - MB							Pass
Q 54	5	CA53737-14							Pass
Q 55	4	OP69824 - MB							Pass
Q 56	2	CC1119-20		100/500			SP		Pass
Q 57	1	CCB							Pass
Q 58	6	CC1025		100/500					low
Q 59	7	CC1018							Pass
Q 60	8	OP69812 - BS		1X			SP		Pass
Q 61	9	- MB							Pass
Q 62	10	SC64541-1							Pass
Q 63	11	-7							Pass
Q 64	12	ASTEST							Pass
Q 65	13	MS TEST							Pass
Q 66	2	CC1119-20		100/500			SP		Pass
Q 67	1	CCB							Pass
Q 68	14	OP69831-BS		1X			SP		Pass

\*< Conductivity Limit For Perchlorate by SW846 6850  
 Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration  
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

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Analyst's Signature: \_\_\_\_\_



SGS ACCUTEST-ORLANDO

DATE: 04-20-10  
 COLUMN TYPE: Porosil 120  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 511

LCMS1-Q ANALYSIS LOG

METHODS: 537 Method  
 ACQ. METHOD: 537 L1111 005013  
 PROC. METHOD: PFL 04-20-10 56-110  
 CALIB. DATE: 04-26-10  
 RUN BATCH: SQ 1123

ANALYST: NTS  
 ELUENT A LOT #: 100640  
 ELUENT B LOT #: 170634  
 WATER LOT #: 100640  
 ISTD Lot #: LC 1002

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45669	15	0669031-10A	PFL	0669031	17				BDL
Q 70	16	FA53437-32A							BDL
Q 71	17	-24A							BDL
Q 72	18	-25A							BDL
Q 73	19	-26A							BDL
Q 74	20	-27A							BDL
Q 75	21	-35A							BDL
Q 76	22	-36A							BDL
Q 77	23	-37A							BDL
Q 78	2	CC1114-10		LC1001	100/500		SP		BDL
Q 79	1	CC0							BDL
Q 80	24	F-A53437-40A		0669031	17				BDL
Q 81	25	-40A							BDL
Q 82	26	-50A							BDL
Q 83	27	-60A							BDL
Q 84	28	0669031-MS					SP		✓
Q 85	29	F-A53437-61A							BDL
Q 86	30	-62A							BDL
Q 87	31	-63A							BDL
Q 88	32	-64A							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, 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.

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Analyst's Signature: \_\_\_\_\_



**SGS ACCUTEST-ORLANDO**

DATE: 04-30-18  
 COLUMN TYPE: Porosile 11 20V  
 AMOUNT INJECTED: 5 ul  
 INSTRUMENT: LCMS1-Q  
 HEAD PRESSURE: 5.1

**LCMS1-Q ANALYSIS LOG**

METHODS: 537 0400  
 ACQ. METHOD: SP  
 PROC. METHOD: PCL  
 CALIB. DATE: 04-26-18  
 RUN BATCH: SQ 1123

ANALYST: AMB  
 ELUENT A LOT #: 13064B  
 ELUENT B LOT #: 178024  
 WATER LOT #: 13064B  
 ISTD Lot #: LC100L

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
Q 45609	2	CC1119-20	PCL	LL1021	100/100		SP		Pass
Q 60	1	CCB							ADL
Q 91	33	F-A53477-71A		090931	14				BOL
Q 92	34	-72A							BOL
Q 43	32	6CC1119-20		LL1021	100/50		SP		Pass
Q 94	1	CCB							ADL
Q 95	3T	Surr test							LC 1025
Q 96	3T								
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									
Q									

MS  
 05-01-18

\*< 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.  
 Analyst's Signature:

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/24/18 1030  
 Started {mm/dd/yy 24:00}

Prep Method: 3535A or 537 of 537MOD (circle)

Date/Time: 04/25/18 0915  
 Finished {mm/dd/yy 24:00}

Analytical Method: LC537

Batch#: OP69752 Ext. By: MB Conc. By: MB Viald By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP69752 MB	X	250	6	N/A	20ul		1ml	A	
OP69752 BS		250				10ul			
JC64541-1	1	260							
-2	1	260							
-3	1	230							HARD TIME PASSING thru CART. ↓
-4	1	190							
-5	1	260							
-6	1	260							
-7	1	200							HARD TIME PASSING thru CART.
<div style="border: 1px solid black; padding: 5px; display: inline-block;">                         MB 04/25/18                     </div>									
JC64541-3 MS	2	230	6	N/A	20ul	10ul	1ml	A	HARD TIME PASSING thru CART ↓
-3 MSD	3	200	↓	↓	↓	↓	↓	↓	
DUP									

Comments:

Surr.1 ID: LC1018 Conc: 1ppm Exp. Date: 10/17/18 Inj. By: MB Ver. By: MB  
 Spk.1 ID: LC1017 Conc: 2ppm Exp. Date: 03/30/19 Inj. By: MB Ver. By: MB  
 Spk.2 ID:        Conc:        Exp. Date:        Inj. By:        Ver. By:         
 Spk.3 ID:        Conc:        Exp. Date:        Inj. By:        Ver. By:       

