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

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC2034

Sampling Date: 01/18/23

Report to:

AECOM, Inc
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Denver, CO 80237
katie.abbott@aecom.com; mark.kromis@aecom.com;
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ATTN: Katie Abbott

Total number of pages in report: 692

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.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

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

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Sample Summary

AECOM, INC.

Job No: FC2034

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC2034-1	01/18/23	11:25	NT	01/19/23	AQ	Ground Water	AF-RHMW225401-WGN01B-2301W3

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC2034

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 1/31/2023 11:37:21 AM

On 01/19/2023, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2034 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.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ **Batch ID:** OP95069

Sample(s) FC1816-2MS, FC1816-2MSD were used as the QC samples indicated.

Sample(s) FC2034-1 have surrogates outside control limits.

OP95069-BS for 13C2-4:2FTS: Outside control limits.

OP95069-LLBS for 13C2-4:2FTS: Outside control limits.

OP95069-MB for 13C2-4:2FTS: Outside control limits.

OP95069-MB for 13C2-6:2FTS: Outside control limits.

FC2034-1 for 13C2-4:2FTS: Outside control limits.

FC2034-1: Confirmation run.

FC2034-1 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits.

SGS North America Inc. - Orlando 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.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC2034
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/18/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2034-1	**AF-RHMW225401-WGN01B-2301W3**					
Perfluoropentanoic acid		1.0 J	9.6	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		0.88 J	4.8	0.96	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		0.54 J	4.8	0.96	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		0.88 J	4.8	0.96	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid		0.60 J	4.8	0.96	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid		1.1 J	4.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid		1.1 J	4.8	1.9	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2301W3		
Lab Sample ID:	FC2034-1	**Date Sampled:**	01/18/23
Matrix:	AQ - Ground Water	**Date Received:**	01/19/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q39708.D	1	01/25/23 17:36	NG	01/20/23 09:00	OP95069	S4Q571
Run #2 [a]	4Q39796.D	10	01/26/23 15:30	NG	01/20/23 09:00	OP95069	S4Q572

	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2	520 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.0	9.6	1.9	0.90	ng/l	J
307-24-4	Perfluorohexanoic acid	0.88	4.8	0.96	0.48	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.54	4.8	0.96	0.48	ng/l	J
335-67-1	Perfluorooctanoic acid	0.88	4.8	0.96	0.48	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.60	4.8	0.96	0.48	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.1	4.8	1.9	0.67	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.1	4.8	1.9	0.52	ng/l	J
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate [b]	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.96	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	0.96	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2301W3		
Lab Sample ID:	FC2034-1	**Date Sampled:**	01/18/23
Matrix:	AQ - Ground Water	**Date Received:**	01/19/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.6 U	48	9.6	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.96	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.6	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	9.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.6	3.8	1.2	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.6	1.9	0.75	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	24	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	122%	119%	20-150%
	13C5-PFPeA	121%	143%	20-150%
	13C5-PFHxA	121%	127%	20-150%
	13C4-PFHpA	114%	84%	20-150%
	13C8-PFOA	120%	108%	20-150%
	13C9-PFNA	114%	105%	20-150%
	13C6-PFDA	122%	119%	20-150%
	13C7-PFUnDA	116%	105%	20-150%
	13C2-PFDoDA	117%	113%	20-150%
	13C2-PFTeDA	107%	123%	20-150%
	13C3-PFBS	117%	103%	20-150%
	13C3-PFHxS	118%	105%	20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2301W3		
Lab Sample ID:	FC2034-1	**Date Sampled:**	01/18/23
Matrix:	AQ - Ground Water	**Date Received:**	01/19/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	118%	111%	20-150%
	13C8-FOSA	120%	104%	20-150%
	d3-MeFOSA	109%	100%	20-150%
	d5-EtFOSA	113%	100%	20-150%
	d3-MeFOSAA	135%	96%	20-150%
	d5-EtFOSAA	128%	97%	20-150%
	d7-MeFOSE	107%	91%	20-150%
	d9-EtFOSE	112%	90%	20-150%
	13C2-4:2FTS	184% [c]	194% [c]	20-150%
	13C2-6:2FTS	127%	91%	20-150%
	13C2-8:2FTS	116%	93%	20-150%
	13C3-HFPO-DA	118%	218% [c]	20-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection 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

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC 2034

C0C #: 2301W3AFSG07

SGS North America Inc - Orlando
Chain of Custody

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

SGS - ORLANDO JOB # :

PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: NOAH TURNER Sampler 2:

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

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

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW225401-WGN01B-2301W3	01-18-23	1125	NT/CW/TN	GW	3		X								X	

NT 01-18-2023

NT 01-18-2023

INITIAL ASSESSMENT

LABEL VERIFICATION

Turnaround Time (Business days)

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

Data Deliverable Information

[ ] COMMERCIAL "A" (RESULTS ONLY)
[ ] COMMERCIAL "B" (RESULTS PLUS QC)
[ ] REDT1 (EPA LEVEL 3)
[x] FULLT1 (EPA LEVEL 4)
[x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB 016 67243352

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

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	/AECOM	01-18-23 1520	2 AECOM	3 AECOM	01/18/23 1545	4 19 JAN 23 1530
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.0° IR#1

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

PFAS_COCs_ALL.xls Rev 031318

FC2034: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FC2034 **Client:** AECOM **Project:** : N6274223F0104 RH Fire Suppression System

Date / Time Received: 1/19/2023 3:30:00 PM **Delivery Method:** : United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-71510563

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

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

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

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

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

Misc. Information

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

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

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: TORYW Date: 1/19/2023 3:30:00 PM Reviewer: CD Date: 1/19/2023

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2034
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/18/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC2034

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Injection Standard Area Summaries
- TDCA Retention Time Checks
- Ion Ratio Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	95%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	107%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	96%	20-150%
	13C3-PFHxS	95%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	94%	20-150%
	d5-EtFOSA	100%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	125%	20-150%
	13C2-6:2FTS	106%	20-150%
	13C2-8:2FTS	108%	20-150%
	13C3-HFPO-DA	100%	20-150%

Method Blank Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-MB	4Q39707.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-MB	4Q39707.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	122%	20-150%
	13C5-PFPeA	129%	20-150%
	13C5-PFHxA	126%	20-150%
	13C4-PFHpA	122%	20-150%
	13C8-PFOA	116%	20-150%
	13C9-PFNA	122%	20-150%
	13C6-PFDA	117%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	91%	20-150%
	13C3-PFBS	128%	20-150%
	13C3-PFHxS	133%	20-150%
	13C8-PFOS	122%	20-150%
	13C8-FOSA	112%	20-150%
	d3-MeFOSA	92%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	126%	20-150%
	d5-EtFOSAA	117%	20-150%
	d7-MeFOSE	108%	20-150%
	d9-EtFOSE	108%	20-150%
	13C2-4:2FTS	190%* [a]	20-150%
	13C2-6:2FTS	151%* [a]	20-150%
	13C2-8:2FTS	134%	20-150%
	13C3-HFPO-DA	126%	20-150%

(a) Outside control limits.

Continuing Calibration Blank

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39715.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

OP95069-MS, OP95069-MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39715.D	1	01/25/23	NG	n/a	n/a	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

OP95069-MS, OP95069-MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	98%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	95%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	98%	20-150%
	13C6-PFDA	101%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	104%	20-150%
	13C3-PFBS	102%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	99%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSA	92%	20-150%
	d5-EtFOSA	92%	20-150%
	d3-MeFOSAA	107%	20-150%
	d5-EtFOSAA	105%	20-150%
	d7-MeFOSE	102%	20-150%
	d9-EtFOSE	99%	20-150%
	13C2-4:2FTS	133%	20-150%
	13C2-6:2FTS	119%	20-150%
	13C2-8:2FTS	122%	20-150%
	13C3-HFPO-DA	97%	20-150%

Blank Spike Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-LLBS	4Q39706.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0325	81	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0181	91	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0094	94	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0090	90	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0093	93	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0085	85	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0088	88	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0085	85	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0084	84	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0083	83	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0086	86	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0074	83	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0074	79	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0086	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0085	89	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0082	88	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0087	90	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0083	86	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0070	72	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0297	79	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0341	90	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0343	89	40-150
754-91-6	PFOSA	0.01	0.0095	95	40-150
31506-32-8	MeFOSA	0.01	0.0088	88	40-150
4151-50-2	EtFOSA	0.01	0.0077	77	40-150
2355-31-9	MeFOSAA	0.01	0.0092	92	40-150
2991-50-6	EtFOSAA	0.01	0.0089	89	40-150
24448-09-7	MeFOSE	0.1	0.0882	88	40-150
1691-99-2	EtFOSE	0.1	0.0924	92	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0347	87	40-150
919005-14-4	ADONA	0.0378	0.0349	92	40-150
377-73-1	PFMPA	0.02	0.0174	87	40-150
863090-89-5	PFMBA	0.02	0.0181	91	40-150
151772-58-6	NFDHA	0.02	0.0179	90	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0316	84	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0308	81	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-LLBS	4Q39706.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0158	89	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0412	82	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.218	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.218	87	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	122%	20-150%
	13C5-PFPeA	125%	20-150%
	13C5-PFHxA	126%	20-150%
	13C4-PFHpA	119%	20-150%
	13C8-PFOA	115%	20-150%
	13C9-PFNA	118%	20-150%
	13C6-PFDA	116%	20-150%
	13C7-PFUnDA	116%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	88%	20-150%
	13C3-PFBS	115%	20-150%
	13C3-PFHxS	112%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	109%	20-150%
	d3-MeFOSA	87%	20-150%
	d5-EtFOSA	86%	20-150%
	d3-MeFOSAA	121%	20-150%
	d5-EtFOSAA	114%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	89%	20-150%
	13C2-4:2FTS	174%* [a]	20-150%
	13C2-6:2FTS	133%	20-150%
	13C2-8:2FTS	122%	20-150%
	13C3-HFPO-DA	123%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-BS	4Q39705.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0880	88	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0485	97	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0245	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0240	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0252	101	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0239	96	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0227	91	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0230	92	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0254	102	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0259	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0229	92	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0207	93	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0192	82	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0218	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0216	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0209	90	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0223	93	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0219	91	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0212	87	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0835	89	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0865	91	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0989	103	40-150
754-91-6	PFOSA	0.025	0.0234	94	40-150
31506-32-8	MeFOSA	0.025	0.0218	87	40-150
4151-50-2	EtFOSA	0.025	0.0217	87	40-150
2355-31-9	MeFOSAA	0.025	0.0236	94	40-150
2991-50-6	EtFOSAA	0.025	0.0230	92	40-150
24448-09-7	MeFOSE	0.25	0.241	96	40-150
1691-99-2	EtFOSE	0.25	0.243	97	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0918	92	40-150
919005-14-4	ADONA	0.0945	0.0895	95	40-150
377-73-1	PFMPA	0.05	0.0342	68	40-150
863090-89-5	PFMBA	0.05	0.0493	99	40-150
151772-58-6	NFDHA	0.05	0.0489	98	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.0891	95	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.0896	95	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-BS	4Q39705.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0428	96	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0973	78	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.496	79	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.567	91	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	43%	20-150%
	13C5-PFPeA	122%	20-150%
	13C5-PFHxA	123%	20-150%
	13C4-PFHpA	71%	20-150%
	13C8-PFOA	115%	20-150%
	13C9-PFNA	124%	20-150%
	13C6-PFDA	127%	20-150%
	13C7-PFUnDA	119%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	110%	20-150%
	13C3-PFBS	122%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	110%	20-150%
	13C8-FOSA	118%	20-150%
	d3-MeFOSA	109%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	117%	20-150%
	d5-EtFOSAA	105%	20-150%
	d7-MeFOSE	103%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	173%* [a]	20-150%
	13C2-6:2FTS	119%	20-150%
	13C2-8:2FTS	109%	20-150%
	13C3-HFPO-DA	121%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-MS	4Q39723.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
OP95069-MSD	4Q39724.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
FC1816-2	4Q39722.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
FC1816-2 [a]	4Q39800.D	10	01/26/23	NG	01/20/23	OP95069	S4Q572

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	FC1816-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.018	U	0.0877	0.0800	91	0.0877	0.0793	90	1	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0088	U	0.0439	0.0439	100	0.0439	0.0433	99	1	40-150/30
307-24-4	Perfluorohexanoic acid	0.0022	J	0.0219	0.0214	88	0.0219	0.0213	87	0	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0219	0.0236	108	0.0219	0.0223	102	6	40-150/30
335-67-1	Perfluorooctanoic acid	0.0064		0.0219	0.0225	73	0.0219	0.0235	78	4	40-150/30
375-95-1	Perfluorononanoic acid	0.0044	U	0.0219	0.0218	99	0.0219	0.0214	98	2	40-150/30
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0219	0.0204	93	0.0219	0.0196	89	4	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0219	0.0213	97	0.0219	0.0196	89	8	40-150/30
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0219	0.0207	94	0.0219	0.0212	97	2	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0219	0.0212	97	0.0219	0.0217	99	2	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0219	0.0209	95	0.0219	0.0216	98	3	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0195	0.0192	99	0.0195	0.0198	102	3	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0206	0.0181	88	0.0206	0.0177	86	2	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0024	J	0.02	0.0205	90	0.02	0.0191	83	7	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0209	0.0202	97	0.0209	0.0220	105	9	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0204	0.0206	101	0.0204	0.0184	90	11	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0211	0.0192	91	0.0211	0.0189	90	2	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0212	0.0203	96	0.0212	0.0193	91	5	40-150/30
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0213	0.0209	98	0.0213	0.0188	88	11	40-150/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0822	0.0743	90	0.0822	0.0764	93	3	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0833	0.0809	97	0.0833	0.0801	96	1	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0842	0.0918	109	0.0842	0.0748	89	20	40-150/30
754-91-6	PFOSA	0.0044	U	0.0219	0.0216	98	0.0219	0.0207	94	4	40-150/30
31506-32-8	MeFOSA	0.0044	U	0.0219	0.0200	91	0.0219	0.0184	84	8	40-150/30
4151-50-2	EtFOSA	0.0044	U	0.0219	0.0208	95	0.0219	0.0191	87	9	40-150/30
2355-31-9	MeFOSAA	0.0044	U	0.0219	0.0226	103	0.0219	0.0228	104	1	40-150/30
2991-50-6	EtFOSAA	0.0044	U	0.0219	0.0202	92	0.0219	0.0217	99	7	40-150/30
24448-09-7	MeFOSE	0.044	U	0.219	0.220	100	0.219	0.218	99	1	40-150/30
1691-99-2	EtFOSE	0.044	U	0.219	0.218	99	0.219	0.218	99	0	40-150/30
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0877	0.0842	96	0.0877	0.0823	94	2	40-150/30
919005-14-4	ADONA	0.018	U	0.0829	0.0820	99	0.0829	0.0815	98	1	40-150/30
377-73-1	PFMPA	0.0088	U	0.0439	0.0416	95	0.0439	0.0411	94	1	40-150/30
863090-89-5	PFMBA	0.0088	U	0.0439	0.0441	101	0.0439	0.0435	99	1	40-150/30
151772-58-6	NFDHA	0.0088	U	0.0439	0.0417	95	0.0439	0.0433	99	4	40-150/30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.082	0.0756	92	0.082	0.0715	87	6	40-150/30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0829	0.0749	90	0.0829	0.0729	88	3	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95069-MS	4Q39723.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
OP95069-MSD	4Q39724.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
FC1816-2	4Q39722.D	1	01/25/23	NG	01/20/23	OP95069	S4Q571
FC1816-2 [a]	4Q39800.D	10	01/26/23	NG	01/20/23	OP95069	S4Q572

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC2034-1

CAS No.	Compound	FC1816-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
113507-82-7	PFEESA	0.0088	U	0.039	0.0400	102	0.039	0.0385	99	4	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.11	0.100	91	0.11	0.0974	89	3	40-150/30
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.548	0.534	97	0.548	0.520	95	3	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.548	0.534	97	0.548	0.511	93	4	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC1816-2	FC1816-2	Limits
	13C4-PFBA	68%	74%	73%	71%	20-150%
	13C5-PFPeA	121%	118%	125%	118%	20-150%
	13C5-PFHxA	120%	118%	124%	127%	20-150%
	13C4-PFHpA	112%	113%	122%	121%	20-150%
	13C8-PFOA	110%	114%	114%	107%	20-150%
	13C9-PFNA	106%	113%	115%	109%	20-150%
	13C6-PFDA	113%	117%	121%	148%	20-150%
	13C7-PFUnDA	110%	110%	117%	140%	20-150%
	13C2-PFDoDA	103%	102%	109%	125%	20-150%
	13C2-PFTeDA	104%	103%	107%	129%	20-150%
	13C3-PFBS	117%	117%	115%	128%	20-150%
	13C3-PFHxS	117%	122%	120%	140%	20-150%
	13C8-PFOS	103%	103%	109%	100%	20-150%
	13C8-FOSA	109%	108%	115%	111%	20-150%
	d3-MeFOSA	101%	101%			20-150%
	d5-EtFOSA	96%	99%			20-150%
	d3-MeFOSAA	110%	109%	120%	115%	20-150%
	d5-EtFOSAA	113%	105%	112%	150%	20-150%
	d7-MeFOSE	104%	99%			20-150%
	d9-EtFOSE	105%	99%			20-150%
	13C2-4:2FTS	162%* [b]	159%* [b]	185%* [b]	195%* [b]	20-150%
	13C2-6:2FTS	141%	141%	135%	145%	20-150%
	13C2-8:2FTS	115%	129%	123%	165%* [b]	20-150%
	13C3-HFPO-DA	120%	117%			20-150%

(a) Confirmation run.
(b) Outside control limits.

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	**Injection Date:**	01/25/23
Lab File ID:	4Q39702.D	**Injection Time:**	15:48
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal [b]	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std [c]	250560	3.19	178027	6.18	184242	7.79	91212	8.36	53953	8.89
Upper Limit [d]	431266	3.59	320268	6.58	332708	8.19	161592	8.76	102828	9.29
Lower Limit [e]	64690	2.79	48040	5.78	49906	7.39	24239	7.96	15424	8.49

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF [a]
OP95069-BS	210464	3.25	137047	6.17	134894	7.78	65964	8.35	42543	8.88	1
OP95069-LLBS	209813	3.23	132996	6.18	142381	7.79	70518	8.36	43201	8.88	1
OP95069-MB	192774	3.19	128108	6.11	142221	7.75	68081	8.32	43421	8.85	1
FC2034-1	211804	3.21	142270	6.18	145283	7.78	72210	8.35	48709	8.87	1
OP95096-BS	232914	3.23	146008	6.18	158475	7.78	74040	8.35	44424	8.88	1
OP95096-LLBS	210349	3.20	141586	6.15	149746	7.76	73324	8.33	44328	8.87	1
OP95096-MB	212816	3.21	139314	6.16	147014	7.76	75745	8.35	45310	8.88	1
ZZZZZZ	211495	3.21	139531	6.17	148057	7.78	73163	8.35	42583	8.88	1
ZZZZZZ	214631	3.20	145829	6.15	152641	7.76	75658	8.33	46488	8.87	1

IS 1 = 13C3-PFBA
IS 2 = 13C2-PFHxA
IS 3 = 13C4-PFOA
IS 4 = 13C5-PFNA
IS 5 = 13C2-PFDA

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	**Injection Date:**	01/25/23
Lab File ID:	4Q39702.D	**Injection Time:**	15:48
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	21282	7.92	38281	9.07
Check Std [c]	23539	7.92	41881	9.07
Upper Limit [d]	42564	8.32	76562	9.47
Lower Limit [e]	6385	7.52	11484	8.67

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
OP95069-BS	18128	7.90	34671	9.06	1
OP95069-LLBS	18726	7.92	33918	9.06	1
OP95069-MB	16973	7.88	31614	9.04	1
FC2034-1	18500	7.90	34324	9.04	1
OP95096-BS	19269	7.90	36793	9.06	1
OP95096-LLBS	19167	7.89	35035	9.04	1
OP95096-MB	18691	7.90	34714	9.06	1
ZZZZZZ	18144	7.90	35158	9.06	1
ZZZZZZ	19467	7.89	35159	9.04	1

IS 6 = 18O2-PFHXS
IS 7 = 13C4-PFOS

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	**Injection Date:**	01/25/23
Lab File ID:	4Q39714.D	**Injection Time:**	19:01
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal [b]	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std [c]	251240	3.15	180678	6.14	193038	7.75	88048	8.32	56230	8.85
Upper Limit [d]	431266	3.55	320268	6.54	332708	8.15	161592	8.72	102828	9.25
Lower Limit [e]	64690	2.75	48040	5.74	49906	7.35	24239	7.92	15424	8.45

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF [a]
S4Q571-ICCB	246820	3.18	180051	6.15	183861	7.76	88645	8.33	54487	8.87	1
ZZZZZZ	206810	3.21	134408	6.15	141407	7.76	68633	8.33	41939	8.87	1
ZZZZZZ	205897	3.21	132797	6.17	141847	7.78	73064	8.35	42940	8.88	1
ZZZZZZ	189250	3.21	112730	6.16	126170	7.78	63720	8.35	37780	8.88	10
ZZZZZZ	228848	3.23	145021	6.16	151042	7.78	73734	8.35	43756	8.87	1
ZZZZZZ	209919	3.21	140575	6.17	149020	7.78	73572	8.36	45892	8.88	1
FC1816-2	200301	3.20	132921	6.17	142109	7.79	69903	8.36	42054	8.88	1
OP95069-MS	194430	3.19	131390	6.17	137386	7.79	71219	8.36	42650	8.89	1
OP95069-MSD	195116	3.19	134583	6.17	136421	7.79	65353	8.36	41888	8.89	1
ZZZZZZ	204412	3.20	139727	6.17	144327	7.78	69390	8.36	43295	8.88	1

IS 1 = 13C3-PFBA
IS 2 = 13C2-PFHxA
IS 3 = 13C4-PFOA
IS 4 = 13C5-PFNA
IS 5 = 13C2-PFDA

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q571-CC571	**Injection Date:**	01/25/23
Lab File ID:	4Q39714.D	**Injection Time:**	19:01
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	21282	7.92	38281	9.07
Check Std [c]	23578	7.88	42275	9.03
Upper Limit [d]	42564	8.28	76562	9.43
Lower Limit [e]	6385	7.48	11484	8.63

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
S4Q571-ICCB	23367	7.89	42911	9.04	1
ZZZZZZ	18358	7.89	33925	9.04	1
ZZZZZZ	17930	7.90	35400	9.06	1
ZZZZZZ	18310	7.90	29850	9.06	10
ZZZZZZ	20419	7.90	36448	9.06	1
ZZZZZZ	18062	7.90	34910	9.06	1
FC1816-2	18406	7.92	33314	9.06	1
OP95069-MS	17224	7.92	32728	9.07	1
OP95069-MSD	17269	7.92	33334	9.07	1
ZZZZZZ	17306	7.90	34593	9.06	1

IS 6 = 18O2-PFHXS
IS 7 = 13C4-PFOS

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q572-CC571	**Injection Date:**	01/26/23
Lab File ID:	4Q39794.D	**Injection Time:**	13:55
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal [b]	215633	3.18	160134	6.17	166354	7.79	80796	8.36	51414	8.88
Check Std [c]	223492	3.09	165602	6.06	171786	7.71	85726	8.30	53827	8.83
Upper Limit [d]	431266	3.49	320268	6.46	332708	8.11	161592	8.70	102828	9.23
Lower Limit [e]	64690	2.69	48040	5.66	49906	7.31	24239	7.90	15424	8.43

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF [a]
FC2034-1 [f]	228180	3.29	127120	6.21	142480	7.78	73590	8.33	51780	8.84	10
ZZZZZZ	209610	3.13	145220	6.07	146230	7.71	76520	8.30	53030	8.80	10
ZZZZZZ	102740	3.12	70310	6.07	74780	7.73	30880	8.31	22160	8.84	10
ZZZZZZ	165340	3.12	114980	6.07	119790	7.73	67150	8.31	37400	8.83	10
FC1816-2	159700	3.12	112370	6.07	121950	7.73	68080	8.30	33920	8.84	10
ZZZZZZ	156300	3.13	111720	6.06	106880	7.69	55950	8.26	34890	8.78	10

IS 1 = 13C3-PFBA
IS 2 = 13C2-PFHxA
IS 3 = 13C4-PFOA
IS 4 = 13C5-PFNA
IS 5 = 13C2-PFDA

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
(f) Confirmation run.

Injection Standard Area Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q572-CC571	**Injection Date:**	01/26/23
Lab File ID:	4Q39794.D	**Injection Time:**	13:55
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	21282	7.92	38281	9.07
Check Std [c]	20792	7.84	40607	9.01
Upper Limit [d]	42564	8.24	76562	9.41
Lower Limit [e]	6385	7.44	11484	8.61

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
FC2034-1 [f]	22890	7.90	43990	9.02	10
ZZZZZZ	23130	7.84	36930	8.99	10
ZZZZZZ	11540	7.85	16000	9.02	10
ZZZZZZ	16250	7.85	26200	9.01	10
FC1816-2	14720	7.84	28070	9.02	10
ZZZZZZ	17520	7.82	29470	8.97	10

IS 6 = 18O2-PFHXS
IS 7 = 13C4-PFOS

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q571-ICC571 4Q39694.D 01/25/23 13:55. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -70 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
(f) Confirmation run.

TDCA Retention Time Check

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-RT
Lab File ID: 4Q39688.D
Instrument ID: GCMS4Q
Injection Date: 01/25/23
Injection Time: 12:31

Compound	RT (min)	RT Difference	Low Limit
PFOS	9.057	--	--
TDCA	7.435	1.622	1.000
TCDCA	7.273	1.784	1.000
TUDCA	6.442	2.615	1.000

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
S4Q571-IC571	4Q39690.D	01/25/23	12:59	00:28	Mass Calibration Verification
S4Q571-IC571	4Q39691.D	01/25/23	13:13	00:42	Initial cal 1
S4Q571-IC571	4Q39692.D	01/25/23	13:27	00:56	Initial cal 2
S4Q571-IC571	4Q39693.D	01/25/23	13:41	01:10	Initial cal 3
S4Q571-ICC571	4Q39694.D	01/25/23	13:55	01:24	Initial cal 4
S4Q571-IC571	4Q39695.D	01/25/23	14:09	01:38	Initial cal 5
S4Q571-IC571	4Q39696.D	01/25/23	14:23	01:52	Initial cal 6
S4Q571-IC571	4Q39697.D	01/25/23	14:38	02:07	Initial cal 7
S4Q571-IC571	4Q39698.D	01/25/23	14:52	02:21	Initial cal 8
S4Q571-IBLK	4Q39699.D	01/25/23	15:06	02:35	Instrument Blank
S4Q571-ICV571	4Q39700.D	01/25/23	15:20	02:49	Initial cal verification 4
S4Q571-ICV571	4Q39701.D	01/25/23	15:34	03:03	Initial cal verification 20
S4Q571-CC571	4Q39702.D	01/25/23	15:48	03:17	Continuing cal 4
S4Q571-CC571	4Q39703.D	01/25/23	16:02	03:31	Continuing cal 1.0LL
OP95069-BS	4Q39705.D	01/25/23	16:54	04:23	Blank Spike
OP95069-LLBS	4Q39706.D	01/25/23	17:08	04:37	Blank Spike
OP95069-MB	4Q39707.D	01/25/23	17:22	04:51	Method Blank
FC2034-1	4Q39708.D	01/25/23	17:36	05:05	AF-RHMW225401-WGN01B-2301W3
OP95096-BS	4Q39709.D	01/25/23	17:50	05:19	Blank Spike
OP95096-LLBS	4Q39710.D	01/25/23	18:05	05:34	Blank Spike
OP95096-MB	4Q39711.D	01/25/23	18:19	05:48	Method Blank
ZZZZZZ	4Q39712.D	01/25/23	18:33	06:02	(unrelated sample)
ZZZZZZ	4Q39713.D	01/25/23	18:47	06:16	(unrelated sample)
S4Q571-CC571	4Q39714.D	01/25/23	19:01	06:30	Continuing cal 4
S4Q571-ICCB	4Q39715.D	01/25/23	19:15	06:44	Continuing Calibration Blank
ZZZZZZ	4Q39716.D	01/25/23	19:29	06:58	(unrelated sample)
ZZZZZZ	4Q39717.D	01/25/23	19:43	07:12	(unrelated sample)
ZZZZZZ	4Q39718.D	01/25/23	19:57	07:26	(unrelated sample)
ZZZZZZ	4Q39719.D	01/25/23	20:11	07:40	(unrelated sample)
ZZZZZZ	4Q39721.D	01/25/23	20:40	08:09	(unrelated sample)
FC1816-2	4Q39722.D	01/25/23	20:54	08:23	(used for QC only; not part of job FC2034)
OP95069-MS	4Q39723.D	01/25/23	21:08	08:37	Matrix Spike
OP95069-MSD	4Q39724.D	01/25/23	21:22	08:51	Matrix Spike Duplicate
ZZZZZZ	4Q39725.D	01/25/23	21:36	09:05	(unrelated sample)

TDCA Retention Time Check

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q571-RT	**Injection Date:**	01/25/23
Lab File ID:	4Q39688.D	**Injection Time:**	12:31
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S4Q571-CC571	4Q39726.D	01/25/23	21:50	09:19	Continuing cal 4
S4Q571-ICCB	4Q39727.D	01/25/23	22:04	09:33	Continuing Calibration Blank
ZZZZZZ	4Q39728.D	01/25/23	22:18	09:47	(unrelated sample)
ZZZZZZ	4Q39730.D	01/25/23	22:46	10:15	(unrelated sample)
ZZZZZZ	4Q39731.D	01/25/23	23:00	10:29	(unrelated sample)
ZZZZZZ	4Q39732.D	01/25/23	23:14	10:43	(unrelated sample)
ZZZZZZ	4Q39733.D	01/25/23	23:28	10:57	(unrelated sample)
ZZZZZZ	4Q39735.D	01/25/23	23:56	11:25	(unrelated sample)
ZZZZZZ	4Q39736.D	01/26/23	00:11	11:40	(unrelated sample)
ZZZZZZ	4Q39737.D	01/26/23	00:25	11:54	(unrelated sample)
S4Q571-CC571	4Q39738.D	01/26/23	00:39	12:08	Continuing cal 4
S4Q571-CC571	4Q39740.D	01/26/23	01:07	12:36	Continuing cal 1.0LL
ZZZZZZ	4Q39741.D	01/26/23	01:21	12:50	(unrelated sample)
ZZZZZZ	4Q39742.D	01/26/23	01:35	13:04	(unrelated sample)
ZZZZZZ	4Q39743.D	01/26/23	01:49	13:18	(unrelated sample)
ZZZZZZ	4Q39745.D	01/26/23	02:17	13:46	(unrelated sample)
ZZZZZZ	4Q39747.D	01/26/23	02:45	14:14	(unrelated sample)
ZZZZZZ	4Q39748.D	01/26/23	02:59	14:28	(unrelated sample)
ZZZZZZ	4Q39750.D	01/26/23	03:28	14:57	(unrelated sample)
S4Q571-CC571	4Q39751.D	01/26/23	03:42	15:11	Continuing cal 4
S4Q571-ICCB	4Q39752.D	01/26/23	03:56	15:25	Continuing Calibration Blank
ZZZZZZ	4Q39754.D	01/26/23	04:24	15:53	(unrelated sample)
ZZZZZZ	4Q39755.D	01/26/23	04:38	16:07	(unrelated sample)
ZZZZZZ	4Q39757.D	01/26/23	05:06	16:35	(unrelated sample)
ZZZZZZ	4Q39759.D	01/26/23	05:34	17:03	(unrelated sample)
FC1815-11	4Q39760.D	01/26/23	05:48	17:17	(used for QC only; not part of job FC2034)
OP95096-MS	4Q39761.D	01/26/23	06:02	17:31	Matrix Spike
OP95096-MSD	4Q39762.D	01/26/23	06:16	17:45	Matrix Spike Duplicate
S4Q571-CC571	4Q39763.D	01/26/23	06:30	17:59	Continuing cal 4
S4Q571-ICCB	4Q39764.D	01/26/23	06:45	18:14	Continuing Calibration Blank
ZZZZZZ	4Q39765.D	01/26/23	06:59	18:28	(unrelated sample)
ZZZZZZ	4Q39766.D	01/26/23	07:13	18:42	(unrelated sample)
ZZZZZZ	4Q39767.D	01/26/23	07:27	18:56	(unrelated sample)
ZZZZZZ	4Q39768.D	01/26/23	07:41	19:10	(unrelated sample)
ZZZZZZ	4Q39769.D	01/26/23	07:55	19:24	(unrelated sample)
ZZZZZZ	4Q39770.D	01/26/23	08:09	19:38	(unrelated sample)
ZZZZZZ	4Q39771.D	01/26/23	08:23	19:52	(unrelated sample)
S4Q571-CC571	4Q39773.D	01/26/23	08:51	20:20	Continuing cal 4
S4Q571-ICCB	4Q39774.D	01/26/23	09:05	20:34	Continuing Calibration Blank
OP94135-MB	4Q39775.D	01/26/23	09:19	20:48	Method Blank
ZZZZZZ	4Q39776.D	01/26/23	09:33	21:02	(unrelated sample)
ZZZZZZ	4Q39777.D	01/26/23	09:47	21:16	(unrelated sample)
ZZZZZZ	4Q39778.D	01/26/23	10:02	21:31	(unrelated sample)
ZZZZZZ	4Q39779.D	01/26/23	10:16	21:45	(unrelated sample)

TDCA Retention Time Check

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q571-RT	**Injection Date:**	01/25/23
Lab File ID:	4Q39688.D	**Injection Time:**	12:31
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP94007-MB	4Q39780.D	01/26/23	10:30	21:59	Method Blank
ZZZZZZ	4Q39781.D	01/26/23	10:44	22:13	(unrelated sample)
ZZZZZZ	4Q39782.D	01/26/23	10:58	22:27	(unrelated sample)
ZZZZZZ	4Q39783.D	01/26/23	11:12	22:41	(unrelated sample)
ZZZZZZ	4Q39784.D	01/26/23	11:26	22:55	(unrelated sample)
S4Q571-ECC571	4Q39785.D	01/26/23	11:40	23:09	Ending cal 4
S4Q571-ICCB	4Q39786.D	01/26/23	11:54	23:23	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-RT
Lab File ID: 4Q39790.D
Instrument ID: GCMS4Q
Injection Date: 01/26/23
Injection Time: 12:58

Compound	RT (min)	RT Difference	Low Limit
PFOS	9.007	--	--
TDCA	7.386	1.621	1.000
TCDCA	7.211	1.796	1.000
TUDCA	6.355	2.652	1.000

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
S4Q572-IBLK	4Q39793.D	01/26/23	13:41	00:43	Instrument Blank
S4Q572-CC571	4Q39794.D	01/26/23	13:55	00:57	Continuing cal 4
S4Q572-CC571	4Q39795.D	01/26/23	14:12	01:14	Continuing cal 1.0LL
FC2034-1	4Q39796.D	01/26/23	15:30	02:32	AF-RHMW225401-WGN01B-2301W3
ZZZZZZ	4Q39797.D	01/26/23	15:44	02:46	(unrelated sample)
ZZZZZZ	4Q39798.D	01/26/23	15:58	03:00	(unrelated sample)
ZZZZZZ	4Q39799.D	01/26/23	16:12	03:14	(unrelated sample)
FC1816-2	4Q39800.D	01/26/23	16:26	03:28	(used for QC only; not part of job FC2034)
ZZZZZZ	4Q39801.D	01/26/23	16:40	03:42	(unrelated sample)
S4Q572-CC571	4Q39802.D	01/26/23	16:54	03:56	Continuing cal 4
S4Q572-ICCB	4Q39803.D	01/26/23	17:08	04:10	Continuing Calibration Blank
ZZZZZZ	4Q39804.D	01/26/23	17:22	04:24	(unrelated sample)
ZZZZZZ	4Q39805.D	01/26/23	17:36	04:38	(unrelated sample)
ZZZZZZ	4Q39806.D	01/26/23	17:50	04:52	(unrelated sample)
ZZZZZZ	4Q39807.D	01/26/23	18:05	05:07	(unrelated sample)
ZZZZZZ	4Q39808.D	01/26/23	18:19	05:21	(unrelated sample)
ZZZZZZ	4Q39809.D	01/26/23	18:33	05:35	(unrelated sample)
ZZZZZZ	4Q39810.D	01/26/23	18:47	05:49	(unrelated sample)
ZZZZZZ	4Q39811.D	01/26/23	19:01	06:03	(unrelated sample)
ZZZZZZ	4Q39812.D	01/26/23	19:15	06:17	(unrelated sample)
S4Q572-CC571	4Q39813.D	01/26/23	19:29	06:31	Continuing cal 4
S4Q572-ICCB	4Q39814.D	01/26/23	19:43	06:45	Continuing Calibration Blank
S4Q572-CC571	4Q39815.D	01/26/23	19:57	06:59	Continuing cal 1.0LL
ZZZZZZ	4Q39816.D	01/26/23	20:11	07:13	(unrelated sample)
ZZZZZZ	4Q39817.D	01/26/23	20:25	07:27	(unrelated sample)
ZZZZZZ	4Q39818.D	01/26/23	20:39	07:41	(unrelated sample)
ZZZZZZ	4Q39819.D	01/26/23	20:53	07:55	(unrelated sample)
ZZZZZZ	4Q39820.D	01/26/23	21:07	08:09	(unrelated sample)
ZZZZZZ	4Q39821.D	01/26/23	21:21	08:23	(unrelated sample)
ZZZZZZ	4Q39822.D	01/26/23	21:36	08:38	(unrelated sample)
ZZZZZZ	4Q39823.D	01/26/23	21:50	08:52	(unrelated sample)
FC1815-11	4Q39824.D	01/26/23	22:04	09:06	(used for QC only; not part of job FC2034)
S4Q572-CC571	4Q39825.D	01/26/23	22:18	09:20	Continuing cal 4
S4Q572-ICCB	4Q39826.D	01/26/23	22:32	09:34	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q572-RT	**Injection Date:**	01/26/23
Lab File ID:	4Q39790.D	**Injection Time:**	12:58
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4Q39827.D	01/26/23	22:46	09:48	(unrelated sample)
ZZZZZZ	4Q39828.D	01/26/23	23:00	10:02	(unrelated sample)
ZZZZZZ	4Q39829.D	01/26/23	23:14	10:16	(unrelated sample)
ZZZZZZ	4Q39830.D	01/26/23	23:28	10:30	(unrelated sample)
ZZZZZZ	4Q39831.D	01/26/23	23:42	10:44	(unrelated sample)
S4Q572-ECC571	4Q39832.D	01/26/23	23:56	10:58	Ending cal 4
S4Q572-ICCB	4Q39833.D	01/27/23	00:10	11:12	Continuing Calibration Blank

Ion Ratio Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q571 **Method:** EPA DRAFT 1633

Lab Sample ID	Lab File ID	Ion Ratios PFPeA	PFHxA	PFHpA	PFOA	PFBS	PFHxS	PFOS
S4Q571-ICC571	4Q39694.D	0	2.9	16.9	20.2	34.3	48.7	48.4
FC2034-1	4Q39708.D	0	1.9	21.4	25.4	34	52.2	31.8

Isotope Dilution Standard Recovery Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC2034-1	4Q39708.D	122	121	121	114	120	114	122	116
FC2034-1	4Q39796.D	119	143	127	84	108	105	119	105
OP95069-BS	4Q39705.D	43	122	123	71	115	124	127	119
OP95069-LLBS	4Q39706.D	122	125	126	119	115	118	116	116
OP95069-MB	4Q39707.D	122	129	126	122	116	122	117	112
OP95069-MS	4Q39723.D	68	121	120	112	110	106	113	110
OP95069-MSD	4Q39724.D	74	118	118	113	114	113	117	110
S4Q571-IBLK	4Q39699.D	101	103	105	102	95	102	107	109
S4Q571-ICCB	4Q39715.D	98	101	101	95	101	98	101	105

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	20-150%
S2 = 13C5-PFPeA	20-150%
S3 = 13C5-PFHxA	20-150%
S4 = 13C4-PFHpA	20-150%
S5 = 13C8-PFOA	20-150%
S6 = 13C9-PFNA	20-150%
S7 = 13C6-PFDA	20-150%
S8 = 13C7-PFUnDA	20-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC2034-1	4Q39708.D	117	107	117	118	118	120	109	113
FC2034-1	4Q39796.D	113	123	103	105	111	104	100	100
OP95069-BS	4Q39705.D	105	110	122	117	110	118	109	105
OP95069-LLBS	4Q39706.D	105	88	115	112	107	109	87	86
OP95069-MB	4Q39707.D	99	91	128	133	122	112	92	98
OP95069-MS	4Q39723.D	103	104	117	117	103	109	101	96
OP95069-MSD	4Q39724.D	102	103	117	122	103	108	101	99
S4Q571-IBLK	4Q39699.D	102	105	96	95	94	99	94	100
S4Q571-ICCB	4Q39715.D	102	104	102	103	99	97	92	92

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	20-150%
S10 = 13C2-PFTeDA	20-150%
S11 = 13C3-PFBS	20-150%
S12 = 13C3-PFHxS	20-150%
S13 = 13C8-PFOS	20-150%
S14 = 13C8-FOSA	20-150%
S15 = d3-MeFOSA	20-150%
S16 = d5-EtFOSA	20-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20	S21	S22	S23	S24
FC2034-1	4Q39708.D	135	128	107	112	184* [a]	127	116	118
FC2034-1	4Q39796.D	96	97	91	90	194* [a]	91	93	218* [a]
OP95069-BS	4Q39705.D	117	105	103	102	173* [a]	119	109	121
OP95069-LLBS	4Q39706.D	121	114	90	89	174* [a]	133	122	123
OP95069-MB	4Q39707.D	126	117	108	108	190* [a]	151* [a]	134	126
OP95069-MS	4Q39723.D	110	113	104	105	162* [a]	141	115	120
OP95069-MSD	4Q39724.D	109	105	99	99	159* [a]	141	129	117
S4Q571-IBLK	4Q39699.D	106	94	100	102	125	106	108	100
S4Q571-ICCB	4Q39715.D	107	105	102	99	133	119	122	97

Isotope Dilution Standards	Recovery Limits
S17 = d3-MeFOSAA	20-150%
S18 = d5-EtFOSAA	20-150%
S19 = d7-MeFOSE	20-150%
S20 = d9-EtFOSE	20-150%
S21 = 13C2-4:2FTS	20-150%
S22 = 13C2-6:2FTS	20-150%
S23 = 13C2-8:2FTS	20-150%
S24 = 13C3-HFPO-DA	20-150%

(a) Outside control limits.

Initial Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.D

Initial Calibration Report

Method Path	D:\MassHunter\methods
Method File	1633_012423_S4Q571.quantmethod.xml
Batch Name	D:\MassHunter\Data\012423_1633_S4Q571\QuantResults\s4q571A.batch.bin
Last Calib Update	1/25/2023 4:47:10 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d	1/25/2023 1:13:39 PM	1/25/2023 4:47:10 PM
2	D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d	1/25/2023 1:27:44 PM	1/25/2023 4:47:10 PM
3	D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d	1/25/2023 1:41:46 PM	1/25/2023 4:47:10 PM
4	D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d	1/25/2023 1:55:50 PM	1/25/2023 4:47:10 PM
5	D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d	1/25/2023 2:09:56 PM	1/25/2023 4:47:10 PM
6	D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d	1/25/2023 2:23:59 PM	1/25/2023 4:47:10 PM
7	D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d	1/25/2023 2:38:03 PM	1/25/2023 4:47:10 PM
8	D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d	1/25/2023 2:52:07 PM	1/25/2023 4:47:10 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA						ISTD					
T PFBA	Avg RF	0.2357	0.2487	0.2603	0.2431	0.2862	0.3308	0.3253	0.2961	0.2783	13.307
I M5-PFPeA						ISTD					
T PFMPA	Avg RF	0.5634	0.6366	0.6585	0.6327	0.7228	0.8260	0.8112	0.7910	0.7053	13.742
T 3:3FTCA	Avg RF	0.0418	0.0443	0.0458	0.0436	0.0519	0.0595	0.0615	0.0629	0.0514	17.052
T PFPeA	Avg RF	0.9095	1.0112	1.0659	0.9943	1.1451	1.2715	1.2390	1.1369	1.0967	11.353
T PFMBA	Avg RF	0.5544	0.6221	0.6527	0.6307	0.7106	0.7900	0.7740	0.7335	0.6835	11.979
I M5-PFHxA						ISTD					
T NFDHA	Avg RF	0.0599	0.0597	0.0637	0.0623	0.0669	0.0745	0.0710	0.0530	0.0639	10.685
T PFHxA	Avg RF	0.7434	0.8847	0.9249	0.9082	1.0390	1.1557	1.1232	0.9979	0.9721	13.906
T PFEESA	Avg RF	0.6658	0.7489	0.8031	0.7892	0.8737	0.9676	0.9475	0.8514	0.8309	12.124
T 5:3FTCA	Avg RF	0.1132	0.1227	0.1257	0.1204	0.1327	0.1492	0.1439	0.1266	0.1293	9.350
T 7:3FTCA	Avg RF	0.0599	0.0703	0.0749	0.0713	0.0794	0.0849	0.0831	0.0703	0.0743	10.968
I M4-PFHpA						ISTD					
T PFHpA	Avg RF	1.1689	1.4559	1.4759	1.4062	1.6595	1.8509	1.7644	1.6834	1.5581	14.269
I M8-PFOA						ISTD					
T PFOA	Avg RF	0.9465	0.9678	1.0710	0.9949	1.1950	1.2758	1.2749	1.1658	1.1115	12.104
I M9-PFNA						ISTD					
T PFNA	Avg RF	0.8207	0.8402	0.8365	0.8046	0.9687	1.0638	1.0285	0.9077	0.9088	11.042
I M6-PFDA						ISTD					
T PFDA	Avg RF	0.7411	0.7793	0.8779	0.7771	0.9266	1.0608	1.0505	0.9204	0.8917	13.701
I M7-PFUnDA						ISTD					
T PFUnDA	Avg RF	0.6879	0.7472	0.7141	0.6566	0.7402	0.8714	0.8792	0.7570	0.7567	10.607
I M2-PFDoDA						ISTD					

Generated at 4:48 PM on 1/25/2023

Initial Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.7487	0.9184	0.9378	0.8690	1.0058	1.1505	1.0949	0.9816	0.9633	13.136
T PFTrDA	Avg RF	0.9206	1.1075	1.2084	1.0889	1.2605	1.3837	1.3007	1.1663	1.1796	12.177
I M2-PFTeDA						ISTD					
T PFTeDA	Avg RF	0.9867	1.1179	1.1852	1.1225	1.3397	1.5474	1.4664	1.2962	1.2578	15.092
I M8-FOSA						ISTD					
T FOSA	Avg RF	0.8440	0.8949	0.9416	0.8565	1.0290	1.1187	1.0429	0.9956	0.9654	10.103
I M3-PFBS						ISTD					
T PFBS	Avg RF	1.0008	0.9906	1.0301	1.0074	1.1883	1.3472	1.2685	1.2055	1.1298	12.364
I M3-PFHxS						ISTD					
T PFPeS	Avg RF	0.6938	0.6693	0.7337	0.6429	0.7785	0.8740	0.9355	0.9126	0.7800	14.635
T PFHxS	Avg RF	0.5672	0.7639	0.7492	0.7027	0.8152	0.9216	0.9755	0.9656	0.8076	17.530
I M8-PFOS						ISTD					
T PFHpS	Avg RF	0.7762	0.9702	0.9551	0.9432	1.0585	1.1751	1.1921	1.0138	1.0105	13.301
T PFOS	Avg RF	0.9712	1.0650	1.1231	1.0803	1.1962	1.3140	1.3866	1.2064	1.1678	11.688
T PFNS	Avg RF	0.4006	0.4504	0.3998	0.3946	0.4315	0.4983	0.5228	0.4614	0.4449	10.720
T PFDS	Avg RF	0.4816	0.6055	0.5704	0.5361	0.6008	0.6270	0.6603	0.5504	0.5790	9.749
T PFDoDS	Avg RF	0.4339	0.4339	0.4548	0.4682	0.5009	0.5600	0.5693	0.4906	0.4890	10.742
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	6.6658	7.9174	8.2341	7.4525	8.3184	9.1761	9.1276	8.4754	8.1709	10.229
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	3.3416	4.0305	3.6444	3.8353	4.1291	4.4614	4.4388	3.8238	3.9631	9.680
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	2.2941	2.3007	2.3041	2.2881	2.5890	2.7849	2.6264	2.1628	2.4188	8.996
I M3-MeFOSAA						ISTD					
T MeFOSAA	Avg RF	0.7318	0.7227	0.7940	0.7105	0.8527	0.9417	0.9618	0.9443	0.8325	12.851
I M3-HFPO-DA						ISTD					
T HFPO-DA	Avg RF	0.8089	0.8648	0.8861	0.8610	1.0022	1.1068	1.0636	0.9467	0.9425	11.267
T ADONA	Avg RF	4.6600	5.1123	5.3341	5.0179	5.6935	6.0500	5.8293	5.4591	5.3945	8.515
T 9Cl-PF3ONS	Avg RF	2.2842	2.5301	2.6889	2.5921	3.0202	3.4179	3.2819	2.9726	2.8485	13.712
T 11Cl-PF3OUdS	Avg RF	2.0822	2.2630	2.3867	2.2525	2.5361	2.6118	2.4403	2.1267	2.3374	8.087
I M5-EtFOSAA						ISTD					
T EtFOSAA	Avg RF	0.8801	0.7392	0.6953	0.7010	0.8454	1.0117	0.9126	0.9127	0.8373	13.696
I M7-MeFOSE						ISTD					
T MeFOSE	Avg RF	0.9262	1.0507	1.0938	1.0167	1.0846	1.1886	1.1056	0.9833	1.0562	7.674
I M9-EtFOSE						ISTD					
T EtFOSE	Avg RF	0.8227	0.9505	1.0089	0.9317	1.0253	1.0945	1.0312	0.9005	0.9707	8.897

Generated at 4:48 PM on 1/25/2023

Initial Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EtFOSA						ISTD					
T EtFOSA	Avg RF	0.9859	0.9164	0.9573	0.9222	1.1237	1.2278	1.1670	1.1003	1.0501	11.393
I M3-MeFOSA						ISTD					
T MeFOSA	Avg RF	0.7290	0.9468	0.9124	0.8408	0.9740	1.1276	1.1393	0.9482	0.9523	14.316
I 13C4-PFOS						ISTD					
S d3-MeFOSAA	Linear	0.6172	0.5825	0.5889	0.6054	0.5673	0.5505	0.5436	0.5376	0.5741	5.094
S 13C8-PFOS	Linear	1.0912	1.0238	0.9976	0.9934	1.0034	1.0205	1.0068	1.0303	1.0209	3.063
S d5-EtFOSAA	Linear	0.5438	0.4967	0.5022	0.5311	0.4766	0.4497	0.5263	0.4741	0.5001	6.476
S 13C8-FOSA	Linear	1.4647	1.4551	1.4171	1.4814	1.3951	1.3807	1.4955	1.3467	1.4295	3.693
S d7-MeFOSE	Linear	0.7927	0.7658	0.7162	0.7837	0.7531	0.7161	0.7454	0.6909	0.7455	4.774
S d3-MeFOSA	Linear	0.6386	0.6351	0.6266	0.6543	0.6159	0.6478	0.6701	0.7421	0.6538	6.025
S d9-EtFOSE	Linear	0.9265	0.9338	0.8705	0.9087	0.8580	0.7975	0.8036	0.7327	0.8539	8.323
S d5-EtFOSA	Linear	0.7735	0.7898	0.7640	0.8519	0.7232	0.7452	0.8101	0.7812	0.7799	5.061
I 13C3-PFBA						ISTD					
S 13C4-PFBA	Linear	0.9157	0.9154	0.9076	0.8996	0.9089	0.8919	0.8849	0.8887	0.9016	1.340
I 18O2-PFHxS						ISTD					
S 13C2-4:2FTS	Linear	0.0958	0.0974	0.0891	0.0922	0.0920	0.0872	0.0771		0.0901	7.485
S 13C3-PFBS	Linear	2.1316	2.2106	2.1786	2.1550	2.1413	2.1699	2.2508	2.0468	2.1606	2.779
S 13C2-6:2FTS	Linear	0.2122	0.2195	0.2266	0.2067	0.1992	0.1872	0.1601		0.2017	11.134
S 13C3-PFHxS	Linear	1.4879	1.4645	1.4438	1.4962	1.4835	1.5350	1.4366	1.3197	1.4584	4.396
S 13C2-8:2FTS	Linear	0.3076	0.3050	0.2835	0.2795	0.2691	0.2532	0.2340		0.2760	9.640
I 13C4-PFOA						ISTD					
S 13C8-PFOA	Linear	0.9074	0.9275	0.8766	0.9079	0.8923	0.9047	0.8705	0.8914	0.8973	2.057
I 13C2-PFDA						ISTD					
S 13C6-PFDA	Linear	1.1228	1.1561	1.0620	1.1045	1.1322	1.0816	1.0611	1.1128	1.1041	3.071
S 13C7-PFUnDA	Linear	1.2653	1.2608	1.1927	1.1994	1.2050	1.1568	1.0977	1.1006	1.1848	5.378
S 13C2-PFDoDA	Linear	1.3528	1.2286	1.1545	1.1952	1.2460	1.1897	1.1746	1.1662	1.2134	5.289
S 13C2-PFTeDA	Linear	0.8882	0.8972	0.8481	0.8806	0.8714	0.8232	0.8352	0.8617	0.8632	3.022
I 13C5-PFNA						ISTD					
S 13C9-PFNA	Linear	0.8666	0.9044	0.9231	0.8957	0.8814	0.8667	0.8523	0.9170	0.8884	2.894
I 13C2-PFHxA						ISTD					
S 13C5-PFPeA	Linear	0.8397	0.8153	0.8271	0.8273	0.8378	0.8178	0.7958	0.7434	0.8130	3.861
S 13C5-PFHxA	Linear	1.0590	1.0545	1.0538	1.0287	1.0646	1.0444	1.0427	1.0625	1.0513	1.143
S 13C3-HFPO-DA	Linear	0.2074	0.2035	0.2043	0.2017	0.2005	0.2010	0.1954	0.1816	0.1994	4.012
S 13C4-PFHpA	Linear	0.5878	0.5828	0.5851	0.5885	0.5990	0.5755	0.5933	0.5528	0.5831	2.415

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

Generated at 4:48 PM on 1/25/2023

Initial Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICC571
Lab FileID: 4Q39694.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PFBA	Linear	y = 0.901609 * x	
S 13C5-PFPeA	Linear	y = 0.813026 * x	
S 13C2-4:2FTS	Linear	y = 0.090106 * x	
S 13C3-PFBS	Linear	y = 2.160564 * x	
S 13C5-PFHxA	Linear	y = 1.051277 * x	
S 13C3-HFPO-DA	Linear	y = 0.199440 * x	
S 13C4-PFHpA	Linear	y = 0.583095 * x	
S 13C2-6:2FTS	Linear	y = 0.201650 * x	
S 13C8-PFOA	Linear	y = 0.897292 * x	
S 13C3-PFHxS	Linear	y = 1.458394 * x	
S 13C9-PFNA	Linear	y = 0.888403 * x	
S 13C2-8:2FTS	Linear	y = 0.275985 * x	
S 13C6-PFDA	Linear	y = 1.104144 * x	
S d3-MeFOSAA	Linear	y = 0.574119 * x	
S 13C8-PFOS	Linear	y = 1.020876 * x	
S d5-EtFOSAA	Linear	y = 0.500050 * x	
S 13C7-PFUnDA	Linear	y = 1.184788 * x	
S 13C2-PFDoDA	Linear	y = 1.213447 * x	
S 13C8-FOSA	Linear	y = 1.429528 * x	
S 13C2-PFTeDA	Linear	y = 0.863228 * x	
S d7-MeFOSE	Linear	y = 0.745499 * x	
S d3-MeFOSA	Linear	y = 0.653812 * x	
S d9-EtFOSE	Linear	y = 0.853921 * x	
S d5-EtFOSA	Linear	y = 0.779859 * x	

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

Initial Calibration Verification

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39700.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39700
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.001	20.0	120.0
13C2-6:2FTS	5.000	5.691	13.8	113.8
13C2-8:2FTS	5.000	5.802	16.0	116.0
13C2-PFDoDA	1.250	1.285	2.8	102.8
13C2-PFTeDA	1.250	1.289	3.1	103.1
13C3-PFBS	2.500	2.577	3.1	103.1
13C3-PFHxS	2.500	2.725	9.0	109.0
13C4-PFBA	10.000	9.967	-0.3	99.7
13C4-PFHpA	2.500	2.530	1.2	101.2
13C5-PFHxA	2.500	2.516	0.6	100.6
13C5-PFPeA	5.000	5.101	2.0	102.0
13C6-PFDA	1.250	1.285	2.8	102.8
13C7-PFUnDA	1.250	1.291	3.3	103.3
13C8-FOSA	2.500	2.529	1.2	101.2
13C8-PFOA	2.500	2.489	-0.4	99.6
13C8-PFOS	2.500	2.343	-6.3	93.7
13C9-PFNA	1.250	1.262	1.0	101.0
4:2FTS	9.375	8.164	-12.9	87.1
6:2FTS	9.500	9.655	1.6	101.6
8:2FTS	9.600	8.588	-10.5	89.5
d3-MeFOSAA	5.000	5.025	0.5	100.5
EtFOSAA	2.500	2.248	-10.1	89.9
FOSA	2.500	2.386	-4.6	95.4
MeFOSAA	2.500	2.704	8.1	108.1
PFBA	10.000	9.126	-8.7	91.3
PFBS	2.218	2.092	-5.7	94.3
PFDA	2.500	2.395	-4.2	95.8
PFDoDA	2.500	2.357	-5.7	94.3
PFDS	2.413	2.365	-2.0	98.0
PFHpA	2.500	2.412	-3.5	96.5
PFHpS	2.383	2.377	-0.2	99.8
PFHxA	2.500	2.387	-4.5	95.5
PFHxS	2.285	2.131	-6.7	93.3
PFNA	2.500	2.313	-7.5	92.5
PFNS	2.405	2.338	-2.8	97.2
PFOA	2.500	2.468	-1.3	98.7
PFOS	2.320	2.191	-5.5	94.5

Initial Calibration Verification

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39700.D

PFPeA	5.000	4.765	-4.7	95.3
PFPeS	2.353	2.008	-14.6	85.4
PFTeDA	2.500	2.405	-3.8	96.2
PFTrDA	2.500	2.504	0.2	100.2
PFUnDA	2.500	2.405	-3.8	96.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.467	0.2	100.2
13C3-HFPO-DA	10.000	10.169	1.7	101.7
9Cl-PF3ONS	9.350	8.668	-7.3	92.7
ADONA	9.450	9.133	-3.4	96.6
HFPO-DA	10.000	9.795	-2.0	98.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.262	-9.8	90.2
5:3FTCA	62.400	60.144	-3.6	96.4
7:3FTCA	62.400	61.359	-1.7	98.3
d3-MeFOSA	2.500	2.359	-5.6	94.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.249	-10.1	89.9
EtFOSE	25.000	25.085	0.3	100.3
MeFOSA	2.500	2.393	-4.3	95.7
MeFOSE	25.000	24.480	-2.1	97.9
PFDoDS	2.425	2.363	-2.6	97.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.950	-1.0	99.0
d7-MeFOSE	25.000	25.322	1.3	101.3
d9-EtFOSE	25.000	25.353	1.4	101.4
d5-EtFOSA	2.500	2.481	-0.8	99.2
NFDHA	5.000	4.859	-2.8	97.2
PFMBA	5.000	4.773	-4.5	95.5
PFMPA	5.000	4.645	-7.1	92.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.249	-4.5	95.5

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39701.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
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2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39701
Type : QC
Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.755	15.1	115.1
13C2-6:2FTS	5.000	5.307	6.1	106.1
13C2-8:2FTS	5.000	5.414	8.3	108.3
13C2-PFDoDA	1.250	1.275	2.0	102.0
13C2-PFTeDA	1.250	1.331	6.5	106.5
13C3-PFBS	2.500	2.651	6.0	106.0
13C3-PFHxS	2.500	2.560	2.4	102.4
13C4-PFBA	10.000	10.102	1.0	101.0
13C4-PFHpA	2.500	2.521	0.9	100.9
13C5-PFHxA	2.550	2.508	-1.6	98.4
13C5-PFPeA	5.000	5.148	3.0	103.0
13C6-PFDA	1.250	1.318	5.4	105.4
13C7-PFUnDA	1.250	1.352	8.1	108.1
13C8-FOSA	2.500	2.623	4.9	104.9
13C8-PFOA	2.250	2.494	10.9	110.9
13C8-PFOS	2.500	2.630	5.2	105.2
13C9-PFNA	1.250	1.318	5.4	105.4
4:2FTS	20.000	19.402	-3.0	97.0
6:2FTS	20.000	21.533	7.7	107.7
8:2FTS	20.000	20.823	4.1	104.1
d3-MeFOSAA	5.000	4.954	-0.9	99.1
EtFOSAA	20.000	23.336	16.7	116.7
FOSA	20.000	21.820	9.1	109.1
MeFOSAA	20.000	24.376	21.9	121.9
PFBA	20.000	19.352	-3.2	96.8
PFBS	20.000	22.500	12.5	112.5
PFDA	20.000	21.882	9.4	109.4
PFDoDA	20.000	18.834	-5.8	94.2
PFDS	20.000	19.994	0.0	100.0
PFHpA	20.000	21.271	6.4	106.4
PFHpS	20.000	20.939	4.7	104.7
PFHxA	20.000	22.559	12.8	112.8
PFHxS	20.000	23.865	19.3	119.3
PFNA	20.000	21.819	9.1	109.1
PFNS	20.000	20.793	4.0	104.0
PFOA	20.000	21.144	5.7	105.7
PFOS	20.000	17.800	-11.0	89.0

Initial Calibration Verification

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-ICV571
Lab FileID: 4Q39701.D

PFPeA	20.000	22.210	11.0	111.0
PFPeS	20.000	23.212	16.1	116.1
PFTeDA	20.000	22.363	11.8	111.8
PFTrDA	20.000	19.347	-3.3	96.7
PFUnDA	20.000	19.983	-0.1	99.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	21.943	9.7	109.7
13C3-HFPO-DA	10.000	10.286	2.9	102.9
9Cl-PF3ONS	20.000	21.437	7.2	107.2
ADONA	20.000	21.125	5.6	105.6
HFPO-DA	20.000	20.877	4.4	104.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.960	-0.2	99.8
5:3FTCA	20.000	20.722	3.6	103.6
7:3FTCA	20.000	19.955	-0.2	99.8
d3-MeFOSA	2.500	2.499	0.0	100.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	22.167	10.8	110.8
EtFOSE	100.000	101.284	1.3	101.3
MeFOSA	20.000	22.092	10.5	110.5
MeFOSE	100.000	100.051	0.1	100.1
PFDoDS	20.000	19.956	-0.2	99.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.793	-4.1	95.9
d7-MeFOSE	25.000	23.622	-5.5	94.5
d9-EtFOSE	25.000	24.177	-3.3	96.7
d5-EtFOSA	2.500	2.401	-4.0	96.0
NFDHA	20.000	21.729	8.6	108.6
PFMBA	20.000	20.741	3.7	103.7
PFMPA	20.000	20.720	3.6	103.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.883	-5.6	94.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39702.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39702
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.232	4.6	104.6
13C2-6:2FTS	5.000	5.457	9.1	109.1
13C2-8:2FTS	5.000	5.418	8.4	108.4
13C2-PFDoDA	1.250	1.337	7.0	107.0
13C2-PFTeDA	1.250	1.290	3.2	103.2
13C3-PFBS	2.500	2.607	4.3	104.3
13C3-PFHxS	2.500	2.556	2.2	102.2
13C4-PFBA	10.000	9.885	-1.1	98.9
13C4-PFHpA	2.500	2.512	0.5	100.5
13C5-PFHxA	2.500	2.540	1.6	101.6
13C5-PFPeA	5.000	5.082	1.6	101.6
13C6-PFDA	1.250	1.286	2.9	102.9
13C7-PFUnDA	1.250	1.354	8.4	108.4
13C8-FOSA	2.500	2.569	2.7	102.7
13C8-PFOA	2.500	2.487	-0.5	99.5
13C8-PFOS	2.500	2.516	0.7	100.7
13C9-PFNA	1.250	1.231	-1.5	98.5
4:2FTS	9.375	8.957	-4.5	95.5
6:2FTS	9.500	8.484	-10.7	89.3
8:2FTS	9.600	8.552	-10.9	89.1
d3-MeFOSAA	5.000	5.247	4.9	104.9
EtFOSAA	2.500	2.052	-17.9	82.1
FOSA	2.500	2.230	-10.8	89.2
MeFOSAA	2.500	2.349	-6.1	93.9
PFBA	10.000	8.603	-14.0	86.0
PFBS	2.218	1.955	-11.9	88.1
PFDA	2.500	2.283	-8.7	91.3
PFDoDA	2.500	2.213	-11.5	88.5
PFDS	2.413	2.261	-6.3	93.7
PFHpA	2.500	2.288	-8.5	91.5
PFHpS	2.383	2.176	-8.7	91.3
PFHxA	2.500	2.227	-10.9	89.1
PFHxS	2.285	1.992	-12.8	87.2
PFNA	2.500	2.197	-12.1	87.9
PFNS	2.405	1.964	-18.4	81.6
PFOA	2.500	2.356	-5.7	94.3
PFOS	2.320	2.065	-11.0	89.0

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39702.D

PFPeA	5.000	4.576	-8.5	91.5
PFPeS	2.353	1.926	-18.1	81.9
PFTeDA	2.500	2.411	-3.6	96.4
PFTrDA	2.500	2.362	-5.5	94.5
PFUnDA	2.500	2.065	-17.4	82.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.314	-1.4	98.6
13C3-HFPO-DA	10.000	9.915	-0.9	99.1
9Cl-PF3ONS	9.350	8.740	-6.5	93.5
ADONA	9.450	8.991	-4.9	95.1
HFPO-DA	10.000	9.591	-4.1	95.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.865	-12.9	87.1
5:3FTCA	62.400	56.768	-9.0	91.0
7:3FTCA	62.400	59.230	-5.1	94.9
d3-MeFOSA	2.500	2.525	1.0	101.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.273	-9.1	90.9
EtFOSE	25.000	24.075	-3.7	96.3
MeFOSA	2.500	2.299	-8.1	91.9
MeFOSE	25.000	24.724	-1.1	98.9
PFDoDS	2.425	2.215	-8.7	91.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.308	6.2	106.2
d7-MeFOSE	25.000	25.042	0.2	100.2
d9-EtFOSE	25.000	25.924	3.7	103.7
d5-EtFOSA	2.500	2.426	-3.0	97.0
NFDHA	5.000	4.995	-0.1	99.9
PFMBA	5.000	4.665	-6.7	93.3
PFMPA	5.000	4.521	-9.6	90.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.136	-7.1	92.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39703.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39703
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.203	24.1	124.1
13C2-6:2FTS	5.000	5.850	17.0	117.0
13C2-8:2FTS	5.000	5.662	13.2	113.2
13C2-PFDoDA	1.250	1.266	1.3	101.3
13C2-PFTeDA	1.250	1.262	0.9	100.9
13C3-PFBS	2.500	2.610	4.4	104.4
13C3-PFHxS	2.500	2.591	3.6	103.6
13C4-PFBA	10.000	10.018	0.2	100.2
13C4-PFHpA	2.500	2.492	-0.3	99.7
13C5-PFHxA	2.500	2.541	1.6	101.6
13C5-PFPeA	5.000	5.084	1.7	101.7
13C6-PFDA	1.250	1.277	2.1	102.1
13C7-PFUnDA	1.250	1.335	6.8	106.8
13C8-FOSA	2.500	2.544	1.8	101.8
13C8-PFOA	2.500	2.438	-2.5	97.5
13C8-PFOS	2.500	2.467	-1.3	98.7
13C9-PFNA	1.250	1.257	0.6	100.6
4:2FTS	0.750	0.529	-29.4	70.6
6:2FTS	0.760	0.631	-17.0	83.0
8:2FTS	0.768	0.567	-26.2	73.8
d3-MeFOSAA	5.000	5.502	10.0	110.0
EtFOSAA	0.200	0.190	-4.8	95.2
FOSA	0.200	0.195	-2.7	97.3
MeFOSAA	0.200	0.145	-27.7	72.3
PFBA	0.800	0.596	-25.6	74.4
PFBS	0.177	0.131	-26.2	73.8
PFDA	0.200	0.170	-15.0	85.0
PFDoDA	0.200	0.157	-21.3	78.7
PFDS	0.193	0.172	-11.0	89.0
PFHpA	0.200	0.153	-23.4	76.6
PFHpS	0.191	0.189	-1.2	98.8
PFHxA	0.200	0.154	-23.2	76.8
PFHxS	0.183	0.153	-16.4	83.6
PFNA	0.200	0.154	-23.2	76.8
PFNS	0.192	0.163	-14.9	85.1
PFOA	0.200	0.196	-1.8	98.2
PFOS	0.186	0.196	5.3	105.3

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39703.D

PFPeA	0.400	0.330	-17.4	82.6
PFPeS	0.188	0.169	-10.0	90.0
PFTeDA	0.200	0.173	-13.4	86.6
PFTrDA	0.200	0.179	-10.7	89.3
PFUnDA	0.200	0.209	4.3	104.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	0.756	0.683	-9.6	90.4
13C3-HFPO-DA	10.000	9.926	-0.7	99.3
9Cl-PF3ONS	0.748	0.628	-16.0	84.0
ADONA	0.756	0.682	-9.8	90.2
HFPO-DA	0.800	0.732	-8.5	91.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.816	-18.3	81.7
5:3FTCA	4.992	4.148	-16.9	83.1
7:3FTCA	4.992	3.945	-21.0	79.0
d3-MeFOSA	2.500	2.485	-0.6	99.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.164	-18.1	81.9
EtFOSE	2.000	1.846	-7.7	92.3
MeFOSA	0.200	0.190	-4.9	95.1
MeFOSE	2.000	1.807	-9.6	90.4
PFDoDS	0.194	0.164	-15.2	84.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.339	6.8	106.8
d7-MeFOSE	25.000	26.416	5.7	105.7
d9-EtFOSE	25.000	27.280	9.1	109.1
d5-EtFOSA	2.500	2.571	2.8	102.8
NFDHA	0.400	0.331	-17.4	82.6
PFMBA	0.400	0.331	-17.4	82.6
PFMPA	0.400	0.325	-18.8	81.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.305	-14.3	85.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39714.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39714
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.068	21.4	121.4
13C2-6:2FTS	5.000	5.709	14.2	114.2
13C2-8:2FTS	5.000	5.782	15.6	115.6
13C2-PFDoDA	1.250	1.282	2.6	102.6
13C2-PFTeDA	1.250	1.307	4.6	104.6
13C3-PFBS	2.500	2.600	4.0	104.0
13C3-PFHxS	2.500	2.525	1.0	101.0
13C4-PFBA	10.000	9.819	-1.8	98.2
13C4-PFHpA	2.500	2.437	-2.5	97.5
13C5-PFHxA	2.500	2.528	1.1	101.1
13C5-PFPeA	5.000	5.114	2.3	102.3
13C6-PFDA	1.250	1.320	5.6	105.6
13C7-PFUnDA	1.250	1.401	12.1	112.1
13C8-FOSA	2.500	2.508	0.3	100.3
13C8-PFOA	2.500	2.424	-3.0	97.0
13C8-PFOS	2.500	2.547	1.9	101.9
13C9-PFNA	1.250	1.326	6.1	106.1
4:2FTS	9.375	8.471	-9.6	90.4
6:2FTS	9.500	8.455	-11.0	89.0
8:2FTS	9.600	8.321	-13.3	86.7
d3-MeFOSAA	5.000	5.967	19.3	119.3
EtFOSAA	2.500	2.123	-15.1	84.9
FOSA	2.500	2.354	-5.8	94.2
MeFOSAA	2.500	2.281	-8.8	91.2
PFBA	10.000	8.707	-12.9	87.1
PFBS	2.218	1.947	-12.2	87.8
PFDA	2.500	2.219	-11.2	88.8
PFDoDA	2.500	2.235	-10.6	89.4
PFDS	2.413	2.165	-10.3	89.7
PFHpA	2.500	2.288	-8.5	91.5
PFHpS	2.383	2.116	-11.2	88.8
PFHxA	2.500	2.307	-7.7	92.3
PFHxS	2.285	1.823	-20.2	79.8
PFNA	2.500	2.072	-17.1	82.9
PFNS	2.405	2.063	-14.2	85.8
PFOA	2.500	2.286	-8.6	91.4
PFOS	2.320	2.133	-8.1	91.9

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39714.D

PFPeA	5.000	4.576	-8.5	91.5
PFPeS	2.353	1.924	-18.2	81.8
PFTeDA	2.500	2.336	-6.6	93.4
PFTrDA	2.500	2.330	-6.8	93.2
PFUnDA	2.500	2.069	-17.2	82.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.182	-2.8	97.2
13C3-HFPO-DA	10.000	9.977	-0.2	99.8
9Cl-PF3ONS	9.350	8.662	-7.4	92.6
ADONA	9.450	9.031	-4.4	95.6
HFPO-DA	10.000	9.377	-6.2	93.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.380	-16.8	83.2
5:3FTCA	62.400	57.187	-8.4	91.6
7:3FTCA	62.400	56.268	-9.8	90.2
d3-MeFOSA	2.500	2.393	-4.3	95.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.228	-10.9	89.1
EtFOSE	25.000	24.559	-1.8	98.2
MeFOSA	2.500	2.391	-4.4	95.6
MeFOSE	25.000	23.004	-8.0	92.0
PFDoDS	2.425	2.198	-9.3	90.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.671	13.4	113.4
d7-MeFOSE	25.000	26.267	5.1	105.1
d9-EtFOSE	25.000	25.172	0.7	100.7
d5-EtFOSA	2.500	2.501	0.0	100.0
NFDHA	5.000	4.430	-11.4	88.6
PFMBA	5.000	4.636	-7.3	92.7
PFMPA	5.000	4.535	-9.3	90.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.162	-6.5	93.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39726.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012423_1633_S4Q571\s4q571A.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39726
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.549	# 31.0	131.0
13C2-6:2FTS	5.000	5.458	9.2	109.2
13C2-8:2FTS	5.000	5.694	13.9	113.9
13C2-PFDoDA	1.250	1.237	-1.0	99.0
13C2-PFTeDA	1.250	1.327	6.2	106.2
13C3-PFBS	2.500	2.649	6.0	106.0
13C3-PFHxS	2.500	2.655	6.2	106.2
13C4-PFBA	10.000	9.776	-2.2	97.8
13C4-PFHpA	2.500	2.510	0.4	100.4
13C5-PFHxA	2.500	2.571	2.9	102.9
13C5-PFPeA	5.000	5.034	0.7	100.7
13C6-PFDA	1.250	1.303	4.2	104.2
13C7-PFUnDA	1.250	1.373	9.8	109.8
13C8-FOSA	2.500	2.520	0.8	100.8
13C8-PFOA	2.500	2.522	0.9	100.9
13C8-PFOS	2.500	2.490	-0.4	99.6
13C9-PFNA	1.250	1.246	-0.3	99.7
4:2FTS	9.375	7.523	-19.8	80.2
6:2FTS	9.500	9.294	-2.2	97.8
8:2FTS	9.600	8.904	-7.3	92.7
d3-MeFOSAA	5.000	5.339	6.8	106.8
EtFOSAA	2.500	2.180	-12.8	87.2
FOSA	2.500	2.244	-10.2	89.8
MeFOSAA	2.500	2.575	3.0	103.0
PFBA	10.000	8.731	-12.7	87.3
PFBS	2.218	1.941	-12.5	87.5
PFDA	2.500	2.139	-14.4	85.6
PFDoDA	2.500	2.273	-9.1	90.9
PFDS	2.413	2.211	-8.4	91.6
PFHpA	2.500	2.288	-8.5	91.5
PFHpS	2.383	2.200	-7.7	92.3
PFHxA	2.500	2.276	-8.9	91.1
PFHxS	2.285	1.954	-14.5	85.5
PFNA	2.500	2.185	-12.6	87.4
PFNS	2.405	2.064	-14.2	85.8
PFOA	2.500	2.317	-7.3	92.7
PFOS	2.320	2.019	-13.0	87.0

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q571-CC571
Lab FileID: 4Q39726.D

PFPeA	5.000	4.617	-7.7	92.3
PFPeS	2.353	1.944	-17.4	82.6
PFTeDA	2.500	2.253	-9.9	90.1
PFTrDA	2.500	2.406	-3.8	96.2
PFUnDA	2.500	2.031	-18.8	81.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.127	-3.4	96.6
13C3-HFPO-DA	10.000	9.943	-0.6	99.4
9Cl-PF3ONS	9.350	8.591	-8.1	91.9
ADONA	9.450	9.053	-4.2	95.8
HFPO-DA	10.000	9.349	-6.5	93.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.971	-12.1	87.9
5:3FTCA	62.400	56.508	-9.4	90.6
7:3FTCA	62.400	57.281	-8.2	91.8
d3-MeFOSA	2.500	2.369	-5.2	94.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.271	-9.1	90.9
EtFOSE	25.000	24.290	-2.8	97.2
MeFOSA	2.500	2.334	-6.6	93.4
MeFOSE	25.000	23.606	-5.6	94.4
PFDoDS	2.425	2.141	-11.7	88.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.303	6.1	106.1
d7-MeFOSE	25.000	24.849	-0.6	99.4
d9-EtFOSE	25.000	24.297	-2.8	97.2
d5-EtFOSA	2.500	2.362	-5.5	94.5
NFDHA	5.000	4.568	-8.6	91.4
PFMBA	5.000	4.732	-5.4	94.6
PFMPA	5.000	4.570	-8.6	91.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.149	-6.8	93.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39794.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39794
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.257	25.1	125.1
13C2-6:2FTS	5.000	5.331	6.6	106.6
13C2-8:2FTS	5.000	5.525	10.5	110.5
13C2-PFDoDA	1.250	1.269	1.5	101.5
13C2-PFTeDA	1.250	1.421	13.7	113.7
13C3-PFBS	2.500	2.677	7.1	107.1
13C3-PFHxS	2.500	2.526	1.1	101.1
13C4-PFBA	10.000	9.879	-1.2	98.8
13C4-PFHpA	2.500	2.504	0.2	100.2
13C5-PFHxA	2.500	2.567	2.7	102.7
13C5-PFPeA	5.000	5.020	0.4	100.4
13C6-PFDA	1.250	1.256	0.5	100.5
13C7-PFUnDA	1.250	1.330	6.4	106.4
13C8-FOSA	2.500	2.425	-3.0	97.0
13C8-PFOA	2.500	2.435	-2.6	97.4
13C8-PFOS	2.500	2.388	-4.5	95.5
13C9-PFNA	1.250	1.232	-1.5	98.5
4:2FTS	9.375	8.916	-4.9	95.1
6:2FTS	9.500	10.450	10.0	110.0
8:2FTS	9.600	9.468	-1.4	98.6
d3-MeFOSAA	5.000	5.632	12.6	112.6
EtFOSAA	2.500	2.143	-14.3	85.7
FOSA	2.500	2.408	-3.7	96.3
MeFOSAA	2.500	2.476	-1.0	99.0
PFBA	10.000	9.047	-9.5	90.5
PFBS	2.218	1.995	-10.0	90.0
PFDA	2.500	2.306	-7.7	92.3
PFDoDA	2.500	2.486	-0.6	99.4
PFDS	2.413	2.359	-2.2	97.8
PFHpA	2.500	2.474	-1.0	99.0
PFHpS	2.383	2.092	-12.2	87.8
PFHxA	2.500	2.327	-6.9	93.1
PFHxS	2.285	2.153	-5.8	94.2
PFNA	2.500	2.383	-4.7	95.3
PFNS	2.405	2.186	-9.1	90.9
PFOA	2.500	2.463	-1.5	98.5
PFOS	2.320	2.129	-8.2	91.8

Continuing Calibration Summary

Job Number: FC2034 **Sample:** S4Q572-CC571
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q39794.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	4.835	-3.3	96.7
PFPeS	2.353	2.177	-7.5	92.5
PFTeDA	2.500	2.240	-10.4	89.6
PFTrDA	2.500	2.524	0.9	100.9
PFUnDA	2.500	2.138	-14.5	85.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.475	0.3	100.3
13C3-HFPO-DA	10.000	10.716	7.2	107.2
9Cl-PF3ONS	9.350	7.956	-14.9	85.1
ADONA	9.450	8.957	-5.2	94.8
HFPO-DA	10.000	9.838	-1.6	98.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.757	-13.8	86.2
5:3FTCA	62.400	53.890	-13.6	86.4
7:3FTCA	62.400	54.903	-12.0	88.0
d3-MeFOSA	2.500	2.355	-5.8	94.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.384	-4.6	95.4
EtFOSE	25.000	24.672	-1.3	98.7
MeFOSA	2.500	2.300	-8.0	92.0
MeFOSE	25.000	25.159	0.6	100.6
PFDoDS	2.425	2.384	-1.7	98.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.427	8.5	108.5
d7-MeFOSE	25.000	23.772	-4.9	95.1
d9-EtFOSE	25.000	23.973	-4.1	95.9
d5-EtFOSA	2.500	2.287	-8.5	91.5
NFDHA	5.000	4.843	-3.1	96.9
PFMBA	5.000	4.617	-7.7	92.3
PFMPA	5.000	4.434	-11.3	88.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.202	-5.6	94.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39795.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39795
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	7.341	# 46.8	146.8
13C2-6:2FTS	5.000	5.430	8.6	108.6
13C2-8:2FTS	5.000	5.723	14.5	114.5
13C2-PFDoDA	1.250	1.254	0.3	100.3
13C2-PFTeDA	1.250	1.335	6.8	106.8
13C3-PFBS	2.500	2.617	4.7	104.7
13C3-PFHxS	2.500	2.486	-0.5	99.5
13C4-PFBA	10.000	9.829	-1.7	98.3
13C4-PFHpA	2.500	2.307	-7.7	92.3
13C5-PFHxA	2.500	2.561	2.4	102.4
13C5-PFPeA	5.000	5.044	0.9	100.9
13C6-PFDA	1.250	1.182	-5.4	94.6
13C7-PFUnDA	1.250	1.247	-0.2	99.8
13C8-FOSA	2.500	2.419	-3.2	96.8
13C8-PFOA	2.500	2.524	1.0	101.0
13C8-PFOS	2.500	2.442	-2.3	97.7
13C9-PFNA	1.250	1.261	0.8	100.8
4:2FTS	0.750	0.593	-20.9	79.1
6:2FTS	0.760	0.753	-1.0	99.0
8:2FTS	0.768	0.746	-2.8	97.2
d3-MeFOSAA	5.000	5.709	14.2	114.2
EtFOSAA	0.200	0.167	-16.3	83.7
FOSA	0.200	0.178	-10.8	89.2
MeFOSAA	0.200	0.227	13.3	113.3
PFBA	0.800	0.635	-20.7	79.3
PFBS	0.177	0.144	-18.8	81.2
PFDA	0.200	0.196	-2.0	98.0
PFDoDA	0.200	0.180	-10.0	90.0
PFDS	0.193	0.150	-22.1	77.9
PFHpA	0.200	0.173	-13.5	86.5
PFHpS	0.191	0.176	-8.0	92.0
PFHxA	0.200	0.150	-24.8	75.2
PFHxS	0.183	0.208	13.4	113.4
PFNA	0.200	0.159	-20.4	79.6
PFNS	0.192	0.166	-13.4	86.6
PFOA	0.200	0.149	-25.6	74.4
PFOS	0.186	0.169	-9.1	90.9

Continuing Calibration Summary

Job Number: FC2034 **Sample:** S4Q572-CC571
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q39795.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	0.400	0.329	-17.6	82.4
PFPeS	0.188	0.153	-18.4	81.6
PFTeDA	0.200	0.171	-14.3	85.7
PFTrDA	0.200	0.168	-15.9	84.1
PFUnDA	0.200	0.188	-6.2	93.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	0.756	0.675	-10.7	89.3
13C3-HFPO-DA	10.000	10.502	5.0	105.0
9Cl-PF3ONS	0.748	0.561	-25.0	75.0
ADONA	0.756	0.642	-15.1	84.9
HFPO-DA	0.800	0.619	-22.6	77.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.717	-28.2	71.8
5:3FTCA	4.992	3.923	-21.4	78.6
7:3FTCA	4.992	3.964	-20.6	79.4
d3-MeFOSA	2.500	2.269	-9.2	90.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.174	-13.0	87.0
EtFOSE	2.000	1.891	-5.5	94.5
MeFOSA	0.200	0.197	-1.3	98.7
MeFOSE	2.000	1.816	-9.2	90.8
PFDoDS	0.194	0.179	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.383	7.7	107.7
d7-MeFOSE	25.000	24.393	-2.4	97.6
d9-EtFOSE	25.000	24.609	-1.6	98.4
d5-EtFOSA	2.500	2.318	-7.3	92.7
NFDHA	0.400	0.404	1.0	101.0
PFMBA	0.400	0.325	-18.8	81.2
PFMPA	0.400	0.318	-20.5	79.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.295	-17.2	82.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39802.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\012623_1633_S4Q572\s4q572.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\012423_1633_S4Q571\4Q39691.d
2:D:\MassHunter\Data\012423_1633_S4Q571\4Q39692.d
3:D:\MassHunter\Data\012423_1633_S4Q571\4Q39693.d
4:D:\MassHunter\Data\012423_1633_S4Q571\4Q39694.d
5:D:\MassHunter\Data\012423_1633_S4Q571\4Q39695.d
6:D:\MassHunter\Data\012423_1633_S4Q571\4Q39696.d
7:D:\MassHunter\Data\012423_1633_S4Q571\4Q39697.d
8:D:\MassHunter\Data\012423_1633_S4Q571\4Q39698.d

Data File: 4Q39802
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.886	17.7	117.7
13C2-6:2FTS	5.000	5.381	7.6	107.6
13C2-8:2FTS	5.000	5.644	12.9	112.9
13C2-PFDoDA	1.250	1.467	17.4	117.4
13C2-PFTeDA	1.250	1.683	# 34.7	134.7
13C3-PFBS	2.500	2.494	-0.2	99.8
13C3-PFHxS	2.500	2.563	2.5	102.5
13C4-PFBA	10.000	9.884	-1.2	98.8
13C4-PFHpA	2.500	2.577	3.1	103.1
13C5-PFHxA	2.500	2.584	3.3	103.3
13C5-PFPeA	5.000	4.977	-0.5	99.5
13C6-PFDA	1.250	1.285	2.8	102.8
13C7-PFUnDA	1.250	1.549	24.0	124.0
13C8-FOSA	2.500	2.400	-4.0	96.0
13C8-PFOA	2.500	2.441	-2.4	97.6
13C8-PFOS	2.500	2.384	-4.6	95.4
13C9-PFNA	1.250	1.221	-2.4	97.6
4:2FTS	9.375	9.102	-2.9	97.1
6:2FTS	9.500	9.918	4.4	104.4
8:2FTS	9.600	9.394	-2.1	97.9
d3-MeFOSAA	5.000	5.701	14.0	114.0
EtFOSAA	2.500	2.389	-4.4	95.6
FOSA	2.500	2.443	-2.3	97.7
MeFOSAA	2.500	2.412	-3.5	96.5
PFBA	10.000	8.970	-10.3	89.7
PFBS	2.218	2.127	-4.1	95.9
PFDA	2.500	2.499	0.0	100.0
PFDoDA	2.500	2.358	-5.7	94.3
PFDS	2.413	2.236	-7.3	92.7
PFHpA	2.500	2.323	-7.1	92.9
PFHpS	2.383	2.163	-9.3	90.7
PFHxA	2.500	2.342	-6.3	93.7
PFHxS	2.285	2.054	-10.1	89.9
PFNA	2.500	2.307	-7.7	92.3
PFNS	2.405	2.055	-14.5	85.5
PFOA	2.500	2.453	-1.9	98.1
PFOS	2.320	2.300	-0.9	99.1

Continuing Calibration Summary

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q572-CC571
Lab FileID: 4Q39802.D

PFPeA	5.000	4.868	-2.6	97.4
PFPeS	2.353	2.108	-10.4	89.6
PFTeDA	2.500	2.205	-11.8	88.2
PFTrDA	2.500	2.439	-2.4	97.6
PFUnDA	2.500	2.228	-10.9	89.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	9.450	9.514	0.7	100.7
13C3-HFPO-DA	10.000	10.658	6.6	106.6
9Cl-PF3ONS	9.350	8.525	-8.8	91.2
ADONA	9.450	8.814	-6.7	93.3
HFPO-DA	10.000	9.552	-4.5	95.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.865	-12.9	87.1
5:3FTCA	62.400	54.479	-12.7	87.3
7:3FTCA	62.400	54.888	-12.0	88.0
d3-MeFOSA	2.500	2.337	-6.5	93.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.203	-11.9	88.1
EtFOSE	25.000	25.208	0.8	100.8
MeFOSA	2.500	2.394	-4.2	95.8
MeFOSE	25.000	25.386	1.5	101.5
PFDoDS	2.425	2.334	-3.8	96.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.402	8.0	108.0
d7-MeFOSE	25.000	23.813	-4.7	95.3
d9-EtFOSE	25.000	23.647	-5.4	94.6
d5-EtFOSA	2.500	2.390	-4.4	95.6
NFDHA	5.000	4.487	-10.3	89.7
PFMBA	5.000	4.570	-8.6	91.4
PFMPA	5.000	4.458	-10.8	89.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.054	-8.9	91.1

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q571 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q571-RT	4Q39688.D	01/25/23 12:31	n/a	Retention Time Marker
S4Q571-RT	4Q39689.D	01/25/23 12:45	n/a	Retention Time Marker
S4Q571-IC571	4Q39690.D	01/25/23 12:59	n/a	Mass Calibration Verification
S4Q571-IC571	4Q39691.D	01/25/23 13:13	n/a	Initial cal 1
S4Q571-IC571	4Q39692.D	01/25/23 13:27	n/a	Initial cal 2
S4Q571-IC571	4Q39693.D	01/25/23 13:41	n/a	Initial cal 3
S4Q571-ICC571	4Q39694.D	01/25/23 13:55	n/a	Initial cal 4
S4Q571-IC571	4Q39695.D	01/25/23 14:09	n/a	Initial cal 5
S4Q571-IC571	4Q39696.D	01/25/23 14:23	n/a	Initial cal 6
S4Q571-IC571	4Q39697.D	01/25/23 14:38	n/a	Initial cal 7
S4Q571-IC571	4Q39698.D	01/25/23 14:52	n/a	Initial cal 8
S4Q571-IBLK	4Q39699.D	01/25/23 15:06	n/a	Instrument Blank
S4Q571-ICV571	4Q39700.D	01/25/23 15:20	n/a	Initial cal verification 4
S4Q571-ICV571	4Q39701.D	01/25/23 15:34	n/a	Initial cal verification 20
S4Q571-CC571	4Q39702.D	01/25/23 15:48	n/a	Continuing cal 4
S4Q571-CC571	4Q39703.D	01/25/23 16:02	n/a	Continuing cal 1.0LL
OP95069-BS	4Q39705.D	01/25/23 16:54	OP95069	Blank Spike
OP95069-LLBS	4Q39706.D	01/25/23 17:08	OP95069	Blank Spike
OP95069-MB	4Q39707.D	01/25/23 17:22	OP95069	Method Blank
FC2034-1	4Q39708.D	01/25/23 17:36	OP95069	AF-RHMW225401-WGN01B-2301W3
OP95096-BS	4Q39709.D	01/25/23 17:50	OP95096	Blank Spike
OP95096-LLBS	4Q39710.D	01/25/23 18:05	OP95096	Blank Spike
OP95096-MB	4Q39711.D	01/25/23 18:19	OP95096	Method Blank
ZZZZZZ	4Q39712.D	01/25/23 18:33	OP95096	(unrelated sample)
ZZZZZZ	4Q39713.D	01/25/23 18:47	OP95096	(unrelated sample)
S4Q571-CC571	4Q39714.D	01/25/23 19:01	n/a	Continuing cal 4
S4Q571-ICCB	4Q39715.D	01/25/23 19:15	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39716.D	01/25/23 19:29	OP95069	(unrelated sample)
ZZZZZZ	4Q39717.D	01/25/23 19:43	OP95069	(unrelated sample)
ZZZZZZ	4Q39718.D	01/25/23 19:57	OP95069	(unrelated sample)
ZZZZZZ	4Q39719.D	01/25/23 20:11	OP95069	(unrelated sample)
ZZZZZZ	4Q39721.D	01/25/23 20:40	OP95069	(unrelated sample)
FC1816-2	4Q39722.D	01/25/23 20:54	OP95069	(used for QC only; not part of job FC2034)
OP95069-MS	4Q39723.D	01/25/23 21:08	OP95069	Matrix Spike
OP95069-MSD	4Q39724.D	01/25/23 21:22	OP95069	Matrix Spike Duplicate
ZZZZZZ	4Q39725.D	01/25/23 21:36	OP95069	(unrelated sample)
S4Q571-CC571	4Q39726.D	01/25/23 21:50	n/a	Continuing cal 4
S4Q571-ICCB	4Q39727.D	01/25/23 22:04	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39728.D	01/25/23 22:18	OP95069	(unrelated sample)
ZZZZZZ	4Q39730.D	01/25/23 22:46	OP95069	(unrelated sample)
ZZZZZZ	4Q39731.D	01/25/23 23:00	OP95069	(unrelated sample)
ZZZZZZ	4Q39732.D	01/25/23 23:14	OP95069	(unrelated sample)
ZZZZZZ	4Q39733.D	01/25/23 23:28	OP95069	(unrelated sample)
ZZZZZZ	4Q39735.D	01/25/23 23:56	OP95069	(unrelated sample)
ZZZZZZ	4Q39736.D	01/26/23 00:11	OP95069	(unrelated sample)
ZZZZZZ	4Q39737.D	01/26/23 00:25	OP95069	(unrelated sample)

Run Sequence Report

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q571 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q571-CC571	4Q39738.D	01/26/23 00:39	n/a	Continuing cal 4
S4Q571-CC571	4Q39740.D	01/26/23 01:07	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q39741.D	01/26/23 01:21	OP95069	(unrelated sample)
ZZZZZZ	4Q39742.D	01/26/23 01:35	OP95069	(unrelated sample)
ZZZZZZ	4Q39743.D	01/26/23 01:49	OP95069	(unrelated sample)
ZZZZZZ	4Q39745.D	01/26/23 02:17	OP95096	(unrelated sample)
ZZZZZZ	4Q39747.D	01/26/23 02:45	OP95096	(unrelated sample)
ZZZZZZ	4Q39748.D	01/26/23 02:59	OP95096	(unrelated sample)
ZZZZZZ	4Q39750.D	01/26/23 03:28	OP95096	(unrelated sample)
S4Q571-CC571	4Q39751.D	01/26/23 03:42	n/a	Continuing cal 4
S4Q571-ICCB	4Q39752.D	01/26/23 03:56	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39754.D	01/26/23 04:24	OP95096	(unrelated sample)
ZZZZZZ	4Q39755.D	01/26/23 04:38	OP95096	(unrelated sample)
ZZZZZZ	4Q39757.D	01/26/23 05:06	OP95096	(unrelated sample)
ZZZZZZ	4Q39759.D	01/26/23 05:34	OP95096	(unrelated sample)
FC1815-11	4Q39760.D	01/26/23 05:48	OP95096	(used for QC only; not part of job FC2034)
OP95096-MS	4Q39761.D	01/26/23 06:02	OP95096	Matrix Spike
OP95096-MSD	4Q39762.D	01/26/23 06:16	OP95096	Matrix Spike Duplicate
S4Q571-CC571	4Q39763.D	01/26/23 06:30	n/a	Continuing cal 4
S4Q571-ICCB	4Q39764.D	01/26/23 06:45	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39765.D	01/26/23 06:59	OP95096	(unrelated sample)
ZZZZZZ	4Q39766.D	01/26/23 07:13	OP95096	(unrelated sample)
ZZZZZZ	4Q39767.D	01/26/23 07:27	OP95096	(unrelated sample)
ZZZZZZ	4Q39768.D	01/26/23 07:41	OP95096	(unrelated sample)
ZZZZZZ	4Q39769.D	01/26/23 07:55	OP95096	(unrelated sample)
ZZZZZZ	4Q39770.D	01/26/23 08:09	OP95096	(unrelated sample)
ZZZZZZ	4Q39771.D	01/26/23 08:23	OP95096	(unrelated sample)
S4Q571-CC571	4Q39773.D	01/26/23 08:51	n/a	Continuing cal 4
S4Q571-ICCB	4Q39774.D	01/26/23 09:05	n/a	Continuing Calibration Blank
OP94135-MB	4Q39775.D	01/26/23 09:19	OP94135	Method Blank
ZZZZZZ	4Q39776.D	01/26/23 09:33	OP94135	(unrelated sample)
ZZZZZZ	4Q39777.D	01/26/23 09:47	OP94135	(unrelated sample)
ZZZZZZ	4Q39778.D	01/26/23 10:02	OP94135	(unrelated sample)
ZZZZZZ	4Q39779.D	01/26/23 10:16	OP94135	(unrelated sample)
OP94007-MB	4Q39780.D	01/26/23 10:30	OP94007	Method Blank
ZZZZZZ	4Q39781.D	01/26/23 10:44	OP94007	(unrelated sample)
ZZZZZZ	4Q39782.D	01/26/23 10:58	OP94007	(unrelated sample)
ZZZZZZ	4Q39783.D	01/26/23 11:12	OP94007	(unrelated sample)
ZZZZZZ	4Q39784.D	01/26/23 11:26	OP94007	(unrelated sample)
S4Q571-ECC571	4Q39785.D	01/26/23 11:40	n/a	Ending cal 4
S4Q571-ICCB	4Q39786.D	01/26/23 11:54	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC2034
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q572 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q572-RT	4Q39790.D	01/26/23 12:58	n/a	Retention Time Marker
S4Q572-RT	4Q39791.D	01/26/23 13:13	n/a	Retention Time Marker
S4Q572-IBLK	4Q39793.D	01/26/23 13:41	n/a	Instrument Blank
S4Q572-CC571	4Q39794.D	01/26/23 13:55	n/a	Continuing cal 4
S4Q572-CC571	4Q39795.D	01/26/23 14:12	n/a	Continuing cal 1.0LL
FC2034-1	4Q39796.D	01/26/23 15:30	OP95069	AF-RHMW225401-WGN01B-2301W3
ZZZZZZ	4Q39797.D	01/26/23 15:44	OP95096	(unrelated sample)
ZZZZZZ	4Q39798.D	01/26/23 15:58	OP95069	(unrelated sample)
ZZZZZZ	4Q39799.D	01/26/23 16:12	OP95069	(unrelated sample)
FC1816-2	4Q39800.D	01/26/23 16:26	OP95069	(used for QC only; not part of job FC2034)
ZZZZZZ	4Q39801.D	01/26/23 16:40	OP95069	(unrelated sample)
S4Q572-CC571	4Q39802.D	01/26/23 16:54	n/a	Continuing cal 4
S4Q572-ICCB	4Q39803.D	01/26/23 17:08	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39804.D	01/26/23 17:22	OP95069	(unrelated sample)
ZZZZZZ	4Q39805.D	01/26/23 17:36	OP95069	(unrelated sample)
ZZZZZZ	4Q39806.D	01/26/23 17:50	OP95069	(unrelated sample)
ZZZZZZ	4Q39807.D	01/26/23 18:05	OP95069	(unrelated sample)
ZZZZZZ	4Q39808.D	01/26/23 18:19	OP95069	(unrelated sample)
ZZZZZZ	4Q39809.D	01/26/23 18:33	OP95069	(unrelated sample)
ZZZZZZ	4Q39810.D	01/26/23 18:47	OP95069	(unrelated sample)
ZZZZZZ	4Q39811.D	01/26/23 19:01	OP95069	(unrelated sample)
ZZZZZZ	4Q39812.D	01/26/23 19:15	OP95069	(unrelated sample)
S4Q572-CC571	4Q39813.D	01/26/23 19:29	n/a	Continuing cal 4
S4Q572-ICCB	4Q39814.D	01/26/23 19:43	n/a	Continuing Calibration Blank
S4Q572-CC571	4Q39815.D	01/26/23 19:57	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q39816.D	01/26/23 20:11	OP95096	(unrelated sample)
ZZZZZZ	4Q39817.D	01/26/23 20:25	OP95096	(unrelated sample)
ZZZZZZ	4Q39818.D	01/26/23 20:39	OP95096	(unrelated sample)
ZZZZZZ	4Q39819.D	01/26/23 20:53	OP95096	(unrelated sample)
ZZZZZZ	4Q39820.D	01/26/23 21:07	OP95096	(unrelated sample)
ZZZZZZ	4Q39821.D	01/26/23 21:21	OP95096	(unrelated sample)
ZZZZZZ	4Q39822.D	01/26/23 21:36	OP95096	(unrelated sample)
ZZZZZZ	4Q39823.D	01/26/23 21:50	OP95096	(unrelated sample)
FC1815-11	4Q39824.D	01/26/23 22:04	OP95096	(used for QC only; not part of job FC2034)
S4Q572-CC571	4Q39825.D	01/26/23 22:18	n/a	Continuing cal 4
S4Q572-ICCB	4Q39826.D	01/26/23 22:32	n/a	Continuing Calibration Blank
ZZZZZZ	4Q39827.D	01/26/23 22:46	OP95096	(unrelated sample)
ZZZZZZ	4Q39828.D	01/26/23 23:00	OP95096	(unrelated sample)
ZZZZZZ	4Q39829.D	01/26/23 23:14	OP95096	(unrelated sample)
ZZZZZZ	4Q39830.D	01/26/23 23:28	OP95096	(unrelated sample)
ZZZZZZ	4Q39831.D	01/26/23 23:42	OP95096	(unrelated sample)
S4Q572-ECC571	4Q39832.D	01/26/23 23:56	n/a	Ending cal 4
S4Q572-ICCB	4Q39833.D	01/27/23 00:10	n/a	Continuing Calibration Blank

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39708.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 5:36:55 PM
Sample Name : fc2034-1
Vial : P1-D5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,520,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.227	216.8 -> 171.9	466339	10.00	µg/L	0.053
M5-PFPeA	4.888	268.3 -> 223.0	280666	5.00	µg/L	0.025
M5-PFHxA	6.184	318.0 -> 273.0	181590	2.50	µg/L	0.012
M4-PFHpA	7.106	367.1 -> 322.0	94544	2.50	µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	155965	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	73251	1.25	µg/L	-0.012
M6-PFDA	8.866	519.1 -> 474.1	65449	1.25	µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	66708	1.25	µg/L	-0.012
M2-PFDoDA	9.781	615.1 -> 570.0	69440	1.25	µg/L	-0.025
M2-PFTeDA	10.512	715.2 -> 670.0	44787	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	58662	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	46891	2.50	µg/L	0.012
M3-PFHxS	7.904	402.1 -> 79.9	31956	2.50	µg/L	-0.012
M8-PFOS	9.043	507.1 -> 79.9	41331	2.50	µg/L	-0.025
M2-4:2FTS	5.835	329.1 -> 80.9	6132	5.00	µg/L	0.012
M2-6:2FTS	7.524	429.1 -> 80.9	9476	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	11804	5.00	µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	53245	5.00	µg/L	-0.013
M3-HFPO-DA	6.564	286.9 -> 168.9	133379	10.00	µg/L	0.012
M5-EtFOSAA	9.121	589.2 -> 419.0	44034	5.00	µg/L	-0.025
M7-MeFOSE	11.248	623.2 -> 58.9	274353	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	328090	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	30314	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	24466	2.50	µg/L	0.012
13C4-PFOS	9.044	502.8 -> 79.9	34324	2.50	µg/L	-0.025
13C3-PFBA	3.215	216.0 -> 172.0	211804	5.00	µg/L	0.037
18O2-PFHxS	7.903	403.0 -> 83.9	18500	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	145283	2.50	µg/L	-0.012
13C2-PFDA	8.867	515.1 -> 470.1	48709	1.25	µg/L	-0.012
13C5-PFNA	8.348	468.0 -> 423.0	72210	1.25	µg/L	-0.012
13C2-PFHxA	6.185	315.1 -> 270.0	142270	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	6132	9.20	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 183.9%		
13C2-6:2FTS	7.524	429.1 -> 80.9	9476	6.35	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 127.0%		
13C2-8:2FTS	8.641	529.1 -> 80.9	11804	5.78	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.6%		
13C2-PFDoDA	9.781	615.1 -> 570.0	69440	1.47	µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	44787	1.33	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C3-PFBS	6.101	302.1 -> 79.9	46891	2.93	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.3%		
13C3-PFHxS	7.904	402.1 -> 79.9	31956	2.96	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.4%			
13C4-PFBA	3.227	216.8 -> 171.9	466339	12.21	µg/L		0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.1%			
13C4-PFHpA	7.106	367.1 -> 322.0	94544	2.85	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.0%			
13C5-PFHxA	6.184	318.0 -> 273.0	181590	3.04	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.4%			
13C5-PFPeA	4.888	268.3 -> 223.0	280666	6.07	µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.3%			
13C6-PFDA	8.866	519.1 -> 474.1	65449	1.52	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 121.7%			
13C7-PFUnDA	9.361	570.0 -> 525.1	66708	1.44	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.6%			
13C8-FOSA	10.247	506.1 -> 77.8	58662	2.99	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.6%			
13C8-PFOA	7.776	421.1 -> 376.0	155965	2.99	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.6%			
13C8-PFOS	9.043	507.1 -> 79.9	41331	2.95	µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.0%			
13C9-PFNA	8.347	472.1 -> 427.0	73251	1.43	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.2%			
d3-MeFOSAA	8.912	573.2 -> 419.0	53245	6.75	µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 135.1%			
13C3-HFPO-DA	6.564	286.9 -> 168.9	133379	11.75	µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.5%			
d3-MeFOSA	11.327	515.0 -> 219.0	24466	2.73	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.0%			
d5-EtFOSAA	9.121	589.2 -> 419.0	44034	6.41	µg/L		-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 128.3%			
d7-MeFOSE	11.248	623.2 -> 58.9	274353	26.80	µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.2%			
d9-EtFOSE	11.482	639.2 -> 58.9	328090	27.98	µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.9%			
d5-EtFOSA	11.548	531.1 -> 219.0	30314	2.83	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.2%			
Target Compounds							QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.			
		327.1 -> 80.9					
6:2FTS	-	427.1 -> 407.0	-	N.D.			
		427.1 -> 80.9					
8:2FTS	-	527.1 -> 507.0	-	N.D.			
		527.1 -> 80.8					
EtFOSAA	-	584.2 -> 419.1	-	N.D.			
		584.2 -> 526.0					
FOSA	-	498.1 -> 77.9	-	N.D.			
		498.1 -> 478.0					
MeFOSAA	-	570.1 -> 419.0	-	N.D.			
		570.1 -> 483.0					
PFBA	-	212.8 -> 168.9	-	N.D.			
PFBS	6.102	298.7 -> 79.9	1314	0.06	µg/L		99
		298.7 -> 98.8	446				
PFDA	9.042	512.9 -> 469.0	0		µg/L	m	1
		512.9 -> 219.0	0				
PFDoDA	9.543	613.1 -> 569.0	0		µg/L	m	1
		613.1 -> 319.0	0				
PFDS	-	599.0 -> 79.9	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

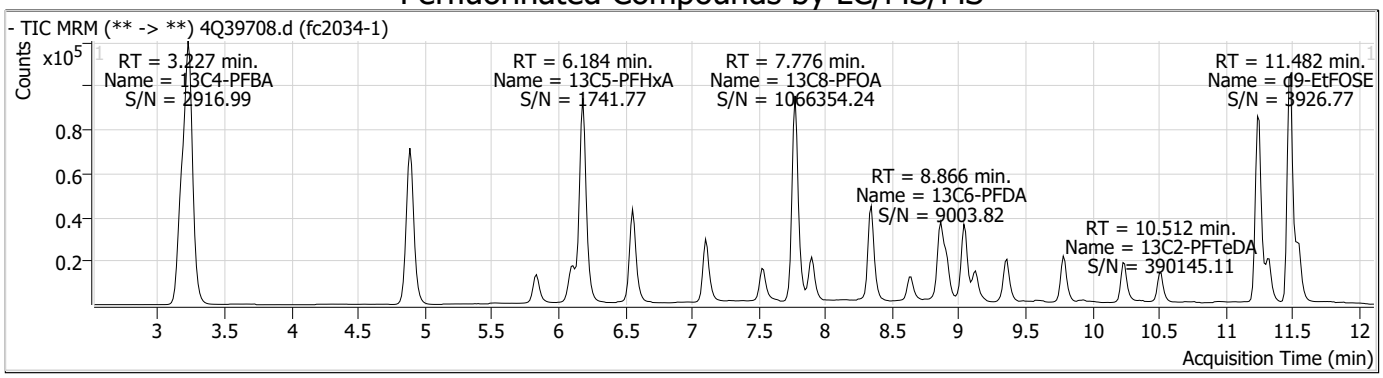
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	7.106	363.1 -> 319.0	3308	0.06	µg/L		90
		363.1 -> 169.0	708				
PFHpS	9.022	449.0 -> 79.9	0		µg/L	m	1
		449.0 -> 98.9	0				
PFHxA	6.187	313.0 -> 269.0	6469	0.09	µg/L		97
		313.0 -> 118.9	126				
PFHxS	7.905	398.7 -> 79.9	1231	0.12	µg/L	m	95
		398.7 -> 98.9	642				
PFNA	8.810	463.0 -> 419.0	0		µg/L	m	1
		463.0 -> 219.0	0				
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.777	413.0 -> 369.0	6377	0.09	µg/L	m	89
		413.0 -> 169.0	1622				
PFOS	9.044	498.9 -> 79.9	2226	0.12	µg/L	m	76
		498.9 -> 98.8	708				
PFPeA	4.891	263.0 -> 219.0	6493	0.11	µg/L		100
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	10.376	713.1 -> 669.0	0		µg/L	m	1
		713.1 -> 168.9	0				
PFTrDA	10.429	663.0 -> 619.0	0		µg/L	m	1
		663.0 -> 168.9	0				
PFUnDA	-	563.1 -> 519.0	-	N.D.			
		563.1 -> 269.1					
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
MeFOSA	-	511.9 -> 219.0	-	N.D.			
		511.9 -> 169.0					
MeFOSE	-	616.1 -> 58.9	-	N.D.			
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

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

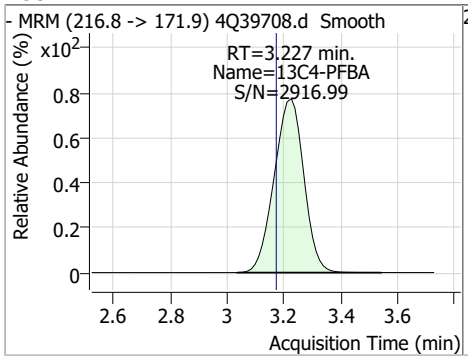
Perfluorinated Compounds by LC/MS/MS

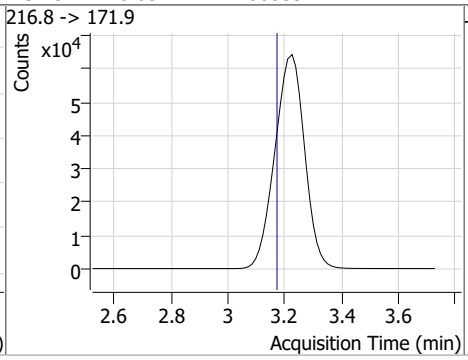
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

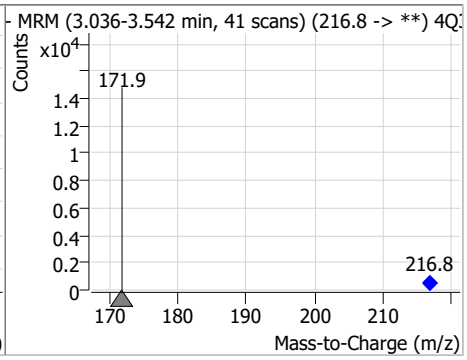
Perfluorinated Compounds by LC/MS/MS



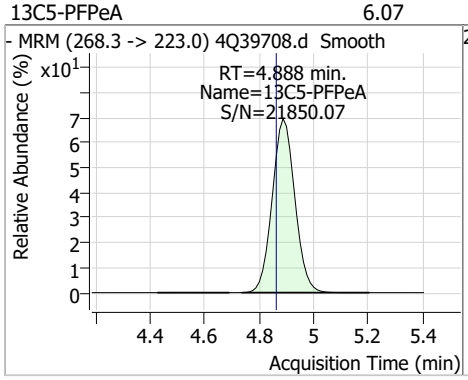
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.21	3.23	0.05	466339				

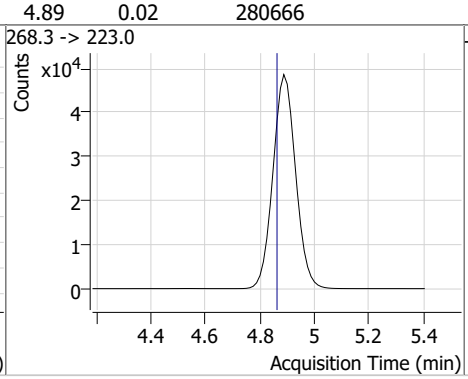


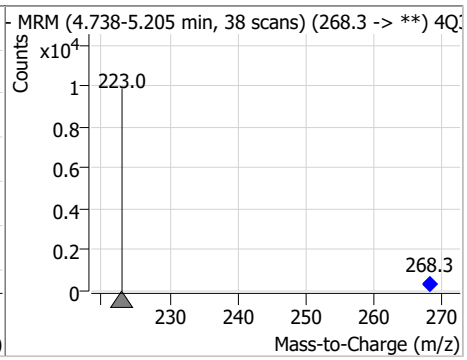




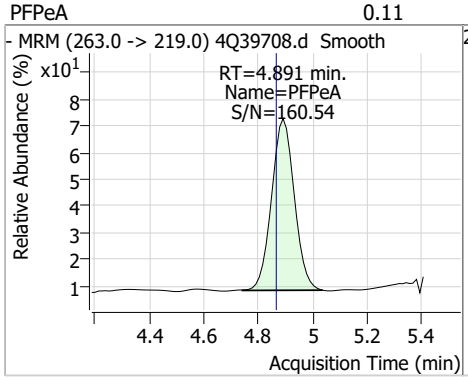
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.07	4.89	0.02	280666				

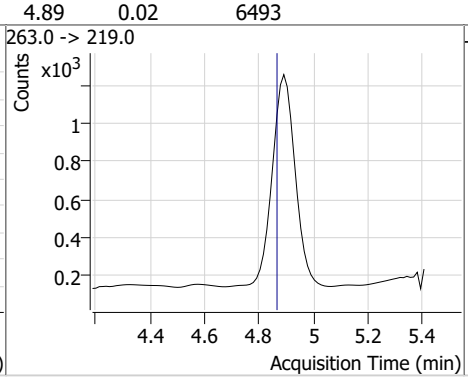


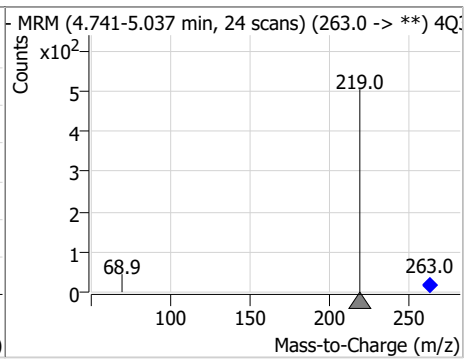




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.11	4.89	0.02	6493				

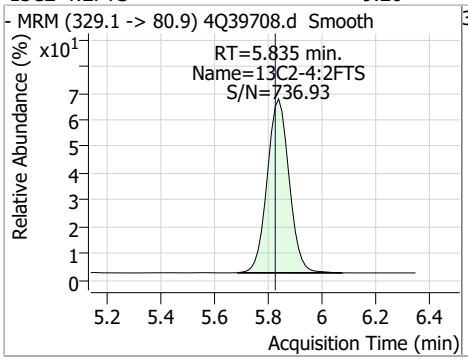


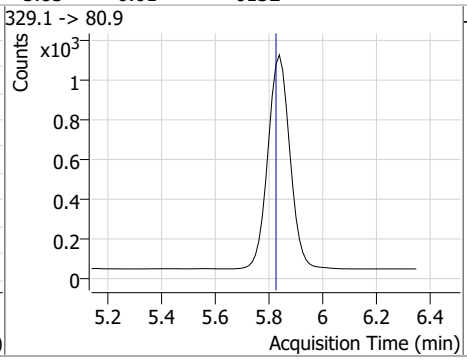


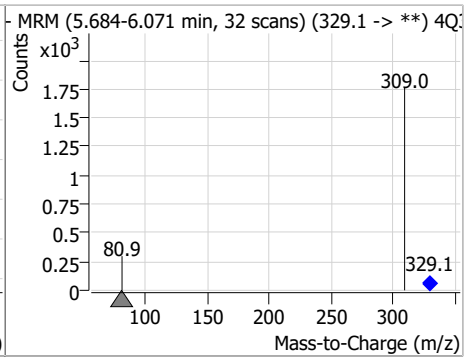


Perfluorinated Compounds by LC/MS/MS

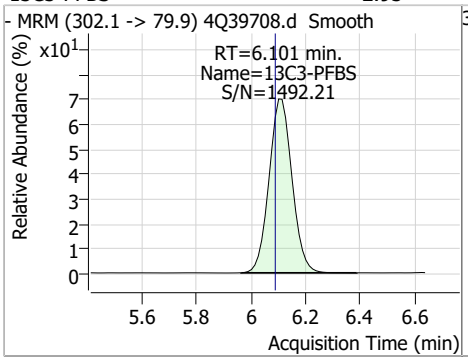
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.20	5.83	0.01	6132				

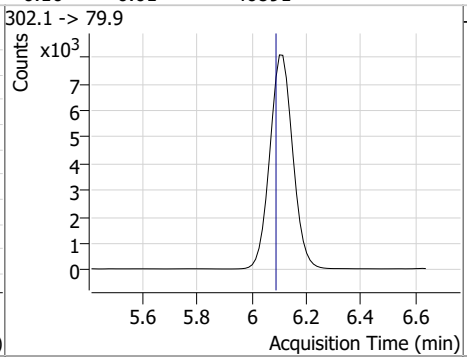


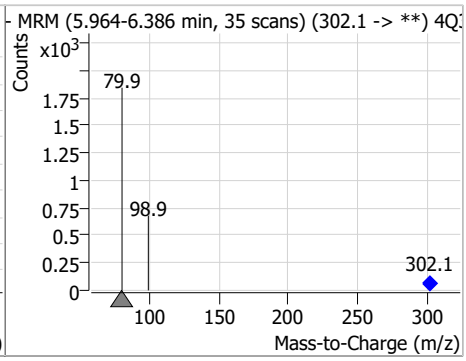




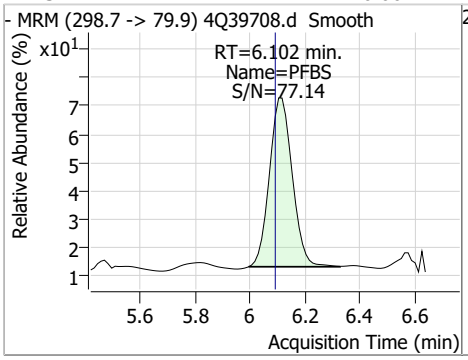
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.93	6.10	0.01	46891				

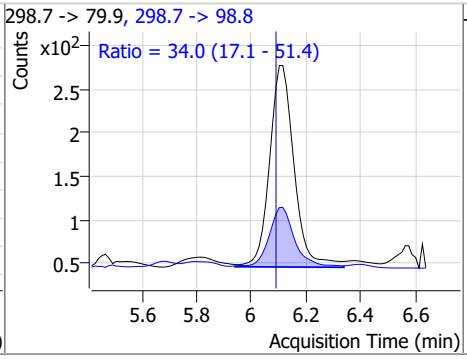


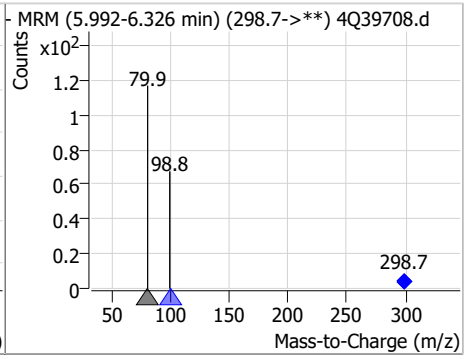




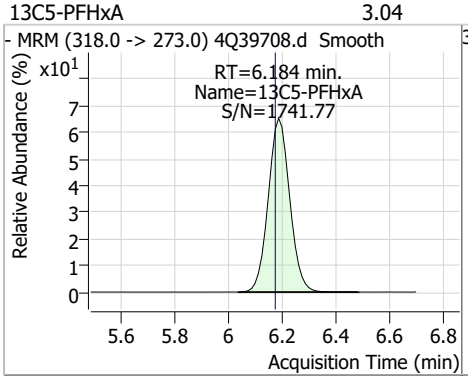
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.06	6.10	0.01	1314	298.7 -> 98.8	34.0	17.1	51.4

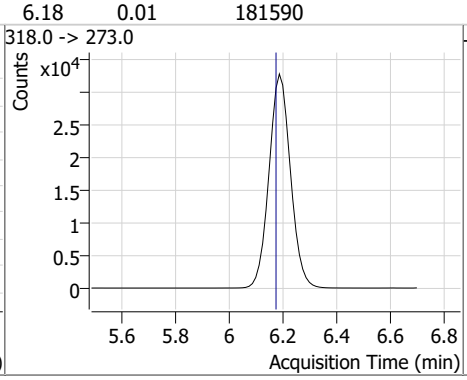


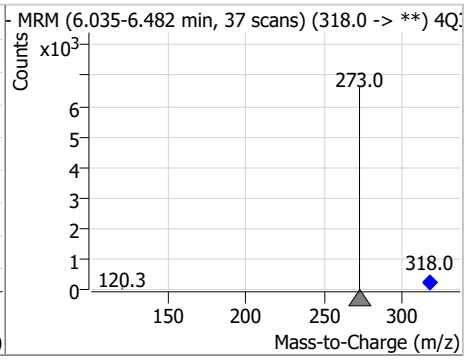




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.04	6.18	0.01	181590				

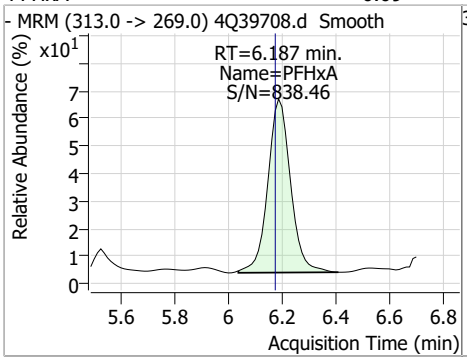


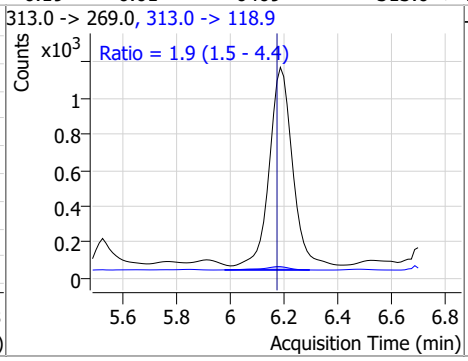


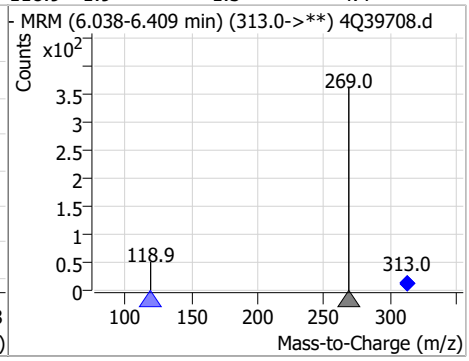


Perfluorinated Compounds by LC/MS/MS

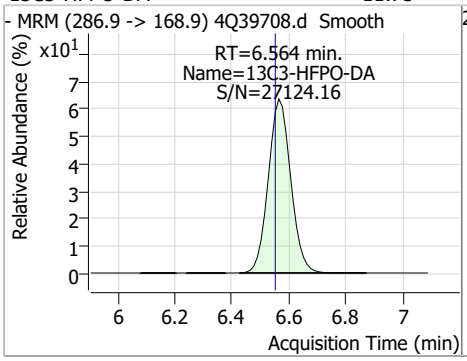
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.09	6.19	0.01	6469	313.0 -> 118.9	1.9	1.5	4.4

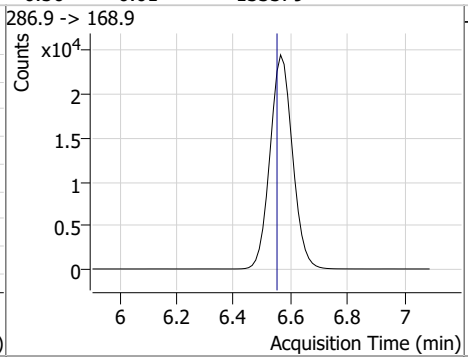


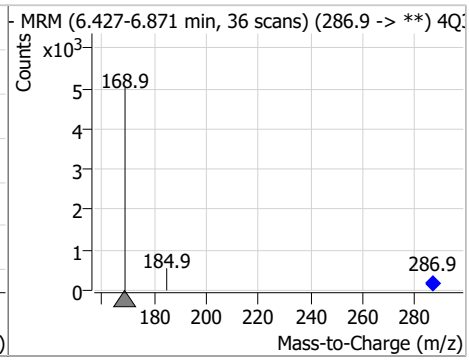




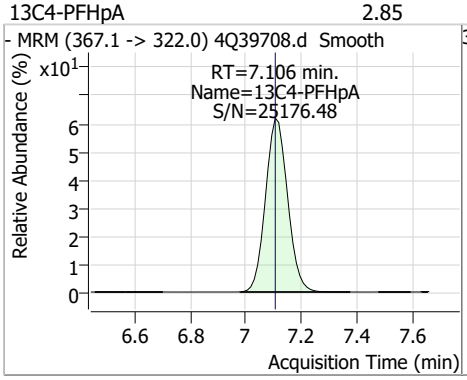
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.75	6.56	0.01	133379				

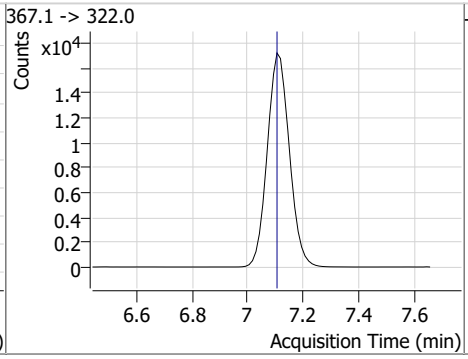


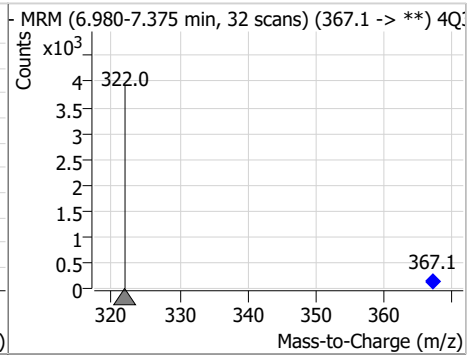




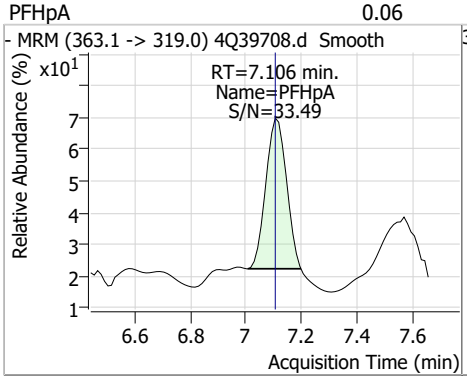
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.85	7.11	0.00	94544				

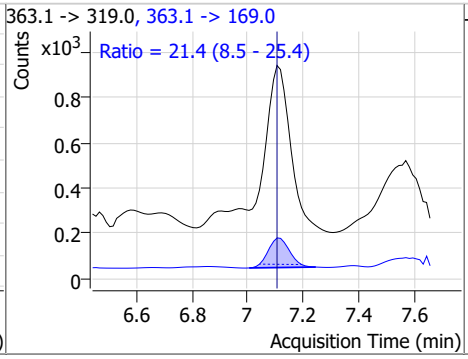


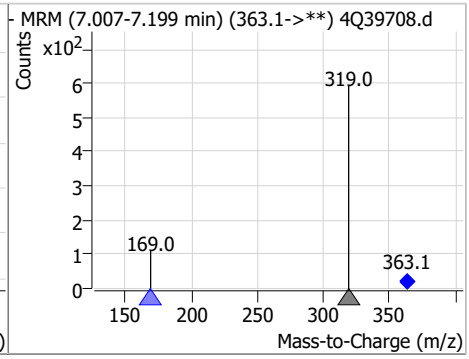




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.06	7.11	0.00	3308	363.1 -> 169.0	21.4	8.5	25.4

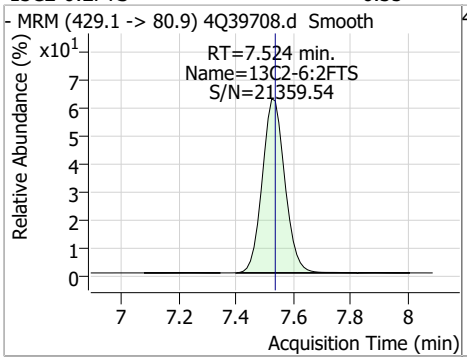


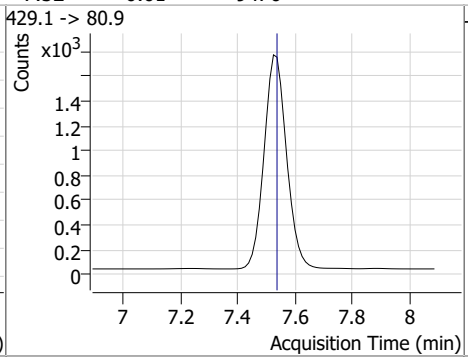


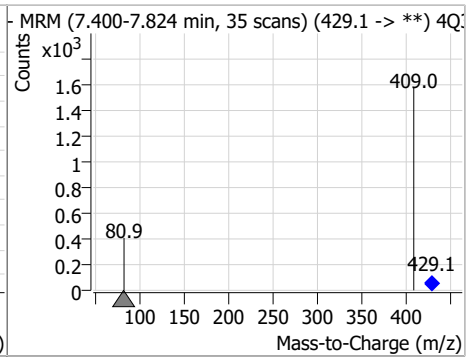


Perfluorinated Compounds by LC/MS/MS

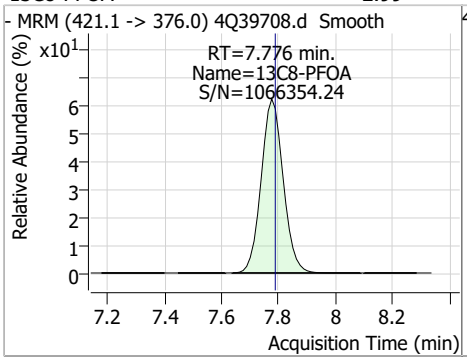
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.35	7.52	-0.01	9476				

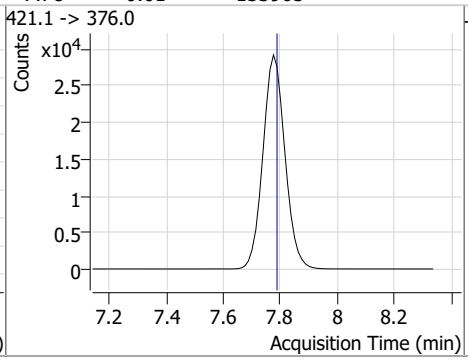


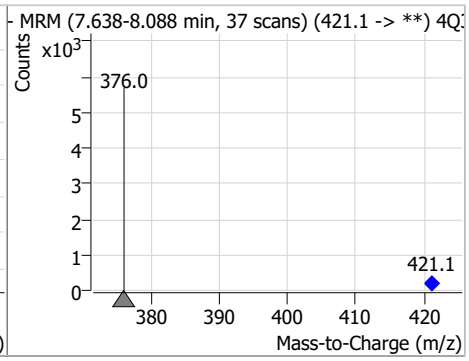




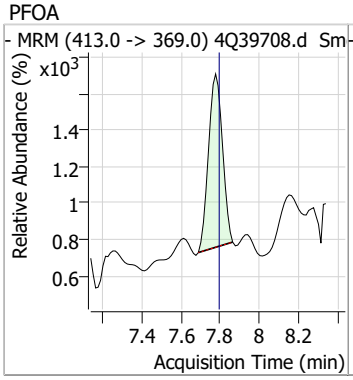
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.99	7.78	-0.01	155965				

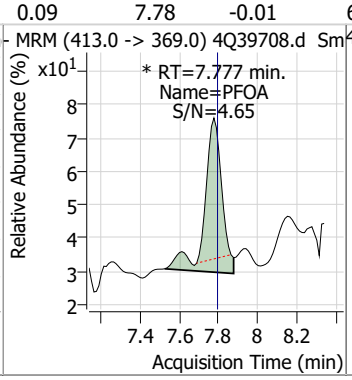


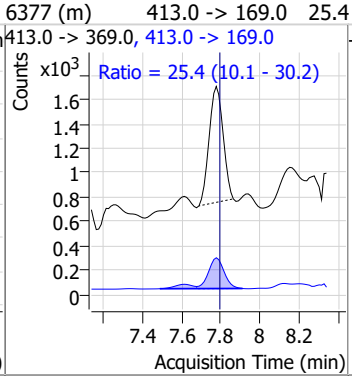


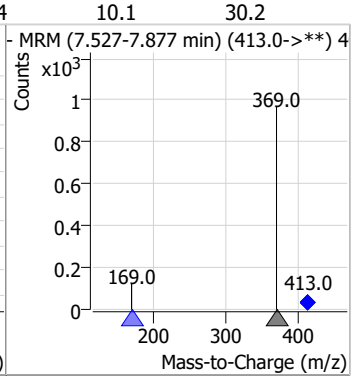


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.09	7.78	-0.01	6377 (m)	413.0 -> 169.0	25.4	10.1	30.2

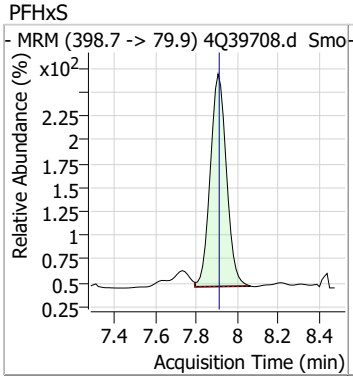


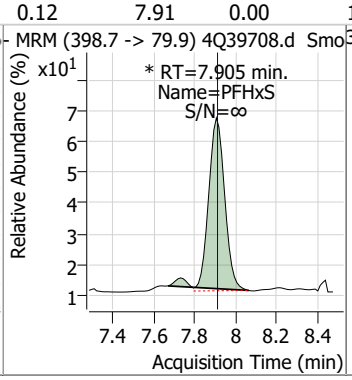


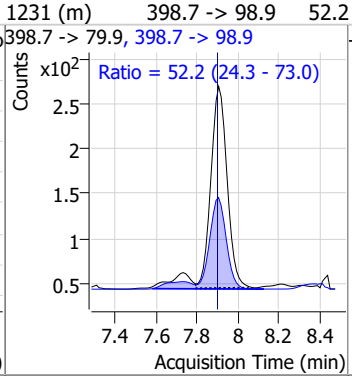


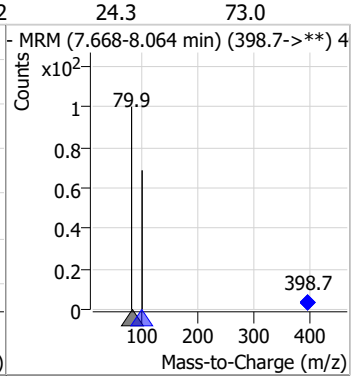


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.12	7.91	0.00	1231 (m)	398.7 -> 98.9	52.2	24.3	73.0



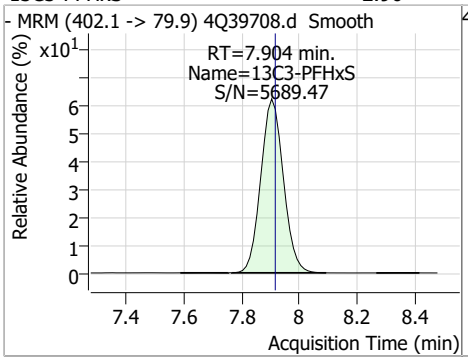


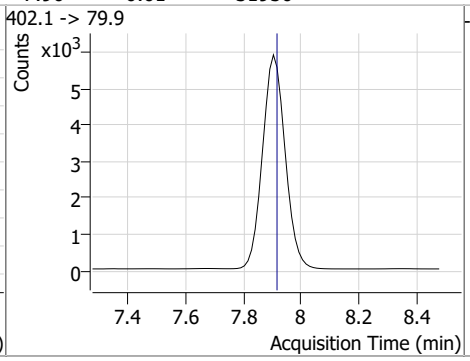


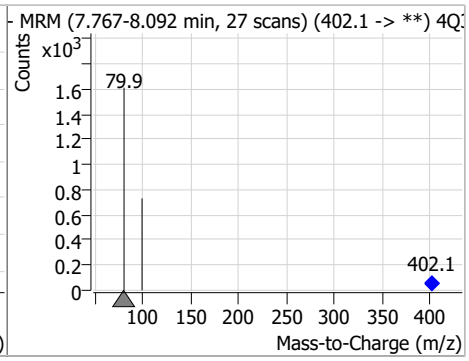


Perfluorinated Compounds by LC/MS/MS

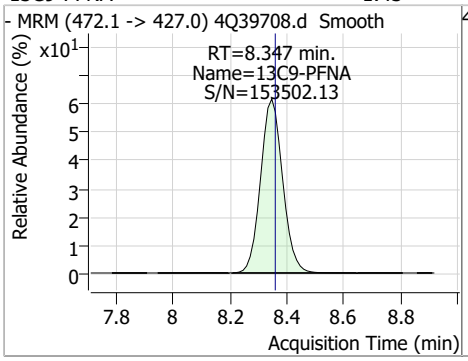
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.96	7.90	-0.01	31956				

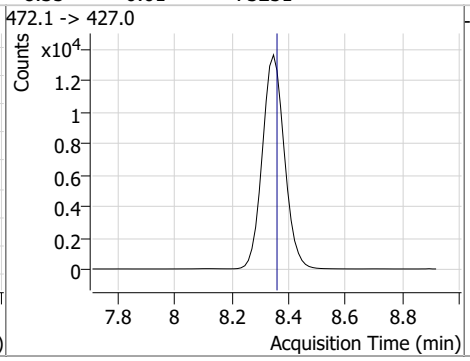


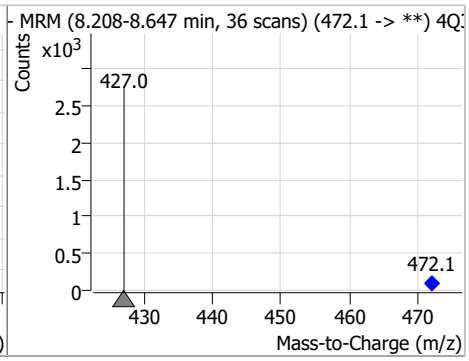




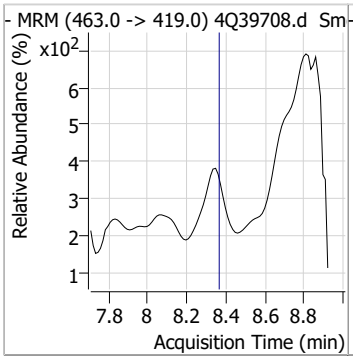
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.43	8.35	-0.01	73251				

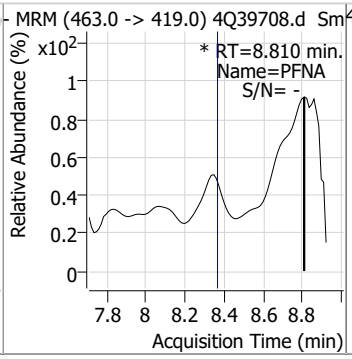


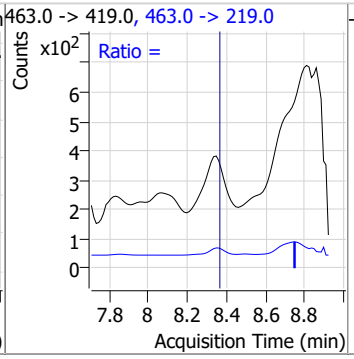


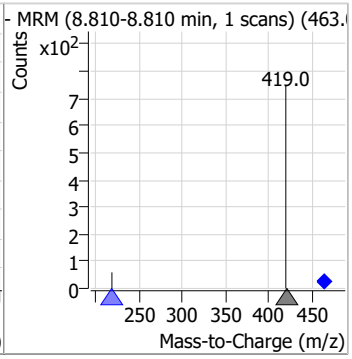


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		11.7	35.0

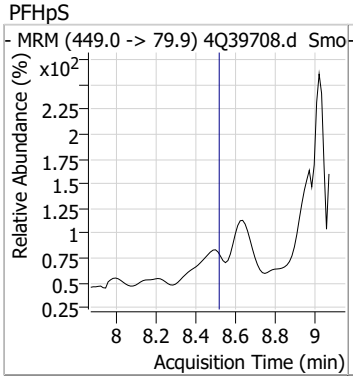


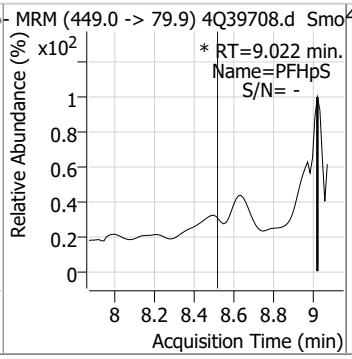


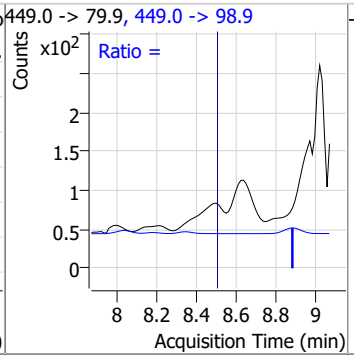


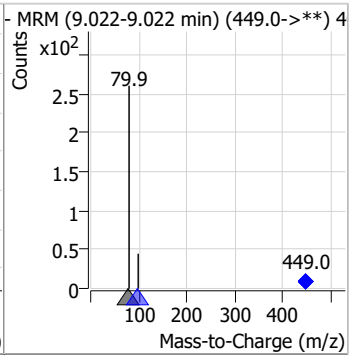


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS		0		0	449.0 -> 98.9		23.0	69.0



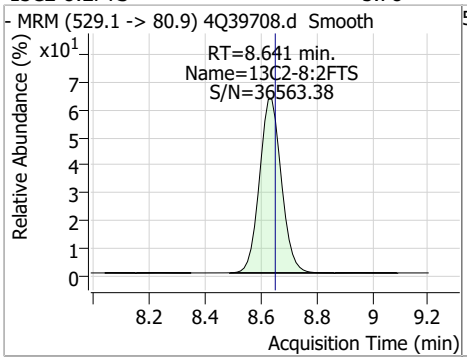


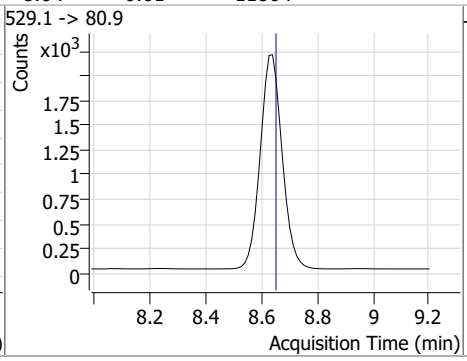


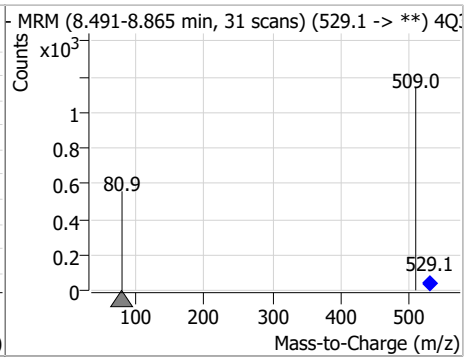


Perfluorinated Compounds by LC/MS/MS

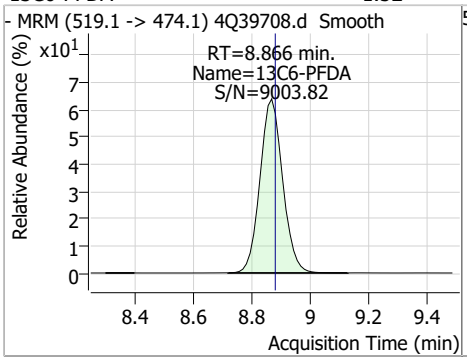
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.78	8.64	-0.01	11804				

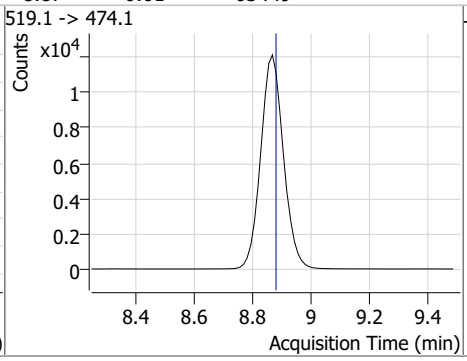


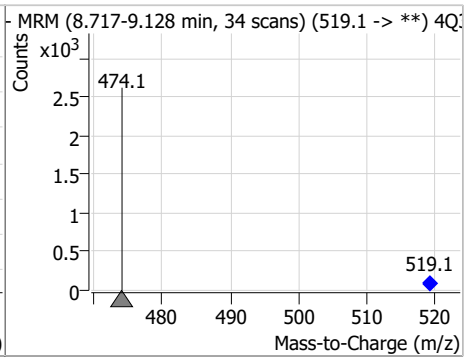




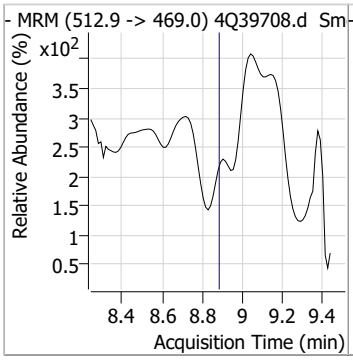
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.52	8.87	-0.01	65449				

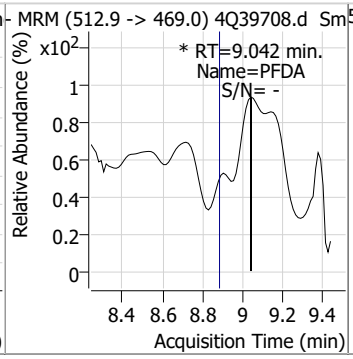


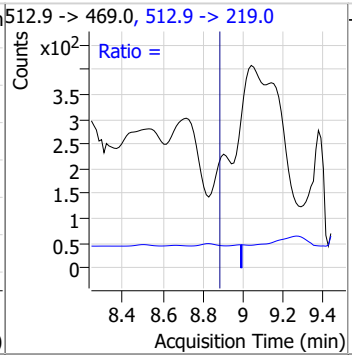


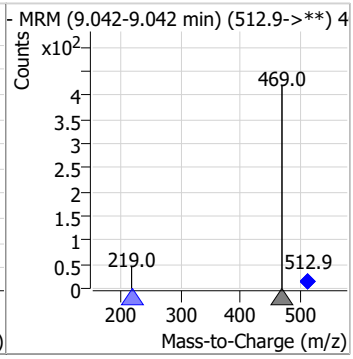


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA		0		0	512.9 -> 219.0		10.3	30.8

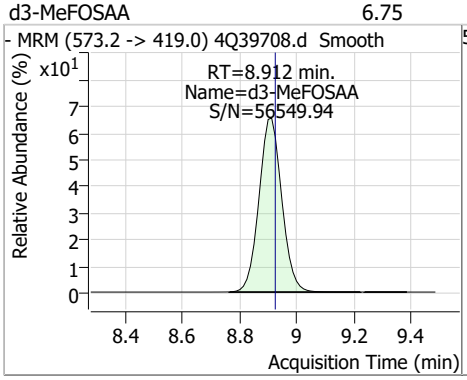


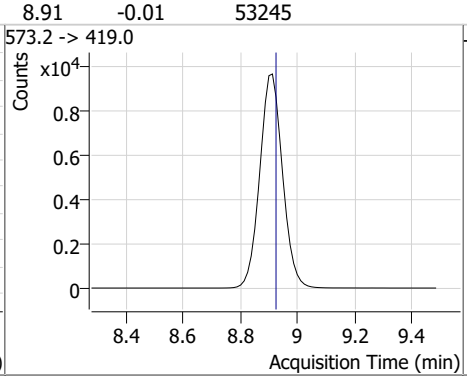


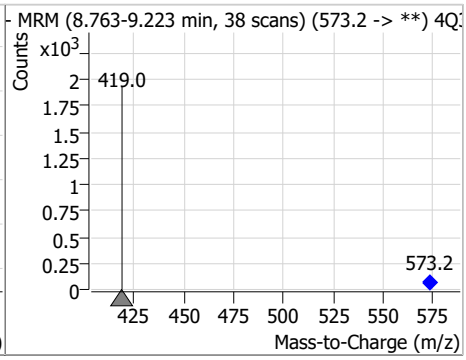




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.75	8.91	-0.01	53245				

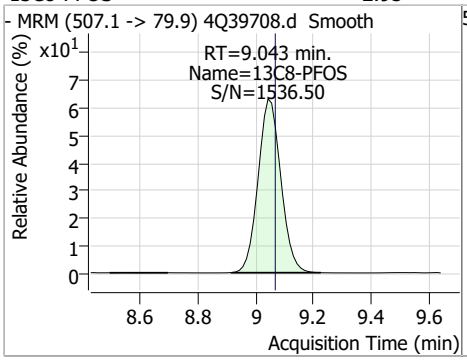


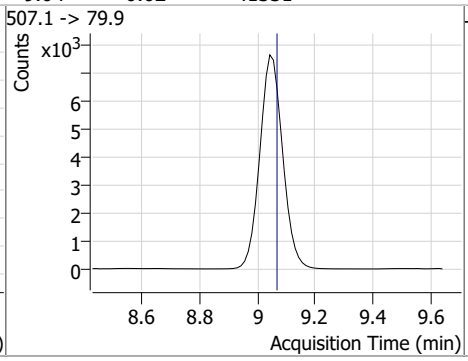


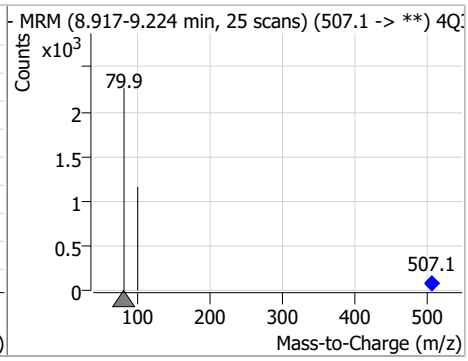


Perfluorinated Compounds by LC/MS/MS

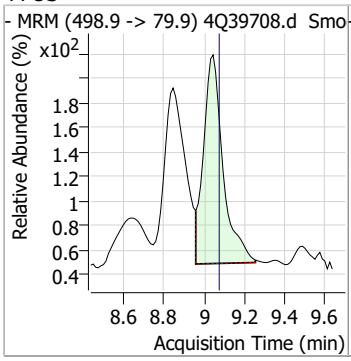
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.95	9.04	-0.02	41331				

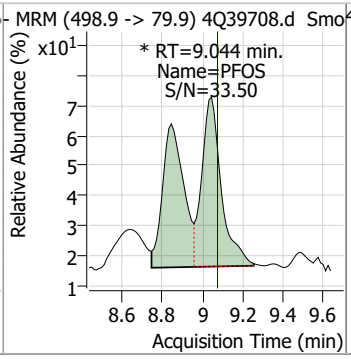


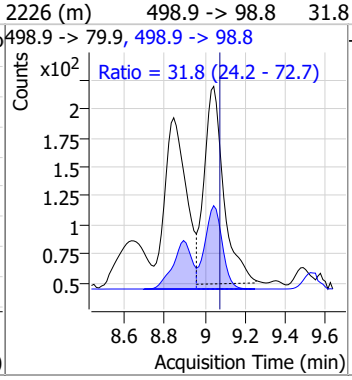


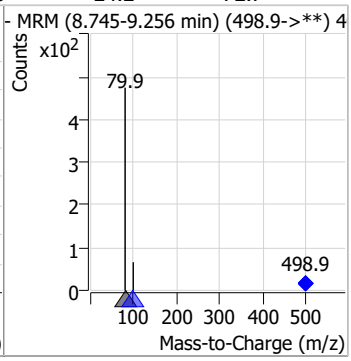


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.12	9.04	-0.02	2226 (m)	498.9 -> 98.8	31.8	24.2	72.7

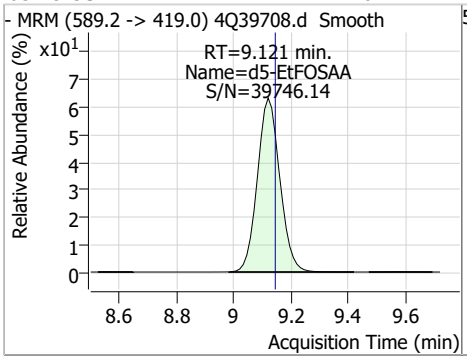


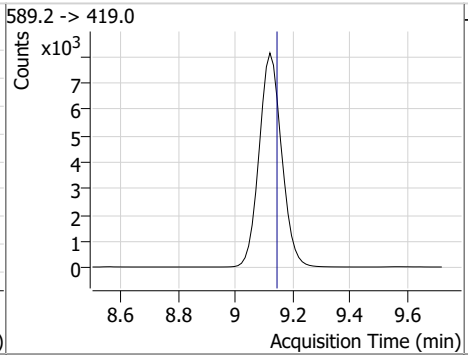


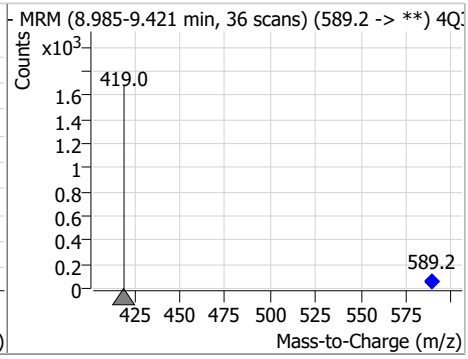




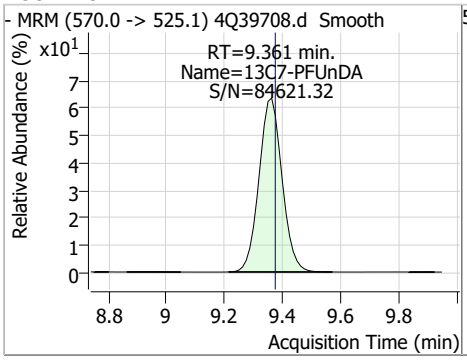
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.41	9.12	-0.02	44034				

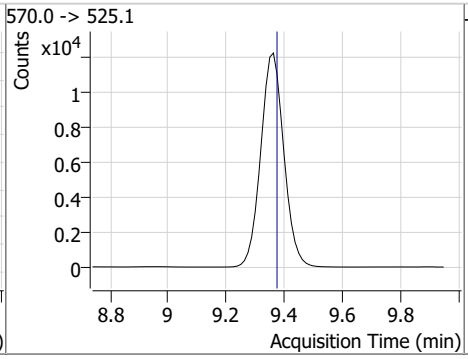


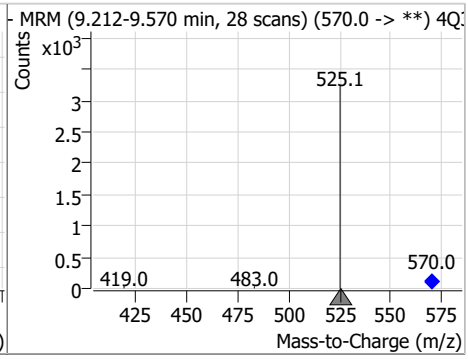




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.44	9.36	-0.01	66708				

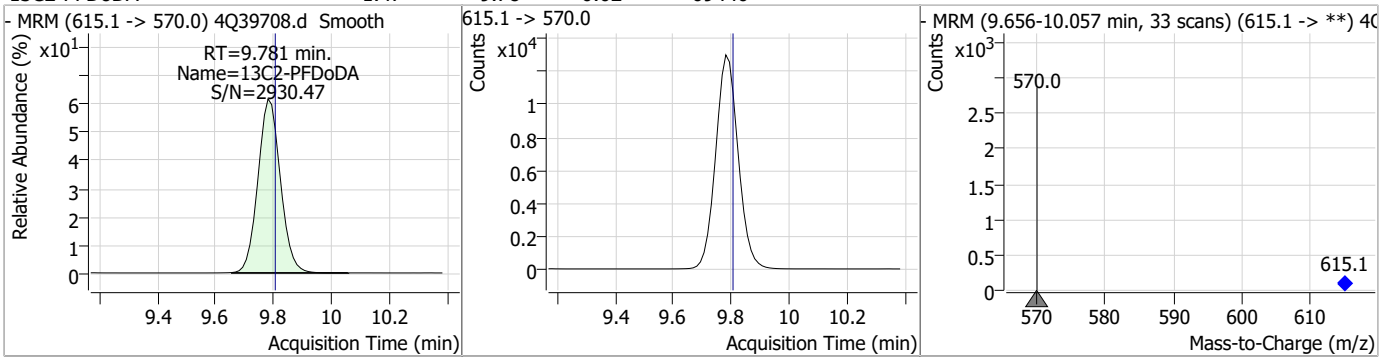




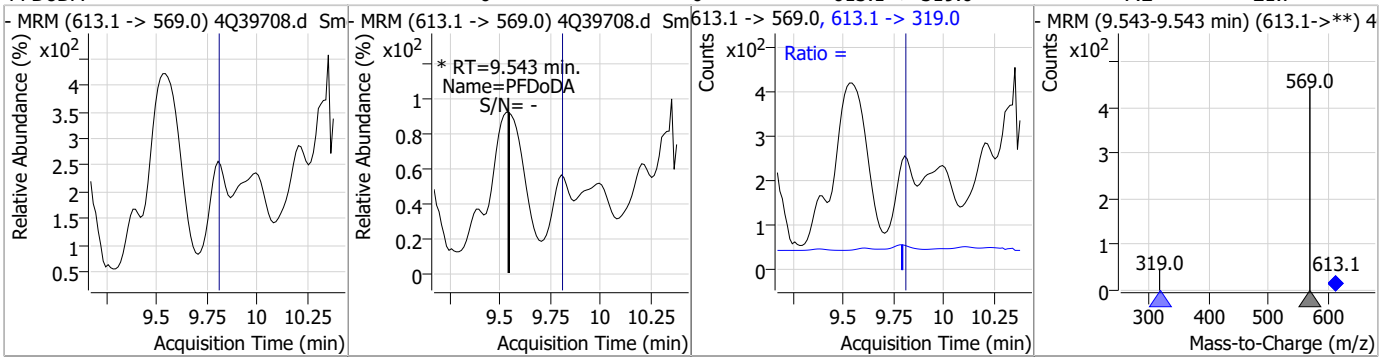


Perfluorinated Compounds by LC/MS/MS

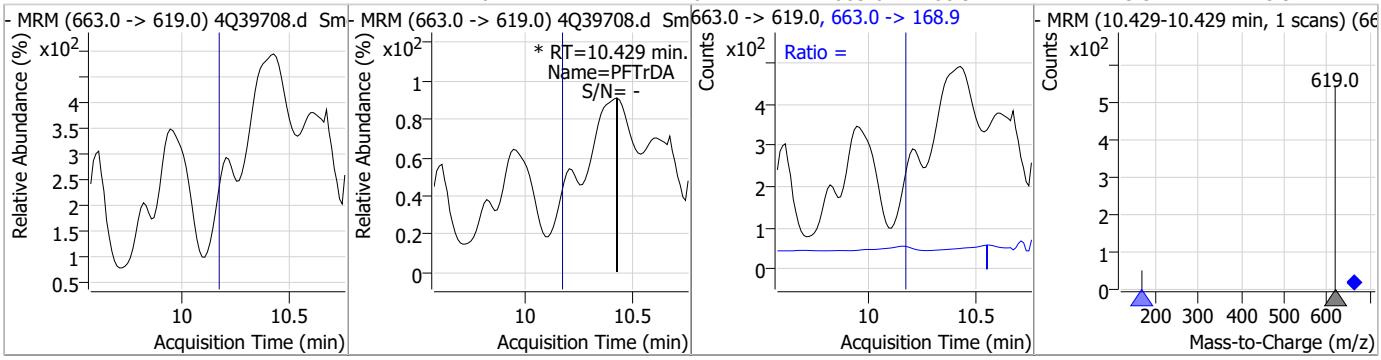
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.47	9.78	-0.02	69440				



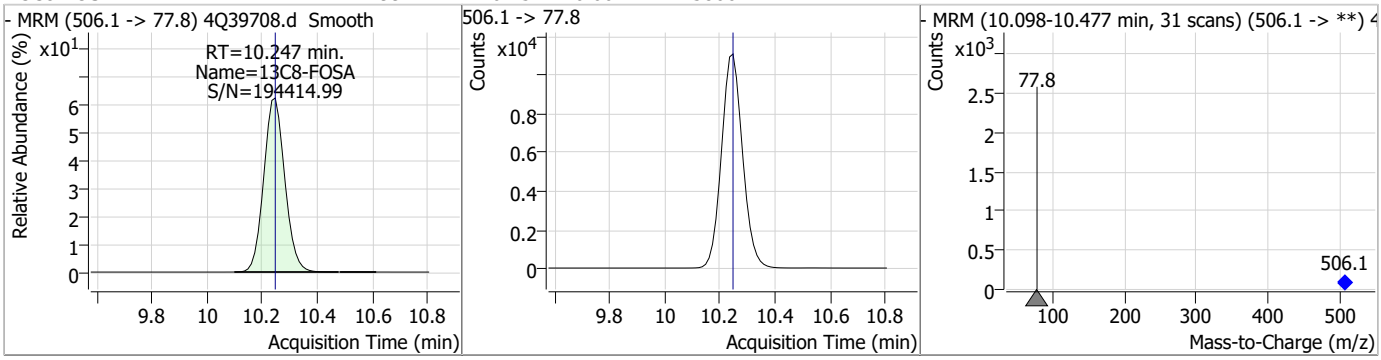
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA		0		0	613.1 -> 319.0		7.2	21.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA		0		0	663.0 -> 168.9		5.3	15.9

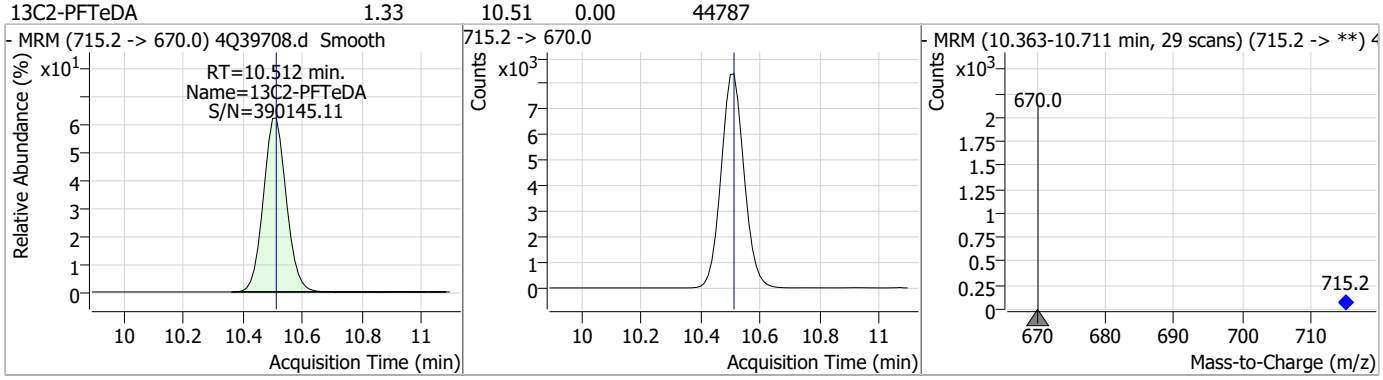


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.99	10.25	0.00	58662				

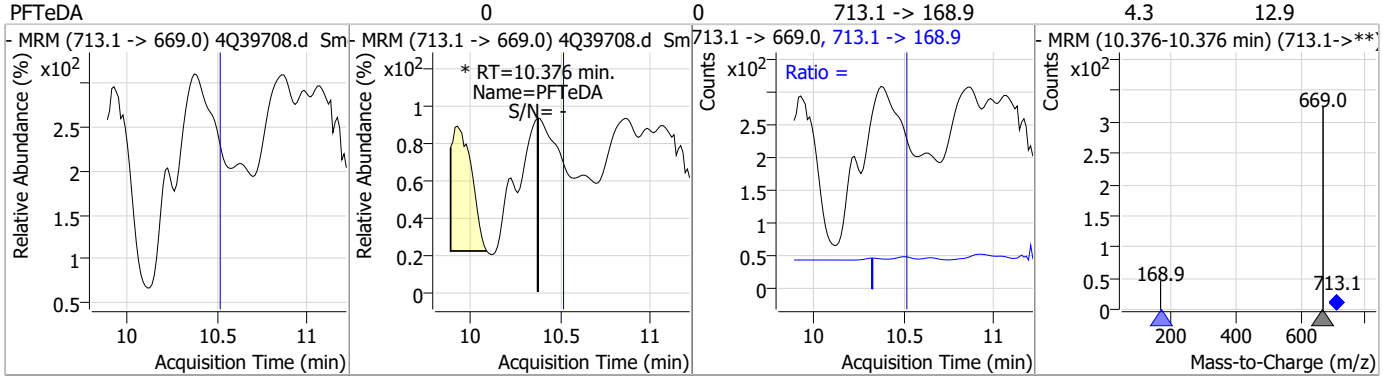


Perfluorinated Compounds by LC/MS/MS

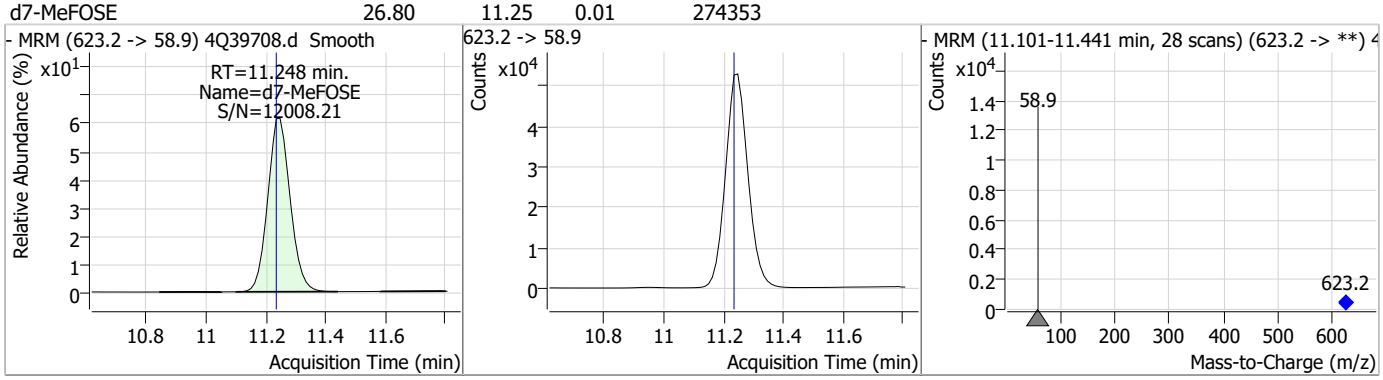
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	10.51	0.00	44787				



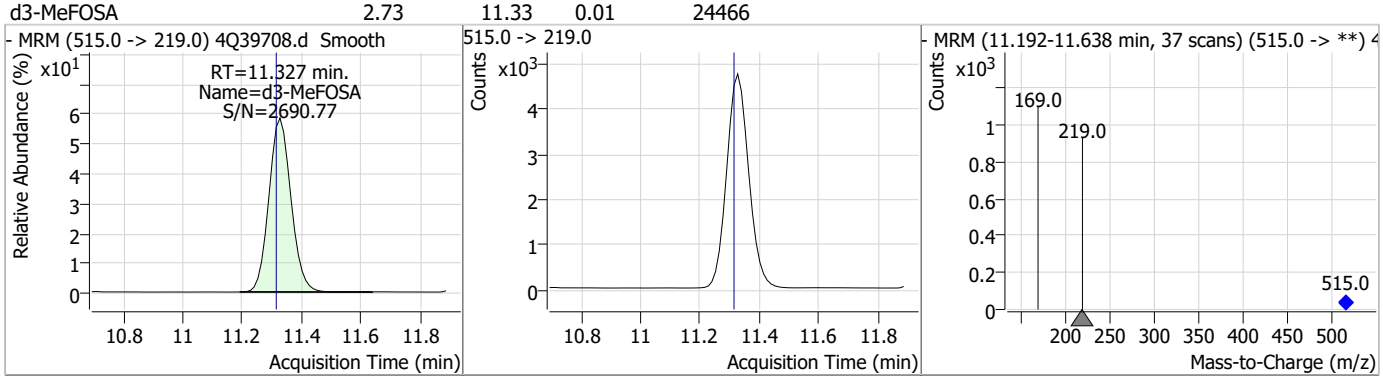
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA		0		0	713.1 -> 168.9		4.3	12.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.80	11.25	0.01	274353				

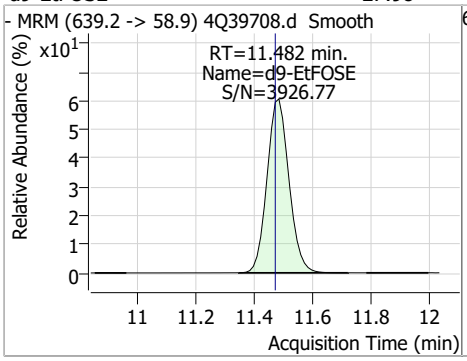


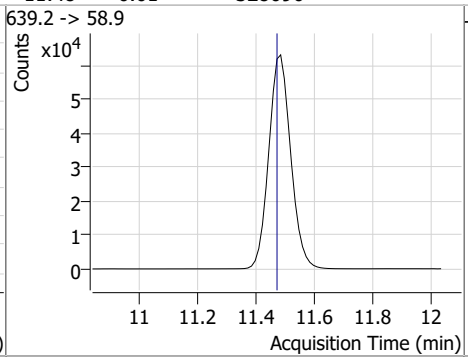
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.73	11.33	0.01	24466				

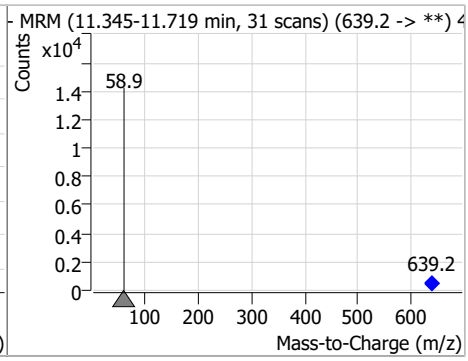


Perfluorinated Compounds by LC/MS/MS

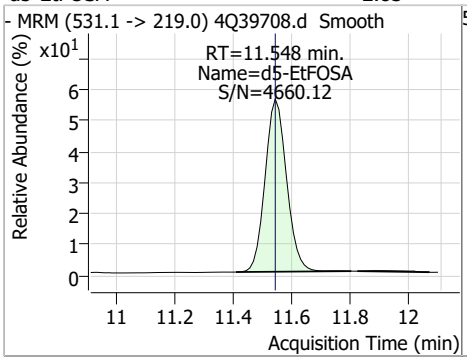
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.98	11.48	0.01	328090				

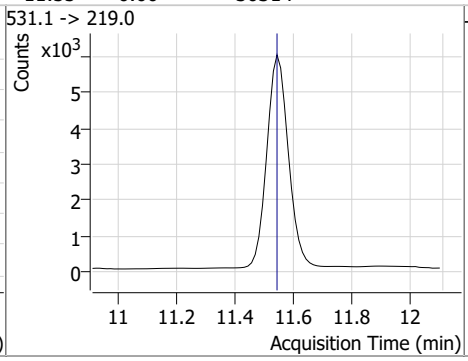


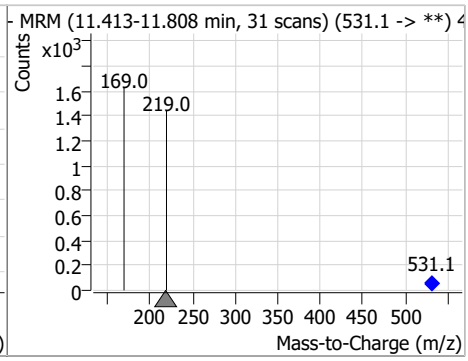




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.83	11.55	0.00	30314				







Manual Integration Approval Summary

Sample Number: FC2034-1
Lab FileID: 4Q39708.D
Injection Time: 01/25/23 17:36
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:58 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.78	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.04	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39796.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 3:30:02 PM
Sample Name : fc2034-1
Vial : P3-A1
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95069,S4Q572,520,,,5.0,10,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.289	216.8 -> 171.9	48934	1.00	µg/L	0.203
M5-PFPeA	4.926	268.3 -> 223.0	29639	0.50	µg/L	0.162
M5-PFHxA	6.209	318.0 -> 273.0	17004	0.25	µg/L	0.150
M4-PFHpA	7.118	367.1 -> 322.0	6239	0.25	µg/L	0.088
M8-PFOA	7.776	421.1 -> 376.0	13800	0.25	µg/L	0.062
M9-PFNA	8.334	472.1 -> 427.0	6837	0.13	µg/L	0.037
M6-PFDA	8.842	519.1 -> 474.1	6807	0.13	µg/L	0.012
M7-PFUnDA	9.311	570.0 -> 525.1	6451	0.13	µg/L	0.000
M2-PFDoDA	9.731	615.1 -> 570.0	7089	0.13	µg/L	0.000
M2-PFTeDA	10.450	715.2 -> 670.0	5491	0.13	µg/L	0.012
M8-FOSA	10.210	506.1 -> 77.8	6550	0.25	µg/L	0.012
M3-PFBS	6.127	302.1 -> 79.9	5117	0.25	µg/L	0.150
M3-PFHxS	7.904	402.1 -> 79.9	3513	0.25	µg/L	0.063
M8-PFOS	9.018	507.1 -> 79.9	4996	0.25	µg/L	0.012
M2-4:2FTS	5.860	329.1 -> 80.9	798	0.50	µg/L	0.151
M2-6:2FTS	7.536	429.1 -> 80.9	835	0.50	µg/L	0.074
M2-8:2FTS	8.616	529.1 -> 80.9	1172	0.50	µg/L	0.025
M3-MeFOSAA	8.887	573.2 -> 419.0	4848	0.50	µg/L	0.012
M3-HFPO-DA	6.576	286.9 -> 168.9	22059	1.00	µg/L	0.124
M5-EtFOSAA	9.096	589.2 -> 419.0	4279	0.50	µg/L	0.012
M7-MeFOSE	11.200	623.2 -> 58.9	29936	2.50	µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	33741	2.50	µg/L	0.000
M5-EtFOSA	11.511	531.1 -> 219.0	3436	0.25	µg/L	0.000
M3-MeFOSA	11.290	515.0 -> 219.0	2887	0.25	µg/L	0.012
13C4-PFOS	9.019	502.8 -> 79.9	4399	0.25	µg/L	0.012
13C3-PFBA	3.292	216.0 -> 172.0	22818	0.50	µg/L	0.202
18O2-PFHxS	7.903	403.0 -> 83.9	2289	0.25	µg/L	0.063
13C4-PFOA	7.776	417.1 -> 372.0	14248	0.25	µg/L	0.062
13C2-PFDA	8.842	515.1 -> 470.1	5178	0.13	µg/L	0.012
13C5-PFNA	8.334	468.0 -> 423.0	7359	0.13	µg/L	0.037
13C2-PFHxA	6.210	315.1 -> 270.0	12712	0.25	µg/L	0.149
System Monitoring Compounds						
13C2-4:2FTS	5.860	329.1 -> 80.9	798	0.97	µg/L	0.151
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 19.4%		
13C2-6:2FTS	7.536	429.1 -> 80.9	835	0.45	µg/L	0.074
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 9.1%		
13C2-8:2FTS	8.616	529.1 -> 80.9	1172	0.46	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 9.3%		
13C2-PFDoDA	9.731	615.1 -> 570.0	7089	0.14	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 11.3%		
13C2-PFTeDA	10.450	715.2 -> 670.0	5491	0.15	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 12.3%		
13C3-PFBS	6.127	302.1 -> 79.9	5117	0.26	µg/L	0.150
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.3%		
13C3-PFHxS	7.904	402.1 -> 79.9	3513	0.26	µg/L	0.063

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.5%			
13C4-PFBA	3.289	216.8 -> 171.9	48934	1.19	µg/L		0.203
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.9%			
13C4-PFHpA	7.118	367.1 -> 322.0	6239	0.21	µg/L		0.088
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 8.4%			
13C5-PFHxA	6.209	318.0 -> 273.0	17004	0.32	µg/L		0.150
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 12.7%			
13C5-PFPeA	4.926	268.3 -> 223.0	29639	0.72	µg/L		0.162
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 14.3%			
13C6-PFDA	8.842	519.1 -> 474.1	6807	0.15	µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 11.9%			
13C7-PFUnDA	9.311	570.0 -> 525.1	6451	0.13	µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.5%			
13C8-FOSA	10.210	506.1 -> 77.8	6550	0.26	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.4%			
13C8-PFOA	7.776	421.1 -> 376.0	13800	0.27	µg/L		0.062
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.8%			
13C8-PFOS	9.018	507.1 -> 79.9	4996	0.28	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 11.1%			
13C9-PFNA	8.334	472.1 -> 427.0	6837	0.13	µg/L		0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.5%			
d3-MeFOSAA	8.887	573.2 -> 419.0	4848	0.48	µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 9.6%			
13C3-HFPO-DA	6.576	286.9 -> 168.9	22059	2.18	µg/L		0.124
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 21.8%			
d3-MeFOSA	11.290	515.0 -> 219.0	2887	0.25	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.0%			
d5-EtFOSAA	9.096	589.2 -> 419.0	4279	0.49	µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 9.7%			
d7-MeFOSE	11.200	623.2 -> 58.9	29936	2.28	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.1%			
d9-EtFOSE	11.433	639.2 -> 58.9	33741	2.25	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.0%			
d5-EtFOSA	11.511	531.1 -> 219.0	3436	0.25	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.0%			
Target Compounds							QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.			
		327.1 -> 80.9					
6:2FTS	-	427.1 -> 407.0	-	N.D.			
		427.1 -> 80.9					
8:2FTS	-	527.1 -> 507.0	-	N.D.			
		527.1 -> 80.8					
EtFOSAA	-	584.2 -> 419.1	-	N.D.			
		584.2 -> 526.0					
FOSA	-	498.1 -> 77.9	-	N.D.			
		498.1 -> 478.0					
MeFOSAA	-	570.1 -> 419.0	-	N.D.			
		570.1 -> 483.0					
PFBA	-	212.8 -> 168.9	-	N.D.			
PFBS	-	298.7 -> 79.9	-	N.D.			
		298.7 -> 98.8					
PFDA	9.179	512.9 -> 469.0	0		µg/L	m	1
		512.9 -> 219.0	0				
PFDoDA	-	613.1 -> 569.0	-	N.D.			
		613.1 -> 319.0					
PFDS	-	599.0 -> 79.9	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

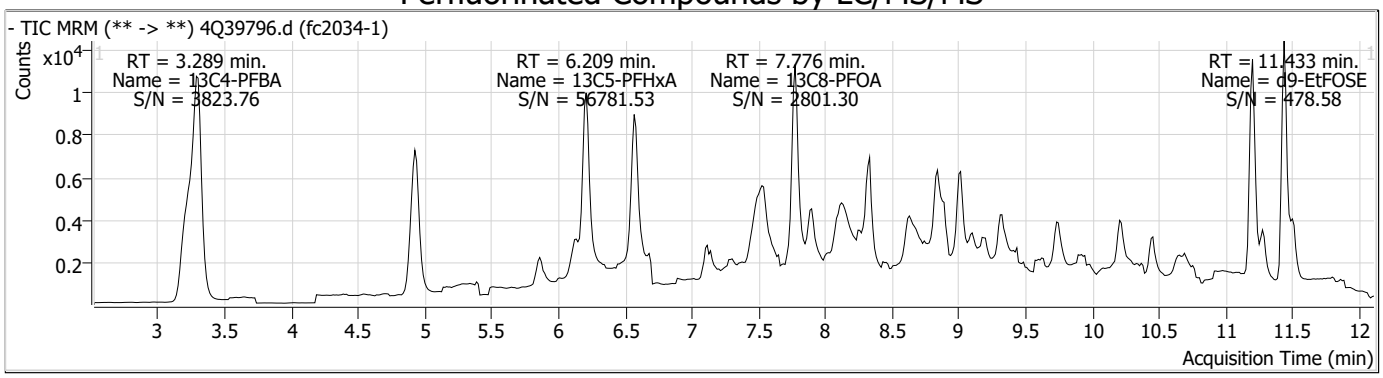
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	7.507	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.547	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	8.673	463.0 -> 419.0	0		µg/L	m	1
		463.0 -> 219.0	0				
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	8.139	413.0 -> 369.0	0		µg/L	m	1
		413.0 -> 169.0	0				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	10.886	713.1 -> 669.0	0		µg/L	m	1
		713.1 -> 168.9	0				
PFTrDA	9.778	663.0 -> 619.0	0		µg/L	m	1
		663.0 -> 168.9	0				
PFUnDA	9.686	563.1 -> 519.0	0		µg/L	m	1
		563.1 -> 269.1	0				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
MeFOSA	-	511.9 -> 219.0	-	N.D.			
		511.9 -> 169.0					
MeFOSE	-	616.1 -> 58.9	-	N.D.			
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

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

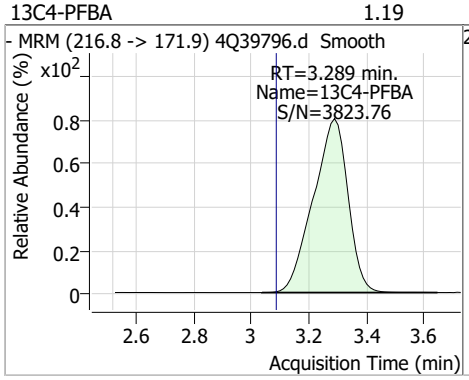
Perfluorinated Compounds by LC/MS/MS

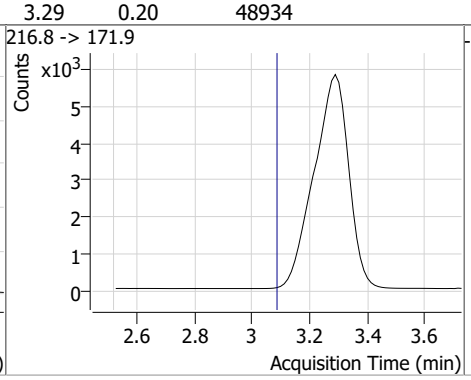
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

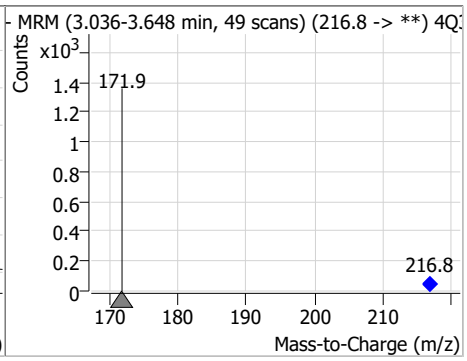
Perfluorinated Compounds by LC/MS/MS



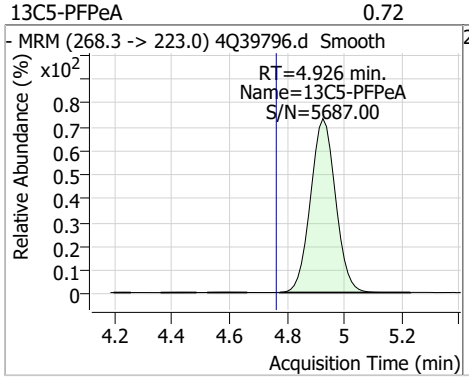
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.19	3.29	0.20	48934				

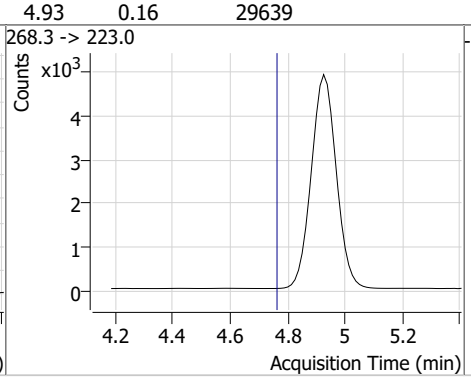


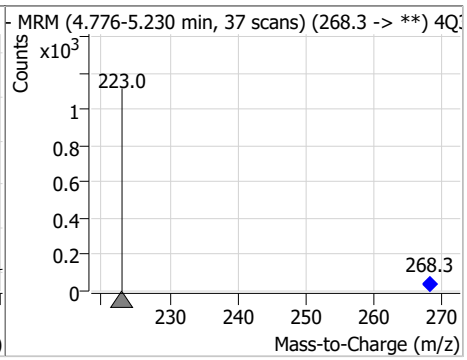




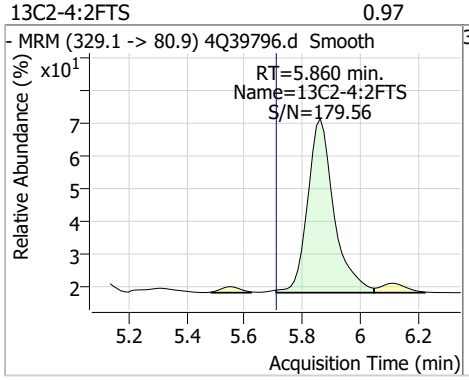
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	0.72	4.93	0.16	29639				

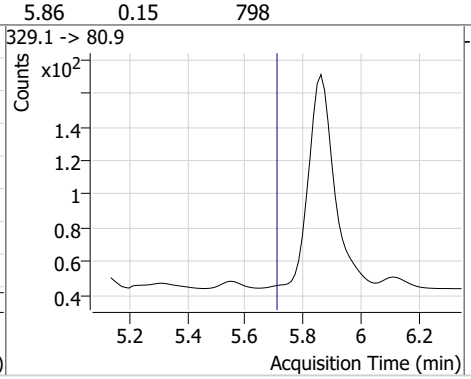


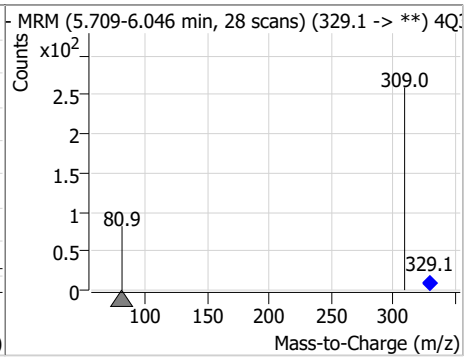




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	0.97	5.86	0.15	798				

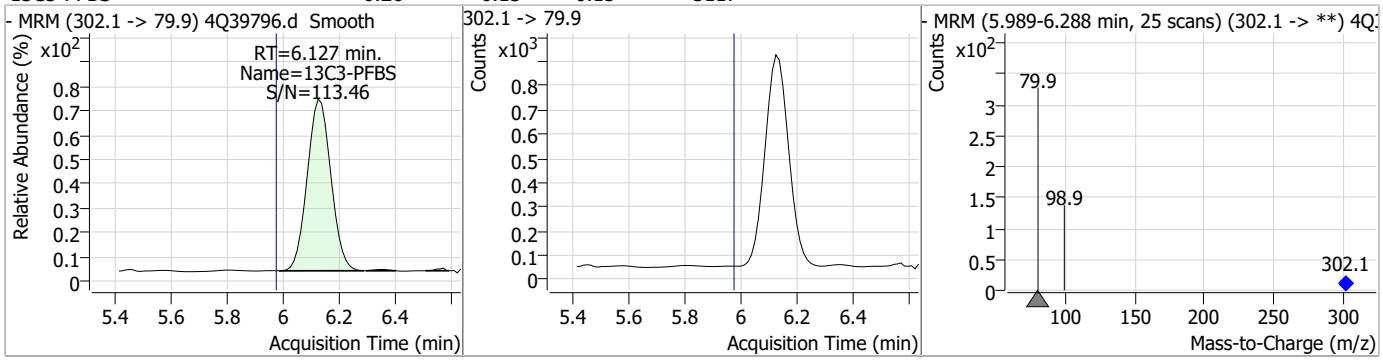




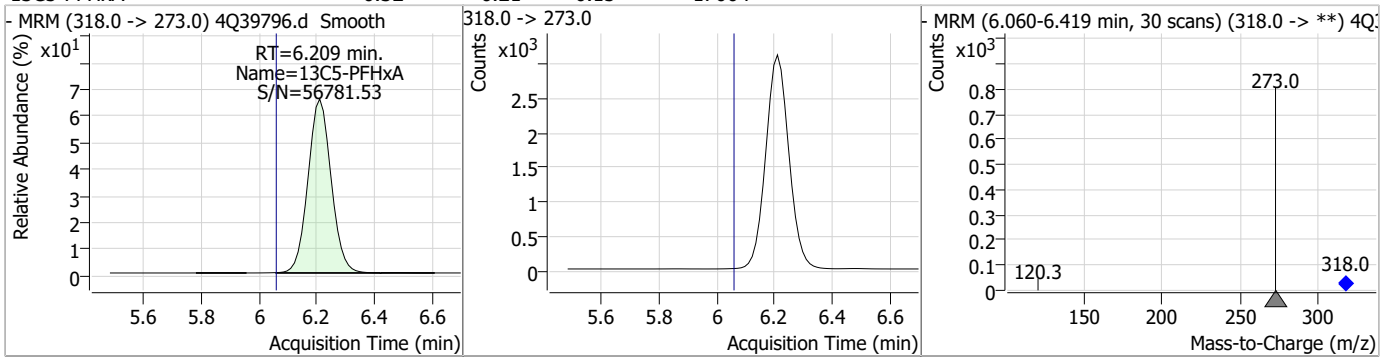


Perfluorinated Compounds by LC/MS/MS

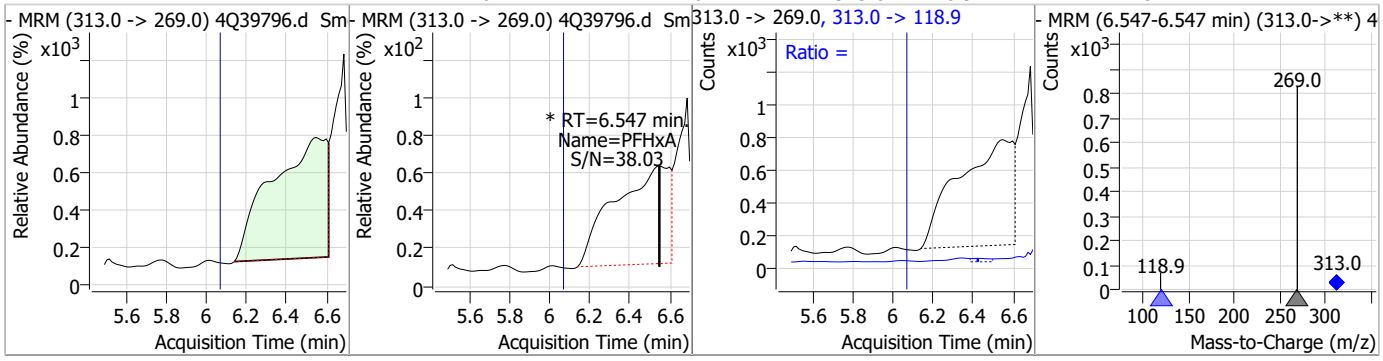
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	0.26	6.13	0.15	5117				



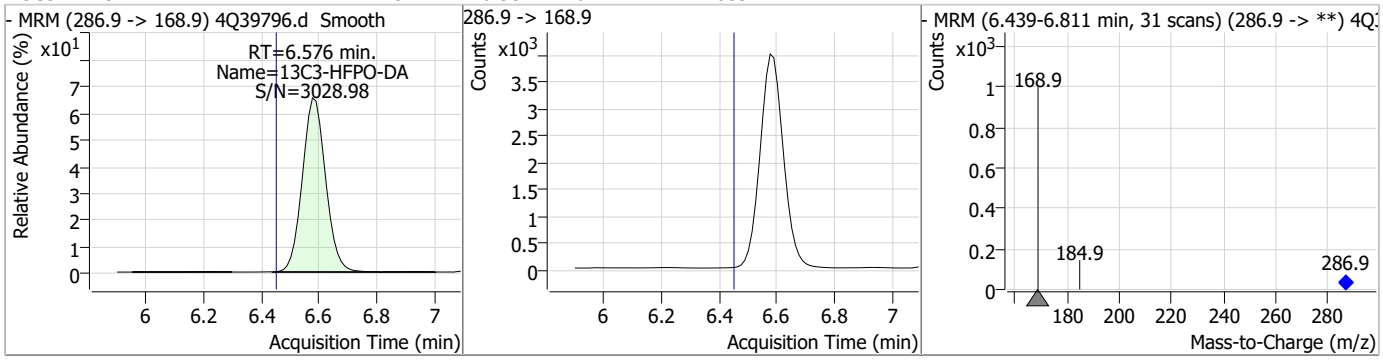
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	0.32	6.21	0.15	17004				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0			0	313.0 -> 118.9		1.5	4.4

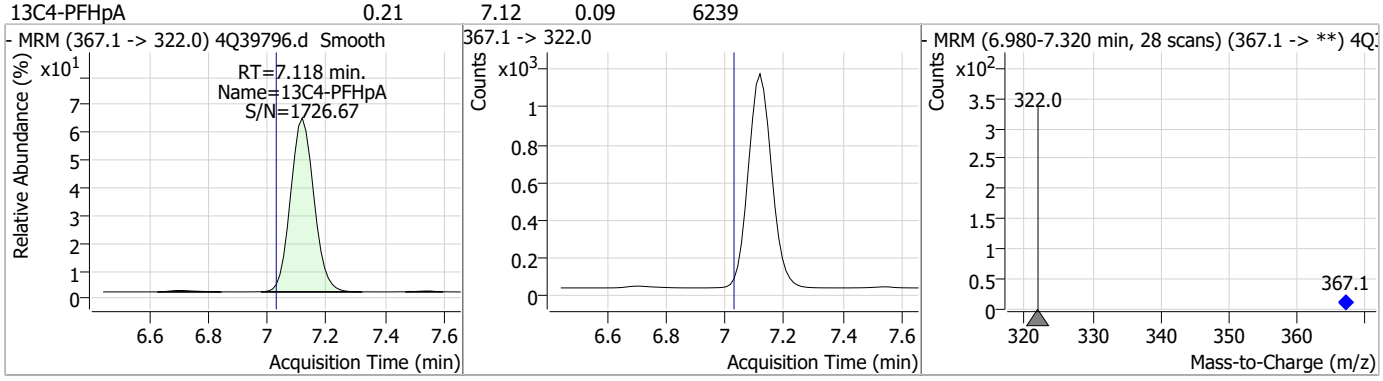


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.18	6.58	0.12	22059				

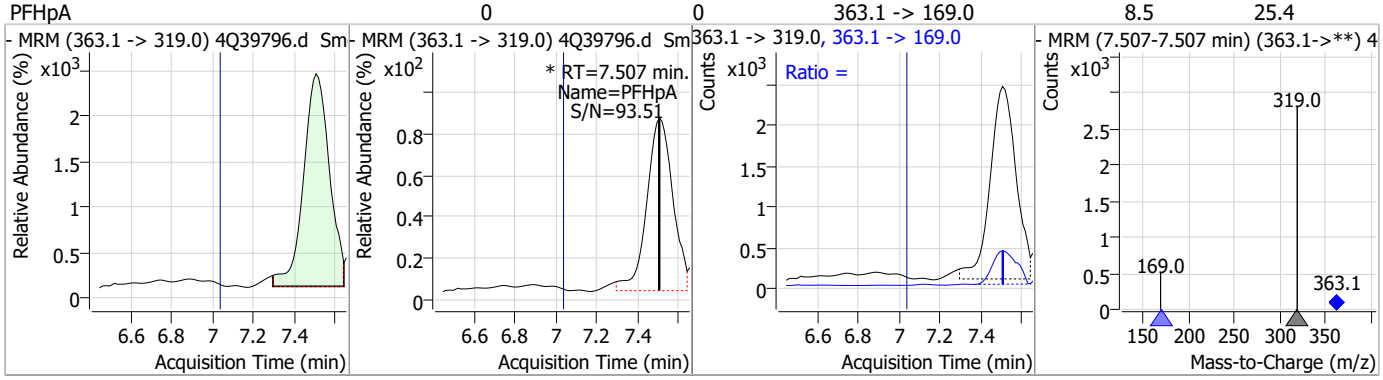


Perfluorinated Compounds by LC/MS/MS

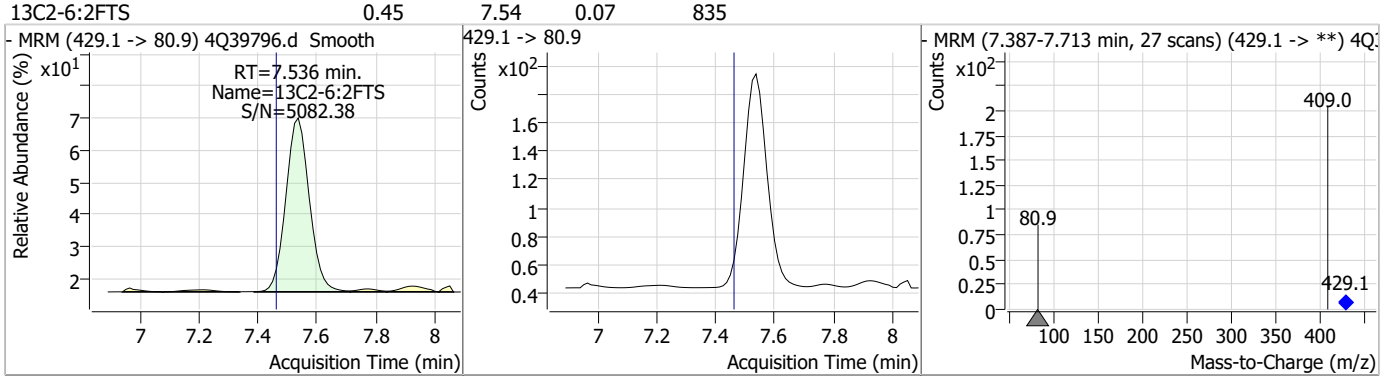
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	0.21	7.12	0.09	6239				



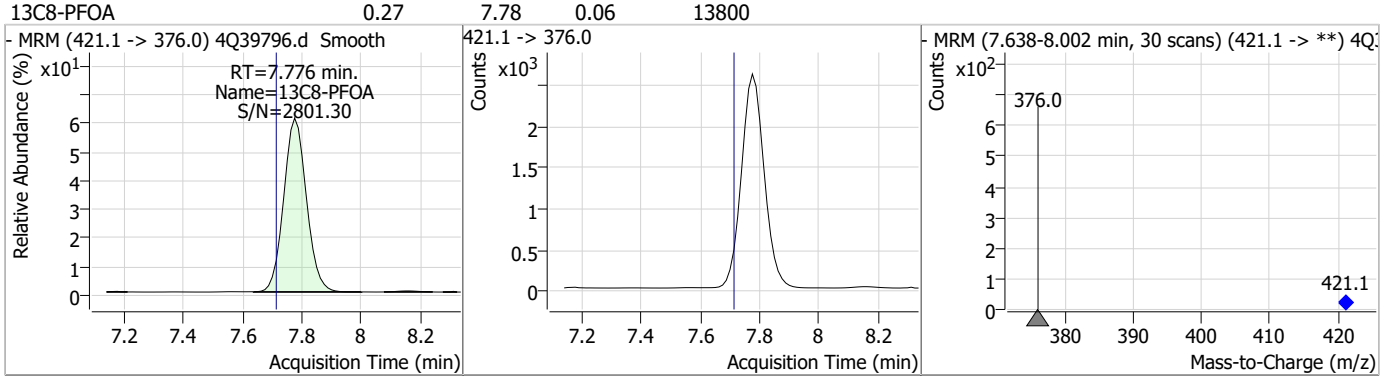
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		8.5	25.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	0.45	7.54	0.07	835				

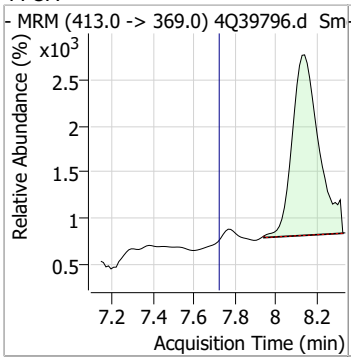


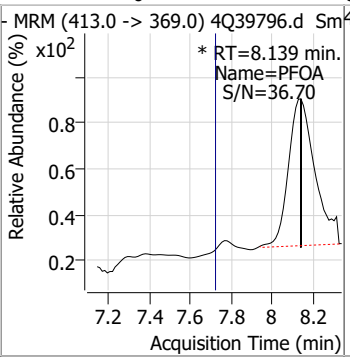
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	0.27	7.78	0.06	13800				

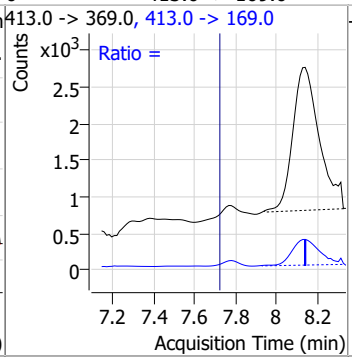


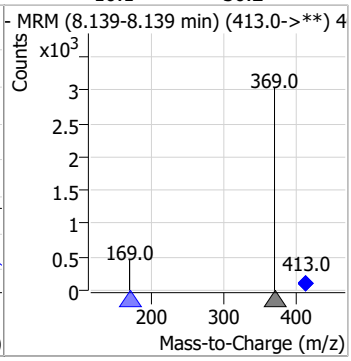
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		10.1	30.2

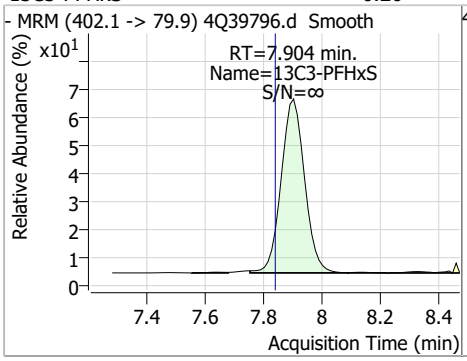


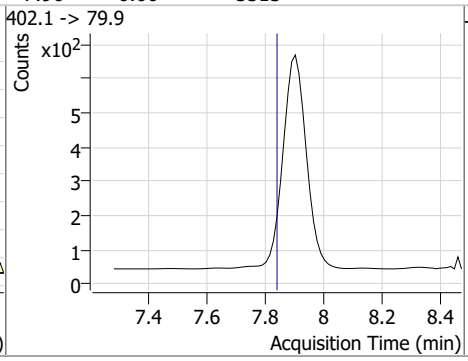


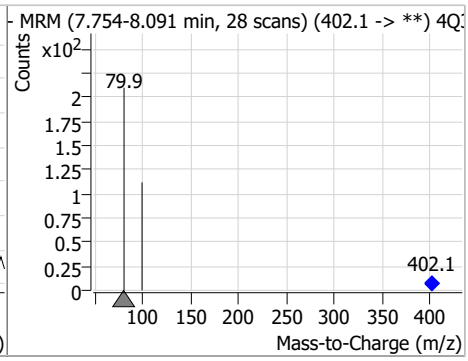




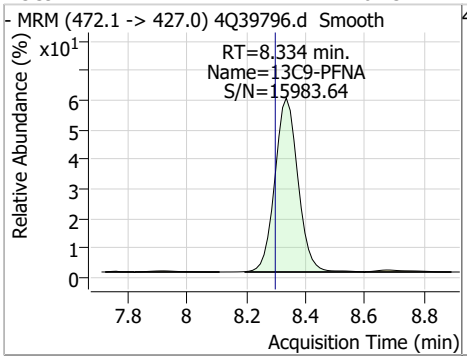
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	0.26	7.90	0.06	3513				

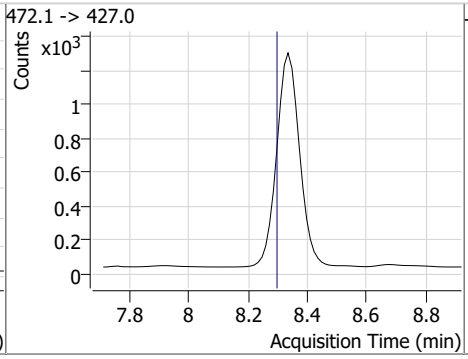


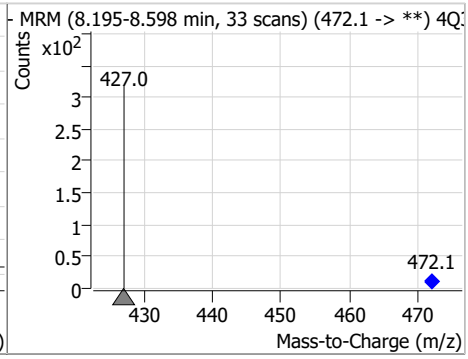




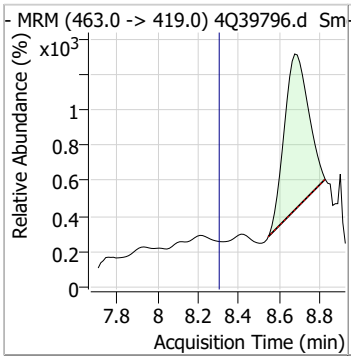
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	0.13	8.33	0.04	6837				

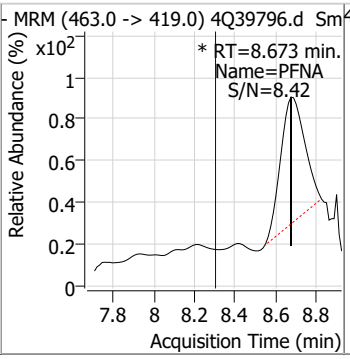


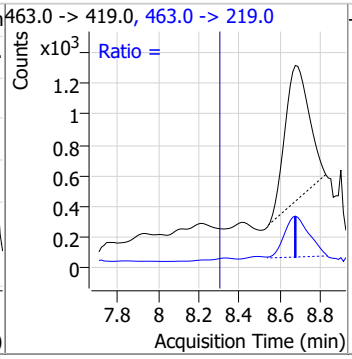


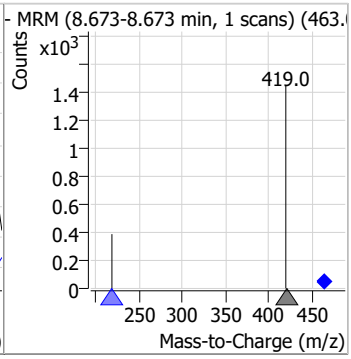


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		11.7	35.0



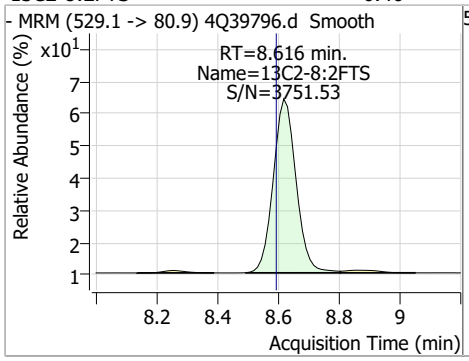


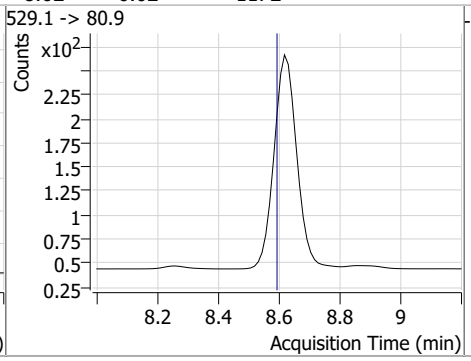


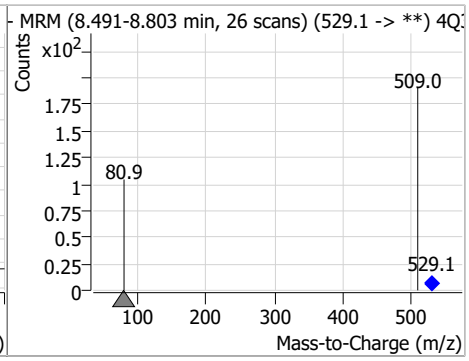


Perfluorinated Compounds by LC/MS/MS

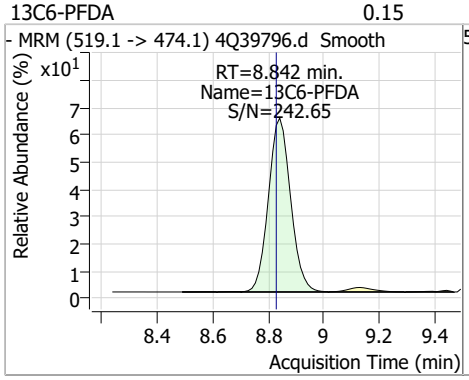
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	0.46	8.62	0.02	1172				

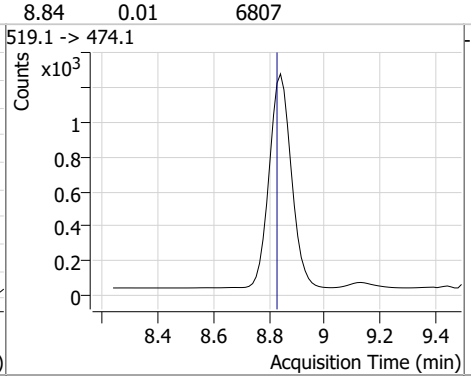


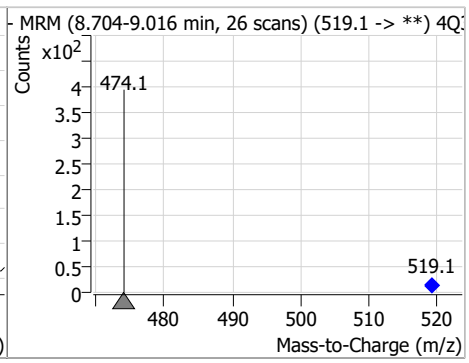




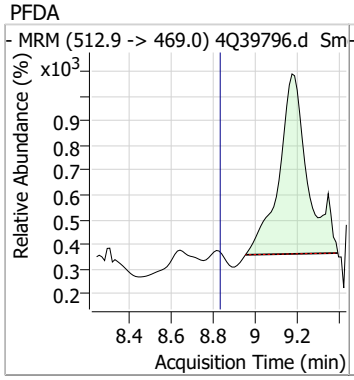
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	0.15	8.84	0.01	6807				

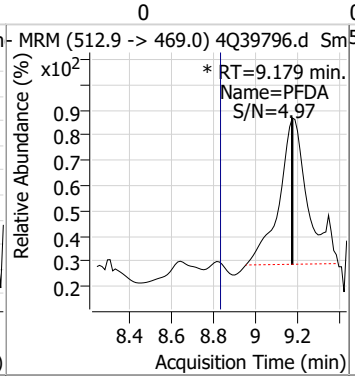


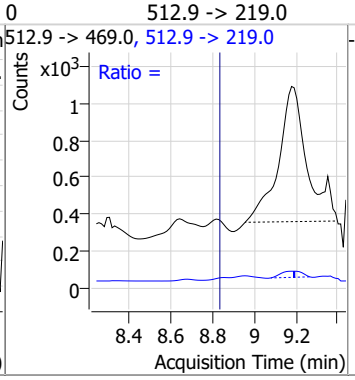


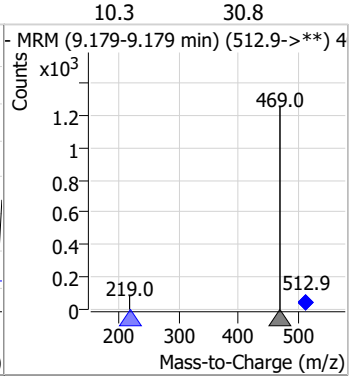


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0		0		512.9 -> 219.0		10.3	30.8

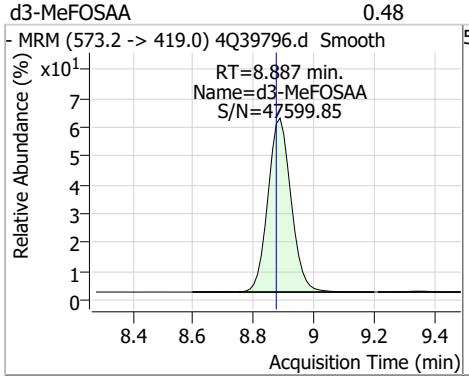


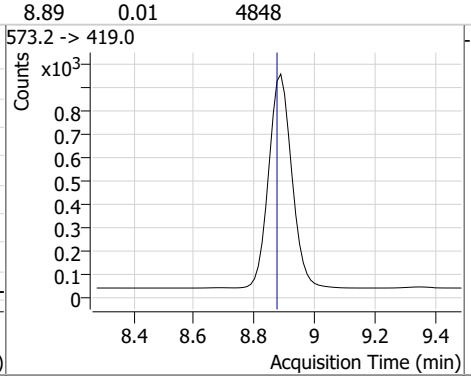


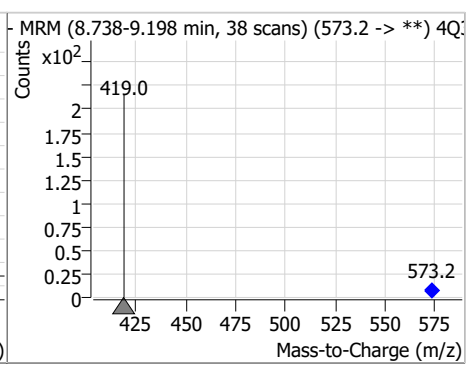




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	0.48	8.89	0.01	4848				

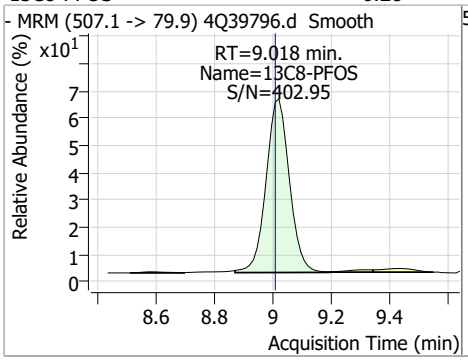


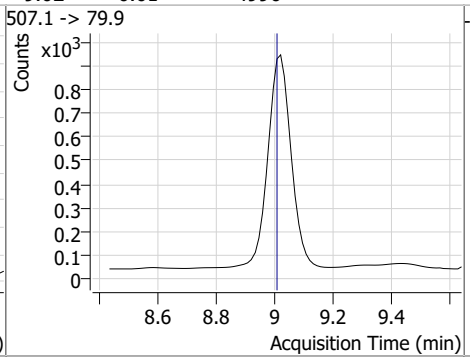


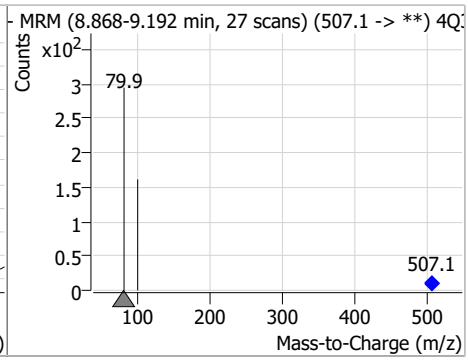


Perfluorinated Compounds by LC/MS/MS

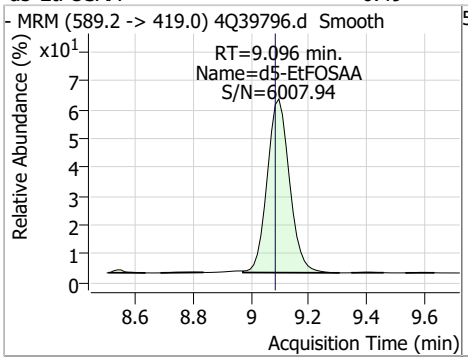
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	0.28	9.02	0.01	4996				

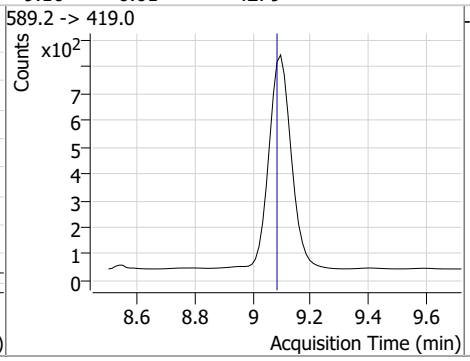


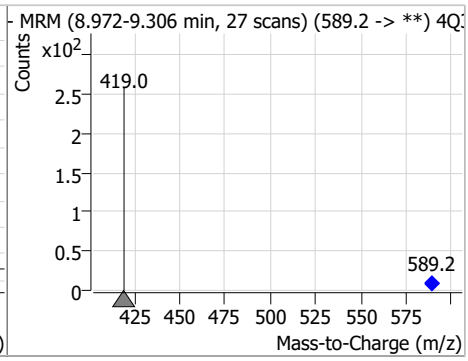




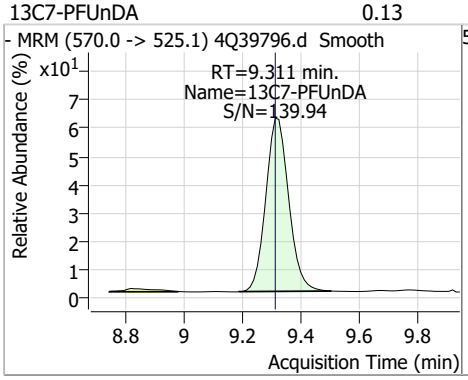
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	0.49	9.10	0.01	4279				

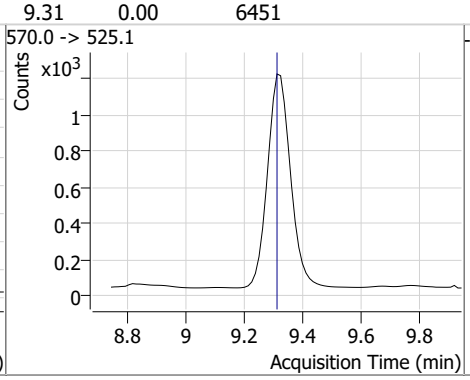


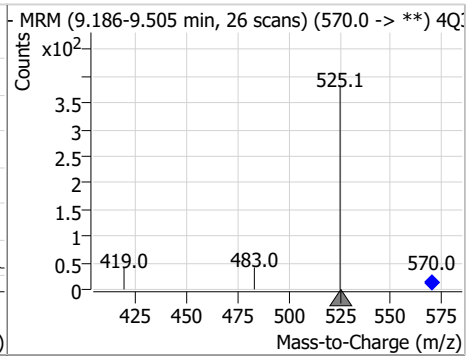




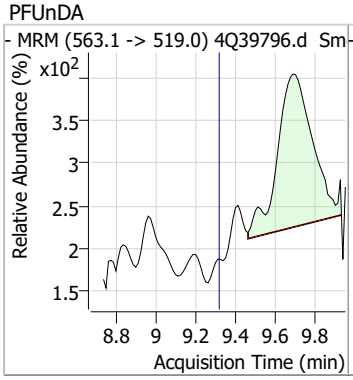
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.13	9.31	0.00	6451				

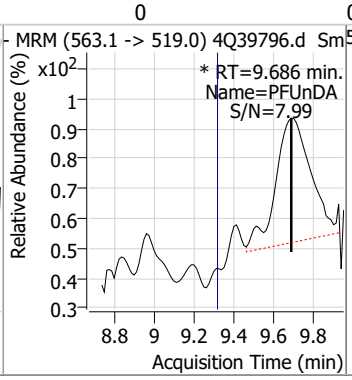


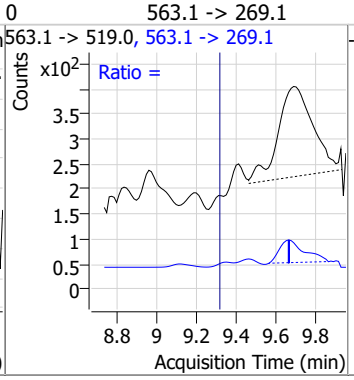


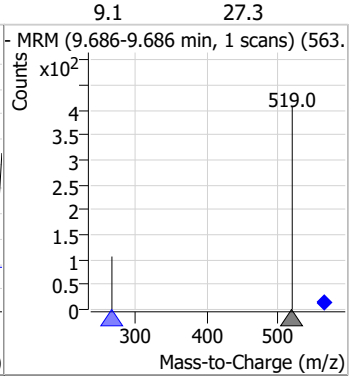


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA		0		0	563.1 -> 269.1		9.1	27.3



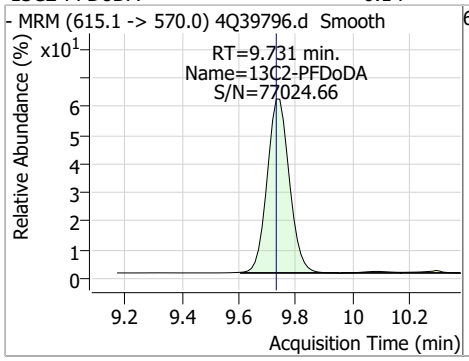


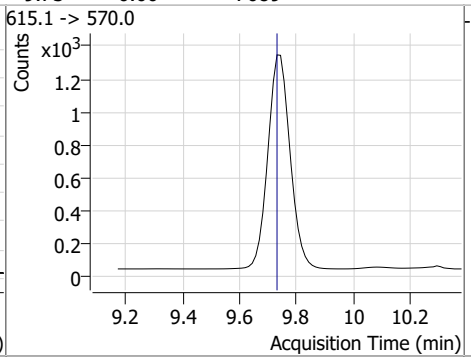


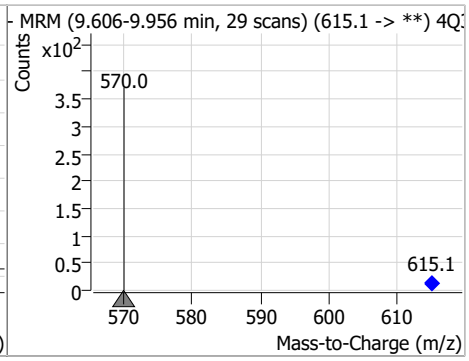


Perfluorinated Compounds by LC/MS/MS

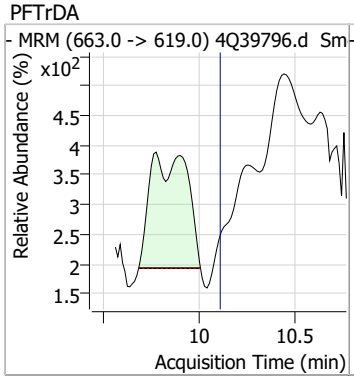
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.14	9.73	0.00	7089				

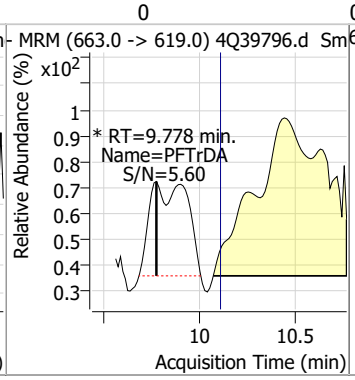


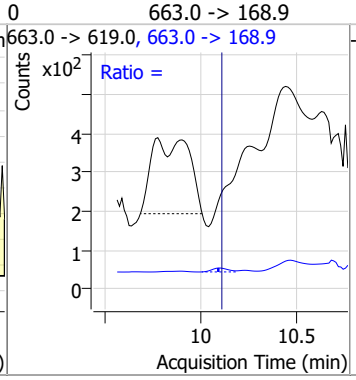


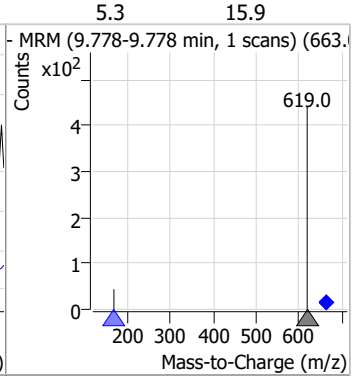


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA		0		0	663.0 -> 168.9		5.3	15.9

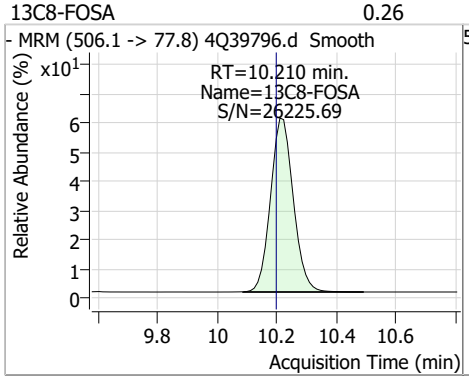


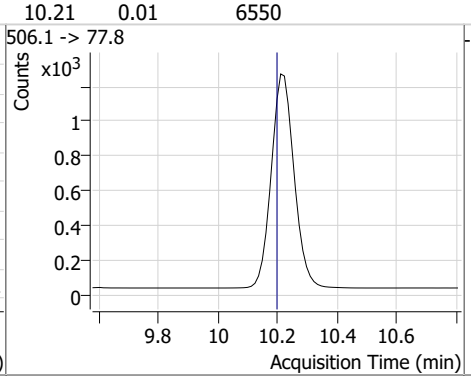


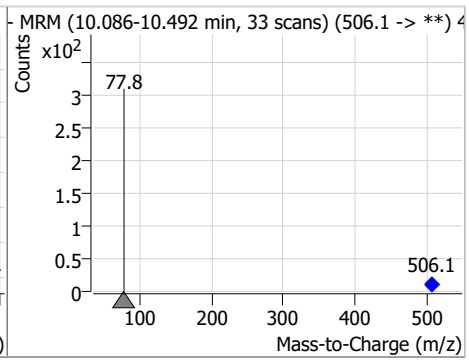




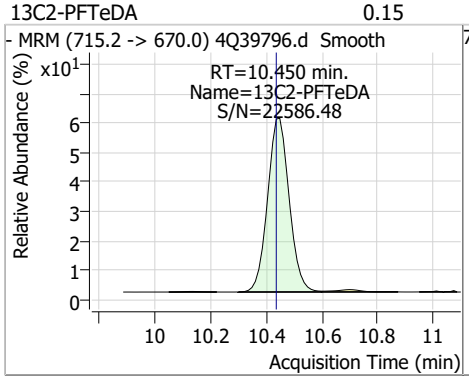
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.26	10.21	0.01	6550				

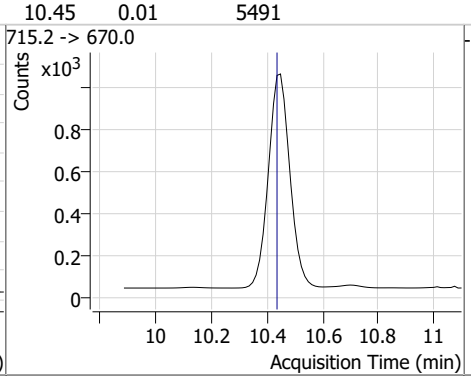


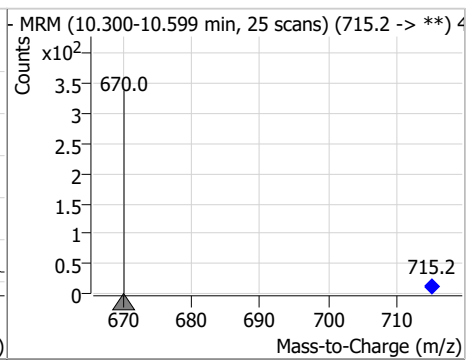




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.15	10.45	0.01	5491				

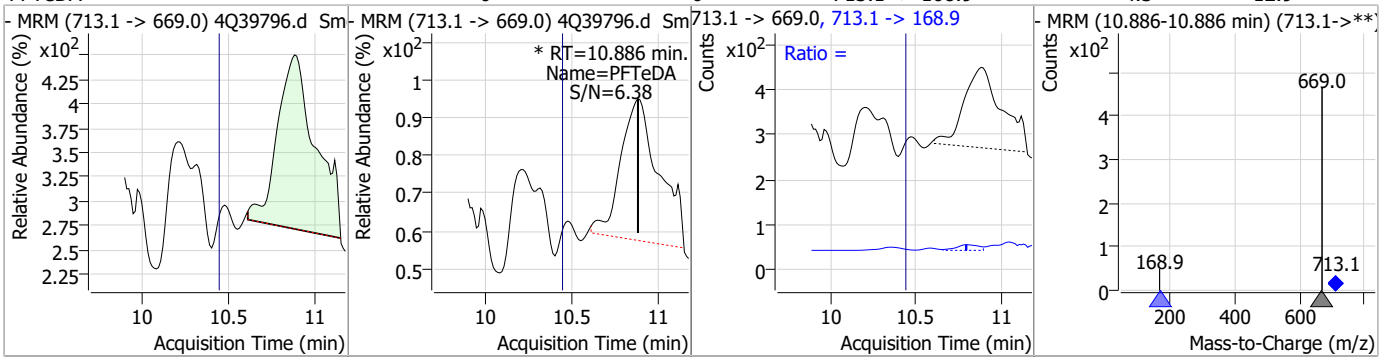




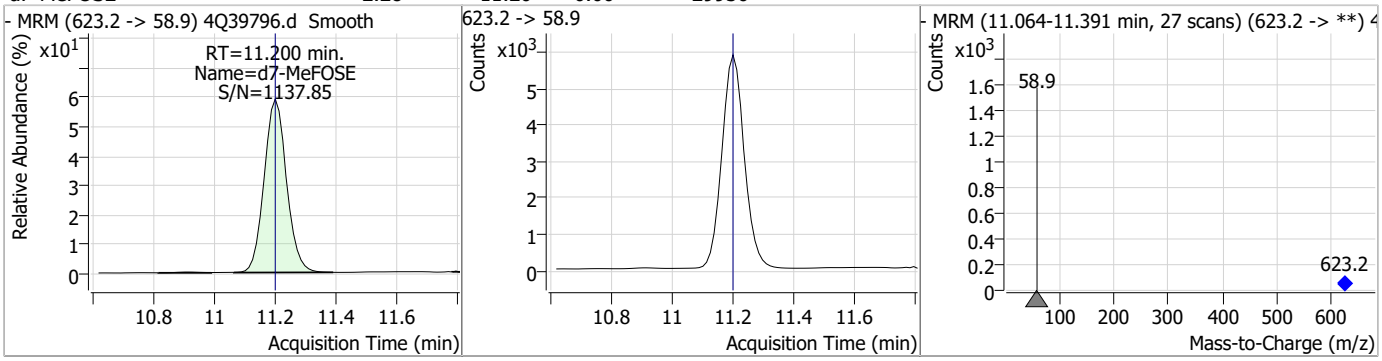


Perfluorinated Compounds by LC/MS/MS

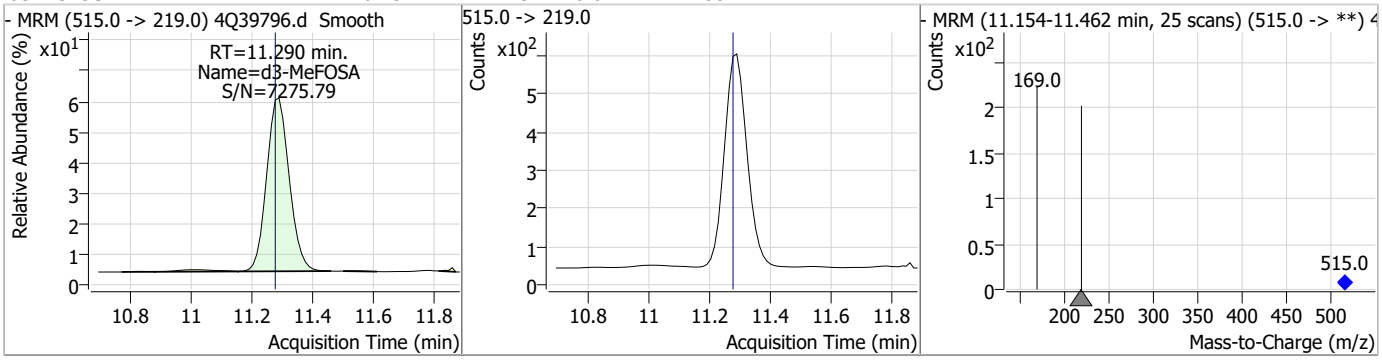
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA		0		0	713.1 -> 168.9		4.3	12.9



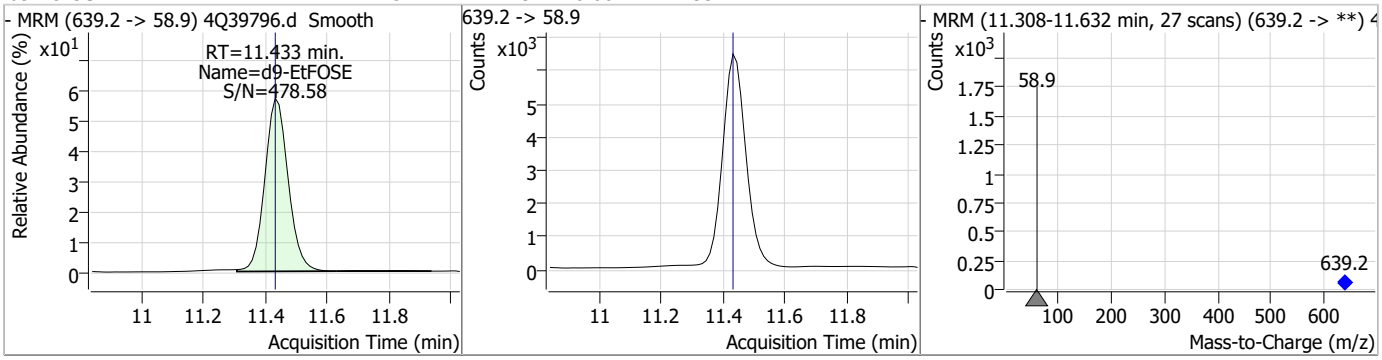
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	2.28	11.20	0.00	29936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.25	11.29	0.01	2887				

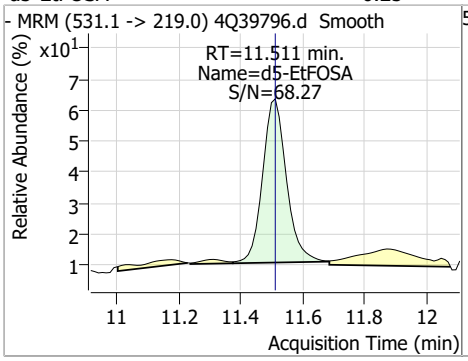


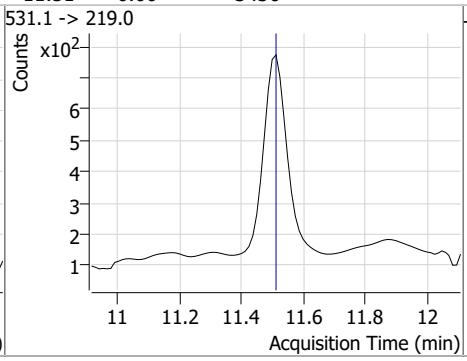
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	2.25	11.43	0.00	33741				

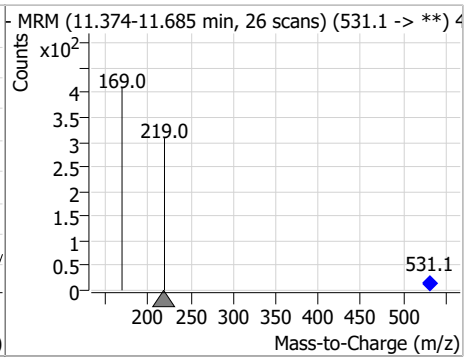


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	0.25	11.51	0.00	3436				







7.1.2

7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39707.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 5:22:41 PM
Sample Name : op95069-mb
Vial : P1-D4
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	423208	10.00	µg/L	0.012
M5-PFPeA	4.813	268.3 -> 223.0	268937	5.00	µg/L	-0.050
M5-PFHxA	6.109	318.0 -> 273.0	170356	2.50	µg/L	-0.063
M4-PFHpA	7.067	367.1 -> 322.0	91091	2.50	µg/L	-0.038
M8-PFOA	7.751	421.1 -> 376.0	147399	2.50	µg/L	-0.037
M9-PFNA	8.321	472.1 -> 427.0	73778	1.25	µg/L	-0.038
M6-PFDA	8.854	519.1 -> 474.1	56129	1.25	µg/L	-0.025
M7-PFUnDA	9.361	570.0 -> 525.1	57744	1.25	µg/L	-0.012
M2-PFDoDA	9.781	615.1 -> 570.0	52141	1.25	µg/L	-0.025
M2-PFTeDA	10.499	715.2 -> 670.0	34118	1.25	µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	50606	2.50	µg/L	-0.012
M3-PFBS	6.039	302.1 -> 79.9	46800	2.50	µg/L	-0.050
M3-PFHxS	7.879	402.1 -> 79.9	33029	2.50	µg/L	-0.037
M8-PFOS	9.043	507.1 -> 79.9	39482	2.50	µg/L	-0.025
M2-4:2FTS	5.759	329.1 -> 80.9	5817	5.00	µg/L	-0.064
M2-6:2FTS	7.499	429.1 -> 80.9	10367	5.00	µg/L	-0.037
M2-8:2FTS	8.616	529.1 -> 80.9	12537	5.00	µg/L	-0.037
M3-MeFOSAA	8.899	573.2 -> 419.0	45657	5.00	µg/L	-0.025
M3-HFPO-DA	6.501	286.9 -> 168.9	128756	10.00	µg/L	-0.050
M5-EtFOSAA	9.121	589.2 -> 419.0	37125	5.00	µg/L	-0.025
M7-MeFOSE	11.235	623.2 -> 58.9	255471	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	292151	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	24234	2.50	µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	19112	2.50	µg/L	0.000
13C4-PFOS	9.044	502.8 -> 79.9	31614	2.50	µg/L	-0.025
13C3-PFBA	3.190	216.0 -> 172.0	192774	5.00	µg/L	0.013
18O2-PFHxS	7.878	403.0 -> 83.9	16973	2.50	µg/L	-0.037
13C4-PFOA	7.752	417.1 -> 372.0	142221	2.50	µg/L	-0.037
13C2-PFDA	8.854	515.1 -> 470.1	43421	1.25	µg/L	-0.025
13C5-PFNA	8.322	468.0 -> 423.0	68081	1.25	µg/L	-0.038
13C2-PFHxA	6.110	315.1 -> 270.0	128108	2.50	µg/L	-0.063
System Monitoring Compounds						
13C2-4:2FTS	5.759	329.1 -> 80.9	5817	9.51	µg/L	-0.064
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 190.2%		
13C2-6:2FTS	7.499	429.1 -> 80.9	10367	7.57	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 151.4%		
13C2-8:2FTS	8.616	529.1 -> 80.9	12537	6.69	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 133.8%		
13C2-PFDoDA	9.781	615.1 -> 570.0	52141	1.24	µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-PFTeDA	10.499	715.2 -> 670.0	34118	1.14	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C3-PFBS	6.039	302.1 -> 79.9	46800	3.19	µg/L	-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.6%		
13C3-PFHxS	7.879	402.1 -> 79.9	33029	3.34	µg/L	-0.037

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 133.4%	
13C4-PFBA	3.186	216.8 -> 171.9	423208	12.17 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.7%	
13C4-PFHpA	7.067	367.1 -> 322.0	91091	3.05 µg/L	-0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.9%	
13C5-PFHxA	6.109	318.0 -> 273.0	170356	3.16 µg/L	-0.063
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 126.5%	
13C5-PFPeA	4.813	268.3 -> 223.0	268937	6.46 µg/L	-0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 129.1%	
13C6-PFDA	8.854	519.1 -> 474.1	56129	1.46 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C7-PFUnDA	9.361	570.0 -> 525.1	57744	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.2%	
13C8-FOSA	10.235	506.1 -> 77.8	50606	2.80 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C8-PFOA	7.751	421.1 -> 376.0	147399	2.89 µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.5%	
13C8-PFOS	9.043	507.1 -> 79.9	39482	3.06 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.3%	
13C9-PFNA	8.321	472.1 -> 427.0	73778	1.52 µg/L	-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.0%	
d3-MeFOSAA	8.899	573.2 -> 419.0	45657	6.29 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 125.8%	
13C3-HFPO-DA	6.501	286.9 -> 168.9	128756	12.60 µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.0%	
d3-MeFOSA	11.315	515.0 -> 219.0	19112	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	9.121	589.2 -> 419.0	37125	5.87 µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
d7-MeFOSE	11.235	623.2 -> 58.9	255471	27.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
d9-EtFOSE	11.470	639.2 -> 58.9	292151	27.06 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
d5-EtFOSA	11.548	531.1 -> 219.0	24234	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
Target Compounds					**QValue**
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	9.290	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDoDA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

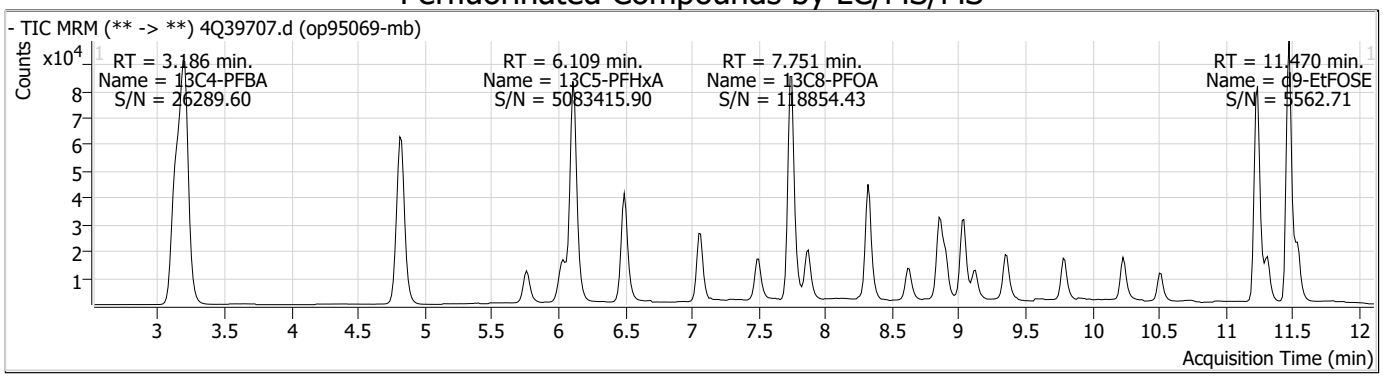
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

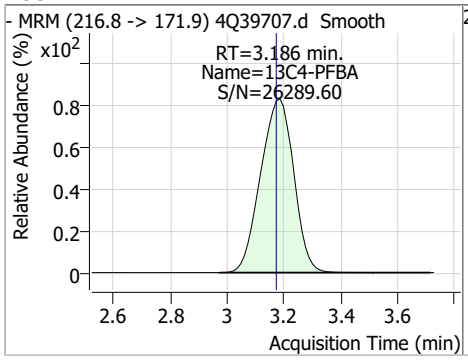
Perfluorinated Compounds by LC/MS/MS

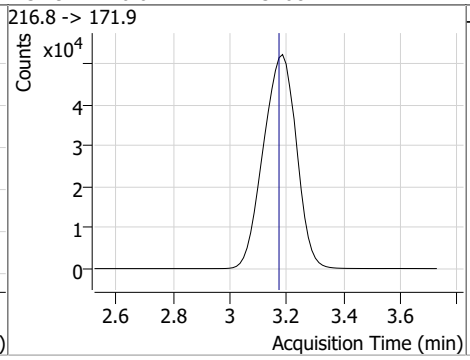
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

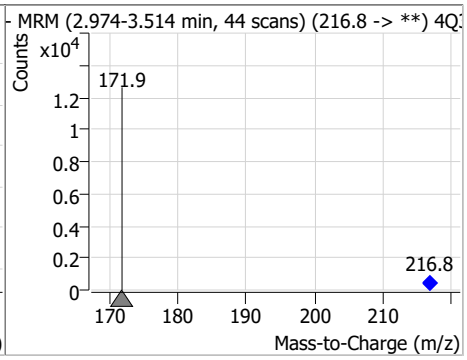
Perfluorinated Compounds by LC/MS/MS



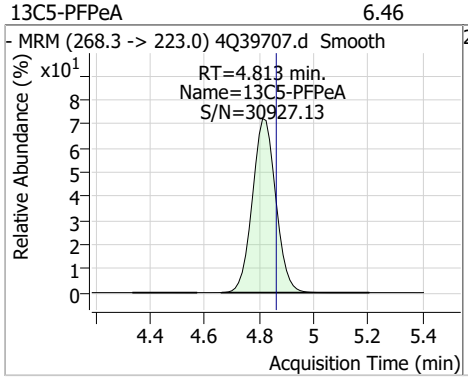
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.17	3.19	0.01	423208				

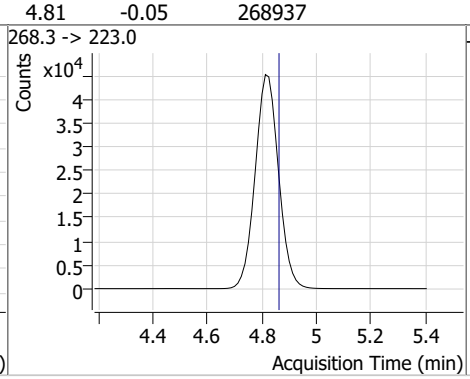


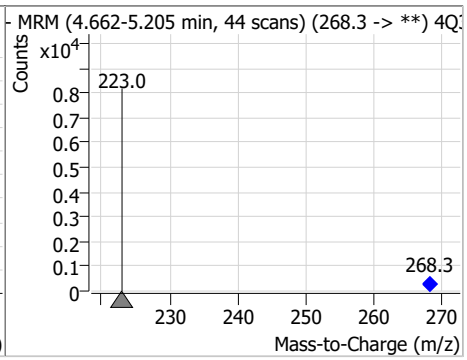




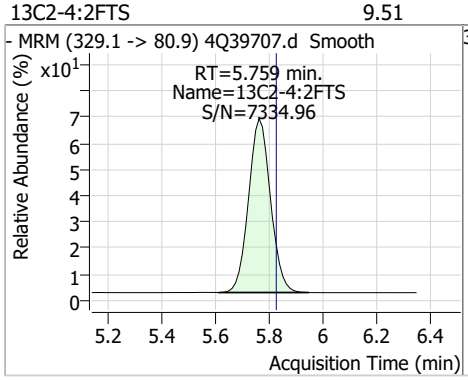
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.46	4.81	-0.05	268937				

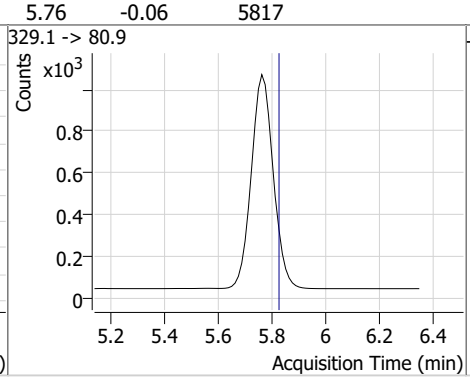


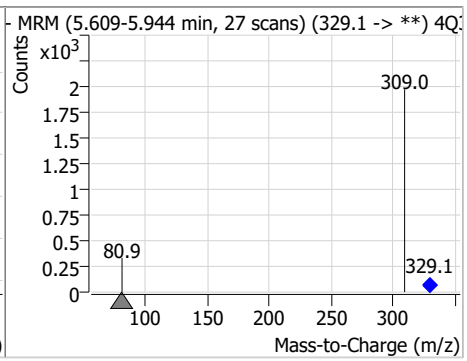




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.51	5.76	-0.06	5817				

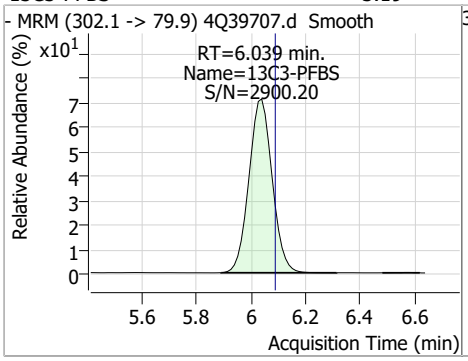


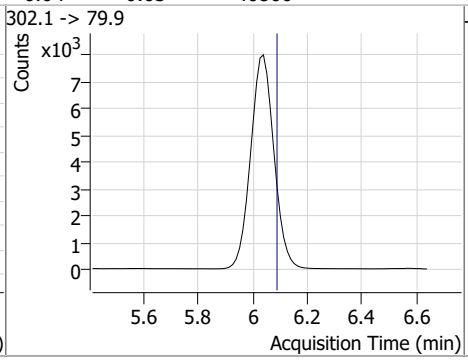


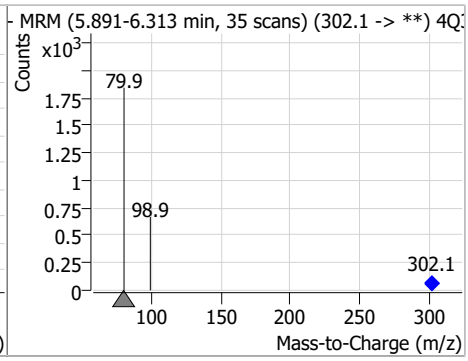


Perfluorinated Compounds by LC/MS/MS

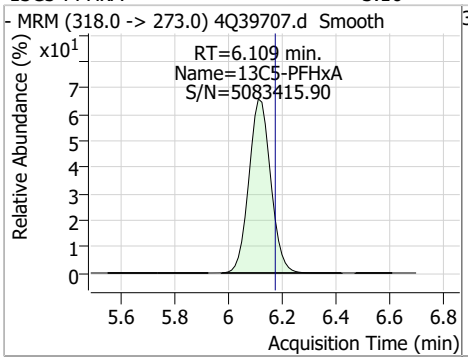
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.19	6.04	-0.05	46800				

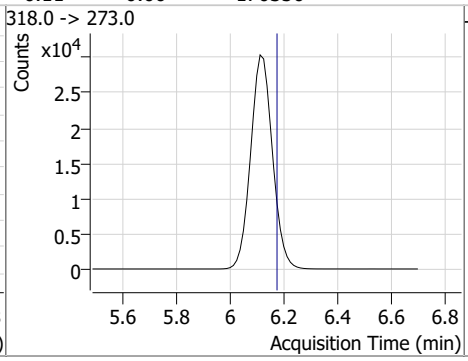


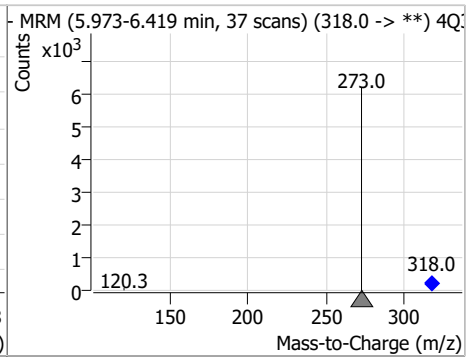




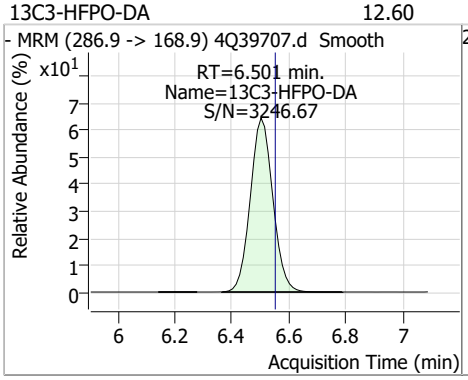
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.16	6.11	-0.06	170356				

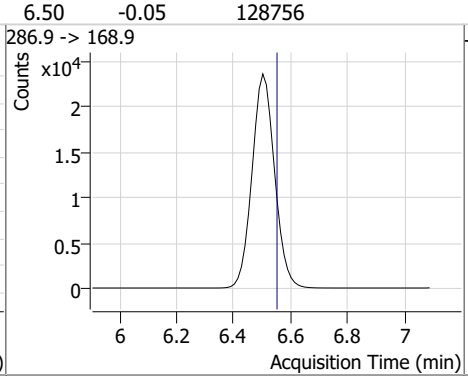


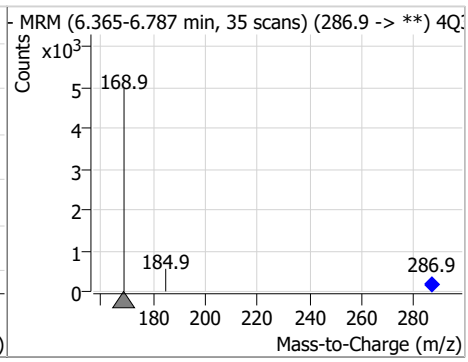




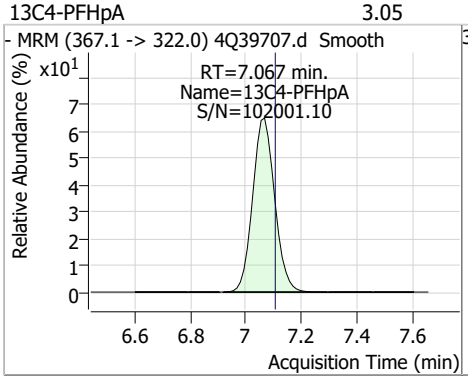
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.60	6.50	-0.05	128756				

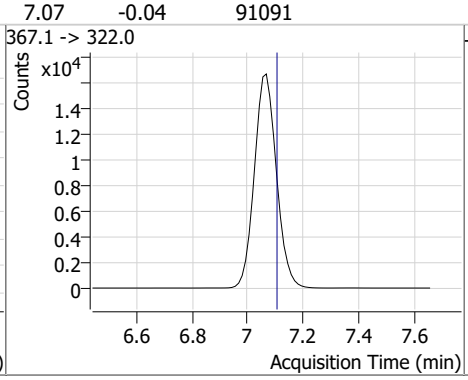


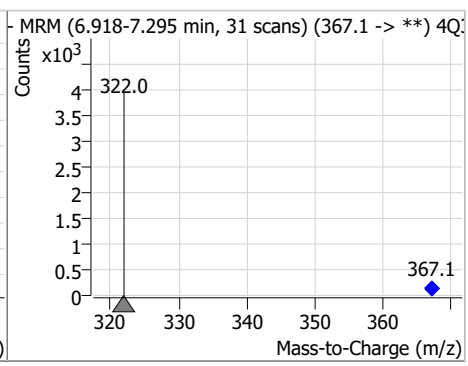




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.05	7.07	-0.04	91091				

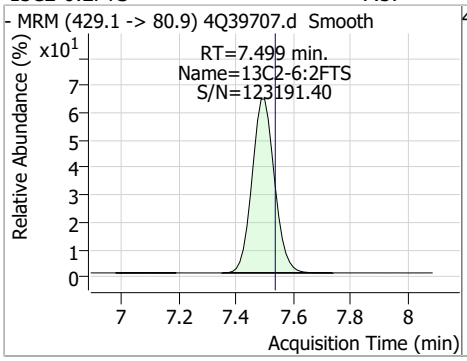


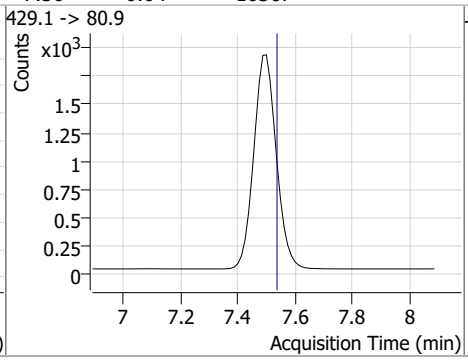


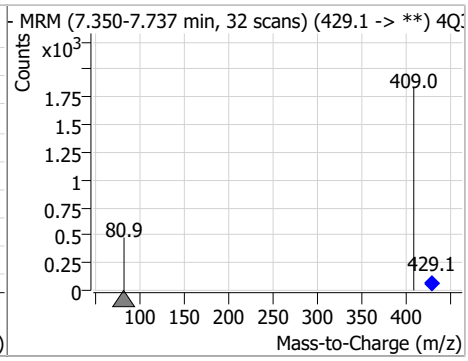


Perfluorinated Compounds by LC/MS/MS

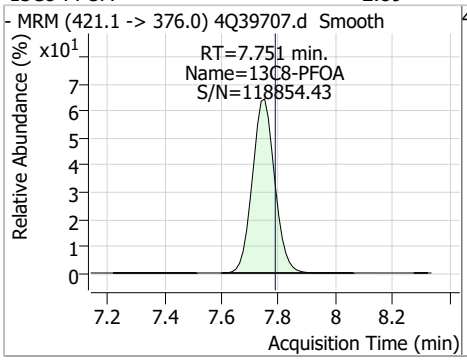
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.57	7.50	-0.04	10367				

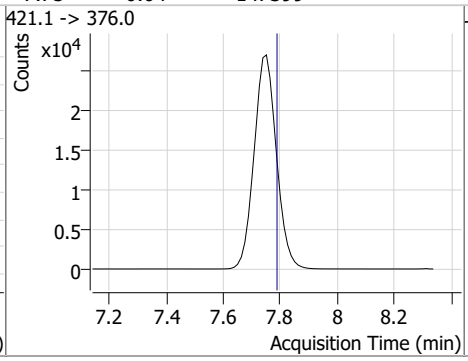


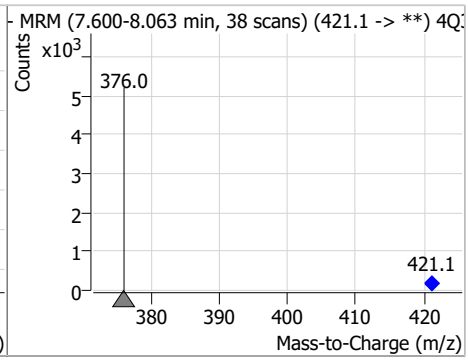




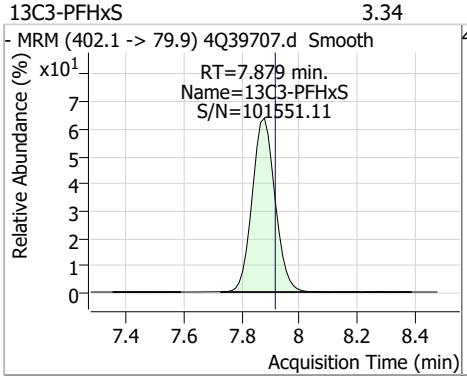
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.89	7.75	-0.04	147399				

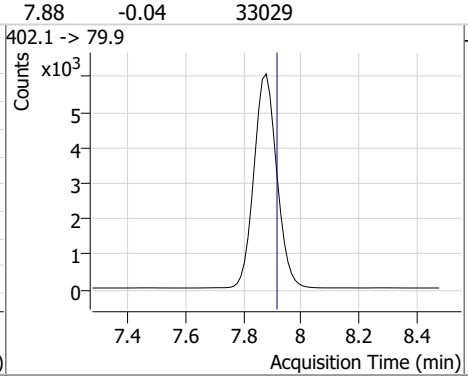


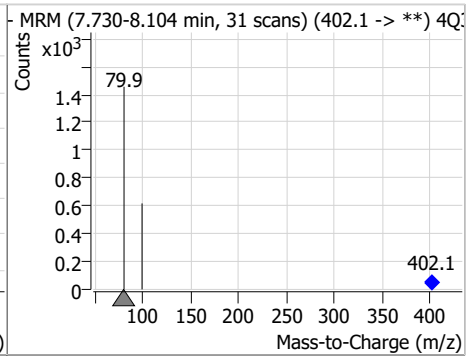




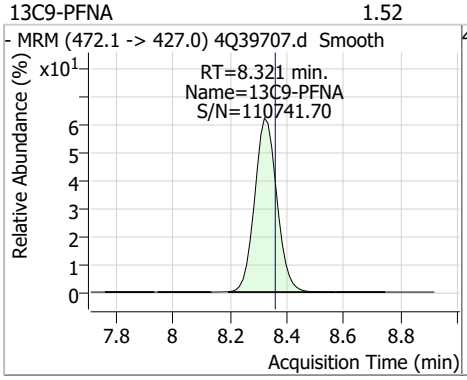
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.34	7.88	-0.04	33029				

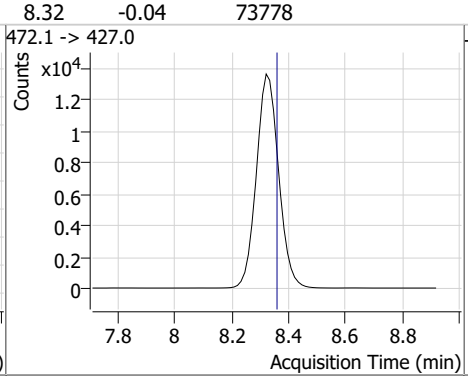


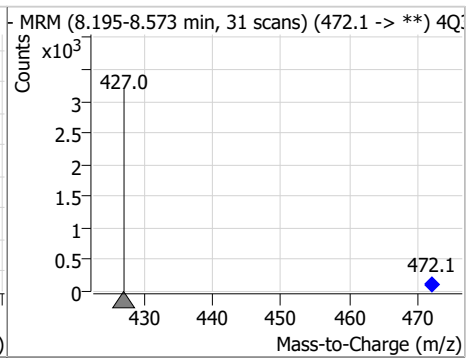




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.52	8.32	-0.04	73778				

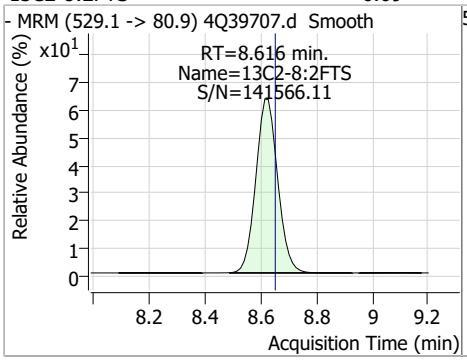


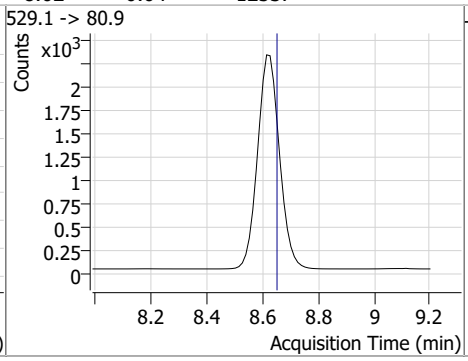


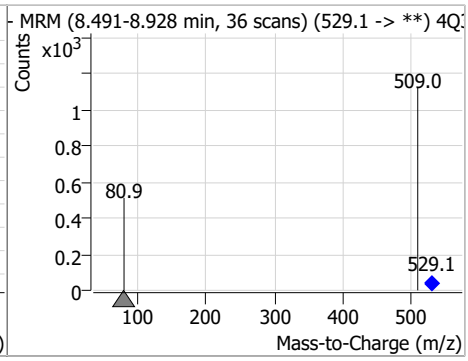


Perfluorinated Compounds by LC/MS/MS

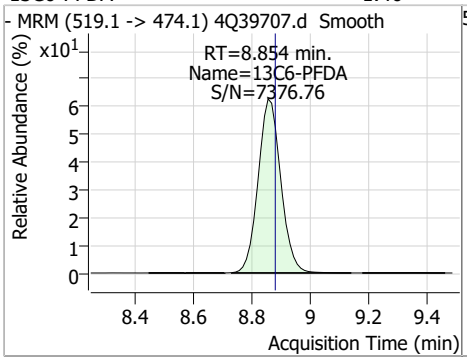
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.69	8.62	-0.04	12537				

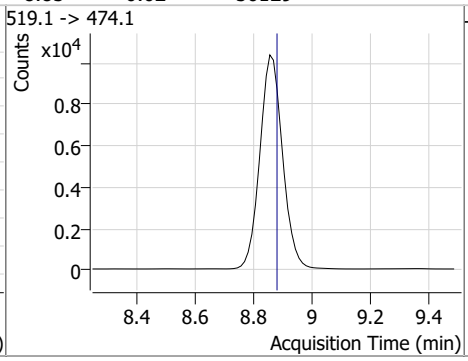


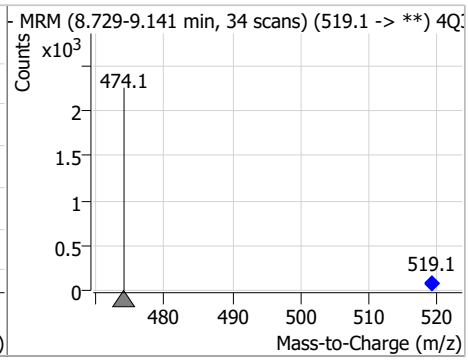




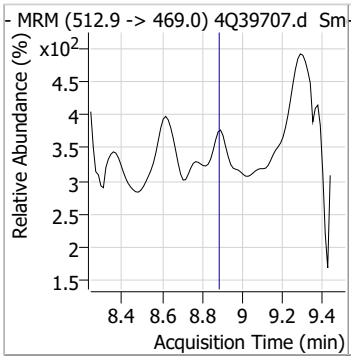
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.46	8.85	-0.02	56129				

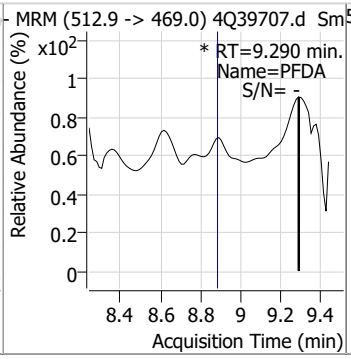


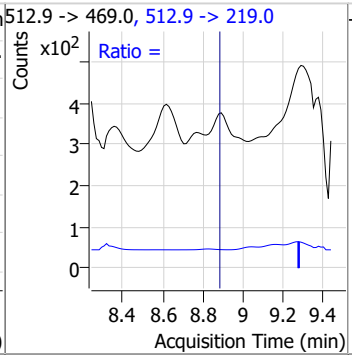


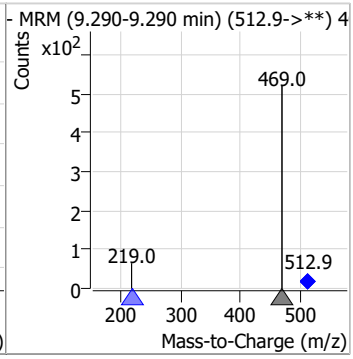


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA		0		0	512.9 -> 219.0		10.3	30.8

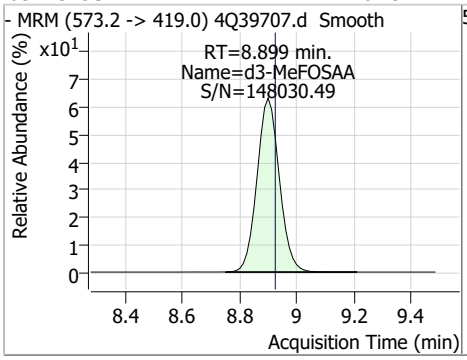


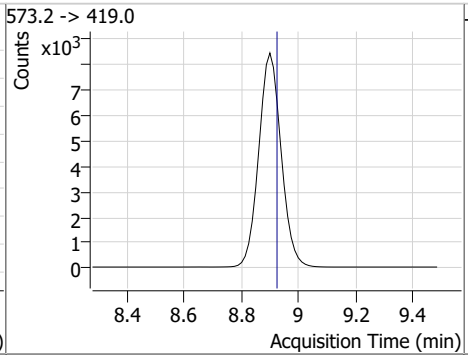


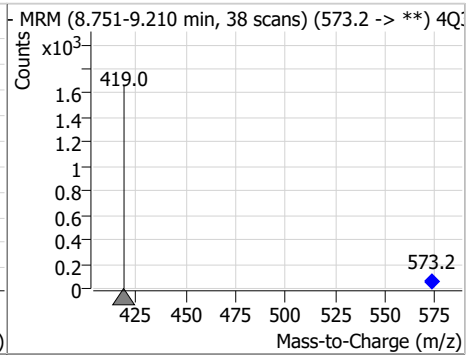




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.29	8.90	-0.02	45657				

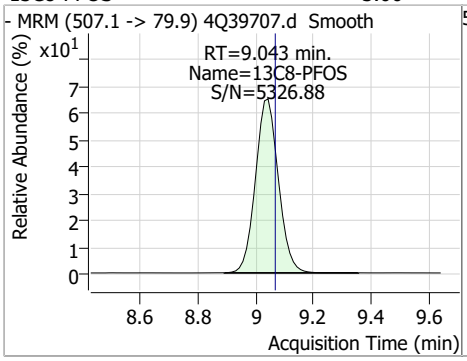


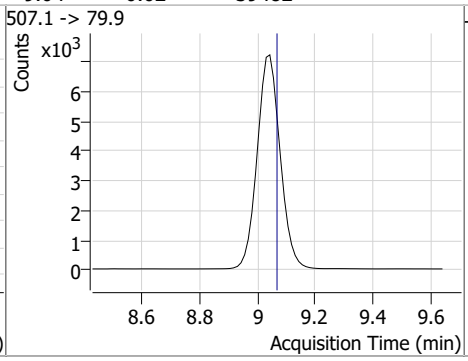


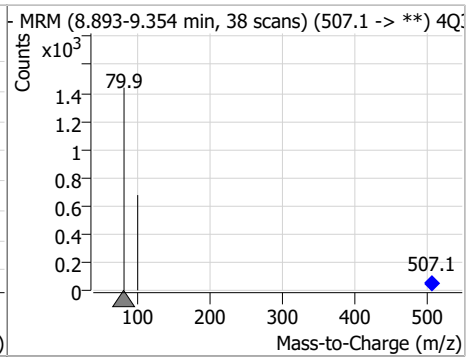


Perfluorinated Compounds by LC/MS/MS

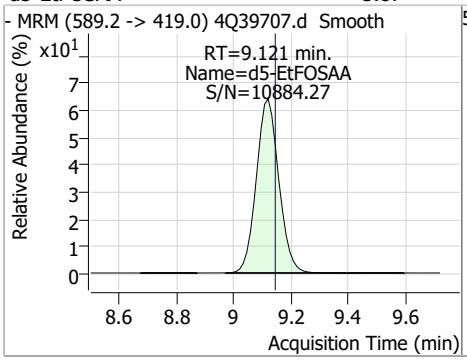
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.06	9.04	-0.02	39482				

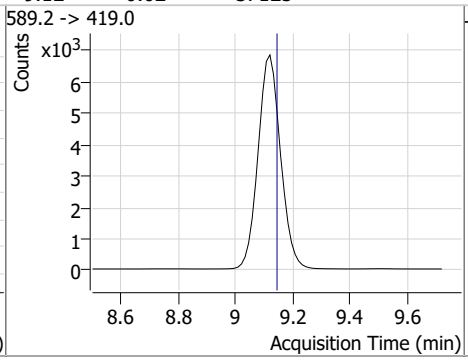


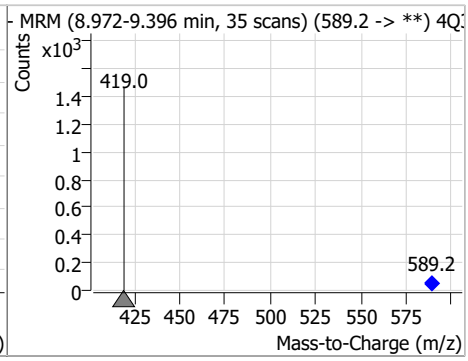




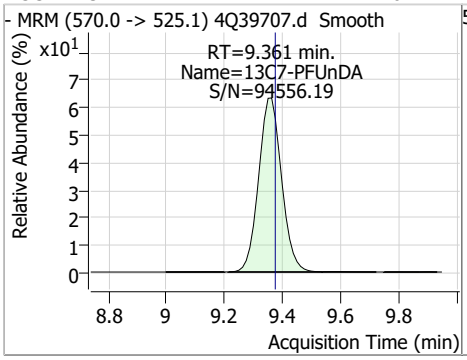
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.87	9.12	-0.02	37125				

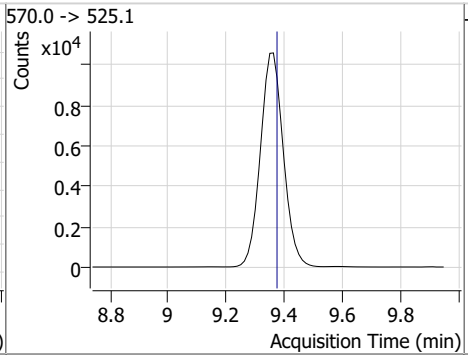


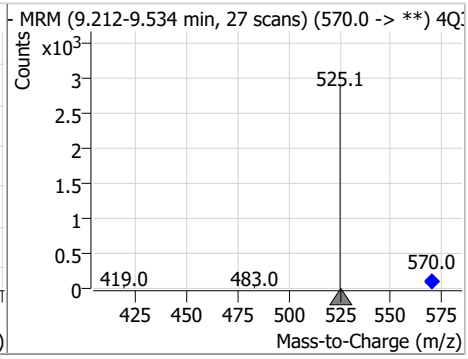




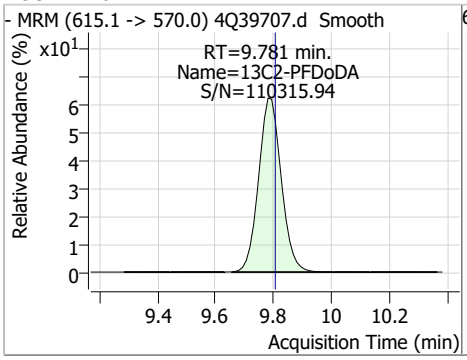
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.40	9.36	-0.01	57744				

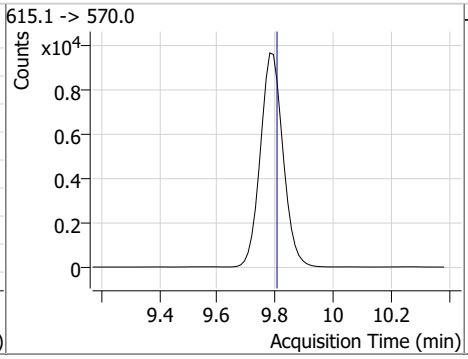


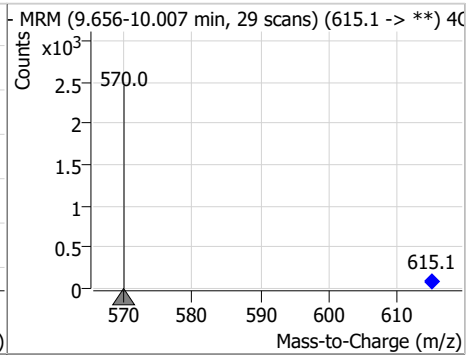




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	9.78	-0.02	52141				

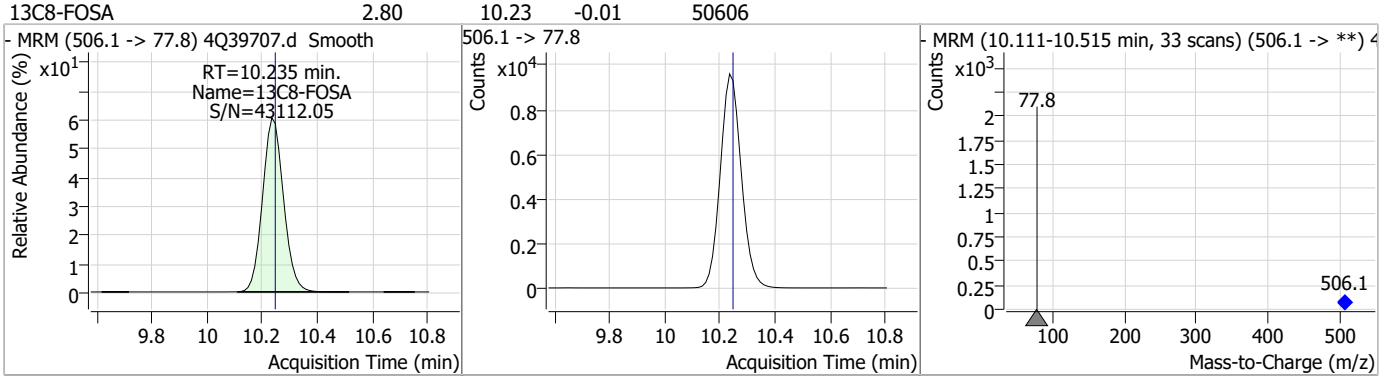




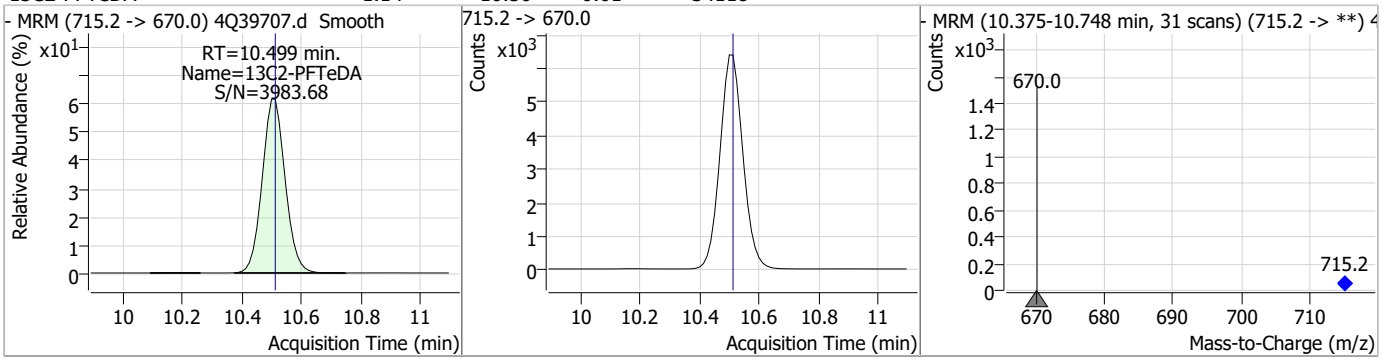


Perfluorinated Compounds by LC/MS/MS

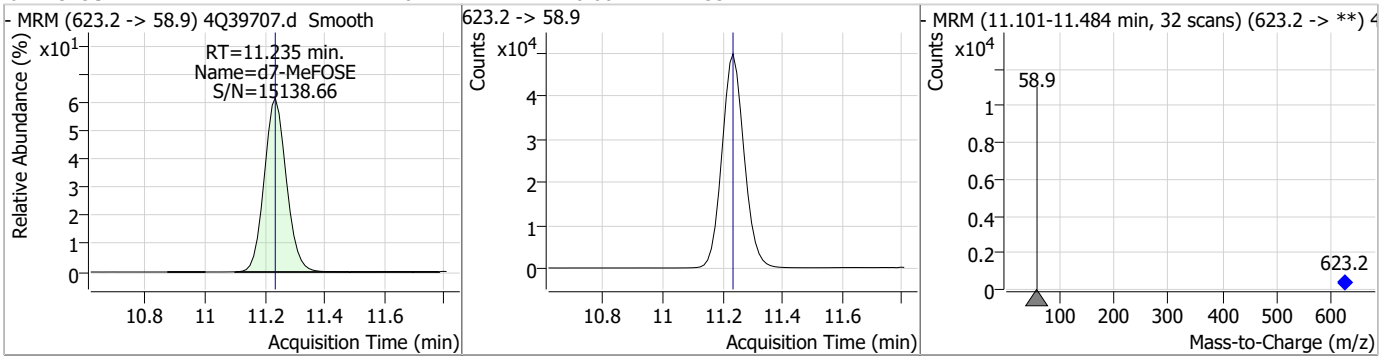
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.80	10.23	-0.01	50606				



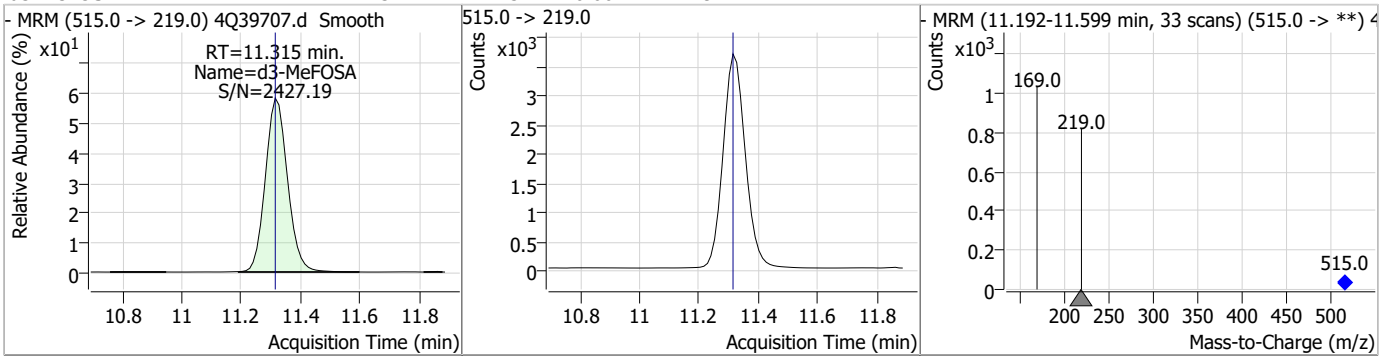
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	10.50	-0.01	34118				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.10	11.24	0.00	255471				

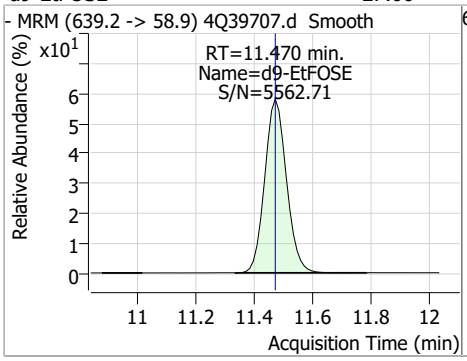


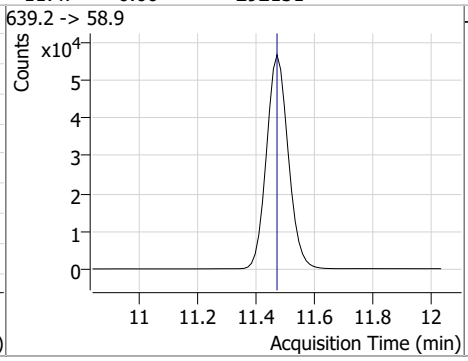
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	11.31	0.00	19112				

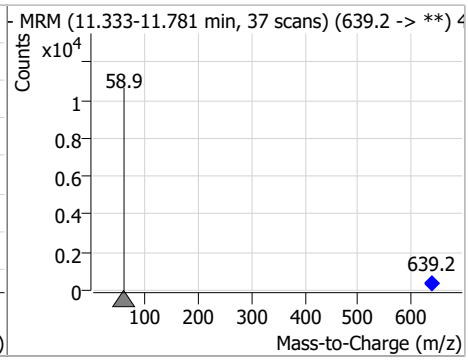


Perfluorinated Compounds by LC/MS/MS

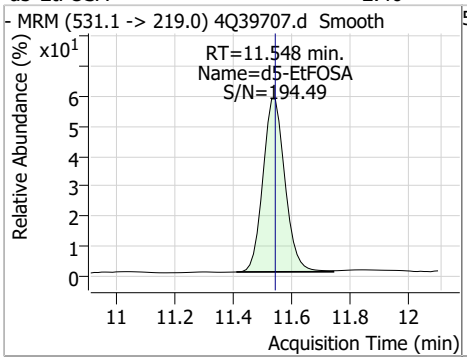
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.06	11.47	0.00	292151				

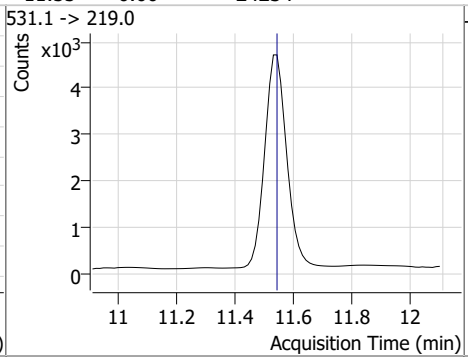


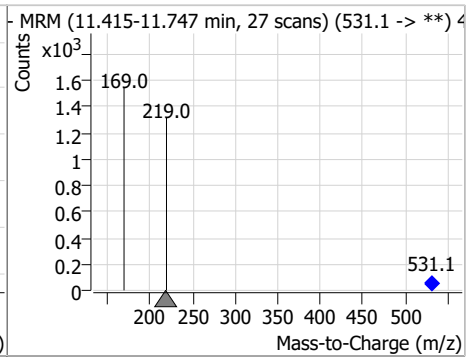




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.46	11.55	0.00	24234				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39699.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 3:06:13 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	458728	10.00	µg/L	0.012
M5-PFPeA	4.863	268.3 -> 223.0	296708	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	195696	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	105386	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	166224	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	83708	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	65303	1.25	µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	70923	1.25	µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	68124	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	50131	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	60255	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	51177	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	34261	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40890	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	5594	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	10615	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	14794	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	51747	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	142112	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39851	5.00	µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	318909	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	369217	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	33345	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	26212	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	42592	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	253122	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	24757	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	194102	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	55101	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	92267	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	177500	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	5594	6.27	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 125.4%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10615	5.32	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C2-8:2FTS	8.653	529.1 -> 80.9	14794	5.41	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	68124	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	10.512	715.2 -> 670.0	50131	1.32	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C3-PFBS	6.089	302.1 -> 79.9	51177	2.39	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFHxS	7.917	402.1 -> 79.9	34261	2.37	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C4-PFBA	3.186	216.8 -> 171.9	458728	10.05 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	7.106	367.1 -> 322.0	105386	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	6.172	318.0 -> 273.0	195696	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C5-PFPeA	4.863	268.3 -> 223.0	296708	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C6-PFDA	8.891	519.1 -> 474.1	65303	1.34 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C7-PFUnDA	9.373	570.0 -> 525.1	70923	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C8-FOSA	10.247	506.1 -> 77.8	60255	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOA	7.788	421.1 -> 376.0	166224	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOS	9.068	507.1 -> 79.9	40890	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C9-PFNA	8.360	472.1 -> 427.0	83708	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.924	573.2 -> 419.0	51747	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	142112	10.04 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d3-MeFOSA	11.327	515.0 -> 219.0	26212	2.35 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
d5-EtFOSAA	9.146	589.2 -> 419.0	39851	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
d7-MeFOSE	11.248	623.2 -> 58.9	318909	25.11 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d9-EtFOSE	11.482	639.2 -> 58.9	369217	25.38 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d5-EtFOSA	11.548	531.1 -> 219.0	33345	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

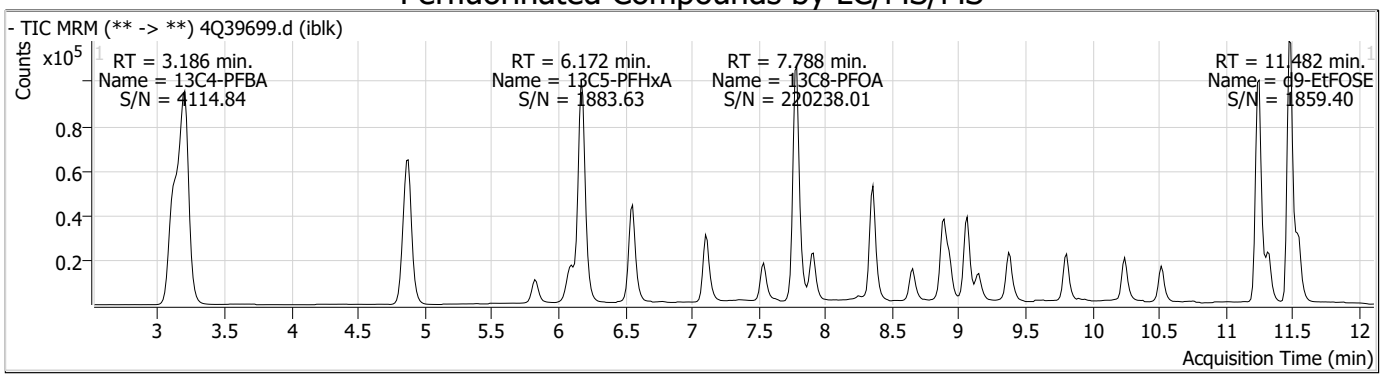
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	7.569	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.765	413.0 -> 369.0	808	0.01	µg/L	#m	66
		413.0 -> 169.0	290				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 168.9					
PFUnDA	9.374	563.1 -> 519.0	1762	0.04	µg/L	#	64
		563.1 -> 269.1	42				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
MeFOSA	-	511.9 -> 219.0	-	N.D.			
		511.9 -> 169.0					
MeFOSE	-	616.1 -> 58.9	-	N.D.			
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

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

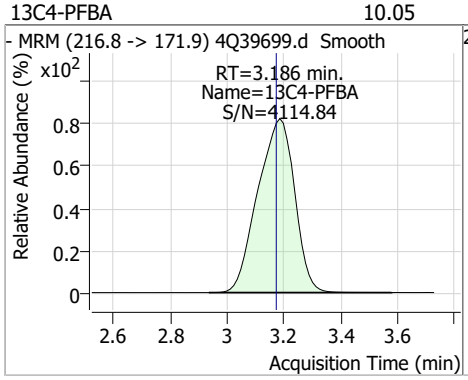
Perfluorinated Compounds by LC/MS/MS

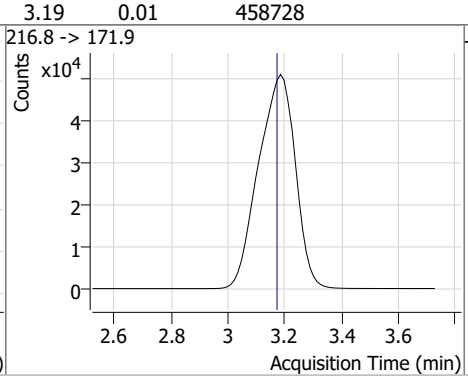
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

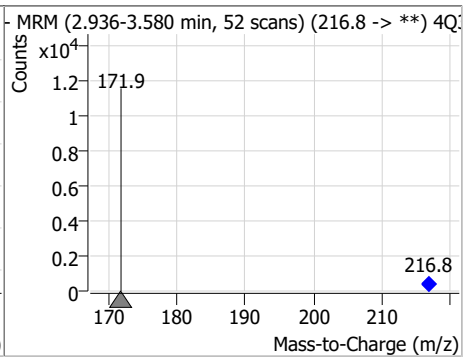
Perfluorinated Compounds by LC/MS/MS



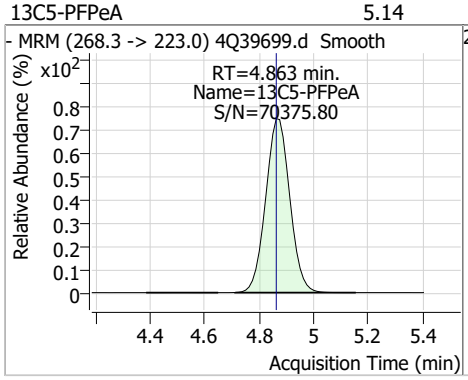
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.05	3.19	0.01	458728				

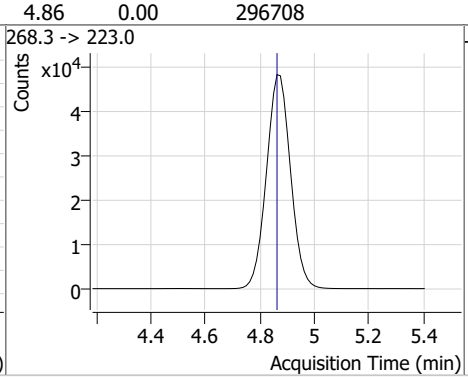


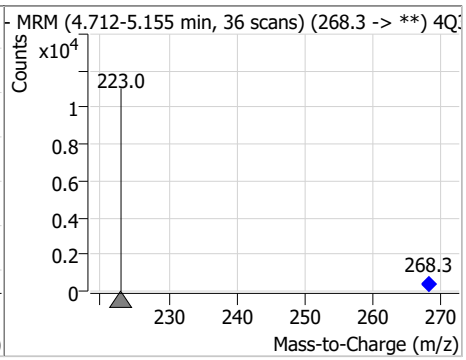




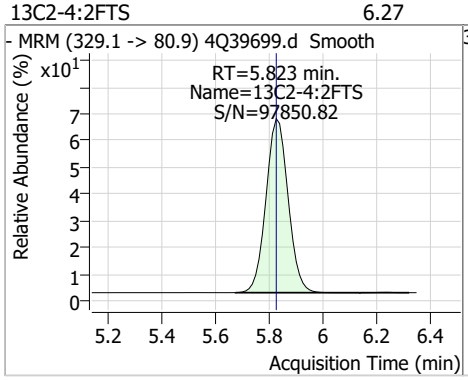
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.14	4.86	0.00	296708				

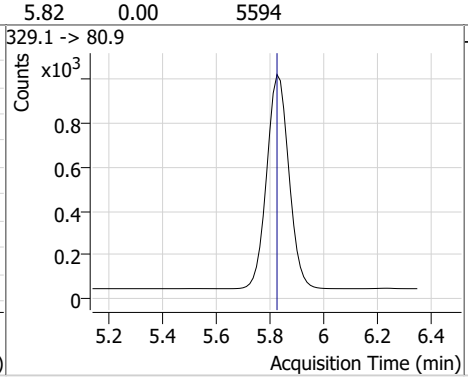


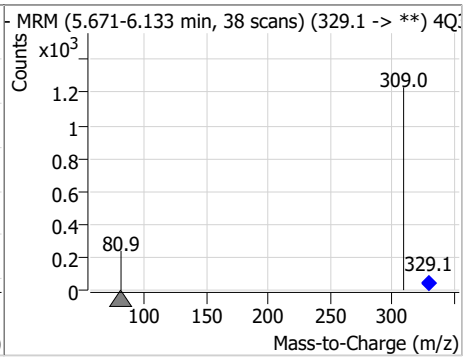




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.27	5.82	0.00	5594				

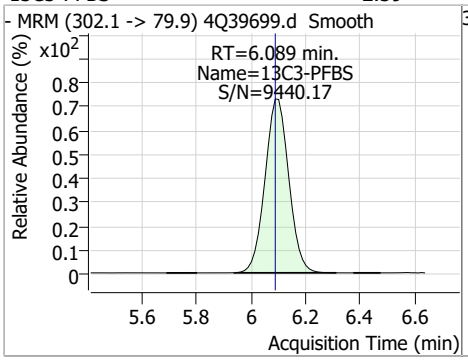


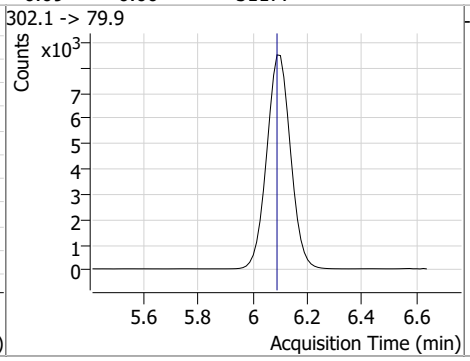


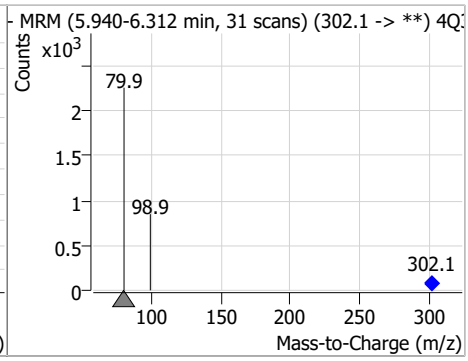


Perfluorinated Compounds by LC/MS/MS

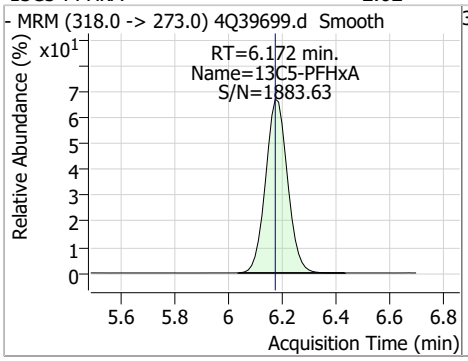
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	6.09	0.00	51177				

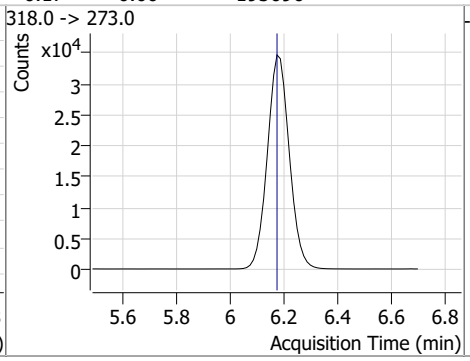


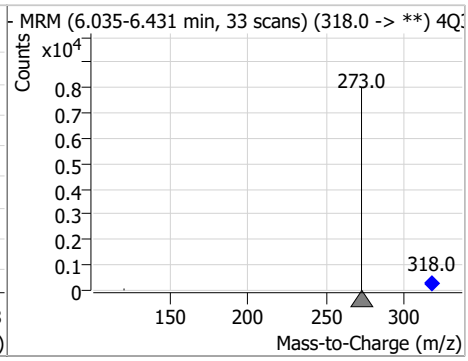




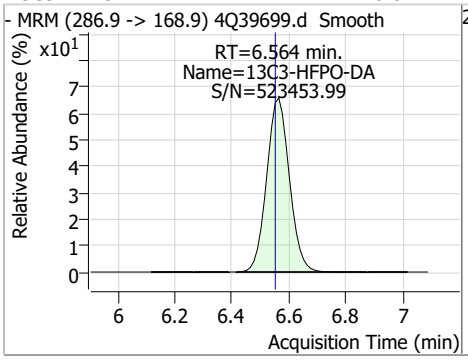
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.62	6.17	0.00	195696				

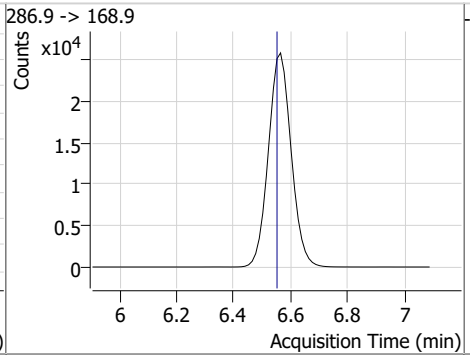


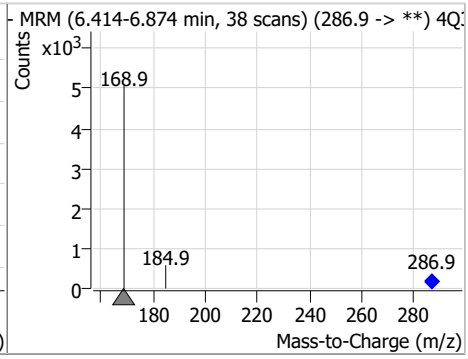




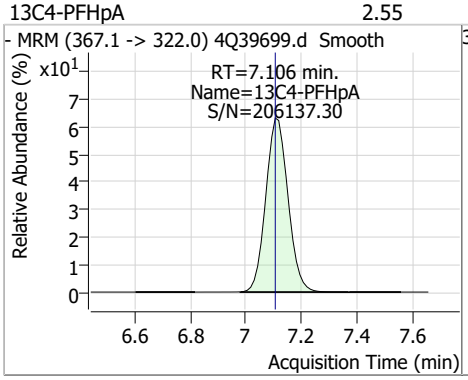
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.04	6.56	0.01	142112				

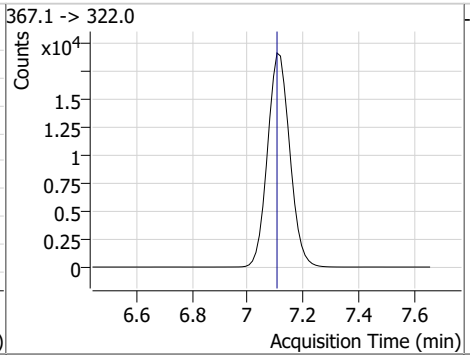


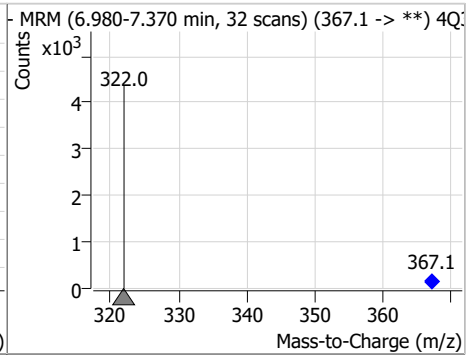




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	7.11	0.00	105386				

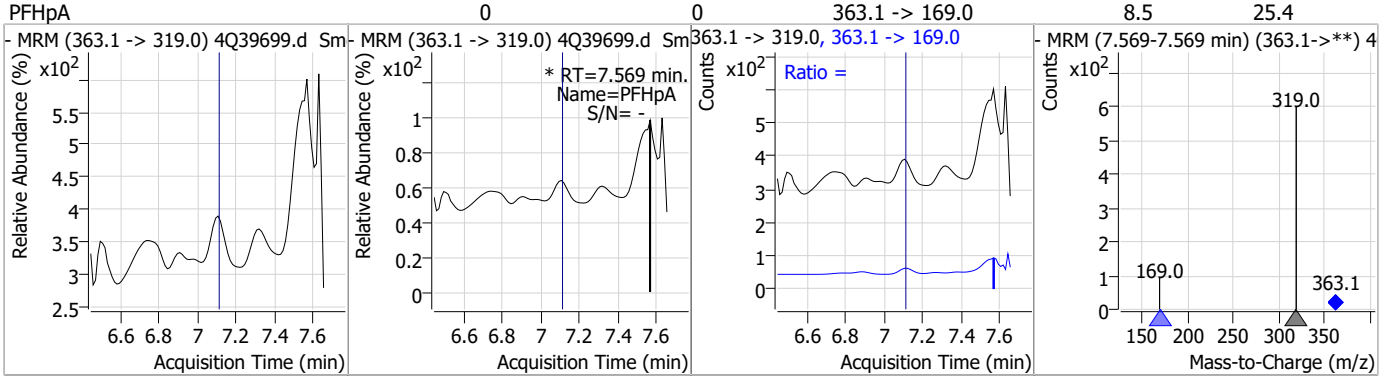




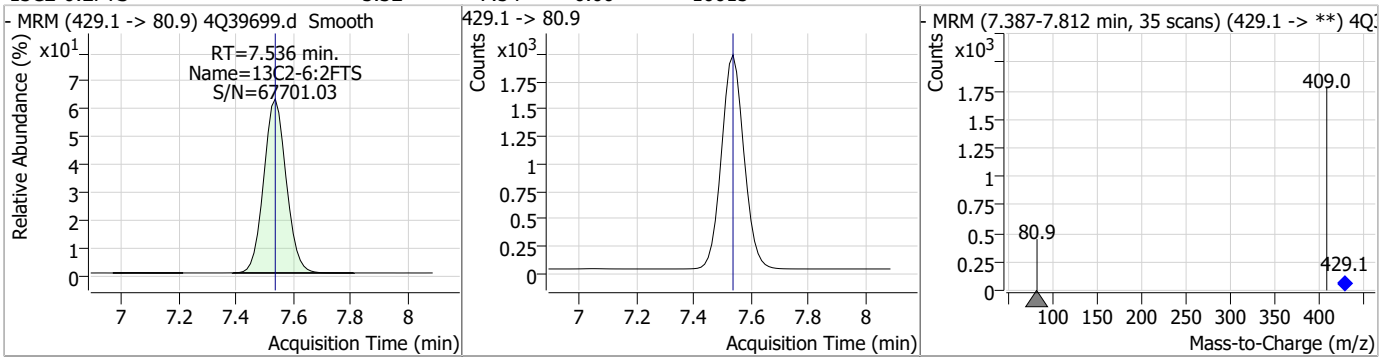


Perfluorinated Compounds by LC/MS/MS

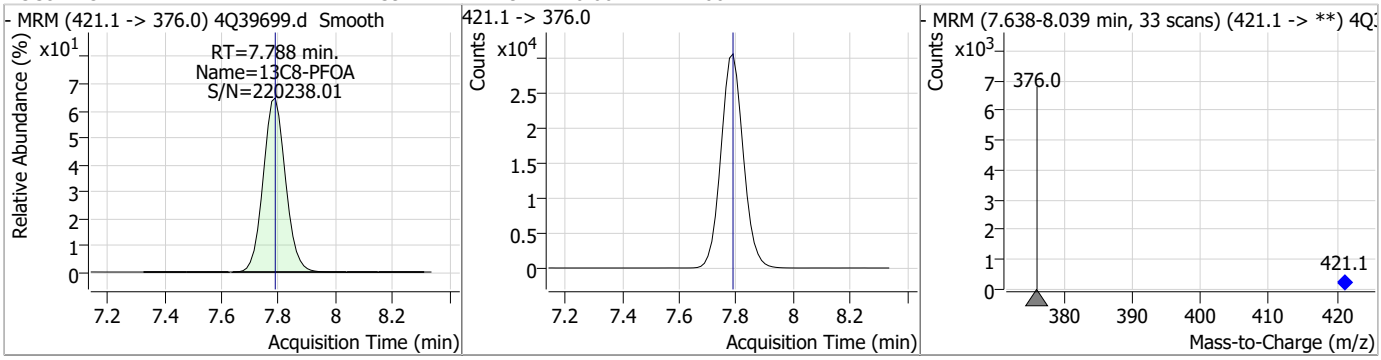
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		8.5	25.4



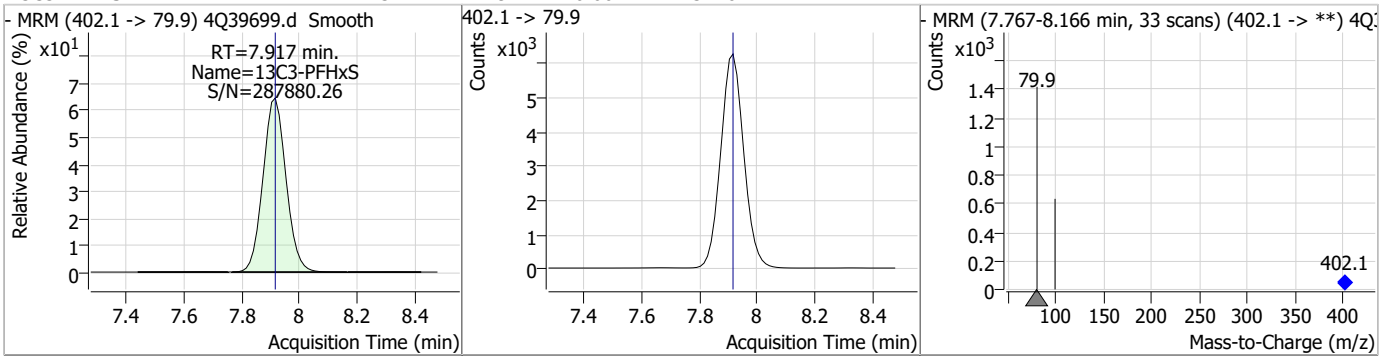
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.32	7.54	0.00	10615				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.39	7.79	0.00	166224				

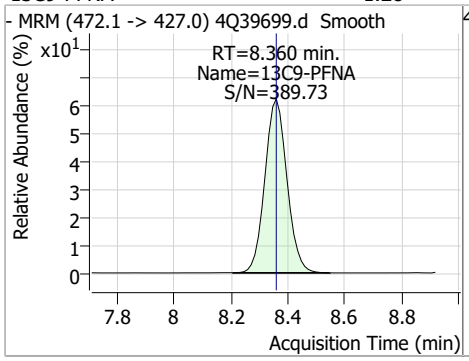


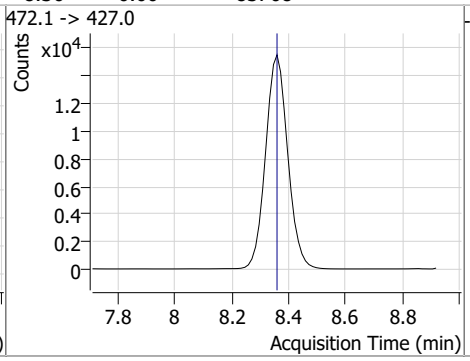
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.37	7.92	0.00	34261				

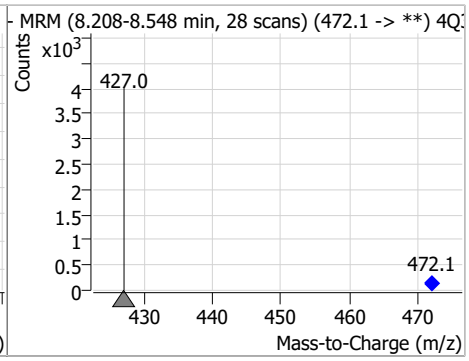


Perfluorinated Compounds by LC/MS/MS

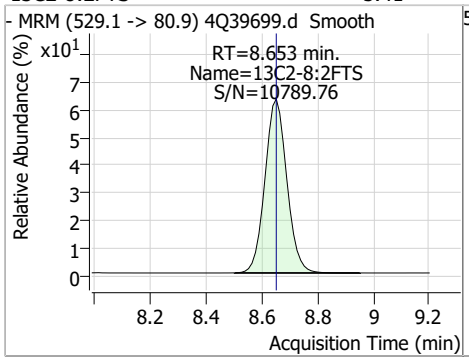
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	8.36	0.00	83708				

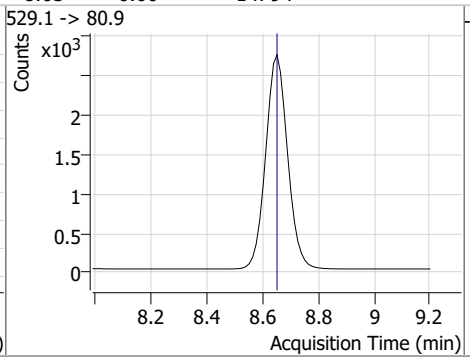


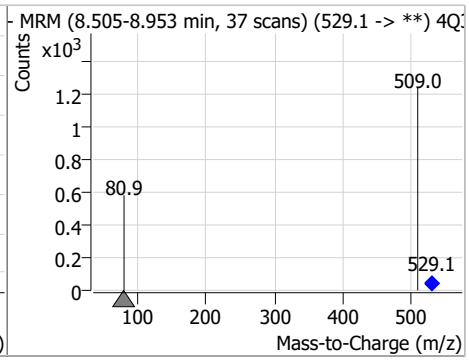




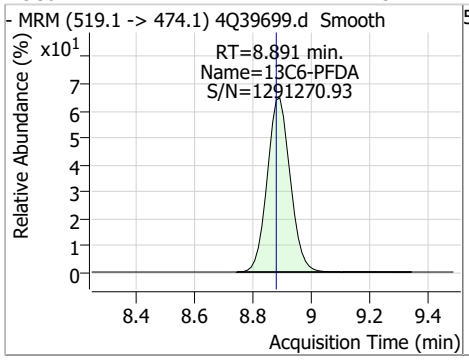
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.41	8.65	0.00	14794				

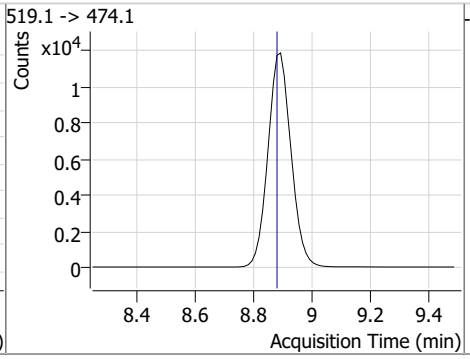


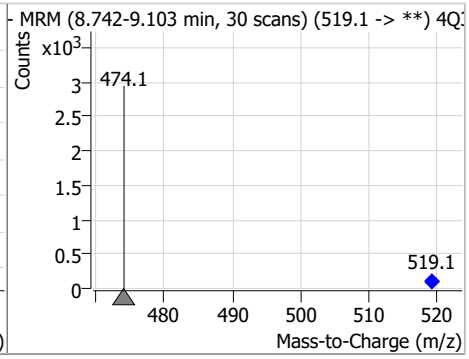




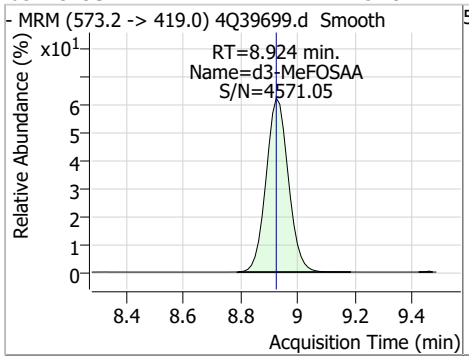
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.34	8.89	0.01	65303				

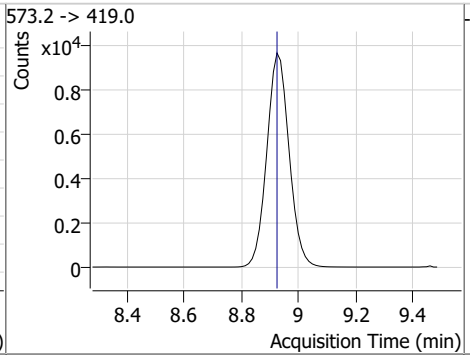


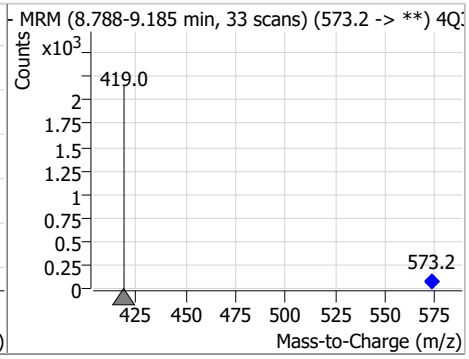




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.29	8.92	0.00	51747				

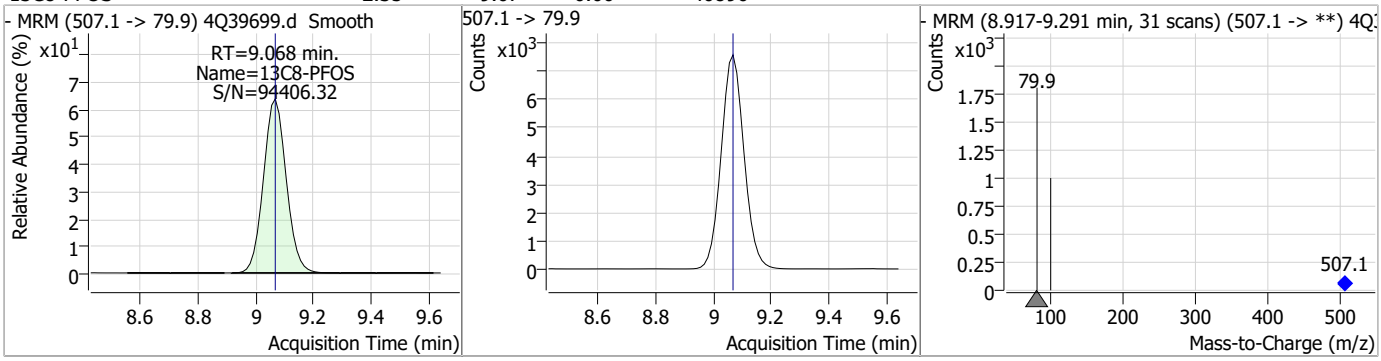




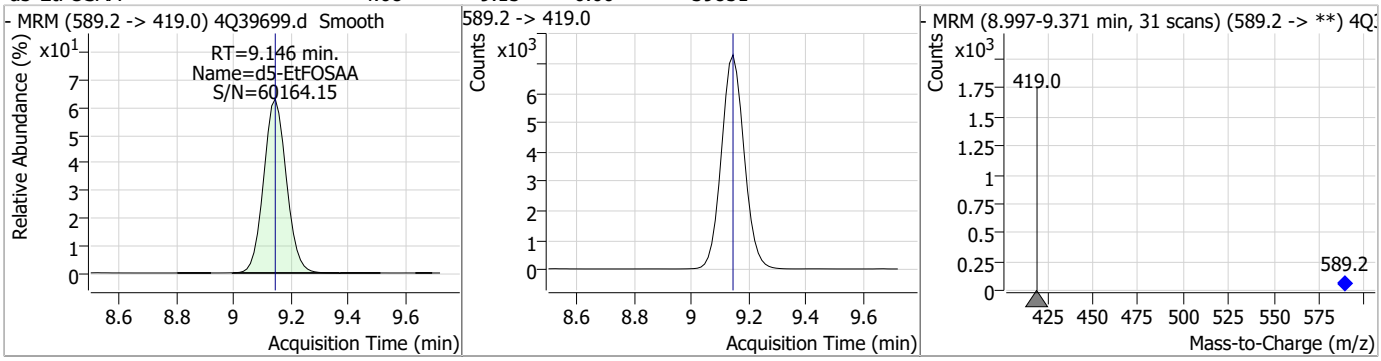


Perfluorinated Compounds by LC/MS/MS

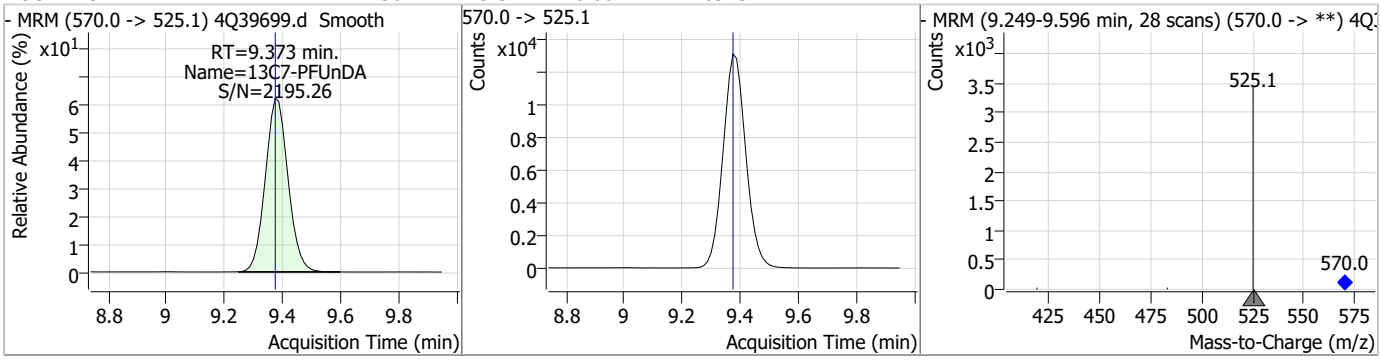
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.35	9.07	0.00	40890				



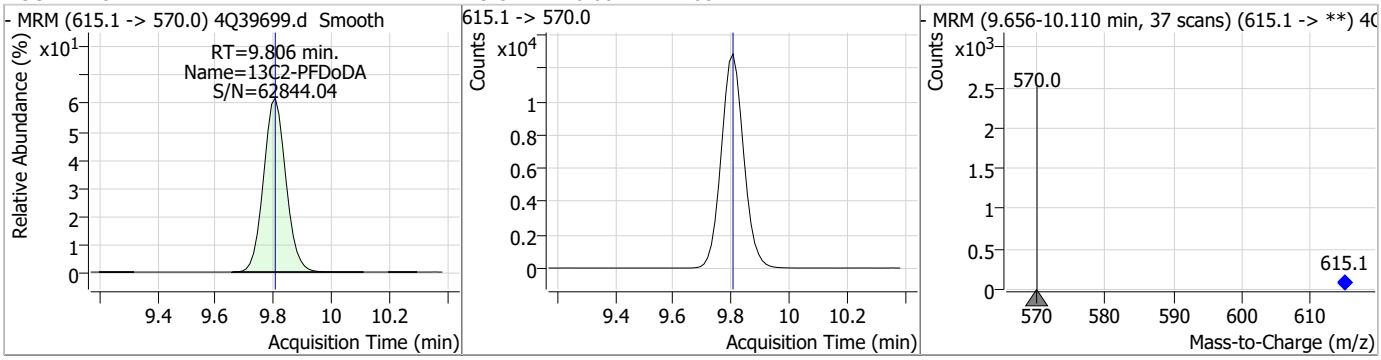
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.68	9.15	0.00	39851				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.36	9.37	0.00	70923				

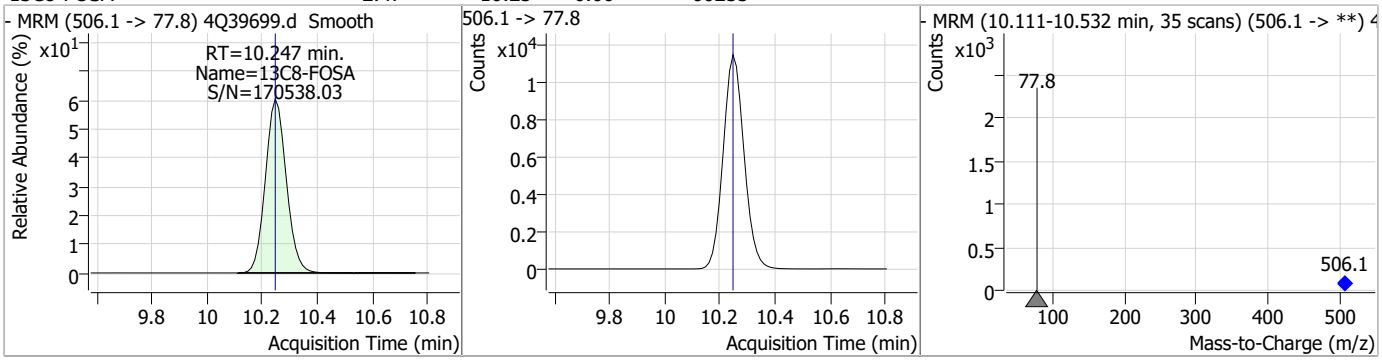


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.81	0.00	68124				

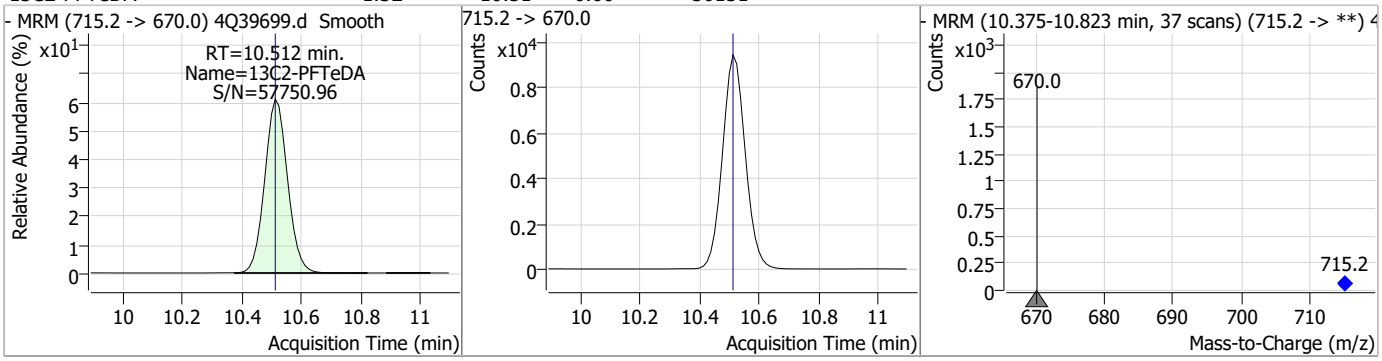


Perfluorinated Compounds by LC/MS/MS

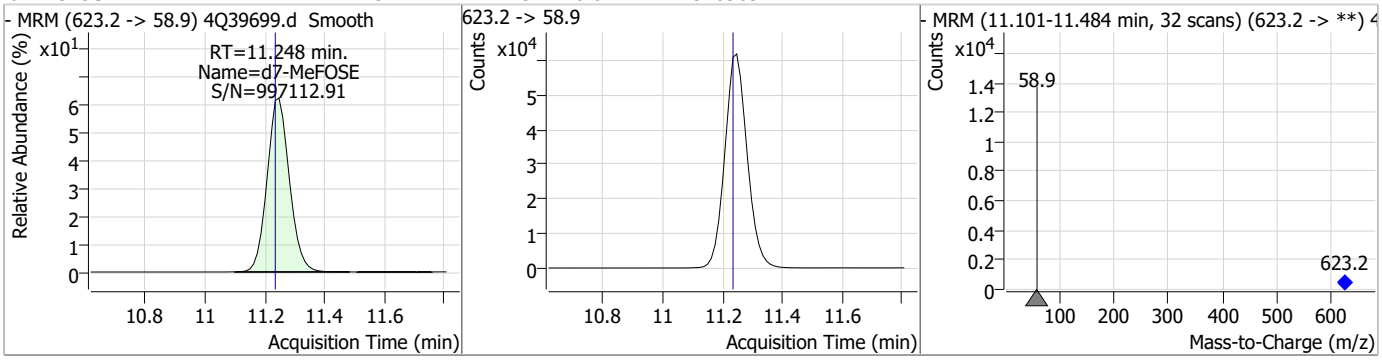
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.47	10.25	0.00	60255				



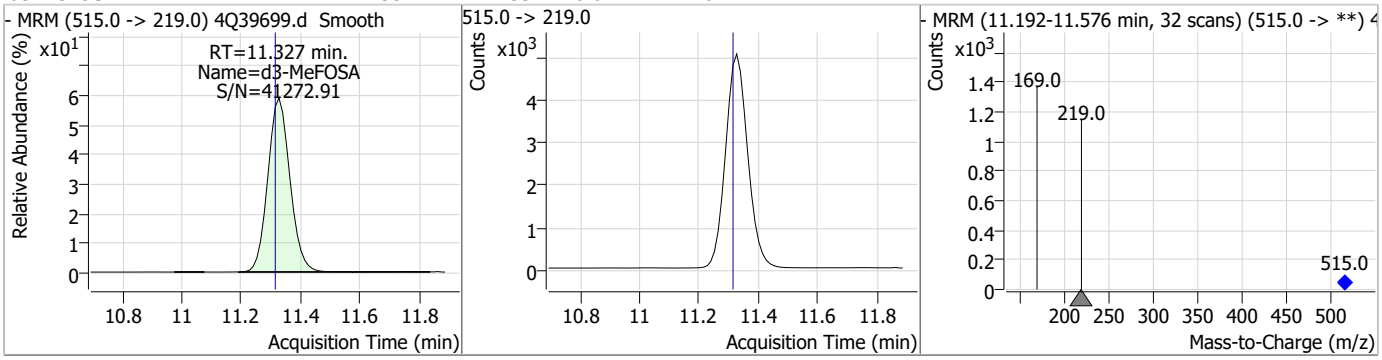
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	10.51	0.00	50131				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.11	11.25	0.01	318909				

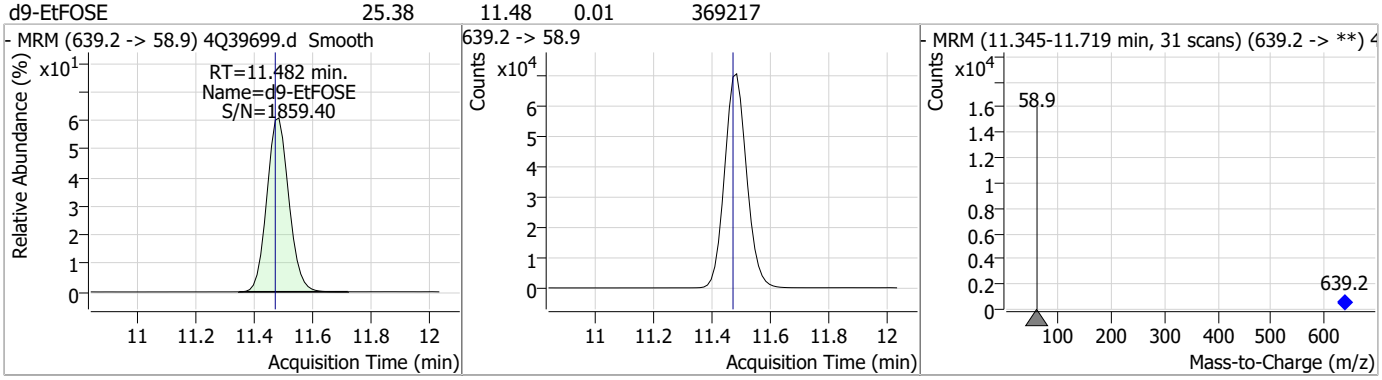


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.35	11.33	0.01	26212				

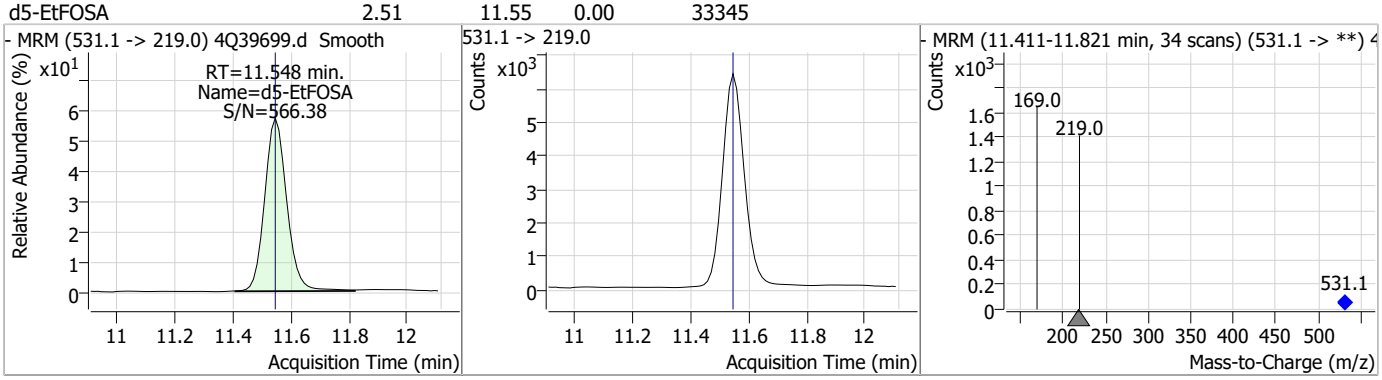


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.38	11.48	0.01	369217				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.51	11.55	0.00	33345				



Manual Integration Approval Summary

Sample Number: S4Q571-IBLK
Lab FileID: 4Q39699.D
Injection Time: 01/25/23 15:06
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.76	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q39715.d
Operator	:	natashag
Acq. Method	:	1633full.m
Acq. Date-Time	:	1/25/2023 7:15:33 PM
Sample Name	:	iccb
Vial	:	P1-A1
DA Method File	:	1633_012423_S4Q571.quantmethod.xml
Batch Name	:	s4q571A.batch.bin
Sample Information	:	op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.174	216.8 -> 171.9	438211	10.00	µg/L	0.000
M5-PFPeA	4.851	268.3 -> 223.0	294645	5.00	µg/L	-0.013
M5-PFHxA	6.147	318.0 -> 273.0	191454	2.50	µg/L	-0.025
M4-PFHpA	7.093	367.1 -> 322.0	99657	2.50	µg/L	-0.012
M8-PFOA	7.764	421.1 -> 376.0	167351	2.50	µg/L	-0.025
M9-PFNA	8.334	472.1 -> 427.0	77451	1.25	µg/L	-0.026
M6-PFDA	8.866	519.1 -> 474.1	60538	1.25	µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	67996	1.25	µg/L	-0.012
M2-PFDoDA	9.781	615.1 -> 570.0	67716	1.25	µg/L	-0.025
M2-PFTeDA	10.499	715.2 -> 670.0	48898	1.25	µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	59662	2.50	µg/L	-0.012
M3-PFBS	6.077	302.1 -> 79.9	51672	2.50	µg/L	-0.012
M3-PFHxS	7.892	402.1 -> 79.9	35188	2.50	µg/L	-0.025
M8-PFOS	9.043	507.1 -> 79.9	43405	2.50	µg/L	-0.025
M2-4:2FTS	5.796	329.1 -> 80.9	5590	5.00	µg/L	-0.027
M2-6:2FTS	7.511	429.1 -> 80.9	11242	5.00	µg/L	-0.025
M2-8:2FTS	8.629	529.1 -> 80.9	15687	5.00	µg/L	-0.025
M3-MeFOSAA	8.912	573.2 -> 419.0	52502	5.00	µg/L	-0.013
M3-HFPO-DA	6.539	286.9 -> 168.9	139290	10.00	µg/L	-0.012
M5-EtFOSAA	9.121	589.2 -> 419.0	45096	5.00	µg/L	-0.025
M7-MeFOSE	11.235	623.2 -> 58.9	326289	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	361647	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	30805	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25906	2.50	µg/L	0.012
13C4-PFOS	9.044	502.8 -> 79.9	42911	2.50	µg/L	-0.025
13C3-PFBA	3.178	216.0 -> 172.0	246820	5.00	µg/L	0.000
18O2-PFHxS	7.891	403.0 -> 83.9	23367	2.50	µg/L	-0.025
13C4-PFOA	7.764	417.1 -> 372.0	183861	2.50	µg/L	-0.025
13C2-PFDA	8.867	515.1 -> 470.1	54487	1.25	µg/L	-0.012
13C5-PFNA	8.334	468.0 -> 423.0	88645	1.25	µg/L	-0.026
13C2-PFHxA	6.148	315.1 -> 270.0	180051	2.50	µg/L	-0.025
System Monitoring Compounds						
13C2-4:2FTS	5.796	329.1 -> 80.9	5590	6.64	µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 132.7%		
13C2-6:2FTS	7.511	429.1 -> 80.9	11242	5.96	µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.3%		
13C2-8:2FTS	8.629	529.1 -> 80.9	15687	6.08	µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.6%		
13C2-PFDoDA	9.781	615.1 -> 570.0	67716	1.28	µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFTeDA	10.499	715.2 -> 670.0	48898	1.30	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-PFBS	6.077	302.1 -> 79.9	51672	2.56	µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	7.892	402.1 -> 79.9	35188	2.58	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C4-PFBA	3.174	216.8 -> 171.9	438211	9.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C4-PFHpA	7.093	367.1 -> 322.0	99657	2.37	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%			
13C5-PFHxA	6.147	318.0 -> 273.0	191454	2.53	µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C5-PFPeA	4.851	268.3 -> 223.0	294645	5.03	µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C6-PFDA	8.866	519.1 -> 474.1	60538	1.26	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C7-PFUnDA	9.361	570.0 -> 525.1	67996	1.32	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%			
13C8-FOSA	10.235	506.1 -> 77.8	59662	2.43	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C8-PFOA	7.764	421.1 -> 376.0	167351	2.54	µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C8-PFOS	9.043	507.1 -> 79.9	43405	2.48	µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C9-PFNA	8.334	472.1 -> 427.0	77451	1.23	µg/L		-0.026
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%			
d3-MeFOSAA	8.912	573.2 -> 419.0	52502	5.33	µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C3-HFPO-DA	6.539	286.9 -> 168.9	139290	9.70	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
d3-MeFOSA	11.327	515.0 -> 219.0	25906	2.31	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%			
d5-EtFOSAA	9.121	589.2 -> 419.0	45096	5.25	µg/L		-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.1%			
d7-MeFOSE	11.235	623.2 -> 58.9	326289	25.50	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
d9-EtFOSE	11.470	639.2 -> 58.9	361647	24.67	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
d5-EtFOSA	11.548	531.1 -> 219.0	30805	2.30	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%			
Target Compounds							**QValue**
4:2FTS	-	327.1 -> 307.0	-	N.D.			
		327.1 -> 80.9					
6:2FTS	-	427.1 -> 407.0	-	N.D.			
		427.1 -> 80.9					
8:2FTS	-	527.1 -> 507.0	-	N.D.			
		527.1 -> 80.8					
EtFOSAA	-	584.2 -> 419.1	-	N.D.			
		584.2 -> 526.0					
FOSA	-	498.1 -> 77.9	-	N.D.			
		498.1 -> 478.0					
MeFOSAA	-	570.1 -> 419.0	-	N.D.			
		570.1 -> 483.0					
PFBA	-	212.8 -> 168.9	-	N.D.			
PFBS	-	298.7 -> 79.9	-	N.D.			
		298.7 -> 98.8					
PFDA	-	512.9 -> 469.0	-	N.D.			
		512.9 -> 219.0					
PFDoDA	10.369	613.1 -> 569.0	0		µg/L	m	1
		613.1 -> 319.0	0				
PFDS	-	599.0 -> 79.9	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

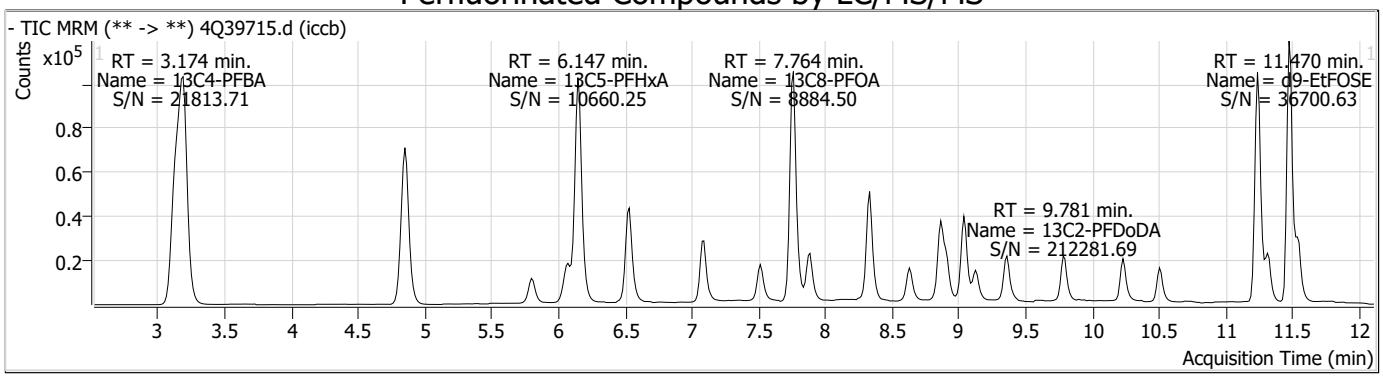
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	7.532	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	8.164	413.0 -> 369.0	0		µg/L	m	1
		413.0 -> 169.0	0				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 168.9					
PFUnDA	-	563.1 -> 519.0	-	N.D.			
		563.1 -> 269.1					
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
MeFOSA	-	511.9 -> 219.0	-	N.D.			
		511.9 -> 169.0					
MeFOSE	-	616.1 -> 58.9	-	N.D.			
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

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

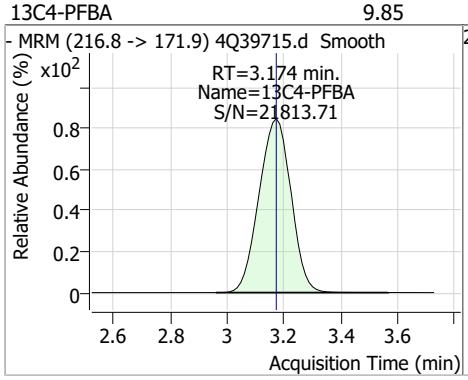
Perfluorinated Compounds by LC/MS/MS

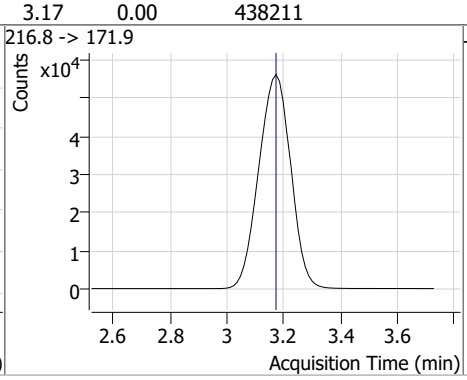
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

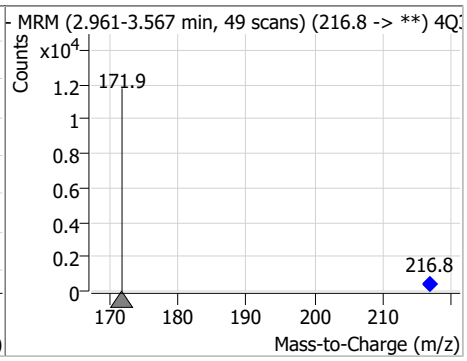
Perfluorinated Compounds by LC/MS/MS



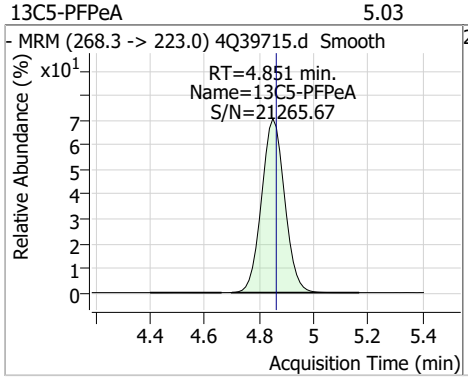
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.85	3.17	0.00	438211				

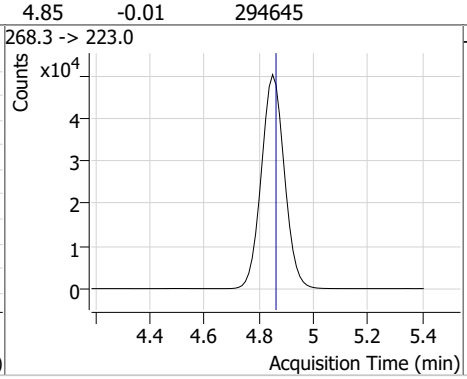


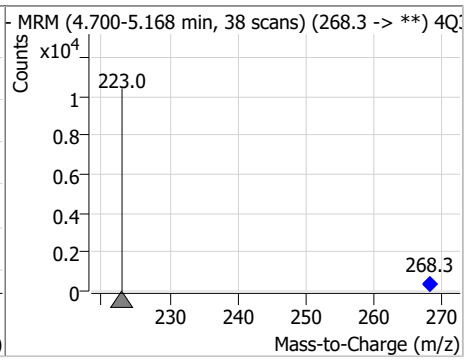




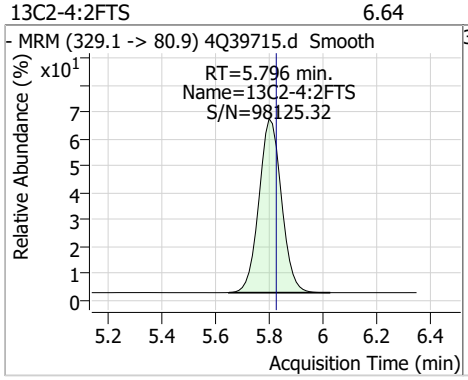
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.85	-0.01	294645				

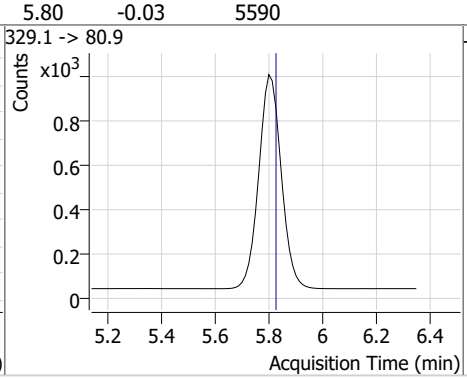


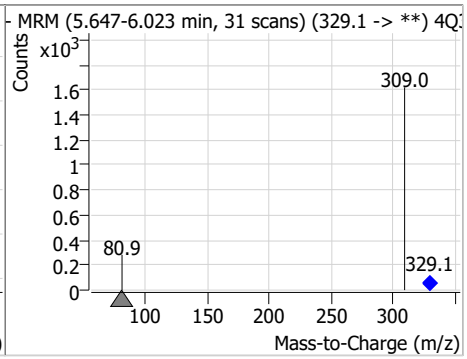




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.64	5.80	-0.03	5590				

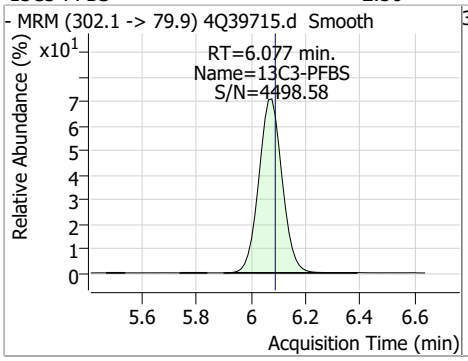


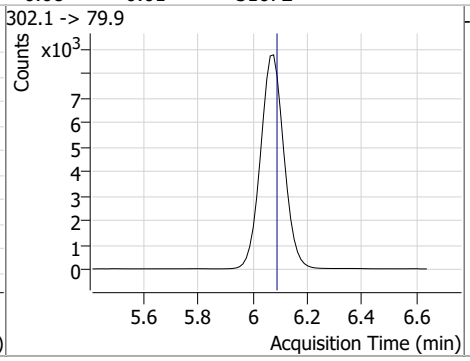


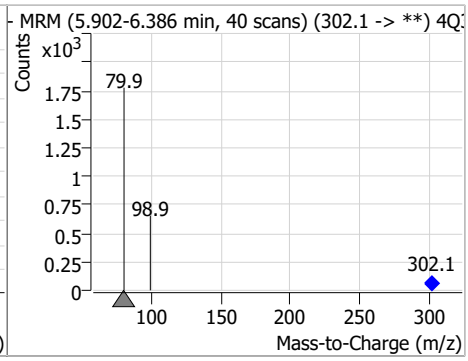


Perfluorinated Compounds by LC/MS/MS

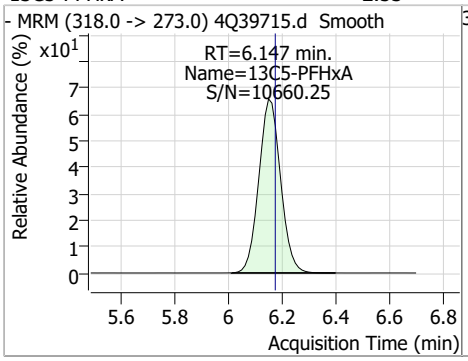
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.56	6.08	-0.01	51672				

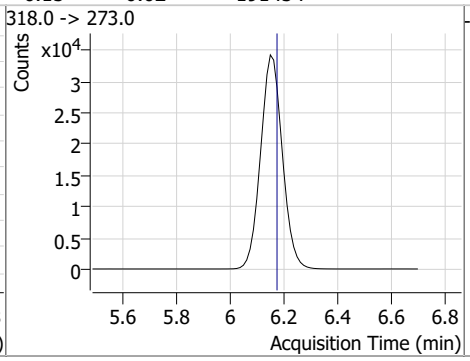


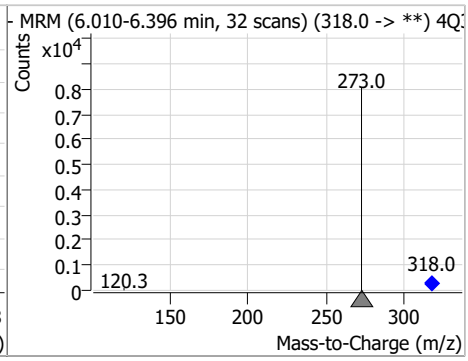




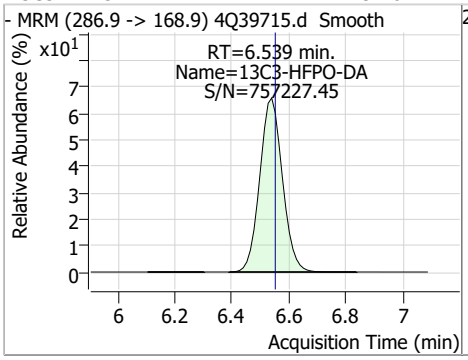
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	6.15	-0.02	191454				

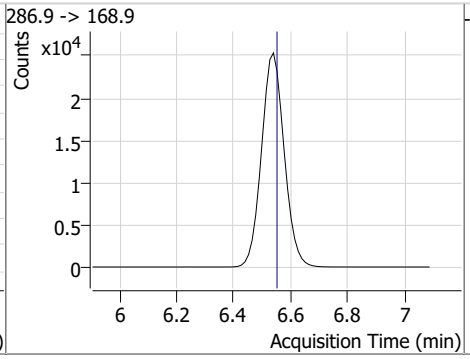


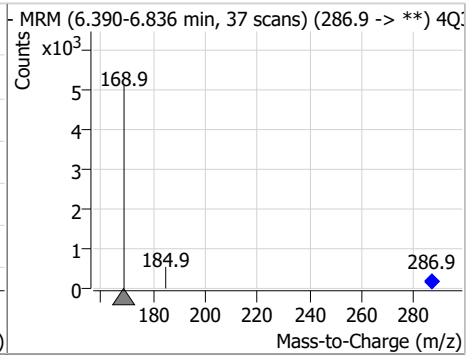




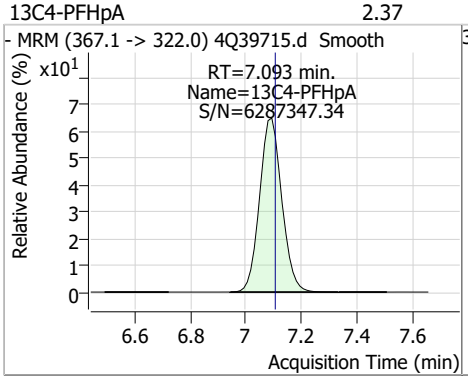
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.70	6.54	-0.01	139290				

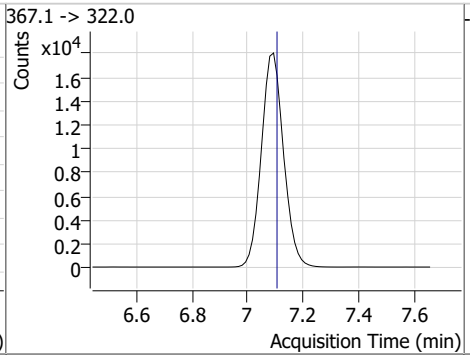


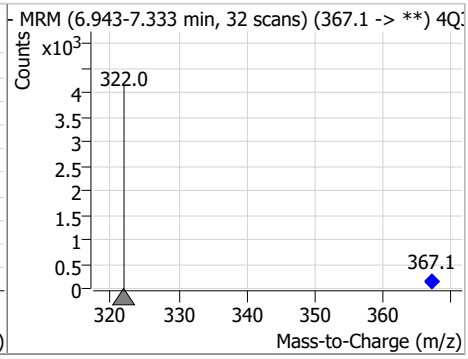




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.37	7.09	-0.01	99657				

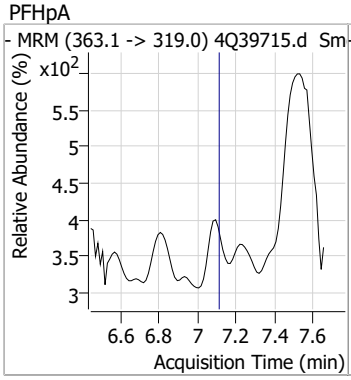


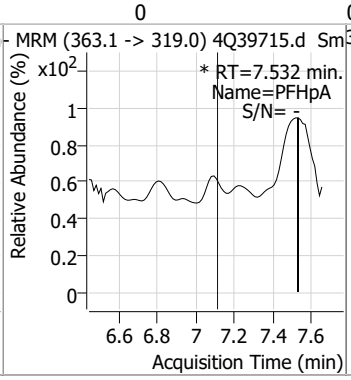


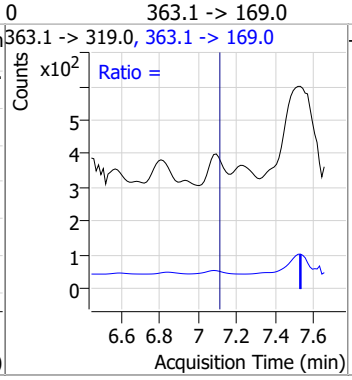


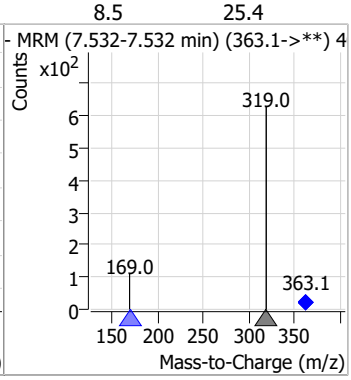
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		8.5	25.4

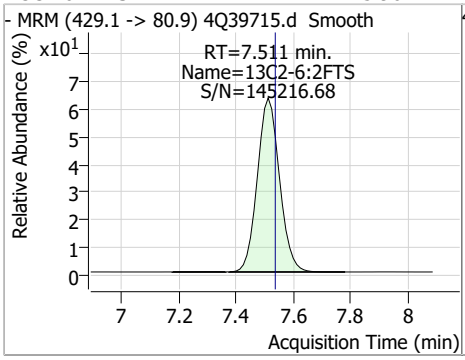


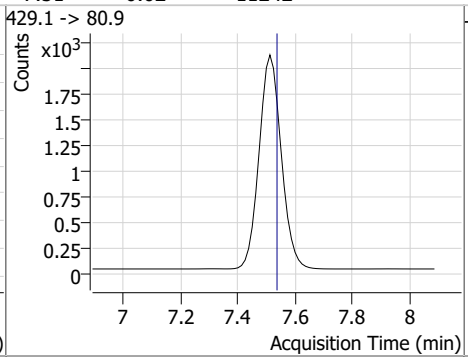


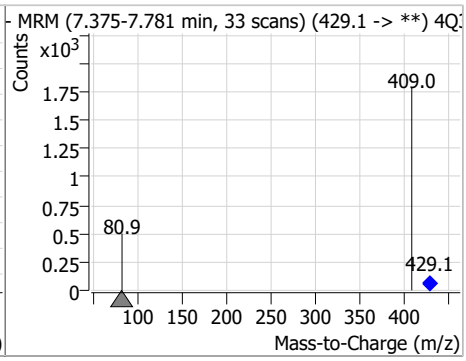




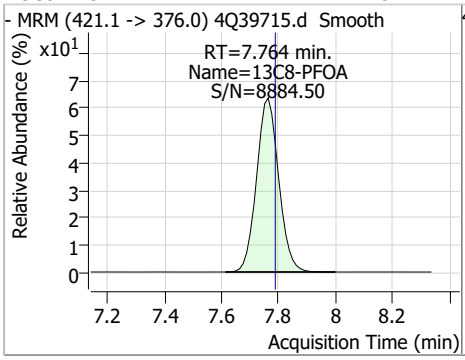
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.96	7.51	-0.02	11242				

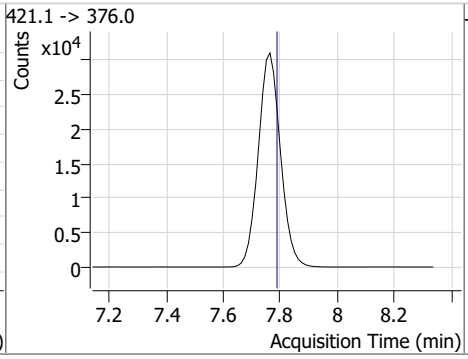


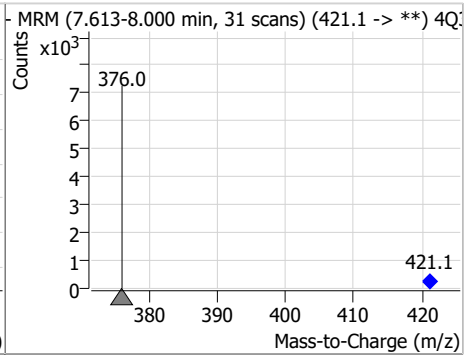




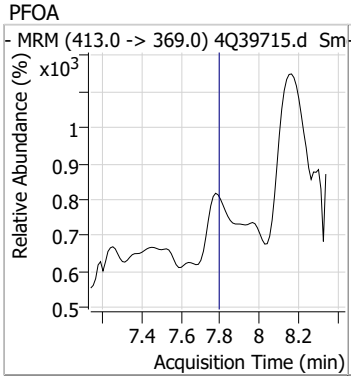
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.54	7.76	-0.02	167351				

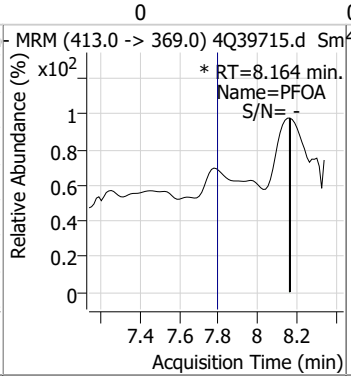


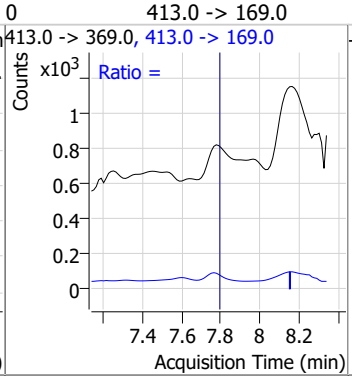


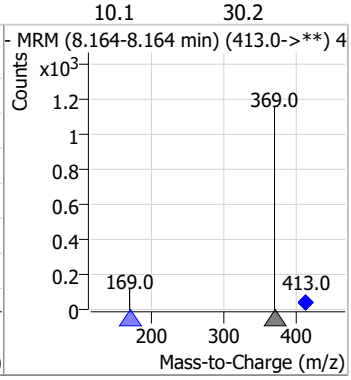


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		10.1	30.2



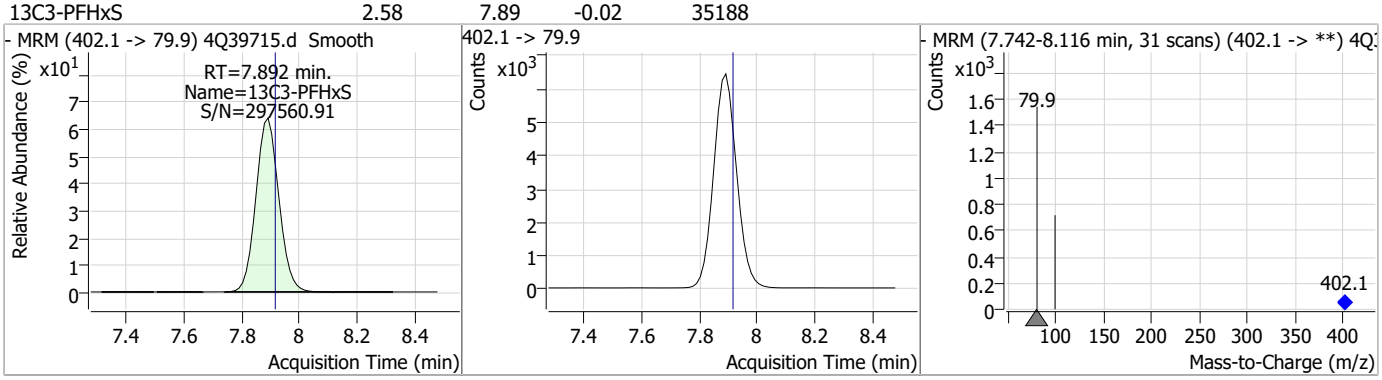




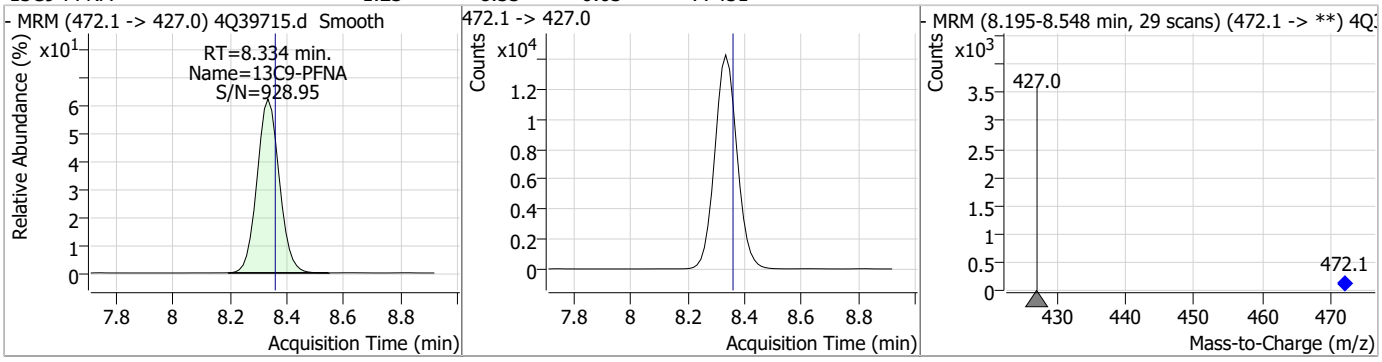


Perfluorinated Compounds by LC/MS/MS

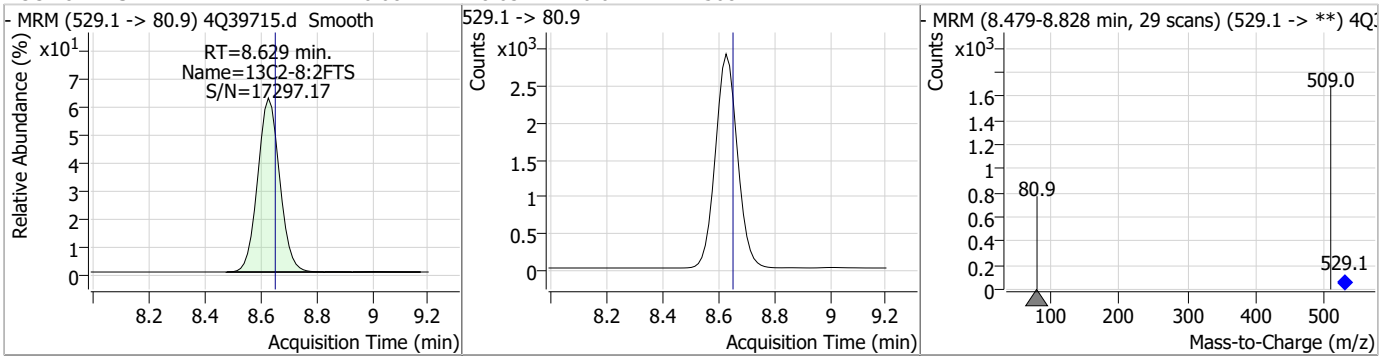
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.58	7.89	-0.02	35188				



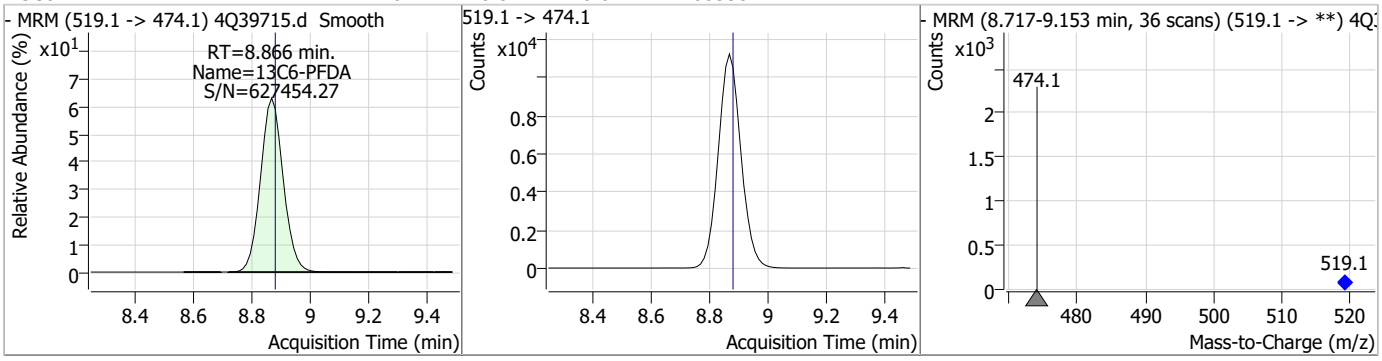
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	8.33	-0.03	77451				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.08	8.63	-0.02	15687				

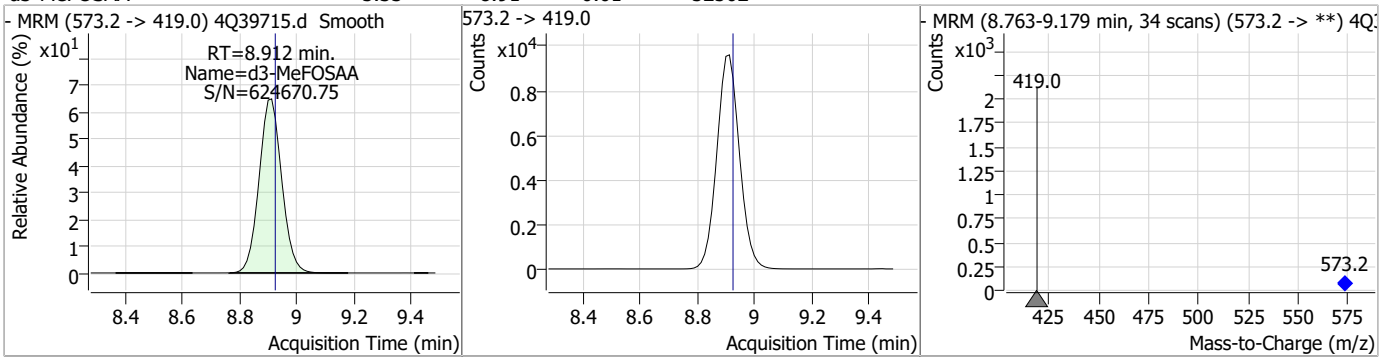


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.87	-0.01	60538				

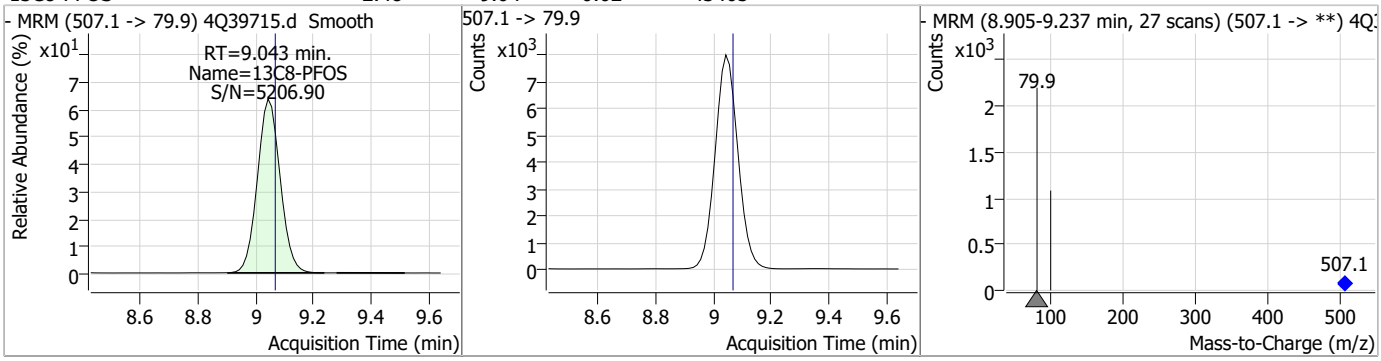


Perfluorinated Compounds by LC/MS/MS

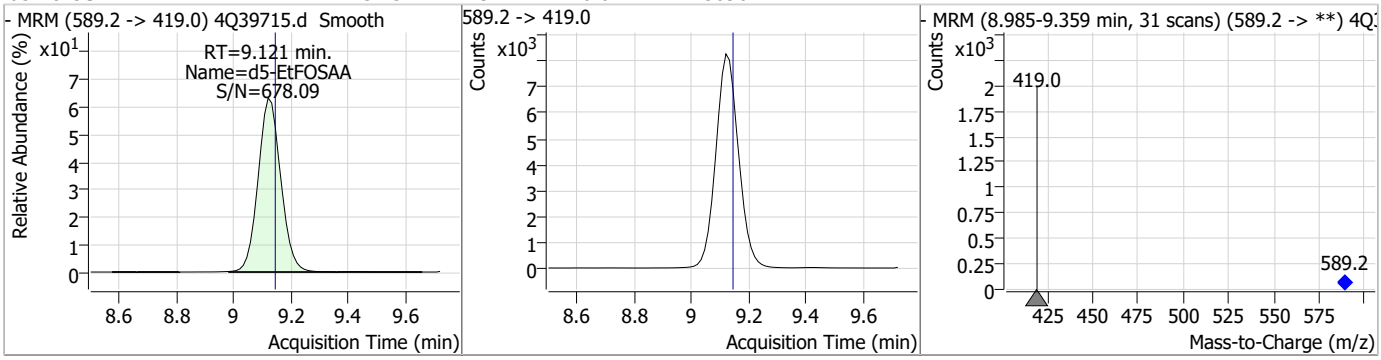
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.33	8.91	-0.01	52502				



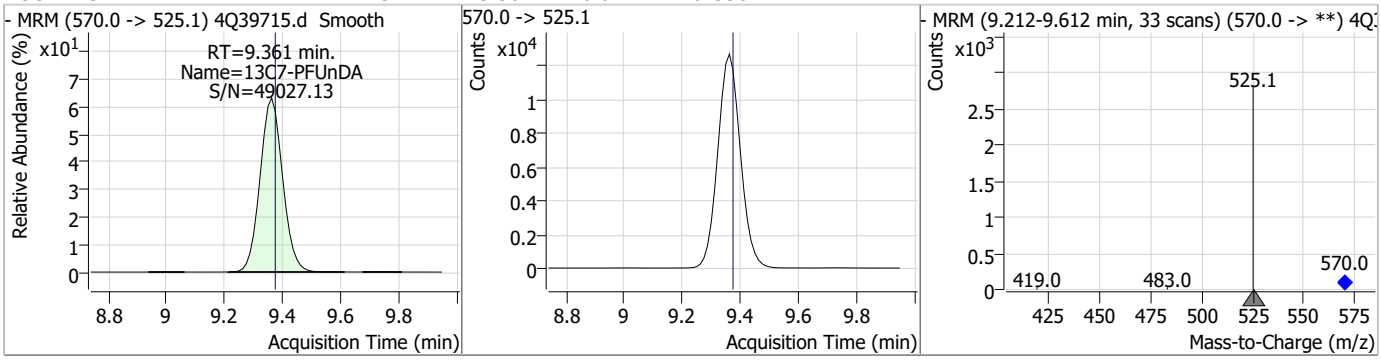
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.48	9.04	-0.02	43405				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.25	9.12	-0.02	45096				

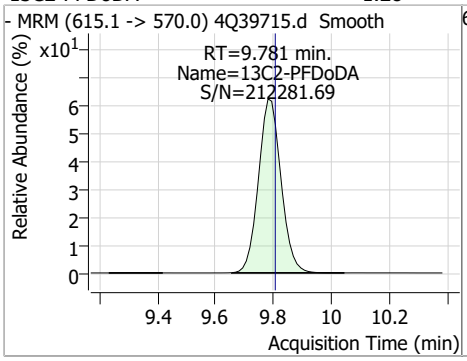


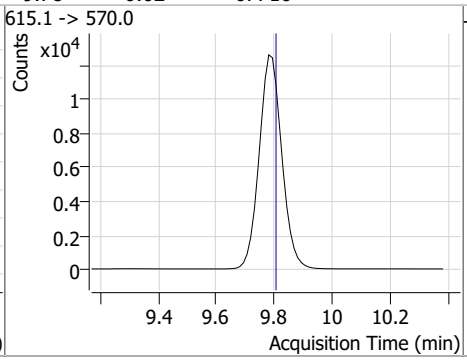
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	9.36	-0.01	67996				

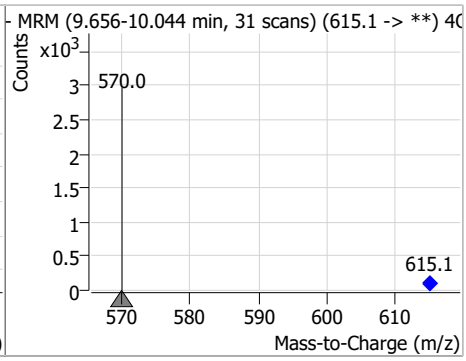


Perfluorinated Compounds by LC/MS/MS

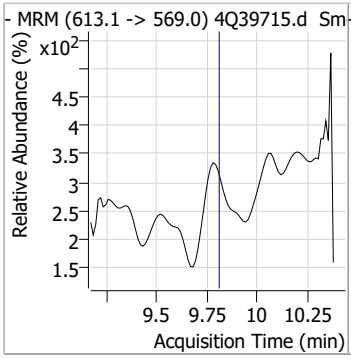
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.78	-0.02	67716				

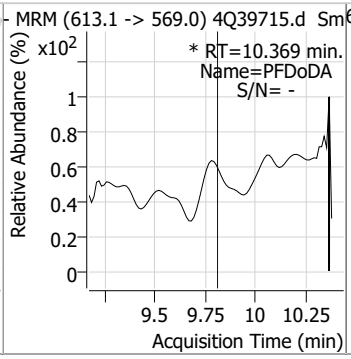


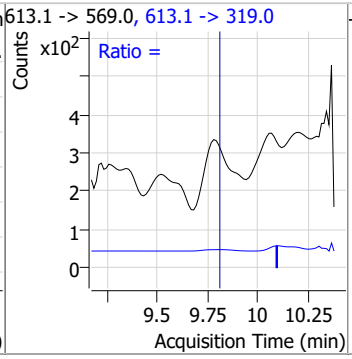


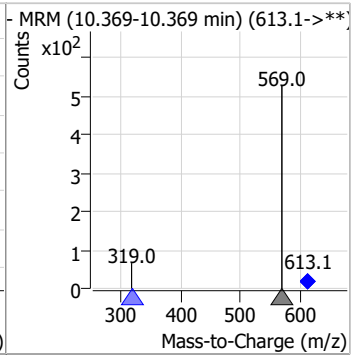


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA		0		0	613.1 -> 319.0		7.2	21.7

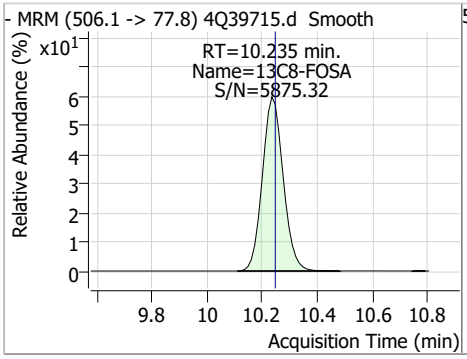


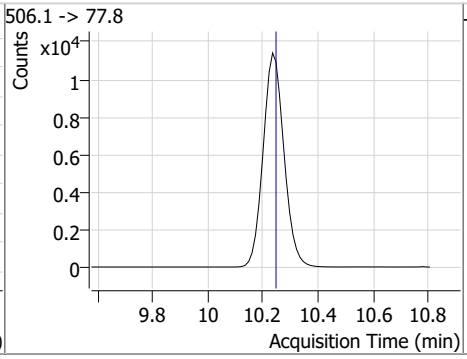


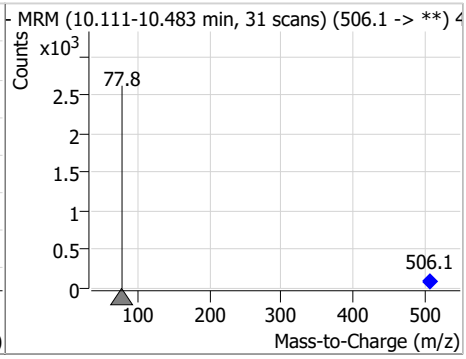




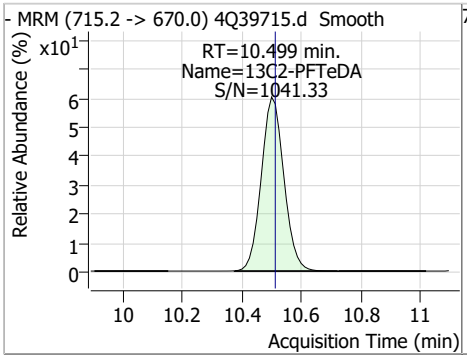
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.43	10.23	-0.01	59662				

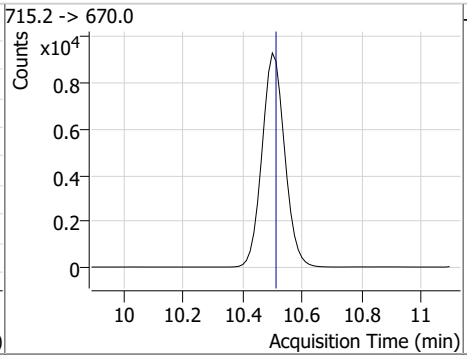


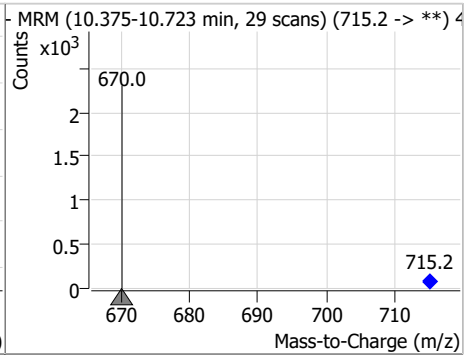




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	10.50	-0.01	48898				

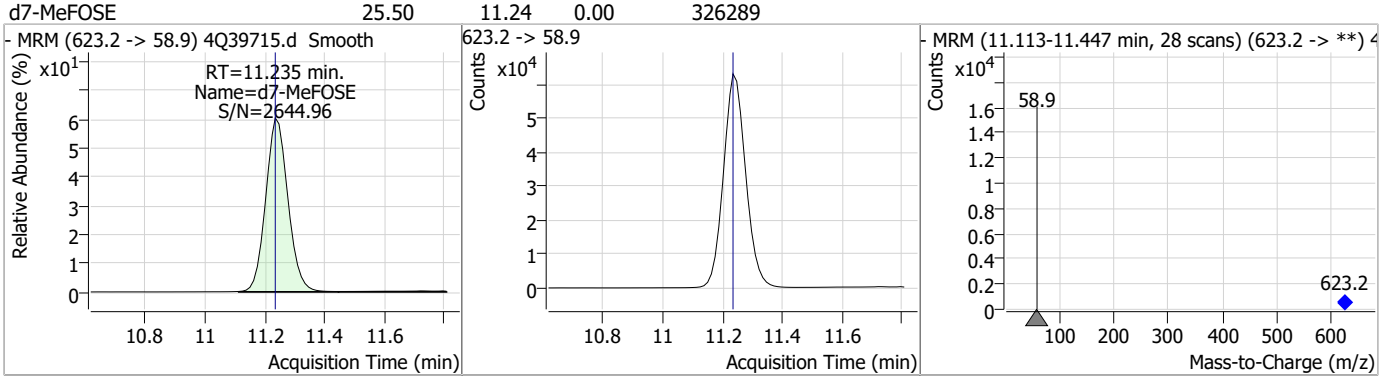




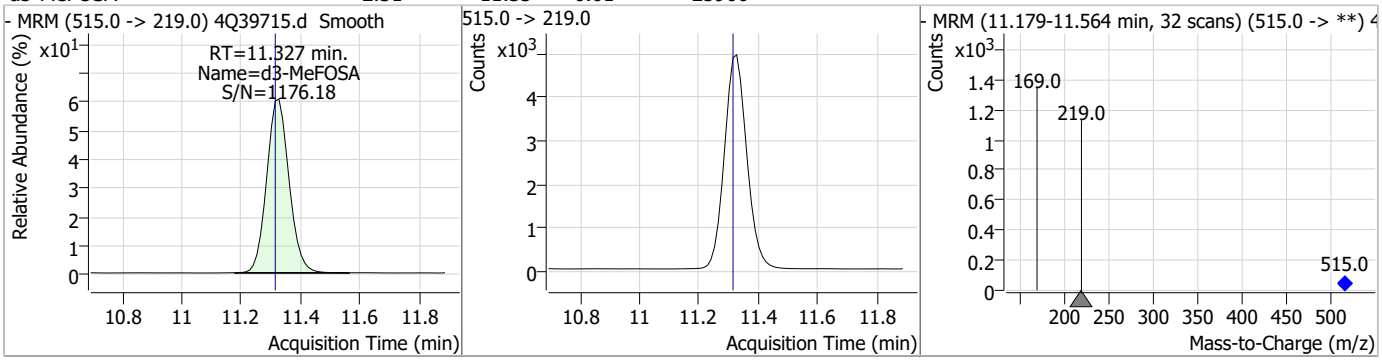


Perfluorinated Compounds by LC/MS/MS

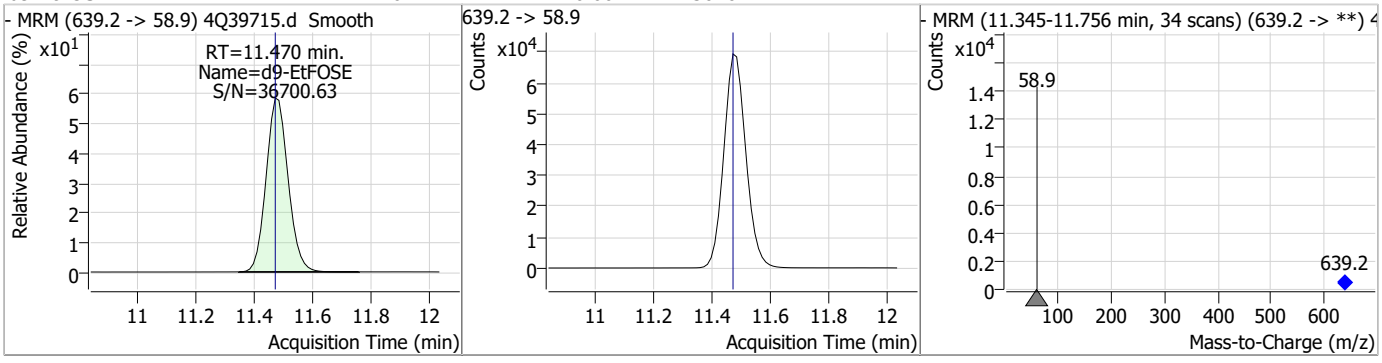
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.50	11.24	0.00	326289				



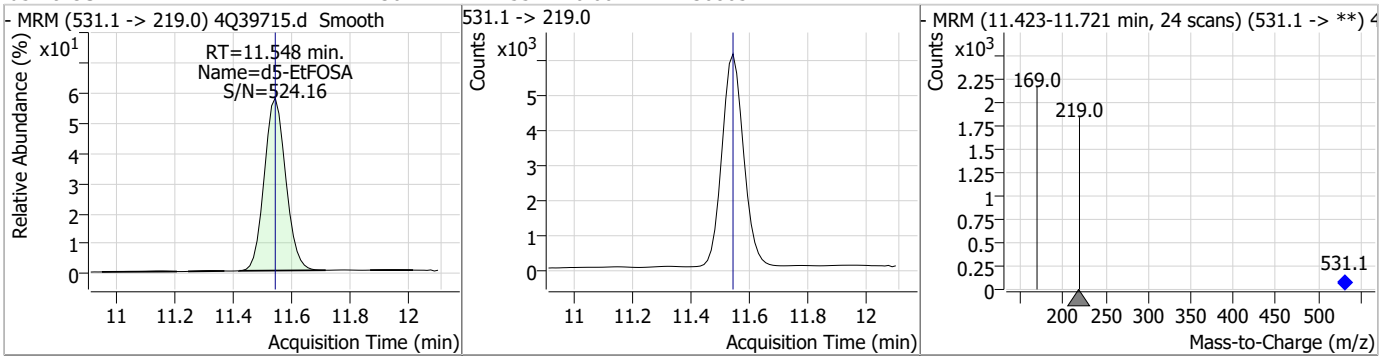
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	11.33	0.01	25906				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.67	11.47	0.00	361647				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	11.55	0.00	30805				



Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39705.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 4:54:35 PM
Sample Name : op95069-bs
Vial : P1-D2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.252	216.8 -> 171.9	161970	10.00	µg/L	0.078
M5-PFPeA	4.901	268.3 -> 223.0	272039	5.00	µg/L	0.037
M5-PFHxA	6.172	318.0 -> 273.0	177711	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	56348	2.50	µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	138965	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	72522	1.25	µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	59472	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	59834	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	53986	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40401	1.25	µg/L	0.000
M8-FOSA	10.259	506.1 -> 77.8	58691	2.50	µg/L	0.012
M3-PFBS	6.101	302.1 -> 79.9	47960	2.50	µg/L	0.012
M3-PFHxS	7.904	402.1 -> 79.9	31060	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	38835	2.50	µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	5650	5.00	µg/L	0.000
M2-6:2FTS	7.524	429.1 -> 80.9	8719	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	10870	5.00	µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	46674	5.00	µg/L	-0.013
M3-HFPO-DA	6.551	286.9 -> 168.9	131759	10.00	µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	36264	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	266234	25.00	µg/L	0.000
M9-EtFOSE	11.482	639.2 -> 58.9	302980	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	28415	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	24772	2.50	µg/L	0.012
13C4-PFOS	9.056	502.8 -> 79.9	34671	2.50	µg/L	-0.012
13C3-PFBA	3.255	216.0 -> 172.0	210464	5.00	µg/L	0.077
18O2-PFHxS	7.903	403.0 -> 83.9	18128	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	134894	2.50	µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	42543	1.25	µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	65964	1.25	µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	137047	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	5650	8.65	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 172.9%		
13C2-6:2FTS	7.524	429.1 -> 80.9	8719	5.96	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.3%		
13C2-8:2FTS	8.641	529.1 -> 80.9	10870	5.43	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-PFDoDA	9.793	615.1 -> 570.0	53986	1.31	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40401	1.38	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C3-PFBS	6.101	302.1 -> 79.9	47960	3.06	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.5%		
13C3-PFHxS	7.904	402.1 -> 79.9	31060	2.94	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.5%		
13C4-PFBA	3.252	216.8 -> 171.9	161970	4.27 µg/L		0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 42.7%		
13C4-PFHpA	7.106	367.1 -> 322.0	56348	1.76 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 70.5%		
13C5-PFHxA	6.172	318.0 -> 273.0	177711	3.08 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.3%		
13C5-PFPeA	4.901	268.3 -> 223.0	272039	6.10 µg/L		0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 122.1%		
13C6-PFDA	8.879	519.1 -> 474.1	59472	1.58 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 126.6%		
13C7-PFUnDA	9.373	570.0 -> 525.1	59834	1.48 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.7%		
13C8-FOSA	10.259	506.1 -> 77.8	58691	2.96 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.4%		
13C8-PFOA	7.776	421.1 -> 376.0	138965	2.87 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.8%		
13C8-PFOS	9.055	507.1 -> 79.9	38835	2.74 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C9-PFNA	8.347	472.1 -> 427.0	72522	1.55 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 123.8%		
d3-MeFOSAA	8.912	573.2 -> 419.0	46674	5.86 µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.2%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	131759	12.05 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.5%		
d3-MeFOSA	11.327	515.0 -> 219.0	24772	2.73 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%		
d5-EtFOSAA	9.133	589.2 -> 419.0	36264	5.23 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
d7-MeFOSE	11.235	623.2 -> 58.9	266234	25.75 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
d9-EtFOSE	11.482	639.2 -> 58.9	302980	25.58 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
d5-EtFOSA	11.548	531.1 -> 219.0	28415	2.63 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	77060	8.35 µg/L		99
		327.1 -> 80.9	35481			
6:2FTS	7.524	427.1 -> 407.0	59760	8.65 µg/L		99
		427.1 -> 80.9	29926			
8:2FTS	8.641	527.1 -> 507.0	52019	9.89 µg/L		98
		527.1 -> 80.8	28423			
EtFOSAA	9.147	584.2 -> 419.1	13972	2.30 µg/L	m	99
		584.2 -> 526.0	6820			
FOSA	10.250	498.1 -> 77.9	52921	2.33 µg/L		100
		498.1 -> 478.0	1090			
MeFOSAA	8.925	570.1 -> 419.0	16308	2.36 µg/L	m	99
		570.1 -> 483.0	3169			
PFBA	3.258	212.8 -> 168.9	39644	8.80 µg/L		100
PFBS	6.102	298.7 -> 79.9	44860	2.07 µg/L		98
		298.7 -> 98.8	15799			
PFDA	8.879	512.9 -> 469.0	96359	2.27 µg/L		98
		512.9 -> 219.0	19095			
PFDoDA	9.794	613.1 -> 569.0	105625	2.54 µg/L		97
		613.1 -> 319.0	16463			
PFDS	9.959	599.0 -> 79.9	19683	2.19 µg/L		98

Perfluorinated Compounds by LC/MS/MS

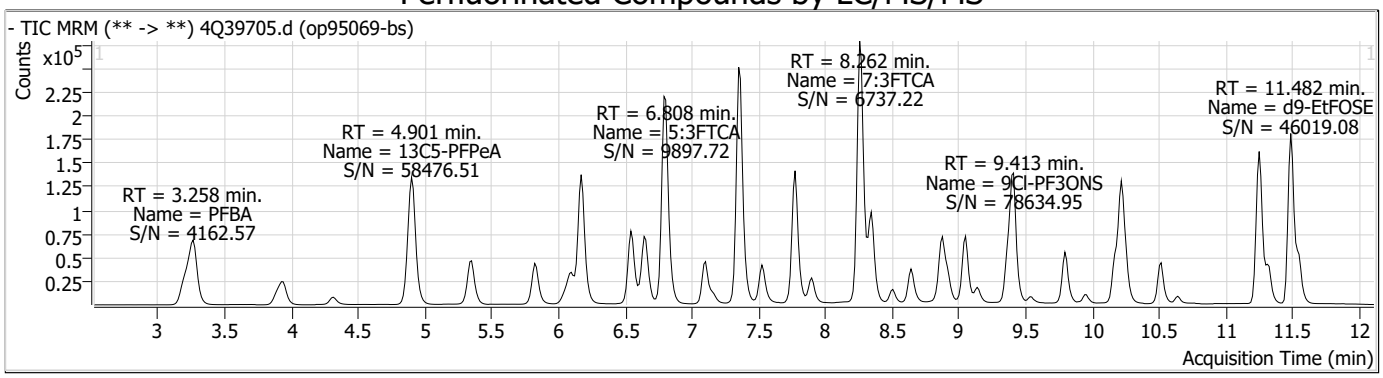
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	9403				
PFHpA	7.106	363.1 -> 319.0	84192	2.40	µg/L		99
		363.1 -> 169.0	13986				
PFHpS	8.513	449.0 -> 79.9	33898	2.16	µg/L		95
		449.0 -> 98.9	16688				
PFHxA	6.175	313.0 -> 269.0	169491	2.45	µg/L		99
		313.0 -> 118.9	5292				
PFHxS	7.905	398.7 -> 79.9	21850	2.18	µg/L	m	92
		398.7 -> 98.9	9491				
PFNA	8.348	463.0 -> 419.0	125952	2.39	µg/L		98
		463.0 -> 219.0	30635				
PFNS	9.536	548.8 -> 79.9	15383	2.23	µg/L		98
		548.8 -> 98.9	7928				
PFOA	7.777	413.0 -> 369.0	155880	2.52	µg/L		100
		413.0 -> 169.0	31729				
PFOS	9.057	498.9 -> 79.9	37953	2.09	µg/L	m	99
		498.9 -> 98.8	18715				
PFPeA	4.904	263.0 -> 219.0	289098	4.85	µg/L		100
PFPeS	7.171	349.1 -> 79.9	18591	1.92	µg/L		95
		349.1 -> 98.9	7835				
PFTeDA	10.513	713.1 -> 669.0	93038	2.29	µg/L		100
		713.1 -> 168.9	8056				
PFTrDA	10.167	663.0 -> 619.0	131879	2.59	µg/L		98
		663.0 -> 168.9	12977				
PFUnDA	9.374	563.1 -> 519.0	83240	2.30	µg/L		98
		563.1 -> 269.1	14315				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	275827	8.96	µg/L		100
		632.9 -> 452.9	82546				
9Cl-PF3ONS	9.413	530.8 -> 351.0	334442	8.91	µg/L		100
		532.8 -> 353.0	99551				
ADONA	7.369	376.9 -> 250.9	636466	8.95	µg/L		98
		376.9 -> 84.8	232100				
HFPO-DA	6.552	284.9 -> 168.9	114008	9.18	µg/L		98
		284.9 -> 184.9	12715				
3:3FTCA	4.317	241.0 -> 177.0	27223	9.73	µg/L		98
		241.0 -> 117.0	2827				
5:3FTCA	6.808	341.0 -> 237.1	455650	49.57	µg/L		99
		341.0 -> 217.0	343982				
7:3FTCA	8.262	441.0 -> 316.9	299325	56.71	µg/L		99
		441.0 -> 336.9	682081				
EtFOSA	11.550	526.0 -> 219.0	25899	2.17	µg/L		100
		526.0 -> 169.0	29721				
EtFOSE	11.496	630.0 -> 58.9	286194	24.33	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	20526	2.18	µg/L		97
		511.9 -> 169.0	25650				
MeFOSE	11.261	616.1 -> 58.9	271488	24.14	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	16082	2.12	µg/L		99
		699.1 -> 98.8	8376				
NFDHA	6.053	295.0 -> 201.0	22220	4.89	µg/L		98
		295.0 -> 84.9	6722				
PFMBA	5.353	279.0 -> 85.1	183350	4.93	µg/L		100
PFMPA	3.932	229.0 -> 84.9	131084	3.42	µg/L		100
PFEESA	6.647	314.8 -> 134.9	252978	4.28	µg/L		100
		314.8 -> 82.9	8062				

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

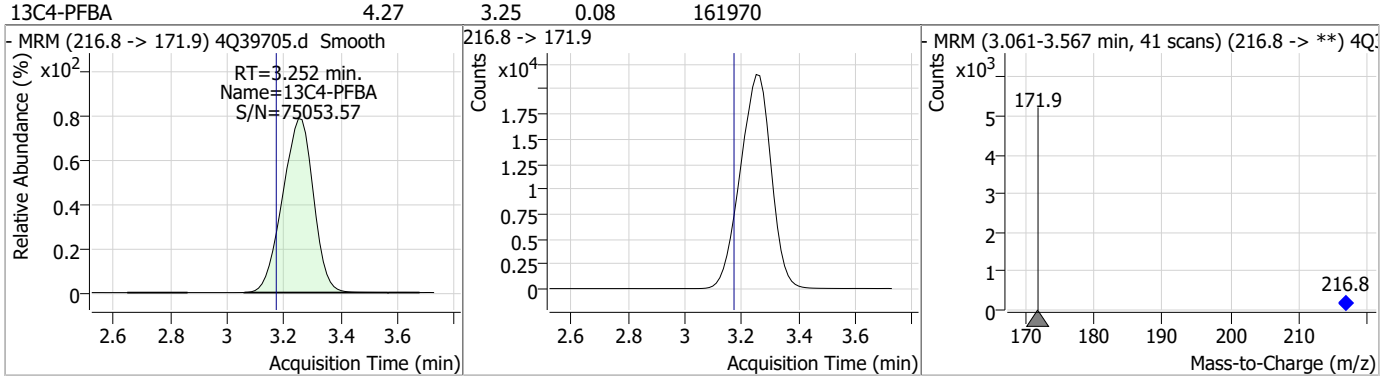
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

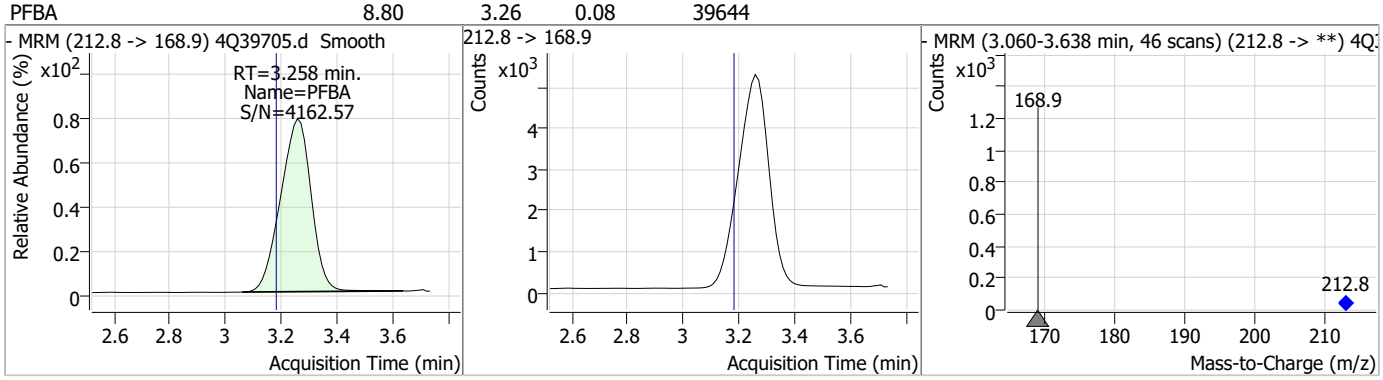
Perfluorinated Compounds by LC/MS/MS



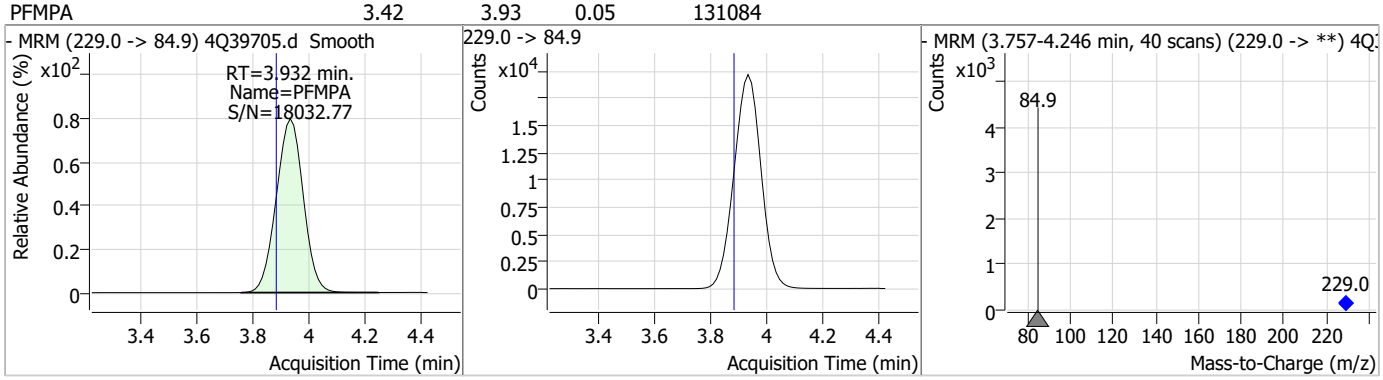
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	4.27	3.25	0.08	161970				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.80	3.26	0.08	39644				

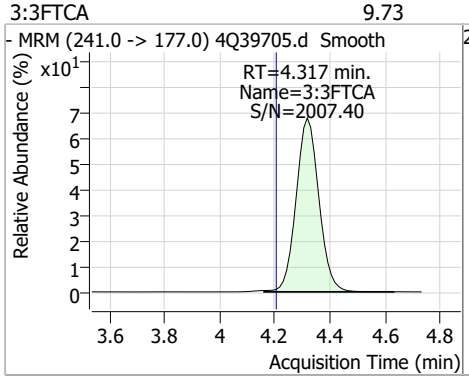


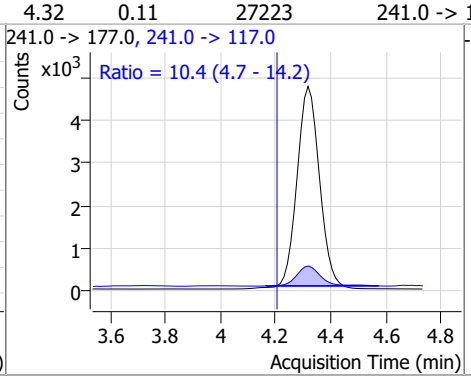
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	3.42	3.93	0.05	131084				

