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: FC8439

Sampling Date: 08/03/23

Report to:

AECOM, Inc
7595 Technology Way
Denver, CO 80237
katie.abbott@aecom.com; mark.kromis@aecom.com;
watson.tanji@aecom.com; kristin.rutherford@aecom.com
ATTN: Katie Abbott

Total number of pages in report: **1269**

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 unless noted in the narrative, comments or footnotes.

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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SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC8439

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC8439-1	08/03/23	09:30	MGAY	08/05/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2308
FC8439-2	08/03/23	09:30	MGAY	08/05/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2308
FC8439-3	08/03/23	11:25	MGAY	08/05/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2308
FC8439-4	08/03/23	09:35	MYCW	08/05/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2308
FC8439-5	08/03/23	09:35	MYCW	08/05/23	AQ	Ground Water	AF-RHMW02-WGFD01LF-2308
FC8439-6	08/03/23	11:20	MYCW	08/05/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2308

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC8439

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 8/14/2023 5:14:28 PM

On 08/05/2023, 6 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 FC8439 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:** OP98297

Sample(s) FC8439-3MS, FC8439-4DUP were used as the QC samples indicated.

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

RPD(s) for Duplicate for Perfluorooctanoic acid are outside control limits for sample OP98297-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FC8439-2, FC8439-4, FC8439-5, FC8439-6 have surrogates outside control limits.

OP98297-LLBS for 13C2-8:2FTS: Outside control limits.

OP98297-LLBS for 13C2-6:2FTS: Outside control limits.

OP98297-MB: All results and recoveries corrected for double EIS.

FC8439-1 for 8:2 Fluorotelomer sulfonate: Associated CCV outside of control limits high, sample was ND.

FC8439-1 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-2 for 8:2 Fluorotelomer sulfonate: Associated CCV outside of control limits high, sample was ND.

FC8439-2 for 13C2-4:2FTS: Outside control limits.

FC8439-2: Dilution required (ID recovery standard failure).

FC8439-2 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-3 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-4: Dilution required (ID recovery standard failure).

FC8439-4 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-4 for 13C2-8:2FTS: Outside control limits.

FC8439-4 for 13C2-6:2FTS: Outside control limits.

FC8439-4 for 13C2-4:2FTS: Outside control limits.

FC8439-5 for 13C7-PFUnDA: Outside control limits.

FC8439-5 for 13C2-4:2FTS: Outside control limits.

FC8439-5 for 13C2-6:2FTS: Outside control limits.

FC8439-5: Dilution required (ID recovery standard failure).

FC8439-5 for d5-EtFOSAA: Outside control limits.

FC8439-5 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-6 for 9Cl-PF3ONS (F-53B Major): Associated CCV outside control limits high. Sample was ND.

FC8439-6 for d5-EtFOSAA: Outside control limits.

FC8439-6 for d3-MeFOSAA: Outside control limits.

FC8439-6 for 13C2-6:2FTS: Outside control limits.

FC8439-6 for 13C2-4:2FTS: Outside control limits.

FC8439-6 for 13C8-PFOA: Outside control limits.

FC8439-6 for 13C7-PFUnDA: Outside control limits.

FC8439-6 for 13C5-PFHxA: Outside control limits.

FC8439-6 for 13C4-PFHpA: Outside control limits.

FC8439-6 for 13C4-PFBA: 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: FC8439
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 08/03/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC8439-1	**AF-RHMW12A-WGN01LF-2308**					
Perfluoropentanoic acid		1.5 J	7.5	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		0.58 J	3.8	1.9	ng/l	EPA DRAFT 1633
FC8439-2	**AF-RHMW12A-WGFD01LF-2308**					
Perfluoropentanoic acid		1.7 J	8.0	2.0	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		0.72 J	4.0	2.0	ng/l	EPA DRAFT 1633
FC8439-3	**AF-RHMW16-WGN01LF-2308**					
No hits reported in this sample.						
FC8439-4	**AF-RHMW02-WGN01LF-2308**					
Perfluorooctanoic acid		0.95 J	3.7	0.93	ng/l	EPA DRAFT 1633
FC8439-5	**AF-RHMW02-WGFD01LF-2308**					
Perfluorooctanoic acid		0.69 J	3.7	0.93	ng/l	EPA DRAFT 1633
FC8439-6	**AF-RHMW03-WGN01LF-2308**					
Perfluoropentanoic acid		2.1 J	7.7	1.9	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2308		
Lab Sample ID:	FC8439-1	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48785.D	1	08/09/23 20:31	AL	08/08/23 10:50	OP98297	S4Q713
Run #2							

	Initial Volume	Final Volume
Run #1	530 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.5	7.5	1.9	0.89	ng/l	J
307-24-4	Perfluorohexanoic acid	0.58	3.8	1.9	0.47	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	3.8	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate [a]	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	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-RHMW12A-WGN01LF-2308		
Lab Sample ID:	FC8439-1	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [b]	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		20-150%
	13C5-PFPeA	118%		20-150%
	13C5-PFHxA	132%		20-150%
	13C4-PFHpA	135%		20-150%
	13C8-PFOA	123%		20-150%
	13C9-PFNA	119%		20-150%
	13C6-PFDA	136%		20-150%
	13C7-PFUnDA	133%		20-150%
	13C2-PFDoDA	126%		20-150%
	13C2-PFTeDA	103%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	117%		20-150%

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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-RHMW12A-WGN01LF-2308		
Lab Sample ID:	FC8439-1	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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%		20-150%
	13C8-FOSA	96%		20-150%
	d3-MeFOSA	106%		20-150%
	d5-EtFOSA	108%		20-150%
	d3-MeFOSAA	121%		20-150%
	d5-EtFOSAA	127%		20-150%
	d7-MeFOSE	86%		20-150%
	d9-EtFOSE	94%		20-150%
	13C2-4:2FTS	148%		20-180%
	13C2-6:2FTS	159%		20-180%
	13C2-8:2FTS	159%		20-180%
	13C3-HFPO-DA	111%		20-150%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside control limits high. Sample was ND.

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2308		
Lab Sample ID:	FC8439-2	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48786.D	1	08/09/23 20:46	AL	08/08/23 10:50	OP98297	S4Q713
Run #2 [a]	6Q22666.D	5	08/10/23 19:50	MV	08/08/23 10:50	OP98297	S6Q330

	Initial Volume	Final Volume
Run #1	500 ml	5.0 ml
Run #2	500 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	4.0 U	16	4.0	1.9	ng/l	
2706-90-3	Perfluoropentanoic acid	1.7	8.0	2.0	0.94	ng/l	J
307-24-4	Perfluorohexanoic acid	0.72	4.0	2.0	0.50	ng/l	J
375-85-9	Perfluoroheptanoic acid	2.0 U	4.0	2.0	0.50	ng/l	
335-67-1	Perfluorooctanoic acid	1.0 U	4.0	1.0	0.50	ng/l	
375-95-1	Perfluorononanoic acid	2.0 U	4.0	2.0	0.61	ng/l	
335-76-2	Perfluorodecanoic acid	2.0 U	4.0	2.0	0.50	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.0 U	4.0	2.0	0.60	ng/l	
307-55-1	Perfluorododecanoic acid	2.0 U	4.0	2.0	0.60	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.0 U	4.0	2.0	0.84	ng/l	
376-06-7	Perfluorotetradecanoic acid	2.0 U	4.0	2.0	0.50	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	2.0 U	4.0	2.0	0.50	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	4.0 U	5.0	4.0	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.0 U	4.0	2.0	0.70	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	2.0 U	4.0	2.0	0.50	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.0 U	4.0	2.0	0.54	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.0 U	4.0	2.0	0.57	ng/l	
335-77-3	Perfluorodecanesulfonic acid	2.0 U	4.0	2.0	0.64	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	4.0 U	5.0	4.0	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	40 U [b]	100	40	16	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	8.0 U	20	8.0	3.5	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate [c]	8.0 U	20	8.0	4.1	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	2.0 U	4.0	2.0	0.67	ng/l	
31506-32-8	MeFOSA	4.0 U	8.0	4.0	1.0	ng/l	
4151-50-2	EtFOSA	4.0 U	8.0	4.0	1.0	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-RHMW12A-WGFD01LF-2308		
Lab Sample ID:	FC8439-2	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4.0 U	5.0	4.0	1.0	ng/l	
2991-50-6	EtFOSAA	4.0 U	5.0	4.0	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	20 U	40	20	4.4	ng/l	
1691-99-2	EtFOSE	20 U	40	20	7.4	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	2.0 U	4.0	2.0	1.0	ng/l	
919005-14-4	ADONA	4.0 U	8.0	4.0	1.9	ng/l	
377-73-1	PFMPA	2.0 U	8.0	2.0	1.0	ng/l	
863090-89-5	PFMBA	4.0 U	8.0	4.0	1.1	ng/l	
151772-58-6	NFDHA	4.0 U	8.0	4.0	1.2	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [d]	4.0 U	8.0	4.0	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	4.0 U	8.0	4.0	1.8	ng/l	
113507-82-7	PFEESA	2.0 U	8.0	2.0	0.78	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	10 U	20	10	4.5	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	20 U	100	20	8.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	20 U	100	20	7.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%	62%	20-150%
	13C5-PFPeA	110%	123%	20-150%
	13C5-PFHxA	127%	124%	20-150%
	13C4-PFHpA	127%	119%	20-150%
	13C8-PFOA	124%	126%	20-150%
	13C9-PFNA	104%	117%	20-150%
	13C6-PFDA	122%	118%	20-150%
	13C7-PFUnDA	123%	111%	20-150%
	13C2-PFDoDA	114%	115%	20-150%
	13C2-PFTeDA	96%	102%	20-150%
	13C3-PFBS	116%	118%	20-150%
	13C3-PFHxS	122%	122%	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-RHMW12A-WGFD01LF-2308		
Lab Sample ID:	FC8439-2	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	106%	102%	20-150%
	13C8-FOSA	89%	95%	20-150%
	d3-MeFOSA	99%	105%	20-150%
	d5-EtFOSA	98%	96%	20-150%
	d3-MeFOSAA	109%	114%	20-150%
	d5-EtFOSAA	113%	108%	20-150%
	d7-MeFOSE	80%	85%	20-150%
	d9-EtFOSE	84%	91%	20-150%
	13C2-4:2FTS	183% [e]	129%	20-180%
	13C2-6:2FTS	163%	132%	20-180%
	13C2-8:2FTS	165%	123%	20-180%
	13C3-HFPO-DA	109%	120%	20-150%

(a) Dilution required (ID recovery standard failure).
(b) Result is from Run# 2
(c) Associated CCV outside of control limits high, sample was ND.
(d) Associated CCV outside control limits high. Sample was ND.
(e) 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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2308		
Lab Sample ID:	FC8439-3	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48789.D	1	08/09/23 21:30	AL	08/08/23 10:50	OP98297	S4Q713
Run #2							

	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	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-RHMW16-WGN01LF-2308		
Lab Sample ID:	FC8439-3	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [a]	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	108%		20-150%
	13C5-PFPeA	108%		20-150%
	13C5-PFHxA	128%		20-150%
	13C4-PFHpA	129%		20-150%
	13C8-PFOA	120%		20-150%
	13C9-PFNA	102%		20-150%
	13C6-PFDA	122%		20-150%
	13C7-PFUnDA	128%		20-150%
	13C2-PFDoDA	115%		20-150%
	13C2-PFTeDA	98%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	114%		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-RHMW16-WGN01LF-2308		
Lab Sample ID:	FC8439-3	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	114%		20-150%
	13C8-FOSA	90%		20-150%
	d3-MeFOSA	101%		20-150%
	d5-EtFOSA	91%		20-150%
	d3-MeFOSAA	109%		20-150%
	d5-EtFOSAA	120%		20-150%
	d7-MeFOSE	82%		20-150%
	d9-EtFOSE	87%		20-150%
	13C2-4:2FTS	156%		20-180%
	13C2-6:2FTS	162%		20-180%
	13C2-8:2FTS	165%		20-180%
	13C3-HFPO-DA	106%		20-150%

(a) Associated CCV outside control limits high. Sample was ND.

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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2308		
Lab Sample ID:	FC8439-4	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48791.D	1	08/09/23 22:00	AL	08/08/23 10:50	OP98297	S4Q713
Run #2 [a]	6Q22667.D	10	08/10/23 20:04	MV	08/08/23 10:50	OP98297	S6Q330

	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2	540 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.95	3.7	0.93	0.46	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	74 U [b]	190	74	30	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	74 U [b]	190	74	32	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	74 U [b]	190	74	38	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	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-RHMW02-WGN01LF-2308		
Lab Sample ID:	FC8439-4	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [C]	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%	91%	20-150%
	13C5-PFPeA	80%	121%	20-150%
	13C5-PFHxA	131%	127%	20-150%
	13C4-PFHpA	139%	131%	20-150%
	13C8-PFOA	118%	117%	20-150%
	13C9-PFNA	106%	115%	20-150%
	13C6-PFDA	126%	121%	20-150%
	13C7-PFUnDA	135%	121%	20-150%
	13C2-PFDoDA	114%	107%	20-150%
	13C2-PFTeDA	88%	91%	20-150%
	13C3-PFBS	114%	116%	20-150%
	13C3-PFHxS	116%	113%	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-RHMW02-WGN01LF-2308		
Lab Sample ID:	FC8439-4	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	120%	113%	20-150%
	13C8-FOSA	109%	106%	20-150%
	d3-MeFOSA	101%	89%	20-150%
	d5-EtFOSA	92%	94%	20-150%
	d3-MeFOSAA	138%	113%	20-150%
	d5-EtFOSAA	146%	106%	20-150%
	d7-MeFOSE	86%	92%	20-150%
	d9-EtFOSE	92%	94%	20-150%
	13C2-4:2FTS	258% [d]	109%	20-180%
	13C2-6:2FTS	227% [d]	137%	20-180%
	13C2-8:2FTS	184% [d]	142%	20-180%
	13C3-HFPO-DA	92%	120%	20-150%

(a) Dilution required (ID recovery standard failure).
(b) Result is from Run# 2
(c) Associated CCV outside control limits high. Sample was ND.
(d) 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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW02-WGFD01LF-2308		
Lab Sample ID:	FC8439-5	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48793.D	1	08/09/23 22:29	AL	08/08/23 10:50	OP98297	S4Q713
Run #2 [a]	6Q22669.D	10	08/10/23 20:33	MV	08/08/23 10:50	OP98297	S6Q330

	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2	540 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.69	3.7	0.93	0.46	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	19 U [b]	37	19	5.6	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	74 U [b]	190	74	30	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	74 U [b]	190	74	32	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	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-RHMW02-WGFD01LF-2308		
Lab Sample ID:	FC8439-5	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	37 U [b]	46	37	12	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [c]	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	103%	92%	20-150%
	13C5-PFPeA	91%	123%	20-150%
	13C5-PFHxA	139%	130%	20-150%
	13C4-PFHpA	149%	132%	20-150%
	13C8-PFOA	138%	123%	20-150%
	13C9-PFNA	123%	127%	20-150%
	13C6-PFDA	145%	133%	20-150%
	13C7-PFUnDA	154% [d]	122%	20-150%
	13C2-PFDoDA	133%	102%	20-150%
	13C2-PFTeDA	105%	99%	20-150%
	13C3-PFBS	131%	133%	20-150%
	13C3-PFHxS	135%	130%	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-RHMW02-WGFD01LF-2308		
Lab Sample ID:	FC8439-5	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	122%	127%	20-150%
	13C8-FOSA	109%	107%	20-150%
	d3-MeFOSA	111%	109%	20-150%
	d5-EtFOSA	103%	102%	20-150%
	d3-MeFOSAA	142%	122%	20-150%
	d5-EtFOSAA	155% d	115%	20-150%
	d7-MeFOSE	90%	99%	20-150%
	d9-EtFOSE	100%	104%	20-150%
	13C2-4:2FTS	310% d	140%	20-180%
	13C2-6:2FTS	238% d	139%	20-180%
	13C2-8:2FTS	176%	145%	20-180%
	13C3-HFPO-DA	104%	117%	20-150%

(a) Dilution required (ID recovery standard failure).
(b) Result is from Run# 2
(c) Associated CCV outside control limits high. Sample was ND.
(d) 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

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2308		
Lab Sample ID:	FC8439-6	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	4Q48794.D	1	08/09/23 22:44	AL	08/08/23 10:50	OP98297	S4Q713
Run #2	6Q22670.D	10	08/10/23 20:48	MV	08/08/23 10:50	OP98297	S6Q330

	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	38 U [a]	150	38	18	ng/l	
2706-90-3	Perfluoropentanoic acid	2.1	7.7	1.9	0.90	ng/l	J
307-24-4	Perfluorohexanoic acid	19 U [a]	38	19	4.8	ng/l	
375-85-9	Perfluoroheptanoic acid	19 U [a]	38	19	4.8	ng/l	
335-67-1	Perfluorooctanoic acid	9.6 U [a]	38	9.6	4.8	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	19 U [a]	38	19	5.8	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	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	77 U [a]	190	77	31	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	77 U [a]	190	77	33	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	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.7	3.8	0.96	ng/l	
4151-50-2	EtFOSA	3.8 U	7.7	3.8	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-RHMW03-WGN01LF-2308		
Lab Sample ID:	FC8439-6	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	38 U [a]	48	38	9.6	ng/l	
2991-50-6	EtFOSAA	38 U [a]	48	38	13	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.96	ng/l	
919005-14-4	ADONA	3.8 U	7.7	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.7	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	7.7	3.8	1.1	ng/l	
151772-58-6	NFDHA	38 U [a]	77	38	12	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major) [b]	3.8 U	7.7	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.7	3.8	1.7	ng/l	
113507-82-7	PFEESA	19 U [a]	77	19	7.5	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	19	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	190 U [a]	960	190	84	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	190 U [a]	960	190	75	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	160% [c]	122%	20-150%
	13C5-PFPeA	138%	135%	20-150%
	13C5-PFHxA	168% [c]	137%	20-150%
	13C4-PFHpA	169% [c]	138%	20-150%
	13C8-PFOA	155% [c]	147%	20-150%
	13C9-PFNA	131%	135%	20-150%
	13C6-PFDA	146%	116%	20-150%
	13C7-PFUnDA	156% [c]	103%	20-150%
	13C2-PFDoDA	133%	103%	20-150%
	13C2-PFTeDA	104%	86%	20-150%
	13C3-PFBS	145%	135%	20-150%
	13C3-PFHxS	148%	119%	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-RHMW03-WGN01LF-2308		
Lab Sample ID:	FC8439-6	**Date Sampled:**	08/03/23
Matrix:	AQ - Ground Water	**Date Received:**	08/05/23
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	141%	143%	20-150%
	13C8-FOSA	105%	94%	20-150%
	d3-MeFOSA	120%	100%	20-150%
	d5-EtFOSA	116%	109%	20-150%
	d3-MeFOSAA	156% [c]	133%	20-150%
	d5-EtFOSAA	162% [c]	116%	20-150%
	d7-MeFOSE	93%	82%	20-150%
	d9-EtFOSE	98%	92%	20-150%
	13C2-4:2FTS	228% [c]	122%	20-180%
	13C2-6:2FTS	203% [c]	141%	20-180%
	13C2-8:2FTS	158%	116%	20-180%
	13C3-HFPO-DA	135%	127%	20-150%

(a) Result is from Run# 2

(b) Associated CCV outside control limits high. Sample was ND.

(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

FC8439

SGS North America Inc - Orlando
Chain of Custody

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COC #: 2308AFSG05
PAGE 1 OF 1
SGS - ORLANDO JOB # :
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: Mariah Gascle Sampler 2: Andy Young

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

Analytical Information: PFAS EPA Draft 1633

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	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH-ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW12A-WGN01LF-2308	8/13/23	0930	MG, AY	GW	3		x								x	
2	AF-RHMW12A-WGFD01LF-2308	8/13/23	0930	MG, AY	GW	3		x								x	

8/3/23 (initialed)

INITIAL ASSESSMENT
LABEL VERIFICATION
3.4° IR#1

Turnaround Time (Business days)
10 Day (Business)
7 Day
[x] 5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date:
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: 016-14920146

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 Andy Young / AECOM	8/3/23/1230	2 Brittany Tominez / AECOM	3 Brittany Tominez / AECOM	08/03/23 1300	4 [signature] 8/5/23 1000
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

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

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

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FC8439: Chain of Custody
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FC8439

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Chain of Custody

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TEL: 407-425-6700 FAX: 407-425-0707
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COC #: 2308AFSG06

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: Mariah Grasha Sampler 2: Andy Young

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	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
3	AF-RHMW16-WGN01LF-2308	8/3/23	1125	MG,AY	GW	3		X								X	

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: 016-14920346

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	Andy Young / AECOM	8/3/23 1239	2 Brittany Tamimura / AECOM	3 Brittany Tamimura / AECOM	08/03/23 1300	4 1000 8/5/23
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):

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

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FC8439

COC #: 2308AFSG01

PAGE 1 OF 1

SGS North America Inc - Orlando
Chain of Custody

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www.sgs.com

SGS - ORLANDO JOB # :

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information	Project Information	Analytical Information	Matrix Codes
Company Name: AECOM	**Project Name:** N6274223F0104 RH Fire Suppression System	PFAS EPA Draft 1633	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
Address: 1001 Bishop St. ste 1600	**Street**		
City: Honolulu **State:** HI **Zip:** 96813	**City** Honolulu **State** Hawaii		
Project Contact: Katie Abbott **Email:** katie.abbott@aecom.com **Project Manager:** Watson Tanji **Email:** watson.tanji@aecom.com	**Project #** 60697810		
Phone #: 303-796-4624 / 808-954-4512	**Fax #**		
Sampler(s) Name(s) (Printed) **Sampler 1:** Matt Yim **Sampler 2:** Chris Womack	**Client Purchase Order #**		

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MECH	LAB USE ONLY
4	AF-RHMW02-WGN01LF-2308	8/3/23	0935	MY/CW	GW	3		X							X	
5	AF-RHMW02-WGFD01LF-2308	8/3/23	0935	MY,CW	GW	3		X							X	

MY 8/3/23

MY 8/3/23

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
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	[ ] COMMERCIAL "A" (RESULTS ONLY) [ ] COMMERCIAL "B" (RESULTS PLUS QC) [ ] REDT1 (EPA LEVEL 3) [x] FULLT1 (EPA LEVEL 4) [x] EDD'S	EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AWB: 016-14972014 6

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 Matt Yim, MY AECOM 8/3/23	1730	2 Brittany Tommez /AECOM	3 Brittany Tommez /AECOM	08/03/23 1300	4 1000 8/3/23
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

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

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

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FC 8439

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Chain of Custody

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TEL: 407-425-6700 FAX: 407-425-0707
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COC #: 2308AFSG02
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: Matt Yim Sampler 2: Chris Womack

Project Information

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

Analytical Information

PFAS EPA Draft 1633

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	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
6	AF-RHMW03-WGN01LF-2308	8/3/23	1120	MY, CW	GW	3		X								X	

MY 8/3/23

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: 016-14920146

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 Matt Yim / AECOM	8/3/23 1230	2 Brittany Tominez / AECOM	3 Brittany Tominez / AECOM	08/03/23 1300	4 8/5/23 1060
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 5.

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SGS Sample Receipt Summary

Job Number: FC8439 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 8/5/2023 10:00:00 AM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-14920146

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

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

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 230320 pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: ZANEB Date: 8/5/2023 10:00:00 AM Reviewer: CD Date: 8/9/2023

FC8439: Chain of Custody
Page 5 of 5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC8439
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 08/03/23

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 FC8439

MS Semi-volatiles

6

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: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-IBLK	4Q48763.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	0.0020	0.0080	0.0010	ug/l	J
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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-IBLK	4Q48763.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	106%	20-150%
	13C5-PFPeA	95%	20-150%
	13C5-PFHxA	100%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	90%	20-150%
	13C3-PFHxS	94%	20-150%
	13C8-PFOS	91%	20-150%
	13C8-FOSA	92%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	103%	20-150%
	13C2-4:2FTS	148%	20-180%
	13C2-6:2FTS	130%	20-180%
	13C2-8:2FTS	138%	20-180%

Instrument Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-IBLK	6Q22648.D	1	08/10/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	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	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	94%	20-150%
	13C9-PFNA	95%	20-150%
	13C6-PFDA	99%	20-150%
	13C7-PFUnDA	96%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	99%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	105%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	100%	20-150%
	13C2-4:2FTS	109%	20-180%
	13C2-6:2FTS	110%	20-180%

Instrument Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-IBLK	6Q22648.D	1	08/10/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	ID Standard Recoveries		Limits
	13C2-8:2FTS	111%	20-180%

Instrument Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-IBLK	6Q22737.D	1	08/11/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	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	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	95%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	98%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	97%	20-150%
	13C3-PFHxS	96%	20-150%
	13C8-PFOS	99%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	105%	20-150%
	13C2-4:2FTS	102%	20-180%
	13C2-6:2FTS	102%	20-180%

Instrument Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-IBLK	6Q22737.D	1	08/11/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	ID Standard Recoveries		Limits
	13C2-8:2FTS	104%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48777.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-1, FC8439-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48777.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-1, FC8439-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	110%	20-150%
	13C5-PFPeA	89%	20-150%
	13C5-PFHxA	102%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	93%	20-150%
	13C6-PFDA	107%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	103%	20-150%
	13C3-PFBS	90%	20-150%
	13C3-PFHxS	97%	20-150%
	13C8-PFOS	93%	20-150%
	13C8-FOSA	93%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	108%	20-150%
	13C2-4:2FTS	125%	20-180%
	13C2-6:2FTS	135%	20-180%
	13C2-8:2FTS	133%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48788.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48788.D	1	08/09/23	AL	n/a	n/a	S4Q713

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

FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	88%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	84%	20-150%
	13C6-PFDA	101%	20-150%
	13C7-PFUnDA	116%	20-150%
	13C2-PFDoDA	106%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	91%	20-150%
	13C3-PFHxS	99%	20-150%
	13C8-PFOS	93%	20-150%
	13C8-FOSA	92%	20-150%
	d3-MeFOSAA	104%	20-150%
	d5-EtFOSAA	104%	20-150%
	13C2-4:2FTS	141%	20-180%
	13C2-6:2FTS	119%	20-180%
	13C2-8:2FTS	139%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48800.D	1	08/10/23	AL	n/a	n/a	S4Q713

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

FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q713-ICCB	4Q48800.D	1	08/10/23	AL	n/a	n/a	S4Q713

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

FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	88%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	99%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	93%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	90%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	91%	20-150%
	13C8-FOSA	89%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	100%	20-150%
	13C2-4:2FTS	131%	20-180%
	13C2-6:2FTS	137%	20-180%
	13C2-8:2FTS	142%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-ICCB	6Q22663.D	1	08/10/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	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	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	100%	20-150%
	13C5-PFHxA	95%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	101%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	99%	20-150%
	13C3-PFHxS	98%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	95%	20-150%
	d3-MeFOSAA	97%	20-150%
	d5-EtFOSAA	97%	20-150%
	13C2-4:2FTS	104%	20-180%
	13C2-6:2FTS	101%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-ICCB	6Q22663.D	1	08/10/23	MV	n/a	n/a	S6Q330

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

FC8439-2, FC8439-4, FC8439-5, FC8439-6

CAS No.	ID Standard Recoveries		Limits
	13C2-8:2FTS	100%	20-180%

Method Blank Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-MB [a]	4Q48781.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-MB [a]	4Q48781.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	85%	20-150%
	13C5-PFPeA	74%	20-150%
	13C5-PFHxA	81%	20-150%
	13C4-PFHpA	84%	20-150%
	13C8-PFOA	77%	20-150%
	13C9-PFNA	72%	20-150%
	13C6-PFDA	79%	20-150%
	13C7-PFUnDA	80%	20-150%
	13C2-PFDoDA	77%	20-150%
	13C2-PFTeDA	71%	20-150%
	13C3-PFBS	76%	20-150%
	13C3-PFHxS	79%	20-150%
	13C8-PFOS	81%	20-150%
	13C8-FOSA	44%	20-150%
	d3-MeFOSA	49%	20-150%
	d5-EtFOSA	51%	20-150%
	d3-MeFOSAA	77%	20-150%
	d5-EtFOSAA	82%	20-150%
	d7-MeFOSE	37%	20-150%
	d9-EtFOSE	45%	20-150%
	13C2-4:2FTS	112%	20-180%
	13C2-6:2FTS	111%	20-180%
	13C2-8:2FTS	104%	20-180%
	13C3-HFPO-DA	73%	20-150%

(a) All results and recoveries corrected for double EIS.