TurboVap Temp (Therm ID):        N-Evap Temp (Therm ID): NEVAP  
 Observed Temp °C:        Corr. Temp °C:        Observed Temp °C: 50°C Corr. Temp °C: 52°C

Methanol Lot # 178825 SPE Lot # 017637348A pH Paper # 215517  
 Acetonitrile Lot #        Syringe filter Lot #        Reagent #         
 Water Lot# OP69557 Pre-filter Lot#        Reagent # 2% NH4OH 717051  
 Solvent#        Carbon Lot#        Other       

Relinquished By: [Signature] Date: 04/25/18  
 Accepted By: [Signature] Date: 04-25-18

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107.1 10

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/27/18 0900

Prep Method: 3535A or 537 or 537MOD (circle)

Started {mm/dd/yy 24:00} 11:00

Date/Time: 04/30/18

Analytical Method: LC 537 RE-EXT

Finished {mm/dd/yy 24:00}

Batch#: OP69812

Ext. By: MB

Conc. By: MB

Vialed By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP69812 MB	X	250	6	N/A	20ul		1ml	B	
OP69812 BS	X	250				10ul			
JC64541-1	2	250	↓	↓	↓		↓	↓	
-7	2	180							HARD TO PASS THROUGH SPE CART.
/									
MS									
MSD									
DUP									

Comments:

Surr.1 ID: <u>LC1018</u>	Conc: <u>1ppm</u>	Exp. Date: <u>10/17/18</u>	Inj. By: <u>MB</u>	Ver. By: <u>MB</u>
Spk.1 ID: <u>LC1017B</u>	Conc: <u>2ppm</u>	Exp. Date: <u>03/30/19</u>	Inj. By: <u>MB</u>	Ver. By: <u>MB</u>
Spk.2 ID: <u>/</u>	Conc: <u>/</u>	Exp. Date: <u>/</u>	Inj. By: <u>/</u>	Ver. By: <u>/</u>
Spk.3 ID: <u>/</u>	Conc: <u>/</u>	Exp. Date: <u>/</u>	Inj. By: <u>/</u>	Ver. By: <u>/</u>

TurboVap Temp (Therm ID): <u>/</u>	N-Evap Temp (Therm ID): <u>newmp</u>
Observed Temp °C: <u>/</u>	Observed Temp °C: <u>33</u>
Corr. Temp °C: <u>/</u>	Corr. Temp °C: <u>33</u>

Methanol Lot # <u>176800</u>	SPE Lot # <u>0176373481A</u>	pH Paper # <u>215517</u>
Acetonitrile Lot # <u>/</u>	Syringe filter Lot # <u>/</u>	Reagent # <u>/</u>
Water Lot# <u>OP6569557</u>	Pre-filter Lot# <u>/</u>	Reagent # <u>2% NH4OH 7117051</u>
Solvent# <u>ms c4128/18</u>	Carbon Lot# <u>/</u>	Other <u>2% MeOH 176800</u>

Relinquished By: MB

Date: 4/30/18

Accepted By: [Signature]

Date: 04/30/18 12:20

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10.7.2 10

## **Attachment B**

### **Data Usability Summary Report**

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**DATA USABILITY SUMMARY REPORT**

**SITE NAME:** AGFA Peerless  
**LABORATORY:** SGS North America, Inc., Dayton, New Jersey and Orlando, Florida  
**DATA REVIEWER:** Brenda Nuding, Project Chemist  
EA Engineering, Science, and Technology, Inc., PBC  
**SDG NO.:** JC64541  
**SAMPLES COLLECTED:** 17 April 2018  
**SAMPLES RECEIVED:** 19 April 2018  
**SAMPLE NOS.:** Table 1  
**REPORT DATE:** 4 May 2018

Seven (7) water samples including one (1) field duplicate as well as two (2) aqueous quality control (QC) blank samples were collected on 17 April 2018 at the AGFA Peerless site. The samples were delivered to the offsite analytical laboratory SGS North America, Inc. (SGS), in Dayton, New Jersey for the analysis of 1,4-dioxane by SW8260C using selected ion monitoring (SIM) mode. Samples were shipped to SGS in Orlando, Florida for the analysis of per- and polyfluoroalkyl substances (PFAS) by U.S. Environmental Protection Agency (USEPA) Method 537 modified. The analytical results for the samples are included in Sample Delivery Group (SDG) JC64541.