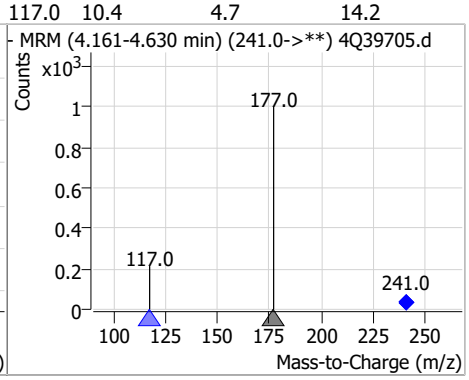


Perfluorinated Compounds by LC/MS/MS

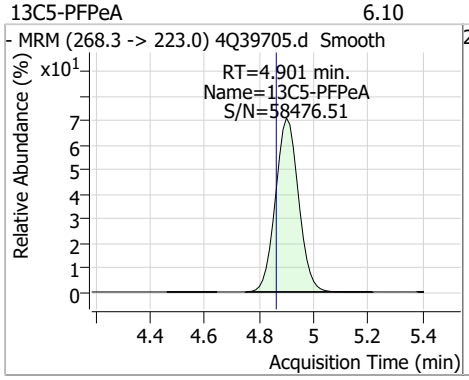
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	9.73	4.32	0.11	27223	241.0 -> 117.0	10.4	4.7	14.2

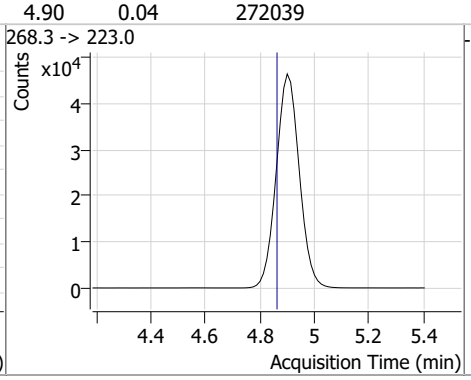


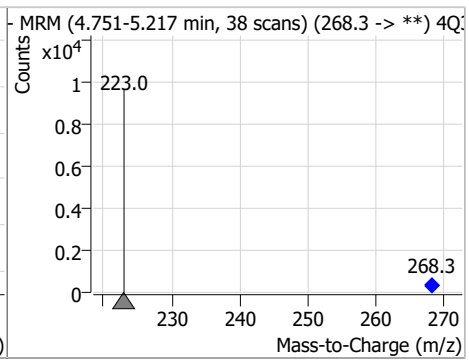




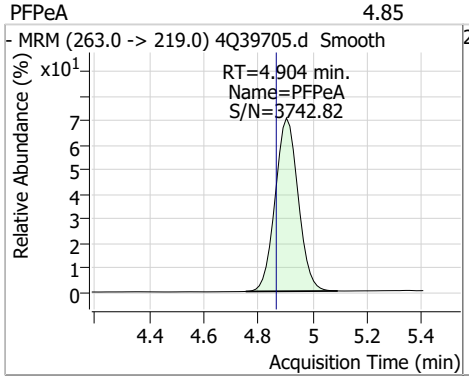
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.10	4.90	0.04	272039				

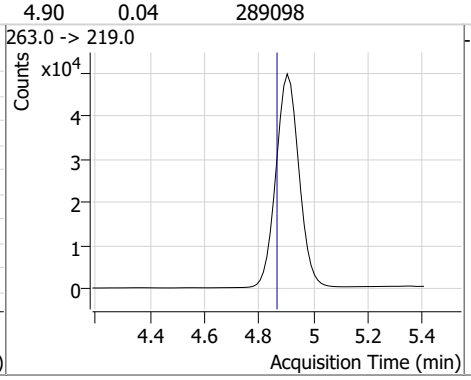


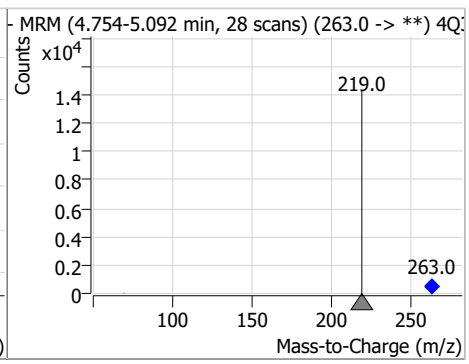




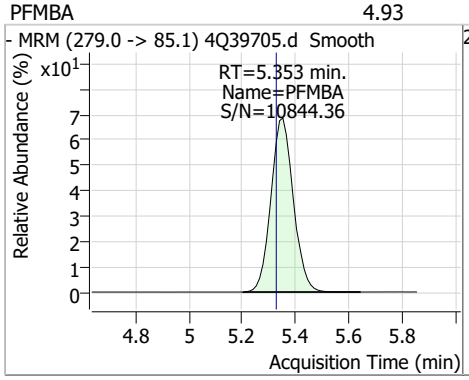
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.85	4.90	0.04	289098				

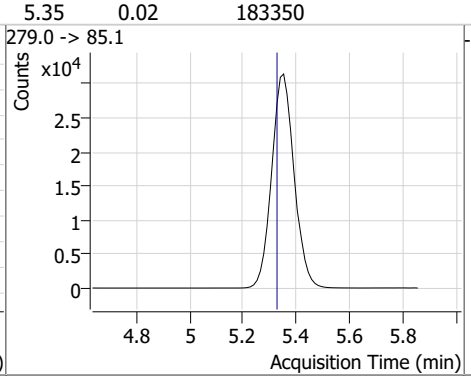


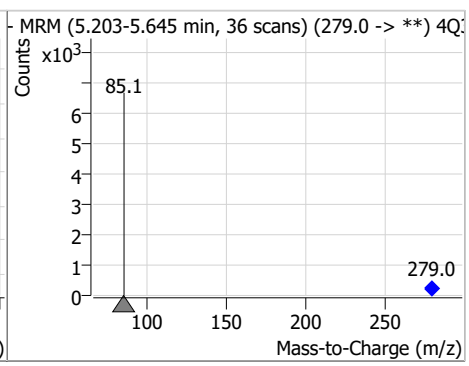




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.93	5.35	0.02	183350				

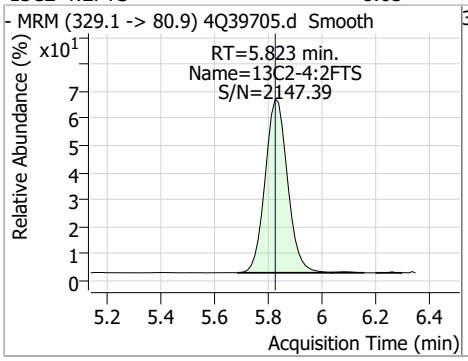


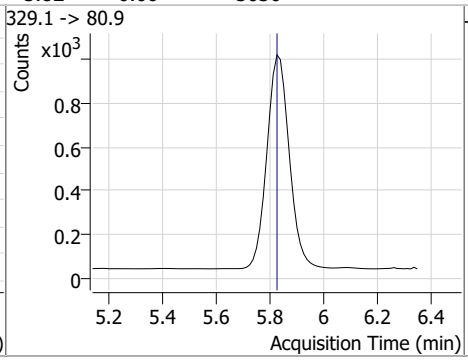


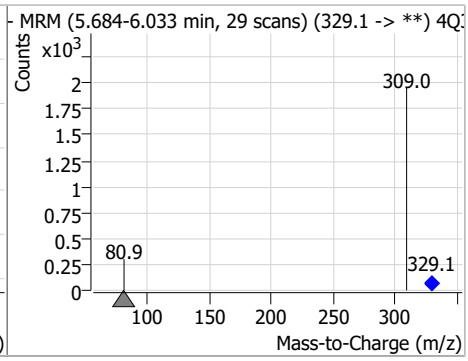


Perfluorinated Compounds by LC/MS/MS

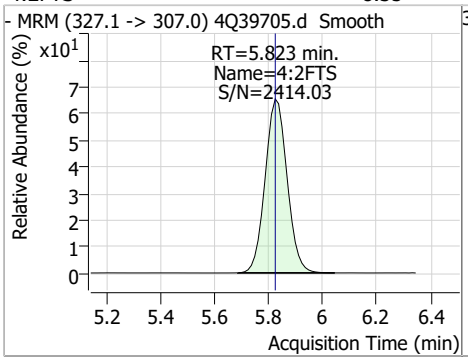
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.65	5.82	0.00	5650				

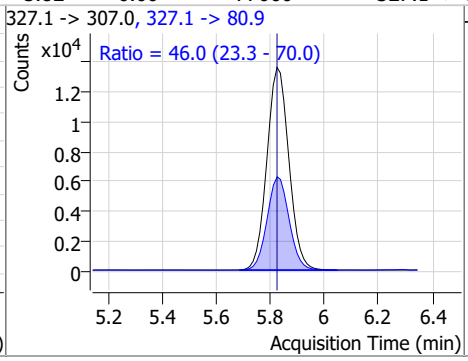


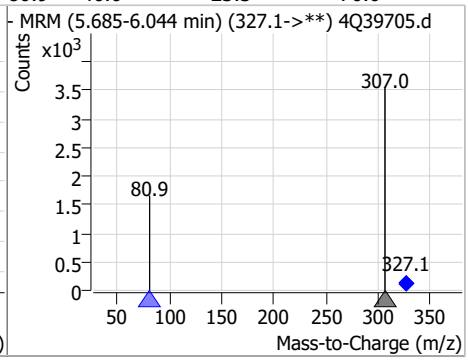




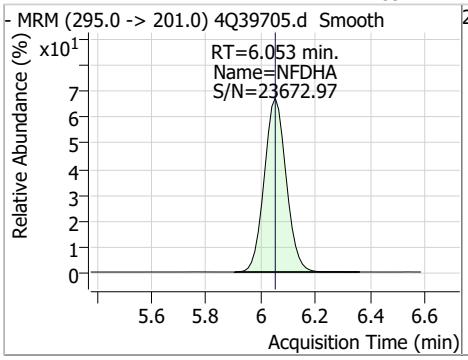
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.35	5.82	0.00	77060	327.1 -> 80.9	46.0	23.3	70.0

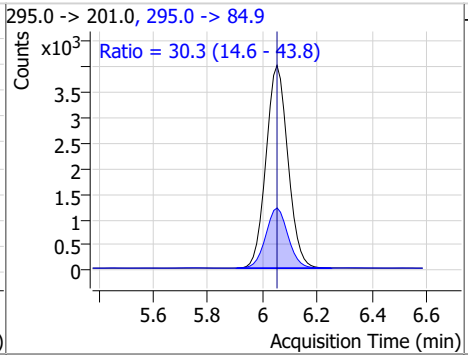


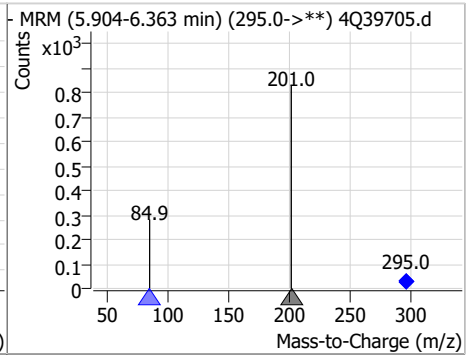




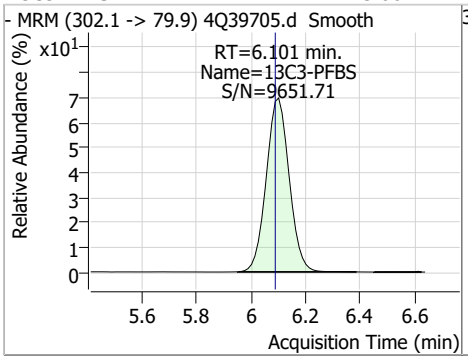
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.89	6.05	0.00	22220	295.0 -> 84.9	30.3	14.6	43.8

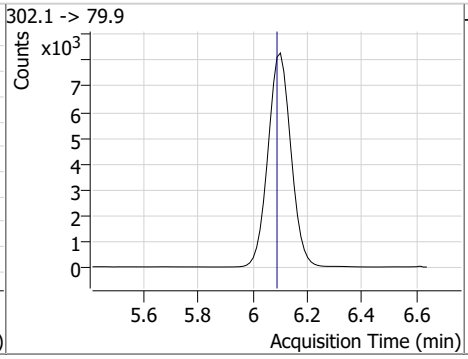


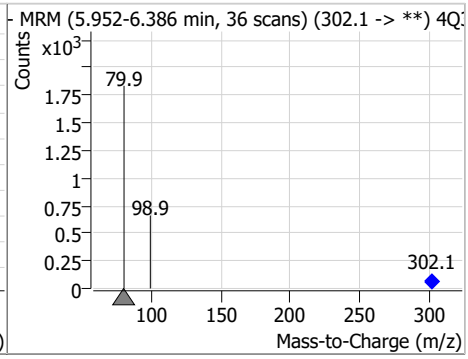




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.06	6.10	0.01	47960				

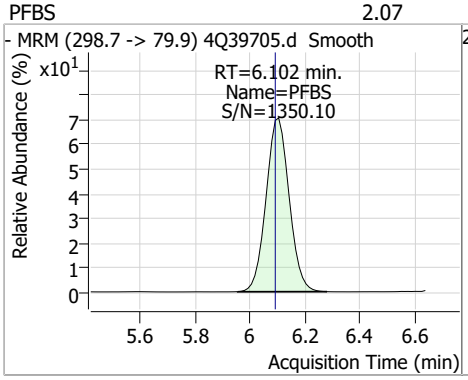


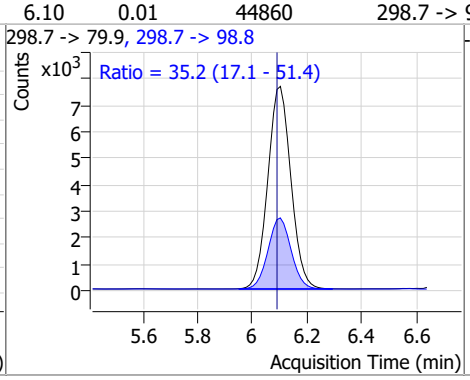


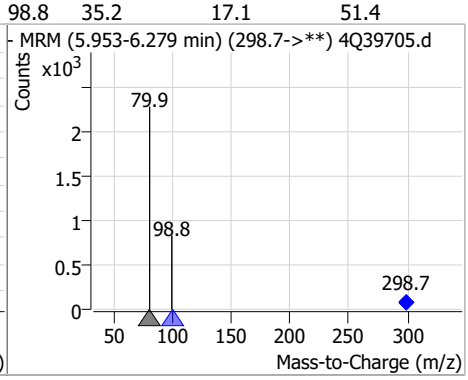


Perfluorinated Compounds by LC/MS/MS

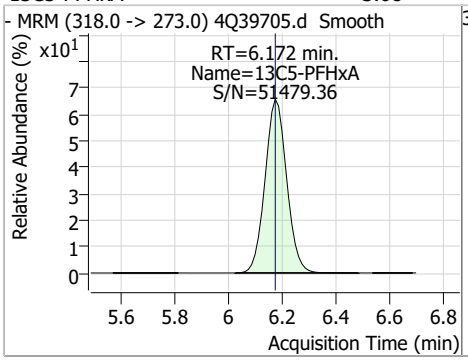
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.07	6.10	0.01	44860	298.7 -> 98.8	35.2	17.1	51.4

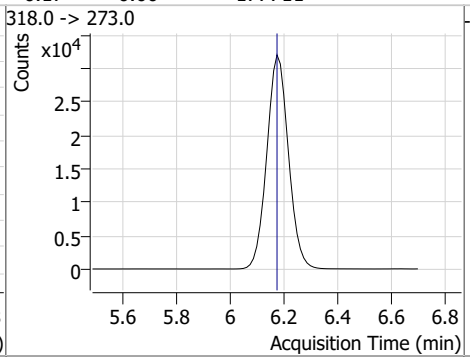


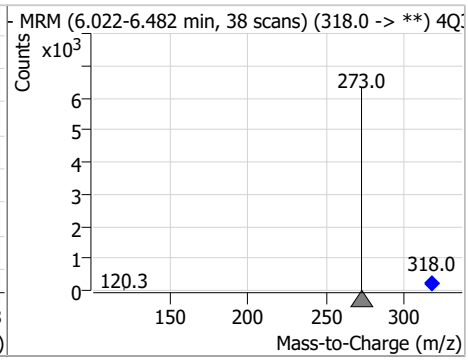




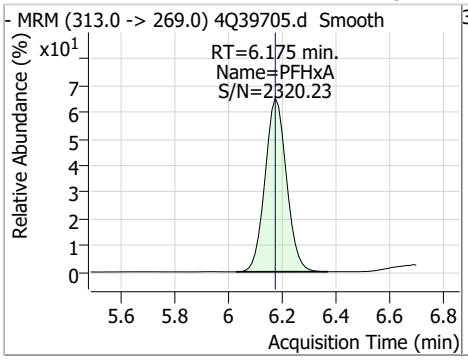
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.08	6.17	0.00	177711				

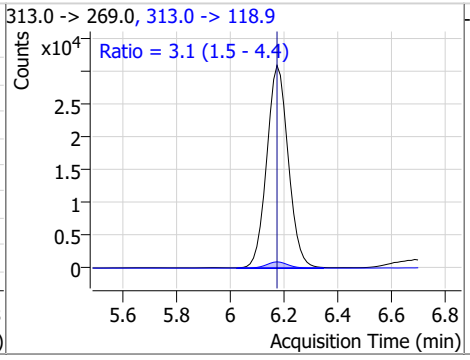


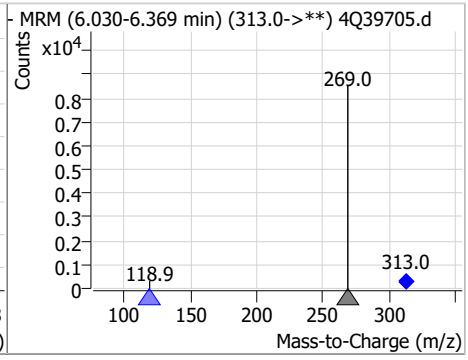




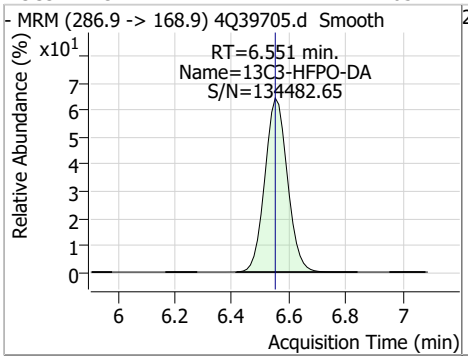
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.45	6.17	0.00	169491	313.0 -> 118.9	3.1	1.5	4.4

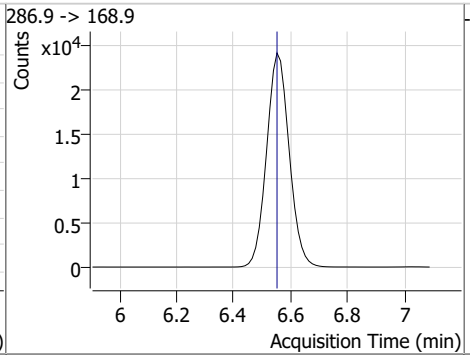


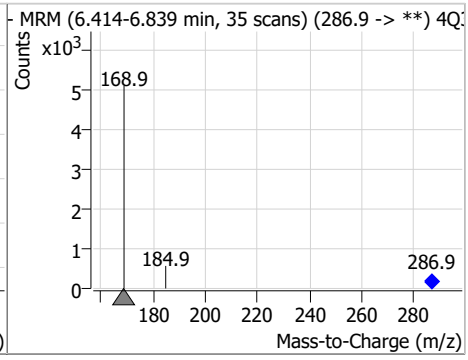




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.05	6.55	0.00	131759				

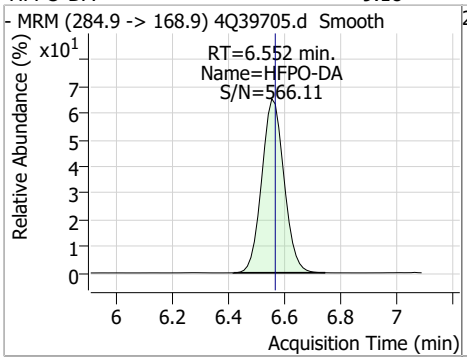


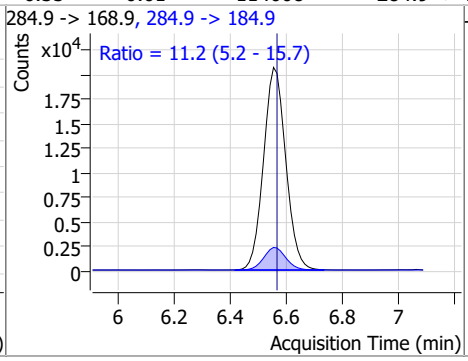


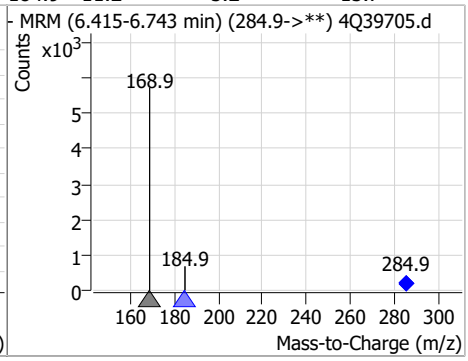


Perfluorinated Compounds by LC/MS/MS

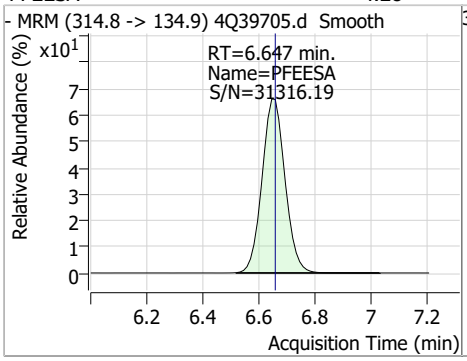
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.18	6.55	-0.01	114008	284.9 -> 184.9	11.2	5.2	15.7

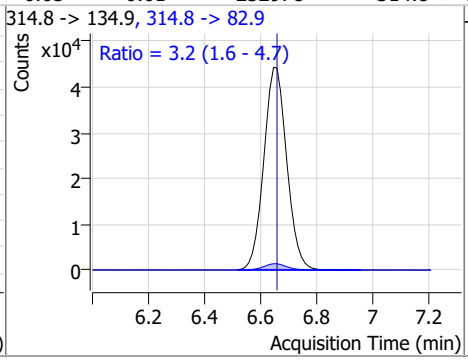


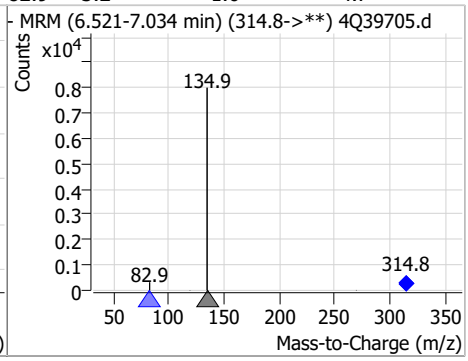




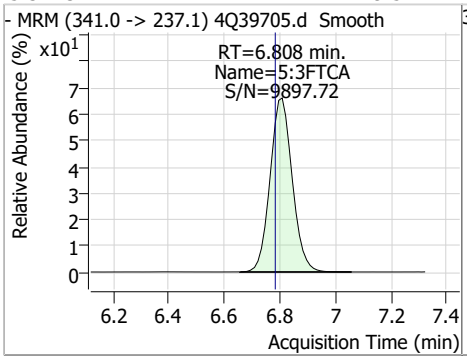
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.28	6.65	-0.01	252978	314.8 -> 82.9	3.2	1.6	4.7

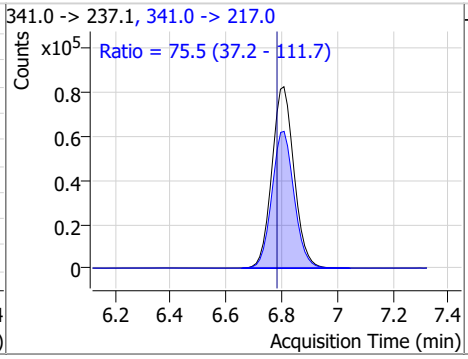


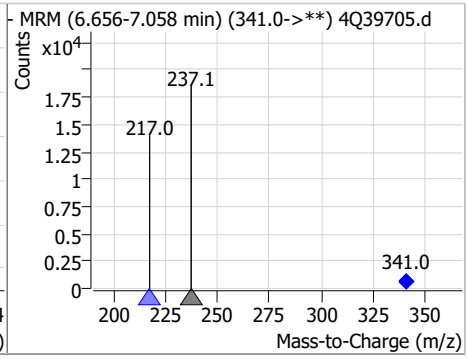




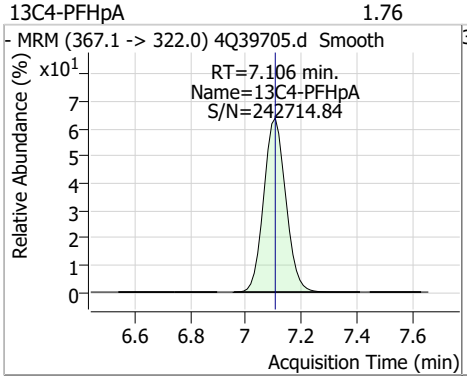
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	49.57	6.81	0.02	455650	341.0 -> 217.0	75.5	37.2	111.7

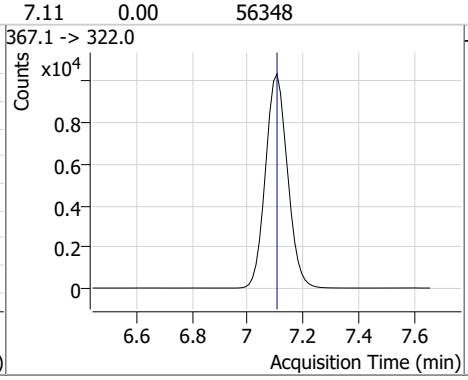


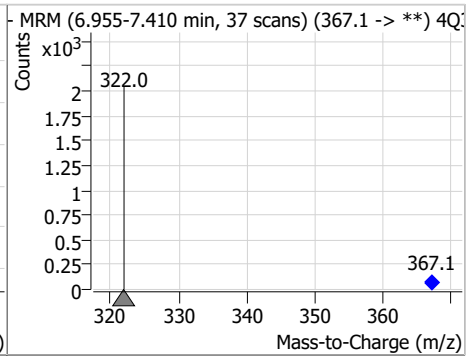




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.76	7.11	0.00	56348				

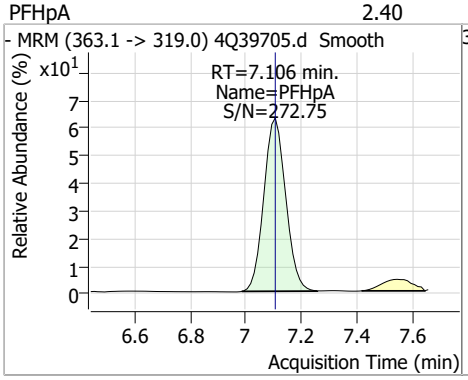


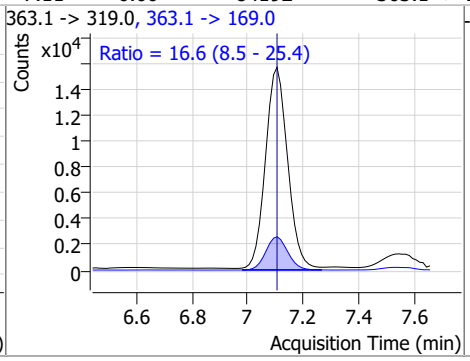


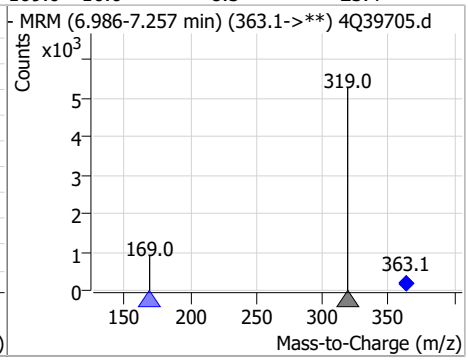


Perfluorinated Compounds by LC/MS/MS

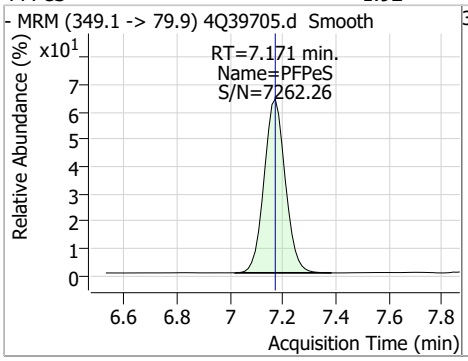
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.40	7.11	0.00	84192	363.1 -> 169.0	16.6	8.5	25.4

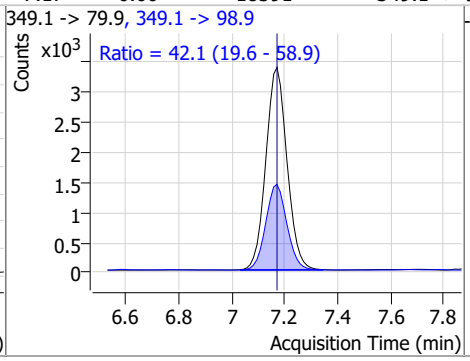


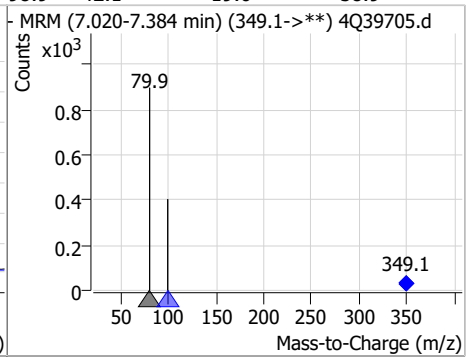




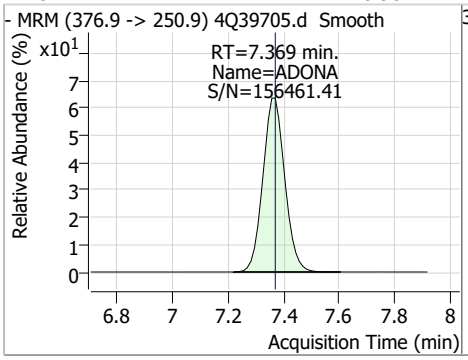
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.92	7.17	0.00	18591	349.1 -> 98.9	42.1	19.6	58.9

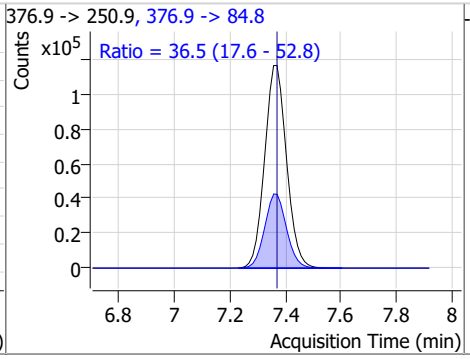


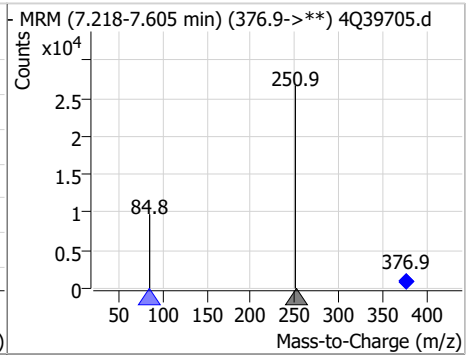




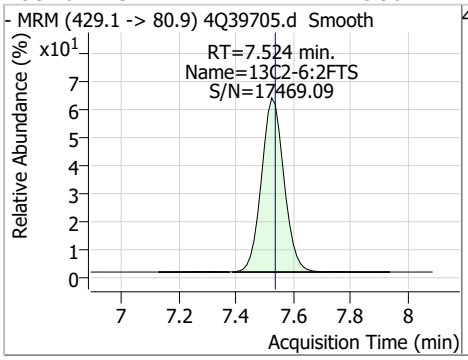
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.95	7.37	0.00	636466	376.9 -> 84.8	36.5	17.6	52.8

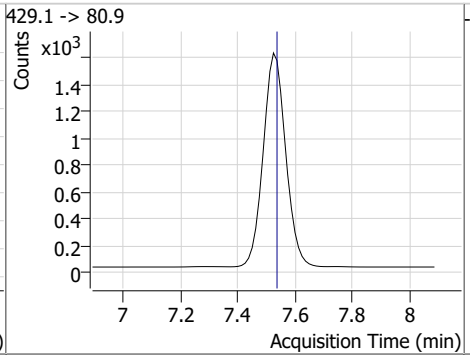


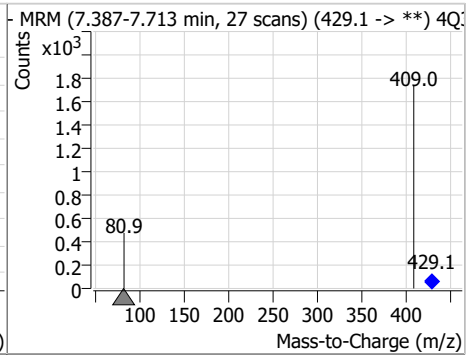




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.96	7.52	-0.01	8719				

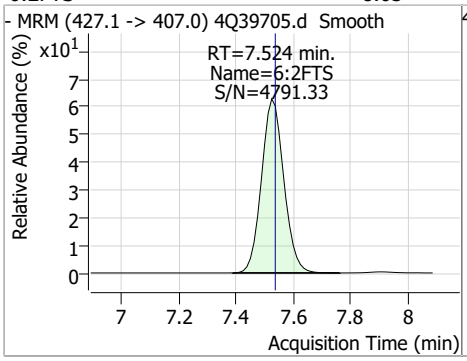


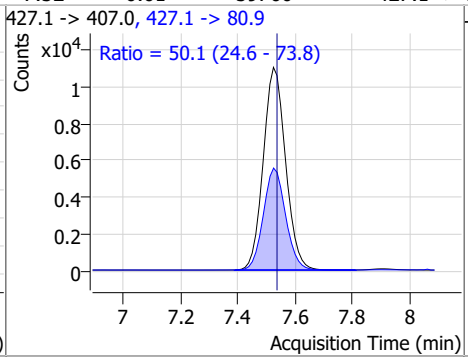


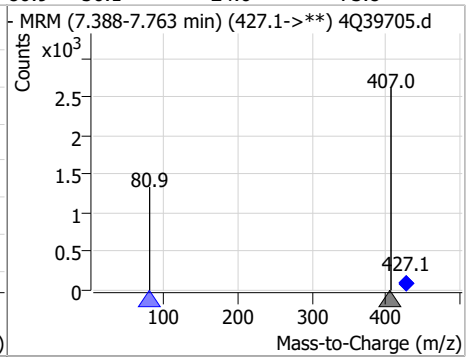


Perfluorinated Compounds by LC/MS/MS

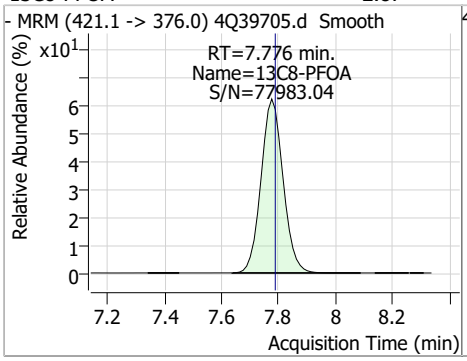
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.65	7.52	-0.01	59760	427.1 -> 80.9	50.1	24.6	73.8

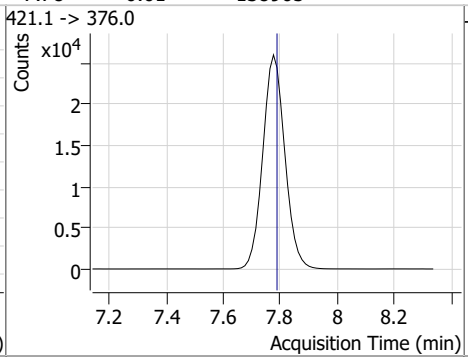


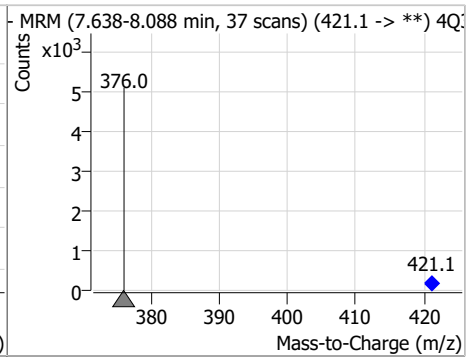




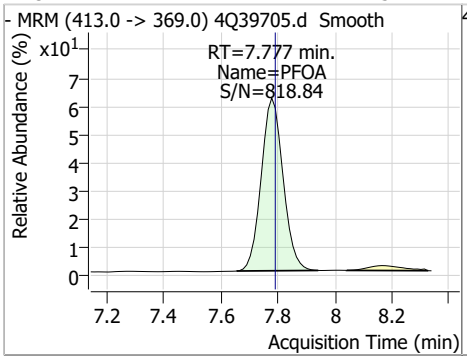
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.87	7.78	-0.01	138965				

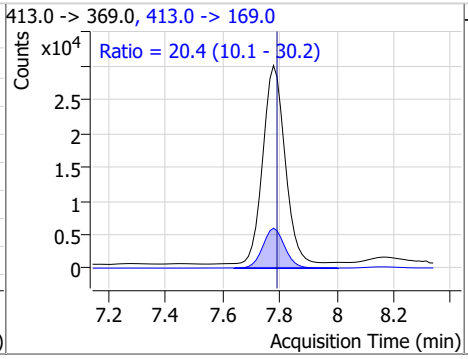


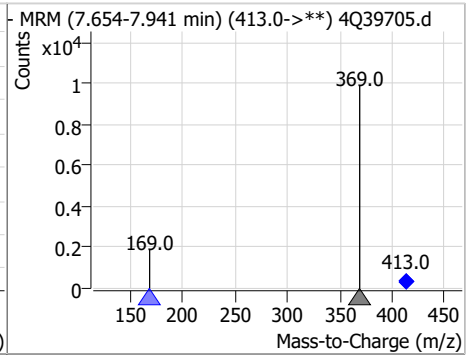




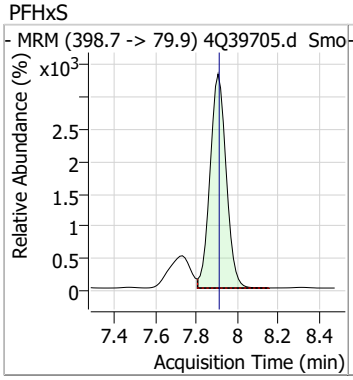
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.52	7.78	-0.01	155880	413.0 -> 169.0	20.4	10.1	30.2

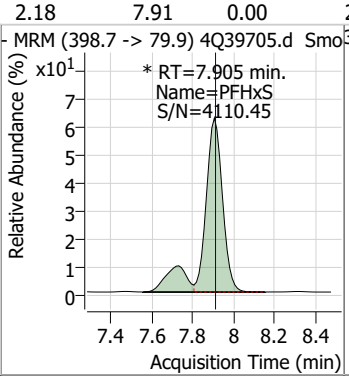


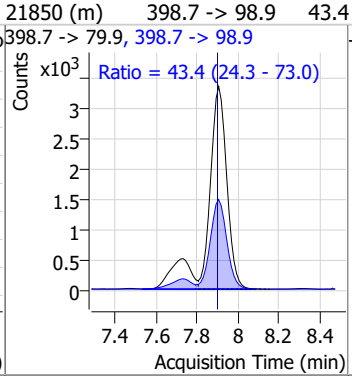


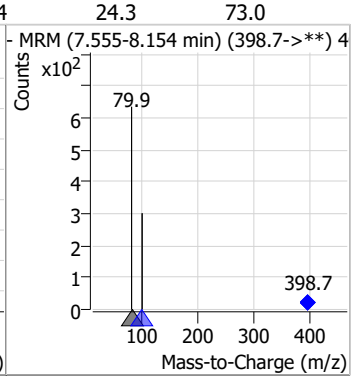


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.18	7.91	0.00	21850 (m)	398.7 -> 98.9	43.4	24.3	73.0



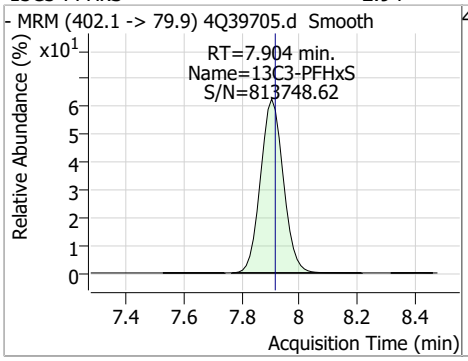


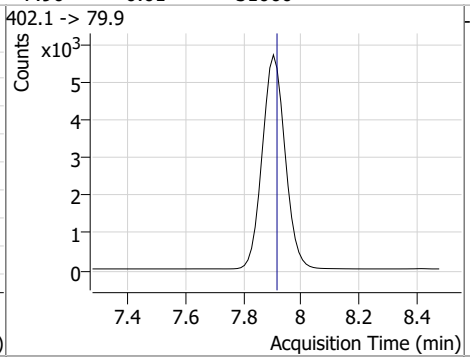


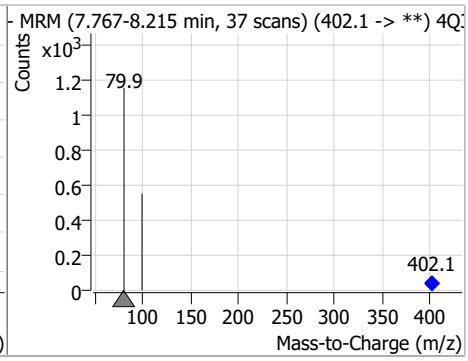


Perfluorinated Compounds by LC/MS/MS

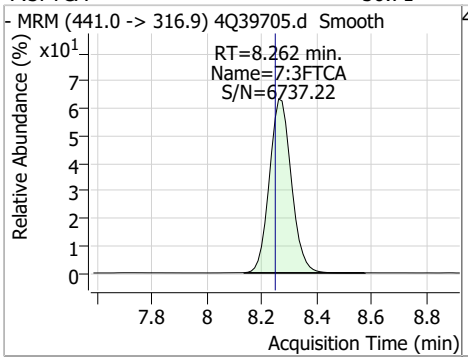
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.94	7.90	-0.01	31060				

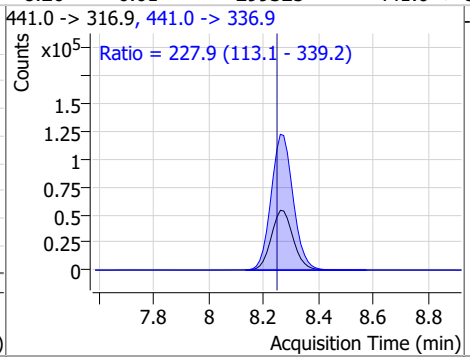


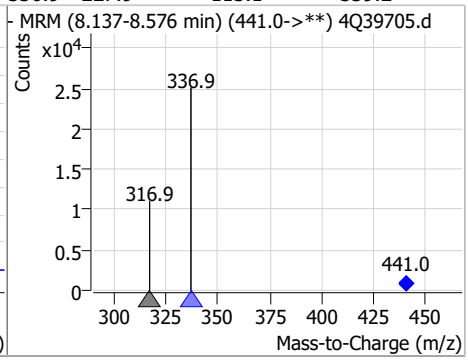




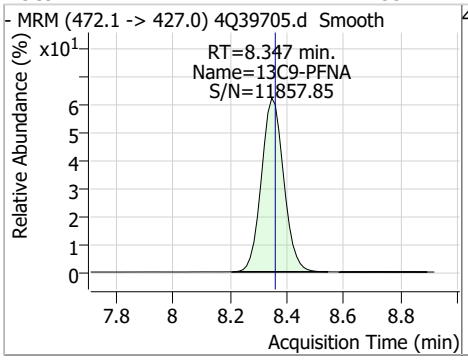
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	56.71	8.26	0.01	299325	441.0 -> 336.9	227.9	113.1	339.2

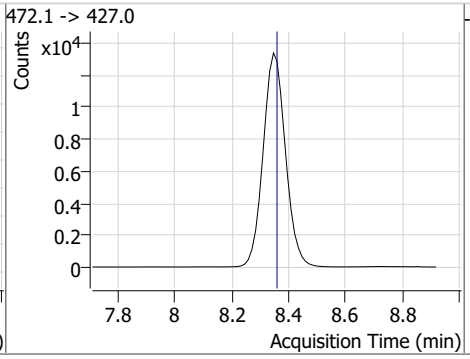


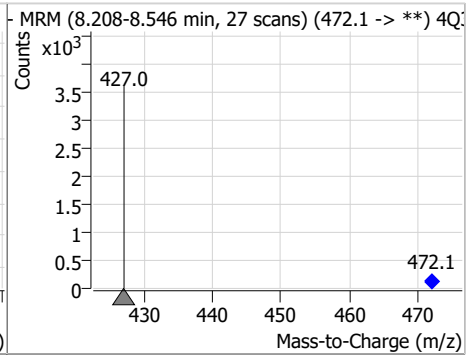




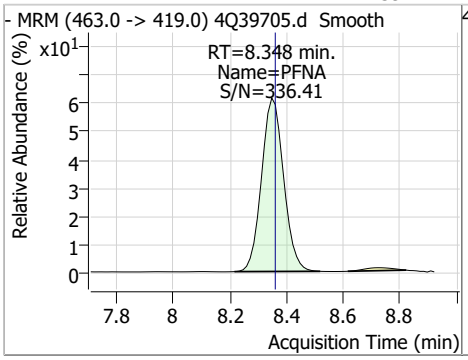
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.55	8.35	-0.01	72522				

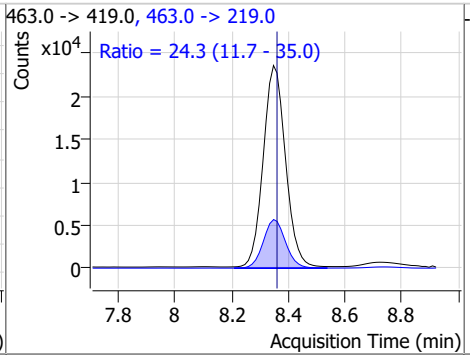


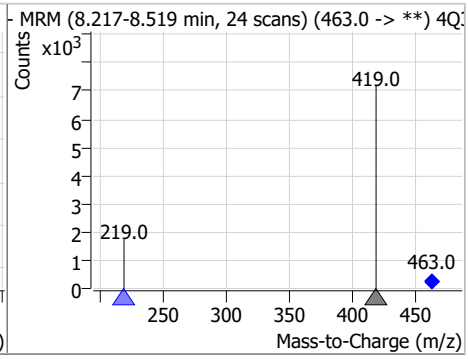




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.39	8.35	-0.01	125952	463.0 -> 219.0	24.3	11.7	35.0

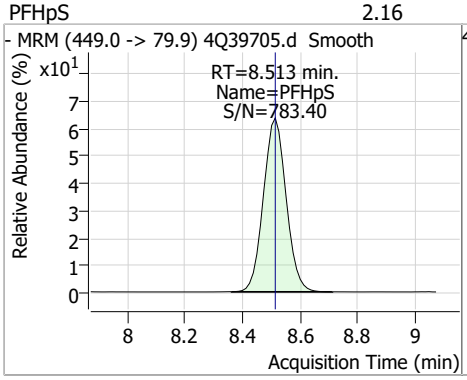


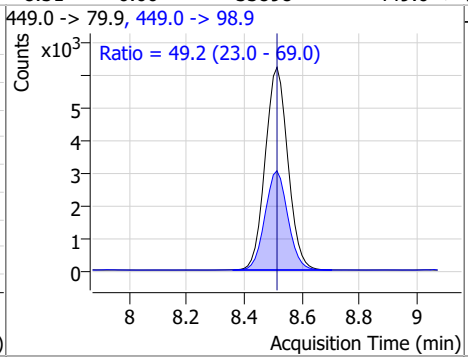


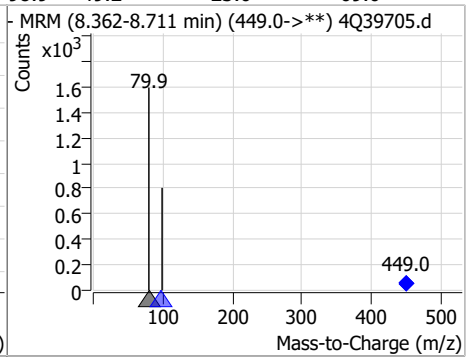


Perfluorinated Compounds by LC/MS/MS

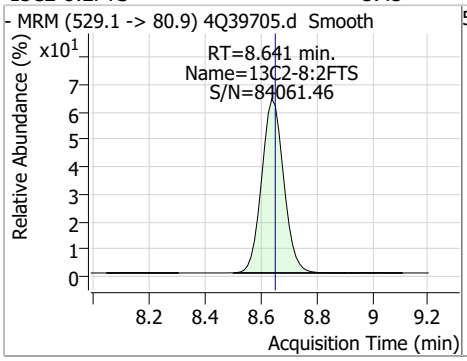
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.16	8.51	0.00	33898	449.0 -> 98.9	49.2	23.0	69.0

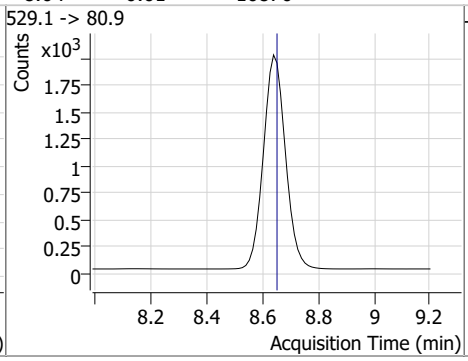


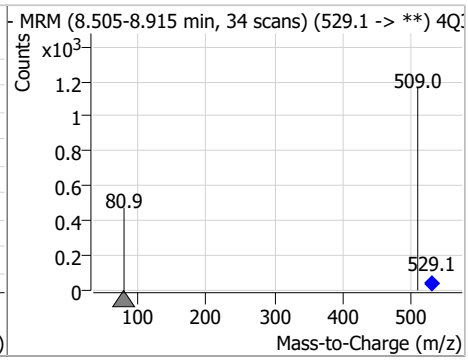




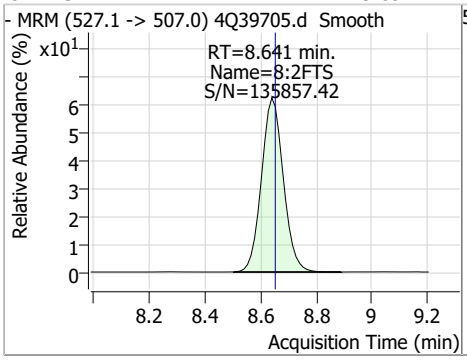
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.43	8.64	-0.01	10870				

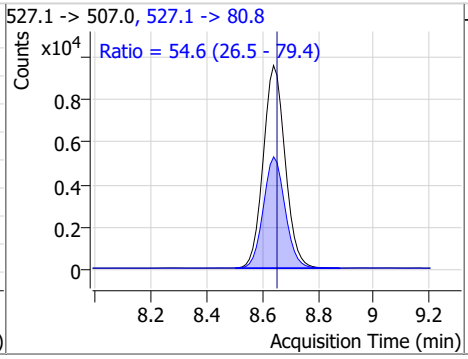


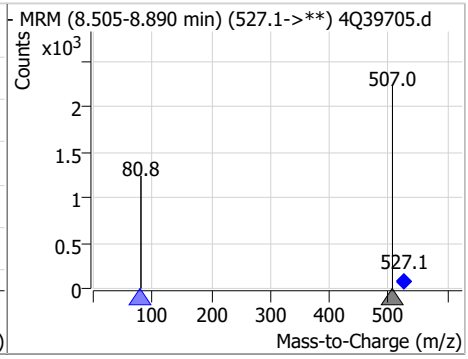




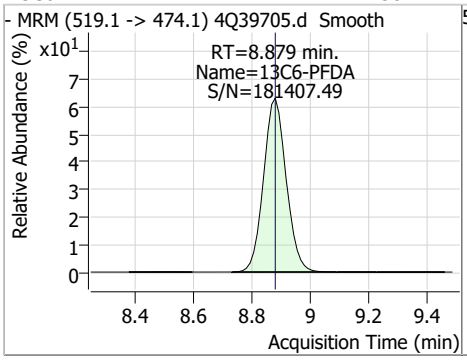
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.89	8.64	-0.01	52019	527.1 -> 80.8	54.6	26.5	79.4

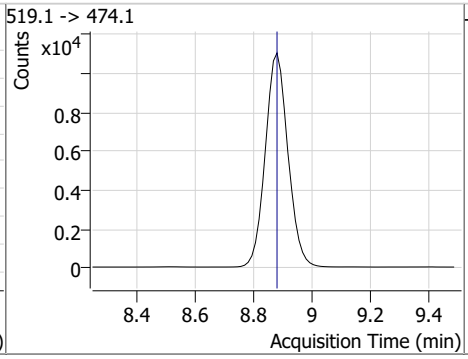


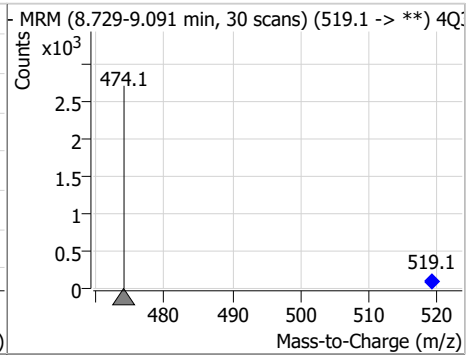




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.58	8.88	0.00	59472				

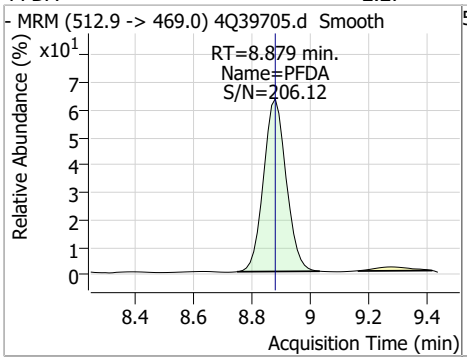


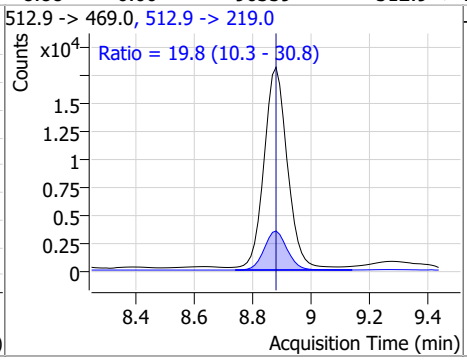


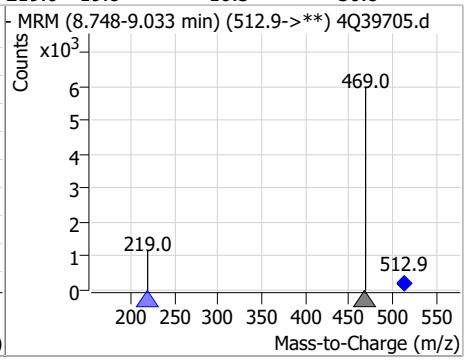


Perfluorinated Compounds by LC/MS/MS

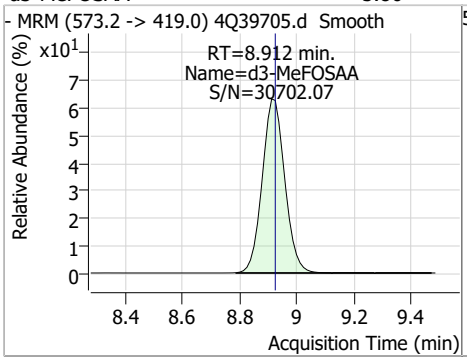
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.27	8.88	0.00	96359	512.9 -> 219.0	19.8	10.3	30.8

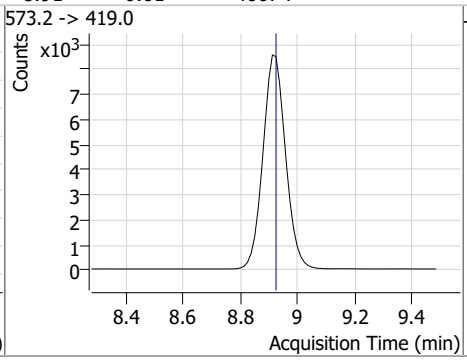


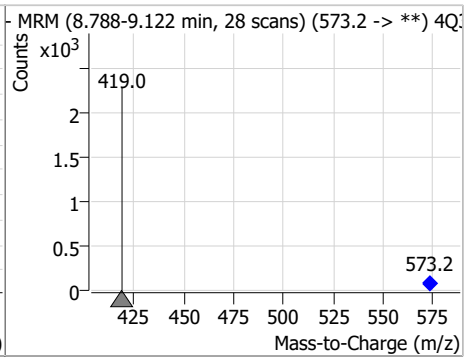




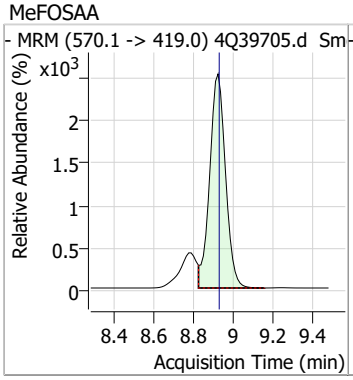
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.86	8.91	-0.01	46674				

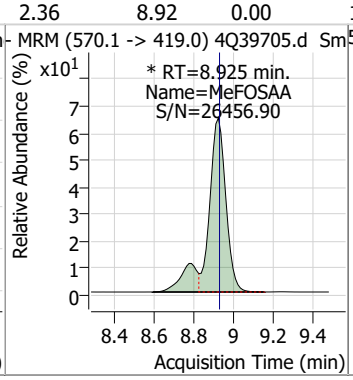


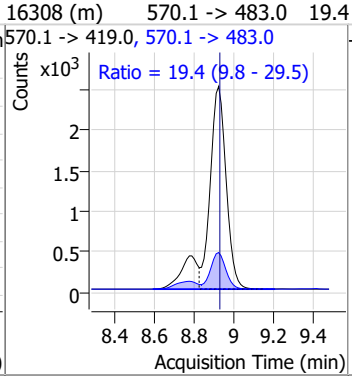


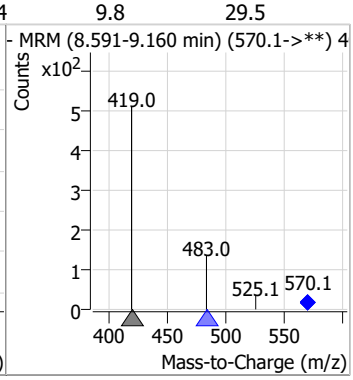


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.36	8.92	0.00	16308 (m)	570.1 -> 483.0	19.4	9.8	29.5

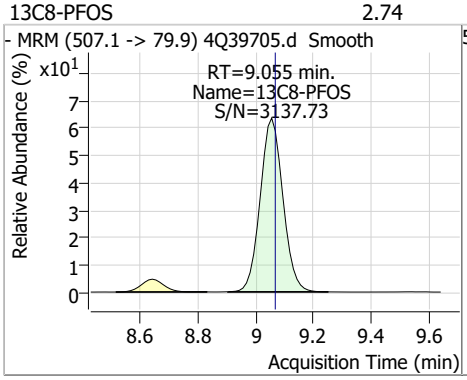


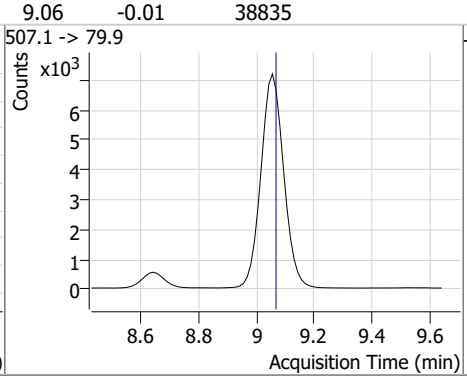


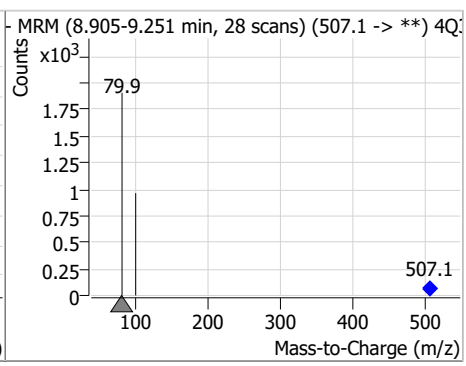




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.74	9.06	-0.01	38835				

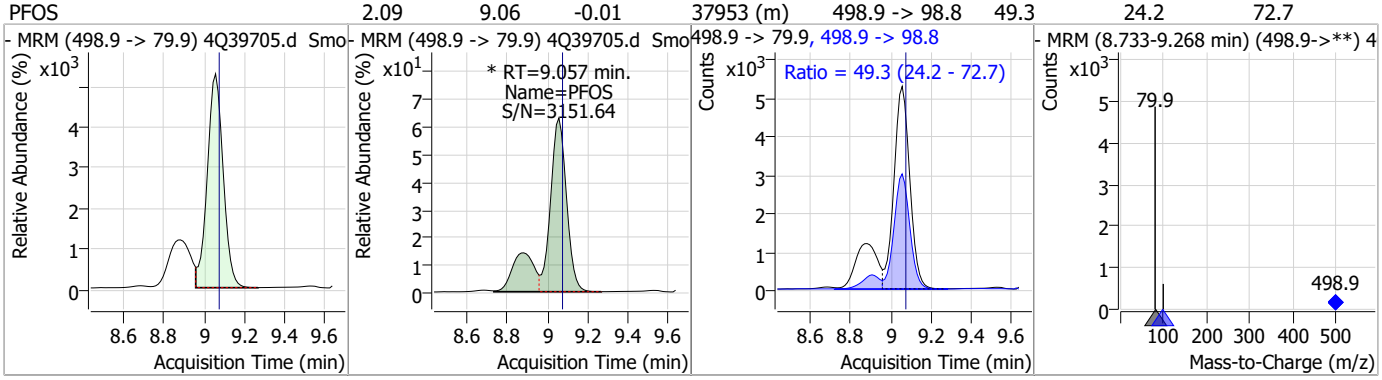




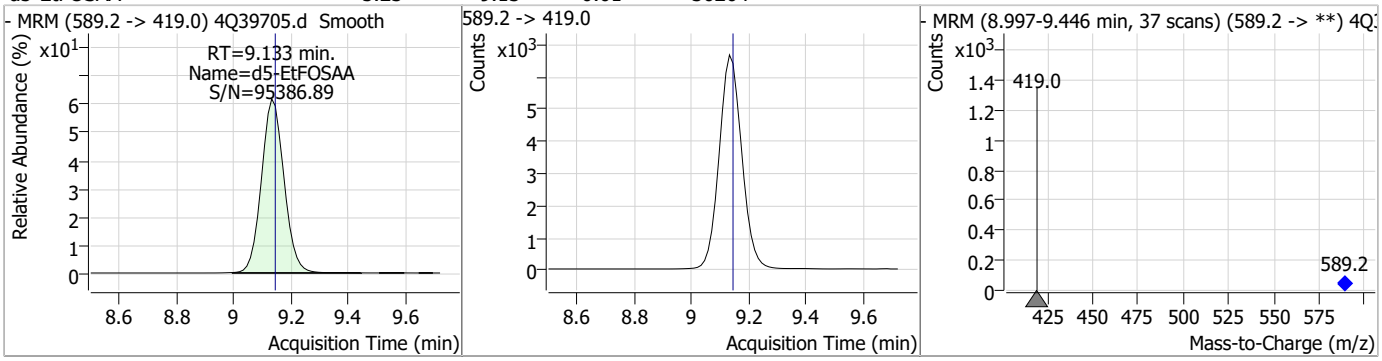


Perfluorinated Compounds by LC/MS/MS

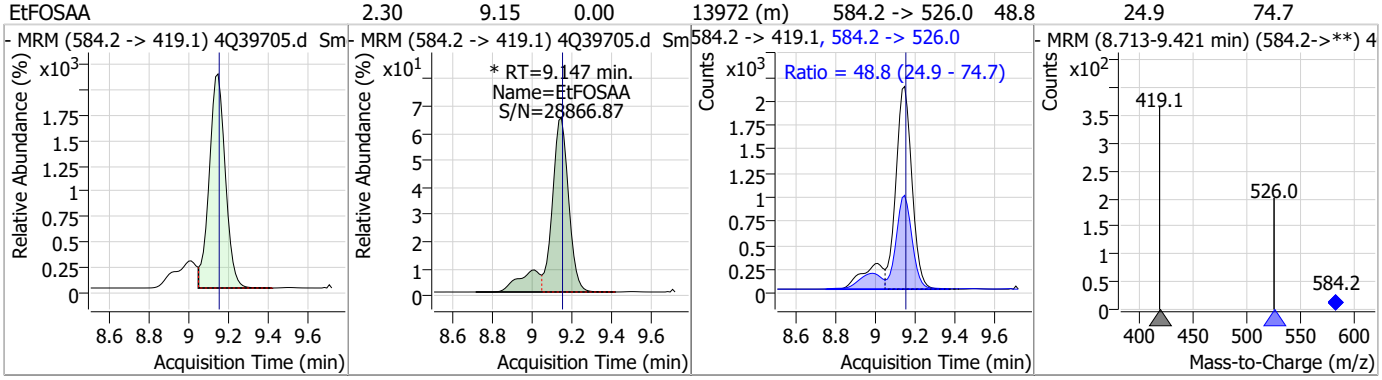
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.09	9.06	-0.01	37953 (m)	498.9 -> 98.8	49.3	24.2	72.7



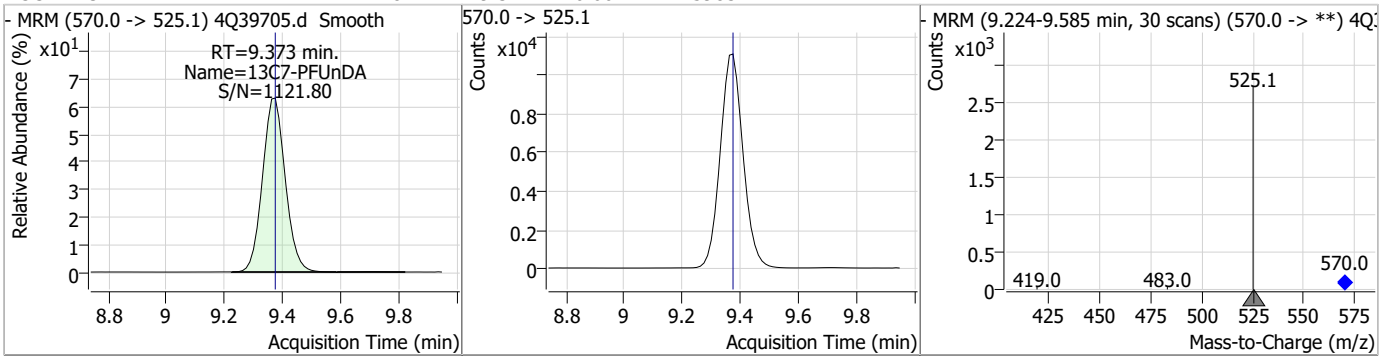
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.23	9.13	-0.01	36264				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.30	9.15	0.00	13972 (m)	584.2 -> 526.0	48.8	24.9	74.7

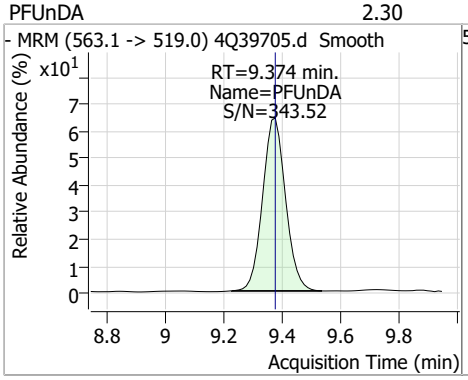


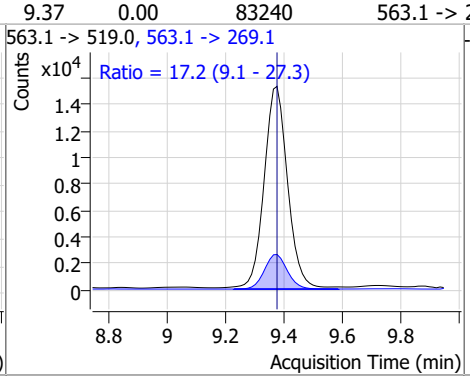
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.48	9.37	0.00	59834				

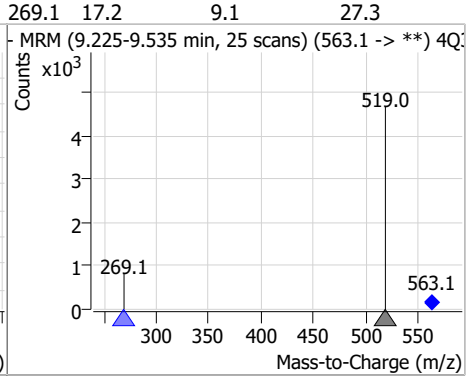


Perfluorinated Compounds by LC/MS/MS

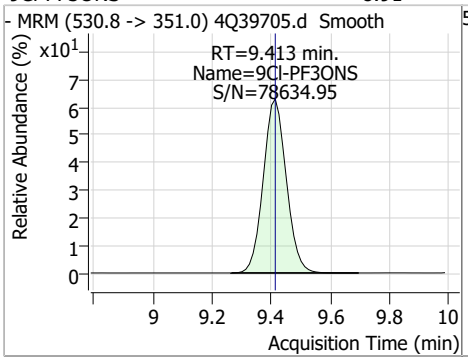
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.30	9.37	0.00	83240	563.1 -> 269.1	17.2	9.1	27.3

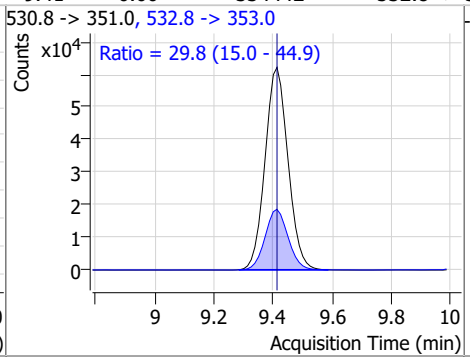


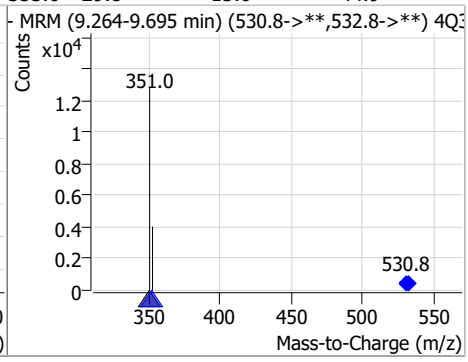




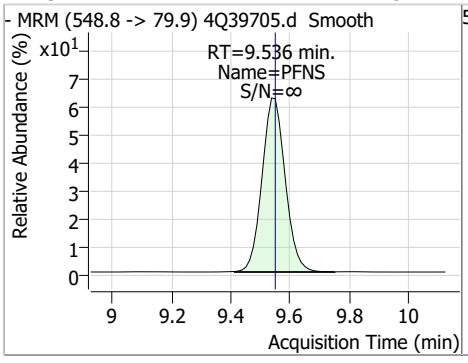
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.91	9.41	0.00	334442	532.8 -> 353.0	29.8	15.0	44.9

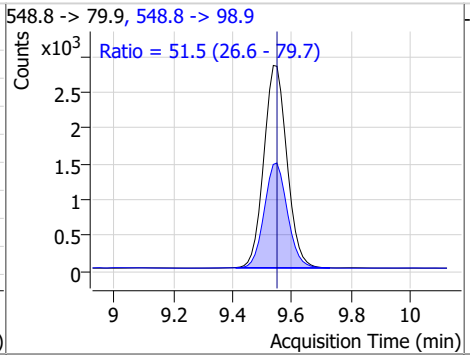


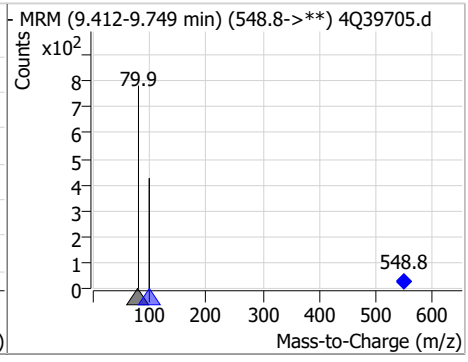




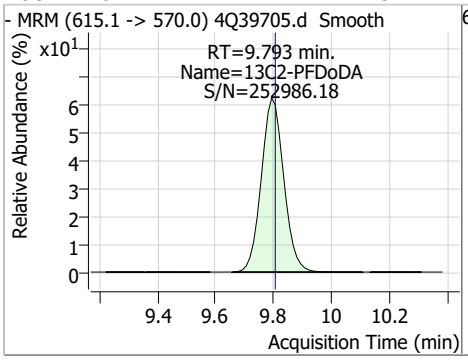
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.23	9.54	-0.01	15383	548.8 -> 98.9	51.5	26.6	79.7

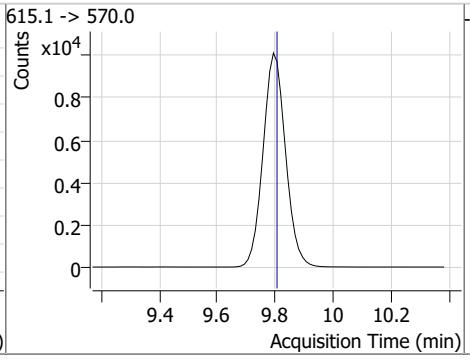


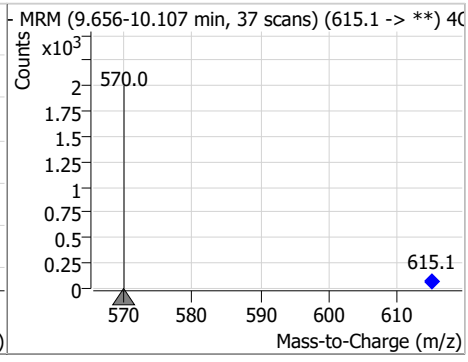




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	9.79	-0.01	53986				

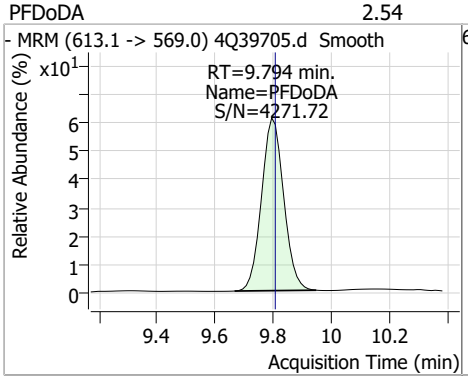


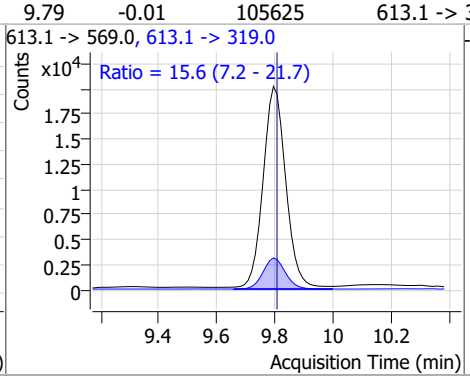


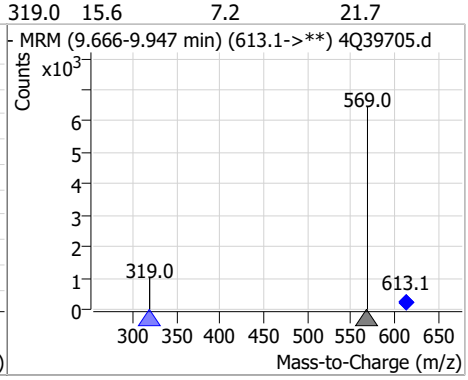


Perfluorinated Compounds by LC/MS/MS

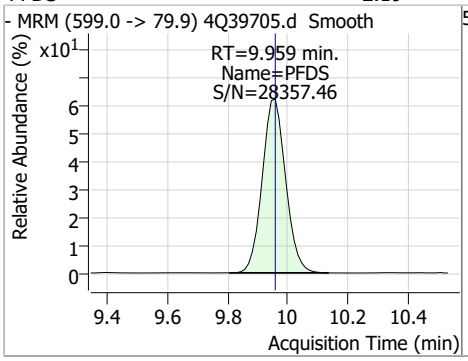
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.54	9.79	-0.01	105625	613.1 -> 319.0	15.6	7.2	21.7

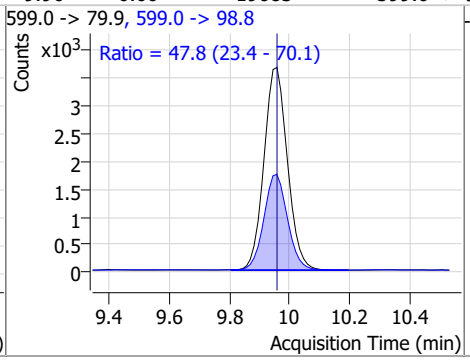


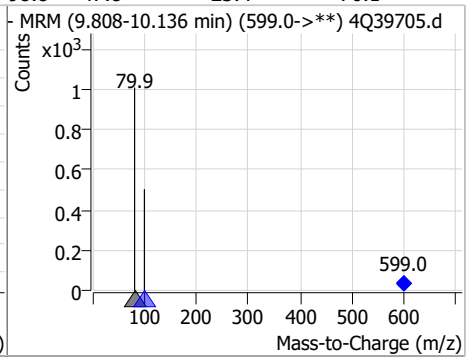




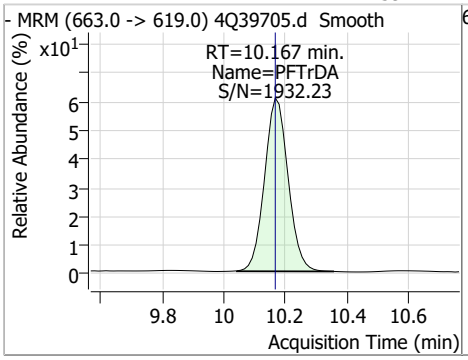
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.19	9.96	0.00	19683	599.0 -> 98.8	47.8	23.4	70.1

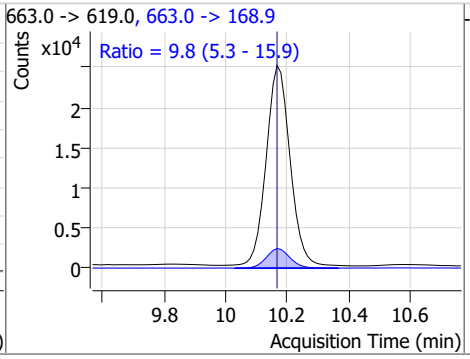


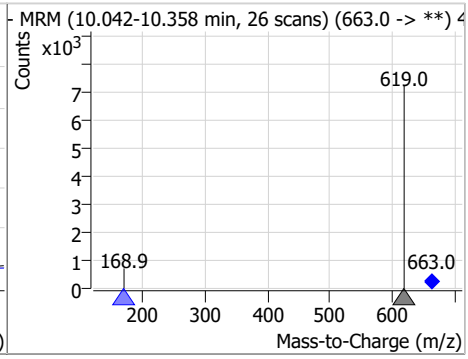




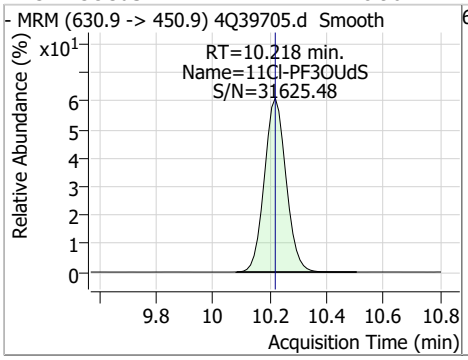
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.59	10.17	0.00	131879	663.0 -> 168.9	9.8	5.3	15.9

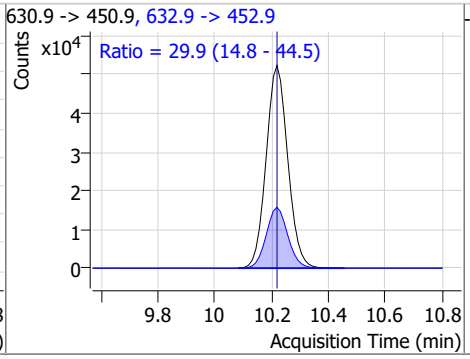


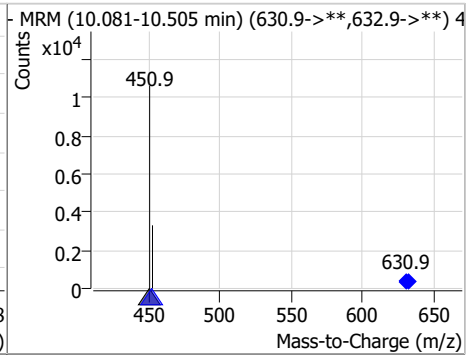




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	8.96	10.22	0.00	275827	632.9 -> 452.9	29.9	14.8	44.5

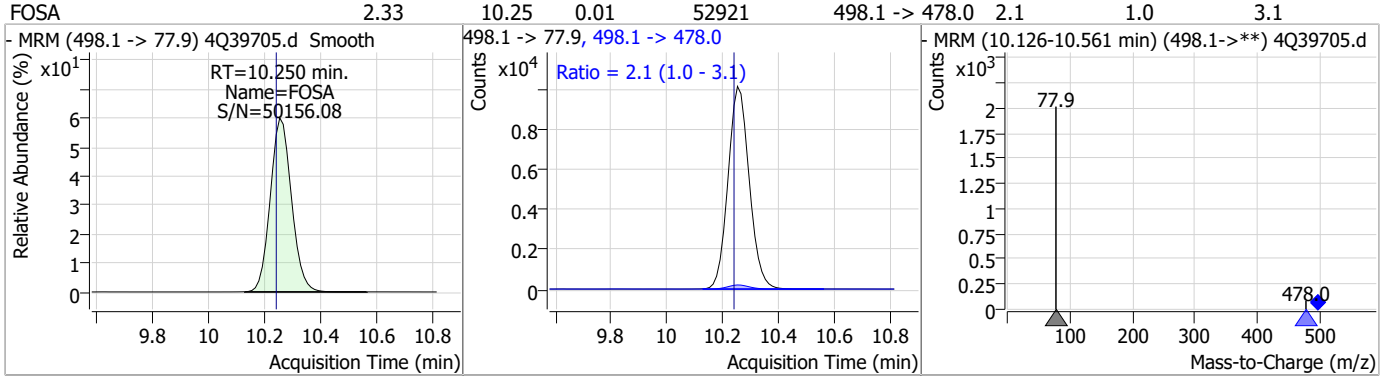




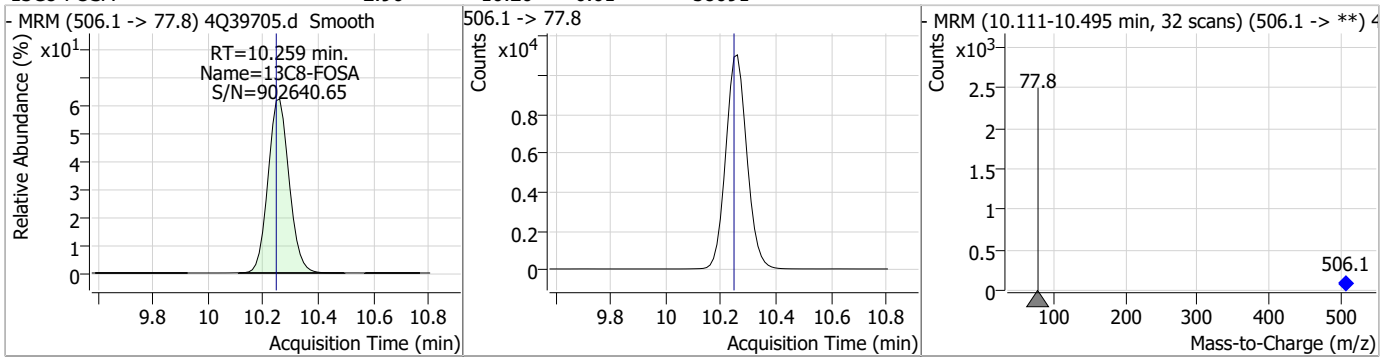


Perfluorinated Compounds by LC/MS/MS

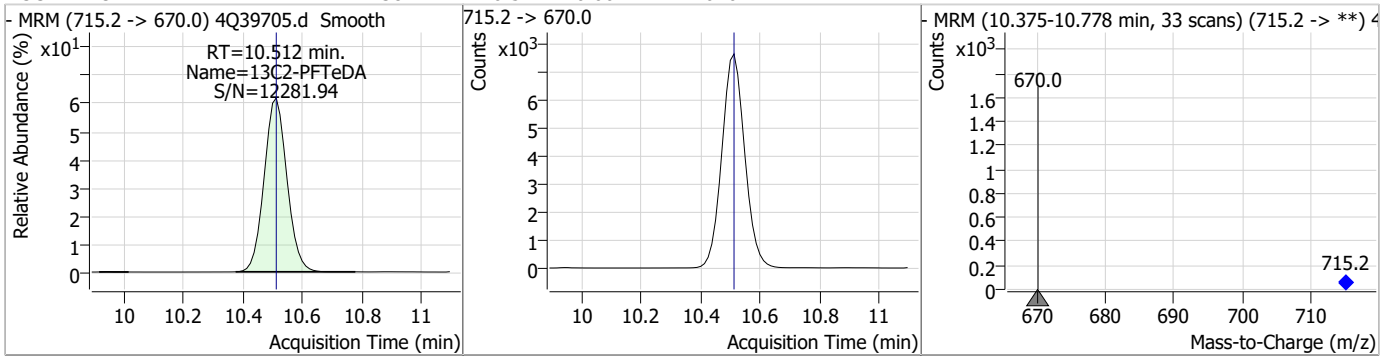
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.33	10.25	0.01	52921	498.1 -> 478.0	2.1	1.0	3.1



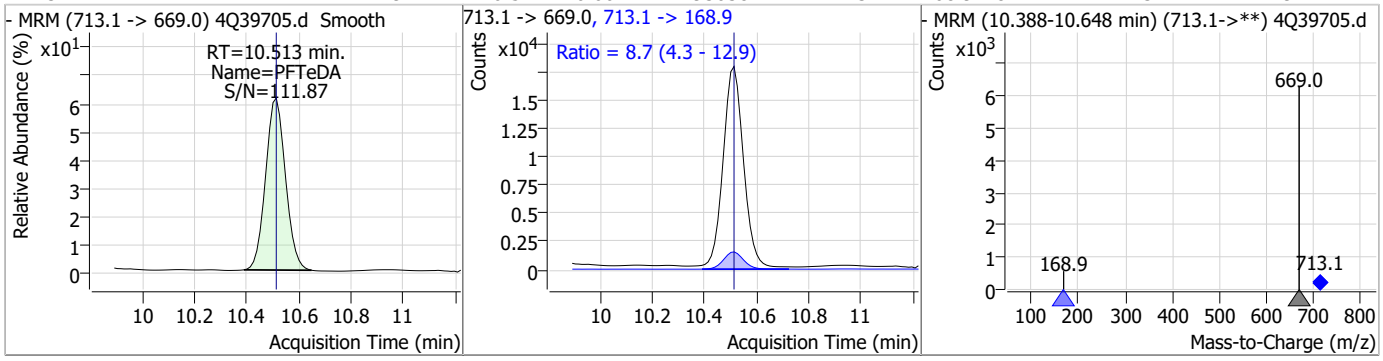
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.96	10.26	0.01	58691				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.38	10.51	0.00	40401				

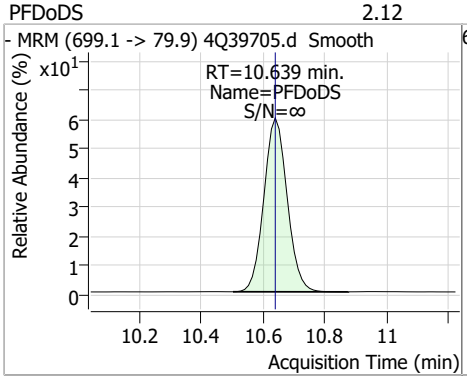


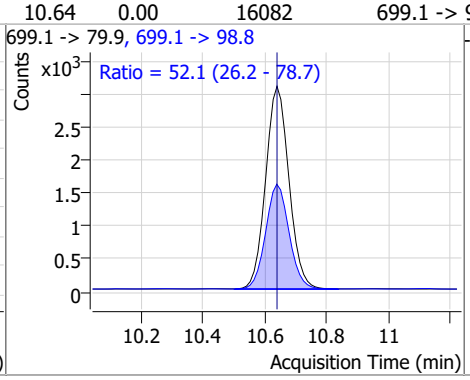
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.29	10.51	0.00	93038	713.1 -> 168.9	8.7	4.3	12.9

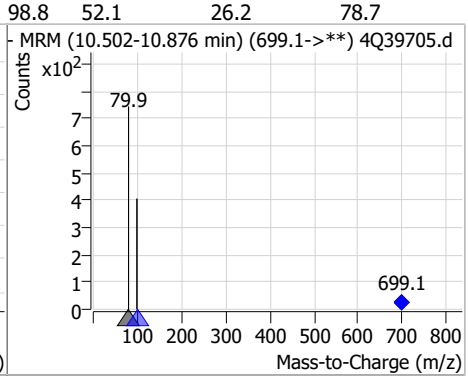


Perfluorinated Compounds by LC/MS/MS

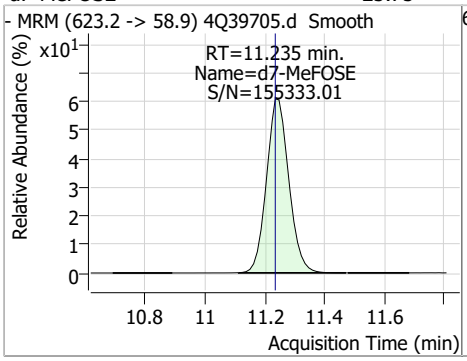
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.12	10.64	0.00	16082	699.1 -> 98.8	52.1	26.2	78.7

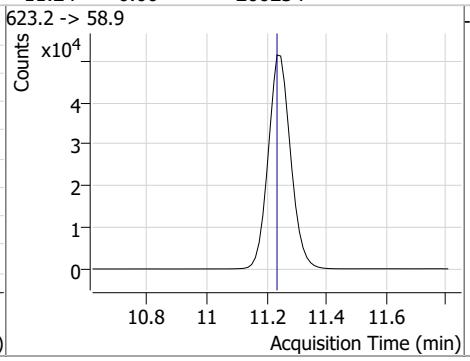


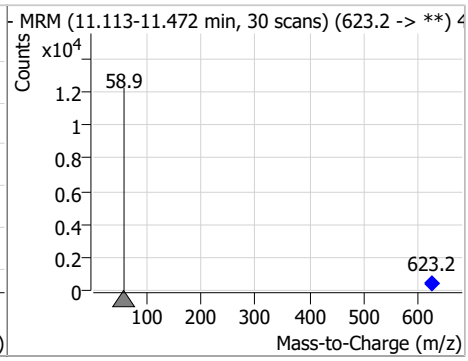




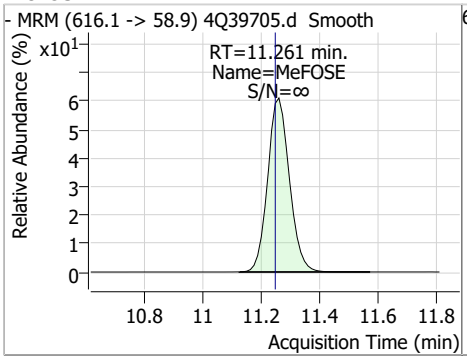
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.75	11.24	0.00	266234				

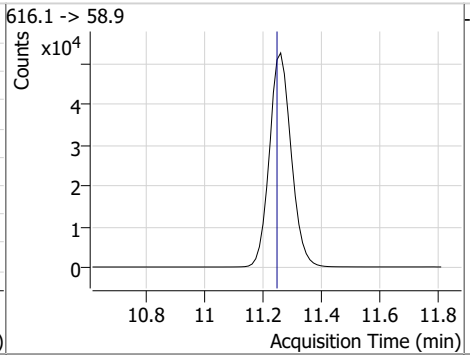


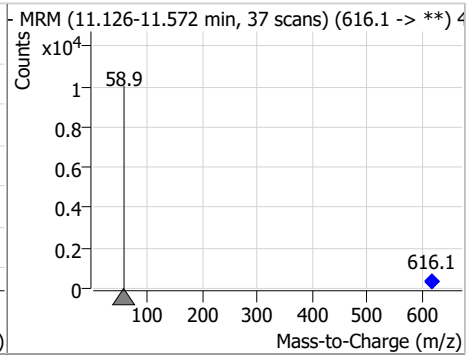




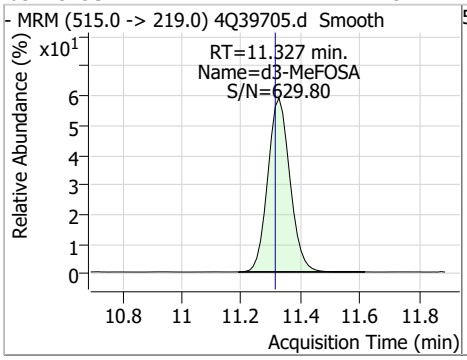
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.14	11.26	0.01	271488				

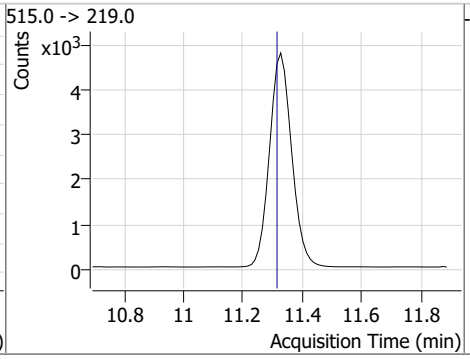


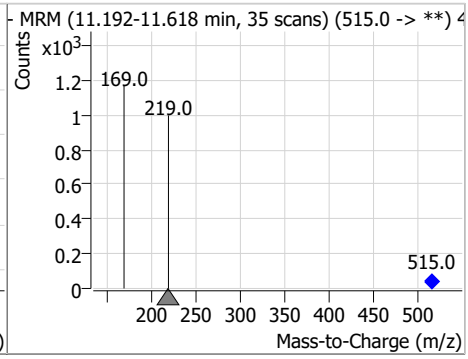




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.73	11.33	0.01	24772				

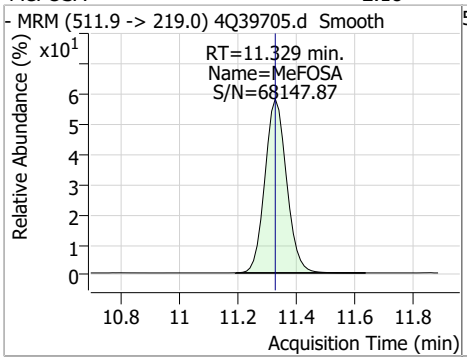


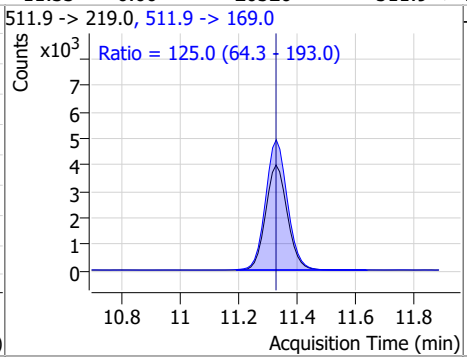


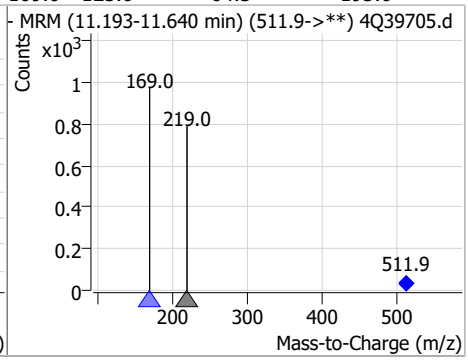


Perfluorinated Compounds by LC/MS/MS

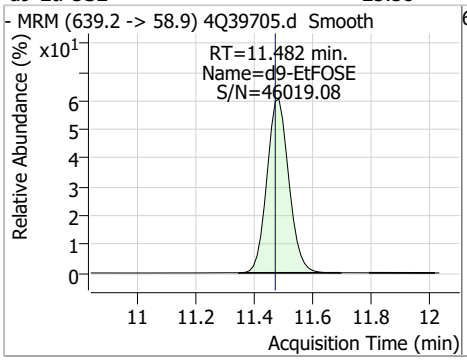
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.18	11.33	0.00	20526	511.9 -> 169.0	125.0	64.3	193.0

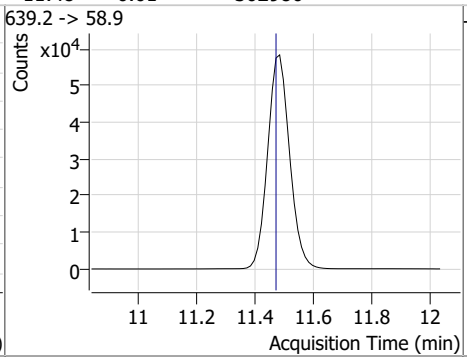


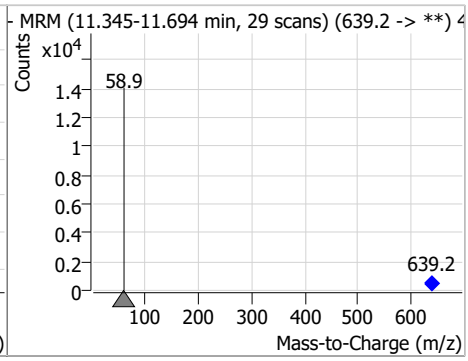




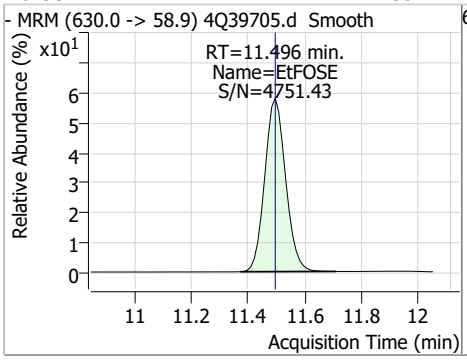
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.58	11.48	0.01	302980				

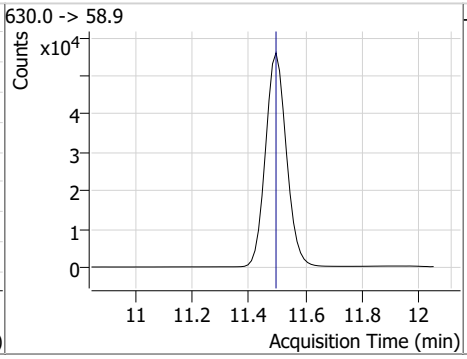


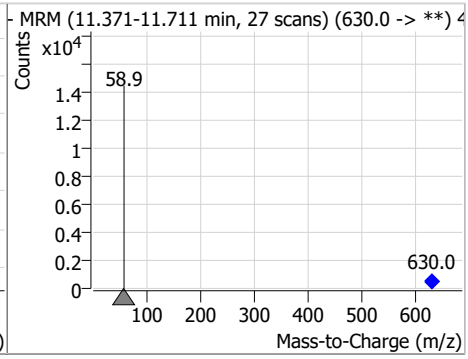




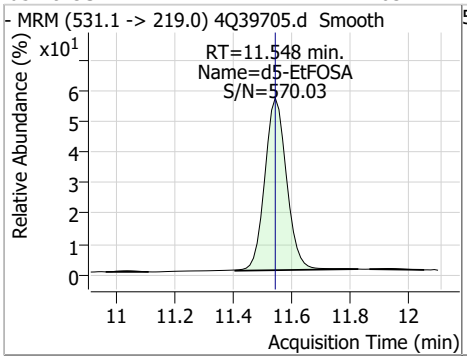
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.33	11.50	0.00	286194				

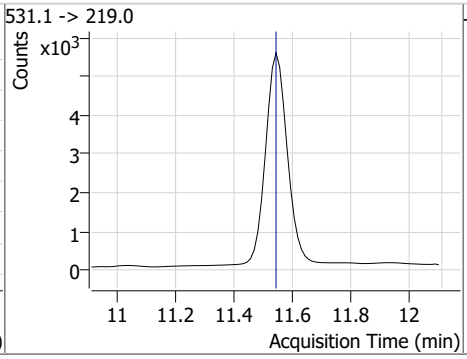


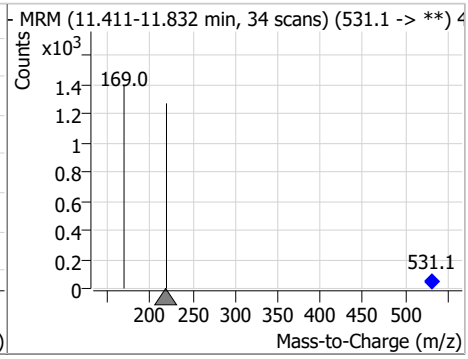




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.63	11.55	0.00	28415				

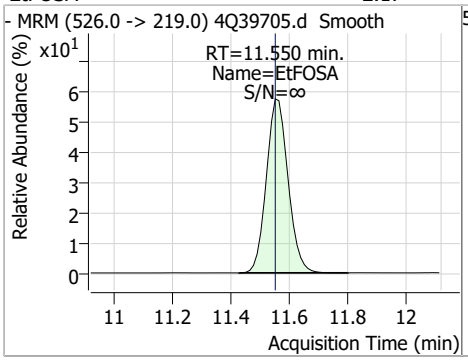


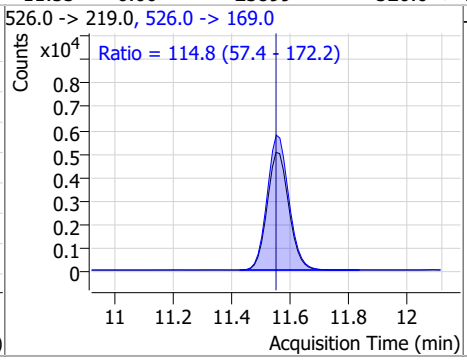


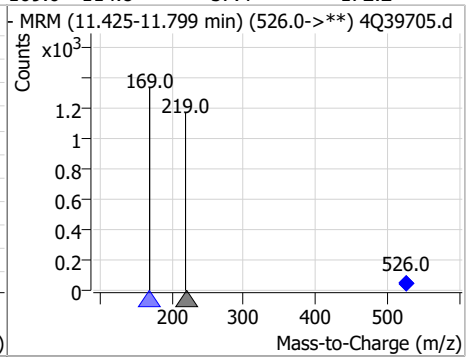


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.17	11.55	0.00	25899	526.0 -> 169.0	114.8	57.4	172.2







Manual Integration Approval Summary

Sample Number: OP95069-BS
Lab FileID: 4Q39705.D
Injection Time: 01/25/23 16:54
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39706.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 5:08:38 PM
Sample Name : op95069-llbs:3
Vial : P1-D3
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.227	216.8 -> 171.9	462707	10.00	µg/L	0.053
M5-PFPeA	4.888	268.3 -> 223.0	269984	5.00	µg/L	0.025
M5-PFHxA	6.184	318.0 -> 273.0	176433	2.50	µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	92067	2.50	µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	146369	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	73935	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	55215	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	59371	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	54790	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	32851	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	52627	2.50	µg/L	0.000
M3-PFBS	6.114	302.1 -> 79.9	46351	2.50	µg/L	0.025
M3-PFHxS	7.917	402.1 -> 79.9	30711	2.50	µg/L	0.000
M8-PFOS	9.055	507.1 -> 79.9	36992	2.50	µg/L	-0.012
M2-4:2FTS	5.835	329.1 -> 80.9	5874	5.00	µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	10017	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12561	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	46951	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	130556	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	38617	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	228605	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	257130	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	22636	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	19376	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	33918	2.50	µg/L	-0.012
13C3-PFBA	3.230	216.0 -> 172.0	209813	5.00	µg/L	0.052
18O2-PFHxS	7.916	403.0 -> 83.9	18726	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	142381	2.50	µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	43201	1.25	µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	70518	1.25	µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	132996	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	5874	8.70	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 174.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10017	6.63	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 132.6%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12561	6.08	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	54790	1.31	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	32851	1.10	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C3-PFBS	6.114	302.1 -> 79.9	46351	2.86	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.6%		
13C3-PFHxS	7.917	402.1 -> 79.9	30711	2.81	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C4-PFBA	3.227	216.8 -> 171.9	462707	12.23 µg/L		0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C4-PFHpA	7.118	367.1 -> 322.0	92067	2.97 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.7%		
13C5-PFHxA	6.184	318.0 -> 273.0	176433	3.15 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 126.2%		
13C5-PFPeA	4.888	268.3 -> 223.0	269984	6.24 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 124.8%		
13C6-PFDA	8.879	519.1 -> 474.1	55215	1.45 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.8%		
13C7-PFUnDA	9.373	570.0 -> 525.1	59371	1.45 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.0%		
13C8-FOSA	10.247	506.1 -> 77.8	52627	2.71 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C8-PFOA	7.788	421.1 -> 376.0	146369	2.86 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.6%		
13C8-PFOS	9.055	507.1 -> 79.9	36992	2.67 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C9-PFNA	8.360	472.1 -> 427.0	73935	1.48 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.0%		
d3-MeFOSAA	8.924	573.2 -> 419.0	46951	6.03 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.6%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	130556	12.31 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 123.1%		
d3-MeFOSA	11.315	515.0 -> 219.0	19376	2.18 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.4%		
d5-EtFOSAA	9.146	589.2 -> 419.0	38617	5.69 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	228605	22.60 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.4%		
d9-EtFOSE	11.470	639.2 -> 58.9	257130	22.19 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
d5-EtFOSA	11.535	531.1 -> 219.0	22636	2.14 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.6%		
Target Compounds						QValue
4:2FTS	5.836	327.1 -> 307.0	28516	2.97 µg/L		99
		327.1 -> 80.9	13494			
6:2FTS	7.537	427.1 -> 407.0	27081	3.41 µg/L		99
		427.1 -> 80.9	13159			
8:2FTS	8.654	527.1 -> 507.0	20819	3.43 µg/L		97
		527.1 -> 80.8	11503			
EtFOSAA	9.147	584.2 -> 419.1	5745	0.89 µg/L	m	80
		584.2 -> 526.0	2052			
FOSA	10.250	498.1 -> 77.9	19311	0.95 µg/L		99
		498.1 -> 478.0	336			
MeFOSAA	8.925	570.1 -> 419.0	6389	0.92 µg/L	m	91
		570.1 -> 483.0	1528			
PFBA	3.233	212.8 -> 168.9	41838	3.25 µg/L		100
PFBS	6.115	298.7 -> 79.9	15575	0.74 µg/L		94
		298.7 -> 98.8	5845			
PFDA	8.879	512.9 -> 469.0	34642	0.88 µg/L		98
		512.9 -> 219.0	6825			
PFDoDA	9.794	613.1 -> 569.0	35477	0.84 µg/L		98
		613.1 -> 319.0	5438			
PFDS	9.959	599.0 -> 79.9	7110	0.83 µg/L		99

Perfluorinated Compounds by LC/MS/MS

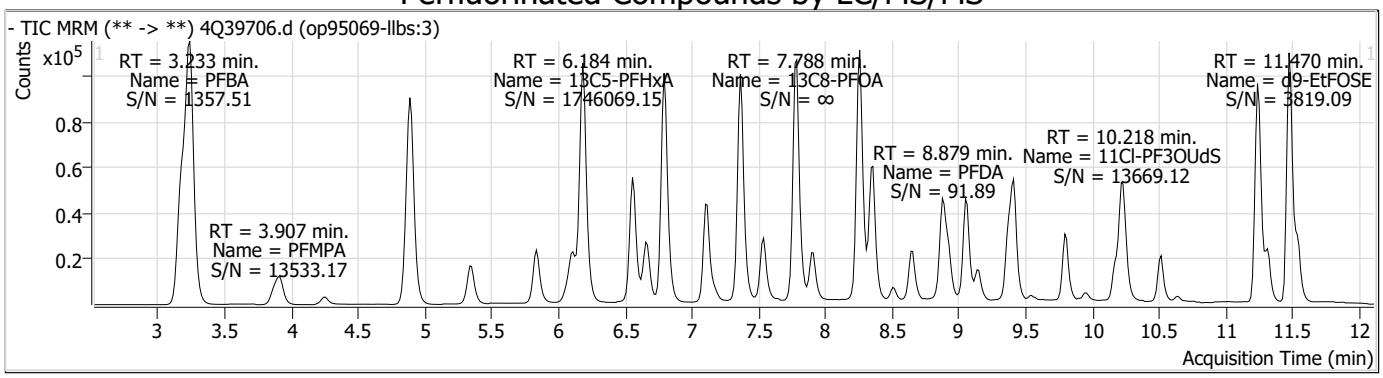
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3351				
PFHpA	7.119	363.1 -> 319.0	51581	0.90	µg/L		99
		363.1 -> 169.0	8516				
PFHpS	8.513	449.0 -> 79.9	12646	0.85	µg/L		79
		449.0 -> 98.9	7584				
PFHxA	6.187	313.0 -> 269.0	64238	0.94	µg/L		99
		313.0 -> 118.9	1599				
PFHxS	7.917	398.7 -> 79.9	8520	0.86	µg/L	m	96
		398.7 -> 98.9	3912				
PFNA	8.360	463.0 -> 419.0	45829	0.85	µg/L		99
		463.0 -> 219.0	10371				
PFNS	9.549	548.8 -> 79.9	5735	0.87	µg/L		97
		548.8 -> 98.9	2921				
PFOA	7.790	413.0 -> 369.0	60772	0.93	µg/L		99
		413.0 -> 169.0	12695				
PFOS	9.057	498.9 -> 79.9	14113	0.82	µg/L	m	99
		498.9 -> 98.8	6955				
PFPeA	4.891	263.0 -> 219.0	107448	1.81	µg/L		100
PFPeS	7.184	349.1 -> 79.9	7131	0.74	µg/L		95
		349.1 -> 98.9	3028				
PFTeDA	10.513	713.1 -> 669.0	28268	0.86	µg/L		99
		713.1 -> 168.9	2573				
PFTrDA	10.167	663.0 -> 619.0	43130	0.83	µg/L		100
		663.0 -> 168.9	4497				
PFUnDA	9.374	563.1 -> 519.0	30706	0.85	µg/L		98
		563.1 -> 269.1	5309				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	94119	3.08	µg/L		100
		632.9 -> 452.9	27919				
9Cl-PF3ONS	9.413	530.8 -> 351.0	117407	3.16	µg/L		100
		532.8 -> 353.0	35094				
ADONA	7.369	376.9 -> 250.9	245885	3.49	µg/L		99
		376.9 -> 84.8	87931				
HFPO-DA	6.565	284.9 -> 168.9	42731	3.47	µg/L		98
		284.9 -> 184.9	4877				
3:3FTCA	4.254	241.0 -> 177.0	11427	4.12	µg/L		97
		241.0 -> 117.0	1208				
5:3FTCA	6.796	341.0 -> 237.1	198645	21.77	µg/L		98
		341.0 -> 217.0	151163				
7:3FTCA	8.262	441.0 -> 316.9	114347	21.82	µg/L		97
		441.0 -> 336.9	263703				
EtFOSA	11.550	526.0 -> 219.0	7327	0.77	µg/L		99
		526.0 -> 169.0	8475				
EtFOSE	11.483	630.0 -> 58.9	92211	9.24	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	6500	0.88	µg/L		86
		511.9 -> 169.0	7312				
MeFOSE	11.248	616.1 -> 58.9	85158	8.82	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	5091	0.70	µg/L		98
		699.1 -> 98.8	2757				
NFDHA	6.066	295.0 -> 201.0	8078	1.79	µg/L		93
		295.0 -> 84.9	2674				
PFMBA	5.353	279.0 -> 85.1	66911	1.81	µg/L		100
PFMPA	3.907	229.0 -> 84.9	66338	1.74	µg/L		100
PFEESA	6.672	314.8 -> 134.9	92836	1.58	µg/L		98
		314.8 -> 82.9	3432				

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

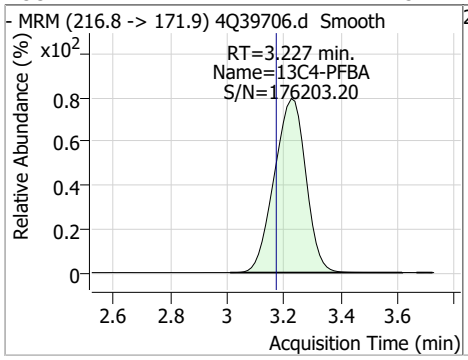
Perfluorinated Compounds by LC/MS/MS

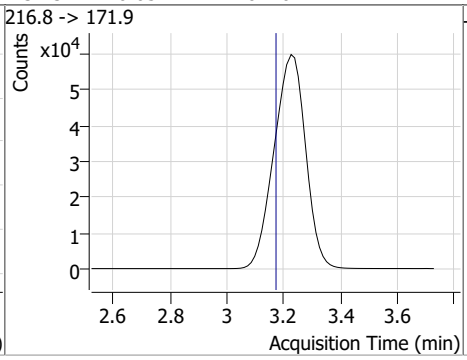
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

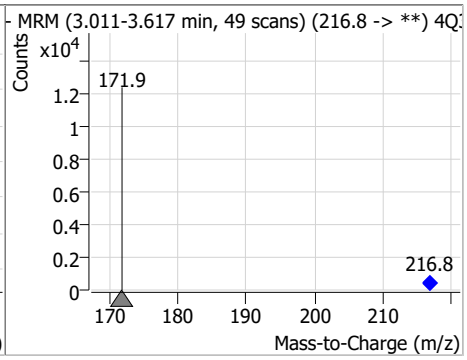
Perfluorinated Compounds by LC/MS/MS



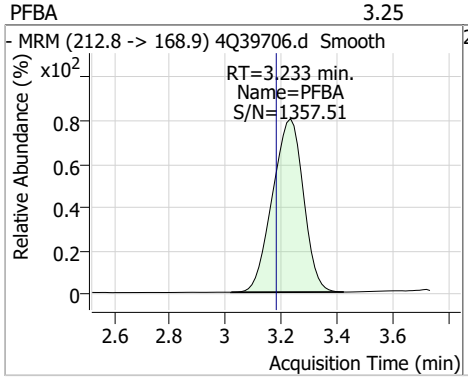
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.23	3.23	0.05	462707				

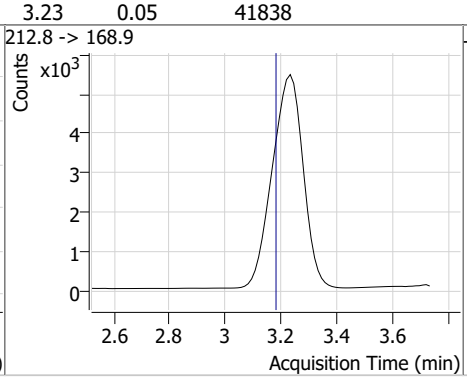


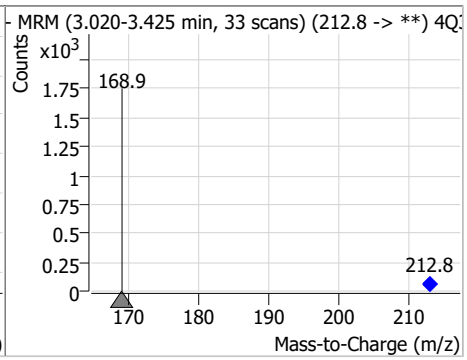




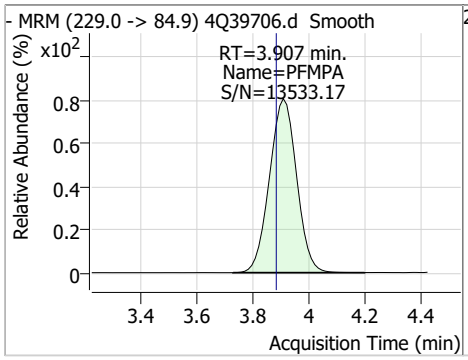
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.25	3.23	0.05	41838				

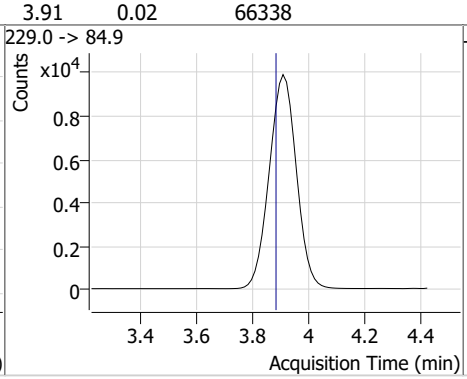


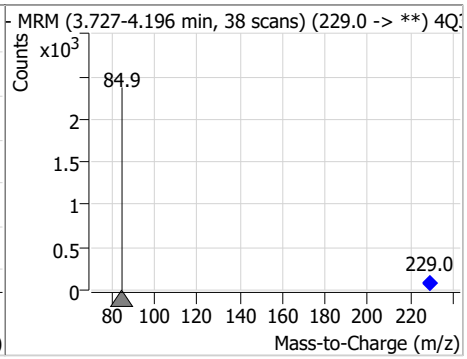




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	1.74	3.91	0.02	66338				

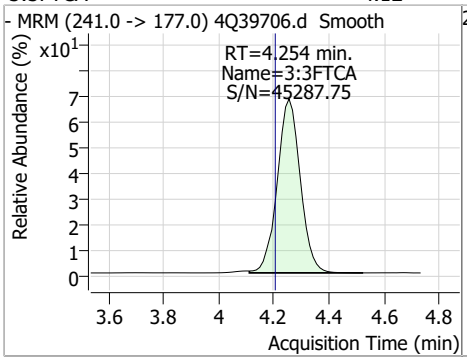


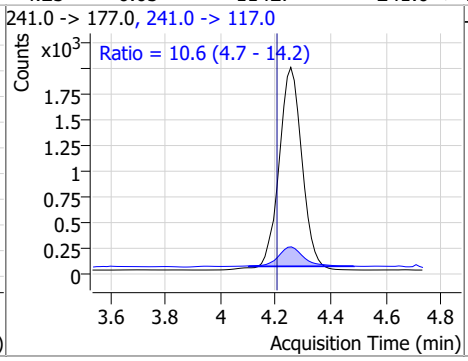


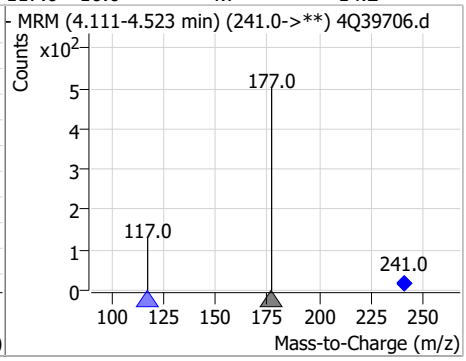


Perfluorinated Compounds by LC/MS/MS

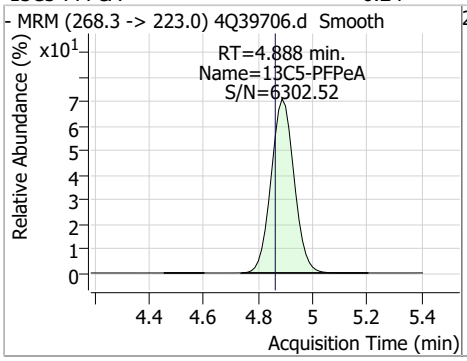
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	4.12	4.25	0.05	11427	241.0 -> 117.0	10.6	4.7	14.2

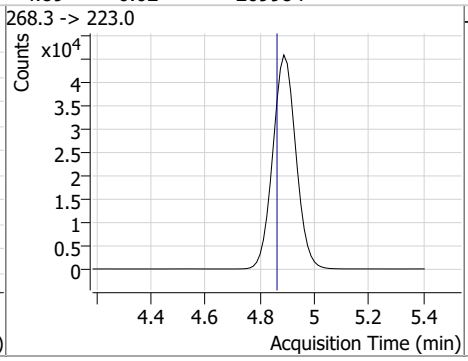


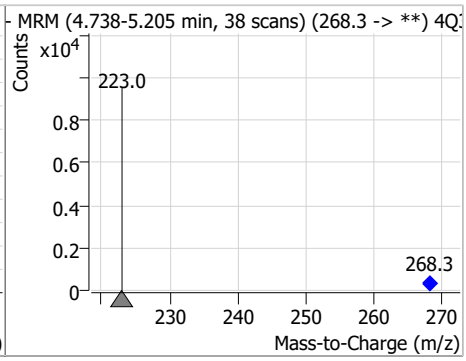




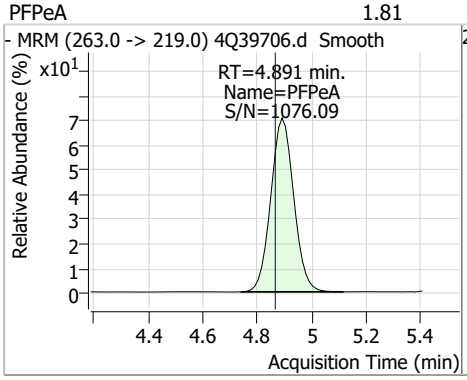
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.24	4.89	0.02	269984				

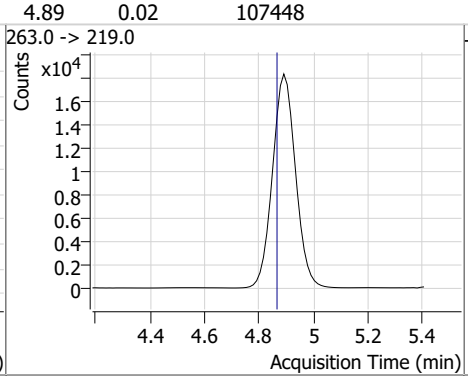


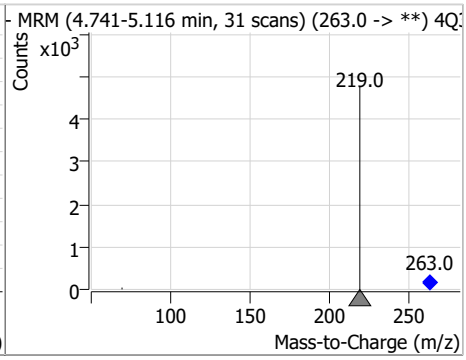




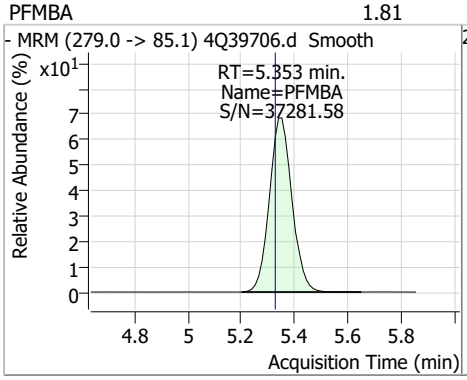
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.81	4.89	0.02	107448				

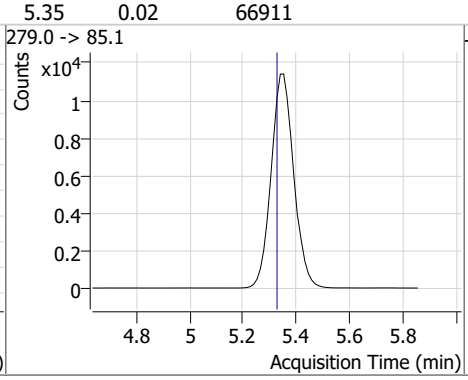


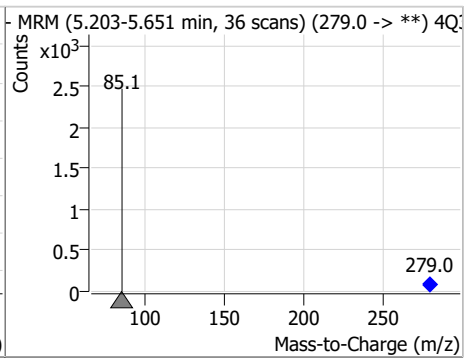




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.81	5.35	0.02	66911				

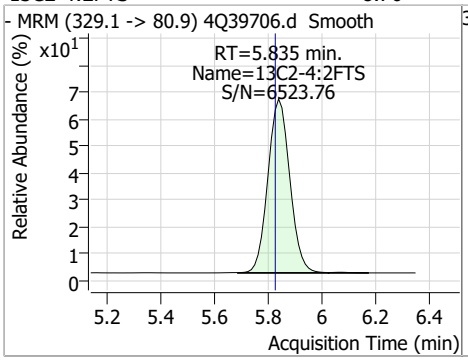


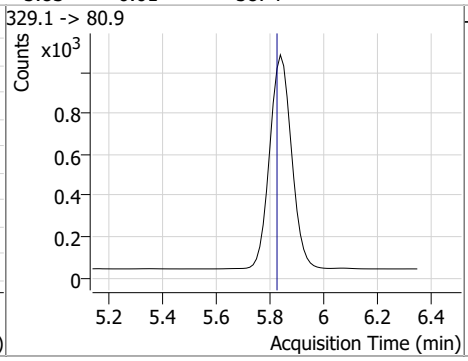


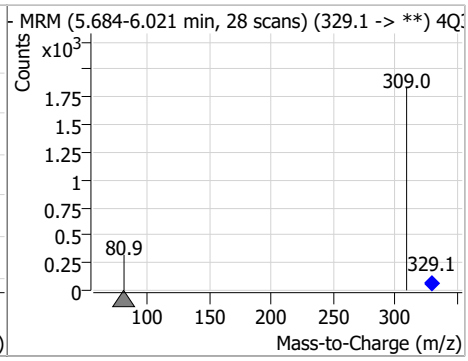


Perfluorinated Compounds by LC/MS/MS

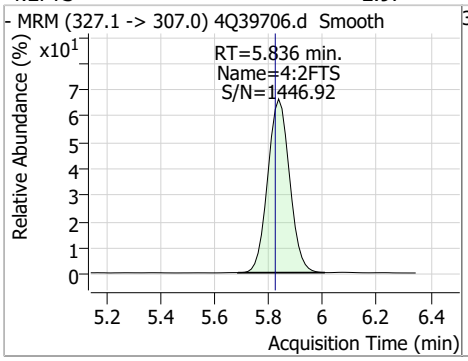
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.70	5.83	0.01	5874				

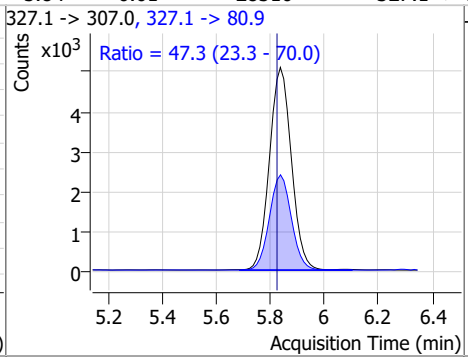


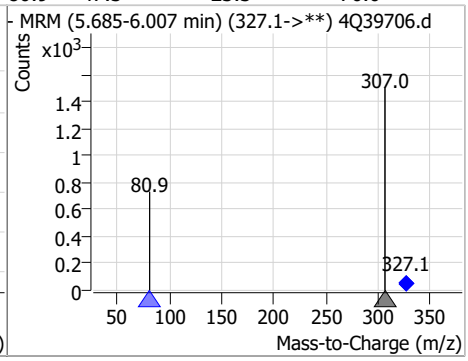




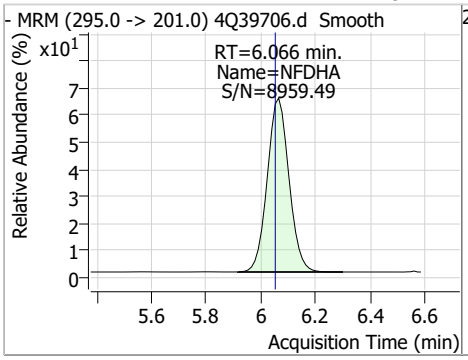
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.97	5.84	0.01	28516	327.1 -> 80.9	47.3	23.3	70.0

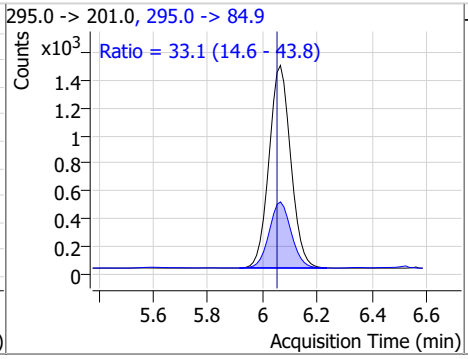


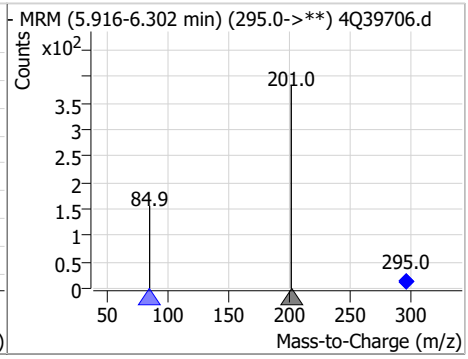




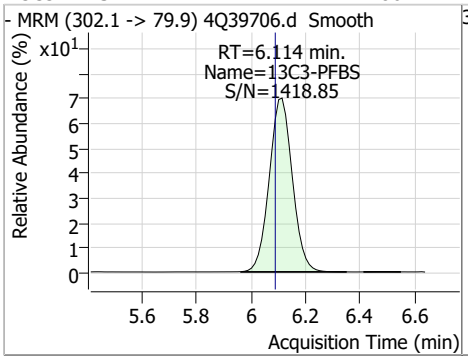
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	1.79	6.07	0.01	8078	295.0 -> 84.9	33.1	14.6	43.8

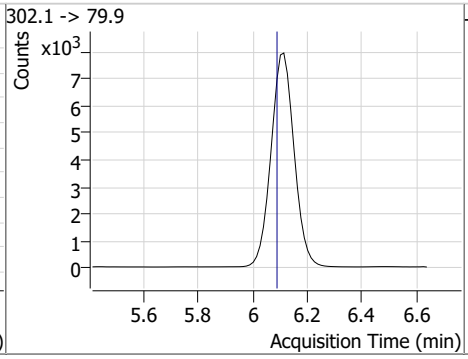


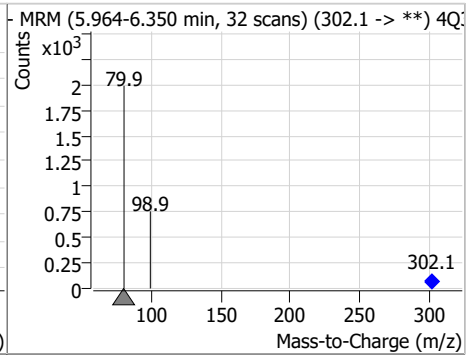




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.86	6.11	0.02	46351				

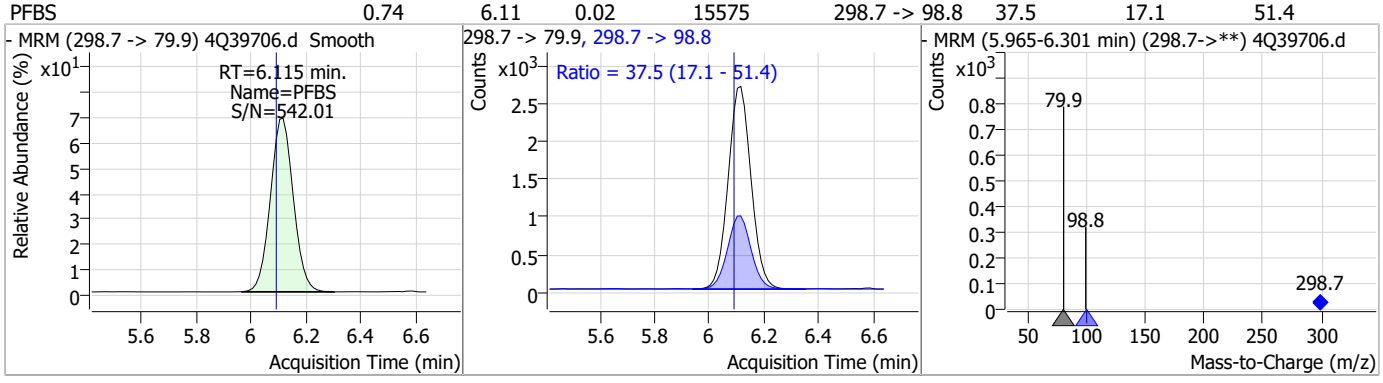




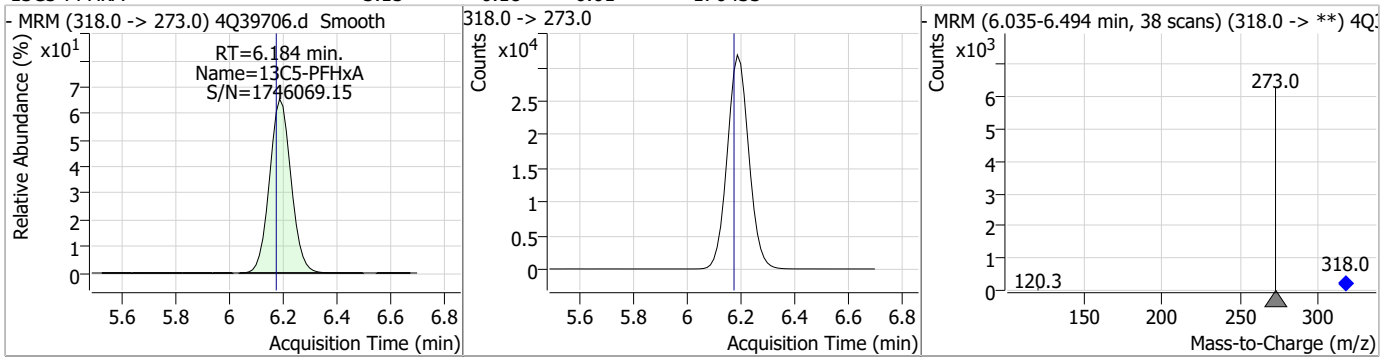


Perfluorinated Compounds by LC/MS/MS

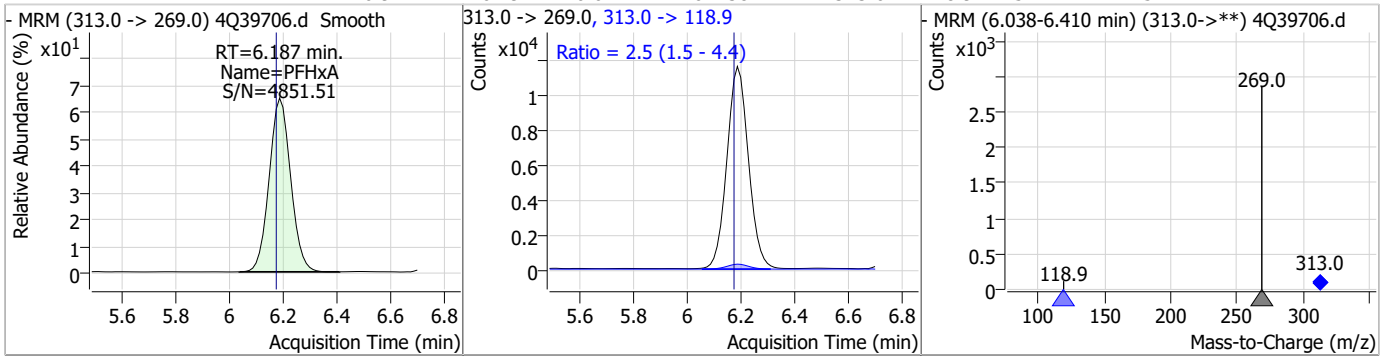
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.74	6.11	0.02	15575	298.7 -> 98.8	37.5	17.1	51.4



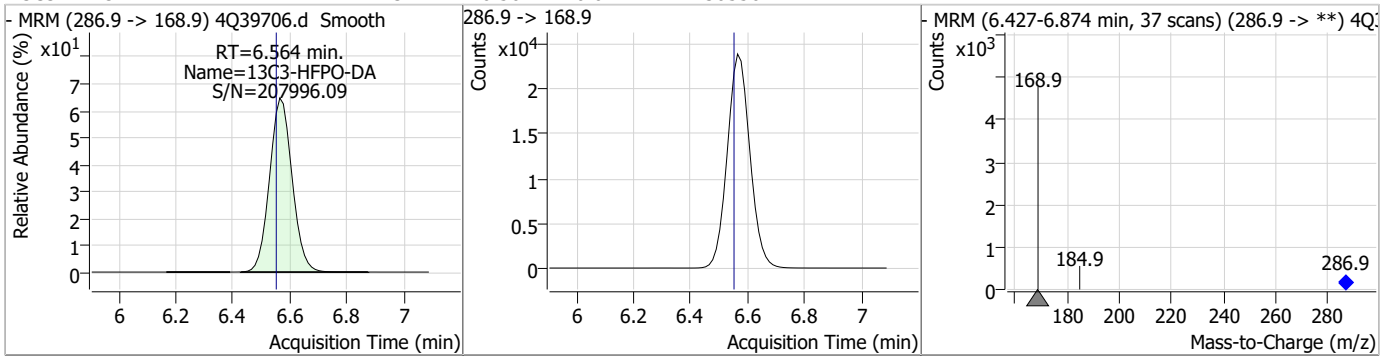
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.15	6.18	0.01	176433				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.94	6.19	0.01	64238	313.0 -> 118.9	2.5	1.5	4.4

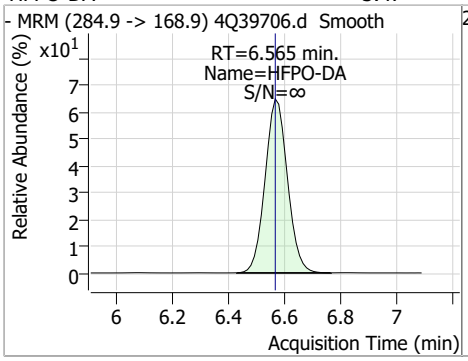


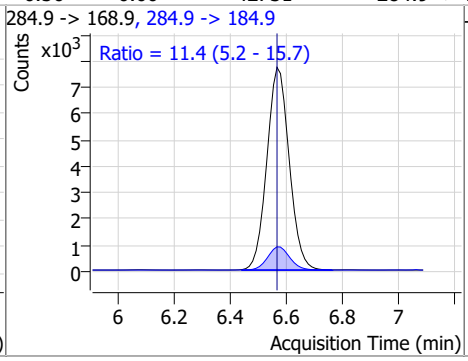
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.31	6.56	0.01	130556				

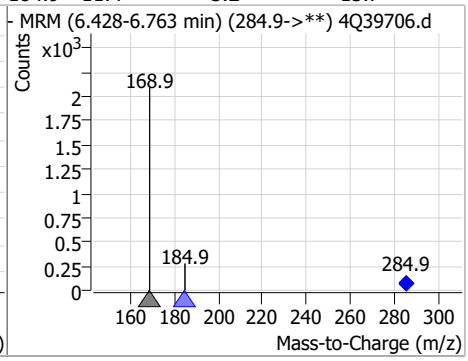


Perfluorinated Compounds by LC/MS/MS

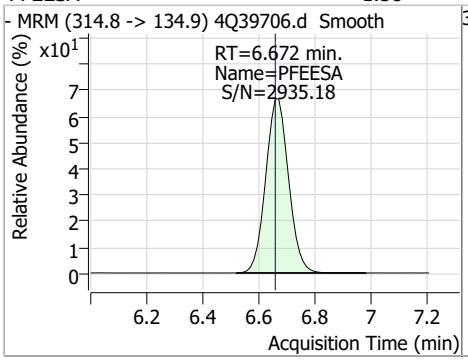
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	3.47	6.56	0.00	42731	284.9 -> 184.9	11.4	5.2	15.7

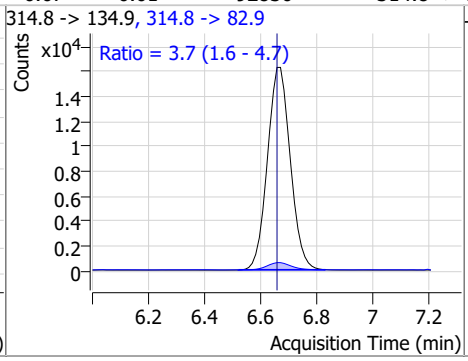


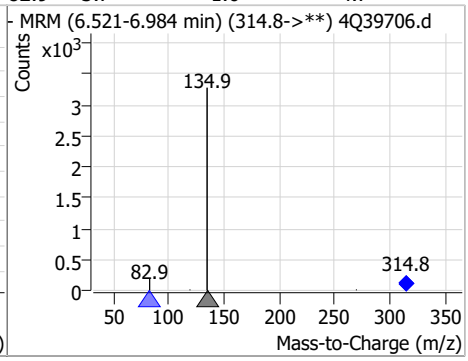




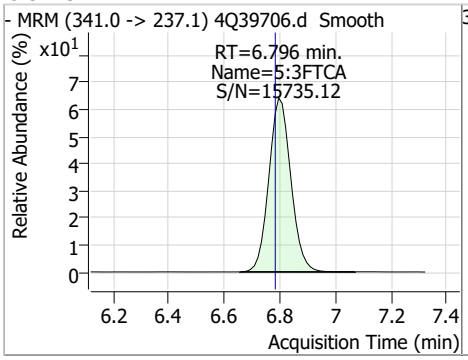
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.58	6.67	0.01	92836	314.8 -> 82.9	3.7	1.6	4.7

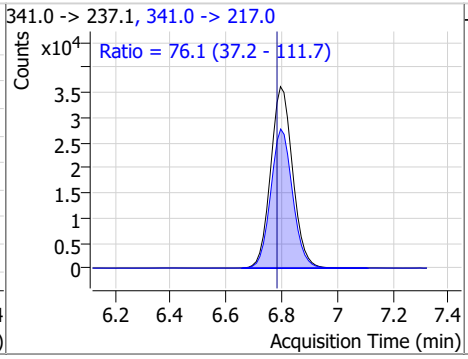


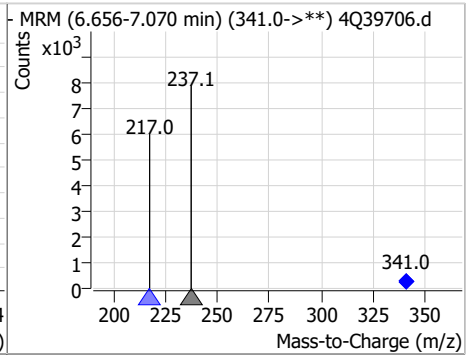




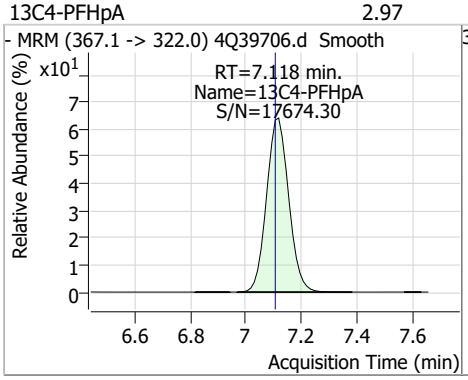
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	21.77	6.80	0.01	198645	341.0 -> 217.0	76.1	37.2	111.7

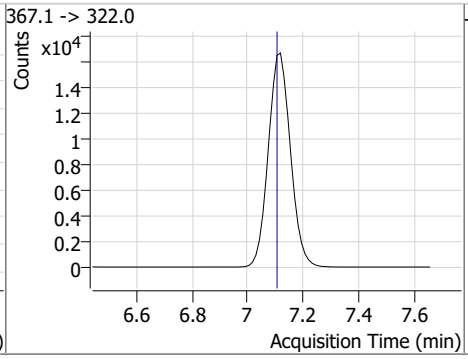


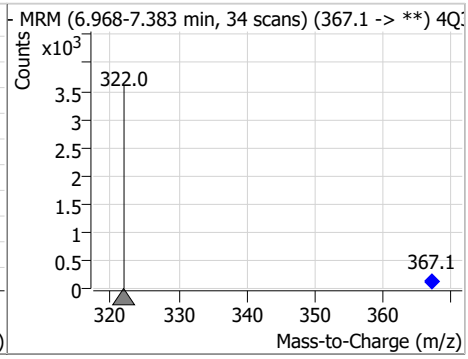




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.97	7.12	0.01	92067				

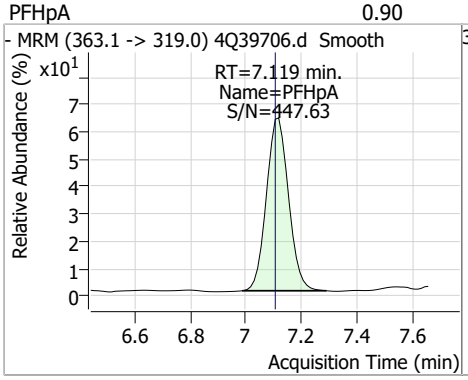


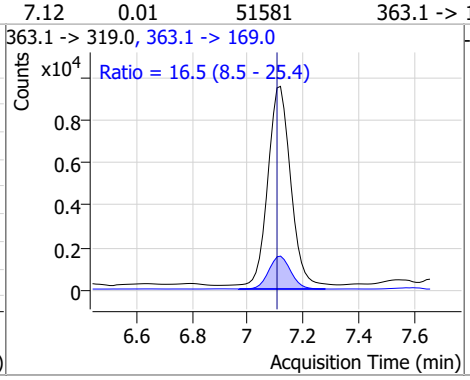


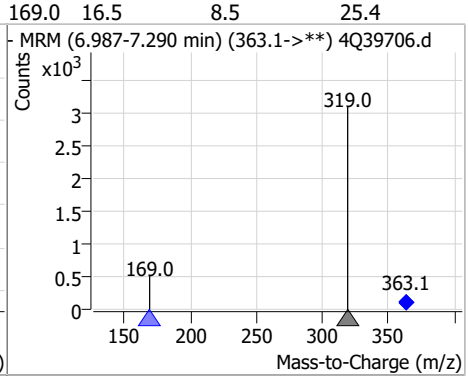


Perfluorinated Compounds by LC/MS/MS

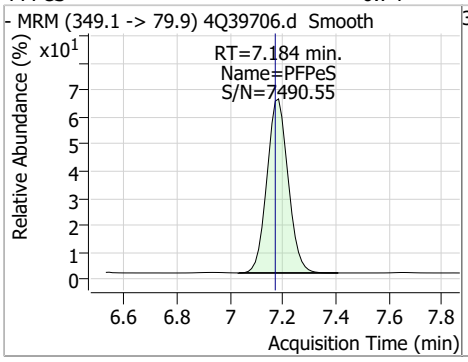
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.90	7.12	0.01	51581	363.1 -> 169.0	16.5	8.5	25.4

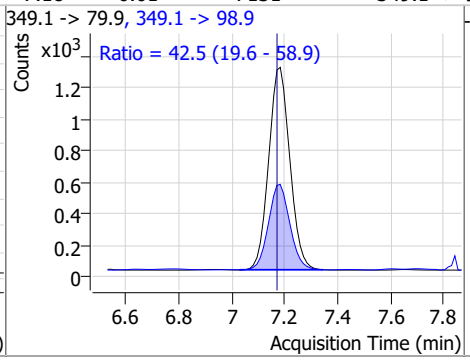


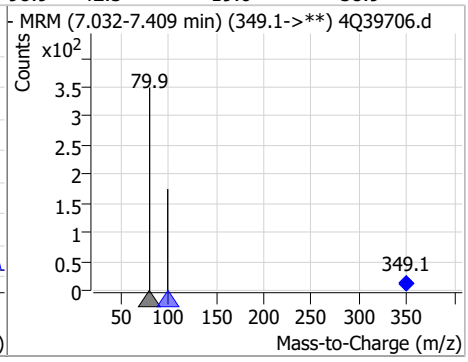




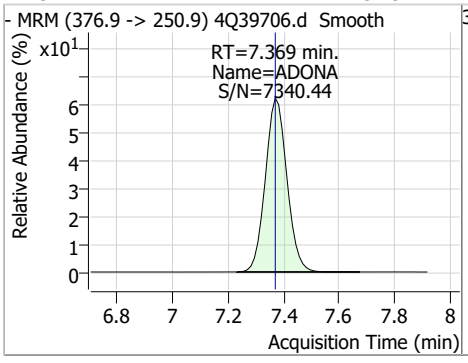
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.74	7.18	0.01	7131	349.1 -> 98.9	42.5	19.6	58.9

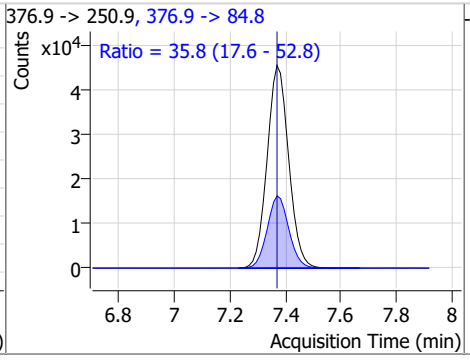


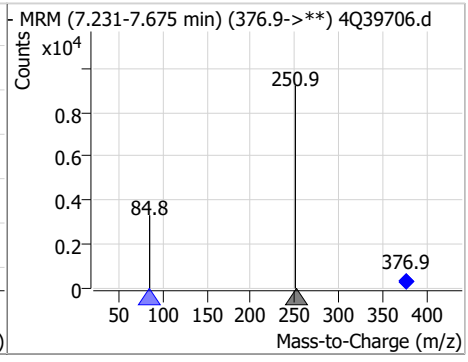




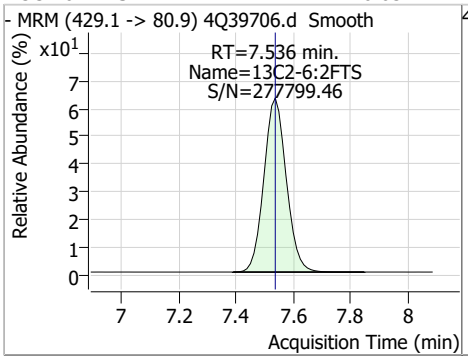
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	3.49	7.37	0.00	245885	376.9 -> 84.8	35.8	17.6	52.8

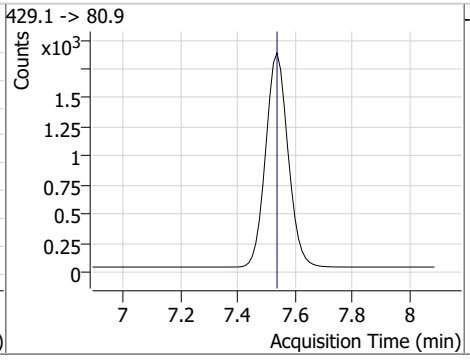


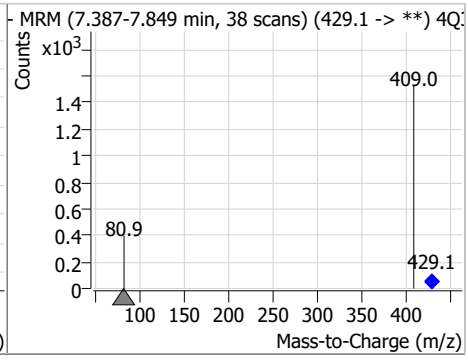




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.63	7.54	0.00	10017				

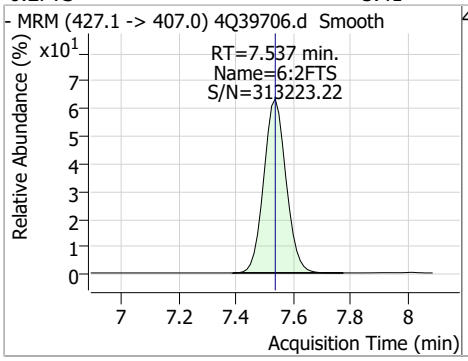


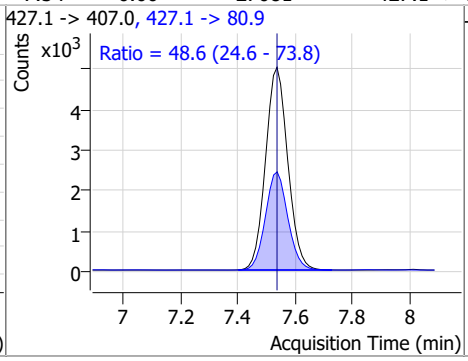


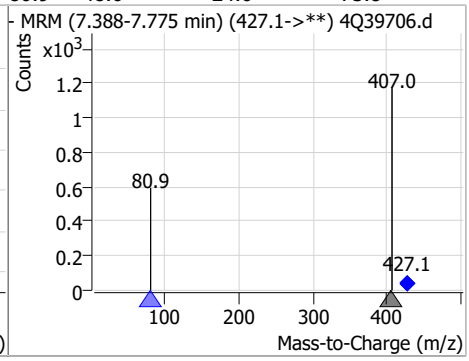


Perfluorinated Compounds by LC/MS/MS

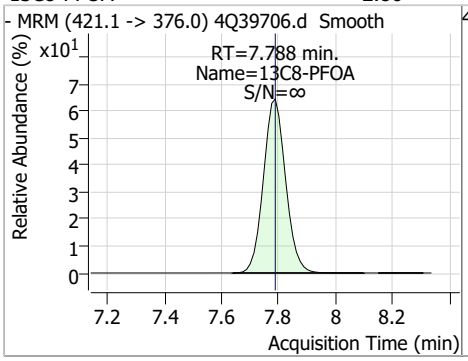
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	3.41	7.54	0.00	27081	427.1 -> 80.9	48.6	24.6	73.8

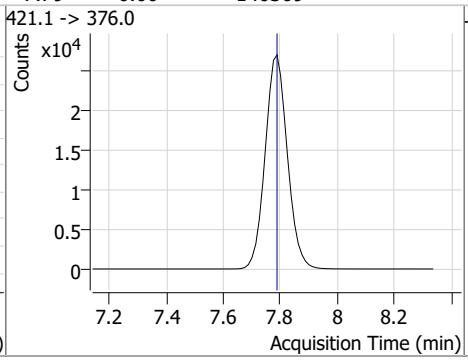


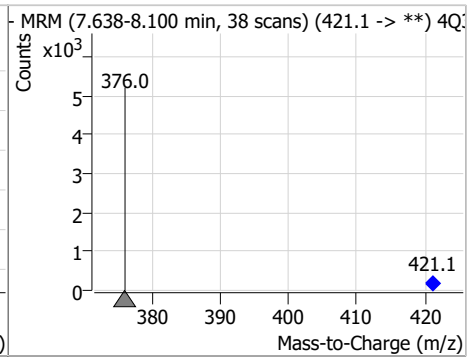




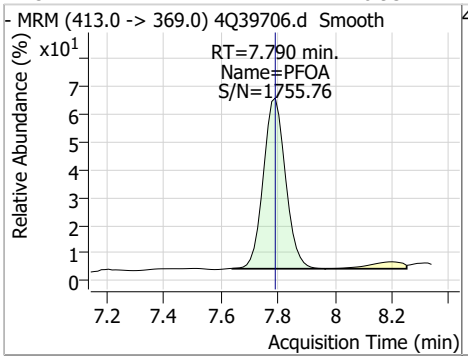
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.86	7.79	0.00	146369				

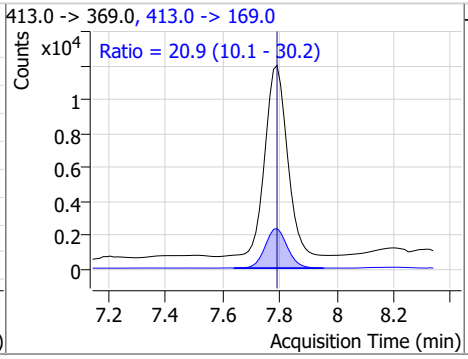


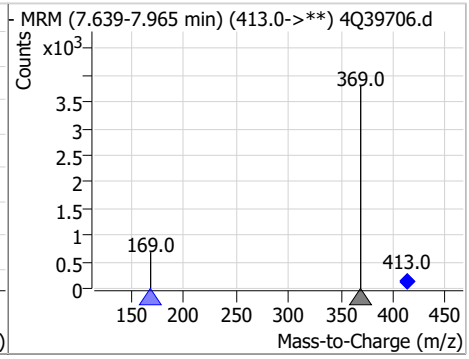




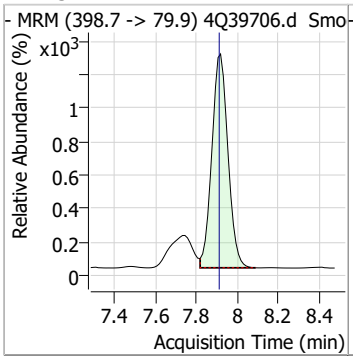
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.93	7.79	0.00	60772	413.0 -> 169.0	20.9	10.1	30.2

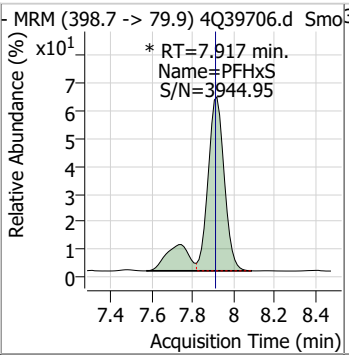


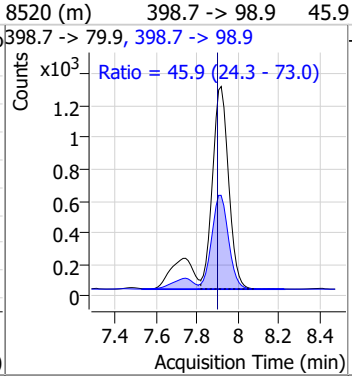


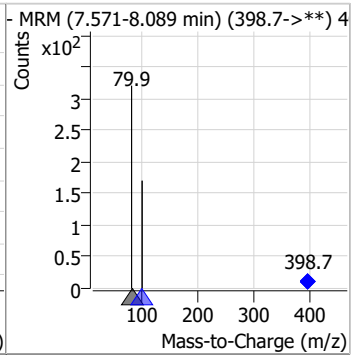


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.86	7.92	0.01	8520 (m)	398.7 -> 98.9	45.9	24.3	73.0



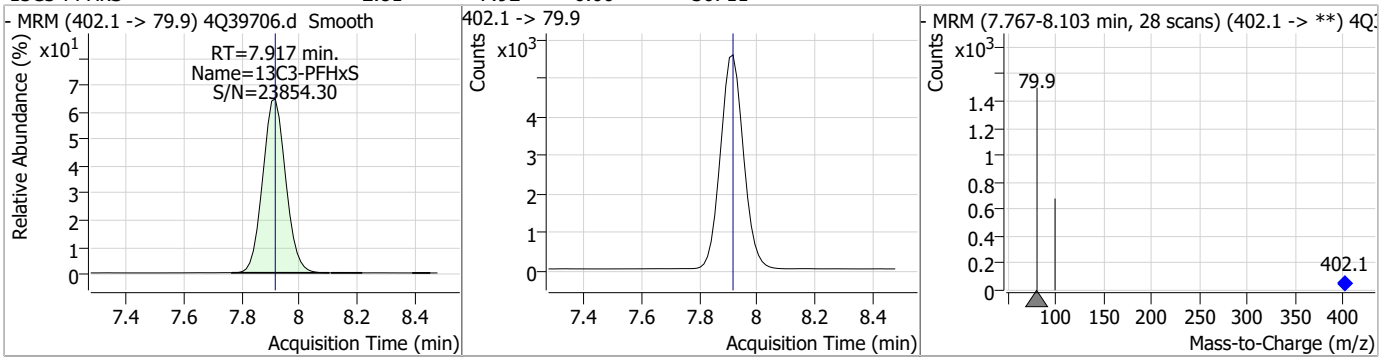




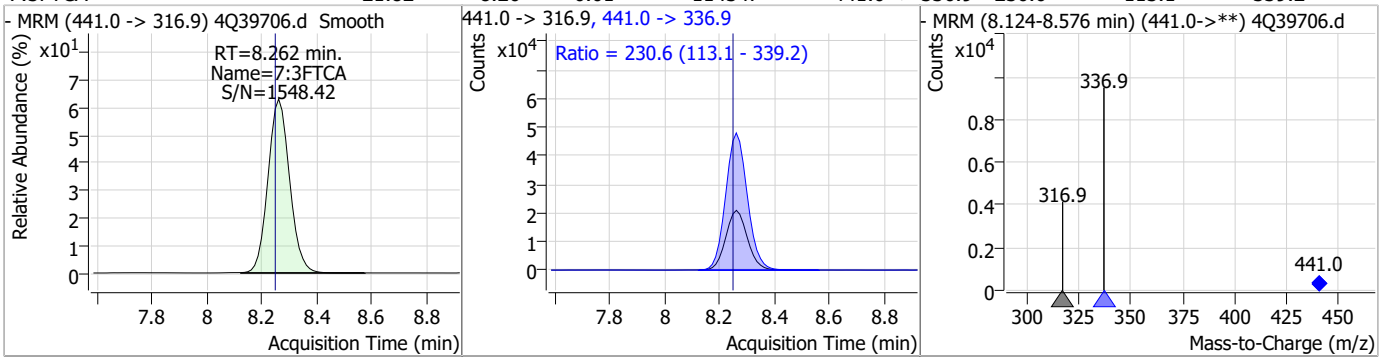


Perfluorinated Compounds by LC/MS/MS

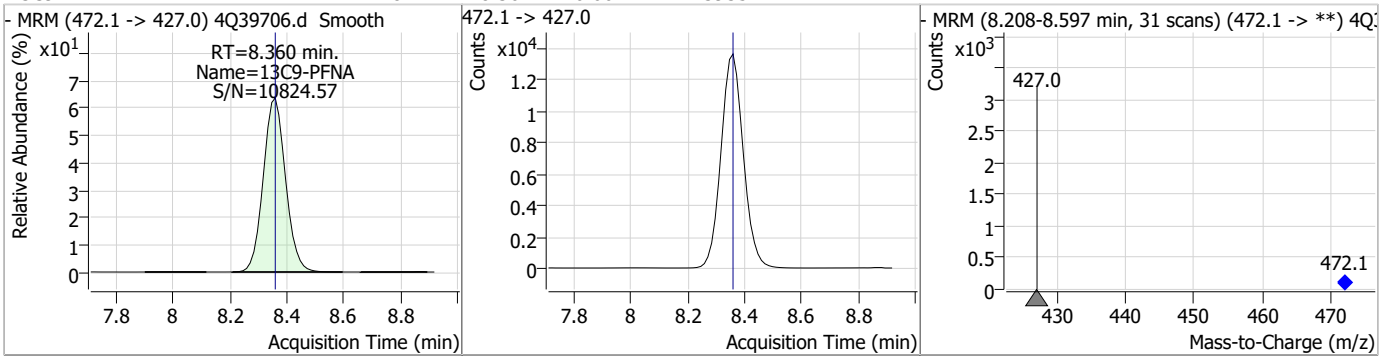
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.81	7.92	0.00	30711				



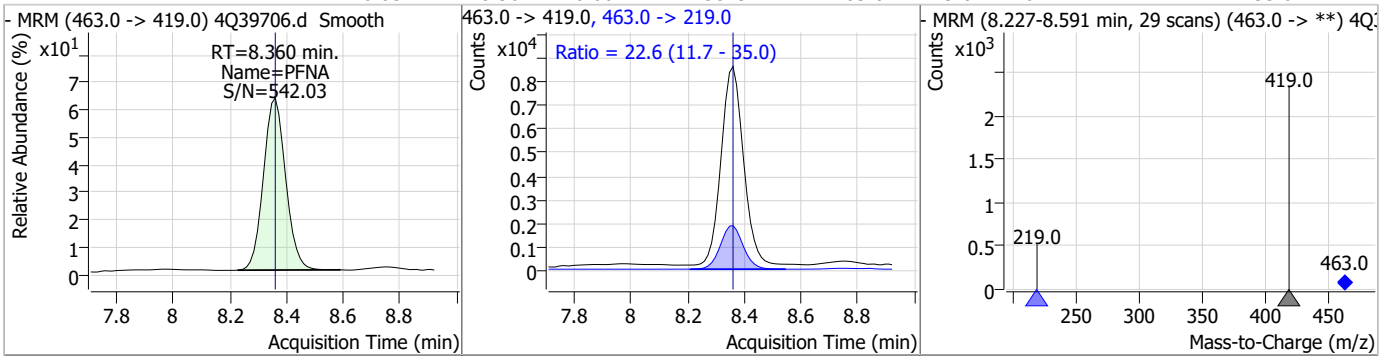
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	21.82	8.26	0.01	114347	441.0 -> 336.9	230.6	113.1	339.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.48	8.36	0.00	73935				

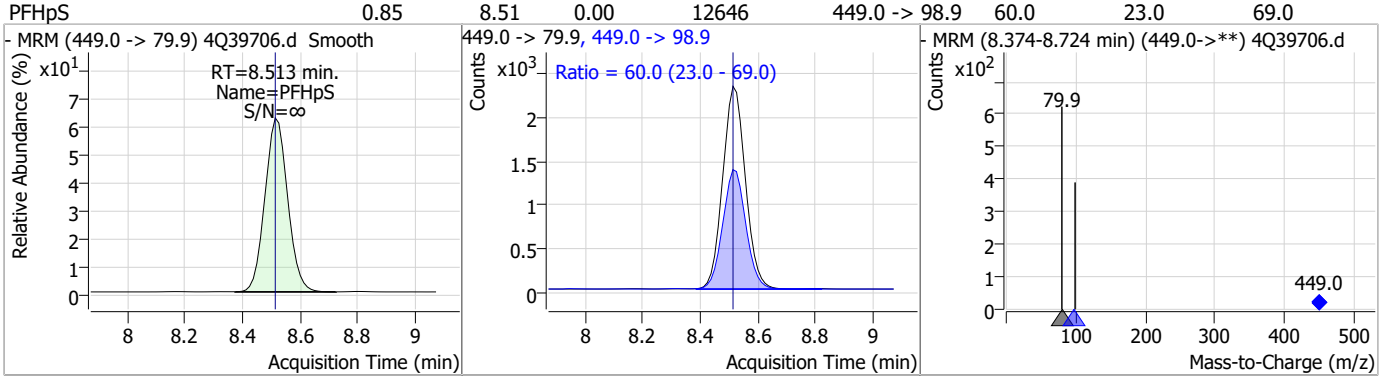


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.85	8.36	0.00	45829	463.0 -> 219.0	22.6	11.7	35.0

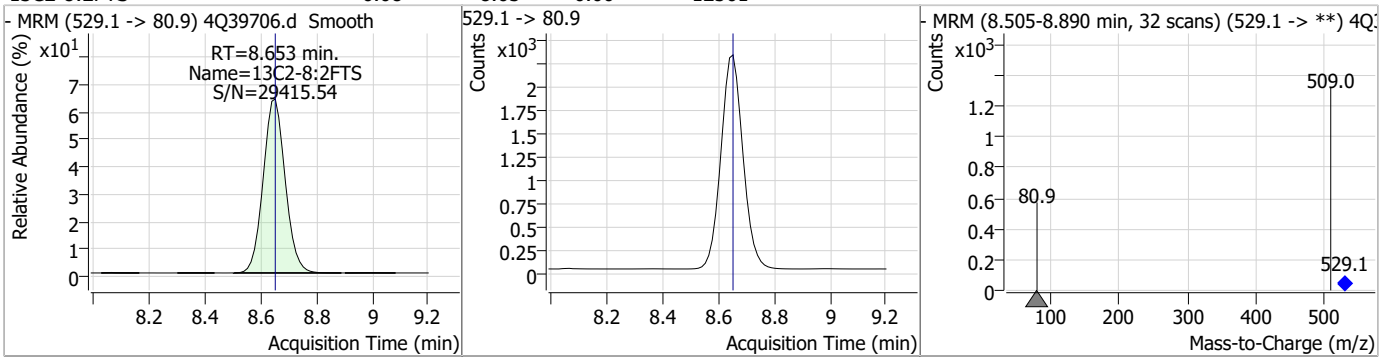


Perfluorinated Compounds by LC/MS/MS

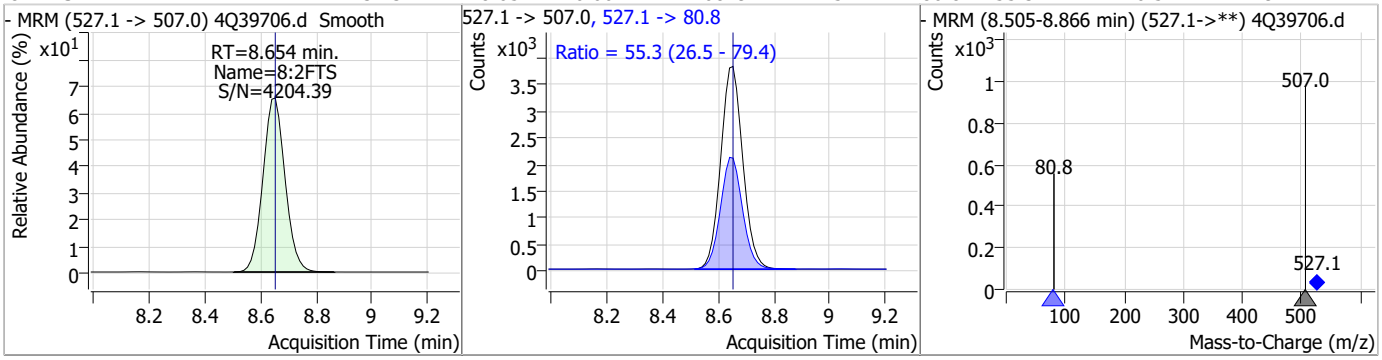
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.85	8.51	0.00	12646	449.0 -> 98.9	60.0	23.0	69.0



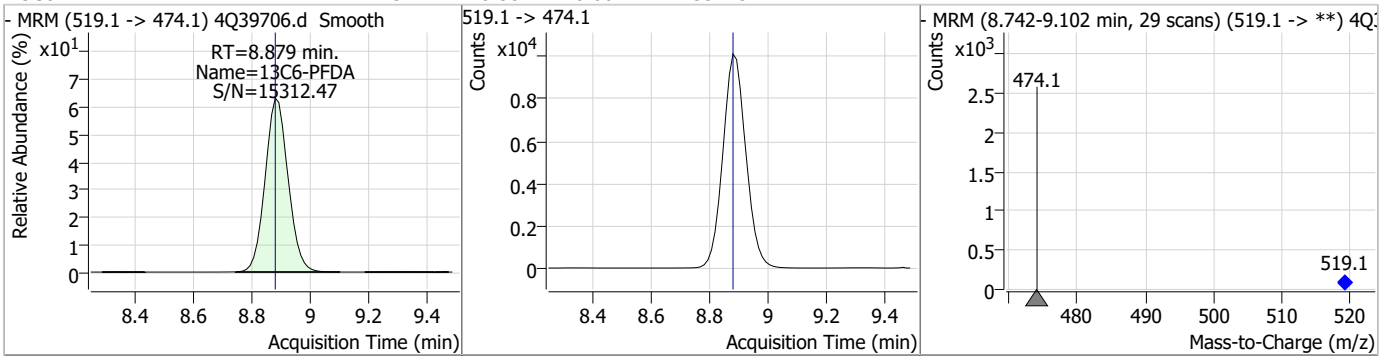
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.08	8.65	0.00	12561				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	3.43	8.65	0.00	20819	527.1 -> 80.8	55.3	26.5	79.4

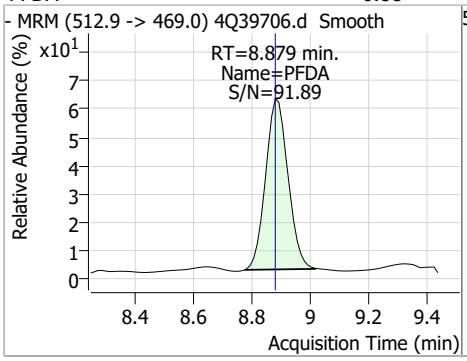


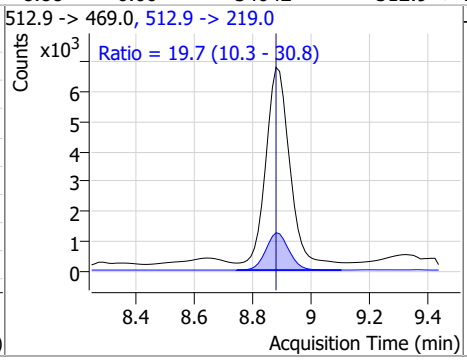
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.45	8.88	0.00	55215				

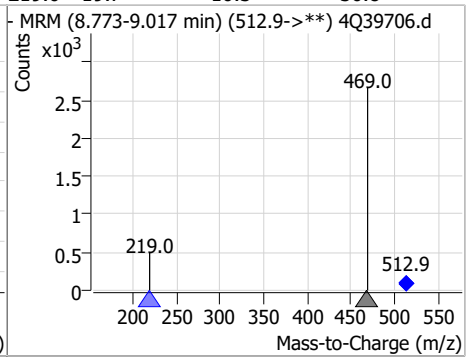


Perfluorinated Compounds by LC/MS/MS

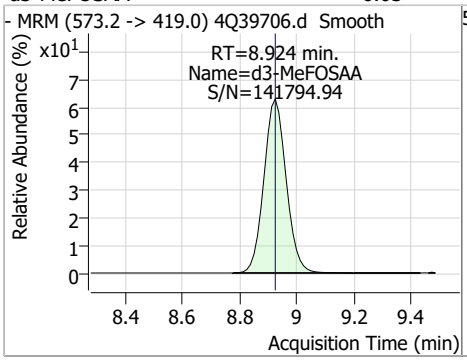
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.88	8.88	0.00	34642	512.9 -> 219.0	19.7	10.3	30.8

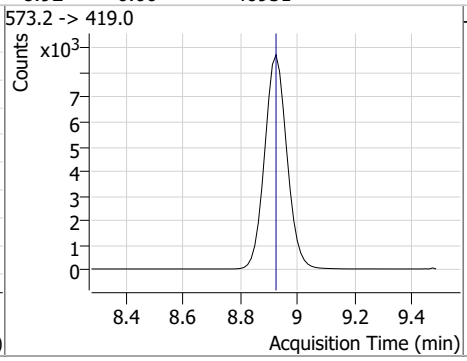


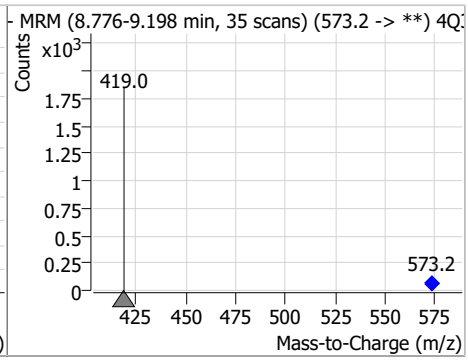




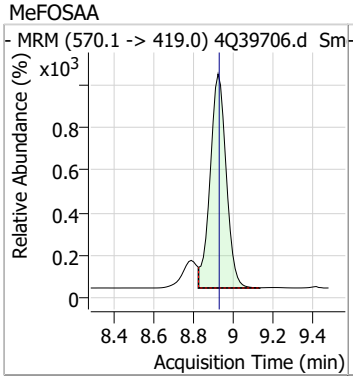
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.03	8.92	0.00	46951				

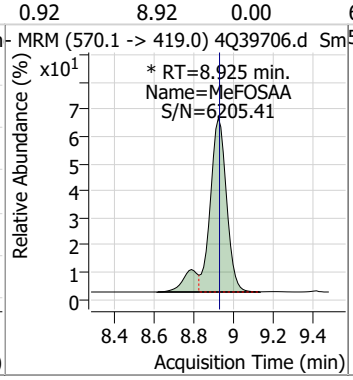


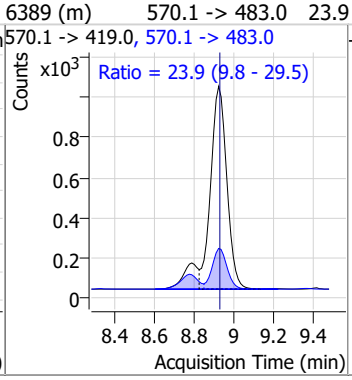


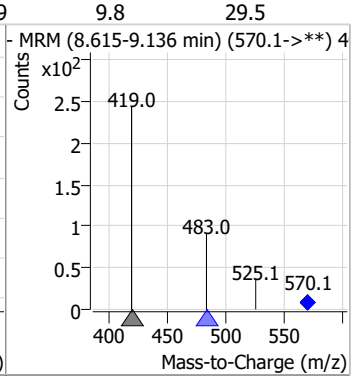


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.92	8.92	0.00	6389 (m)	570.1 -> 483.0	23.9	9.8	29.5

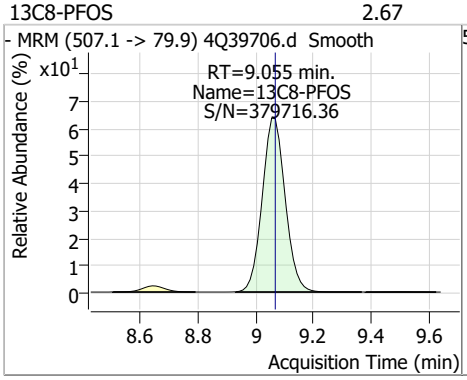


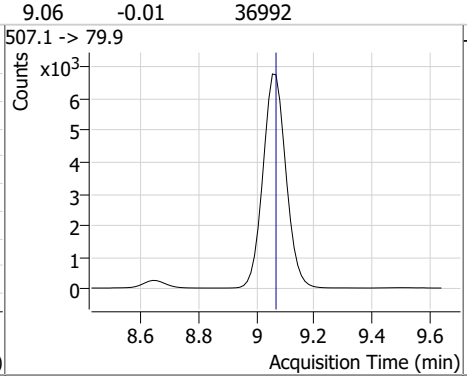


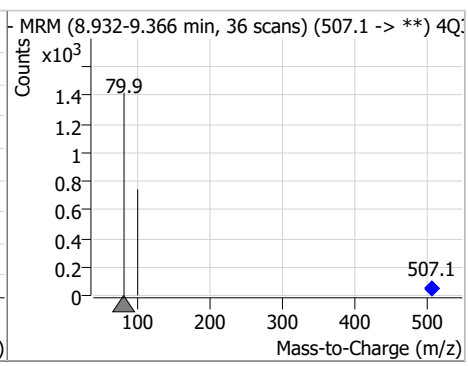




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.67	9.06	-0.01	36992				

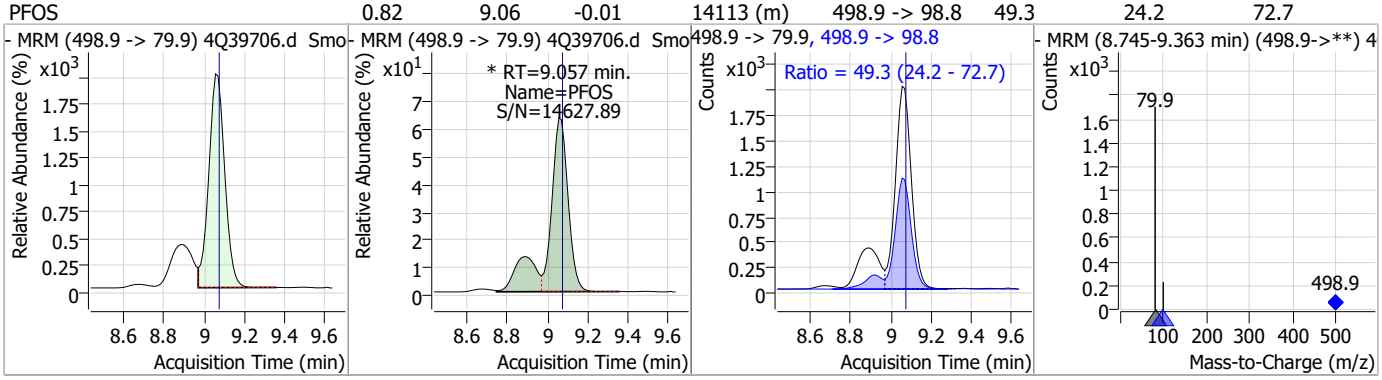




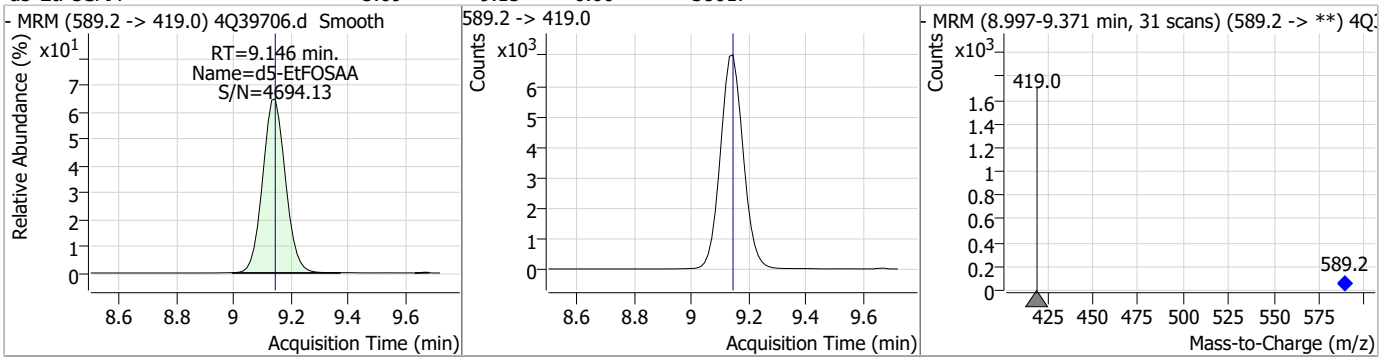


Perfluorinated Compounds by LC/MS/MS

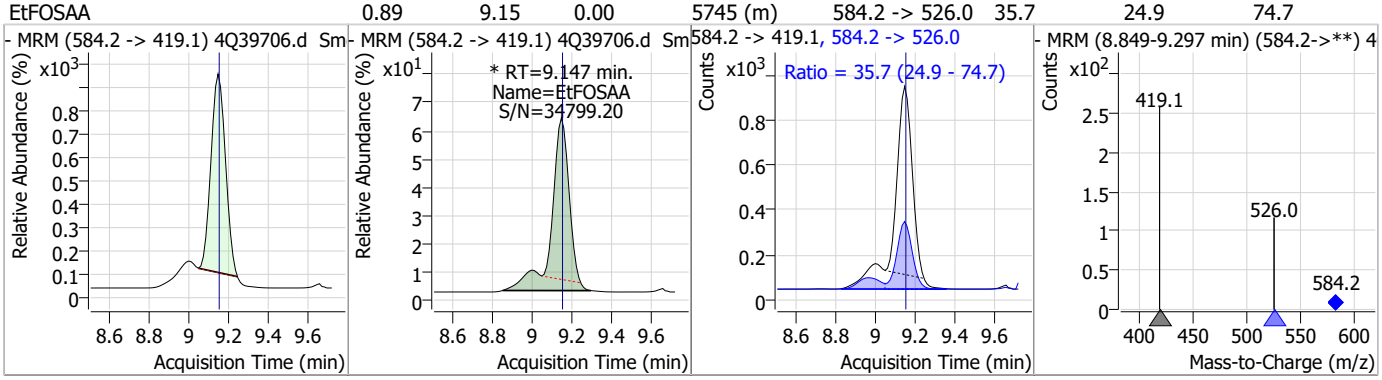
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.82	9.06	-0.01	14113 (m)	498.9 -> 98.8	49.3	24.2	72.7



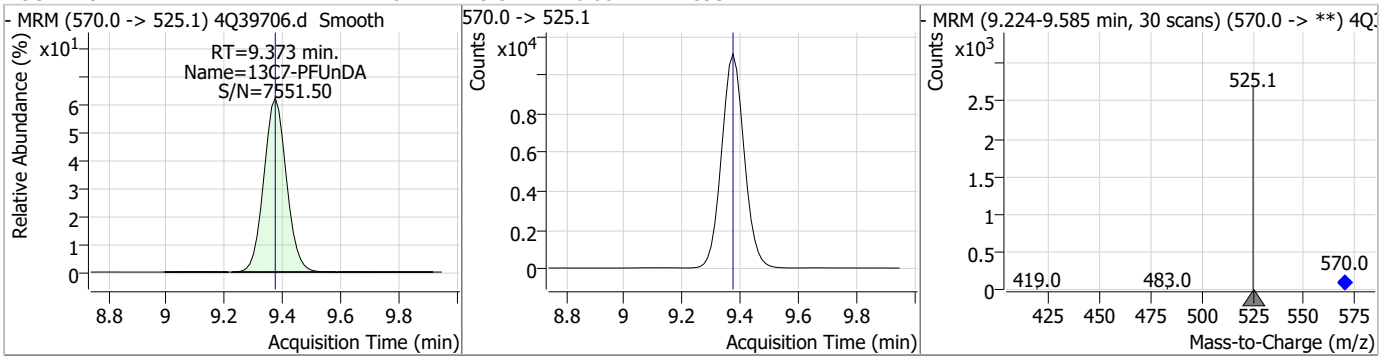
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.69	9.15	0.00	38617				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.89	9.15	0.00	5745 (m)	584.2 -> 526.0	35.7	24.9	74.7

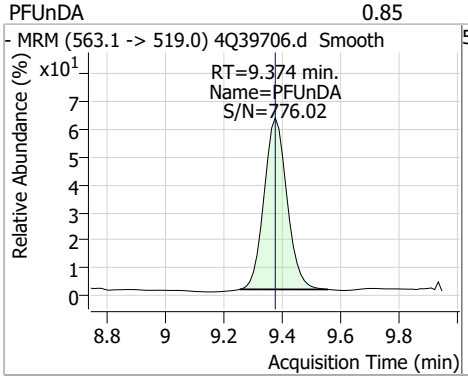


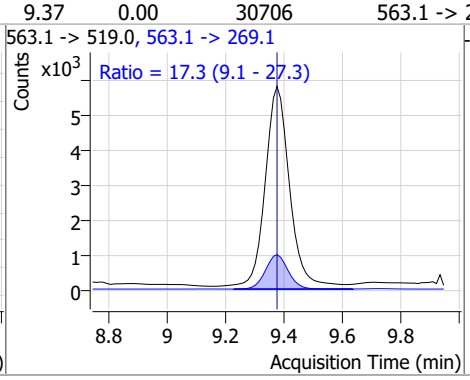
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.45	9.37	0.00	59371				

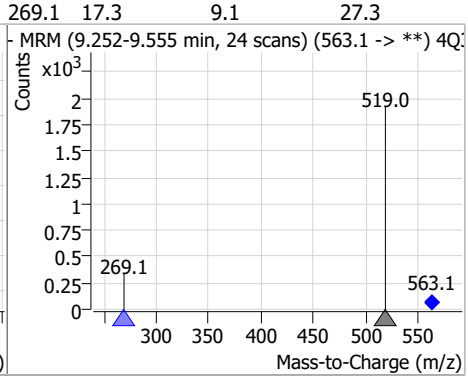


Perfluorinated Compounds by LC/MS/MS

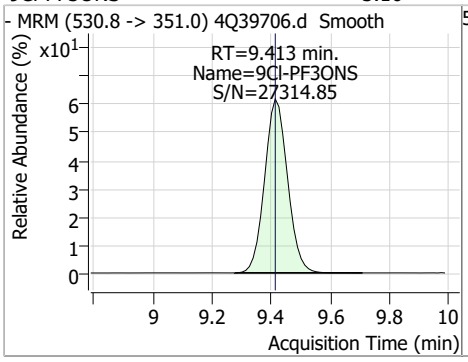
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.85	9.37	0.00	30706	563.1 -> 269.1	17.3	9.1	27.3

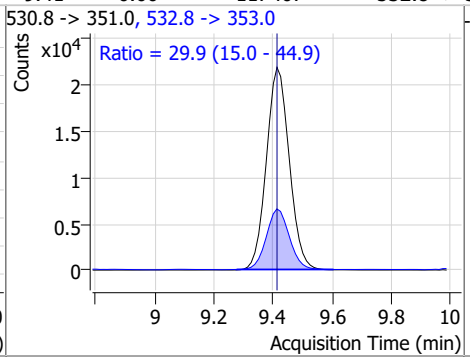


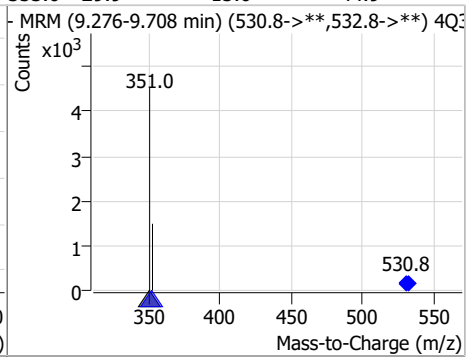




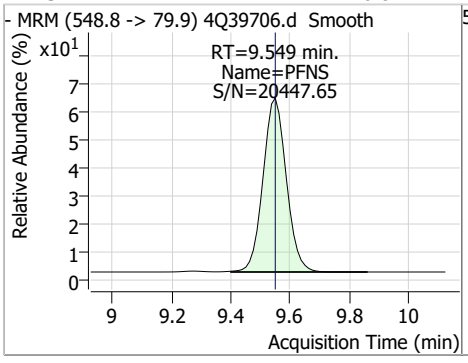
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	3.16	9.41	0.00	117407	532.8 -> 353.0	29.9	15.0	44.9

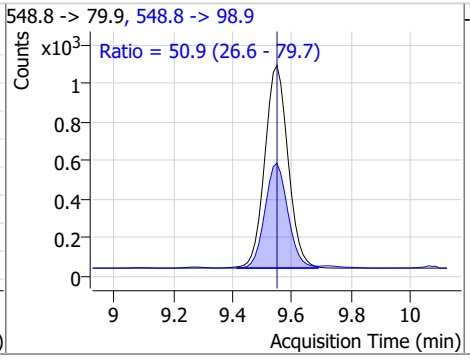


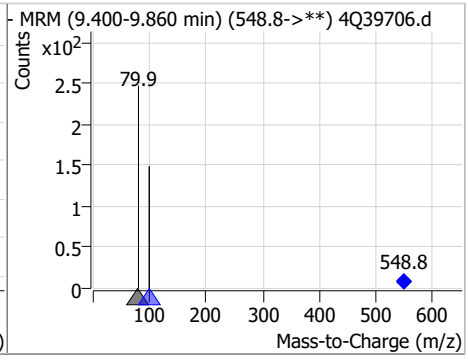




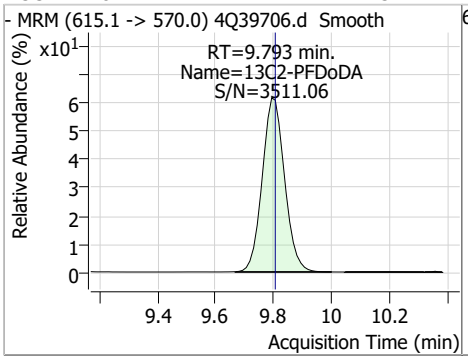
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.87	9.55	0.00	5735	548.8 -> 98.9	50.9	26.6	79.7

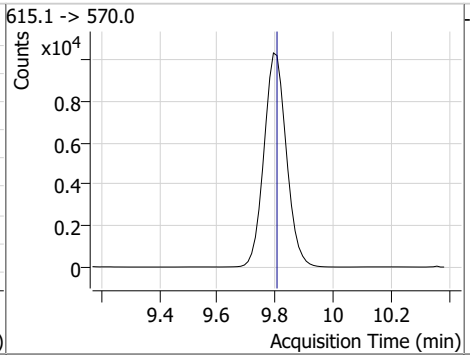


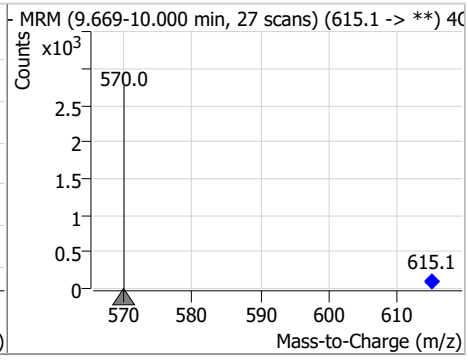




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	9.79	-0.01	54790				

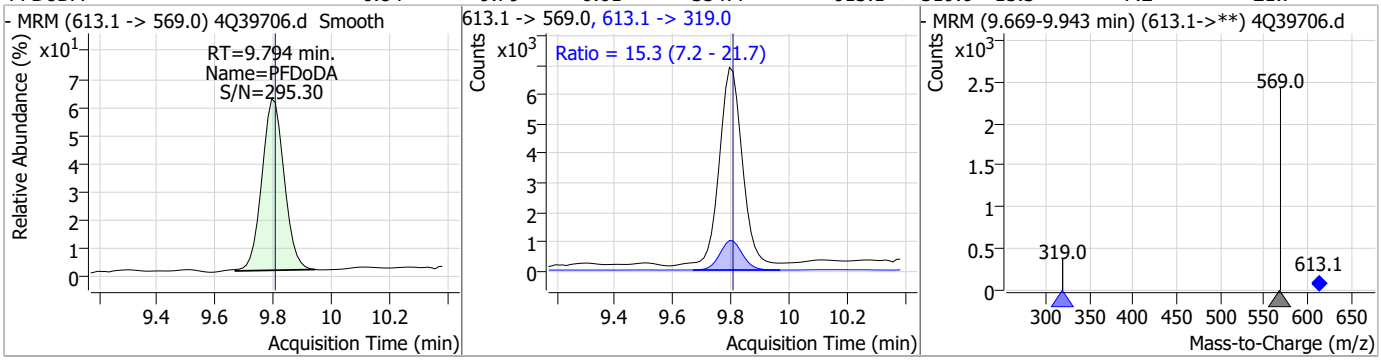




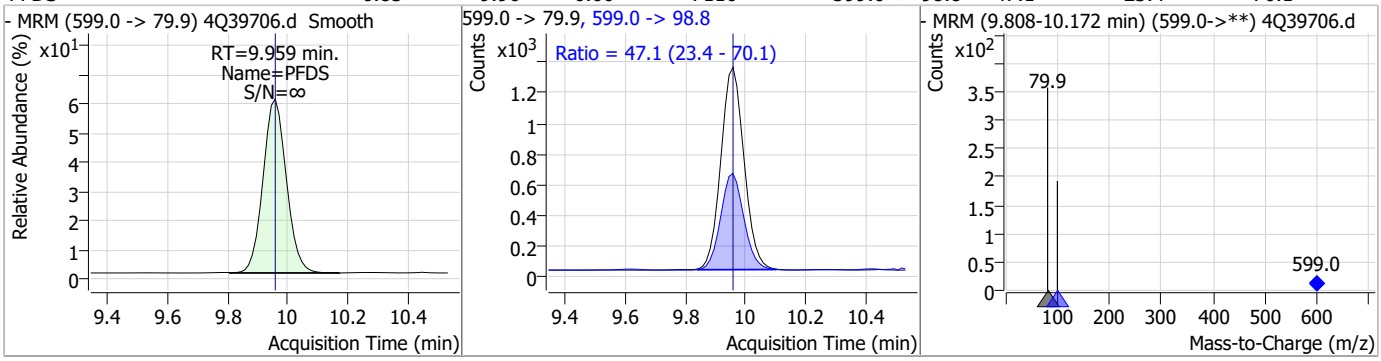


Perfluorinated Compounds by LC/MS/MS

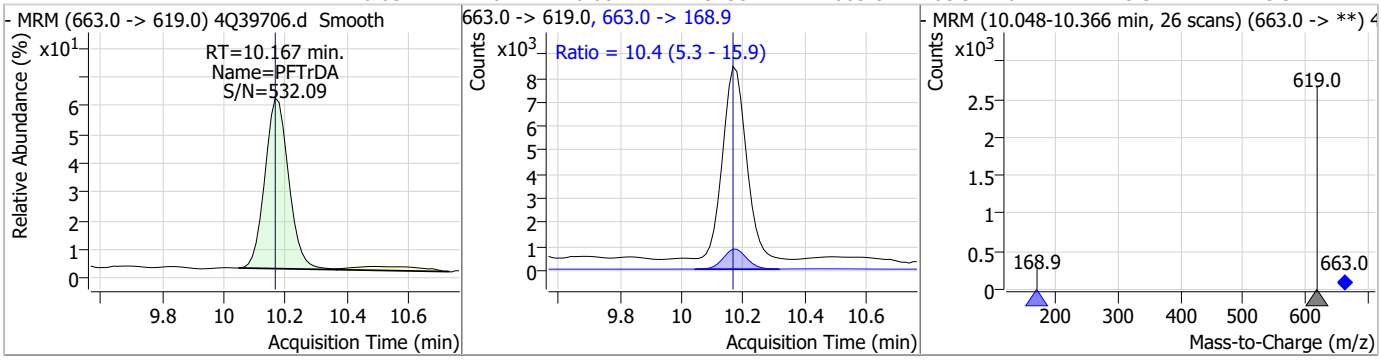
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.84	9.79	-0.01	35477	613.1 -> 319.0	15.3	7.2	21.7



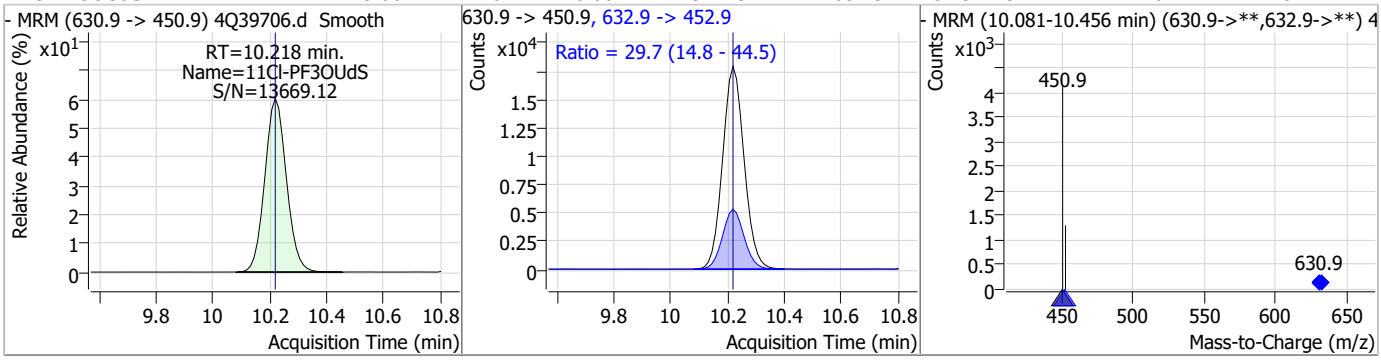
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.83	9.96	0.00	7110	599.0 -> 98.8	47.1	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.83	10.17	0.00	43130	663.0 -> 168.9	10.4	5.3	15.9

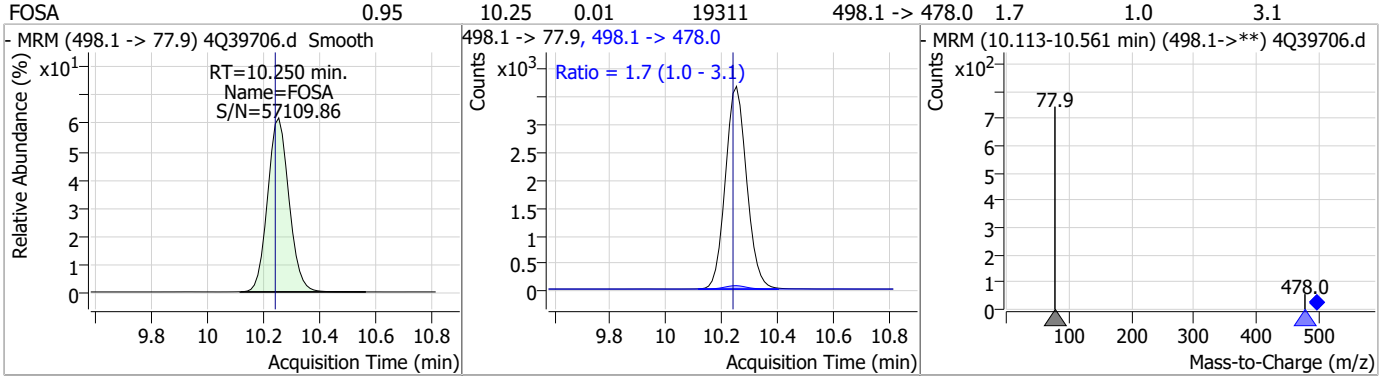


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	3.08	10.22	0.00	94119	632.9 -> 452.9	29.7	14.8	44.5

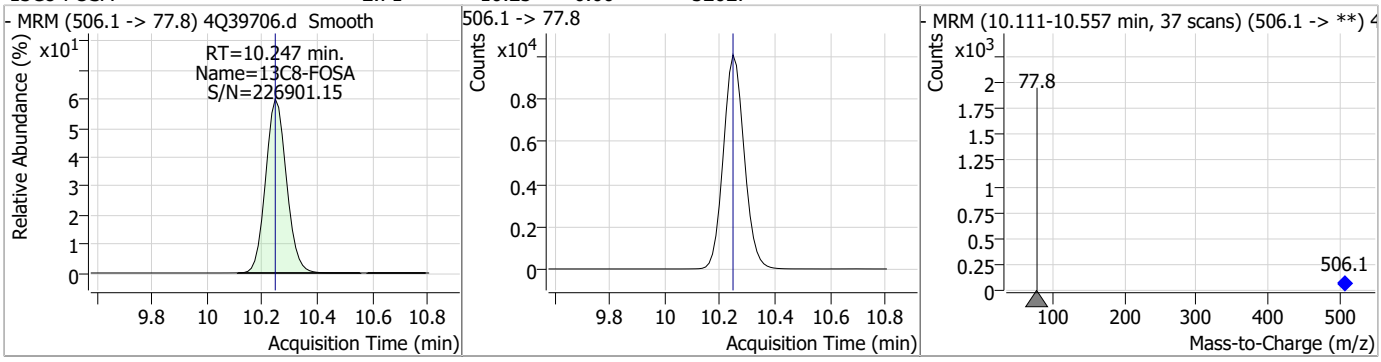


Perfluorinated Compounds by LC/MS/MS

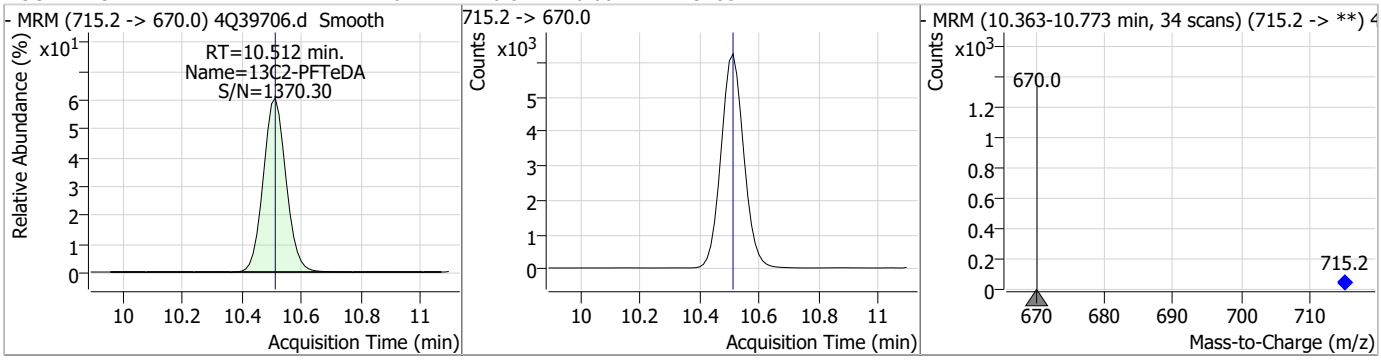
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.95	10.25	0.01	19311	498.1 -> 478.0	1.7	1.0	3.1



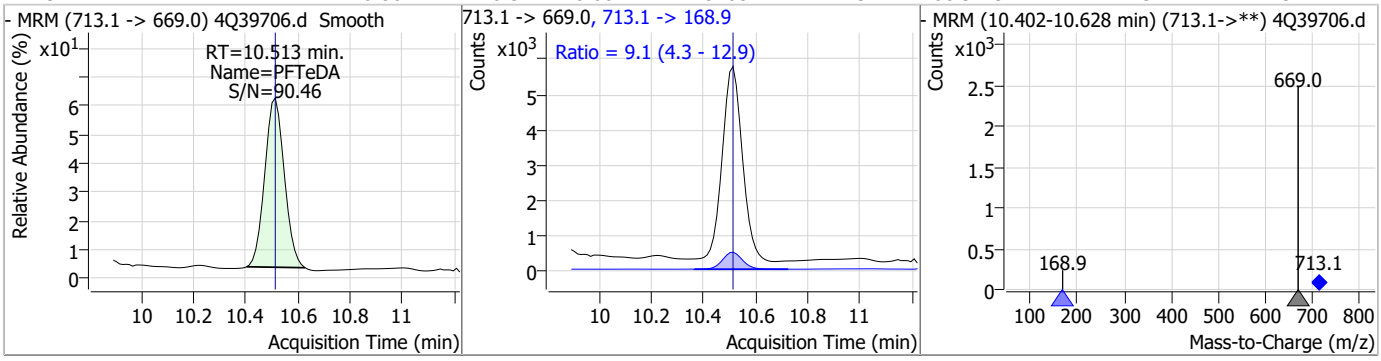
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.71	10.25	0.00	52627				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.10	10.51	0.00	32851				

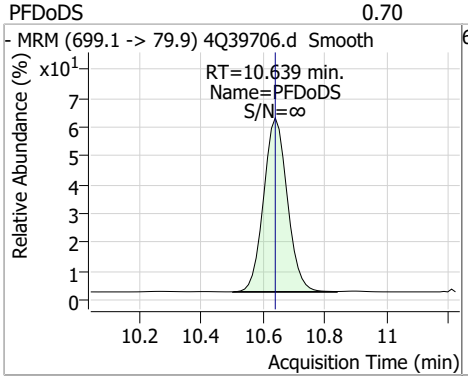


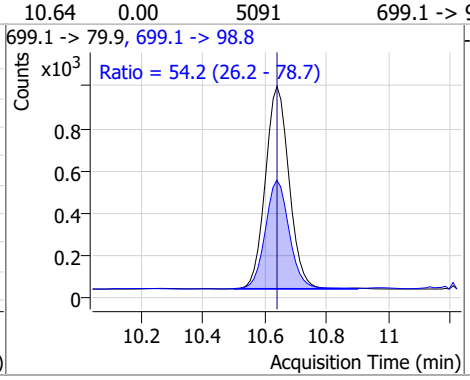
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.86	10.51	0.00	28268	713.1 -> 168.9	9.1	4.3	12.9

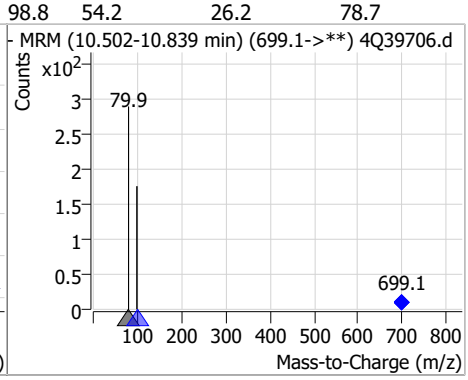


Perfluorinated Compounds by LC/MS/MS

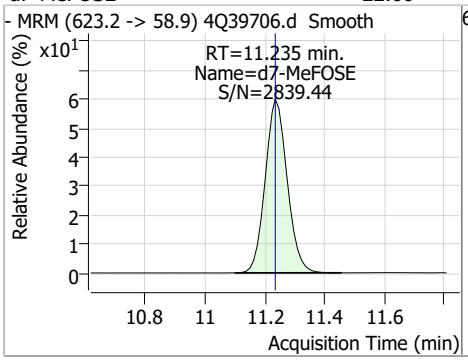
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.70	10.64	0.00	5091	699.1 -> 98.8	54.2	26.2	78.7

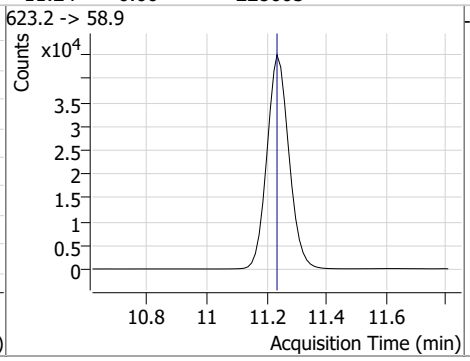


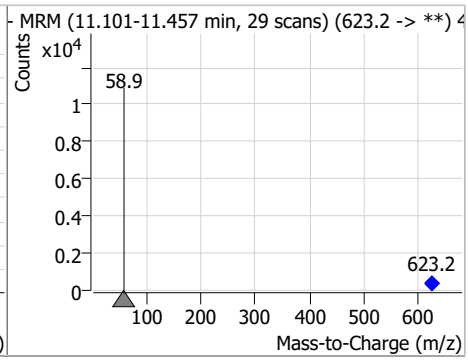




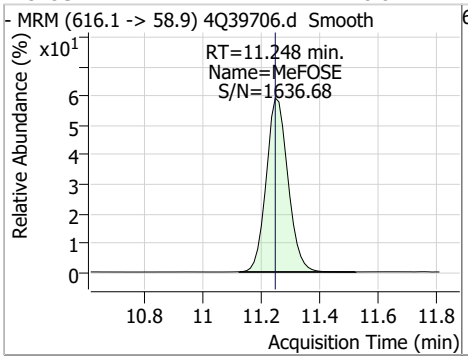
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.60	11.24	0.00	228605				

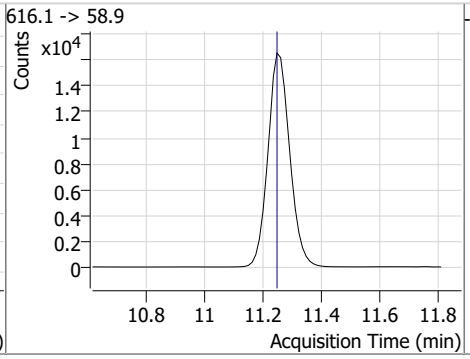


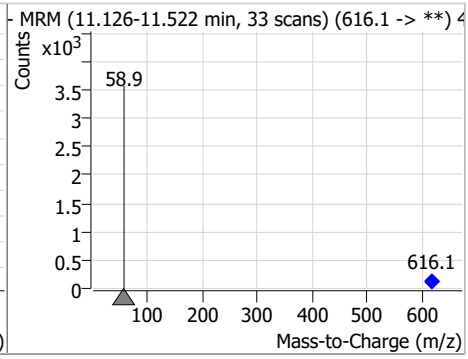




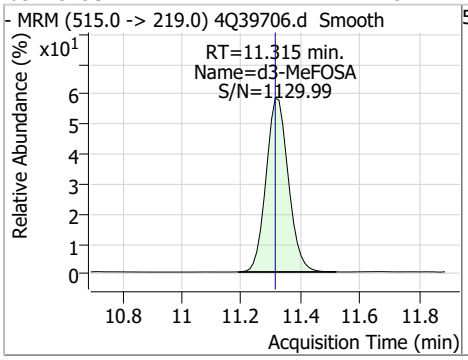
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	8.82	11.25	0.00	85158				

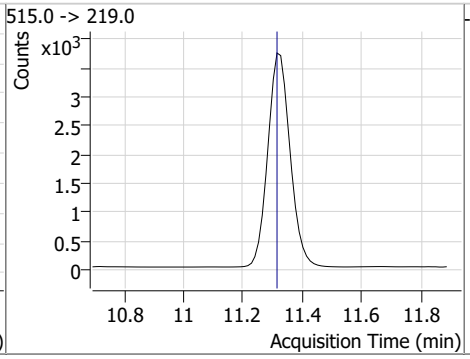


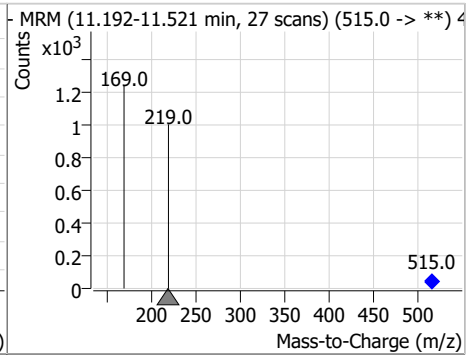




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.18	11.31	0.00	19376				

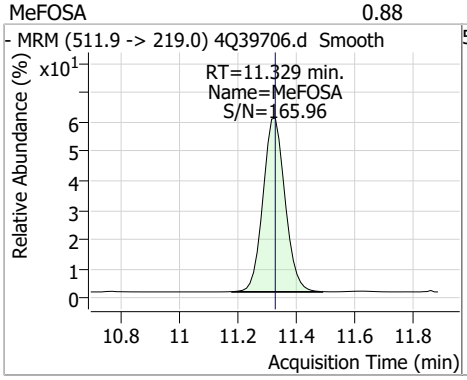


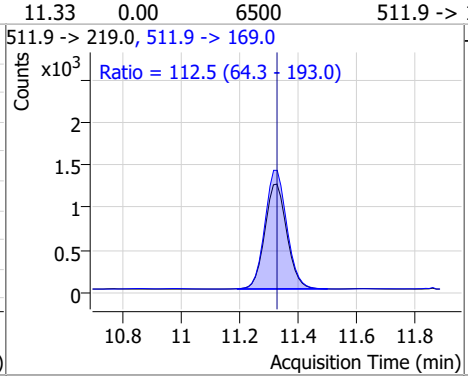


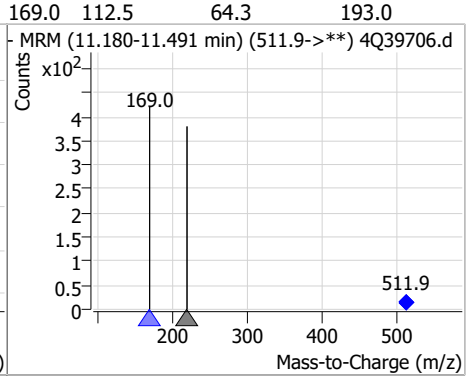


Perfluorinated Compounds by LC/MS/MS

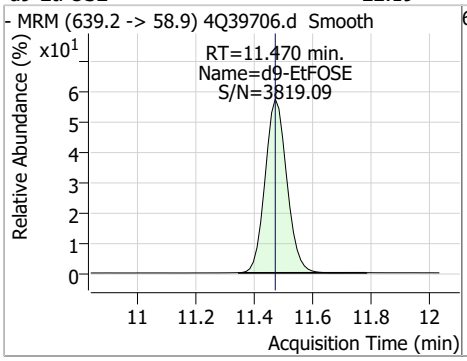
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.88	11.33	0.00	6500	511.9 -> 169.0	112.5	64.3	193.0

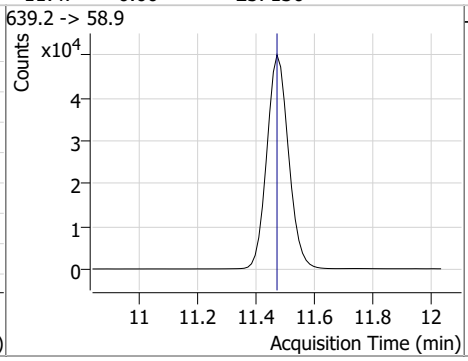


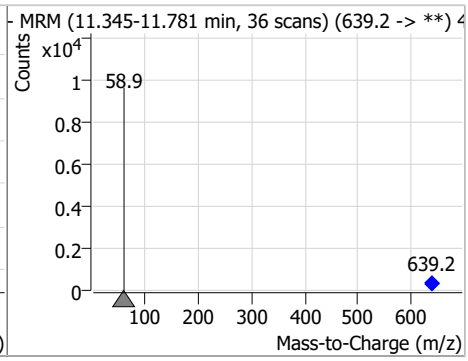




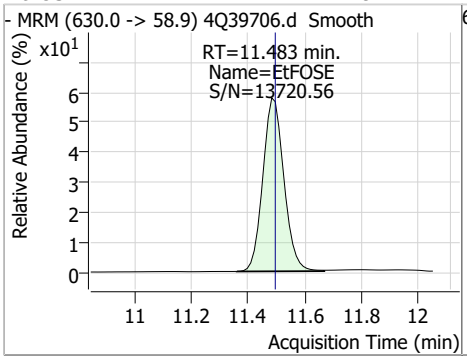
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.19	11.47	0.00	257130				

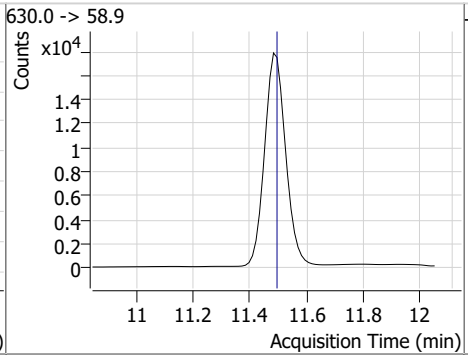


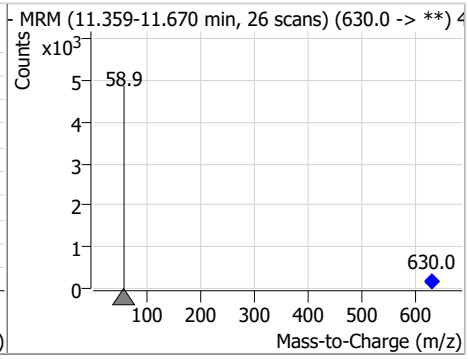




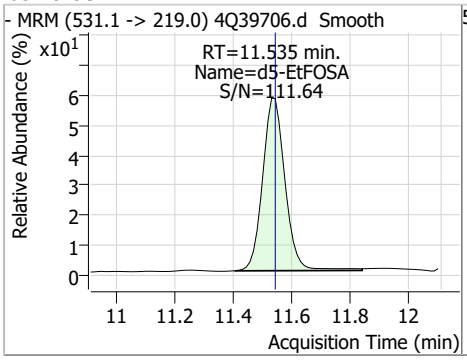
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	9.24	11.48	-0.01	92211				

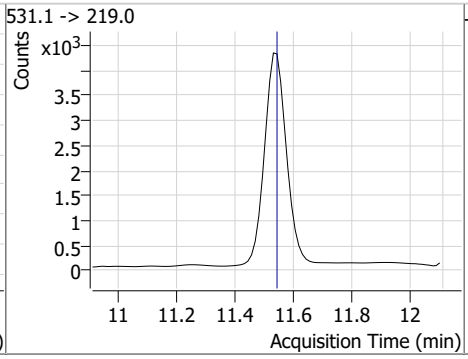


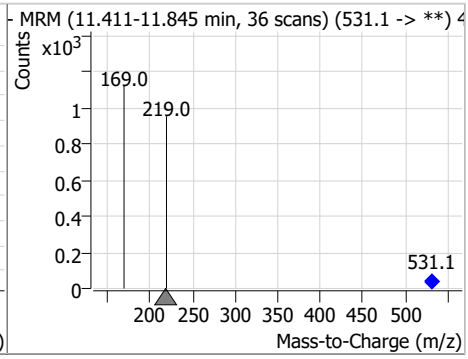




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.14	11.54	-0.01	22636				

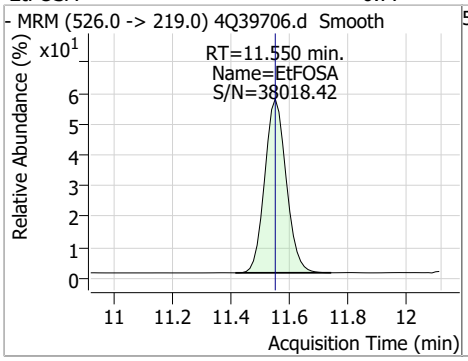


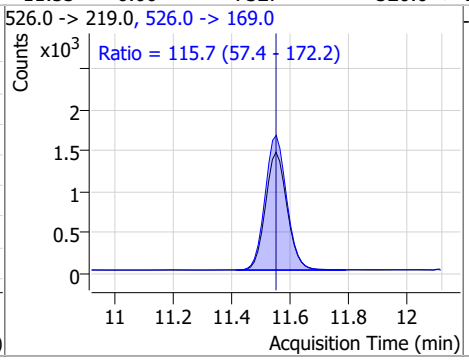


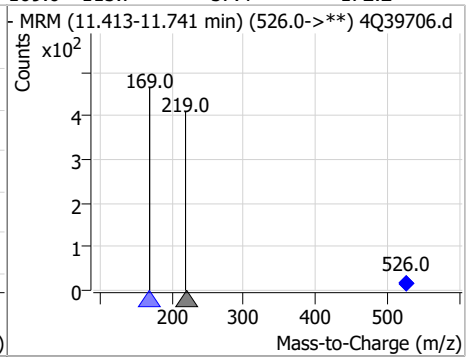


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.77	11.55	0.00	7327	526.0 -> 169.0	115.7	57.4	172.2







Manual Integration Approval Summary

Sample Number: OP95069-LLBS
Lab FileID: 4Q39706.D
Injection Time: 01/25/23 17:08
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39723.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 9:08:10 PM
Sample Name : op95069-ms
Vial : P1-E9
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	239483	10.00	µg/L	0.012
M5-PFPeA	4.863	268.3 -> 223.0	258956	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	166198	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	85678	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	135994	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	67119	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	53350	1.25	µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	55388	1.25	µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	53540	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	38133	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	50938	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	43639	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	29400	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	34506	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	5044	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9769	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	10945	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	41360	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	125686	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	36981	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	253269	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	292606	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	24560	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	21629	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	32728	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	194430	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	17224	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	137386	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	42650	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	71219	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	131390	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	5044	8.12	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 162.5%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9769	7.03	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 140.6%		
13C2-8:2FTS	8.653	529.1 -> 80.9	10945	5.76	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
13C2-PFDoDA	9.806	615.1 -> 570.0	53540	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	38133	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-PFBS	6.089	302.1 -> 79.9	43639	2.93	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.3%		
13C3-PFHxS	7.917	402.1 -> 79.9	29400	2.93	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.0%		
13C4-PFBA	3.186	216.8 -> 171.9	239483	6.83 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.3%		
13C4-PFHpA	7.106	367.1 -> 322.0	85678	2.80 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.8%		
13C5-PFHxA	6.172	318.0 -> 273.0	166198	3.01 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.3%		
13C5-PFPeA	4.863	268.3 -> 223.0	258956	6.06 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.2%		
13C6-PFDA	8.891	519.1 -> 474.1	53350	1.42 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.3%		
13C7-PFUnDA	9.373	570.0 -> 525.1	55388	1.37 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C8-FOSA	10.247	506.1 -> 77.8	50938	2.72 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-PFOA	7.788	421.1 -> 376.0	135994	2.76 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C8-PFOS	9.068	507.1 -> 79.9	34506	2.58 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C9-PFNA	8.360	472.1 -> 427.0	67119	1.33 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%		
d3-MeFOSAA	8.924	573.2 -> 419.0	41360	5.50 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	125686	11.99 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.9%		
d3-MeFOSA	11.327	515.0 -> 219.0	21629	2.53 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
d5-EtFOSAA	9.146	589.2 -> 419.0	36981	5.65 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
d7-MeFOSE	11.235	623.2 -> 58.9	253269	25.95 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d9-EtFOSE	11.470	639.2 -> 58.9	292606	26.18 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
d5-EtFOSA	11.548	531.1 -> 219.0	24560	2.41 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	69785	8.47 µg/L		99
		327.1 -> 80.9	33271			
6:2FTS	7.537	427.1 -> 407.0	71374	9.22 µg/L		99
		427.1 -> 80.9	35469			
8:2FTS	8.654	527.1 -> 507.0	55426	10.47 µg/L		100
		527.1 -> 80.8	29247			
EtFOSAA	9.159	584.2 -> 419.1	14278	2.31 µg/L	m	96
		584.2 -> 526.0	6719			
FOSA	10.250	498.1 -> 77.9	48496	2.47 µg/L		100
		498.1 -> 478.0	945			
MeFOSAA	8.937	570.1 -> 419.0	15760	2.57 µg/L	m	99
		570.1 -> 483.0	3026			
PFBA	3.195	212.8 -> 168.9	60763	9.12 µg/L		100
PFBS	6.090	298.7 -> 79.9	43258	2.19 µg/L		97
		298.7 -> 98.8	15699			
PFDA	8.892	512.9 -> 469.0	88548	2.33 µg/L		98
		512.9 -> 219.0	19138			
PFDoDA	9.806	613.1 -> 569.0	97560	2.36 µg/L		98
		613.1 -> 319.0	14924			
PFDS	9.959	599.0 -> 79.9	18511	2.32 µg/L		98

Perfluorinated Compounds by LC/MS/MS

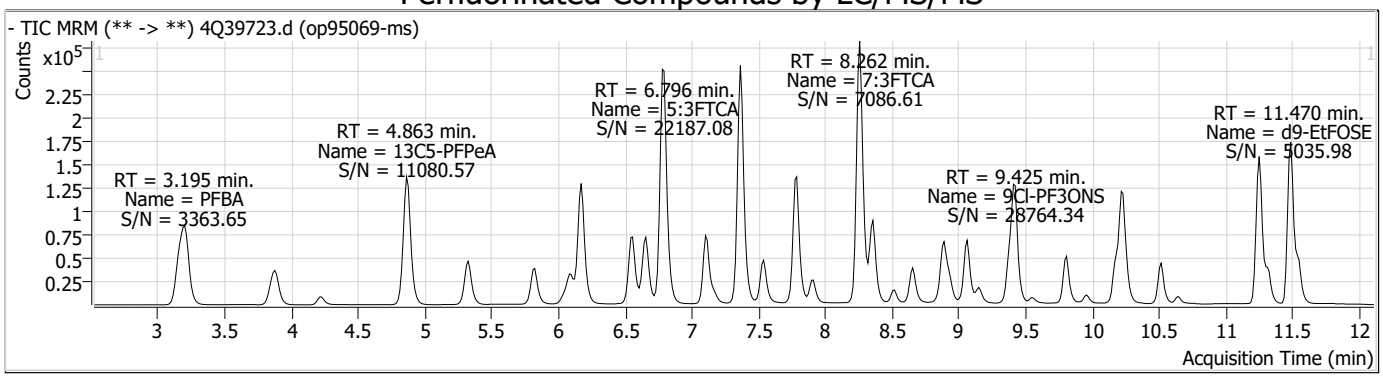
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	8836				
PFHpA	7.106	363.1 -> 319.0	143554	2.69	µg/L		98
		363.1 -> 169.0	22768				
PFHpS	8.526	449.0 -> 79.9	32104	2.30	µg/L		89
		449.0 -> 98.9	17061				
PFHxA	6.175	313.0 -> 269.0	158016	2.45	µg/L		99
		313.0 -> 118.9	5199				
PFHxS	7.917	398.7 -> 79.9	22193	2.34	µg/L	m	91
		398.7 -> 98.9	9487				
PFNA	8.360	463.0 -> 419.0	121497	2.49	µg/L		99
		463.0 -> 219.0	28656				
PFNS	9.549	548.8 -> 79.9	13417	2.18	µg/L		99
		548.8 -> 98.9	6996				
PFOA	7.790	413.0 -> 369.0	155035	2.56	µg/L	m	99
		413.0 -> 169.0	31996				
PFOS	9.069	498.9 -> 79.9	37858	2.35	µg/L	m	98
		498.9 -> 98.8	17807				
PFPeA	4.866	263.0 -> 219.0	283961	5.00	µg/L		100
PFPeS	7.171	349.1 -> 79.9	18936	2.06	µg/L		92
		349.1 -> 98.9	8403				
PFTeDA	10.513	713.1 -> 669.0	91474	2.38	µg/L		98
		713.1 -> 168.9	8664				
PFTrDA	10.179	663.0 -> 619.0	122073	2.42	µg/L		98
		663.0 -> 168.9	12053				
PFUnDA	9.386	563.1 -> 519.0	81428	2.43	µg/L		98
		563.1 -> 269.1	14159				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	250762	8.54	µg/L		100
		632.9 -> 452.9	74963				
9Cl-PF3ONS	9.425	530.8 -> 351.0	308705	8.62	µg/L		98
		532.8 -> 353.0	89086				
ADONA	7.369	376.9 -> 250.9	633987	9.35	µg/L		98
		376.9 -> 84.8	229200				
HFPO-DA	6.565	284.9 -> 168.9	113769	9.60	µg/L		100
		284.9 -> 184.9	11947				
3:3FTCA	4.229	241.0 -> 177.0	30373	11.41	µg/L		99
		241.0 -> 117.0	2946				
5:3FTCA	6.796	341.0 -> 237.1	523729	60.93	µg/L		98
		341.0 -> 217.0	397899				
7:3FTCA	8.262	441.0 -> 316.9	300485	60.87	µg/L		99
		441.0 -> 336.9	682682				
EtFOSA	11.550	526.0 -> 219.0	24471	2.37	µg/L		100
		526.0 -> 169.0	27992				
EtFOSE	11.496	630.0 -> 58.9	282078	24.83	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	18820	2.28	µg/L		93
		511.9 -> 169.0	22769				
MeFOSE	11.261	616.1 -> 58.9	267770	25.03	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	16082	2.38	µg/L		98
		699.1 -> 98.8	8218				
NFDHA	6.053	295.0 -> 201.0	20179	4.75	µg/L		97
		295.0 -> 84.9	6171				
PFMBA	5.328	279.0 -> 85.1	177800	5.02	µg/L		100
PFMPA	3.882	229.0 -> 84.9	173169	4.74	µg/L		100
PFEESA	6.660	314.8 -> 134.9	251628	4.56	µg/L		99
		314.8 -> 82.9	7237				

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

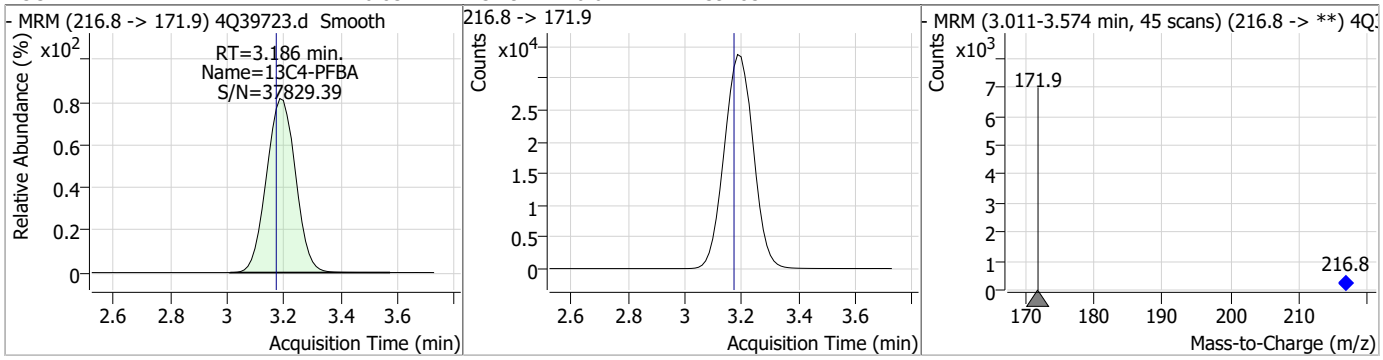
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

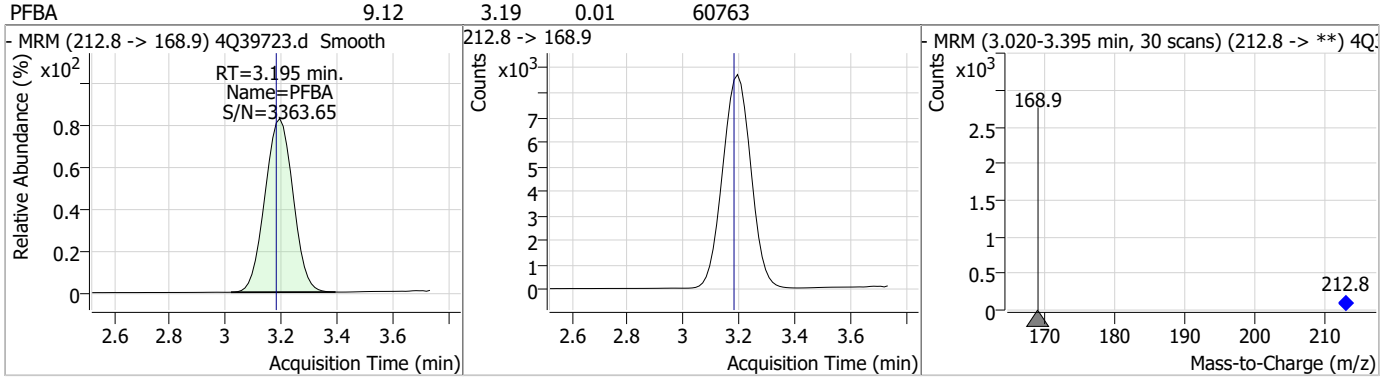
Perfluorinated Compounds by LC/MS/MS



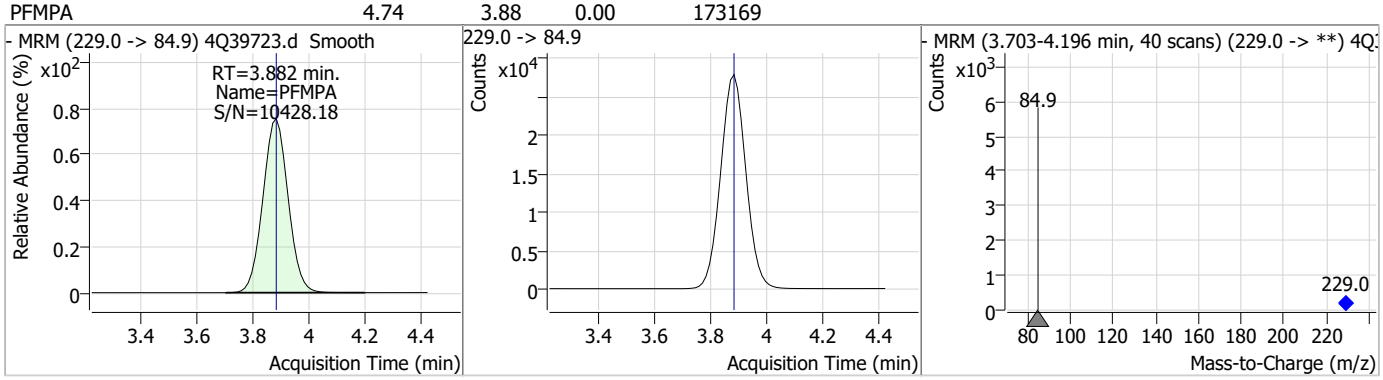
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	6.83	3.19	0.01	239483				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.12	3.19	0.01	60763				

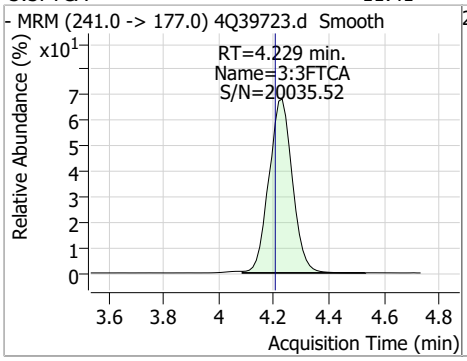


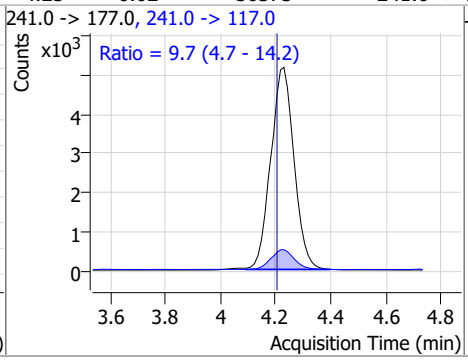
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.74	3.88	0.00	173169				

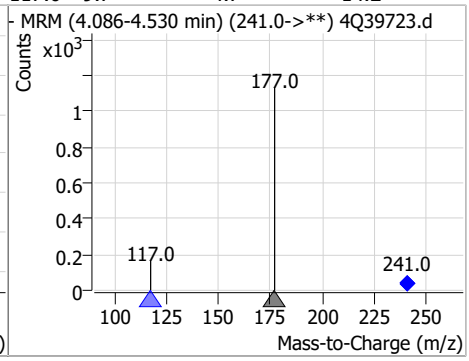


Perfluorinated Compounds by LC/MS/MS

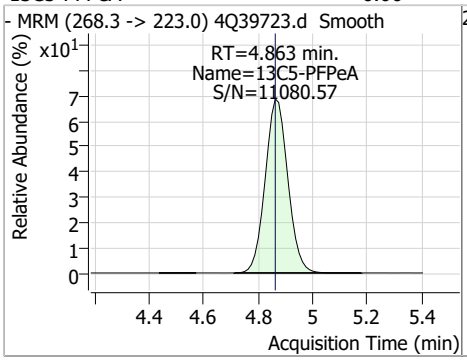
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.41	4.23	0.02	30373	241.0 -> 117.0	9.7	4.7	14.2

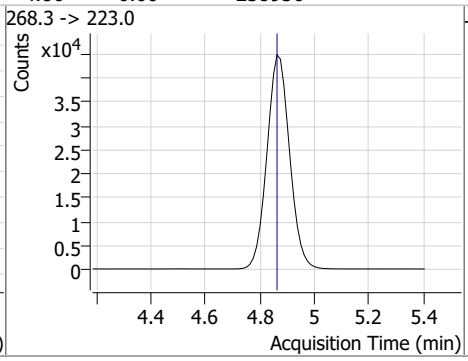


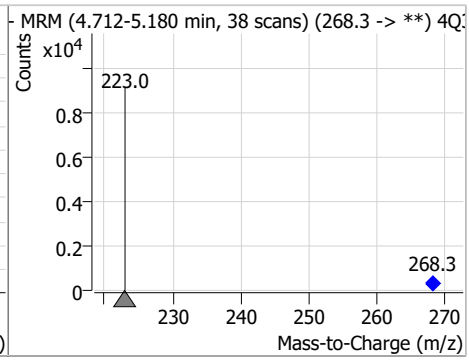




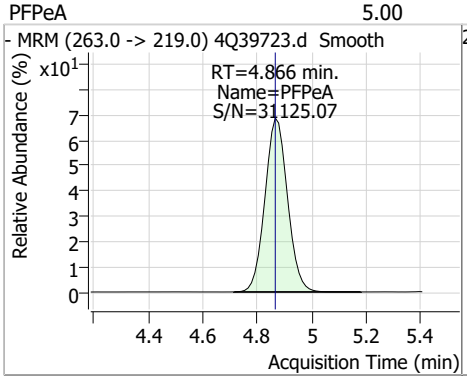
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.06	4.86	0.00	258956				

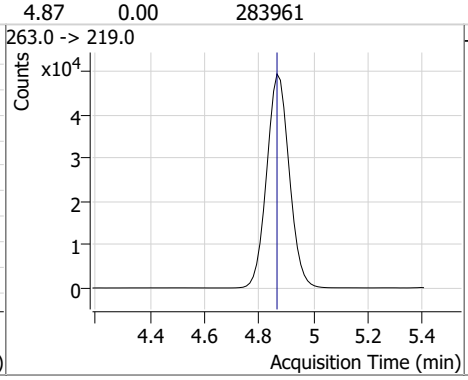


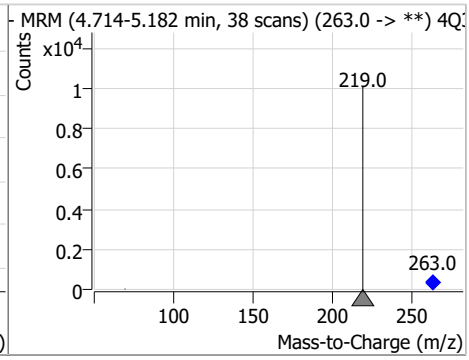




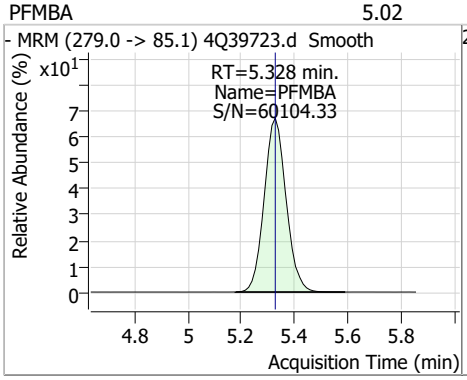
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.00	4.87	0.00	283961				

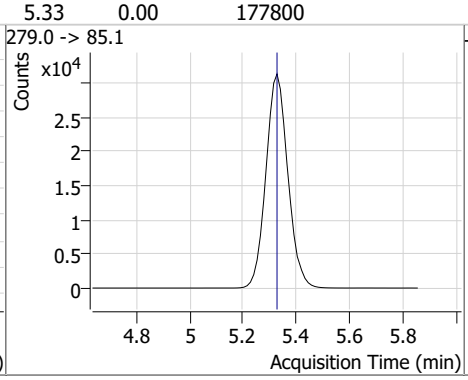


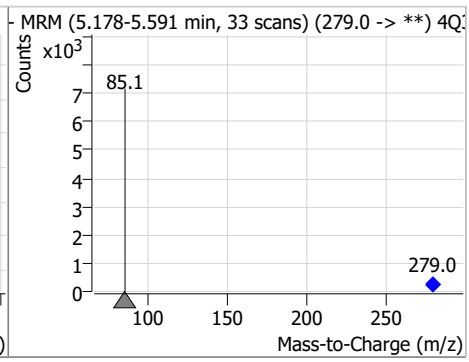




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.02	5.33	0.00	177800				

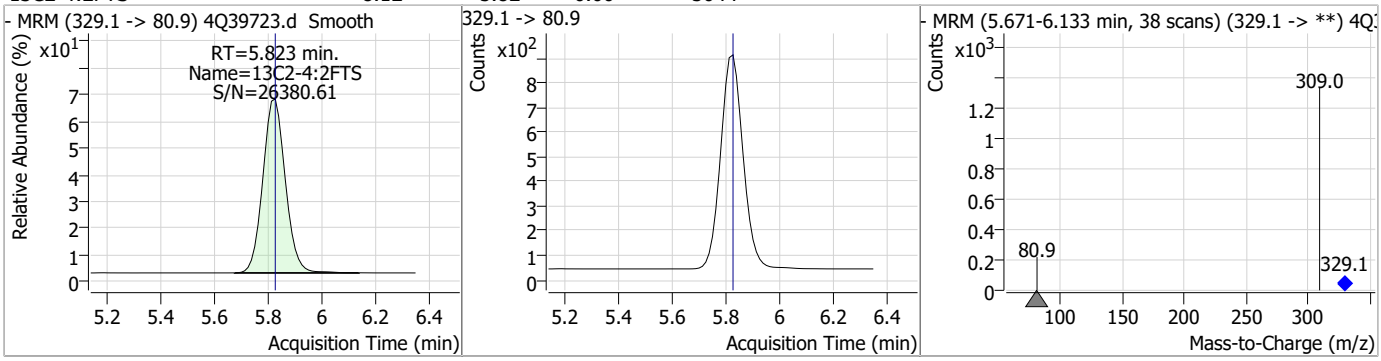




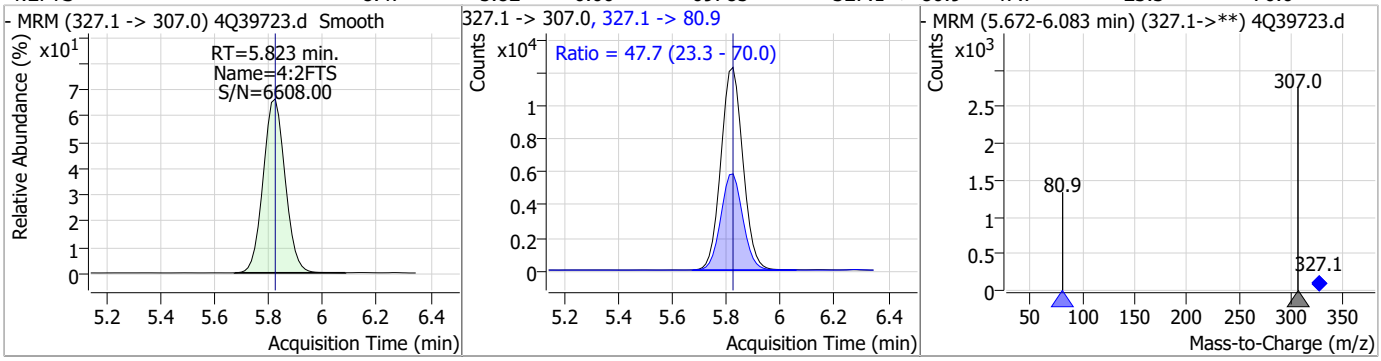


Perfluorinated Compounds by LC/MS/MS

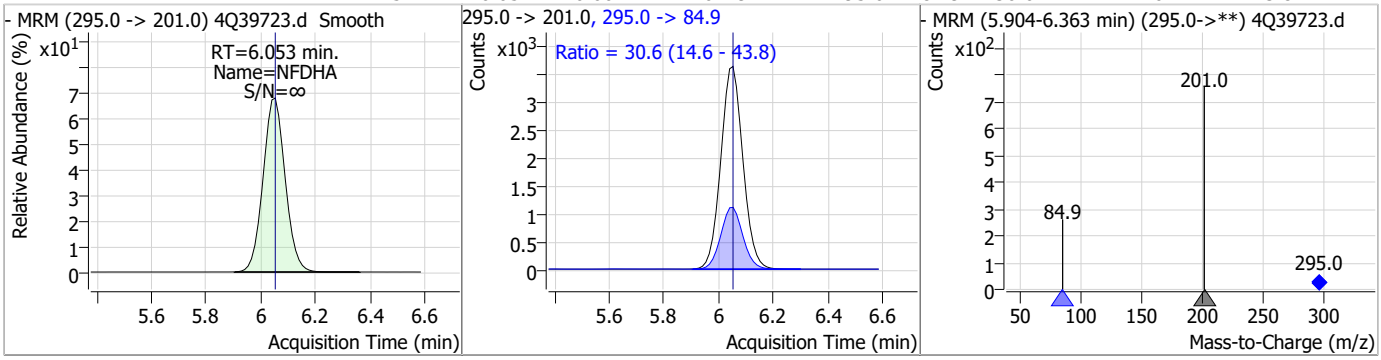
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.12	5.82	0.00	5044				



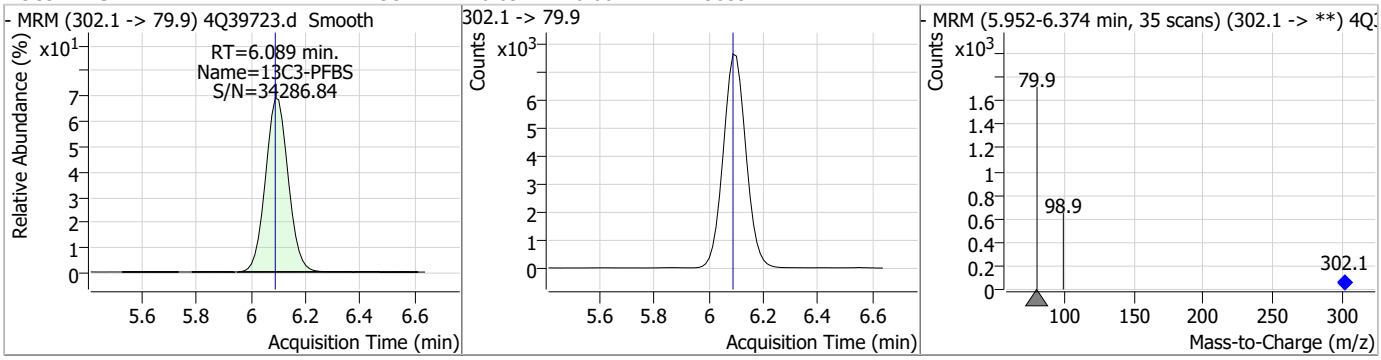
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.47	5.82	0.00	69785	327.1 -> 80.9	47.7	23.3	70.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.75	6.05	0.00	20179	295.0 -> 84.9	30.6	14.6	43.8

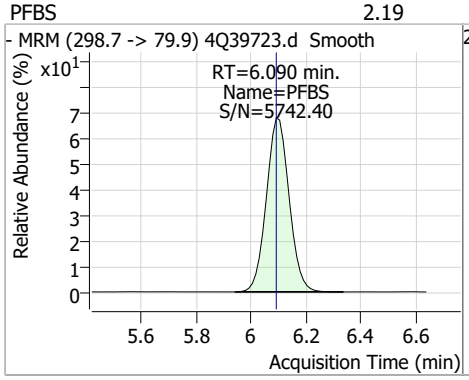


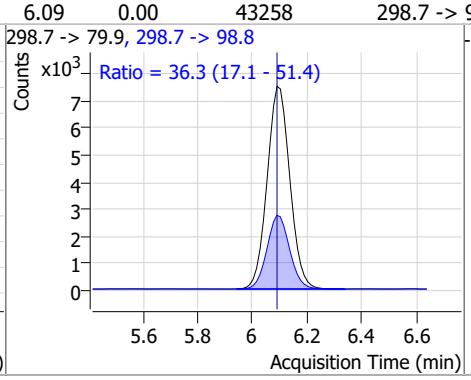
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.93	6.09	0.00	43639				

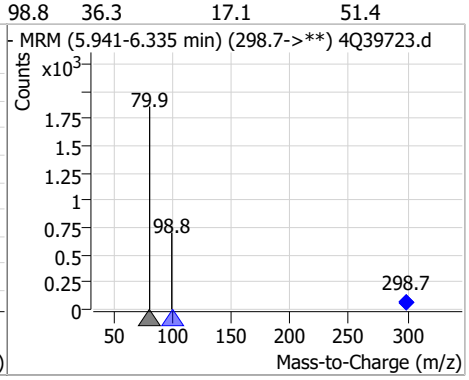


Perfluorinated Compounds by LC/MS/MS

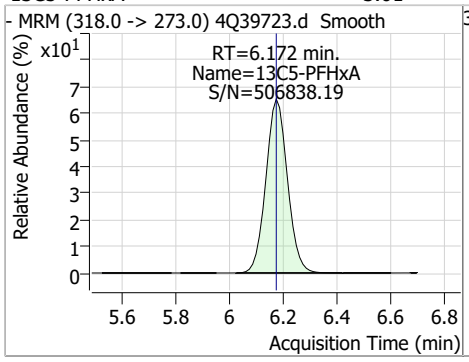
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.19	6.09	0.00	43258	298.7 -> 98.8	36.3	17.1	51.4

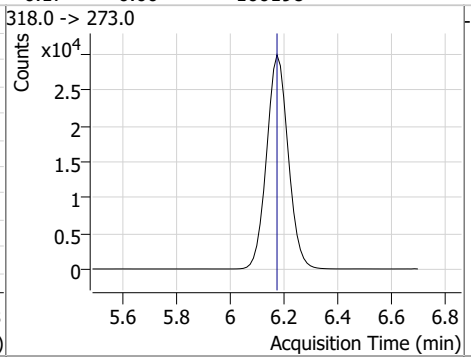


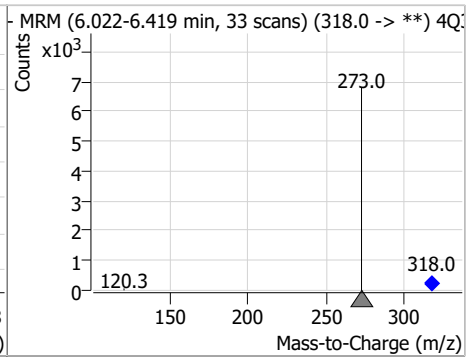




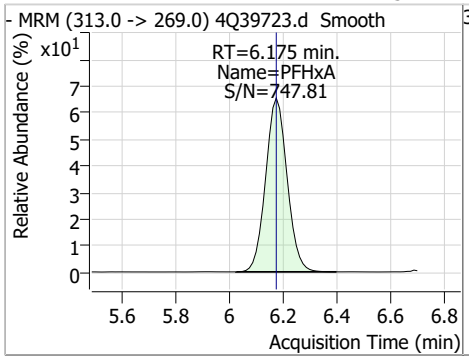
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.01	6.17	0.00	166198				

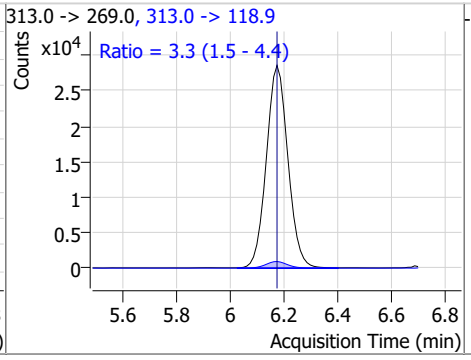


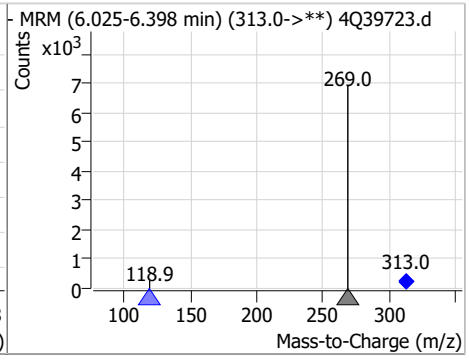




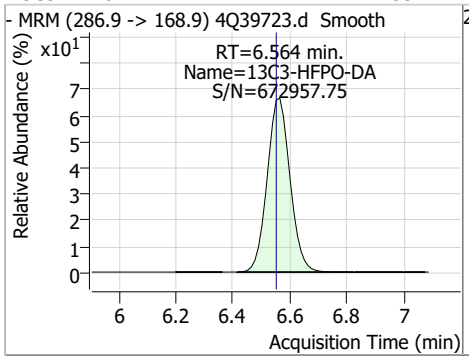
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.45	6.17	0.00	158016	313.0 -> 118.9	3.3	1.5	4.4

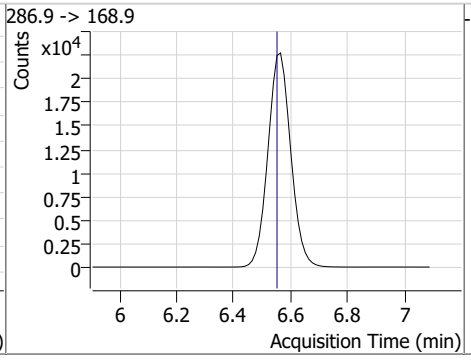


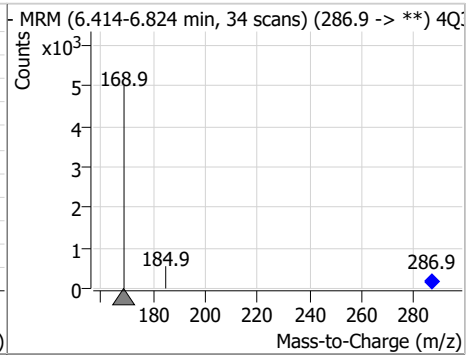




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.99	6.56	0.01	125686				

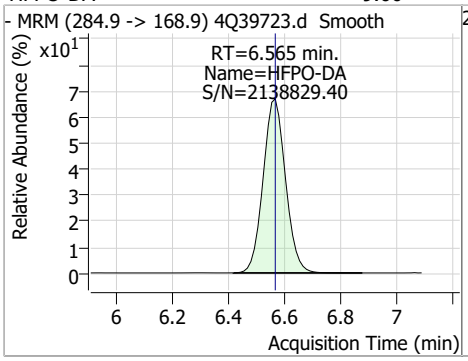


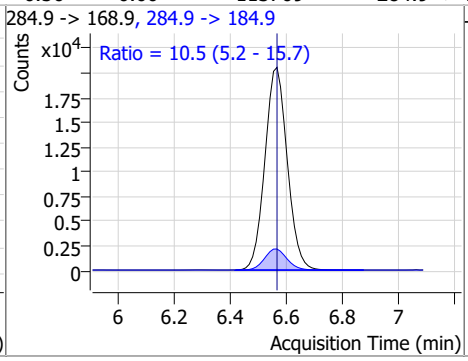


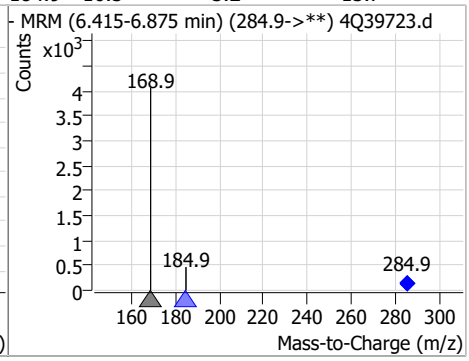


Perfluorinated Compounds by LC/MS/MS

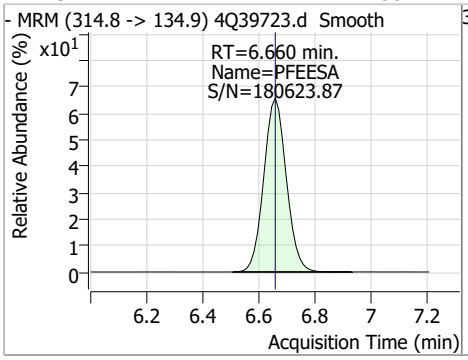
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.60	6.56	0.00	113769	284.9 -> 184.9	10.5	5.2	15.7

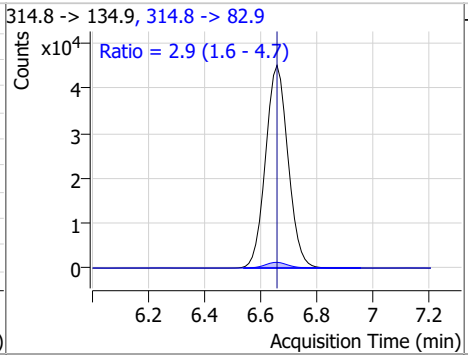


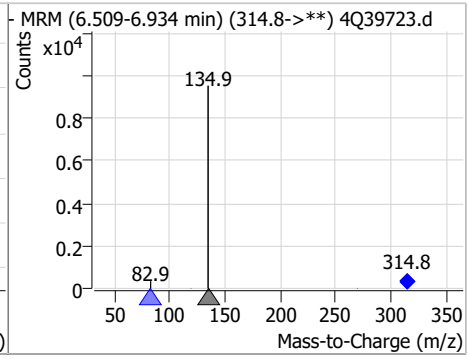




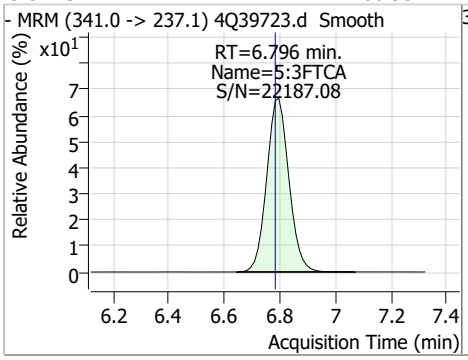
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.56	6.66	0.00	251628	314.8 -> 82.9	2.9	1.6	4.7

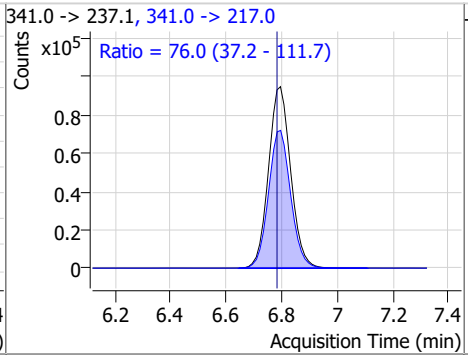


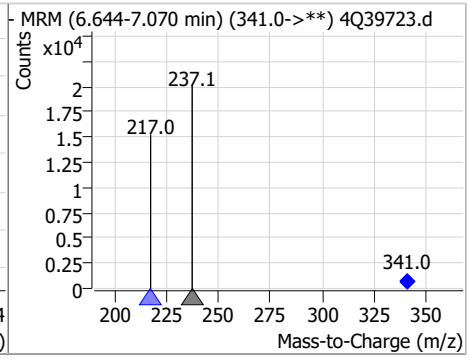




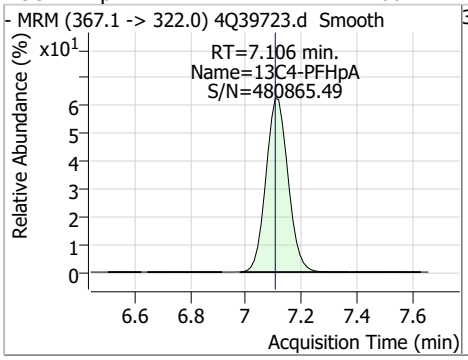
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.93	6.80	0.01	523729	341.0 -> 217.0	76.0	37.2	111.7

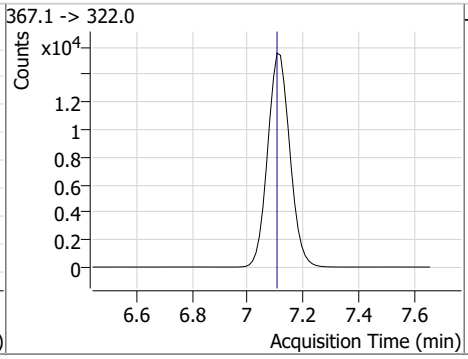


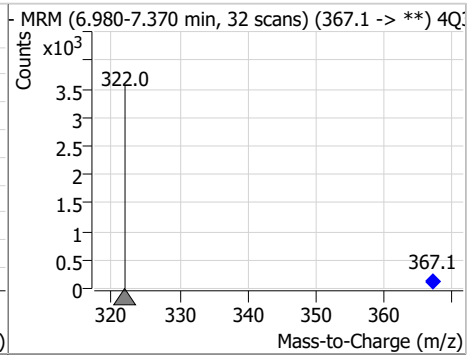




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.80	7.11	0.00	85678				

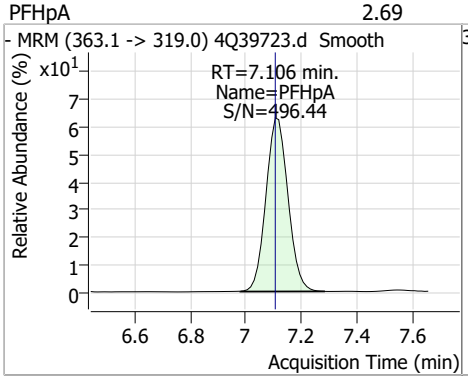


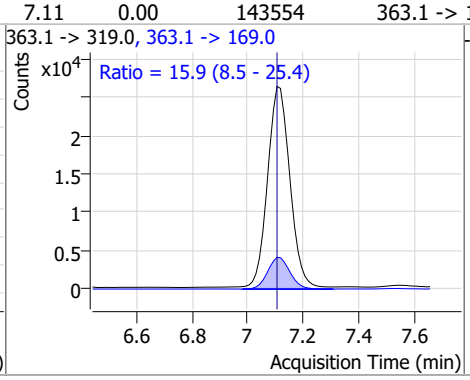


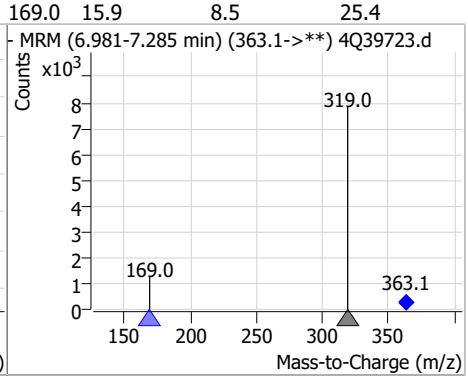


Perfluorinated Compounds by LC/MS/MS

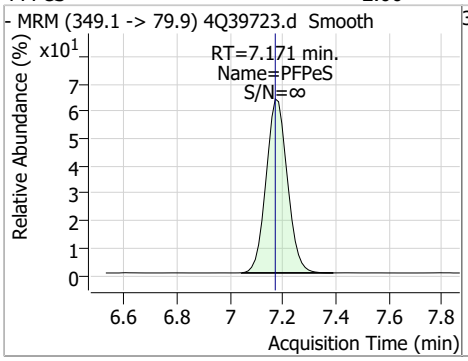
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.69	7.11	0.00	143554	363.1 -> 169.0	15.9	8.5	25.4

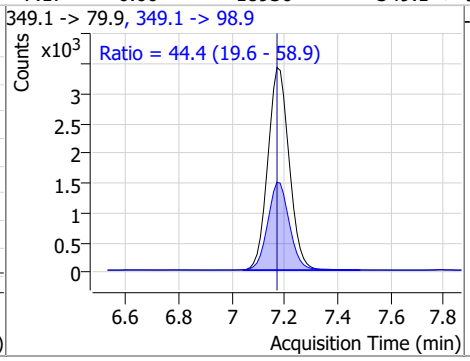


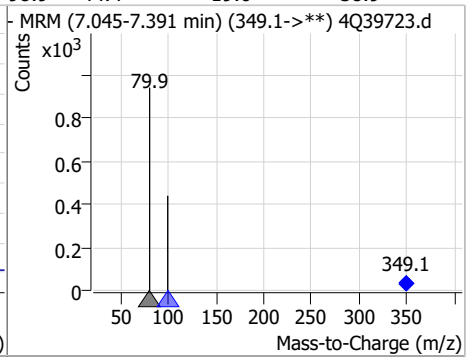




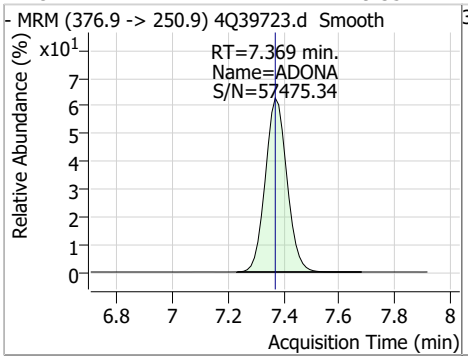
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.06	7.17	0.00	18936	349.1 -> 98.9	44.4	19.6	58.9

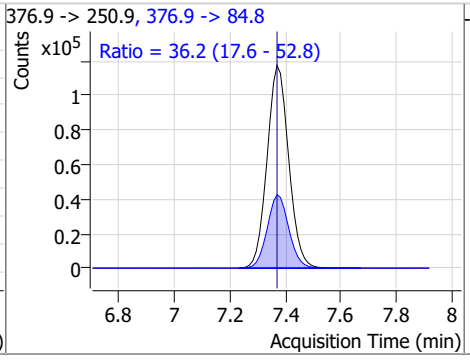


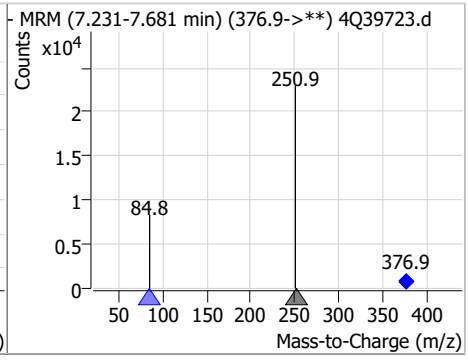




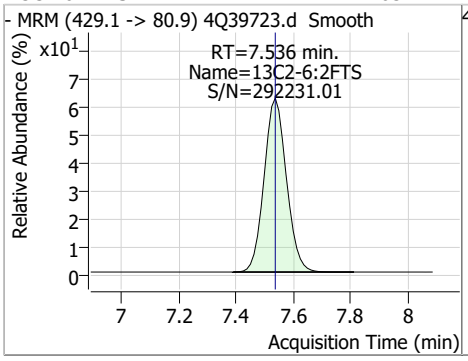
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.35	7.37	0.00	633987	376.9 -> 84.8	36.2	17.6	52.8

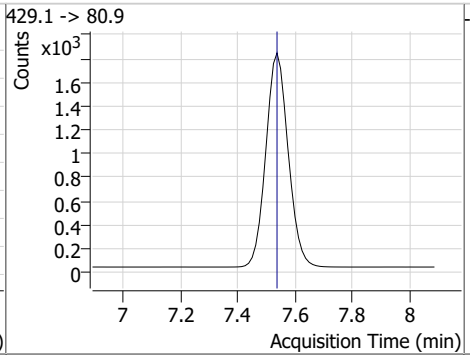


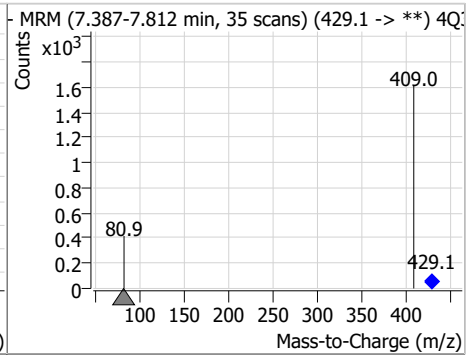




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.03	7.54	0.00	9769				

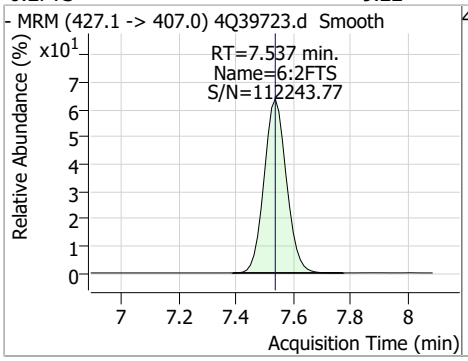


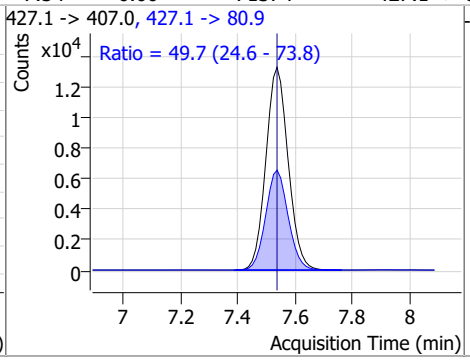


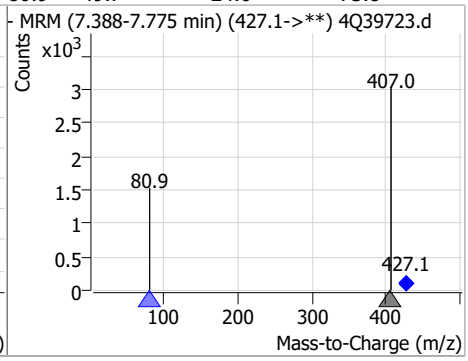


Perfluorinated Compounds by LC/MS/MS

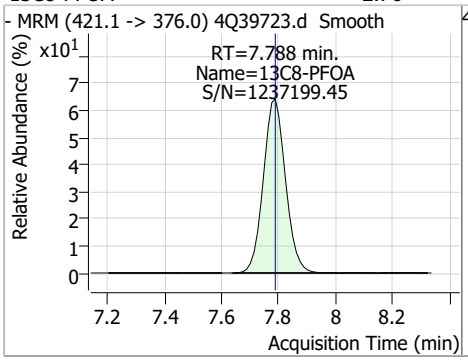
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.22	7.54	0.00	71374	427.1 -> 80.9	49.7	24.6	73.8

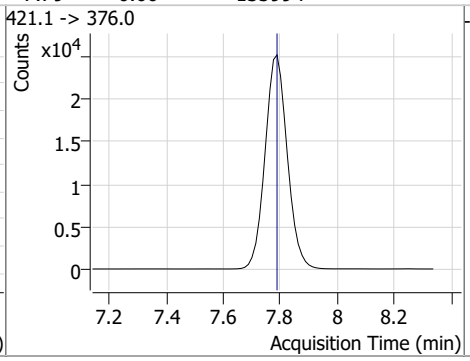


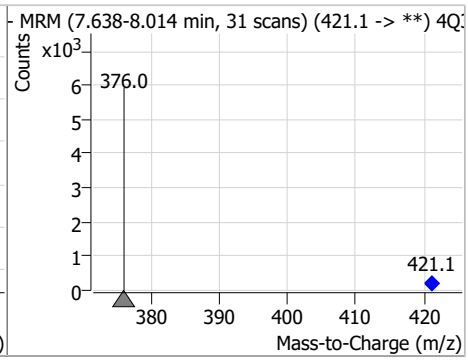




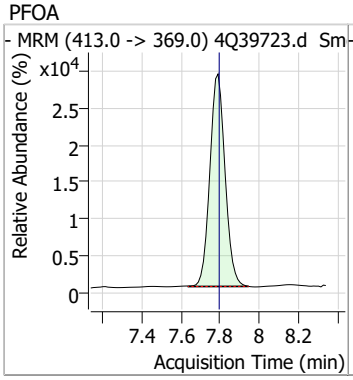
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.76	7.79	0.00	135994				

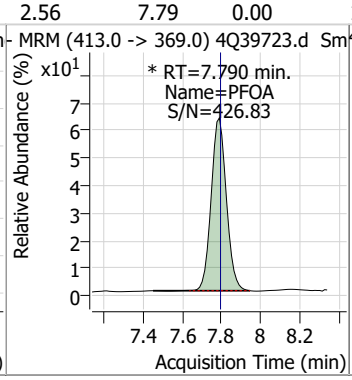


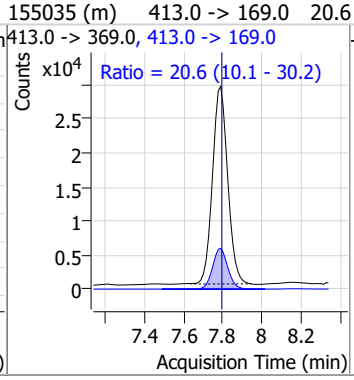


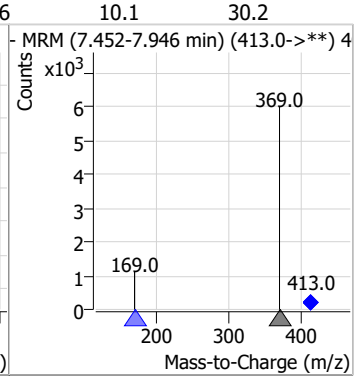


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.56	7.79	0.00	155035 (m)	413.0 -> 169.0	20.6	10.1	30.2

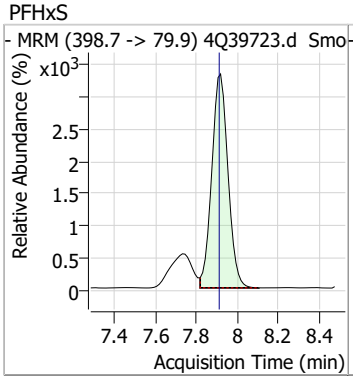


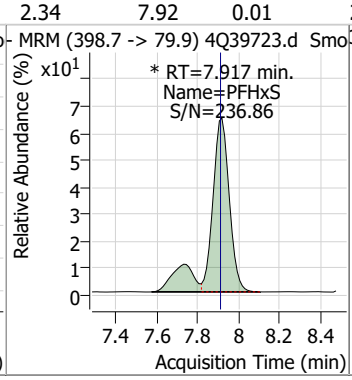


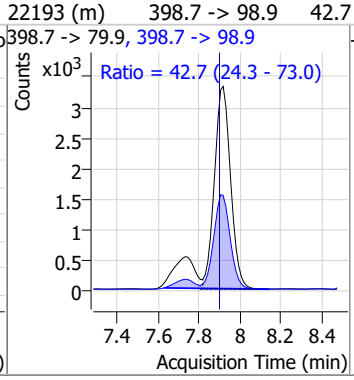


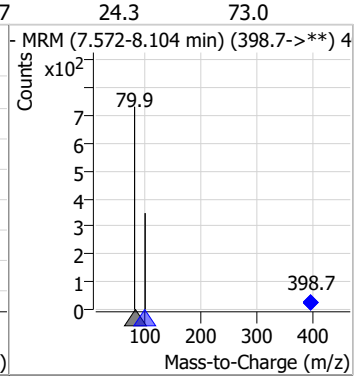


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.34	7.92	0.01	22193 (m)	398.7 -> 98.9	42.7	24.3	73.0



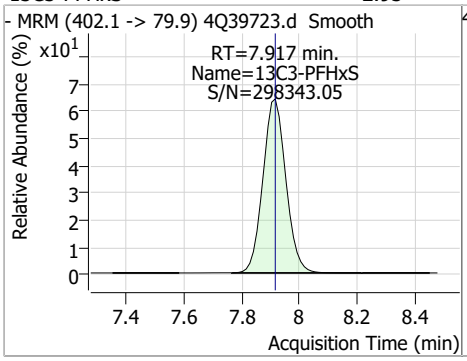


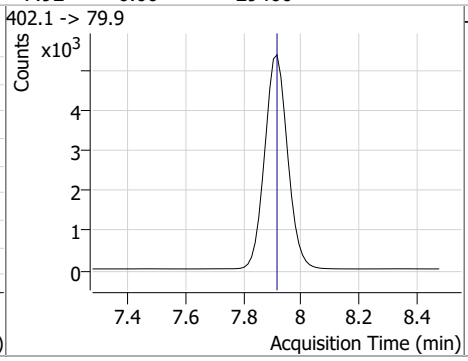


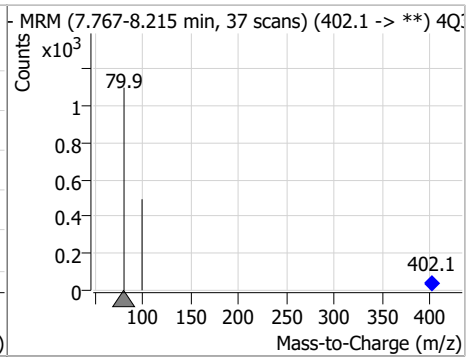


Perfluorinated Compounds by LC/MS/MS

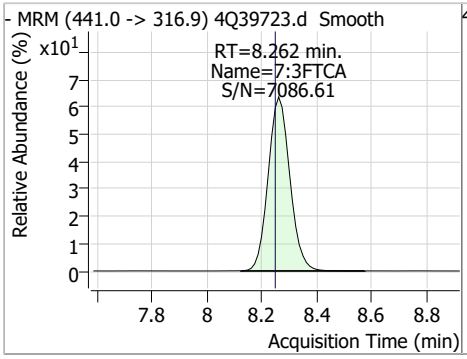
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.93	7.92	0.00	29400				

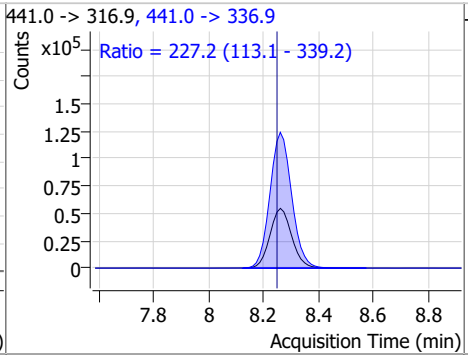


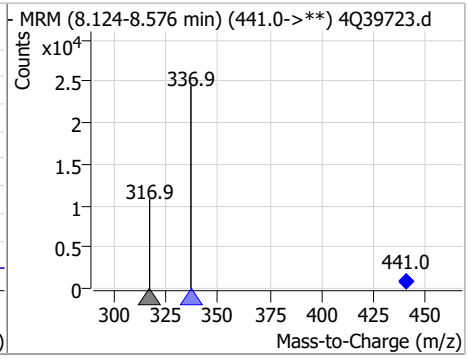




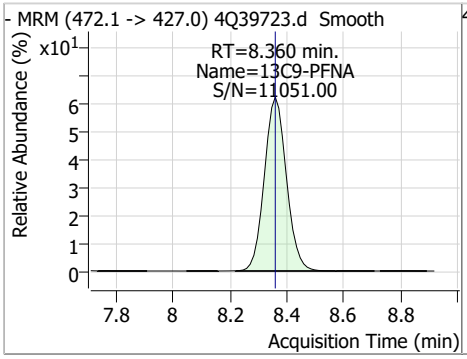
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.87	8.26	0.01	300485	441.0 -> 336.9	227.2	113.1	339.2

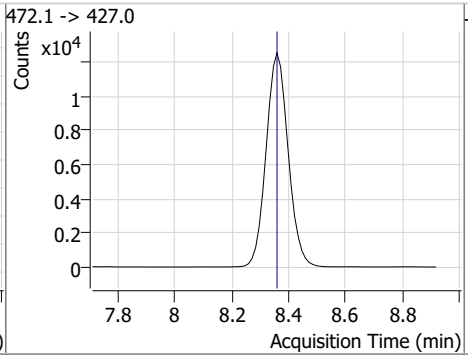


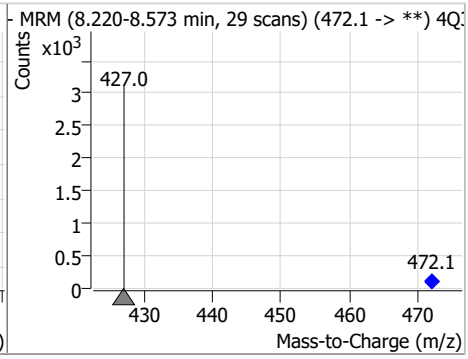




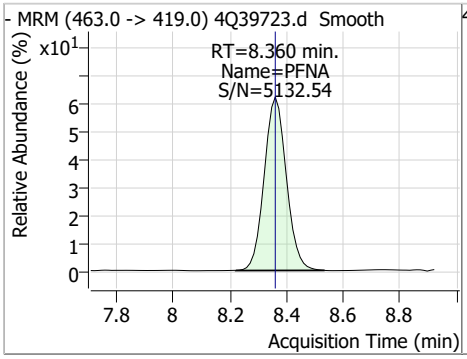
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.33	8.36	0.00	67119				

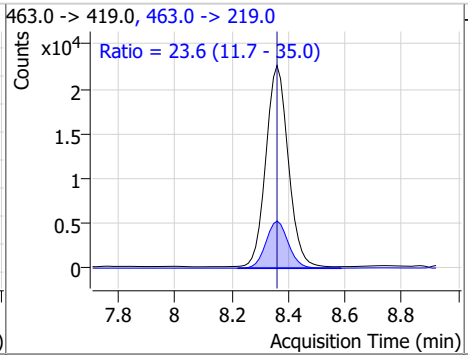


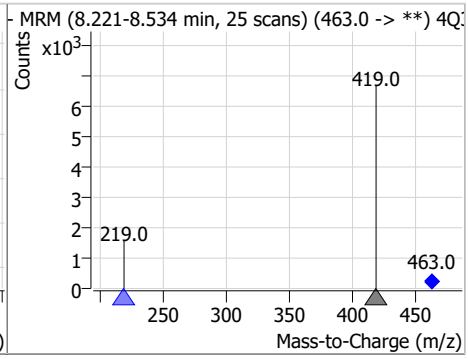




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.49	8.36	0.00	121497	463.0 -> 219.0	23.6	11.7	35.0

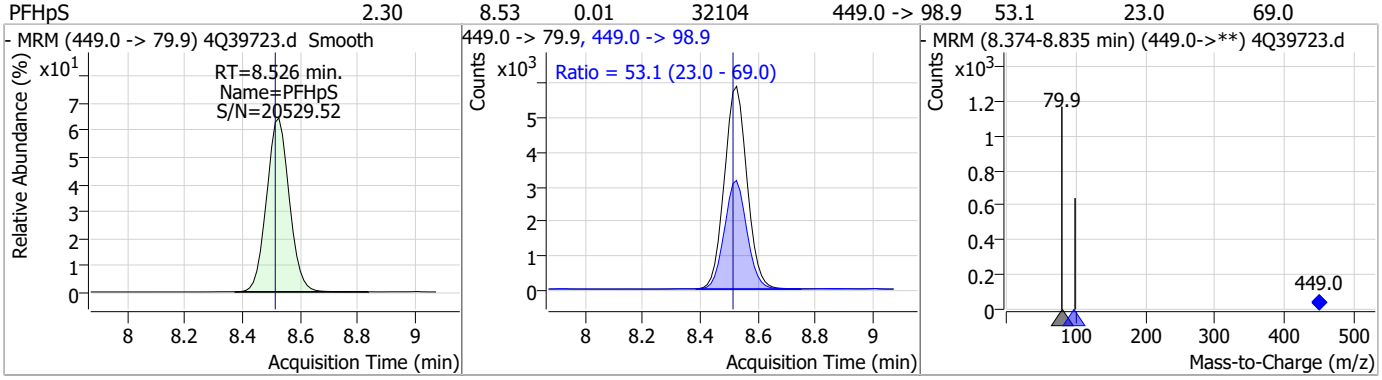




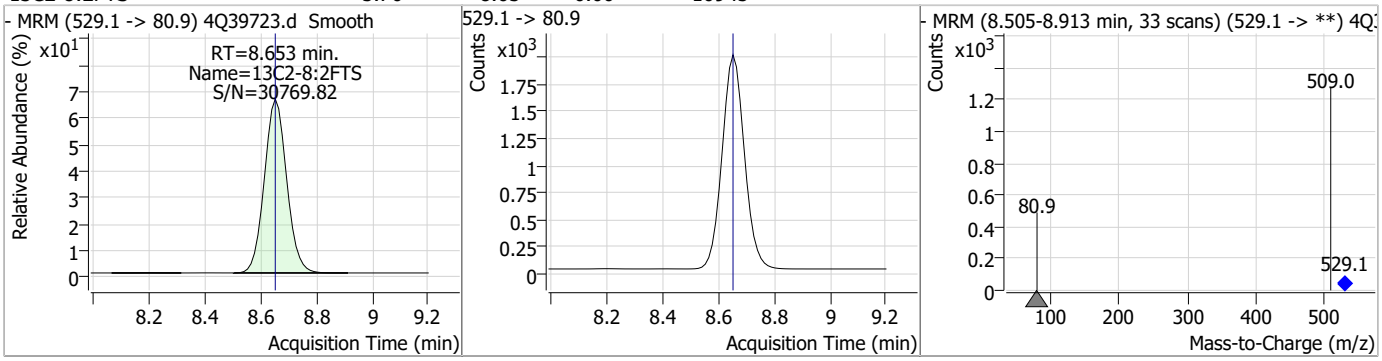


Perfluorinated Compounds by LC/MS/MS

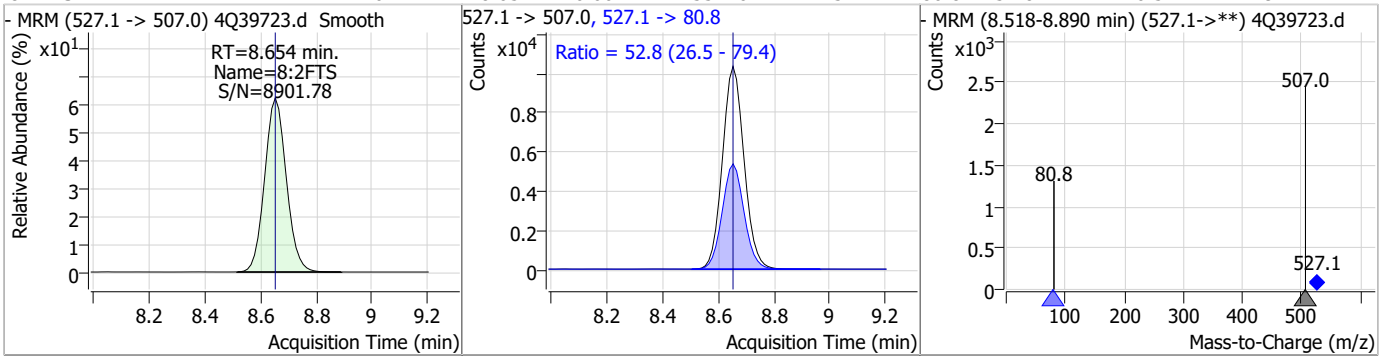
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.30	8.53	0.01	32104	449.0 -> 98.9	53.1	23.0	69.0



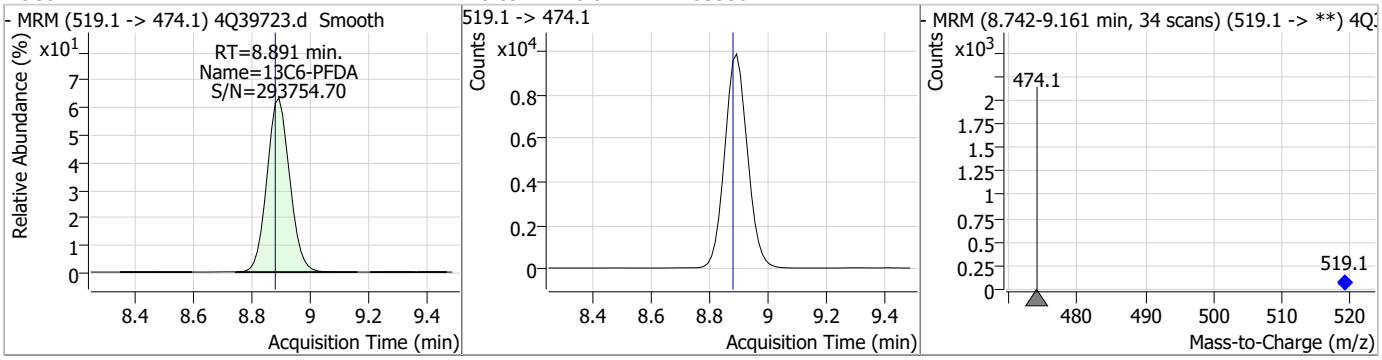
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.76	8.65	0.00	10945				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.47	8.65	0.00	55426	527.1 -> 80.8	52.8	26.5	79.4

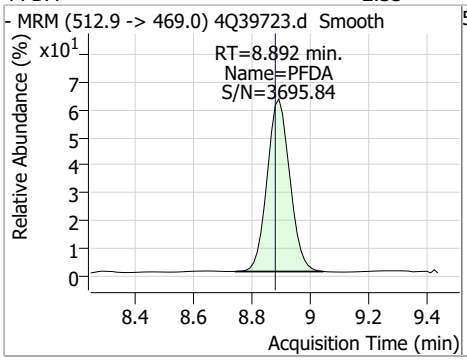


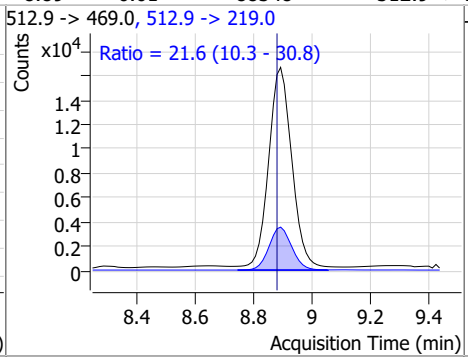
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.42	8.89	0.01	53350				

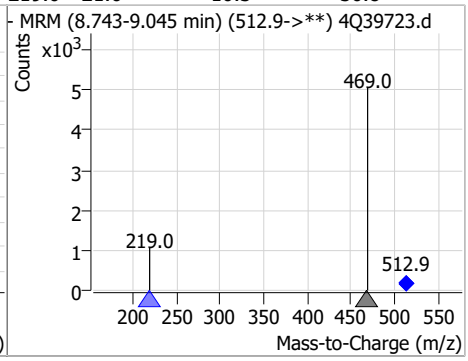


Perfluorinated Compounds by LC/MS/MS

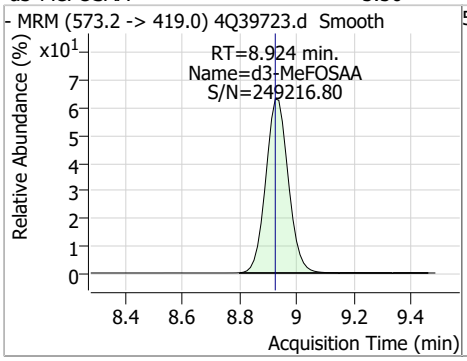
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.33	8.89	0.01	88548	512.9 -> 219.0	21.6	10.3	30.8

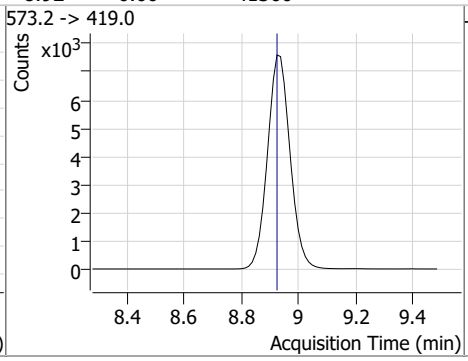


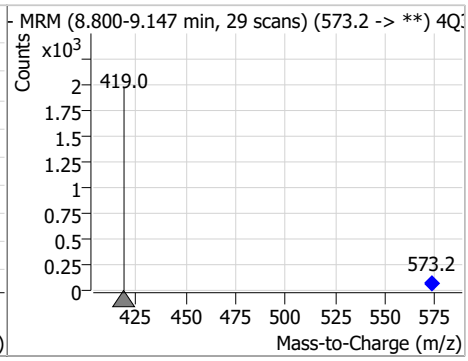




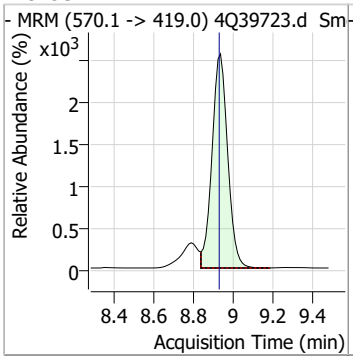
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.50	8.92	0.00	41360				

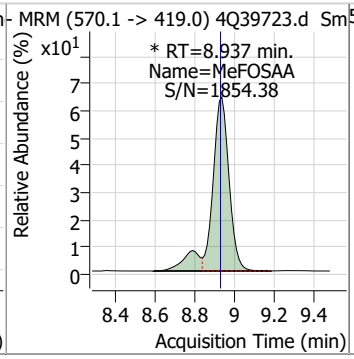


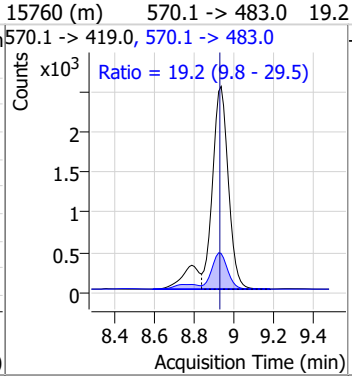


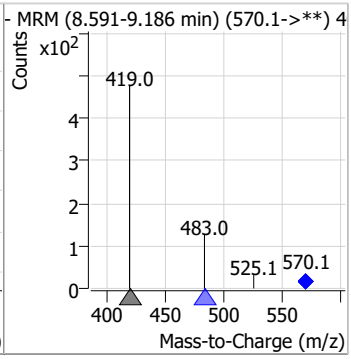


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.57	8.94	0.01	15760 (m)	570.1 -> 483.0	19.2	9.8	29.5

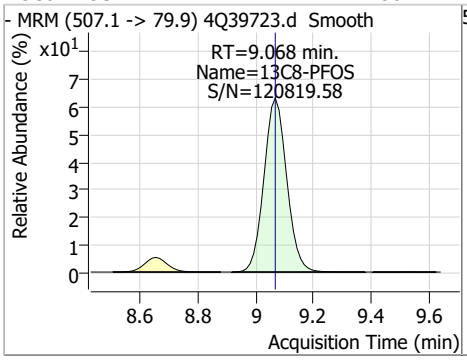


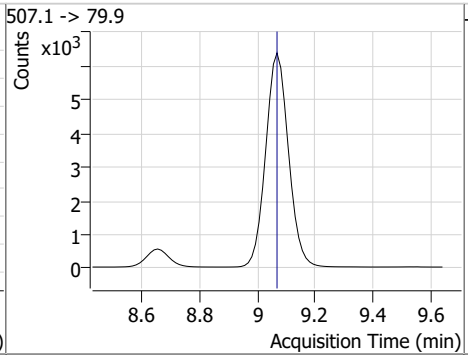


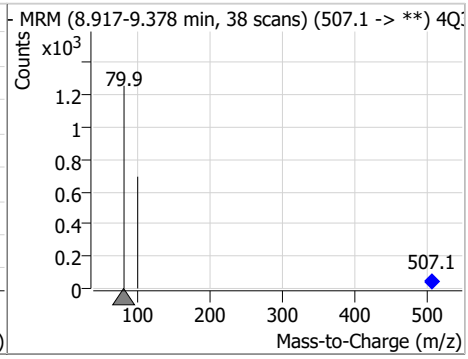




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	9.07	0.00	34506				

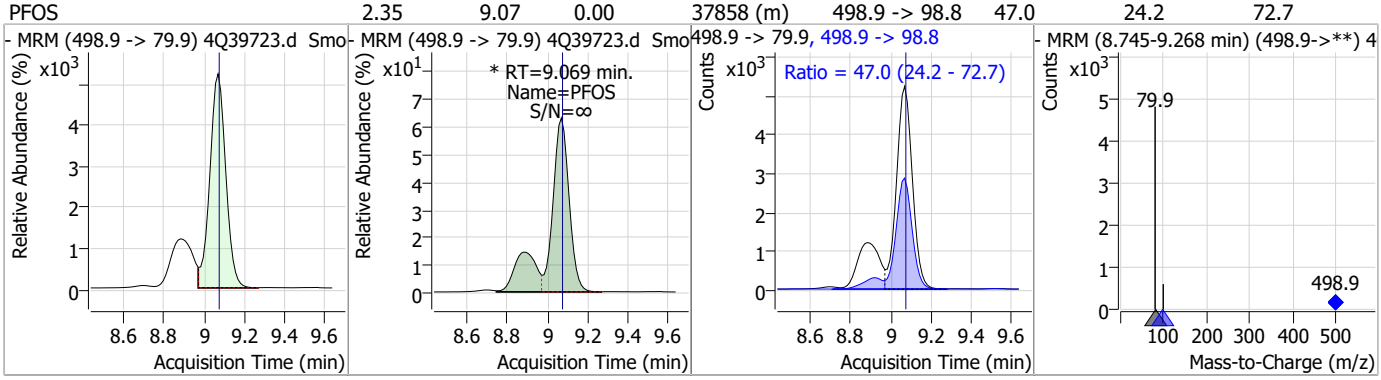




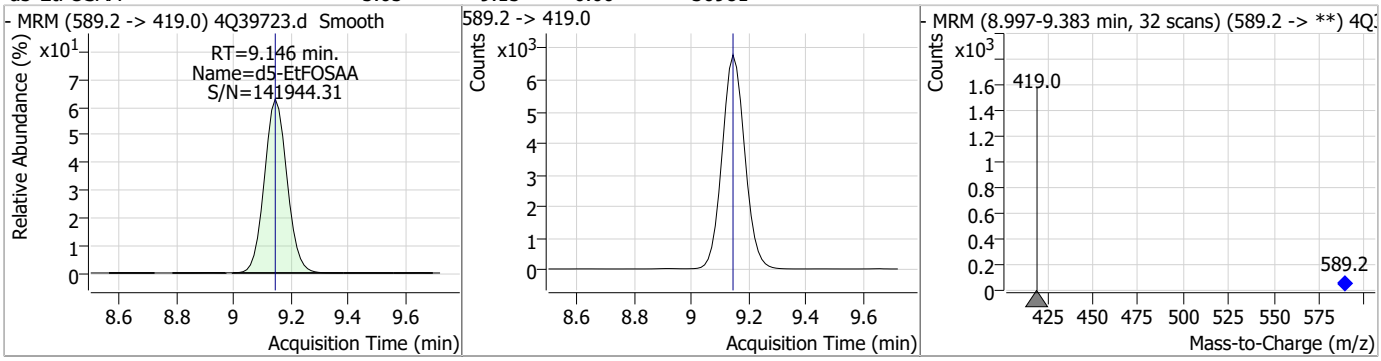


Perfluorinated Compounds by LC/MS/MS

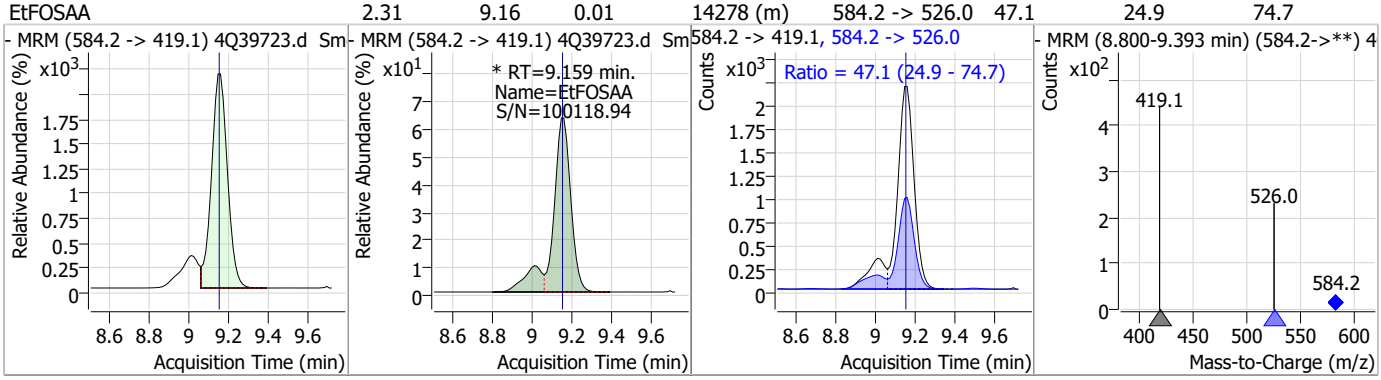
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.35	9.07	0.00	37858 (m)	498.9 -> 98.8	47.0	24.2	72.7



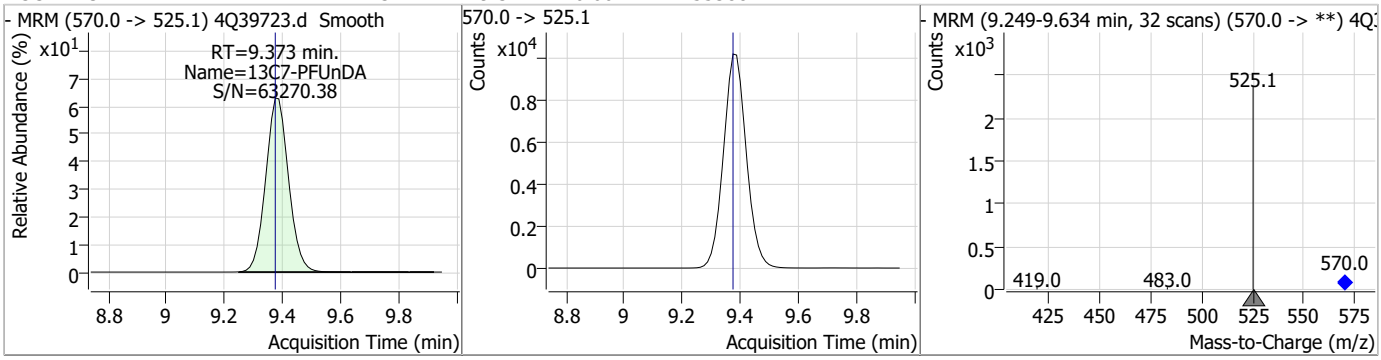
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.65	9.15	0.00	36981				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.31	9.16	0.01	14278 (m)	584.2 -> 526.0	47.1	24.9	74.7

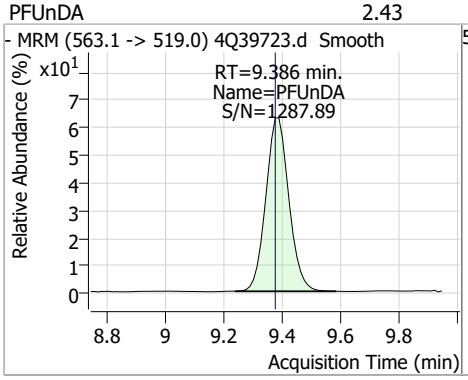


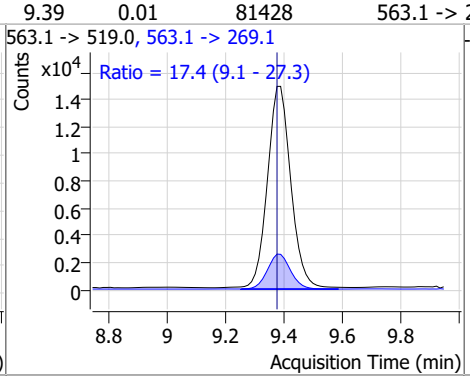
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	9.37	0.00	55388				

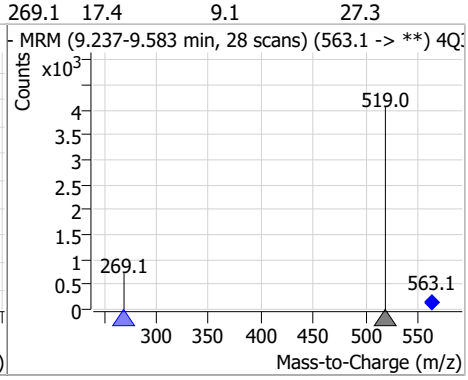


Perfluorinated Compounds by LC/MS/MS

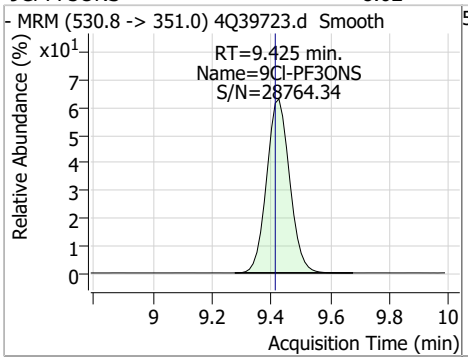
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.43	9.39	0.01	81428	563.1 -> 269.1	17.4	9.1	27.3

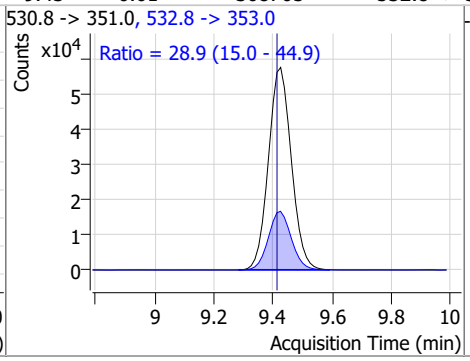


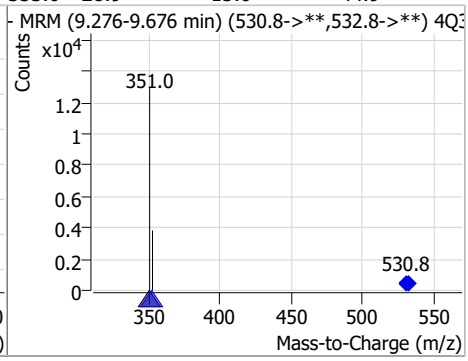




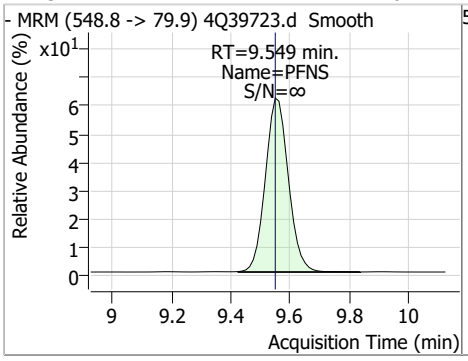
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.62	9.43	0.01	308705	532.8 -> 353.0	28.9	15.0	44.9

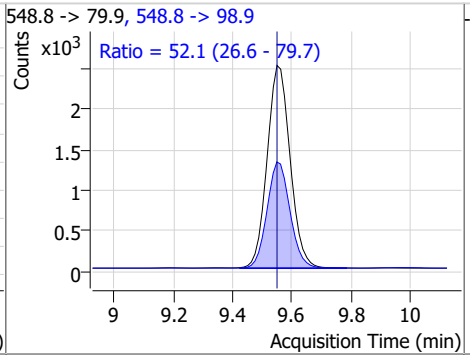


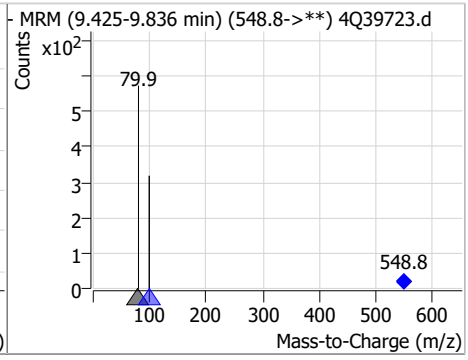




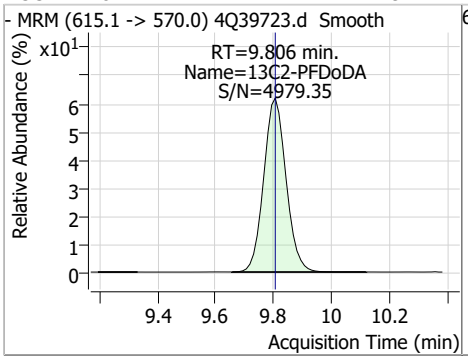
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.18	9.55	0.00	13417	548.8 -> 98.9	52.1	26.6	79.7

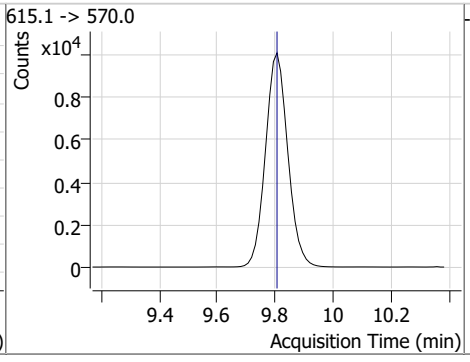


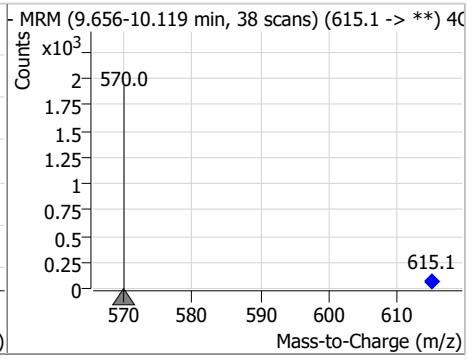




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.81	0.00	53540				

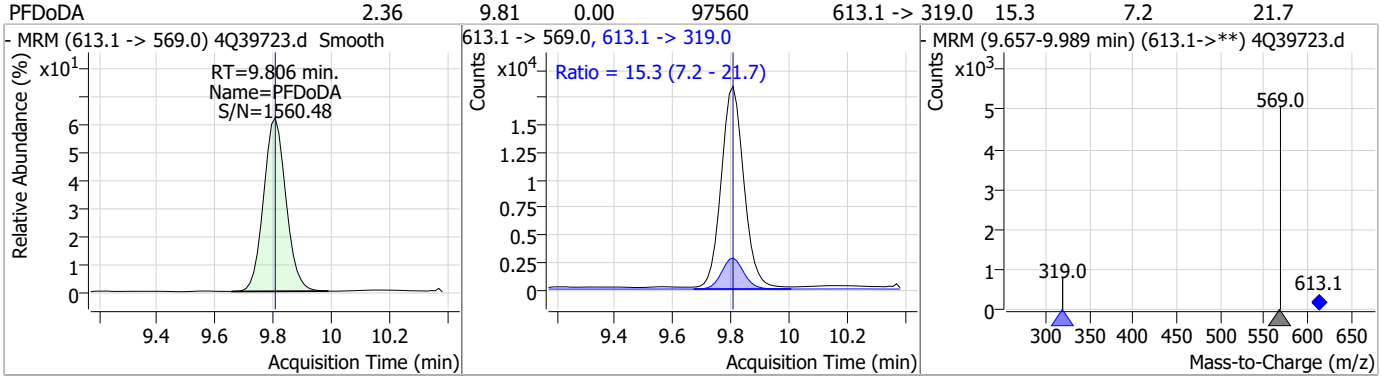




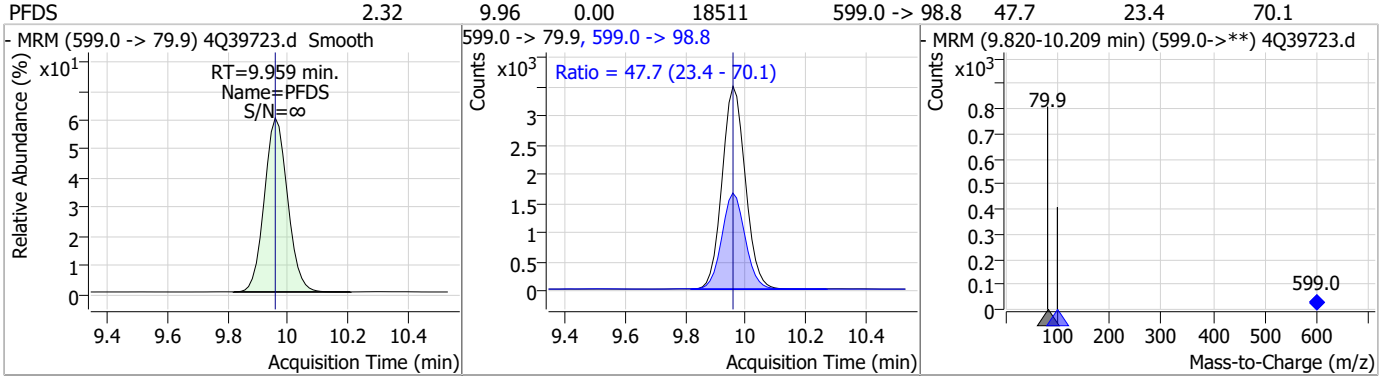


Perfluorinated Compounds by LC/MS/MS

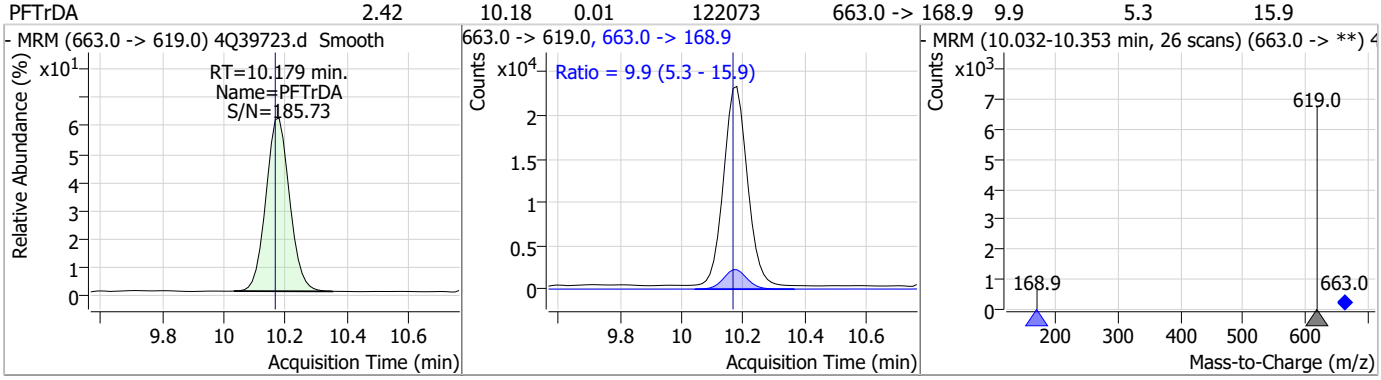
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.36	9.81	0.00	97560	613.1 -> 319.0	15.3	7.2	21.7



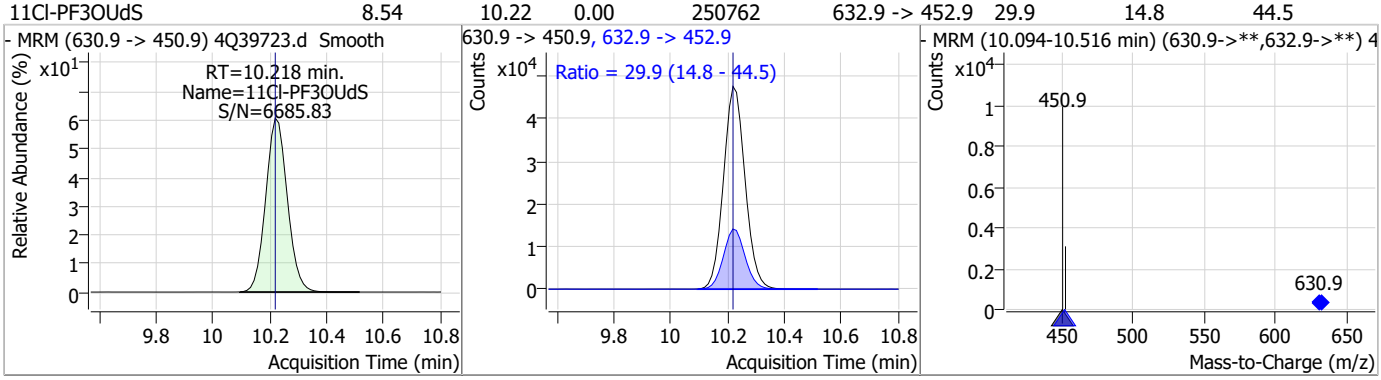
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.32	9.96	0.00	18511	599.0 -> 98.8	47.7	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.42	10.18	0.01	122073	663.0 -> 168.9	9.9	5.3	15.9

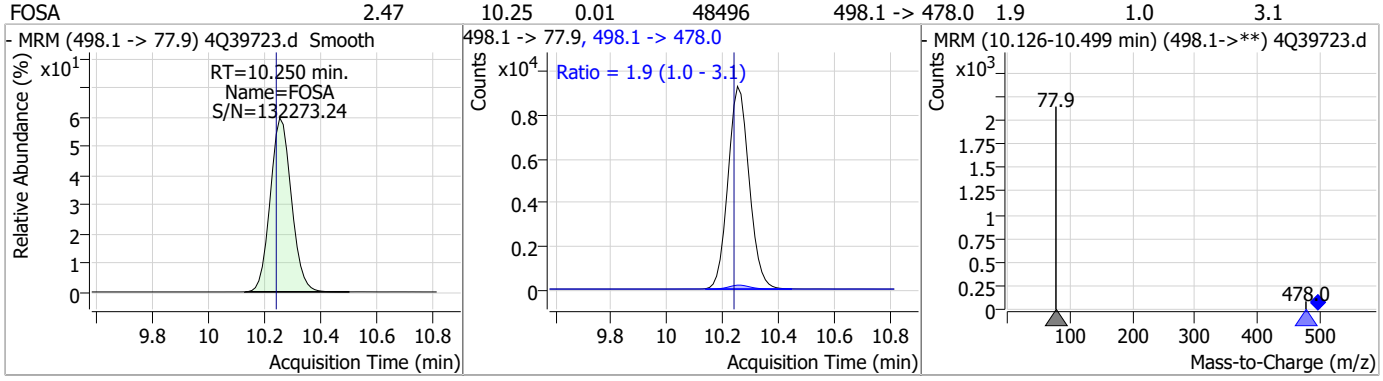


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	8.54	10.22	0.00	250762	632.9 -> 452.9	29.9	14.8	44.5

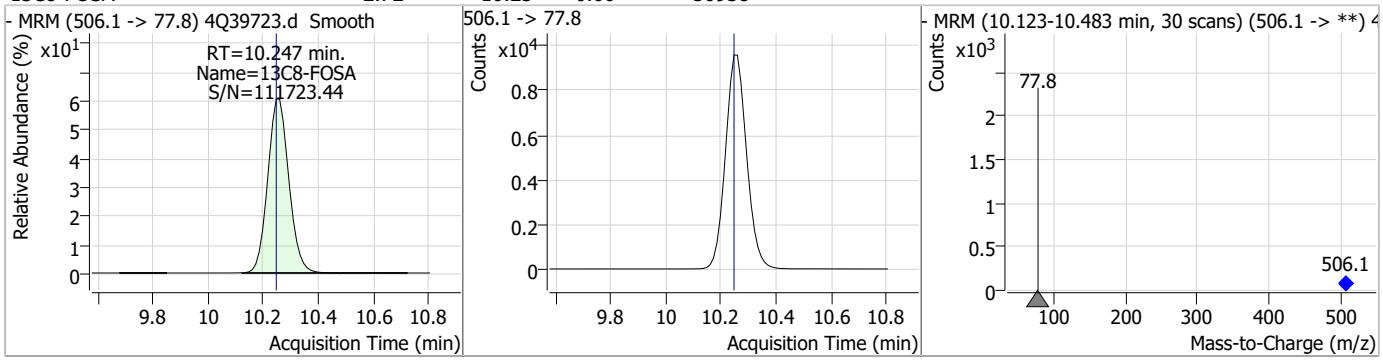


Perfluorinated Compounds by LC/MS/MS

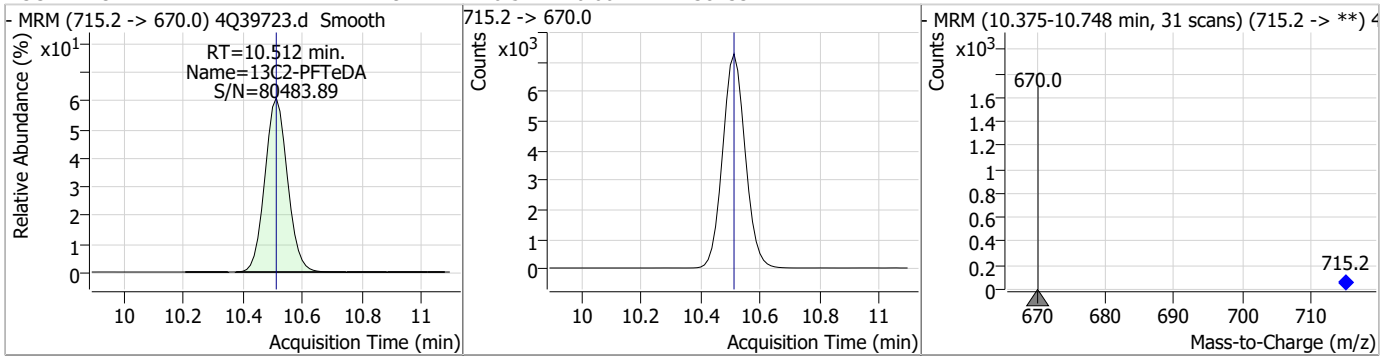
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.47	10.25	0.01	48496	498.1 -> 478.0	1.9	1.0	3.1



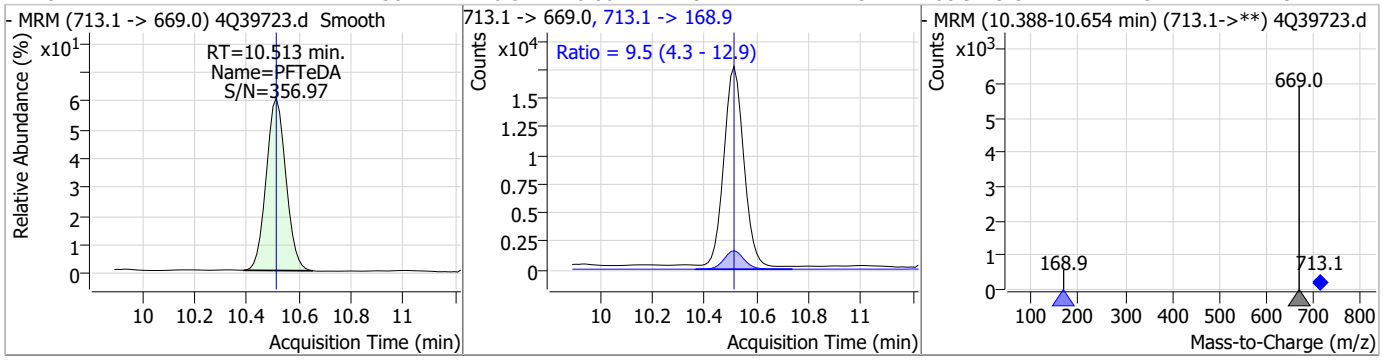
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.72	10.25	0.00	50938				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	10.51	0.00	38133				

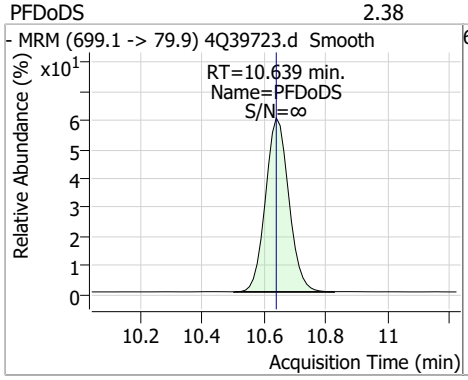


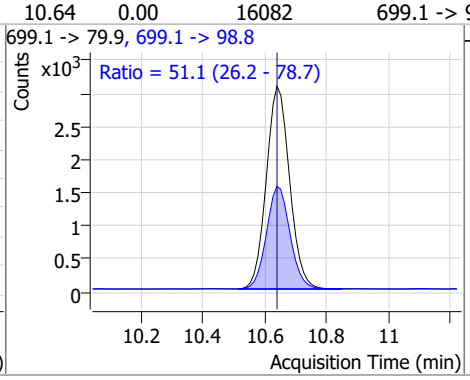
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.38	10.51	0.00	91474	713.1 -> 168.9	9.5	4.3	12.9

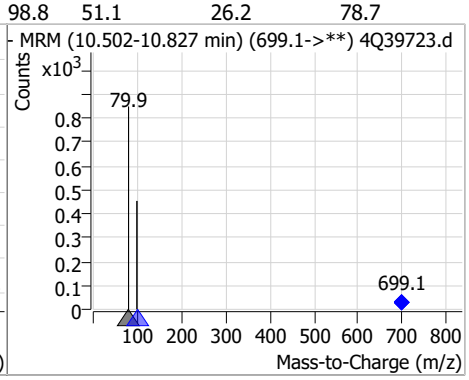


Perfluorinated Compounds by LC/MS/MS

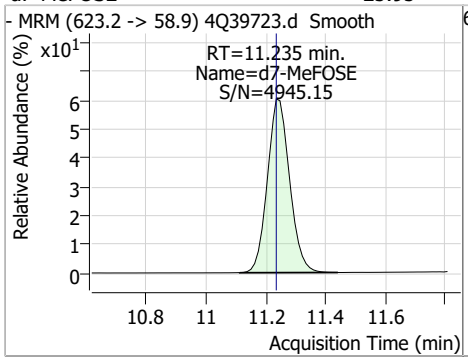
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.38	10.64	0.00	16082	699.1 -> 98.8	51.1	26.2	78.7

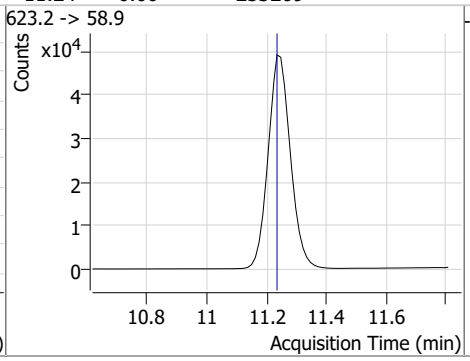


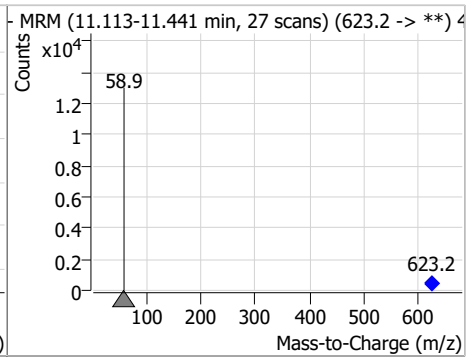




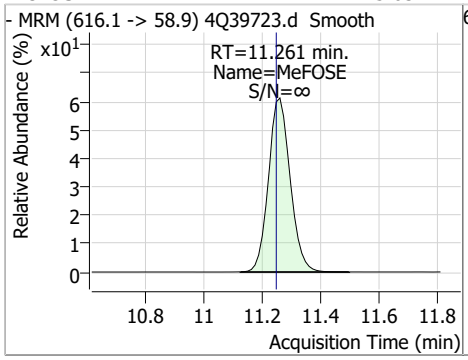
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.95	11.24	0.00	253269				

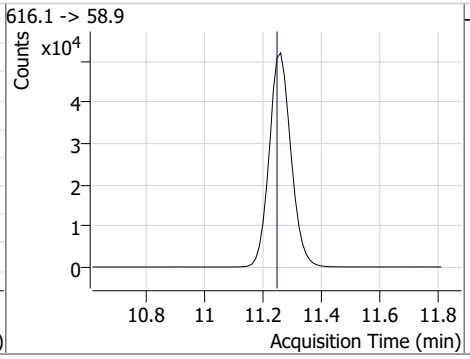


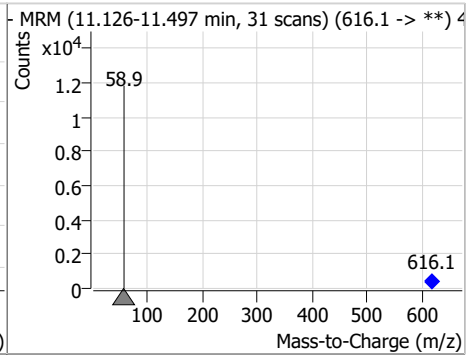




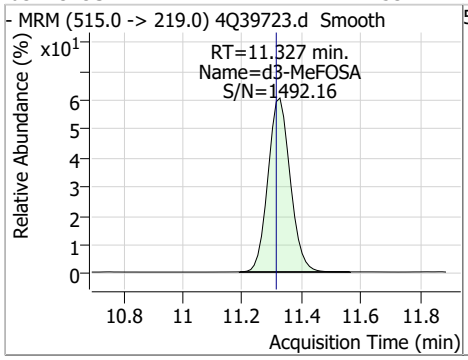
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	25.03	11.26	0.01	267770				

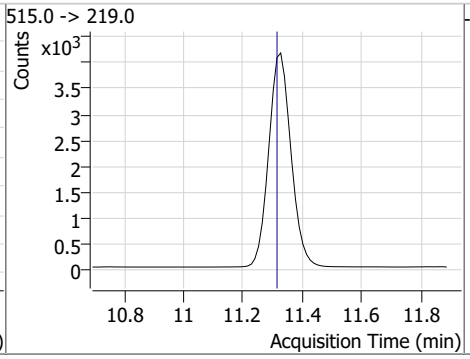


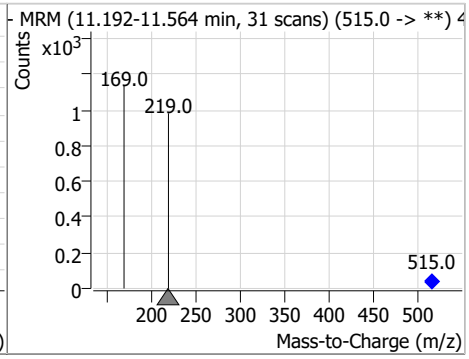




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	11.33	0.01	21629				

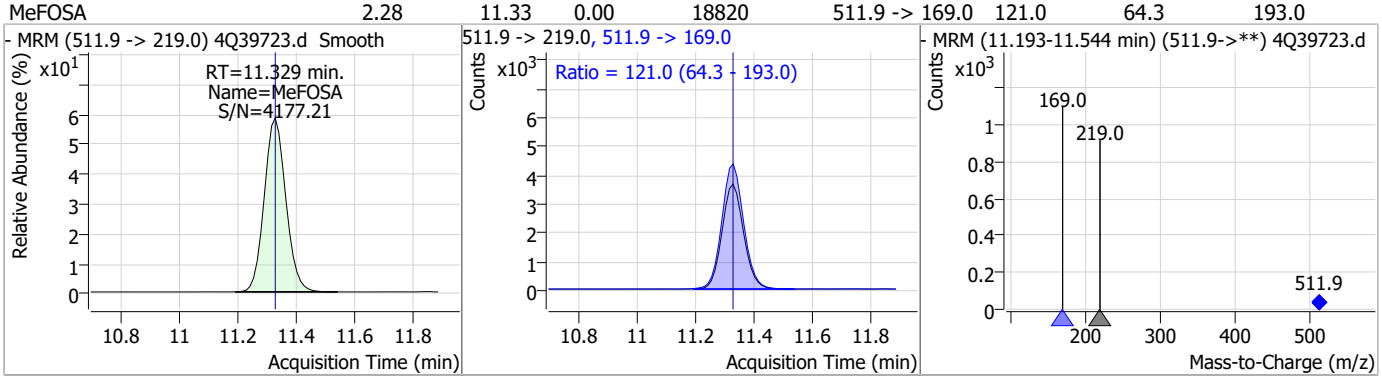




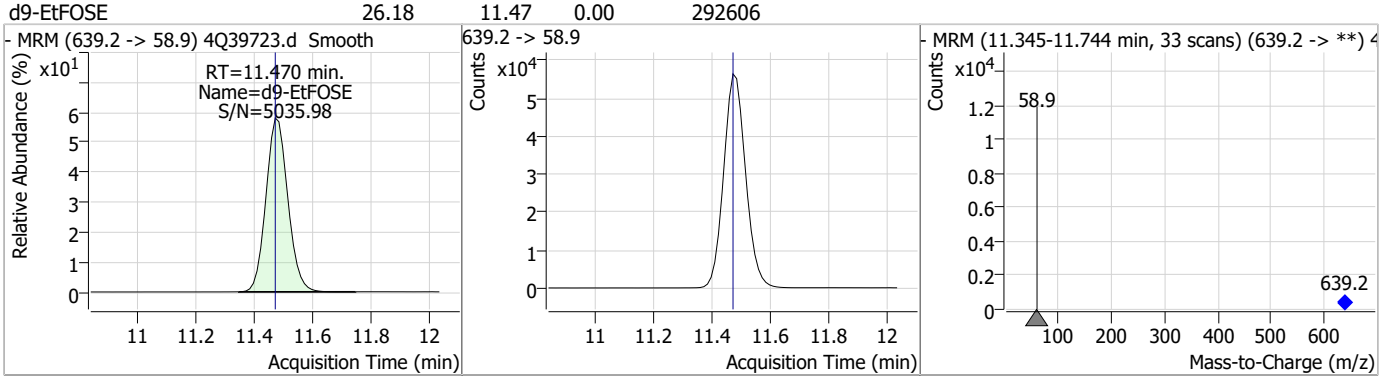


Perfluorinated Compounds by LC/MS/MS

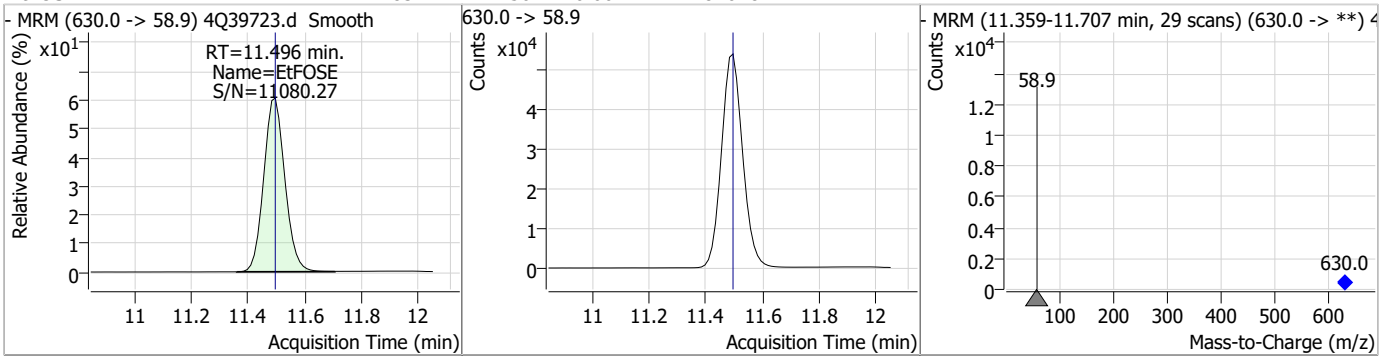
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.28	11.33	0.00	18820	511.9 -> 169.0	121.0	64.3	193.0



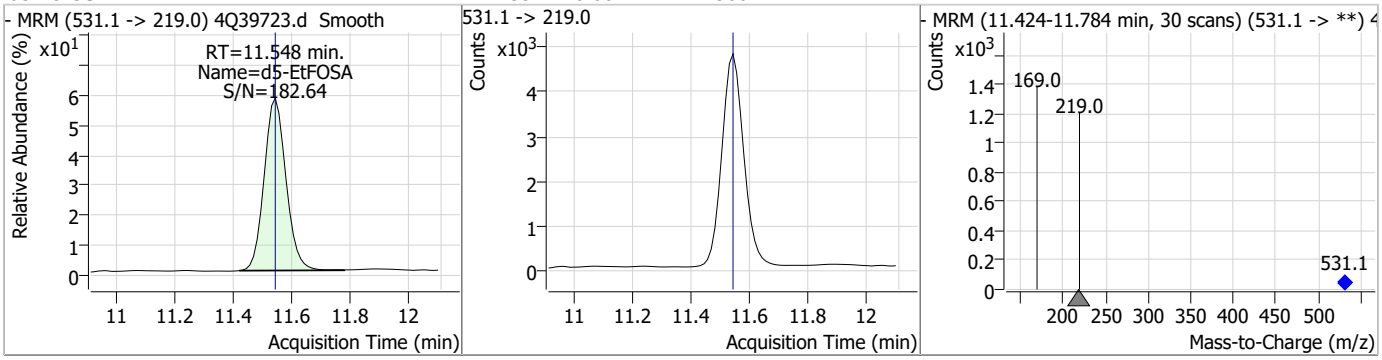
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.18	11.47	0.00	292606				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.83	11.50	0.00	282078				

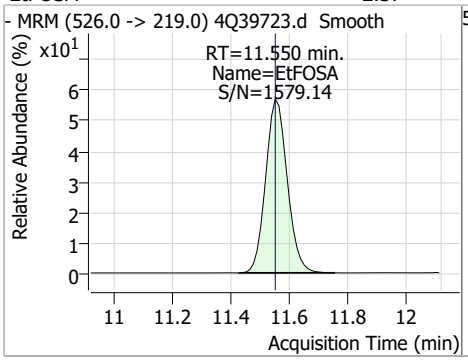


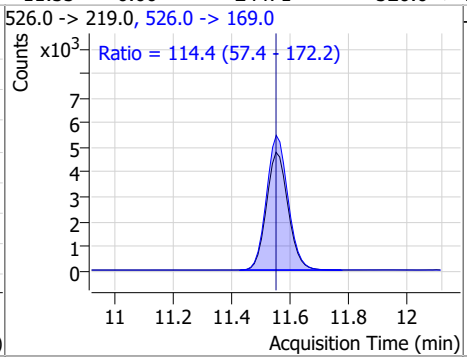
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.41	11.55	0.00	24560				

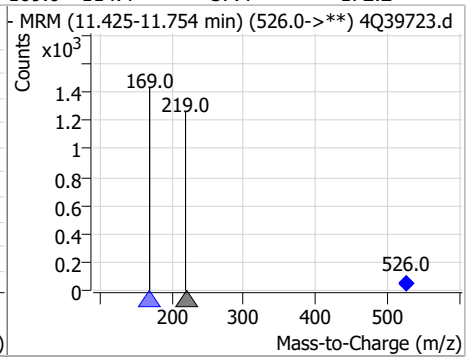


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.37	11.55	0.00	24471	526.0 -> 169.0	114.4	57.4	172.2







Manual Integration Approval Summary

Sample Number: OP95069-MS
Lab FileID: 4Q39723.D
Injection Time: 01/25/23 21:08
Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:25 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.79	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39724.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 9:22:13 PM
Sample Name : op95069-msd
Vial : P1-F1
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95069,S4Q571,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.199	216.8 -> 171.9	262030	10.00	µg/L	0.025
M5-PFPeA	4.863	268.3 -> 223.0	258740	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	167458	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	89055	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	139462	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	65697	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	54193	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	54353	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	51774	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	37424	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	51696	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	43495	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	30802	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	35140	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4943	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9804	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12338	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	41811	5.00	µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	125453	10.00	µg/L	0.000
M5-EtFOSAA	9.146	589.2 -> 419.0	35013	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	245275	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	282992	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	25730	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	22012	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	33334	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	195116	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	17269	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	136421	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	41888	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	65353	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	134583	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4943	7.94	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 158.8%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9804	7.04	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 140.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12338	6.47	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 129.4%		
13C2-PFDoDA	9.793	615.1 -> 570.0	51774	1.27	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	10.512	715.2 -> 670.0	37424	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFBS	6.089	302.1 -> 79.9	43495	2.91	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.6%		
13C3-PFHxS	7.917	402.1 -> 79.9	30802	3.06	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C4-PFBA	3.199	216.8 -> 171.9	262030	7.45 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.5%		
13C4-PFHpA	7.106	367.1 -> 322.0	89055	2.84 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C5-PFHxA	6.172	318.0 -> 273.0	167458	2.96 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.4%		
13C5-PFPeA	4.863	268.3 -> 223.0	258740	5.91 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.2%		
13C6-PFDA	8.879	519.1 -> 474.1	54193	1.46 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.2%		
13C7-PFUnDA	9.373	570.0 -> 525.1	54353	1.37 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C8-FOSA	10.247	506.1 -> 77.8	51696	2.71 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C8-PFOA	7.788	421.1 -> 376.0	139462	2.85 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C8-PFOS	9.068	507.1 -> 79.9	35140	2.58 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C9-PFNA	8.360	472.1 -> 427.0	65697	1.41 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.2%		
d3-MeFOSAA	8.924	573.2 -> 419.0	41811	5.46 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	125453	11.68 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.8%		
d3-MeFOSA	11.327	515.0 -> 219.0	22012	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
d5-EtFOSAA	9.146	589.2 -> 419.0	35013	5.25 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
d7-MeFOSE	11.235	623.2 -> 58.9	245275	24.68 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	282992	24.85 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	25730	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	70381	8.71 µg/L		100
		327.1 -> 80.9	32786			
6:2FTS	7.537	427.1 -> 407.0	70949	9.13 µg/L		98
		427.1 -> 80.9	33953			
8:2FTS	8.654	527.1 -> 507.0	50900	8.53 µg/L		92
		527.1 -> 80.8	29834			
EtFOSAA	9.147	584.2 -> 419.1	14517	2.48 µg/L	m	92
		584.2 -> 526.0	6410			
FOSA	10.250	498.1 -> 77.9	47215	2.37 µg/L		99
		498.1 -> 478.0	876			
MeFOSAA	8.925	570.1 -> 419.0	16111	2.60 µg/L	m	95
		570.1 -> 483.0	2770			
PFBA	3.195	212.8 -> 168.9	65931	9.04 µg/L		100
PFBS	6.090	298.7 -> 79.9	44306	2.25 µg/L		99
		298.7 -> 98.8	14952			
PFDA	8.892	512.9 -> 469.0	86281	2.23 µg/L		99
		512.9 -> 219.0	17538			
PFDoDA	9.794	613.1 -> 569.0	96470	2.42 µg/L		99
		613.1 -> 319.0	14312			
PFDS	9.959	599.0 -> 79.9	17931	2.20 µg/L		96

Perfluorinated Compounds by LC/MS/MS

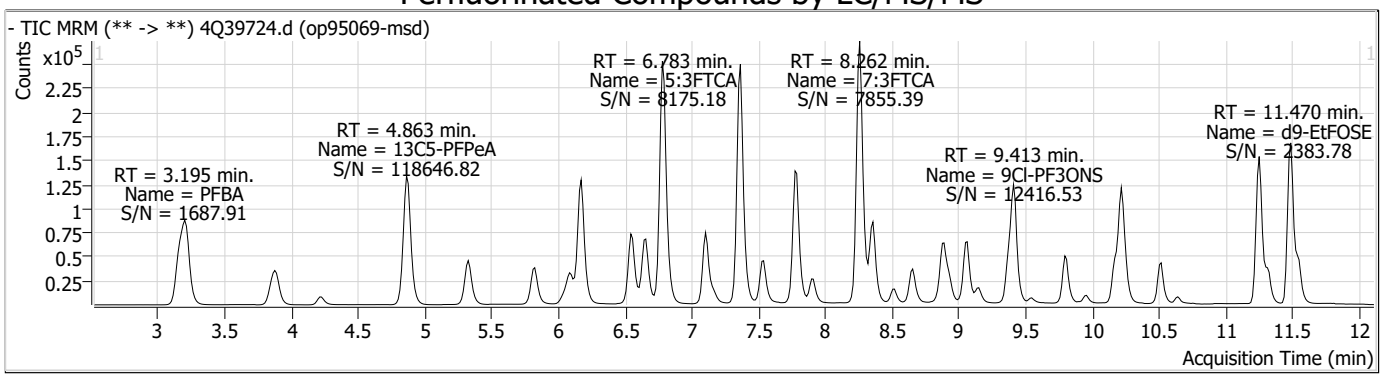
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	7939				
PFHpA	7.106	363.1 -> 319.0	140845	2.54	µg/L		98
		363.1 -> 169.0	22497				
PFHpS	8.526	449.0 -> 79.9	35618	2.51	µg/L		99
		449.0 -> 98.9	16260				
PFHxA	6.175	313.0 -> 269.0	158033	2.43	µg/L		99
		313.0 -> 118.9	5119				
PFHxS	7.917	398.7 -> 79.9	21700	2.18	µg/L	m	98
		398.7 -> 98.9	10264				
PFNA	8.360	463.0 -> 419.0	116660	2.44	µg/L		99
		463.0 -> 219.0	27581				
PFNS	9.549	548.8 -> 79.9	13464	2.15	µg/L		86
		548.8 -> 98.9	5851				
PFOA	7.790	413.0 -> 369.0	165979	2.68	µg/L	m	100
		413.0 -> 169.0	33509				
PFOS	9.069	498.9 -> 79.9	34453	2.10	µg/L	m	99
		498.9 -> 98.8	16933				
PFPeA	4.866	263.0 -> 219.0	280389	4.94	µg/L		100
PFPeS	7.171	349.1 -> 79.9	19427	2.02	µg/L		93
		349.1 -> 98.9	8422				
PFTeDA	10.513	713.1 -> 669.0	92542	2.46	µg/L		99
		713.1 -> 168.9	8212				
PFTrDA	10.167	663.0 -> 619.0	120720	2.47	µg/L		98
		663.0 -> 168.9	12052				
PFUnDA	9.374	563.1 -> 519.0	73548	2.24	µg/L		98
		563.1 -> 269.1	14081				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	243789	8.31	µg/L		99
		632.9 -> 452.9	71736				
9Cl-PF3ONS	9.413	530.8 -> 351.0	291118	8.15	µg/L		98
		532.8 -> 353.0	84499				
ADONA	7.369	376.9 -> 250.9	628629	9.29	µg/L		99
		376.9 -> 84.8	224779				
HFPO-DA	6.552	284.9 -> 168.9	110963	9.38	µg/L		99
		284.9 -> 184.9	11282				
3:3FTCA	4.229	241.0 -> 177.0	29536	11.10	µg/L		98
		241.0 -> 117.0	2602				
5:3FTCA	6.783	341.0 -> 237.1	513907	59.34	µg/L		99
		341.0 -> 217.0	385069				
7:3FTCA	8.262	441.0 -> 316.9	289591	58.22	µg/L		97
		441.0 -> 336.9	667216				
EtFOSA	11.550	526.0 -> 219.0	23512	2.18	µg/L		97
		526.0 -> 169.0	26183				
EtFOSE	11.496	630.0 -> 58.9	273027	24.85	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	17584	2.10	µg/L		92
		511.9 -> 169.0	20907				
MeFOSE	11.261	616.1 -> 58.9	257800	24.88	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	14748	2.15	µg/L		100
		699.1 -> 98.8	7756				
NFDHA	6.041	295.0 -> 201.0	21106	4.93	µg/L		99
		295.0 -> 84.9	6049				
PFMBA	5.328	279.0 -> 85.1	175580	4.96	µg/L		100
PFMPA	3.882	229.0 -> 84.9	171141	4.69	µg/L		100
PFEESA	6.660	314.8 -> 134.9	244535	4.39	µg/L		99
		314.8 -> 82.9	6763				

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

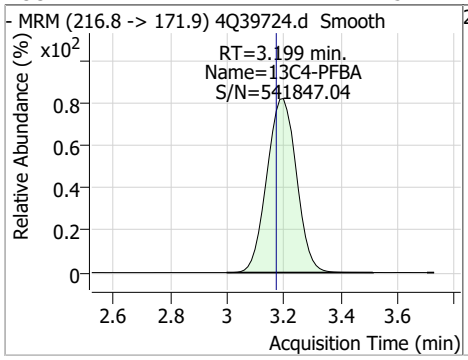
Perfluorinated Compounds by LC/MS/MS

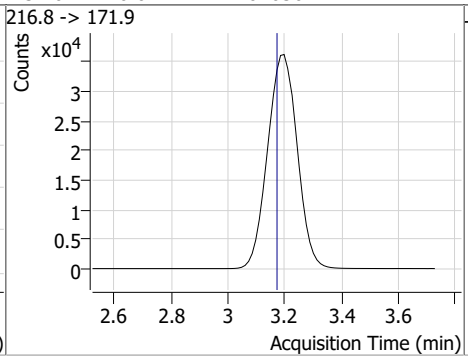
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

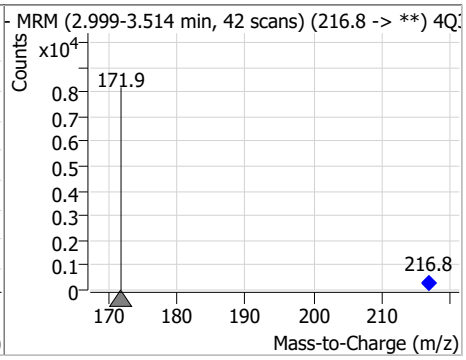
Perfluorinated Compounds by LC/MS/MS



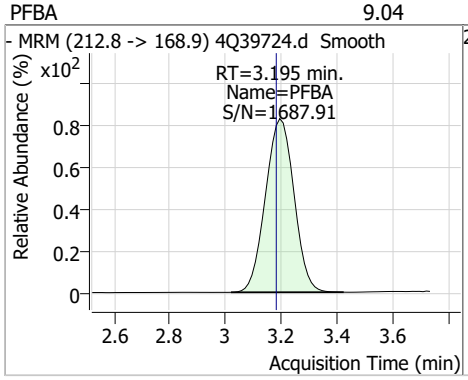
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.45	3.20	0.02	262030				

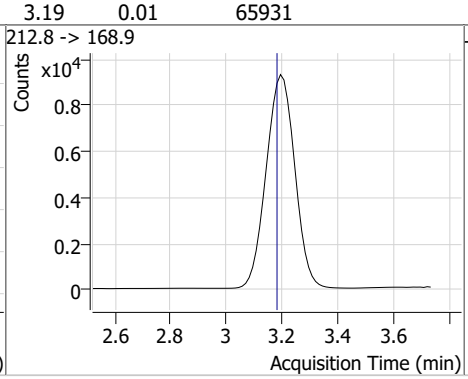


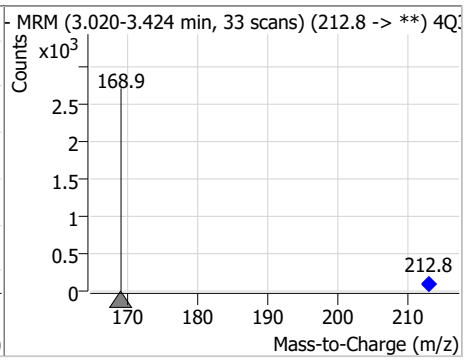




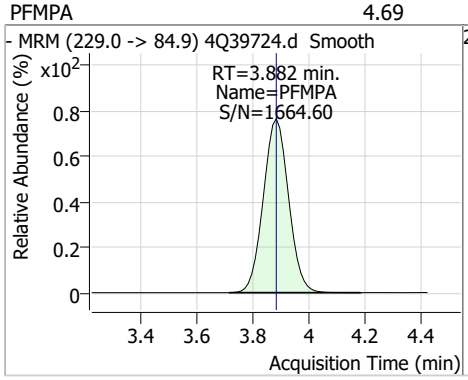
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.04	3.19	0.01	65931				

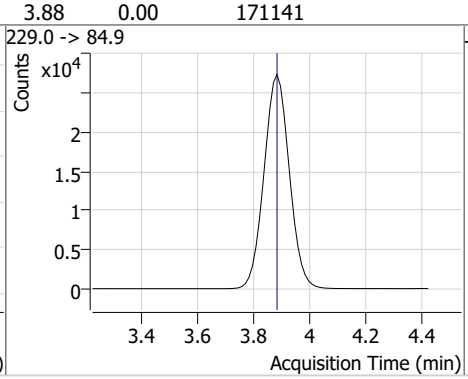


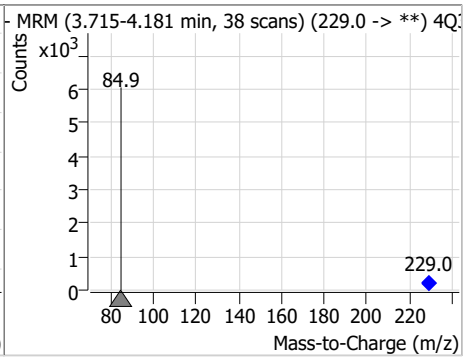




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.69	3.88	0.00	171141				

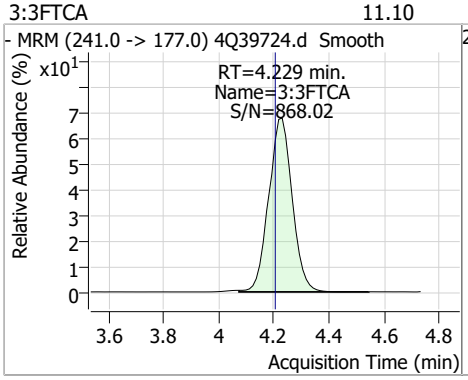


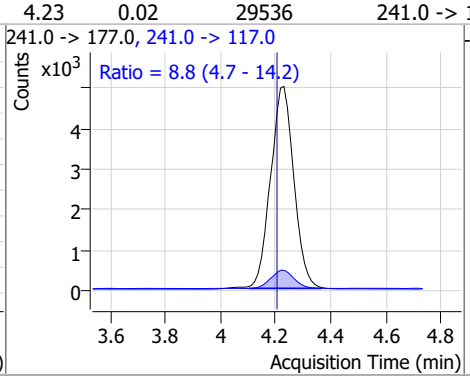


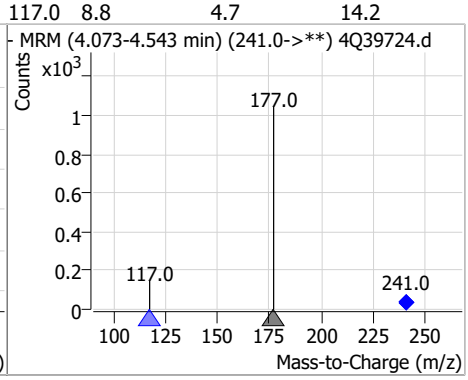


Perfluorinated Compounds by LC/MS/MS

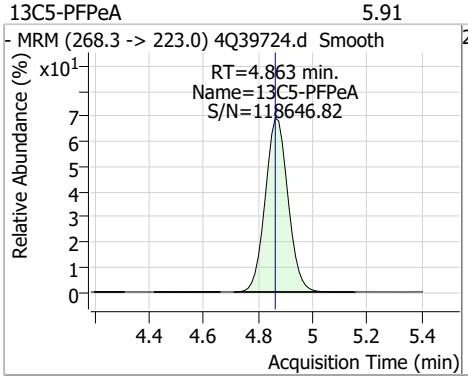
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.10	4.23	0.02	29536	241.0 -> 117.0	8.8	4.7	14.2

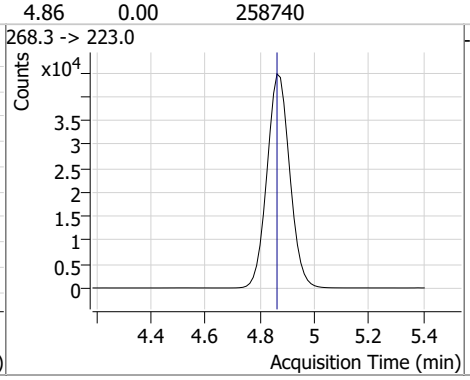


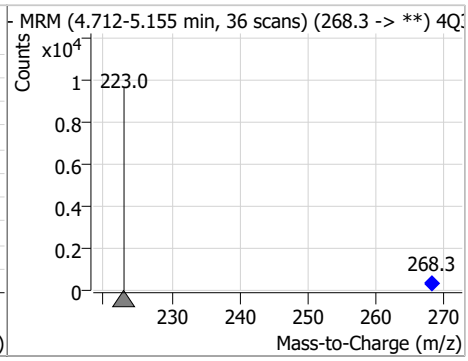




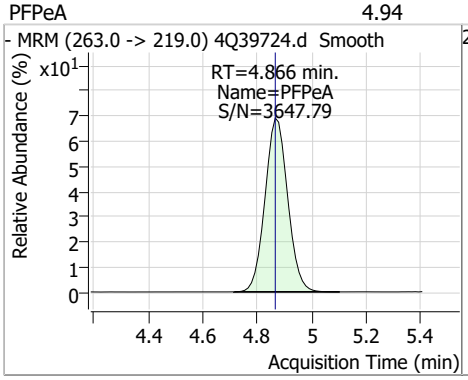
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.91	4.86	0.00	258740				

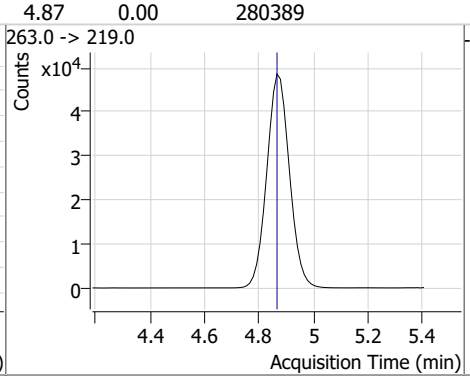


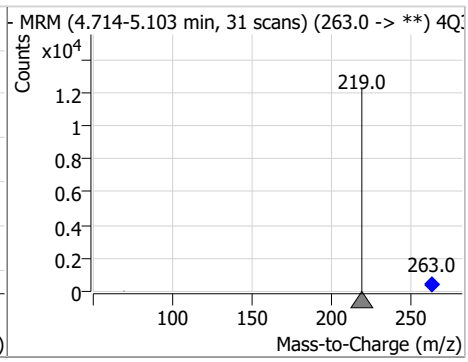




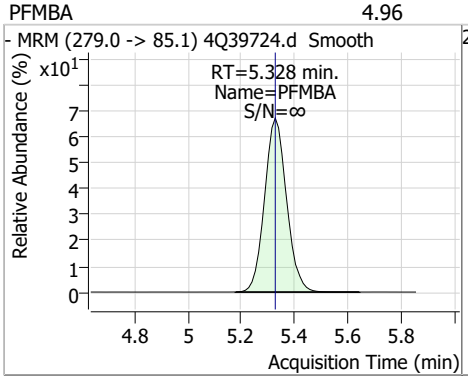
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.94	4.87	0.00	280389				

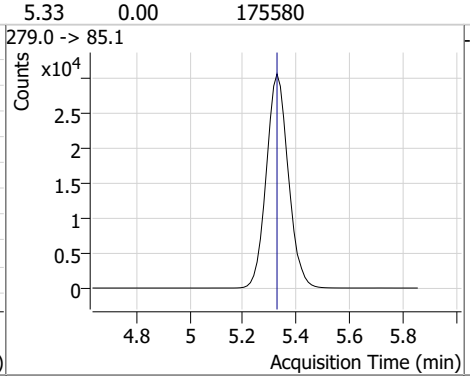


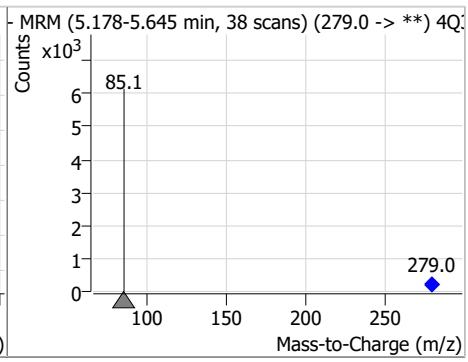




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.96	5.33	0.00	175580				

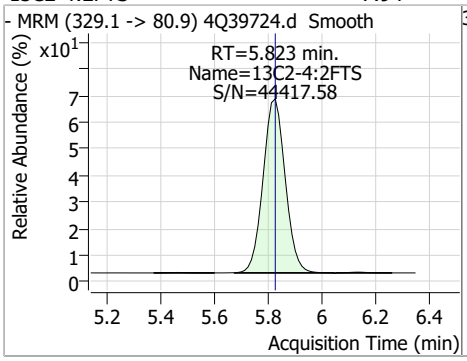


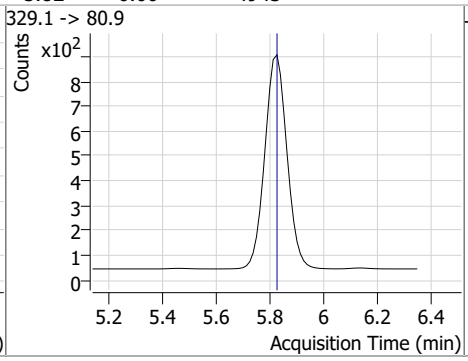


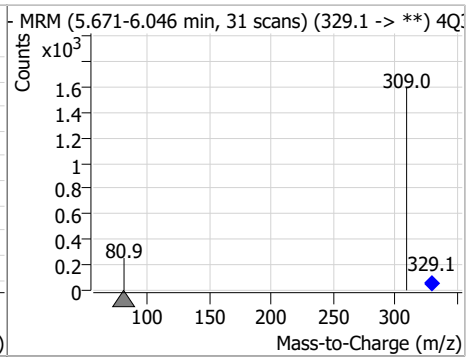


Perfluorinated Compounds by LC/MS/MS

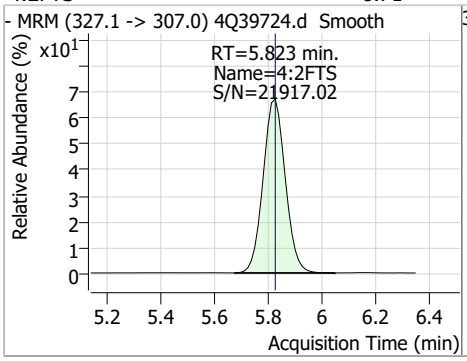
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.94	5.82	0.00	4943				

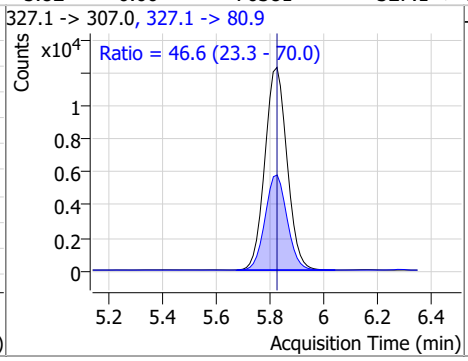


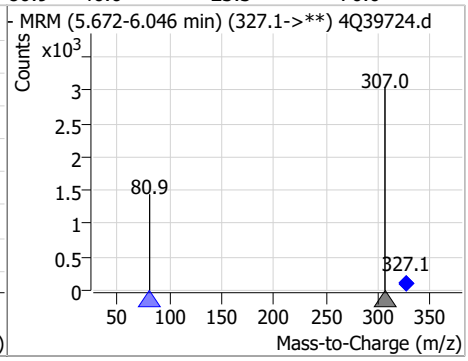




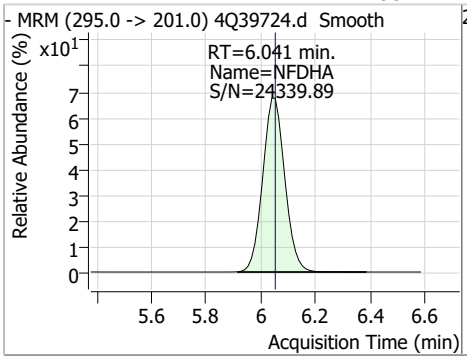
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.71	5.82	0.00	70381	327.1 -> 80.9	46.6	23.3	70.0

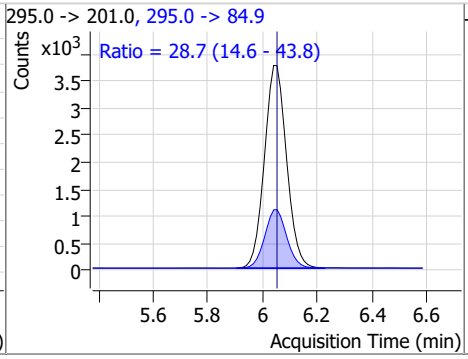


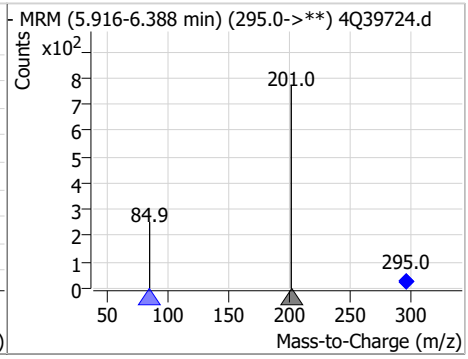




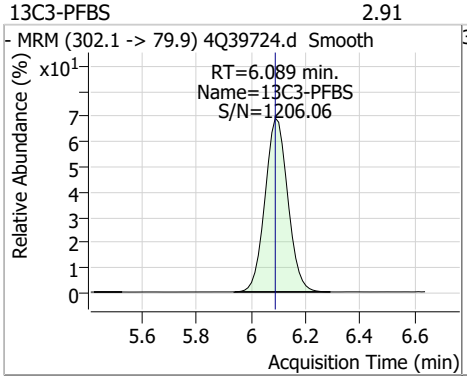
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.93	6.04	-0.01	21106	295.0 -> 84.9	28.7	14.6	43.8

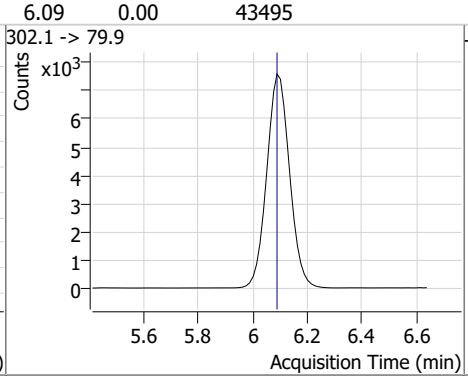


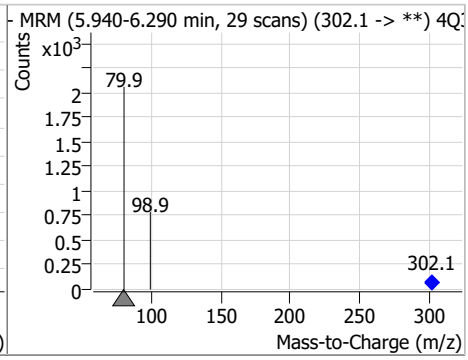




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.91	6.09	0.00	43495				

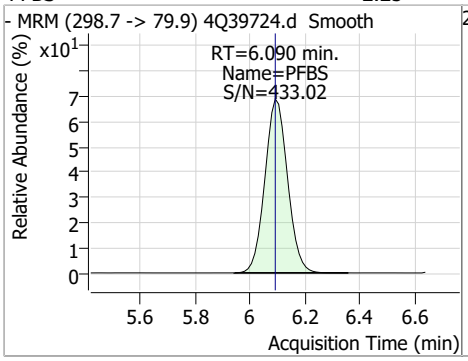


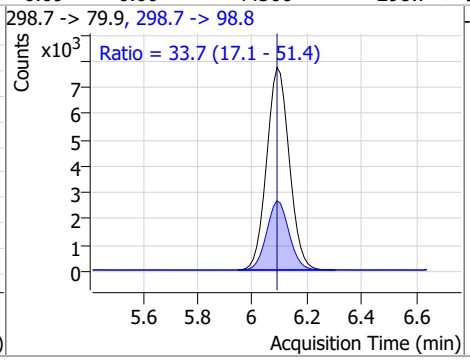


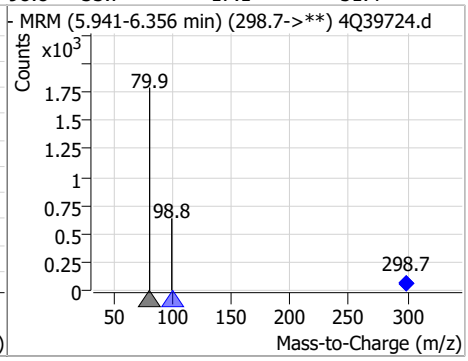


Perfluorinated Compounds by LC/MS/MS

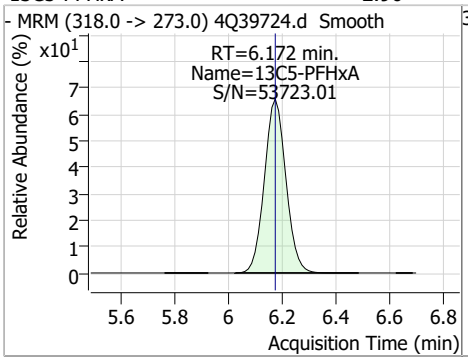
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.25	6.09	0.00	44306	298.7 -> 98.8	33.7	17.1	51.4

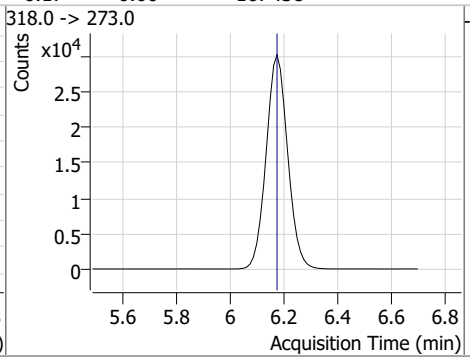


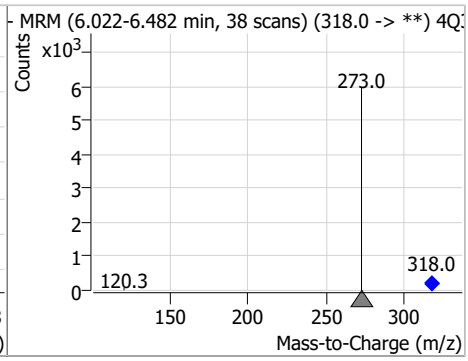




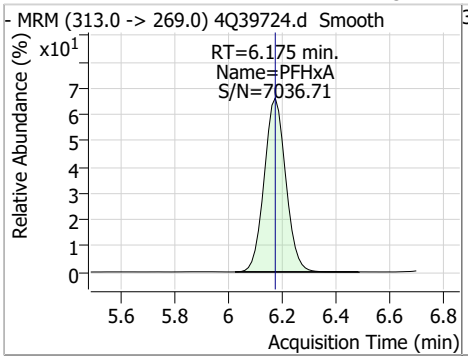
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.96	6.17	0.00	167458				

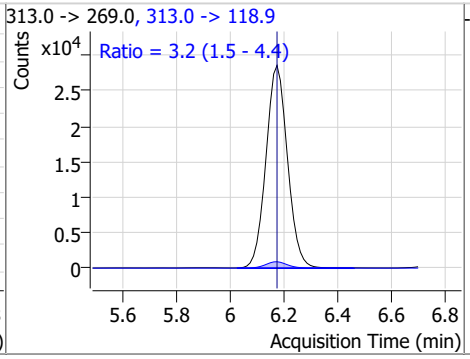


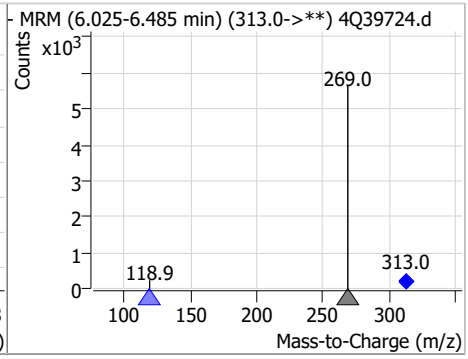




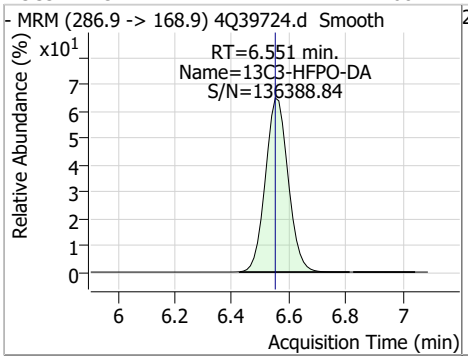
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.43	6.17	0.00	158033	313.0 -> 118.9	3.2	1.5	4.4

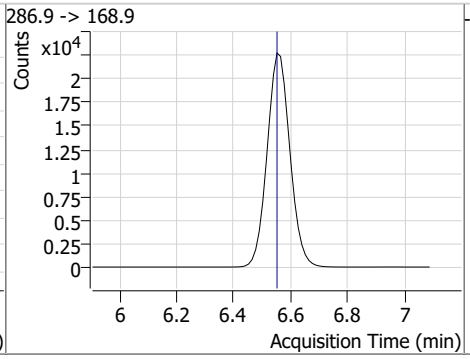


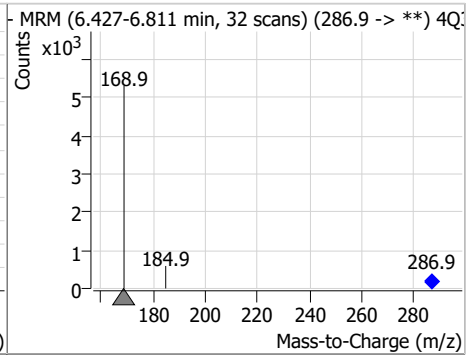




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.68	6.55	0.00	125453				

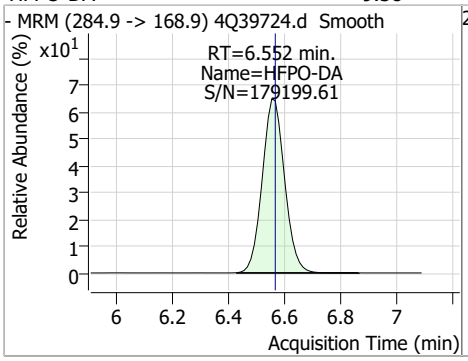


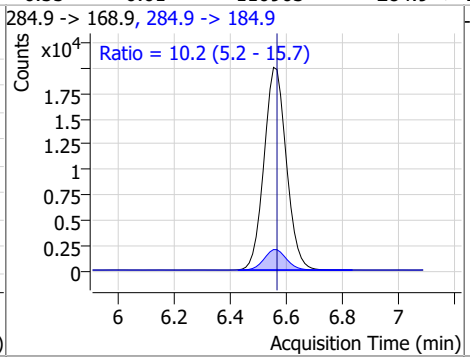


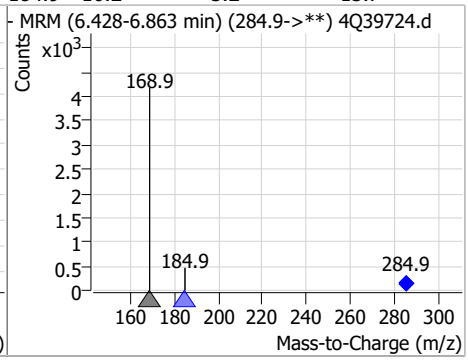


Perfluorinated Compounds by LC/MS/MS

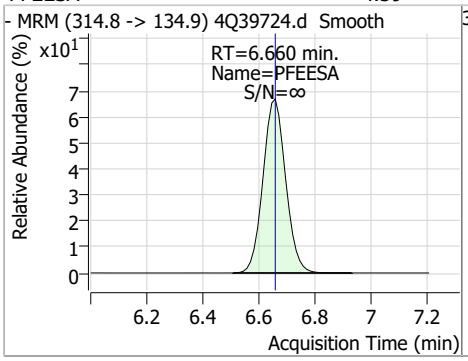
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.38	6.55	-0.01	110963	284.9 -> 184.9	10.2	5.2	15.7

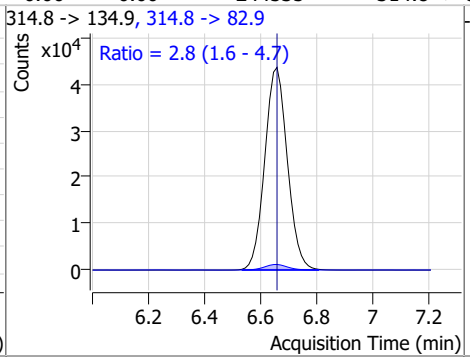


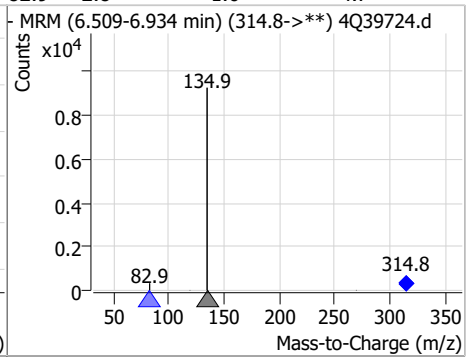




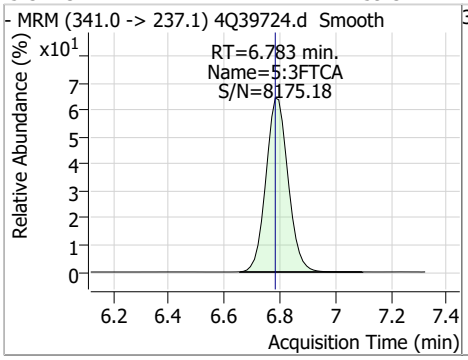
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.39	6.66	0.00	244535	314.8 -> 82.9	2.8	1.6	4.7

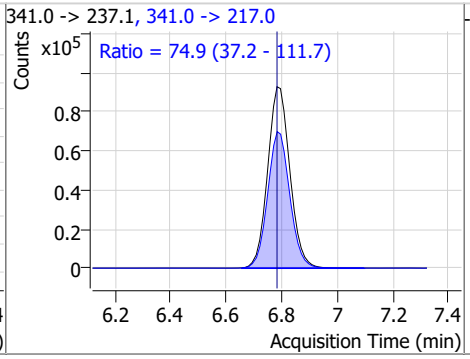


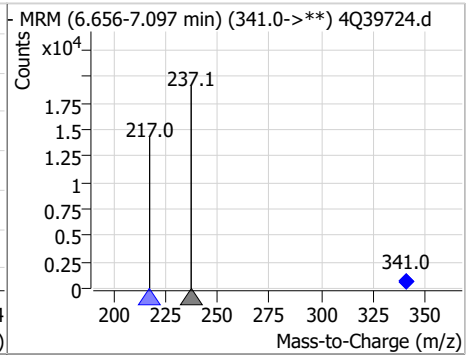




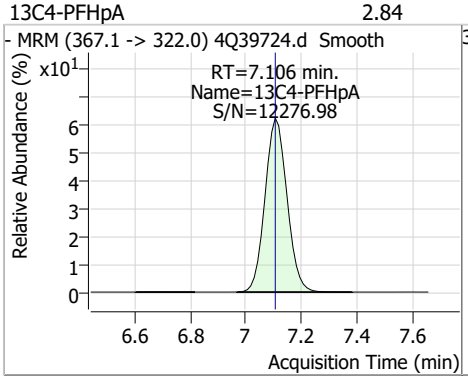
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.34	6.78	0.00	513907	341.0 -> 217.0	74.9	37.2	111.7

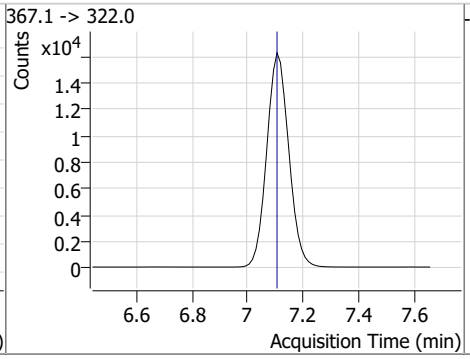


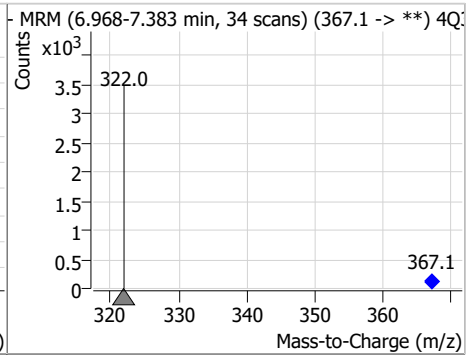




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.84	7.11	0.00	89055				

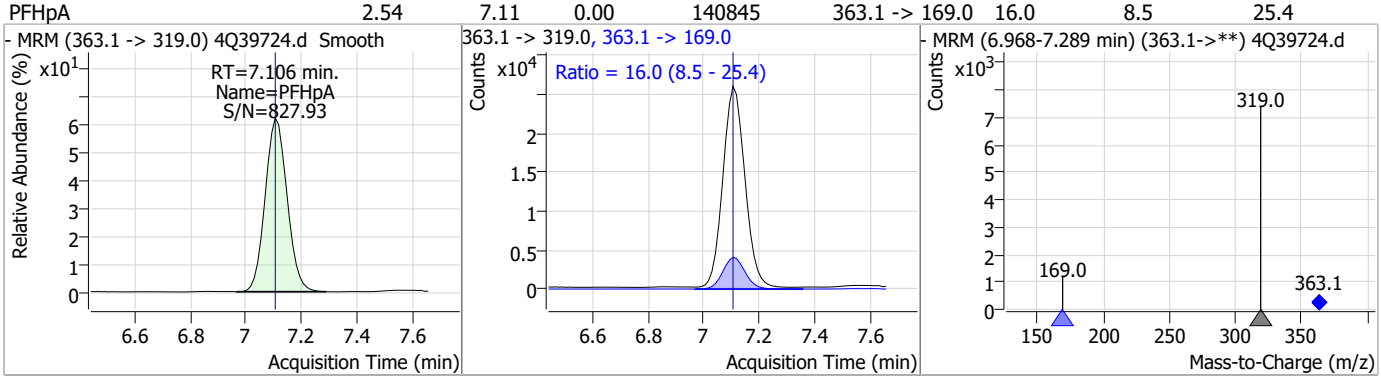




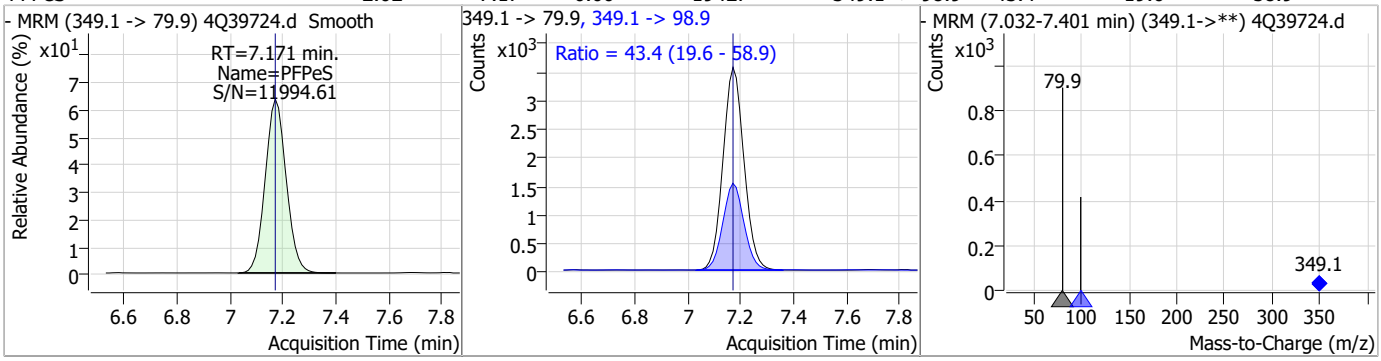


Perfluorinated Compounds by LC/MS/MS

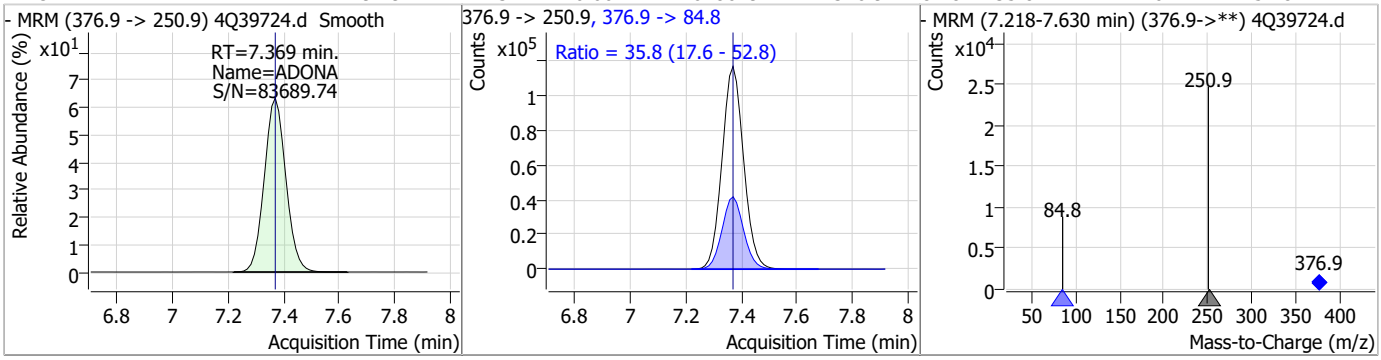
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.54	7.11	0.00	140845	363.1 -> 169.0	16.0	8.5	25.4



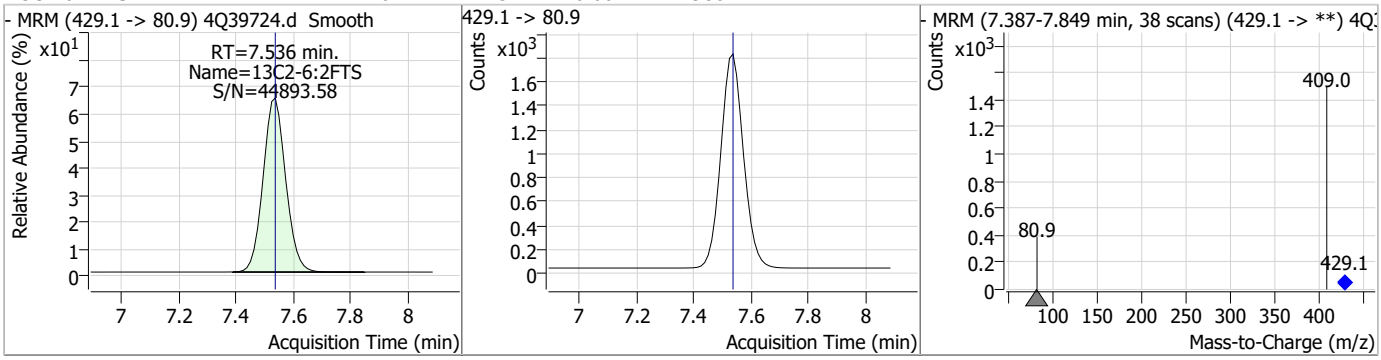
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.02	7.17	0.00	19427	349.1 -> 98.9	43.4	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.29	7.37	0.00	628629	376.9 -> 84.8	35.8	17.6	52.8

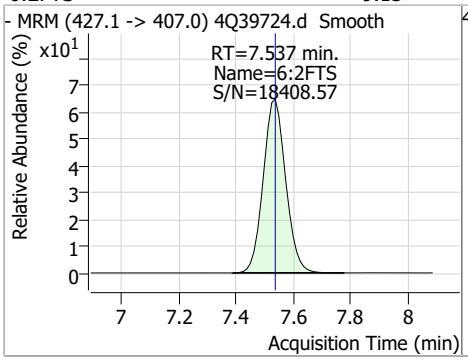


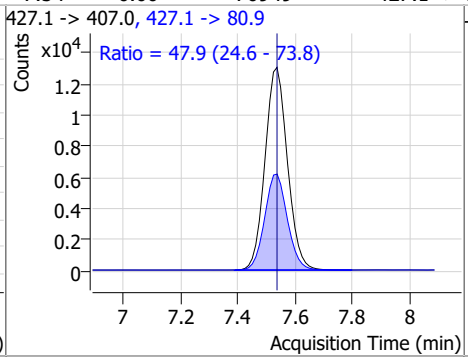
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.04	7.54	0.00	9804				

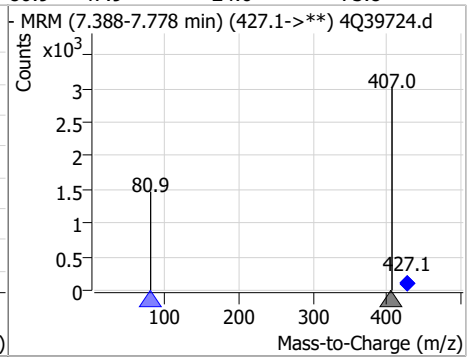


Perfluorinated Compounds by LC/MS/MS

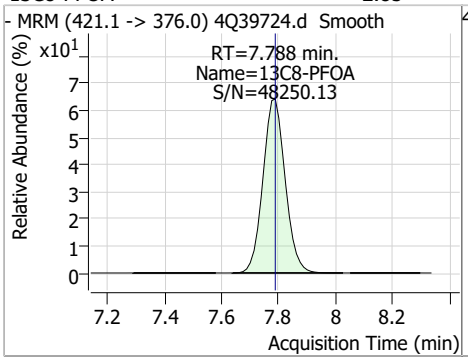
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.13	7.54	0.00	70949	427.1 -> 80.9	47.9	24.6	73.8

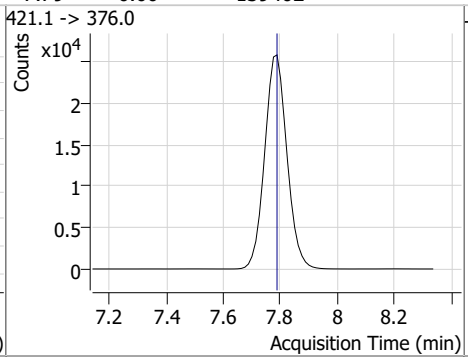


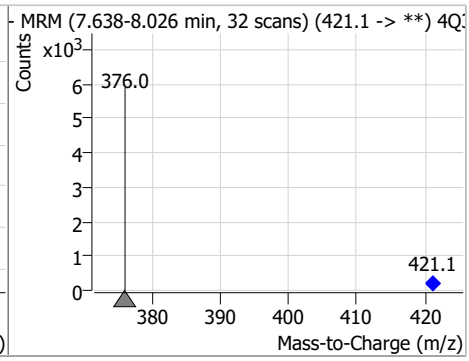




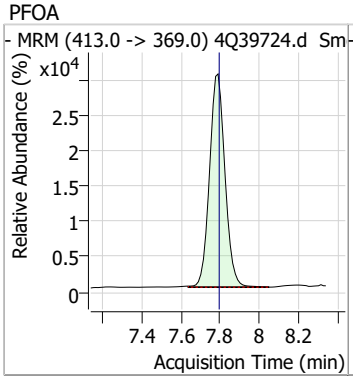
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.85	7.79	0.00	139462				

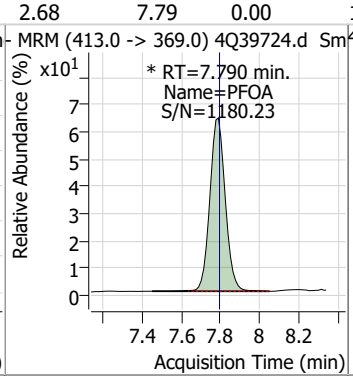


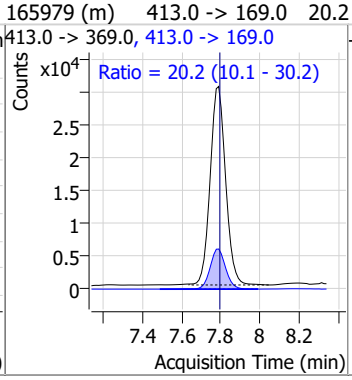


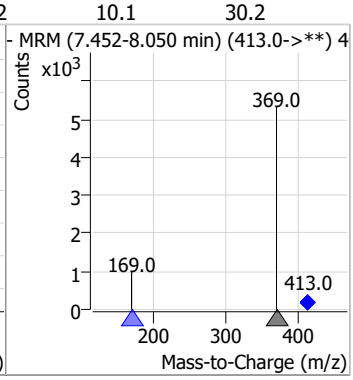


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.68	7.79	0.00	165979 (m)	413.0 -> 169.0	20.2	10.1	30.2

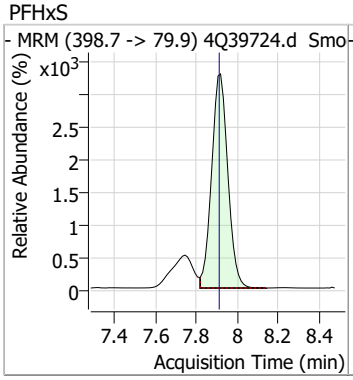


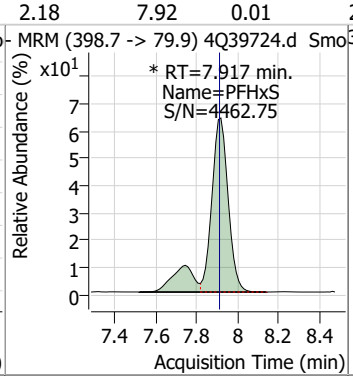


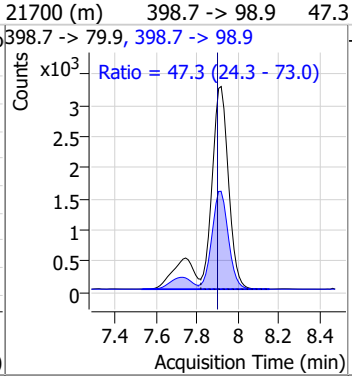


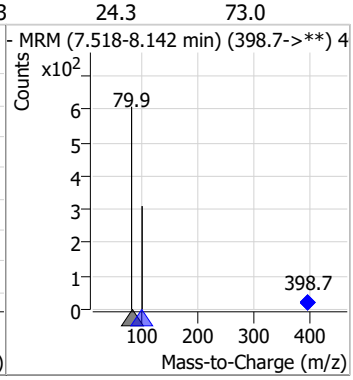


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.18	7.92	0.01	21700 (m)	398.7 -> 98.9	47.3	24.3	73.0



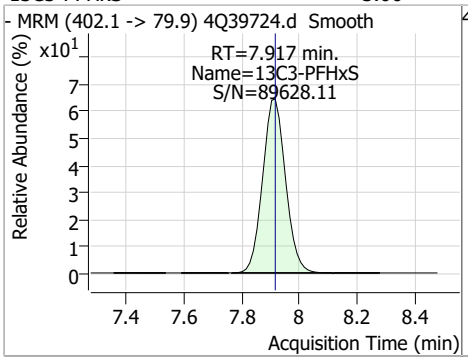


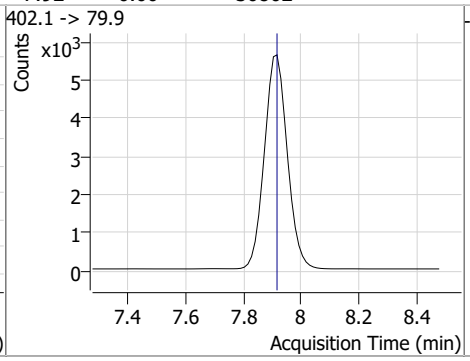


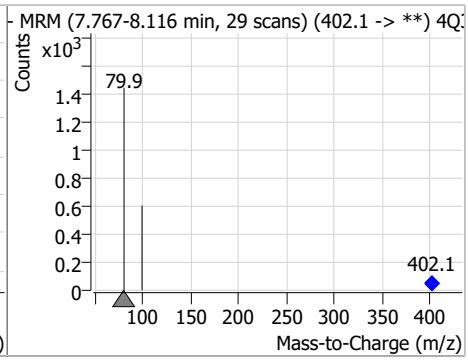


Perfluorinated Compounds by LC/MS/MS

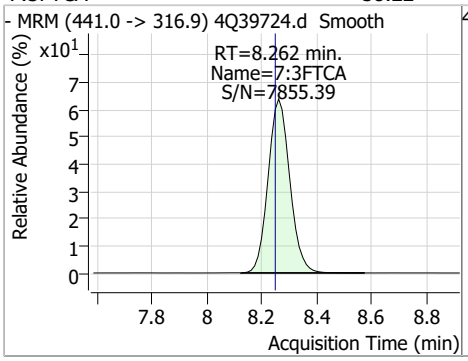
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.06	7.92	0.00	30802				

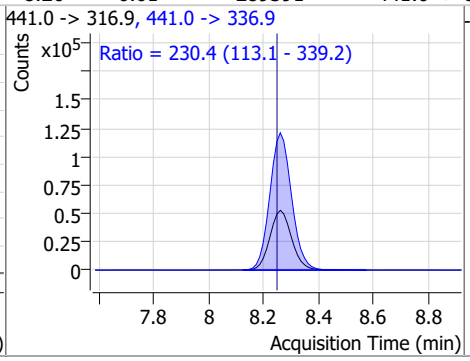


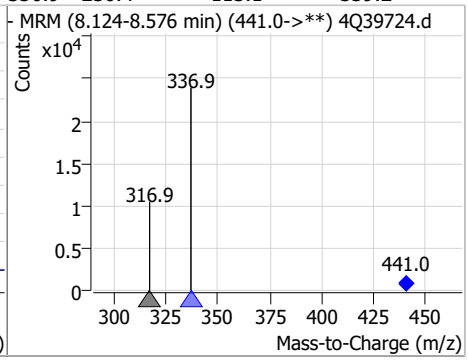




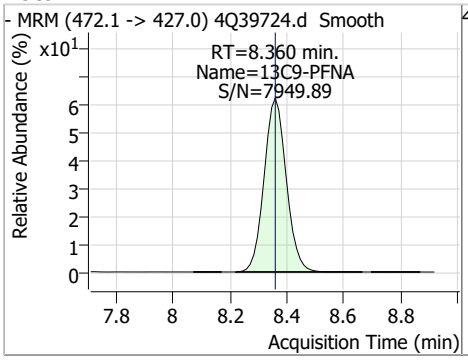
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	58.22	8.26	0.01	289591	441.0 -> 336.9	230.4	113.1	339.2

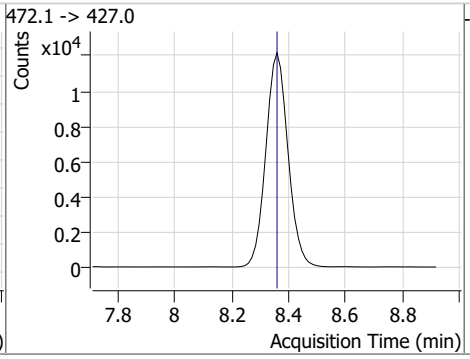


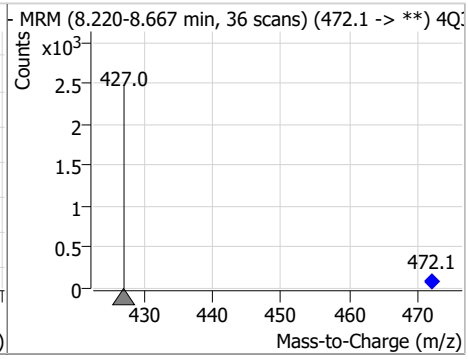




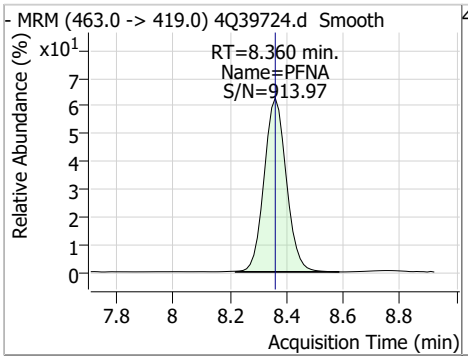
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.41	8.36	0.00	65697				