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-ICCB	6Q22733.D	1	08/11/23	MV	n/a	n/a	S6Q330

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

S6Q330-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	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	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	105%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	99%	20-150%
	13C3-PFHxS	101%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSAA	101%	20-150%
	d5-EtFOSAA	103%	20-150%
	13C2-4:2FTS	102%	20-180%
	13C2-6:2FTS	99%	20-180%

Continuing Calibration Blank

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q330-ICCB	6Q22733.D	1	08/11/23	MV	n/a	n/a	S6Q330

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

S6Q330-IBLK

CAS No.	ID Standard Recoveries		Limits
	13C2-8:2FTS	94%	20-180%

Blank Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-LLBS	4Q48780.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0319	106	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0180	120	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0090	120	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0078	104	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0090	120	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0088	117	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0084	112	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0079	105	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0080	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0089	119	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0084	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0084	126	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0079	112	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0082	120	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0072	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0090	129	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0082	114	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0077	106	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0079	109	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0321	114	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0316	111	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0284	99	40-150
754-91-6	PFOSA	0.0075	0.0083	111	40-150
31506-32-8	MeFOSA	0.015	0.0138	92	40-150
4151-50-2	EtFOSA	0.015	0.0158	105	40-150
2355-31-9	MeFOSAA	0.0075	0.0090	120	40-150
2991-50-6	EtFOSAA	0.0075	0.0079	105	40-150
24448-09-7	MeFOSE	0.0375	0.0381	102	40-150
1691-99-2	EtFOSE	0.0375	0.0363	97	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0166	111	40-150
919005-14-4	ADONA	0.0142	0.0174	123	40-150
377-73-1	PFMPA	0.015	0.0175	117	40-150
863090-89-5	PFMBA	0.015	0.0177	118	40-150
151772-58-6	NFDHA	0.015	0.0154	103	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0175	125	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0157	111	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-LLBS	4Q48780.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0141	106	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0248	66	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.172	92	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.192	102	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	142%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	132%	20-150%
	13C4-PFHpA	137%	20-150%
	13C8-PFOA	127%	20-150%
	13C9-PFNA	115%	20-150%
	13C6-PFDA	127%	20-150%
	13C7-PFUnDA	133%	20-150%
	13C2-PFDoDA	118%	20-150%
	13C2-PFTeDA	106%	20-150%
	13C3-PFBS	121%	20-150%
	13C3-PFHxS	127%	20-150%
	13C8-PFOS	111%	20-150%
	13C8-FOSA	60%	20-150%
	d3-MeFOSA	73%	20-150%
	d5-EtFOSA	74%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	120%	20-150%
	d7-MeFOSE	58%	20-150%
	d9-EtFOSE	70%	20-150%
	13C2-4:2FTS	168%	20-180%
	13C2-6:2FTS	181%* [a]	20-180%
	13C2-8:2FTS	200%* [a]	20-180%
	13C3-HFPO-DA	114%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-BS	4Q48779.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.111	111	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0643	129	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0284	114	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0282	113	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0300	120	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0319	128	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0318	127	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0292	117	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0274	110	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0304	122	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0302	121	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0315	142	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0257	109	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0299	131	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0272	114	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0299	129	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0308	128	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0274	114	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0280	115	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.108	115	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.108	114	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.119	124	40-150
754-91-6	PFOSA	0.025	0.0293	117	40-150
31506-32-8	MeFOSA	0.05	0.0533	107	40-150
4151-50-2	EtFOSA	0.05	0.0562	112	40-150
2355-31-9	MeFOSAA	0.025	0.0310	124	40-150
2991-50-6	EtFOSAA	0.025	0.0360	144	40-150
24448-09-7	MeFOSE	0.125	0.140	112	40-150
1691-99-2	EtFOSE	0.125	0.138	110	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0545	109	40-150
919005-14-4	ADONA	0.0473	0.0604	128	40-150
377-73-1	PFMPA	0.05	0.0621	124	40-150
863090-89-5	PFMBA	0.05	0.0632	126	40-150
151772-58-6	NFDHA	0.05	0.0577	115	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0629	135	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0608	129	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-BS	4Q48779.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0489	110	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0953	76	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.610	98	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.672	108	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	140%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	130%	20-150%
	13C4-PFHpA	135%	20-150%
	13C8-PFOA	127%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	130%	20-150%
	13C7-PFUnDA	137%	20-150%
	13C2-PFDoDA	135%	20-150%
	13C2-PFTeDA	116%	20-150%
	13C3-PFBS	114%	20-150%
	13C3-PFHxS	125%	20-150%
	13C8-PFOS	112%	20-150%
	13C8-FOSA	68%	20-150%
	d3-MeFOSA	74%	20-150%
	d5-EtFOSA	74%	20-150%
	d3-MeFOSAA	123%	20-150%
	d5-EtFOSAA	101%	20-150%
	d7-MeFOSE	58%	20-150%
	d9-EtFOSE	69%	20-150%
	13C2-4:2FTS	159%	20-180%
	13C2-6:2FTS	168%	20-180%
	13C2-8:2FTS	173%	20-180%
	13C3-HFPO-DA	114%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-MS	4Q48790.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-3	4Q48789.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	FC8439-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015	U	0.0909	0.106	117	40-150
2706-90-3	Perfluoropentanoic acid	0.0074	U	0.0455	0.0603	133	40-150
307-24-4	Perfluorohexanoic acid	0.0037	U	0.0227	0.0260	114	40-150
375-85-9	Perfluoroheptanoic acid	0.0037	U	0.0227	0.0268	118	40-150
335-67-1	Perfluorooctanoic acid	0.0037	U	0.0227	0.0290	128	40-150
375-95-1	Perfluorononanoic acid	0.0037	U	0.0227	0.0279	123	40-150
335-76-2	Perfluorodecanoic acid	0.0037	U	0.0227	0.0292	128	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037	U	0.0227	0.0270	119	40-150
307-55-1	Perfluorododecanoic acid	0.0037	U	0.0227	0.0269	118	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037	U	0.0227	0.0276	121	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037	U	0.0227	0.0284	125	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037	U	0.0202	0.0295	146	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046	U	0.0214	0.0260	122	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037	U	0.0208	0.0282	136	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037	U	0.0217	0.0250	115	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037	U	0.0211	0.0252	119	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037	U	0.0219	0.0282	129	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037	U	0.0219	0.0247	113	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046	U	0.022	0.0250	113	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.019	U	0.0852	0.0991	116	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019	U	0.0864	0.0981	114	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	0.0873	0.133	152*	40-150
754-91-6	PFOSA	0.0037	U	0.0227	0.0279	123	40-150
31506-32-8	MeFOSA	0.0074	U	0.0455	0.0473	104	40-150
4151-50-2	EtFOSA	0.0074	U	0.0455	0.0545	120	40-150
2355-31-9	MeFOSAA	0.0046	U	0.0227	0.0328	144	40-150
2991-50-6	EtFOSAA	0.0046	U	0.0227	0.0254	112	40-150
24448-09-7	MeFOSE	0.037	U	0.114	0.121	106	40-150
1691-99-2	EtFOSE	0.037	U	0.114	0.126	111	40-150
13252-13-6	HFPO-DA (GenX)	0.0037	U	0.0455	0.0512	113	40-150
919005-14-4	ADONA	0.0074	U	0.043	0.0574	134	40-150
377-73-1	PFMPA	0.0074	U	0.0455	0.0548	121	40-150
863090-89-5	PFMBA	0.0074	U	0.0455	0.0587	129	40-150
151772-58-6	NFDHA	0.0074	U	0.0455	0.0524	115	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0074	U	0.0425	0.0587	138	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0074	U	0.043	0.0549	128	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-MS	4Q48790.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-3	4Q48789.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	FC8439-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0074	U	0.0405	0.0449	111	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019	U	0.114	0.111	98	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.093	U	0.568	0.593	104	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.093	U	0.568	0.664	117	40-150

CAS No.	ID Standard Recoveries	MS	FC8439-3	Limits
	13C4-PFBA	107%	108%	20-150%
	13C5-PFPeA	107%	108%	20-150%
	13C5-PFHxA	124%	128%	20-150%
	13C4-PFHpA	126%	129%	20-150%
	13C8-PFOA	120%	120%	20-150%
	13C9-PFNA	101%	102%	20-150%
	13C6-PFDA	127%	122%	20-150%
	13C7-PFUnDA	130%	128%	20-150%
	13C2-PFDoDA	123%	115%	20-150%
	13C2-PFTeDA	103%	98%	20-150%
	13C3-PFBS	120%	108%	20-150%
	13C3-PFHxS	129%	114%	20-150%
	13C8-PFOS	113%	114%	20-150%
	13C8-FOSA	83%	90%	20-150%
	d3-MeFOSA	102%	101%	20-150%
	d5-EtFOSA	91%	91%	20-150%
	d3-MeFOSAA	118%	109%	20-150%
	d5-EtFOSAA	127%	120%	20-150%
	d7-MeFOSE	75%	82%	20-150%
	d9-EtFOSE	85%	87%	20-150%
	13C2-4:2FTS	170%	156%	20-180%
	13C2-6:2FTS	179%	162%	20-180%
	13C2-8:2FTS	155%	165%	20-180%
	13C3-HFPO-DA	107%	106%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-DUP	4Q48792.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-4	4Q48791.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-4 [a]	6Q22667.D	10	08/10/23	MV	08/08/23	OP98297	S6Q330

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	FC8439-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.015	U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0074	U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0037	U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0037	U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.00095	J	0.00056	J	52*	30
375-95-1	Perfluorononanoic acid	0.0037	U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0037	U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0037	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0037	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0037	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0037	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0037	U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0046	U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0037	U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0037	U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0037	U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0037	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0037	U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0046	U	ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.19	U [b]	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.19	U [b]	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.19	U [b]	ND		nc	30
754-91-6	PFOSA	0.0037	U	ND		nc	30
31506-32-8	MeFOSA	0.0074	U	ND		nc	30
4151-50-2	EtFOSA	0.0074	U	ND		nc	30
2355-31-9	MeFOSAA	0.0046	U	ND		nc	30
2991-50-6	EtFOSAA	0.0046	U	ND		nc	30
24448-09-7	MeFOSE	0.037	U	ND		nc	30
1691-99-2	EtFOSE	0.037	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0037	U	ND		nc	30
919005-14-4	ADONA	0.0074	U	ND		nc	30
377-73-1	PFMPA	0.0074	U	ND		nc	30
863090-89-5	PFMBA	0.0074	U	ND		nc	30
151772-58-6	NFDHA	0.0074	U	ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0074	U	ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0074	U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP98297-DUP	4Q48792.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-4	4Q48791.D	1	08/09/23	AL	08/08/23	OP98297	S4Q713
FC8439-4 [a]	6Q22667.D	10	08/10/23	MV	08/08/23	OP98297	S6Q330

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

FC8439-1, FC8439-2, FC8439-3, FC8439-4, FC8439-5, FC8439-6

CAS No.	Compound	FC8439-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0074 U		ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U		ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.093 U		ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.093 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC8439-4	FC8439-4	Limits
	13C4-PFBA	88%	96%	91%	20-150%
	13C5-PFPeA	77%	80%	121%	20-150%
	13C5-PFHxA	125%	131%	127%	20-150%
	13C4-PFHpA	133%	139%	131%	20-150%
	13C8-PFOA	121%	118%	117%	20-150%
	13C9-PFNA	107%	106%	115%	20-150%
	13C6-PFDA	120%	126%	121%	20-150%
	13C7-PFUnDA	124%	135%	121%	20-150%
	13C2-PFDoDA	106%	114%	107%	20-150%
	13C2-PFTeDA	82%	88%	91%	20-150%
	13C3-PFBS	113%	114%	116%	20-150%
	13C3-PFHxS	128%	116%	113%	20-150%
	13C8-PFOS	110%	120%	113%	20-150%
	13C8-FOSA	101%	109%	106%	20-150%
	d3-MeFOSA	98%	101%	89%	20-150%
	d5-EtFOSA	94%	92%	94%	20-150%
	d3-MeFOSAA	138%	138%	113%	20-150%
	d5-EtFOSAA	145%	146%	106%	20-150%
	d7-MeFOSE	83%	86%	92%	20-150%
	d9-EtFOSE	85%	92%	94%	20-150%
	13C2-4:2FTS	265%* [c]	258%* [c]	109%	20-180%
	13C2-6:2FTS	254%* [c]	227%* [c]	137%	20-180%
	13C2-8:2FTS	180%	184%* [c]	142%	20-180%
	13C3-HFPO-DA	88%	92%	120%	20-150%

(a) Dilution required (ID recovery standard failure).
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q713-CC711	**Injection Date:**	08/09/23
Lab File ID:	4Q48776.D	**Injection Time:**	18:19
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]	51455	2.90	31931	5.61	47937	7.23	18636	7.79	14450	8.28
Check Std [c]	61499	2.89	37374	5.62	57982	7.25	25592	7.80	17403	8.30
Upper Limit [d]	102910	3.29	63862	6.02	95874	7.65	37272	8.20	28900	8.70
Lower Limit [e]	20582	2.49	12772	5.22	19175	6.85	7454	7.40	5780	7.90

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]
S4Q713-ICCB	57476	2.88	36124	5.62	53437	7.25	23201	7.80	16671	8.30	1
S4Q713-ICCB	57476	2.88	36124	5.62	53437	7.25	23201	7.80	16671	8.30	1
ZZZZZZ	39160	2.89	31450	5.62	48100	7.25	21090	7.81	15650	8.29	10
OP98297-BS	46030	2.93	28192	5.62	42499	7.25	18465	7.81	12930	8.30	1
OP98297-LLBS	47443	2.94	28837	5.62	44104	7.25	18881	7.81	13090	8.30	1
OP98297-MB [f]	30165	2.93	17789	5.62	28337	7.25	11445	7.81	8929	8.30	1
ZZZZZZ	45445	2.93	28164	5.63	42400	7.26	18065	7.81	13561	8.30	1
ZZZZZZ	50367	2.93	31193	5.63	48097	7.25	20382	7.81	14761	8.30	1
ZZZZZZ	46340	2.93	28830	5.63	44044	7.25	19196	7.81	13495	8.30	1
FC8439-1	43186	2.93	27161	5.63	41985	7.26	16878	7.81	11946	8.32	1
FC8439-2	47062	2.94	29046	5.63	43996	7.26	19193	7.81	12796	8.30	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: S4Q711-ICC711 4Q48588.D 08/07/23 17:14. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.
(f) All results and recoveries corrected for double EIS.

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q713-CC711	**Injection Date:**	08/09/23
Lab File ID:	4Q48776.D	**Injection Time:**	18:19
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	4175	7.32	7644	8.42
Check Std [c]	4983	7.33	9613	8.44
Upper Limit [d]	8350	7.73	15288	8.84
Lower Limit [e]	1670	6.93	3058	8.04

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
S4Q713-ICCB	4812	7.33	9086	8.44	1
S4Q713-ICCB	4812	7.33	9086	8.44	1
ZZZZZZ	3770	7.34	7680	8.43	10
OP98297-BS	3832	7.34	7610	8.44	1
OP98297-LLBS	3802	7.34	7719	8.44	1
OP98297-MB [f]	2413	7.33	4702	8.44	1
ZZZZZZ	3727	7.34	7132	8.44	1
ZZZZZZ	3892	7.34	8104	8.44	1
ZZZZZZ	3875	7.34	7398	8.44	1
FC8439-1	3893	7.34	6996	8.44	1
FC8439-2	3876	7.34	7607	8.44	1

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

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q711-ICC711 4Q48588.D 08/07/23 17:14. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.
(f) All results and recoveries corrected for double EIS.

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q713-CC711	**Injection Date:**	08/09/23
Lab File ID:	4Q48787.D	**Injection Time:**	21:01
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]	51455	2.90	31931	5.61	47937	7.23	18636	7.79	14450	8.28
Check Std [c]	61496	2.92	37306	5.61	57522	7.25	24550	7.80	17170	8.29
Upper Limit [d]	102910	3.32	63862	6.01	95874	7.65	37272	8.20	28900	8.69
Lower Limit [e]	20582	2.52	12772	5.21	19175	6.85	7454	7.40	5780	7.89

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]
S4Q713-ICCB	57955	2.89	36670	5.61	53942	7.23	24412	7.79	16908	8.29	1
FC8439-3	48462	2.93	29136	5.63	44667	7.25	19673	7.81	13671	8.30	1
OP98297-MS	46989	2.94	28932	5.62	43614	7.25	19557	7.80	12799	8.29	1
FC8439-4	25747	2.93	29588	5.62	47002	7.25	20500	7.81	13847	8.30	1
OP98297-DUP	26877	2.93	31391	5.62	47947	7.25	21496	7.81	14713	8.30	1
FC8439-5	22770	2.93	24747	5.62	37878	7.25	16425	7.80	11288	8.30	1
FC8439-6	32827	2.94	21350	5.62	32800	7.25	14096	7.80	10104	8.29	1
OP98277-BS	51923	2.94	32584	5.63	48420	7.25	20910	7.80	14629	8.30	1
OP98277-LLBS	52177	2.94	32213	5.63	49571	7.26	21506	7.81	14814	8.30	1
OP98277-MB	53927	2.94	34056	5.63	50273	7.25	20944	7.81	15495	8.30	1
ZZZZZZ	51868	2.95	32742	5.63	49444	7.25	21535	7.80	15268	8.30	1
S4Q713-ECC711	61642	2.89	38759	5.62	58871	7.25	25059	7.80	17647	8.29	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: S4Q711-ICC711 4Q48588.D 08/07/23 17:14. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q713-CC711	**Injection Date:**	08/09/23
Lab File ID:	4Q48787.D	**Injection Time:**	21:01
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	4175	7.32	7644	8.42
Check Std [c]	4938	7.33	9625	8.43
Upper Limit [d]	8350	7.73	15288	8.83
Lower Limit [e]	1670	6.93	3058	8.03

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
S4Q713-ICCB	4874	7.32	9226	8.43	1
FC8439-3	4047	7.34	7728	8.44	1
OP98297-MS	3595	7.33	7161	8.43	1
FC8439-4	3787	7.34	7117	8.44	1
OP98297-DUP	3821	7.34	7246	8.44	1
FC8439-5	3042	7.34	6176	8.44	1
FC8439-6	2834	7.33	5102	8.43	1
OP98277-BS	4041	7.33	7926	8.44	1
OP98277-LLBS	3956	7.34	8429	8.44	1
OP98277-MB	4304	7.34	8879	8.44	1
ZZZZZZ	4159	7.34	8408	8.43	1
S4Q713-ECC711	5244	7.33	10308	8.43	1

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

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q711-ICC711 4Q48588.D 08/07/23 17:14. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q330-CC330	**Injection Date:**	08/10/23
Lab File ID:	6Q22662.D	**Injection Time:**	18:53
Instrument ID:	GCMS6Q	**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]	79487	3.00	64872	5.67	109102	7.24	57898	7.77	37915	8.25
Check Std [c]	78225	3.01	61049	5.67	105604	7.24	58237	7.77	37795	8.25
Upper Limit [d]	158974	3.41	129744	6.07	218204	7.64	115796	8.17	75830	8.65
Lower Limit [e]	31795	2.61	25949	5.27	43641	6.84	23159	7.37	15166	7.85

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]
S6Q330-ICCB	82681	3.00	66105	5.67	110857	7.24	60110	7.76	38404	8.25	1
ZZZZZZ	65242	3.04	52814	5.68	87050	7.24	46324	7.77	30754	8.25	2
ZZZZZZ	64330	3.04	48928	5.68	86944	7.24	45410	7.77	28942	8.25	2
FC8439-2 [f]	57175	3.01	45635	5.67	74265	7.24	41425	7.77	25390	8.25	5
FC8439-4 [f]	47560	3.00	40390	5.67	72800	7.23	38430	7.76	24530	8.25	10
FC8439-5 [f]	44130	3.00	36680	5.67	64380	7.24	35280	7.76	21030	8.25	10
FC8439-6	48590	3.00	38330	5.67	64030	7.24	33370	7.76	24490	8.25	10
FC7717-4	68110	3.01	51244	5.67	89882	7.24	48302	7.77	32724	8.25	2
ZZZZZZ	64818	3.01	51650	5.67	83514	7.24	45718	7.77	28014	8.25	2
ZZZZZZ	61360	3.00	47035	5.67	83520	7.24	43290	7.76	30765	8.25	5

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: S6Q330-ICC330 6Q22643.D 08/10/23 14:20. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.
(f) Dilution required (ID recovery standard failure).

Injection Standard Area Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q330-CC330	**Injection Date:**	08/10/23
Lab File ID:	6Q22662.D	**Injection Time:**	18:53
Instrument ID:	GCMS6Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	11379	7.35	19178	8.43
Check Std [c]	10897	7.35	18938	8.41
Upper Limit [d]	22758	7.75	38356	8.81
Lower Limit [e]	4552	6.95	7671	8.01

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
S6Q330-ICCB	11657	7.35	20420	8.41	1
ZZZZZZ	8836	7.35	14712	8.41	2
ZZZZZZ	9362	7.35	14780	8.41	2
FC8439-2 [f]	8210	7.35	13580	8.41	5
FC8439-4 [f]	7750	7.35	12640	8.41	10
FC8439-5 [f]	6250	7.35	10550	8.41	10
FC8439-6	7340	7.35	10930	8.41	10
FC7717-4	8978	7.35	14886	8.41	2
ZZZZZZ	9412	7.35	15320	8.41	2
ZZZZZZ	8875	7.35	15035	8.41	5

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

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S6Q330-ICC330 6Q22643.D 08/10/23 14:20. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 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 = -60% of initial standard area; Retention time -0.4 minutes of check standard.
(f) Dilution required (ID recovery standard failure).

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-RT
Lab File ID: 4Q48582.D
Instrument ID: GCMS4Q
Injection Date: 08/07/23
Injection Time: 15:28

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.406	--	--
TDCA	6.947	1.459	1.000
TCDCA	6.798	1.608	1.000
TUDCA	5.954	2.452	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
S4Q711-IC711	4Q48584.D	08/07/23	16:11	00:43	Mass Calibration Verification
S4Q711-IC711	4Q48585.D	08/07/23	16:26	00:58	Initial cal 1
S4Q711-IC711	4Q48586.D	08/07/23	16:41	01:13	Initial cal 2
S4Q711-IC711	4Q48587.D	08/07/23	16:59	01:31	Initial cal 3
S4Q711-ICC711	4Q48588.D	08/07/23	17:14	01:46	Initial cal 4
S4Q711-IC711	4Q48589.D	08/07/23	17:28	02:00	Initial cal 5
S4Q711-IC711	4Q48590.D	08/07/23	17:43	02:15	Initial cal 6
S4Q711-IC711	4Q48591.D	08/07/23	17:58	02:30	Initial cal 7
S4Q711-IC711	4Q48592.D	08/07/23	18:13	02:45	Initial cal 8
S4Q711-IBLK	4Q48593.D	08/07/23	18:27	02:59	Instrument Blank
S4Q711-IBLK	4Q48593.D	08/07/23	18:27	02:59	Instrument Blank
S4Q711-ICV711	4Q48594.D	08/07/23	18:42	03:14	Initial cal verification 4
S4Q711-ICV711	4Q48595.D	08/07/23	18:57	03:29	Initial cal verification 20
S4Q711-CC711	4Q48596.D	08/07/23	19:12	03:44	Continuing cal 4
S4Q711-CC711	4Q48597.D	08/07/23	19:26	03:58	Continuing cal 1.0LL
ZZZZZZ	4Q48598.D	08/07/23	19:41	04:13	(unrelated sample)
OP98225-BS	4Q48599.D	08/07/23	19:56	04:28	Blank Spike
OP98225-LLBS	4Q48600.D	08/07/23	20:11	04:43	Blank Spike
OP98225-MB	4Q48601.D	08/07/23	20:25	04:57	Method Blank
ZZZZZZ	4Q48602.D	08/07/23	20:40	05:12	(unrelated sample)
ZZZZZZ	4Q48604.D	08/07/23	21:10	05:42	(unrelated sample)
ZZZZZZ	4Q48605.D	08/07/23	21:24	05:56	(unrelated sample)
S4Q711-CC711	4Q48606.D	08/07/23	21:39	06:11	Continuing cal 4
S4Q711-ICCB	4Q48607.D	08/07/23	21:54	06:26	Continuing Calibration Blank
S4Q711-ICCB	4Q48607.D	08/07/23	21:54	06:26	Continuing Calibration Blank
ZZZZZZ	4Q48608.D	08/07/23	22:09	06:41	(unrelated sample)
ZZZZZZ	4Q48609.D	08/07/23	22:23	06:55	(unrelated sample)
ZZZZZZ	4Q48610.D	08/07/23	22:38	07:10	(unrelated sample)
ZZZZZZ	4Q48611.D	08/07/23	22:53	07:25	(unrelated sample)
ZZZZZZ	4Q48612.D	08/07/23	23:08	07:40	(unrelated sample)
FC7868-1	4Q48613.D	08/07/23	23:22	07:54	(used for QC only; not part of job FC8439)
OP98161-MS	4Q48614.D	08/07/23	23:37	08:09	Matrix Spike
OP98161-MSD	4Q48615.D	08/07/23	23:52	08:24	Matrix Spike Duplicate
S4Q711-CC711	4Q48616.D	08/08/23	00:07	08:39	Continuing cal 4

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q711-RT	**Injection Date:**	08/07/23
Lab File ID:	4Q48582.D	**Injection Time:**	15:28
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S4Q711-ICCB	4Q48617.D	08/08/23	00:21	08:53	Continuing Calibration Blank
S4Q711-ICCB	4Q48617.D	08/08/23	00:21	08:53	Continuing Calibration Blank
ZZZZZZ	4Q48618.D	08/08/23	00:36	09:08	(unrelated sample)
ZZZZZZ	4Q48619.D	08/08/23	00:51	09:23	(unrelated sample)
ZZZZZZ	4Q48620.D	08/08/23	01:06	09:38	(unrelated sample)
ZZZZZZ	4Q48621.D	08/08/23	01:20	09:52	(unrelated sample)
ZZZZZZ	4Q48622.D	08/08/23	01:35	10:07	(unrelated sample)
ZZZZZZ	4Q48623.D	08/08/23	01:50	10:22	(unrelated sample)
ZZZZZZ	4Q48624.D	08/08/23	02:05	10:37	(unrelated sample)
ZZZZZZ	4Q48625.D	08/08/23	02:19	10:51	(unrelated sample)
ZZZZZZ	4Q48626.D	08/08/23	02:34	11:06	(unrelated sample)
ZZZZZZ	4Q48627.D	08/08/23	02:49	11:21	(unrelated sample)
S4Q711-CC711	4Q48628.D	08/08/23	03:04	11:36	Continuing cal 4
S4Q711-ICCB	4Q48629.D	08/08/23	03:18	11:50	Continuing Calibration Blank
S4Q711-ICCB	4Q48629.D	08/08/23	03:18	11:50	Continuing Calibration Blank
ZZZZZZ	4Q48630.D	08/08/23	03:33	12:05	(unrelated sample)
ZZZZZZ	4Q48632.D	08/08/23	04:03	12:35	(unrelated sample)
ZZZZZZ	4Q48634.D	08/08/23	04:32	13:04	(unrelated sample)
ZZZZZZ	4Q48635.D	08/08/23	04:47	13:19	(unrelated sample)
ZZZZZZ	4Q48637.D	08/08/23	05:16	13:48	(unrelated sample)
FC7482-3	4Q48638.D	08/08/23	05:31	14:03	(used for QC only; not part of job FC8439)
OP98118-MS	4Q48639.D	08/08/23	05:46	14:18	Matrix Spike
S4Q711-CC711	4Q48640.D	08/08/23	06:01	14:33	Continuing cal 4
S4Q711-ICCB	4Q48641.D	08/08/23	06:15	14:47	Continuing Calibration Blank
S4Q711-ICCB	4Q48641.D	08/08/23	06:15	14:47	Continuing Calibration Blank
ZZZZZZ	4Q48642.D	08/08/23	06:30	15:02	(unrelated sample)
ZZZZZZ	4Q48643.D	08/08/23	06:45	15:17	(unrelated sample)
FC7599-1	4Q48644.D	08/08/23	07:00	15:32	(used for QC only; not part of job FC8439)
OP98118-DUP	4Q48645.D	08/08/23	07:14	15:46	Duplicate
ZZZZZZ	4Q48646.D	08/08/23	07:29	16:01	(unrelated sample)
ZZZZZZ	4Q48647.D	08/08/23	07:44	16:16	(unrelated sample)
FC7615-1	4Q48648.D	08/08/23	07:59	16:31	(used for QC only; not part of job FC8439)
OP98119-MS	4Q48649.D	08/08/23	08:13	16:45	Matrix Spike
OP98119-MSD	4Q48650.D	08/08/23	08:28	17:00	Matrix Spike Duplicate
S4Q711-CC711	4Q48651.D	08/08/23	08:43	17:15	Continuing cal 4
S4Q711-ICCB	4Q48652.D	08/08/23	08:59	17:31	Continuing Calibration Blank
ZZZZZZ	4Q48654.D	08/08/23	09:29	18:01	(unrelated sample)
ZZZZZZ	4Q48655.D	08/08/23	09:44	18:16	(unrelated sample)
ZZZZZZ	4Q48656.D	08/08/23	09:59	18:31	(unrelated sample)
ZZZZZZ	4Q48657.D	08/08/23	10:14	18:46	(unrelated sample)
ZZZZZZ	4Q48658.D	08/08/23	10:29	19:01	(unrelated sample)
ZZZZZZ	4Q48661.D	08/08/23	11:14	19:46	(unrelated sample)
ZZZZZZ	4Q48662.D	08/08/23	11:29	20:01	(unrelated sample)
S4Q711-CC711	4Q48663.D	08/08/23	11:43	20:15	Continuing cal 4