**TABLE 1**  
**SAMPLE CROSS-REFERENCE TABLE**  
**SAMPLE DELIVERY GROUP JC64541**

Field Sample ID	Lab Sample ID	Matrix	Date Collected	Analyses Performed
MW-5	JC64541-1	Groundwater	17 April 2018	PFAS, 1,4-dioxane
MW-6R	JC64541-2	Groundwater	17 April 2018	PFAS, 1,4-dioxane
MW-10	JC64541-3	Groundwater	17 April 2018	PFAS, 1,4-dioxane
MW-2	JC64541-4	Groundwater	17 April 2018	PFAS, 1,4-dioxane
FB-01	JC64541-5	Field blank	17 April 2018	PFAS, 1,4-dioxane
RB-01	JC64541-6	Reagent blank	17 April 2018	PFAS, 1,4-dioxane
FD-01	JC64541-7	Field duplicate	17 April 2018	PFAS, 1,4-dioxane
Note(s): PFAS – per- and polyfluoroalkyl substances				

The data were reviewed and validated by the EA Project Chemist, Brenda Nuding using a combination of method-specific criteria and the USEPA National Functional Guidelines for Organic Superfund Methods Data Review (January 2017) the NYSDEC's Guidance for Data Deliverables and the Development of Data Usability Summary Reports, (Appendix 2B of the Technical Guidance for Site Investigation and Remediation [May 2010]), and USEPA Region II data validation guidelines.

Table 2 presents the parameters evaluated.

**Table 2. Laboratory Performance Criteria Evaluated**

Qualified		Parameter
Yes	No	
-	X	Deliverables
-	X	Sample Receipt and Chain of Custody
-	X	Holding Times
-	X	Initial and Continuing Calibrations
-	X	Laboratory Control Samples
-	X	Blanks
-	X	Matrix Spikes and Replicates
-	X	Field Duplicates
-	X	Internal Standards
-	X	Surrogates
-	X	Sample Results

The project data that were associated with parameters out of compliance with QC specifications have been qualified in accordance with USEPA specifications. The analytical data contained in this report have been reviewed for completeness, accuracy, and precision. The data as qualified meet the quality objectives for the intended use.

**1. Deliverables:**

The data package for this SDG are complete.

**2. Sample Receipt and Chain of Custody:**

Samples were received by the offsite laboratory intact under secure chain of custody, in good condition, and within the method-specified temperature range.

**3. Holding Times:**

Samples were prepared and analyzed within the holding times as specified in the referenced methods of analysis.

**4. Initial and Continuing Calibrations:**

Initial and continuing calibrations were performed at the required frequencies. Target analyte results were within method-established QC limits for initial and continuing calibrations.

**5. Laboratory Control Samples:**

Laboratory control samples (LCS) were prepared and analyzed as recommended by the referenced methods. The percent recoveries (%Rs) were within the project-specified QC limits.

**6. Blanks:**

Method and field blanks were prepared and analyzed as recommended by the referenced methods. Target analytes were not detected in the blanks.

**7. Matrix Spikes:**

Results for the matrix spike and matrix spike duplicates were reviewed. The %Rs and relative percent differences (RPDs) for these QC samples prepared with the designated project sample (MW-10) were within the project-specified QC limits, unless otherwise noted.

For the analysis of PFAS by EPA Method 537 (modified), the %Rs were above QC limits for the following compounds: perfluoroundecanoic acid (145%R) and 8:2 fluorotelomer sulfonate (236%R); the associated results for project samples are nondetectable, and the indicated bias is high so no qualification has been performed in response to the elevated MS %Rs. The RPD was above QC limits for PFOSA; however, as the associated results for project samples are nondetectable, no qualification has been performed due to MS/MSD RPD.

**8. Field Duplicates:**

One project sample was identified as a field duplicate. The parent sample/field duplicate association is presented in Table 3 below. The RPDs for the results of the original and field duplicate samples were within QC limits for results greater than the reporting limit.

**Table 3. Field Duplicates**

Field Duplicate	Primary Sample
FD-01	MW-10

**9. Internal Standards:**

Internal standards were added to environmental and QC samples and standards to monitor sensitivity and response during every analytical run. Internal standard area counts and retention times for project samples were within project-specified QC limits, unless otherwise noted.

For the analysis of PFAS by EPA Method 537 (modified), results for internal standards associated with target analytes were below QC limits for three samples: MW-6R, MW-2, MW-10, and FD-01. As corrective action, these samples were reanalyzed and dilutions were prepared to reduce the impact of matrix interference and results for internal standards were within QC limits with the exception of the sample selected for MS/MSD. The internal results for the sample selected for MS/MSD were confirmed by the analysis of the MS and MSD samples. Analytical results are reported from runs that have internal standards within QC limits; therefore, no qualification is necessary.

**10. Surrogates:**

Surrogates were added to environmental and QC samples and standards for the analysis of organic compounds as required by the referenced methodology. Surrogate %Rs were within the project-specified QC limits, unless otherwise noted.

For the analysis of 1,4-dioxane by SW8260C SIM, %R for the surrogate 1,4-dioxane-d8 was reported above QC limits for sample MW-6R. The associated result for the target analyte 1,4-dioxane has already been flagged with the J qualifier by the laboratory because the result is detectable, but below the reporting limit; therefore, no further qualification has been performed.

**11. Samples Results:**

The reported quantitation results and reported detection limits were reviewed and found to be accurate and to meet project requirements. No bias is inferred.