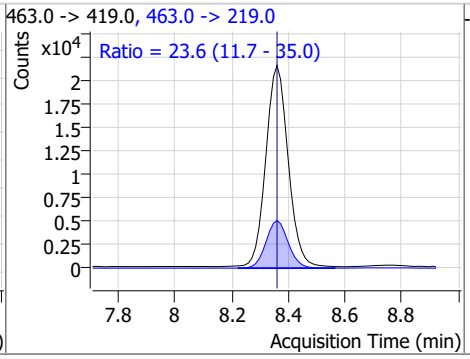


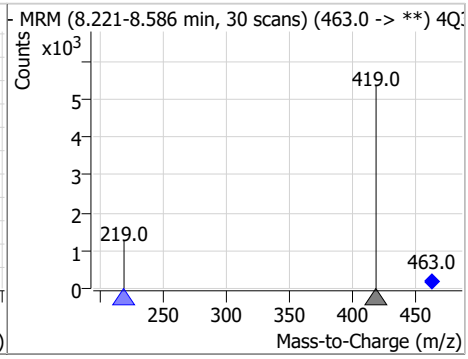




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.44	8.36	0.00	116660	463.0 -> 219.0	23.6	11.7	35.0

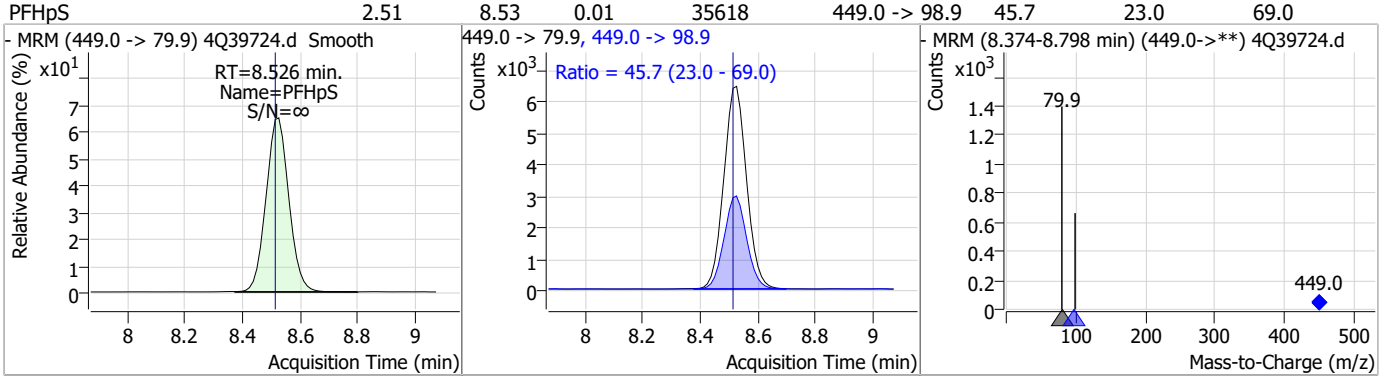




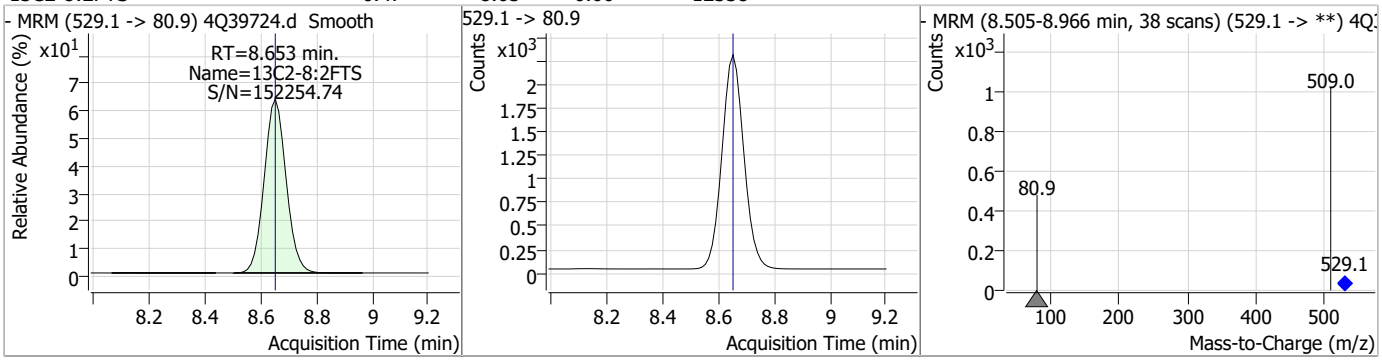


Perfluorinated Compounds by LC/MS/MS

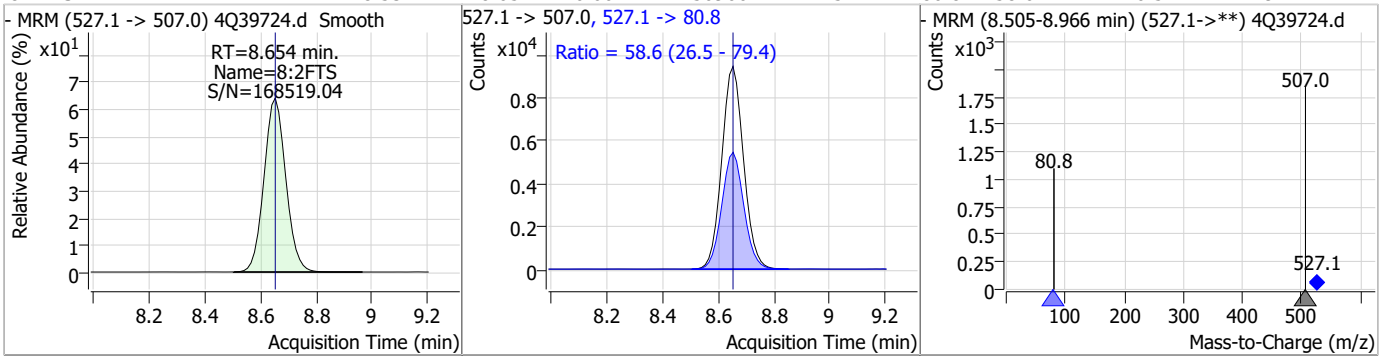
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.51	8.53	0.01	35618	449.0 -> 98.9	45.7	23.0	69.0



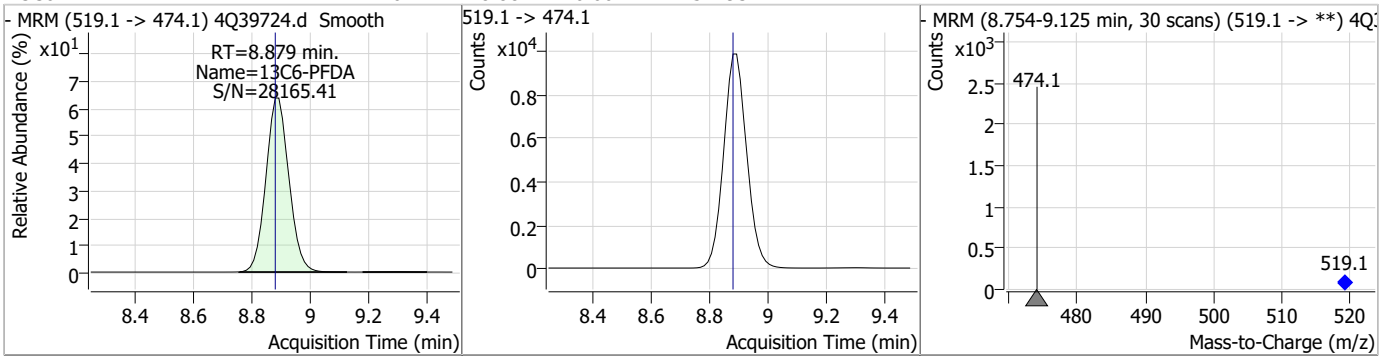
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.47	8.65	0.00	12338				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.53	8.65	0.00	50900	527.1 -> 80.8	58.6	26.5	79.4

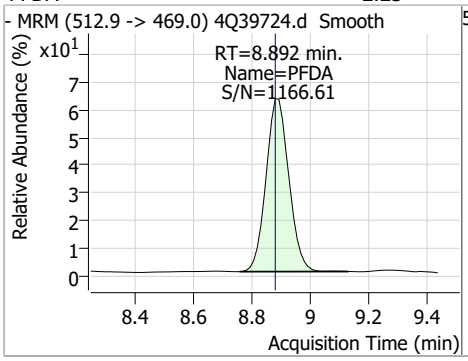


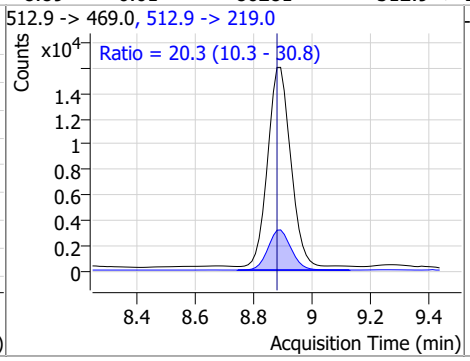
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.46	8.88	0.00	54193				

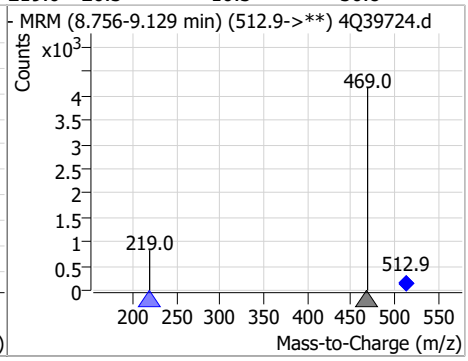


Perfluorinated Compounds by LC/MS/MS

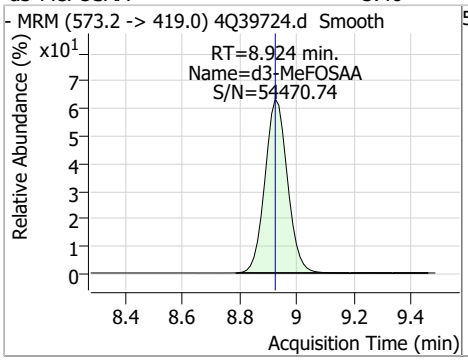
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.23	8.89	0.01	86281	512.9 -> 219.0	20.3	10.3	30.8

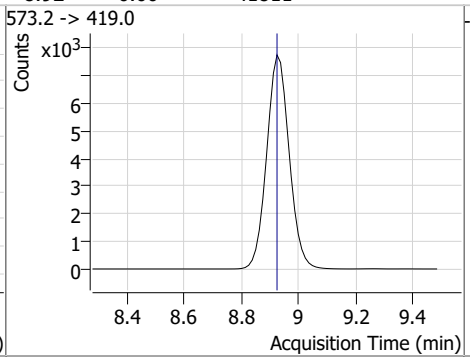


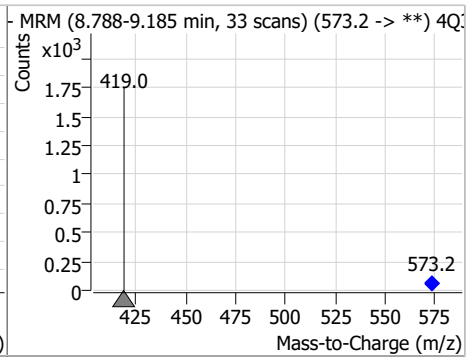




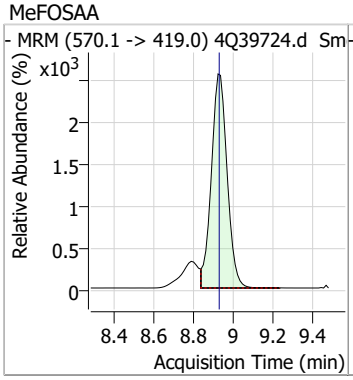
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.46	8.92	0.00	41811				

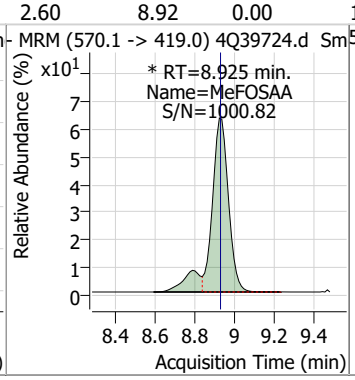


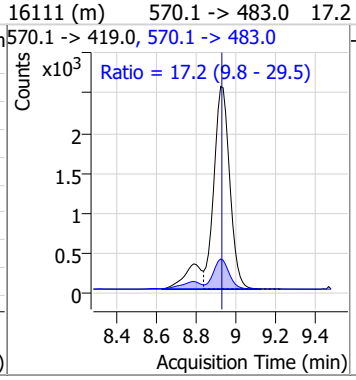


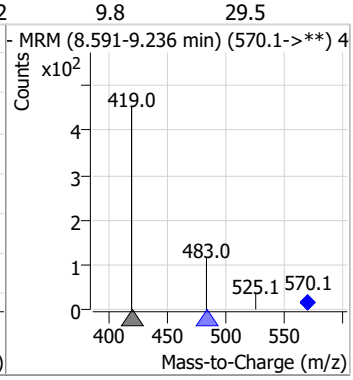


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.60	8.92	0.00	16111 (m)	570.1 -> 483.0	17.2	9.8	29.5

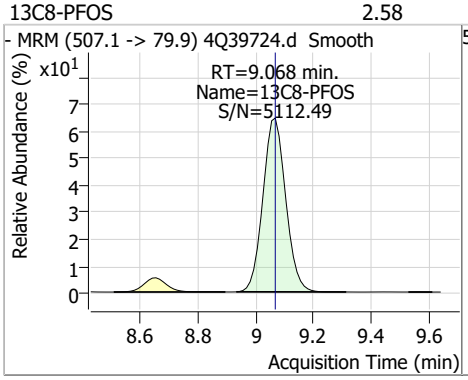


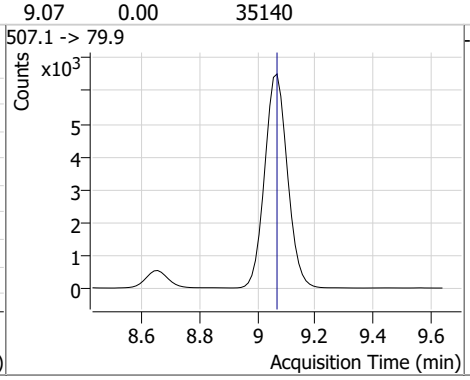


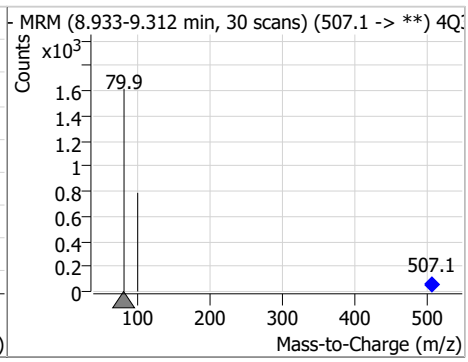




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	9.07	0.00	35140				

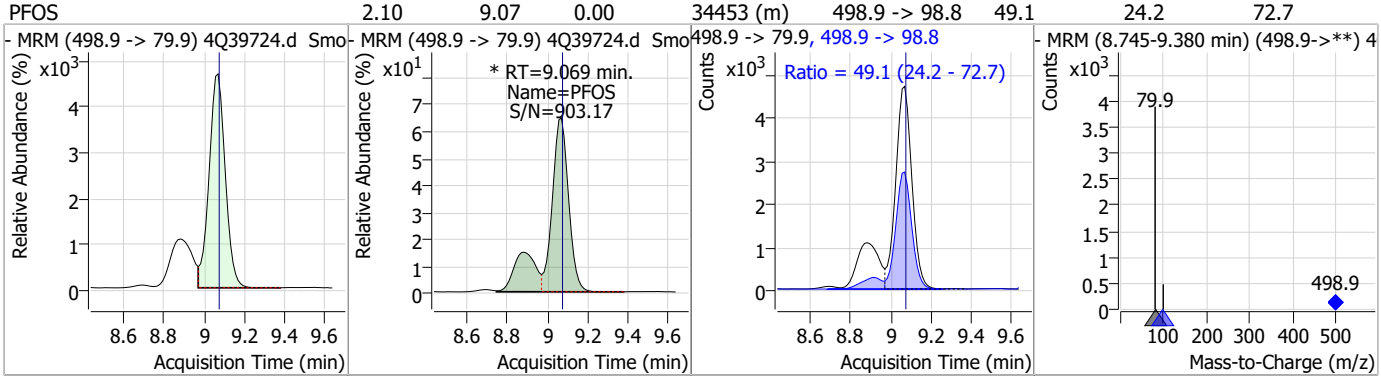




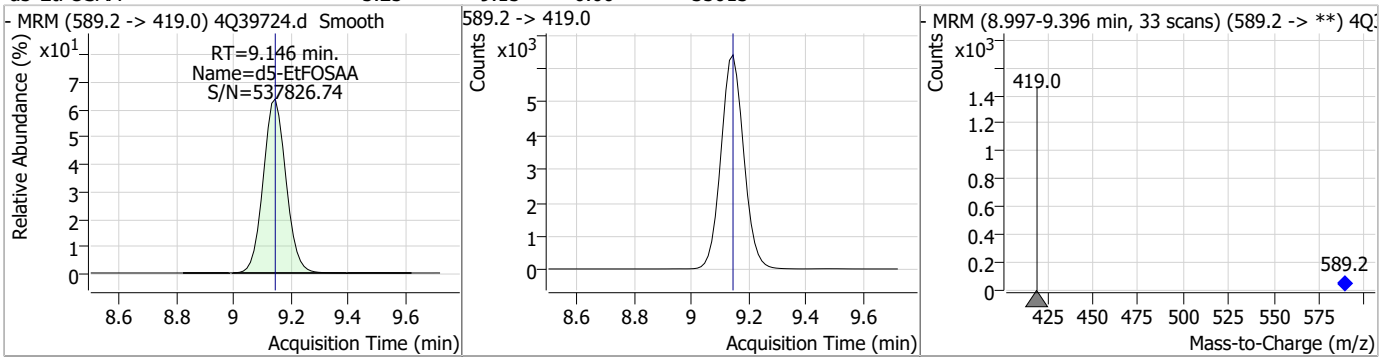


Perfluorinated Compounds by LC/MS/MS

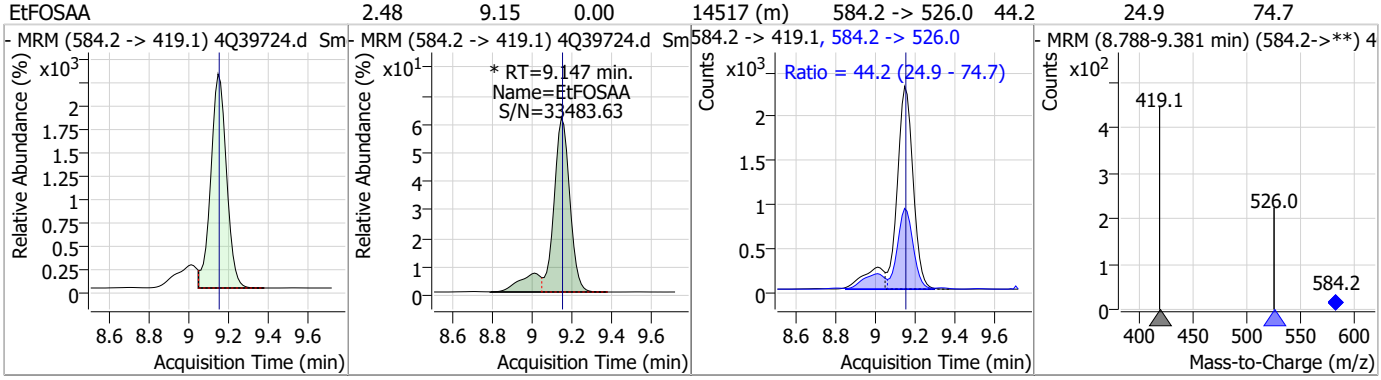
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.10	9.07	0.00	34453 (m)	498.9 -> 98.8	49.1	24.2	72.7



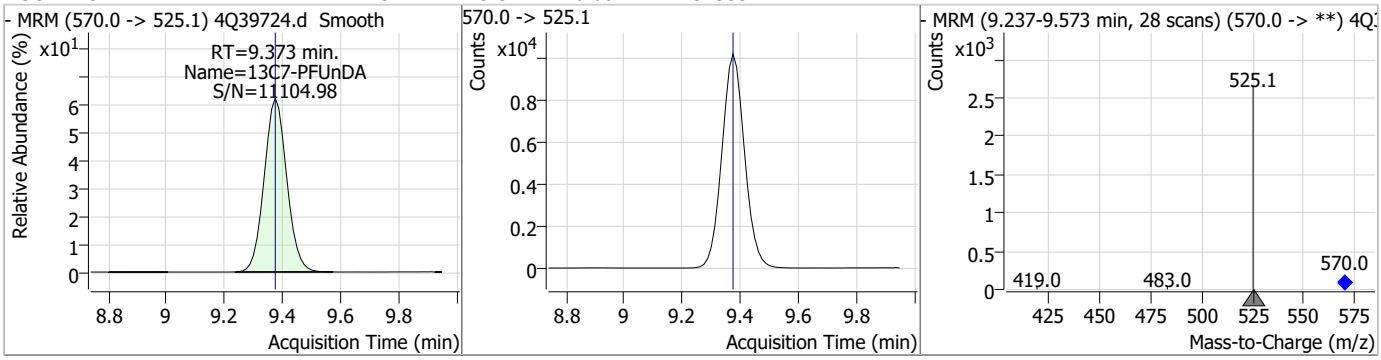
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.25	9.15	0.00	35013				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.48	9.15	0.00	14517 (m)	584.2 -> 526.0	44.2	24.9	74.7

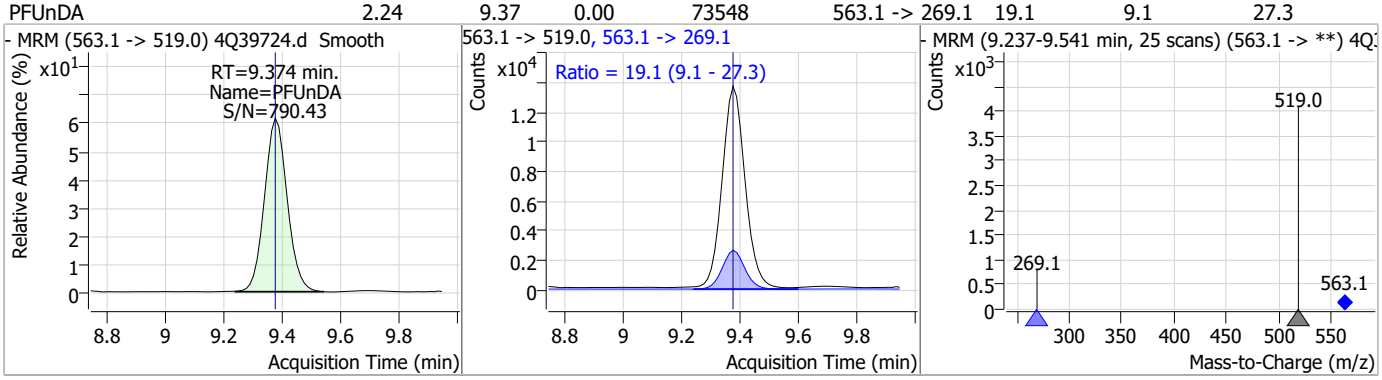


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	9.37	0.00	54353				

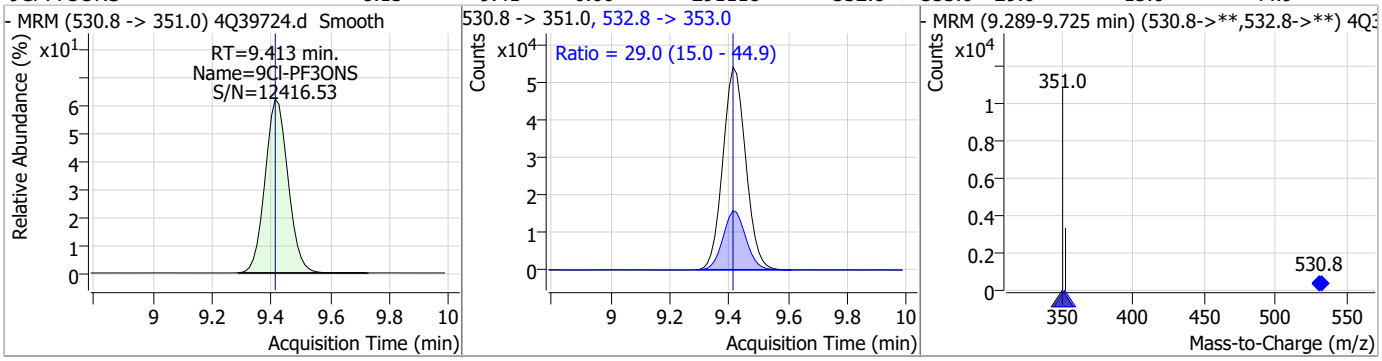


Perfluorinated Compounds by LC/MS/MS

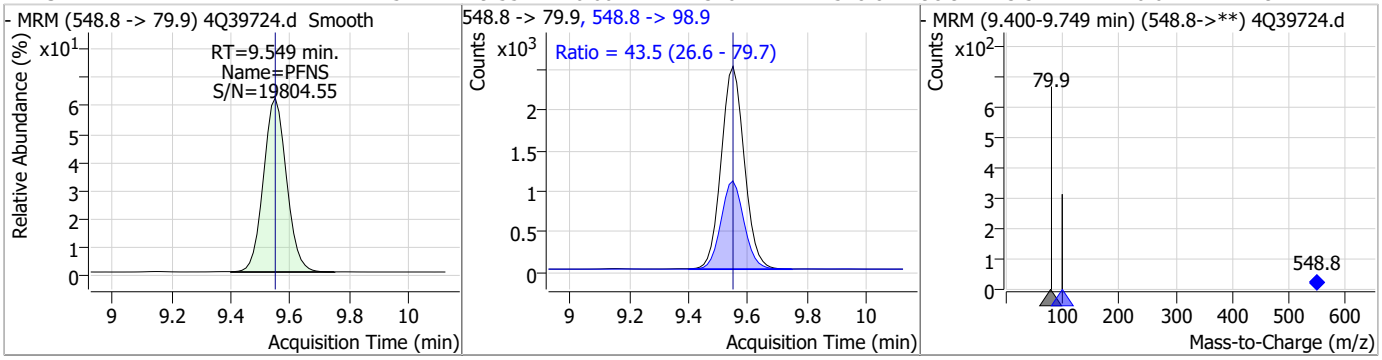
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.24	9.37	0.00	73548	563.1 -> 269.1	19.1	9.1	27.3



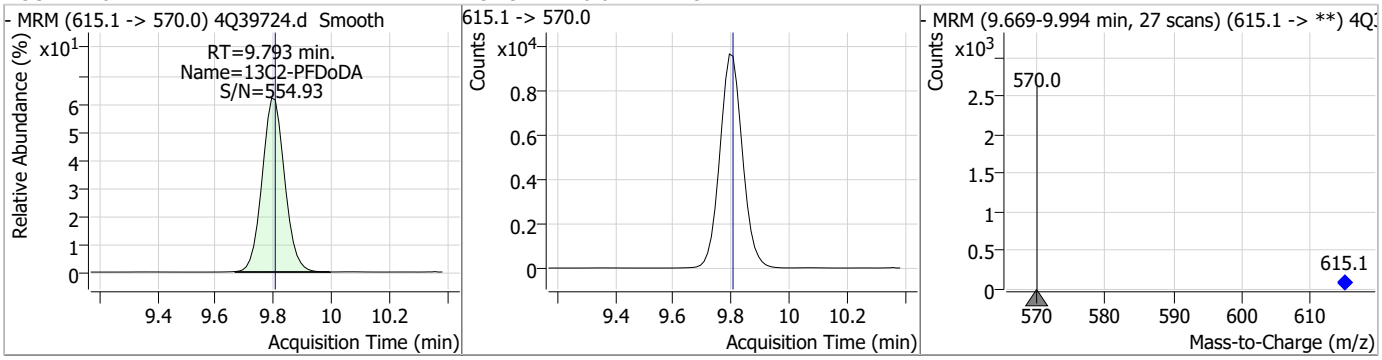
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.15	9.41	0.00	291118	532.8 -> 353.0	29.0	15.0	44.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.15	9.55	0.00	13464	548.8 -> 98.9	43.5	26.6	79.7

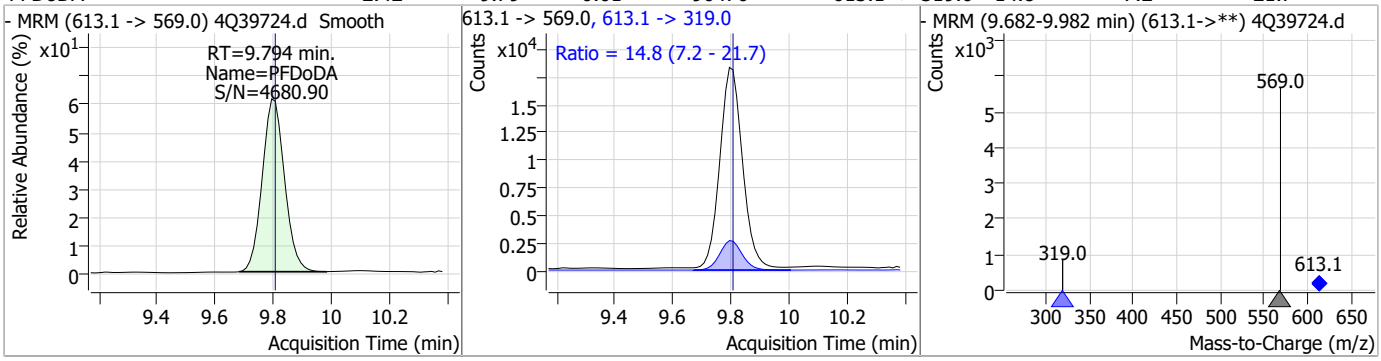


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.79	-0.01	51774				

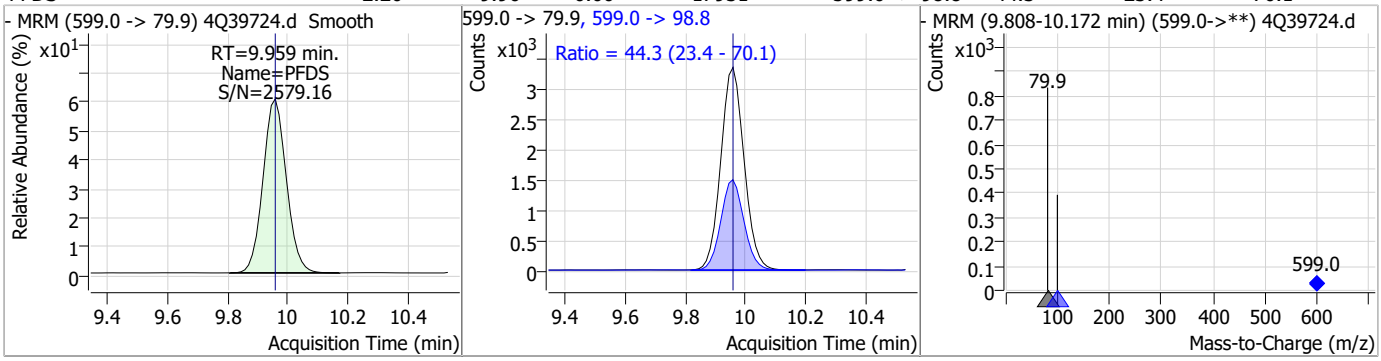


Perfluorinated Compounds by LC/MS/MS

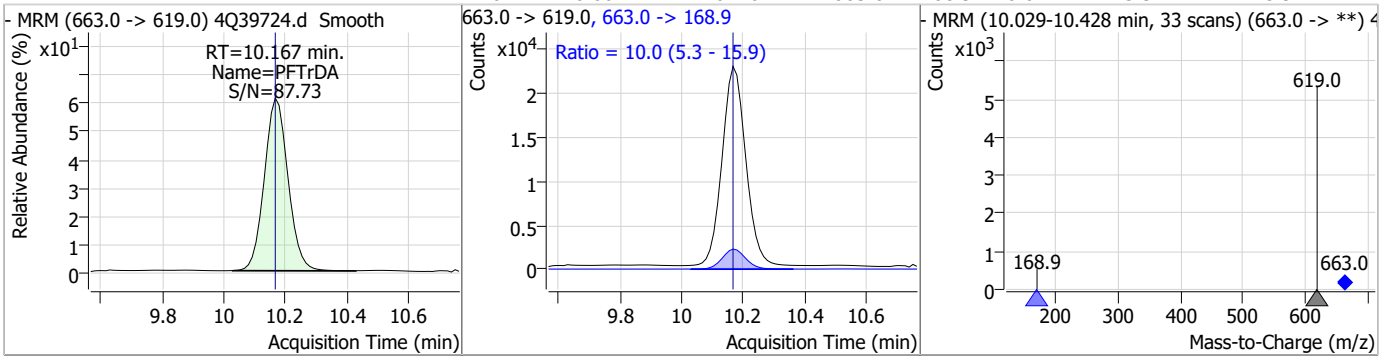
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.42	9.79	-0.01	96470	613.1 -> 319.0	14.8	7.2	21.7



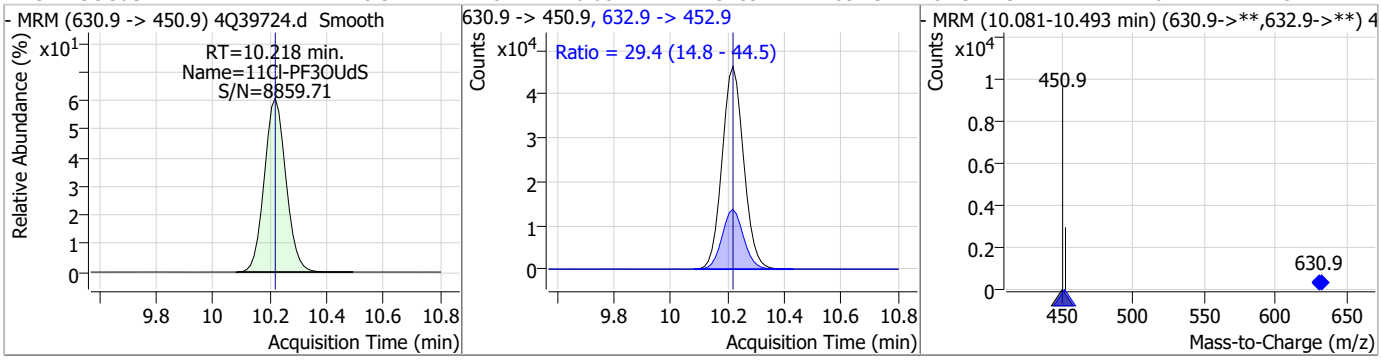
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.20	9.96	0.00	17931	599.0 -> 98.8	44.3	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.47	10.17	0.00	120720	663.0 -> 168.9	10.0	5.3	15.9

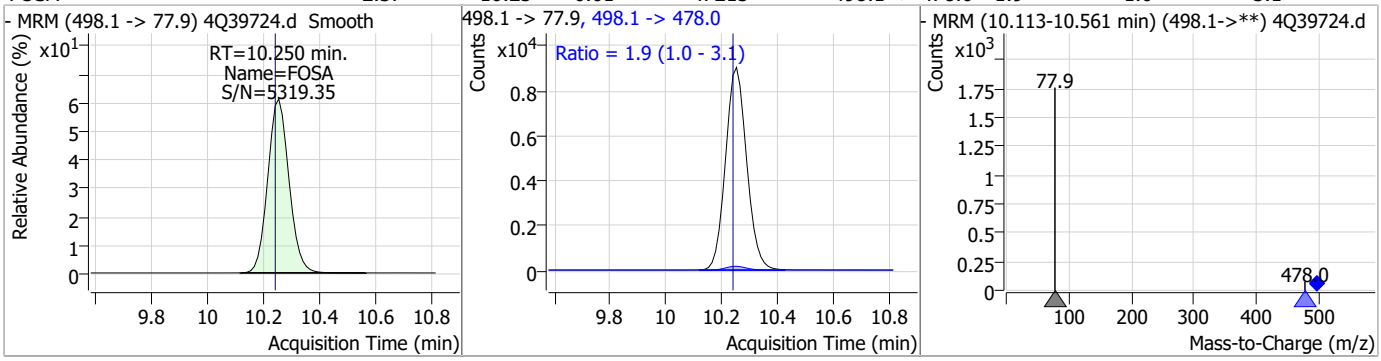


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	8.31	10.22	0.00	243789	632.9 -> 452.9	29.4	14.8	44.5

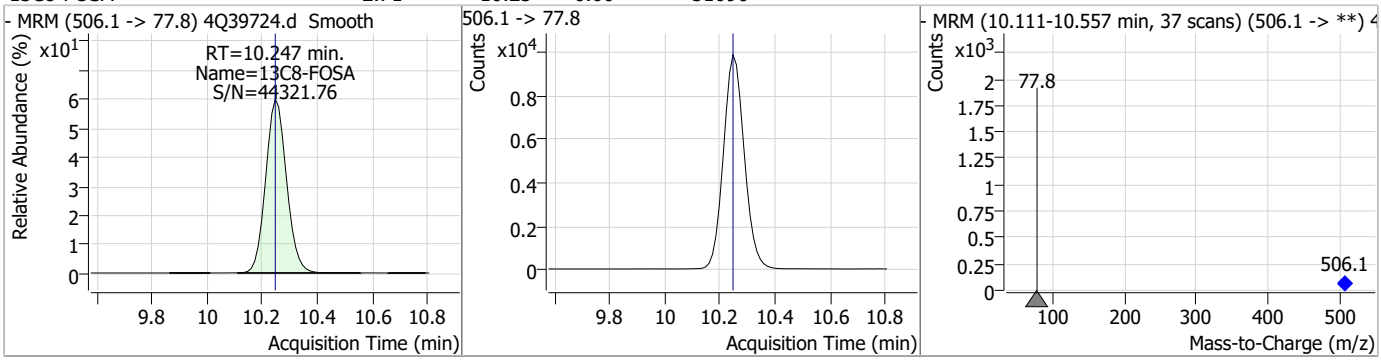


Perfluorinated Compounds by LC/MS/MS

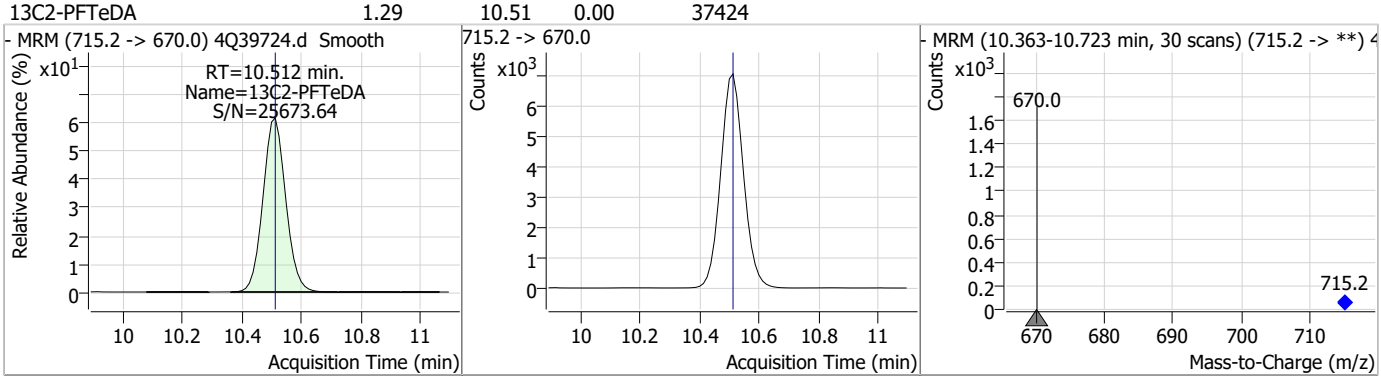
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.37	10.25	0.01	47215	498.1 -> 478.0	1.9	1.0	3.1



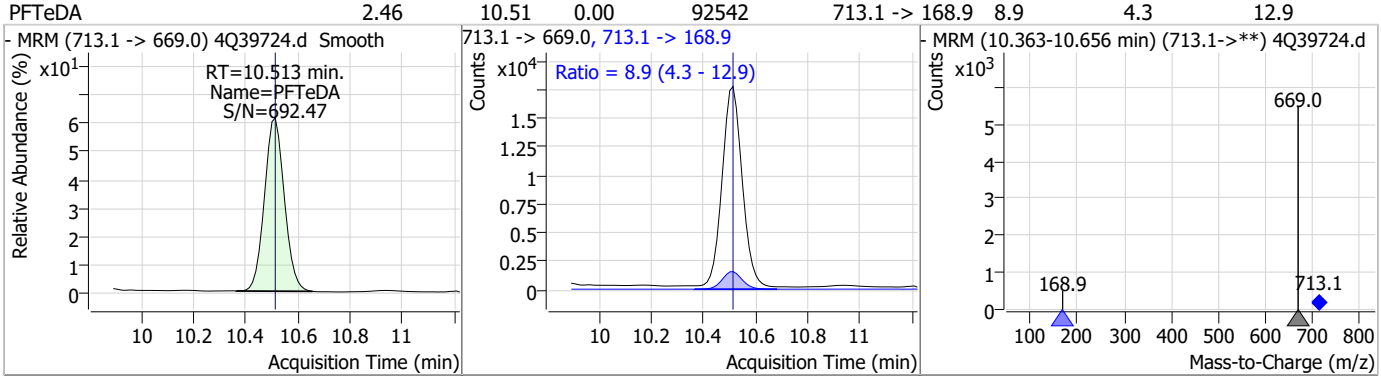
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.71	10.25	0.00	51696				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	10.51	0.00	37424				

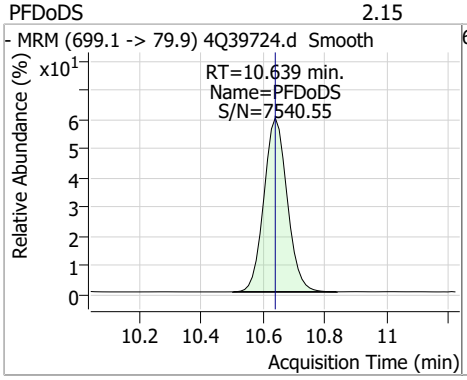


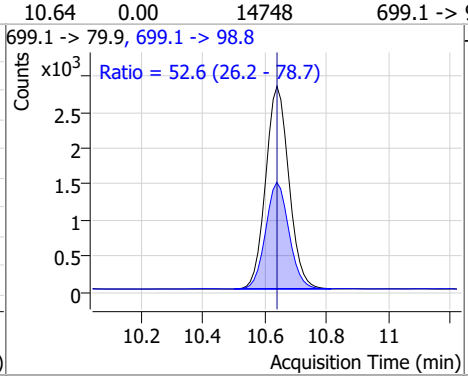
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.46	10.51	0.00	92542	713.1 -> 168.9	8.9	4.3	12.9

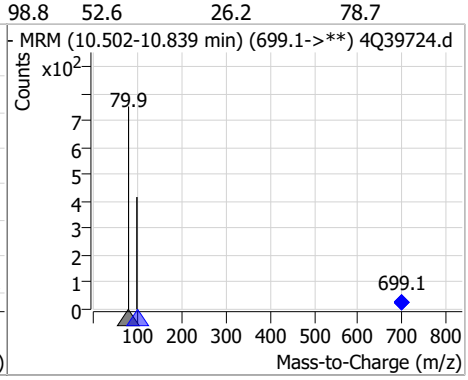


Perfluorinated Compounds by LC/MS/MS

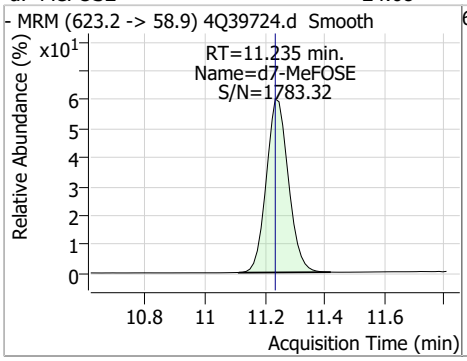
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.15	10.64	0.00	14748	699.1 -> 98.8	52.6	26.2	78.7

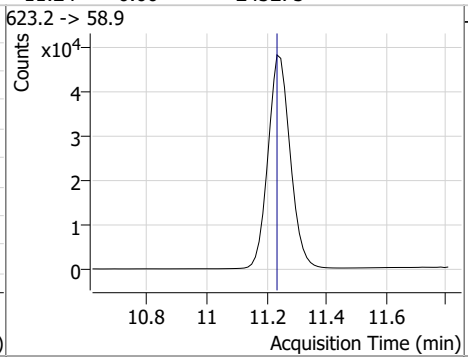


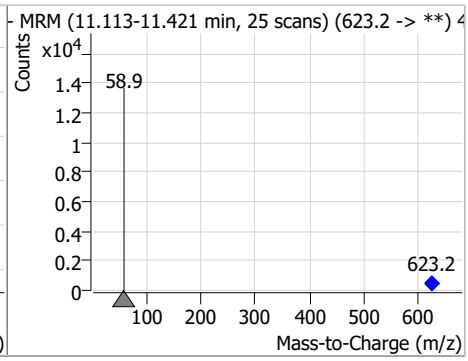




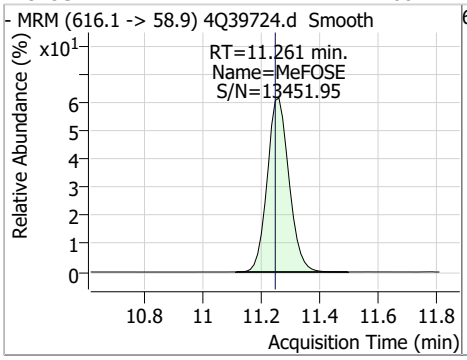
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.68	11.24	0.00	245275				

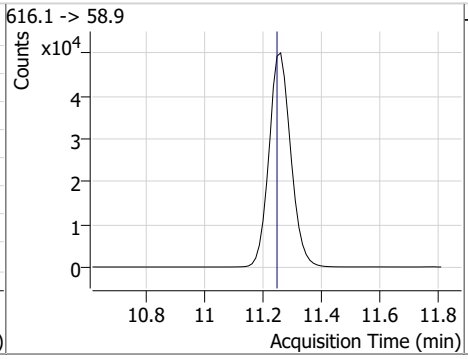


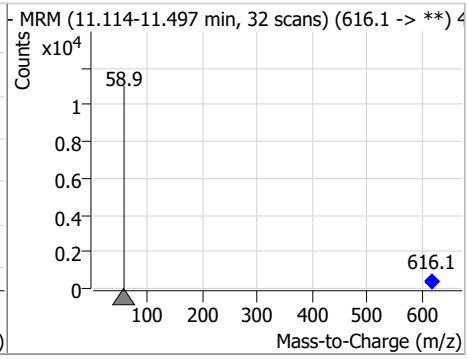




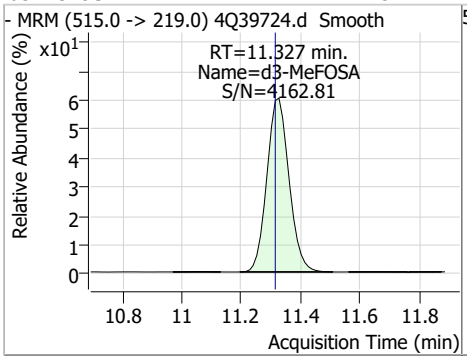
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.88	11.26	0.01	257800				

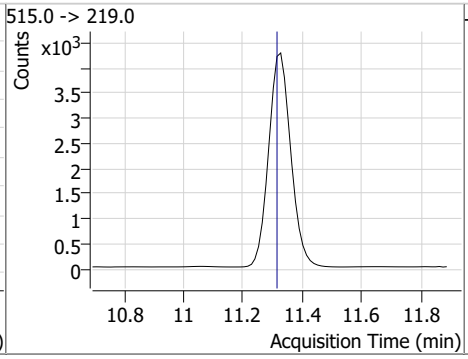


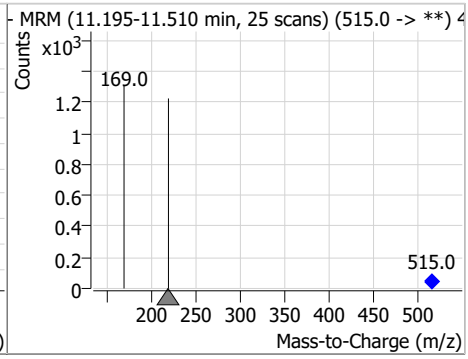




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.52	11.33	0.01	22012				

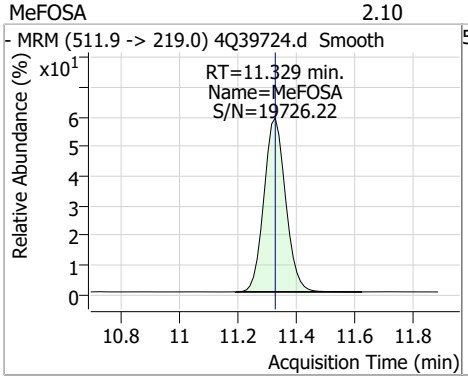


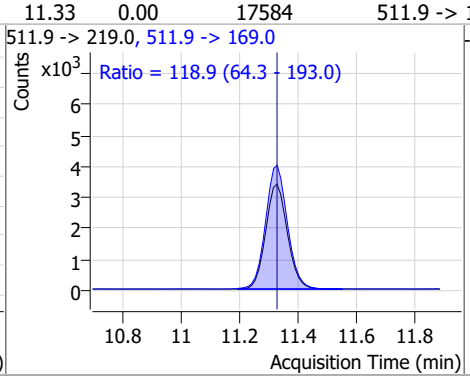


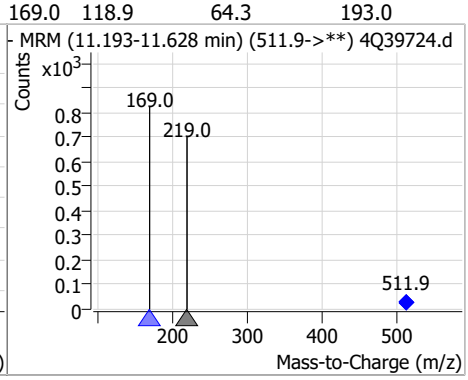


Perfluorinated Compounds by LC/MS/MS

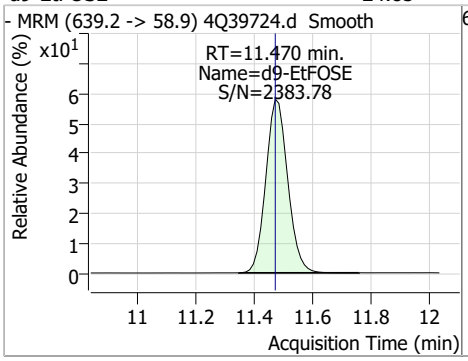
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.10	11.33	0.00	17584	511.9 -> 169.0	118.9	64.3	193.0

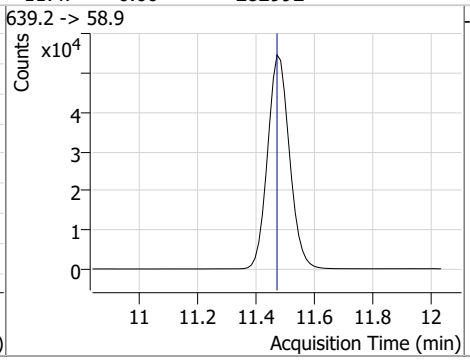


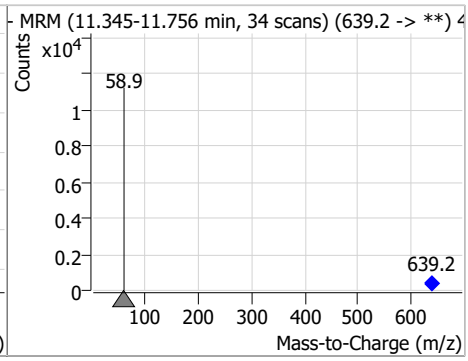




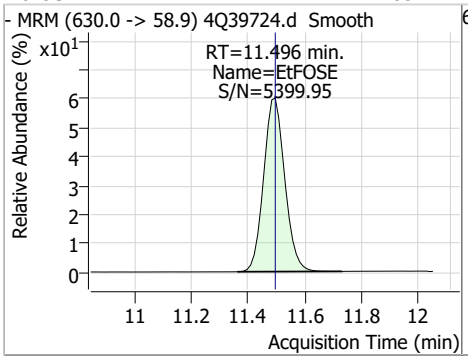
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.85	11.47	0.00	282992				

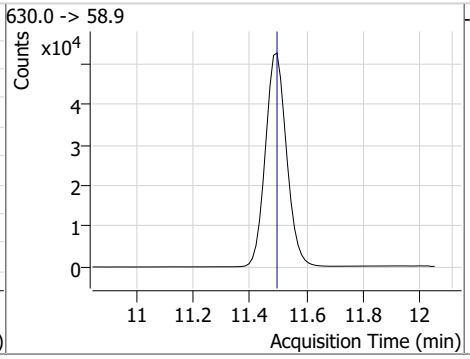


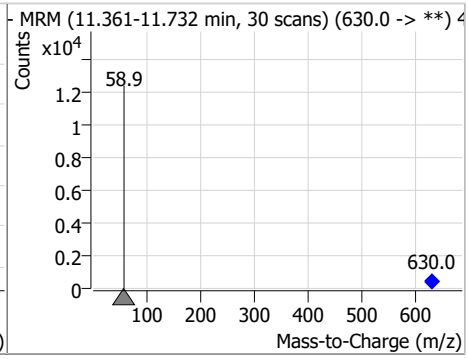




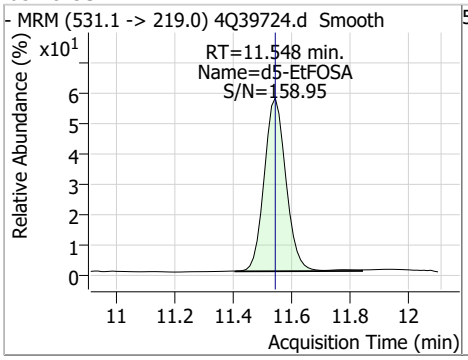
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.85	11.50	0.00	273027				

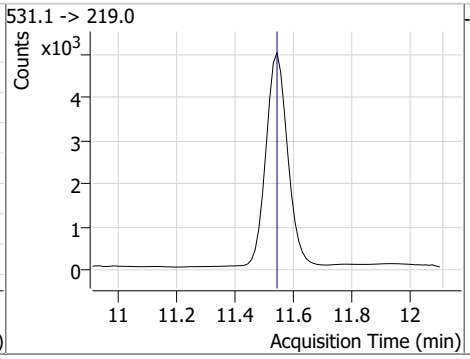


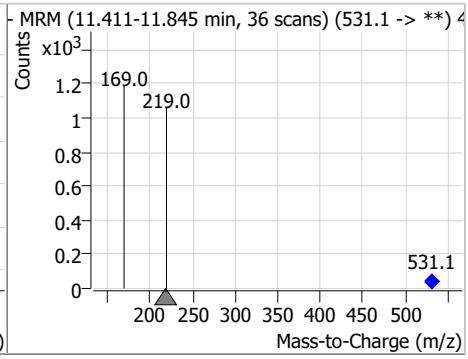




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	11.55	0.00	25730				

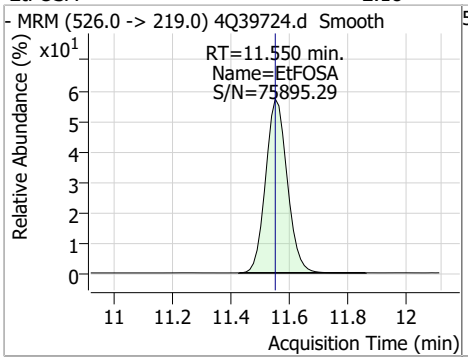


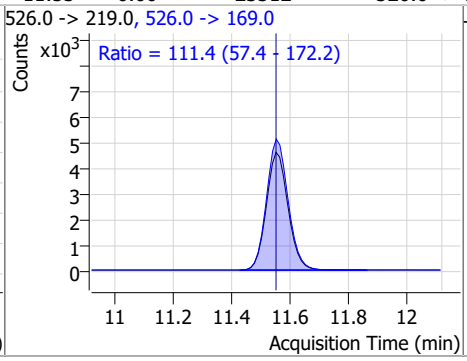


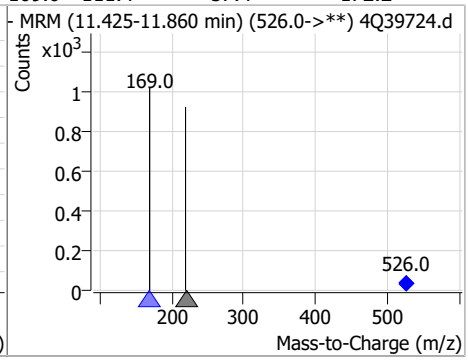


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.18	11.55	0.00	23512	526.0 -> 169.0	111.4	57.4	172.2







Manual Integration Approval Summary

Sample Number: OP95069-MSD
Lab FileID: 4Q39724.D
Injection Time: 01/25/23 21:22
Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:25 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.79	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

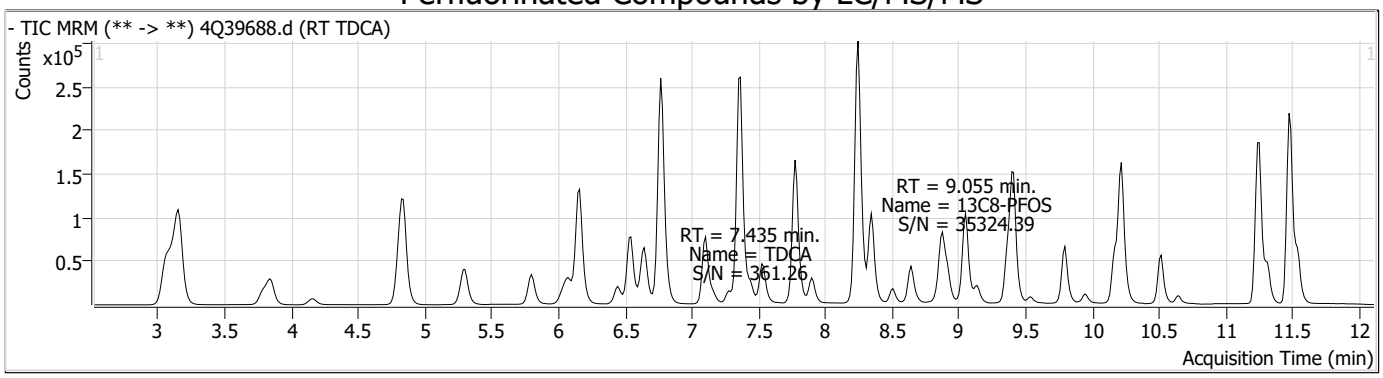
Data File : 4Q39688.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 12:31:28 PM
Sample Name : RT TDCA
Vial : P1-B1
DA Method File : TDCA.quantmethod.xml
Batch Name : s4q571_TDCA.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	9.055	507.1 -> 79.9	54844	2.50	µg/L		-0.024
13C4-PFOS	9.056	502.8 -> 79.9	58938	2.50	µg/L		-0.024
System Monitoring Compounds							
13C8-PFOS	9.055	507.1 -> 79.9	54844	2.36	µg/L		-0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%			
Target Compounds							QValue
PFOS	9.057	498.9 -> 79.9	52290	2.79	µg/L	m	97
		498.9 -> 98.8	26001				
TCDCA	7.273	498.9 -> 79.9	16350	6.46	ng/ml		100
TDCA	7.435	498.9 -> 79.9	21377	9.33	ng/ml		100
TUDCA	6.442	498.9 -> 79.9	24238	4.98	ng/ml		100

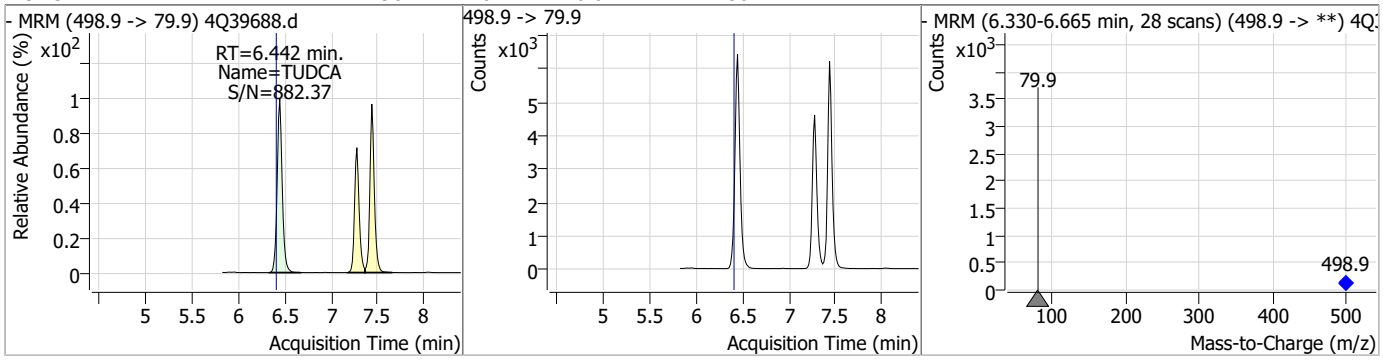
 # = Qualifier out of range, m = manually integrated, + = Area summed

7.5.1
7

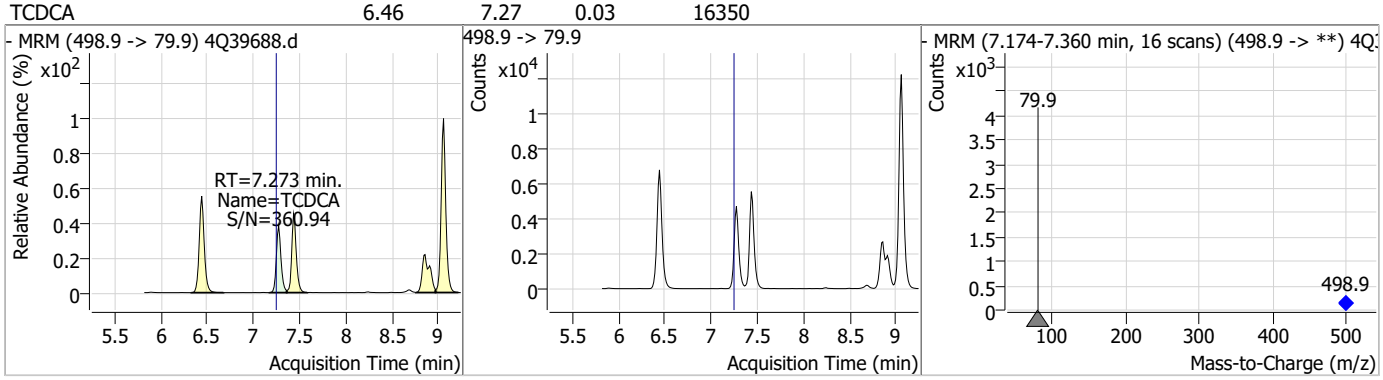
Perfluorinated Compounds by LC/MS/MS



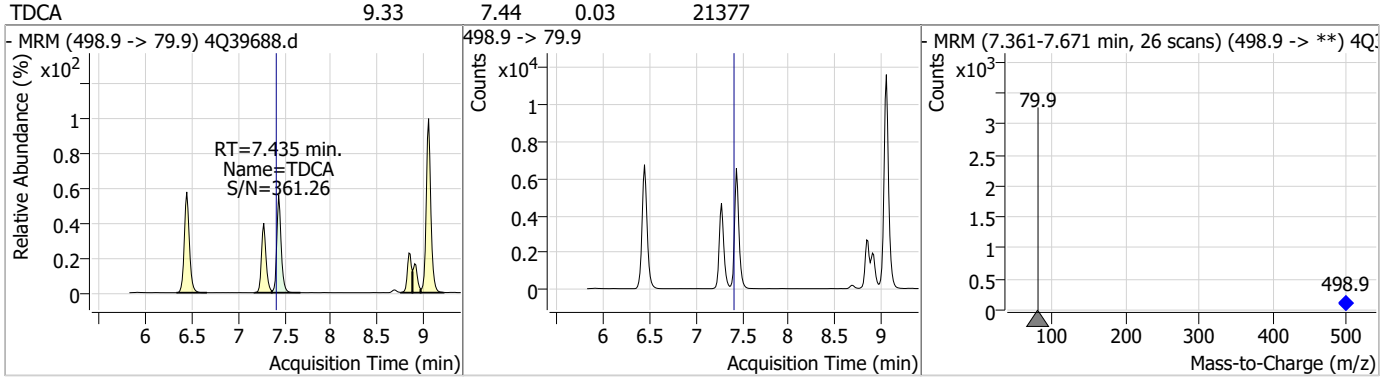
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	4.98	6.44	0.04	24238				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	6.46	7.27	0.03	16350				

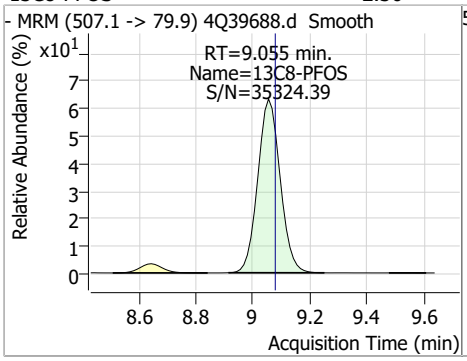


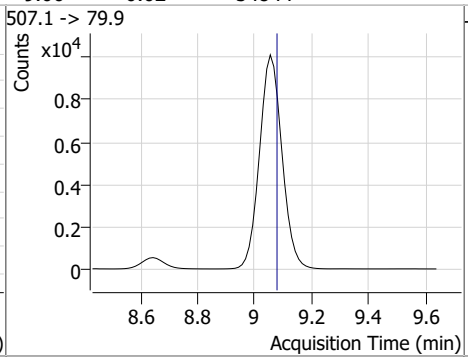
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	9.33	7.44	0.03	21377				

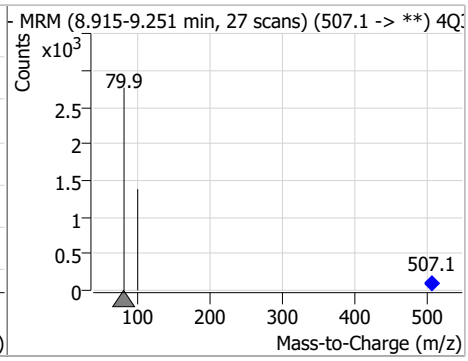


Perfluorinated Compounds by LC/MS/MS

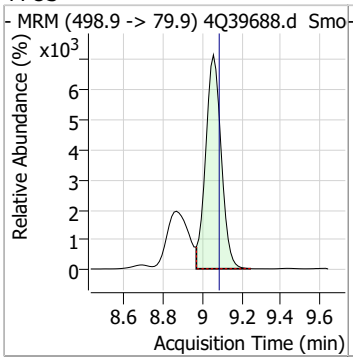
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.36	9.06	-0.02	54844				

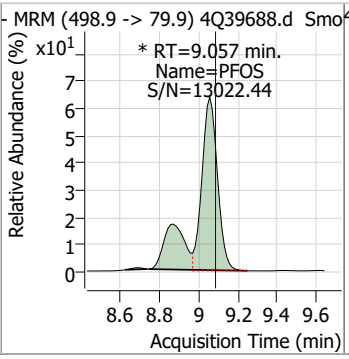


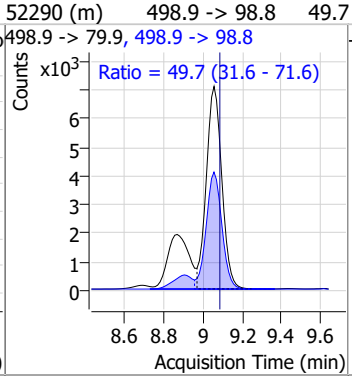


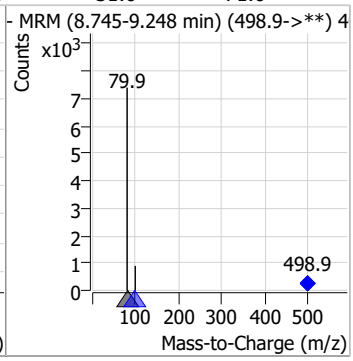


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.79	9.06	-0.02	52290 (m)	498.9 -> 98.8	49.7	31.6	71.6









Manual Integration Approval Summary

Sample Number:	S4Q571-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q39688.D	**Analyst approved:**	01/26/23 13:32 Natasha Gumtie
Injection Time:	01/25/23 12:31	**Supervisor approved:**	01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q39689.d
Operator	:	natashag
Acq. Method	:	1633full.m
Acq. Date-Time	:	1/25/2023 12:45:33 PM
Sample Name	:	RT Br-Ln
Vial	:	P1-B2
DA Method File	:	1633_012423_S4Q571.quantmethod.xml
Batch Name	:	s4q571A.batch.bin
Sample Information	:	op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.161	216.8 -> 171.9	351537	10.00	µg/L	-0.012
M5-PFPeA	4.863	268.3 -> 223.0	223819	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	144632	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	80772	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	121074	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	63288	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	48765	1.25	µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	55283	1.25	µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	53949	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	38702	1.25	µg/L	0.000
M8-FOSA	10.235	506.1 -> 77.8	48243	2.50	µg/L	-0.012
M3-PFBS	6.089	302.1 -> 79.9	41207	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	26873	2.50	µg/L	0.000
M8-PFOS	9.055	507.1 -> 79.9	34477	2.50	µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	3129	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	6495	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	8802	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	40816	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	106736	10.00	µg/L	0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	33836	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	249832	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	278617	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	25509	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	22534	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	32711	2.50	µg/L	-0.012
13C3-PFBA	3.165	216.0 -> 172.0	189365	5.00	µg/L	-0.012
18O2-PFHxS	7.916	403.0 -> 83.9	18142	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	138411	2.50	µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	46209	1.25	µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	71866	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	133508	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	3129	4.79	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-6:2FTS	7.536	429.1 -> 80.9	6495	4.44	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	8802	4.39	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C2-PFDoDA	9.793	615.1 -> 570.0	53949	1.20	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFTeDA	10.512	715.2 -> 670.0	38702	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C3-PFBS	6.089	302.1 -> 79.9	41207	2.63	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-PFHxS	7.917	402.1 -> 79.9	26873	2.54	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C4-PFBA	3.161	216.8 -> 171.9	351537	10.29 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C4-PFHpA	7.106	367.1 -> 322.0	80772	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	6.172	318.0 -> 273.0	144632	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFPeA	4.863	268.3 -> 223.0	223819	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C6-PFDA	8.879	519.1 -> 474.1	48765	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C7-PFUnDA	9.361	570.0 -> 525.1	55283	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-FOSA	10.235	506.1 -> 77.8	48243	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-PFOA	7.788	421.1 -> 376.0	121074	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C8-PFOS	9.055	507.1 -> 79.9	34477	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C9-PFNA	8.360	472.1 -> 427.0	63288	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.924	573.2 -> 419.0	40816	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C3-HFPO-DA	6.564	286.9 -> 168.9	106736	10.02 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d3-MeFOSA	11.315	515.0 -> 219.0	22534	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
d5-EtFOSAA	9.133	589.2 -> 419.0	33836	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d7-MeFOSE	11.235	623.2 -> 58.9	249832	25.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d9-EtFOSE	11.470	639.2 -> 58.9	278617	24.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d5-EtFOSA	11.535	531.1 -> 219.0	25509	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
Target Compounds					QValue
4:2FTS	5.823	327.1 -> 307.0	261770	51.19 µg/L	99
		327.1 -> 80.9	123811		
6:2FTS	7.537	427.1 -> 407.0	291287	56.58 µg/L	100
		427.1 -> 80.9	143486		
8:2FTS	8.654	527.1 -> 507.0	255208	59.94 µg/L	100
		527.1 -> 80.8	135382		
EtFOSAA	9.147	584.2 -> 419.1	69963	12.35 µg/L	76
		584.2 -> 526.0	23146		
FOSA	10.238	498.1 -> 77.9	531101	28.51 µg/L	99
		498.1 -> 478.0	8626		
MeFOSAA	8.925	570.1 -> 419.0	85781	14.18 µg/L	91
		570.1 -> 483.0	13203		
PFBA	3.170	212.8 -> 168.9	562202	57.47 µg/L	100
PFBS	6.090	298.7 -> 79.9	222477	11.95 µg/L	100
		298.7 -> 98.8	76651		
PFDA	8.879	512.9 -> 469.0	524799	15.09 µg/L	99
		512.9 -> 219.0	105328		
PFDoDA	9.794	613.1 -> 569.0	600393	14.44 µg/L	99
		613.1 -> 319.0	89262		
PFDS	9.945	599.0 -> 79.9	108754	13.62 µg/L	100

Perfluorinated Compounds by LC/MS/MS

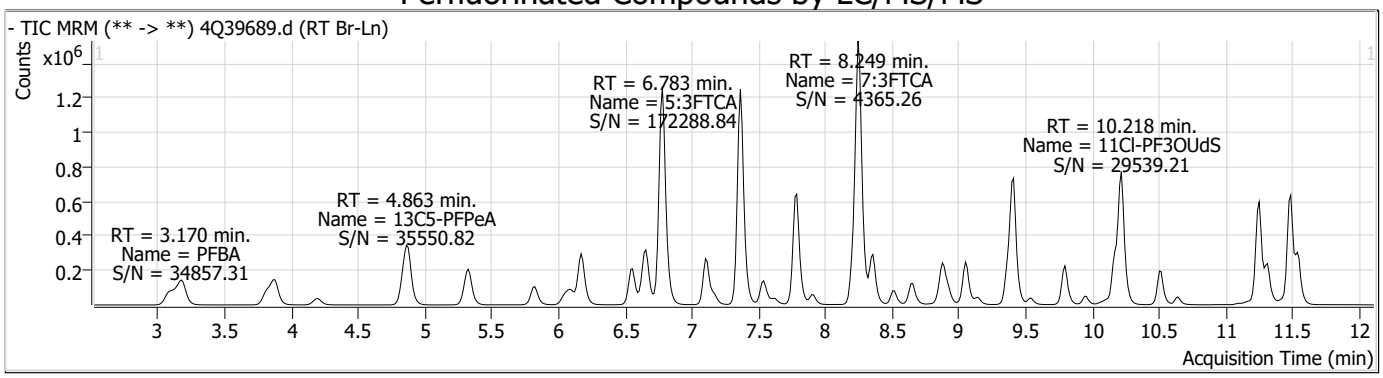
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	50769			
PFHpA	7.106	363.1 -> 319.0	730328	14.51	µg/L	100
		363.1 -> 169.0	123628			
PFHpS	8.526	449.0 -> 79.9	190984	13.70	µg/L	95
		449.0 -> 98.9	94018			
PFHxA	6.175	313.0 -> 269.0	792969	14.10	µg/L	99
		313.0 -> 118.9	24423			
PFHxS	7.917	398.7 -> 79.9	94492	10.88	µg/L	97
		398.7 -> 98.9	48124			
PFNA	8.360	463.0 -> 419.0	666769	14.49	µg/L	98
		463.0 -> 219.0	160320			
PFNS	9.536	548.8 -> 79.9	84063	13.70	µg/L	95
		548.8 -> 98.9	41672			
PFOA	7.790	413.0 -> 369.0	1659129	30.82	µg/L	99
		413.0 -> 169.0	339886			
PFOS	9.057	498.9 -> 79.9	162920	10.12	µg/L	88
		498.9 -> 98.8	92099			
PFPeA	4.866	263.0 -> 219.0	1392402	28.36	µg/L	100
PFPeS	7.171	349.1 -> 79.9	110471	13.18	µg/L	99
		349.1 -> 98.9	43832			
PFTeDA	10.513	713.1 -> 669.0	571289	14.67	µg/L	100
		713.1 -> 168.9	49392			
PFTrDA	10.167	663.0 -> 619.0	738279	14.50	µg/L	100
		663.0 -> 168.9	77087			
PFUnDA	9.361	563.1 -> 519.0	465411	13.91	µg/L	98
		563.1 -> 269.1	88022			
11Cl-PF3OUdS	10.218	630.9 -> 450.9	1463803	58.67	µg/L	99
		632.9 -> 452.9	442456			
9Cl-PF3ONS	9.413	530.8 -> 351.0	1829683	60.18	µg/L	99
		532.8 -> 353.0	557250			
ADONA	7.369	376.9 -> 250.9	3171915	55.09	µg/L	99
		376.9 -> 84.8	1129849			
HFPO-DA	6.565	284.9 -> 168.9	594778	59.12	µg/L	99
		284.9 -> 184.9	65013			
3:3FTCA	4.192	241.0 -> 177.0	163731	71.15	µg/L	97
		241.0 -> 117.0	14040			
5:3FTCA	6.783	341.0 -> 237.1	2592860	346.62	µg/L	99
		341.0 -> 217.0	1948897			
7:3FTCA	8.249	441.0 -> 316.9	1588027	369.65	µg/L	99
		441.0 -> 336.9	3603935			
EtFOSA	11.550	526.0 -> 219.0	396091	36.97	µg/L	85
		526.0 -> 169.0	520533			
EtFOSE	11.483	630.0 -> 58.9	1710898	158.15	µg/L	100
MeFOSA	11.316	511.9 -> 219.0	262506	30.58	µg/L	72
		511.9 -> 169.0	424035			
MeFOSE	11.248	616.1 -> 58.9	1638561	155.24	µg/L	100
PFDoDS	10.639	699.1 -> 79.9	93427	13.86	µg/L	99
		699.1 -> 98.8	49599			
NFDHA	6.053	295.0 -> 201.0	113717	30.77	µg/L	98
		295.0 -> 84.9	32175			
PFMBA	5.328	279.0 -> 85.1	873955	28.56	µg/L	100
PFMPA	3.869	229.0 -> 84.9	917336	29.06	µg/L	100
PFEESA	6.660	314.8 -> 134.9	1216861	25.31	µg/L	100
		314.8 -> 82.9	38674			

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

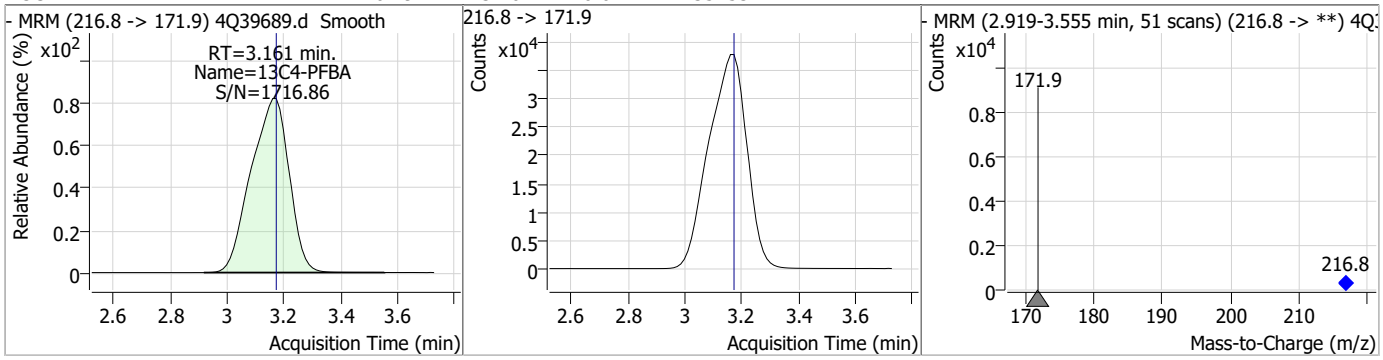
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

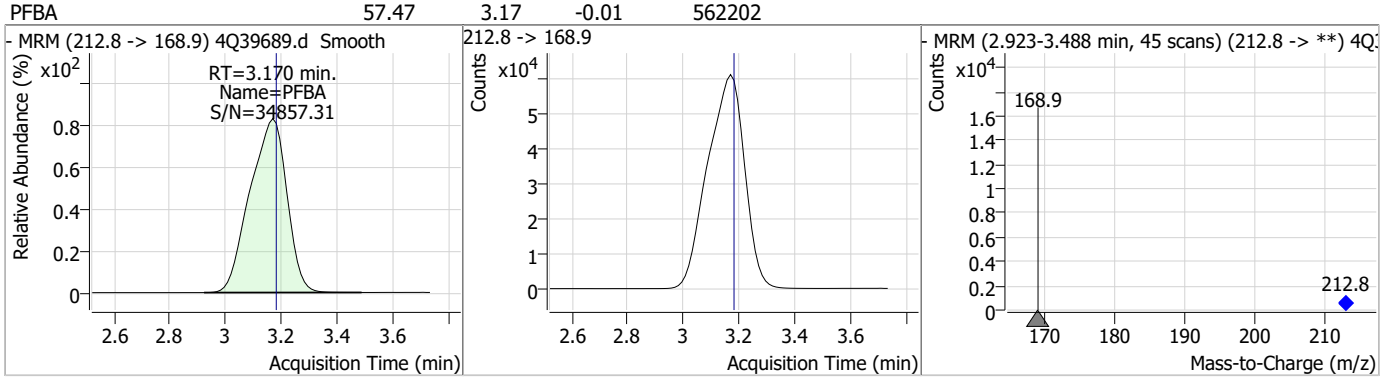
Perfluorinated Compounds by LC/MS/MS



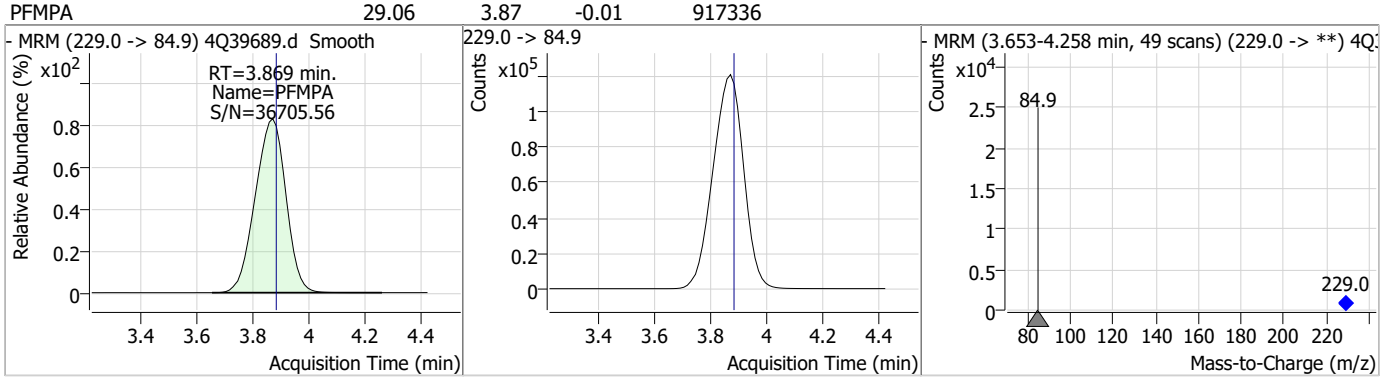
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.29	3.16	-0.01	351537				



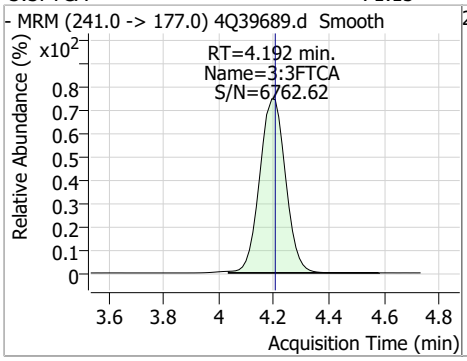
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	57.47	3.17	-0.01	562202				

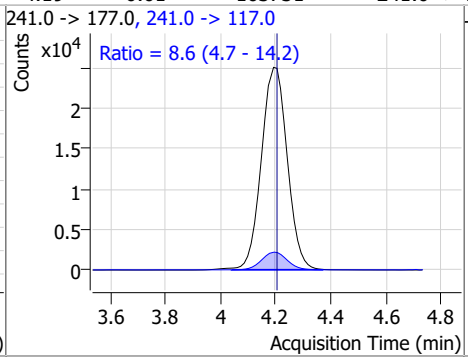


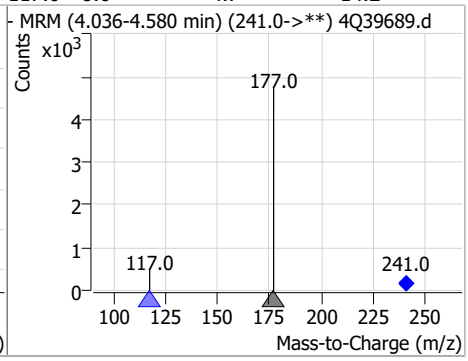
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	29.06	3.87	-0.01	917336				



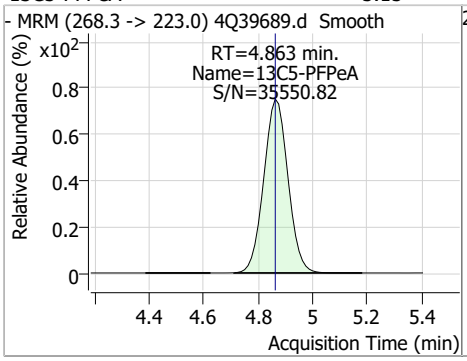
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	71.15	4.19	-0.01	163731	241.0 -> 117.0	8.6	4.7	14.2

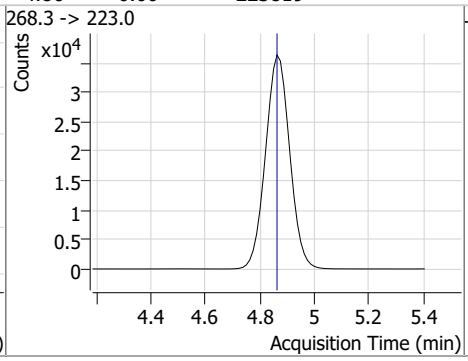


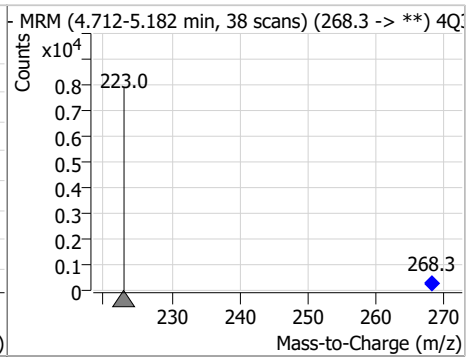




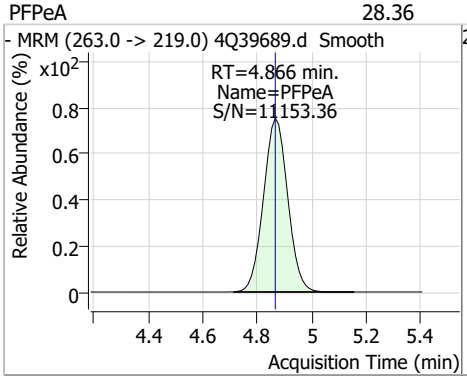
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.15	4.86	0.00	223819				

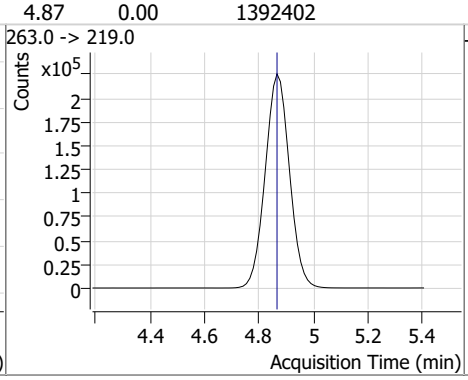


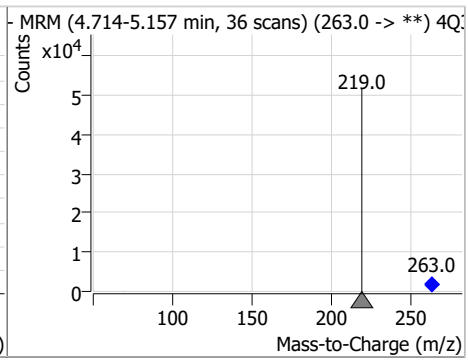




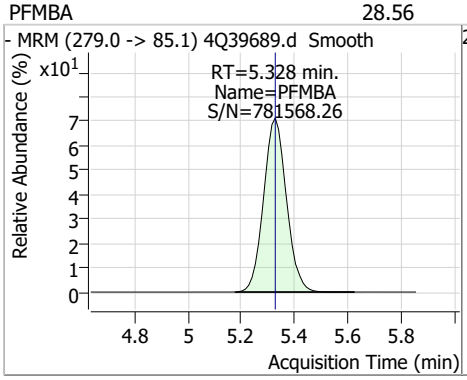
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.36	4.87	0.00	1392402				

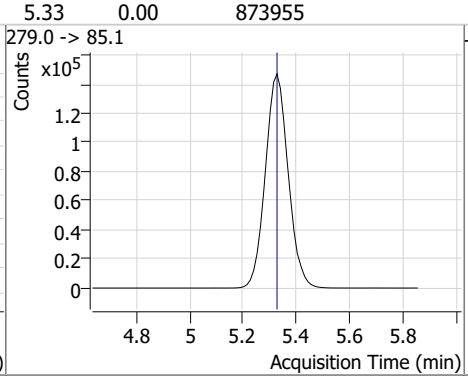


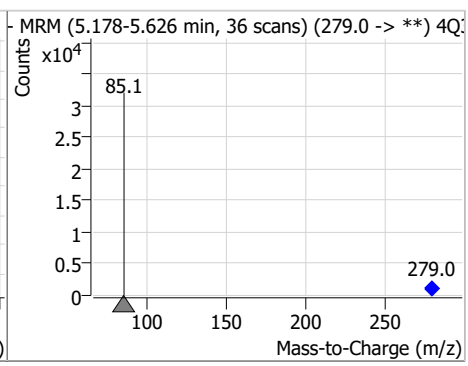




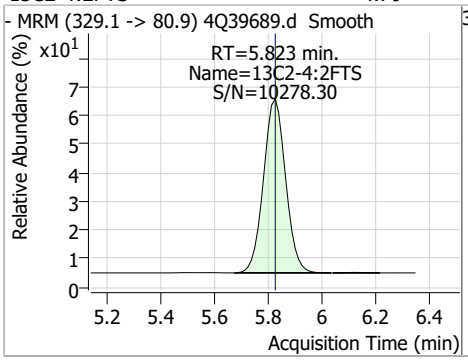
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.56	5.33	0.00	873955				

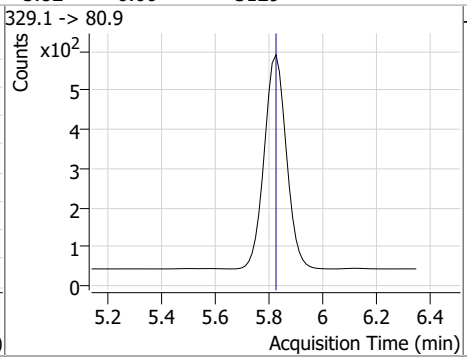


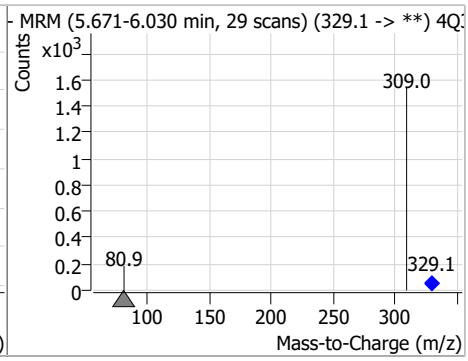




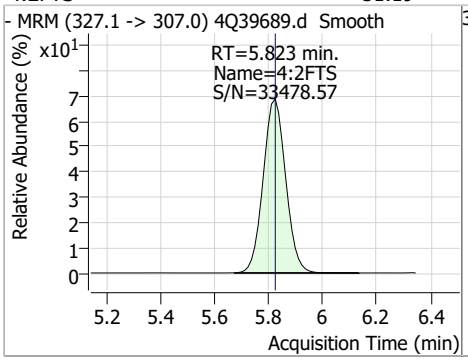
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.79	5.82	0.00	3129				

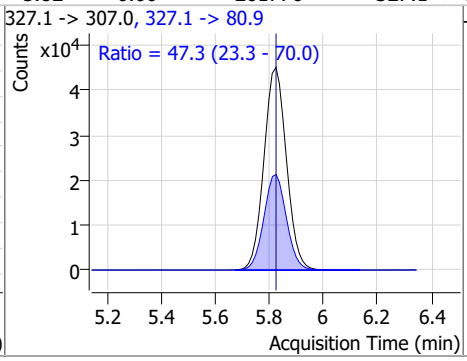


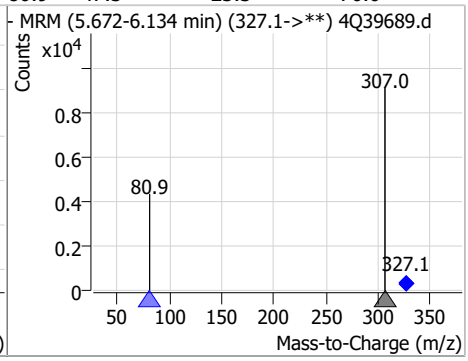




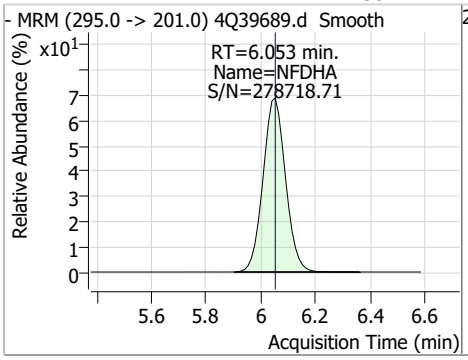
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	51.19	5.82	0.00	261770	327.1 -> 80.9	47.3	23.3	70.0

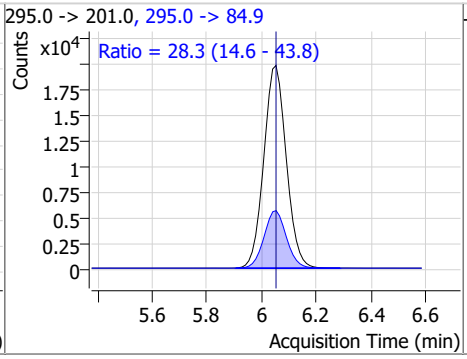


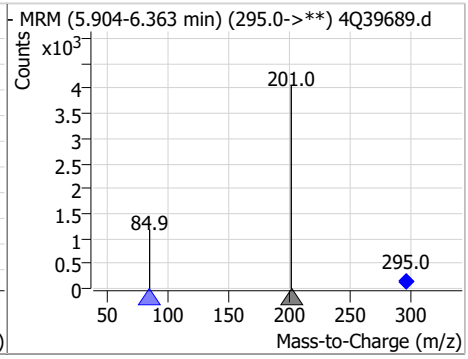




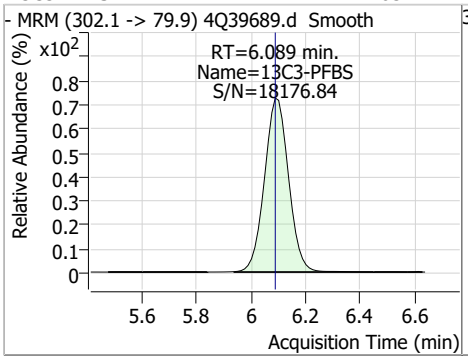
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	30.77	6.05	0.00	113717	295.0 -> 84.9	28.3	14.6	43.8

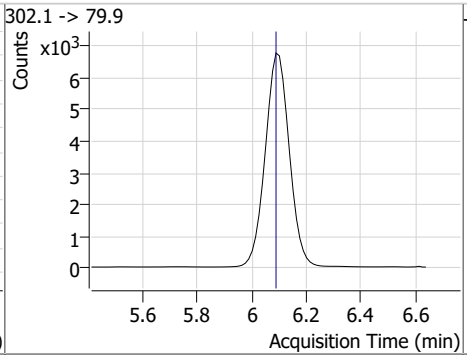


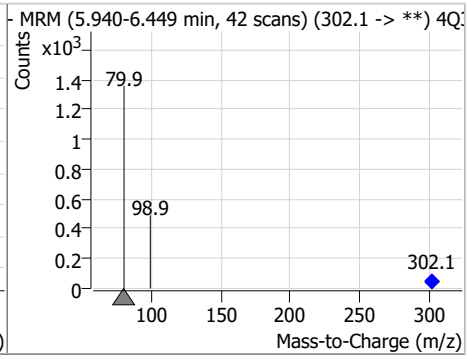




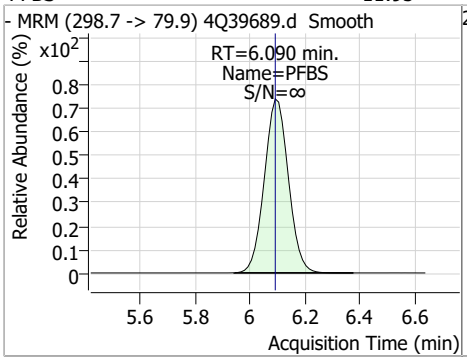
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.63	6.09	0.00	41207				

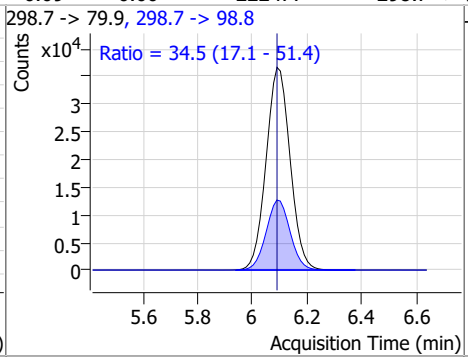


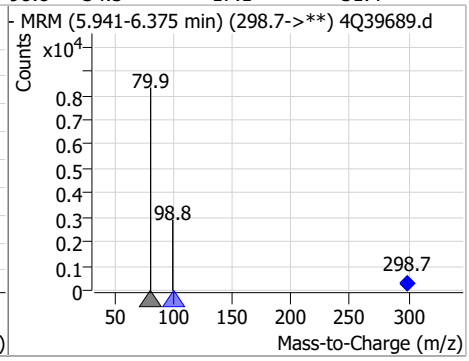




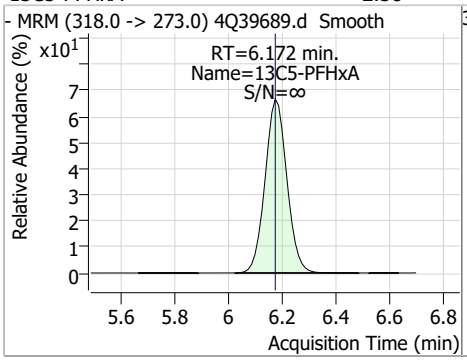
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.95	6.09	0.00	222477	298.7 -> 98.8	34.5	17.1	51.4

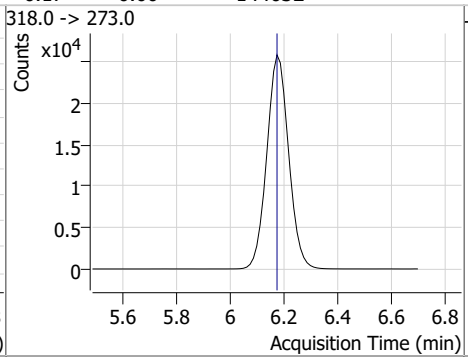


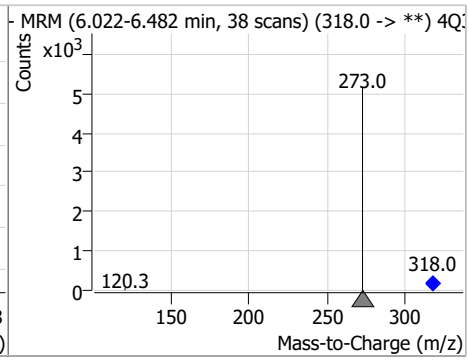




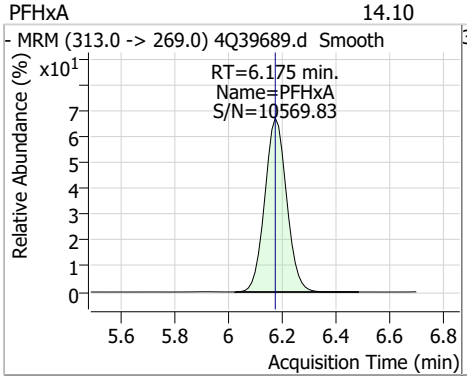
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	6.17	0.00	144632				

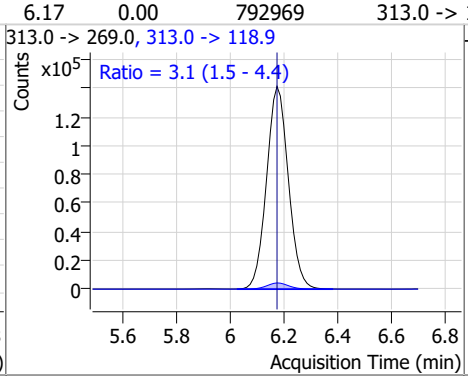


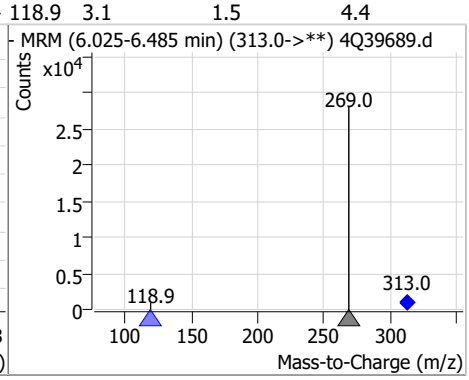




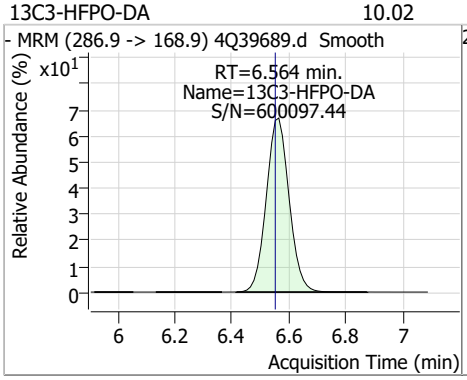
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	14.10	6.17	0.00	792969	313.0 -> 118.9	3.1	1.5	4.4

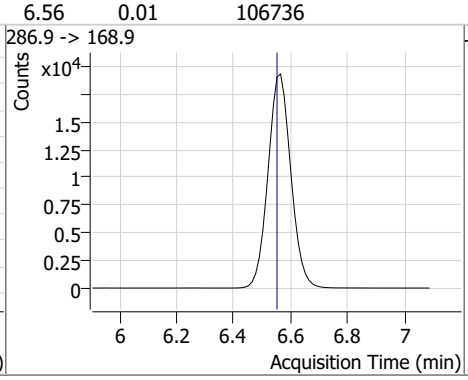


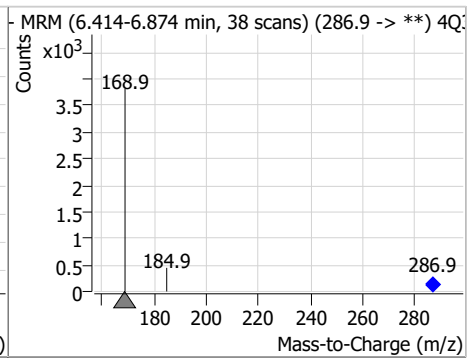




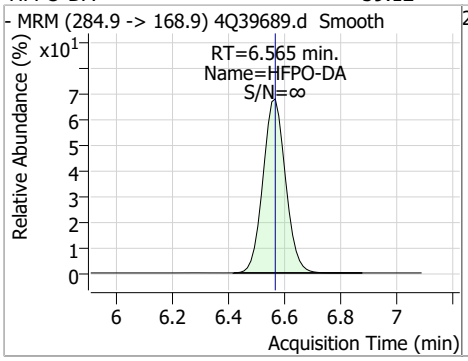
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.02	6.56	0.01	106736				

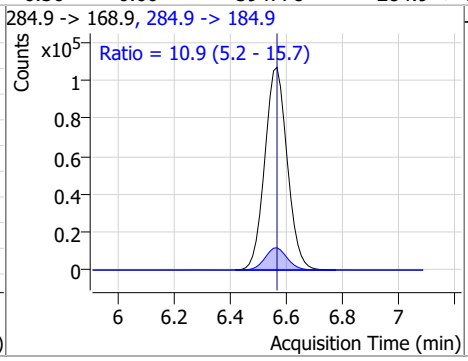


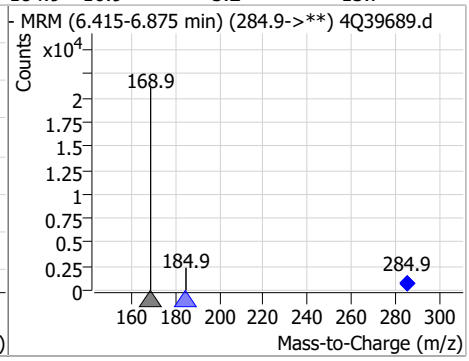




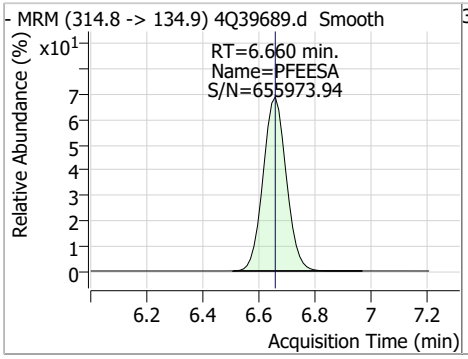
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	59.12	6.56	0.00	594778	284.9 -> 184.9	10.9	5.2	15.7

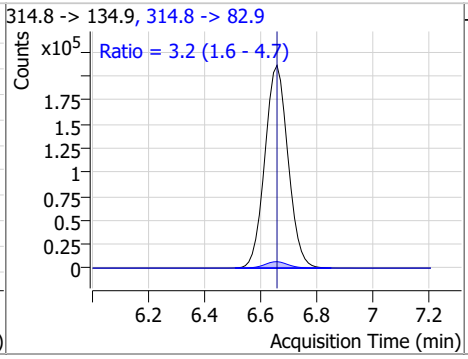


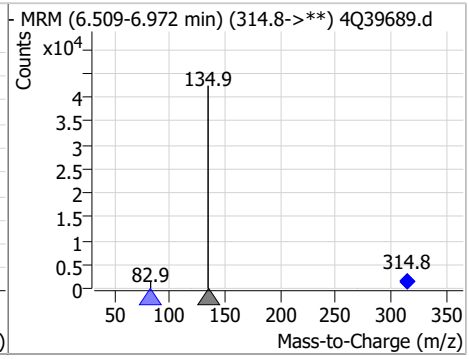




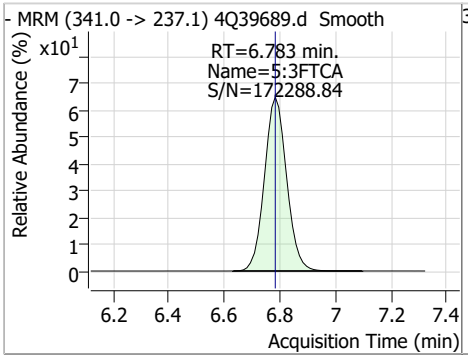
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	25.31	6.66	0.00	1216861	314.8 -> 82.9	3.2	1.6	4.7

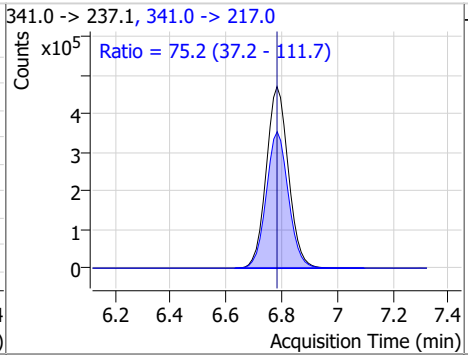


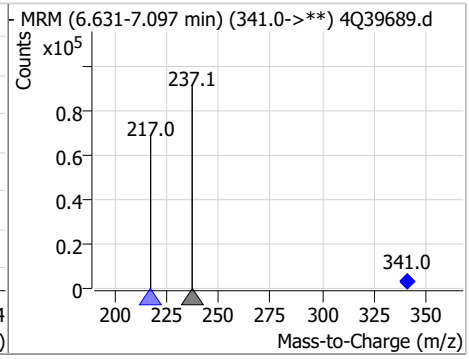




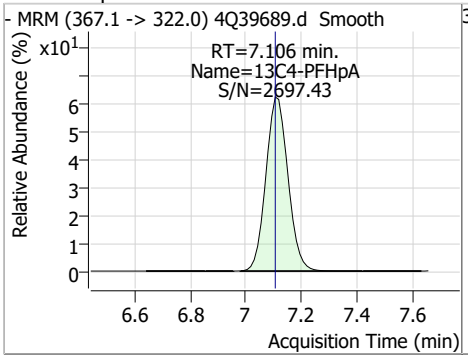
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	346.62	6.78	0.00	2592860	341.0 -> 217.0	75.2	37.2	111.7

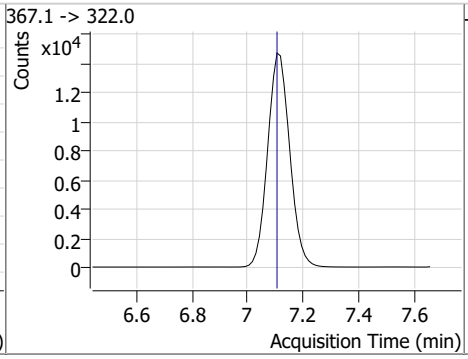


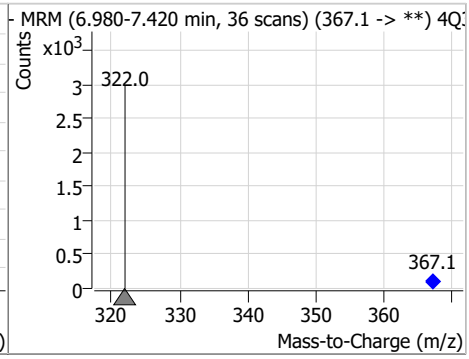




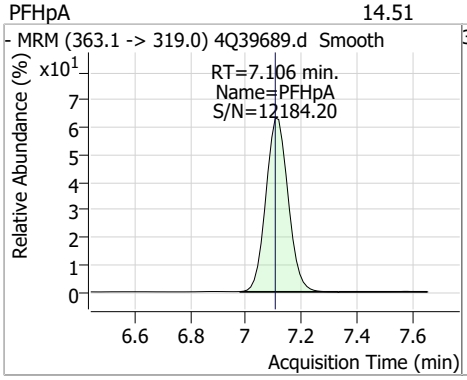
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	7.11	0.00	80772				

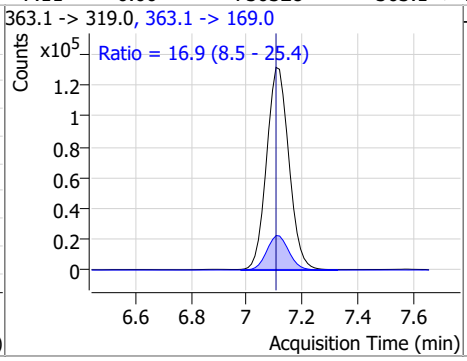


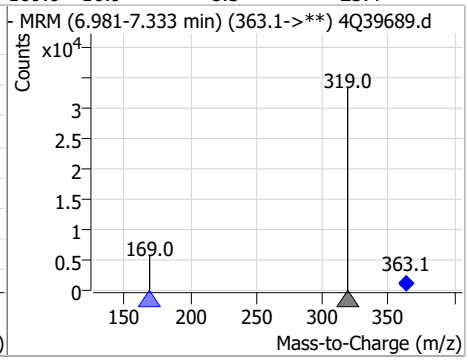




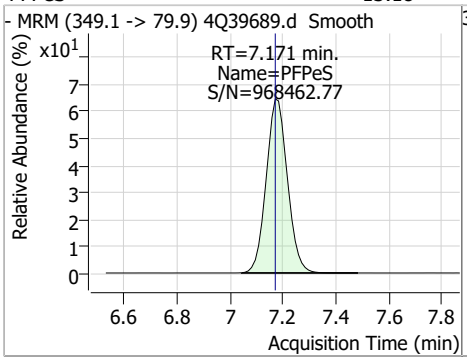
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.51	7.11	0.00	730328	363.1 -> 169.0	16.9	8.5	25.4

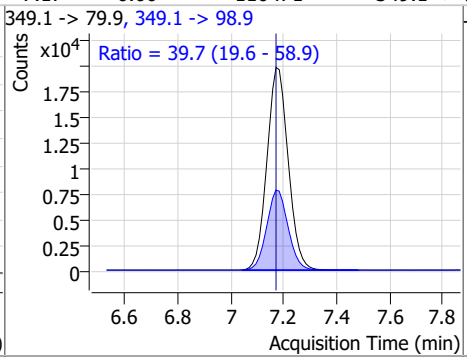


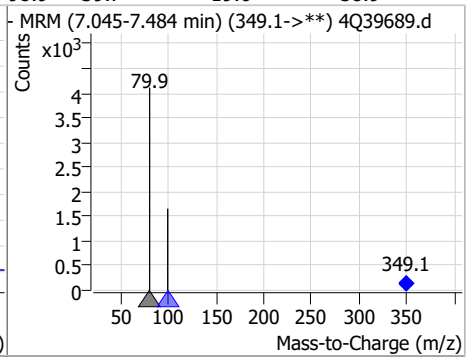




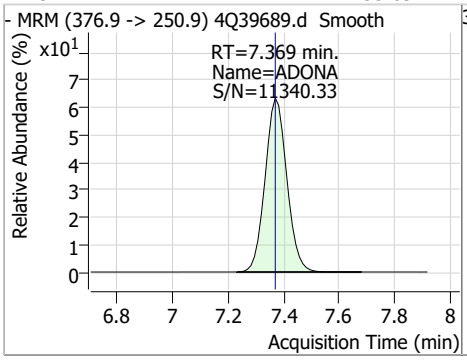
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	13.18	7.17	0.00	110471	349.1 -> 98.9	39.7	19.6	58.9

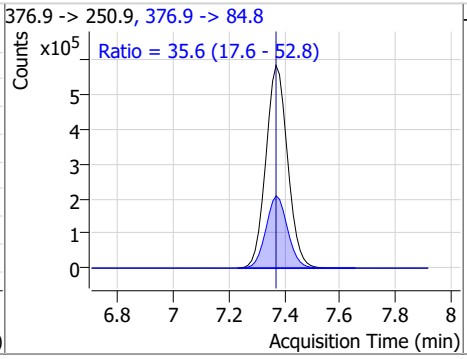


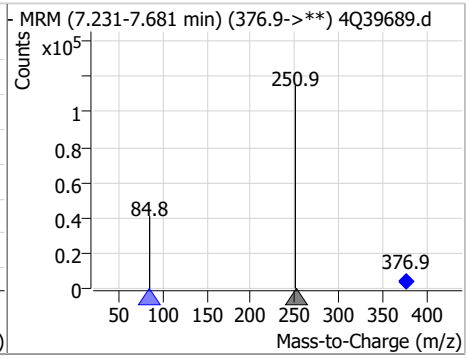




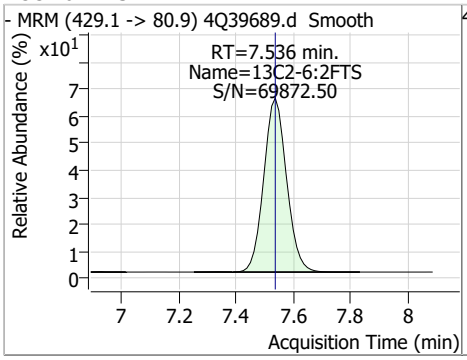
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	55.09	7.37	0.00	3171915	376.9 -> 84.8	35.6	17.6	52.8

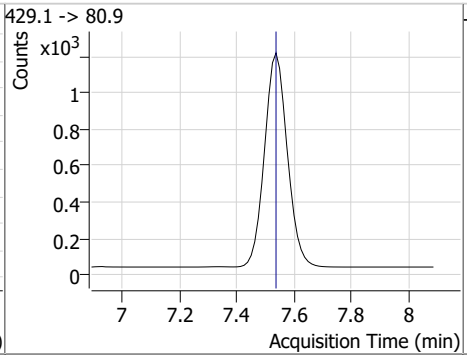


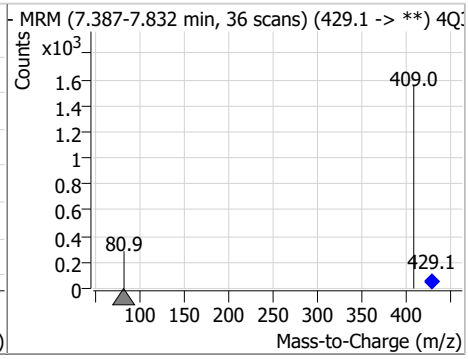




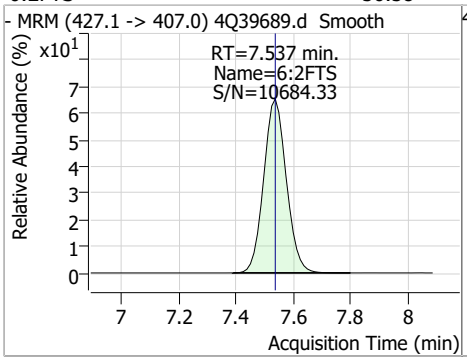
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.44	7.54	0.00	6495				

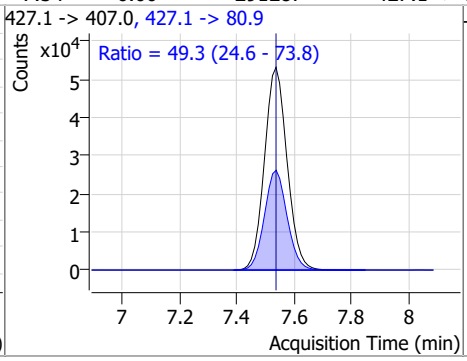


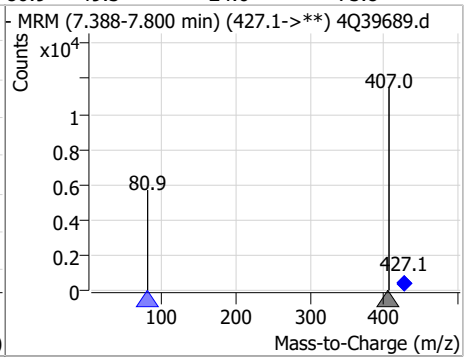




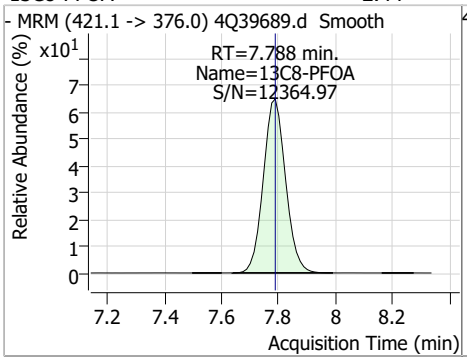
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	56.58	7.54	0.00	291287	427.1 -> 80.9	49.3	24.6	73.8

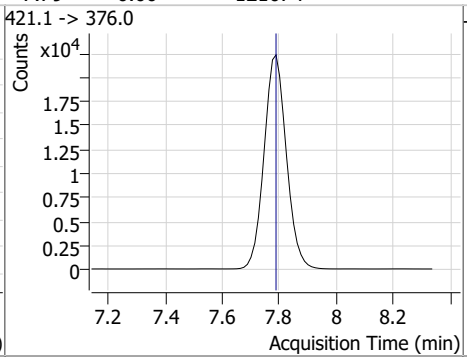


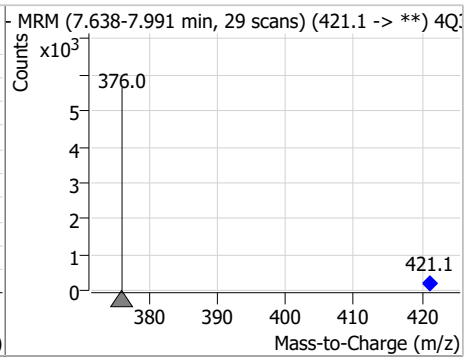




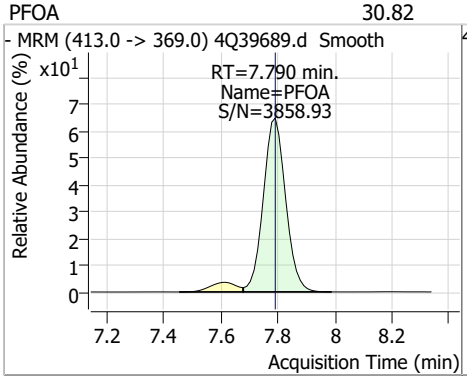
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.79	0.00	121074				

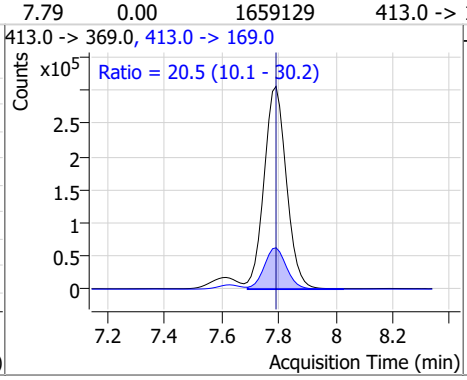


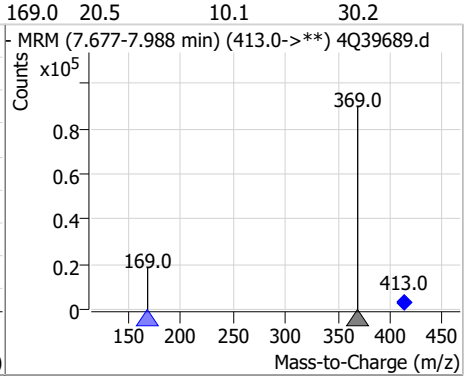




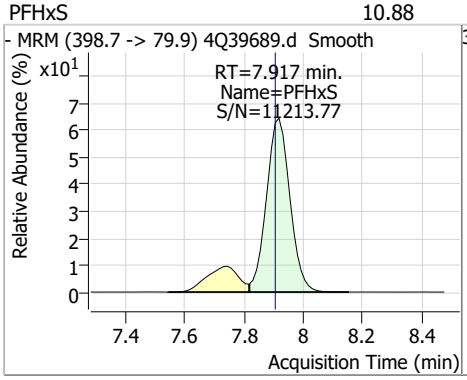
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	30.82	7.79	0.00	1659129	413.0 -> 169.0	20.5	10.1	30.2

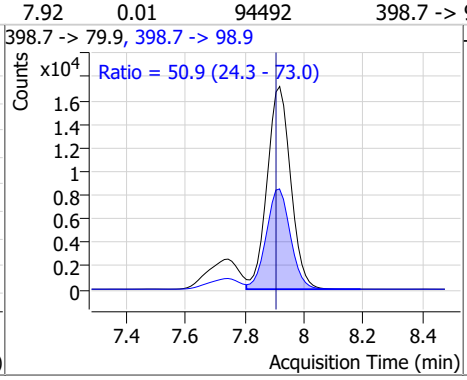


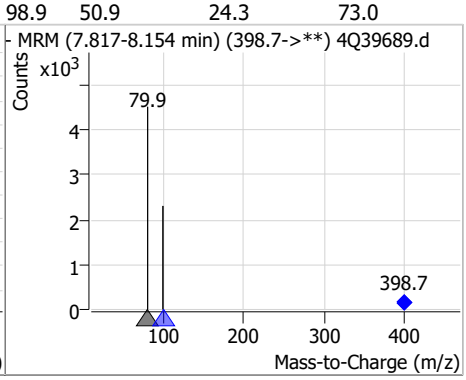




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.88	7.92	0.01	94492	398.7 -> 98.9	50.9	24.3	73.0

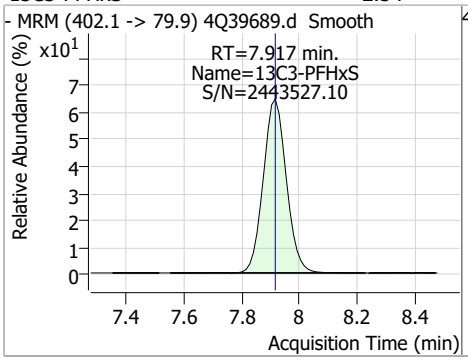


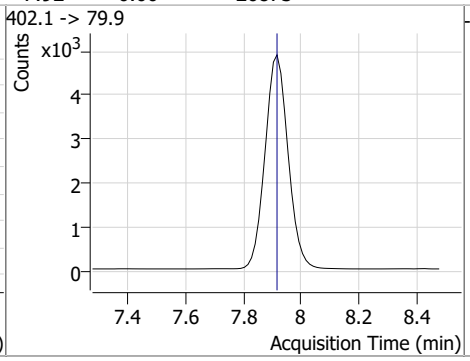


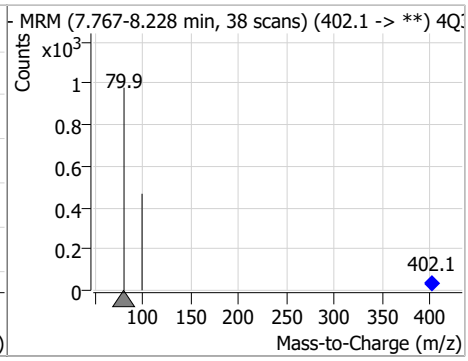


Perfluorinated Compounds by LC/MS/MS

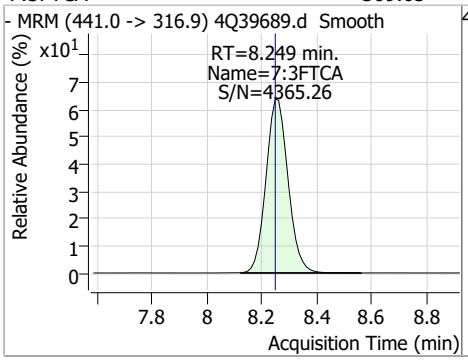
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.54	7.92	0.00	26873				

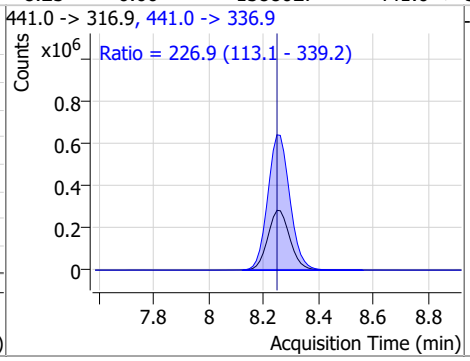


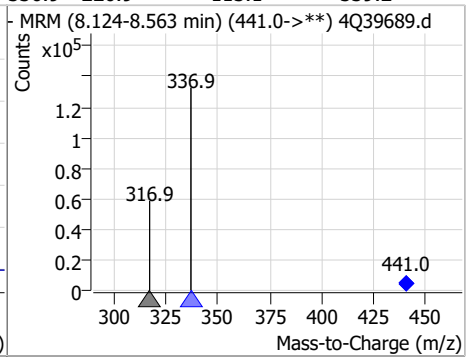




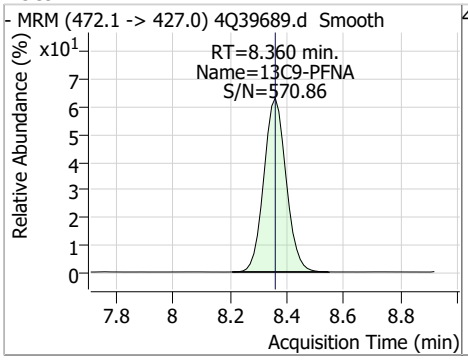
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	369.65	8.25	0.00	1588027	441.0 -> 336.9	226.9	113.1	339.2

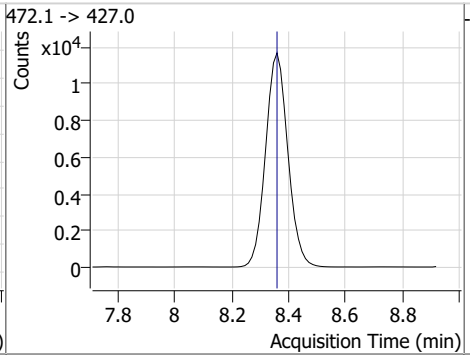


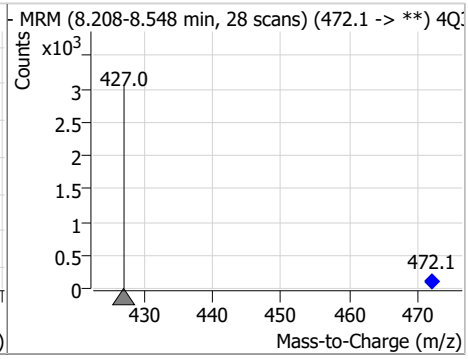




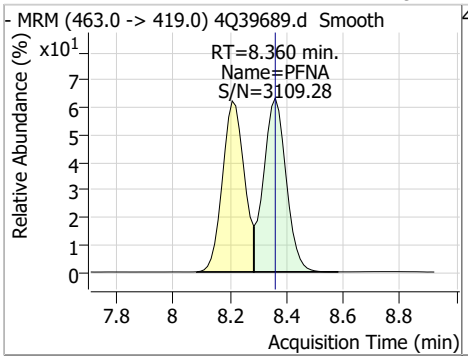
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	8.36	0.00	63288				

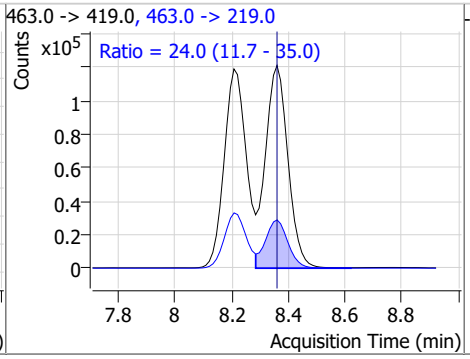


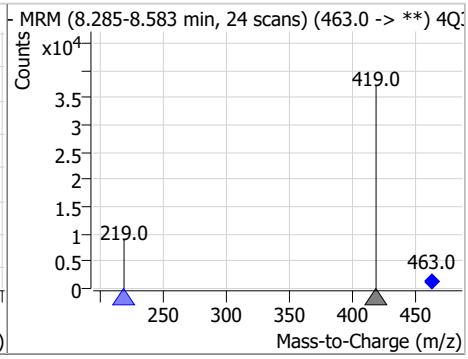




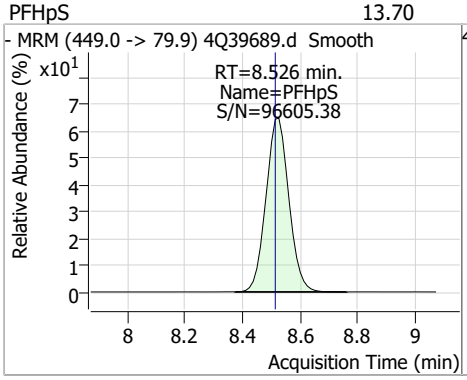
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	14.49	8.36	0.00	666769	463.0 -> 219.0	24.0	11.7	35.0

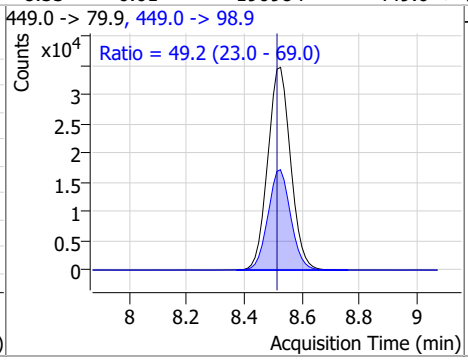


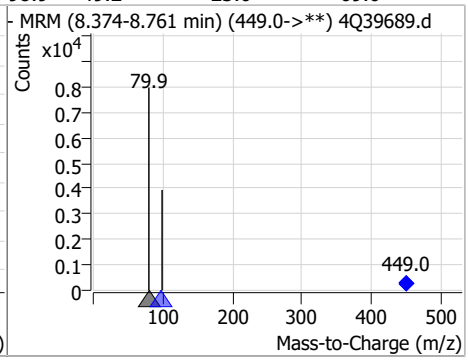




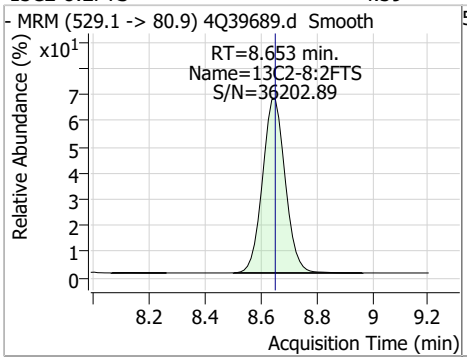
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.70	8.53	0.01	190984	449.0 -> 98.9	49.2	23.0	69.0

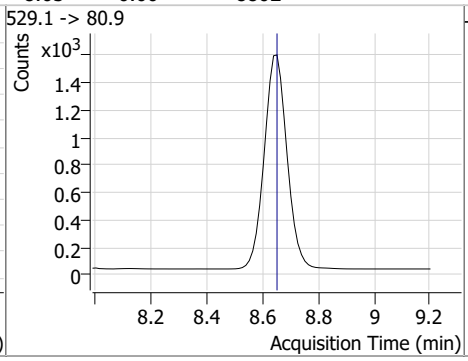


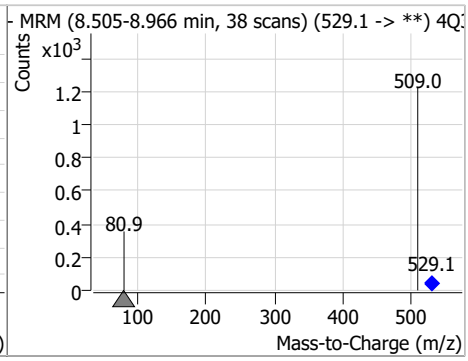




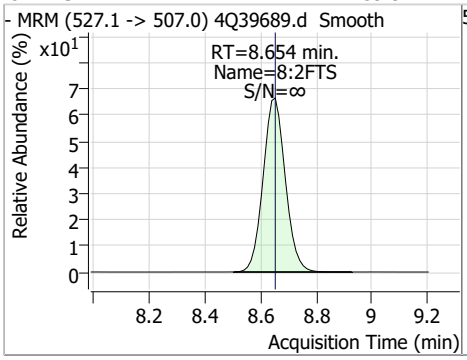
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.39	8.65	0.00	8802				

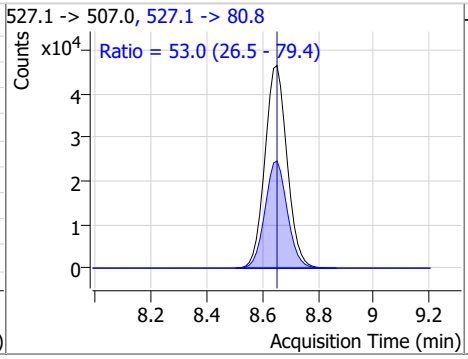


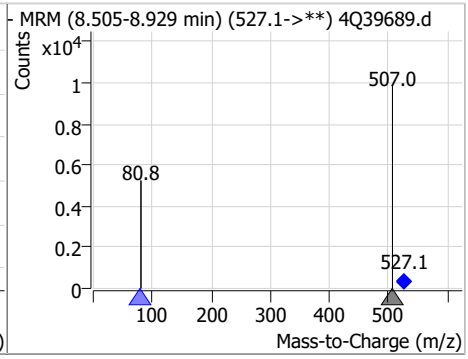




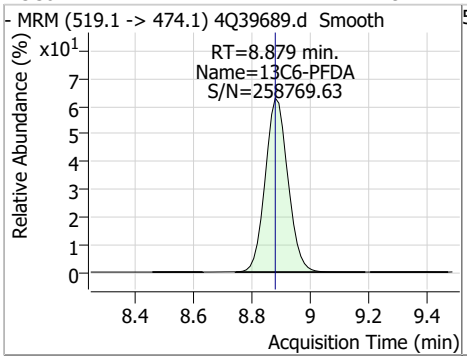
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	59.94	8.65	0.00	255208	527.1 -> 80.8	53.0	26.5	79.4

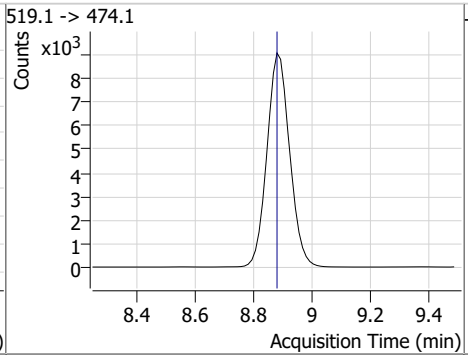


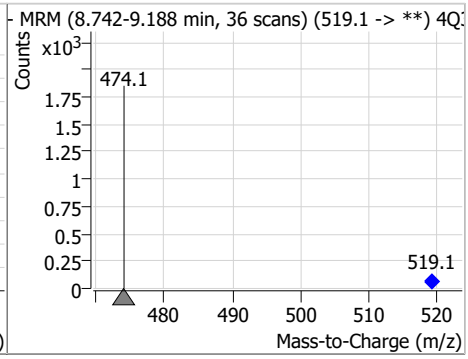




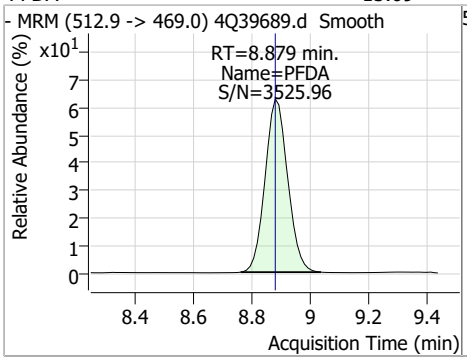
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.19	8.88	0.00	48765				

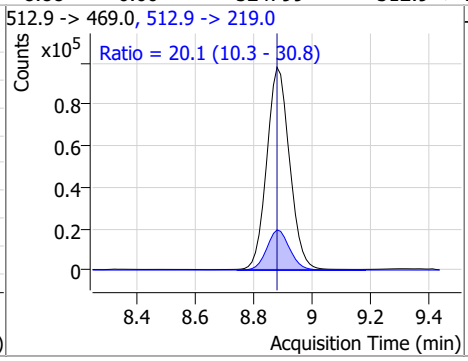


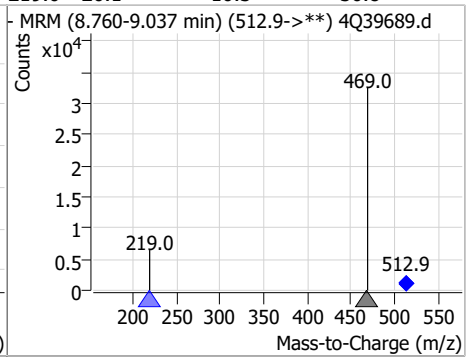




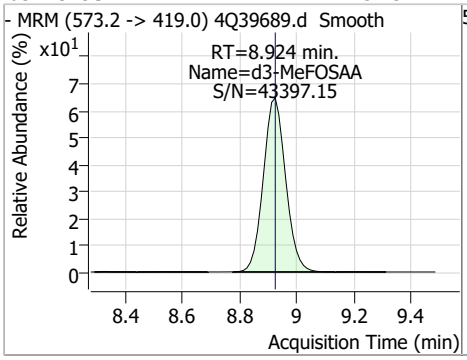
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	15.09	8.88	0.00	524799	512.9 -> 219.0	20.1	10.3	30.8

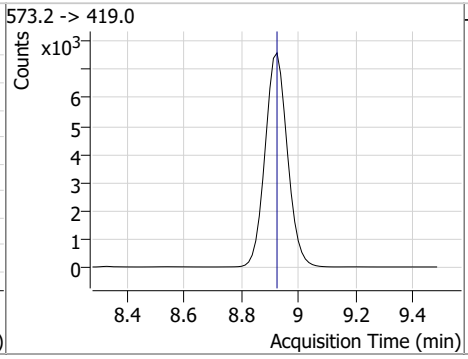


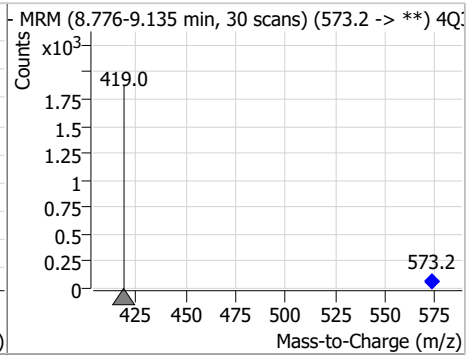




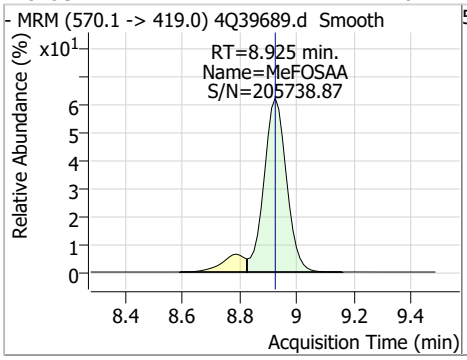
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.43	8.92	0.00	40816				

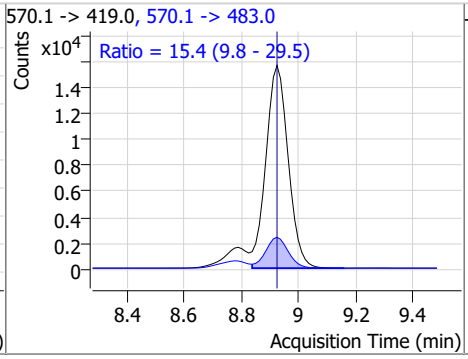


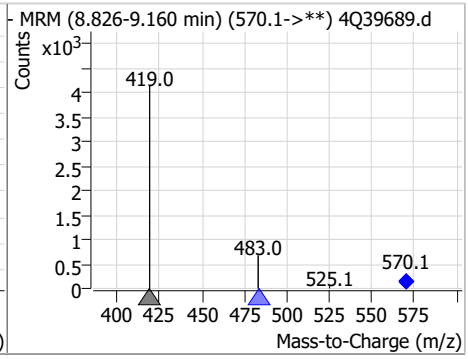




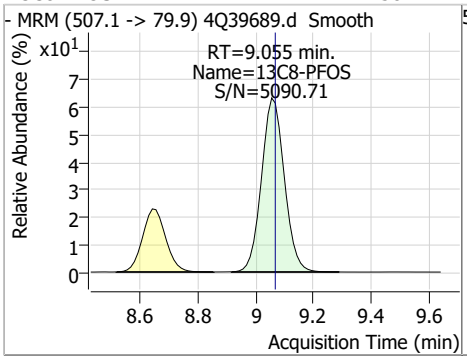
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.18	8.92	0.00	85781	570.1 -> 483.0	15.4	9.8	29.5

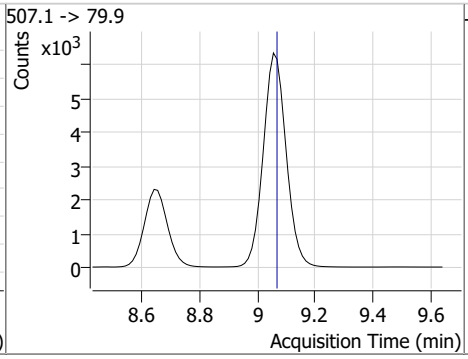


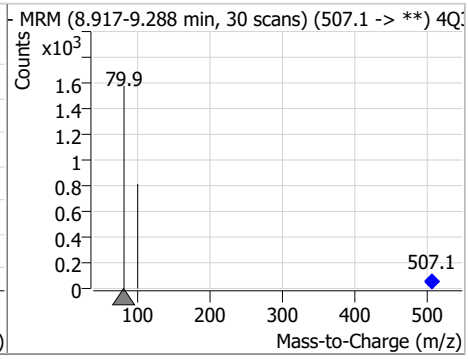




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	9.06	-0.01	34477				

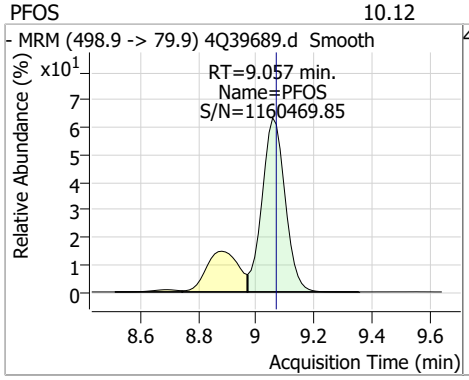


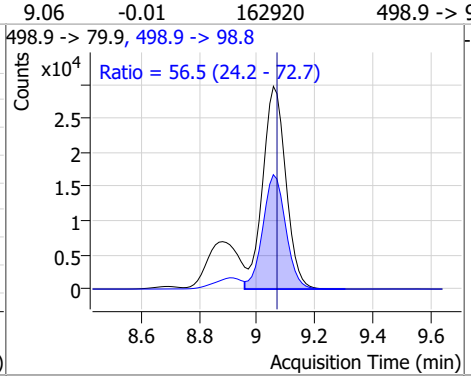


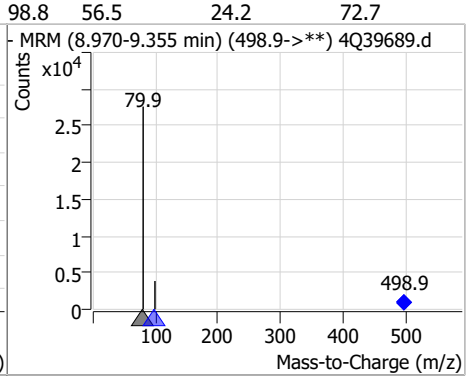


Perfluorinated Compounds by LC/MS/MS

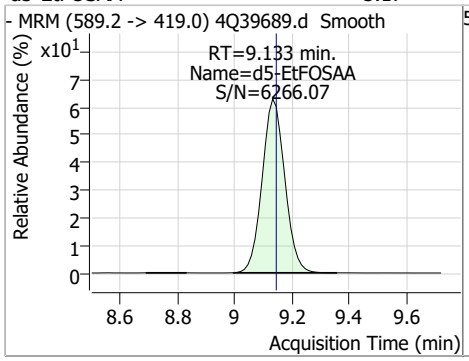
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.12	9.06	-0.01	162920	498.9 -> 98.8	56.5	24.2	72.7

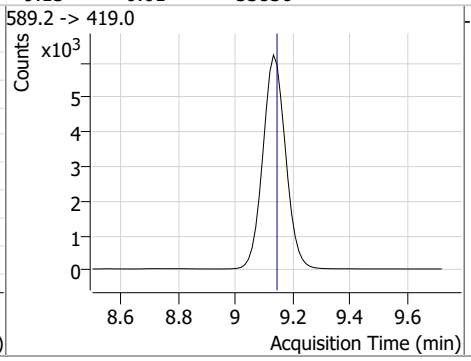


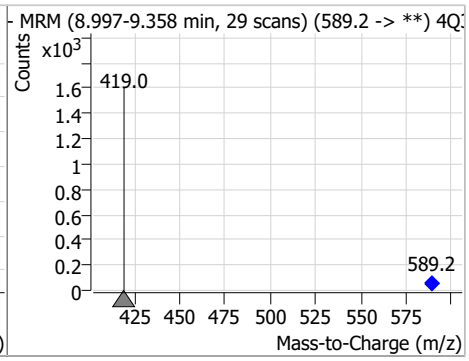




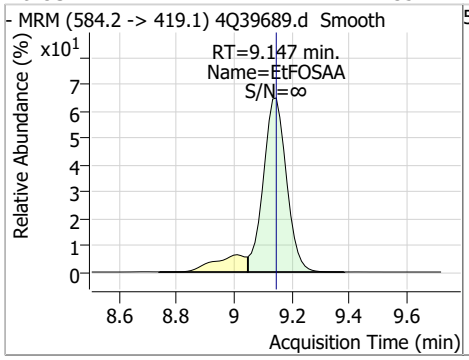
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.17	9.13	-0.01	33836				

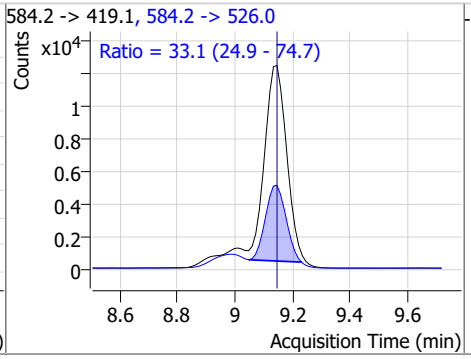


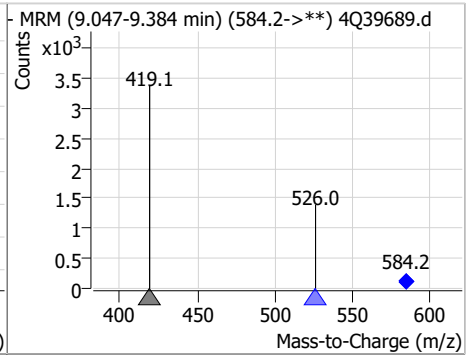




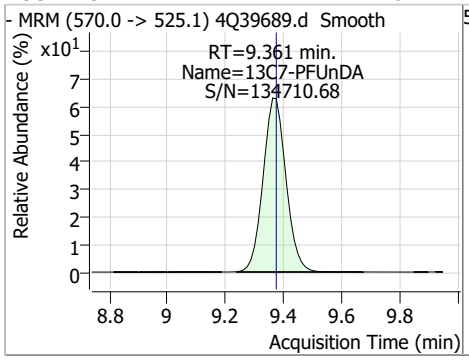
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.35	9.15	0.00	69963	584.2 -> 526.0	33.1	24.9	74.7

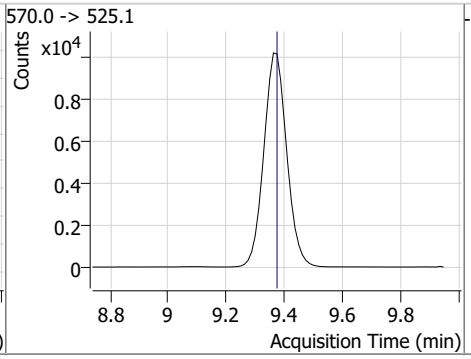


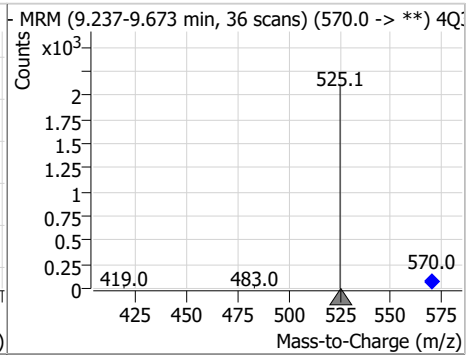




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	9.36	-0.01	55283				

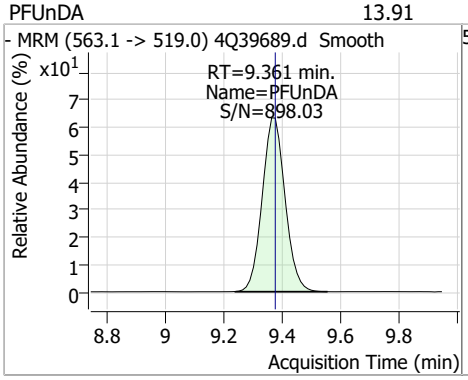


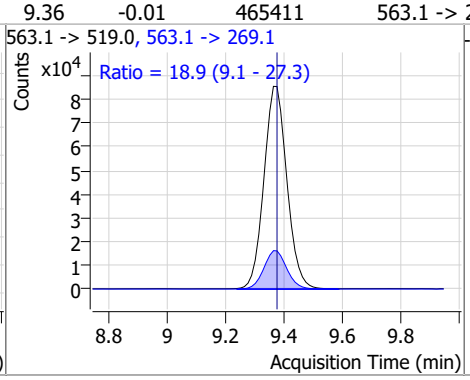


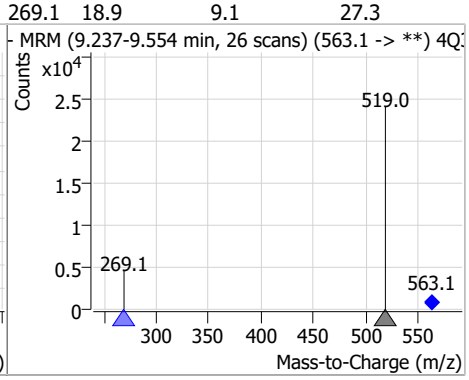


Perfluorinated Compounds by LC/MS/MS

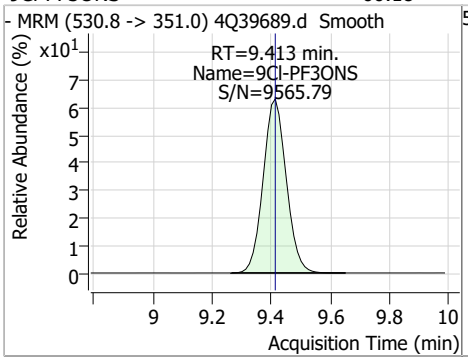
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.91	9.36	-0.01	465411	563.1 -> 269.1	18.9	9.1	27.3

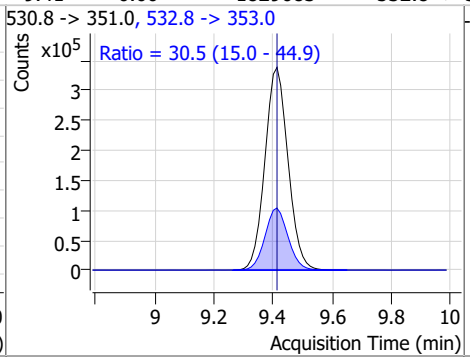


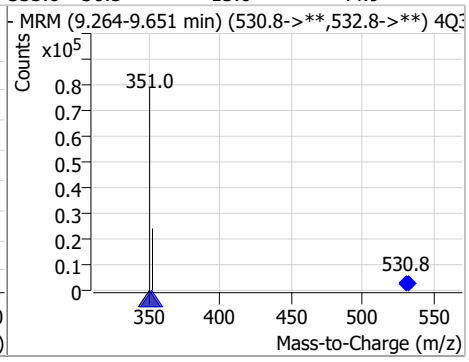




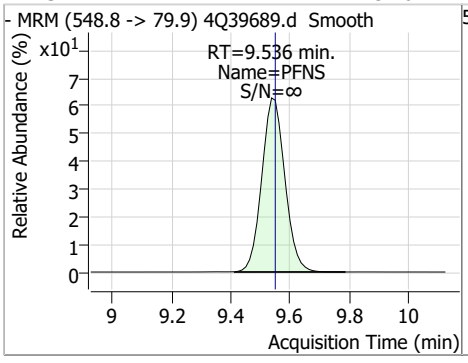
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	60.18	9.41	0.00	1829683	532.8 -> 353.0	30.5	15.0	44.9

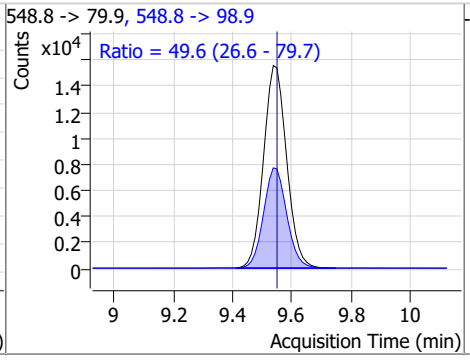


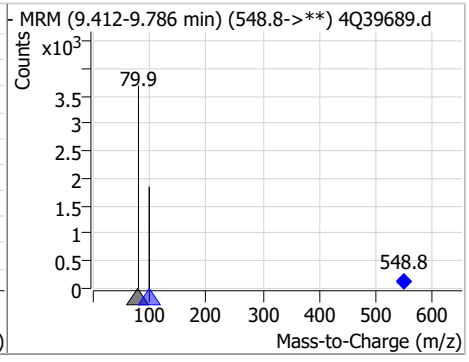




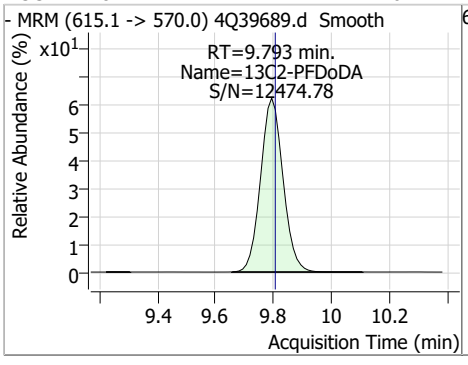
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.70	9.54	-0.01	84063	548.8 -> 98.9	49.6	26.6	79.7

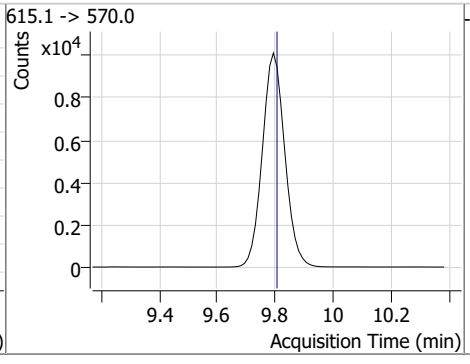


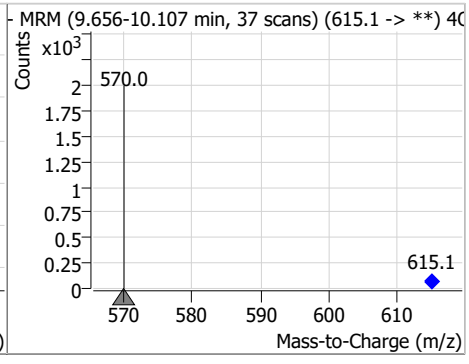




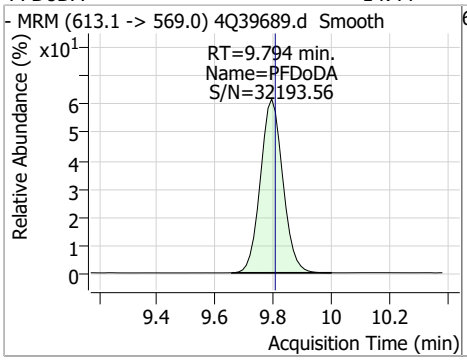
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.79	-0.01	53949				

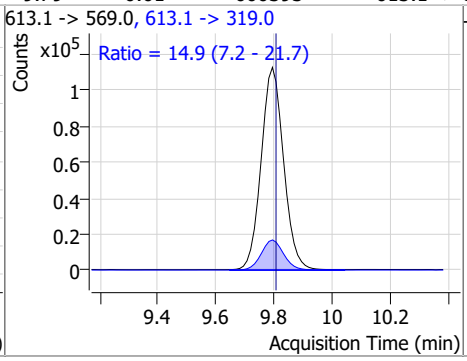


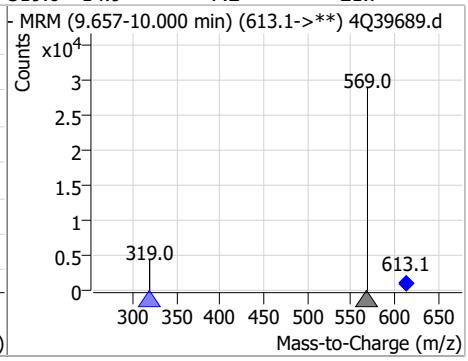




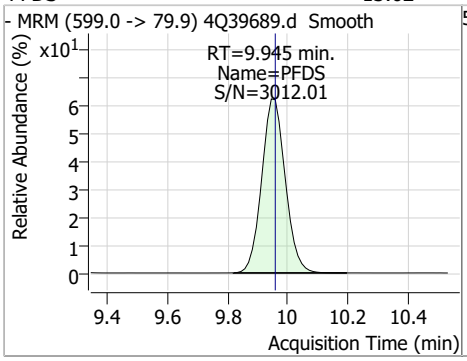
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	14.44	9.79	-0.01	600393	613.1 -> 319.0	14.9	7.2	21.7

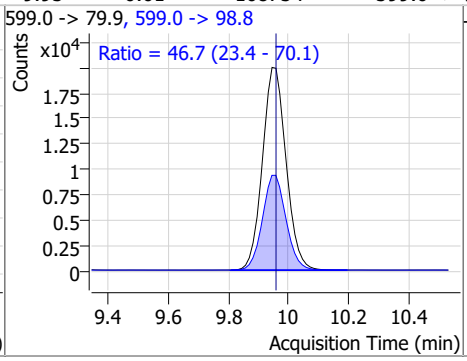


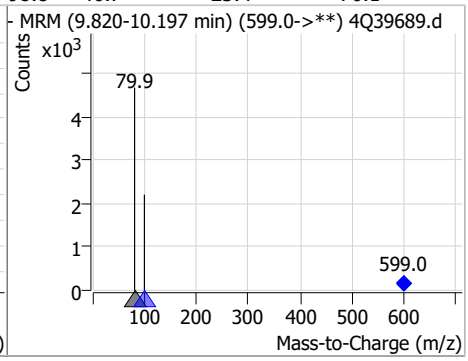




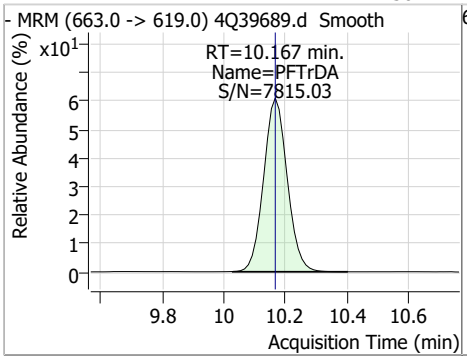
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	13.62	9.95	-0.01	108754	599.0 -> 98.8	46.7	23.4	70.1

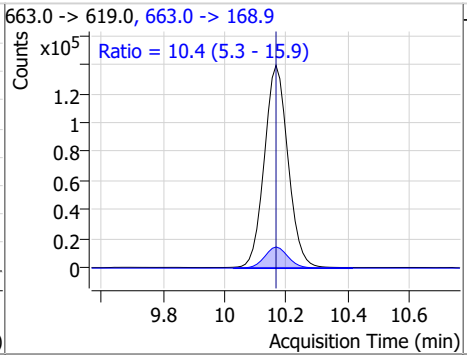


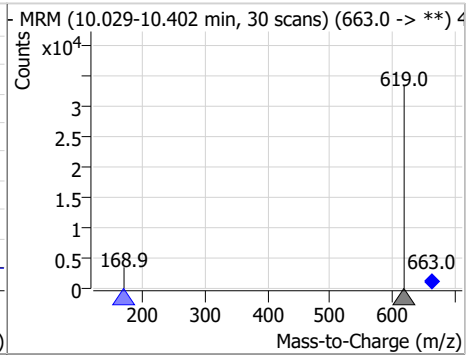




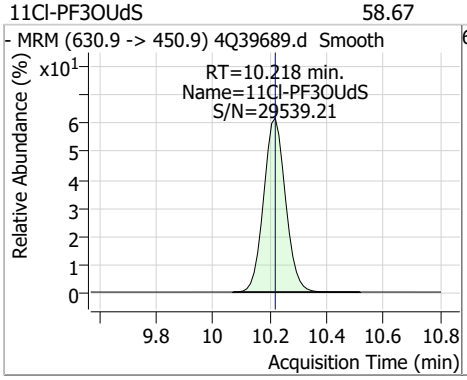
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	14.50	10.17	0.00	738279	663.0 -> 168.9	10.4	5.3	15.9

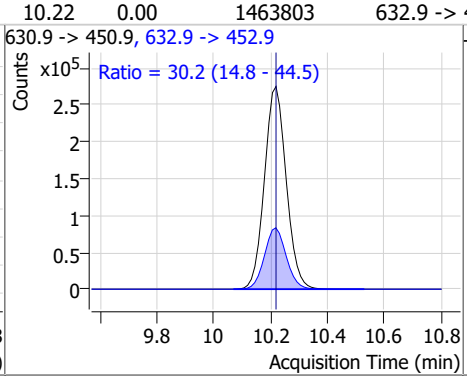


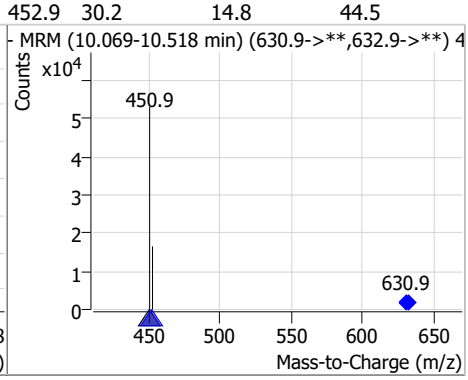




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	58.67	10.22	0.00	1463803	632.9 -> 452.9	30.2	14.8	44.5

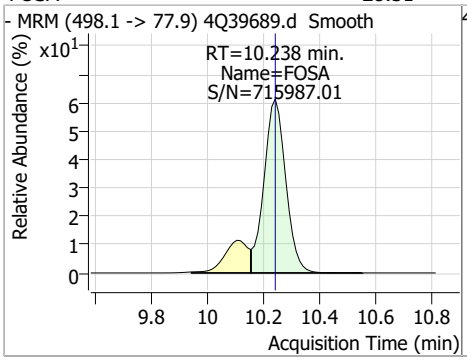


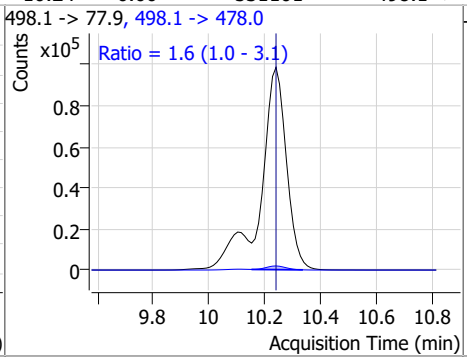


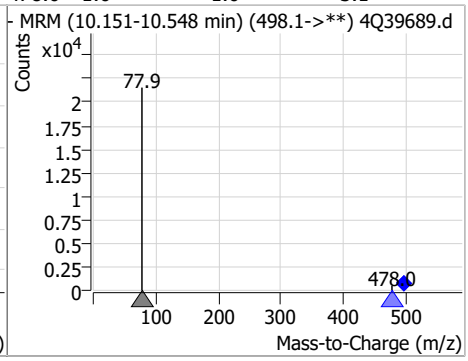


Perfluorinated Compounds by LC/MS/MS

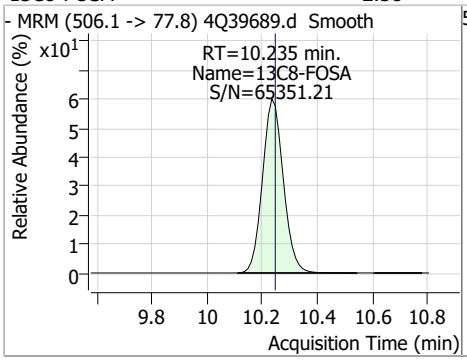
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	28.51	10.24	0.00	531101	498.1 -> 478.0	1.6	1.0	3.1

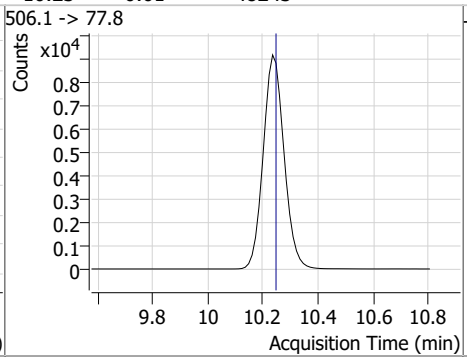


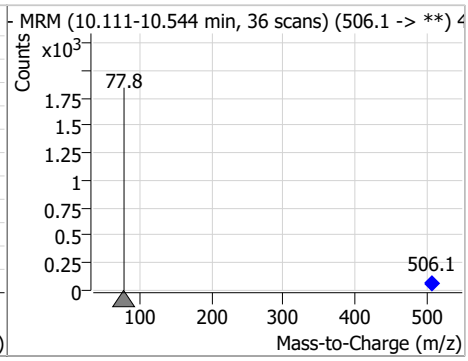




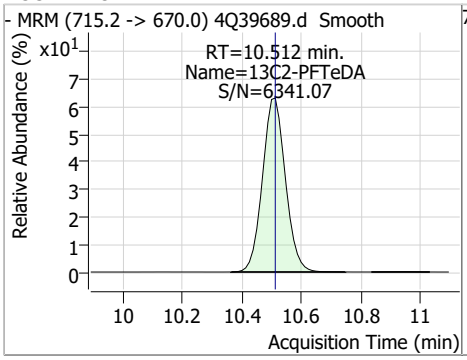
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.58	10.23	-0.01	48243				

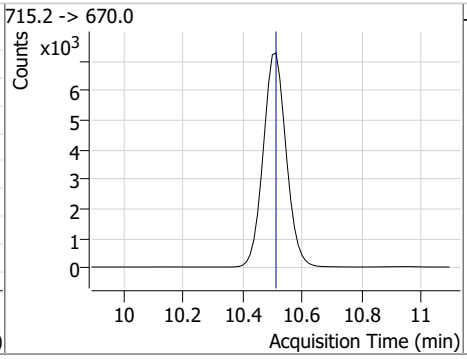


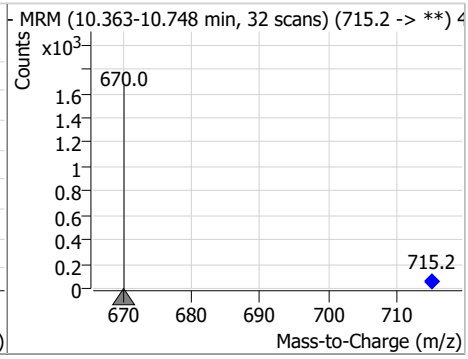




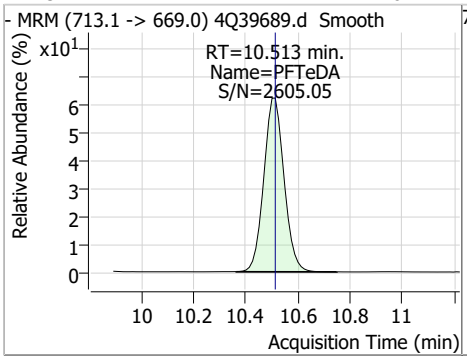
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	10.51	0.00	38702				

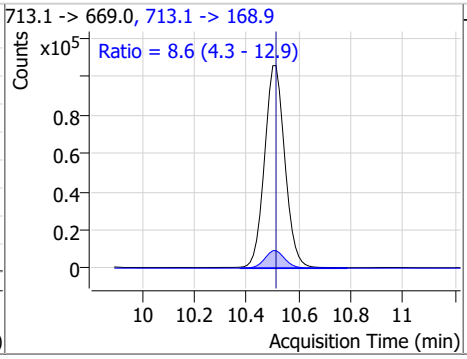


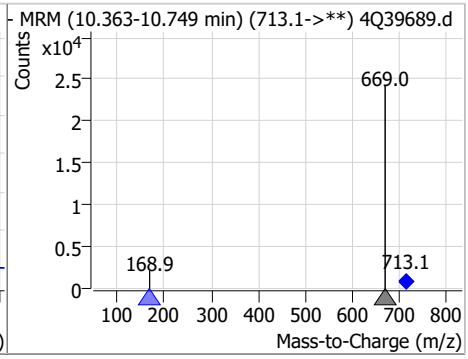




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	14.67	10.51	0.00	571289	713.1 -> 168.9	8.6	4.3	12.9

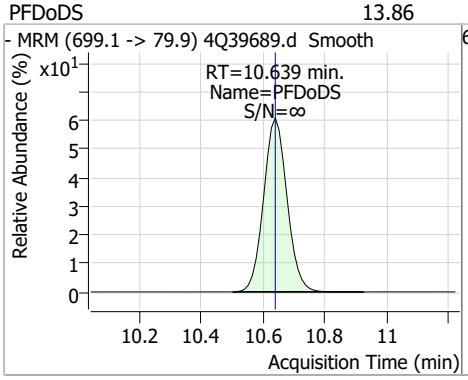


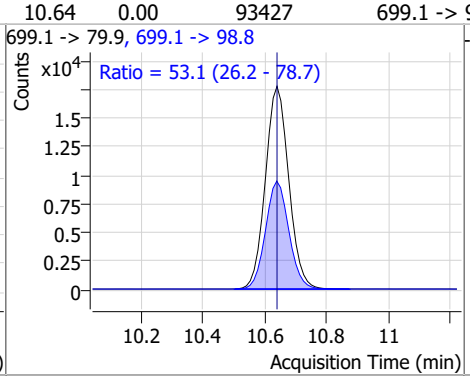


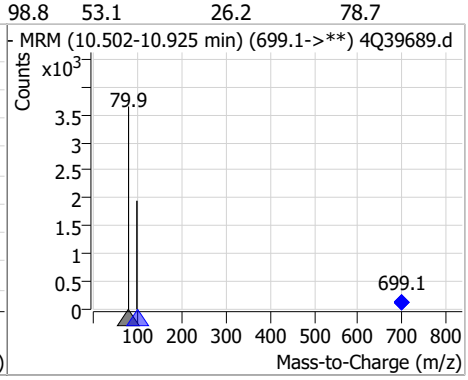


Perfluorinated Compounds by LC/MS/MS

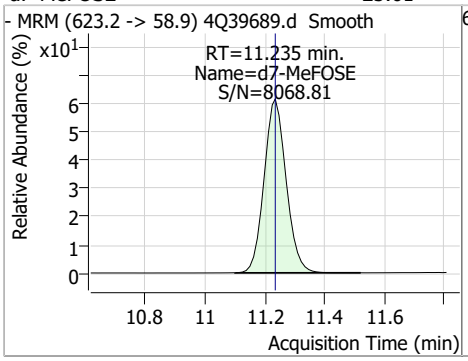
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	13.86	10.64	0.00	93427	699.1 -> 98.8	53.1	26.2	78.7

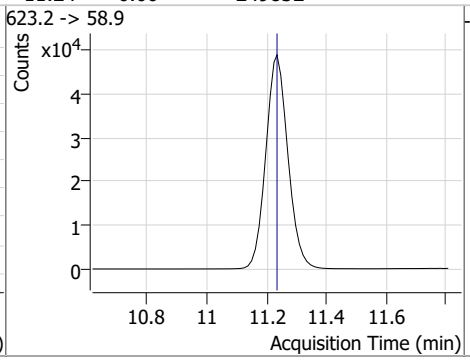


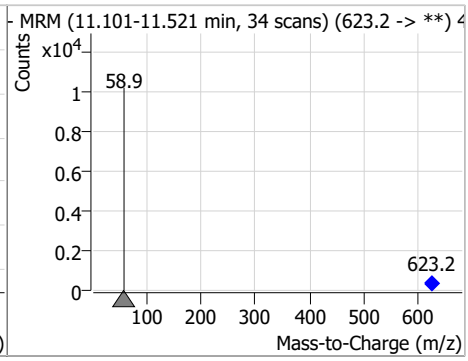




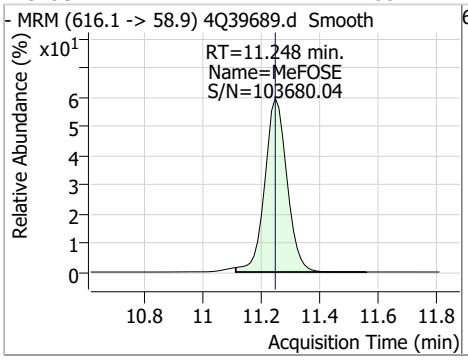
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.61	11.24	0.00	249832				

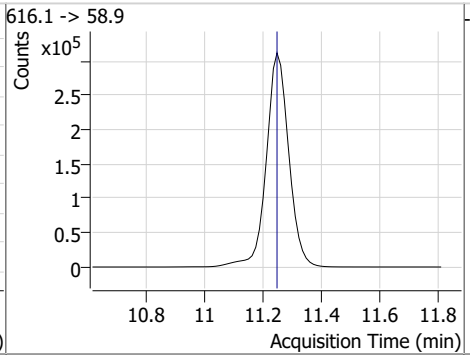


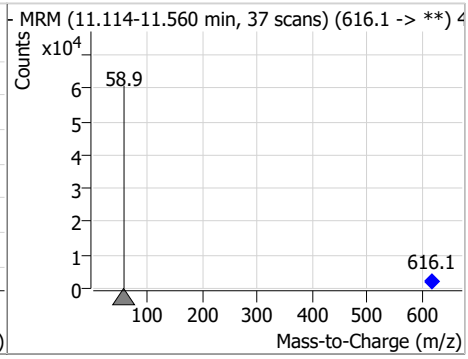




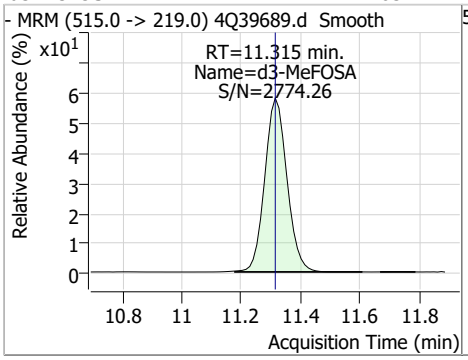
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	155.24	11.25	0.00	1638561				

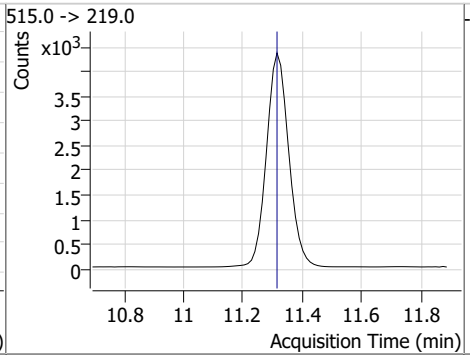


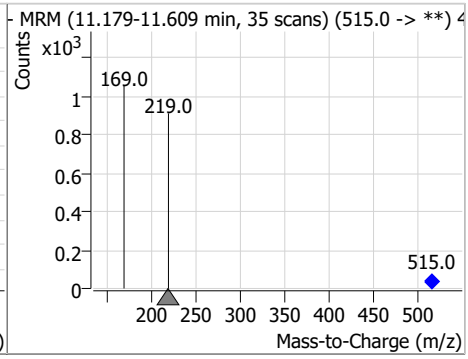




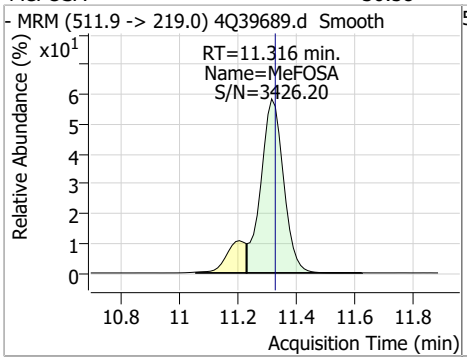
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.63	11.31	0.00	22534				

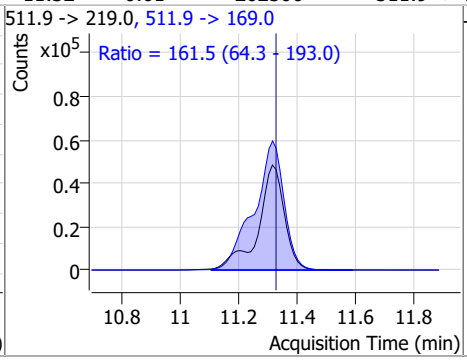


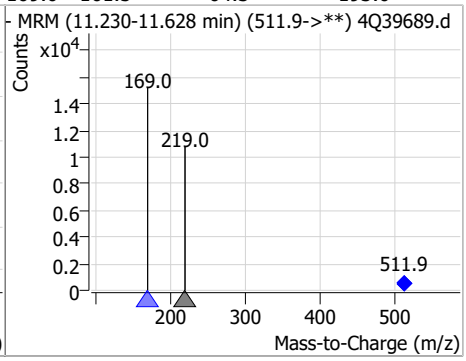




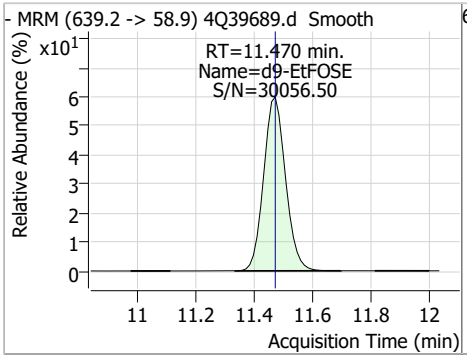
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	30.58	11.32	-0.01	262506	511.9 -> 169.0	161.5	64.3	193.0

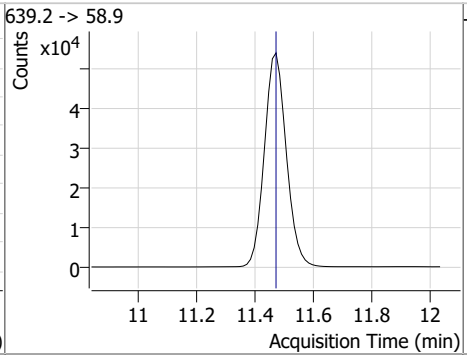


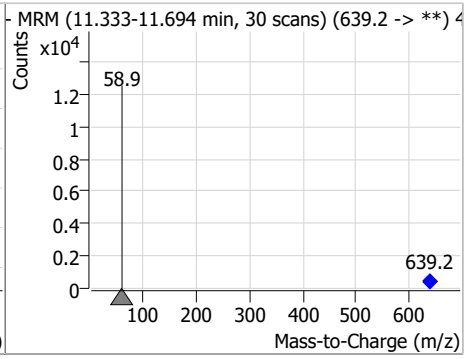




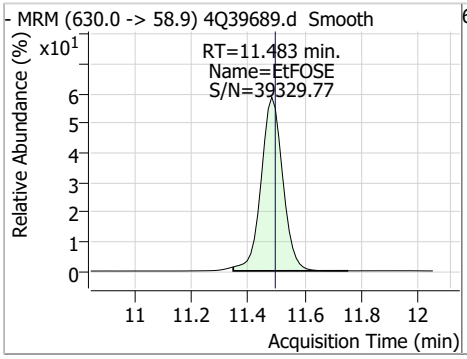
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.94	11.47	0.00	278617				

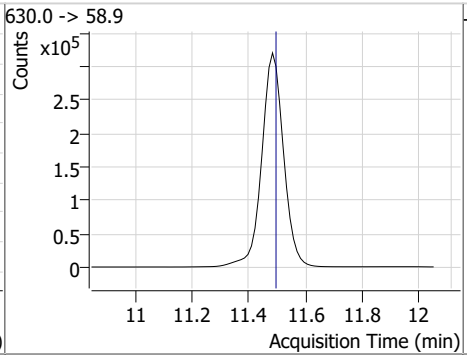


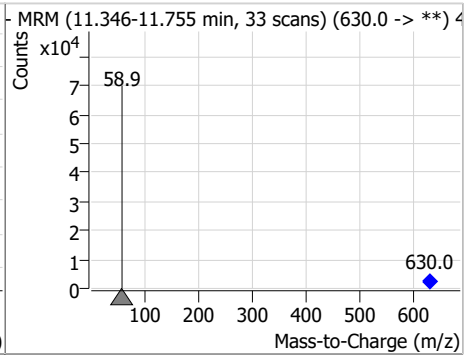




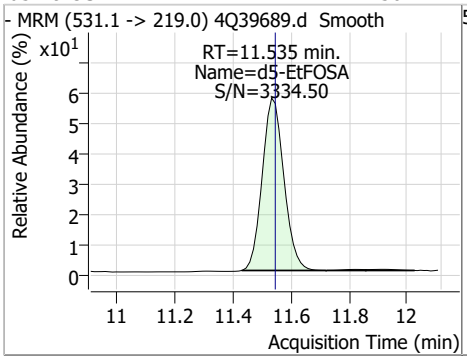
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	158.15	11.48	-0.01	1710898				

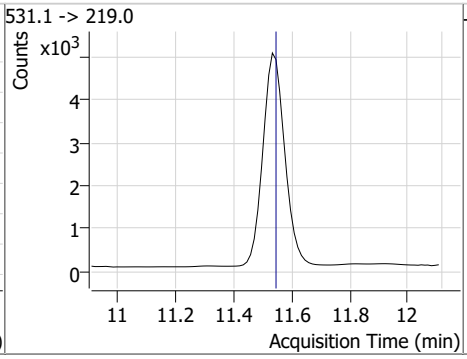


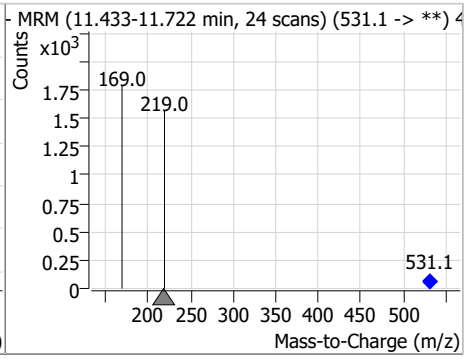




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	11.54	-0.01	25509				

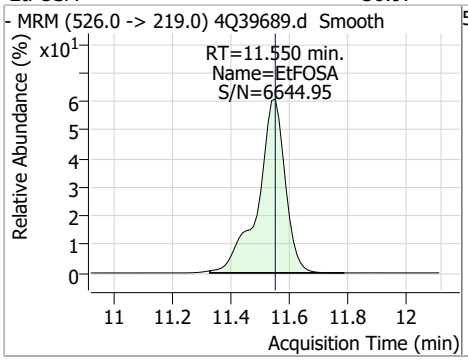


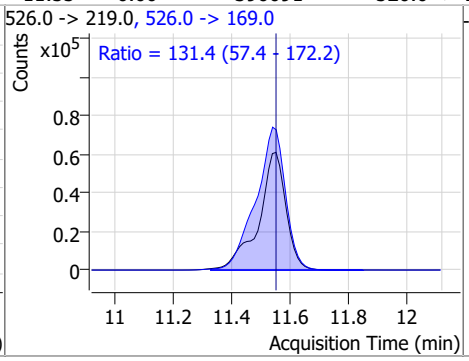


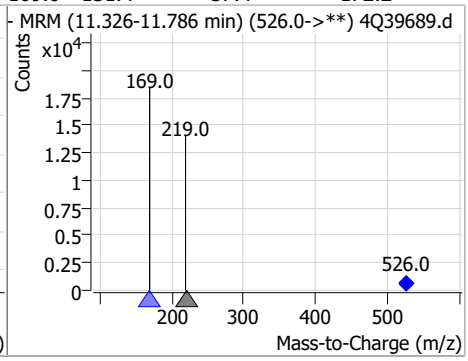


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	36.97	11.55	0.00	396091	526.0 -> 169.0	131.4	57.4	172.2







7.5.2

7

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

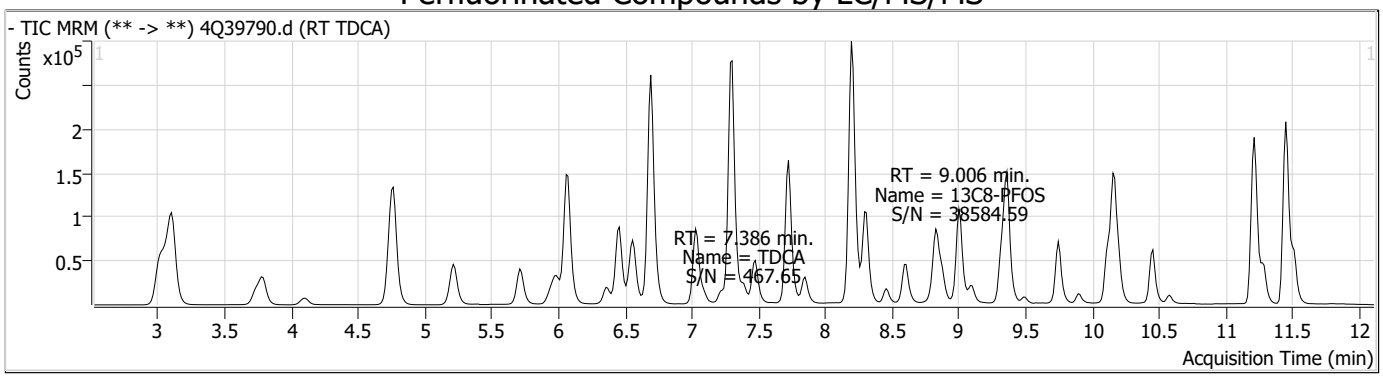
Data File : 4Q39790.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 12:58:59 PM
Sample Name : RT TDCA
Vial : P1-B1
DA Method File : TDCA.quantmethod.xml
Batch Name : s4q572_TDCA.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	9.006	507.1 -> 79.9	58519	2.50	µg/L		-0.073
13C4-PFOS	9.007	502.8 -> 79.9	57240	2.50	µg/L		-0.073
System Monitoring Compounds							
13C8-PFOS	9.006	507.1 -> 79.9	58519	2.59	µg/L		-0.073
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%			
Target Compounds							QValue
PFOS	9.007	498.9 -> 79.9	56827	2.84	µg/L	m	94
		498.9 -> 98.8	26958				
TCDCA	7.211	498.9 -> 79.9	16334	6.05	ng/ml		100
TDCA	7.386	498.9 -> 79.9	20202	8.26	ng/ml		100
TUDCA	6.355	498.9 -> 79.9	24260	4.68	ng/ml		100

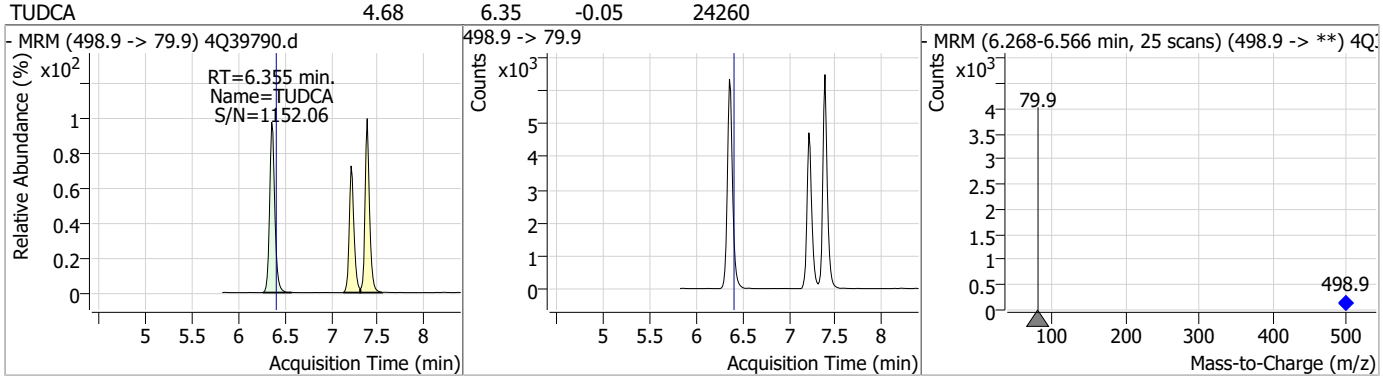
 # = Qualifier out of range, m = manually integrated, + = Area summed

7.5.3
7

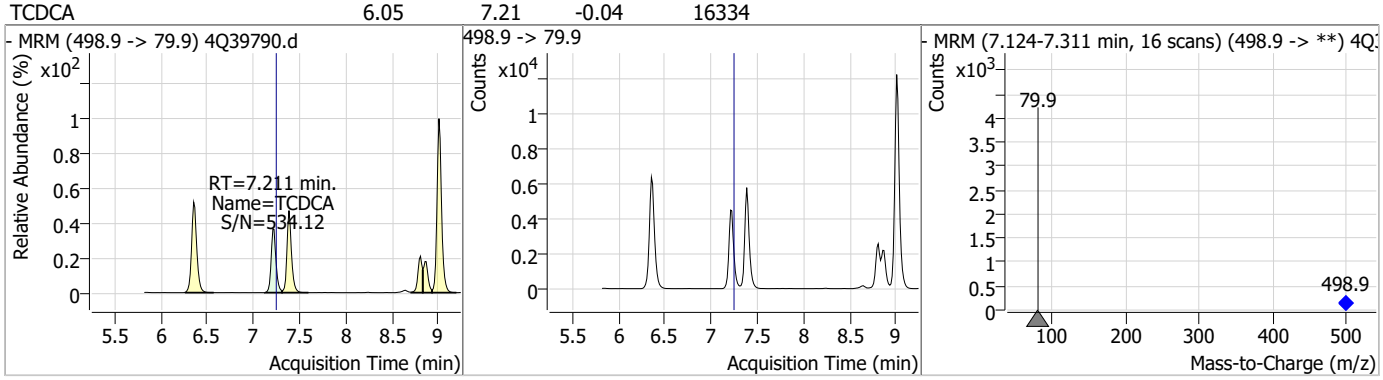
Perfluorinated Compounds by LC/MS/MS



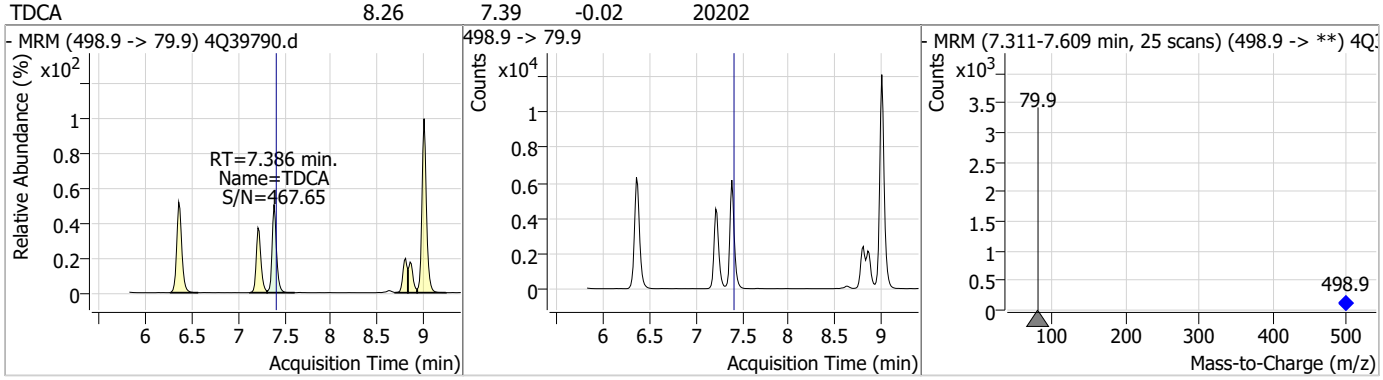
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	4.68	6.35	-0.05	24260				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	6.05	7.21	-0.04	16334				

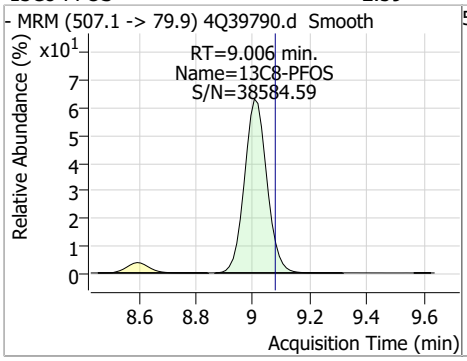


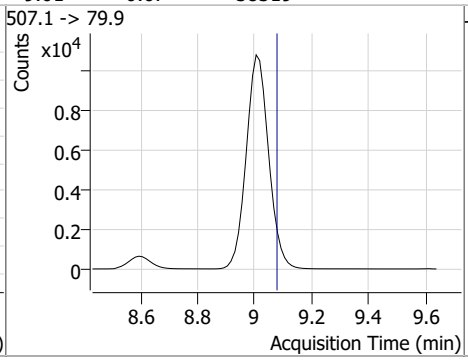
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	8.26	7.39	-0.02	20202				

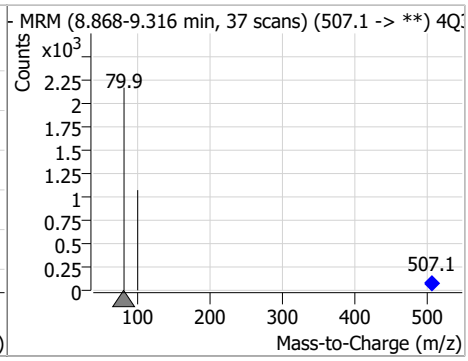


Perfluorinated Compounds by LC/MS/MS

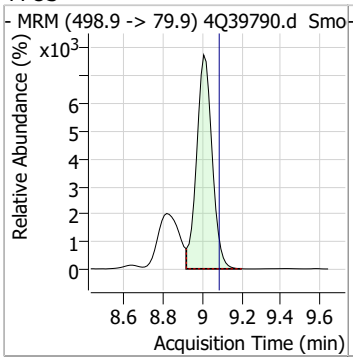
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.59	9.01	-0.07	58519				

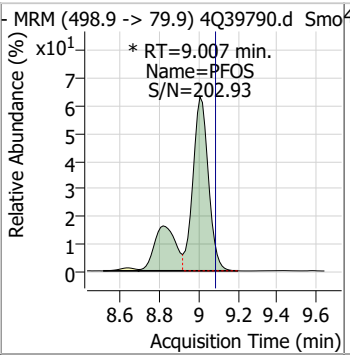


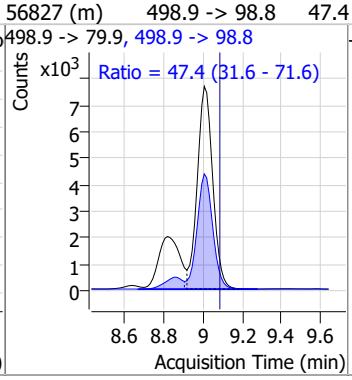


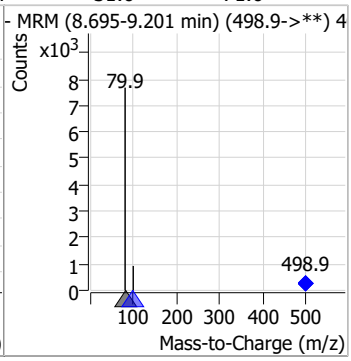


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.84	9.01	-0.07	56827 (m)	498.9 -> 98.8	47.4	31.6	71.6









Manual Integration Approval Summary

Sample Number:	S4Q572-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q39790.D	**Analyst approved:**	01/27/23 10:21 Natasha Gumtie
Injection Time:	01/26/23 12:58	**Supervisor approved:**	01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		9.01	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39791.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 1:13:03 PM
Sample Name : RT Br-Ln
Vial : P1-B2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.099	216.8 -> 171.9	333340	10.00	µg/L	0.013
M5-PFPeA	4.763	268.3 -> 223.0	233728	5.00	µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	157548	2.50	µg/L	0.000
M4-PFHpA	7.005	367.1 -> 322.0	87499	2.50	µg/L	-0.025
M8-PFOA	7.688	421.1 -> 376.0	126009	2.50	µg/L	-0.026
M9-PFNA	8.259	472.1 -> 427.0	68071	1.25	µg/L	-0.038
M6-PFDA	8.779	519.1 -> 474.1	53187	1.25	µg/L	-0.050
M7-PFUnDA	9.274	570.0 -> 525.1	57013	1.25	µg/L	-0.037
M2-PFDoDA	9.706	615.1 -> 570.0	59768	1.25	µg/L	-0.025
M2-PFTeDA	10.425	715.2 -> 670.0	46777	1.25	µg/L	-0.012
M8-FOSA	10.172	506.1 -> 77.8	49846	2.50	µg/L	-0.025
M3-PFBS	5.977	302.1 -> 79.9	40249	2.50	µg/L	0.000
M3-PFHxS	7.816	402.1 -> 79.9	28708	2.50	µg/L	-0.025
M8-PFOS	8.956	507.1 -> 79.9	33525	2.50	µg/L	-0.050
M2-4:2FTS	5.709	329.1 -> 80.9	3733	5.00	µg/L	0.000
M2-6:2FTS	7.437	429.1 -> 80.9	7006	5.00	µg/L	-0.025
M2-8:2FTS	8.554	529.1 -> 80.9	9621	5.00	µg/L	-0.037
M3-MeFOSAA	8.825	573.2 -> 419.0	43818	5.00	µg/L	-0.049
M3-HFPO-DA	6.439	286.9 -> 168.9	123052	10.00	µg/L	-0.013
M5-EtFOSAA	9.034	589.2 -> 419.0	36123	5.00	µg/L	-0.050
M7-MeFOSE	11.188	623.2 -> 58.9	238967	25.00	µg/L	-0.012
M9-EtFOSE	11.433	639.2 -> 58.9	266822	25.00	µg/L	0.000
M5-EtFOSA	11.498	531.1 -> 219.0	24738	2.50	µg/L	-0.012
M3-MeFOSA	11.277	515.0 -> 219.0	22386	2.50	µg/L	0.000
13C4-PFOS	8.957	502.8 -> 79.9	34692	2.50	µg/L	-0.050
13C3-PFBA	3.090	216.0 -> 172.0	189605	5.00	µg/L	0.000
18O2-PFHxS	7.815	403.0 -> 83.9	17994	2.50	µg/L	-0.025
13C4-PFOA	7.688	417.1 -> 372.0	139629	2.50	µg/L	-0.026
13C2-PFDA	8.780	515.1 -> 470.1	48913	1.25	µg/L	-0.050
13C5-PFNA	8.259	468.0 -> 423.0	73368	1.25	µg/L	-0.038
13C2-PFHxA	6.061	315.1 -> 270.0	143395	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.709	329.1 -> 80.9	3733	5.76	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
13C2-6:2FTS	7.437	429.1 -> 80.9	7006	4.83	µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-8:2FTS	8.554	529.1 -> 80.9	9621	4.84	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C2-PFDoDA	9.706	615.1 -> 570.0	59768	1.26	µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-PFTeDA	10.425	715.2 -> 670.0	46777	1.38	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C3-PFBS	5.977	302.1 -> 79.9	40249	2.59	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFHxS	7.816	402.1 -> 79.9	28708	2.73	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C4-PFBA	3.099	216.8 -> 171.9	333340	9.75 µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C4-PFHpA	7.005	367.1 -> 322.0	87499	2.62 µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C5-PFHxA	6.060	318.0 -> 273.0	157548	2.61 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C5-PFPeA	4.763	268.3 -> 223.0	233728	5.01 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C6-PFDA	8.779	519.1 -> 474.1	53187	1.23 µg/L		-0.050
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C7-PFUnDA	9.274	570.0 -> 525.1	57013	1.23 µg/L		-0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C8-FOSA	10.172	506.1 -> 77.8	49846	2.51 µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C8-PFOA	7.688	421.1 -> 376.0	126009	2.51 µg/L		-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C8-PFOS	8.956	507.1 -> 79.9	33525	2.37 µg/L		-0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C9-PFNA	8.259	472.1 -> 427.0	68071	1.31 µg/L		-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%		
d3-MeFOSAA	8.825	573.2 -> 419.0	43818	5.50 µg/L		-0.049
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C3-HFPO-DA	6.439	286.9 -> 168.9	123052	10.76 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
d3-MeFOSA	11.277	515.0 -> 219.0	22386	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%		
d5-EtFOSAA	9.034	589.2 -> 419.0	36123	5.21 µg/L		-0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
d7-MeFOSE	11.188	623.2 -> 58.9	238967	23.10 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
d9-EtFOSE	11.433	639.2 -> 58.9	266822	22.52 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
d5-EtFOSA	11.498	531.1 -> 219.0	24738	2.29 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%		
Target Compounds						QValue
4:2FTS	5.710	327.1 -> 307.0	308609	50.58 µg/L		98
		327.1 -> 80.9	139330			
6:2FTS	7.437	427.1 -> 407.0	318653	57.39 µg/L		97
		427.1 -> 80.9	149555			
8:2FTS	8.542	527.1 -> 507.0	264312	56.79 µg/L		98
		527.1 -> 80.8	143166			
EtFOSAA	9.048	584.2 -> 419.1	87956	14.54 µg/L	m	91
		584.2 -> 526.0	38224			
FOSA	10.176	498.1 -> 77.9	667478	34.68 µg/L	m	100
		498.1 -> 478.0	13998			
MeFOSAA	8.826	570.1 -> 419.0	104848	16.15 µg/L	m	98
		570.1 -> 483.0	19568			
PFBA	3.095	212.8 -> 168.9	534765	57.65 µg/L		100
PFBS	5.978	298.7 -> 79.9	240674	13.23 µg/L		100
		298.7 -> 98.8	83224			
PFDA	8.780	512.9 -> 469.0	540078	14.23 µg/L		97
		512.9 -> 219.0	103094			
PFDoDA	9.706	613.1 -> 569.0	673515	14.62 µg/L		100
		613.1 -> 319.0	97886			
PFDS	9.870	599.0 -> 79.9	109248	14.07 µg/L		98

Perfluorinated Compounds by LC/MS/MS

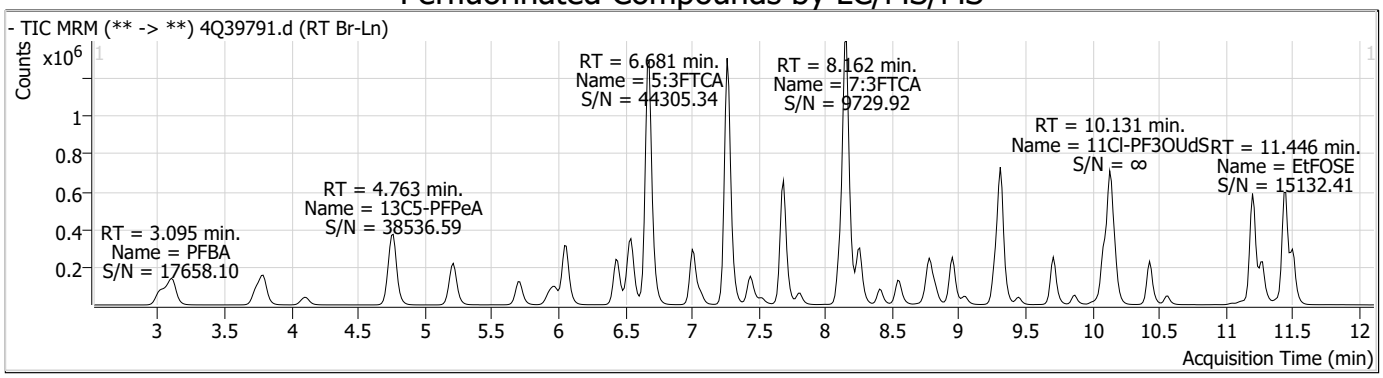
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	52148				
PFHpA	7.006	363.1 -> 319.0	785706	14.41	µg/L		99
		363.1 -> 169.0	135588				
PFHpS	8.411	449.0 -> 79.9	187860	13.86	µg/L		93
		449.0 -> 98.9	95041				
PFHxA	6.063	313.0 -> 269.0	865979	14.14	µg/L		100
		313.0 -> 118.9	26518				
PFHxS	7.817	398.7 -> 79.9	117490	12.67	µg/L	m	97
		398.7 -> 98.9	54618				
PFNA	8.259	463.0 -> 419.0	1314652	26.56	µg/L	m	94
		463.0 -> 219.0	345055				
PFNS	9.450	548.8 -> 79.9	84644	14.19	µg/L		93
		548.8 -> 98.9	40914				
PFOA	7.690	413.0 -> 369.0	1761850	31.45	µg/L	m	96
		413.0 -> 169.0	385332				
PFOS	8.958	498.9 -> 79.9	218319	13.94	µg/L	m	98
		498.9 -> 98.8	102745				
PFPeA	4.754	263.0 -> 219.0	1483969	28.95	µg/L		100
PFPeS	7.069	349.1 -> 79.9	113496	12.67	µg/L		99
		349.1 -> 98.9	45556				
PFTeDA	10.426	713.1 -> 669.0	642210	13.64	µg/L		99
		713.1 -> 168.9	52433				
PFTrDA	10.080	663.0 -> 619.0	814492	14.44	µg/L		97
		663.0 -> 168.9	78554				
PFUnDA	9.274	563.1 -> 519.0	486296	14.09	µg/L		100
		563.1 -> 269.1	89364				
11Cl-PF3OUdS	10.131	630.9 -> 450.9	1548717	53.85	µg/L		98
		632.9 -> 452.9	474891				
9Cl-PF3ONS	9.313	530.8 -> 351.0	1778908	50.75	µg/L		100
		532.8 -> 353.0	528867				
ADONA	7.268	376.9 -> 250.9	3361033	50.63	µg/L		99
		376.9 -> 84.8	1169918				
HFPO-DA	6.440	284.9 -> 168.9	681489	58.76	µg/L		99
		284.9 -> 184.9	74896				
3:3FTCA	4.098	241.0 -> 177.0	175283	72.94	µg/L		98
		241.0 -> 117.0	15145				
5:3FTCA	6.681	341.0 -> 237.1	2754834	338.08	µg/L		100
		341.0 -> 217.0	2052578				
7:3FTCA	8.162	441.0 -> 316.9	1519912	324.79	µg/L		98
		441.0 -> 336.9	3397629				
EtFOSA	11.500	526.0 -> 219.0	391451	37.67	µg/L		87
		526.0 -> 169.0	503911				
EtFOSE	11.446	630.0 -> 58.9	1631494	157.48	µg/L		100
MeFOSA	11.279	511.9 -> 219.0	307858	36.10	µg/L	m	93
		511.9 -> 169.0	421834				
MeFOSE	11.201	616.1 -> 58.9	1625080	160.97	µg/L		100
PFDoDS	10.565	699.1 -> 79.9	97575	14.88	µg/L		97
		699.1 -> 98.8	53138				
NFDHA	5.929	295.0 -> 201.0	116829	29.02	µg/L		100
		295.0 -> 84.9	34067				
PFMBA	5.216	279.0 -> 85.1	918787	28.76	µg/L		100
PFMPA	3.782	229.0 -> 84.9	944968	28.66	µg/L		100
PFEESA	6.546	314.8 -> 134.9	1333644	25.47	µg/L		99
		314.8 -> 82.9	39381				

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

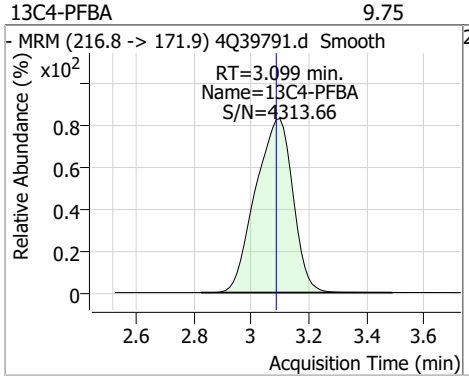
Perfluorinated Compounds by LC/MS/MS

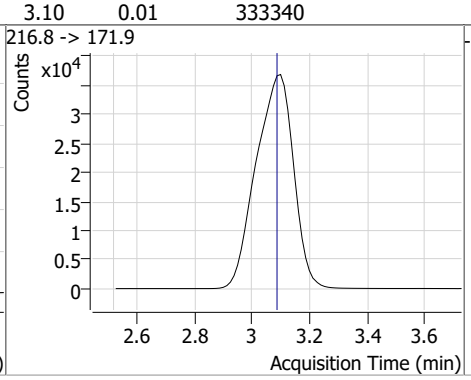
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

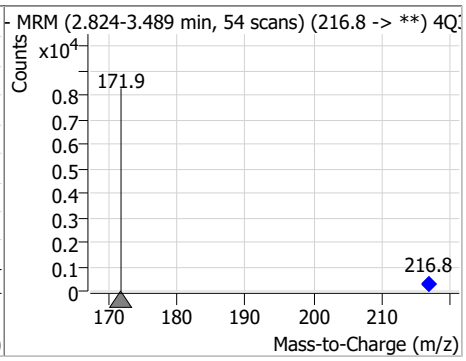
Perfluorinated Compounds by LC/MS/MS



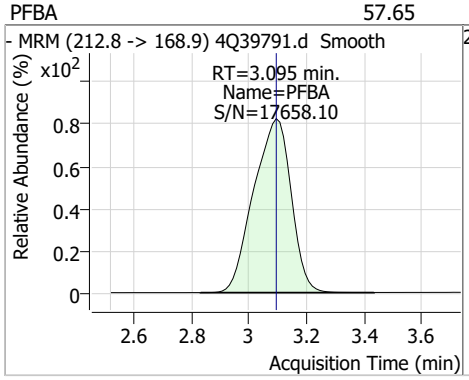
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.75	3.10	0.01	333340				

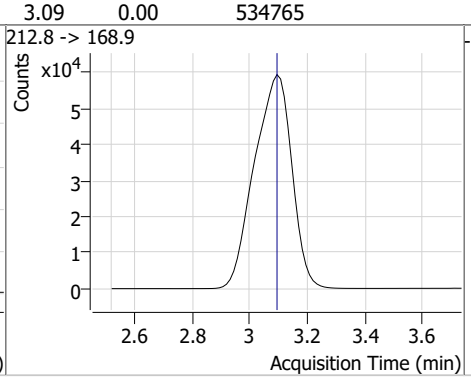


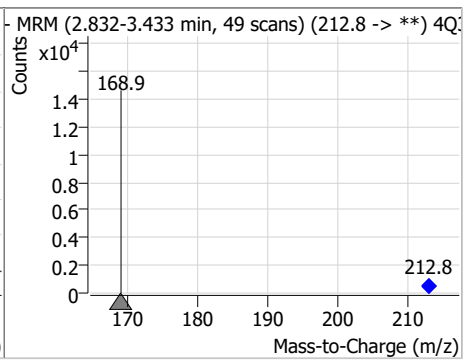




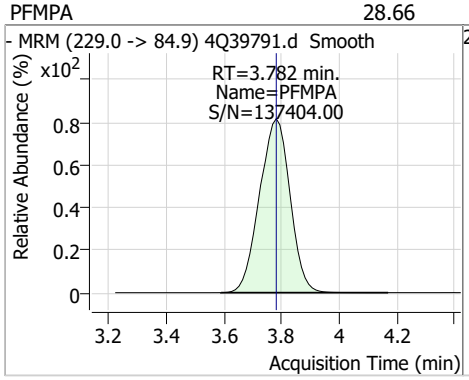
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	57.65	3.09	0.00	534765				

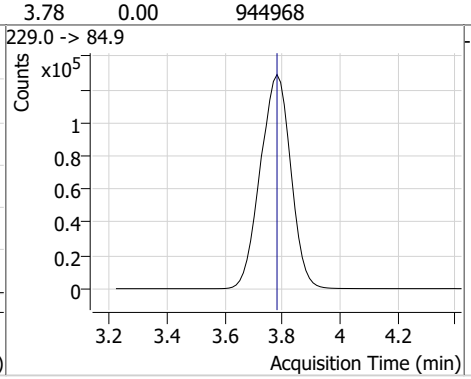


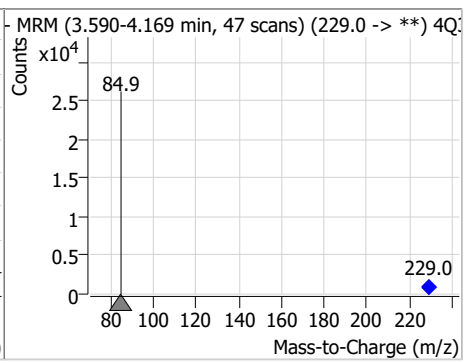




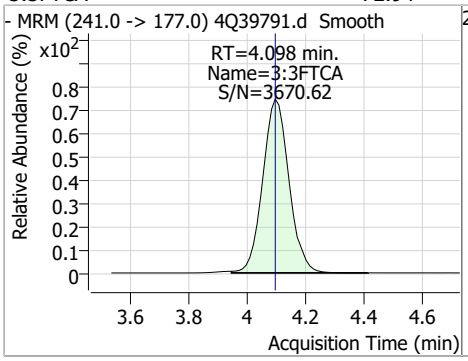
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	28.66	3.78	0.00	944968				

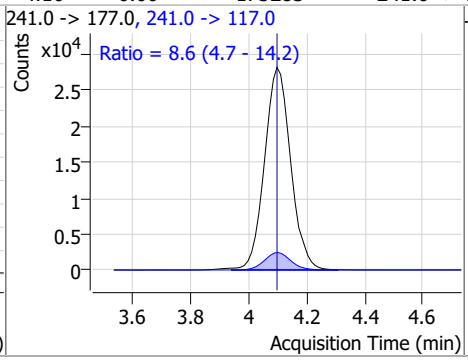


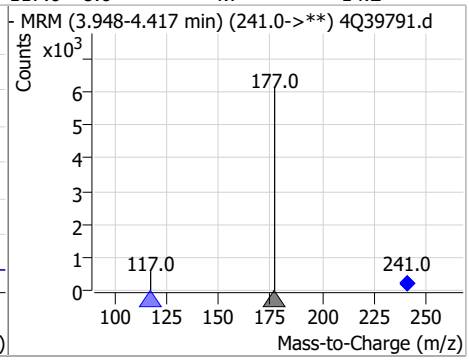




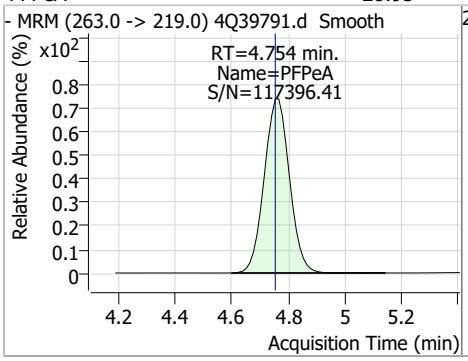
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	72.94	4.10	0.00	175283	241.0 -> 117.0	8.6	4.7	14.2

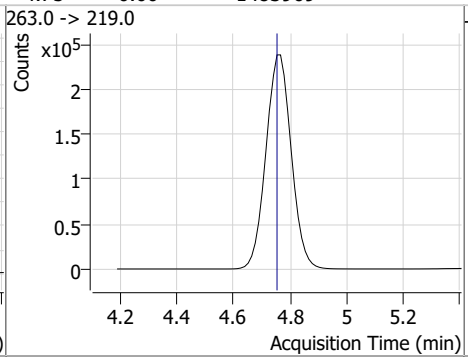


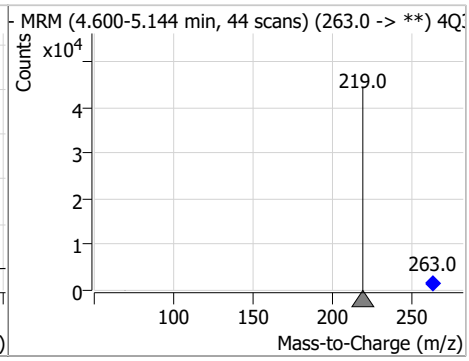




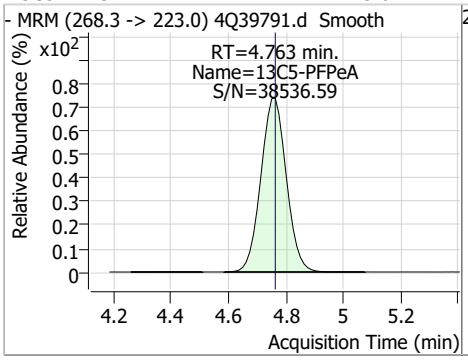
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.95	4.75	0.00	1483969				

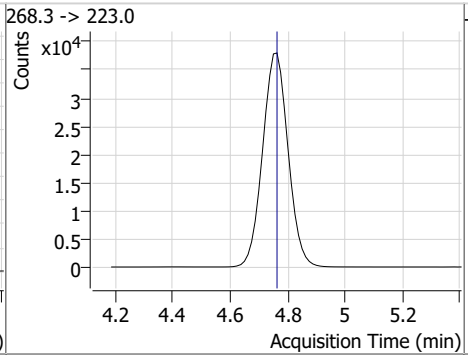


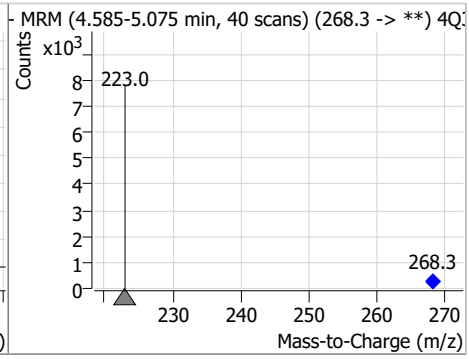




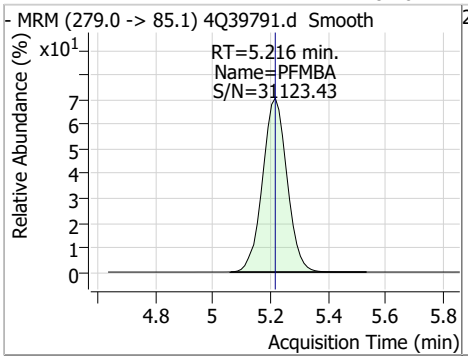
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.76	0.00	233728				

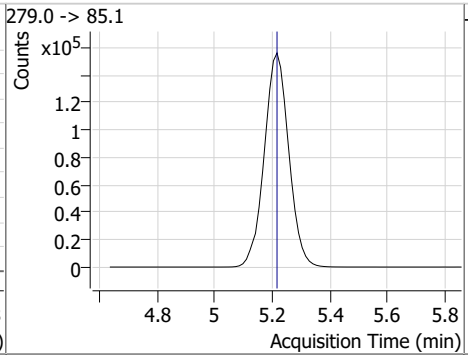


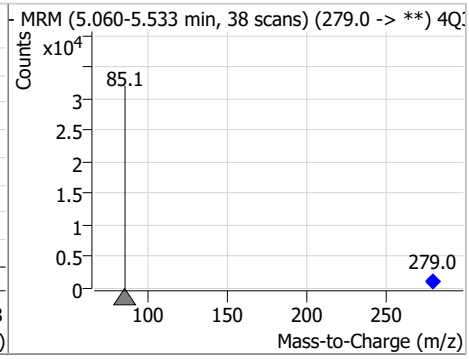




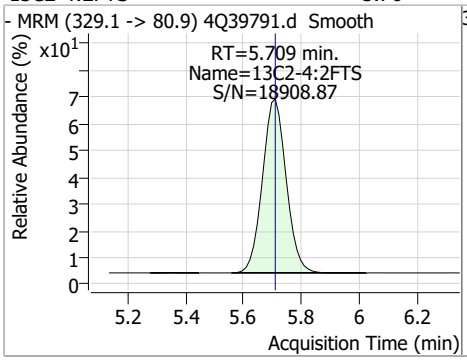
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.76	5.22	0.00	918787				

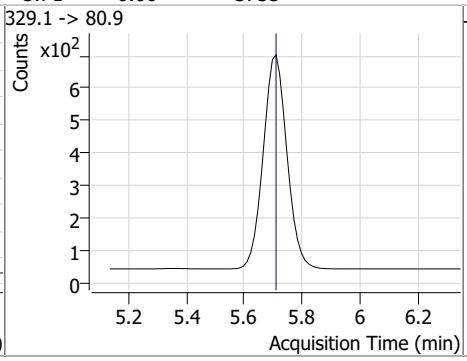


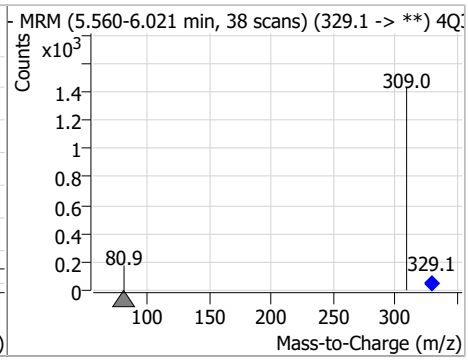




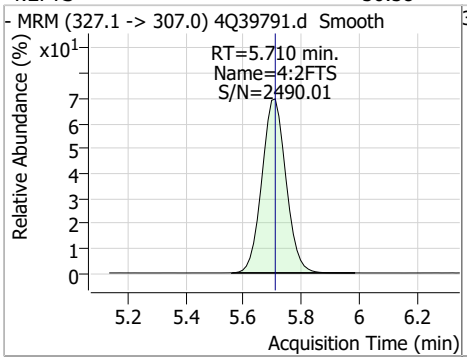
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.76	5.71	0.00	3733				

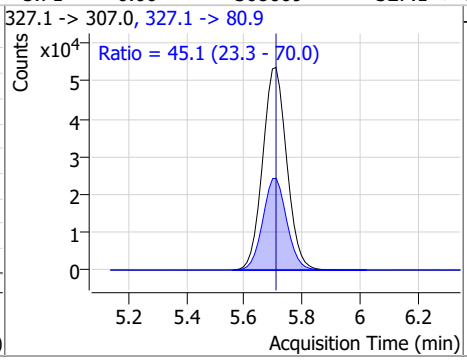


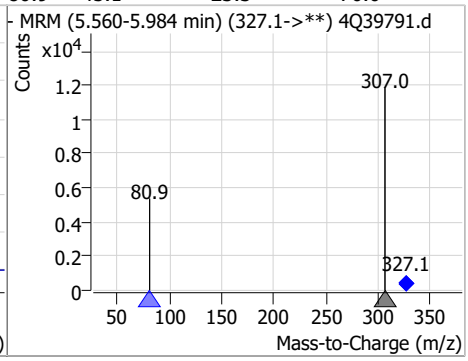




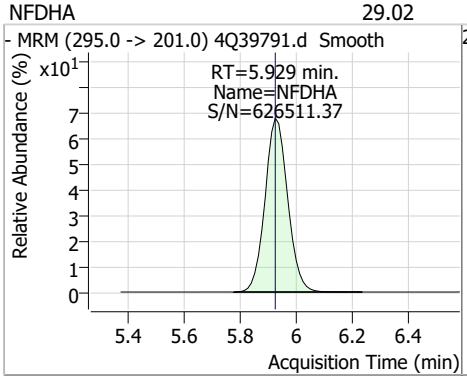
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.58	5.71	0.00	308609	327.1 -> 80.9	45.1	23.3	70.0

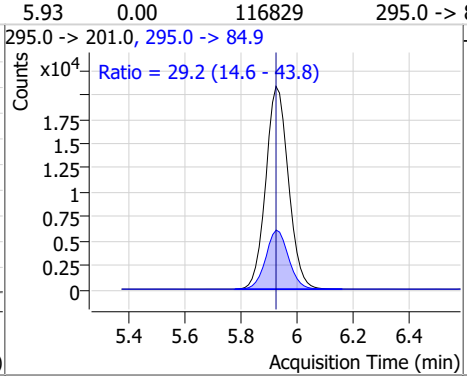


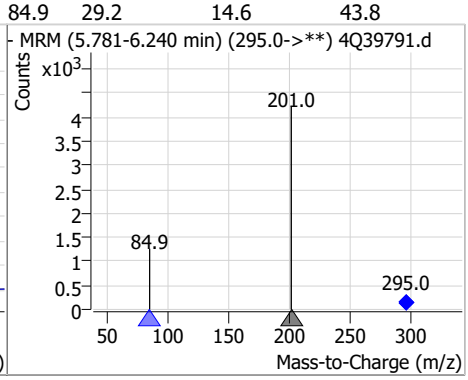




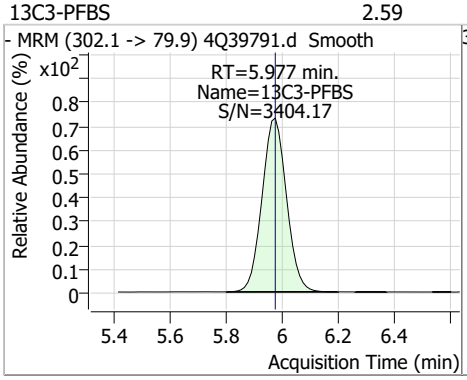
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	29.02	5.93	0.00	116829	295.0 -> 84.9	29.2	14.6	43.8

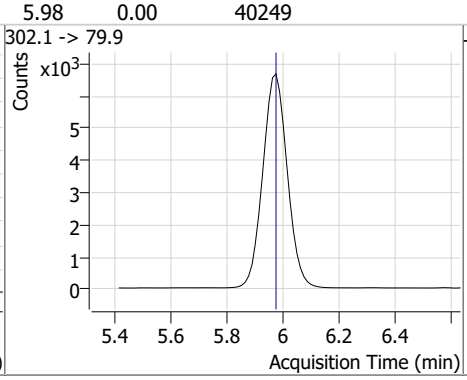


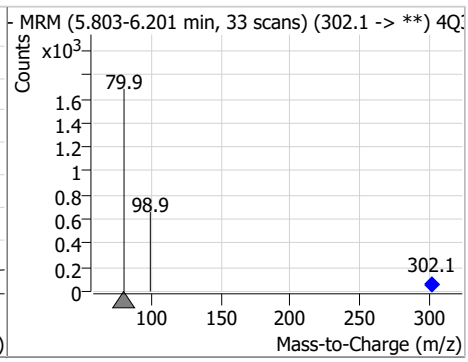




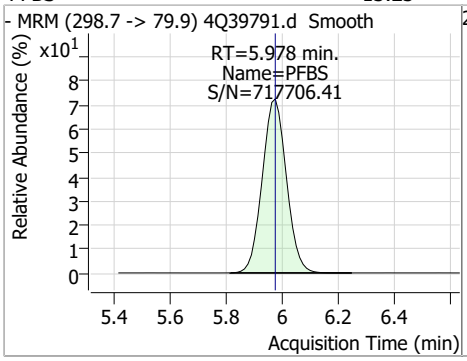
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.59	5.98	0.00	40249				

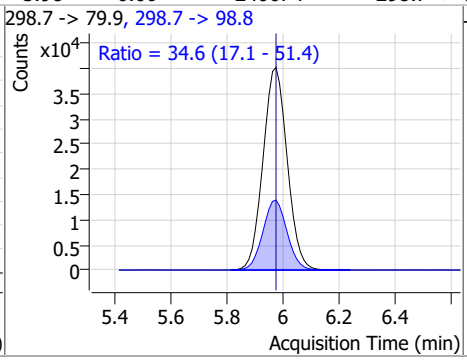


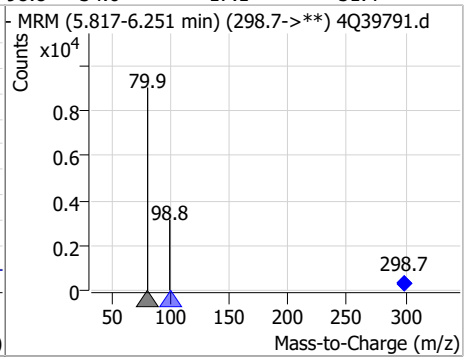




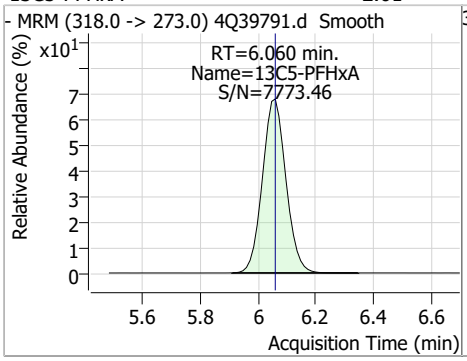
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	13.23	5.98	0.00	240674	298.7 -> 98.8	34.6	17.1	51.4

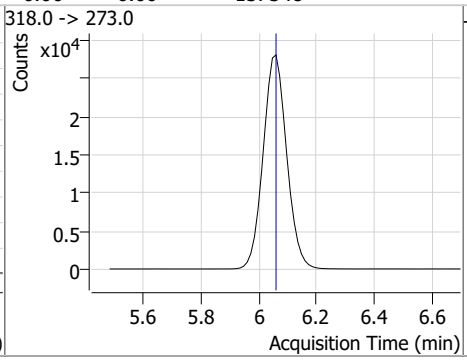


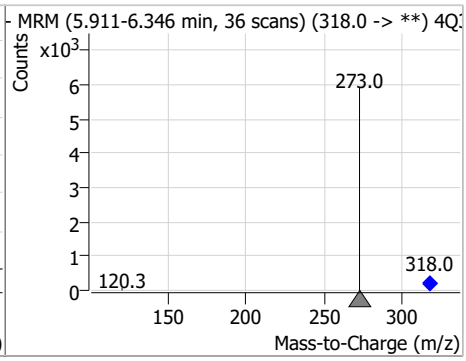




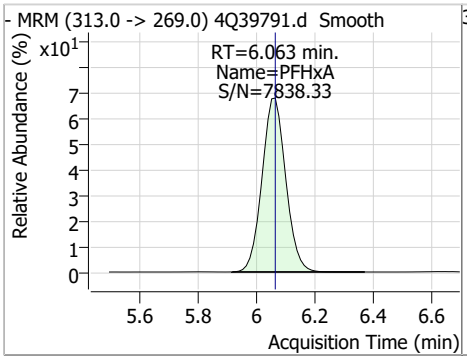
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.61	6.06	0.00	157548				

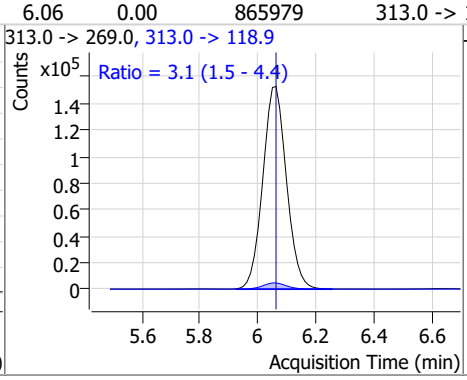


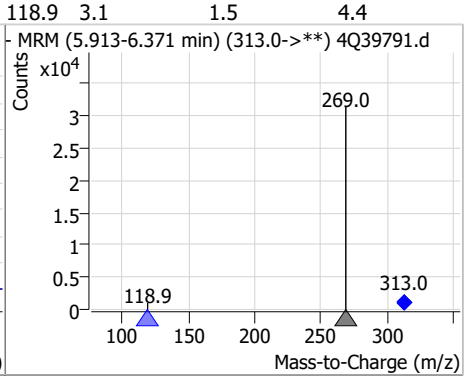




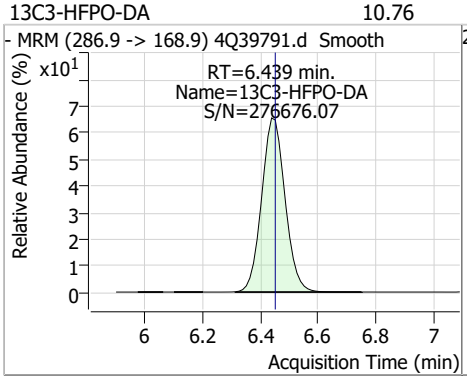
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	14.14	6.06	0.00	865979	313.0 -> 118.9	3.1	1.5	4.4

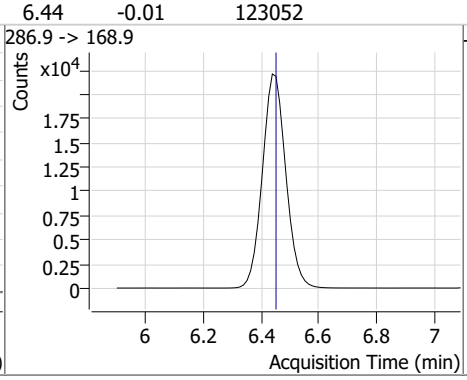


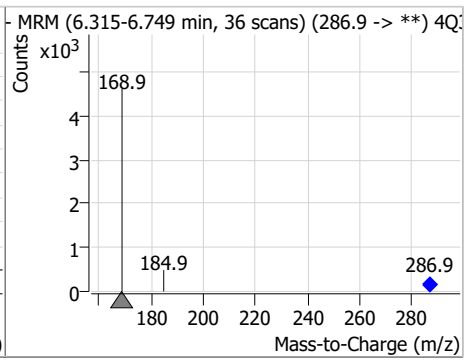




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.76	6.44	-0.01	123052				

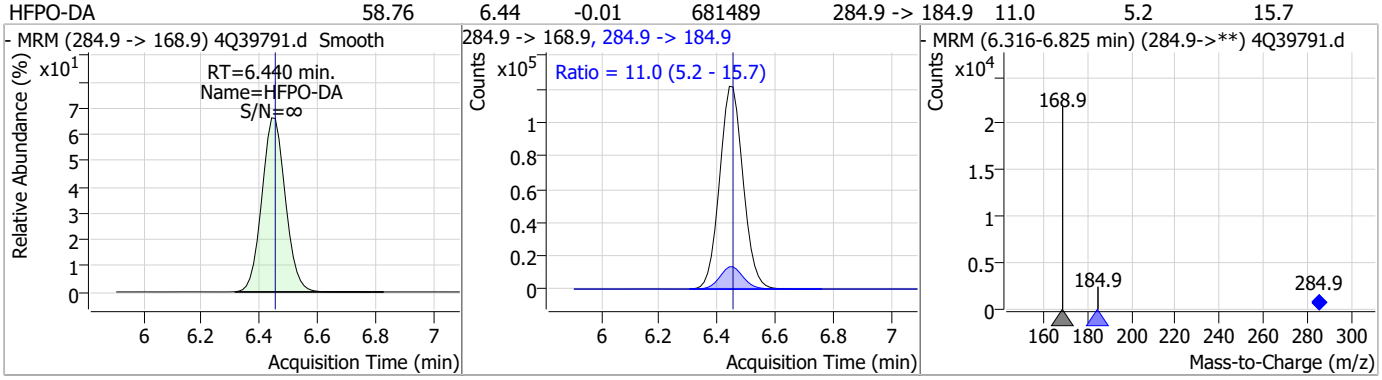




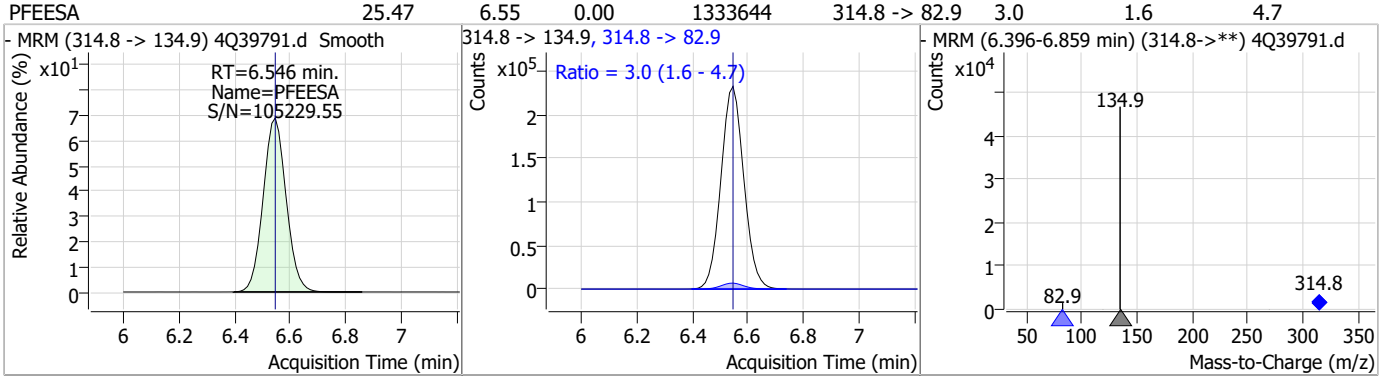


Perfluorinated Compounds by LC/MS/MS

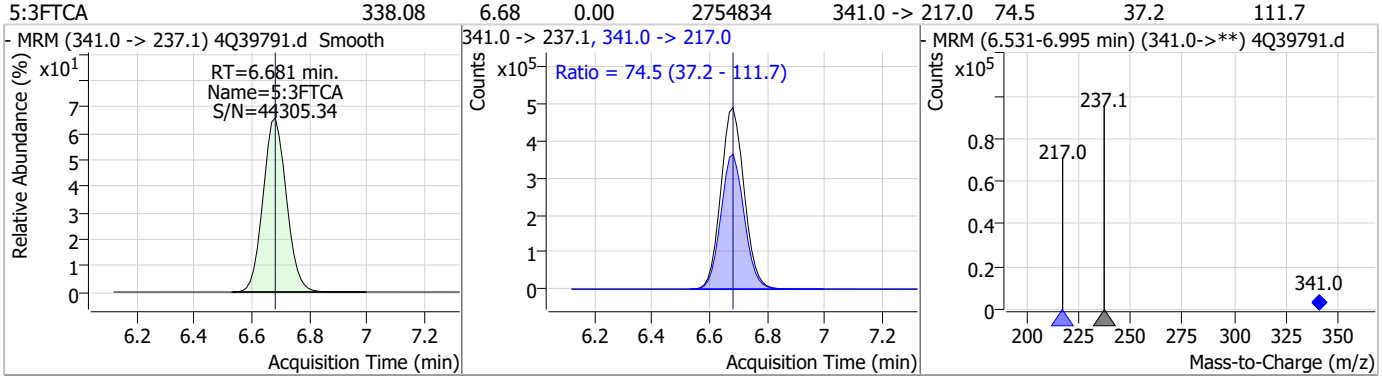
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	58.76	6.44	-0.01	681489	284.9 -> 184.9	11.0	5.2	15.7



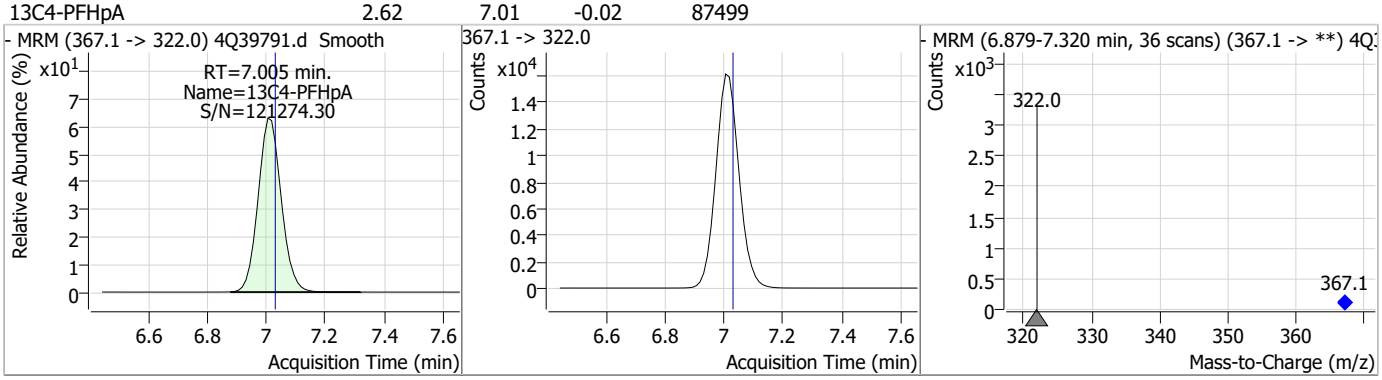
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	25.47	6.55	0.00	1333644	314.8 -> 82.9	3.0	1.6	4.7



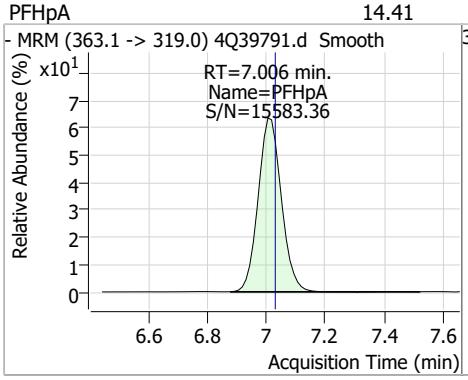
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	338.08	6.68	0.00	2754834	341.0 -> 217.0	74.5	37.2	111.7

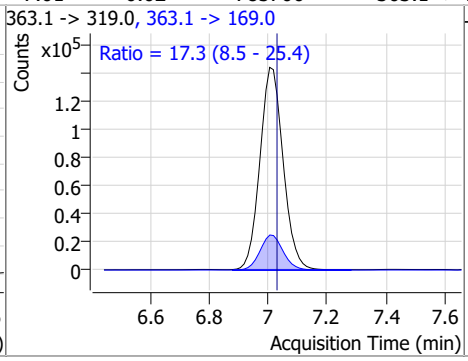


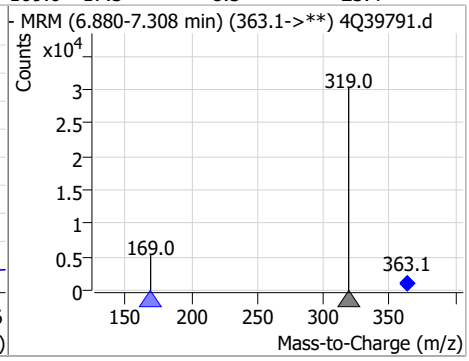
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.62	7.01	-0.02	87499				



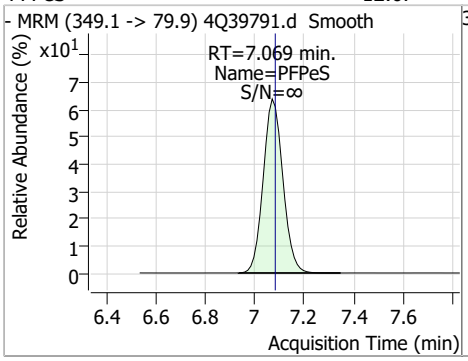
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.41	7.01	-0.02	785706	363.1 -> 169.0	17.3	8.5	25.4

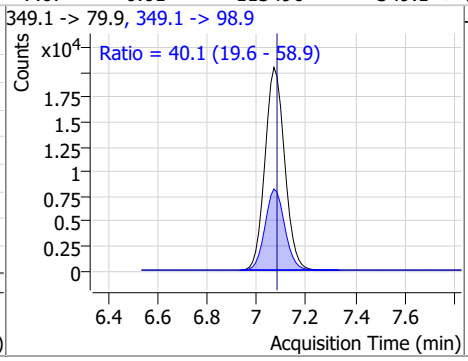


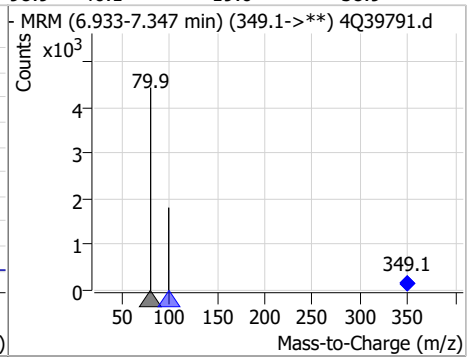




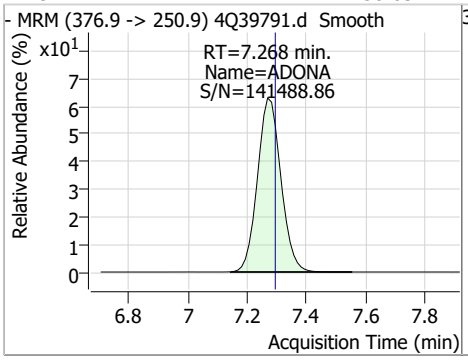
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.67	7.07	-0.01	113496	349.1 -> 98.9	40.1	19.6	58.9

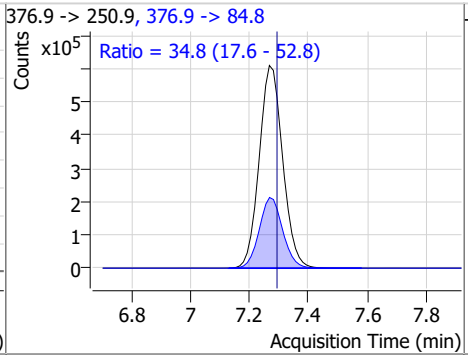


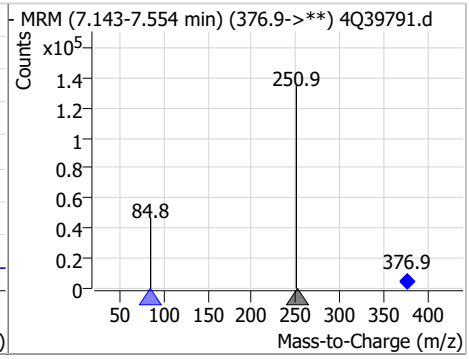




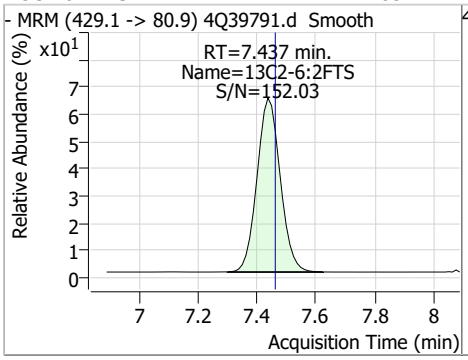
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	50.63	7.27	-0.03	3361033	376.9 -> 84.8	34.8	17.6	52.8

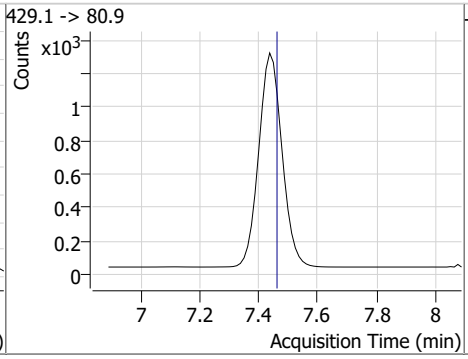


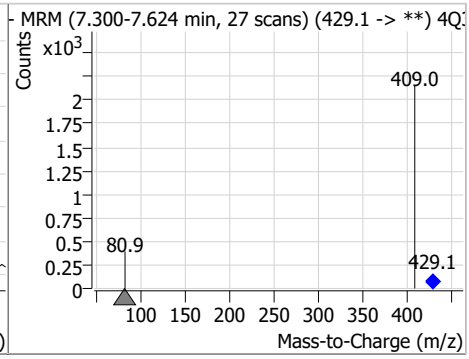




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.83	7.44	-0.02	7006				

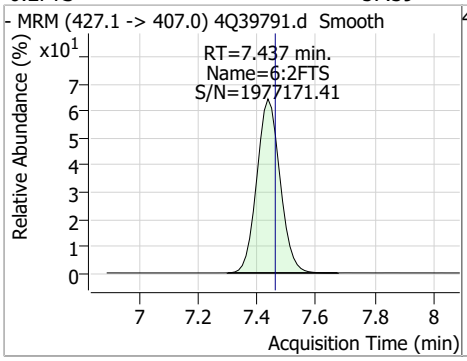


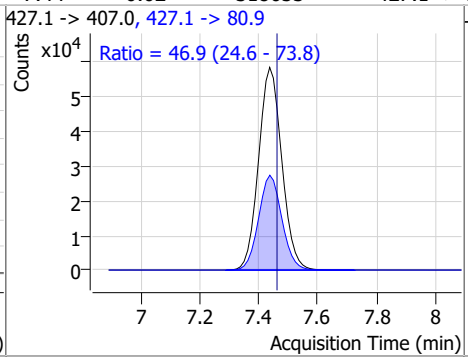


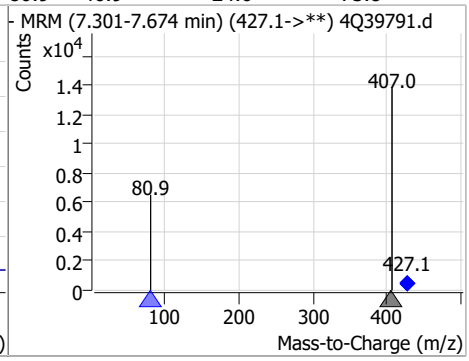


Perfluorinated Compounds by LC/MS/MS

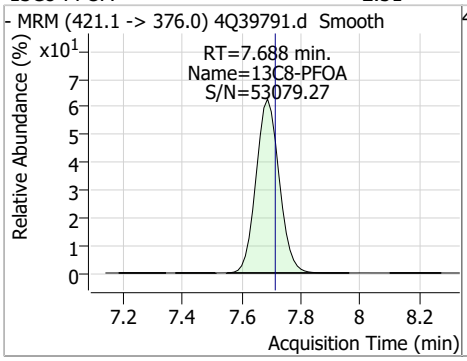
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	57.39	7.44	-0.02	318653	427.1 -> 80.9	46.9	24.6	73.8

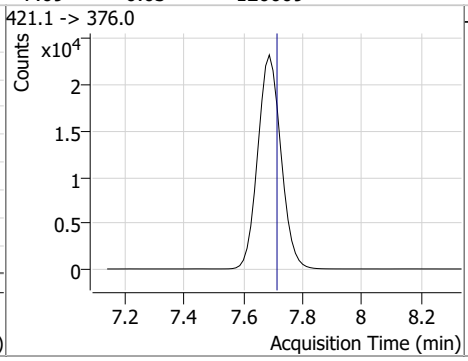


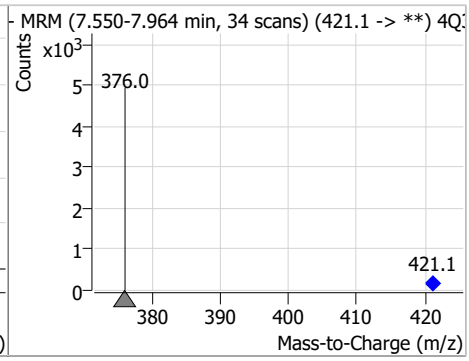




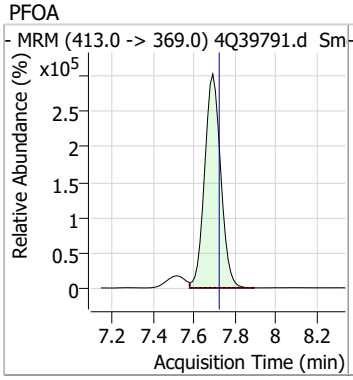
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.51	7.69	-0.03	126009				

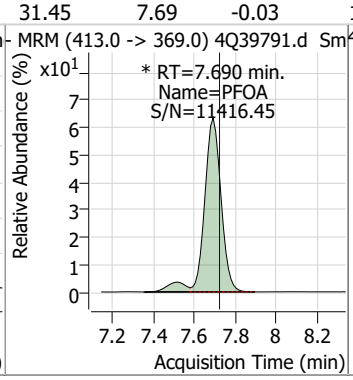


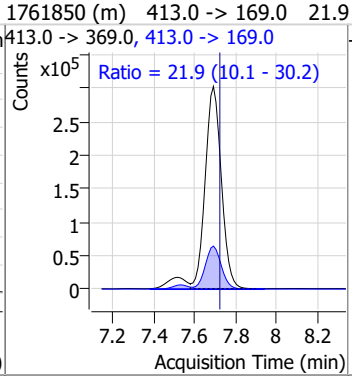


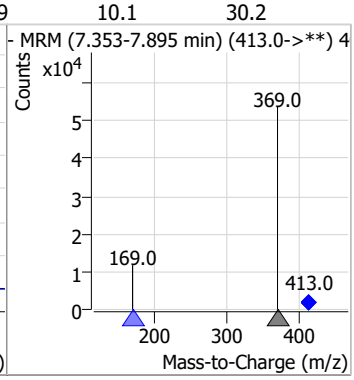


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	31.45	7.69	-0.03	1761850 (m)	413.0 -> 169.0	21.9	10.1	30.2

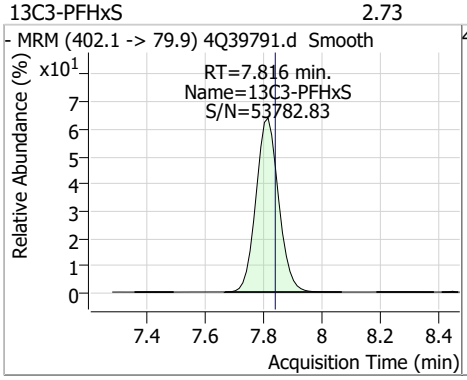


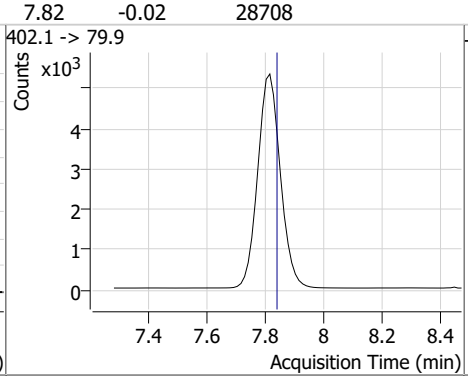


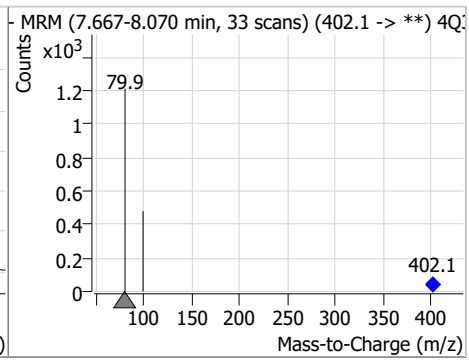




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.73	7.82	-0.02	28708				

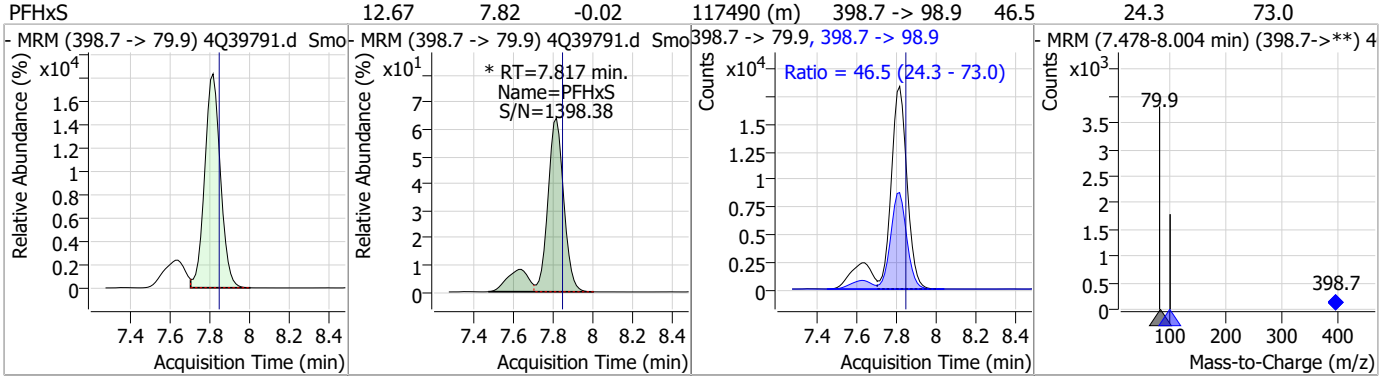




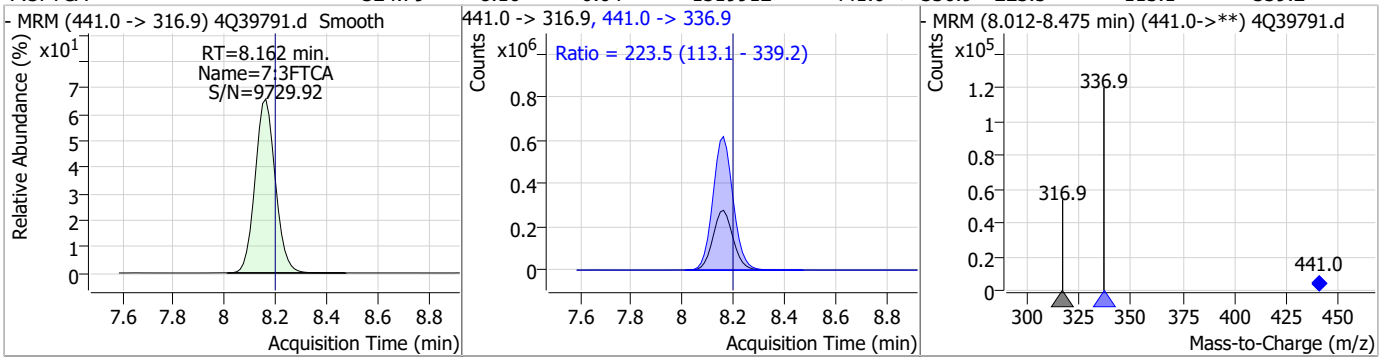


Perfluorinated Compounds by LC/MS/MS

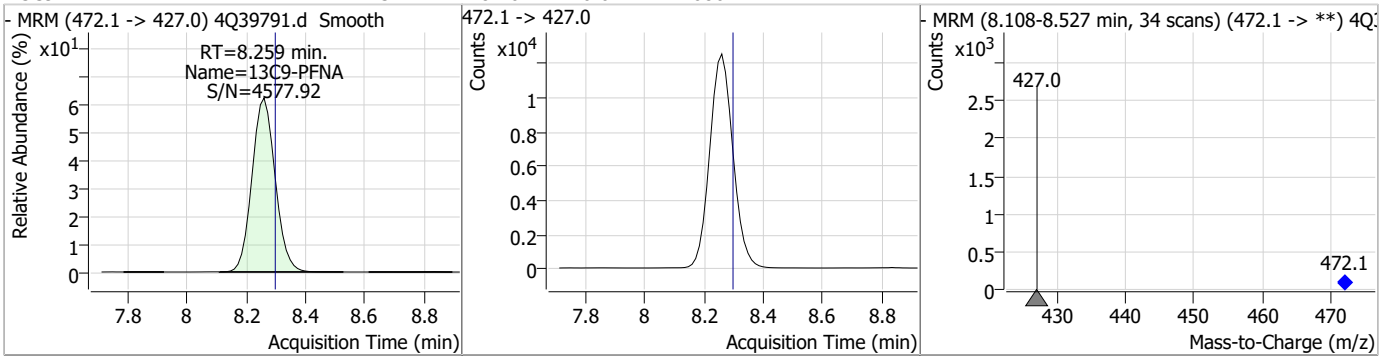
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	12.67	7.82	-0.02	117490 (m)	398.7 -> 98.9	46.5	24.3	73.0



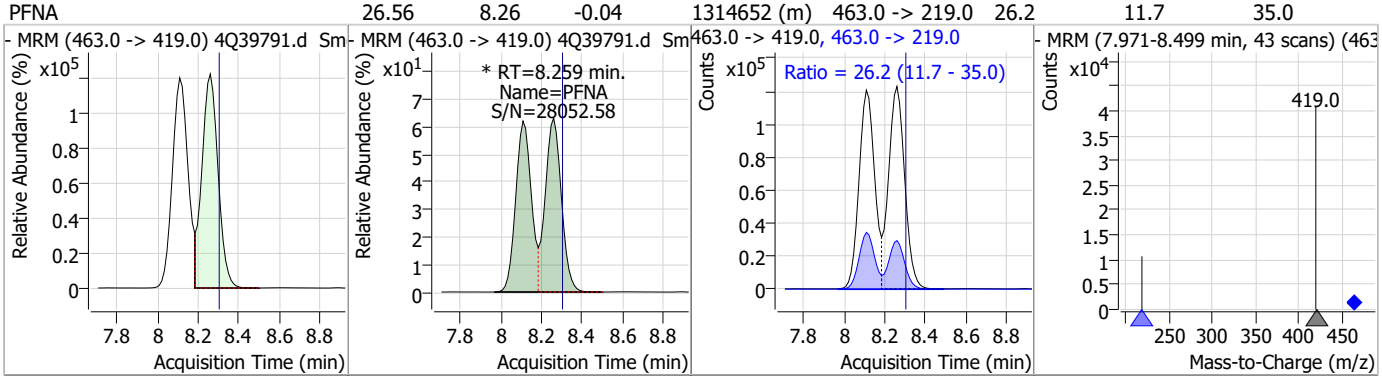
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	324.79	8.16	-0.04	1519912	441.0 -> 336.9	223.5	113.1	339.2



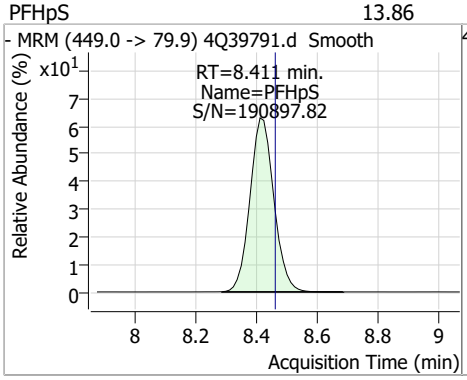
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	8.26	-0.04	68071				

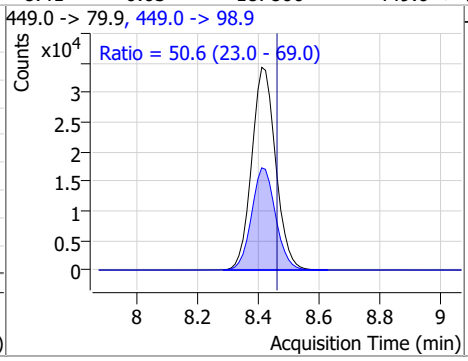


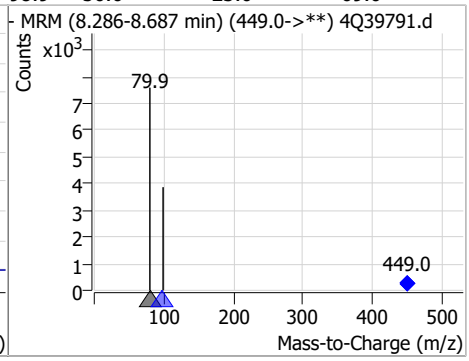
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	26.56	8.26	-0.04	1314652 (m)	463.0 -> 219.0	26.2	11.7	35.0



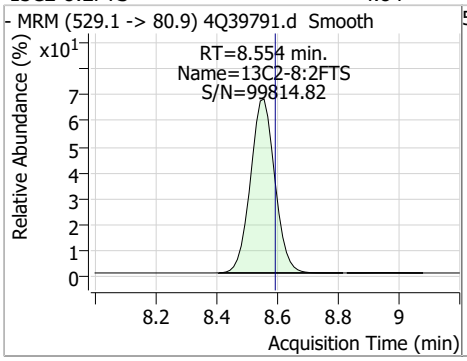
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.86	8.41	-0.05	187860	449.0 -> 98.9	50.6	23.0	69.0

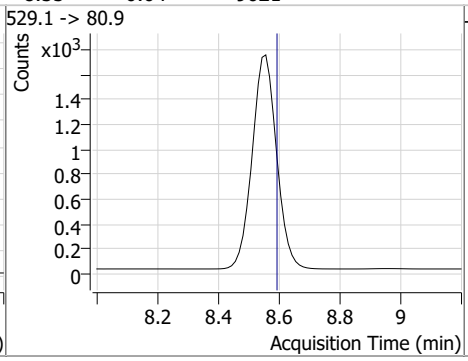


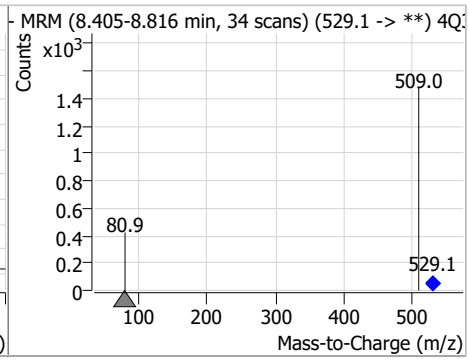




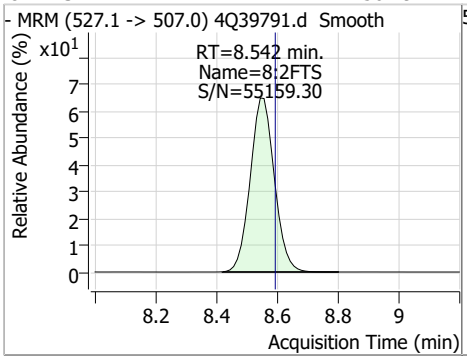
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.84	8.55	-0.04	9621				

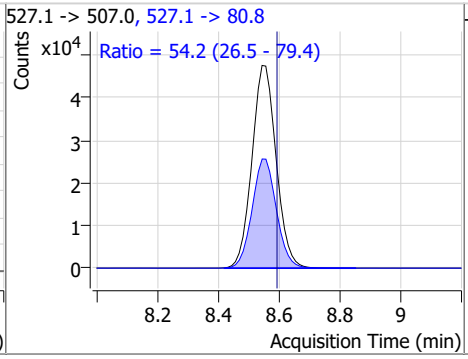


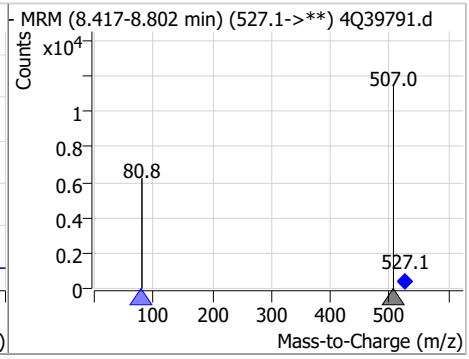




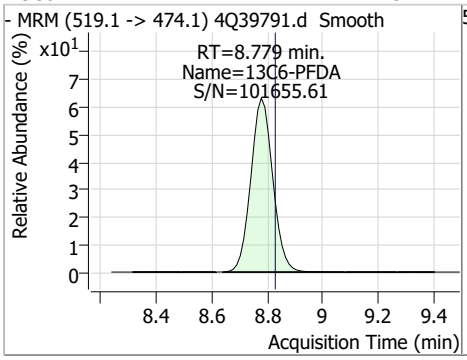
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	56.79	8.54	-0.05	264312	527.1 -> 80.8	54.2	26.5	79.4

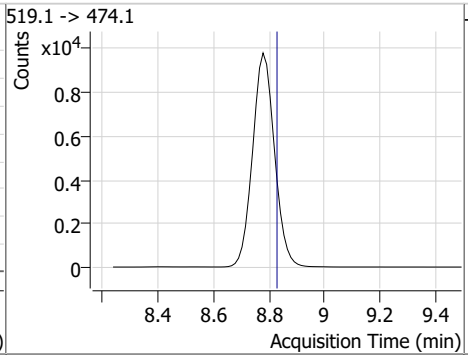


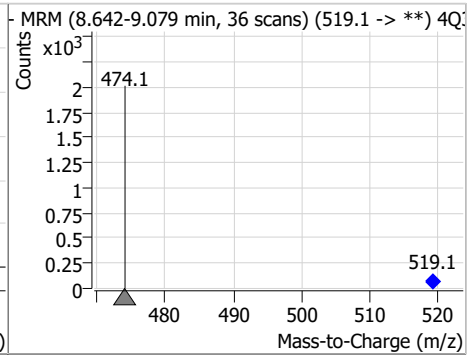




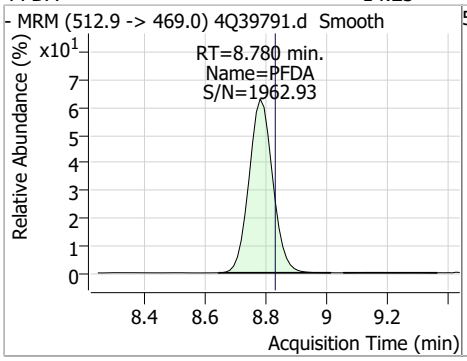
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.23	8.78	-0.05	53187				

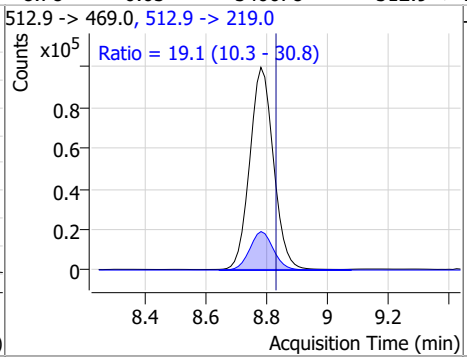


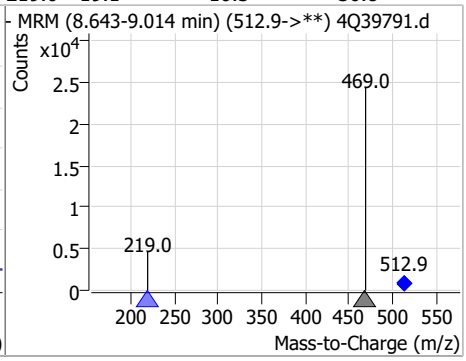




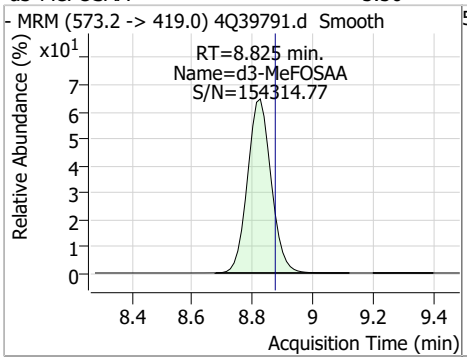
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	14.23	8.78	-0.05	540078	512.9 -> 219.0	19.1	10.3	30.8

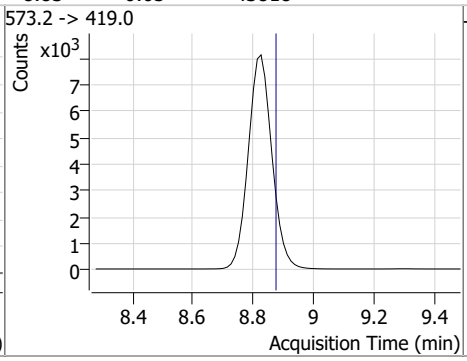


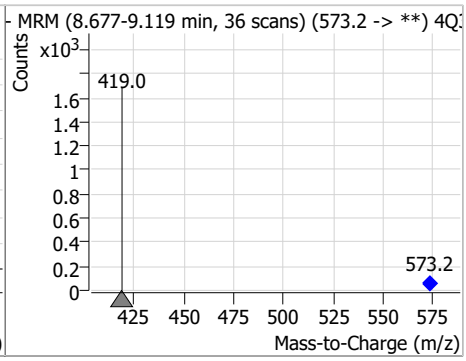




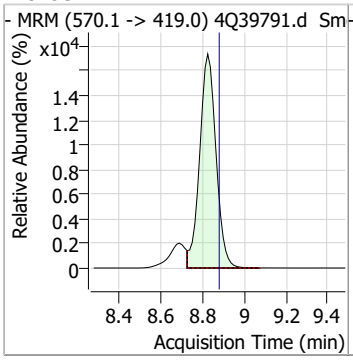
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.50	8.83	-0.05	43818				

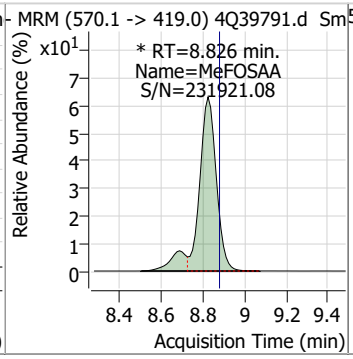


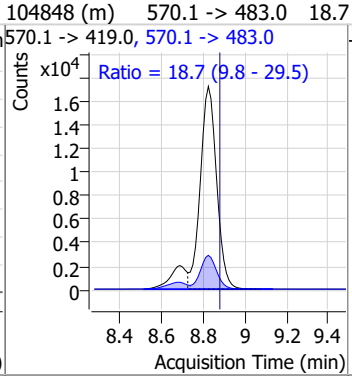


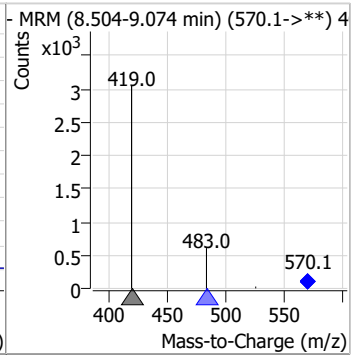


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.15	8.83	-0.05	104848 (m)	570.1 -> 483.0	18.7	9.8	29.5

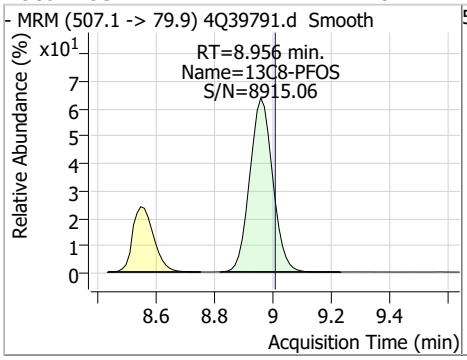


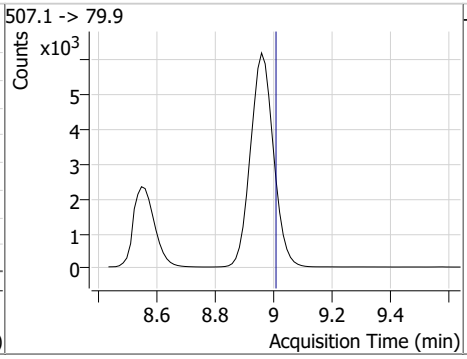


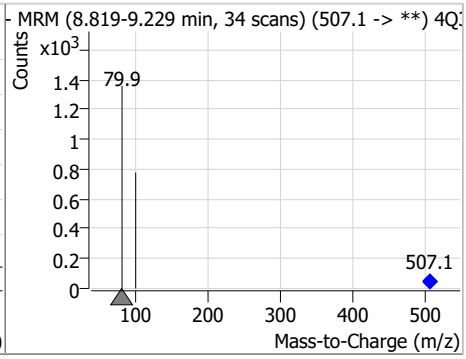




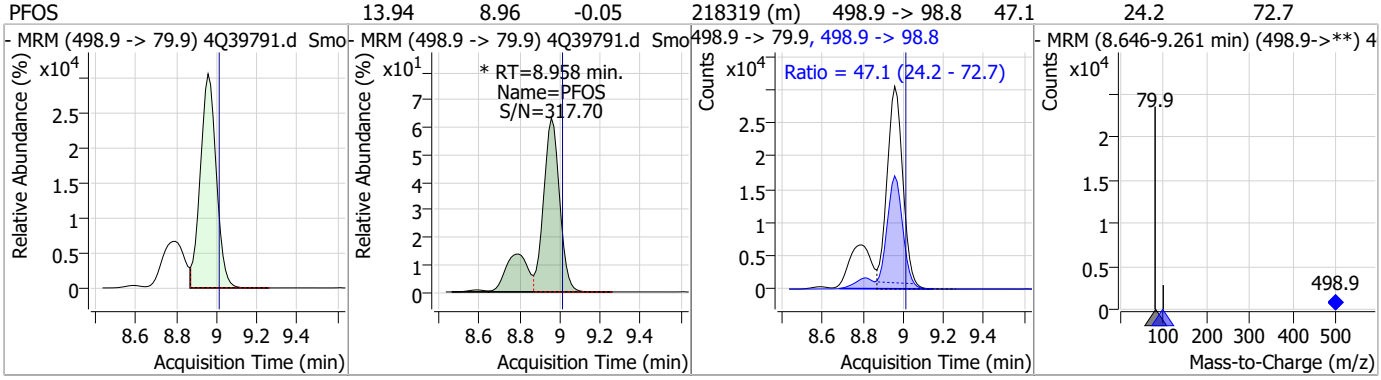
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.37	8.96	-0.05	33525				



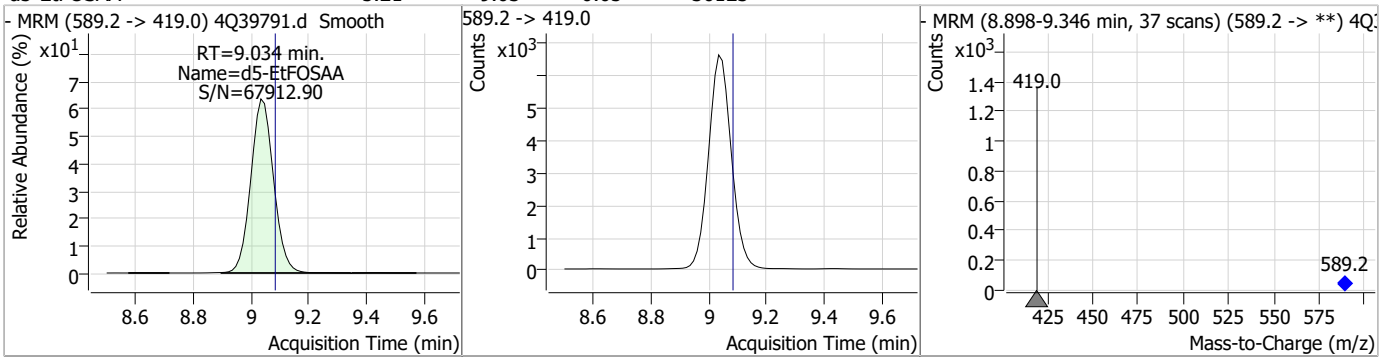




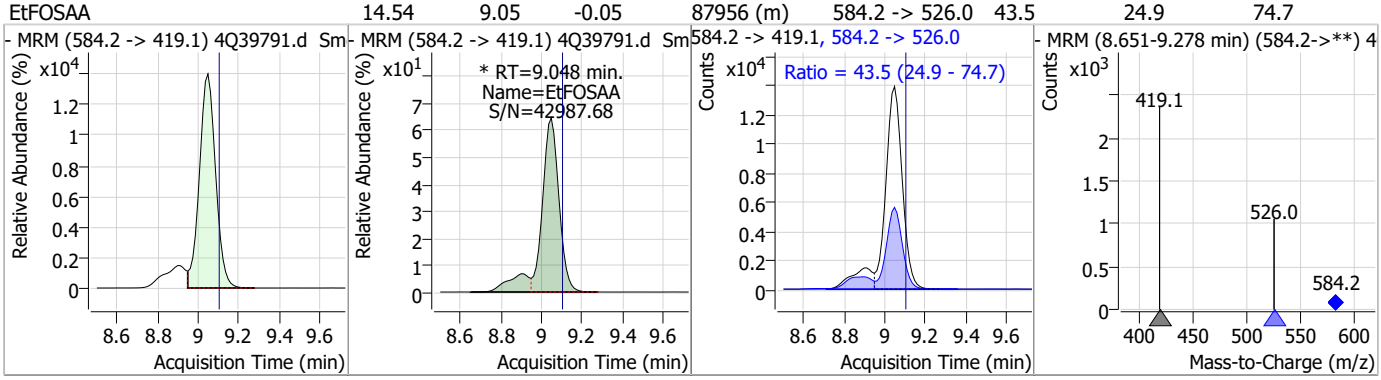
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	13.94	8.96	-0.05	218319 (m)	498.9 -> 98.8	47.1	24.2	72.7



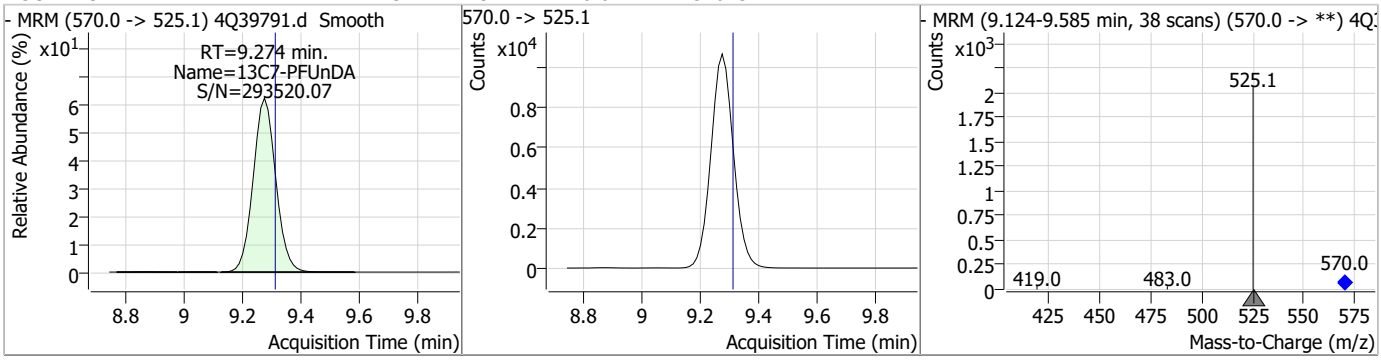
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.21	9.03	-0.05	36123				



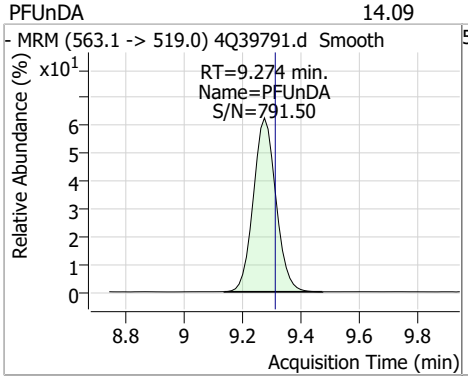
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.54	9.05	-0.05	87956 (m)	584.2 -> 526.0	43.5	24.9	74.7

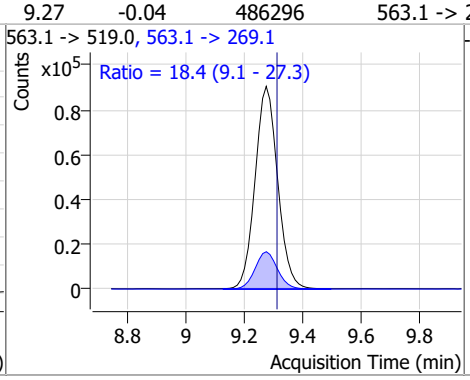


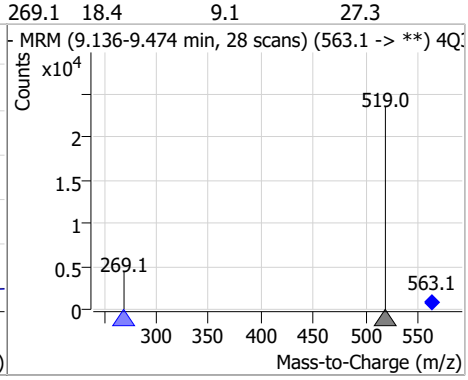
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	9.27	-0.04	57013				



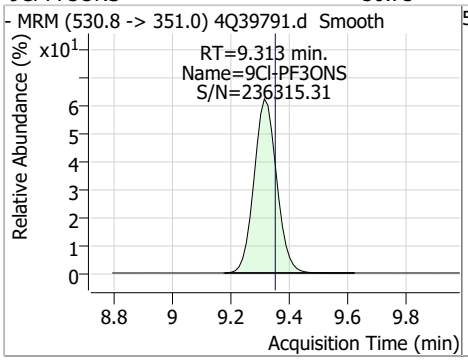
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.09	9.27	-0.04	486296	563.1 -> 269.1	18.4	9.1	27.3

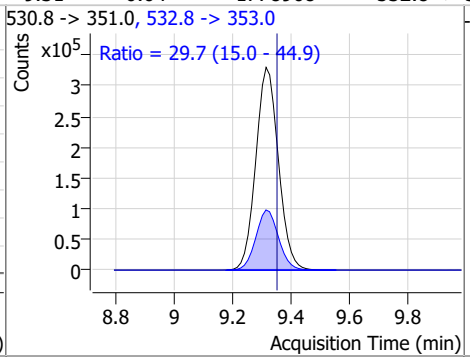


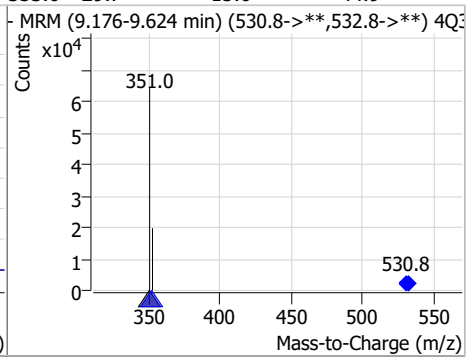




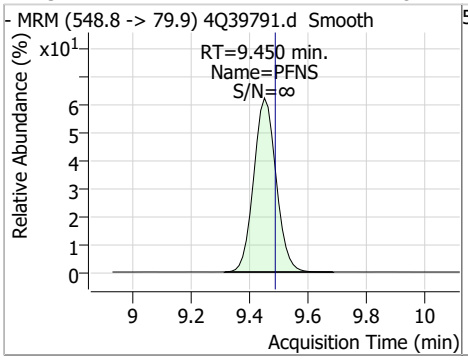
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	50.75	9.31	-0.04	1778908	532.8 -> 353.0	29.7	15.0	44.9

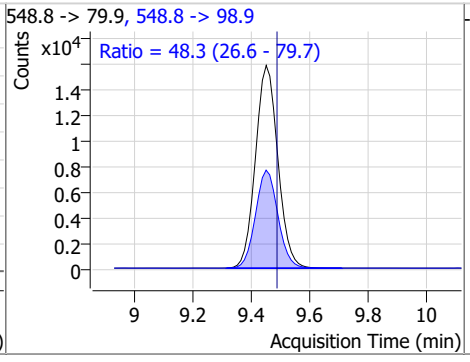


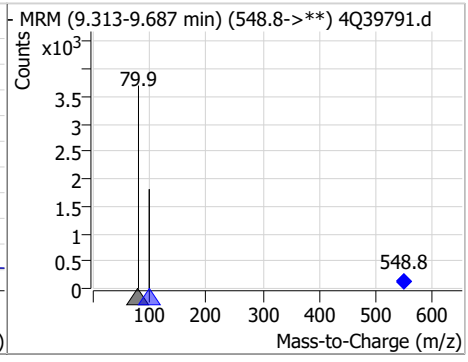




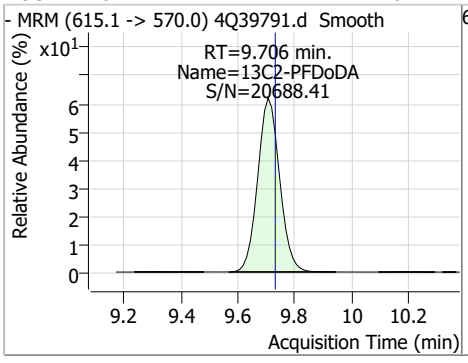
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	14.19	9.45	-0.04	84644	548.8 -> 98.9	48.3	26.6	79.7

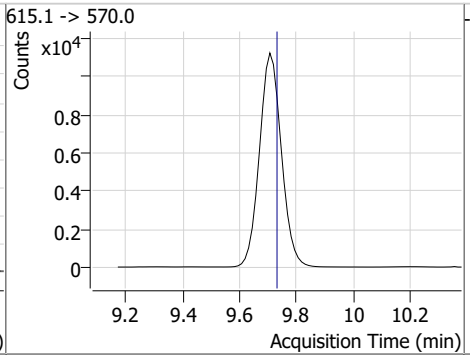


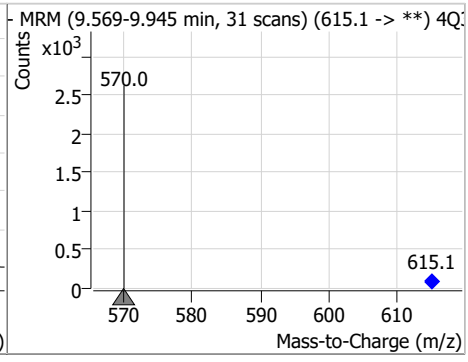




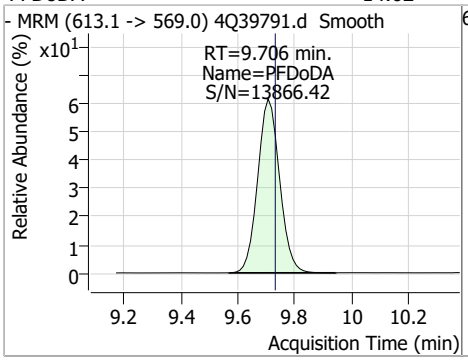
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	9.71	-0.03	59768				

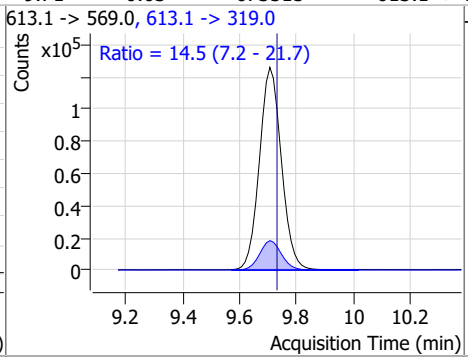


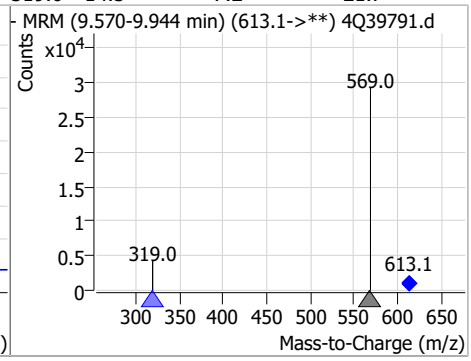




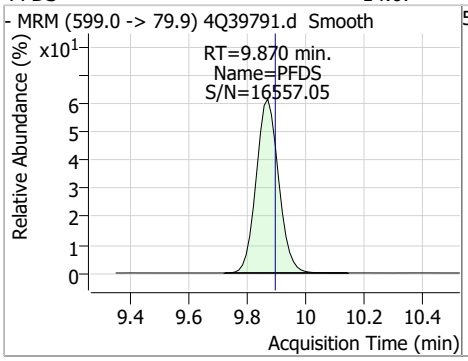
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	14.62	9.71	-0.03	673515	613.1 -> 319.0	14.5	7.2	21.7

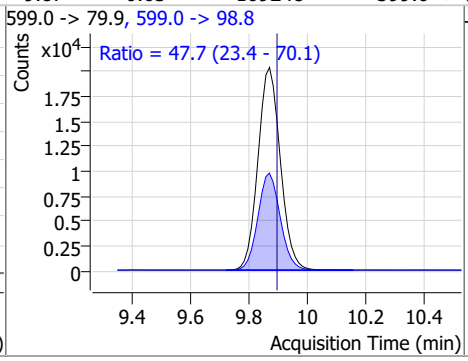


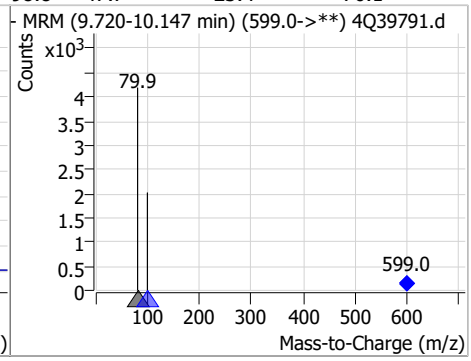




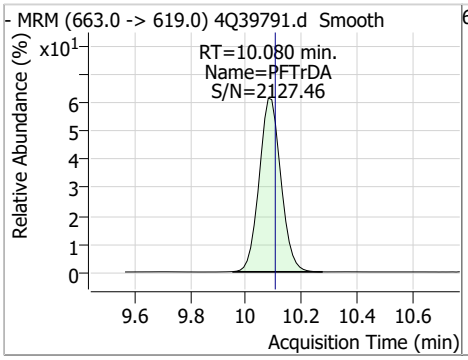
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	14.07	9.87	-0.03	109248	599.0 -> 98.8	47.7	23.4	70.1

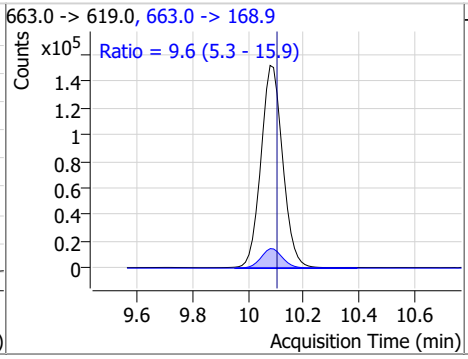


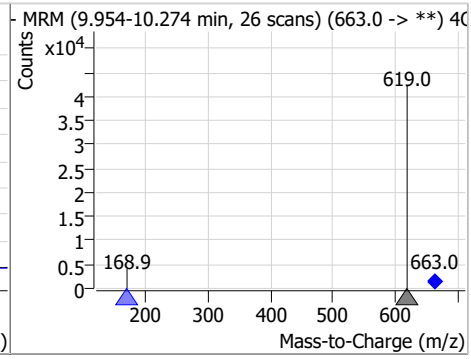




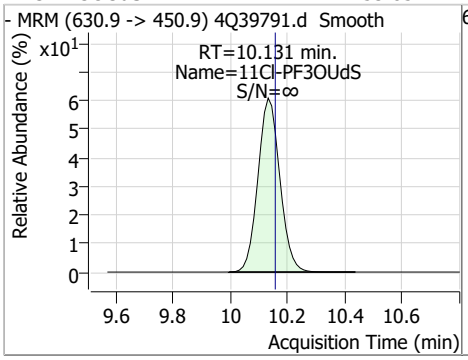
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	14.44	10.08	-0.02	814492	663.0 -> 168.9	9.6	5.3	15.9

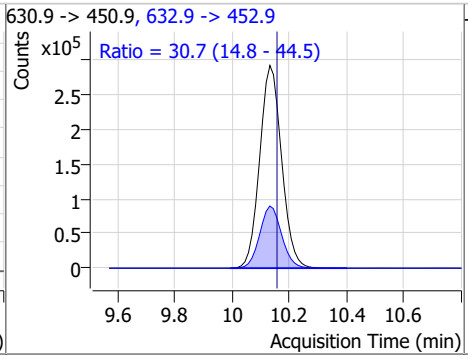


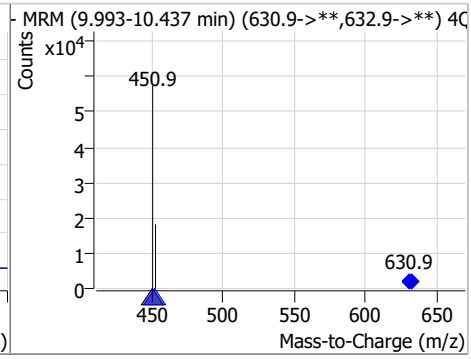




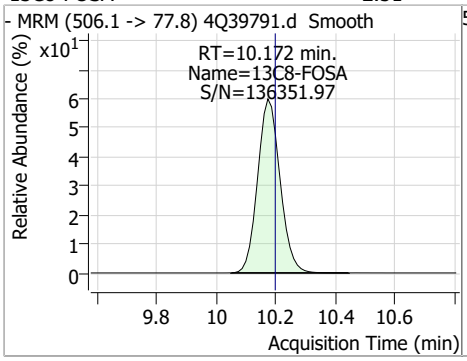
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	53.85	10.13	-0.02	1548717	632.9 -> 452.9	30.7	14.8	44.5

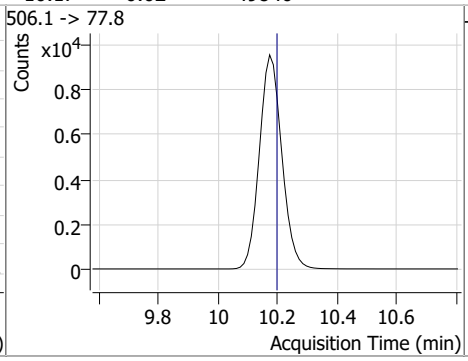


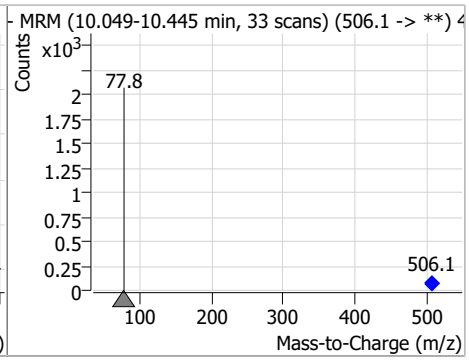




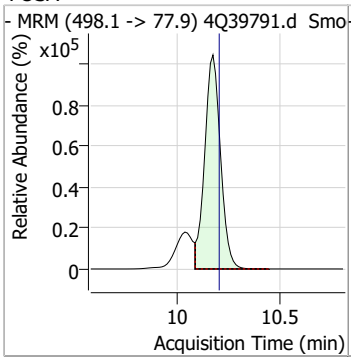
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	10.17	-0.02	49846				

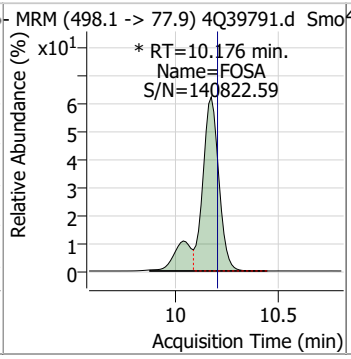


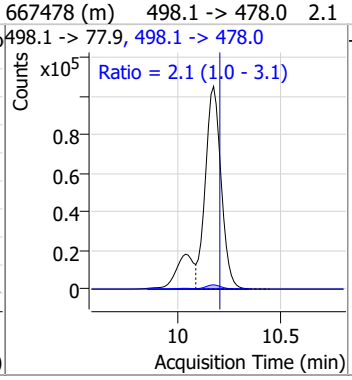


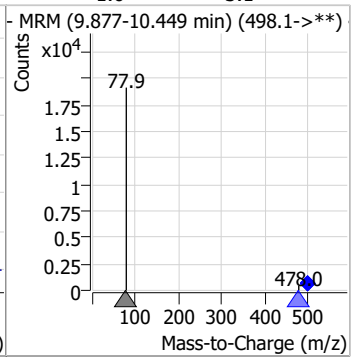


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	34.68	10.18	-0.02	667478 (m)	498.1 -> 478.0	2.1	1.0	3.1

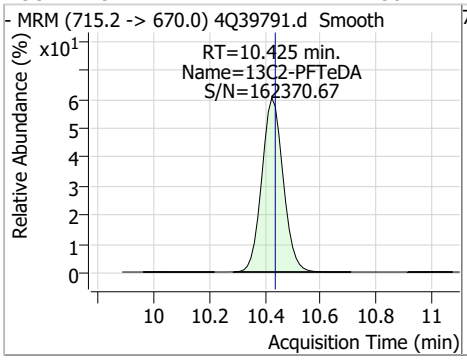


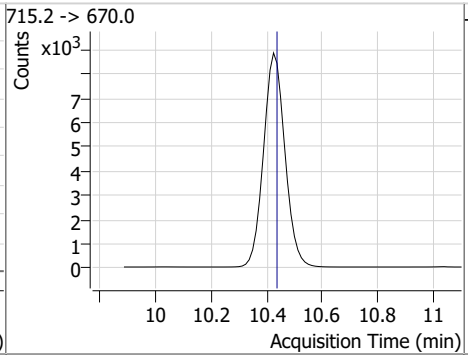


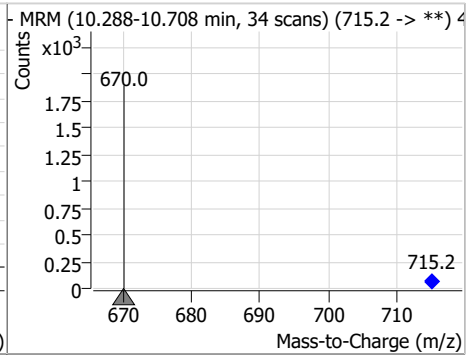




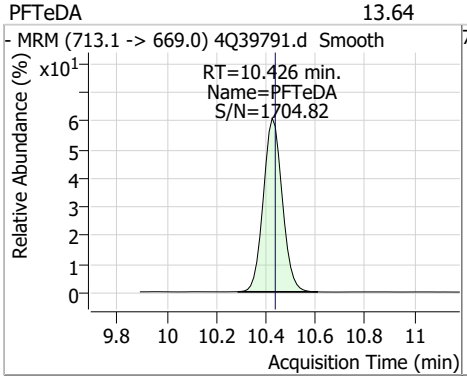
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.38	10.42	-0.01	46777				

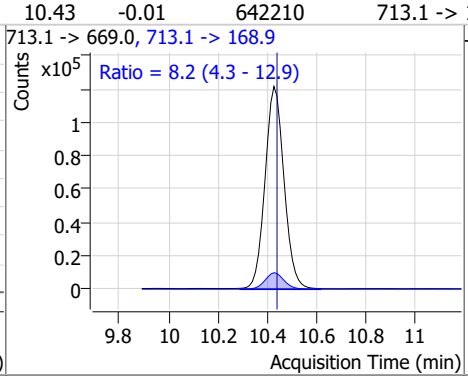


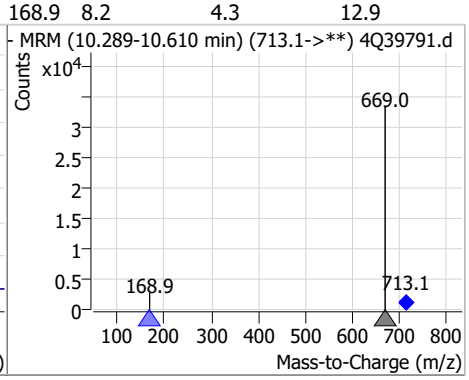




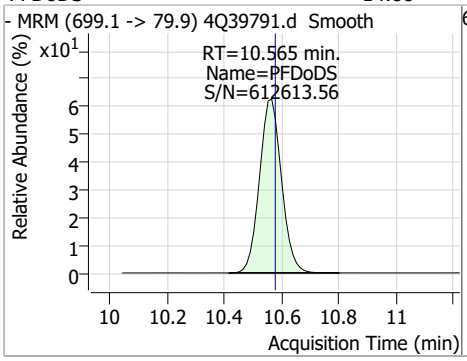
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.64	10.43	-0.01	642210	713.1 -> 168.9	8.2	4.3	12.9

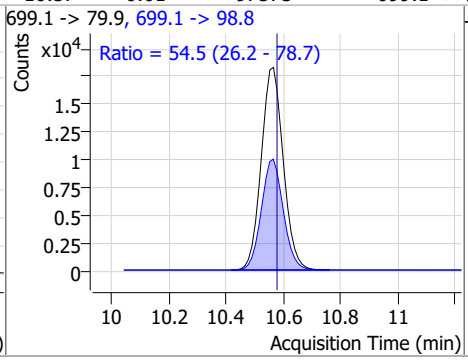


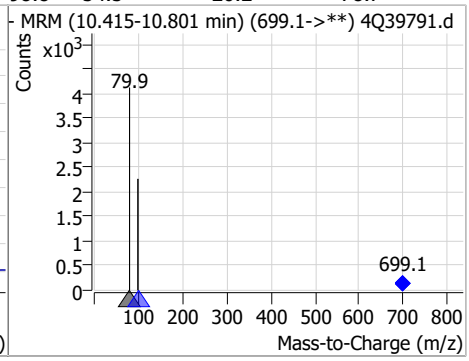




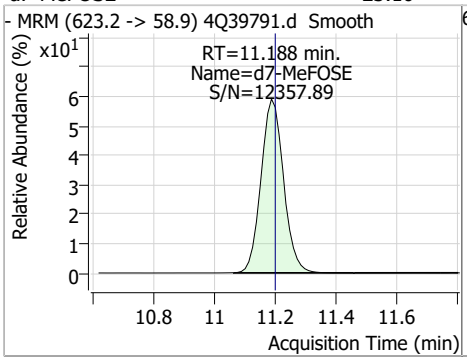
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	14.88	10.57	-0.01	97575	699.1 -> 98.8	54.5	26.2	78.7

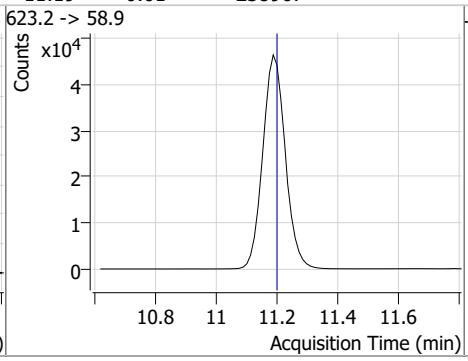


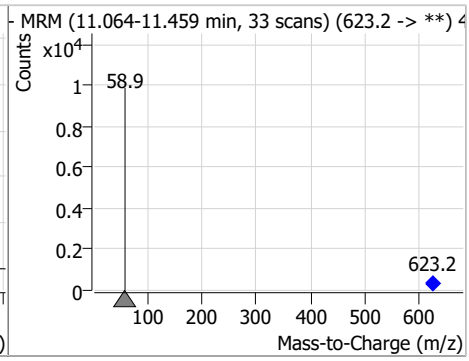




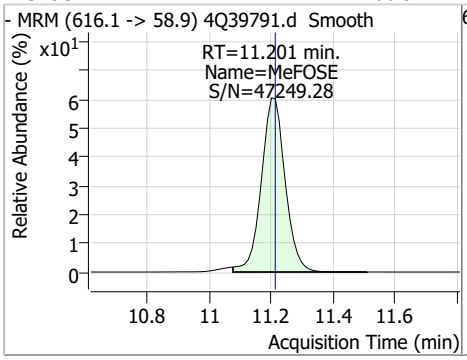
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.10	11.19	-0.01	238967				

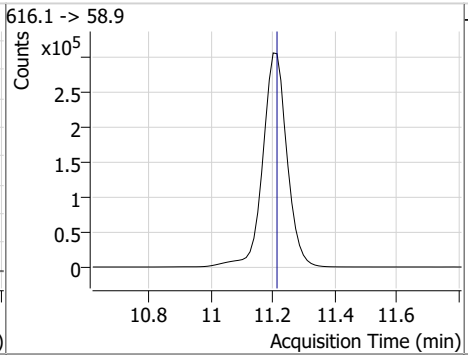


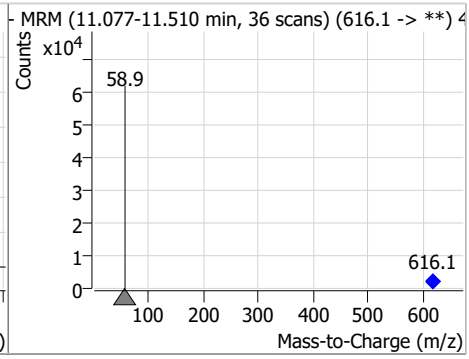




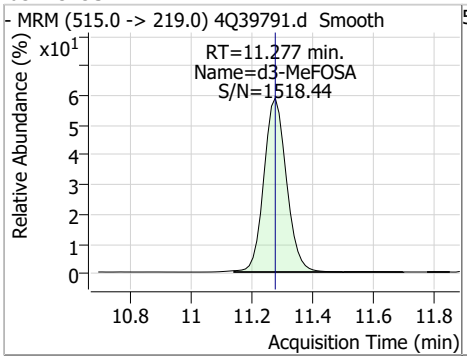
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	160.97	11.20	-0.01	1625080				

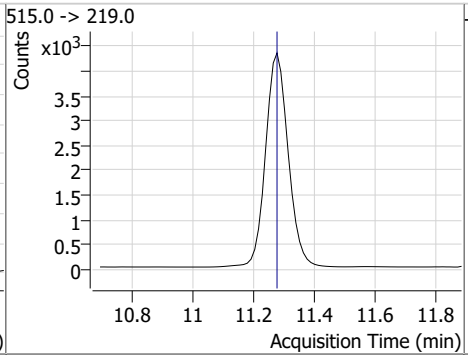


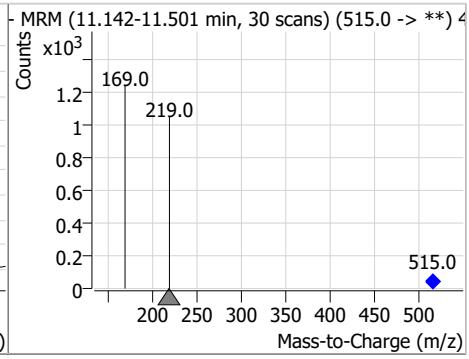




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	11.28	0.00	22386				

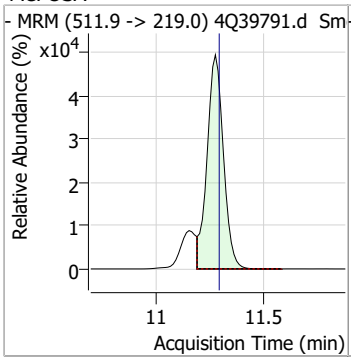


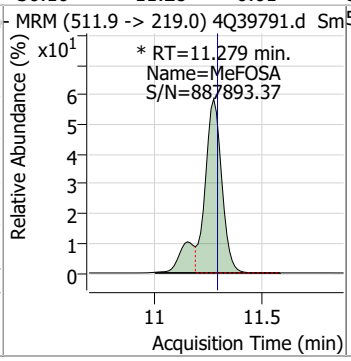


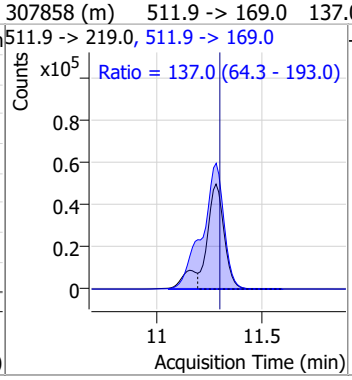


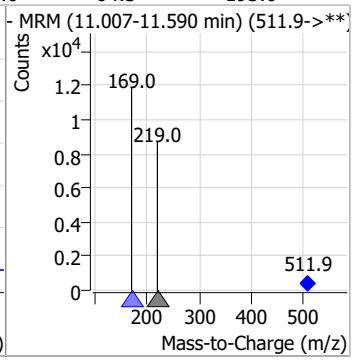
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	36.10	11.28	-0.01	307858 (m)	511.9 -> 169.0	137.0	64.3	193.0

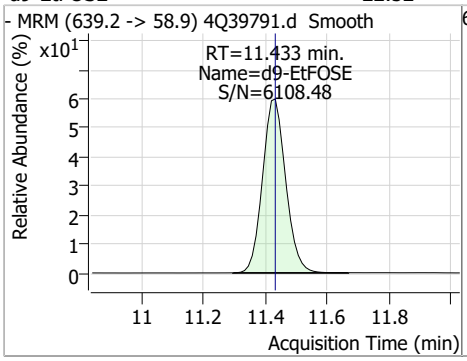


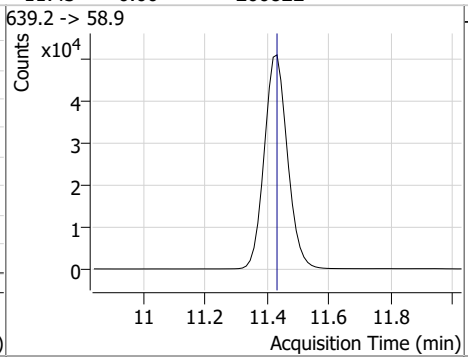


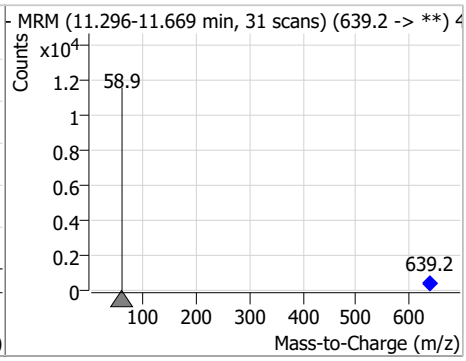




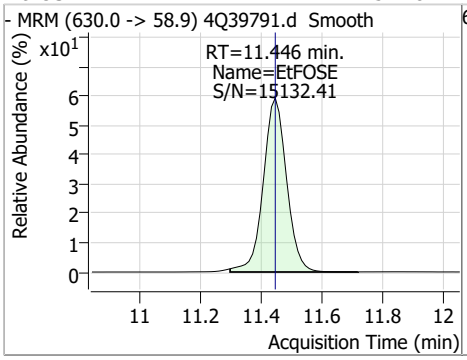
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.52	11.43	0.00	266822				

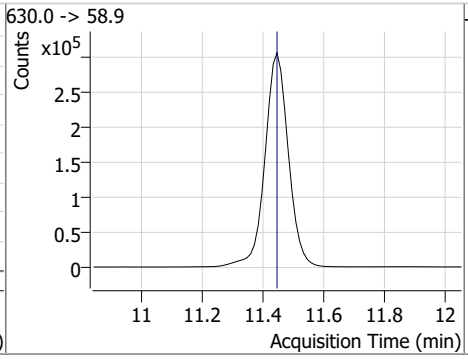


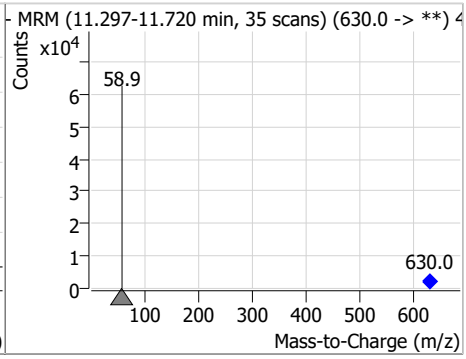




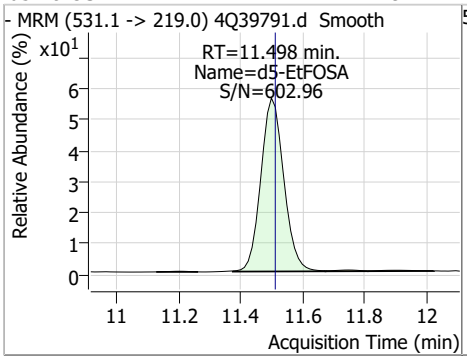
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	157.48	11.45	0.00	1631494				

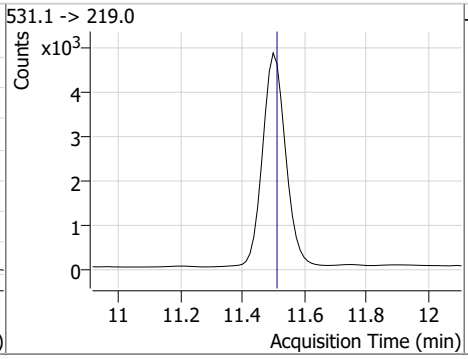


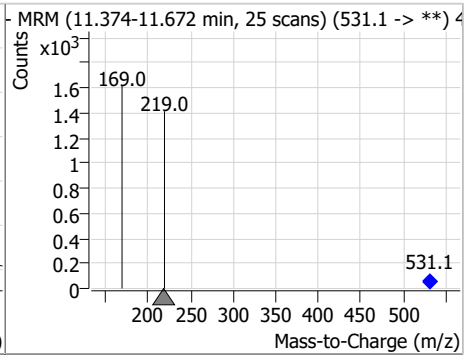




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.50	-0.01	24738				

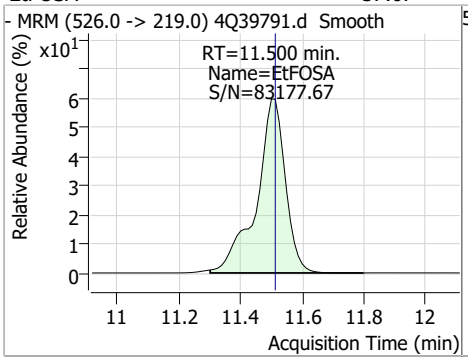


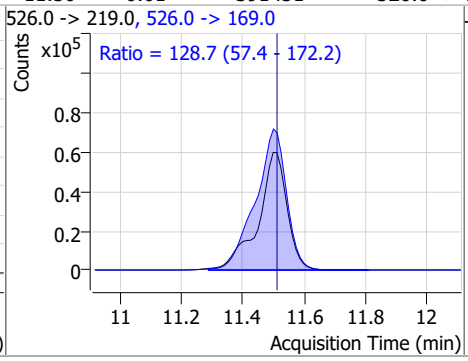


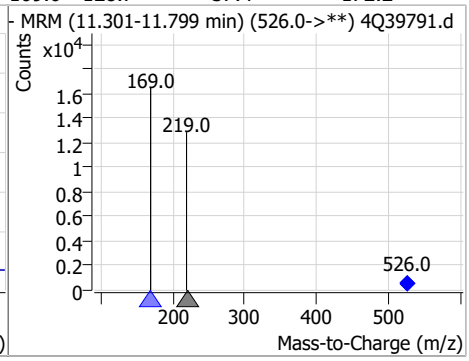


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	37.67	11.50	-0.01	391451	526.0 -> 169.0	128.7	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q572-RT
Lab FileID: 4Q39791.D
Injection Time: 01/26/23 13:13
Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:21 Natasha Gumtie
Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.69	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.82	Split peak
Perfluorononanoic acid	375-95-1		8.26	Split peak
MeFOSAA	2355-31-9		8.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.96	Split peak
EtFOSAA	2991-50-6		9.05	Split peak
PFOSA	754-91-6		10.18	Split peak
MeFOSA	31506-32-8		11.28	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS4-Q
MS Model	G6470A
MS Instrument Serial	SG2004G105
Software_Firmware Version	10.0.142, FW: A.00.08.100
Tune Date & Time	25 January 2023 12:05:19
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.59E+0 [R] (Torr); 3.48E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.74	0.04	Pass	168395
302.00	302.00	0.00	Pass	0.70	0.70	0.00	Pass	265819
601.98	602.01	0.03	Pass	0.70	0.71	0.01	Pass	473392
1033.99	1034.01	0.02	Pass	0.70	0.69	-0.01	Pass	533021
1633.95	1634.00	0.05	Pass	0.70	0.67	-0.03	Pass	971783
2233.91	2233.93	0.02	Pass	0.70	0.70	0.00	Pass	545277

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.99	-0.01	Pass	0.70	0.74	0.04	Pass	47134
112.99	112.93	-0.06	Pass	0.70	0.79	0.09	Pass	140249
302.00	302.02	0.02	Pass	0.70	0.70	0.00	Pass	254327
601.98	602.01	0.03	Pass	0.70	0.70	0.00	Pass	308931
1033.99	1034.09	0.10	Pass	0.70	0.65	-0.05	Pass	229423
1633.95	1633.95	0.00	Pass	0.70	0.69	-0.01	Pass	512306
2233.91	2233.92	0.01	Pass	0.70	0.68	-0.02	Pass	276022

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.03	0.04	Pass	1.20	1.24	0.04	Pass	201016
302.00	302.00	0.00	Pass	1.20	1.26	0.06	Pass	343276
601.98	601.96	-0.02	Pass	1.20	1.23	0.03	Pass	641773
1033.99	1033.96	-0.03	Pass	1.20	1.26	0.06	Pass	853282
1633.95	1633.91	-0.04	Pass	1.20	1.24	0.04	Pass	2093908
2233.91	2233.87	-0.04	Pass	1.20	1.25	0.05	Pass	1357888

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.97	-0.03	Pass	1.20	1.19	-0.01	Pass	60096
112.99	112.94	-0.05	Pass	1.20	1.23	0.03	Pass	191377
302.00	301.79	-0.21	Pass	1.20	1.34	0.14	Pass	348130
601.98	601.72	-0.26	Pass	1.20	1.43	0.23	Pass	545717
1033.99	1033.87	-0.12	Pass	1.20	1.38	0.18	Pass	436121
1633.95	1633.90	-0.05	Pass	1.20	1.36	0.16	Pass	1221253
2233.91	2234.00	0.09	Pass	1.20	1.26	0.06	Pass	703698

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	2.50	2.53	0.03	Pass	254213
302.00	302.00	0.00	Pass	2.50	2.50	0.00	Pass	429283
601.98	601.99	0.01	Pass	2.50	2.44	-0.06	Pass	926526
1033.99	1033.95	-0.04	Pass	2.50	2.49	-0.01	Pass	1499218
1633.95	1633.92	-0.03	Pass	2.50	2.41	-0.09	Pass	4541677
2233.91	2233.81	-0.10	Pass	2.50	2.39	-0.11	Pass	3706981

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.97	-0.03	Pass	2.50	2.52	0.02	Pass	71751
112.99	112.95	-0.04	Pass	2.50	2.56	0.06	Pass	236501
302.00	301.98	-0.02	Pass	2.50	2.54	0.04	Pass	446017
601.98	601.94	-0.04	Pass	2.50	2.61	0.11	Pass	752845
1033.99	1034.12	0.13	Pass	2.50	2.52	0.02	Pass	705110
1633.95	1634.24	0.29	Pass	2.50	2.28	-0.22	Pass	2178532
2233.91	2234.05	0.14	Pass	2.50	2.26	-0.24	Pass	1645963

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39691.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 1:13:39 PM
Sample Name : ic571-1
Vial : P1-A2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.161	216.8 -> 171.9	378112	10.00	µg/L	-0.012
M5-PFPeA	4.851	268.3 -> 223.0	244215	5.00	µg/L	-0.013
M5-PFHxA	6.160	318.0 -> 273.0	153999	2.50	µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	85473	2.50	µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	144006	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67256	1.25	µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	51600	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	58149	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	62170	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40820	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	51136	2.50	µg/L	0.000
M3-PFBS	6.077	302.1 -> 79.9	42632	2.50	µg/L	-0.012
M3-PFHxS	7.904	402.1 -> 79.9	29757	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	38096	2.50	µg/L	-0.012
M2-4:2FTS	5.796	329.1 -> 80.9	3832	5.00	µg/L	-0.027
M2-6:2FTS	7.524	429.1 -> 80.9	8489	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	12306	5.00	µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	43096	5.00	µg/L	0.000
M3-HFPO-DA	6.539	286.9 -> 168.9	120662	10.00	µg/L	-0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	37972	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	276768	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	323467	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27006	2.50	µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	22296	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	34913	2.50	µg/L	-0.012
13C3-PFBA	3.153	216.0 -> 172.0	206451	5.00	µg/L	-0.025
18O2-PFHxS	7.903	403.0 -> 83.9	20000	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	158705	2.50	µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	45955	1.25	µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	77611	1.25	µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	145414	2.50	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	5.796	329.1 -> 80.9	3832	5.32	µg/L	-0.027
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C2-6:2FTS	7.524	429.1 -> 80.9	8489	5.26	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C2-8:2FTS	8.641	529.1 -> 80.9	12306	5.57	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	62170	1.39	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40820	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-PFBS	6.077	302.1 -> 79.9	42632	2.47	µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFHxS	7.904	402.1 -> 79.9	29757	2.55	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C4-PFBA	3.161	216.8 -> 171.9	378112	10.16 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFHpA	7.093	367.1 -> 322.0	85473	2.52 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C5-PFHxA	6.160	318.0 -> 273.0	153999	2.52 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFPeA	4.851	268.3 -> 223.0	244215	5.16 µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C6-PFDA	8.879	519.1 -> 474.1	51600	1.27 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C7-PFUnDA	9.373	570.0 -> 525.1	58149	1.33 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C8-FOSA	10.247	506.1 -> 77.8	51136	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-PFOA	7.776	421.1 -> 376.0	144006	2.53 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-PFOS	9.055	507.1 -> 79.9	38096	2.67 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C9-PFNA	8.347	472.1 -> 427.0	67256	1.22 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%		
d3-MeFOSAA	8.924	573.2 -> 419.0	43096	5.38 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C3-HFPO-DA	6.539	286.9 -> 168.9	120662	10.40 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d3-MeFOSA	11.315	515.0 -> 219.0	22296	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
d5-EtFOSAA	9.133	589.2 -> 419.0	37972	5.44 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	276768	26.58 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
d9-EtFOSE	11.470	639.2 -> 58.9	323467	27.12 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
d5-EtFOSA	11.548	531.1 -> 219.0	27006	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
Target Compounds						QValue
4:2FTS	5.797	327.1 -> 307.0	3831	0.61 µg/L		91
		327.1 -> 80.9	2027			
6:2FTS	7.524	427.1 -> 407.0	4312	0.64 µg/L		96
		427.1 -> 80.9	2239			
8:2FTS	8.641	527.1 -> 507.0	4336	0.73 µg/L		94
		527.1 -> 80.8	2104			
EtFOSAA	9.147	584.2 -> 419.1	1337	0.21 µg/L	m	76
		584.2 -> 526.0	448			
FOSA	10.238	498.1 -> 77.9	3453	0.17 µg/L	#	96
		498.1 -> 478.0	116			
MeFOSAA	8.925	570.1 -> 419.0	1262	0.20 µg/L	m	89
		570.1 -> 483.0	184			
PFBA	3.157	212.8 -> 168.9	7130	0.68 µg/L		100
PFBS	6.078	298.7 -> 79.9	3021	0.16 µg/L		95
		298.7 -> 98.8	945			
PFDA	8.879	512.9 -> 469.0	6119	0.17 µg/L		91
		512.9 -> 219.0	1517			
PFDoDA	9.806	613.1 -> 569.0	7448	0.16 µg/L		99
		613.1 -> 319.0	1043			
PFDS	9.959	599.0 -> 79.9	1416	0.16 µg/L		89

Perfluorinated Compounds by LC/MS/MS

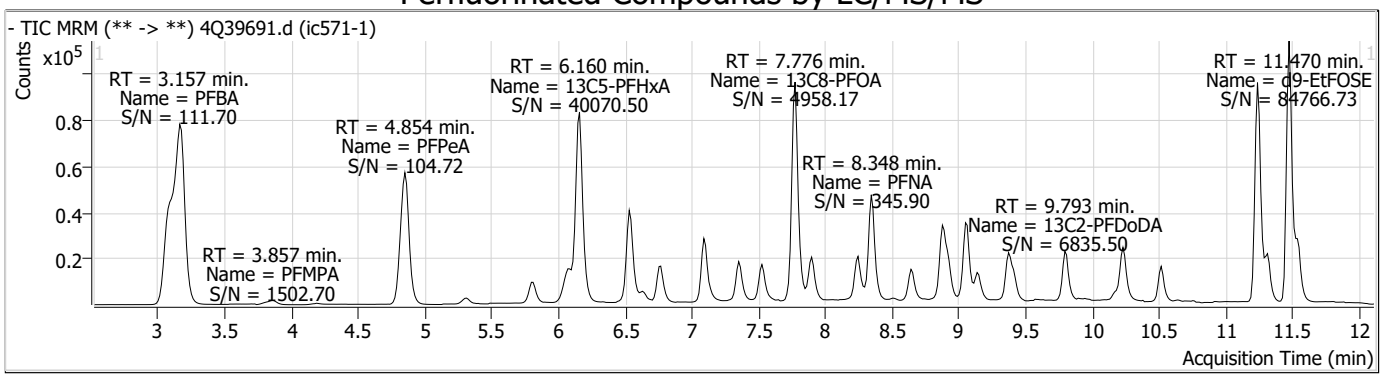
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	562				
PFHpA	7.094	363.1 -> 319.0	7993	0.15	µg/L		94
		363.1 -> 169.0	1552				
PFHpS	8.513	449.0 -> 79.9	2259	0.15	µg/L		86
		449.0 -> 98.9	1256				
PFHxA	6.162	313.0 -> 269.0	9159	0.15	µg/L	#	93
		313.0 -> 118.9	467				
PFHxS	7.905	398.7 -> 79.9	1235	0.13	µg/L	m	82
		398.7 -> 98.9	749				
PFNA	8.348	463.0 -> 419.0	8831	0.18	µg/L		94
		463.0 -> 219.0	1806				
PFNS	9.549	548.8 -> 79.9	1172	0.17	µg/L		99
		548.8 -> 98.9	633				
PFOA	7.777	413.0 -> 369.0	10905	0.17	µg/L	m	99
		413.0 -> 169.0	2273				
PFOS	9.057	498.9 -> 79.9	2753	0.15	µg/L	m	93
		498.9 -> 98.8	1460				
PFPeA	4.854	263.0 -> 219.0	17770	0.33	µg/L		100
PFPeS	7.159	349.1 -> 79.9	1553	0.17	µg/L		87
		349.1 -> 98.9	485				
PFTeDA	10.513	713.1 -> 669.0	6444	0.16	µg/L		88
		713.1 -> 168.9	829				
PFTrDA	10.167	663.0 -> 619.0	9157	0.16	µg/L		99
		663.0 -> 168.9	927				
PFUnDA	9.374	563.1 -> 519.0	6400	0.18	µg/L		99
		563.1 -> 269.1	1194				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	18994	0.67	µg/L		98
		632.9 -> 452.9	5801				
9Cl-PF3ONS	9.413	530.8 -> 351.0	20616	0.60	µg/L		97
		532.8 -> 353.0	6545				
ADONA	7.357	376.9 -> 250.9	42508	0.65	µg/L		97
		376.9 -> 84.8	14339				
HFPO-DA	6.540	284.9 -> 168.9	7808	0.69	µg/L		93
		284.9 -> 184.9	1026				
3:3FTCA	4.173	241.0 -> 177.0	2038	0.81	µg/L		98
		241.0 -> 117.0	176				
5:3FTCA	6.771	341.0 -> 237.1	34816	4.37	µg/L		94
		341.0 -> 217.0	24312				
7:3FTCA	8.249	441.0 -> 316.9	18421	4.03	µg/L		86
		441.0 -> 336.9	45896				
EtFOSA	11.550	526.0 -> 219.0	2130	0.19	µg/L		96
		526.0 -> 169.0	2351				
EtFOSE	11.483	630.0 -> 58.9	21289	1.70	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	1300	0.15	µg/L		82
		511.9 -> 169.0	1951				
MeFOSE	11.248	616.1 -> 58.9	20507	1.75	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	1283	0.17	µg/L		94
		699.1 -> 98.8	615				
NFDHA	6.028	295.0 -> 201.0	1476	0.38	µg/L		92
		295.0 -> 84.9	498				
PFMBA	5.316	279.0 -> 85.1	10832	0.32	µg/L		100
PFMPA	3.857	229.0 -> 84.9	11007	0.32	µg/L		100
PFEESA	6.634	314.8 -> 134.9	14600	0.29	µg/L		99
		314.8 -> 82.9	439				

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

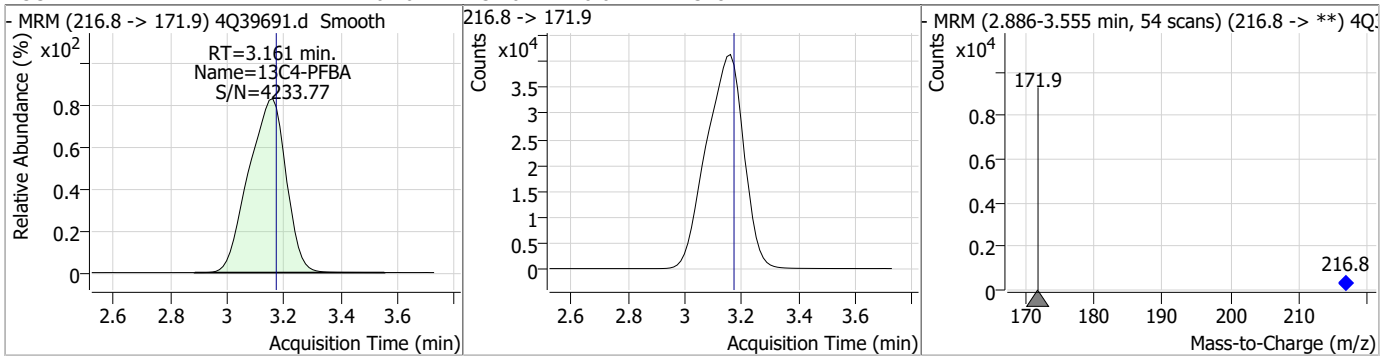
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

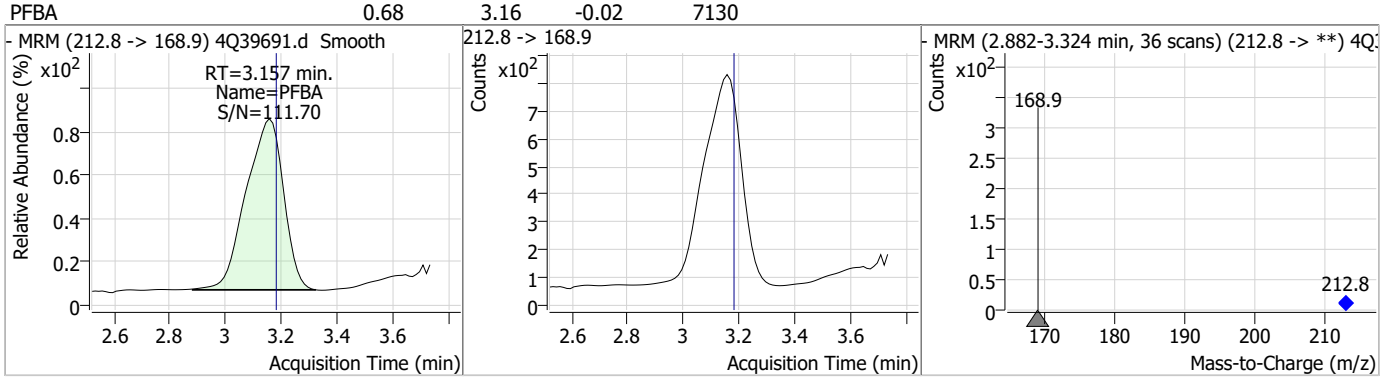
Perfluorinated Compounds by LC/MS/MS



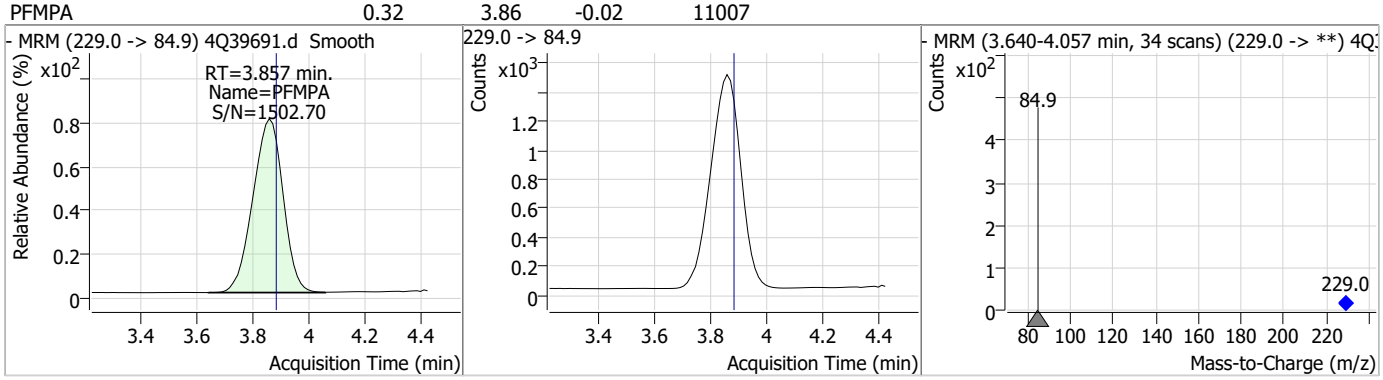
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.16	3.16	-0.01	378112				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.68	3.16	-0.02	7130				

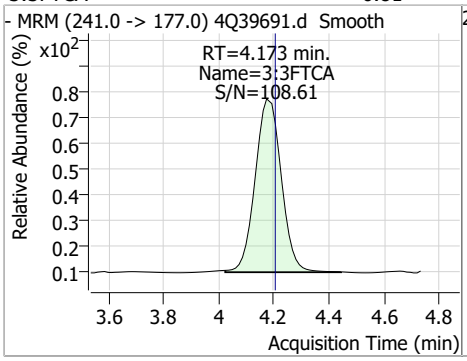


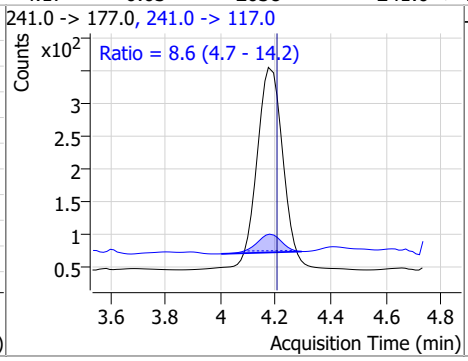
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.32	3.86	-0.02	11007				

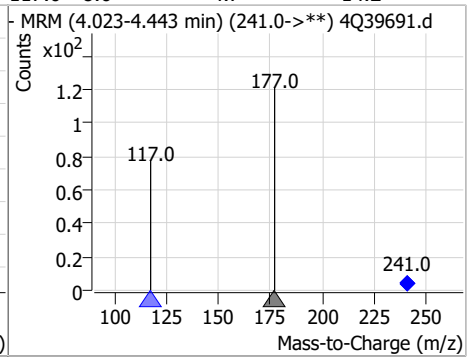


Perfluorinated Compounds by LC/MS/MS

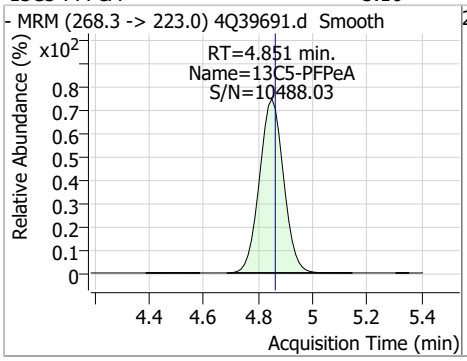
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.81	4.17	-0.03	2038	241.0 -> 117.0	8.6	4.7	14.2

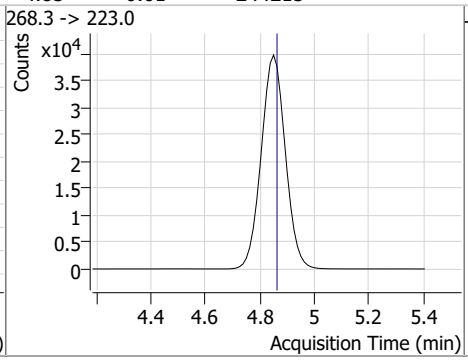


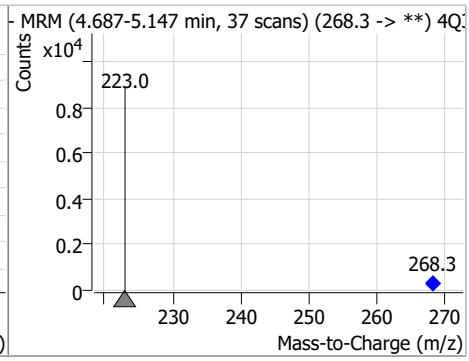




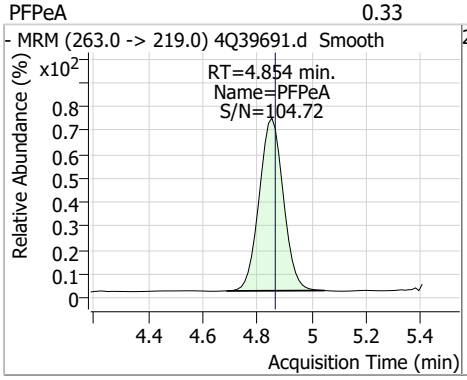
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.16	4.85	-0.01	244215				

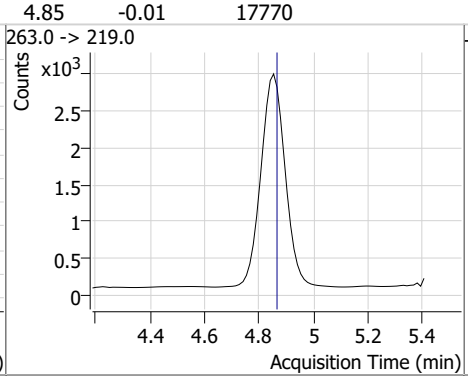


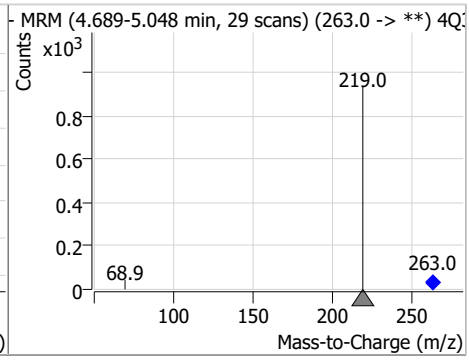




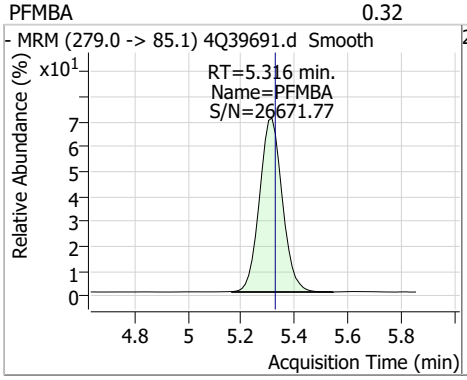
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.33	4.85	-0.01	17770				

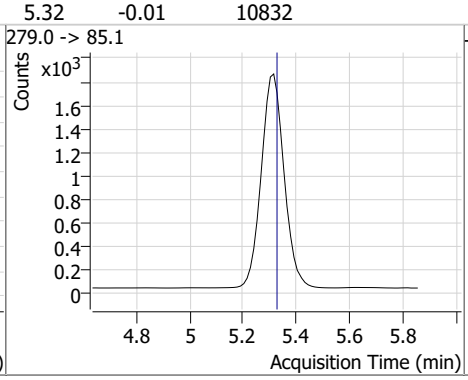


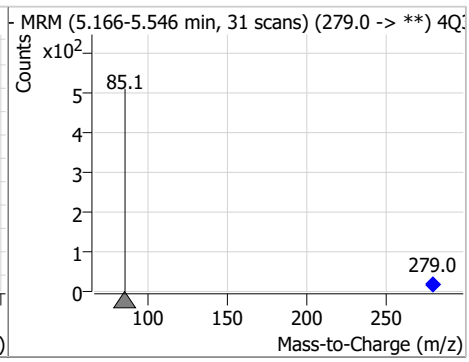




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.32	5.32	-0.01	10832				

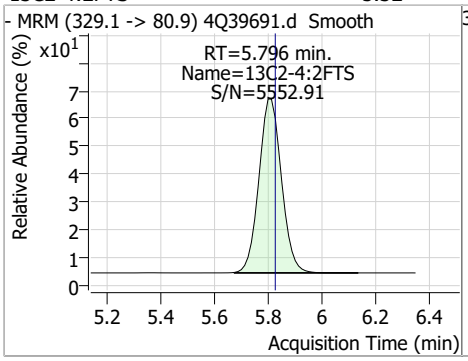


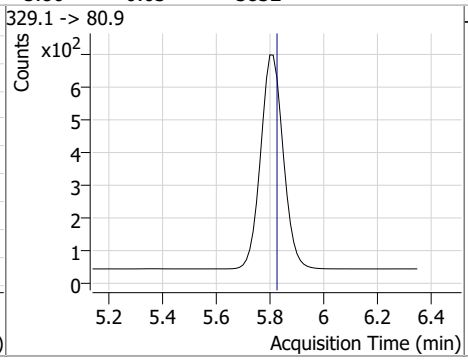


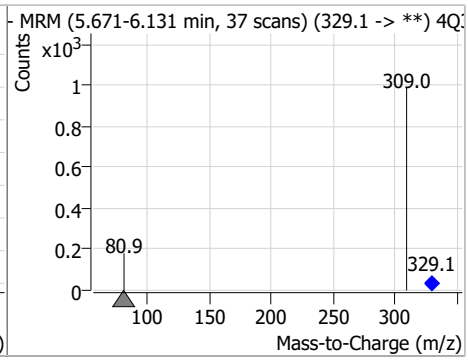


Perfluorinated Compounds by LC/MS/MS

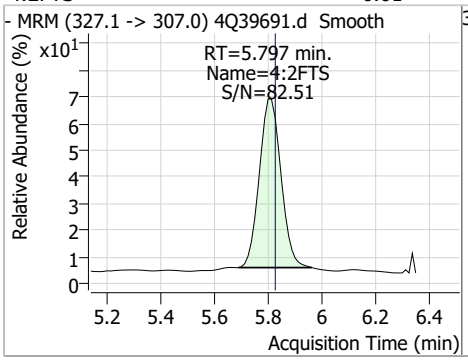
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.32	5.80	-0.03	3832				

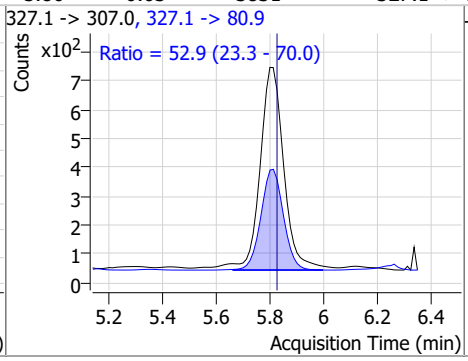


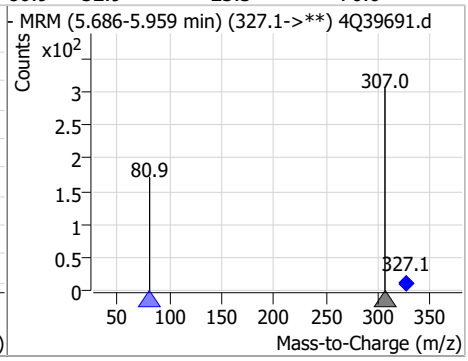




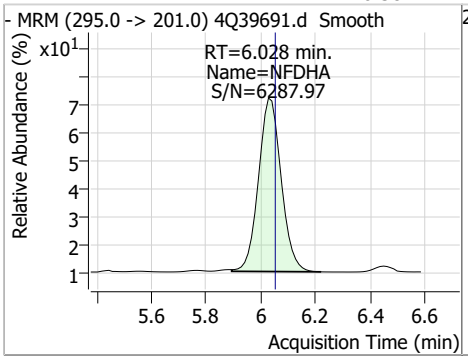
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.61	5.80	-0.03	3831	327.1 -> 80.9	52.9	23.3	70.0

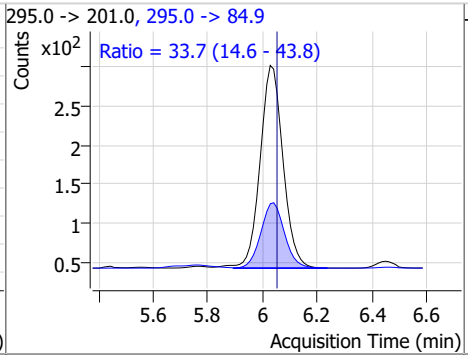


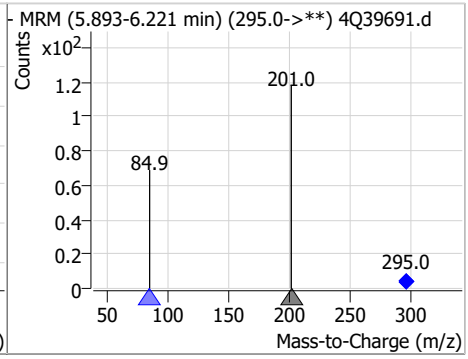




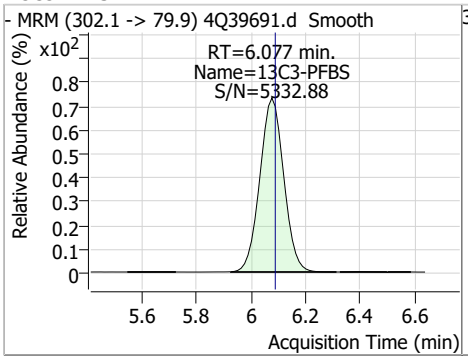
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.38	6.03	-0.02	1476	295.0 -> 84.9	33.7	14.6	43.8

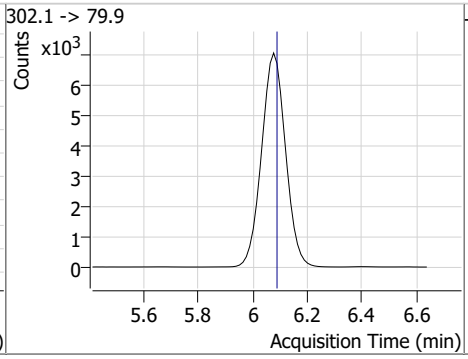


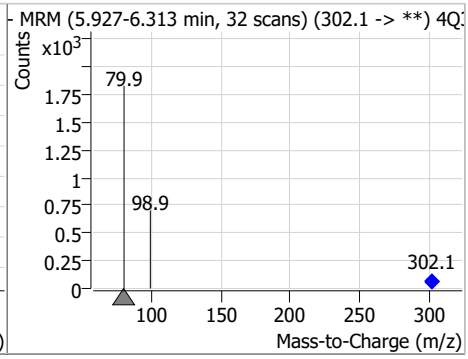




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.47	6.08	-0.01	42632				

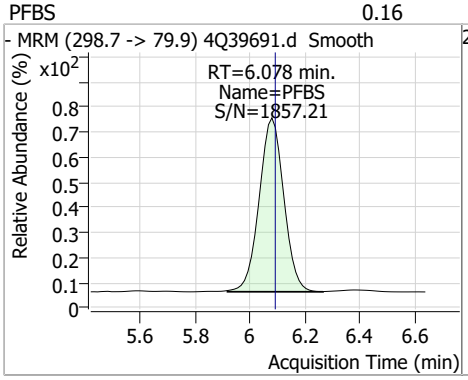


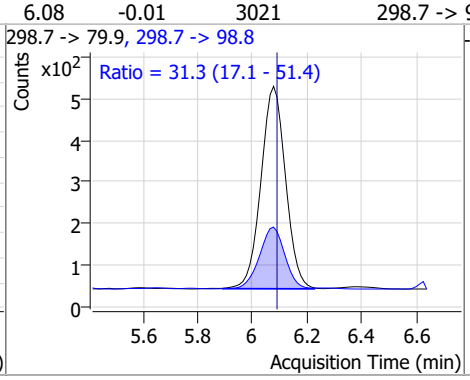


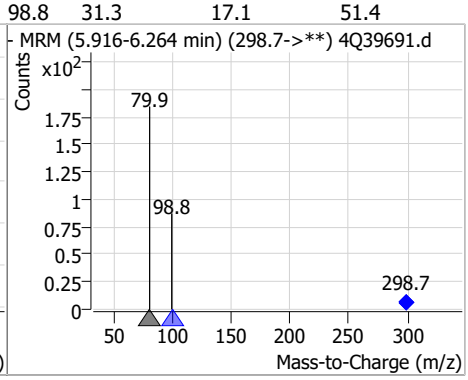


Perfluorinated Compounds by LC/MS/MS

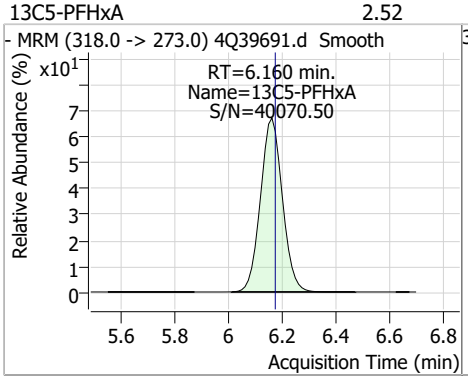
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.16	6.08	-0.01	3021	298.7 -> 98.8	31.3	17.1	51.4

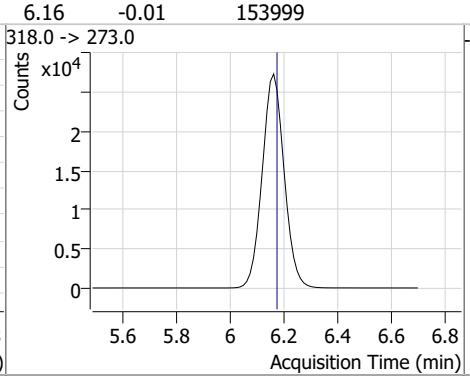


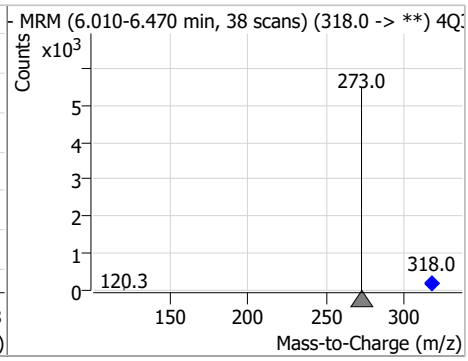




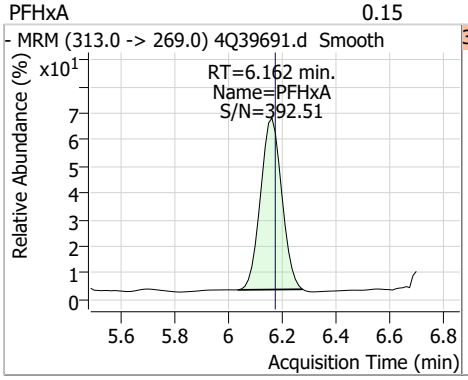
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	6.16	-0.01	153999				

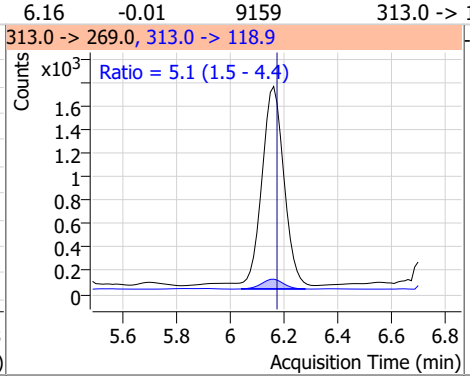


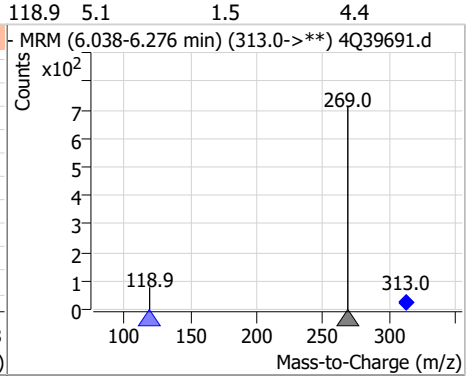




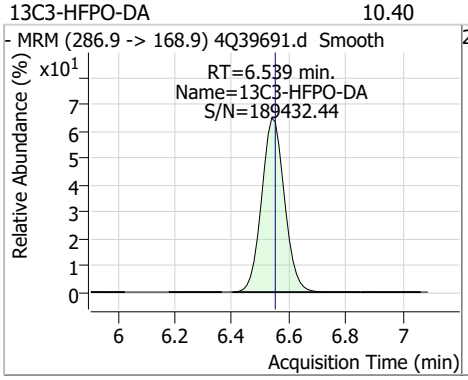
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.15	6.16	-0.01	9159	313.0 -> 118.9	5.1	1.5	4.4

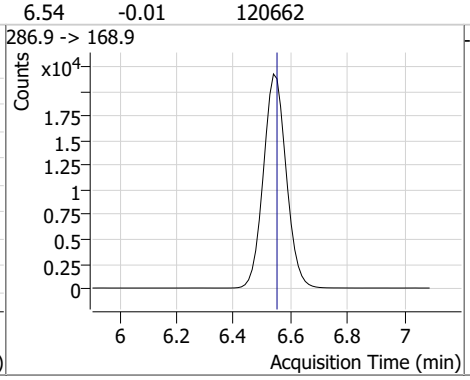


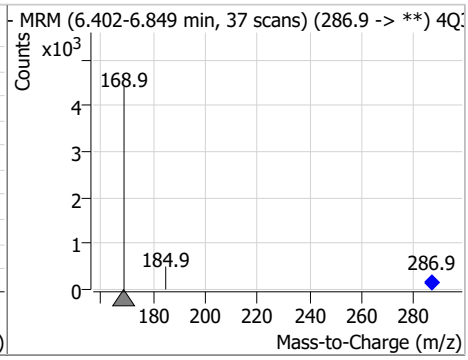




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.40	6.54	-0.01	120662				

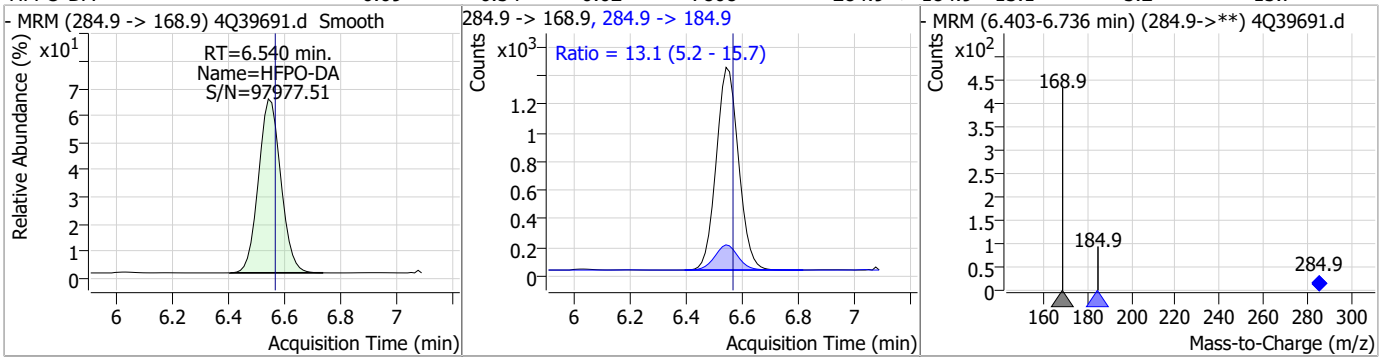




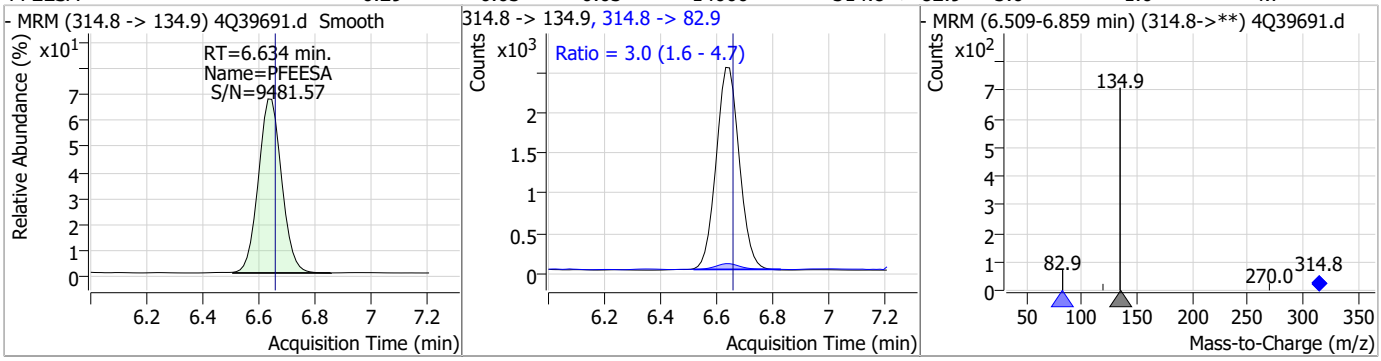


Perfluorinated Compounds by LC/MS/MS

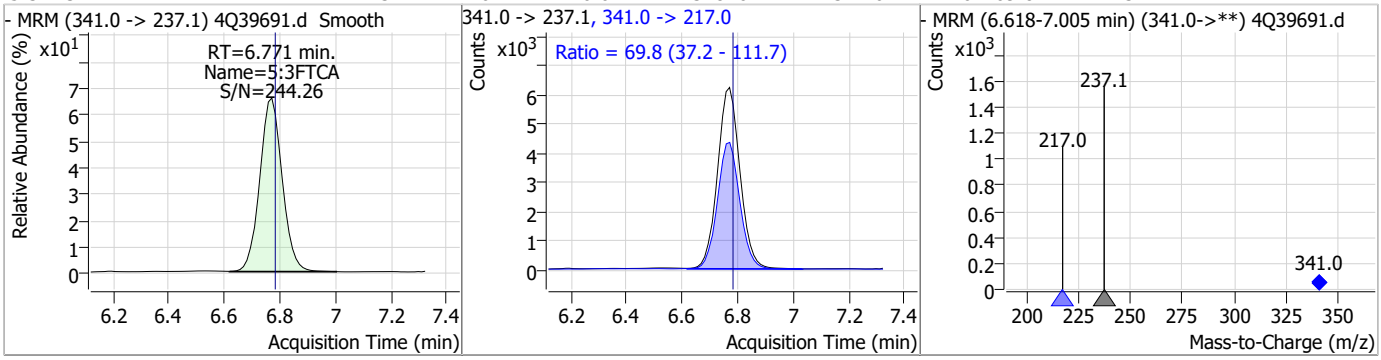
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.69	6.54	-0.02	7808	284.9 -> 184.9	13.1	5.2	15.7



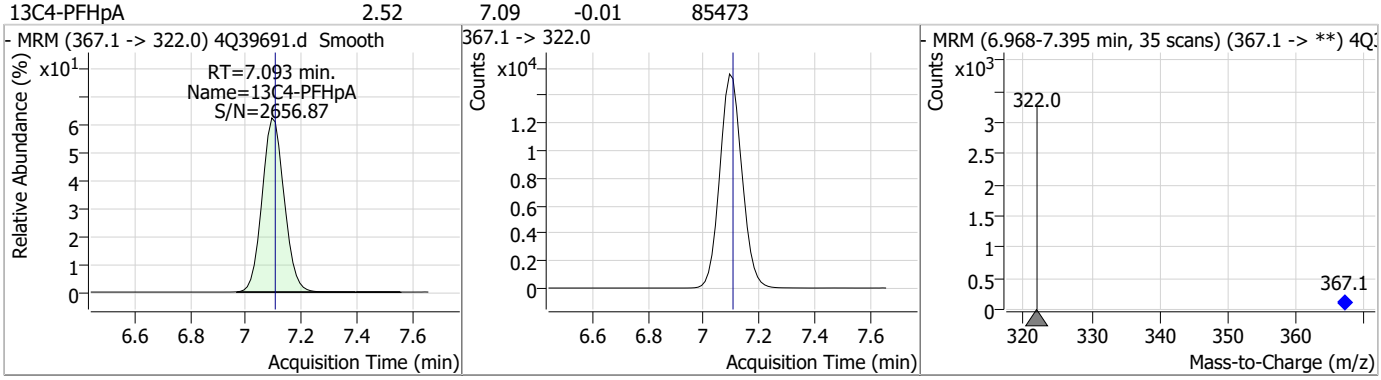
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.29	6.63	-0.03	14600	314.8 -> 82.9	3.0	1.6	4.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.37	6.77	-0.01	34816	341.0 -> 217.0	69.8	37.2	111.7

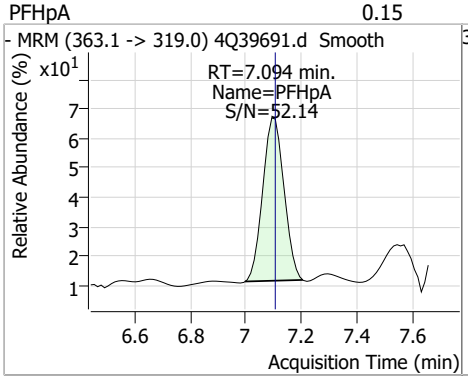


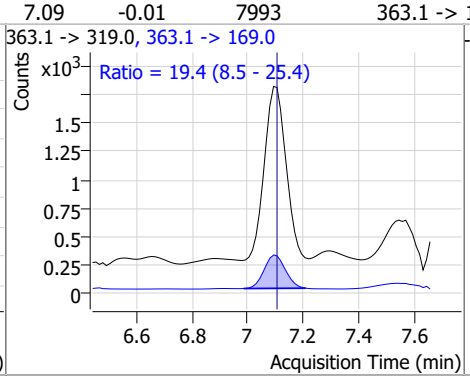
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	7.09	-0.01	85473				

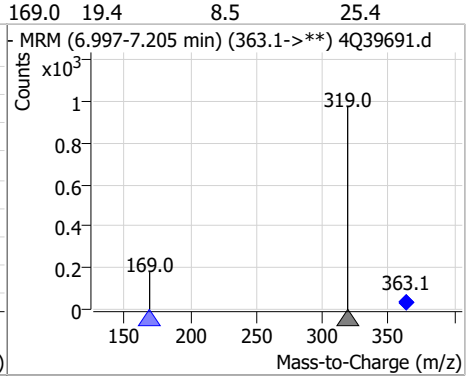


Perfluorinated Compounds by LC/MS/MS

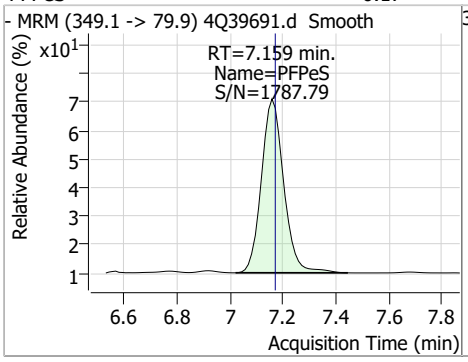
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.15	7.09	-0.01	7993	363.1 -> 169.0	19.4	8.5	25.4

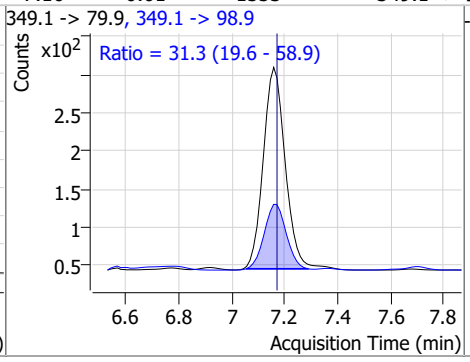


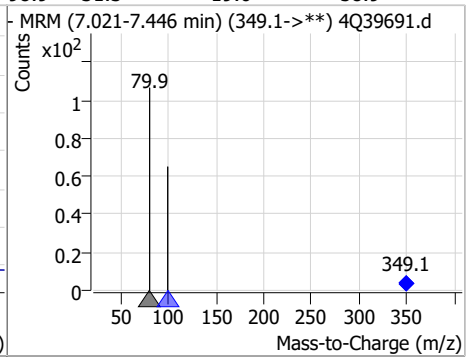




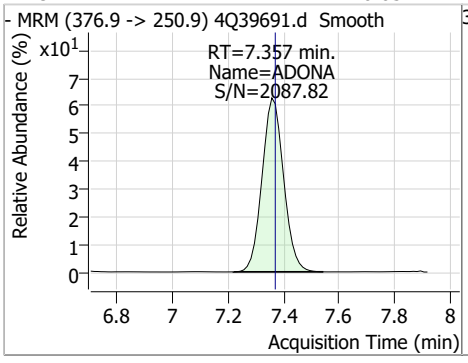
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.17	7.16	-0.01	1553	349.1 -> 98.9	31.3	19.6	58.9

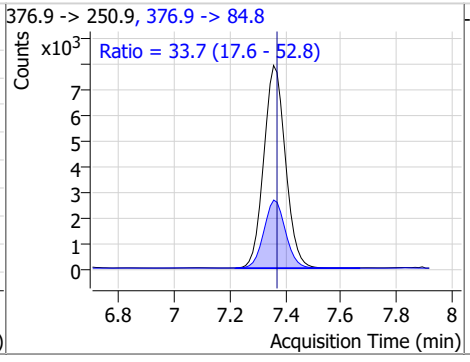


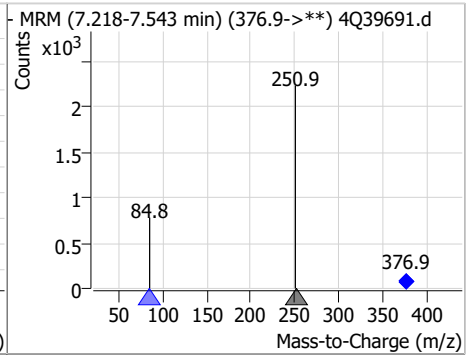




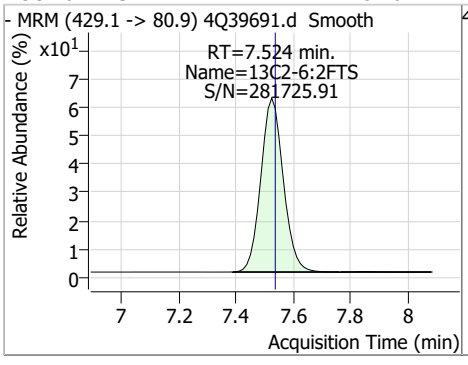
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.65	7.36	-0.01	42508	376.9 -> 84.8	33.7	17.6	52.8

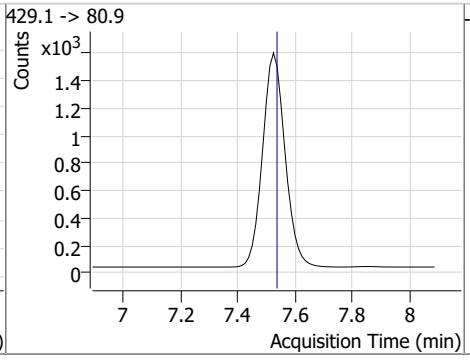


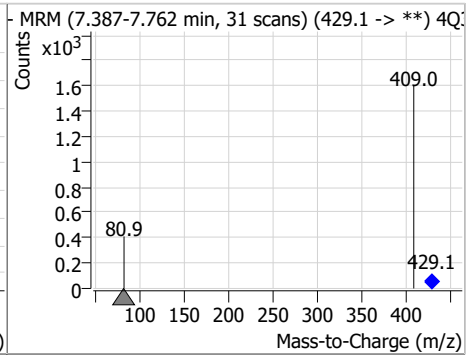




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.26	7.52	-0.01	8489				

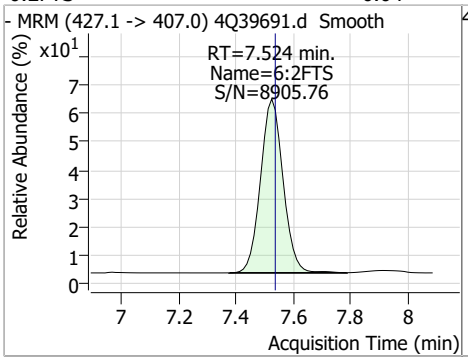


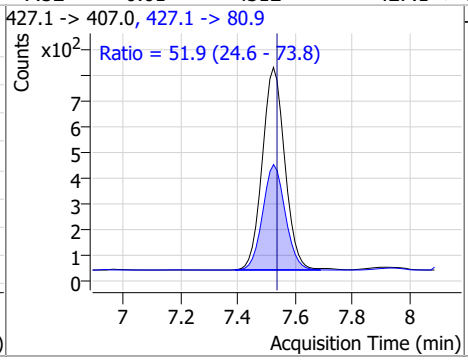


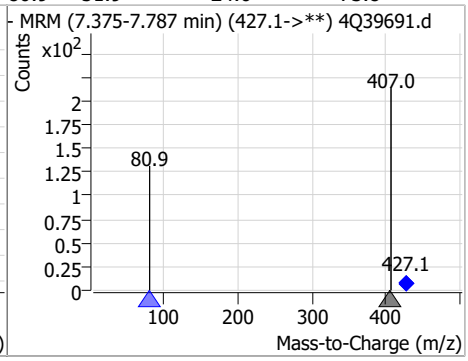


Perfluorinated Compounds by LC/MS/MS

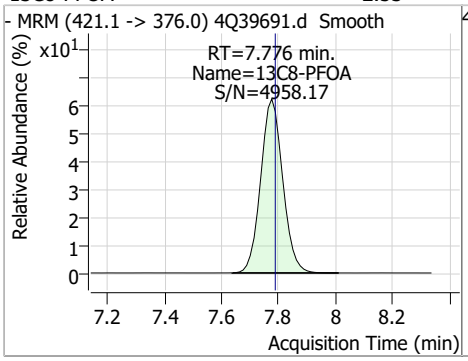
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.64	7.52	-0.01	4312	427.1 -> 80.9	51.9	24.6	73.8

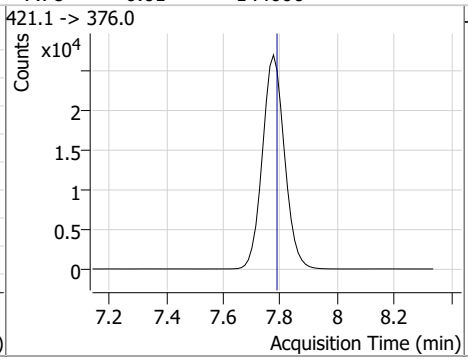


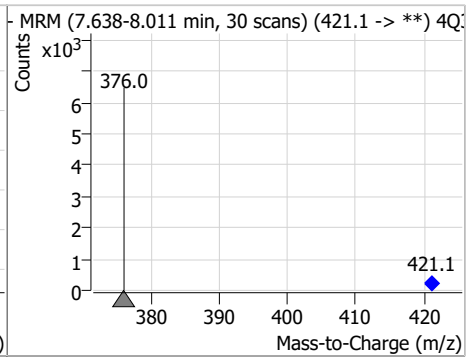




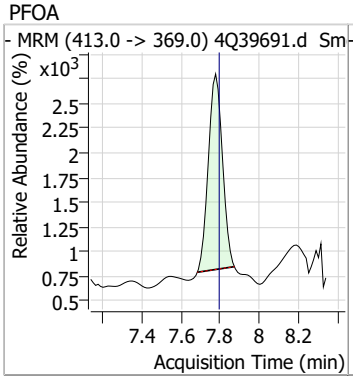
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	7.78	-0.01	144006				

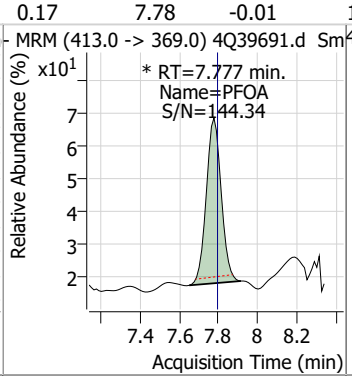


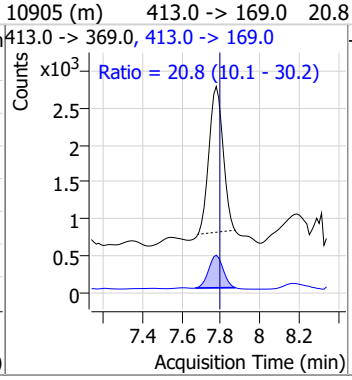


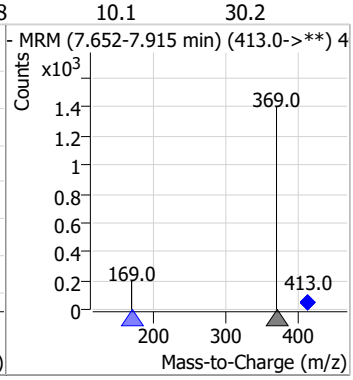


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.17	7.78	-0.01	10905 (m)	413.0 -> 169.0	20.8	10.1	30.2

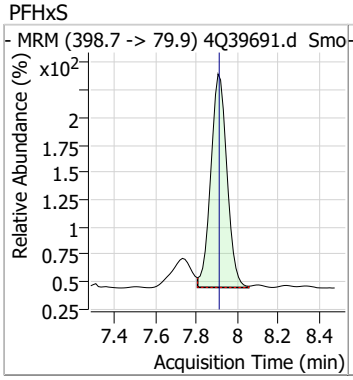


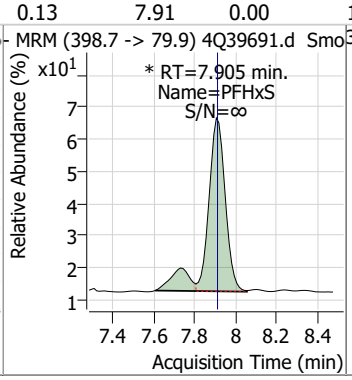


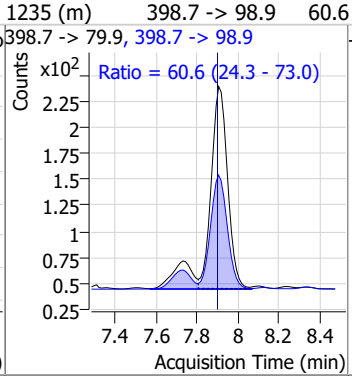


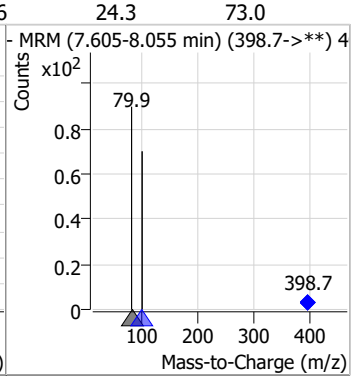


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.13	7.91	0.00	1235 (m)	398.7 -> 98.9	60.6	24.3	73.0



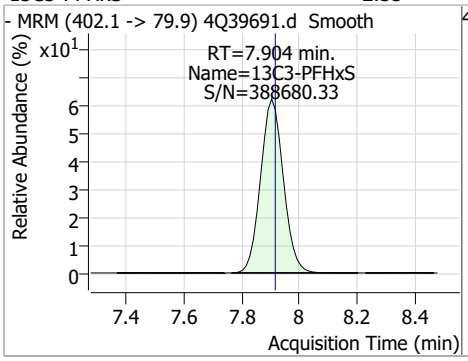


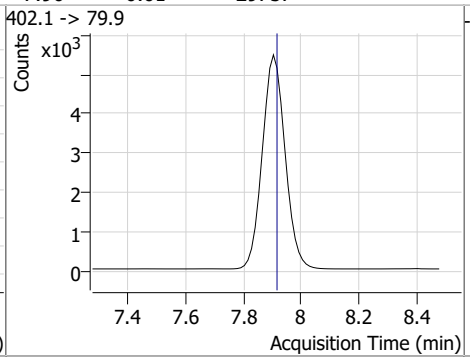


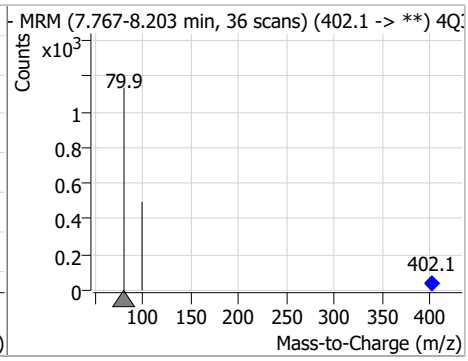


Perfluorinated Compounds by LC/MS/MS

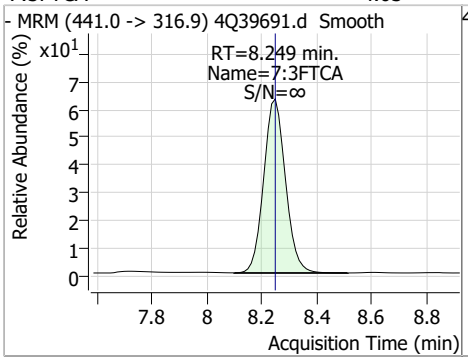
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.55	7.90	-0.01	29757				

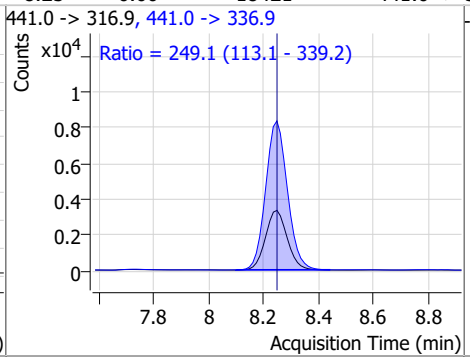


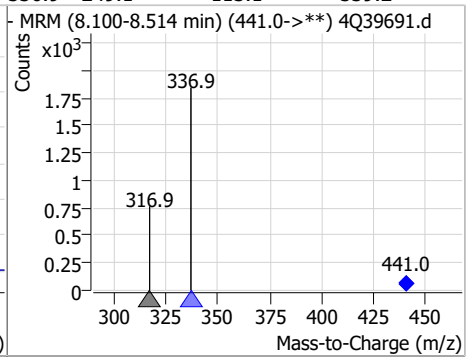




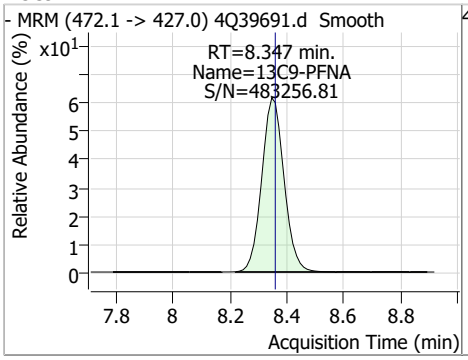
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.03	8.25	0.00	18421	441.0 -> 336.9	249.1	113.1	339.2

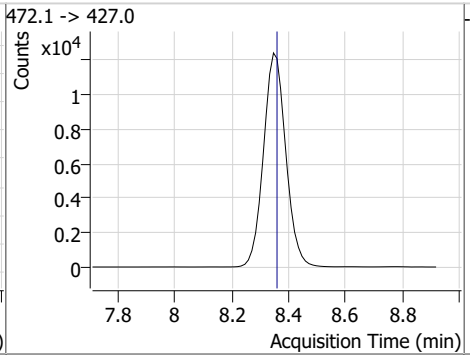


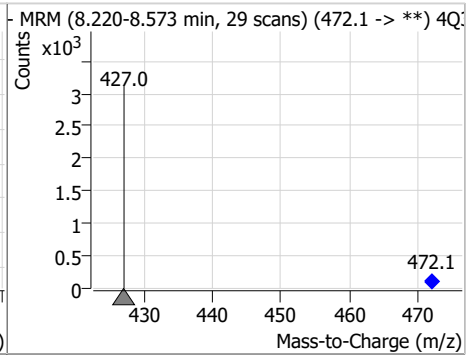




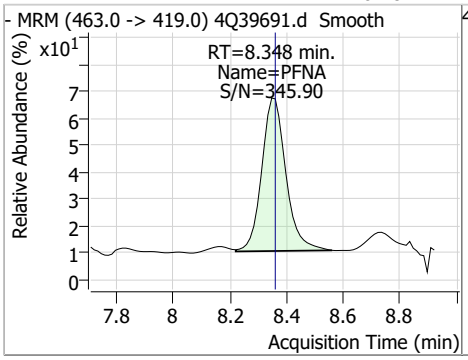
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	8.35	-0.01	67256				

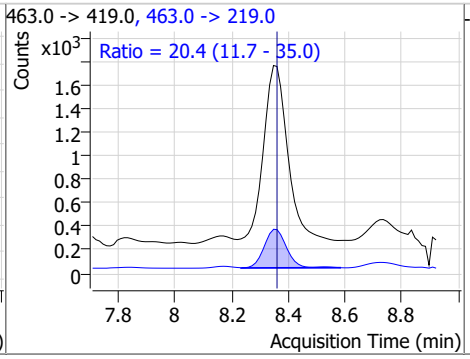


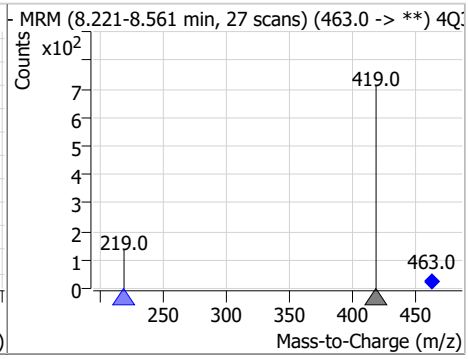




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.18	8.35	-0.01	8831	463.0 -> 219.0	20.4	11.7	35.0

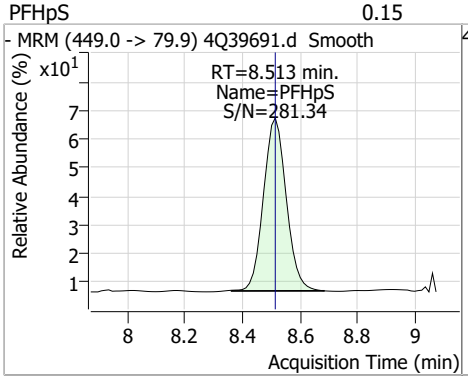


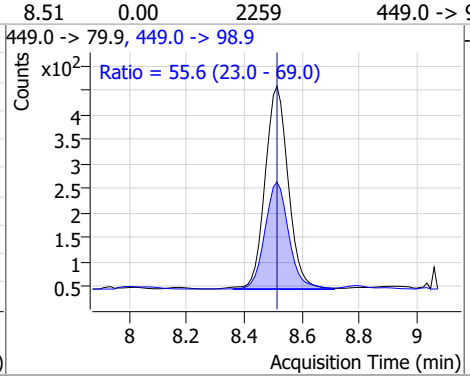


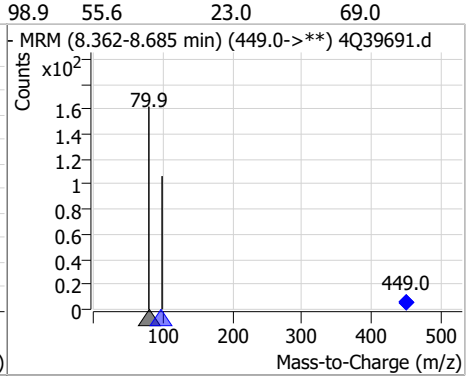


Perfluorinated Compounds by LC/MS/MS

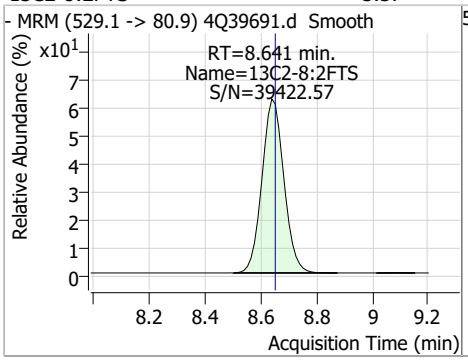
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.15	8.51	0.00	2259	449.0 -> 98.9	55.6	23.0	69.0

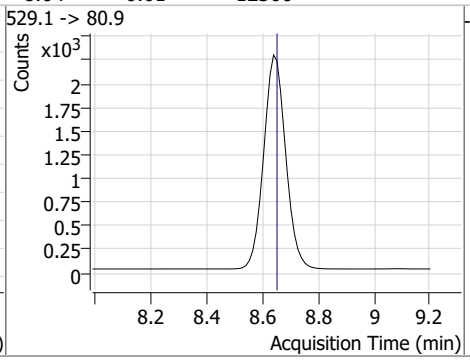


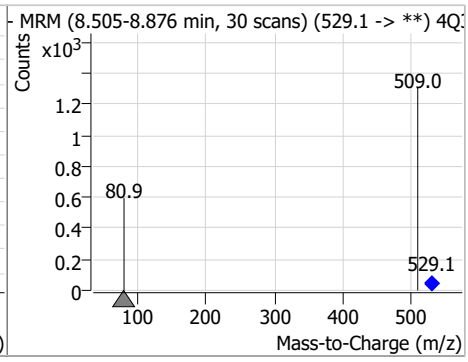




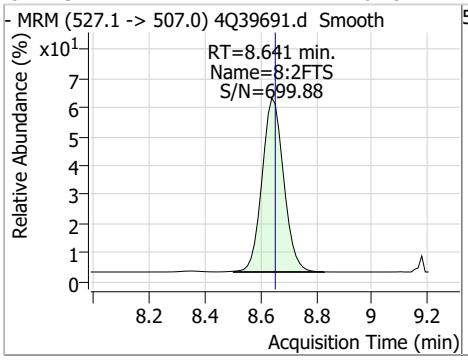
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.57	8.64	-0.01	12306				

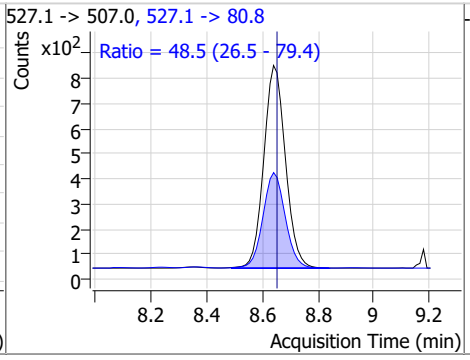


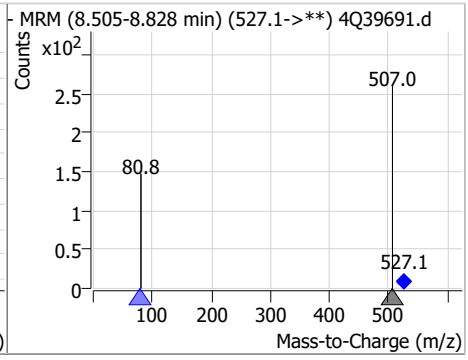




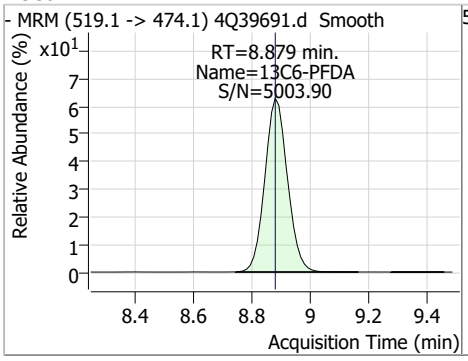
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.73	8.64	-0.01	4336	527.1 -> 80.8	48.5	26.5	79.4

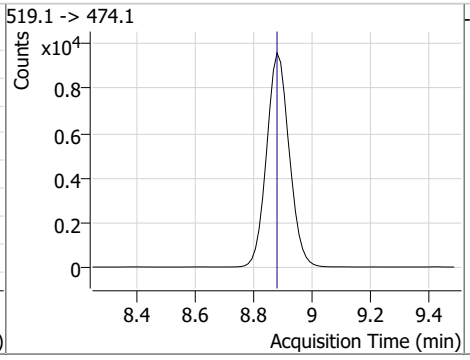


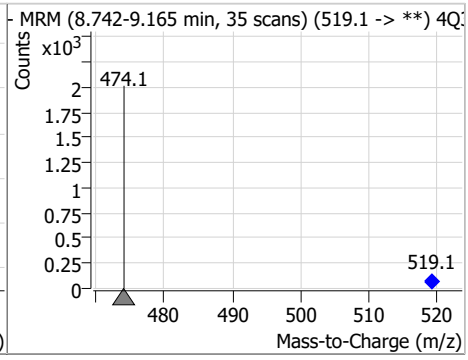




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.88	0.00	51600				

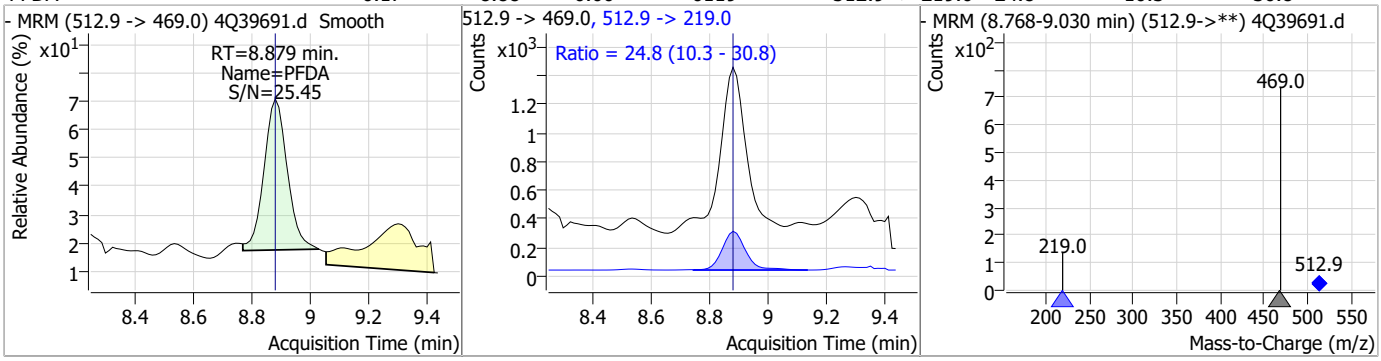




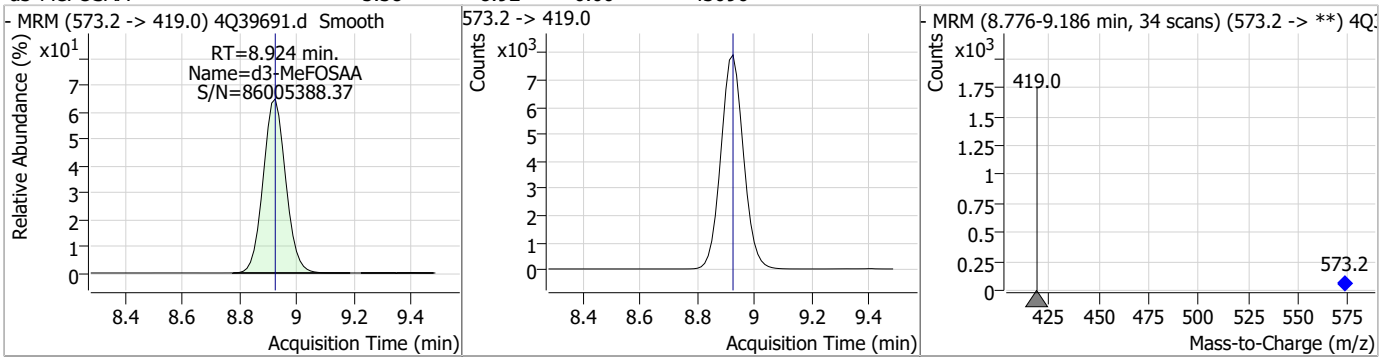


Perfluorinated Compounds by LC/MS/MS

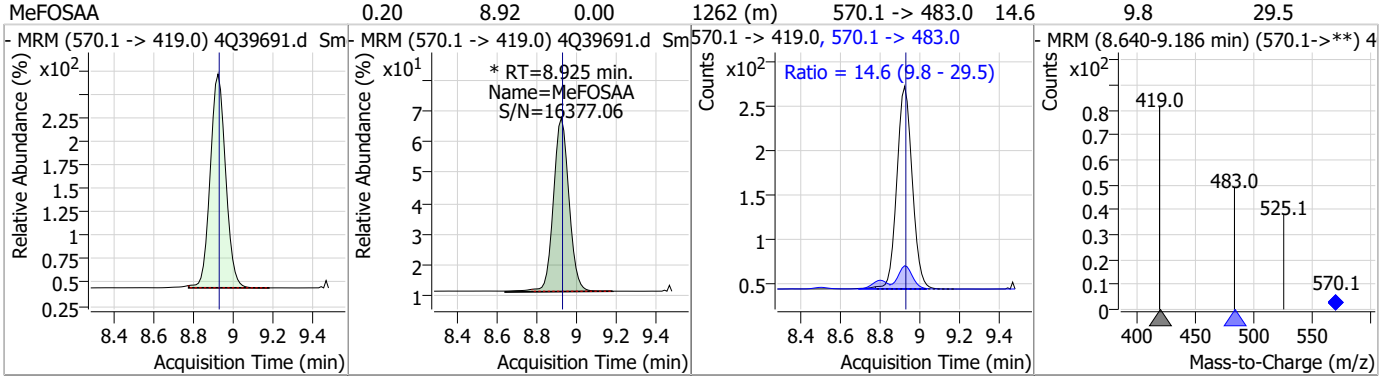
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.17	8.88	0.00	6119	512.9 -> 219.0	24.8	10.3	30.8



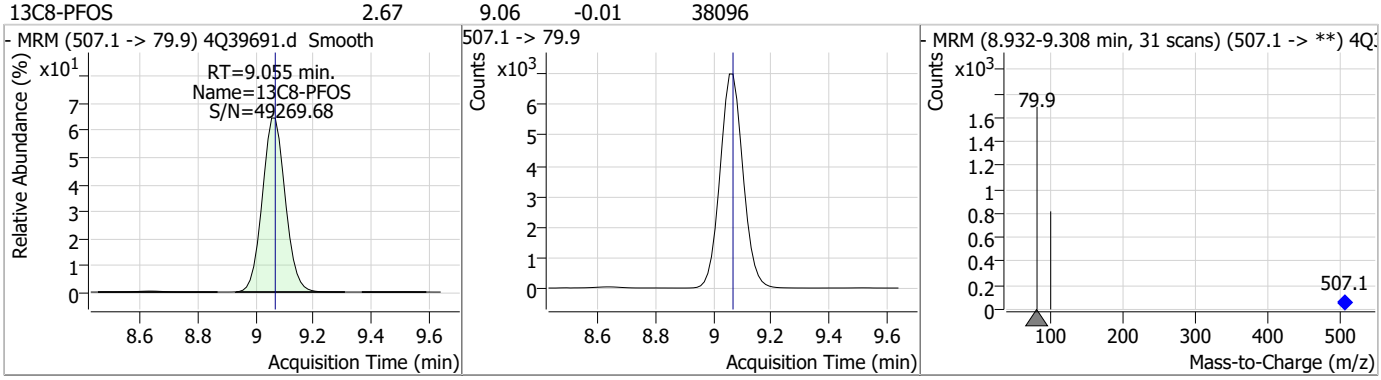
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.38	8.92	0.00	43096				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.92	0.00	1262 (m)	570.1 -> 483.0	14.6	9.8	29.5