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q711-RT	**Injection Date:**	08/07/23
Lab File ID:	4Q48582.D	**Injection Time:**	15:28
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S4Q711-ICCB	4Q48664.D	08/08/23	11:58	20:30	Continuing Calibration Blank
ZZZZZZ	4Q48665.D	08/08/23	12:13	20:45	(unrelated sample)
ZZZZZZ	4Q48666.D	08/08/23	12:28	21:00	(unrelated sample)
S4Q711-ECC711	4Q48667.D	08/08/23	12:42	21:14	Ending cal 4
S4Q711-ICCB	4Q48668.D	08/08/23	12:57	21:29	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-RT
Lab File ID: 4Q48760.D
Instrument ID: GCMS4Q
Injection Date: 08/09/23
Injection Time: 14:15

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.419	--	--
TDCA	6.972	1.447	1.000
TCDCA	6.823	1.596	1.000
TUDCA	5.979	2.440	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
S4Q713-IBLK	4Q48763.D	08/09/23	15:01	00:46	Instrument Blank
S4Q713-IBLK	4Q48763.D	08/09/23	15:01	00:46	Instrument Blank
S4Q713-CC711	4Q48764.D	08/09/23	15:16	01:01	Continuing cal 4
S4Q713-CC711	4Q48765.D	08/09/23	15:30	01:15	Continuing cal 1.0LL
OP98160-BS	4Q48766.D	08/09/23	15:45	01:30	Blank Spike
OP98160-LLBS	4Q48767.D	08/09/23	16:00	01:45	Blank Spike
OP98160-MB	4Q48768.D	08/09/23	16:15	02:00	Method Blank
ZZZZZZ	4Q48769.D	08/09/23	16:35	02:20	(unrelated sample)
ZZZZZZ	4Q48770.D	08/09/23	16:50	02:35	(unrelated sample)
ZZZZZZ	4Q48771.D	08/09/23	17:05	02:50	(unrelated sample)
FC8220-6	4Q48772.D	08/09/23	17:20	03:05	(used for QC only; not part of job FC8439)
OP98160-MS	4Q48773.D	08/09/23	17:35	03:20	Matrix Spike
OP98160-MSD	4Q48774.D	08/09/23	17:49	03:34	Matrix Spike Duplicate
ZZZZZZ	4Q48775.D	08/09/23	18:04	03:49	(unrelated sample)
S4Q713-CC711	4Q48776.D	08/09/23	18:19	04:04	Continuing cal 4
S4Q713-ICCB	4Q48777.D	08/09/23	18:33	04:18	Continuing Calibration Blank
S4Q713-ICCB	4Q48777.D	08/09/23	18:33	04:18	Continuing Calibration Blank
ZZZZZZ	4Q48778.D	08/09/23	18:48	04:33	(unrelated sample)
OP98297-BS	4Q48779.D	08/09/23	19:03	04:48	Blank Spike
OP98297-LLBS	4Q48780.D	08/09/23	19:18	05:03	Blank Spike
OP98297-MB	4Q48781.D	08/09/23	19:33	05:18	Method Blank
ZZZZZZ	4Q48782.D	08/09/23	19:47	05:32	(unrelated sample)
ZZZZZZ	4Q48783.D	08/09/23	20:02	05:47	(unrelated sample)
ZZZZZZ	4Q48784.D	08/09/23	20:17	06:02	(unrelated sample)
FC8439-1	4Q48785.D	08/09/23	20:31	06:16	AF-RHMW12A-WGN01LF-2308
FC8439-2	4Q48786.D	08/09/23	20:46	06:31	AF-RHMW12A-WGFD01LF-2308
S4Q713-CC711	4Q48787.D	08/09/23	21:01	06:46	Continuing cal 4
S4Q713-ICCB	4Q48788.D	08/09/23	21:16	07:01	Continuing Calibration Blank
FC8439-3	4Q48789.D	08/09/23	21:30	07:15	AF-RHMW16-WGN01LF-2308
OP98297-MS	4Q48790.D	08/09/23	21:45	07:30	Matrix Spike
FC8439-4	4Q48791.D	08/09/23	22:00	07:45	AF-RHMW02-WGN01LF-2308
OP98297-DUP	4Q48792.D	08/09/23	22:15	08:00	Duplicate
FC8439-5	4Q48793.D	08/09/23	22:29	08:14	AF-RHMW02-WGFD01LF-2308
FC8439-6	4Q48794.D	08/09/23	22:44	08:29	AF-RHMW03-WGN01LF-2308

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q713-RT	**Injection Date:**	08/09/23
Lab File ID:	4Q48760.D	**Injection Time:**	14:15
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP98277-BS	4Q48795.D	08/09/23	22:59	08:44	Blank Spike
OP98277-LLBS	4Q48796.D	08/09/23	23:14	08:59	Blank Spike
OP98277-MB	4Q48797.D	08/09/23	23:28	09:13	Method Blank
ZZZZZZ	4Q48798.D	08/09/23	23:43	09:28	(unrelated sample)
S4Q713-ECC711	4Q48799.D	08/09/23	23:58	09:43	Ending cal 4
S4Q713-ICCB	4Q48800.D	08/10/23	00:13	09:58	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-RT
Lab File ID: 6Q22637.D
Instrument ID: GCMS6Q
Injection Date: 08/10/23
Injection Time: 12:54

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.415	--	--
TDCA	6.951	1.464	1.000
TCDCA	6.789	1.626	1.000
TUDCA	5.961	2.454	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
S6Q330-IC330	6Q22639.D	08/10/23	13:23	00:29	Mass Calibration Verification
S6Q330-IC330	6Q22640.D	08/10/23	13:37	00:43	Initial cal 1
S6Q330-IC330	6Q22641.D	08/10/23	13:52	00:58	Initial cal 2
S6Q330-IC330	6Q22642.D	08/10/23	14:06	01:12	Initial cal 3
S6Q330-ICC330	6Q22643.D	08/10/23	14:20	01:26	Initial cal 4
S6Q330-IC330	6Q22644.D	08/10/23	14:35	01:41	Initial cal 5
S6Q330-IC330	6Q22645.D	08/10/23	14:49	01:55	Initial cal 6
S6Q330-IC330	6Q22646.D	08/10/23	15:03	02:09	Initial cal 7
S6Q330-IC330	6Q22647.D	08/10/23	15:18	02:24	Initial cal 8
S6Q330-IBLK	6Q22648.D	08/10/23	15:32	02:38	Instrument Blank
S6Q330-IBLK	6Q22648.D	08/10/23	15:32	02:38	Instrument Blank
S6Q330-ICV330	6Q22649.D	08/10/23	15:46	02:52	Initial cal verification 4
S6Q330-ICV330	6Q22650.D	08/10/23	16:01	03:07	Initial cal verification 20
S6Q330-CC330	6Q22651.D	08/10/23	16:15	03:21	Continuing cal 4
S6Q330-CC330	6Q22652.D	08/10/23	16:29	03:35	Continuing cal 1.0LL
OP98337-BS	6Q22653.D	08/10/23	16:44	03:50	Blank Spike
OP98337-BSD	6Q22654.D	08/10/23	16:58	04:04	Blank Spike Duplicate
OP98337-LLBS	6Q22655.D	08/10/23	17:12	04:18	Blank Spike
OP98337-MB	6Q22656.D	08/10/23	17:27	04:33	Method Blank
ZZZZZZ	6Q22657.D	08/10/23	17:41	04:47	(unrelated sample)
ZZZZZZ	6Q22659.D	08/10/23	18:10	05:16	(unrelated sample)
ZZZZZZ	6Q22660.D	08/10/23	18:24	05:30	(unrelated sample)
S6Q330-CC330	6Q22662.D	08/10/23	18:53	05:59	Continuing cal 4
S6Q330-ICCB	6Q22663.D	08/10/23	19:07	06:13	Continuing Calibration Blank
ZZZZZZ	6Q22664.D	08/10/23	19:21	06:27	(unrelated sample)
ZZZZZZ	6Q22665.D	08/10/23	19:36	06:42	(unrelated sample)
FC8439-2	6Q22666.D	08/10/23	19:50	06:56	AF-RHMW12A-WGFD01LF-2308
FC8439-4	6Q22667.D	08/10/23	20:04	07:10	AF-RHMW02-WGN01LF-2308
FC8439-5	6Q22669.D	08/10/23	20:33	07:39	AF-RHMW02-WGFD01LF-2308
FC8439-6	6Q22670.D	08/10/23	20:48	07:54	AF-RHMW03-WGN01LF-2308
FC7717-4	6Q22671.D	08/10/23	21:02	08:08	(used for QC only; not part of job FC8439)
ZZZZZZ	6Q22672.D	08/10/23	21:16	08:22	(unrelated sample)
ZZZZZZ	6Q22673.D	08/10/23	21:31	08:37	(unrelated sample)
S6Q330-CC330	6Q22674.D	08/10/23	21:45	08:51	Continuing cal 4

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q330-RT	**Injection Date:**	08/10/23
Lab File ID:	6Q22637.D	**Injection Time:**	12:54
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q330-ICCB	6Q22675.D	08/10/23	21:59	09:05	Continuing Calibration Blank
ZZZZZZ	6Q22676.D	08/10/23	22:14	09:20	(unrelated sample)
ZZZZZZ	6Q22677.D	08/10/23	22:28	09:34	(unrelated sample)
ZZZZZZ	6Q22679.D	08/10/23	22:57	10:03	(unrelated sample)
ZZZZZZ	6Q22680.D	08/10/23	23:11	10:17	(unrelated sample)
ZZZZZZ	6Q22681.D	08/10/23	23:25	10:31	(unrelated sample)
ZZZZZZ	6Q22682.D	08/10/23	23:40	10:46	(unrelated sample)
ZZZZZZ	6Q22683.D	08/10/23	23:54	11:00	(unrelated sample)
ZZZZZZ	6Q22684.D	08/11/23	00:08	11:14	(unrelated sample)
S6Q330-CC330	6Q22685.D	08/11/23	00:23	11:29	Continuing cal 4
S6Q330-ICCB	6Q22686.D	08/11/23	00:37	11:43	Continuing Calibration Blank
OP98277-BS	6Q22687.D	08/11/23	00:51	11:57	Blank Spike
OP98277-LLBS	6Q22688.D	08/11/23	01:06	12:12	Blank Spike
OP98277-MB	6Q22689.D	08/11/23	01:20	12:26	Method Blank
ZZZZZZ	6Q22690.D	08/11/23	01:34	12:40	(unrelated sample)
ZZZZZZ	6Q22691.D	08/11/23	01:49	12:55	(unrelated sample)
ZZZZZZ	6Q22692.D	08/11/23	02:03	13:09	(unrelated sample)
ZZZZZZ	6Q22693.D	08/11/23	02:17	13:23	(unrelated sample)
FC8066-5	6Q22694.D	08/11/23	02:32	13:38	(used for QC only; not part of job FC8439)
OP98277-MS	6Q22695.D	08/11/23	02:46	13:52	Matrix Spike
OP98277-MSD	6Q22696.D	08/11/23	03:00	14:06	Matrix Spike Duplicate
S6Q330-CC330	6Q22697.D	08/11/23	03:15	14:21	Continuing cal 4
S6Q330-ICCB	6Q22698.D	08/11/23	03:29	14:35	Continuing Calibration Blank
ZZZZZZ	6Q22699.D	08/11/23	03:43	14:49	(unrelated sample)
ZZZZZZ	6Q22700.D	08/11/23	03:58	15:04	(unrelated sample)
ZZZZZZ	6Q22701.D	08/11/23	04:12	15:18	(unrelated sample)
ZZZZZZ	6Q22702.D	08/11/23	04:26	15:32	(unrelated sample)
ZZZZZZ	6Q22703.D	08/11/23	04:41	15:47	(unrelated sample)
ZZZZZZ	6Q22704.D	08/11/23	04:55	16:01	(unrelated sample)
ZZZZZZ	6Q22705.D	08/11/23	05:09	16:15	(unrelated sample)
ZZZZZZ	6Q22706.D	08/11/23	05:24	16:30	(unrelated sample)
ZZZZZZ	6Q22707.D	08/11/23	05:38	16:44	(unrelated sample)
S6Q330-CC330	6Q22708.D	08/11/23	05:52	16:58	Continuing cal 4
S6Q330-ICCB	6Q22709.D	08/11/23	06:07	17:13	Continuing Calibration Blank
OP98222-BS	6Q22710.D	08/11/23	06:21	17:27	Blank Spike
OP98222-LLBS	6Q22711.D	08/11/23	06:35	17:41	Blank Spike
OP98222-MB	6Q22712.D	08/11/23	06:50	17:56	Method Blank
ZZZZZZ	6Q22713.D	08/11/23	07:04	18:10	(unrelated sample)
FC7822-1	6Q22714.D	08/11/23	07:18	18:24	(used for QC only; not part of job FC8439)
OP98222-MS	6Q22715.D	08/11/23	07:33	18:39	Matrix Spike
FC7822-2	6Q22716.D	08/11/23	07:47	18:53	(used for QC only; not part of job FC8439)
OP98222-DUP	6Q22717.D	08/11/23	08:01	19:07	Duplicate
ZZZZZZ	6Q22718.D	08/11/23	08:16	19:22	(unrelated sample)
ZZZZZZ	6Q22719.D	08/11/23	08:30	19:36	(unrelated sample)

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q330-RT	**Injection Date:**	08/10/23
Lab File ID:	6Q22637.D	**Injection Time:**	12:54
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q330-CC330	6Q22720.D	08/11/23	08:44	19:50	Continuing cal 4
S6Q330-ICCB	6Q22721.D	08/11/23	08:59	20:05	Continuing Calibration Blank
ZZZZZZ	6Q22722.D	08/11/23	09:13	20:19	(unrelated sample)
ZZZZZZ	6Q22723.D	08/11/23	09:27	20:33	(unrelated sample)
ZZZZZZ	6Q22725.D	08/11/23	09:56	21:02	(unrelated sample)
ZZZZZZ	6Q22726.D	08/11/23	10:10	21:16	(unrelated sample)
ZZZZZZ	6Q22727.D	08/11/23	10:25	21:31	(unrelated sample)
ZZZZZZ	6Q22728.D	08/11/23	10:39	21:45	(unrelated sample)
ZZZZZZ	6Q22729.D	08/11/23	10:53	21:59	(unrelated sample)
ZZZZZZ	6Q22730.D	08/11/23	11:08	22:14	(unrelated sample)
ZZZZZZ	6Q22731.D	08/11/23	11:22	22:28	(unrelated sample)
S6Q330-CC330	6Q22732.D	08/11/23	11:36	22:42	Continuing cal 4
S6Q330-ICCB	6Q22733.D	08/11/23	11:51	22:57	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-RT
Lab File ID: 6Q22734.D
Instrument ID: GCMS6Q
Injection Date: 08/11/23
Injection Time: 12:05

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.415	--	--
TDCA	6.938	1.477	1.000
TCDCA	6.777	1.638	1.000
TUDCA	5.949	2.466	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
S6Q330-IBLK	6Q22737.D	08/11/23	12:48	00:43	Instrument Blank
S6Q330-IBLK	6Q22737.D	08/11/23	12:48	00:43	Instrument Blank
S6Q330-CC330	6Q22738.D	08/11/23	13:02	00:57	Continuing cal 4
S6Q330-CC330	6Q22739.D	08/11/23	13:17	01:12	Continuing cal 1.0LL
ZZZZZZ	6Q22740.D	08/11/23	13:31	01:26	(unrelated sample)
OP98223-BS	6Q22741.D	08/11/23	13:45	01:40	Blank Spike
OP98223-LLBS	6Q22742.D	08/11/23	14:00	01:55	Blank Spike
OP98223-MB	6Q22743.D	08/11/23	14:14	02:09	Method Blank
ZZZZZZ	6Q22744.D	08/11/23	14:28	02:23	(unrelated sample)
ZZZZZZ	6Q22745.D	08/11/23	14:43	02:38	(unrelated sample)
ZZZZZZ	6Q22746.D	08/11/23	14:57	02:52	(unrelated sample)
ZZZZZZ	6Q22747.D	08/11/23	15:11	03:06	(unrelated sample)
ZZZZZZ	6Q22748.D	08/11/23	15:26	03:21	(unrelated sample)
ZZZZZZ	6Q22749.D	08/11/23	15:40	03:35	(unrelated sample)
S6Q330-CC330	6Q22750.D	08/11/23	15:54	03:49	Continuing cal 4
S6Q330-ICCB	6Q22751.D	08/11/23	16:09	04:04	Continuing Calibration Blank
ZZZZZZ	6Q22752.D	08/11/23	16:23	04:18	(unrelated sample)
FC7824-8	6Q22753.D	08/11/23	16:37	04:32	(used for QC only; not part of job FC8439)
OP98223-MS	6Q22754.D	08/11/23	16:52	04:47	Matrix Spike
FC7824-9	6Q22755.D	08/11/23	17:06	05:01	(used for QC only; not part of job FC8439)
OP98223-DUP	6Q22756.D	08/11/23	17:20	05:15	Duplicate
S6Q330-CC330	6Q22757.D	08/11/23	17:35	05:30	Continuing cal 4
S6Q330-ICCB	6Q22758.D	08/11/23	17:49	05:44	Continuing Calibration Blank
OP98278-BS	6Q22759.D	08/11/23	18:03	05:58	Blank Spike
OP98278-LLBS	6Q22760.D	08/11/23	18:18	06:13	Blank Spike
OP98278-MB	6Q22761.D	08/11/23	18:32	06:27	Method Blank
ZZZZZZ	6Q22762.D	08/11/23	18:46	06:41	(unrelated sample)
ZZZZZZ	6Q22763.D	08/11/23	19:01	06:56	(unrelated sample)
ZZZZZZ	6Q22764.D	08/11/23	19:15	07:10	(unrelated sample)
ZZZZZZ	6Q22765.D	08/11/23	19:29	07:24	(unrelated sample)
FC7901-6	6Q22766.D	08/11/23	19:44	07:39	(used for QC only; not part of job FC8439)
OP98278-MS	6Q22767.D	08/11/23	19:58	07:53	Matrix Spike
OP98278-MSD	6Q22768.D	08/11/23	20:12	08:07	Matrix Spike Duplicate
S6Q330-CC330	6Q22769.D	08/11/23	20:27	08:22	Continuing cal 4

TDCA Retention Time Check

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q330-RT	**Injection Date:**	08/11/23
Lab File ID:	6Q22734.D	**Injection Time:**	12:05
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q330-ICCB	6Q22770.D	08/11/23	20:41	08:36	Continuing Calibration Blank
ZZZZZZ	6Q22771.D	08/11/23	20:55	08:50	(unrelated sample)
ZZZZZZ	6Q22772.D	08/11/23	21:10	09:05	(unrelated sample)
ZZZZZZ	6Q22773.D	08/11/23	21:24	09:19	(unrelated sample)
ZZZZZZ	6Q22774.D	08/11/23	21:38	09:33	(unrelated sample)
S6Q330-CC330	6Q22775.D	08/11/23	21:53	09:48	Continuing cal 4
S6Q330-ICCB	6Q22776.D	08/11/23	22:08	10:03	Continuing Calibration Blank
OP98280-BS	6Q22777.D	08/11/23	22:22	10:17	Blank Spike
OP98280-LLBS	6Q22778.D	08/11/23	22:36	10:31	Blank Spike
OP98280-MB	6Q22779.D	08/11/23	22:51	10:46	Method Blank
ZZZZZZ	6Q22780.D	08/11/23	23:05	11:00	(unrelated sample)
FC7902-2	6Q22781.D	08/11/23	23:19	11:14	(used for QC only; not part of job FC8439)
OP98280-MS	6Q22782.D	08/11/23	23:34	11:29	Matrix Spike
OP98280-MSD	6Q22783.D	08/11/23	23:48	11:43	Matrix Spike Duplicate
ZZZZZZ	6Q22784.D	08/12/23	00:02	11:57	(unrelated sample)
ZZZZZZ	6Q22785.D	08/12/23	00:17	12:12	(unrelated sample)
S6Q330-ECC330	6Q22786.D	08/12/23	00:31	12:26	Ending cal 4
S6Q330-ICCB	6Q22787.D	08/12/23	00:45	12:40	Continuing Calibration Blank

Ion Ratio Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q713 **Method:** EPA DRAFT 1633

Lab Sample ID	Lab File ID	Ion Ratios PFPeA	PFHxA	PFOA
S4Q711-ICC711	4Q48588.D	0	3.3	19.3
FC8439-1	4Q48785.D	0	2.2	
FC8439-2	4Q48786.D	0	4.1	
FC8439-3	4Q48789.D			
FC8439-4	4Q48791.D			10.9
FC8439-5	4Q48793.D			9
FC8439-6	4Q48794.D	0		

Isotope Dilution Standard Recovery Summary

Job Number: FC8439
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
FC8439-1	4Q48785.D	67	118	132	135	123	119	136	133
FC8439-2	6Q22666.D	62	123	124	119	126	117	118	111
FC8439-2	4Q48786.D	67	110	127	127	124	104	122	123
FC8439-3	4Q48789.D	108	108	128	129	120	102	122	128
FC8439-4	6Q22667.D	91	121	127	131	117	115	121	121
FC8439-4	4Q48791.D	96	80	131	139	118	106	126	135
FC8439-5	6Q22669.D	92	123	130	132	123	127	133	122
FC8439-5	4Q48793.D	103	91	139	149	138	123	145	154* [a]
FC8439-6	6Q22670.D	122	135	137	138	147	135	116	103
FC8439-6	4Q48794.D	160* [a]	138	168* [a]	169* [a]	155* [a]	131	146	156* [a]
OP98297-BS	4Q48779.D	140	111	130	135	127	108	130	137
OP98297-DUP	4Q48792.D	88	77	125	133	121	107	120	124
OP98297-LLBS	4Q48780.D	142	114	132	137	127	115	127	133
OP98297-MB	4Q48781.D	85	74	81	84	77	72	79	80
OP98297-MS	4Q48790.D	107	107	124	126	120	101	127	130
S4Q713-IBLK	4Q48763.D	106	95	100	101	99	96	102	111
S4Q713-ICCB	4Q48777.D	110	89	102	103	101	93	107	110
S4Q713-ICCB	4Q48788.D	111	88	99	103	102	84	101	116
S4Q713-ICCB	4Q48800.D	111	88	97	99	100	93	100	105
S6Q330-IBLK	6Q22648.D	100	103	101	103	94	95	99	96
S6Q330-IBLK	6Q22737.D	100	101	98	104	99	95	103	98
S6Q330-ICCB	6Q22663.D	101	100	95	101	104	101	105	100
S6Q330-ICCB	6Q22733.D	101	105	106	100	99	99	104	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%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FC8439
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
FC8439-1	4Q48785.D	126	103	109	117	118	96	106	108
FC8439-2	6Q22666.D	115	102	118	122	102	95	105	96
FC8439-2	4Q48786.D	114	96	116	122	106	89	99	98
FC8439-3	4Q48789.D	115	98	108	114	114	90	101	91
FC8439-4	6Q22667.D	107	91	116	113	113	106	89	94
FC8439-4	4Q48791.D	114	88	114	116	120	109	101	92
FC8439-5	6Q22669.D	102	99	133	130	127	107	109	102
FC8439-5	4Q48793.D	133	105	131	135	122	109	111	103
FC8439-6	6Q22670.D	103	86	135	119	143	94	100	109
FC8439-6	4Q48794.D	133	104	145	148	141	105	120	116
OP98297-BS	4Q48779.D	135	116	114	125	112	68	74	74
OP98297-DUP	4Q48792.D	106	82	113	128	110	101	98	94
OP98297-LLBS	4Q48780.D	118	106	121	127	111	60	73	74
OP98297-MB	4Q48781.D	77	71	76	79	81	44	49	51
OP98297-MS	4Q48790.D	123	103	120	129	113	83	102	91
S4Q713-IBLK	4Q48763.D	101	100	90	94	91	92		
S4Q713-ICCB	4Q48777.D	108	103	90	97	93	93		
S4Q713-ICCB	4Q48788.D	106	99	91	99	93	92		
S4Q713-ICCB	4Q48800.D	103	94	90	102	91	89		
S6Q330-IBLK	6Q22648.D	99	98	99	105	105	104		
S6Q330-IBLK	6Q22737.D	98	98	97	96	99	100		
S6Q330-ICCB	6Q22663.D	102	99	99	98	100	95		
S6Q330-ICCB	6Q22733.D	103	98	99	101	102	99		

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: FC8439
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
FC8439-1	4Q48785.D	121	127	86	94	148	159	159	111
FC8439-2	6Q22666.D	114	108	85	91	129	132	123	120
FC8439-2	4Q48786.D	109	113	80	84	183* [a]	163	165	109
FC8439-3	4Q48789.D	109	120	82	87	156	162	165	106
FC8439-4	6Q22667.D	113	106	92	94	109	137	142	120
FC8439-4	4Q48791.D	138	146	86	92	258* [a]	227* [a]	184* [a]	92
FC8439-5	6Q22669.D	122	115	99	104	140	139	145	117
FC8439-5	4Q48793.D	142	155* [a]	90	100	310* [a]	238* [a]	176	104
FC8439-6	6Q22670.D	133	116	82	92	122	141	116	127
FC8439-6	4Q48794.D	156* [a]	162* [a]	93	98	228* [a]	203* [a]	158	135
OP98297-BS	4Q48779.D	123	101	58	69	159	168	173	114
OP98297-DUP	4Q48792.D	138	145	83	85	265* [a]	254* [a]	180	88
OP98297-LLBS	4Q48780.D	118	120	58	70	168	181* [a]	200* [a]	114
OP98297-MB	4Q48781.D	77	82	37	45	112	111	104	73
OP98297-MS	4Q48790.D	118	127	75	85	170	179	155	107
S4Q713-IBLK	4Q48763.D	105	103			148	130	138	
S4Q713-ICCB	4Q48777.D	106	108			125	135	133	
S4Q713-ICCB	4Q48788.D	104	104			141	119	139	
S4Q713-ICCB	4Q48800.D	96	100			131	137	142	
S6Q330-IBLK	6Q22648.D	106	100			109	110	111	
S6Q330-IBLK	6Q22737.D	100	105			102	102	104	
S6Q330-ICCB	6Q22663.D	97	97			104	101	100	
S6Q330-ICCB	6Q22733.D	101	103			102	99	94	

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	20-180%
S22 = 13C2-6:2FTS	20-180%
S23 = 13C2-8:2FTS	20-180%
S24 = 13C3-HFPO-DA	20-150%

(a) Outside control limits.