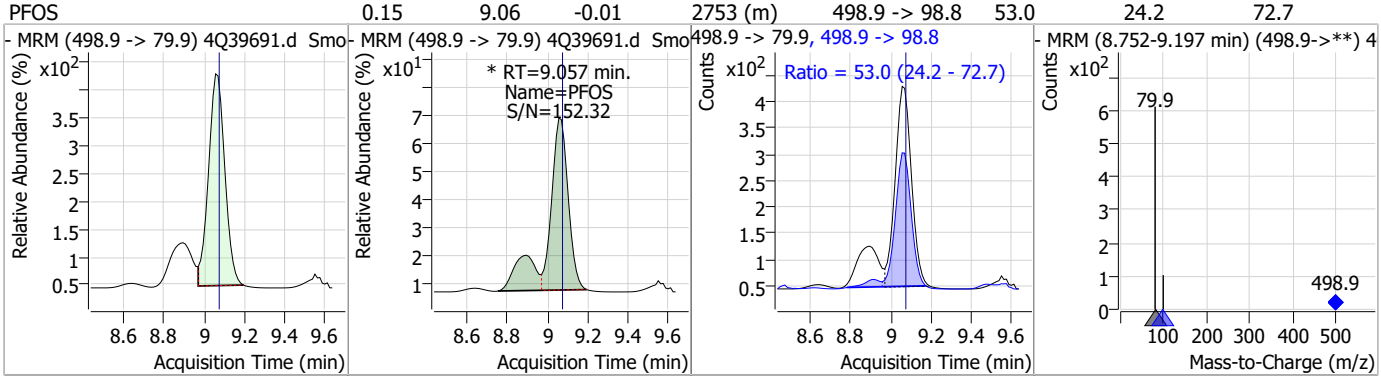


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.67	9.06	-0.01	38096				

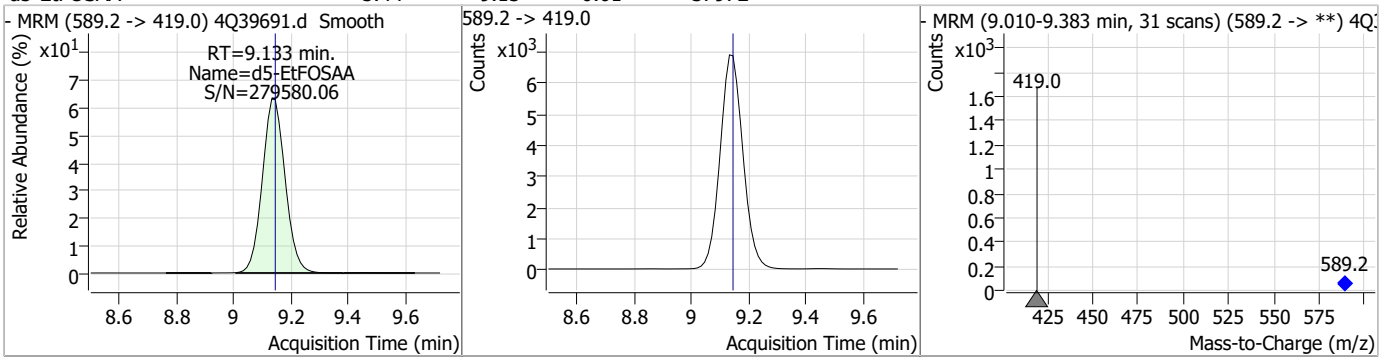


Perfluorinated Compounds by LC/MS/MS

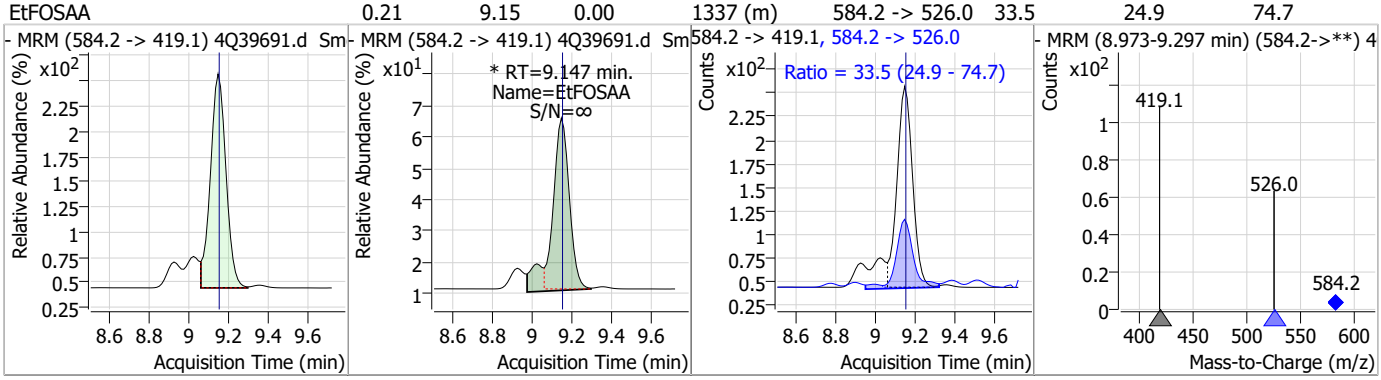
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.15	9.06	-0.01	2753 (m)	498.9 -> 98.8	53.0	24.2	72.7



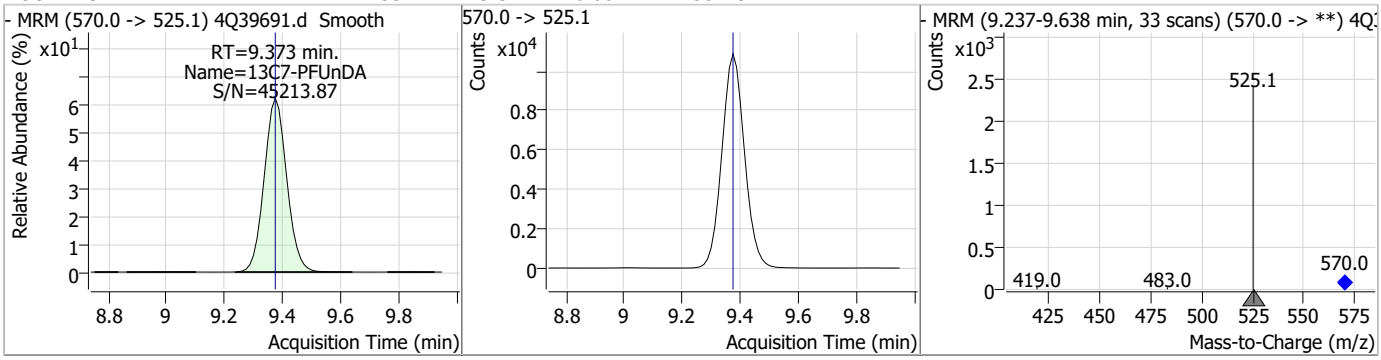
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.44	9.13	-0.01	37972				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.21	9.15	0.00	1337 (m)	584.2 -> 526.0	33.5	24.9	74.7

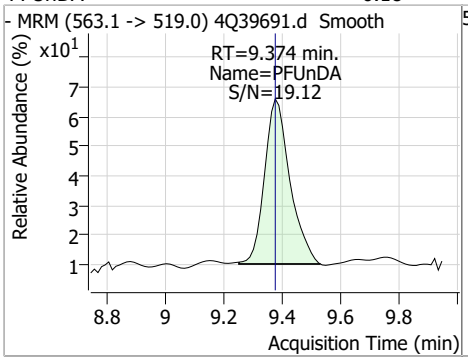


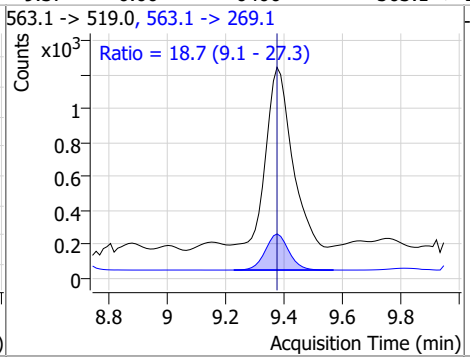
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	9.37	0.00	58149				

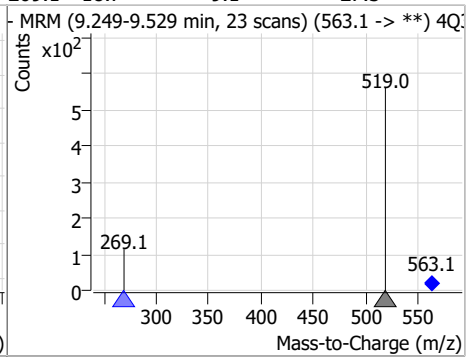


Perfluorinated Compounds by LC/MS/MS

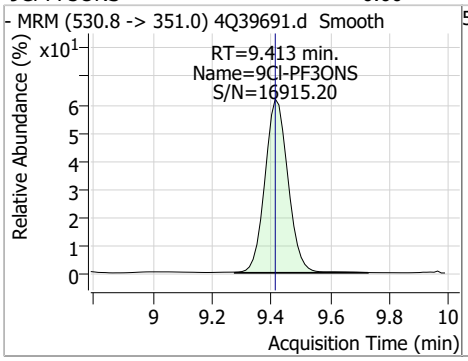
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.18	9.37	0.00	6400	563.1 -> 269.1	18.7	9.1	27.3

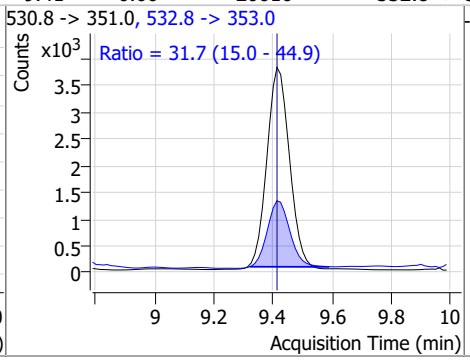


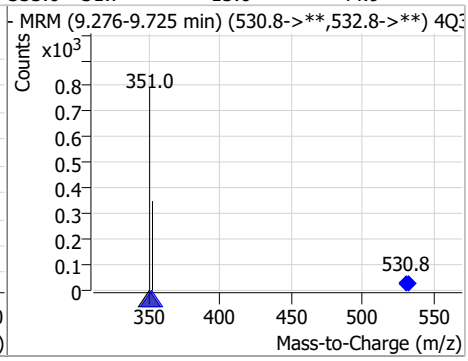




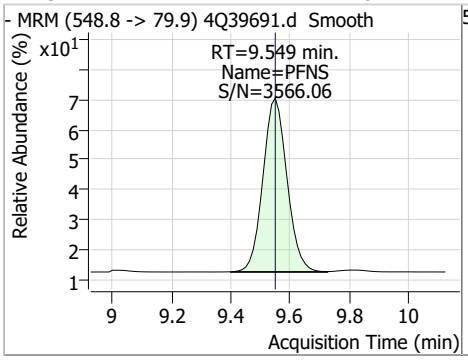
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.60	9.41	0.00	20616	532.8 -> 353.0	31.7	15.0	44.9

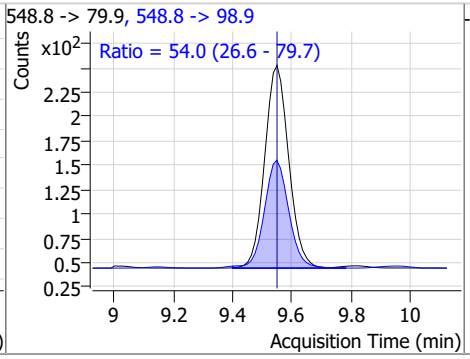


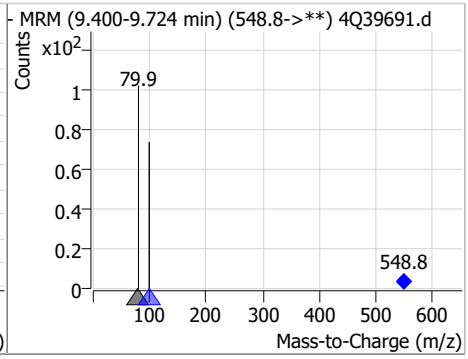




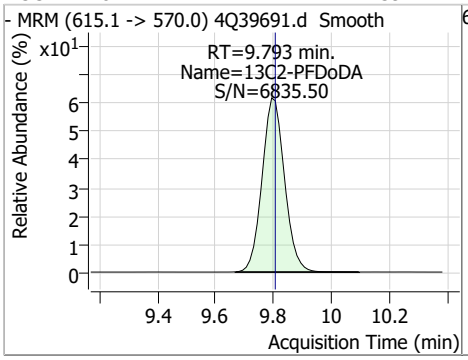
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.17	9.55	0.00	1172	548.8 -> 98.9	54.0	26.6	79.7

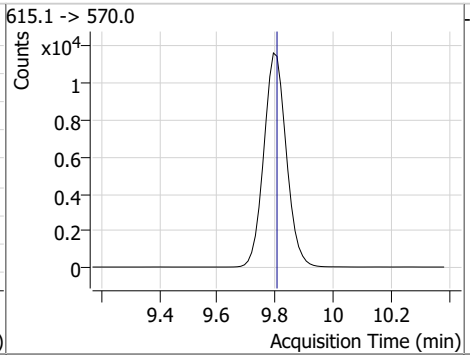


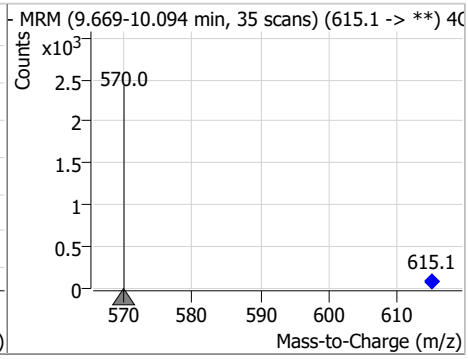




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.39	9.79	-0.01	62170				

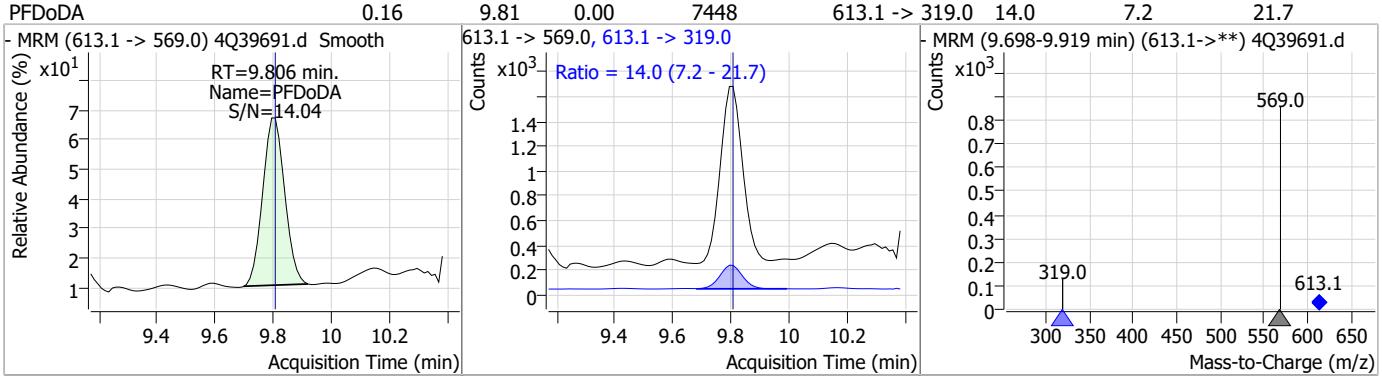




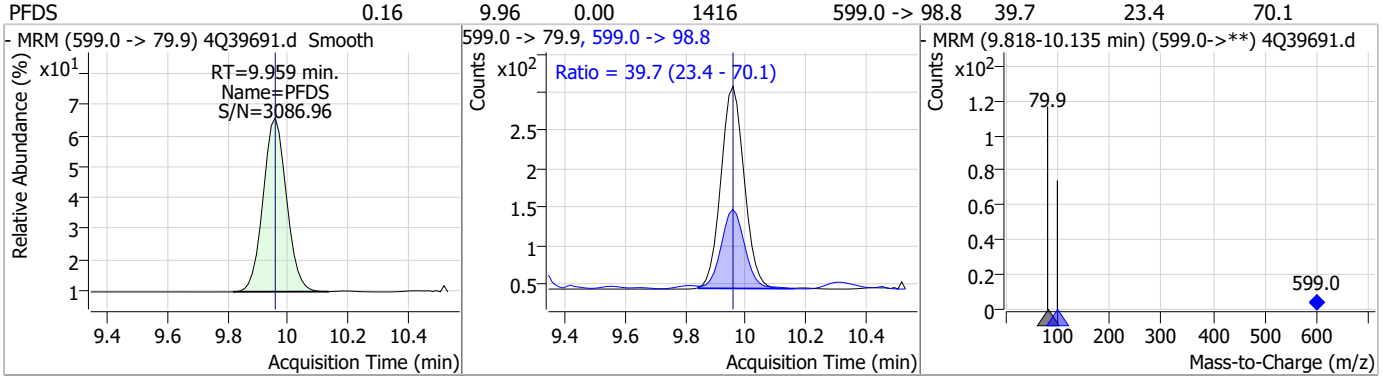


Perfluorinated Compounds by LC/MS/MS

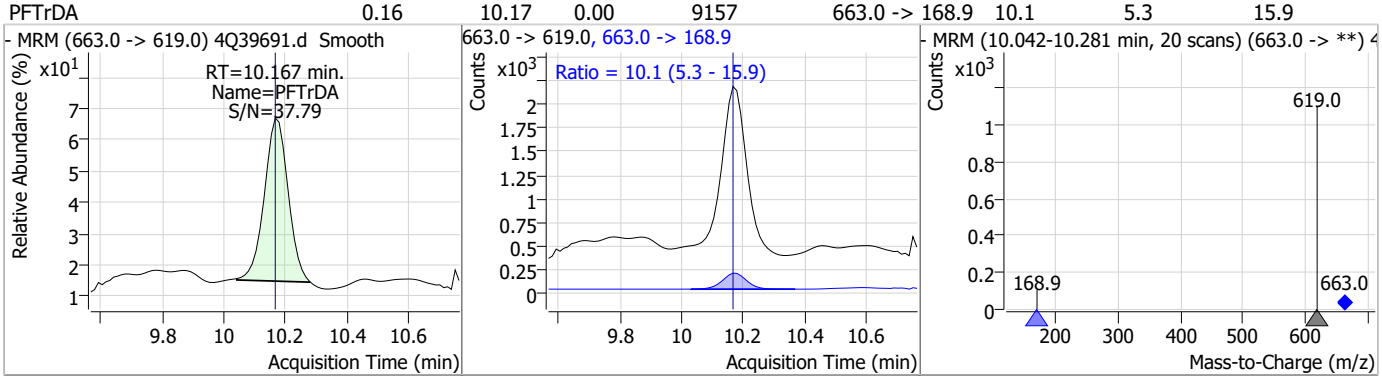
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.16	9.81	0.00	7448	613.1 -> 319.0	14.0	7.2	21.7



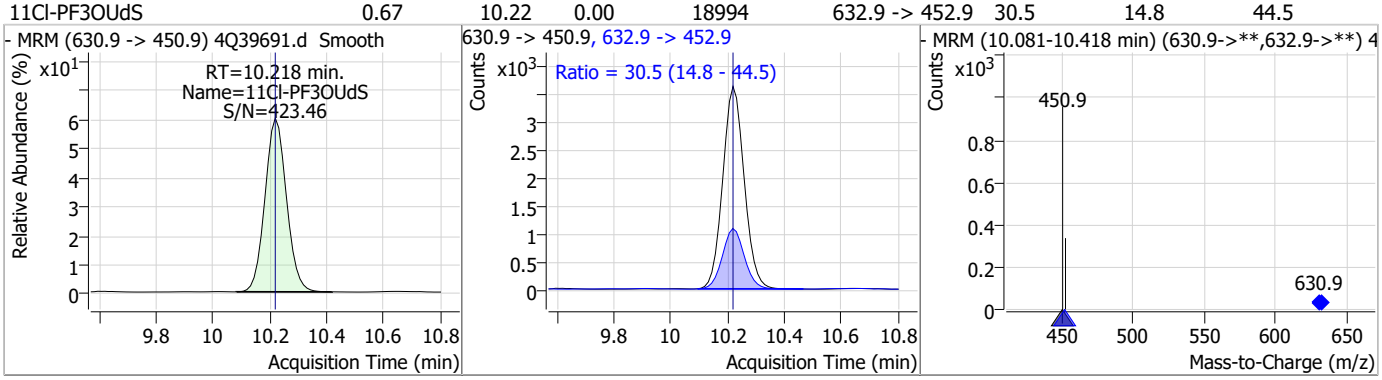
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.16	9.96	0.00	1416	599.0 -> 98.8	39.7	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.16	10.17	0.00	9157	663.0 -> 168.9	10.1	5.3	15.9

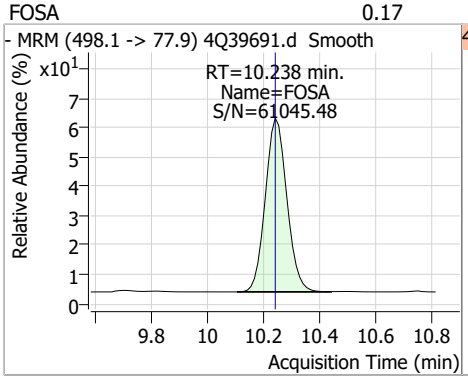


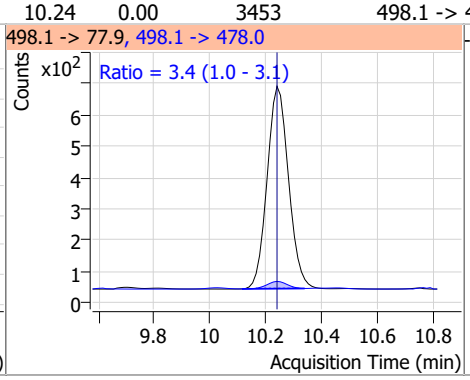
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.67	10.22	0.00	18994	632.9 -> 452.9	30.5	14.8	44.5

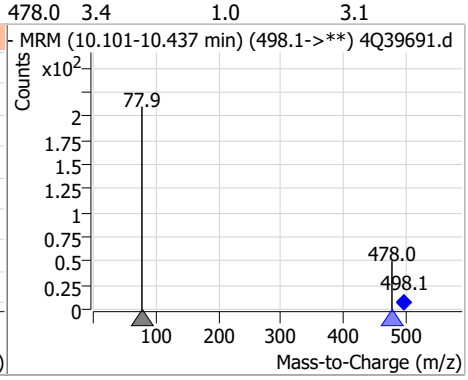


Perfluorinated Compounds by LC/MS/MS

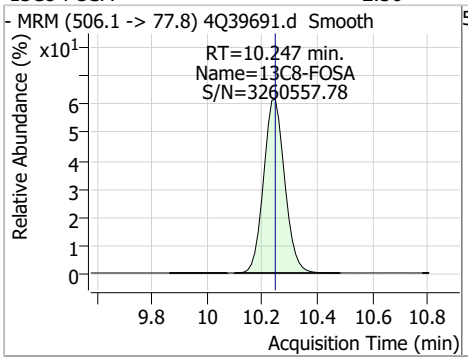
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.17	10.24	0.00	3453	498.1 -> 478.0	3.4	1.0	3.1

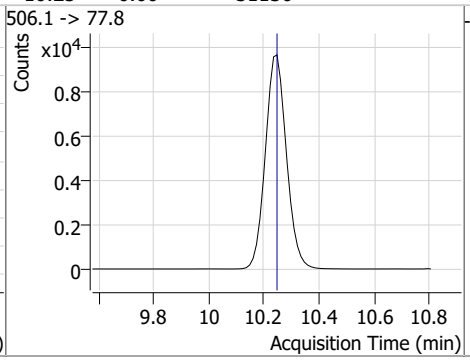


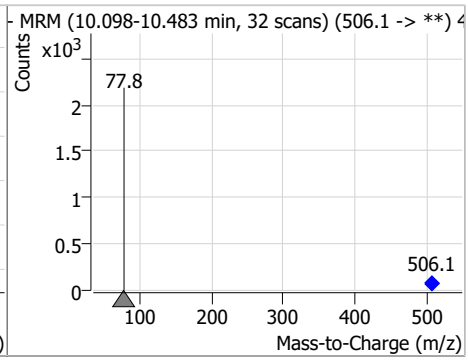




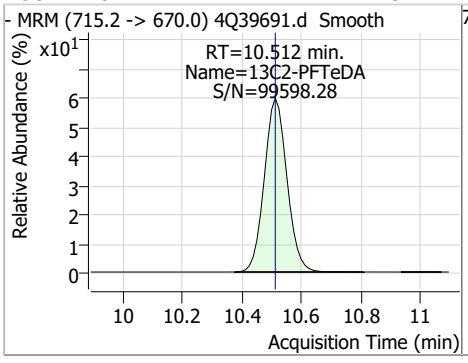
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	10.25	0.00	51136				

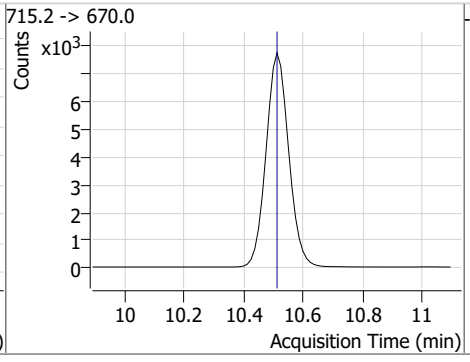


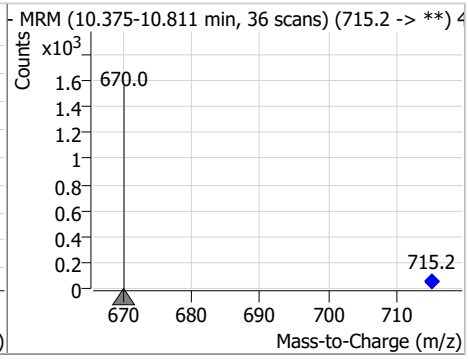




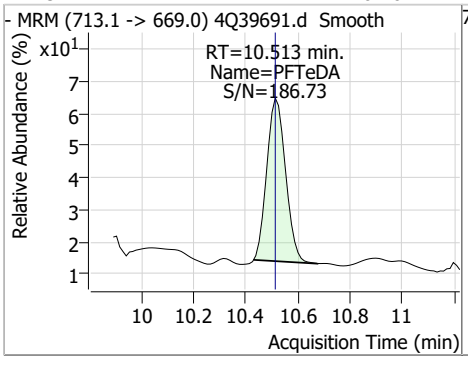
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	10.51	0.00	40820				

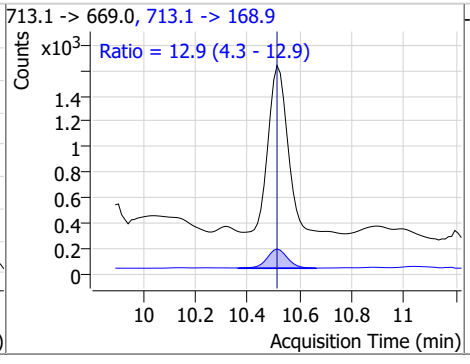


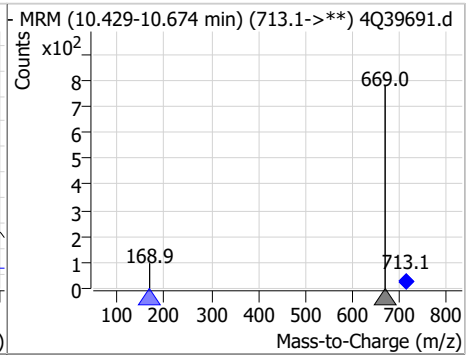




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.16	10.51	0.00	6444	713.1 -> 168.9	12.9	4.3	12.9

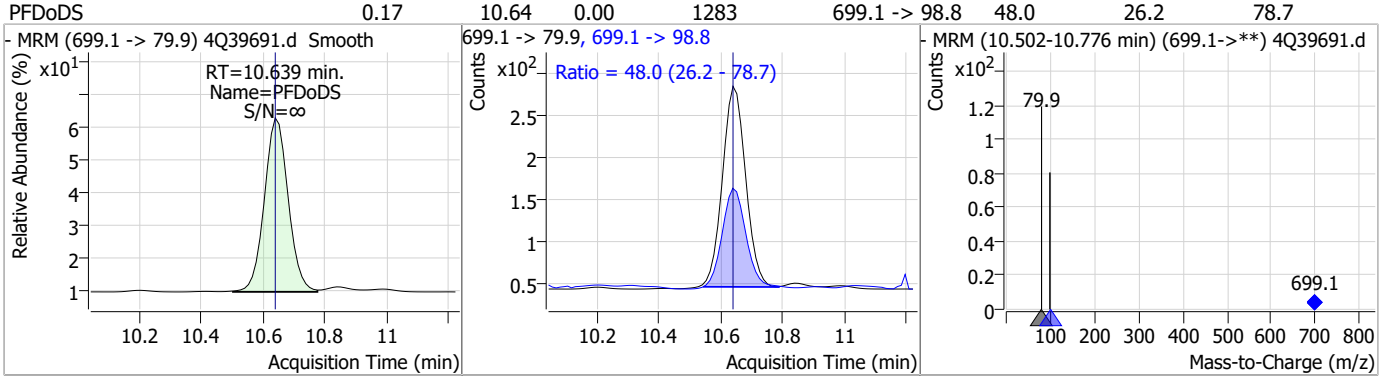




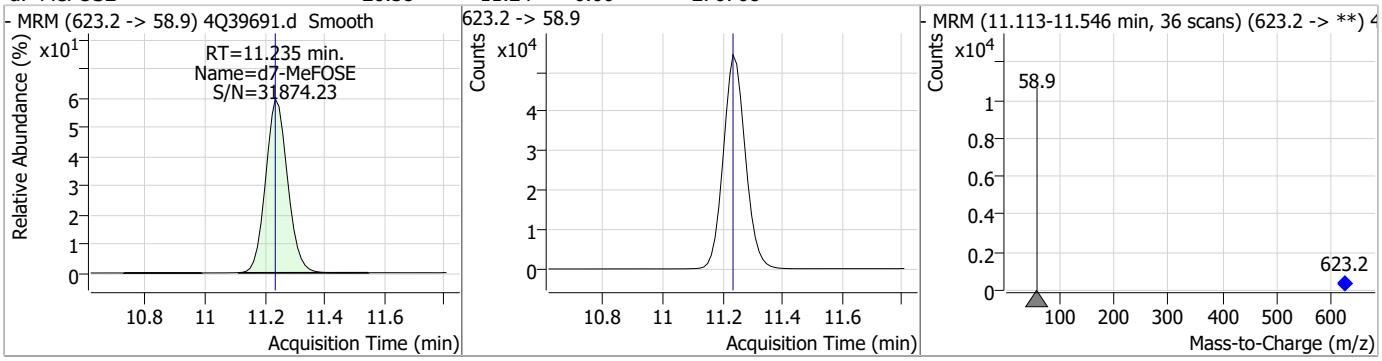


Perfluorinated Compounds by LC/MS/MS

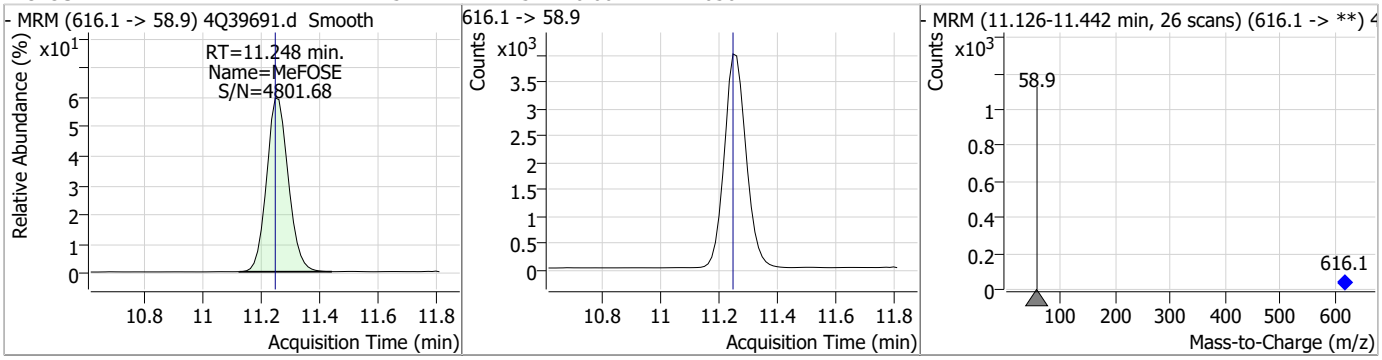
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.17	10.64	0.00	1283	699.1 -> 98.8	48.0	26.2	78.7



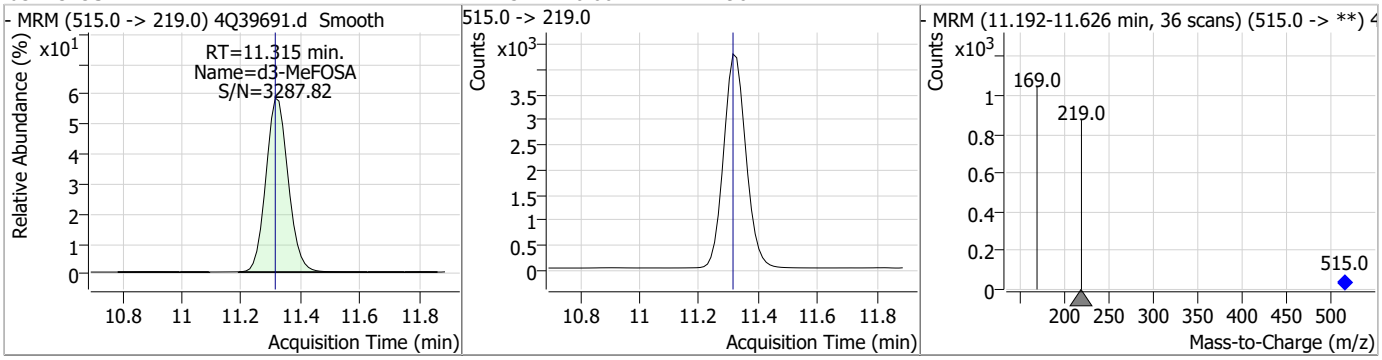
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.58	11.24	0.00	276768				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.75	11.25	0.00	20507				

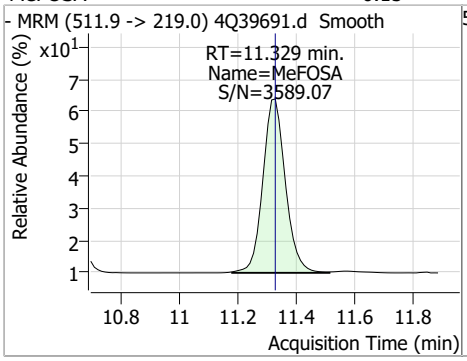


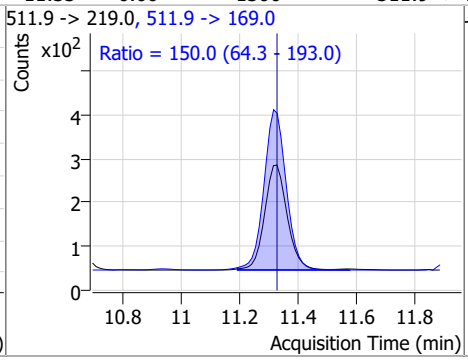
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	11.31	0.00	22296				

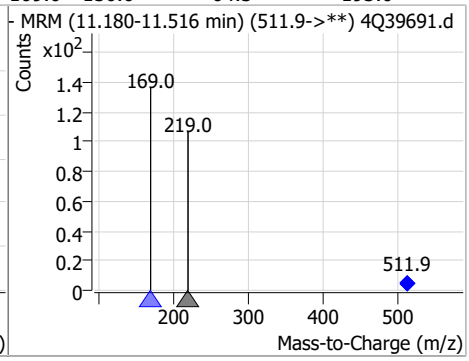


Perfluorinated Compounds by LC/MS/MS

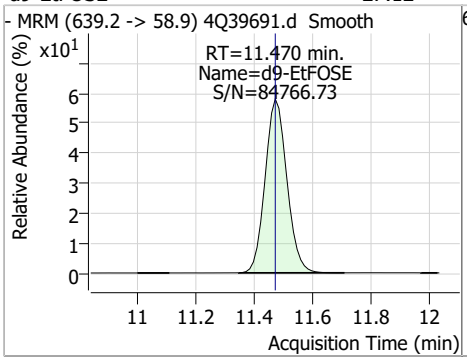
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.15	11.33	0.00	1300	511.9 -> 169.0	150.0	64.3	193.0

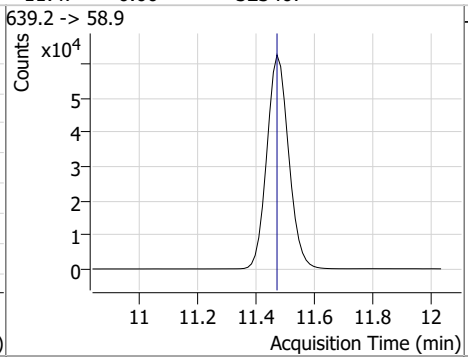


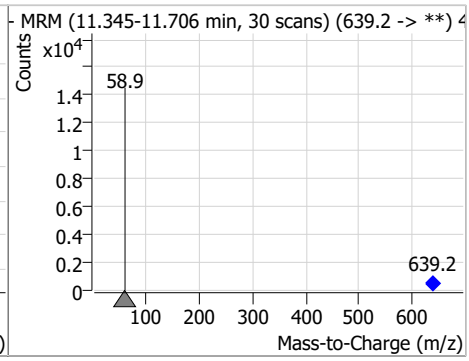




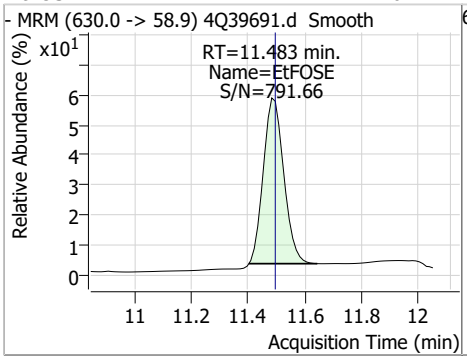
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.12	11.47	0.00	323467				

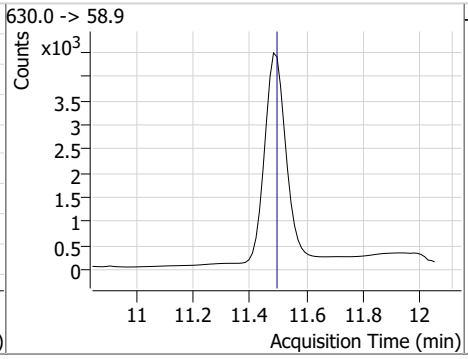


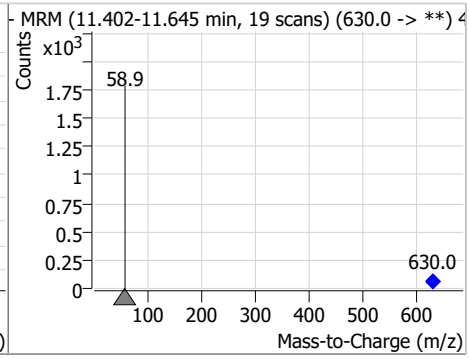




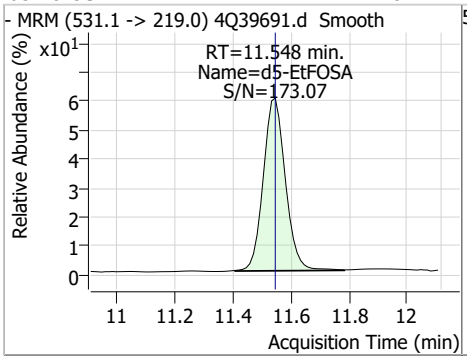
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.70	11.48	-0.01	21289				

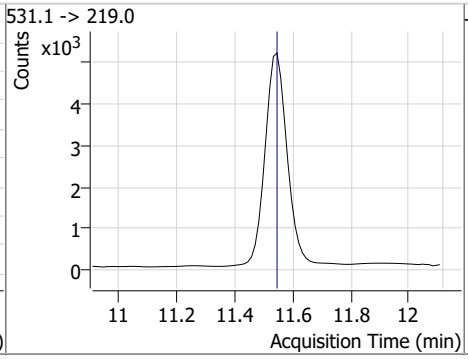


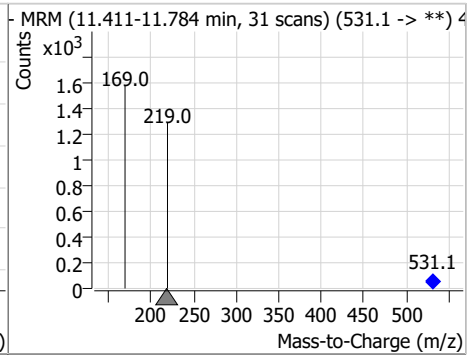




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.48	11.55	0.00	27006				

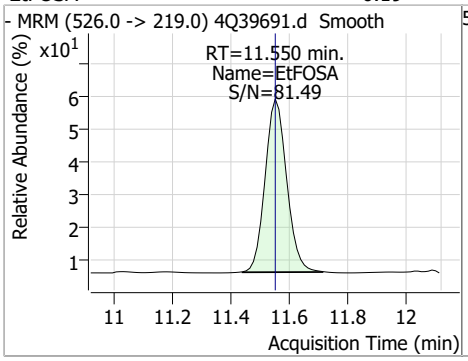


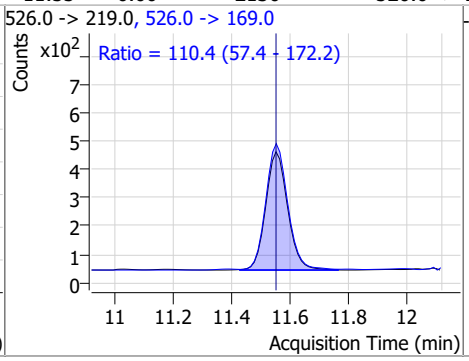


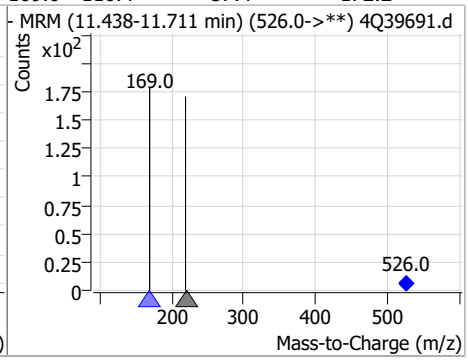


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.19	11.55	0.00	2130	526.0 -> 169.0	110.4	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39691.D
Injection Time: 01/25/23 13:13
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.78	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39692.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 1:27:44 PM
Sample Name : ic571-2
Vial : P1-A3
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.174	216.8 -> 171.9	425906	10.00	µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	275437	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	178125	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	98454	2.50	µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	162718	2.50	µg/L	-0.012
M9-PFNA	8.360	472.1 -> 427.0	77025	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	60461	1.25	µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	65940	1.25	µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	64252	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	46921	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57584	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	48477	2.50	µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	32115	2.50	µg/L	-0.012
M8-PFOS	9.068	507.1 -> 79.9	40514	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4273	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9626	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13379	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	46101	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	137508	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39312	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	303064	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	369546	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	31256	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25133	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	39574	2.50	µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	232642	5.00	µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	21929	2.50	µg/L	0.000
13C4-PFOA	7.776	417.1 -> 372.0	175433	2.50	µg/L	-0.012
13C2-PFDA	8.891	515.1 -> 470.1	52298	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	85169	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	168924	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4273	5.41	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9626	5.44	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13379	5.53	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C2-PFDoDA	9.806	615.1 -> 570.0	64252	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C2-PFTeDA	10.512	715.2 -> 670.0	46921	1.30	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C3-PFBS	6.089	302.1 -> 79.9	48477	2.56	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	7.904	402.1 -> 79.9	32115	2.51	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C4-PFBA	3.174	216.8 -> 171.9	425906	10.15 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C4-PFHpA	7.106	367.1 -> 322.0	98454	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C5-PFHxA	6.172	318.0 -> 273.0	178125	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFPeA	4.863	268.3 -> 223.0	275437	5.01 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	8.891	519.1 -> 474.1	60461	1.31 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C7-PFUnDA	9.373	570.0 -> 525.1	65940	1.33 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C8-FOSA	10.247	506.1 -> 77.8	57584	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C8-PFOA	7.776	421.1 -> 376.0	162718	2.58 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C8-PFOS	9.068	507.1 -> 79.9	40514	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C9-PFNA	8.360	472.1 -> 427.0	77025	1.27 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%		
d3-MeFOSAA	8.924	573.2 -> 419.0	46101	5.07 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	137508	10.20 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
d3-MeFOSA	11.327	515.0 -> 219.0	25133	2.43 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%		
d5-EtFOSAA	9.146	589.2 -> 419.0	39312	4.97 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d7-MeFOSE	11.235	623.2 -> 58.9	303064	25.68 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	369546	27.34 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	31256	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	12685	1.82 µg/L		98
		327.1 -> 80.9	6125			
6:2FTS	7.537	427.1 -> 407.0	14743	1.93 µg/L		98
		427.1 -> 80.9	7010			
8:2FTS	8.654	527.1 -> 507.0	11820	1.83 µg/L		97
		527.1 -> 80.8	6500			
EtFOSAA	9.147	584.2 -> 419.1	2906	0.44 µg/L	m	94
		584.2 -> 526.0	1329			
FOSA	10.250	498.1 -> 77.9	10307	0.46 µg/L		99
		498.1 -> 478.0	180			
MeFOSAA	8.925	570.1 -> 419.0	3332	0.49 µg/L	m	92
		570.1 -> 483.0	778			
PFBA	3.182	212.8 -> 168.9	21185	1.79 µg/L		100
PFBS	6.090	298.7 -> 79.9	8529	0.39 µg/L		97
		298.7 -> 98.8	3071			
PFDA	8.892	512.9 -> 469.0	18848	0.44 µg/L		96
		512.9 -> 219.0	4217			
PFDoDA	9.806	613.1 -> 569.0	23605	0.48 µg/L		96
		613.1 -> 319.0	3818			
PFDS	9.959	599.0 -> 79.9	4739	0.51 µg/L		85

Perfluorinated Compounds by LC/MS/MS

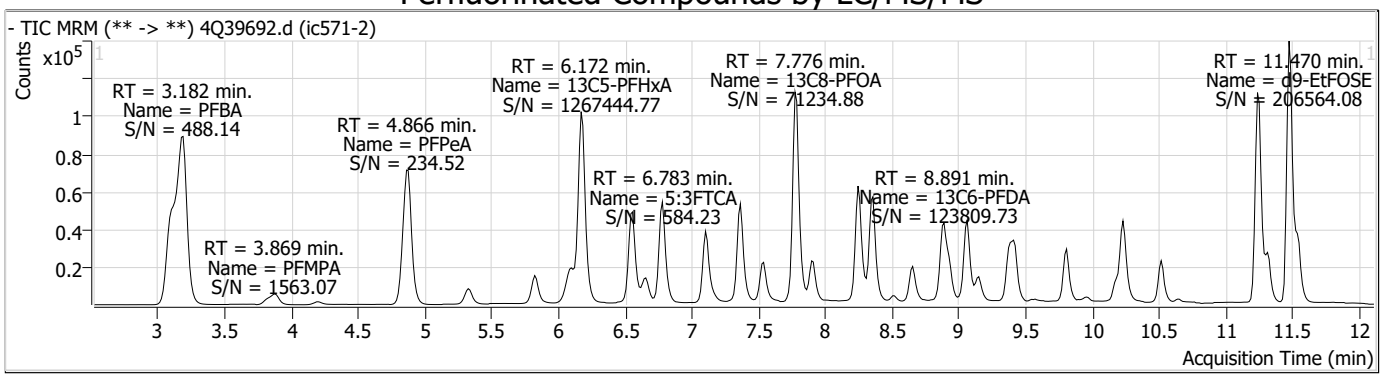
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	1749				
PFHpA	7.106	363.1 -> 319.0	28669	0.47	µg/L		98
		363.1 -> 169.0	4597				
PFHpS	8.526	449.0 -> 79.9	7500	0.46	µg/L		100
		449.0 -> 98.9	3445				
PFHxA	6.175	313.0 -> 269.0	31517	0.46	µg/L		100
		313.0 -> 118.9	952				
PFHxS	7.917	398.7 -> 79.9	4485	0.43	µg/L	m	93
		398.7 -> 98.9	2402				
PFNA	8.360	463.0 -> 419.0	25887	0.46	µg/L		99
		463.0 -> 219.0	5863				
PFNS	9.549	548.8 -> 79.9	3511	0.49	µg/L		92
		548.8 -> 98.9	1667				
PFOA	7.790	413.0 -> 369.0	31496	0.44	µg/L		99
		413.0 -> 169.0	6460				
PFOS	9.069	498.9 -> 79.9	8008	0.42	µg/L	m	94
		498.9 -> 98.8	4181				
PFPeA	4.866	263.0 -> 219.0	55704	0.92	µg/L		100
PFPeS	7.171	349.1 -> 79.9	4050	0.40	µg/L		88
		349.1 -> 98.9	1893				
PFTeDA	10.513	713.1 -> 669.0	20982	0.44	µg/L		97
		713.1 -> 168.9	2048				
PFTrDA	10.179	663.0 -> 619.0	28463	0.47	µg/L		100
		663.0 -> 168.9	3062				
PFUnDA	9.374	563.1 -> 519.0	19707	0.49	µg/L		98
		563.1 -> 269.1	3373				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	58813	1.83	µg/L		99
		632.9 -> 452.9	17927				
9Cl-PF3ONS	9.425	530.8 -> 351.0	65058	1.66	µg/L		100
		532.8 -> 353.0	19539				
ADONA	7.369	376.9 -> 250.9	132864	1.79	µg/L		96
		376.9 -> 84.8	43992				
HFPO-DA	6.565	284.9 -> 168.9	23783	1.84	µg/L		98
		284.9 -> 184.9	2694				
3:3FTCA	4.204	241.0 -> 177.0	6089	2.15	µg/L		100
		241.0 -> 117.0	588				
5:3FTCA	6.783	341.0 -> 237.1	109086	11.84	µg/L		99
		341.0 -> 217.0	80255				
7:3FTCA	8.249	441.0 -> 316.9	62555	11.82	µg/L		93
		441.0 -> 336.9	148943				
EtFOSA	11.550	526.0 -> 219.0	5728	0.44	µg/L		96
		526.0 -> 169.0	6301				
EtFOSE	11.483	630.0 -> 58.9	70253	4.90	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	4759	0.50	µg/L		91
		511.9 -> 169.0	5626				
MeFOSE	11.261	616.1 -> 58.9	63688	4.97	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	3410	0.43	µg/L		91
		699.1 -> 98.8	2007				
NFDHA	6.053	295.0 -> 201.0	4255	0.93	µg/L		98
		295.0 -> 84.9	1281				
PFMBA	5.328	279.0 -> 85.1	34270	0.91	µg/L		100
PFMPA	3.869	229.0 -> 84.9	35067	0.90	µg/L		100
PFEESA	6.660	314.8 -> 134.9	47492	0.80	µg/L		99
		314.8 -> 82.9	1633				

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

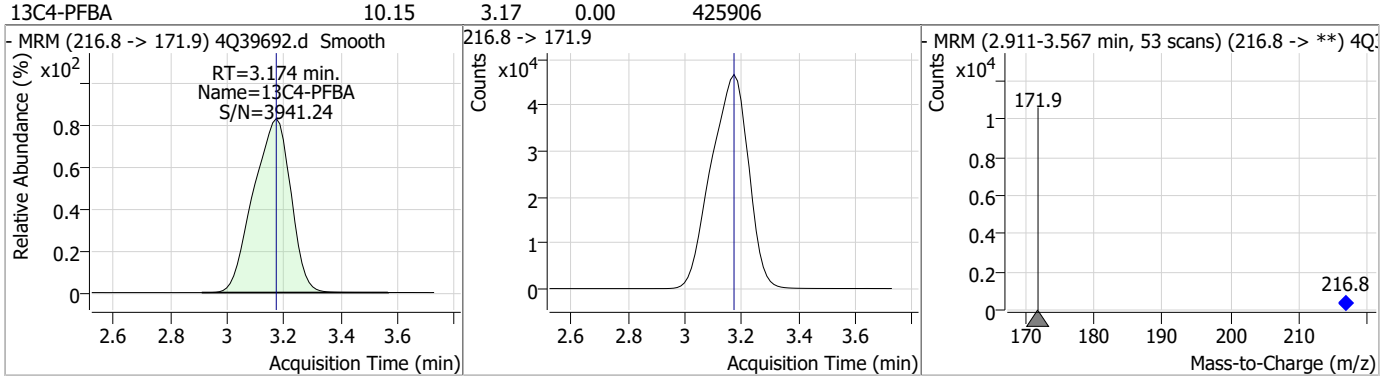
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

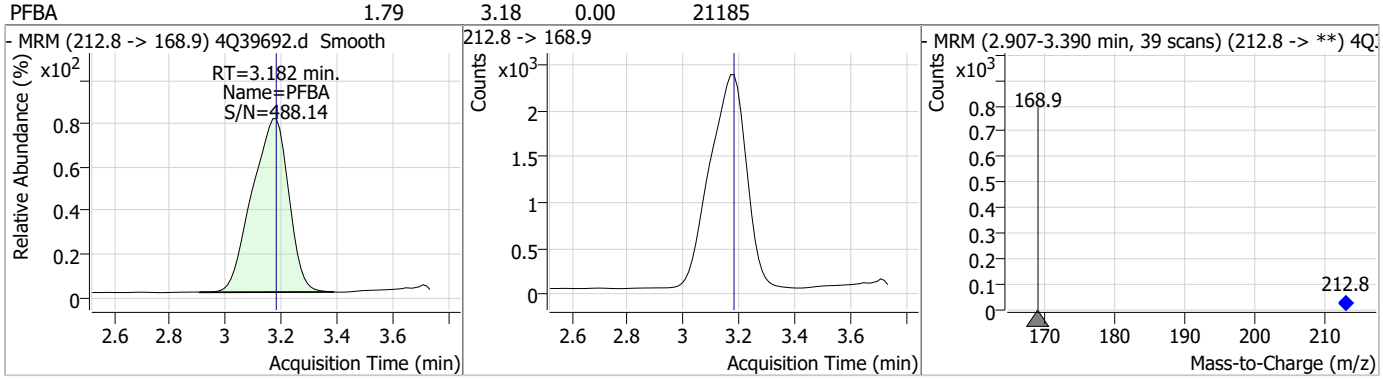
Perfluorinated Compounds by LC/MS/MS



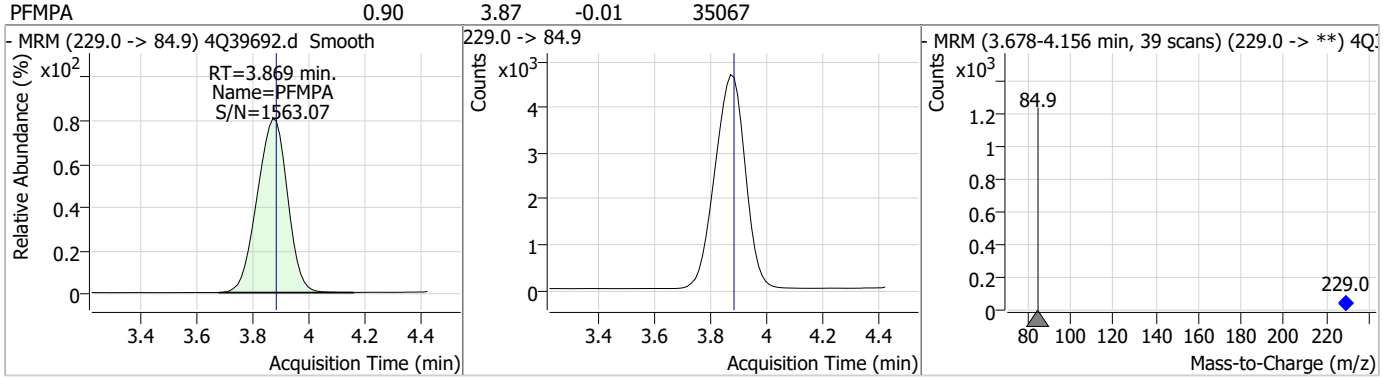
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.15	3.17	0.00	425906				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.79	3.18	0.00	21185				

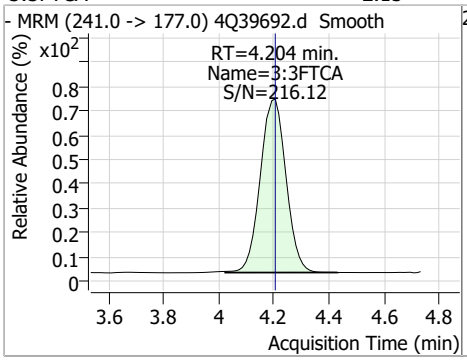


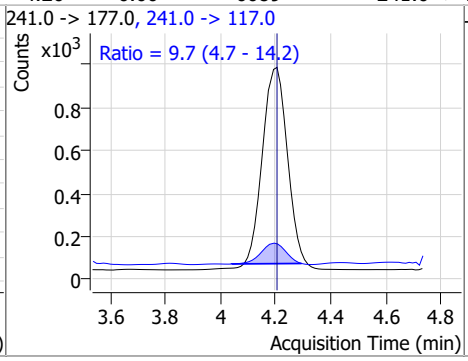
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.90	3.87	-0.01	35067				

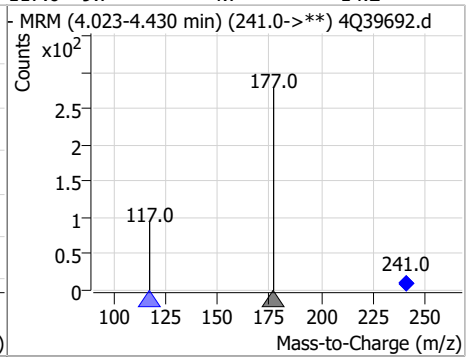


Perfluorinated Compounds by LC/MS/MS

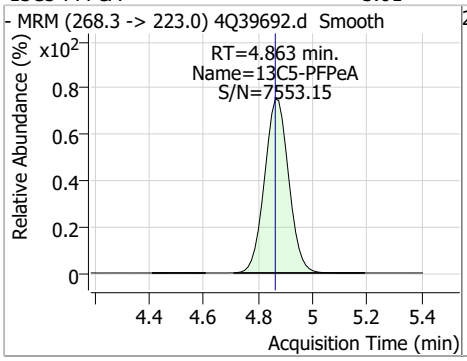
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.15	4.20	0.00	6089	241.0 -> 117.0	9.7	4.7	14.2

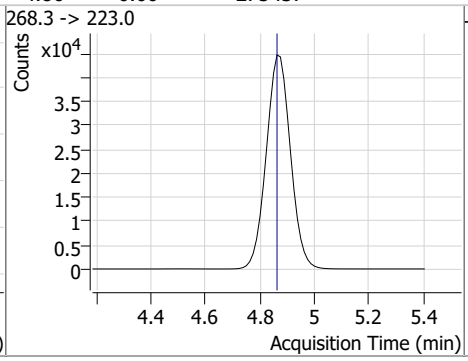


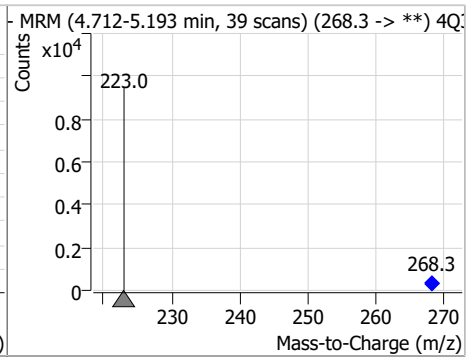




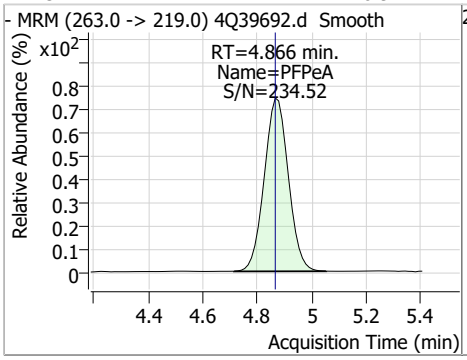
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.86	0.00	275437				

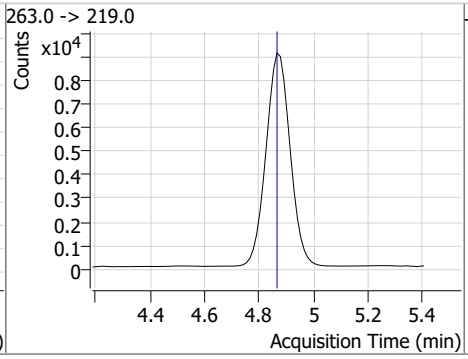


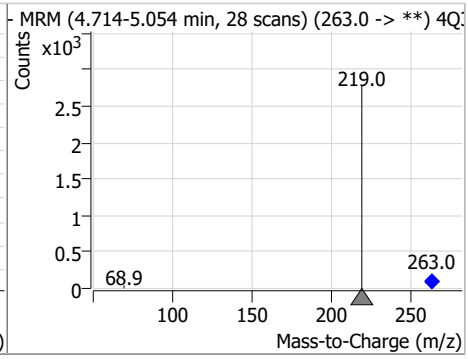




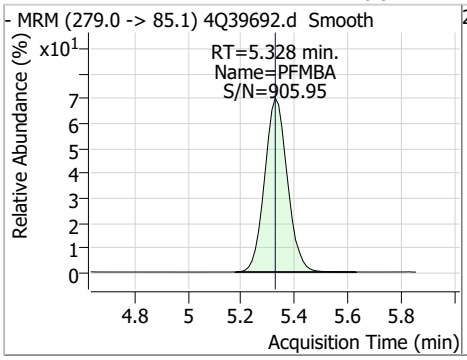
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.92	4.87	0.00	55704				

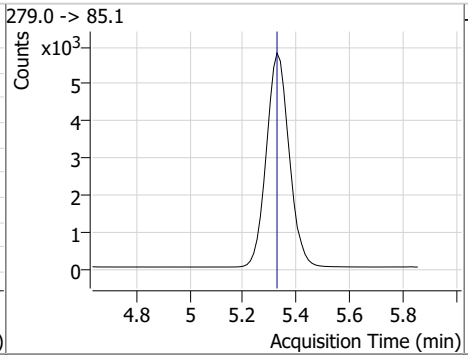


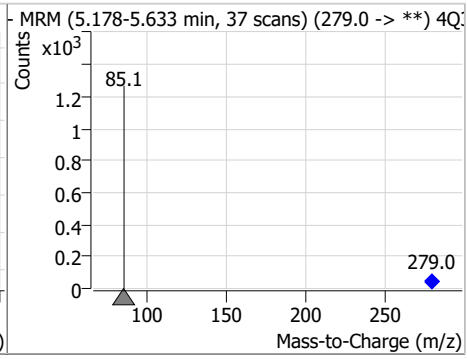




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.91	5.33	0.00	34270				

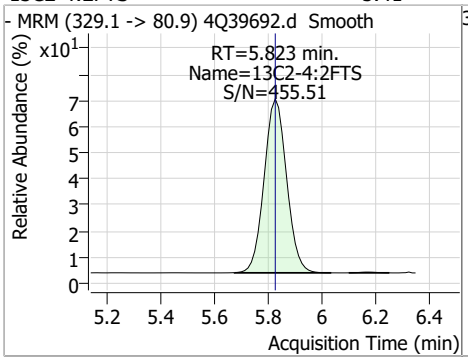


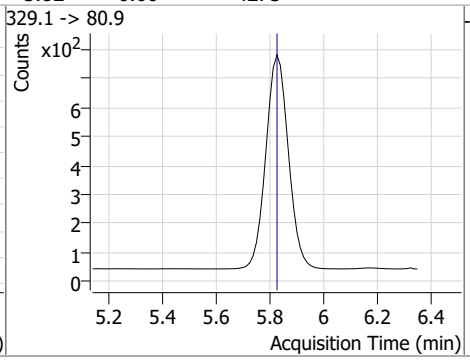


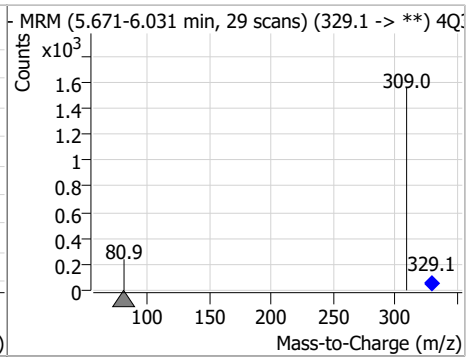


Perfluorinated Compounds by LC/MS/MS

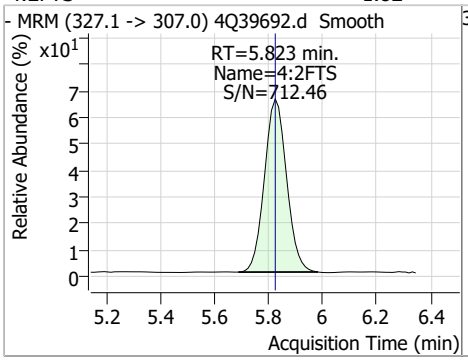
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.41	5.82	0.00	4273				

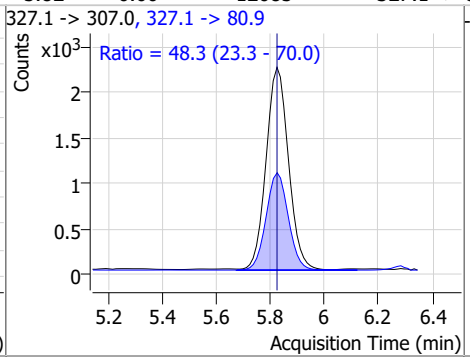


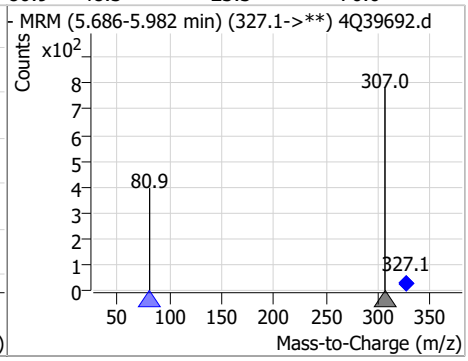




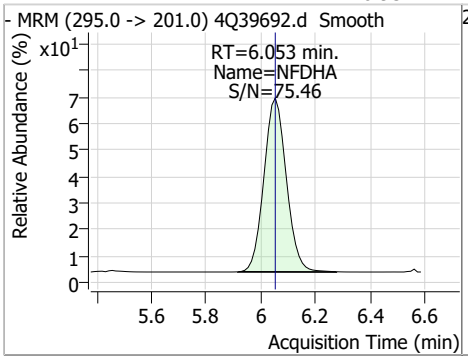
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.82	5.82	0.00	12685	327.1 -> 80.9	48.3	23.3	70.0

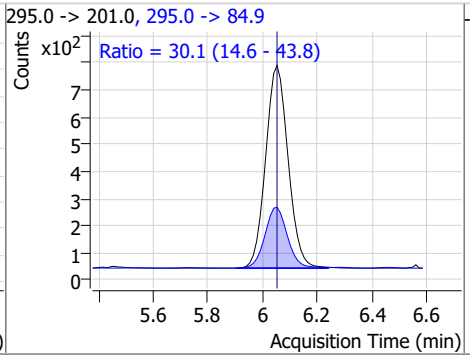


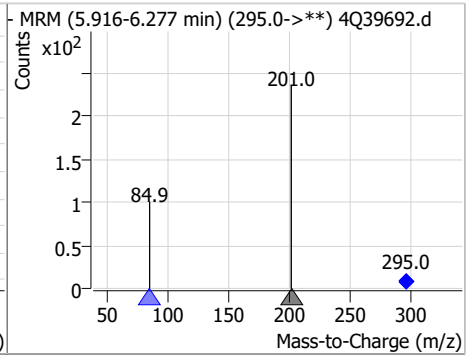




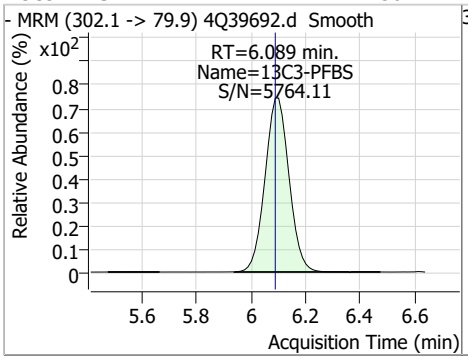
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.93	6.05	0.00	4255	295.0 -> 84.9	30.1	14.6	43.8

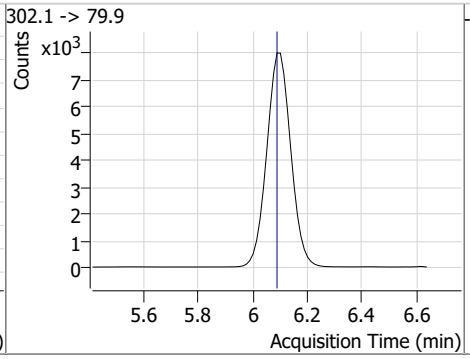


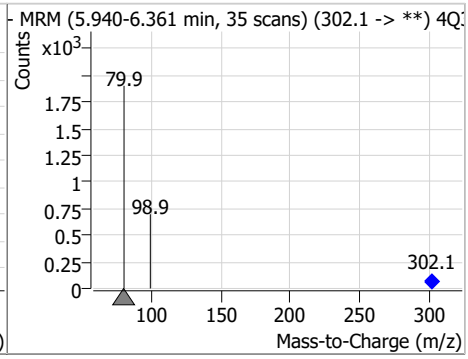




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.56	6.09	0.00	48477				

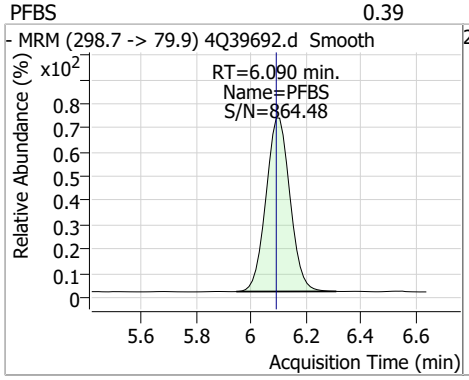


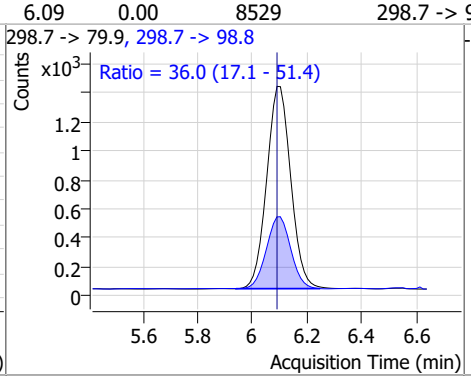


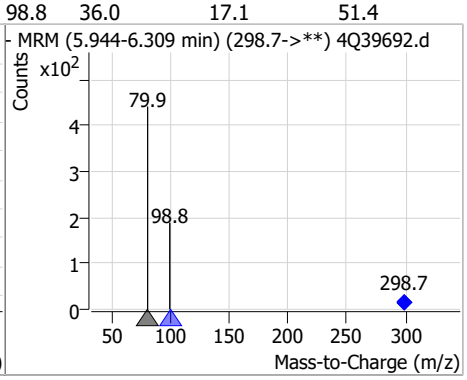


Perfluorinated Compounds by LC/MS/MS

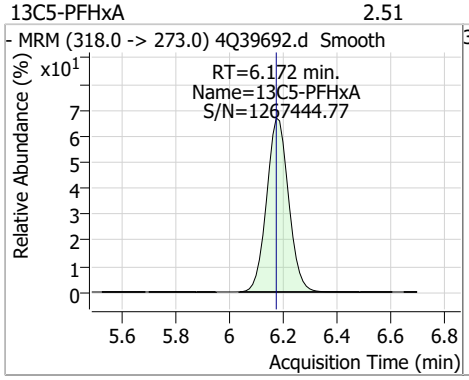
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.39	6.09	0.00	8529	298.7 -> 98.8	36.0	17.1	51.4

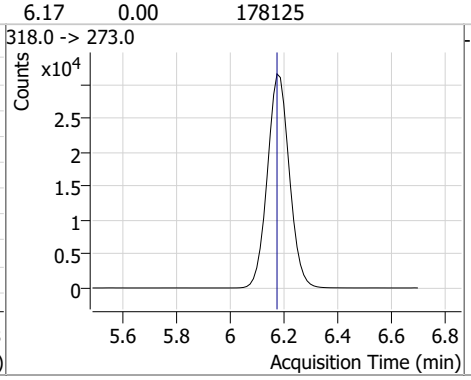


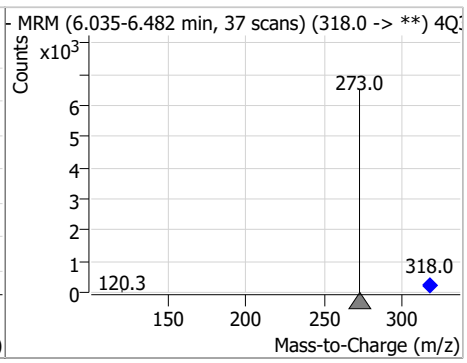




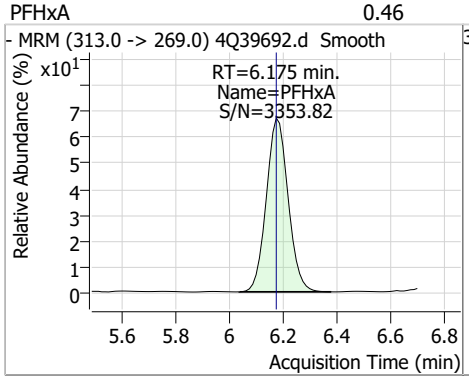
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	6.17	0.00	178125				

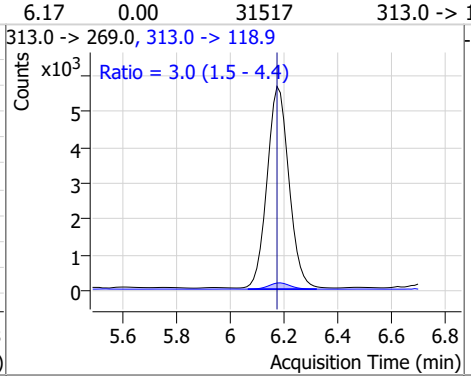


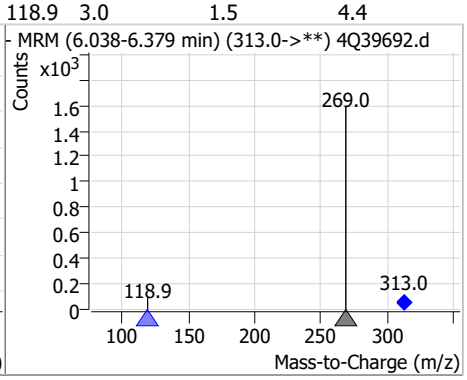




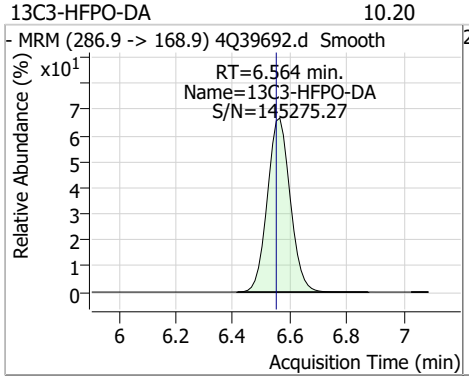
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.46	6.17	0.00	31517	313.0 -> 118.9	3.0	1.5	4.4

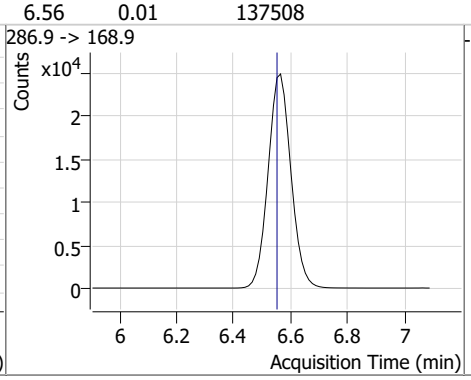


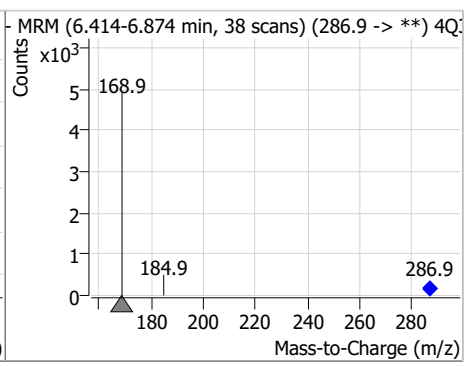




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.20	6.56	0.01	137508				

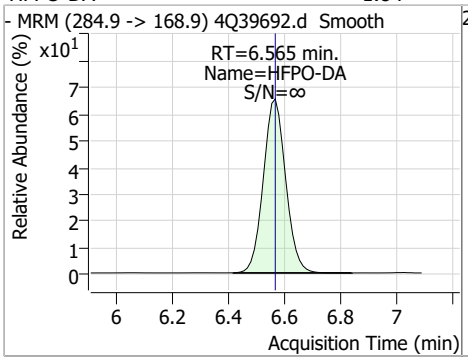


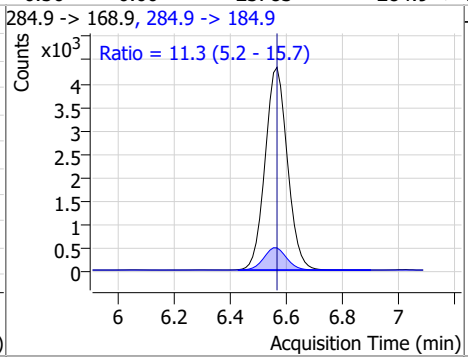


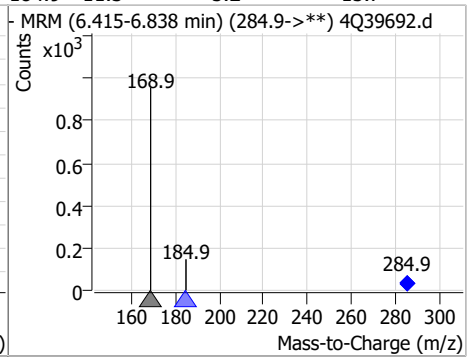


Perfluorinated Compounds by LC/MS/MS

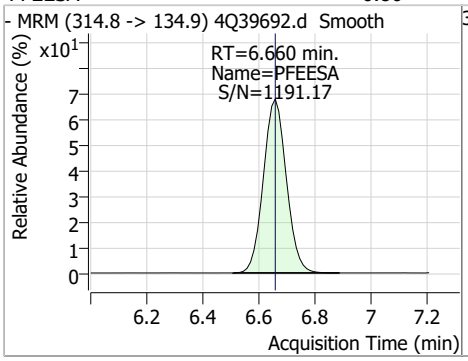
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.84	6.56	0.00	23783	284.9 -> 184.9	11.3	5.2	15.7

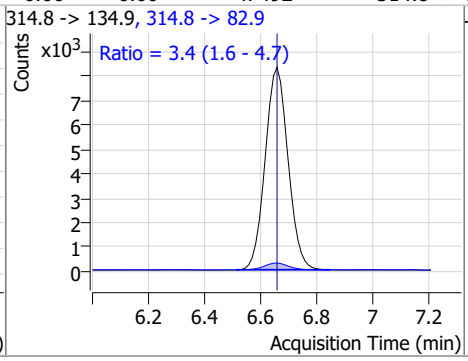


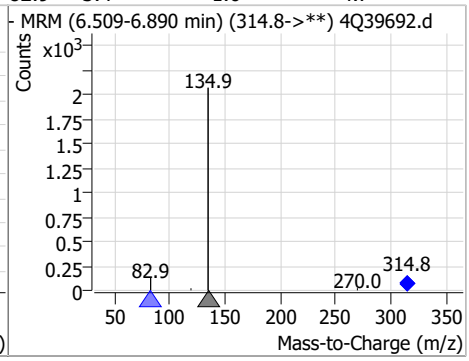




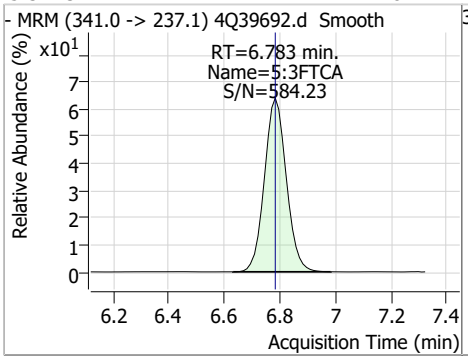
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.80	6.66	0.00	47492	314.8 -> 82.9	3.4	1.6	4.7

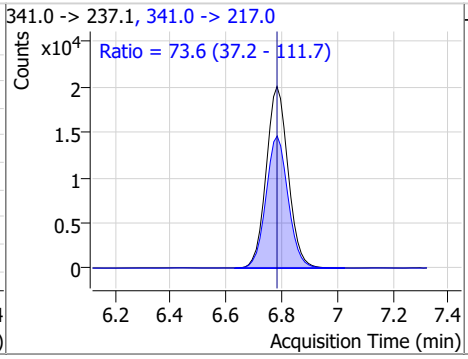


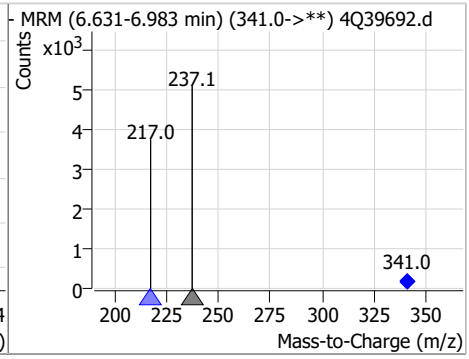




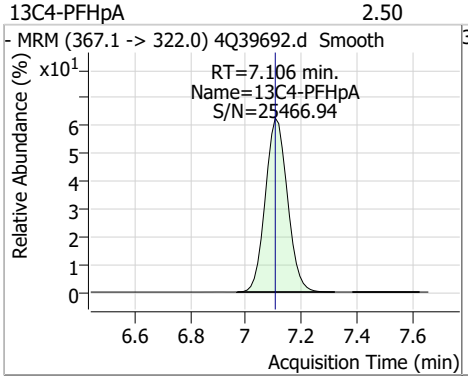
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	11.84	6.78	0.00	109086	341.0 -> 217.0	73.6	37.2	111.7

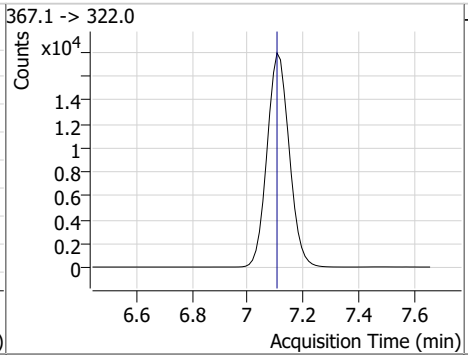


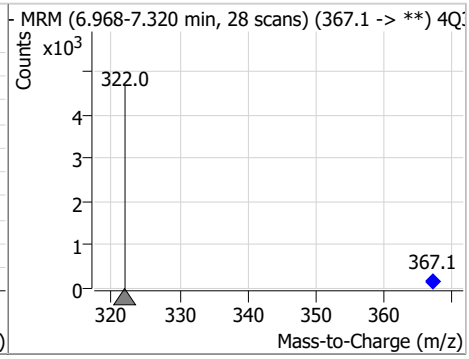




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	7.11	0.00	98454				

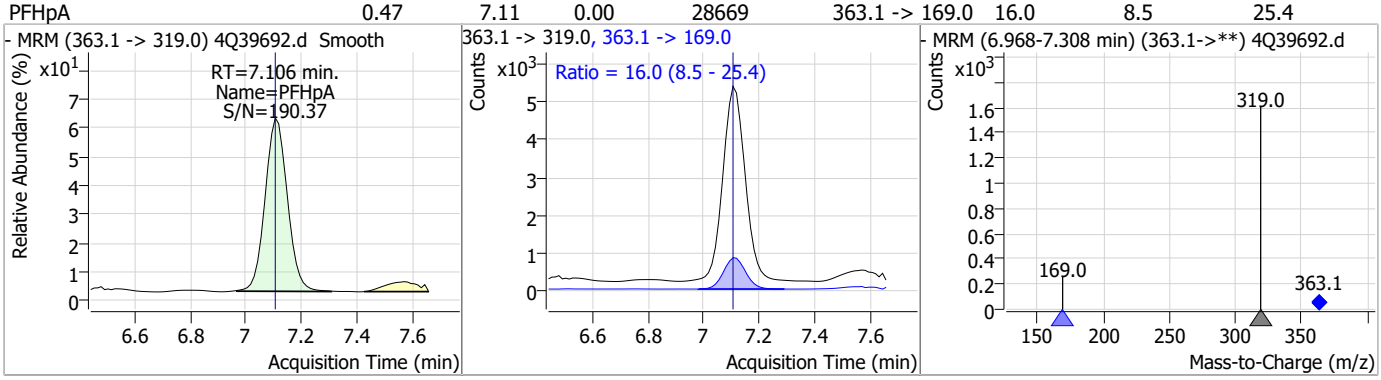




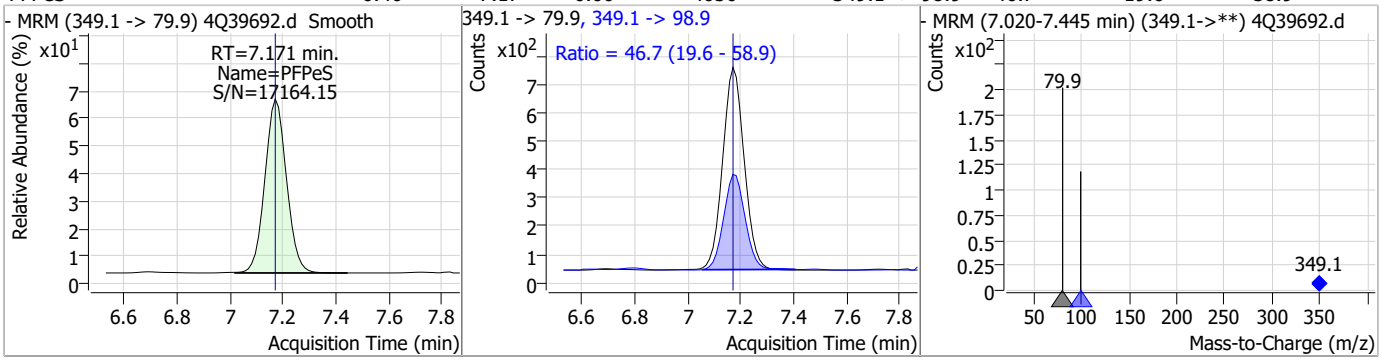


Perfluorinated Compounds by LC/MS/MS

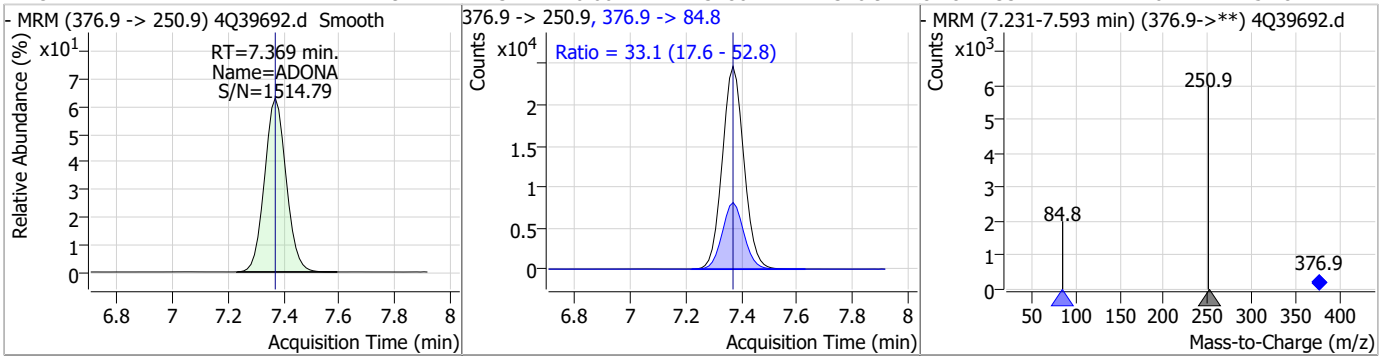
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.47	7.11	0.00	28669	363.1 -> 169.0	16.0	8.5	25.4



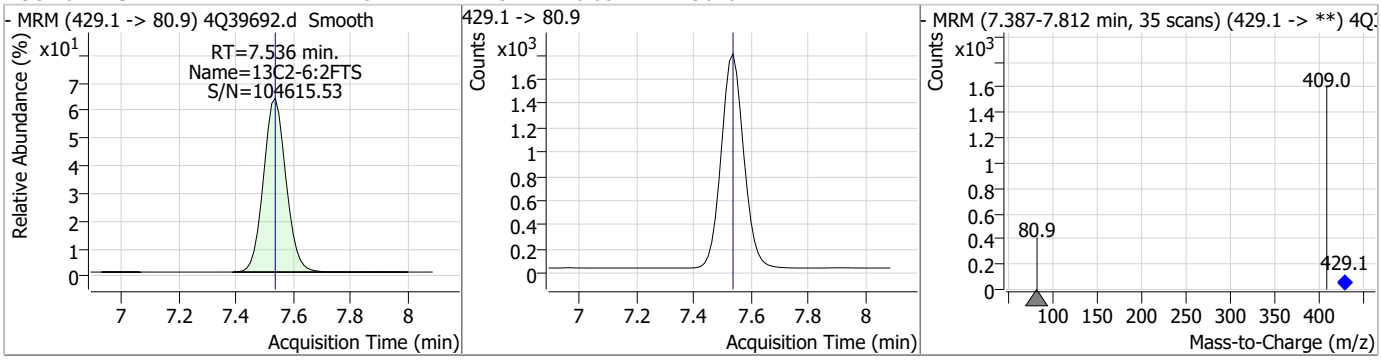
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.40	7.17	0.00	4050	349.1 -> 98.9	46.7	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.79	7.37	0.00	132864	376.9 -> 84.8	33.1	17.6	52.8

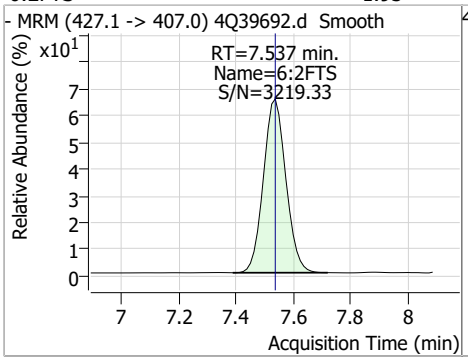


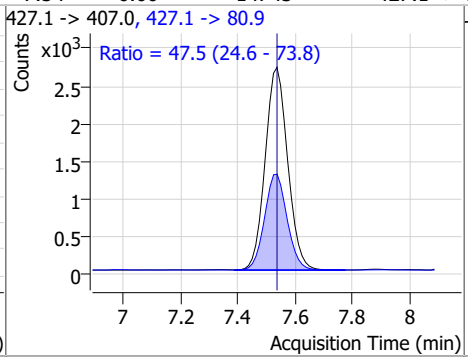
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.44	7.54	0.00	9626				

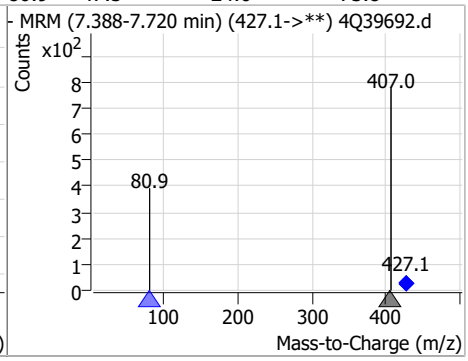


Perfluorinated Compounds by LC/MS/MS

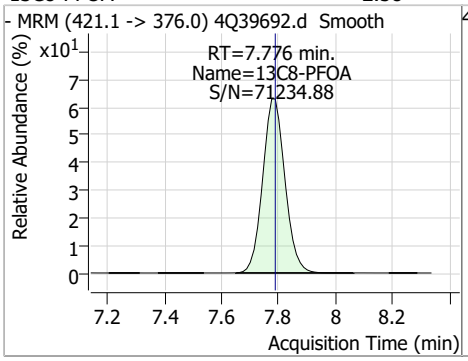
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.93	7.54	0.00	14743	427.1 -> 80.9	47.5	24.6	73.8

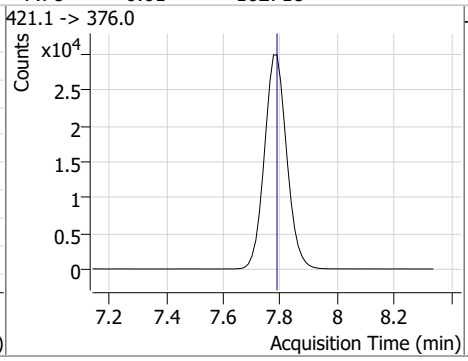


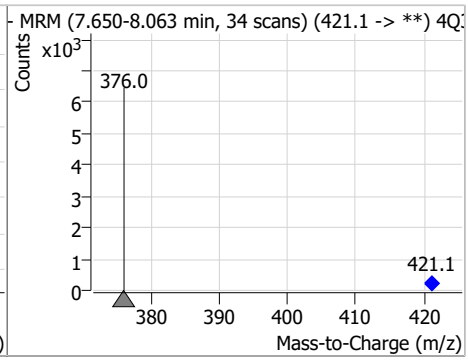




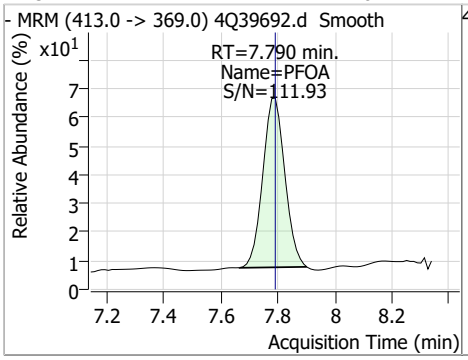
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.58	7.78	-0.01	162718				

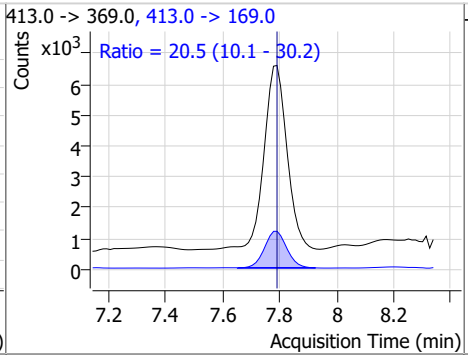


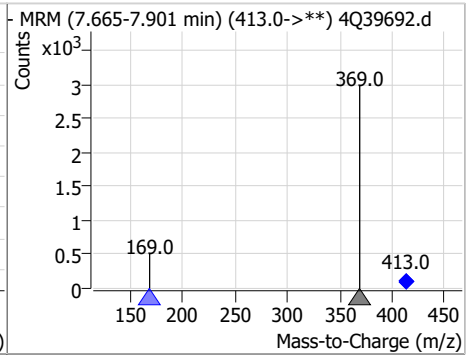




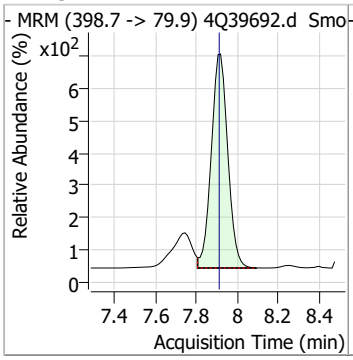
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.44	7.79	0.00	31496	413.0 -> 169.0	20.5	10.1	30.2

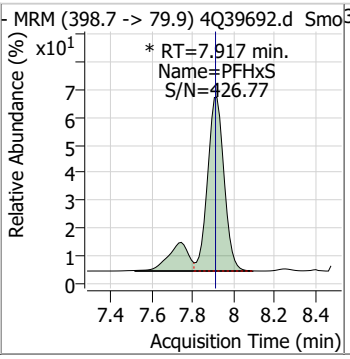


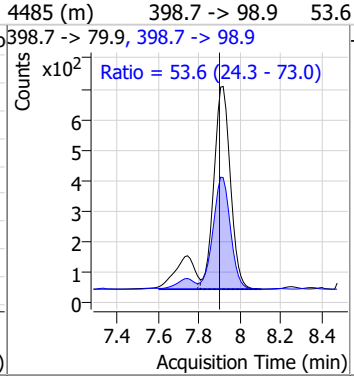


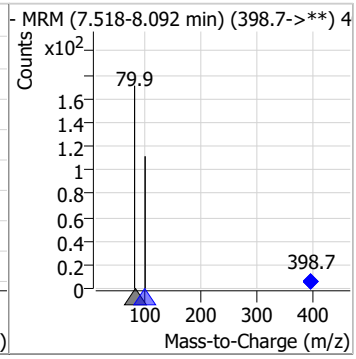


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.43	7.92	0.01	4485 (m)	398.7 -> 98.9	53.6	24.3	73.0



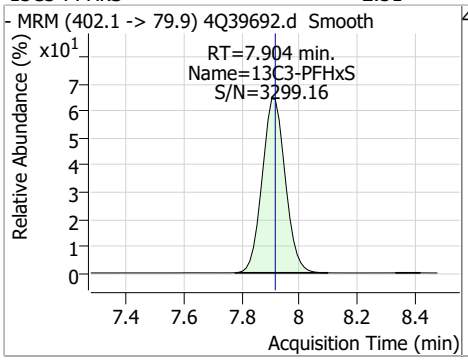


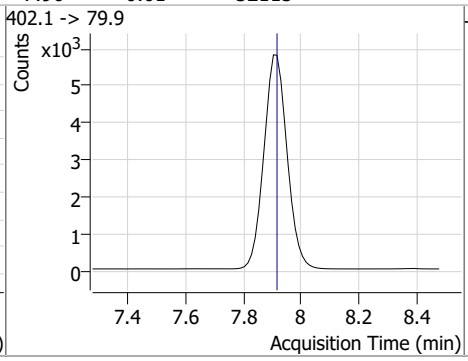


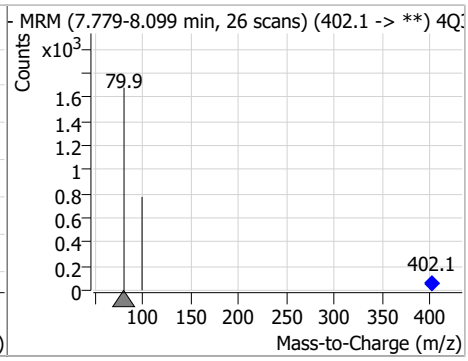


Perfluorinated Compounds by LC/MS/MS

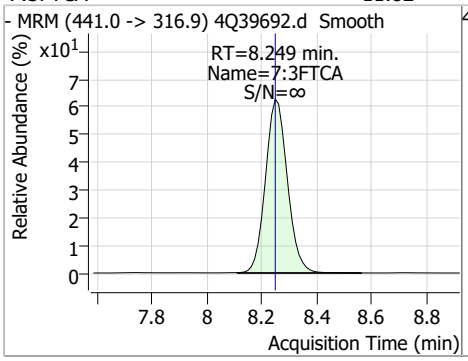
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.90	-0.01	32115				

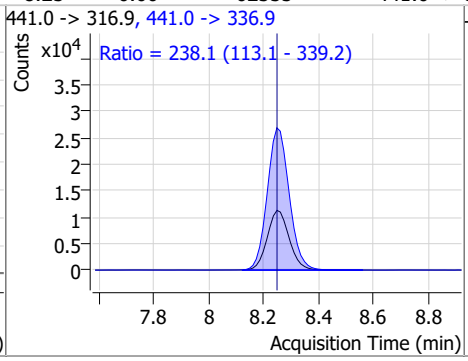


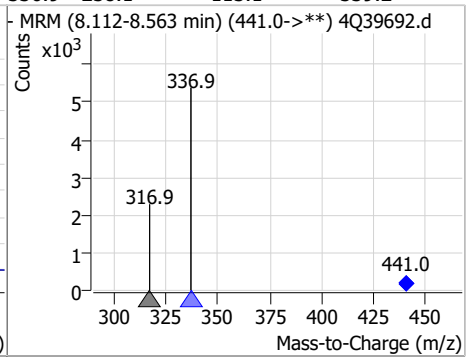




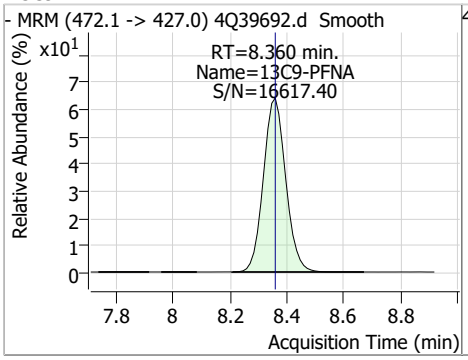
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	11.82	8.25	0.00	62555	441.0 -> 336.9	238.1	113.1	339.2

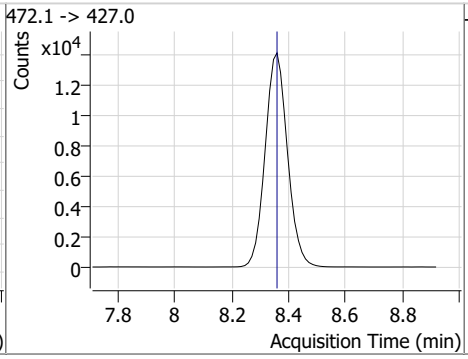


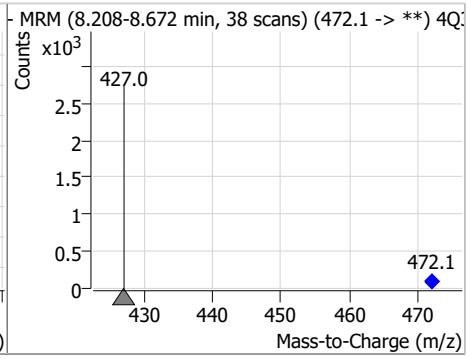




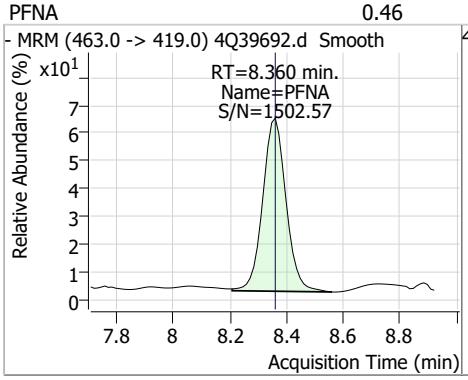
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	8.36	0.00	77025				

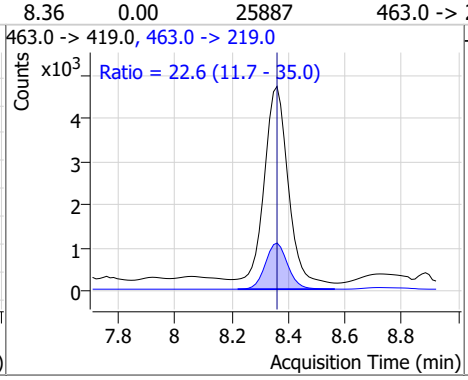


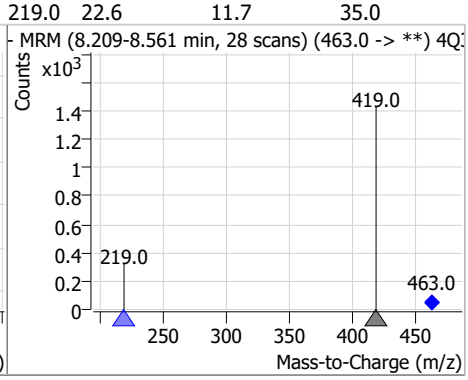




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.46	8.36	0.00	25887	463.0 -> 219.0	22.6	11.7	35.0

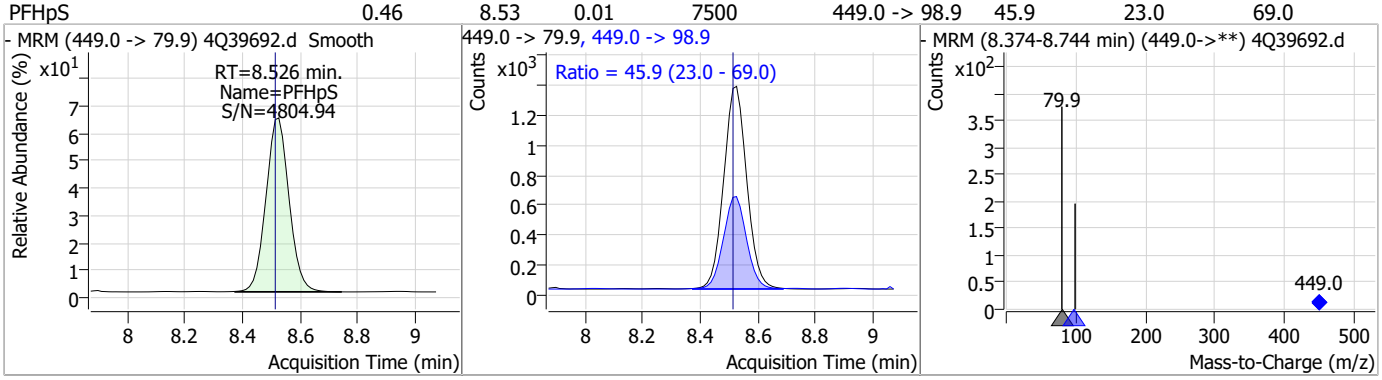




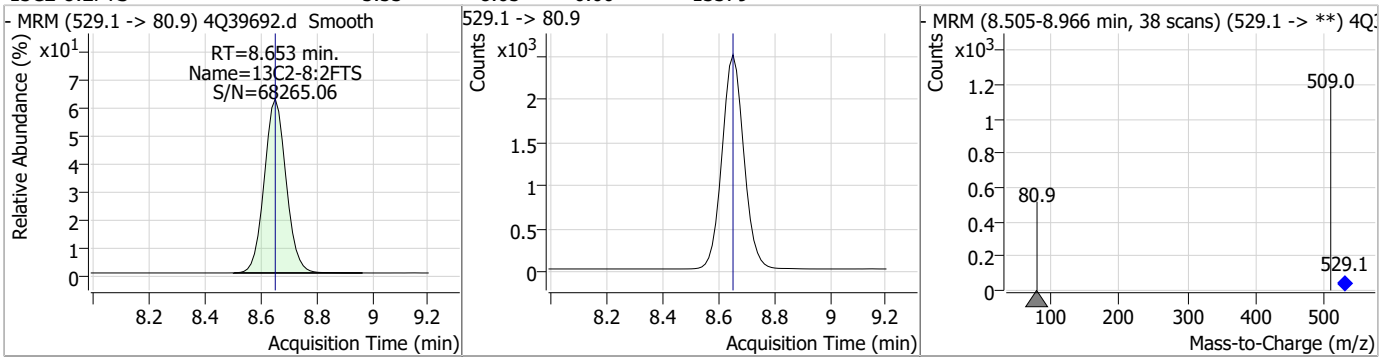


Perfluorinated Compounds by LC/MS/MS

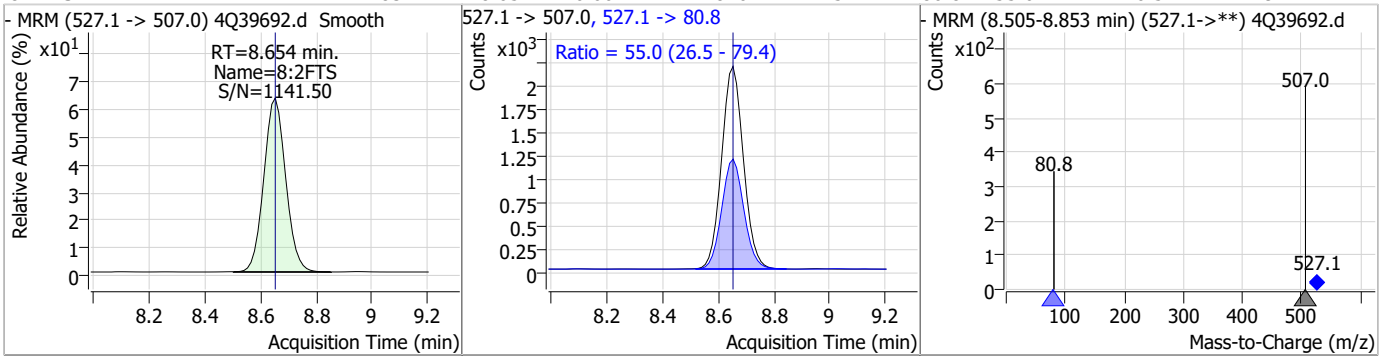
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.46	8.53	0.01	7500	449.0 -> 98.9	45.9	23.0	69.0



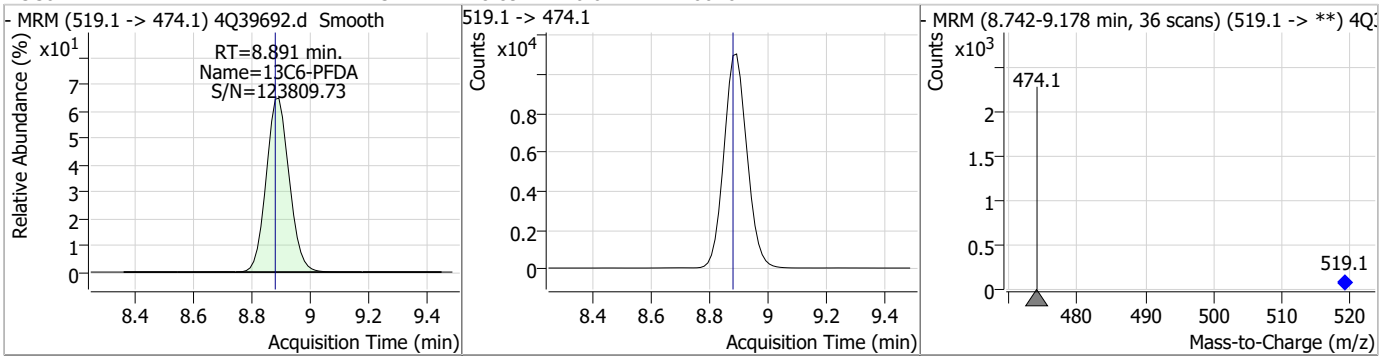
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.53	8.65	0.00	13379				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.83	8.65	0.00	11820	527.1 -> 80.8	55.0	26.5	79.4

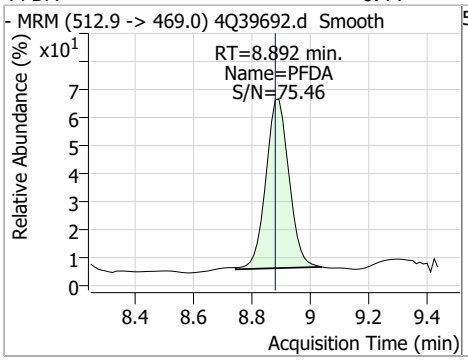


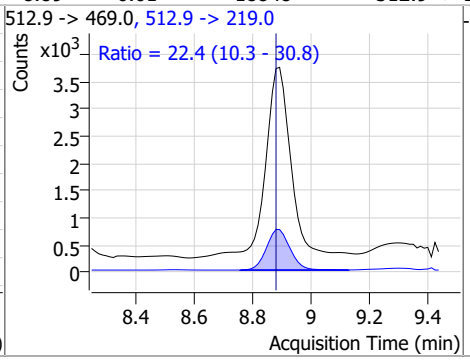
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.89	0.01	60461				

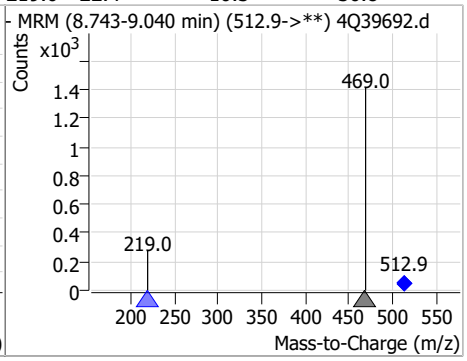


Perfluorinated Compounds by LC/MS/MS

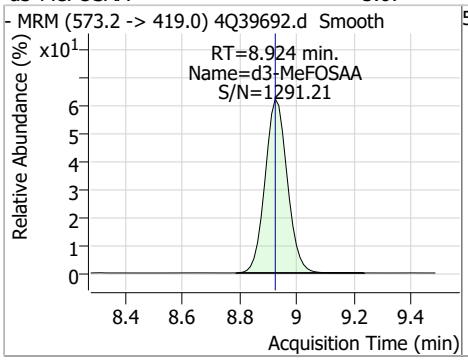
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.44	8.89	0.01	18848	512.9 -> 219.0	22.4	10.3	30.8

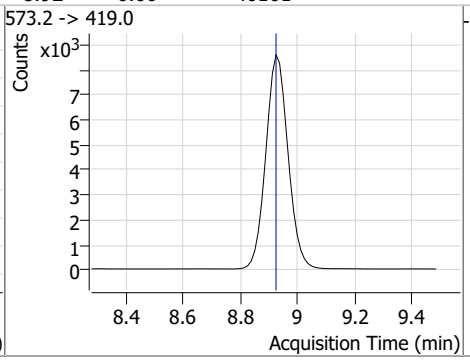


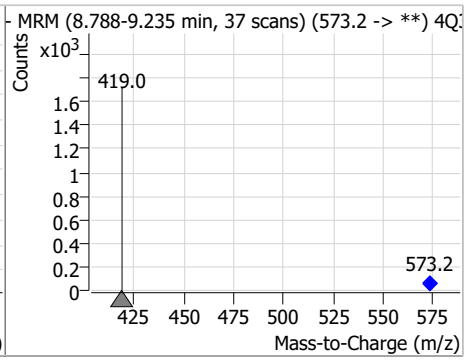




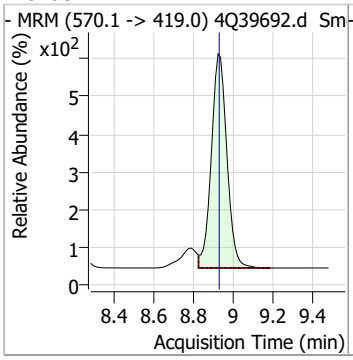
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.07	8.92	0.00	46101				

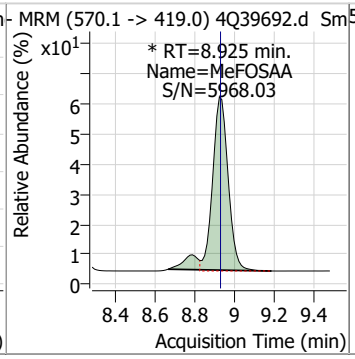


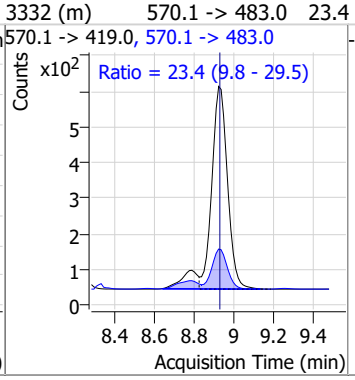


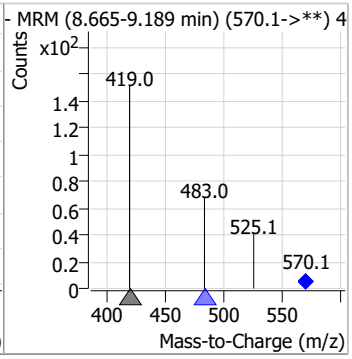


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.49	8.92	0.00	3332 (m)	570.1 -> 483.0	23.4	9.8	29.5

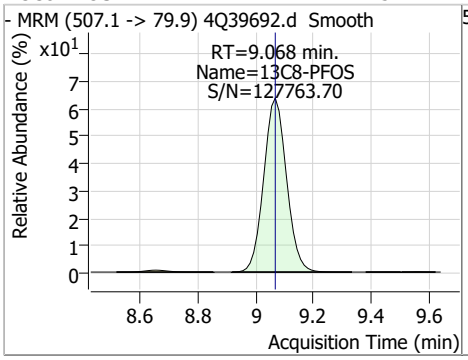


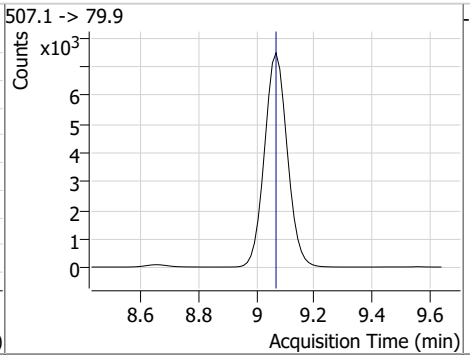


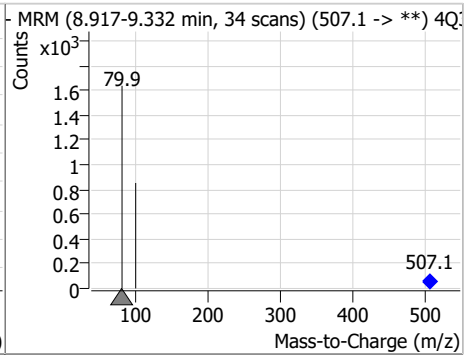




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.51	9.07	0.00	40514				

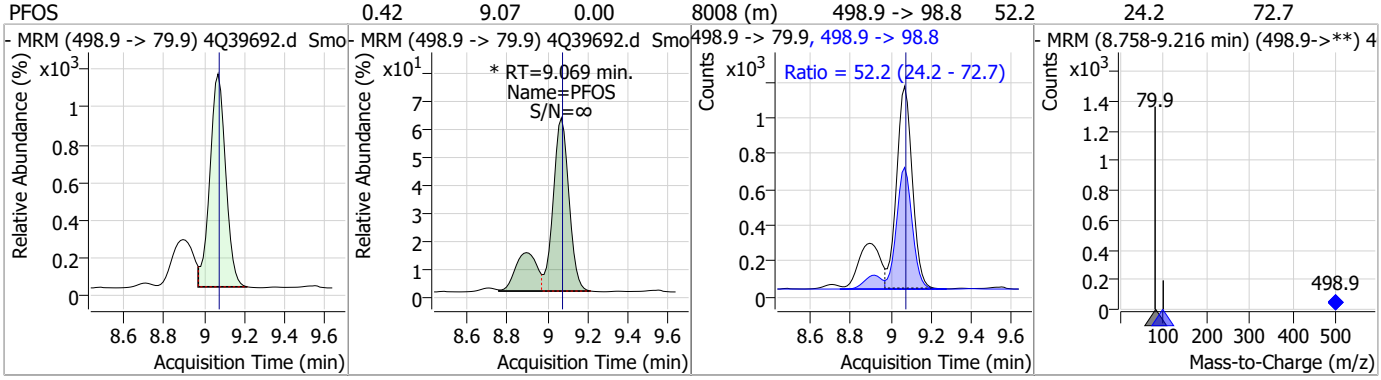




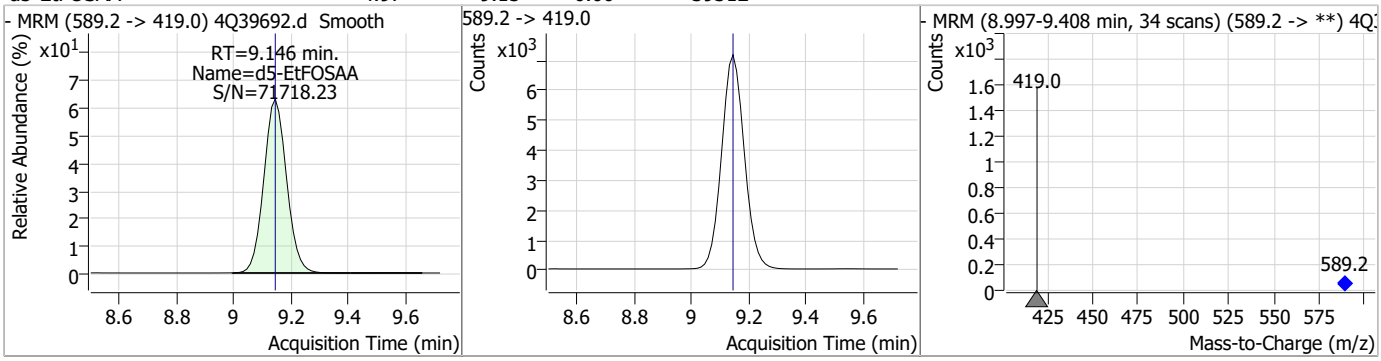


Perfluorinated Compounds by LC/MS/MS

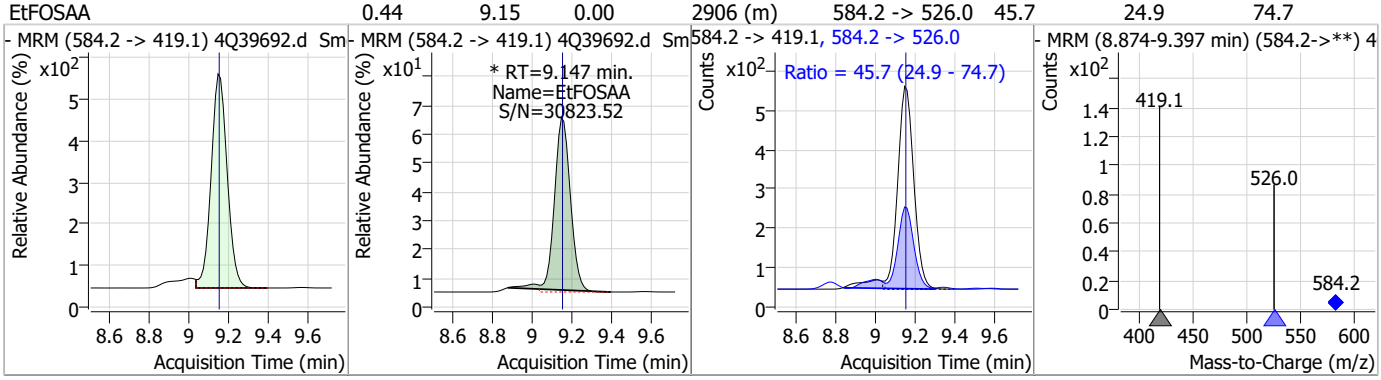
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.42	9.07	0.00	8008 (m)	498.9 -> 98.8	52.2	24.2	72.7



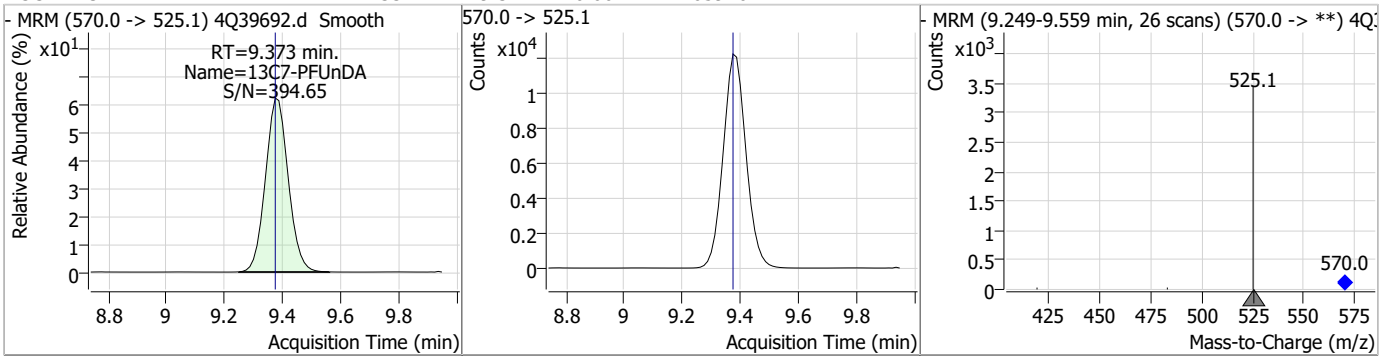
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.97	9.15	0.00	39312				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.44	9.15	0.00	2906 (m)	584.2 -> 526.0	45.7	24.9	74.7

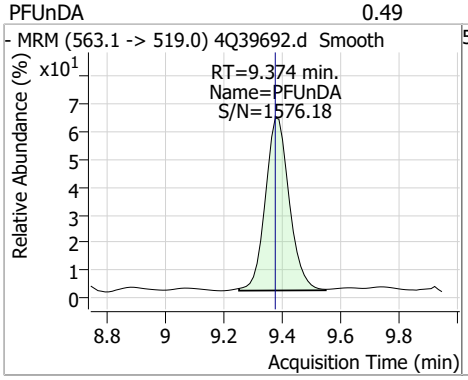


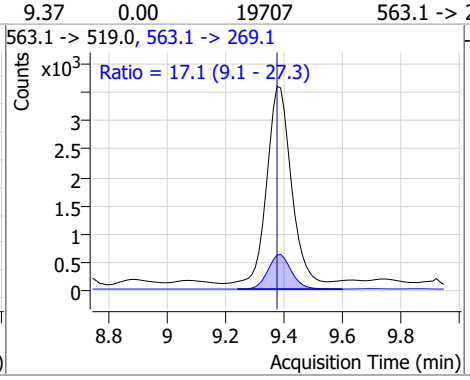
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	9.37	0.00	65940				

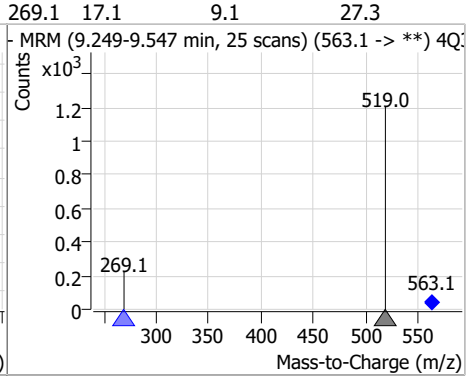


Perfluorinated Compounds by LC/MS/MS

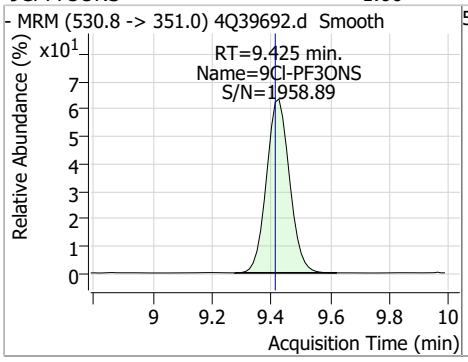
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.49	9.37	0.00	19707	563.1 -> 269.1	17.1	9.1	27.3

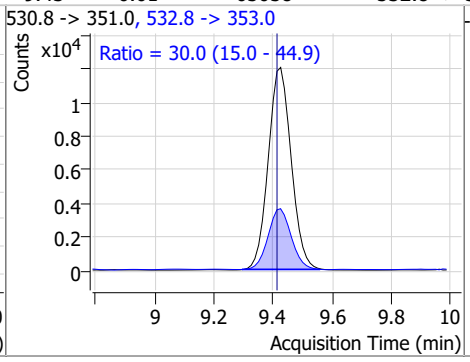


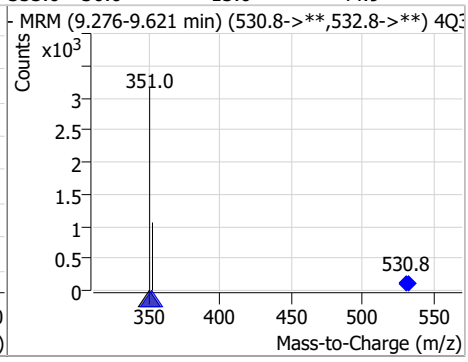




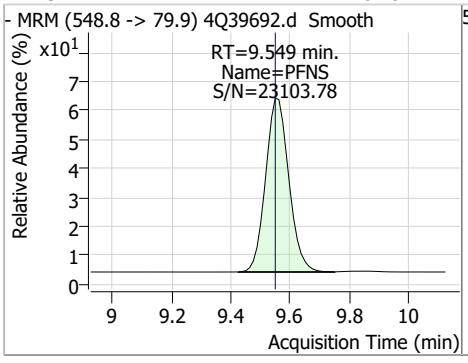
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.66	9.43	0.01	65058	532.8 -> 353.0	30.0	15.0	44.9

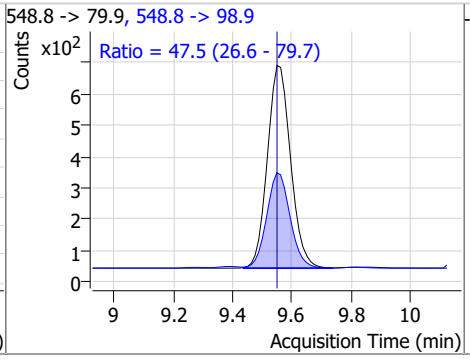


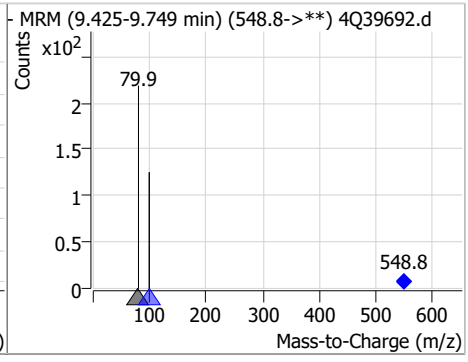




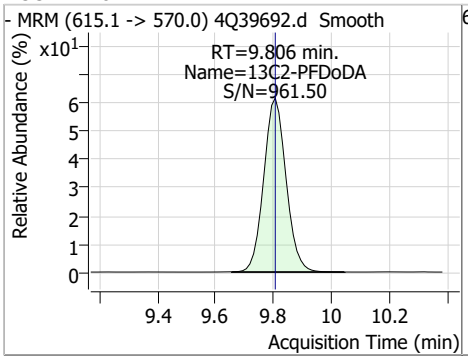
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.49	9.55	0.00	3511	548.8 -> 98.9	47.5	26.6	79.7

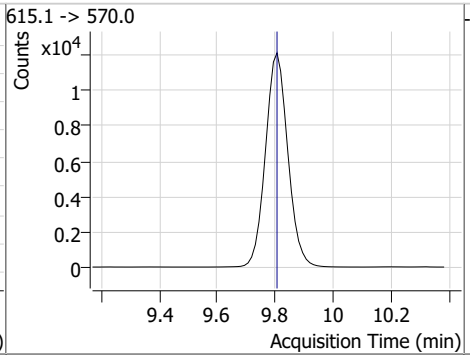


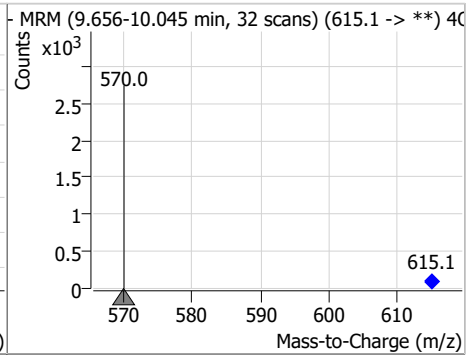




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.81	0.00	64252				

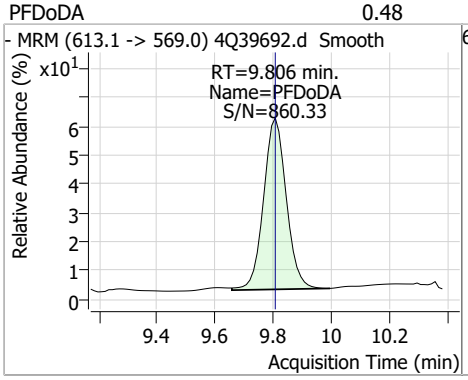


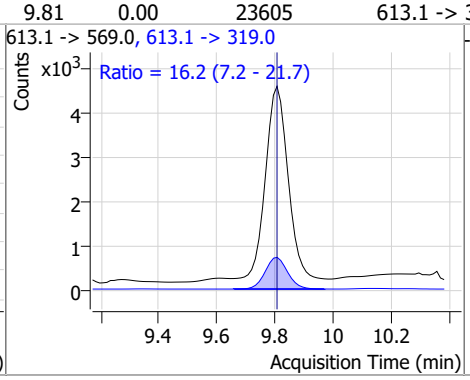


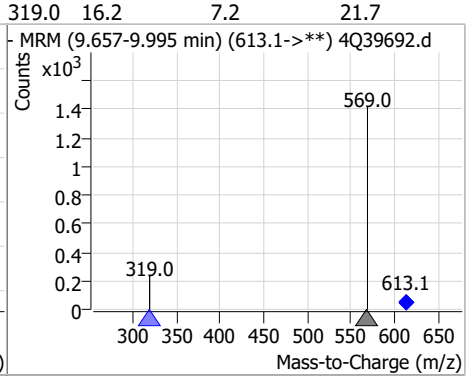


Perfluorinated Compounds by LC/MS/MS

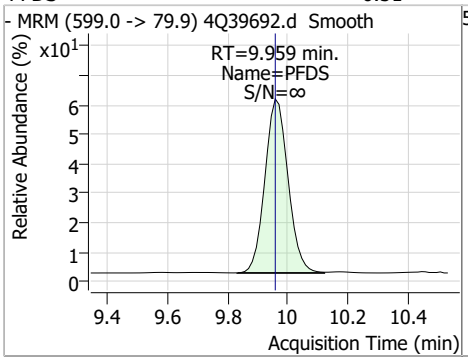
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.48	9.81	0.00	23605	613.1 -> 319.0	16.2	7.2	21.7

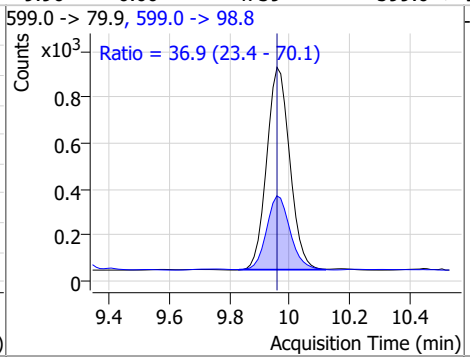


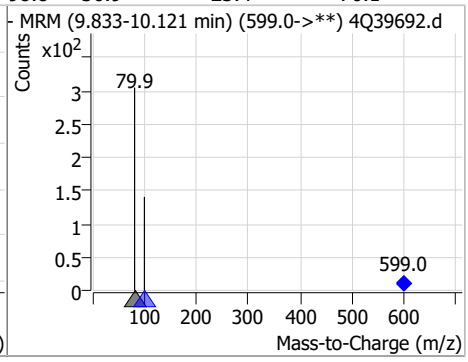




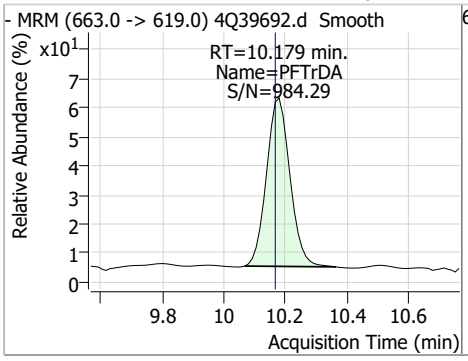
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.51	9.96	0.00	4739	599.0 -> 98.8	36.9	23.4	70.1

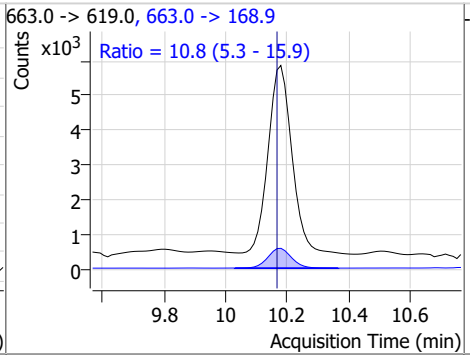


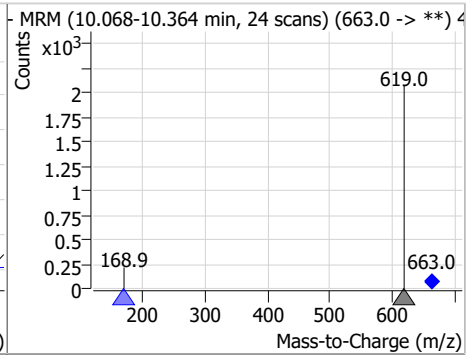




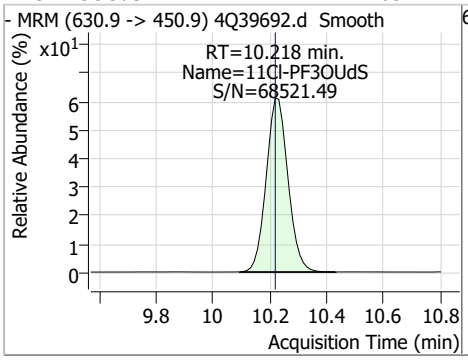
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.47	10.18	0.01	28463	663.0 -> 168.9	10.8	5.3	15.9

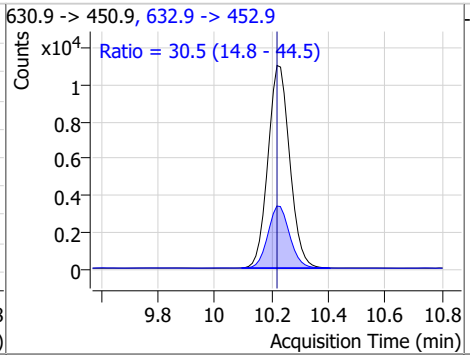


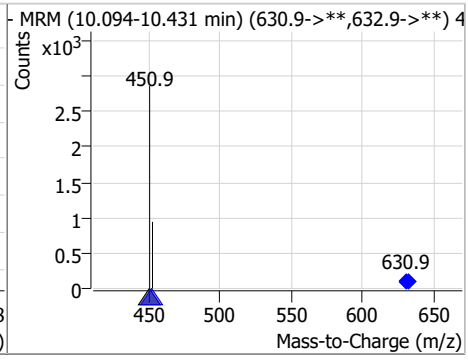




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.83	10.22	0.00	58813	632.9 -> 452.9	30.5	14.8	44.5

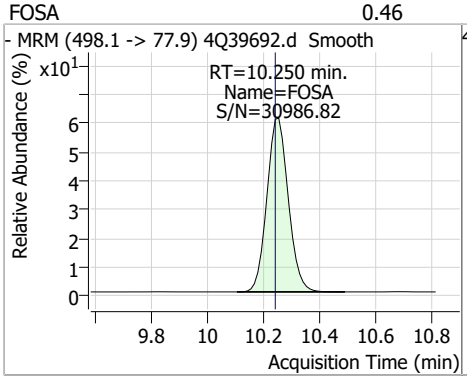


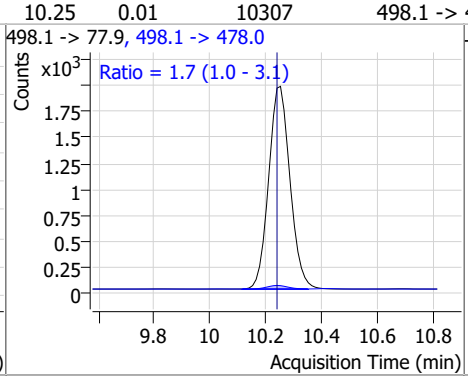


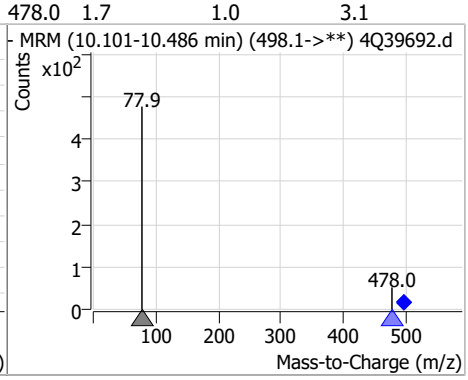


Perfluorinated Compounds by LC/MS/MS

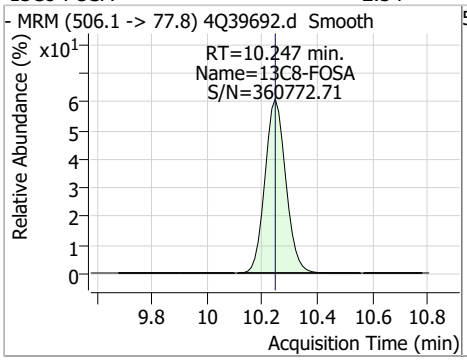
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.46	10.25	0.01	10307	498.1 -> 478.0	1.7	1.0	3.1

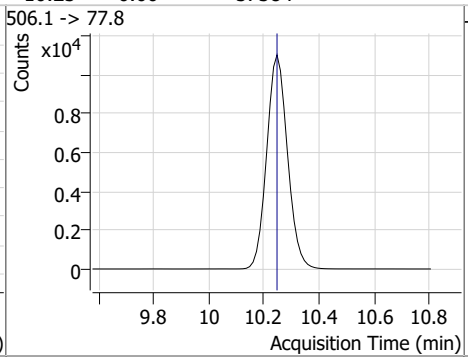


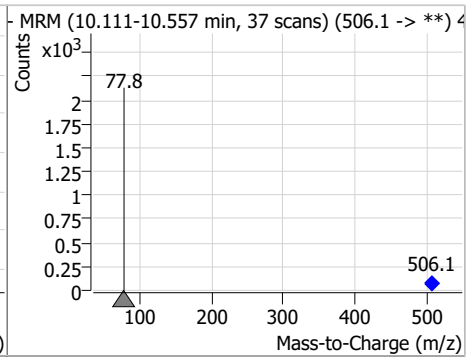




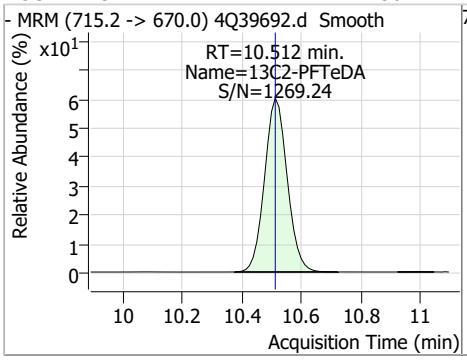
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.54	10.25	0.00	57584				

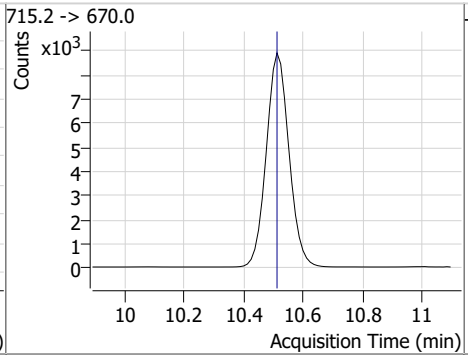


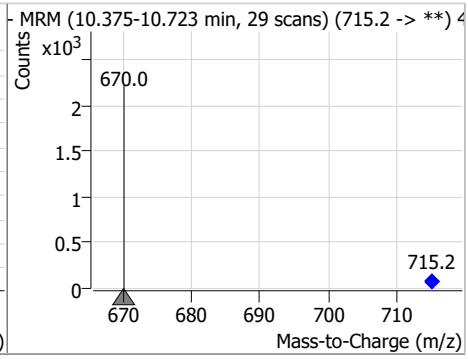




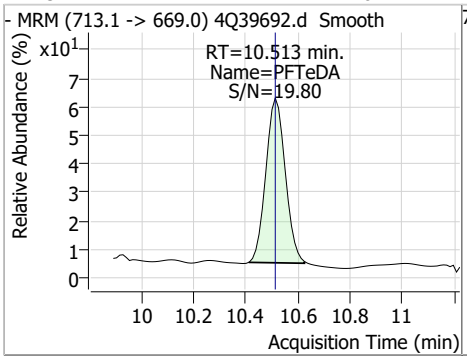
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	10.51	0.00	46921				

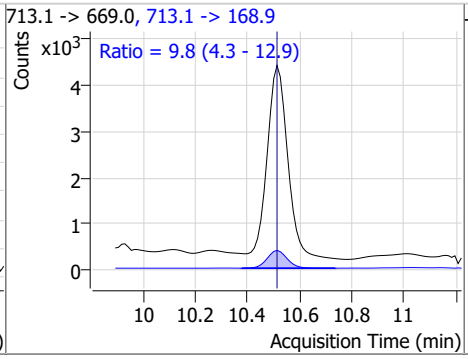


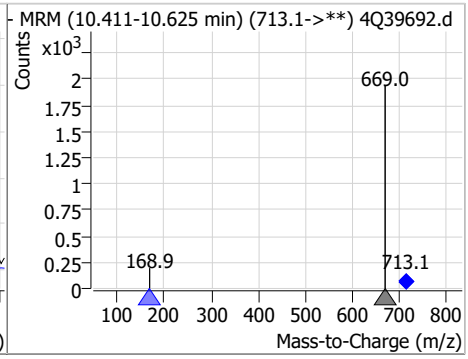




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.44	10.51	0.00	20982	713.1 -> 168.9	9.8	4.3	12.9

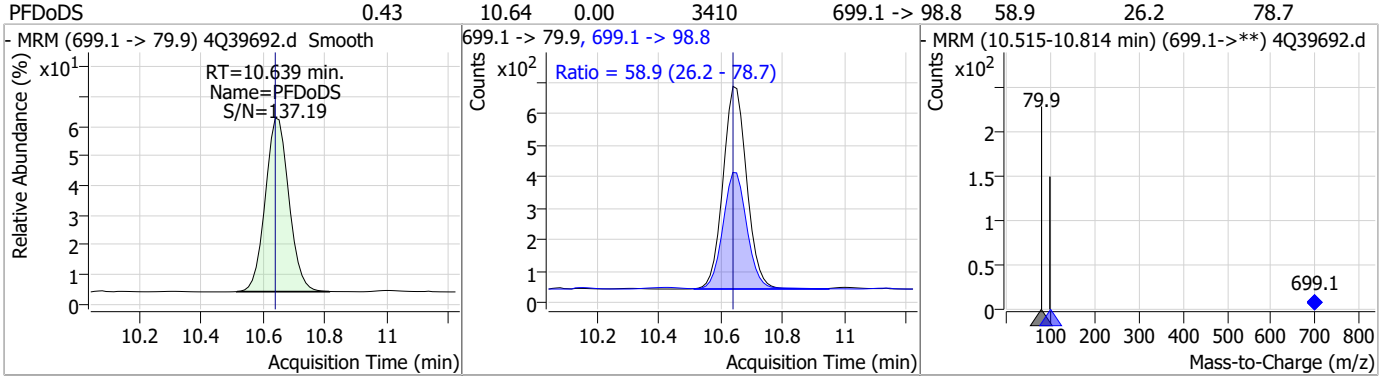




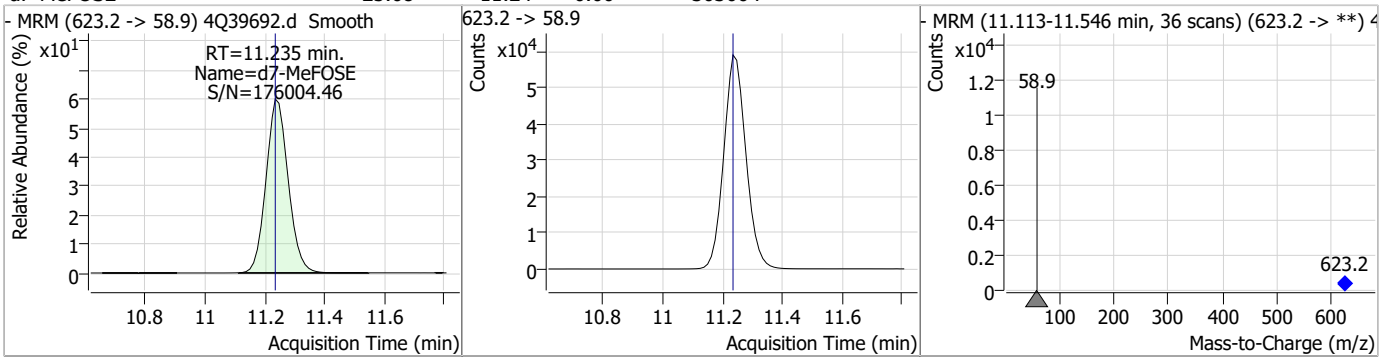


Perfluorinated Compounds by LC/MS/MS

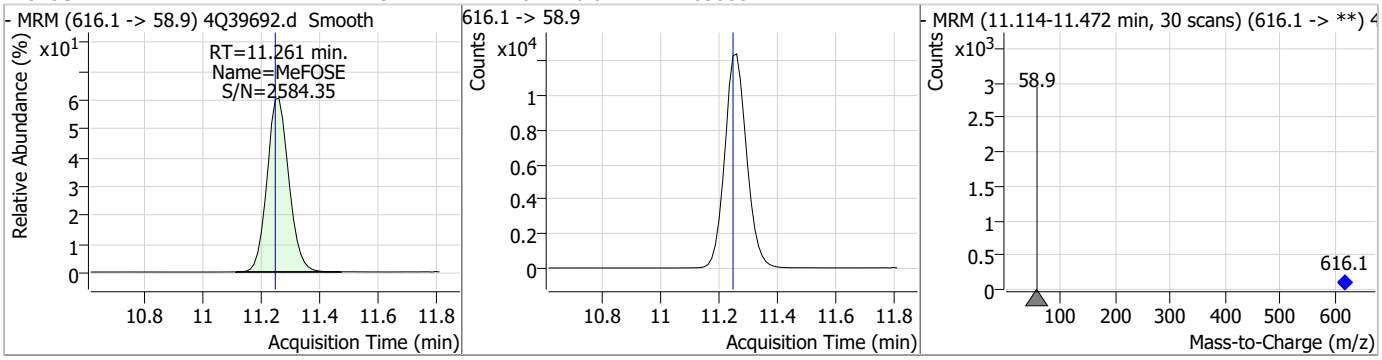
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.43	10.64	0.00	3410	699.1 -> 98.8	58.9	26.2	78.7



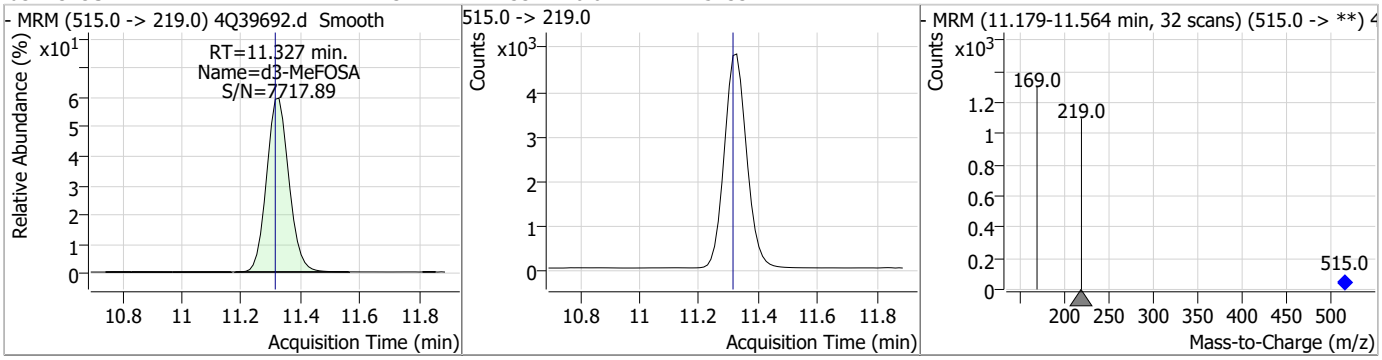
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.68	11.24	0.00	303064				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	4.97	11.26	0.01	63688				

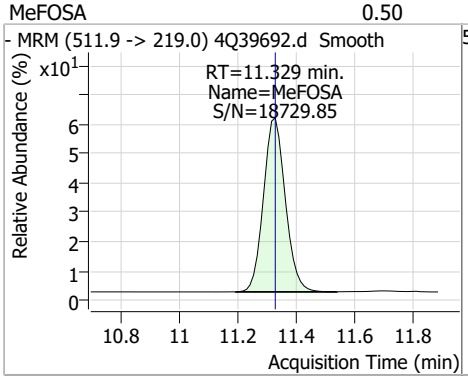


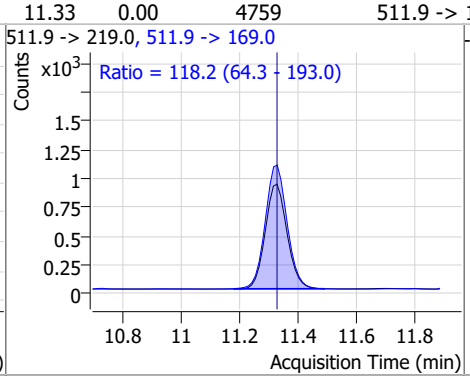
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	11.33	0.01	25133				

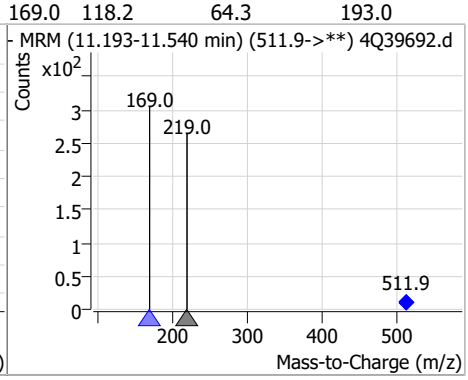


Perfluorinated Compounds by LC/MS/MS

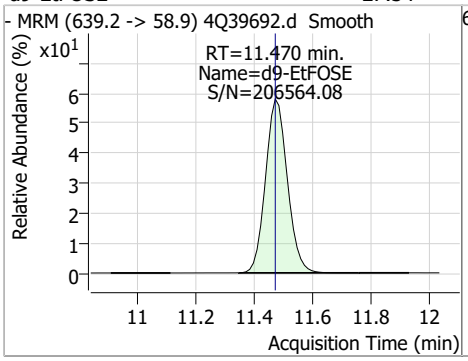
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.50	11.33	0.00	4759	511.9 -> 169.0	118.2	64.3	193.0

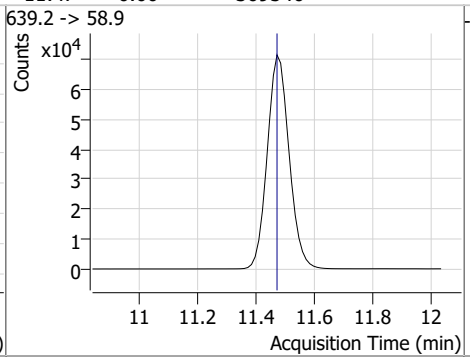


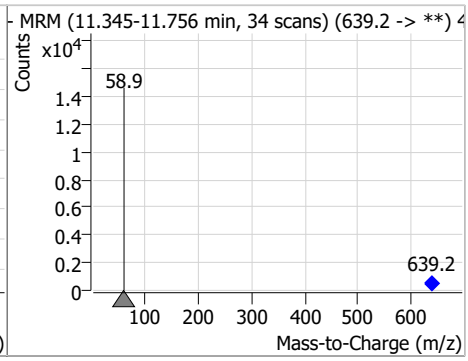




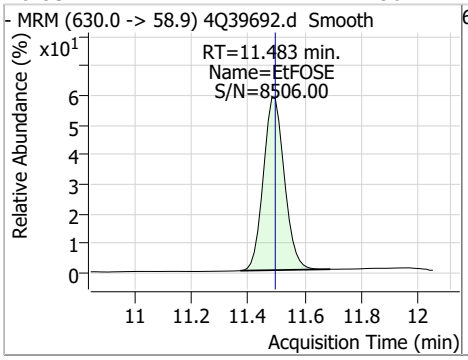
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.34	11.47	0.00	369546				

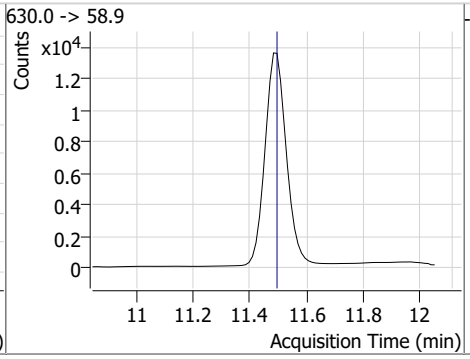


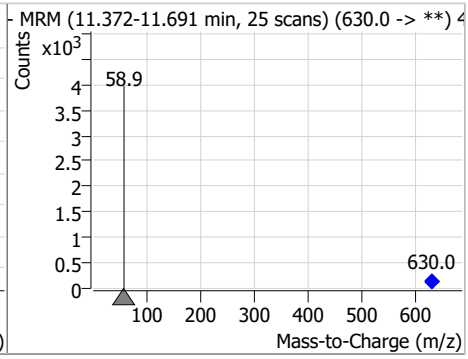




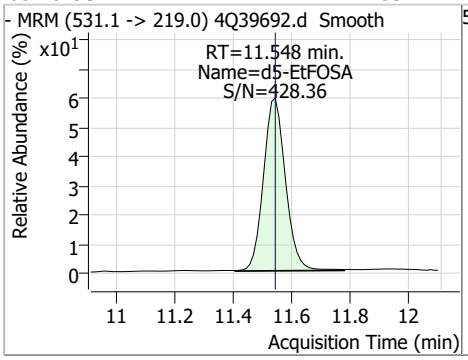
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	4.90	11.48	-0.01	70253				

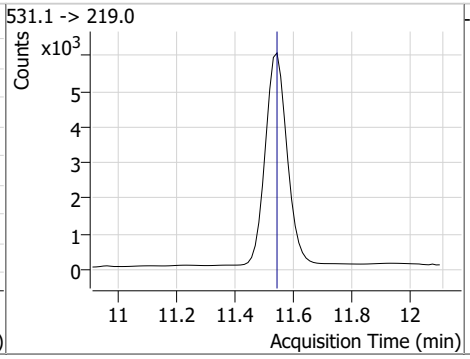


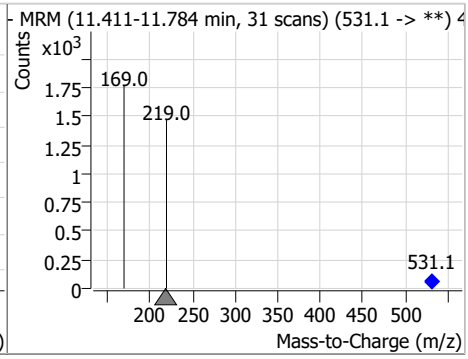




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.53	11.55	0.00	31256				

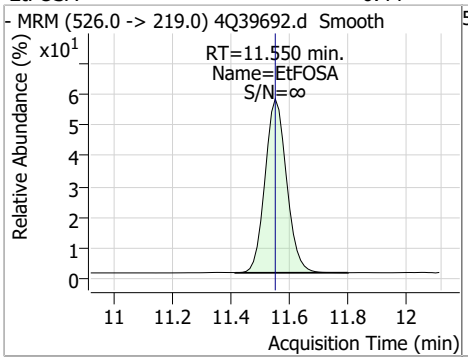


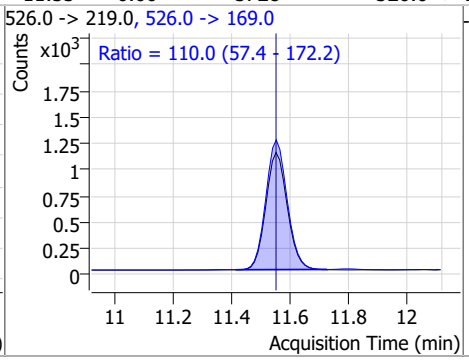


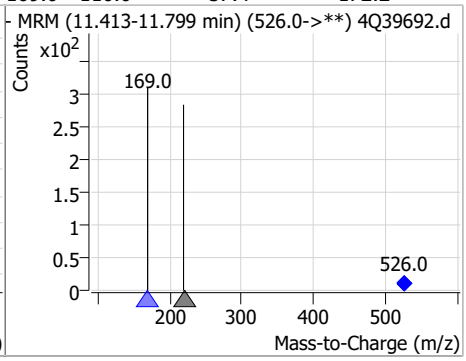


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.44	11.55	0.00	5728	526.0 -> 169.0	110.0	57.4	172.2







Manual Integration Approval Summary

Sample Number:	S4Q571-IC571	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q39692.D	**Analyst approved:**	01/26/23 13:32 Natasha Gumtie
Injection Time:	01/25/23 13:27	**Supervisor approved:**	01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39693.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 1:41:46 PM
Sample Name : ic571-3
Vial : P1-A4
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.174	216.8 -> 171.9	420330	10.00	µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	277981	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	177083	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	98314	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	157496	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	77407	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	59889	1.25	µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	67259	1.25	µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	65101	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	47827	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57939	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	49095	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	32537	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40788	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4015	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	10214	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12778	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	48157	5.00	µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	137307	10.00	µg/L	0.000
M5-EtFOSAA	9.146	589.2 -> 419.0	41063	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	292848	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	355927	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	31239	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25620	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	40887	2.50	µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	231552	5.00	µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	22535	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	179662	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	56391	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	83856	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	168037	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4015	4.94	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10214	5.62	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12778	5.14	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFDoDA	9.806	615.1 -> 570.0	65101	1.19	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C2-PFTeDA	10.512	715.2 -> 670.0	47827	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C3-PFBS	6.089	302.1 -> 79.9	49095	2.52	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C3-PFHxS	7.917	402.1 -> 79.9	32537	2.48	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFBA	3.174	216.8 -> 171.9	420330	10.07 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFHpA	7.106	367.1 -> 322.0	98314	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFHxA	6.172	318.0 -> 273.0	177083	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFPeA	4.863	268.3 -> 223.0	277981	5.09 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C6-PFDA	8.891	519.1 -> 474.1	59889	1.20 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C7-PFUnDA	9.386	570.0 -> 525.1	67259	1.26 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C8-FOSA	10.247	506.1 -> 77.8	57939	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C8-PFOA	7.788	421.1 -> 376.0	157496	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C8-PFOS	9.068	507.1 -> 79.9	40788	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C9-PFNA	8.360	472.1 -> 427.0	77407	1.30 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%		
d3-MeFOSAA	8.924	573.2 -> 419.0	48157	5.13 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	137307	10.24 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
d3-MeFOSA	11.327	515.0 -> 219.0	25620	2.40 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%		
d5-EtFOSAA	9.146	589.2 -> 419.0	41063	5.02 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d7-MeFOSE	11.235	623.2 -> 58.9	292848	24.02 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
d9-EtFOSE	11.470	639.2 -> 58.9	355927	25.49 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d5-EtFOSA	11.548	531.1 -> 219.0	31239	2.45 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	30999	4.72 µg/L		100
		327.1 -> 80.9	14409			
6:2FTS	7.537	427.1 -> 407.0	35363	4.37 µg/L		99
		427.1 -> 80.9	17590			
8:2FTS	8.654	527.1 -> 507.0	28264	4.57 µg/L		90
		527.1 -> 80.8	16904			
EtFOSAA	9.147	584.2 -> 419.1	7138	1.04 µg/L	m	97
		584.2 -> 526.0	3388			
FOSA	10.250	498.1 -> 77.9	27278	1.22 µg/L		99
		498.1 -> 478.0	500			
MeFOSAA	8.925	570.1 -> 419.0	9559	1.34 µg/L	m	96
		570.1 -> 483.0	1726			
PFBA	3.182	212.8 -> 168.9	54696	4.68 µg/L		100
PFBS	6.090	298.7 -> 79.9	22434	1.01 µg/L		97
		298.7 -> 98.8	8080			
PFDA	8.892	512.9 -> 469.0	52576	1.23 µg/L		94
		512.9 -> 219.0	9437			
PFDoDA	9.806	613.1 -> 569.0	61053	1.22 µg/L		97
		613.1 -> 319.0	9678			
PFDS	9.959	599.0 -> 79.9	11223	1.19 µg/L		100

Perfluorinated Compounds by LC/MS/MS

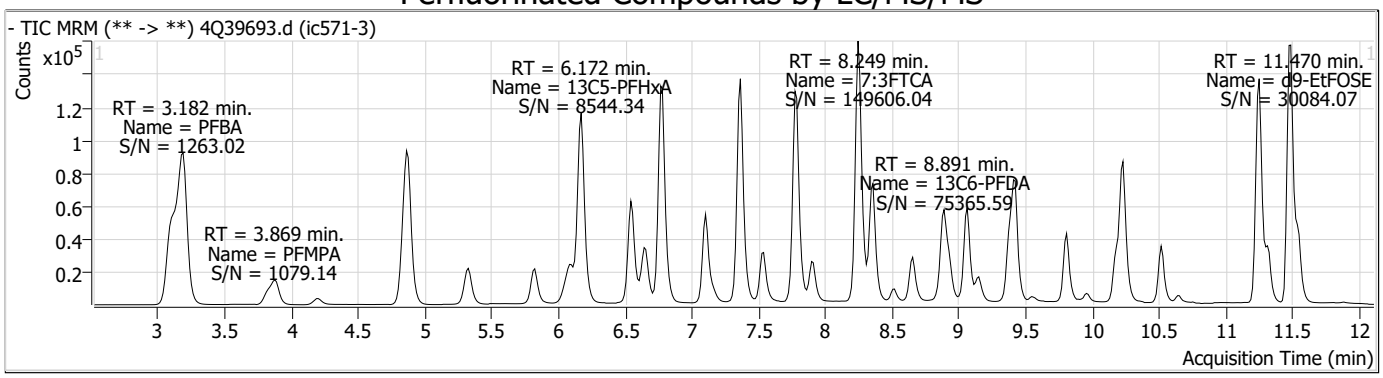
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	5236				
PFHpA	7.106	363.1 -> 319.0	72552	1.18	µg/L		99
		363.1 -> 169.0	12662				
PFHpS	8.526	449.0 -> 79.9	18558	1.13	µg/L		96
		449.0 -> 98.9	8978				
PFHxA	6.175	313.0 -> 269.0	81895	1.19	µg/L		99
		313.0 -> 118.9	2708				
PFHxS	7.905	398.7 -> 79.9	11145	1.06	µg/L	m	93
		398.7 -> 98.9	5921				
PFNA	8.360	463.0 -> 419.0	64752	1.15	µg/L		97
		463.0 -> 219.0	15957				
PFNS	9.549	548.8 -> 79.9	7847	1.08	µg/L		93
		548.8 -> 98.9	3789				
PFOA	7.790	413.0 -> 369.0	84336	1.20	µg/L		99
		413.0 -> 169.0	16820				
PFOS	9.069	498.9 -> 79.9	21255	1.12	µg/L	m	96
		498.9 -> 98.8	10797				
PFPeA	4.866	263.0 -> 219.0	148150	2.43	µg/L		100
PFPeS	7.171	349.1 -> 79.9	11230	1.11	µg/L		95
		349.1 -> 98.9	4039				
PFTeDA	10.513	713.1 -> 669.0	56683	1.18	µg/L		100
		713.1 -> 168.9	4808				
PFTrDA	10.179	663.0 -> 619.0	78669	1.28	µg/L		96
		663.0 -> 168.9	7263				
PFUnDA	9.374	563.1 -> 519.0	48030	1.18	µg/L		98
		563.1 -> 269.1	8253				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	154841	4.82	µg/L		99
		632.9 -> 452.9	47035				
9Cl-PF3ONS	9.425	530.8 -> 351.0	172603	4.41	µg/L		100
		532.8 -> 353.0	52048				
ADONA	7.369	376.9 -> 250.9	346064	4.67	µg/L		99
		376.9 -> 84.8	120306				
HFPO-DA	6.552	284.9 -> 168.9	60836	4.70	µg/L		98
		284.9 -> 184.9	6883				
3:3FTCA	4.204	241.0 -> 177.0	15876	5.55	µg/L		100
		241.0 -> 117.0	1501				
5:3FTCA	6.783	341.0 -> 237.1	277747	30.33	µg/L		99
		341.0 -> 217.0	205043				
7:3FTCA	8.249	441.0 -> 316.9	165517	31.47	µg/L		95
		441.0 -> 336.9	388455				
EtFOSA	11.550	526.0 -> 219.0	14952	1.14	µg/L		95
		526.0 -> 169.0	17976				
EtFOSE	11.496	630.0 -> 58.9	179555	12.99	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	11688	1.20	µg/L		98
		511.9 -> 169.0	14783				
MeFOSE	11.261	616.1 -> 58.9	160163	12.95	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	9001	1.13	µg/L		94
		699.1 -> 98.8	5129				
NFDHA	6.053	295.0 -> 201.0	11275	2.49	µg/L		96
		295.0 -> 84.9	3051				
PFMBA	5.328	279.0 -> 85.1	90721	2.39	µg/L		100
PFMPA	3.869	229.0 -> 84.9	91519	2.33	µg/L		100
PFEESA	6.647	314.8 -> 134.9	126566	2.15	µg/L		100
		314.8 -> 82.9	3911				

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

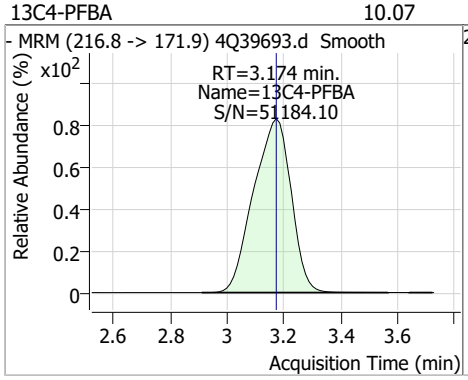
Perfluorinated Compounds by LC/MS/MS

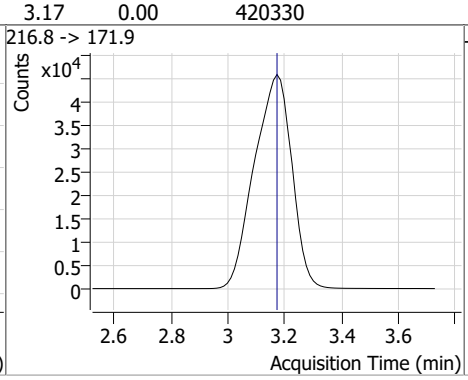
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

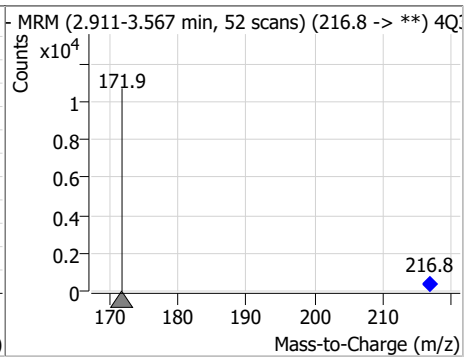
Perfluorinated Compounds by LC/MS/MS



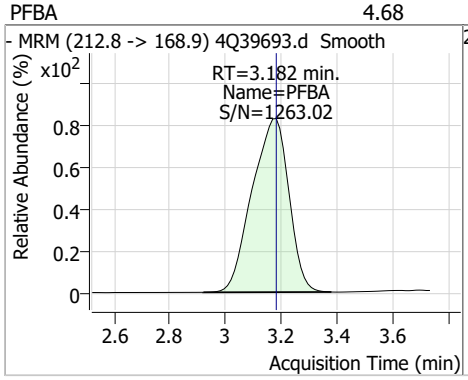
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.07	3.17	0.00	420330				

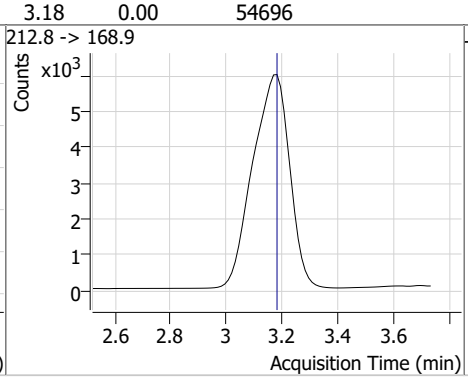


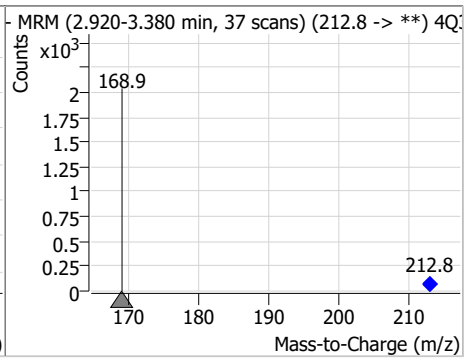




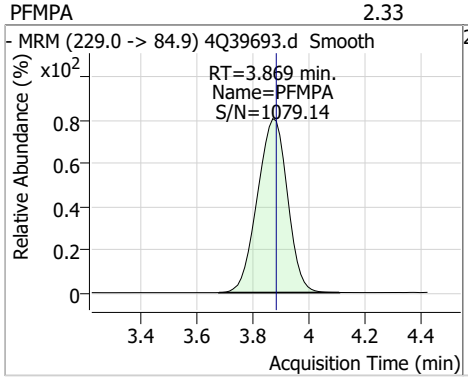
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.68	3.18	0.00	54696				

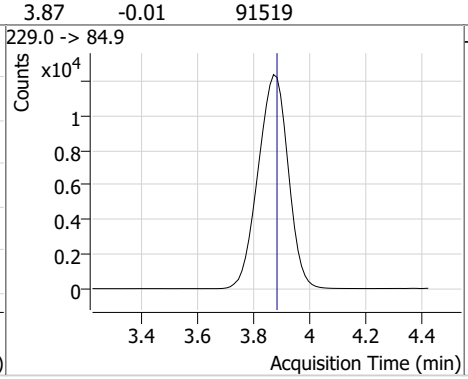


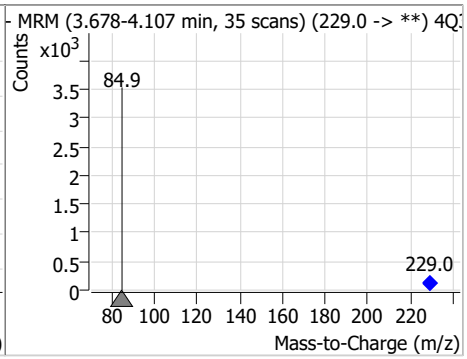




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	2.33	3.87	-0.01	91519				

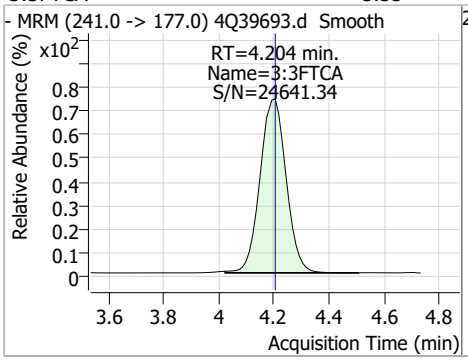


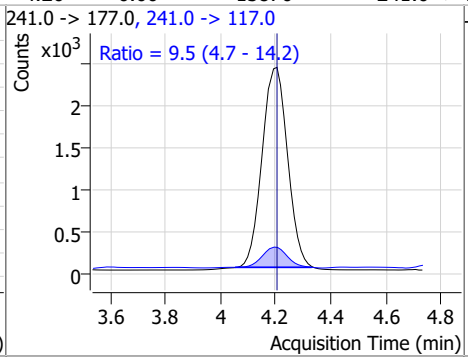


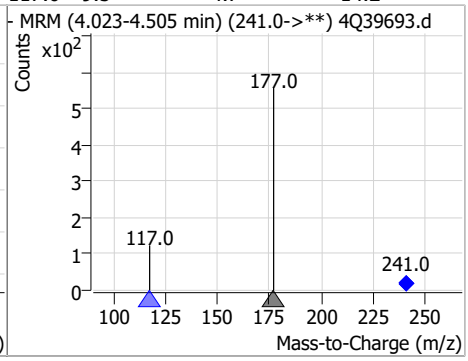


Perfluorinated Compounds by LC/MS/MS

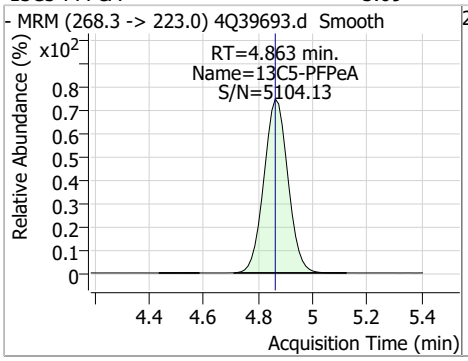
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	5.55	4.20	0.00	15876	241.0 -> 117.0	9.5	4.7	14.2

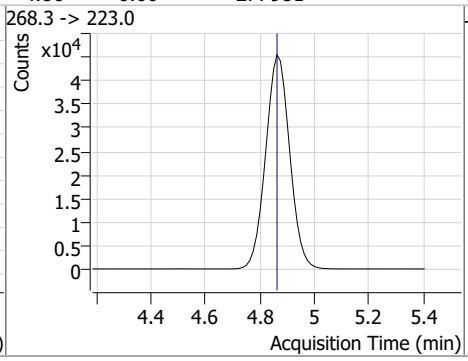


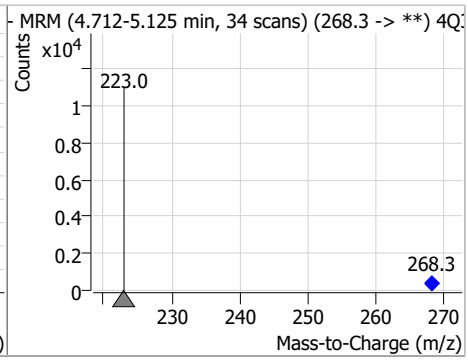




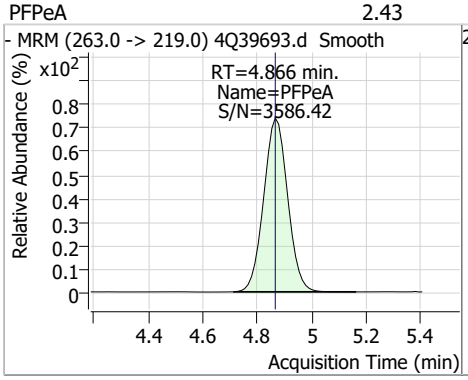
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.86	0.00	277981				

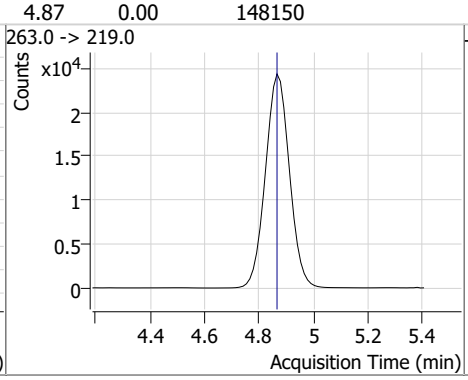


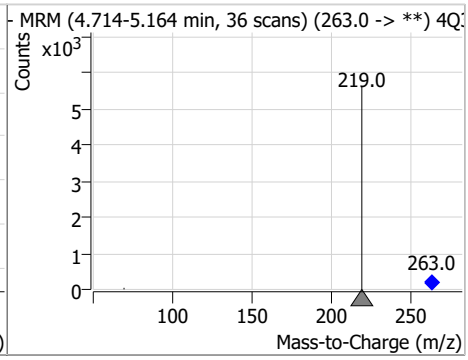




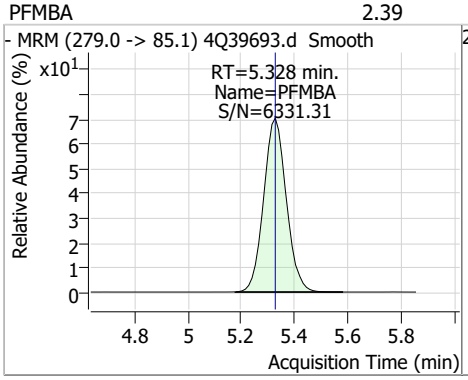
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.43	4.87	0.00	148150				

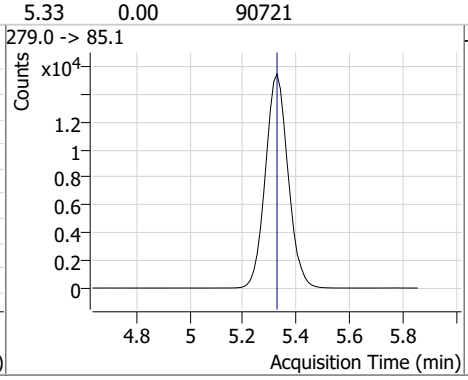


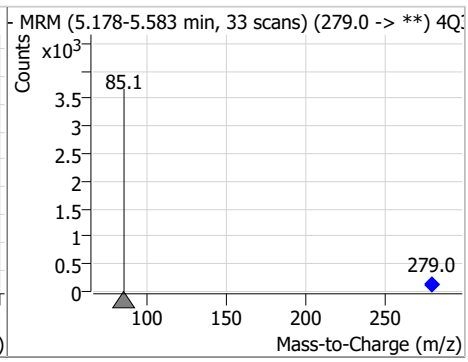




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.39	5.33	0.00	90721				

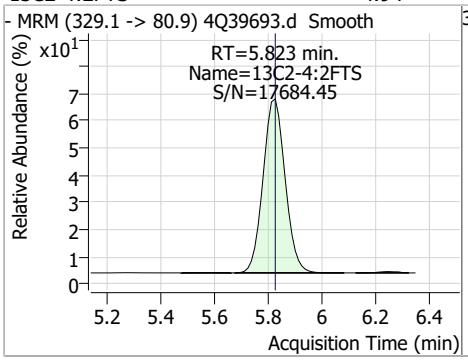


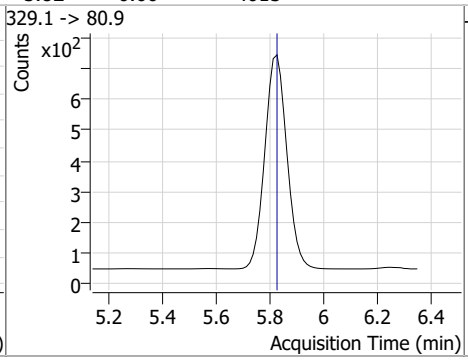


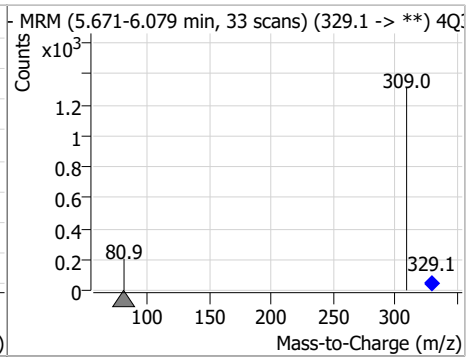


Perfluorinated Compounds by LC/MS/MS

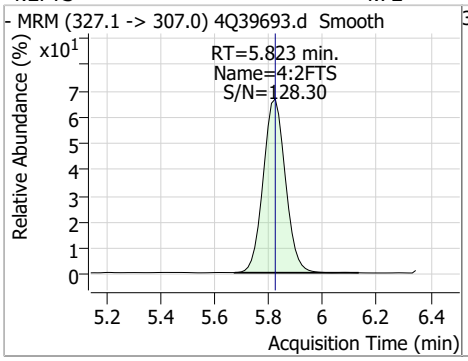
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.94	5.82	0.00	4015				

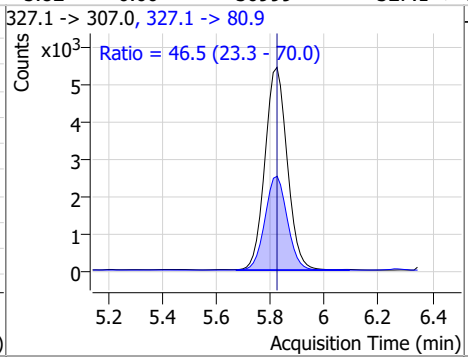


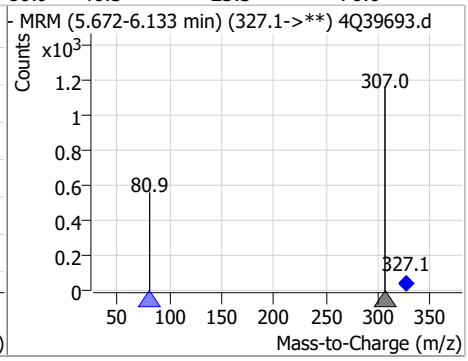




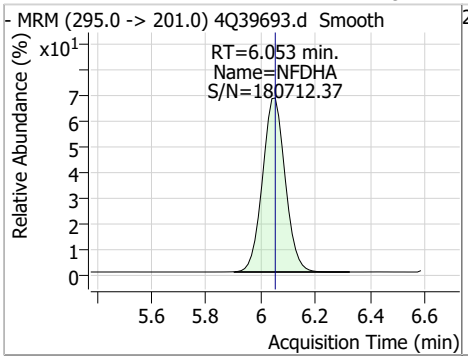
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.72	5.82	0.00	30999	327.1 -> 80.9	46.5	23.3	70.0

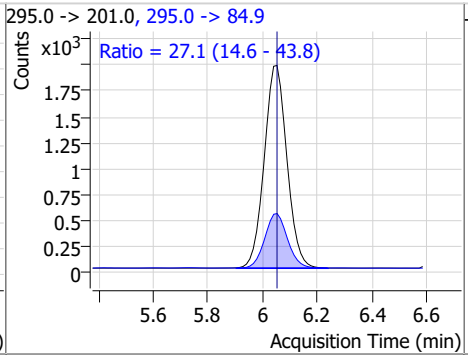


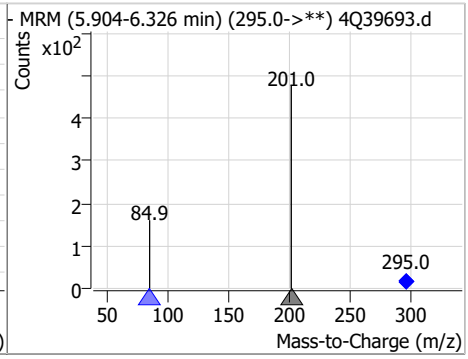




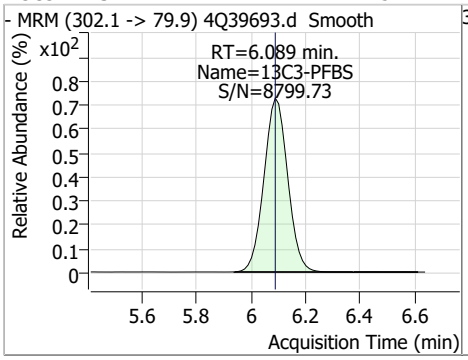
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	2.49	6.05	0.00	11275	295.0 -> 84.9	27.1	14.6	43.8

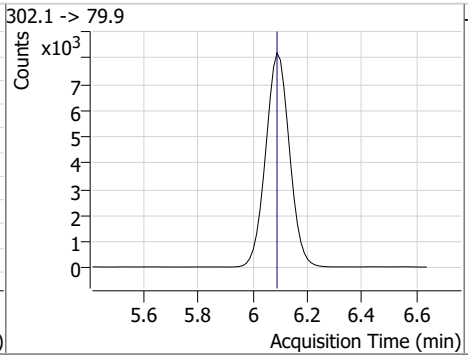


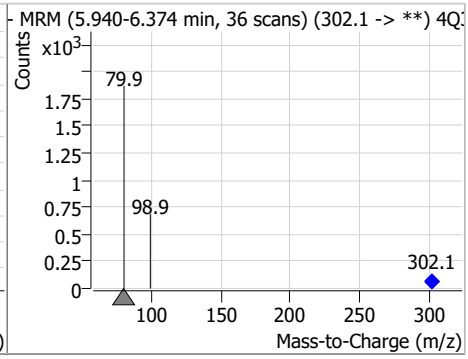




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.52	6.09	0.00	49095				

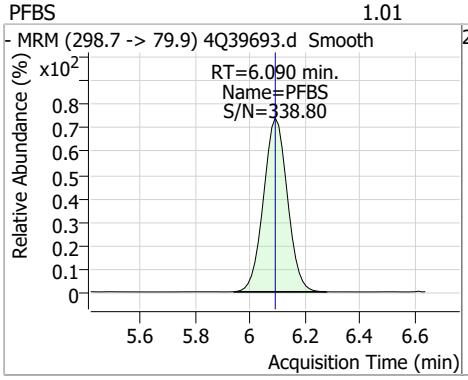


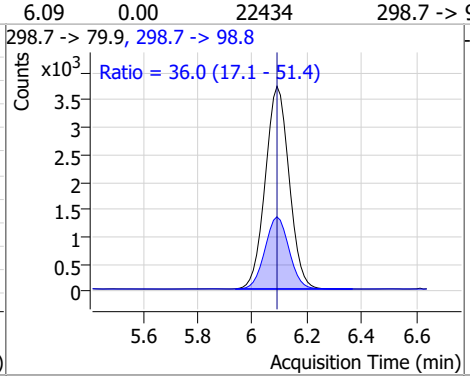


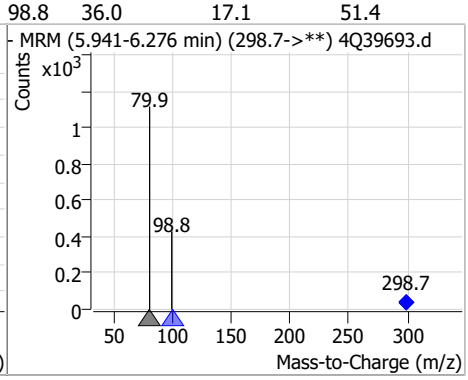


Perfluorinated Compounds by LC/MS/MS

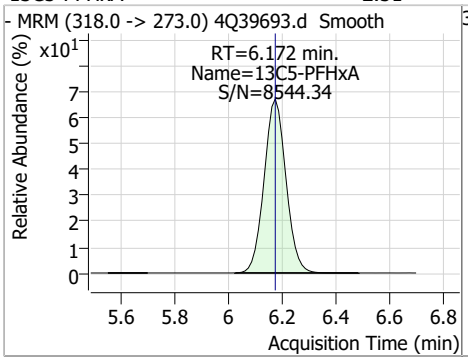
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.01	6.09	0.00	22434	298.7 -> 98.8	36.0	17.1	51.4

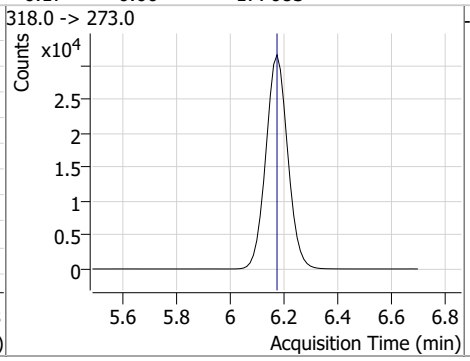


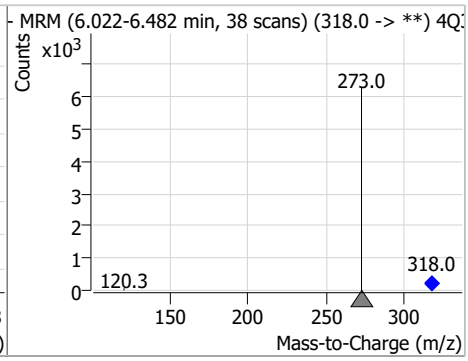




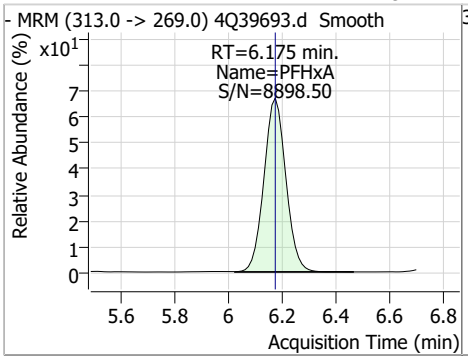
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	6.17	0.00	177083				

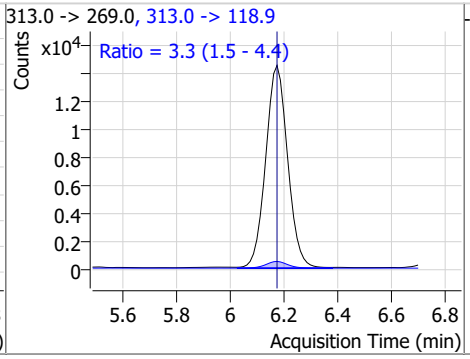


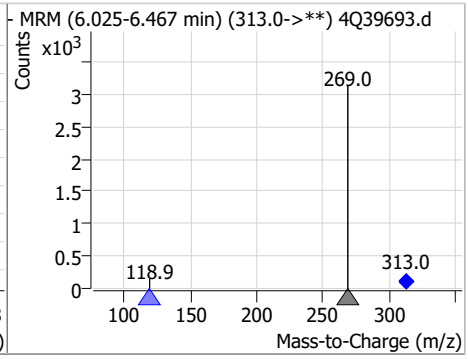




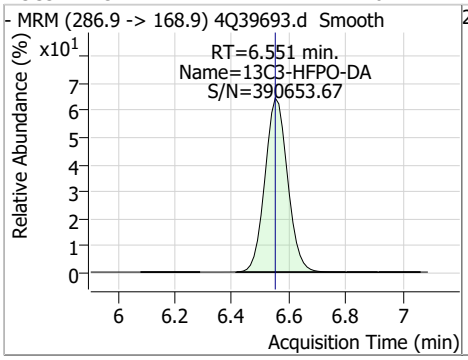
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.19	6.17	0.00	81895	313.0 -> 118.9	3.3	1.5	4.4

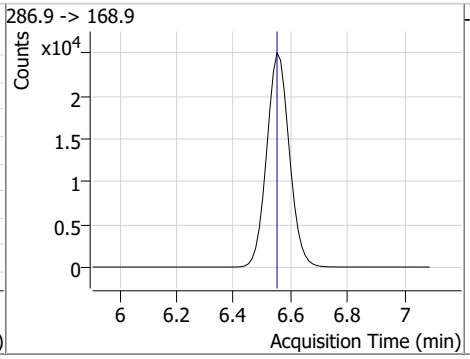


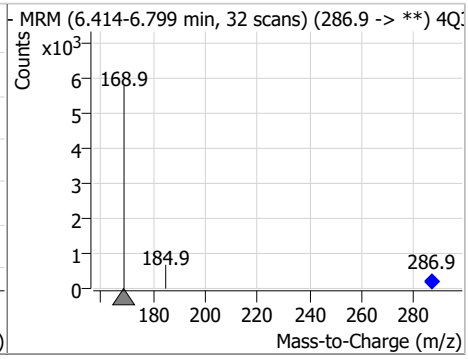




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.24	6.55	0.00	137307				

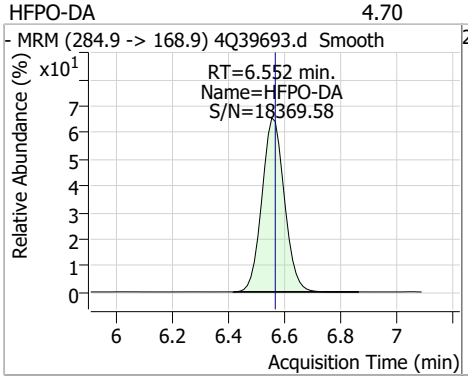


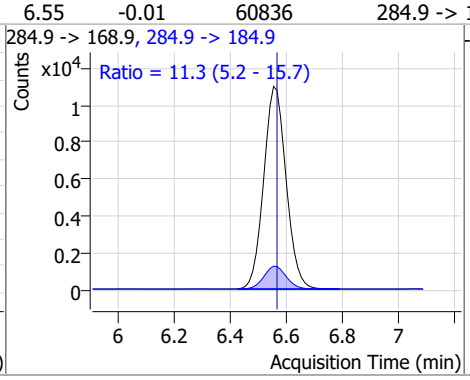


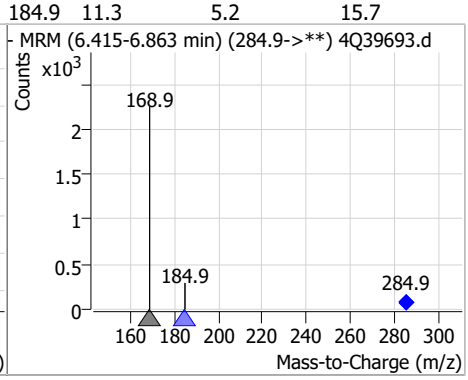


Perfluorinated Compounds by LC/MS/MS

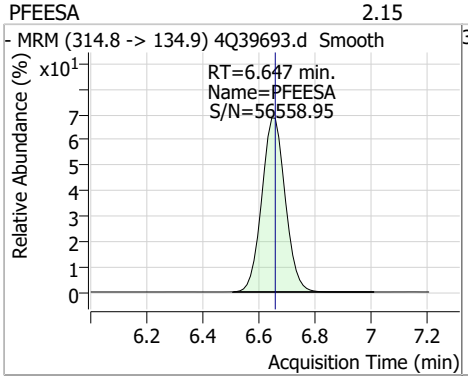
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.70	6.55	-0.01	60836	284.9 -> 184.9	11.3	5.2	15.7

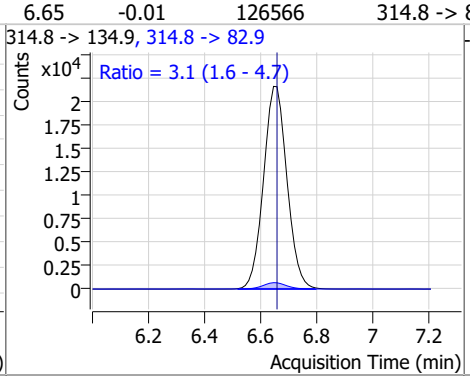


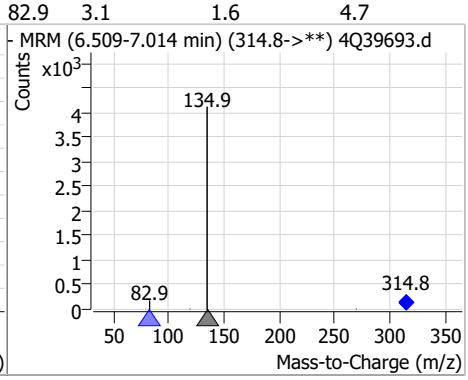




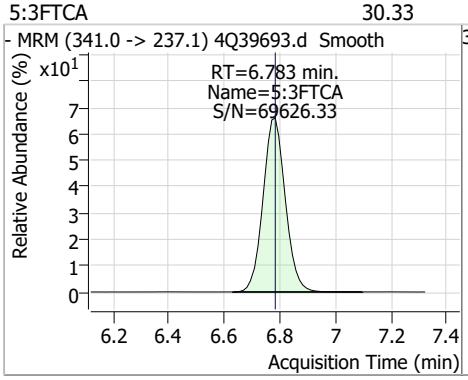
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.15	6.65	-0.01	126566	314.8 -> 82.9	3.1	1.6	4.7

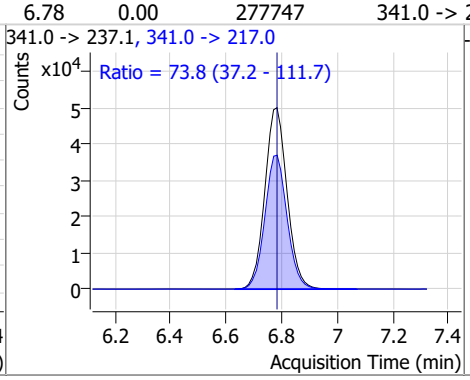


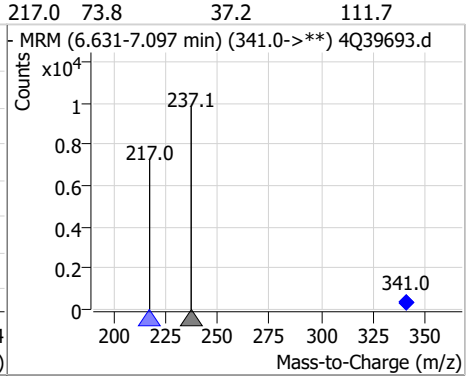




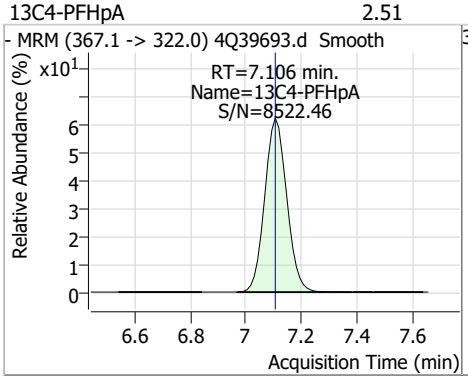
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	30.33	6.78	0.00	277747	341.0 -> 217.0	73.8	37.2	111.7

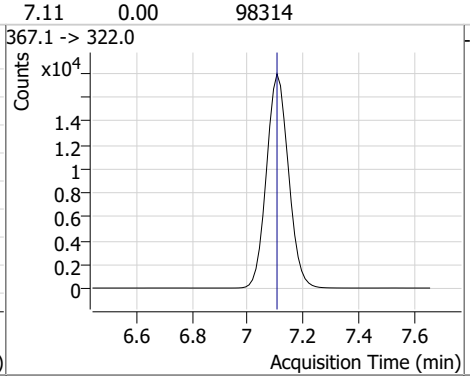


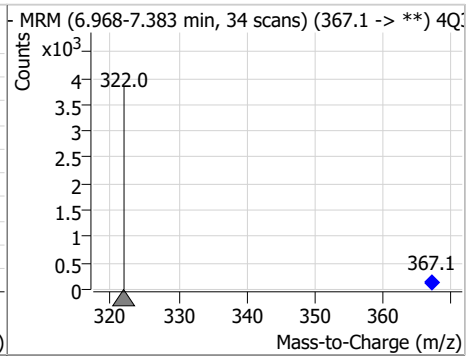




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	7.11	0.00	98314				

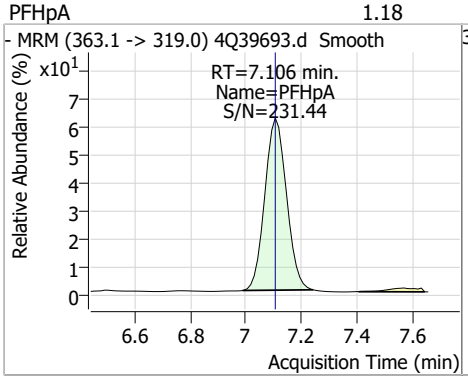


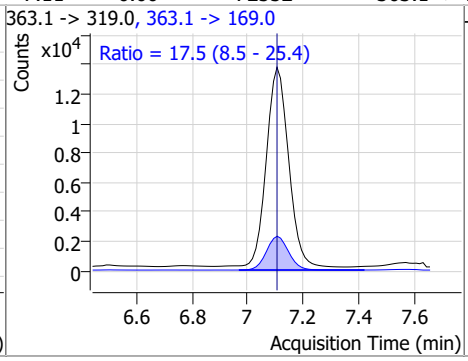


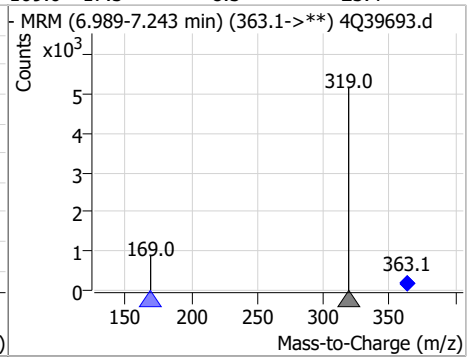


Perfluorinated Compounds by LC/MS/MS

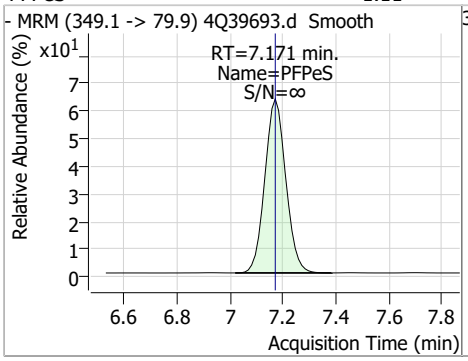
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.18	7.11	0.00	72552	363.1 -> 169.0	17.5	8.5	25.4

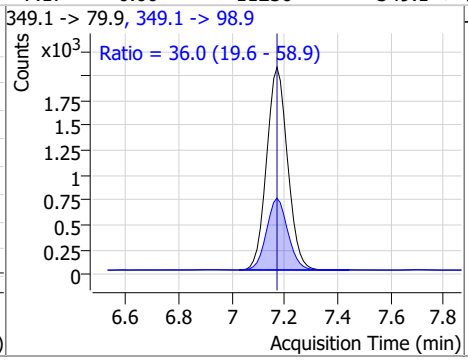


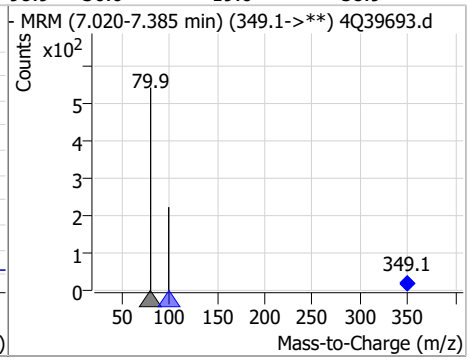




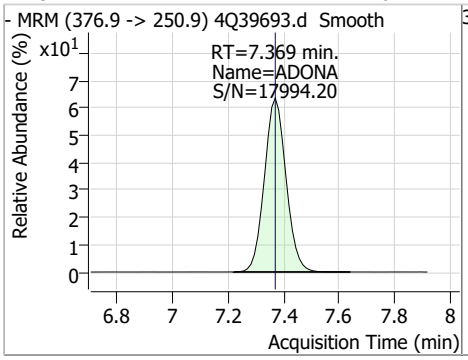
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.11	7.17	0.00	11230	349.1 -> 98.9	36.0	19.6	58.9

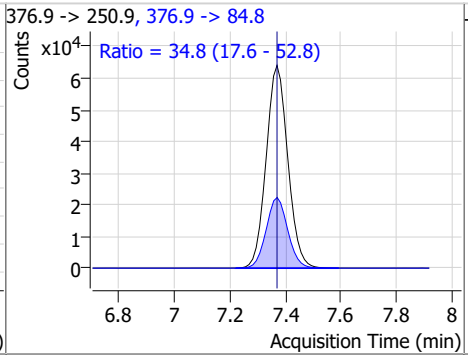


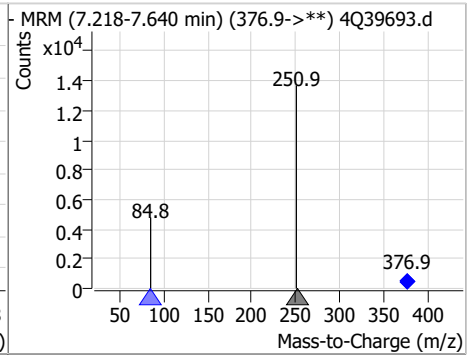




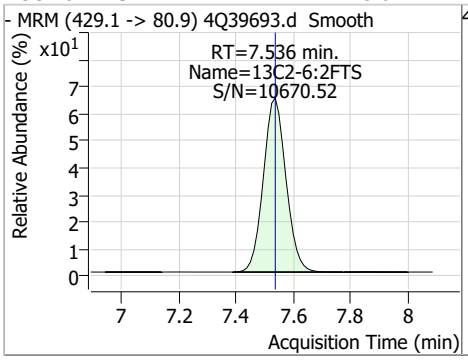
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.67	7.37	0.00	346064	376.9 -> 84.8	34.8	17.6	52.8

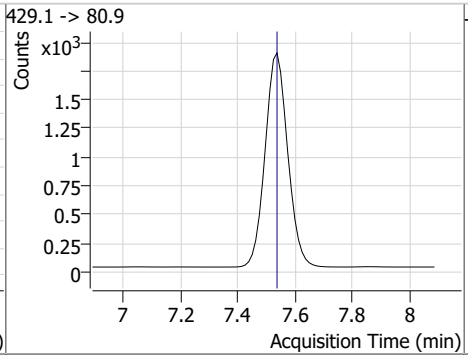


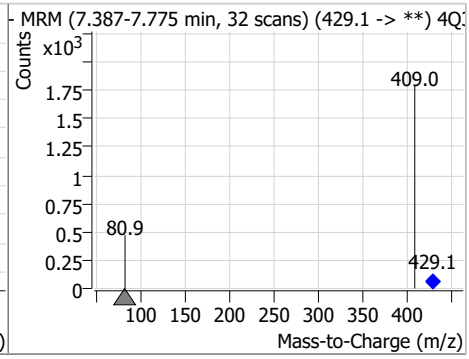




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.62	7.54	0.00	10214				

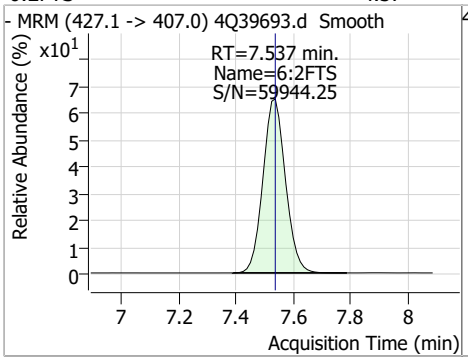


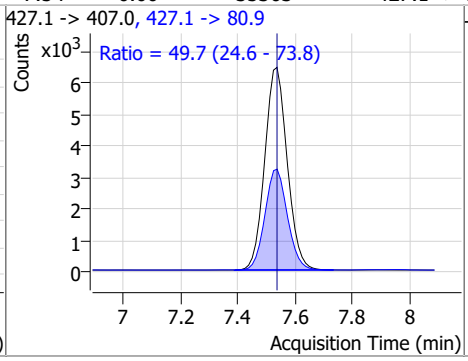


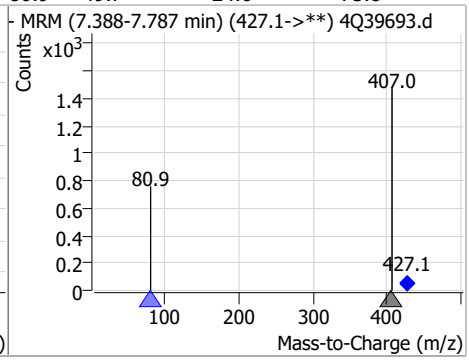


Perfluorinated Compounds by LC/MS/MS

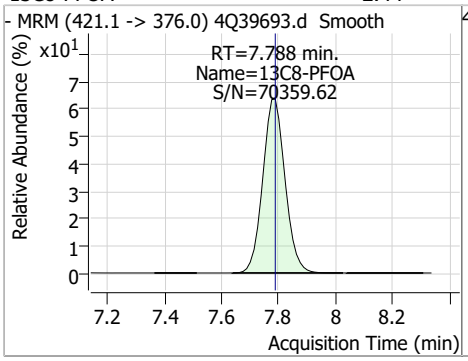
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.37	7.54	0.00	35363	427.1 -> 80.9	49.7	24.6	73.8

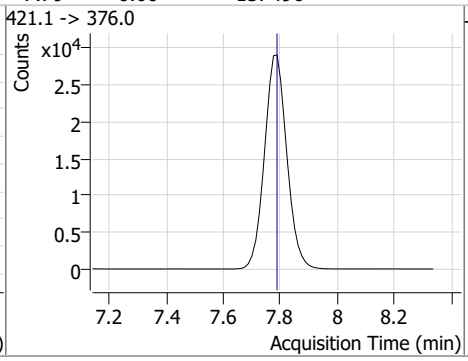


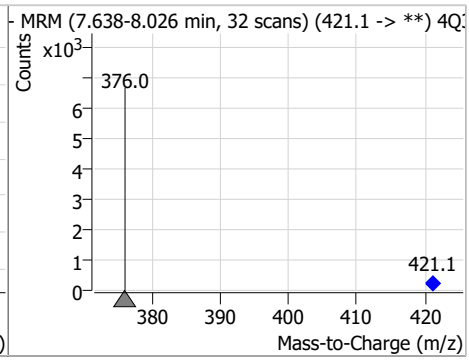




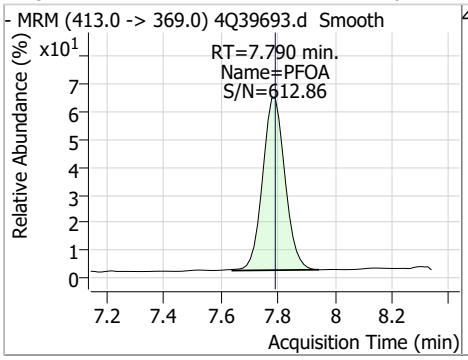
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.79	0.00	157496				

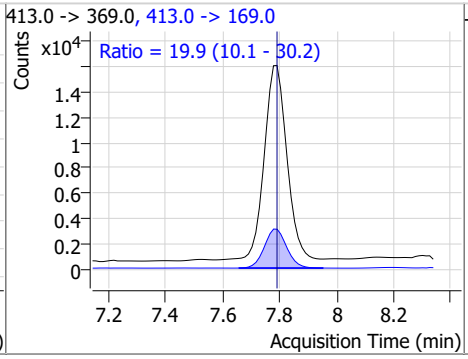


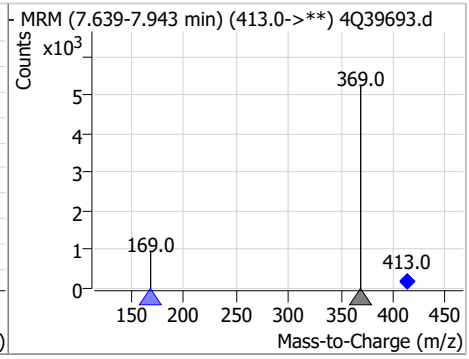




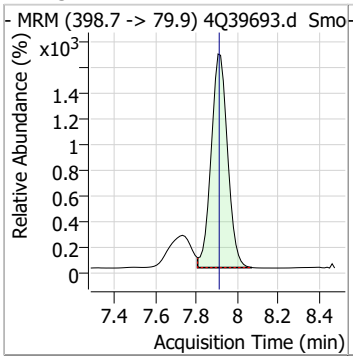
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.20	7.79	0.00	84336	413.0 -> 169.0	19.9	10.1	30.2

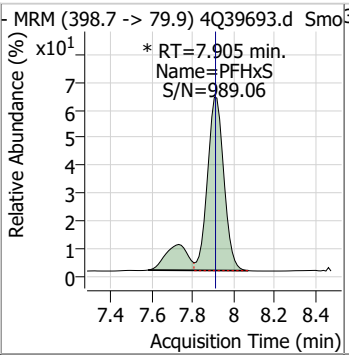


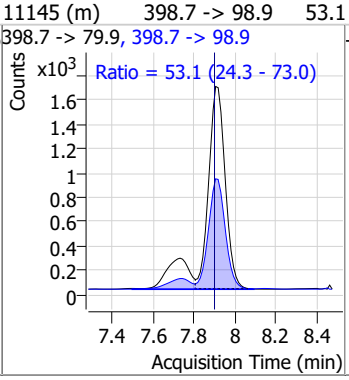


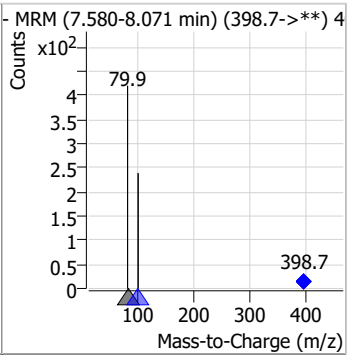


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.06	7.91	0.00	11145 (m)	398.7 -> 98.9	53.1	24.3	73.0



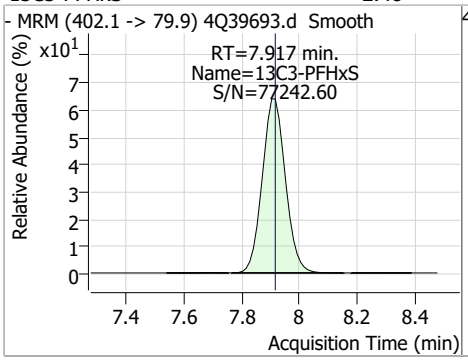


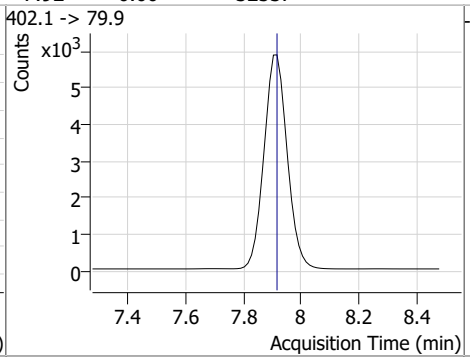


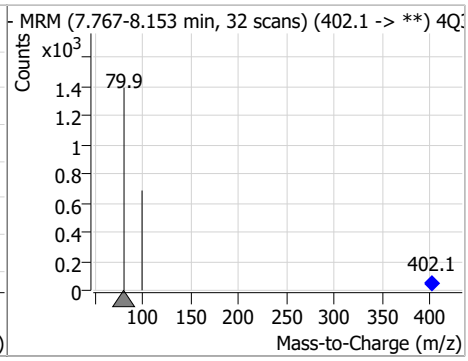


Perfluorinated Compounds by LC/MS/MS

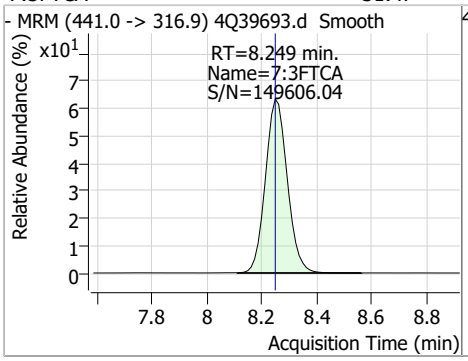
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.48	7.92	0.00	32537				

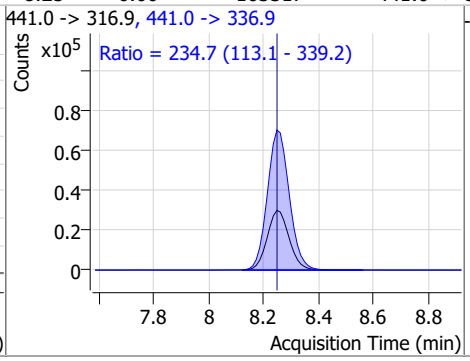


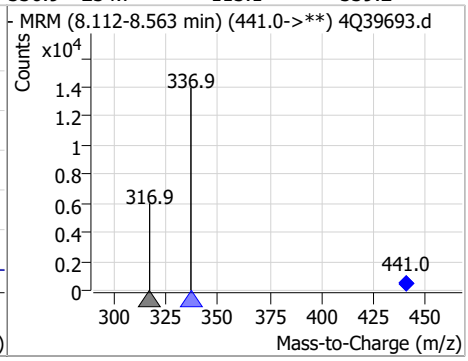




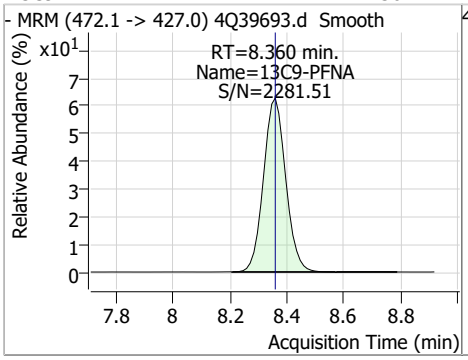
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	31.47	8.25	0.00	165517	441.0 -> 336.9	234.7	113.1	339.2

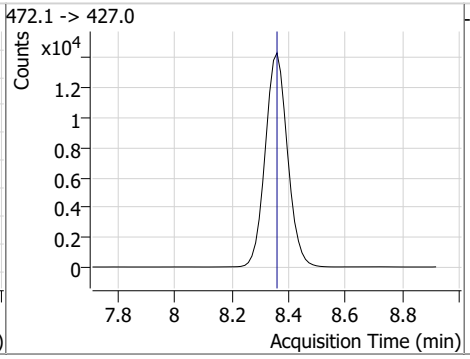


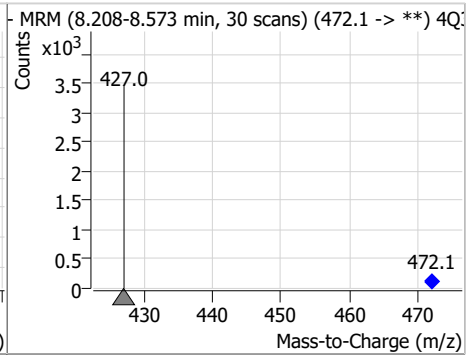




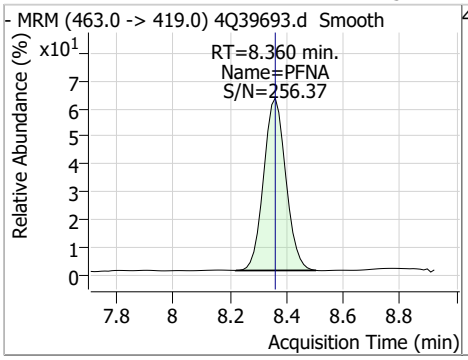
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	8.36	0.00	77407				

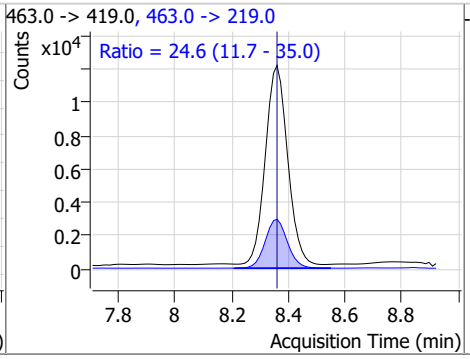


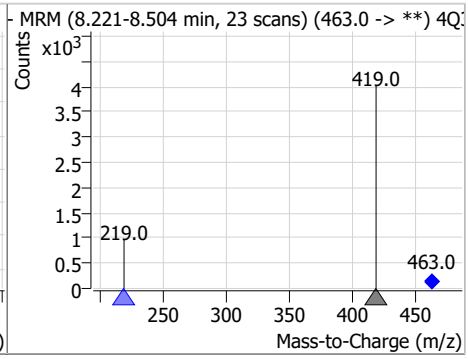




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.15	8.36	0.00	64752	463.0 -> 219.0	24.6	11.7	35.0

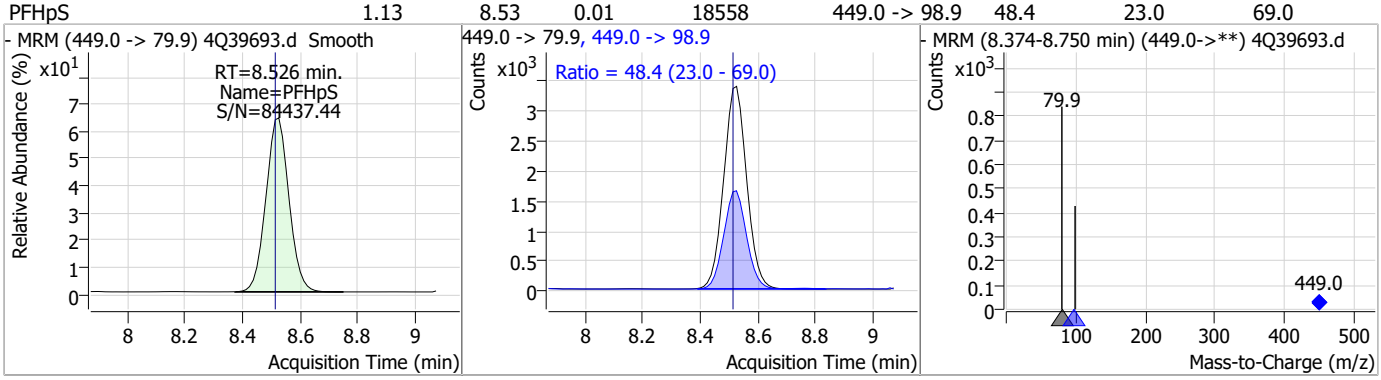




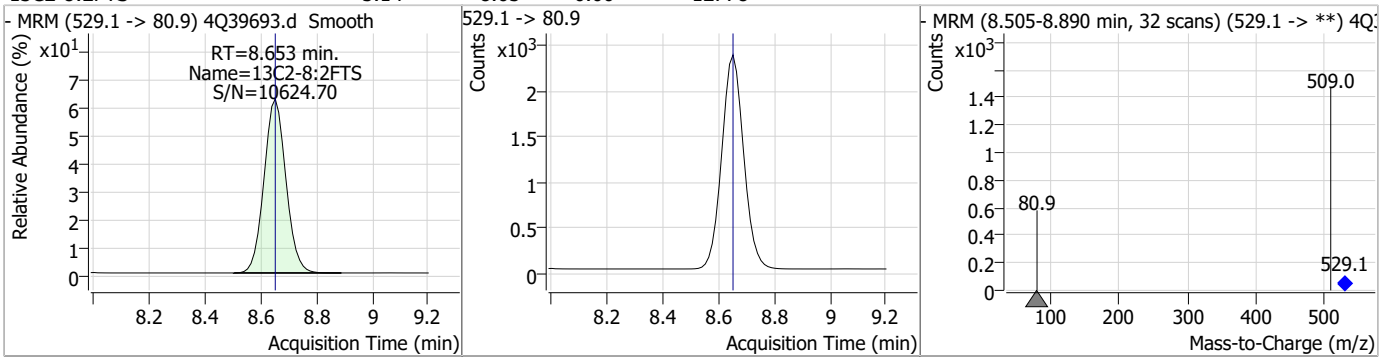


Perfluorinated Compounds by LC/MS/MS

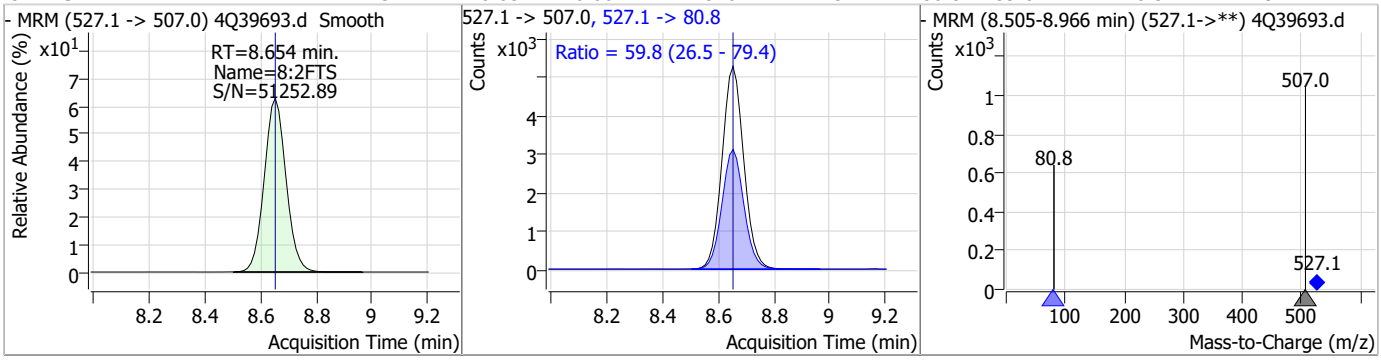
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.13	8.53	0.01	18558	449.0 -> 98.9	48.4	23.0	69.0



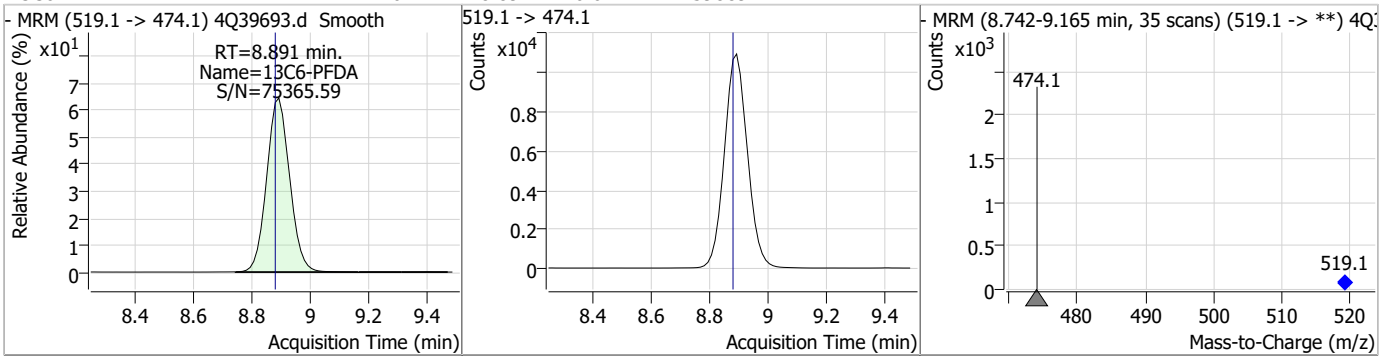
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.14	8.65	0.00	12778				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.57	8.65	0.00	28264	527.1 -> 80.8	59.8	26.5	79.4

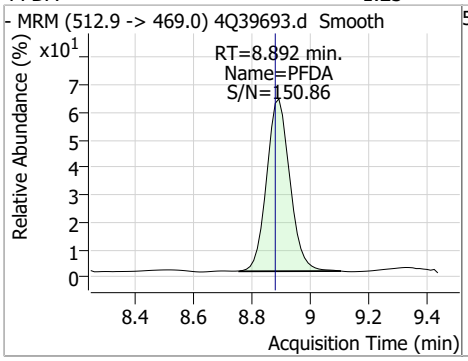


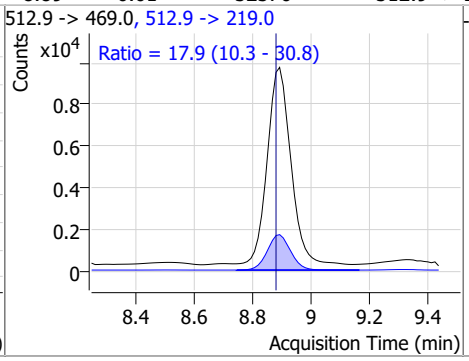
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.20	8.89	0.01	59889				

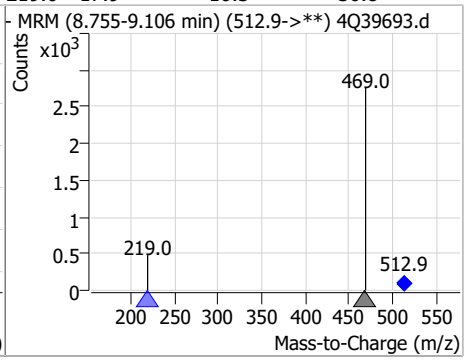


Perfluorinated Compounds by LC/MS/MS

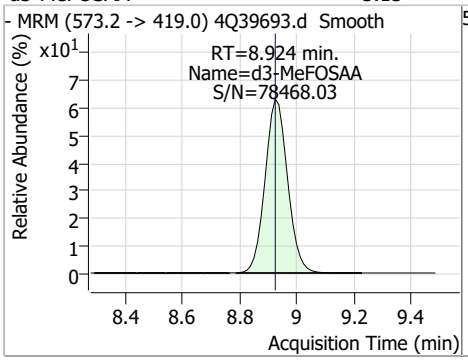
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.23	8.89	0.01	52576	512.9 -> 219.0	17.9	10.3	30.8

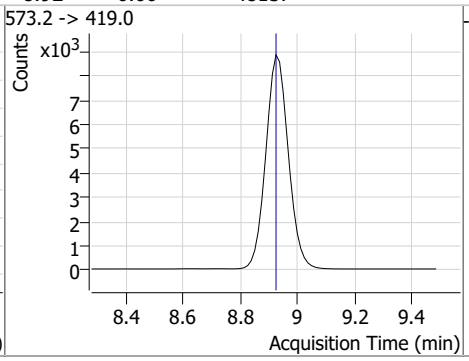


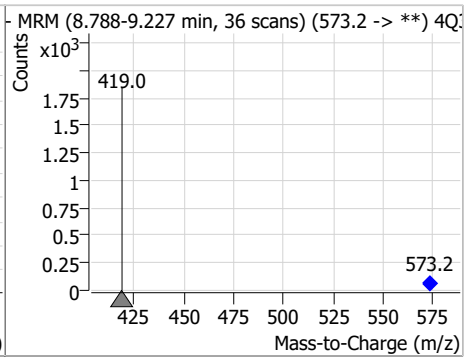




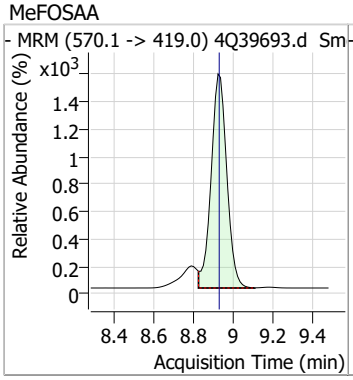
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.13	8.92	0.00	48157				

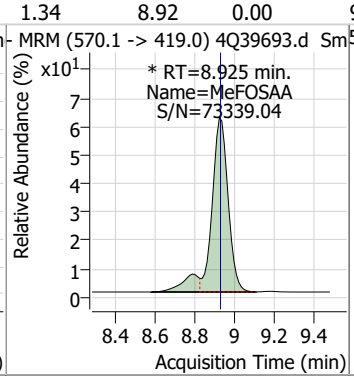


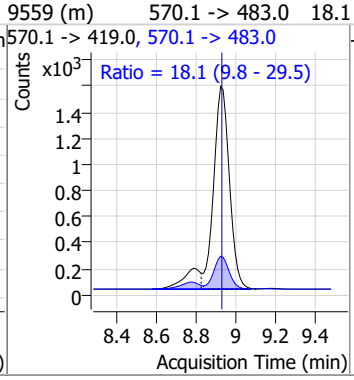


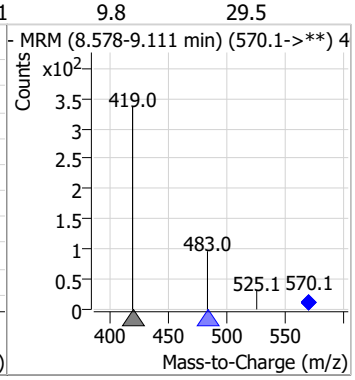


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.34	8.92	0.00	9559 (m)	570.1 -> 483.0	18.1	9.8	29.5

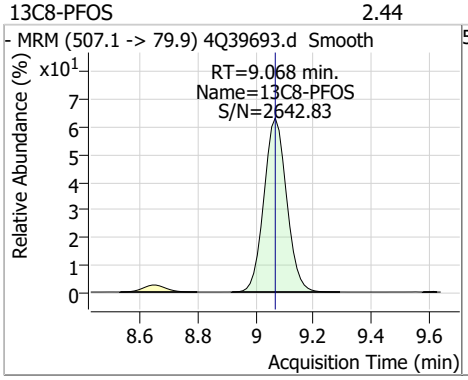


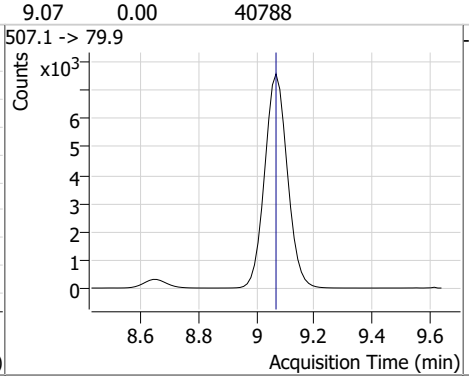


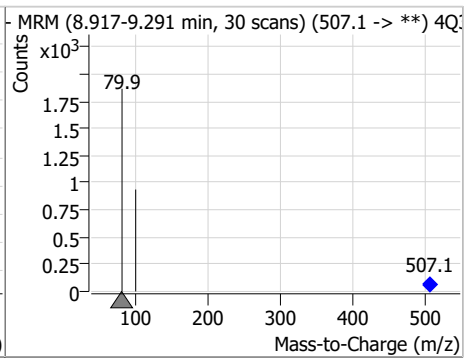




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	9.07	0.00	40788				

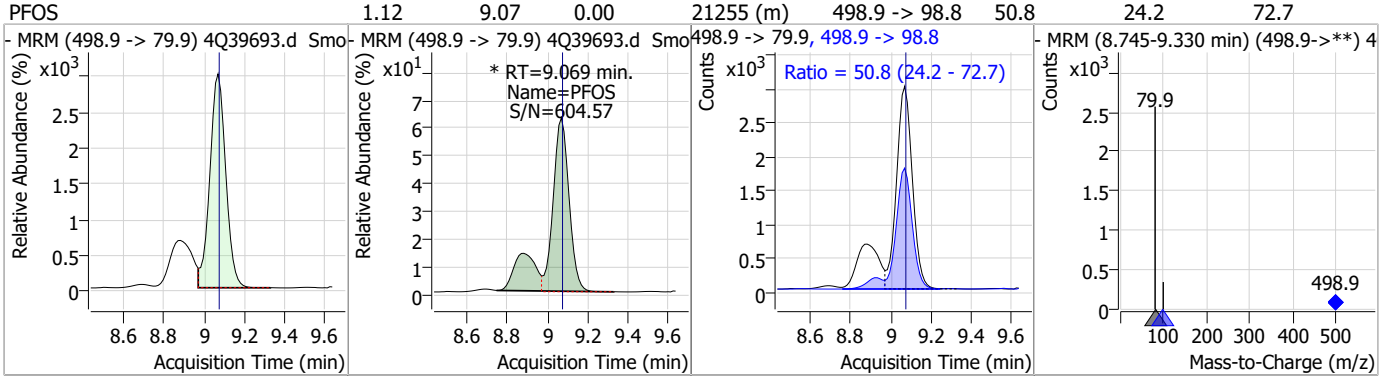




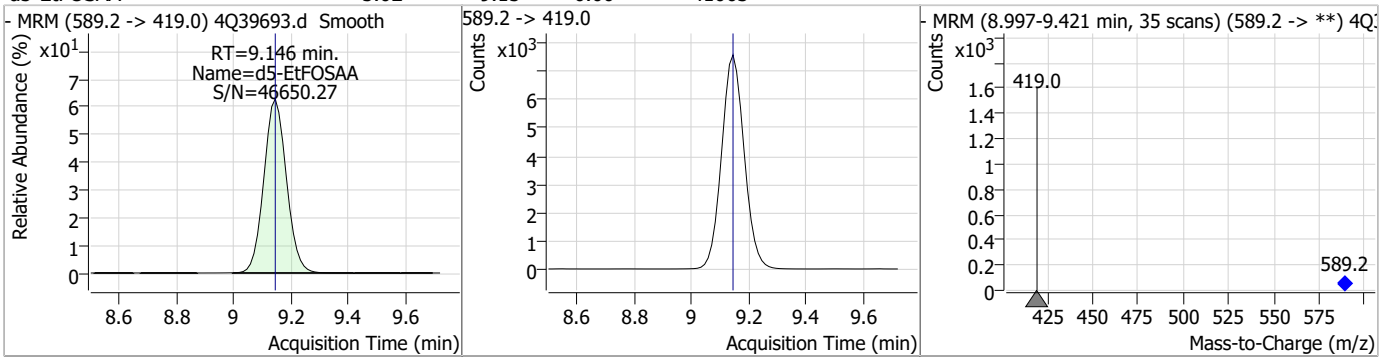


Perfluorinated Compounds by LC/MS/MS

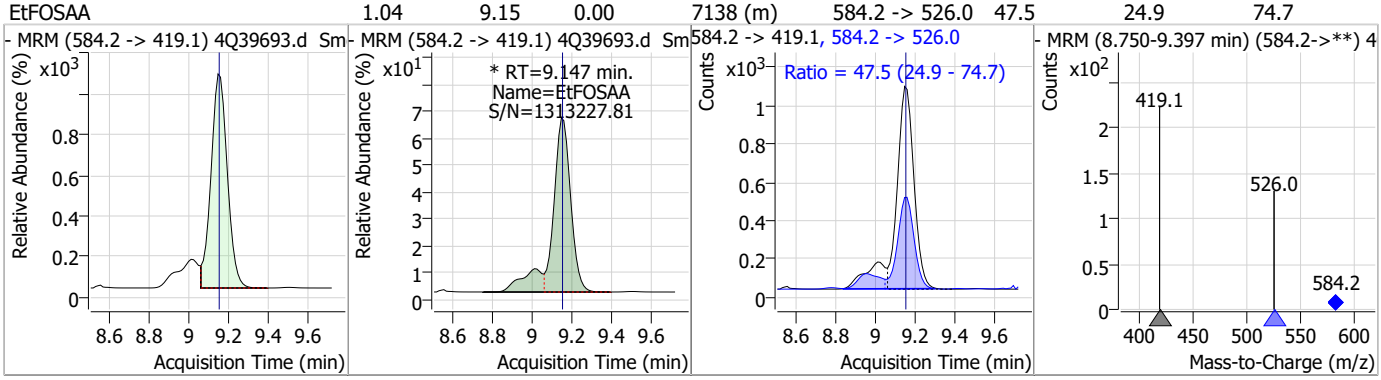
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.12	9.07	0.00	21255 (m)	498.9 -> 98.8	50.8	24.2	72.7



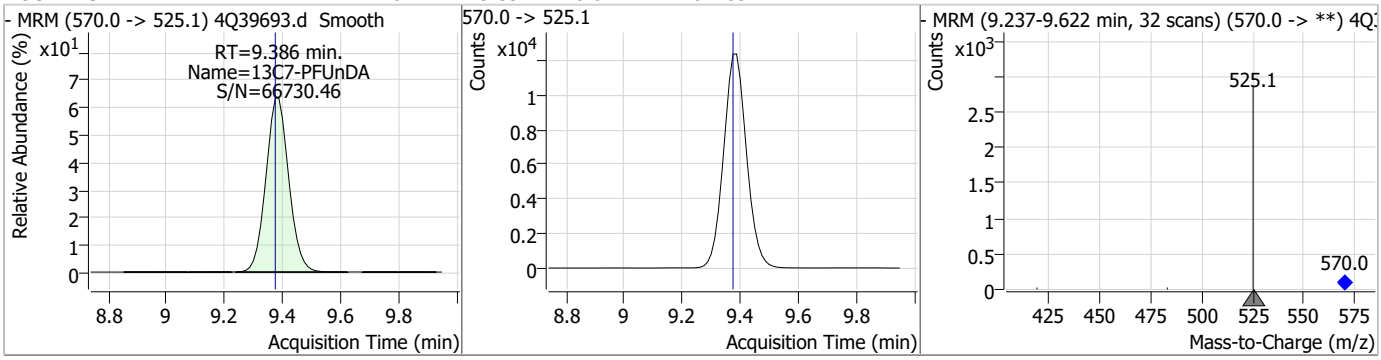
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.02	9.15	0.00	41063				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.04	9.15	0.00	7138 (m)	584.2 -> 526.0	47.5	24.9	74.7

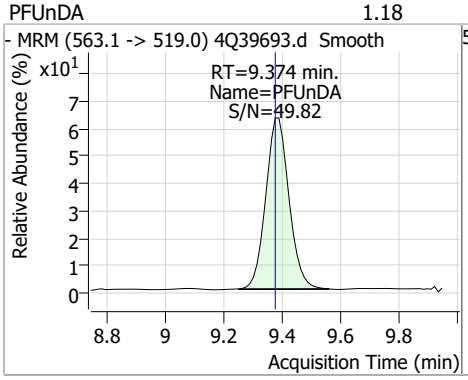


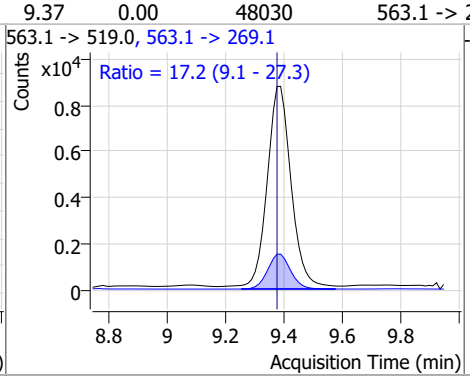
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	9.39	0.01	67259				

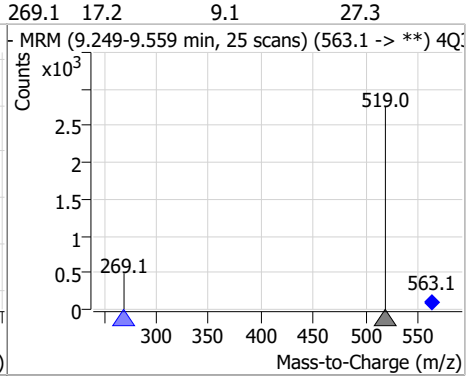


Perfluorinated Compounds by LC/MS/MS

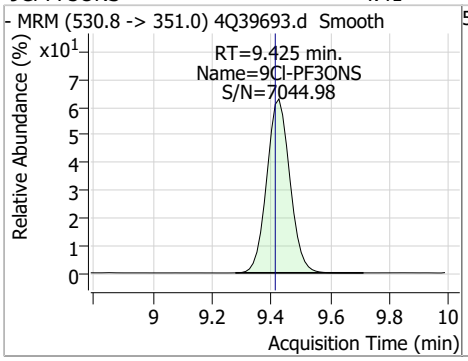
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.18	9.37	0.00	48030	563.1 -> 269.1	17.2	9.1	27.3

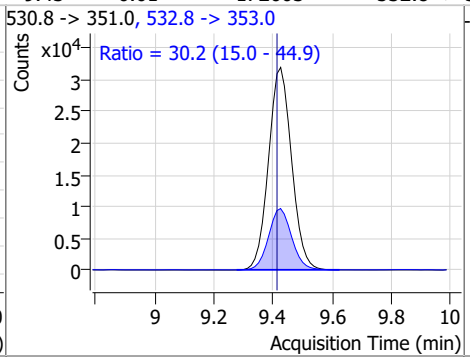


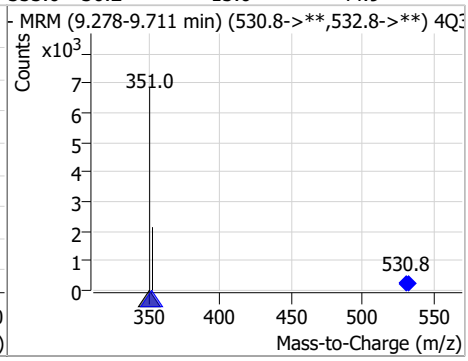




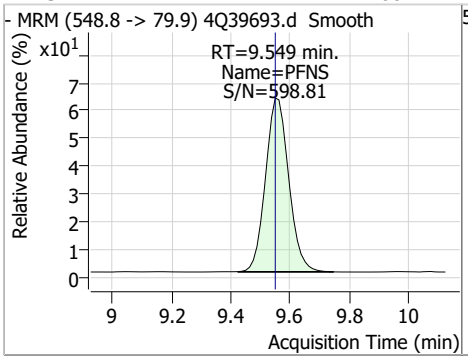
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.41	9.43	0.01	172603	532.8 -> 353.0	30.2	15.0	44.9

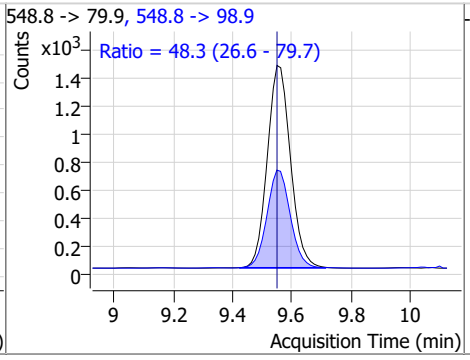


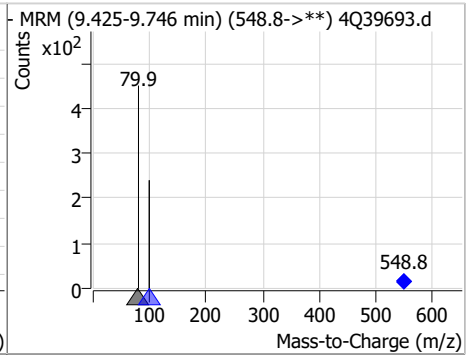




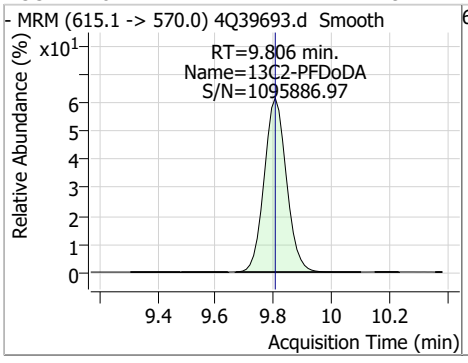
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.08	9.55	0.00	7847	548.8 -> 98.9	48.3	26.6	79.7

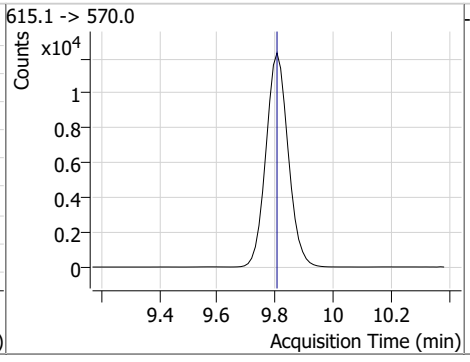


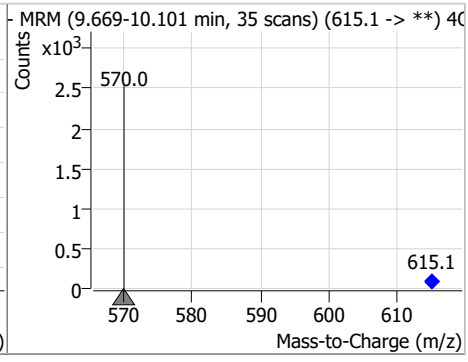




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	9.81	0.00	65101				

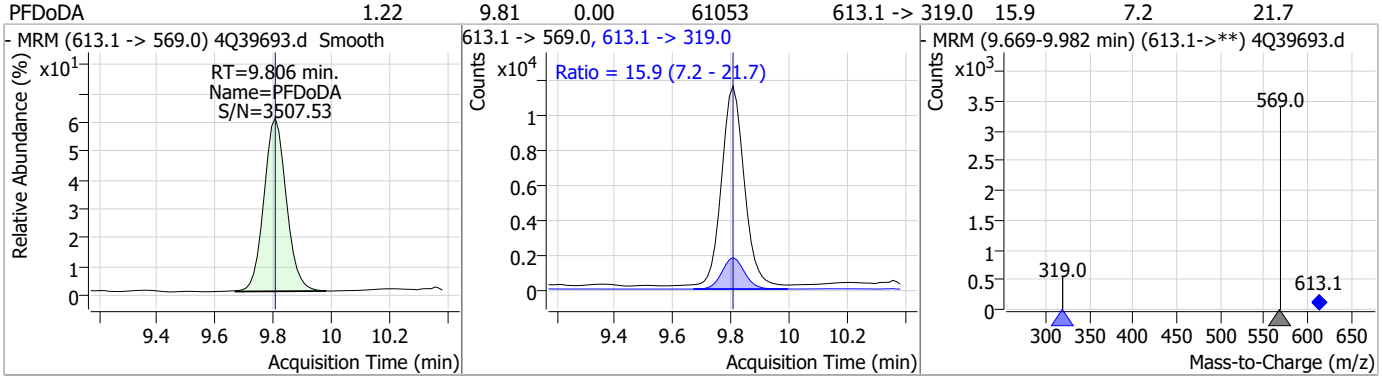




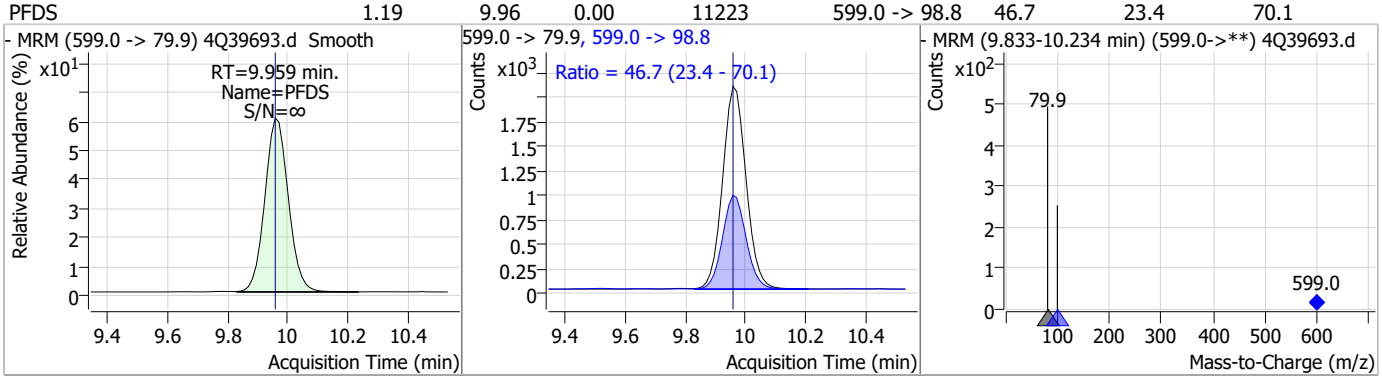


Perfluorinated Compounds by LC/MS/MS

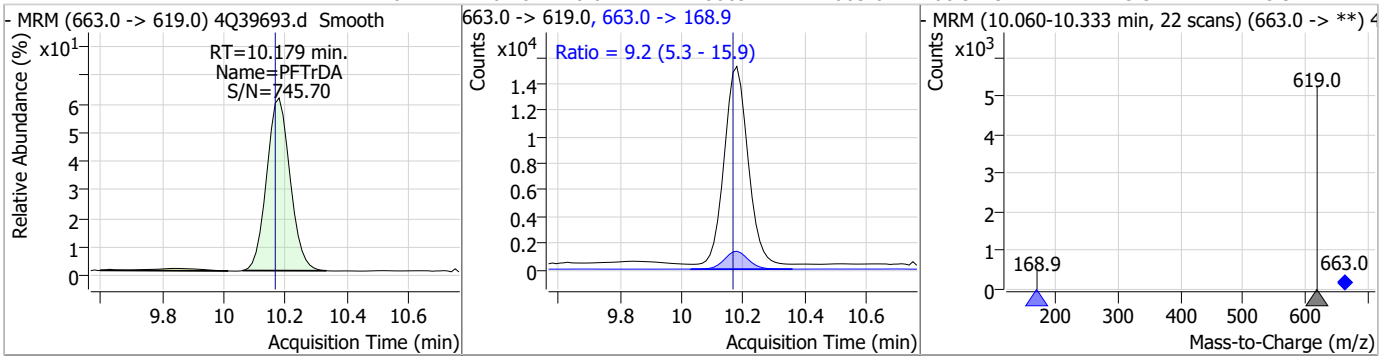
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.22	9.81	0.00	61053	613.1 -> 319.0	15.9	7.2	21.7



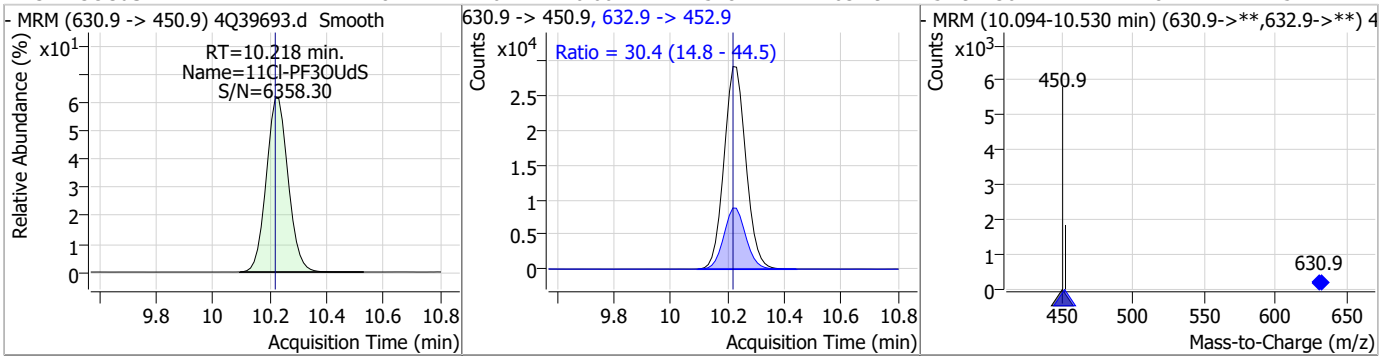
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.19	9.96	0.00	11223	599.0 -> 98.8	46.7	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.28	10.18	0.01	78669	663.0 -> 168.9	9.2	5.3	15.9

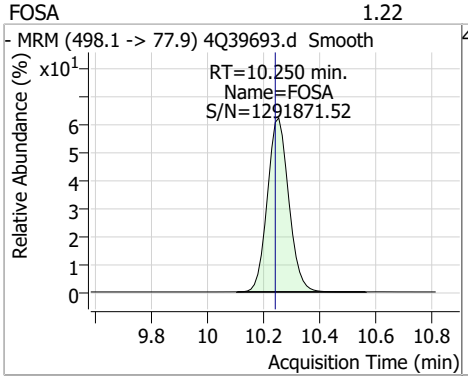


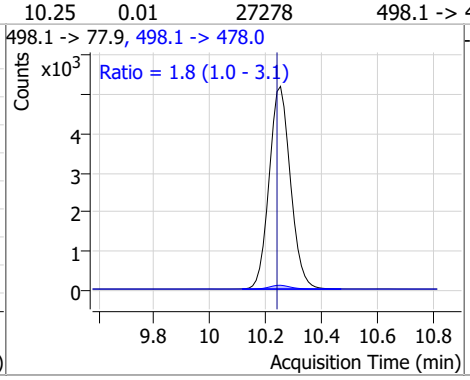
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.82	10.22	0.00	154841	632.9 -> 452.9	30.4	14.8	44.5

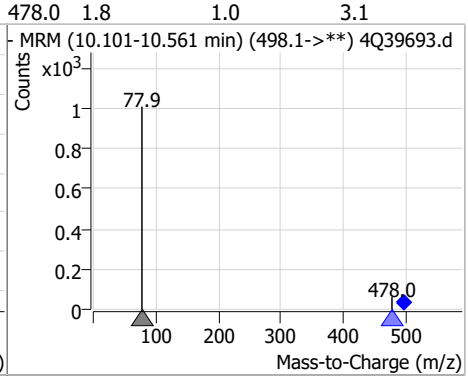


Perfluorinated Compounds by LC/MS/MS

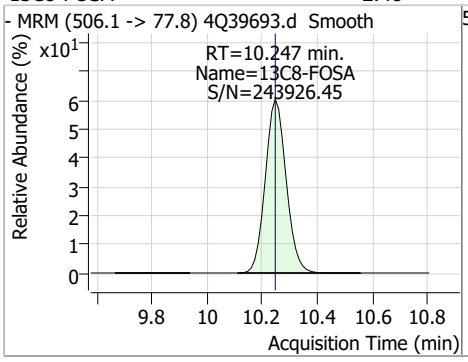
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.22	10.25	0.01	27278	498.1 -> 478.0	1.8	1.0	3.1

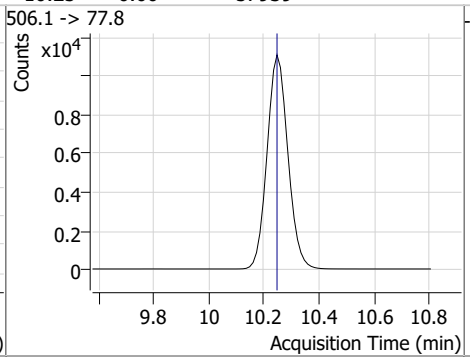


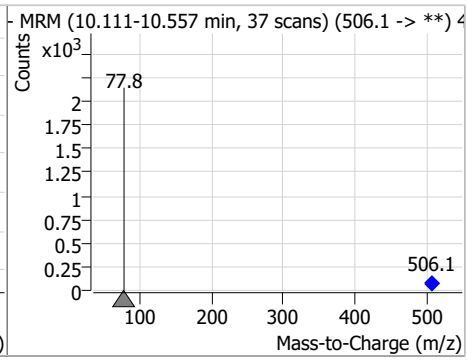




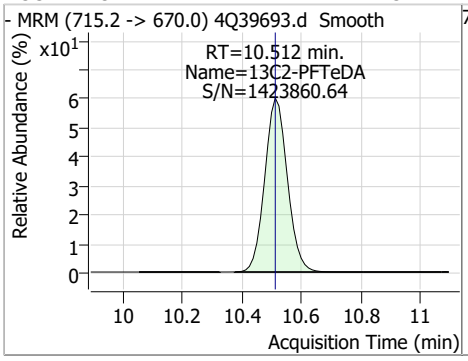
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	10.25	0.00	57939				

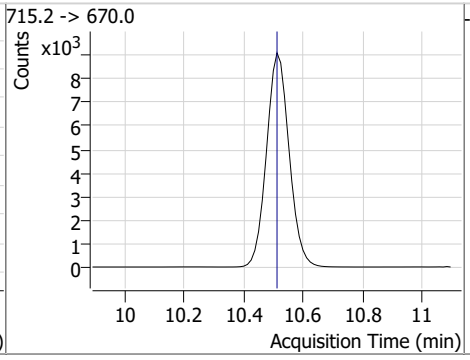


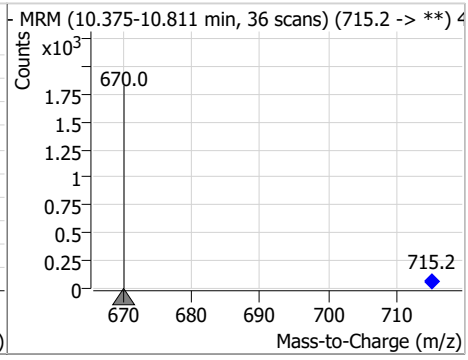




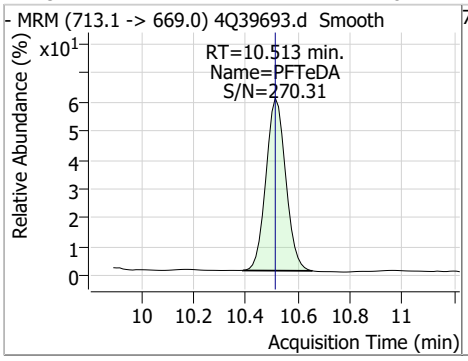
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	10.51	0.00	47827				

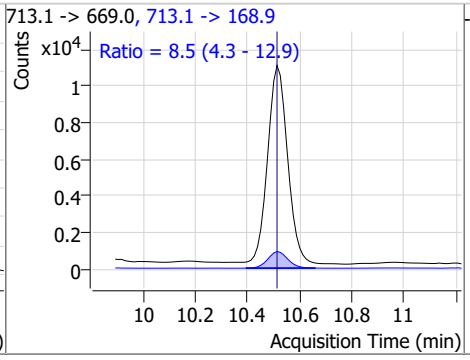


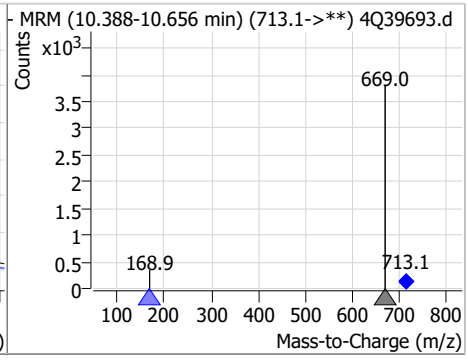




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.18	10.51	0.00	56683	713.1 -> 168.9	8.5	4.3	12.9

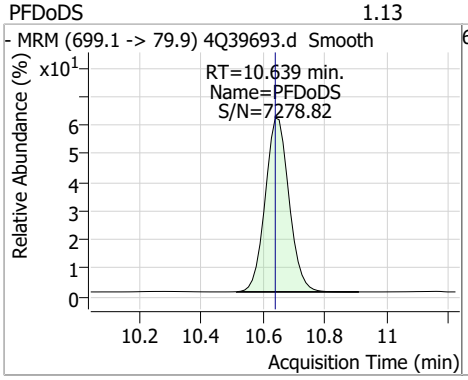


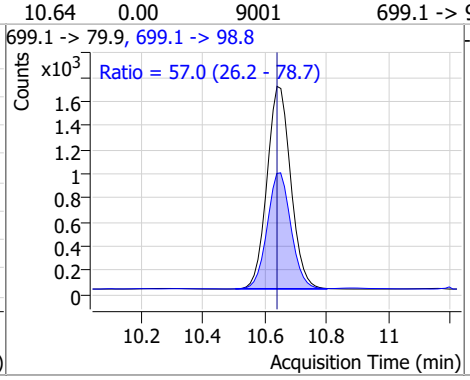


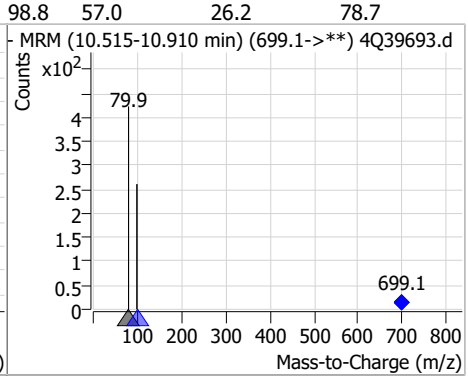


Perfluorinated Compounds by LC/MS/MS

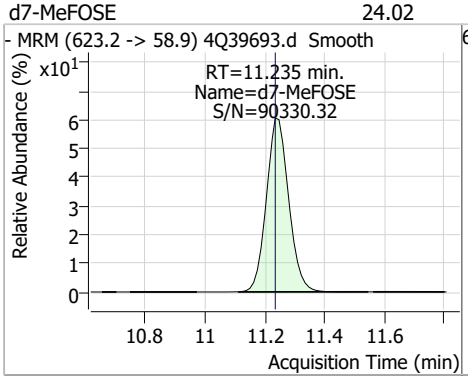
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	1.13	10.64	0.00	9001	699.1 -> 98.8	57.0	26.2	78.7

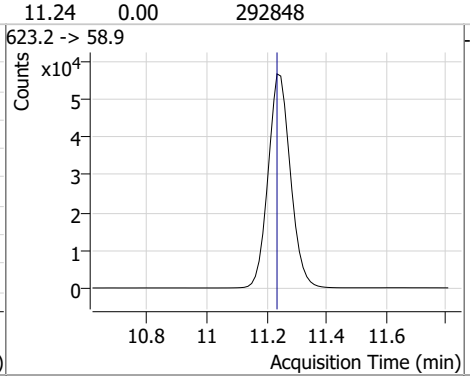


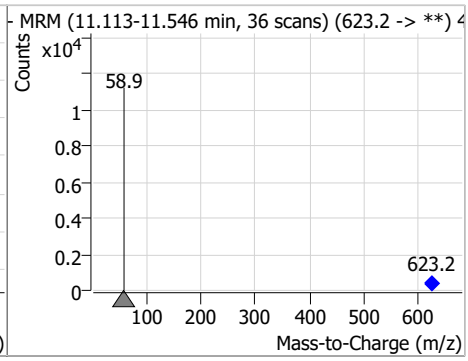




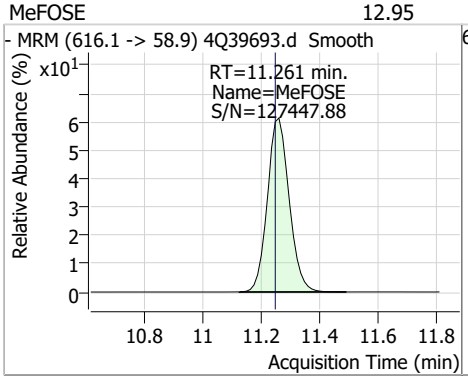
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.02	11.24	0.00	292848				

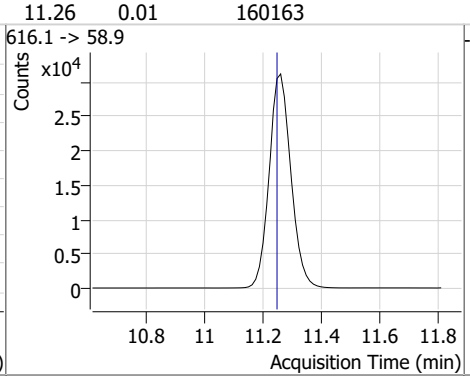


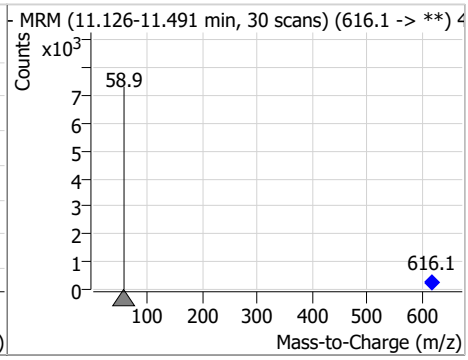




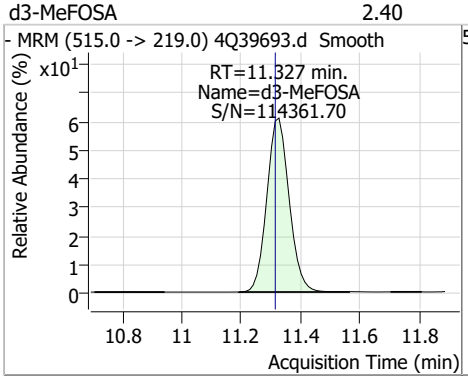
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.95	11.26	0.01	160163				

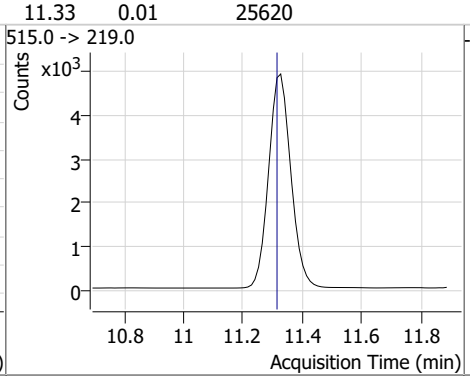


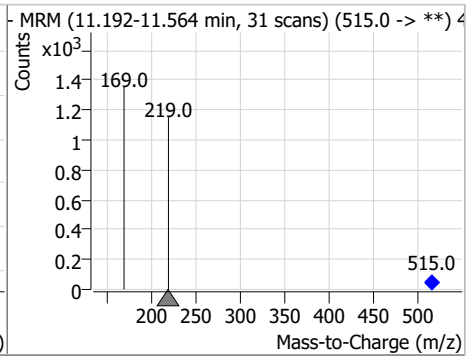




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.40	11.33	0.01	25620				

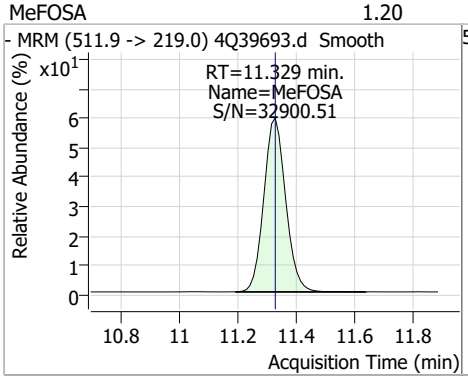


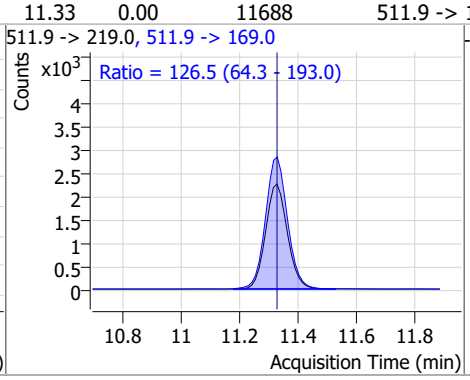


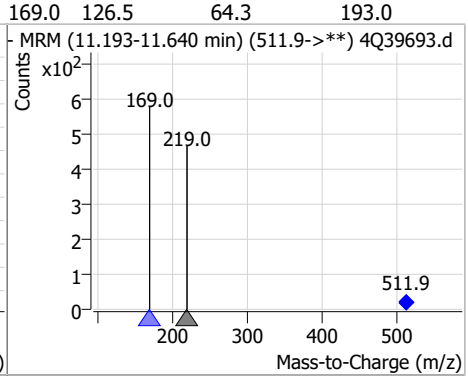


Perfluorinated Compounds by LC/MS/MS

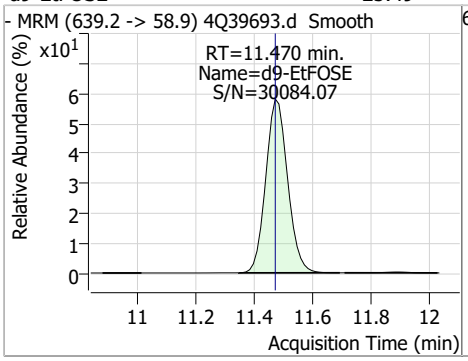
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.20	11.33	0.00	11688	511.9 -> 169.0	126.5	64.3	193.0

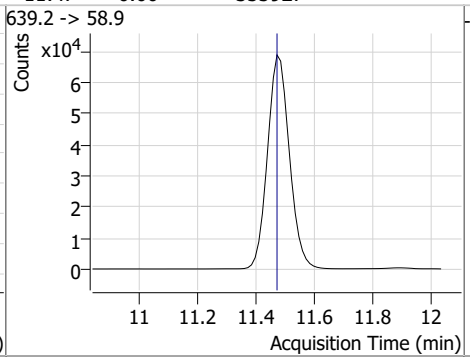


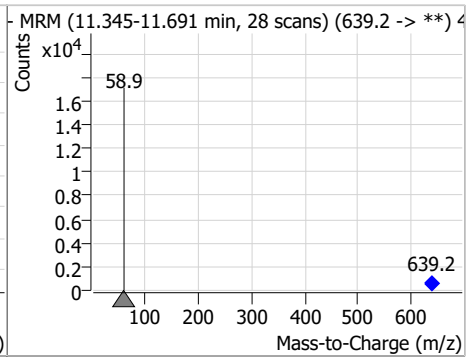




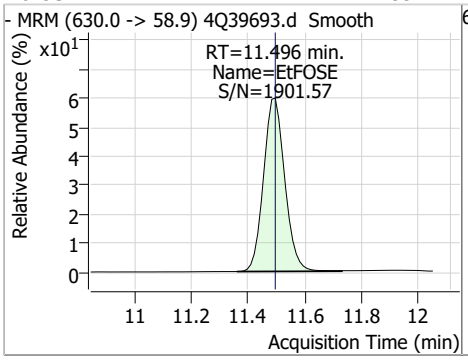
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.49	11.47	0.00	355927				

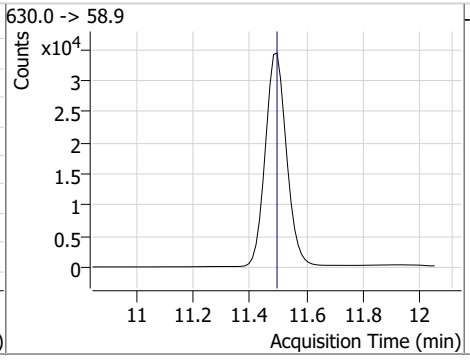


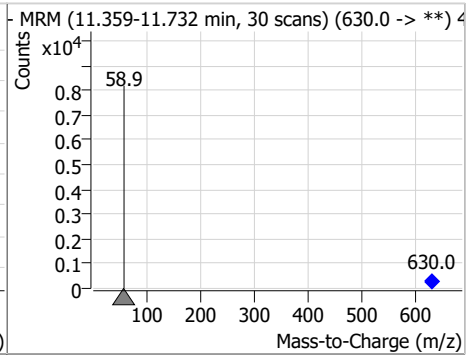




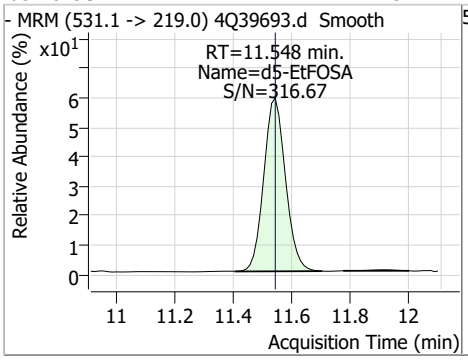
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.99	11.50	0.00	179555				

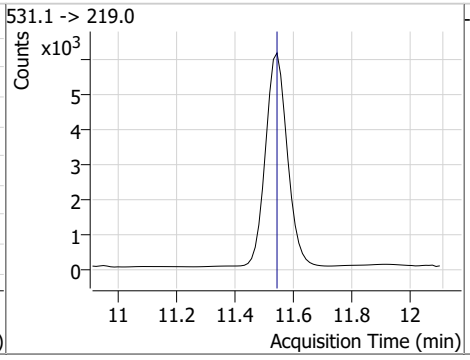


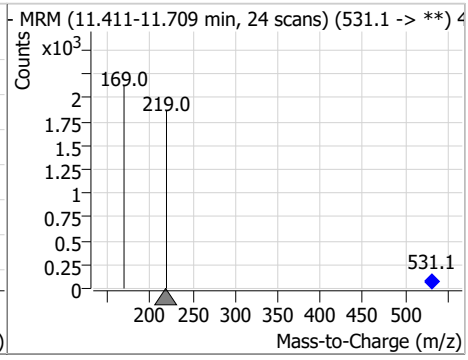




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	11.55	0.00	31239				

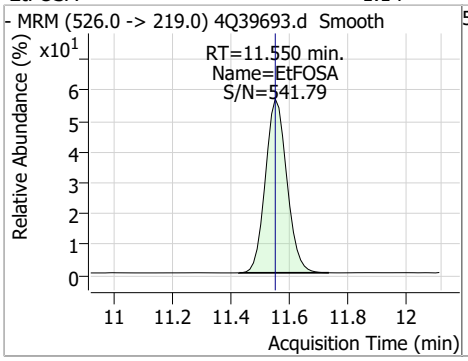


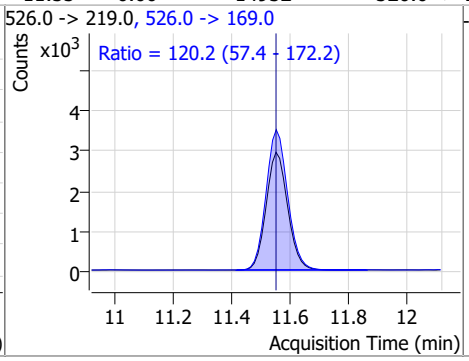


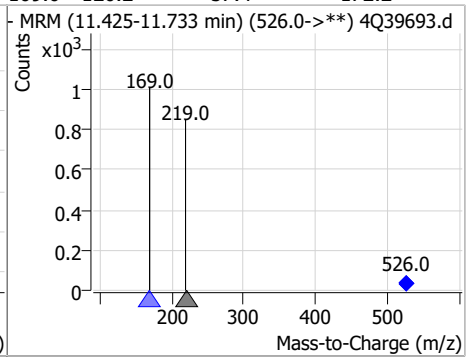


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	1.14	11.55	0.00	14952	526.0 -> 169.0	120.2	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39693.D
Injection Time: 01/25/23 13:41
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39694.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 1:55:50 PM
Sample Name : icc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.174	216.8 -> 171.9	441400	10.00	µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	293070	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	182217	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	104247	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	171671	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	81248	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	64118	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	69624	1.25	µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	69379	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	51121	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	60134	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	50511	2.50	µg/L	0.000
M3-PFHxS	7.917	402.1 -> 79.9	35070	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	40325	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4324	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	9692	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13101	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	49146	5.00	µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	142936	10.00	µg/L	0.000
M5-EtFOSAA	9.146	589.2 -> 419.0	43117	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	318140	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	368880	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	34580	2.50	µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	26560	2.50	µg/L	0.000
13C4-PFOS	9.068	502.8 -> 79.9	40593	2.50	µg/L	0.000
13C3-PFBA	3.178	216.0 -> 172.0	245325	5.00	µg/L	0.000
18O2-PFHxS	7.916	403.0 -> 83.9	23439	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	189084	2.50	µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	58050	1.25	µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	90711	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	177127	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4324	5.12	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9692	5.13	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13101	5.06	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	69379	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-PFTeDA	10.512	715.2 -> 670.0	51121	1.28	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C3-PFBS	6.089	302.1 -> 79.9	50511	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFHxS	7.917	402.1 -> 79.9	35070	2.56	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C4-PFBA	3.174	216.8 -> 171.9	441400	9.98 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C4-PFHpA	7.106	367.1 -> 322.0	104247	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C5-PFHxA	6.172	318.0 -> 273.0	182217	2.45 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C5-PFPeA	4.863	268.3 -> 223.0	293070	5.09 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C6-PFDA	8.879	519.1 -> 474.1	64118	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C7-PFUnDA	9.373	570.0 -> 525.1	69624	1.27 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-FOSA	10.247	506.1 -> 77.8	60134	2.59 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C8-PFOA	7.788	421.1 -> 376.0	171671	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-PFOS	9.068	507.1 -> 79.9	40325	2.43 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C9-PFNA	8.360	472.1 -> 427.0	81248	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%		
d3-MeFOSAA	8.924	573.2 -> 419.0	49146	5.27 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	142936	10.12 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
d3-MeFOSA	11.315	515.0 -> 219.0	26560	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%		
d5-EtFOSAA	9.146	589.2 -> 419.0	43117	5.31 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
d7-MeFOSE	11.235	623.2 -> 58.9	318140	26.28 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
d9-EtFOSE	11.470	639.2 -> 58.9	368880	26.60 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	34580	2.73 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	60421	8.55 µg/L		100
		327.1 -> 80.9	28203			
6:2FTS	7.537	427.1 -> 407.0	70624	9.19 µg/L		100
		427.1 -> 80.9	34733			
8:2FTS	8.654	527.1 -> 507.0	57553	9.08 µg/L		100
		527.1 -> 80.8	30457			
EtFOSAA	9.147	584.2 -> 419.1	15112	2.09 µg/L	m	100
		584.2 -> 526.0	7523			
FOSA	10.238	498.1 -> 77.9	51504	2.22 µg/L		100
		498.1 -> 478.0	1078			
MeFOSAA	8.925	570.1 -> 419.0	17460	2.40 µg/L	m	100
		570.1 -> 483.0	3439			
PFBA	3.182	212.8 -> 168.9	107304	8.74 µg/L		100
PFBS	6.090	298.7 -> 79.9	45144	1.98 µg/L		100
		298.7 -> 98.8	15474			
PFDA	8.879	512.9 -> 469.0	99658	2.18 µg/L		100
		512.9 -> 219.0	20492			
PFDoDA	9.806	613.1 -> 569.0	120584	2.26 µg/L		100
		613.1 -> 319.0	17471			
PFDS	9.959	599.0 -> 79.9	20864	2.23 µg/L		100

Perfluorinated Compounds by LC/MS/MS

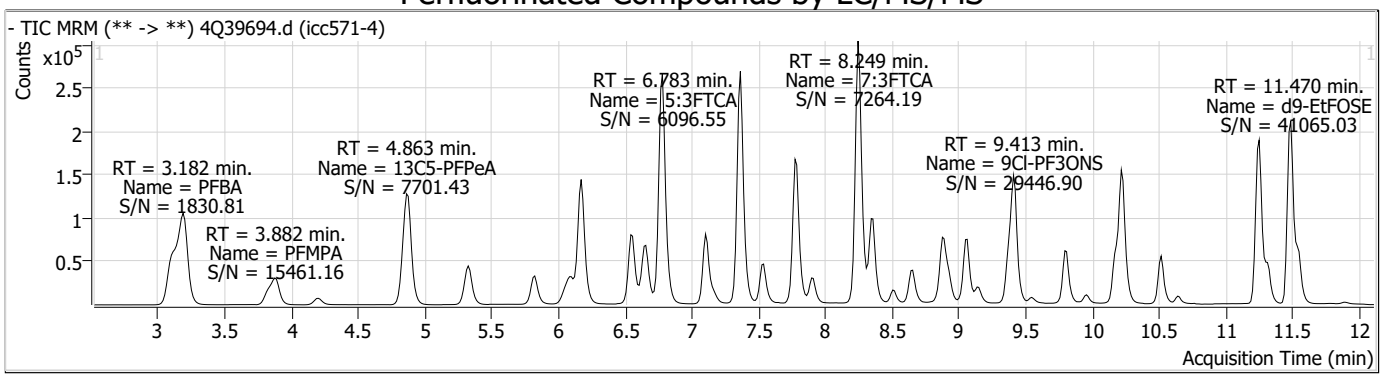
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	9747				
PFHpA	7.106	363.1 -> 319.0	146591	2.26	µg/L		100
		363.1 -> 169.0	24846				
PFHpS	8.513	449.0 -> 79.9	36253	2.22	µg/L		100
		449.0 -> 98.9	16680				
PFHxA	6.175	313.0 -> 269.0	165491	2.34	µg/L		100
		313.0 -> 118.9	4827				
PFHxS	7.905	398.7 -> 79.9	22524	1.99	µg/L	m	100
		398.7 -> 98.9	10969				
PFNA	8.360	463.0 -> 419.0	130741	2.21	µg/L		100
		463.0 -> 219.0	30482				
PFNS	9.549	548.8 -> 79.9	15308	2.13	µg/L		100
		548.8 -> 98.9	8135				
PFOA	7.790	413.0 -> 369.0	170801	2.24	µg/L		100
		413.0 -> 169.0	34435				
PFOS	9.069	498.9 -> 79.9	40426	2.15	µg/L	m	100
		498.9 -> 98.8	19583				
PFPeA	4.866	263.0 -> 219.0	291410	4.53	µg/L		100
PFPeS	7.171	349.1 -> 79.9	21220	1.94	µg/L		100
		349.1 -> 98.9	8337				
PFTeDA	10.513	713.1 -> 669.0	114770	2.23	µg/L		100
		713.1 -> 168.9	9869				
PFTrDA	10.167	663.0 -> 619.0	151089	2.31	µg/L		100
		663.0 -> 168.9	16015				
PFUnDA	9.374	563.1 -> 519.0	91428	2.17	µg/L		100
		563.1 -> 269.1	16627				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	304251	9.11	µg/L		100
		632.9 -> 452.9	90269				
9Cl-PF3ONS	9.413	530.8 -> 351.0	346424	8.51	µg/L		100
		532.8 -> 353.0	103738				
ADONA	7.369	376.9 -> 250.9	677791	8.79	µg/L		100
		376.9 -> 84.8	238608				
HFPO-DA	6.565	284.9 -> 168.9	123064	9.13	µg/L		100
		284.9 -> 184.9	12915				
3:3FTCA	4.204	241.0 -> 177.0	31868	10.58	µg/L		100
		241.0 -> 117.0	3016				
5:3FTCA	6.783	341.0 -> 237.1	547549	58.10	µg/L		100
		341.0 -> 217.0	407828				
7:3FTCA	8.249	441.0 -> 316.9	324127	59.89	µg/L		100
		441.0 -> 336.9	733000				
EtFOSA	11.550	526.0 -> 219.0	31890	2.20	µg/L		100
		526.0 -> 169.0	36617				
EtFOSE	11.496	630.0 -> 58.9	343672	24.00	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	22332	2.21	µg/L		100
		511.9 -> 169.0	28736				
MeFOSE	11.248	616.1 -> 58.9	323453	24.07	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	18314	2.32	µg/L		100
		699.1 -> 98.8	9612				
NFDHA	6.053	295.0 -> 201.0	22702	4.88	µg/L		100
		295.0 -> 84.9	6623				
PFMBA	5.328	279.0 -> 85.1	184849	4.61	µg/L		100
PFMPA	3.882	229.0 -> 84.9	185440	4.49	µg/L		100
PFEESA	6.660	314.8 -> 134.9	255985	4.23	µg/L		100
		314.8 -> 82.9	8078				

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

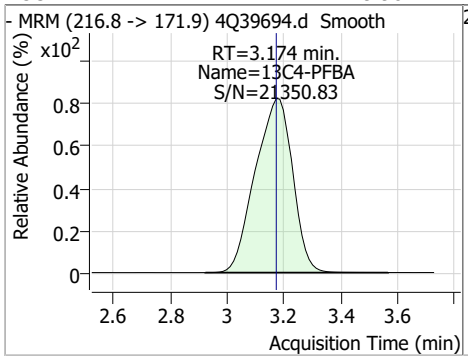
Perfluorinated Compounds by LC/MS/MS

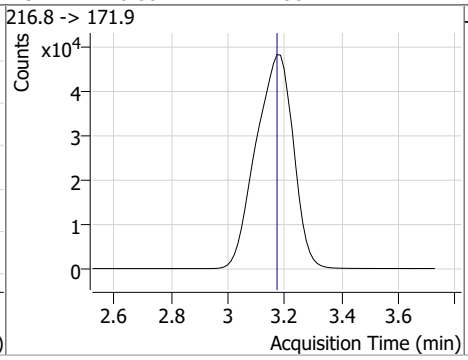
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

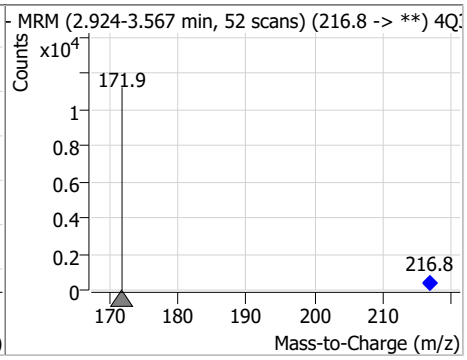
Perfluorinated Compounds by LC/MS/MS



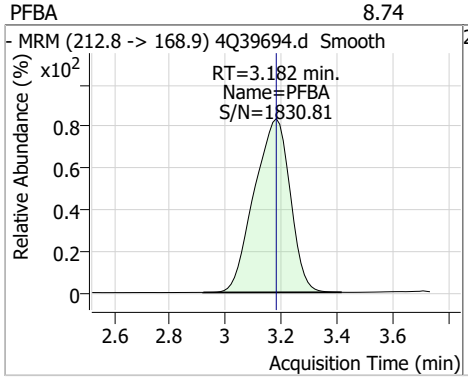
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.98	3.17	0.00	441400				

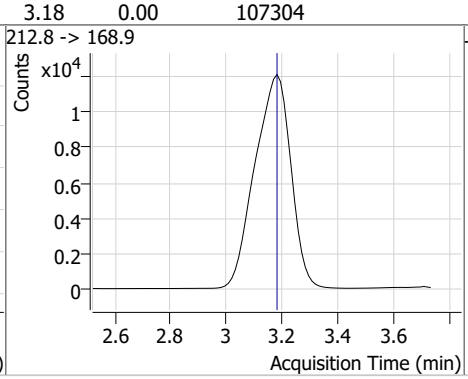


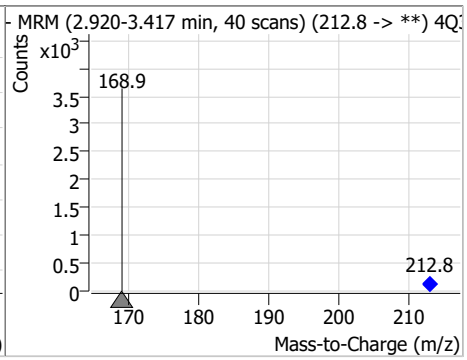




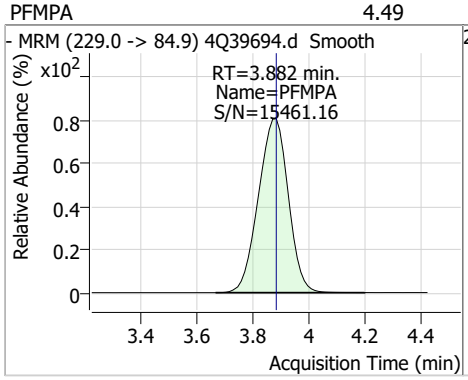
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.74	3.18	0.00	107304				

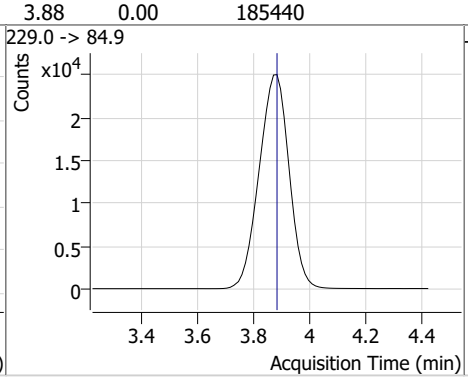


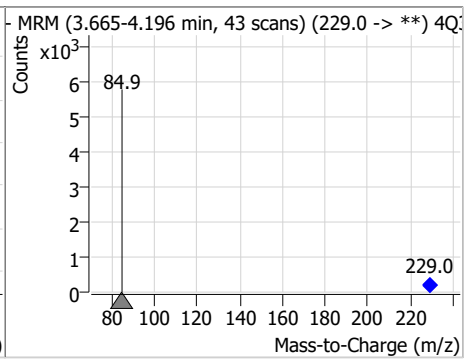




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.49	3.88	0.00	185440				

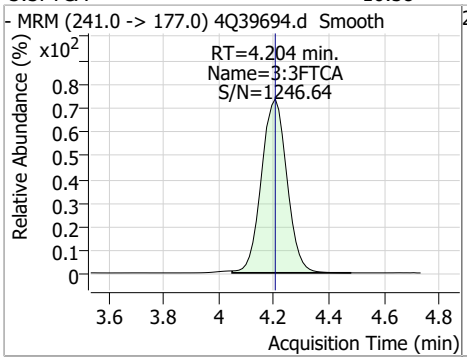


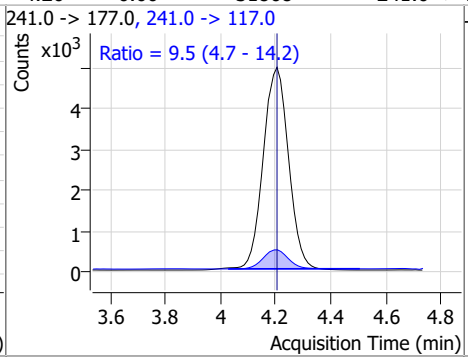


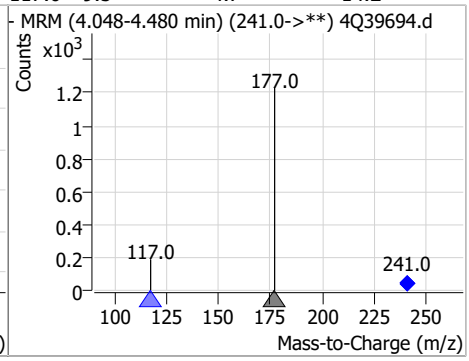


Perfluorinated Compounds by LC/MS/MS

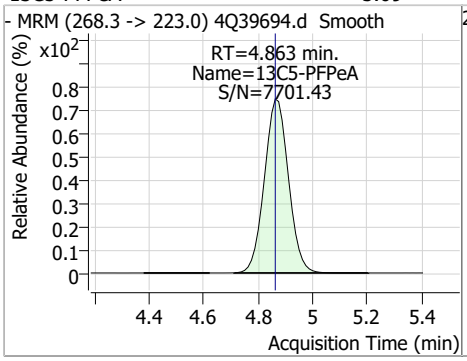
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.58	4.20	0.00	31868	241.0 -> 117.0	9.5	4.7	14.2

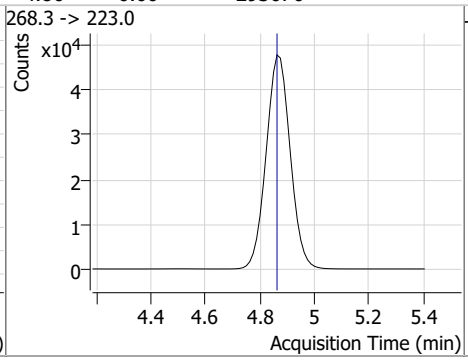


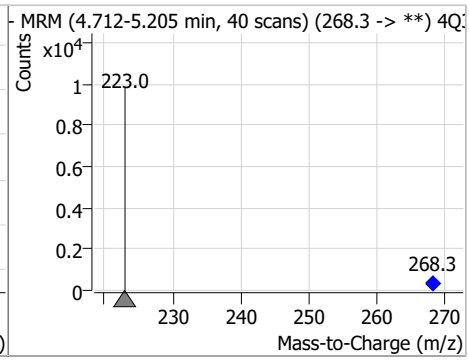




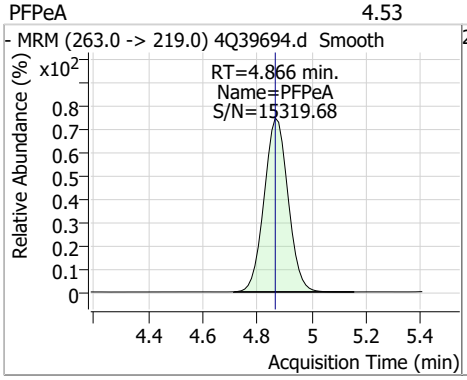
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.86	0.00	293070				

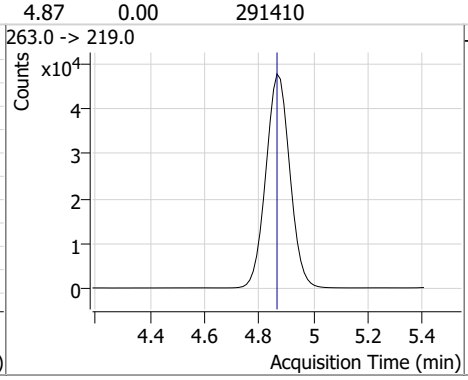


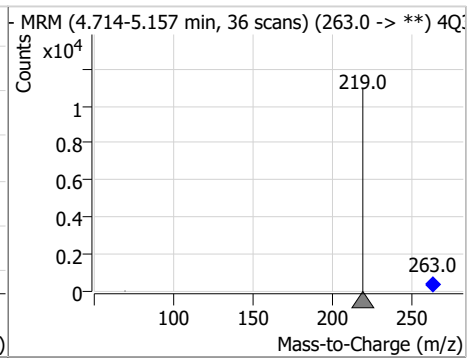




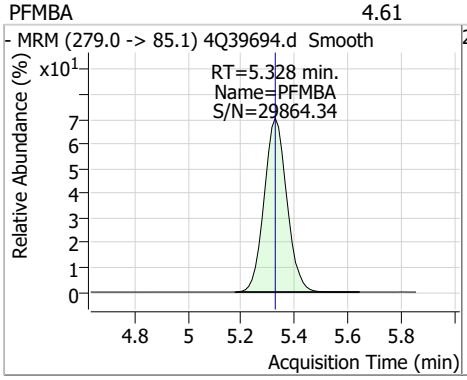
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.53	4.87	0.00	291410				

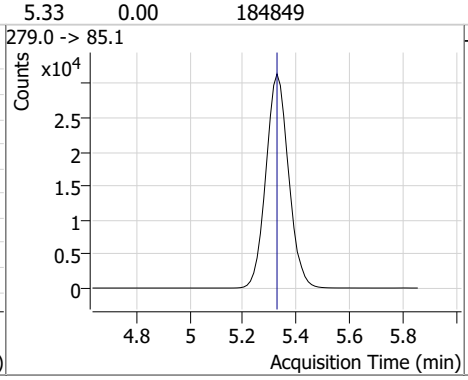


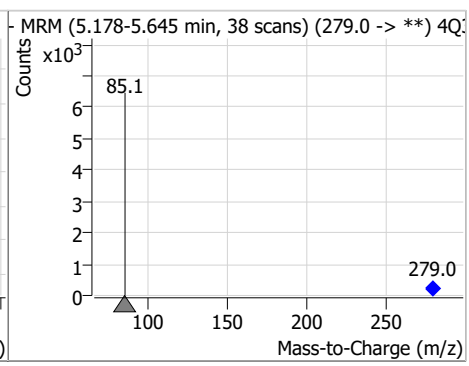




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.61	5.33	0.00	184849				

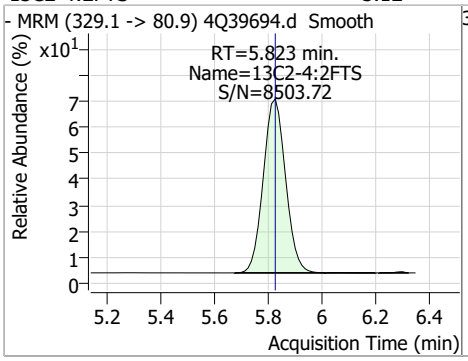


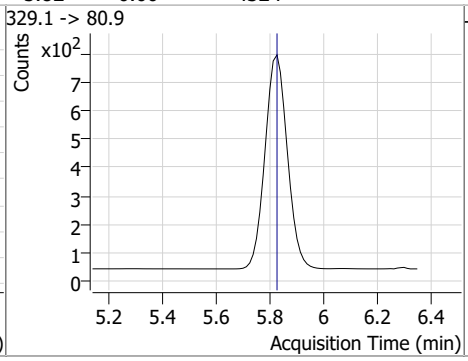


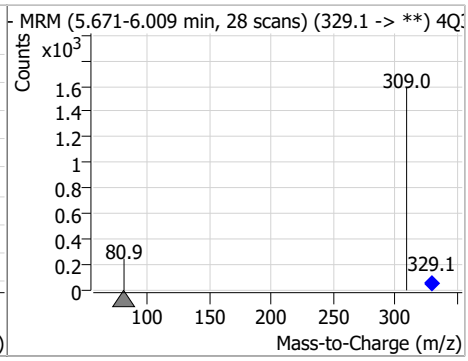


Perfluorinated Compounds by LC/MS/MS

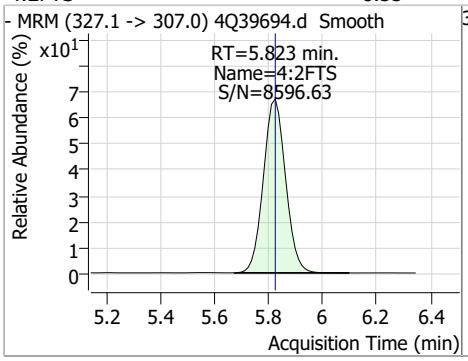
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.12	5.82	0.00	4324				

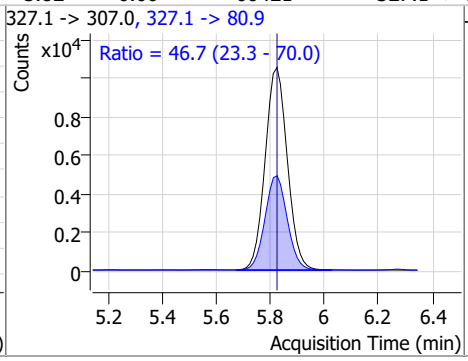


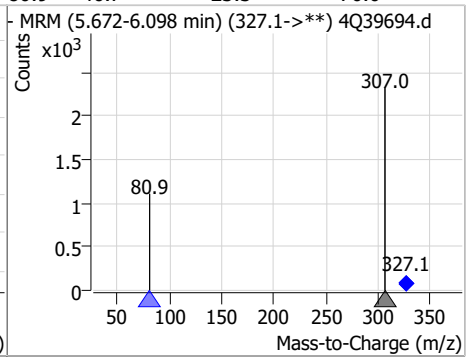




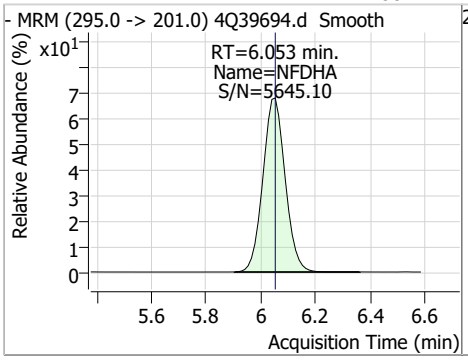
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.55	5.82	0.00	60421	327.1 -> 80.9	46.7	23.3	70.0

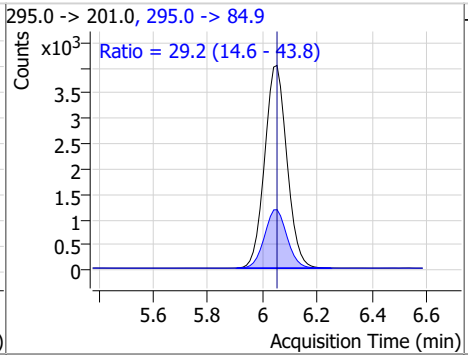


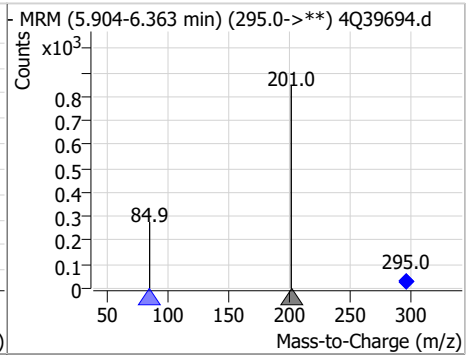




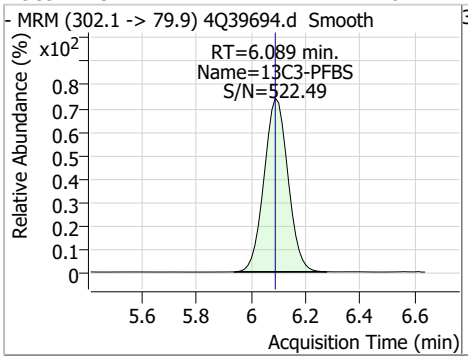
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.88	6.05	0.00	22702	295.0 -> 84.9	29.2	14.6	43.8

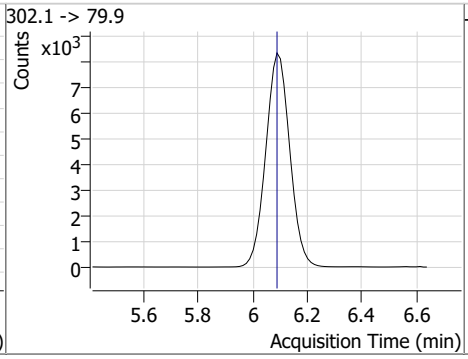


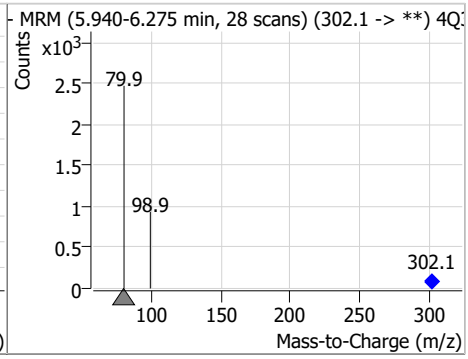




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	6.09	0.00	50511				

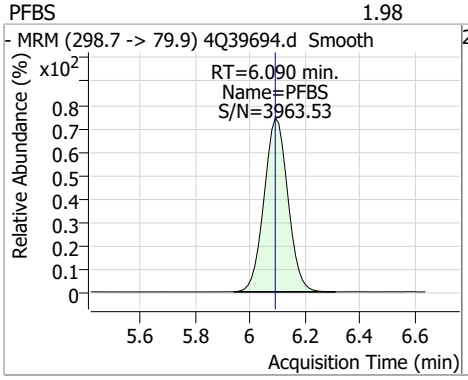


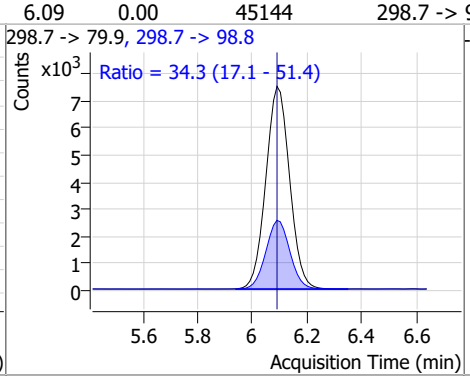


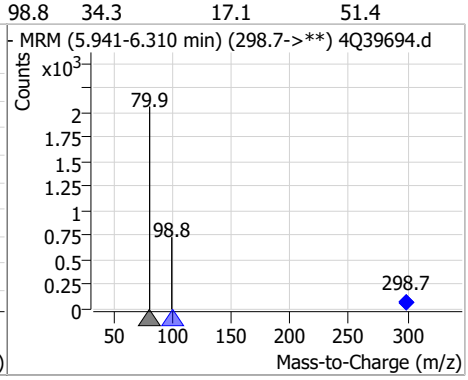


Perfluorinated Compounds by LC/MS/MS

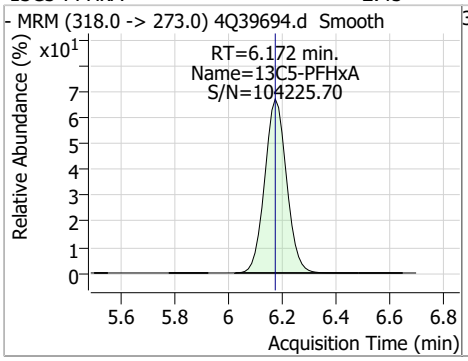
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.98	6.09	0.00	45144	298.7 -> 98.8	34.3	17.1	51.4

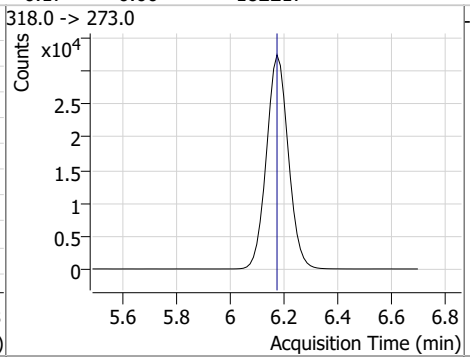


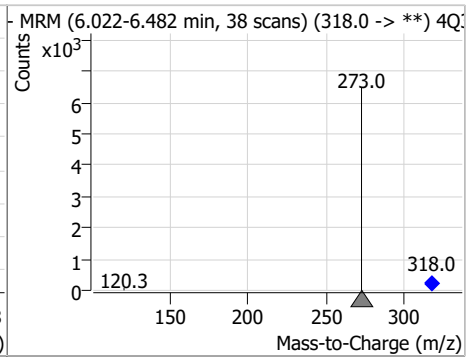




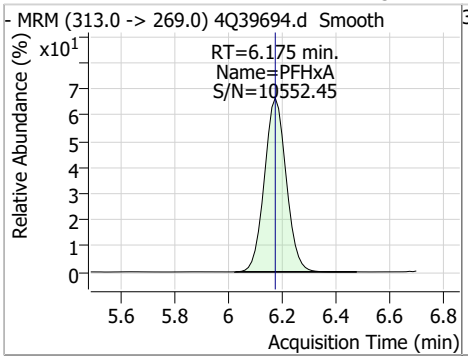
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.45	6.17	0.00	182217				

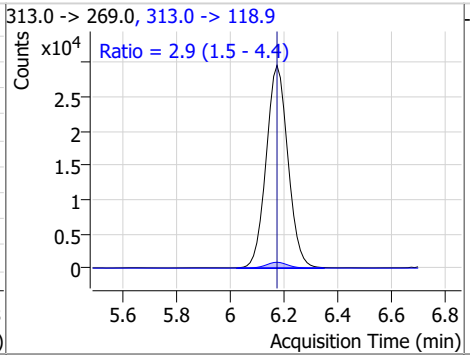


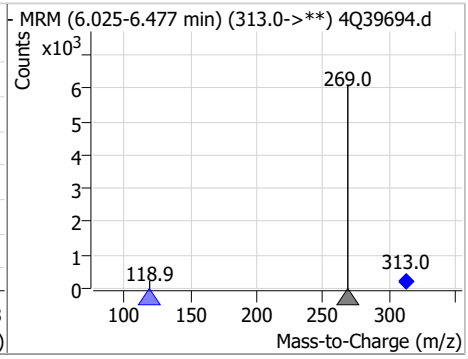




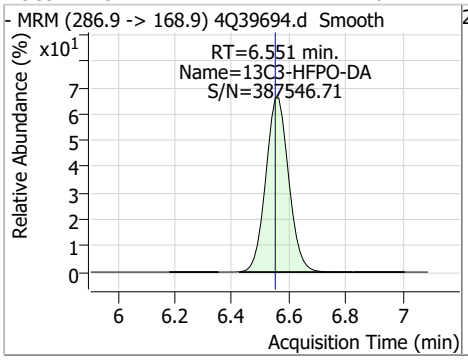
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.34	6.17	0.00	165491	313.0 -> 118.9	2.9	1.5	4.4

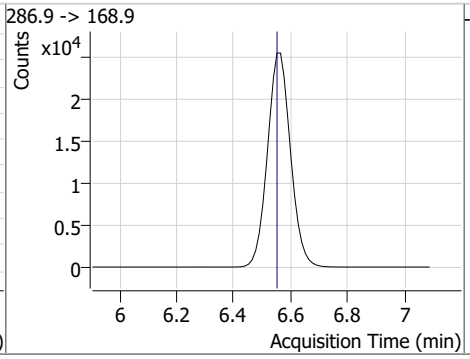


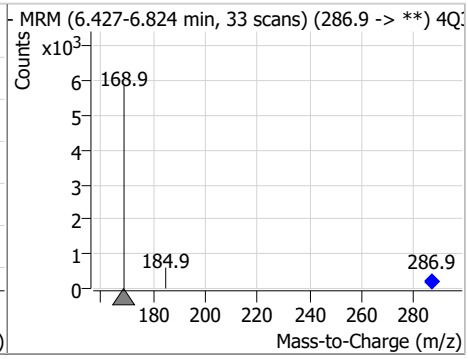




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.12	6.55	0.00	142936				

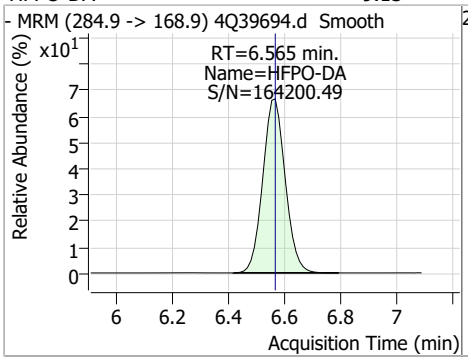


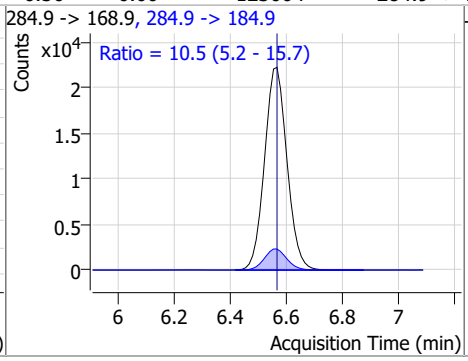


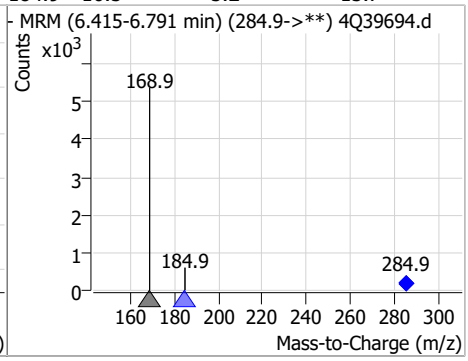


Perfluorinated Compounds by LC/MS/MS

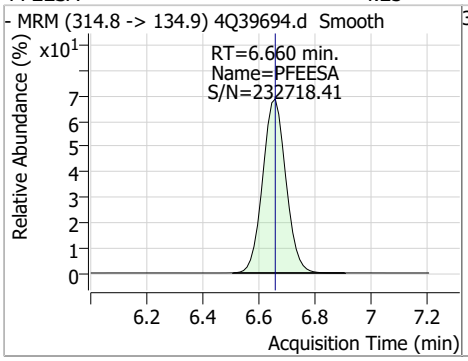
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.13	6.56	0.00	123064	284.9 -> 184.9	10.5	5.2	15.7

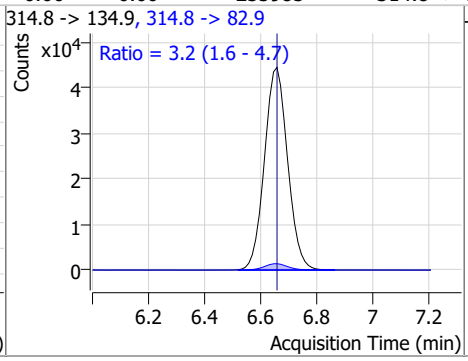


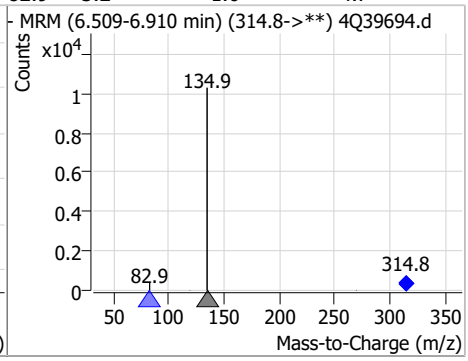




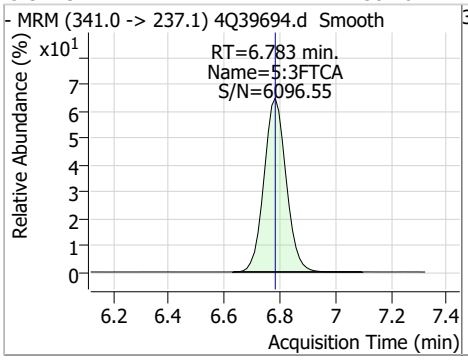
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.23	6.66	0.00	255985	314.8 -> 82.9	3.2	1.6	4.7

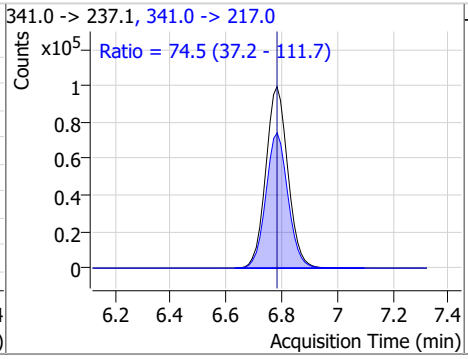


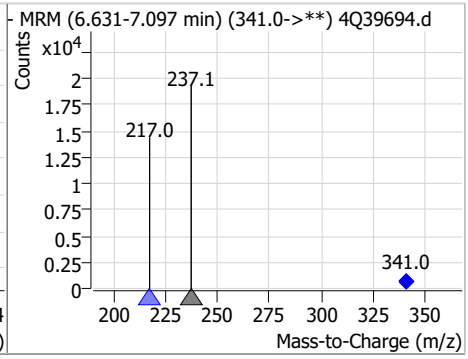




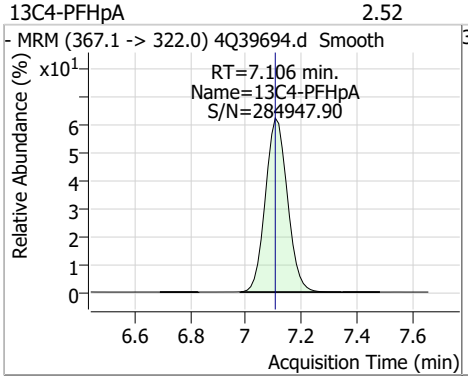
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.10	6.78	0.00	547549	341.0 -> 217.0	74.5	37.2	111.7

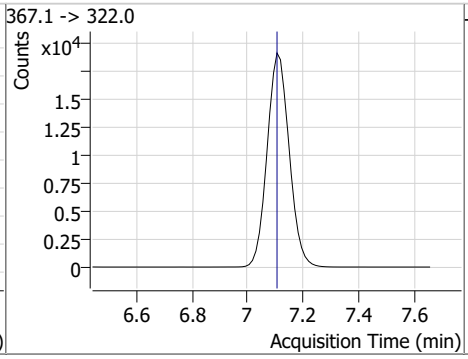


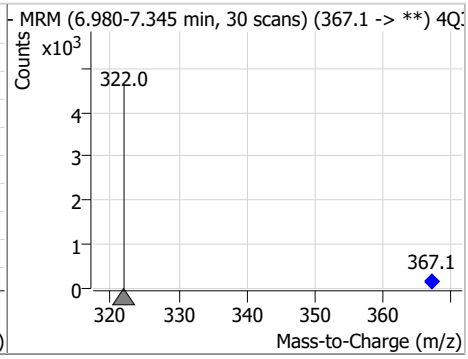




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	7.11	0.00	104247				

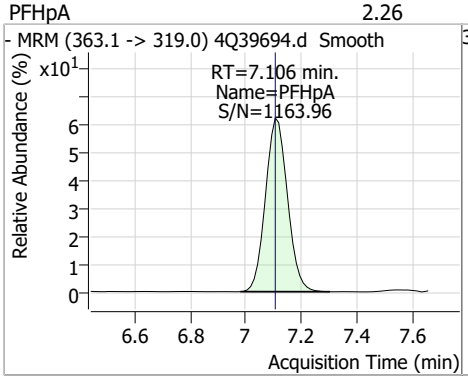


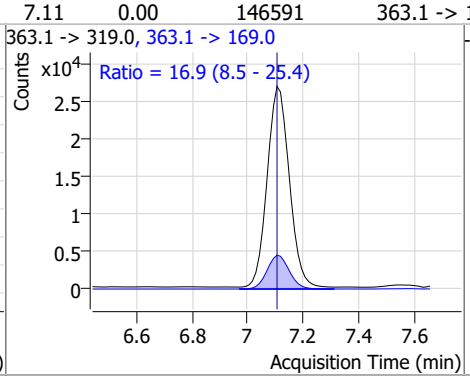


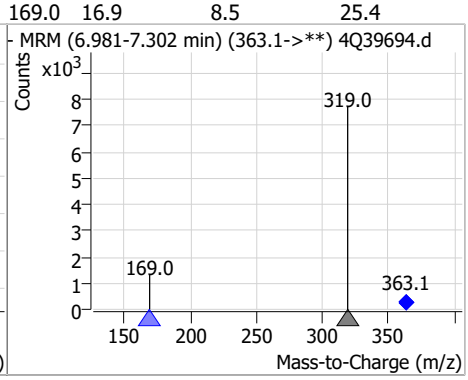


Perfluorinated Compounds by LC/MS/MS

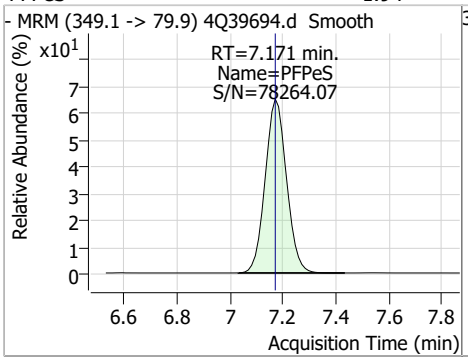
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.26	7.11	0.00	146591	363.1 -> 169.0	16.9	8.5	25.4

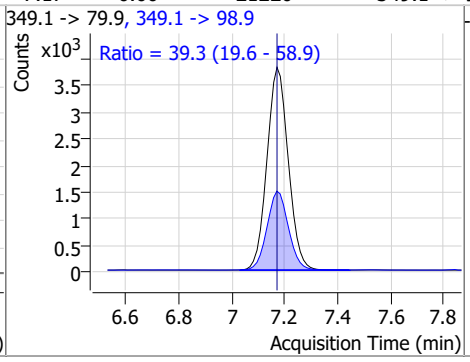


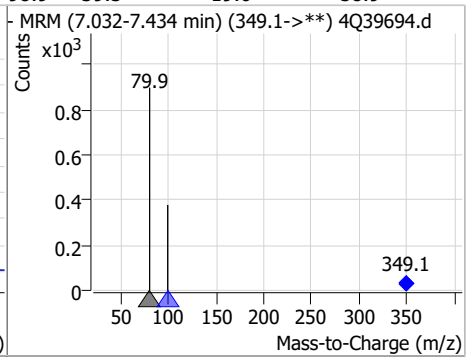




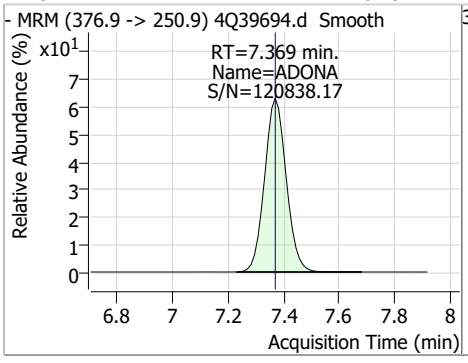
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.94	7.17	0.00	21220	349.1 -> 98.9	39.3	19.6	58.9

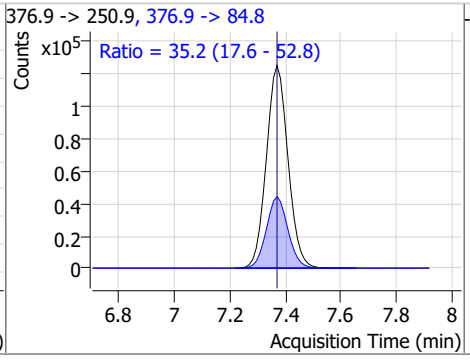


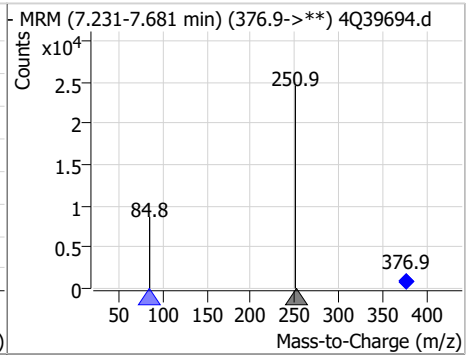




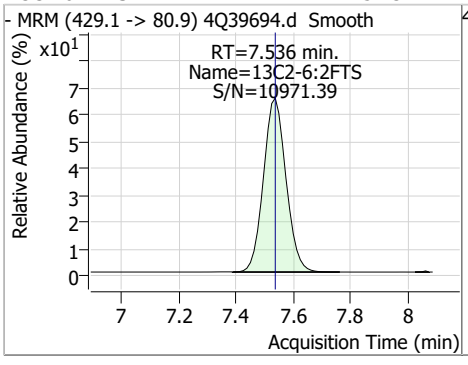
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.79	7.37	0.00	677791	376.9 -> 84.8	35.2	17.6	52.8

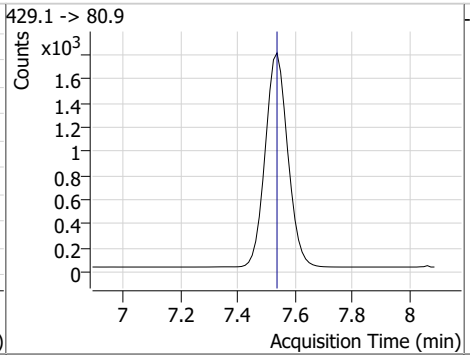


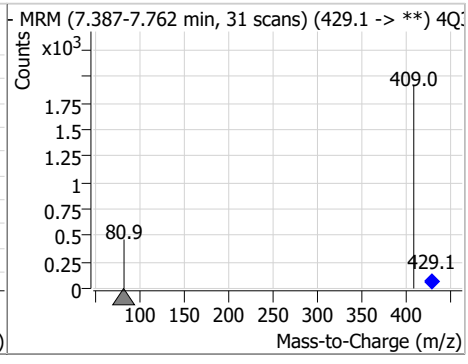




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.13	7.54	0.00	9692				

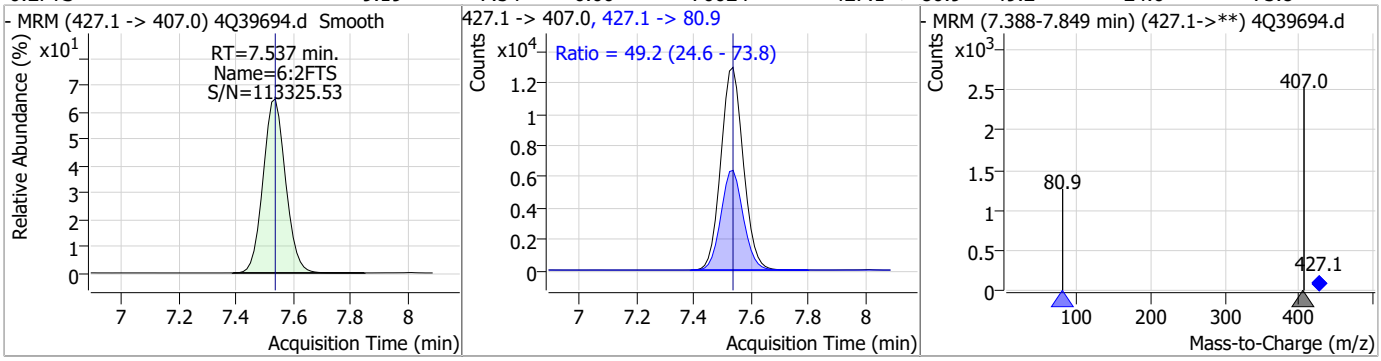




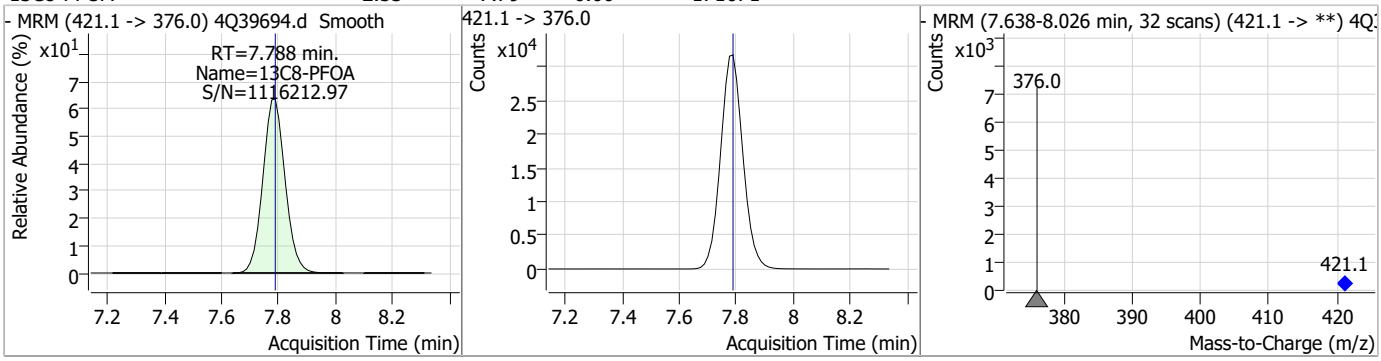


Perfluorinated Compounds by LC/MS/MS

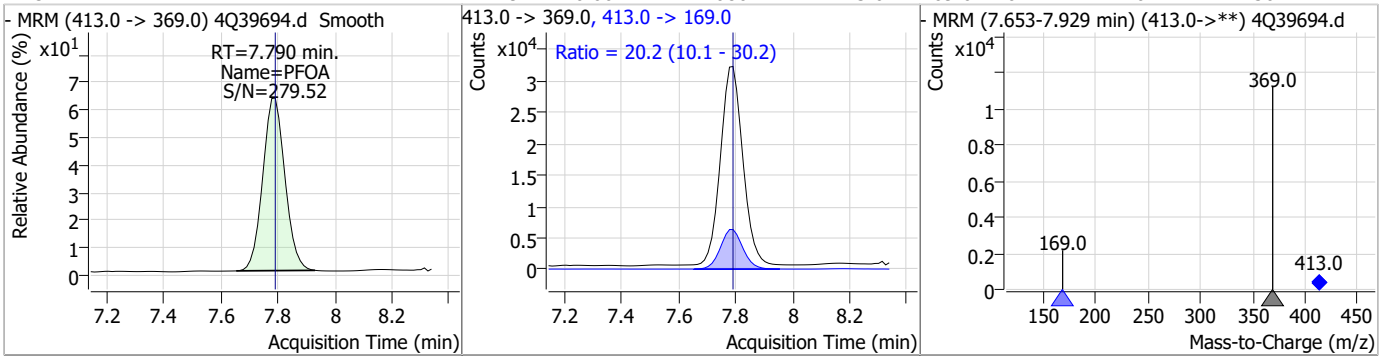
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.19	7.54	0.00	70624	427.1 -> 80.9	49.2	24.6	73.8



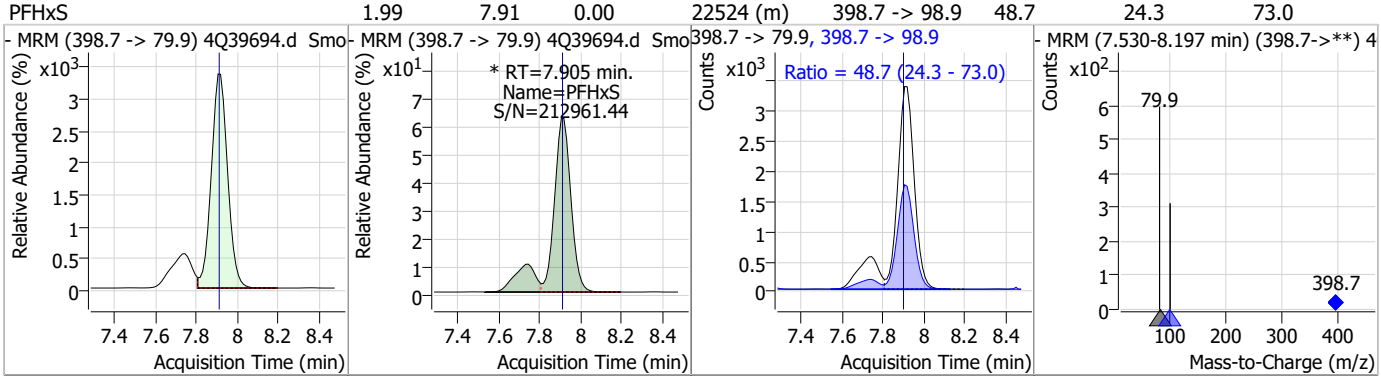
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	7.79	0.00	171671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.24	7.79	0.00	170801	413.0 -> 169.0	20.2	10.1	30.2

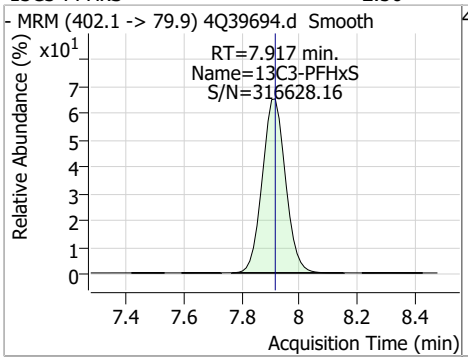


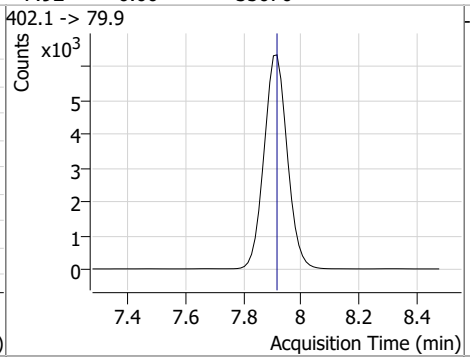
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.99	7.91	0.00	22524 (m)	398.7 -> 98.9	48.7	24.3	73.0

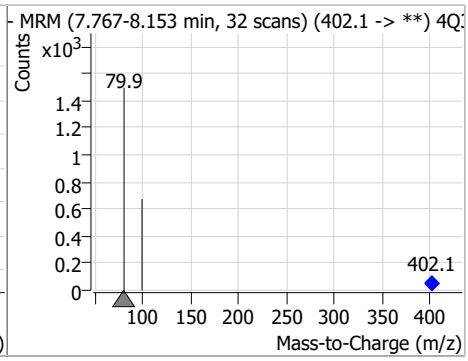


Perfluorinated Compounds by LC/MS/MS

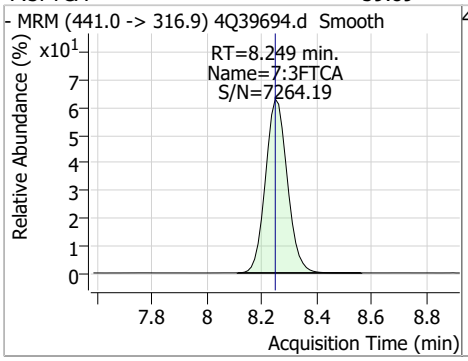
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.92	0.00	35070				

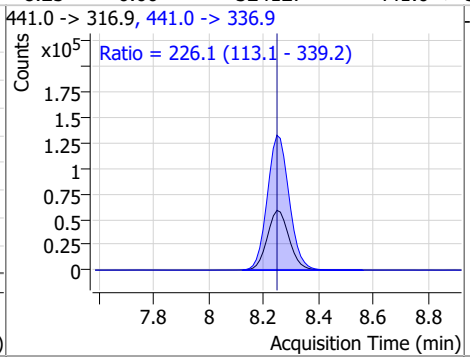


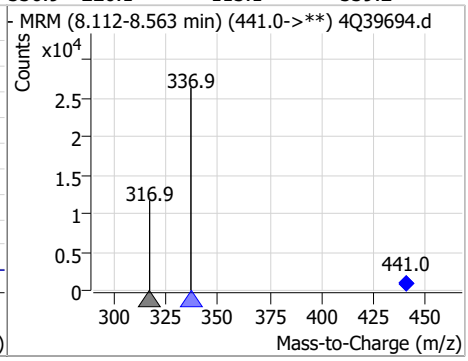




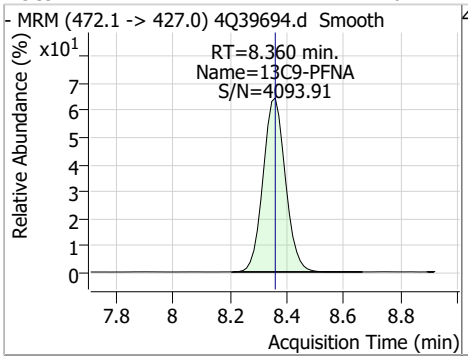
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	59.89	8.25	0.00	324127	441.0 -> 336.9	226.1	113.1	339.2

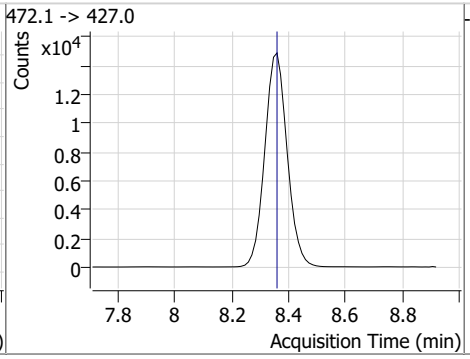


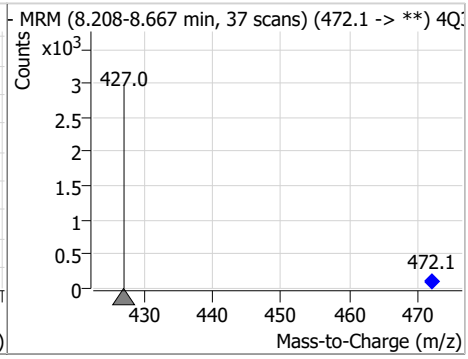




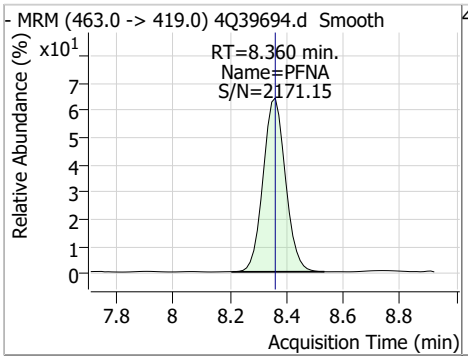
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	8.36	0.00	81248				

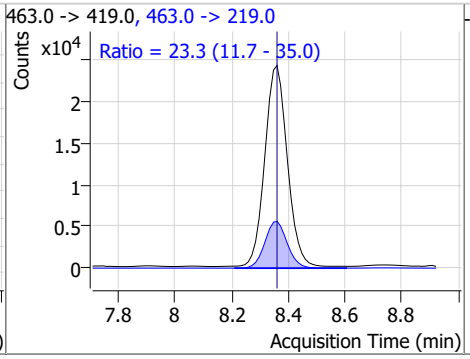


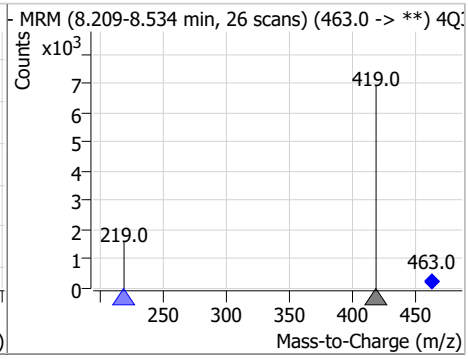




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.21	8.36	0.00	130741	463.0 -> 219.0	23.3	11.7	35.0

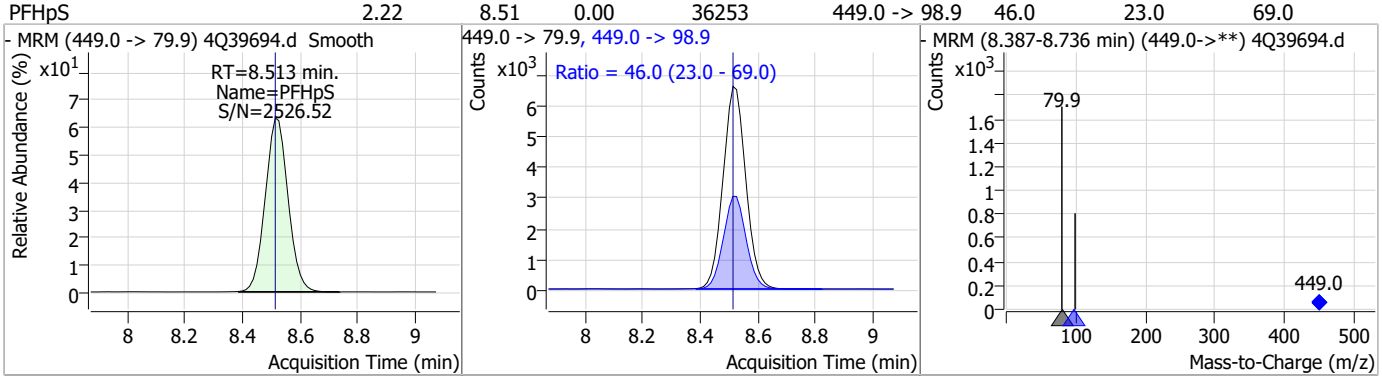




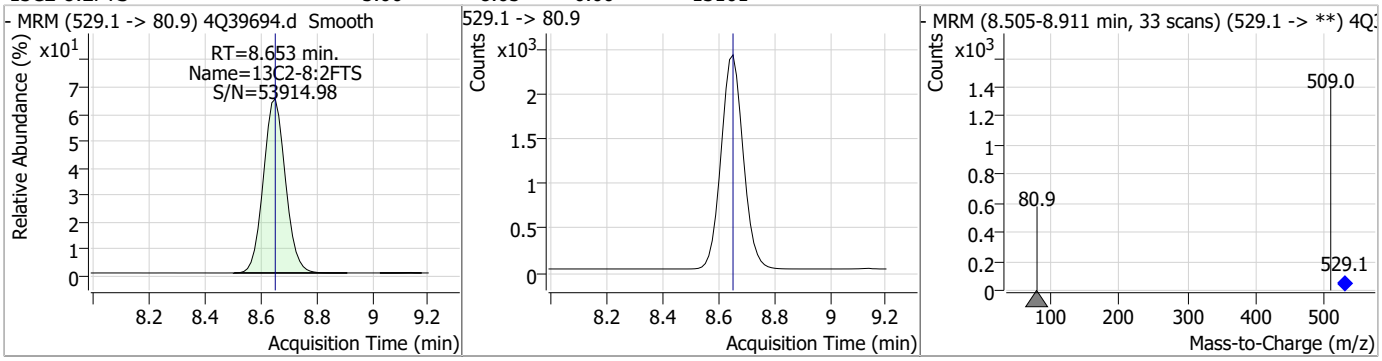


Perfluorinated Compounds by LC/MS/MS

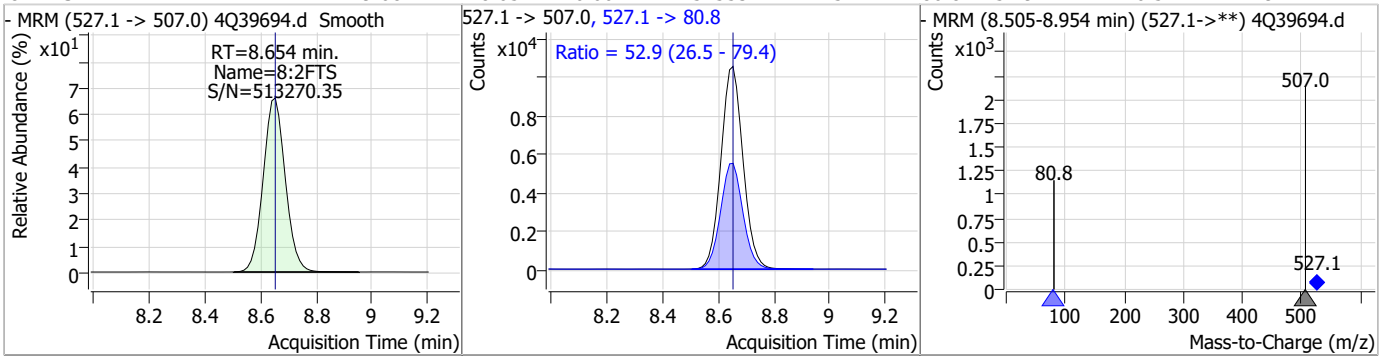
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.22	8.51	0.00	36253	449.0 -> 98.9	46.0	23.0	69.0



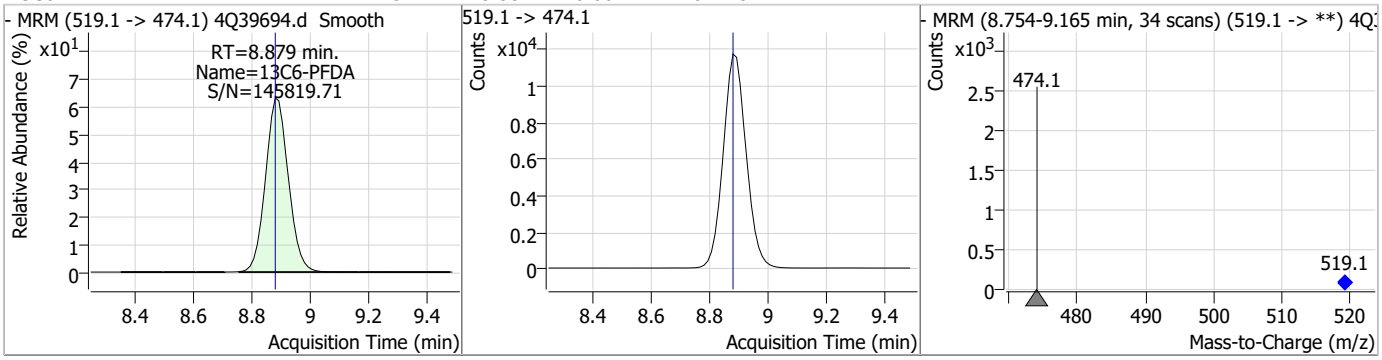
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.06	8.65	0.00	13101				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.08	8.65	0.00	57553	527.1 -> 80.8	52.9	26.5	79.4

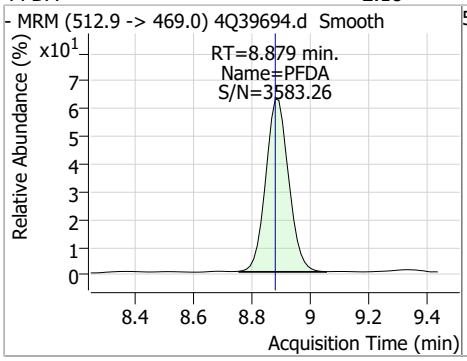


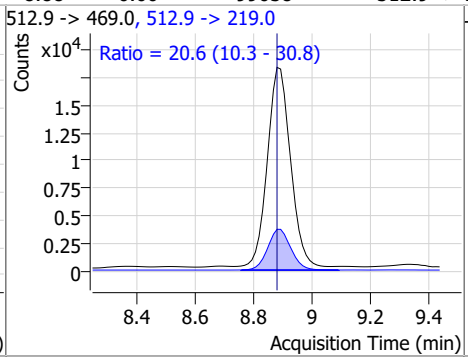
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.88	0.00	64118				

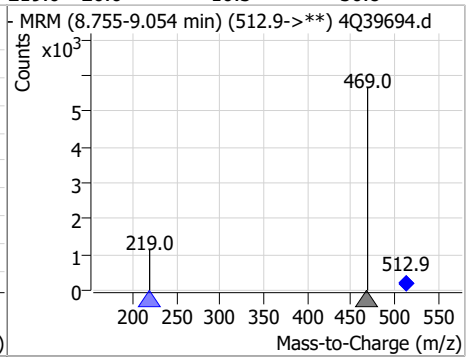


Perfluorinated Compounds by LC/MS/MS

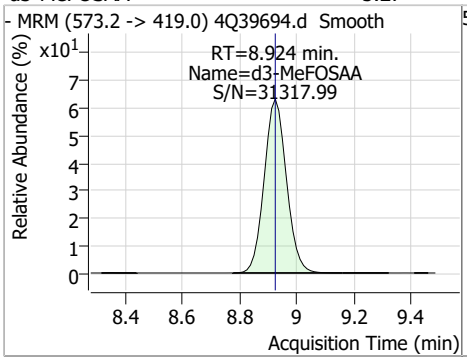
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.18	8.88	0.00	99658	512.9 -> 219.0	20.6	10.3	30.8

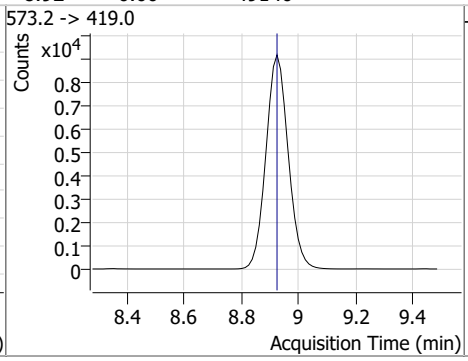


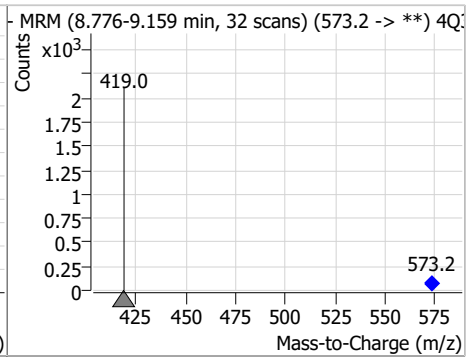




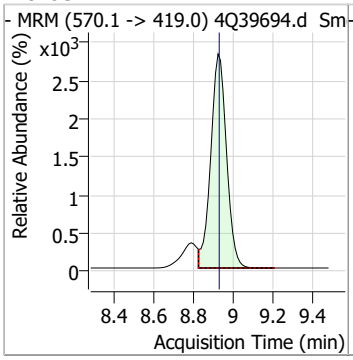
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.27	8.92	0.00	49146				

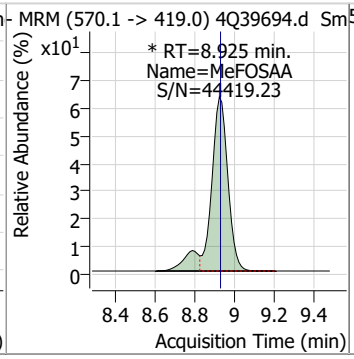


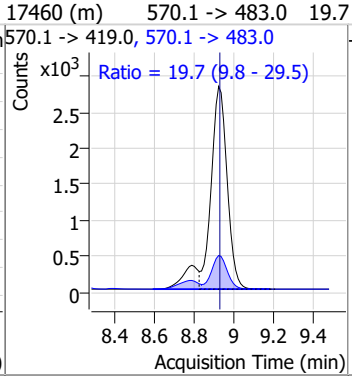


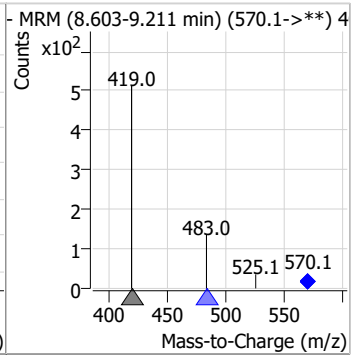


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.40	8.92	0.00	17460 (m)	570.1 -> 483.0	19.7	9.8	29.5

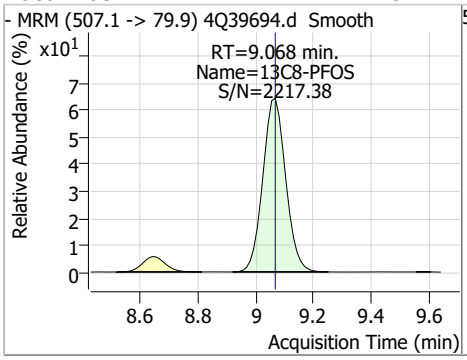


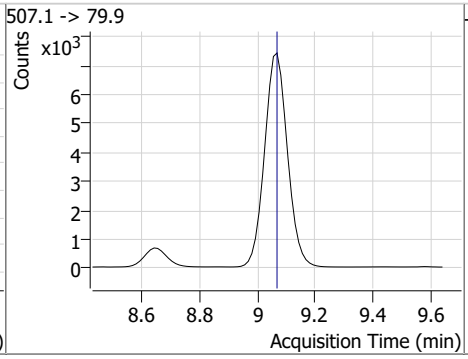


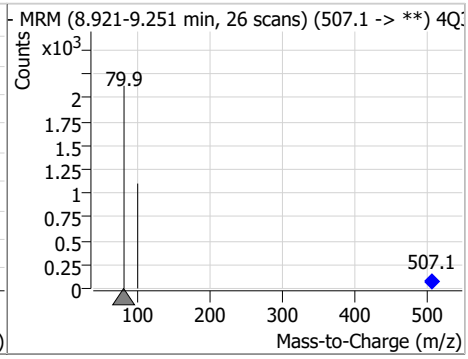




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.43	9.07	0.00	40325				

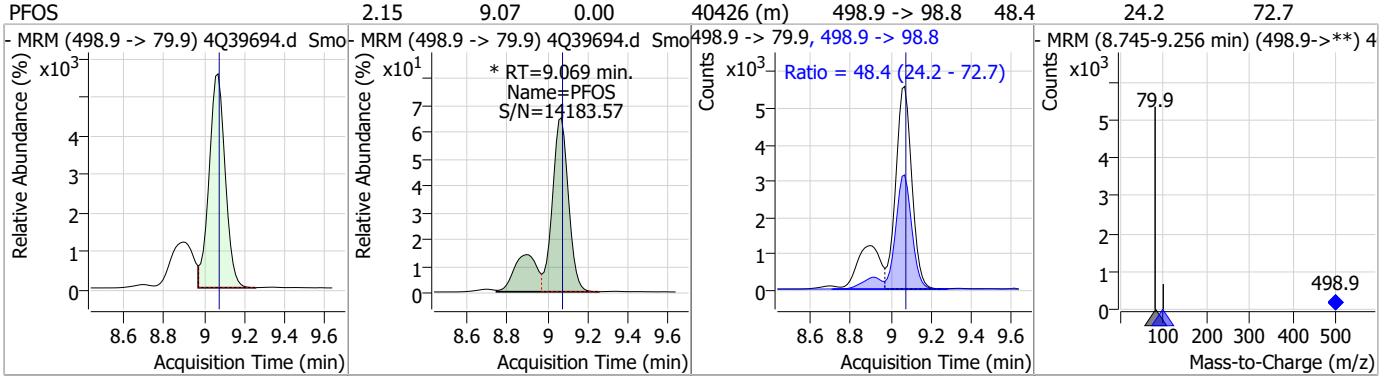




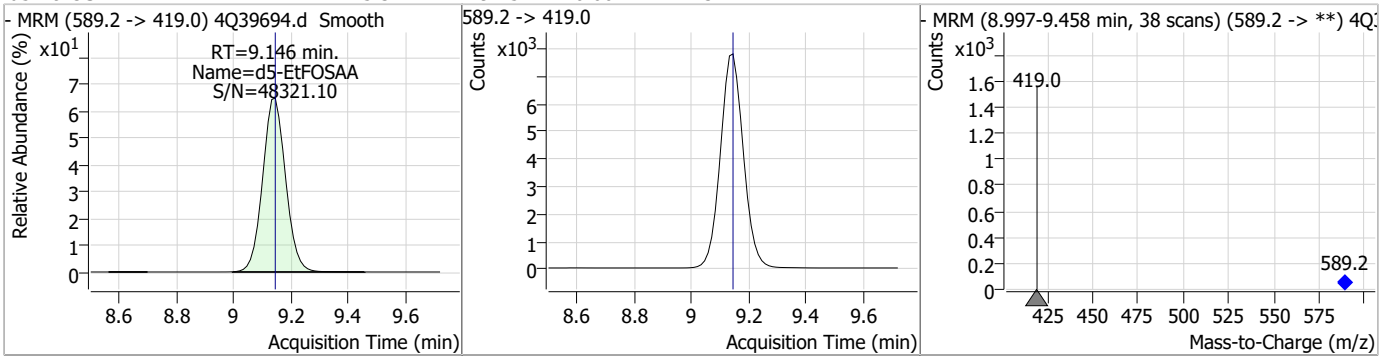


Perfluorinated Compounds by LC/MS/MS

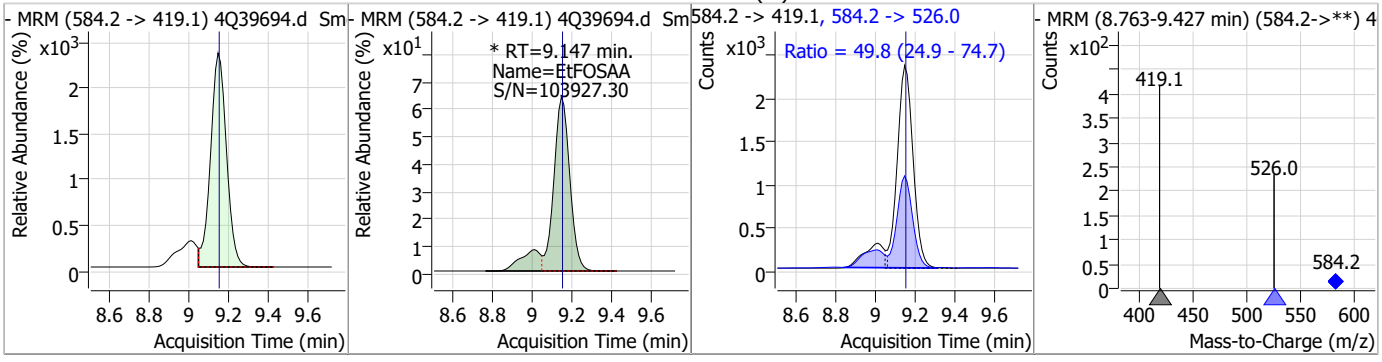
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.15	9.07	0.00	40426 (m)	498.9 -> 98.8	48.4	24.2	72.7



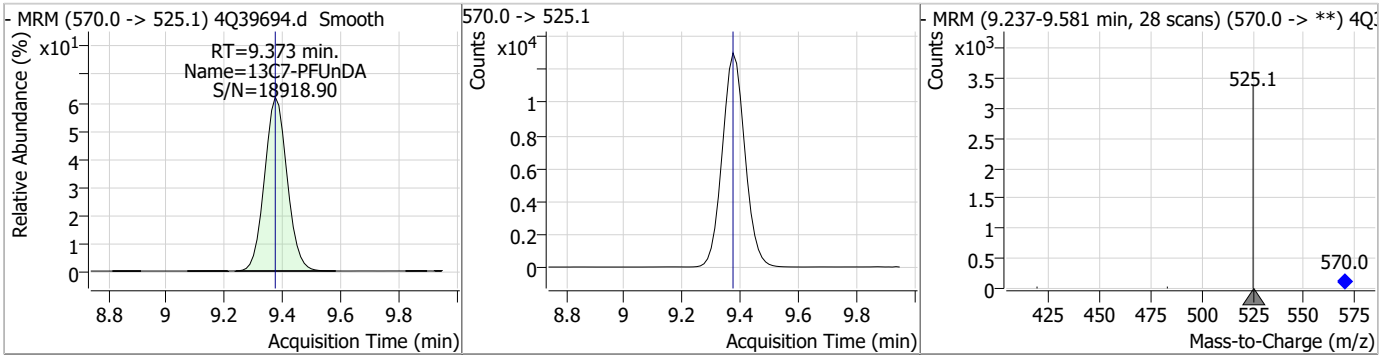
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.31	9.15	0.00	43117				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.09	9.15	0.00	15112 (m)	584.2 -> 526.0	49.8	24.9	74.7

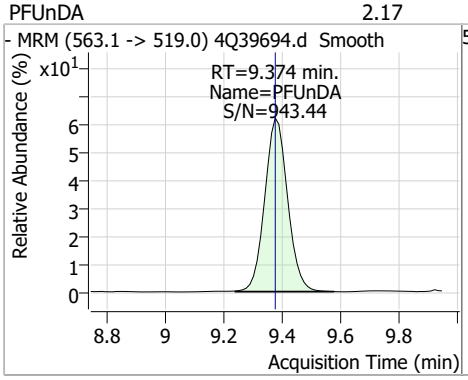


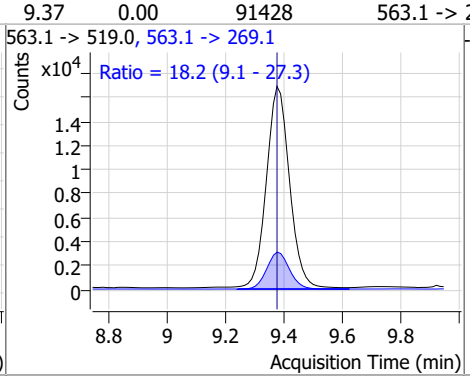
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	9.37	0.00	69624				

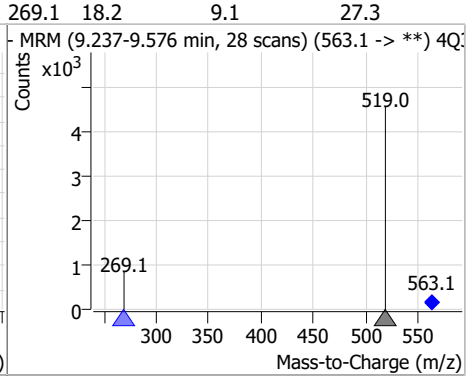


Perfluorinated Compounds by LC/MS/MS

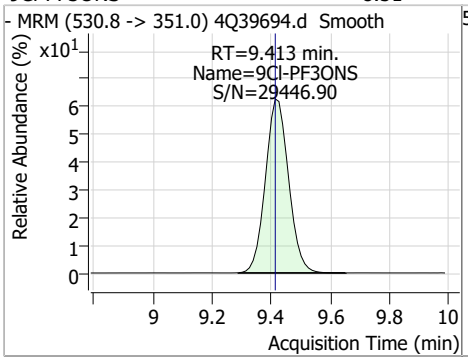
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.17	9.37	0.00	91428	563.1 -> 269.1	18.2	9.1	27.3

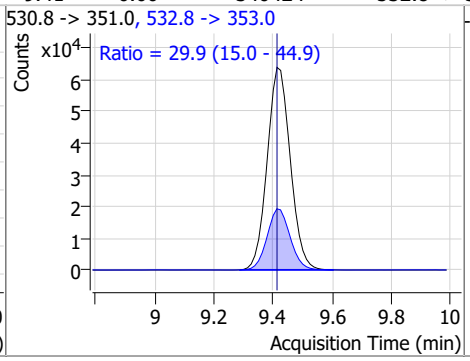


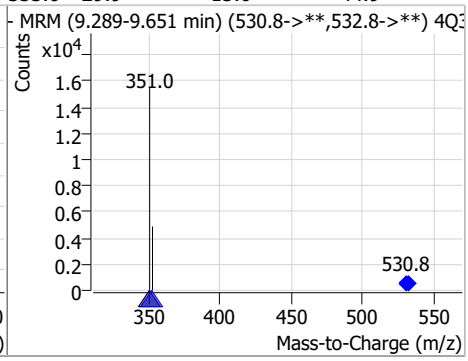




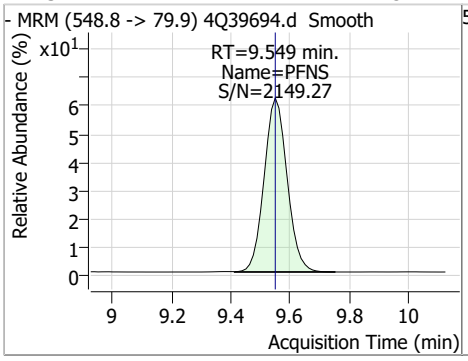
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.51	9.41	0.00	346424	532.8 -> 353.0	29.9	15.0	44.9

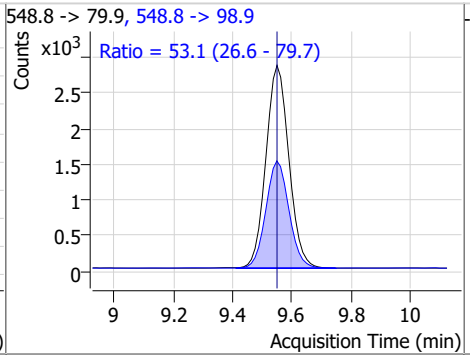


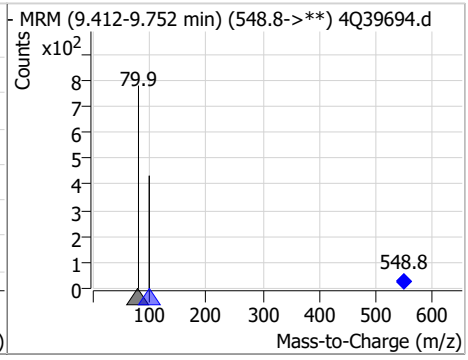




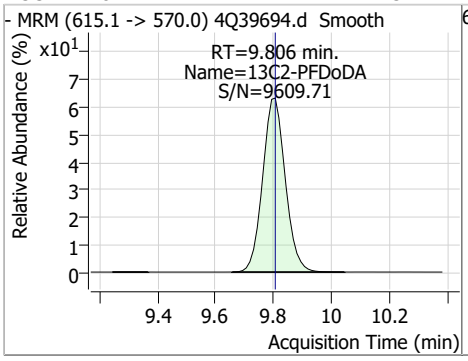
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.13	9.55	0.00	15308	548.8 -> 98.9	53.1	26.6	79.7

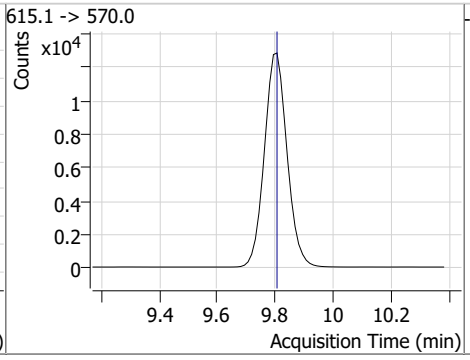


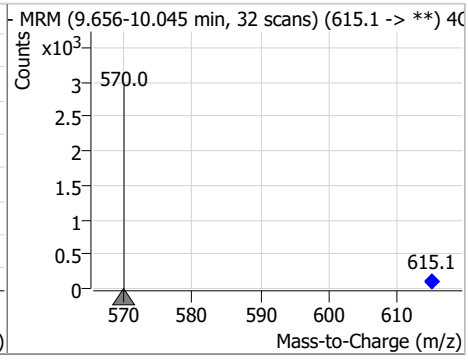




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	9.81	0.00	69379				

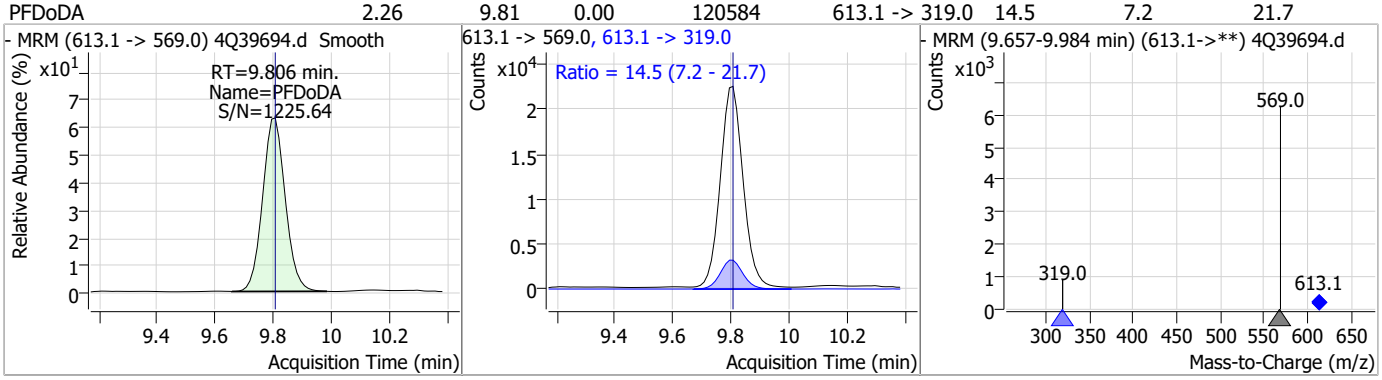




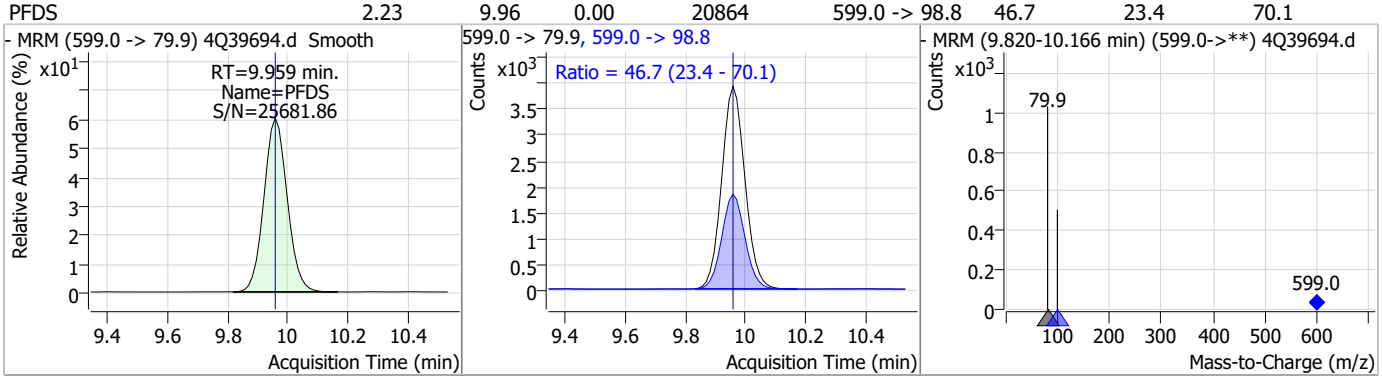


Perfluorinated Compounds by LC/MS/MS

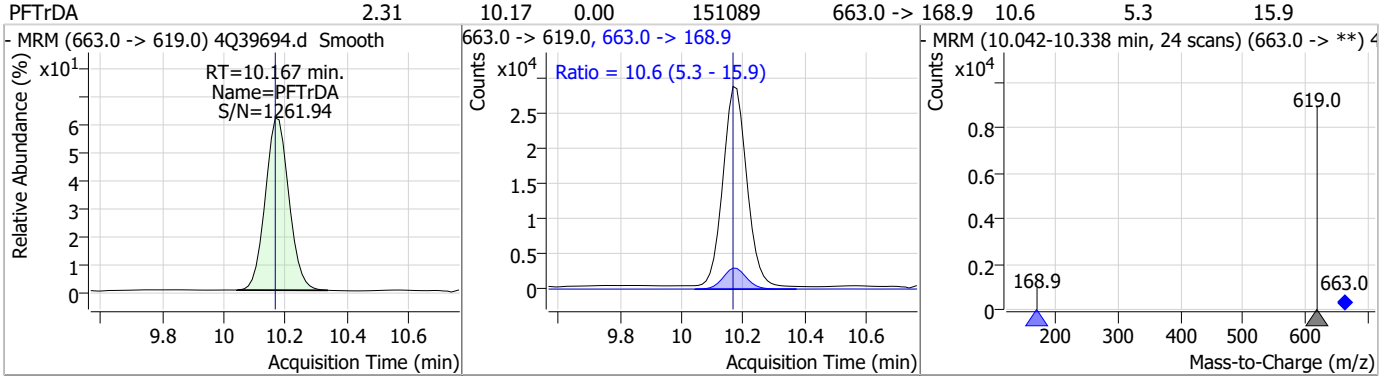
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.26	9.81	0.00	120584	613.1 -> 319.0	14.5	7.2	21.7



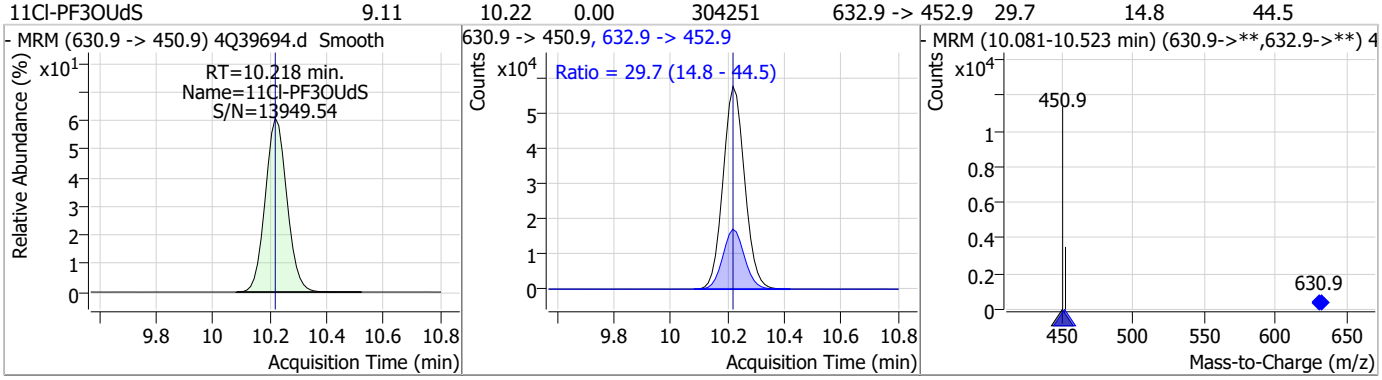
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.23	9.96	0.00	20864	599.0 -> 98.8	46.7	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.31	10.17	0.00	151089	663.0 -> 168.9	10.6	5.3	15.9

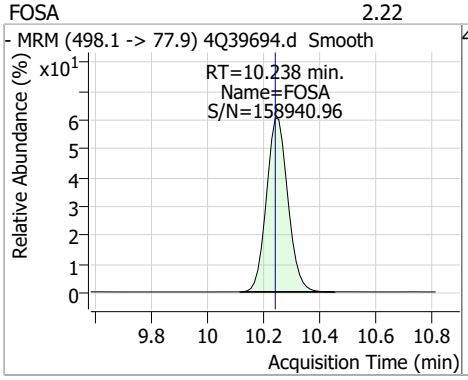


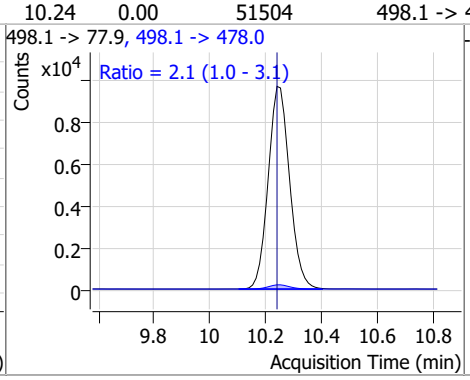
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.11	10.22	0.00	304251	632.9 -> 452.9	29.7	14.8	44.5

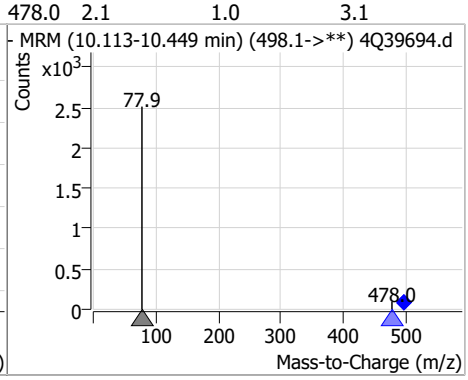


Perfluorinated Compounds by LC/MS/MS

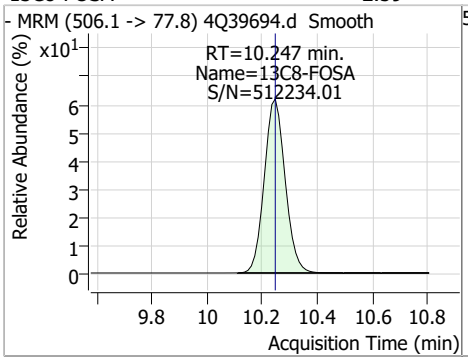
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.22	10.24	0.00	51504	498.1 -> 478.0	2.1	1.0	3.1

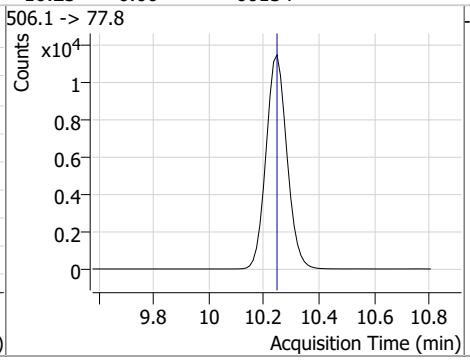


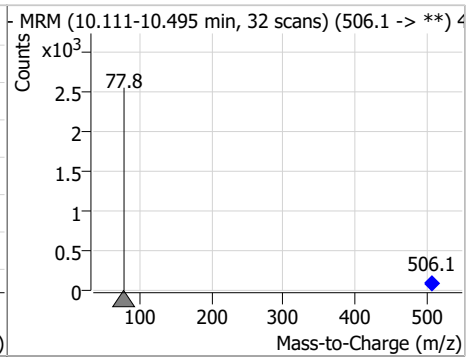




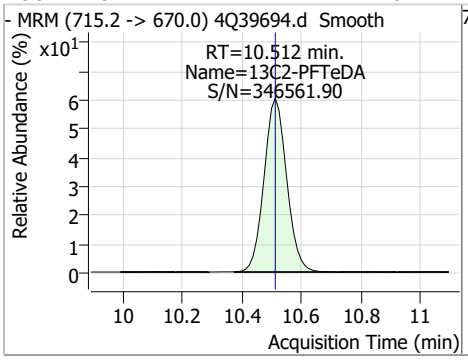
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.59	10.25	0.00	60134				

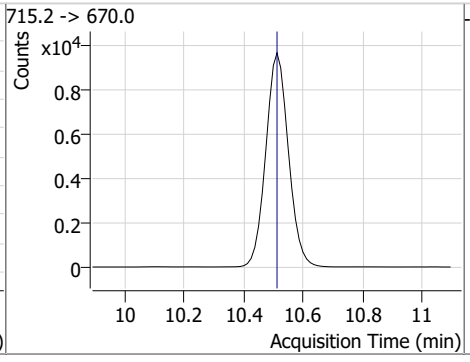


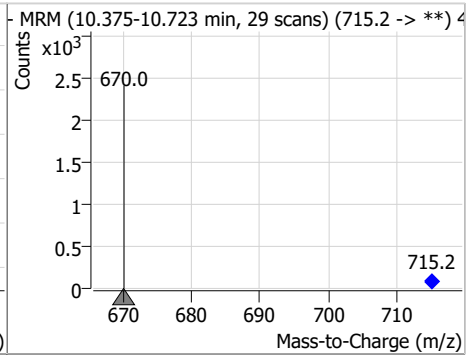




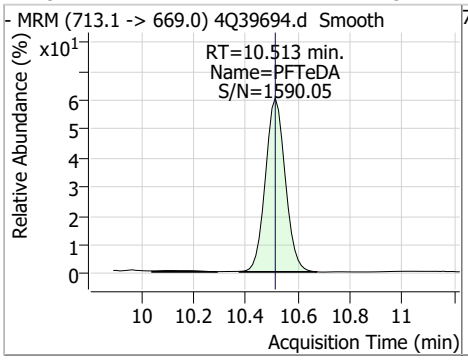
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	10.51	0.00	51121				

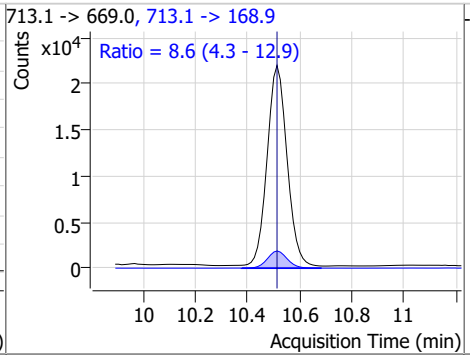


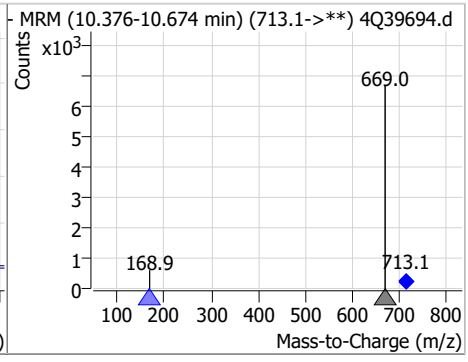




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.23	10.51	0.00	114770	713.1 -> 168.9	8.6	4.3	12.9

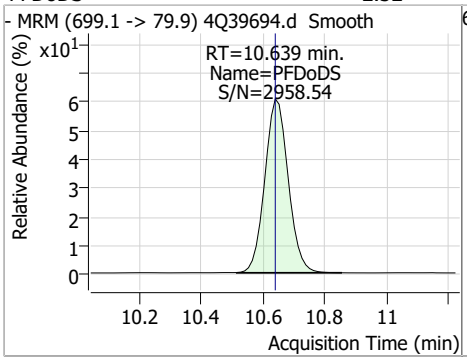


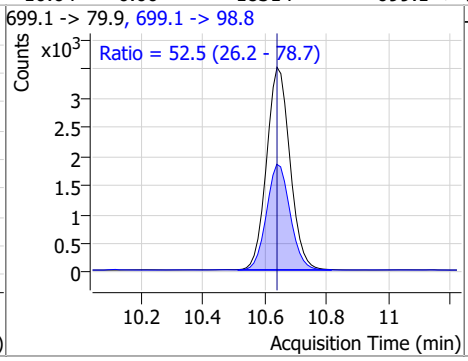


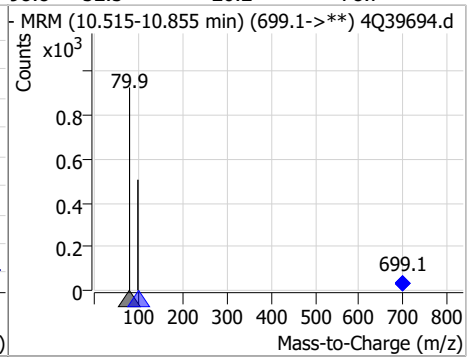


Perfluorinated Compounds by LC/MS/MS

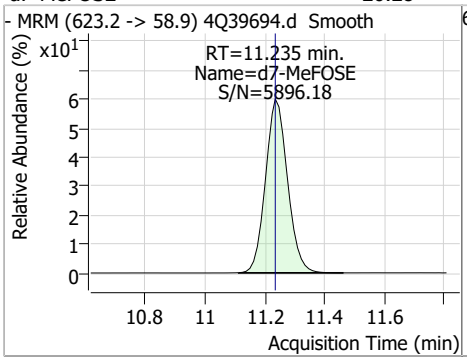
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.32	10.64	0.00	18314	699.1 -> 98.8	52.5	26.2	78.7

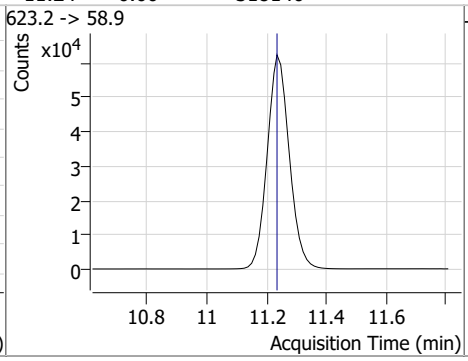


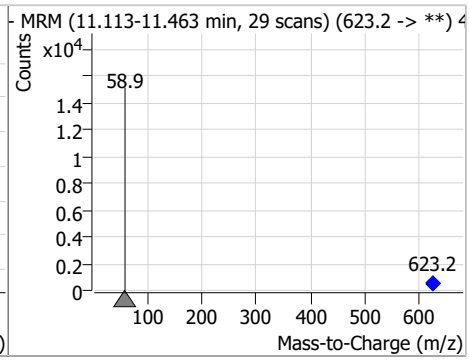




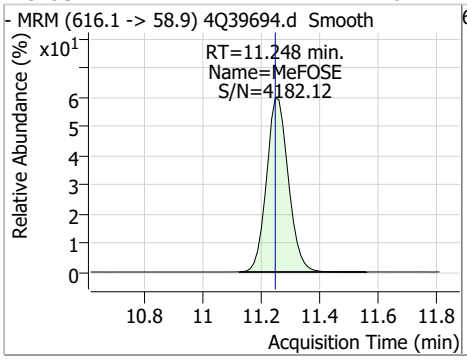
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.28	11.24	0.00	318140				

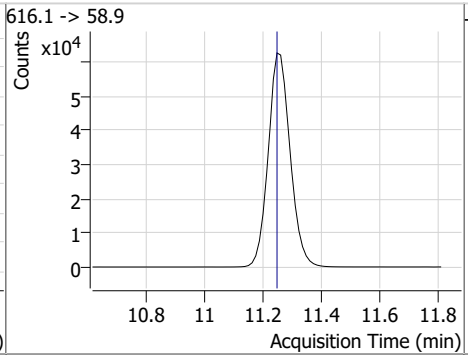


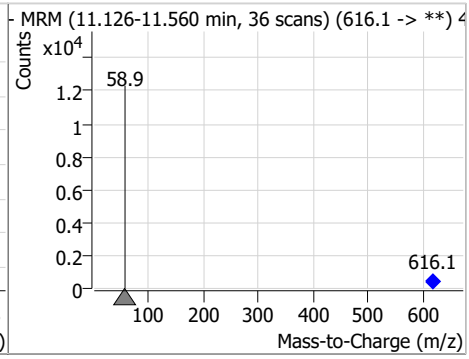




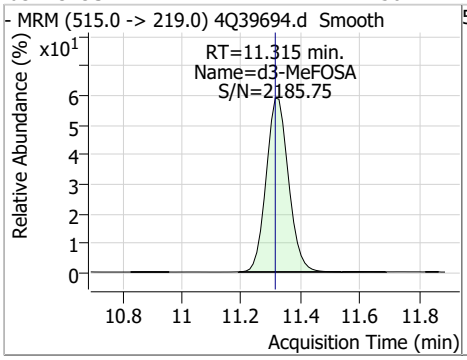
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.07	11.25	0.00	323453				

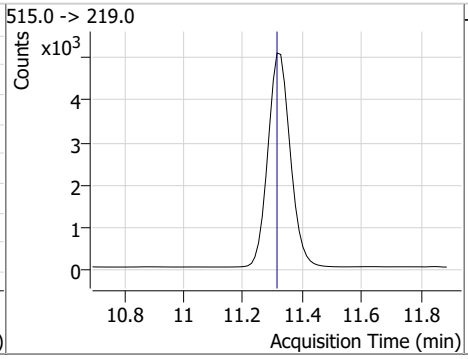


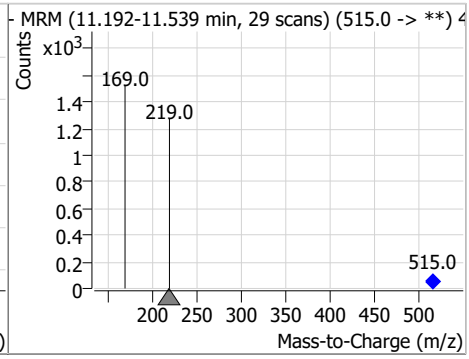




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	11.31	0.00	26560				

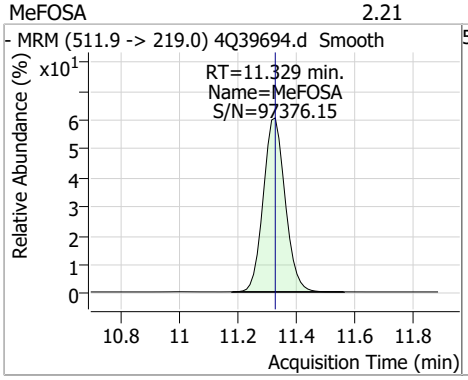


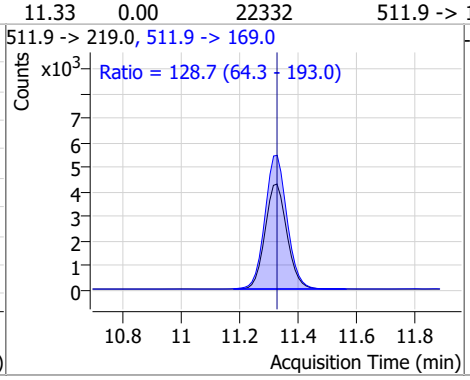


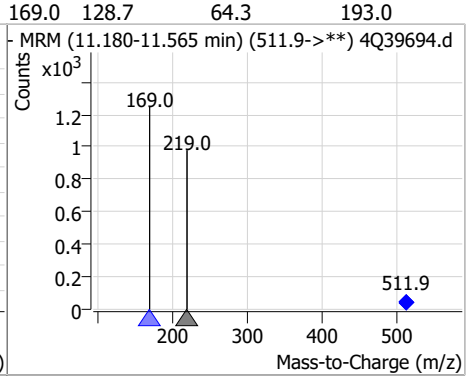


Perfluorinated Compounds by LC/MS/MS

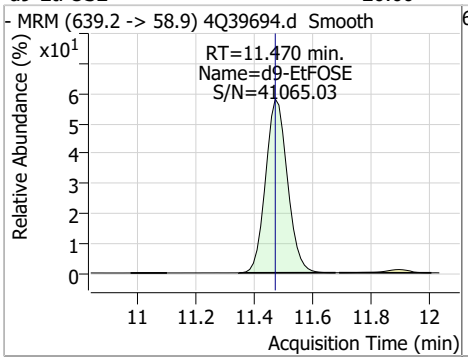
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.21	11.33	0.00	22332	511.9 -> 169.0	128.7	64.3	193.0

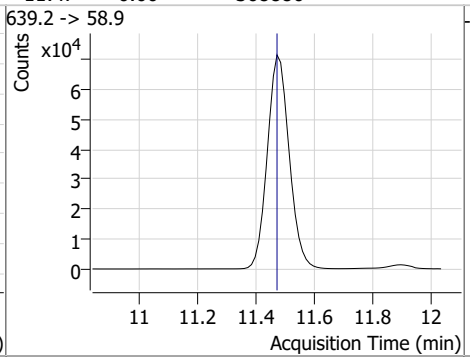


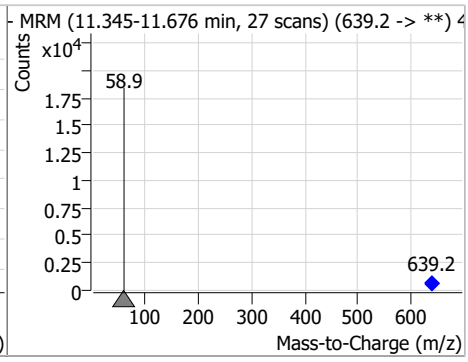




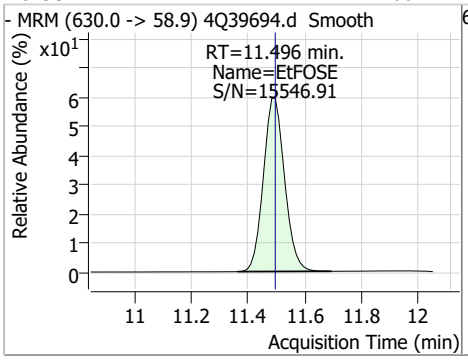
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.60	11.47	0.00	368880				

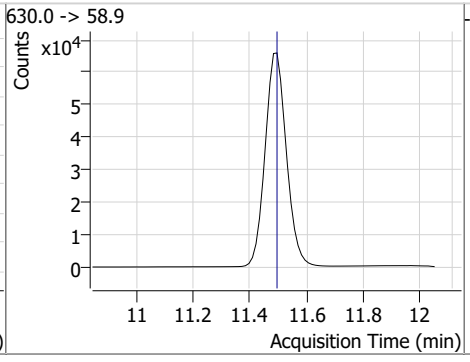


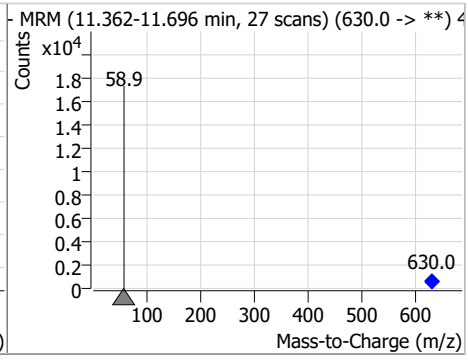




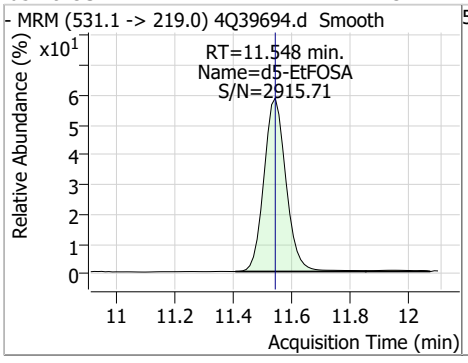
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.00	11.50	0.00	343672				

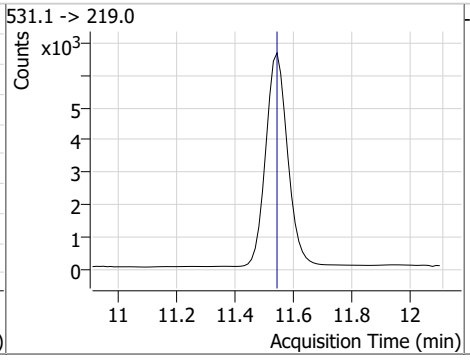


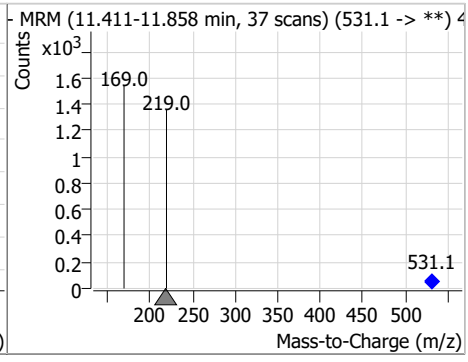




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.73	11.55	0.00	34580				

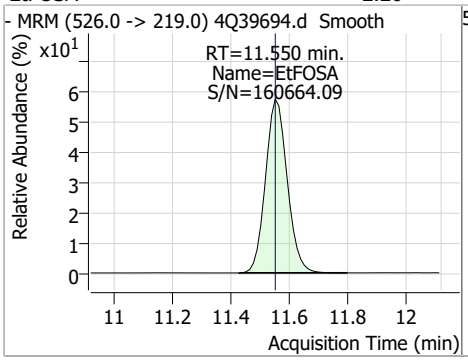


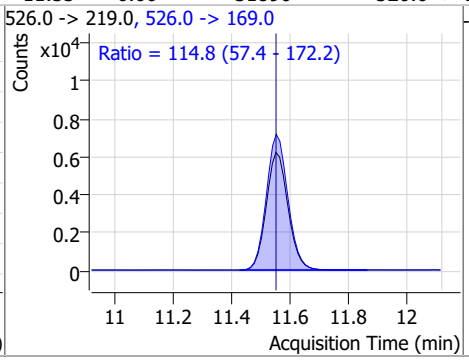


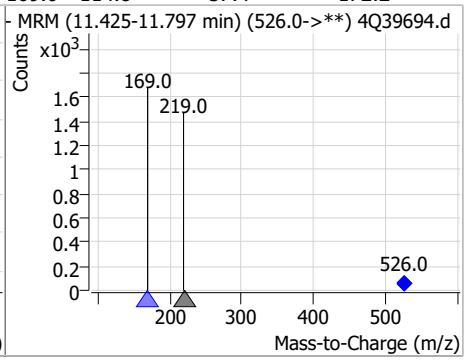


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.20	11.55	0.00	31890	526.0 -> 169.0	114.8	57.4	172.2







7.6.5

7

Manual Integration Approval Summary

Sample Number: S4Q571-ICC571
Lab FileID: 4Q39694.D
Injection Time: 01/25/23 13:55
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39695.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 2:09:56 PM
Sample Name : ic571-5
Vial : P1-A6
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	408897	10.00	µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	269912	5.00	µg/L	0.012
M5-PFHxA	6.172	318.0 -> 273.0	171494	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	96487	2.50	µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	152326	2.50	µg/L	-0.012
M9-PFNA	8.360	472.1 -> 427.0	71058	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	58494	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	62258	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	64377	1.25	µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	45023	1.25	µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	56001	2.50	µg/L	-0.012
M3-PFBS	6.089	302.1 -> 79.9	46575	2.50	µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	32268	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	40278	2.50	µg/L	-0.012
M2-4:2FTS	5.823	329.1 -> 80.9	4000	5.00	µg/L	0.000
M2-6:2FTS	7.524	429.1 -> 80.9	8667	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	11705	5.00	µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	45543	5.00	µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	129215	10.00	µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	38262	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	302282	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	344405	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	29030	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	24722	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	40141	2.50	µg/L	-0.012
13C3-PFBA	3.190	216.0 -> 172.0	224932	5.00	µg/L	0.013
18O2-PFHxS	7.903	403.0 -> 83.9	21751	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	170705	2.50	µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	51665	1.25	µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	80616	1.25	µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	161087	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4000	5.10	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-6:2FTS	7.524	429.1 -> 80.9	8667	4.94	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-8:2FTS	8.641	529.1 -> 80.9	11705	4.87	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-PFDoDA	9.793	615.1 -> 570.0	64377	1.28	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFTeDA	10.499	715.2 -> 670.0	45023	1.26	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-PFBS	6.089	302.1 -> 79.9	46575	2.48	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFHxS	7.904	402.1 -> 79.9	32268	2.54	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	3.186	216.8 -> 171.9	408897	10.08 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFHpA	7.106	367.1 -> 322.0	96487	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C5-PFHxA	6.172	318.0 -> 273.0	171494	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C5-PFPeA	4.876	268.3 -> 223.0	269912	5.15 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C6-PFDA	8.879	519.1 -> 474.1	58494	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C7-PFUnDA	9.373	570.0 -> 525.1	62258	1.27 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C8-FOSA	10.235	506.1 -> 77.8	56001	2.44 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-PFOA	7.776	421.1 -> 376.0	152326	2.49 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C8-PFOS	9.055	507.1 -> 79.9	40278	2.46 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C9-PFNA	8.360	472.1 -> 427.0	71058	1.24 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSAA	8.924	573.2 -> 419.0	45543	4.94 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	129215	10.05 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
d3-MeFOSA	11.315	515.0 -> 219.0	24722	2.35 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%		
d5-EtFOSAA	9.133	589.2 -> 419.0	38262	4.77 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
d7-MeFOSE	11.235	623.2 -> 58.9	302282	25.25 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
d9-EtFOSE	11.470	639.2 -> 58.9	344405	25.12 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
d5-EtFOSA	11.535	531.1 -> 219.0	29030	2.32 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	124780	19.09 µg/L		99
		327.1 -> 80.9	57221			
6:2FTS	7.524	427.1 -> 407.0	135986	19.80 µg/L		99
		427.1 -> 80.9	67948			
8:2FTS	8.641	527.1 -> 507.0	116368	20.55 µg/L		96
		527.1 -> 80.8	64744			
EtFOSAA	9.147	584.2 -> 419.1	32345	5.05 µg/L	m	92
		584.2 -> 526.0	14285			
FOSA	10.238	498.1 -> 77.9	115256	5.33 µg/L		100
		498.1 -> 478.0	2544			
MeFOSAA	8.925	570.1 -> 419.0	38834	5.76 µg/L	m	93
		570.1 -> 483.0	6472			
PFBA	3.195	212.8 -> 168.9	234087	20.57 µg/L		100
PFBS	6.090	298.7 -> 79.9	98184	4.66 µg/L		98
		298.7 -> 98.8	32497			
PFDA	8.879	512.9 -> 469.0	216813	5.20 µg/L		99
		512.9 -> 219.0	43375			
PFDoDA	9.794	613.1 -> 569.0	259003	5.22 µg/L		100
		613.1 -> 319.0	37287			
PFDS	9.959	599.0 -> 79.9	46706	5.01 µg/L		99