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICC711
Lab FileID: 4Q48588.D

Initial Calibration Report

Method Path	D:\MassHunter\methods
Method File	1633_080723_S4Q711.quantmethod.xml
Batch Name	D:\MassHunter\Data\080723_1633_S4Q711\QuantResults\s4q711.batch.bin
Last Calib Update	8/9/2023 10:16:05 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d	8/7/2023 4:26:15 PM	8/9/2023 10:16:05 AM
2	D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d	8/7/2023 4:41:00 PM	8/9/2023 10:16:05 AM
3	D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d	8/7/2023 4:59:17 PM	8/9/2023 10:16:05 AM
4	D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d	8/7/2023 5:14:04 PM	8/9/2023 10:16:05 AM
5	D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d	8/7/2023 5:28:48 PM	8/9/2023 10:16:05 AM
6	D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d	8/7/2023 5:43:35 PM	8/9/2023 10:16:05 AM
7	D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d	8/7/2023 5:58:22 PM	8/9/2023 10:16:05 AM
8	D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d	8/7/2023 6:13:07 PM	8/9/2023 10:16:05 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA				---------- ISTD ----------							
T PFBA	Avg RF	0.2160	0.2050	0.2176	0.2381	0.2530	0.2335	0.2360	0.2429	0.2303	6.940
T 3:3FTCA	Avg RF	0.0530	0.0497	0.0545	0.0575	0.0615	0.0577	0.0607	0.0703	0.0581	10.799
I M5-PFPeA				---------- ISTD ----------							
T PFMPA	Avg RF	0.4250	0.4334	0.4450	0.4877	0.5196	0.4877	0.4946	0.5065	0.4750	7.474
T PFPeA	Avg RF	0.7650	0.7853	0.8352	0.8778	0.9497	0.9069	0.9088	0.9228	0.8689	7.716
T PFMBA	Avg RF	0.4111	0.4469	0.4750	0.5018	0.5274	0.5037	0.5098	0.5202	0.4870	8.234
I M5-PFHxA				---------- ISTD ----------							
T NFDHA	Avg RF	0.0436	0.0459	0.0461	0.0509	0.0536	0.0463	0.0445	0.0411	0.0465	8.578
T PFHxA	Avg RF	0.6201	0.7038	0.6795	0.7202	0.7862	0.7494	0.7406	0.7719	0.7214	7.451
T PFEESA	Avg RF	0.5003	0.5560	0.5378	0.6075	0.6542	0.5988	0.5948	0.5996	0.5811	8.205
T 5:3FTCA	Avg RF	0.0988	0.1084	0.1119	0.1222	0.1330	0.1236	0.1224	0.1242	0.1181	9.223
T 7:3FTCA	Avg RF	0.0583	0.0572	0.0605	0.0688	0.0717	0.0686	0.0670	0.0684	0.0651	8.490
I M4-PFHpA				---------- ISTD ----------							
T PFHpA	Avg RF	0.9990	0.9969	1.1078	1.1699	1.2248	1.1674	1.1775	1.1825	1.1282	7.665
I M8-PFOA				---------- ISTD ----------							
T PFOA	Avg RF	1.0494	0.7854	0.9157	1.0212	1.0526	1.0125	1.0183	1.0762	0.9914	9.682
I M9-PFNA				---------- ISTD ----------							
T PFNA	Avg RF	0.5597	0.6391	0.6558	0.6591	0.7128	0.6603	0.6567	0.6608	0.6505	6.519
I M6-PFDA				---------- ISTD ----------							
T PFDA	Avg RF	0.7586	0.7423	0.8897	0.8936	0.9888	0.8798	0.9654	0.9096	0.8785	9.994
I M7-PFUnDA				---------- ISTD ----------							
T PFUnDA	Avg RF	0.7715	0.7609	0.7709	0.8570	0.8925	0.8260	0.8070	0.8283	0.8142	5.664
I M2-PFDoDA				---------- ISTD ----------							

Generated at 10:17 AM on 8/9/2023

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICC711
Lab FileID: 4Q48588.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.7373	0.6677	0.8092	0.8025	0.8239	0.8300	0.7950	0.7909	0.7821	6.926
T PFTrDA	Avg RF	0.6661	0.6880	0.7846	0.8617	0.9043	0.8757	0.8550	0.8306	0.8083	10.922
I M2-PFTeDA						ISTD					
T PFTeDA	Avg RF	0.8144	0.8254	0.8291	0.8728	0.9724	0.9164	0.8876	0.8867	0.8756	6.064
I M8-FOSA						ISTD					
T FOSA	Avg RF	0.6963	0.7944	0.7925	0.8574	0.8668	0.8139	0.8170	0.8344	0.8091	6.540
I M3-PFBS						ISTD					
T PFBS	Avg RF	0.4832	0.5140	0.6129	0.6684	0.6450	0.6515	0.6564	0.6534	0.6106	11.695
I M3-PFHxS						ISTD					
T PFPeS	Avg RF	0.5325	0.5726	0.6634	0.7235	0.8358	0.7039	0.6534	0.7154	0.6751	13.952
T PFHxS	Avg RF	0.5271	0.7489	0.7055	0.7603	0.8061	0.7296	0.6992	0.7630	0.7174	11.734
I M8-PFOS						ISTD					
T PFHpS	Avg RF	0.7075	0.6959	0.7072	0.7945	0.8133	0.7873	0.7578	0.7813	0.7556	6.073
T PFOS	Avg RF	0.8938	0.8634	0.8812	0.9788	0.9622	0.9627	0.9185	0.9034	0.9205	4.634
T PFNS	Avg RF	0.4176	0.4339	0.4780	0.5375	0.5088	0.5232	0.5004	0.5063	0.4882	8.688
T PFDS	Avg RF	0.4628	0.4950	0.4736	0.5487	0.5200	0.5496	0.5291	0.5522	0.5164	6.855
T PFDoDS	Avg RF	0.3607	0.3357	0.3543	0.4357	0.3958	0.4360	0.4253	0.4348	0.3973	10.487
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	6.7126	7.7558	5.6756	6.5741	7.6168	6.5636	6.2012	6.8294	6.7411	10.172
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	3.3633	4.0432	4.0177	4.6280	5.3482	4.3261	4.3719	3.8528	4.2439	13.826
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	1.9491	2.0621	1.9943	2.1952	2.3790	2.0169	2.3034	2.2422	2.1428	7.402
I M3-MeFOSAA						ISTD					
T MeFOSAA	Avg RF	0.4484	0.5876	0.6137	0.6306	0.7409	0.6585	0.6489	0.6715	0.6250	13.526
I M3-HFPO-DA						ISTD					
T HFPO-DA	Avg RF	0.6780	0.8133	0.7992	0.8209	0.9231	0.8444	0.8455	0.8587	0.8229	8.464
T ADONA	Avg RF	4.9339	5.3338	5.6049	6.1305	6.4636	6.1253	5.8766	5.9551	5.8030	8.469
T 9Cl-PF3ONS	Avg RF	2.5292	2.8432	2.9484	3.2100	3.2610	3.1208	2.9711	2.7202	2.9505	8.451
T 11Cl-PF3OUdS	Avg RF	1.7592	1.8893	2.0106	2.2057	2.1876	2.1938	2.2435	2.2832	2.0966	9.018
I M5-EtFOSAA						ISTD					
T EtFOSAA	Avg RF	0.6197	0.6737	0.5951	0.7532	0.7151	0.6874	0.7088	0.7133	0.6833	7.700
I M7-MeFOSE						ISTD					
T MeFOSE	Avg RF	0.7152	0.8132	0.8551	0.9650	0.9739	0.9631	0.9089	0.9576	0.8940	10.397
I M9-EtFOSE						ISTD					
T EtFOSE	Avg RF	0.6306	0.6457	0.7942	0.7960	0.8974	0.8107	0.8522	0.8314	0.7823	12.161

Generated at 10:17 AM on 8/9/2023

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICC711
Lab FileID: 4Q48588.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	0.8615	0.9051	0.8520	0.9353	0.9925	0.9086	0.9182	0.9795	0.9191	5.428
I M3-MeFOSA						ISTD					
T MeFOSA	Avg RF	0.7912	0.8548	0.8605	0.9244	0.9659	0.9085	0.8567	0.7942	0.8695	7.022
I 13C4-PFOS						ISTD					
S d3-MeFOSAA	Avg RF	0.9251	0.9317	0.8846	0.9295	0.8720	0.9841	0.9214	0.9751	0.9279	4.164
S 13C8-PFOS	Avg RF	1.0373	1.0349	0.9806	0.9755	0.9674	1.0384	0.9801	1.0190	1.0042	3.091
S d5-EtFOSAA	Avg RF	0.7482	0.7295	0.7481	0.7348	0.7157	0.8303	0.7673	0.8288	0.7628	5.749
S 13C8-FOSA	Avg RF	1.6368	1.5447	1.5233	1.5439	1.5124	1.6673	1.5288	1.5182	1.5594	3.772
S d7-MeFOSE	Avg RF	0.7513	0.7455	0.7284	0.7370	0.6751	0.7656	0.7376	0.7331	0.7342	3.624
S d3-MeFOSA	Avg RF	0.8879	0.8695	0.8835	0.9170	0.8526	0.9749	0.9342	1.0271	0.9183	6.393
S d9-EtFOSE	Avg RF	1.0292	1.0513	0.9922	1.0627	0.9468	1.1319	0.9856	1.0371	1.0296	5.480
S d5-EtFOSA	Avg RF	1.0408	1.0119	1.0619	1.0823	1.0044	1.1762	1.0517	1.0325	1.0577	5.124
I 13C3-PFBA						ISTD					
S 13C4-PFBA	Avg RF	0.8531	0.8530	0.8541	0.8588	0.8464	0.8576	0.8553	0.8585	0.8546	0.475
I 18O2-PFHxS						ISTD					
S 13C2-4:2FTS	Avg RF	0.0601	0.0590	0.0728	0.0670	0.0566	0.0601	0.0627	0.0613	0.0625	8.235
S 13C3-PFBS	Avg RF	2.2242	2.3391	2.1654	2.1244	2.1143	2.0368	1.9630	2.0551	2.1278	5.512
S 13C2-6:2FTS	Avg RF	0.1243	0.1300	0.1277	0.1140	0.1022	0.1154	0.1101	0.1309	0.1193	8.757
S 13C3-PFHxS	Avg RF	1.4772	1.4731	1.4036	1.3614	1.2465	1.3394	1.3847	1.3858	1.3840	5.353
S 13C2-8:2FTS	Avg RF	0.1884	0.1933	0.1856	0.1747	0.1677	0.1938	0.1623	0.1841	0.1812	6.484
I 13C4-PFOA						ISTD					
S 13C8-PFOA	Avg RF	0.8548	0.8880	0.8054	0.8169	0.8388	0.7959	0.8107	0.7744	0.8231	4.376
I 13C2-PFDA						ISTD					
S 13C6-PFDA	Avg RF	0.8481	0.8668	0.8630	0.9302	0.8192	0.9559	0.8237	0.8142	0.8651	6.052
S 13C7-PFUnDA	Avg RF	0.9664	0.9674	0.9963	1.0064	0.9279	1.0547	0.9892	0.8862	0.9743	5.235
S 13C2-PFDoDA	Avg RF	1.0469	1.0589	1.0394	1.0948	1.0159	1.1045	1.1016	1.1053	1.0709	3.266
S 13C2-PFTeDA	Avg RF	0.8359	0.8461	0.8624	0.8912	0.7623	0.8903	0.8978	0.8924	0.8598	5.329
I 13C5-PFNA						ISTD					
S 13C9-PFNA	Avg RF	0.9950	0.9346	0.9608	0.9578	0.8778	0.9483	0.9503	0.9508	0.9469	3.473
I 13C2-PFHxA						ISTD					
S 13C5-PFPeA	Avg RF	0.8948	0.8946	0.8737	0.9038	0.8917	0.8679	0.8577	0.8064	0.8738	3.602
S 13C5-PFHxA	Avg RF	1.0620	1.0497	1.0485	1.0734	1.0422	1.0467	1.0564	1.0030	1.0477	1.968
S 13C3-HFPO-DA	Avg RF	0.2378	0.2370	0.2363	0.2442	0.2327	0.2403	0.2434	0.2336	0.2382	1.777
S 13C4-PFHpA	Avg RF	0.7472	0.7396	0.7444	0.7612	0.7382	0.7565	0.7498	0.7211	0.7448	1.658

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

Generated at 10:17 AM on 8/9/2023

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICV711
Lab FileID: 4Q48594.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080723_1633_S4Q711\s4q711.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48594
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.378	7.6	107.6
13C2-6:2FTS	5.000	5.096	1.9	101.9
13C2-8:2FTS	5.000	5.530	10.6	110.6
13C2-PFDoDA	1.250	1.222	-2.3	97.7
13C2-PFTeDA	1.250	1.253	0.3	100.3
13C3-PFBS	2.500	2.590	3.6	103.6
13C3-PFHxS	2.500	2.586	3.4	103.4
13C4-PFBA	10.000	10.185	1.9	101.9
13C4-PFHpA	2.500	2.551	2.0	102.0
13C5-PFHxA	2.500	2.510	0.4	100.4
13C5-PFPeA	5.000	5.039	0.8	100.8
13C6-PFDA	1.250	1.300	4.0	104.0
13C7-PFUnDA	1.250	1.291	3.3	103.3
13C8-FOSA	2.500	2.404	-3.9	96.1
13C8-PFOA	2.500	2.496	-0.2	99.8
13C8-PFOS	2.500	2.453	-1.9	98.1
13C9-PFNA	1.250	1.232	-1.5	98.5
4:2FTS	9.375	10.292	9.8	109.8
6:2FTS	9.500	10.456	10.1	110.1
8:2FTS	9.600	11.405	18.8	118.8
d3-MeFOSAA	5.000	4.838	-3.2	96.8
EtFOSAA	2.500	2.812	12.5	112.5
FOSA	2.500	2.834	13.4	113.4
MeFOSAA	2.500	2.946	17.8	117.8
PFBA	10.000	11.032	10.3	110.3
PFBS	2.218	2.575	16.1	116.1
PFDA	2.500	2.661	6.4	106.4
PFDoDA	2.500	2.729	9.2	109.2
PFDS	2.413	2.714	12.5	112.5
PFHpA	2.500	2.811	12.4	112.4
PFHpS	2.383	2.393	0.4	100.4
PFHxA	2.500	2.779	11.2	111.2
PFHxS	2.285	2.498	9.3	109.3
PFNA	2.500	2.726	9.0	109.0
PFNS	2.405	2.667	10.9	110.9
PFOA	2.500	2.686	7.5	107.5
PFOS	2.320	2.666	14.9	114.9

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICV711
Lab FileID: 4Q48594.D

PFPeA	5.000	5.523	10.5	110.5
PFPeS	2.353	2.673	13.6	113.6
PFTeDA	2.500	2.747	9.9	109.9
PFTrDA	2.500	2.993	19.7	119.7
PFUnDA	2.500	2.750	10.0	110.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	5.563	17.7	117.7
13C3-HFPO-DA	10.000	9.830	-1.7	98.3
9Cl-PF3ONS	4.675	5.712	22.2	122.2
ADONA	4.725	5.582	18.1	118.1
HFPO-DA	5.000	5.696	13.9	113.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	13.129	5.2	105.2
5:3FTCA	62.400	69.201	10.9	110.9
7:3FTCA	62.400	70.654	13.2	113.2
d3-MeFOSA	2.500	2.543	1.7	101.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.283	5.7	105.7
EtFOSE	12.500	14.644	17.2	117.2
MeFOSA	5.000	5.286	5.7	105.7
MeFOSE	12.500	13.979	11.8	111.8
PFDoDS	2.425	2.696	11.2	111.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.771	-4.6	95.4
d7-MeFOSE	25.000	24.176	-3.3	96.7
d9-EtFOSE	25.000	23.932	-4.3	95.7
d5-EtFOSA	2.500	2.562	2.5	102.5
NFDHA	5.000	5.851	17.0	117.0
PFMBA	5.000	5.534	10.7	110.7
PFMPA	5.000	5.480	9.6	109.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	5.000	12.4	112.4

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICV711
Lab FileID: 4Q48595.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080723_1633_S4Q711\s4q711.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48595
Type : QC
Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.526	10.5	110.5
13C2-6:2FTS	5.000	5.433	8.7	108.7
13C2-8:2FTS	5.000	4.713	-5.7	94.3
13C2-PFDoDA	1.250	1.355	8.4	108.4
13C2-PFTeDA	1.250	1.309	4.7	104.7
13C3-PFBS	2.500	2.510	0.4	100.4
13C3-PFHxS	2.500	2.545	1.8	101.8
13C4-PFBA	10.000	10.188	1.9	101.9
13C4-PFHpA	2.500	2.514	0.6	100.6
13C5-PFHxA	2.500	2.458	-1.7	98.3
13C5-PFPeA	5.000	4.993	-0.1	99.9
13C6-PFDA	1.250	1.297	3.7	103.7
13C7-PFUnDA	1.250	1.342	7.4	107.4
13C8-FOSA	2.500	2.549	2.0	102.0
13C8-PFOA	2.500	2.509	0.4	100.4
13C8-PFOS	2.500	2.487	-0.5	99.5
13C9-PFNA	1.250	1.176	-6.0	94.0
4:2FTS	20.000	19.676	-1.6	98.4
6:2FTS	20.000	20.258	1.3	101.3
8:2FTS	20.000	25.124	25.6	125.6
d3-MeFOSAA	5.000	5.131	2.6	102.6
EtFOSAA	20.000	20.709	3.5	103.5
FOSA	20.000	19.618	-1.9	98.1
MeFOSAA	20.000	21.428	7.1	107.1
PFBA	20.000	19.603	-2.0	98.0
PFBS	20.000	23.248	16.2	116.2
PFDA	20.000	21.027	5.1	105.1
PFDoDA	20.000	17.847	-10.8	89.2
PFDS	20.000	20.838	4.2	104.2
PFHpA	20.000	21.026	5.1	105.1
PFHpS	20.000	20.442	2.2	102.2
PFHxA	20.000	21.206	6.0	106.0
PFHxS	20.000	22.348	11.7	111.7
PFNA	20.000	22.880	14.4	114.4
PFNS	20.000	21.303	6.5	106.5
PFOA	20.000	19.825	-0.9	99.1
PFOS	20.000	20.521	2.6	102.6

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q711-ICV711
Lab FileID: 4Q48595.D

PFPeA	20.000	21.563	7.8	107.8
PFPeS	20.000	21.803	9.0	109.0
PFTeDA	20.000	20.948	4.7	104.7
PFTrDA	20.000	18.162	-9.2	90.8
PFUnDA	20.000	18.949	-5.3	94.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	21.160	5.8	105.8
13C3-HFPO-DA	10.000	9.998	0.0	100.0
9Cl-PF3ONS	20.000	21.039	5.2	105.2
ADONA	20.000	18.642	-6.8	93.2
HFPO-DA	20.000	19.027	-4.9	95.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.594	-7.0	93.0
5:3FTCA	20.000	20.805	4.0	104.0
7:3FTCA	20.000	19.475	-2.6	97.4
d3-MeFOSA	2.500	2.595	3.8	103.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	18.393	-8.0	92.0
EtFOSE	100.000	111.712	11.7	111.7
MeFOSA	20.000	18.401	-8.0	92.0
MeFOSE	100.000	108.830	8.8	108.8
PFDoDS	20.000	21.050	5.3	105.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.140	2.8	102.8
d7-MeFOSE	25.000	25.396	1.6	101.6
d9-EtFOSE	25.000	24.763	-0.9	99.1
d5-EtFOSA	2.500	2.579	3.1	103.1
NFDHA	20.000	20.343	1.7	101.7
PFMBA	20.000	20.480	2.4	102.4
PFMPA	20.000	20.357	1.8	101.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.136	-9.3	90.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-CC711
Lab FileID: 4Q48765.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080923_1633_S4Q713\s4q713.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48765
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.742	# 34.8	134.8
13C2-6:2FTS	5.000	7.005	# 40.1	140.1
13C2-8:2FTS	5.000	7.024	# 40.5	140.5
13C2-PFDoDA	1.250	1.303	4.2	104.2
13C2-PFTeDA	1.250	1.215	-2.8	97.2
13C3-PFBS	2.500	2.372	-5.1	94.9
13C3-PFHxS	2.500	2.361	-5.6	94.4
13C4-PFBA	10.000	10.760	7.6	107.6
13C4-PFHpA	2.500	2.537	1.5	101.5
13C5-PFHxA	2.500	2.473	-1.1	98.9
13C5-PFPeA	5.000	4.632	-7.4	92.6
13C6-PFDA	1.250	1.344	7.6	107.6
13C7-PFUnDA	1.250	1.341	7.3	107.3
13C8-FOSA	2.500	2.319	-7.2	92.8
13C8-PFOA	2.500	2.572	2.9	102.9
13C8-PFOS	2.500	2.433	-2.7	97.3
13C9-PFNA	1.250	1.089	-12.8	87.2
4:2FTS	0.750	0.697	-7.1	92.9
6:2FTS	0.760	0.633	-16.7	83.3
8:2FTS	0.768	0.836	8.9	108.9
d3-MeFOSAA	5.000	5.089	1.8	101.8
EtFOSAA	0.200	0.211	5.4	105.4
FOSA	0.200	0.197	-1.5	98.5
MeFOSAA	0.200	0.217	8.5	108.5
PFBA	0.800	0.679	-15.1	84.9
PFBS	0.177	0.165	-6.9	93.1
PFDA	0.200	0.170	-15.0	85.0
PFDoDA	0.200	0.154	-23.1	76.9
PFDS	0.193	0.159	-17.7	82.3
PFHpA	0.200	0.180	-10.2	89.8
PFHpS	0.191	0.136	-29.0	71.0
PFHxA	0.200	0.176	-12.1	87.9
PFHxS	0.183	0.199	8.6	108.6
PFNA	0.200	0.181	-9.4	90.6
PFNS	0.192	0.197	2.7	102.7
PFOA	0.200	0.190	-5.1	94.9
PFOS	0.186	0.186	-0.1	99.9

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-CC711
Lab FileID: 4Q48765.D

PFPeA	0.400	0.303	-24.2	75.8
PFPeS	0.188	0.203	8.2	108.2
PFTeDA	0.200	0.190	-5.2	94.8
PFTrDA	0.200	0.194	-3.0	97.0
PFUnDA	0.200	0.165	-17.5	82.5
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	0.378	0.380	0.6	100.6
13C3-HFPO-DA	10.000	9.425	-5.8	94.2
9Cl-PF3ONS	0.374	0.384	2.7	102.7
ADONA	0.378	0.359	-4.9	95.1
HFPO-DA	0.400	0.382	-4.4	95.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.805	-19.4	80.6
5:3FTCA	4.992	4.450	-10.9	89.1
7:3FTCA	4.992	4.578	-8.3	91.7
d3-MeFOSA	2.500	2.461	-1.6	98.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.399	-0.2	99.8
EtFOSE	1.000	1.072	7.2	107.2
MeFOSA	0.400	0.353	-11.8	88.2
MeFOSE	1.000	0.906	-9.4	90.6
PFDoDS	0.194	0.185	-4.7	95.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.453	9.1	109.1
d7-MeFOSE	25.000	22.712	-9.2	90.8
d9-EtFOSE	25.000	22.584	-9.7	90.3
d5-EtFOSA	2.500	2.453	-1.9	98.1
NFDHA	0.400	0.377	-5.8	94.2
PFMBA	0.400	0.367	-8.2	91.8
PFMPA	0.400	0.371	-7.3	92.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.303	-14.8	85.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-CC711
Lab FileID: 4Q48776.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080923_1633_S4Q713\s4q713.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48776
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.800	# 36.0	136.0
13C2-6:2FTS	5.000	6.115	22.3	122.3
13C2-8:2FTS	5.000	6.020	20.4	120.4
13C2-PFDoDA	1.250	1.358	8.7	108.7
13C2-PFTeDA	1.250	1.295	3.6	103.6
13C3-PFBS	2.500	2.204	-11.8	88.2
13C3-PFHxS	2.500	2.436	-2.6	97.4
13C4-PFBA	10.000	10.825	8.3	108.3
13C4-PFHpA	2.500	2.564	2.6	102.6
13C5-PFHxA	2.500	2.475	-1.0	99.0
13C5-PFPeA	5.000	4.578	-8.4	91.6
13C6-PFDA	1.250	1.260	0.8	100.8
13C7-PFUnDA	1.250	1.439	15.1	115.1
13C8-FOSA	2.500	2.340	-6.4	93.6
13C8-PFOA	2.500	2.460	-1.6	98.4
13C8-PFOS	2.500	2.357	-5.7	94.3
13C9-PFNA	1.250	1.084	-13.3	86.7
4:2FTS	9.375	9.035	-3.6	96.4
6:2FTS	9.500	10.536	10.9	110.9
8:2FTS	9.600	13.082	# 36.3	136.3
d3-MeFOSAA	5.000	5.270	5.4	105.4
EtFOSAA	2.500	2.329	-6.8	93.2
FOSA	2.500	2.632	5.3	105.3
MeFOSAA	2.500	2.805	12.2	112.2
PFBA	10.000	10.105	1.1	101.1
PFBS	2.218	2.863	29.1	129.1
PFDA	2.500	2.756	10.2	110.2
PFDoDA	2.500	2.591	3.7	103.7
PFDS	2.413	2.548	5.6	105.6
PFHpA	2.500	2.677	7.1	107.1
PFHpS	2.383	2.420	1.6	101.6
PFHxA	2.500	2.648	5.9	105.9
PFHxS	2.285	2.649	15.9	115.9
PFNA	2.500	2.845	13.8	113.8
PFNS	2.405	2.649	10.1	110.1
PFOA	2.500	2.755	10.2	110.2
PFOS	2.320	2.627	13.2	113.2

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-CC711
Lab FileID: 4Q48776.D

PFPeA	5.000	5.591	11.8	111.8
PFPeS	2.353	2.405	2.2	102.2
PFTeDA	2.500	2.618	4.7	104.7
PFTrDA	2.500	2.795	11.8	111.8
PFUnDA	2.500	2.450	-2.0	98.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	5.794	22.6	122.6
13C3-HFPO-DA	10.000	9.275	-7.2	92.8
9Cl-PF3ONS	4.675	5.918	26.6	126.6
ADONA	4.725	5.539	17.2	117.2
HFPO-DA	5.000	5.142	2.8	102.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.230	-10.0	90.0
5:3FTCA	62.400	68.287	9.4	109.4
7:3FTCA	62.400	70.797	13.5	113.5
d3-MeFOSA	2.500	2.411	-3.5	96.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.530	10.6	110.6
EtFOSE	12.500	13.973	11.8	111.8
MeFOSA	5.000	5.112	2.2	102.2
MeFOSE	12.500	13.045	4.4	104.4
PFDoDS	2.425	2.624	8.2	108.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.566	11.3	111.3
d7-MeFOSE	25.000	21.914	-12.3	87.7
d9-EtFOSE	25.000	21.065	-15.7	84.3
d5-EtFOSA	2.500	2.307	-7.7	92.3
NFDHA	5.000	5.576	11.5	111.5
PFMBA	5.000	5.633	12.7	112.7
PFMPA	5.000	5.552	11.0	111.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.656	4.6	104.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-CC711
Lab FileID: 4Q48787.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080923_1633_S4Q713\s4q713.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48787
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	7.620	# 52.4	152.4
13C2-6:2FTS	5.000	6.690	# 33.8	133.8
13C2-8:2FTS	5.000	6.881	# 37.6	137.6
13C2-PFDoDA	1.250	1.389	11.1	111.1
13C2-PFTeDA	1.250	1.269	1.5	101.5
13C3-PFBS	2.500	2.387	-4.5	95.5
13C3-PFHxS	2.500	2.424	-3.0	97.0
13C4-PFBA	10.000	10.994	9.9	109.9
13C4-PFHpA	2.500	2.572	2.9	102.9
13C5-PFHxA	2.500	2.517	0.7	100.7
13C5-PFPeA	5.000	4.530	-9.4	90.6
13C6-PFDA	1.250	1.221	-2.3	97.7
13C7-PFUnDA	1.250	1.437	15.0	115.0
13C8-FOSA	2.500	2.333	-6.7	93.3
13C8-PFOA	2.500	2.426	-3.0	97.0
13C8-PFOS	2.500	2.367	-5.3	94.7
13C9-PFNA	1.250	1.127	-9.9	90.1
4:2FTS	9.375	8.260	-11.9	88.1
6:2FTS	9.500	10.244	7.8	107.8
8:2FTS	9.600	11.860	23.5	123.5
d3-MeFOSAA	5.000	5.202	4.0	104.0
EtFOSAA	2.500	2.198	-12.1	87.9
FOSA	2.500	2.648	5.9	105.9
MeFOSAA	2.500	3.032	21.3	121.3
PFBA	10.000	10.072	0.7	100.7
PFBS	2.218	2.674	20.6	120.6
PFDA	2.500	2.863	14.5	114.5
PFDoDA	2.500	2.537	1.5	101.5
PFDS	2.413	2.525	4.6	104.6
PFHpA	2.500	2.628	5.1	105.1
PFHpS	2.383	2.496	4.8	104.8
PFHxA	2.500	2.616	4.6	104.6
PFHxS	2.285	2.676	17.1	117.1
PFNA	2.500	2.722	8.9	108.9
PFNS	2.405	2.700	12.3	112.3
PFOA	2.500	2.799	11.9	111.9
PFOS	2.320	2.651	14.3	114.3

Continuing Calibration Summary

Job Number: FC8439 **Sample:** S4Q713-CC711
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q48787.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	5.667	13.3	113.3
PFPeS	2.353	2.545	8.2	108.2
PFTeDA	2.500	2.607	4.3	104.3
PFTrDA	2.500	2.766	10.6	110.6
PFUnDA	2.500	2.420	-3.2	96.8
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	4.725	6.021	27.4	127.4
13C3-HFPO-DA	10.000	9.139	-8.6	91.4
9Cl-PF3ONS	4.675	6.083	# 30.1	130.1
ADONA	4.725	5.669	20.0	120.0
HFPO-DA	5.000	5.142	2.8	102.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.114	-10.9	89.1
5:3FTCA	62.400	67.990	9.0	109.0
7:3FTCA	62.400	69.808	11.9	111.9
d3-MeFOSA	2.500	2.452	-1.9	98.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.914	18.3	118.3
EtFOSE	12.500	14.577	16.6	116.6
MeFOSA	5.000	5.120	2.4	102.4
MeFOSE	12.500	13.247	6.0	106.0
PFDoDS	2.425	2.559	5.5	105.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.614	12.3	112.3
d7-MeFOSE	25.000	21.788	-12.8	87.2
d9-EtFOSE	25.000	21.836	-12.7	87.3
d5-EtFOSA	2.500	2.273	-9.1	90.9
NFDHA	5.000	4.993	-0.1	99.9
PFMBA	5.000	5.819	16.4	116.4
PFMPA	5.000	5.701	14.0	114.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.759	7.0	107.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-ECC711
Lab FileID: 4Q48799.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\080923_1633_S4Q713\s4q713.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\080723_1633_S4Q711\4Q48585.d
2:D:\MassHunter\Data\080723_1633_S4Q711\4Q48586.d
3:D:\MassHunter\Data\080723_1633_S4Q711\4Q48587.d
4:D:\MassHunter\Data\080723_1633_S4Q711\4Q48588.d
5:D:\MassHunter\Data\080723_1633_S4Q711\4Q48589.d
6:D:\MassHunter\Data\080723_1633_S4Q711\4Q48590.d
7:D:\MassHunter\Data\080723_1633_S4Q711\4Q48591.d
8:D:\MassHunter\Data\080723_1633_S4Q711\4Q48592.d