Perfluorinated Compounds by LC/MS/MS

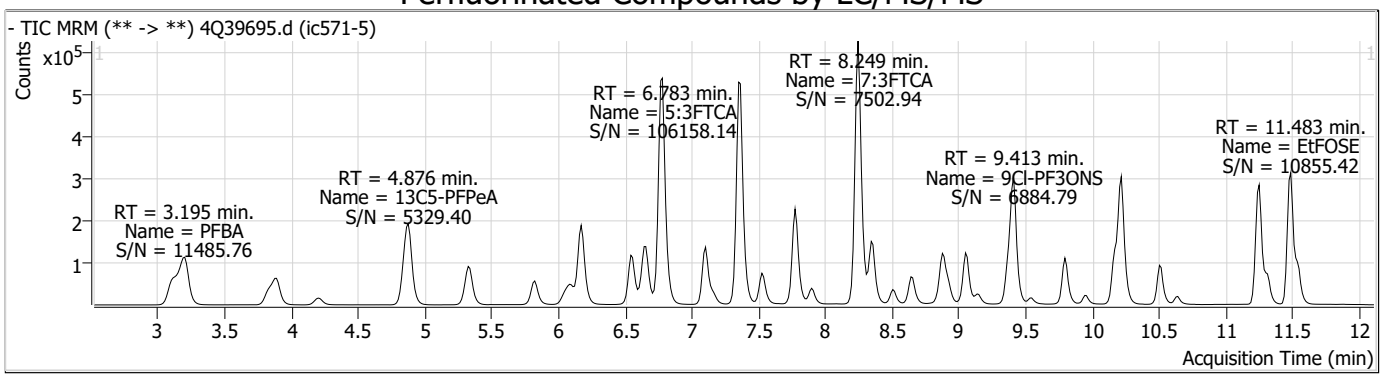
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	21423				
PFHpA	7.106	363.1 -> 319.0	320246	5.33	µg/L		99
		363.1 -> 169.0	53265				
PFHpS	8.513	449.0 -> 79.9	81258	4.99	µg/L		97
		449.0 -> 98.9	38906				
PFHxA	6.175	313.0 -> 269.0	356362	5.34	µg/L		100
		313.0 -> 118.9	10435				
PFHxS	7.905	398.7 -> 79.9	48088	4.61	µg/L	m	97
		398.7 -> 98.9	22376				
PFNA	8.360	463.0 -> 419.0	275346	5.33	µg/L		100
		463.0 -> 219.0	64242				
PFNS	9.549	548.8 -> 79.9	33440	4.66	µg/L		95
		548.8 -> 98.9	16491				
PFOA	7.777	413.0 -> 369.0	364057	5.38	µg/L		99
		413.0 -> 169.0	72019				
PFOS	9.057	498.9 -> 79.9	89420	4.75	µg/L	m	98
		498.9 -> 98.8	42122				
PFPeA	4.879	263.0 -> 219.0	618160	10.44	µg/L		100
PFPeS	7.171	349.1 -> 79.9	47279	4.70	µg/L		99
		349.1 -> 98.9	18214				
PFTeDA	10.500	713.1 -> 669.0	241275	5.33	µg/L		100
		713.1 -> 168.9	20543				
PFTrDA	10.167	663.0 -> 619.0	324590	5.34	µg/L		98
		663.0 -> 168.9	31876				
PFUnDA	9.374	563.1 -> 519.0	184344	4.89	µg/L		97
		563.1 -> 269.1	35628				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	619354	20.51	µg/L		98
		632.9 -> 452.9	190541				
9Cl-PF3ONS	9.413	530.8 -> 351.0	729769	19.83	µg/L		99
		532.8 -> 353.0	222008				
ADONA	7.369	376.9 -> 250.9	1390455	19.95	µg/L		98
		376.9 -> 84.8	502364				
HFPO-DA	6.552	284.9 -> 168.9	258993	21.27	µg/L		100
		284.9 -> 184.9	27281				
3:3FTCA	4.204	241.0 -> 177.0	69868	25.18	µg/L		98
		241.0 -> 117.0	6021				
5:3FTCA	6.783	341.0 -> 237.1	1136065	128.08	µg/L		99
		341.0 -> 217.0	859022				
7:3FTCA	8.249	441.0 -> 316.9	679840	133.46	µg/L		98
		441.0 -> 336.9	1518133				
EtFOSA	11.550	526.0 -> 219.0	65245	5.35	µg/L		97
		526.0 -> 169.0	77219				
EtFOSE	11.483	630.0 -> 58.9	706251	52.81	µg/L		100
MeFOSA	11.316	511.9 -> 219.0	48161	5.11	µg/L		100
		511.9 -> 169.0	62208				
MeFOSE	11.248	616.1 -> 58.9	655693	51.34	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	39137	4.97	µg/L		97
		699.1 -> 98.8	21360				
NFDHA	6.053	295.0 -> 201.0	45897	10.47	µg/L		99
		295.0 -> 84.9	13161				
PFMBA	5.328	279.0 -> 85.1	383589	10.40	µg/L		100
PFMPA	3.882	229.0 -> 84.9	390180	10.25	µg/L		100
PFEESA	6.660	314.8 -> 134.9	533425	9.36	µg/L		100
		314.8 -> 82.9	16308				

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

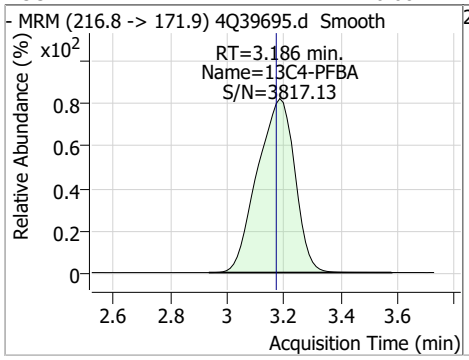
Perfluorinated Compounds by LC/MS/MS

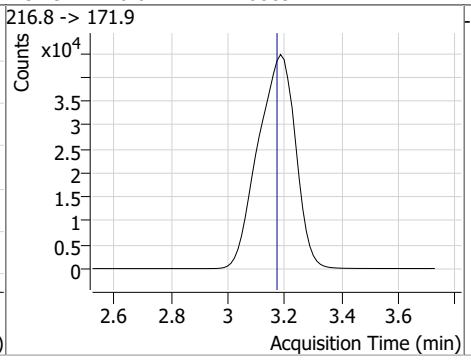
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

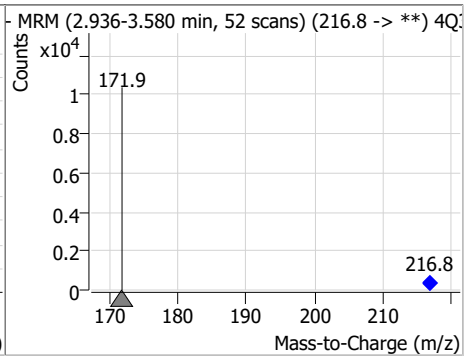
Perfluorinated Compounds by LC/MS/MS



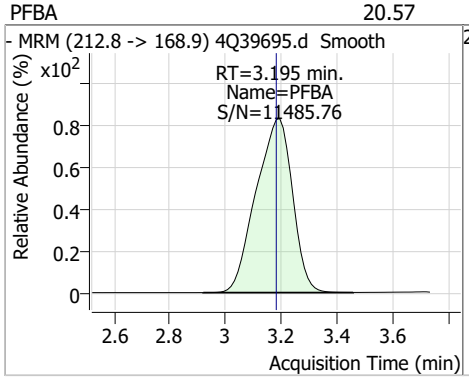
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.08	3.19	0.01	408897				

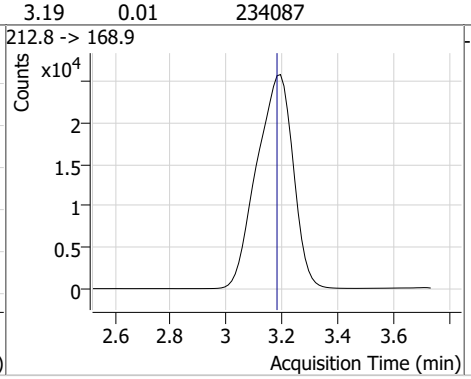


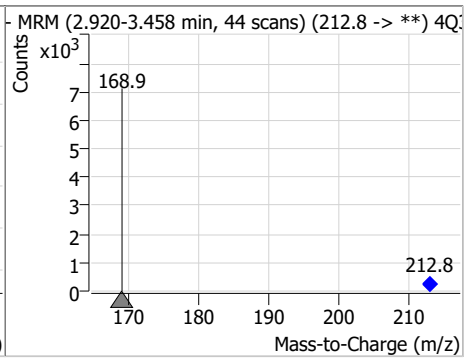




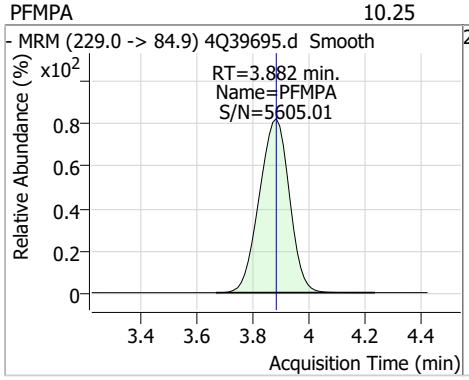
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.57	3.19	0.01	234087				

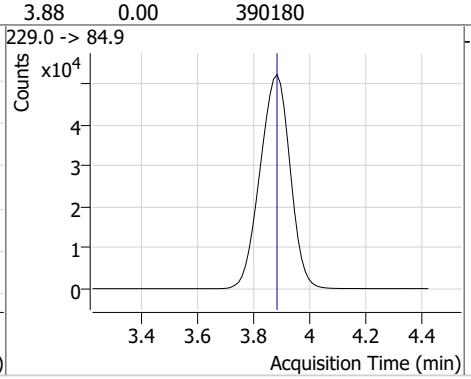


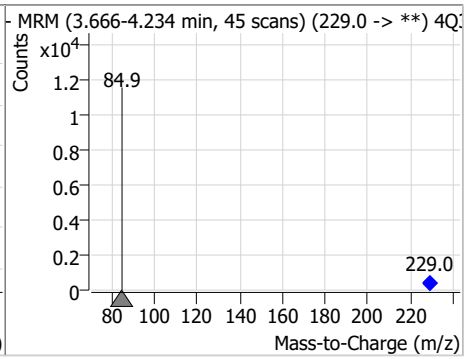




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	10.25	3.88	0.00	390180				

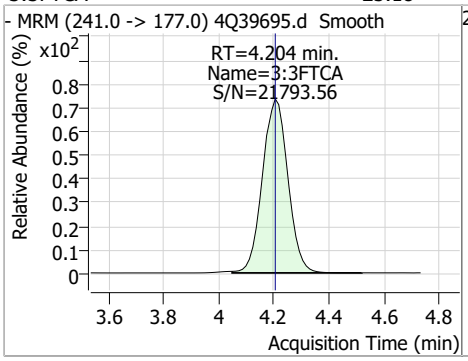


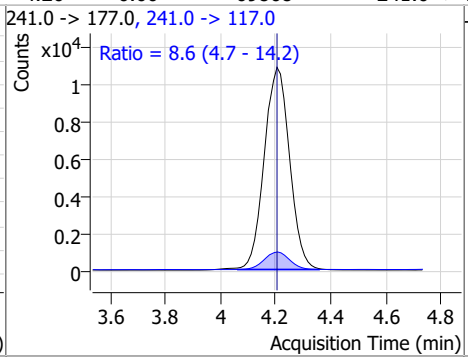


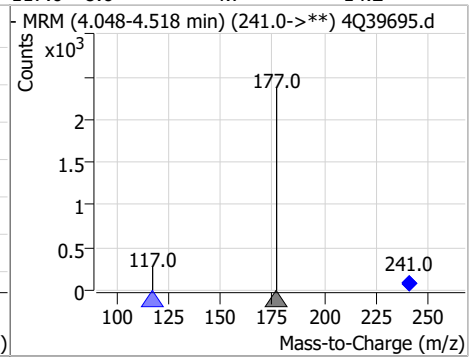


Perfluorinated Compounds by LC/MS/MS

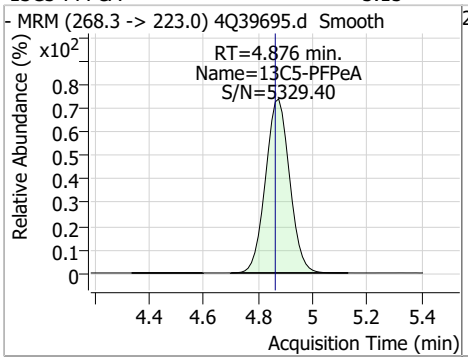
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	25.18	4.20	0.00	69868	241.0 -> 117.0	8.6	4.7	14.2

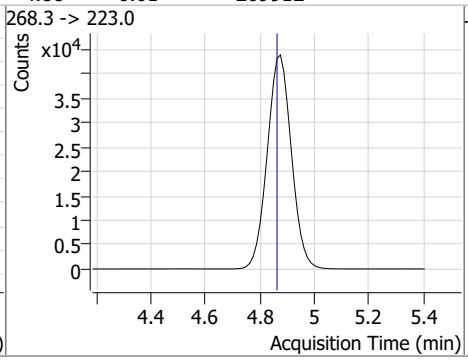


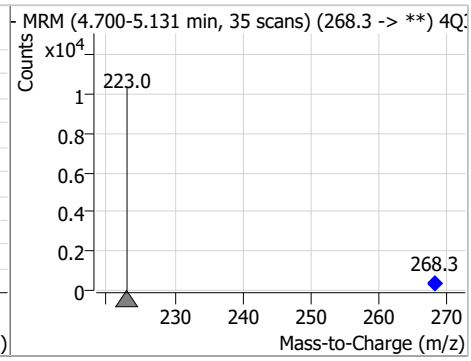




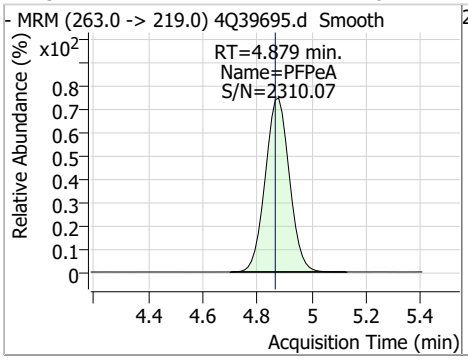
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.15	4.88	0.01	269912				

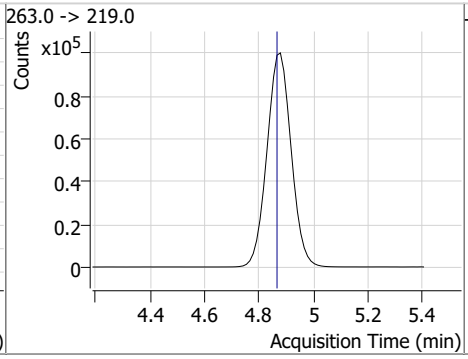


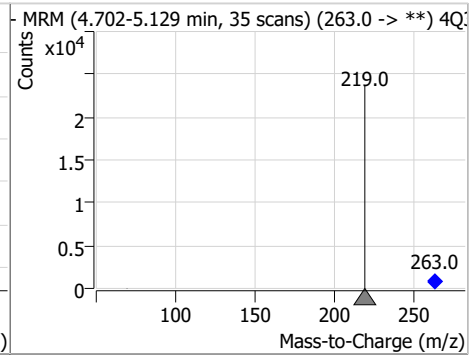




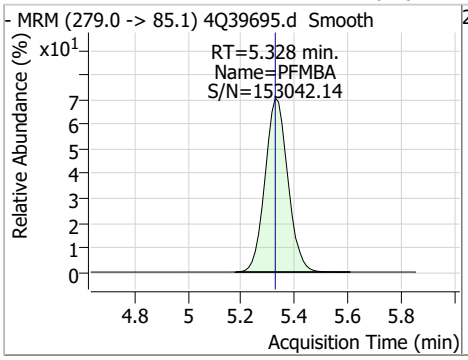
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.44	4.88	0.01	618160				

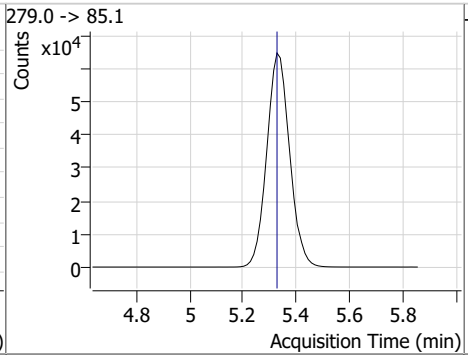


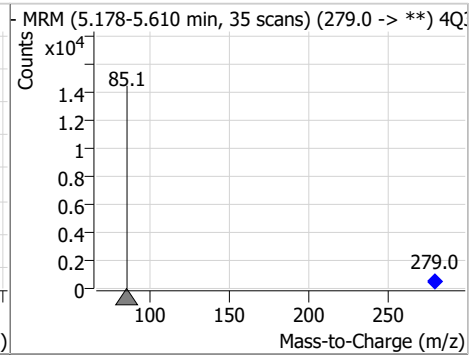




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	10.40	5.33	0.00	383589				

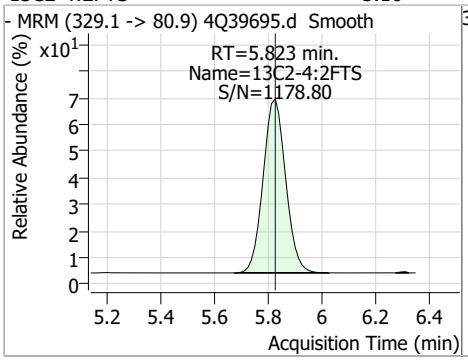


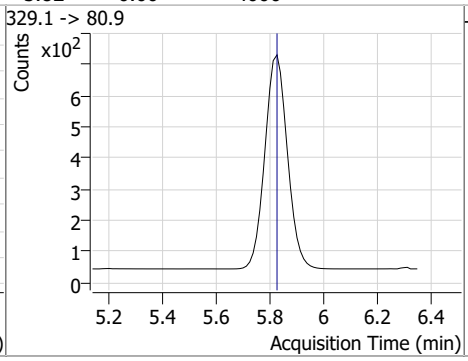


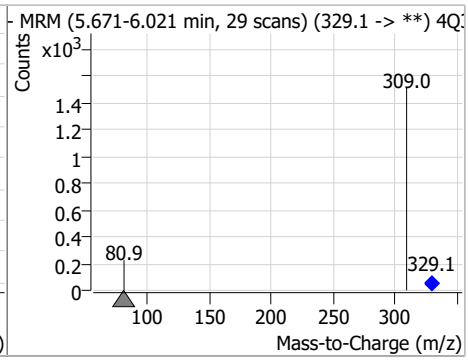


Perfluorinated Compounds by LC/MS/MS

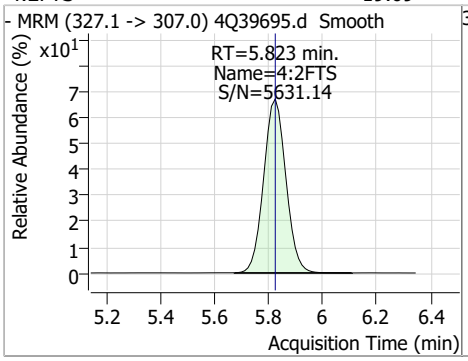
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.10	5.82	0.00	4000				

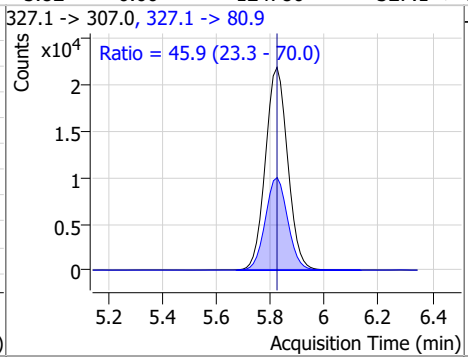


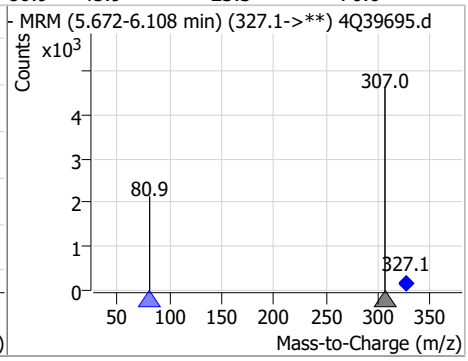




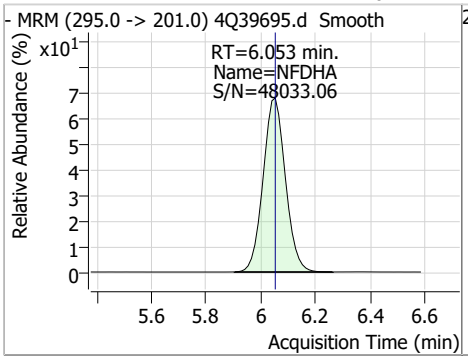
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.09	5.82	0.00	124780	327.1 -> 80.9	45.9	23.3	70.0

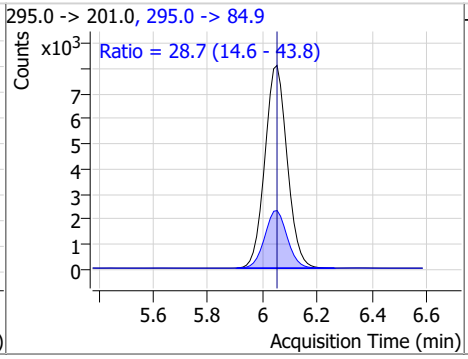


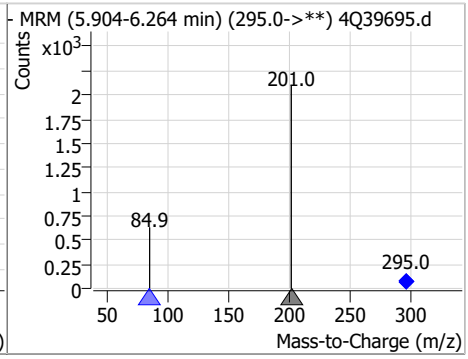




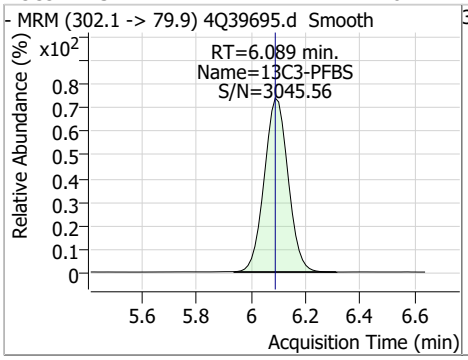
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	10.47	6.05	0.00	45897	295.0 -> 84.9	28.7	14.6	43.8

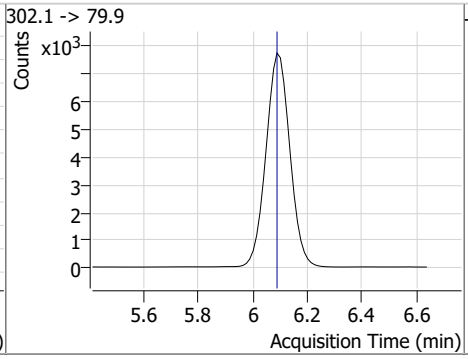


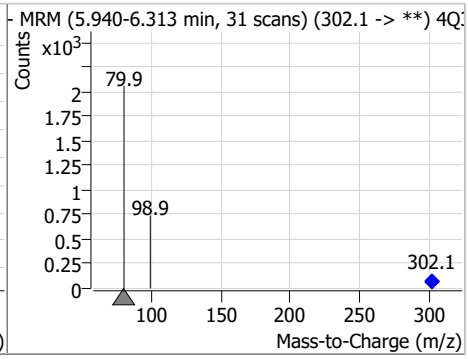




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.48	6.09	0.00	46575				

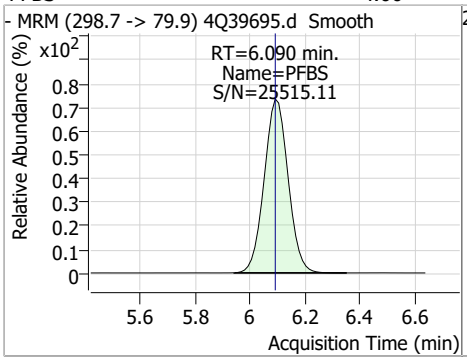


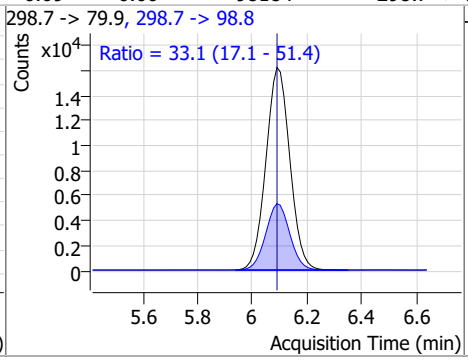


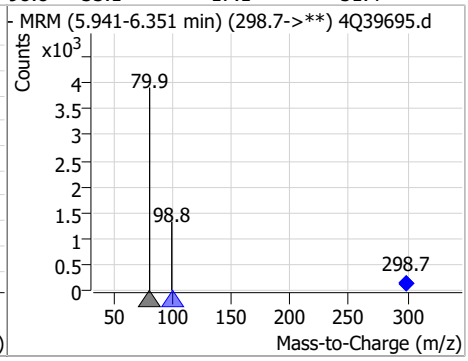


Perfluorinated Compounds by LC/MS/MS

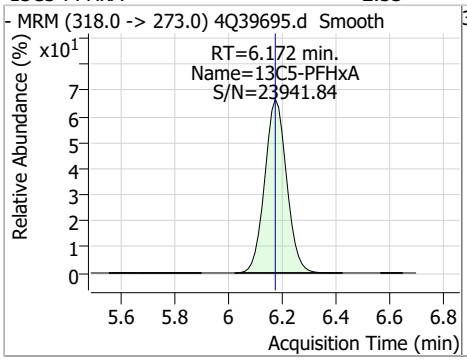
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.66	6.09	0.00	98184	298.7 -> 98.8	33.1	17.1	51.4

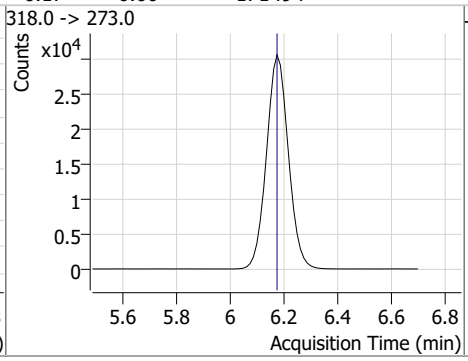


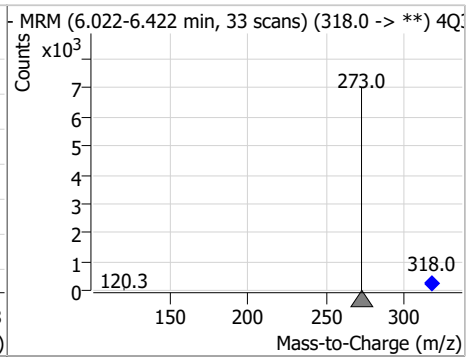




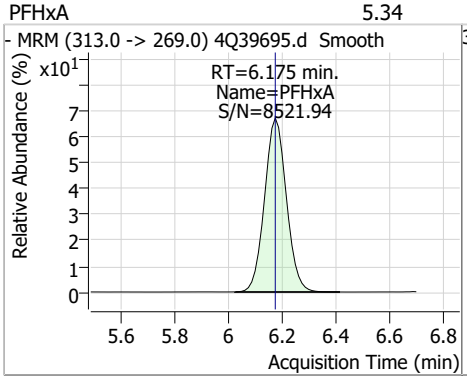
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	6.17	0.00	171494				

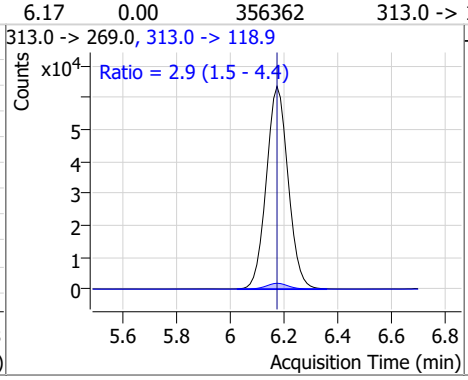


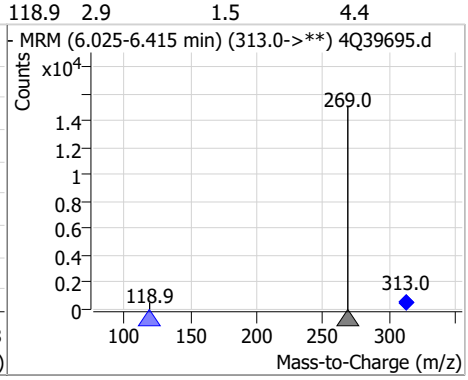




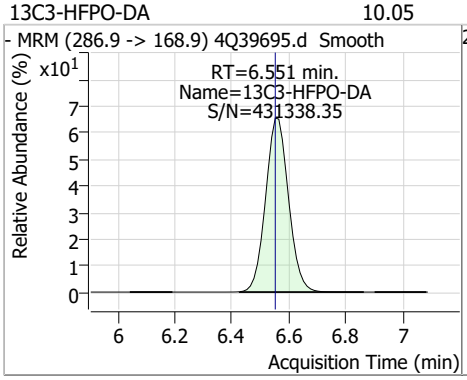
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.34	6.17	0.00	356362	313.0 -> 118.9	2.9	1.5	4.4

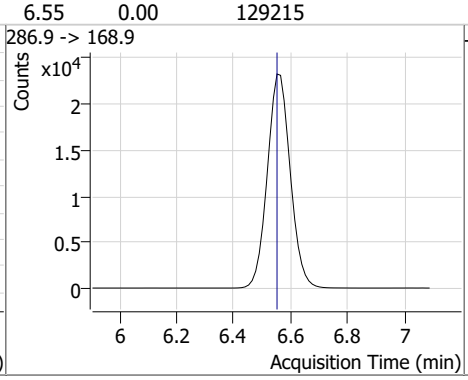


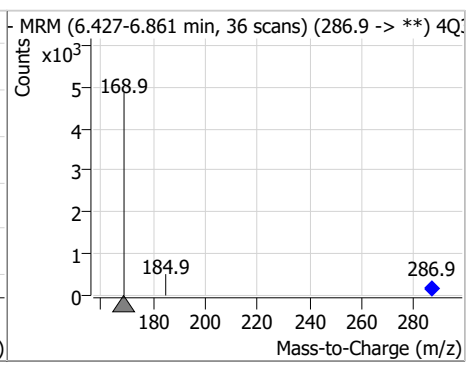




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.05	6.55	0.00	129215				

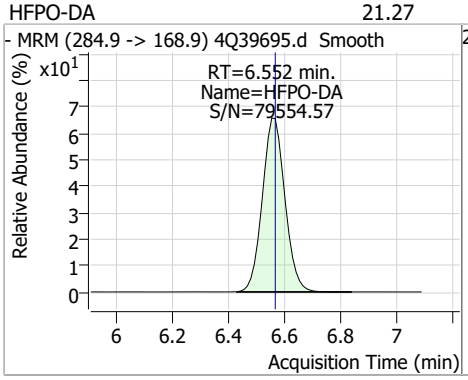


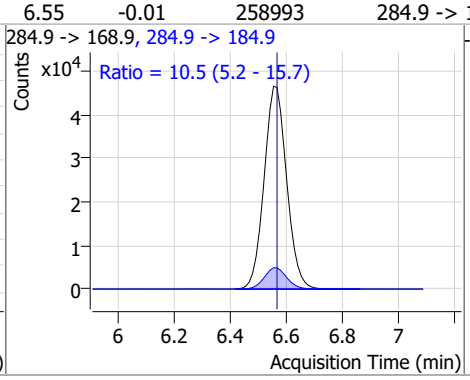


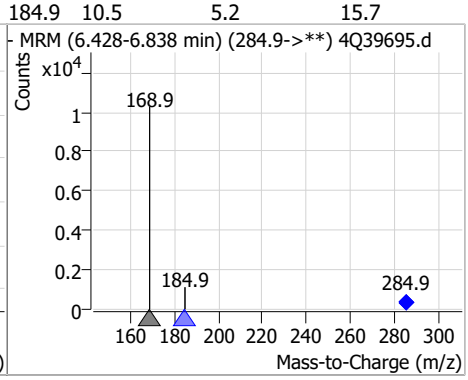


Perfluorinated Compounds by LC/MS/MS

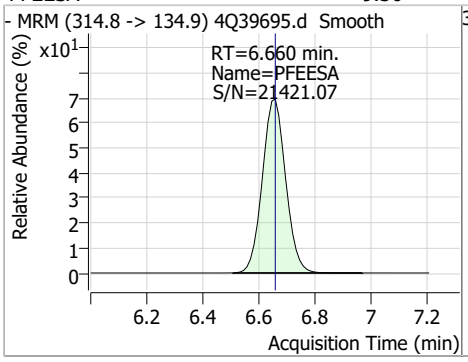
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.27	6.55	-0.01	258993	284.9 -> 184.9	10.5	5.2	15.7

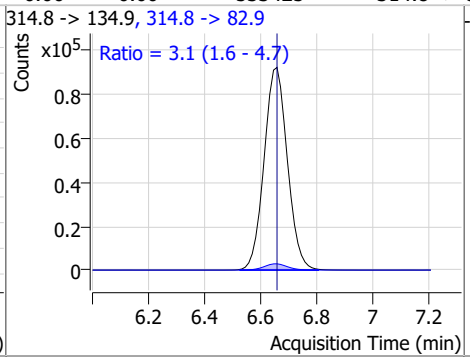


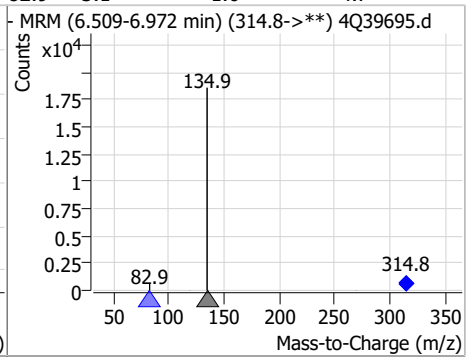




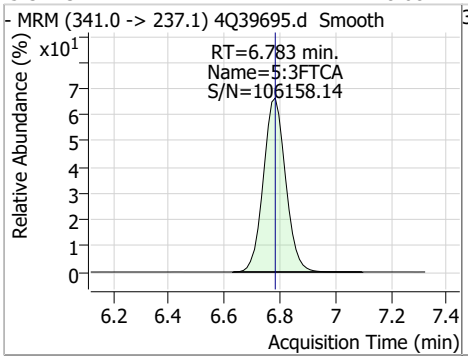
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	9.36	6.66	0.00	533425	314.8 -> 82.9	3.1	1.6	4.7

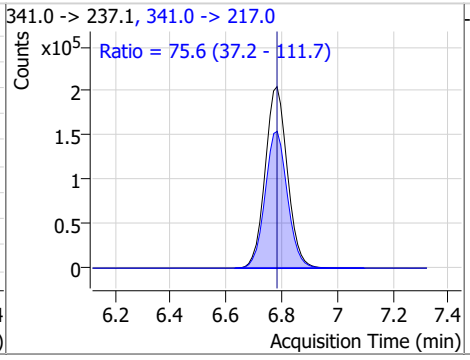


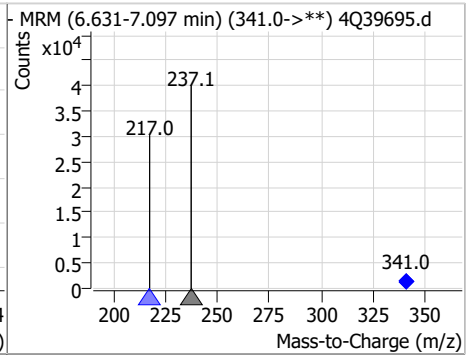




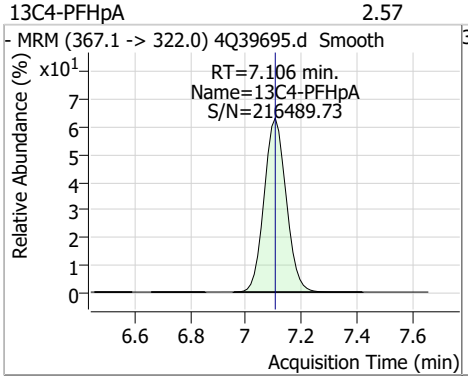
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	128.08	6.78	0.00	1136065	341.0 -> 217.0	75.6	37.2	111.7

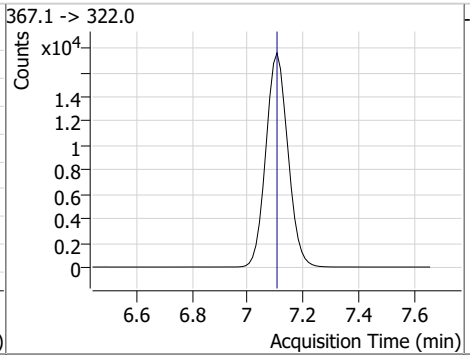


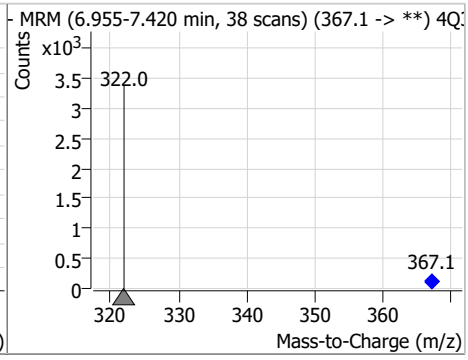




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	7.11	0.00	96487				

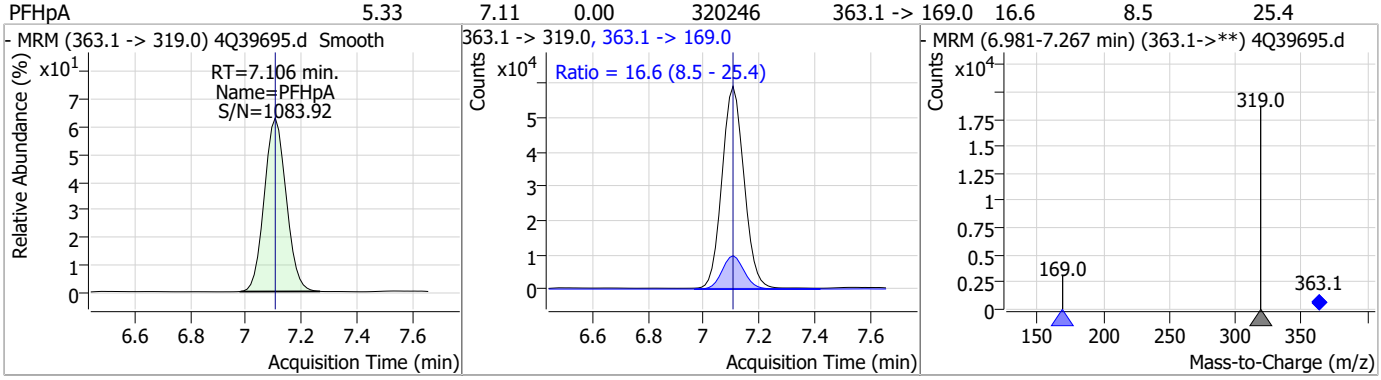




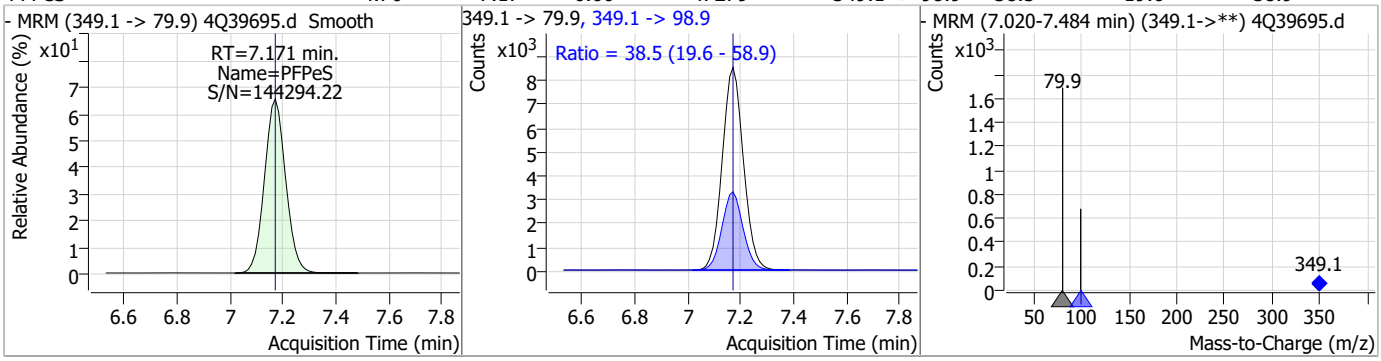


Perfluorinated Compounds by LC/MS/MS

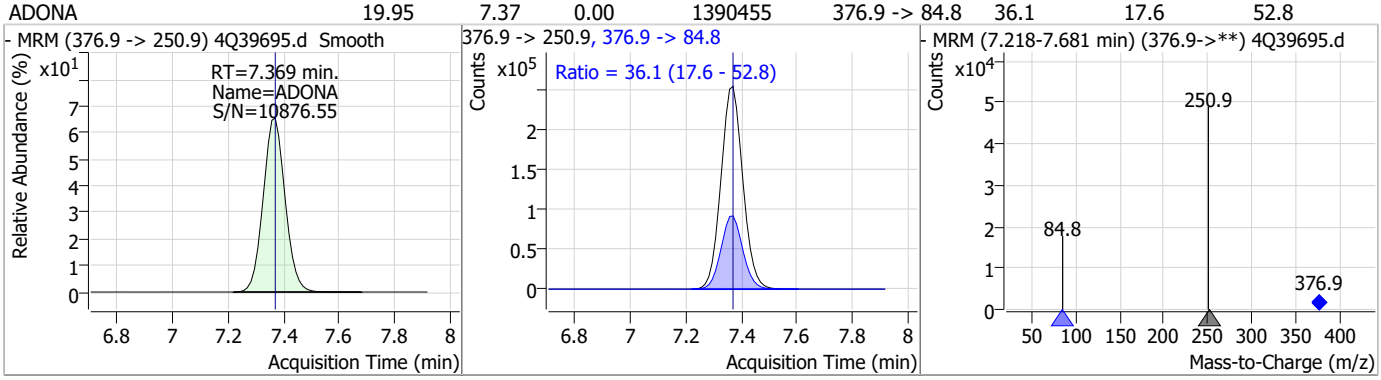
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.33	7.11	0.00	320246	363.1 -> 169.0	16.6	8.5	25.4



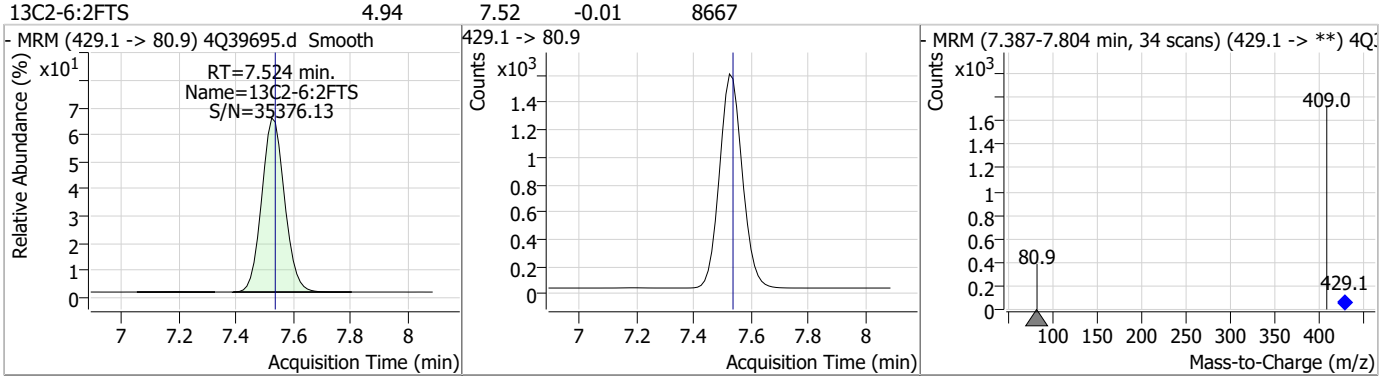
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.70	7.17	0.00	47279	349.1 -> 98.9	38.5	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.95	7.37	0.00	1390455	376.9 -> 84.8	36.1	17.6	52.8

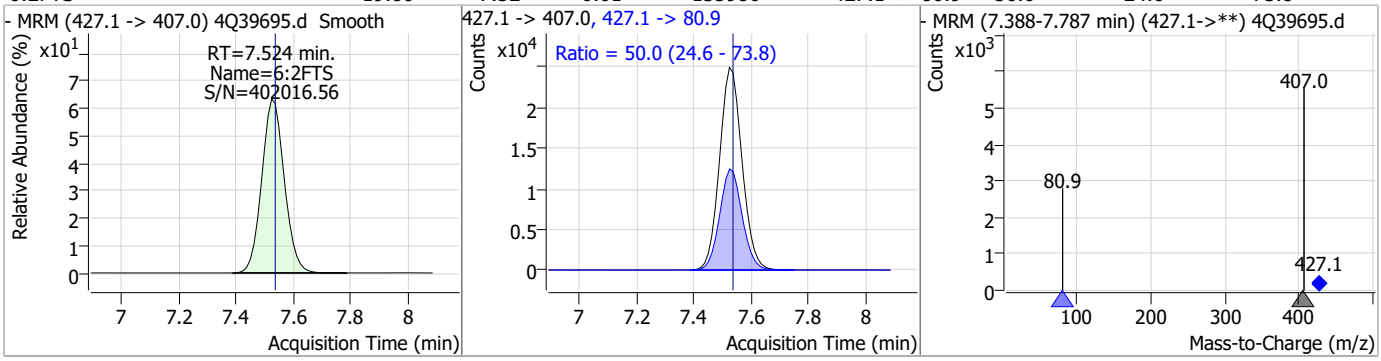


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.94	7.52	-0.01	8667				

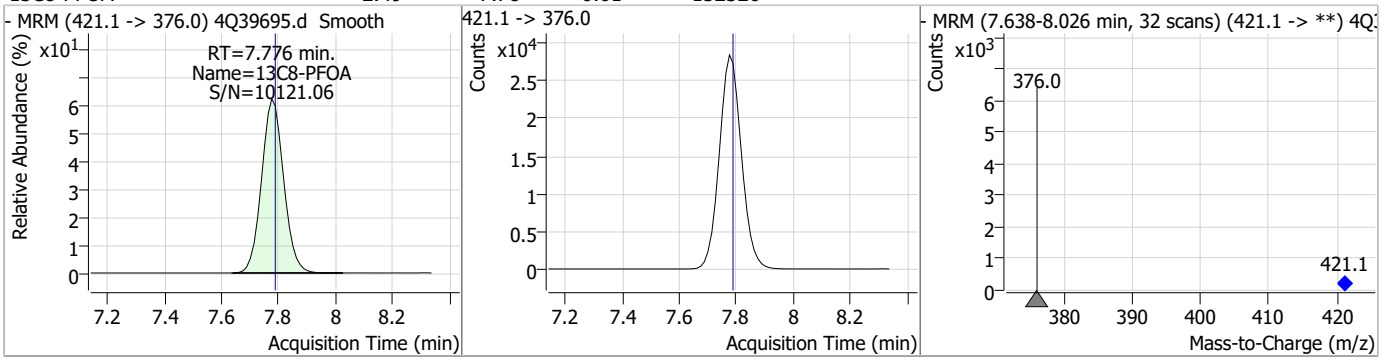


Perfluorinated Compounds by LC/MS/MS

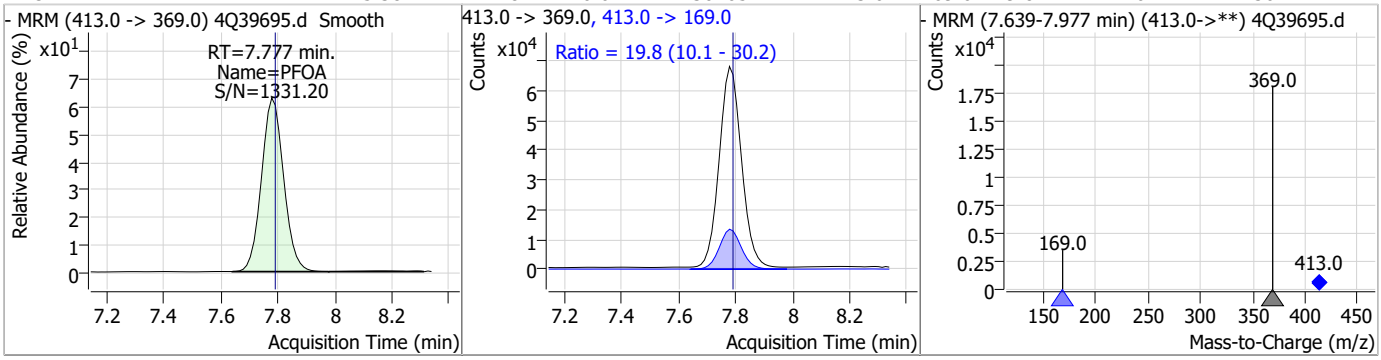
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.80	7.52	-0.01	135986	427.1 -> 80.9	50.0	24.6	73.8



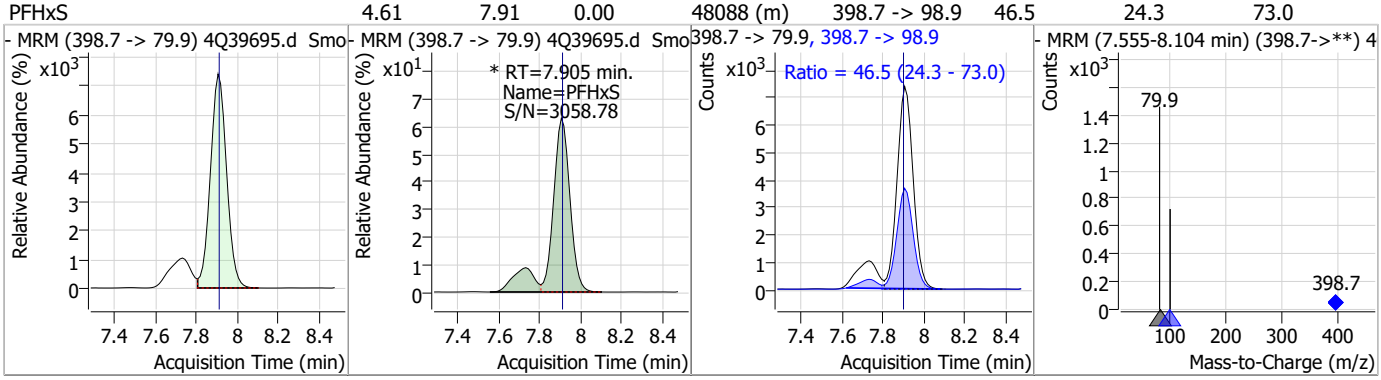
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.78	-0.01	152326				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.38	7.78	-0.01	364057	413.0 -> 169.0	19.8	10.1	30.2

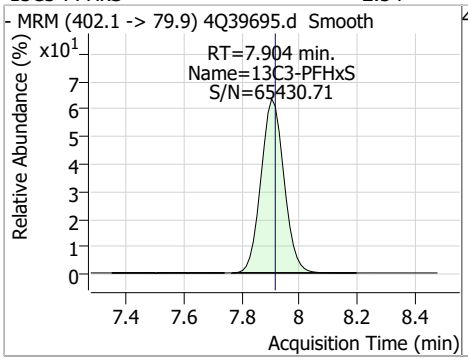


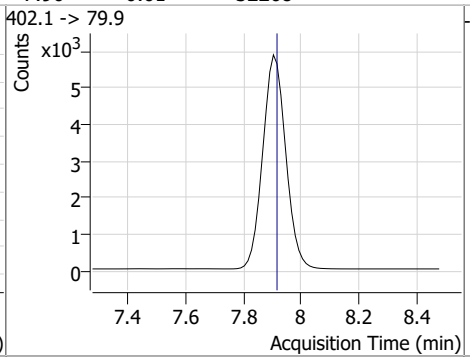
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.61	7.91	0.00	48088 (m)	398.7 -> 98.9	46.5	24.3	73.0

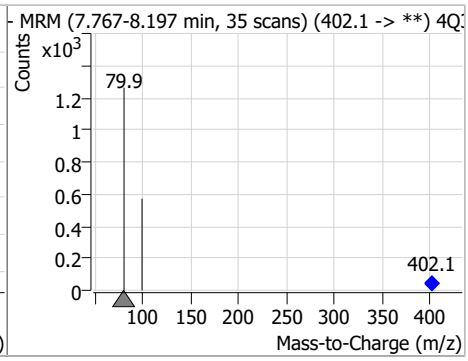


Perfluorinated Compounds by LC/MS/MS

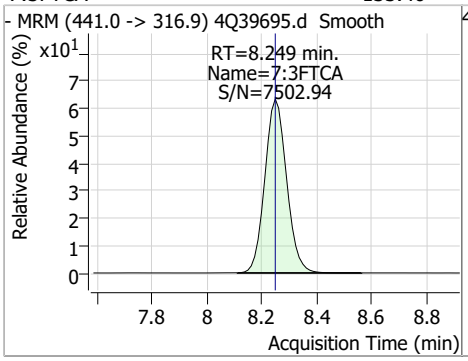
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.54	7.90	-0.01	32268				

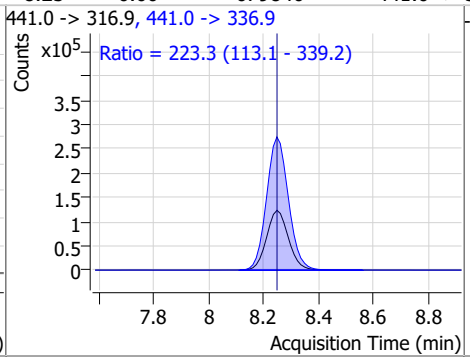


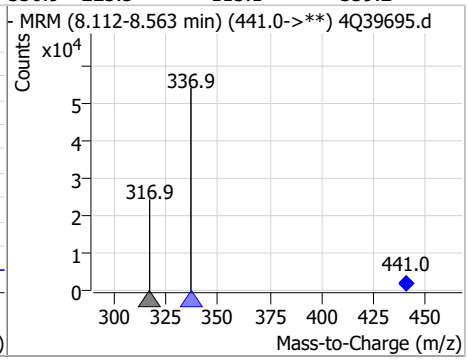




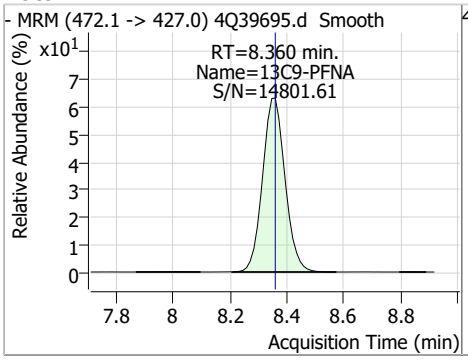
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	133.46	8.25	0.00	679840	441.0 -> 336.9	223.3	113.1	339.2

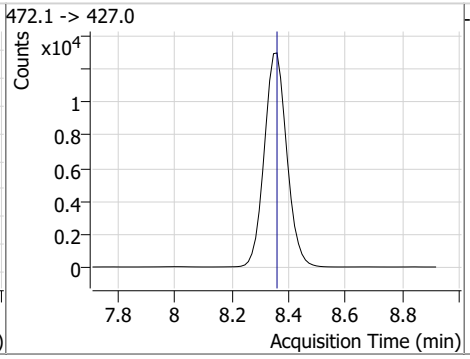


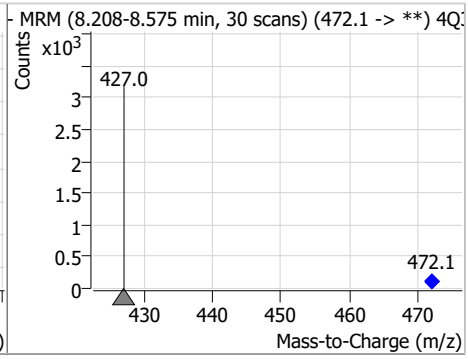




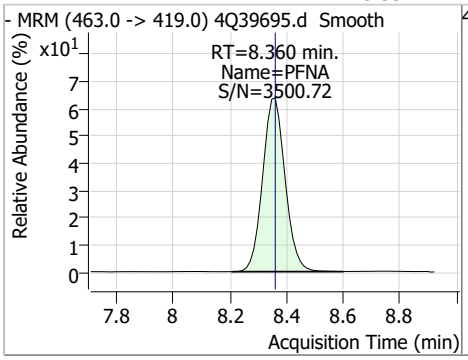
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	8.36	0.00	71058				

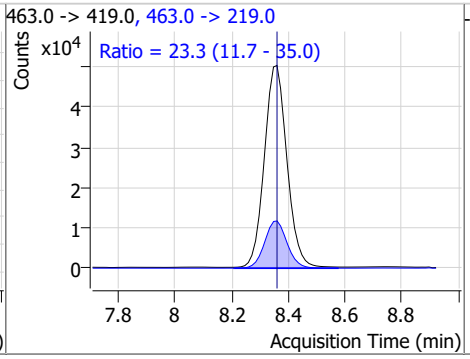


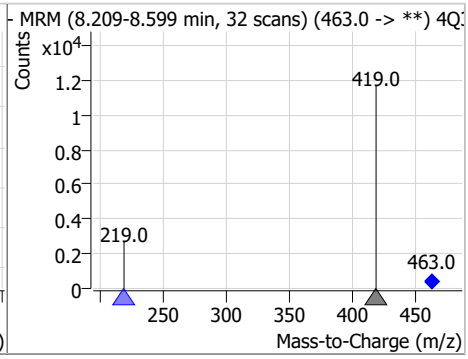




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.33	8.36	0.00	275346	463.0 -> 219.0	23.3	11.7	35.0

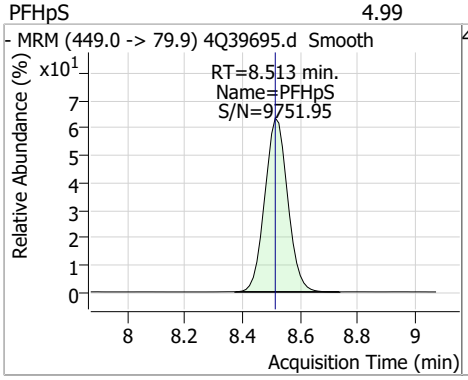


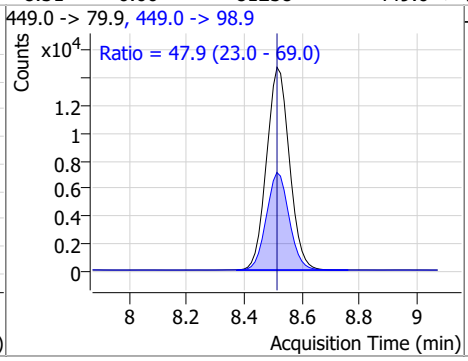


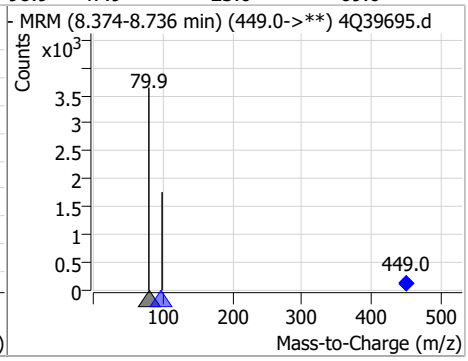


Perfluorinated Compounds by LC/MS/MS

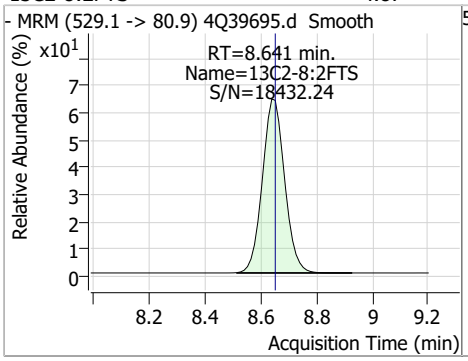
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.99	8.51	0.00	81258	449.0 -> 98.9	47.9	23.0	69.0

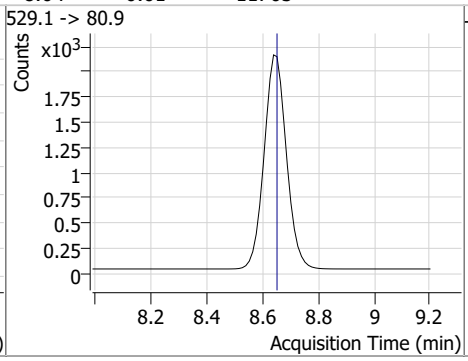


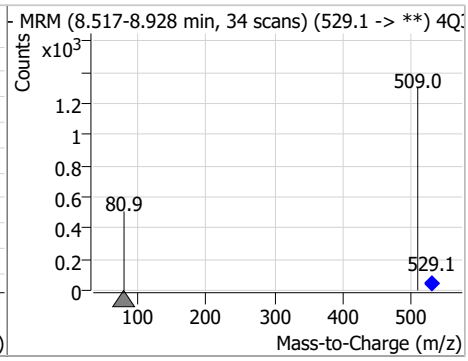




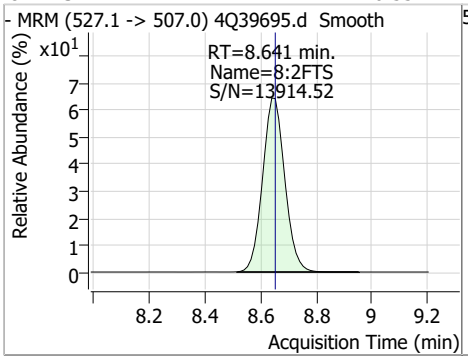
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.87	8.64	-0.01	11705				

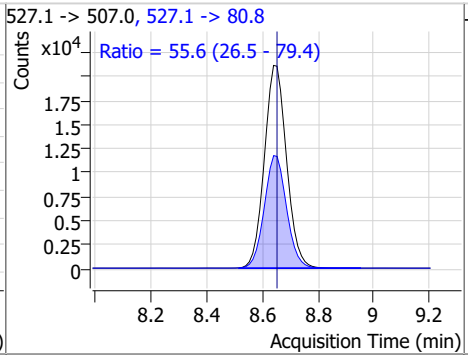


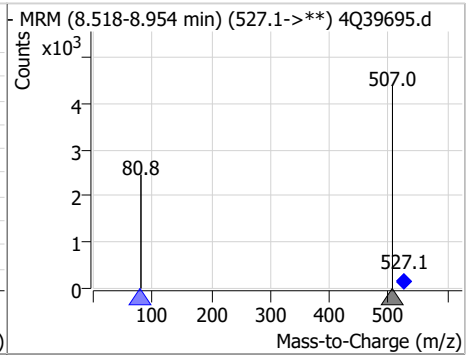




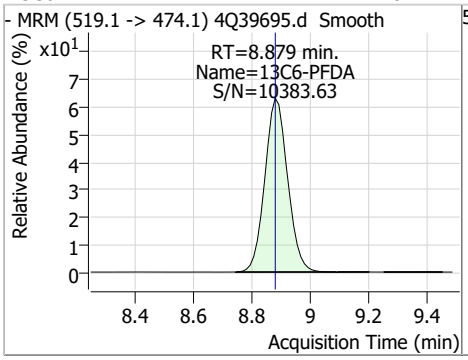
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.55	8.64	-0.01	116368	527.1 -> 80.8	55.6	26.5	79.4

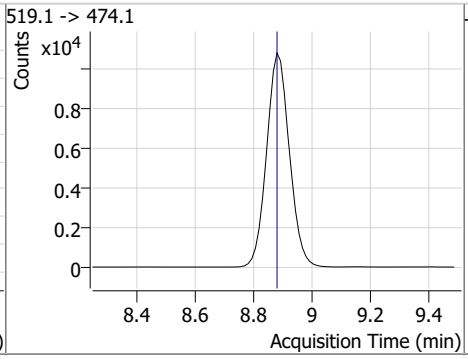


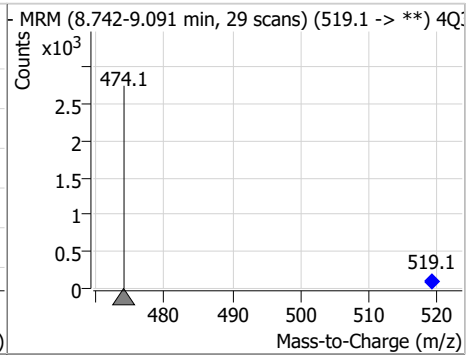




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.88	0.00	58494				

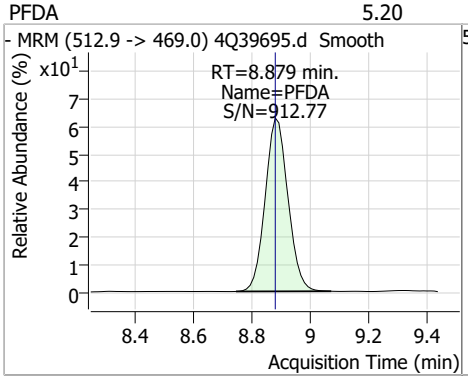


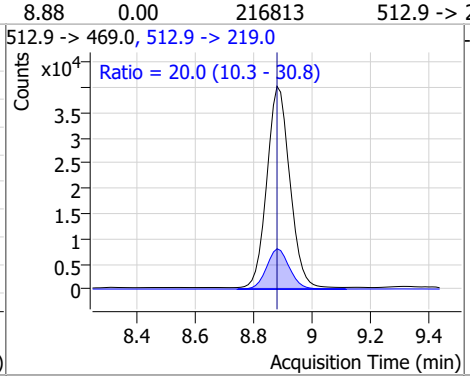


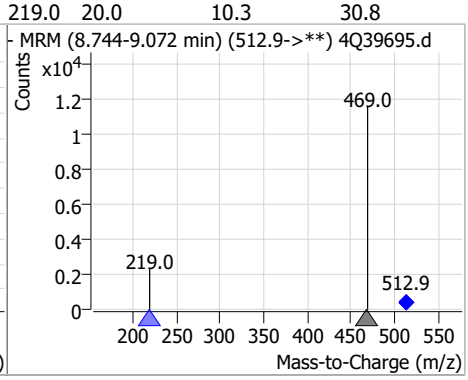


Perfluorinated Compounds by LC/MS/MS

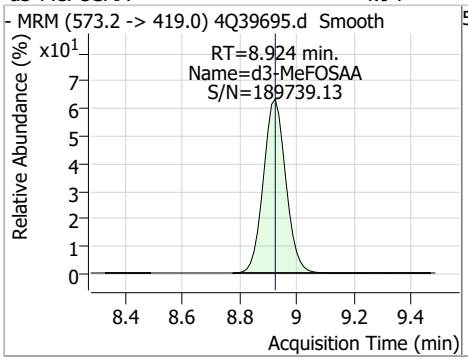
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.20	8.88	0.00	216813	512.9 -> 219.0	20.0	10.3	30.8

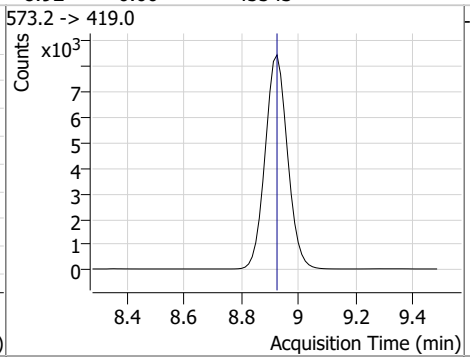


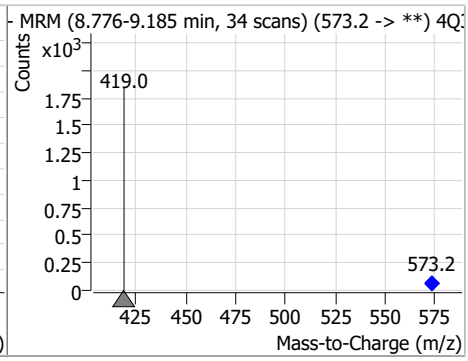




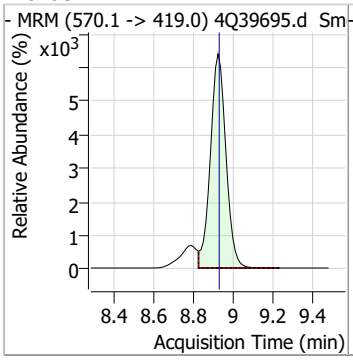
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.94	8.92	0.00	45543				

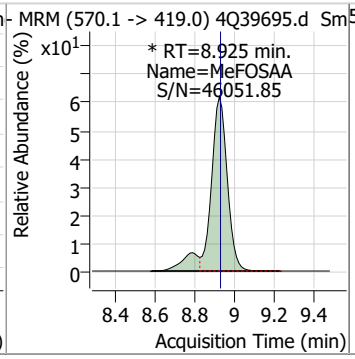


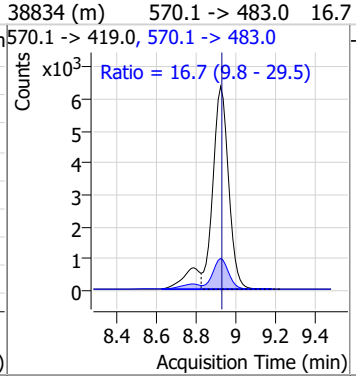


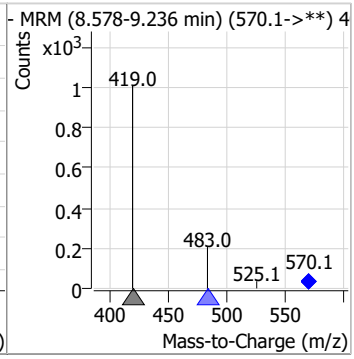


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.76	8.92	0.00	38834 (m)	570.1 -> 483.0	16.7	9.8	29.5

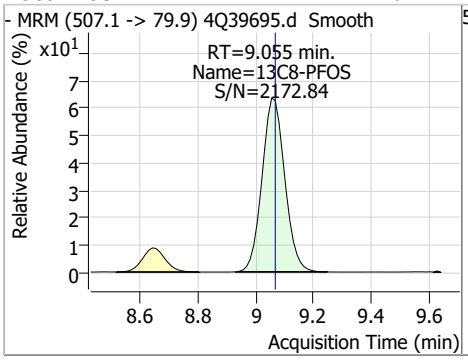


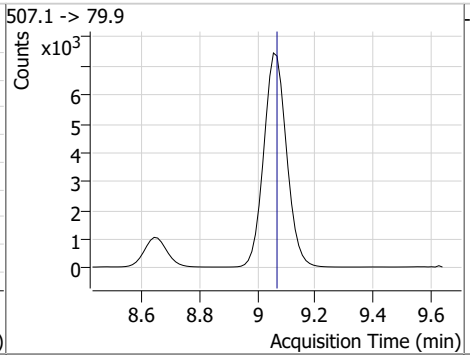


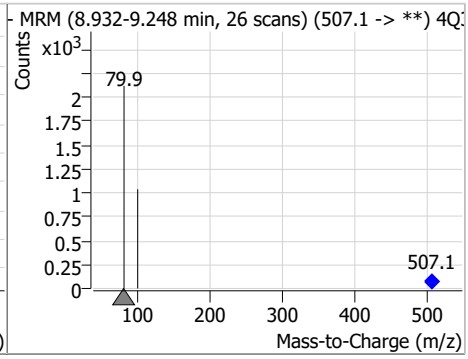




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	9.06	-0.01	40278				

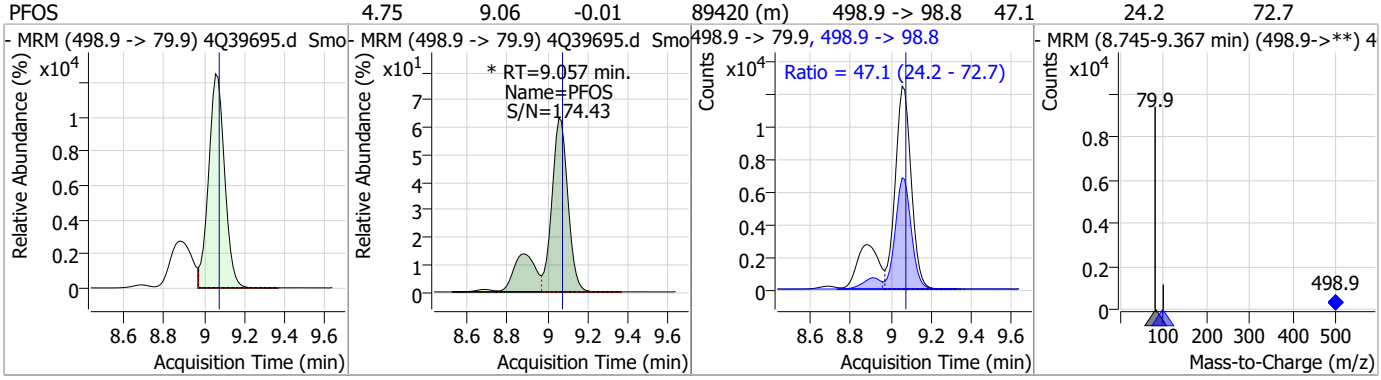




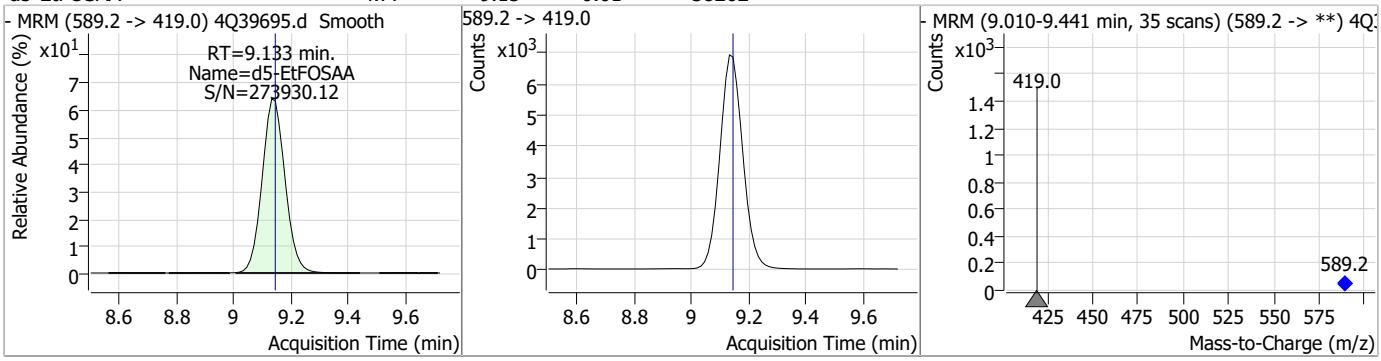


Perfluorinated Compounds by LC/MS/MS

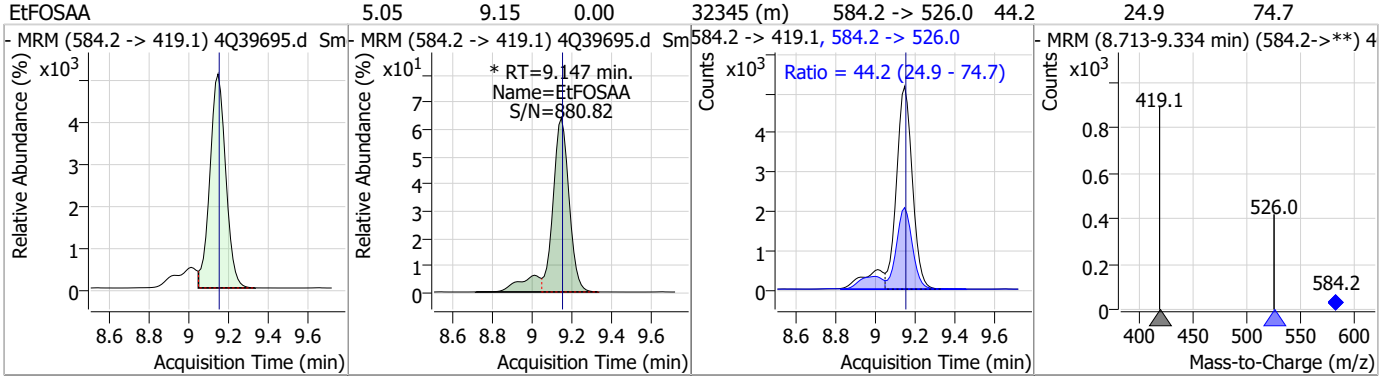
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.75	9.06	-0.01	89420 (m)	498.9 -> 98.8	47.1	24.2	72.7



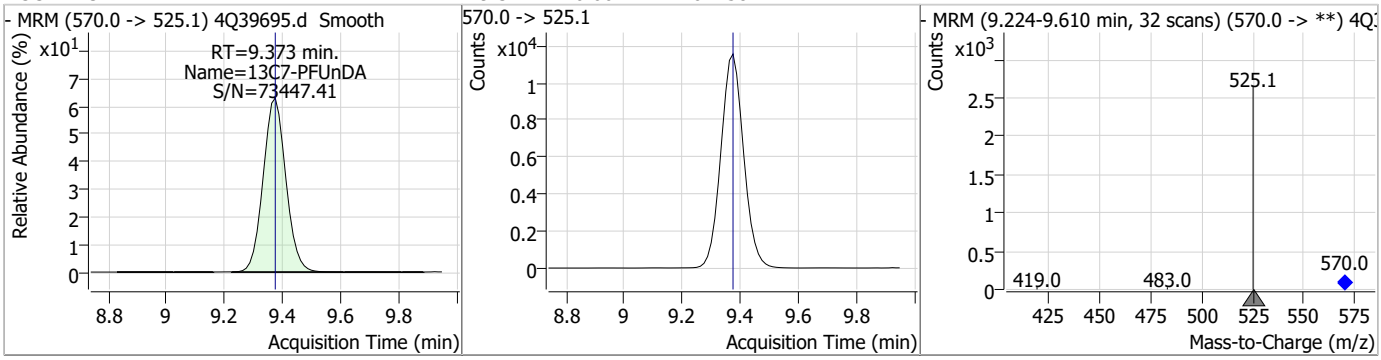
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.77	9.13	-0.01	38262				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.05	9.15	0.00	32345 (m)	584.2 -> 526.0	44.2	24.9	74.7

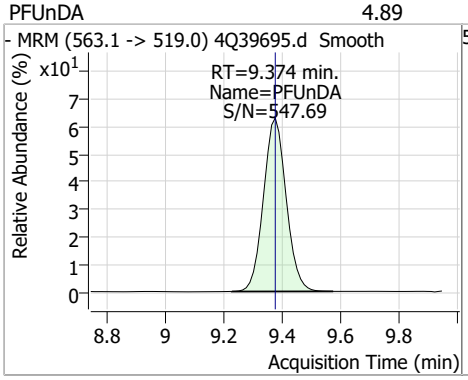


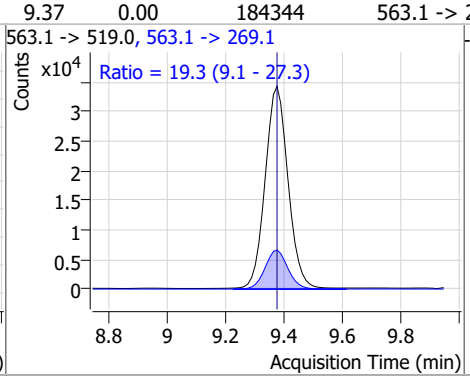
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	9.37	0.00	62258				

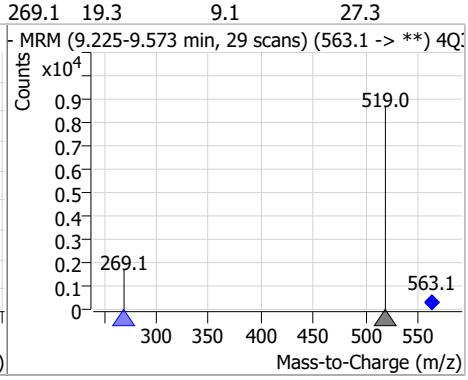


Perfluorinated Compounds by LC/MS/MS

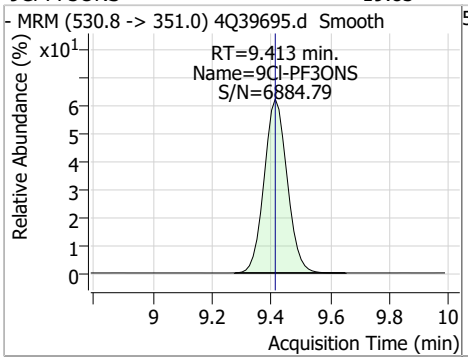
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.89	9.37	0.00	184344	563.1 -> 269.1	19.3	9.1	27.3

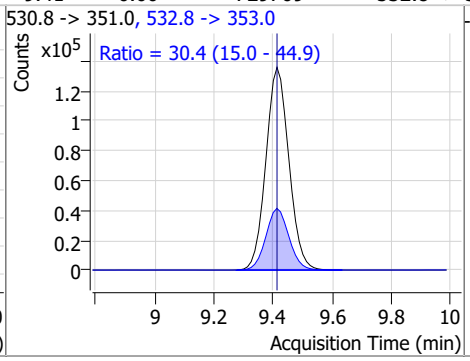


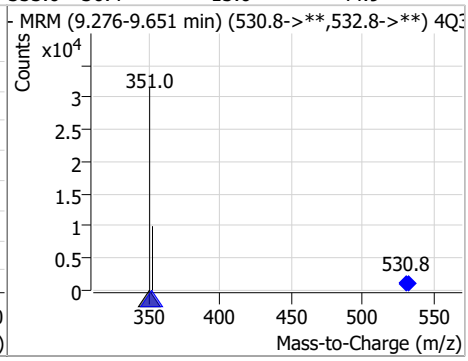




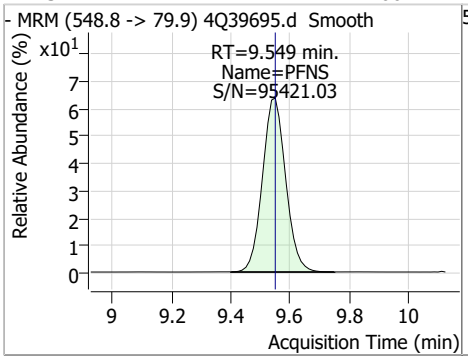
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.83	9.41	0.00	729769	532.8 -> 353.0	30.4	15.0	44.9

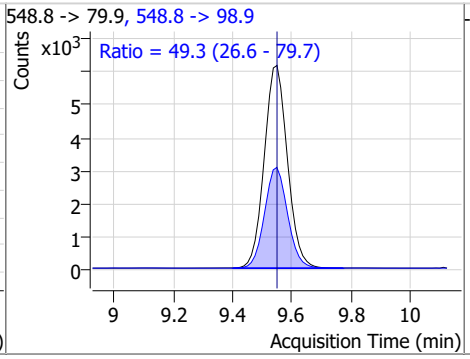


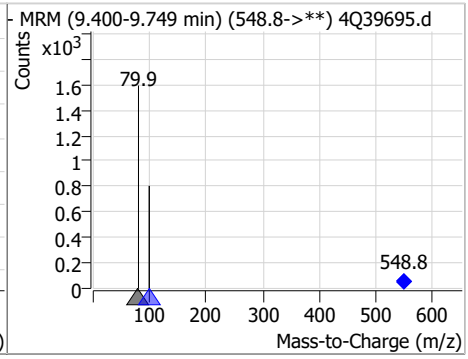




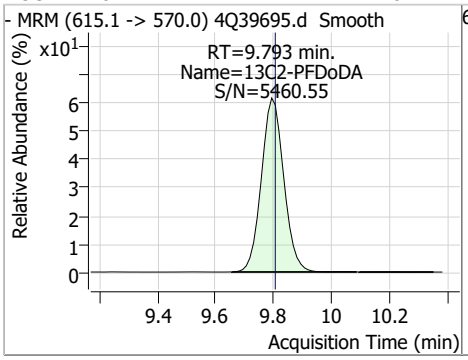
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.66	9.55	0.00	33440	548.8 -> 98.9	49.3	26.6	79.7

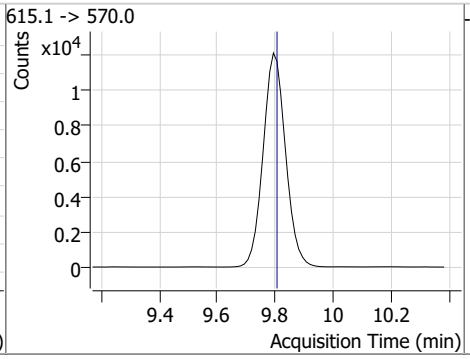


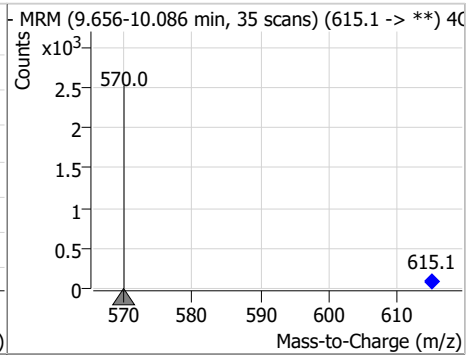




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.79	-0.01	64377				

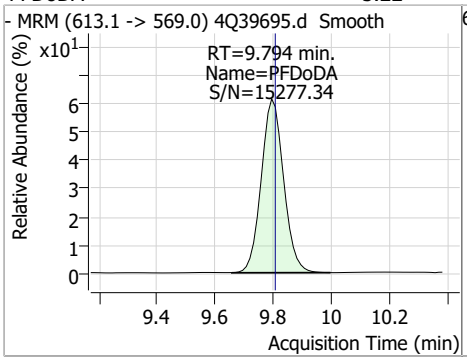


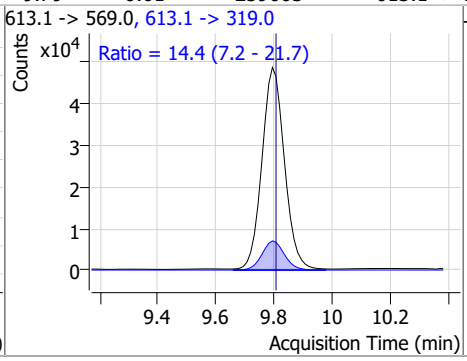


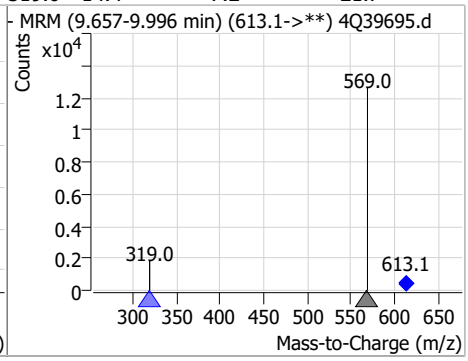


Perfluorinated Compounds by LC/MS/MS

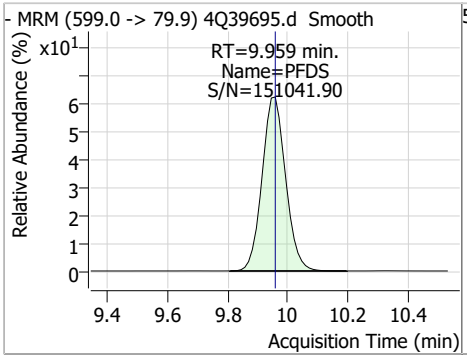
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.22	9.79	-0.01	259003	613.1 -> 319.0	14.4	7.2	21.7

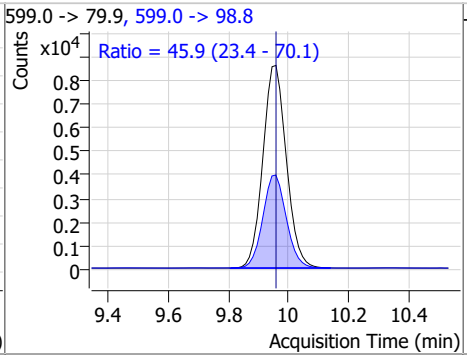


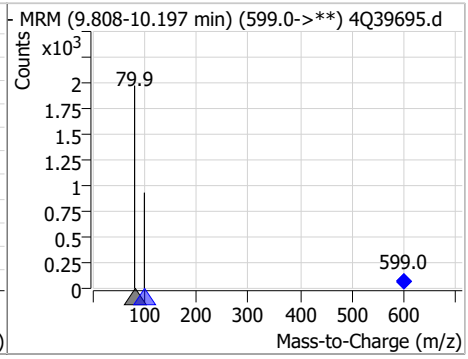




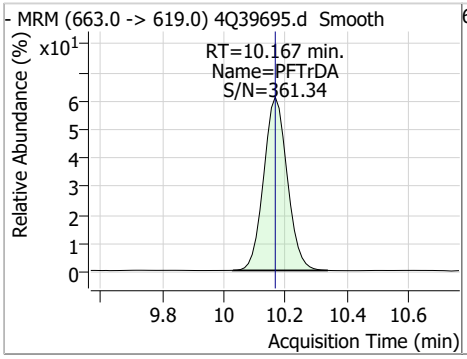
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.01	9.96	0.00	46706	599.0 -> 98.8	45.9	23.4	70.1

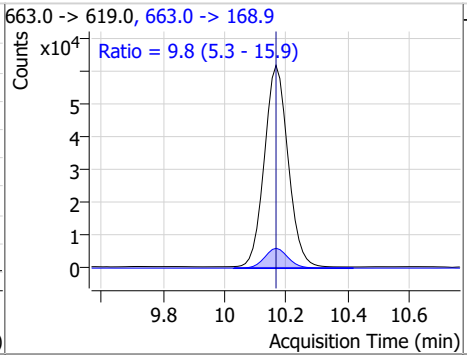


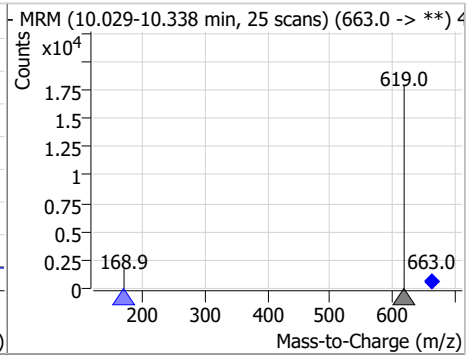




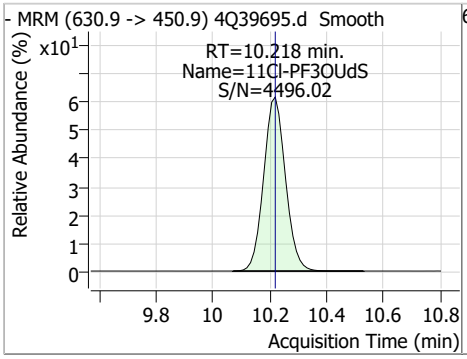
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.34	10.17	0.00	324590	663.0 -> 168.9	9.8	5.3	15.9

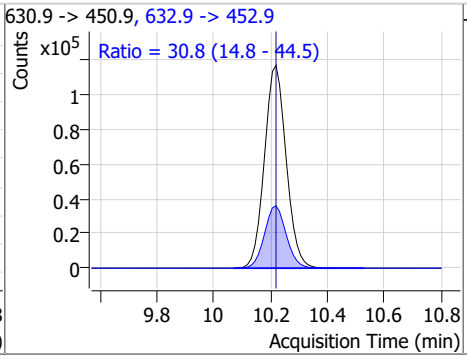


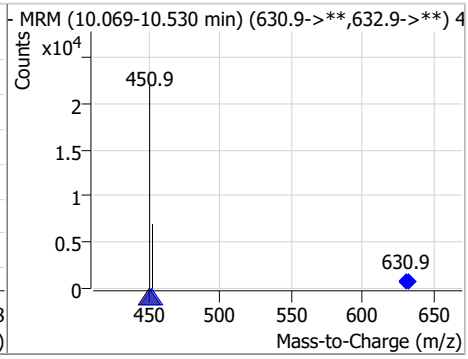




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.51	10.22	0.00	619354	632.9 -> 452.9	30.8	14.8	44.5

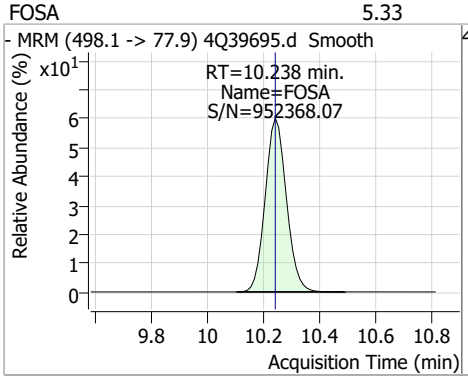


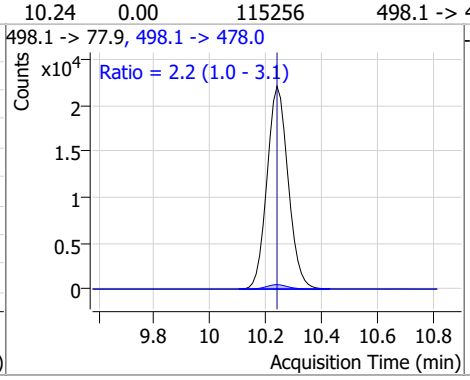


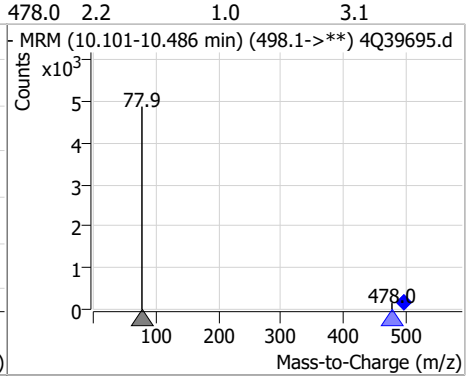


Perfluorinated Compounds by LC/MS/MS

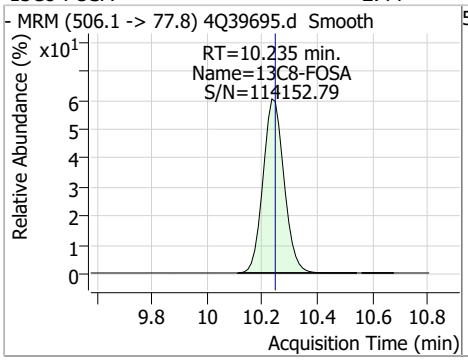
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.33	10.24	0.00	115256	498.1 -> 478.0	2.2	1.0	3.1

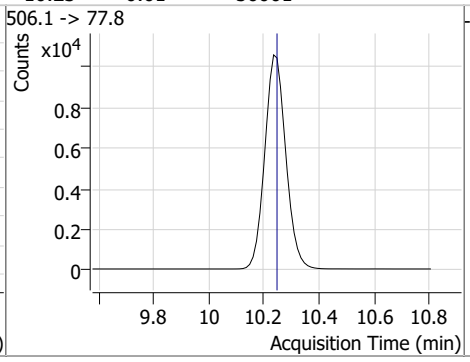


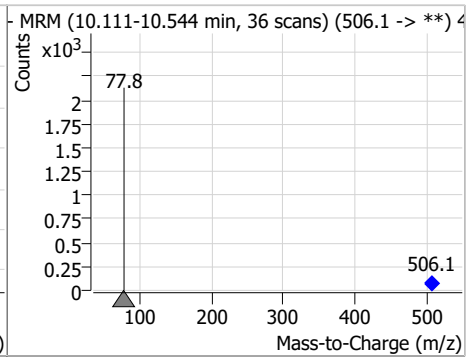




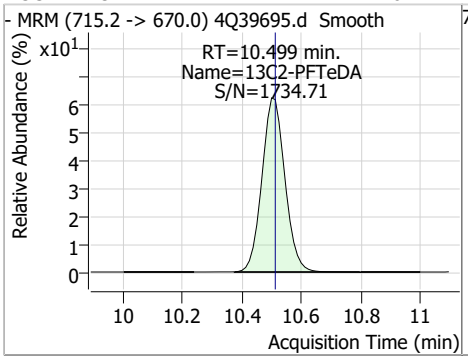
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	10.23	-0.01	56001				

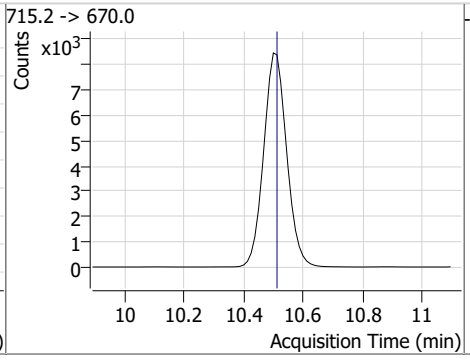


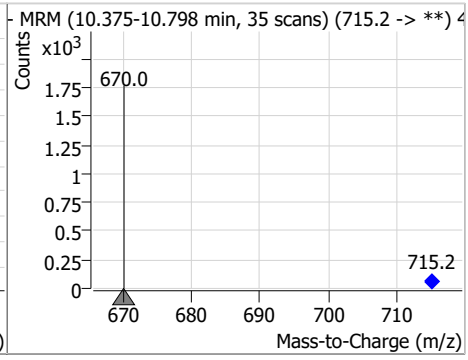




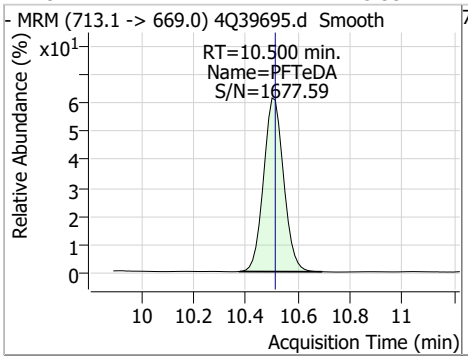
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	10.50	-0.01	45023				

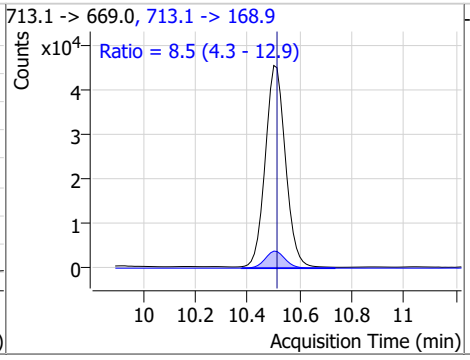


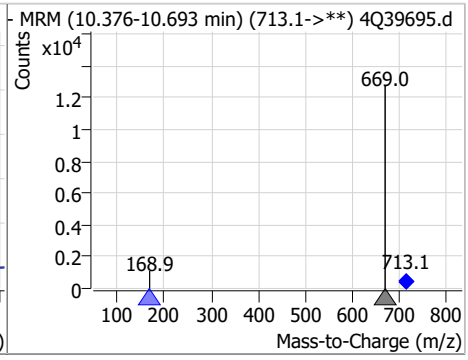




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.33	10.50	-0.01	241275	713.1 -> 168.9	8.5	4.3	12.9

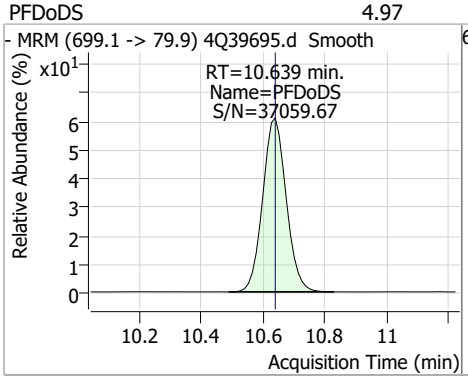


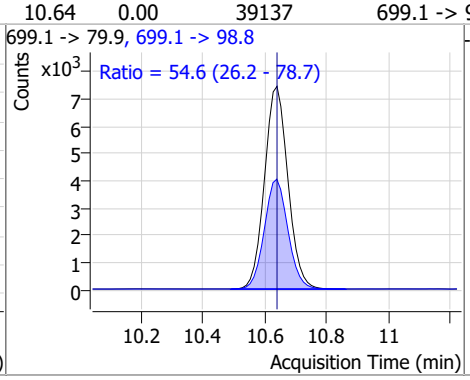


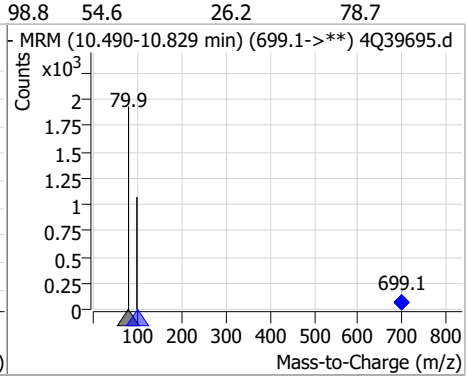


Perfluorinated Compounds by LC/MS/MS

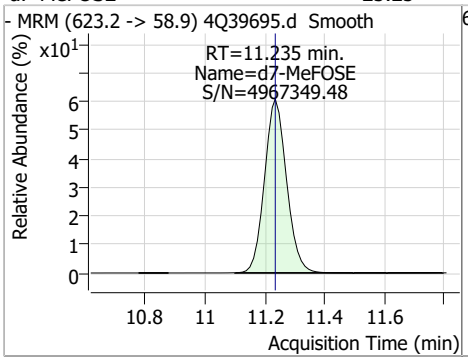
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	4.97	10.64	0.00	39137	699.1 -> 98.8	54.6	26.2	78.7

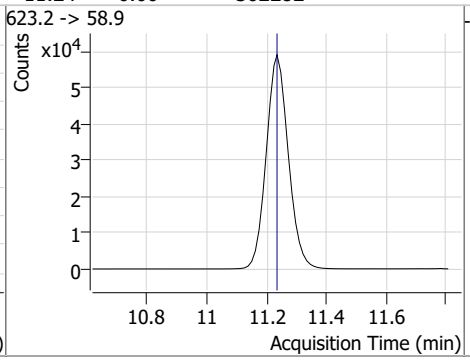


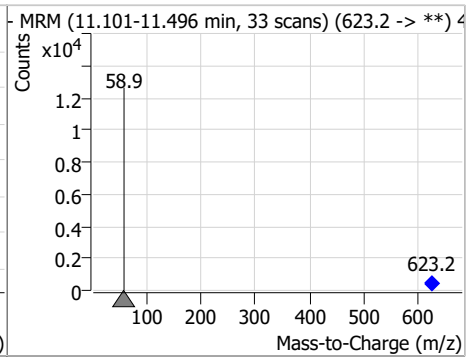




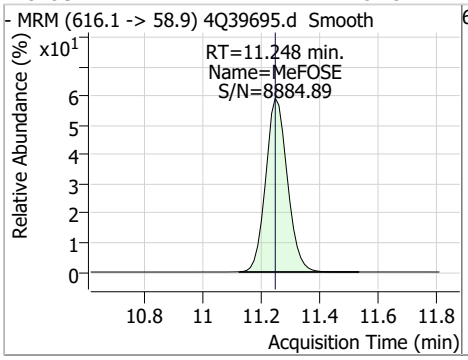
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.25	11.24	0.00	302282				

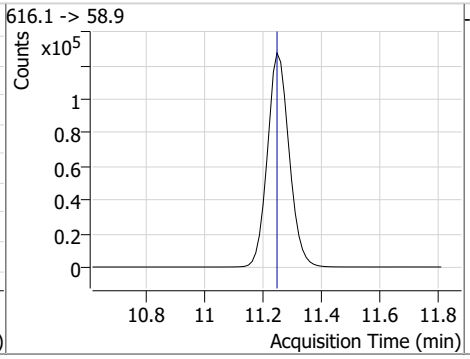


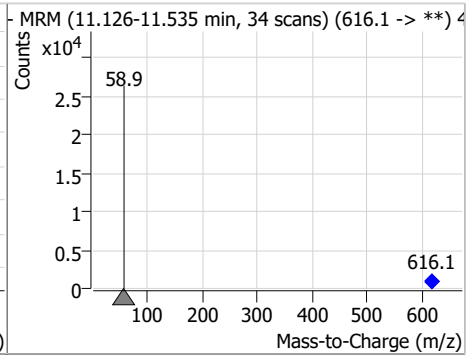




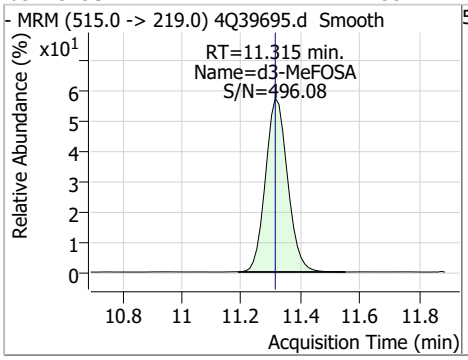
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	51.34	11.25	0.00	655693				

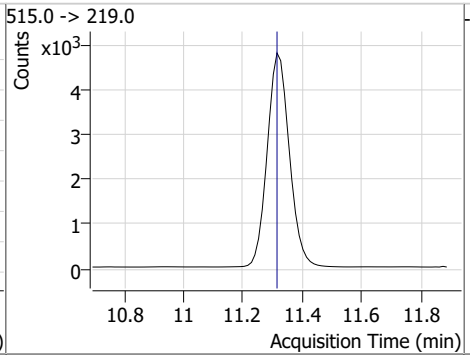


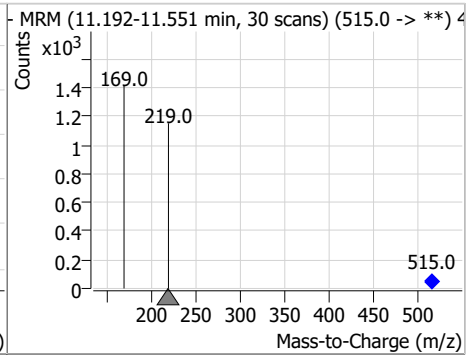




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.35	11.31	0.00	24722				

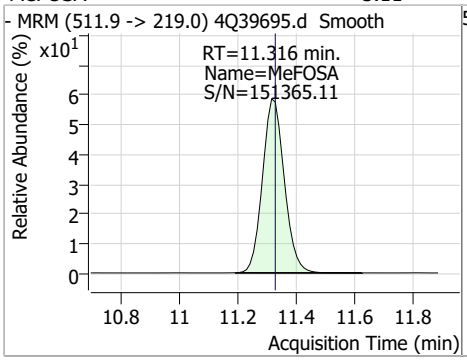


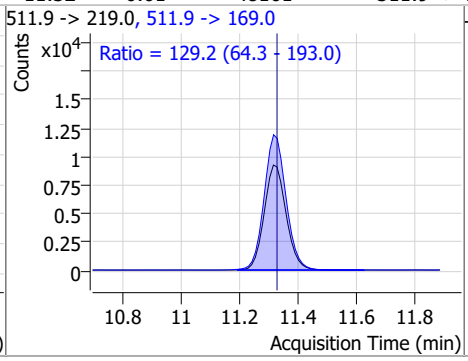


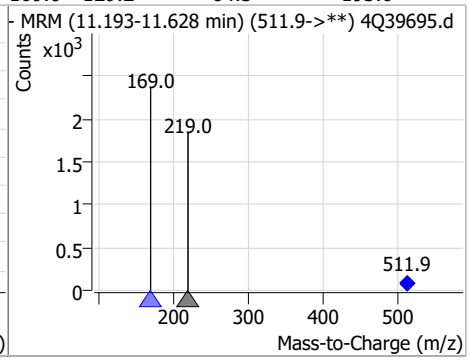


Perfluorinated Compounds by LC/MS/MS

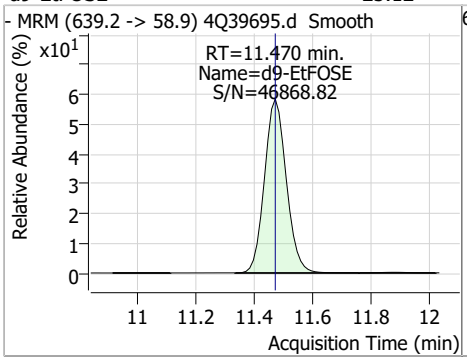
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.11	11.32	-0.01	48161	511.9 -> 169.0	129.2	64.3	193.0

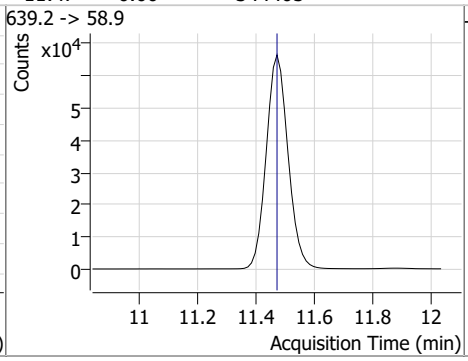


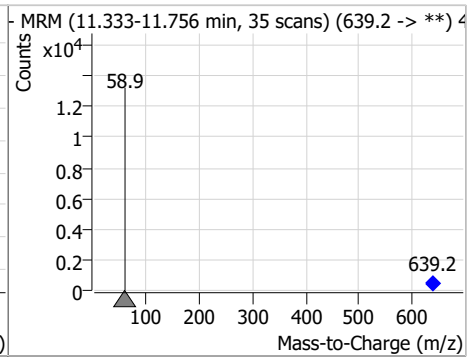




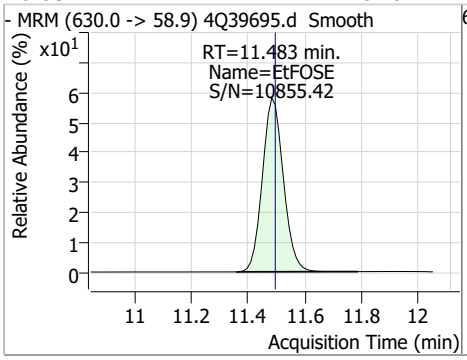
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.12	11.47	0.00	344405				

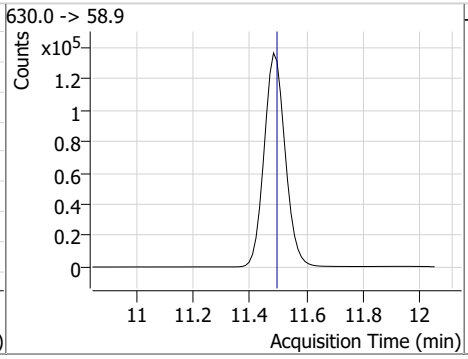


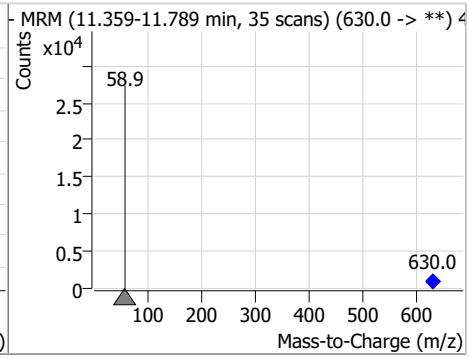




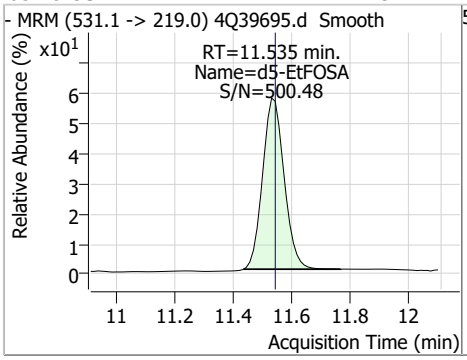
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	52.81	11.48	-0.01	706251				

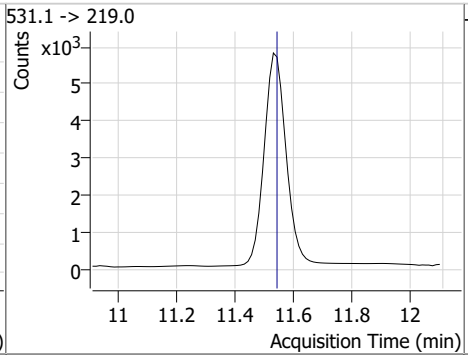


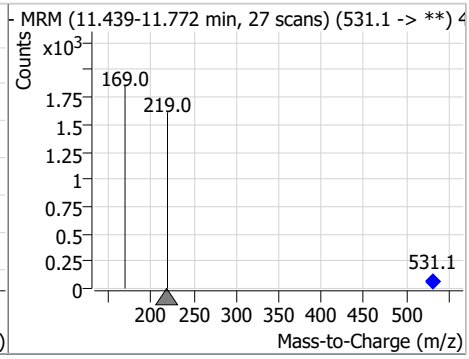




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	11.54	-0.01	29030				

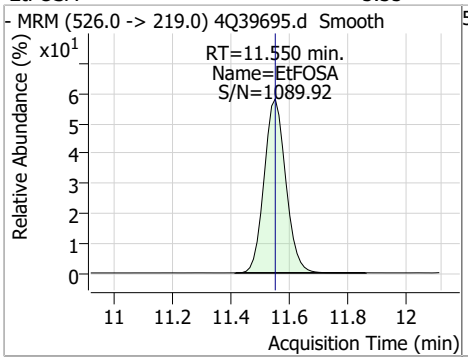


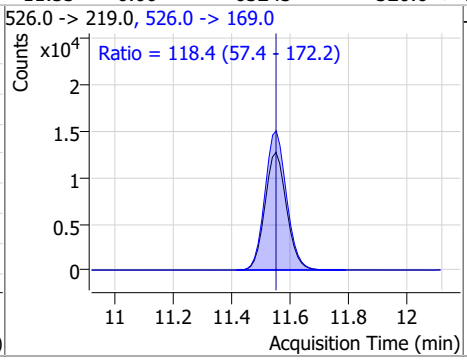


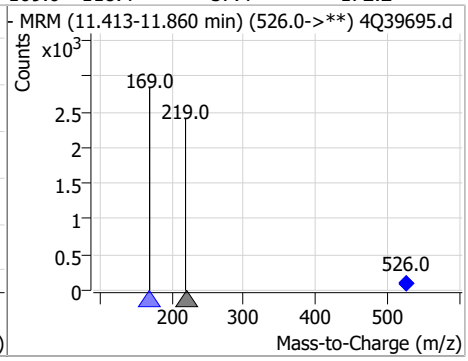


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.35	11.55	0.00	65245	526.0 -> 169.0	118.4	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39695.D
Injection Time: 01/25/23 14:09
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

4Q39696.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q39696.d
Operator	:	natashag
Acq. Method	:	1633full.m
Acq. Date-Time	:	1/25/2023 2:23:59 PM
Sample Name	:	ic571-6
Vial	:	P1-A7
DA Method File	:	1633_012423_S4Q571.quantmethod.xml
Batch Name	:	s4q571A.batch.bin
Sample Information	:	op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.161	216.8 -> 171.9	369078	10.00	µg/L	-0.012
M5-PFPeA	4.851	268.3 -> 223.0	254974	5.00	µg/L	-0.013
M5-PFHxA	6.160	318.0 -> 273.0	162811	2.50	µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	89713	2.50	µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	145420	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67248	1.25	µg/L	-0.012
M6-PFDA	8.866	519.1 -> 474.1	54380	1.25	µg/L	-0.012
M7-PFUnDA	9.361	570.0 -> 525.1	58160	1.25	µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	59817	1.25	µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	41390	1.25	µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	53662	2.50	µg/L	-0.012
M3-PFBS	6.077	302.1 -> 79.9	44644	2.50	µg/L	-0.012
M3-PFHxS	7.904	402.1 -> 79.9	31582	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	39665	2.50	µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	3587	5.00	µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	7703	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	10417	5.00	µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	42794	5.00	µg/L	-0.013
M3-HFPO-DA	6.539	286.9 -> 168.9	125367	10.00	µg/L	-0.012
M5-EtFOSAA	9.133	589.2 -> 419.0	34957	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	278309	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	309959	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	28962	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	25177	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	38866	2.50	µg/L	-0.012
13C3-PFBA	3.165	216.0 -> 172.0	206897	5.00	µg/L	-0.012
18O2-PFHxS	7.903	403.0 -> 83.9	20574	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	160746	2.50	µg/L	-0.012
13C2-PFDA	8.867	515.1 -> 470.1	50277	1.25	µg/L	-0.012
13C5-PFNA	8.348	468.0 -> 423.0	77588	1.25	µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	155895	2.50	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	5.808	329.1 -> 80.9	3587	4.84	µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-6:2FTS	7.524	429.1 -> 80.9	7703	4.64	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-8:2FTS	8.641	529.1 -> 80.9	10417	4.59	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-PFDoDA	9.793	615.1 -> 570.0	59817	1.23	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFTeDA	10.499	715.2 -> 670.0	41390	1.19	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C3-PFBS	6.077	302.1 -> 79.9	44644	2.51	µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-PFHxS	7.904	402.1 -> 79.9	31582	2.63	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C4-PFBA	3.161	216.8 -> 171.9	369078	9.89 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	7.093	367.1 -> 322.0	89713	2.47 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C5-PFHxA	6.160	318.0 -> 273.0	162811	2.48 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFPeA	4.851	268.3 -> 223.0	254974	5.03 µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C6-PFDA	8.866	519.1 -> 474.1	54380	1.22 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C7-PFUnDA	9.361	570.0 -> 525.1	58160	1.22 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-FOSA	10.235	506.1 -> 77.8	53662	2.41 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C8-PFOA	7.776	421.1 -> 376.0	145420	2.52 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C8-PFOS	9.055	507.1 -> 79.9	39665	2.50 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C9-PFNA	8.347	472.1 -> 427.0	67248	1.22 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%		
d3-MeFOSAA	8.912	573.2 -> 419.0	42794	4.79 µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-HFPO-DA	6.539	286.9 -> 168.9	125367	10.08 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
d3-MeFOSA	11.315	515.0 -> 219.0	25177	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%		
d5-EtFOSAA	9.133	589.2 -> 419.0	34957	4.50 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
d7-MeFOSE	11.235	623.2 -> 58.9	278309	24.01 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
d9-EtFOSE	11.470	639.2 -> 58.9	309959	23.35 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
d5-EtFOSA	11.535	531.1 -> 219.0	28962	2.39 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%		
Target Compounds						QValue
4:2FTS	5.809	327.1 -> 307.0	308581	52.64 µg/L		99
		327.1 -> 80.9	142084			
6:2FTS	7.524	427.1 -> 407.0	326461	53.47 µg/L		98
		427.1 -> 80.9	156329			
8:2FTS	8.641	527.1 -> 507.0	278514	55.27 µg/L		98
		527.1 -> 80.8	150420			
EtFOSAA	9.134	584.2 -> 419.1	88418	15.11 µg/L	m	91
		584.2 -> 526.0	38592			
FOSA	10.238	498.1 -> 77.9	300150	14.48 µg/L		100
		498.1 -> 478.0	6822			
MeFOSAA	8.912	570.1 -> 419.0	100751	15.89 µg/L	m	98
		570.1 -> 483.0	18730			
PFBA	3.170	212.8 -> 168.9	610463	59.44 µg/L		100
PFBS	6.078	298.7 -> 79.9	266754	13.22 µg/L		98
		298.7 -> 98.8	95202			
PFDA	8.867	512.9 -> 469.0	576853	14.87 µg/L		99
		512.9 -> 219.0	116005			
PFDoDA	9.794	613.1 -> 569.0	688192	14.93 µg/L		98
		613.1 -> 319.0	104282			
PFDS	9.945	599.0 -> 79.9	119999	13.06 µg/L		98

Perfluorinated Compounds by LC/MS/MS

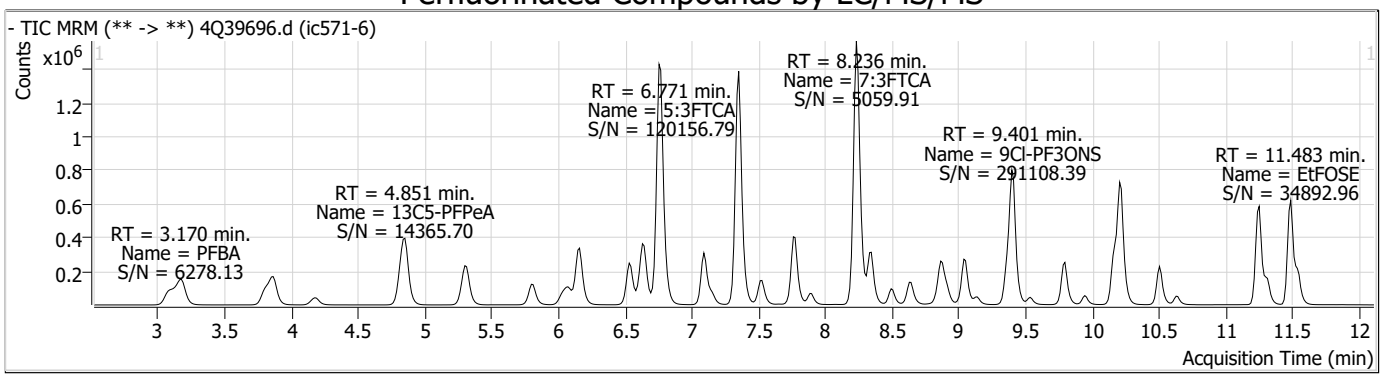
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	54482				
PFHpA	7.094	363.1 -> 319.0	830259	14.85	µg/L		99
		363.1 -> 169.0	142943				
PFHpS	8.501	449.0 -> 79.9	222101	13.85	µg/L		96
		449.0 -> 98.9	108126				
PFHxA	6.162	313.0 -> 269.0	940842	14.86	µg/L		100
		313.0 -> 118.9	27444				
PFHxS	7.905	398.7 -> 79.9	133011	13.04	µg/L	m	99
		398.7 -> 98.9	63800				
PFNA	8.348	463.0 -> 419.0	715404	14.63	µg/L		97
		463.0 -> 219.0	177206				
PFNS	9.536	548.8 -> 79.9	95073	13.47	µg/L		92
		548.8 -> 98.9	45058				
PFOA	7.777	413.0 -> 369.0	927641	14.35	µg/L		99
		413.0 -> 169.0	193534				
PFOS	9.057	498.9 -> 79.9	241826	13.05	µg/L	m	98
		498.9 -> 98.8	114467				
PFPeA	4.841	263.0 -> 219.0	1620943	28.98	µg/L		100
PFPeS	7.159	349.1 -> 79.9	129871	13.18	µg/L		99
		349.1 -> 98.9	50195				
PFTeDA	10.500	713.1 -> 669.0	640468	15.38	µg/L		100
		713.1 -> 168.9	56083				
PFTrDA	10.167	663.0 -> 619.0	827713	14.66	µg/L		100
		663.0 -> 168.9	86398				
PFUnDA	9.361	563.1 -> 519.0	506814	14.39	µg/L		98
		563.1 -> 269.1	96566				
11Cl-PF3OUdS	10.206	630.9 -> 450.9	1547152	52.80	µg/L		99
		632.9 -> 452.9	469773				
9Cl-PF3ONS	9.401	530.8 -> 351.0	2003197	56.10	µg/L		99
		532.8 -> 353.0	589018				
ADONA	7.357	376.9 -> 250.9	3583756	52.99	µg/L		100
		376.9 -> 84.8	1265758				
HFPO-DA	6.540	284.9 -> 168.9	693788	58.72	µg/L		99
		284.9 -> 184.9	74977				
3:3FTCA	4.173	241.0 -> 177.0	189477	72.28	µg/L		98
		241.0 -> 117.0	16467				
5:3FTCA	6.771	341.0 -> 237.1	3031842	360.05	µg/L		99
		341.0 -> 217.0	2286881				
7:3FTCA	8.236	441.0 -> 316.9	1725452	356.80	µg/L		99
		441.0 -> 336.9	3881688				
EtFOSA	11.550	526.0 -> 219.0	177802	14.62	µg/L		99
		526.0 -> 169.0	206734				
EtFOSE	11.483	630.0 -> 58.9	1696285	140.95	µg/L		100
MeFOSA	11.316	511.9 -> 219.0	141951	14.80	µg/L		92
		511.9 -> 169.0	168994				
MeFOSE	11.248	616.1 -> 58.9	1653958	140.67	µg/L		100
PFDoDS	10.627	699.1 -> 79.9	107726	13.89	µg/L		99
		699.1 -> 98.8	57150				
NFDHA	6.028	295.0 -> 201.0	121326	29.17	µg/L		99
		295.0 -> 84.9	36195				
PFMBA	5.303	279.0 -> 85.1	1007118	28.89	µg/L		100
PFMPA	3.857	229.0 -> 84.9	1053080	29.28	µg/L		100
PFEESA	6.634	314.8 -> 134.9	1402117	25.91	µg/L		100
		314.8 -> 82.9	44965				

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

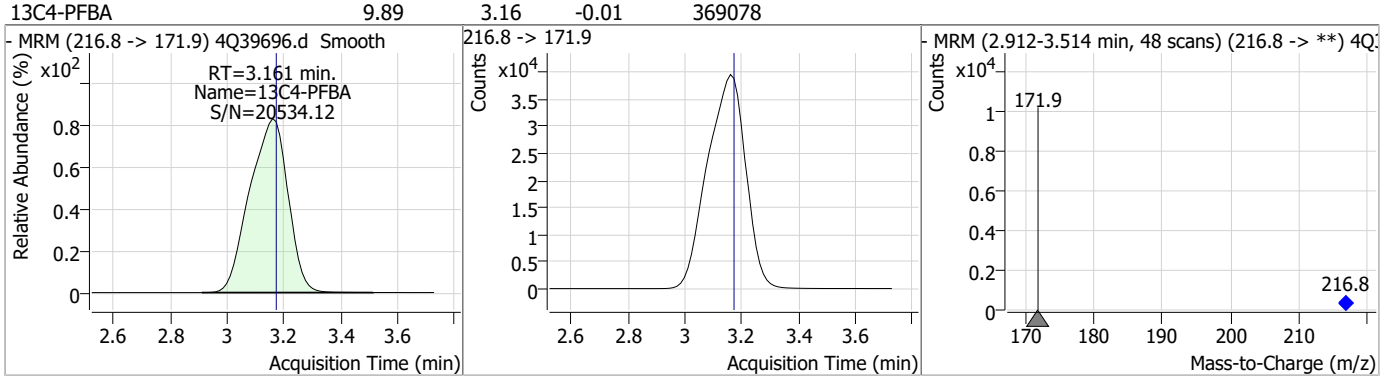
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

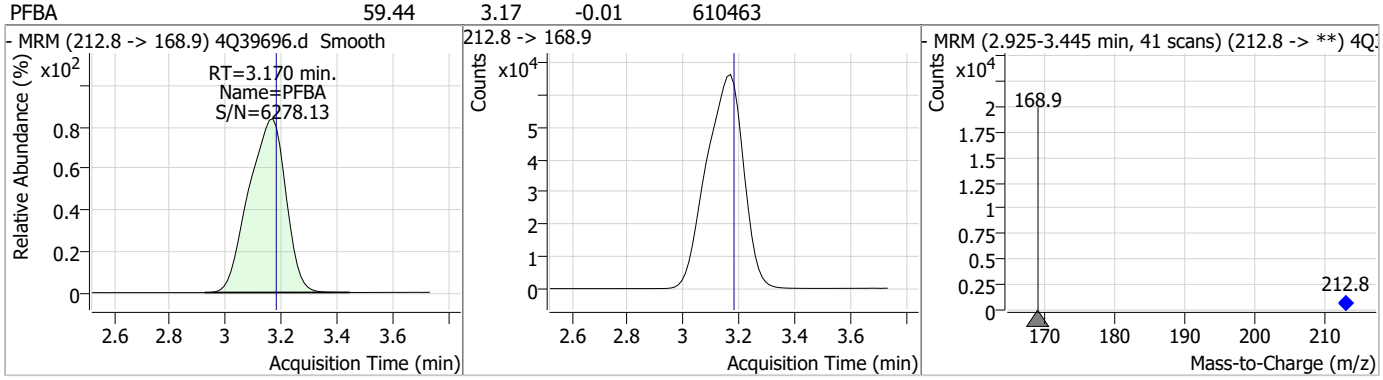
Perfluorinated Compounds by LC/MS/MS



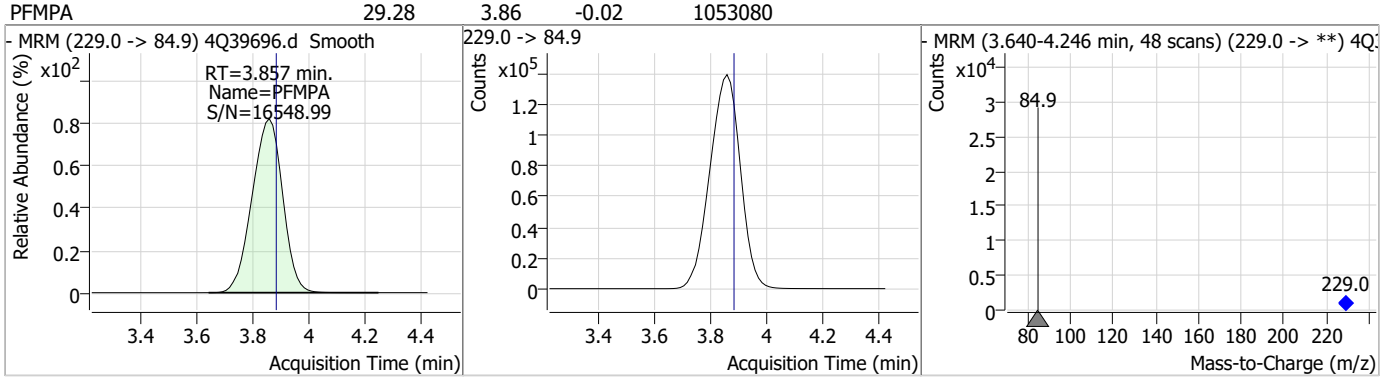
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.89	3.16	-0.01	369078				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	59.44	3.17	-0.01	610463				

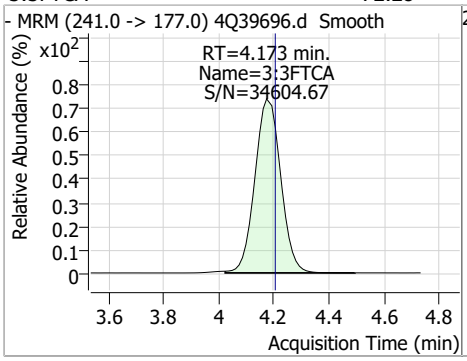


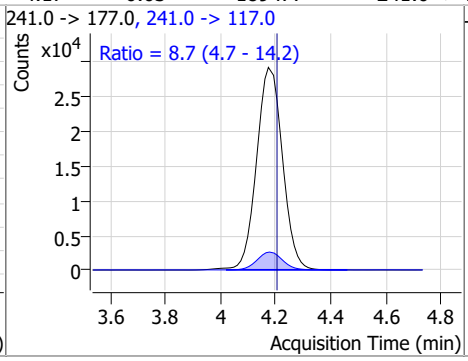
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	29.28	3.86	-0.02	1053080				

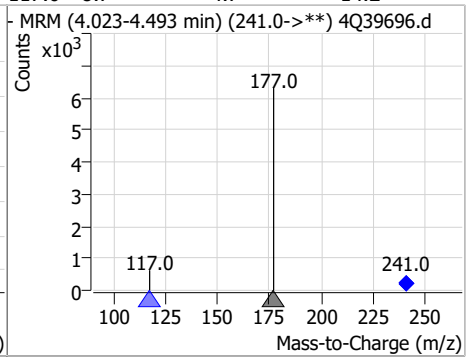


Perfluorinated Compounds by LC/MS/MS

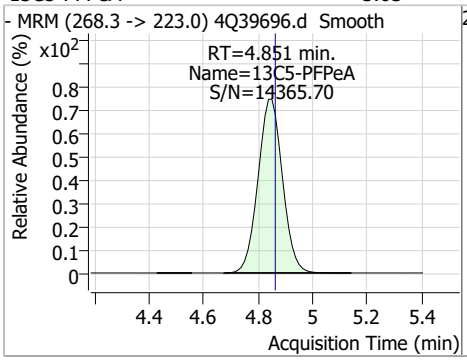
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	72.28	4.17	-0.03	189477	241.0 -> 117.0	8.7	4.7	14.2

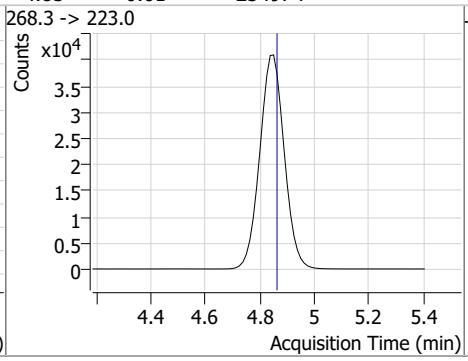


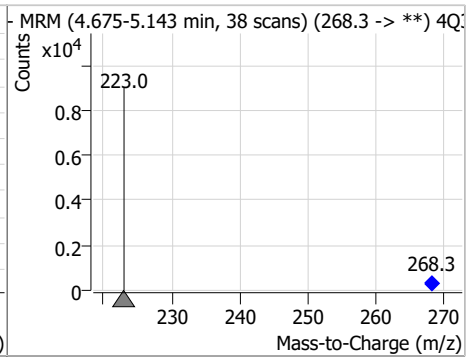




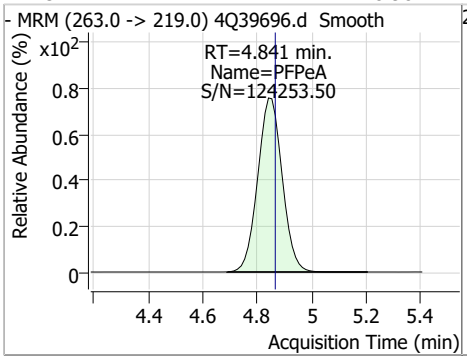
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.85	-0.01	254974				

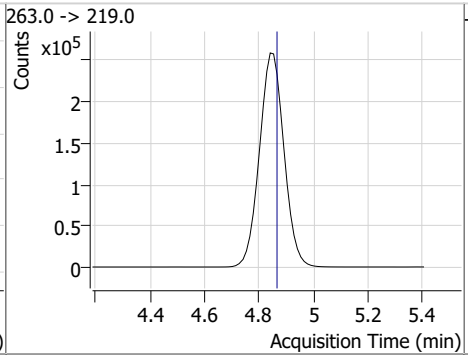


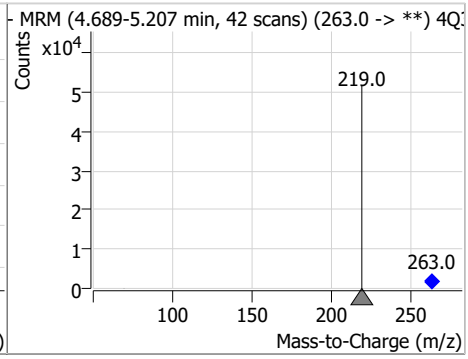




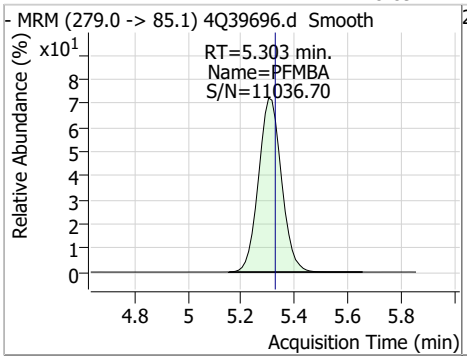
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.98	4.84	-0.02	1620943				

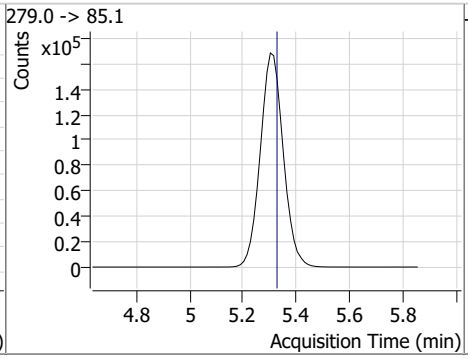


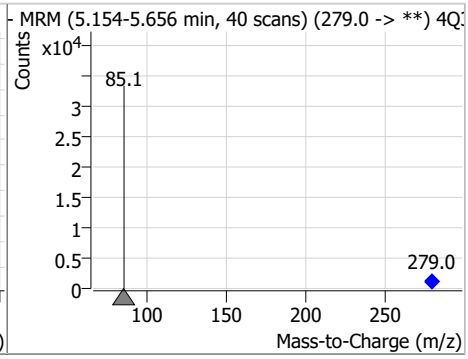




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.89	5.30	-0.02	1007118				

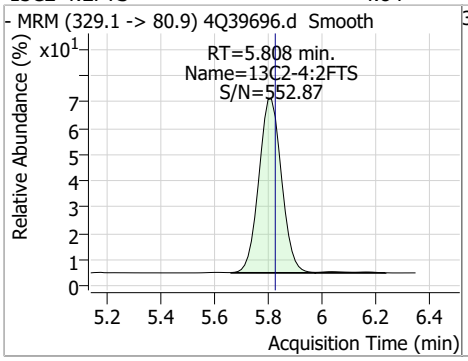


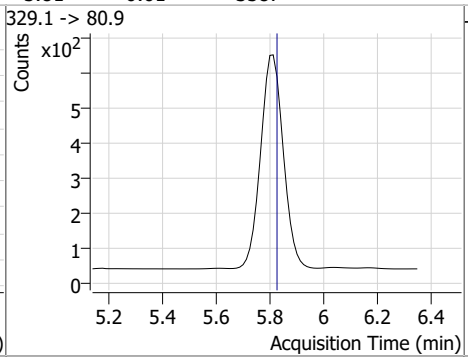


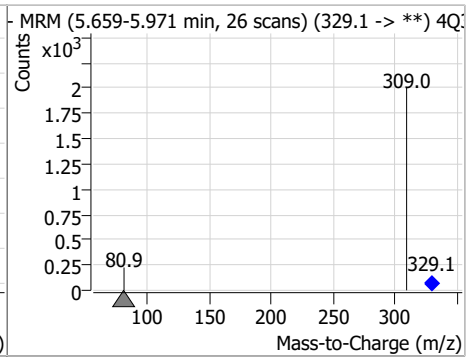


Perfluorinated Compounds by LC/MS/MS

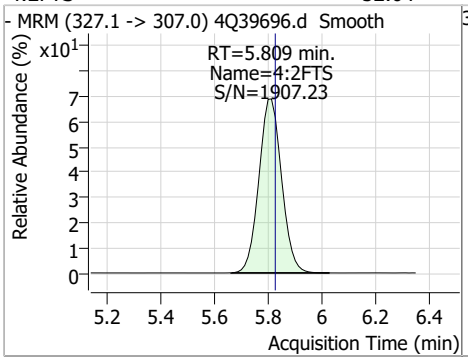
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.84	5.81	-0.01	3587				

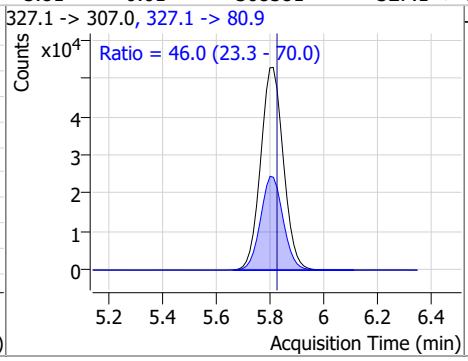


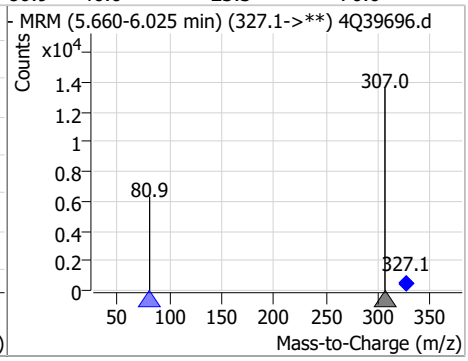




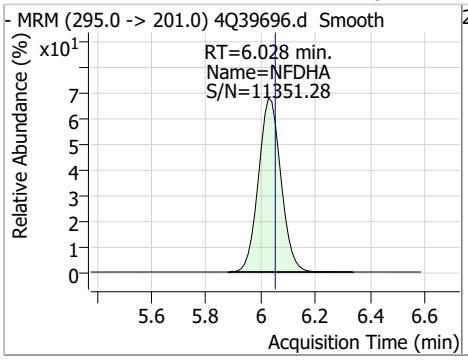
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	52.64	5.81	-0.01	308581	327.1 -> 80.9	46.0	23.3	70.0

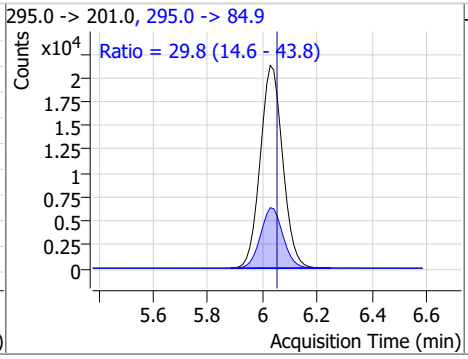


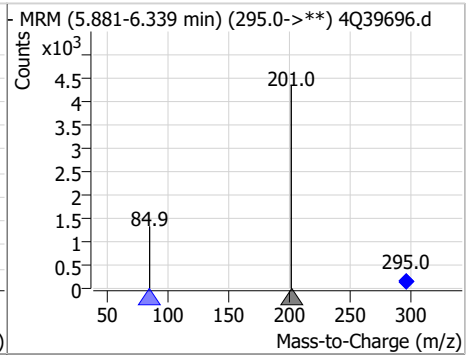




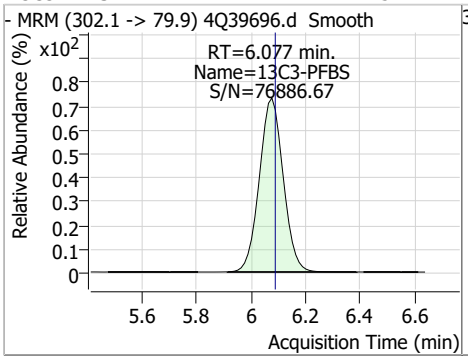
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	29.17	6.03	-0.02	121326	295.0 -> 84.9	29.8	14.6	43.8

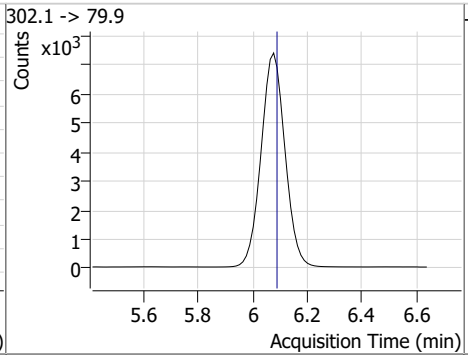


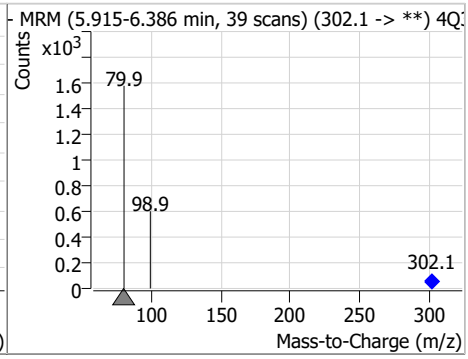




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	6.08	-0.01	44644				

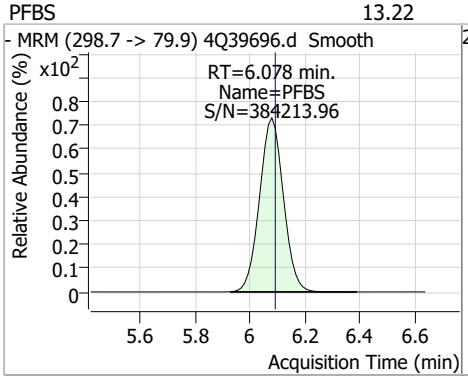


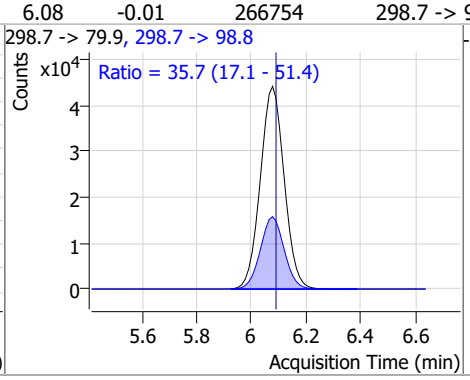


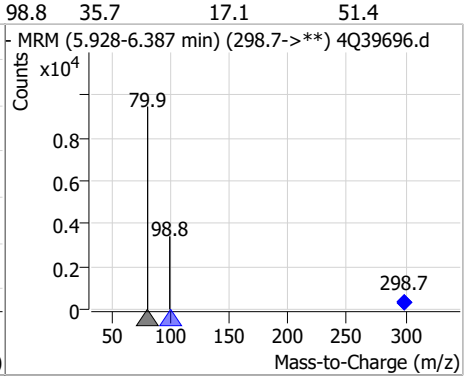


Perfluorinated Compounds by LC/MS/MS

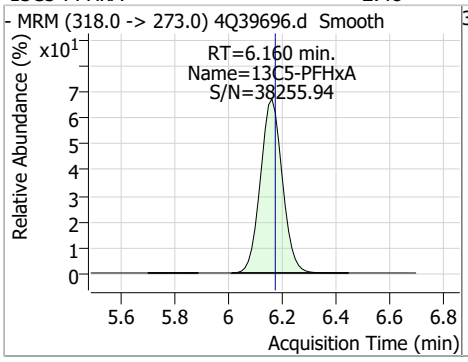
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	13.22	6.08	-0.01	266754	298.7 -> 98.8	35.7	17.1	51.4

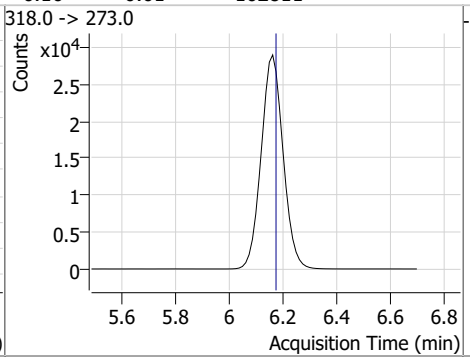


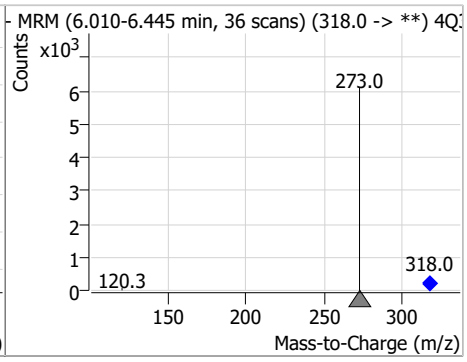




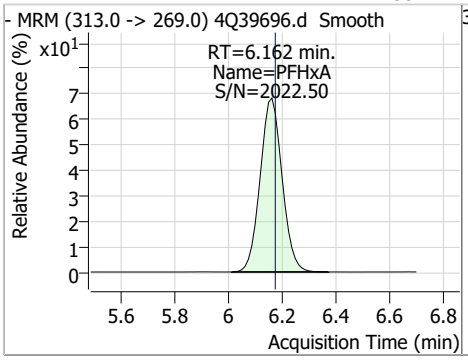
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	6.16	-0.01	162811				

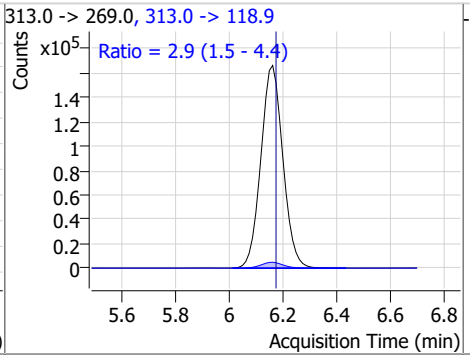


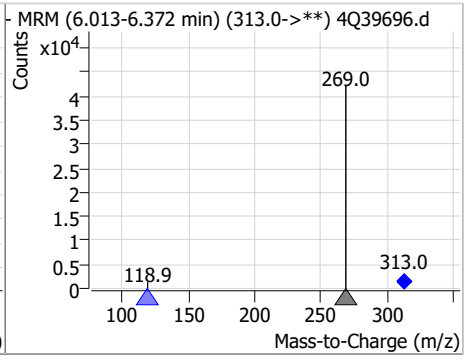




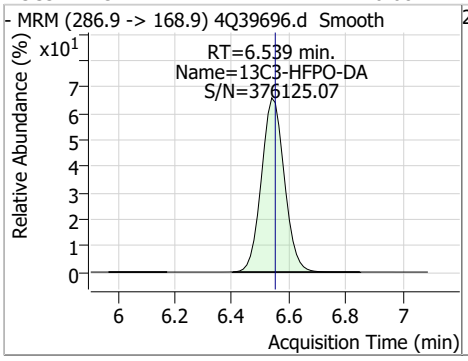
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	14.86	6.16	-0.01	940842	313.0 -> 118.9	2.9	1.5	4.4

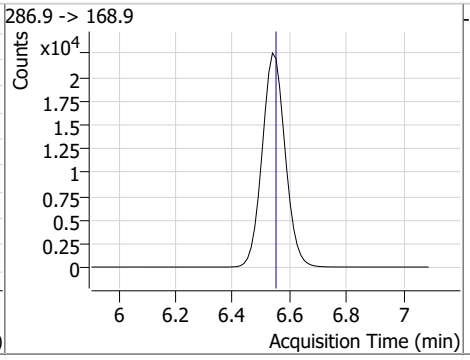


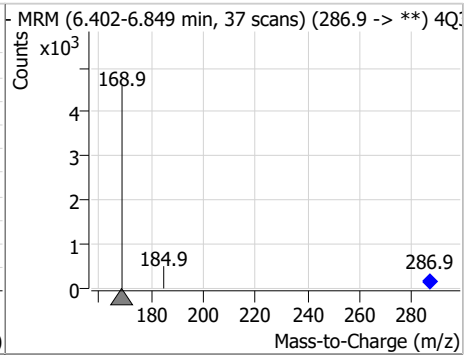




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.08	6.54	-0.01	125367				

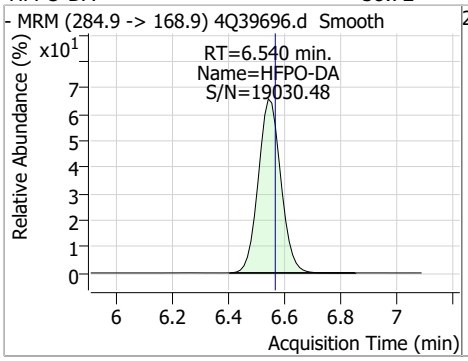


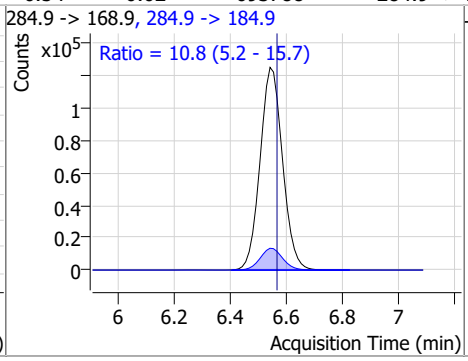


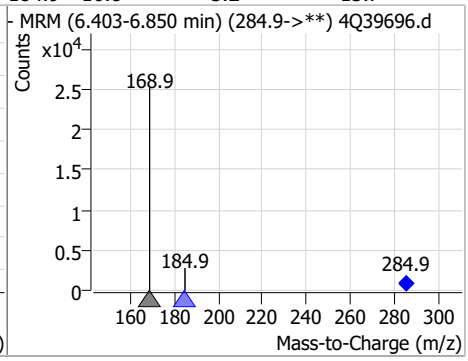


Perfluorinated Compounds by LC/MS/MS

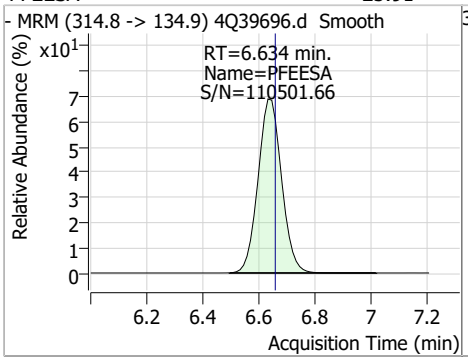
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	58.72	6.54	-0.02	693788	284.9 -> 184.9	10.8	5.2	15.7

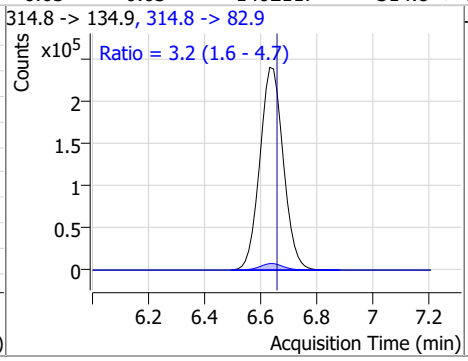


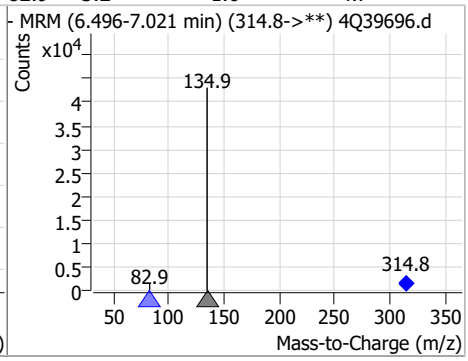




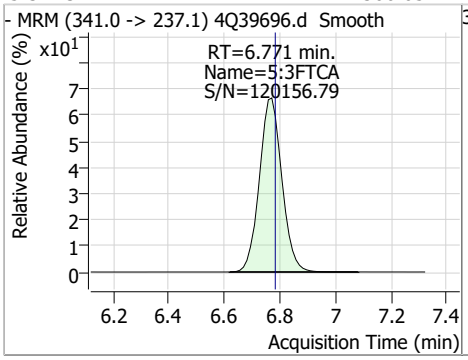
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	25.91	6.63	-0.03	1402117	314.8 -> 82.9	3.2	1.6	4.7

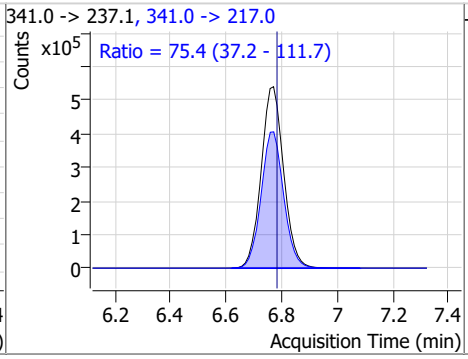


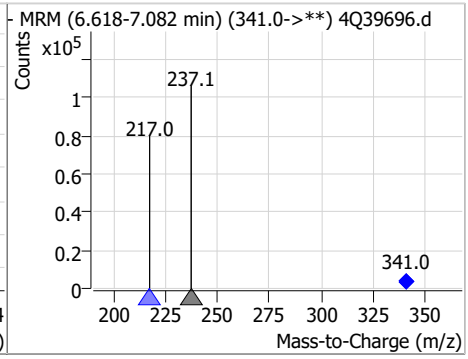




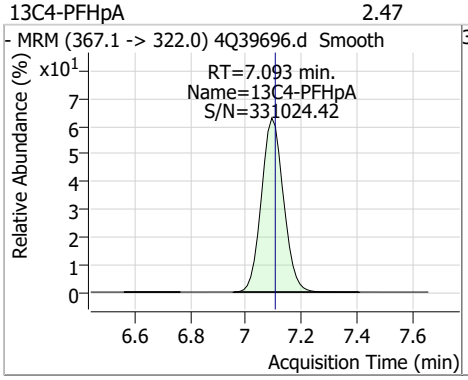
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	360.05	6.77	-0.01	3031842	341.0 -> 217.0	75.4	37.2	111.7

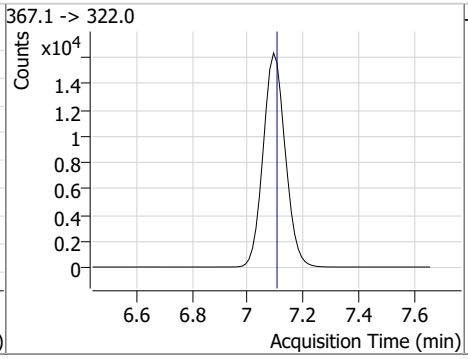


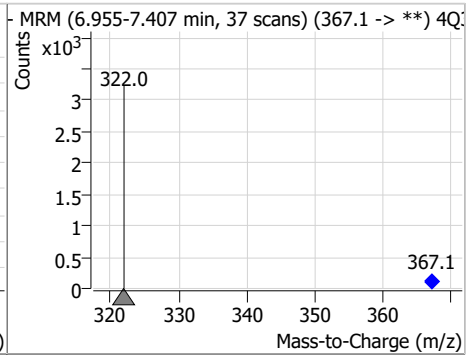




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.47	7.09	-0.01	89713				

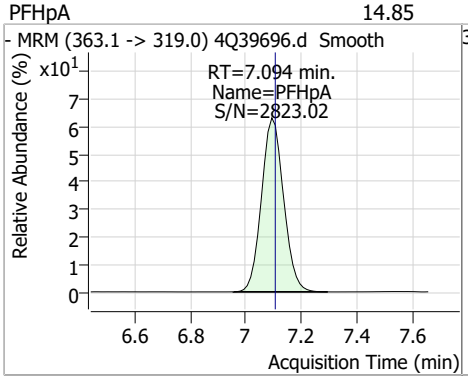


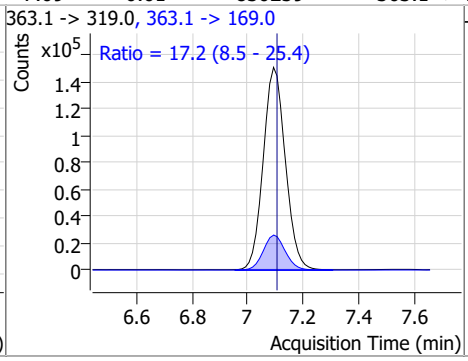


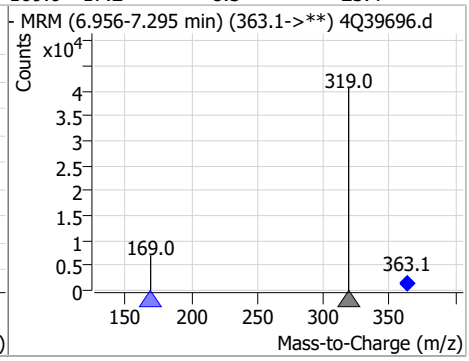


Perfluorinated Compounds by LC/MS/MS

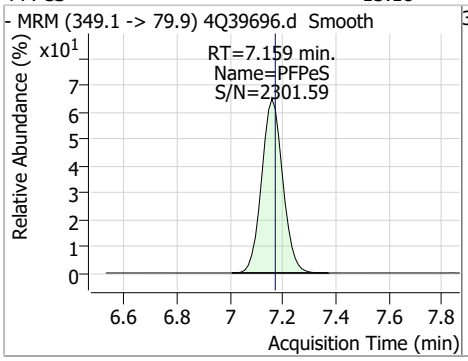
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.85	7.09	-0.01	830259	363.1 -> 169.0	17.2	8.5	25.4

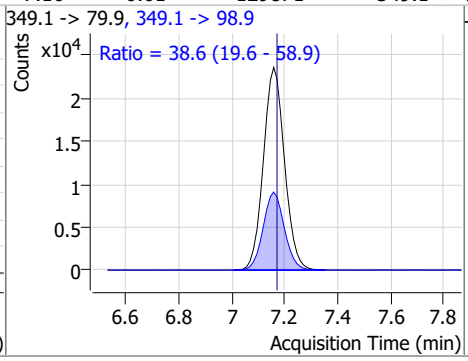


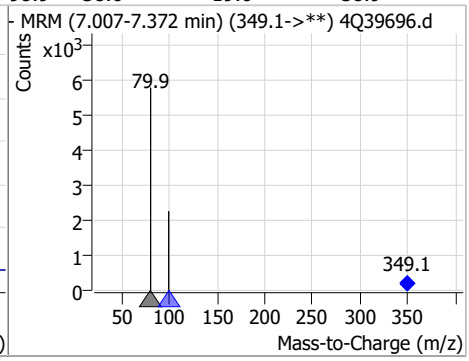




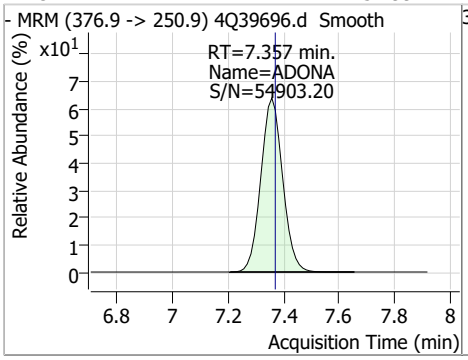
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	13.18	7.16	-0.01	129871	349.1 -> 98.9	38.6	19.6	58.9

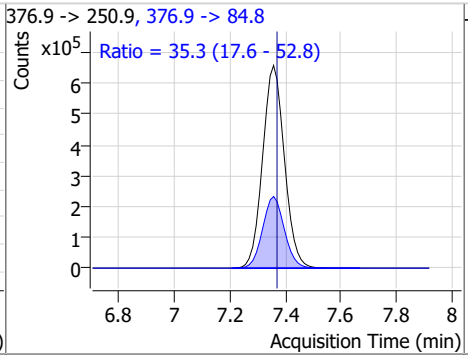


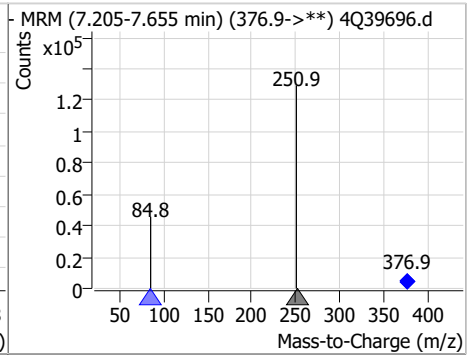




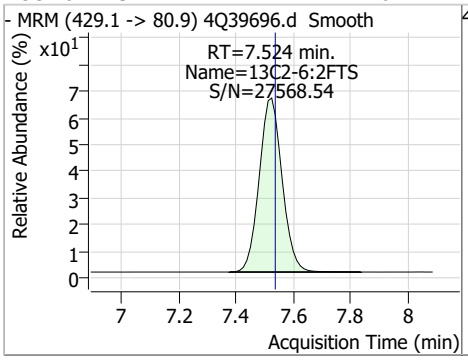
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	52.99	7.36	-0.01	3583756	376.9 -> 84.8	35.3	17.6	52.8

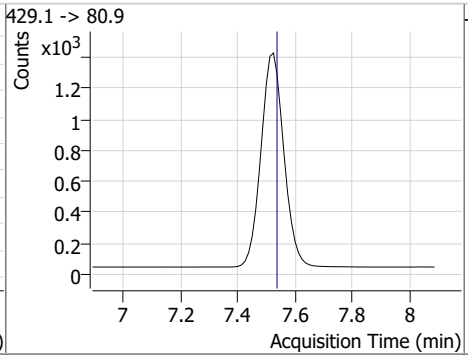


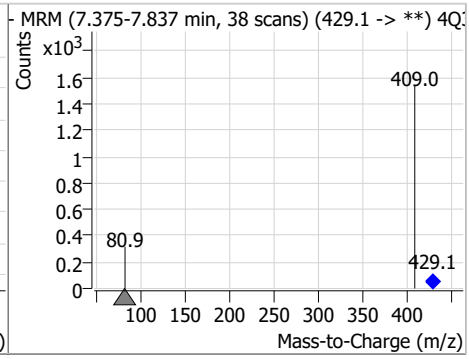




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.64	7.52	-0.01	7703				

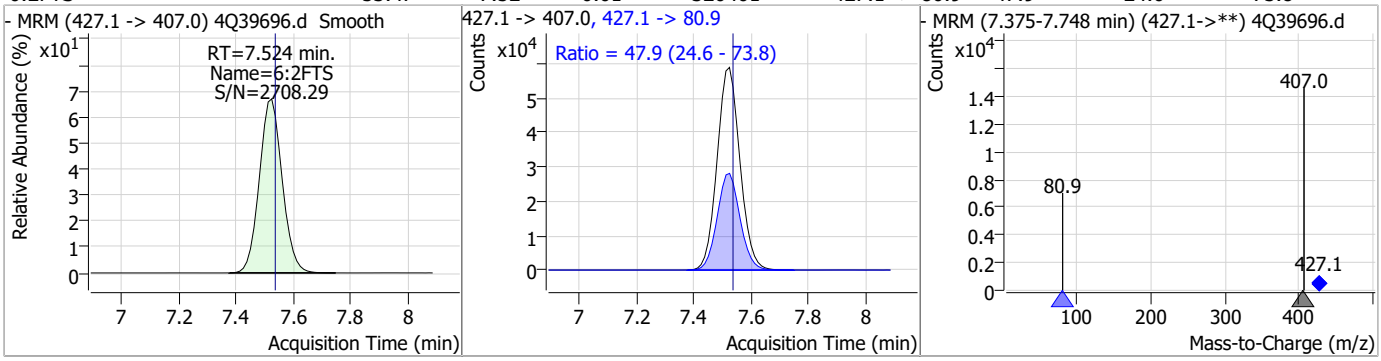




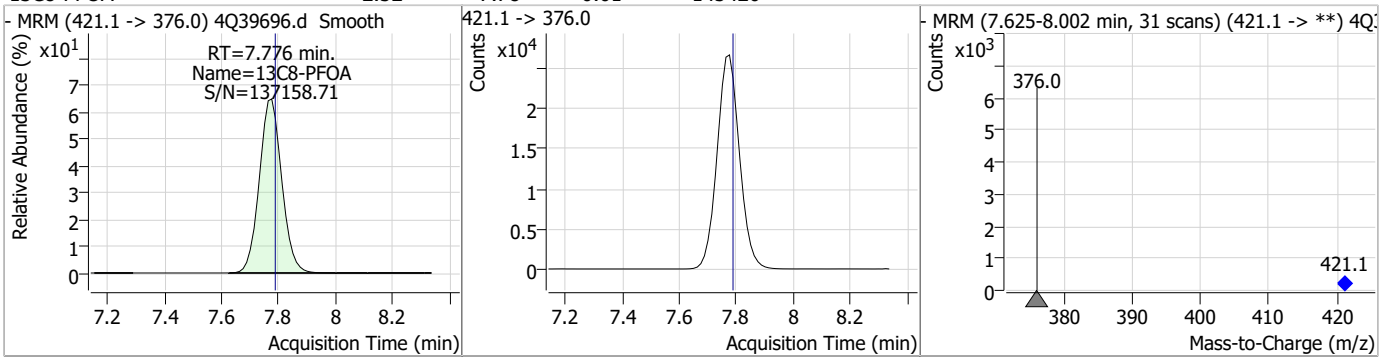


Perfluorinated Compounds by LC/MS/MS

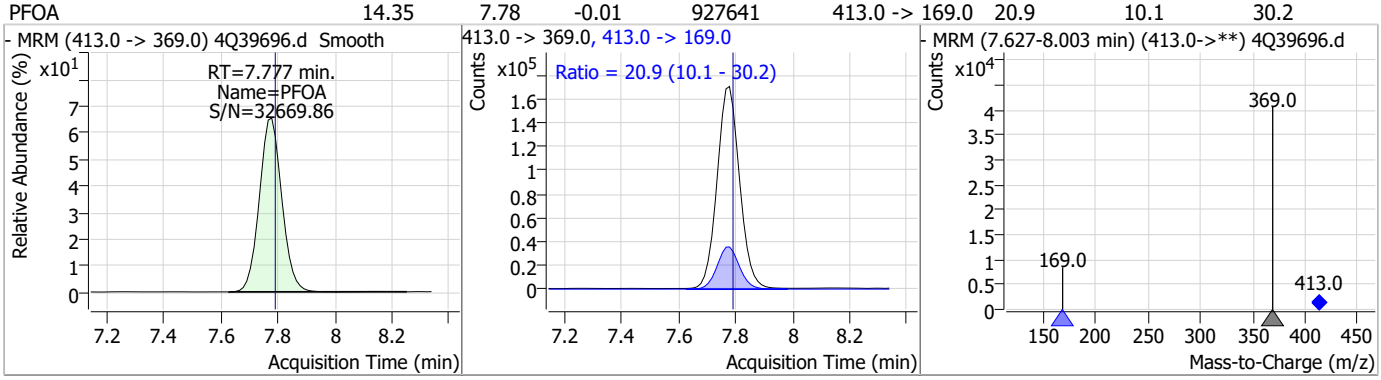
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	53.47	7.52	-0.01	326461	427.1 -> 80.9	47.9	24.6	73.8



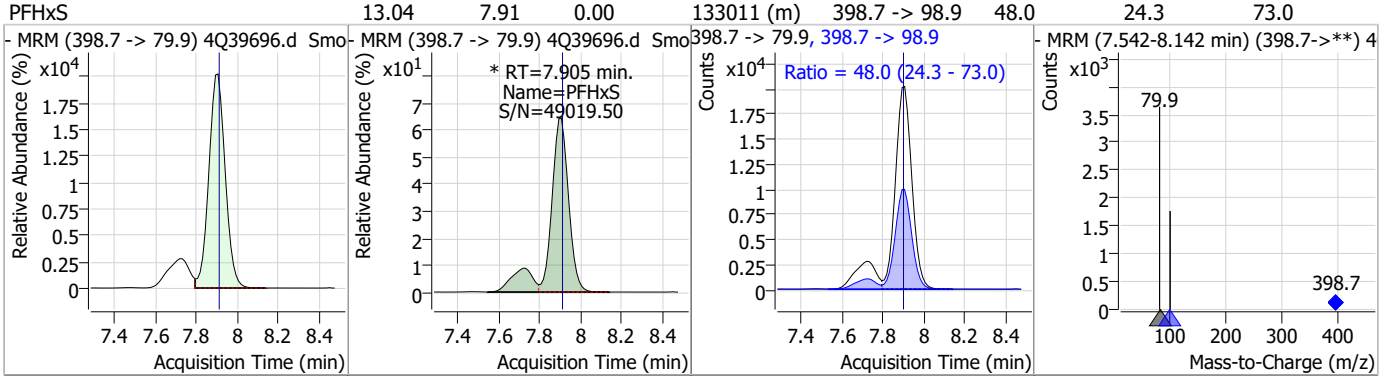
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.78	-0.01	145420				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	14.35	7.78	-0.01	927641	413.0 -> 169.0	20.9	10.1	30.2

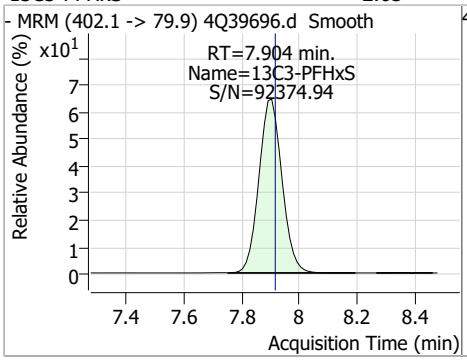


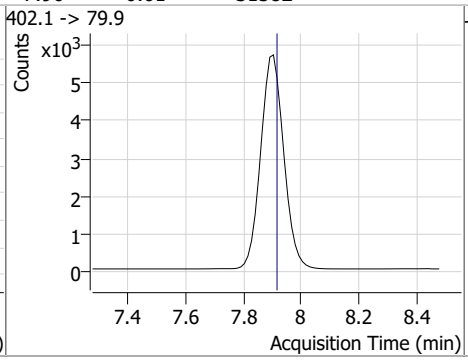
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	13.04	7.91	0.00	133011 (m)	398.7 -> 98.9	48.0	24.3	73.0

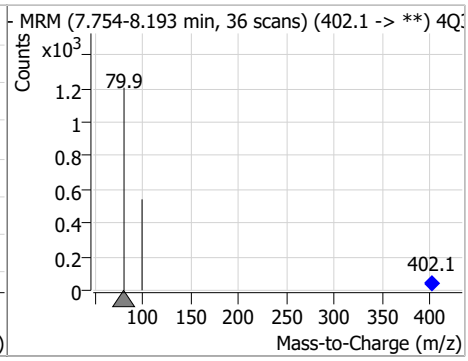


Perfluorinated Compounds by LC/MS/MS

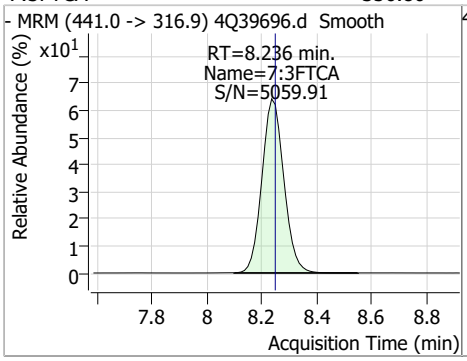
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.63	7.90	-0.01	31582				

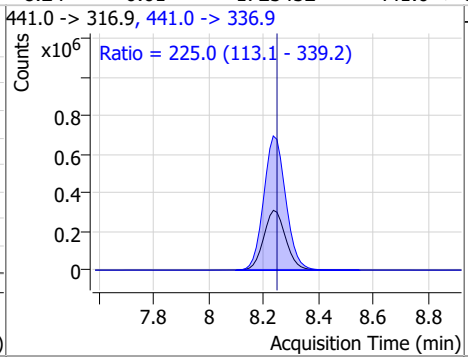


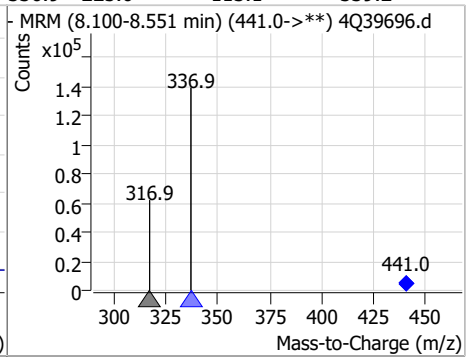




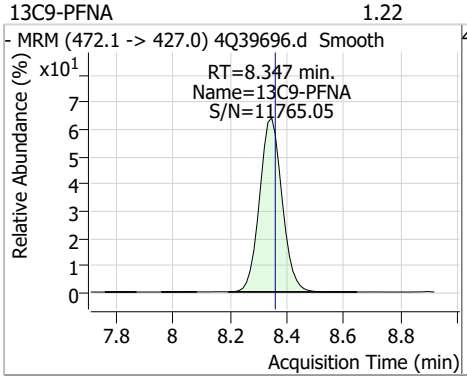
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	356.80	8.24	-0.01	1725452	441.0 -> 336.9	225.0	113.1	339.2

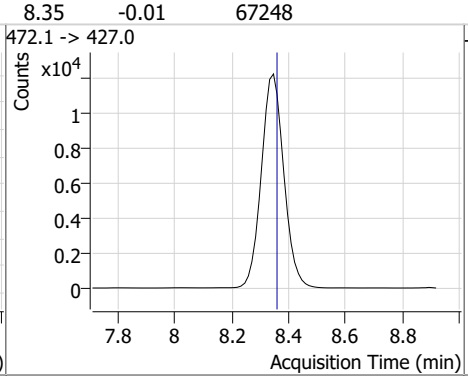


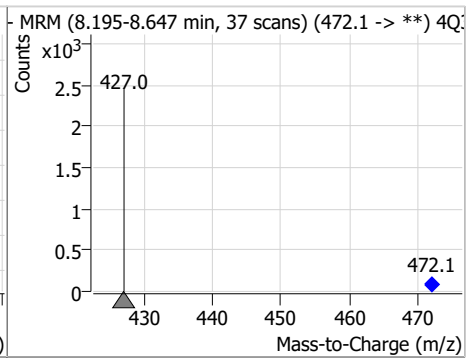




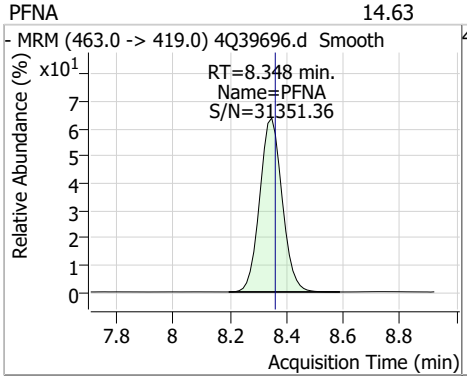
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	8.35	-0.01	67248				

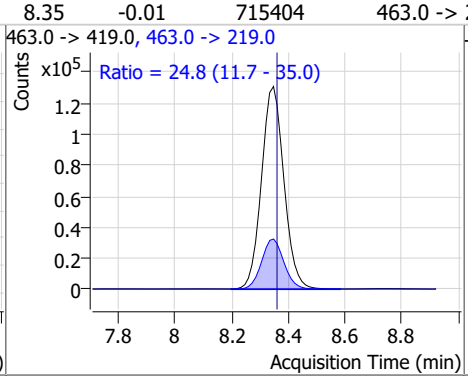


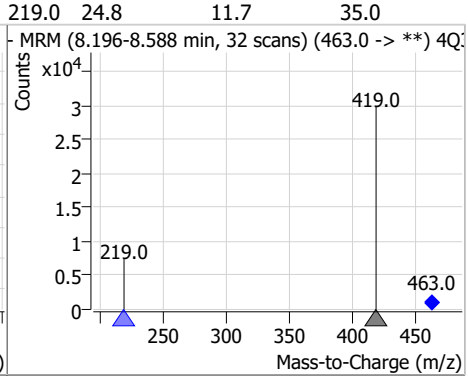




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	14.63	8.35	-0.01	715404	463.0 -> 219.0	24.8	11.7	35.0

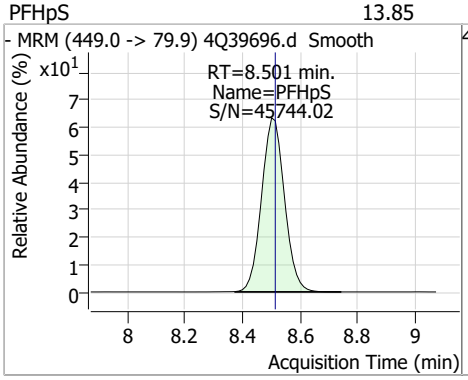


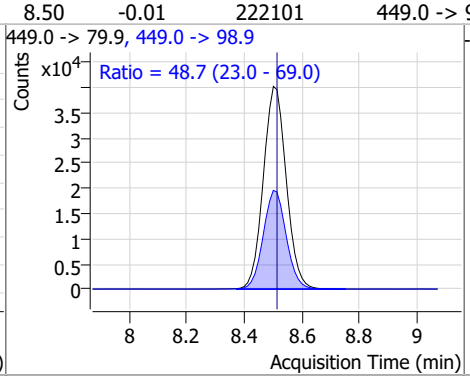


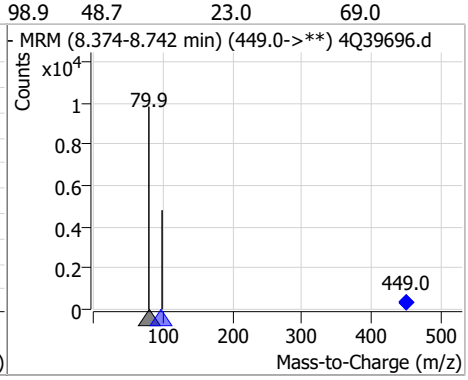


Perfluorinated Compounds by LC/MS/MS

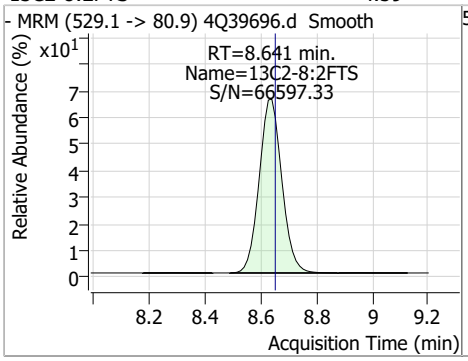
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.85	8.50	-0.01	222101	449.0 -> 98.9	48.7	23.0	69.0

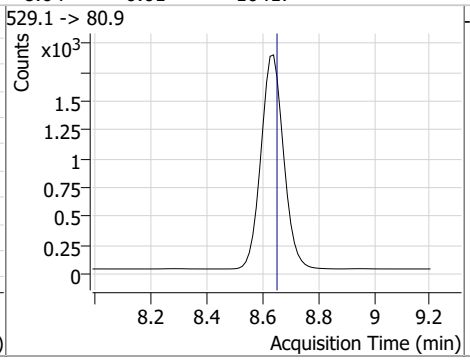


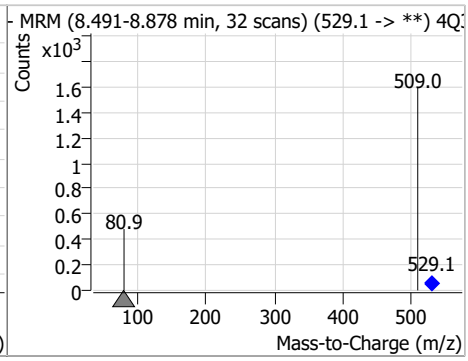




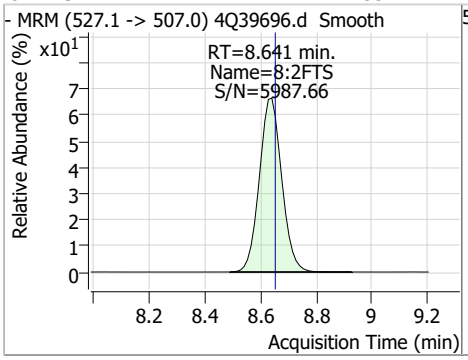
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.59	8.64	-0.01	10417				

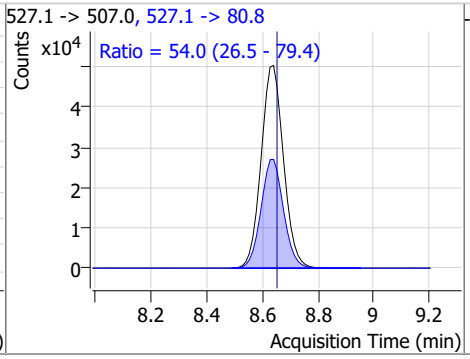


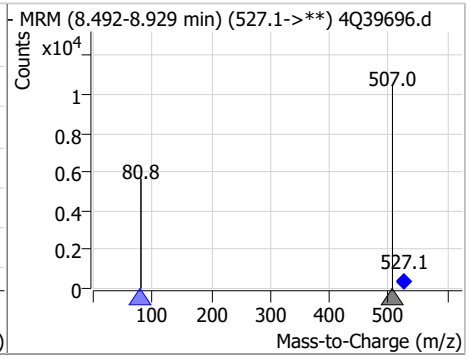




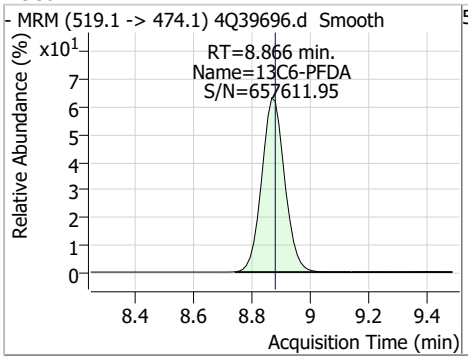
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	55.27	8.64	-0.01	278514	527.1 -> 80.8	54.0	26.5	79.4

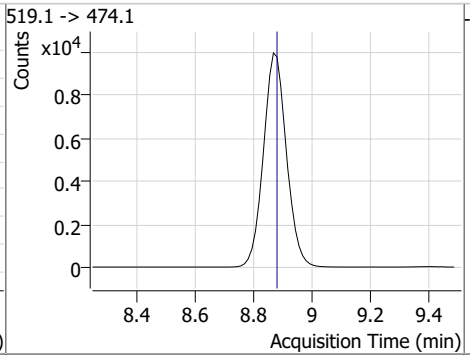


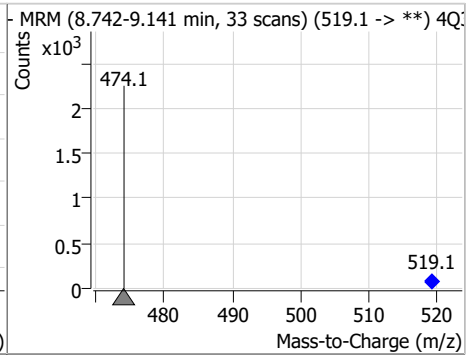




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.87	-0.01	54380				

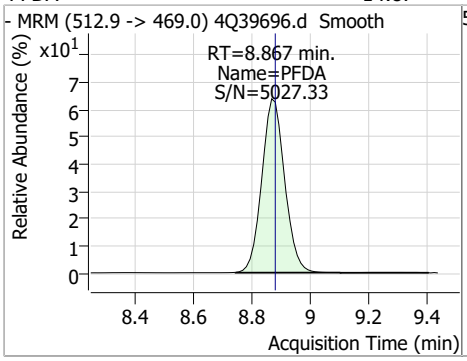


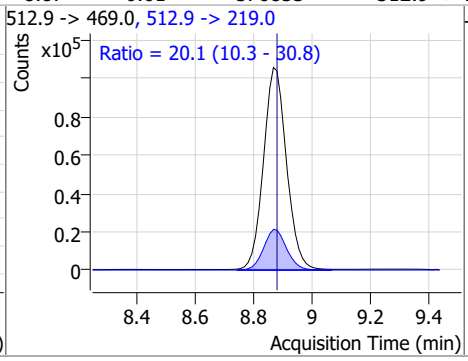


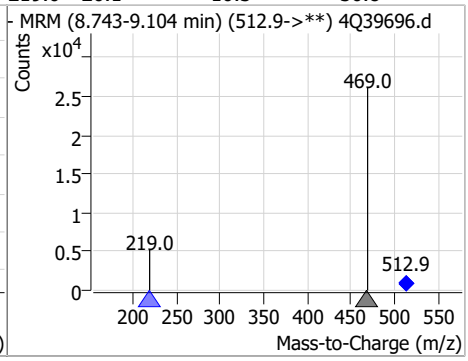


Perfluorinated Compounds by LC/MS/MS

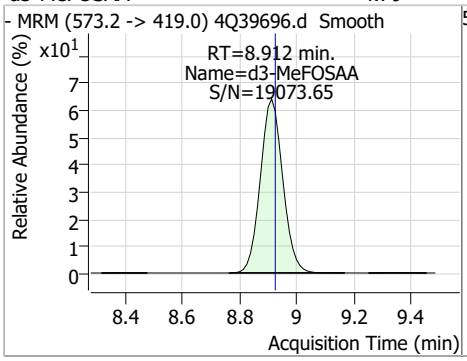
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	14.87	8.87	-0.01	576853	512.9 -> 219.0	20.1	10.3	30.8

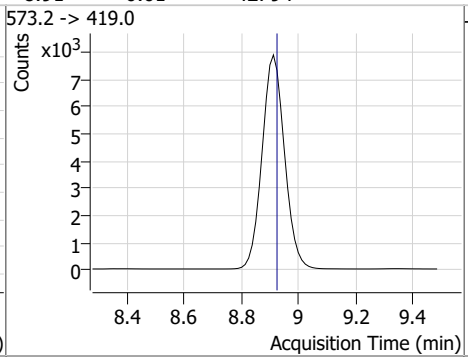


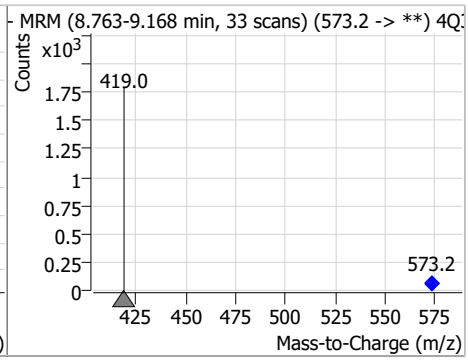




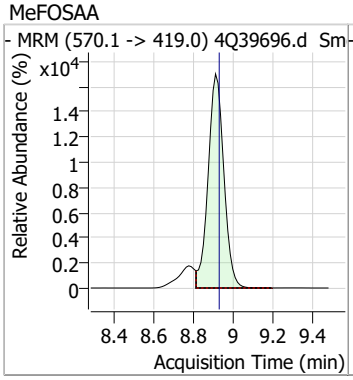
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.79	8.91	-0.01	42794				

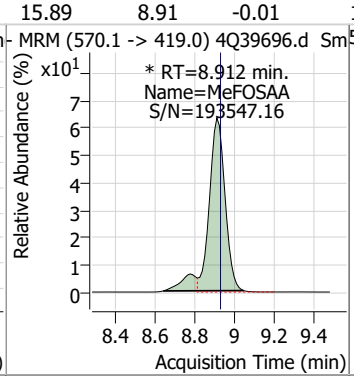


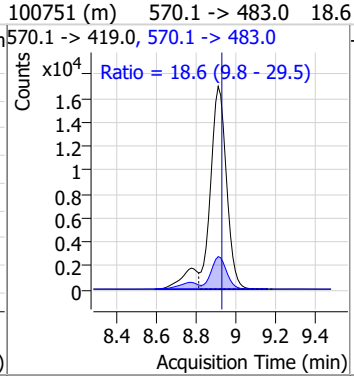


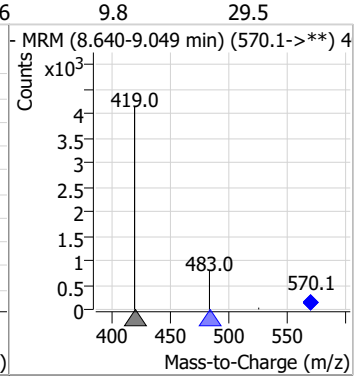


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	15.89	8.91	-0.01	100751 (m)	570.1 -> 483.0	18.6	9.8	29.5

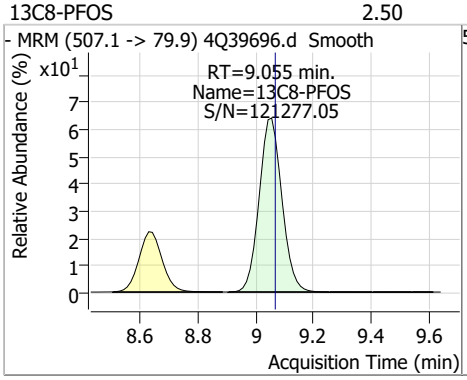


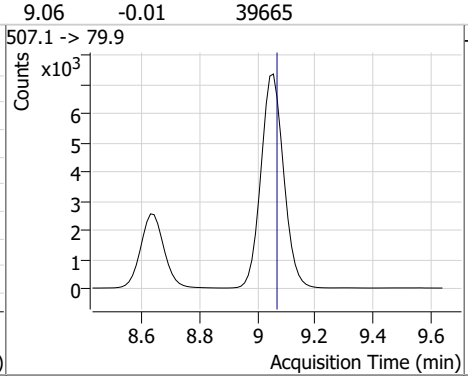


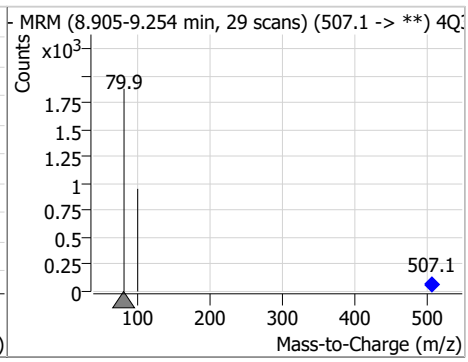




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.50	9.06	-0.01	39665				

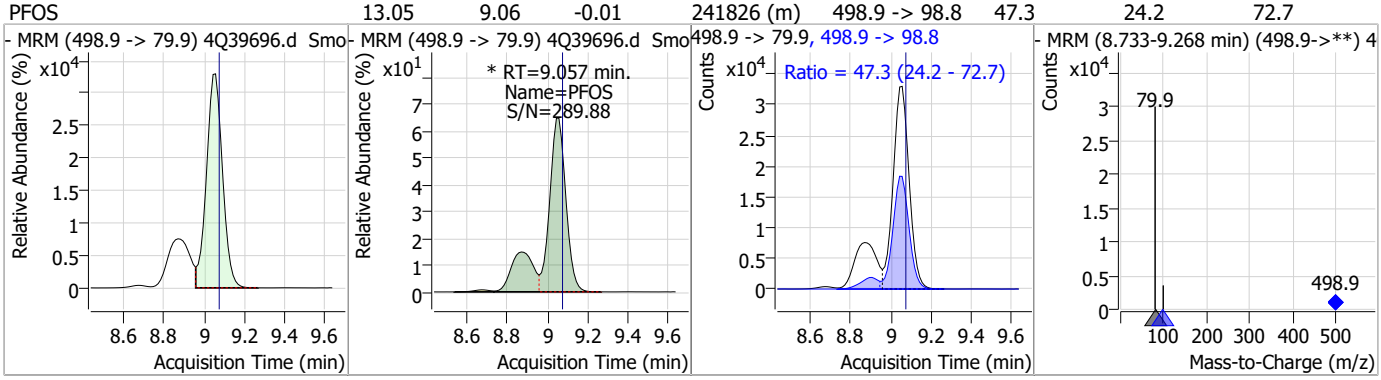




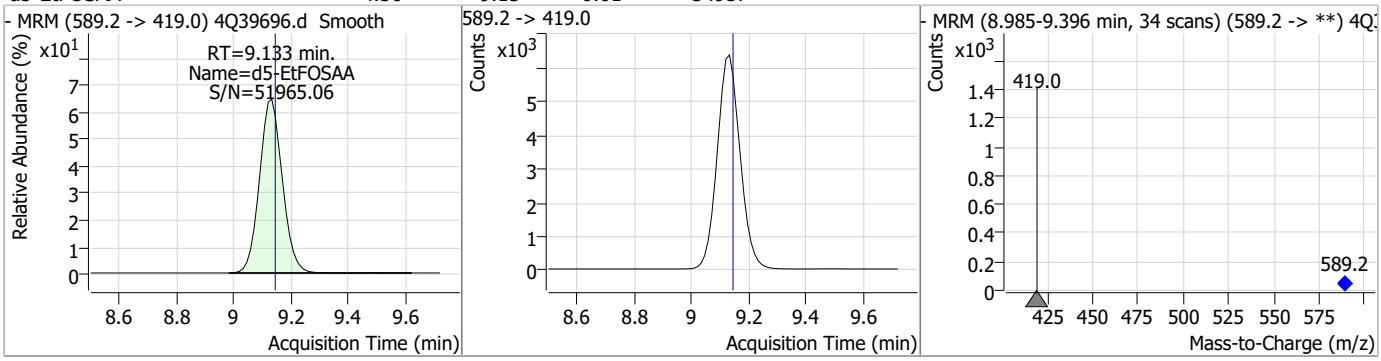


Perfluorinated Compounds by LC/MS/MS

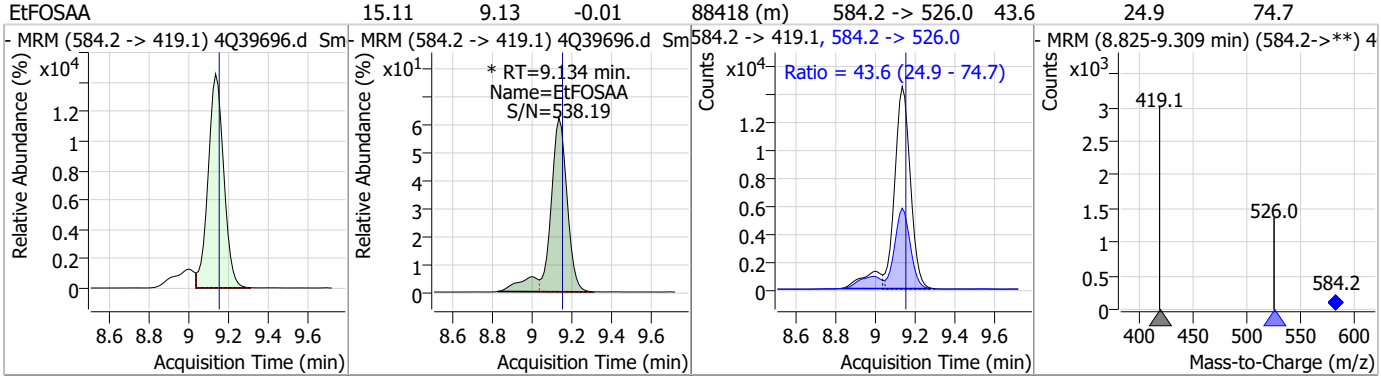
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	13.05	9.06	-0.01	241826 (m)	498.9 -> 98.8	47.3	24.2	72.7



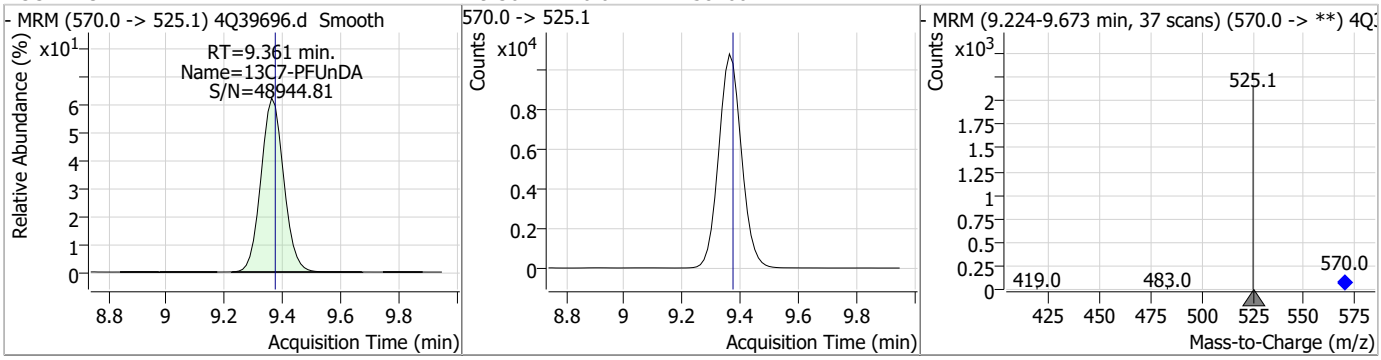
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.50	9.13	-0.01	34957				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.11	9.13	-0.01	88418 (m)	584.2 -> 526.0	43.6	24.9	74.7

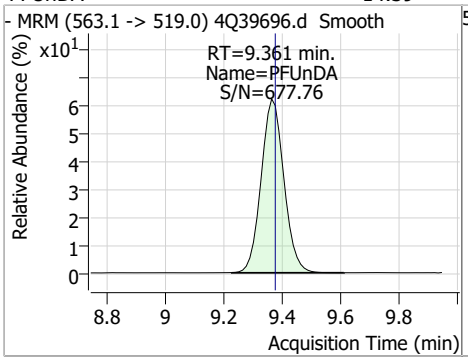


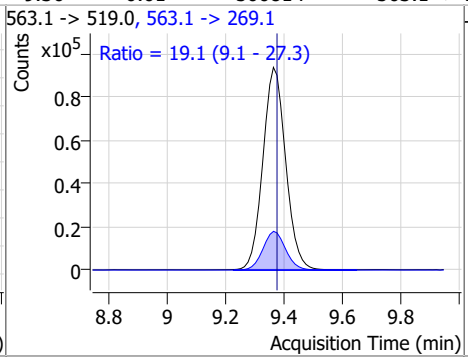
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	9.36	-0.01	58160				

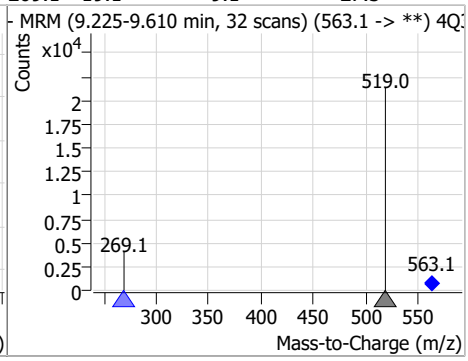


Perfluorinated Compounds by LC/MS/MS

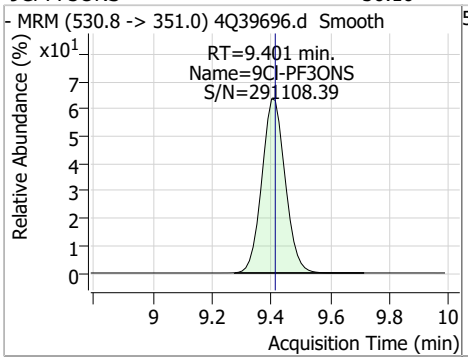
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.39	9.36	-0.01	506814	563.1 -> 269.1	19.1	9.1	27.3

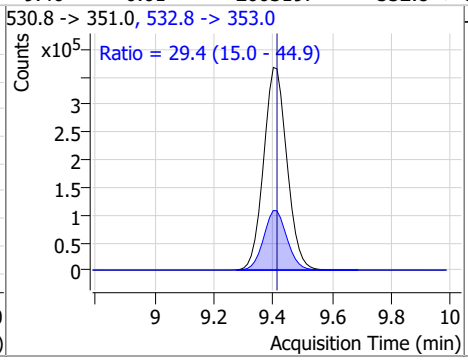


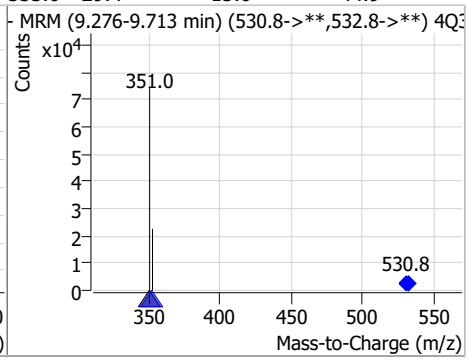




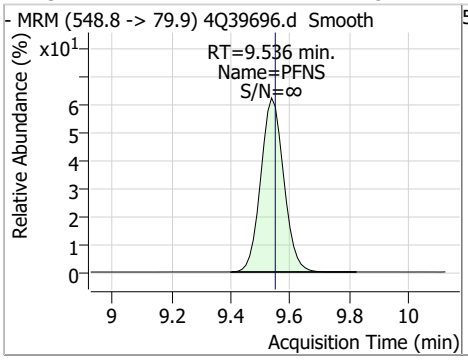
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	56.10	9.40	-0.01	2003197	532.8 -> 353.0	29.4	15.0	44.9

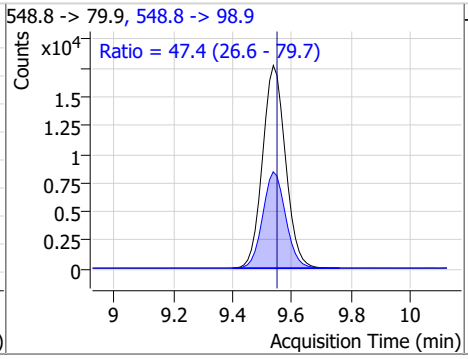


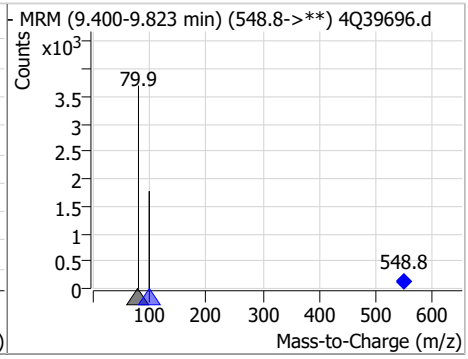




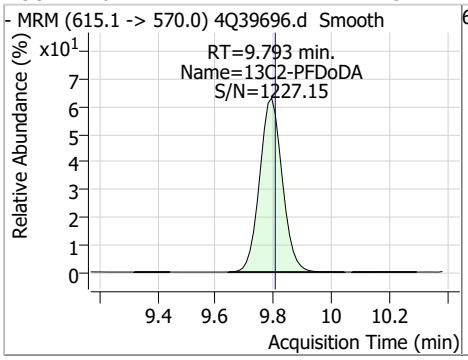
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.47	9.54	-0.01	95073	548.8 -> 98.9	47.4	26.6	79.7

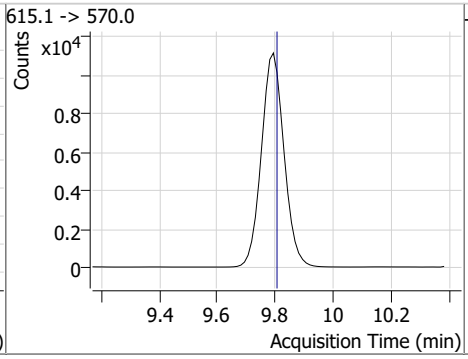


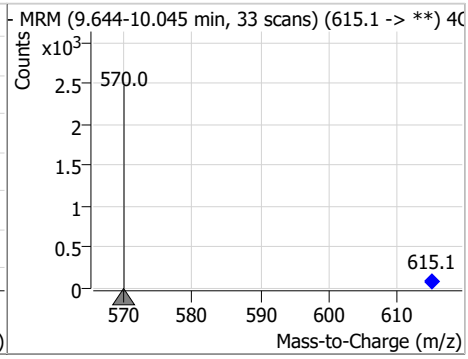




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	9.79	-0.01	59817				

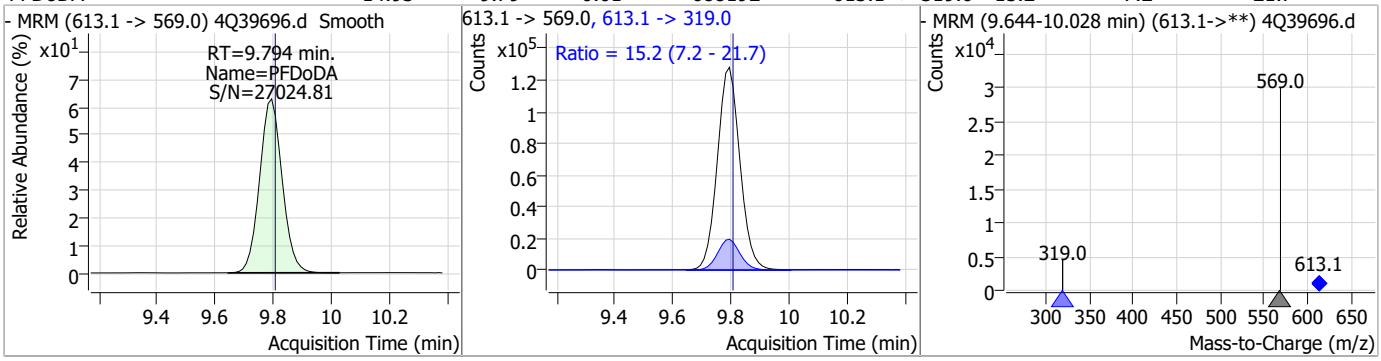




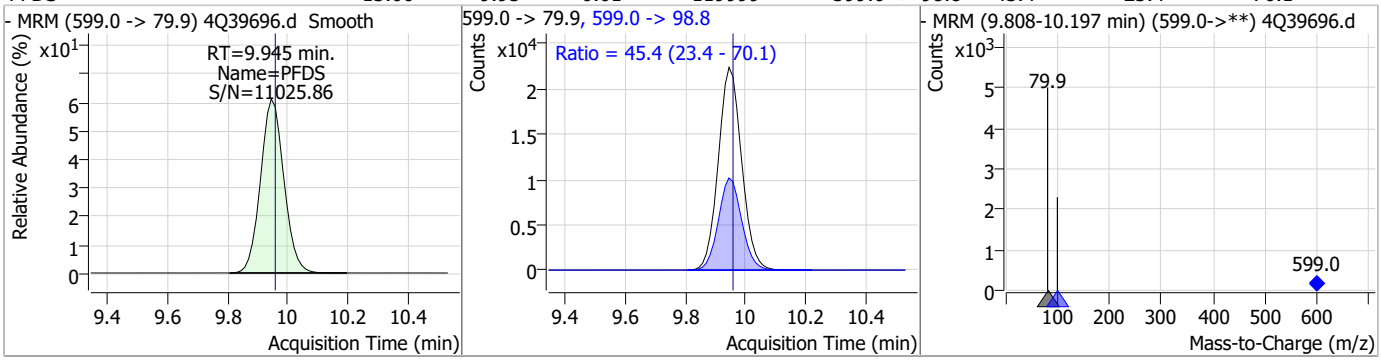


Perfluorinated Compounds by LC/MS/MS

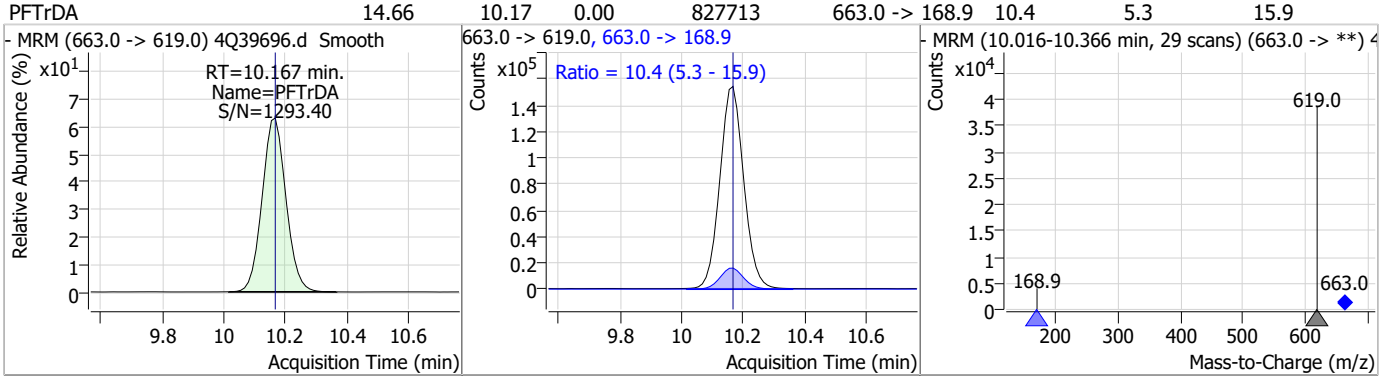
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	14.93	9.79	-0.01	688192	613.1 -> 319.0	15.2	7.2	21.7



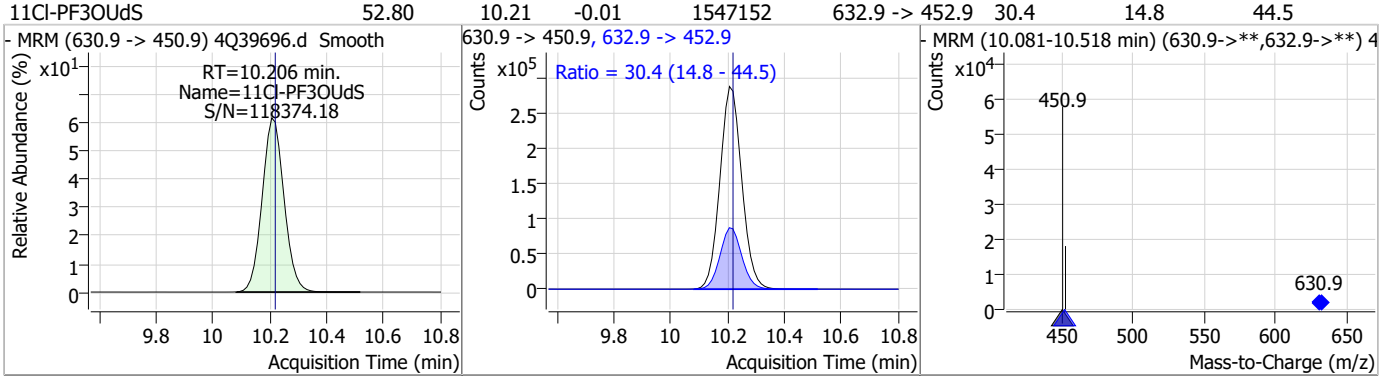
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	13.06	9.95	-0.01	119999	599.0 -> 98.8	45.4	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	14.66	10.17	0.00	827713	663.0 -> 168.9	10.4	5.3	15.9

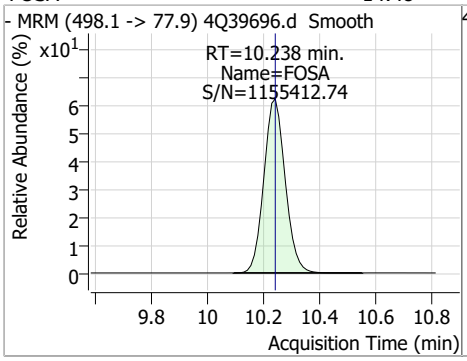


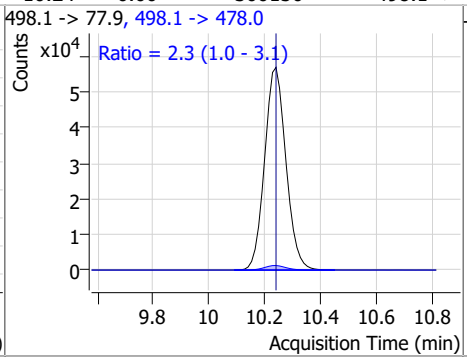
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	52.80	10.21	-0.01	1547152	632.9 -> 452.9	30.4	14.8	44.5

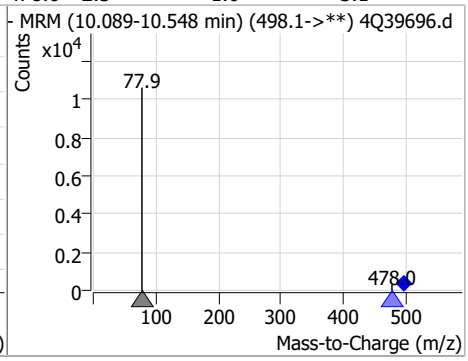


Perfluorinated Compounds by LC/MS/MS

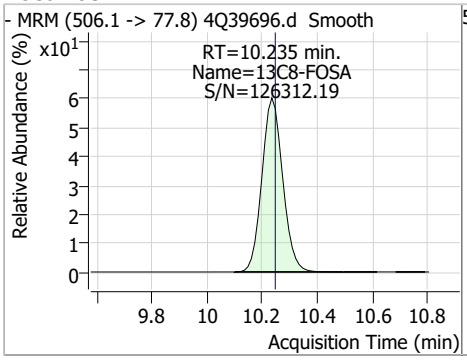
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	14.48	10.24	0.00	300150	498.1 -> 478.0	2.3	1.0	3.1

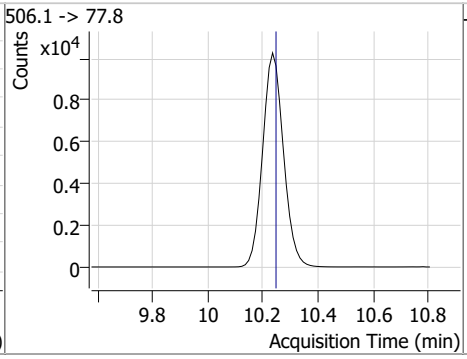


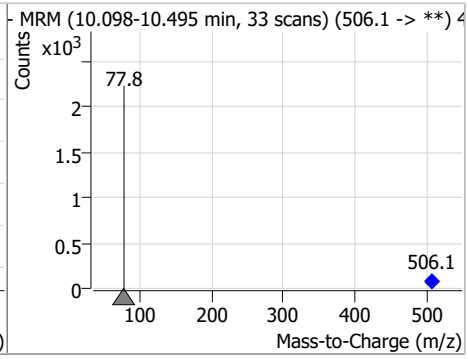




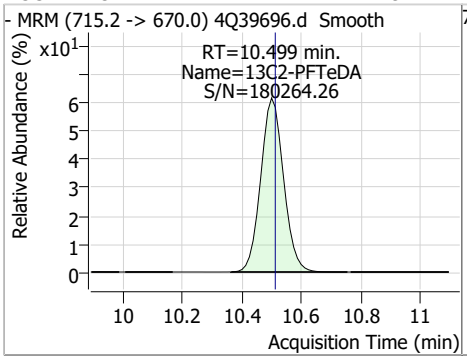
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.41	10.23	-0.01	53662				

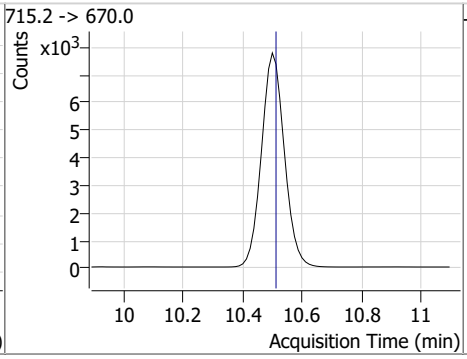


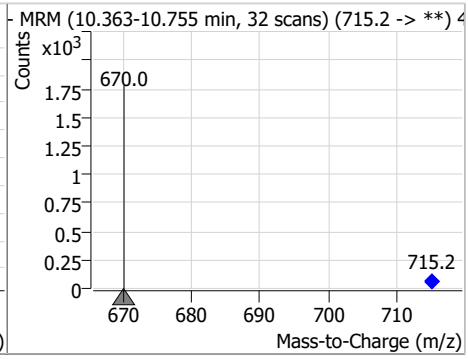




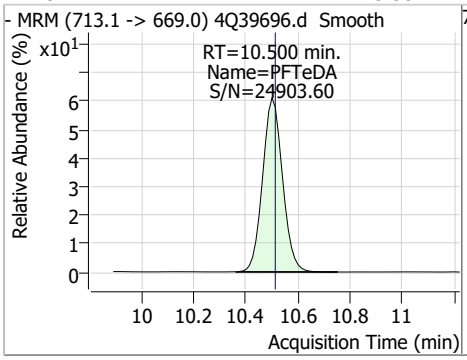
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.19	10.50	-0.01	41390				

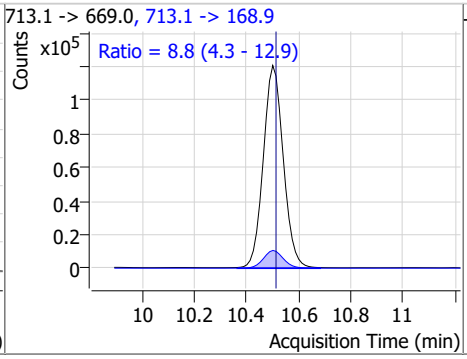


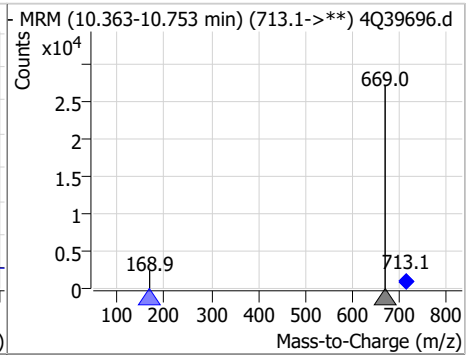




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	15.38	10.50	-0.01	640468	713.1 -> 168.9	8.8	4.3	12.9

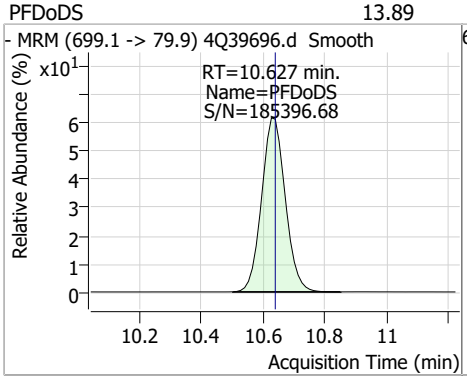


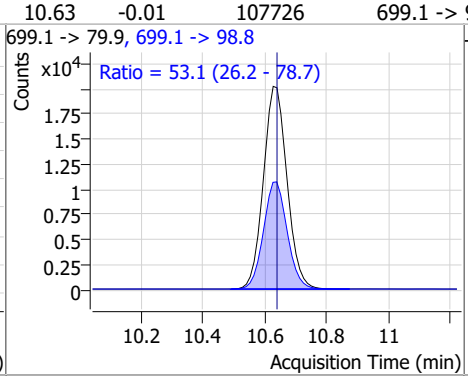


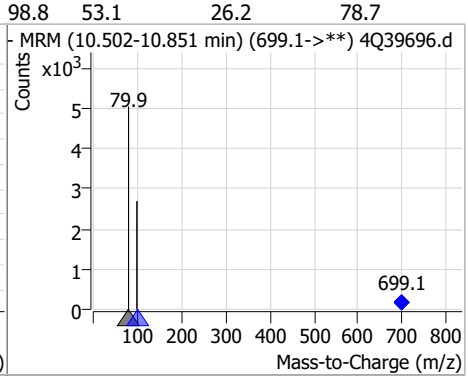


Perfluorinated Compounds by LC/MS/MS

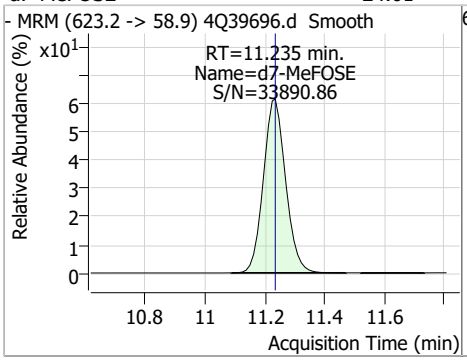
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	13.89	10.63	-0.01	107726	699.1 -> 98.8	53.1	26.2	78.7

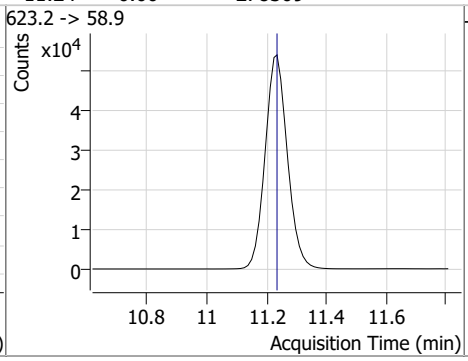


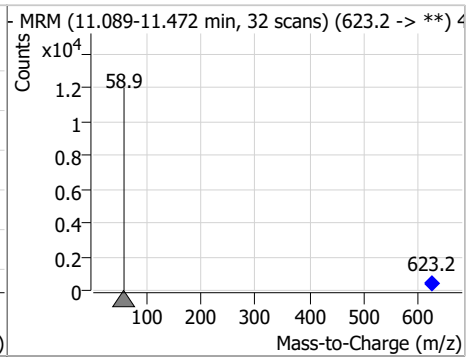




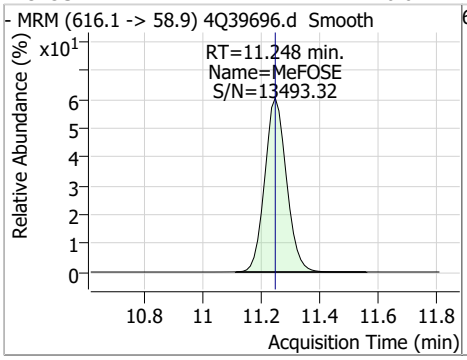
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.01	11.24	0.00	278309				

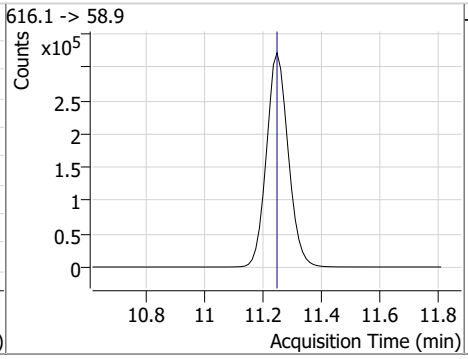


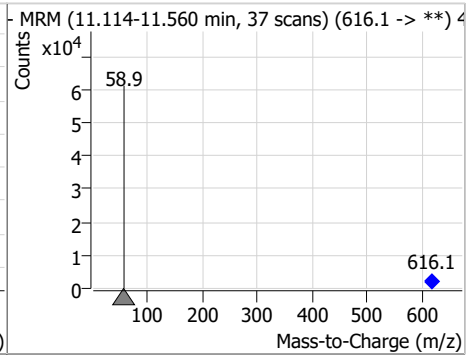




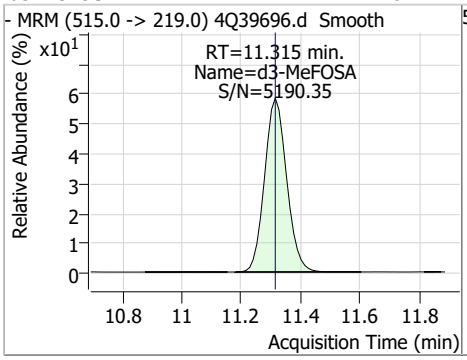
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	140.67	11.25	0.00	1653958				

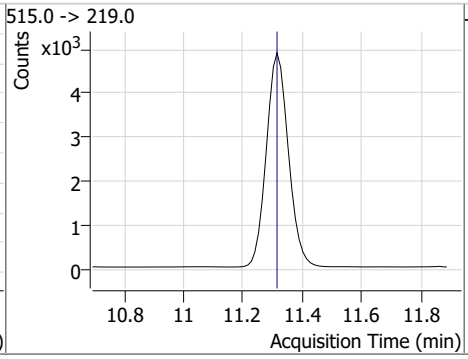


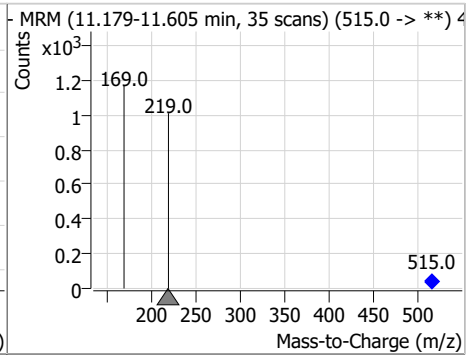




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.48	11.31	0.00	25177				

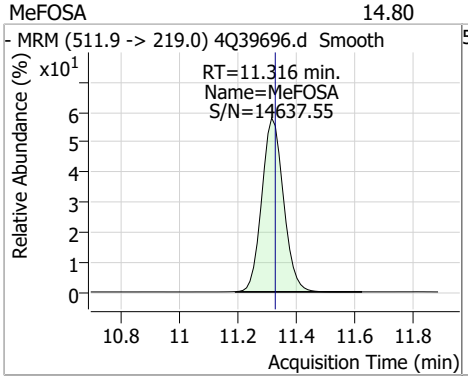


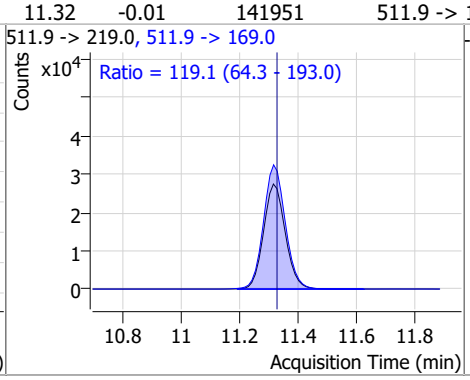


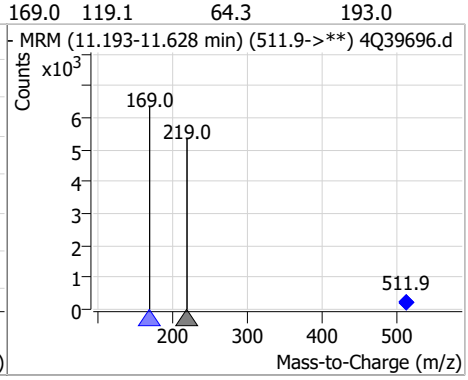


Perfluorinated Compounds by LC/MS/MS

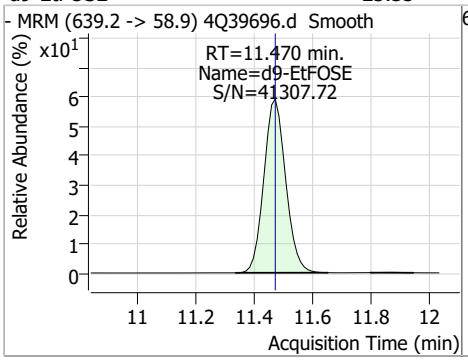
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	14.80	11.32	-0.01	141951	511.9 -> 169.0	119.1	64.3	193.0

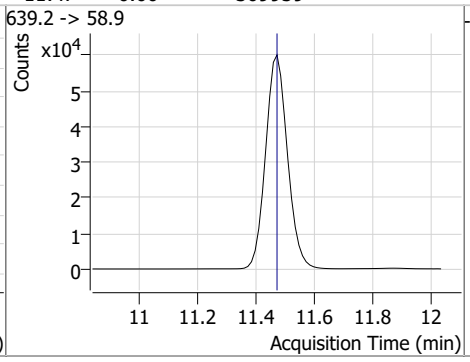


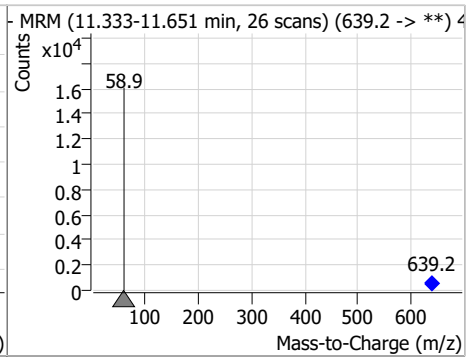




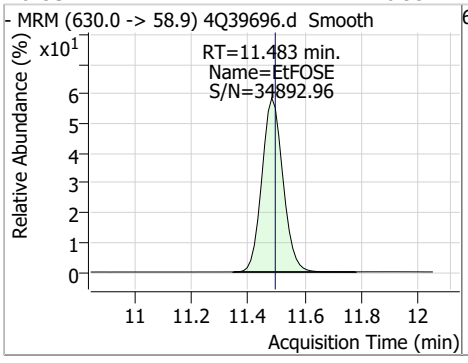
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.35	11.47	0.00	309959				

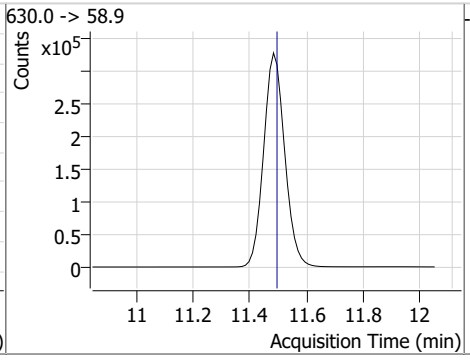


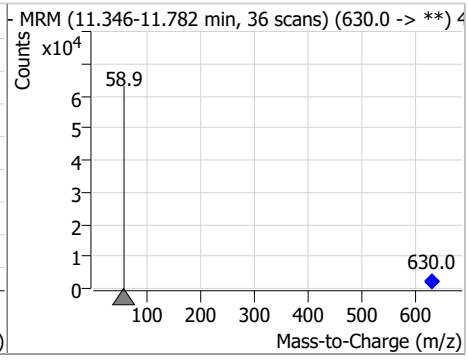




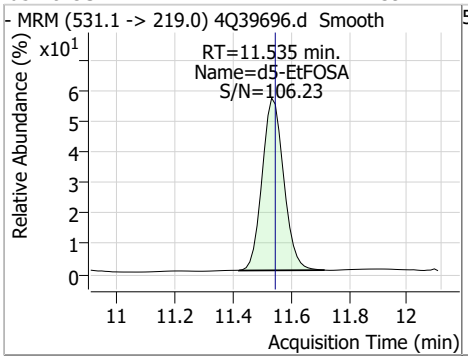
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	140.95	11.48	-0.01	1696285				

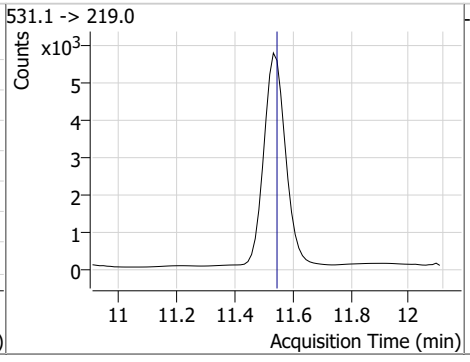


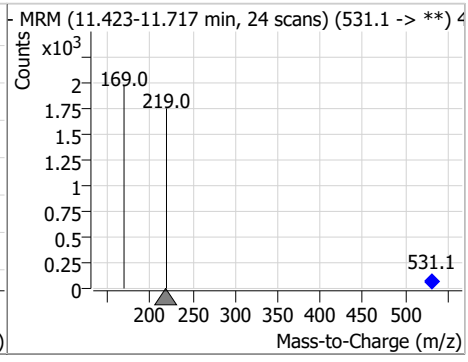




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.39	11.54	-0.01	28962				

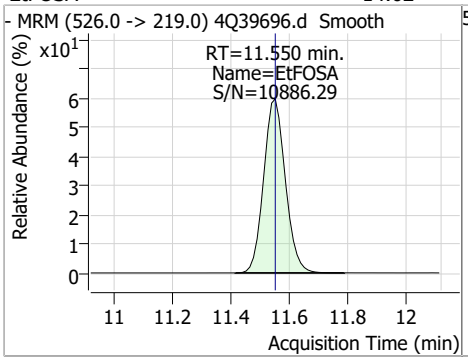


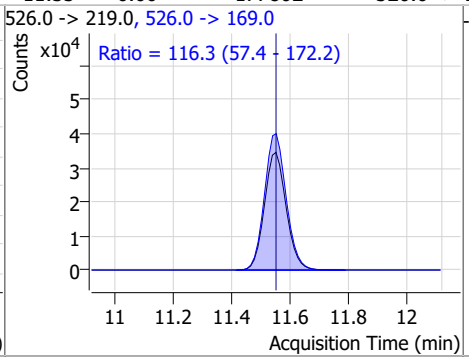


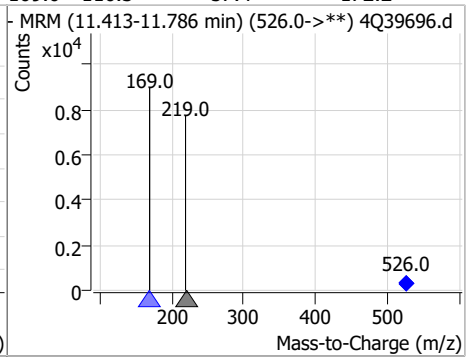


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	14.62	11.55	0.00	177802	526.0 -> 169.0	116.3	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39696.D
Injection Time: 01/25/23 14:23
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39697.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 2:38:03 PM
Sample Name : ic571-7
Vial : P1-A8
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.174	216.8 -> 171.9	350066	10.00	µg/L	0.000
M5-PFPeA	4.863	268.3 -> 223.0	244619	5.00	µg/L	0.000
M5-PFHxA	6.172	318.0 -> 273.0	160250	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	91182	2.50	µg/L	0.000
M8-PFOA	7.776	421.1 -> 376.0	134744	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	67313	1.25	µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	52323	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	54128	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	57922	1.25	µg/L	-0.012
M2-PFTeDA	10.499	715.2 -> 670.0	41187	1.25	µg/L	-0.012
M8-FOSA	10.247	506.1 -> 77.8	53535	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	44844	2.50	µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	28621	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	36041	2.50	µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	3071	5.00	µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	6378	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	9324	5.00	µg/L	-0.012
M3-MeFOSAA	8.924	573.2 -> 419.0	38921	5.00	µg/L	0.000
M3-HFPO-DA	6.551	286.9 -> 168.9	120106	10.00	µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	37679	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	266840	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	287681	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	28999	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	23987	2.50	µg/L	0.000
13C4-PFOS	9.056	502.8 -> 79.9	35798	2.50	µg/L	-0.012
13C3-PFBA	3.178	216.0 -> 172.0	197800	5.00	µg/L	0.000
18O2-PFHxS	7.903	403.0 -> 83.9	19923	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	154783	2.50	µg/L	-0.012
13C2-PFDA	8.879	515.1 -> 470.1	49313	1.25	µg/L	0.000
13C5-PFNA	8.348	468.0 -> 423.0	78977	1.25	µg/L	-0.012
13C2-PFHxA	6.173	315.1 -> 270.0	153692	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.808	329.1 -> 80.9	3071	4.28	µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.5%		
13C2-6:2FTS	7.524	429.1 -> 80.9	6378	3.97	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 79.4%		
13C2-8:2FTS	8.641	529.1 -> 80.9	9324	4.24	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C2-PFDoDA	9.793	615.1 -> 570.0	57922	1.21	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C2-PFTeDA	10.499	715.2 -> 670.0	41187	1.21	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-PFBS	6.089	302.1 -> 79.9	44844	2.60	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C3-PFHxS	7.904	402.1 -> 79.9	28621	2.46	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C4-PFBA	3.174	216.8 -> 171.9	350066	9.81 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C4-PFHpA	7.106	367.1 -> 322.0	91182	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFHxA	6.172	318.0 -> 273.0	160250	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFPeA	4.863	268.3 -> 223.0	244619	4.89 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C6-PFDA	8.879	519.1 -> 474.1	52323	1.20 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C7-PFUnDA	9.373	570.0 -> 525.1	54128	1.16 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C8-FOSA	10.247	506.1 -> 77.8	53535	2.62 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-PFOA	7.776	421.1 -> 376.0	134744	2.43 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOS	9.055	507.1 -> 79.9	36041	2.47 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C9-PFNA	8.347	472.1 -> 427.0	67313	1.20 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%		
d3-MeFOSAA	8.924	573.2 -> 419.0	38921	4.73 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	120106	9.80 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
d3-MeFOSA	11.315	515.0 -> 219.0	23987	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
d5-EtFOSAA	9.133	589.2 -> 419.0	37679	5.26 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
d7-MeFOSE	11.235	623.2 -> 58.9	266840	25.00 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d9-EtFOSE	11.470	639.2 -> 58.9	287681	23.53 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
d5-EtFOSA	11.535	531.1 -> 219.0	28999	2.60 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%		
Target Compounds						QValue
4:2FTS	5.809	327.1 -> 307.0	525658	104.73 µg/L		100
		327.1 -> 80.9	244079			
6:2FTS	7.524	427.1 -> 407.0	537883	106.40 µg/L		99
		427.1 -> 80.9	261729			
8:2FTS	8.641	527.1 -> 507.0	470186	104.24 µg/L		100
		527.1 -> 80.8	250131			
EtFOSAA	9.147	584.2 -> 419.1	171932	27.25 µg/L	m	92
		584.2 -> 526.0	76617			
FOSA	10.238	498.1 -> 77.9	558333	27.01 µg/L		100
		498.1 -> 478.0	11125			
MeFOSAA	8.925	570.1 -> 419.0	187178	32.46 µg/L	m	100
		570.1 -> 483.0	36751			
PFBA	3.170	212.8 -> 168.9	1138692	116.89 µg/L		100
PFBS	6.090	298.7 -> 79.9	504554	24.90 µg/L		98
		298.7 -> 98.8	179779			
PFDA	8.879	512.9 -> 469.0	1099336	29.45 µg/L		100
		512.9 -> 219.0	225891			
PFDoDA	9.794	613.1 -> 569.0	1268326	28.41 µg/L		98
		613.1 -> 319.0	193951			
PFDS	9.959	599.0 -> 79.9	229635	27.51 µg/L		99

Perfluorinated Compounds by LC/MS/MS

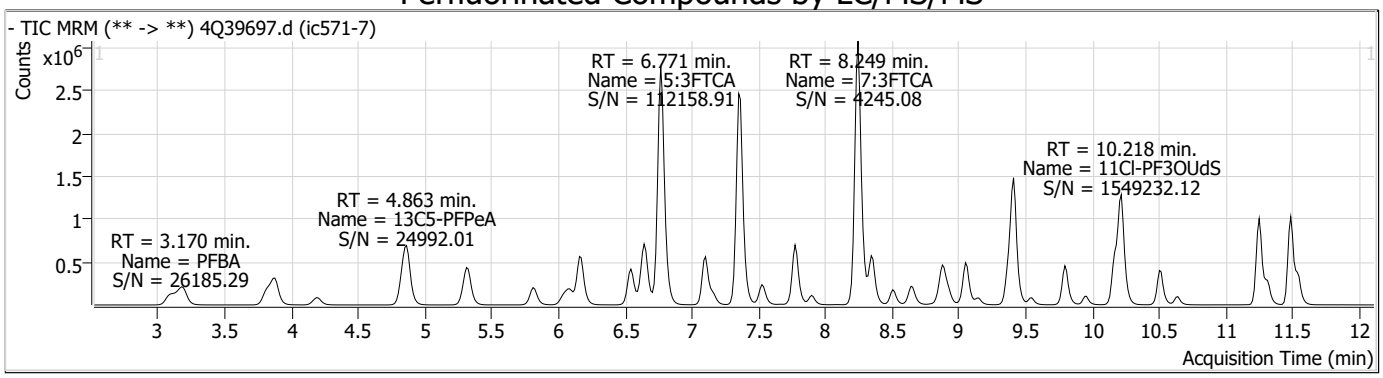
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	108594				
PFHpA	7.106	363.1 -> 319.0	1608807	28.31	µg/L		99
		363.1 -> 169.0	277059				
PFHpS	8.513	449.0 -> 79.9	409445	28.11	µg/L		95
		449.0 -> 98.9	201777				
PFHxA	6.175	313.0 -> 269.0	1799895	28.88	µg/L		99
		313.0 -> 118.9	56317				
PFHxS	7.905	398.7 -> 79.9	255178	27.60	µg/L	m	97
		398.7 -> 98.9	119186				
PFNA	8.360	463.0 -> 419.0	1384587	28.29	µg/L		97
		463.0 -> 219.0	341623				
PFNS	9.549	548.8 -> 79.9	181262	28.26	µg/L		93
		548.8 -> 98.9	87610				
PFOA	7.777	413.0 -> 369.0	1717813	28.68	µg/L		98
		413.0 -> 169.0	366208				
PFOS	9.057	498.9 -> 79.9	463766	27.55	µg/L	m	99
		498.9 -> 98.8	221145				
PFPeA	4.866	263.0 -> 219.0	3030712	56.49	µg/L		100
PFPeS	7.171	349.1 -> 79.9	251961	28.21	µg/L		99
		349.1 -> 98.9	100078				
PFTeDA	10.500	713.1 -> 669.0	1207927	29.15	µg/L		99
		713.1 -> 168.9	106582				
PFTrDA	10.167	663.0 -> 619.0	1506789	27.57	µg/L		100
		663.0 -> 168.9	159602				
PFUnDA	9.374	563.1 -> 519.0	951755	29.05	µg/L		98
		563.1 -> 269.1	181336				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	2769757	98.66	µg/L		99
		632.9 -> 452.9	834953				
9Cl-PF3ONS	9.413	530.8 -> 351.0	3685518	107.73	µg/L		100
		532.8 -> 353.0	1095683				
ADONA	7.369	376.9 -> 250.9	6616281	102.12	µg/L		99
		376.9 -> 84.8	2296038				
HFPO-DA	6.552	284.9 -> 168.9	1277394	112.84	µg/L		99
		284.9 -> 184.9	139379				
3:3FTCA	4.192	241.0 -> 177.0	375562	149.32	µg/L		99
		241.0 -> 117.0	34067				
5:3FTCA	6.771	341.0 -> 237.1	5755542	694.42	µg/L		99
		341.0 -> 217.0	4332447				
7:3FTCA	8.249	441.0 -> 316.9	3322260	697.97	µg/L		98
		441.0 -> 336.9	7623121				
EtFOSA	11.550	526.0 -> 219.0	338432	27.78	µg/L		98
		526.0 -> 169.0	396413				
EtFOSE	11.483	630.0 -> 58.9	2966644	265.60	µg/L		100
MeFOSA	11.316	511.9 -> 219.0	273278	29.91	µg/L		93
		511.9 -> 169.0	328823				
MeFOSE	11.248	616.1 -> 58.9	2950093	261.69	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	199036	28.24	µg/L		96
		699.1 -> 98.8	109470				
NFDHA	6.041	295.0 -> 201.0	227429	55.55	µg/L		100
		295.0 -> 84.9	65928				
PFMBA	5.316	279.0 -> 85.1	1893468	56.62	µg/L		100
PFMPA	3.869	229.0 -> 84.9	1984262	57.51	µg/L		100
PFEESA	6.647	314.8 -> 134.9	2702597	50.74	µg/L		100
		314.8 -> 82.9	89154				

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

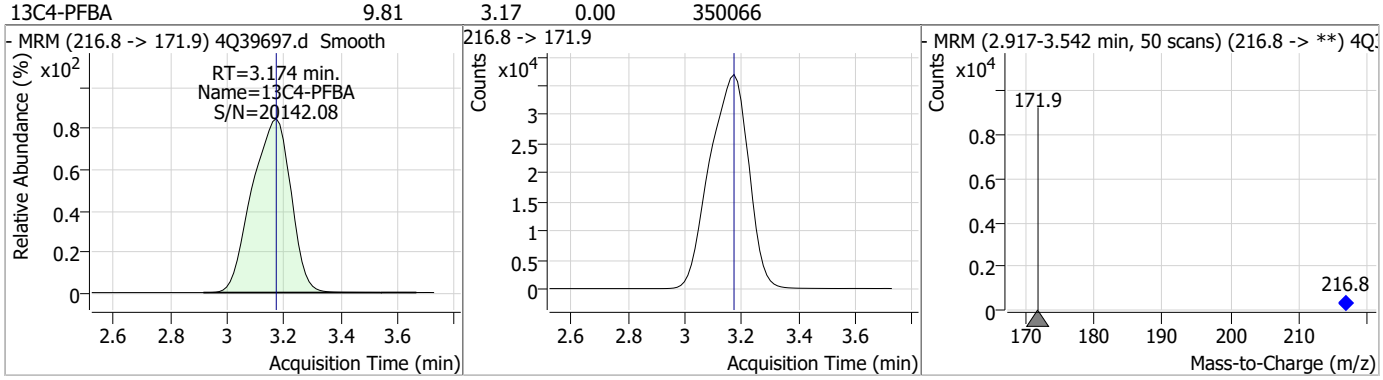
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

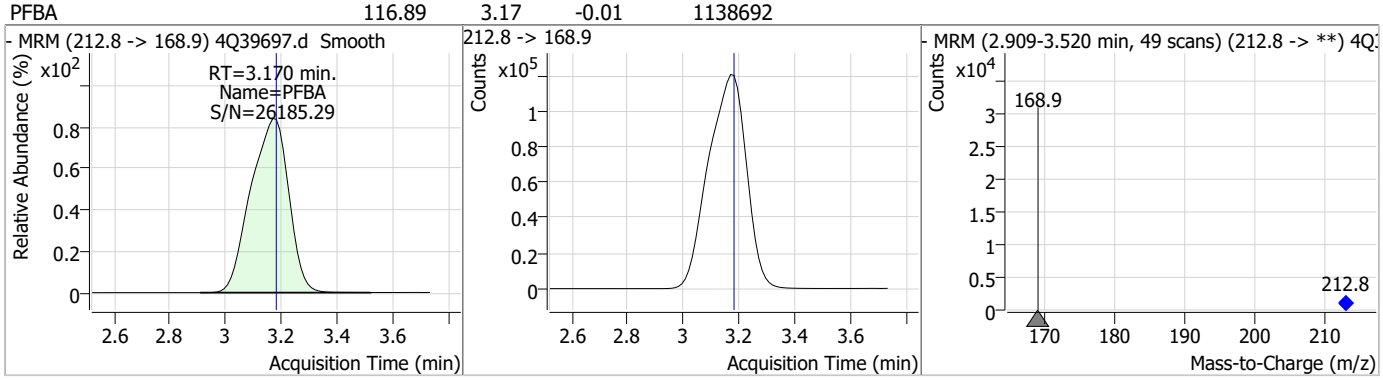
Perfluorinated Compounds by LC/MS/MS



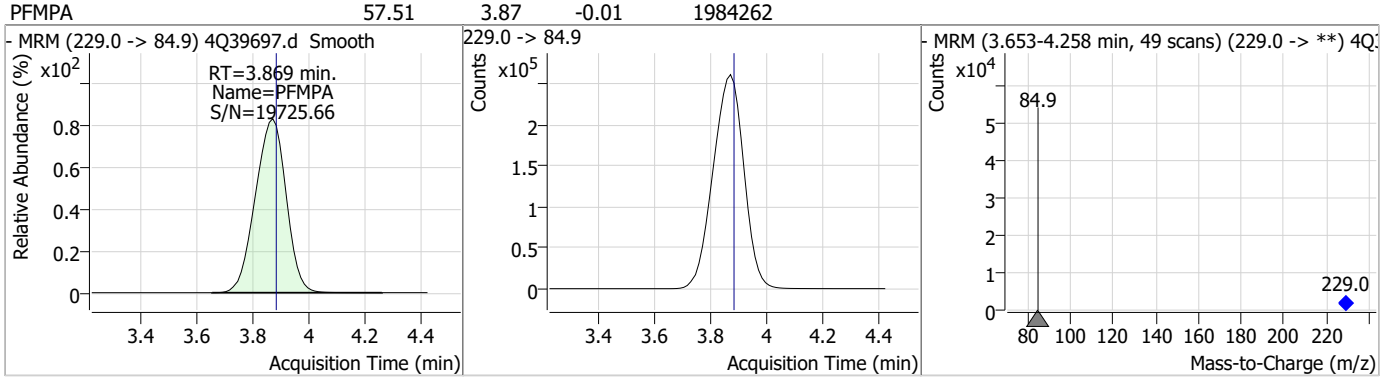
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.81	3.17	0.00	350066				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	116.89	3.17	-0.01	1138692				

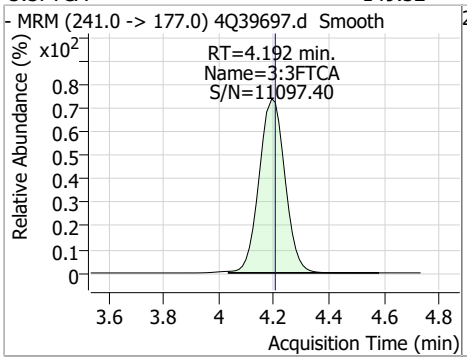


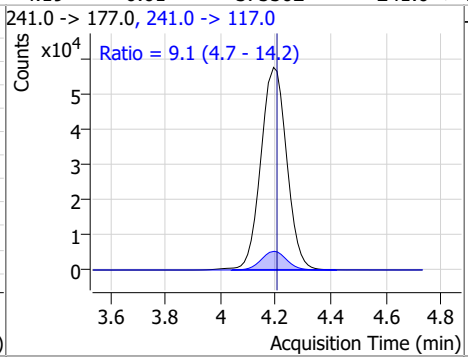
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	57.51	3.87	-0.01	1984262				

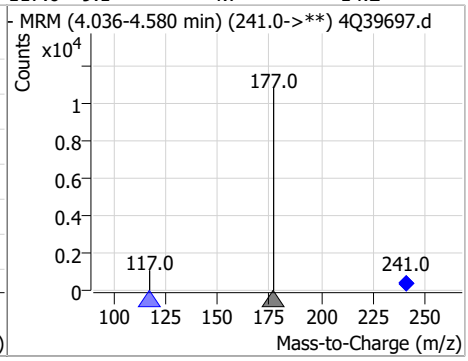


Perfluorinated Compounds by LC/MS/MS

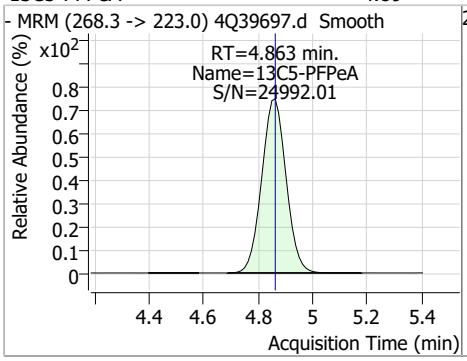
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	149.32	4.19	-0.01	375562	241.0 -> 117.0	9.1	4.7	14.2

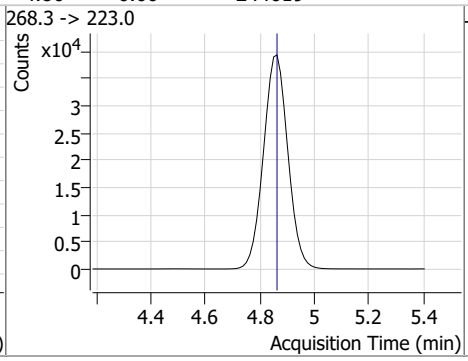


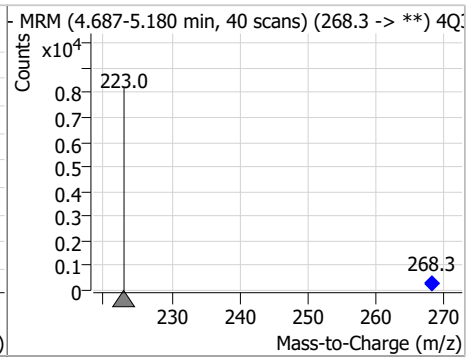




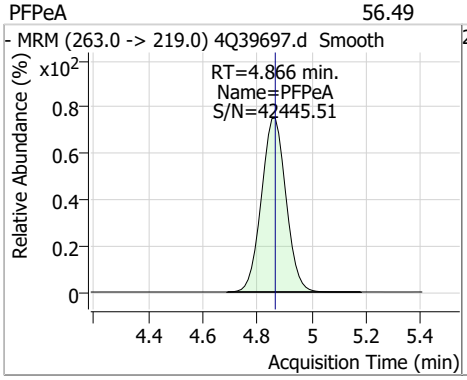
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.89	4.86	0.00	244619				

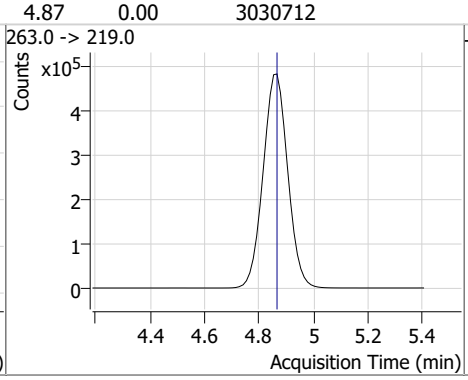


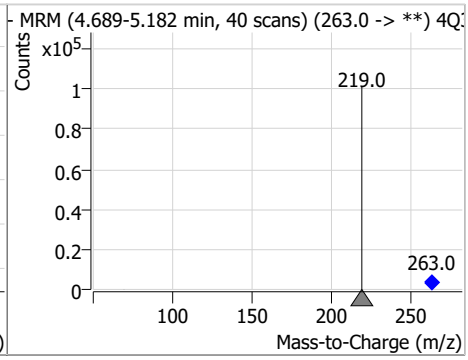




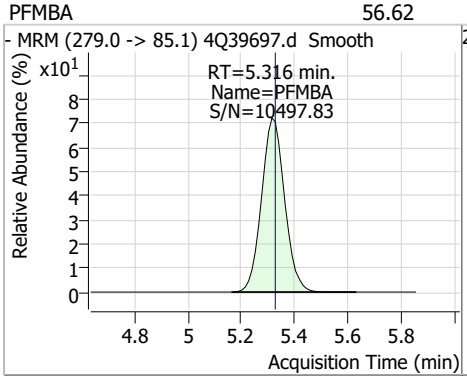
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	56.49	4.87	0.00	3030712				

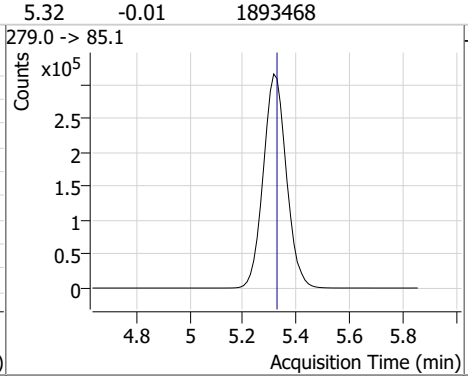


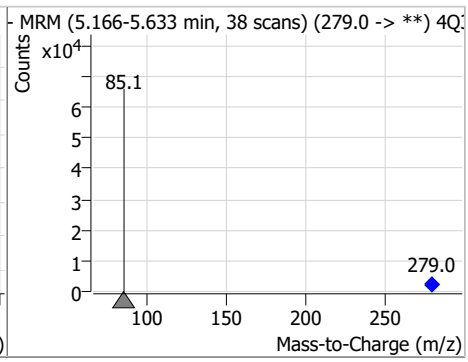




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	56.62	5.32	-0.01	1893468				

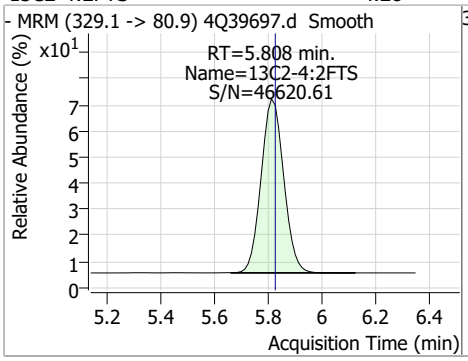


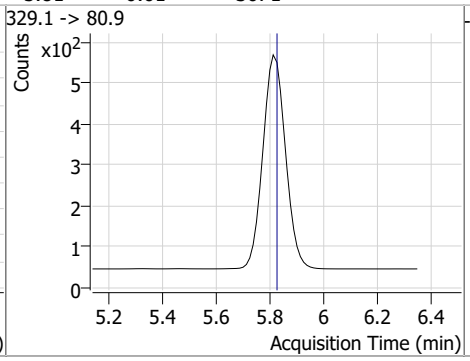


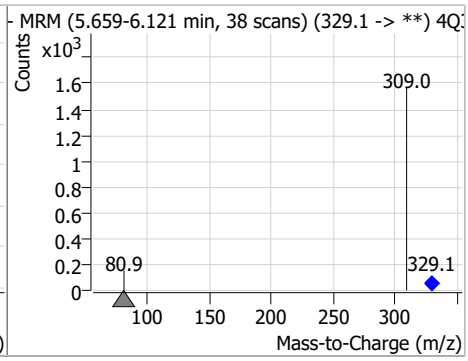


Perfluorinated Compounds by LC/MS/MS

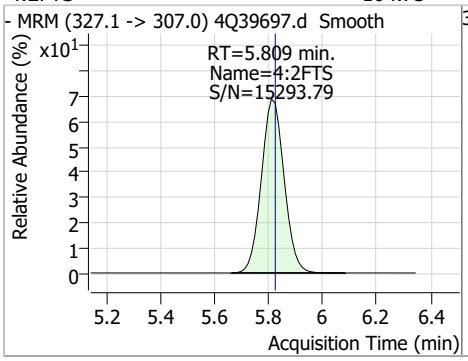
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.28	5.81	-0.01	3071				

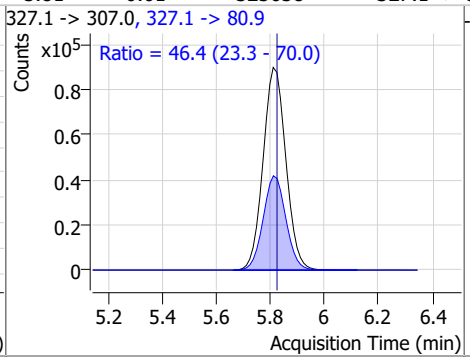


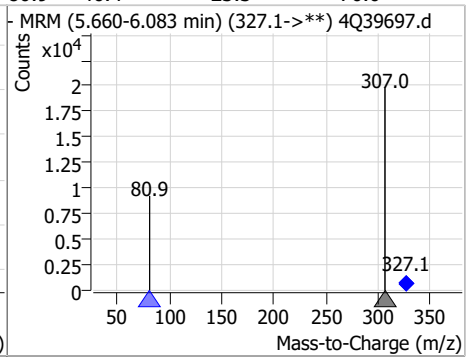




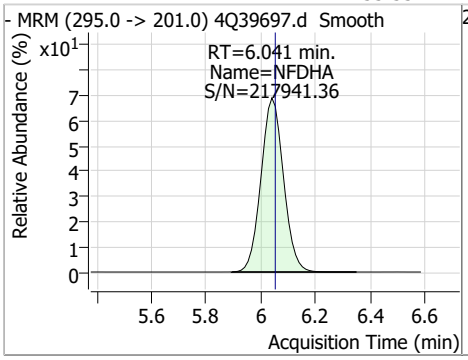
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	104.73	5.81	-0.01	525658	327.1 -> 80.9	46.4	23.3	70.0

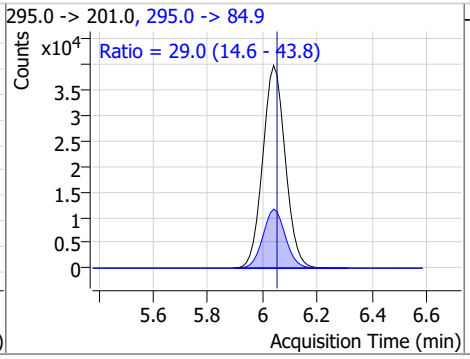


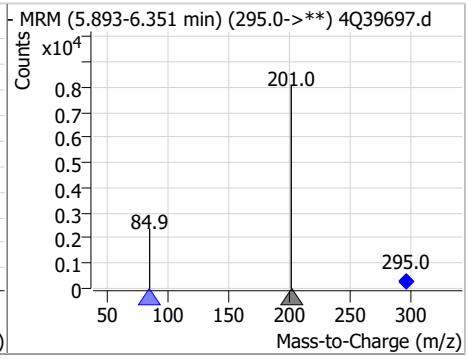




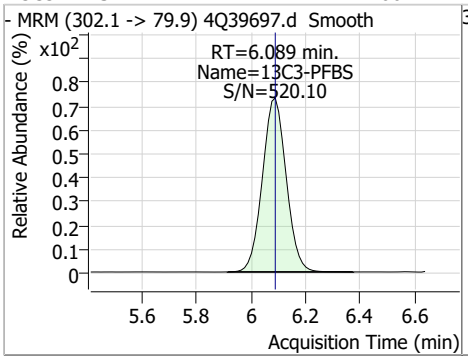
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	55.55	6.04	-0.01	227429	295.0 -> 84.9	29.0	14.6	43.8

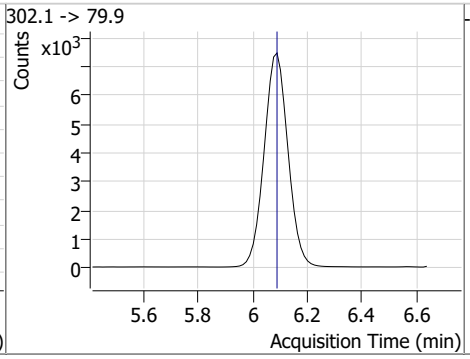


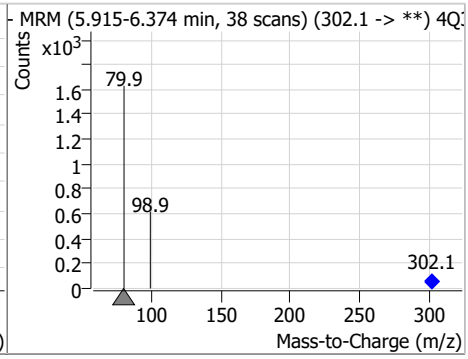




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.60	6.09	0.00	44844				

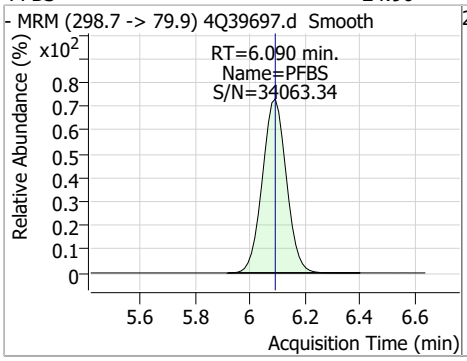


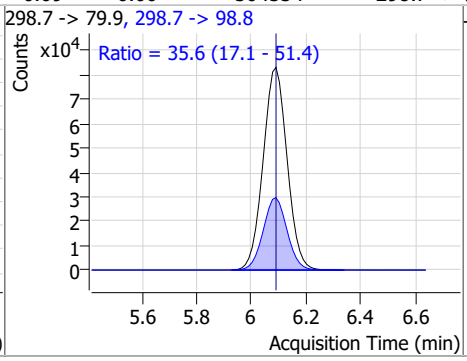


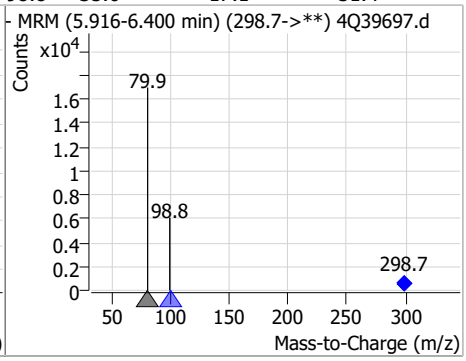


Perfluorinated Compounds by LC/MS/MS

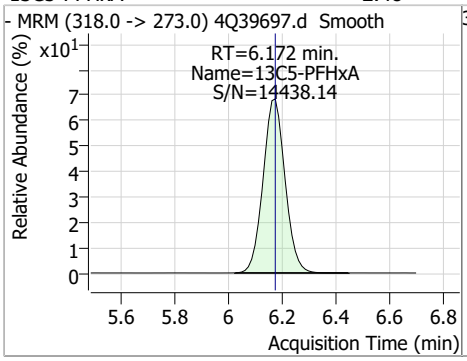
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	24.90	6.09	0.00	504554	298.7 -> 98.8	35.6	17.1	51.4

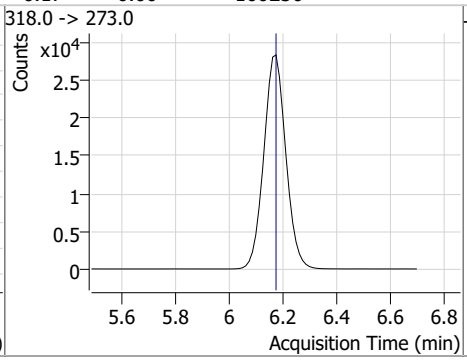


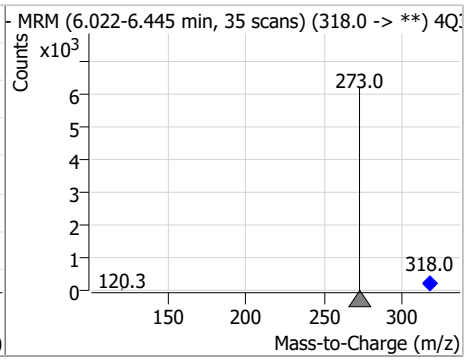




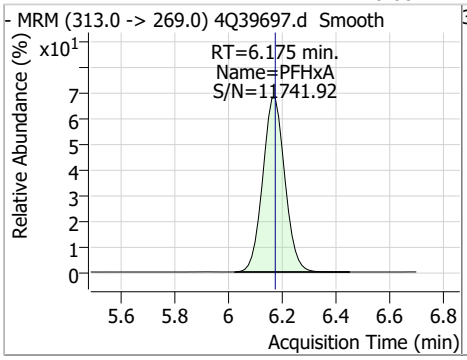
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	6.17	0.00	160250				

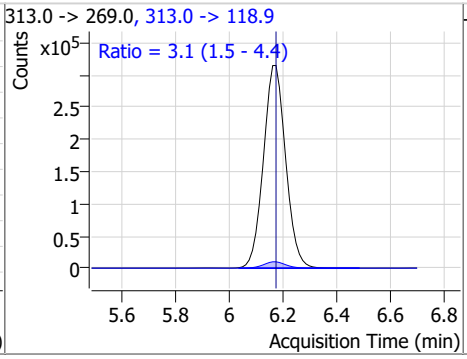


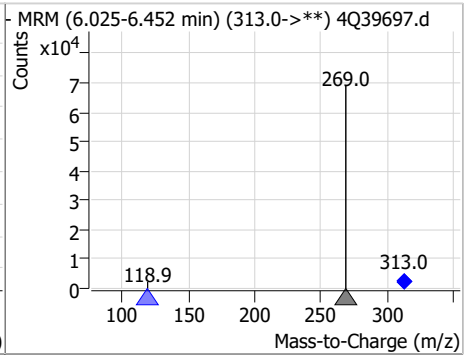




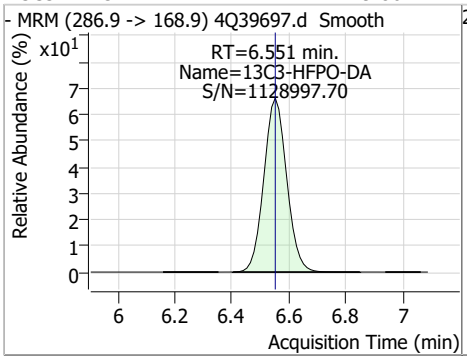
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	28.88	6.17	0.00	1799895	313.0 -> 118.9	3.1	1.5	4.4

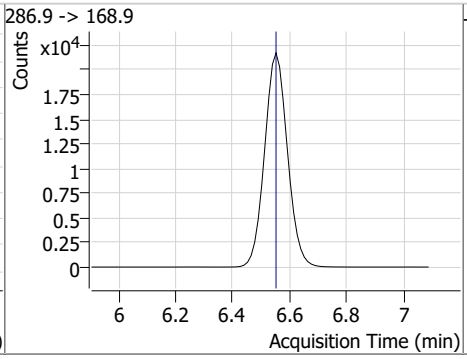


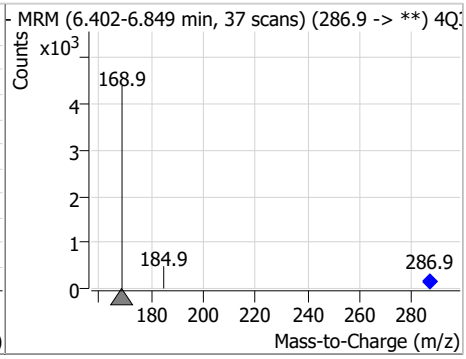




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.80	6.55	0.00	120106				

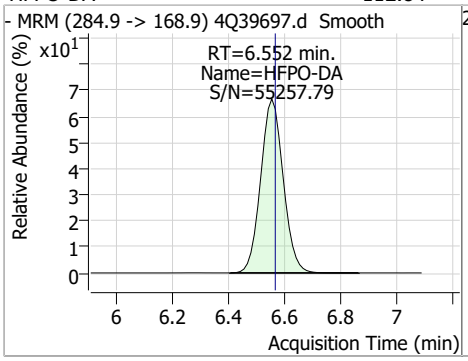


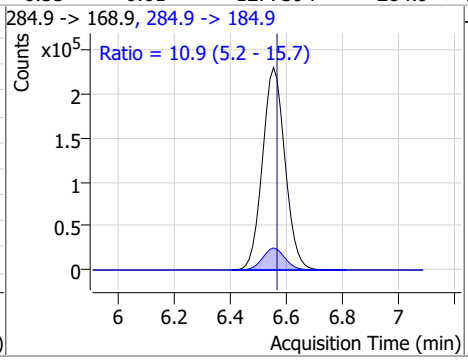


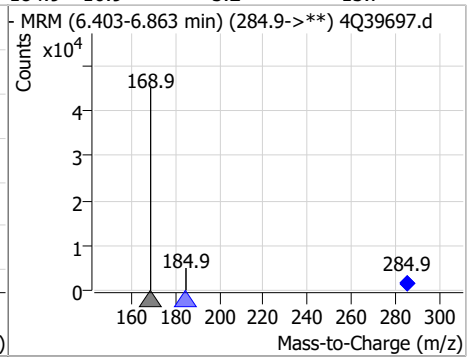


Perfluorinated Compounds by LC/MS/MS

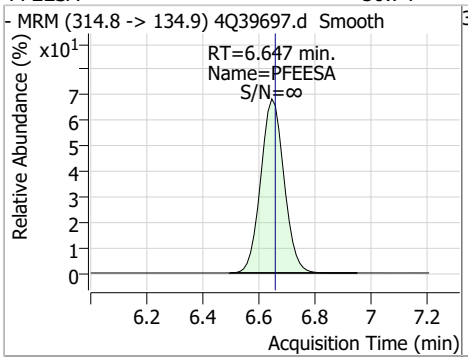
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	112.84	6.55	-0.01	1277394	284.9 -> 184.9	10.9	5.2	15.7

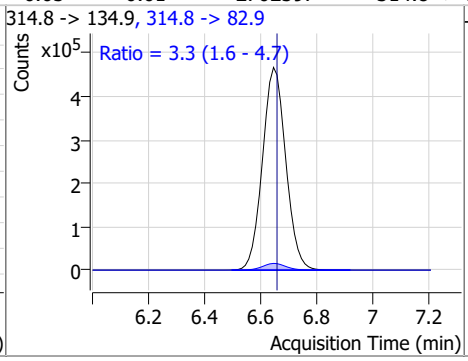


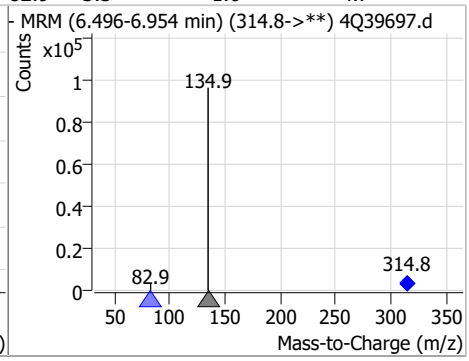




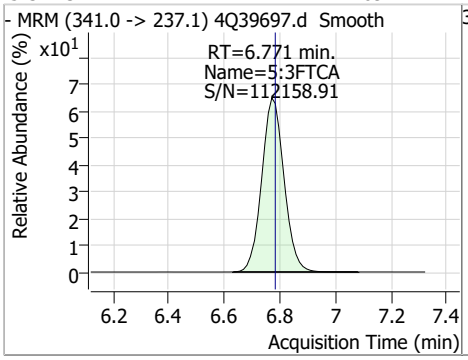
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	50.74	6.65	-0.01	2702597	314.8 -> 82.9	3.3	1.6	4.7

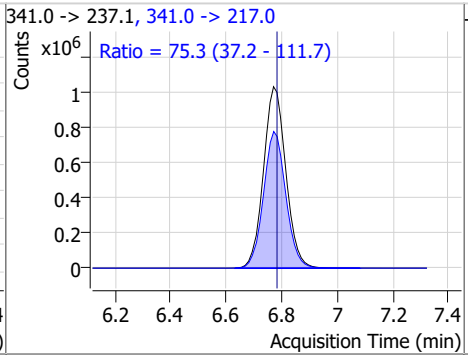


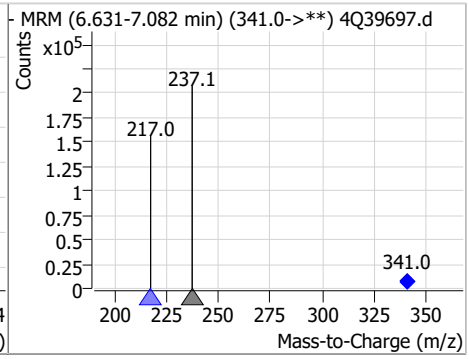




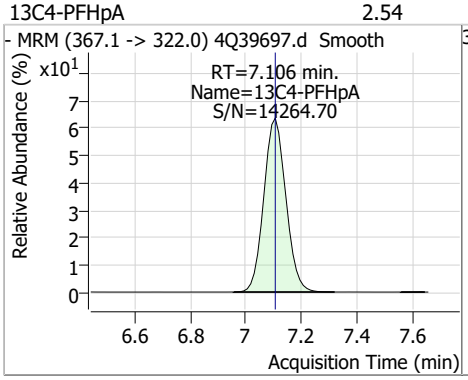
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	694.42	6.77	-0.01	5755542	341.0 -> 217.0	75.3	37.2	111.7

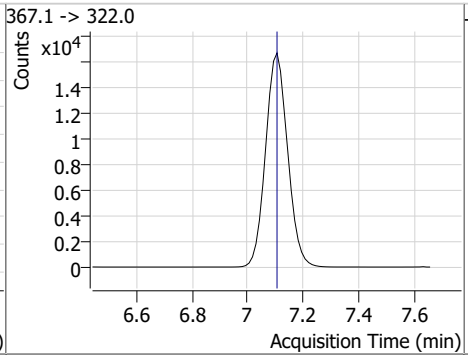


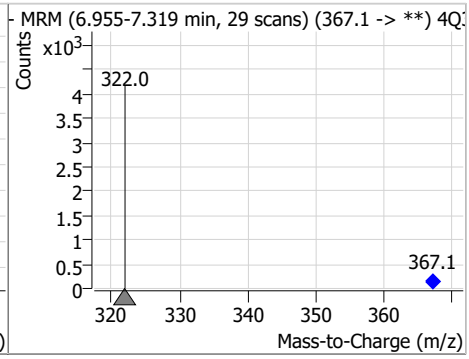




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	7.11	0.00	91182				

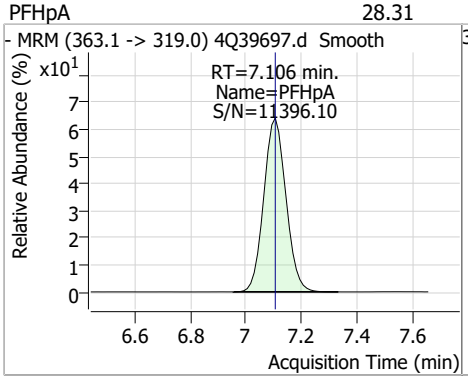


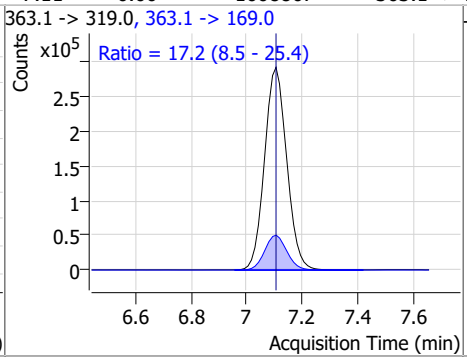


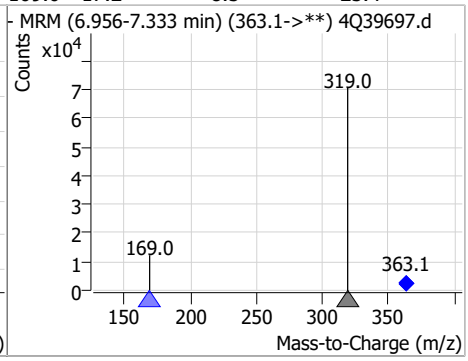


Perfluorinated Compounds by LC/MS/MS

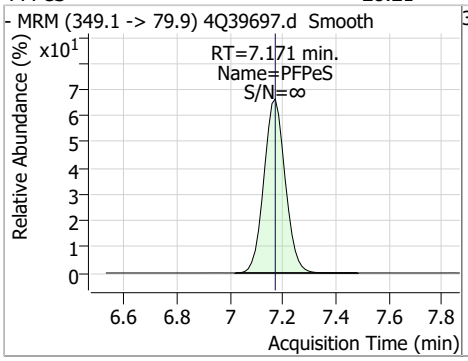
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	28.31	7.11	0.00	1608807	363.1 -> 169.0	17.2	8.5	25.4

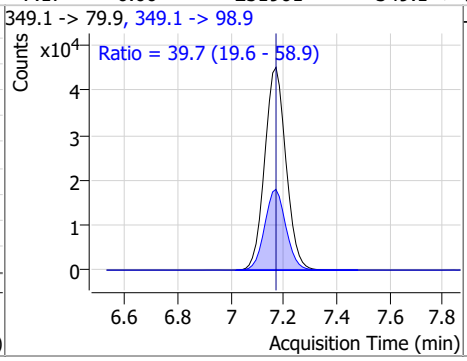


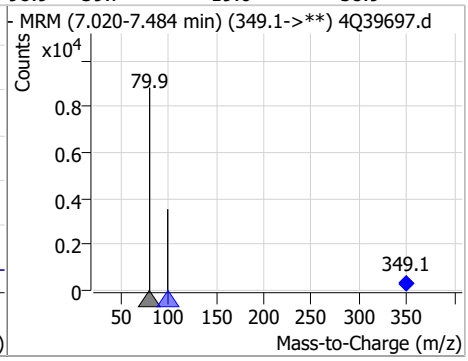




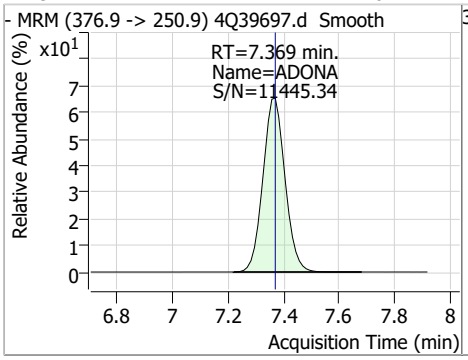
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	28.21	7.17	0.00	251961	349.1 -> 98.9	39.7	19.6	58.9

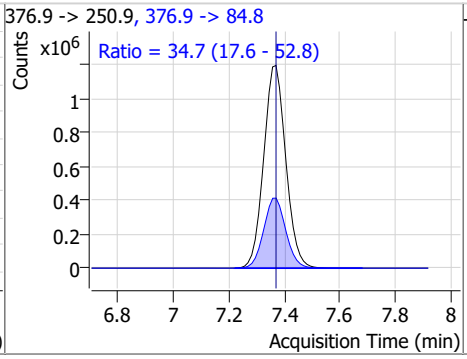


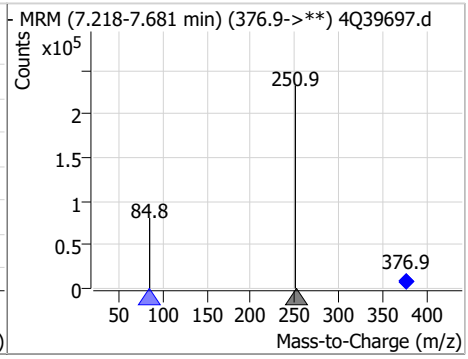




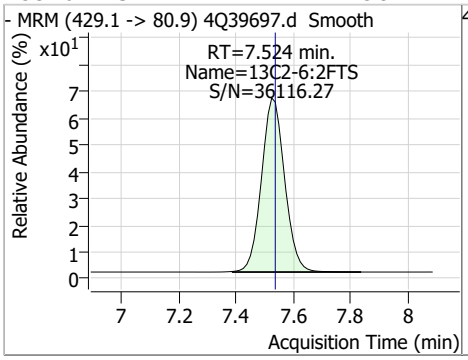
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	102.12	7.37	0.00	6616281	376.9 -> 84.8	34.7	17.6	52.8

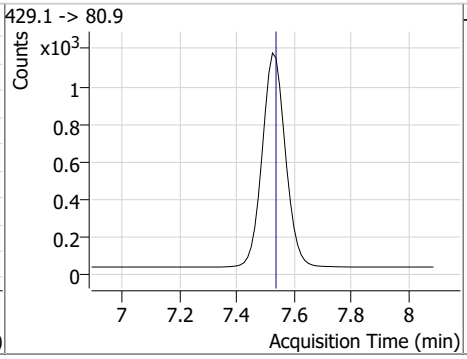


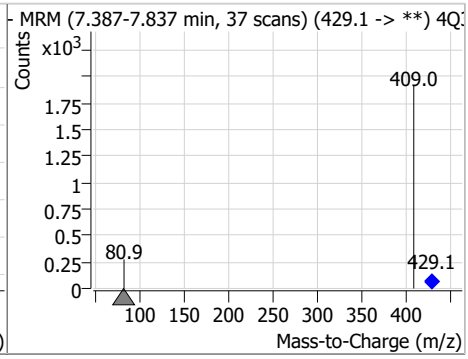




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.97	7.52	-0.01	6378				

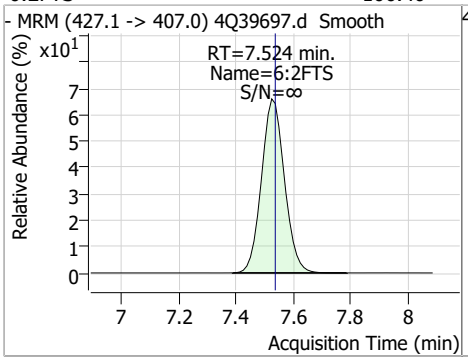


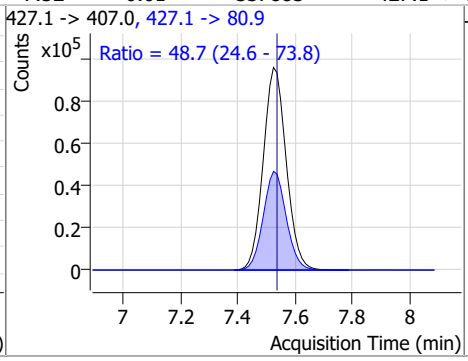


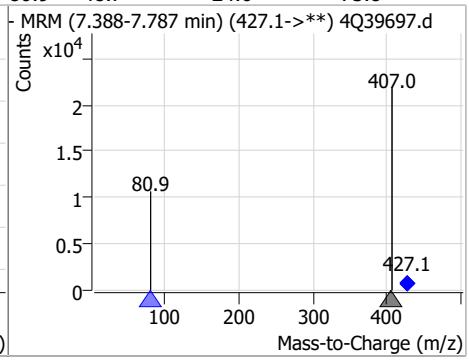


Perfluorinated Compounds by LC/MS/MS

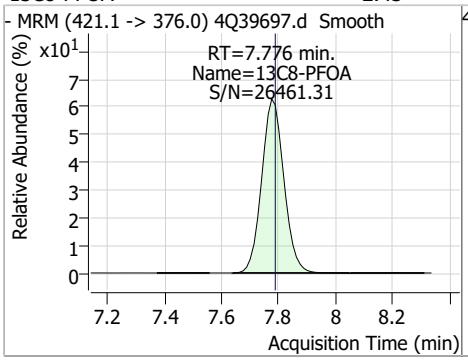
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	106.40	7.52	-0.01	537883	427.1 -> 80.9	48.7	24.6	73.8

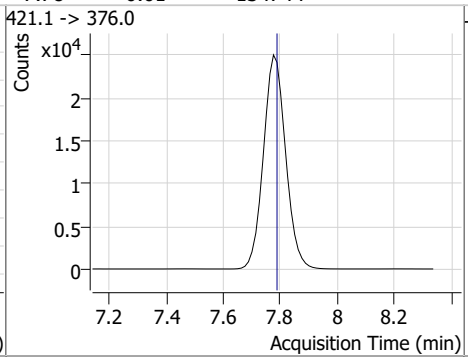


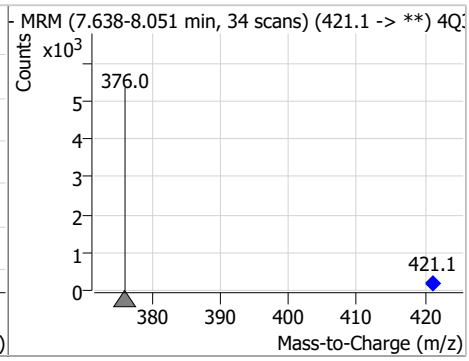




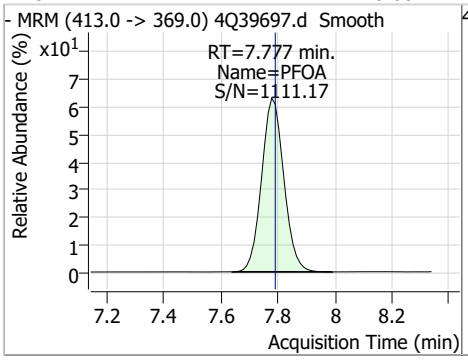
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.43	7.78	-0.01	134744				

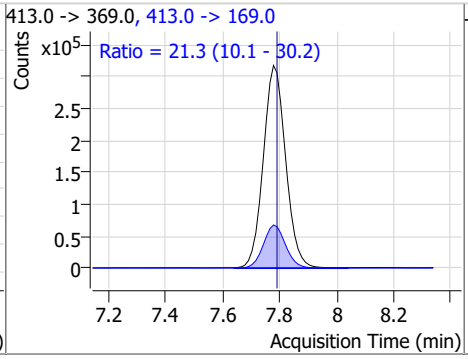


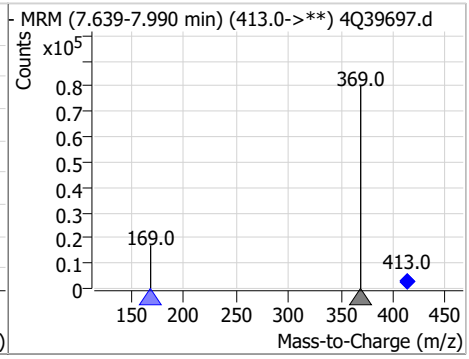




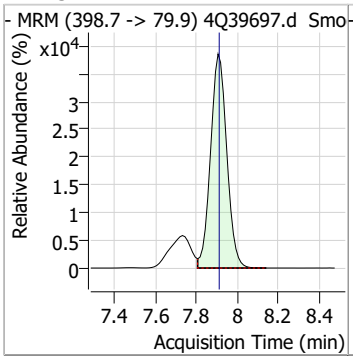
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	28.68	7.78	-0.01	1717813	413.0 -> 169.0	21.3	10.1	30.2

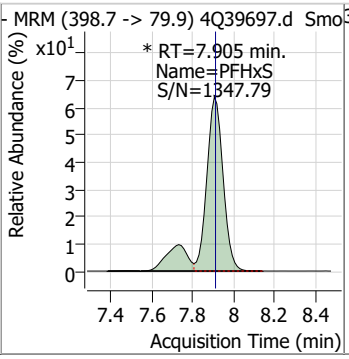


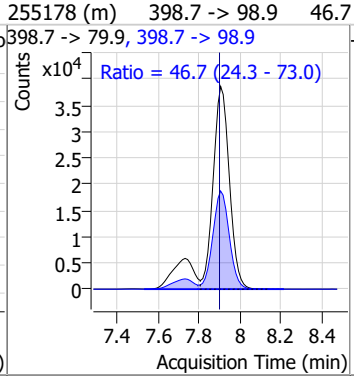


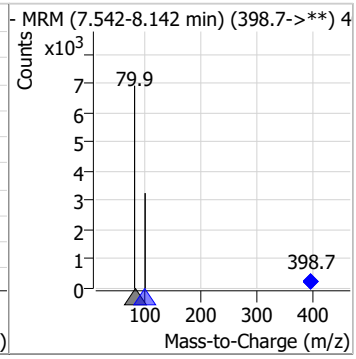


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	27.60	7.91	0.00	255178 (m)	398.7 -> 98.9	46.7	24.3	73.0



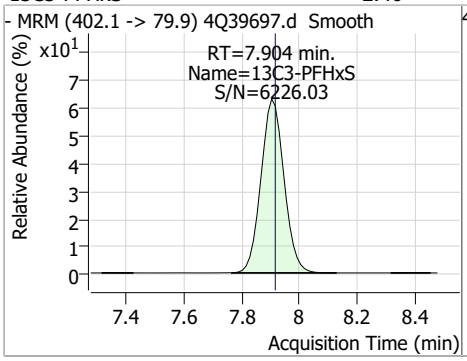


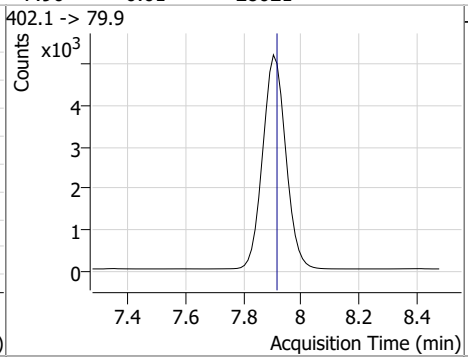


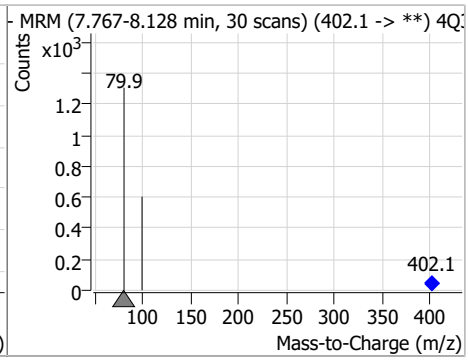


Perfluorinated Compounds by LC/MS/MS

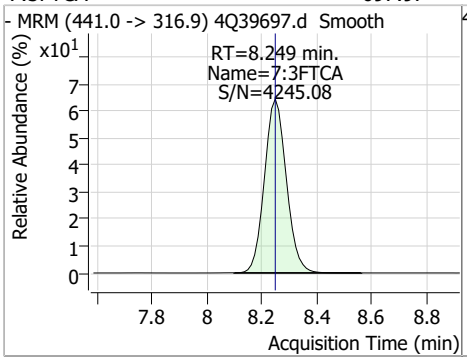
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.46	7.90	-0.01	28621				

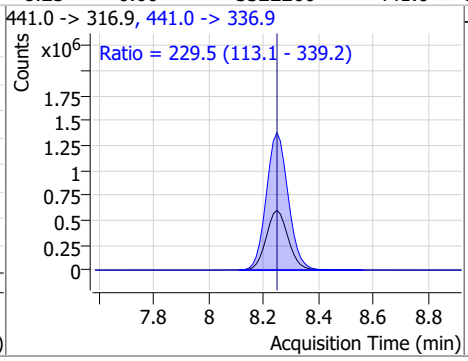


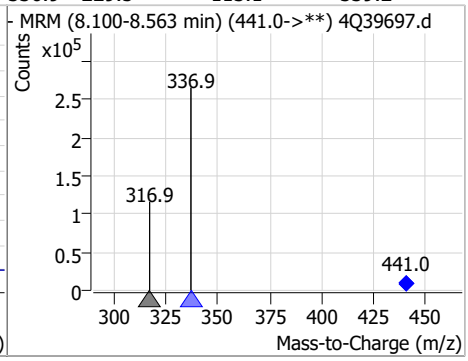




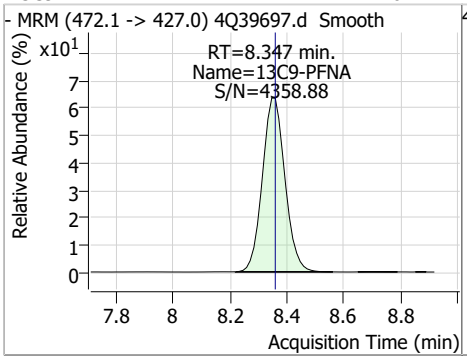
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	697.97	8.25	0.00	3322260	441.0 -> 336.9	229.5	113.1	339.2

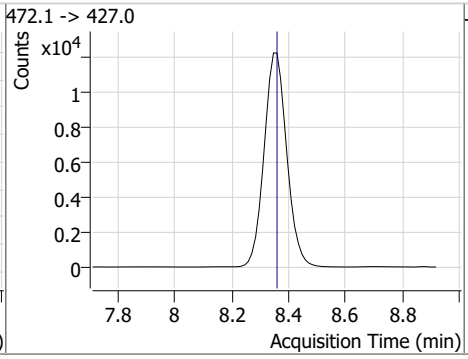


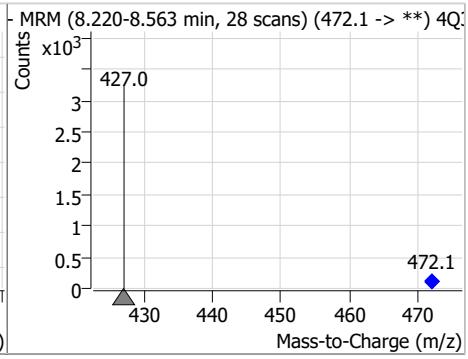




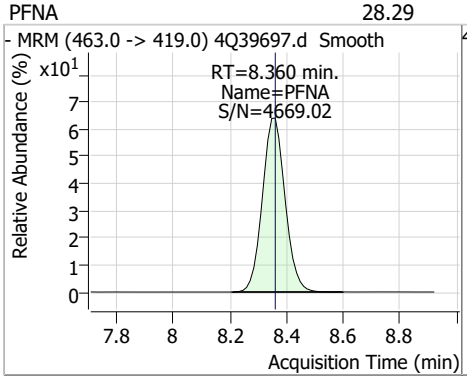
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.20	8.35	-0.01	67313				

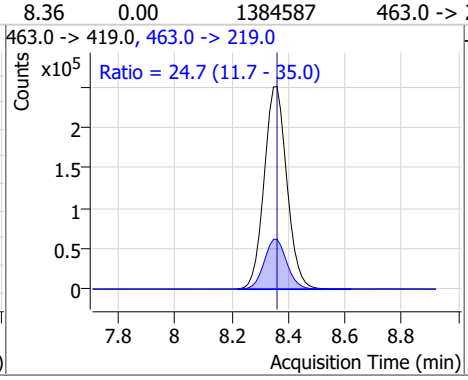


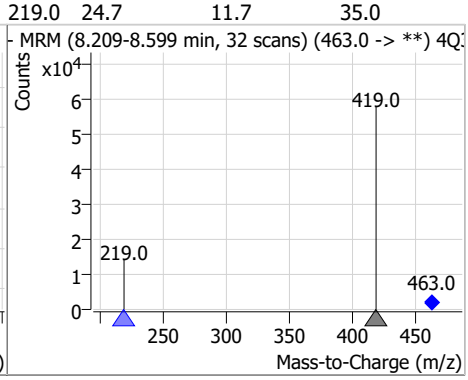




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	28.29	8.36	0.00	1384587	463.0 -> 219.0	24.7	11.7	35.0

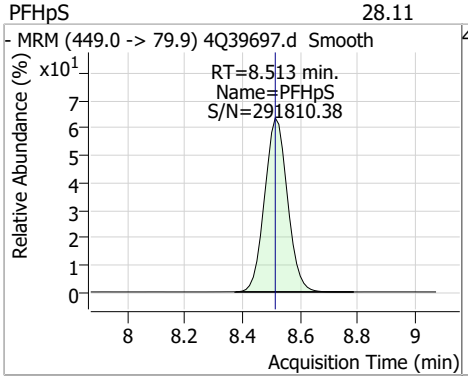


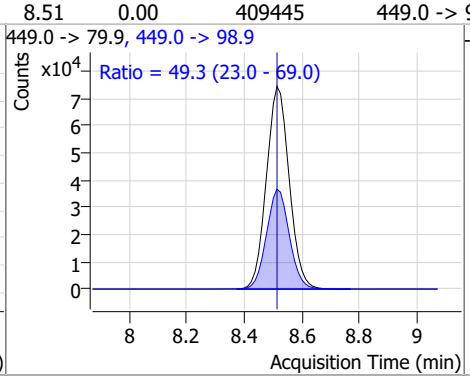


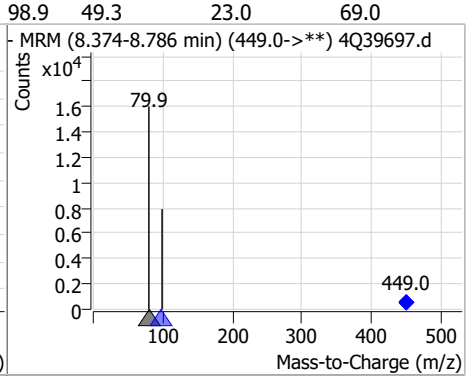


Perfluorinated Compounds by LC/MS/MS

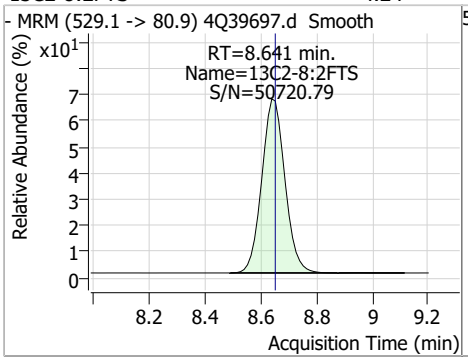
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	28.11	8.51	0.00	409445	449.0 -> 98.9	49.3	23.0	69.0

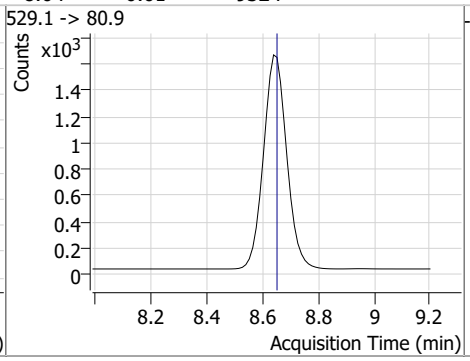


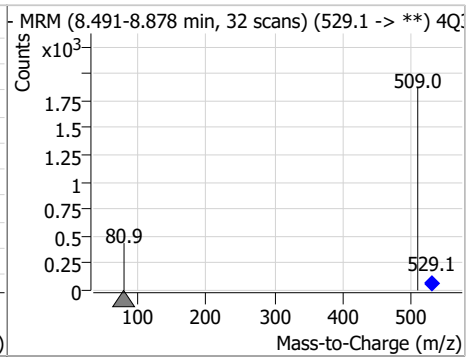




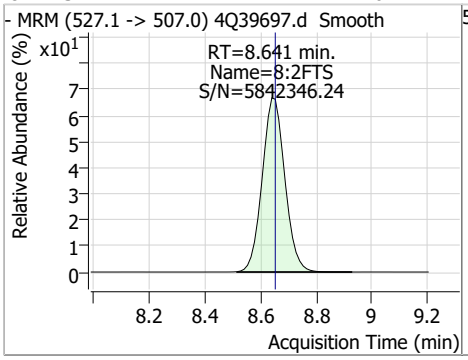
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.24	8.64	-0.01	9324				

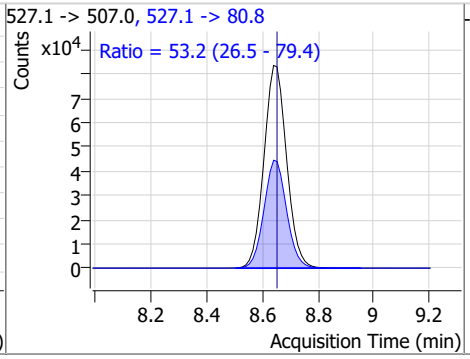


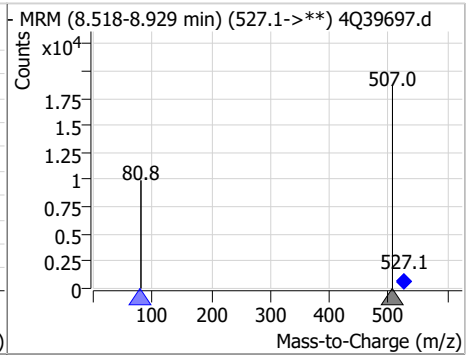




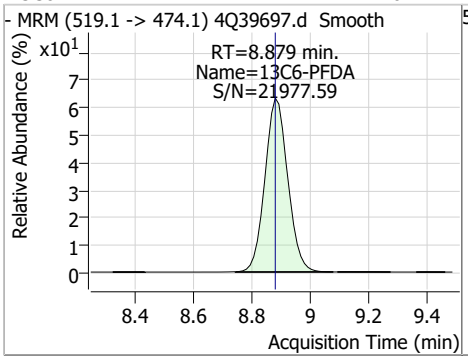
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	104.24	8.64	-0.01	470186	527.1 -> 80.8	53.2	26.5	79.4

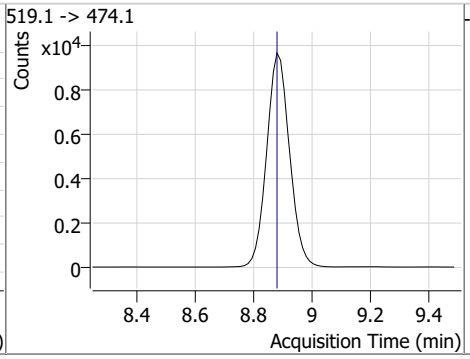


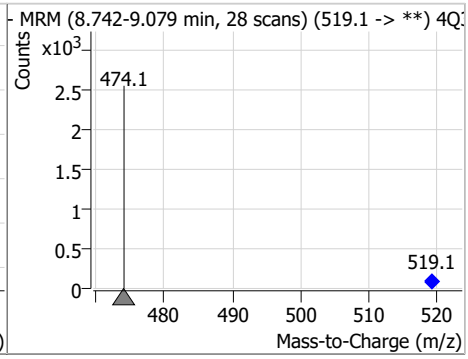




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.20	8.88	0.00	52323				

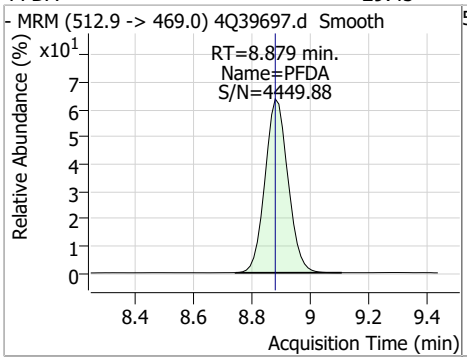


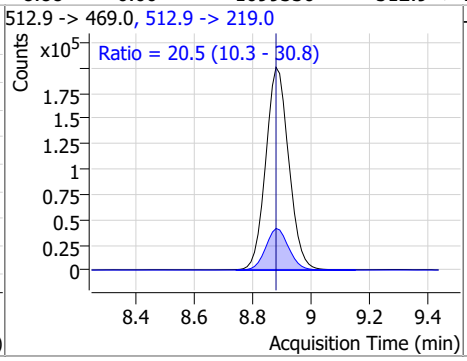


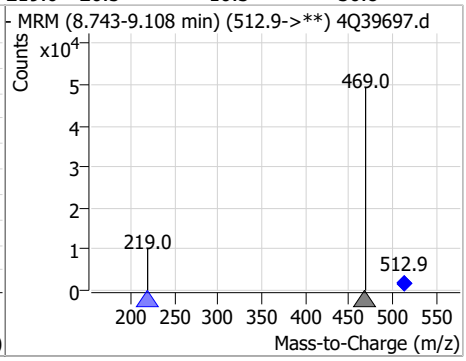


Perfluorinated Compounds by LC/MS/MS

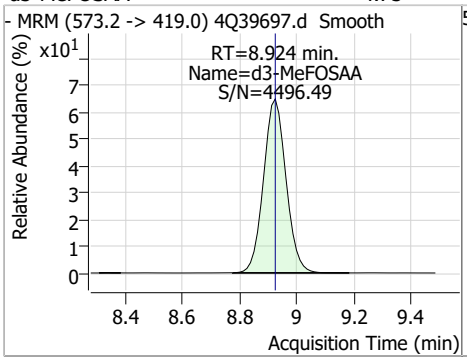
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	29.45	8.88	0.00	1099336	512.9 -> 219.0	20.5	10.3	30.8

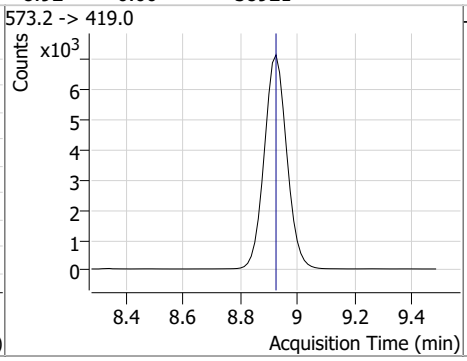


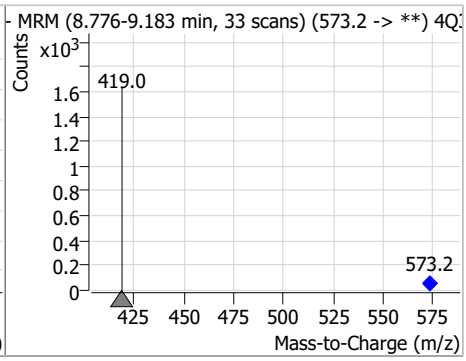




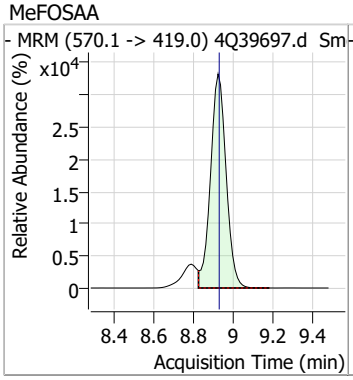
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.73	8.92	0.00	38921				

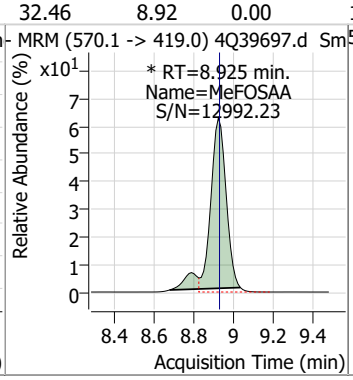


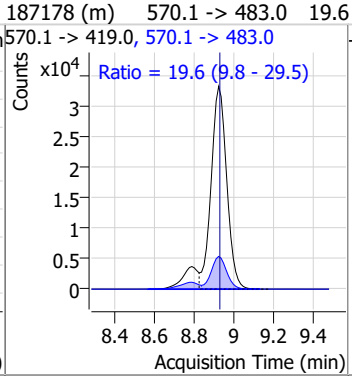


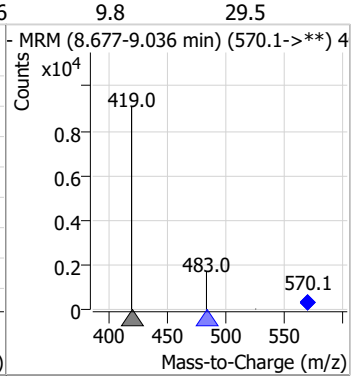


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	32.46	8.92	0.00	187178 (m)	570.1 -> 483.0	19.6	9.8	29.5

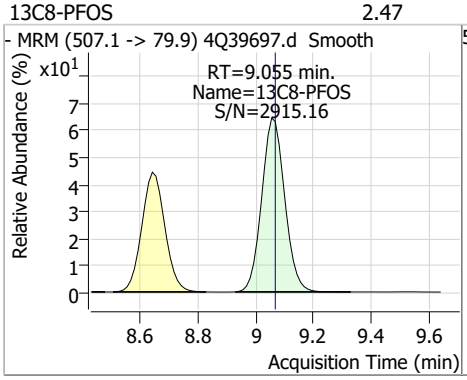


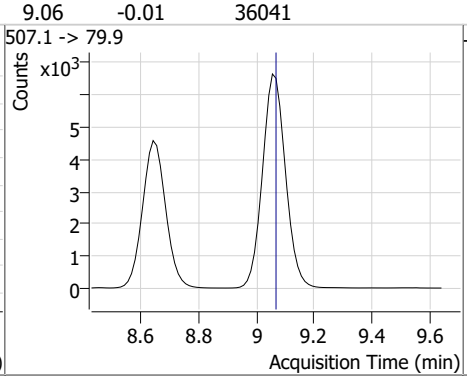


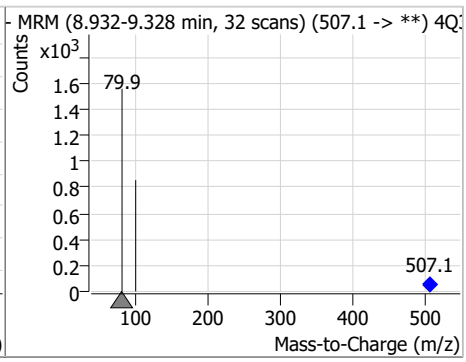




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.47	9.06	-0.01	36041				

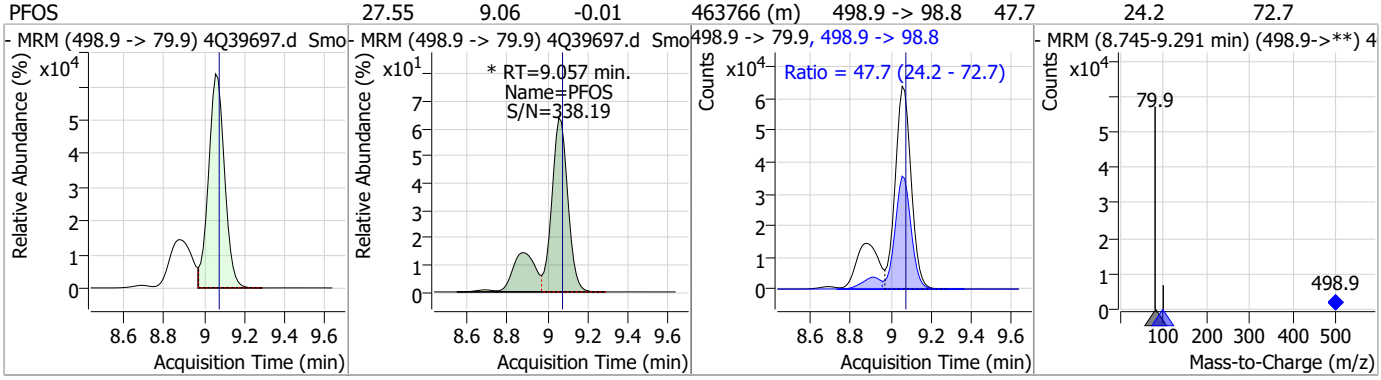




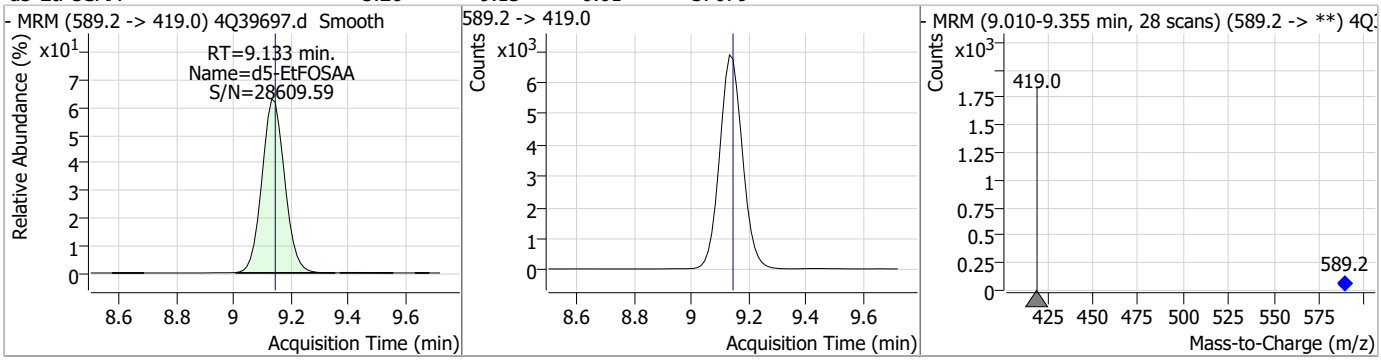


Perfluorinated Compounds by LC/MS/MS

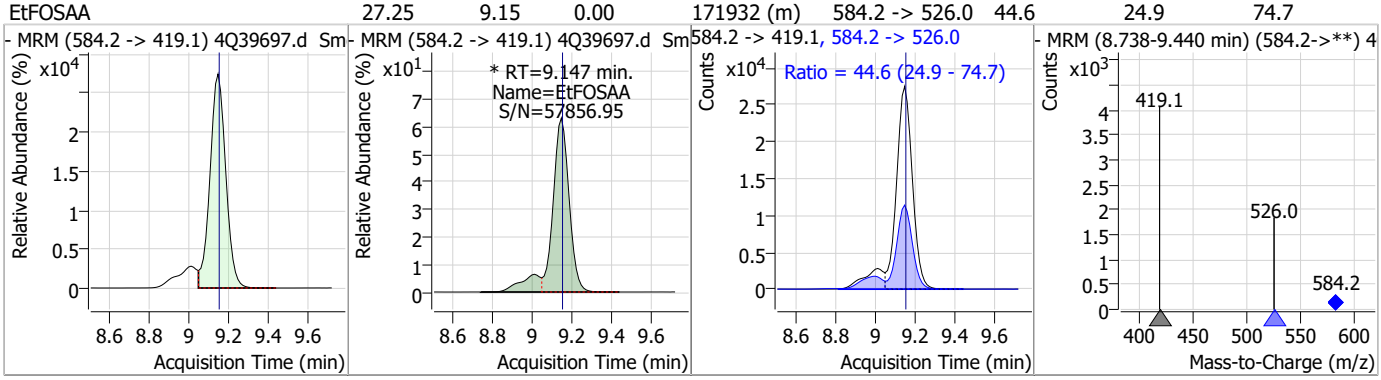
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	27.55	9.06	-0.01	463766 (m)	498.9 -> 98.8	47.7	24.2	72.7



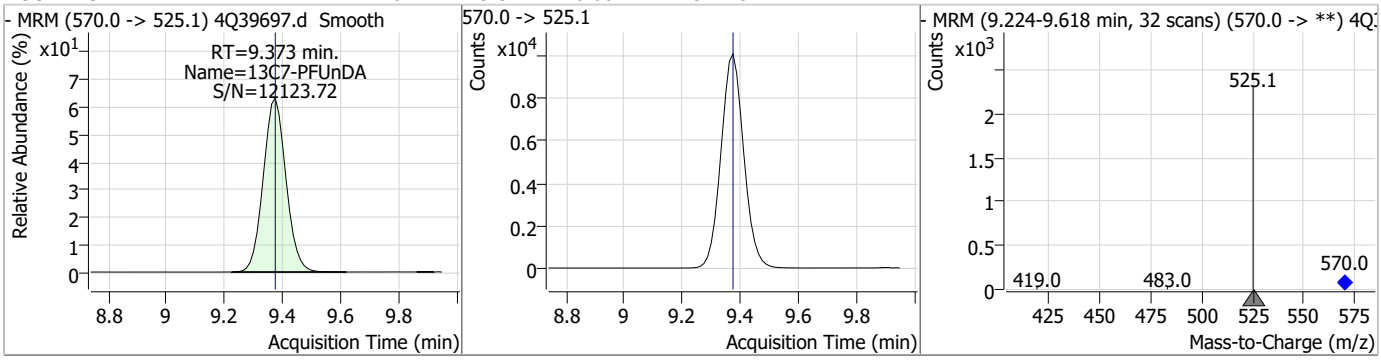
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.26	9.13	-0.01	37679				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	27.25	9.15	0.00	171932 (m)	584.2 -> 526.0	44.6	24.9	74.7

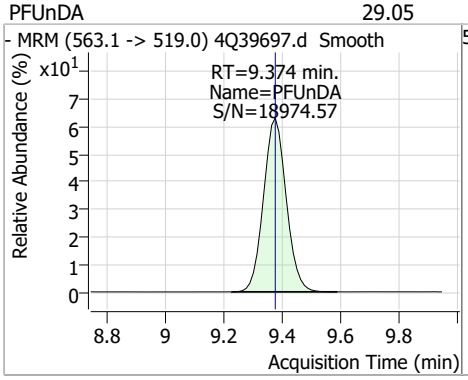


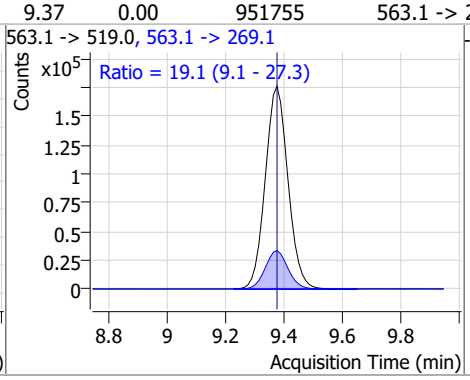
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	9.37	0.00	54128				

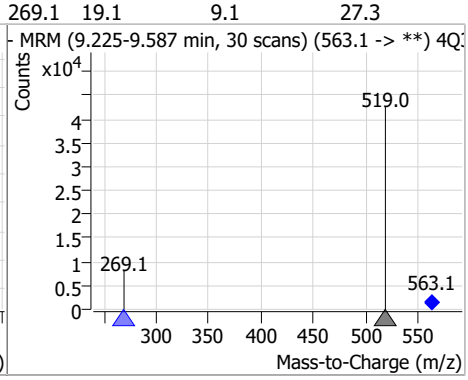


Perfluorinated Compounds by LC/MS/MS

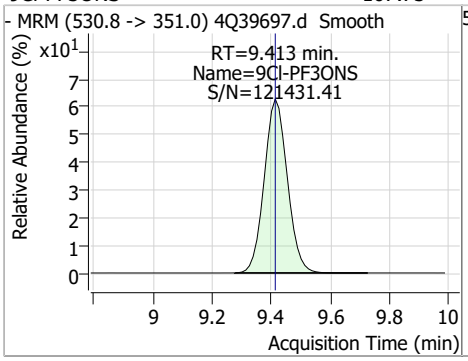
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	29.05	9.37	0.00	951755	563.1 -> 269.1	19.1	9.1	27.3

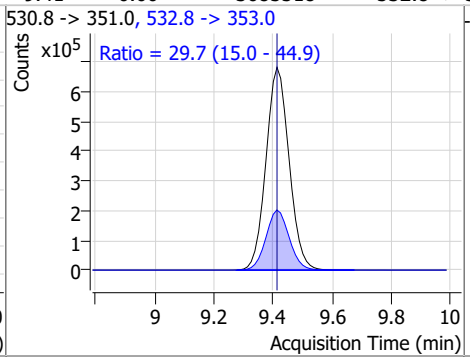


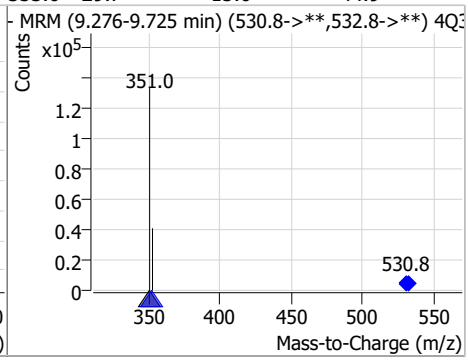




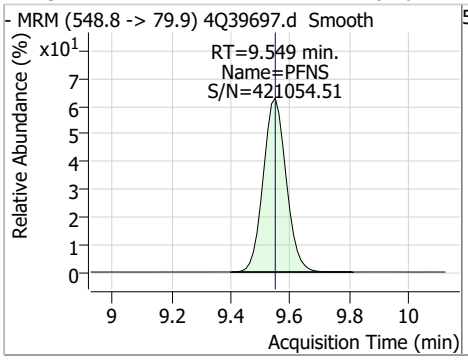
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	107.73	9.41	0.00	3685518	532.8 -> 353.0	29.7	15.0	44.9

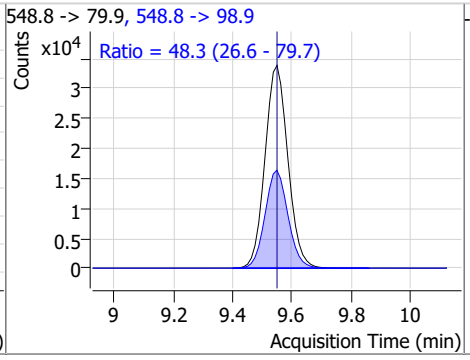


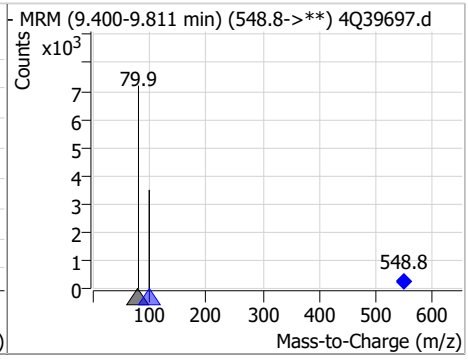




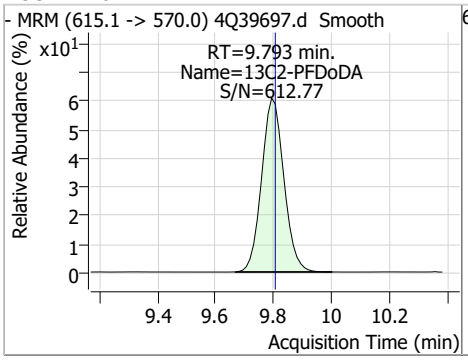
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	28.26	9.55	0.00	181262	548.8 -> 98.9	48.3	26.6	79.7

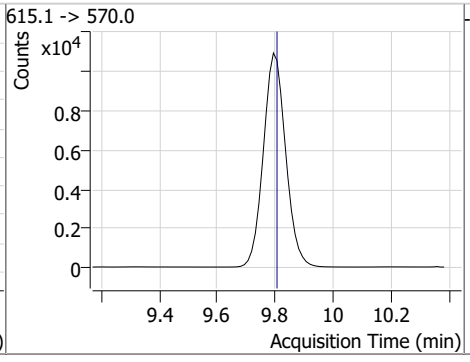


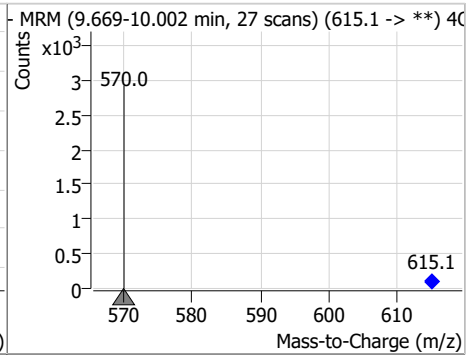




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	9.79	-0.01	57922				

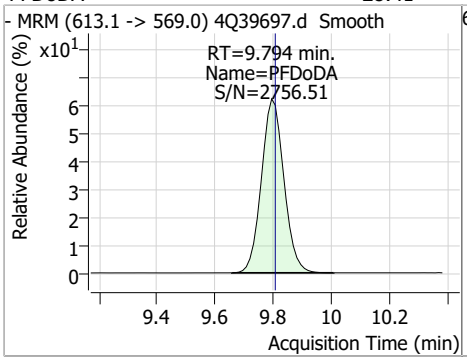


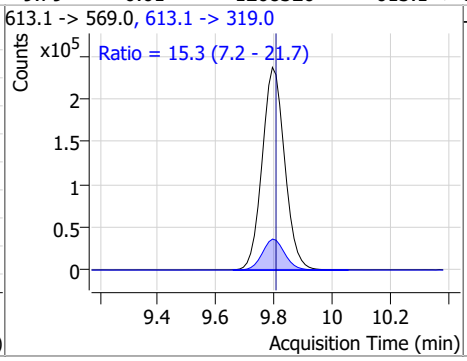


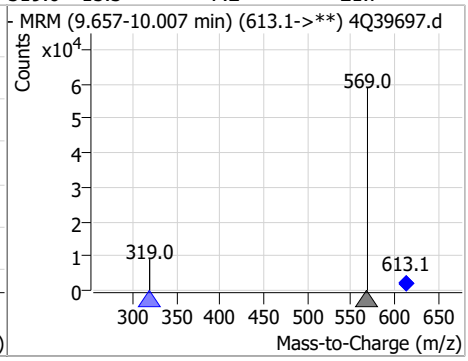


Perfluorinated Compounds by LC/MS/MS

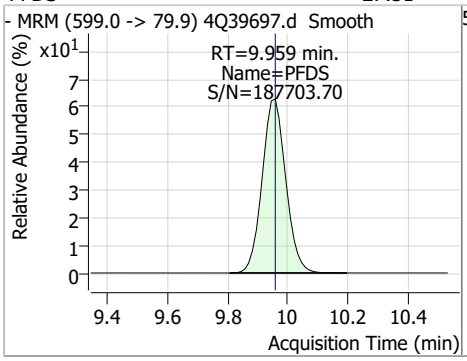
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	28.41	9.79	-0.01	1268326	613.1 -> 319.0	15.3	7.2	21.7

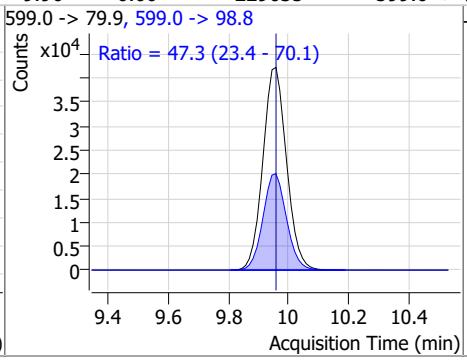


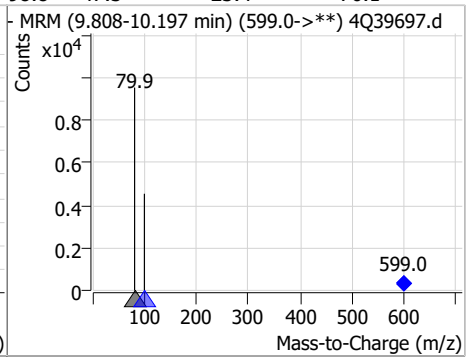




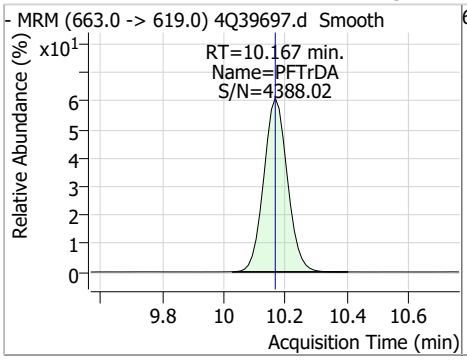
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	27.51	9.96	0.00	229635	599.0 -> 98.8	47.3	23.4	70.1

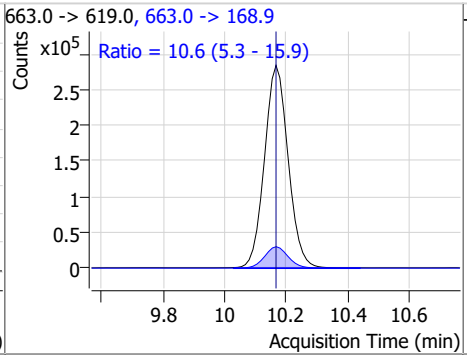


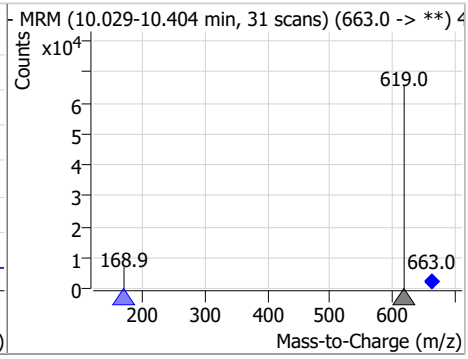




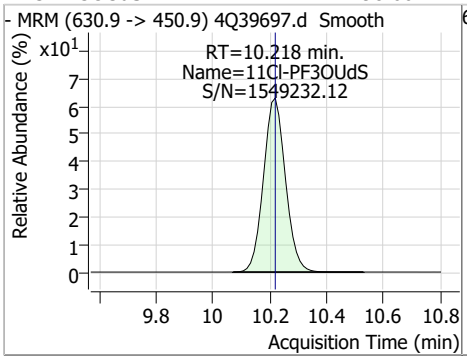
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	27.57	10.17	0.00	1506789	663.0 -> 168.9	10.6	5.3	15.9

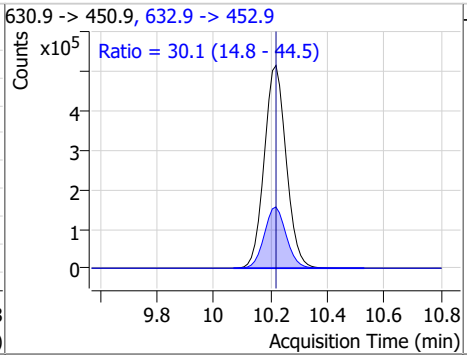


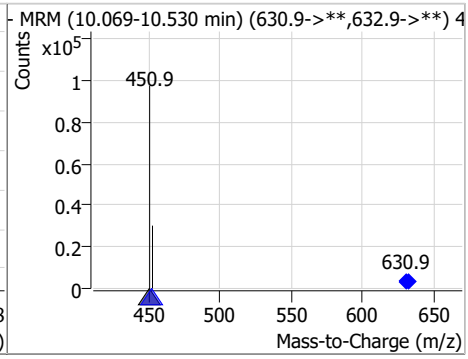




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	98.66	10.22	0.00	2769757	632.9 -> 452.9	30.1	14.8	44.5

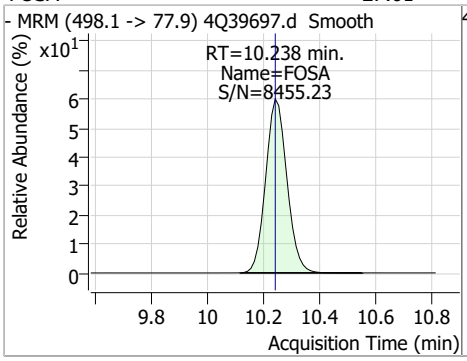


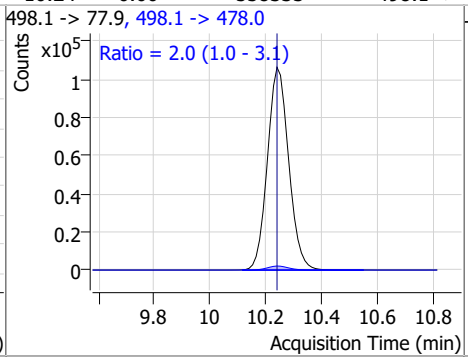


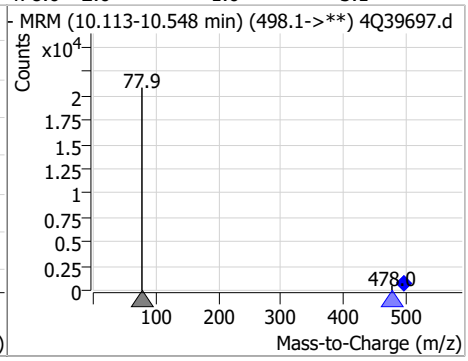


Perfluorinated Compounds by LC/MS/MS

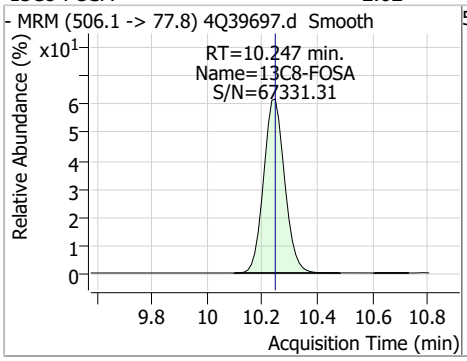
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	27.01	10.24	0.00	558333	498.1 -> 478.0	2.0	1.0	3.1

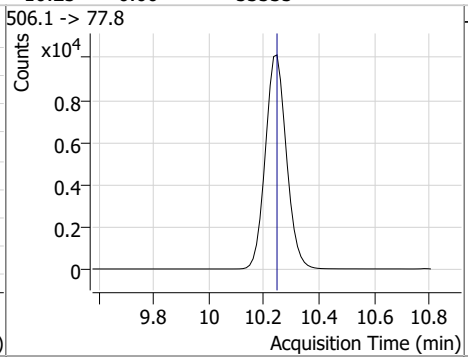


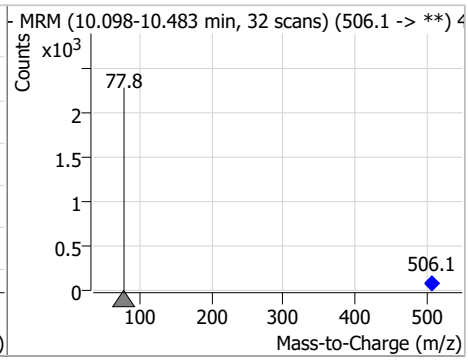




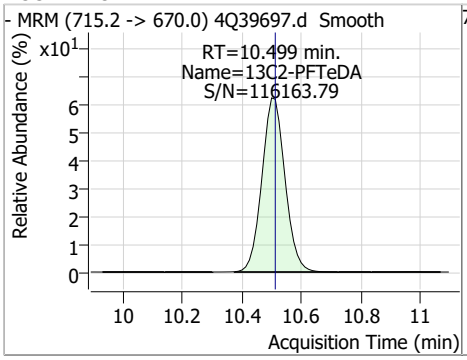
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	10.25	0.00	53535				

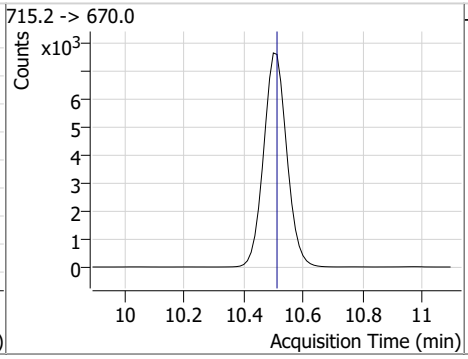


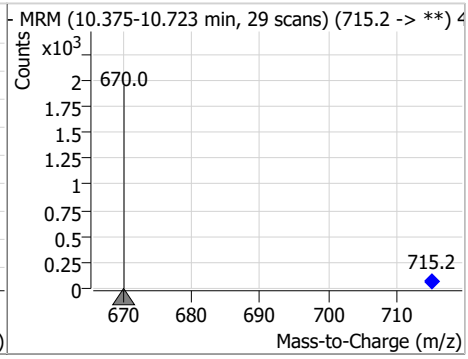




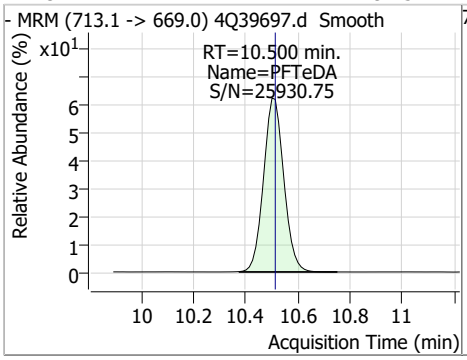
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	10.50	-0.01	41187				

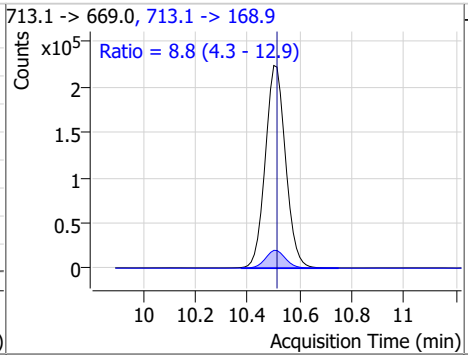


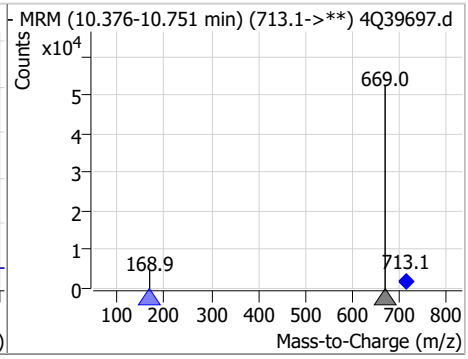




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	29.15	10.50	-0.01	1207927	713.1 -> 168.9	8.8	4.3	12.9

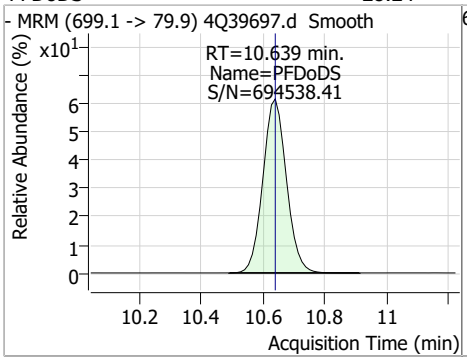


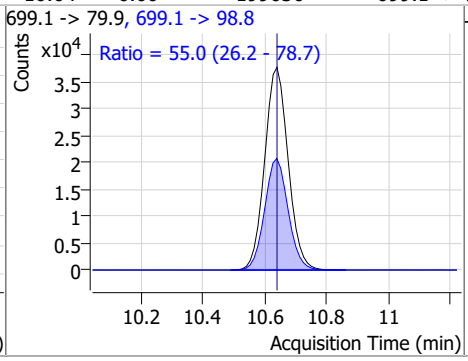


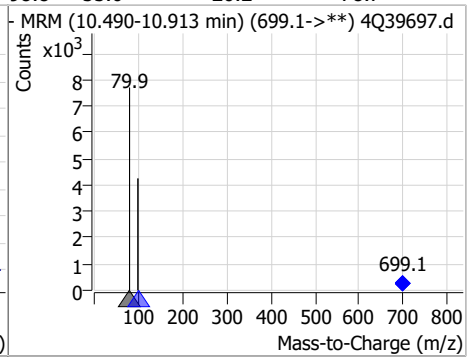


Perfluorinated Compounds by LC/MS/MS

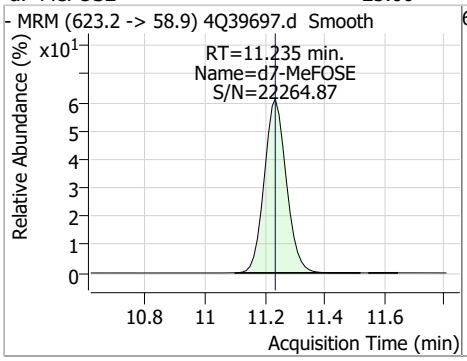
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	28.24	10.64	0.00	199036	699.1 -> 98.8	55.0	26.2	78.7

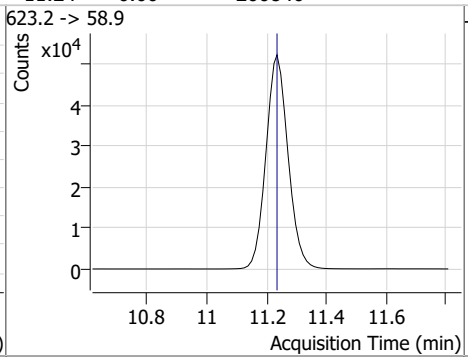


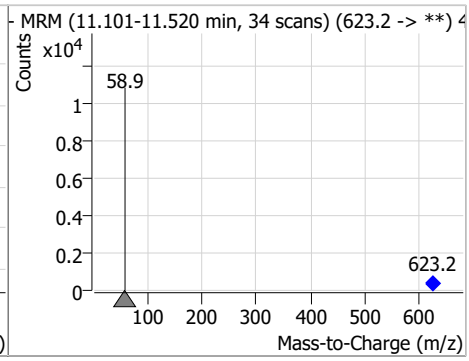




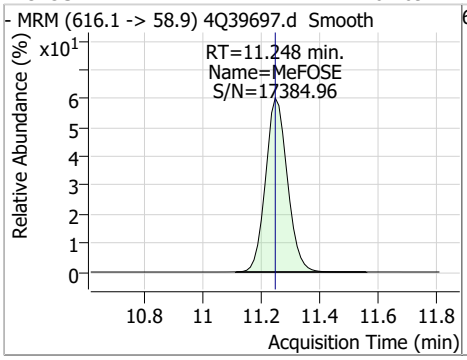
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.00	11.24	0.00	266840				

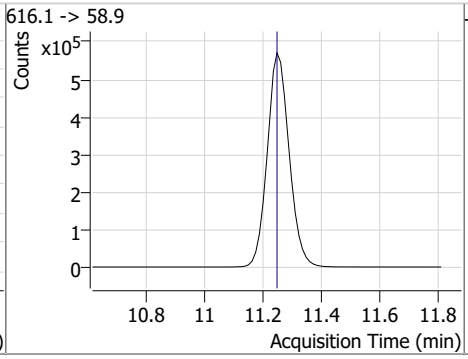


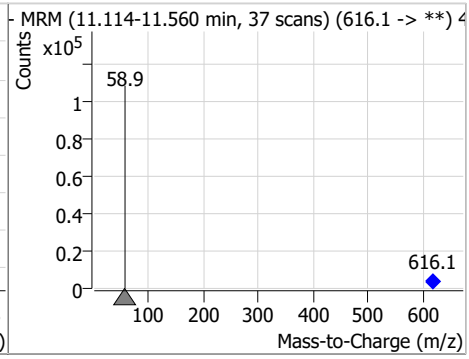




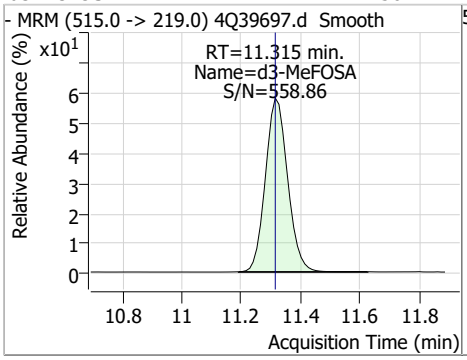
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	261.69	11.25	0.00	2950093				

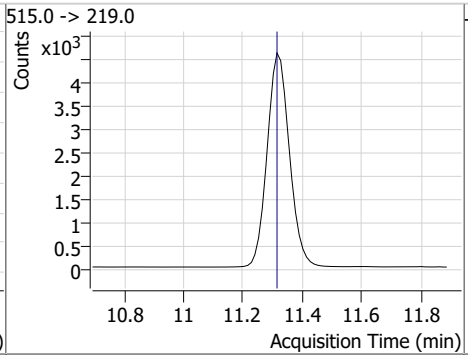


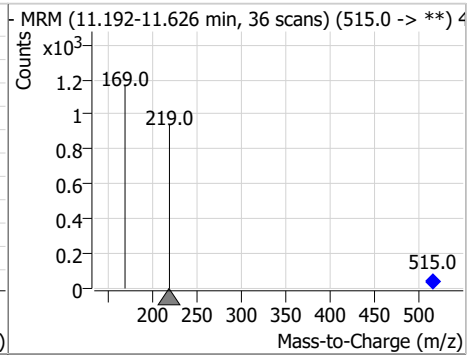




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	11.31	0.00	23987				

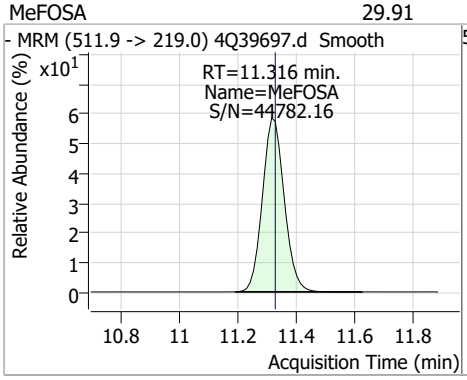


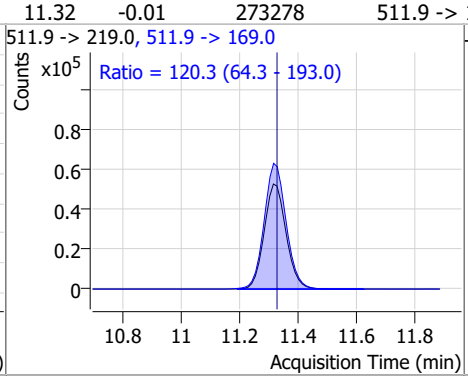


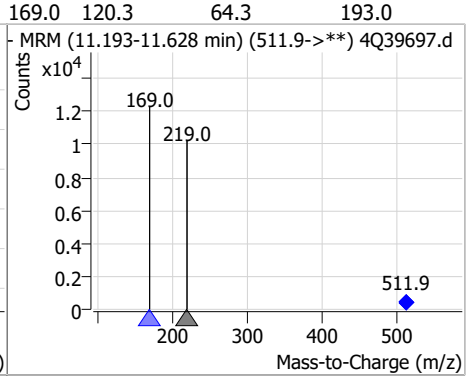


Perfluorinated Compounds by LC/MS/MS

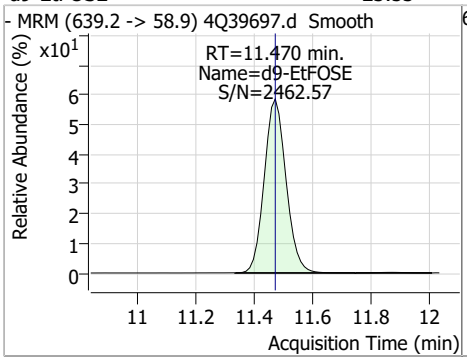
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	29.91	11.32	-0.01	273278	511.9 -> 169.0	120.3	64.3	193.0

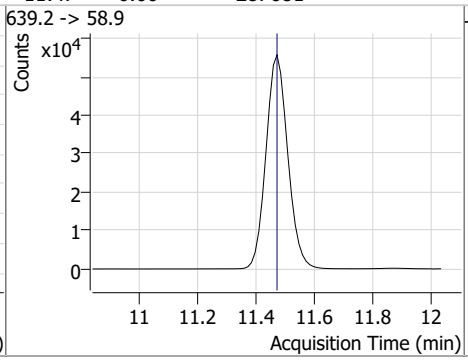


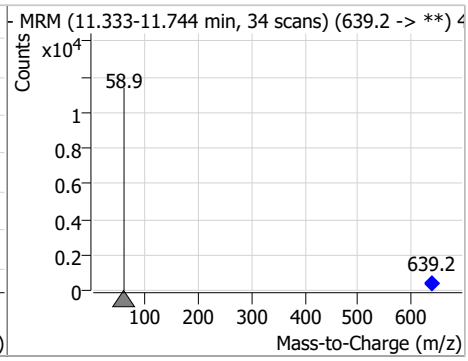




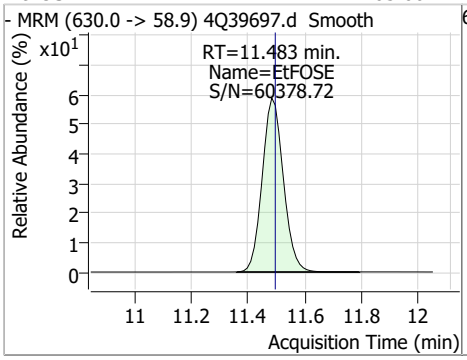
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.53	11.47	0.00	287681				

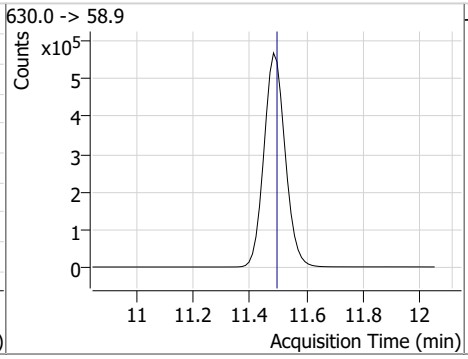


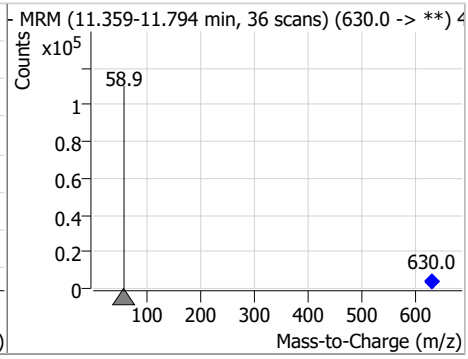




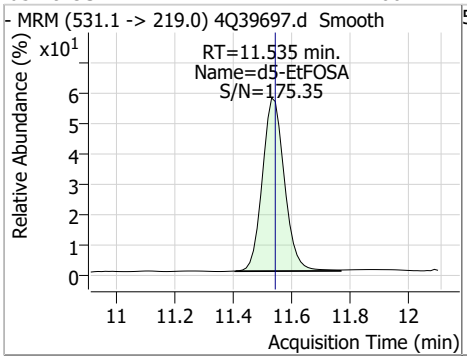
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	265.60	11.48	-0.01	2966644				

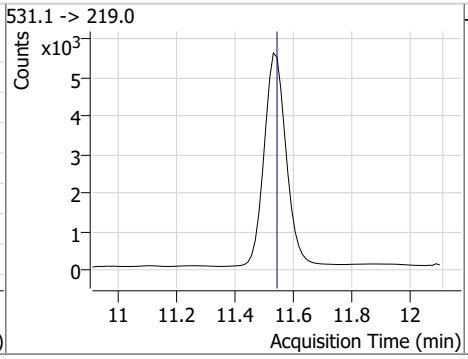


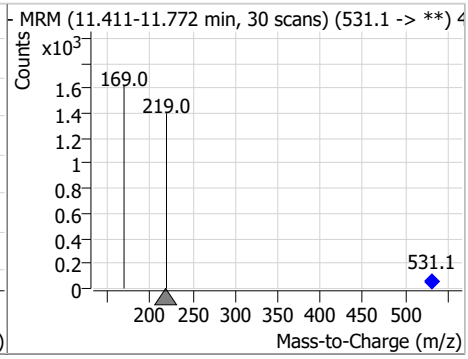




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	11.54	-0.01	28999				

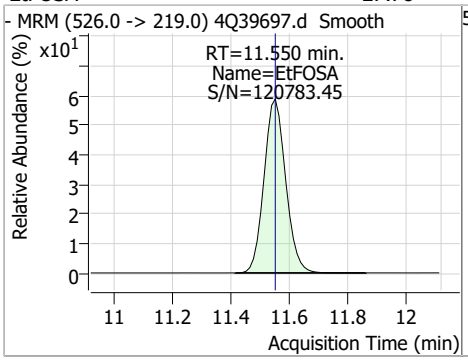


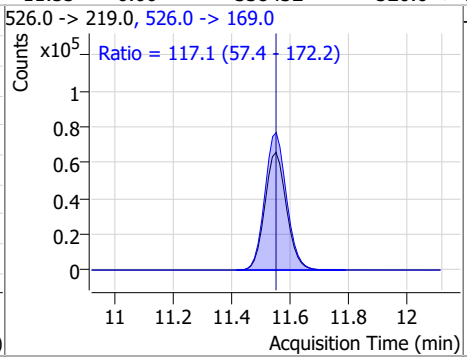


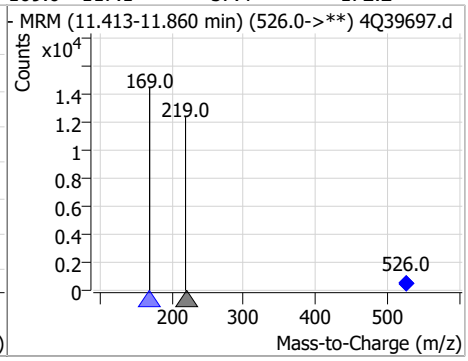


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	27.78	11.55	0.00	338432	526.0 -> 169.0	117.1	57.4	172.2







7.6.8

7

Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39697.D
Injection Time: 01/25/23 14:38
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39698.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 2:52:07 PM
Sample Name : ic571-8
Vial : P1-A9
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	318998	10.00	µg/L	0.012
M5-PFPeA	4.863	268.3 -> 223.0	224357	5.00	µg/L	0.000
M5-PFHxA	6.160	318.0 -> 273.0	160327	2.50	µg/L	-0.012
M4-PFHpA	7.093	367.1 -> 322.0	83415	2.50	µg/L	-0.012
M8-PFOA	7.776	421.1 -> 376.0	126320	2.50	µg/L	-0.012
M9-PFNA	8.347	472.1 -> 427.0	65881	1.25	µg/L	-0.012
M6-PFDA	8.879	519.1 -> 474.1	52704	1.25	µg/L	0.000
M7-PFUnDA	9.361	570.0 -> 525.1	52123	1.25	µg/L	-0.012
M2-PFDoDA	9.793	615.1 -> 570.0	55230	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	40811	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	47774	2.50	µg/L	0.000
M3-PFBS	6.089	302.1 -> 79.9	41156	2.50	µg/L	0.000
M3-PFHxS	7.904	402.1 -> 79.9	26535	2.50	µg/L	-0.012
M8-PFOS	9.055	507.1 -> 79.9	36550	2.50	µg/L	-0.012
M2-4:2FTS	5.808	329.1 -> 80.9	2621	5.00	µg/L	-0.014
M2-6:2FTS	7.524	429.1 -> 80.9	5327	5.00	µg/L	-0.012
M2-8:2FTS	8.641	529.1 -> 80.9	8297	5.00	µg/L	-0.012
M3-MeFOSAA	8.912	573.2 -> 419.0	38141	5.00	µg/L	-0.013
M3-HFPO-DA	6.551	286.9 -> 168.9	109609	10.00	µg/L	0.000
M5-EtFOSAA	9.133	589.2 -> 419.0	33636	5.00	µg/L	-0.012
M7-MeFOSE	11.235	623.2 -> 58.9	245100	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	259915	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27711	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	26327	2.50	µg/L	0.012
13C4-PFOS	9.056	502.8 -> 79.9	35474	2.50	µg/L	-0.012
13C3-PFBA	3.178	216.0 -> 172.0	179468	5.00	µg/L	0.000
18O2-PFHxS	7.903	403.0 -> 83.9	20107	2.50	µg/L	-0.012
13C4-PFOA	7.776	417.1 -> 372.0	141714	2.50	µg/L	-0.012
13C2-PFDA	8.867	515.1 -> 470.1	47360	1.25	µg/L	-0.012
13C5-PFNA	8.348	468.0 -> 423.0	71843	1.25	µg/L	-0.012
13C2-PFHxA	6.161	315.1 -> 270.0	150897	2.50	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	5.808	329.1 -> 80.9	2621	3.62	µg/L	-0.014
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 72.3%		
13C2-6:2FTS	7.524	429.1 -> 80.9	5327	3.28	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 65.7%		
13C2-8:2FTS	8.641	529.1 -> 80.9	8297	3.74	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 74.8%		
13C2-PFDoDA	9.793	615.1 -> 570.0	55230	1.20	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40811	1.25	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFBS	6.089	302.1 -> 79.9	41156	2.37	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C3-PFHxS	7.904	402.1 -> 79.9	26535	2.26	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFBA	3.186	216.8 -> 171.9	318998	9.86 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C4-PFHpA	7.093	367.1 -> 322.0	83415	2.37 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C5-PFHxA	6.160	318.0 -> 273.0	160327	2.53 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C5-PFPeA	4.863	268.3 -> 223.0	224357	4.57 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C6-PFDA	8.879	519.1 -> 474.1	52704	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C7-PFUnDA	9.361	570.0 -> 525.1	52123	1.16 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C8-FOSA	10.247	506.1 -> 77.8	47774	2.36 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C8-PFOA	7.776	421.1 -> 376.0	126320	2.48 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C8-PFOS	9.055	507.1 -> 79.9	36550	2.52 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C9-PFNA	8.347	472.1 -> 427.0	65881	1.29 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
d3-MeFOSAA	8.912	573.2 -> 419.0	38141	4.68 µg/L		-0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-HFPO-DA	6.551	286.9 -> 168.9	109609	9.11 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
d3-MeFOSA	11.327	515.0 -> 219.0	26327	2.84 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.5%		
d5-EtFOSAA	9.133	589.2 -> 419.0	33636	4.74 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	245100	23.17 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	259915	21.45 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.8%		
d5-EtFOSA	11.548	531.1 -> 219.0	27711	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
Target Compounds						QValue
4:2FTS	5.809	327.1 -> 307.0	1041365	243.11 µg/L		99
		327.1 -> 80.9	479457			
6:2FTS	7.524	427.1 -> 407.0	967552	229.15 µg/L		100
		427.1 -> 80.9	472894			
8:2FTS	8.641	527.1 -> 507.0	861341	214.60 µg/L		98
		527.1 -> 80.8	466024			
EtFOSAA	9.134	584.2 -> 419.1	383730	68.13 µg/L	m	94
		584.2 -> 526.0	176255			
FOSA	10.238	498.1 -> 77.9	1189092	64.45 µg/L		100
		498.1 -> 478.0	24219			
MeFOSAA	8.912	570.1 -> 419.0	450206	79.67 µg/L	m	97
		570.1 -> 483.0	82869			
PFBA	3.182	212.8 -> 168.9	2361469	266.02 µg/L		100
PFBS	6.090	298.7 -> 79.9	1100163	59.15 µg/L		97
		298.7 -> 98.8	398564			
PFDA	8.879	512.9 -> 469.0	2425540	64.51 µg/L		99
		512.9 -> 219.0	493684			
PFDoDA	9.794	613.1 -> 569.0	2710594	63.68 µg/L		97
		613.1 -> 319.0	422038			
PFDS	9.945	599.0 -> 79.9	485305	57.33 µg/L		100

Perfluorinated Compounds by LC/MS/MS

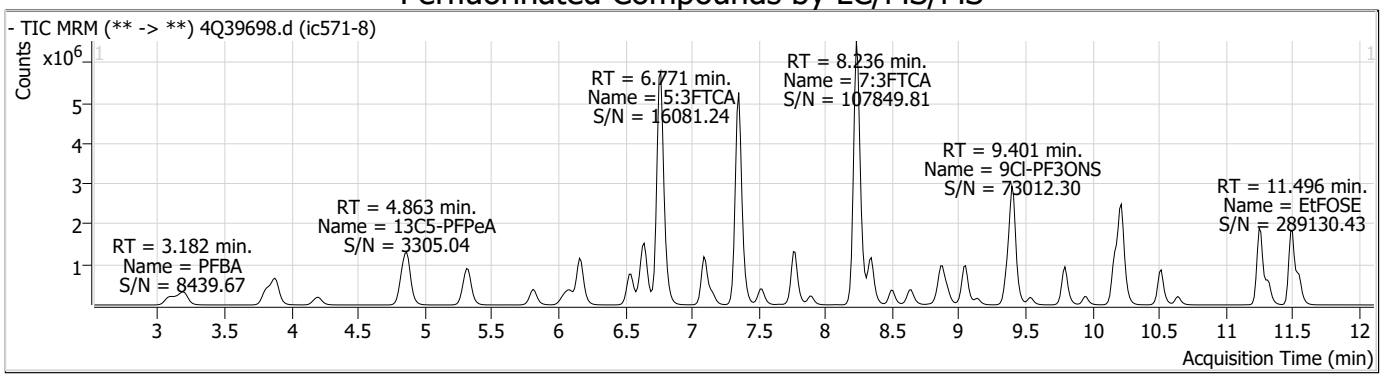
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	225281				
PFHpA	7.094	363.1 -> 319.0	3510441	67.52	µg/L		99
		363.1 -> 169.0	610490				
PFHpS	8.513	449.0 -> 79.9	882807	59.75	µg/L		94
		449.0 -> 98.9	441805				
PFHxA	6.162	313.0 -> 269.0	3999743	64.16	µg/L		99
		313.0 -> 118.9	132517				
PFHxS	7.905	398.7 -> 79.9	585472	68.30	µg/L	m	99
		398.7 -> 98.9	279562				
PFNA	8.348	463.0 -> 419.0	2990079	62.42	µg/L		98
		463.0 -> 219.0	731205				
PFNS	9.536	548.8 -> 79.9	405611	62.35	µg/L		96
		548.8 -> 98.9	203741				
PFOA	7.777	413.0 -> 369.0	3681564	65.56	µg/L		98
		413.0 -> 169.0	770522				
PFOS	9.057	498.9 -> 79.9	1023009	59.92	µg/L	m	99
		498.9 -> 98.8	487770				
PFPeA	4.866	263.0 -> 219.0	6377006	129.59	µg/L		100
PFPeS	7.159	349.1 -> 79.9	569663	68.81	µg/L		98
		349.1 -> 98.9	230026				
PFTeDA	10.513	713.1 -> 669.0	2644932	64.41	µg/L		99
		713.1 -> 168.9	234614				
PFTrDA	10.167	663.0 -> 619.0	3220822	61.80	µg/L		100
		663.0 -> 168.9	336542				
PFUnDA	9.361	563.1 -> 519.0	1972957	62.53	µg/L		98
		563.1 -> 269.1	378812				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	5507049	214.95	µg/L		99
		632.9 -> 452.9	1660882				
9Cl-PF3ONS	9.401	530.8 -> 351.0	7616181	243.94	µg/L		99
		532.8 -> 353.0	2220536				
ADONA	7.357	376.9 -> 250.9	14136286	239.08	µg/L		97
		376.9 -> 84.8	4736132				
HFPO-DA	6.552	284.9 -> 168.9	2594160	251.11	µg/L		98
		284.9 -> 184.9	293242				
3:3FTCA	4.204	241.0 -> 177.0	881204	382.01	µg/L		99
		241.0 -> 117.0	79715				
5:3FTCA	6.771	341.0 -> 237.1	12669471	1527.87	µg/L		99
		341.0 -> 217.0	9339210				
7:3FTCA	8.236	441.0 -> 316.9	7028212	1475.84	µg/L		92
		441.0 -> 336.9	16842538				
EtFOSA	11.550	526.0 -> 219.0	762262	65.49	µg/L		99
		526.0 -> 169.0	880307				
EtFOSE	11.496	630.0 -> 58.9	5851245	579.81	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	624110	62.24	µg/L		93
		511.9 -> 169.0	751163				
MeFOSE	11.261	616.1 -> 58.9	6025380	581.89	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	434882	60.84	µg/L		98
		699.1 -> 98.8	234274				
NFDHA	6.041	295.0 -> 201.0	425012	103.75	µg/L		99
		295.0 -> 84.9	121264				
PFMBA	5.316	279.0 -> 85.1	4114360	134.15	µg/L		100
PFMPA	3.869	229.0 -> 84.9	4436600	140.19	µg/L		100
PFEESA	6.647	314.8 -> 134.9	6074560	114.00	µg/L		100
		314.8 -> 82.9	203069				

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

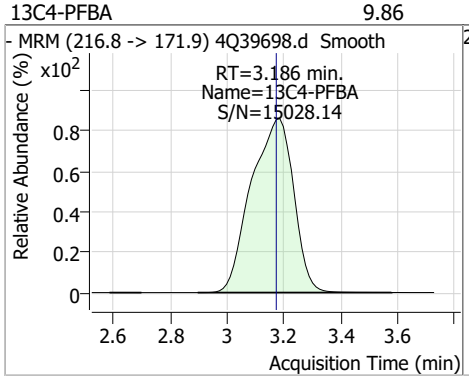
Perfluorinated Compounds by LC/MS/MS

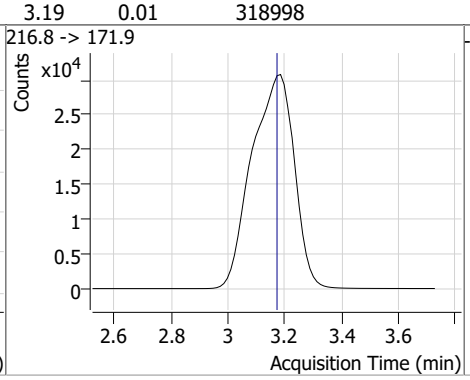
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

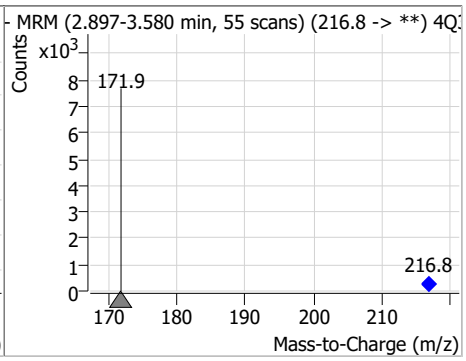
Perfluorinated Compounds by LC/MS/MS



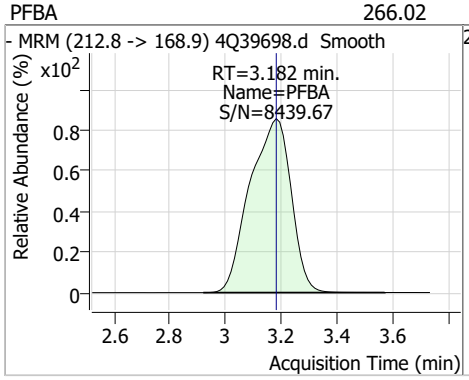
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.86	3.19	0.01	318998				

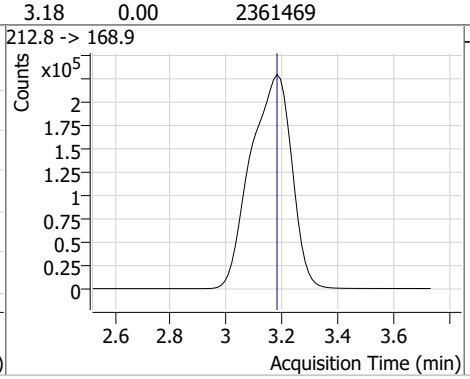


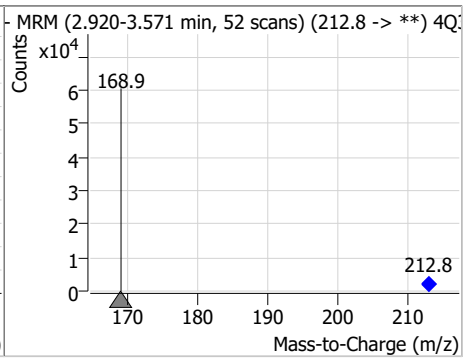




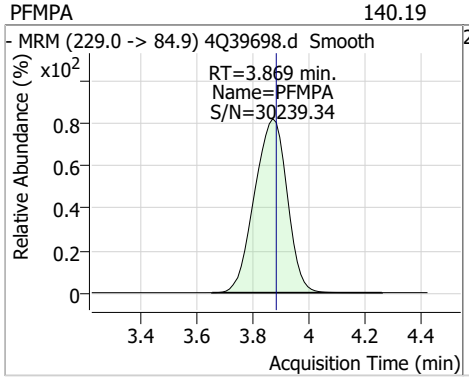
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	266.02	3.18	0.00	2361469				

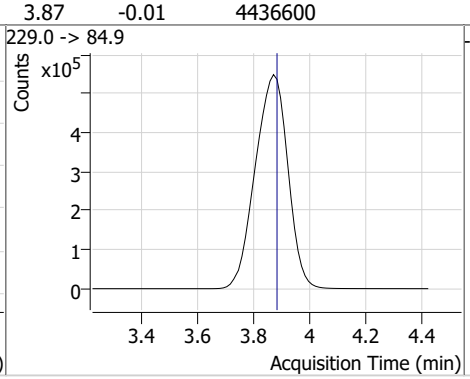


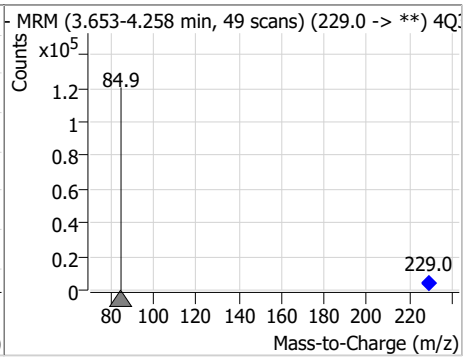




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	140.19	3.87	-0.01	4436600				

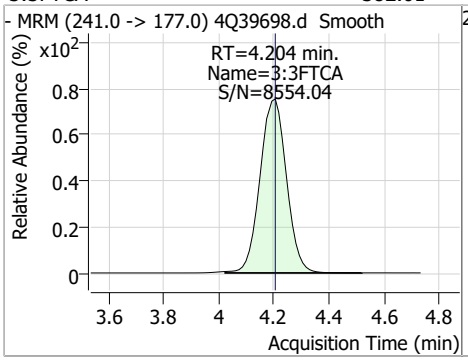


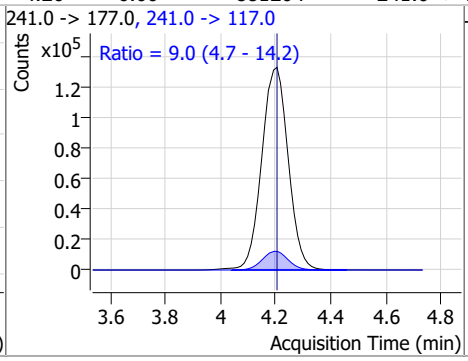


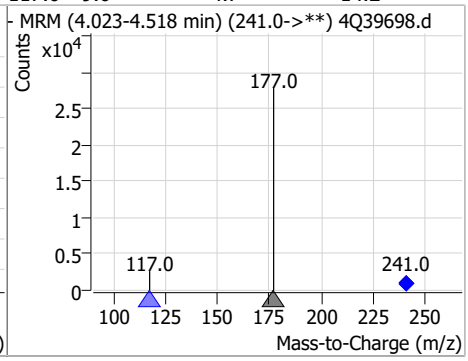


Perfluorinated Compounds by LC/MS/MS

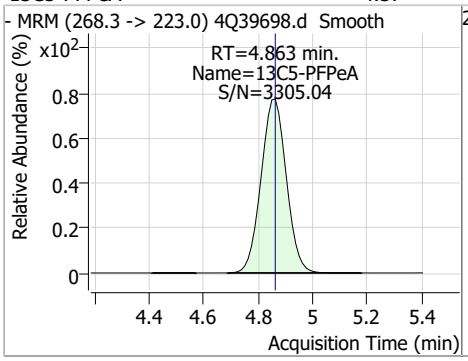
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	382.01	4.20	0.00	881204	241.0 -> 117.0	9.0	4.7	14.2

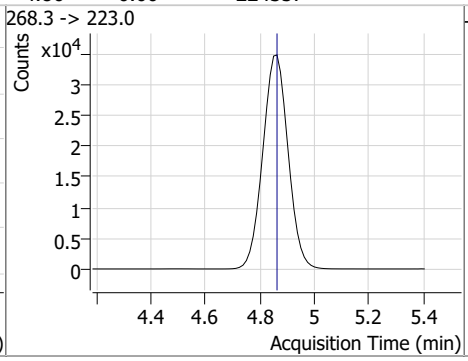


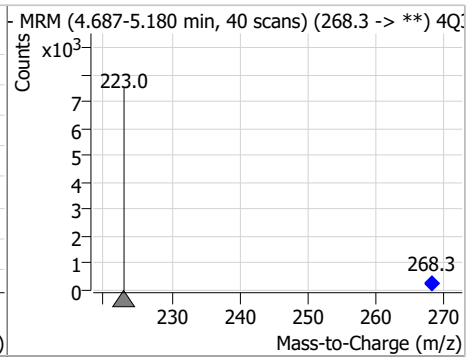




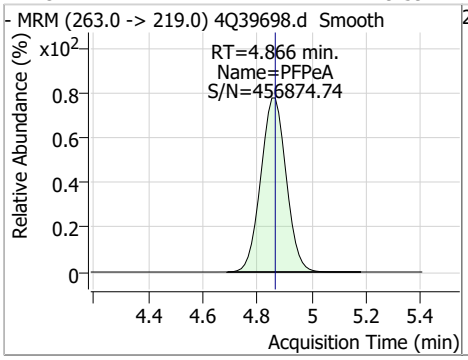
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.57	4.86	0.00	224357				

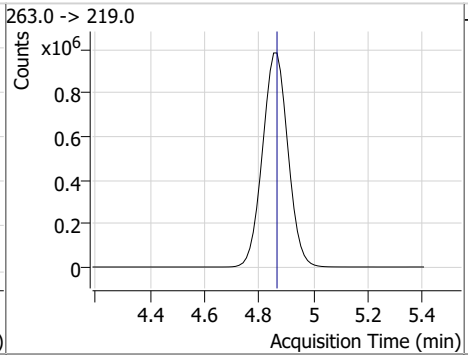


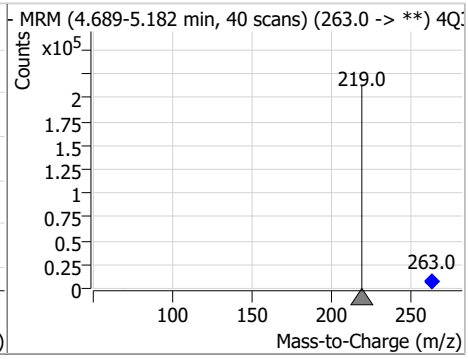




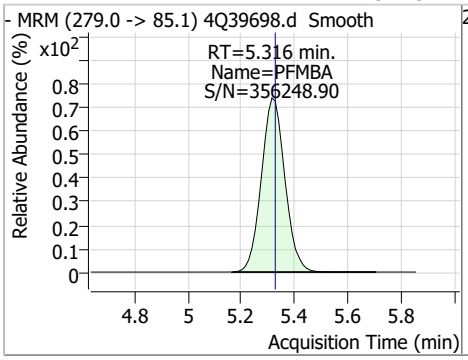
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	129.59	4.87	0.00	6377006				

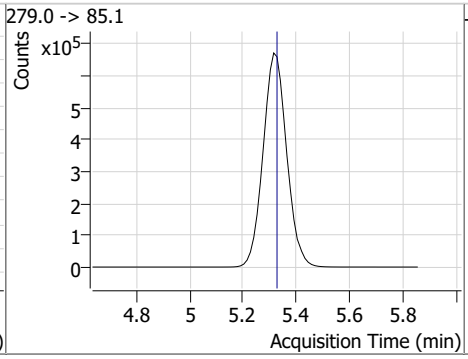


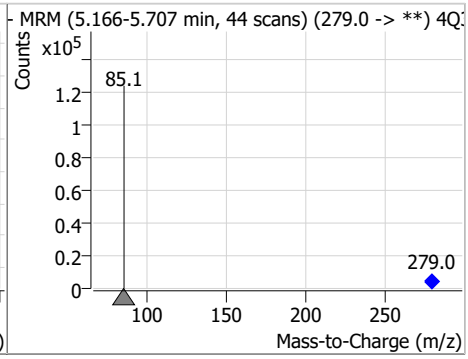




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	134.15	5.32	-0.01	4114360				

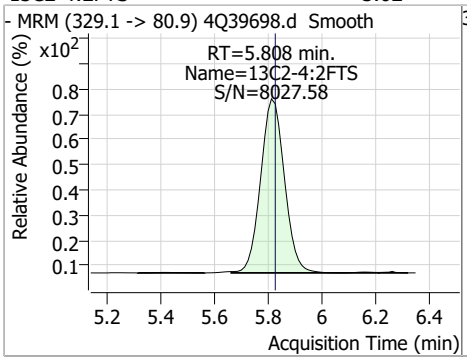


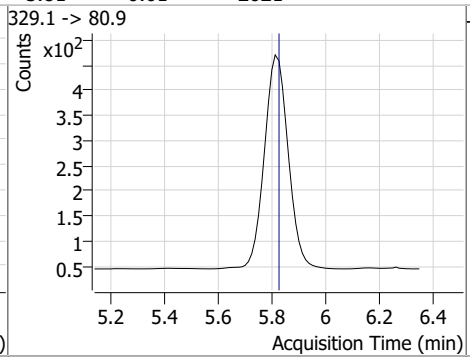


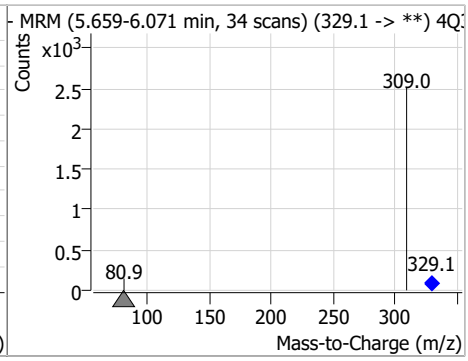


Perfluorinated Compounds by LC/MS/MS

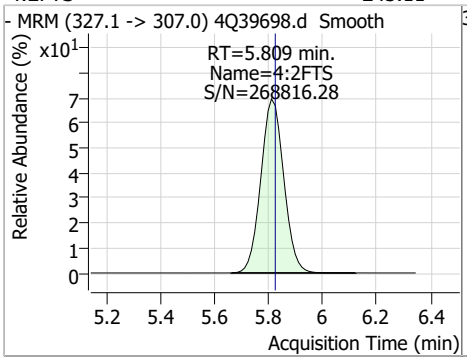
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.62	5.81	-0.01	2621				

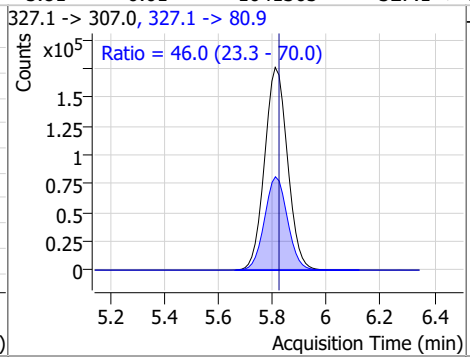


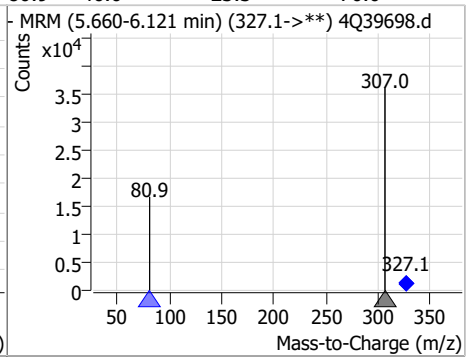




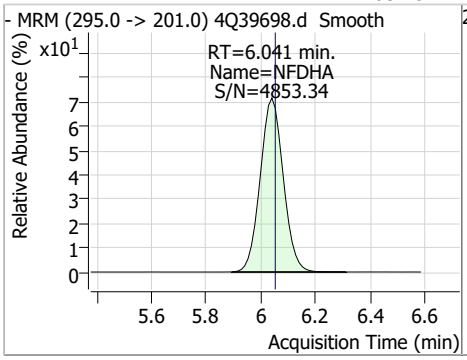
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	243.11	5.81	-0.01	1041365	327.1 -> 80.9	46.0	23.3	70.0

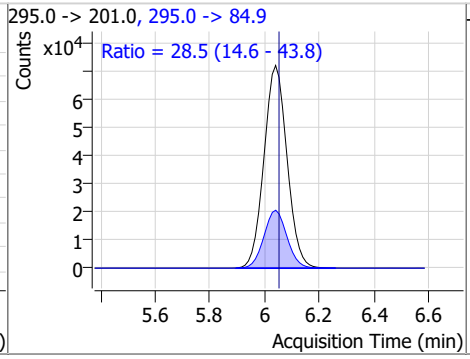


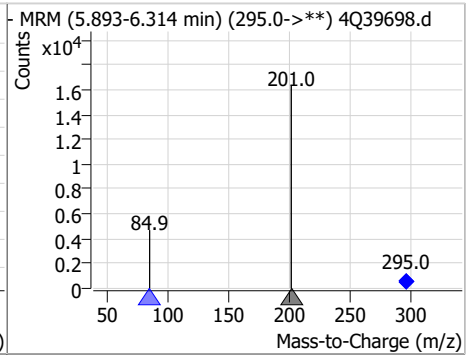




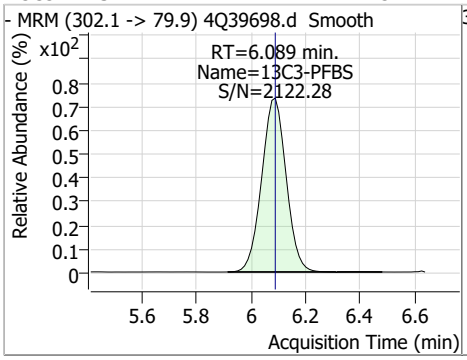
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	103.75	6.04	-0.01	425012	295.0 -> 84.9	28.5	14.6	43.8

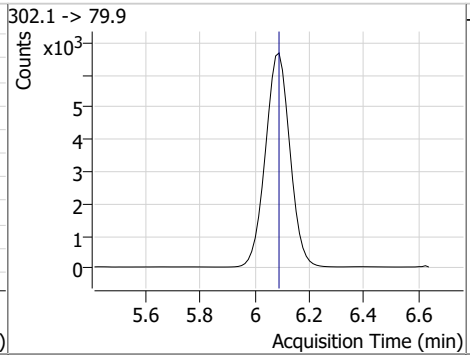


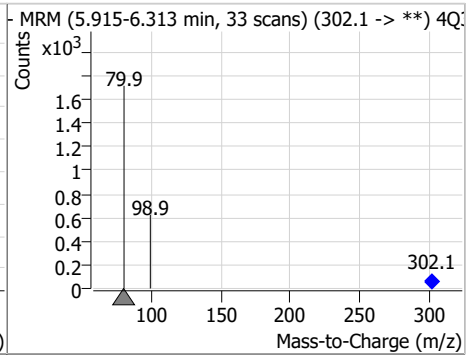




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.37	6.09	0.00	41156				

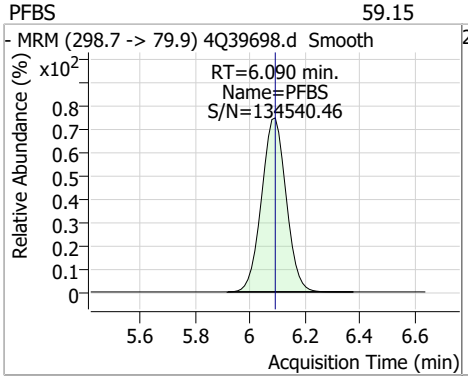


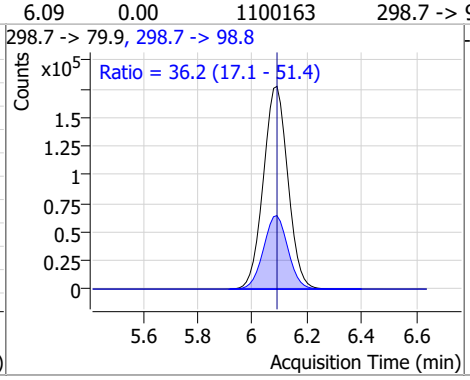


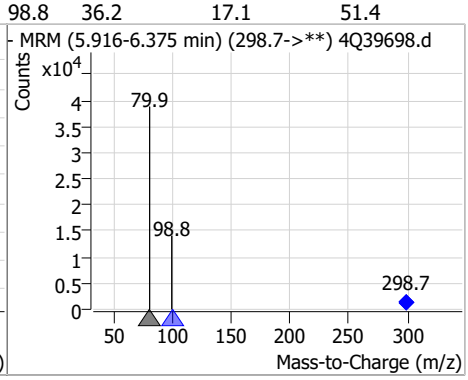


Perfluorinated Compounds by LC/MS/MS

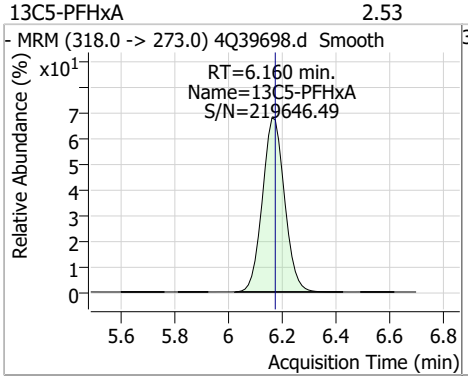
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	59.15	6.09	0.00	1100163	298.7 -> 98.8	36.2	17.1	51.4

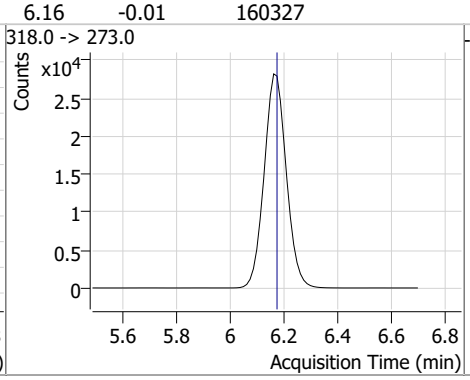


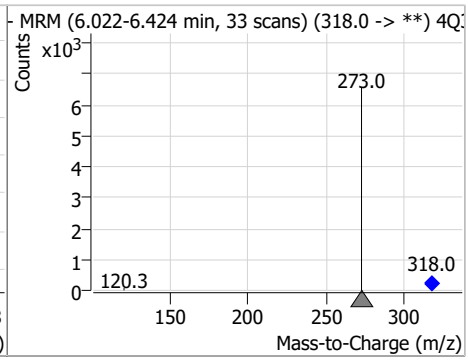




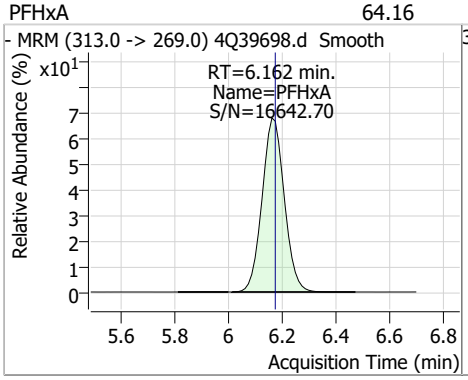
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	6.16	-0.01	160327				

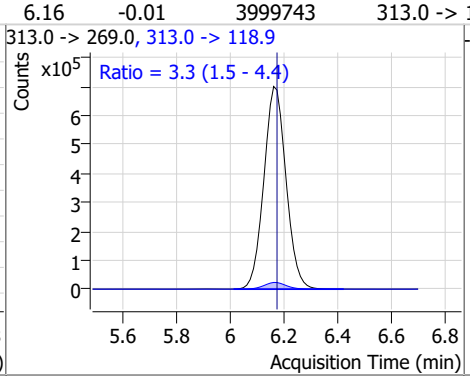


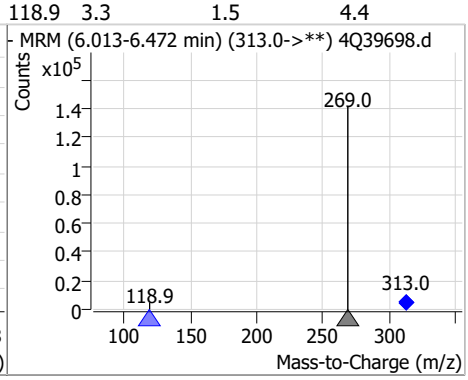




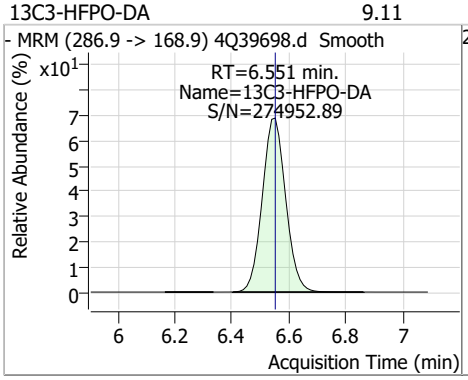
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	64.16	6.16	-0.01	3999743	313.0 -> 118.9	3.3	1.5	4.4

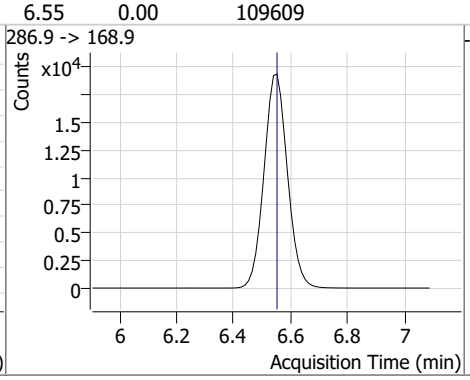


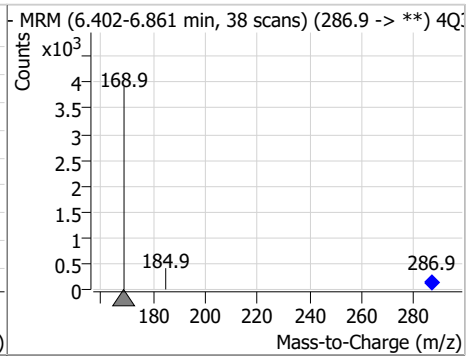




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.11	6.55	0.00	109609				

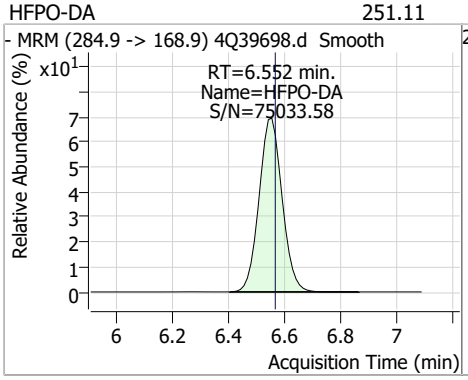


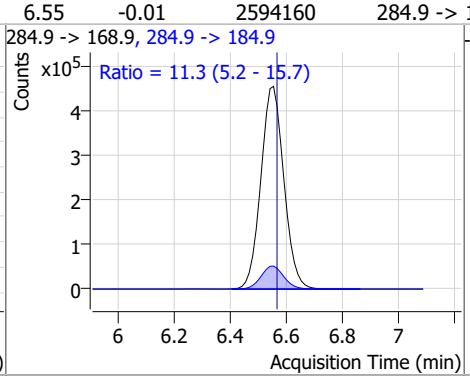


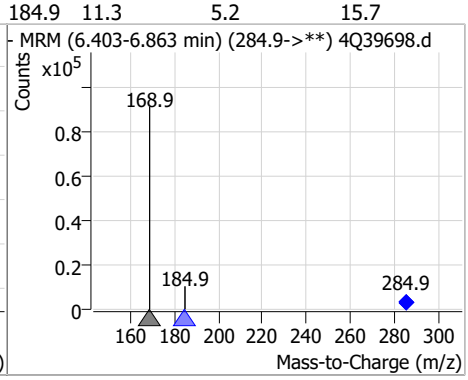


Perfluorinated Compounds by LC/MS/MS

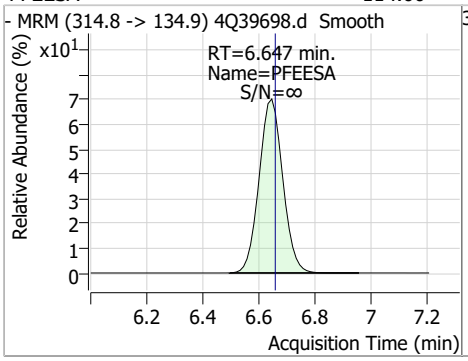
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	251.11	6.55	-0.01	2594160	284.9 -> 184.9	11.3	5.2	15.7

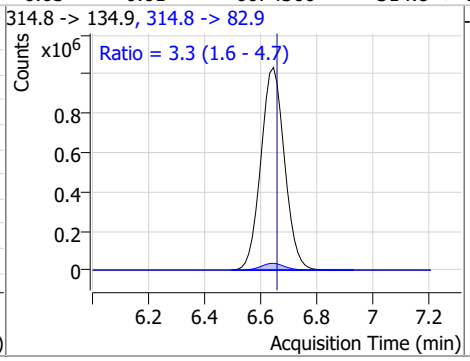


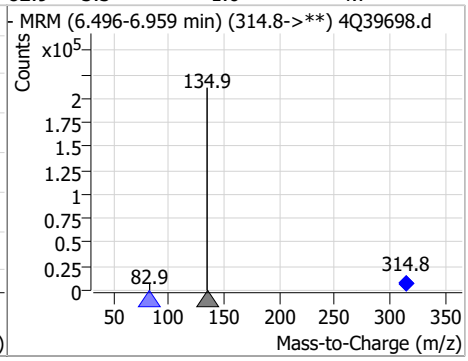




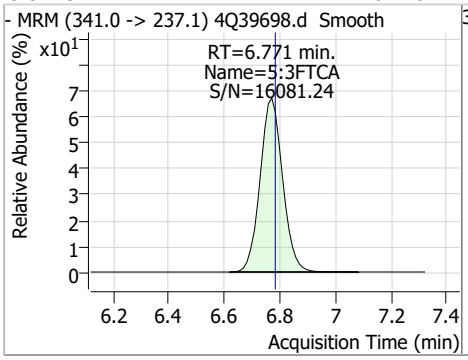
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	114.00	6.65	-0.01	6074560	314.8 -> 82.9	3.3	1.6	4.7

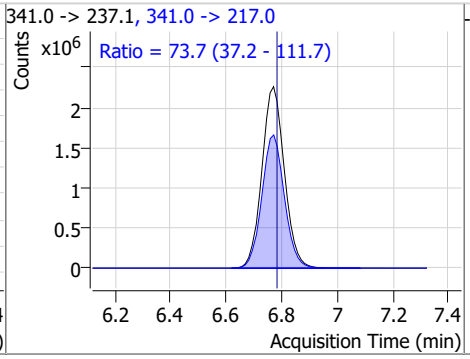


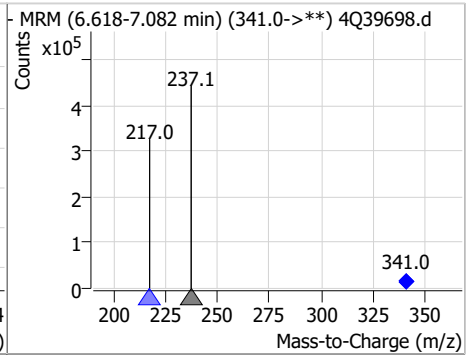




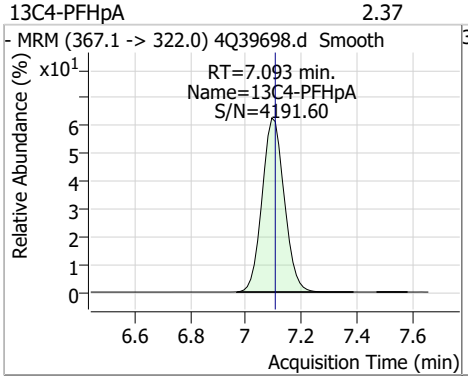
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1527.87	6.77	-0.01	12669471	341.0 -> 217.0	73.7	37.2	111.7

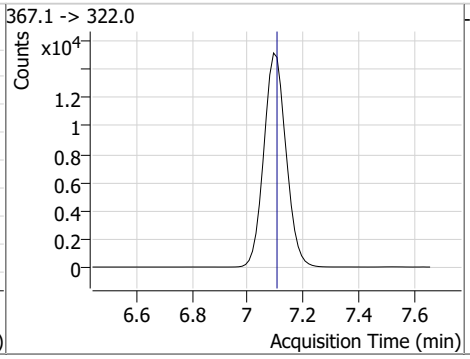


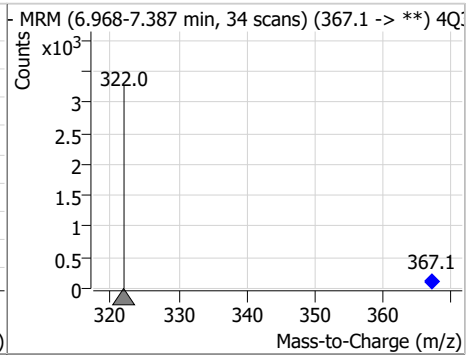




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.37	7.09	-0.01	83415				

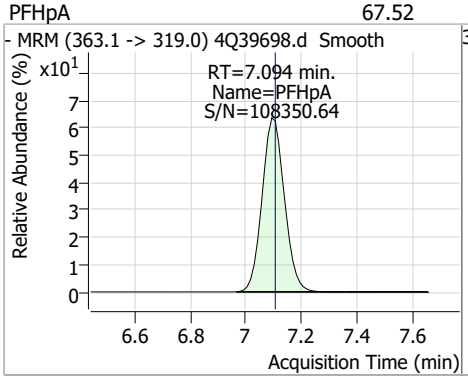


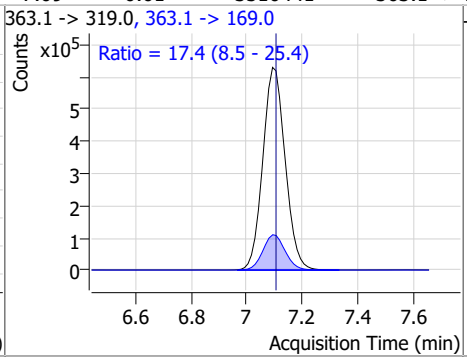


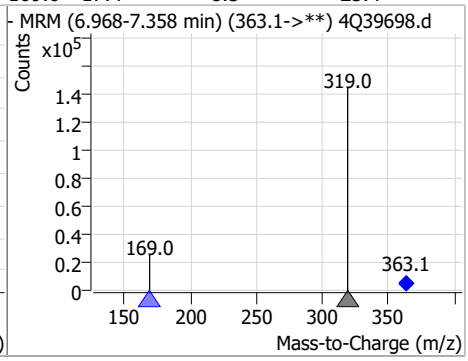


Perfluorinated Compounds by LC/MS/MS

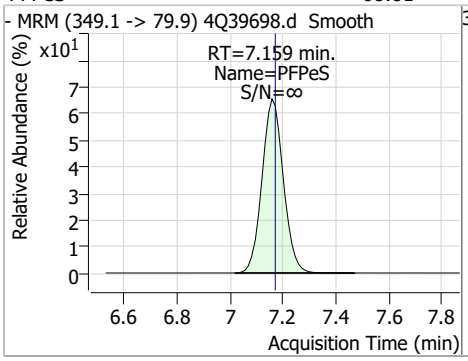
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	67.52	7.09	-0.01	3510441	363.1 -> 169.0	17.4	8.5	25.4