Data File: 4Q48799
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.645	# 32.9	132.9
13C2-6:2FTS	5.000	6.527	# 30.5	130.5
13C2-8:2FTS	5.000	6.944	# 38.9	138.9
13C2-PFDoDA	1.250	1.311	4.9	104.9
13C2-PFTeDA	1.250	1.182	-5.5	94.5
13C3-PFBS	2.500	2.230	-10.8	89.2
13C3-PFHxS	2.500	2.329	-6.8	93.2
13C4-PFBA	10.000	11.067	10.7	110.7
13C4-PFHpA	2.500	2.564	2.6	102.6
13C5-PFHxA	2.500	2.554	2.2	102.2
13C5-PFPeA	5.000	4.279	-14.4	85.6
13C6-PFDA	1.250	1.259	0.7	100.7
13C7-PFUnDA	1.250	1.385	10.8	110.8
13C8-FOSA	2.500	2.112	-15.5	84.5
13C8-PFOA	2.500	2.451	-1.9	98.1
13C8-PFOS	2.500	2.272	-9.1	90.9
13C9-PFNA	1.250	1.156	-7.5	92.5
4:2FTS	9.375	9.332	-0.5	99.5
6:2FTS	9.500	10.351	9.0	109.0
8:2FTS	9.600	10.762	12.1	112.1
d3-MeFOSAA	5.000	4.961	-0.8	99.2
EtFOSAA	2.500	2.341	-6.4	93.6
FOSA	2.500	2.723	8.9	108.9
MeFOSAA	2.500	2.898	15.9	115.9
PFBA	10.000	10.207	2.1	102.1
PFBS	2.218	2.853	28.6	128.6
PFDA	2.500	2.937	17.5	117.5
PFDoDA	2.500	2.610	4.4	104.4
PFDS	2.413	2.564	6.2	106.2
PFHpA	2.500	2.564	2.5	102.5
PFHpS	2.383	2.372	-0.5	99.5
PFHxA	2.500	2.491	-0.4	99.6
PFHxS	2.285	2.680	17.3	117.3
PFNA	2.500	2.634	5.4	105.4
PFNS	2.405	2.763	14.9	114.9
PFOA	2.500	2.814	12.6	112.6
PFOS	2.320	2.552	10.0	110.0

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q713-ECC711
Lab FileID: 4Q48799.D

PFPeA	5.000	5.847	16.9	116.9
PFPeS	2.353	2.439	3.6	103.6
PFTeDA	2.500	2.777	11.1	111.1
PFTrDA	2.500	2.880	15.2	115.2
PFUnDA	2.500	2.612	4.5	104.5
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	4.725	5.933	25.6	125.6
13C3-HFPO-DA	10.000	8.980	-10.2	89.8
9Cl-PF3ONS	4.675	5.906	26.3	126.3
ADONA	4.725	5.719	21.0	121.0
HFPO-DA	5.000	5.237	4.7	104.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.953	-12.2	87.8
5:3FTCA	62.400	66.241	6.2	106.2
7:3FTCA	62.400	65.569	5.1	105.1
d3-MeFOSA	2.500	2.317	-7.3	92.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.903	18.1	118.1
EtFOSE	12.500	14.406	15.2	115.2
MeFOSA	5.000	5.145	2.9	102.9
MeFOSE	12.500	12.854	2.8	102.8
PFDoDS	2.425	2.512	3.6	103.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.047	0.9	100.9
d7-MeFOSE	25.000	20.475	-18.1	81.9
d9-EtFOSE	25.000	20.200	-19.2	80.8
d5-EtFOSA	2.500	2.147	-14.1	85.9
NFDHA	5.000	5.330	6.6	106.6
PFMBA	5.000	6.020	20.4	120.4
PFMPA	5.000	5.731	14.6	114.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.486	0.8	100.8

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICC330
Lab FileID: 6Q22643.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	1633_081023_S6Q330.quantmethod.xml
Batch Name	D:\MassHunter\Data\081023_1633_S6Q330\QuantResults\s6q330.batch.bin
Last Calib Update	8/10/2023 4:07:14 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d	8/10/2023 1:37:43 PM	8/10/2023 4:07:14 PM
2	D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d	8/10/2023 1:52:03 PM	8/10/2023 4:07:14 PM
3	D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d	8/10/2023 2:06:22 PM	8/10/2023 4:07:14 PM
4	D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d	8/10/2023 2:20:43 PM	8/10/2023 4:07:14 PM
5	D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d	8/10/2023 2:35:04 PM	8/10/2023 4:07:14 PM
6	D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d	8/10/2023 2:49:29 PM	8/10/2023 4:07:14 PM
7	D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d	8/10/2023 3:03:50 PM	8/10/2023 4:07:14 PM
8	D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d	8/10/2023 3:18:11 PM	8/10/2023 4:07:14 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA				---------- ISTD ----------							
T PFBA	Avg RF	0.3437	0.3187	0.2896	0.3160	0.2979	0.3285	0.3136	0.2916	0.3124	5.992
T 3:3FTCA	Avg RF	0.0525	0.0494	0.0454	0.0482	0.0459	0.0507	0.0506	0.0525	0.0494	5.539
I M5-PFPeA				---------- ISTD ----------							
T PFMPA	Avg RF	0.6675	0.6365	0.5857	0.6272	0.5905	0.6636	0.6260	0.5906	0.6235	5.191
T PFPeA	Avg RF	1.1737	1.1175	1.0464	1.1158	1.0393	1.1741	1.1025	1.0422	1.1014	5.018
T PFMBA	Avg RF	0.8407	0.7896	0.7407	0.7847	0.7426	0.8264	0.7749	0.7328	0.7790	5.121
I M5-PFHxA				---------- ISTD ----------							
T NFDHA	Avg RF	0.1030	0.1048	0.0866	0.0887	0.0869	0.0962	0.0941	0.0838	0.0930	8.457
T PFHxA	Avg RF	0.8137	0.7418	0.6408	0.7396	0.6976	0.7698	0.7660	0.6810	0.7313	7.577
T PFEESA	Avg RF	1.0477	0.9868	0.9494	0.9504	0.9118	1.0476	1.0404	0.9244	0.9823	5.753
T 5:3FTCA	Avg RF	0.1574	0.1582	0.1393	0.1525	0.1405	0.1614	0.1569	0.1371	0.1504	6.528
T 7:3FTCA	Avg RF	0.1220	0.1191	0.1021	0.1085	0.1046	0.1178	0.1119	0.1039	0.1112	6.890
I M4-PFHpA				---------- ISTD ----------							
T PFHpA	Avg RF	1.0625	1.0248	0.8945	0.9831	0.9355	1.0972	0.9650	0.9247	0.9859	7.156
I M8-PFOA				---------- ISTD ----------							
T PFOA	Avg RF	1.0696	0.9845	0.9628	1.0820	0.9658	1.0872	1.0354	0.9871	1.0218	5.176
I M9-PFNA				---------- ISTD ----------							
T PFNA	Avg RF	0.9990	0.8281	0.8094	0.7868	0.8348	0.8710	0.9058	0.8378	0.8591	7.819
I M6-PFDA				---------- ISTD ----------							
T PFDA	Avg RF	1.7119	1.5082	1.4031	1.5175	1.3877	1.4061	1.4158	1.4985	1.4811	7.234
I M7-PFUnDA				---------- ISTD ----------							
T PFUnDA	Avg RF	0.7606	0.7005	0.7249	0.7162	0.6862	0.7549	0.7325	0.6842	0.7200	4.020
I M2-PFDoDA				---------- ISTD ----------							

Generated at 4:07 PM on 8/10/2023

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICC330
Lab FileID: 6Q22643.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.8625	0.8217	0.8129	0.8024	0.8267	0.9158	0.7900	0.7202	0.8190	6.884
T PFTrDA	Avg RF	0.9129	0.8235	0.8445	0.9193	0.8433	0.9075	0.8109	0.7000	0.8452	8.565
I M2-PFTeDA						ISTD					
T PFTeDA	Avg RF	1.3882	1.2376	1.1459	1.1803	1.1522	1.3606	1.1994	1.0480	1.2140	9.326
I M8-FOSA						ISTD					
T FOSA	Avg RF	0.8776	0.7907	0.7284	0.7892	0.7519	0.8466	0.7551	0.7372	0.7846	6.794
I M3-PFBS						ISTD					
T PFBS	Avg RF	0.8402	0.8129	0.7641	0.8970	0.7625	0.8735	0.8298	0.7552	0.8169	6.526
I M3-PFHxS						ISTD					
T PFPeS	Avg RF	1.0878	1.0075	1.0064	0.9848	1.0313	1.0414	1.0663	0.9627	1.0235	4.060
T PFHxS	Avg RF	1.3792	1.2024	0.9869	1.0240	1.0300	1.1121	1.0695	1.0205	1.1031	11.832
I M8-PFOS						ISTD					
T PFHpS	Avg RF	1.2456	1.1271	1.1099	1.1678	1.0093	1.1296	1.2001	1.1462	1.1419	6.085
T PFOS	Avg RF	1.1112	1.1249	1.0531	1.1139	0.9973	1.0501	1.0953	1.0515	1.0747	4.072
T PFNS	Avg RF	1.1120	1.0230	1.0274	1.0897	0.9254	1.0043	1.0422	1.0253	1.0312	5.450
T PFDS	Avg RF	0.6681	0.6732	0.5646	0.6180	0.5144	0.5843	0.5840	0.5929	0.5999	8.786
T PFDoDS	Avg RF	0.2794	0.2860	0.2771	0.2897	0.2553	0.2788	0.2973	0.2711	0.2793	4.532
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	6.9430	7.1440	6.0893	6.4297	6.2264	7.0163	6.5706	5.3276	6.4684	9.234
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	4.6097	4.8819	4.1028	4.5384	4.4461	4.7780	4.5454	3.8770	4.4724	7.471
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	2.8892	3.1293	2.4826	2.8499	2.5162	2.6241	2.5420	2.3723	2.6757	9.550
I M3-MeFOSAA						ISTD					
T MeFOSAA	Avg RF	1.0831	1.0573	0.9142	0.9102	0.8925	0.9951	0.9230	0.8722	0.9560	8.287
I M3-HFPO-DA						ISTD					
T HFPO-DA	Avg RF	0.9861	0.9929	0.7854	0.8594	0.7581	0.8907	0.7933	0.7415	0.8509	11.606
T ADONA	Avg RF	13.05	13.22	11.93	13.02	12.05	14.19	12.91	11.52	12.74	6.721
T 9Cl-PF3ONS	Avg RF	5.9949	6.0608	5.3035	6.0224	5.7794	6.4412	5.6240	4.9266	5.7691	8.287
T 11Cl-PF3OUdS	Avg RF	3.7243	3.8193	3.3370	3.4829	3.4885	3.9418	3.5878	3.1696	3.5689	7.131
I M5-EtFOSAA						ISTD					
T EtFOSAA	Avg RF	0.7423	0.6189	0.5862	0.6190	0.5577	0.6528	0.6360	0.6278	0.6301	8.602
I M7-MeFOSE						ISTD					
T MeFOSE	Avg RF	0.9646	0.9010	0.9099	0.9258	0.8990	1.0088	0.9864	0.8816	0.9346	4.949
I M9-EtFOSE						ISTD					
T EtFOSE	Avg RF	1.0574	1.0198	0.9304	0.9822	0.9922	1.0697	1.0441	1.0086	1.0131	4.479

Generated at 4:07 PM on 8/10/2023

Initial Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICC330
Lab FileID: 6Q22643.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	1.1759	1.1824	0.9796	1.1079	1.0395	1.1464	1.1495	1.0276	1.1011	6.917
I M3-MeFOSA						ISTD					
T MeFOSA	Avg RF	1.0065	0.9676	0.8600	0.9512	0.9115	0.9837	0.9369	0.7953	0.9266	7.515
I 13C4-PFOS						ISTD					
S d3-MeFOSAA	Avg RF	1.0208	0.8551	0.8610	0.9503	0.9037	0.8873	0.9321	0.8268	0.9046	6.871
S 13C8-PFOS	Avg RF	0.7713	0.6797	0.7153	0.7050	0.7694	0.7734	0.7621	0.6802	0.7320	5.652
S d5-EtFOSAA	Avg RF	0.8882	0.8437	0.8757	0.8392	0.8489	0.8352	0.8347	0.7155	0.8351	6.248
S 13C8-FOSA	Avg RF	2.0202	1.8423	1.8793	1.9110	1.8041	1.8107	1.9637	1.8653	1.8871	3.976
S d7-MeFOSE	Avg RF	0.7486	0.6653	0.6639	0.6710	0.6621	0.6523	0.6905	0.6517	0.6757	4.715
S d3-MeFOSA	Avg RF	0.8325	0.7235	0.7672	0.7478	0.7372	0.7542	0.8051	0.8120	0.7724	5.097
S d9-EtFOSE	Avg RF	0.9976	0.8565	0.9057	0.9422	0.8703	0.8925	0.9295	0.8194	0.9017	6.148
S d5-EtFOSA	Avg RF	0.8537	0.7208	0.8069	0.7682	0.7625	0.7663	0.7927	0.7550	0.7783	5.104
I 13C3-PFBA						ISTD					
S 13C4-PFBA	Avg RF	1.1811	1.1759	1.1793	1.1813	1.1771	1.1925	1.1909	1.1698	1.1810	0.640
I 18O2-PFHxS						ISTD					
S 13C2-4:2FTS	Avg RF	0.1598	0.1474	0.1641	0.1676	0.1563	0.1386	0.1363	0.1248	0.1494	10.125
S 13C3-PFBS	Avg RF	2.1096	2.1112	2.2143	2.1763	2.1919	2.0330	2.1069	2.0345	2.1222	3.207
S 13C2-6:2FTS	Avg RF	0.2193	0.2146	0.2509	0.2448	0.2196	0.2002	0.1957	0.1798	0.2156	11.143
S 13C3-PFHxS	Avg RF	1.2807	1.3086	1.4240	1.5478	1.3919	1.3498	1.3507	1.3390	1.3741	6.050
S 13C2-8:2FTS	Avg RF	0.2190	0.2024	0.2290	0.2323	0.2226	0.2034	0.2059	0.1742	0.2111	8.936
I 13C4-PFOA						ISTD					
S 13C8-PFOA	Avg RF	0.9028	0.9578	0.9514	0.8803	0.9267	0.9324	0.9111	0.9227	0.9231	2.746
I 13C2-PFDA						ISTD					
S 13C6-PFDA	Avg RF	0.7451	0.6938	0.6877	0.6573	0.7157	0.7909	0.7387	0.6176	0.7058	7.680
S 13C7-PFUnDA	Avg RF	0.9555	0.9615	0.9170	0.8973	0.9570	0.9624	0.9616	0.8569	0.9337	4.227
S 13C2-PFDoDA	Avg RF	0.8562	0.8838	0.8065	0.7958	0.8159	0.8755	0.8699	0.8526	0.8445	4.001
S 13C2-PFTeDA	Avg RF	0.4796	0.4727	0.4966	0.4695	0.4884	0.5012	0.5043	0.4739	0.4858	2.828
I 13C5-PFNA						ISTD					
S 13C9-PFNA	Avg RF	0.7616	0.7895	0.7797	0.8809	0.8189	0.8175	0.8409	0.7973	0.8108	4.651
I 13C2-PFHxA						ISTD					
S 13C5-PFPeA	Avg RF	0.4735	0.4790	0.4605	0.4776	0.4839	0.4684	0.4692	0.4546	0.4708	2.076
S 13C5-PFHxA	Avg RF	1.0049	1.0244	1.0495	1.0601	1.0621	1.0339	1.0033	1.0173	1.0319	2.270
S 13C3-HFPO-DA	Avg RF	0.1639	0.1596	0.1598	0.1615	0.1649	0.1557	0.1639	0.1649	0.1618	2.006
S 13C4-PFHpA	Avg RF	1.0225	1.0245	0.9903	1.0072	1.0301	0.9779	1.0346	0.9879	1.0094	2.147

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

Generated at 4:07 PM on 8/10/2023

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICV330
Lab FileID: 6Q22649.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22649
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.439	8.8	108.8
13C2-6:2FTS	5.000	5.362	7.2	107.2
13C2-8:2FTS	5.000	5.853	17.1	117.1
13C2-PFDoDA	1.250	1.178	-5.7	94.3
13C2-PFTeDA	1.250	1.240	-0.8	99.2
13C3-PFBS	2.500	2.427	-2.9	97.1
13C3-PFHxS	2.500	2.383	-4.7	95.3
13C4-PFBA	10.000	10.088	0.9	100.9
13C4-PFHpA	2.500	2.498	-0.1	99.9
13C5-PFHxA	2.500	2.459	-1.6	98.4
13C5-PFPeA	5.000	4.956	-0.9	99.1
13C6-PFDA	1.250	1.223	-2.1	97.9
13C7-PFUnDA	1.250	1.260	0.8	100.8
13C8-FOSA	2.500	2.461	-1.6	98.4
13C8-PFOA	2.500	2.562	2.5	102.5
13C8-PFOS	2.500	2.539	1.6	101.6
13C9-PFNA	1.250	1.322	5.8	105.8
4:2FTS	9.375	9.083	-3.1	96.9
6:2FTS	9.500	9.119	-4.0	96.0
8:2FTS	9.600	8.717	-9.2	90.8
d3-MeFOSAA	5.000	4.952	-1.0	99.0
EtFOSAA	2.500	2.381	-4.8	95.2
FOSA	2.500	2.356	-5.8	94.2
MeFOSAA	2.500	2.383	-4.7	95.3
PFBA	10.000	9.286	-7.1	92.9
PFBS	2.218	2.348	5.9	105.9
PFDA	2.500	2.413	-3.5	96.5
PFDoDA	2.500	2.435	-2.6	97.4
PFDS	2.413	2.127	-11.8	88.2
PFHpA	2.500	2.386	-4.6	95.4
PFHpS	2.383	2.309	-3.1	96.9
PFHxA	2.500	2.471	-1.2	98.8
PFHxS	2.285	2.214	-3.1	96.9
PFNA	2.500	2.240	-10.4	89.6
PFNS	2.405	2.141	-11.0	89.0
PFOA	2.500	2.307	-7.7	92.3
PFOS	2.320	2.096	-9.6	90.4

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICV330
Lab FileID: 6Q22649.D

PFPeA	5.000	4.806	-3.9	96.1
PFPeS	2.353	2.411	2.4	102.4
PFTeDA	2.500	2.297	-8.1	91.9
PFTrDA	2.500	2.568	2.7	102.7
PFUnDA	2.500	2.362	-5.5	94.5
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	4.725	4.390	-7.1	92.9
13C3-HFPO-DA	10.000	9.783	-2.2	97.8
9Cl-PF3ONS	4.675	4.325	-7.5	92.5
ADONA	4.725	4.548	-3.7	96.3
HFPO-DA	5.000	4.486	-10.3	89.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.262	-9.8	90.2
5:3FTCA	62.400	60.691	-2.7	97.3
7:3FTCA	62.400	61.922	-0.8	99.2
d3-MeFOSA	2.500	2.487	-0.5	99.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.696	-6.1	93.9
EtFOSE	12.500	11.796	-5.6	94.4
MeFOSA	5.000	4.658	-6.8	93.2
MeFOSE	12.500	10.971	-12.2	87.8
PFDoDS	2.425	2.308	-4.8	95.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.859	-2.8	97.2
d7-MeFOSE	25.000	25.588	2.4	102.4
d9-EtFOSE	25.000	24.890	-0.4	99.6
d5-EtFOSA	2.500	2.472	-1.1	98.9
NFDHA	5.000	4.807	-3.9	96.1
PFMBA	5.000	4.753	-4.9	95.1
PFMPA	5.000	4.772	-4.6	95.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.282	-3.8	96.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICV330
Lab FileID: 6Q22650.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22650
Type : QC
Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.350	7.0	107.0
13C2-6:2FTS	5.000	5.196	3.9	103.9
13C2-8:2FTS	5.000	5.605	12.1	112.1
13C2-PFDoDA	1.250	1.221	-2.3	97.7
13C2-PFTeDA	1.250	1.234	-1.3	98.7
13C3-PFBS	2.500	2.453	-1.9	98.1
13C3-PFHxS	2.500	2.661	6.5	106.5
13C4-PFBA	10.000	10.087	0.9	100.9
13C4-PFHpA	2.500	2.525	1.0	101.0
13C5-PFHxA	2.500	2.554	2.2	102.2
13C5-PFPeA	5.000	5.111	2.2	102.2
13C6-PFDA	1.250	1.243	-0.6	99.4
13C7-PFUnDA	1.250	1.218	-2.6	97.4
13C8-FOSA	2.500	2.517	0.7	100.7
13C8-PFOA	2.500	2.468	-1.3	98.7
13C8-PFOS	2.500	2.689	7.6	107.6
13C9-PFNA	1.250	1.266	1.3	101.3
4:2FTS	20.000	20.173	0.9	100.9
6:2FTS	20.000	21.021	5.1	105.1
8:2FTS	20.000	18.827	-5.9	94.1
d3-MeFOSAA	5.000	5.063	1.3	101.3
EtFOSAA	20.000	19.214	-3.9	96.1
FOSA	20.000	19.075	-4.6	95.4
MeFOSAA	20.000	18.695	-6.5	93.5
PFBA	20.000	18.362	-8.2	91.8
PFBS	20.000	21.372	6.9	106.9
PFDA	20.000	19.256	-3.7	96.3
PFDoDA	20.000	17.002	-15.0	85.0
PFDS	20.000	18.707	-6.5	93.5
PFHpA	20.000	18.346	-8.3	91.7
PFHpS	20.000	17.658	-11.7	88.3
PFHxA	20.000	19.622	-1.9	98.1
PFHxS	20.000	17.983	-10.1	89.9
PFNA	20.000	19.694	-1.5	98.5
PFNS	20.000	18.301	-8.5	91.5
PFOA	20.000	17.570	-12.1	87.9
PFOS	20.000	17.137	-14.3	85.7

Initial Calibration Verification

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-ICV330
Lab FileID: 6Q22650.D

PFPeA	20.000	19.830	-0.8	99.2
PFPeS	20.000	19.408	-3.0	97.0
PFTeDA	20.000	18.377	-8.1	91.9
PFTrDA	20.000	16.387	-18.1	81.9
PFUnDA	20.000	19.064	-4.7	95.3
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	20.000	19.657	-1.7	98.3
13C3-HFPO-DA	10.000	9.820	-1.8	98.2
9Cl-PF3ONS	20.000	21.365	6.8	106.8
ADONA	20.000	18.832	-5.8	94.2
HFPO-DA	20.000	18.355	-8.2	91.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.117	-9.4	90.6
5:3FTCA	20.000	19.612	-1.9	98.1
7:3FTCA	20.000	18.613	-6.9	93.1
d3-MeFOSA	2.500	2.447	-2.1	97.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	16.466	-17.7	82.3
EtFOSE	100.000	99.142	-0.9	99.1
MeFOSA	20.000	17.595	-12.0	88.0
MeFOSE	100.000	106.677	6.7	106.7
PFDoDS	20.000	16.994	-15.0	85.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.872	-2.6	97.4
d7-MeFOSE	25.000	25.032	0.1	100.1
d9-EtFOSE	25.000	24.856	-0.6	99.4
d5-EtFOSA	2.500	2.629	5.2	105.2
NFDHA	20.000	19.141	-4.3	95.7
PFMBA	20.000	19.151	-4.2	95.8
PFMPA	20.000	19.291	-3.5	96.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.540	-12.3	87.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22651.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22651
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.023	0.5	100.5
13C2-6:2FTS	5.000	5.464	9.3	109.3
13C2-8:2FTS	5.000	5.171	3.4	103.4
13C2-PFDoDA	1.250	1.273	1.8	101.8
13C2-PFTeDA	1.250	1.258	0.6	100.6
13C3-PFBS	2.500	2.436	-2.6	97.4
13C3-PFHxS	2.500	2.549	2.0	102.0
13C4-PFBA	10.000	10.044	0.4	100.4
13C4-PFHpA	2.500	2.513	0.5	100.5
13C5-PFHxA	2.500	2.619	4.7	104.7
13C5-PFPeA	5.000	5.185	3.7	103.7
13C6-PFDA	1.250	1.376	10.1	110.1
13C7-PFUnDA	1.250	1.279	2.3	102.3
13C8-FOSA	2.500	2.559	2.4	102.4
13C8-PFOA	2.500	2.542	1.7	101.7
13C8-PFOS	2.500	2.570	2.8	102.8
13C9-PFNA	1.250	1.160	-7.2	92.8
4:2FTS	9.375	9.838	4.9	104.9
6:2FTS	9.500	9.422	-0.8	99.2
8:2FTS	9.600	10.213	6.4	106.4
d3-MeFOSAA	5.000	5.152	3.0	103.0
EtFOSAA	2.500	2.556	2.2	102.2
FOSA	2.500	2.480	-0.8	99.2
MeFOSAA	2.500	2.509	0.3	100.3
PFBA	10.000	10.019	0.2	100.2
PFBS	2.218	2.259	1.9	101.9
PFDA	2.500	2.371	-5.2	94.8
PFDoDA	2.500	2.507	0.3	100.3
PFDS	2.413	2.446	1.4	101.4
PFHpA	2.500	2.662	6.5	106.5
PFHpS	2.383	2.504	5.1	105.1
PFHxA	2.500	2.503	0.1	100.1
PFHxS	2.285	2.089	-8.6	91.4
PFNA	2.500	2.484	-0.7	99.3
PFNS	2.405	2.399	-0.3	99.7
PFOA	2.500	2.495	-0.2	99.8
PFOS	2.320	2.440	5.2	105.2

Continuing Calibration Summary

Job Number: FC8439 **Sample:** S6Q330-CC330
Account: AECOMCOD AECOM, INC. **Lab FileID:** 6Q22651.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	5.048	1.0	101.0
PFPeS	2.353	2.322	-1.3	98.7
PFTeDA	2.500	2.547	1.9	101.9
PFTrDA	2.500	2.629	5.1	105.1
PFUnDA	2.500	2.599	4.0	104.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	5.051	6.9	106.9
13C3-HFPO-DA	10.000	9.864	-1.4	98.6
9Cl-PF3ONS	4.675	5.039	7.8	107.8
ADONA	4.725	5.161	9.2	109.2
HFPO-DA	5.000	5.030	0.6	100.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.132	-2.8	97.2
5:3FTCA	62.400	61.885	-0.8	99.2
7:3FTCA	62.400	64.422	3.2	103.2
d3-MeFOSA	2.500	2.437	-2.5	97.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.076	1.5	101.5
EtFOSE	12.500	12.830	2.6	102.6
MeFOSA	5.000	5.166	3.3	103.3
MeFOSE	12.500	11.953	-4.4	95.6
PFDoDS	2.425	2.465	1.7	101.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.156	3.1	103.1
d7-MeFOSE	25.000	25.650	2.6	102.6
d9-EtFOSE	25.000	25.142	0.6	100.6
d5-EtFOSA	2.500	2.576	3.0	103.0
NFDHA	5.000	5.087	1.7	101.7
PFMBA	5.000	5.020	0.4	100.4
PFMPA	5.000	5.018	0.4	100.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.543	2.1	102.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22652.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22652
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.160	3.2	103.2
13C2-6:2FTS	5.000	5.235	4.7	104.7
13C2-8:2FTS	5.000	5.274	5.5	105.5
13C2-PFDoDA	1.250	1.381	10.5	110.5
13C2-PFTeDA	1.250	1.218	-2.5	97.5
13C3-PFBS	2.500	2.318	-7.3	92.7
13C3-PFHxS	2.500	2.435	-2.6	97.4
13C4-PFBA	10.000	10.150	1.5	101.5
13C4-PFHpA	2.500	2.484	-0.7	99.3
13C5-PFHxA	2.500	2.490	-0.4	99.6
13C5-PFPeA	5.000	5.067	1.3	101.3
13C6-PFDA	1.250	1.328	6.2	106.2
13C7-PFUnDA	1.250	1.244	-0.5	99.5
13C8-FOSA	2.500	2.386	-4.6	95.4
13C8-PFOA	2.500	2.532	1.3	101.3
13C8-PFOS	2.500	2.519	0.8	100.8
13C9-PFNA	1.250	1.282	2.6	102.6
4:2FTS	0.750	0.849	13.2	113.2
6:2FTS	0.760	0.843	10.9	110.9
8:2FTS	0.768	0.849	10.5	110.5
d3-MeFOSAA	5.000	5.187	3.7	103.7
EtFOSAA	0.200	0.234	17.2	117.2
FOSA	0.200	0.211	5.4	105.4
MeFOSAA	0.200	0.207	3.5	103.5
PFBA	0.800	0.862	7.8	107.8
PFBS	0.177	0.200	12.9	112.9
PFDA	0.200	0.192	-3.8	96.2
PFDoDA	0.200	0.209	4.4	104.4
PFDS	0.193	0.203	5.4	105.4
PFHpA	0.200	0.216	8.1	108.1
PFHpS	0.191	0.210	9.8	109.8
PFHxA	0.200	0.212	6.1	106.1
PFHxS	0.183	0.185	1.1	101.1
PFNA	0.200	0.226	13.0	113.0
PFNS	0.192	0.197	2.5	102.5
PFOA	0.200	0.212	6.2	106.2
PFOS	0.186	0.201	8.3	108.3

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22652.D

PFPeA	0.400	0.445	11.3	111.3
PFPeS	0.188	0.206	9.3	109.3
PFTeDA	0.200	0.225	12.6	112.6
PFTrDA	0.200	0.185	-7.6	92.4
PFUnDA	0.200	0.228	13.8	113.8
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	0.378	0.444	17.5	117.5
13C3-HFPO-DA	10.000	9.793	-2.1	97.9
9Cl-PF3ONS	0.374	0.390	4.3	104.3
ADONA	0.378	0.424	12.1	112.1
HFPO-DA	0.400	0.435	8.8	108.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.030	3.1	103.1
5:3FTCA	4.992	5.439	9.0	109.0
7:3FTCA	4.992	5.288	5.9	105.9
d3-MeFOSA	2.500	2.434	-2.6	97.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.417	4.2	104.2
EtFOSE	1.000	1.072	7.2	107.2
MeFOSA	0.400	0.430	7.6	107.6
MeFOSE	1.000	1.009	0.9	100.9
PFDoDS	0.194	0.231	18.9	118.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.832	-3.4	96.6
d7-MeFOSE	25.000	25.366	1.5	101.5
d9-EtFOSE	25.000	24.630	-1.5	98.5
d5-EtFOSA	2.500	2.548	1.9	101.9
NFDHA	0.400	0.452	13.1	113.1
PFMBA	0.400	0.433	8.4	108.4
PFMPA	0.400	0.424	6.0	106.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.376	5.7	105.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22662.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22662
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.038	0.8	100.8
13C2-6:2FTS	5.000	5.247	4.9	104.9
13C2-8:2FTS	5.000	5.096	1.9	101.9
13C2-PFDoDA	1.250	1.218	-2.6	97.4
13C2-PFTeDA	1.250	1.205	-3.6	96.4
13C3-PFBS	2.500	2.548	1.9	101.9
13C3-PFHxS	2.500	2.459	-1.6	98.4
13C4-PFBA	10.000	10.062	0.6	100.6
13C4-PFHpA	2.500	2.637	5.5	105.5
13C5-PFHxA	2.500	2.488	-0.5	99.5
13C5-PFPeA	5.000	5.182	3.6	103.6
13C6-PFDA	1.250	1.219	-2.5	97.5
13C7-PFUnDA	1.250	1.200	-4.0	96.0
13C8-FOSA	2.500	2.502	0.1	100.1
13C8-PFOA	2.500	2.530	1.2	101.2
13C8-PFOS	2.500	2.501	0.0	100.0
13C9-PFNA	1.250	1.208	-3.3	96.7
4:2FTS	9.375	9.442	0.7	100.7
6:2FTS	9.500	9.454	-0.5	99.5
8:2FTS	9.600	9.851	2.6	102.6
d3-MeFOSAA	5.000	4.912	-1.8	98.2
EtFOSAA	2.500	2.377	-4.9	95.1
FOSA	2.500	2.392	-4.3	95.7
MeFOSAA	2.500	2.465	-1.4	98.6
PFBA	10.000	10.028	0.3	100.3
PFBS	2.218	2.170	-2.2	97.8
PFDA	2.500	2.616	4.7	104.7
PFDoDA	2.500	2.525	1.0	101.0
PFDS	2.413	2.326	-3.6	96.4
PFHpA	2.500	2.568	2.7	102.7
PFHpS	2.383	2.399	0.7	100.7
PFHxA	2.500	2.670	6.8	106.8
PFHxS	2.285	2.343	2.6	102.6
PFNA	2.500	2.476	-0.9	99.1
PFNS	2.405	2.296	-4.5	95.5
PFOA	2.500	2.354	-5.8	94.2
PFOS	2.320	2.378	2.5	102.5

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22662.D

PFPeA	5.000	5.017	0.3	100.3
PFPeS	2.353	2.447	4.0	104.0
PFTeDA	2.500	2.457	-1.7	98.3
PFTrDA	2.500	2.490	-0.4	99.6
PFUnDA	2.500	2.619	4.8	104.8
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	4.725	4.869	3.1	103.1
13C3-HFPO-DA	10.000	9.805	-2.0	98.0
9Cl-PF3ONS	4.675	5.002	7.0	107.0
ADONA	4.725	5.003	5.9	105.9
HFPO-DA	5.000	4.850	-3.0	97.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.033	-3.6	96.4
5:3FTCA	62.400	63.880	2.4	102.4
7:3FTCA	62.400	66.536	6.6	106.6
d3-MeFOSA	2.500	2.426	-2.9	97.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.059	1.2	101.2
EtFOSE	12.500	12.898	3.2	103.2
MeFOSA	5.000	5.065	1.3	101.3
MeFOSE	12.500	11.656	-6.7	93.3
PFDoDS	2.425	2.492	2.8	102.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.771	-4.6	95.4
d7-MeFOSE	25.000	24.531	-1.9	98.1
d9-EtFOSE	25.000	23.711	-5.2	94.8
d5-EtFOSA	2.500	2.466	-1.4	98.6
NFDHA	5.000	5.234	4.7	104.7
PFMBA	5.000	4.965	-0.7	99.3
PFMPA	5.000	5.035	0.7	100.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.801	7.9	107.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22674.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22674
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.463	9.3	109.3
13C2-6:2FTS	5.000	5.075	1.5	101.5
13C2-8:2FTS	5.000	5.112	2.2	102.2
13C2-PFDoDA	1.250	1.220	-2.4	97.6
13C2-PFTeDA	1.250	1.177	-5.9	94.1
13C3-PFBS	2.500	2.464	-1.4	98.6
13C3-PFHxS	2.500	2.398	-4.1	95.9
13C4-PFBA	10.000	9.977	-0.2	99.8
13C4-PFHpA	2.500	2.478	-0.9	99.1
13C5-PFHxA	2.500	2.502	0.1	100.1
13C5-PFPeA	5.000	5.087	1.7	101.7
13C6-PFDA	1.250	1.223	-2.1	97.9
13C7-PFUnDA	1.250	1.298	3.8	103.8
13C8-FOSA	2.500	2.522	0.9	100.9
13C8-PFOA	2.500	2.657	6.3	106.3
13C8-PFOS	2.500	2.679	7.2	107.2
13C9-PFNA	1.250	1.302	4.1	104.1
4:2FTS	9.375	8.966	-4.4	95.6
6:2FTS	9.500	10.700	12.6	112.6
8:2FTS	9.600	9.511	-0.9	99.1
d3-MeFOSAA	5.000	5.199	4.0	104.0
EtFOSAA	2.500	2.524	0.9	100.9
FOSA	2.500	2.533	1.3	101.3
MeFOSAA	2.500	2.475	-1.0	99.0
PFBA	10.000	10.101	1.0	101.0
PFBS	2.218	2.134	-3.8	96.2
PFDA	2.500	2.498	-0.1	99.9
PFDoDA	2.500	2.425	-3.0	97.0
PFDS	2.413	2.340	-3.0	97.0
PFHpA	2.500	2.558	2.3	102.3
PFHpS	2.383	2.248	-5.7	94.3
PFHxA	2.500	2.688	7.5	107.5
PFHxS	2.285	2.222	-2.8	97.2
PFNA	2.500	2.471	-1.1	98.9
PFNS	2.405	2.403	-0.1	99.9
PFOA	2.500	2.432	-2.7	97.3
PFOS	2.320	2.338	0.8	100.8

Continuing Calibration Summary

Job Number: FC8439 **Sample:** S6Q330-CC330
Account: AECOMCOD AECOM, INC. **Lab FileID:** 6Q22674.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	5.091	1.8	101.8
PFPeS	2.353	2.447	4.0	104.0
PFTeDA	2.500	2.573	2.9	102.9
PFTrDA	2.500	2.533	1.3	101.3
PFUnDA	2.500	2.342	-6.3	93.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	5.019	6.2	106.2
13C3-HFPO-DA	10.000	10.105	1.1	101.1
9Cl-PF3ONS	4.675	4.962	6.1	106.1
ADONA	4.725	4.635	-1.9	98.1
HFPO-DA	5.000	4.945	-1.1	98.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.207	-2.2	97.8
5:3FTCA	62.400	66.318	6.3	106.3
7:3FTCA	62.400	64.471	3.3	103.3
d3-MeFOSA	2.500	2.517	0.7	100.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.130	2.6	102.6
EtFOSE	12.500	12.839	2.7	102.7
MeFOSA	5.000	5.210	4.2	104.2
MeFOSE	12.500	12.274	-1.8	98.2
PFDoDS	2.425	2.401	-1.0	99.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.294	5.9	105.9
d7-MeFOSE	25.000	25.786	3.1	103.1
d9-EtFOSE	25.000	26.004	4.0	104.0
d5-EtFOSA	2.500	2.584	3.4	103.4
NFDHA	5.000	5.184	3.7	103.7
PFMBA	5.000	5.012	0.2	100.2
PFMPA	5.000	5.052	1.0	101.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.494	1.0	101.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22732.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22732
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.456	-10.9	89.1
13C2-6:2FTS	5.000	4.458	-10.8	89.2
13C2-8:2FTS	5.000	3.913	-21.7	78.3
13C2-PFDoDA	1.250	1.222	-2.3	97.7
13C2-PFTeDA	1.250	1.206	-3.5	96.5
13C3-PFBS	2.500	2.357	-5.7	94.3
13C3-PFHxS	2.500	2.387	-4.5	95.5
13C4-PFBA	10.000	10.022	0.2	100.2
13C4-PFHpA	2.500	2.471	-1.2	98.8
13C5-PFHxA	2.500	2.565	2.6	102.6
13C5-PFPeA	5.000	5.204	4.1	104.1
13C6-PFDA	1.250	1.249	-0.1	99.9
13C7-PFUnDA	1.250	1.253	0.2	100.2
13C8-FOSA	2.500	2.491	-0.4	99.6
13C8-PFOA	2.500	2.425	-3.0	97.0
13C8-PFOS	2.500	2.555	2.2	102.2
13C9-PFNA	1.250	1.199	-4.1	95.9
4:2FTS	9.375	9.760	4.1	104.1
6:2FTS	9.500	9.801	3.2	103.2
8:2FTS	9.600	10.471	9.1	109.1
d3-MeFOSAA	5.000	5.325	6.5	106.5
EtFOSAA	2.500	2.749	10.0	110.0
FOSA	2.500	2.560	2.4	102.4
MeFOSAA	2.500	2.451	-2.0	98.0
PFBA	10.000	9.946	-0.5	99.5
PFBS	2.218	2.272	2.4	102.4
PFDA	2.500	2.540	1.6	101.6
PFDoDA	2.500	2.476	-1.0	99.0
PFDS	2.413	2.449	1.5	101.5
PFHpA	2.500	2.585	3.4	103.4
PFHpS	2.383	2.463	3.3	103.3
PFHxA	2.500	2.533	1.3	101.3
PFHxS	2.285	2.251	-1.5	98.5
PFNA	2.500	2.490	-0.4	99.6
PFNS	2.405	2.446	1.7	101.7
PFOA	2.500	2.691	7.6	107.6
PFOS	2.320	2.393	3.1	103.1

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22732.D

PFPeA	5.000	5.003	0.1	100.1
PFPeS	2.353	2.423	3.0	103.0
PFTeDA	2.500	2.611	4.4	104.4
PFTrDA	2.500	2.534	1.3	101.3
PFUnDA	2.500	2.593	3.7	103.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.718	-0.1	99.9
13C3-HFPO-DA	10.000	10.287	2.9	102.9
9Cl-PF3ONS	4.675	4.877	4.3	104.3
ADONA	4.725	4.820	2.0	102.0
HFPO-DA	5.000	4.691	-6.2	93.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.990	-3.9	96.1
5:3FTCA	62.400	61.988	-0.7	99.3
7:3FTCA	62.400	62.035	-0.6	99.4
d3-MeFOSA	2.500	2.449	-2.0	98.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.972	-0.6	99.4
EtFOSE	12.500	12.456	-0.3	99.7
MeFOSA	5.000	5.199	4.0	104.0
MeFOSE	12.500	12.597	0.8	100.8
PFDoDS	2.425	2.450	1.0	101.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.897	-2.1	97.9
d7-MeFOSE	25.000	24.993	0.0	100.0
d9-EtFOSE	25.000	25.821	3.3	103.3
d5-EtFOSA	2.500	2.581	3.2	103.2
NFDHA	5.000	5.021	0.4	100.4
PFMBA	5.000	4.884	-2.3	97.7
PFMPA	5.000	4.966	-0.7	99.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.536	1.9	101.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22738.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22738
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.375	7.5	107.5
13C2-6:2FTS	5.000	5.294	5.9	105.9
13C2-8:2FTS	5.000	5.515	10.3	110.3
13C2-PFDoDA	1.250	1.276	2.1	102.1
13C2-PFTeDA	1.250	1.221	-2.3	97.7
13C3-PFBS	2.500	2.516	0.6	100.6
13C3-PFHxS	2.500	2.507	0.3	100.3
13C4-PFBA	10.000	10.063	0.6	100.6
13C4-PFHpA	2.500	2.563	2.5	102.5
13C5-PFHxA	2.500	2.459	-1.6	98.4
13C5-PFPeA	5.000	5.124	2.5	102.5
13C6-PFDA	1.250	1.306	4.5	104.5
13C7-PFUnDA	1.250	1.261	0.9	100.9
13C8-FOSA	2.500	2.560	2.4	102.4
13C8-PFOA	2.500	2.452	-1.9	98.1
13C8-PFOS	2.500	2.698	7.9	107.9
13C9-PFNA	1.250	1.262	0.9	100.9
4:2FTS	9.375	9.071	-3.2	96.8
6:2FTS	9.500	9.618	1.2	101.2
8:2FTS	9.600	9.600	0.0	100.0
d3-MeFOSAA	5.000	5.148	3.0	103.0
EtFOSAA	2.500	2.427	-2.9	97.1
FOSA	2.500	2.547	1.9	101.9
MeFOSAA	2.500	2.668	6.7	106.7
PFBA	10.000	10.031	0.3	100.3
PFBS	2.218	2.262	2.0	102.0
PFDA	2.500	2.375	-5.0	95.0
PFDoDA	2.500	2.358	-5.7	94.3
PFDS	2.413	2.273	-5.8	94.2
PFHpA	2.500	2.448	-2.1	97.9
PFHpS	2.383	2.479	4.0	104.0
PFHxA	2.500	2.566	2.6	102.6
PFHxS	2.285	2.293	0.4	100.4
PFNA	2.500	2.434	-2.6	97.4
PFNS	2.405	2.300	-4.4	95.6
PFOA	2.500	2.466	-1.4	98.6
PFOS	2.320	2.327	0.3	100.3

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22738.D

PFPeA	5.000	5.120	2.4	102.4
PFPeS	2.353	2.387	1.4	101.4
PFTeDA	2.500	2.549	2.0	102.0
PFTrDA	2.500	2.455	-1.8	98.2
PFUnDA	2.500	2.590	3.6	103.6
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	4.725	4.893	3.6	103.6
13C3-HFPO-DA	10.000	9.912	-0.9	99.1
9Cl-PF3ONS	4.675	4.961	6.1	106.1
ADONA	4.725	4.998	5.8	105.8
HFPO-DA	5.000	5.101	2.0	102.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.804	-5.4	94.6
5:3FTCA	62.400	65.076	4.3	104.3
7:3FTCA	62.400	64.396	3.2	103.2
d3-MeFOSA	2.500	2.498	-0.1	99.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.146	2.9	102.9
EtFOSE	12.500	12.053	-3.6	96.4
MeFOSA	5.000	5.341	6.8	106.8
MeFOSE	12.500	12.240	-2.1	97.9
PFDoDS	2.425	2.486	2.5	102.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.403	8.1	108.1
d7-MeFOSE	25.000	25.192	0.8	100.8
d9-EtFOSE	25.000	26.241	5.0	105.0
d5-EtFOSA	2.500	2.583	3.3	103.3
NFDHA	5.000	5.315	6.3	106.3
PFMBA	5.000	5.026	0.5	100.5
PFMPA	5.000	5.088	1.8	101.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.653	4.6	104.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22739.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\081023_1633_S6Q330\s6q330.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\081023_1633_S6Q330\6Q22640.d
2:D:\MassHunter\Data\081023_1633_S6Q330\6Q22641.d
3:D:\MassHunter\Data\081023_1633_S6Q330\6Q22642.d
4:D:\MassHunter\Data\081023_1633_S6Q330\6Q22643.d
5:D:\MassHunter\Data\081023_1633_S6Q330\6Q22644.d
6:D:\MassHunter\Data\081023_1633_S6Q330\6Q22645.d
7:D:\MassHunter\Data\081023_1633_S6Q330\6Q22646.d
8:D:\MassHunter\Data\081023_1633_S6Q330\6Q22647.d

Data File: 6Q22739
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.078	1.6	101.6
13C2-6:2FTS	5.000	5.180	3.6	103.6
13C2-8:2FTS	5.000	5.365	7.3	107.3
13C2-PFDoDA	1.250	1.246	-0.3	99.7
13C2-PFTeDA	1.250	1.186	-5.1	94.9
13C3-PFBS	2.500	2.392	-4.3	95.7
13C3-PFHxS	2.500	2.318	-7.3	92.7
13C4-PFBA	10.000	9.933	-0.7	99.3
13C4-PFHpA	2.500	2.496	-0.2	99.8
13C5-PFHxA	2.500	2.527	1.1	101.1
13C5-PFPeA	5.000	5.101	2.0	102.0
13C6-PFDA	1.250	1.232	-1.4	98.6
13C7-PFUnDA	1.250	1.217	-2.6	97.4
13C8-FOSA	2.500	2.457	-1.7	98.3
13C8-PFOA	2.500	2.483	-0.7	99.3
13C8-PFOS	2.500	2.441	-2.3	97.7
13C9-PFNA	1.250	1.261	0.9	100.9
4:2FTS	0.750	0.819	9.2	109.2
6:2FTS	0.760	0.829	9.0	109.0
8:2FTS	0.768	0.746	-2.9	97.1
d3-MeFOSAA	5.000	5.358	7.2	107.2
EtFOSAA	0.200	0.232	16.2	116.2
FOSA	0.200	0.227	13.7	113.7
MeFOSAA	0.200	0.203	1.4	101.4
PFBA	0.800	0.857	7.1	107.1
PFBS	0.177	0.197	11.4	111.4
PFDA	0.200	0.229	14.6	114.6
PFDoDA	0.200	0.229	14.6	114.6
PFDS	0.193	0.216	11.7	111.7
PFHpA	0.200	0.216	8.1	108.1
PFHpS	0.191	0.228	19.5	119.5
PFHxA	0.200	0.217	8.5	108.5
PFHxS	0.183	0.193	5.2	105.2
PFNA	0.200	0.215	7.3	107.3
PFNS	0.192	0.209	8.9	108.9
PFOA	0.200	0.190	-5.1	94.9
PFOS	0.186	0.240	28.8	128.8

Continuing Calibration Summary

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q330-CC330
Lab FileID: 6Q22739.D

PFPeA	0.400	0.427	6.7	106.7
PFPeS	0.188	0.204	8.7	108.7
PFTeDA	0.200	0.226	13.0	113.0
PFTrDA	0.200	0.215	7.6	107.6
PFUnDA	0.200	0.229	14.6	114.6
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	0.378	0.405	7.1	107.1
13C3-HFPO-DA	10.000	10.099	1.0	101.0
9Cl-PF3ONS	0.374	0.415	11.0	111.0
ADONA	0.378	0.423	11.8	111.8
HFPO-DA	0.400	0.457	14.2	114.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.072	7.4	107.4
5:3FTCA	4.992	5.216	4.5	104.5
7:3FTCA	4.992	5.181	3.8	103.8
d3-MeFOSA	2.500	2.445	-2.2	97.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.428	6.9	106.9
EtFOSE	1.000	0.995	-0.5	99.5
MeFOSA	0.400	0.439	9.8	109.8
MeFOSE	1.000	1.035	3.5	103.5
PFDoDS	0.194	0.193	-0.5	99.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.841	-3.2	96.8
d7-MeFOSE	25.000	24.876	-0.5	99.5
d9-EtFOSE	25.000	26.013	4.1	104.1
d5-EtFOSA	2.500	2.572	2.9	102.9
NFDHA	0.400	0.466	16.4	116.4
PFMBA	0.400	0.427	6.7	106.7
PFMPA	0.400	0.426	6.4	106.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.392	10.1	110.1

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q711 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q711-RT	4Q48582.D	08/07/23 15:28	n/a	Retention Time Marker
S4Q711-RT	4Q48583.D	08/07/23 15:56	n/a	Retention Time Marker
S4Q711-IC711	4Q48584.D	08/07/23 16:11	n/a	Mass Calibration Verification
S4Q711-IC711	4Q48585.D	08/07/23 16:26	n/a	Initial cal 1
S4Q711-IC711	4Q48586.D	08/07/23 16:41	n/a	Initial cal 2
S4Q711-IC711	4Q48587.D	08/07/23 16:59	n/a	Initial cal 3
S4Q711-ICC711	4Q48588.D	08/07/23 17:14	n/a	Initial cal 4
S4Q711-IC711	4Q48589.D	08/07/23 17:28	n/a	Initial cal 5
S4Q711-IC711	4Q48590.D	08/07/23 17:43	n/a	Initial cal 6
S4Q711-IC711	4Q48591.D	08/07/23 17:58	n/a	Initial cal 7
S4Q711-IC711	4Q48592.D	08/07/23 18:13	n/a	Initial cal 8
S4Q711-IBLK	4Q48593.D	08/07/23 18:27	n/a	Instrument Blank
S4Q711-IBLK	4Q48593.D	08/07/23 18:27	n/a	Instrument Blank
S4Q711-ICV711	4Q48594.D	08/07/23 18:42	n/a	Initial cal verification 4
S4Q711-ICV711	4Q48595.D	08/07/23 18:57	n/a	Initial cal verification 20
S4Q711-CC711	4Q48596.D	08/07/23 19:12	n/a	Continuing cal 4
S4Q711-CC711	4Q48597.D	08/07/23 19:26	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q48598.D	08/07/23 19:41	OP98117	(unrelated sample)
OP98225-BS	4Q48599.D	08/07/23 19:56	OP98225	Blank Spike
OP98225-LLBS	4Q48600.D	08/07/23 20:11	OP98225	Blank Spike
OP98225-MB	4Q48601.D	08/07/23 20:25	OP98225	Method Blank
ZZZZZZ	4Q48602.D	08/07/23 20:40	OP98225	(unrelated sample)
ZZZZZZ	4Q48604.D	08/07/23 21:10	OP98225	(unrelated sample)
ZZZZZZ	4Q48605.D	08/07/23 21:24	OP98161	(unrelated sample)
S4Q711-CC711	4Q48606.D	08/07/23 21:39	n/a	Continuing cal 4
S4Q711-ICCB	4Q48607.D	08/07/23 21:54	n/a	Continuing Calibration Blank
S4Q711-ICCB	4Q48607.D	08/07/23 21:54	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48608.D	08/07/23 22:09	OP98118	(unrelated sample)
ZZZZZZ	4Q48609.D	08/07/23 22:23	OP98118	(unrelated sample)
ZZZZZZ	4Q48610.D	08/07/23 22:38	OP98119	(unrelated sample)
ZZZZZZ	4Q48611.D	08/07/23 22:53	OP98119	(unrelated sample)
ZZZZZZ	4Q48612.D	08/07/23 23:08	OP98119	(unrelated sample)
FC7868-1	4Q48613.D	08/07/23 23:22	OP98161	(used for QC only; not part of job FC8439)
OP98161-MS	4Q48614.D	08/07/23 23:37	OP98161	Matrix Spike
OP98161-MSD	4Q48615.D	08/07/23 23:52	OP98161	Matrix Spike Duplicate
S4Q711-CC711	4Q48616.D	08/08/23 00:07	n/a	Continuing cal 4
S4Q711-ICCB	4Q48617.D	08/08/23 00:21	n/a	Continuing Calibration Blank
S4Q711-ICCB	4Q48617.D	08/08/23 00:21	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48618.D	08/08/23 00:36	OP98161	(unrelated sample)
ZZZZZZ	4Q48619.D	08/08/23 00:51	OP98161	(unrelated sample)
ZZZZZZ	4Q48620.D	08/08/23 01:06	OP98161	(unrelated sample)
ZZZZZZ	4Q48621.D	08/08/23 01:20	OP98161	(unrelated sample)
ZZZZZZ	4Q48622.D	08/08/23 01:35	OP98161	(unrelated sample)
ZZZZZZ	4Q48623.D	08/08/23 01:50	OP98161	(unrelated sample)
ZZZZZZ	4Q48624.D	08/08/23 02:05	OP98161	(unrelated sample)
ZZZZZZ	4Q48625.D	08/08/23 02:19	OP98161	(unrelated sample)