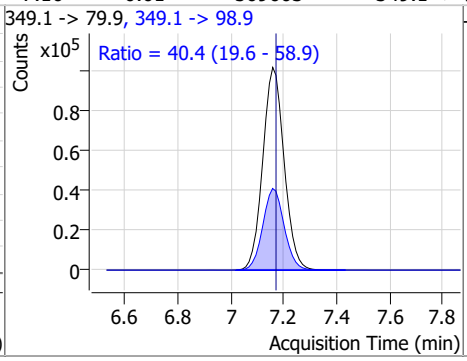


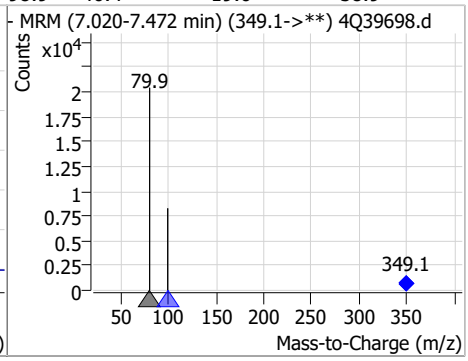




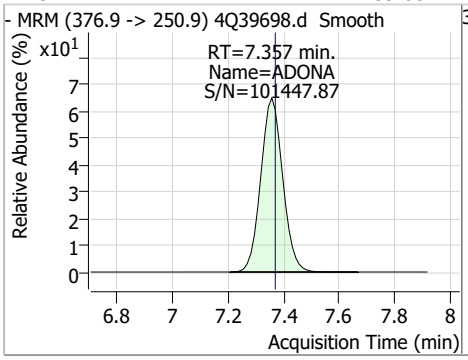
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	68.81	7.16	-0.01	569663	349.1 -> 98.9	40.4	19.6	58.9

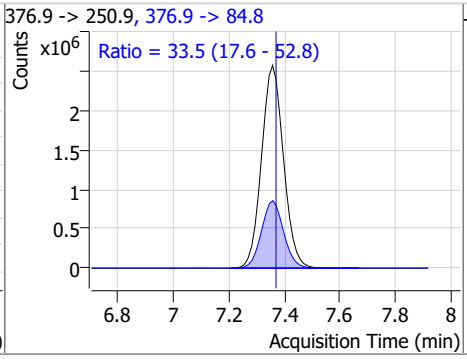


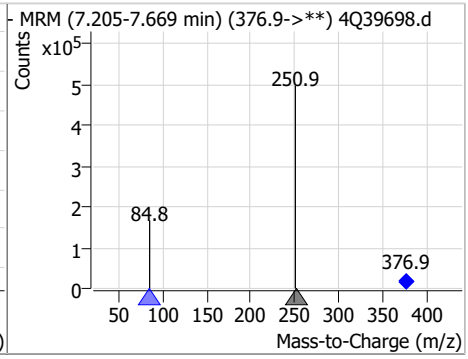




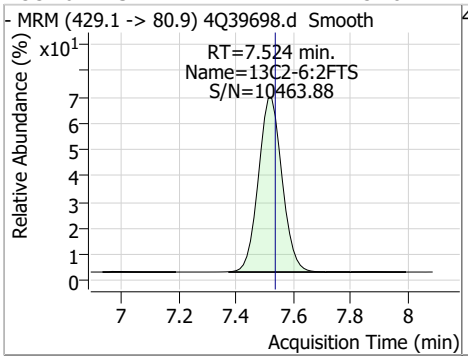
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	239.08	7.36	-0.01	14136286	376.9 -> 84.8	33.5	17.6	52.8

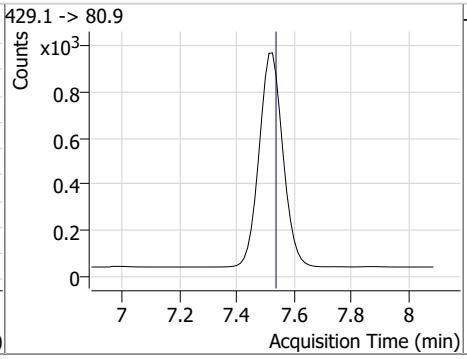


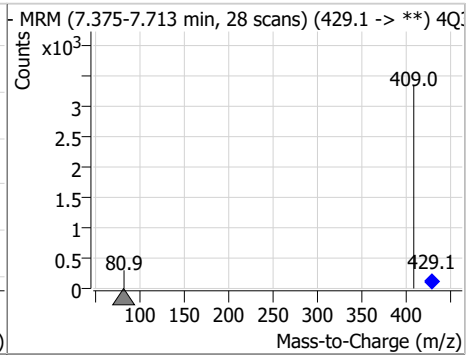




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.28	7.52	-0.01	5327				

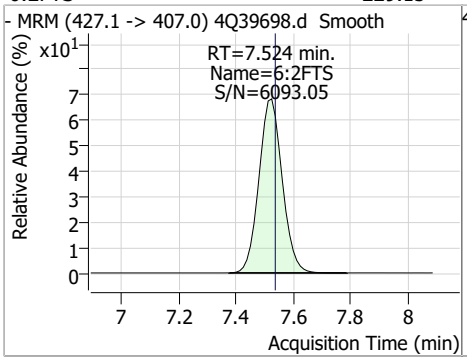


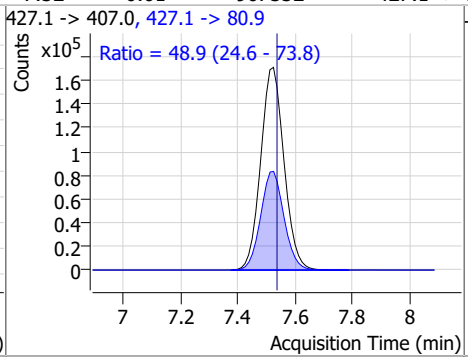


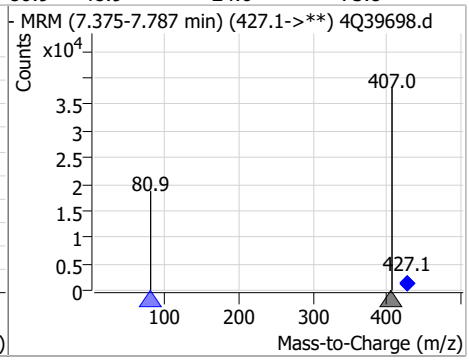


Perfluorinated Compounds by LC/MS/MS

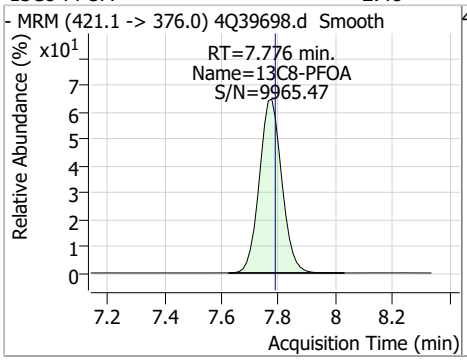
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	229.15	7.52	-0.01	967552	427.1 -> 80.9	48.9	24.6	73.8

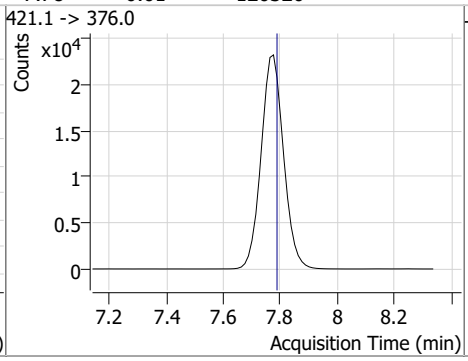


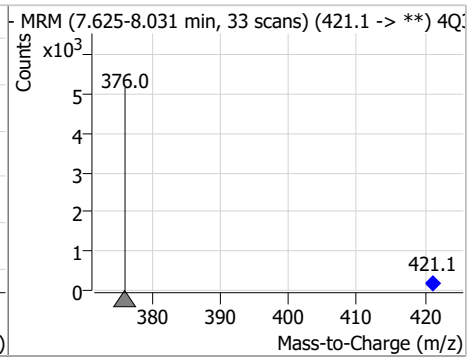




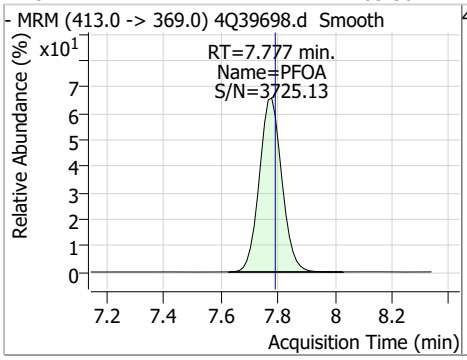
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	7.78	-0.01	126320				

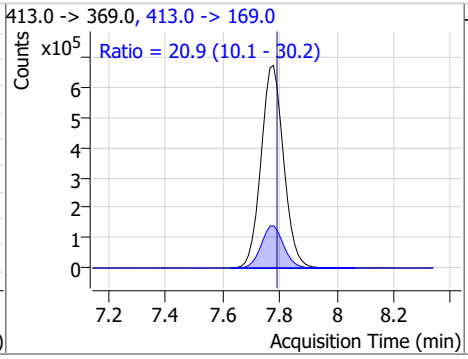


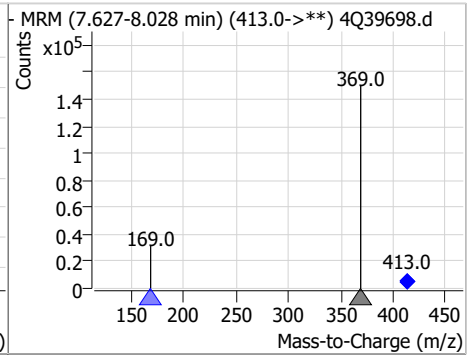




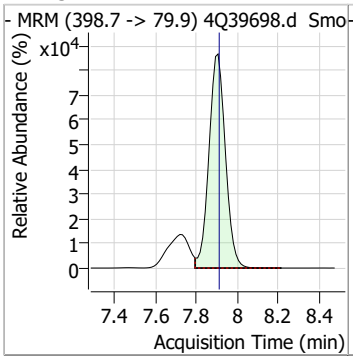
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	65.56	7.78	-0.01	3681564	413.0 -> 169.0	20.9	10.1	30.2

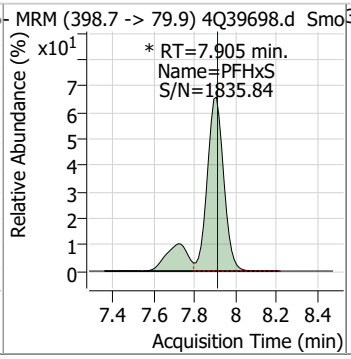


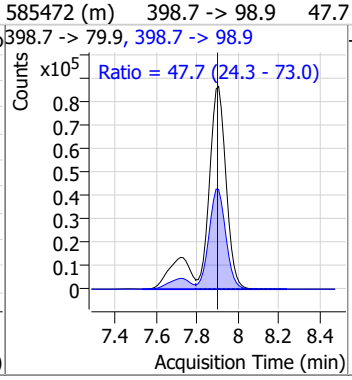


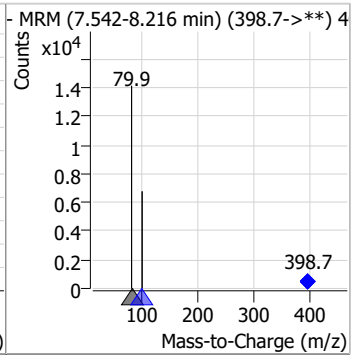


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	68.30	7.91	0.00	585472 (m)	398.7 -> 98.9	47.7	24.3	73.0



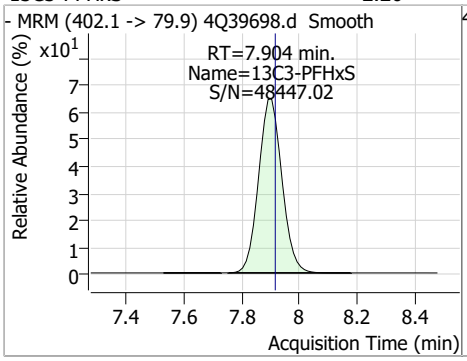


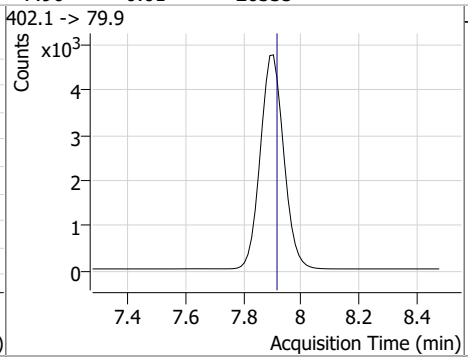


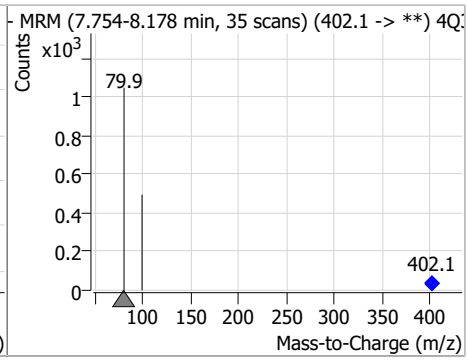


Perfluorinated Compounds by LC/MS/MS

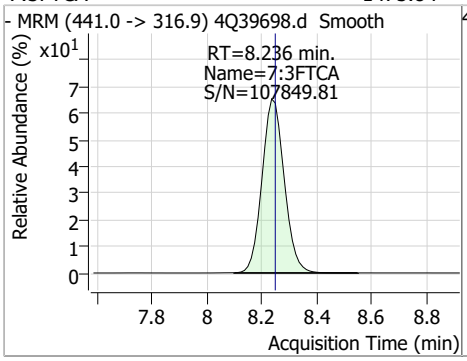
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.26	7.90	-0.01	26535				

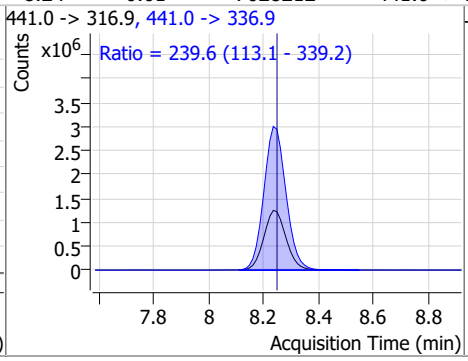


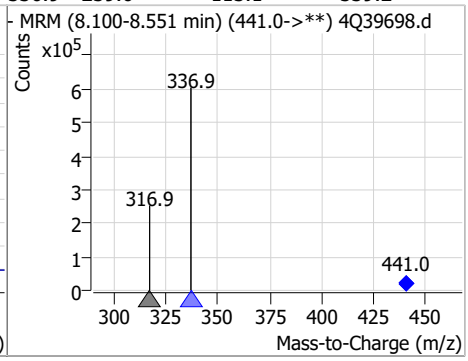




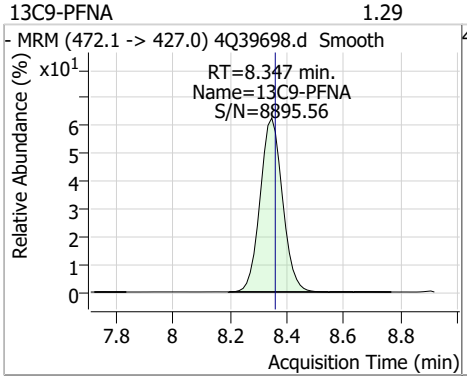
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1475.84	8.24	-0.01	7028212	441.0 -> 336.9	239.6	113.1	339.2

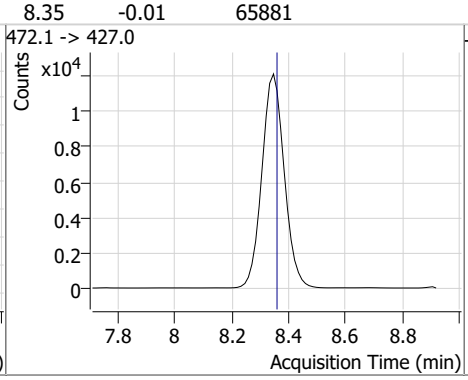


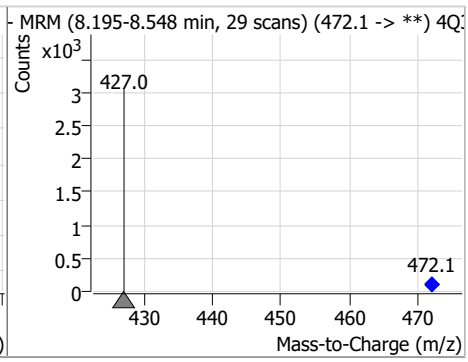




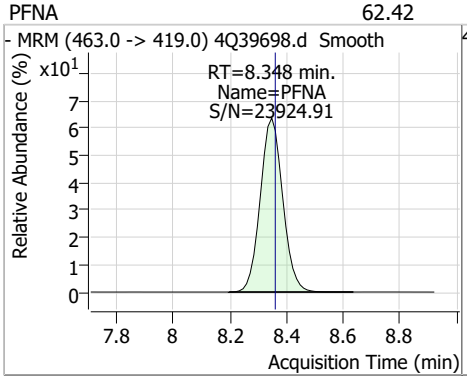
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	8.35	-0.01	65881				

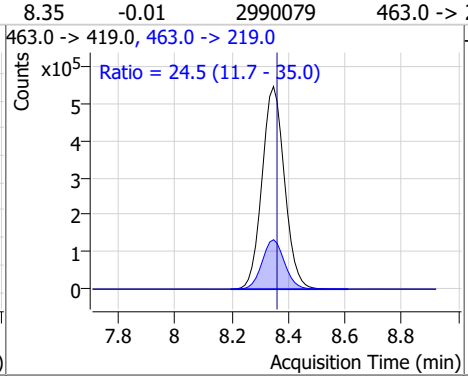


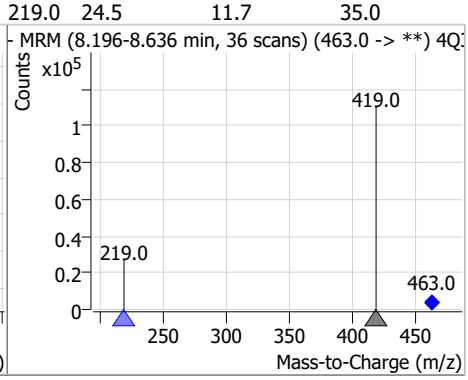




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	62.42	8.35	-0.01	2990079	463.0 -> 219.0	24.5	11.7	35.0

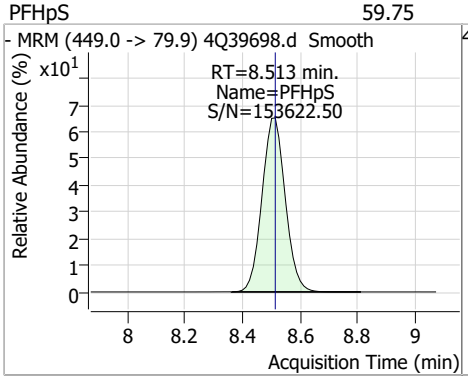


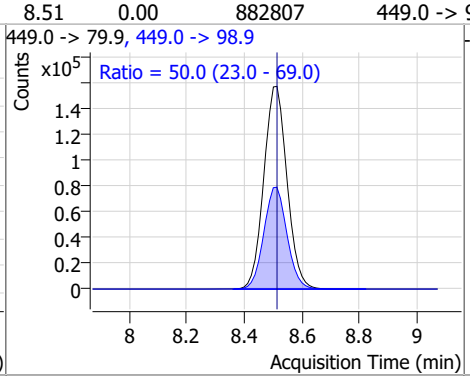


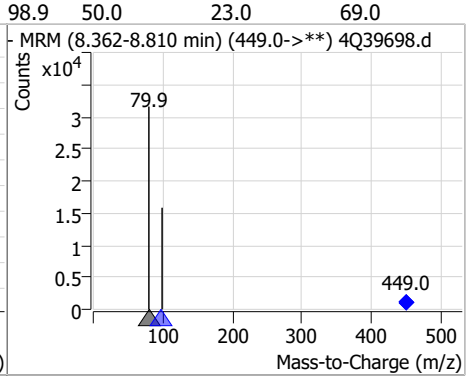


Perfluorinated Compounds by LC/MS/MS

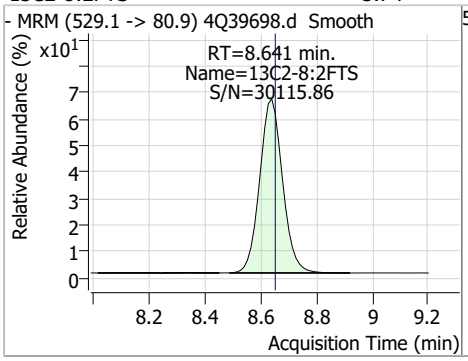
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	59.75	8.51	0.00	882807	449.0 -> 98.9	50.0	23.0	69.0

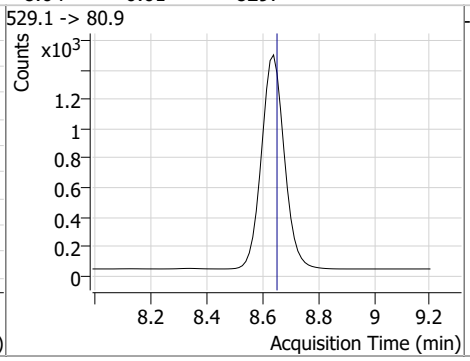


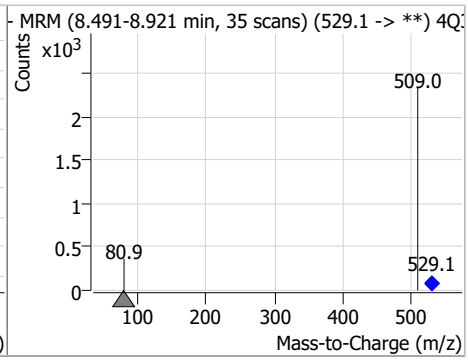




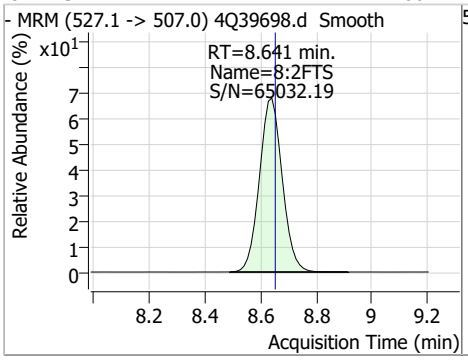
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.74	8.64	-0.01	8297				

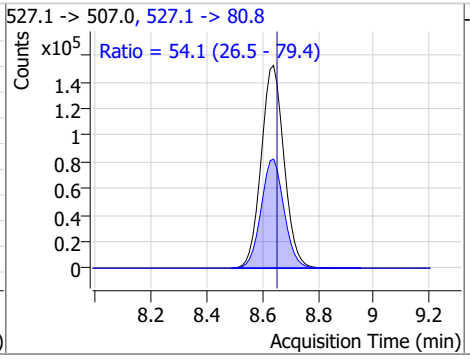


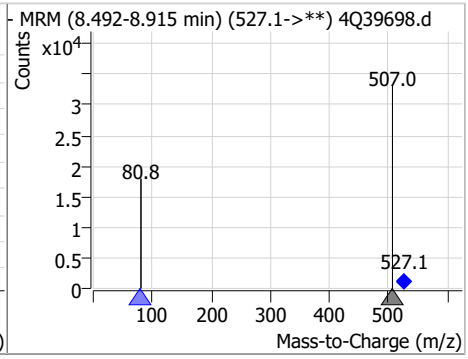




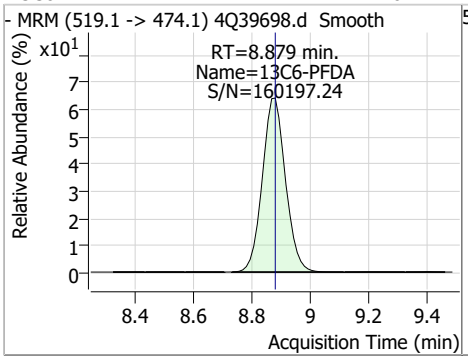
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	214.60	8.64	-0.01	861341	527.1 -> 80.8	54.1	26.5	79.4

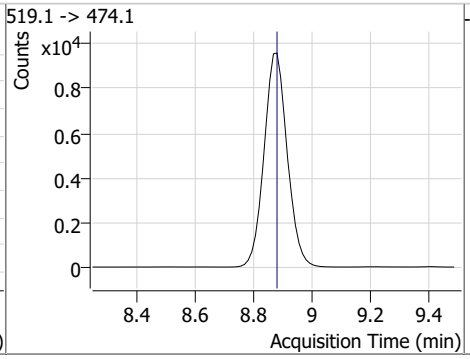


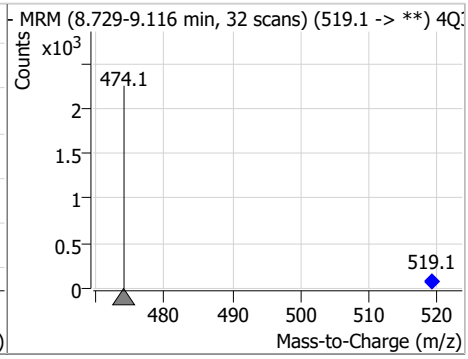




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.88	0.00	52704				

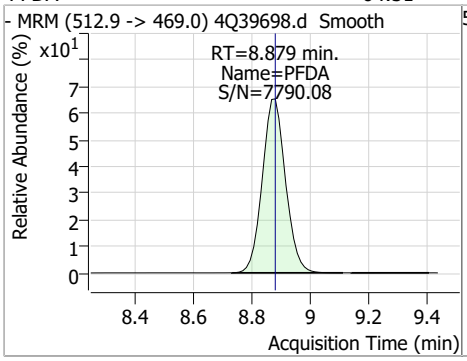


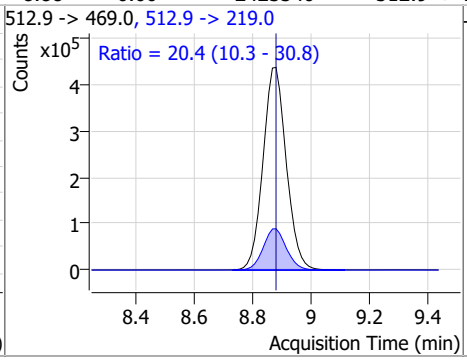


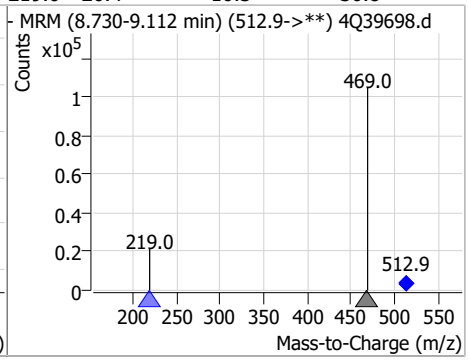


Perfluorinated Compounds by LC/MS/MS

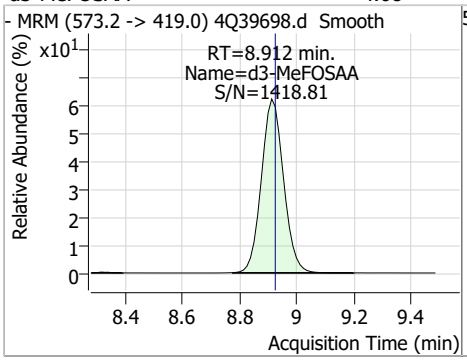
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	64.51	8.88	0.00	2425540	512.9 -> 219.0	20.4	10.3	30.8

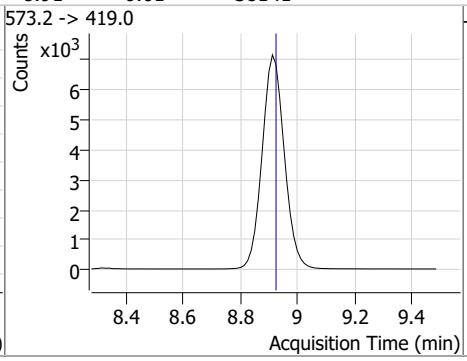


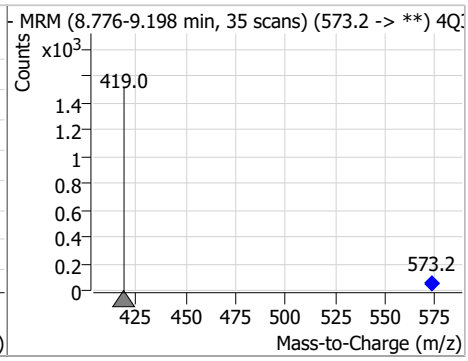




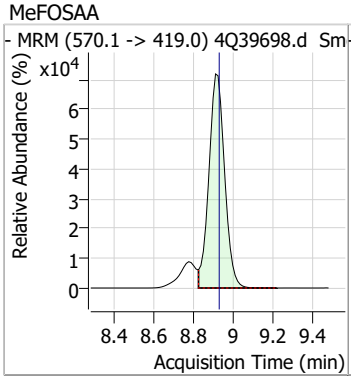
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.68	8.91	-0.01	38141				

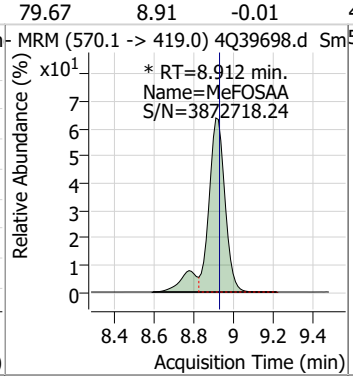


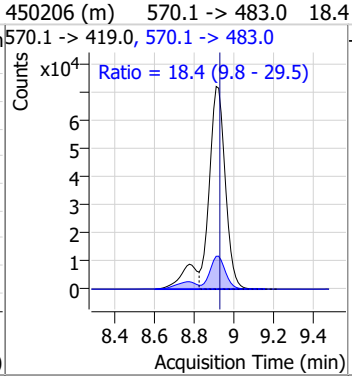


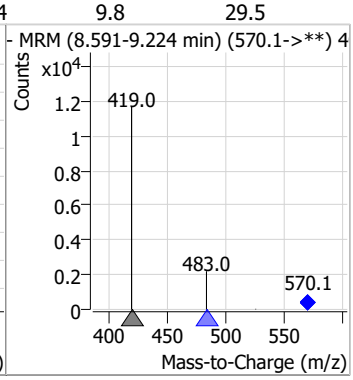


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	79.67	8.91	-0.01	450206 (m)	570.1 -> 483.0	18.4	9.8	29.5

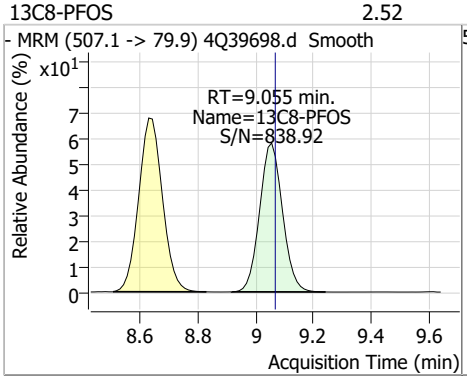


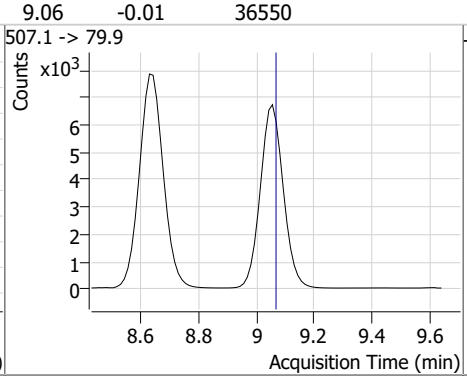


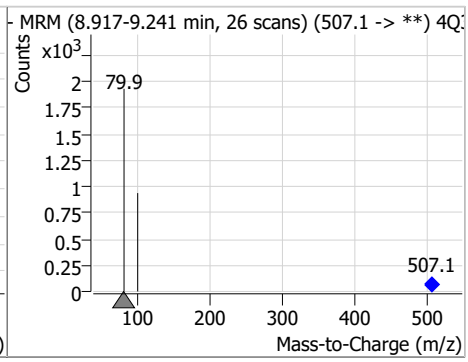




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.52	9.06	-0.01	36550				

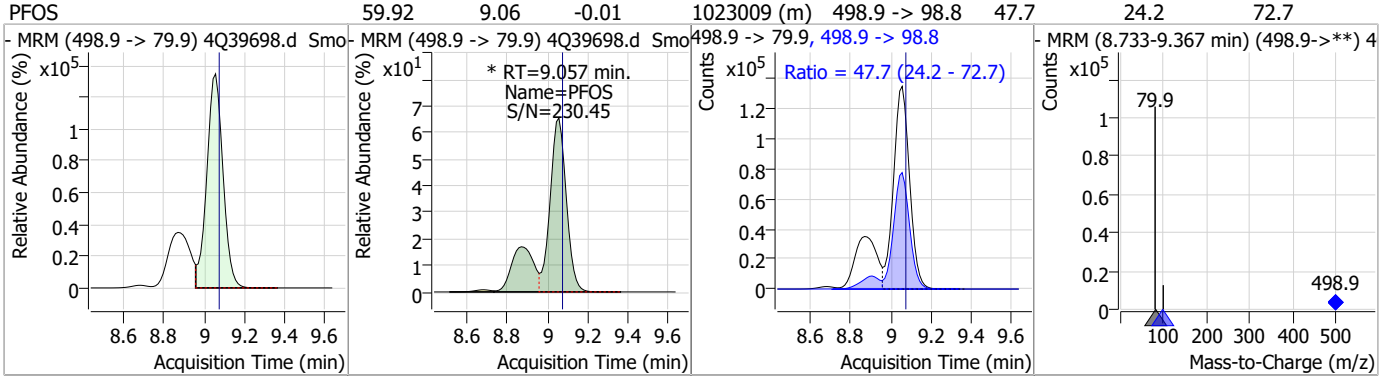




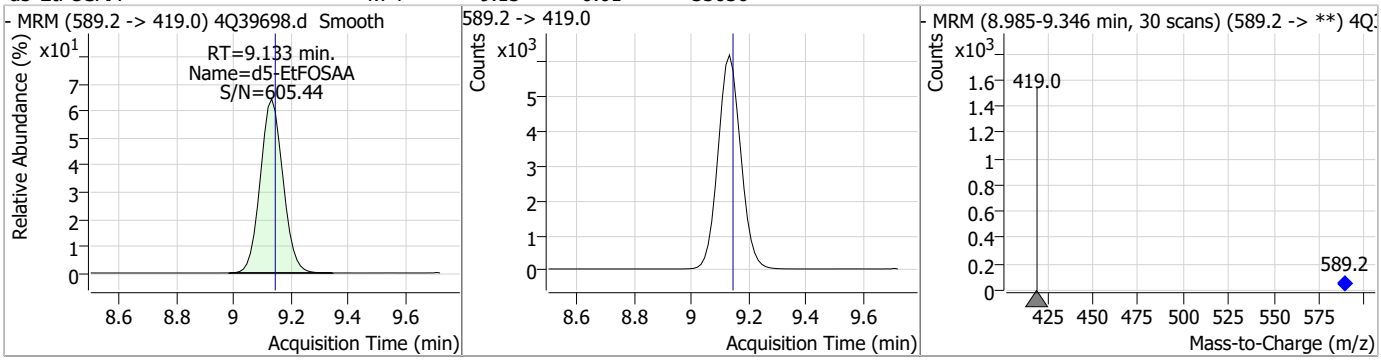


Perfluorinated Compounds by LC/MS/MS

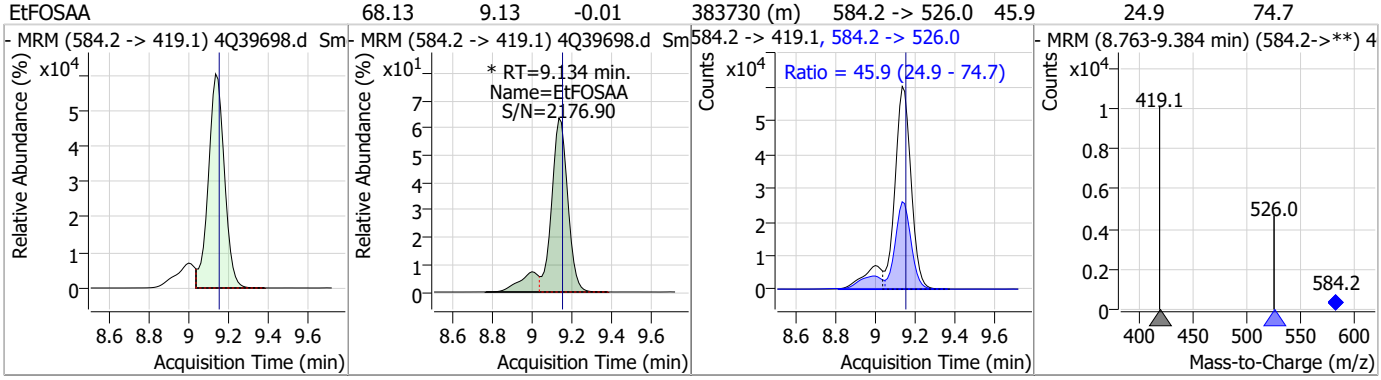
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	59.92	9.06	-0.01	1023009 (m)	498.9 -> 98.8	47.7	24.2	72.7



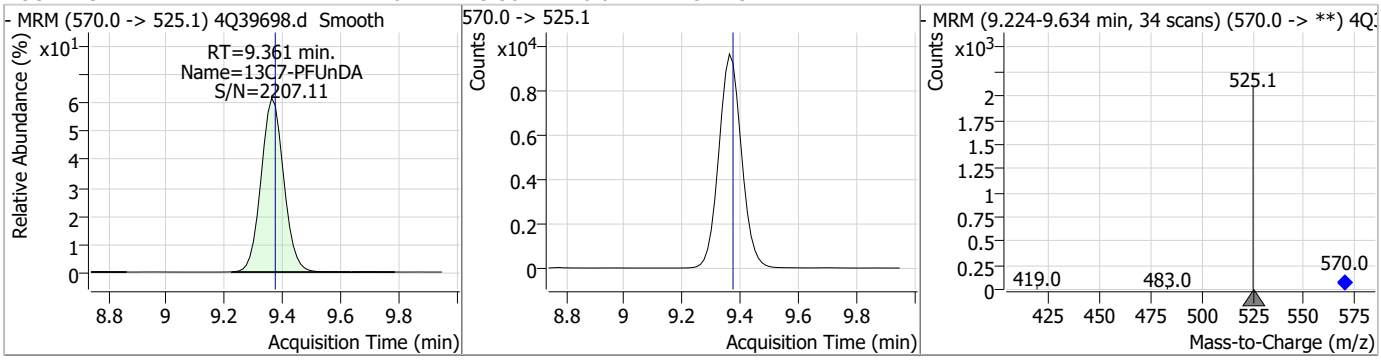
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.74	9.13	-0.01	33636				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	68.13	9.13	-0.01	383730 (m)	584.2 -> 526.0	45.9	24.9	74.7

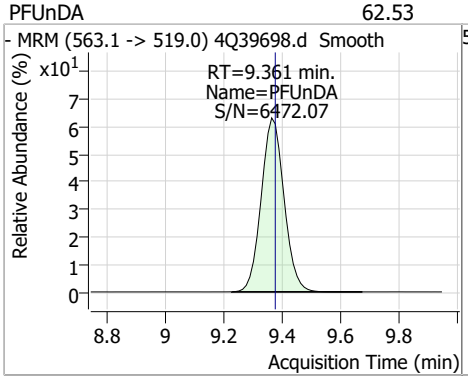


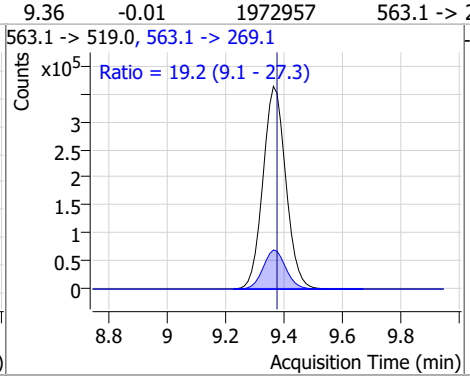
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	9.36	-0.01	52123				

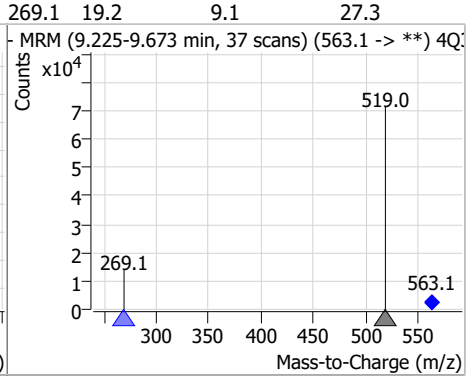


Perfluorinated Compounds by LC/MS/MS

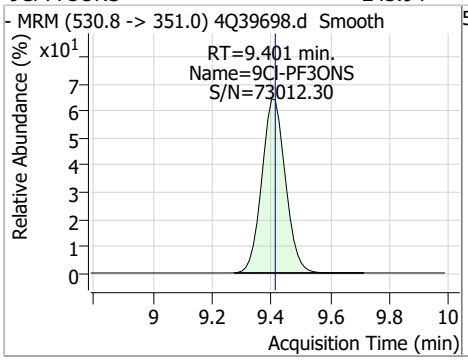
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	62.53	9.36	-0.01	1972957	563.1 -> 269.1	19.2	9.1	27.3

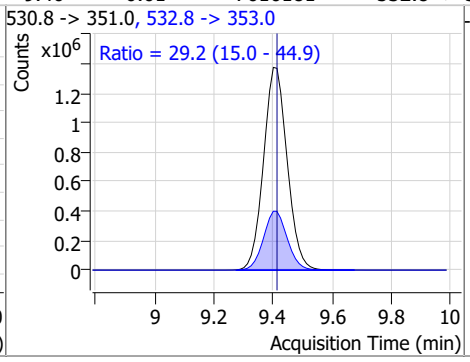


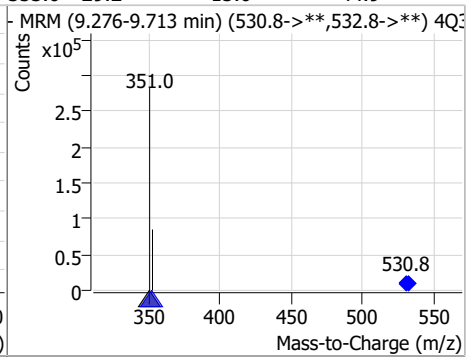




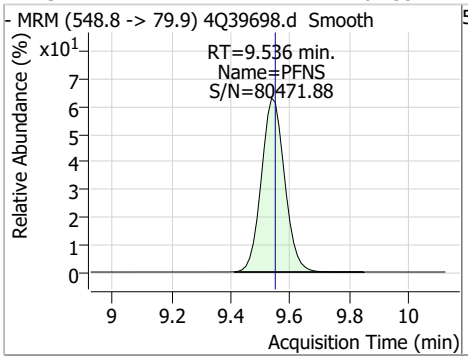
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	243.94	9.40	-0.01	7616181	532.8 -> 353.0	29.2	15.0	44.9

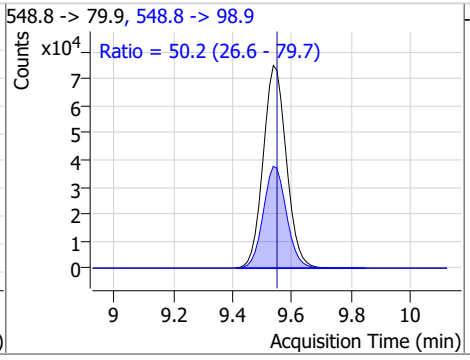


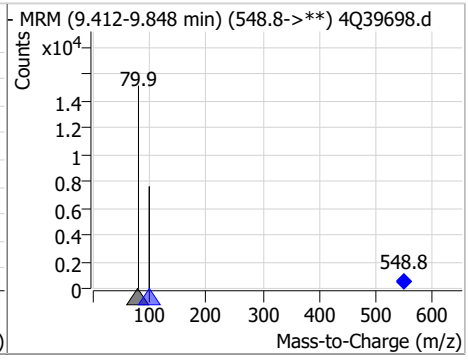




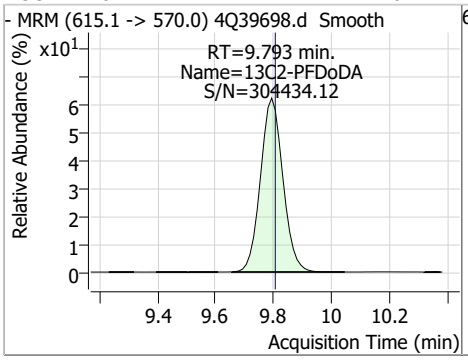
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	62.35	9.54	-0.01	405611	548.8 -> 98.9	50.2	26.6	79.7

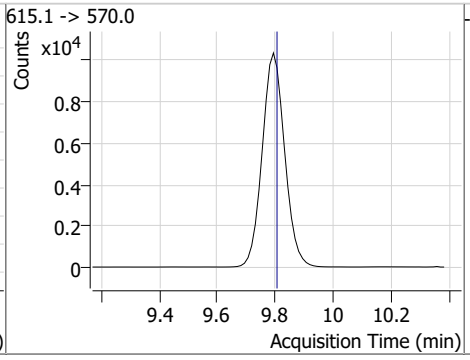


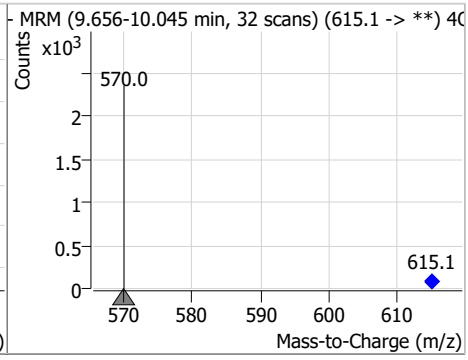




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.79	-0.01	55230				

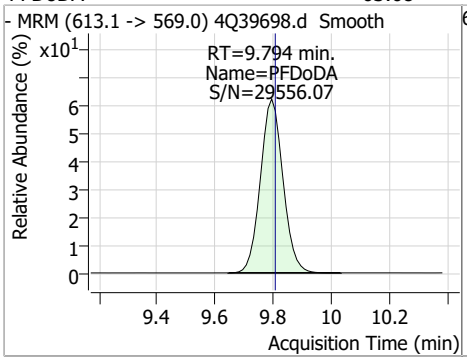


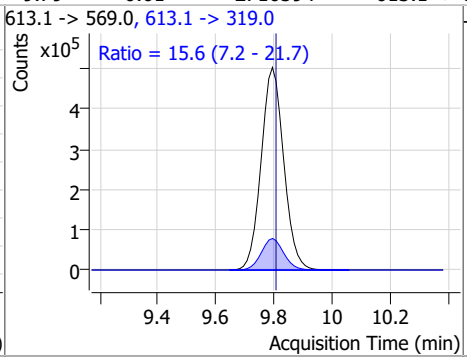


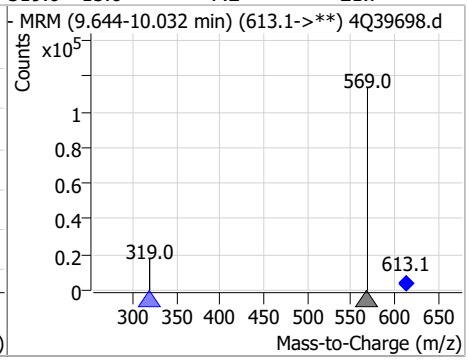


Perfluorinated Compounds by LC/MS/MS

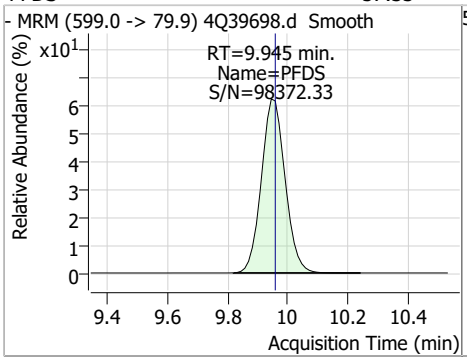
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	63.68	9.79	-0.01	2710594	613.1 -> 319.0	15.6	7.2	21.7

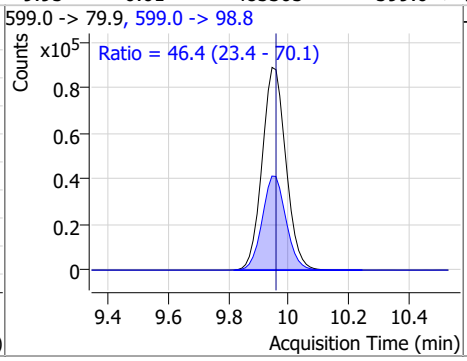


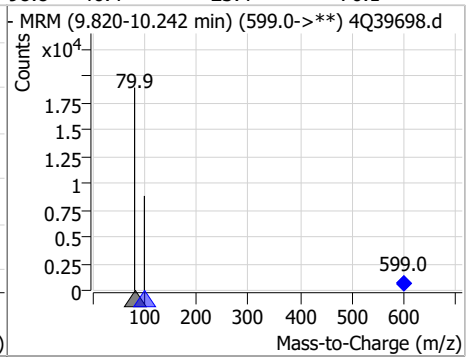




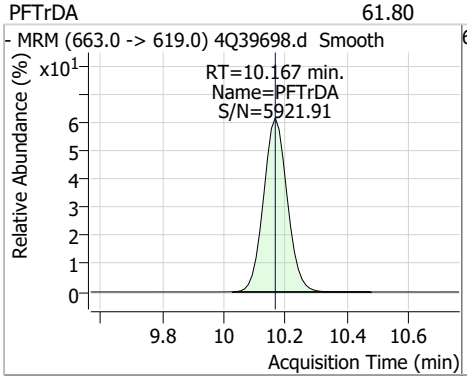
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	57.33	9.95	-0.01	485305	599.0 -> 98.8	46.4	23.4	70.1

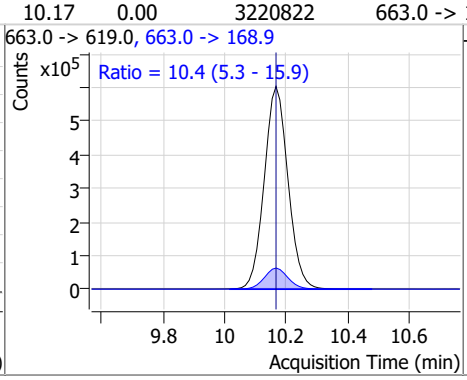


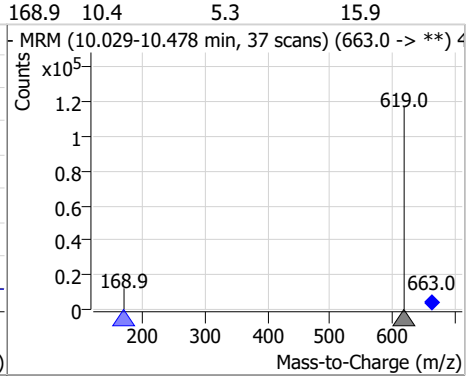




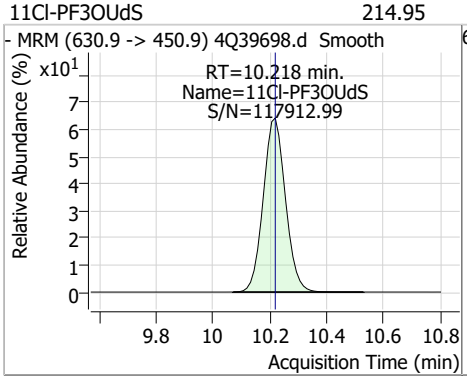
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	61.80	10.17	0.00	3220822	663.0 -> 168.9	10.4	5.3	15.9

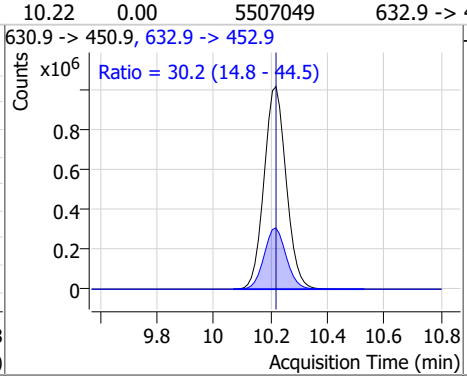


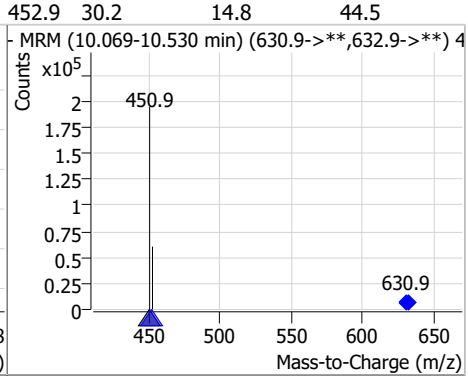




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	214.95	10.22	0.00	5507049	632.9 -> 452.9	30.2	14.8	44.5

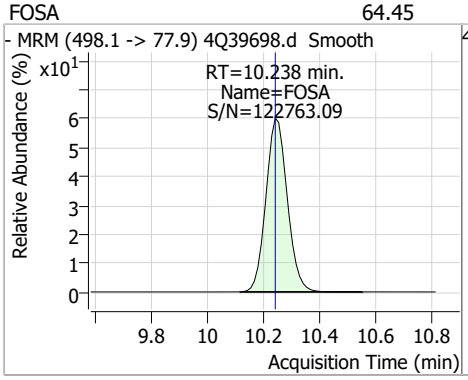


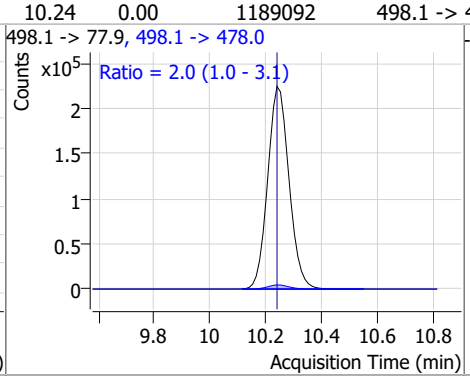


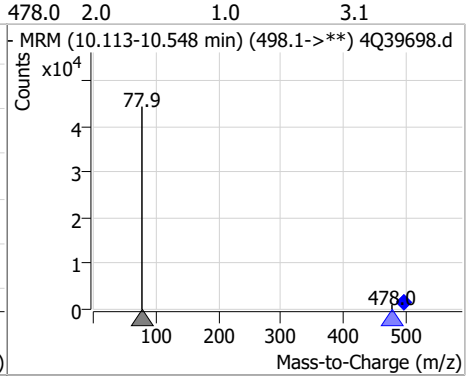


Perfluorinated Compounds by LC/MS/MS

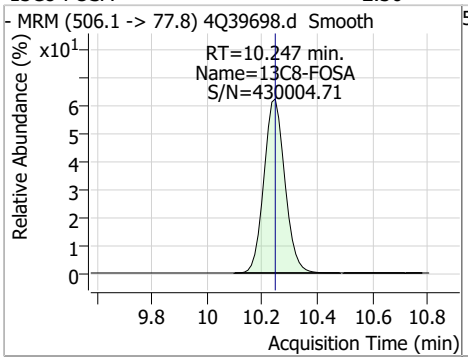
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	64.45	10.24	0.00	1189092	498.1 -> 478.0	2.0	1.0	3.1

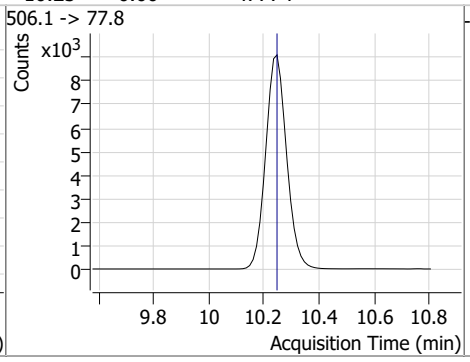


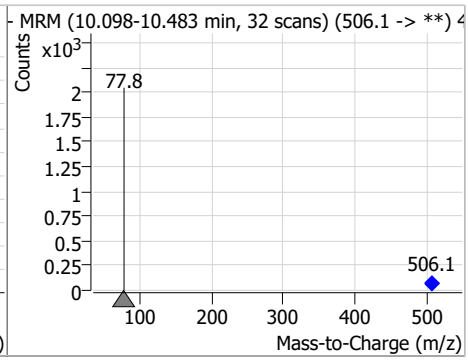




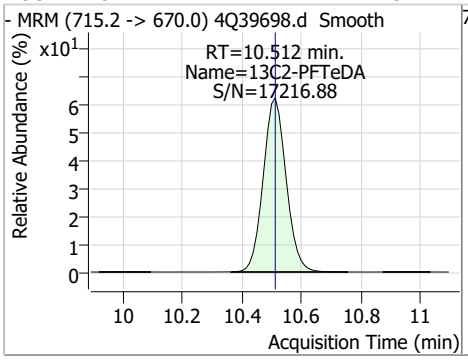
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.36	10.25	0.00	47774				

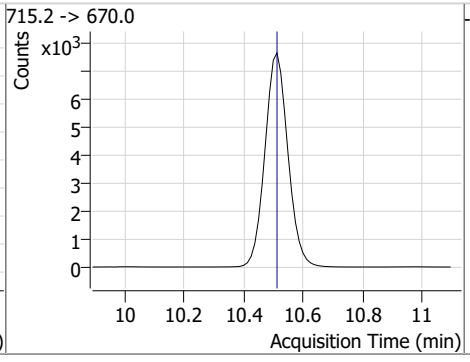


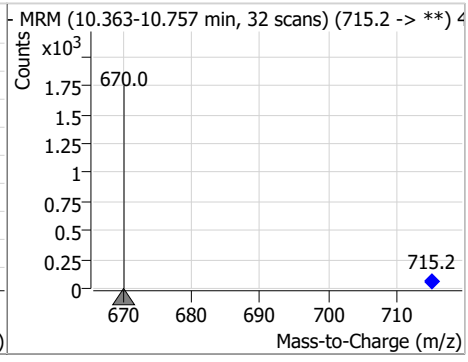




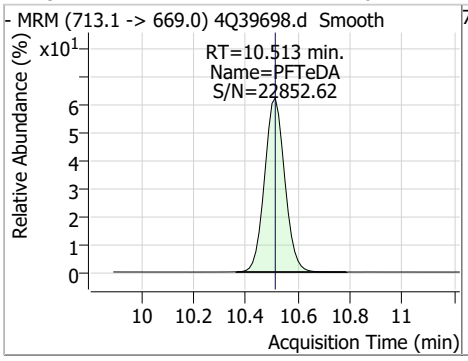
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	10.51	0.00	40811				

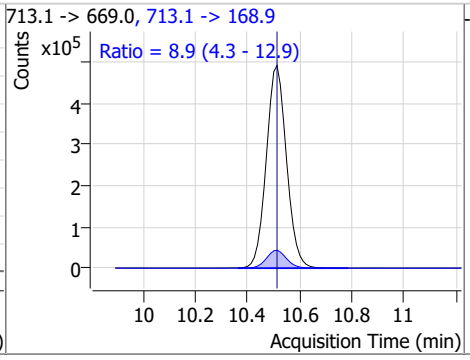


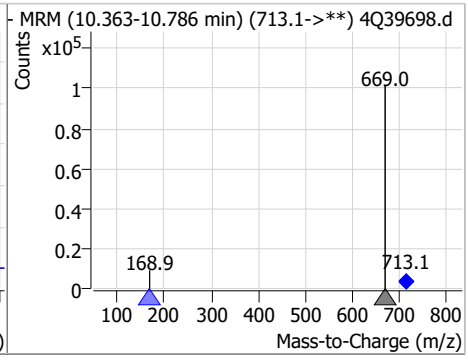




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	64.41	10.51	0.00	2644932	713.1 -> 168.9	8.9	4.3	12.9

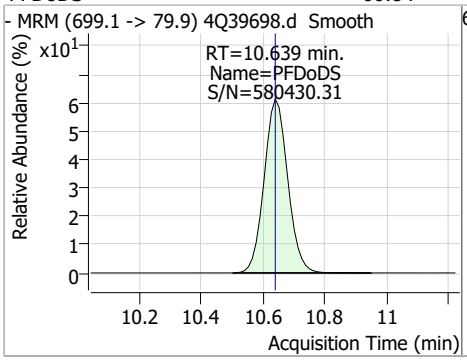


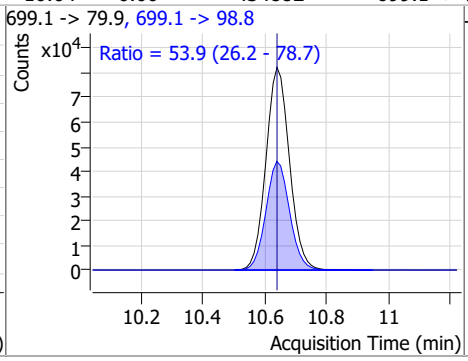


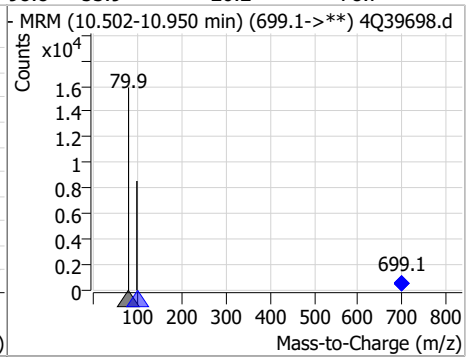


Perfluorinated Compounds by LC/MS/MS

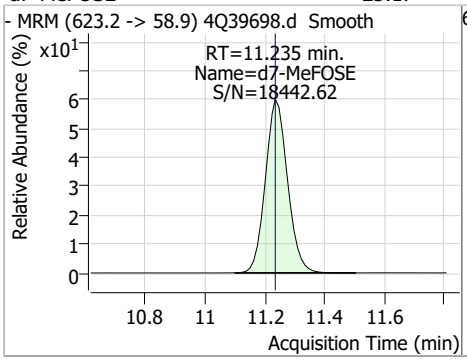
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	60.84	10.64	0.00	434882	699.1 -> 98.8	53.9	26.2	78.7

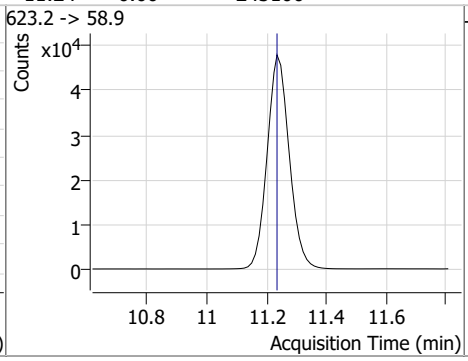


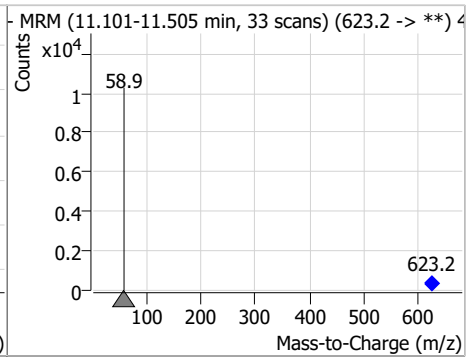




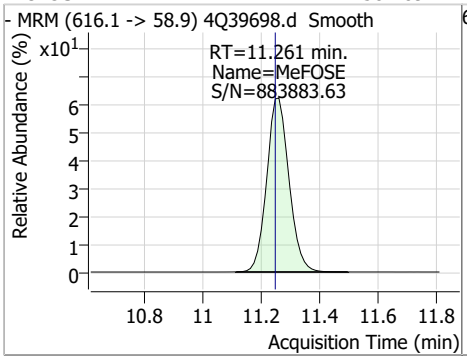
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.17	11.24	0.00	245100				

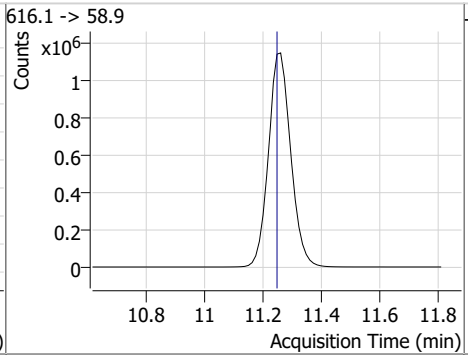


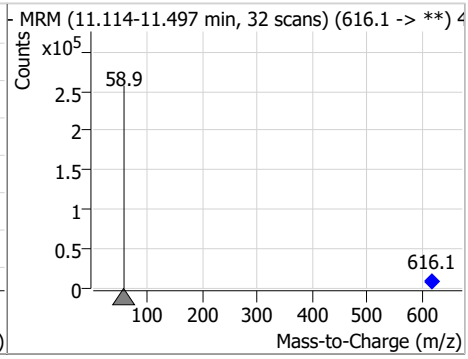




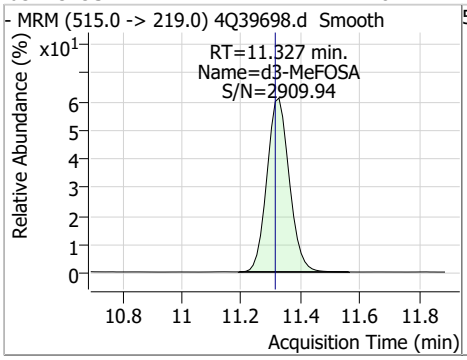
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	581.89	11.26	0.01	6025380				

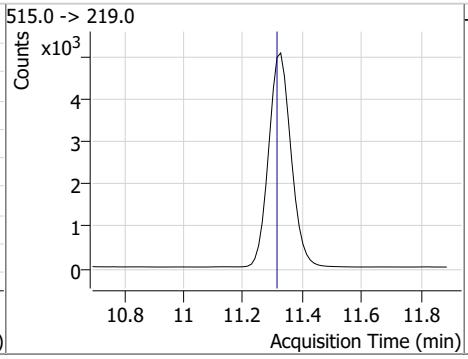


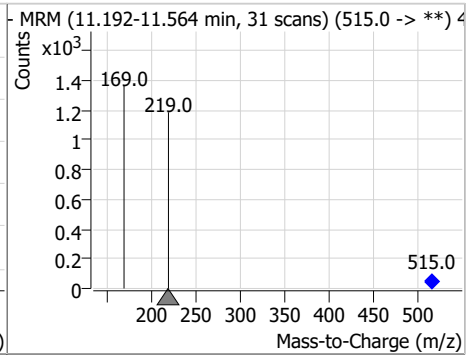




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.84	11.33	0.01	26327				

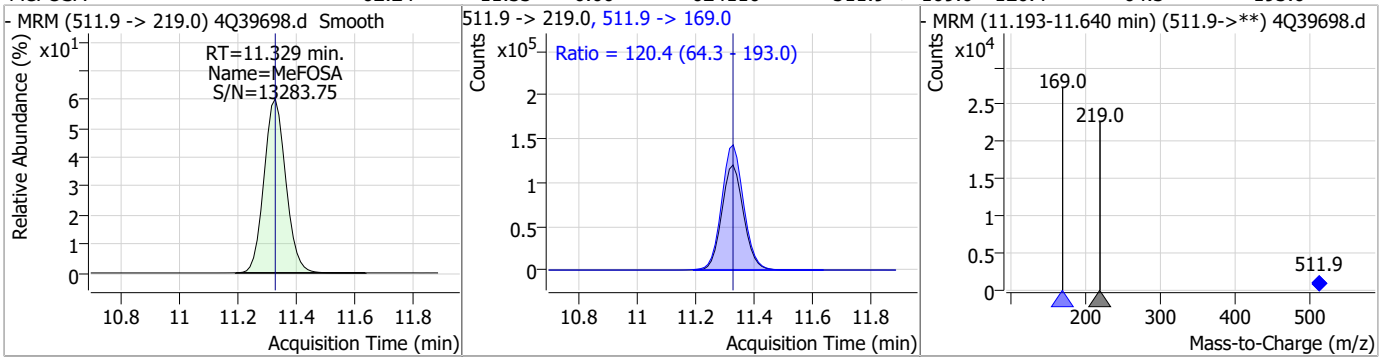




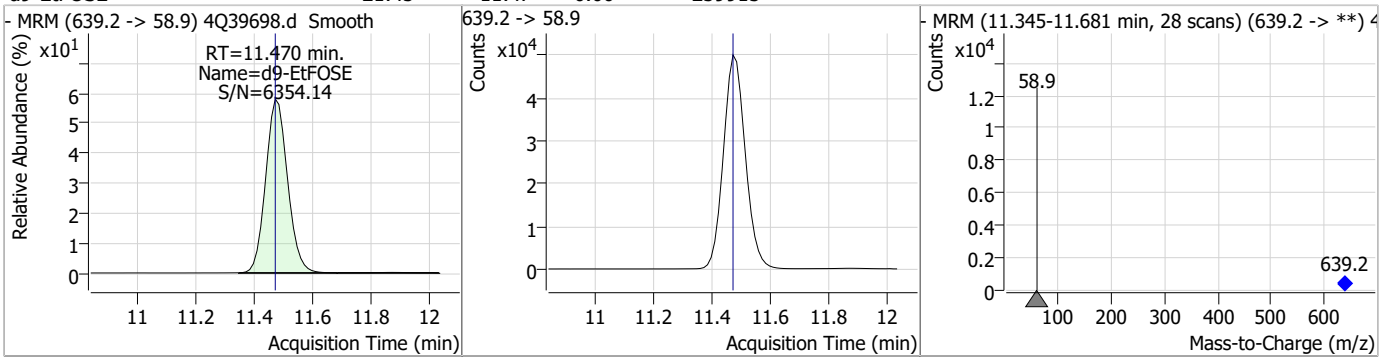


Perfluorinated Compounds by LC/MS/MS

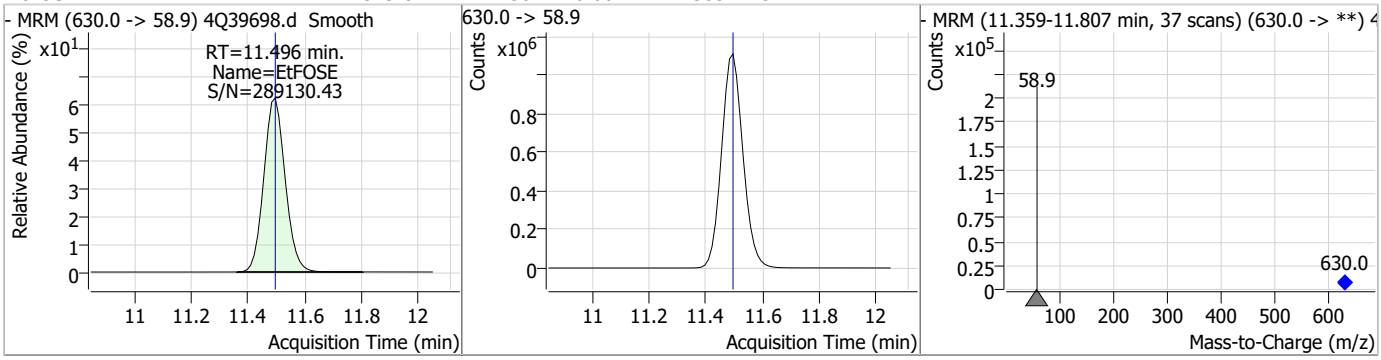
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	62.24	11.33	0.00	624110	511.9 -> 169.0	120.4	64.3	193.0



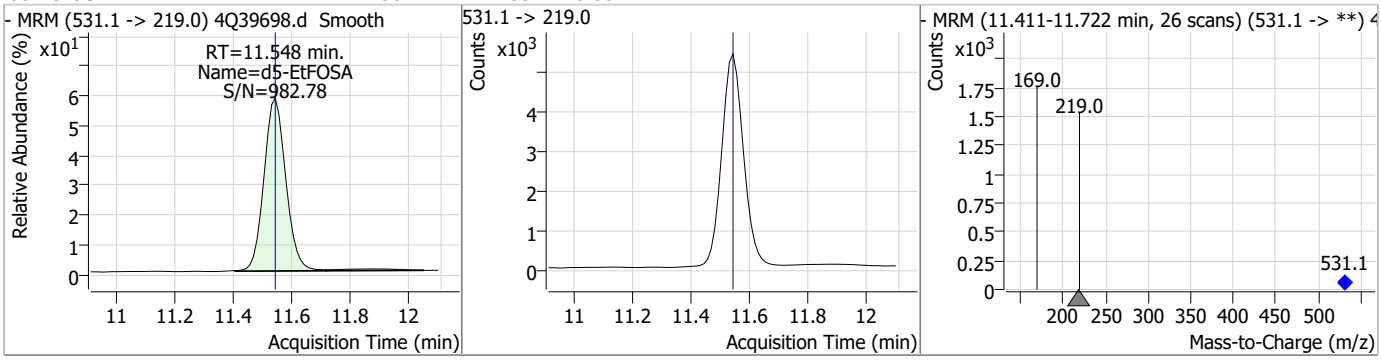
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.45	11.47	0.00	259915				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	579.81	11.50	0.00	5851245				

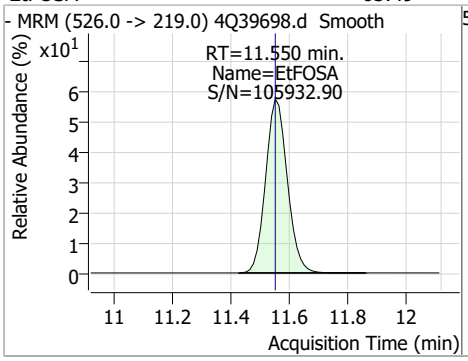


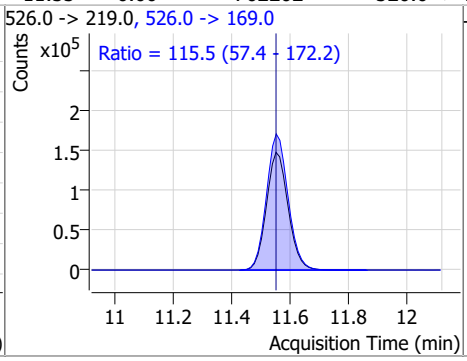
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	11.55	0.00	27711				

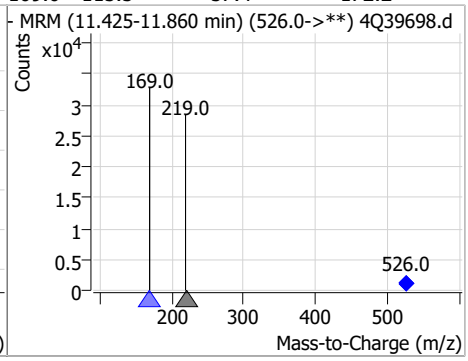


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	65.49	11.55	0.00	762262	526.0 -> 169.0	115.5	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-IC571
Lab FileID: 4Q39698.D
Injection Time: 01/25/23 14:52
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.91	Split peak
MeFOSAA	2355-31-9		8.91	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.06	Split peak
EtFOSAA	2991-50-6		9.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39700.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 3:20:17 PM
Sample Name : icv571-4
Vial : P1-B3
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	419809	10.00	µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	275371	5.00	µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	175598	2.50	µg/L	0.012
M4-PFHpA	7.106	367.1 -> 322.0	97939	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	156890	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	75671	1.25	µg/L	0.000
M6-PFDA	8.879	519.1 -> 474.1	58039	1.25	µg/L	0.000
M7-PFUnDA	9.373	570.0 -> 525.1	62565	1.25	µg/L	0.000
M2-PFDoDA	9.806	615.1 -> 570.0	63791	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	45529	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57771	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	46812	2.50	µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	33415	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	38226	2.50	µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4547	5.00	µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	9650	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	13465	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	46102	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	134672	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	39555	5.00	µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	301651	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	345936	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	30919	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	24647	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	39948	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	233574	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	21022	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	175601	2.50	µg/L	0.000
13C2-PFDA	8.879	515.1 -> 470.1	51142	1.25	µg/L	0.000
13C5-PFNA	8.360	468.0 -> 423.0	84342	1.25	µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	166002	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	4547	6.00	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.0%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9650	5.69	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.8%		
13C2-8:2FTS	8.653	529.1 -> 80.9	13465	5.80	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.0%		
13C2-PFDoDA	9.806	615.1 -> 570.0	63791	1.28	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-PFTeDA	10.512	715.2 -> 670.0	45529	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-PFBS	6.101	302.1 -> 79.9	46812	2.58	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-PFHxS	7.917	402.1 -> 79.9	33415	2.72	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C4-PFBA	3.186	216.8 -> 171.9	419809	9.97 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	7.106	367.1 -> 322.0	97939	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFHxA	6.184	318.0 -> 273.0	175598	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C5-PFPeA	4.876	268.3 -> 223.0	275371	5.10 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C6-PFDA	8.879	519.1 -> 474.1	58039	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C7-PFUnDA	9.373	570.0 -> 525.1	62565	1.29 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-FOSA	10.247	506.1 -> 77.8	57771	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-PFOA	7.788	421.1 -> 376.0	156890	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C8-PFOS	9.068	507.1 -> 79.9	38226	2.34 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C9-PFNA	8.360	472.1 -> 427.0	75671	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%		
d3-MeFOSAA	8.924	573.2 -> 419.0	46102	5.03 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	134672	10.17 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
d3-MeFOSA	11.327	515.0 -> 219.0	24647	2.36 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%		
d5-EtFOSAA	9.146	589.2 -> 419.0	39555	4.95 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
d7-MeFOSE	11.248	623.2 -> 58.9	301651	25.32 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
d9-EtFOSE	11.482	639.2 -> 58.9	345936	25.35 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
d5-EtFOSA	11.548	531.1 -> 219.0	30919	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
Target Compounds						QValue
4:2FTS	5.836	327.1 -> 307.0	60656	8.16 µg/L		98
		327.1 -> 80.9	29001			
6:2FTS	7.537	427.1 -> 407.0	73849	9.65 µg/L		99
		427.1 -> 80.9	35628			
8:2FTS	8.654	527.1 -> 507.0	55939	8.59 µg/L		96
		527.1 -> 80.8	31236			
EtFOSAA	9.147	584.2 -> 419.1	14888	2.25 µg/L	m	93
		584.2 -> 526.0	6658			
FOSA	10.250	498.1 -> 77.9	53232	2.39 µg/L		100
		498.1 -> 478.0	1189			
MeFOSAA	8.925	570.1 -> 419.0	18467	2.70 µg/L	m	95
		570.1 -> 483.0	3255			
PFBA	3.195	212.8 -> 168.9	106609	9.13 µg/L		100
PFBS	6.102	298.7 -> 79.9	44248	2.09 µg/L		97
		298.7 -> 98.8	15916			
PFDA	8.879	512.9 -> 469.0	99158	2.39 µg/L		96
		512.9 -> 219.0	18612			
PFDoDA	9.806	613.1 -> 569.0	115852	2.36 µg/L		97
		613.1 -> 319.0	18073			
PFDS	9.959	599.0 -> 79.9	20938	2.37 µg/L		99

Perfluorinated Compounds by LC/MS/MS

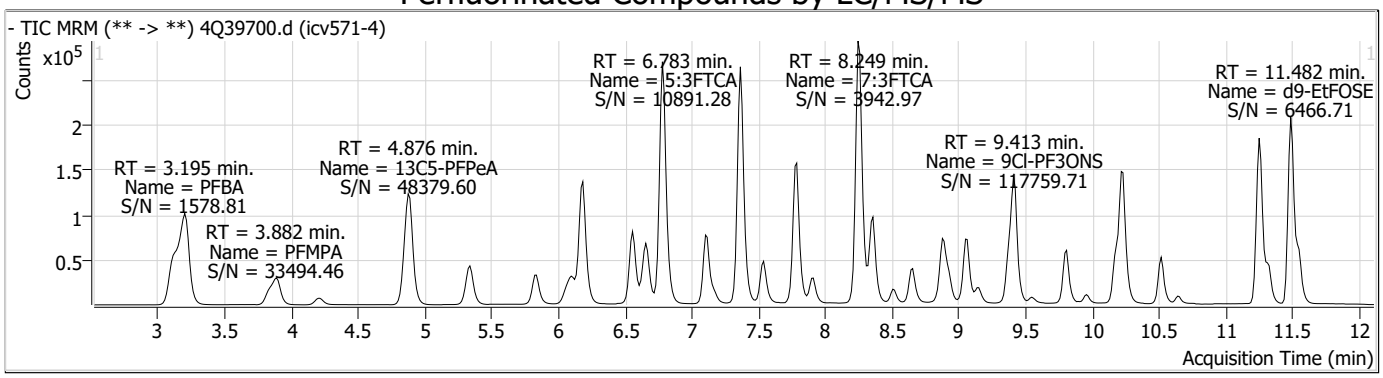
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	9660				
PFHpA	7.119	363.1 -> 319.0	147217	2.41	µg/L		99
		363.1 -> 169.0	24253				
PFHpS	8.513	449.0 -> 79.9	36734	2.38	µg/L		97
		449.0 -> 98.9	17638				
PFHxA	6.187	313.0 -> 269.0	163008	2.39	µg/L		99
		313.0 -> 118.9	5296				
PFHxS	7.917	398.7 -> 79.9	23005	2.13	µg/L	m	98
		398.7 -> 98.9	11536				
PFNA	8.360	463.0 -> 419.0	127251	2.31	µg/L		99
		463.0 -> 219.0	30128				
PFNS	9.549	548.8 -> 79.9	15909	2.34	µg/L		89
		548.8 -> 98.9	7194				
PFOA	7.790	413.0 -> 369.0	172147	2.47	µg/L		97
		413.0 -> 169.0	32751				
PFOS	9.069	498.9 -> 79.9	39129	2.19	µg/L	m	99
		498.9 -> 98.8	18553				
PFPeA	4.879	263.0 -> 219.0	287776	4.76	µg/L		100
PFPeS	7.171	349.1 -> 79.9	20939	2.01	µg/L		98
		349.1 -> 98.9	8436				
PFTeDA	10.513	713.1 -> 669.0	110162	2.40	µg/L		99
		713.1 -> 168.9	9133				
PFTrDA	10.179	663.0 -> 619.0	150737	2.50	µg/L		97
		663.0 -> 168.9	14420				
PFUnDA	9.374	563.1 -> 519.0	91082	2.40	µg/L		99
		563.1 -> 269.1	16075				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	298011	9.47	µg/L		99
		632.9 -> 452.9	89388				
9Cl-PF3ONS	9.413	530.8 -> 351.0	332500	8.67	µg/L		100
		532.8 -> 353.0	99667				
ADONA	7.369	376.9 -> 250.9	663475	9.13	µg/L		100
		376.9 -> 84.8	233410				
HFPO-DA	6.565	284.9 -> 168.9	124331	9.80	µg/L		98
		284.9 -> 184.9	13867				
3:3FTCA	4.217	241.0 -> 177.0	31885	11.26	µg/L		98
		241.0 -> 117.0	3218				
5:3FTCA	6.783	341.0 -> 237.1	546231	60.14	µg/L		99
		341.0 -> 217.0	409650				
7:3FTCA	8.249	441.0 -> 316.9	320035	61.36	µg/L		100
		441.0 -> 336.9	725669				
EtFOSA	11.550	526.0 -> 219.0	29202	2.25	µg/L		93
		526.0 -> 169.0	35873				
EtFOSE	11.496	630.0 -> 58.9	336935	25.09	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	22470	2.39	µg/L		91
		511.9 -> 169.0	26597				
MeFOSE	11.261	616.1 -> 58.9	311977	24.48	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	17665	2.36	µg/L		98
		699.1 -> 98.8	9572				
NFDHA	6.053	295.0 -> 201.0	21799	4.86	µg/L		92
		295.0 -> 84.9	7313				
PFMBA	5.341	279.0 -> 85.1	179686	4.77	µg/L		100
PFMPA	3.882	229.0 -> 84.9	180405	4.64	µg/L		100
PFEESA	6.660	314.8 -> 134.9	247990	4.25	µg/L		99
		314.8 -> 82.9	7147				

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

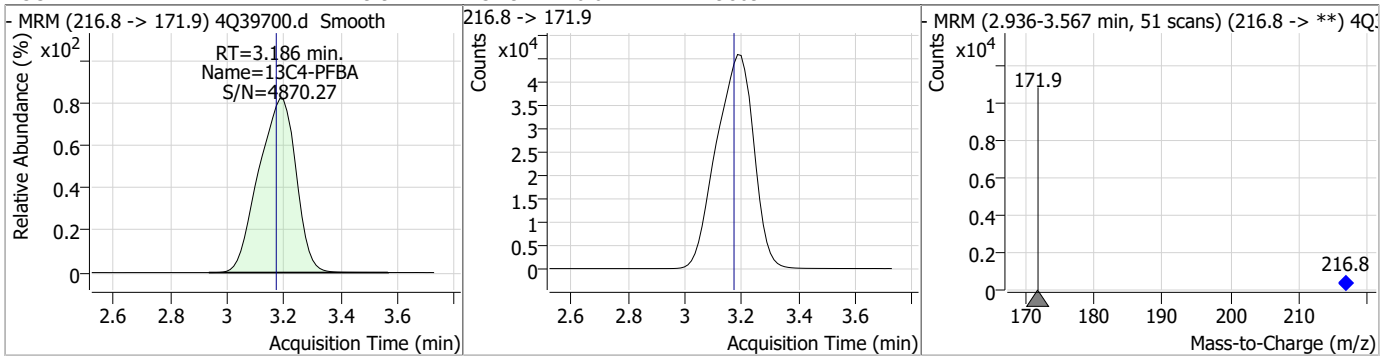
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

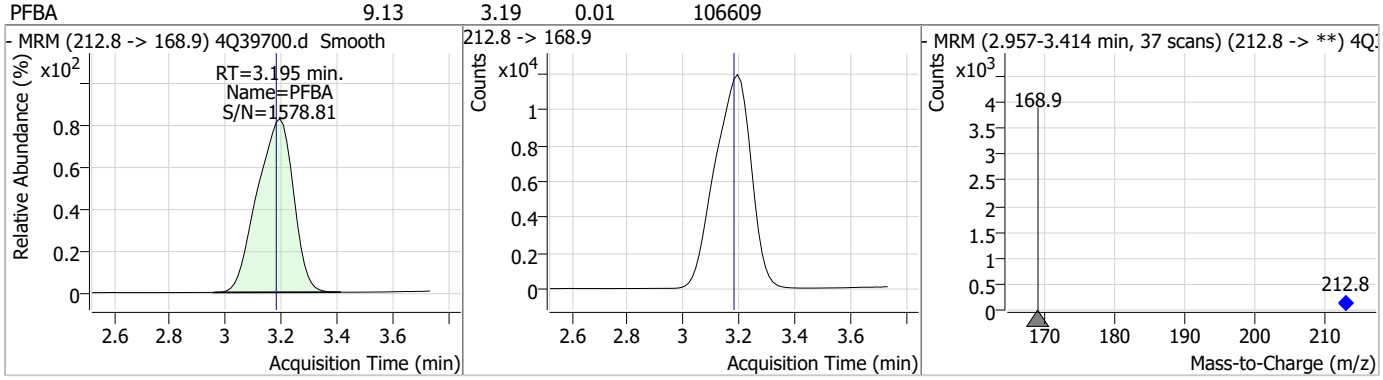
Perfluorinated Compounds by LC/MS/MS



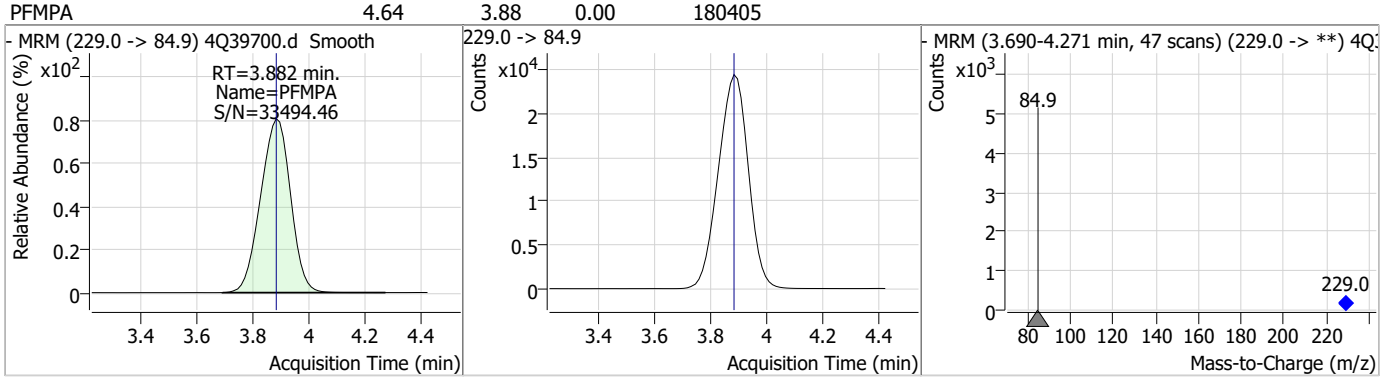
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.97	3.19	0.01	419809				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.13	3.19	0.01	106609				

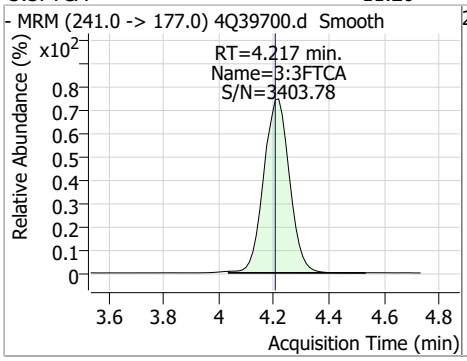


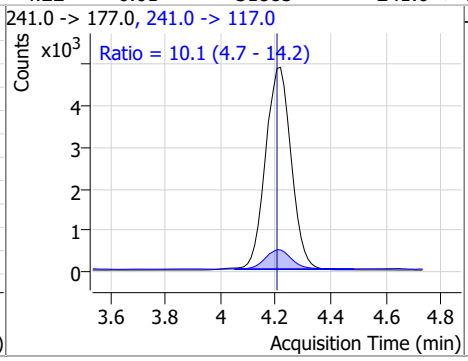
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.64	3.88	0.00	180405				

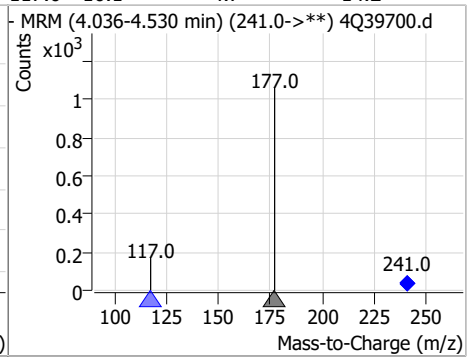


Perfluorinated Compounds by LC/MS/MS

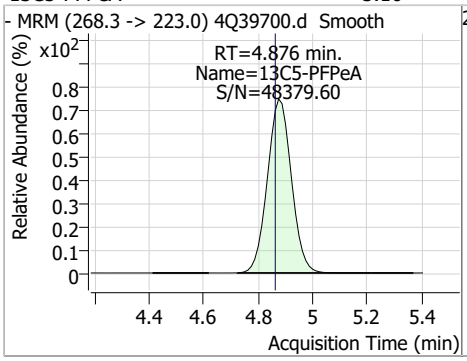
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.26	4.22	0.01	31885	241.0 -> 117.0	10.1	4.7	14.2

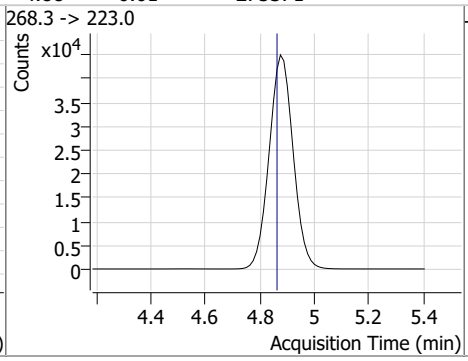


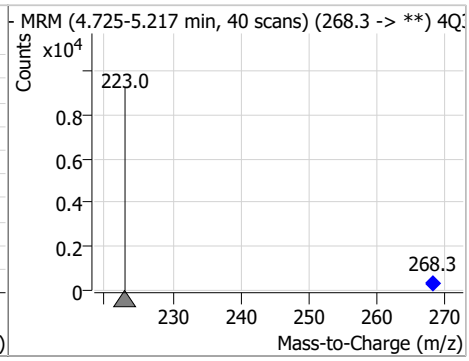




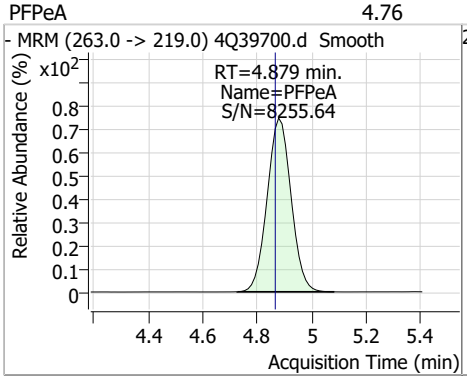
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.88	0.01	275371				

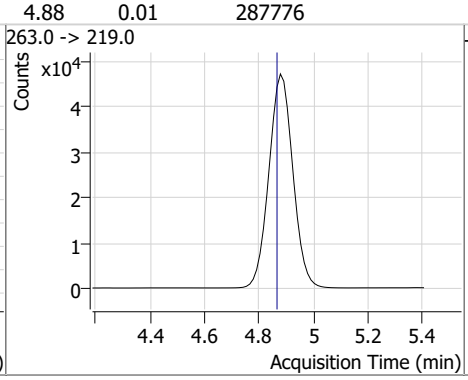


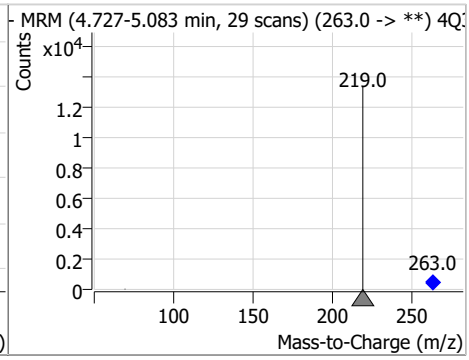




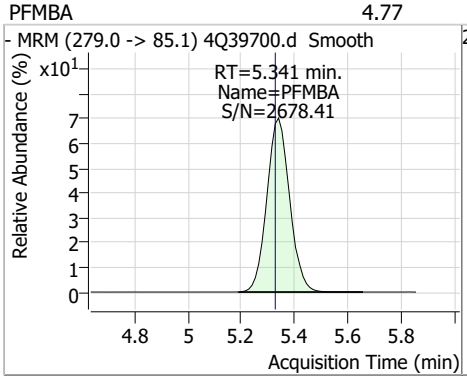
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.76	4.88	0.01	287776				

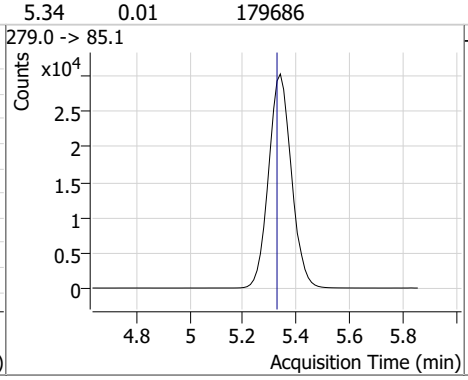


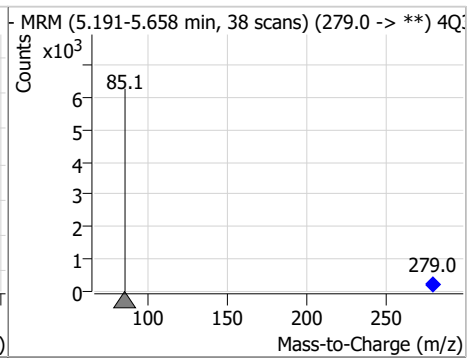




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.77	5.34	0.01	179686				

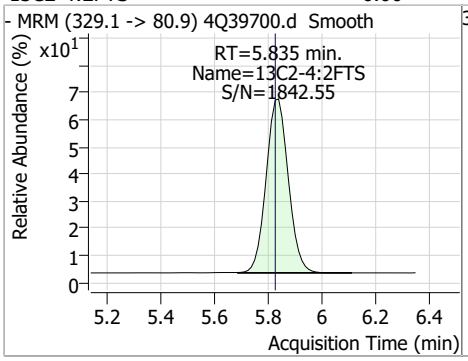


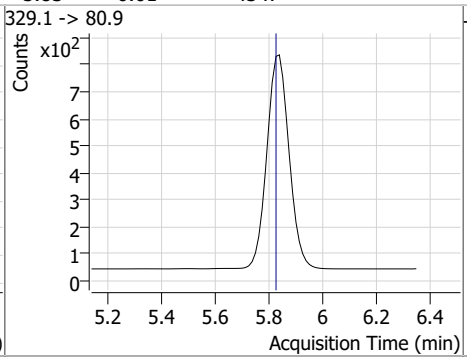


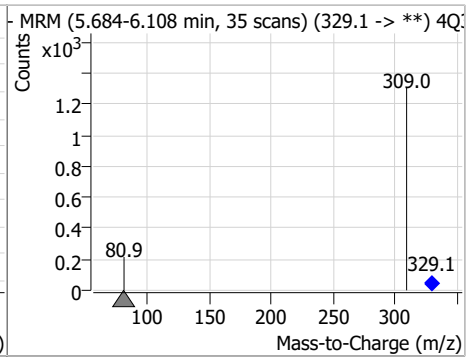


Perfluorinated Compounds by LC/MS/MS

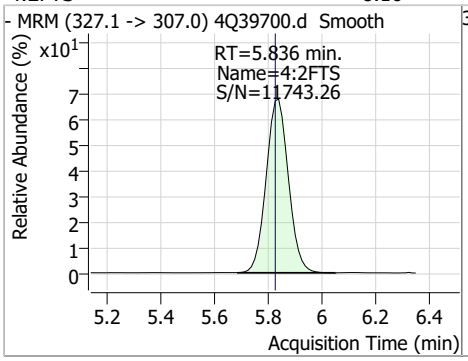
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.00	5.83	0.01	4547				

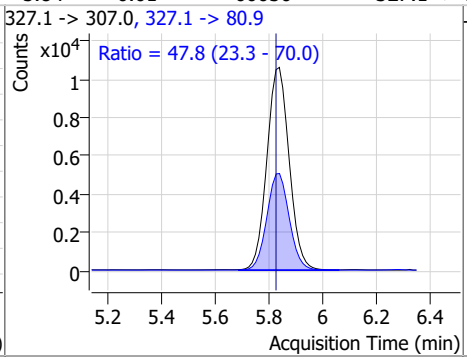


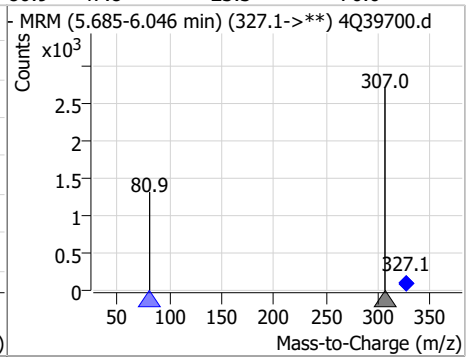




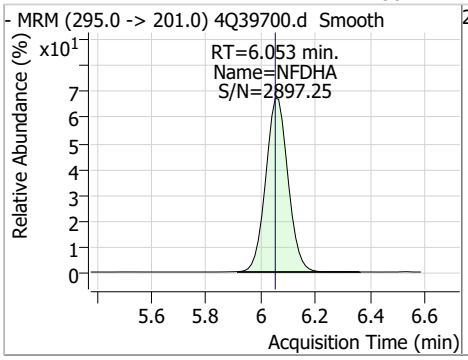
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.16	5.84	0.01	60656	327.1 -> 80.9	47.8	23.3	70.0

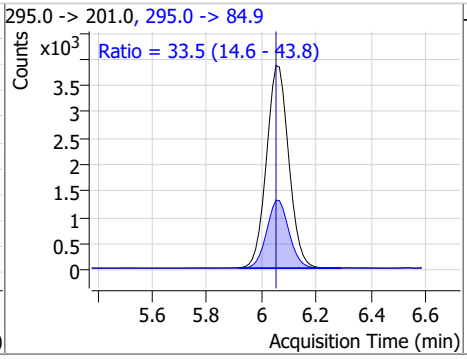


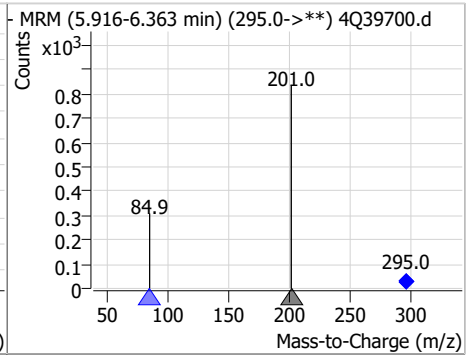




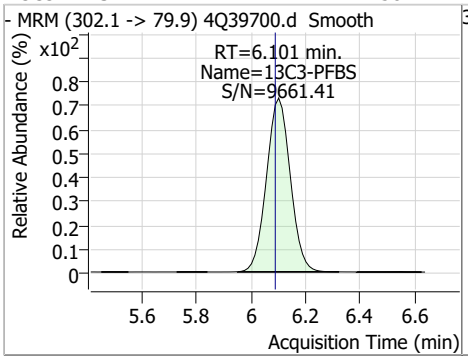
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.86	6.05	0.00	21799	295.0 -> 84.9	33.5	14.6	43.8

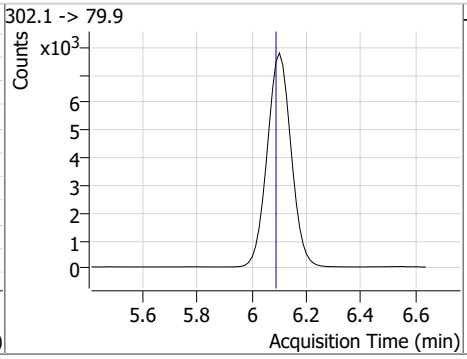


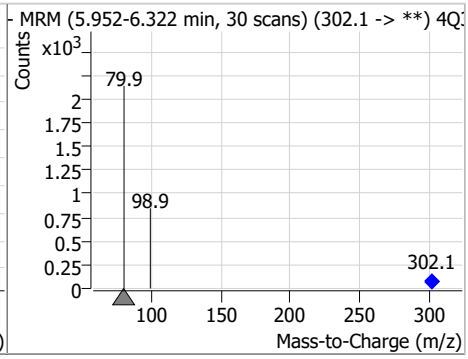




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.58	6.10	0.01	46812				

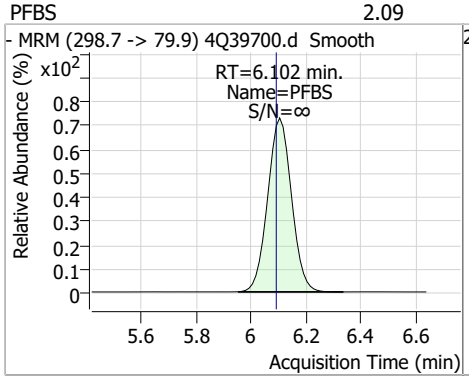


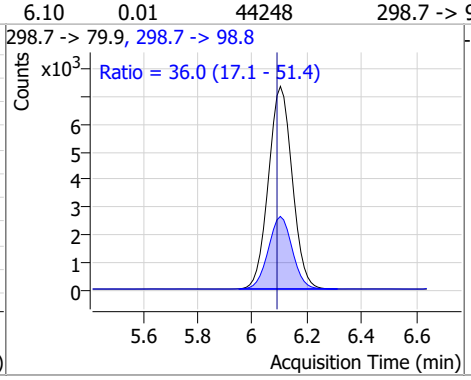


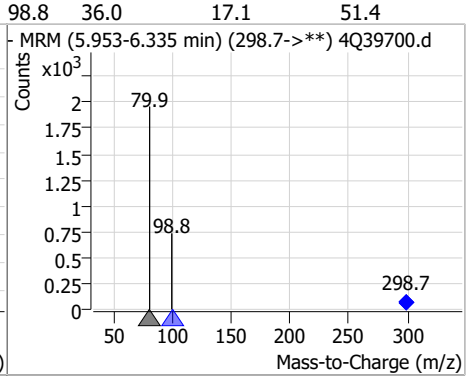


Perfluorinated Compounds by LC/MS/MS

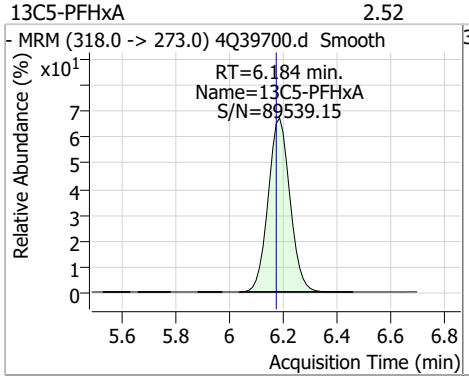
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.09	6.10	0.01	44248	298.7 -> 98.8	36.0	17.1	51.4

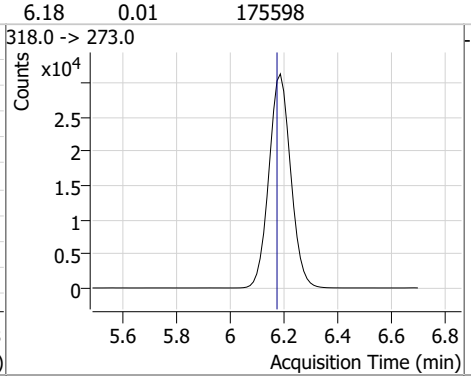


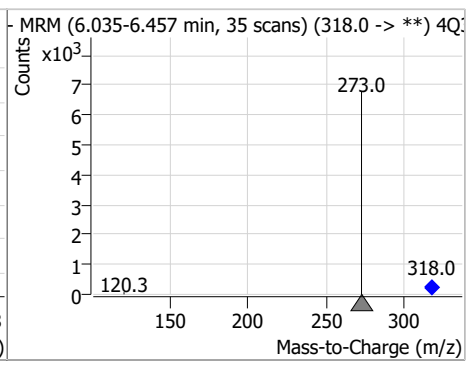




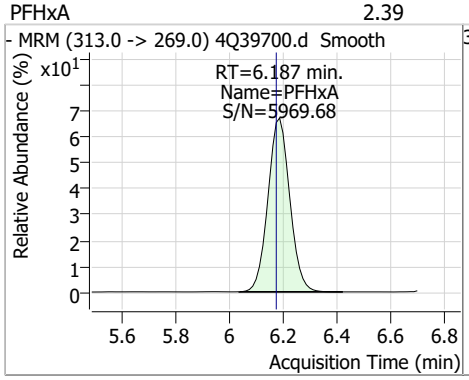
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	6.18	0.01	175598				

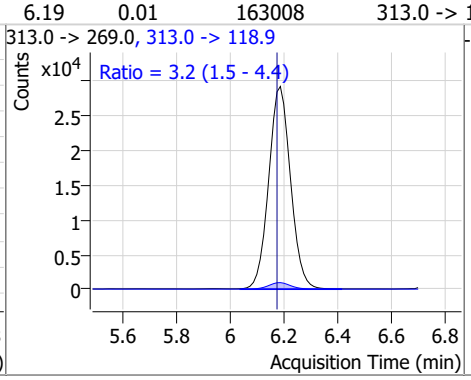


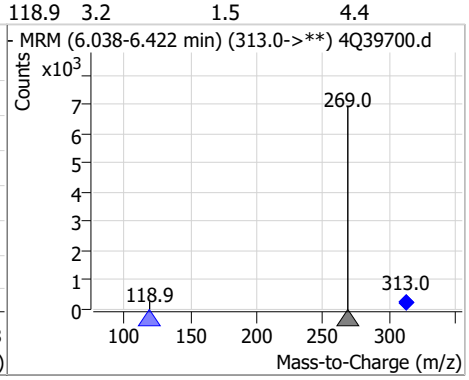




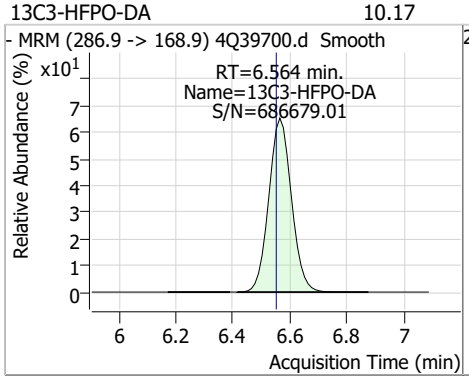
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.39	6.19	0.01	163008	313.0 -> 118.9	3.2	1.5	4.4

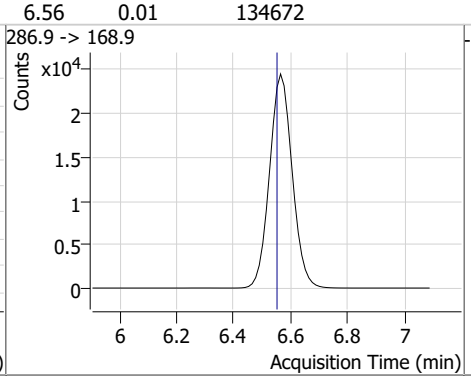


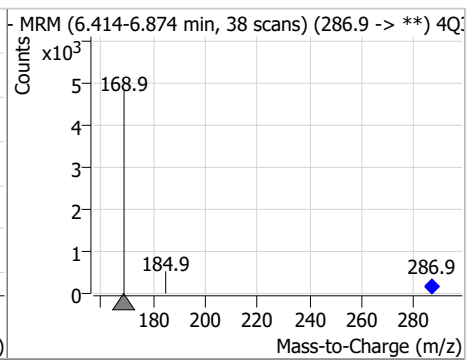




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.17	6.56	0.01	134672				

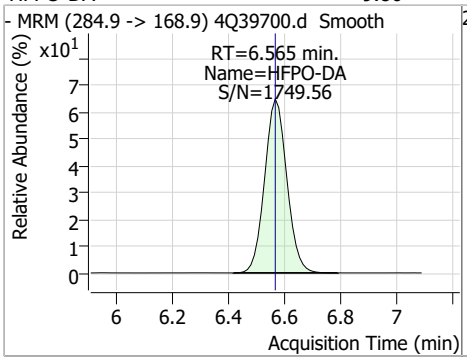


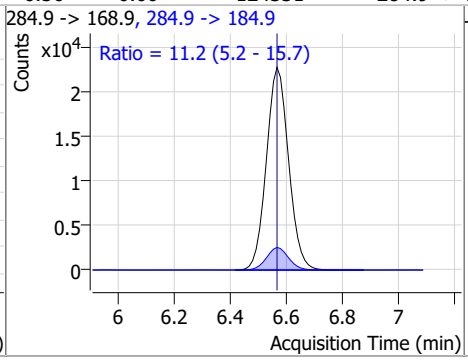


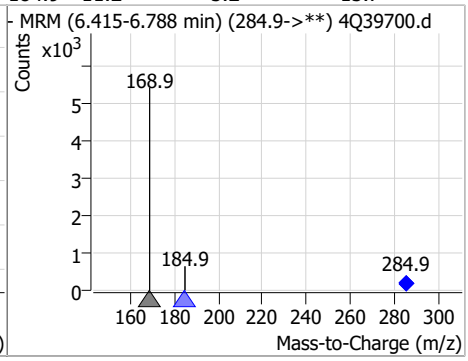


Perfluorinated Compounds by LC/MS/MS

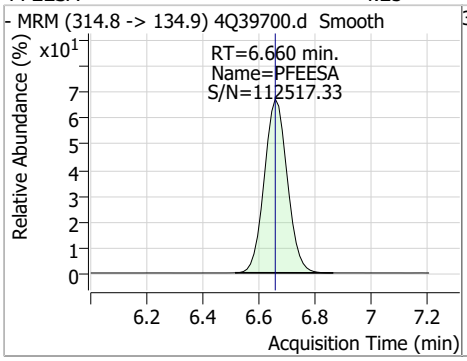
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.80	6.56	0.00	124331	284.9 -> 184.9	11.2	5.2	15.7

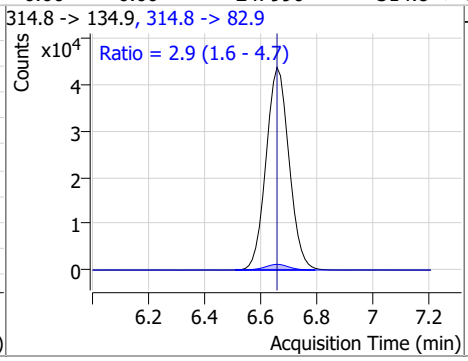


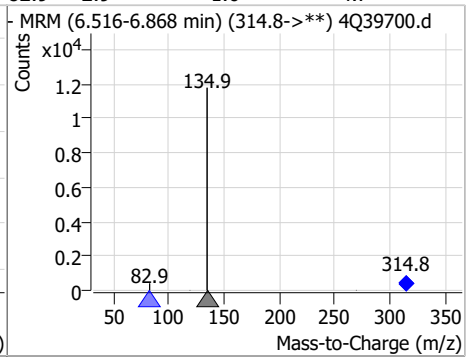




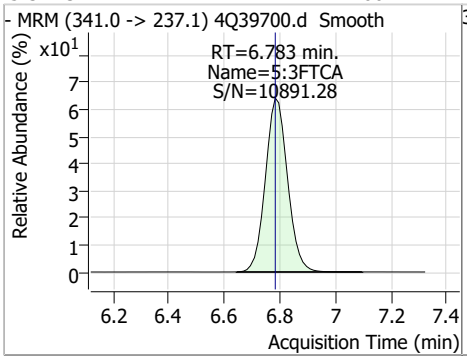
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.25	6.66	0.00	247990	314.8 -> 82.9	2.9	1.6	4.7

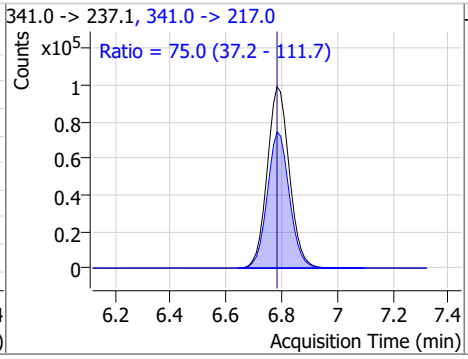


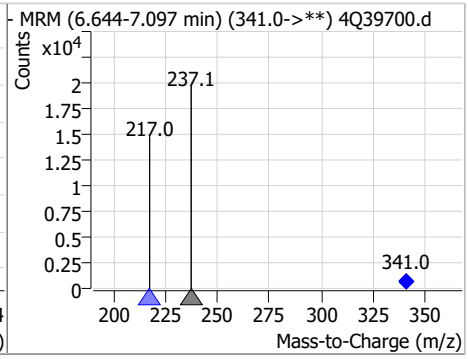




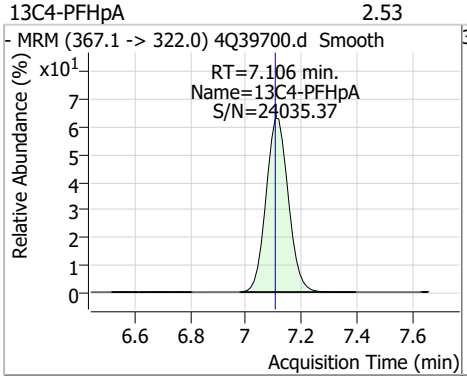
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.14	6.78	0.00	546231	341.0 -> 217.0	75.0	37.2	111.7

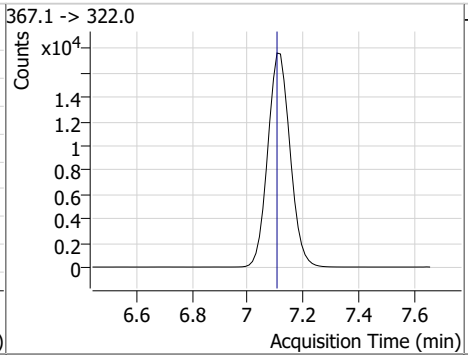


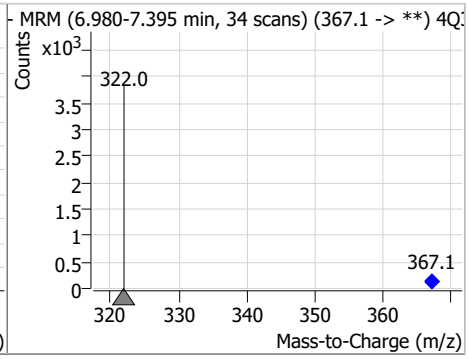




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	7.11	0.00	97939				

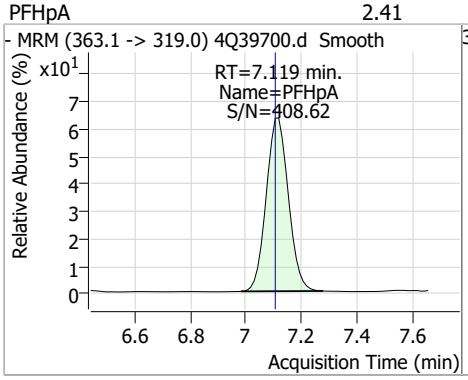


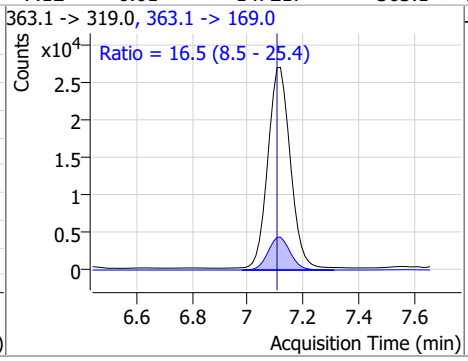


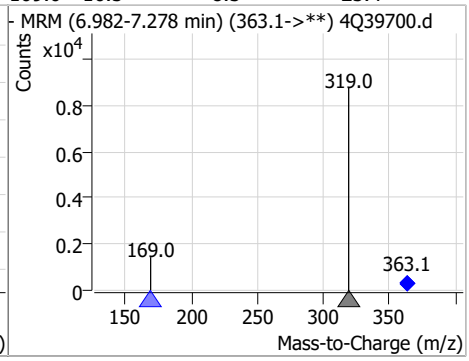


Perfluorinated Compounds by LC/MS/MS

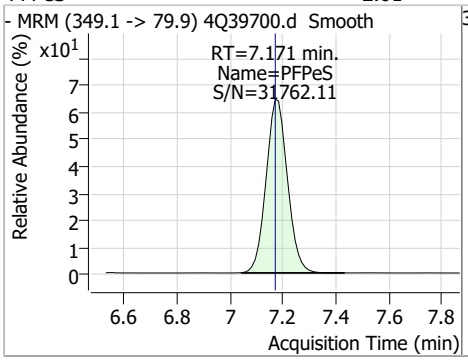
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.41	7.12	0.01	147217	363.1 -> 169.0	16.5	8.5	25.4

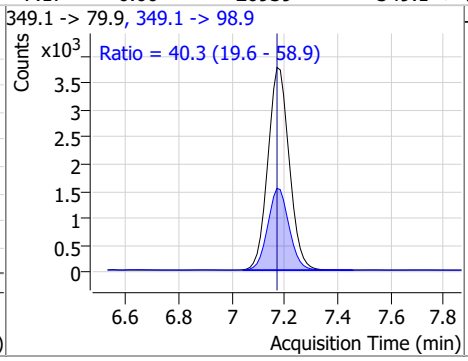


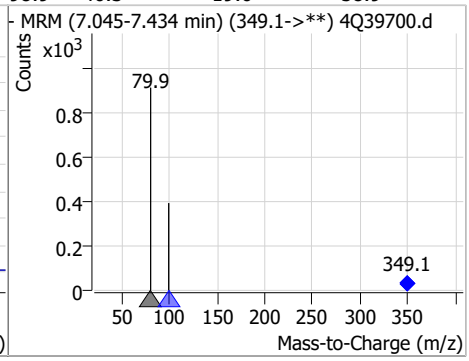




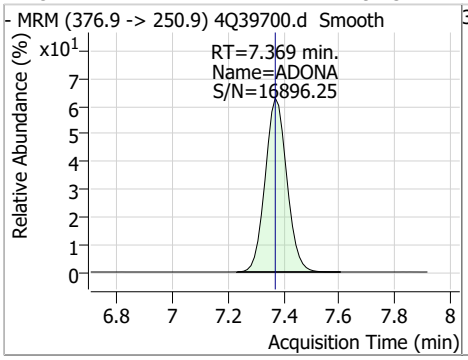
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.01	7.17	0.00	20939	349.1 -> 98.9	40.3	19.6	58.9

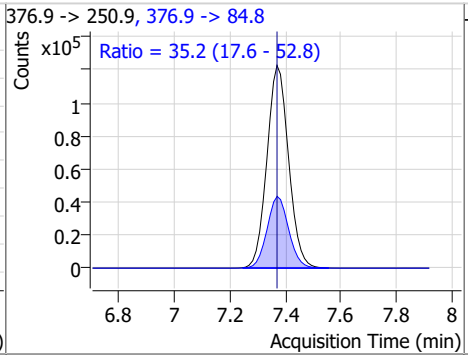


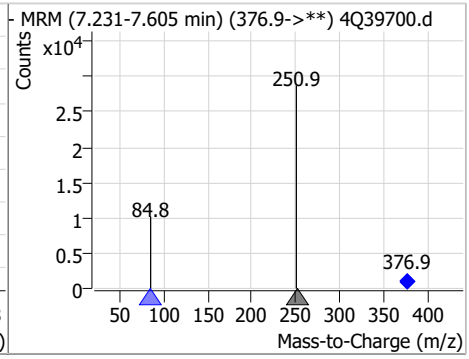




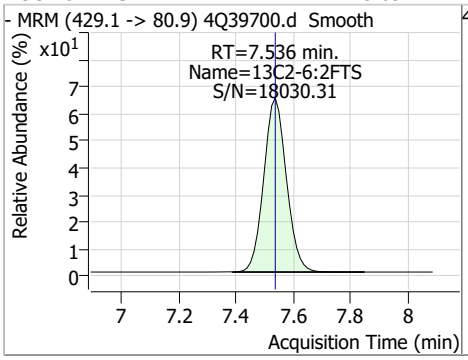
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.13	7.37	0.00	663475	376.9 -> 84.8	35.2	17.6	52.8

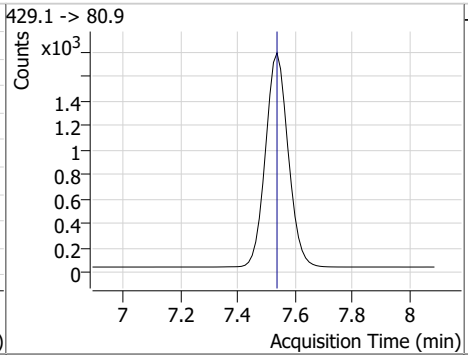


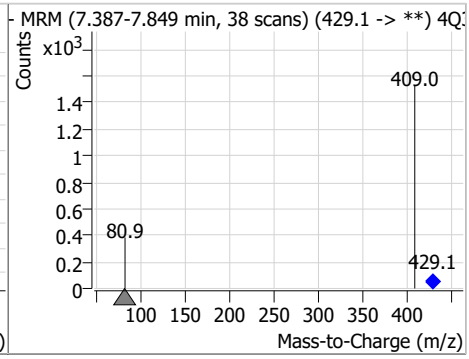




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.69	7.54	0.00	9650				

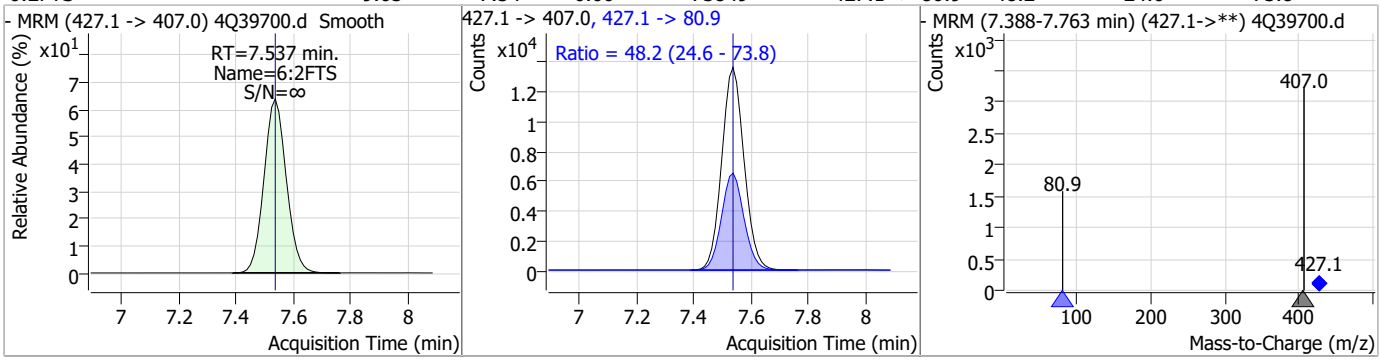




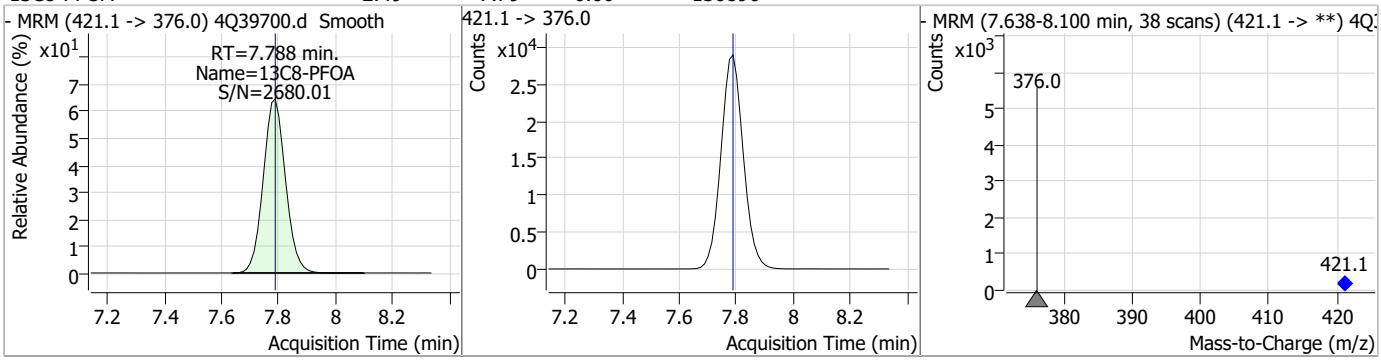


Perfluorinated Compounds by LC/MS/MS

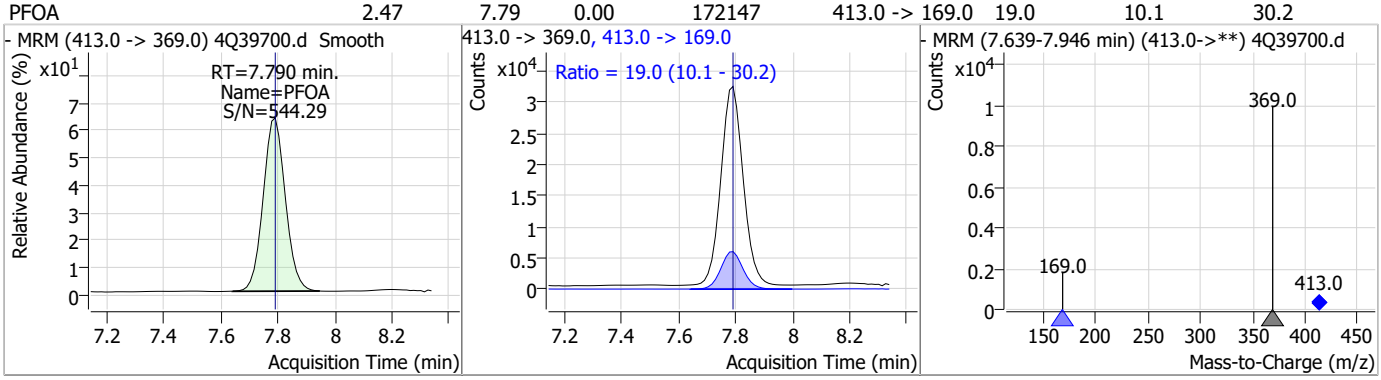
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.65	7.54	0.00	73849	427.1 -> 80.9	48.2	24.6	73.8



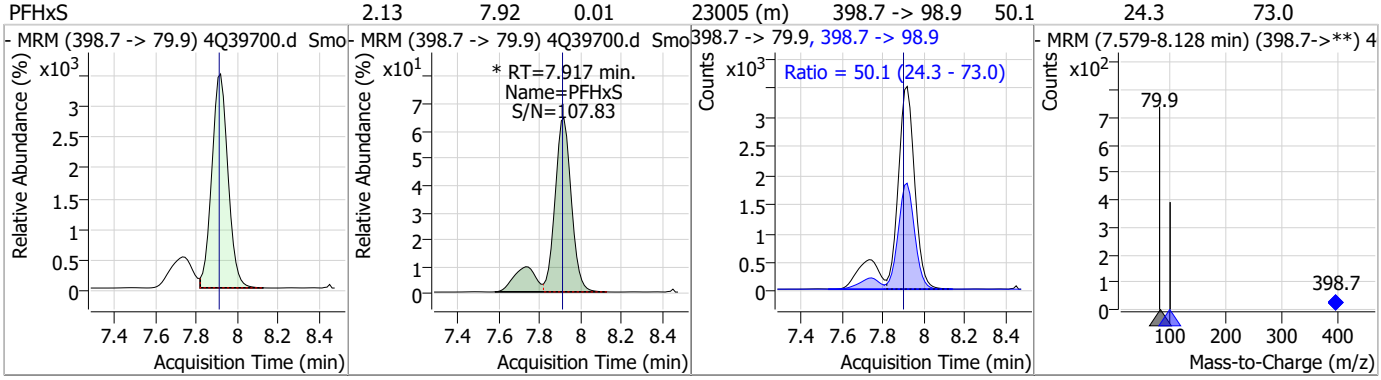
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.79	0.00	156890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.47	7.79	0.00	172147	413.0 -> 169.0	19.0	10.1	30.2

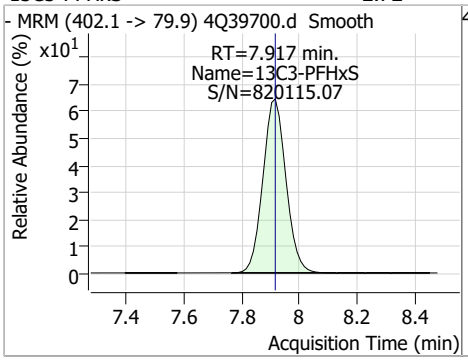


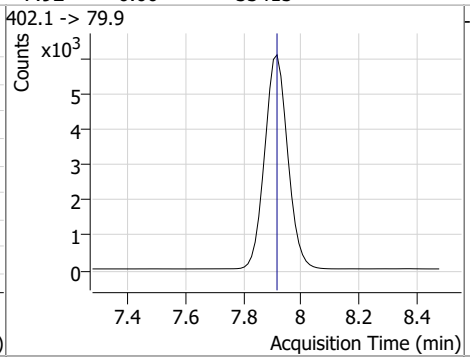
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.13	7.92	0.01	23005 (m)	398.7 -> 98.9	50.1	24.3	73.0

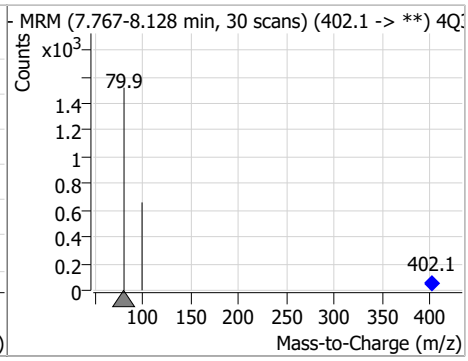


Perfluorinated Compounds by LC/MS/MS

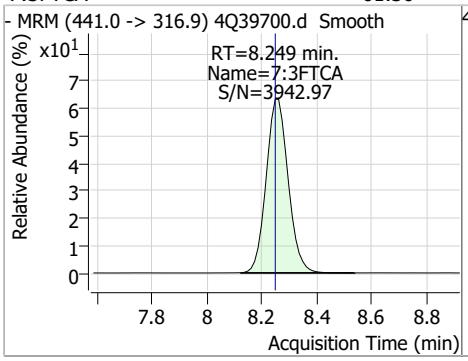
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.72	7.92	0.00	33415				

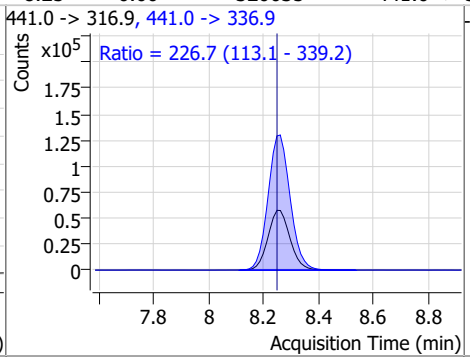


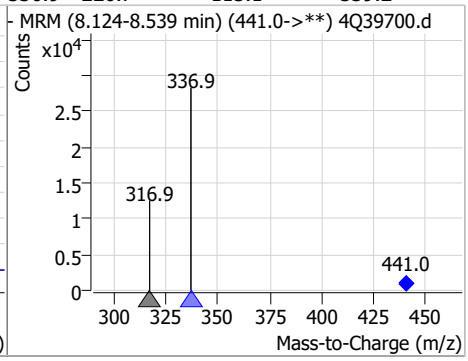




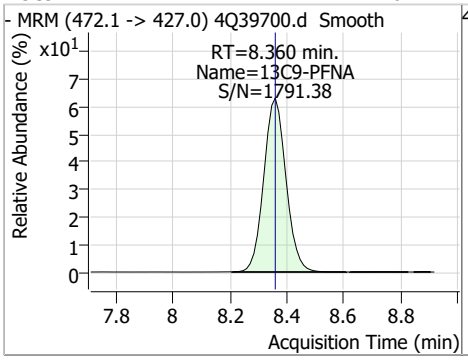
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.36	8.25	0.00	320035	441.0 -> 336.9	226.7	113.1	339.2

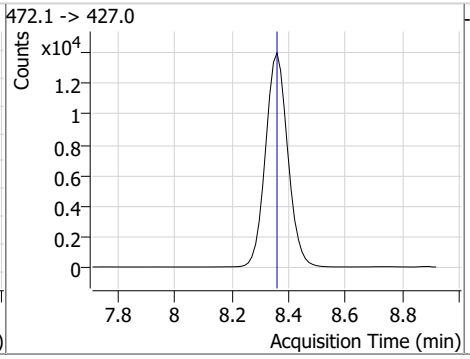


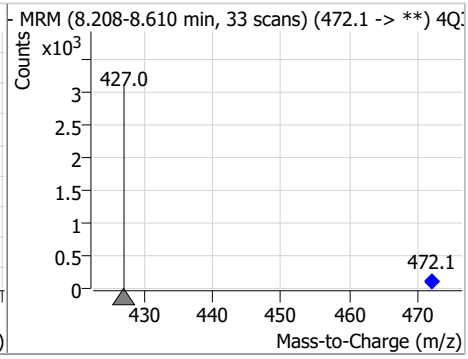




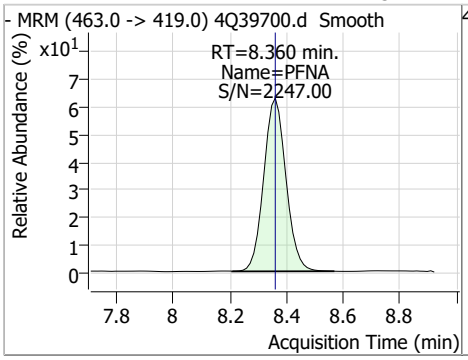
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	8.36	0.00	75671				

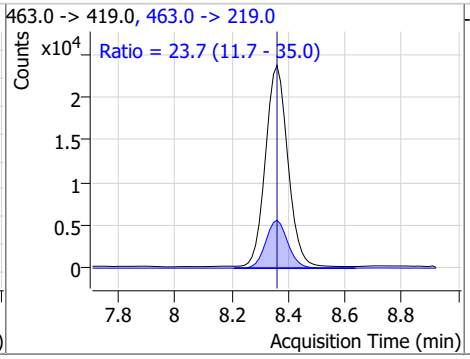


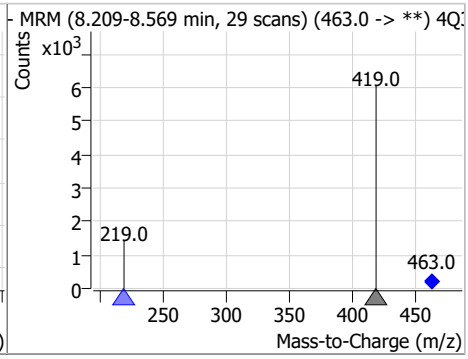




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.31	8.36	0.00	127251	463.0 -> 219.0	23.7	11.7	35.0

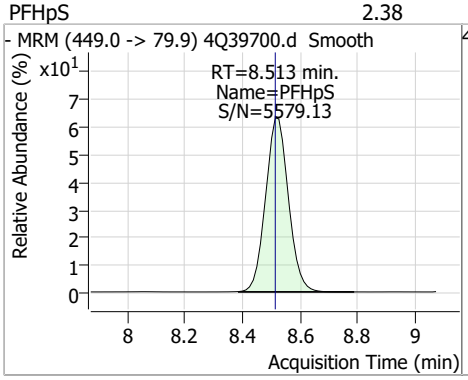


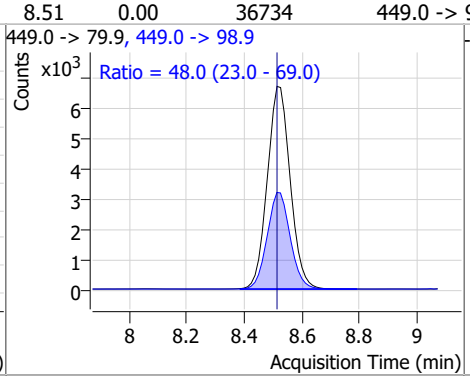


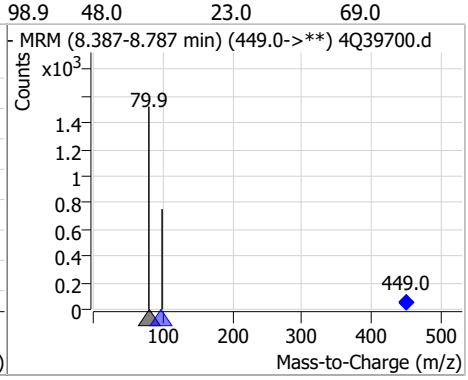


Perfluorinated Compounds by LC/MS/MS

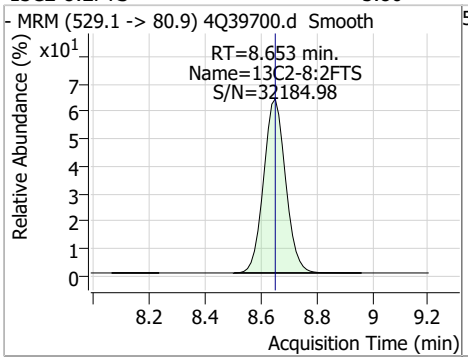
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.38	8.51	0.00	36734	449.0 -> 98.9	48.0	23.0	69.0

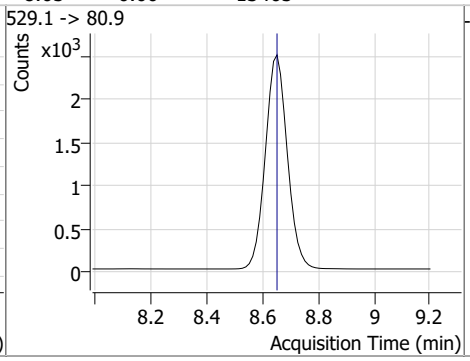


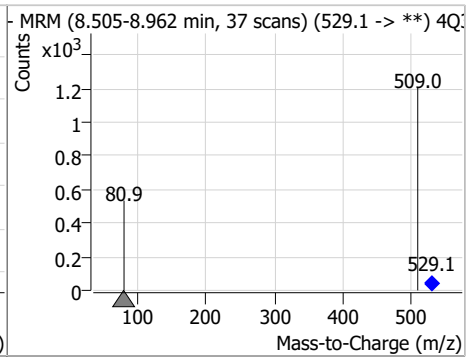




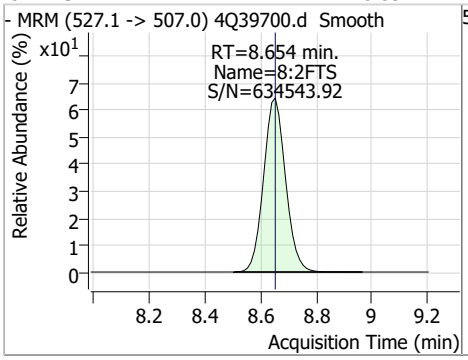
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.80	8.65	0.00	13465				

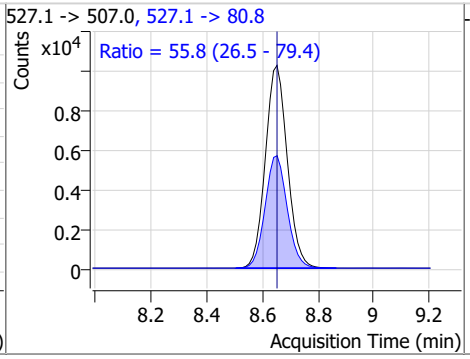


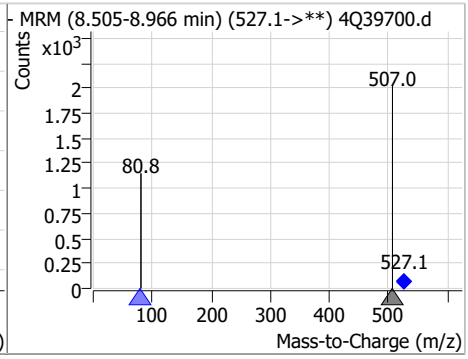




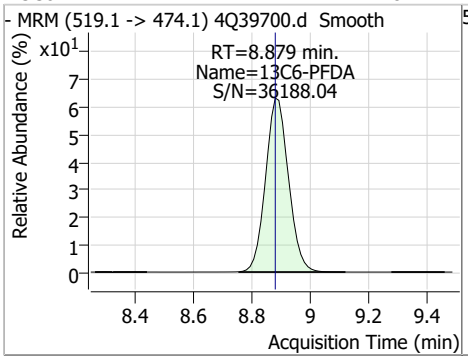
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.59	8.65	0.00	55939	527.1 -> 80.8	55.8	26.5	79.4

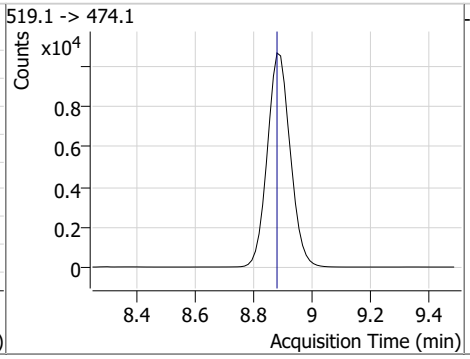


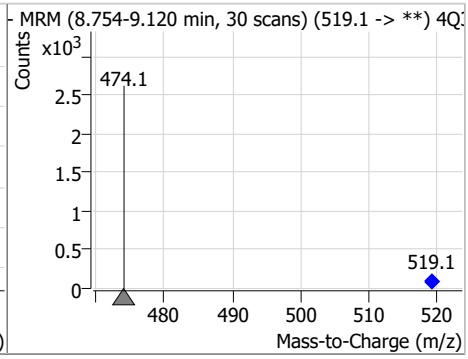




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.88	0.00	58039				

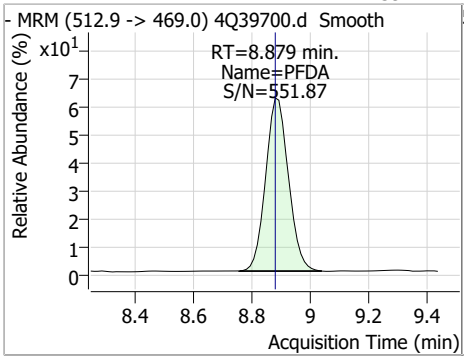


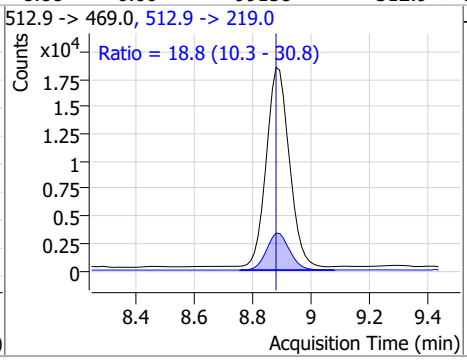


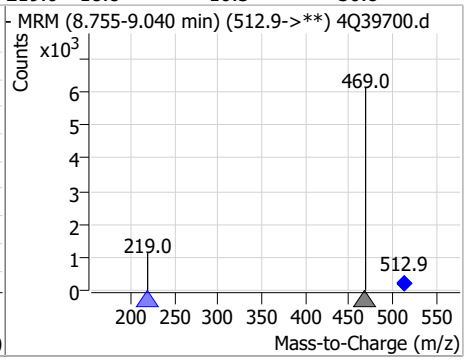


Perfluorinated Compounds by LC/MS/MS

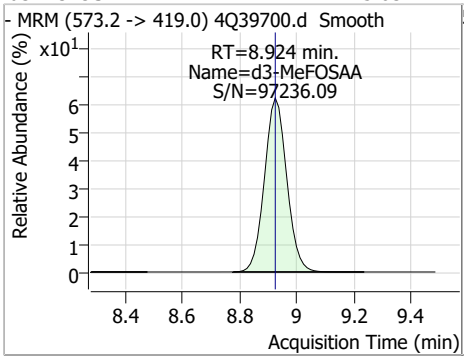
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.39	8.88	0.00	99158	512.9 -> 219.0	18.8	10.3	30.8

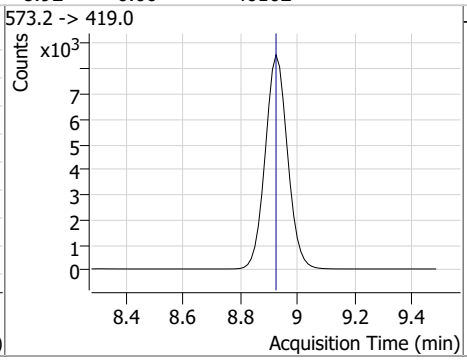


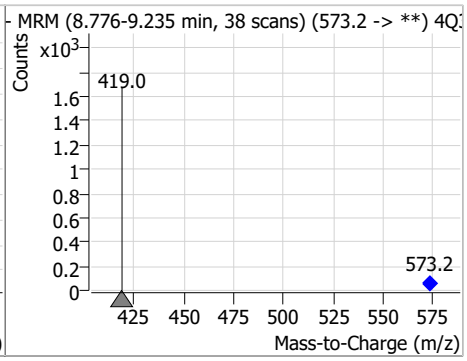




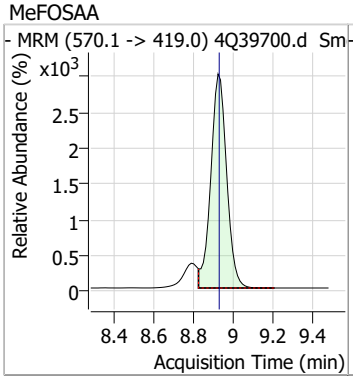
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.03	8.92	0.00	46102				

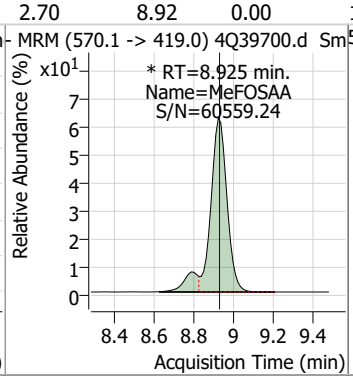


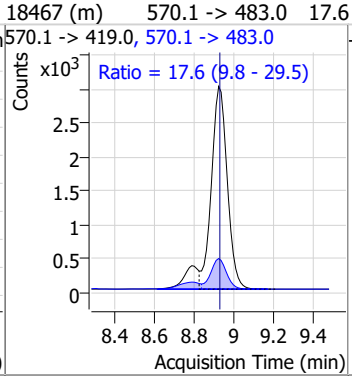


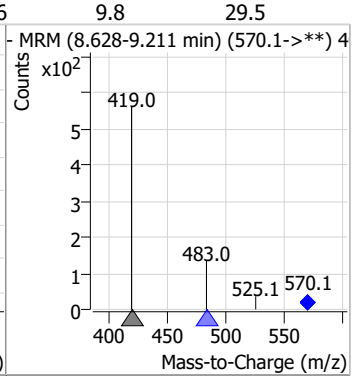


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.70	8.92	0.00	18467 (m)	570.1 -> 483.0	17.6	9.8	29.5

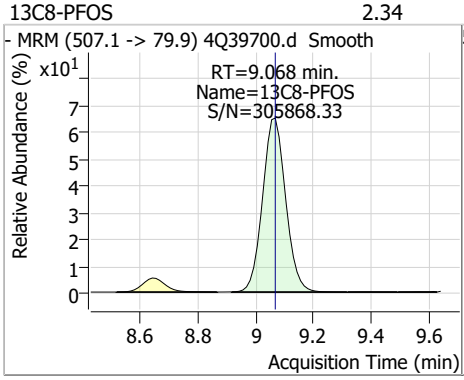


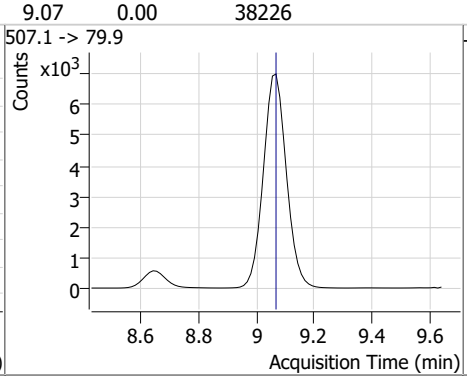


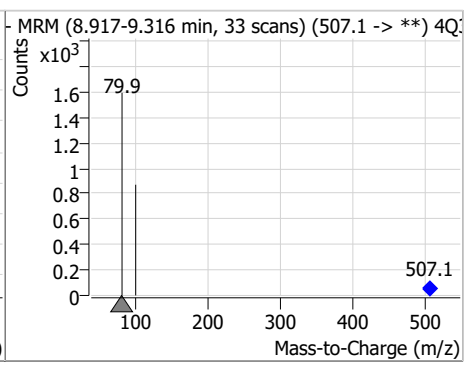




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.34	9.07	0.00	38226				

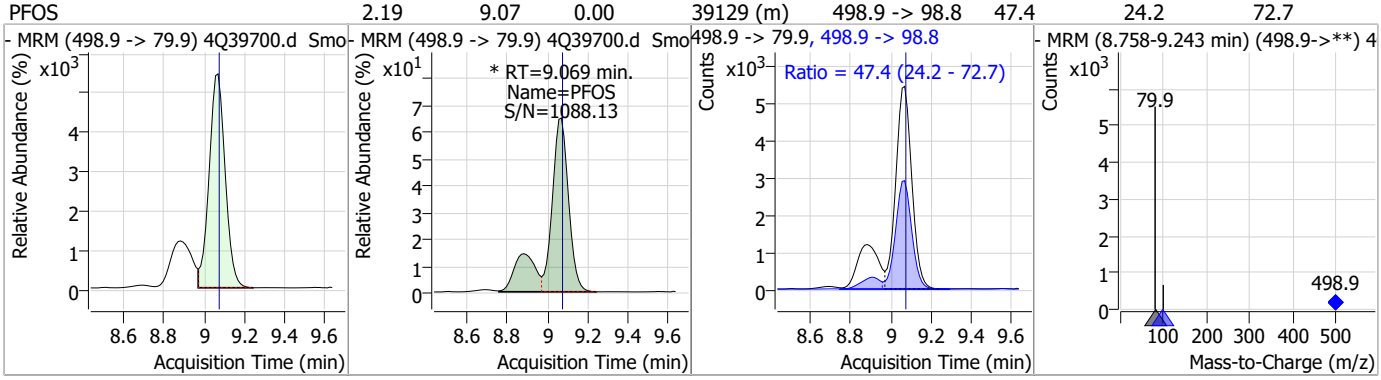




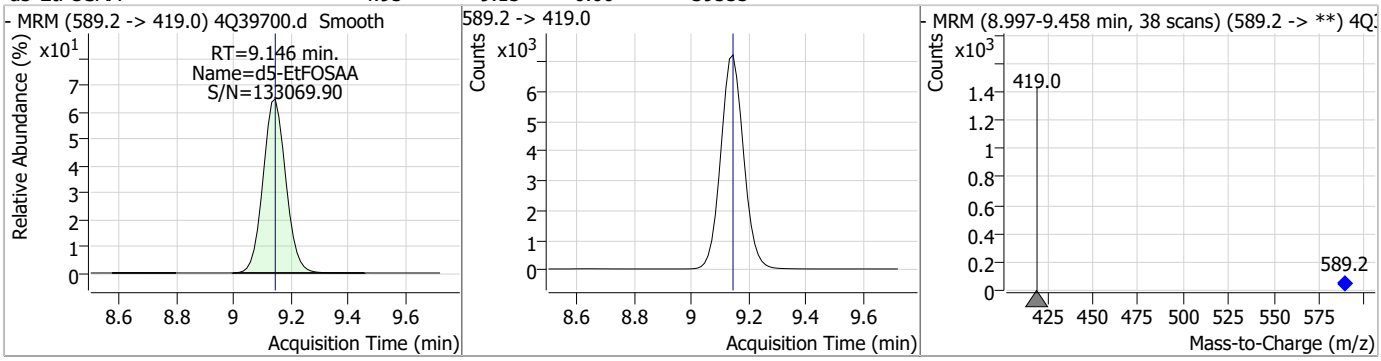


Perfluorinated Compounds by LC/MS/MS

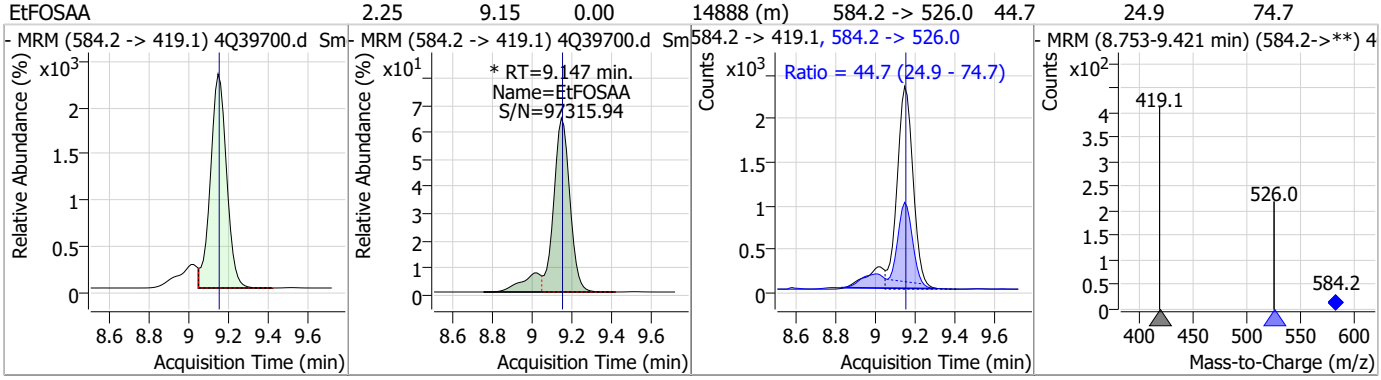
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.19	9.07	0.00	39129 (m)	498.9 -> 98.8	47.4	24.2	72.7



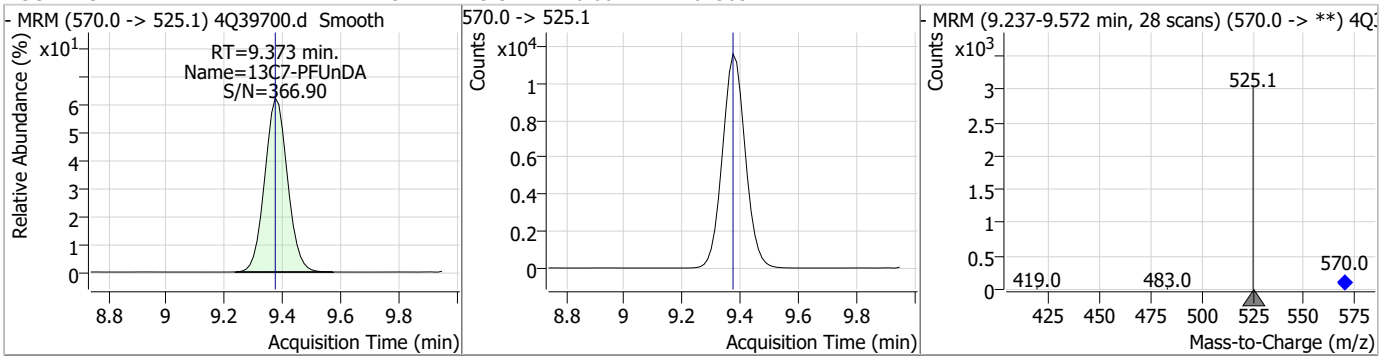
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.95	9.15	0.00	39555				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.25	9.15	0.00	14888 (m)	584.2 -> 526.0	44.7	24.9	74.7

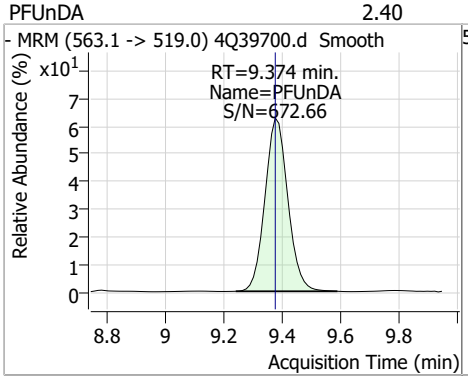


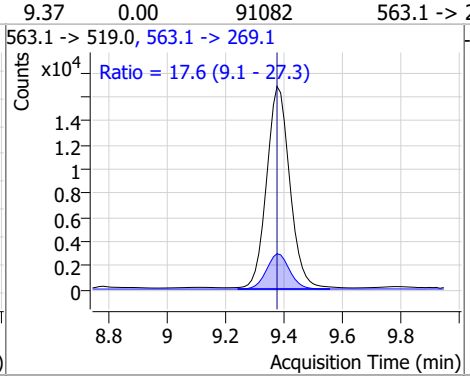
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	9.37	0.00	62565				

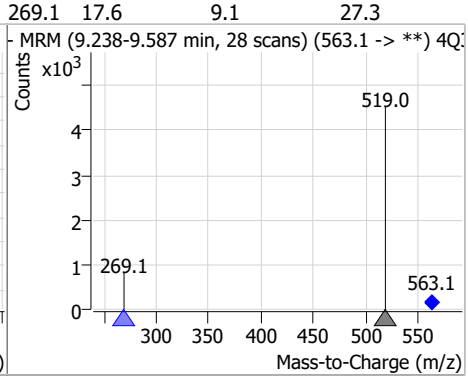


Perfluorinated Compounds by LC/MS/MS

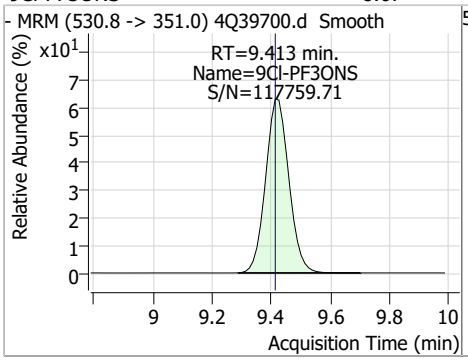
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.40	9.37	0.00	91082	563.1 -> 269.1	17.6	9.1	27.3

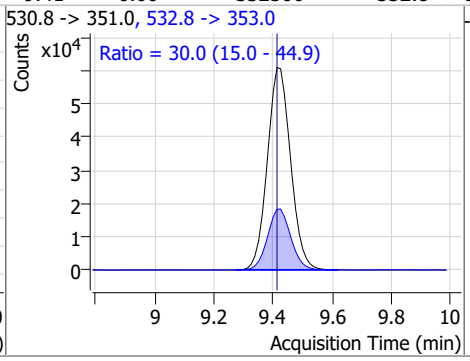


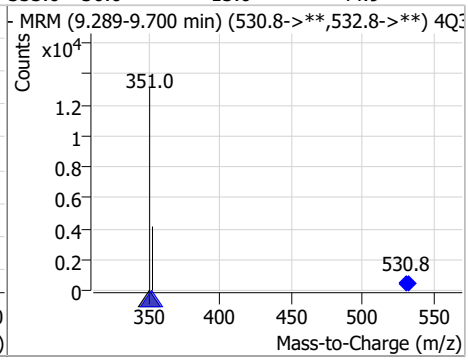




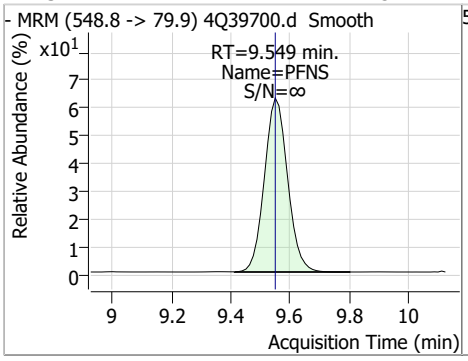
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.67	9.41	0.00	332500	532.8 -> 353.0	30.0	15.0	44.9

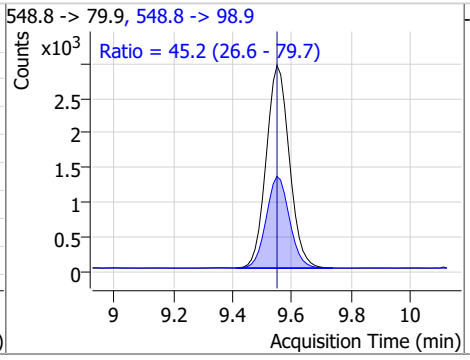


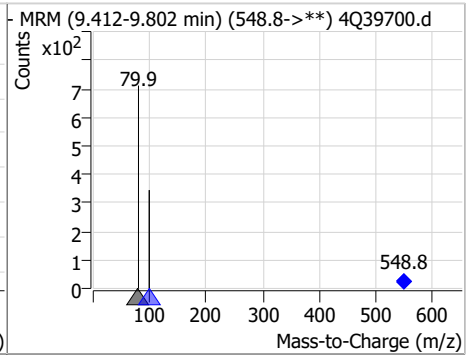




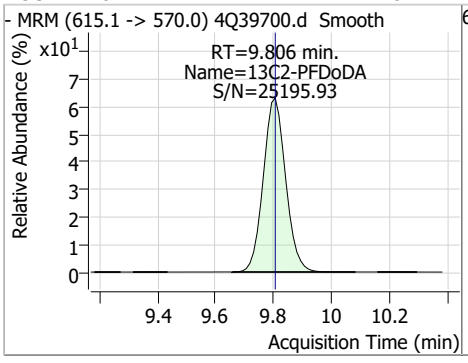
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.34	9.55	0.00	15909	548.8 -> 98.9	45.2	26.6	79.7

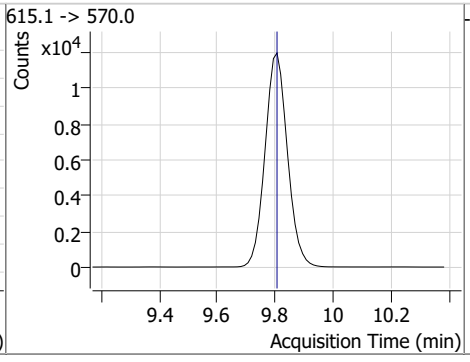


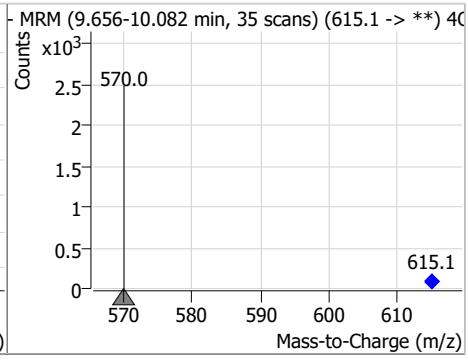




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.81	0.00	63791				

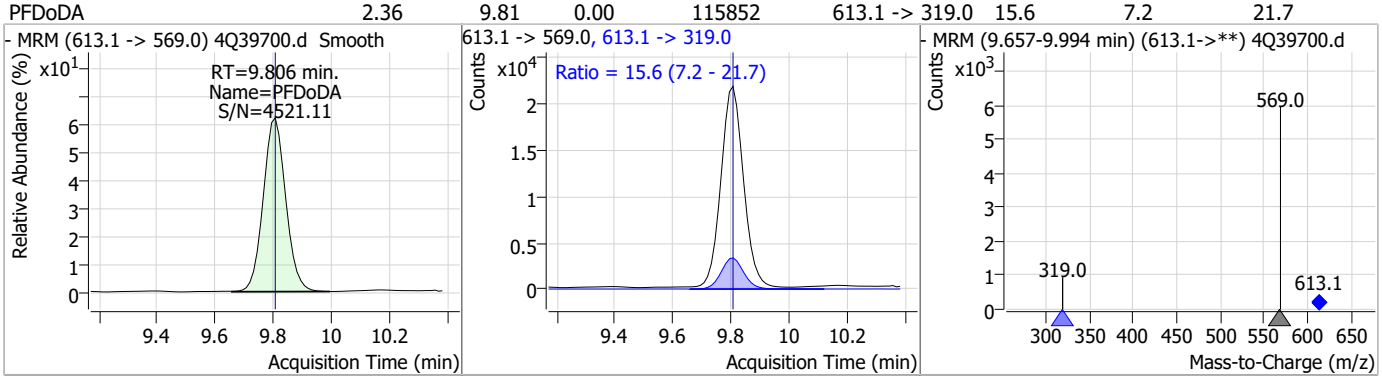




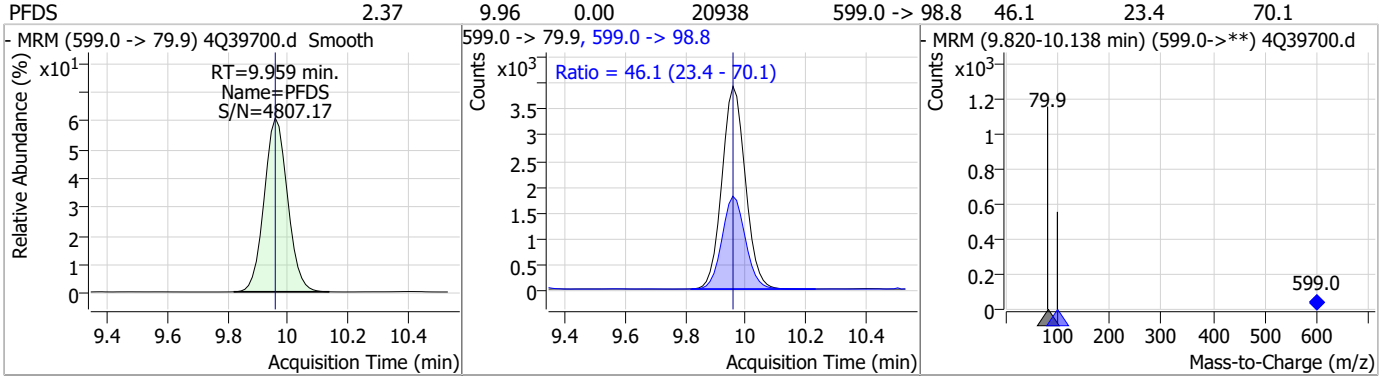


Perfluorinated Compounds by LC/MS/MS

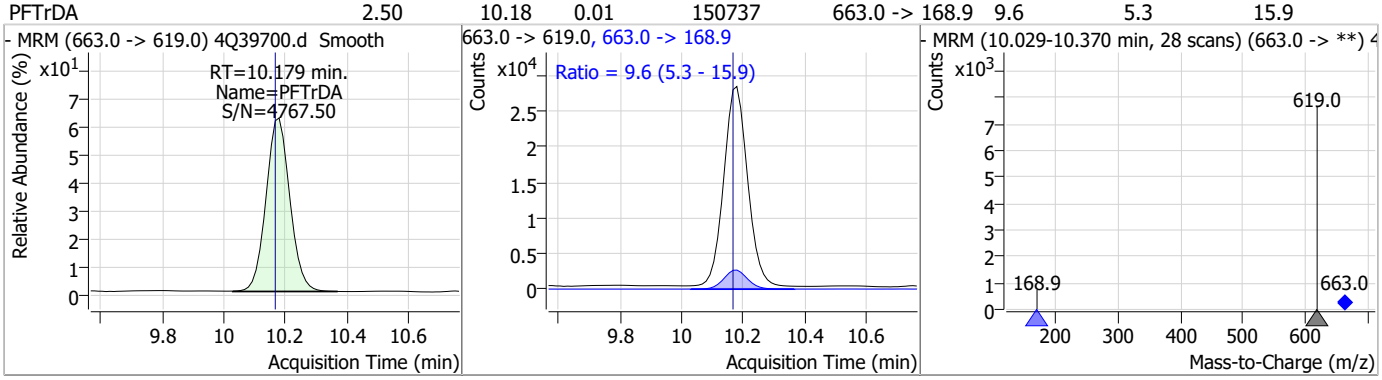
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.36	9.81	0.00	115852	613.1 -> 319.0	15.6	7.2	21.7



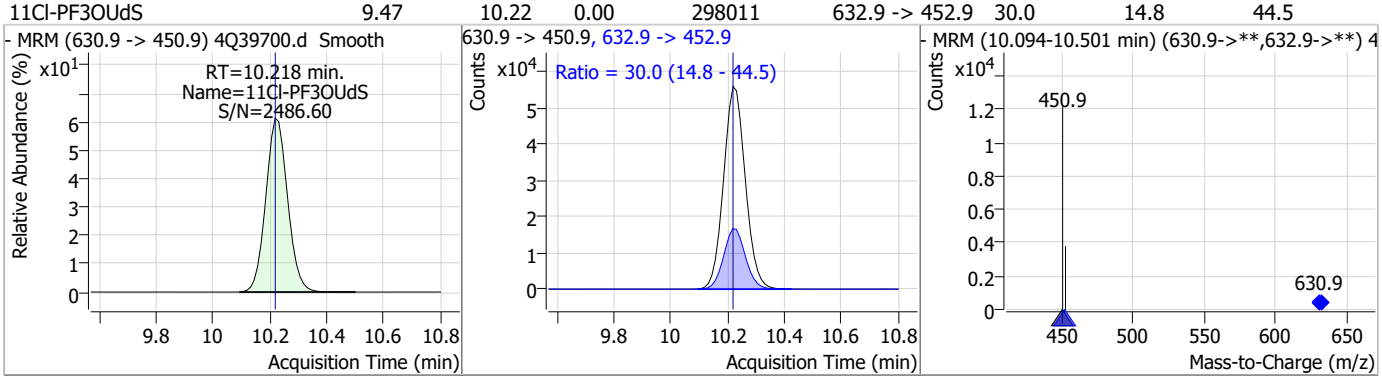
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.37	9.96	0.00	20938	599.0 -> 98.8	46.1	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.50	10.18	0.01	150737	663.0 -> 168.9	9.6	5.3	15.9

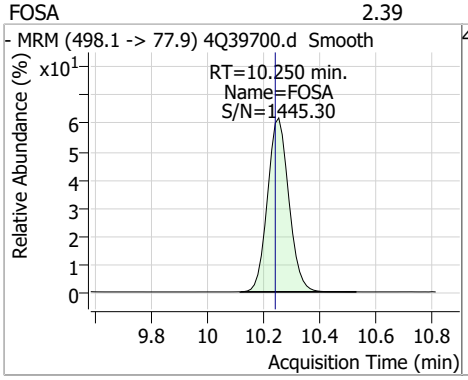


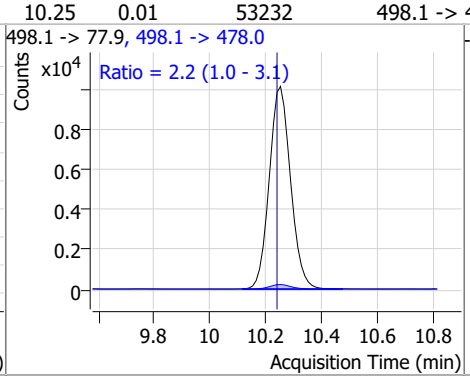
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.47	10.22	0.00	298011	632.9 -> 452.9	30.0	14.8	44.5

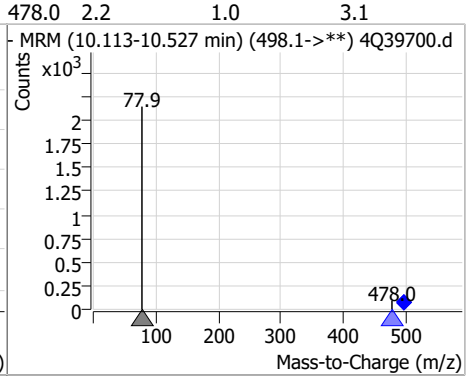


Perfluorinated Compounds by LC/MS/MS

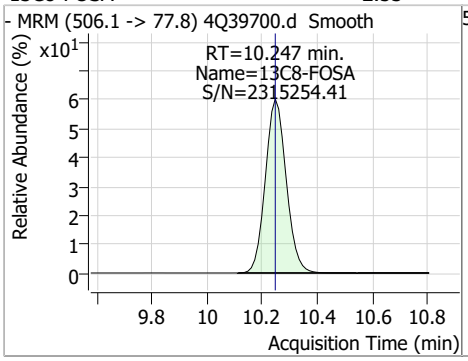
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.39	10.25	0.01	53232	498.1 -> 478.0	2.2	1.0	3.1

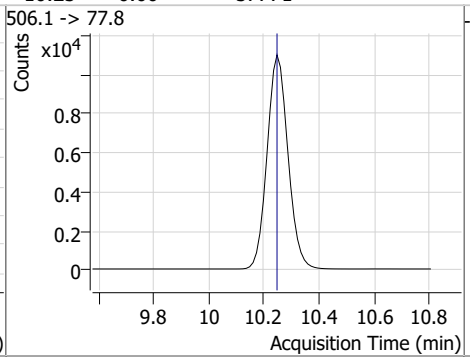


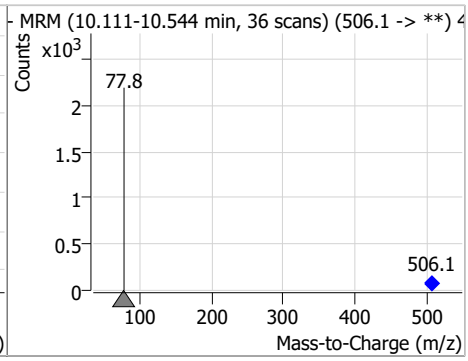




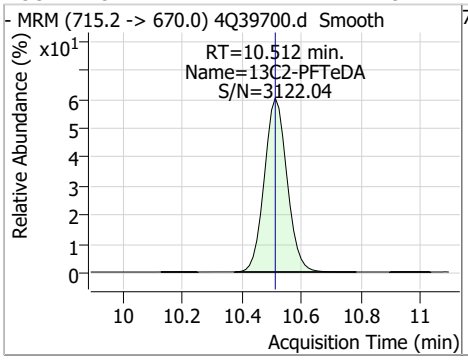
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	10.25	0.00	57771				

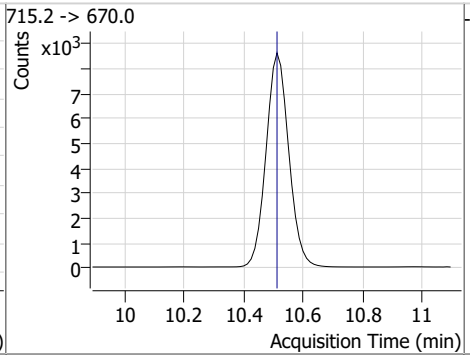


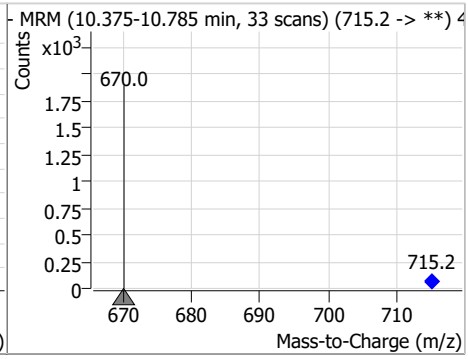




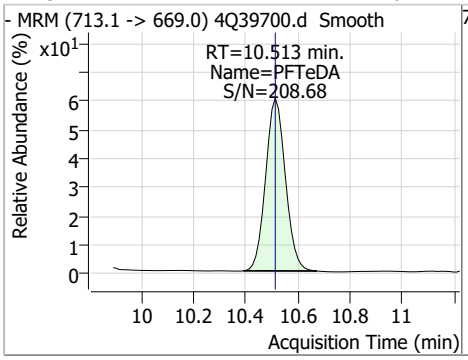
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	10.51	0.00	45529				

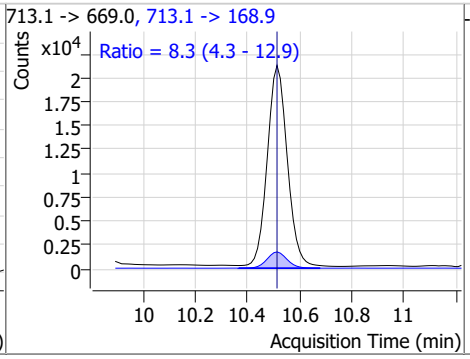


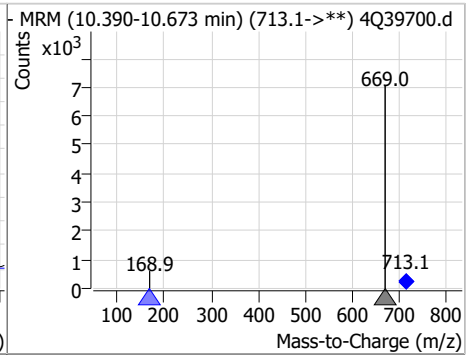




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.40	10.51	0.00	110162	713.1 -> 168.9	8.3	4.3	12.9

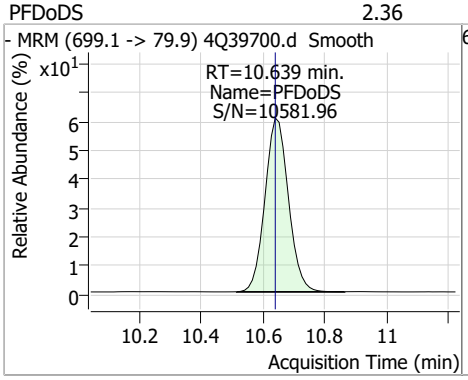


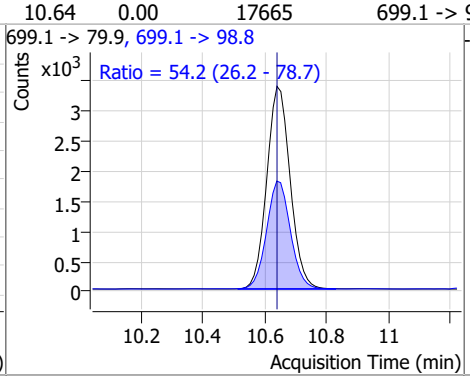


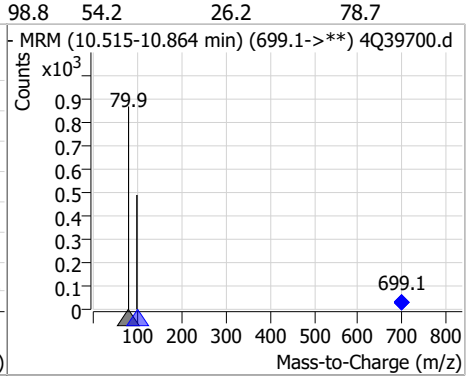


Perfluorinated Compounds by LC/MS/MS

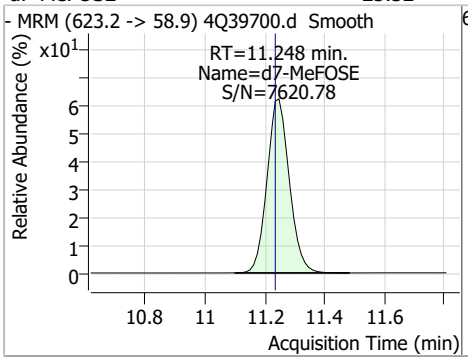
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.36	10.64	0.00	17665	699.1 -> 98.8	54.2	26.2	78.7

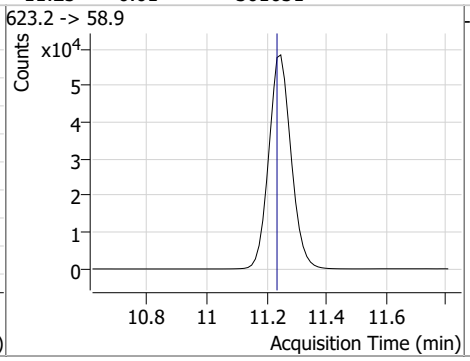


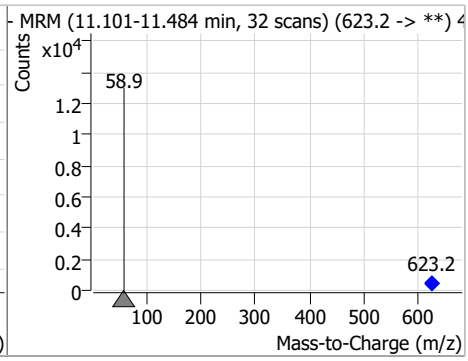




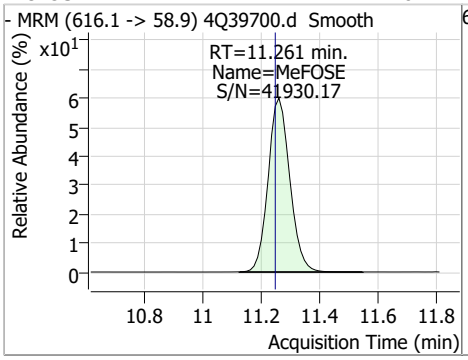
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.32	11.25	0.01	301651				

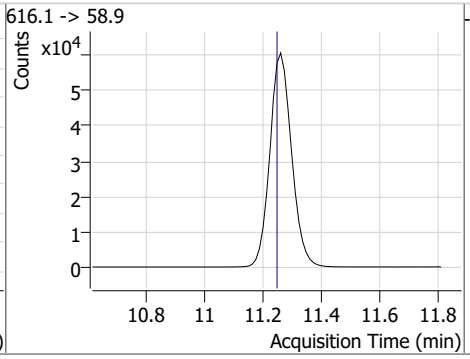


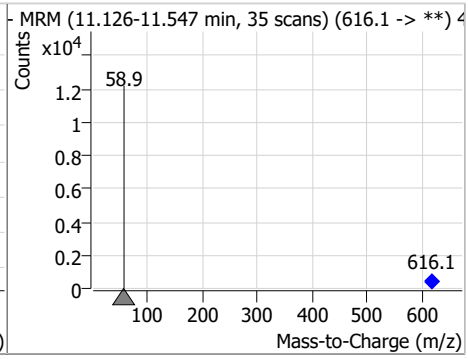




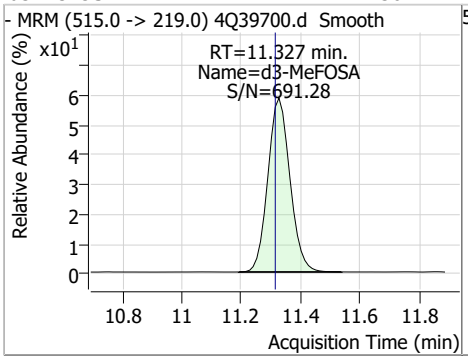
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.48	11.26	0.01	311977				

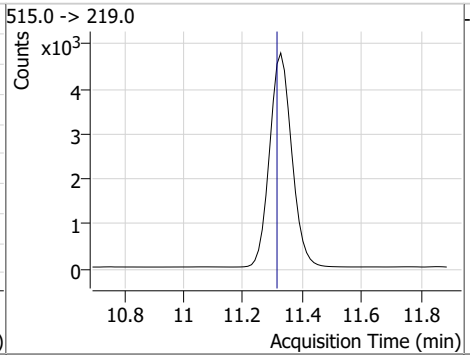


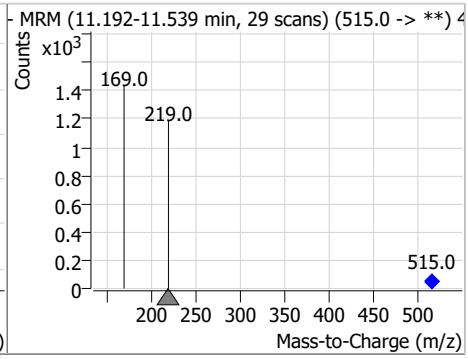




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	11.33	0.01	24647				

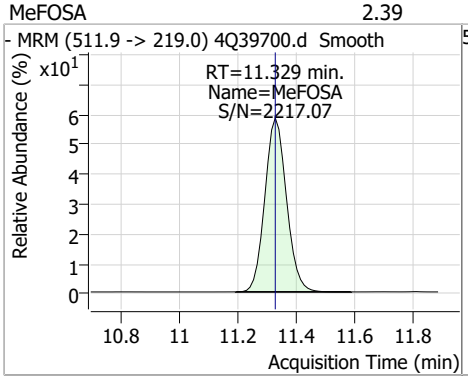


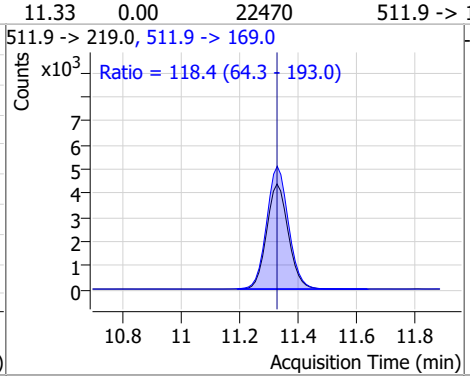


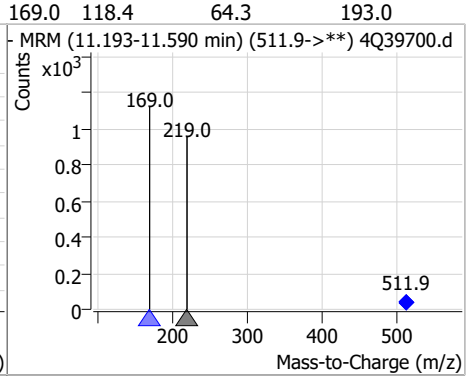


Perfluorinated Compounds by LC/MS/MS

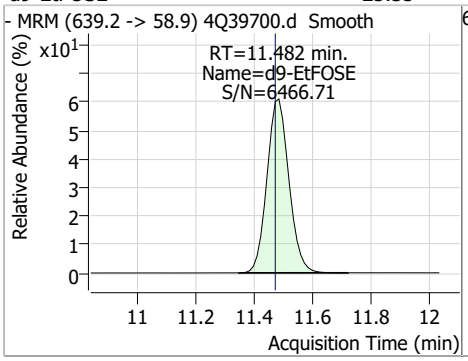
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.39	11.33	0.00	22470	511.9 -> 169.0	118.4	64.3	193.0

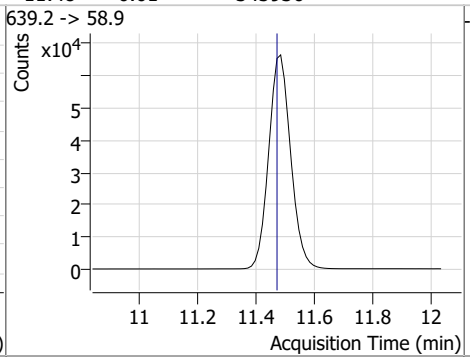


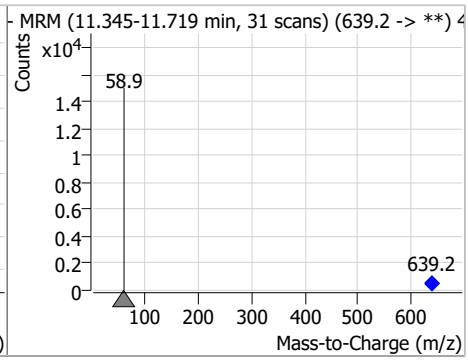




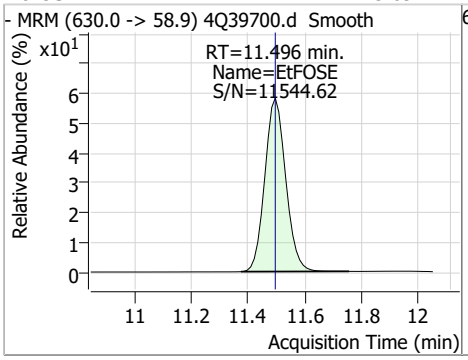
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.35	11.48	0.01	345936				

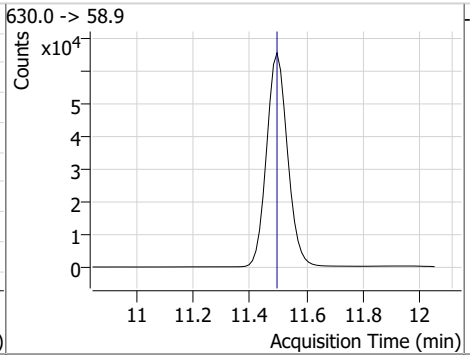


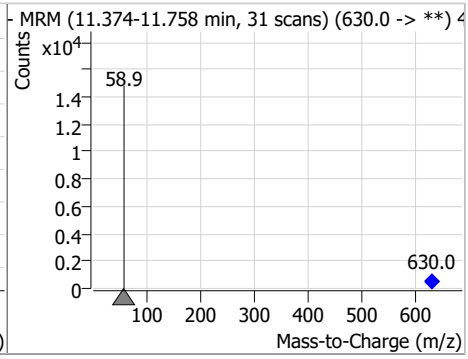




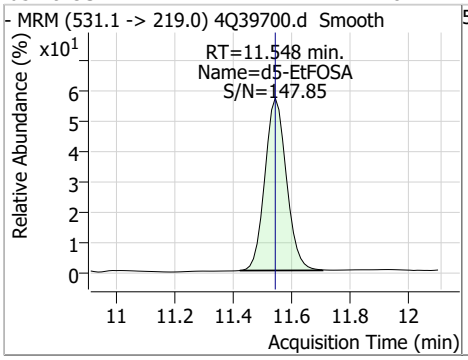
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	25.09	11.50	0.00	336935				

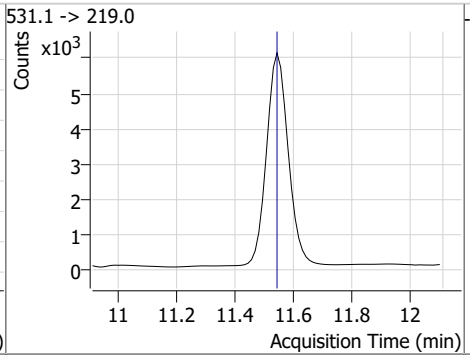


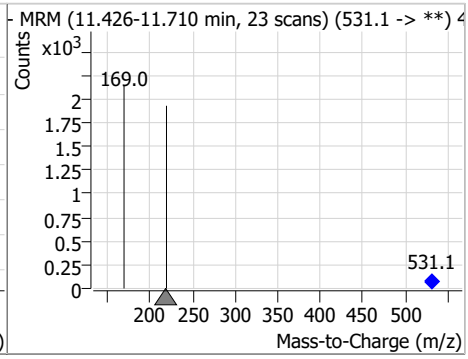




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.48	11.55	0.00	30919				

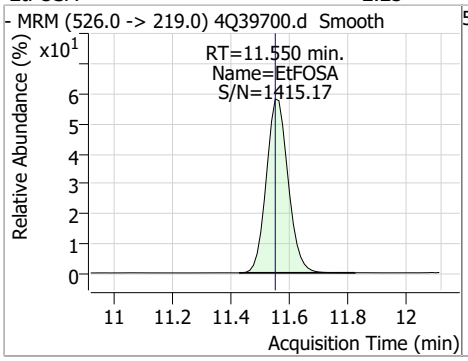


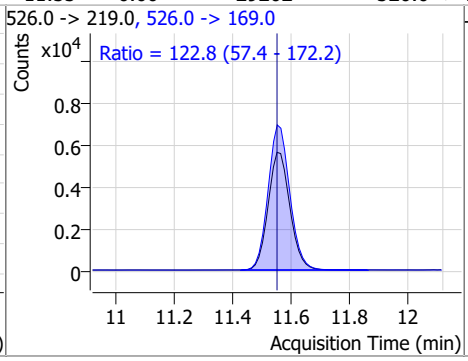


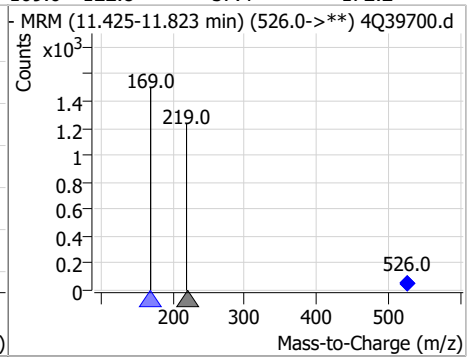


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.25	11.55	0.00	29202	526.0 -> 169.0	122.8	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-ICV571
Lab FileID: 4Q39700.D
Injection Time: 01/25/23 15:20
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39701.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 3:34:20 PM
Sample Name : icv571-20
Vial : P1-B4
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	420873	10.00	µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	272735	5.00	µg/L	0.012
M5-PFHxA	6.172	318.0 -> 273.0	171841	2.50	µg/L	0.000
M4-PFHpA	7.106	367.1 -> 322.0	95812	2.50	µg/L	0.000
M8-PFOA	7.788	421.1 -> 376.0	149743	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	74972	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	57128	1.25	µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	62875	1.25	µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	60737	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	45113	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	57923	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	47683	2.50	µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	31089	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	41482	2.50	µg/L	0.000
M2-4:2FTS	5.823	329.1 -> 80.9	4317	5.00	µg/L	0.000
M2-6:2FTS	7.536	429.1 -> 80.9	8909	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	12438	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	43935	5.00	µg/L	0.000
M3-HFPO-DA	6.564	286.9 -> 168.9	133683	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	37023	5.00	µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	272030	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	318908	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	28923	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	25237	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	38618	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	231036	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	20813	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	167260	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	49074	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	80039	1.25	µg/L	0.000
13C2-PFHxA	6.173	315.1 -> 270.0	162920	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.823	329.1 -> 80.9	4317	5.76	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	8909	5.31	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-8:2FTS	8.653	529.1 -> 80.9	12438	5.41	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C2-PFDoDA	9.806	615.1 -> 570.0	60737	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-PFTeDA	10.512	715.2 -> 670.0	45113	1.33	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C3-PFBS	6.101	302.1 -> 79.9	47683	2.65	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-PFHxS	7.917	402.1 -> 79.9	31089	2.56	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C4-PFBA	3.186	216.8 -> 171.9	420873	10.10 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFHpA	7.106	367.1 -> 322.0	95812	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C5-PFHxA	6.172	318.0 -> 273.0	171841	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFPeA	4.876	268.3 -> 223.0	272735	5.15 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C6-PFDA	8.891	519.1 -> 474.1	57128	1.32 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C7-PFUnDA	9.386	570.0 -> 525.1	62875	1.35 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C8-FOSA	10.247	506.1 -> 77.8	57923	2.62 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C8-PFOA	7.788	421.1 -> 376.0	149743	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C8-PFOS	9.068	507.1 -> 79.9	41482	2.63 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C9-PFNA	8.360	472.1 -> 427.0	74972	1.32 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%		
d3-MeFOSAA	8.924	573.2 -> 419.0	43935	4.95 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	133683	10.29 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
d3-MeFOSA	11.327	515.0 -> 219.0	25237	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSAA	9.146	589.2 -> 419.0	37023	4.79 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
d7-MeFOSE	11.248	623.2 -> 58.9	272030	23.62 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
d9-EtFOSE	11.482	639.2 -> 58.9	318908	24.18 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
d5-EtFOSA	11.548	531.1 -> 219.0	28923	2.40 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%		
Target Compounds						QValue
4:2FTS	5.823	327.1 -> 307.0	136893	19.40 µg/L		100
		327.1 -> 80.9	63523			
6:2FTS	7.537	427.1 -> 407.0	152053	21.53 µg/L		100
		427.1 -> 80.9	74622			
8:2FTS	8.654	527.1 -> 507.0	125296	20.82 µg/L		98
		527.1 -> 80.8	68177			
EtFOSAA	9.159	584.2 -> 419.1	144668	23.34 µg/L	m	91
		584.2 -> 526.0	63101			
FOSA	10.250	498.1 -> 77.9	488073	21.82 µg/L		100
		498.1 -> 478.0	9628			
MeFOSAA	8.937	570.1 -> 419.0	158672	24.38 µg/L	m	98
		570.1 -> 483.0	30125			
PFBA	3.195	212.8 -> 168.9	226643	19.35 µg/L		100
PFBS	6.102	298.7 -> 79.9	484859	22.50 µg/L		97
		298.7 -> 98.8	175842			
PFDA	8.892	512.9 -> 469.0	891801	21.88 µg/L		99
		512.9 -> 219.0	181144			
PFDoDA	9.806	613.1 -> 569.0	881584	18.83 µg/L		97
		613.1 -> 319.0	138320			
PFDS	9.959	599.0 -> 79.9	192085	19.99 µg/L		100

Perfluorinated Compounds by LC/MS/MS

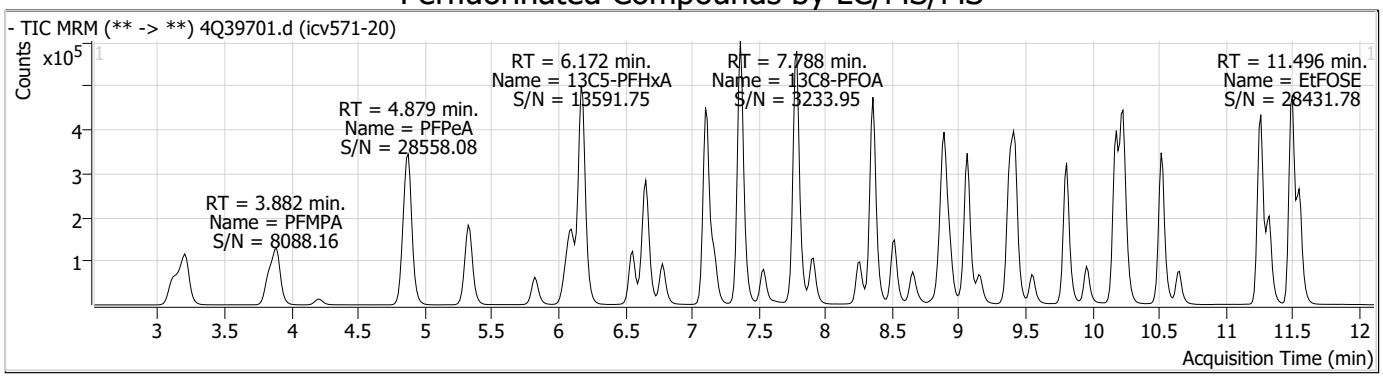
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	89274				
PFHpA	7.106	363.1 -> 319.0	1270226	21.27	µg/L		99
		363.1 -> 169.0	222107				
PFHpS	8.526	449.0 -> 79.9	351093	20.94	µg/L		95
		449.0 -> 98.9	174153				
PFHxA	6.175	313.0 -> 269.0	1507388	22.56	µg/L		99
		313.0 -> 118.9	46364				
PFHxS	7.917	398.7 -> 79.9	239672	23.86	µg/L	m	96
		398.7 -> 98.9	110073				
PFNA	8.360	463.0 -> 419.0	1189342	21.82	µg/L		98
		463.0 -> 219.0	286440				
PFNS	9.549	548.8 -> 79.9	153507	20.79	µg/L		93
		548.8 -> 98.9	73466				
PFOA	7.790	413.0 -> 369.0	1407619	21.14	µg/L		98
		413.0 -> 169.0	297573				
PFOS	9.069	498.9 -> 79.9	344915	17.80	µg/L	m	95
		498.9 -> 98.8	156409				
PFPeA	4.879	263.0 -> 219.0	1328608	22.21	µg/L		100
PFPeS	7.171	349.1 -> 79.9	225163	23.21	µg/L		97
		349.1 -> 98.9	92488				
PFTeDA	10.513	713.1 -> 669.0	1015146	22.36	µg/L		99
		713.1 -> 168.9	89826				
PFTrDA	10.179	663.0 -> 619.0	1108866	19.35	µg/L		100
		663.0 -> 168.9	118315				
PFUnDA	9.386	563.1 -> 519.0	760580	19.98	µg/L		99
		563.1 -> 269.1	141442				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	685669	21.94	µg/L		98
		632.9 -> 452.9	211023				
9Cl-PF3ONS	9.425	530.8 -> 351.0	816321	21.44	µg/L		100
		532.8 -> 353.0	242608				
ADONA	7.369	376.9 -> 250.9	1523437	21.12	µg/L		99
		376.9 -> 84.8	543935				
HFPO-DA	6.565	284.9 -> 168.9	263046	20.88	µg/L		99
		284.9 -> 184.9	28370				
3:3FTCA	4.204	241.0 -> 177.0	55972	19.96	µg/L		99
		241.0 -> 117.0	5472				
5:3FTCA	6.783	341.0 -> 237.1	184175	20.72	µg/L		99
		341.0 -> 217.0	138010				
7:3FTCA	8.262	441.0 -> 316.9	101851	19.95	µg/L		91
		441.0 -> 336.9	244884				
EtFOSA	11.562	526.0 -> 219.0	269302	22.17	µg/L		99
		526.0 -> 169.0	312295				
EtFOSE	11.496	630.0 -> 58.9	1254128	101.28	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	212376	22.09	µg/L		95
		511.9 -> 169.0	260944				
MeFOSE	11.261	616.1 -> 58.9	1149837	100.05	µg/L		100
PFDoDS	10.652	699.1 -> 79.9	161904	19.96	µg/L		99
		699.1 -> 98.8	85701				
NFDHA	6.053	295.0 -> 201.0	95403	21.73	µg/L		98
		295.0 -> 84.9	26893				
PFMBA	5.328	279.0 -> 85.1	773308	20.74	µg/L		100
PFMPA	3.882	229.0 -> 84.9	797110	20.72	µg/L		100
PFEESA	6.660	314.8 -> 134.9	1078478	18.88	µg/L		100
		314.8 -> 82.9	33867				

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

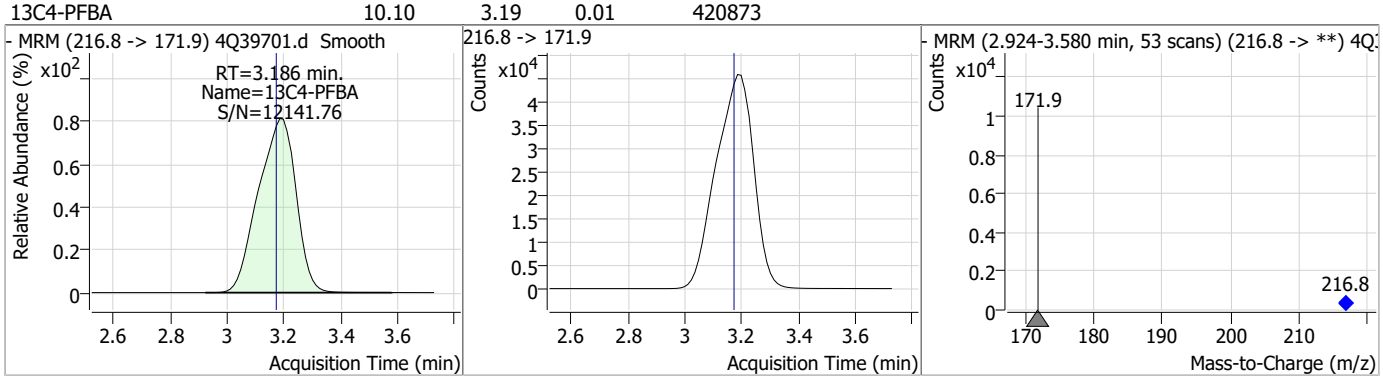
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

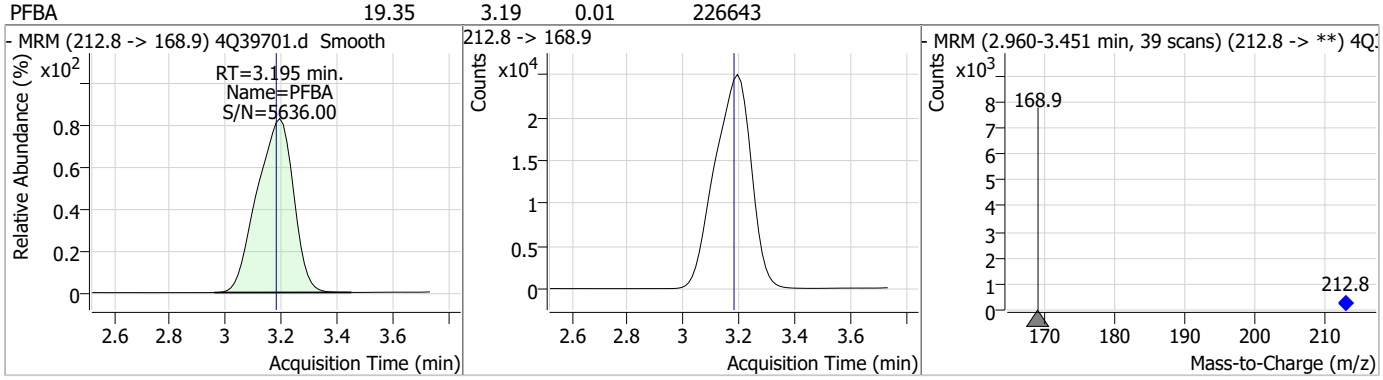
Perfluorinated Compounds by LC/MS/MS



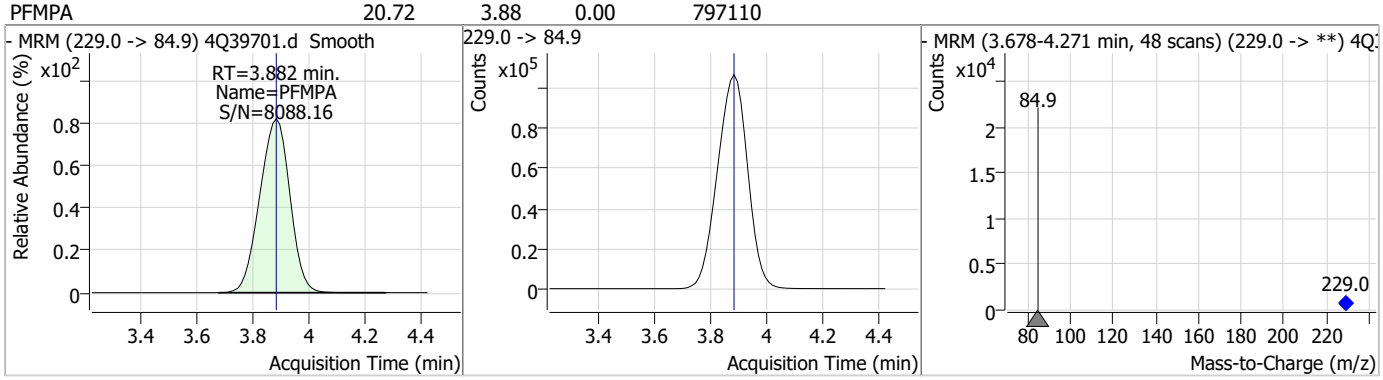
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.10	3.19	0.01	420873				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.35	3.19	0.01	226643				

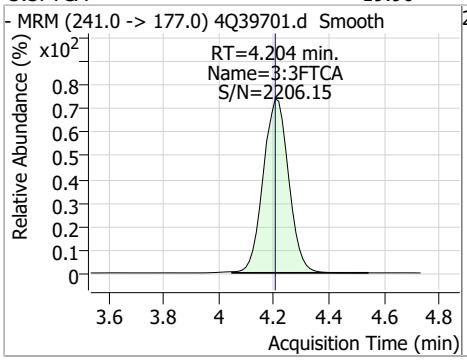


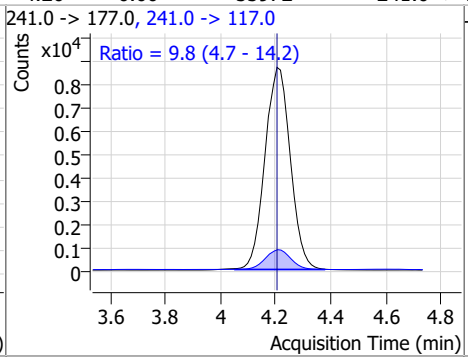
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	20.72	3.88	0.00	797110				

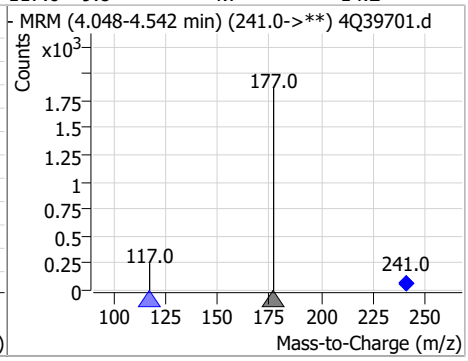


Perfluorinated Compounds by LC/MS/MS

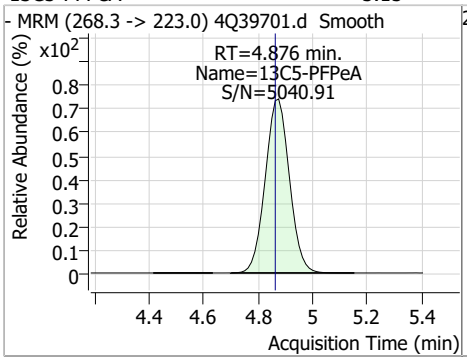
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.96	4.20	0.00	55972	241.0 -> 117.0	9.8	4.7	14.2

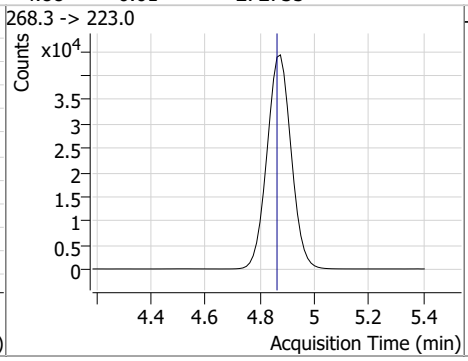


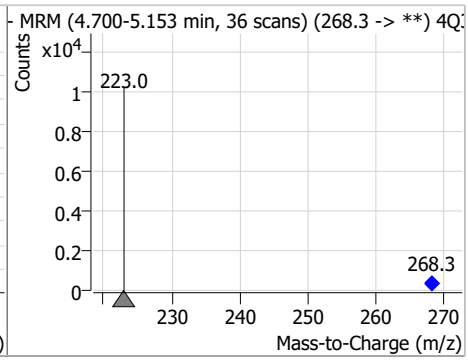




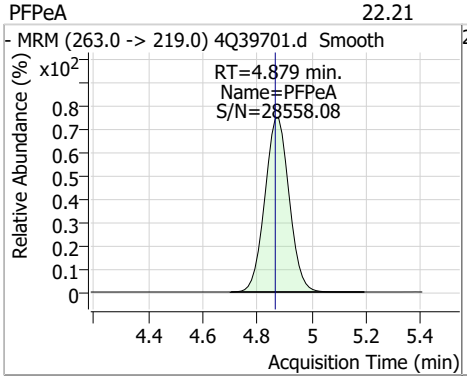
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.15	4.88	0.01	272735				

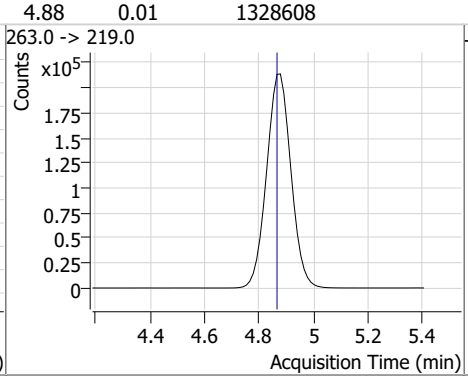


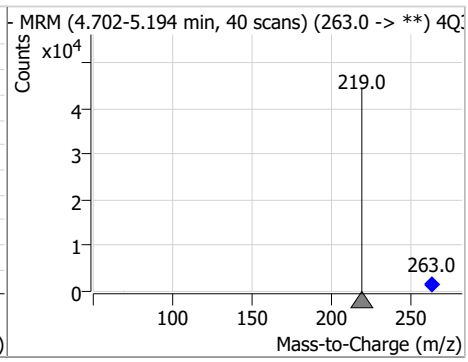




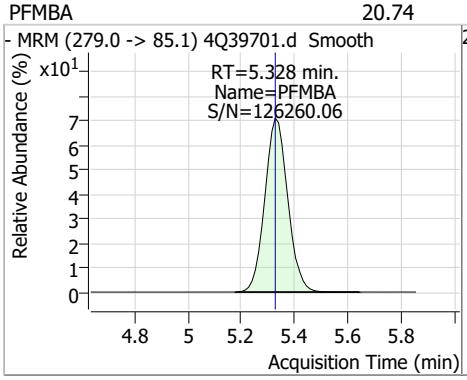
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.21	4.88	0.01	1328608				

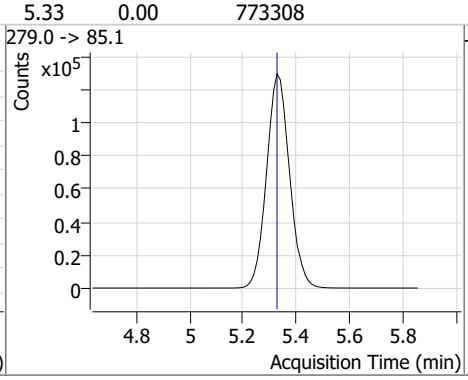


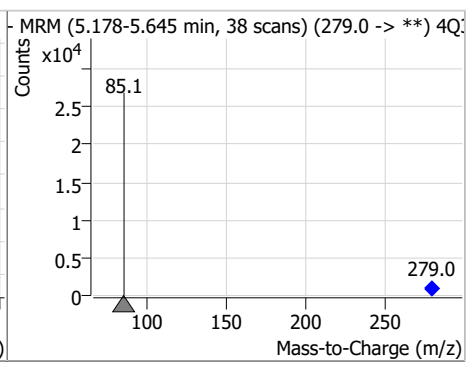




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	20.74	5.33	0.00	773308				

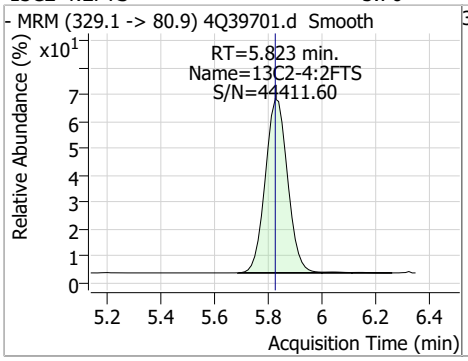


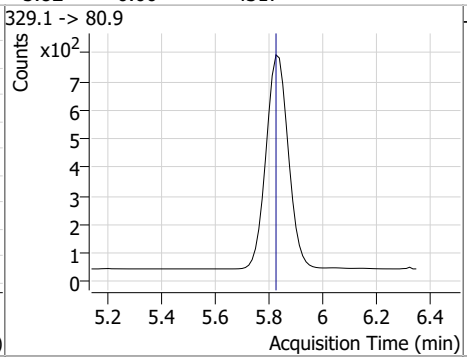


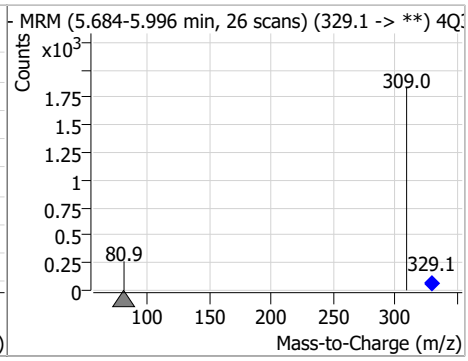


Perfluorinated Compounds by LC/MS/MS

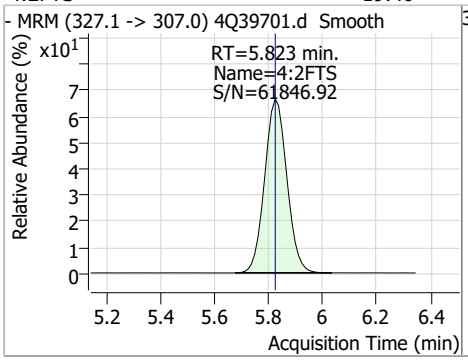
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.76	5.82	0.00	4317				

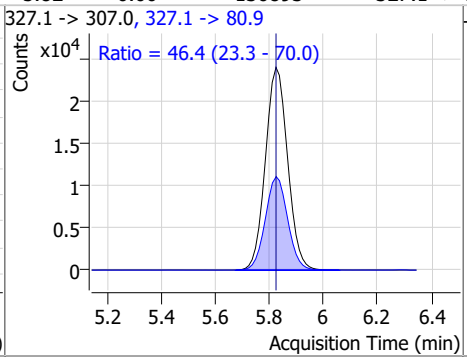


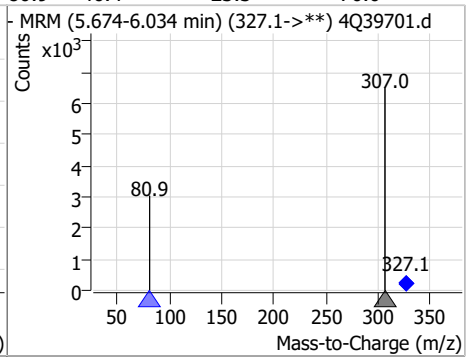




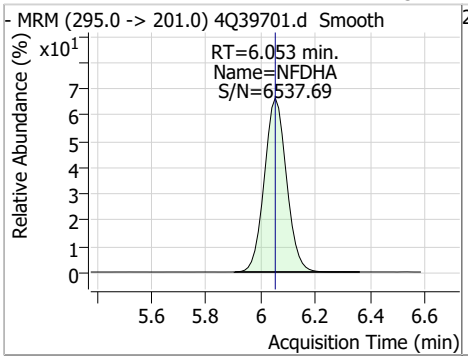
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.40	5.82	0.00	136893	327.1 -> 80.9	46.4	23.3	70.0

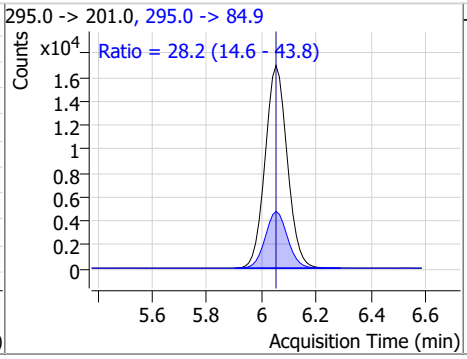


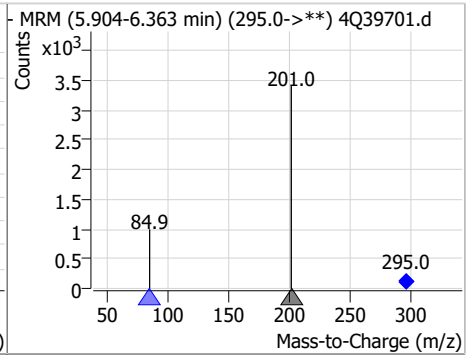




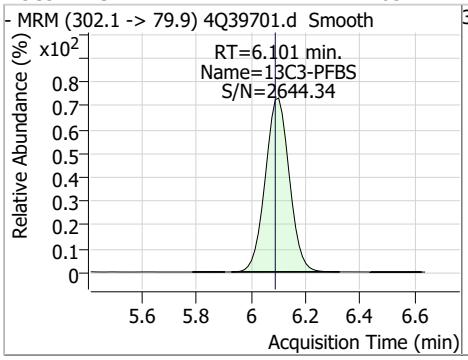
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	21.73	6.05	0.00	95403	295.0 -> 84.9	28.2	14.6	43.8

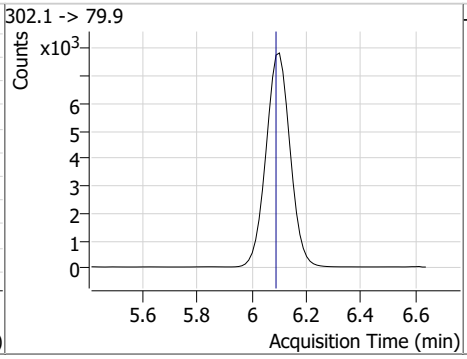


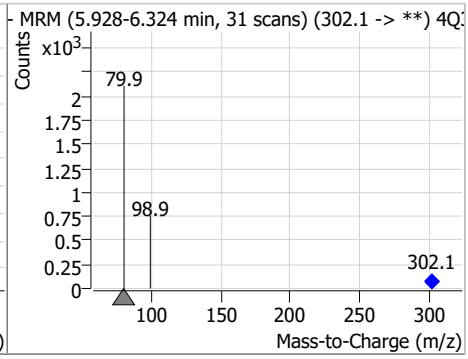




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.65	6.10	0.01	47683				

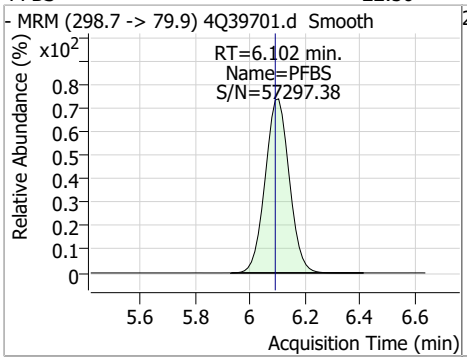


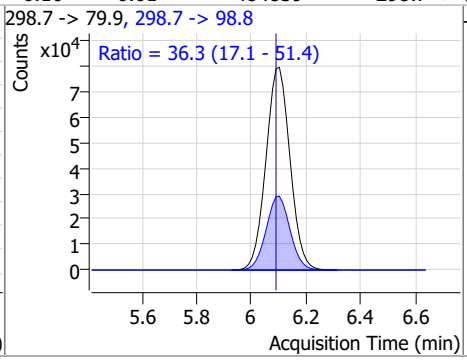


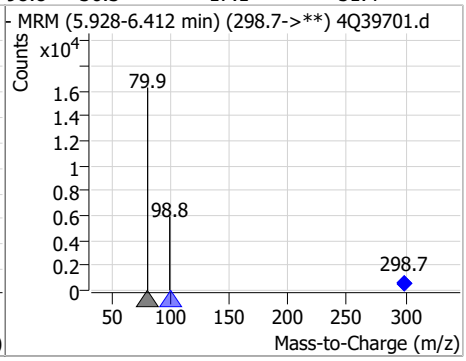


Perfluorinated Compounds by LC/MS/MS

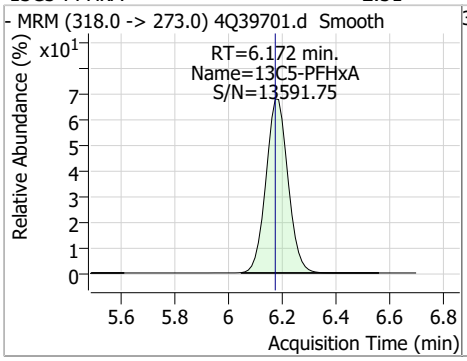
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.50	6.10	0.01	484859	298.7 -> 98.8	36.3	17.1	51.4

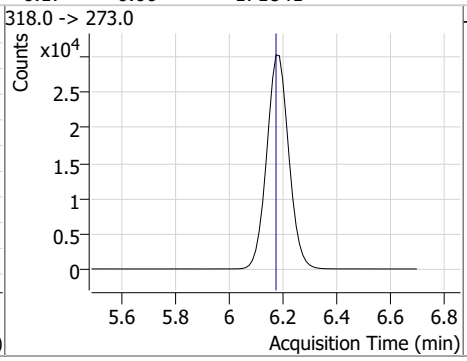


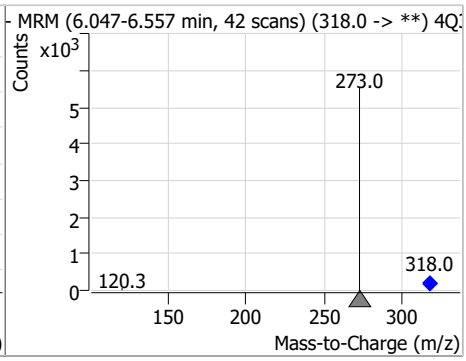




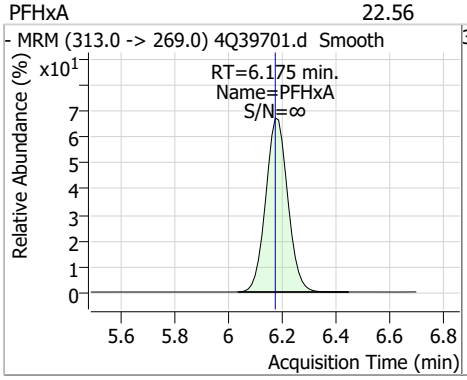
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	6.17	0.00	171841				

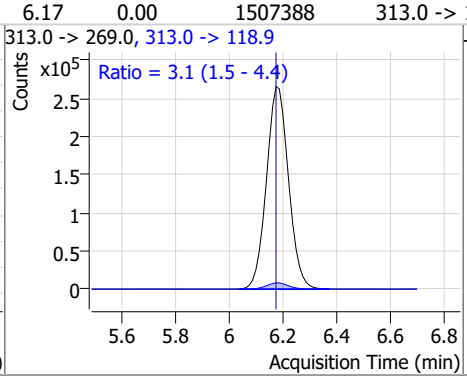


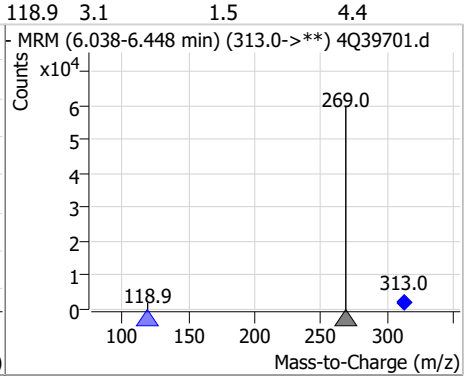




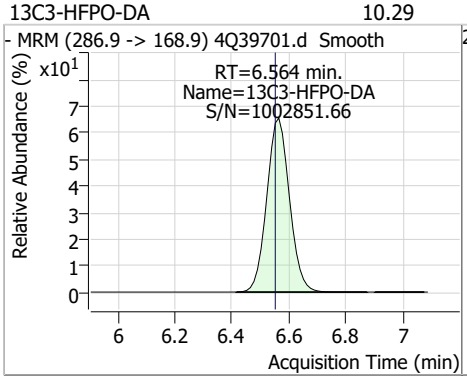
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.56	6.17	0.00	1507388	313.0 -> 118.9	3.1	1.5	4.4

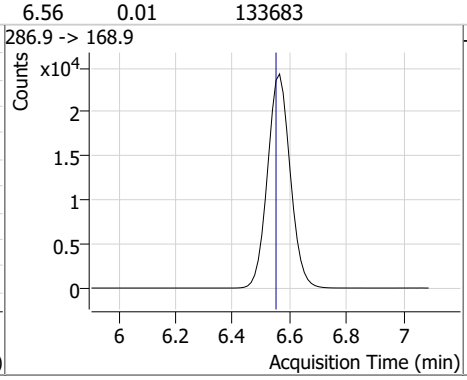


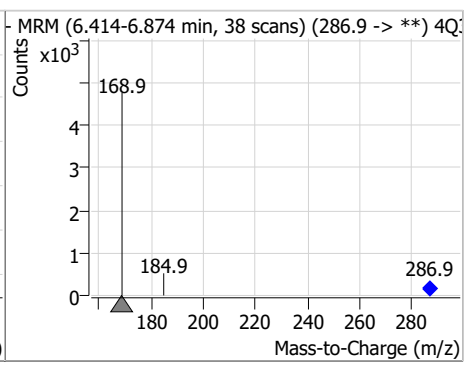




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.29	6.56	0.01	133683				

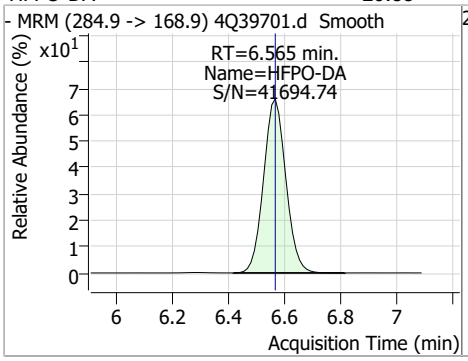


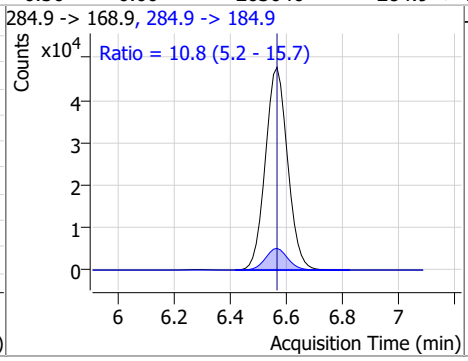


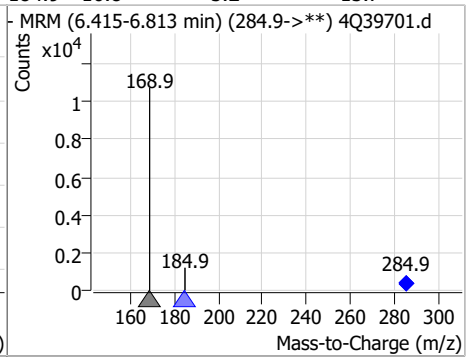


Perfluorinated Compounds by LC/MS/MS

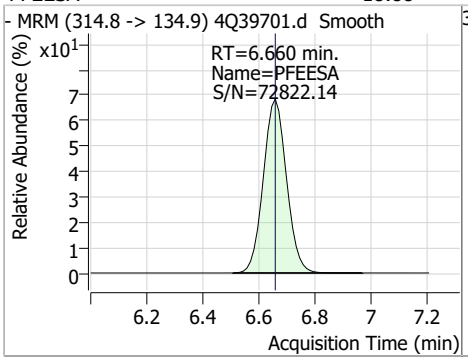
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.88	6.56	0.00	263046	284.9 -> 184.9	10.8	5.2	15.7

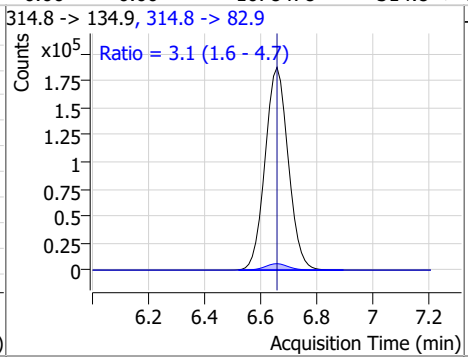


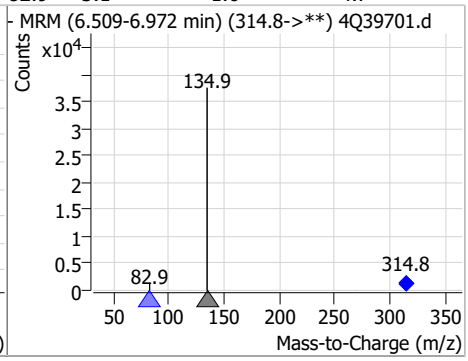




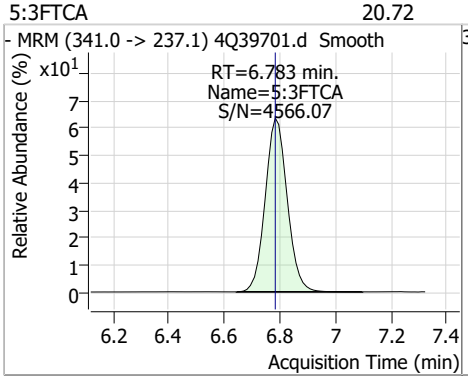
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	18.88	6.66	0.00	1078478	314.8 -> 82.9	3.1	1.6	4.7

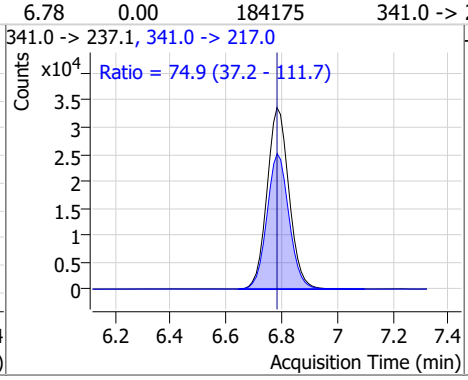


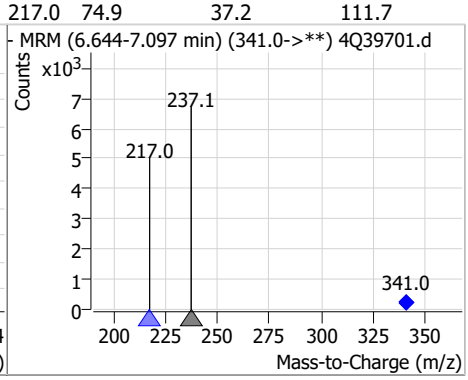




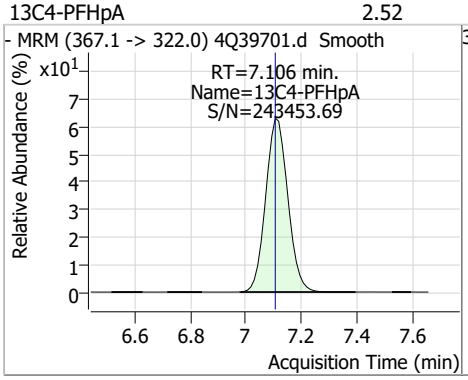
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	20.72	6.78	0.00	184175	341.0 -> 217.0	74.9	37.2	111.7

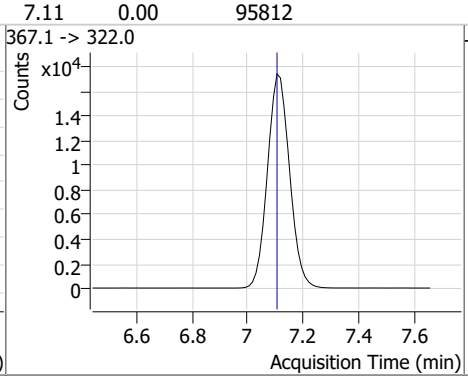


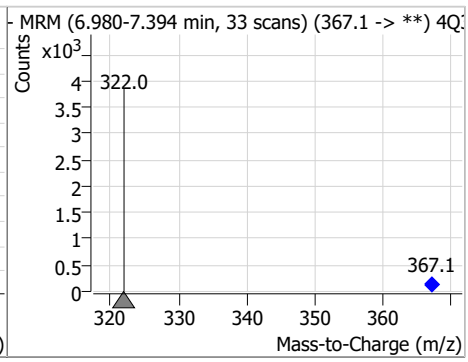




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	7.11	0.00	95812				

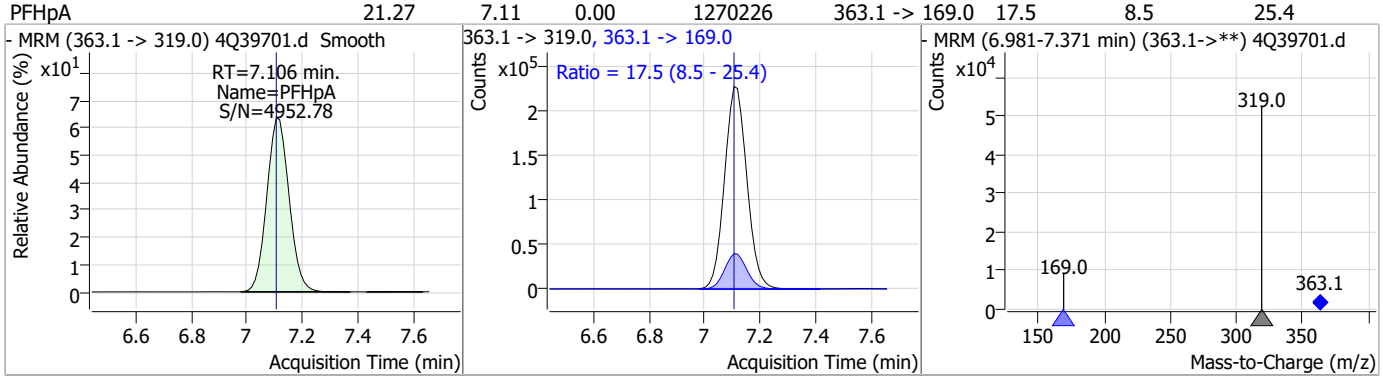




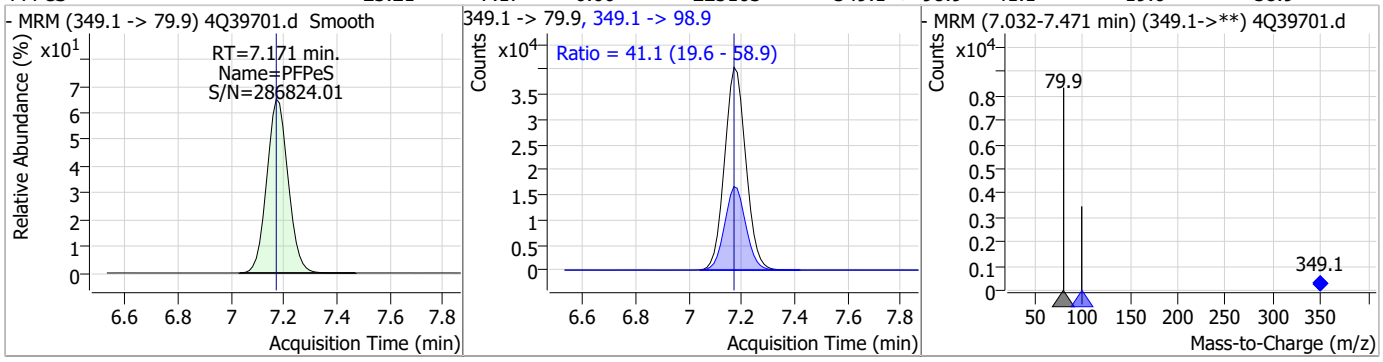


Perfluorinated Compounds by LC/MS/MS

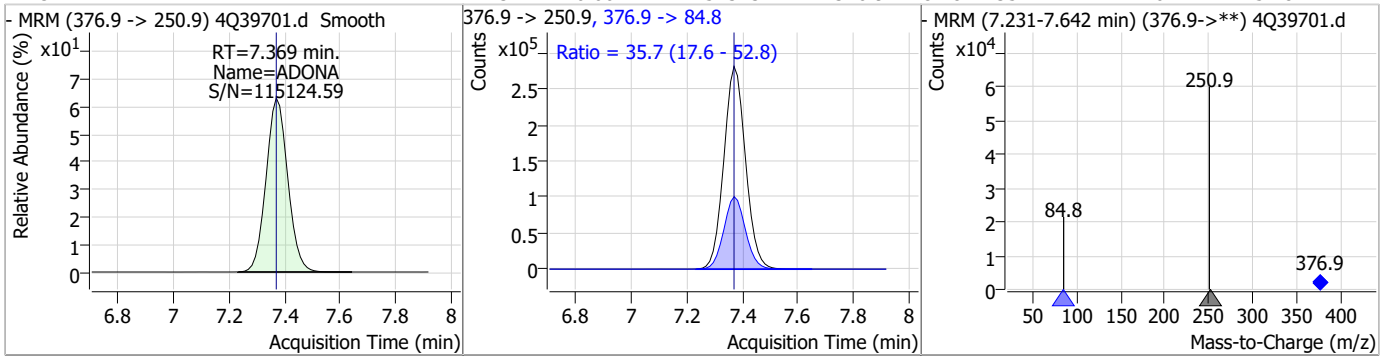
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.27	7.11	0.00	1270226	363.1 -> 169.0	17.5	8.5	25.4



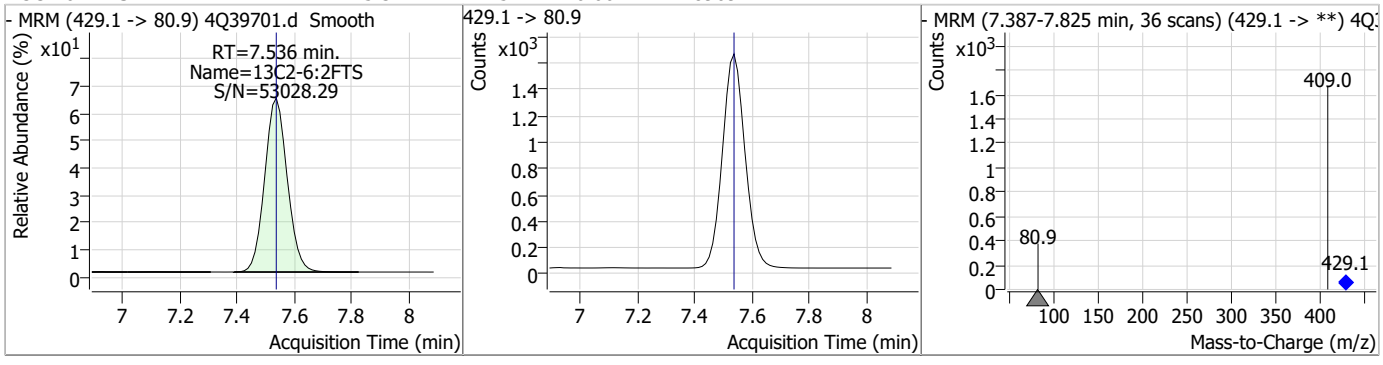
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	23.21	7.17	0.00	225163	349.1 -> 98.9	41.1	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	21.12	7.37	0.00	1523437	376.9 -> 84.8	35.7	17.6	52.8

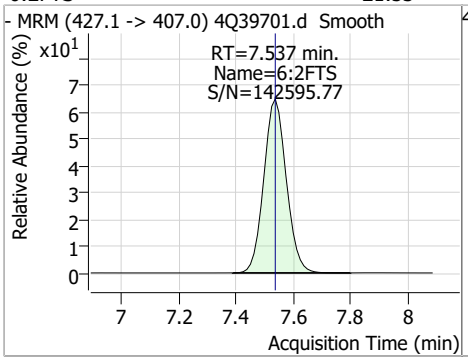


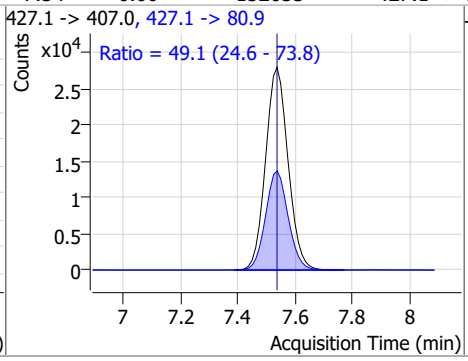
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.31	7.54	0.00	8909				

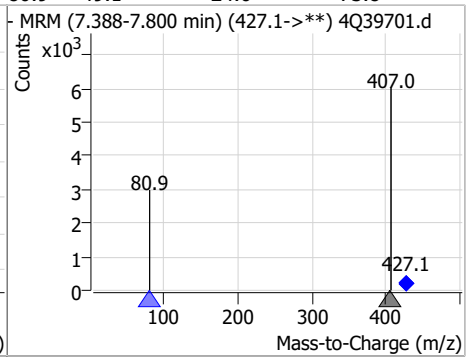


Perfluorinated Compounds by LC/MS/MS

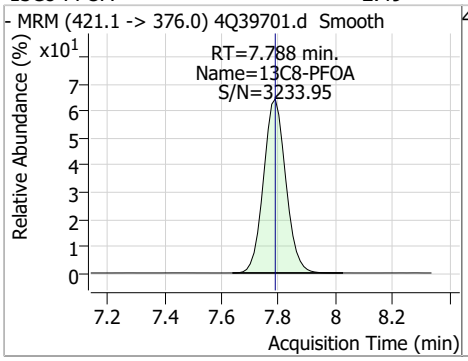
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.53	7.54	0.00	152053	427.1 -> 80.9	49.1	24.6	73.8

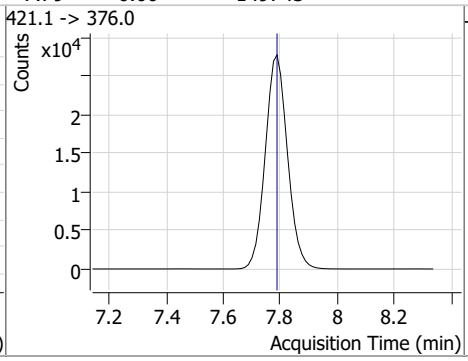


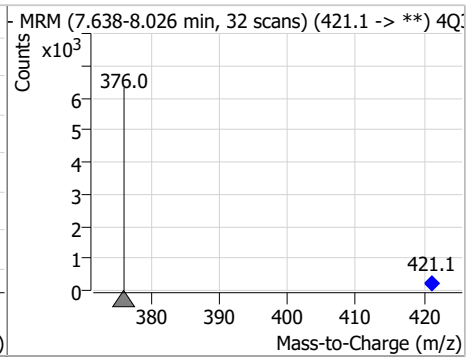




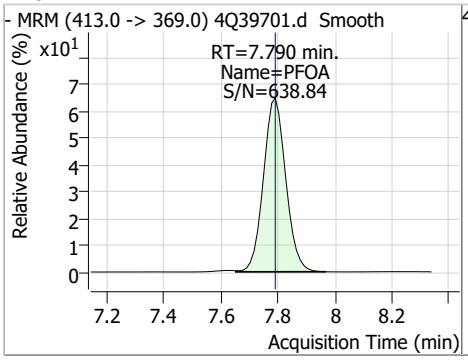
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.79	0.00	149743				

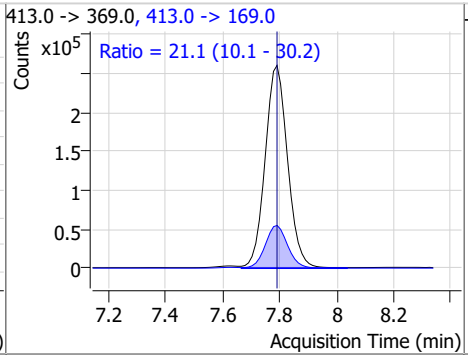


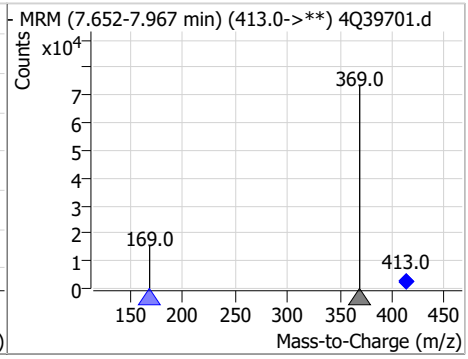




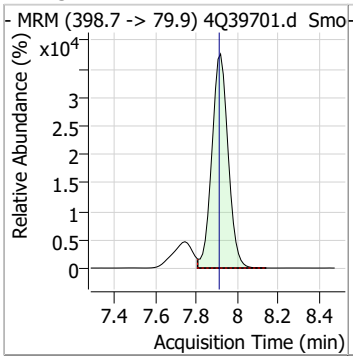
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.14	7.79	0.00	1407619	413.0 -> 169.0	21.1	10.1	30.2

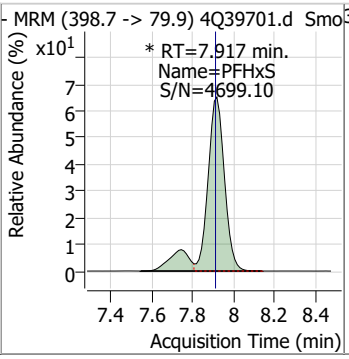


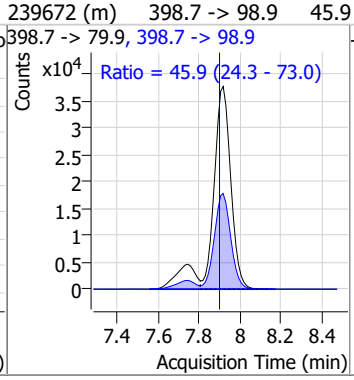


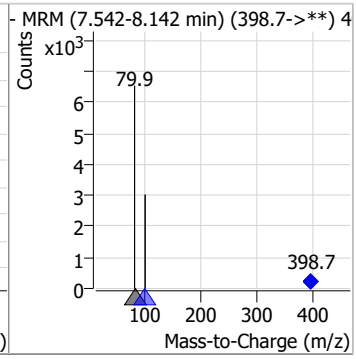


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	23.86	7.92	0.01	239672 (m)	398.7 -> 98.9	45.9	24.3	73.0



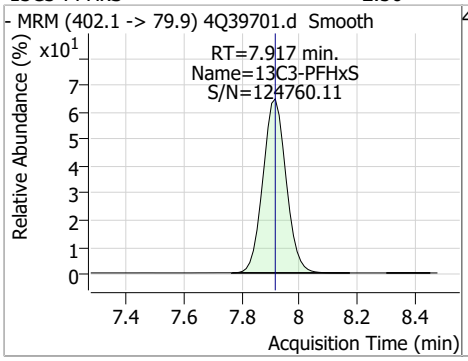


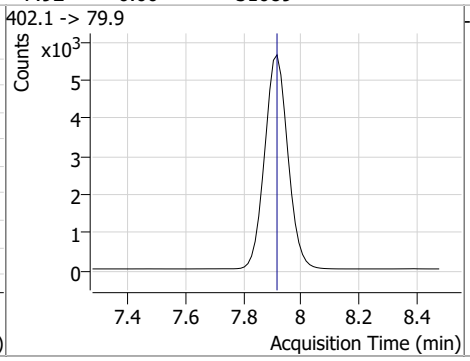


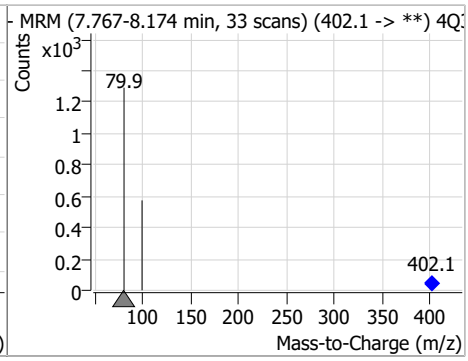


Perfluorinated Compounds by LC/MS/MS

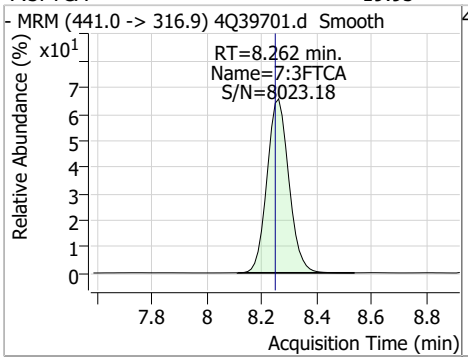
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.92	0.00	31089				

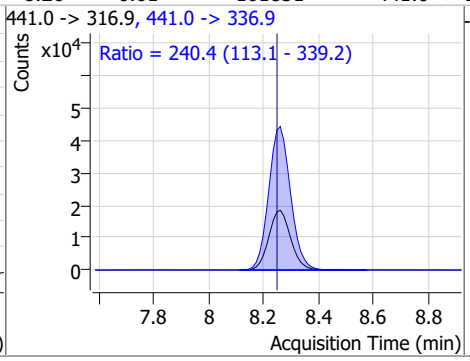


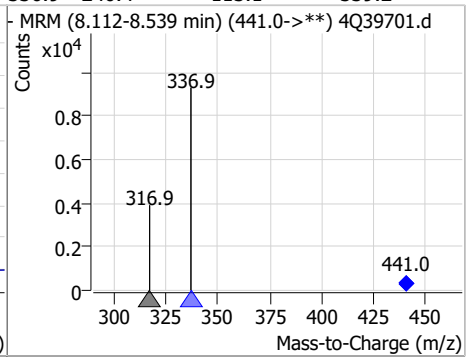




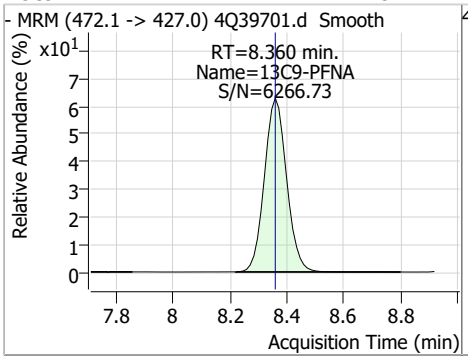
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	19.95	8.26	0.01	101851	441.0 -> 336.9	240.4	113.1	339.2

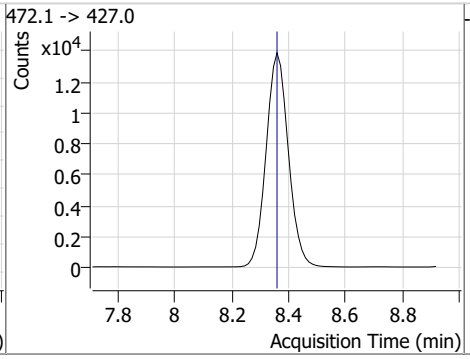


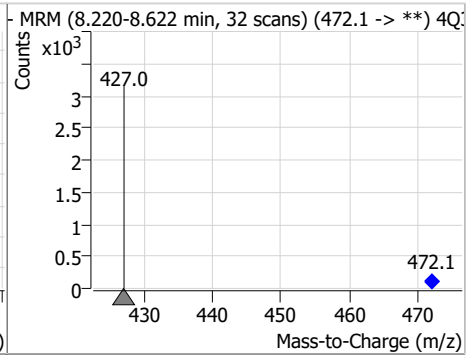




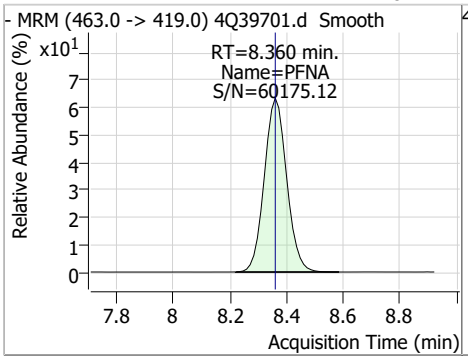
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	8.36	0.00	74972				

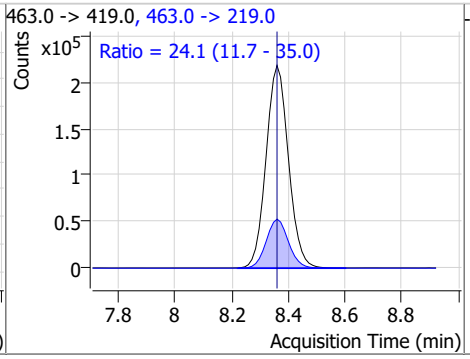


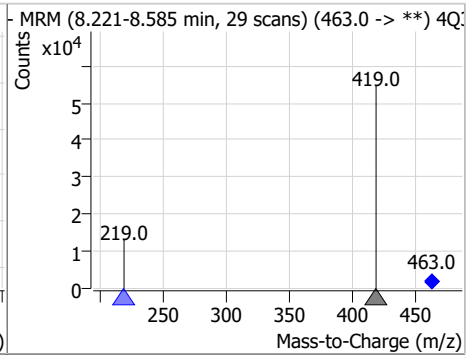




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.82	8.36	0.00	1189342	463.0 -> 219.0	24.1	11.7	35.0

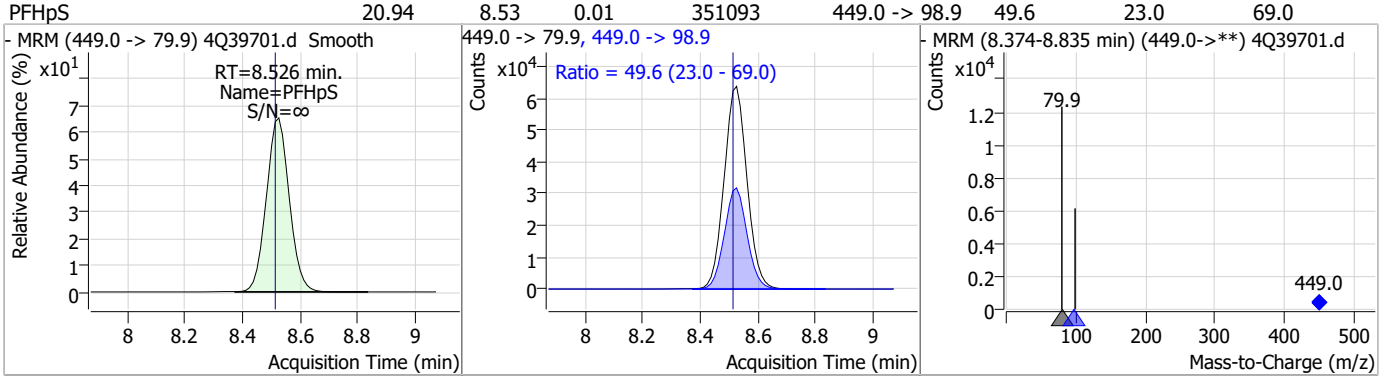




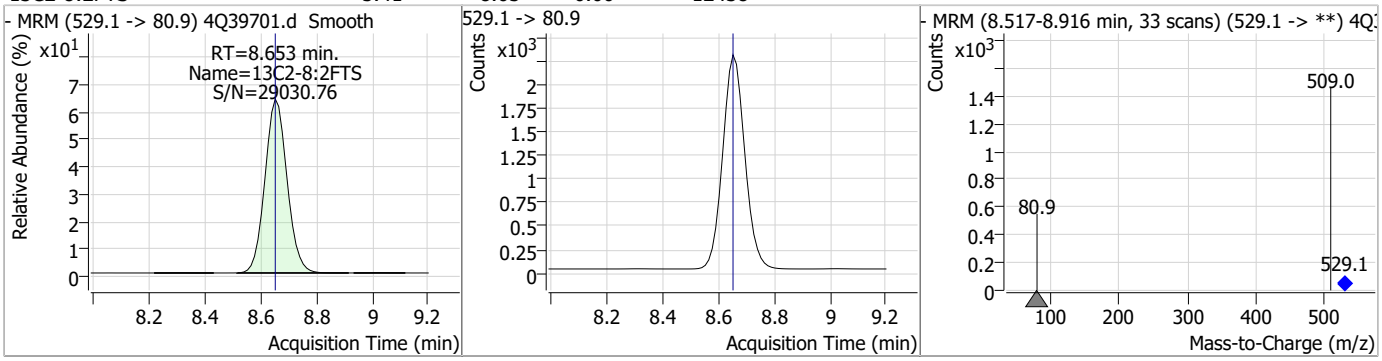


Perfluorinated Compounds by LC/MS/MS

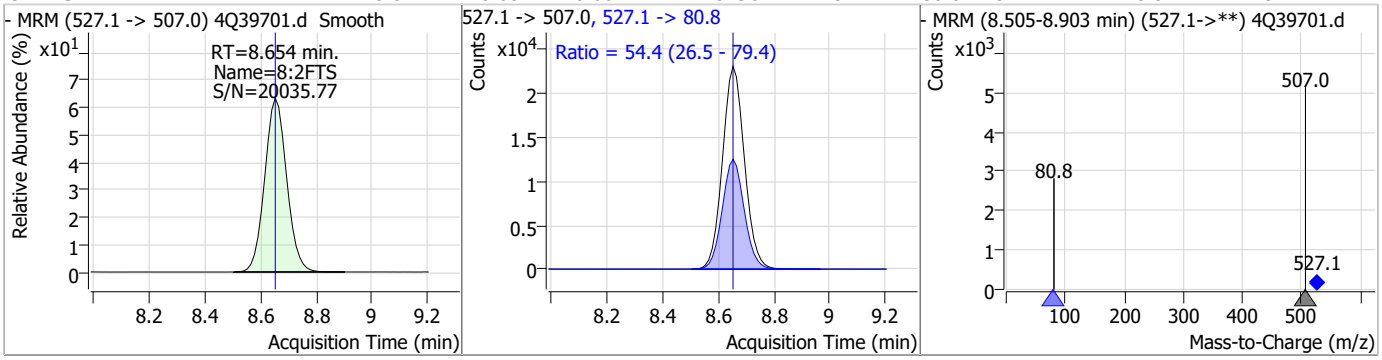
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.94	8.53	0.01	351093	449.0 -> 98.9	49.6	23.0	69.0



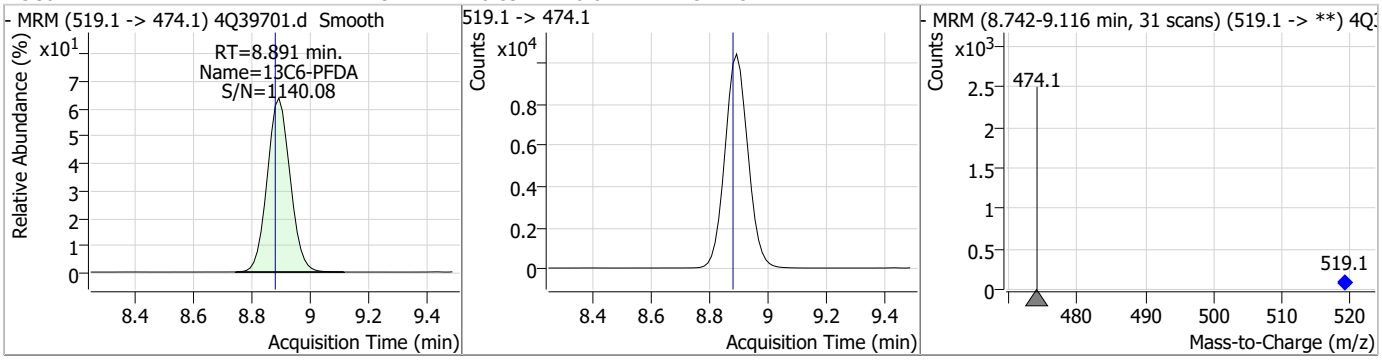
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.41	8.65	0.00	12438				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.82	8.65	0.00	125296	527.1 -> 80.8	54.4	26.5	79.4

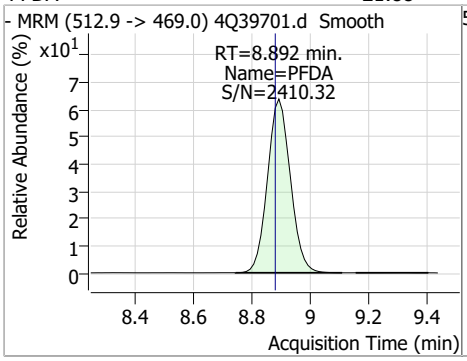


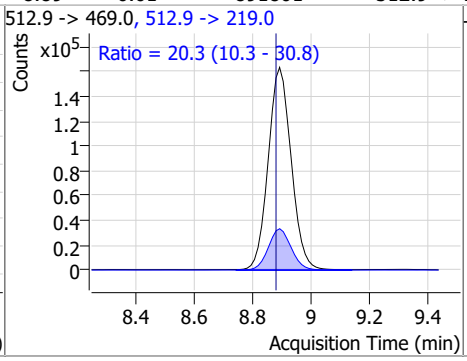
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	8.89	0.01	57128				

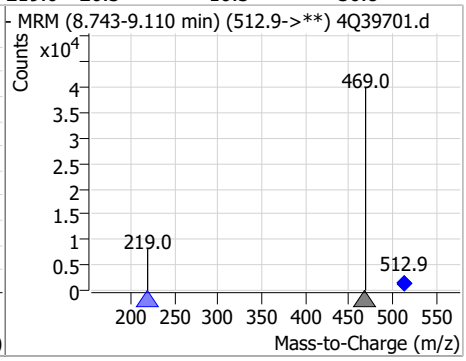


Perfluorinated Compounds by LC/MS/MS

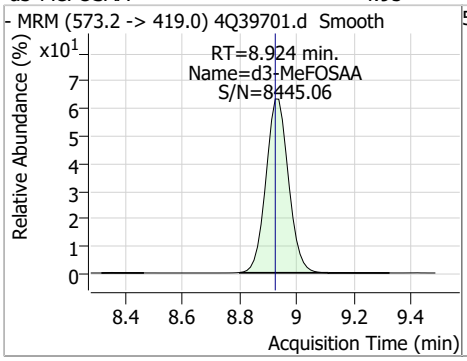
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.88	8.89	0.01	891801	512.9 -> 219.0	20.3	10.3	30.8

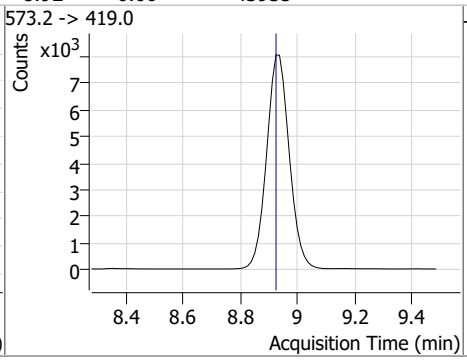


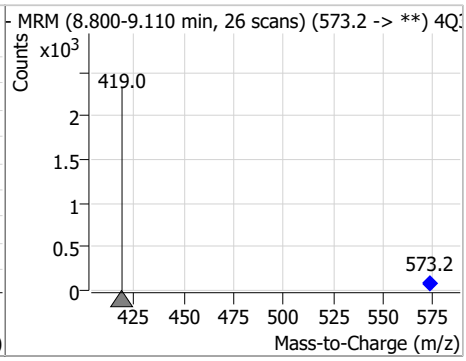




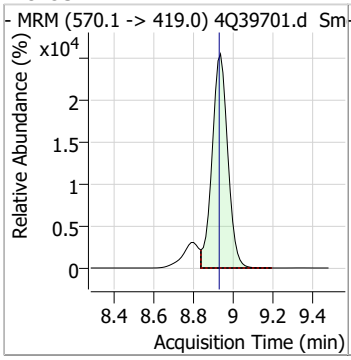
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.95	8.92	0.00	43935				

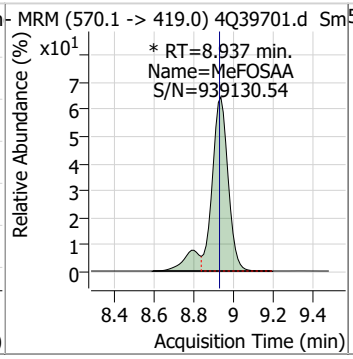


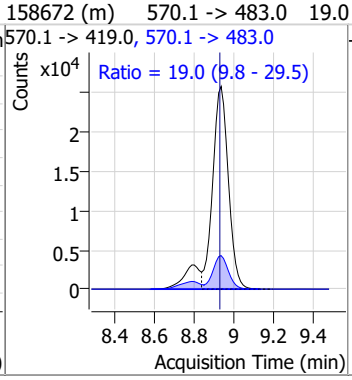


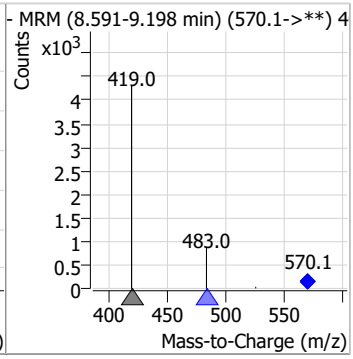


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.38	8.94	0.01	158672 (m)	570.1 -> 483.0	19.0	9.8	29.5

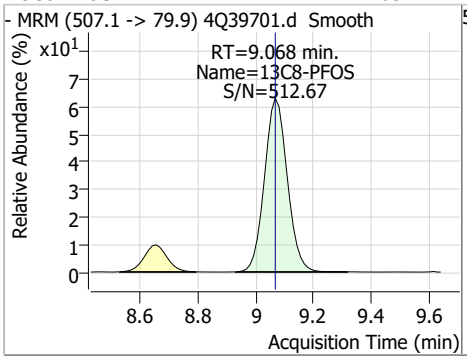


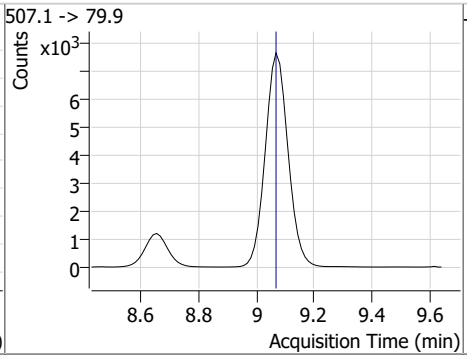


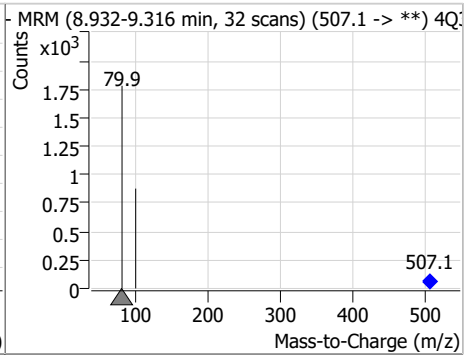




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.63	9.07	0.00	41482				

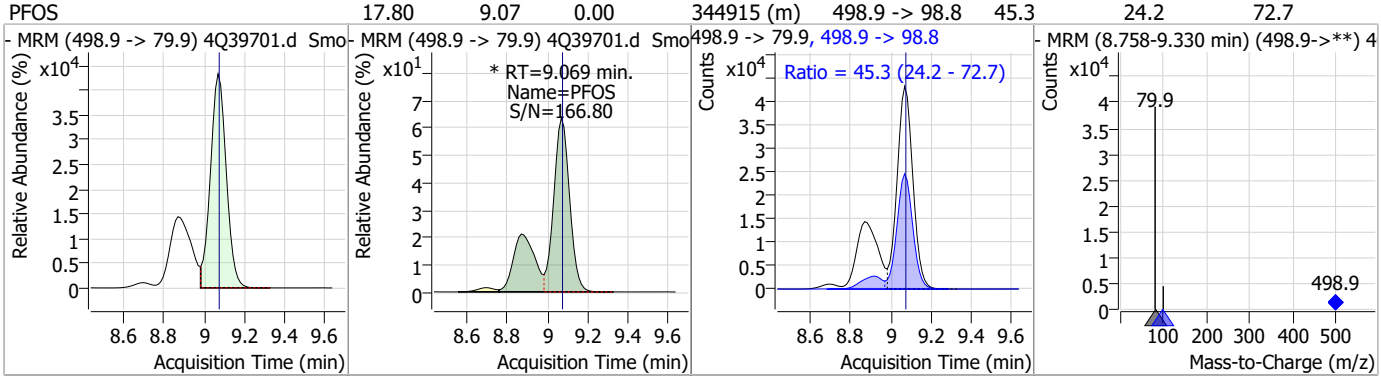




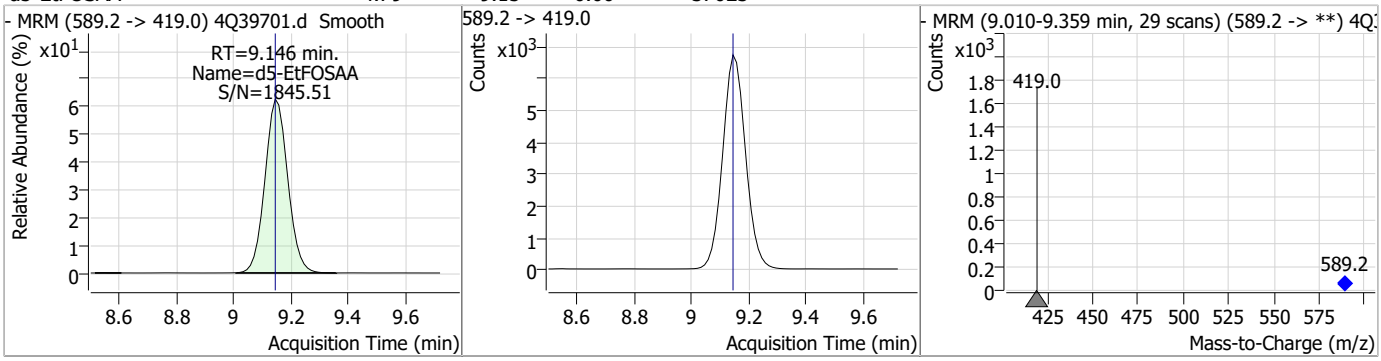


Perfluorinated Compounds by LC/MS/MS

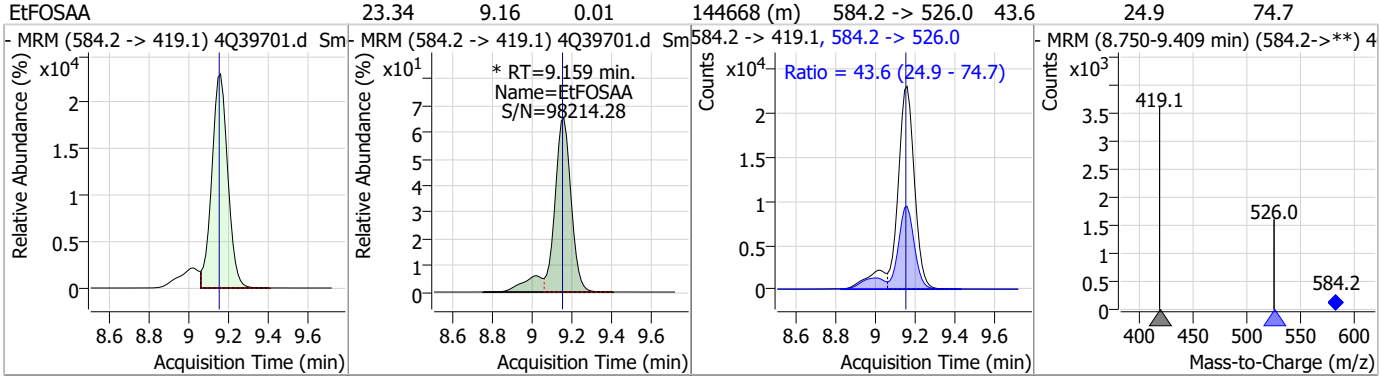
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.80	9.07	0.00	344915 (m)	498.9 -> 98.8	45.3	24.2	72.7



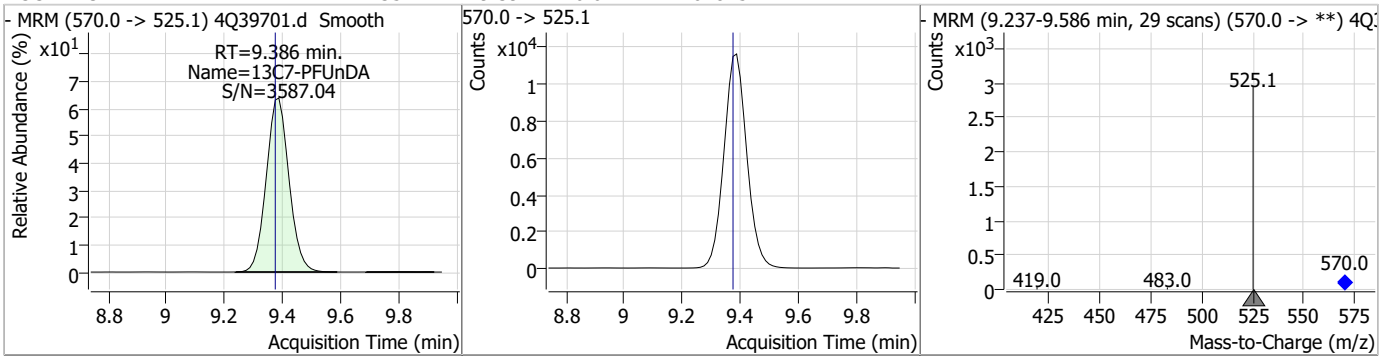
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.79	9.15	0.00	37023				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.34	9.16	0.01	144668 (m)	584.2 -> 526.0	43.6	24.9	74.7

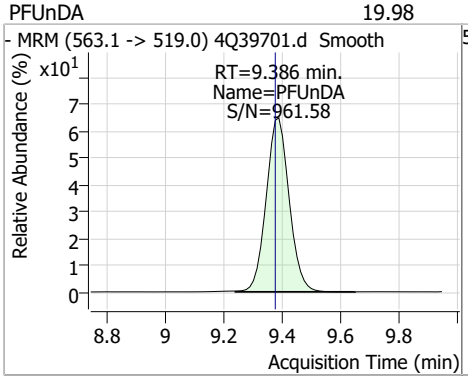


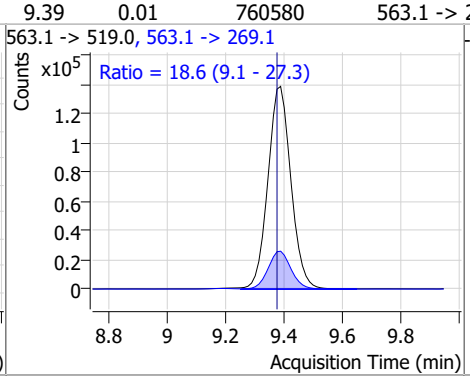
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	9.39	0.01	62875				

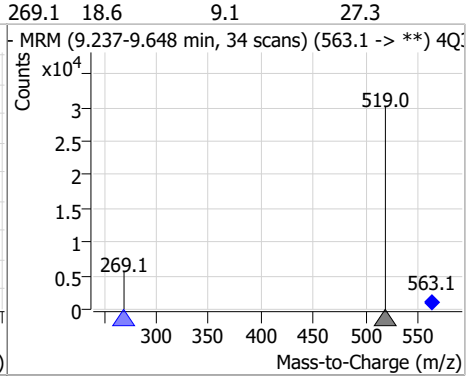


Perfluorinated Compounds by LC/MS/MS

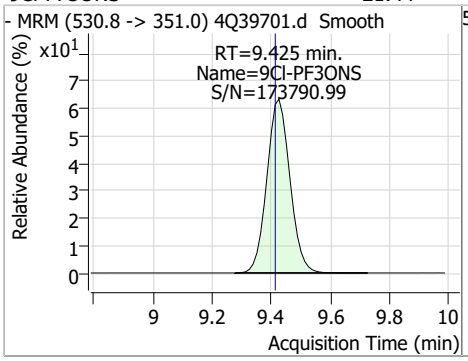
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.98	9.39	0.01	760580	563.1 -> 269.1	18.6	9.1	27.3

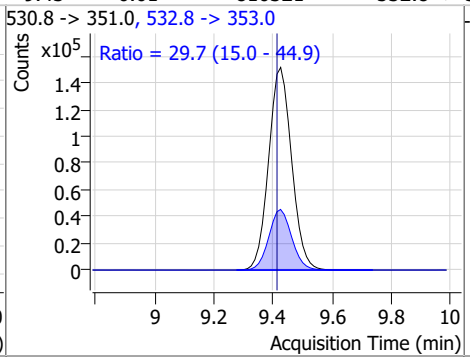


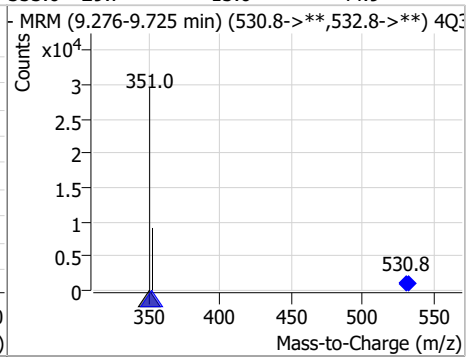




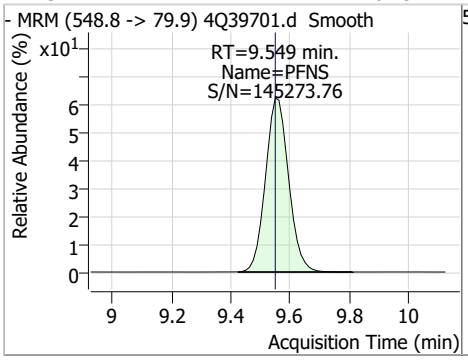
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.44	9.43	0.01	816321	532.8 -> 353.0	29.7	15.0	44.9

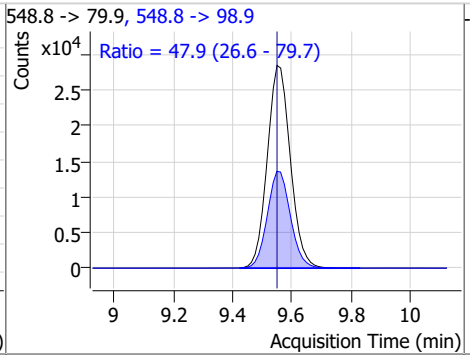


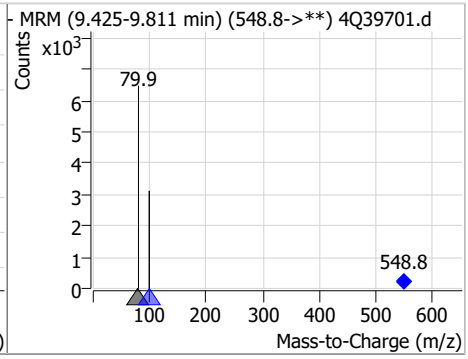




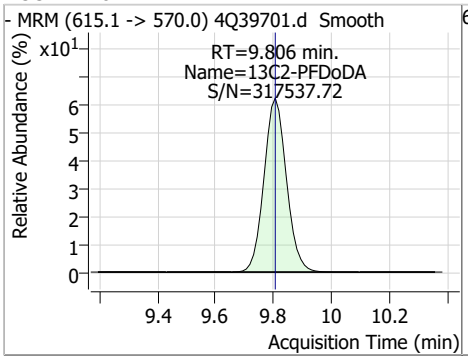
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.79	9.55	0.00	153507	548.8 -> 98.9	47.9	26.6	79.7

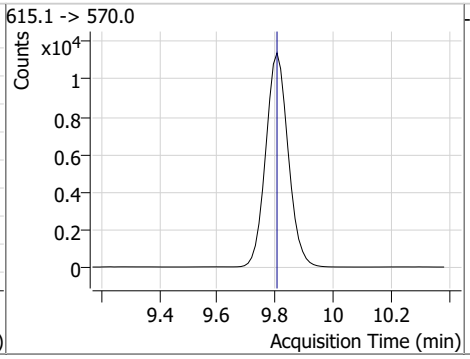


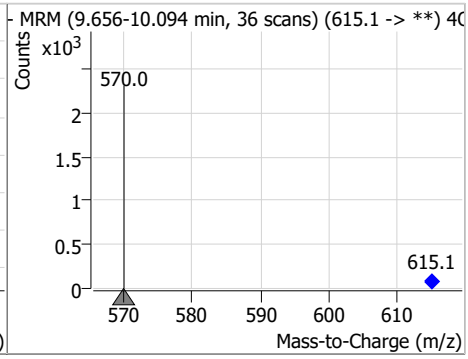




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.81	0.00	60737				

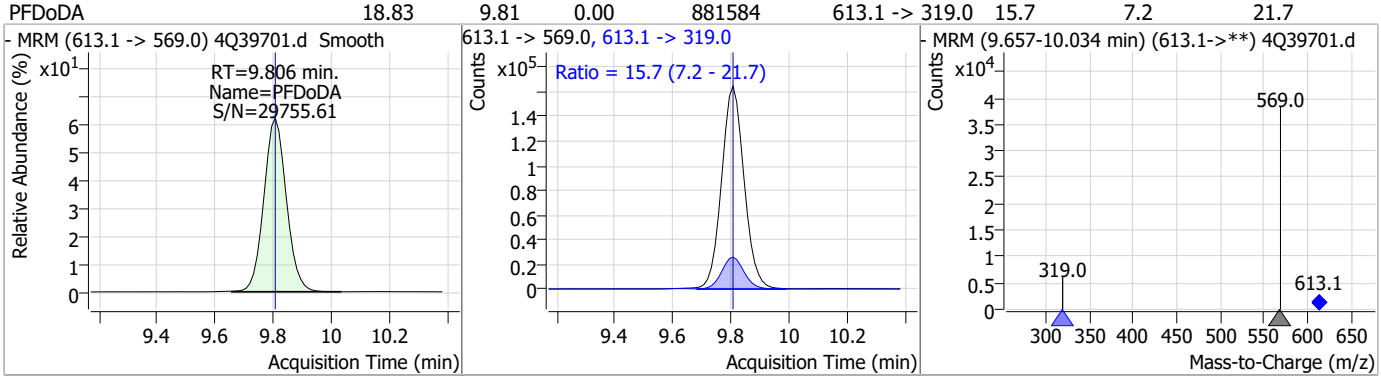




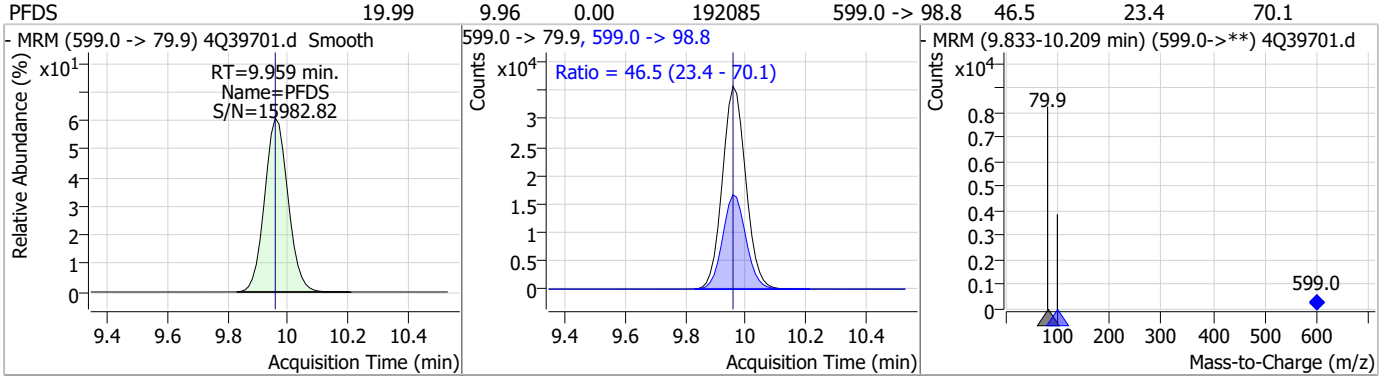


Perfluorinated Compounds by LC/MS/MS

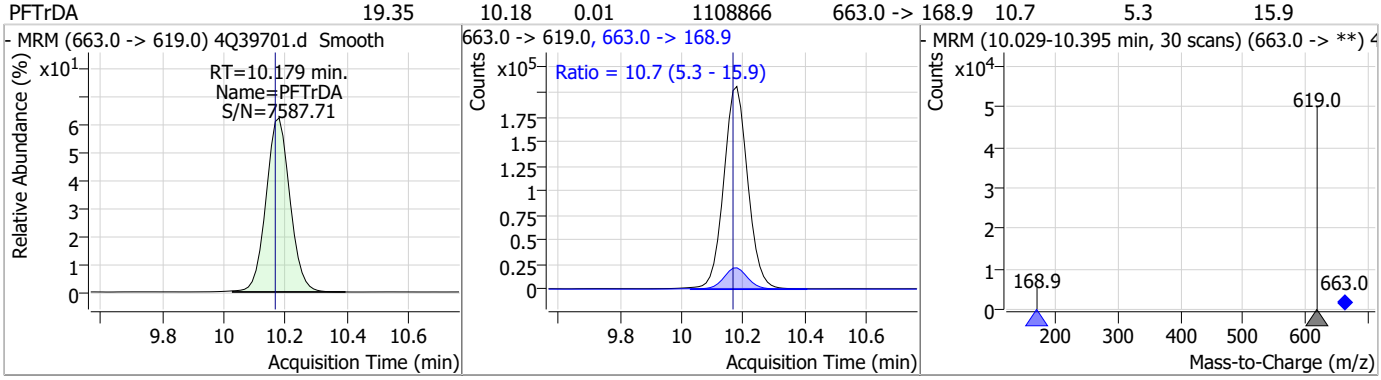
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.83	9.81	0.00	881584	613.1 -> 319.0	15.7	7.2	21.7



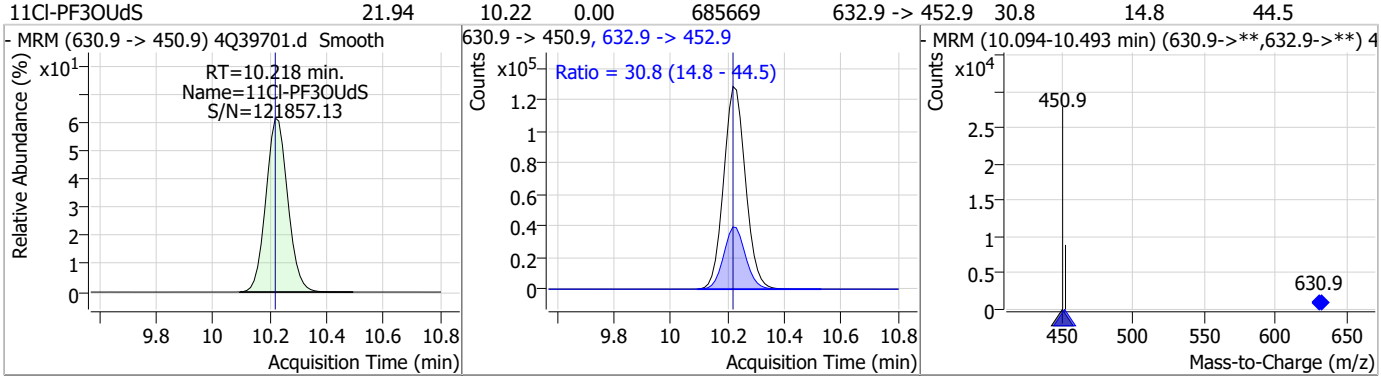
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.99	9.96	0.00	192085	599.0 -> 98.8	46.5	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.35	10.18	0.01	1108866	663.0 -> 168.9	10.7	5.3	15.9

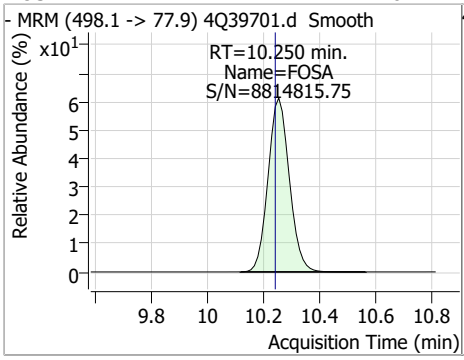


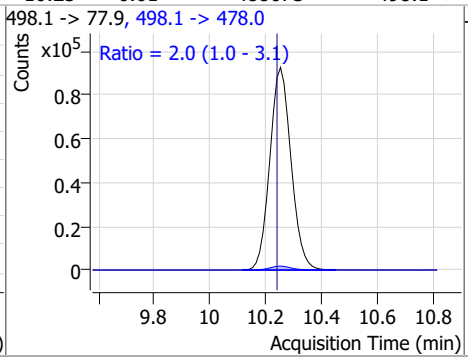
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.94	10.22	0.00	685669	632.9 -> 452.9	30.8	14.8	44.5

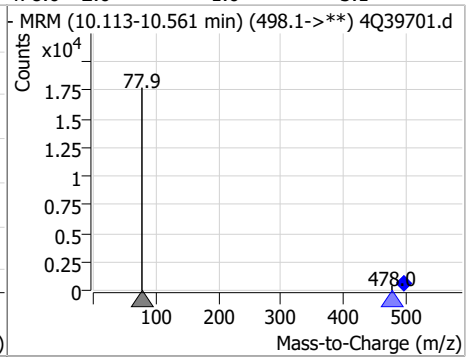


Perfluorinated Compounds by LC/MS/MS

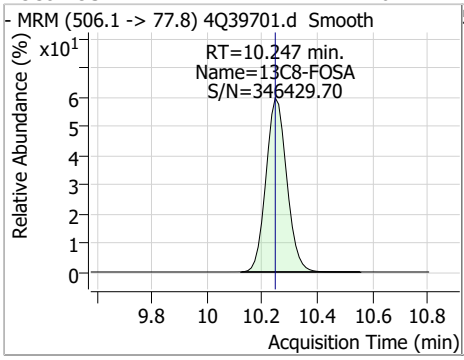
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.82	10.25	0.01	488073	498.1 -> 478.0	2.0	1.0	3.1

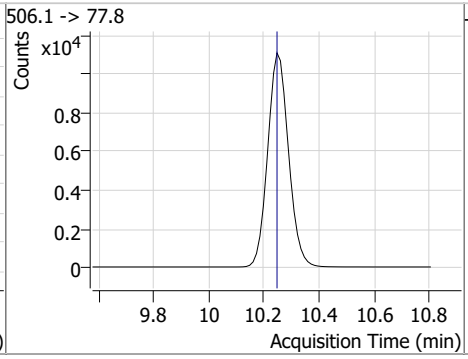


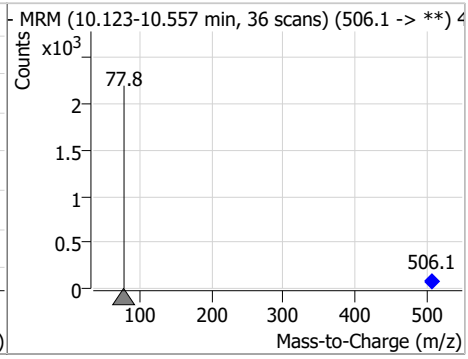




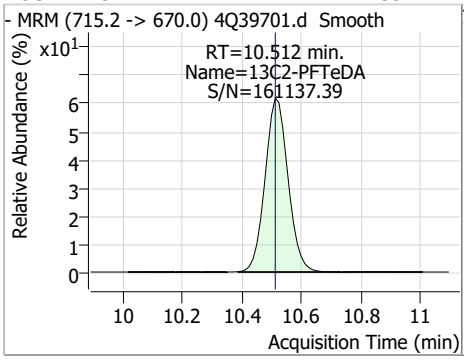
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	10.25	0.00	57923				

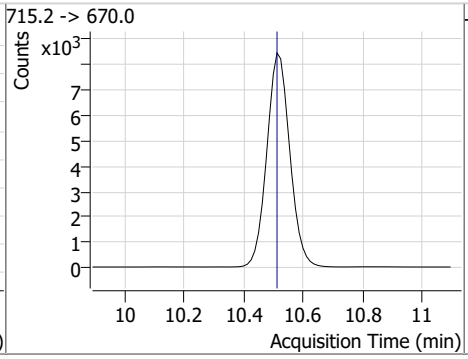


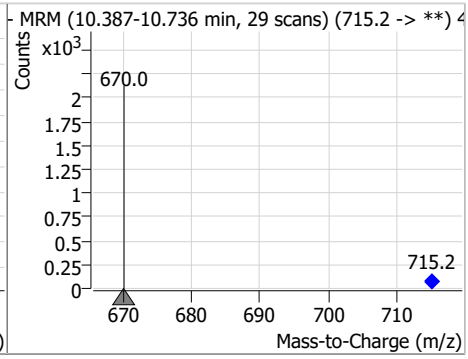




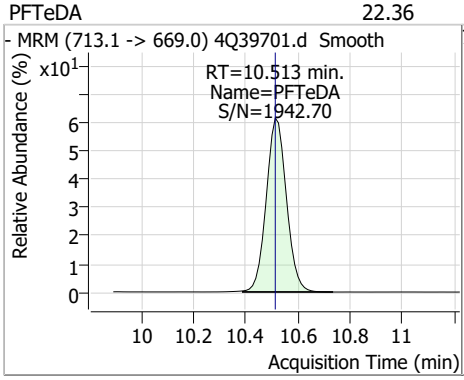
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	10.51	0.00	45113				

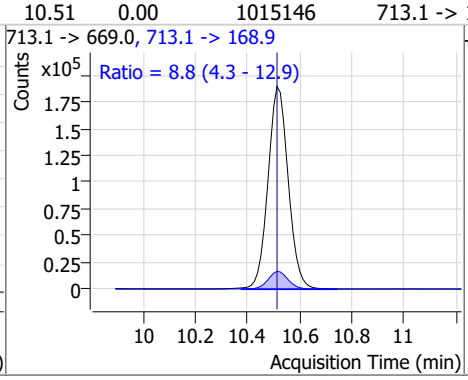


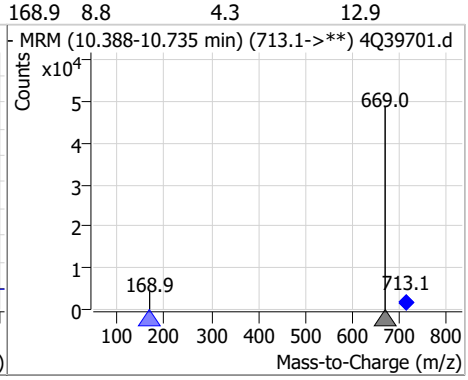




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.36	10.51	0.00	1015146	713.1 -> 168.9	8.8	4.3	12.9

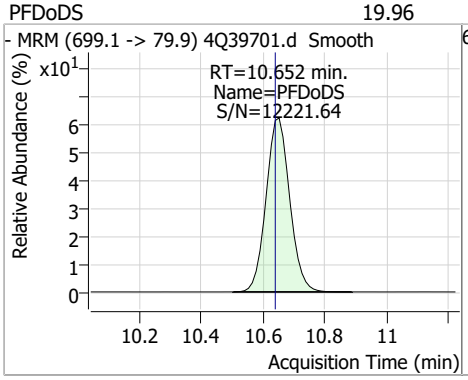


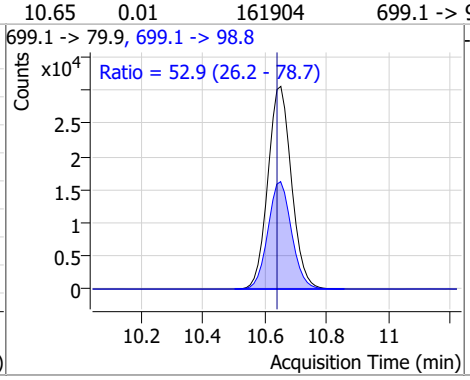


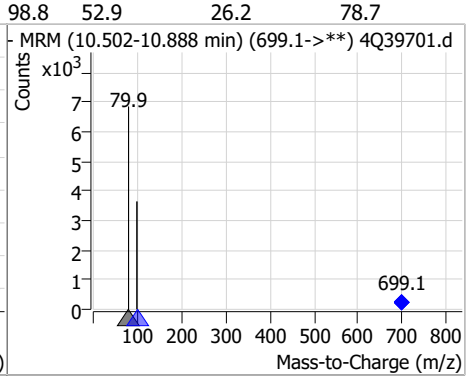


Perfluorinated Compounds by LC/MS/MS

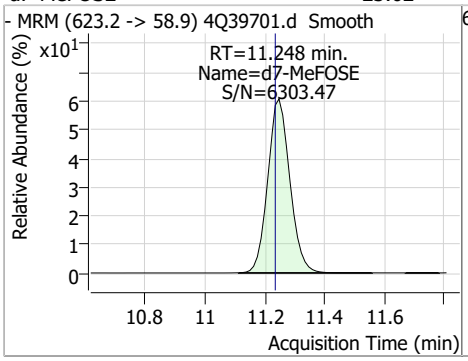
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	19.96	10.65	0.01	161904	699.1 -> 98.8	52.9	26.2	78.7

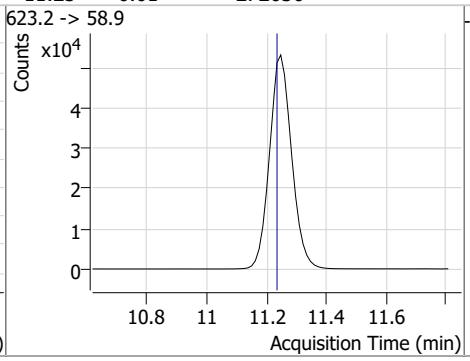


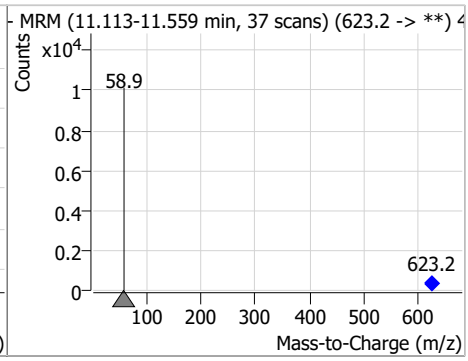




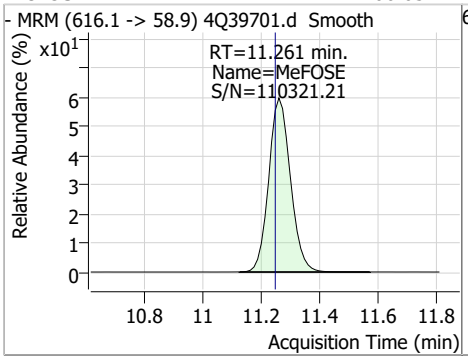
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.62	11.25	0.01	272030				

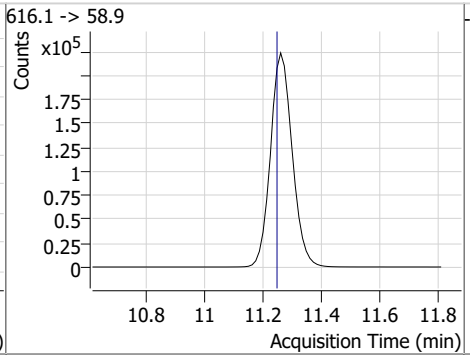


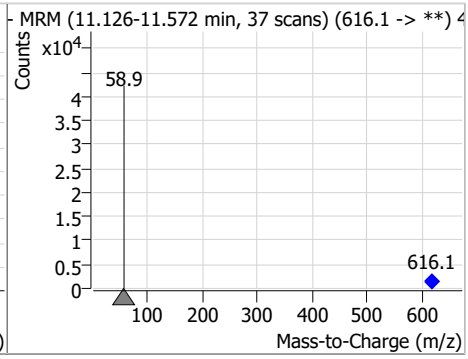




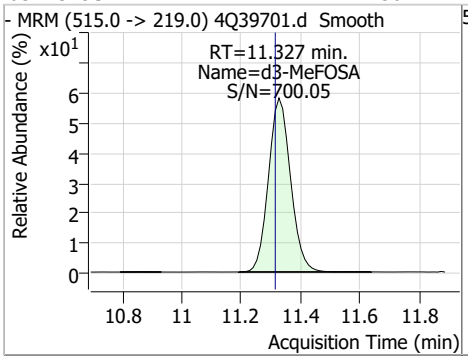
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	100.05	11.26	0.01	1149837				

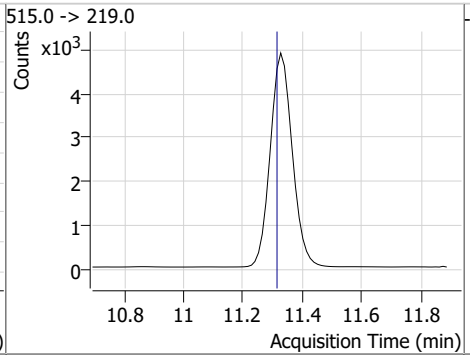


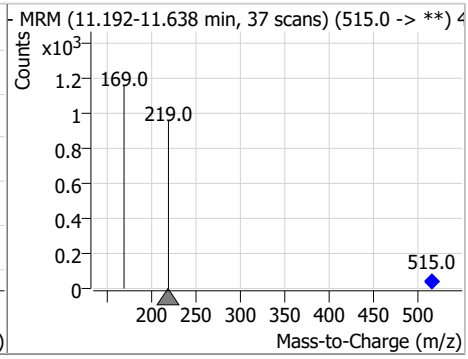




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	11.33	0.01	25237				

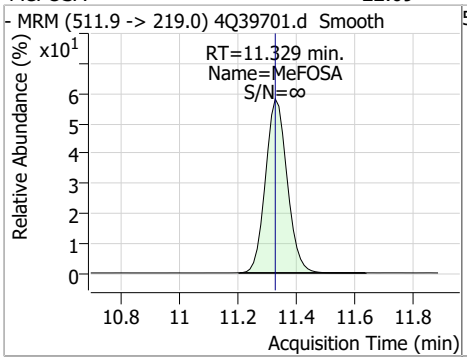


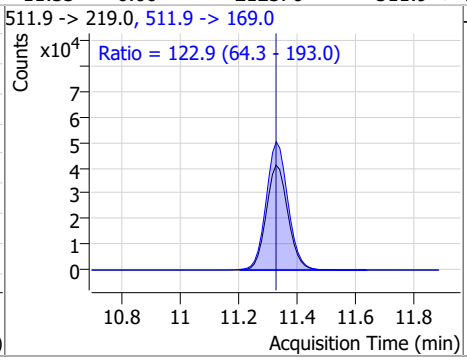


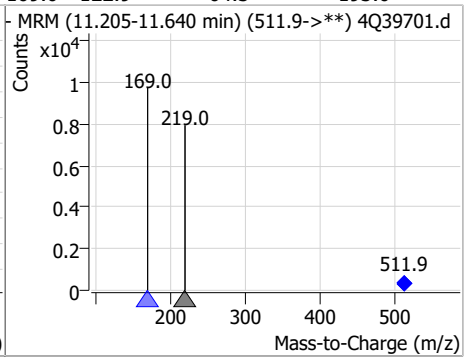


Perfluorinated Compounds by LC/MS/MS

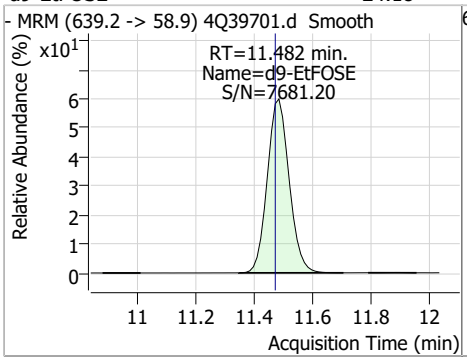
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	22.09	11.33	0.00	212376	511.9 -> 169.0	122.9	64.3	193.0

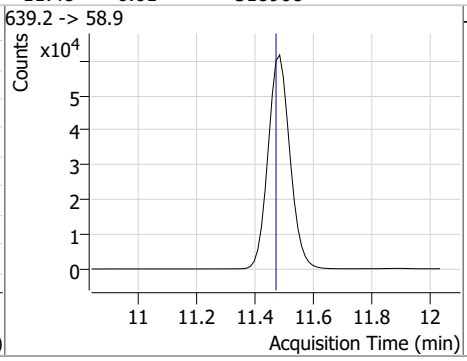


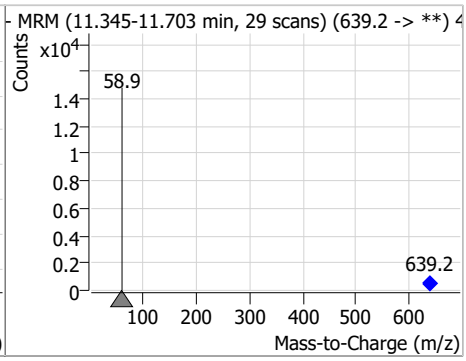




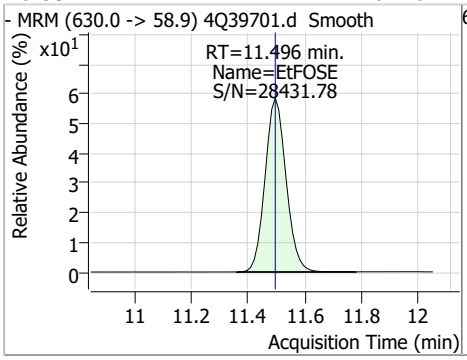
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.18	11.48	0.01	318908				

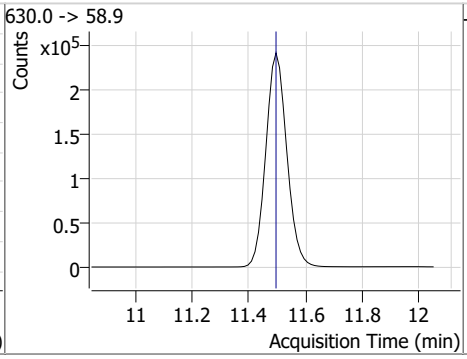


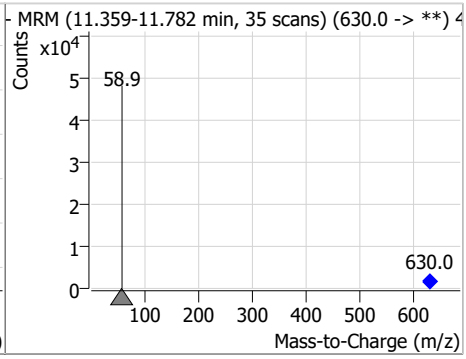




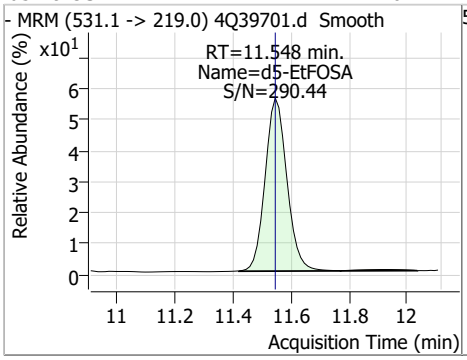
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	101.28	11.50	0.00	1254128				

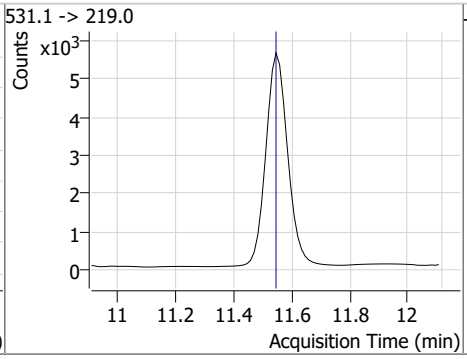


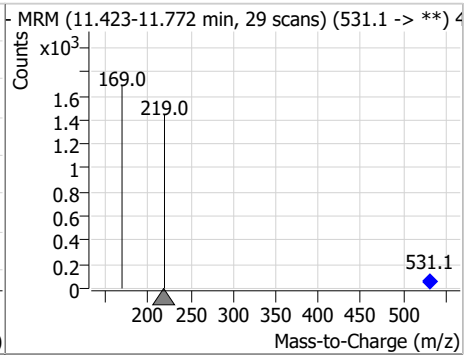




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.40	11.55	0.00	28923				

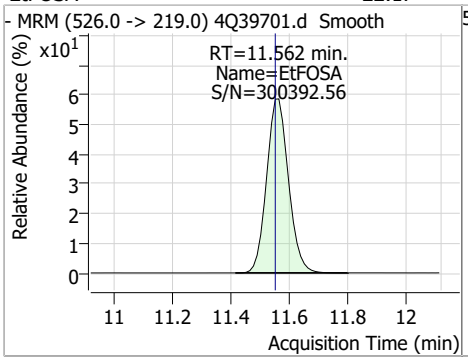


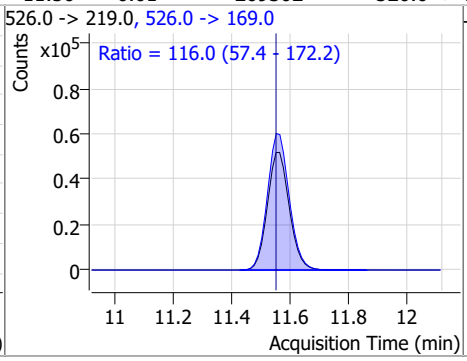


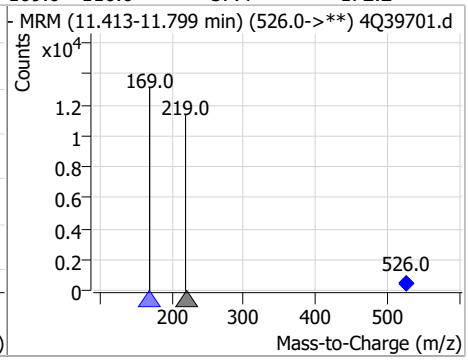


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	22.17	11.56	0.01	269302	526.0 -> 169.0	116.0	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-ICV571
Lab FileID: 4Q39701.D
Injection Time: 01/25/23 15:34
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39702.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 3:48:23 PM
Sample Name : cc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	446624	10.00	µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	294214	5.00	µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	190169	2.50	µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	104291	2.50	µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	164465	2.50	µg/L	0.000
M9-PFNA	8.372	472.1 -> 427.0	79797	1.25	µg/L	0.012
M6-PFDA	8.891	519.1 -> 474.1	61306	1.25	µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	69263	1.25	µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	70038	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	48047	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	61516	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	53027	2.50	µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	35097	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	43034	2.50	µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4439	5.00	µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	10360	5.00	µg/L	0.000
M2-8:2FTS	8.666	529.1 -> 80.9	14078	5.00	µg/L	0.012
M3-MeFOSAA	8.936	573.2 -> 419.0	50470	5.00	µg/L	0.012
M3-HFPO-DA	6.576	286.9 -> 168.9	140810	10.00	µg/L	0.025
M5-EtFOSAA	9.146	589.2 -> 419.0	44465	5.00	µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	312745	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	370847	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	31692	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	27658	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	41881	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	250560	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	23539	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	184242	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	53953	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	91212	1.25	µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	178027	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	4439	5.23	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10360	5.46	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C2-8:2FTS	8.666	529.1 -> 80.9	14078	5.42	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C2-PFDoDA	9.806	615.1 -> 570.0	70038	1.34	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-PFTeDA	10.512	715.2 -> 670.0	48047	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-PFBS	6.101	302.1 -> 79.9	53027	2.61	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C3-PFHxS	7.917	402.1 -> 79.9	35097	2.56	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C4-PFBA	3.186	216.8 -> 171.9	446624	9.89 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	7.118	367.1 -> 322.0	104291	2.51 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFHxA	6.184	318.0 -> 273.0	190169	2.54 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C5-PFPeA	4.876	268.3 -> 223.0	294214	5.08 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	8.891	519.1 -> 474.1	61306	1.29 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C7-PFUnDA	9.386	570.0 -> 525.1	69263	1.35 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C8-FOSA	10.247	506.1 -> 77.8	61516	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C8-PFOA	7.788	421.1 -> 376.0	164465	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C8-PFOS	9.068	507.1 -> 79.9	43034	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C9-PFNA	8.372	472.1 -> 427.0	79797	1.23 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
d3-MeFOSAA	8.936	573.2 -> 419.0	50470	5.25 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C3-HFPO-DA	6.576	286.9 -> 168.9	140810	9.91 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
d3-MeFOSA	11.327	515.0 -> 219.0	27658	2.53 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
d5-EtFOSAA	9.146	589.2 -> 419.0	44465	5.31 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
d7-MeFOSE	11.248	623.2 -> 58.9	312745	25.04 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
d9-EtFOSE	11.482	639.2 -> 58.9	370847	25.92 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
d5-EtFOSA	11.548	531.1 -> 219.0	31692	2.43 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
Target Compounds						QValue
4:2FTS	5.836	327.1 -> 307.0	64973	8.96 µg/L		100
		327.1 -> 80.9	30512			
6:2FTS	7.537	427.1 -> 407.0	69673	8.48 µg/L		98
		427.1 -> 80.9	33505			
8:2FTS	8.666	527.1 -> 507.0	58243	8.55 µg/L		96
		527.1 -> 80.8	32353			
EtFOSAA	9.159	584.2 -> 419.1	15280	2.05 µg/L	m	96
		584.2 -> 526.0	7237			
FOSA	10.250	498.1 -> 77.9	52976	2.23 µg/L		100
		498.1 -> 478.0	1176			
MeFOSAA	8.937	570.1 -> 419.0	17562	2.35 µg/L	m	96
		570.1 -> 483.0	3158			
PFBA	3.195	212.8 -> 168.9	106921	8.60 µg/L		100
PFBS	6.102	298.7 -> 79.9	46841	1.95 µg/L		97
		298.7 -> 98.8	16911			
PFDA	8.892	512.9 -> 469.0	99861	2.28 µg/L		100
		512.9 -> 219.0	20491			
PFDoDA	9.806	613.1 -> 569.0	119454	2.21 µg/L		98
		613.1 -> 319.0	18117			
PFDS	9.959	599.0 -> 79.9	22536	2.26 µg/L		99

Perfluorinated Compounds by LC/MS/MS

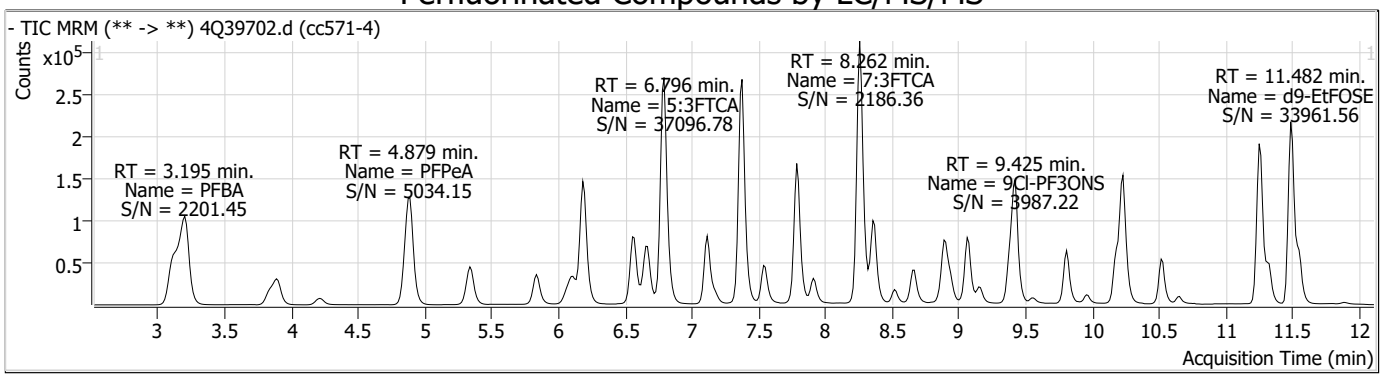
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	10425				
PFHpA	7.119	363.1 -> 319.0	148750	2.29	µg/L		99
		363.1 -> 169.0	24615				
PFHpS	8.526	449.0 -> 79.9	37856	2.18	µg/L		97
		449.0 -> 98.9	18152				
PFHxA	6.187	313.0 -> 269.0	164664	2.23	µg/L		100
		313.0 -> 118.9	4996				
PFHxS	7.917	398.7 -> 79.9	22580	1.99	µg/L	m	97
		398.7 -> 98.9	11449				
PFNA	8.373	463.0 -> 419.0	127465	2.20	µg/L		99
		463.0 -> 219.0	30436				
PFNS	9.561	548.8 -> 79.9	15039	1.96	µg/L		96
		548.8 -> 98.9	7596				
PFOA	7.790	413.0 -> 369.0	172301	2.36	µg/L		98
		413.0 -> 169.0	33511				
PFOS	9.069	498.9 -> 79.9	41517	2.07	µg/L	m	98
		498.9 -> 98.8	19635				
PFPeA	4.879	263.0 -> 219.0	295311	4.58	µg/L		100
PFPeS	7.184	349.1 -> 79.9	21094	1.93	µg/L		99
		349.1 -> 98.9	8450				
PFTeDA	10.513	713.1 -> 669.0	116570	2.41	µg/L		98
		713.1 -> 168.9	9248				
PFTrDA	10.179	663.0 -> 619.0	156080	2.36	µg/L		99
		663.0 -> 168.9	16088				
PFUnDA	9.386	563.1 -> 519.0	86605	2.07	µg/L		98
		563.1 -> 269.1	16504				
11Cl-PF3OUdS	10.231	630.9 -> 450.9	306545	9.31	µg/L		100
		632.9 -> 452.9	91460				
9Cl-PF3ONS	9.425	530.8 -> 351.0	350548	8.74	µg/L		98
		532.8 -> 353.0	101208				
ADONA	7.382	376.9 -> 250.9	682942	8.99	µg/L		99
		376.9 -> 84.8	243674				
HFPO-DA	6.577	284.9 -> 168.9	127284	9.59	µg/L		99
		284.9 -> 184.9	12945				
3:3FTCA	4.217	241.0 -> 177.0	32867	10.87	µg/L		98
		241.0 -> 117.0	3394				
5:3FTCA	6.796	341.0 -> 237.1	558357	56.77	µg/L		100
		341.0 -> 217.0	414376				
7:3FTCA	8.262	441.0 -> 316.9	334564	59.23	µg/L		100
		441.0 -> 336.9	755222				
EtFOSA	11.562	526.0 -> 219.0	30254	2.27	µg/L		95
		526.0 -> 169.0	36259				
EtFOSE	11.496	630.0 -> 58.9	346655	24.08	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	24216	2.30	µg/L		93
		511.9 -> 169.0	29313				
MeFOSE	11.261	616.1 -> 58.9	326670	24.72	µg/L		100
PFDoDS	10.652	699.1 -> 79.9	18643	2.21	µg/L		100
		699.1 -> 98.8	9836				
NFDHA	6.066	295.0 -> 201.0	24270	4.99	µg/L		94
		295.0 -> 84.9	6267				
PFMBA	5.341	279.0 -> 85.1	187635	4.67	µg/L		100
PFMPA	3.882	229.0 -> 84.9	187635	4.52	µg/L		100
PFEESA	6.672	314.8 -> 134.9	261388	4.14	µg/L		99
		314.8 -> 82.9	7564				

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

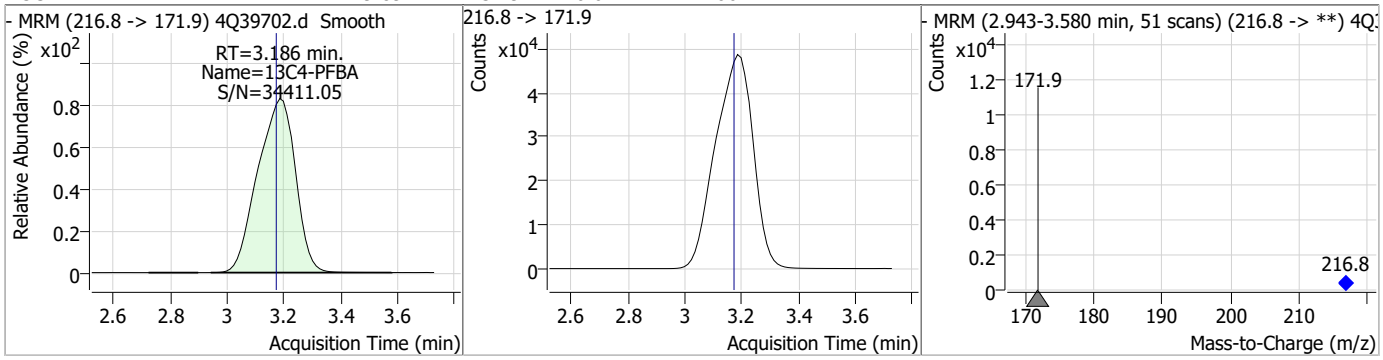
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

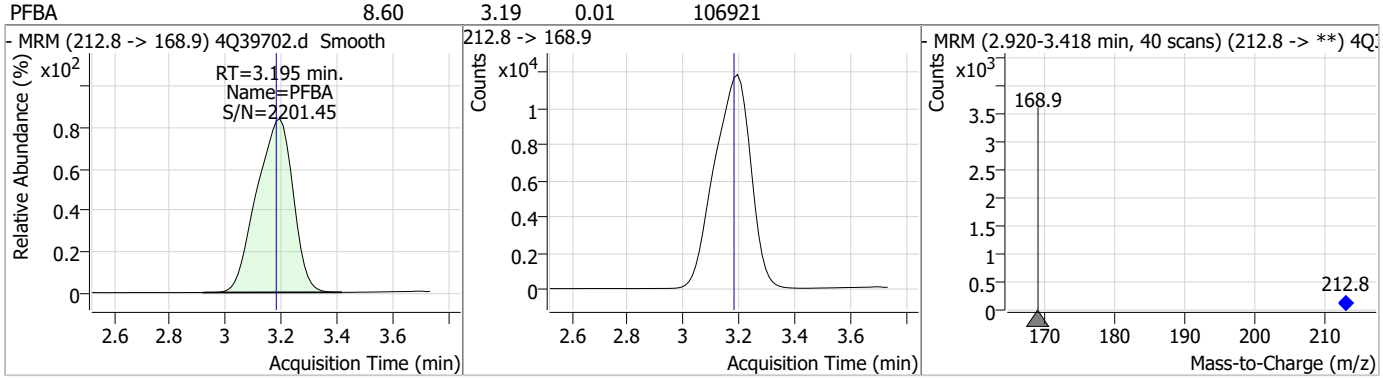
Perfluorinated Compounds by LC/MS/MS



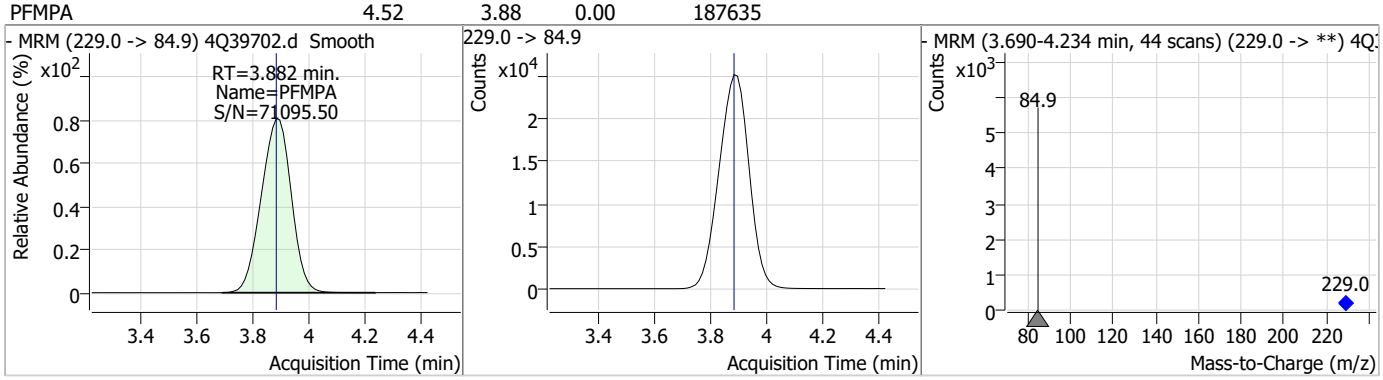
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.89	3.19	0.01	446624				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.60	3.19	0.01	106921				

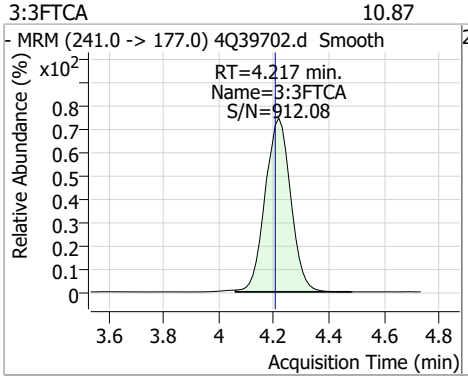


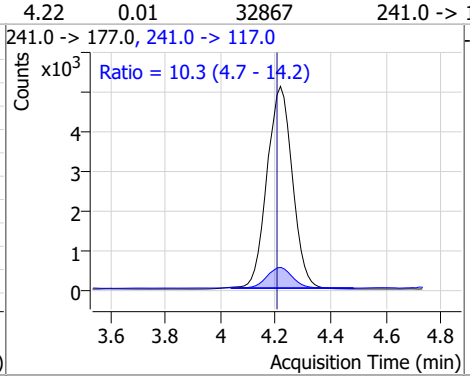
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.52	3.88	0.00	187635				

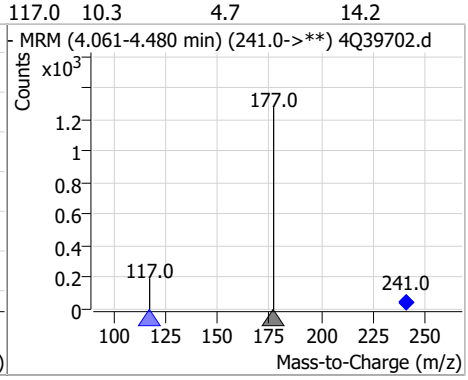


Perfluorinated Compounds by LC/MS/MS

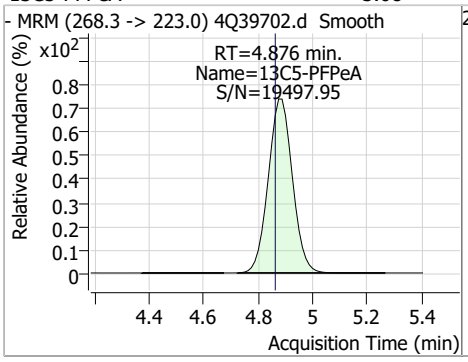
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.87	4.22	0.01	32867	241.0 -> 117.0	10.3	4.7	14.2

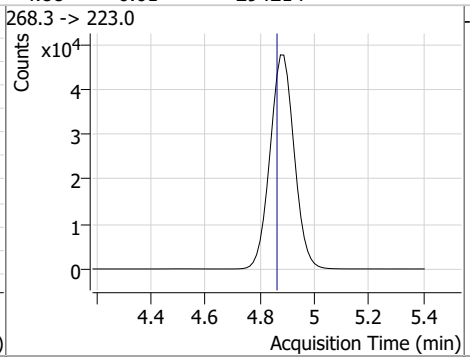


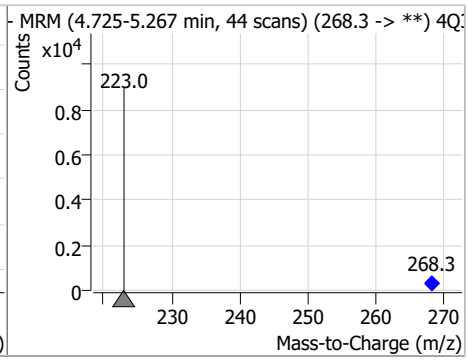




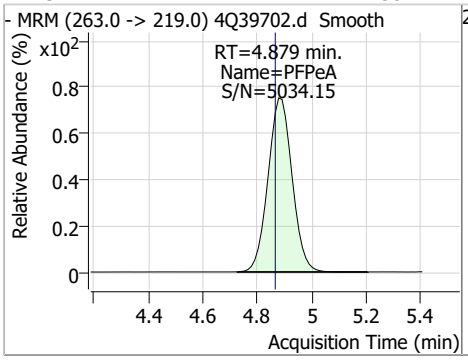
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.88	0.01	294214				

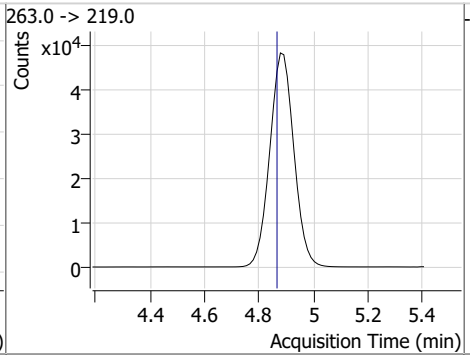


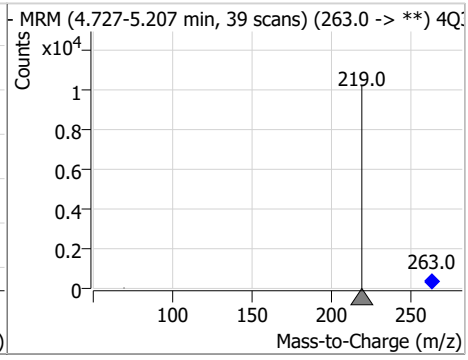




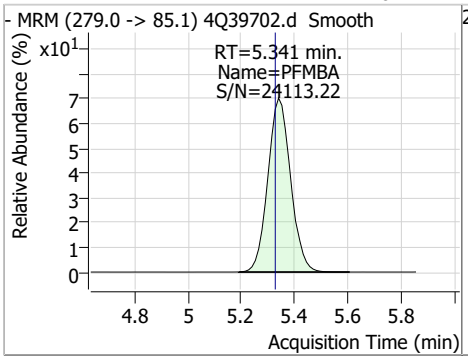
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.58	4.88	0.01	295311				

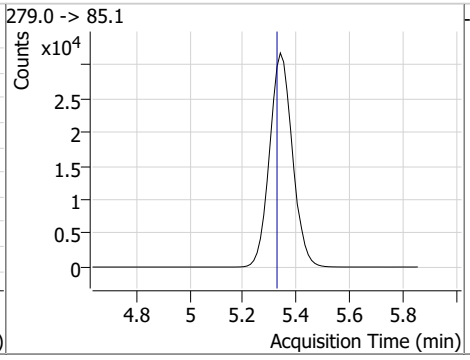


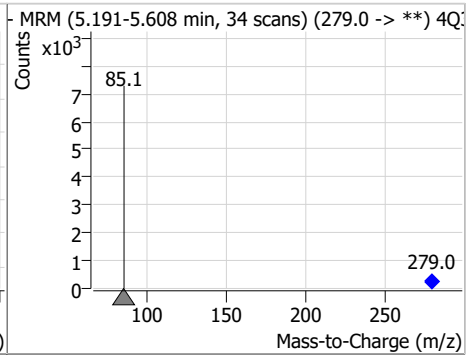




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.67	5.34	0.01	187635				

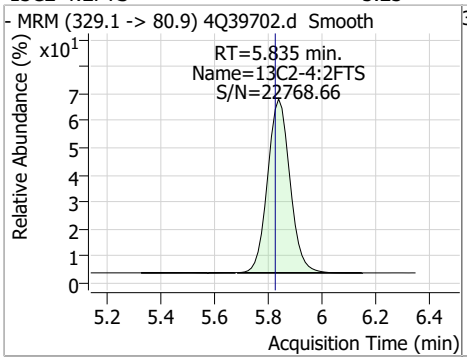


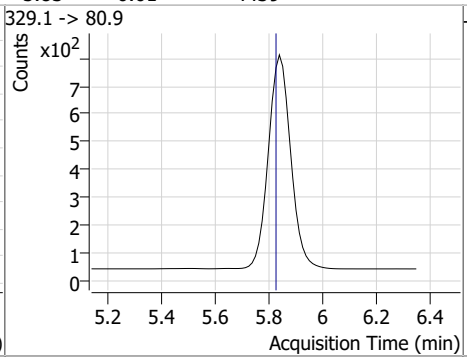


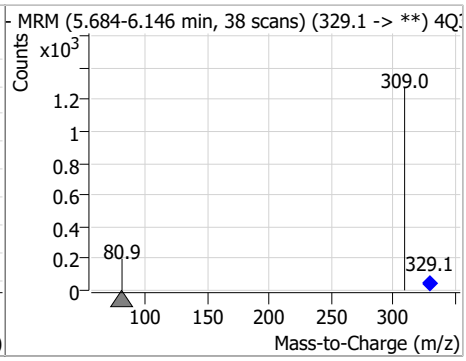


Perfluorinated Compounds by LC/MS/MS

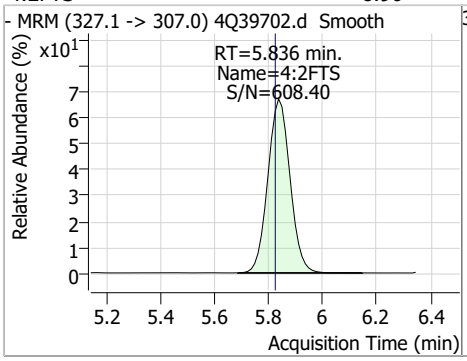
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.23	5.83	0.01	4439				

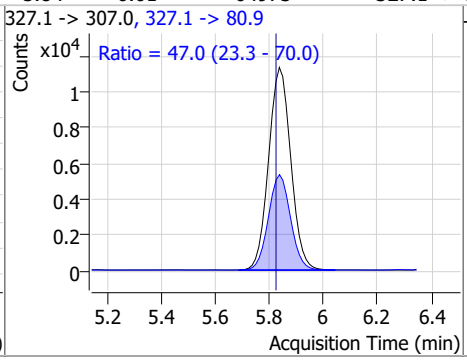


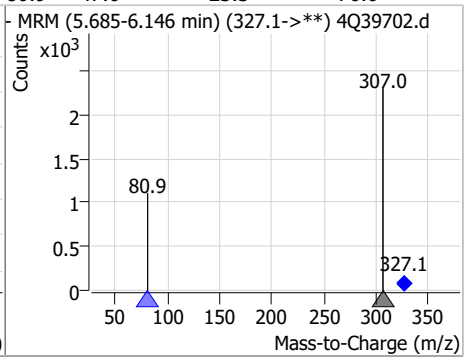




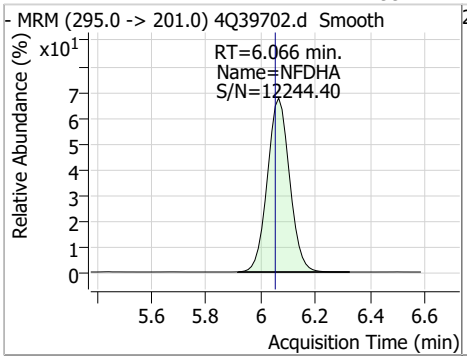
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.96	5.84	0.01	64973	327.1 -> 80.9	47.0	23.3	70.0

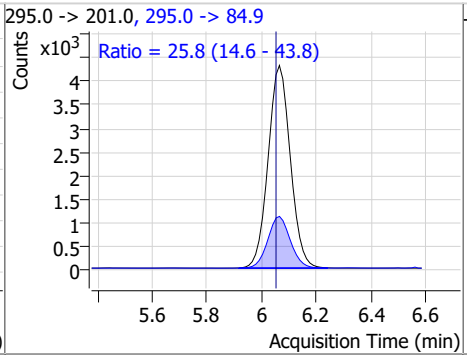


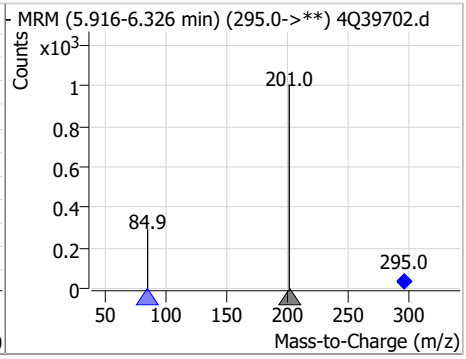




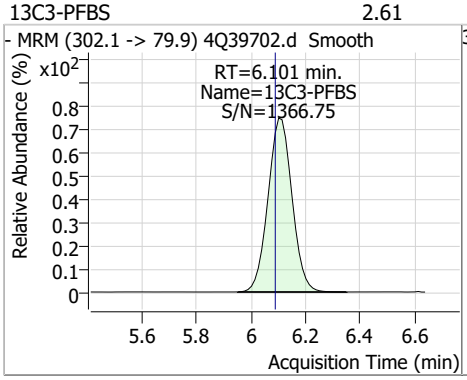
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.99	6.07	0.01	24270	295.0 -> 84.9	25.8	14.6	43.8

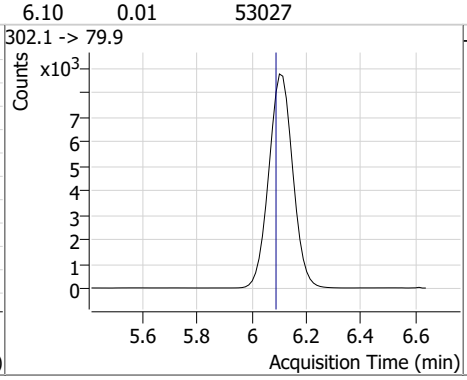


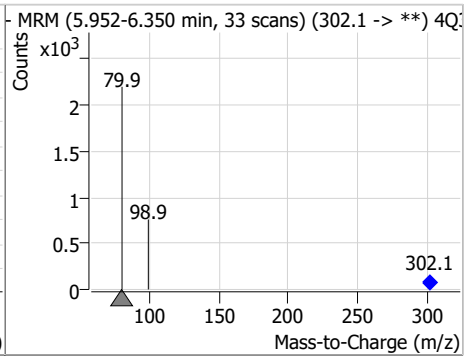




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	6.10	0.01	53027				

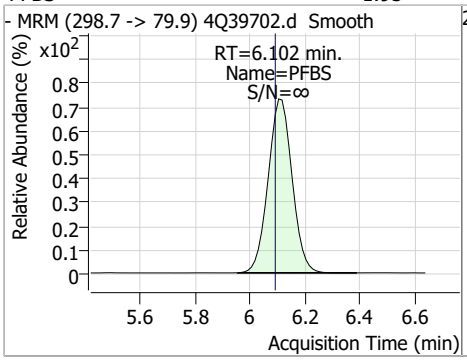


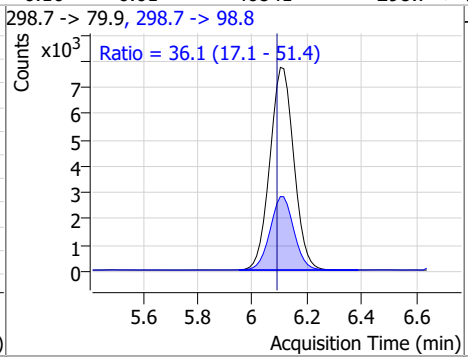


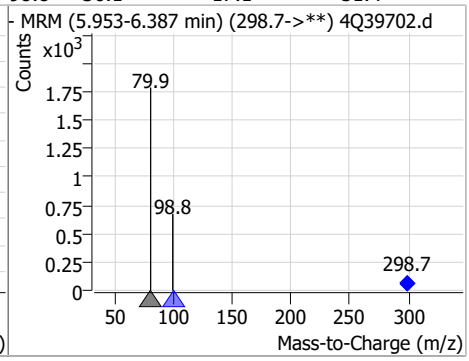


Perfluorinated Compounds by LC/MS/MS

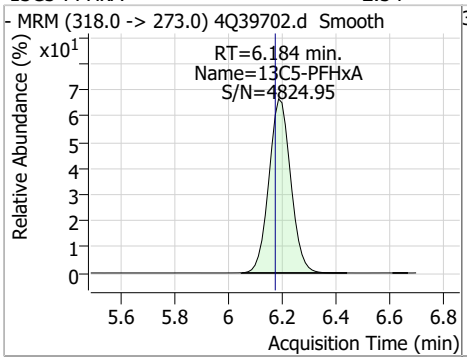
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.95	6.10	0.01	46841	298.7 -> 98.8	36.1	17.1	51.4

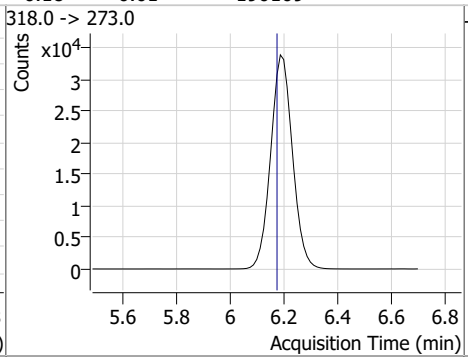


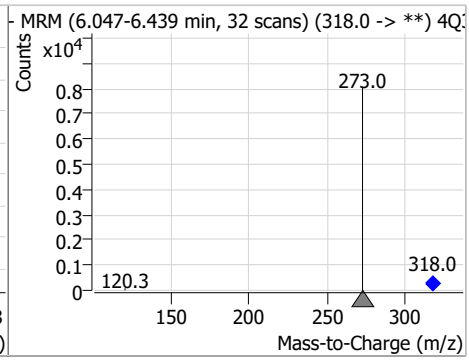




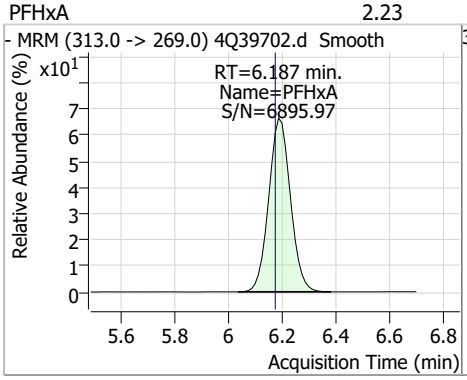
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	6.18	0.01	190169				

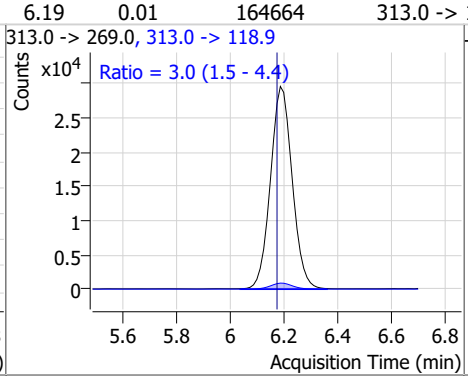


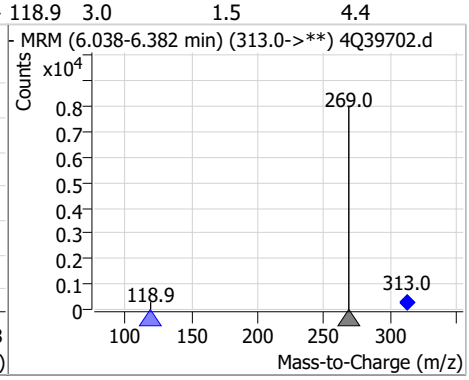




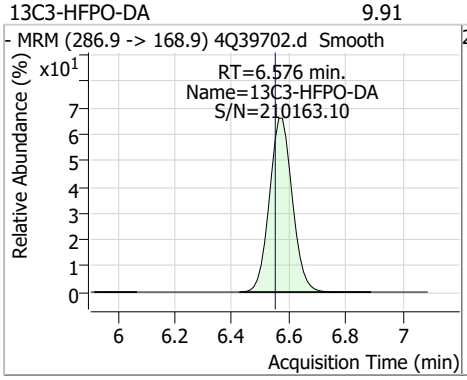
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.23	6.19	0.01	164664	313.0 -> 118.9	3.0	1.5	4.4

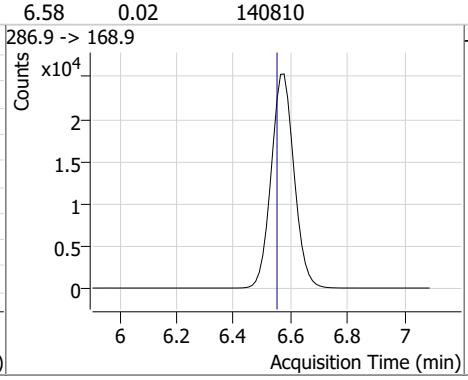


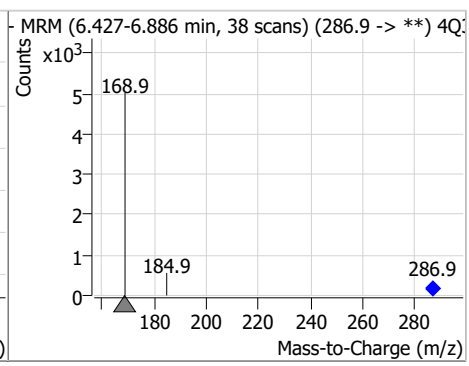




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.91	6.58	0.02	140810				

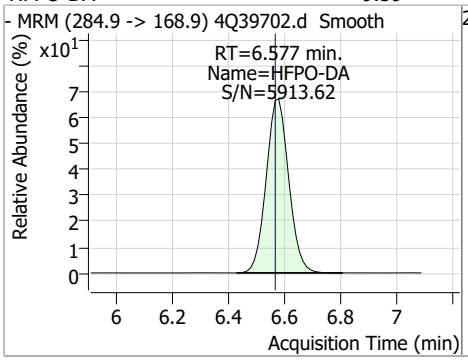


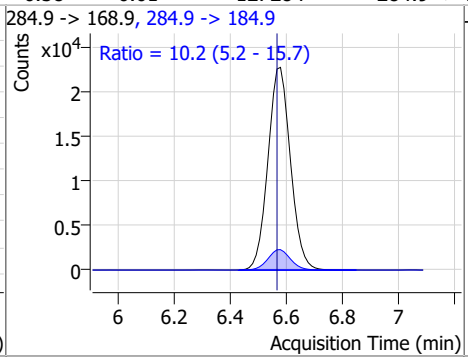


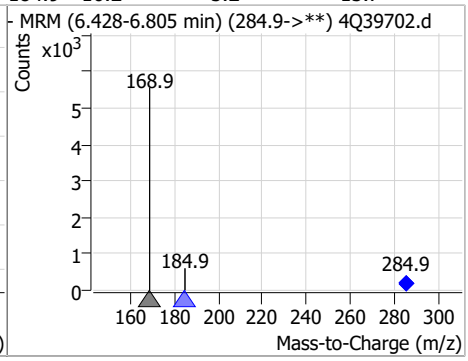


Perfluorinated Compounds by LC/MS/MS

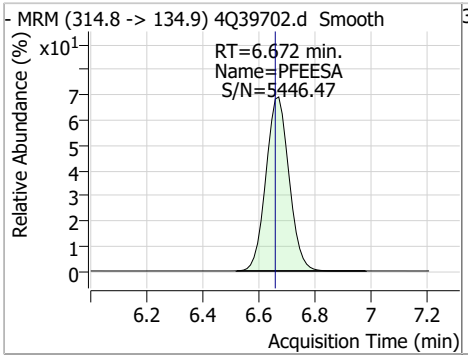
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.59	6.58	0.01	127284	284.9 -> 184.9	10.2	5.2	15.7

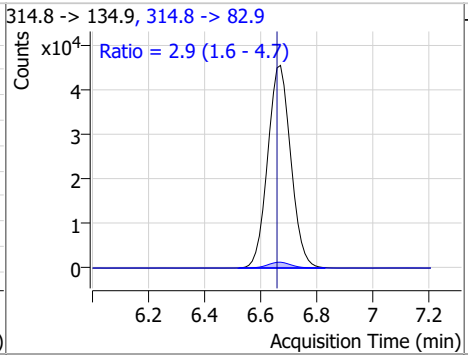


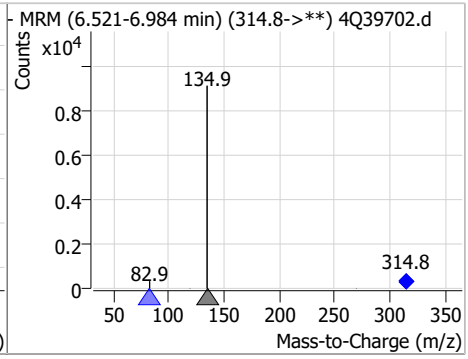




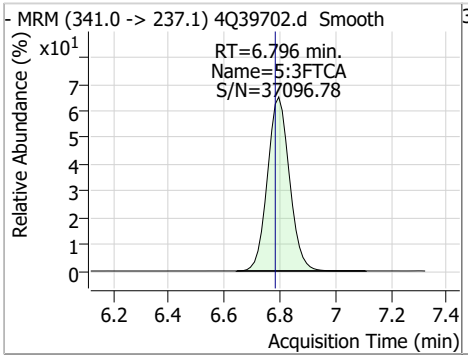
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.14	6.67	0.01	261388	314.8 -> 82.9	2.9	1.6	4.7

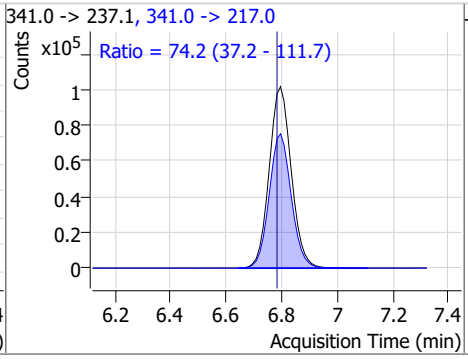


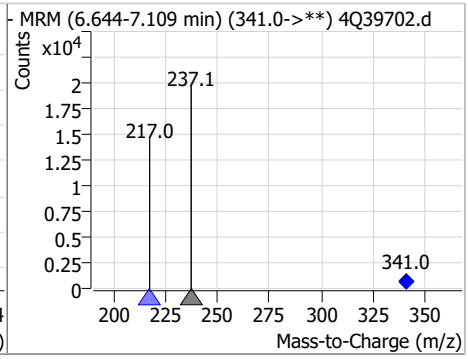




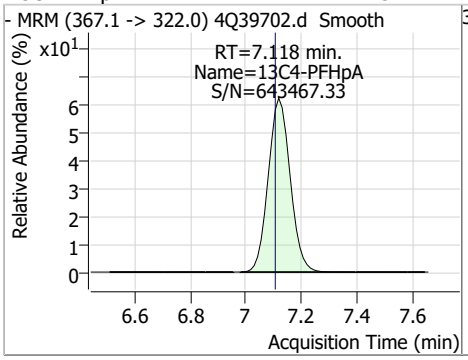
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.77	6.80	0.01	558357	341.0 -> 217.0	74.2	37.2	111.7

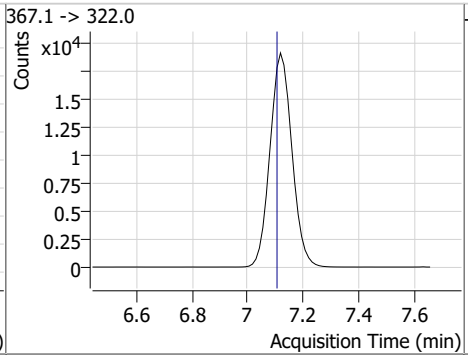


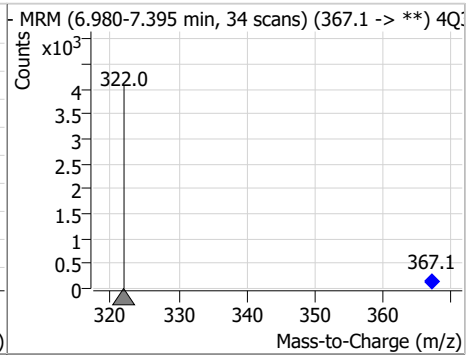




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	7.12	0.01	104291				

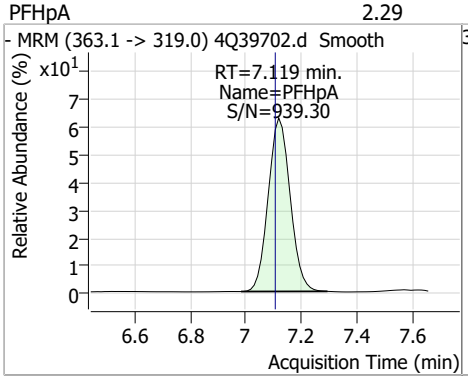


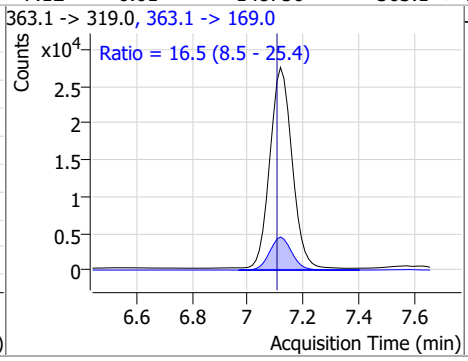


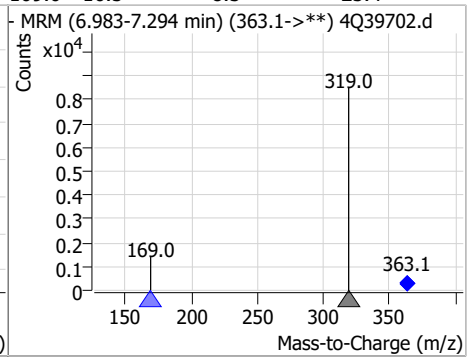


Perfluorinated Compounds by LC/MS/MS

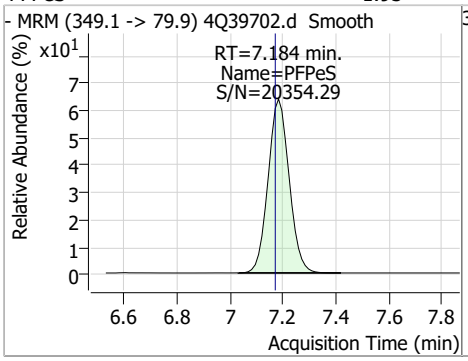
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.29	7.12	0.01	148750	363.1 -> 169.0	16.5	8.5	25.4

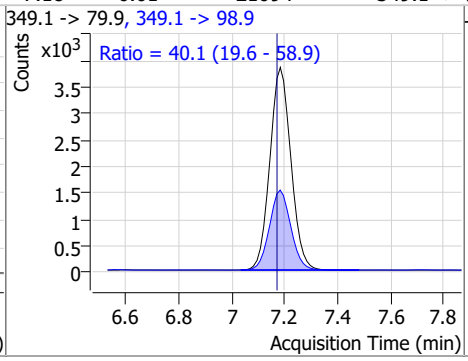


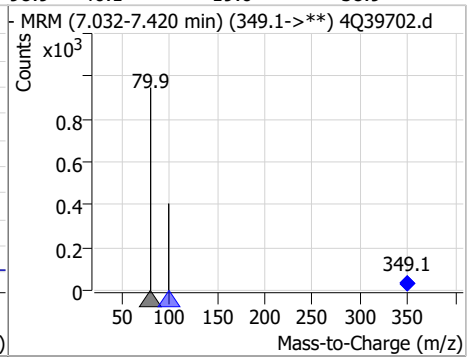




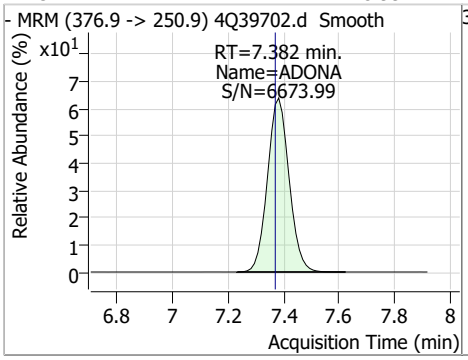
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.93	7.18	0.01	21094	349.1 -> 98.9	40.1	19.6	58.9

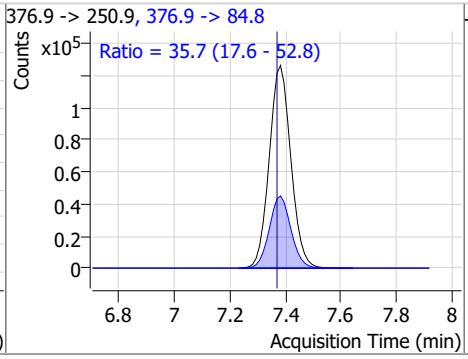


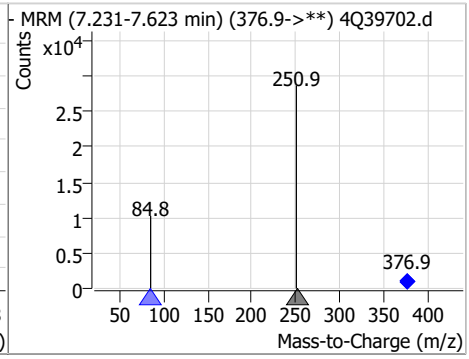




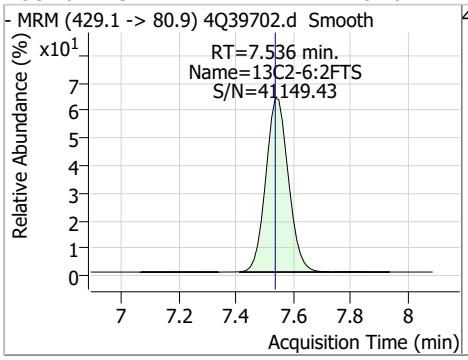
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.99	7.38	0.01	682942	376.9 -> 84.8	35.7	17.6	52.8

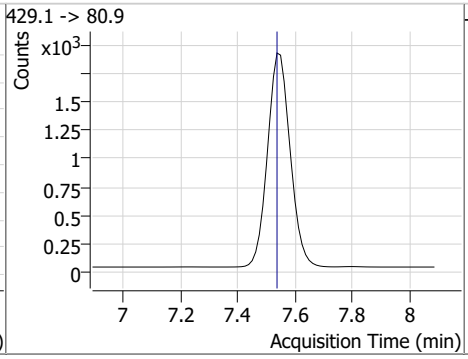


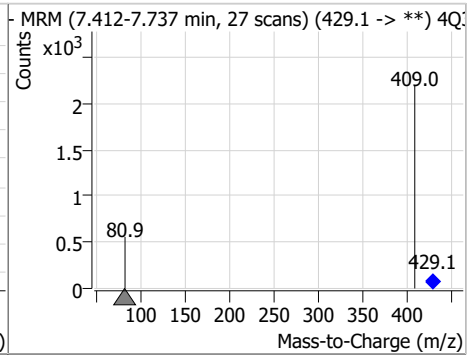




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.46	7.54	0.00	10360				

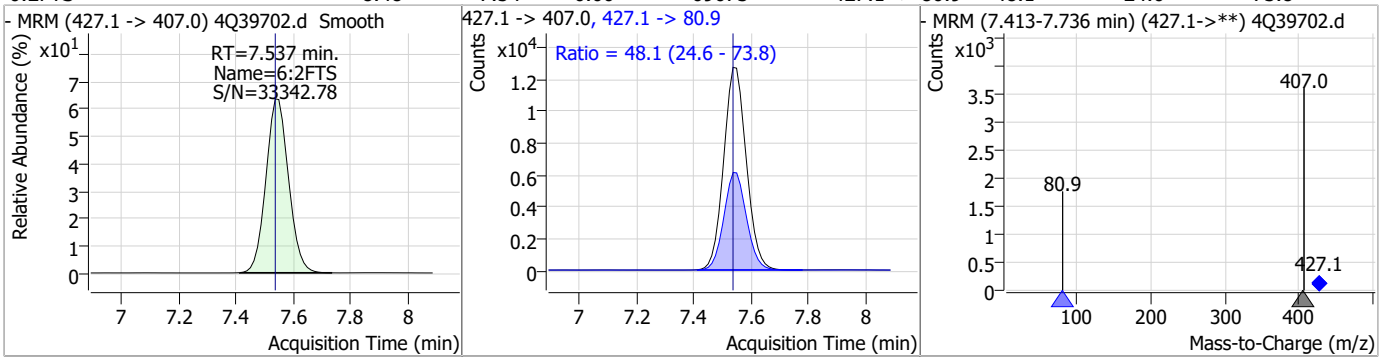




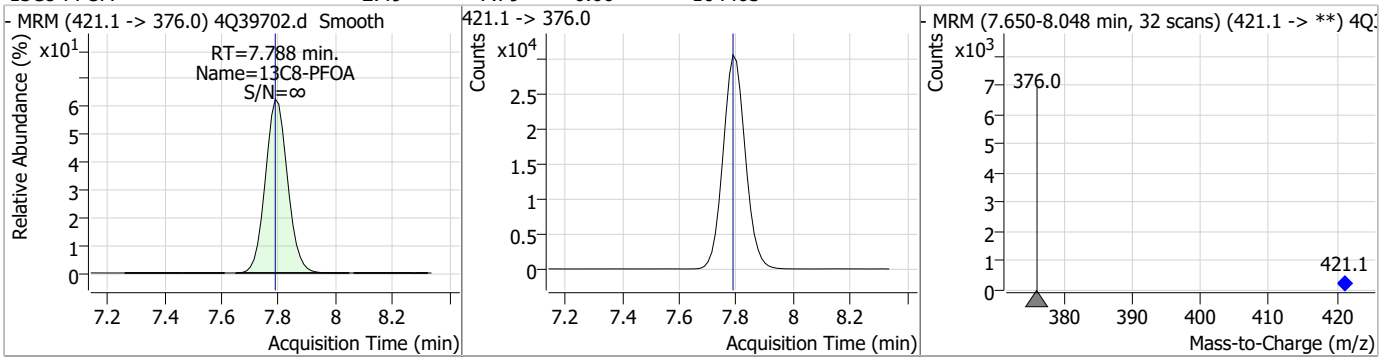


Perfluorinated Compounds by LC/MS/MS

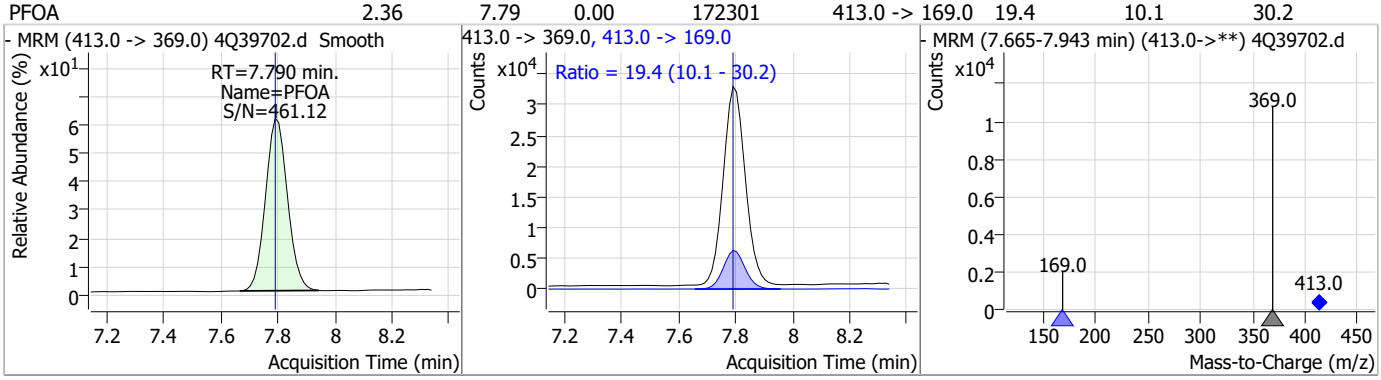
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.48	7.54	0.00	69673	427.1 -> 80.9	48.1	24.6	73.8



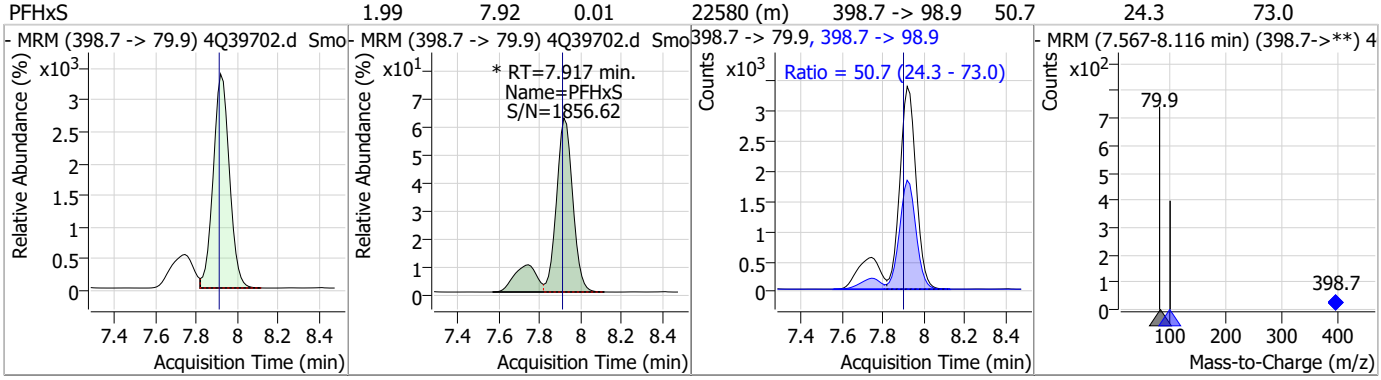
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.79	0.00	164465				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.36	7.79	0.00	172301	413.0 -> 169.0	19.4	10.1	30.2

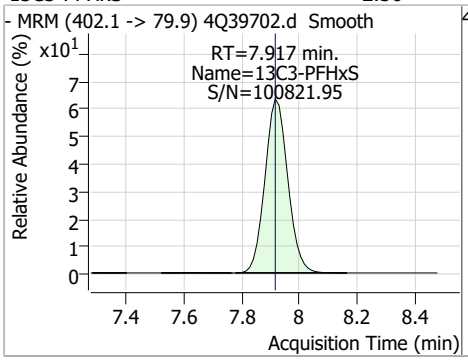


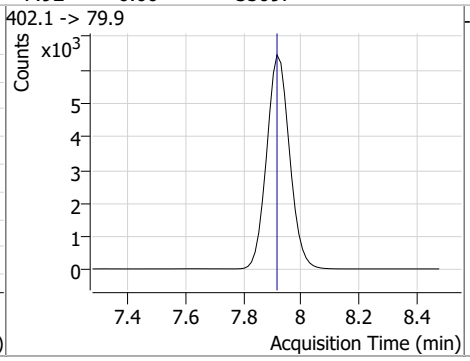
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.99	7.92	0.01	22580 (m)	398.7 -> 98.9	50.7	24.3	73.0

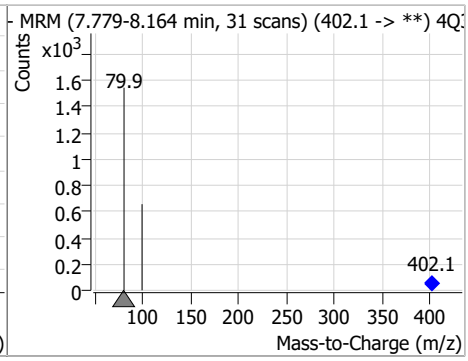


Perfluorinated Compounds by LC/MS/MS

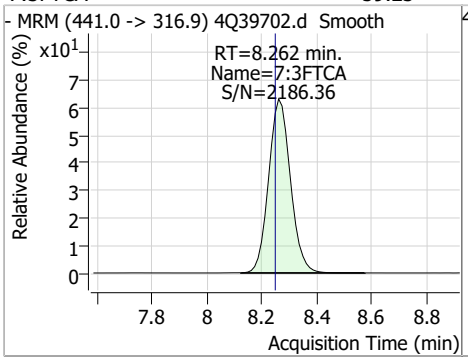
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.92	0.00	35097				

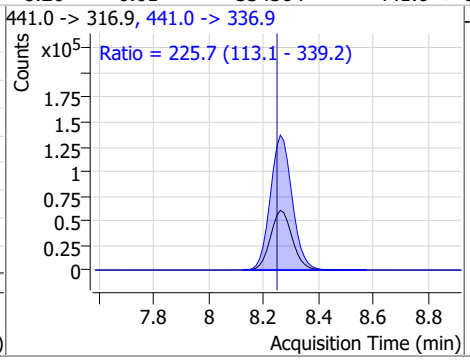


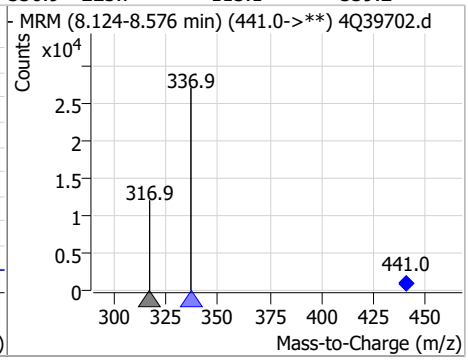




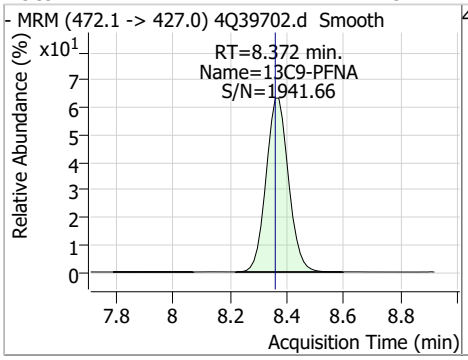
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	59.23	8.26	0.01	334564	441.0 -> 336.9	225.7	113.1	339.2

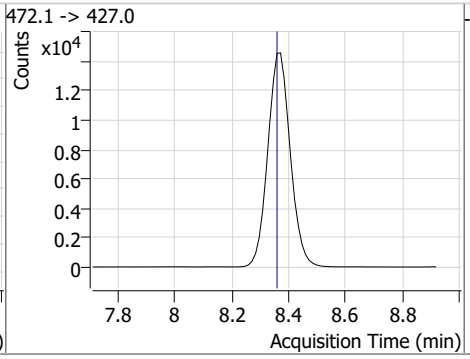


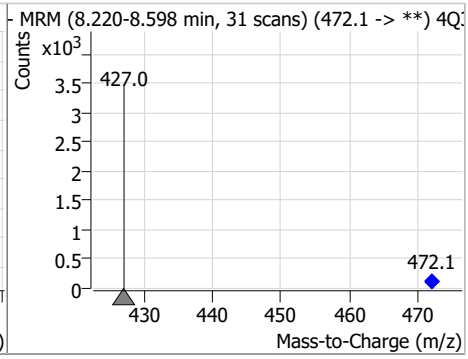




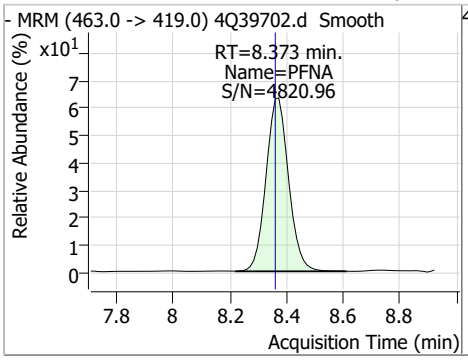
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	8.37	0.01	79797				

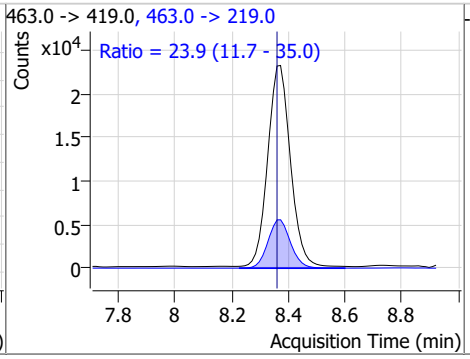


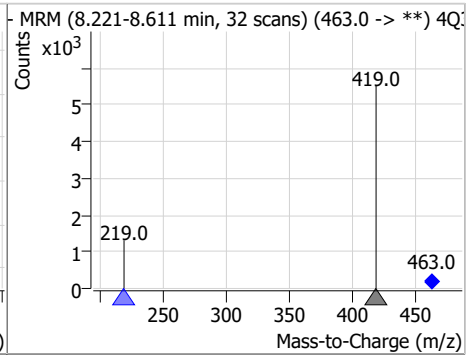




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.20	8.37	0.01	127465	463.0 -> 219.0	23.9	11.7	35.0

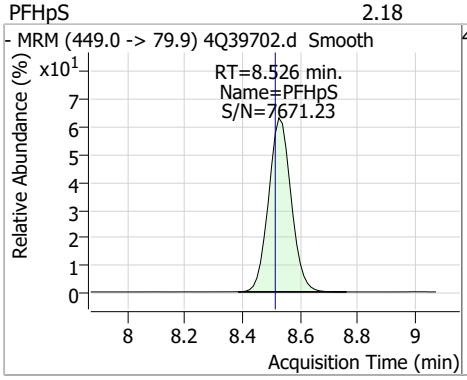


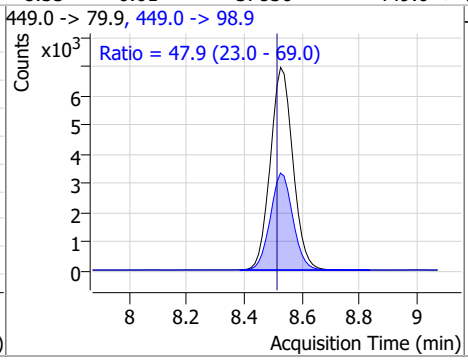


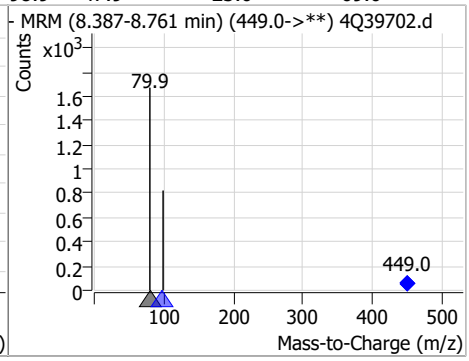


Perfluorinated Compounds by LC/MS/MS

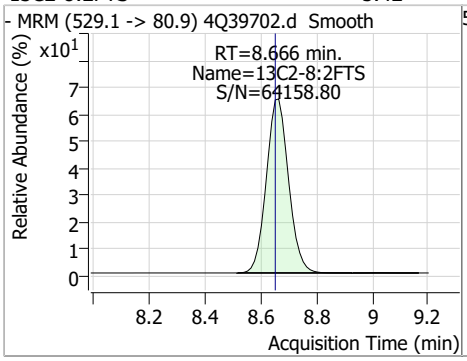
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.18	8.53	0.01	37856	449.0 -> 98.9	47.9	23.0	69.0

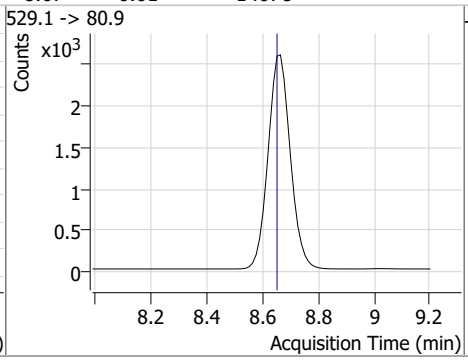


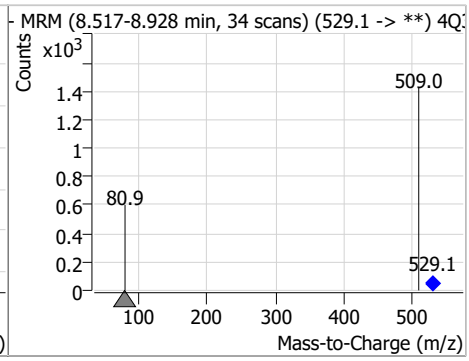




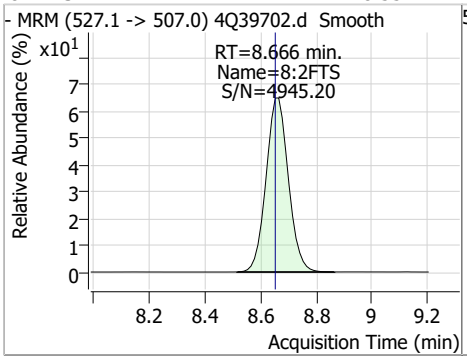
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.42	8.67	0.01	14078				

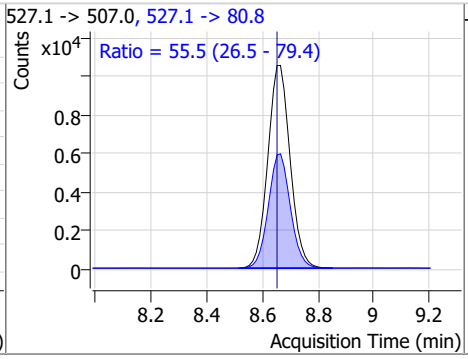


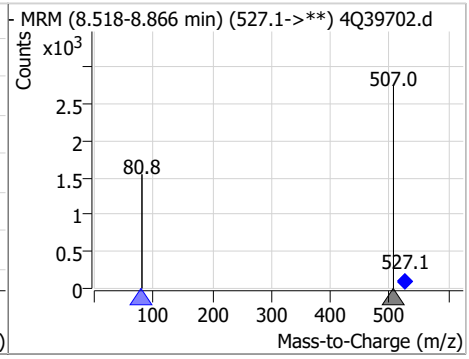




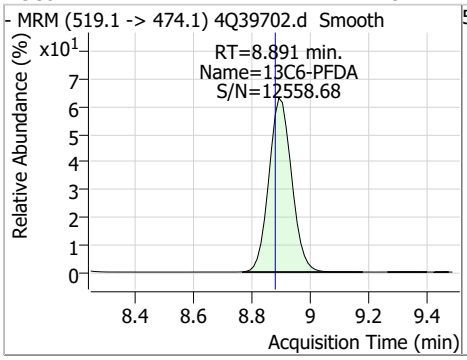
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.55	8.67	0.01	58243	527.1 -> 80.8	55.5	26.5	79.4

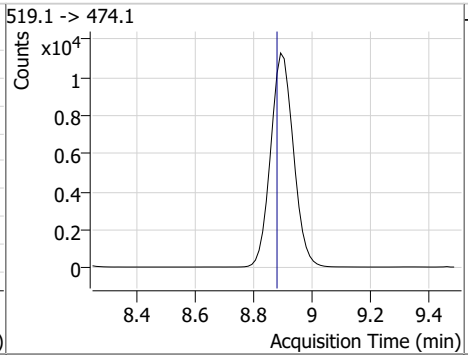


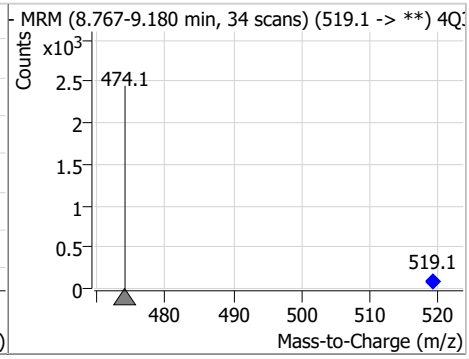




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.29	8.89	0.01	61306				

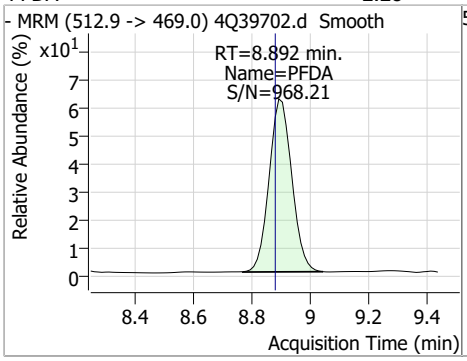


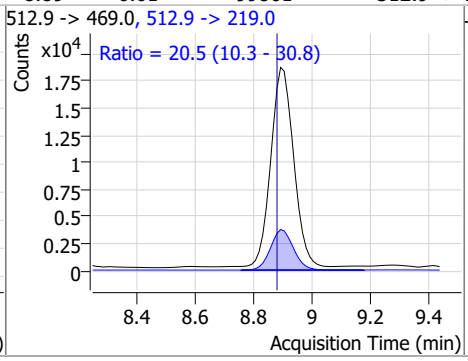


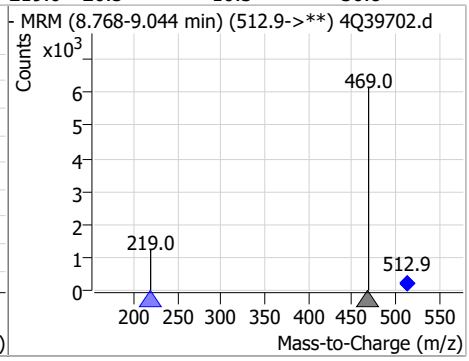


Perfluorinated Compounds by LC/MS/MS

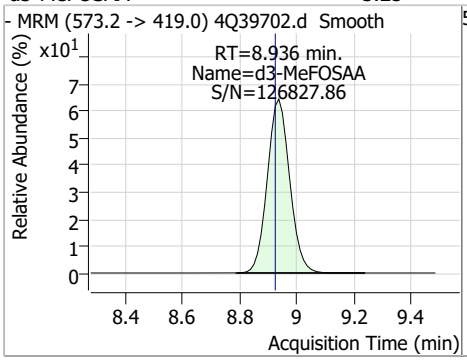
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.28	8.89	0.01	99861	512.9 -> 219.0	20.5	10.3	30.8

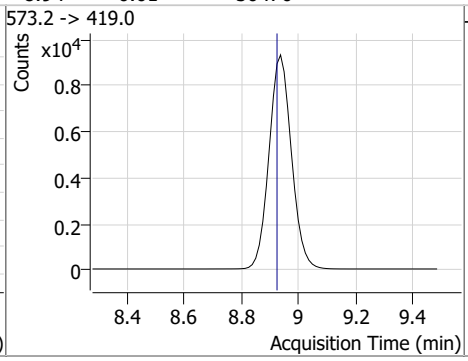


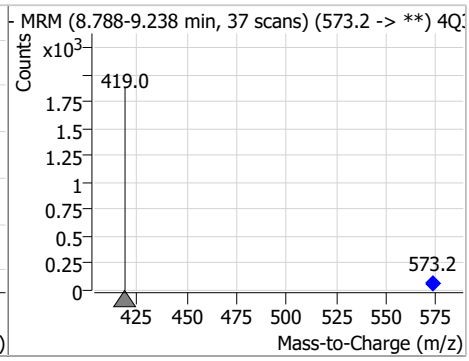




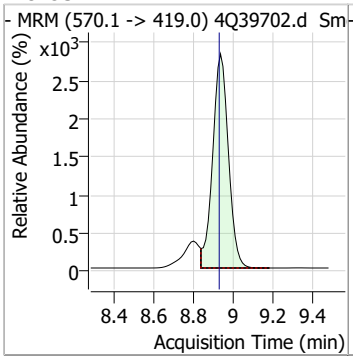
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.25	8.94	0.01	50470				

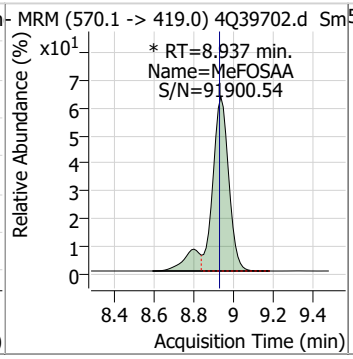


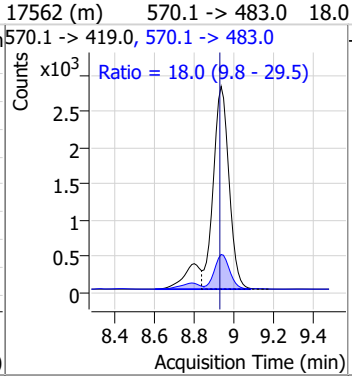


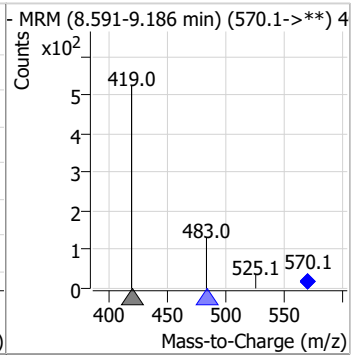


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.35	8.94	0.01	17562 (m)	570.1 -> 483.0	18.0	9.8	29.5

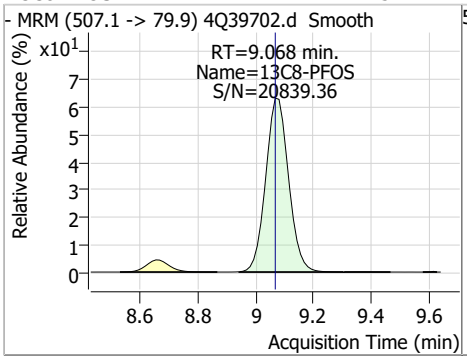


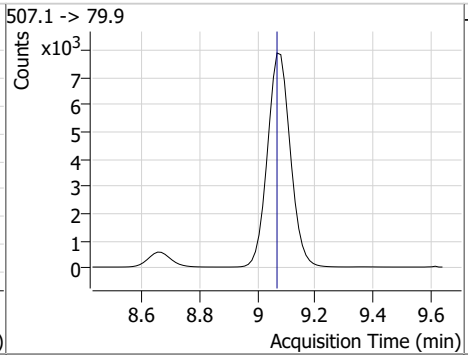


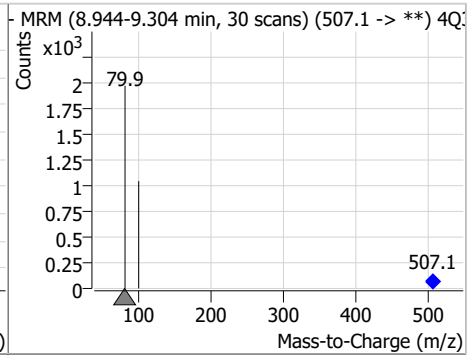




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.52	9.07	0.00	43034				

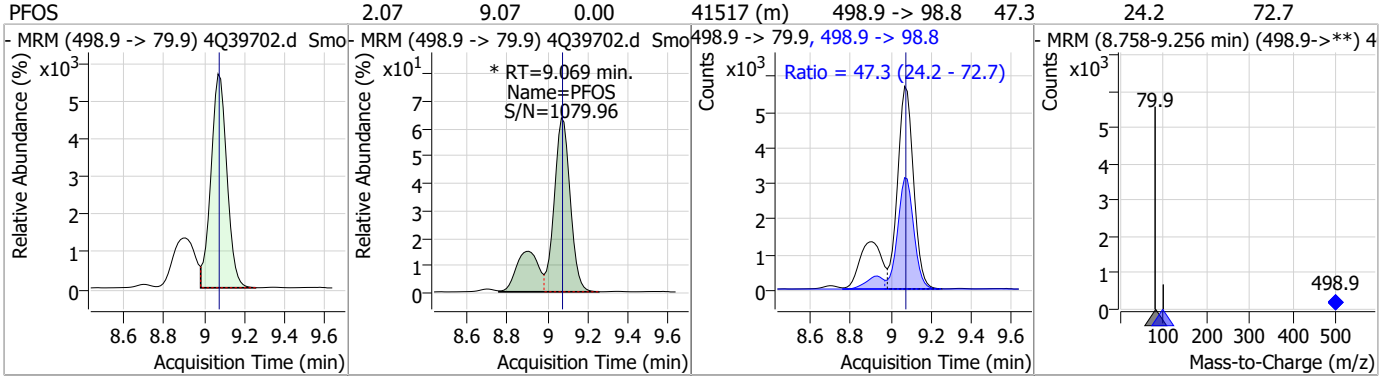




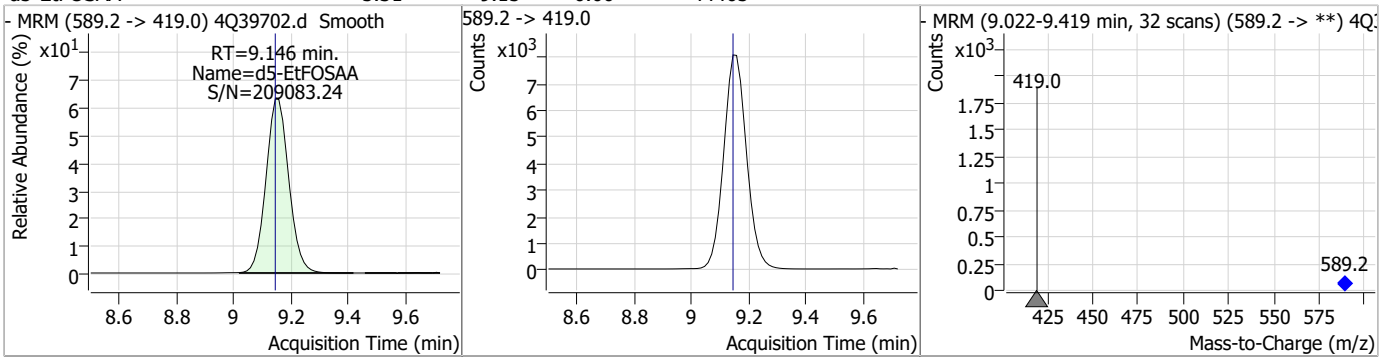


Perfluorinated Compounds by LC/MS/MS

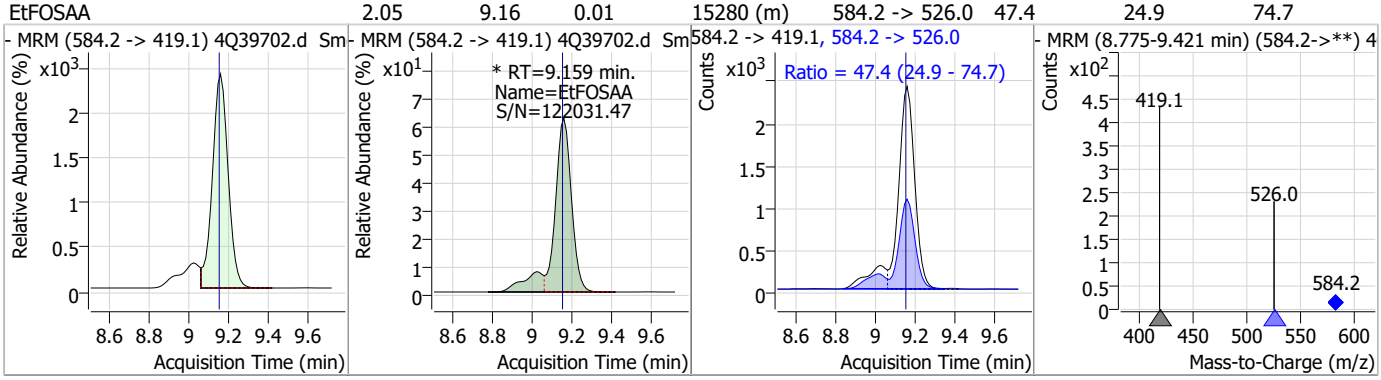
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.07	9.07	0.00	41517 (m)	498.9 -> 98.8	47.3	24.2	72.7



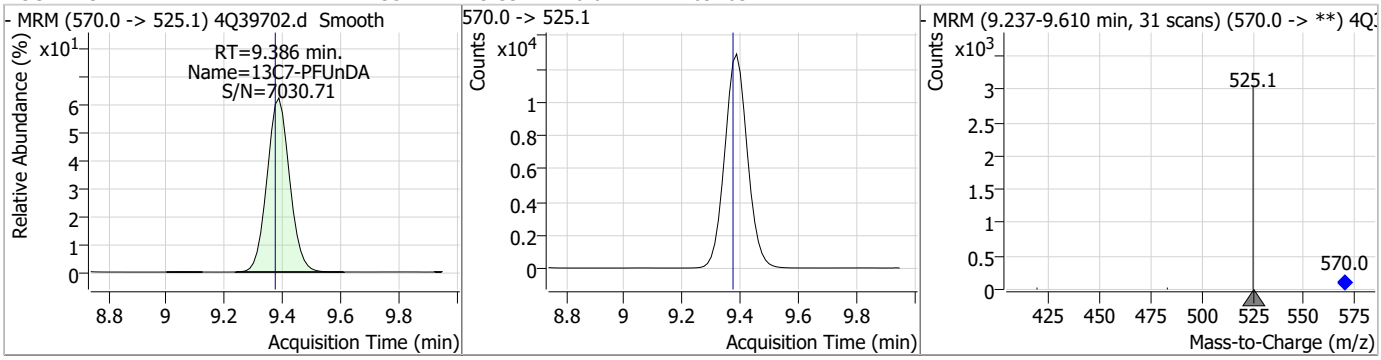
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.31	9.15	0.00	44465				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.05	9.16	0.01	15280 (m)	584.2 -> 526.0	47.4	24.9	74.7

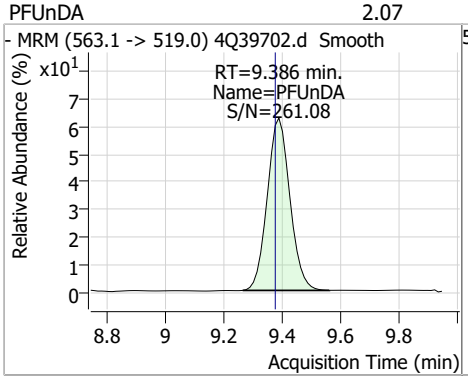


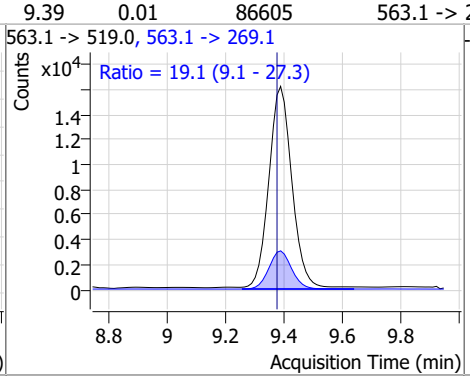
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	9.39	0.01	69263				

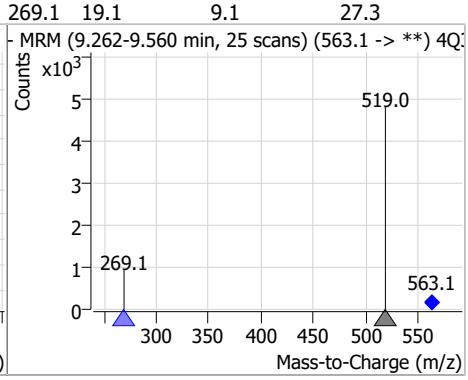


Perfluorinated Compounds by LC/MS/MS

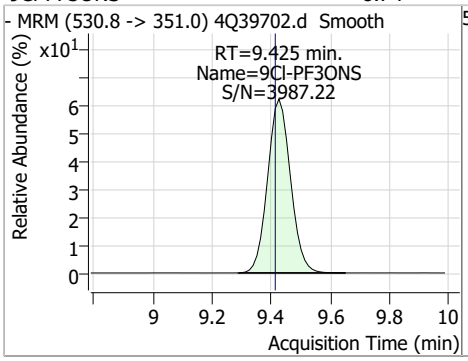
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.07	9.39	0.01	86605	563.1 -> 269.1	19.1	9.1	27.3

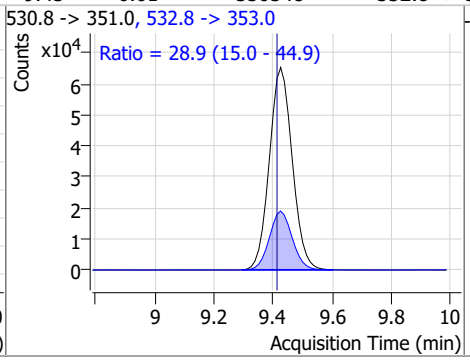


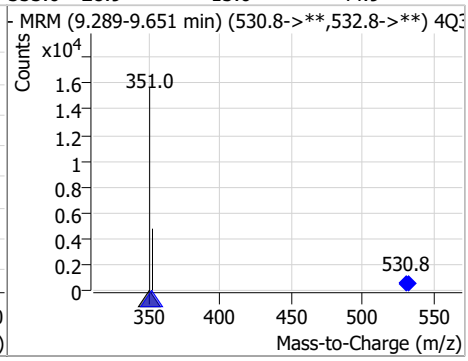




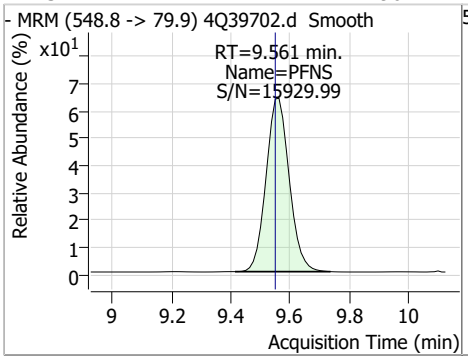
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.74	9.43	0.01	350548	532.8 -> 353.0	28.9	15.0	44.9

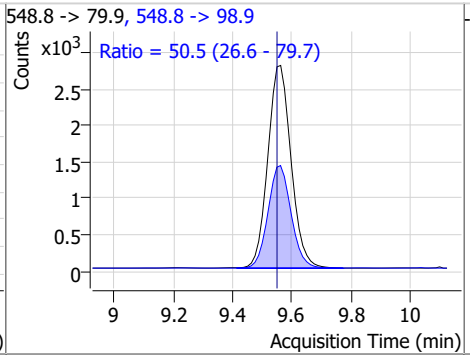


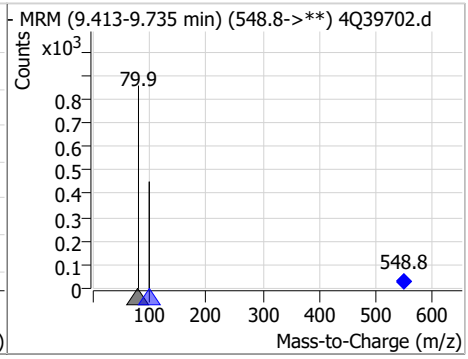




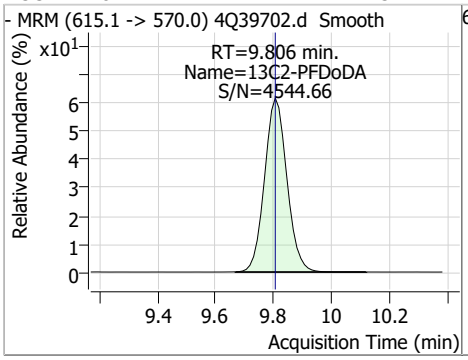
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.96	9.56	0.01	15039	548.8 -> 98.9	50.5	26.6	79.7

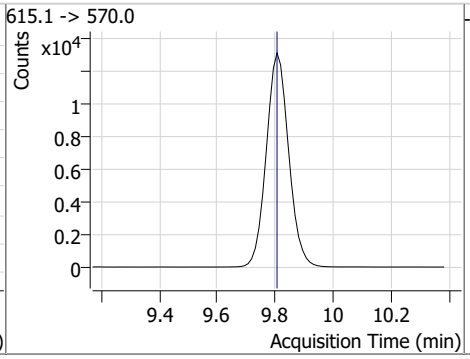


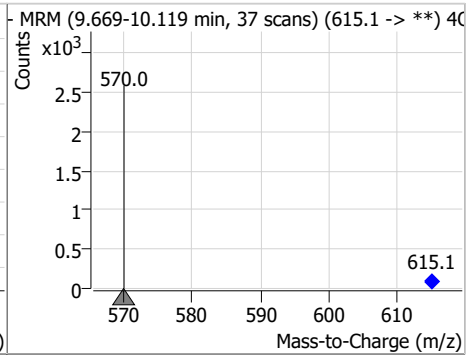




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.34	9.81	0.00	70038				

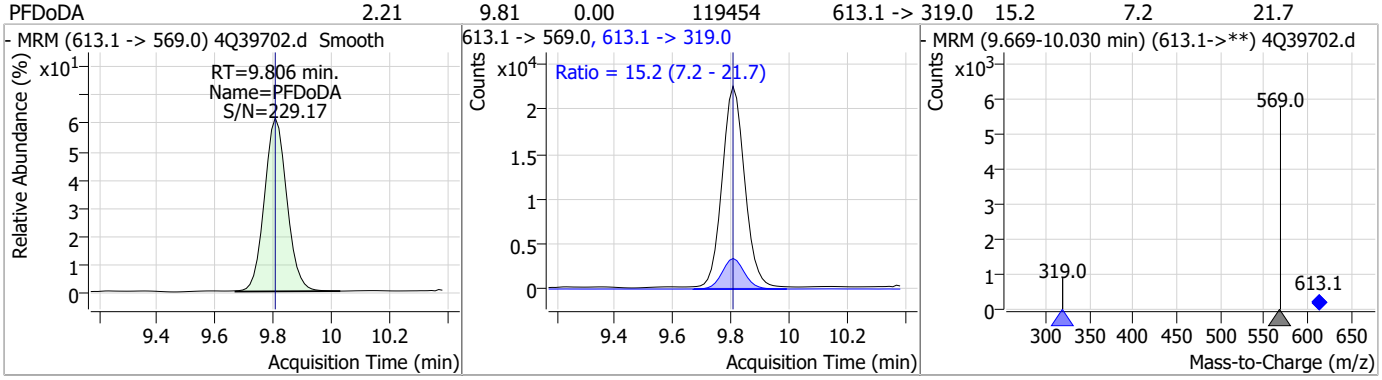




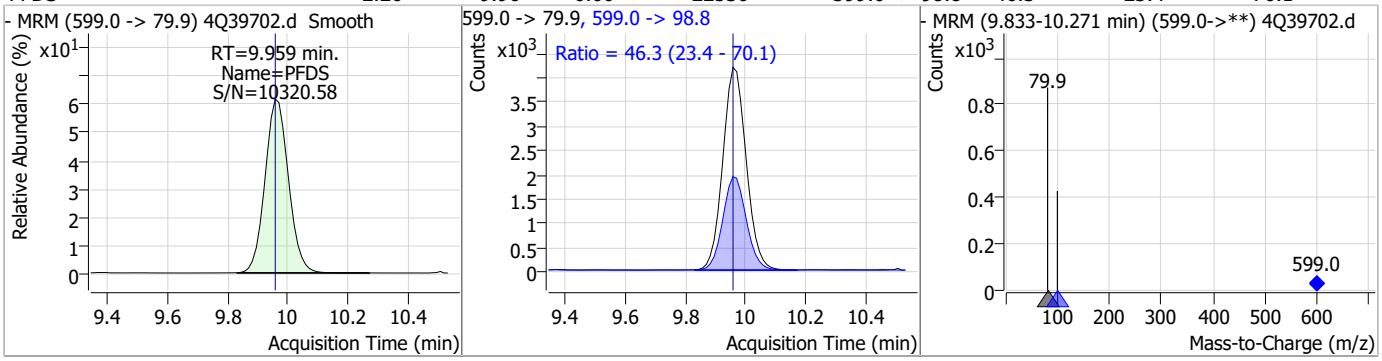


Perfluorinated Compounds by LC/MS/MS

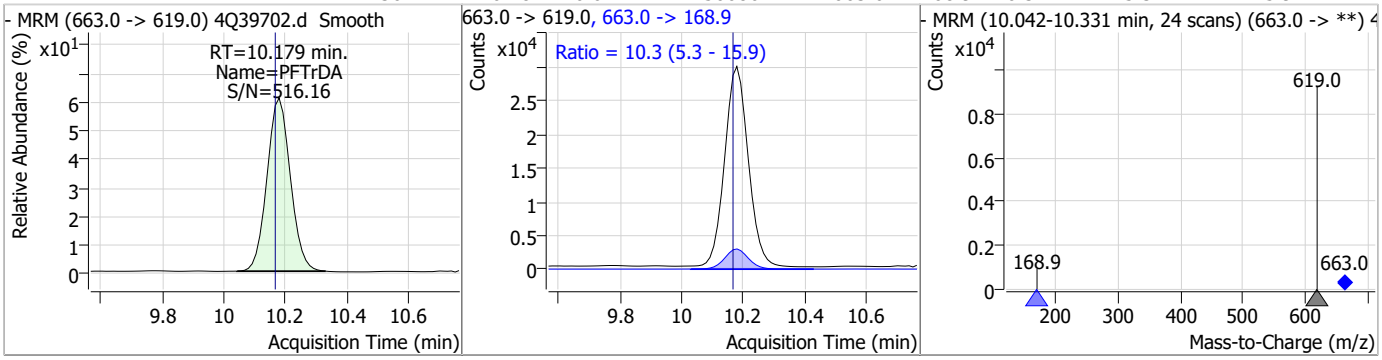
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.21	9.81	0.00	119454	613.1 -> 319.0	15.2	7.2	21.7



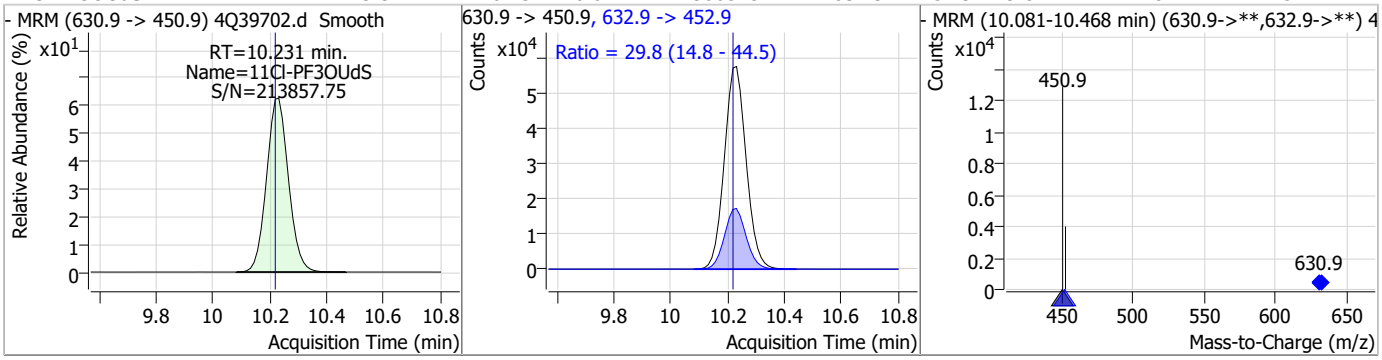
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.26	9.96	0.00	22536	599.0 -> 98.8	46.3	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.36	10.18	0.01	156080	663.0 -> 168.9	10.3	5.3	15.9

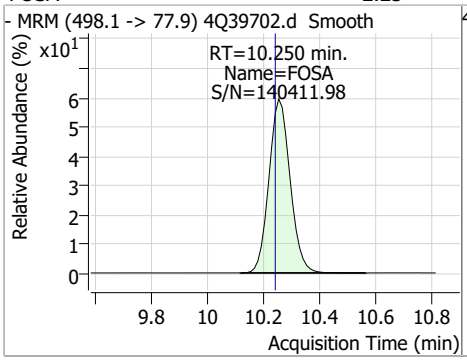


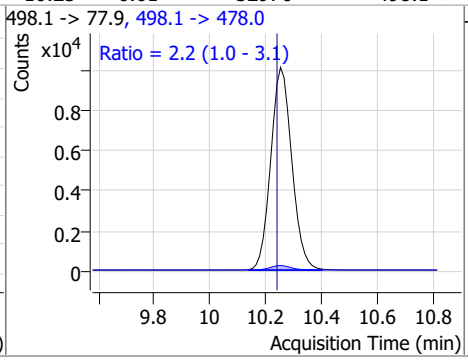
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.31	10.23	0.01	306545	632.9 -> 452.9	29.8	14.8	44.5

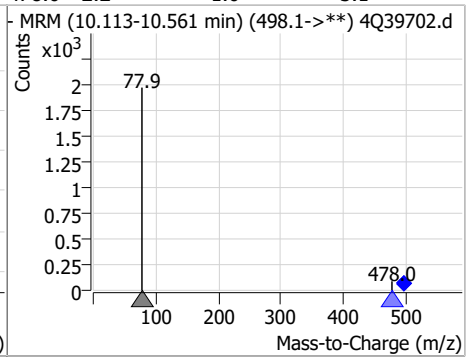


Perfluorinated Compounds by LC/MS/MS

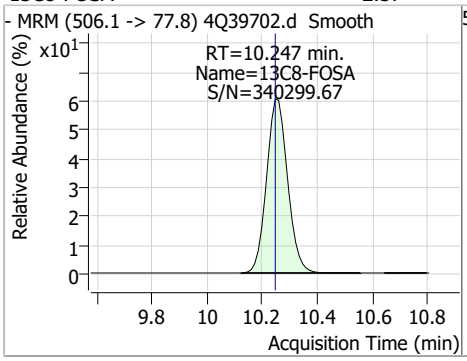
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.23	10.25	0.01	52976	498.1 -> 478.0	2.2	1.0	3.1

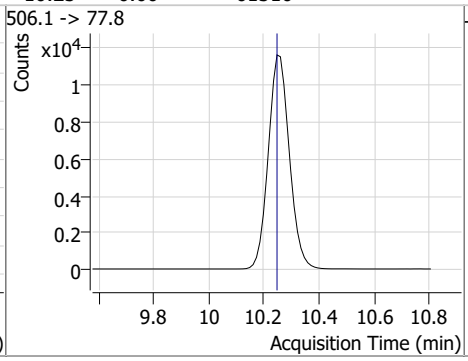


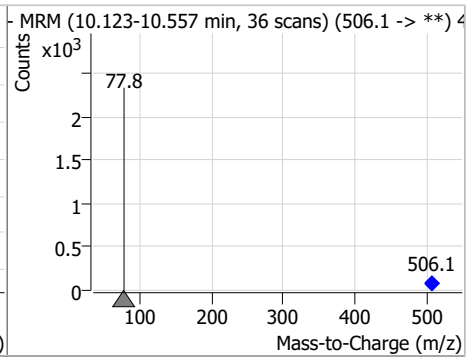




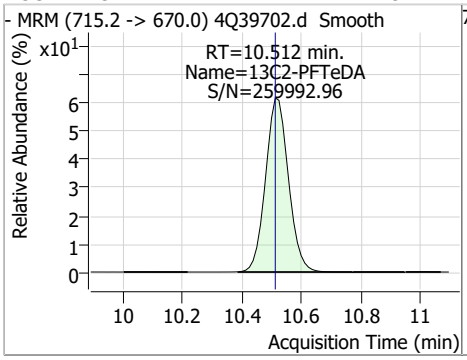
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.57	10.25	0.00	61516				

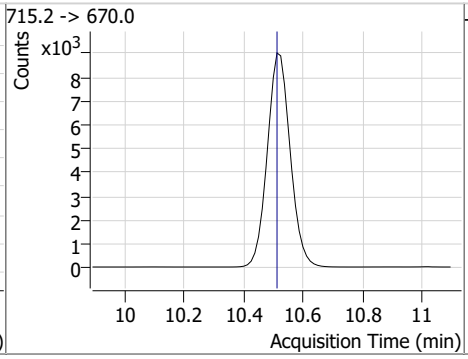


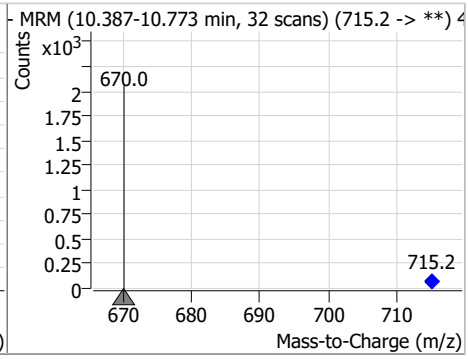




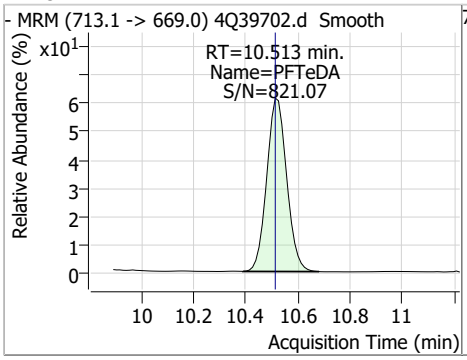
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	10.51	0.00	48047				

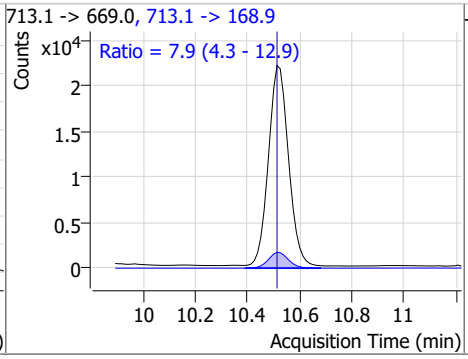


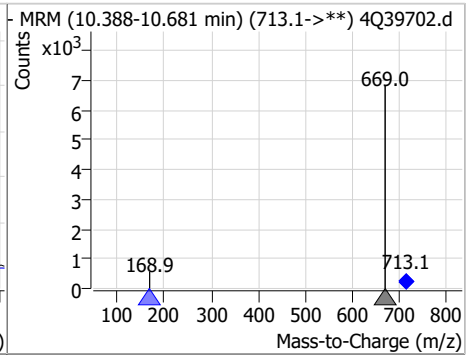




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.41	10.51	0.00	116570	713.1 -> 168.9	7.9	4.3	12.9

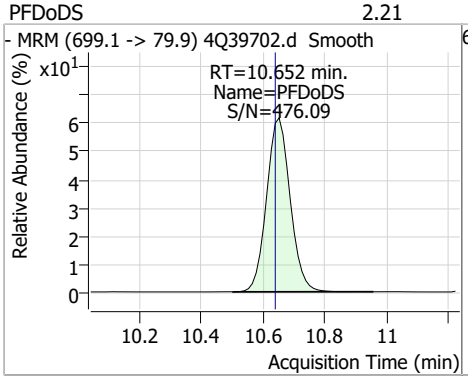


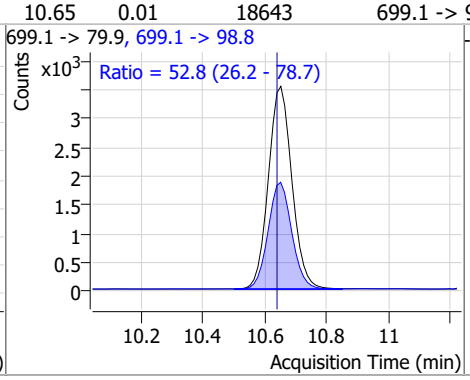


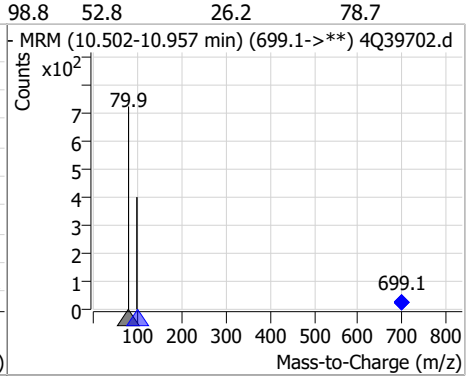


Perfluorinated Compounds by LC/MS/MS

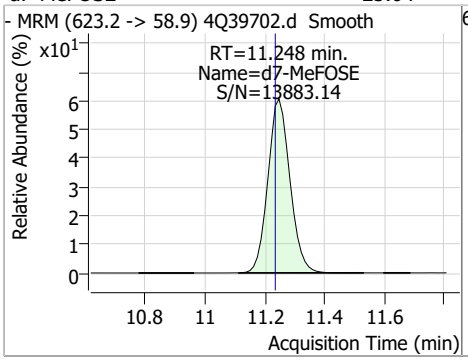
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.21	10.65	0.01	18643	699.1 -> 98.8	52.8	26.2	78.7

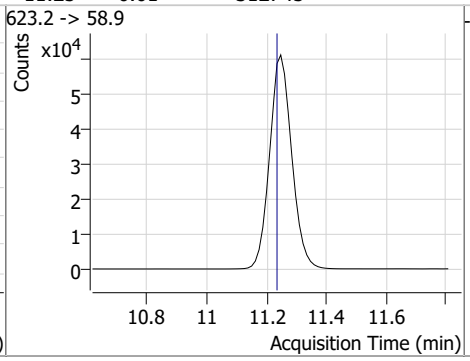


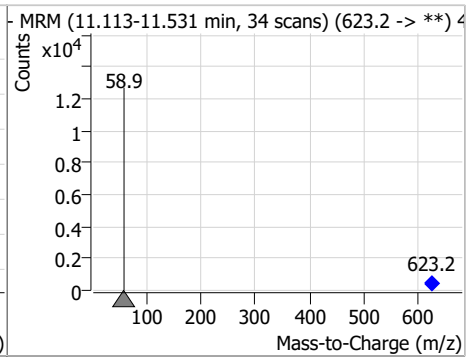




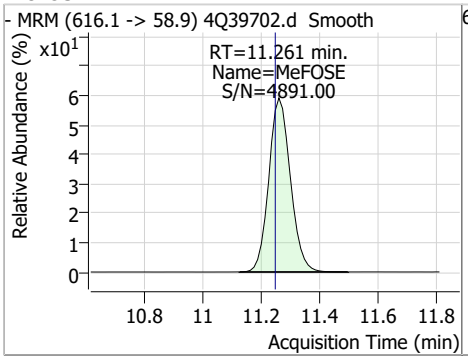
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.04	11.25	0.01	312745				

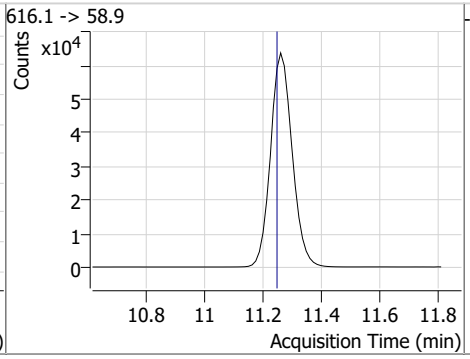


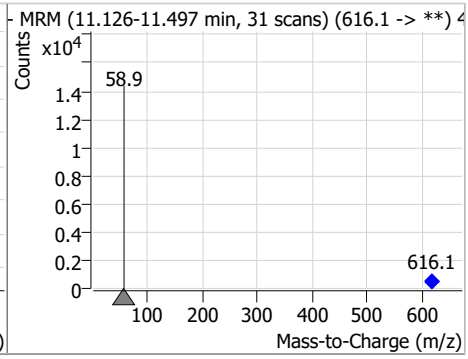




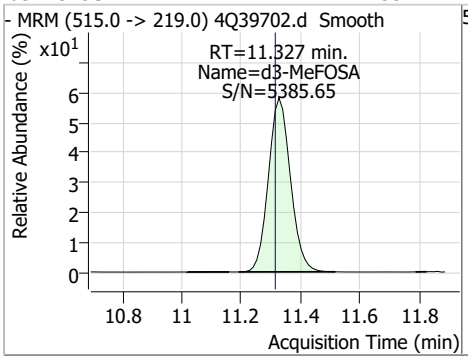
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.72	11.26	0.01	326670				

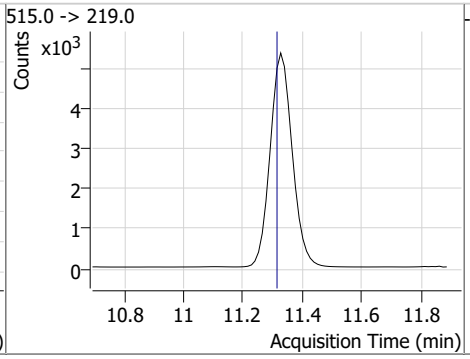


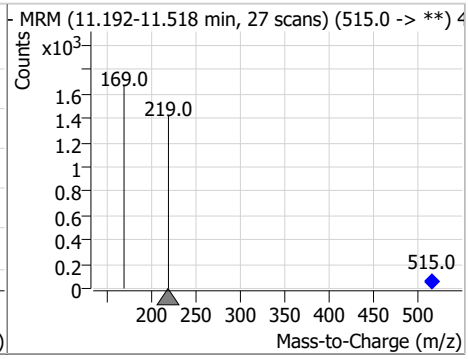




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	11.33	0.01	27658				

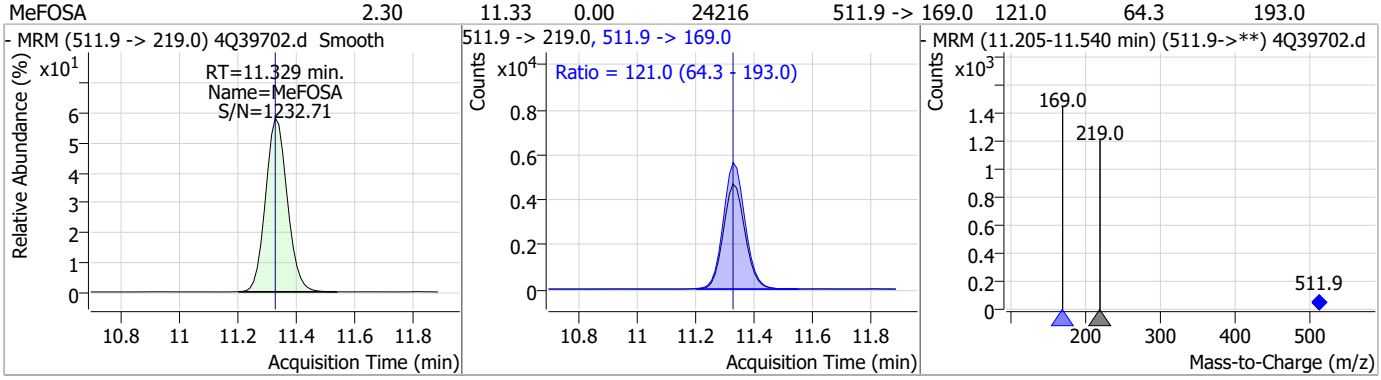




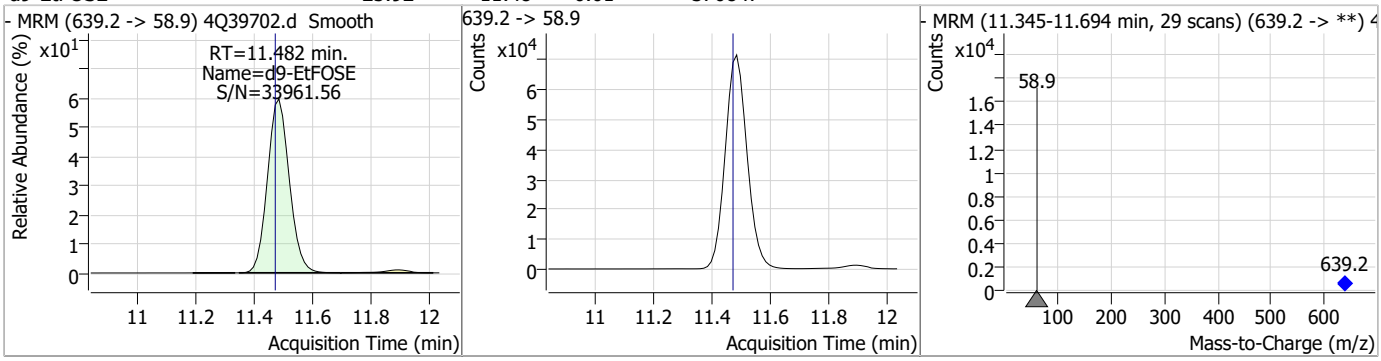


Perfluorinated Compounds by LC/MS/MS

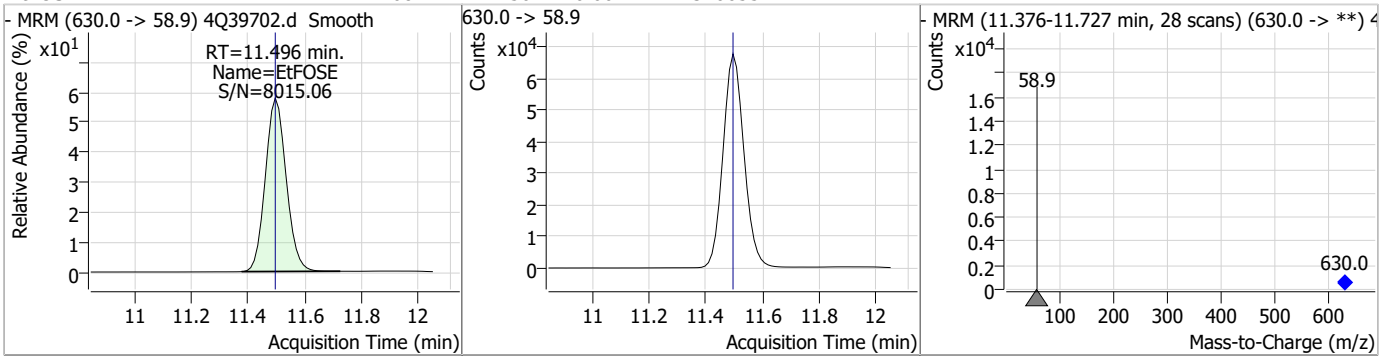
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.30	11.33	0.00	24216	511.9 -> 169.0	121.0	64.3	193.0



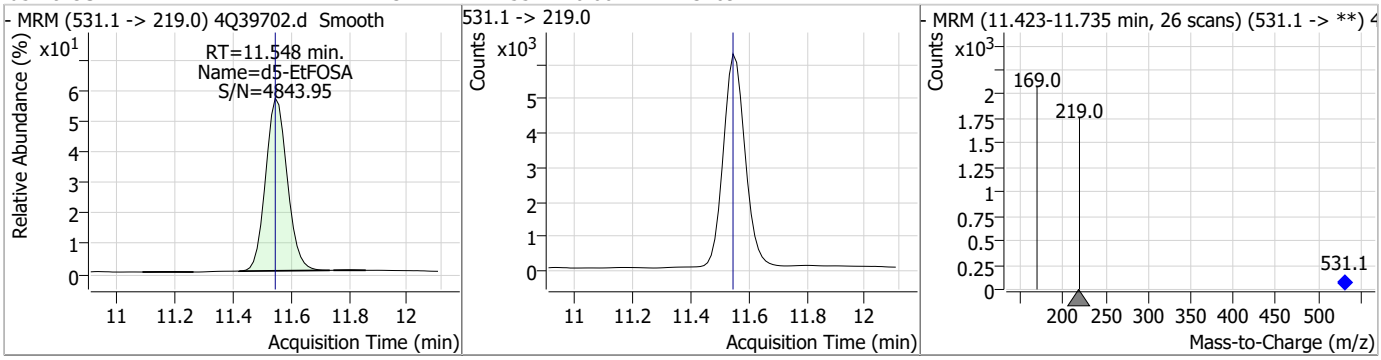
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.92	11.48	0.01	370847				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.08	11.50	0.00	346655				

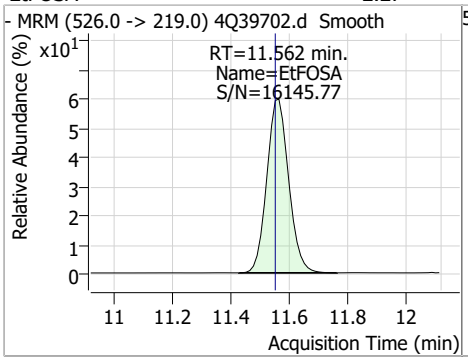


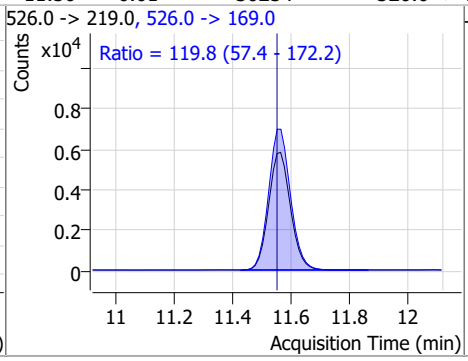
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.43	11.55	0.00	31692				

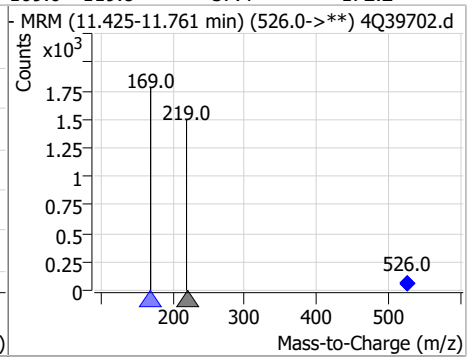


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.27	11.56	0.01	30254	526.0 -> 169.0	119.8	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-CC571
Lab FileID: 4Q39702.D
Injection Time: 01/25/23 15:48
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39703.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 4:02:26 PM
Sample Name : cc571-1.0LL
Vial : P1-A2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.186	216.8 -> 171.9	372647	10.00	µg/L	0.012
M5-PFPeA	4.876	268.3 -> 223.0	244594	5.00	µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	158061	2.50	µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	85983	2.50	µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	137019	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	67070	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	52115	1.25	µg/L	0.012
M7-PFUnDA	9.386	570.0 -> 525.1	58483	1.25	µg/L	0.012
M2-PFDoDA	9.806	615.1 -> 570.0	56811	1.25	µg/L	0.000
M2-PFTeDA	10.512	715.2 -> 670.0	40270	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	49286	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	43255	2.50	µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	28985	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	34131	2.50	µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	4288	5.00	µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	9050	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	11987	5.00	µg/L	0.000
M3-MeFOSAA	8.936	573.2 -> 419.0	42803	5.00	µg/L	0.012
M3-HFPO-DA	6.564	286.9 -> 168.9	117139	10.00	µg/L	0.012
M5-EtFOSAA	9.146	589.2 -> 419.0	36179	5.00	µg/L	0.000
M7-MeFOSE	11.235	623.2 -> 58.9	266850	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	315657	25.00	µg/L	0.000
M5-EtFOSA	11.548	531.1 -> 219.0	27166	2.50	µg/L	0.000
M3-MeFOSA	11.315	515.0 -> 219.0	22017	2.50	µg/L	0.000
13C4-PFOS	9.068	502.8 -> 79.9	33876	2.50	µg/L	0.000
13C3-PFBA	3.190	216.0 -> 172.0	206281	5.00	µg/L	0.013
18O2-PFHxS	7.916	403.0 -> 83.9	19178	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	156572	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	46218	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	75055	1.25	µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	147925	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	4288	6.20	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 124.1%		
13C2-6:2FTS	7.536	429.1 -> 80.9	9050	5.85	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.0%		
13C2-8:2FTS	8.653	529.1 -> 80.9	11987	5.66	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C2-PFDoDA	9.806	615.1 -> 570.0	56811	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C2-PFTeDA	10.512	715.2 -> 670.0	40270	1.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C3-PFBS	6.101	302.1 -> 79.9	43255	2.61	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-PFHxS	7.917	402.1 -> 79.9	28985	2.59	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C4-PFBA	3.186	216.8 -> 171.9	372647	10.02 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	7.118	367.1 -> 322.0	85983	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFHxA	6.184	318.0 -> 273.0	158061	2.54 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C5-PFPeA	4.876	268.3 -> 223.0	244594	5.08 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C6-PFDA	8.891	519.1 -> 474.1	52115	1.28 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C7-PFUnDA	9.386	570.0 -> 525.1	58483	1.34 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C8-FOSA	10.247	506.1 -> 77.8	49286	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C8-PFOA	7.788	421.1 -> 376.0	137019	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C8-PFOS	9.068	507.1 -> 79.9	34131	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C9-PFNA	8.360	472.1 -> 427.0	67070	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%		
d3-MeFOSAA	8.936	573.2 -> 419.0	42803	5.50 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C3-HFPO-DA	6.564	286.9 -> 168.9	117139	9.93 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d3-MeFOSA	11.315	515.0 -> 219.0	22017	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
d5-EtFOSAA	9.146	589.2 -> 419.0	36179	5.34 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
d7-MeFOSE	11.235	623.2 -> 58.9	266850	26.42 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
d9-EtFOSE	11.470	639.2 -> 58.9	315657	27.28 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
d5-EtFOSA	11.548	531.1 -> 219.0	27166	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%		
Target Compounds						QValue
4:2FTS	5.836	327.1 -> 307.0	3709	0.53 µg/L	m	84
		327.1 -> 80.9	2129			
6:2FTS	7.537	427.1 -> 407.0	4527	0.63 µg/L		89
		427.1 -> 80.9	2572			
8:2FTS	8.654	527.1 -> 507.0	3287	0.57 µg/L		83
		527.1 -> 80.8	2143			
EtFOSAA	9.159	584.2 -> 419.1	1154	0.19 µg/L	m	100
		584.2 -> 526.0	575			
FOSA	10.250	498.1 -> 77.9	3703	0.19 µg/L		99
		498.1 -> 478.0	95			
MeFOSAA	8.937	570.1 -> 419.0	917	0.14 µg/L	m	90
		570.1 -> 483.0	141			
PFBA	3.195	212.8 -> 168.9	6176	0.60 µg/L		100
PFBS	6.102	298.7 -> 79.9	2552	0.13 µg/L		96
		298.7 -> 98.8	934			
PFDA	8.892	512.9 -> 469.0	6318	0.17 µg/L		95
		512.9 -> 219.0	1167			
PFDoDA	9.806	613.1 -> 569.0	6889	0.16 µg/L		87
		613.1 -> 319.0	1366			
PFDS	9.959	599.0 -> 79.9	1357	0.17 µg/L		91

Perfluorinated Compounds by LC/MS/MS

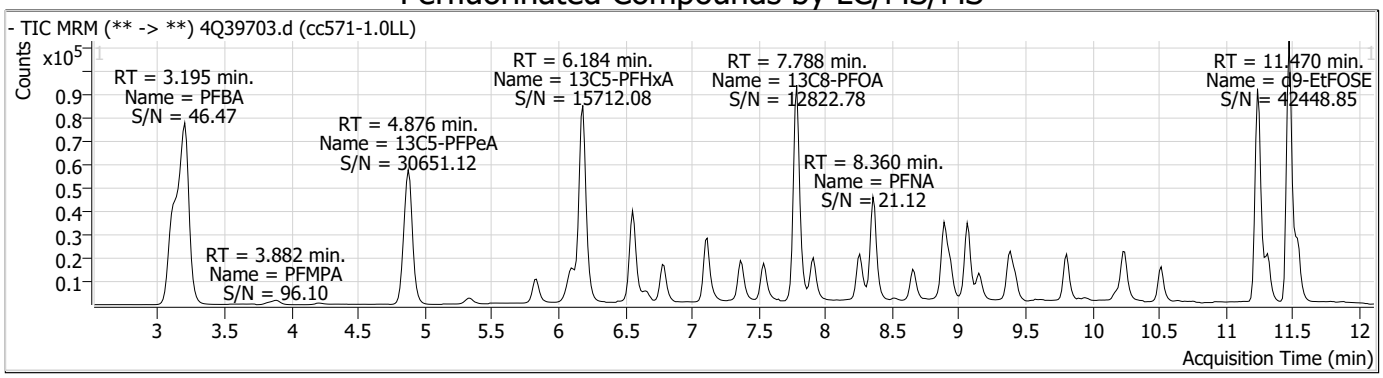
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	719				
PFHpA	7.119	363.1 -> 319.0	8208	0.15	µg/L		95
		363.1 -> 169.0	1574				
PFHpS	8.526	449.0 -> 79.9	2603	0.19	µg/L		95
		449.0 -> 98.9	1114				
PFHxA	6.187	313.0 -> 269.0	9446	0.15	µg/L		96
		313.0 -> 118.9	406				
PFHxS	7.917	398.7 -> 79.9	1432	0.15	µg/L	m	98
		398.7 -> 98.9	720				
PFNA	8.360	463.0 -> 419.0	7490	0.15	µg/L		96
		463.0 -> 219.0	1614				
PFNS	9.549	548.8 -> 79.9	992	0.16	µg/L		95
		548.8 -> 98.9	565				
PFOA	7.790	413.0 -> 369.0	11968	0.20	µg/L		90
		413.0 -> 169.0	1875				
PFOS	9.069	498.9 -> 79.9	3122	0.20	µg/L	m	99
		498.9 -> 98.8	1541				
PFPeA	4.879	263.0 -> 219.0	17716	0.33	µg/L		100
PFPeS	7.184	349.1 -> 79.9	1531	0.17	µg/L		98
		349.1 -> 98.9	582				
PFTeDA	10.513	713.1 -> 669.0	7018	0.17	µg/L	m	96
		713.1 -> 168.9	701				
PFTrDA	10.179	663.0 -> 619.0	9572	0.18	µg/L		100
		663.0 -> 168.9	1017				
PFUnDA	9.386	563.1 -> 519.0	7382	0.21	µg/L		90
		563.1 -> 269.1	1003				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	18703	0.68	µg/L		97
		632.9 -> 452.9	5249				
9Cl-PF3ONS	9.425	530.8 -> 351.0	20969	0.63	µg/L		95
		532.8 -> 353.0	5702				
ADONA	7.369	376.9 -> 250.9	43070	0.68	µg/L		99
		376.9 -> 84.8	15487				
HFPO-DA	6.565	284.9 -> 168.9	8084	0.73	µg/L		97
		284.9 -> 184.9	940				
3:3FTCA	4.204	241.0 -> 177.0	2052	0.82	µg/L		100
		241.0 -> 117.0	196				
5:3FTCA	6.796	341.0 -> 237.1	33906	4.15	µg/L		98
		341.0 -> 217.0	24545				
7:3FTCA	8.262	441.0 -> 316.9	18520	3.94	µg/L		77
		441.0 -> 336.9	48831				
EtFOSA	11.550	526.0 -> 219.0	1869	0.16	µg/L		95
		526.0 -> 169.0	2049				
EtFOSE	11.483	630.0 -> 58.9	22621	1.85	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	1595	0.19	µg/L		94
		511.9 -> 169.0	1946				
MeFOSE	11.261	616.1 -> 58.9	20376	1.81	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	1098	0.16	µg/L		95
		699.1 -> 98.8	615				
NFDHA	6.053	295.0 -> 201.0	1335	0.33	µg/L		98
		295.0 -> 84.9	404				
PFMBA	5.341	279.0 -> 85.1	11051	0.33	µg/L		100
PFMPA	3.882	229.0 -> 84.9	11202	0.32	µg/L		100
PFEESA	6.660	314.8 -> 134.9	16032	0.31	µg/L		97
		314.8 -> 82.9	358				

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

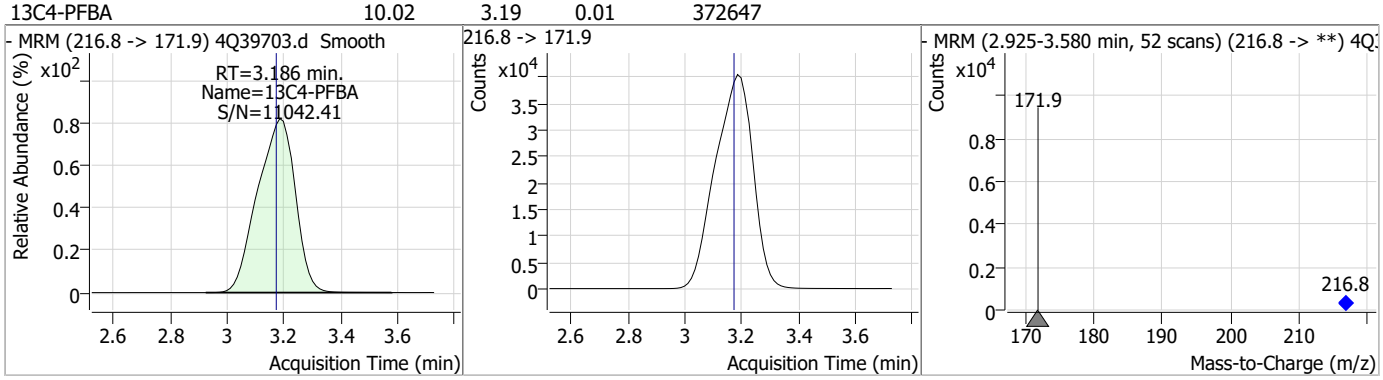
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

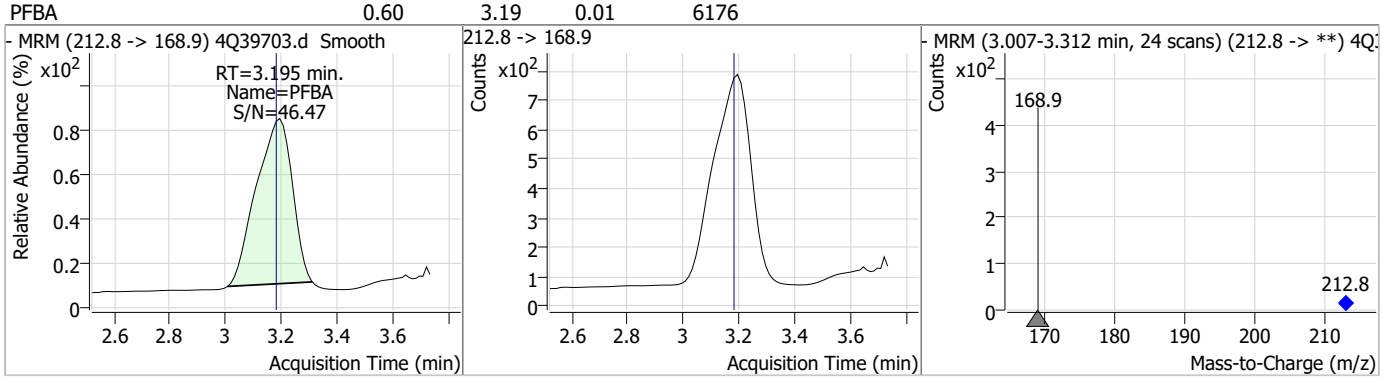
Perfluorinated Compounds by LC/MS/MS



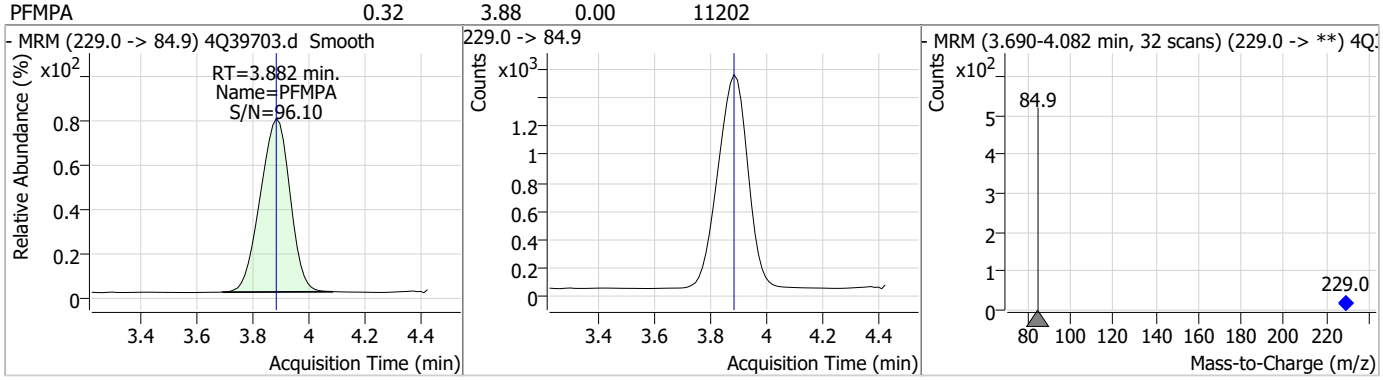
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.02	3.19	0.01	372647				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.60	3.19	0.01	6176				

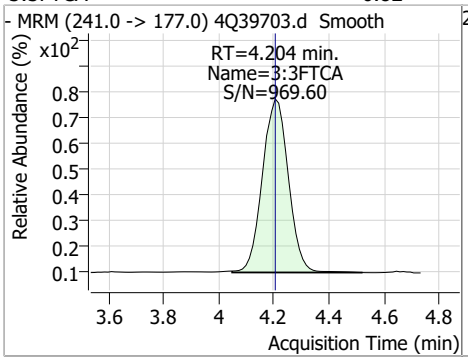


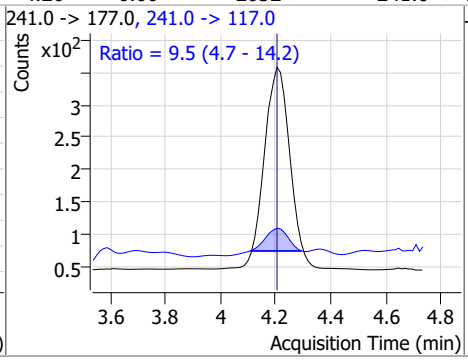
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.32	3.88	0.00	11202				

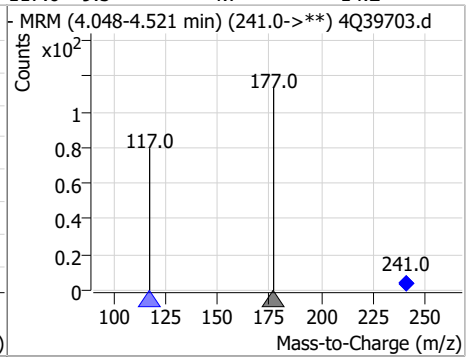


Perfluorinated Compounds by LC/MS/MS

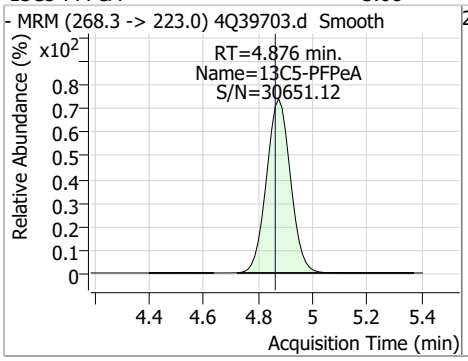
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.82	4.20	0.00	2052	241.0 -> 117.0	9.5	4.7	14.2

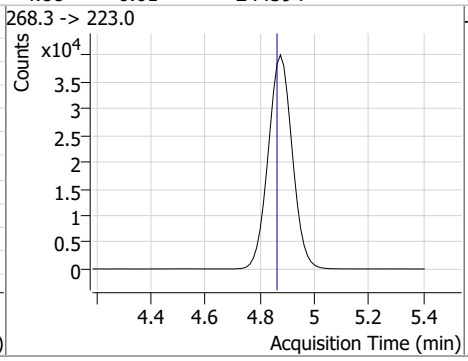


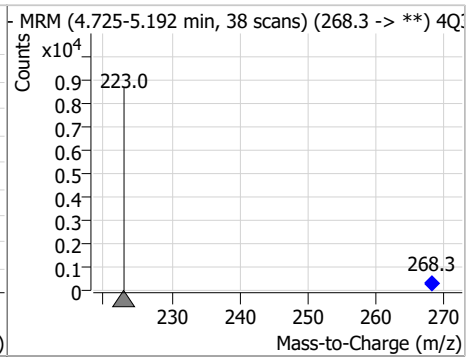




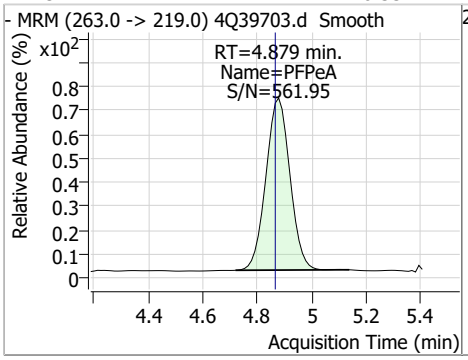
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.88	0.01	244594				

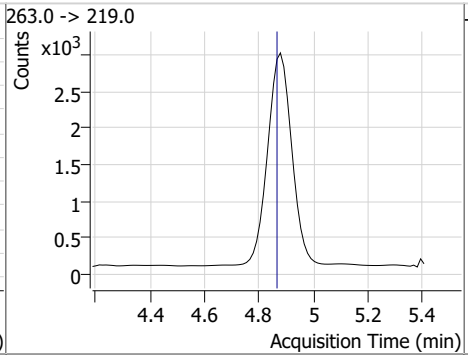


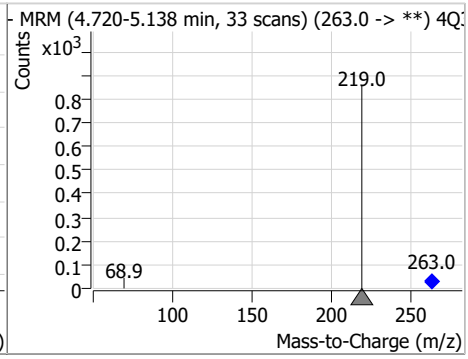




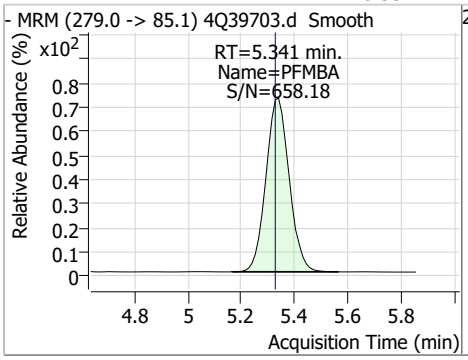
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.33	4.88	0.01	17716				

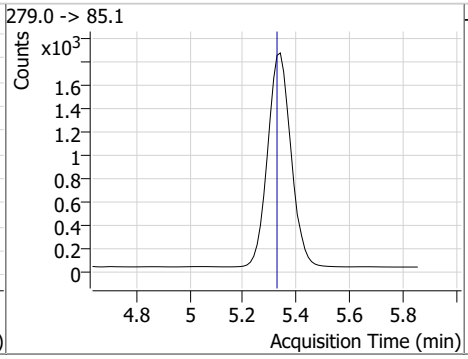


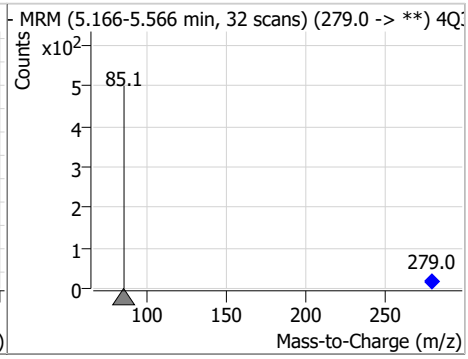




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.33	5.34	0.01	11051				

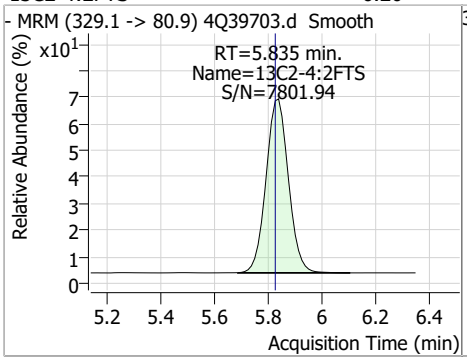


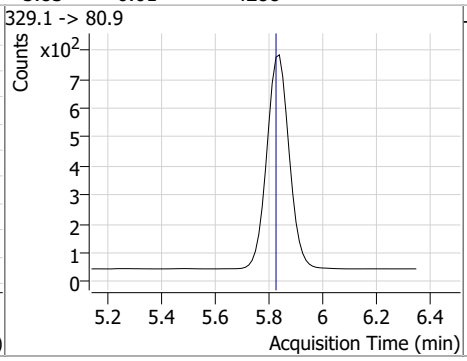


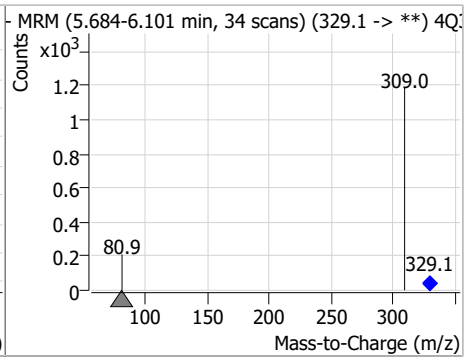


Perfluorinated Compounds by LC/MS/MS

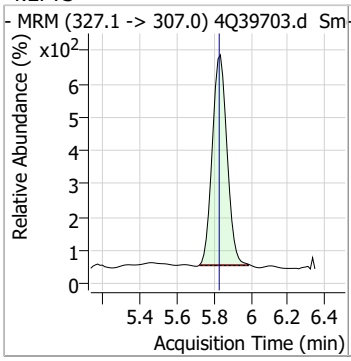
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.20	5.83	0.01	4288				

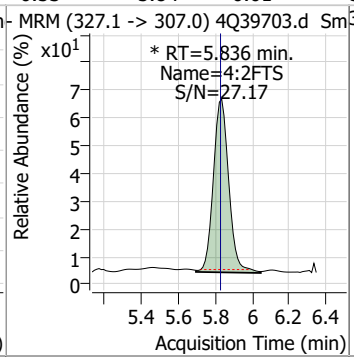


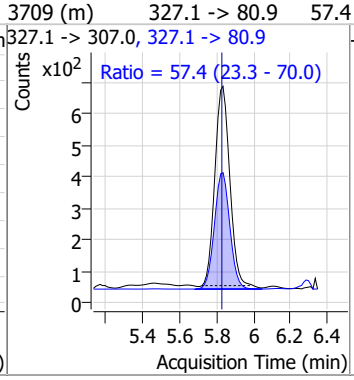


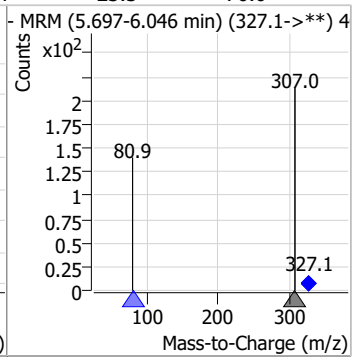


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.53	5.84	0.01	3709 (m)	327.1 -> 80.9	57.4	23.3	70.0

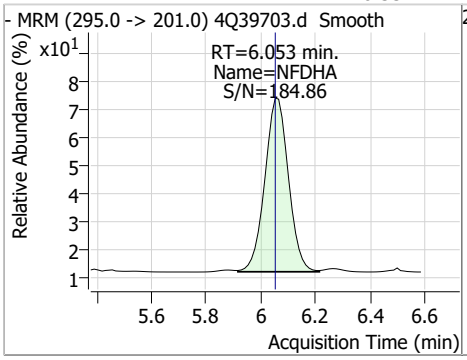


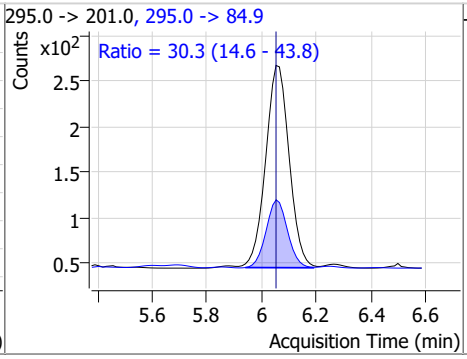


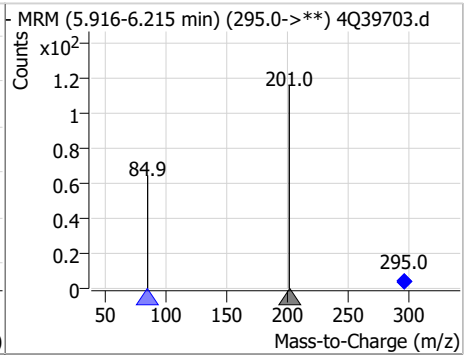




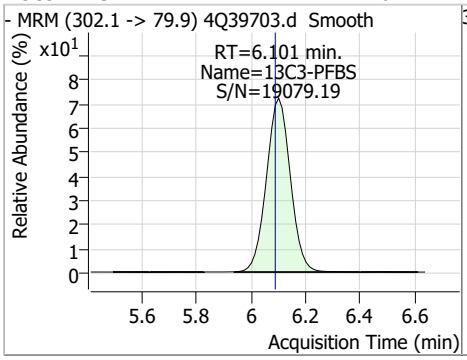
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.33	6.05	0.00	1335	295.0 -> 84.9	30.3	14.6	43.8

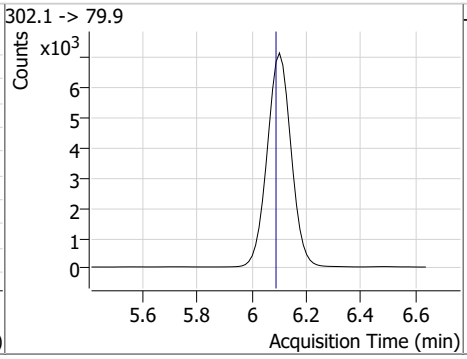


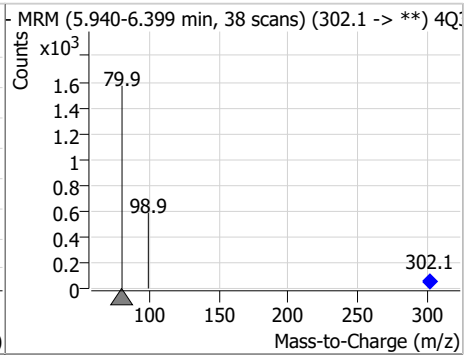




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	6.10	0.01	43255				

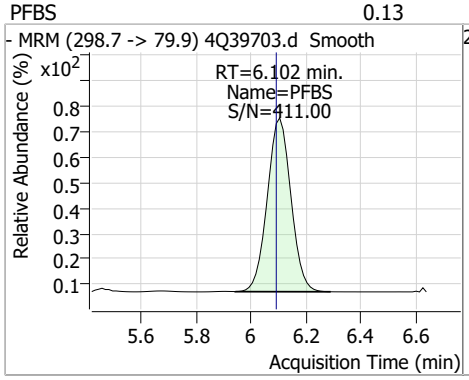


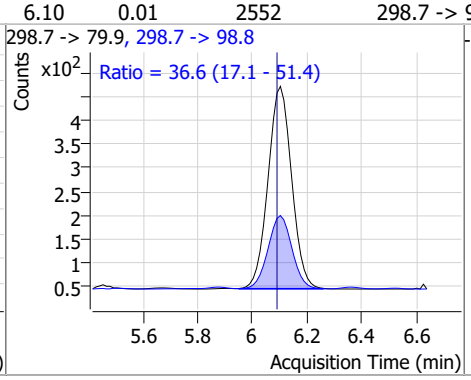


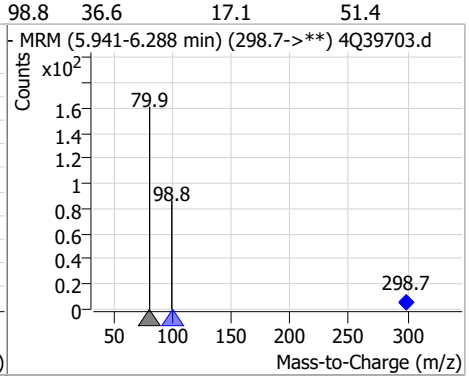


Perfluorinated Compounds by LC/MS/MS

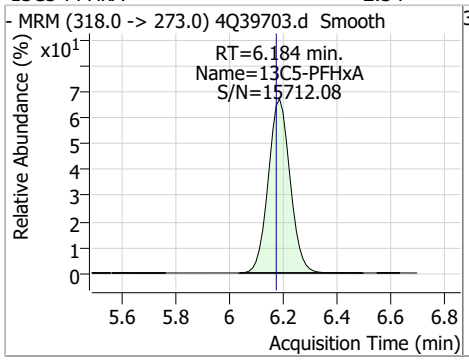
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.13	6.10	0.01	2552	298.7 -> 98.8	36.6	17.1	51.4

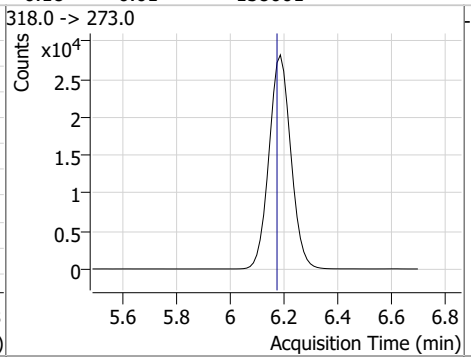


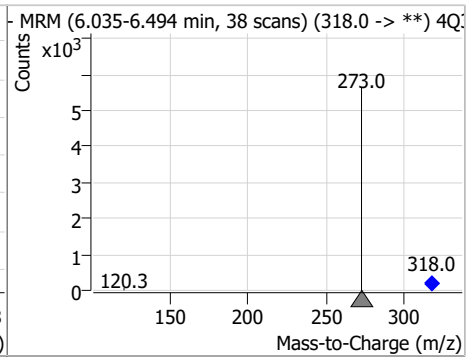




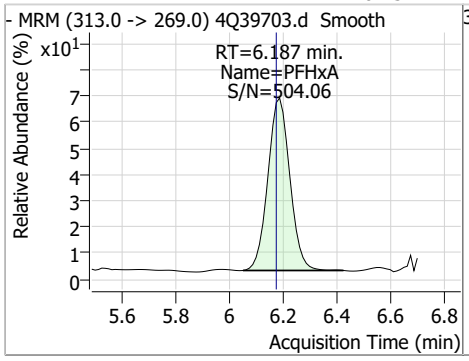
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	6.18	0.01	158061				

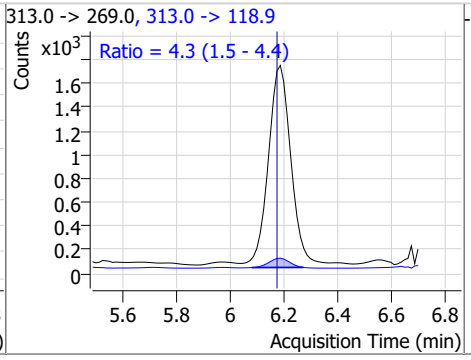


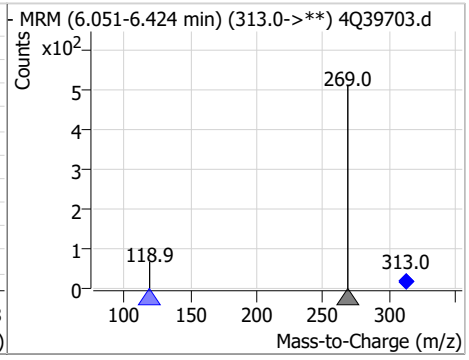




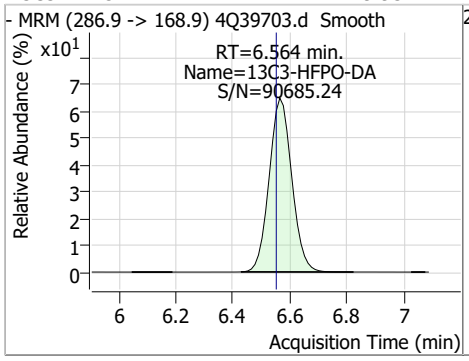
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.15	6.19	0.01	9446	313.0 -> 118.9	4.3	1.5	4.4

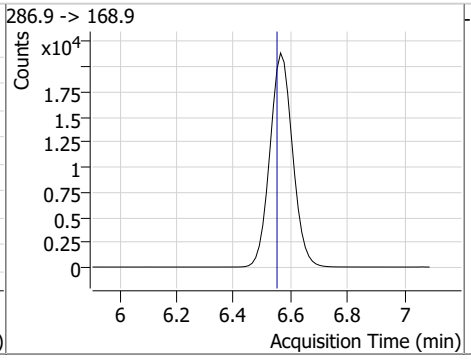


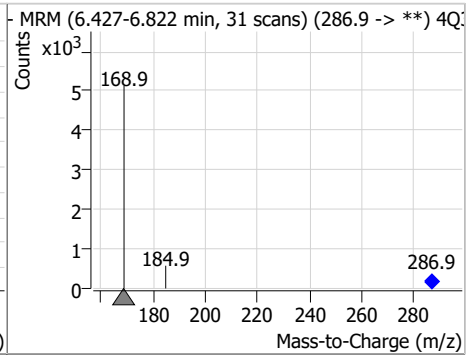




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.93	6.56	0.01	117139				

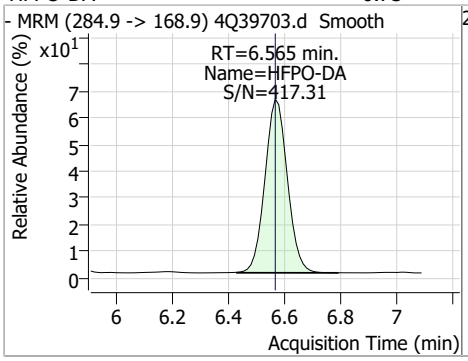


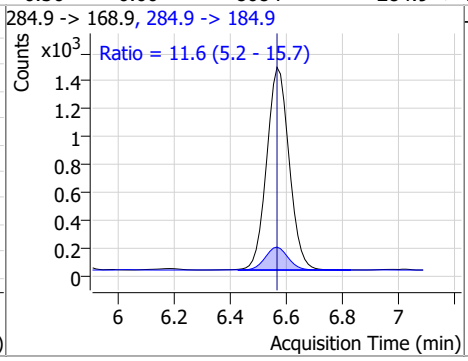


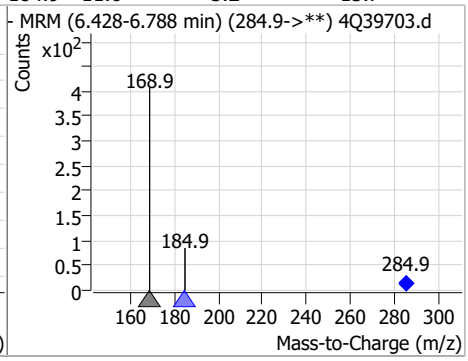


Perfluorinated Compounds by LC/MS/MS

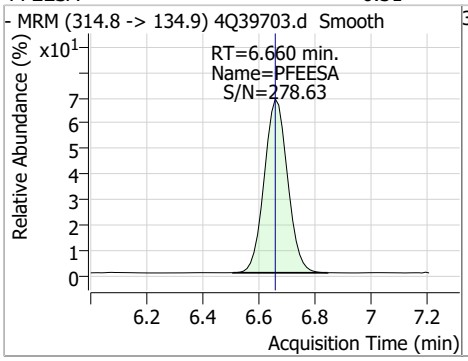
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.73	6.56	0.00	8084	284.9 -> 184.9	11.6	5.2	15.7

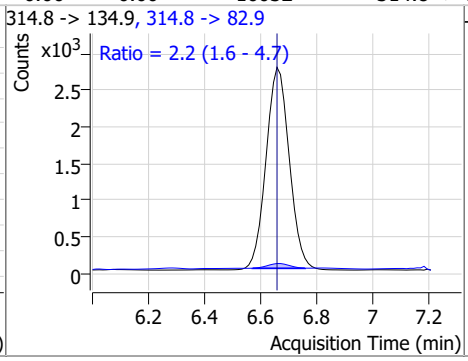


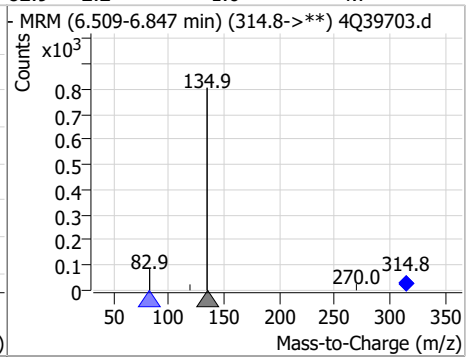




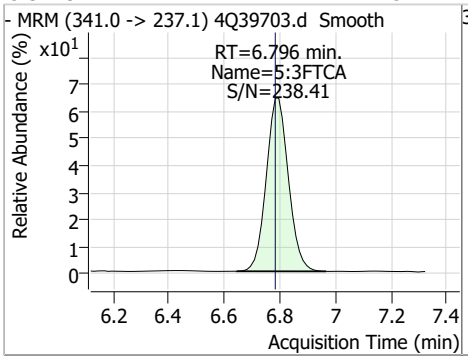
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.31	6.66	0.00	16032	314.8 -> 82.9	2.2	1.6	4.7

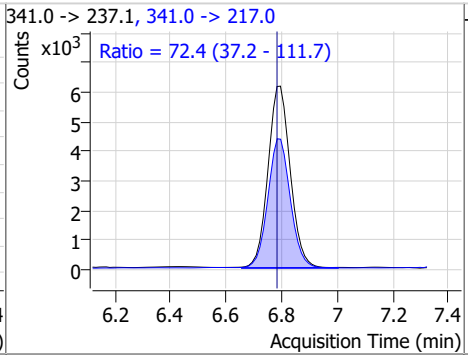


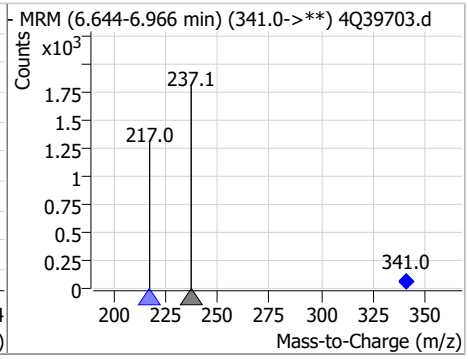




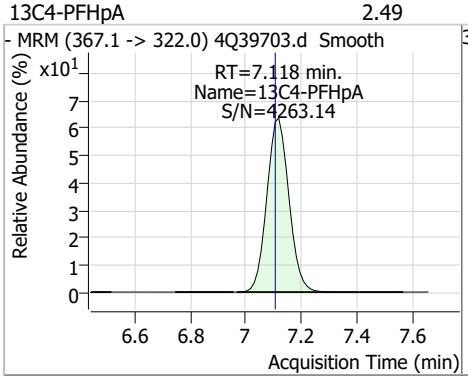
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.15	6.80	0.01	33906	341.0 -> 217.0	72.4	37.2	111.7

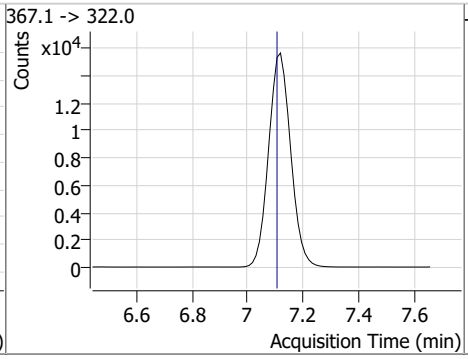


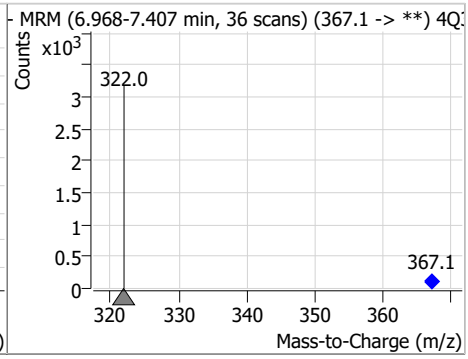




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	7.12	0.01	85983				

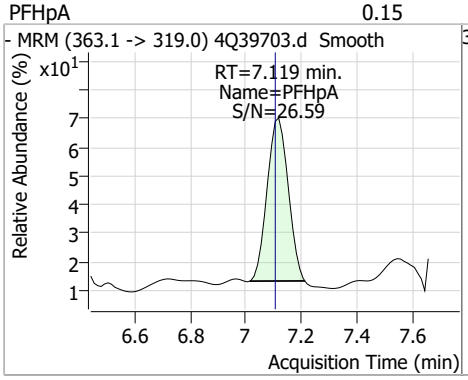


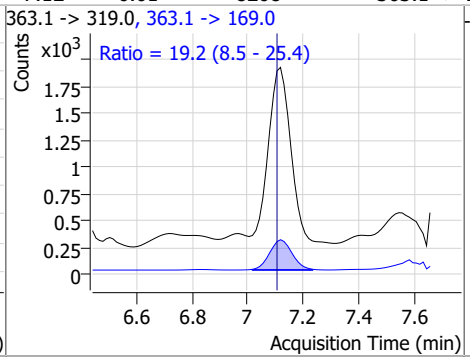


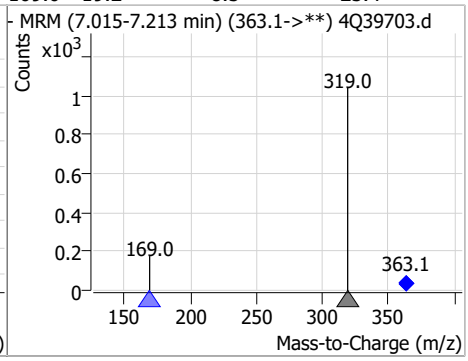


Perfluorinated Compounds by LC/MS/MS

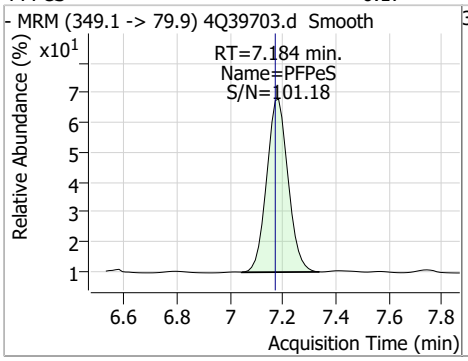
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.15	7.12	0.01	8208	363.1 -> 169.0	19.2	8.5	25.4

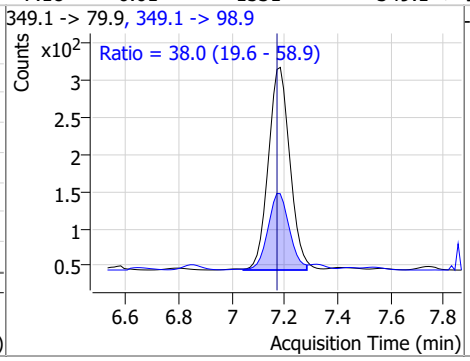


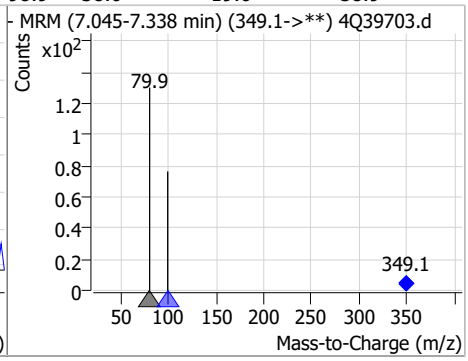




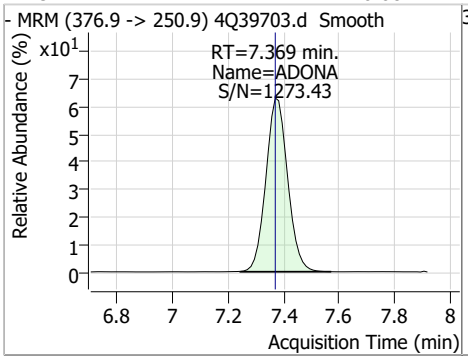
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.17	7.18	0.01	1531	349.1 -> 98.9	38.0	19.6	58.9

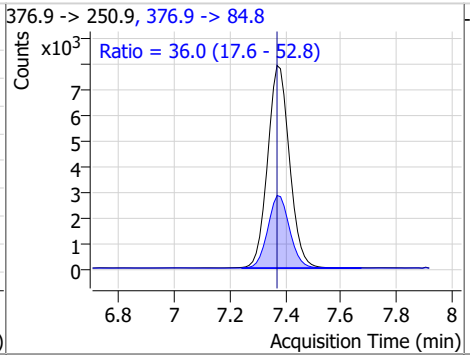


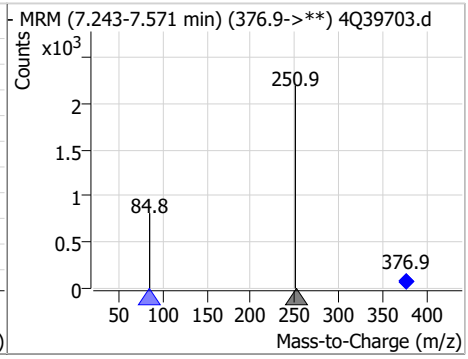




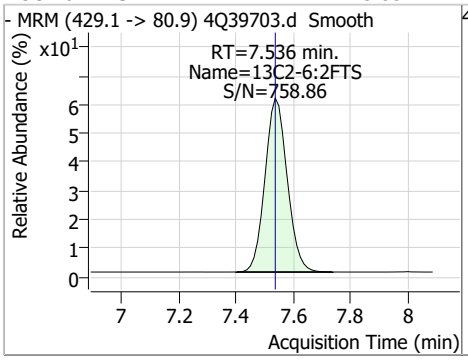
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.68	7.37	0.00	43070	376.9 -> 84.8	36.0	17.6	52.8

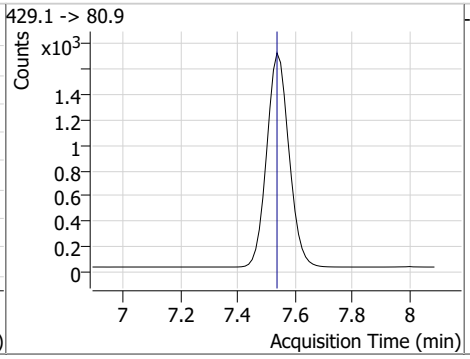


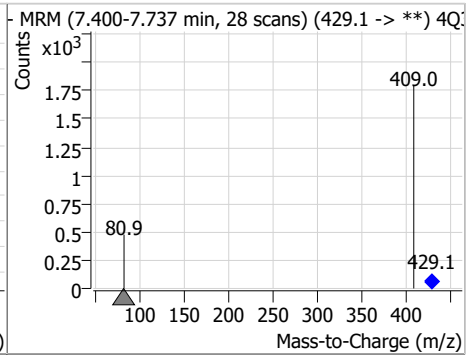




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.85	7.54	0.00	9050				

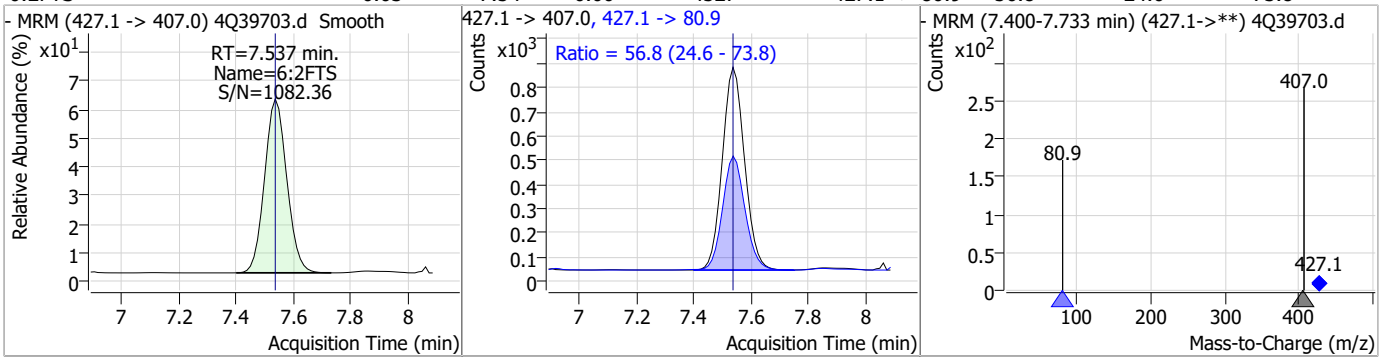




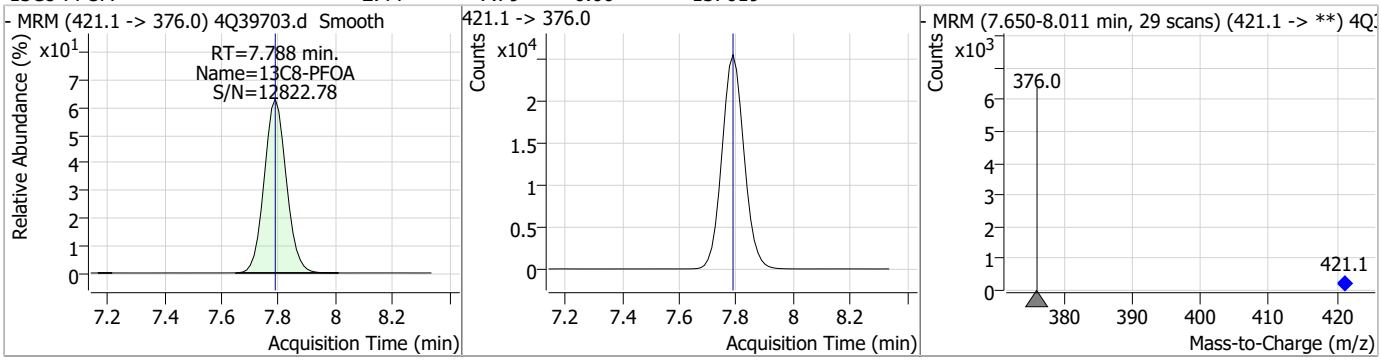


Perfluorinated Compounds by LC/MS/MS

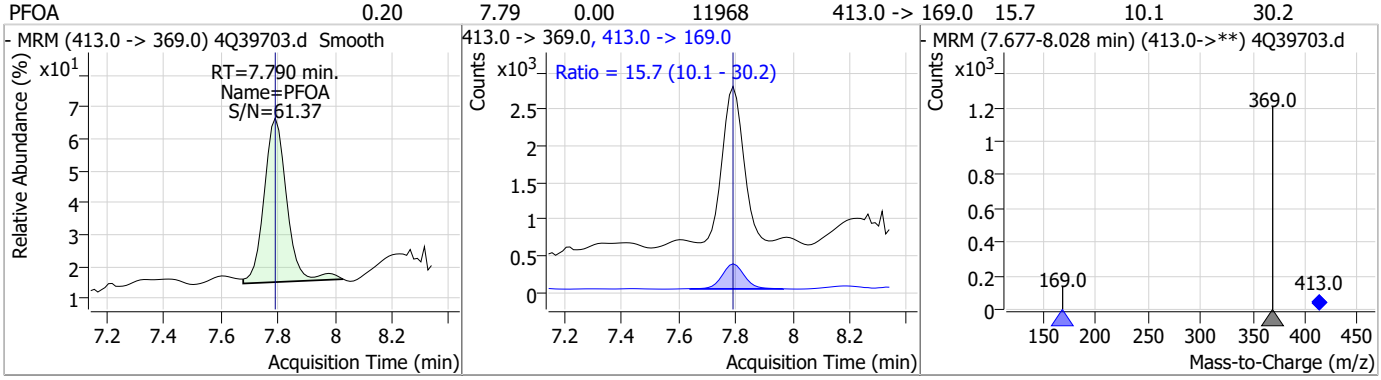
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.63	7.54	0.00	4527	427.1 -> 80.9	56.8	24.6	73.8



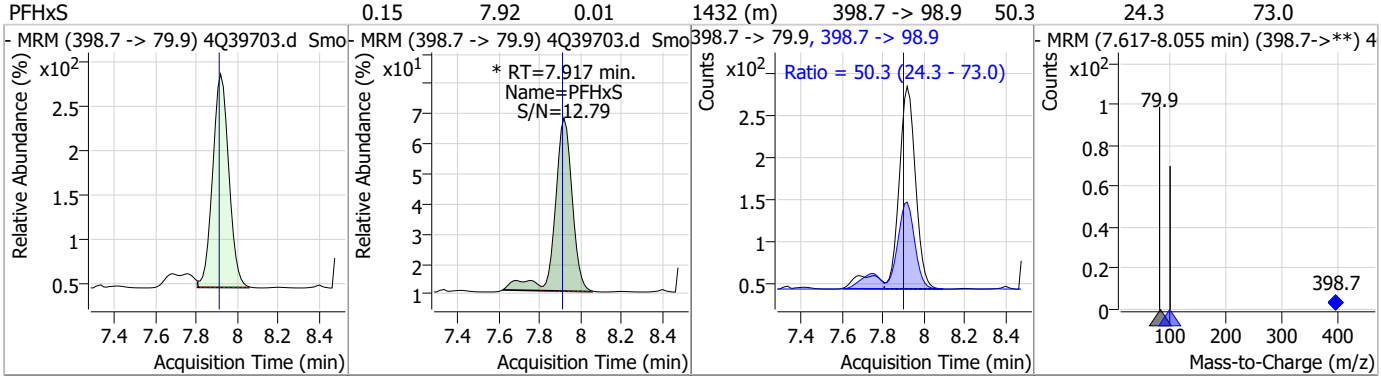
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.79	0.00	137019				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.20	7.79	0.00	11968	413.0 -> 169.0	15.7	10.1	30.2

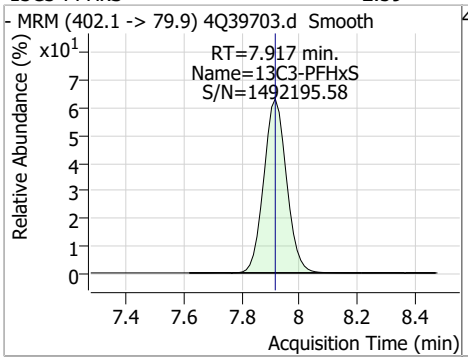


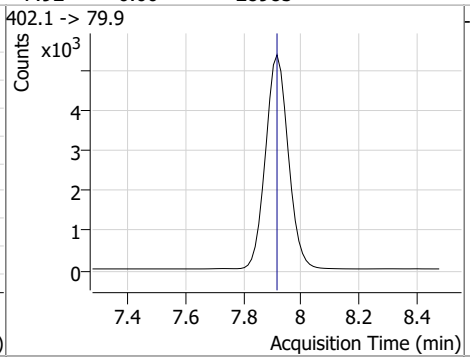
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.15	7.92	0.01	1432 (m)	398.7 -> 98.9	50.3	24.3	73.0

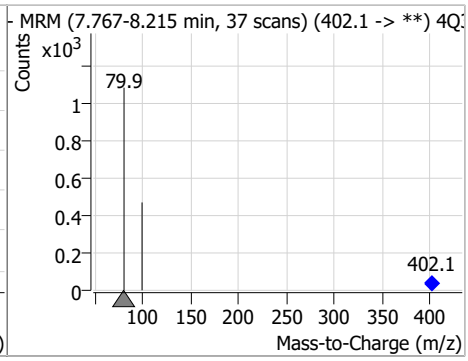


Perfluorinated Compounds by LC/MS/MS

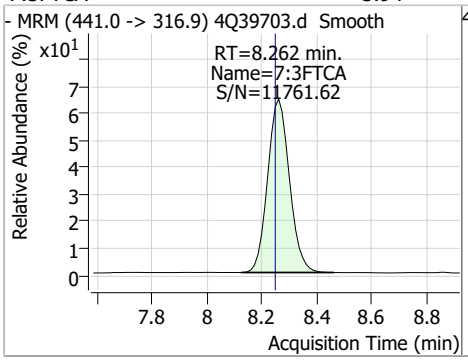
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.59	7.92	0.00	28985				

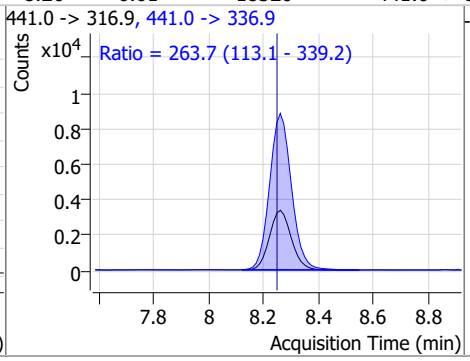


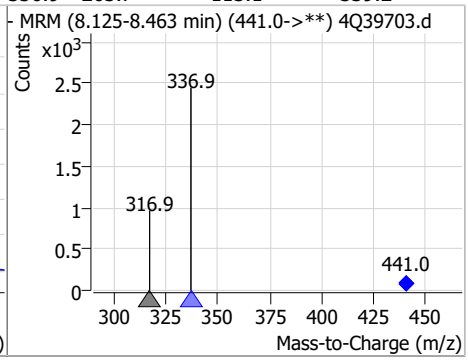




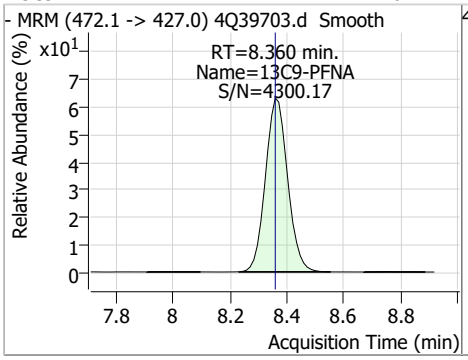
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	3.94	8.26	0.01	18520	441.0 -> 336.9	263.7	113.1	339.2

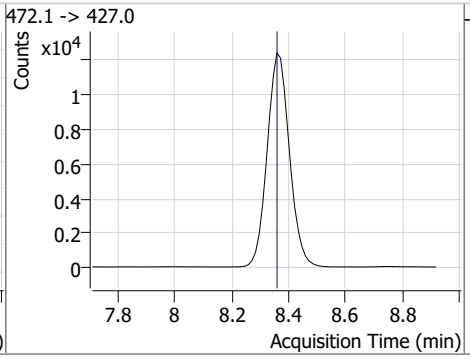


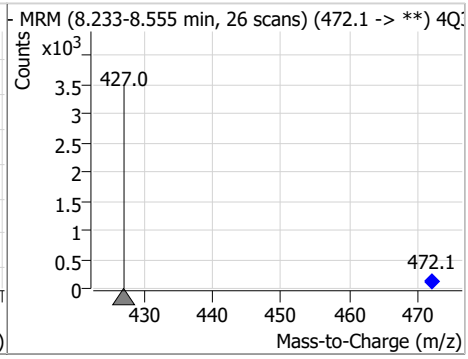




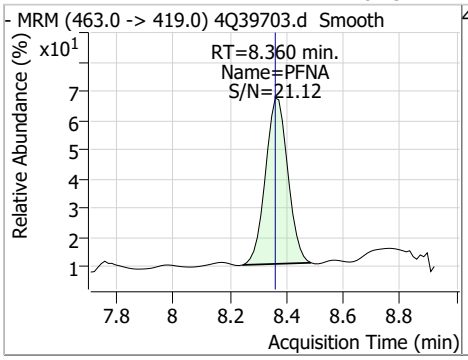
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	8.36	0.00	67070				

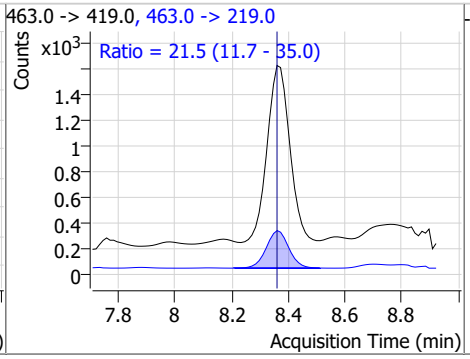


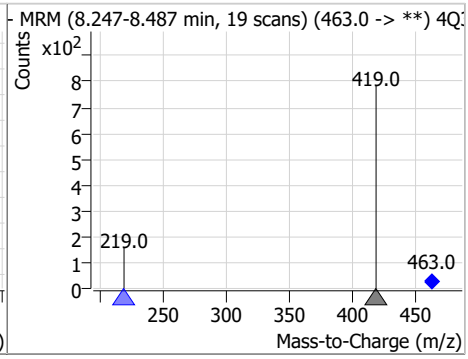




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.15	8.36	0.00	7490	463.0 -> 219.0	21.5	11.7	35.0

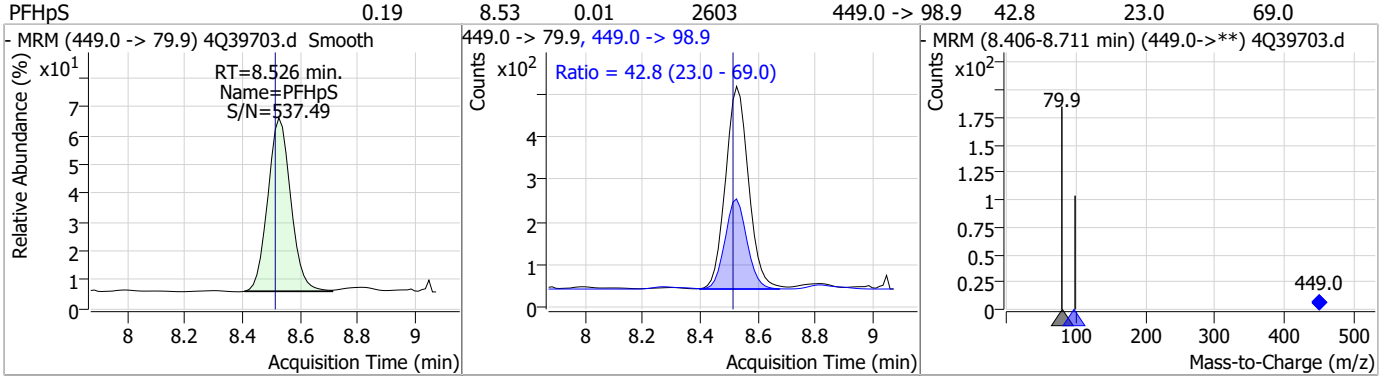




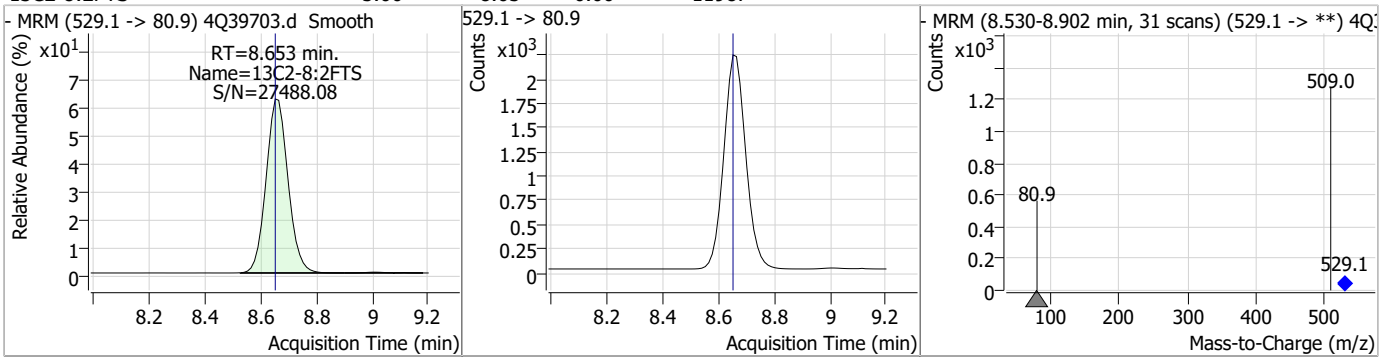


Perfluorinated Compounds by LC/MS/MS

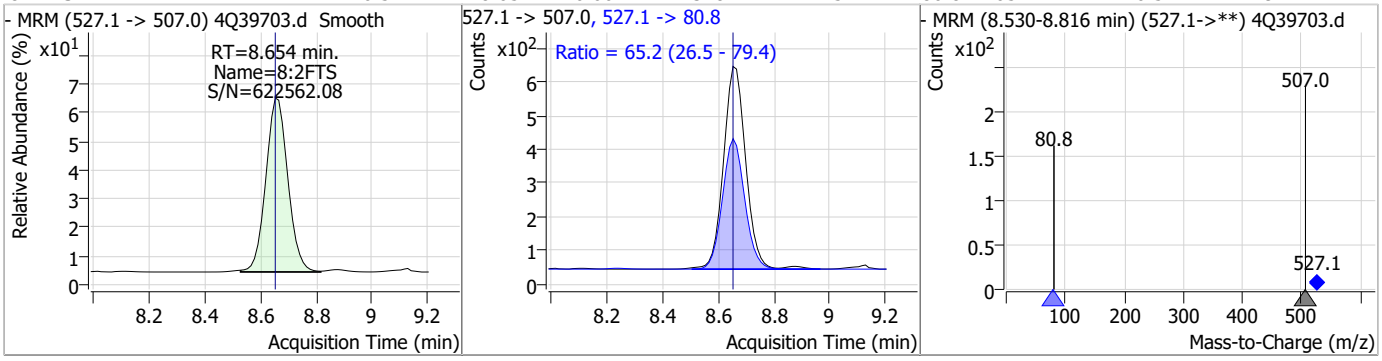
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.19	8.53	0.01	2603	449.0 -> 98.9	42.8	23.0	69.0



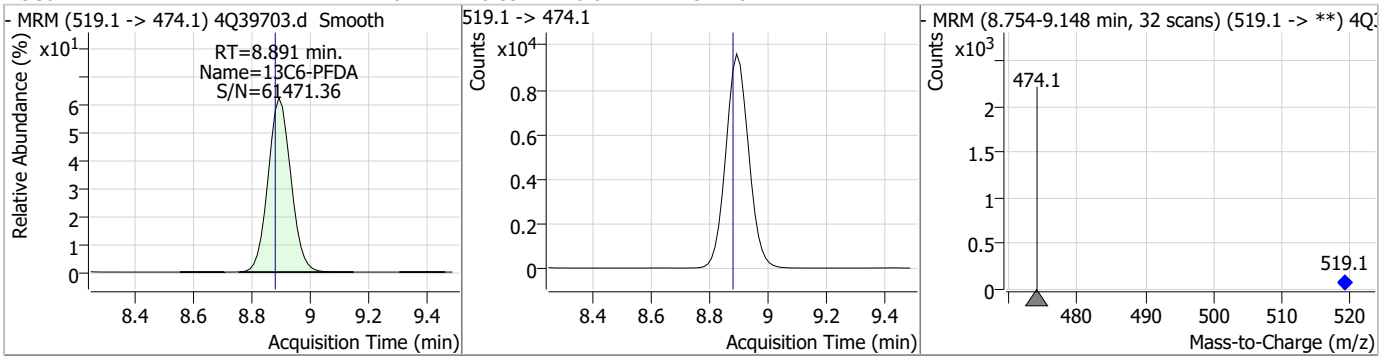
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.66	8.65	0.00	11987				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.57	8.65	0.00	3287	527.1 -> 80.8	65.2	26.5	79.4

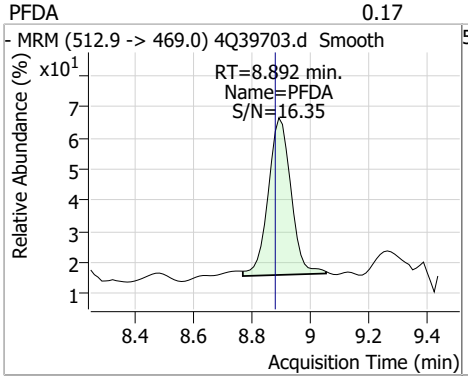


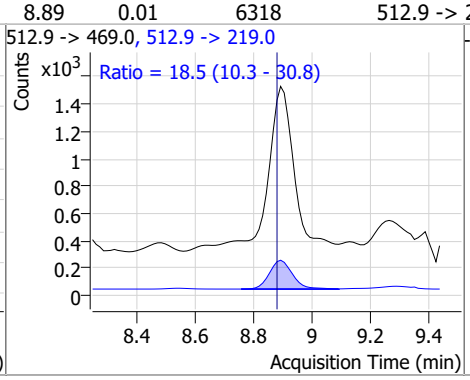
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.89	0.01	52115				

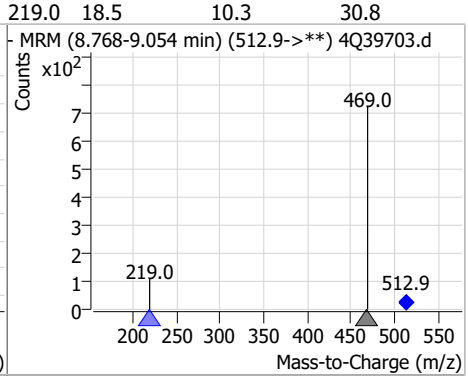


Perfluorinated Compounds by LC/MS/MS

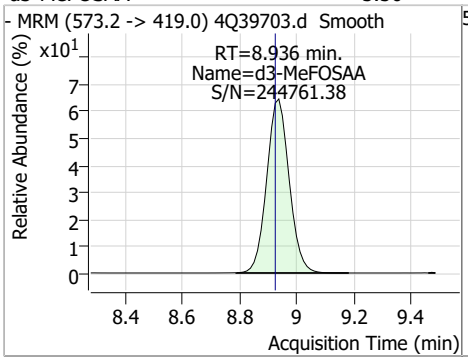
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.17	8.89	0.01	6318	512.9 -> 219.0	18.5	10.3	30.8

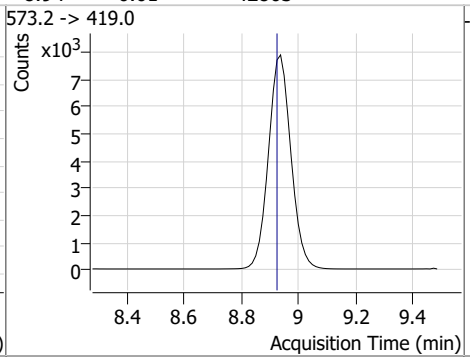


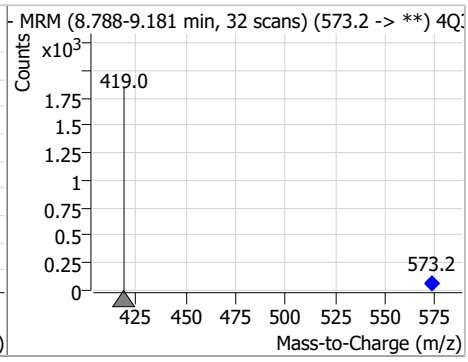




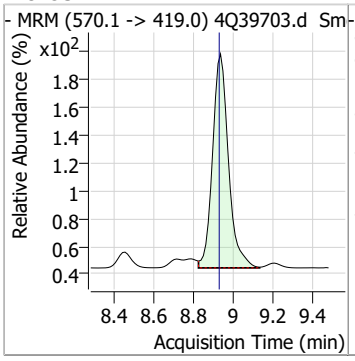
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.50	8.94	0.01	42803				

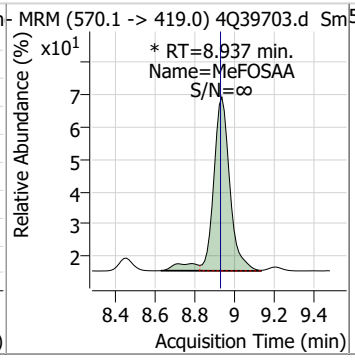


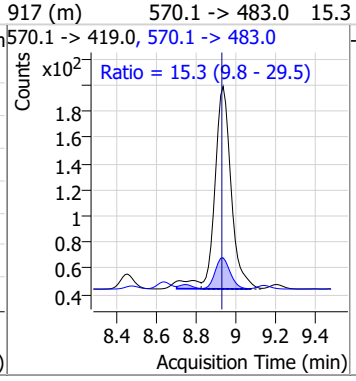


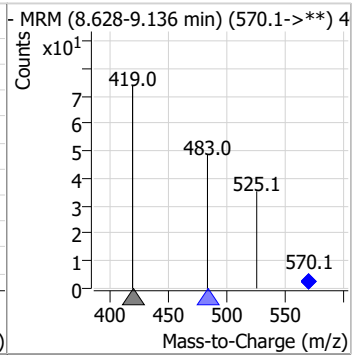


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.14	8.94	0.01	917 (m)	570.1 -> 483.0	15.3	9.8	29.5

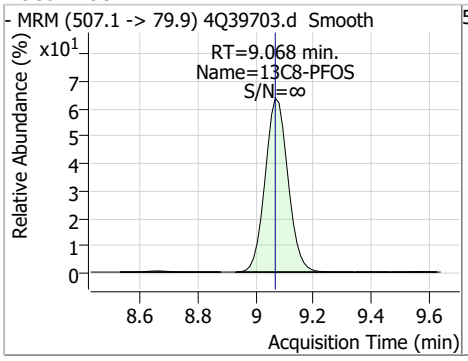


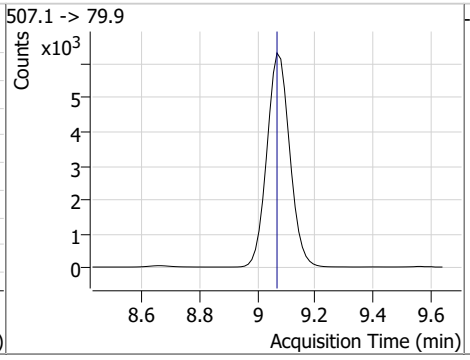


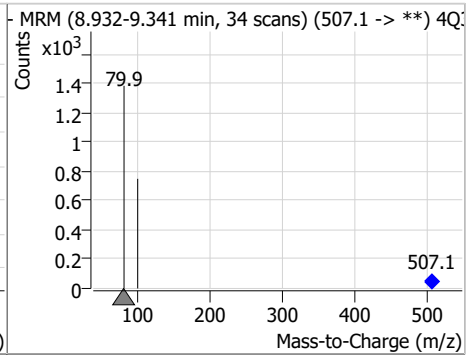




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.47	9.07	0.00	34131				

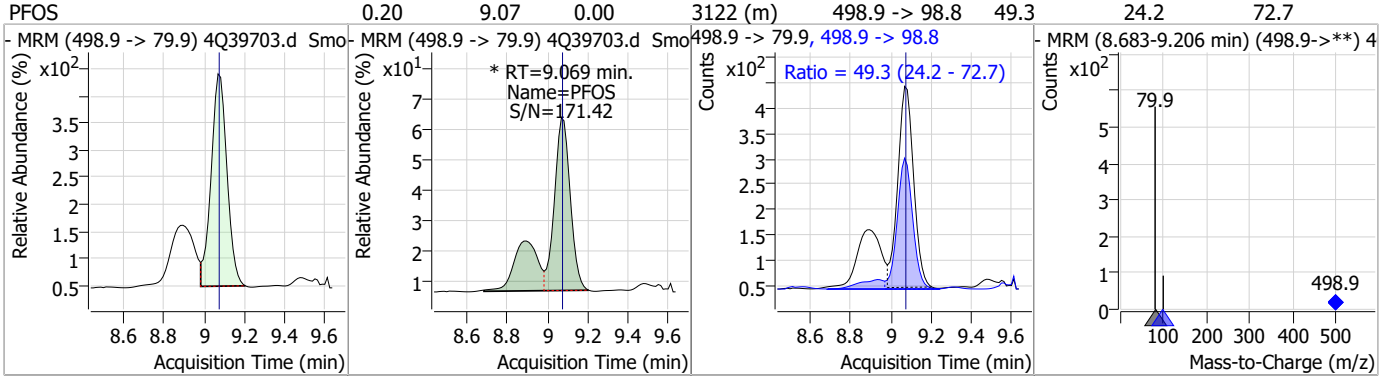




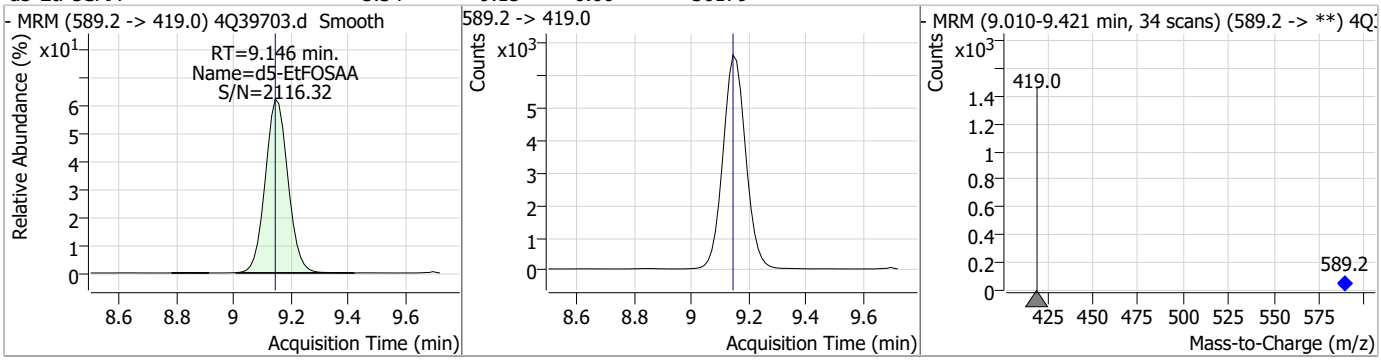


Perfluorinated Compounds by LC/MS/MS

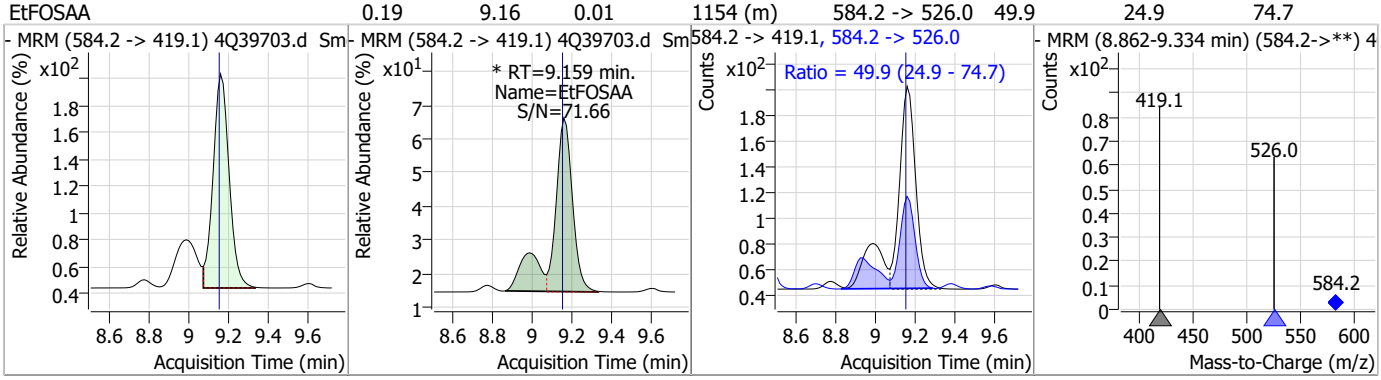
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.20	9.07	0.00	3122 (m)	498.9 -> 98.8	49.3	24.2	72.7



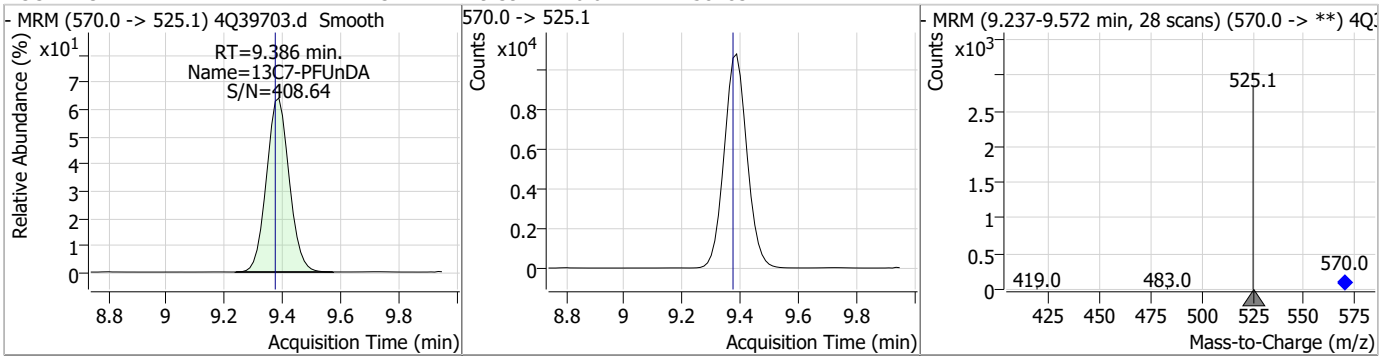
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.34	9.15	0.00	36179				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.19	9.16	0.01	1154 (m)	584.2 -> 526.0	49.9	24.9	74.7

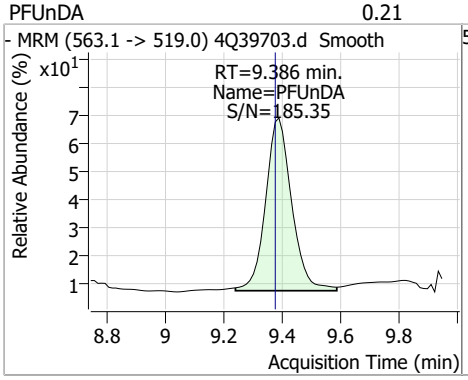


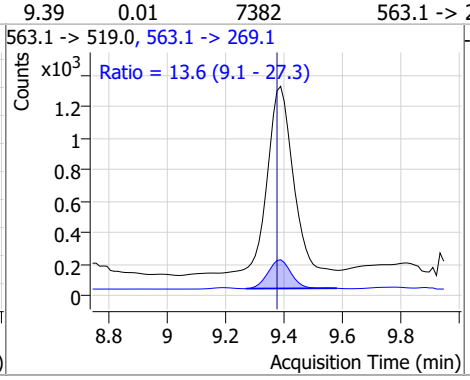
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	9.39	0.01	58483				

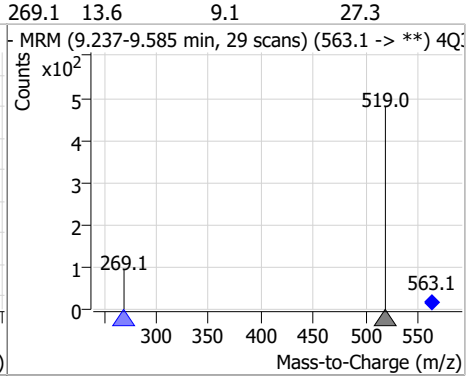


Perfluorinated Compounds by LC/MS/MS

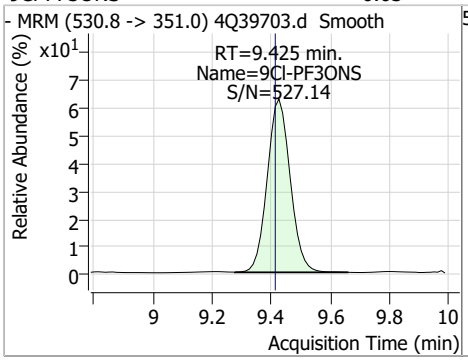
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.21	9.39	0.01	7382	563.1 -> 269.1	13.6	9.1	27.3

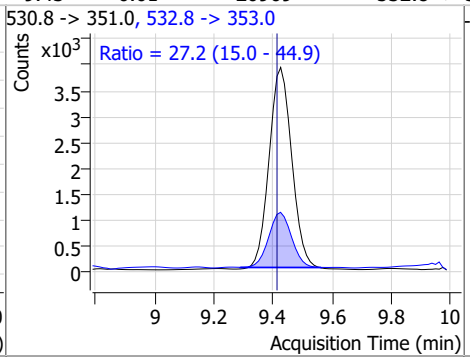


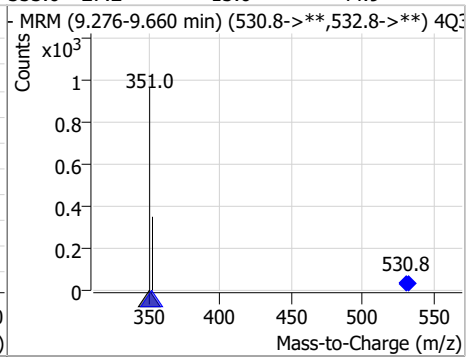




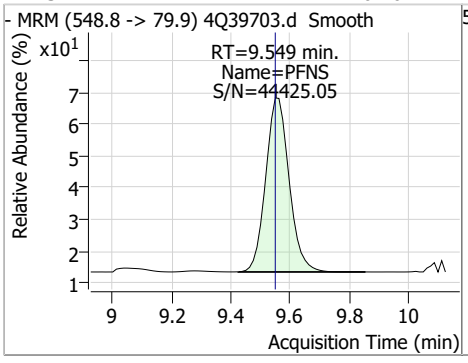
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.63	9.43	0.01	20969	532.8 -> 353.0	27.2	15.0	44.9

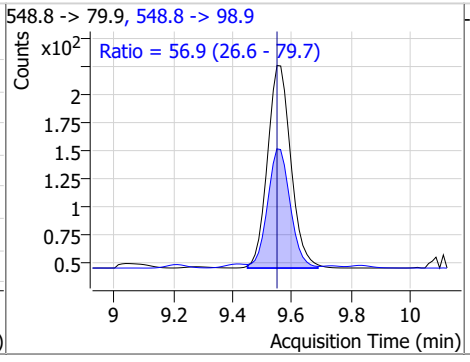


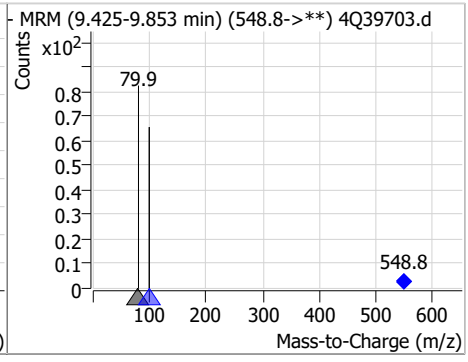




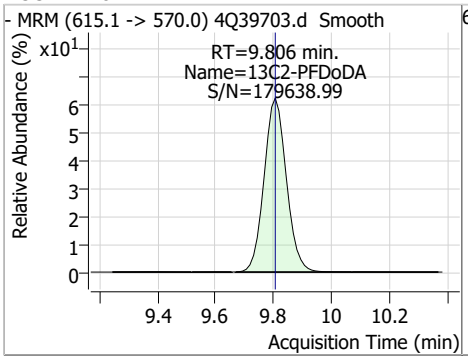
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.16	9.55	0.00	992	548.8 -> 98.9	56.9	26.6	79.7

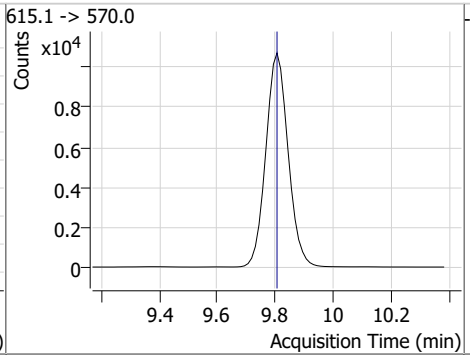


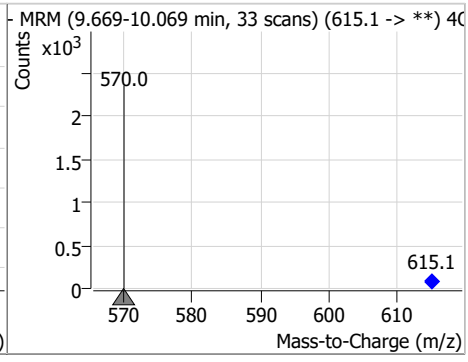




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.81	0.00	56811				

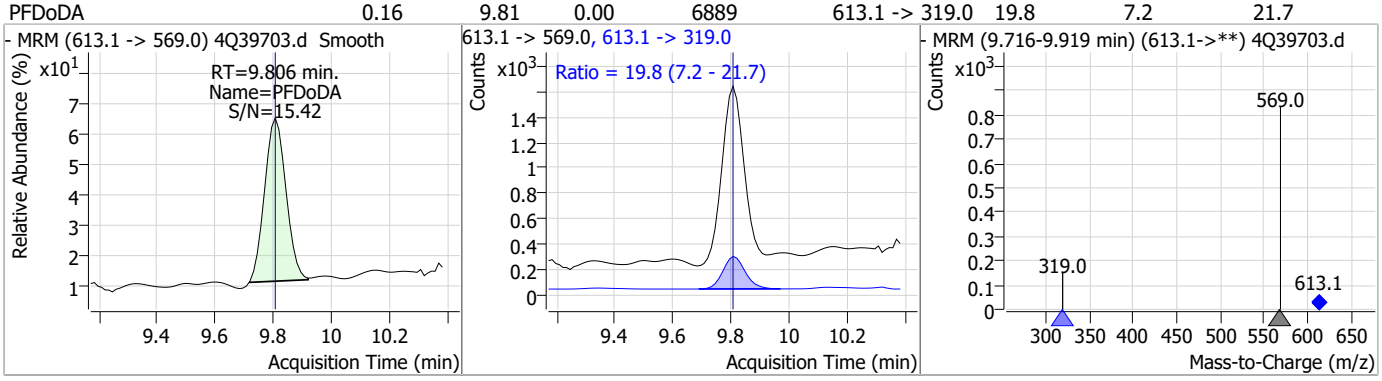




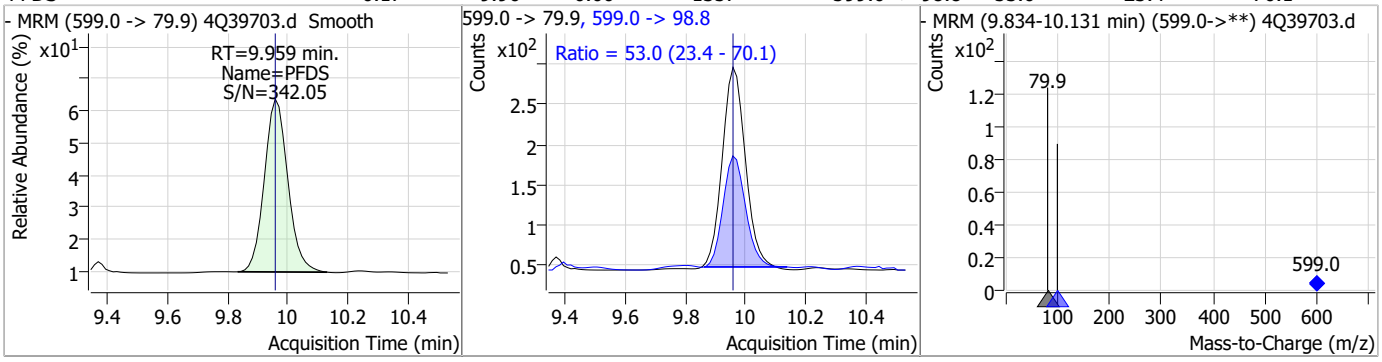


Perfluorinated Compounds by LC/MS/MS

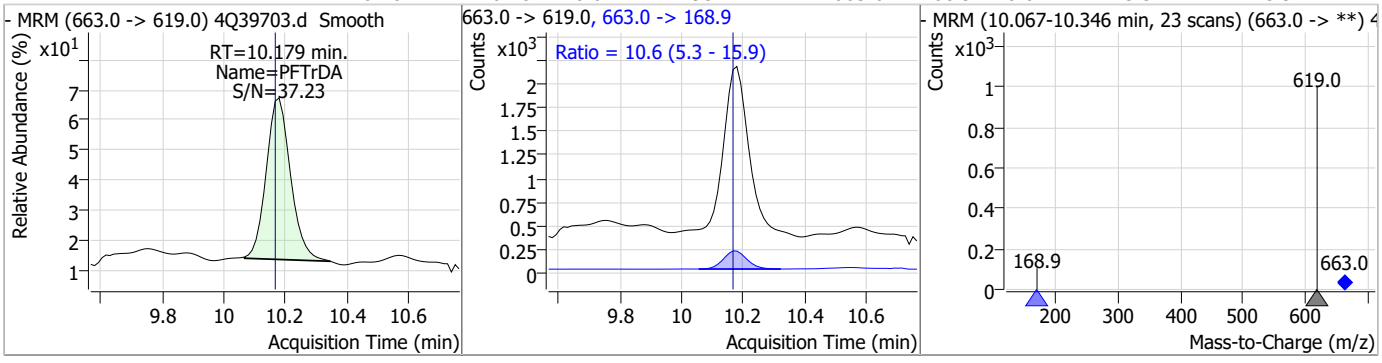
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.16	9.81	0.00	6889	613.1 -> 319.0	19.8	7.2	21.7



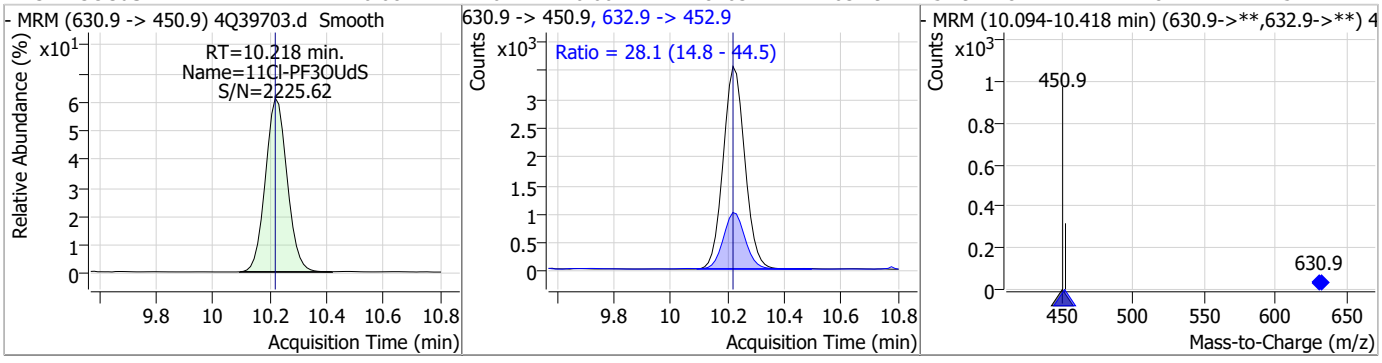
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.17	9.96	0.00	1357	599.0 -> 98.8	53.0	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.18	10.18	0.01	9572	663.0 -> 168.9	10.6	5.3	15.9

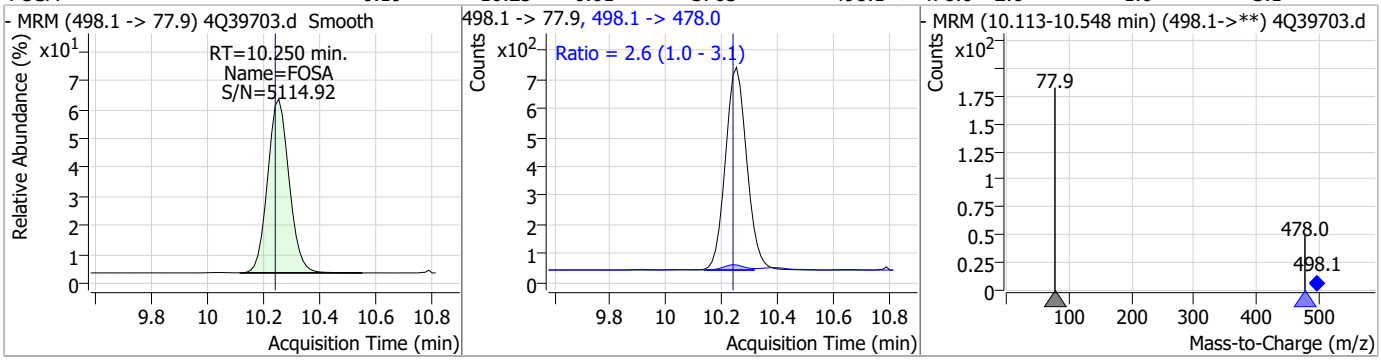


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.68	10.22	0.00	18703	632.9 -> 452.9	28.1	14.8	44.5

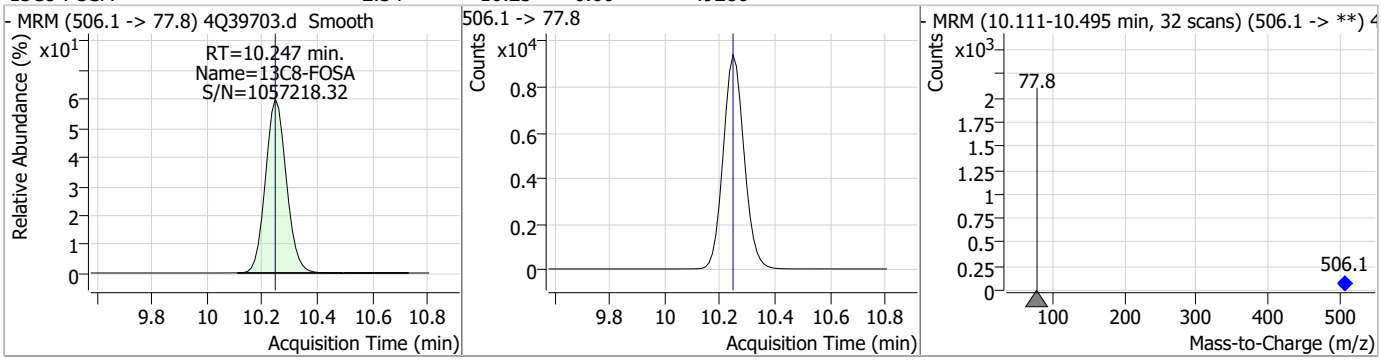


Perfluorinated Compounds by LC/MS/MS

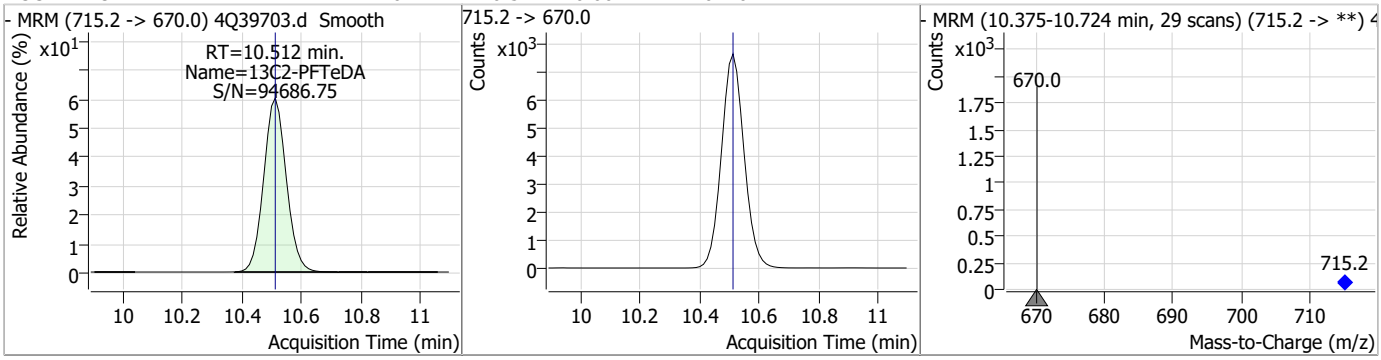
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.19	10.25	0.01	3703	498.1 -> 478.0	2.6	1.0	3.1



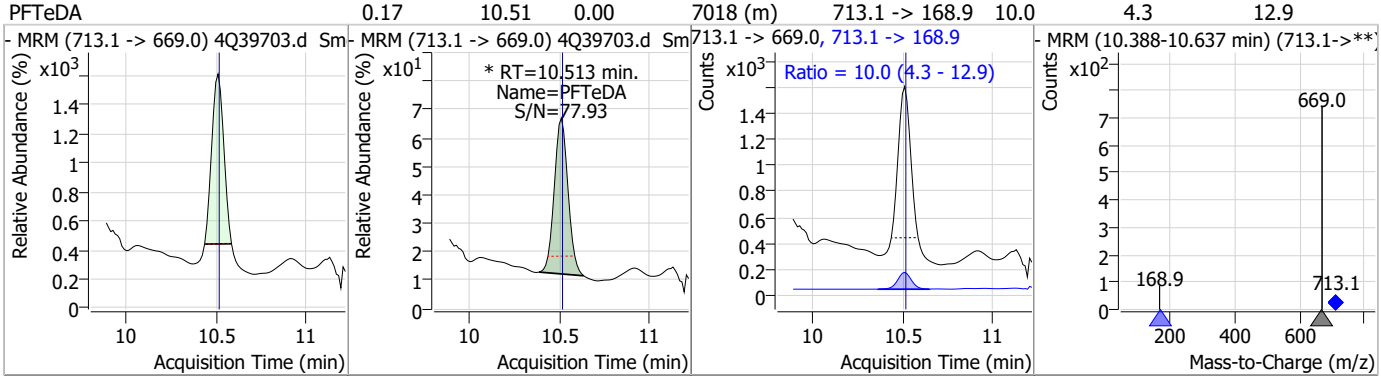
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.54	10.25	0.00	49286				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	10.51	0.00	40270				

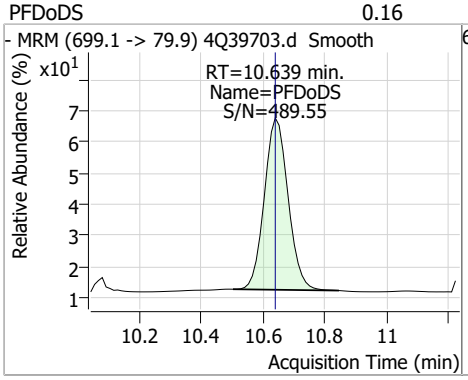


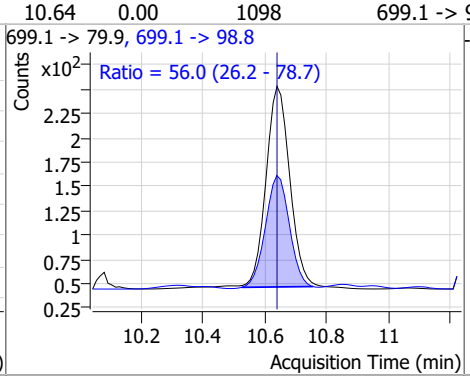
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.17	10.51	0.00	7018 (m)	713.1 -> 168.9	10.0	4.3	12.9

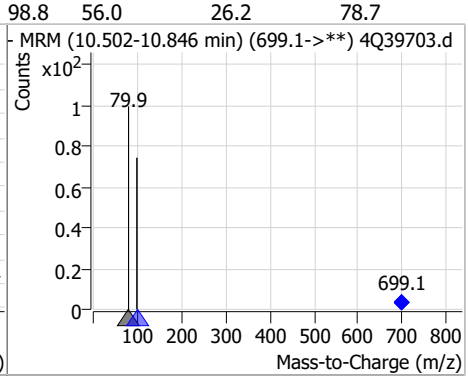


Perfluorinated Compounds by LC/MS/MS

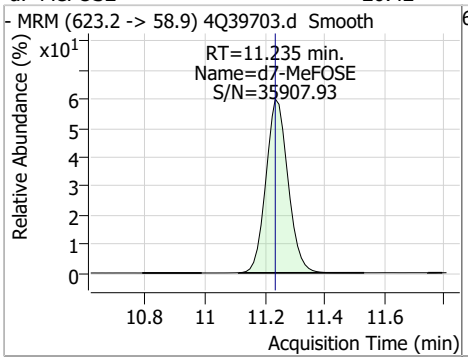
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.16	10.64	0.00	1098	699.1 -> 98.8	56.0	26.2	78.7

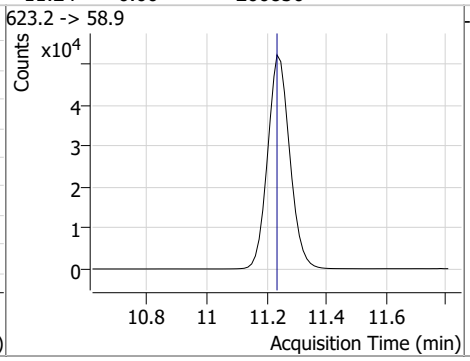


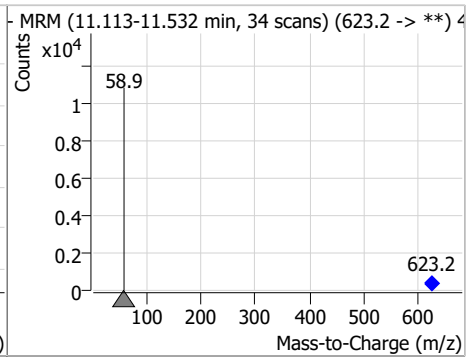




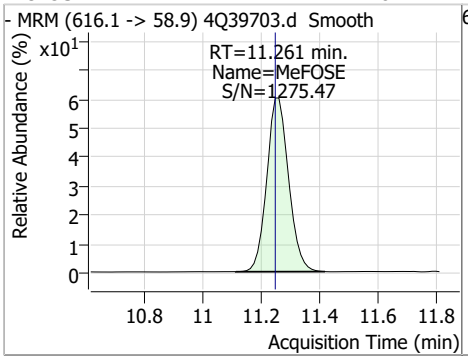
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.42	11.24	0.00	266850				

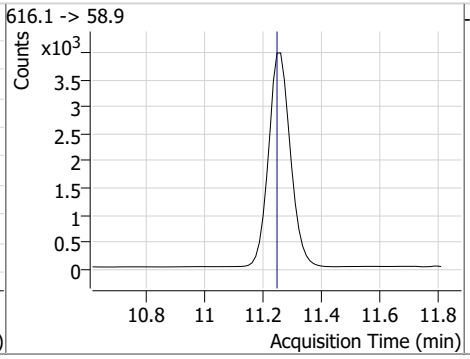


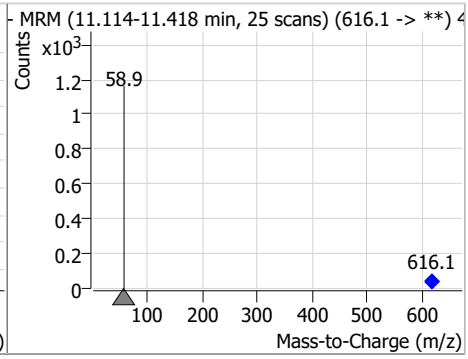




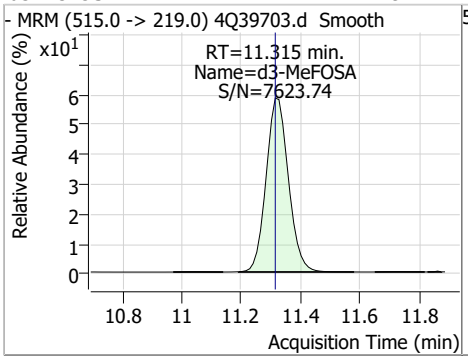
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.81	11.26	0.01	20376				

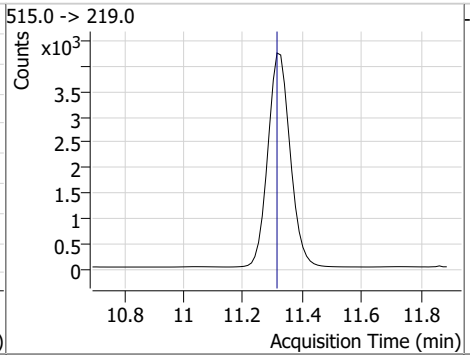


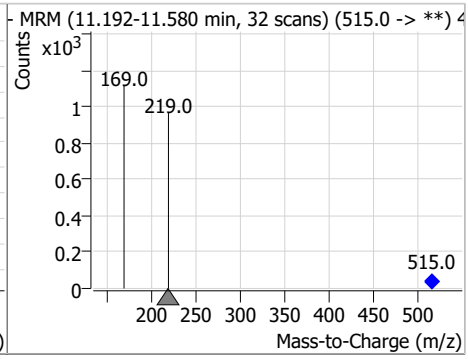




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.49	11.31	0.00	22017				

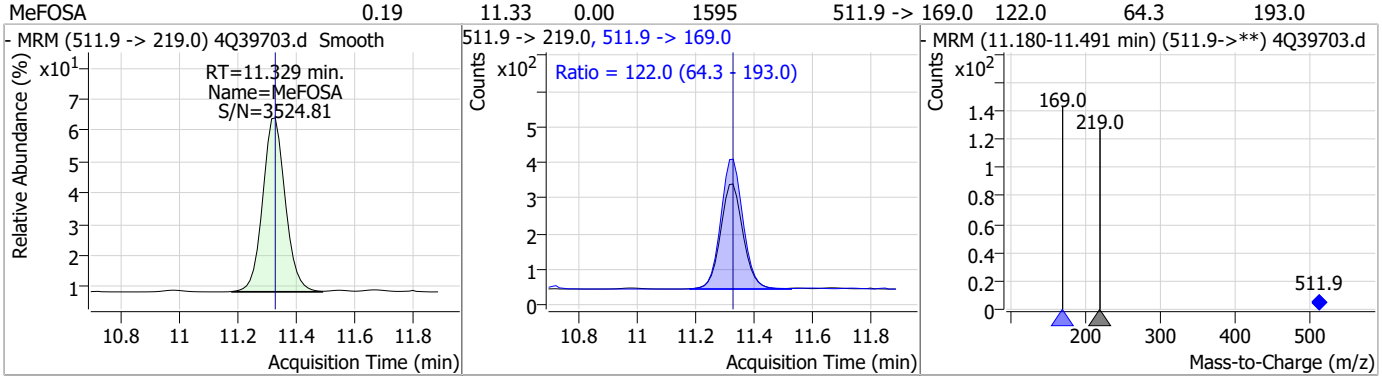




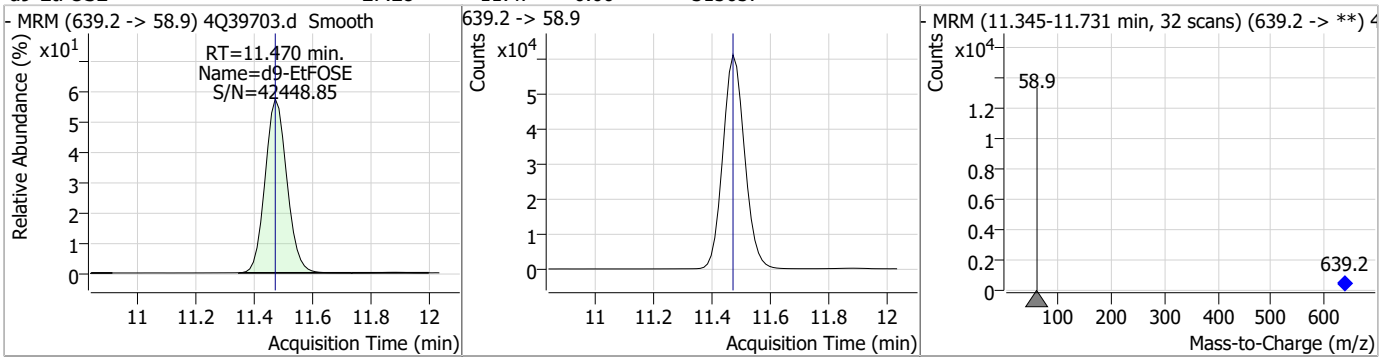


Perfluorinated Compounds by LC/MS/MS

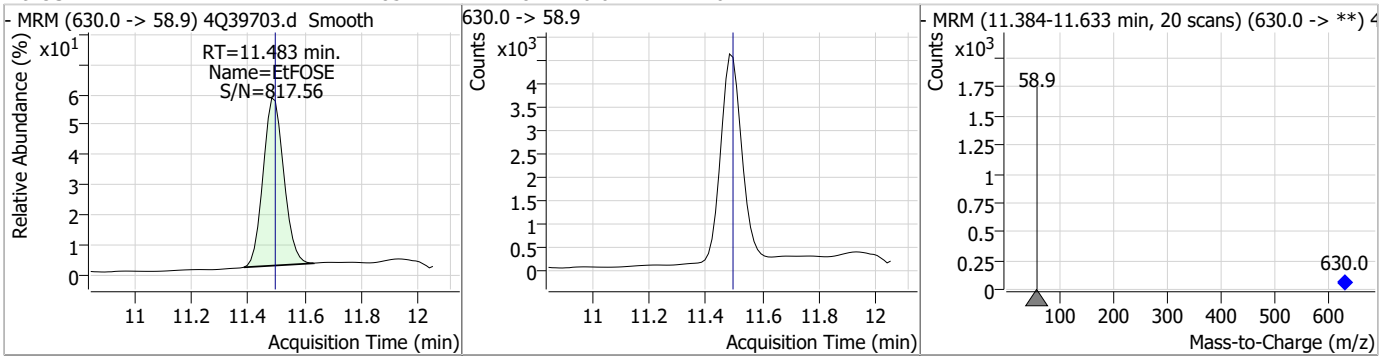
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.19	11.33	0.00	1595	511.9 -> 169.0	122.0	64.3	193.0



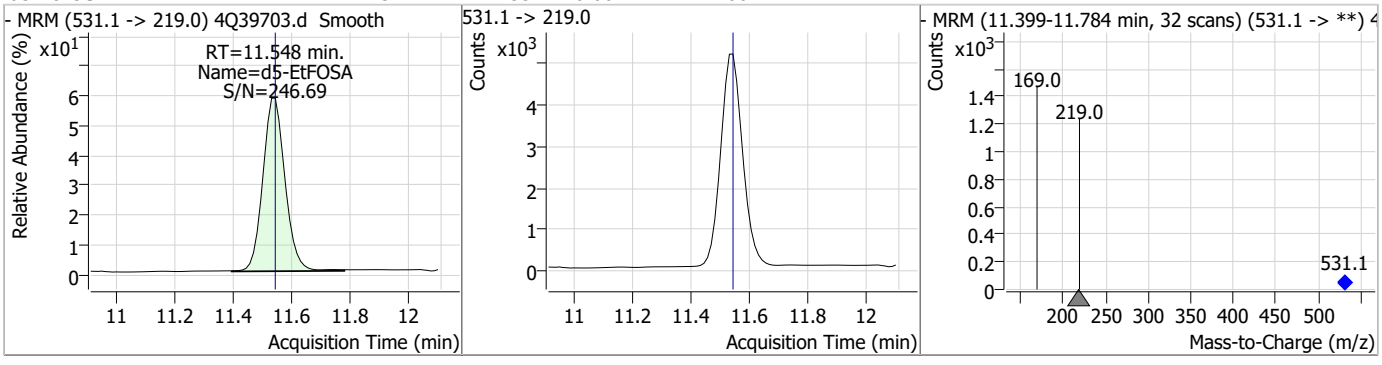
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.28	11.47	0.00	315657				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.85	11.48	-0.01	22621				

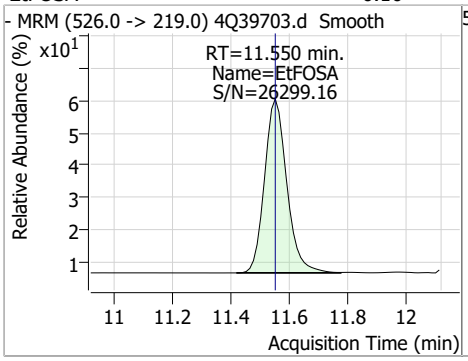


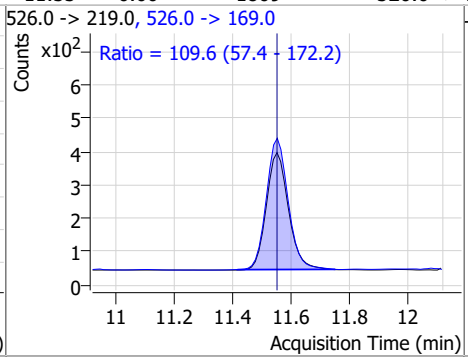
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.57	11.55	0.00	27166				

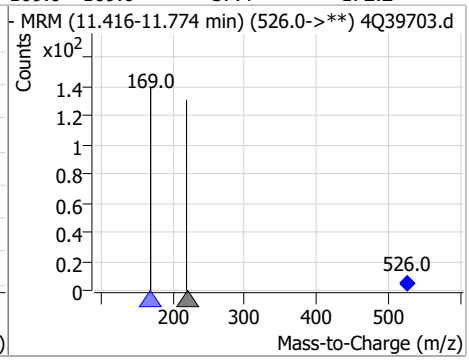


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.16	11.55	0.00	1869	526.0 -> 169.0	109.6	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-CC571
Lab FileID: 4Q39703.D
Injection Time: 01/25/23 16:02
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
4:2 Fluorotelomer sulfonate	757124-72-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.94	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.16	Split peak
Perfluorotetradecanoic acid	376-06-7		10.51	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39714.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 7:01:20 PM
Sample Name : cc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.149	216.8 -> 171.9	444825	10.00	µg/L	-0.025
M5-PFPeA	4.826	268.3 -> 223.0	300490	5.00	µg/L	-0.037
M5-PFHxA	6.135	318.0 -> 273.0	192037	2.50	µg/L	-0.037
M4-PFHpA	7.080	367.1 -> 322.0	102710	2.50	µg/L	-0.026
M8-PFOA	7.751	421.1 -> 376.0	167955	2.50	µg/L	-0.037
M9-PFNA	8.321	472.1 -> 427.0	82977	1.25	µg/L	-0.038
M6-PFDA	8.854	519.1 -> 474.1	65560	1.25	µg/L	-0.025
M7-PFUnDA	9.349	570.0 -> 525.1	74658	1.25	µg/L	-0.025
M2-PFDoDA	9.781	615.1 -> 570.0	69992	1.25	µg/L	-0.025
M2-PFTeDA	10.499	715.2 -> 670.0	50759	1.25	µg/L	-0.012
M8-FOSA	10.235	506.1 -> 77.8	60634	2.50	µg/L	-0.012
M3-PFBS	6.052	302.1 -> 79.9	52987	2.50	µg/L	-0.037
M3-PFHxS	7.879	402.1 -> 79.9	34736	2.50	µg/L	-0.037
M8-PFOS	9.031	507.1 -> 79.9	43972	2.50	µg/L	-0.037
M2-4:2FTS	5.783	329.1 -> 80.9	5157	5.00	µg/L	-0.039
M2-6:2FTS	7.499	429.1 -> 80.9	10858	5.00	µg/L	-0.037
M2-8:2FTS	8.616	529.1 -> 80.9	15051	5.00	µg/L	-0.037
M3-MeFOSAA	8.899	573.2 -> 419.0	57933	5.00	µg/L	-0.025
M3-HFPO-DA	6.526	286.9 -> 168.9	143806	10.00	µg/L	-0.025
M5-EtFOSAA	9.109	589.2 -> 419.0	47956	5.00	µg/L	-0.037
M7-MeFOSE	11.235	623.2 -> 58.9	331128	25.00	µg/L	0.000
M9-EtFOSE	11.470	639.2 -> 58.9	363470	25.00	µg/L	0.000
M5-EtFOSA	11.535	531.1 -> 219.0	32985	2.50	µg/L	-0.012
M3-MeFOSA	11.315	515.0 -> 219.0	26457	2.50	µg/L	0.000
13C4-PFOS	9.031	502.8 -> 79.9	42275	2.50	µg/L	-0.037
13C3-PFBA	3.153	216.0 -> 172.0	251240	5.00	µg/L	-0.025
18O2-PFHxS	7.878	403.0 -> 83.9	23578	2.50	µg/L	-0.037
13C4-PFOA	7.752	417.1 -> 372.0	193038	2.50	µg/L	-0.037
13C2-PFDA	8.854	515.1 -> 470.1	56230	1.25	µg/L	-0.025
13C5-PFNA	8.322	468.0 -> 423.0	88048	1.25	µg/L	-0.038
13C2-PFHxA	6.136	315.1 -> 270.0	180678	2.50	µg/L	-0.037
System Monitoring Compounds						
13C2-4:2FTS	5.783	329.1 -> 80.9	5157	6.07	µg/L	-0.039
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C2-6:2FTS	7.499	429.1 -> 80.9	10858	5.71	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
13C2-8:2FTS	8.616	529.1 -> 80.9	15051	5.78	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.6%		
13C2-PFDoDA	9.781	615.1 -> 570.0	69992	1.28	µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-PFTeDA	10.499	715.2 -> 670.0	50759	1.31	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFBS	6.052	302.1 -> 79.9	52987	2.60	µg/L	-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-PFHxS	7.879	402.1 -> 79.9	34736	2.53	µg/L	-0.037

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFBA	3.149	216.8 -> 171.9	444825	9.82 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C4-PFHpA	7.080	367.1 -> 322.0	102710	2.44 µg/L		-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C5-PFHxA	6.135	318.0 -> 273.0	192037	2.53 µg/L		-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C5-PFPeA	4.826	268.3 -> 223.0	300490	5.11 µg/L		-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C6-PFDA	8.854	519.1 -> 474.1	65560	1.32 µg/L		-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C7-PFUnDA	9.349	570.0 -> 525.1	74658	1.40 µg/L		-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C8-FOSA	10.235	506.1 -> 77.8	60634	2.51 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-PFOA	7.751	421.1 -> 376.0	167955	2.42 µg/L		-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOS	9.031	507.1 -> 79.9	43972	2.55 µg/L		-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C9-PFNA	8.321	472.1 -> 427.0	82977	1.33 µg/L		-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%		
d3-MeFOSAA	8.899	573.2 -> 419.0	57933	5.97 µg/L		-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.3%		
13C3-HFPO-DA	6.526	286.9 -> 168.9	143806	9.98 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d3-MeFOSA	11.315	515.0 -> 219.0	26457	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
d5-EtFOSAA	9.109	589.2 -> 419.0	47956	5.67 µg/L		-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
d7-MeFOSE	11.235	623.2 -> 58.9	331128	26.27 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
d9-EtFOSE	11.470	639.2 -> 58.9	363470	25.17 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d5-EtFOSA	11.535	531.1 -> 219.0	32985	2.50 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
Target Compounds						QValue
4:2FTS	5.784	327.1 -> 307.0	71381	8.47 µg/L		99
		327.1 -> 80.9	32696			
6:2FTS	7.499	427.1 -> 407.0	72769	8.46 µg/L		99
		427.1 -> 80.9	35438			
8:2FTS	8.617	527.1 -> 507.0	60586	8.32 µg/L		96
		527.1 -> 80.8	33716			
EtFOSAA	9.122	584.2 -> 419.1	17048	2.12 µg/L	m	100
		584.2 -> 526.0	8500			
FOSA	10.225	498.1 -> 77.9	55127	2.35 µg/L		100
		498.1 -> 478.0	1218			
MeFOSAA	8.900	570.1 -> 419.0	19579	2.28 µg/L	m	98
		570.1 -> 483.0	4045			
PFBA	3.157	212.8 -> 168.9	107777	8.71 µg/L		100
PFBS	6.053	298.7 -> 79.9	46629	1.95 µg/L		96
		298.7 -> 98.8	17041			
PFDA	8.855	512.9 -> 469.0	103799	2.22 µg/L		99
		512.9 -> 219.0	20993			
PFDoDA	9.781	613.1 -> 569.0	120565	2.24 µg/L		98
		613.1 -> 319.0	18403			
PFDS	9.933	599.0 -> 79.9	22047	2.16 µg/L		96

Perfluorinated Compounds by LC/MS/MS

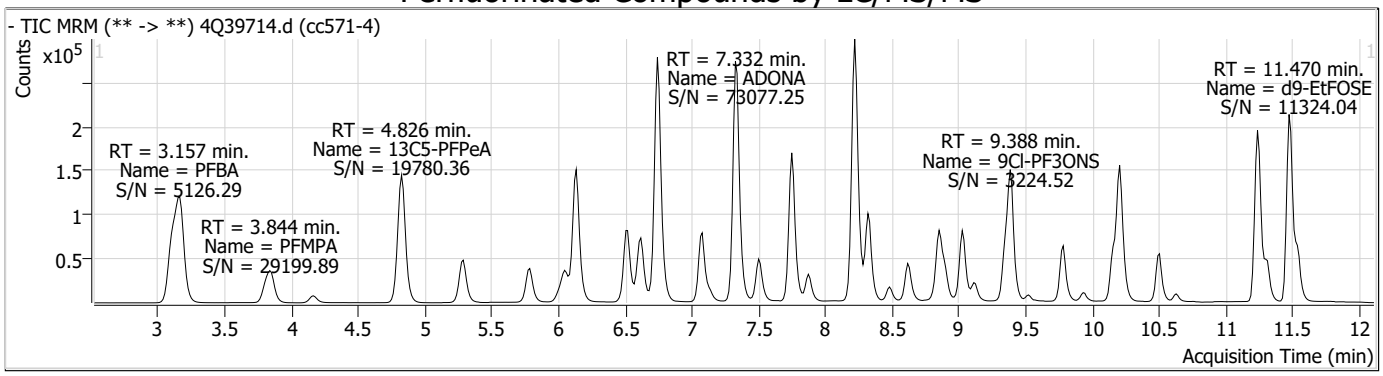
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	9676				
PFHpA	7.080	363.1 -> 319.0	146439	2.29	µg/L		99
		363.1 -> 169.0	24387				
PFHpS	8.488	449.0 -> 79.9	37600	2.12	µg/L		96
		449.0 -> 98.9	18169				
PFHxA	6.138	313.0 -> 269.0	172306	2.31	µg/L		100
		313.0 -> 118.9	4870				
PFHxS	7.880	398.7 -> 79.9	20457	1.82	µg/L	m	89
		398.7 -> 98.9	11552				
PFNA	8.322	463.0 -> 419.0	124988	2.07	µg/L		100
		463.0 -> 219.0	29402				
PFNS	9.524	548.8 -> 79.9	16144	2.06	µg/L		95
		548.8 -> 98.9	8021				
PFOA	7.753	413.0 -> 369.0	170692	2.29	µg/L		99
		413.0 -> 169.0	33698				
PFOS	9.032	498.9 -> 79.9	43809	2.13	µg/L	m	99
		498.9 -> 98.8	20770				
PFPeA	4.829	263.0 -> 219.0	301577	4.58	µg/L		100
PFPeS	7.146	349.1 -> 79.9	20856	1.92	µg/L		96
		349.1 -> 98.9	8707				
PFTeDA	10.500	713.1 -> 669.0	119308	2.34	µg/L		99
		713.1 -> 168.9	9842				
PFTrDA	10.154	663.0 -> 619.0	153911	2.33	µg/L		98
		663.0 -> 168.9	15337				
PFUnDA	9.349	563.1 -> 519.0	93523	2.07	µg/L		97
		563.1 -> 269.1	18277				
11Cl-PF3OUdS	10.206	630.9 -> 450.9	308626	9.18	µg/L		100
		632.9 -> 452.9	91737				
9Cl-PF3ONS	9.388	530.8 -> 351.0	354840	8.66	µg/L		100
		532.8 -> 353.0	105991				
ADONA	7.332	376.9 -> 250.9	700559	9.03	µg/L		99
		376.9 -> 84.8	252000				
HFPO-DA	6.527	284.9 -> 168.9	127093	9.38	µg/L		99
		284.9 -> 184.9	12901				
3:3FTCA	4.161	241.0 -> 177.0	32071	10.38	µg/L		100
		241.0 -> 117.0	2990				
5:3FTCA	6.746	341.0 -> 237.1	568003	57.19	µg/L		99
		341.0 -> 217.0	429224				
7:3FTCA	8.224	441.0 -> 316.9	320954	56.27	µg/L		99
		441.0 -> 336.9	731228				
EtFOSA	11.550	526.0 -> 219.0	30870	2.23	µg/L		99
		526.0 -> 169.0	35710				
EtFOSE	11.483	630.0 -> 58.9	346591	24.56	µg/L		100
MeFOSA	11.316	511.9 -> 219.0	24093	2.39	µg/L		96
		511.9 -> 169.0	29814				
MeFOSE	11.248	616.1 -> 58.9	321809	23.00	µg/L		100
PFDoDS	10.627	699.1 -> 79.9	18905	2.20	µg/L		99
		699.1 -> 98.8	9800				
NFDHA	6.004	295.0 -> 201.0	21738	4.43	µg/L		94
		295.0 -> 84.9	7074				
PFMBA	5.291	279.0 -> 85.1	190444	4.64	µg/L		100
PFMPA	3.844	229.0 -> 84.9	192213	4.53	µg/L		100
PFEESA	6.621	314.8 -> 134.9	265631	4.16	µg/L		99
		314.8 -> 82.9	7605				

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

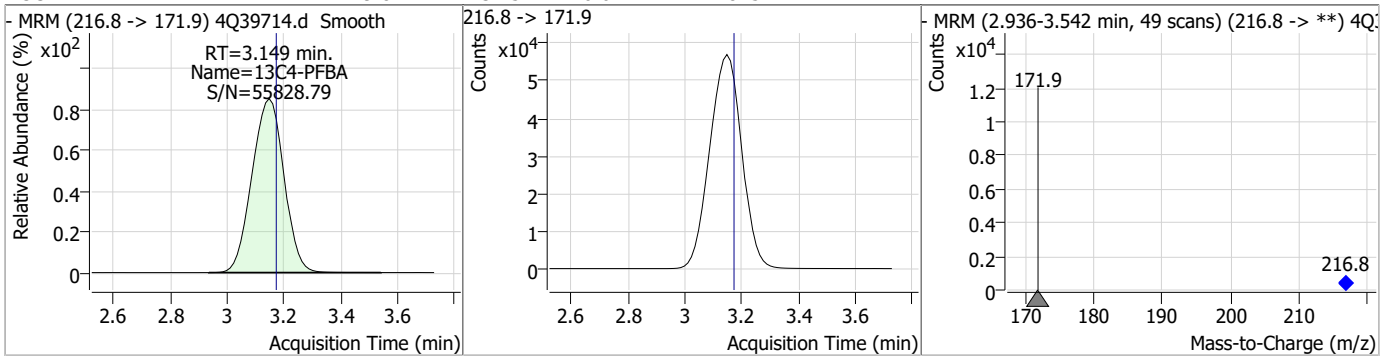
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

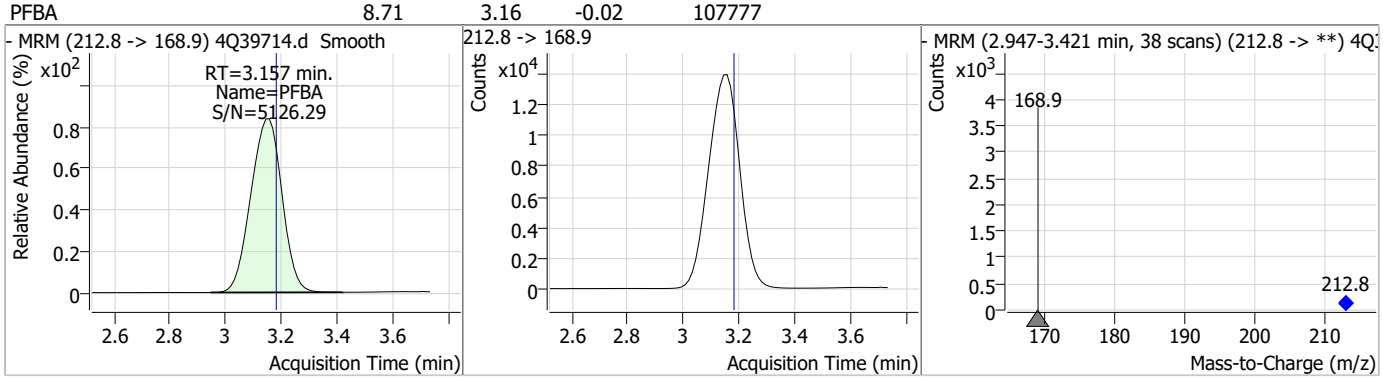
Perfluorinated Compounds by LC/MS/MS



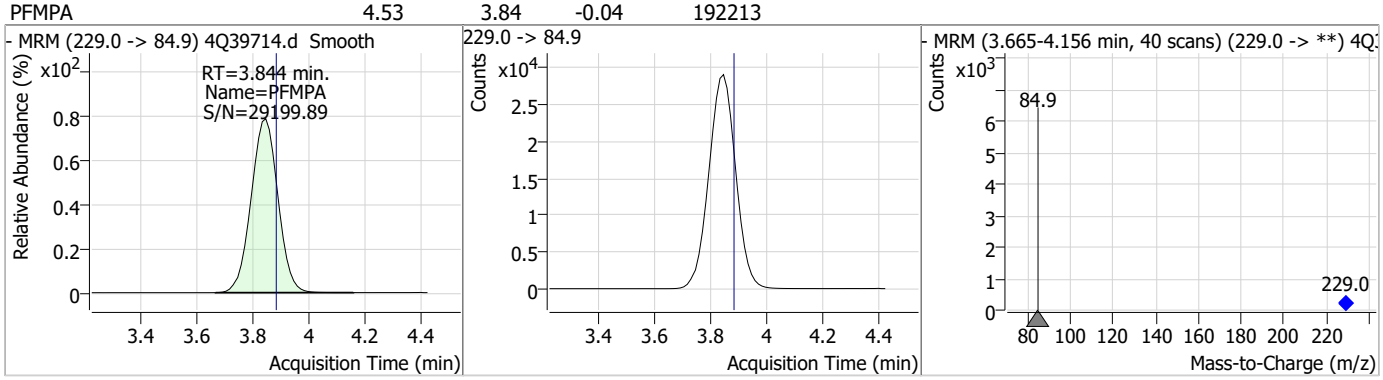
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.82	3.15	-0.02	444825				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.71	3.16	-0.02	107777				

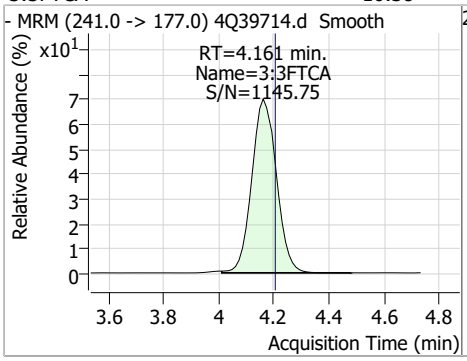


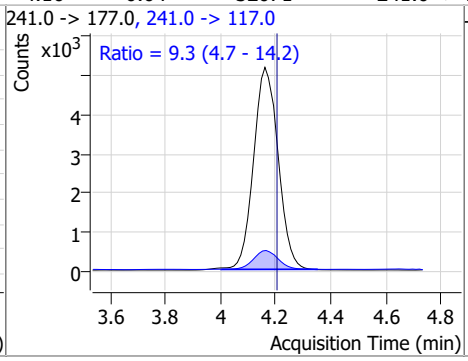
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.53	3.84	-0.04	192213				

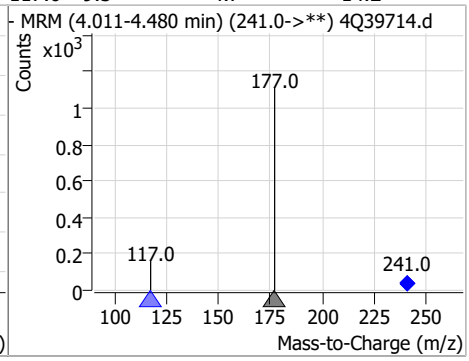


Perfluorinated Compounds by LC/MS/MS

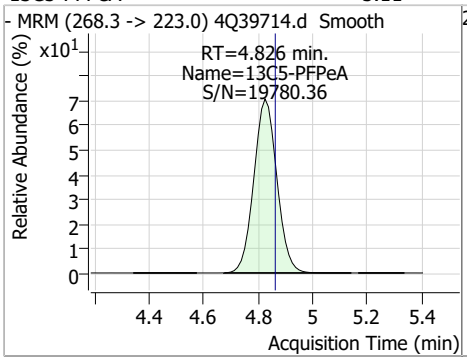
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.38	4.16	-0.04	32071	241.0 -> 117.0	9.3	4.7	14.2

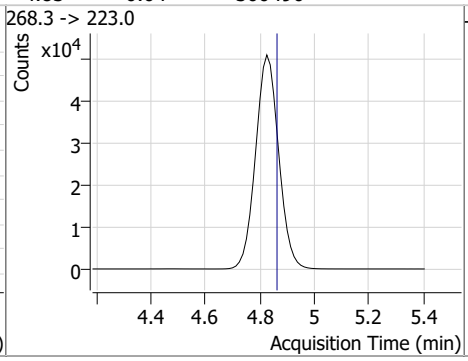


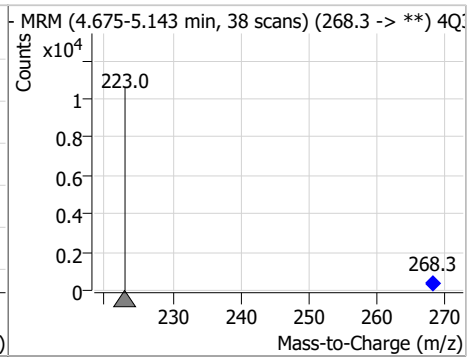




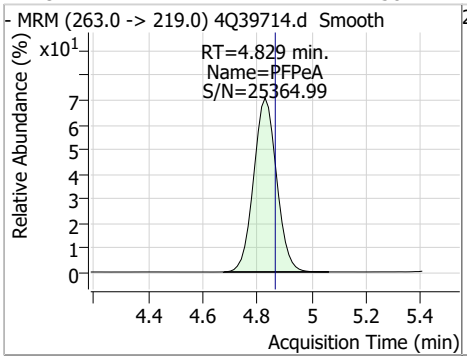
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.11	4.83	-0.04	300490				

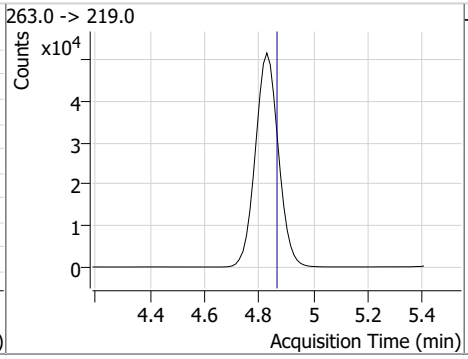


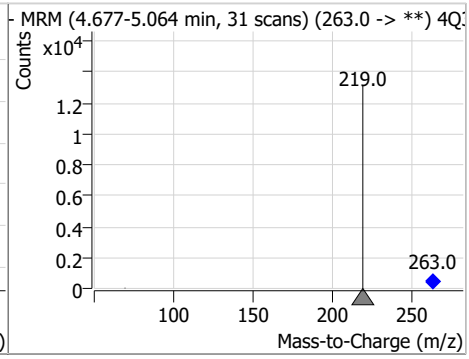




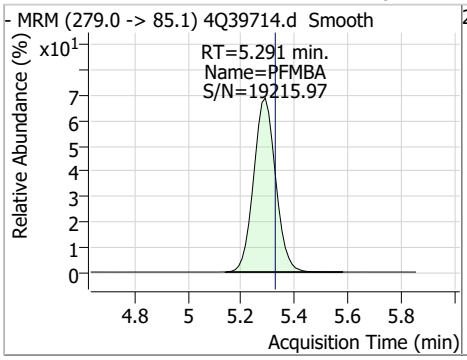
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.58	4.83	-0.04	301577				

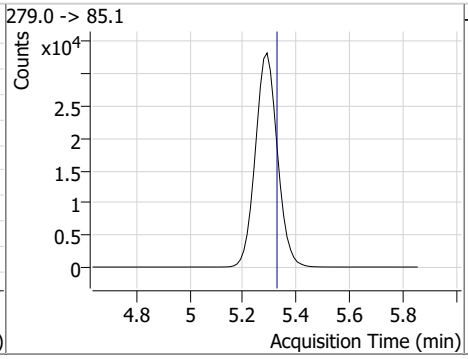


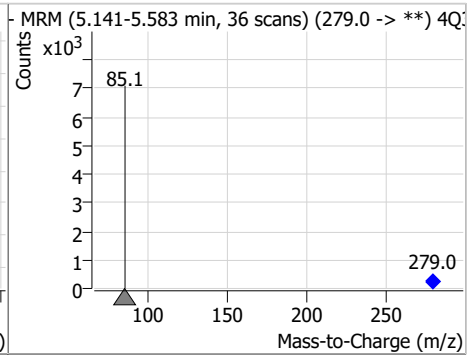




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.64	5.29	-0.04	190444				

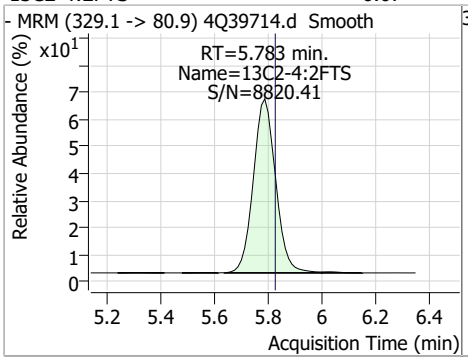


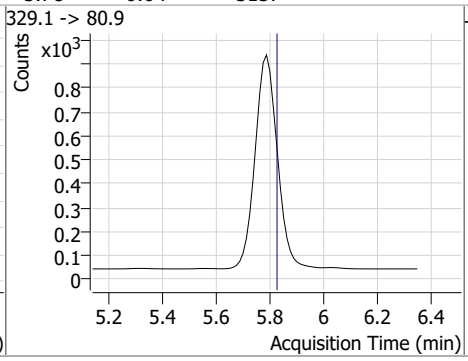


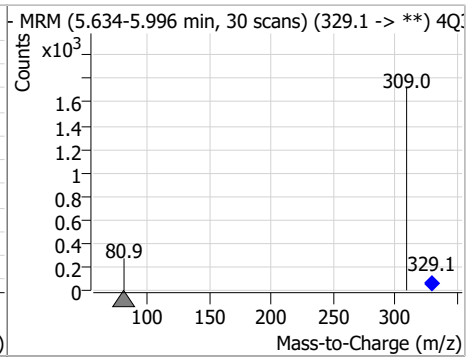


Perfluorinated Compounds by LC/MS/MS

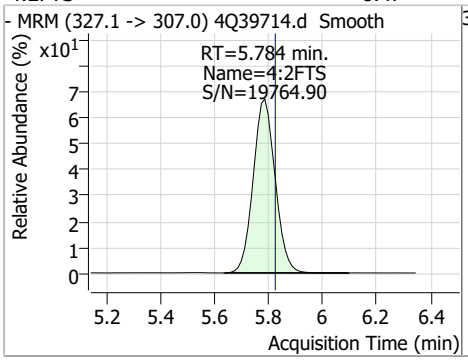
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.07	5.78	-0.04	5157				

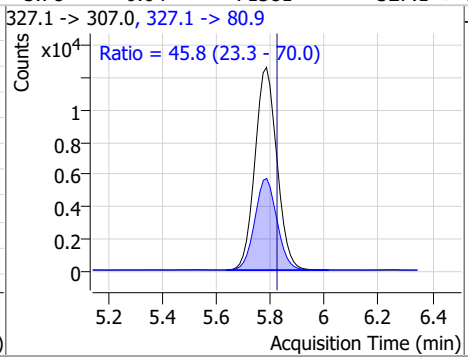


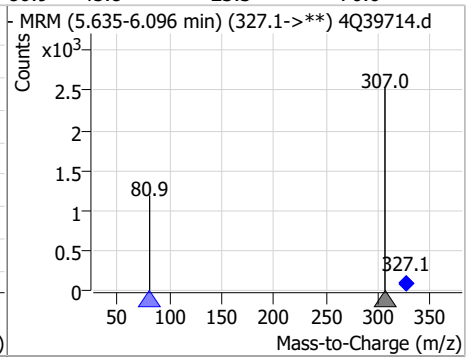




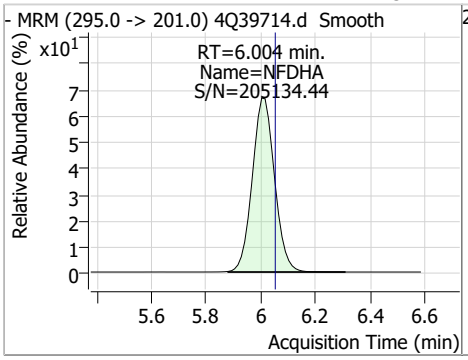
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.47	5.78	-0.04	71381	327.1 -> 80.9	45.8	23.3	70.0

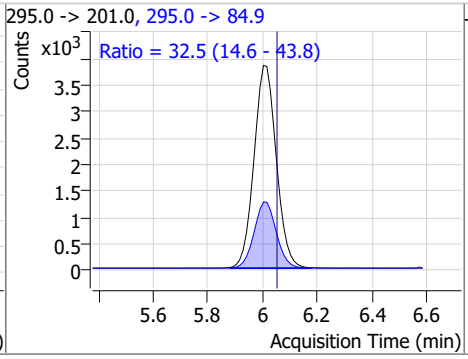


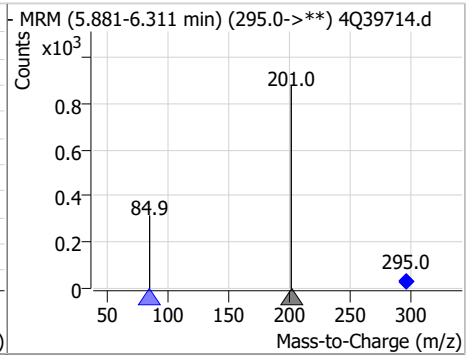




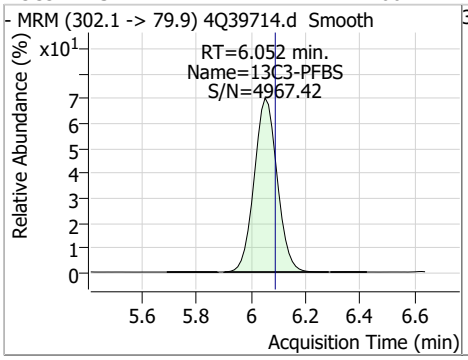
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.43	6.00	-0.05	21738	295.0 -> 84.9	32.5	14.6	43.8

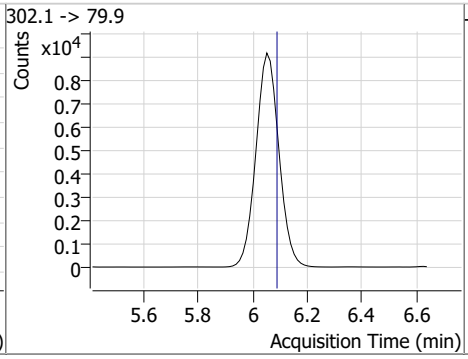


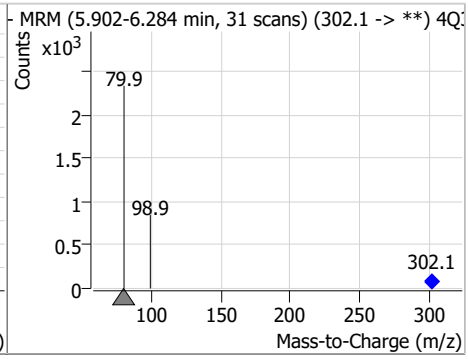




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.60	6.05	-0.04	52987				

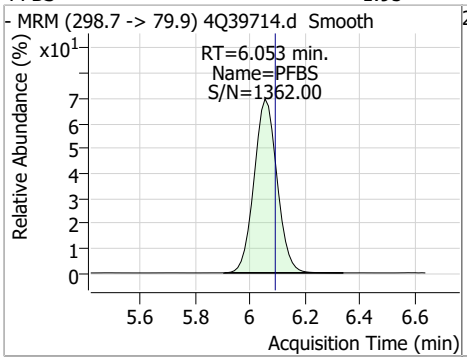


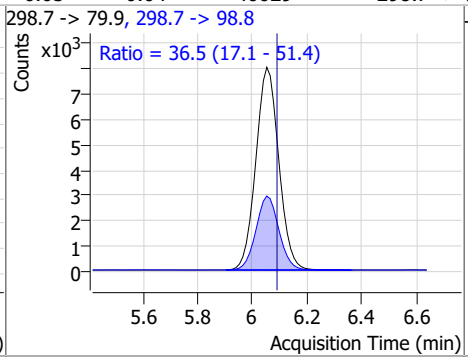


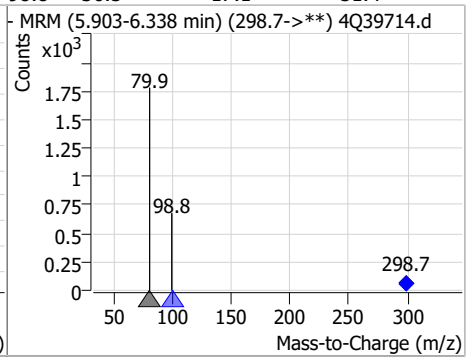


Perfluorinated Compounds by LC/MS/MS

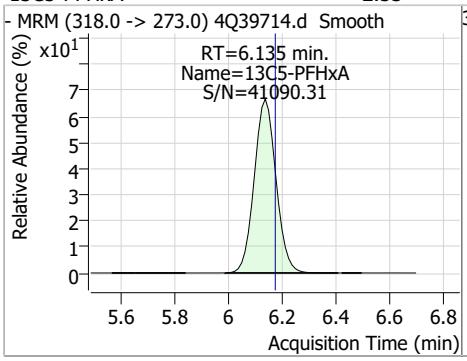
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.95	6.05	-0.04	46629	298.7 -> 98.8	36.5	17.1	51.4

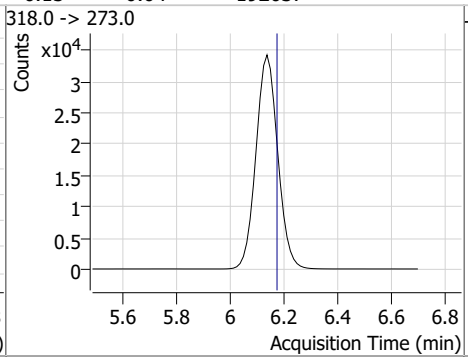


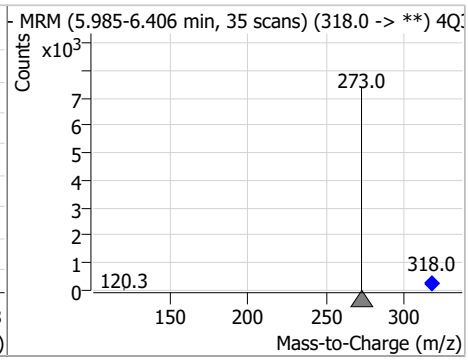




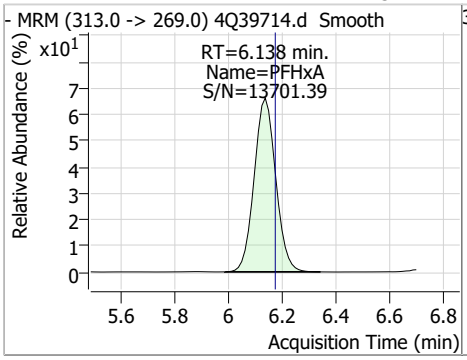
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	6.13	-0.04	192037				

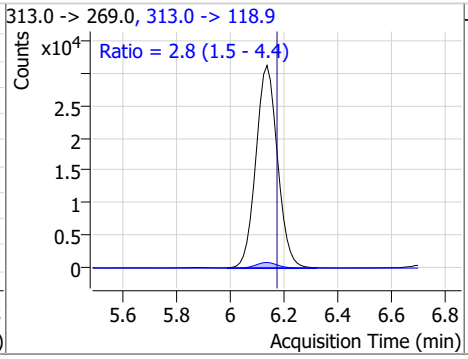


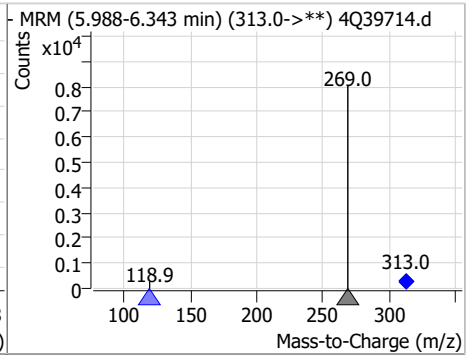




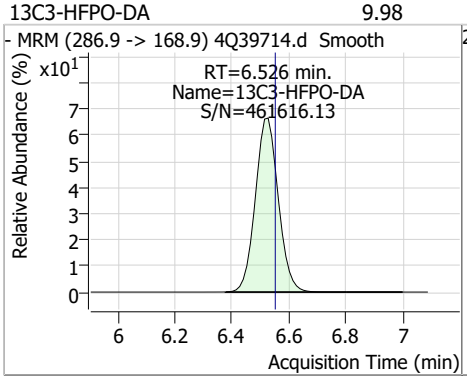
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.31	6.14	-0.04	172306	313.0 -> 118.9	2.8	1.5	4.4

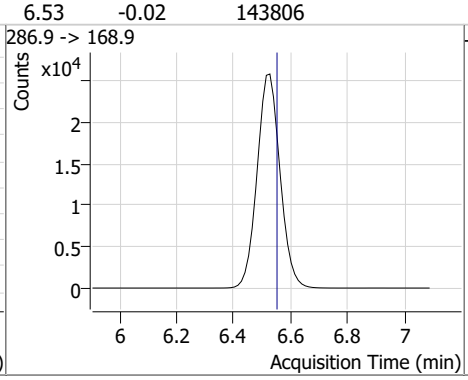


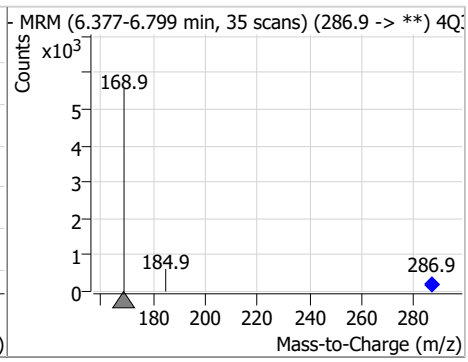




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.98	6.53	-0.02	143806				

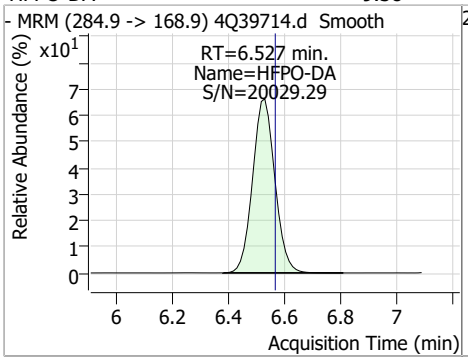


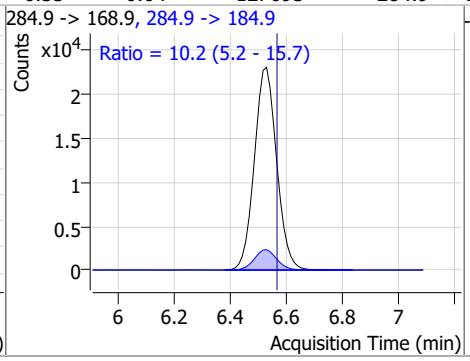


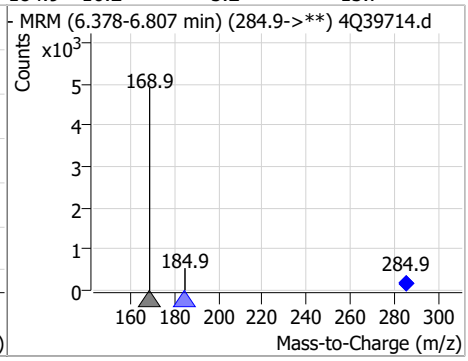


Perfluorinated Compounds by LC/MS/MS

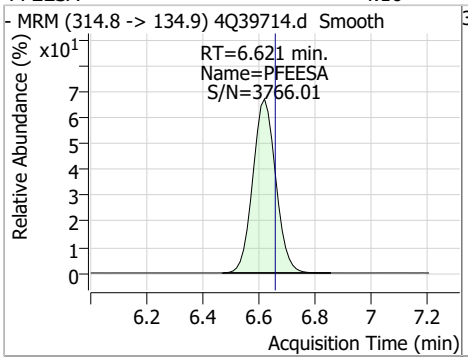
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.38	6.53	-0.04	127093	284.9 -> 184.9	10.2	5.2	15.7

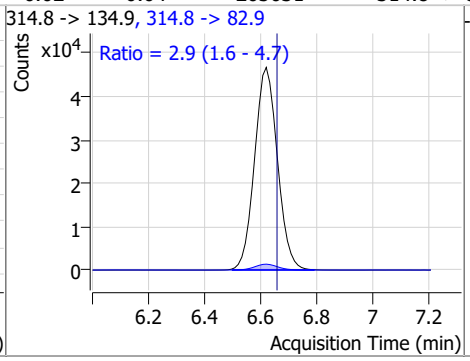


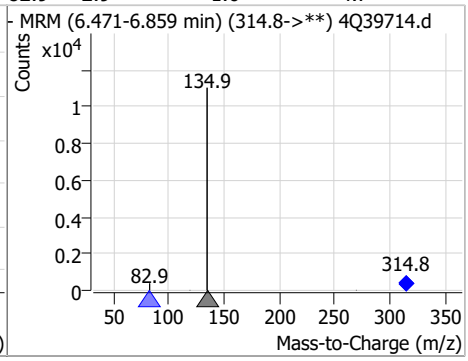




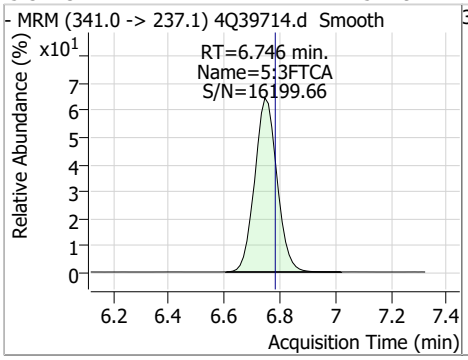
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.16	6.62	-0.04	265631	314.8 -> 82.9	2.9	1.6	4.7

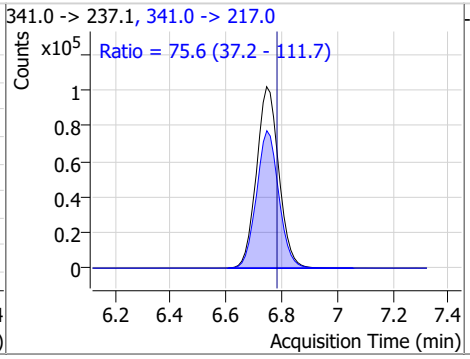


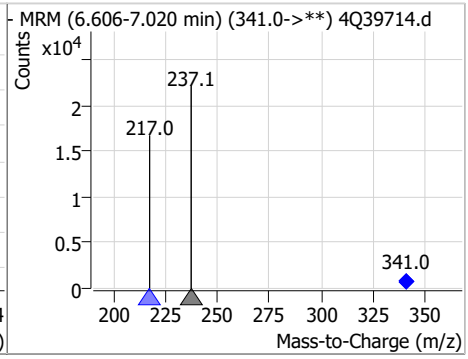




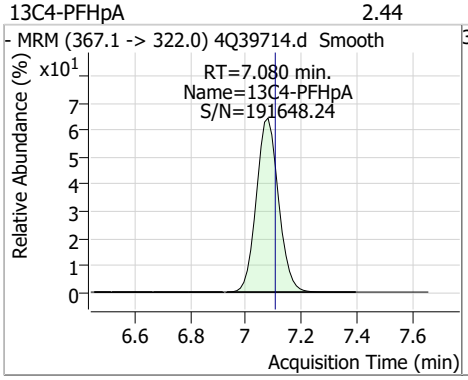
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.19	6.75	-0.04	568003	341.0 -> 217.0	75.6	37.2	111.7

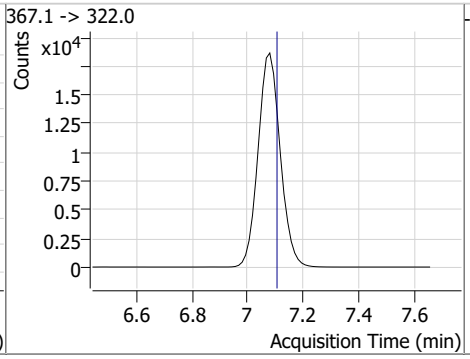


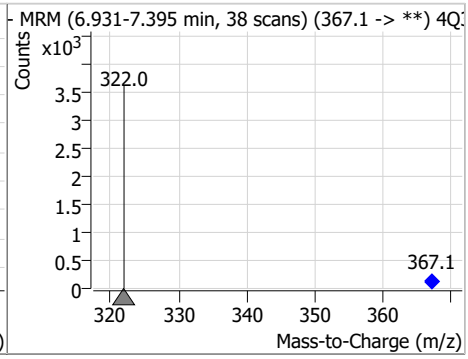




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.44	7.08	-0.03	102710				

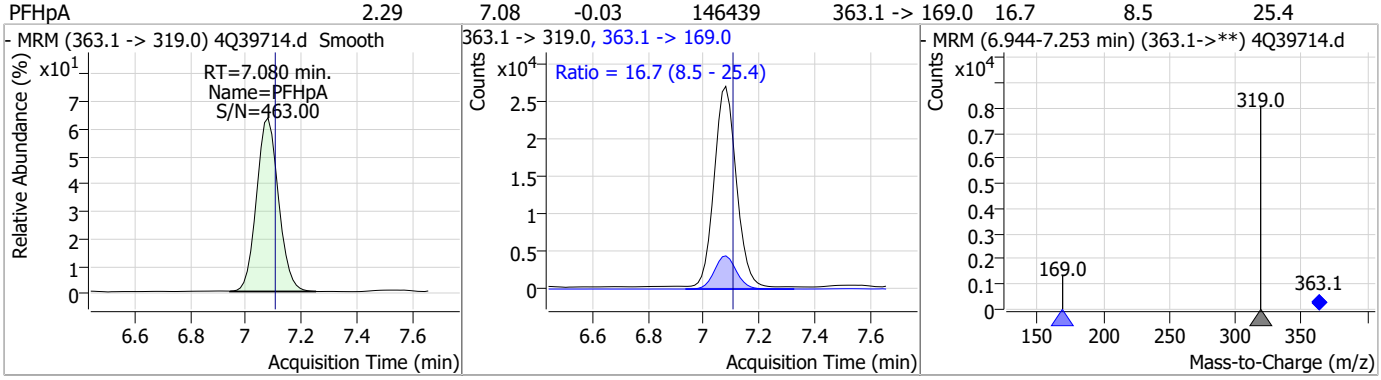




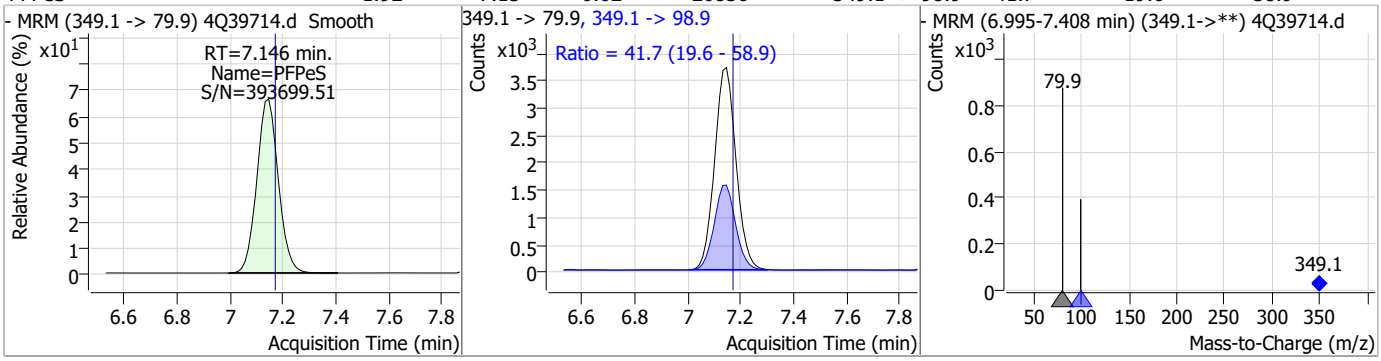


Perfluorinated Compounds by LC/MS/MS

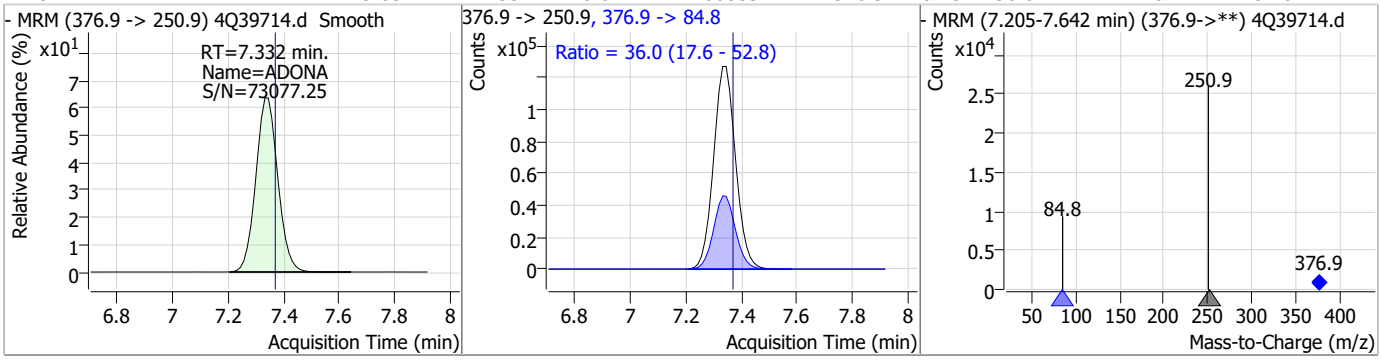
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.29	7.08	-0.03	146439	363.1 -> 169.0	16.7	8.5	25.4



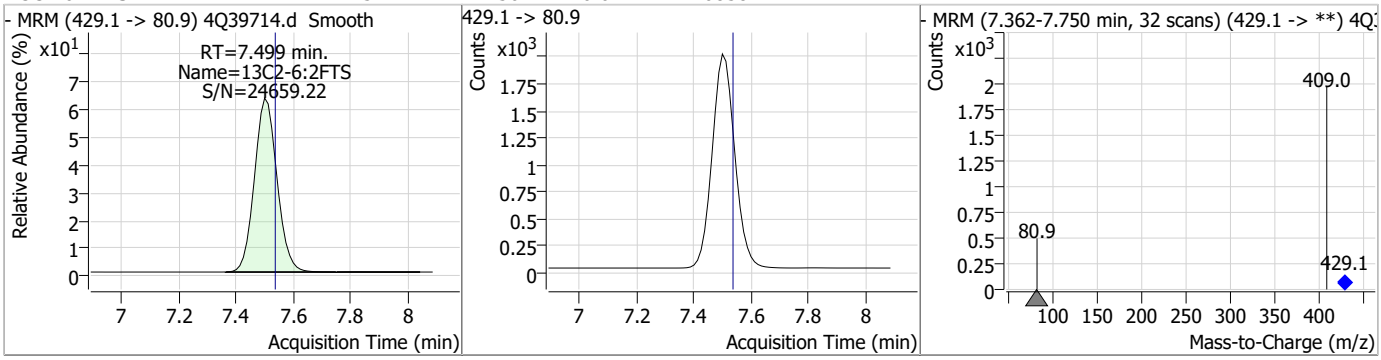
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.92	7.15	-0.02	20856	349.1 -> 98.9	41.7	19.6	58.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.03	7.33	-0.04	700559	376.9 -> 84.8	36.0	17.6	52.8

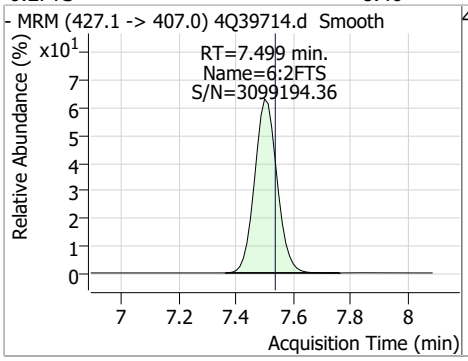


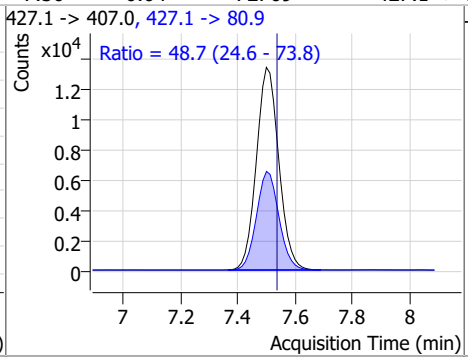
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.71	7.50	-0.04	10858				

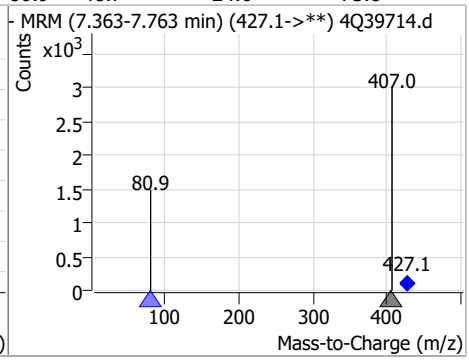


Perfluorinated Compounds by LC/MS/MS

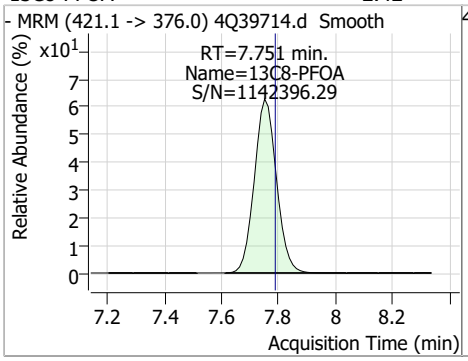
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.46	7.50	-0.04	72769	427.1 -> 80.9	48.7	24.6	73.8

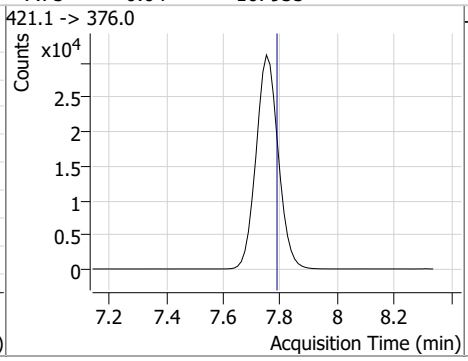


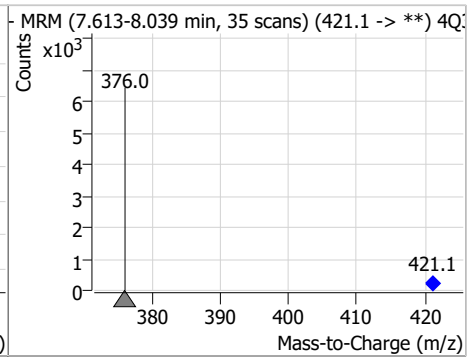




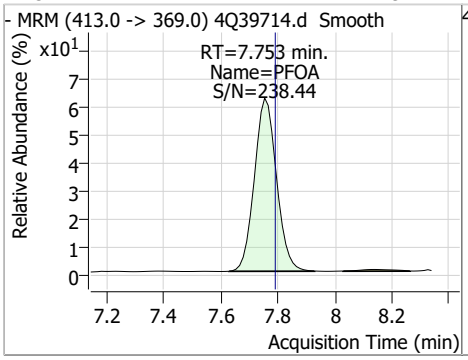
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.42	7.75	-0.04	167955				

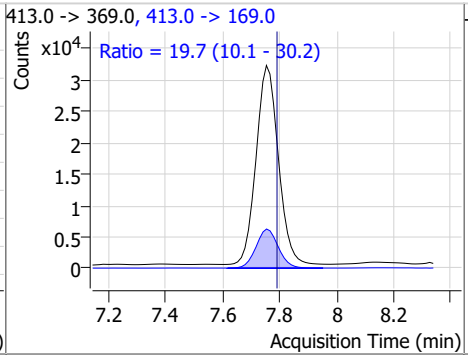


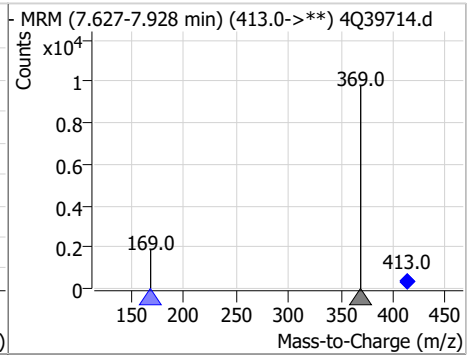




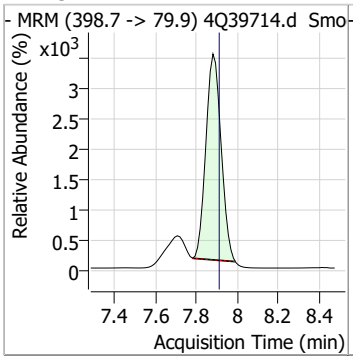
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.29	7.75	-0.04	170692	413.0 -> 169.0	19.7	10.1	30.2

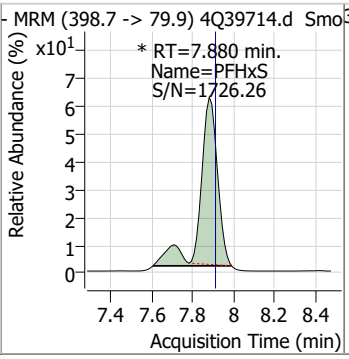


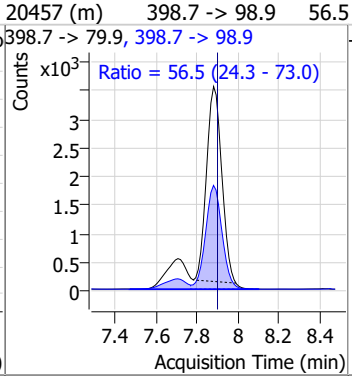


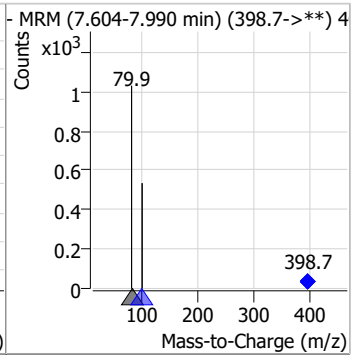


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.82	7.88	-0.02	20457 (m)	398.7 -> 98.9	56.5	24.3	73.0



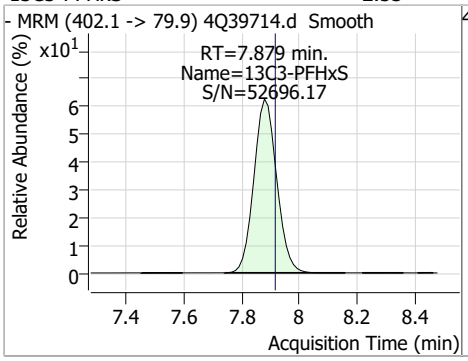


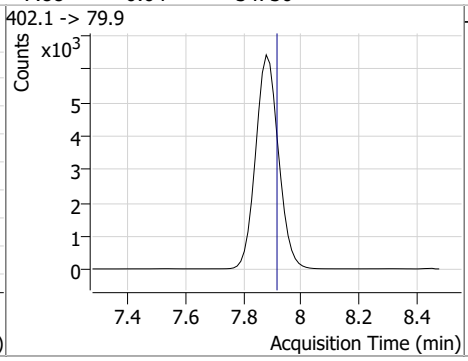


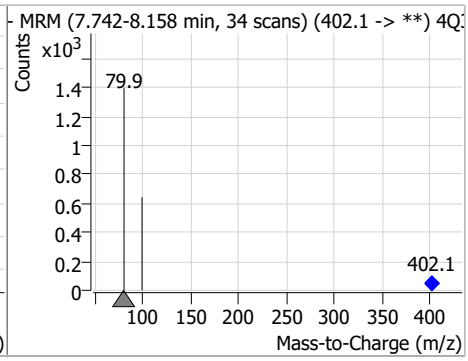


Perfluorinated Compounds by LC/MS/MS

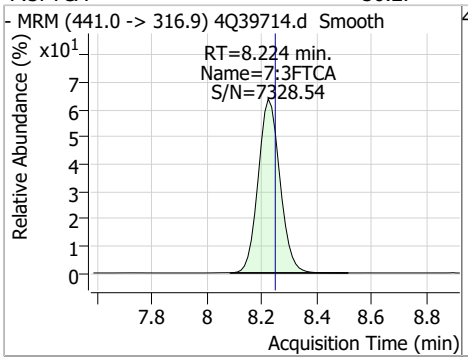
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.53	7.88	-0.04	34736				

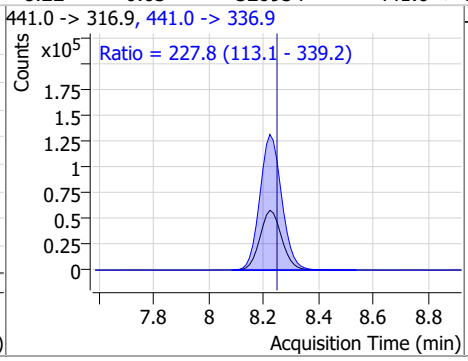


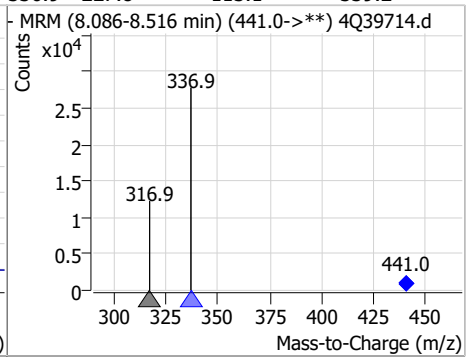




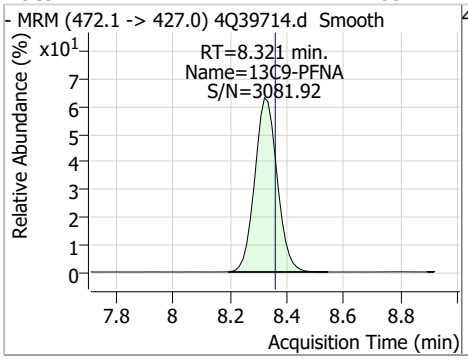
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	56.27	8.22	-0.03	320954	441.0 -> 336.9	227.8	113.1	339.2

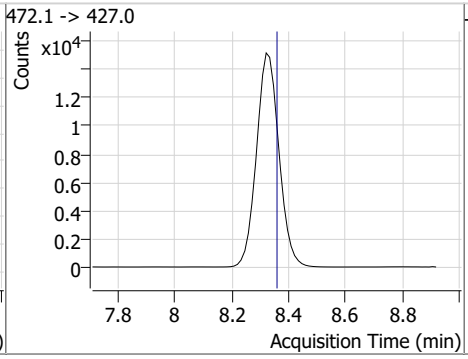


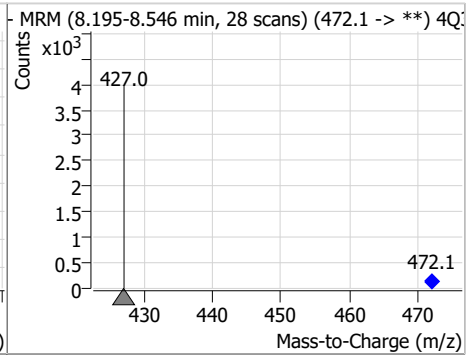




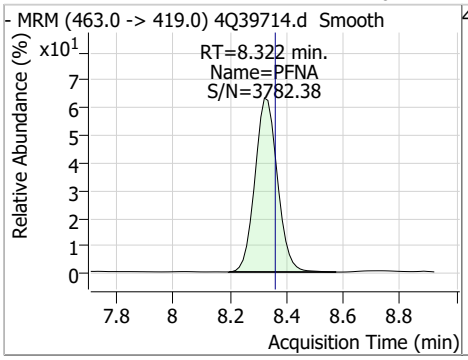
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.33	8.32	-0.04	82977				

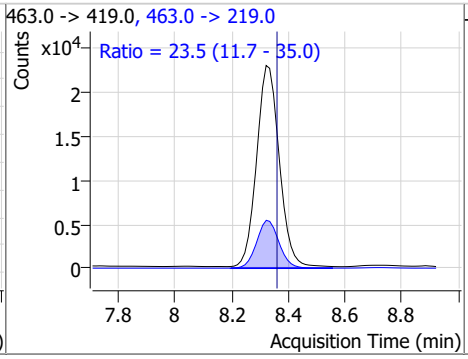


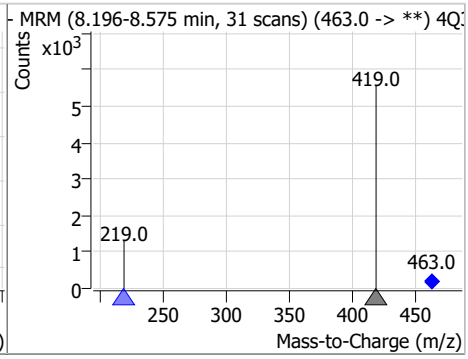




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.07	8.32	-0.04	124988	463.0 -> 219.0	23.5	11.7	35.0

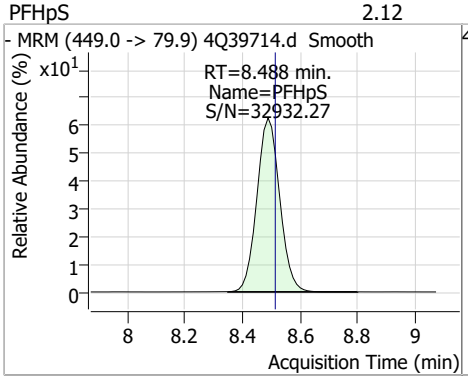


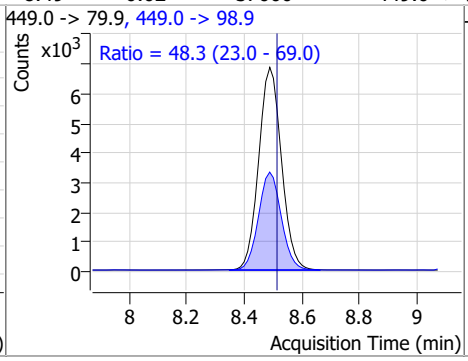


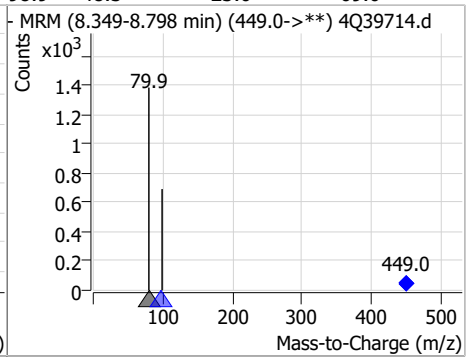


Perfluorinated Compounds by LC/MS/MS

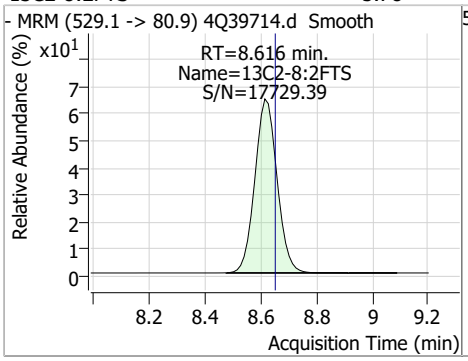
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.12	8.49	-0.02	37600	449.0 -> 98.9	48.3	23.0	69.0

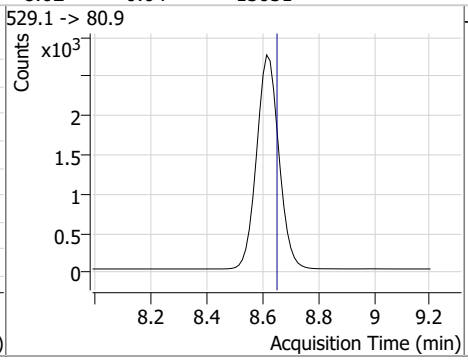


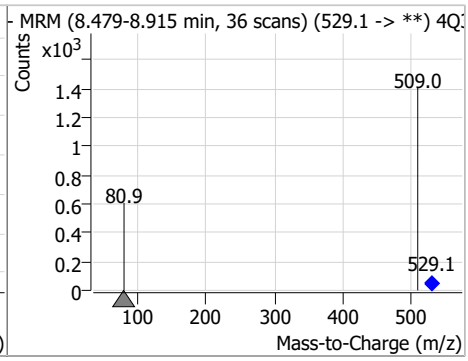




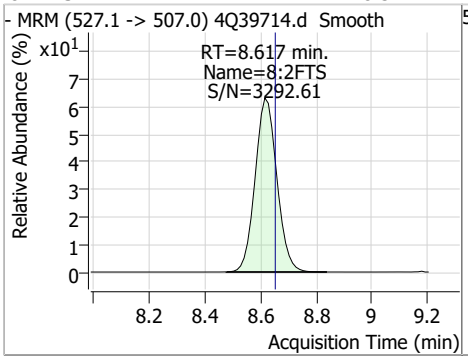
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.78	8.62	-0.04	15051				

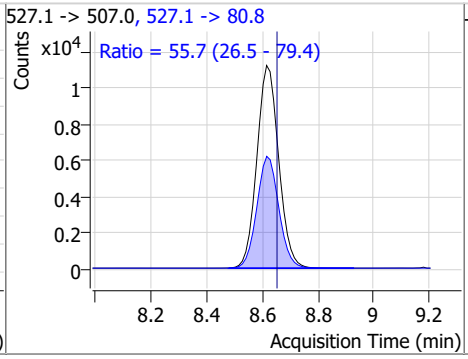


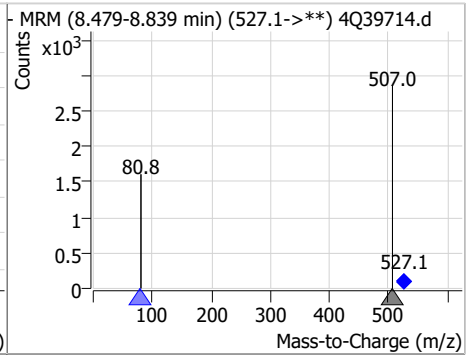




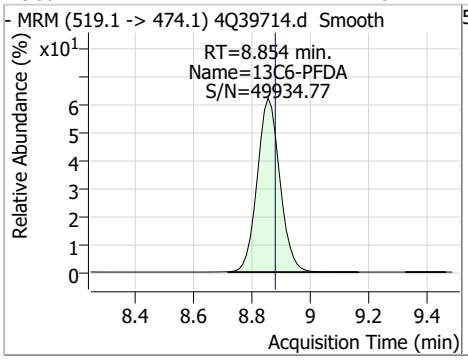
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.32	8.62	-0.04	60586	527.1 -> 80.8	55.7	26.5	79.4

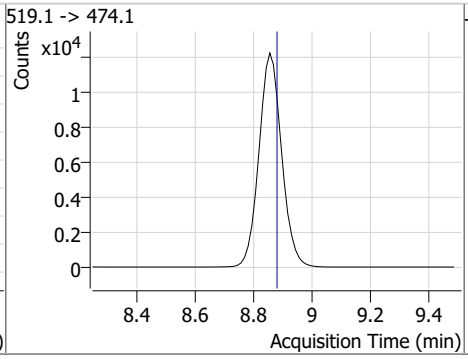


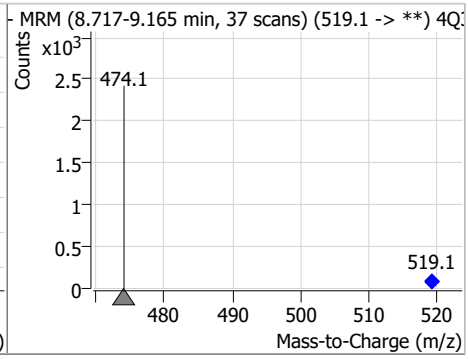




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	8.85	-0.02	65560				

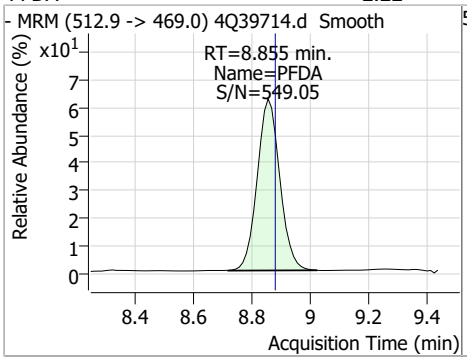


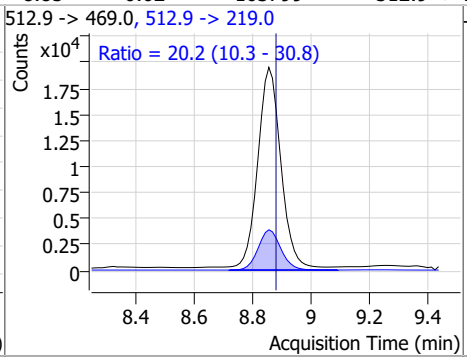


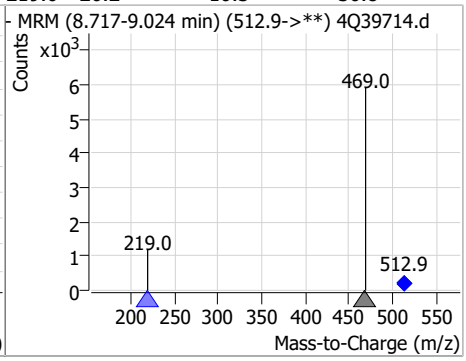


Perfluorinated Compounds by LC/MS/MS

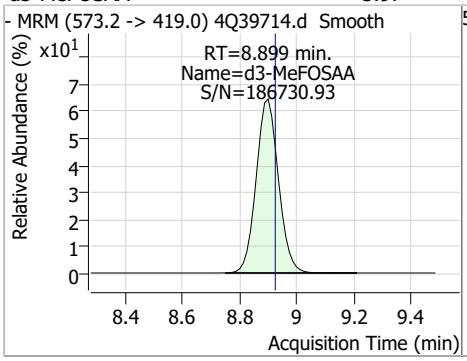
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.22	8.85	-0.02	103799	512.9 -> 219.0	20.2	10.3	30.8

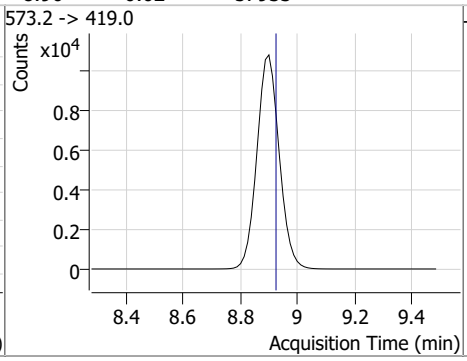


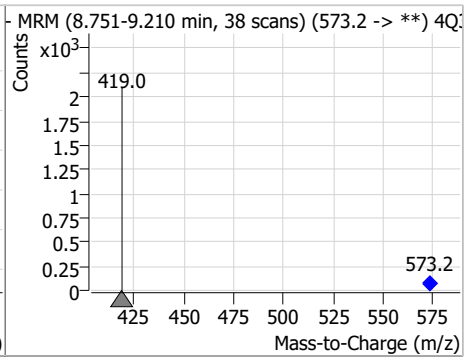




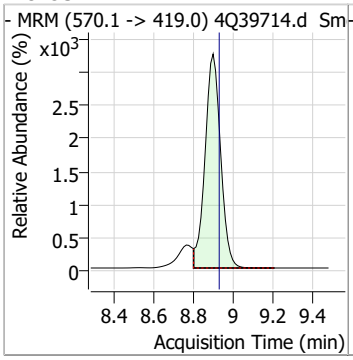
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.97	8.90	-0.02	57933				

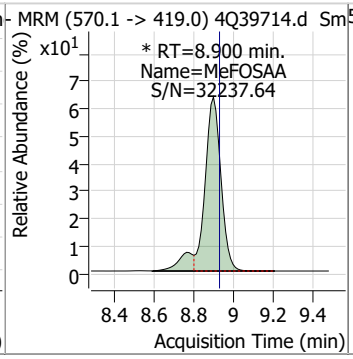


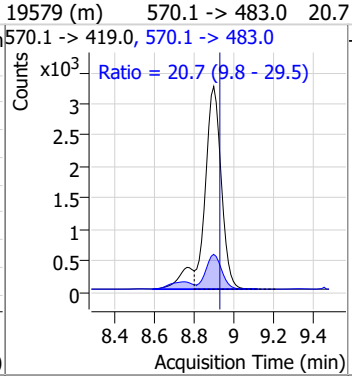


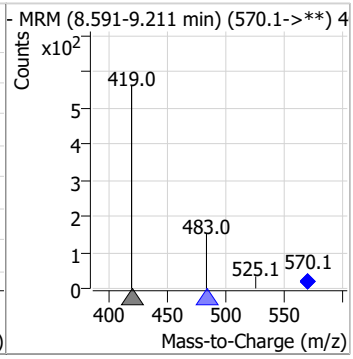


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.28	8.90	-0.03	19579 (m)	570.1 -> 483.0	20.7	9.8	29.5

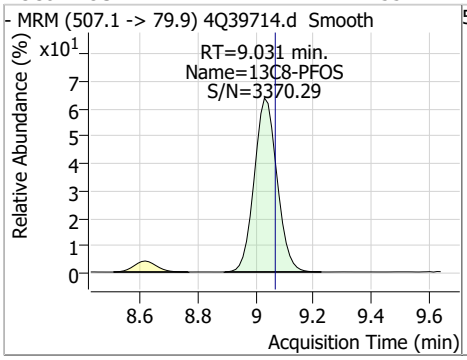


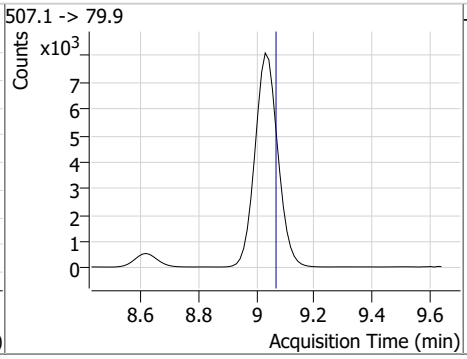


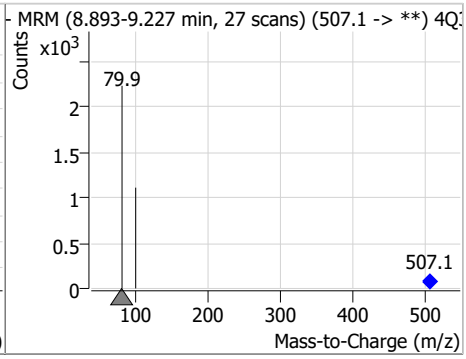




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	9.03	-0.04	43972				

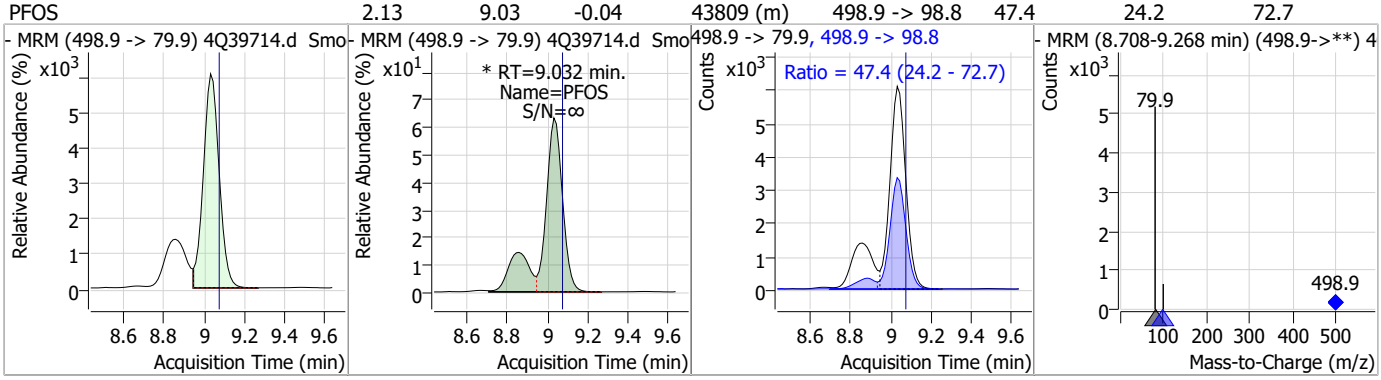




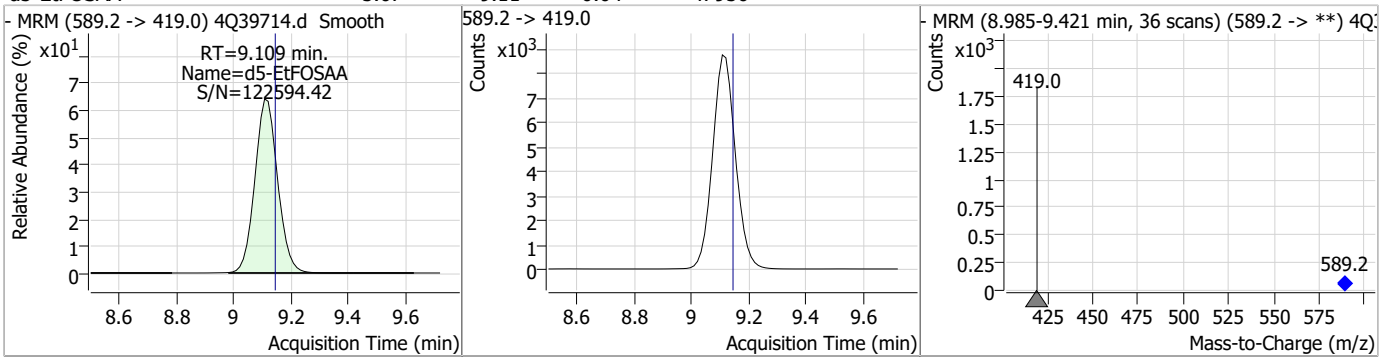


Perfluorinated Compounds by LC/MS/MS

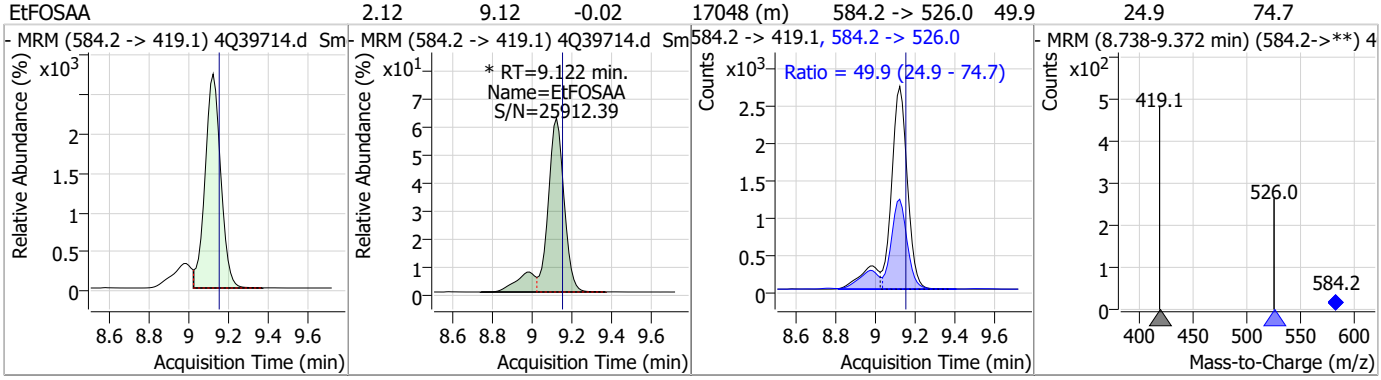
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.13	9.03	-0.04	43809 (m)	498.9 -> 98.8	47.4	24.2	72.7



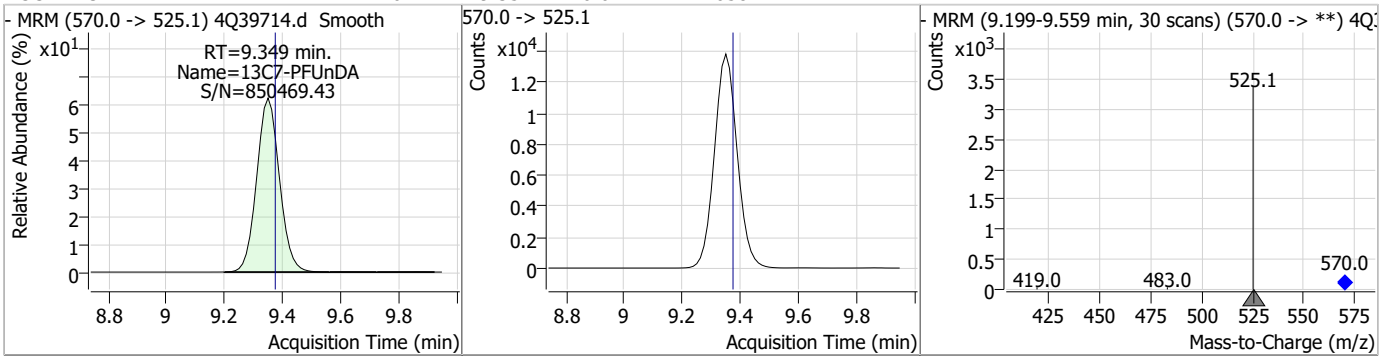
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.67	9.11	-0.04	47956				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.12	9.12	-0.02	17048 (m)	584.2 -> 526.0	49.9	24.9	74.7

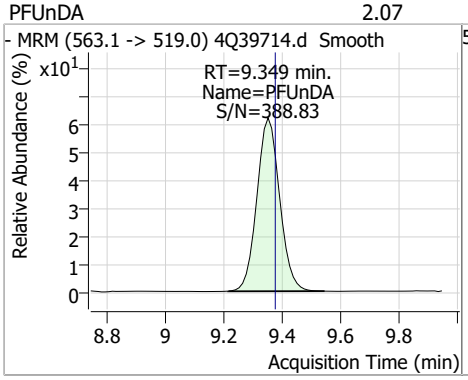


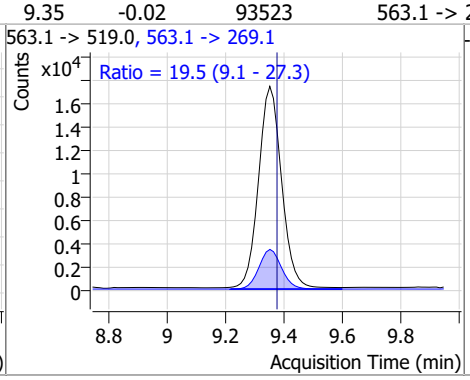
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.40	9.35	-0.02	74658				

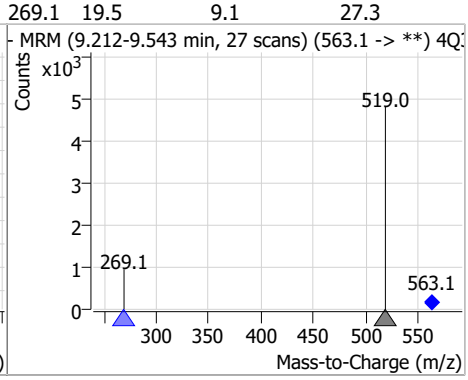


Perfluorinated Compounds by LC/MS/MS

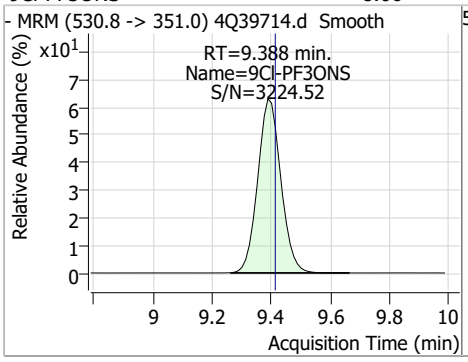
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.07	9.35	-0.02	93523	563.1 -> 269.1	19.5	9.1	27.3

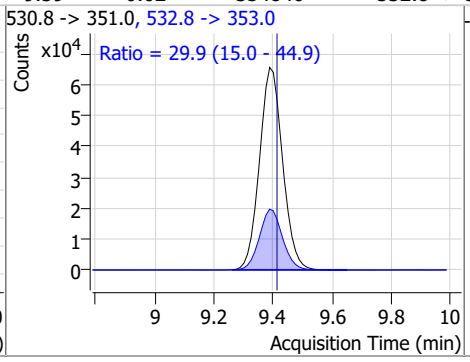


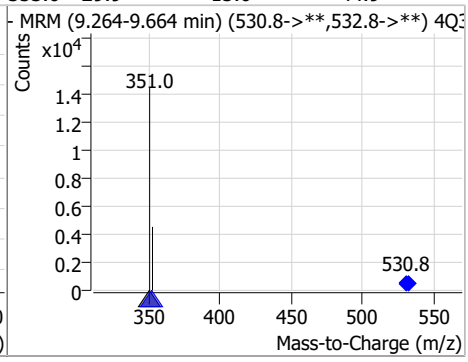




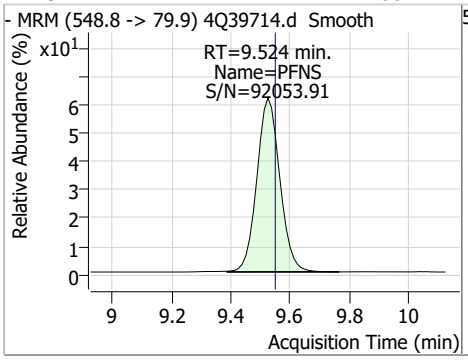
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.66	9.39	-0.02	354840	532.8 -> 353.0	29.9	15.0	44.9

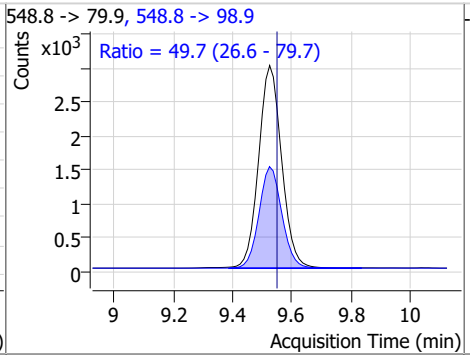


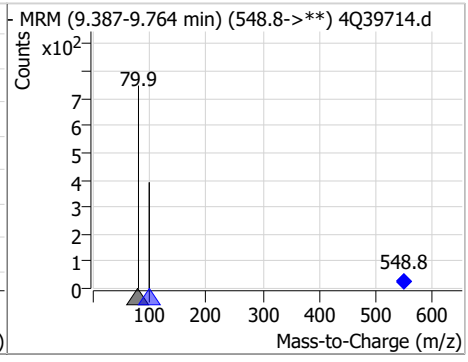




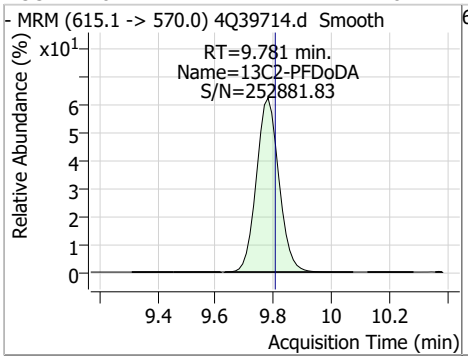
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.06	9.52	-0.02	16144	548.8 -> 98.9	49.7	26.6	79.7

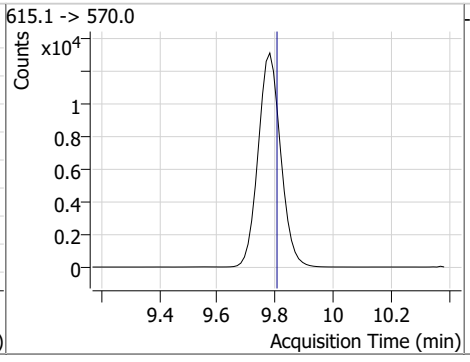


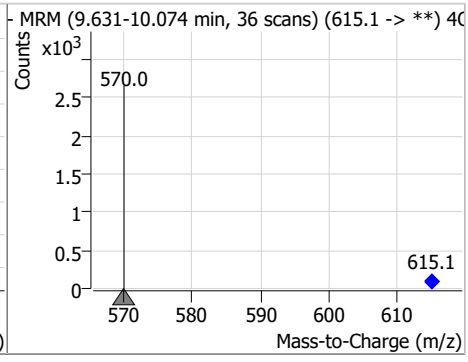




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.78	-0.02	69992				

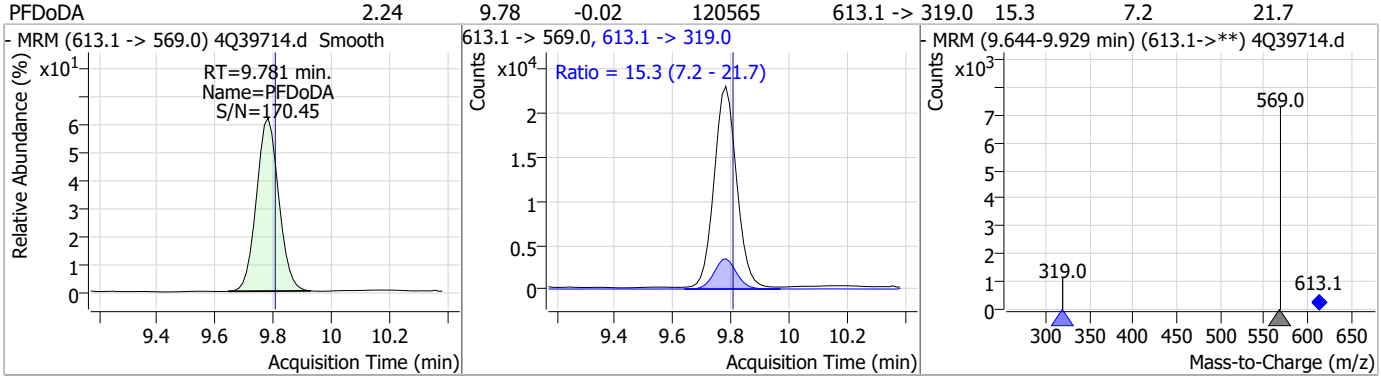




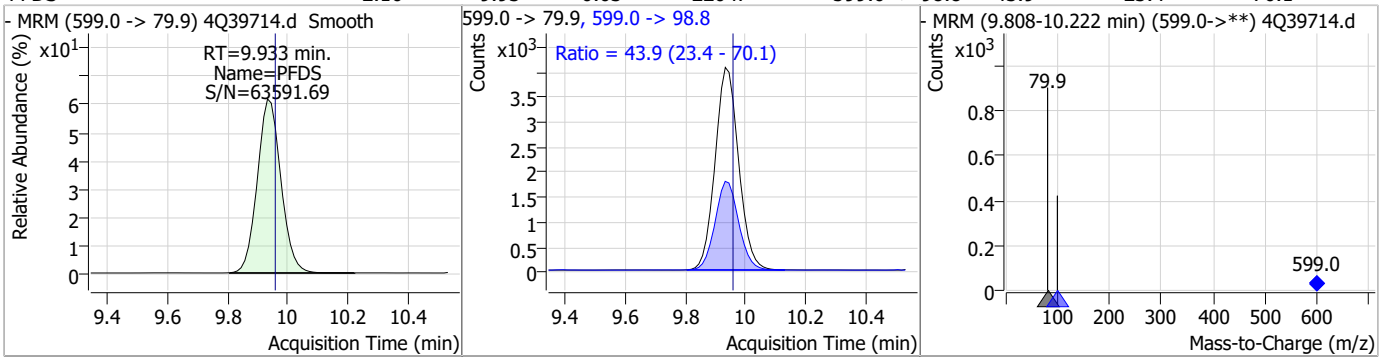


Perfluorinated Compounds by LC/MS/MS

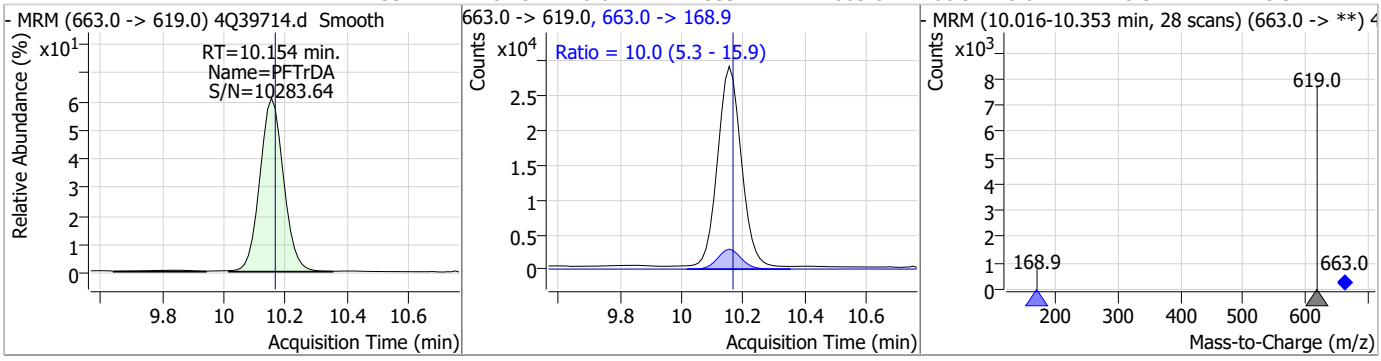
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.24	9.78	-0.02	120565	613.1 -> 319.0	15.3	7.2	21.7



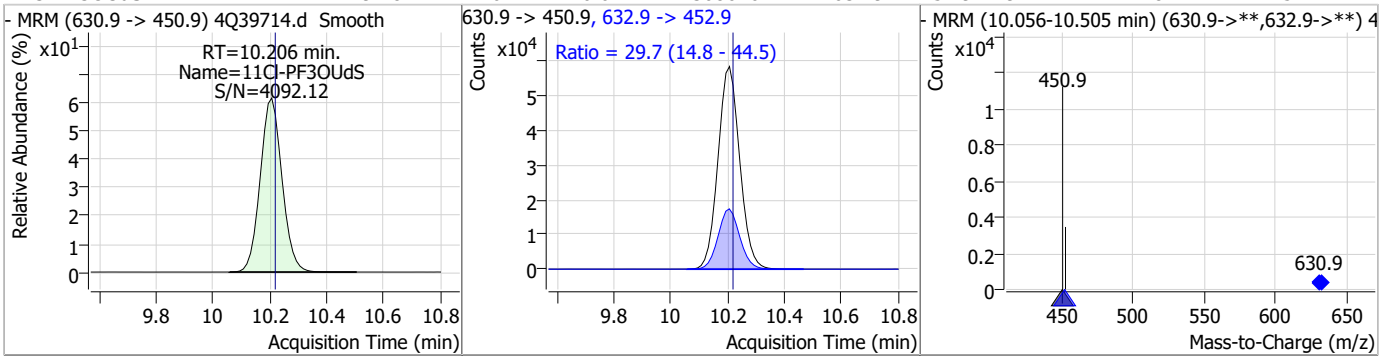
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.16	9.93	-0.03	22047	599.0 -> 98.8	43.9	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.33	10.15	-0.01	153911	663.0 -> 168.9	10.0	5.3	15.9

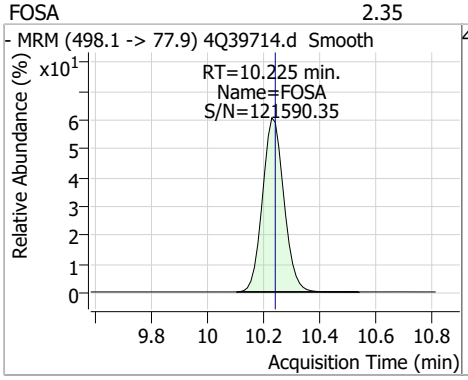


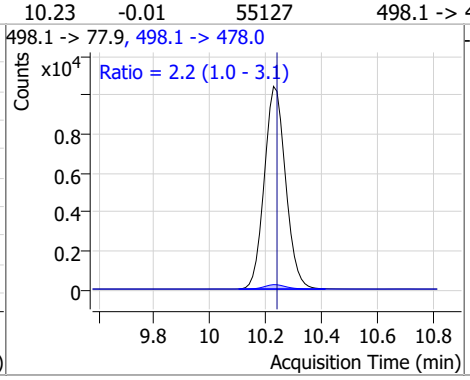
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.18	10.21	-0.01	308626	632.9 -> 452.9	29.7	14.8	44.5

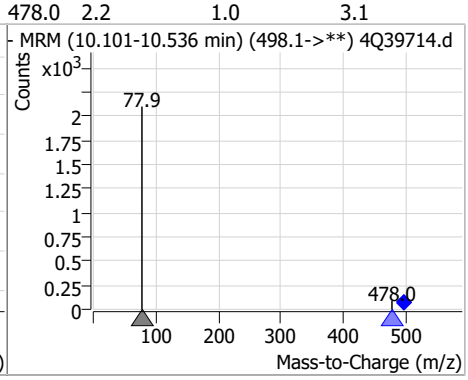


Perfluorinated Compounds by LC/MS/MS

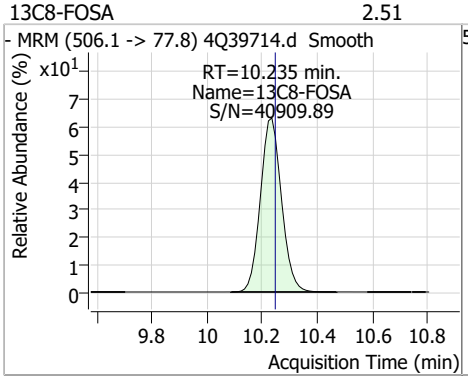
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.35	10.23	-0.01	55127	498.1 -> 478.0	2.2	1.0	3.1

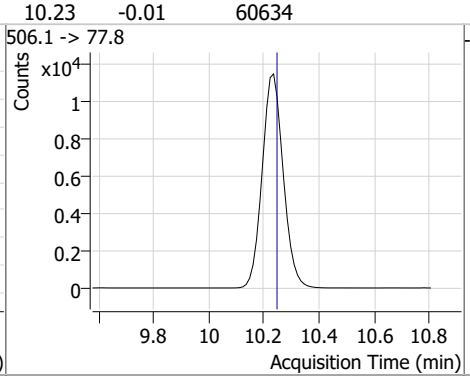


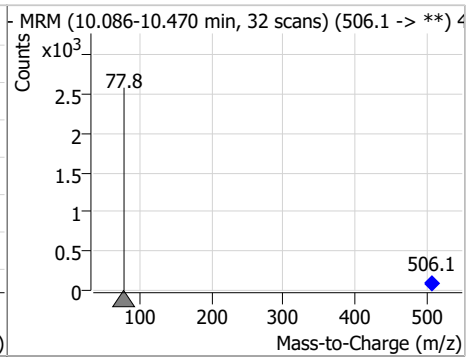




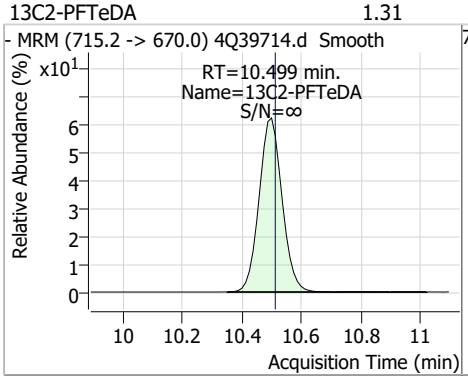
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	10.23	-0.01	60634				

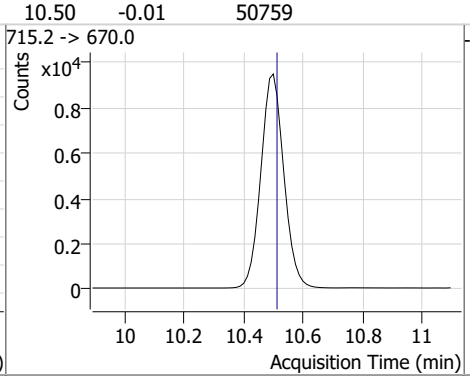


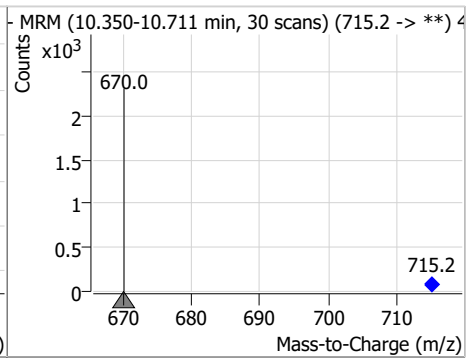




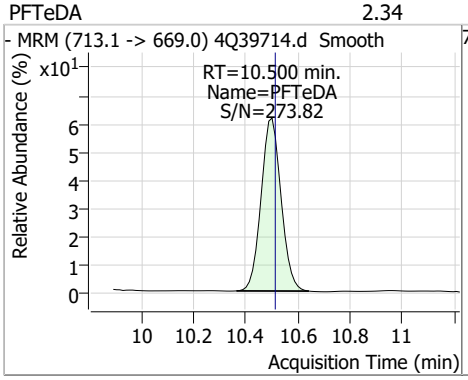
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.31	10.50	-0.01	50759				

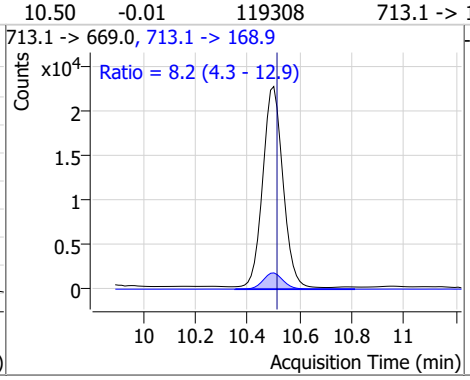


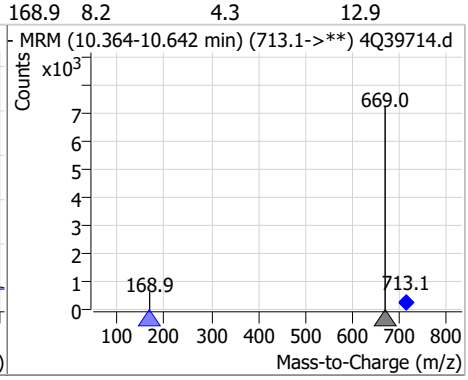




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.34	10.50	-0.01	119308	713.1 -> 168.9	8.2	4.3	12.9

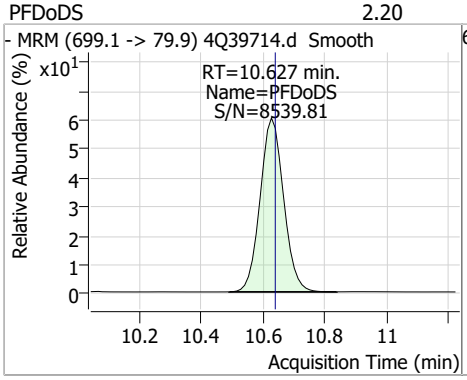


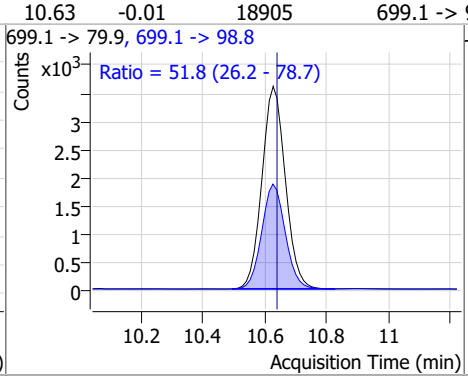


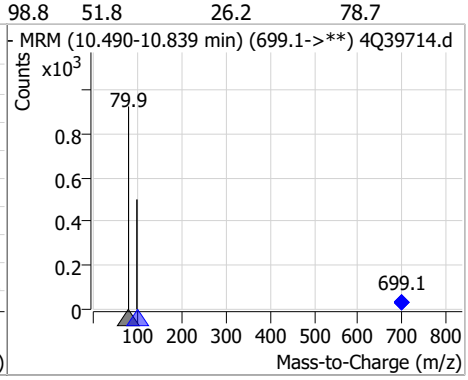


Perfluorinated Compounds by LC/MS/MS

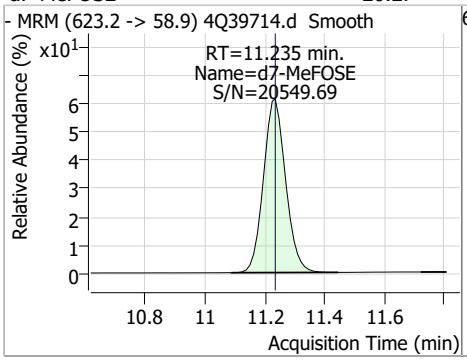
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.20	10.63	-0.01	18905	699.1 -> 98.8	51.8	26.2	78.7

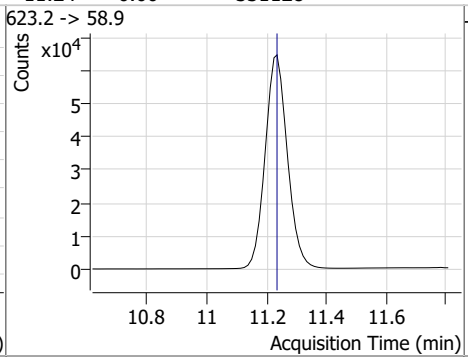


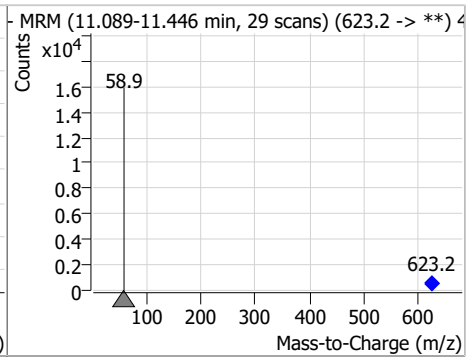




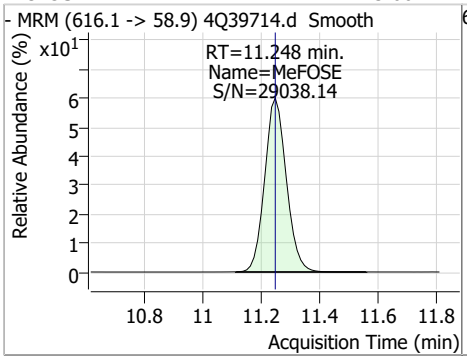
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.27	11.24	0.00	331128				

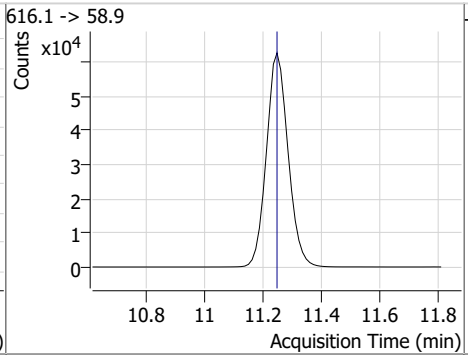


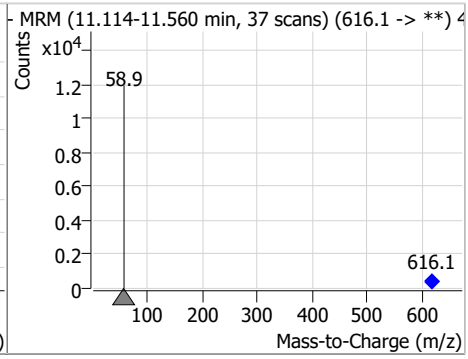




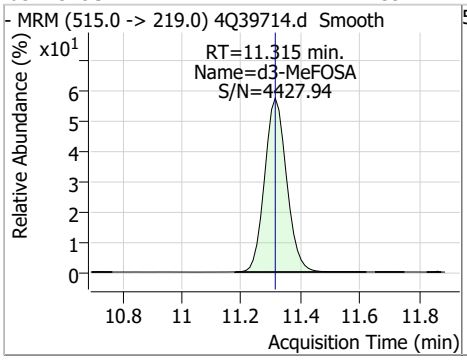
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.00	11.25	0.00	321809				

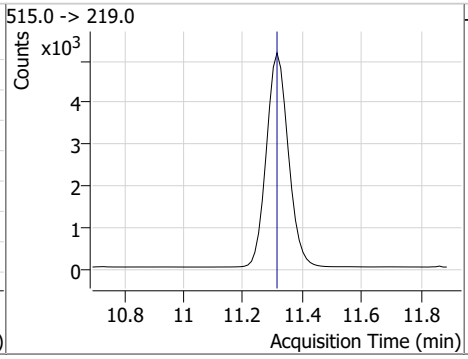


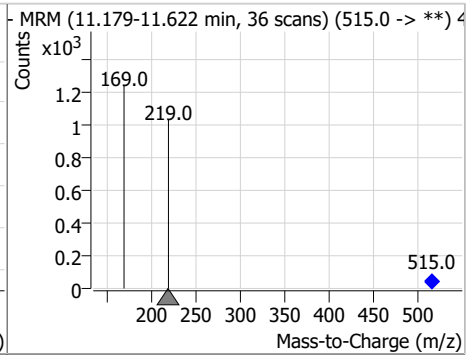




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	11.31	0.00	26457				

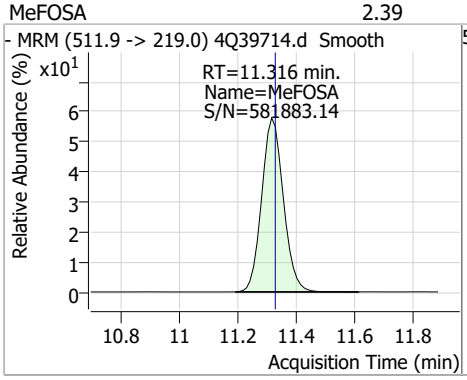


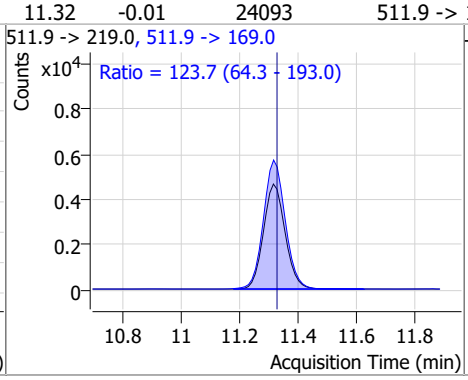


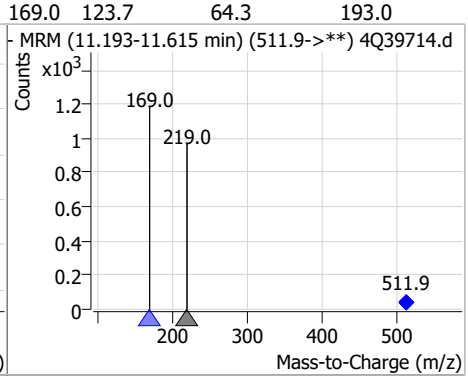


Perfluorinated Compounds by LC/MS/MS

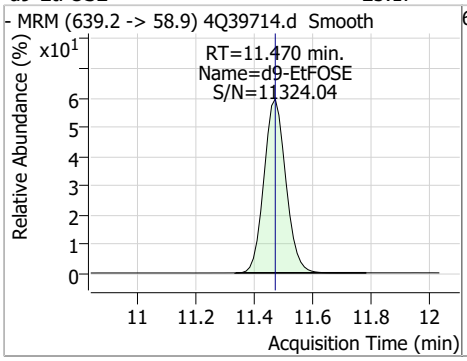
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.39	11.32	-0.01	24093	511.9 -> 169.0	123.7	64.3	193.0

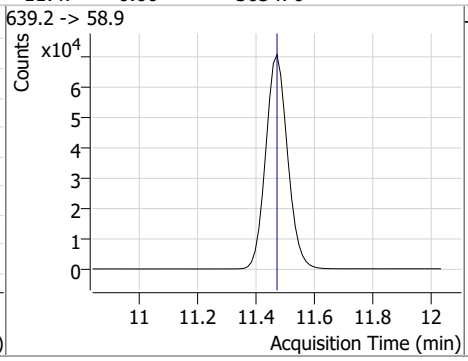


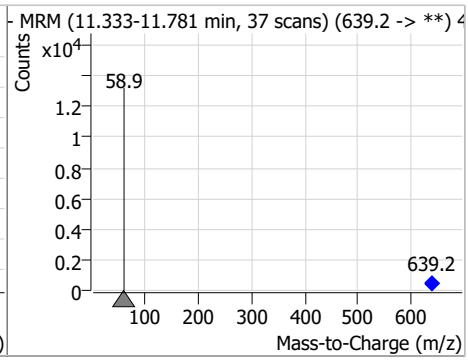




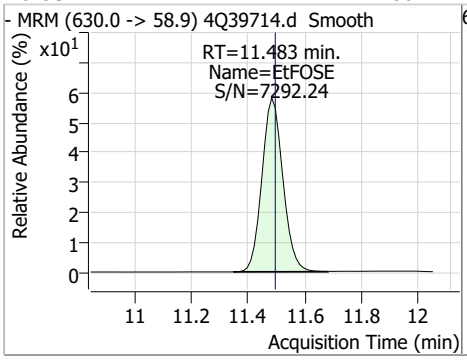
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.17	11.47	0.00	363470				

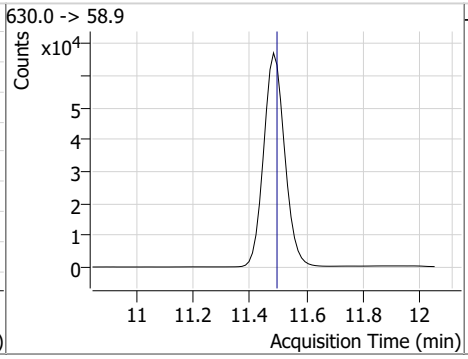


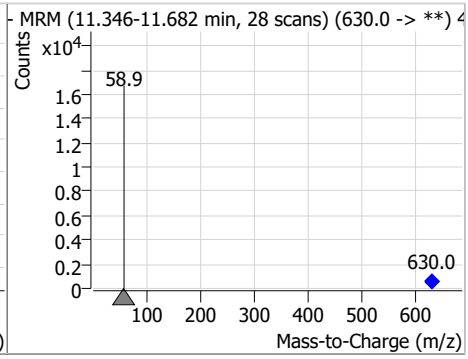




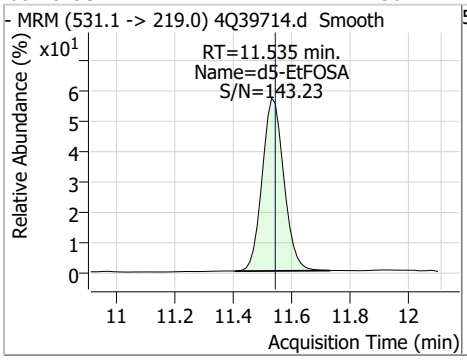
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.56	11.48	-0.01	346591				

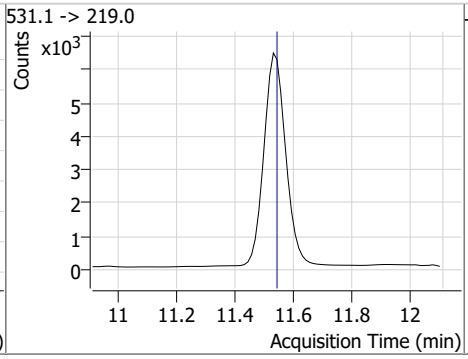


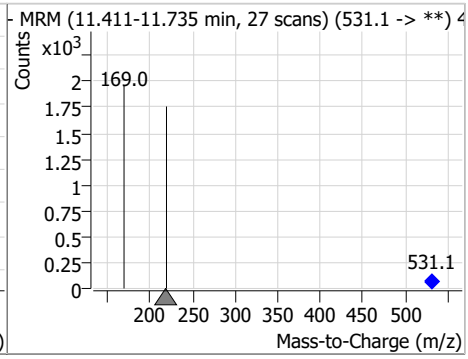




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	11.54	-0.01	32985				

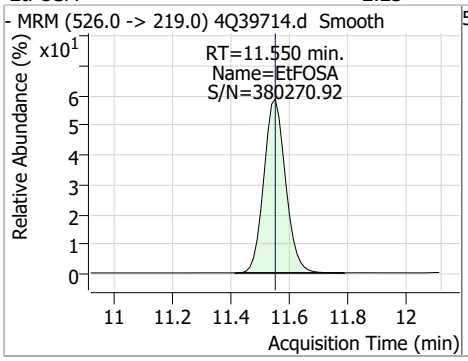


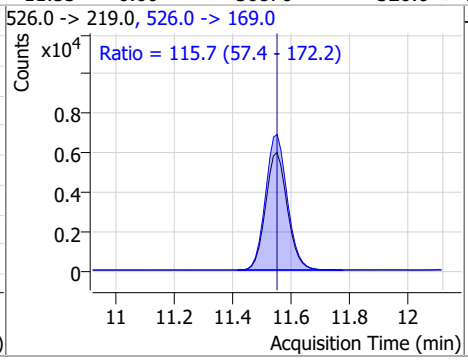


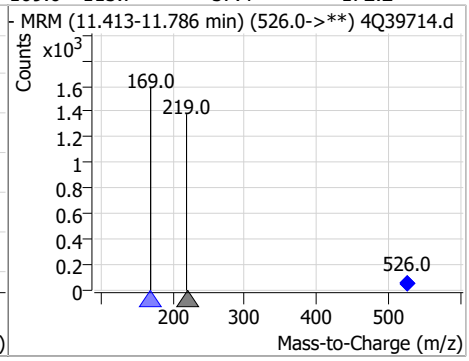


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.23	11.55	0.00	30870	526.0 -> 169.0	115.7	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-CC571
Lab FileID: 4Q39714.D
Injection Time: 01/25/23 19:01
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.88	Split peak
MeFOSAA	2355-31-9		8.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.03	Split peak
EtFOSAA	2991-50-6		9.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:25

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39726.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/25/2023 9:50:22 PM
Sample Name : cc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q571A.batch.bin
Sample Information : op95096,S4Q571,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.161	216.8 -> 171.9	445070	10.00	µg/L	-0.012
M5-PFPeA	4.876	268.3 -> 223.0	297615	5.00	µg/L	0.012
M5-PFHxA	6.184	318.0 -> 273.0	196582	2.50	µg/L	0.012
M4-PFHpA	7.118	367.1 -> 322.0	106449	2.50	µg/L	0.012
M8-PFOA	7.788	421.1 -> 376.0	165877	2.50	µg/L	0.000
M9-PFNA	8.360	472.1 -> 427.0	82882	1.25	µg/L	0.000
M6-PFDA	8.891	519.1 -> 474.1	64639	1.25	µg/L	0.012
M7-PFUnDA	9.373	570.0 -> 525.1	73078	1.25	µg/L	0.000
M2-PFDoDA	9.793	615.1 -> 570.0	67445	1.25	µg/L	-0.012
M2-PFTeDA	10.512	715.2 -> 670.0	51487	1.25	µg/L	0.000
M8-FOSA	10.247	506.1 -> 77.8	62215	2.50	µg/L	0.000
M3-PFBS	6.101	302.1 -> 79.9	52874	2.50	µg/L	0.012
M3-PFHxS	7.917	402.1 -> 79.9	35777	2.50	µg/L	0.000
M8-PFOS	9.068	507.1 -> 79.9	43915	2.50	µg/L	0.000
M2-4:2FTS	5.835	329.1 -> 80.9	5452	5.00	µg/L	0.012
M2-6:2FTS	7.536	429.1 -> 80.9	10168	5.00	µg/L	0.000
M2-8:2FTS	8.653	529.1 -> 80.9	14517	5.00	µg/L	0.000
M3-MeFOSAA	8.924	573.2 -> 419.0	52941	5.00	µg/L	0.000
M3-HFPO-DA	6.576	286.9 -> 168.9	144211	10.00	µg/L	0.025
M5-EtFOSAA	9.146	589.2 -> 419.0	45804	5.00	µg/L	0.000
M7-MeFOSE	11.248	623.2 -> 58.9	319978	25.00	µg/L	0.012
M9-EtFOSE	11.482	639.2 -> 58.9	358378	25.00	µg/L	0.012
M5-EtFOSA	11.548	531.1 -> 219.0	31818	2.50	µg/L	0.000
M3-MeFOSA	11.327	515.0 -> 219.0	26753	2.50	µg/L	0.012
13C4-PFOS	9.068	502.8 -> 79.9	43183	2.50	µg/L	0.000
13C3-PFBA	3.165	216.0 -> 172.0	252483	5.00	µg/L	-0.012
18O2-PFHxS	7.916	403.0 -> 83.9	23096	2.50	µg/L	0.000
13C4-PFOA	7.789	417.1 -> 372.0	183268	2.50	µg/L	0.000
13C2-PFDA	8.891	515.1 -> 470.1	56171	1.25	µg/L	0.012
13C5-PFNA	8.360	468.0 -> 423.0	93597	1.25	µg/L	0.000
13C2-PFHxA	6.185	315.1 -> 270.0	181811	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.835	329.1 -> 80.9	5452	6.55	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 131.0%		
13C2-6:2FTS	7.536	429.1 -> 80.9	10168	5.46	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C2-8:2FTS	8.653	529.1 -> 80.9	14517	5.69	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C2-PFDoDA	9.793	615.1 -> 570.0	67445	1.24	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-PFTeDA	10.512	715.2 -> 670.0	51487	1.33	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C3-PFBS	6.101	302.1 -> 79.9	52874	2.65	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-PFHxS	7.917	402.1 -> 79.9	35777	2.66	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C4-PFBA	3.161	216.8 -> 171.9	445070	9.78 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFHpA	7.118	367.1 -> 322.0	106449	2.51 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C5-PFHxA	6.184	318.0 -> 273.0	196582	2.57 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	4.876	268.3 -> 223.0	297615	5.03 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C6-PFDA	8.891	519.1 -> 474.1	64639	1.30 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C7-PFUnDA	9.373	570.0 -> 525.1	73078	1.37 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C8-FOSA	10.247	506.1 -> 77.8	62215	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C8-PFOA	7.788	421.1 -> 376.0	165877	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C8-PFOS	9.068	507.1 -> 79.9	43915	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C9-PFNA	8.360	472.1 -> 427.0	82882	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%		
d3-MeFOSAA	8.924	573.2 -> 419.0	52941	5.34 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C3-HFPO-DA	6.576	286.9 -> 168.9	144211	9.94 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d3-MeFOSA	11.327	515.0 -> 219.0	26753	2.37 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%		
d5-EtFOSAA	9.146	589.2 -> 419.0	45804	5.30 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
d7-MeFOSE	11.248	623.2 -> 58.9	319978	24.85 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d9-EtFOSE	11.482	639.2 -> 58.9	358378	24.30 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
d5-EtFOSA	11.548	531.1 -> 219.0	31818	2.36 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%		
Target Compounds						QValue
4:2FTS	5.836	327.1 -> 307.0	67021	7.52 µg/L		97
		327.1 -> 80.9	32639			
6:2FTS	7.537	427.1 -> 407.0	74908	9.29 µg/L		99
		427.1 -> 80.9	37342			
8:2FTS	8.654	527.1 -> 507.0	62527	8.90 µg/L		97
		527.1 -> 80.8	34225			
EtFOSAA	9.147	584.2 -> 419.1	16717	2.18 µg/L	m	91
		584.2 -> 526.0	7254			
FOSA	10.250	498.1 -> 77.9	53919	2.24 µg/L		99
		498.1 -> 478.0	1037			
MeFOSAA	8.925	570.1 -> 419.0	20196	2.57 µg/L	m	94
		570.1 -> 483.0	3452			
PFBA	3.170	212.8 -> 168.9	108140	8.73 µg/L		100
PFBS	6.102	298.7 -> 79.9	46377	1.94 µg/L		95
		298.7 -> 98.8	17157			
PFDA	8.892	512.9 -> 469.0	98635	2.14 µg/L		99
		512.9 -> 219.0	20970			
PFDoDA	9.794	613.1 -> 569.0	118125	2.27 µg/L		97
		613.1 -> 319.0	18351			
PFDS	9.959	599.0 -> 79.9	22486	2.21 µg/L		98

Perfluorinated Compounds by LC/MS/MS

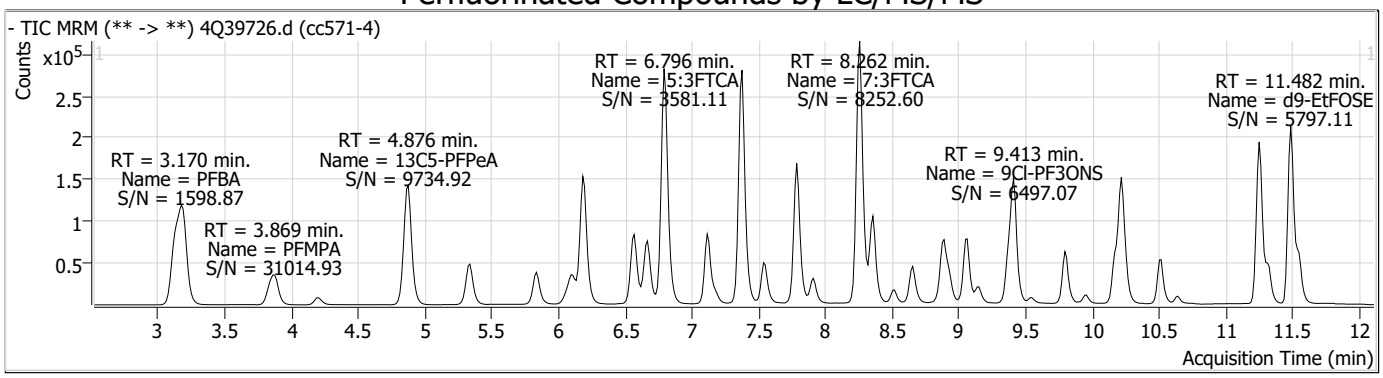
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	10238				
PFHpA	7.119	363.1 -> 319.0	151805	2.29	µg/L		100
		363.1 -> 169.0	25772				
PFHpS	8.526	449.0 -> 79.9	39048	2.20	µg/L		99
		449.0 -> 98.9	17769				
PFHxA	6.187	313.0 -> 269.0	174006	2.28	µg/L		99
		313.0 -> 118.9	5552				
PFHxS	7.917	398.7 -> 79.9	22579	1.95	µg/L	m	100
		398.7 -> 98.9	10925				
PFNA	8.360	463.0 -> 419.0	131688	2.19	µg/L		99
		463.0 -> 219.0	30272				
PFNS	9.549	548.8 -> 79.9	16132	2.06	µg/L		97
		548.8 -> 98.9	8169				
PFOA	7.790	413.0 -> 369.0	170883	2.32	µg/L		99
		413.0 -> 169.0	33579				
PFOS	9.069	498.9 -> 79.9	41419	2.02	µg/L	m	98
		498.9 -> 98.8	19357				
PFPeA	4.879	263.0 -> 219.0	301409	4.62	µg/L		100
PFPeS	7.184	349.1 -> 79.9	21695	1.94	µg/L		95
		349.1 -> 98.9	9131				
PFTeDA	10.513	713.1 -> 669.0	116723	2.25	µg/L		100
		713.1 -> 168.9	9913				
PFTrDA	10.167	663.0 -> 619.0	153129	2.41	µg/L		97
		663.0 -> 168.9	14655				
PFUnDA	9.374	563.1 -> 519.0	89859	2.03	µg/L		100
		563.1 -> 269.1	16531				
11Cl-PF3OUdS	10.218	630.9 -> 450.9	307654	9.13	µg/L		98
		632.9 -> 452.9	95017				
9Cl-PF3ONS	9.413	530.8 -> 351.0	352890	8.59	µg/L		99
		532.8 -> 353.0	103383				
ADONA	7.382	376.9 -> 250.9	704316	9.05	µg/L		99
		376.9 -> 84.8	253189				
HFPO-DA	6.577	284.9 -> 168.9	127065	9.35	µg/L		97
		284.9 -> 184.9	12074				
3:3FTCA	4.204	241.0 -> 177.0	33572	10.97	µg/L		100
		241.0 -> 117.0	3139				
5:3FTCA	6.796	341.0 -> 237.1	574539	56.51	µg/L		100
		341.0 -> 217.0	427768				
7:3FTCA	8.262	441.0 -> 316.9	334468	57.28	µg/L		98
		441.0 -> 336.9	768376				
EtFOSA	11.550	526.0 -> 219.0	30355	2.27	µg/L		96
		526.0 -> 169.0	36281				
EtFOSE	11.496	630.0 -> 58.9	337990	24.29	µg/L		100
MeFOSA	11.329	511.9 -> 219.0	23789	2.33	µg/L		93
		511.9 -> 169.0	28629				
MeFOSE	11.261	616.1 -> 58.9	319110	23.61	µg/L		100
PFDoDS	10.639	699.1 -> 79.9	18392	2.14	µg/L		96
		699.1 -> 98.8	10230				
NFDHA	6.066	295.0 -> 201.0	22945	4.57	µg/L		98
		295.0 -> 84.9	6925				
PFMBA	5.341	279.0 -> 85.1	192529	4.73	µg/L		100
PFMPA	3.869	229.0 -> 84.9	191830	4.57	µg/L		100
PFEESA	6.672	314.8 -> 134.9	271098	4.15	µg/L		100
		314.8 -> 82.9	8486				

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

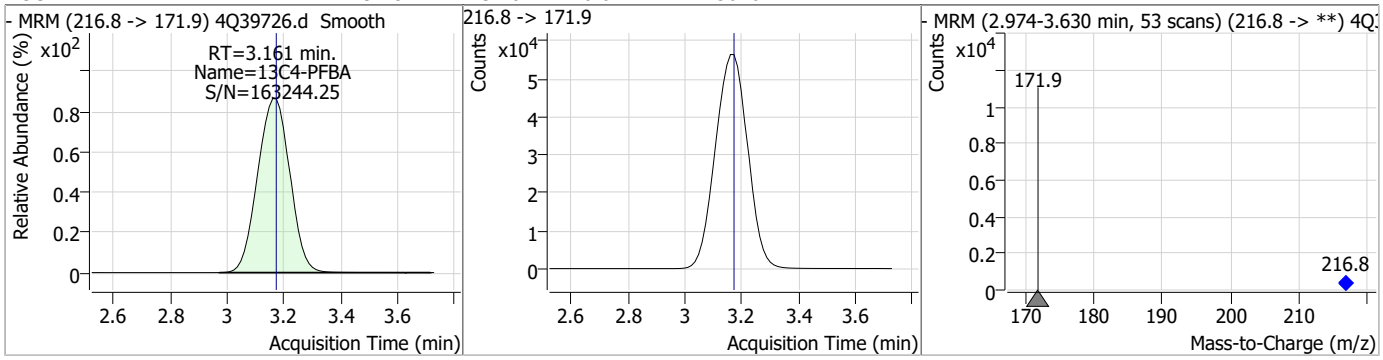
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

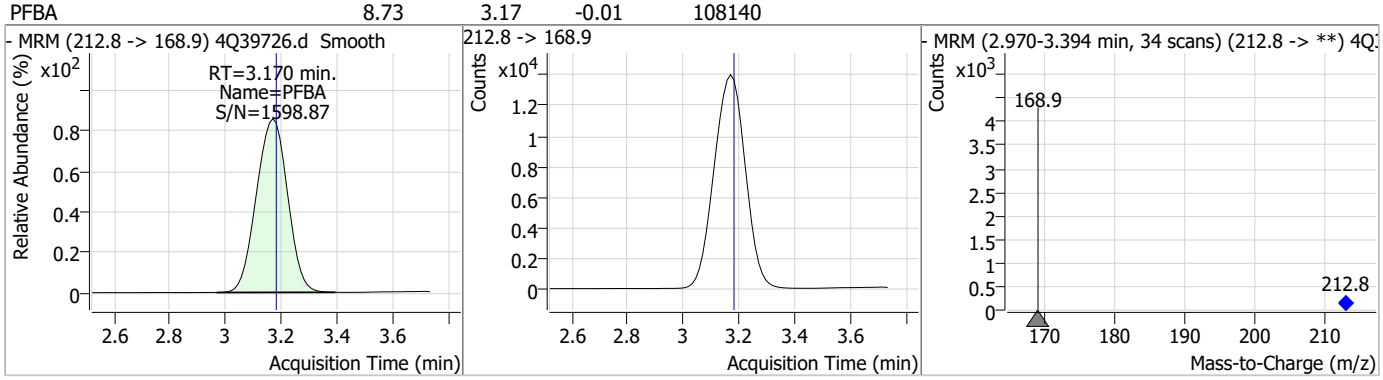
Perfluorinated Compounds by LC/MS/MS



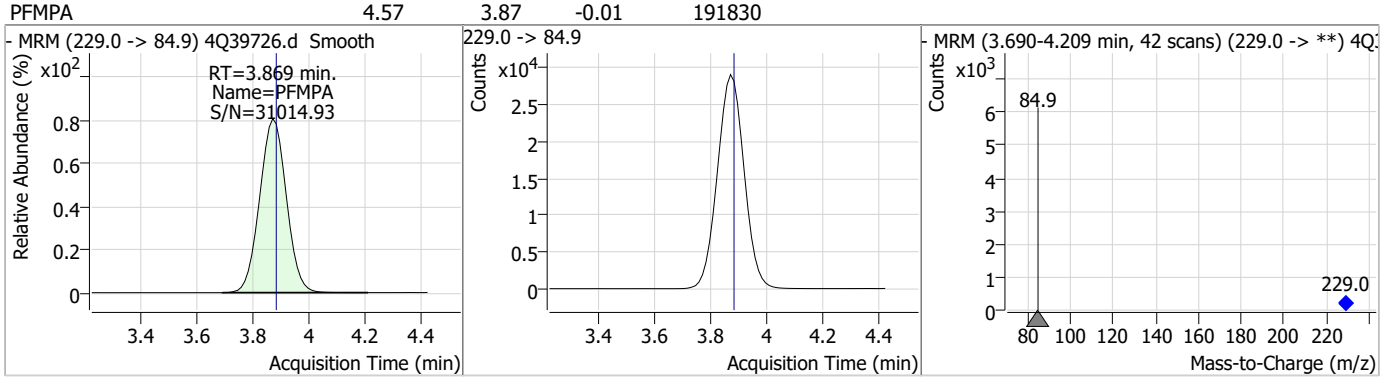
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.78	3.16	-0.01	445070				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.73	3.17	-0.01	108140				

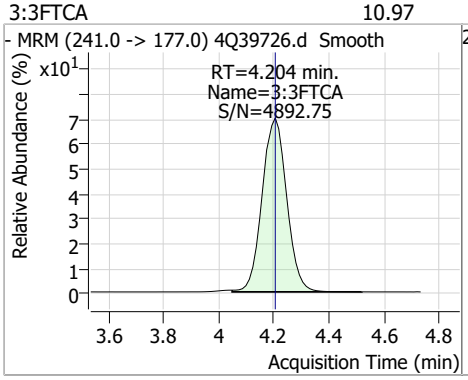


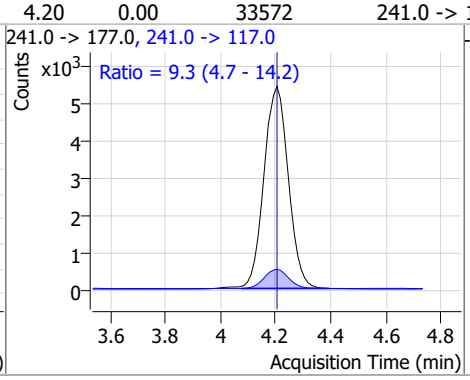
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.57	3.87	-0.01	191830				

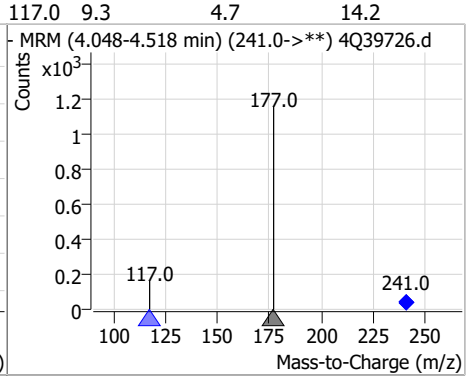


Perfluorinated Compounds by LC/MS/MS

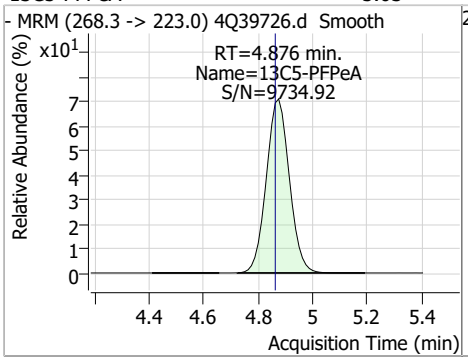
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.97	4.20	0.00	33572	241.0 -> 117.0	9.3	4.7	14.2

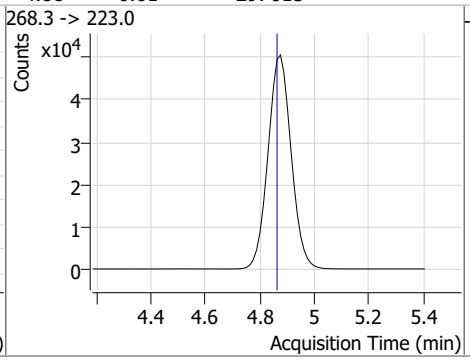


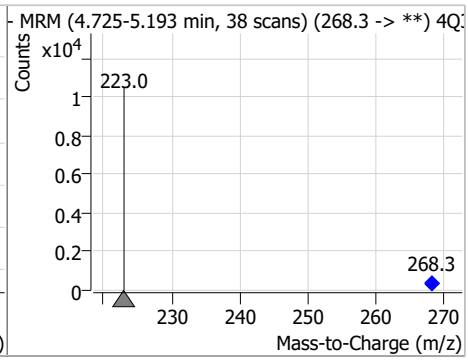




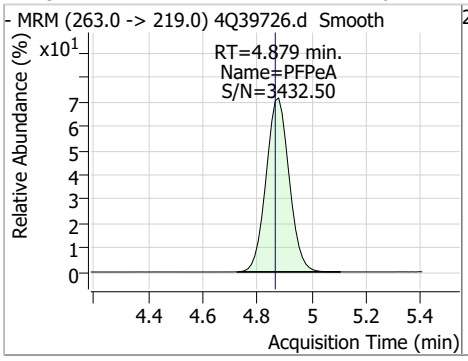
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.88	0.01	297615				

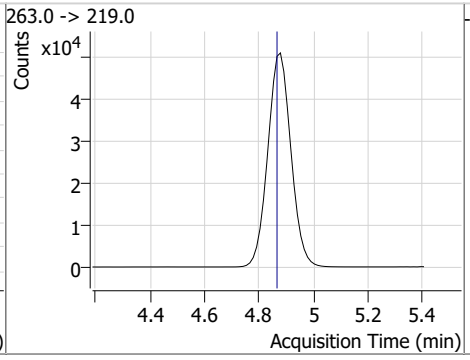


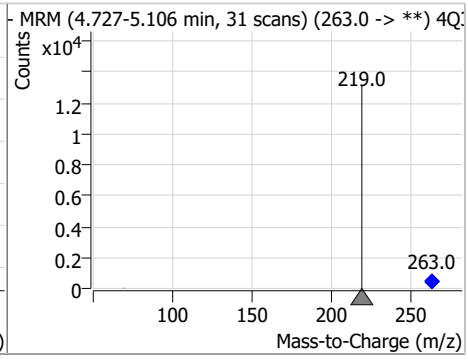




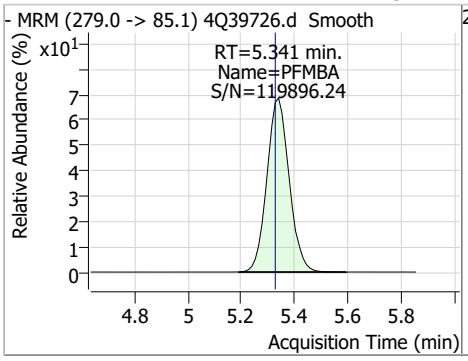
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.62	4.88	0.01	301409				

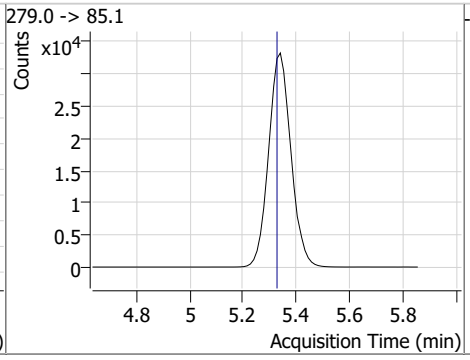


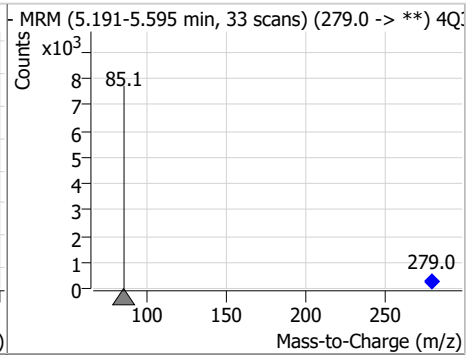




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.73	5.34	0.01	192529				

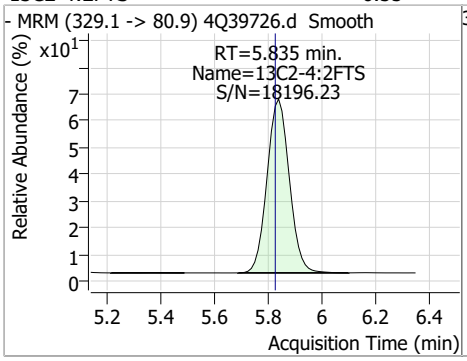


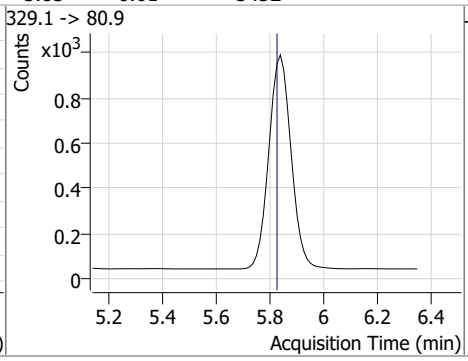


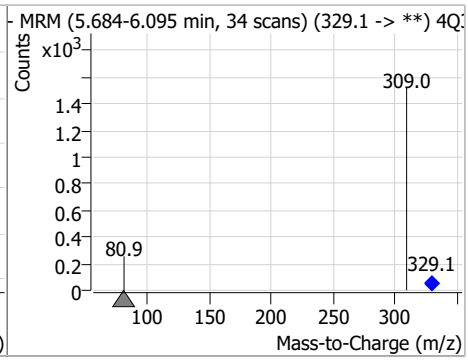


Perfluorinated Compounds by LC/MS/MS

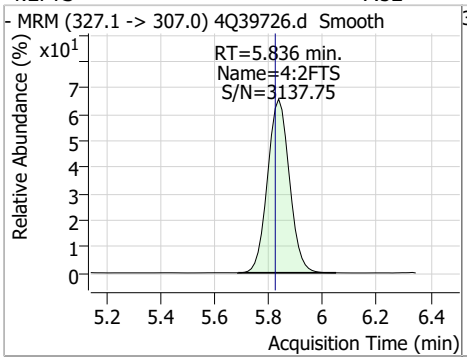
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.55	5.83	0.01	5452				

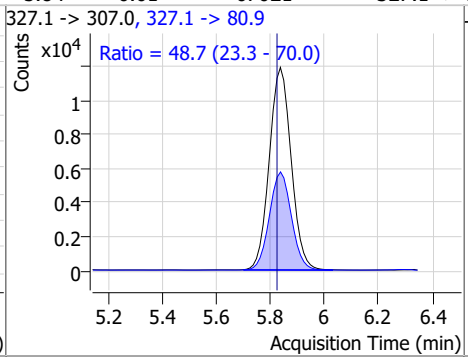


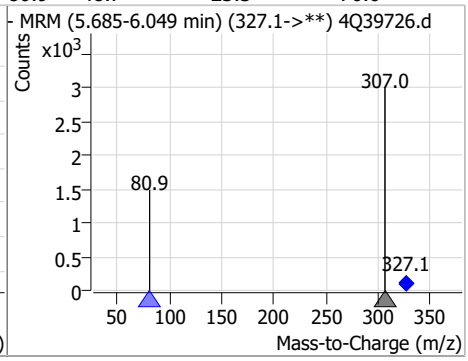




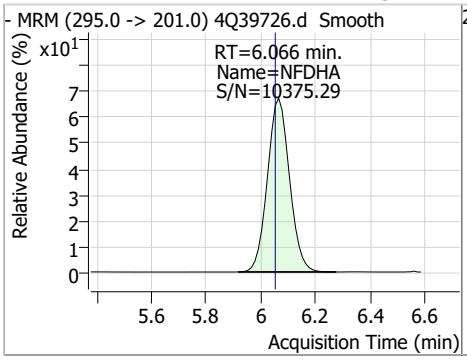
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	7.52	5.84	0.01	67021	327.1 -> 80.9	48.7	23.3	70.0

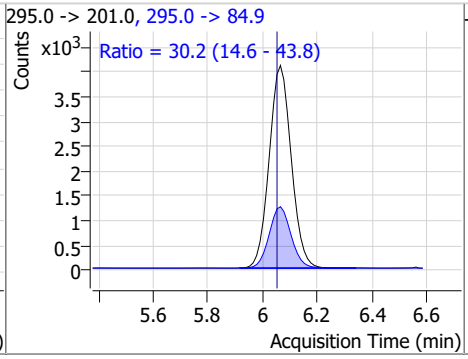


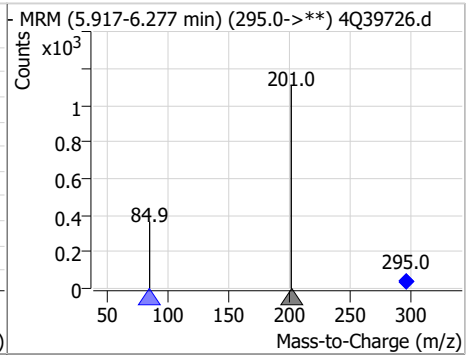




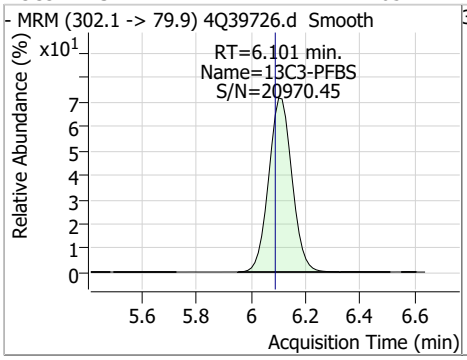
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.57	6.07	0.01	22945	295.0 -> 84.9	30.2	14.6	43.8

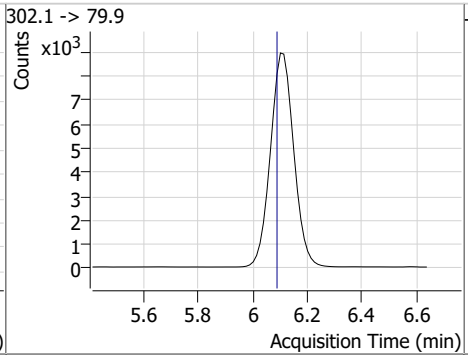


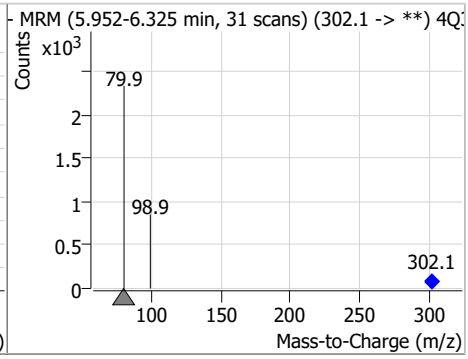




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.65	6.10	0.01	52874				

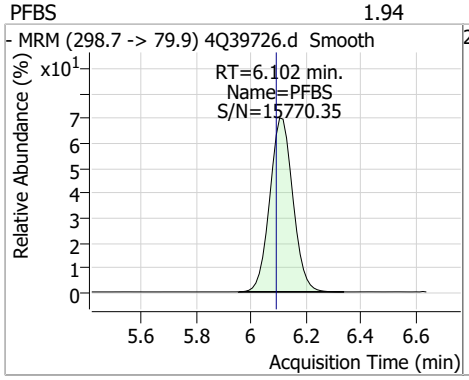


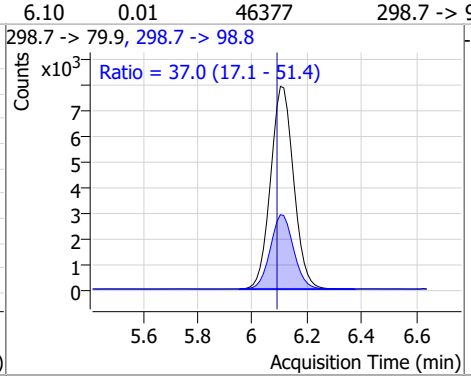


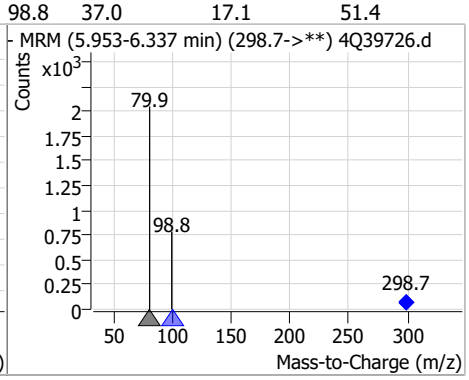


Perfluorinated Compounds by LC/MS/MS

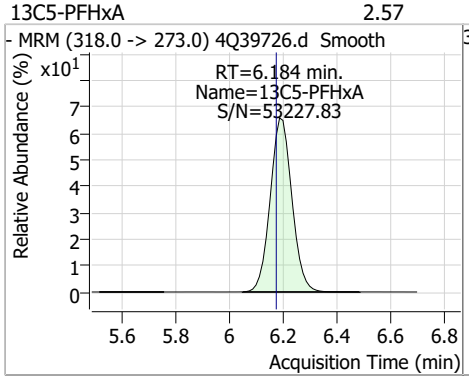
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.94	6.10	0.01	46377	298.7 -> 98.8	37.0	17.1	51.4

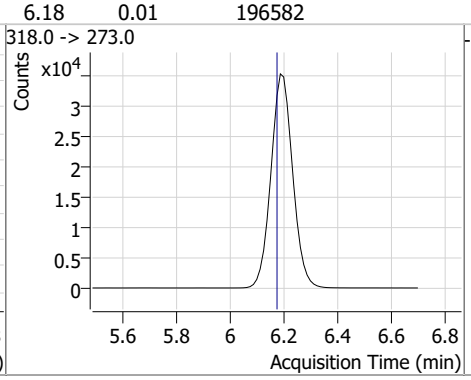


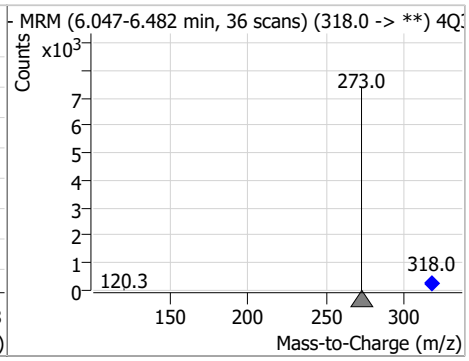




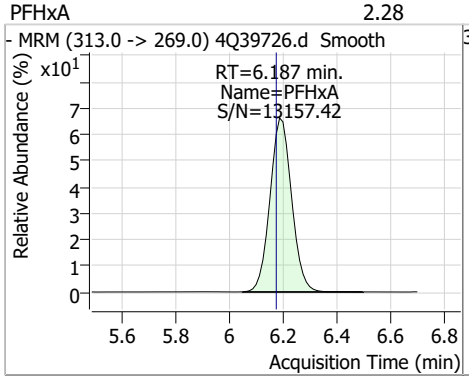
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	6.18	0.01	196582				

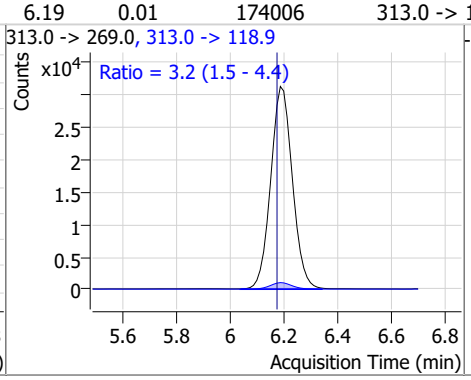


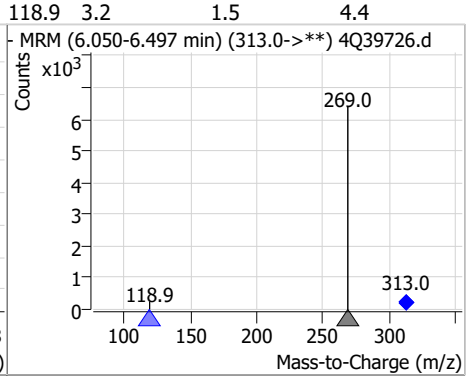




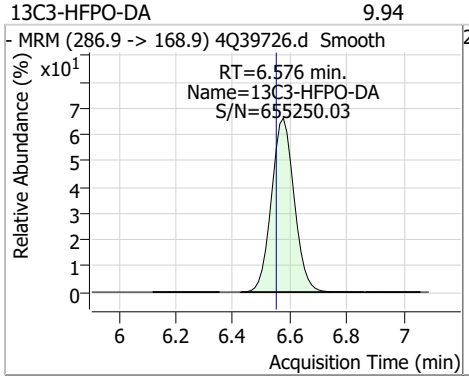
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.28	6.19	0.01	174006	313.0 -> 118.9	3.2	1.5	4.4

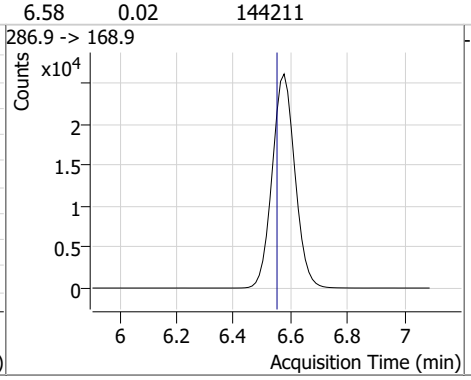


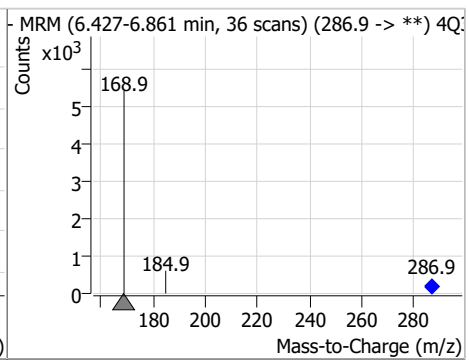




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.94	6.58	0.02	144211				

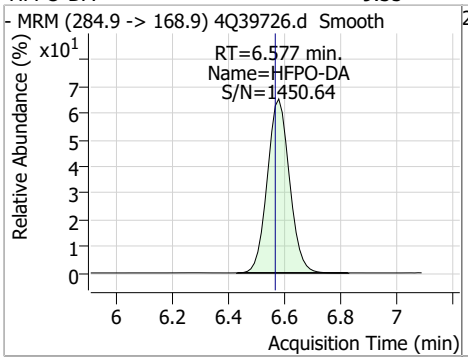


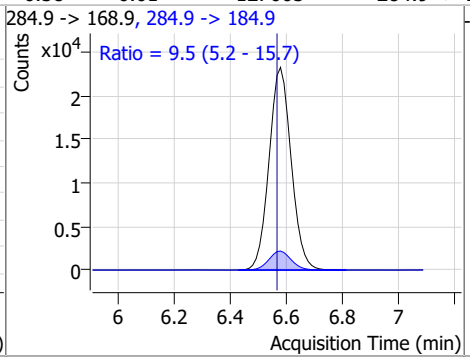


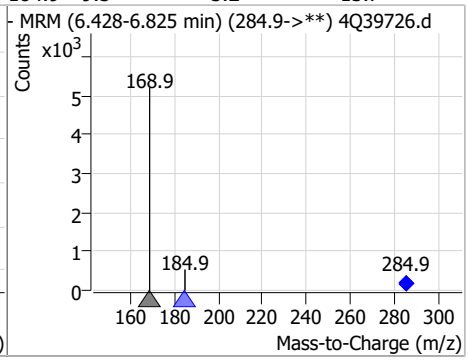


Perfluorinated Compounds by LC/MS/MS

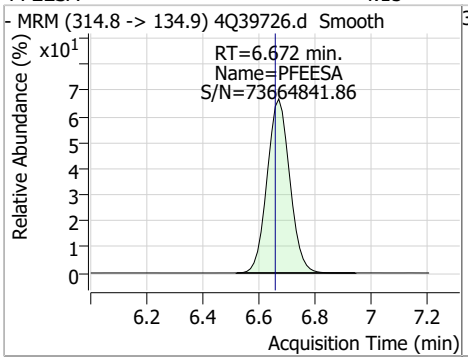
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.35	6.58	0.01	127065	284.9 -> 184.9	9.5	5.2	15.7

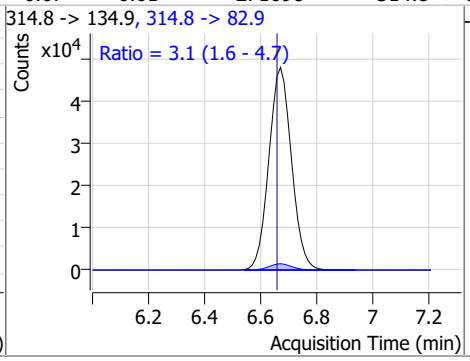


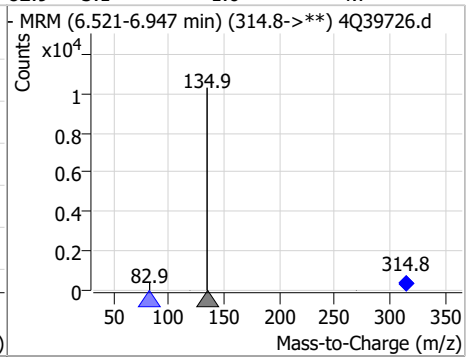




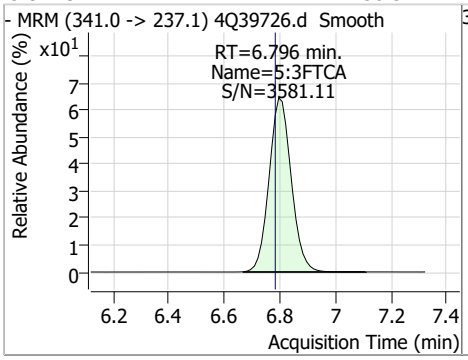
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.15	6.67	0.01	271098	314.8 -> 82.9	3.1	1.6	4.7

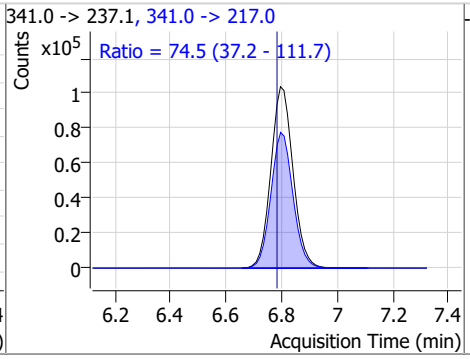


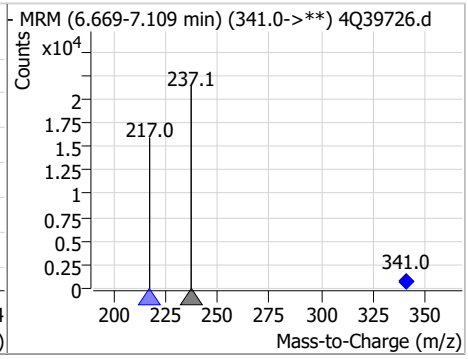




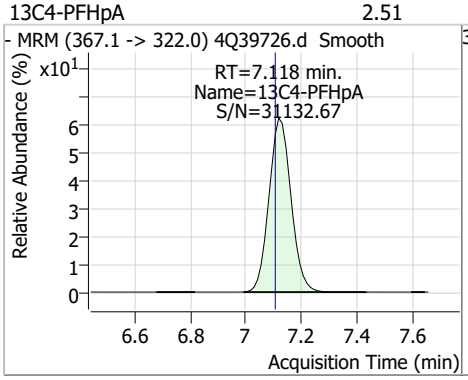
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.51	6.80	0.01	574539	341.0 -> 217.0	74.5	37.2	111.7

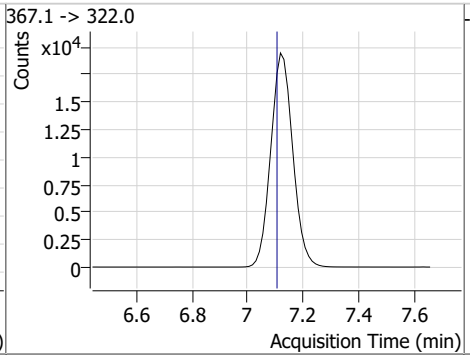


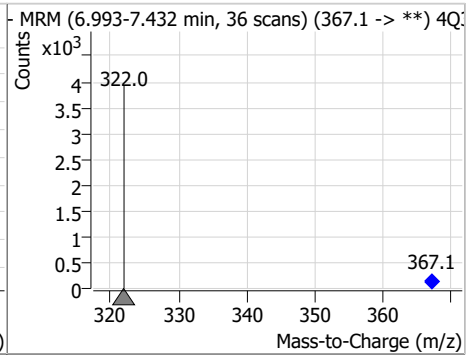




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	7.12	0.01	106449				

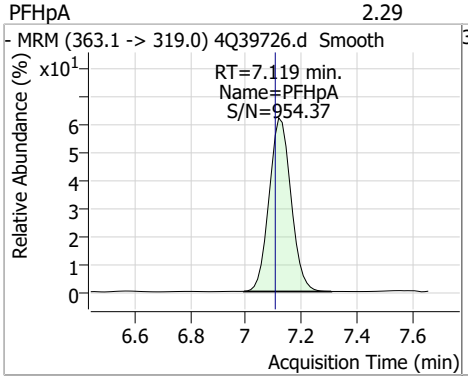


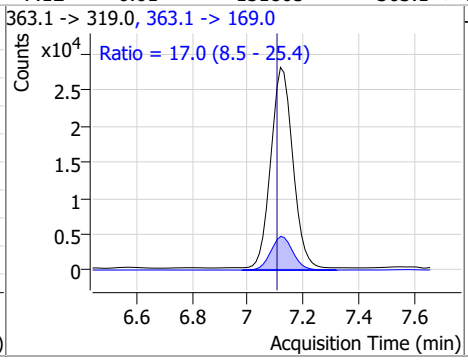


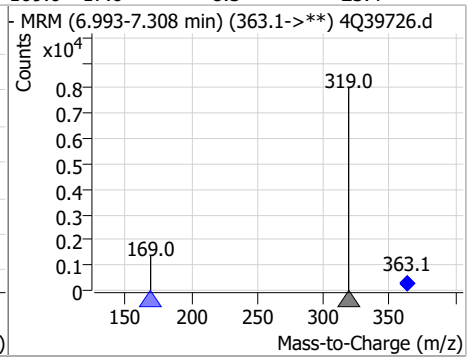


Perfluorinated Compounds by LC/MS/MS

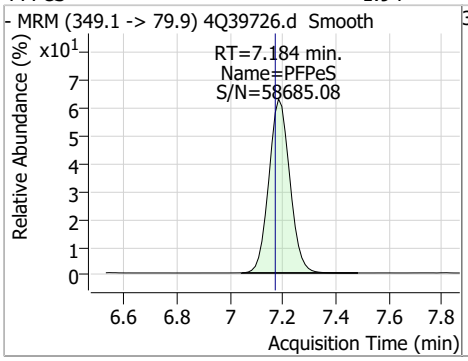
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.29	7.12	0.01	151805	363.1 -> 169.0	17.0	8.5	25.4

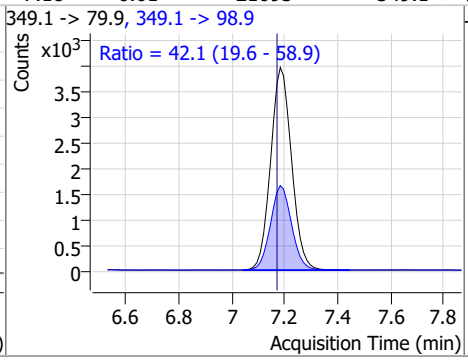


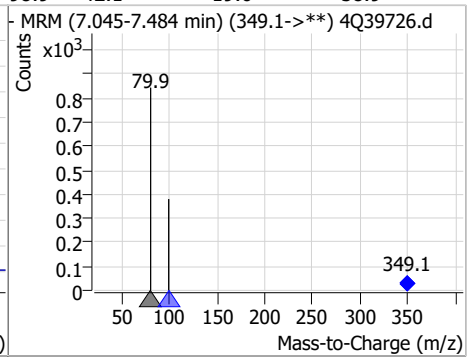




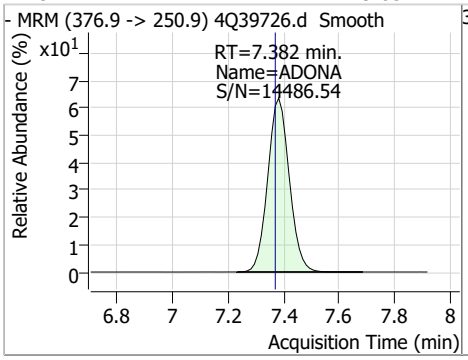
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.94	7.18	0.01	21695	349.1 -> 98.9	42.1	19.6	58.9

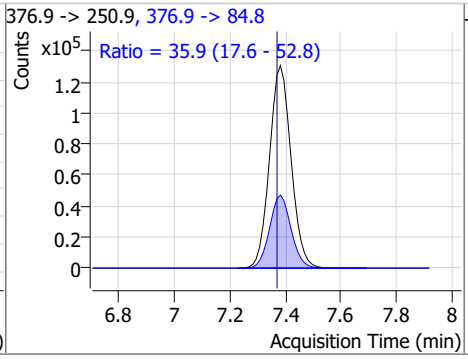


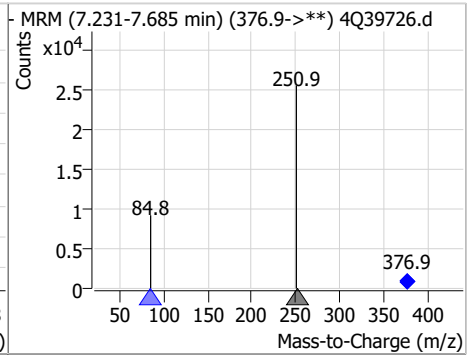




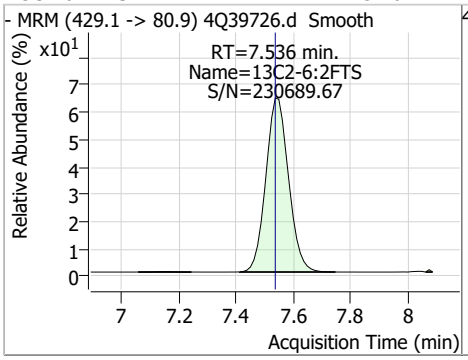
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.05	7.38	0.01	704316	376.9 -> 84.8	35.9	17.6	52.8

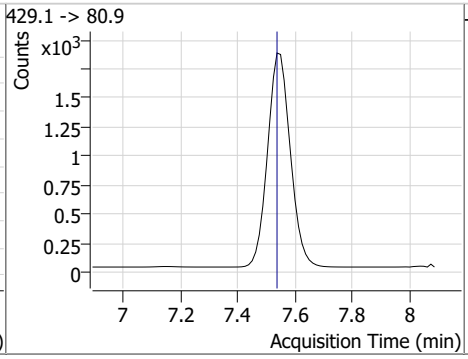


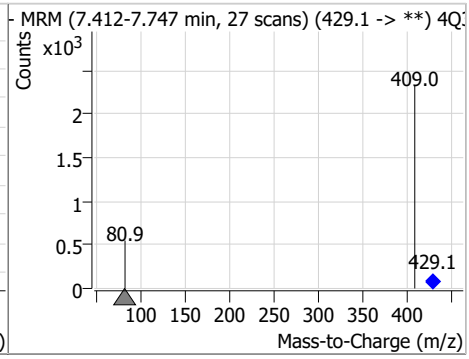




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.46	7.54	0.00	10168				

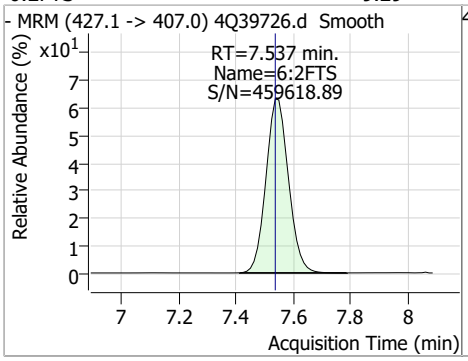


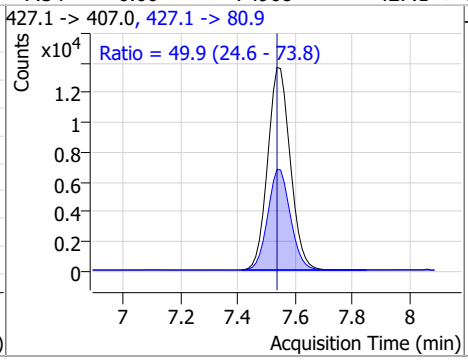


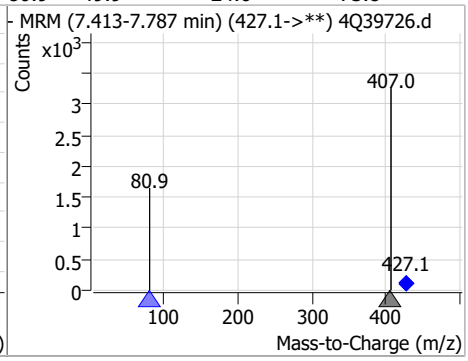


Perfluorinated Compounds by LC/MS/MS

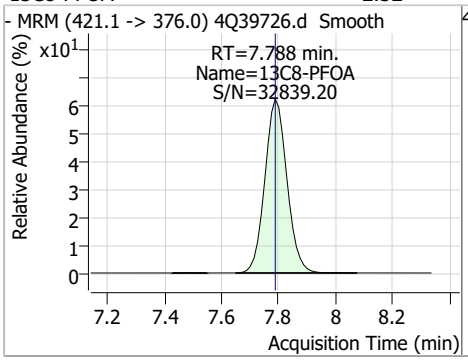
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.29	7.54	0.00	74908	427.1 -> 80.9	49.9	24.6	73.8

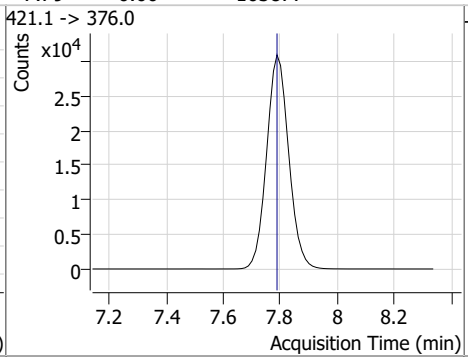


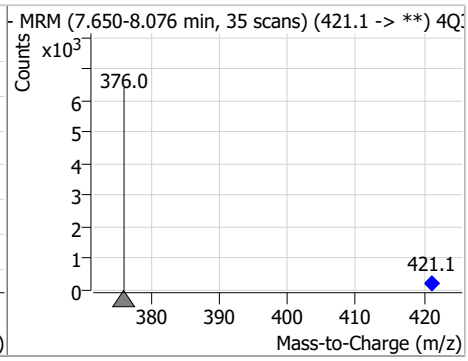




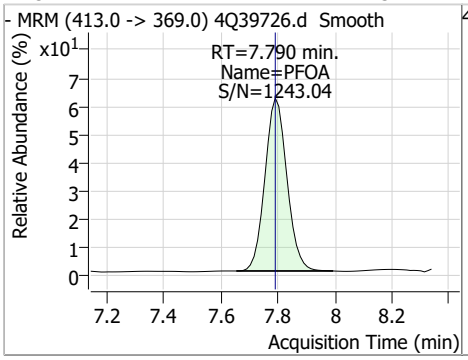
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.79	0.00	165877				

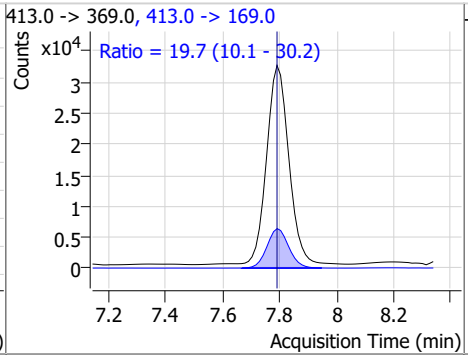


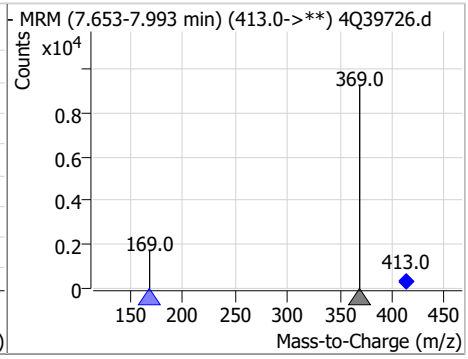




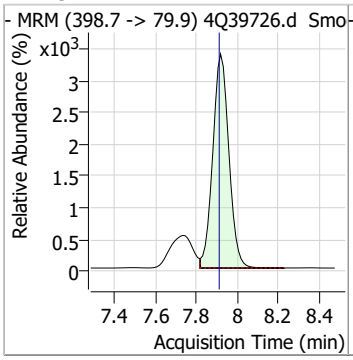
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.32	7.79	0.00	170883	413.0 -> 169.0	19.7	10.1	30.2

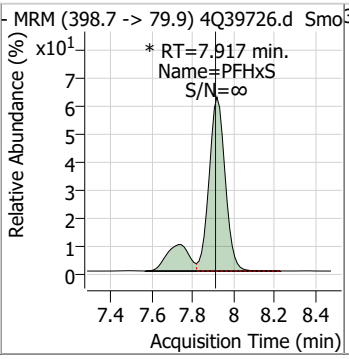


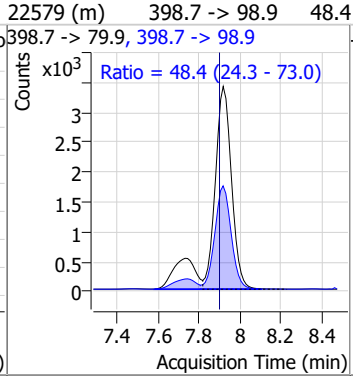


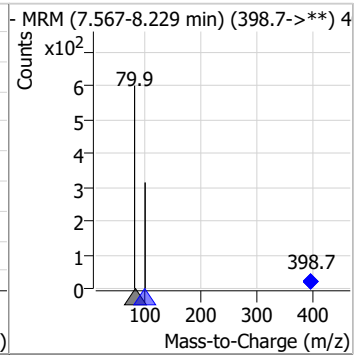


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.95	7.92	0.01	22579 (m)	398.7 -> 98.9	48.4	24.3	73.0



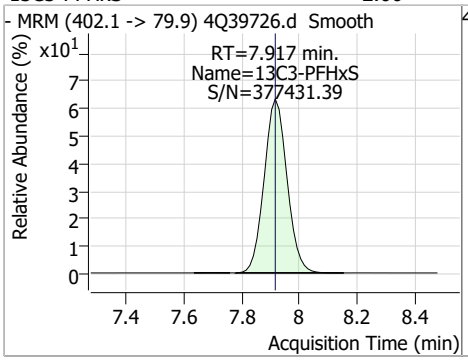


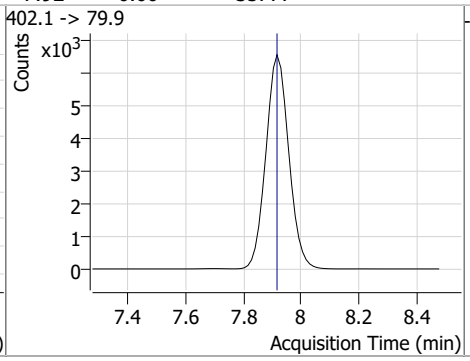


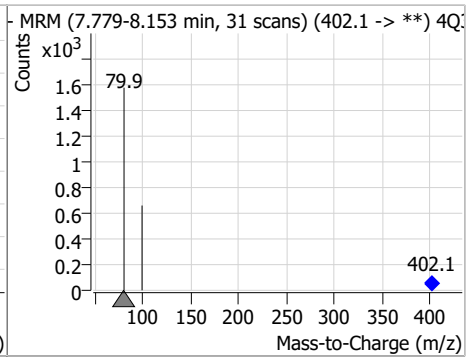


Perfluorinated Compounds by LC/MS/MS

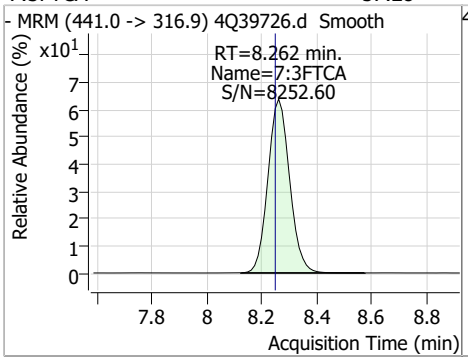
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.66	7.92	0.00	35777				

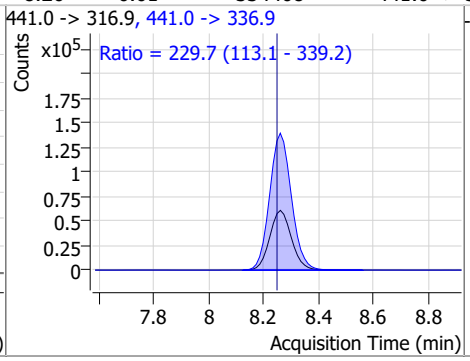


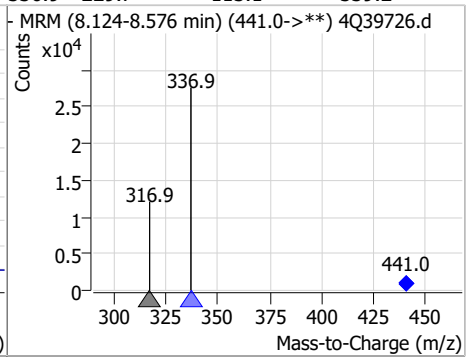




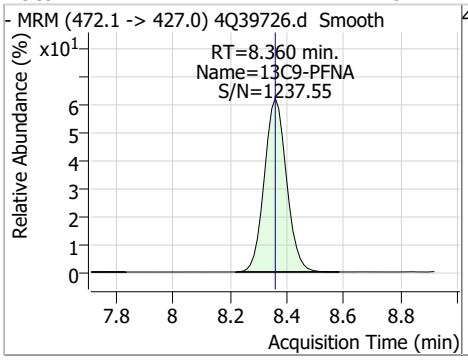
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	57.28	8.26	0.01	334468	441.0 -> 336.9	229.7	113.1	339.2

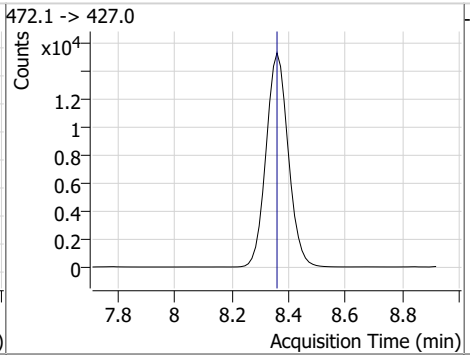


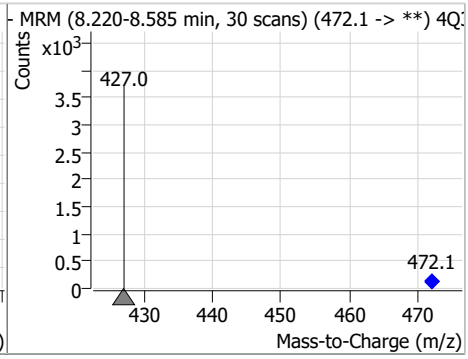




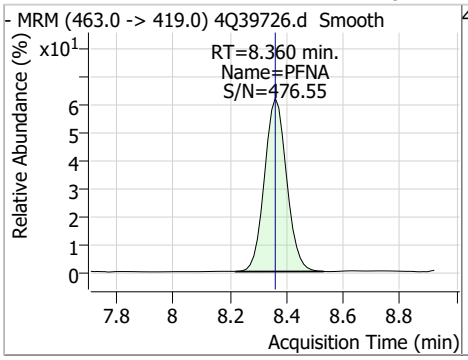
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	8.36	0.00	82882				

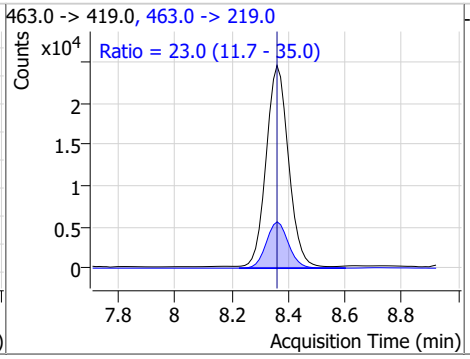


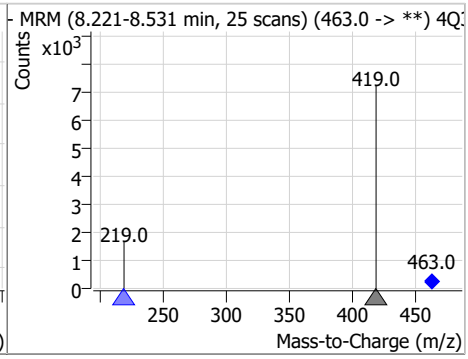




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.19	8.36	0.00	131688	463.0 -> 219.0	23.0	11.7	35.0

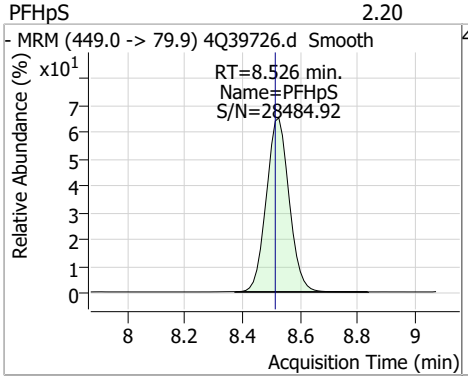


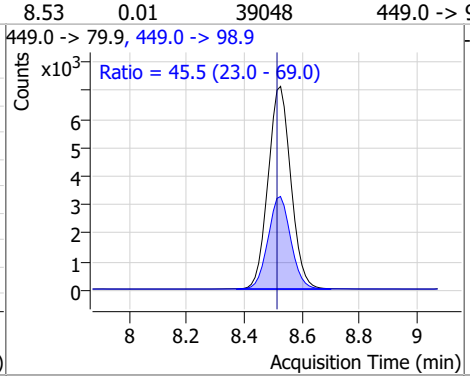


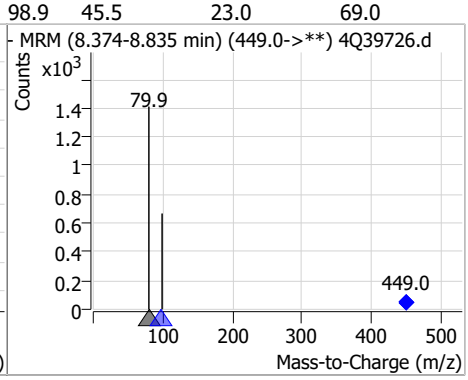


Perfluorinated Compounds by LC/MS/MS

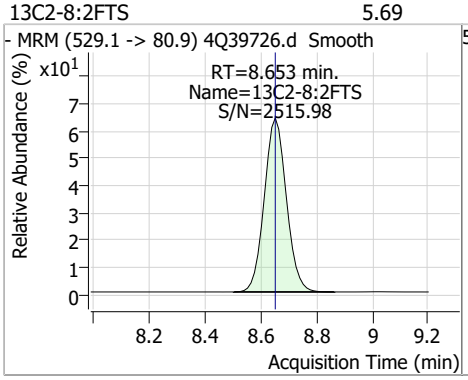
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.20	8.53	0.01	39048	449.0 -> 98.9	45.5	23.0	69.0

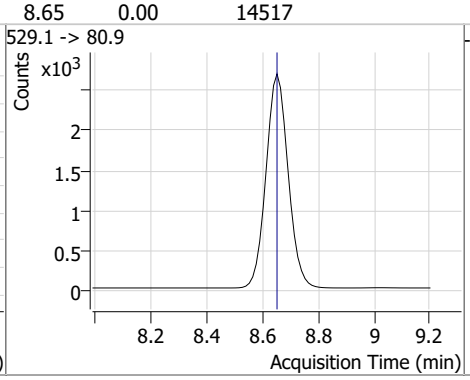


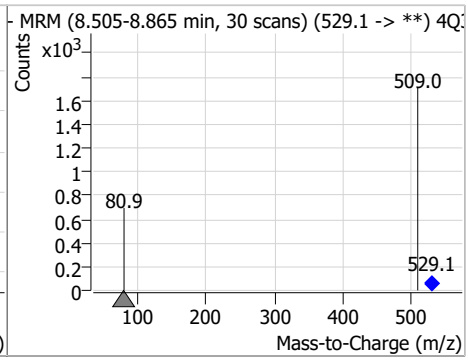




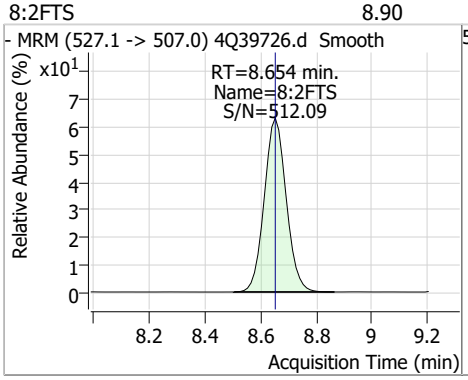
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.69	8.65	0.00	14517				

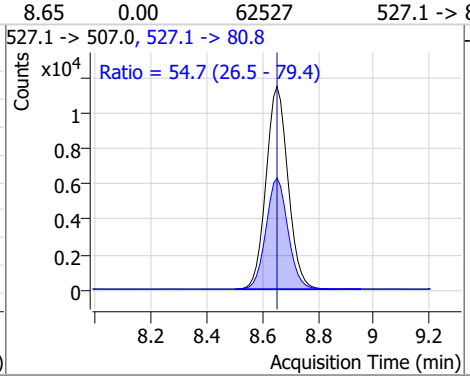


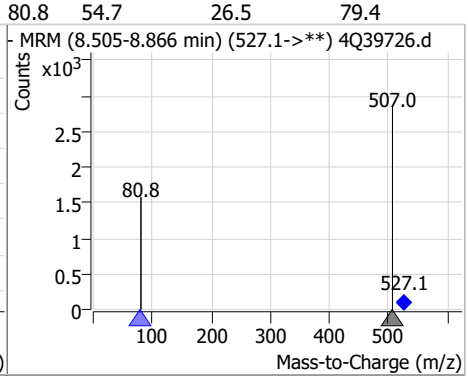




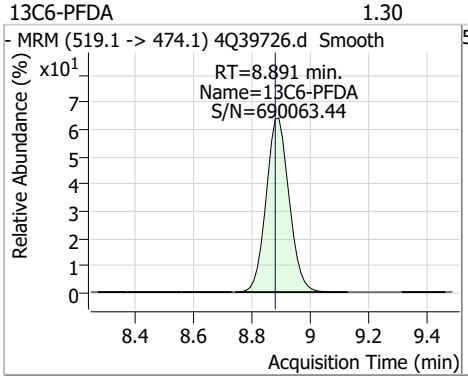
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.90	8.65	0.00	62527	527.1 -> 80.8	54.7	26.5	79.4

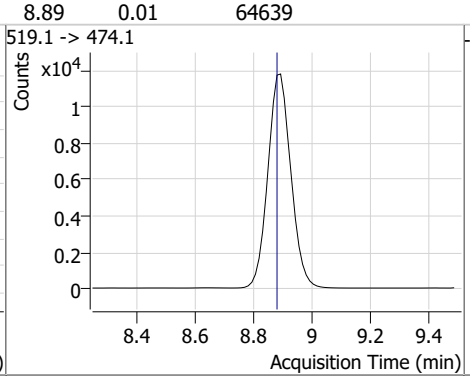


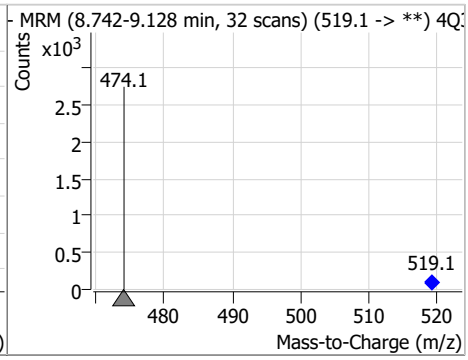




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.30	8.89	0.01	64639				

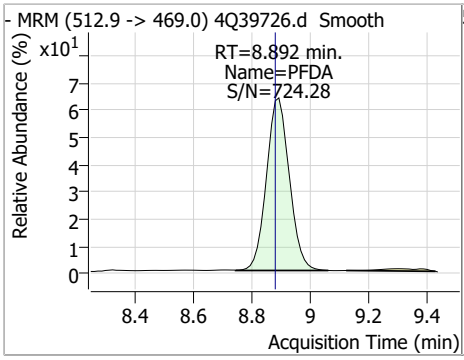


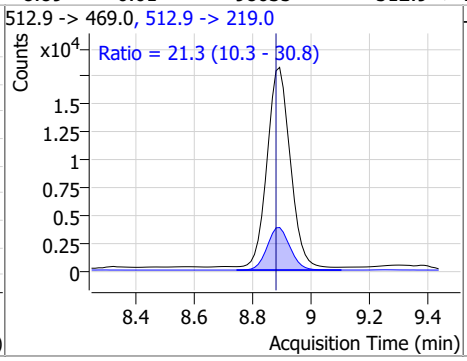


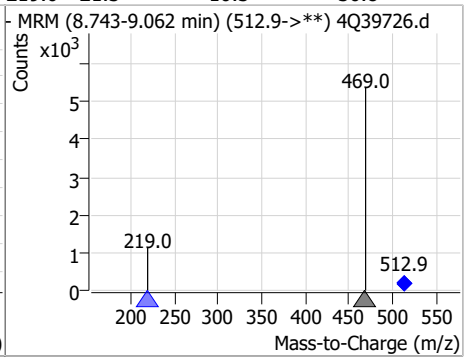


Perfluorinated Compounds by LC/MS/MS

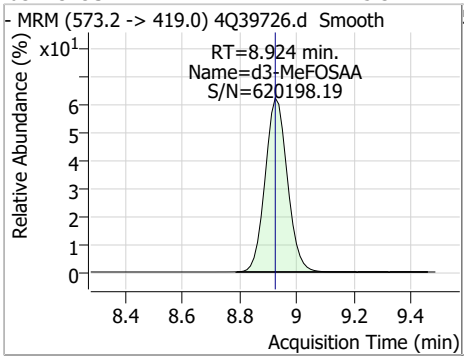
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.14	8.89	0.01	98635	512.9 -> 219.0	21.3	10.3	30.8

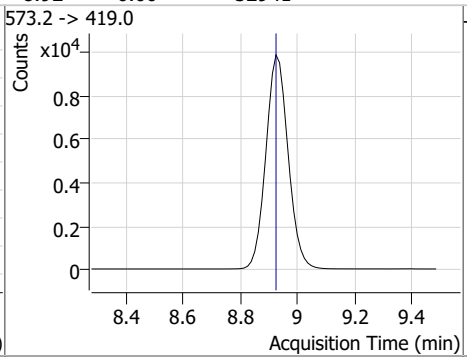


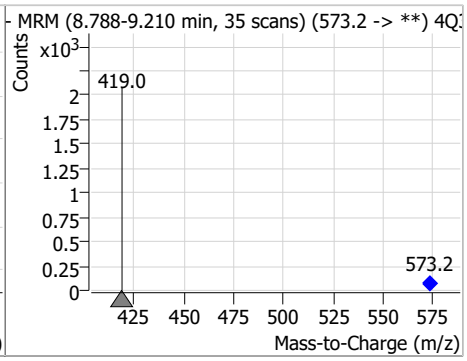




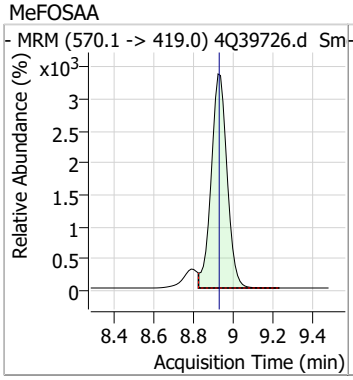
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.34	8.92	0.00	52941				

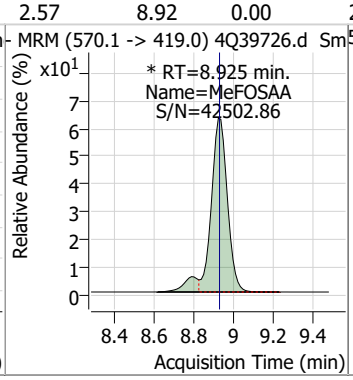


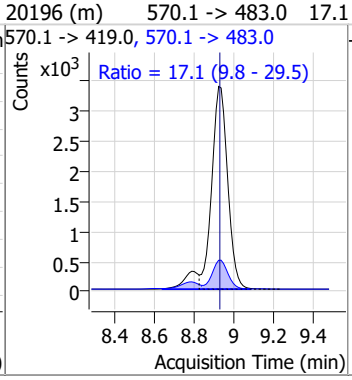


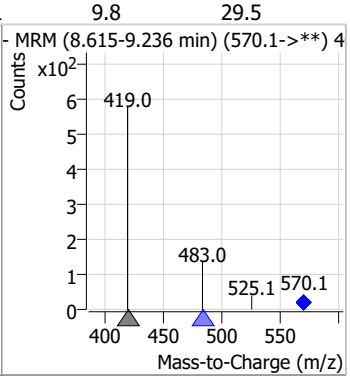


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.57	8.92	0.00	20196 (m)	570.1 -> 483.0	17.1	9.8	29.5

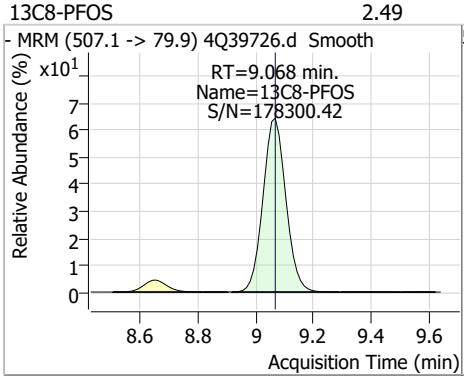


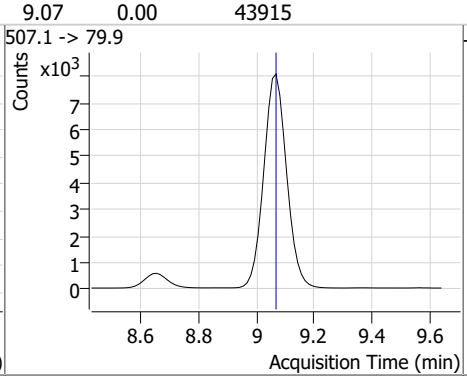


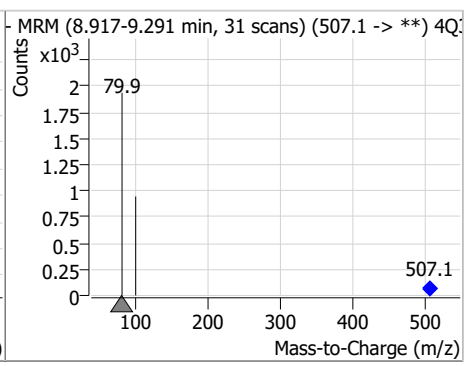




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.49	9.07	0.00	43915				

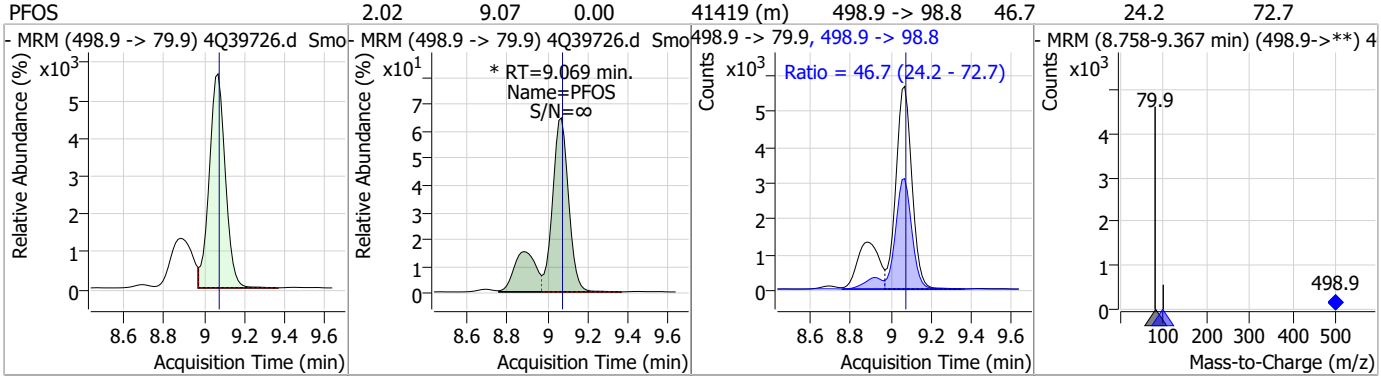




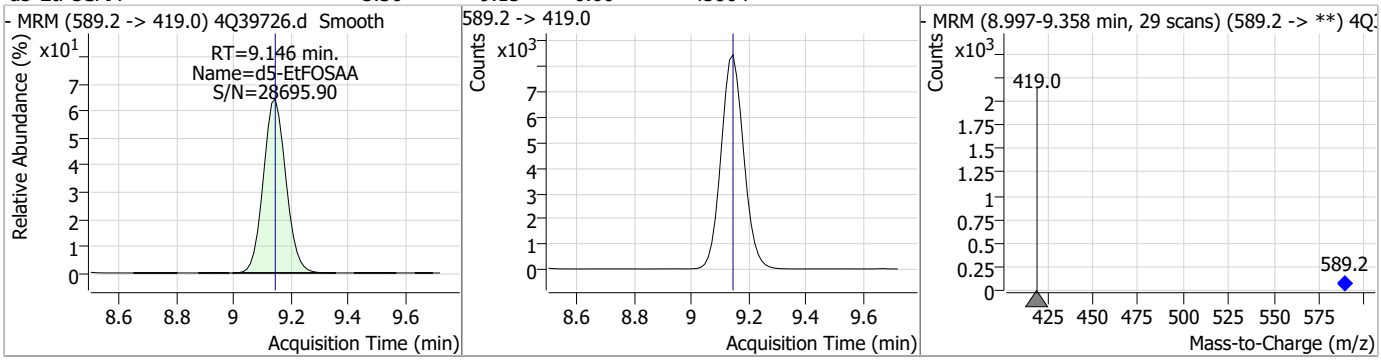


Perfluorinated Compounds by LC/MS/MS

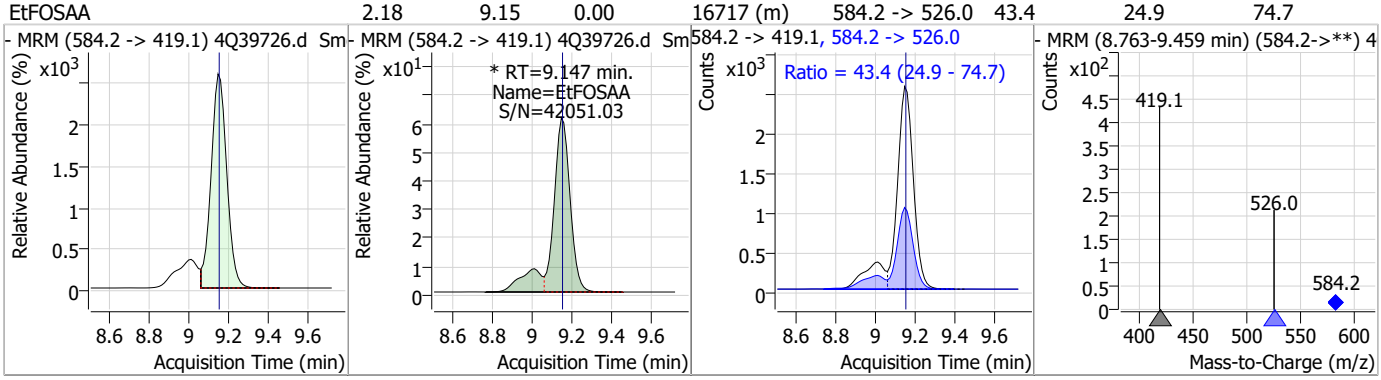
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.02	9.07	0.00	41419 (m)	498.9 -> 98.8	46.7	24.2	72.7



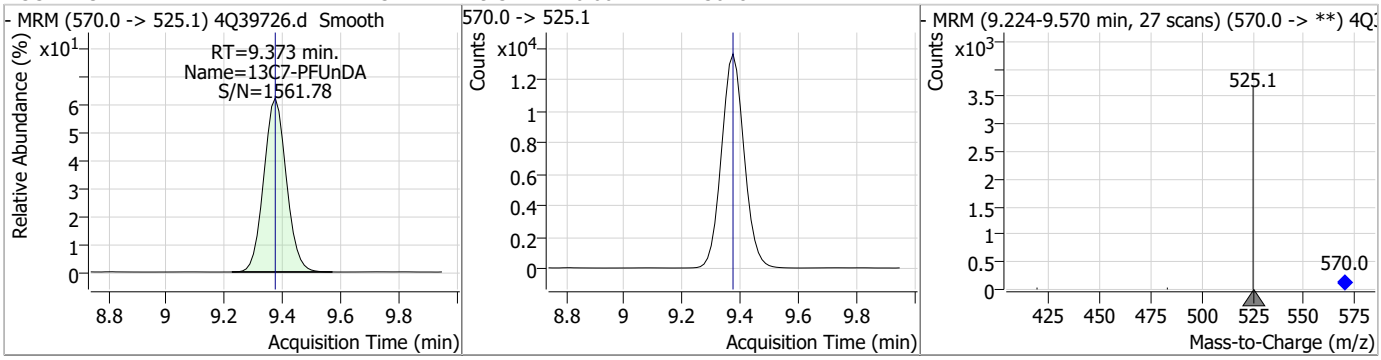
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	9.15	0.00	45804				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.18	9.15	0.00	16717 (m)	584.2 -> 526.0	43.4	24.9	74.7

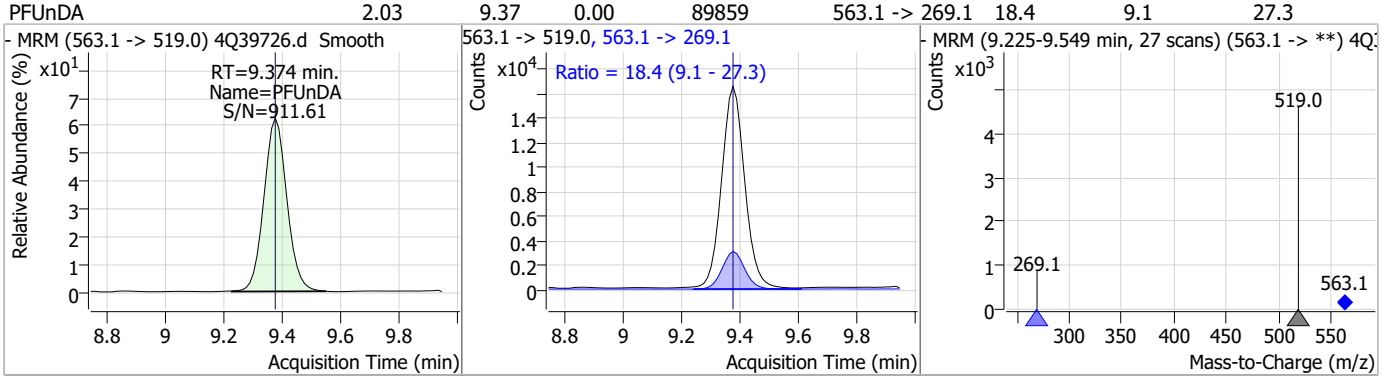


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	9.37	0.00	73078				

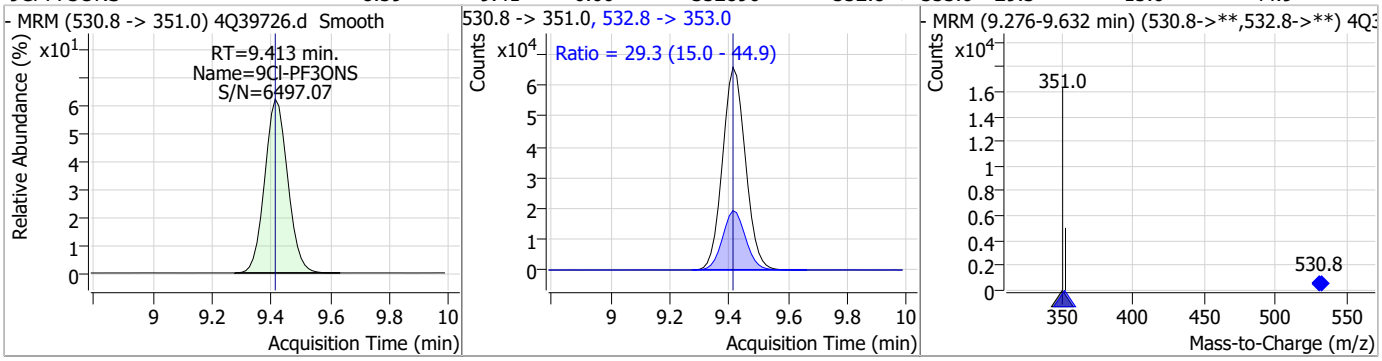


Perfluorinated Compounds by LC/MS/MS

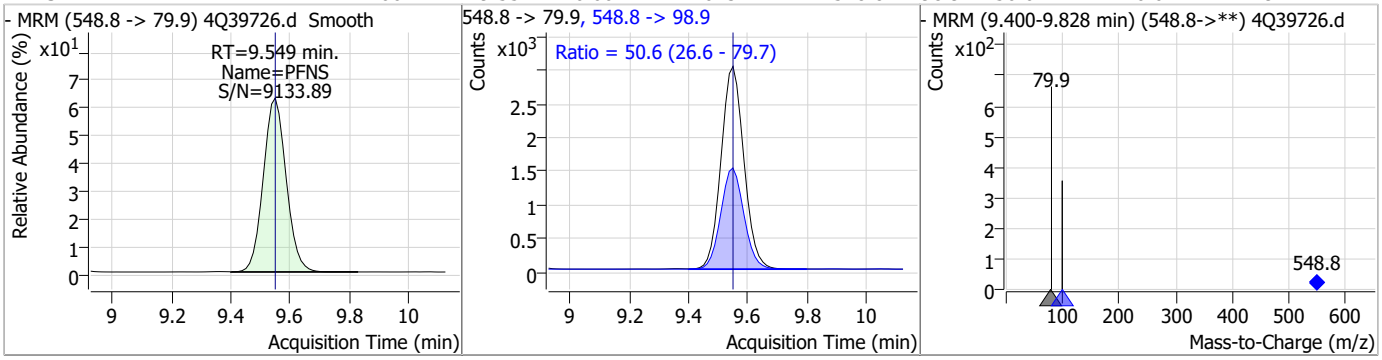
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.03	9.37	0.00	89859	563.1 -> 269.1	18.4	9.1	27.3



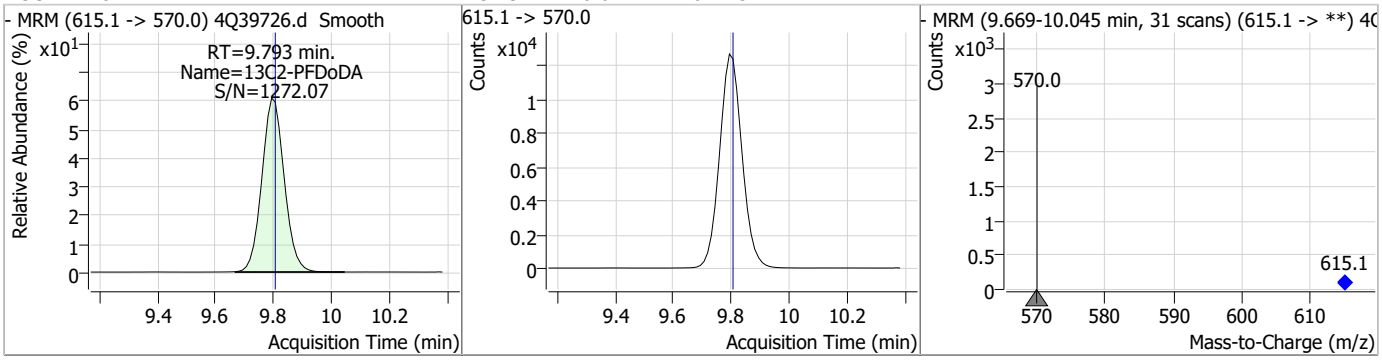
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.59	9.41	0.00	352890	532.8 -> 353.0	29.3	15.0	44.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.06	9.55	0.00	16132	548.8 -> 98.9	50.6	26.6	79.7

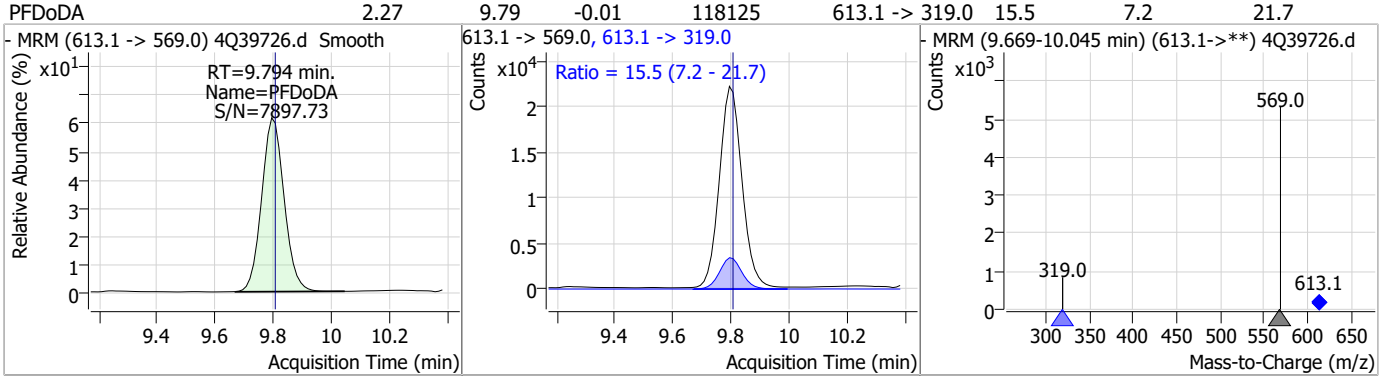


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	9.79	-0.01	67445				

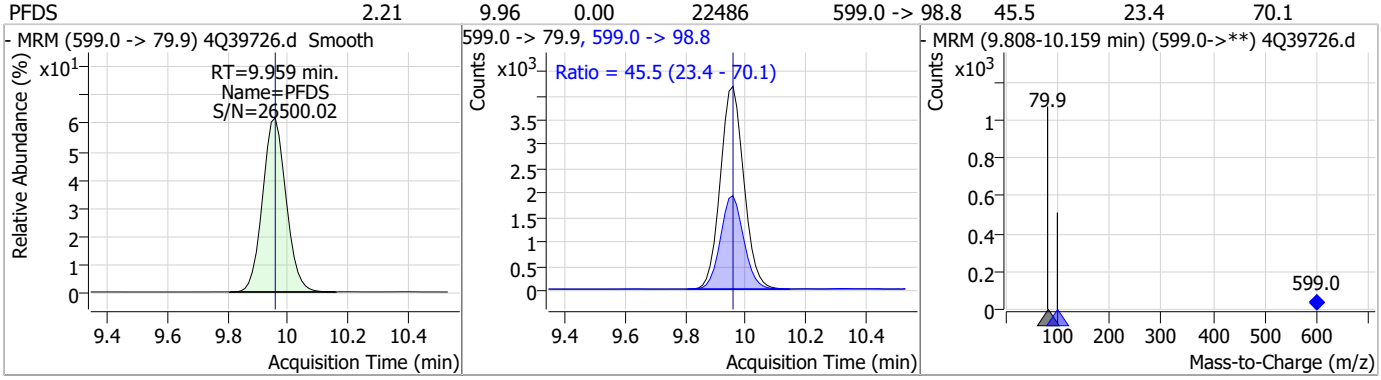


Perfluorinated Compounds by LC/MS/MS

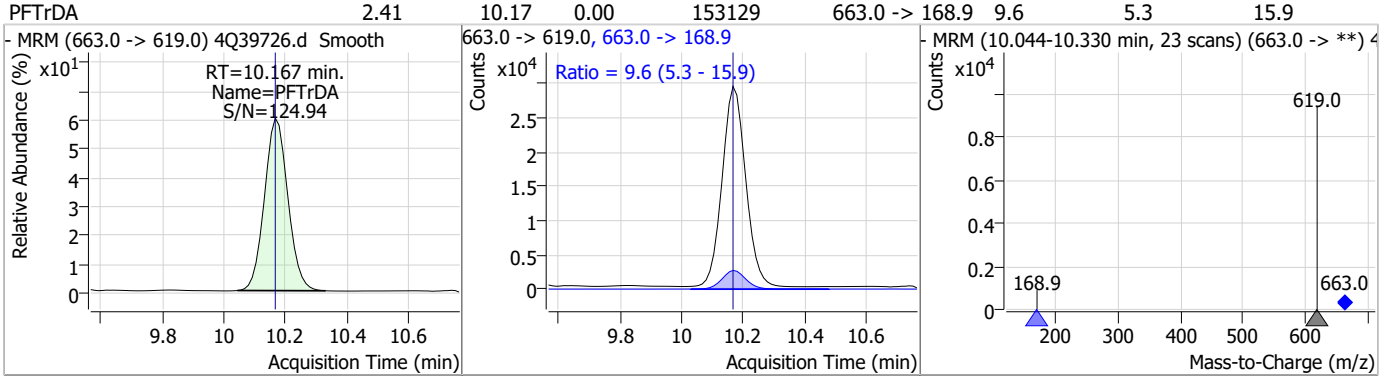
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.27	9.79	-0.01	118125	613.1 -> 319.0	15.5	7.2	21.7



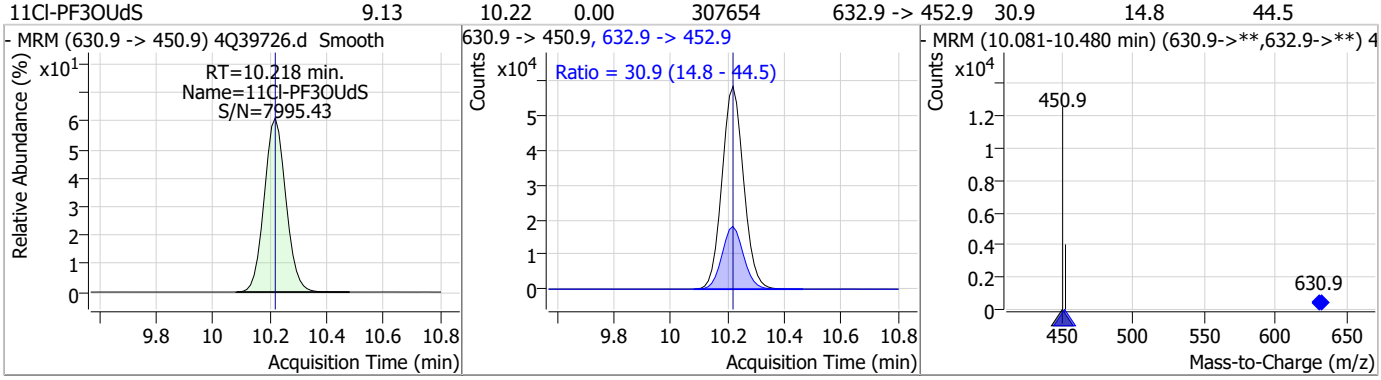
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.21	9.96	0.00	22486	599.0 -> 98.8	45.5	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.41	10.17	0.00	153129	663.0 -> 168.9	9.6	5.3	15.9

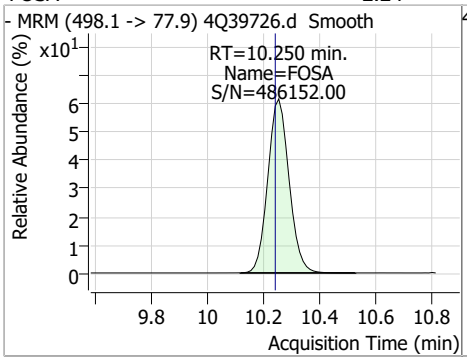


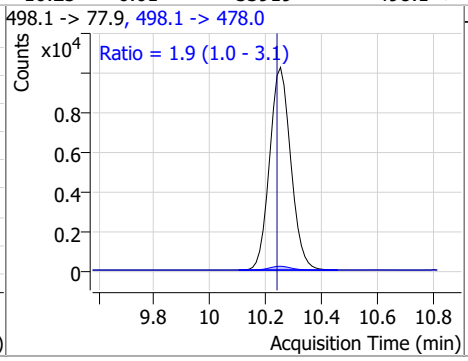
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.13	10.22	0.00	307654	632.9 -> 452.9	30.9	14.8	44.5

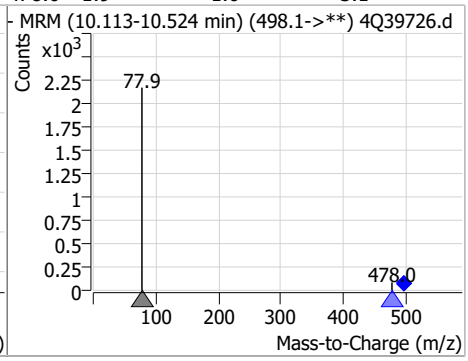


Perfluorinated Compounds by LC/MS/MS

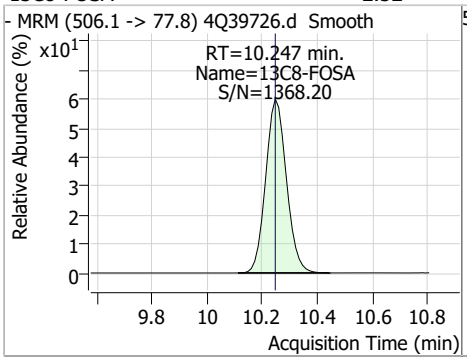
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.24	10.25	0.01	53919	498.1 -> 478.0	1.9	1.0	3.1

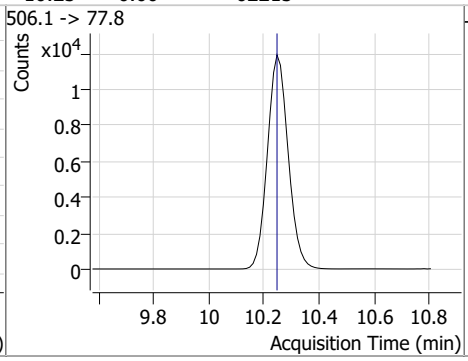


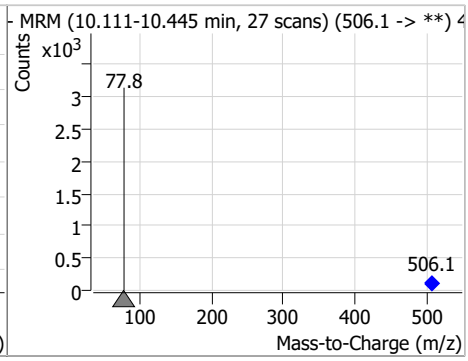




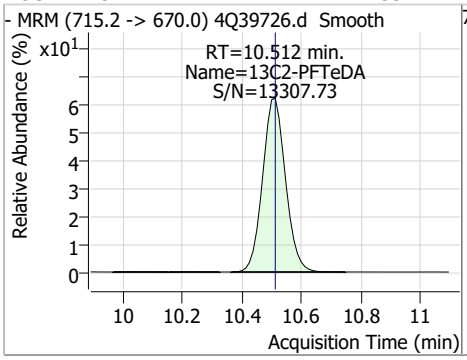
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.52	10.25	0.00	62215				

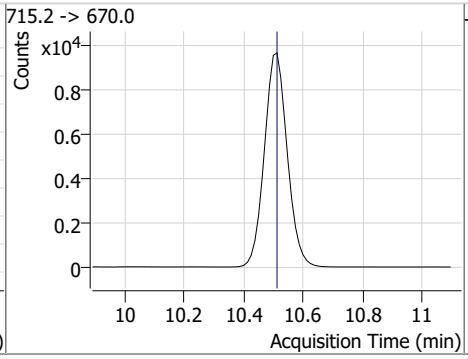


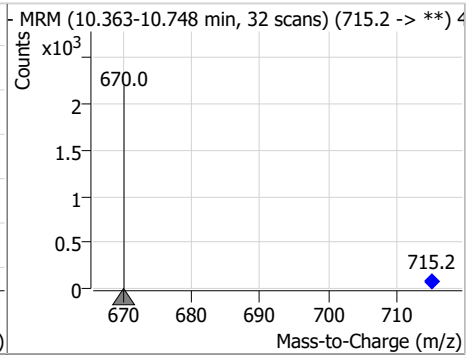




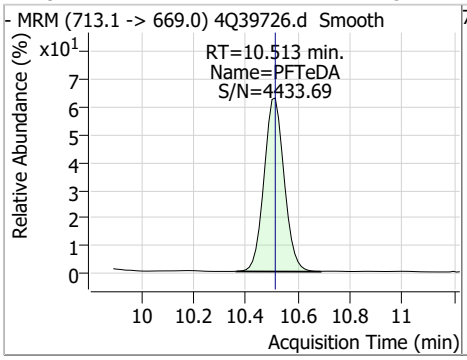
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	10.51	0.00	51487				

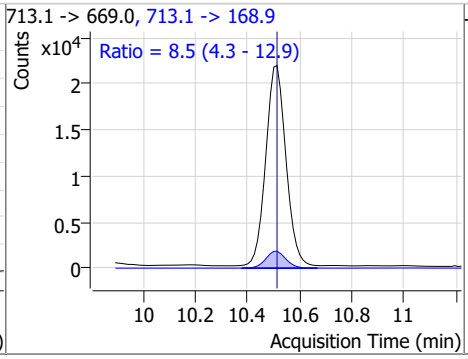


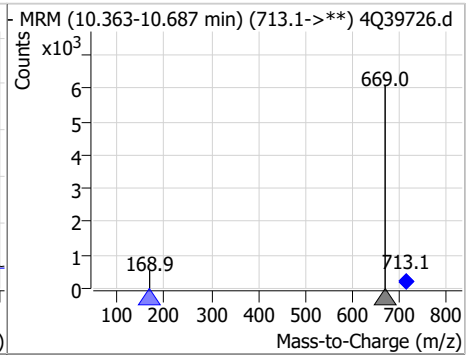




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.25	10.51	0.00	116723	713.1 -> 168.9	8.5	4.3	12.9

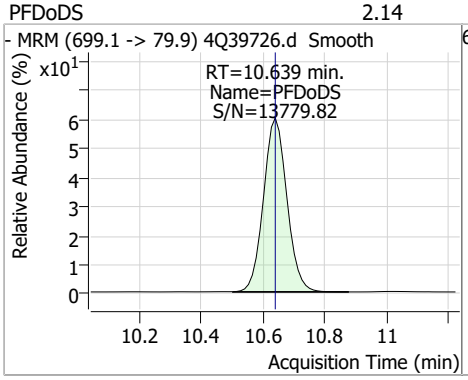


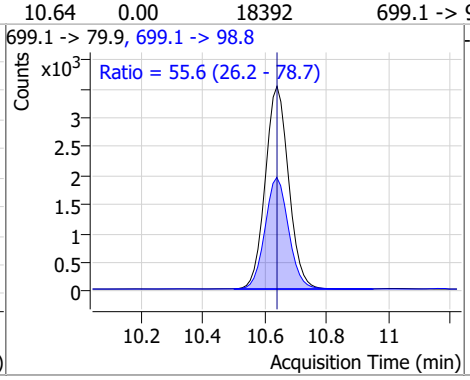


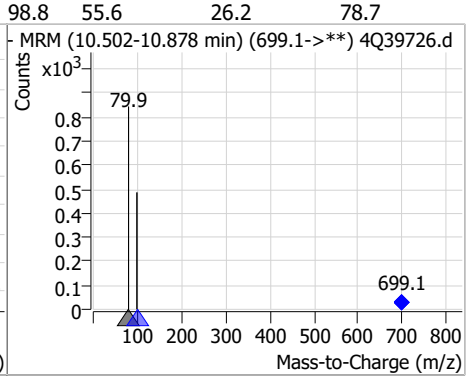


Perfluorinated Compounds by LC/MS/MS

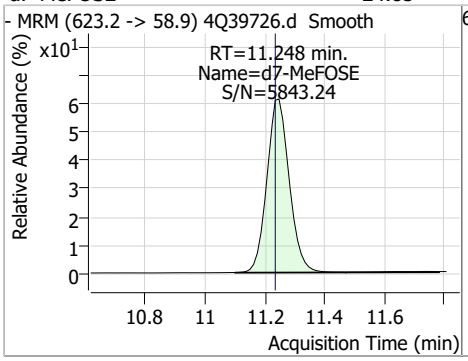
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.14	10.64	0.00	18392	699.1 -> 98.8	55.6	26.2	78.7

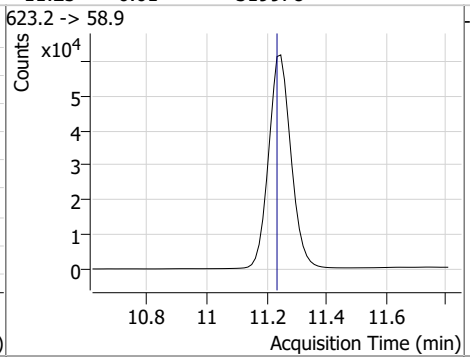


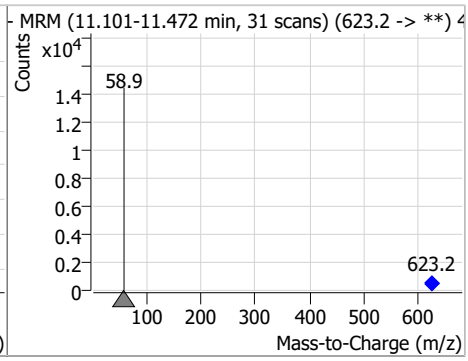




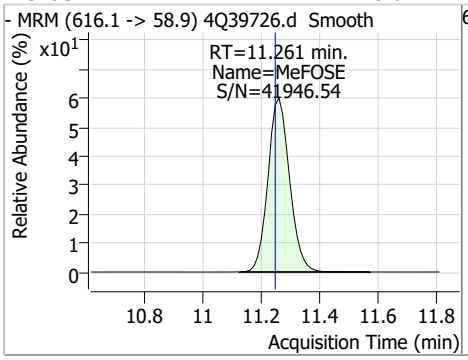
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.85	11.25	0.01	319978				

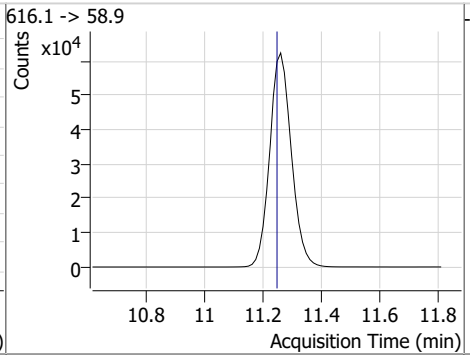


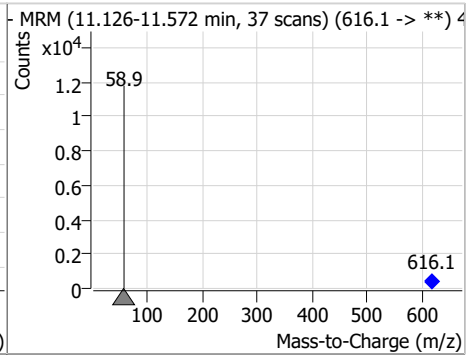




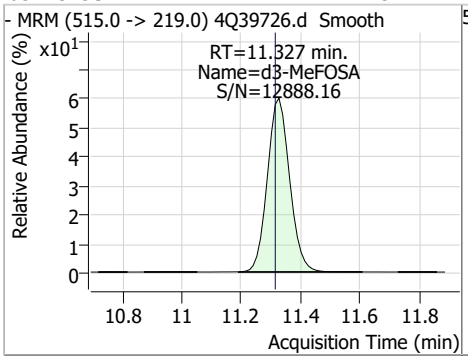
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.61	11.26	0.01	319110				

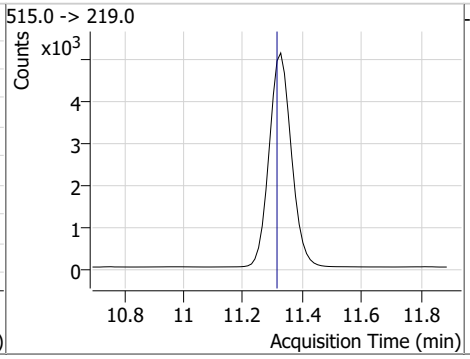


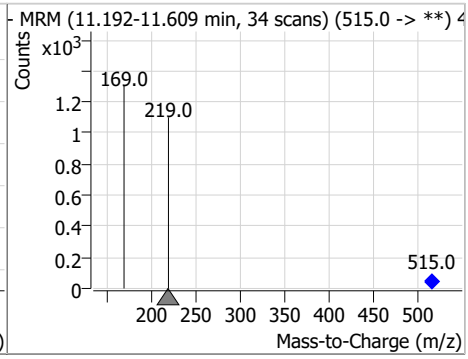




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.37	11.33	0.01	26753				

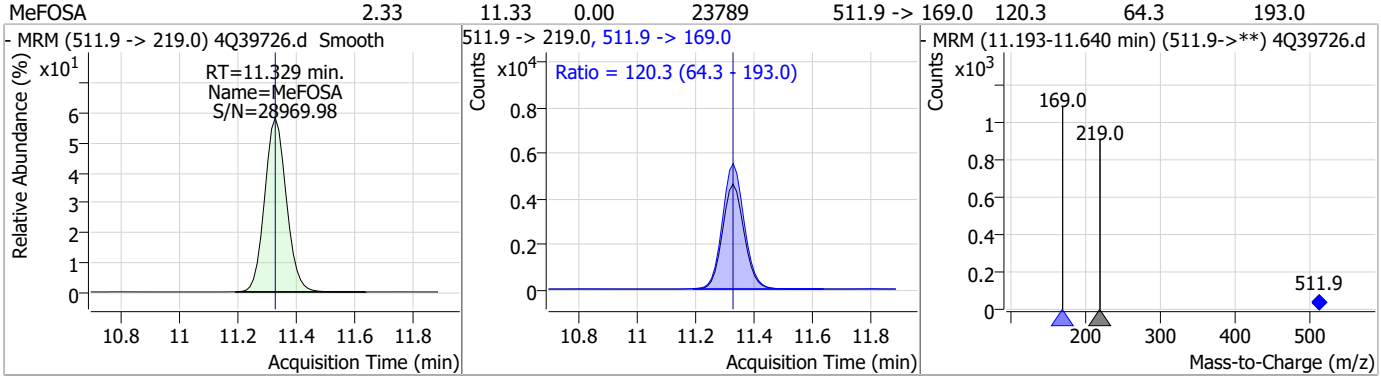




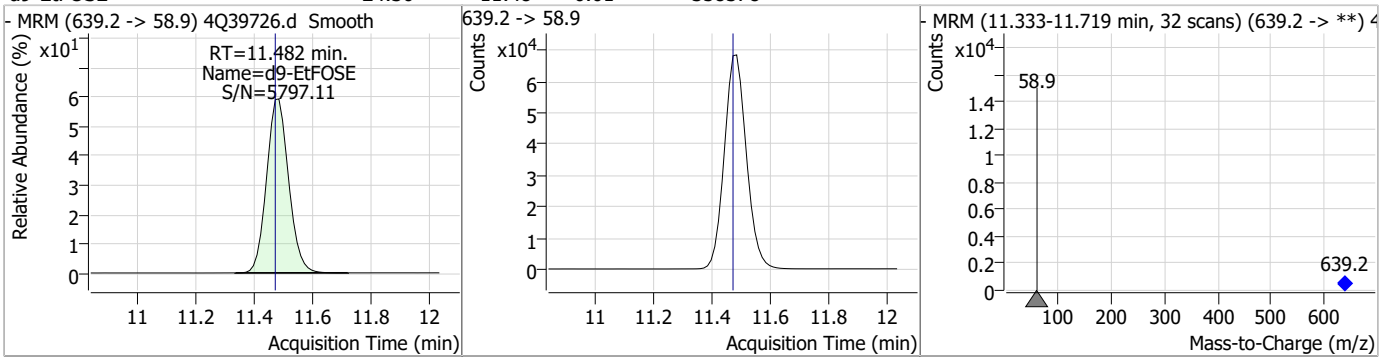


Perfluorinated Compounds by LC/MS/MS

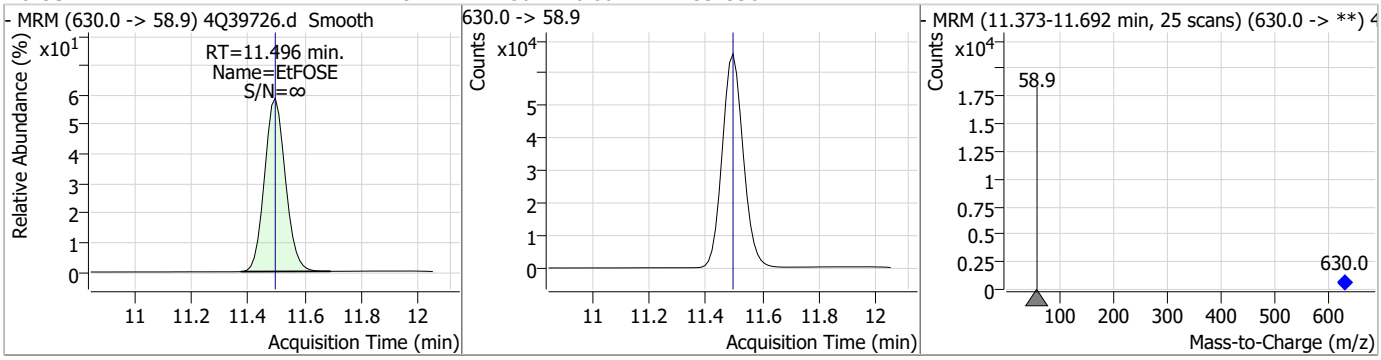
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.33	11.33	0.00	23789	511.9 -> 169.0	120.3	64.3	193.0



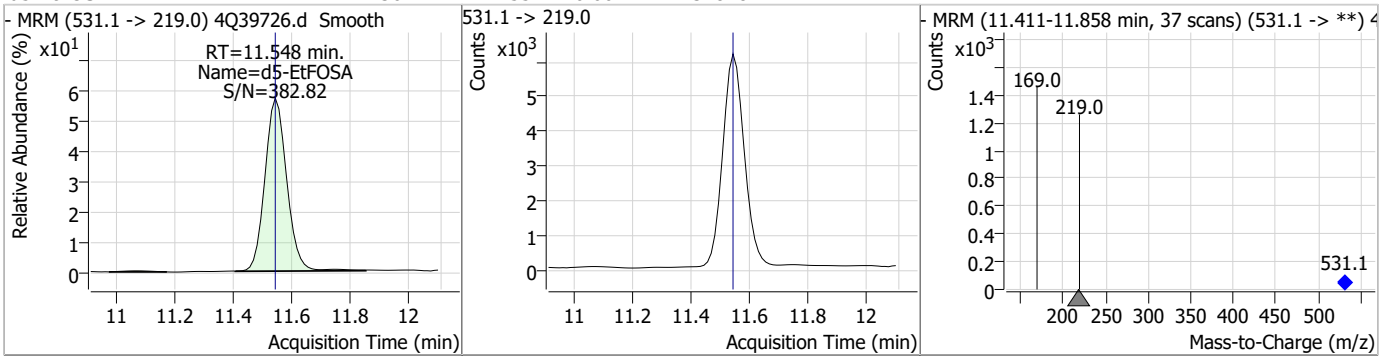
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.30	11.48	0.01	358378				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.29	11.50	0.00	337990				

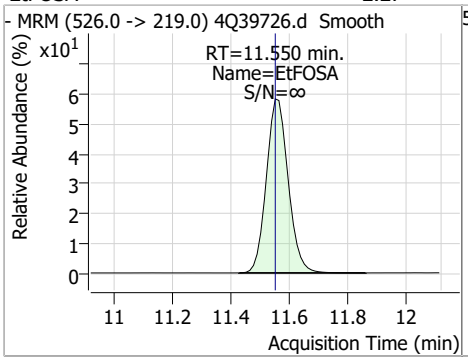


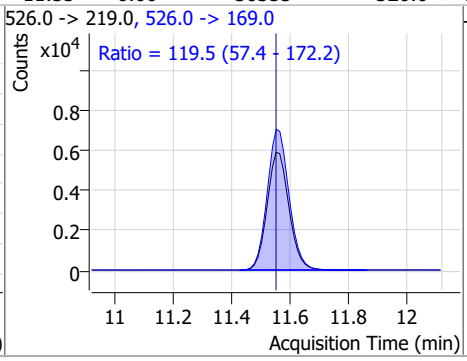
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.36	11.55	0.00	31818				

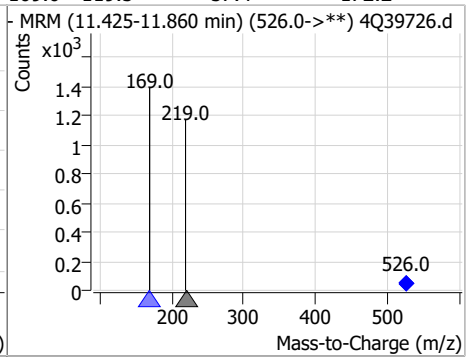


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.27	11.55	0.00	30355	526.0 -> 169.0	119.5	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q571-CC571
Lab FileID: 4Q39726.D
Injection Time: 01/25/23 21:50
Method: EPA DRAFT 1633
Analyst approved: 01/26/23 13:32 Natasha Gumtie
Supervisor approved: 01/29/23 09:25 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.92	Split peak
MeFOSAA	2355-31-9		8.93	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.07	Split peak
EtFOSAA	2991-50-6		9.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39794.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 1:55:13 PM
Sample Name : cc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.086	216.8 -> 171.9	398108	10.00	µg/L	0.000
M5-PFPeA	4.763	268.3 -> 223.0	270367	5.00	µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	178772	2.50	µg/L	0.000
M4-PFHpA	7.030	367.1 -> 322.0	96722	2.50	µg/L	0.000
M8-PFOA	7.714	421.1 -> 376.0	150148	2.50	µg/L	0.000
M9-PFNA	8.297	472.1 -> 427.0	75053	1.25	µg/L	0.000
M6-PFDA	8.829	519.1 -> 474.1	59712	1.25	µg/L	0.000
M7-PFUnDA	9.311	570.0 -> 525.1	67840	1.25	µg/L	0.000
M2-PFDoDA	9.731	615.1 -> 570.0	66307	1.25	µg/L	0.000
M2-PFTeDA	10.437	715.2 -> 670.0	52809	1.25	µg/L	0.000
M8-FOSA	10.197	506.1 -> 77.8	56302	2.50	µg/L	0.000
M3-PFBS	5.977	302.1 -> 79.9	48094	2.50	µg/L	0.000
M3-PFHxS	7.841	402.1 -> 79.9	30641	2.50	µg/L	0.000
M8-PFOS	9.006	507.1 -> 79.9	39595	2.50	µg/L	0.000
M2-4:2FTS	5.709	329.1 -> 80.9	4689	5.00	µg/L	0.000
M2-6:2FTS	7.462	429.1 -> 80.9	8941	5.00	µg/L	0.000
M2-8:2FTS	8.591	529.1 -> 80.9	12682	5.00	µg/L	0.000
M3-MeFOSAA	8.874	573.2 -> 419.0	52516	5.00	µg/L	0.000
M3-HFPO-DA	6.452	286.9 -> 168.9	141564	10.00	µg/L	0.000
M5-EtFOSAA	9.084	589.2 -> 419.0	44075	5.00	µg/L	0.000
M7-MeFOSE	11.200	623.2 -> 58.9	287860	25.00	µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	332507	25.00	µg/L	0.000
M5-EtFOSA	11.511	531.1 -> 219.0	28964	2.50	µg/L	0.000
M3-MeFOSA	11.277	515.0 -> 219.0	25010	2.50	µg/L	0.000
13C4-PFOS	9.007	502.8 -> 79.9	40607	2.50	µg/L	0.000
13C3-PFBA	3.090	216.0 -> 172.0	223492	5.00	µg/L	0.000
18O2-PFHxS	7.840	403.0 -> 83.9	20792	2.50	µg/L	0.000
13C4-PFOA	7.714	417.1 -> 372.0	171786	2.50	µg/L	0.000
13C2-PFDA	8.830	515.1 -> 470.1	53827	1.25	µg/L	0.000
13C5-PFNA	8.297	468.0 -> 423.0	85726	1.25	µg/L	0.000
13C2-PFHxA	6.061	315.1 -> 270.0	165602	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.709	329.1 -> 80.9	4689	6.26	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 125.1%		
13C2-6:2FTS	7.462	429.1 -> 80.9	8941	5.33	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C2-8:2FTS	8.591	529.1 -> 80.9	12682	5.53	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C2-PFDoDA	9.731	615.1 -> 570.0	66307	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFTeDA	10.437	715.2 -> 670.0	52809	1.42	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.7%		
13C3-PFBS	5.977	302.1 -> 79.9	48094	2.68	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C3-PFHxS	7.841	402.1 -> 79.9	30641	2.53	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C4-PFBA	3.086	216.8 -> 171.9	398108	9.88 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	7.030	367.1 -> 322.0	96722	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFHxA	6.060	318.0 -> 273.0	178772	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C5-PFPeA	4.763	268.3 -> 223.0	270367	5.02 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C6-PFDA	8.829	519.1 -> 474.1	59712	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C7-PFUnDA	9.311	570.0 -> 525.1	67840	1.33 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C8-FOSA	10.197	506.1 -> 77.8	56302	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOA	7.714	421.1 -> 376.0	150148	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C8-PFOS	9.006	507.1 -> 79.9	39595	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C9-PFNA	8.297	472.1 -> 427.0	75053	1.23 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
d3-MeFOSAA	8.874	573.2 -> 419.0	52516	5.63 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.6%		
13C3-HFPO-DA	6.452	286.9 -> 168.9	141564	10.72 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
d3-MeFOSA	11.277	515.0 -> 219.0	25010	2.36 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%		
d5-EtFOSAA	9.084	589.2 -> 419.0	44075	5.43 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
d7-MeFOSE	11.200	623.2 -> 58.9	287860	23.77 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
d9-EtFOSE	11.433	639.2 -> 58.9	332507	23.97 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
d5-EtFOSA	11.511	531.1 -> 219.0	28964	2.29 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%		
Target Compounds						QValue
4:2FTS	5.710	327.1 -> 307.0	68320	8.92 µg/L		97
		327.1 -> 80.9	30620			
6:2FTS	7.462	427.1 -> 407.0	74052	10.45 µg/L		98
		427.1 -> 80.9	35324			
8:2FTS	8.592	527.1 -> 507.0	58087	9.47 µg/L		94
		527.1 -> 80.8	33208			
EtFOSAA	9.097	584.2 -> 419.1	15813	2.14 µg/L	m	98
		584.2 -> 526.0	7653			
FOSA	10.200	498.1 -> 77.9	52364	2.41 µg/L		100
		498.1 -> 478.0	1034			
MeFOSAA	8.875	570.1 -> 419.0	19267	2.48 µg/L	m	96
		570.1 -> 483.0	4119			
PFBA	3.095	212.8 -> 168.9	100222	9.05 µg/L		100
PFBS	5.978	298.7 -> 79.9	43371	2.00 µg/L		96
		298.7 -> 98.8	15811			
PFDA	8.830	512.9 -> 469.0	98244	2.31 µg/L		98
		512.9 -> 219.0	19418			
PFDoDA	9.732	613.1 -> 569.0	127036	2.49 µg/L		97
		613.1 -> 319.0	16748			
PFDS	9.896	599.0 -> 79.9	21636	2.36 µg/L		94

Perfluorinated Compounds by LC/MS/MS

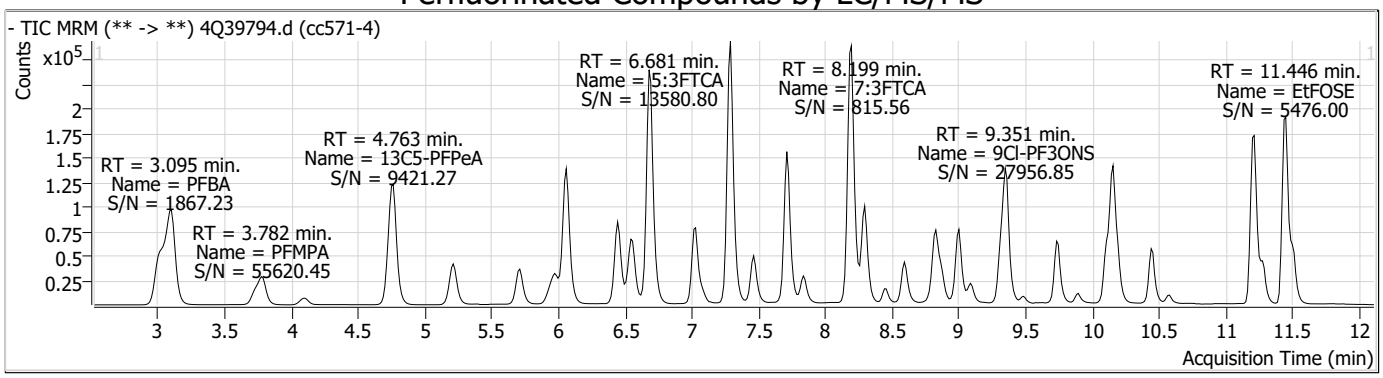
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	9188				
PFHpA	7.030	363.1 -> 319.0	149146	2.47	µg/L		99
		363.1 -> 169.0	25837				
PFHpS	8.462	449.0 -> 79.9	33479	2.09	µg/L		93
		449.0 -> 98.9	16917				
PFHxA	6.063	313.0 -> 269.0	161748	2.33	µg/L		100
		313.0 -> 118.9	4591				
PFHxS	7.842	398.7 -> 79.9	21311	2.15	µg/L	m	91
		398.7 -> 98.9	11721				
PFNA	8.297	463.0 -> 419.0	130045	2.38	µg/L		99
		463.0 -> 219.0	30770				
PFNS	9.487	548.8 -> 79.9	15406	2.19	µg/L		96
		548.8 -> 98.9	7696				
PFOA	7.715	413.0 -> 369.0	164410	2.46	µg/L		98
		413.0 -> 169.0	31377				
PFOS	9.007	498.9 -> 79.9	39386	2.13	µg/L	m	99
		498.9 -> 98.8	19444				
PFPeA	4.754	263.0 -> 219.0	286743	4.84	µg/L		100
PFPeS	7.082	349.1 -> 79.9	20817	2.18	µg/L		98
		349.1 -> 98.9	7865				
PFTeDA	10.438	713.1 -> 669.0	119009	2.24	µg/L		99
		713.1 -> 168.9	9935				
PFTrDA	10.104	663.0 -> 619.0	157900	2.52	µg/L		97
		663.0 -> 168.9	14835				
PFUnDA	9.311	563.1 -> 519.0	87812	2.14	µg/L		98
		563.1 -> 269.1	16657				
11Cl-PF3OUdS	10.156	630.9 -> 450.9	313532	9.48	µg/L		99
		632.9 -> 452.9	94242				
9Cl-PF3ONS	9.351	530.8 -> 351.0	320808	7.96	µg/L		98
		532.8 -> 353.0	98570				
ADONA	7.294	376.9 -> 250.9	683992	8.96	µg/L		99
		376.9 -> 84.8	238274				
HFPO-DA	6.453	284.9 -> 168.9	131257	9.84	µg/L		99
		284.9 -> 184.9	14226				
3:3FTCA	4.098	241.0 -> 177.0	29904	10.76	µg/L		99
		241.0 -> 117.0	2767				
5:3FTCA	6.681	341.0 -> 237.1	498285	53.89	µg/L		99
		341.0 -> 217.0	373731				
7:3FTCA	8.199	441.0 -> 316.9	291537	54.90	µg/L		99
		441.0 -> 336.9	652330				
EtFOSA	11.512	526.0 -> 219.0	29004	2.38	µg/L		98
		526.0 -> 169.0	32591				
EtFOSE	11.446	630.0 -> 58.9	318518	24.67	µg/L		100
MeFOSA	11.292	511.9 -> 219.0	21907	2.30	µg/L		86
		511.9 -> 169.0	24746				
MeFOSE	11.213	616.1 -> 58.9	305968	25.16	µg/L		100
PFDoDS	10.577	699.1 -> 79.9	18462	2.38	µg/L		98
		699.1 -> 98.8	9951				
NFDHA	5.929	295.0 -> 201.0	22119	4.84	µg/L		100
		295.0 -> 84.9	6457				
PFMBA	5.216	279.0 -> 85.1	170652	4.62	µg/L		100
PFMPA	3.782	229.0 -> 84.9	169102	4.43	µg/L		100
PFEESA	6.546	314.8 -> 134.9	249646	4.20	µg/L		100
		314.8 -> 82.9	7654				