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q711	**Method:** EPA DRAFT 1633	**Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	4Q48626.D	08/08/23 02:34	OP98161	(unrelated sample)
ZZZZZZ	4Q48627.D	08/08/23 02:49	OP98161	(unrelated sample)
S4Q711-CC711	4Q48628.D	08/08/23 03:04	n/a	Continuing cal 4
S4Q711-ICCB	4Q48629.D	08/08/23 03:18	n/a	Continuing Calibration Blank
S4Q711-ICCB	4Q48629.D	08/08/23 03:18	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48630.D	08/08/23 03:33	OP98161	(unrelated sample)
ZZZZZZ	4Q48632.D	08/08/23 04:03	OP98161	(unrelated sample)
ZZZZZZ	4Q48634.D	08/08/23 04:32	OP98161	(unrelated sample)
ZZZZZZ	4Q48635.D	08/08/23 04:47	OP98161	(unrelated sample)
ZZZZZZ	4Q48637.D	08/08/23 05:16	OP98118	(unrelated sample)
FC7482-3	4Q48638.D	08/08/23 05:31	OP98118	(used for QC only; not part of job FC8439)
OP98118-MS	4Q48639.D	08/08/23 05:46	OP98118	Matrix Spike
S4Q711-CC711	4Q48640.D	08/08/23 06:01	n/a	Continuing cal 4
S4Q711-ICCB	4Q48641.D	08/08/23 06:15	n/a	Continuing Calibration Blank
S4Q711-ICCB	4Q48641.D	08/08/23 06:15	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48642.D	08/08/23 06:30	OP98118	(unrelated sample)
ZZZZZZ	4Q48643.D	08/08/23 06:45	OP98118	(unrelated sample)
FC7599-1	4Q48644.D	08/08/23 07:00	OP98118	(used for QC only; not part of job FC8439)
OP98118-DUP	4Q48645.D	08/08/23 07:14	OP98118	Duplicate
ZZZZZZ	4Q48646.D	08/08/23 07:29	OP98119	(unrelated sample)
ZZZZZZ	4Q48647.D	08/08/23 07:44	OP98119	(unrelated sample)
FC7615-1	4Q48648.D	08/08/23 07:59	OP98119	(used for QC only; not part of job FC8439)
OP98119-MS	4Q48649.D	08/08/23 08:13	OP98119	Matrix Spike
OP98119-MSD	4Q48650.D	08/08/23 08:28	OP98119	Matrix Spike Duplicate
S4Q711-CC711	4Q48651.D	08/08/23 08:43	n/a	Continuing cal 4
S4Q711-ICCB	4Q48652.D	08/08/23 08:59	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48654.D	08/08/23 09:29	OP98156	(unrelated sample)
ZZZZZZ	4Q48655.D	08/08/23 09:44	OP98156	(unrelated sample)
ZZZZZZ	4Q48656.D	08/08/23 09:59	OP98124	(unrelated sample)
ZZZZZZ	4Q48657.D	08/08/23 10:14	OP98225	(unrelated sample)
ZZZZZZ	4Q48658.D	08/08/23 10:29	OP98225	(unrelated sample)
ZZZZZZ	4Q48661.D	08/08/23 11:14	OP98225	(unrelated sample)
ZZZZZZ	4Q48662.D	08/08/23 11:29	OP98225	(unrelated sample)
S4Q711-CC711	4Q48663.D	08/08/23 11:43	n/a	Continuing cal 4
S4Q711-ICCB	4Q48664.D	08/08/23 11:58	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48665.D	08/08/23 12:13	OP98119	(unrelated sample)
ZZZZZZ	4Q48666.D	08/08/23 12:28	OP98119	(unrelated sample)
S4Q711-ECC711	4Q48667.D	08/08/23 12:42	n/a	Ending cal 4
S4Q711-ICCB	4Q48668.D	08/08/23 12:57	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q713 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q713-RT	4Q48760.D	08/09/23 14:15	n/a	Retention Time Marker
S4Q713-RT	4Q48761.D	08/09/23 14:31	n/a	Retention Time Marker
S4Q713-IBLK	4Q48763.D	08/09/23 15:01	n/a	Instrument Blank
S4Q713-IBLK	4Q48763.D	08/09/23 15:01	n/a	Instrument Blank
S4Q713-CC711	4Q48764.D	08/09/23 15:16	n/a	Continuing cal 4
S4Q713-CC711	4Q48765.D	08/09/23 15:30	n/a	Continuing cal 1.0LL
OP98160-BS	4Q48766.D	08/09/23 15:45	OP98160	Blank Spike
OP98160-LLBS	4Q48767.D	08/09/23 16:00	OP98160	Blank Spike
OP98160-MB	4Q48768.D	08/09/23 16:15	OP98160	Method Blank
ZZZZZZ	4Q48769.D	08/09/23 16:35	OP98160	(unrelated sample)
ZZZZZZ	4Q48770.D	08/09/23 16:50	OP98160	(unrelated sample)
ZZZZZZ	4Q48771.D	08/09/23 17:05	OP98160	(unrelated sample)
FC8220-6	4Q48772.D	08/09/23 17:20	OP98160	(used for QC only; not part of job FC8439)
OP98160-MS	4Q48773.D	08/09/23 17:35	OP98160	Matrix Spike
OP98160-MSD	4Q48774.D	08/09/23 17:49	OP98160	Matrix Spike Duplicate
ZZZZZZ	4Q48775.D	08/09/23 18:04	OP98160	(unrelated sample)
S4Q713-CC711	4Q48776.D	08/09/23 18:19	n/a	Continuing cal 4
S4Q713-ICCB	4Q48777.D	08/09/23 18:33	n/a	Continuing Calibration Blank
S4Q713-ICCB	4Q48777.D	08/09/23 18:33	n/a	Continuing Calibration Blank
ZZZZZZ	4Q48778.D	08/09/23 18:48	OP98156	(unrelated sample)
OP98297-BS	4Q48779.D	08/09/23 19:03	OP98297	Blank Spike
OP98297-LLBS	4Q48780.D	08/09/23 19:18	OP98297	Blank Spike
OP98297-MB	4Q48781.D	08/09/23 19:33	OP98297	Method Blank
ZZZZZZ	4Q48782.D	08/09/23 19:47	OP98297	(unrelated sample)
ZZZZZZ	4Q48783.D	08/09/23 20:02	OP98297	(unrelated sample)
ZZZZZZ	4Q48784.D	08/09/23 20:17	OP98297	(unrelated sample)
FC8439-1	4Q48785.D	08/09/23 20:31	OP98297	AF-RHMW12A-WGN01LF-2308
FC8439-2	4Q48786.D	08/09/23 20:46	OP98297	AF-RHMW12A-WGFD01LF-2308
S4Q713-CC711	4Q48787.D	08/09/23 21:01	n/a	Continuing cal 4
S4Q713-ICCB	4Q48788.D	08/09/23 21:16	n/a	Continuing Calibration Blank
FC8439-3	4Q48789.D	08/09/23 21:30	OP98297	AF-RHMW16-WGN01LF-2308
OP98297-MS	4Q48790.D	08/09/23 21:45	OP98297	Matrix Spike
FC8439-4	4Q48791.D	08/09/23 22:00	OP98297	AF-RHMW02-WGN01LF-2308
OP98297-DUP	4Q48792.D	08/09/23 22:15	OP98297	Duplicate
FC8439-5	4Q48793.D	08/09/23 22:29	OP98297	AF-RHMW02-WGFD01LF-2308
FC8439-6	4Q48794.D	08/09/23 22:44	OP98297	AF-RHMW03-WGN01LF-2308
OP98277-BS	4Q48795.D	08/09/23 22:59	OP98277	Blank Spike
OP98277-LLBS	4Q48796.D	08/09/23 23:14	OP98277	Blank Spike
OP98277-MB	4Q48797.D	08/09/23 23:28	OP98277	Method Blank
ZZZZZZ	4Q48798.D	08/09/23 23:43	OP98277	(unrelated sample)
S4Q713-ECC711	4Q48799.D	08/09/23 23:58	n/a	Ending cal 4
S4Q713-ICCB	4Q48800.D	08/10/23 00:13	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q330 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q330-RT	6Q22637.D	08/10/23 12:54	n/a	Retention Time Marker
S6Q330-RT	6Q22638.D	08/10/23 13:09	n/a	Retention Time Marker
S6Q330-IC330	6Q22639.D	08/10/23 13:23	n/a	Mass Calibration Verification
S6Q330-IC330	6Q22640.D	08/10/23 13:37	n/a	Initial cal 1
S6Q330-IC330	6Q22641.D	08/10/23 13:52	n/a	Initial cal 2
S6Q330-IC330	6Q22642.D	08/10/23 14:06	n/a	Initial cal 3
S6Q330-ICC330	6Q22643.D	08/10/23 14:20	n/a	Initial cal 4
S6Q330-IC330	6Q22644.D	08/10/23 14:35	n/a	Initial cal 5
S6Q330-IC330	6Q22645.D	08/10/23 14:49	n/a	Initial cal 6
S6Q330-IC330	6Q22646.D	08/10/23 15:03	n/a	Initial cal 7
S6Q330-IC330	6Q22647.D	08/10/23 15:18	n/a	Initial cal 8
S6Q330-IBLK	6Q22648.D	08/10/23 15:32	n/a	Instrument Blank
S6Q330-IBLK	6Q22648.D	08/10/23 15:32	n/a	Instrument Blank
S6Q330-ICV330	6Q22649.D	08/10/23 15:46	n/a	Initial cal verification 4
S6Q330-ICV330	6Q22650.D	08/10/23 16:01	n/a	Initial cal verification 20
S6Q330-CC330	6Q22651.D	08/10/23 16:15	n/a	Continuing cal 4
S6Q330-CC330	6Q22652.D	08/10/23 16:29	n/a	Continuing cal 1.0LL
OP98337-BS	6Q22653.D	08/10/23 16:44	OP98337	Blank Spike
OP98337-BSD	6Q22654.D	08/10/23 16:58	OP98337	Blank Spike Duplicate
OP98337-LLBS	6Q22655.D	08/10/23 17:12	OP98337	Blank Spike
OP98337-MB	6Q22656.D	08/10/23 17:27	OP98337	Method Blank
ZZZZZZ	6Q22657.D	08/10/23 17:41	OP98337	(unrelated sample)
ZZZZZZ	6Q22659.D	08/10/23 18:10	OP98248	(unrelated sample)
ZZZZZZ	6Q22660.D	08/10/23 18:24	OP98248	(unrelated sample)
S6Q330-CC330	6Q22662.D	08/10/23 18:53	n/a	Continuing cal 4
S6Q330-ICCB	6Q22663.D	08/10/23 19:07	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22664.D	08/10/23 19:21	OP98181	(unrelated sample)
ZZZZZZ	6Q22665.D	08/10/23 19:36	OP98181	(unrelated sample)
FC8439-2	6Q22666.D	08/10/23 19:50	OP98297	AF-RHMW12A-WGFD01LF-2308
FC8439-4	6Q22667.D	08/10/23 20:04	OP98297	AF-RHMW02-WGN01LF-2308
FC8439-5	6Q22669.D	08/10/23 20:33	OP98297	AF-RHMW02-WGFD01LF-2308
FC8439-6	6Q22670.D	08/10/23 20:48	OP98297	AF-RHMW03-WGN01LF-2308
FC7717-4	6Q22671.D	08/10/23 21:02	OP98159	(used for QC only; not part of job FC8439)
ZZZZZZ	6Q22672.D	08/10/23 21:16	OP98159	(unrelated sample)
ZZZZZZ	6Q22673.D	08/10/23 21:31	OP98159	(unrelated sample)
S6Q330-CC330	6Q22674.D	08/10/23 21:45	n/a	Continuing cal 4
S6Q330-ICCB	6Q22675.D	08/10/23 21:59	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22676.D	08/10/23 22:14	OP98159	(unrelated sample)
ZZZZZZ	6Q22677.D	08/10/23 22:28	OP98159	(unrelated sample)
ZZZZZZ	6Q22679.D	08/10/23 22:57	OP98159	(unrelated sample)
ZZZZZZ	6Q22680.D	08/10/23 23:11	OP98159	(unrelated sample)
ZZZZZZ	6Q22681.D	08/10/23 23:25	OP98159	(unrelated sample)
ZZZZZZ	6Q22682.D	08/10/23 23:40	OP98138	(unrelated sample)
ZZZZZZ	6Q22683.D	08/10/23 23:54	OP98155	(unrelated sample)
ZZZZZZ	6Q22684.D	08/11/23 00:08	OP98155	(unrelated sample)
S6Q330-CC330	6Q22685.D	08/11/23 00:23	n/a	Continuing cal 4

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q330 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q330-ICCB	6Q22686.D	08/11/23 00:37	n/a	Continuing Calibration Blank
OP98277-BS	6Q22687.D	08/11/23 00:51	OP98277	Blank Spike
OP98277-LLBS	6Q22688.D	08/11/23 01:06	OP98277	Blank Spike
OP98277-MB	6Q22689.D	08/11/23 01:20	OP98277	Method Blank
ZZZZZZ	6Q22690.D	08/11/23 01:34	OP98277	(unrelated sample)
ZZZZZZ	6Q22691.D	08/11/23 01:49	OP98277	(unrelated sample)
ZZZZZZ	6Q22692.D	08/11/23 02:03	OP98277	(unrelated sample)
ZZZZZZ	6Q22693.D	08/11/23 02:17	OP98277	(unrelated sample)
FC8066-5	6Q22694.D	08/11/23 02:32	OP98277	(used for QC only; not part of job FC8439)
OP98277-MS	6Q22695.D	08/11/23 02:46	OP98277	Matrix Spike
OP98277-MSD	6Q22696.D	08/11/23 03:00	OP98277	Matrix Spike Duplicate
S6Q330-CC330	6Q22697.D	08/11/23 03:15	n/a	Continuing cal 4
S6Q330-ICCB	6Q22698.D	08/11/23 03:29	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22699.D	08/11/23 03:43	OP98277	(unrelated sample)
ZZZZZZ	6Q22700.D	08/11/23 03:58	OP98277	(unrelated sample)
ZZZZZZ	6Q22701.D	08/11/23 04:12	OP98277	(unrelated sample)
ZZZZZZ	6Q22702.D	08/11/23 04:26	OP98277	(unrelated sample)
ZZZZZZ	6Q22703.D	08/11/23 04:41	OP98277	(unrelated sample)
ZZZZZZ	6Q22704.D	08/11/23 04:55	OP98277	(unrelated sample)
ZZZZZZ	6Q22705.D	08/11/23 05:09	OP98277	(unrelated sample)
ZZZZZZ	6Q22706.D	08/11/23 05:24	OP98277	(unrelated sample)
ZZZZZZ	6Q22707.D	08/11/23 05:38	OP98277	(unrelated sample)
S6Q330-CC330	6Q22708.D	08/11/23 05:52	n/a	Continuing cal 4
S6Q330-ICCB	6Q22709.D	08/11/23 06:07	n/a	Continuing Calibration Blank
OP98222-BS	6Q22710.D	08/11/23 06:21	OP98222	Blank Spike
OP98222-LLBS	6Q22711.D	08/11/23 06:35	OP98222	Blank Spike
OP98222-MB	6Q22712.D	08/11/23 06:50	OP98222	Method Blank
ZZZZZZ	6Q22713.D	08/11/23 07:04	OP98222	(unrelated sample)
FC7822-1	6Q22714.D	08/11/23 07:18	OP98222	(used for QC only; not part of job FC8439)
OP98222-MS	6Q22715.D	08/11/23 07:33	OP98222	Matrix Spike
FC7822-2	6Q22716.D	08/11/23 07:47	OP98222	(used for QC only; not part of job FC8439)
OP98222-DUP	6Q22717.D	08/11/23 08:01	OP98222	Duplicate
ZZZZZZ	6Q22718.D	08/11/23 08:16	OP98222	(unrelated sample)
ZZZZZZ	6Q22719.D	08/11/23 08:30	OP98222	(unrelated sample)
S6Q330-CC330	6Q22720.D	08/11/23 08:44	n/a	Continuing cal 4
S6Q330-ICCB	6Q22721.D	08/11/23 08:59	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22722.D	08/11/23 09:13	OP98222	(unrelated sample)
ZZZZZZ	6Q22723.D	08/11/23 09:27	OP98222	(unrelated sample)
ZZZZZZ	6Q22724.D	08/11/23 09:42	OP98222	(unrelated sample)
ZZZZZZ	6Q22725.D	08/11/23 09:56	OP98222	(unrelated sample)
ZZZZZZ	6Q22726.D	08/11/23 10:10	OP98222	(unrelated sample)
ZZZZZZ	6Q22727.D	08/11/23 10:25	OP98222	(unrelated sample)
ZZZZZZ	6Q22728.D	08/11/23 10:39	OP98222	(unrelated sample)
ZZZZZZ	6Q22729.D	08/11/23 10:53	OP98222	(unrelated sample)
ZZZZZZ	6Q22730.D	08/11/23 11:08	OP98222	(unrelated sample)
ZZZZZZ	6Q22731.D	08/11/23 11:22	OP98222	(unrelated sample)

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q330 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q330-CC330	6Q22732.D	08/11/23 11:36	n/a	Continuing cal 4
S6Q330-ICCB	6Q22733.D	08/11/23 11:51	n/a	Continuing Calibration Blank
S6Q330-RT	6Q22734.D	08/11/23 12:05	n/a	Retention Time Marker
S6Q330-RT	6Q22735.D	08/11/23 12:19	n/a	Retention Time Marker
S6Q330-IBLK	6Q22737.D	08/11/23 12:48	n/a	Instrument Blank
S6Q330-IBLK	6Q22737.D	08/11/23 12:48	n/a	Instrument Blank
S6Q330-CC330	6Q22738.D	08/11/23 13:02	n/a	Continuing cal 4
S6Q330-CC330	6Q22739.D	08/11/23 13:17	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q22740.D	08/11/23 13:31	OP98222	(unrelated sample)
OP98223-BS	6Q22741.D	08/11/23 13:45	OP98223	Blank Spike
OP98223-LLBS	6Q22742.D	08/11/23 14:00	OP98223	Blank Spike
OP98223-MB	6Q22743.D	08/11/23 14:14	OP98223	Method Blank
ZZZZZZ	6Q22744.D	08/11/23 14:28	OP98223	(unrelated sample)
ZZZZZZ	6Q22745.D	08/11/23 14:43	OP98223	(unrelated sample)
ZZZZZZ	6Q22746.D	08/11/23 14:57	OP98223	(unrelated sample)
ZZZZZZ	6Q22747.D	08/11/23 15:11	OP98223	(unrelated sample)
ZZZZZZ	6Q22748.D	08/11/23 15:26	OP98223	(unrelated sample)
ZZZZZZ	6Q22749.D	08/11/23 15:40	OP98223	(unrelated sample)
S6Q330-CC330	6Q22750.D	08/11/23 15:54	n/a	Continuing cal 4
S6Q330-ICCB	6Q22751.D	08/11/23 16:09	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22752.D	08/11/23 16:23	OP98223	(unrelated sample)
FC7824-8	6Q22753.D	08/11/23 16:37	OP98223	(used for QC only; not part of job FC8439)
OP98223-MS	6Q22754.D	08/11/23 16:52	OP98223	Matrix Spike
FC7824-9	6Q22755.D	08/11/23 17:06	OP98223	(used for QC only; not part of job FC8439)
OP98223-DUP	6Q22756.D	08/11/23 17:20	OP98223	Duplicate
S6Q330-CC330	6Q22757.D	08/11/23 17:35	n/a	Continuing cal 4
S6Q330-ICCB	6Q22758.D	08/11/23 17:49	n/a	Continuing Calibration Blank
OP98278-BS	6Q22759.D	08/11/23 18:03	OP98278	Blank Spike
OP98278-LLBS	6Q22760.D	08/11/23 18:18	OP98278	Blank Spike
OP98278-MB	6Q22761.D	08/11/23 18:32	OP98278	Method Blank
ZZZZZZ	6Q22762.D	08/11/23 18:46	OP98278	(unrelated sample)
ZZZZZZ	6Q22763.D	08/11/23 19:01	OP98278	(unrelated sample)
ZZZZZZ	6Q22764.D	08/11/23 19:15	OP98278	(unrelated sample)
ZZZZZZ	6Q22765.D	08/11/23 19:29	OP98278	(unrelated sample)
FC7901-6	6Q22766.D	08/11/23 19:44	OP98278	(used for QC only; not part of job FC8439)
OP98278-MS	6Q22767.D	08/11/23 19:58	OP98278	Matrix Spike
OP98278-MSD	6Q22768.D	08/11/23 20:12	OP98278	Matrix Spike Duplicate
S6Q330-CC330	6Q22769.D	08/11/23 20:27	n/a	Continuing cal 4
S6Q330-ICCB	6Q22770.D	08/11/23 20:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q22771.D	08/11/23 20:55	OP98278	(unrelated sample)
ZZZZZZ	6Q22772.D	08/11/23 21:10	OP98278	(unrelated sample)
ZZZZZZ	6Q22773.D	08/11/23 21:24	OP98278	(unrelated sample)
ZZZZZZ	6Q22774.D	08/11/23 21:38	OP98278	(unrelated sample)
S6Q330-CC330	6Q22775.D	08/11/23 21:53	n/a	Continuing cal 4
S6Q330-ICCB	6Q22776.D	08/11/23 22:08	n/a	Continuing Calibration Blank
OP98280-BS	6Q22777.D	08/11/23 22:22	OP98280	Blank Spike

Run Sequence Report

Job Number: FC8439
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q330	**Method:** EPA DRAFT 1633	**Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP98280-LLBS	6Q22778.D	08/11/23 22:36	OP98280	Blank Spike
OP98280-MB	6Q22779.D	08/11/23 22:51	OP98280	Method Blank
ZZZZZZ	6Q22780.D	08/11/23 23:05	OP98280	(unrelated sample)
FC7902-2	6Q22781.D	08/11/23 23:19	OP98280	(used for QC only; not part of job FC8439)
OP98280-MS	6Q22782.D	08/11/23 23:34	OP98280	Matrix Spike
OP98280-MSD	6Q22783.D	08/11/23 23:48	OP98280	Matrix Spike Duplicate
ZZZZZZ	6Q22784.D	08/12/23 00:02	OP98280	(unrelated sample)
ZZZZZZ	6Q22785.D	08/12/23 00:17	OP98280	(unrelated sample)
S6Q330-ECC330	6Q22786.D	08/12/23 00:31	n/a	Ending cal 4
S6Q330-ICCB	6Q22787.D	08/12/23 00:45	n/a	Continuing Calibration Blank

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48785.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 8:31:58 PM
Sample Name : fc8439-1
Vial : P4-D7
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	49451	10.00	µg/L	0.025
M5-PFPeA	4.425	268.3 -> 223.0	55836	5.00	µg/L	0.012
M5-PFHxA	5.634	318.0 -> 273.0	37506	2.50	µg/L	0.025
M4-PFHpA	6.593	367.1 -> 322.0	27390	2.50	µg/L	0.037
M8-PFOA	7.263	421.1 -> 376.0	42604	2.50	µg/L	0.037
M9-PFNA	7.810	472.1 -> 427.0	18993	1.25	µg/L	0.025
M6-PFDA	8.316	519.1 -> 474.1	14013	1.25	µg/L	0.037
M7-PFUnDA	8.773	570.0 -> 525.1	15491	1.25	µg/L	0.037
M2-PFDoDA	9.218	615.1 -> 570.0	16059	1.25	µg/L	0.037
M2-PFTeDA	9.961	715.2 -> 670.0	10554	1.25	µg/L	0.013
M8-FOSA	9.919	506.1 -> 77.8	10431	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	8990	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6292	2.50	µg/L	0.025
M8-PFOS	8.454	507.1 -> 79.9	8272	2.50	µg/L	0.037
M2-4:2FTS	5.309	329.1 -> 80.9	717	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1482	5.00	µg/L	0.025
M2-8:2FTS	8.104	529.1 -> 80.9	2237	5.00	µg/L	0.039
M3-MeFOSAA	8.373	573.2 -> 419.0	15658	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	28718	10.00	µg/L	0.025
M5-EtFOSAA	8.584	589.2 -> 419.0	13592	5.00	µg/L	0.037
M7-MeFOSE	11.072	623.2 -> 58.9	44004	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	67419	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	7979	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	6825	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	6996	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	43186	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	3893	2.50	µg/L	0.025
13C4-PFOA	7.263	417.1 -> 372.0	41985	2.50	µg/L	0.037
13C2-PFDA	8.316	515.1 -> 470.1	11946	1.25	µg/L	0.037
13C5-PFNA	7.810	468.0 -> 423.0	16878	1.25	µg/L	0.025
13C2-PFHxA	5.635	315.1 -> 270.0	27161	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	717	7.38	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 147.6%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1482	7.97	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 159.5%		
13C2-8:2FTS	8.104	529.1 -> 80.9	2237	7.93	µg/L	0.039
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 158.6%		
13C2-PFDoDA	9.218	615.1 -> 570.0	16059	1.57	µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 125.5%		
13C2-PFTeDA	9.961	715.2 -> 670.0	10554	1.28	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFBS	5.502	302.1 -> 79.9	8990	2.71	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C3-PFHxS	7.342	402.1 -> 79.9	6292	2.92	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 = 116.8%	
13C4-PFBA	2.936	216.8 -> 171.9	49451	6.70 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.0%	
13C4-PFHpA	6.593	367.1 -> 322.0	27390	3.39 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 135.4%	
13C5-PFHxA	5.634	318.0 -> 273.0	37506	3.29 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 131.8%	
13C5-PFPeA	4.425	268.3 -> 223.0	55836	5.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.6%	
13C6-PFDA	8.316	519.1 -> 474.1	14013	1.69 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 135.6%	
13C7-PFUnDA	8.773	570.0 -> 525.1	15491	1.66 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 133.1%	
13C8-FOSA	9.919	506.1 -> 77.8	10431	2.39 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C8-PFOA	7.263	421.1 -> 376.0	42604	3.08 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.3%	
13C8-PFOS	8.454	507.1 -> 79.9	8272	2.94 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C9-PFNA	7.810	472.1 -> 427.0	18993	1.49 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.8%	
d3-MeFOSAA	8.373	573.2 -> 419.0	15658	6.03 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.6%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	28718	11.10 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
d3-MeFOSA	11.176	515.0 -> 219.0	6825	2.66 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
d5-EtFOSAA	8.584	589.2 -> 419.0	13592	6.37 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 127.3%	
d7-MeFOSE	11.072	623.2 -> 58.9	44004	21.42 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.7%	
d9-EtFOSE	11.356	639.2 -> 58.9	67419	23.40 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
d5-EtFOSA	11.435	531.1 -> 219.0	7979	2.70 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	

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

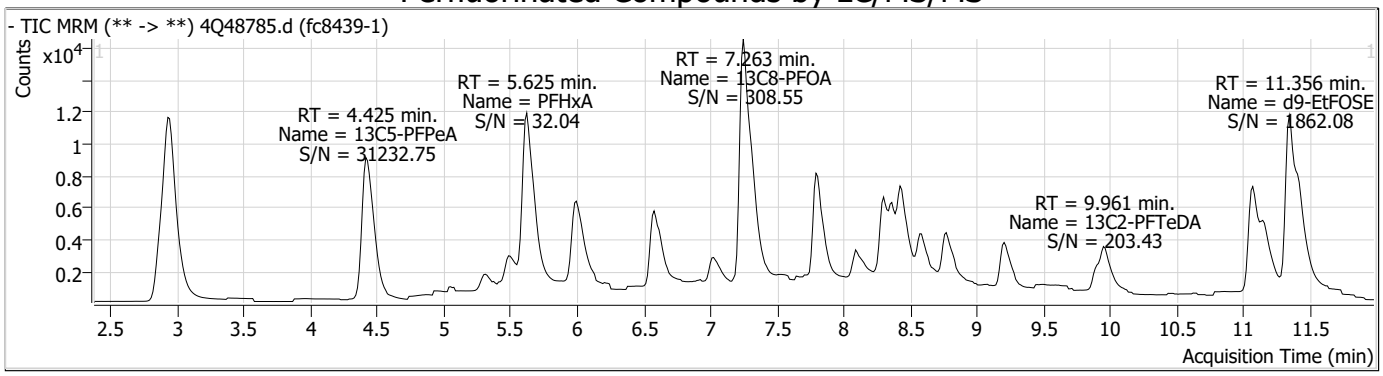
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.957	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	5.625	313.0 -> 269.0	664	0.06	µg/L		97
		313.0 -> 118.9	15				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 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	7.552	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	4.427	263.0 -> 219.0	1516	0.16	µg/L		100
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	11.770	630.0 -> 58.9	0		µg/L	m	1
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

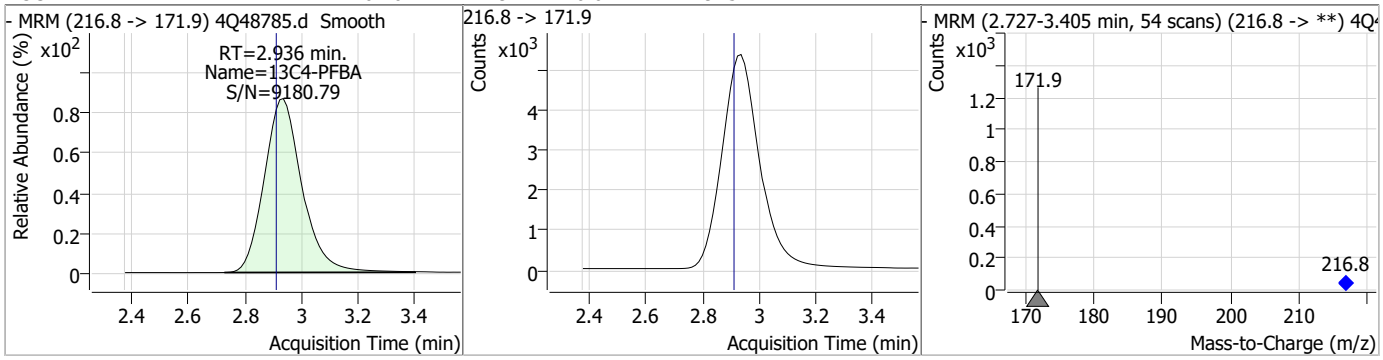
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

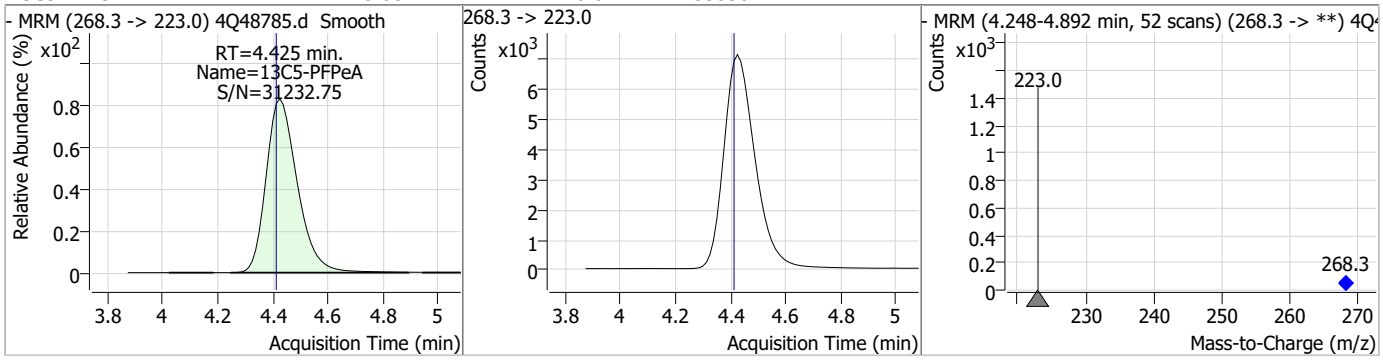
Perfluorinated Compounds by LC/MS/MS



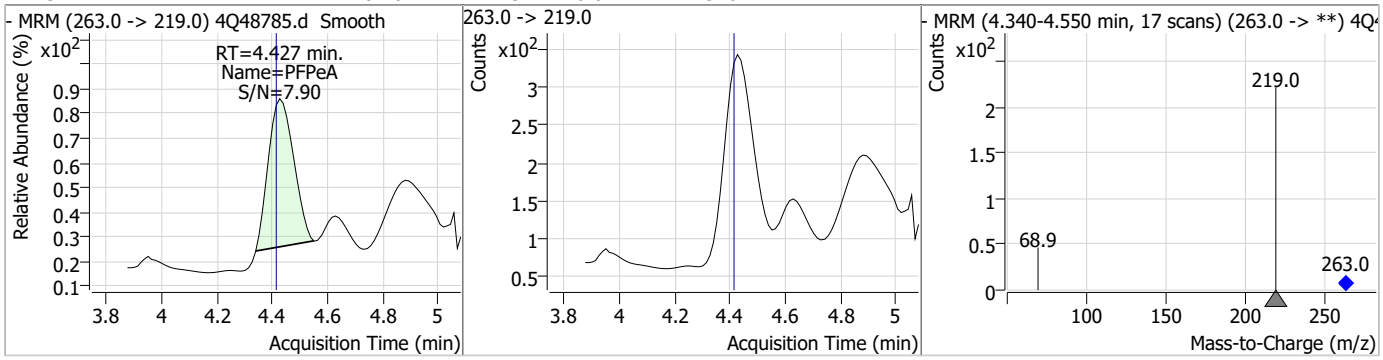
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	6.70	2.94	0.02	49451				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.88	4.42	0.01	55836				