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

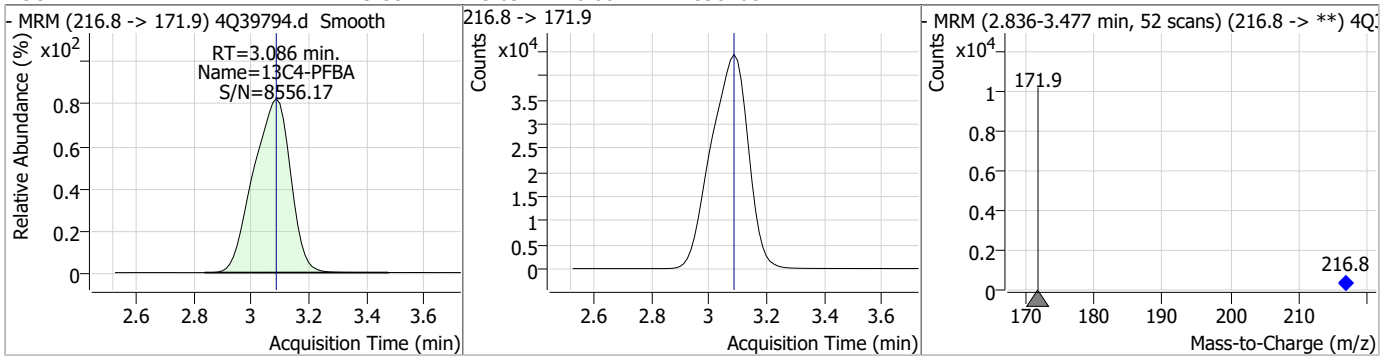
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

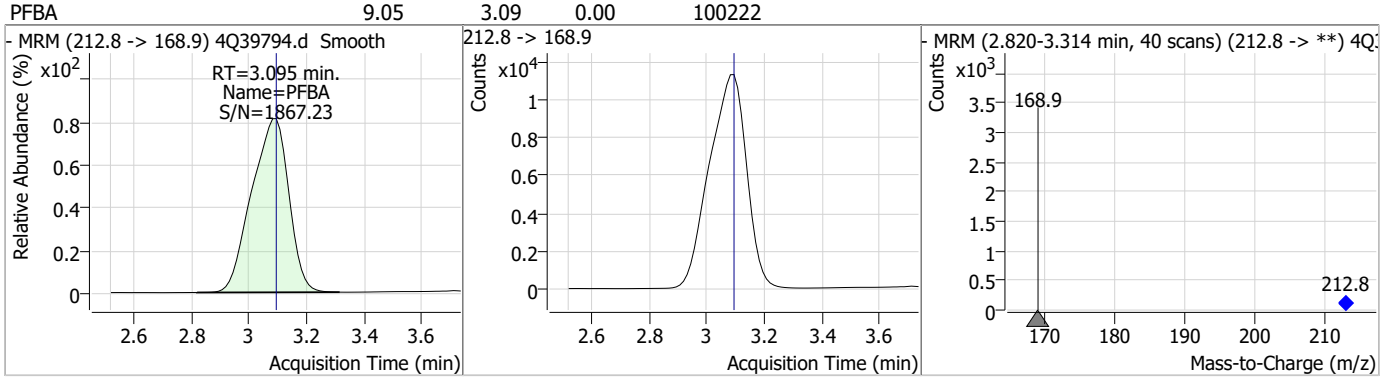
Perfluorinated Compounds by LC/MS/MS



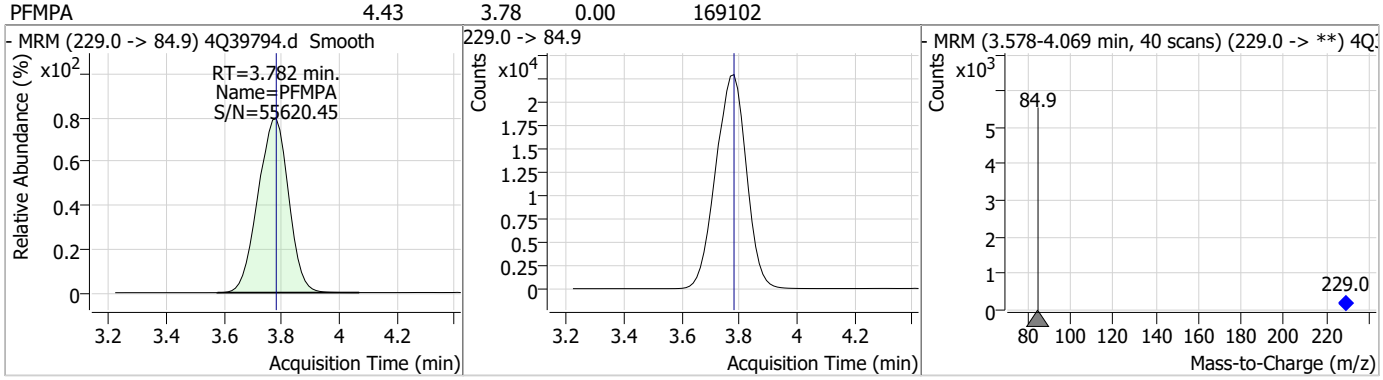
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.88	3.09	0.00	398108				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.05	3.09	0.00	100222				

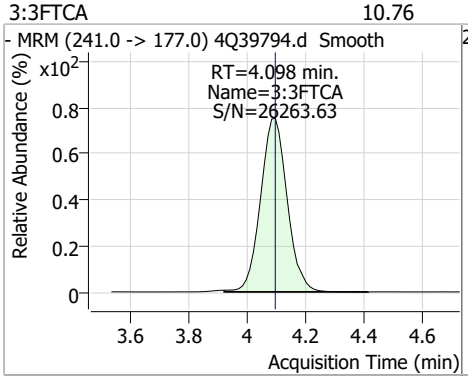


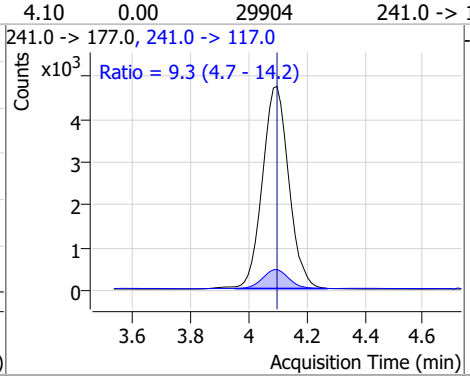
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.43	3.78	0.00	169102				

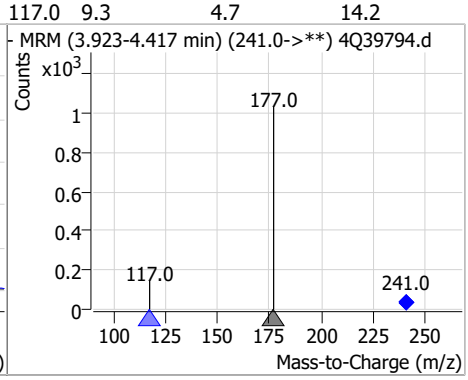


Perfluorinated Compounds by LC/MS/MS

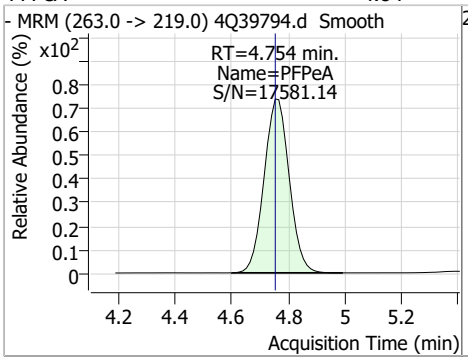
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.76	4.10	0.00	29904	241.0 -> 117.0	9.3	4.7	14.2

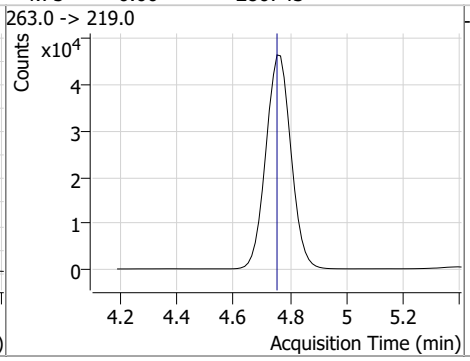


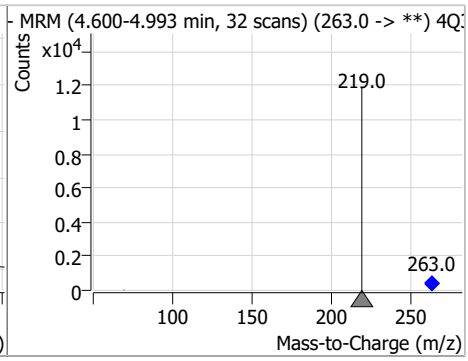




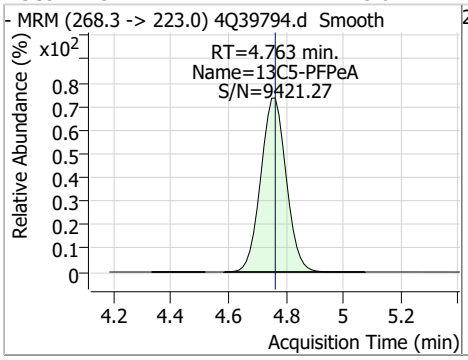
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.84	4.75	0.00	286743				

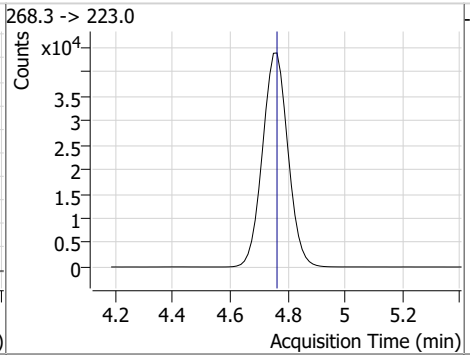


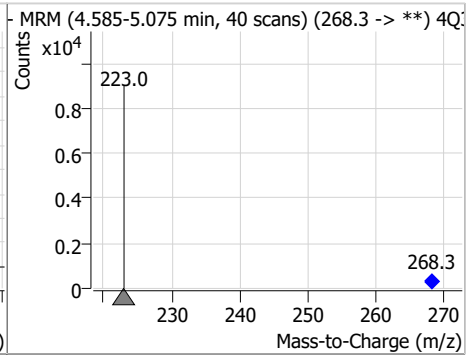




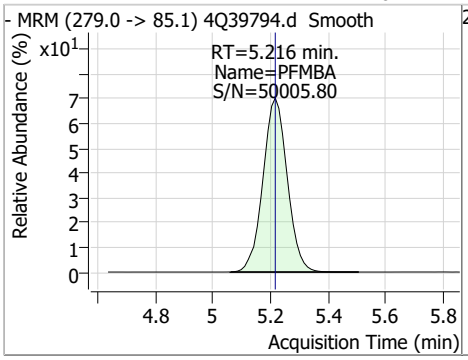
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.02	4.76	0.00	270367				

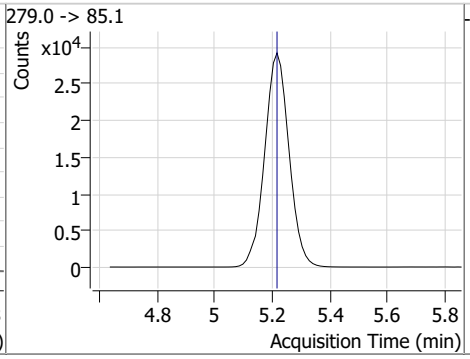


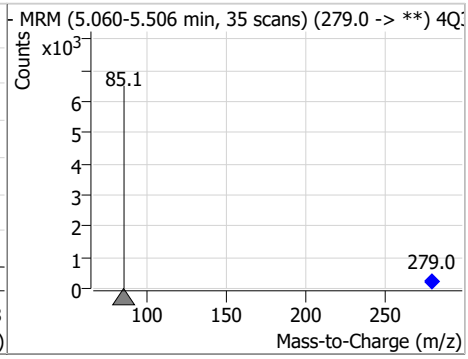




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.62	5.22	0.00	170652				

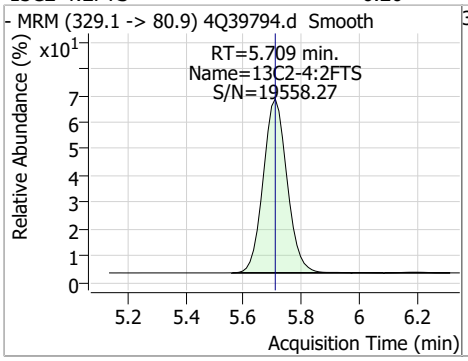


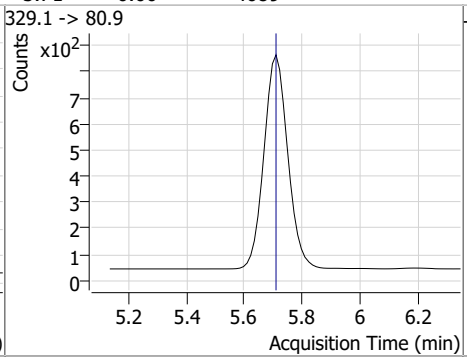


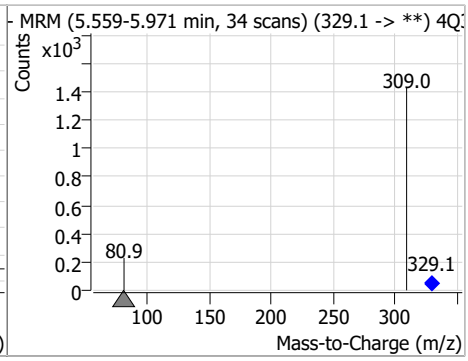


Perfluorinated Compounds by LC/MS/MS

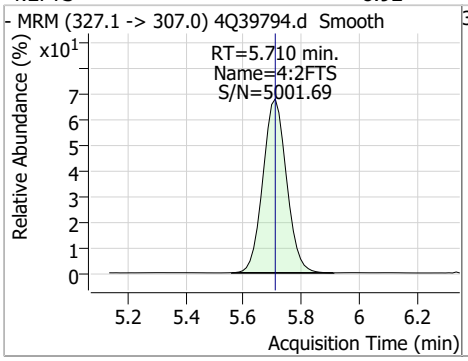
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.26	5.71	0.00	4689				

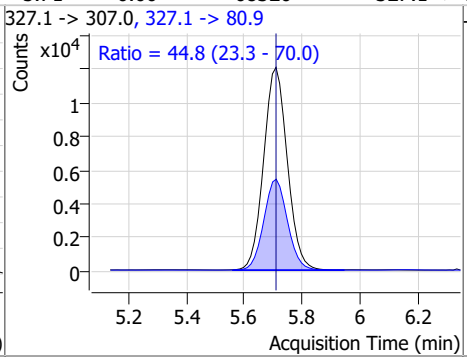


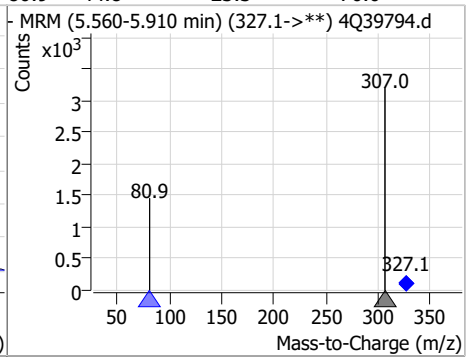




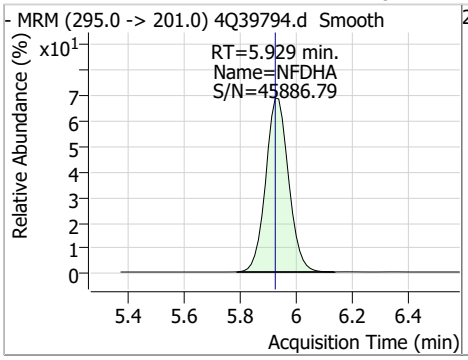
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.92	5.71	0.00	68320	327.1 -> 80.9	44.8	23.3	70.0

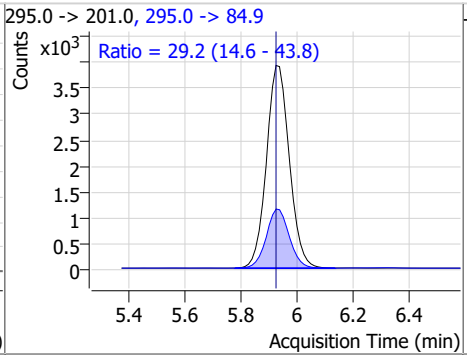


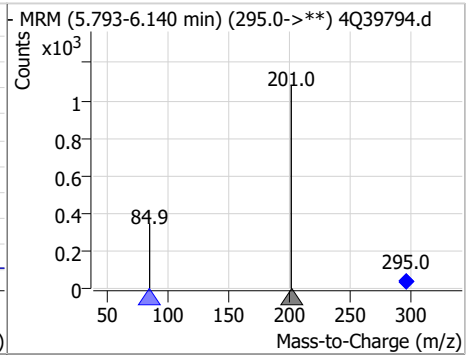




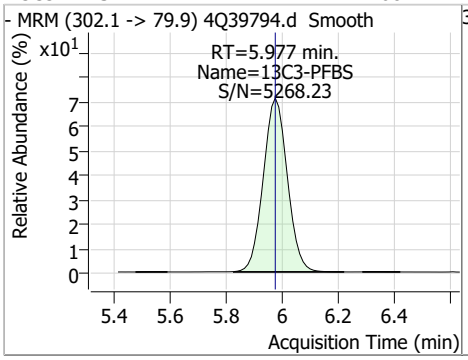
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.84	5.93	0.00	22119	295.0 -> 84.9	29.2	14.6	43.8

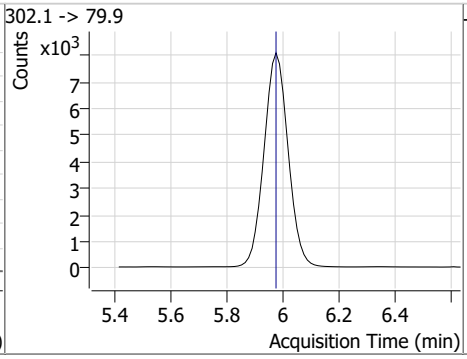


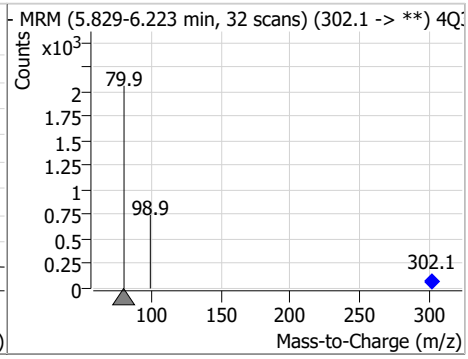




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.68	5.98	0.00	48094				

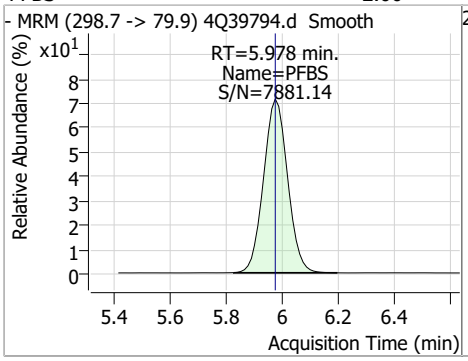


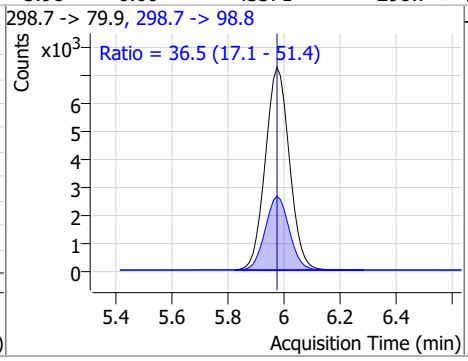


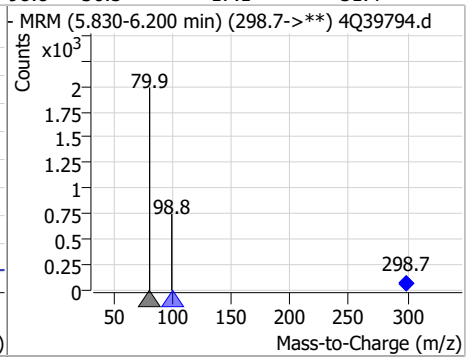


Perfluorinated Compounds by LC/MS/MS

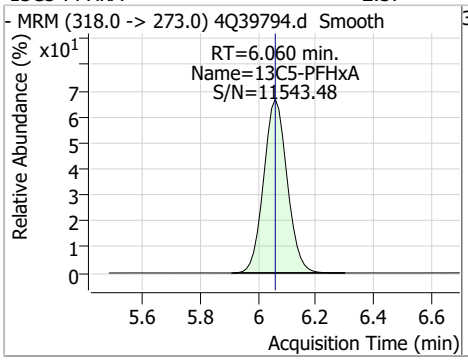
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.00	5.98	0.00	43371	298.7 -> 98.8	36.5	17.1	51.4

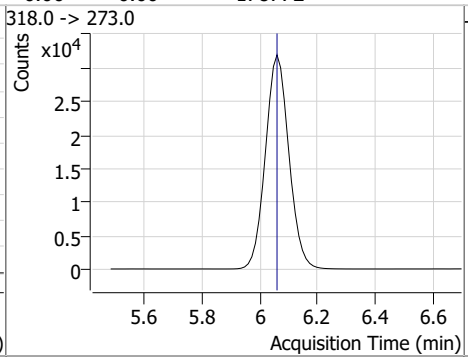


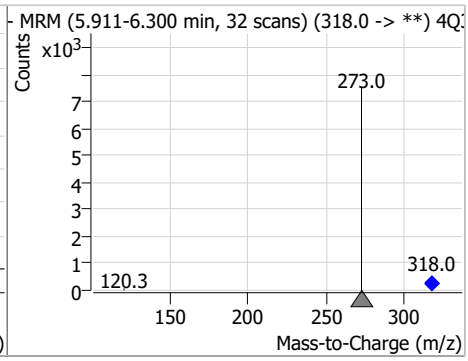




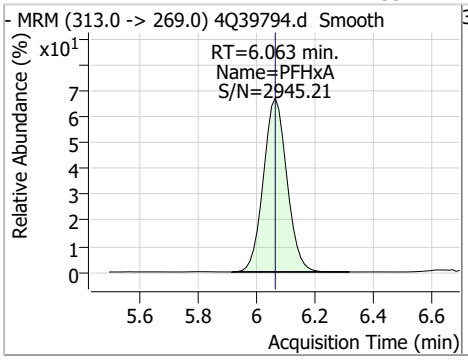
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	6.06	0.00	178772				

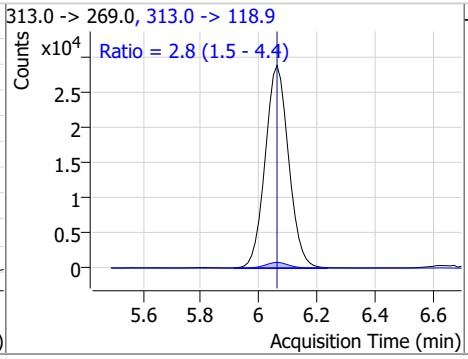


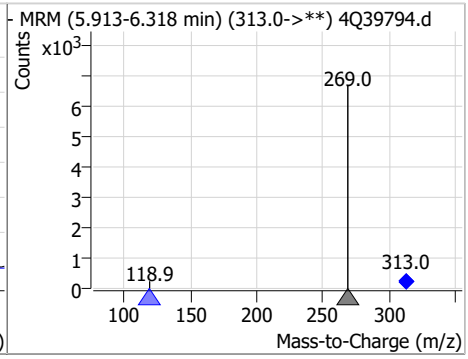




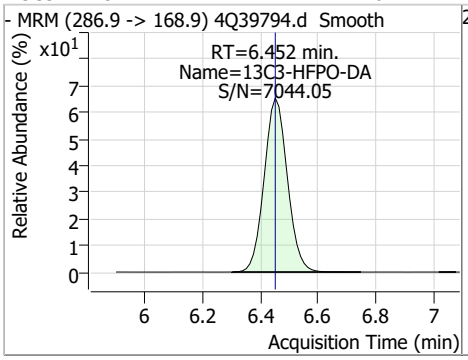
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.33	6.06	0.00	161748	313.0 -> 118.9	2.8	1.5	4.4

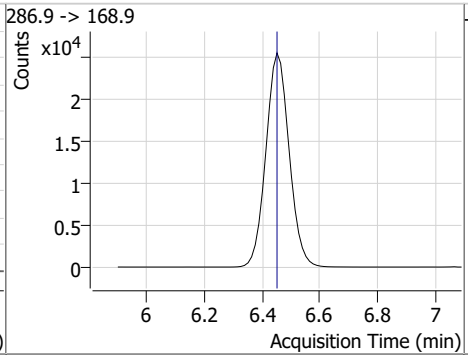


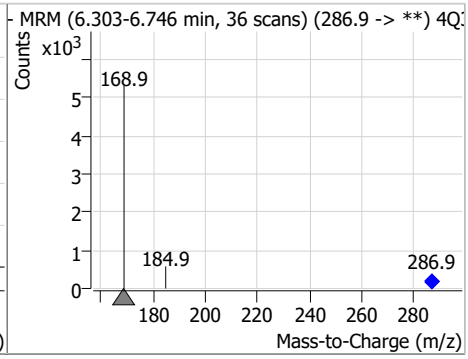




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.72	6.45	0.00	141564				

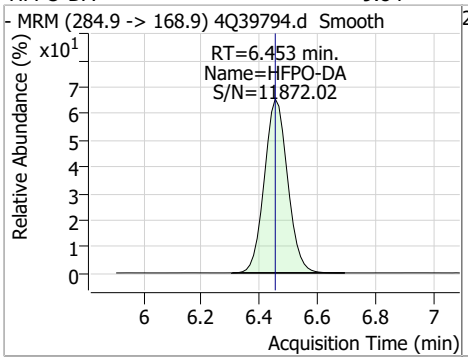


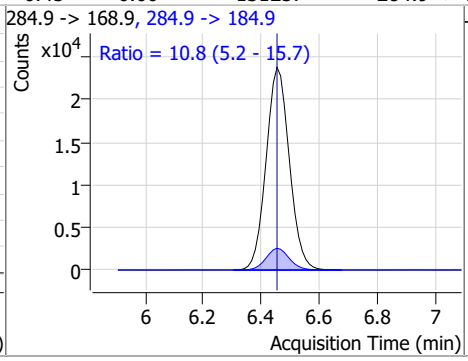


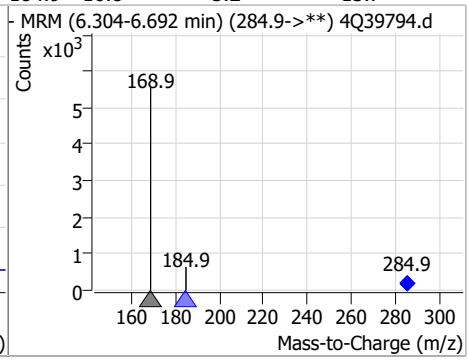


Perfluorinated Compounds by LC/MS/MS

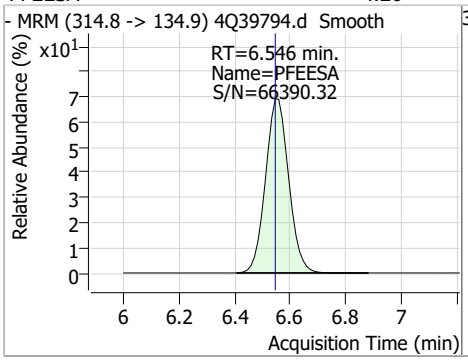
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.84	6.45	0.00	131257	284.9 -> 184.9	10.8	5.2	15.7

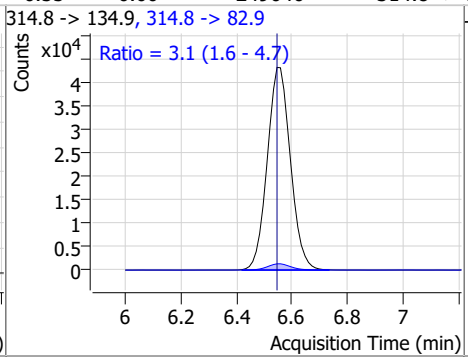


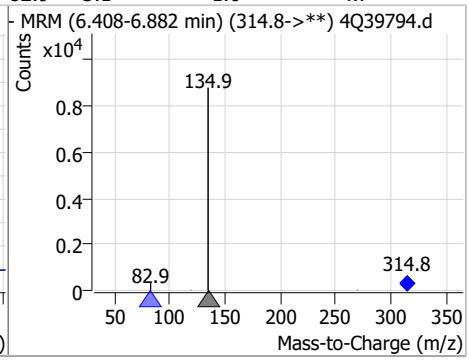




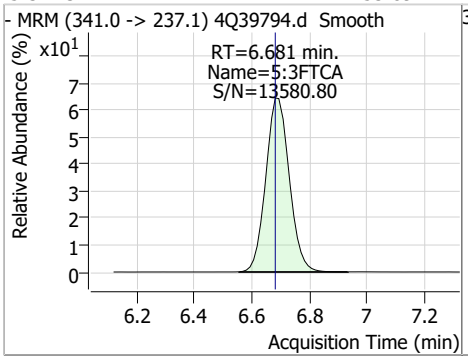
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.20	6.55	0.00	249646	314.8 -> 82.9	3.1	1.6	4.7

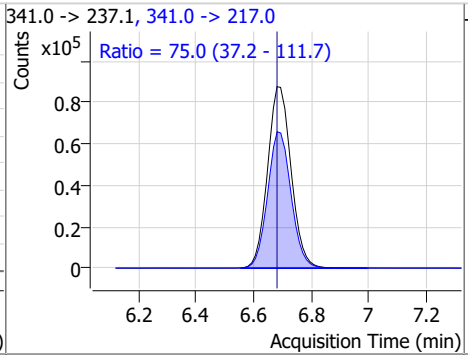


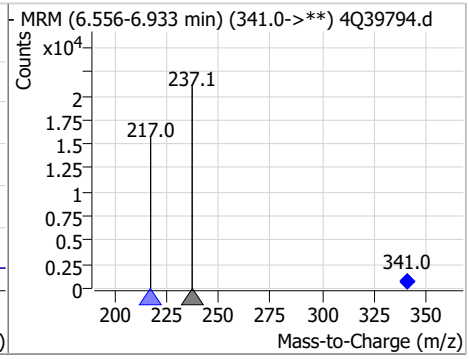




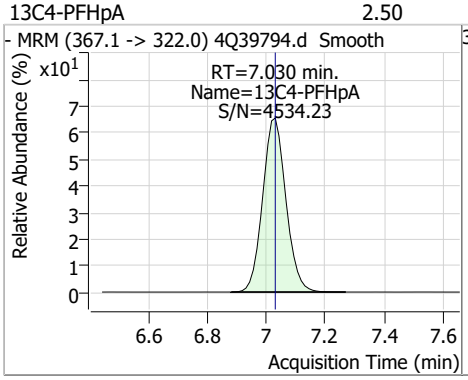
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	53.89	6.68	0.00	498285	341.0 -> 217.0	75.0	37.2	111.7

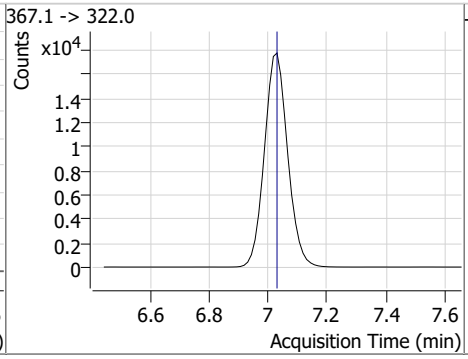


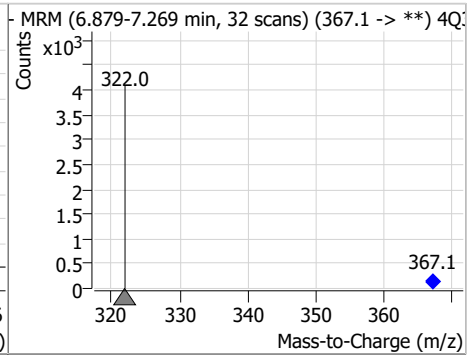




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	7.03	0.00	96722				

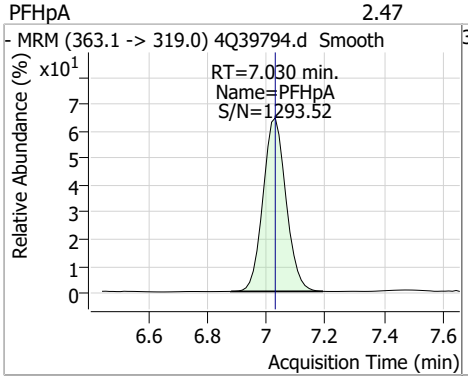


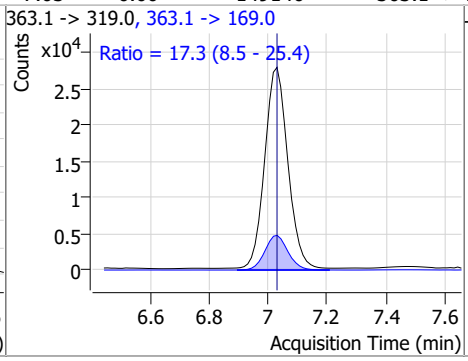


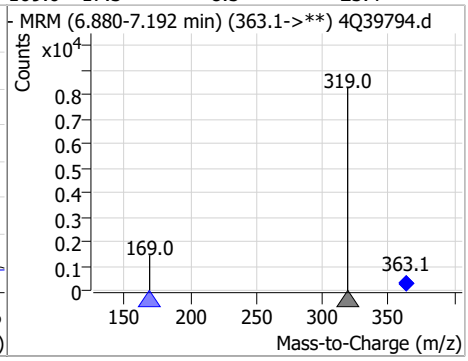


Perfluorinated Compounds by LC/MS/MS

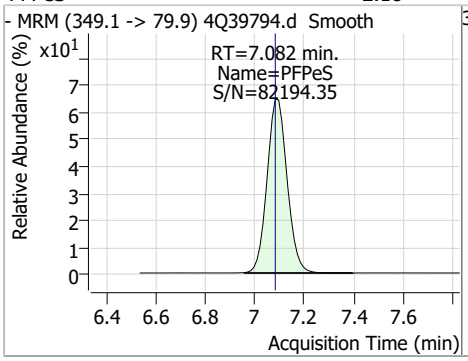
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.47	7.03	0.00	149146	363.1 -> 169.0	17.3	8.5	25.4

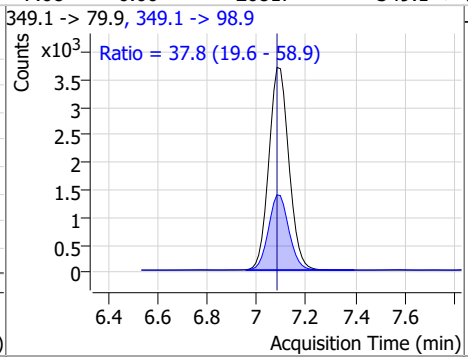


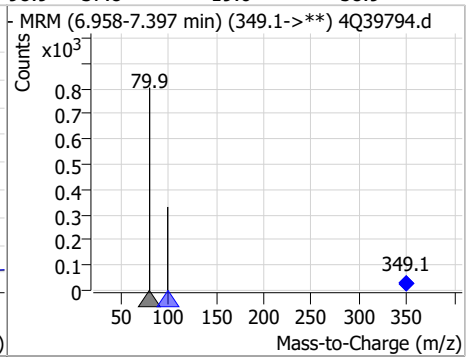




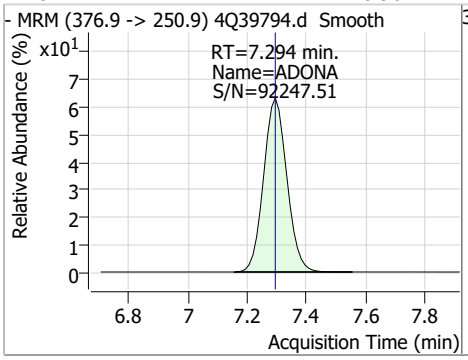
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.18	7.08	0.00	20817	349.1 -> 98.9	37.8	19.6	58.9

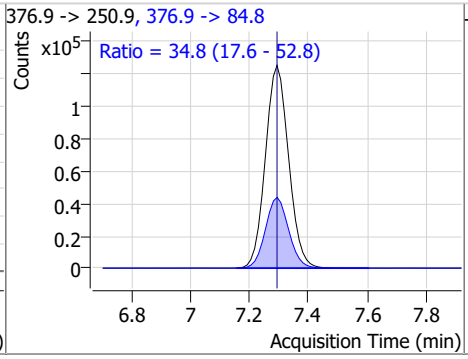


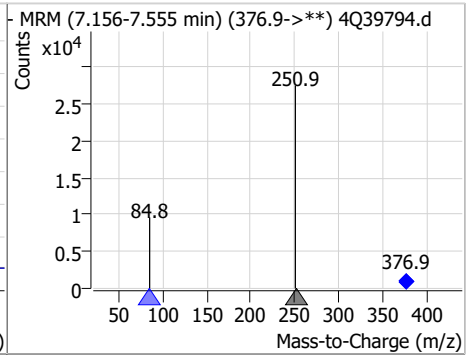




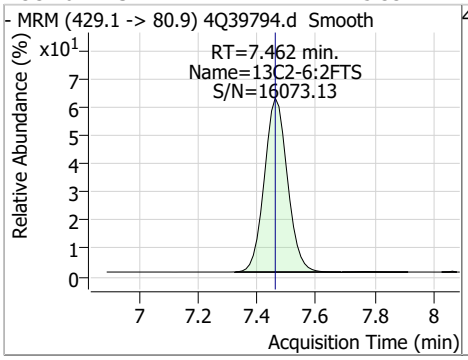
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.96	7.29	0.00	683992	376.9 -> 84.8	34.8	17.6	52.8

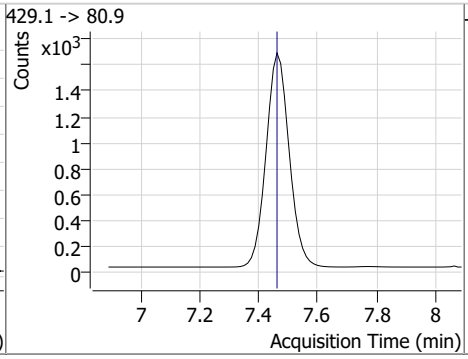


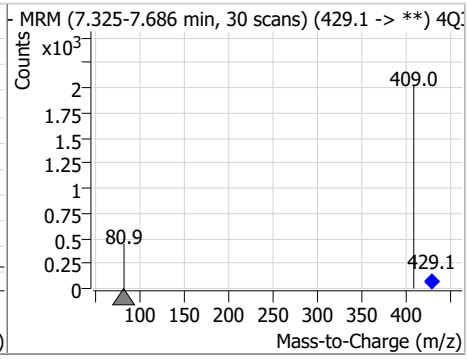




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.33	7.46	0.00	8941				

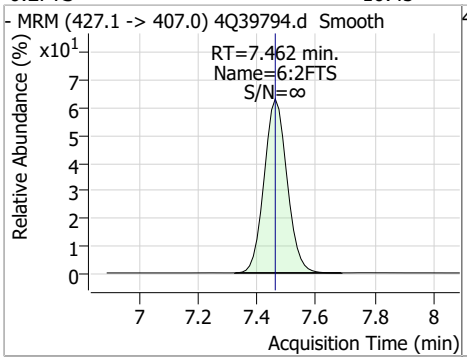


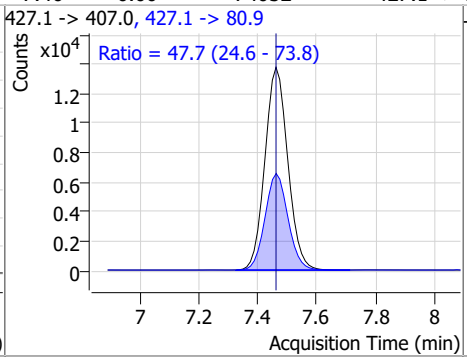


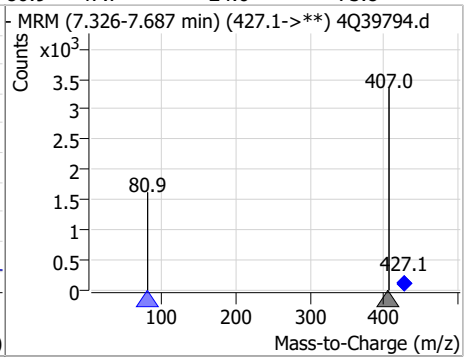


Perfluorinated Compounds by LC/MS/MS

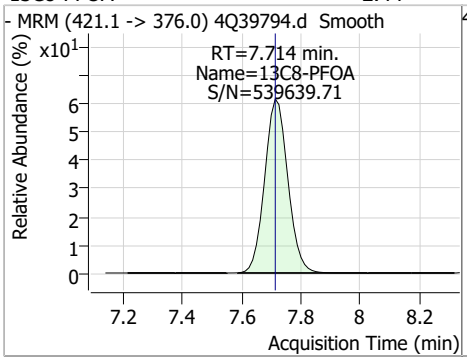
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.45	7.46	0.00	74052	427.1 -> 80.9	47.7	24.6	73.8

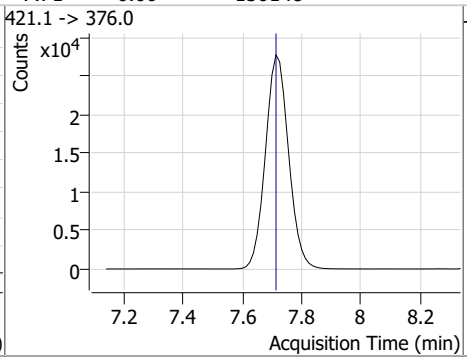


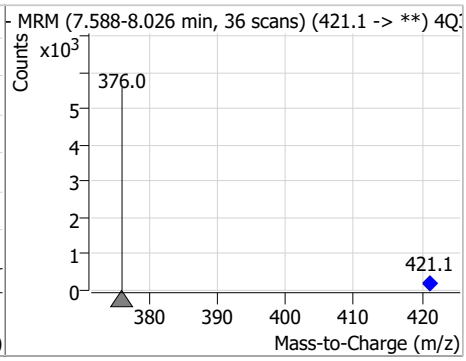




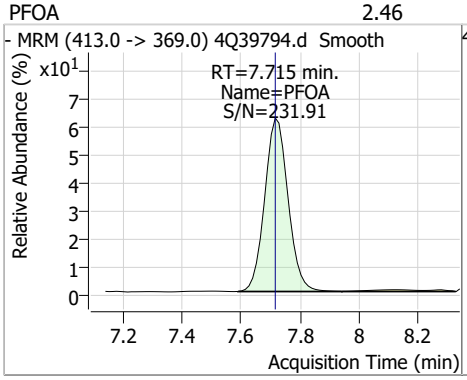
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.71	0.00	150148				

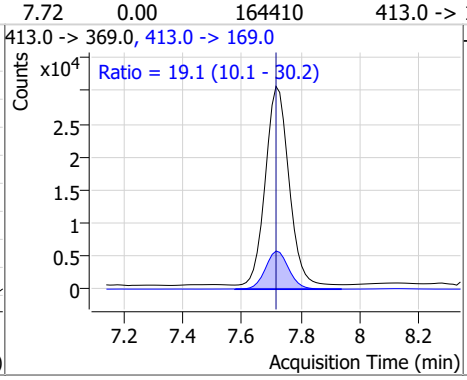


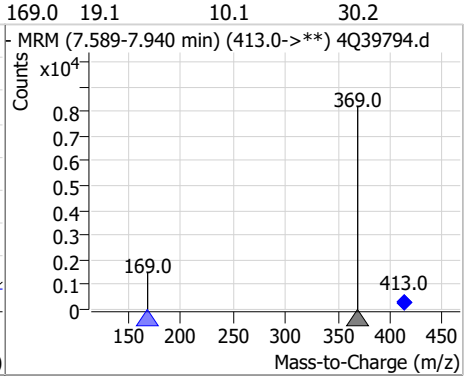




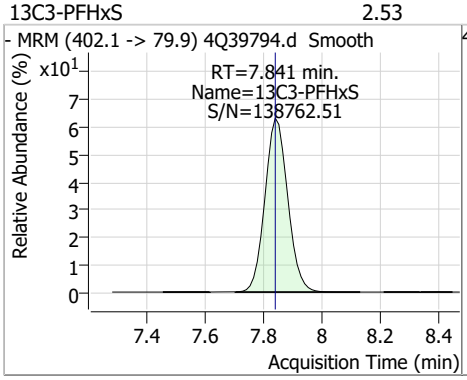
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.46	7.72	0.00	164410	413.0 -> 169.0	19.1	10.1	30.2

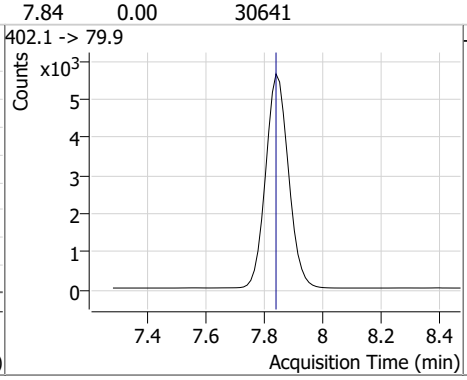


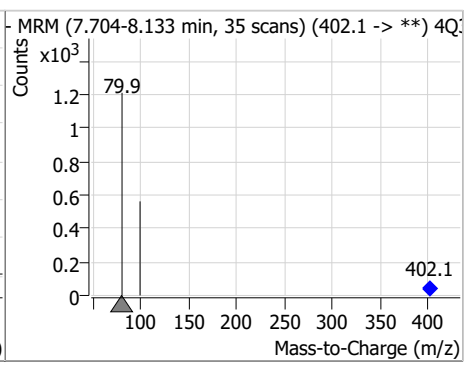




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.53	7.84	0.00	30641				

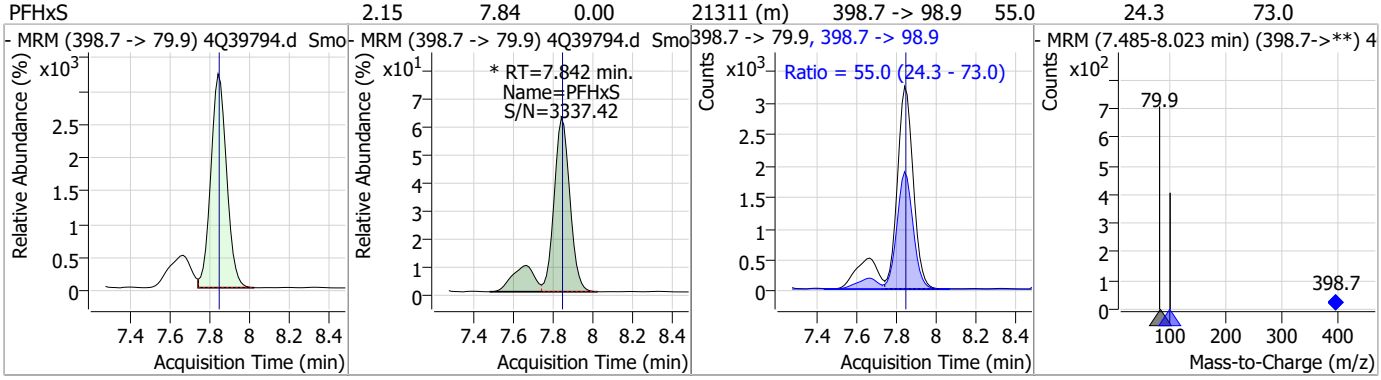




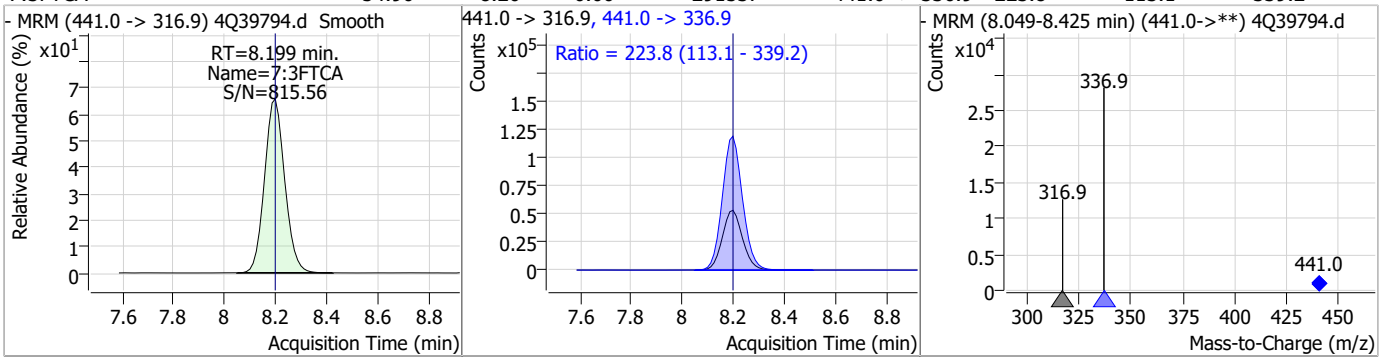


Perfluorinated Compounds by LC/MS/MS

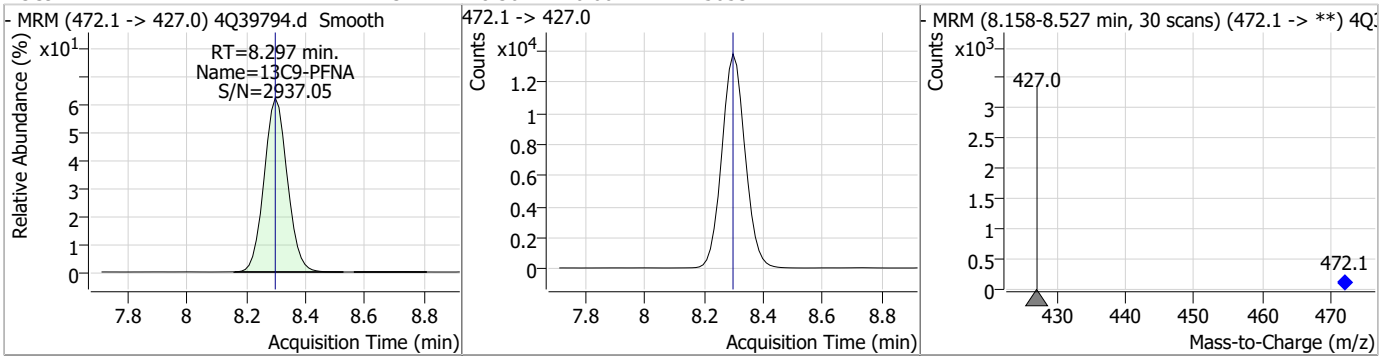
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.15	7.84	0.00	21311 (m)	398.7 -> 98.9	55.0	24.3	73.0



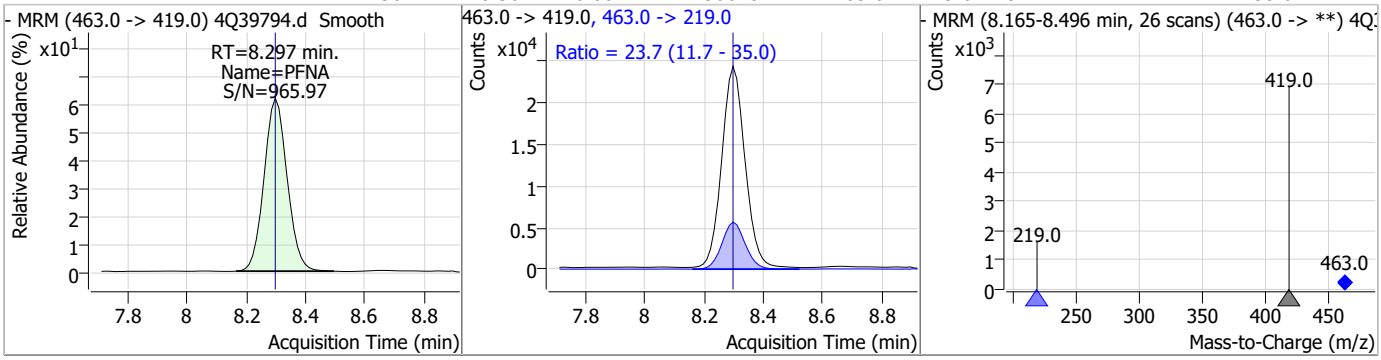
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	54.90	8.20	0.00	291537	441.0 -> 336.9	223.8	113.1	339.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	8.30	0.00	75053				

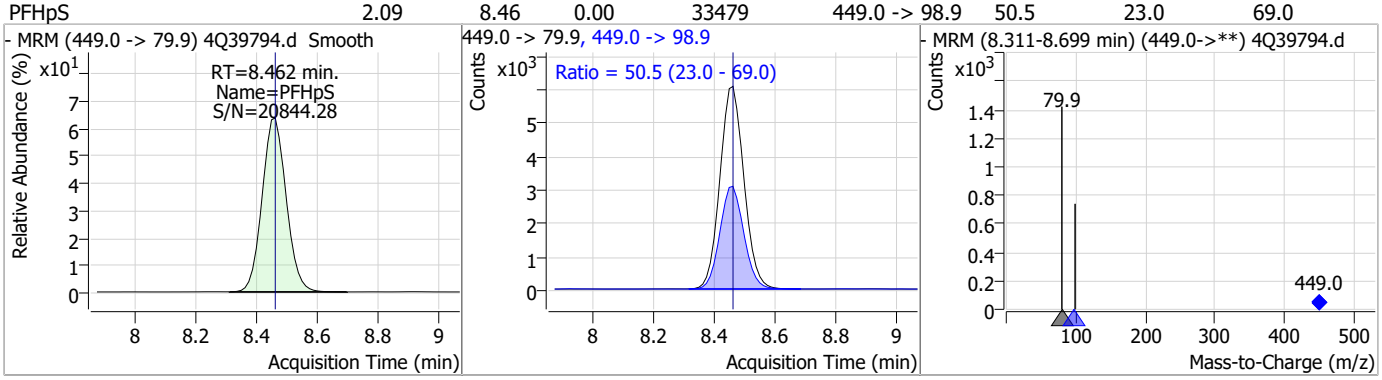


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.38	8.30	0.00	130045	463.0 -> 219.0	23.7	11.7	35.0

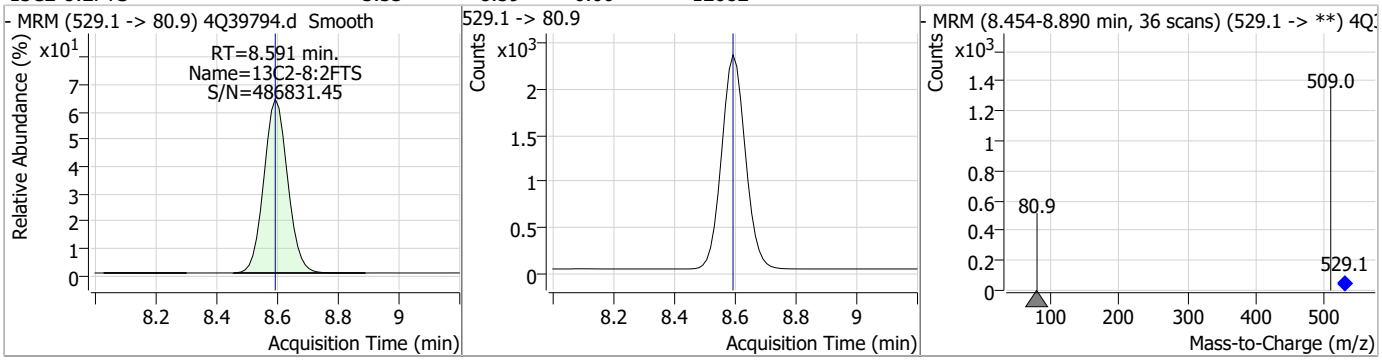


Perfluorinated Compounds by LC/MS/MS

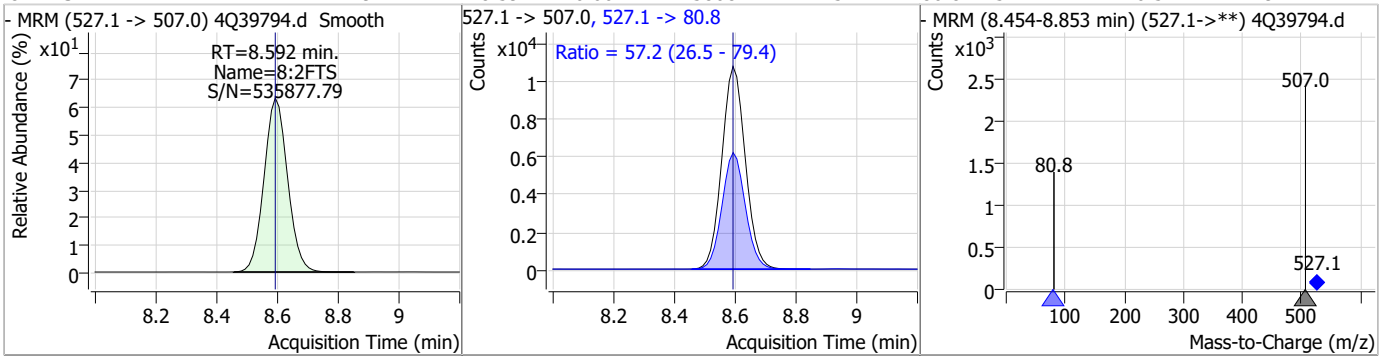
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.09	8.46	0.00	33479	449.0 -> 98.9	50.5	23.0	69.0



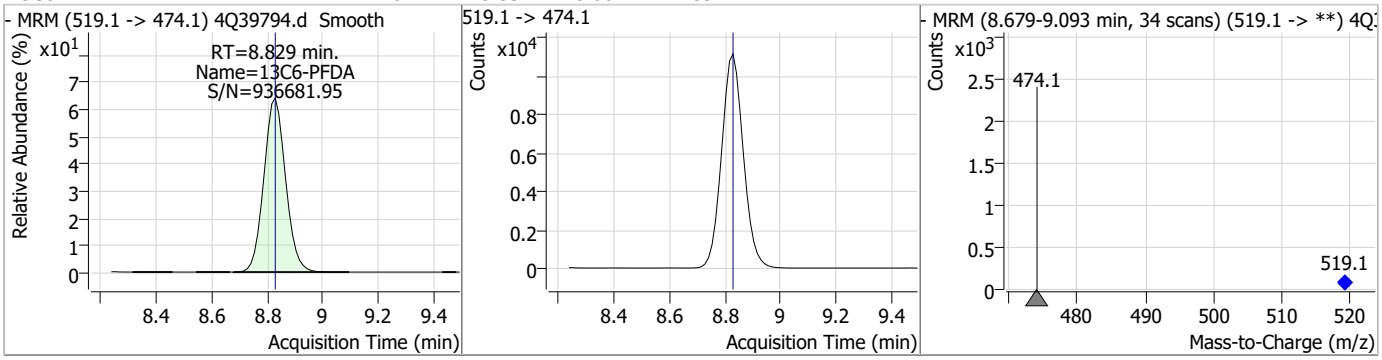
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.53	8.59	0.00	12682				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.47	8.59	0.00	58087	527.1 -> 80.8	57.2	26.5	79.4

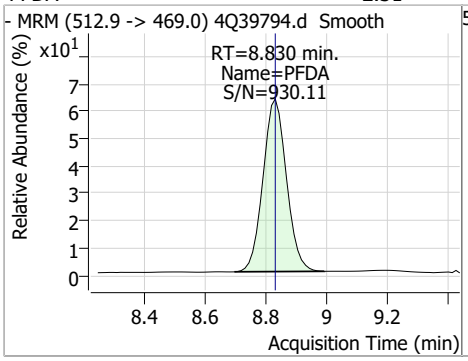


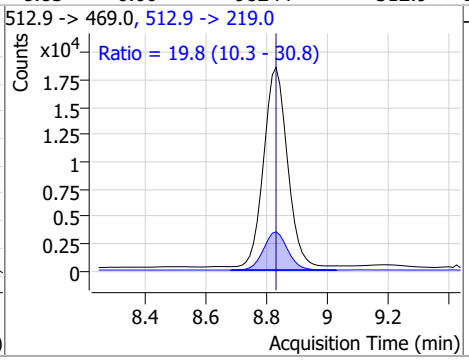
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.83	0.00	59712				

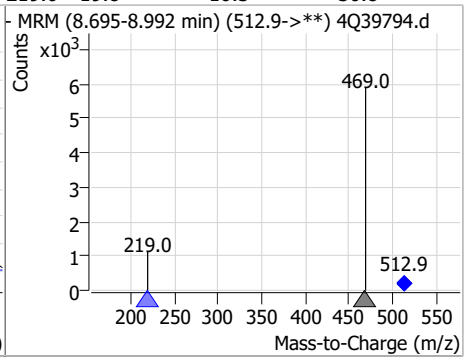


Perfluorinated Compounds by LC/MS/MS

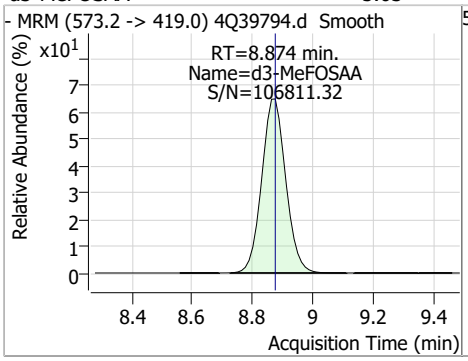
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.31	8.83	0.00	98244	512.9 -> 219.0	19.8	10.3	30.8

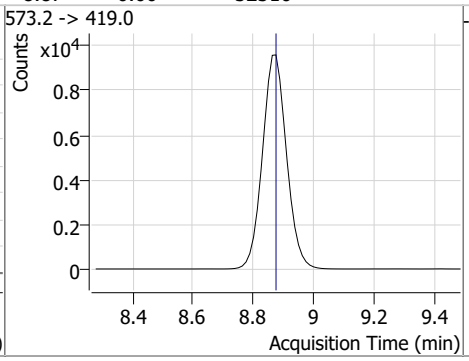


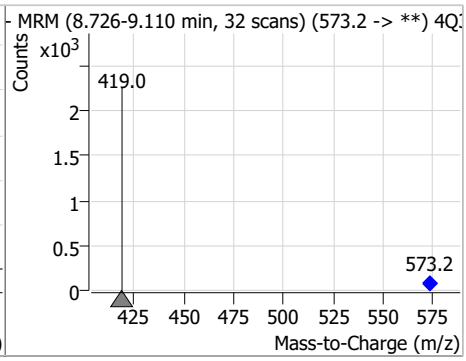




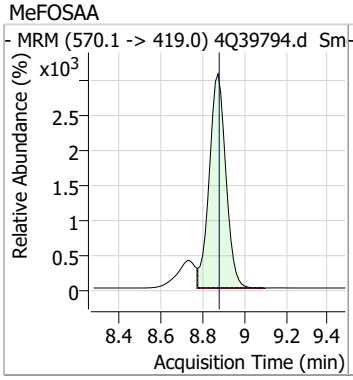
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.63	8.87	0.00	52516				

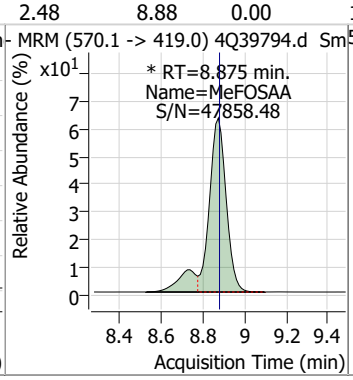


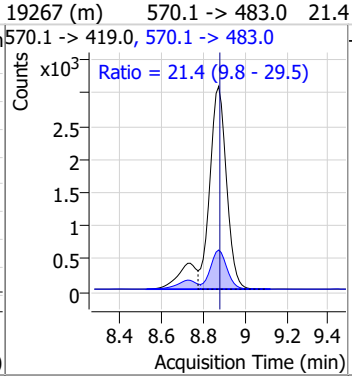


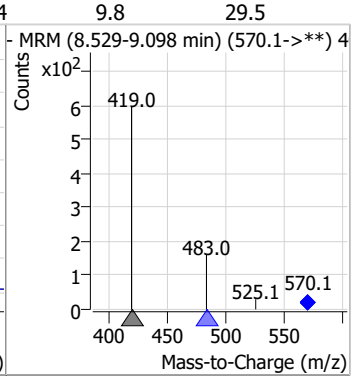


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.48	8.88	0.00	19267 (m)	570.1 -> 483.0	21.4	9.8	29.5

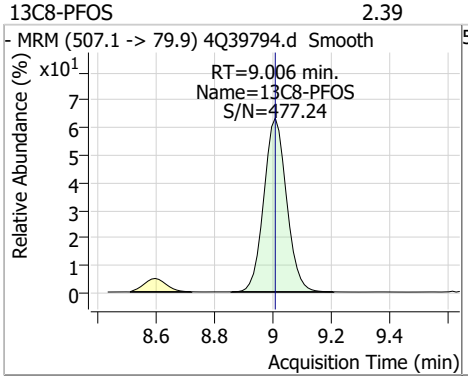


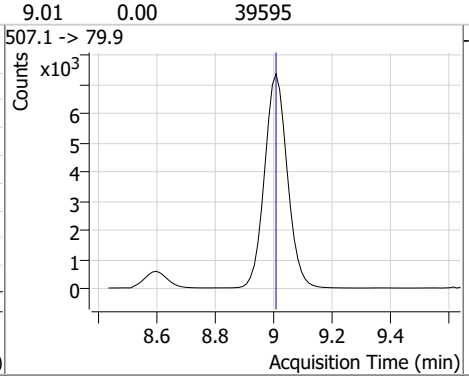


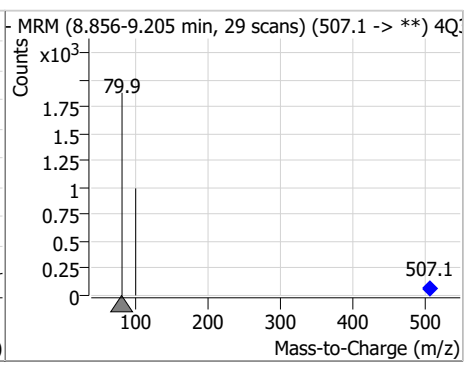




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.39	9.01	0.00	39595				

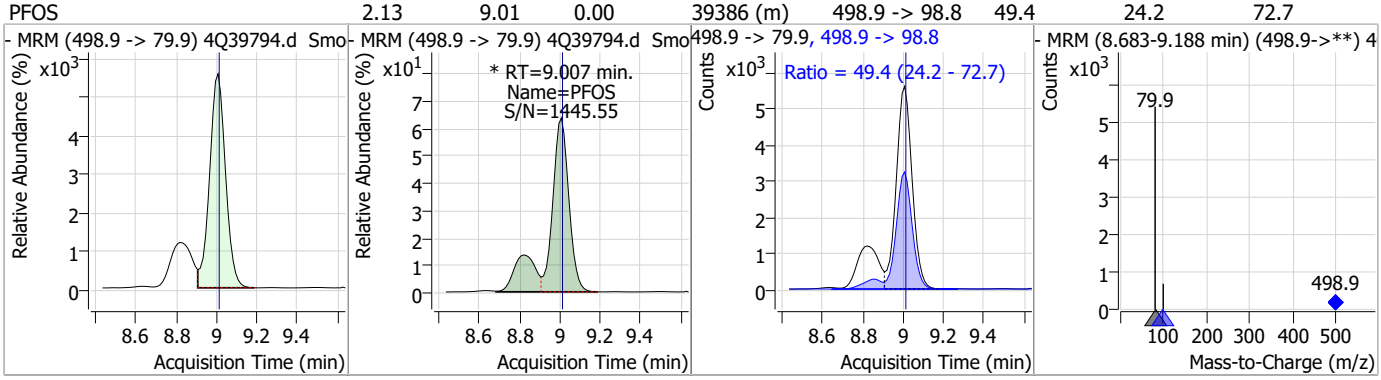




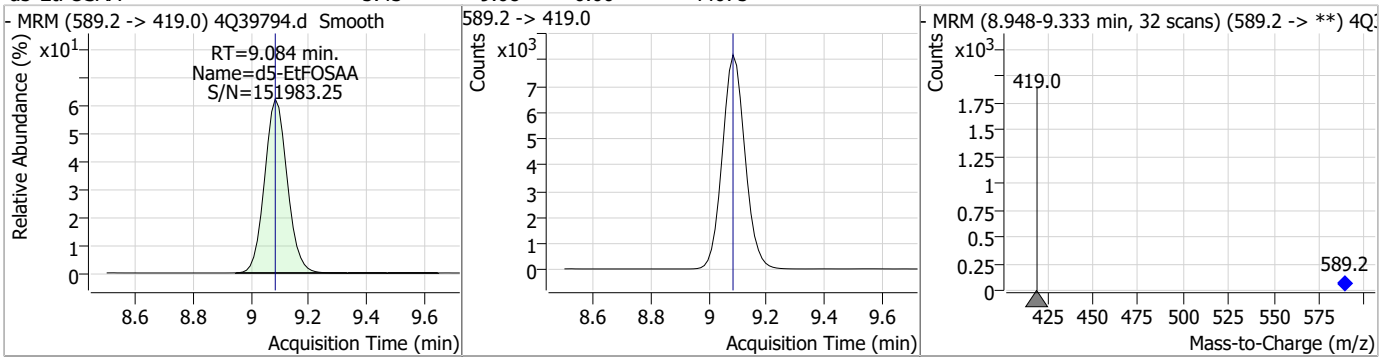


Perfluorinated Compounds by LC/MS/MS

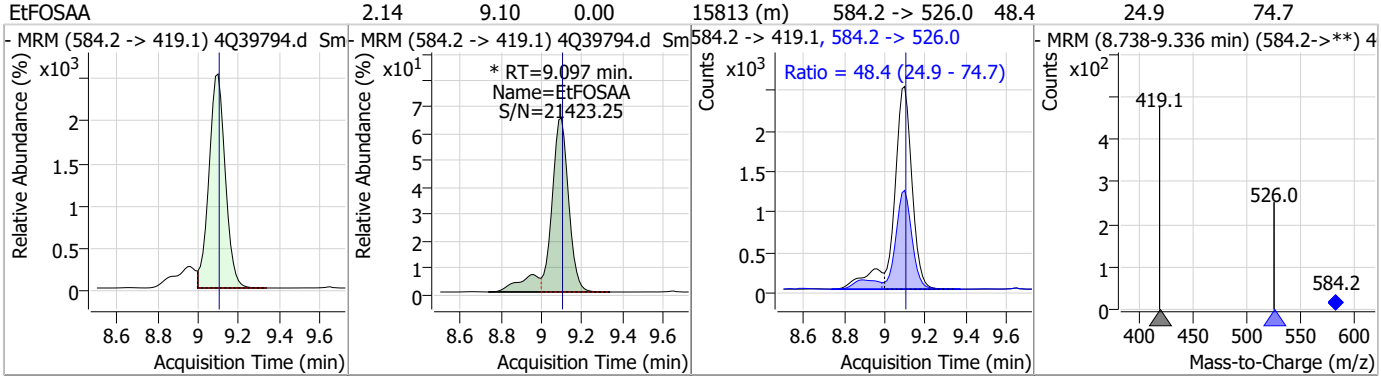
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.13	9.01	0.00	39386 (m)	498.9 -> 98.8	49.4	24.2	72.7



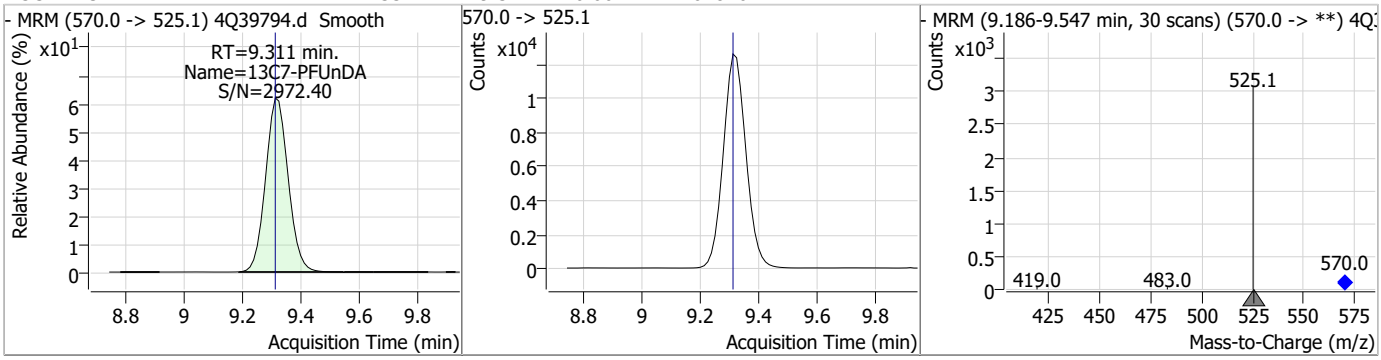
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.43	9.08	0.00	44075				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.14	9.10	0.00	15813 (m)	584.2 -> 526.0	48.4	24.9	74.7

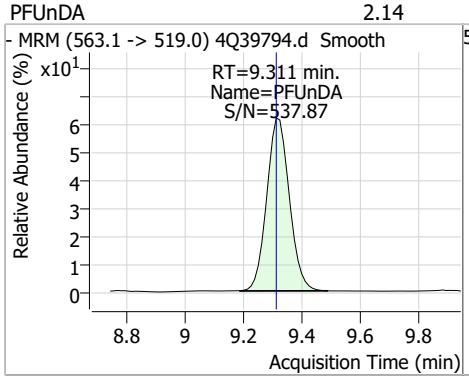


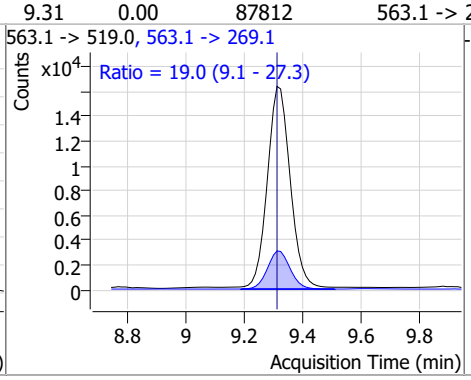
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	9.31	0.00	67840				

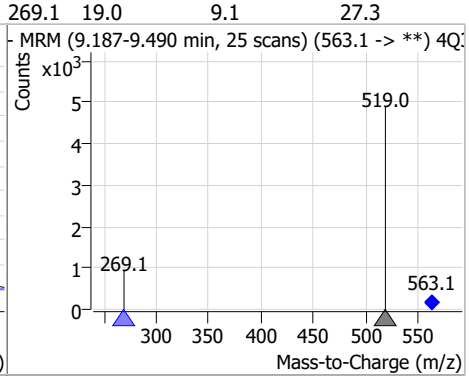


Perfluorinated Compounds by LC/MS/MS

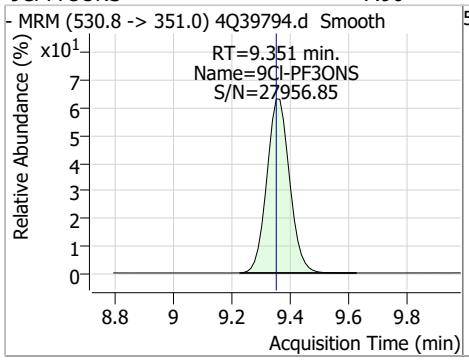
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.14	9.31	0.00	87812	563.1 -> 269.1	19.0	9.1	27.3

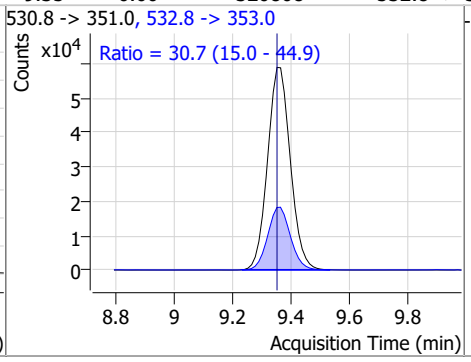


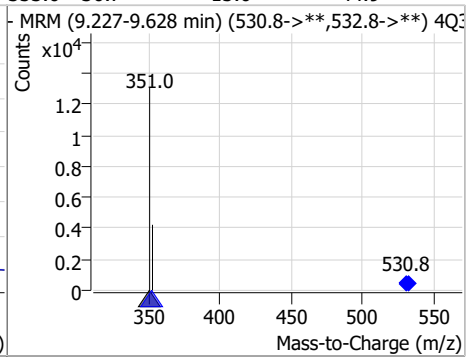




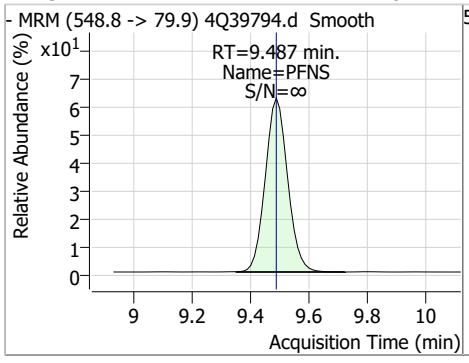
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	7.96	9.35	0.00	320808	532.8 -> 353.0	30.7	15.0	44.9

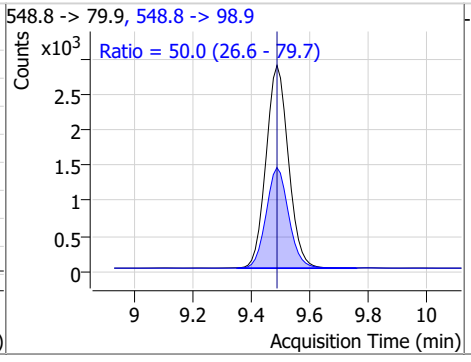


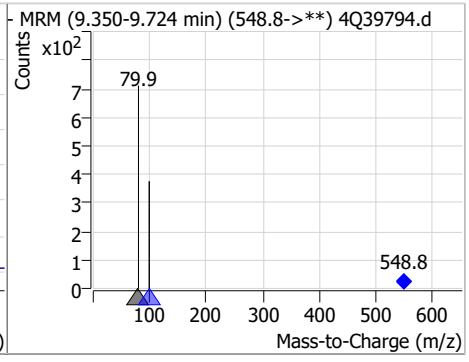




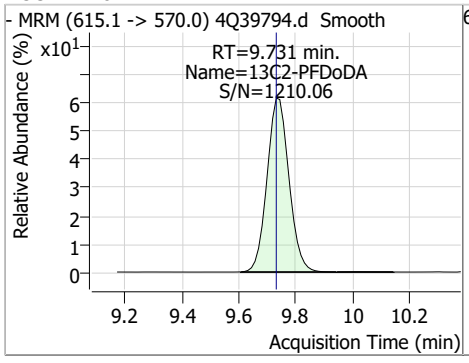
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.19	9.49	0.00	15406	548.8 -> 98.9	50.0	26.6	79.7

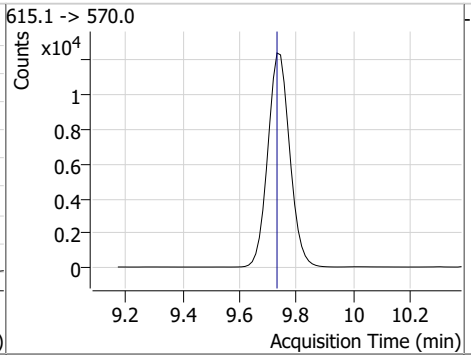


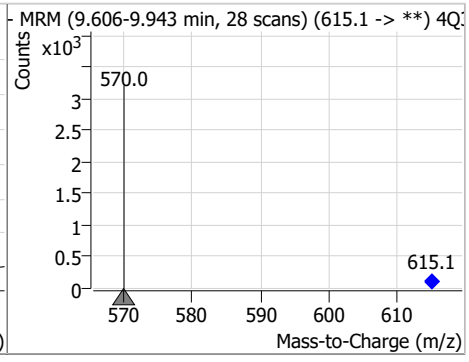




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.73	0.00	66307				

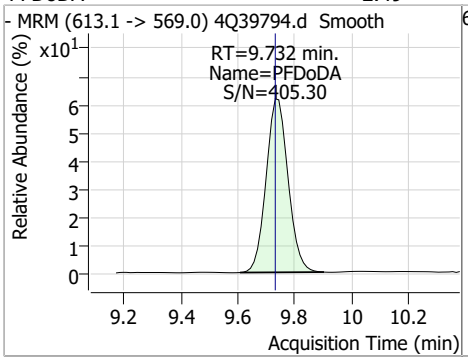


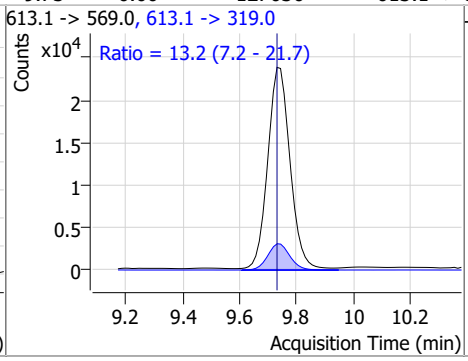


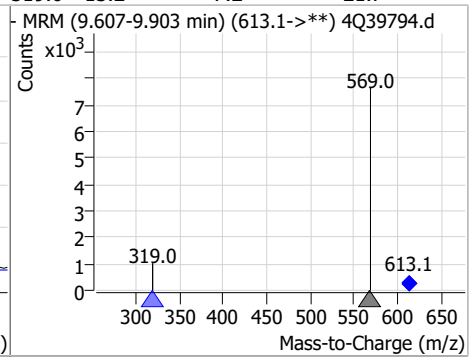


Perfluorinated Compounds by LC/MS/MS

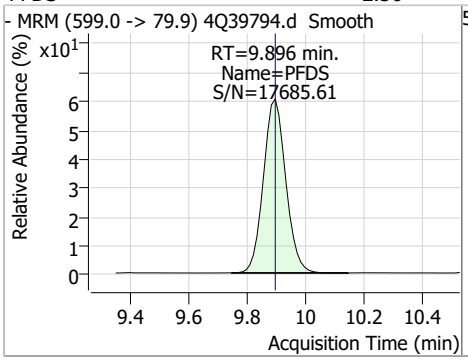
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.49	9.73	0.00	127036	613.1 -> 319.0	13.2	7.2	21.7

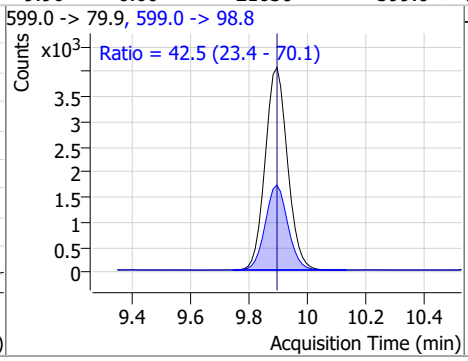


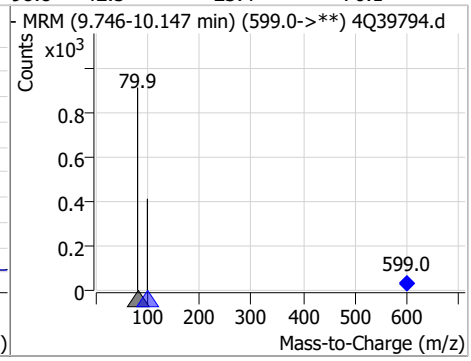




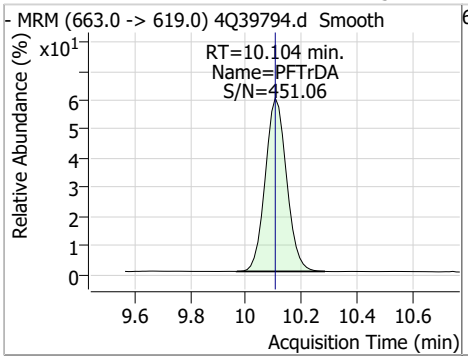
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.36	9.90	0.00	21636	599.0 -> 98.8	42.5	23.4	70.1

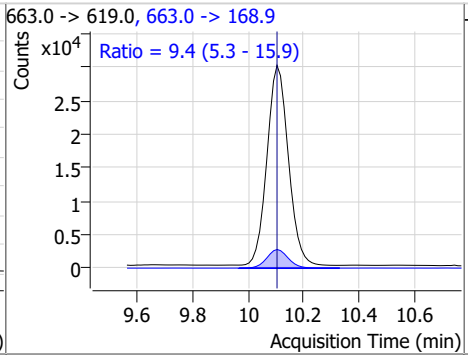


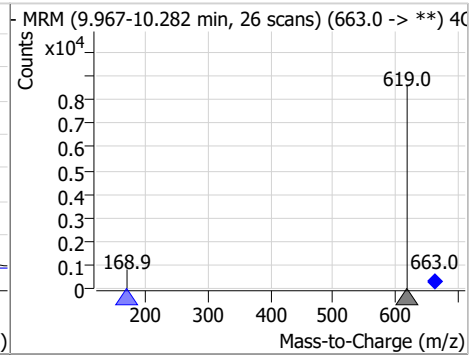




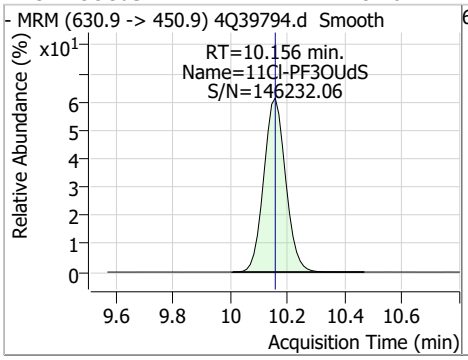
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.52	10.10	0.00	157900	663.0 -> 168.9	9.4	5.3	15.9

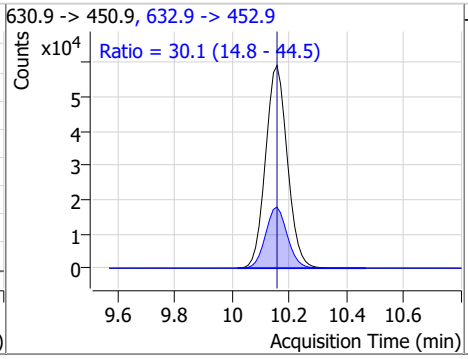


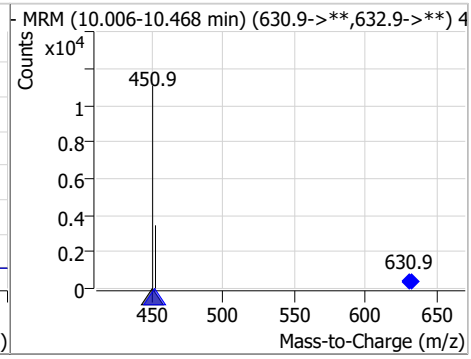




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.48	10.16	0.00	313532	632.9 -> 452.9	30.1	14.8	44.5

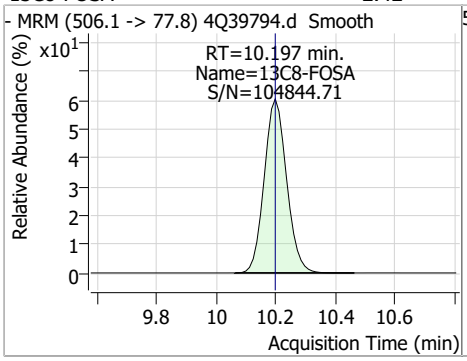


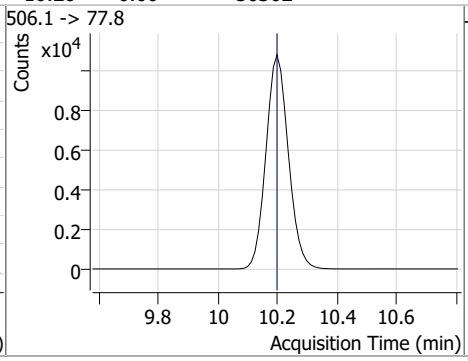


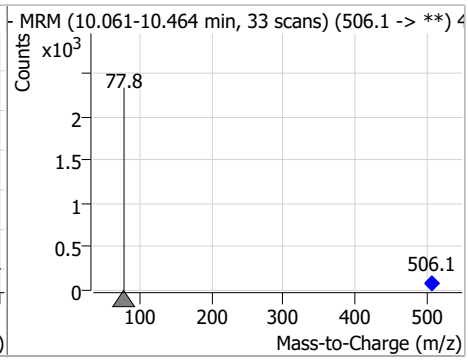


Perfluorinated Compounds by LC/MS/MS

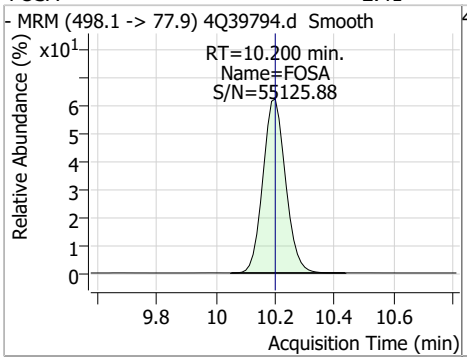
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.42	10.20	0.00	56302				

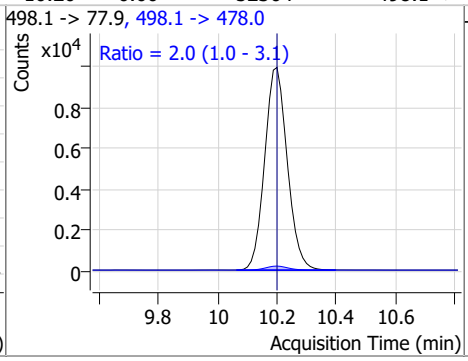


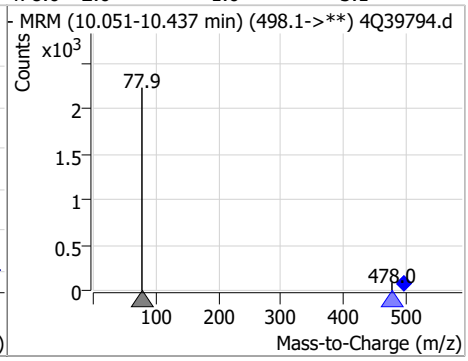




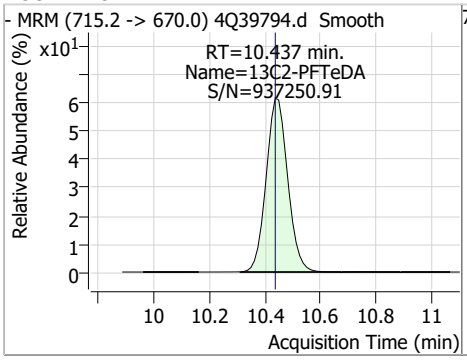
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.41	10.20	0.00	52364	498.1 -> 478.0	2.0	1.0	3.1

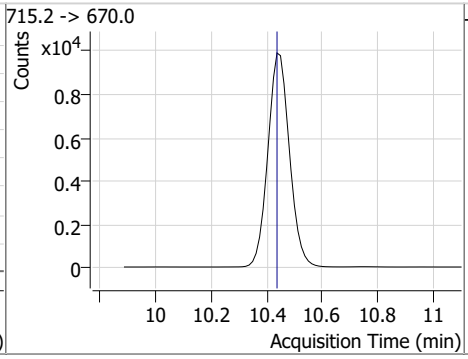


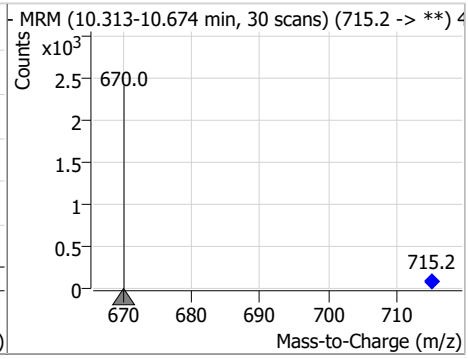




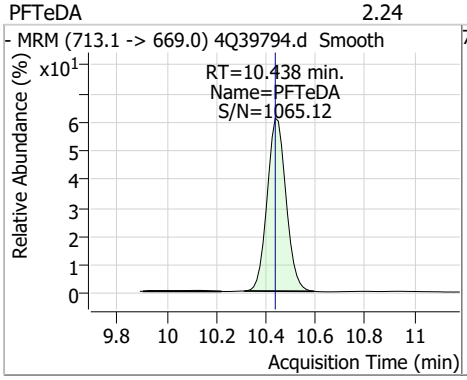
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.42	10.44	0.00	52809				

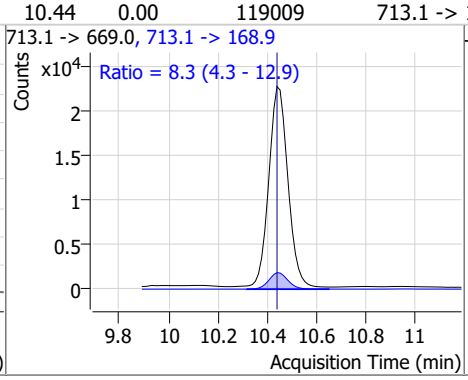


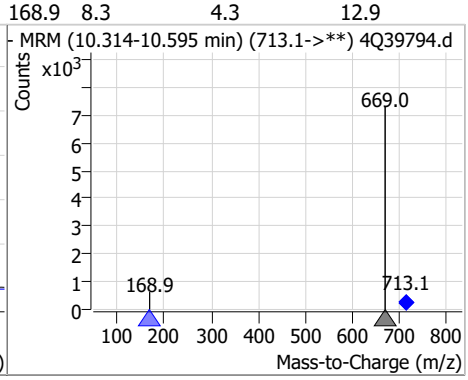




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.24	10.44	0.00	119009	713.1 -> 168.9	8.3	4.3	12.9

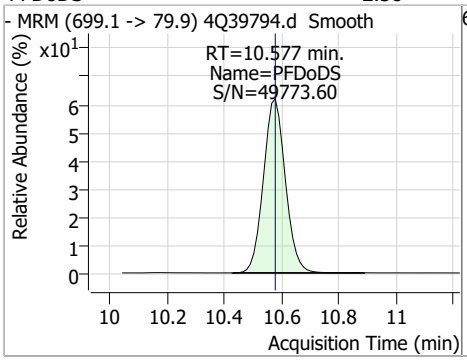


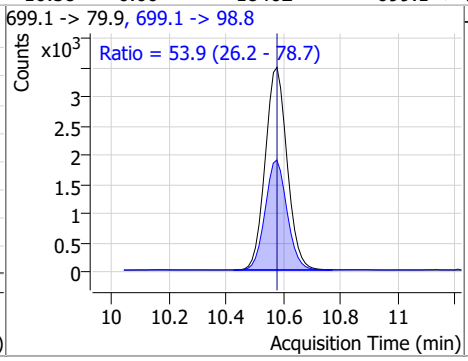


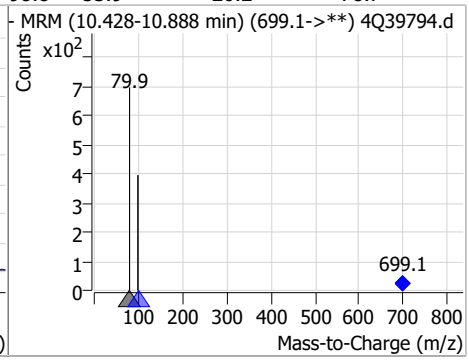


Perfluorinated Compounds by LC/MS/MS

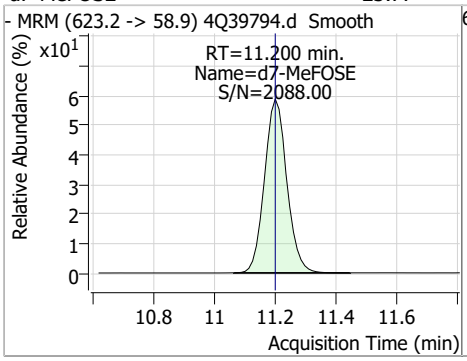
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.38	10.58	0.00	18462	699.1 -> 98.8	53.9	26.2	78.7

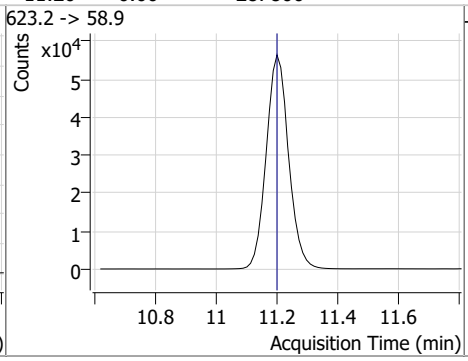


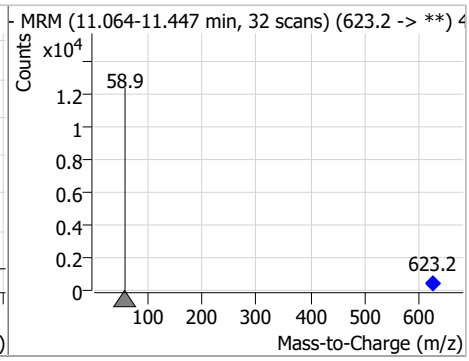




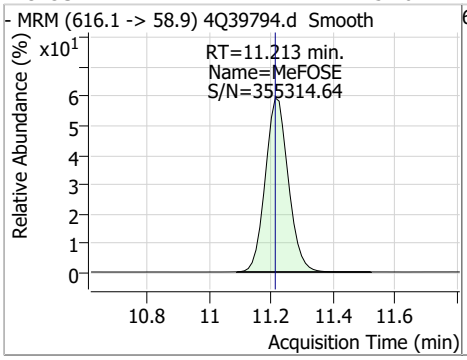
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.77	11.20	0.00	287860				

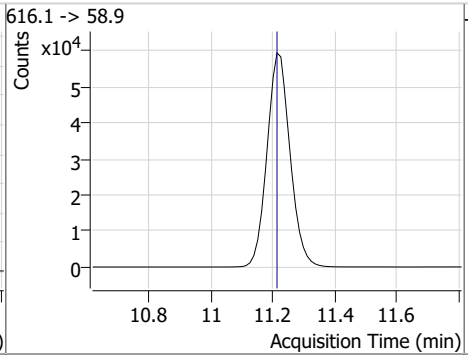


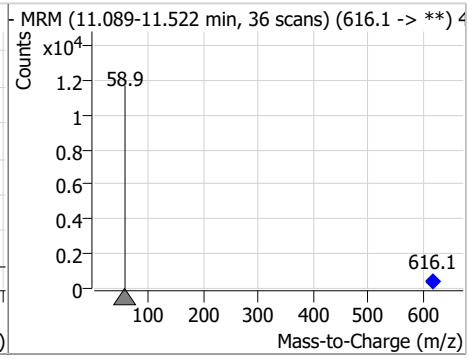




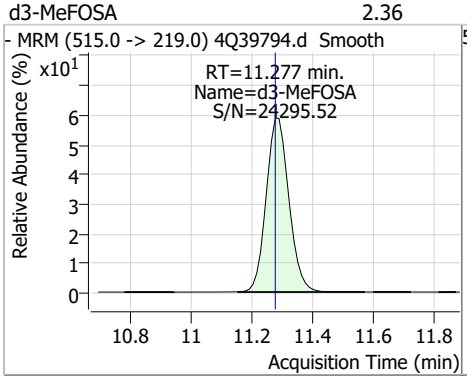
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	25.16	11.21	0.00	305968				

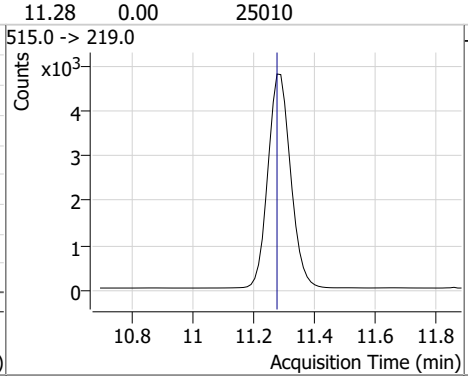


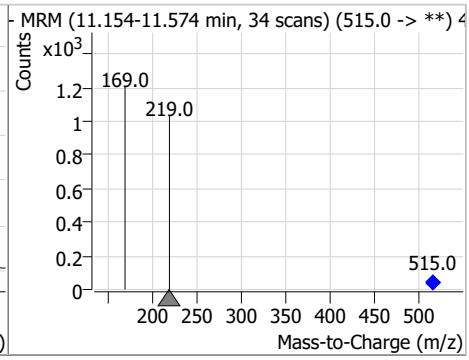




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	11.28	0.00	25010				

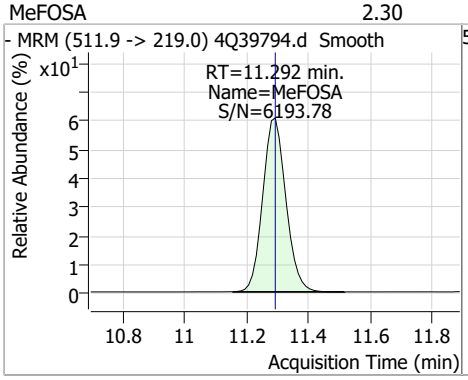


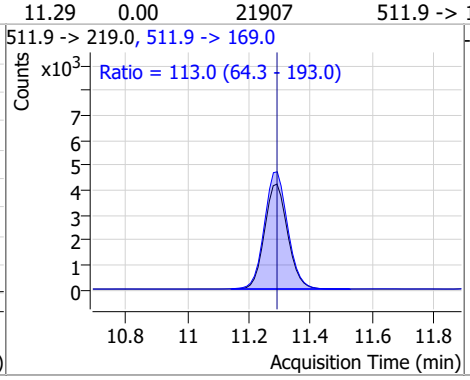


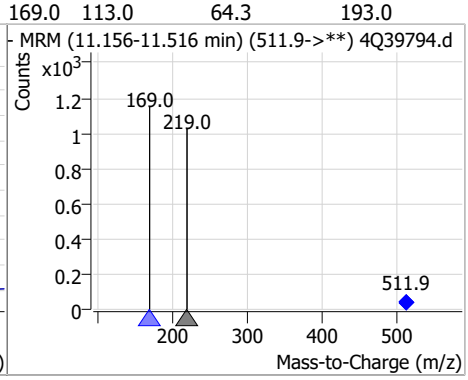


Perfluorinated Compounds by LC/MS/MS

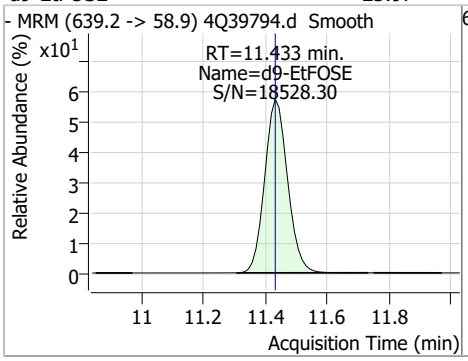
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.30	11.29	0.00	21907	511.9 -> 169.0	113.0	64.3	193.0

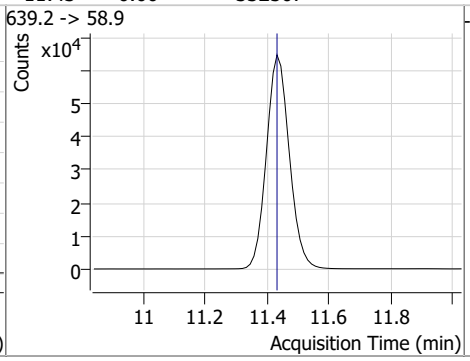


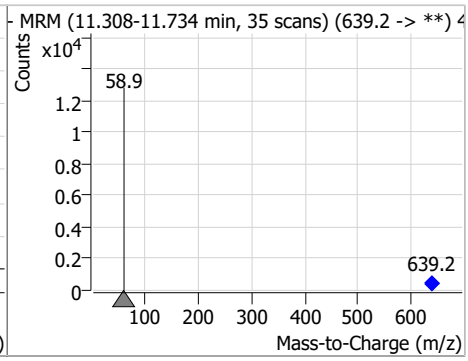




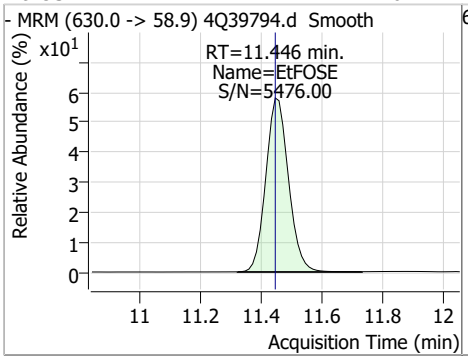
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.97	11.43	0.00	332507				

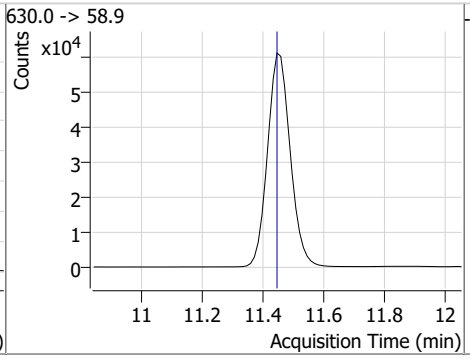


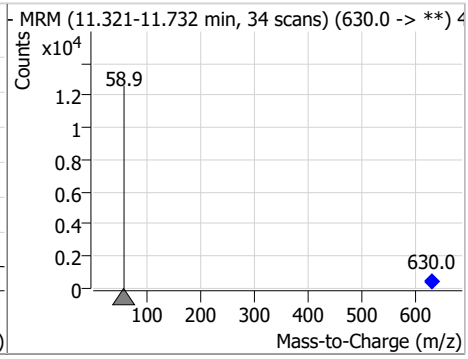




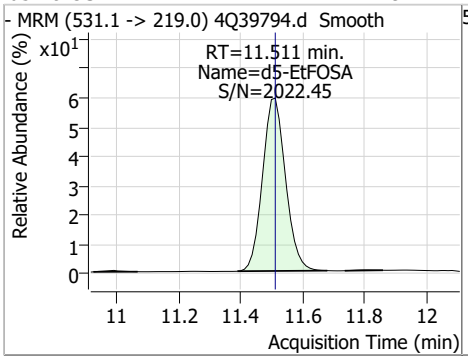
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.67	11.45	0.00	318518				

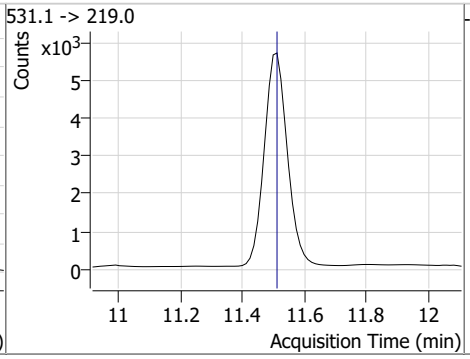


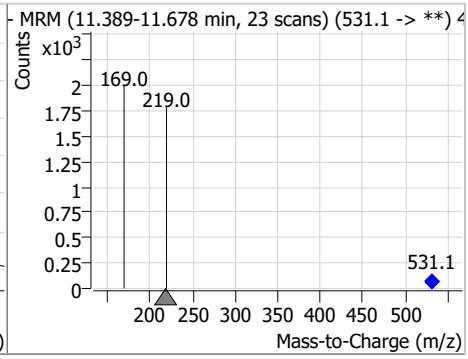




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.51	0.00	28964				

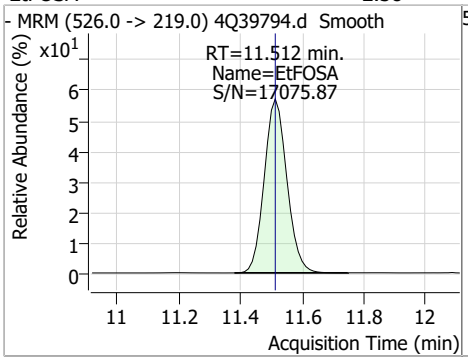


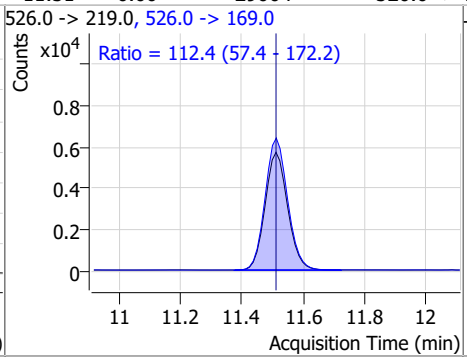


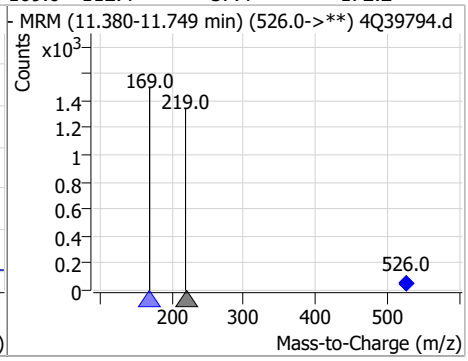


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.38	11.51	0.00	29004	526.0 -> 169.0	112.4	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q572-CC571
Lab FileID: 4Q39794.D
Injection Time: 01/26/23 13:55
Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:21 Natasha Gumtie
Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.84	Split peak
MeFOSAA	2355-31-9		8.88	Split peak
Perfluorooctanesulfonic acid	1763-23-1		9.01	Split peak
EtFOSAA	2991-50-6		9.10	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39795.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 2:12:46 PM
Sample Name : cc571-1.0LL
Vial : P1-A2
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.161	216.8 -> 171.9	370912	10.00	µg/L	0.075
M5-PFPeA	4.801	268.3 -> 223.0	255261	5.00	µg/L	0.037
M5-PFHxA	6.084	318.0 -> 273.0	167567	2.50	µg/L	0.025
M4-PFHpA	7.042	367.1 -> 322.0	83741	2.50	µg/L	0.012
M8-PFOA	7.726	421.1 -> 376.0	144679	2.50	µg/L	0.012
M9-PFNA	8.284	472.1 -> 427.0	71157	1.25	µg/L	-0.012
M6-PFDA	8.804	519.1 -> 474.1	54319	1.25	µg/L	-0.025
M7-PFUnDA	9.286	570.0 -> 525.1	61479	1.25	µg/L	-0.025
M2-PFDoDA	9.718	615.1 -> 570.0	63326	1.25	µg/L	-0.013
M2-PFTeDA	10.437	715.2 -> 670.0	47956	1.25	µg/L	0.000
M8-FOSA	10.185	506.1 -> 77.8	51067	2.50	µg/L	-0.012
M3-PFBS	6.014	302.1 -> 79.9	45026	2.50	µg/L	0.038
M3-PFHxS	7.854	402.1 -> 79.9	28879	2.50	µg/L	0.012
M8-PFOS	8.981	507.1 -> 79.9	36813	2.50	µg/L	-0.025
M2-4:2FTS	5.734	329.1 -> 80.9	5268	5.00	µg/L	0.025
M2-6:2FTS	7.474	429.1 -> 80.9	8720	5.00	µg/L	0.012
M2-8:2FTS	8.567	529.1 -> 80.9	12580	5.00	µg/L	-0.025
M3-MeFOSAA	8.837	573.2 -> 419.0	48402	5.00	µg/L	-0.037
M3-HFPO-DA	6.477	286.9 -> 168.9	130377	10.00	µg/L	0.025
M5-EtFOSAA	9.059	589.2 -> 419.0	39748	5.00	µg/L	-0.025
M7-MeFOSE	11.200	623.2 -> 58.9	268552	25.00	µg/L	0.000
M9-EtFOSE	11.433	639.2 -> 58.9	310336	25.00	µg/L	0.000
M5-EtFOSA	11.498	531.1 -> 219.0	26691	2.50	µg/L	-0.012
M3-MeFOSA	11.277	515.0 -> 219.0	21906	2.50	µg/L	0.000
13C4-PFOS	8.969	502.8 -> 79.9	36920	2.50	µg/L	-0.037
13C3-PFBA	3.165	216.0 -> 172.0	209263	5.00	µg/L	0.075
18O2-PFHxS	7.853	403.0 -> 83.9	19911	2.50	µg/L	0.012
13C4-PFOA	7.727	417.1 -> 372.0	159696	2.50	µg/L	0.012
13C2-PFDA	8.805	515.1 -> 470.1	52011	1.25	µg/L	-0.025
13C5-PFNA	8.285	468.0 -> 423.0	79427	1.25	µg/L	-0.012
13C2-PFHxA	6.085	315.1 -> 270.0	155612	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.734	329.1 -> 80.9	5268	7.34	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 146.8%		
13C2-6:2FTS	7.474	429.1 -> 80.9	8720	5.43	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-8:2FTS	8.567	529.1 -> 80.9	12580	5.72	µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
13C2-PFDoDA	9.718	615.1 -> 570.0	63326	1.25	µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C2-PFTeDA	10.437	715.2 -> 670.0	47956	1.34	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C3-PFBS	6.014	302.1 -> 79.9	45026	2.62	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C3-PFHxS	7.854	402.1 -> 79.9	28879	2.49	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C4-PFBA	3.161	216.8 -> 171.9	370912	9.83 µg/L		0.075
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C4-PFHpA	7.042	367.1 -> 322.0	83741	2.31 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C5-PFHxA	6.084	318.0 -> 273.0	167567	2.56 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	4.801	268.3 -> 223.0	255261	5.04 µg/L		0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C6-PFDA	8.804	519.1 -> 474.1	54319	1.18 µg/L		-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C7-PFUnDA	9.286	570.0 -> 525.1	61479	1.25 µg/L		-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C8-FOSA	10.185	506.1 -> 77.8	51067	2.42 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C8-PFOA	7.726	421.1 -> 376.0	144679	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-PFOS	8.981	507.1 -> 79.9	36813	2.44 µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C9-PFNA	8.284	472.1 -> 427.0	71157	1.26 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%		
d3-MeFOSAA	8.837	573.2 -> 419.0	48402	5.71 µg/L		-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
13C3-HFPO-DA	6.477	286.9 -> 168.9	130377	10.50 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
d3-MeFOSA	11.277	515.0 -> 219.0	21906	2.27 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.8%		
d5-EtFOSAA	9.059	589.2 -> 419.0	39748	5.38 µg/L		-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
d7-MeFOSE	11.200	623.2 -> 58.9	268552	24.39 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
d9-EtFOSE	11.433	639.2 -> 58.9	310336	24.61 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
d5-EtFOSA	11.498	531.1 -> 219.0	26691	2.32 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
Target Compounds						QValue
4:2FTS	5.734	327.1 -> 307.0	5105	0.59 µg/L		92
		327.1 -> 80.9	2649			
6:2FTS	7.475	427.1 -> 407.0	5201	0.75 µg/L		96
		427.1 -> 80.9	2424			
8:2FTS	8.567	527.1 -> 507.0	4541	0.75 µg/L		100
		527.1 -> 80.8	2389			
EtFOSAA	9.060	584.2 -> 419.1	1115	0.17 µg/L	m	93
		584.2 -> 526.0	500			
FOSA	10.188	498.1 -> 77.9	3519	0.18 µg/L	#	93
		498.1 -> 478.0	154			
MeFOSAA	8.850	570.1 -> 419.0	1625	0.23 µg/L	m	85
		570.1 -> 483.0	207			
PFBA	3.170	212.8 -> 168.9	6552	0.63 µg/L		100
PFBS	6.015	298.7 -> 79.9	2925	0.14 µg/L		97
		298.7 -> 98.8	1046			
PFDA	8.805	512.9 -> 469.0	7594	0.20 µg/L		92
		512.9 -> 219.0	1268			
PFDoDA	9.706	613.1 -> 569.0	8788	0.18 µg/L		99
		613.1 -> 319.0	1250			
PFDS	9.870	599.0 -> 79.9	1281	0.15 µg/L		96

Perfluorinated Compounds by LC/MS/MS

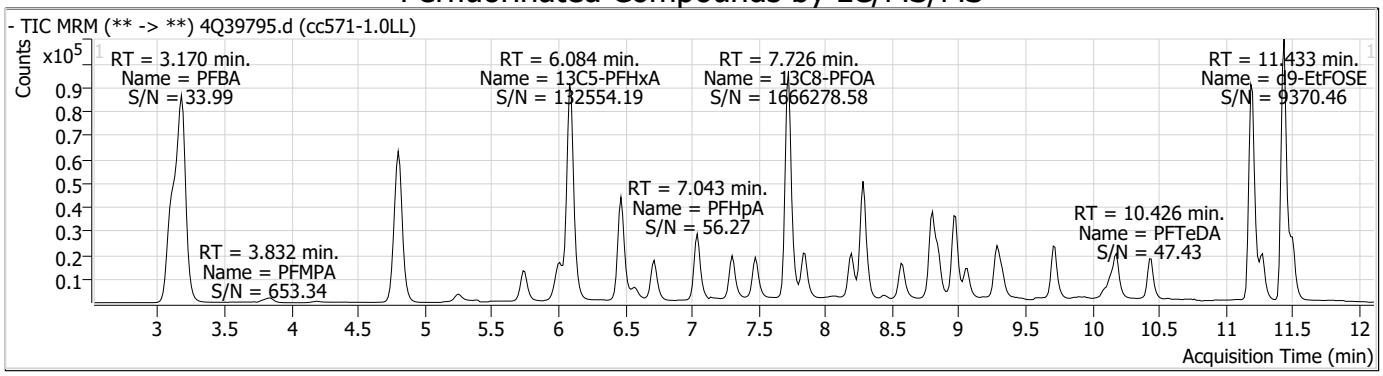
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	636				
PFHpA	7.043	363.1 -> 319.0	9033	0.17	µg/L		100
		363.1 -> 169.0	1532				
PFHpS	8.449	449.0 -> 79.9	2615	0.18	µg/L		88
		449.0 -> 98.9	1410				
PFHxA	6.087	313.0 -> 269.0	9802	0.15	µg/L		97
		313.0 -> 118.9	390				
PFHxS	7.842	398.7 -> 79.9	1937	0.21	µg/L	m	96
		398.7 -> 98.9	891				
PFNA	8.285	463.0 -> 419.0	8233	0.16	µg/L		99
		463.0 -> 219.0	1969				
PFNS	9.462	548.8 -> 79.9	1090	0.17	µg/L		87
		548.8 -> 98.9	682				
PFOA	7.728	413.0 -> 369.0	9567	0.15	µg/L		94
		413.0 -> 169.0	2176				
PFOS	8.983	498.9 -> 79.9	2907	0.17	µg/L	m	100
		498.9 -> 98.8	1404				
PFPeA	4.804	263.0 -> 219.0	18446	0.33	µg/L		100
PFPeS	7.108	349.1 -> 79.9	1382	0.15	µg/L		92
		349.1 -> 98.9	477				
PFTeDA	10.426	713.1 -> 669.0	8270	0.17	µg/L		100
		713.1 -> 168.9	703				
PFTrDA	10.092	663.0 -> 619.0	10052	0.17	µg/L		95
		663.0 -> 168.9	868				
PFUnDA	9.287	563.1 -> 519.0	6981	0.19	µg/L		97
		563.1 -> 269.1	1182				
11Cl-PF3OUdS	10.144	630.9 -> 450.9	20570	0.67	µg/L		92
		632.9 -> 452.9	5247				
9Cl-PF3ONS	9.326	530.8 -> 351.0	20845	0.56	µg/L		94
		532.8 -> 353.0	5601				
ADONA	7.306	376.9 -> 250.9	45128	0.64	µg/L		97
		376.9 -> 84.8	14997				
HFPO-DA	6.478	284.9 -> 168.9	7611	0.62	µg/L		90
		284.9 -> 184.9	1090				
3:3FTCA	4.173	241.0 -> 177.0	1881	0.72	µg/L		100
		241.0 -> 117.0	182				
5:3FTCA	6.721	341.0 -> 237.1	34003	3.92	µg/L		98
		341.0 -> 217.0	25909				
7:3FTCA	8.199	441.0 -> 316.9	19730	3.96	µg/L		99
		441.0 -> 336.9	44126				
EtFOSA	11.512	526.0 -> 219.0	1951	0.17	µg/L		99
		526.0 -> 169.0	2270				
EtFOSE	11.446	630.0 -> 58.9	22782	1.89	µg/L		100
MeFOSA	11.279	511.9 -> 219.0	1648	0.20	µg/L		82
		511.9 -> 169.0	1781				
MeFOSE	11.213	616.1 -> 58.9	20603	1.82	µg/L		100
PFDoDS	10.565	699.1 -> 79.9	1291	0.18	µg/L		94
		699.1 -> 98.8	625				
NFDHA	5.966	295.0 -> 201.0	1730	0.40	µg/L		93
		295.0 -> 84.9	439				
PFMBA	5.253	279.0 -> 85.1	11339	0.32	µg/L		100
PFMPA	3.832	229.0 -> 84.9	11445	0.32	µg/L		100
PFEESA	6.571	314.8 -> 134.9	16410	0.29	µg/L		98
		314.8 -> 82.9	649				

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

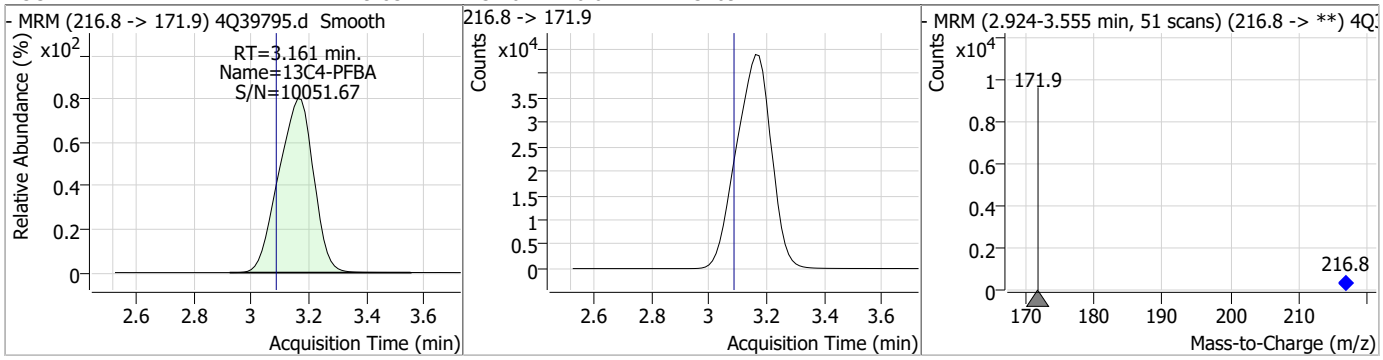
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

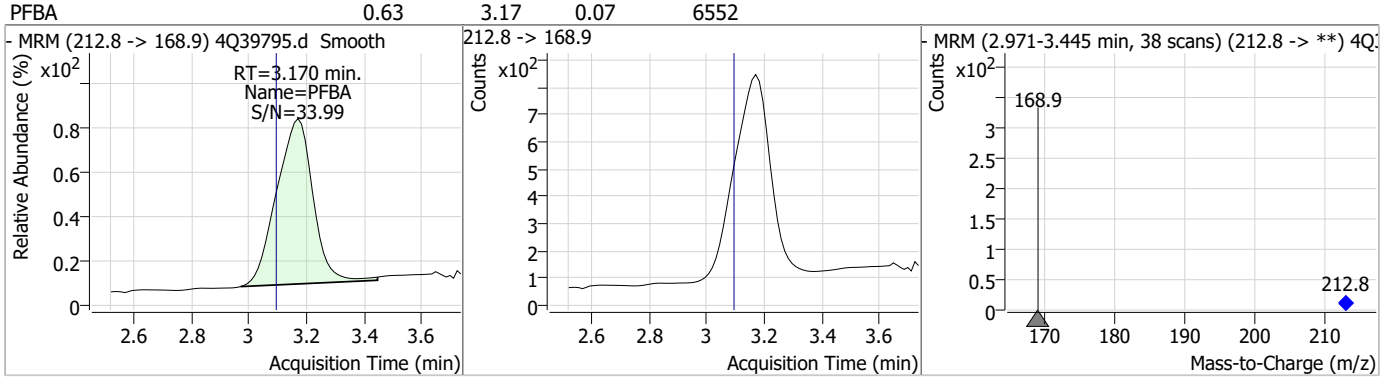
Perfluorinated Compounds by LC/MS/MS



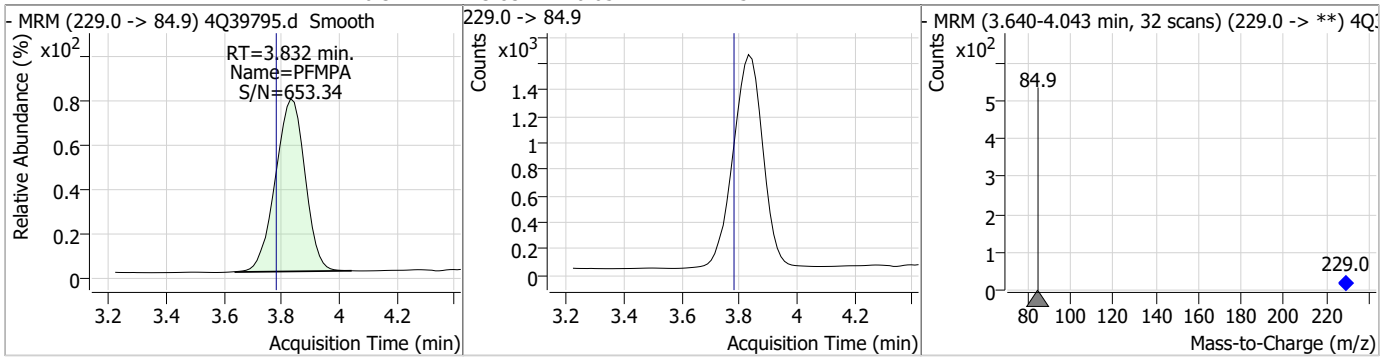
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.83	3.16	0.07	370912				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.63	3.17	0.07	6552				

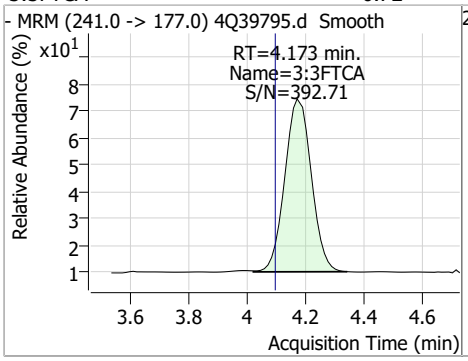


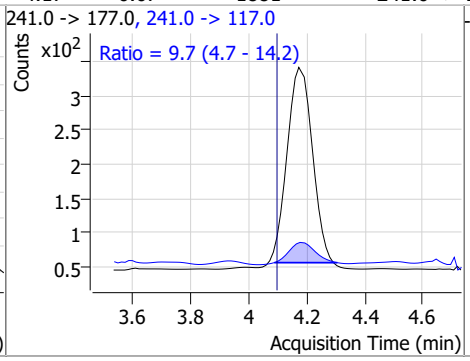
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.32	3.83	0.05	11445				

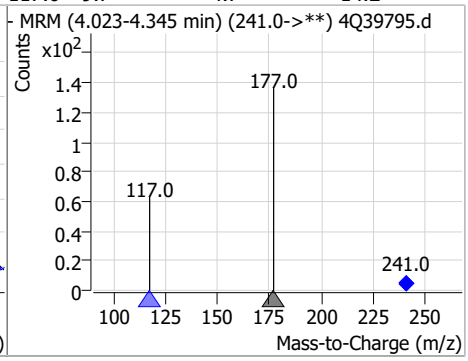


Perfluorinated Compounds by LC/MS/MS

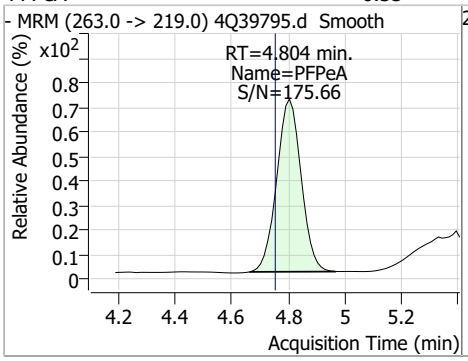
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.72	4.17	0.07	1881	241.0 -> 117.0	9.7	4.7	14.2

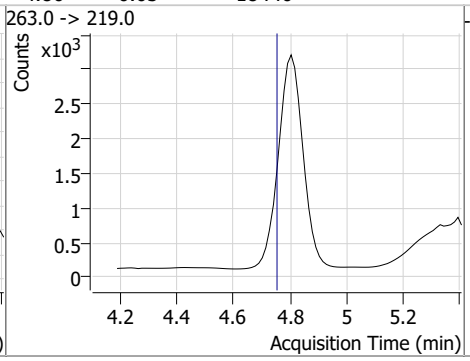


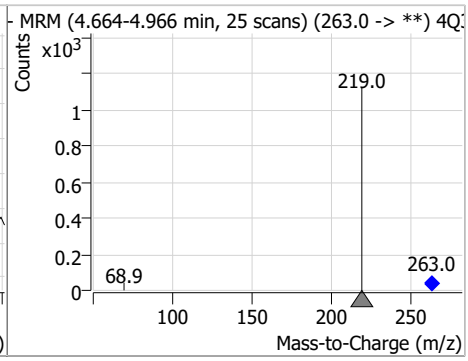




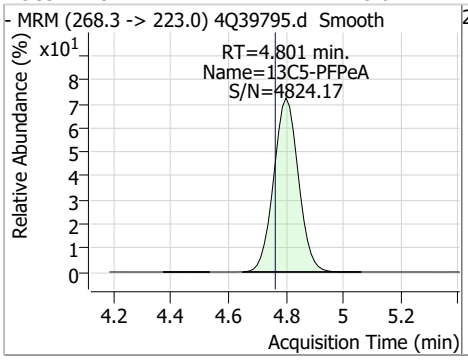
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.33	4.80	0.05	18446				

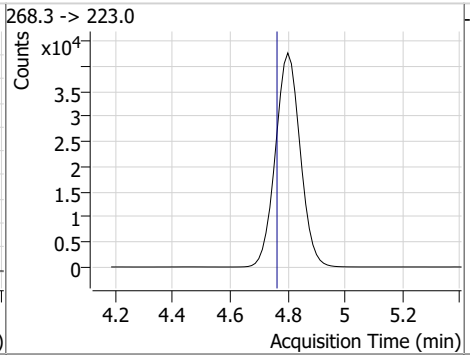


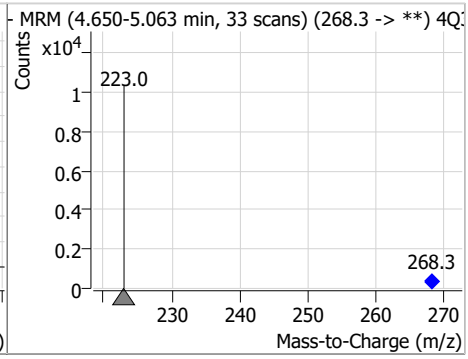




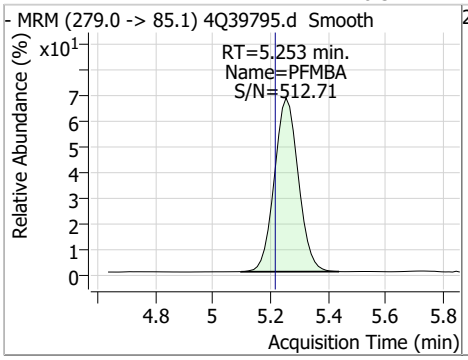
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.80	0.04	255261				

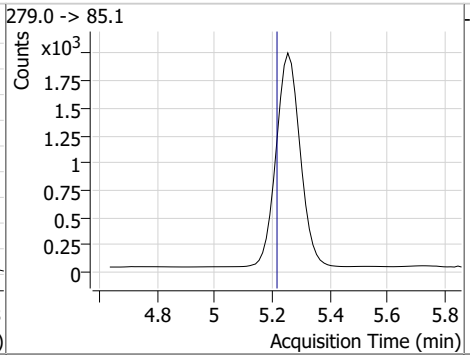


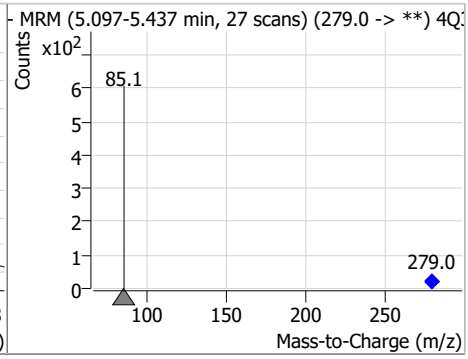




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.32	5.25	0.04	11339				

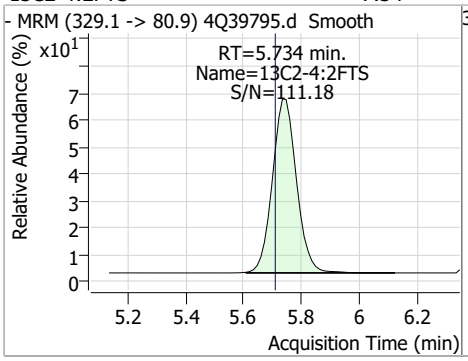


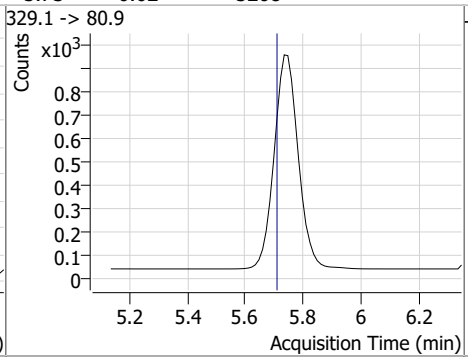


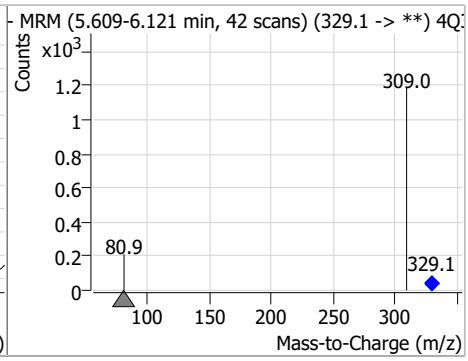


Perfluorinated Compounds by LC/MS/MS

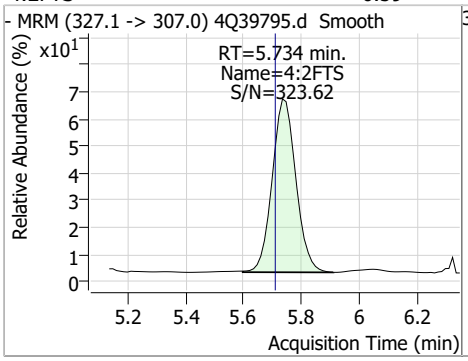
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.34	5.73	0.02	5268				

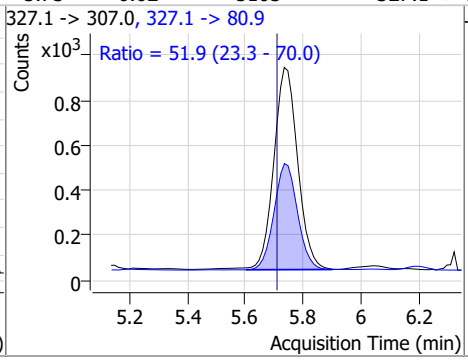


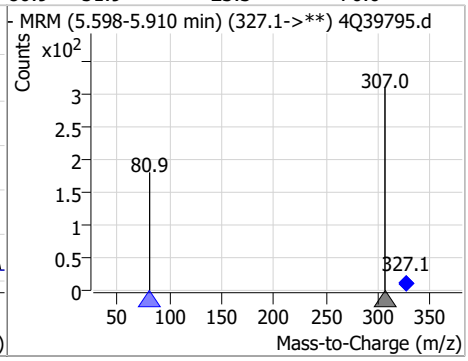




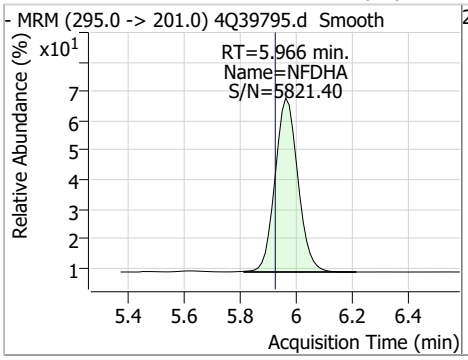
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.59	5.73	0.02	5105	327.1 -> 80.9	51.9	23.3	70.0

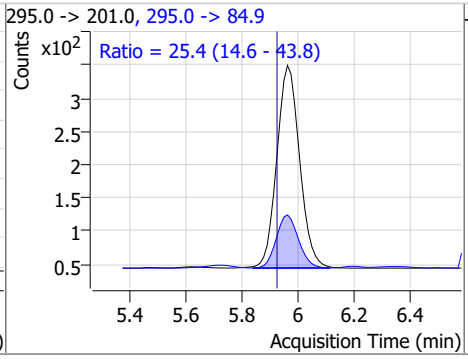


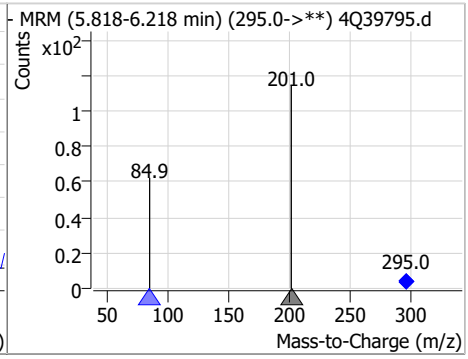




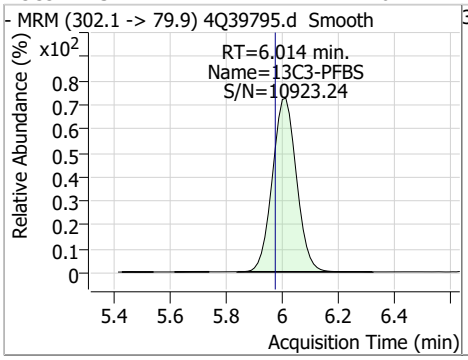
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.40	5.97	0.04	1730	295.0 -> 84.9	25.4	14.6	43.8

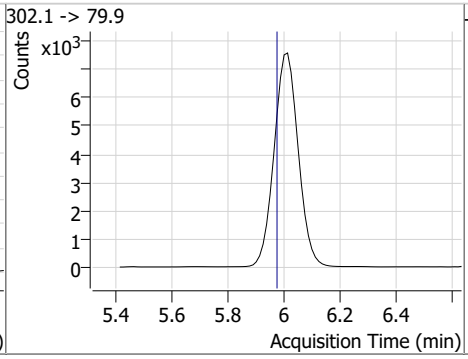


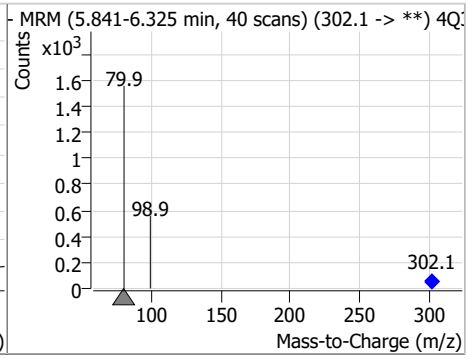




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.62	6.01	0.04	45026				

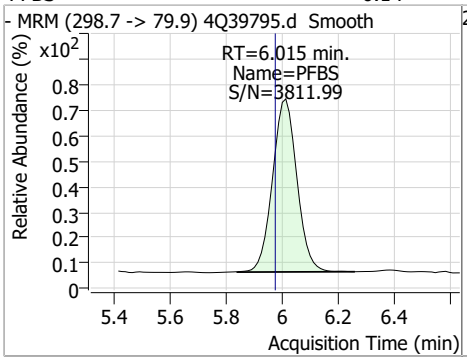


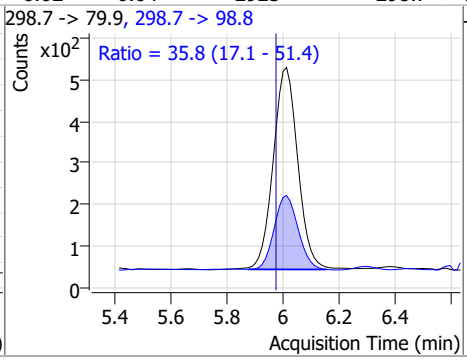


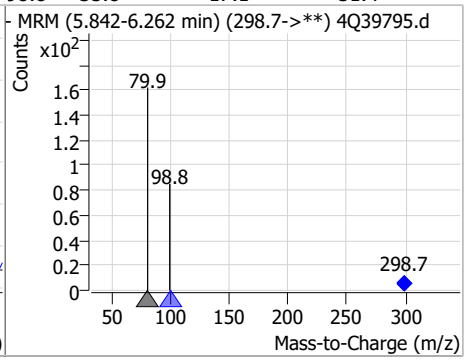


Perfluorinated Compounds by LC/MS/MS

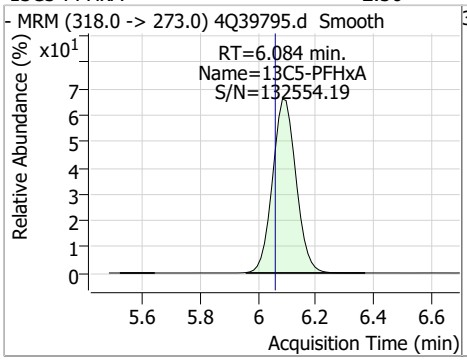
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.14	6.02	0.04	2925	298.7 -> 98.8	35.8	17.1	51.4

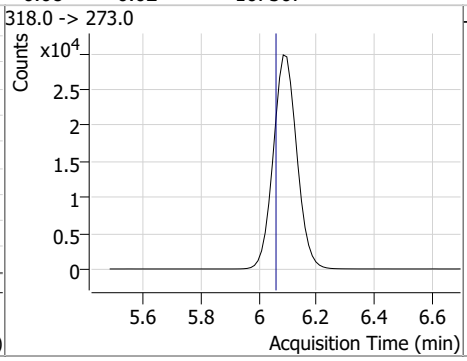


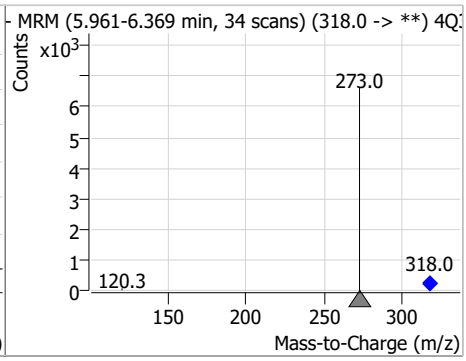




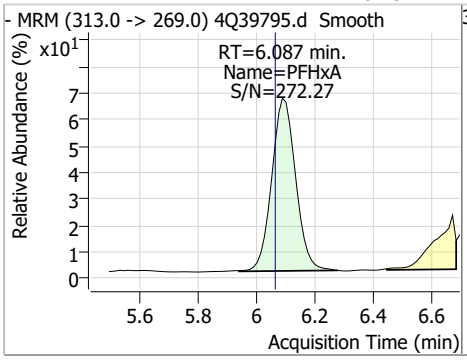
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	6.08	0.02	167567				

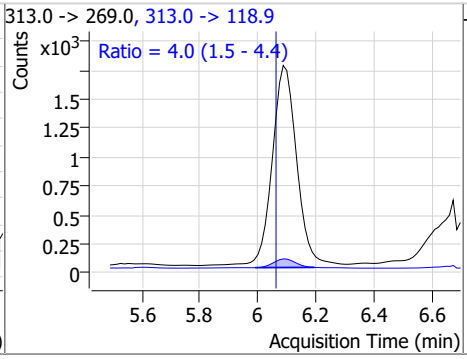


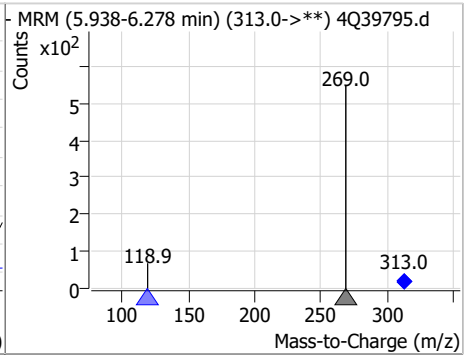




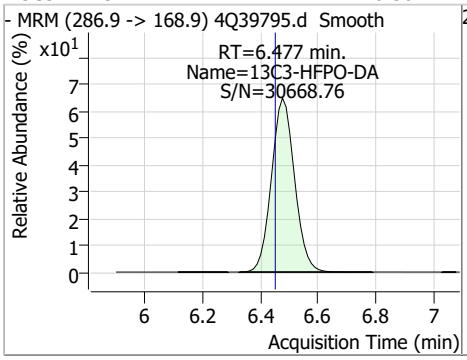
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.15	6.09	0.02	9802	313.0 -> 118.9	4.0	1.5	4.4

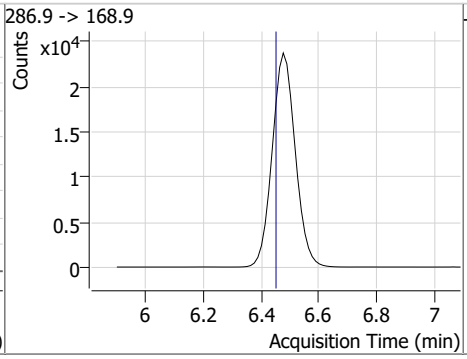


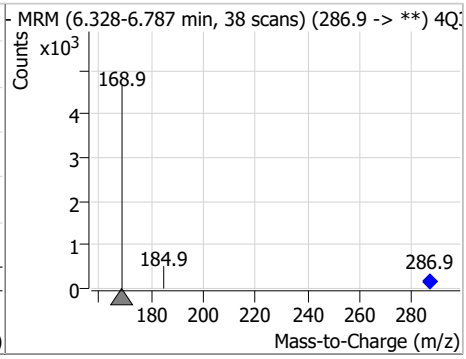




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.50	6.48	0.02	130377				

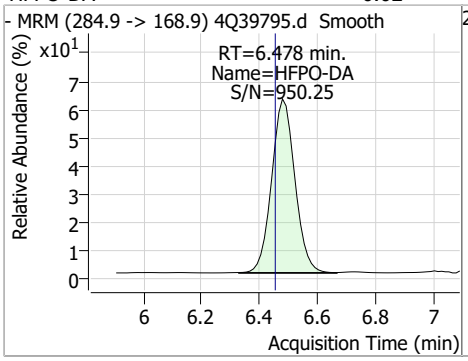


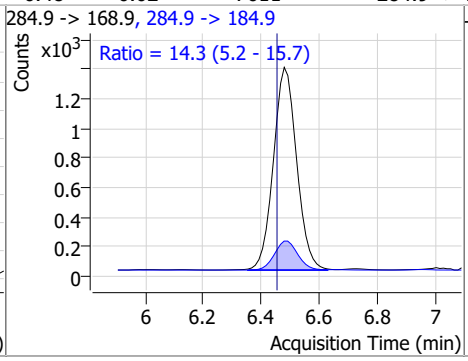


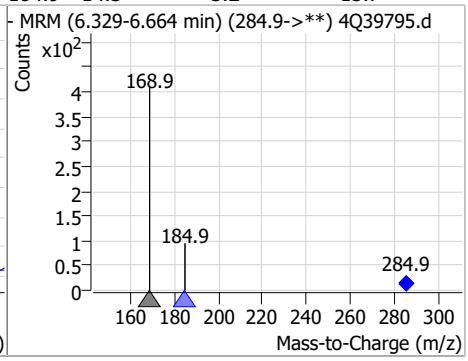


Perfluorinated Compounds by LC/MS/MS

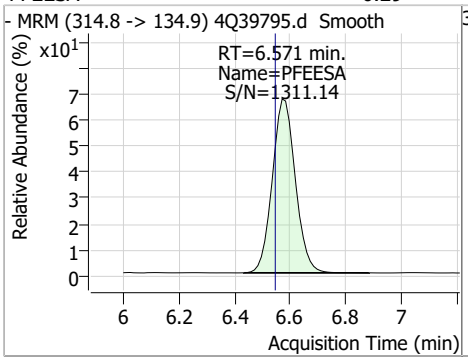
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.62	6.48	0.02	7611	284.9 -> 184.9	14.3	5.2	15.7

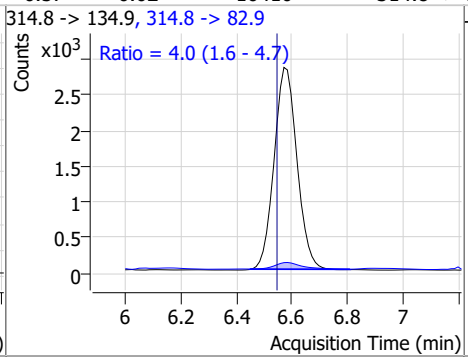


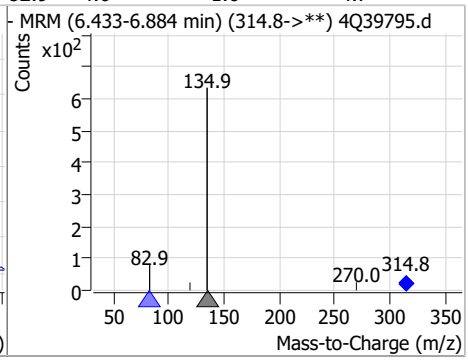




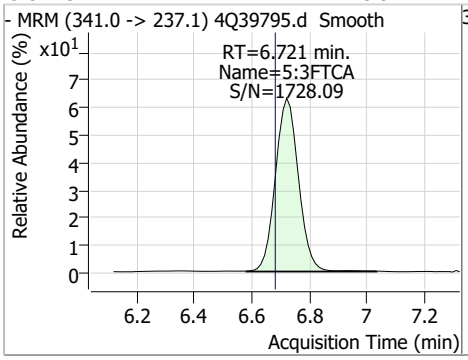
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.29	6.57	0.02	16410	314.8 -> 82.9	4.0	1.6	4.7

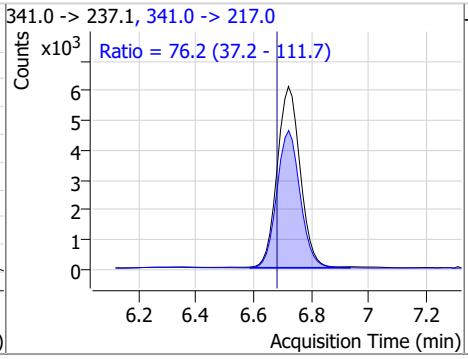


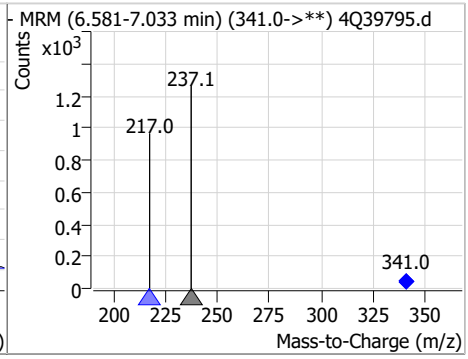




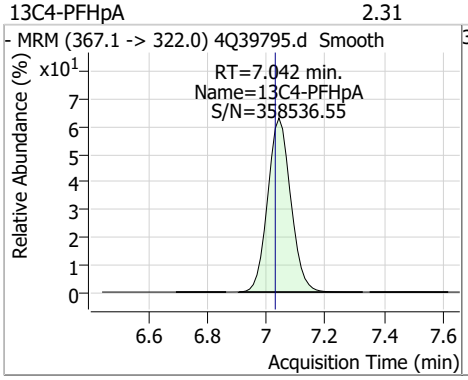
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	3.92	6.72	0.04	34003	341.0 -> 217.0	76.2	37.2	111.7

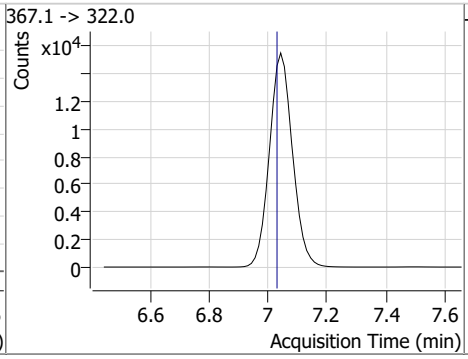


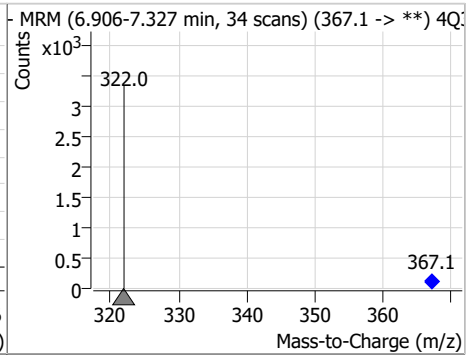




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.31	7.04	0.01	83741				

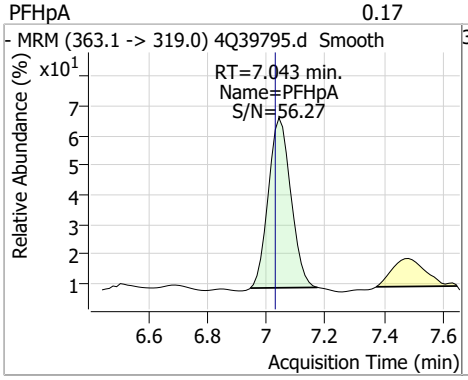


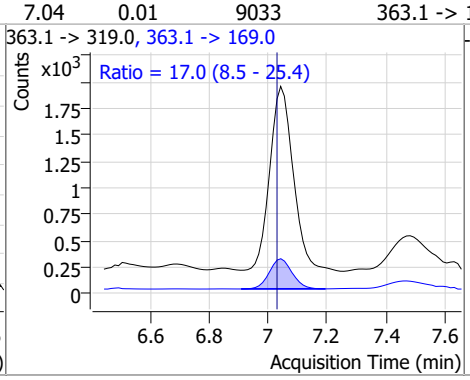


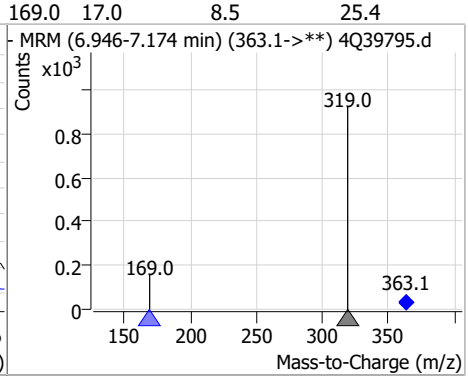


Perfluorinated Compounds by LC/MS/MS

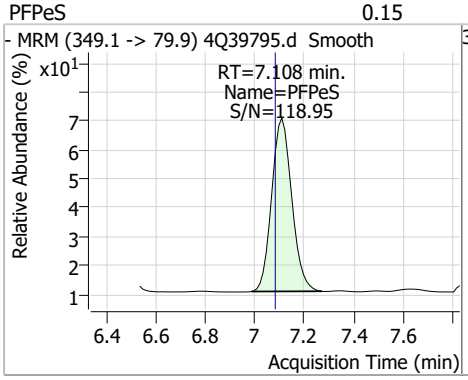
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.17	7.04	0.01	9033	363.1 -> 169.0	17.0	8.5	25.4

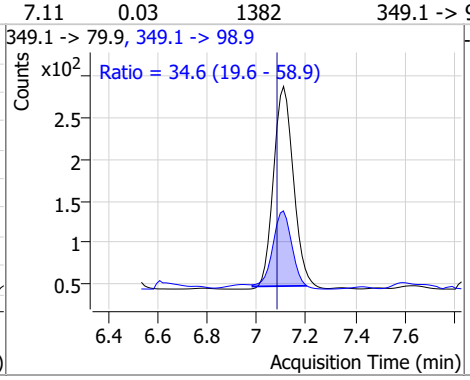


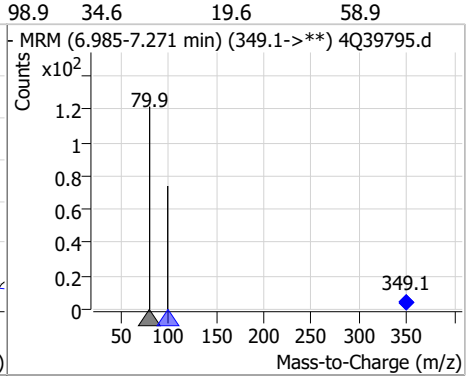




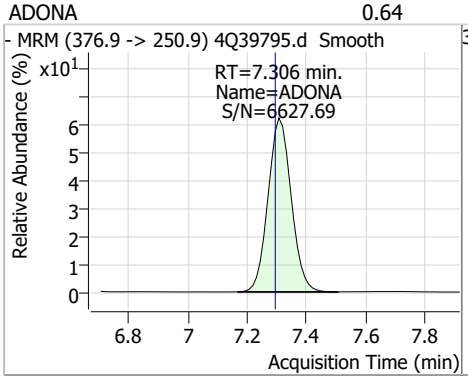
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.15	7.11	0.03	1382	349.1 -> 98.9	34.6	19.6	58.9

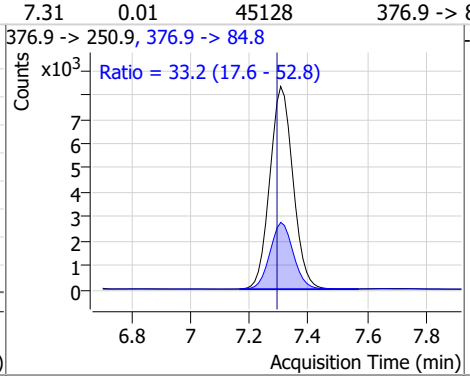


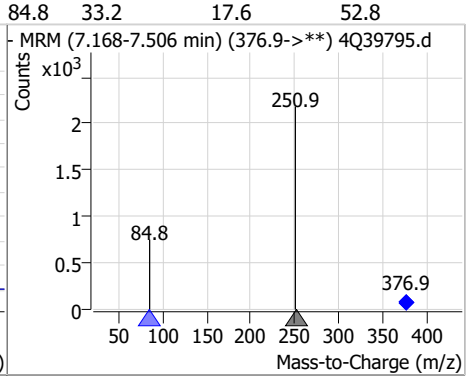




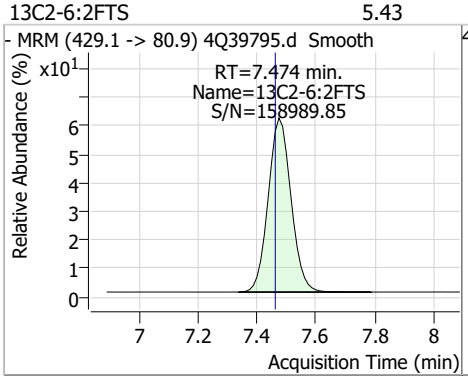
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.64	7.31	0.01	45128	376.9 -> 84.8	33.2	17.6	52.8

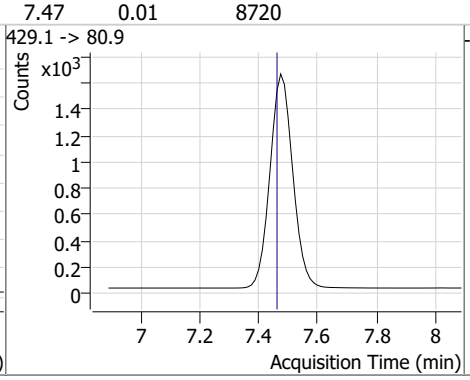


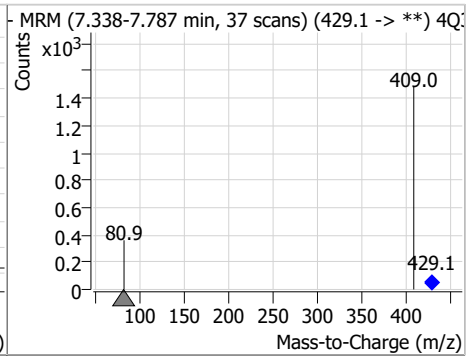




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.43	7.47	0.01	8720				

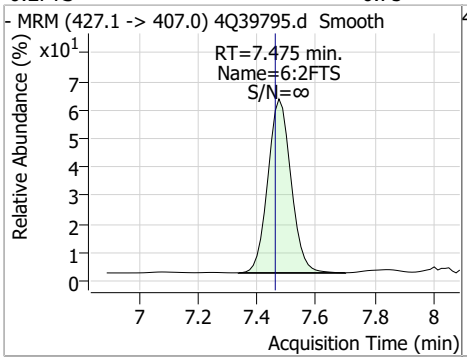


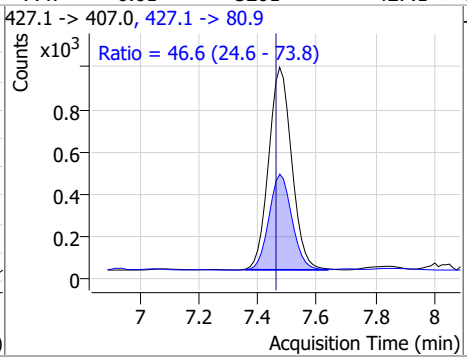


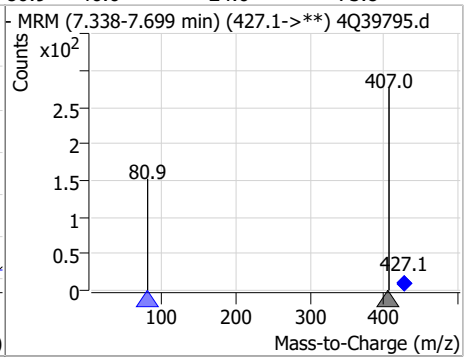


Perfluorinated Compounds by LC/MS/MS

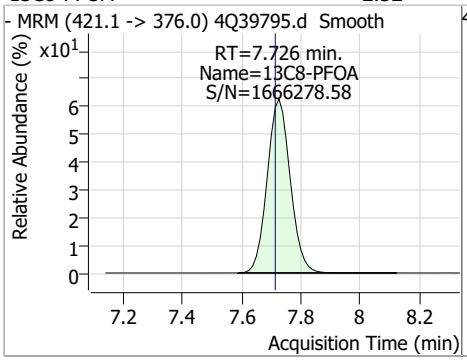
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.75	7.47	0.01	5201	427.1 -> 80.9	46.6	24.6	73.8

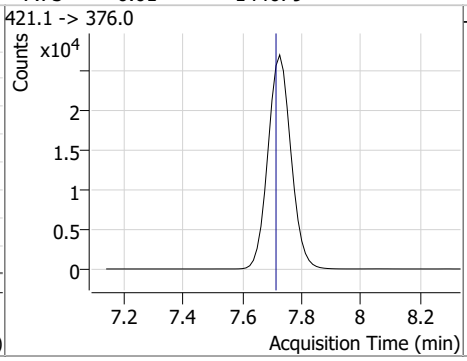


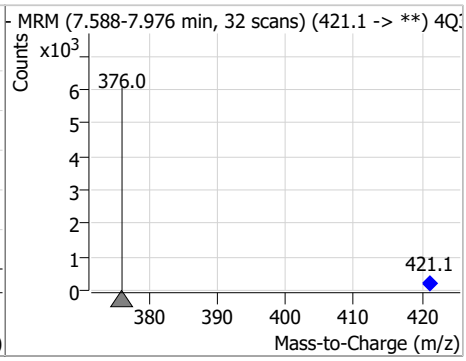




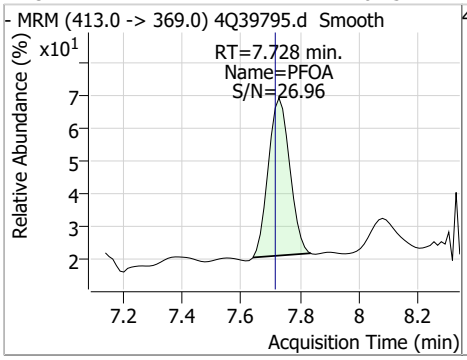
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.73	0.01	144679				

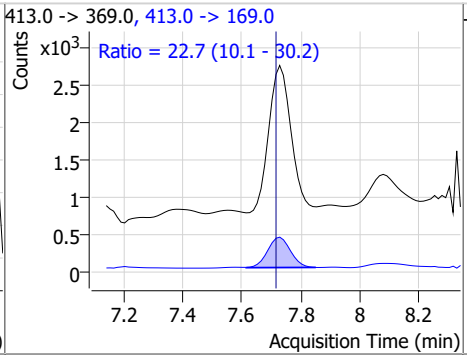


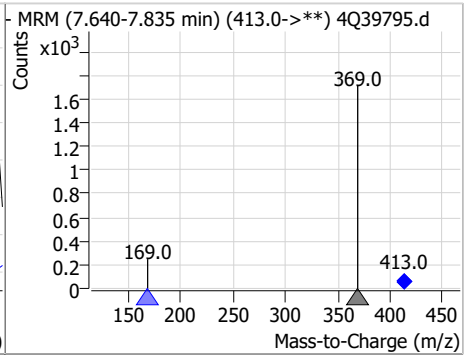




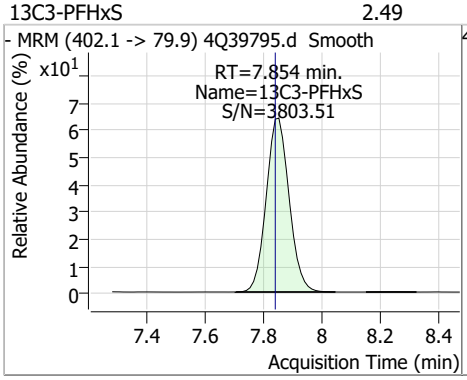
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.15	7.73	0.01	9567	413.0 -> 169.0	22.7	10.1	30.2

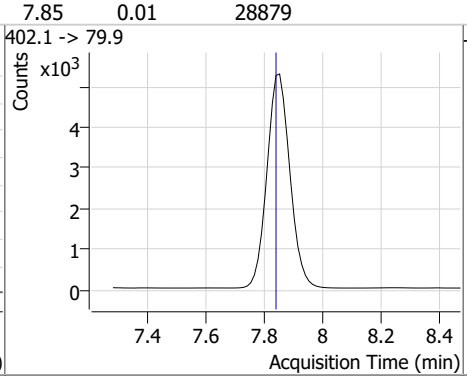


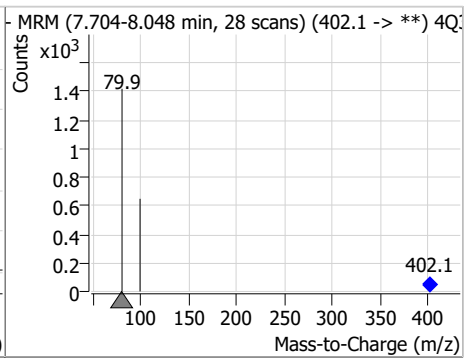




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.49	7.85	0.01	28879				

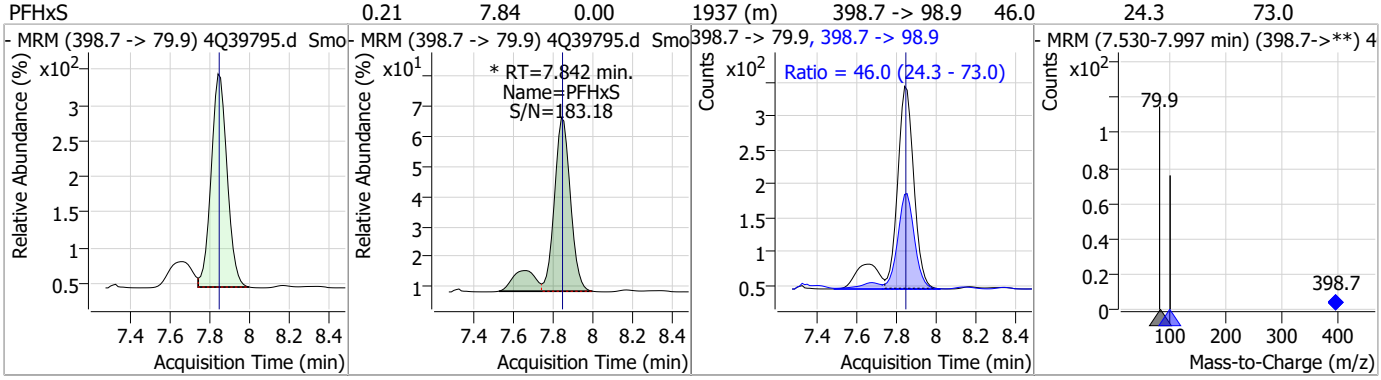




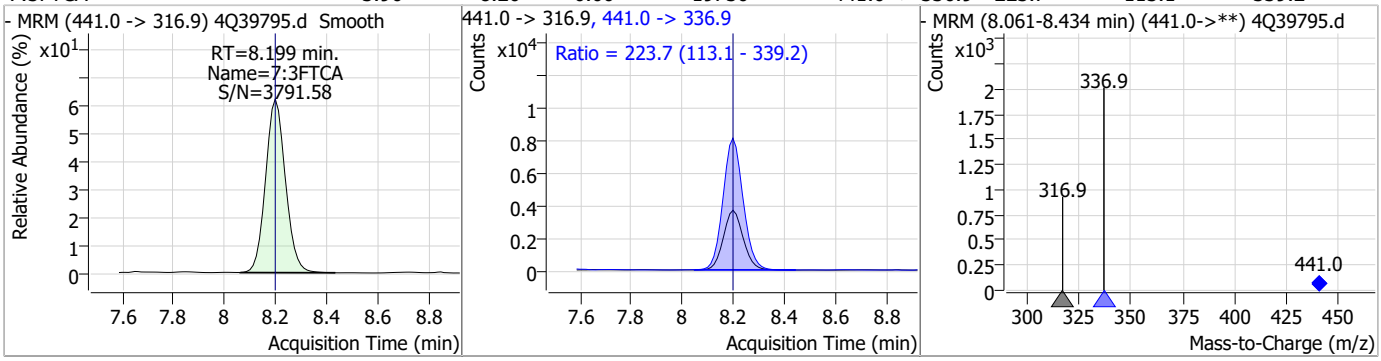


Perfluorinated Compounds by LC/MS/MS

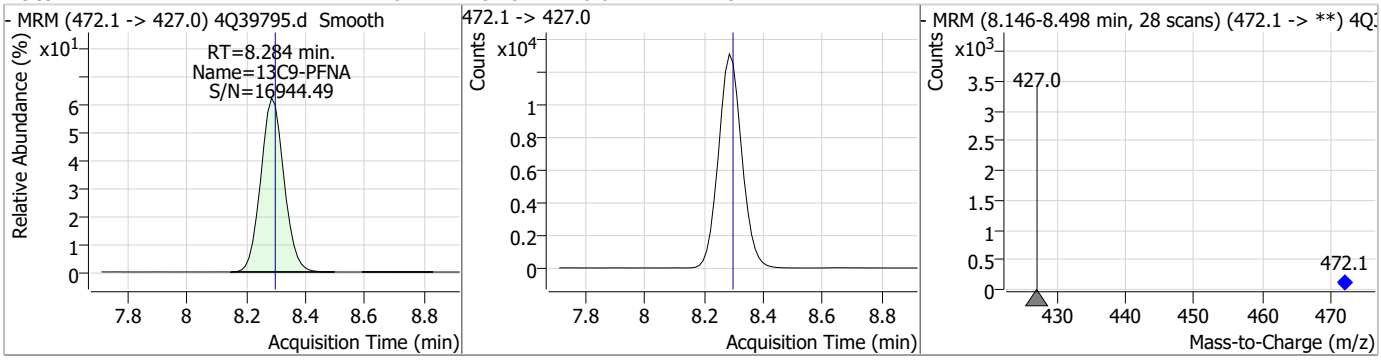
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.21	7.84	0.00	1937 (m)	398.7 -> 98.9	46.0	24.3	73.0



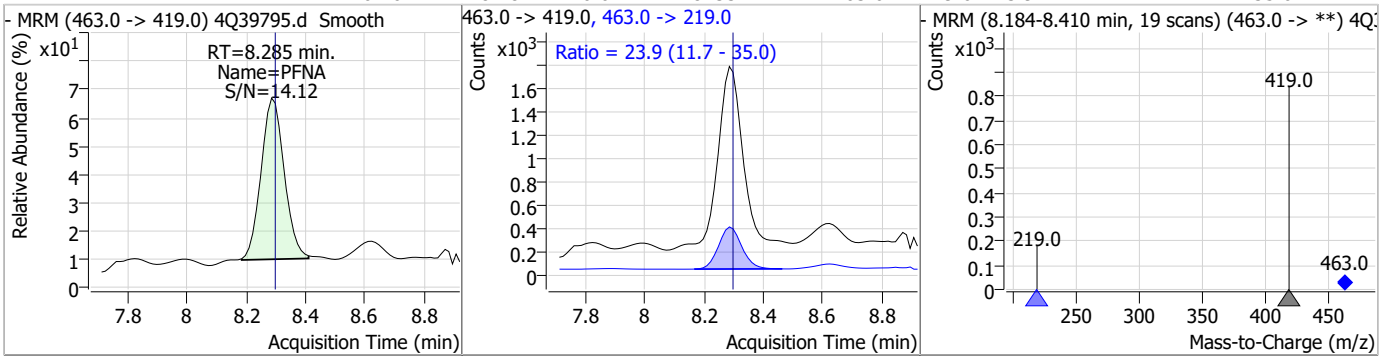
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	3.96	8.20	0.00	19730	441.0 -> 336.9	223.7	113.1	339.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	8.28	-0.01	71157				

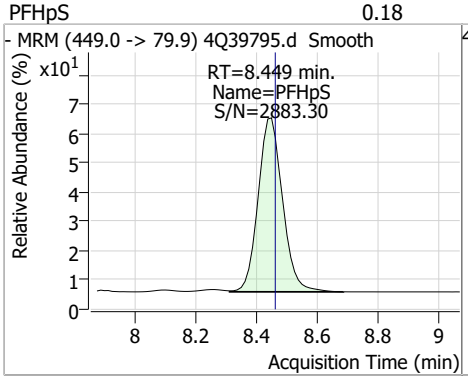


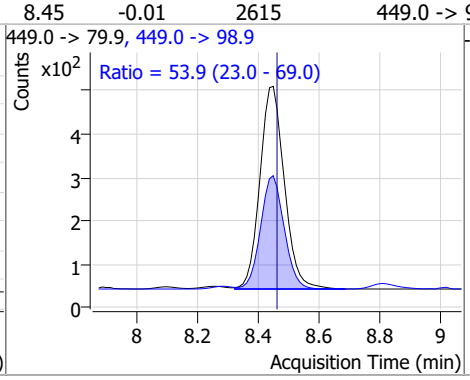
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.16	8.28	-0.01	8233	463.0 -> 219.0	23.9	11.7	35.0

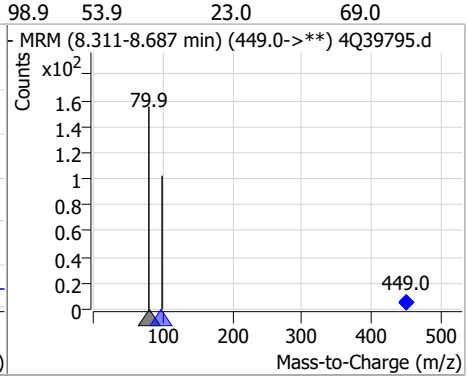


Perfluorinated Compounds by LC/MS/MS

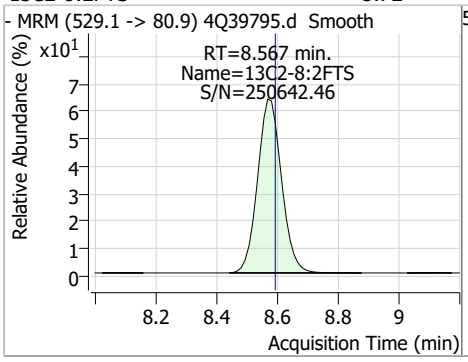
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.18	8.45	-0.01	2615	449.0 -> 98.9	53.9	23.0	69.0

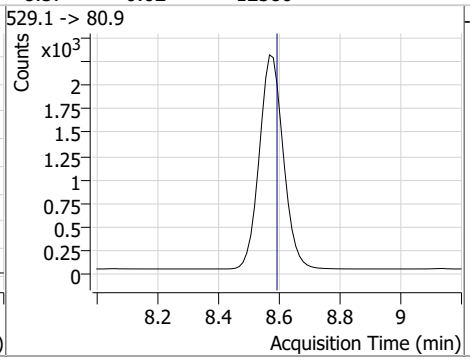


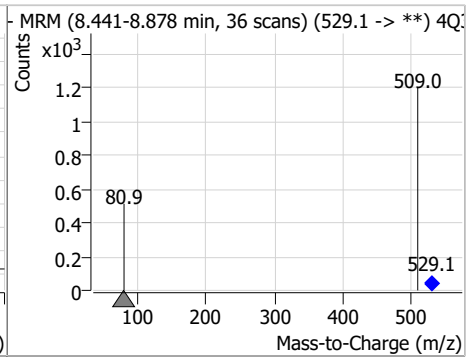




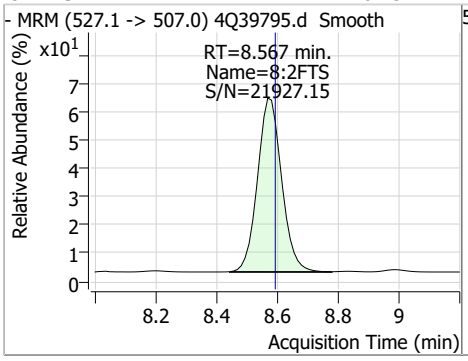
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.72	8.57	-0.02	12580				

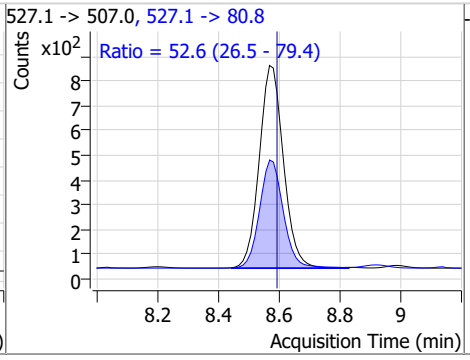


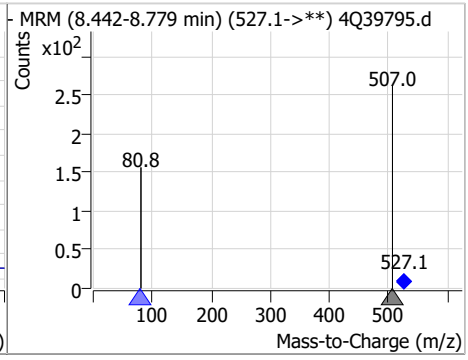




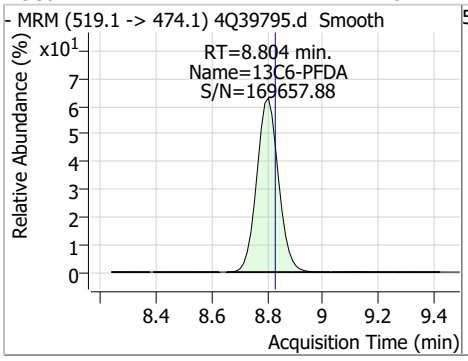
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.75	8.57	-0.02	4541	527.1 -> 80.8	52.6	26.5	79.4

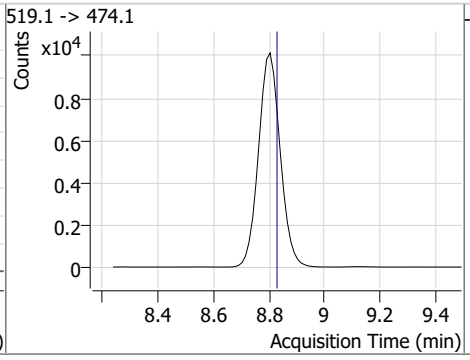


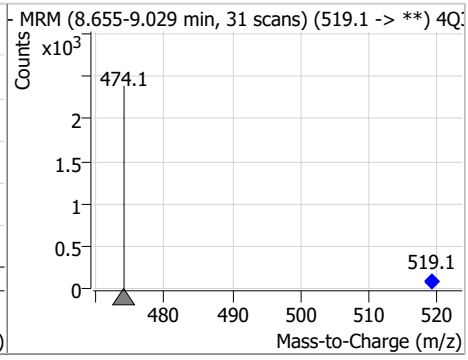




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.18	8.80	-0.02	54319				

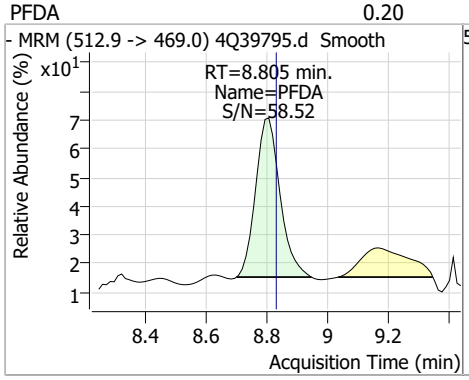


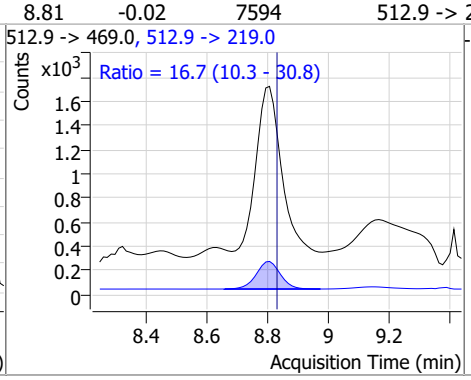


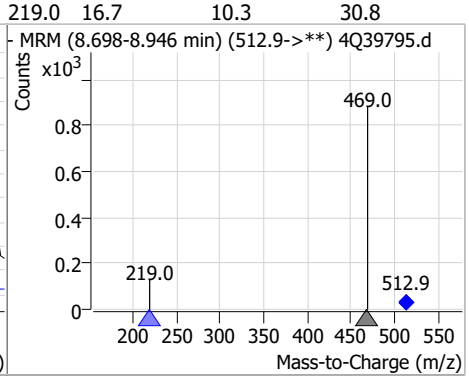


Perfluorinated Compounds by LC/MS/MS

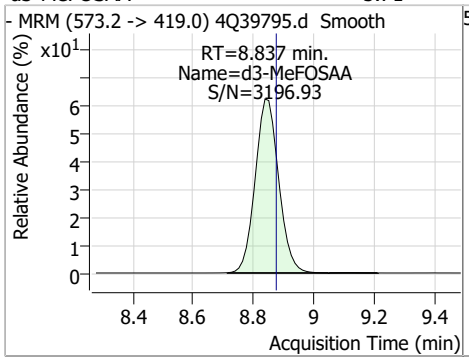
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.20	8.81	-0.02	7594	512.9 -> 219.0	16.7	10.3	30.8

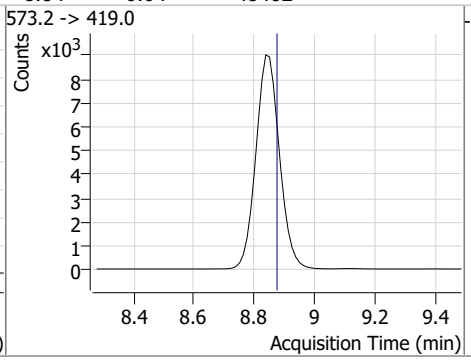


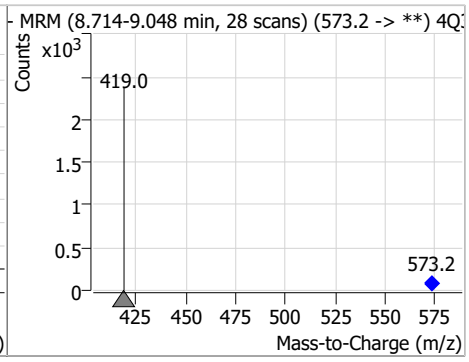




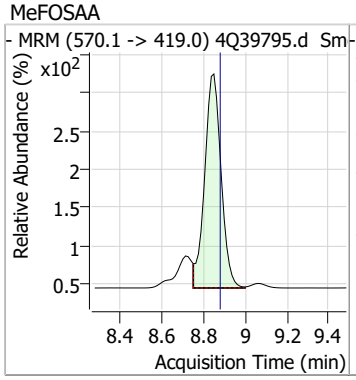
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.71	8.84	-0.04	48402				

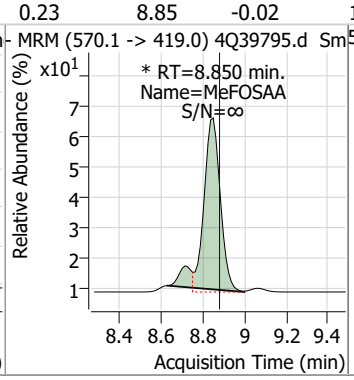


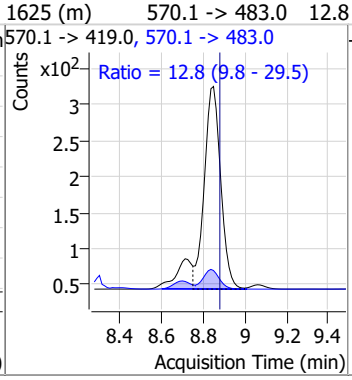


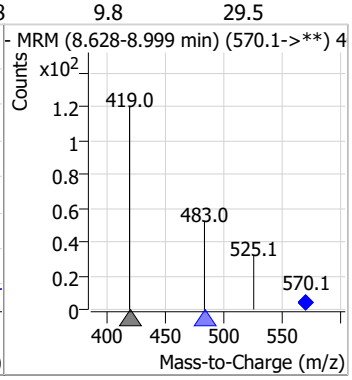


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.23	8.85	-0.02	1625 (m)	570.1 -> 483.0	12.8	9.8	29.5

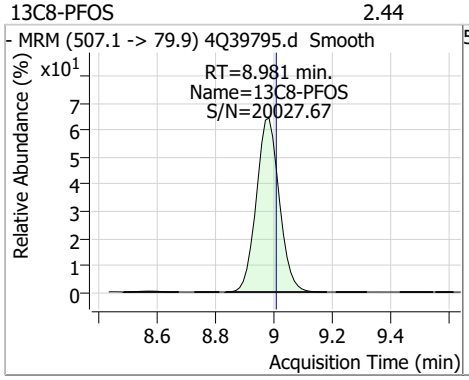


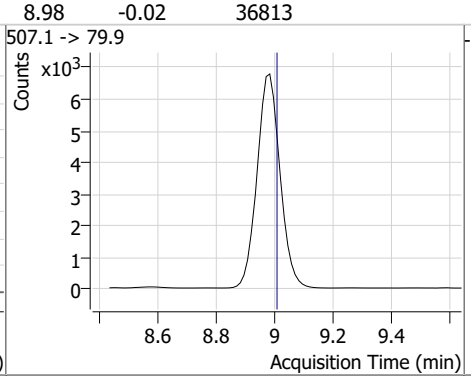


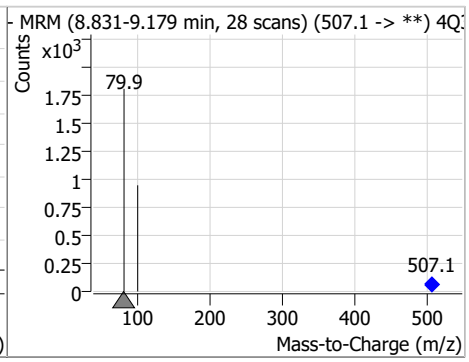




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.98	-0.02	36813				

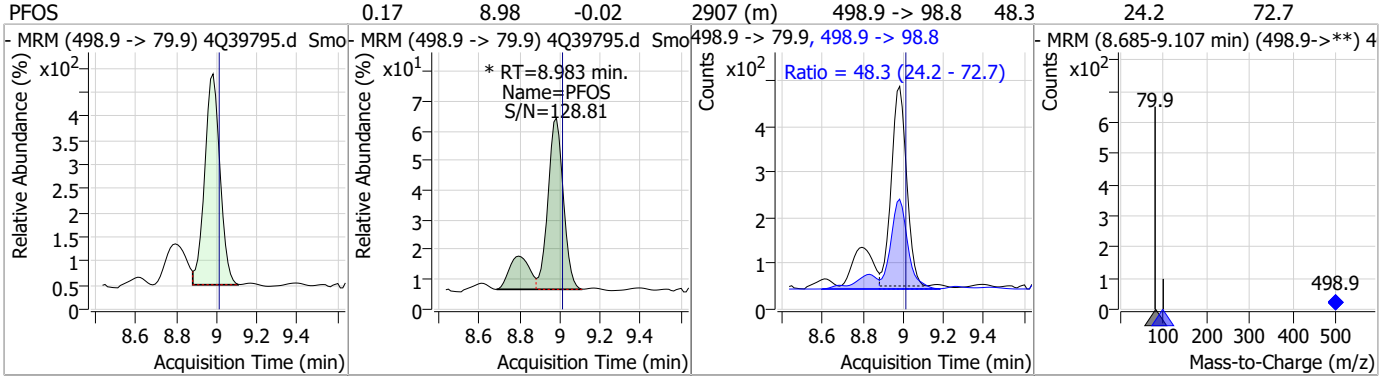




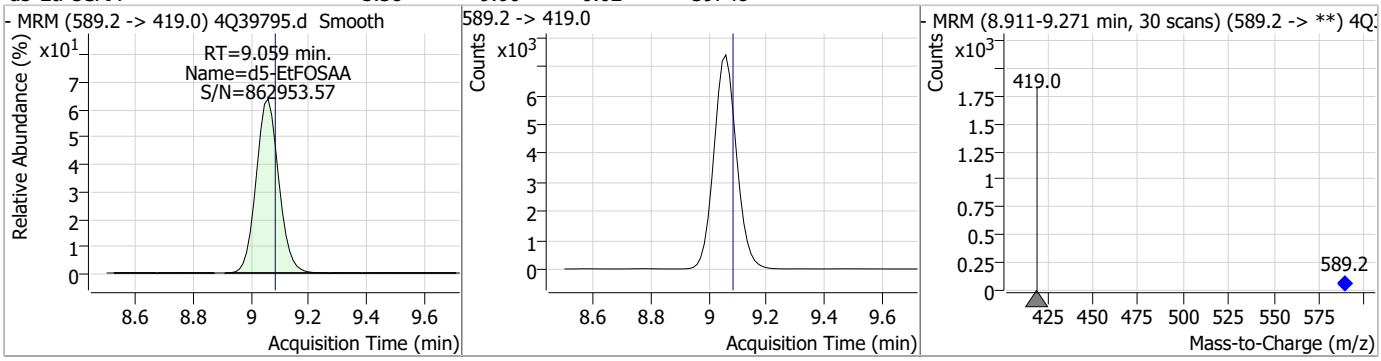


Perfluorinated Compounds by LC/MS/MS

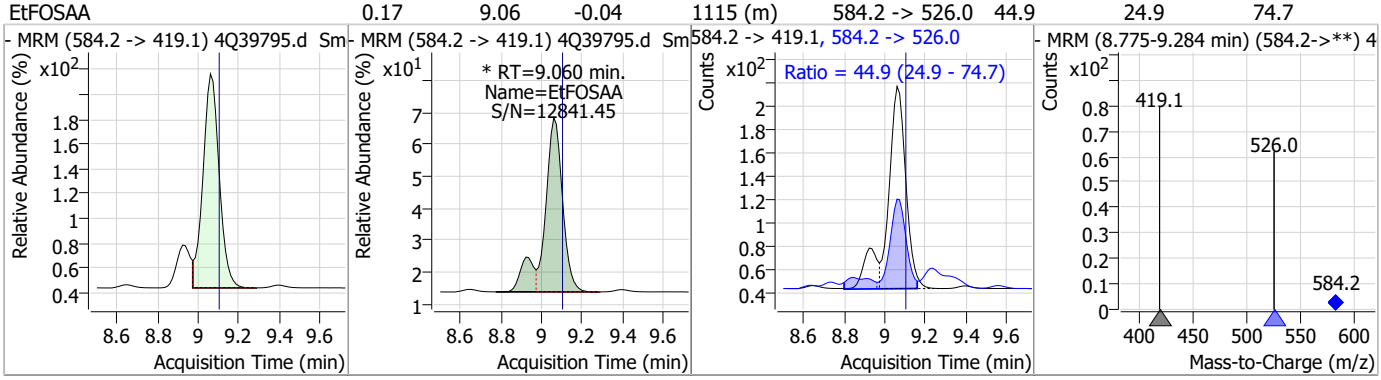
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.98	-0.02	2907 (m)	498.9 -> 98.8	48.3	24.2	72.7



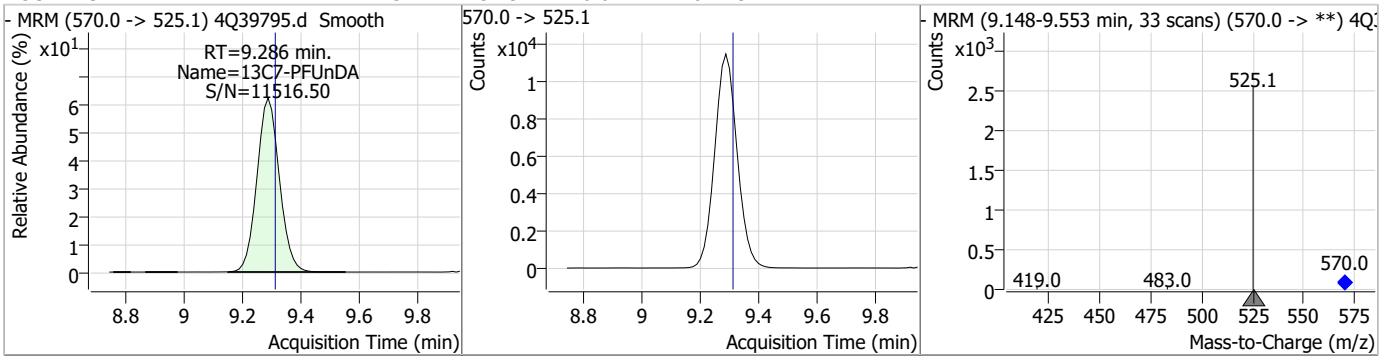
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.38	9.06	-0.02	39748				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.17	9.06	-0.04	1115 (m)	584.2 -> 526.0	44.9	24.9	74.7

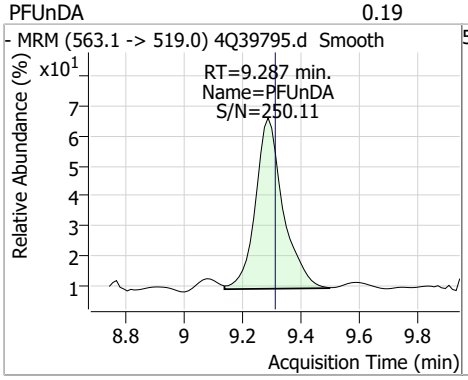


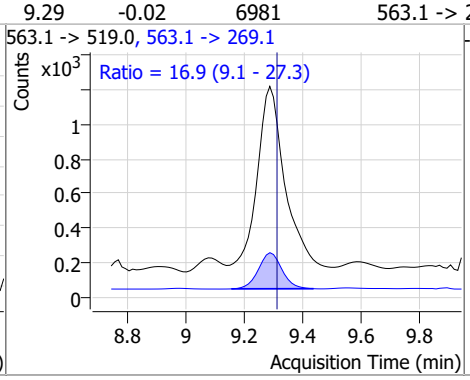
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	9.29	-0.02	61479				

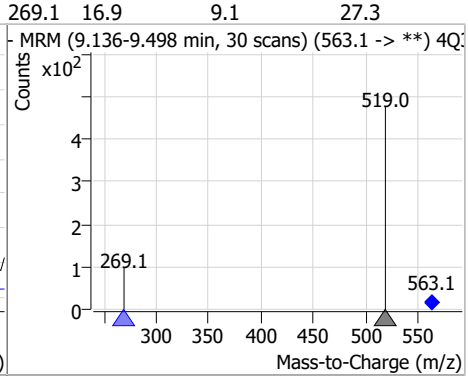


Perfluorinated Compounds by LC/MS/MS

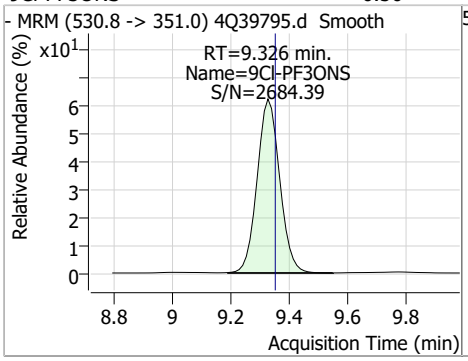
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.19	9.29	-0.02	6981	563.1 -> 269.1	16.9	9.1	27.3

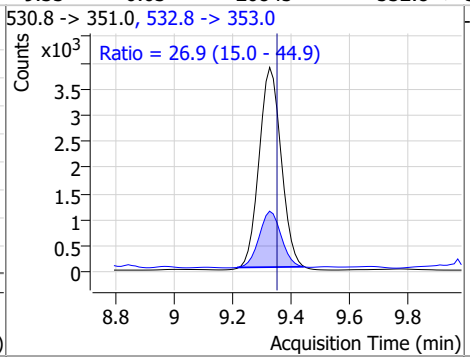


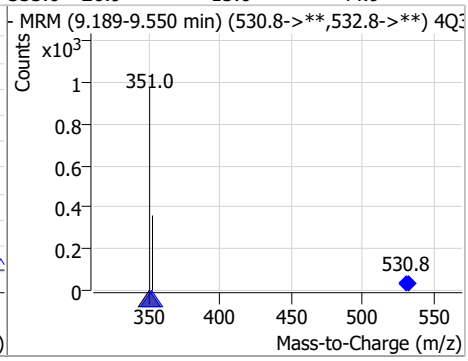




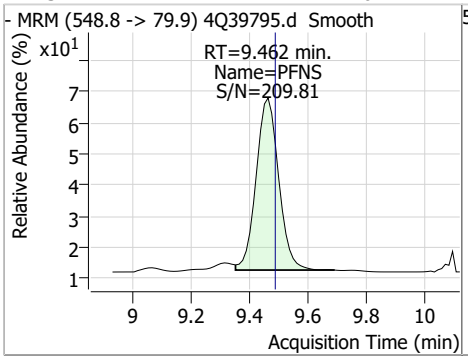
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.56	9.33	-0.03	20845	532.8 -> 353.0	26.9	15.0	44.9

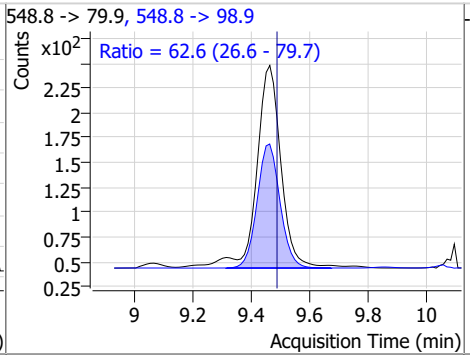


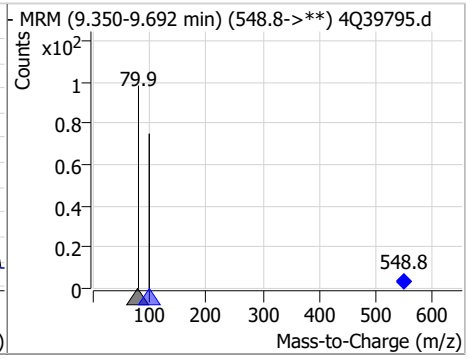




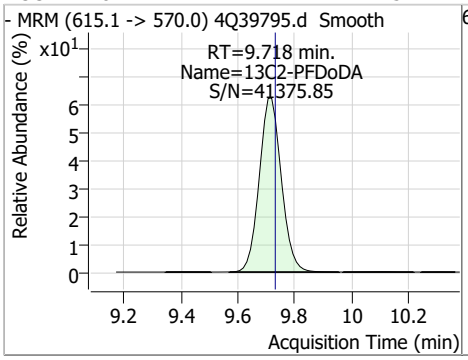
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.17	9.46	-0.02	1090	548.8 -> 98.9	62.6	26.6	79.7

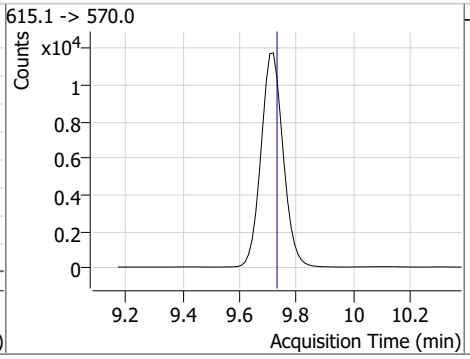


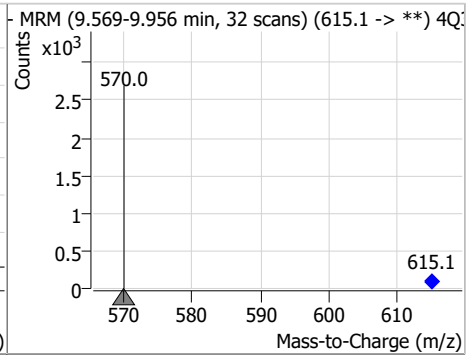




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	9.72	-0.01	63326				

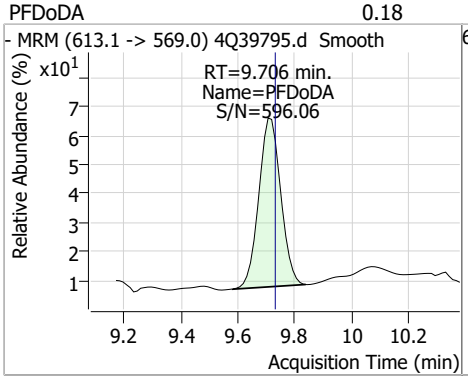


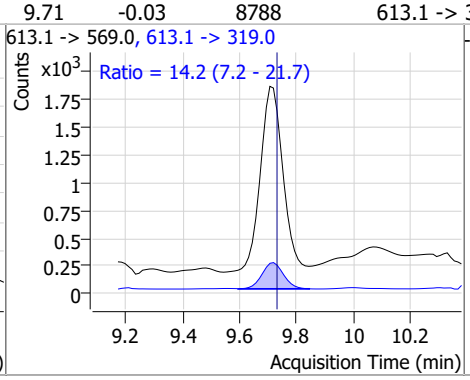


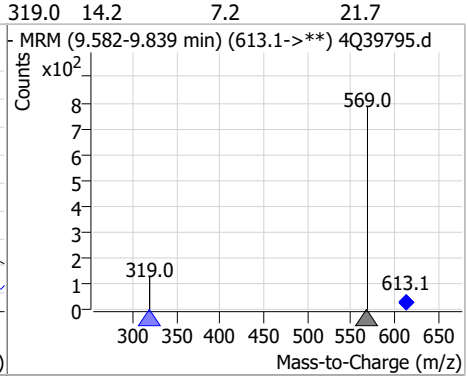


Perfluorinated Compounds by LC/MS/MS

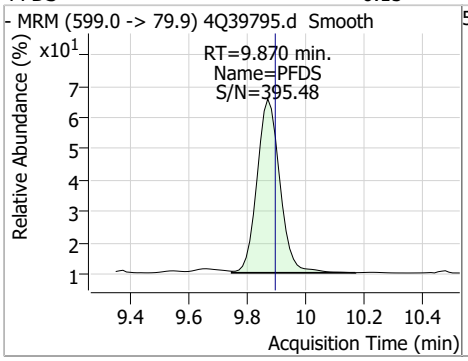
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.18	9.71	-0.03	8788	613.1 -> 319.0	14.2	7.2	21.7

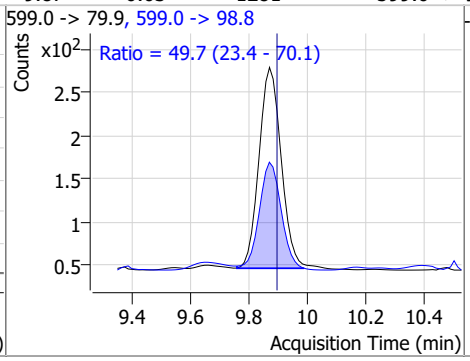


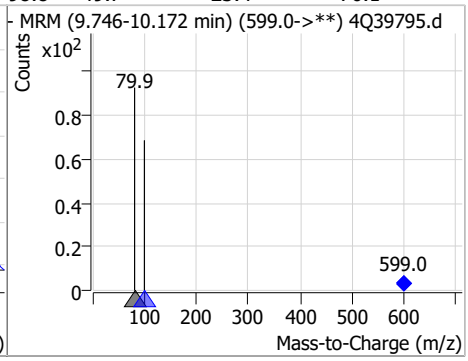




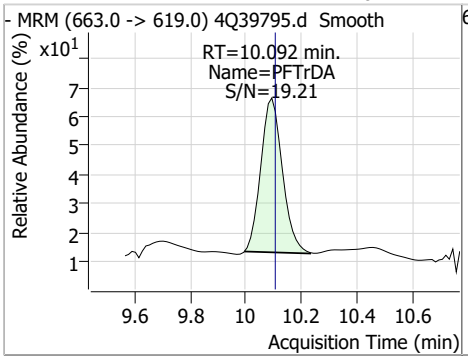
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.15	9.87	-0.03	1281	599.0 -> 98.8	49.7	23.4	70.1

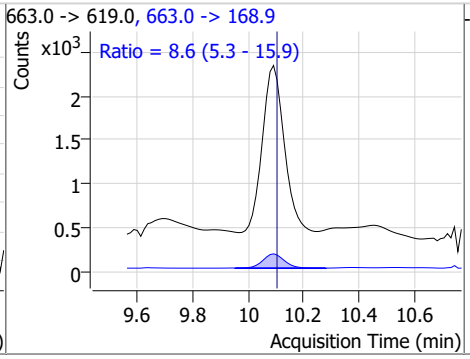


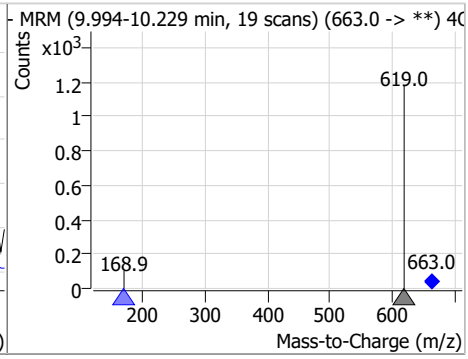




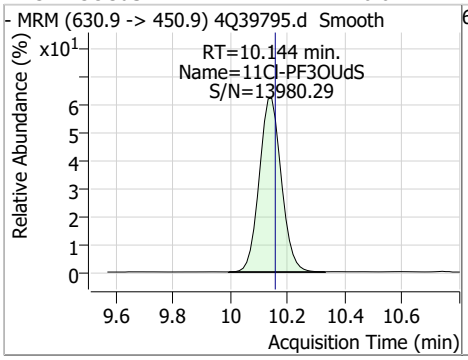
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.17	10.09	-0.01	10052	663.0 -> 168.9	8.6	5.3	15.9

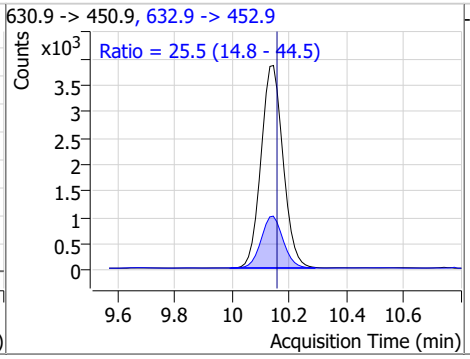


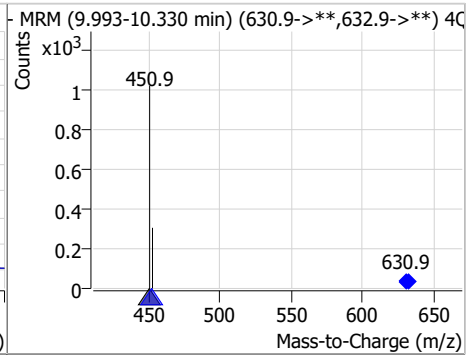




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.67	10.14	-0.01	20570	632.9 -> 452.9	25.5	14.8	44.5

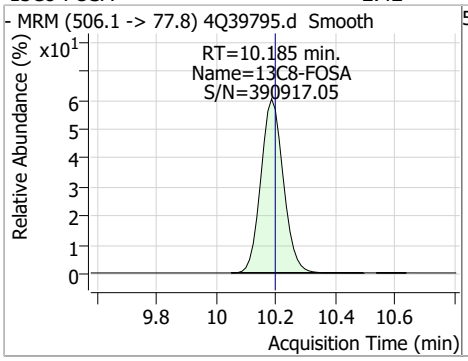


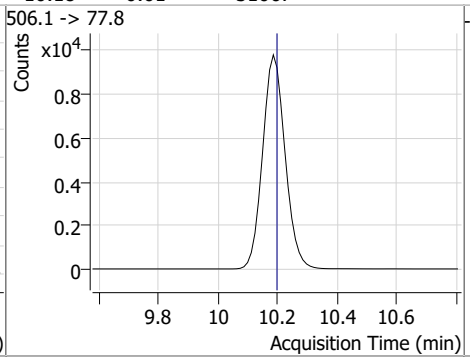


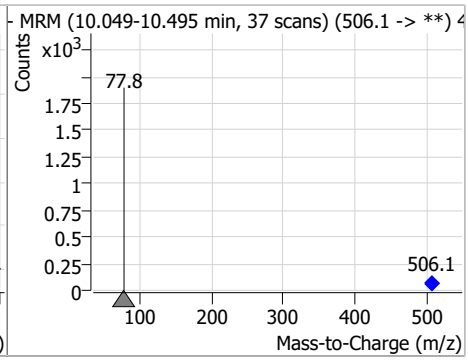


Perfluorinated Compounds by LC/MS/MS

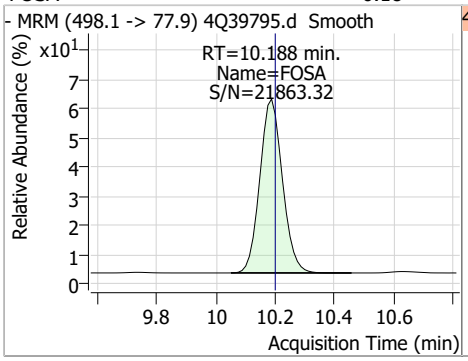
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.42	10.18	-0.01	51067				

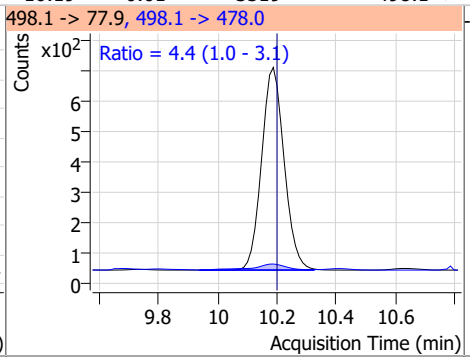


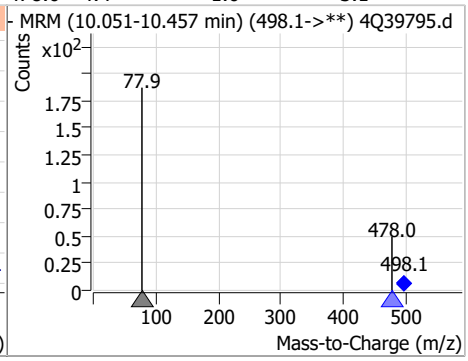




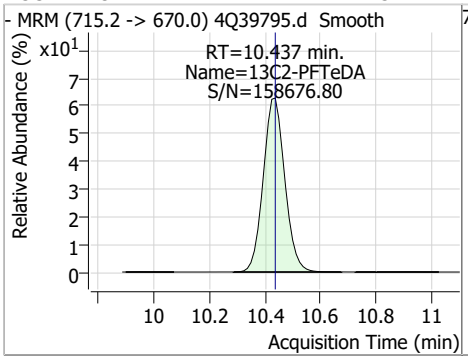
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.18	10.19	-0.01	3519	498.1 -> 478.0	4.4	1.0	3.1

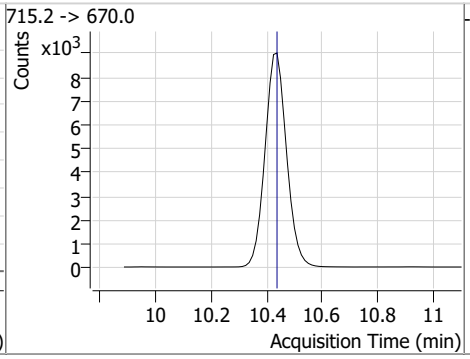


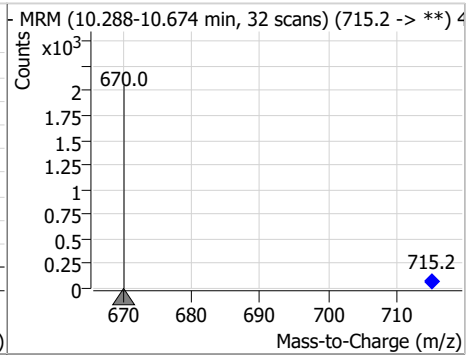




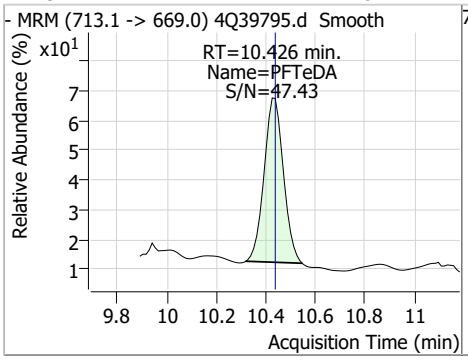
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.34	10.44	0.00	47956				

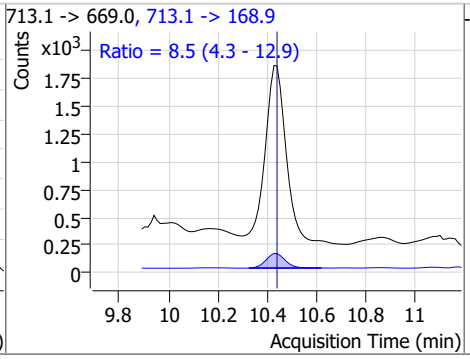


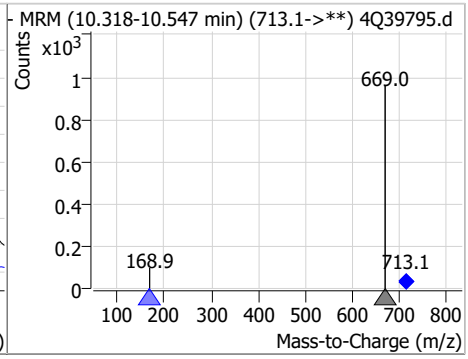




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.17	10.43	-0.01	8270	713.1 -> 168.9	8.5	4.3	12.9

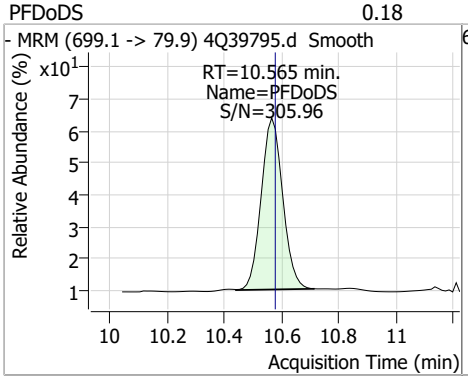


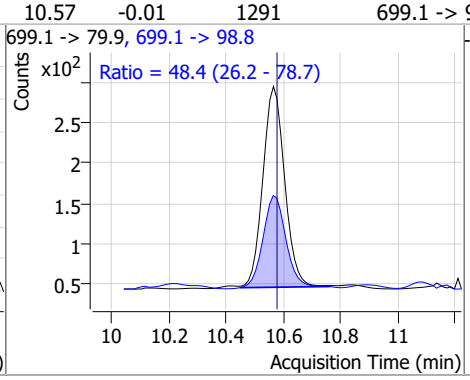


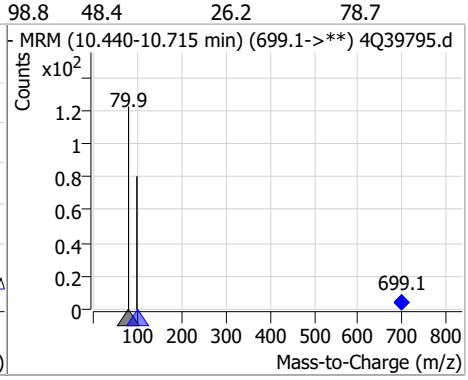


Perfluorinated Compounds by LC/MS/MS

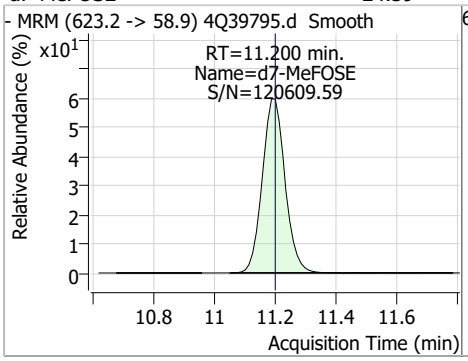
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.18	10.57	-0.01	1291	699.1 -> 98.8	48.4	26.2	78.7

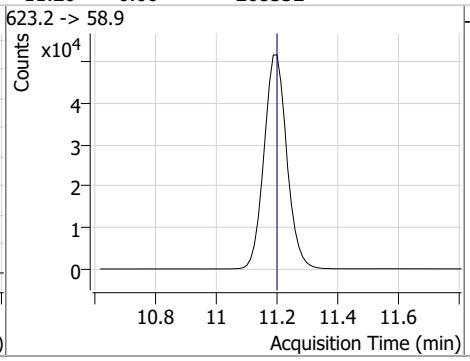


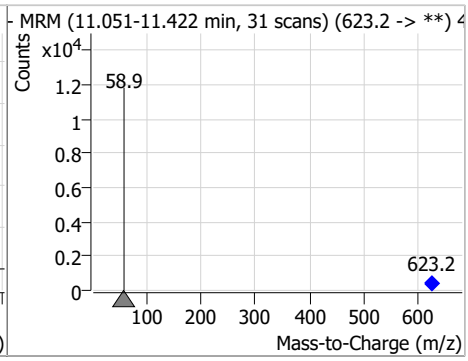




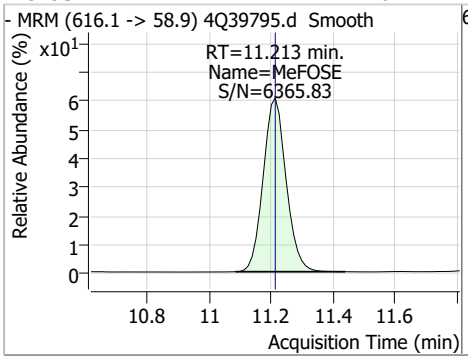
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.39	11.20	0.00	268552				

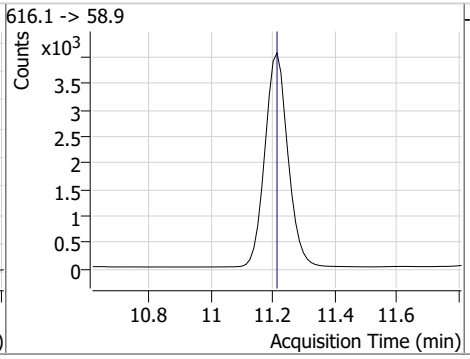


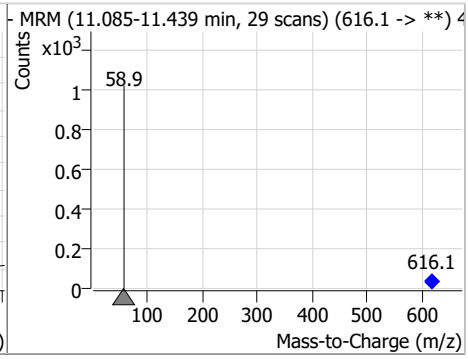




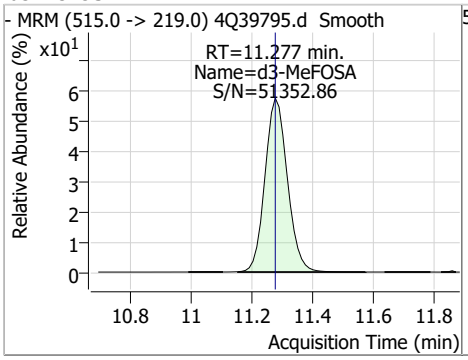
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.82	11.21	0.00	20603				

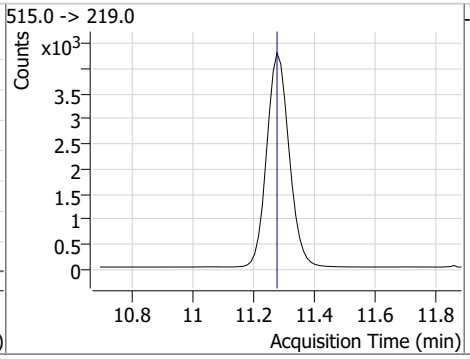


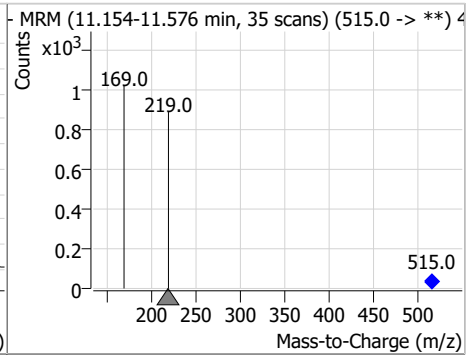




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.27	11.28	0.00	21906				

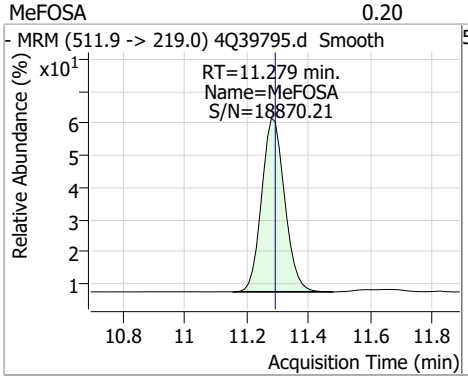


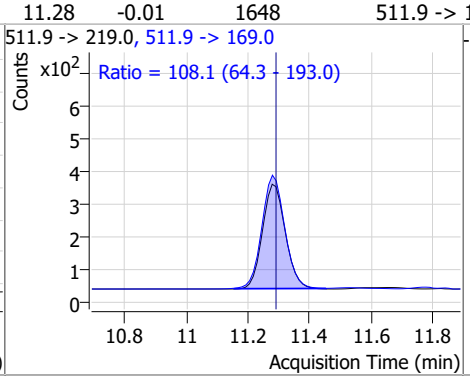


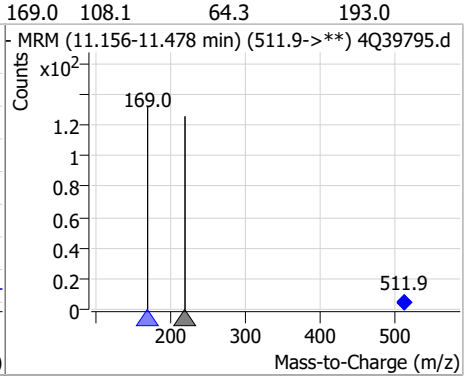


Perfluorinated Compounds by LC/MS/MS

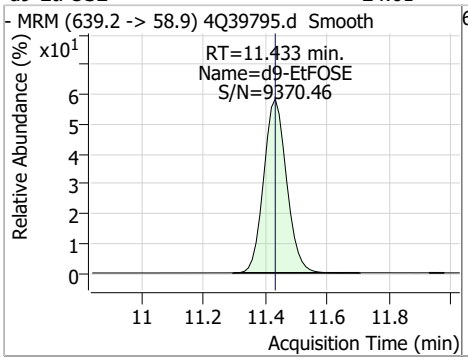
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.20	11.28	-0.01	1648	511.9 -> 169.0	108.1	64.3	193.0

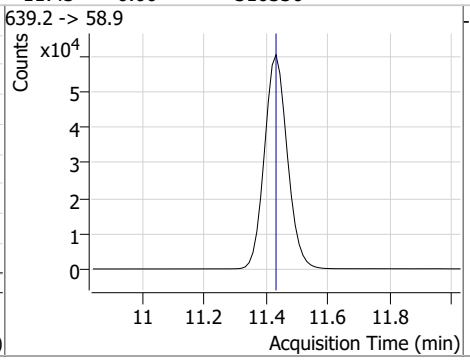


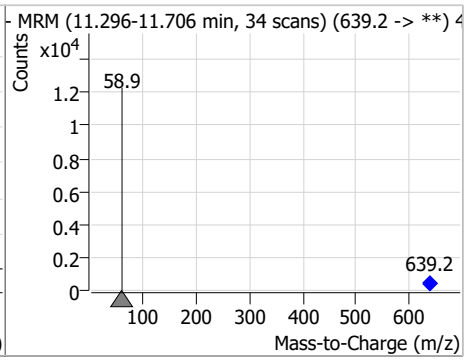




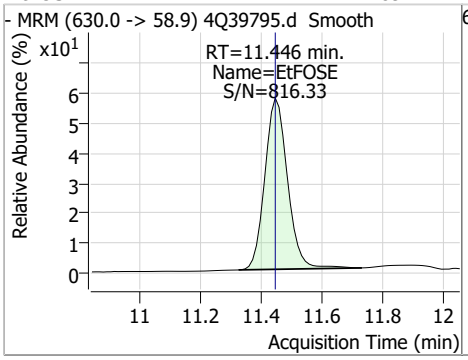
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.61	11.43	0.00	310336				

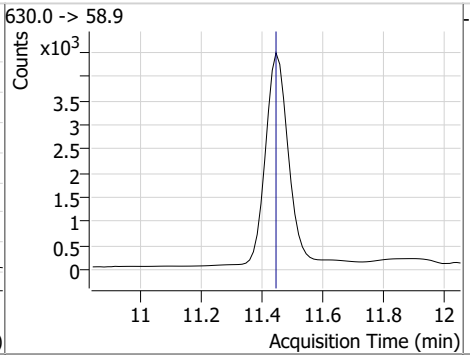


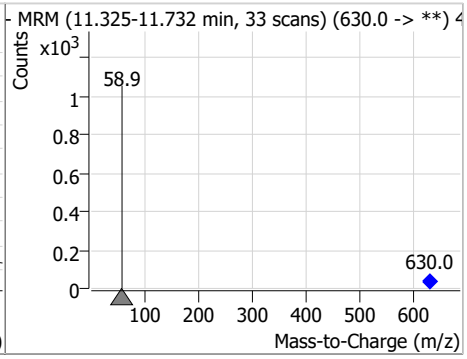




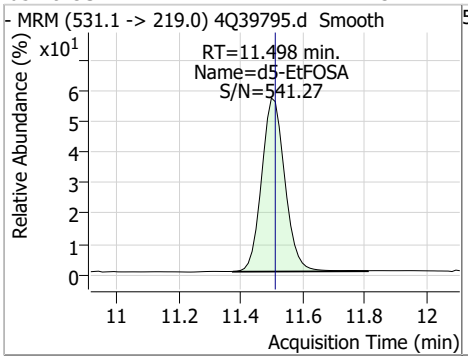
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.89	11.45	0.00	22782				

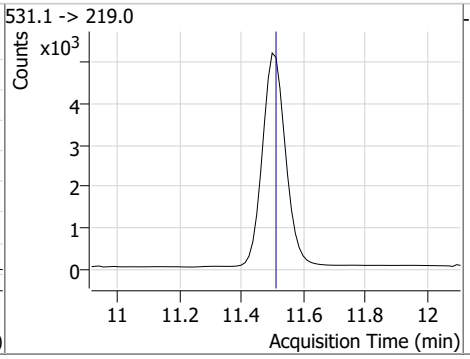


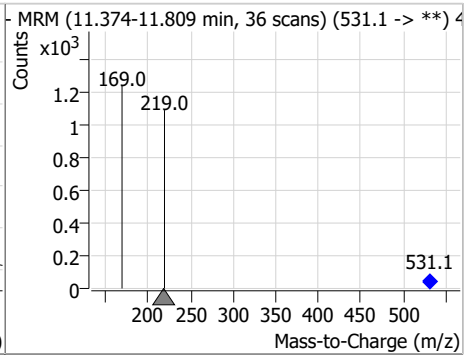




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	11.50	-0.01	26691				

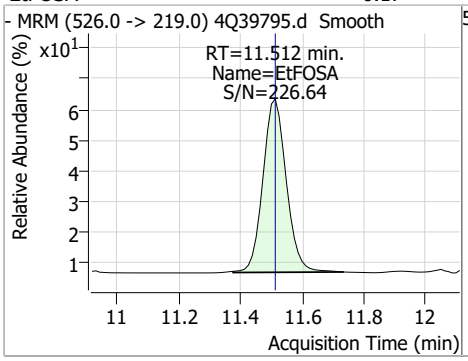


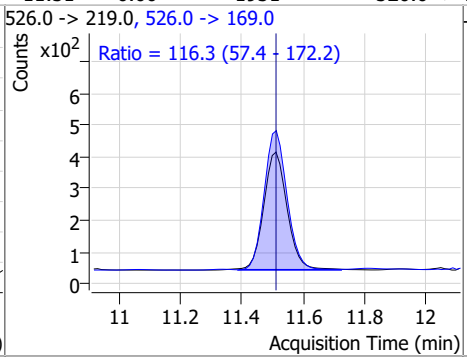


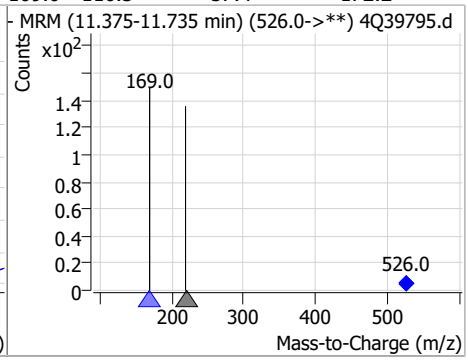


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.17	11.51	0.00	1951	526.0 -> 169.0	116.3	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q572-CC571
Lab FileID: 4Q39795.D
Injection Time: 01/26/23 14:12

Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:21 Natasha Gumtie
Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.84	Split peak
MeFOSAA	2355-31-9		8.85	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.98	Split peak
EtFOSAA	2991-50-6		9.06	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
01/29/23 09:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q39802.d
Operator : natashag
Acq. Method : 1633full.m
Acq. Date-Time : 1/26/2023 4:54:37 PM
Sample Name : cc571-4
Vial : P1-A5
DA Method File : 1633_012423_S4Q571.quantmethod.xml
Batch Name : s4q572.batch.bin
Sample Information : op95096,S4Q572,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.086	216.8 -> 171.9	406020	10.00	µg/L	0.000
M5-PFPeA	4.763	268.3 -> 223.0	273243	5.00	µg/L	0.000
M5-PFHxA	6.060	318.0 -> 273.0	183416	2.50	µg/L	0.000
M4-PFHpA	7.005	367.1 -> 322.0	101467	2.50	µg/L	-0.025
M8-PFOA	7.688	421.1 -> 376.0	151846	2.50	µg/L	-0.026
M9-PFNA	8.259	472.1 -> 427.0	77937	1.25	µg/L	-0.038
M6-PFDA	8.792	519.1 -> 474.1	56086	1.25	µg/L	-0.037
M7-PFUnDA	9.286	570.0 -> 525.1	72580	1.25	µg/L	-0.025
M2-PFDoDA	9.718	615.1 -> 570.0	70391	1.25	µg/L	-0.013
M2-PFTeDA	10.437	715.2 -> 670.0	57447	1.25	µg/L	0.000
M8-FOSA	10.185	506.1 -> 77.8	55845	2.50	µg/L	-0.012
M3-PFBS	5.977	302.1 -> 79.9	47380	2.50	µg/L	0.000
M3-PFHxS	7.816	402.1 -> 79.9	32871	2.50	µg/L	-0.025
M8-PFOS	8.969	507.1 -> 79.9	39628	2.50	µg/L	-0.037
M2-4:2FTS	5.709	329.1 -> 80.9	4664	5.00	µg/L	0.000
M2-6:2FTS	7.437	429.1 -> 80.9	9541	5.00	µg/L	-0.025
M2-8:2FTS	8.554	529.1 -> 80.9	13697	5.00	µg/L	-0.037
M3-MeFOSAA	8.825	573.2 -> 419.0	53288	5.00	µg/L	-0.049
M3-HFPO-DA	6.452	286.9 -> 168.9	143546	10.00	µg/L	0.000
M5-EtFOSAA	9.047	589.2 -> 419.0	43978	5.00	µg/L	-0.037
M7-MeFOSE	11.200	623.2 -> 58.9	289004	25.00	µg/L	0.000
M9-EtFOSE	11.445	639.2 -> 58.9	328730	25.00	µg/L	0.012
M5-EtFOSA	11.511	531.1 -> 219.0	30345	2.50	µg/L	0.000
M3-MeFOSA	11.290	515.0 -> 219.0	24877	2.50	µg/L	0.012
13C4-PFOS	8.969	502.8 -> 79.9	40699	2.50	µg/L	-0.037
13C3-PFBA	3.090	216.0 -> 172.0	227797	5.00	µg/L	0.000
18O2-PFHxS	7.815	403.0 -> 83.9	21983	2.50	µg/L	-0.025
13C4-PFOA	7.688	417.1 -> 372.0	173319	2.50	µg/L	-0.026
13C2-PFDA	8.792	515.1 -> 470.1	49421	1.25	µg/L	-0.037
13C5-PFNA	8.259	468.0 -> 423.0	89844	1.25	µg/L	-0.038
13C2-PFHxA	6.061	315.1 -> 270.0	168826	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.709	329.1 -> 80.9	4664	5.89	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.7%		
13C2-6:2FTS	7.437	429.1 -> 80.9	9541	5.38	µg/L	-0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C2-8:2FTS	8.554	529.1 -> 80.9	13697	5.64	µg/L	-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
13C2-PFDoDA	9.718	615.1 -> 570.0	70391	1.47	µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.4%		
13C2-PFTeDA	10.437	715.2 -> 670.0	57447	1.68	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 134.7%		
13C3-PFBS	5.977	302.1 -> 79.9	47380	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFHxS	7.816	402.1 -> 79.9	32871	2.56	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C4-PFBA	3.086	216.8 -> 171.9	406020	9.88 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	7.005	367.1 -> 322.0	101467	2.58 µg/L		-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFHxA	6.060	318.0 -> 273.0	183416	2.58 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C5-PFPeA	4.763	268.3 -> 223.0	273243	4.98 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C6-PFDA	8.792	519.1 -> 474.1	56086	1.28 µg/L		-0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C7-PFUnDA	9.286	570.0 -> 525.1	72580	1.55 µg/L		-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 124.0%		
13C8-FOSA	10.185	506.1 -> 77.8	55845	2.40 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C8-PFOA	7.688	421.1 -> 376.0	151846	2.44 µg/L		-0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-PFOS	8.969	507.1 -> 79.9	39628	2.38 µg/L		-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C9-PFNA	8.259	472.1 -> 427.0	77937	1.22 µg/L		-0.038
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%		
d3-MeFOSAA	8.825	573.2 -> 419.0	53288	5.70 µg/L		-0.049
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.0%		
13C3-HFPO-DA	6.452	286.9 -> 168.9	143546	10.66 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
d3-MeFOSA	11.290	515.0 -> 219.0	24877	2.34 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%		
d5-EtFOSAA	9.047	589.2 -> 419.0	43978	5.40 µg/L		-0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
d7-MeFOSE	11.200	623.2 -> 58.9	289004	23.81 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
d9-EtFOSE	11.445	639.2 -> 58.9	328730	23.65 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
d5-EtFOSA	11.511	531.1 -> 219.0	30345	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%		
Target Compounds						QValue
4:2FTS	5.710	327.1 -> 307.0	69371	9.10 µg/L		99
		327.1 -> 80.9	32755			
6:2FTS	7.437	427.1 -> 407.0	75006	9.92 µg/L		97
		427.1 -> 80.9	35447			
8:2FTS	8.555	527.1 -> 507.0	62246	9.39 µg/L		99
		527.1 -> 80.8	32686			
EtFOSAA	9.060	584.2 -> 419.1	17593	2.39 µg/L	m	90
		584.2 -> 526.0	7571			
FOSA	10.188	498.1 -> 77.9	52679	2.44 µg/L		100
		498.1 -> 478.0	1057			
MeFOSAA	8.838	570.1 -> 419.0	19043	2.41 µg/L	m	99
		570.1 -> 483.0	3695			
PFBA	3.095	212.8 -> 168.9	101351	8.97 µg/L		100
PFBS	5.978	298.7 -> 79.9	45533	2.13 µg/L		98
		298.7 -> 98.8	15017			
PFDA	8.793	512.9 -> 469.0	100006	2.50 µg/L		99
		512.9 -> 219.0	20207			
PFDoDA	9.719	613.1 -> 569.0	127943	2.36 µg/L		99
		613.1 -> 319.0	18126			
PFDS	9.882	599.0 -> 79.9	20524	2.24 µg/L		95

Perfluorinated Compounds by LC/MS/MS

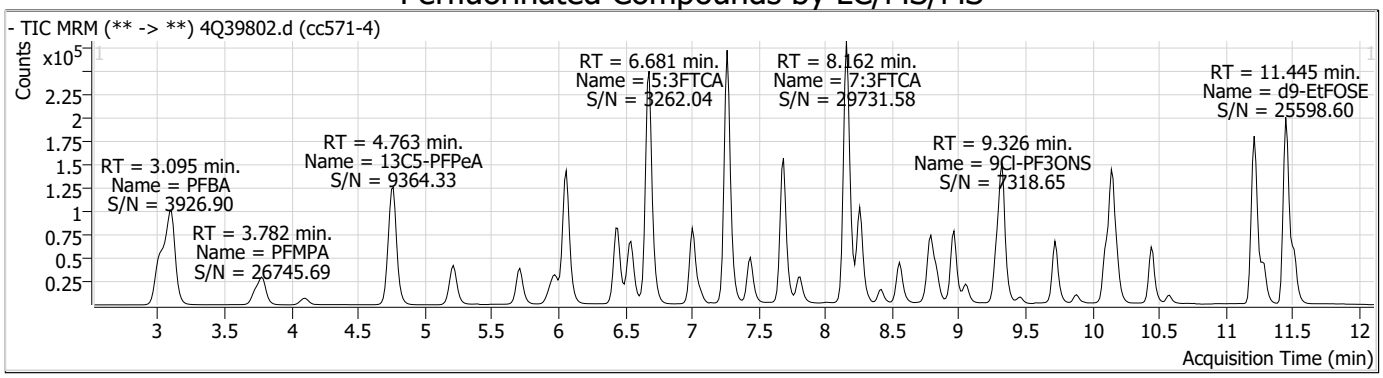
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	8956				
PFHpA	7.006	363.1 -> 319.0	146888	2.32	µg/L		97
		363.1 -> 169.0	23227				
PFHpS	8.424	449.0 -> 79.9	34639	2.16	µg/L		97
		449.0 -> 98.9	16705				
PFHxA	6.063	313.0 -> 269.0	167004	2.34	µg/L		99
		313.0 -> 118.9	5168				
PFHxS	7.817	398.7 -> 79.9	21814	2.05	µg/L	m	94
		398.7 -> 98.9	11498				
PFNA	8.259	463.0 -> 419.0	130705	2.31	µg/L		99
		463.0 -> 219.0	29794				
PFNS	9.462	548.8 -> 79.9	14495	2.06	µg/L		96
		548.8 -> 98.9	7300				
PFOA	7.690	413.0 -> 369.0	165582	2.45	µg/L		99
		413.0 -> 169.0	32731				
PFOS	8.970	498.9 -> 79.9	42579	2.30	µg/L	m	98
		498.9 -> 98.8	20125				
PFPeA	4.754	263.0 -> 219.0	291720	4.87	µg/L		100
PFPeS	7.069	349.1 -> 79.9	21624	2.11	µg/L		99
		349.1 -> 98.9	8592				
PFTeDA	10.438	713.1 -> 669.0	127475	2.21	µg/L		99
		713.1 -> 168.9	10286				
PFTrDA	10.104	663.0 -> 619.0	162016	2.44	µg/L		95
		663.0 -> 168.9	14407				
PFUnDA	9.287	563.1 -> 519.0	97896	2.23	µg/L		99
		563.1 -> 269.1	17301				
11Cl-PF3OUdS	10.144	630.9 -> 450.9	319228	9.51	µg/L		100
		632.9 -> 452.9	94290				
9Cl-PF3ONS	9.326	530.8 -> 351.0	348589	8.53	µg/L		99
		532.8 -> 353.0	102673				
ADONA	7.268	376.9 -> 250.9	682548	8.81	µg/L		99
		376.9 -> 84.8	235429				
HFPO-DA	6.453	284.9 -> 168.9	129226	9.55	µg/L		98
		284.9 -> 184.9	14633				
3:3FTCA	4.098	241.0 -> 177.0	30525	10.87	µg/L		99
		241.0 -> 117.0	2799				
5:3FTCA	6.681	341.0 -> 237.1	516816	54.48	µg/L		100
		341.0 -> 217.0	384599				
7:3FTCA	8.162	441.0 -> 316.9	299029	54.89	µg/L		100
		441.0 -> 336.9	674634				
EtFOSA	11.525	526.0 -> 219.0	28080	2.20	µg/L		96
		526.0 -> 169.0	33551				
EtFOSE	11.458	630.0 -> 58.9	321739	25.21	µg/L		100
MeFOSA	11.292	511.9 -> 219.0	22683	2.39	µg/L		90
		511.9 -> 169.0	26581				
MeFOSE	11.226	616.1 -> 58.9	309953	25.39	µg/L		100
PFDoDS	10.577	699.1 -> 79.9	18090	2.33	µg/L		94
		699.1 -> 98.8	10257				
NFDHA	5.929	295.0 -> 201.0	21027	4.49	µg/L		94
		295.0 -> 84.9	6760				
PFMBA	5.216	279.0 -> 85.1	170712	4.57	µg/L		100
PFMPA	3.782	229.0 -> 84.9	171827	4.46	µg/L		100
PFEESA	6.546	314.8 -> 134.9	247158	4.05	µg/L		100
		314.8 -> 82.9	8258				

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

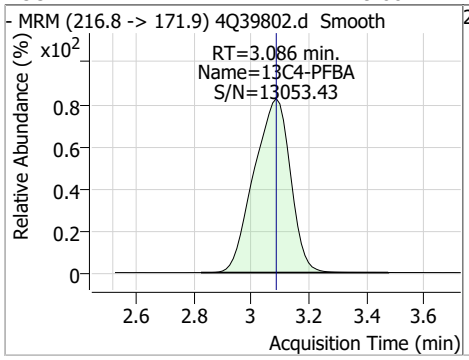
Perfluorinated Compounds by LC/MS/MS

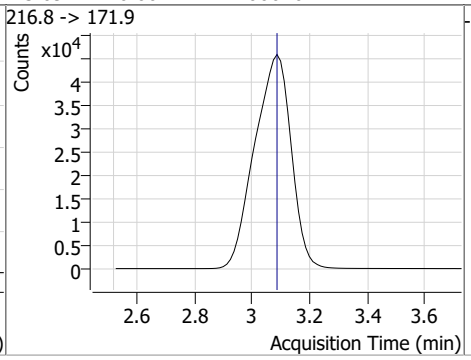
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

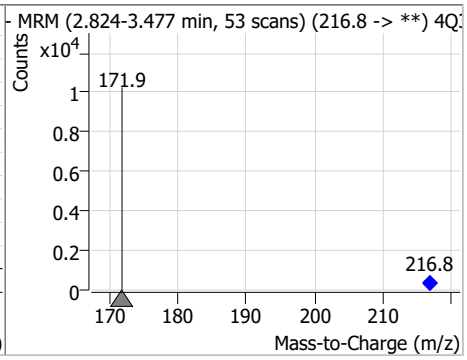
Perfluorinated Compounds by LC/MS/MS



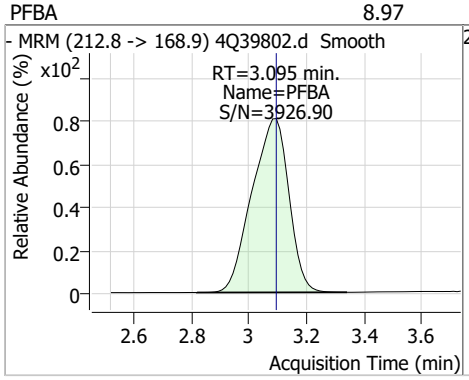
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.88	3.09	0.00	406020				

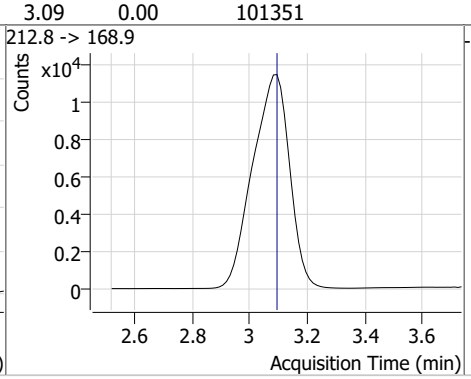


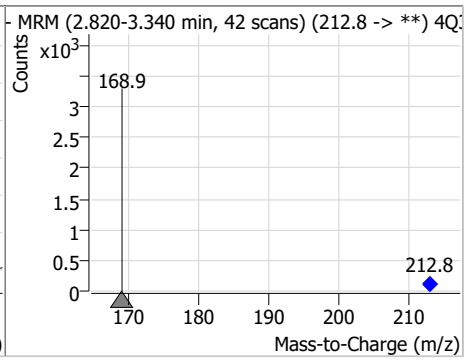




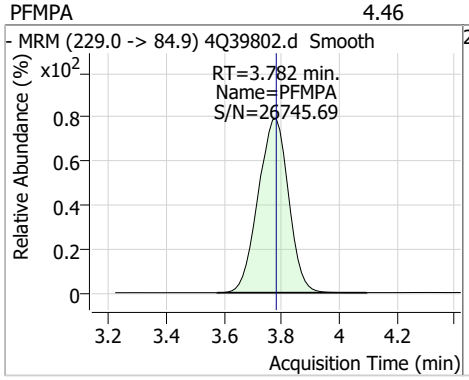
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.97	3.09	0.00	101351				

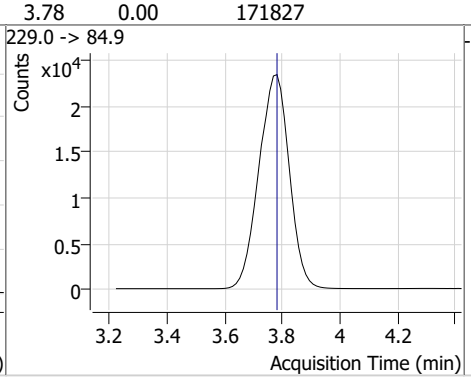


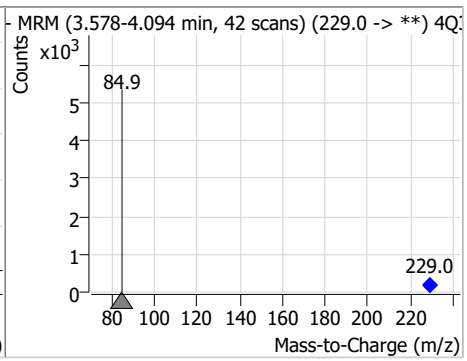




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.46	3.78	0.00	171827				

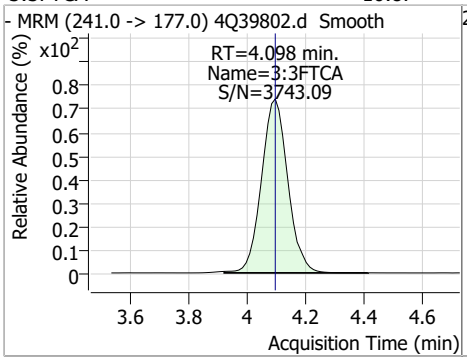


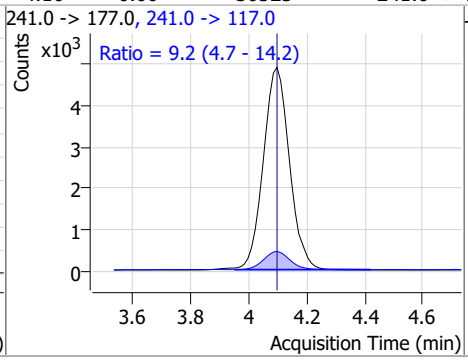


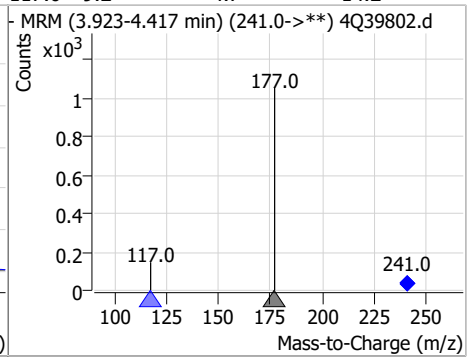


Perfluorinated Compounds by LC/MS/MS

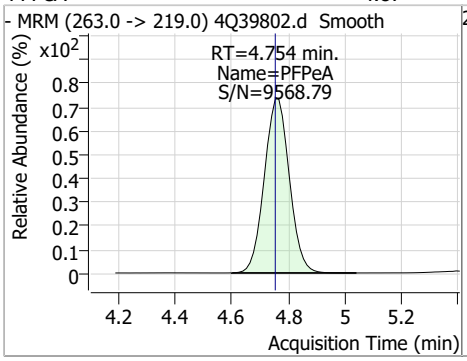
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.87	4.10	0.00	30525	241.0 -> 117.0	9.2	4.7	14.2

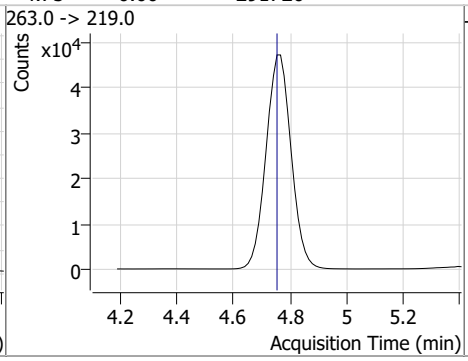


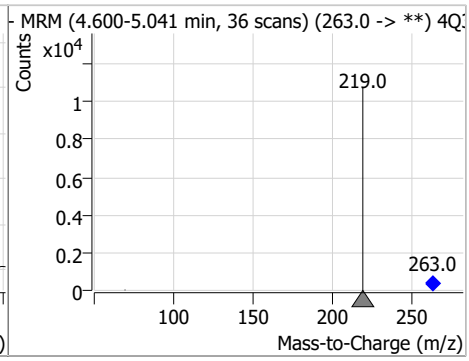




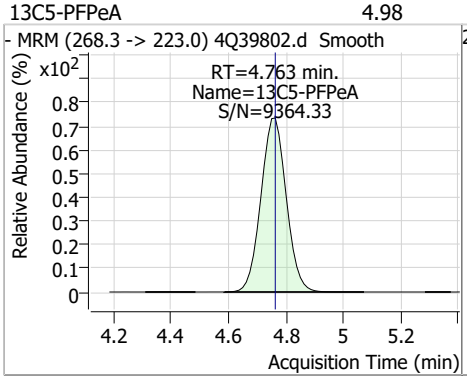
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.87	4.75	0.00	291720				

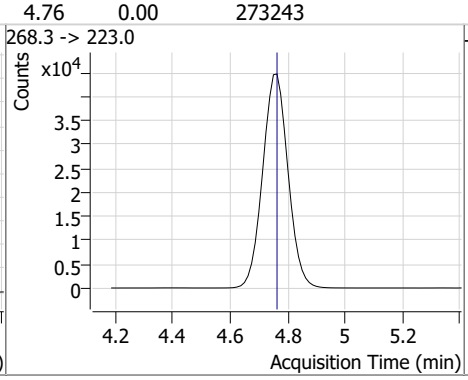


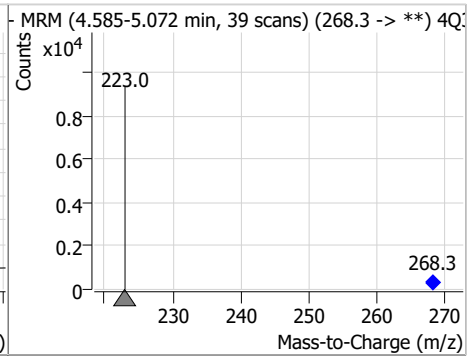




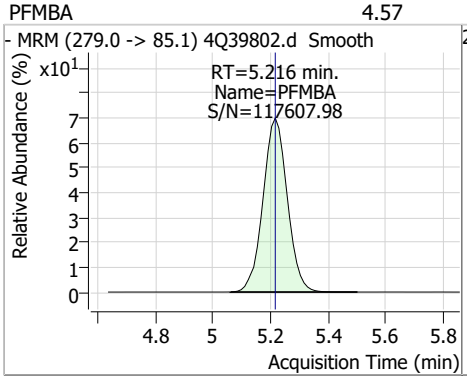
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.98	4.76	0.00	273243				

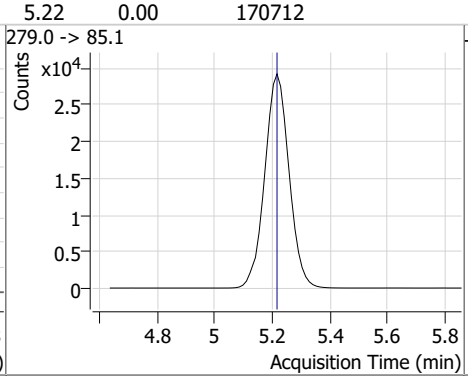


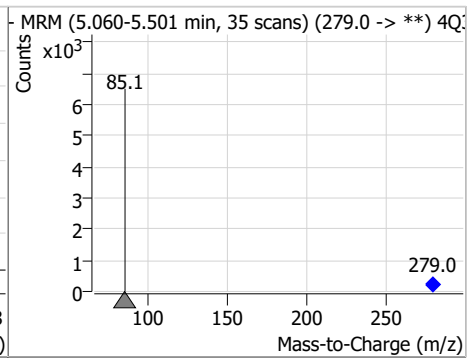




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.57	5.22	0.00	170712				

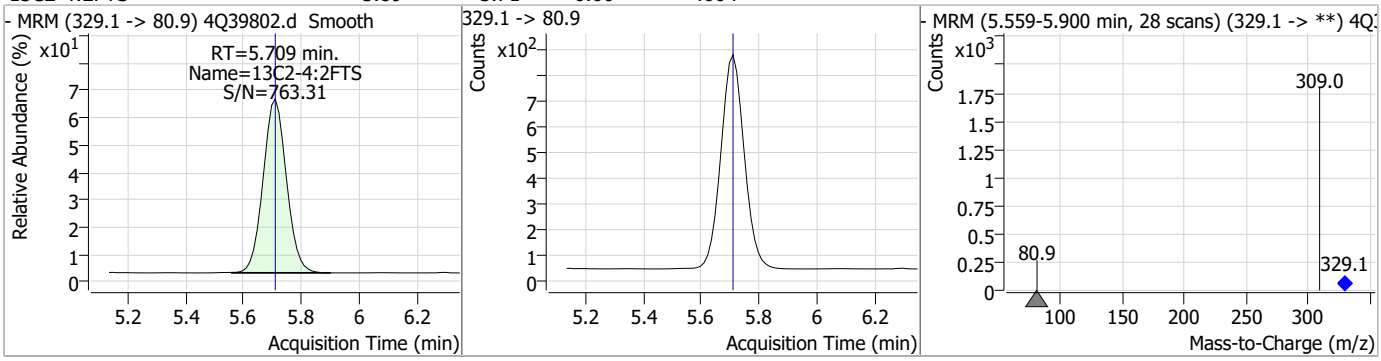




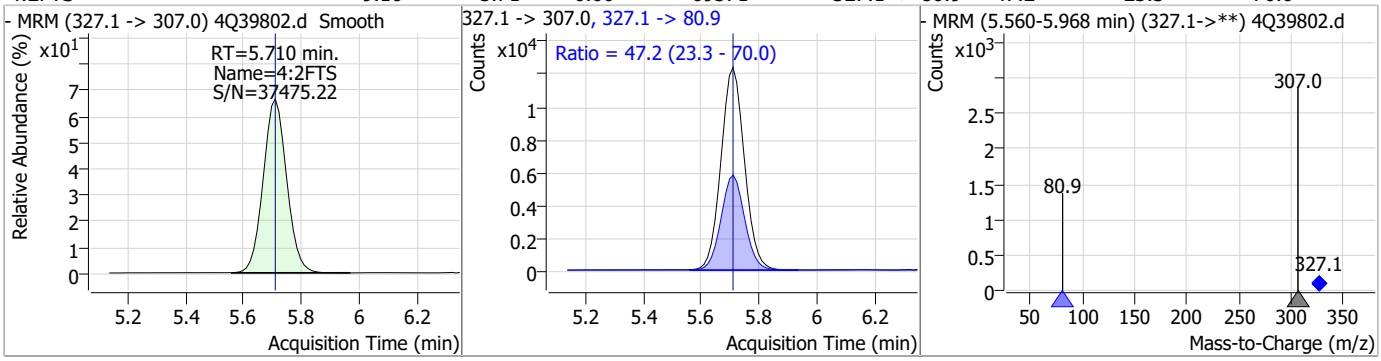


Perfluorinated Compounds by LC/MS/MS

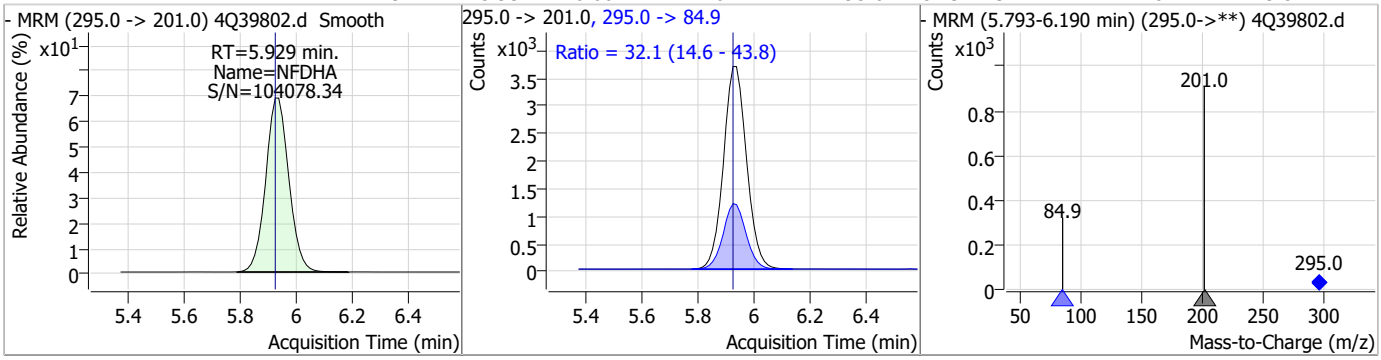
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.89	5.71	0.00	4664				



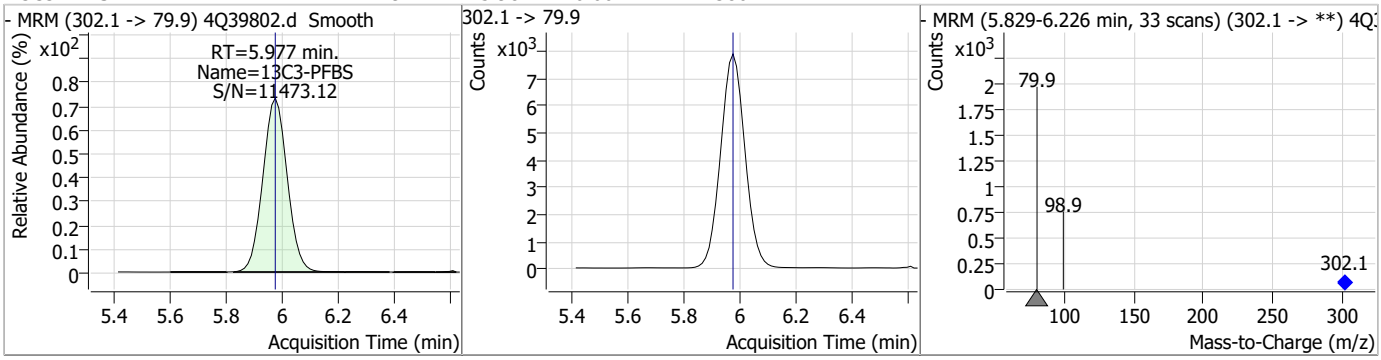
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.10	5.71	0.00	69371	327.1 -> 80.9	47.2	23.3	70.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.49	5.93	0.00	21027	295.0 -> 84.9	32.1	14.6	43.8

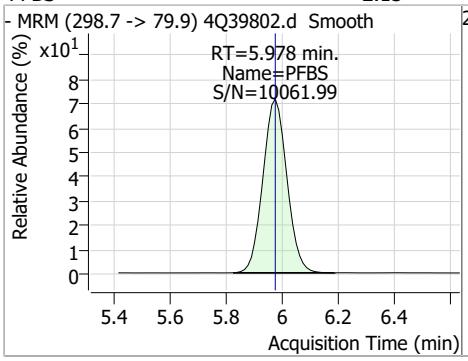


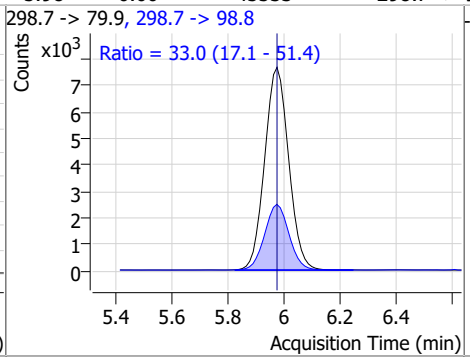
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.98	0.00	47380				

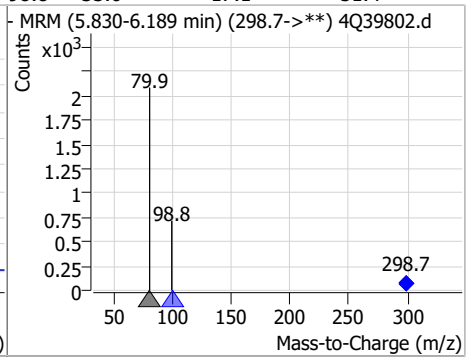


Perfluorinated Compounds by LC/MS/MS

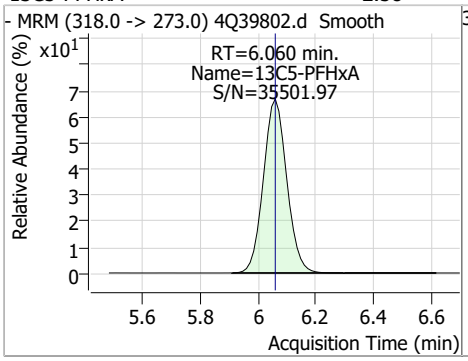
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.13	5.98	0.00	45533	298.7 -> 98.8	33.0	17.1	51.4

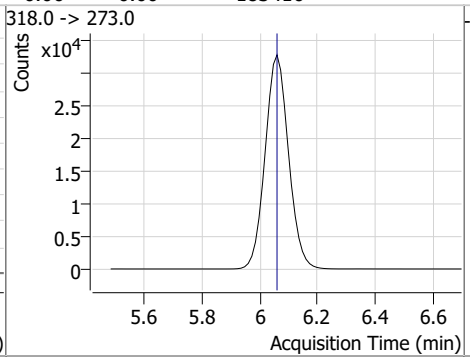


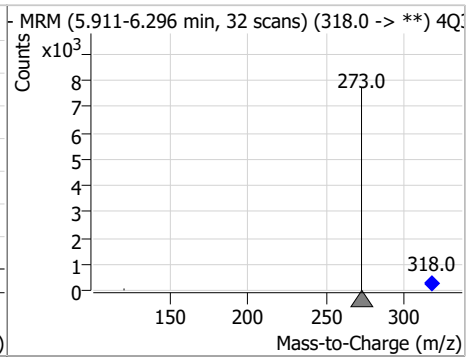




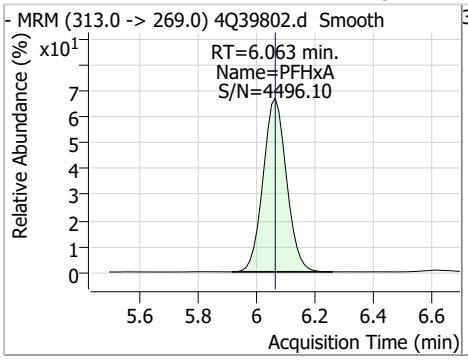
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	6.06	0.00	183416				

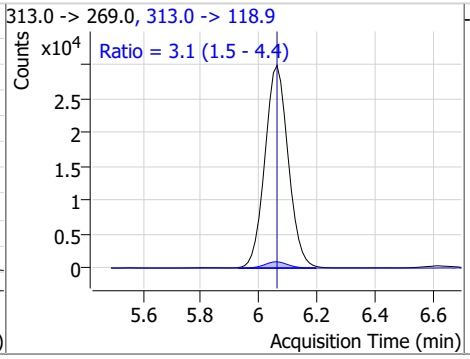


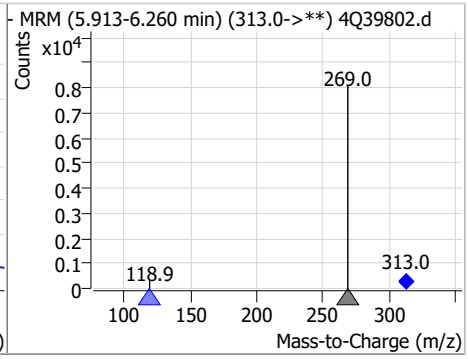




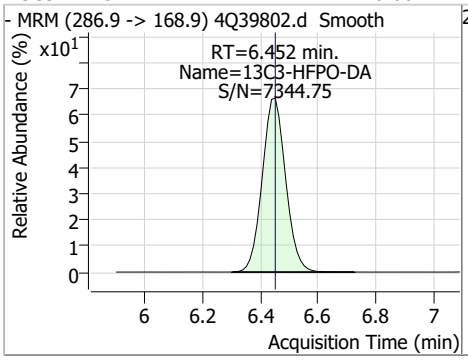
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.34	6.06	0.00	167004	313.0 -> 118.9	3.1	1.5	4.4

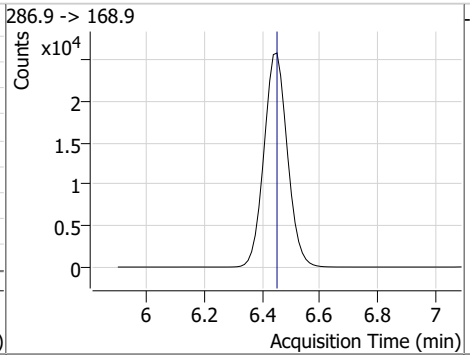


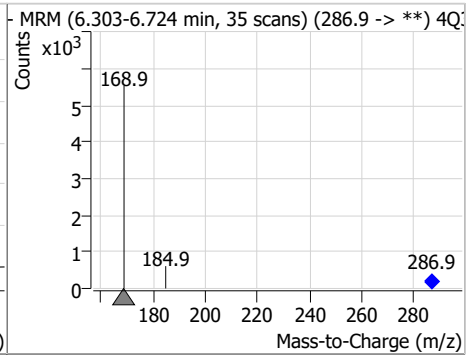




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.66	6.45	0.00	143546				

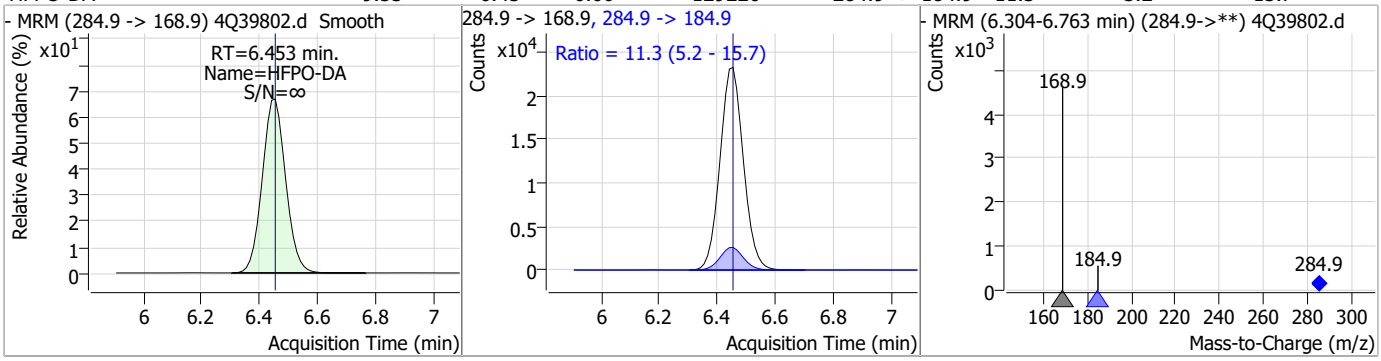




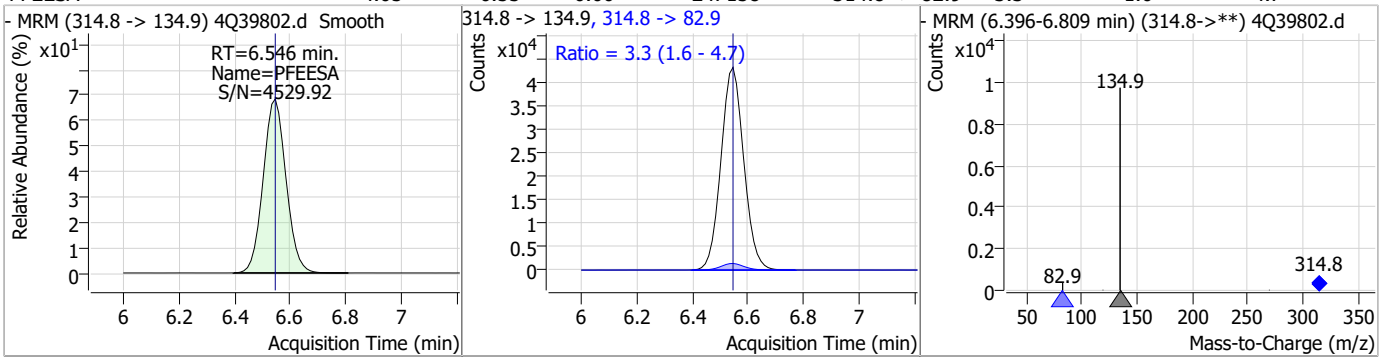


Perfluorinated Compounds by LC/MS/MS

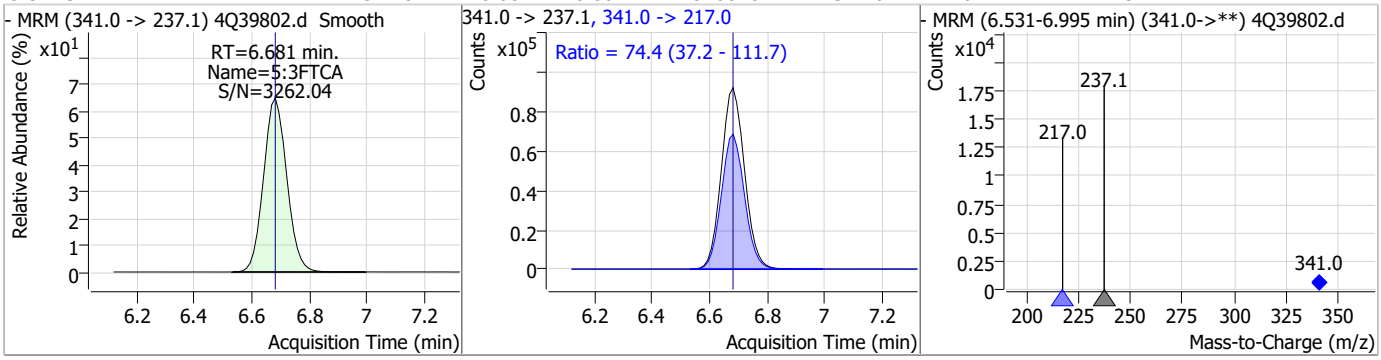
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.55	6.45	0.00	129226	284.9 -> 184.9	11.3	5.2	15.7



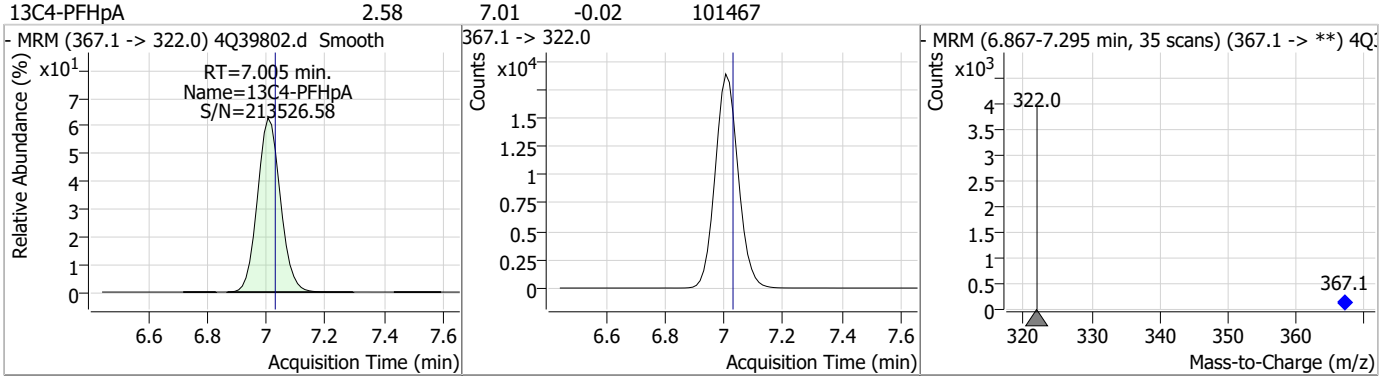
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.05	6.55	0.00	247158	314.8 -> 82.9	3.3	1.6	4.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	54.48	6.68	0.00	516816	341.0 -> 217.0	74.4	37.2	111.7

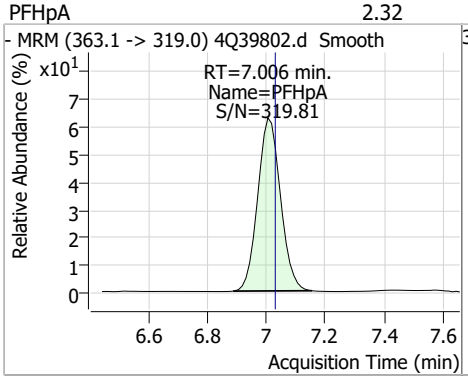


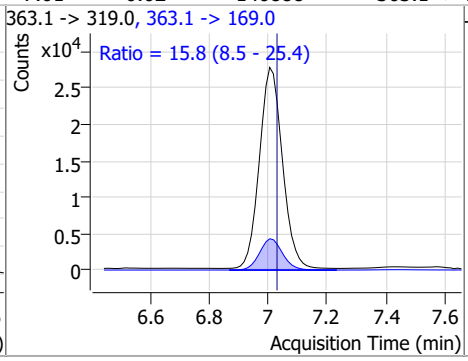
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	7.01	-0.02	101467				

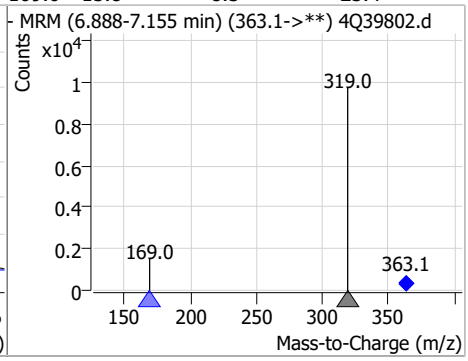


Perfluorinated Compounds by LC/MS/MS

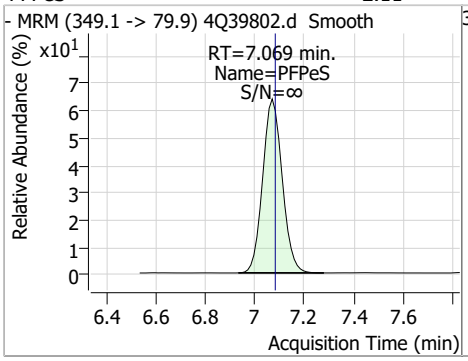
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.32	7.01	-0.02	146888	363.1 -> 169.0	15.8	8.5	25.4

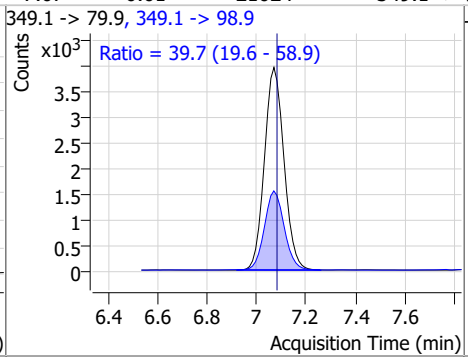


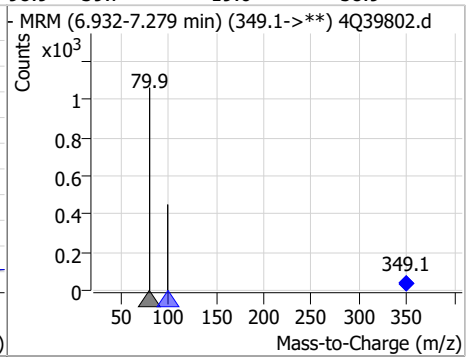




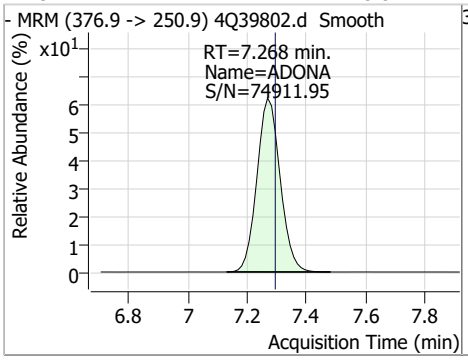
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.11	7.07	-0.01	21624	349.1 -> 98.9	39.7	19.6	58.9

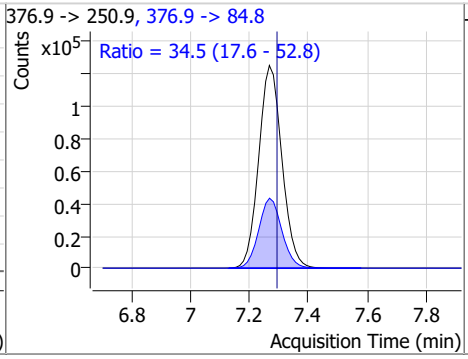


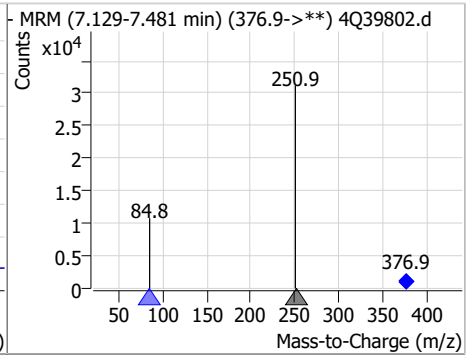




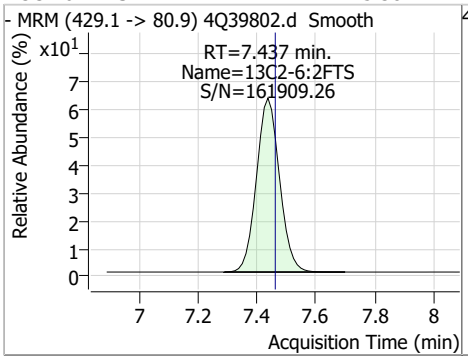
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.81	7.27	-0.03	682548	376.9 -> 84.8	34.5	17.6	52.8

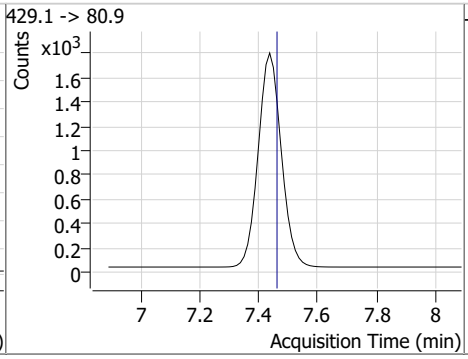


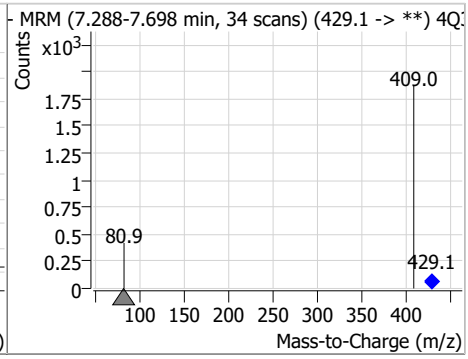




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.38	7.44	-0.02	9541				

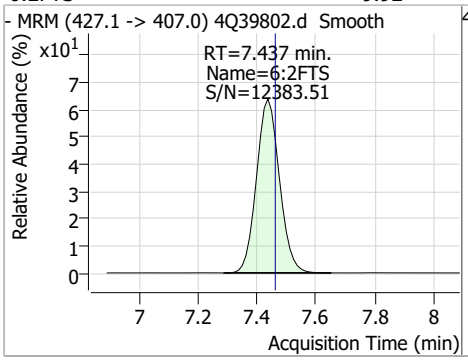


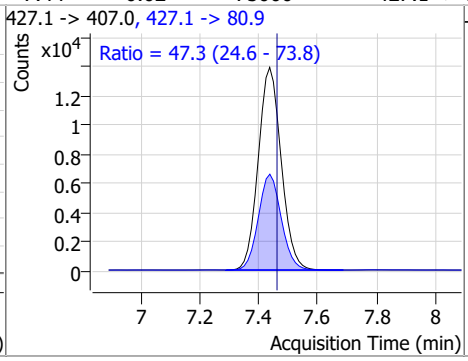


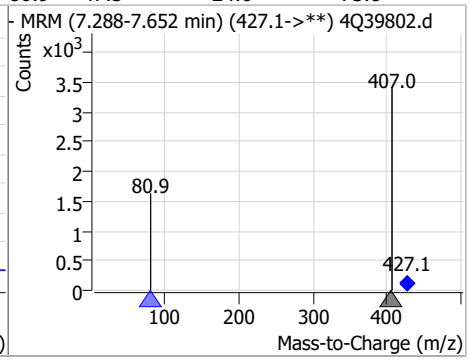


Perfluorinated Compounds by LC/MS/MS

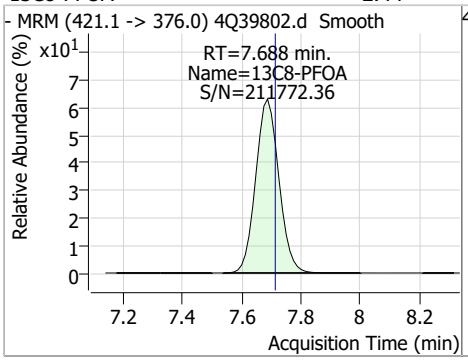
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.92	7.44	-0.02	75006	427.1 -> 80.9	47.3	24.6	73.8

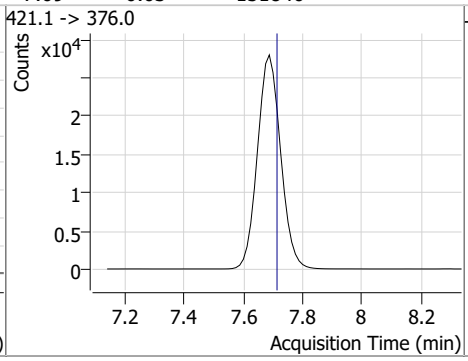


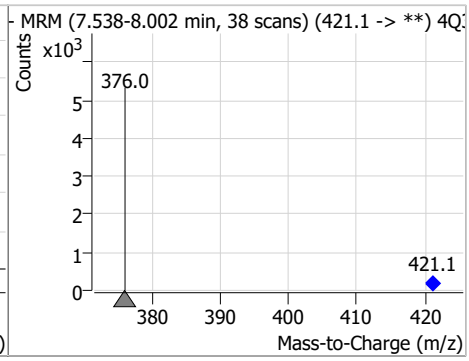




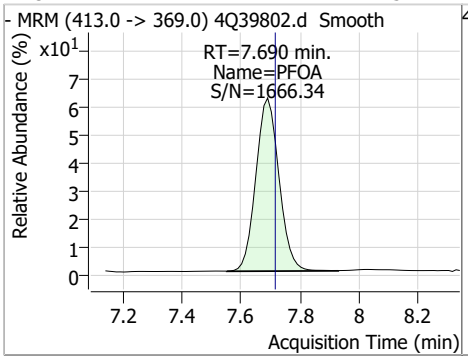
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.69	-0.03	151846				

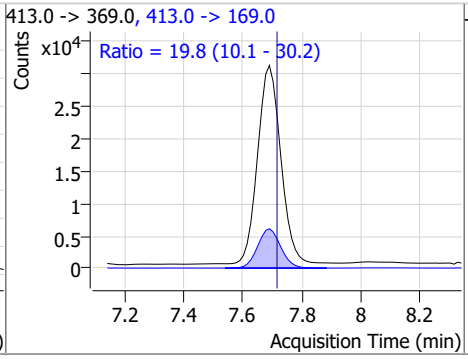


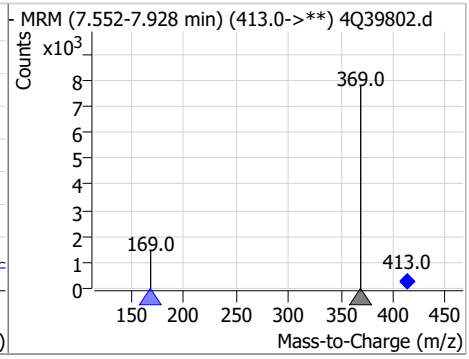




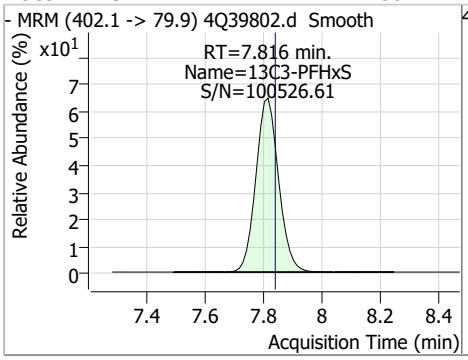
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.45	7.69	-0.03	165582	413.0 -> 169.0	19.8	10.1	30.2

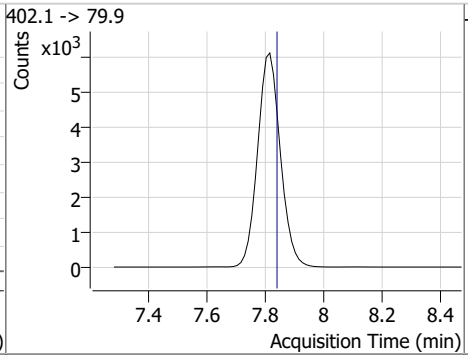


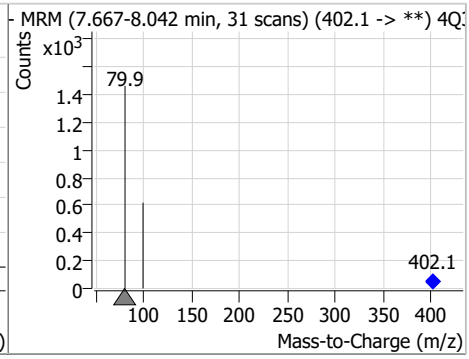




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.82	-0.02	32871				

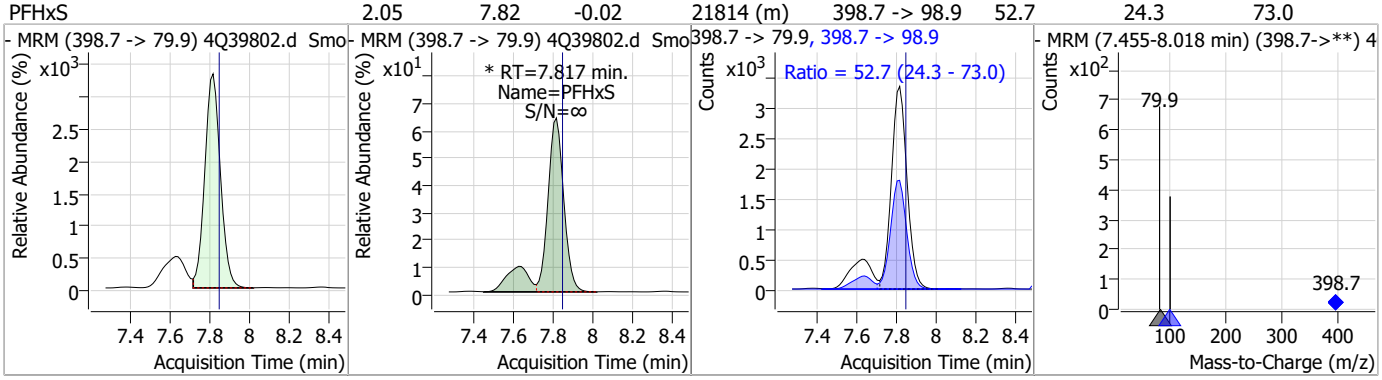




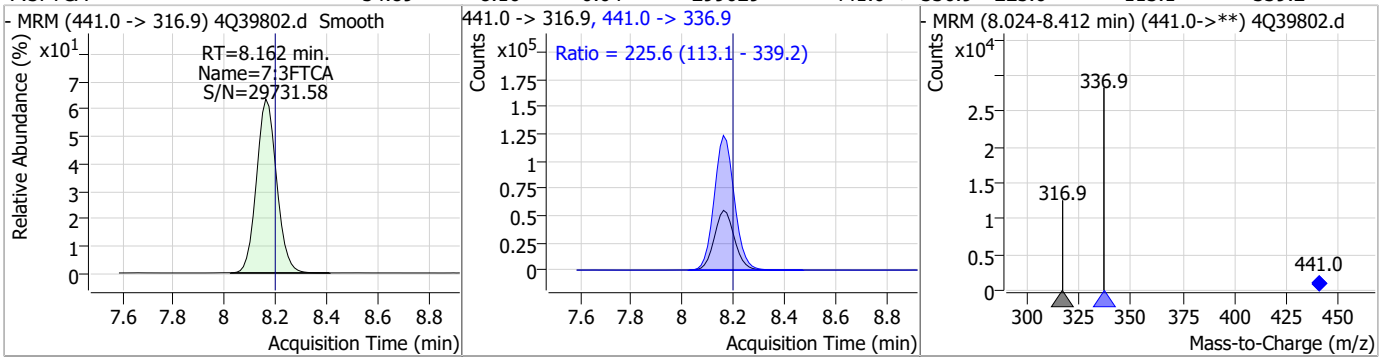


Perfluorinated Compounds by LC/MS/MS

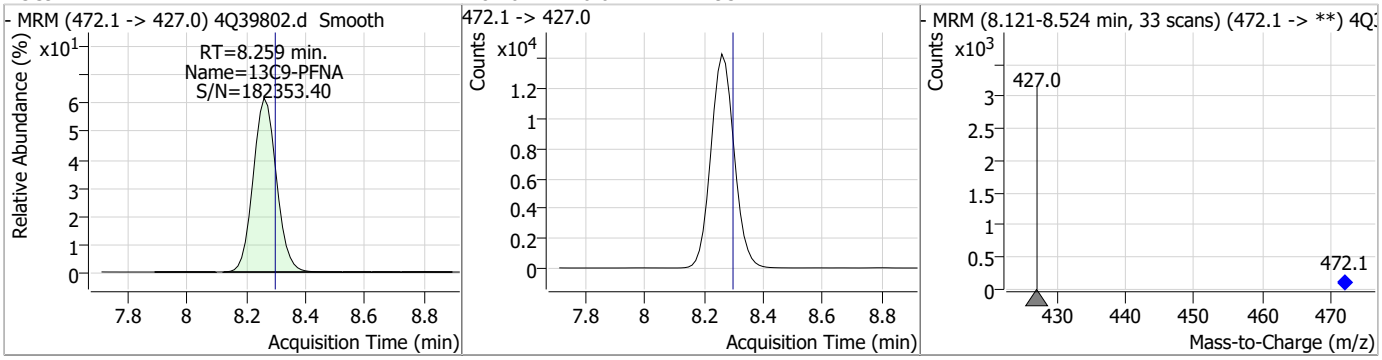
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.05	7.82	-0.02	21814 (m)	398.7 -> 98.9	52.7	24.3	73.0



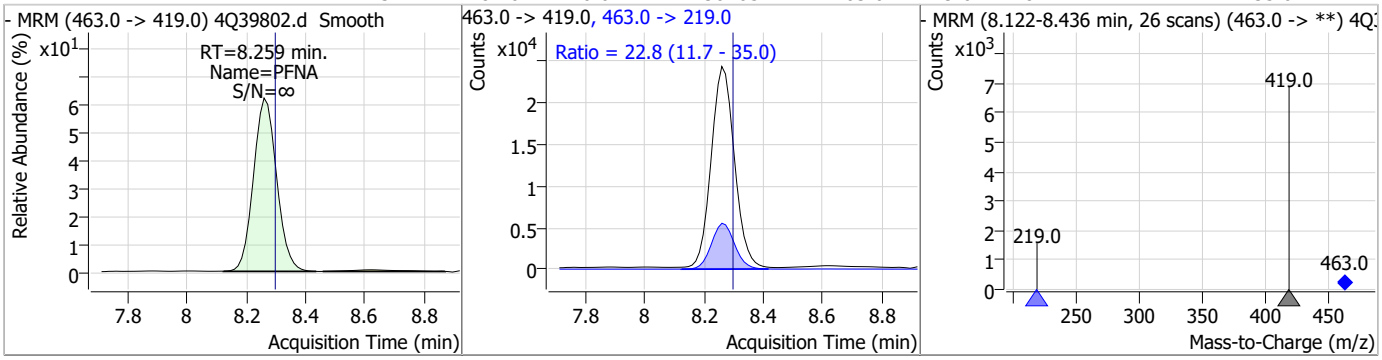
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	54.89	8.16	-0.04	299029	441.0 -> 336.9	225.6	113.1	339.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	8.26	-0.04	77937				

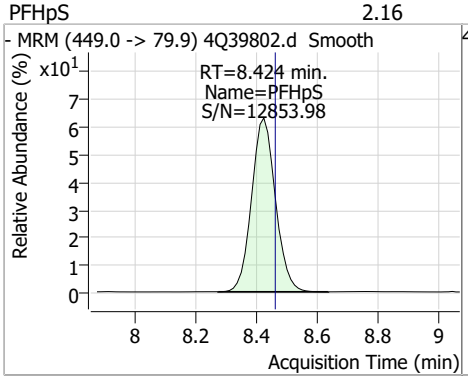


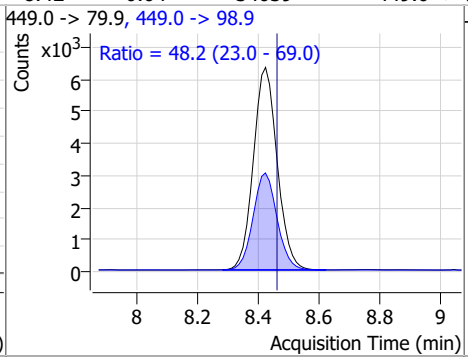
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.31	8.26	-0.04	130705	463.0 -> 219.0	22.8	11.7	35.0

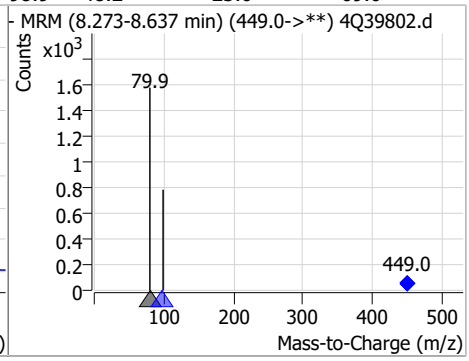


Perfluorinated Compounds by LC/MS/MS

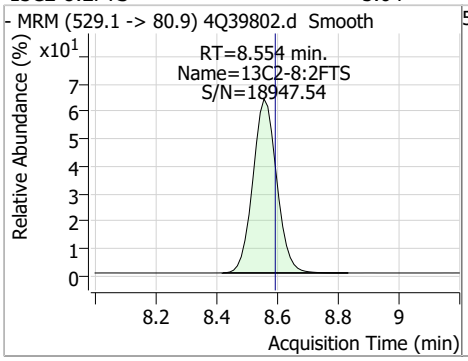
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.16	8.42	-0.04	34639	449.0 -> 98.9	48.2	23.0	69.0

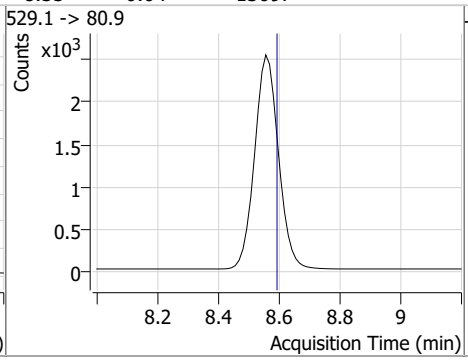


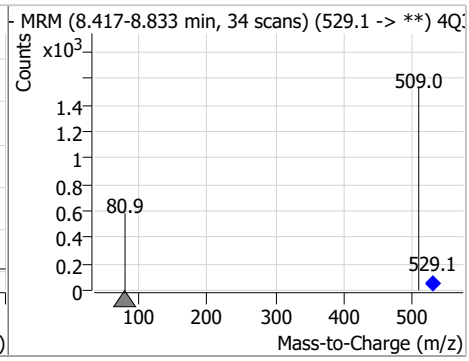




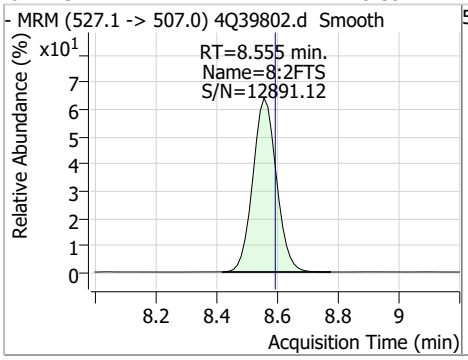
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.64	8.55	-0.04	13697				

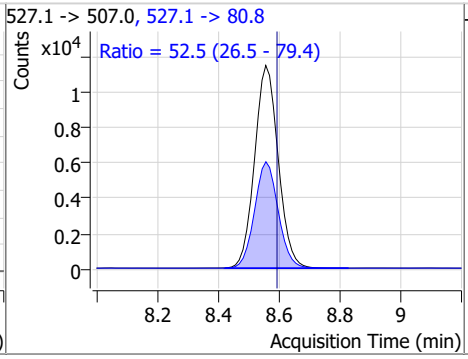


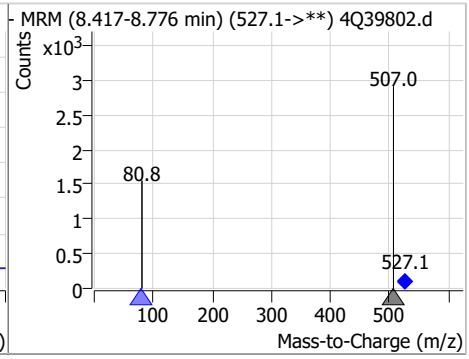




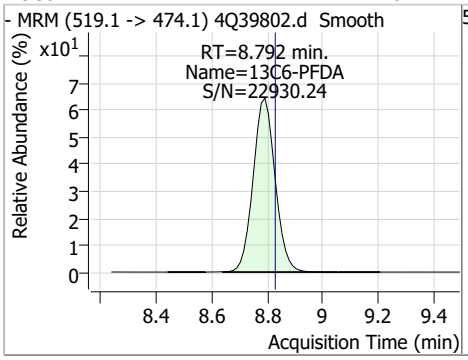
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.39	8.55	-0.04	62246	527.1 -> 80.8	52.5	26.5	79.4

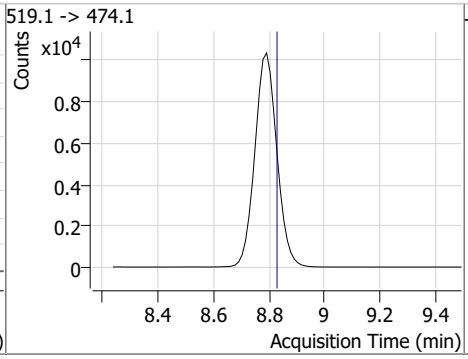


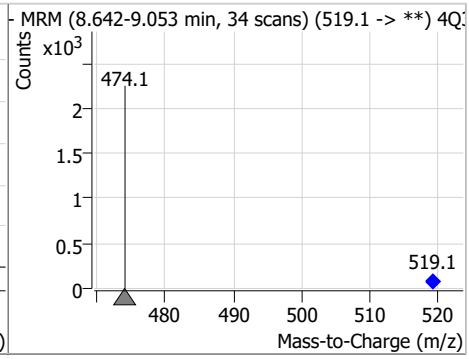




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.79	-0.04	56086				

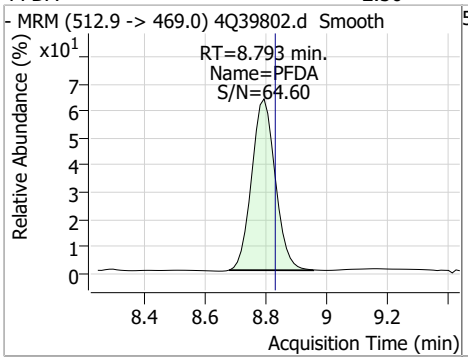


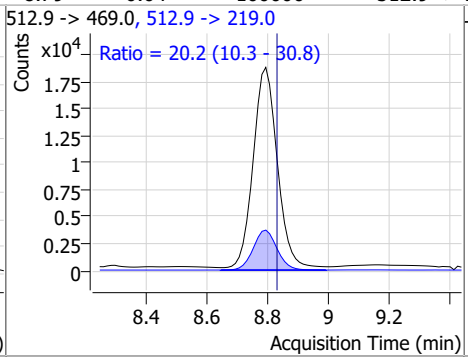


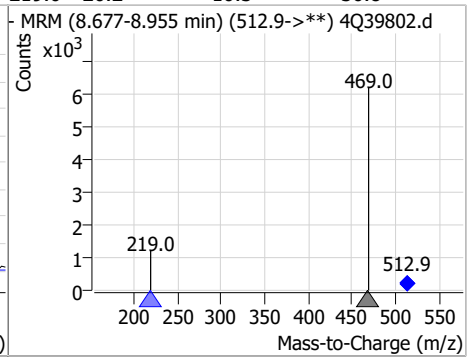


Perfluorinated Compounds by LC/MS/MS

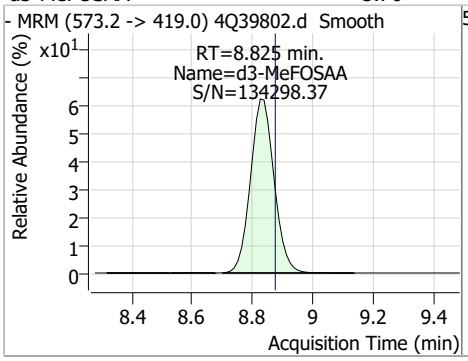
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.50	8.79	-0.04	100006	512.9 -> 219.0	20.2	10.3	30.8

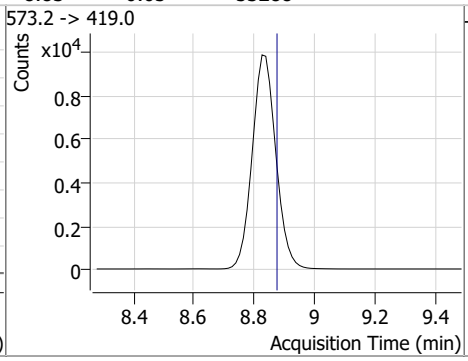


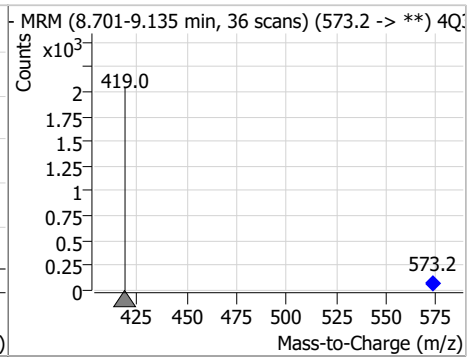




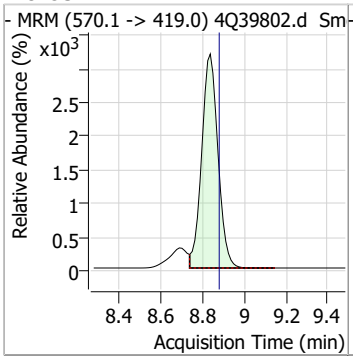
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.70	8.83	-0.05	53288				

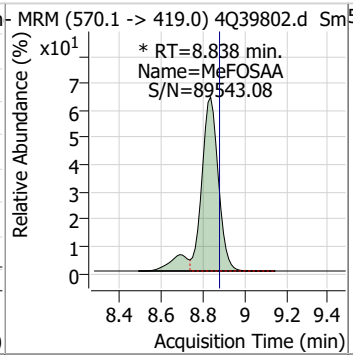


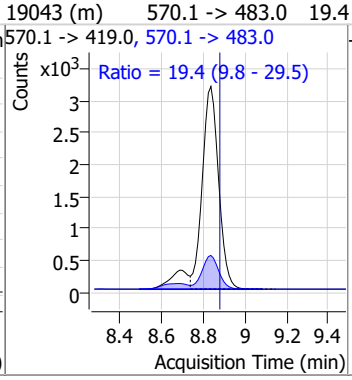


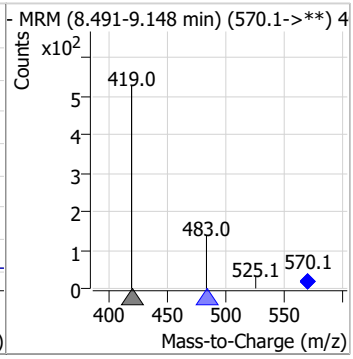


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.41	8.84	-0.04	19043 (m)	570.1 -> 483.0	19.4	9.8	29.5

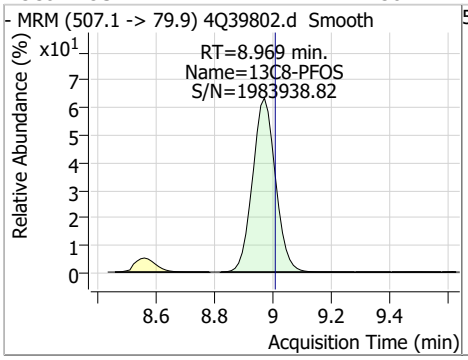


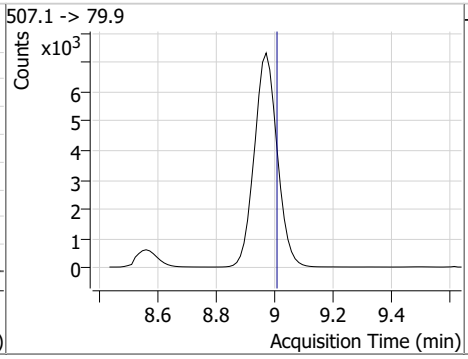


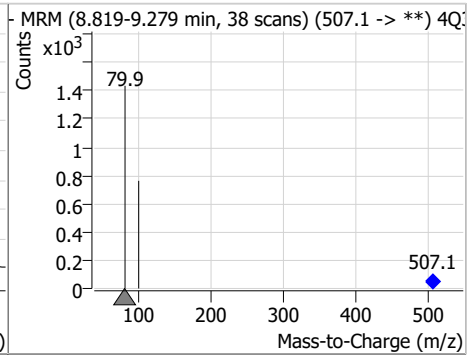




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.38	8.97	-0.04	39628				

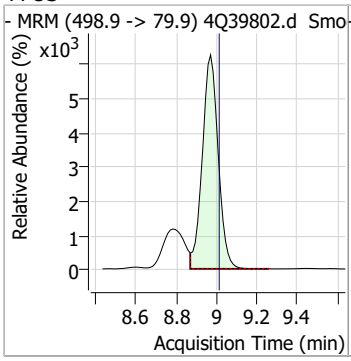


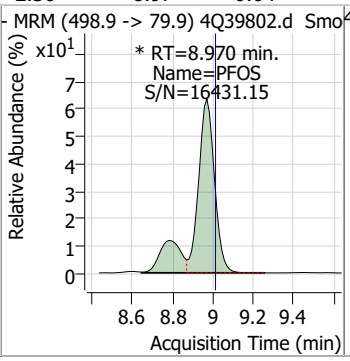


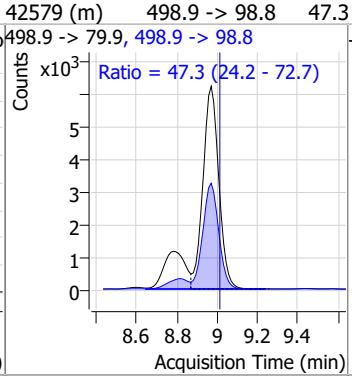


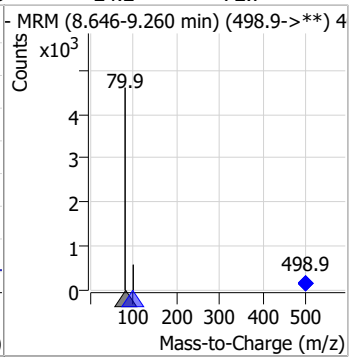
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.30	8.97	-0.04	42579 (m)	498.9 -> 98.8	47.3	24.2	72.7

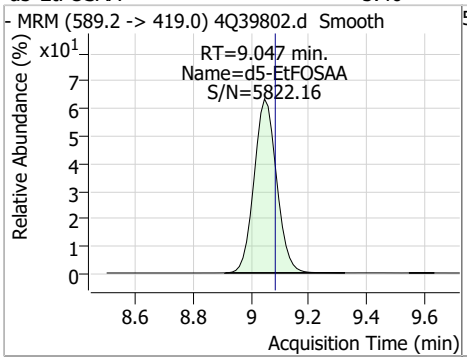


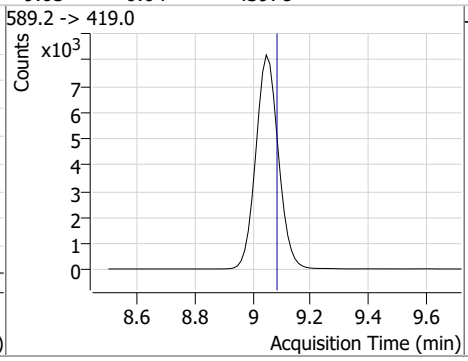


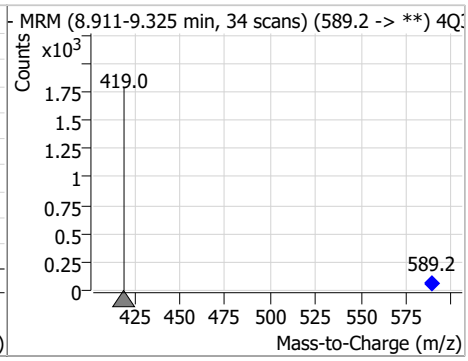




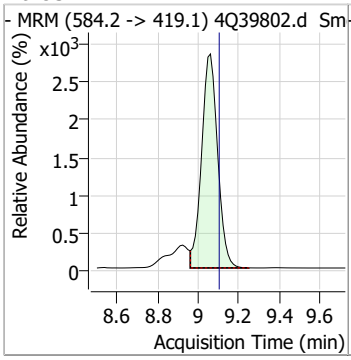
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.40	9.05	-0.04	43978				

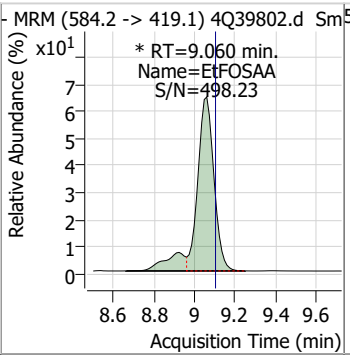


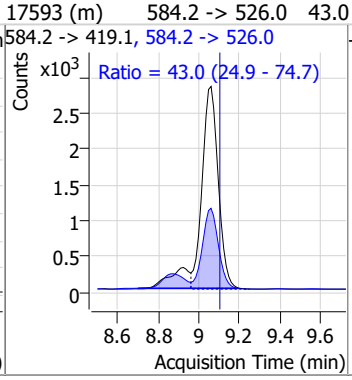


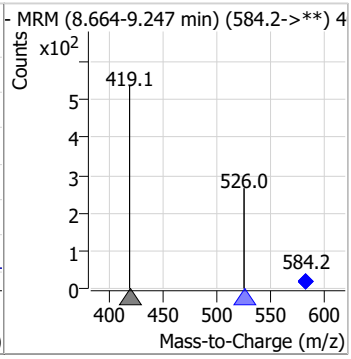


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.39	9.06	-0.04	17593 (m)	584.2 -> 526.0	43.0	24.9	74.7

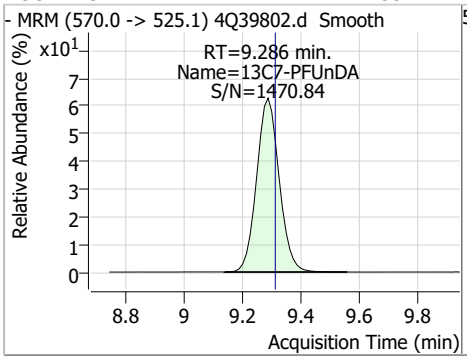


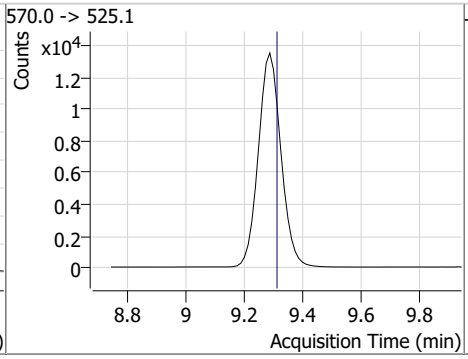


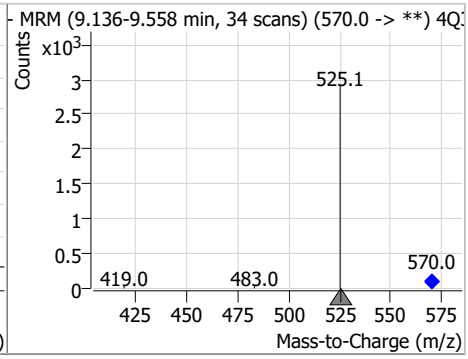




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.55	9.29	-0.02	72580				

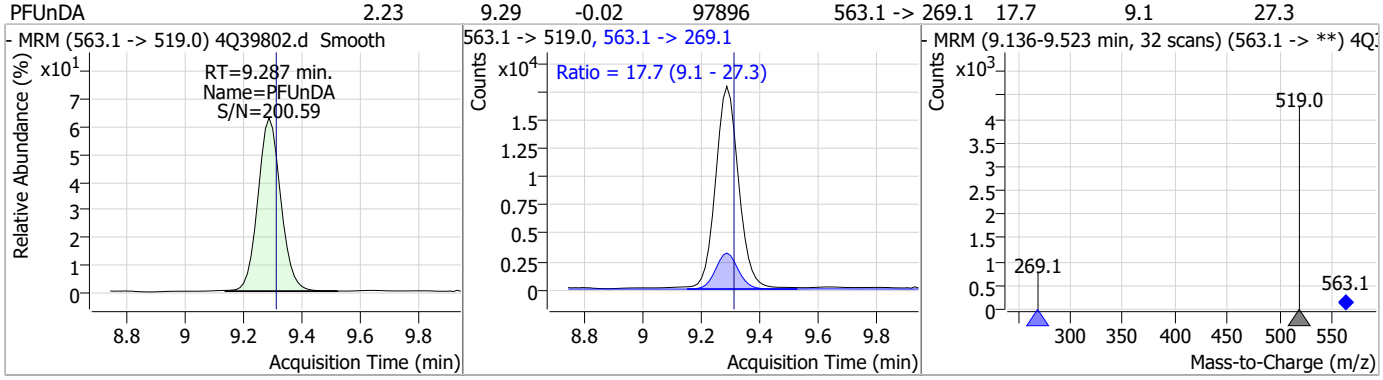




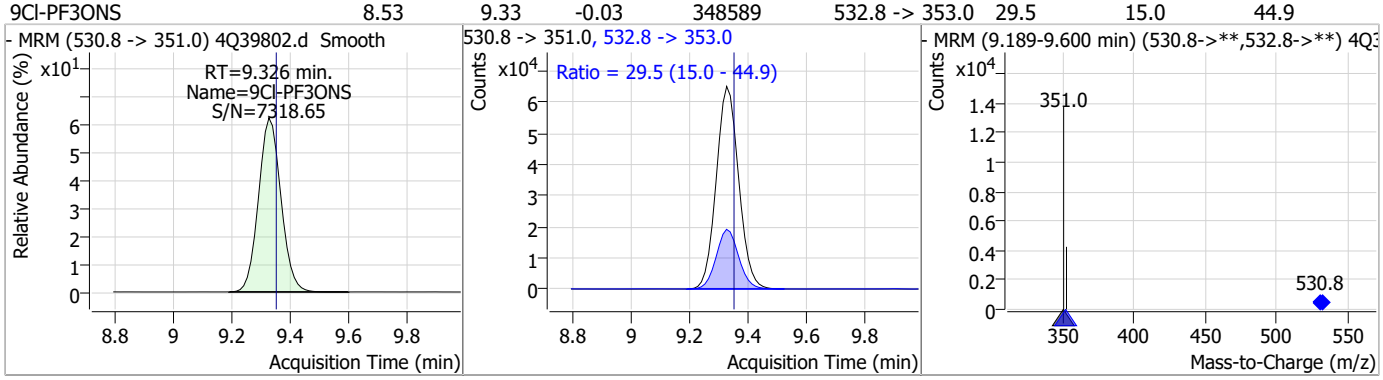


Perfluorinated Compounds by LC/MS/MS

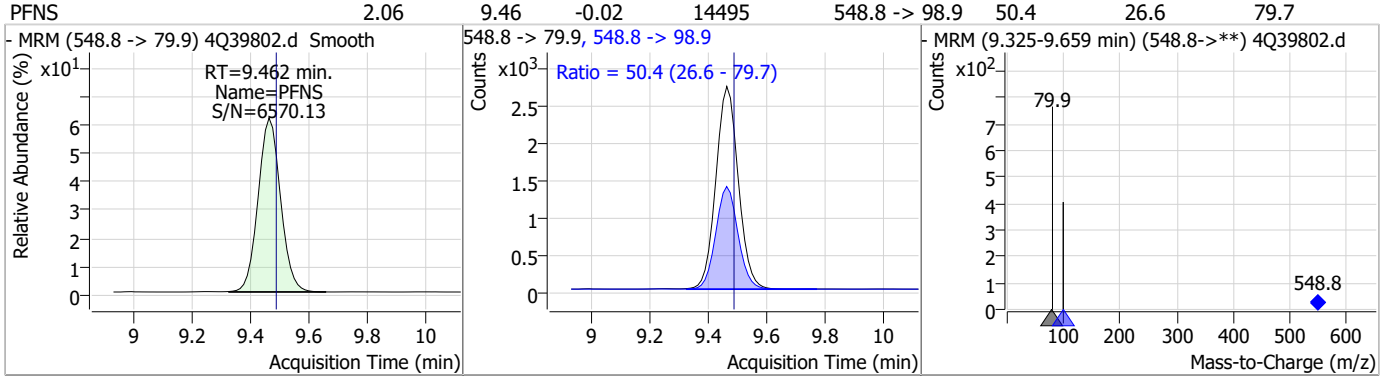
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.23	9.29	-0.02	97896	563.1 -> 269.1	17.7	9.1	27.3



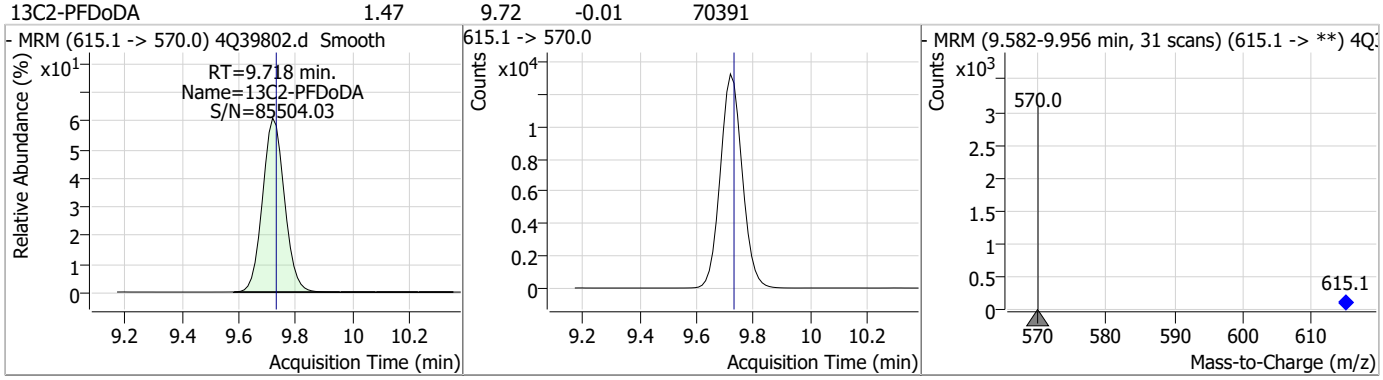
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.53	9.33	-0.03	348589	532.8 -> 353.0	29.5	15.0	44.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.06	9.46	-0.02	14495	548.8 -> 98.9	50.4	26.6	79.7

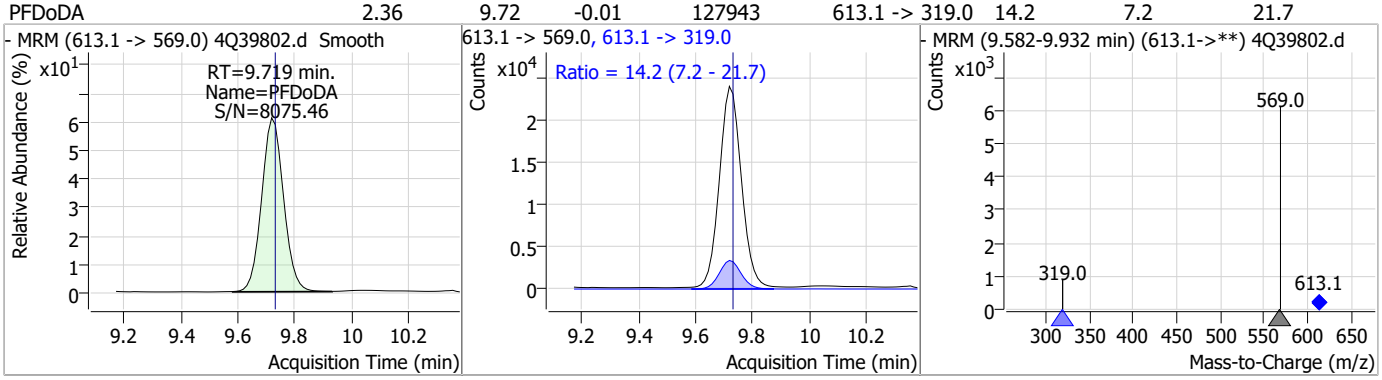


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.47	9.72	-0.01	70391				

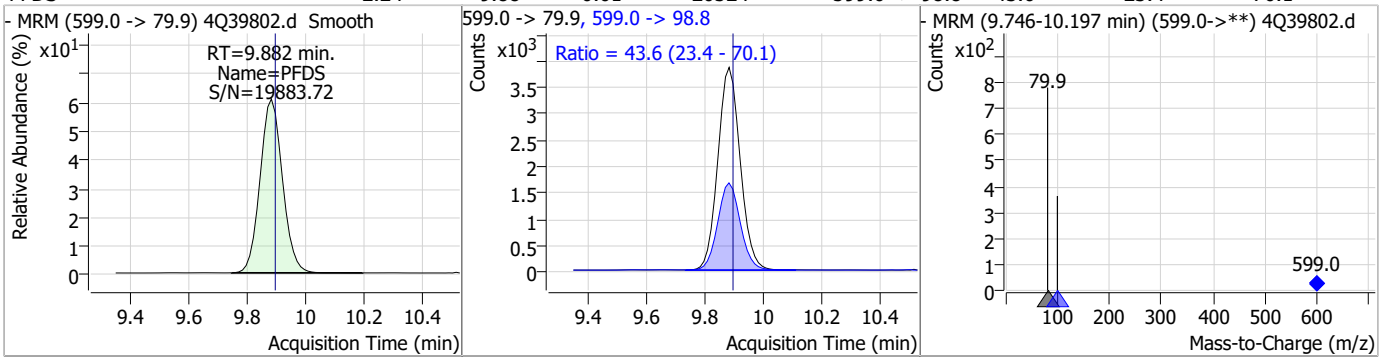


Perfluorinated Compounds by LC/MS/MS

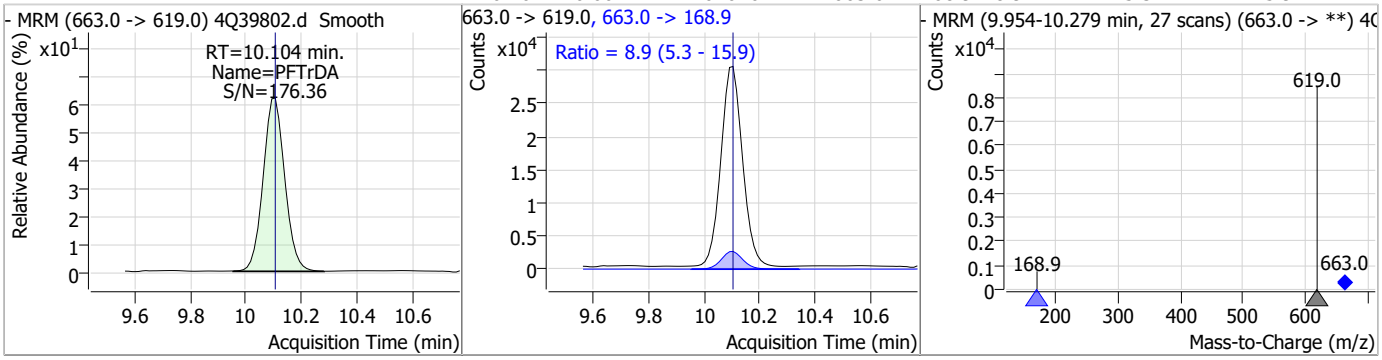
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.36	9.72	-0.01	127943	613.1 -> 319.0	14.2	7.2	21.7



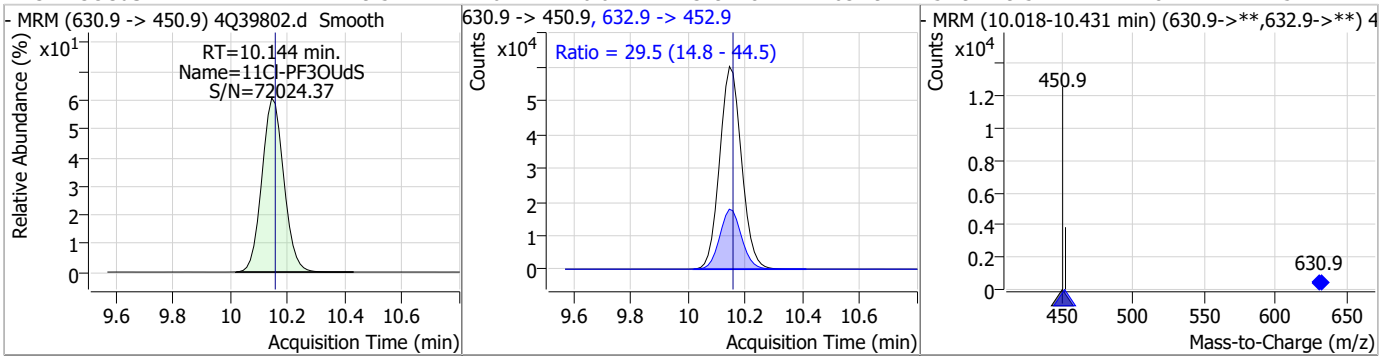
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.24	9.88	-0.01	20524	599.0 -> 98.8	43.6	23.4	70.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.44	10.10	0.00	162016	663.0 -> 168.9	8.9	5.3	15.9

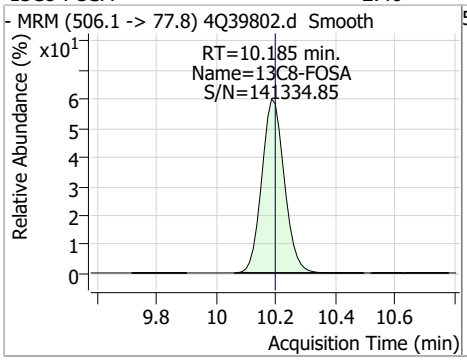


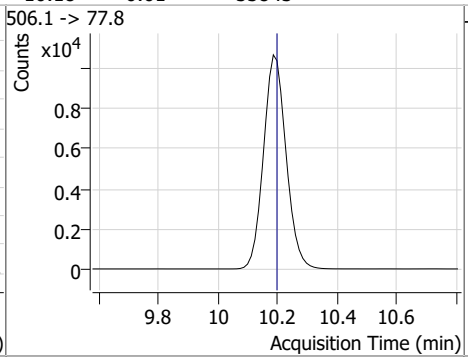
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.51	10.14	-0.01	319228	632.9 -> 452.9	29.5	14.8	44.5

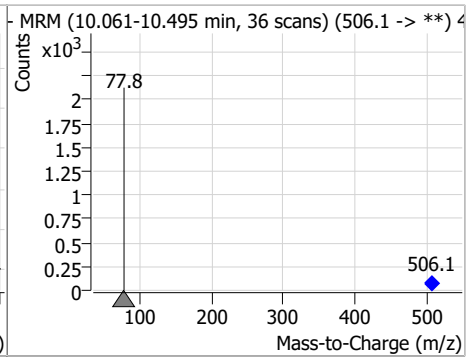


Perfluorinated Compounds by LC/MS/MS

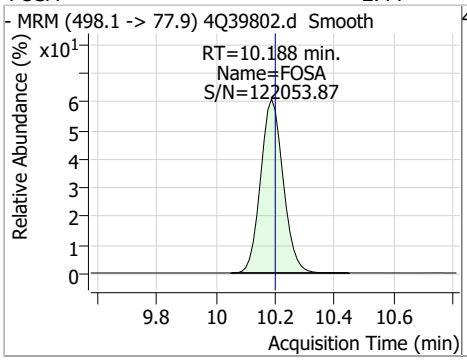
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	10.18	-0.01	55845				

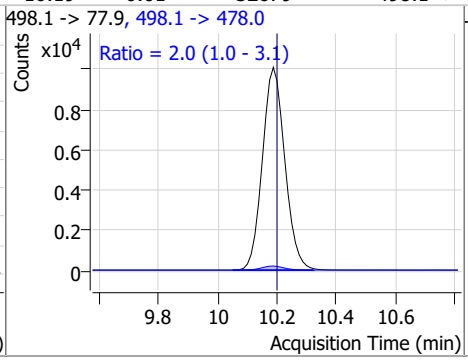


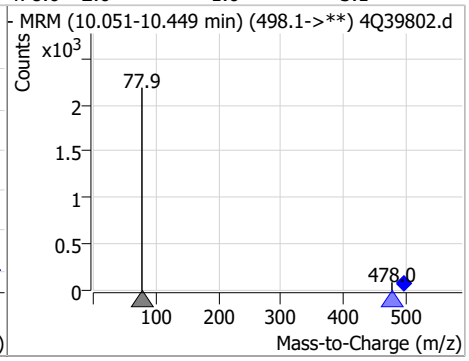




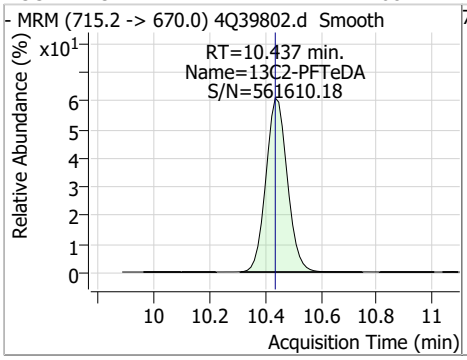
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.44	10.19	-0.01	52679	498.1 -> 478.0	2.0	1.0	3.1

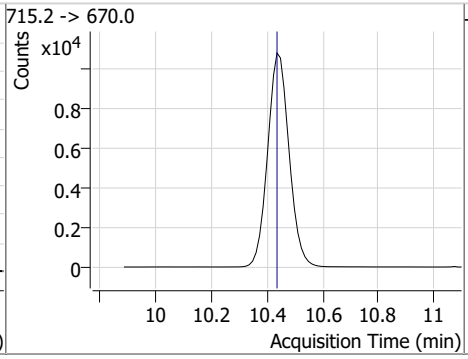


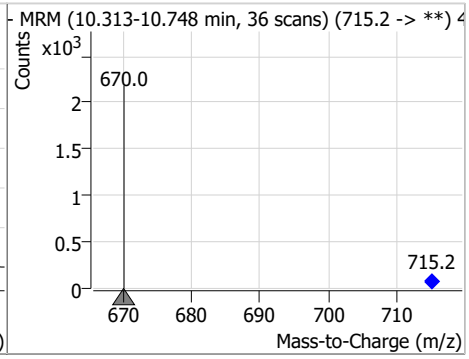




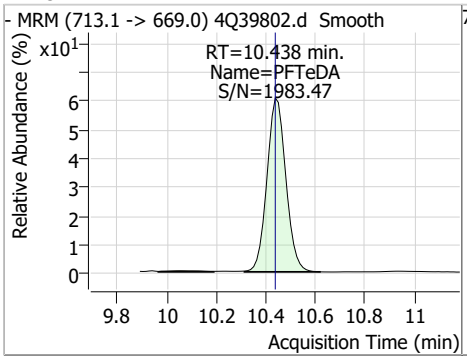
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.68	10.44	0.00	57447				

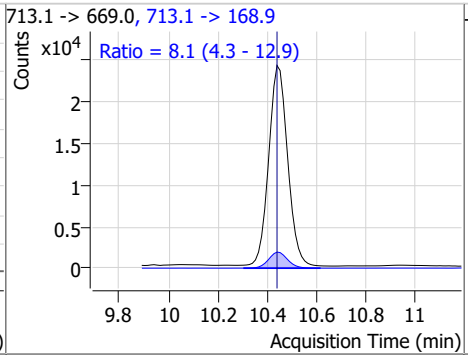


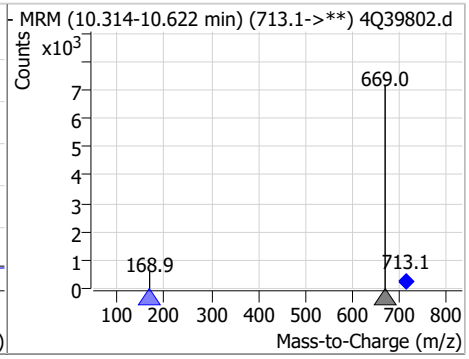




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.21	10.44	0.00	127475	713.1 -> 168.9	8.1	4.3	12.9

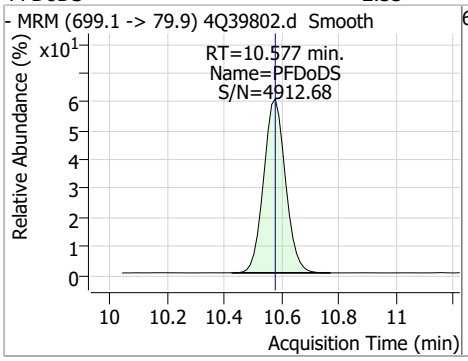


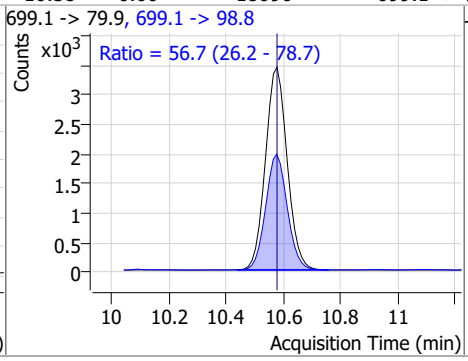


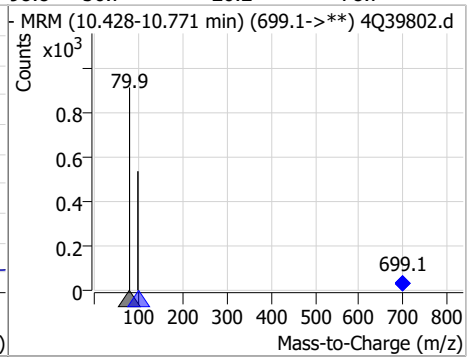


Perfluorinated Compounds by LC/MS/MS

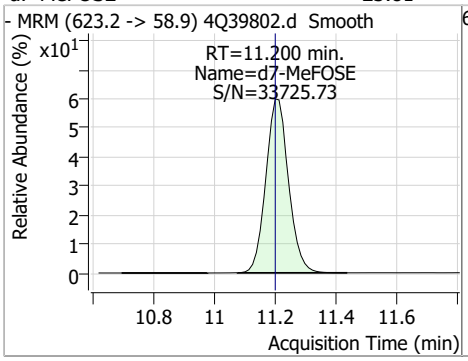
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.33	10.58	0.00	18090	699.1 -> 98.8	56.7	26.2	78.7

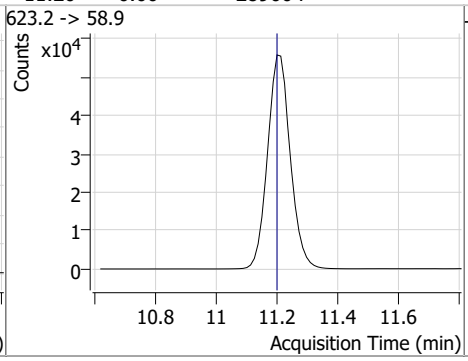


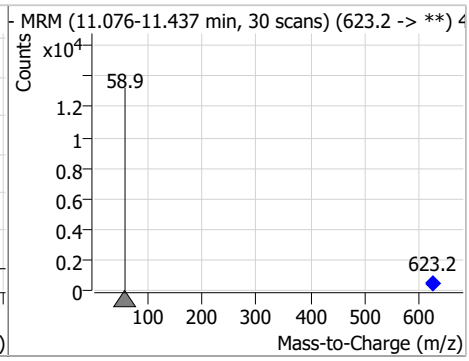




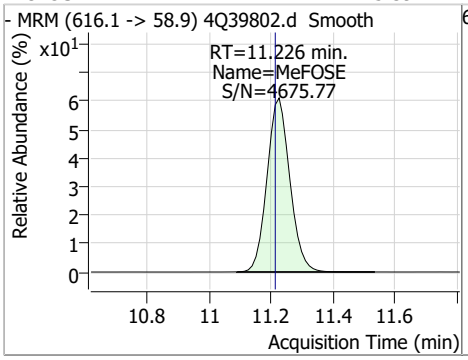
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.81	11.20	0.00	289004				

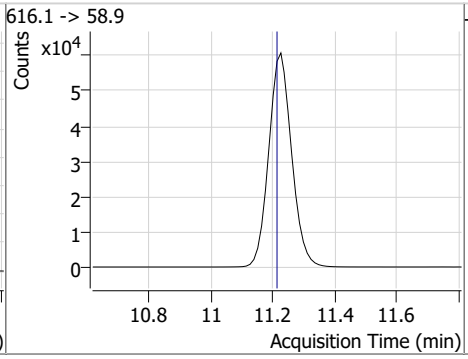


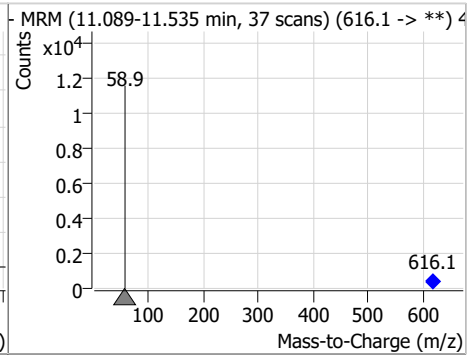




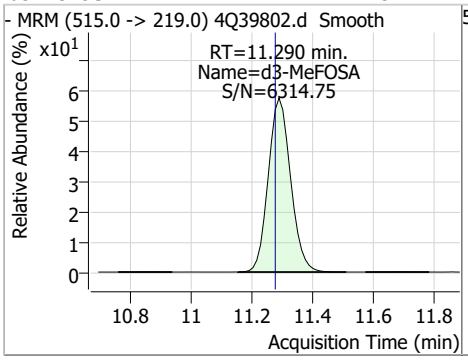
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	25.39	11.23	0.01	309953				

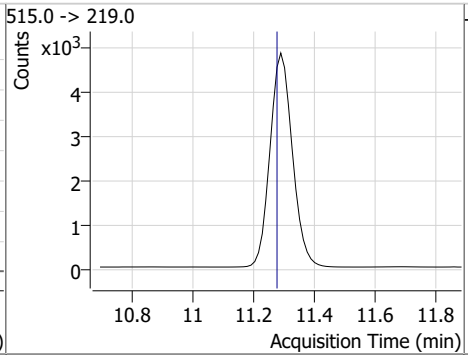


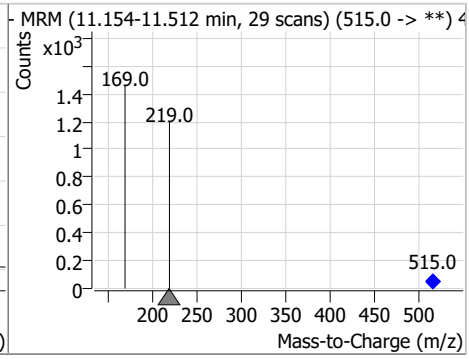




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	11.29	0.01	24877				

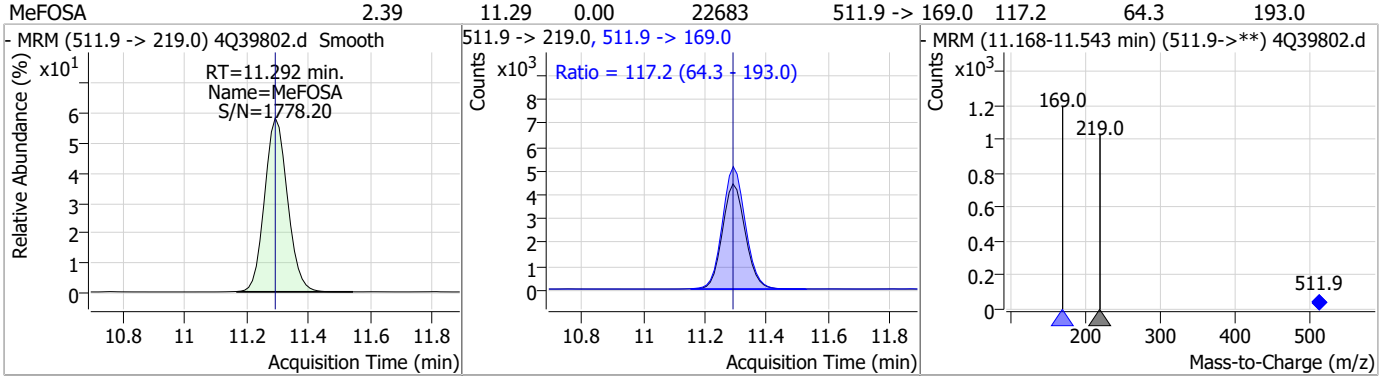




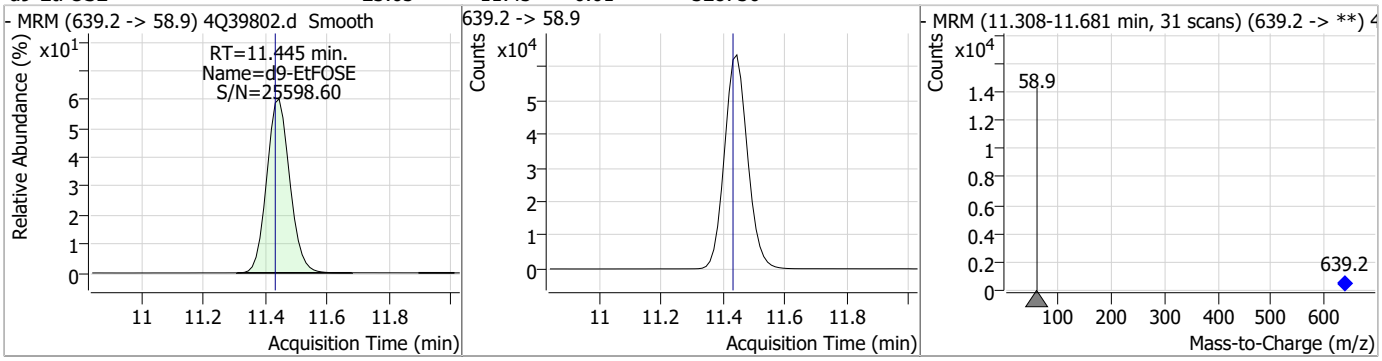


Perfluorinated Compounds by LC/MS/MS

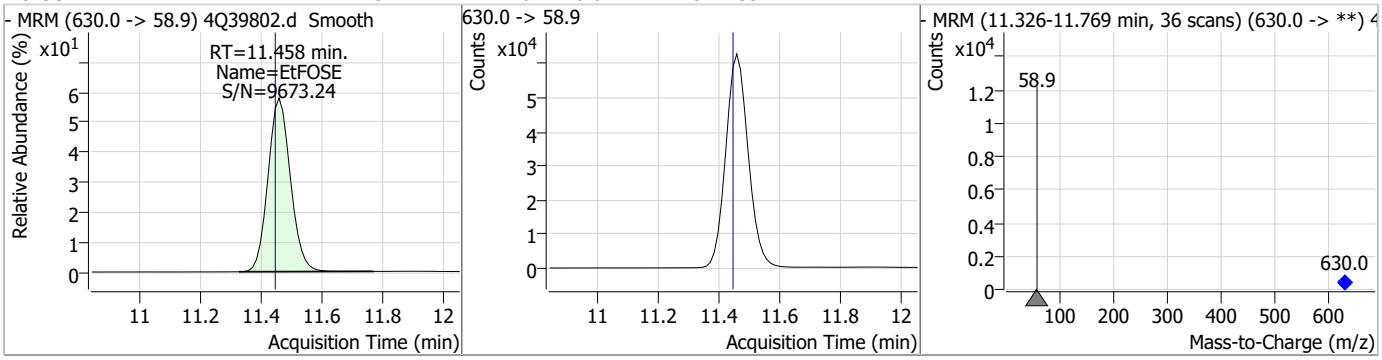
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.39	11.29	0.00	22683	511.9 -> 169.0	117.2	64.3	193.0



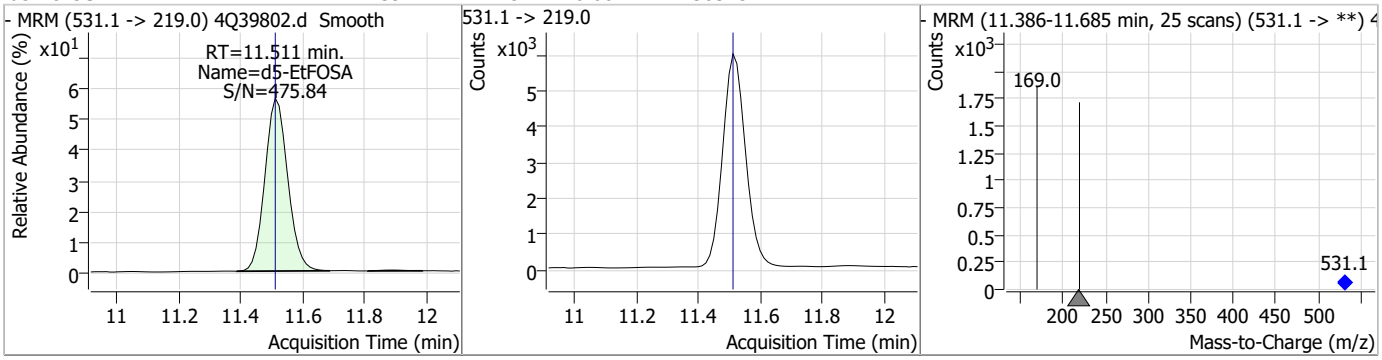
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.65	11.45	0.01	328730				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	25.21	11.46	0.01	321739				

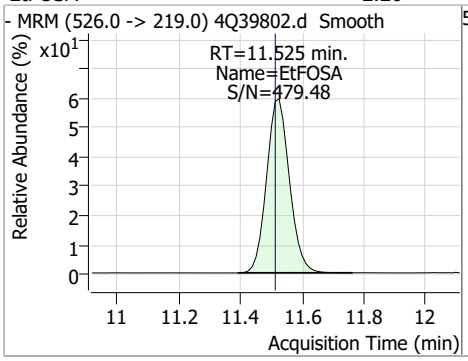


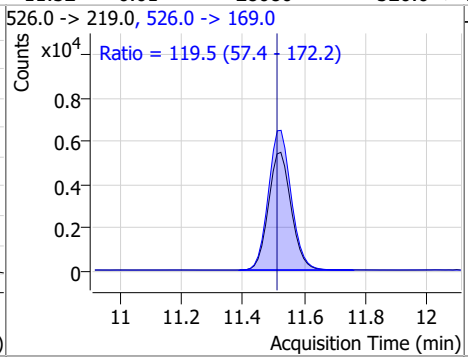
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.39	11.51	0.00	30345				

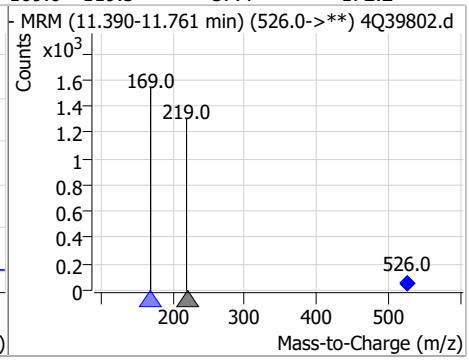


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.20	11.52	0.01	28080	526.0 -> 169.0	119.5	57.4	172.2







Manual Integration Approval Summary

Sample Number: S4Q572-CC571
Lab FileID: 4Q39802.D
Injection Time: 01/26/23 16:54
Method: EPA DRAFT 1633
Analyst approved: 01/27/23 10:21 Natasha Gumtie
Supervisor approved: 01/29/23 09:42 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.82	Split peak
MeFOSAA	2355-31-9		8.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.97	Split peak
EtFOSAA	2991-50-6		9.06	Split peak

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LCMS4-4Q ANALYSIS LOG

DATE:	01/24/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

METHODS:	1633
PROC. METH:	ID_011623_S4Q571
CAL DATE:	01/24/23
ANALYST:	NG
RUN BATCH:	S4Q571

ELUENT A LOT #:	ACN 214785
ELUENT B LOT #:	224863 w5%ACN 214785 2mMAMAC: 11387
IC/CC STD LOT #:	LCMS 2055
ICV STD LOT #:	LCMS 2055/2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q39688.d	P1-B1	RT TDCA	1633full.m	Sample	20/500	op95096,S4Q571,500,,,5.0,1,water	✓
2	4Q39689.d	P1-B2	RT Br-Ln	1633full.m	Sample	100/500	op95096,S4Q571,500,,,5.0,1,water	✓
3	4Q39690.d	P1-A1	ic571-0	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	Check Tune File
4	4Q39691.d	P1-A2	ic571-1	1633full.m	Calibration	1.6/500	op95096,S4Q571,500,,,5.0,1,water	PASS
5	4Q39692.d	P1-A3	ic571-2	1633full.m	Calibration	4/500	op95096,S4Q571,500,,,5.0,1,water	PASS
6	4Q39693.d	P1-A4	ic571-3	1633full.m	Calibration	10/500	op95096,S4Q571,500,,,5.0,1,water	PASS
7	4Q39694.d	P1-A5	icc571-4	1633full.m	Calibration	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
8	4Q39695.d	P1-A6	ic571-5	1633full.m	Calibration	40/500	op95096,S4Q571,500,,,5.0,1,water	PASS
9	4Q39696.d	P1-A7	ic571-6	1633full.m	Calibration	100/500	op95096,S4Q571,500,,,5.0,1,water	PASS
10	4Q39697.d	P1-A8	ic571-7	1633full.m	Calibration	200/500	op95096,S4Q571,500,,,5.0,1,water	PASS
11	4Q39698.d	P1-A9	ic571-8	1633full.m	Calibration	1x	op95096,S4Q571,500,,,5.0,1,water	PASS, FTS's surrs dropped
12	4Q39699.d	P1-A1	iblk	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
13	4Q39700.d	P1-B3	icv571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
14	4Q39701.d	P1-B4	icv571-20	1633full.m	QC	100/500	op95096,S4Q571,500,,,5.0,1,water	PASS
15	4Q39702.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
16	4Q39703.d	P1-A2	cc571-1.0LL	1633full.m	QC	1.6/500	op95096,S4Q571,500,,,5.0,1,water	PASS
17	4Q39704.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
18	4Q39705.d	P1-D2	op95069-bs	1633full.m	Sample		op95069,S4Q571,500,,,5.0,1,water	✓
19	4Q39706.d	P1-D3	op95069-llbs:3	1633full.m	Sample		op95069,S4Q571,500,,,5.0,1,water	✓
20	4Q39707.d	P1-D4	op95069-mb	1633full.m	Sample		op95069,S4Q571,500,,,5.0,1,water	✓
21	4Q39708.d	P1-D5	fc2034-1	1633full.m	Sample		op95069,S4Q571,520,,,5.0,1,water	rr 10x
22	4Q39709.d	P1-D6	op95096-bs	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	✓
23	4Q39710.d	P1-D7	op95096-llbs:3	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	✓
24	4Q39711.d	P1-D8	op95096-mb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	✓
25	4Q39712.d	P1-D9	fc2078-1	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
26	4Q39713.d	P1-E1	fc2078-2	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
27	4Q39714.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
28	4Q39715.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
29	4Q39716.d	P1-E2	fc1804-3	1633full.m	Sample		op95069,S4Q571,550,,,5.0,1,water	rr 10x
30	4Q39717.d	P1-E3	fc1804-4	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	✓
31	4Q39718.d	P1-E4	fc1804-4	1633full.m	Sample	50/500	op95069,S4Q571,570,,,5.0,10,water	✓
32	4Q39719.d	P1-E5	fc1804-5	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	✓
33	4Q39720.d	P1-E6	fc1804-5	1633full.m	Sample	50/500	op95069,S4Q571,570,,,5.0,10,water	✓
34	4Q39721.d	P1-E7	fc1816-1	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
35	4Q39722.d	P1-E8	fc1816-2	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x

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36	4Q39723.d	P1-E9	op95069-ms	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
37	4Q39724.d	P1-F1	op95069-msd	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
38	4Q39725.d	P1-F2	fc1816-3	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
39	4Q39726.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
40	4Q39727.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
41	4Q39728.d	P1-F3	fc1816-4	1633full.m	Sample		op95069,S4Q571,530,,,5.0,1,water	rr 10x
42	4Q39729.d	P1-F4	fc1816-4	1633full.m	Sample	50/500	op95069,S4Q571,530,,,5.0,10,water	rr 10x
43	4Q39730.d	P1-F5	fc1816-5	1633full.m	Sample		op95069,S4Q571,540,,,5.0,1,water	rr 10x
44	4Q39731.d	P1-F6	fc1816-6	1633full.m	Sample		op95069,S4Q571,550,,,5.0,1,water	rr 10x
45	4Q39732.d	P1-F7	fc1816-7	1633full.m	Sample		op95069,S4Q571,560,,,5.0,1,water	rr 10x
46	4Q39733.d	P1-F8	fc1816-8	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
47	4Q39734.d	P1-F9	fc1816-8	1633full.m	Sample	50/500	op95069,S4Q571,570,,,5.0,10,water	rr 10x
48	4Q39735.d	P2-A1	fc1816-9	1633full.m	Sample		op95069,S4Q571,540,,,5.0,1,water	rr 10x
49	4Q39736.d	P2-A2	fc1816-10	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
50	4Q39737.d	P2-A3	fc1816-11	1633full.m	Sample		op95069,S4Q571,570,,,5.0,1,water	rr 10x
51	4Q39738.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
52	4Q39739.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
53	4Q39740.d	P1-A2	cc571-1.0LL	1633full.m	QC	5/500	op95096,S4Q571,500,,,5.0,1,water	PASS
54	4Q39741.d	P2-A4	fc1816-12	1633full.m	Sample		op95069,S4Q571,550,,,5.0,1,water	✓
55	4Q39742.d	P2-A5	fc1816-12	1633full.m	Sample	50/500	op95069,S4Q571,550,,,5.0,10,water	✓
56	4Q39743.d	P2-A6	fc1816-13	1633full.m	Sample		op95069,S4Q571,560,,,5.0,1,water	rr 10x
57	4Q39744.d	P2-A7	fc1816-13	1633full.m	Sample	50/500	op95069,S4Q571,560,,,5.0,10,water	rr 10x
58	4Q39745.d	P2-A8	fc1815-1	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
59	4Q39746.d	P2-A9	fc1815-2	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x, 1x
60	4Q39747.d	P2-B1	fc1815-3	1633full.m	Sample		op95096,S4Q571,540,,,5.0,1,water	✓
61	4Q39748.d	P2-B2	fc1815-4	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
62	4Q39749.d	P2-B3	fc1815-4	1633full.m	Sample	50/500	op95096,S4Q571,565,,,5.0,10,water	✓
63	4Q39750.d	P2-B4	fc1815-5	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
64	4Q39751.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
65	4Q39752.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
66	4Q39753.d	P2-B5	fc1815-6	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x, 1x
67	4Q39754.d	P2-B6	fc1815-7	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
68	4Q39755.d	P2-B7	fc1815-8	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
69	4Q39756.d	P2-B8	fc1815-8	1633full.m	Sample	50/500	op95096,S4Q571,565,,,5.0,10,water	✓
70	4Q39757.d	P2-B9	fc1815-9	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
71	4Q39758.d	P2-C1	fc1815-9	1633full.m	Sample	50/500	op95096,S4Q571,565,,,5.0,10,water	rr 10x
72	4Q39759.d	P2-C2	fc1815-10	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
73	4Q39760.d	P2-C3	fc1815-11	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
74	4Q39761.d	P2-C4	op95096-ms	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
75	4Q39762.d	P2-C5	op95096-msd	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
76	4Q39763.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
77	4Q39764.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
78	4Q39765.d	P2-C6	fc1815-12	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x

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SGS ORLANDO LCMS4-4Q ANALYSIS LOG

79	4Q39766.d	P2-C7	fc1815-13	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	✓
80	4Q39767.d	P2-C8	fc1815-13	1633full.m	Sample	50/500	op95096,S4Q571,565,,,5.0,10,water	✓
81	4Q39768.d	P2-C9	fc1815-14	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
82	4Q39769.d	P2-D1	fc1815-15	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
83	4Q39770.d	P2-D2	fc1815-16	1633full.m	Sample		op95096,S4Q571,540,,,5.0,1,water	rr 10x
84	4Q39771.d	P2-D3	fc1815-17	1633full.m	Sample		op95096,S4Q571,565,,,5.0,1,water	rr 10x
85	4Q39772.d	P2-D4	fc1815-17	1633full.m	Sample	50/500	op95096,S4Q571,565,,,5.0,10,water	rr 10x
86	4Q39773.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
87	4Q39774.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q571,500,,,5.0,1,water	ND
88	4Q39775.d	P1-C1	op94135-mb	1633full.m	Sample		op94135,S4Q571,500,,,5.0,1,water	LOD/LOQ
89	4Q39776.d	P1-C2	fa99824-37	1633full.m	Sample		op94135,S4Q571,500,,,5.0,1,water	LOD/LOQ
90	4Q39777.d	P1-C3	fa99824-38	1633full.m	Sample		op94135,S4Q571,500,,,5.0,1,water	LOD/LOQ
91	4Q39778.d	P1-C4	fa99824-39	1633full.m	Sample		op94135,S4Q571,500,,,5.0,1,water	LOD/LOQ
92	4Q39779.d	P1-C5	fa99824-40	1633full.m	Sample		op94135,S4Q571,500,,,5.0,1,water	LOD/LOQ
93	4Q39780.d	P1-C6	op94007-mb	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	LOD/LOQ
94	4Q39781.d	P1-C7	fa99824-41	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	LOD/LOQ
95	4Q39782.d	P1-C8	fa99824-42	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	LOD/LOQ
96	4Q39783.d	P1-C9	fa99824-43	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	LOD/LOQ
97	4Q39784.d	P1-D1	fa99824-44	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	LOD/LOQ
98	4Q39785.d	P1-A5	ecc571-4	1633full.m	QC	20/500	op95096,S4Q571,500,,,5.0,1,water	PASS
99	4Q39786.d	P1-A1	iccb	1633full.m	Sample		op94007,S4Q571,5.00,,,5.0,1,soil	ND

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LCMS4-4Q ANALYSIS LOG

DATE:	01/26/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

METHODS:	1633
PROC. METH:	ID_011623_S4Q571
CAL DATE:	01/24/23
ANALYST:	NG
RUN BATCH:	S4Q572

ELUENT A LOT #:	ACN 214785
ELUENT B LOT #:	224863 w5%ACN 214785 2mMAMAC: 11387
IC/CC STD LOT #:	LCMS 2055
ICV STD LOT #:	LCMS 2055/2026
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q39787.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
2	4Q39788.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
3	4Q39789.d	P1-A1	ccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
4	4Q39790.d	P1-B1	RT TDCA	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
5	4Q39791.d	P1-B2	RT Br-Ln	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
6	4Q39792.d	P1-A9	high std	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
7	4Q39793.d	P1-A1	iblk	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
8	4Q39794.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
9	4Q39795.d	P1-A2	cc571-1.0LL	1633full.m	QC	1.6/500	op95096,S4Q572,500,,,5.0,1,water	✓
10	4Q39796.d	P3-A1	fc2034-1	1633full.m	Sample	50/500	op95069,S4Q572,520,,,5.0,10,water	✓
11	4Q39797.d	P3-A2	fc2078-1	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
12	4Q39798.d	P3-A3	fc1804-3	1633full.m	Sample	50/500	op95069,S4Q572,550,,,5.0,10,water	✓
13	4Q39799.d	P3-A4	fc1816-1	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
14	4Q39800.d	P3-A5	fc1816-2	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
15	4Q39801.d	P3-A6	fc1816-3	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
16	4Q39802.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
17	4Q39803.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
18	4Q39804.d	P3-A7	fc1816-4	1633full.m	Sample	50/500	op95069,S4Q572,530,,,5.0,10,water	✓
19	4Q39805.d	P3-A8	fc1816-5	1633full.m	Sample	50/500	op95069,S4Q572,540,,,5.0,10,water	✓
20	4Q39806.d	P3-A9	fc1816-6	1633full.m	Sample	50/500	op95069,S4Q572,550,,,5.0,10,water	✓
21	4Q39807.d	P3-B1	fc1816-7	1633full.m	Sample	50/500	op95069,S4Q572,560,,,5.0,10,water	✓
22	4Q39808.d	P3-B2	fc1816-8	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
23	4Q39809.d	P3-B3	fc1816-9	1633full.m	Sample	50/500	op95069,S4Q572,540,,,5.0,10,water	✓
24	4Q39810.d	P3-B4	fc1816-10	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
25	4Q39811.d	P3-B5	fc1816-11	1633full.m	Sample	50/500	op95069,S4Q572,570,,,5.0,10,water	✓
26	4Q39812.d	P3-B6	fc1816-13	1633full.m	Sample	50/500	op95069,S4Q572,560,,,5.0,10,water	✓
27	4Q39813.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
28	4Q39814.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
29	4Q39815.d	P1-A2	cc571-1.0LL	1633full.m	QC	1.6/500	op95096,S4Q572,500,,,5.0,1,water	✓
30	4Q39816.d	P3-B7	fc1815-1	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
31	4Q39817.d	P3-B8	fc1815-2	1633full.m	Sample		op95096,S4Q572,565,,,5.0,1,water	✓
32	4Q39818.d	P3-B9	fc1815-2	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
33	4Q39819.d	P3-C1	fc1815-6	1633full.m	Sample		op95096,S4Q572,565,,,5.0,1,water	✓
34	4Q39820.d	P3-C2	fc1815-6	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
35	4Q39821.d	P3-C3	fc1815-7	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓

Printed 1/27/2023 @ 10:39 AM

SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q39822.d	P3-C4	fc1815-9	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
37	4Q39823.d	P3-C5	fc1815-10	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
38	4Q39824.d	P3-C6	fc1815-11	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
39	4Q39825.d	P1-A5	cc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
40	4Q39826.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓
41	4Q39827.d	P3-C7	fc1815-12	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
42	4Q39828.d	P3-C8	fc1815-14	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
43	4Q39829.d	P3-C9	fc1815-15	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
44	4Q39830.d	P3-D1	fc1815-16	1633full.m	Sample	50/500	op95096,S4Q572,540,,,5.0,10,water	✓
45	4Q39831.d	P3-D2	fc1815-17	1633full.m	Sample	50/500	op95096,S4Q572,565,,,5.0,10,water	✓
46	4Q39832.d	P1-A5	ecc571-4	1633full.m	QC	20/500	op95096,S4Q572,500,,,5.0,1,water	✓
47	4Q39833.d	P1-A1	iccb	1633full.m	Sample		op95096,S4Q572,500,,,5.0,1,water	✓

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	**Exp. Date**	Initials
LCMS 2052	1633 prep mix	Lot: 221044	MeOH	Fisher	—	1/4/24	99.9%	92mL	100mL	92%	NA	1/19/23	4/19/23	MV
↓	↓	Lot: 219481	NH4OH	↓	—	9/19/23	100%	3.3mL	↓	1%	↓	↓	↓	↓
↓	↓	Lot: 224863	H2O	↓	—	1/17/~~23~~ 24 MV	100%	1.7mL	↓	4%	↓	↓	↓	↓
↓	↓	Lot: 224297	Acetic ACID	↓	—	6/24	99.7%	0.625mL	↓	.625%	↓	↓	↓	↓
LCMS 2053	(spike) FULL list std	11568	PFOA DOD 28 comp.	SGS standards	11/9/27	1/10/24	1.0ppm	400NL	4.0mL	100ppb	95% + 5% MeOH H2O	1/24/23	3/21/23	MV
↓	↓	LCMS 1987	40 list ADDon#1	↓	—	3/21/23	1.0ppm	400NL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 1986	40 list Add on #2	↓	—	4/18/23	1.0ppm	400NL	↓	↓	↓	↓	↓	↓
↓	↓ LCMS 2054 →	LCMS ~~2012~~ 3054	Fose std.	↓	—	7/24/23 ~~5/11/23~~ MV	5.0ppm	400NL	↓	500ppb	↓	↓	↓	↓
LCMS 2054	Fose std.	11336	N-Et-FOSE	Wellington	5/13/27	9/19/23	50ppm	200NL	2.0mL	5ppm	95% MeOH 5% H2O	1/24/23	7/24/23	MV
↓	↓	11338	N-Me FOSE	↓	5/13/27	9/19/23	50ppm	200NL	↓	↓	↓	↓	↓	↓
LCMS 2055 A-C	1633 Cal std.	10855 J	PFAC-MxH	Wellington	9/14/26	1/17/24	1-4 ppm	250NL	4mL	62.5 125 250ppb	1633 MIX	1/24/23	7/24/23	MV
↓	↓	10853I 10853J	PFAC-MxI	↓	9/14/26	1/11/24 1/24/24	1-10 ppm	250NL	↓	62.5 625 ppb	↓	↓	↓	↓
↓	↓	11579B 11617A	PFAC-MxF	↓	1/11/25	1/11/24 1/24/24	2ppm	500NL	↓	250ppb	↓	↓	↓	↓
↓	↓	10854I 10854J	PFAC-Mx6	↓	3/4/25	1/11/24 1/24/24	2ppm	250NL	↓	125ppb	↓	↓	↓	↓
↓	↓	11492 11603	PFAC-MxJ	↓	9/14/26	1/11/24 1/24/24	4-20 ppm	312NL	↓	312/1160 ppb	↓	↓	↓	↓
				~~MW~~			N/A MV 1/24/23							

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2025	List 40 (Surr) ADD-ON Isotope Mix	11333	d7-N-MeFosE	Wellington Labs	01/27/27	10/12/23	50ppm	200NL	2.0mL	1/5ppm	95%MeOH 5%H2O	12/7/22	6/7/23	MW
↓	↓	11460 11339	D9-N-EtFosE	↓	01/27/27 01/27/27	12/07/23 10/12/23	↓	200NL	↓	↓	↓	↓	↓	↓
↓	↓	11115	M2-PFHxDA	↓	11/23/28	08/23/23	↓	40NL	↓	↓	↓	↓	↓	↓
↓	↓	10836	D-N EtFosA	↓	12/30/25	08/23/23	↓	40NL	↓	↓	↓	↓	↓	↓
LCMS 2026	(spike) FULL List Std.	11447	PFOA-DOD(28)	Absolute	08/05/27	11/29/23	1.0ppm	400uL	4.0mL	100ppb	95%MeOH 5%H2O	12/08/22	03/21/23	NG
↓	↓	LCMS 1987	40List ADDON#1	—	—	03/21/23	1.0ppm	400uL	↓	100ppb	↓	↓	↓	NG
↓	↓	LCMS 1986	40List ADDON#2	—	—	04/18/23	1.0ppm	400uL	↓	100ppb	↓	↓	↓	NG
↓	↓	LCMS 2012	FOSA Std.	—	—	05/11/23	5.0ppm	400uL	↓	500ppb	↓	↓	↓	NG
LCMS 2027	(spike) 1633 CAL Std.	10855F	PFAC-MXH	Wellington Labs	09/14/26	11/04/23	1-4 ppm	250uL	4mL	625/125/250 ppb	1633 Mix	12/12/22	05/04/23	NG
↓	↓	10853F	PFAC-MXI	↓	09/14/26	11/22/23	1-10 ppm	250uL	↓	62.5/625 ppb	↓	↓	↓	NG
↓	↓	11493A	PFAC-MXF	↓	05/04/23	*05/04/23 11/29/23	2ppm	500uL	↓	250ppb	↓	↓	↓	NG
↓	↓	10854F	PFAC-MXG	↓	03/04/25	11/22/23	2ppm	250uL	↓	125ppb	↓	↓	↓	NG
↓	↓	10857E	PFAC-MXJ	↓	10/12/23	*10/12/23 11/22/23	4-20 ppm	312uL	↓	312/1160 ppb	↓	↓	↓	NG
LCMS 2028	537.1 DW Std.	11447	PFOA-DOD (28comps)	Absolute	08/05/27	11/29/23	1.0ppm	400uL	4mL	100ppb	96%MeOH 4%H2O	12/13/22	02/24/23	NG
↓	↓	LCMS 1950	537.1 DW SURR	—	—	02/24/23	10/20 ppm	400uL	↓	100/200 ppb	↓	↓	↓	NG
						—	M/A	Continue next page MW	12/13/22					

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1987	40 List Std ADD-ON #1	10726A	10:2 FTS	Wellington Labs	03/03/26	03/21/23	50ppm	80uL	4.0mL	1ppm	95%MeOH 5%H2O	10/18/22	03/21/23	NG
		10840	4-PFDoS		07/09/26	10/18/23								
		10829	N-MeFOSA		08/03/26	08/23/23								
		10837	N-EtFOSA		08/03/26	08/23/23								
		10842	PFHxDA	NG 10/18/22	09/03/26	10/18/23								
		10841	PFODA		05/07/26	10/18/23								
	☆	10684A	3:3FTCA PFPrPA		11/12/25	03/21/23								
		10685A	5:3FTCA PFPePA		11/11/25	08/23/23								
		10683A	7:3FTCA PFHpPA		11/12/25	03/21/23								
		11117	PFECHS		10/14/26	06/23/23								
		10628	PFEESA		05/13/25	10/18/23								
		10763B	PFMBA PFSOHxA		03/31/25	10/18/23								
		10764A	PFMPA PF4OPeA		03/31/25	03/21/23								
		10765B	NFHDA 3,6OPFHpA		03/31/25	10/18/23								
						10/18/22								

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-lcms std prep log.xls 030819

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1985A-B	List 40 ADD-ON ~~Isotopic~~	11333	D7-N-MeFOSE	Wellington Labs	01/27/27	10/12/23	50ppm	200uL	2.0mL	1/5 ppm	95% MeOH 5% H_2O	10/18/22	04/18/23	NG
↓	↓	11339	D9-N-EtFOSE	↓	01/27/27	10/12/23	↓	200uL	↓	↓	↓	↓	↓	NG
↓	↓	11115	M2-PFHxDA	↓	11/23/28	08/23/23	↓	40uL	↓	↓	↓	↓	↓	NG
↓	↓	10836	D-N-EtFOSA	↓	12/30/25	08/23/23	↓	40uL	↓	↓	↓	↓	↓	NG
LCMS 1986	40 List Std. ADD-ON #2	11224	FBSA-I	Wellington Labs	11/10/26	06/23/23	50ppm	80uL	4.0mL	1ppm	95% MeOH 5% H_2O	10/18/22	04/18/23	NG
↓	↓	11225	FHxSA-I	↓	12/29/26	06/23/23	50ppm	80uL	↓	↓	↓	↓	↓	NG
↓	↓	11140	L-PFPrS	↓	07/21/26	05/26/23	50ppm	80uL	↓	↓	↓	↓	↓	NG
					NG	10/18/22								

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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS A 2009 B	PFC Spike	11483	PFOA-DOD (28comps)	Wellington Labs	08/05/27	11/08/23	1.0ppm	2mL	5mL	400ppb	95%MeOH 5%H2O	11/08/22	05/08/23	NG
↓	↓	10839	N-Me-FOSA-M	↓	08/23/26	09/22/23	50ppm	40uL	↓	↓	↓	↓	↓	NG
		11224	PFBSA-I		11/10/26	06/23/23	↓	↓						NG
		11249	FHxSA-I		12/29/26	11/03/23								NG
↓	↓	11332	PFECHS	↓	03/28/27	10/18/23	↓	↓	↓	↓	↓	↓	↓	NG
LCMS 2010 A-B	1633 (spike) CAL. Std.	10855F	PFAC-MXH	Wellington Labs	09/14/26	11/04/23	1-4 ppm	250uL	4mL	62.5/125/250 ppb	1633 Mix	11/09/22	05/04/23	NG
↓	↓	10853E	PFAC-MXI	↓	09/14/26	11/04/23	1-10 ppm	250uL	↓	62.5/125 ppb	↓	↓	↓	NG
		10856I	PFAC-MXF		05/04/23	05/04/23	2ppm	500uL		250ppb				NG
		10854E	PFAC-MXG		03/04/25	11/04/23	2 ppm	250uL		125ppb				NG
↓	↓	10857D	PFAC-MXJ	↓	10/12/23	11/08/23	4-20 ppm	312uL	↓	312/1160 ppb	↓	↓	↓	NG
LCMS 2011	(spike) FULL List Std.	11440	PFOA-DOD(28)	Absolute	08/05/27	10/26/23	1.0ppm	400uL	4.0mL	100ppb	95%MeOH 5%H2O	11/11/22	04/21/23	NG
↓	↓	LCMS 1987	40 List ADD-ON #1	—	—	03/21/23	1.0ppm	400uL	↓	100ppb	↓	↓	↓	NG
		LCMS 1986	40 List ADD-ON #2	—	—	04/18/23	1.0ppm	400uL		100ppb				NG
↓	↓	LCMS 2012	FOSE Std.	—	—	05/11/23	5.0ppm	400uL	↓	500ppb	↓	↓	↓	NG
LCMS 2012	FOSE Std.	11336	N-Et-FOSE	Wellington Labs	05/13/27	09/19/23	50ppm	200uL	2.0mL	5ppm	95%MeOH 5%H2O	11/11/22	05/11/23	NG
↓	↓	11338	N-Me-FOSE	↓	05/13/27	09/19/23	50ppm	200uL	↓	↓	↓	↓	↓	NG

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10853

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXI

Native Perfluorooctanesulfonamide and Perfluorooctanesulfonamidoethanol Solution/Mixture

PRODUCT CODE:	PFAC-MXI
LOT NUMBER:	PFACMXI0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Table A: **PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By: _____ **Date:** 09/23/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXI0921 (3 of 5)
rev0

rec'd 10/31/22 11492

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

Table A: **PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: _____ **Date:** 10/02/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

PFACMXJ0921 (3 of 5)
rev1

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11603
recd: 01/10/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Table A: **PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: _____ **Date:** 10/02/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

11579 A-B
rec'd 12/27/22

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)	Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000	A

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 01/12/2022
(mm/dd/yyyy)

B.G. Chittim, General Manager

11617 A-B rec'd 01/19/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

7.8.1
7

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)	Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000	A

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: B.G. Chittim, General Manager **Date:** 01/12/2022 (mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG1219
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	12/03/2019
LAST TESTED: (mm/dd/yyyy)	05/04/2020
EXPIRY DATE: (mm/dd/yyyy)	05/04/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

Table A: **PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 07/30/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXG1219 (3 of 5)
rev2

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

Native Per- and Poly-fluoroalkyl Substance Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0921
SOLVENT(S):	Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/09/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of br-NMeFOSAA
Table C: Isomeric Components and Percent Composition of br-NEtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: **PFAC-MXH; Components and Concentrations (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))**

Compound	Acronym	Concentration* (µg/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4.00	1
Perfluoro-n-pentanoic acid	PFPeA	2.00	2
Perfluoro-n-hexanoic acid	PFHxA	1.00	5
Perfluoro-n-heptanoic acid	PFHpA	1.00	7
Perfluoro-n-octanoic acid	PFOA	1.00	11
Perfluoro-n-nonanoic acid	PFNA	1.00	14
Perfluoro-n-decanoic acid	PFDA	1.00	18
Perfluoro-n-undecanoic acid	PFUdA	1.00	23
Perfluoro-n-dodecanoic acid	PFDoA	1.00	26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00	29
Perfluoro-1-octanesulfonamide	FOSA	1.00	25
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	0.760	20
	N-MeFOSAA: ∑ branched isomers	0.240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	0.775	22
	N-EtFOSAA: ∑ branched isomers	0.225	21

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: ∑ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4.00	3.84	16

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 09/23/2021 (mm/dd/yyyy)

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0921 (3 of 11)
rev0

10683A

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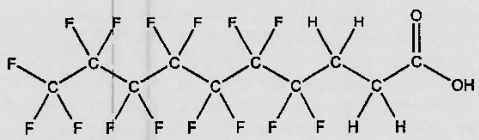
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid

LOT NUMBER: FHpPA1020

STRUCTURE:

CAS #: 812-70-4



MOLECULAR FORMULA:	$C_{10}H_5F_{15}O_2$	**MOLECULAR WEIGHT:**	442.12
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 11/27/2020
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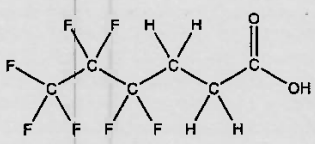
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FPrPA	**LOT NUMBER:**	FPrPA1020
COMPOUND:	3-Perfluoropropyl propanoic acid		
STRUCTURE:		**CAS #:**	356-02-5



MOLECULAR FORMULA:	$C_6H_5F_7O_2$	**MOLECULAR WEIGHT:**	242.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

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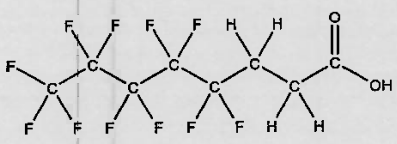
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA:	$C_8H_5F_{11}O_2$	**MOLECULAR WEIGHT:**	342.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/11/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/11/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
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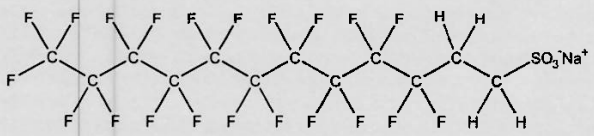
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA:	$C_{12}H_4F_{21}SO_3Na$	**MOLECULAR WEIGHT:**	650.18
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt)	**SOLVENT(S):**	Methanol
	48.3 ± 2.4 µg/mL (10:2FTS acid)		
	48.2 ± 2.4 µg/mL (10:2FTS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/03/2021		
EXPIRY DATE: (mm/dd/yyyy)	03/03/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 03/05/2021 (mm/dd/yyyy)
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10762 A-B

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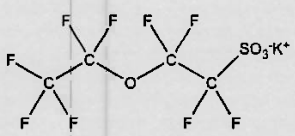
CERTIFICATE OF ANALYSIS
DOCUMENTATION

rec'd 8/20/21 VPH

PRODUCT CODE:	PFEESA	**LOT NUMBER:**	PFEESA0520
COMPOUND:	Potassium perfluoro(2-ethoxyethane)sulfonate		
STRUCTURE:		**CAS #:**	117205-07-9



MOLECULAR FORMULA:	$C_4F_9SO_4K$	**MOLECULAR WEIGHT:**	354.19
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt)	**SOLVENT(S):**	Methanol
	44.6 ± 2.2 µg/ml (PFEESA acid)		
	44.5 ± 2.2 µg/ml (PFEESA anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2020		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

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Certified By: _____ **Date:** 05/29/2020 (mm/dd/yyyy)
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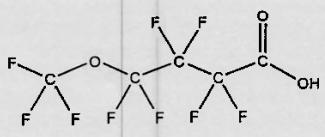
CERTIFICATE OF ANALYSIS
DOCUMENTATION

re-id with 8/20/21

PRODUCT CODE:	PF5OHxA	**LOT NUMBER:**	PF5OHxA0320
COMPOUND:	Perfluoro-5-oxahexanoic acid		
SYNONYM:	Perfluoro-4-methoxybutanoic acid (PFMBA)		
STRUCTURE:		**CAS #:**	863090-89-5



MOLECULAR FORMULA:	$C_5HF_9O_3$	**MOLECULAR WEIGHT:**	280.05
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/31/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/31/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 12/21/2020 (mm/dd/yyyy)
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

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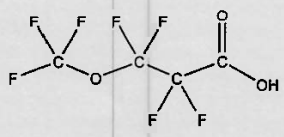
PRODUCT CODE:	PF4OPeA	**LOT NUMBER:**	PF4OPeA0320
COMPOUND:	Perfluoro-4-oxapentanoic acid		
SYNONYM:	Perfluoro-3-methoxypropanoic acid (PFMPA)		
STRUCTURE:		**CAS #:**	377-73-1



MOLECULAR FORMULA:	$C_4HF_7O_3$	**MOLECULAR WEIGHT:**	230.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/31/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/31/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 12/21/2020 (mm/dd/yyyy)
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

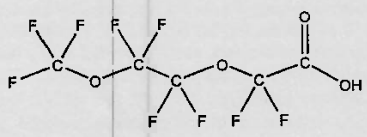
recd WFH 8/20/21

PRODUCT CODE: 3,6-OPFHpA
COMPOUND: Perfluoro-3,6-dioxaheptanoic acid

LOT NUMBER: 36OPFHpA0320

STRUCTURE:

CAS #: 151772-58-6



MOLECULAR FORMULA:	$C_5HF_9O_4$	**MOLECULAR WEIGHT:**	296.04
CONCENTRATION:	50.0 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/31/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/31/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 05/27/2020 (mm/dd/yyyy)
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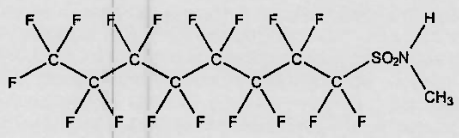
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0721M
COMPOUND:	N-methylperfluoro-1-octanesulfonamide		
STRUCTURE:		**CAS #:**	31506-32-8



rec'd WEH 10/5/21

MOLECULAR FORMULA:	$C_{9}H_{4}F_{17}NO_{2}S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/03/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/03/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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WELLINGTON LABORATORIES

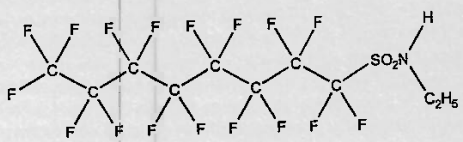
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M 10837
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0821M

CAS #: 4151-50-2

STRUCTURE:



MOLECULAR FORMULA:	$C_{10}H_8F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/12/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 08/16/2021 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

11140

WELLINGTON LABORATORIES

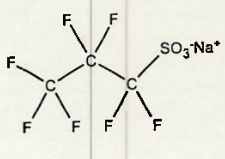
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPrS0721

CAS #: Not available

STRUCTURE:



MOLECULAR FORMULA:	$C_3F_7SO_3Na$
MOLECULAR WEIGHT:	272.07
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 46.0 ± 2.3 µg/mL (PFPrS acid) 45.8 ± 2.3 µg/mL (PFPrS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	07/12/2021
EXPIRY DATE: (mm/dd/yyyy)	07/12/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
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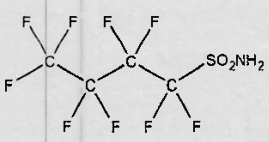
Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11224

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FBSA-I	**LOT NUMBER:**	FBSA1121I
COMPOUND:	Perfluoro-1-butanesulfonamide		
STRUCTURE:		**CAS #:**	30334-69-1



MOLECULAR FORMULA:	$C_4H_2F_9NO_2S$	**MOLECULAR WEIGHT:**	299.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/10/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 11/10/2021 (mm/dd/yyyy)
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11225

WELLINGTON LABORATORIES

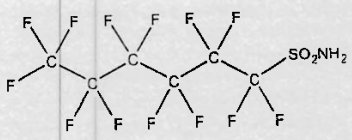
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA1221I

CAS #: 41997-13-1

STRUCTURE:



MOLECULAR FORMULA:	$C_6H_2F_{13}NO_2S$
CONCENTRATION:	50.0 ± 2.5 µg/mL
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	12/29/2021
EXPIRY DATE: (mm/dd/yyyy)	12/29/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 01/10/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

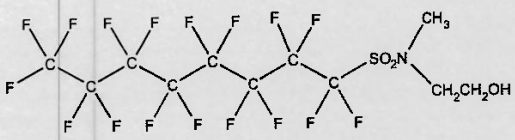
11338

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M
LOT NUMBER: NMeFOSE0522M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:
CAS #: 24448-09-7



MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2022 (HRGC/LRMS)		
	05/13/2022 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/14/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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11384 A-J

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled Perfluoroalkyl Substance Injection Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-IS
LOT NUMBER:	MPFACHIFIS0921
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/07/2021
LAST TESTED: (mm/dd/yyyy)	09/07/2021
EXPIRY DATE: (mm/dd/yyyy)	09/07/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4, C_6, C_8-C_{10}) and two mass-labelled (^{18}O and ^{13}C) perfluoroalkanesulfonates (C_6 and C_8). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ^{13}C or >94% per ^{18}O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM 11447

ANAB ISO 34 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:	64029A
Lot Number:	080522
Description:	PFOA - DOD
	28 components
Expiration Date:	080527
Recommended Storage:	Freezer (0 °C)
Nominal Concentration (µg/mL):	1.0
NIST Test ID#:	6UTB

Solvent(s): Lot# Methanol (1 mM KOH) 042722 (98%) 2-Propanol 23214 (2%)

5E-05 Balance Uncertainty
0.012 Flask Uncertainty

Formulated By: Prashant Chauhan 080522 DATE

Reviewed By: Pedro L. Rentas 080522 DATE

Volume(s) shown below were combined and diluted to (mL): 100.0

Note: All assigned values are anion concentrations.

	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.) Free Acid CAS#	OSHA PEL (TWA)	LD50
1.	Perfluoro-n-butanoic acid (PFBA)	99542	021022	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2.	Perfluoro-n-pentanoic acid (PFPeA)	99543	050222	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3.	Perfluorohexanoic acid (PFHxA)	99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4.	Perfluoroheptanoic acid (PFHpA)	99197	040522	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5.	Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ipr-rat 189mg/kg
6.	Perfluorononanoic acid (PFNA)	99200	050222	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7.	Perfluorodecanoic acid (PFDA)	99195	041822	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	orl-rat 57mg/kg
8.	Perfluoroundecanoic acid (PFUnA)	99205	071522	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9.	Perfluorododecanoic acid (PFDoA)	99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10.	Perfluorotridecanoic acid (PFTrDA)	99204	021022	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11.	Perfluorotetradecanoic acid (PFTeDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A	N/A
12.	Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA03221	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	N/A	N/A
13.	N-Methylperfluorooctanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0621	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
14.	N-Ethylperfluorooctanesulfonamidoacetic acid (br-NEtFOSAA)*	4163	brNEtFOSAA1121	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
15.	Perfluorobutanesulfonic acid (PFBS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16.	Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	032422	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17.	Perfluorohexanesulfonic acid (br-PFHxS)*	99198	071522	0.02	2.00	0.017	50.2	1.00	0.02	355-46-4 (L)	N/A	N/A
18.	Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHpS0122	0.021	2.10	0.017	47.6	1.00	0.05	375-92-8	N/A	N/A
19.	Heptadecafluorooctanesulfonic acid (br-PFOS)*	99201	033022	0.02	2.00	0.017	50.1	1.00	0.02	1763-23-1 (L)	N/A	N/A
20.	Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LPFNS0422	0.021	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A	N/A
21.	Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPFDS0222	0.021	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A	N/A
22.	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	65271	080522	0.02	2.00	0.017	50.2	1.00	0.05	757124-72-4	N/A	N/A
23.	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	65272	071522	0.02	2.00	0.017	50.2	1.00	0.05	27619-97-2	N/A	N/A
24.	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3662	82FTS0122	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25.	2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid (HFPO-DA)	99666	080522	0.02	2.00	0.017	50.1	1.00	0.02	13252-13-6	N/A	N/A
26.	11-Chloroicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0222	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27.	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	4164	9ClPF3ONS0522	0.021	2.14	0.017	46.6	1.00	0.05	756426-58-1	N/A	N/A
28.	Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0422	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
	Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ipr-rat 189mg/kg
	Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A	ipr-rat 189mg/kg
	Perfluorohexanesulfonic acid (linear)*	99198	071522	0.02	2.00	0.017	44.2	0.88	0.02	355-46-4 (L)	N/A	N/A
	Perfluorohexanesulfonic acid (branched isomer)*	99198	071522	0.02	2.00	0.017	6.0	0.12	0.0021	355-46-4 (L)	N/A	N/A
	Heptadecafluorooctanesulfonic acid (linear)*	99201	033022	0.02	2.00	0.017	38.1	0.76	0.02	1763-23-1 (L)	N/A	N/A
	Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	7.5	0.15	0.003	1763-23-1 (L)	N/A	N/A
	Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	4.0	0.08	0.002	1763-23-1 (L)	N/A	N/A
	Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	0.5	0.010	0.0002	1763-23-1 (L)	N/A	N/A
	N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0621	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	N/A	N/A
	N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0621	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	N/A	N/A
	N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0621	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	N/A	N/A
	N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0621	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	N/A	N/A
	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	brNEtFOSAA1121	0.02	2.00	0.017	36.6	0.73	0.04	2991-50-6 (L)	N/A	N/A
	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEtFOSAA1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A	N/A
	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEtFOSAA1121	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	N/A	N/A
	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEtFOSAA1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.1

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5 % of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty References: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result."

SGS
Standard Prep Log S4Q571 page 35 of 42

10

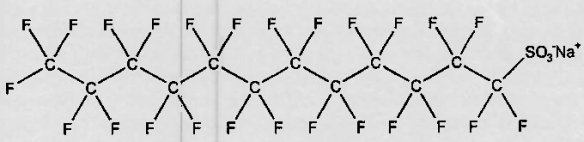
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate
LOT NUMBER: LPFDoS0721

STRUCTURE:
CAS #: 1260224-54-1



MOLECULAR FORMULA:	$C_{12}F_{25}SO_3Na$
MOLECULAR WEIGHT:	722.14
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.5 ± 2.4 µg/mL (PFDoS acid) 48.4 ± 2.4 µg/mL (PFDoS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	07/09/2021
EXPIRY DATE: (mm/dd/yyyy)	07/09/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

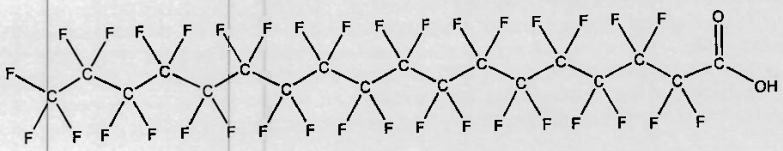
10847 NG 01/18/23

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid

LOT NUMBER: PFODA0821

CAS #: 16517-11-6

STRUCTURE:



MOLECULAR FORMULA:	$C_{18}HF_{35}O_2$	**MOLECULAR WEIGHT:**	914.14
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/03/2021
EXPIRY DATE: (mm/dd/yyyy) 09/03/2026
RECOMMENDED STORAGE: Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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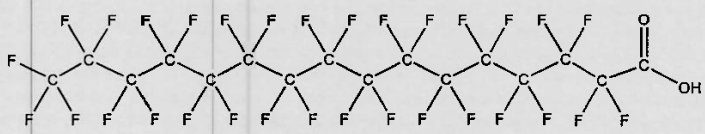
CERTIFICATE OF ANALYSIS
DOCUMENTATION

1084 2 NG 01/18/23

PRODUCT CODE: PFHxDA
LOT NUMBER: PFHxDA0421
COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE:
CAS #: 67905-19-5



MOLECULAR FORMULA: $C_{16}HF_{31}O_2$
MOLECULAR WEIGHT: 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 05/25/2021 (mm/dd/yyyy)

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11117

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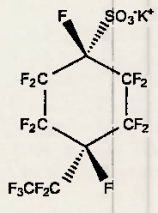
CERTIFICATE OF ANALYSIS
DOCUMENTATION

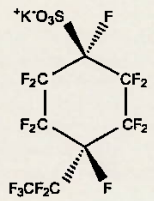
PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS1021

COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



cis-isomer



trans-isomer

CAS #: 335-24-0

MOLECULAR FORMULA:	$C_8F_{15}SO_3K$	**MOLECULAR WEIGHT:**	500.22
CONCENTRATION:	50.0 ± 2.5 µg/mL (K salt)	**SOLVENT(S):**	Methanol
	46.2 ± 2.3 µg/mL (PFECHS acid)		
	46.1 ± 2.3 µg/mL (PFECHS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/14/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/14/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis*/*trans* isomers of PFECHS at a ratio of 1:1.27 (*cis*:*trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/15/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

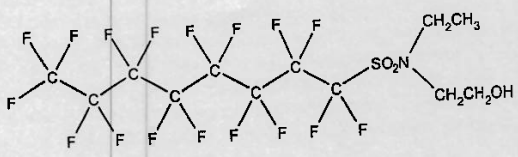
PRODUCT CODE: N-EtFOSE-M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

LOT NUMBER: NEtFOSE0622M

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2022 (HRGC/LRMS) 05/13/2022 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 07/13/2022 (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11383 A-J

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0822
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/20/2022
LAST TESTED: (mm/dd/yyyy)	08/02/2022
EXPIRY DATE: (mm/dd/yyyy)	08/02/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12}, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4, C_6, and C_8), three mass-labelled (one ^{13}C and two ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ^{2}H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: **MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	17
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	23
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	18
N-methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	24
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	16
2-(N-methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/02/2022
(mm/dd/yyyy)

B.G. Chittim, General Manager

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Method: EPA 1633 Draft (QSM)

Date/Time Started: 01/20/23 09:00 {mm/dd/yy 24:00}

Date/Time Finished: 01/24/23 10:00 {mm/dd/yy 24:00}

Balance ID: _____

Batch#: OP 95069 Ext. By: GH Conc. By: _____ Vialed By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 95069 MB		500	7	N/A	25		5	E	
OP 95069 BS		500				200			
OP 95069 LLBS		500				80			
FC1804-3	1	550							
4	1	570							
5	1	570							
FC1816-1	1	570							
2	1	570							
3	1	570							
4	1	530						E	
5	1	540						F	
6	1	~~560~~ 550	7	N/A					
7	1	560	8	7					
8	1	570	7	N/A					
9	1	540							
10	1	570							
11	1	570							
12	1	550							
13	1	560							
FC2034-1	2	520	7	N/A	25		5	F	
OP FC1816-2MS	3	570	7	N/A	25	200	5	E	
OP FC1816-2MSD	4	570	7	N/A	25	200	5	E	
OP DUP									

GH 01/20/23

Comments:

EIS (SURR) ID: 11597 Conc: 250-5000 ng/mL Exp. Date: 01/11/24 Inj. By: GH Ver. By DBL

SPIKE.1 ID: LCMS2050A Conc: VARIED Exp. Date: 07/17/23 Inj. By: GH Ver. By DBL

SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By _____

NIS (ISTD) ID: 11596 Conc: 250-1000 ng/mL Exp. Date: 01/24/24 Inj. By: NG Ver. By MRF

TurboVap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

N-Evap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 223213

Water Lot# OP95069

Acetic Acid# 194003

0.1M Formic PF238

1% NH4OH MeOH PF240

0.3M Formic Acid PF233

3% NH4OH Sol _____

5% Formic Acid _____

SPE Lot # 322-006891

Syringe filter Lot # _____

pH paper Lot# 215322

Carbon Lot# 160898

Relinquished By: Gabriella Kadus Date: 01/20/23

Accepted By: NF Date: 01/24/23

1633 AQ extraction 042222.xls NF