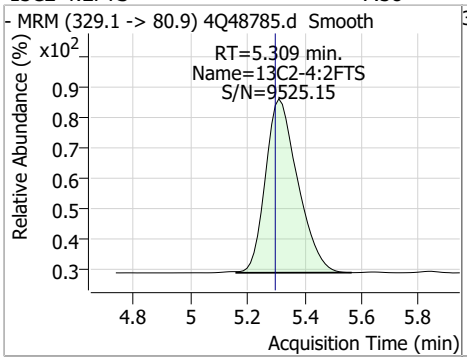


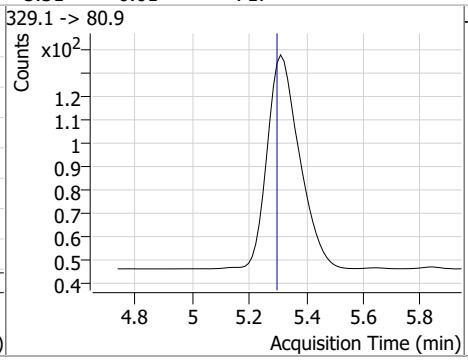
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.16	4.43	0.01	1516				

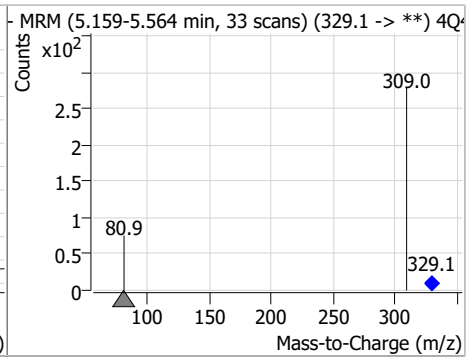


Perfluorinated Compounds by LC/MS/MS

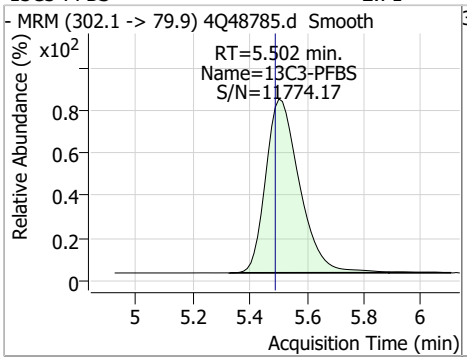
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.38	5.31	0.01	717				

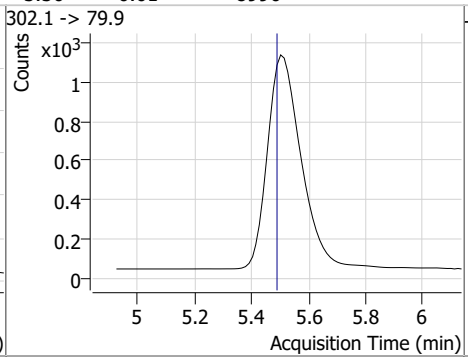


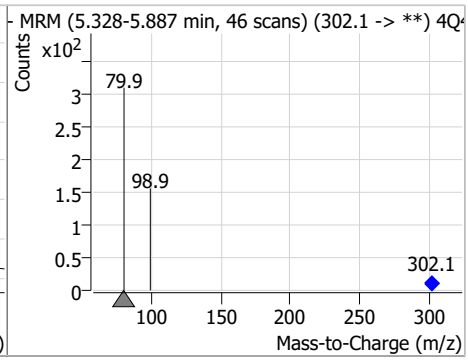




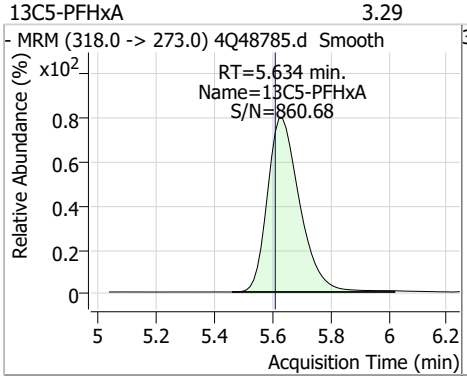
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.71	5.50	0.01	8990				

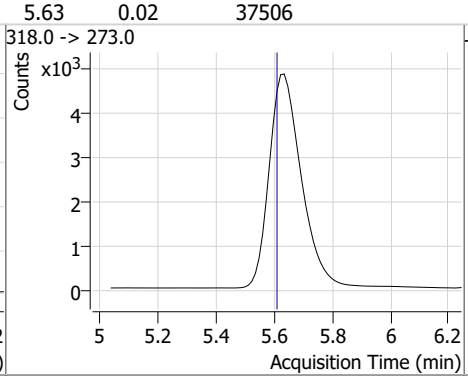


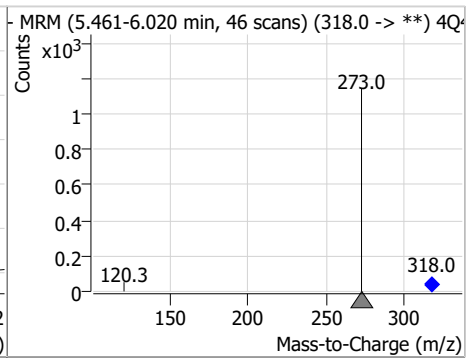




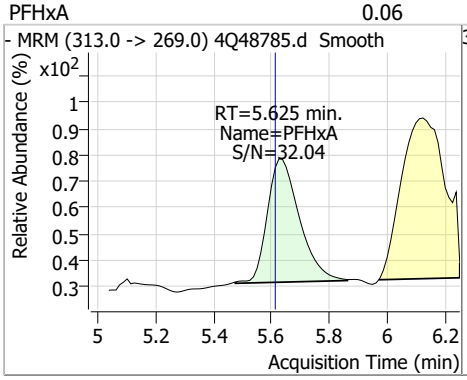
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.29	5.63	0.02	37506				

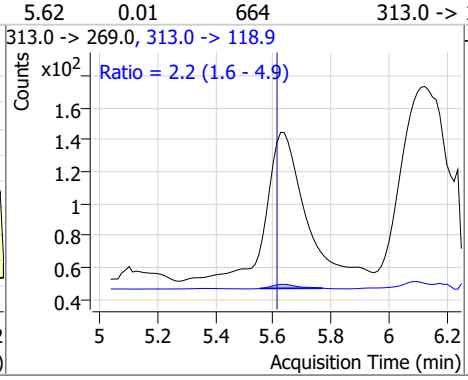


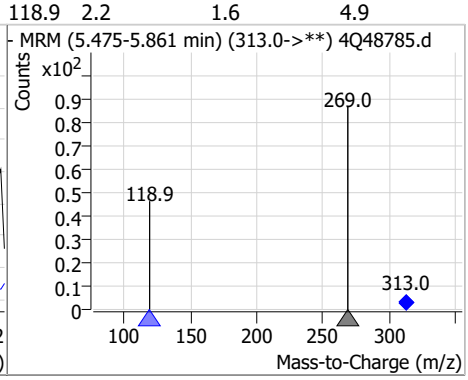




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.06	5.62	0.01	664	313.0 -> 118.9	2.2	1.6	4.9

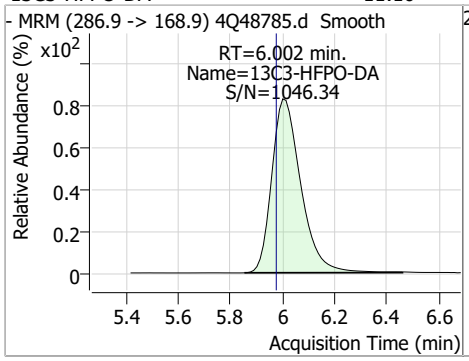


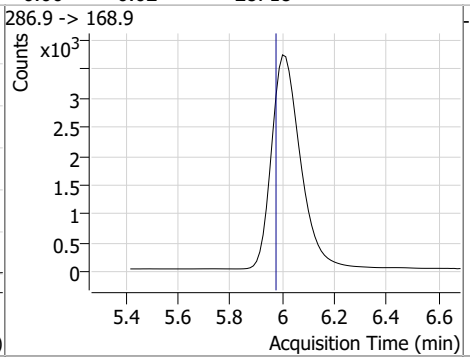


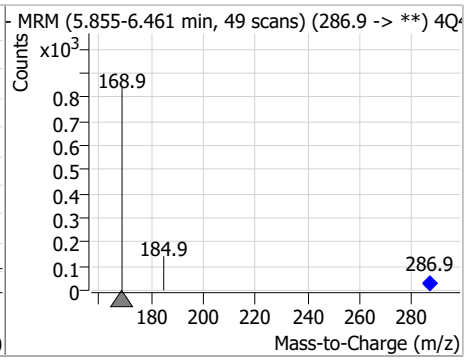


Perfluorinated Compounds by LC/MS/MS

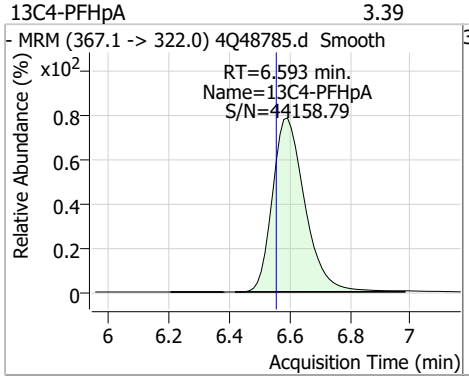
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.10	6.00	0.02	28718				

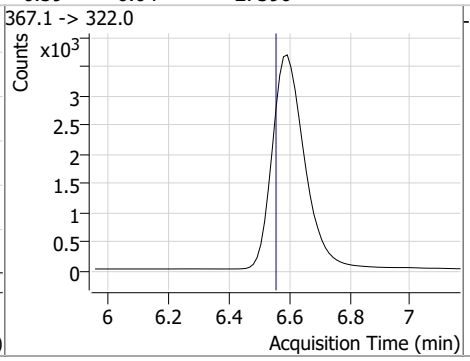


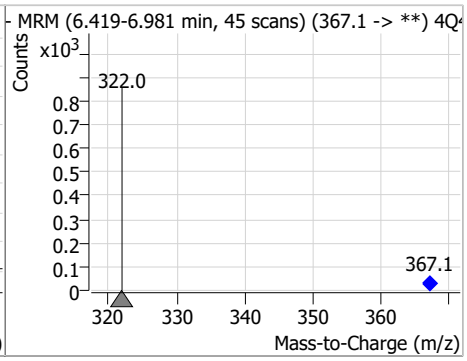




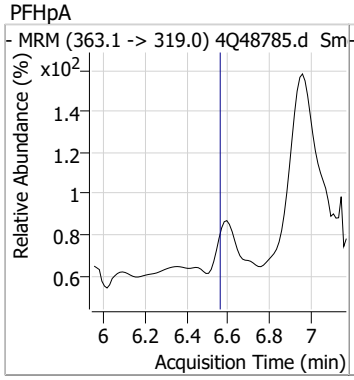
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.39	6.59	0.04	27390				

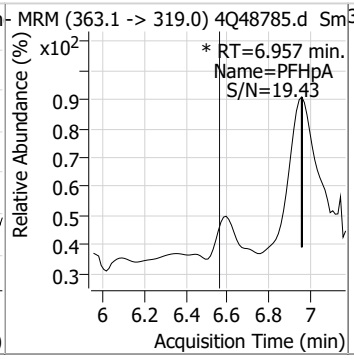


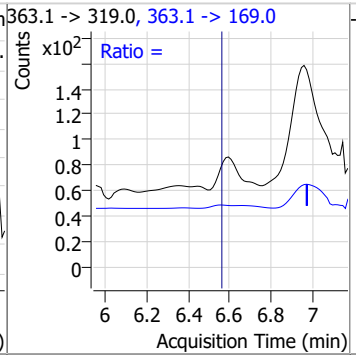


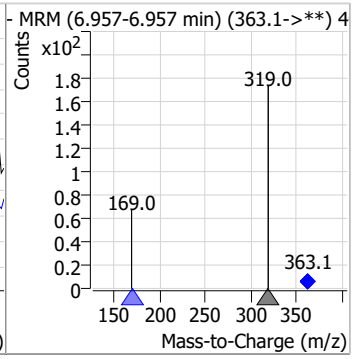


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

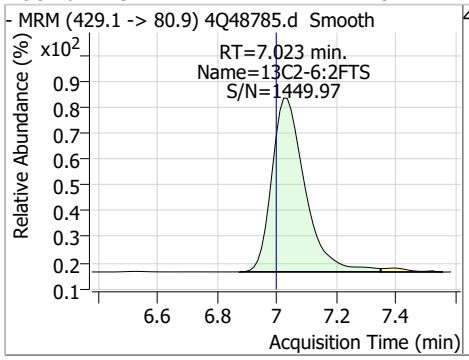


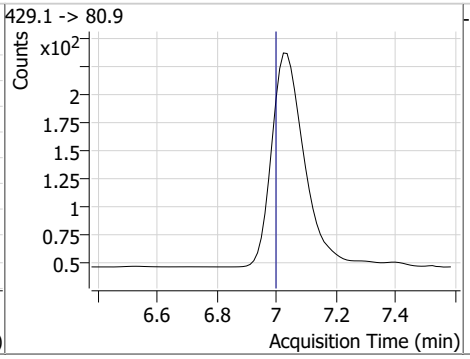


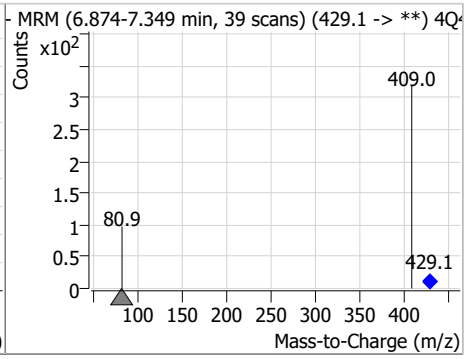




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.97	7.02	0.02	1482				

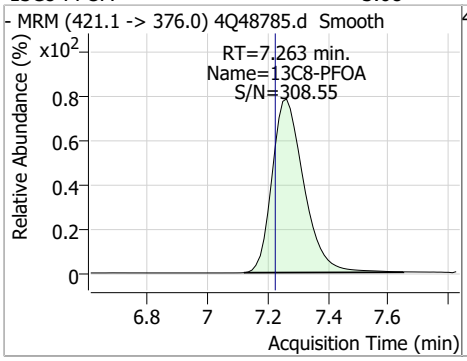


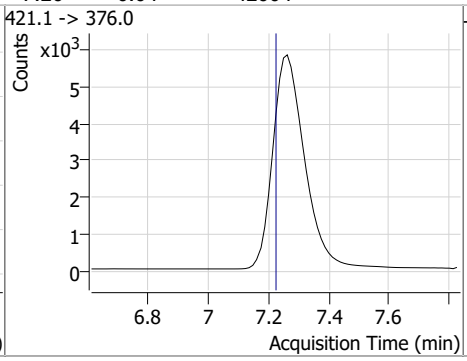


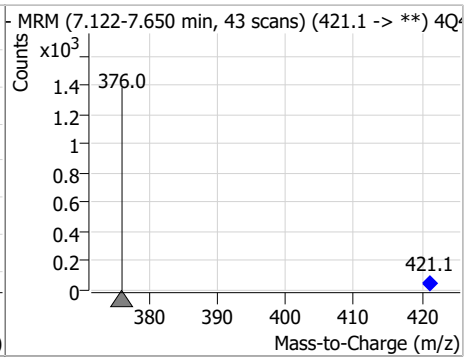


Perfluorinated Compounds by LC/MS/MS

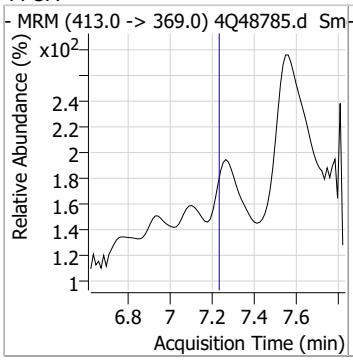
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.08	7.26	0.04	42604				

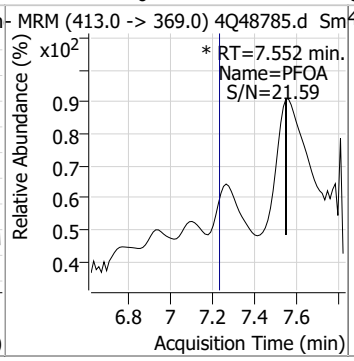


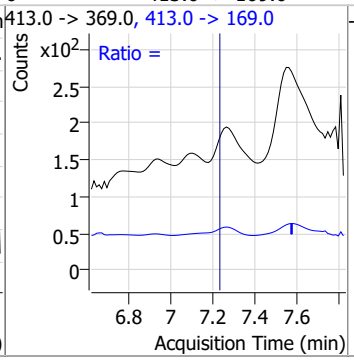


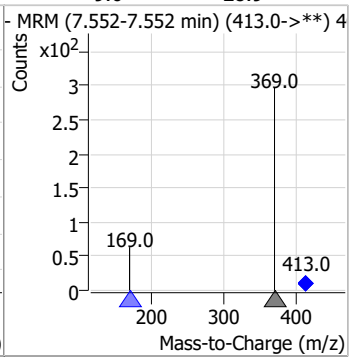


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		9.6	28.9

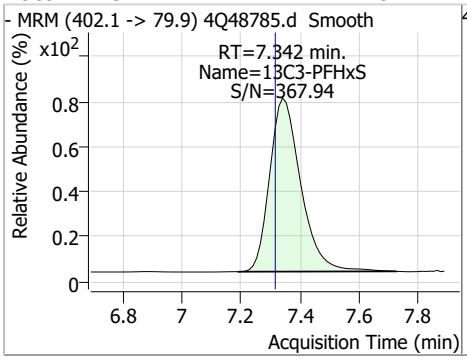


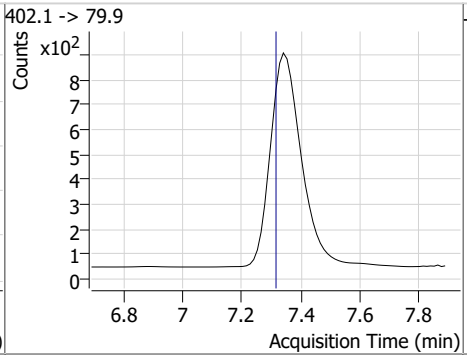


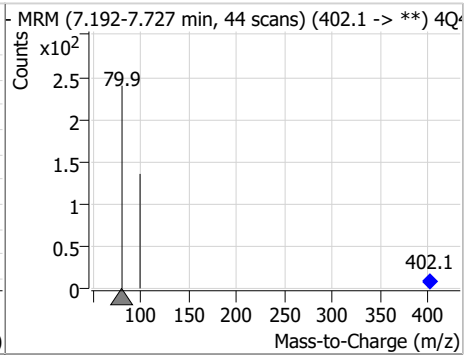




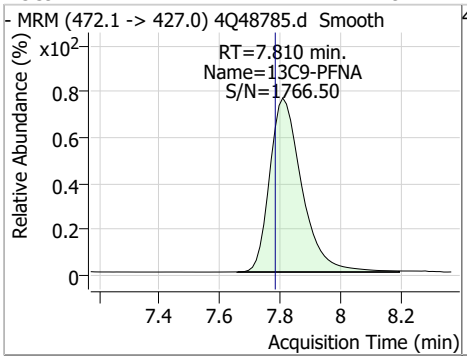
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.92	7.34	0.02	6292				

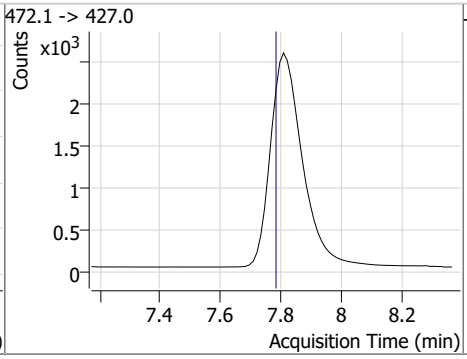


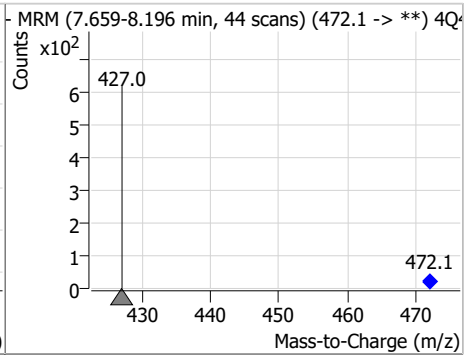




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.49	7.81	0.02	18993				

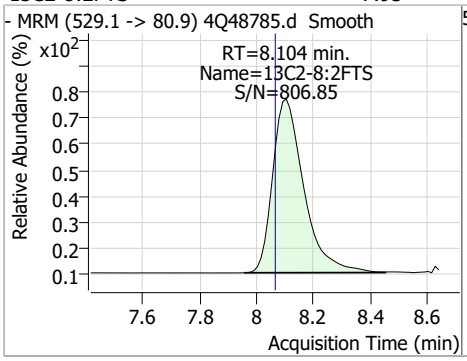


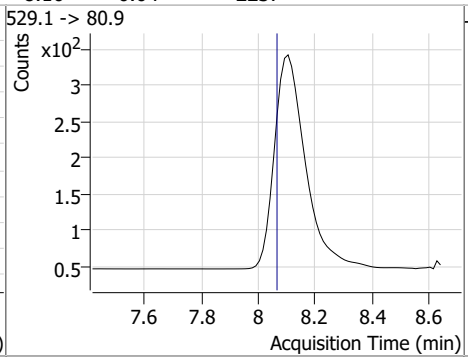


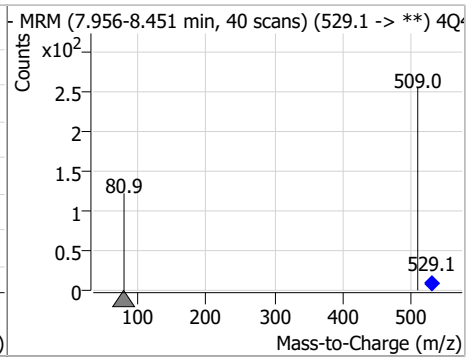


Perfluorinated Compounds by LC/MS/MS

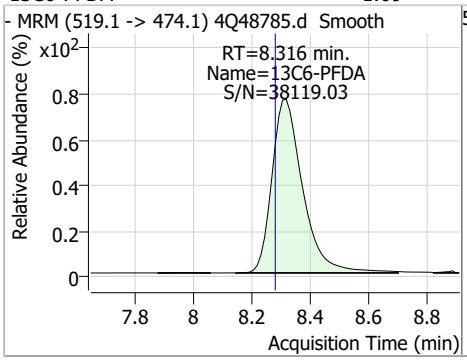
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.93	8.10	0.04	2237				

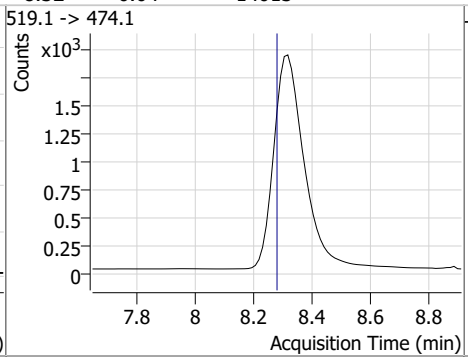


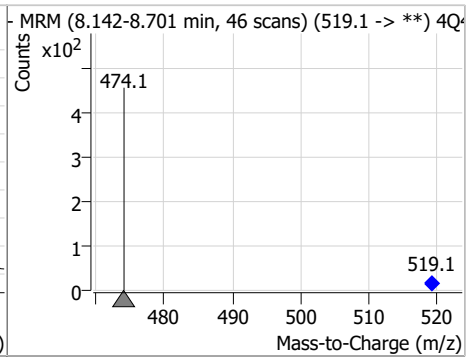




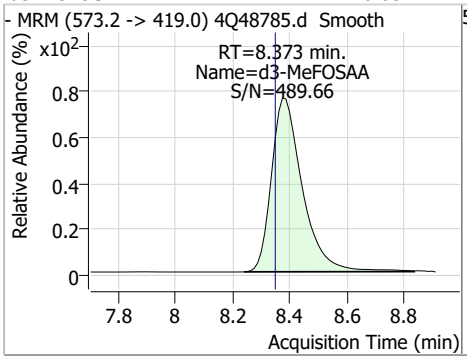
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.69	8.32	0.04	14013				

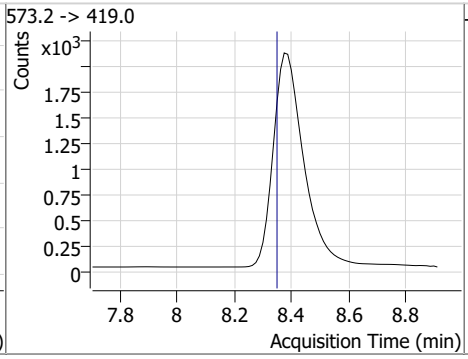


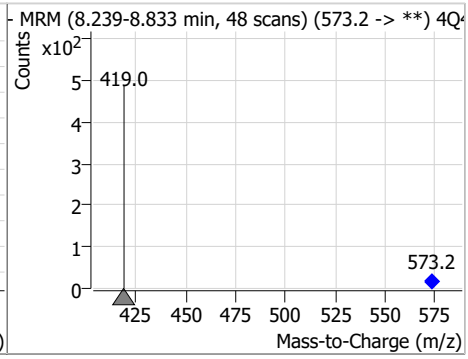




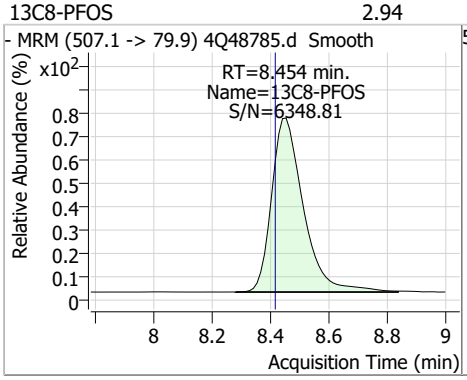
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.03	8.37	0.03	15658				

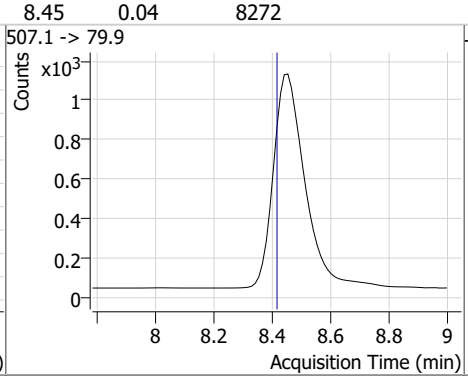


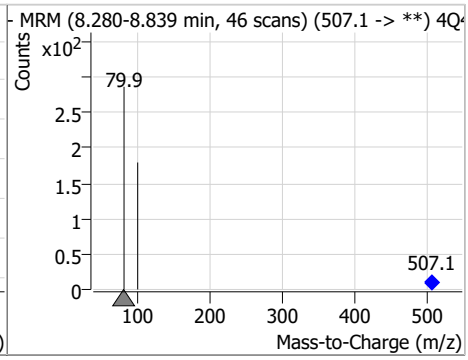




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.94	8.45	0.04	8272				

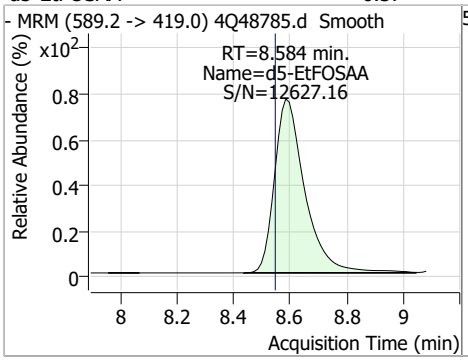


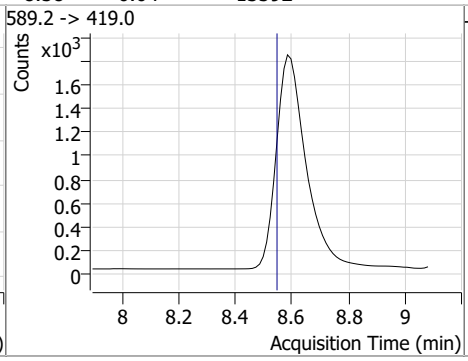


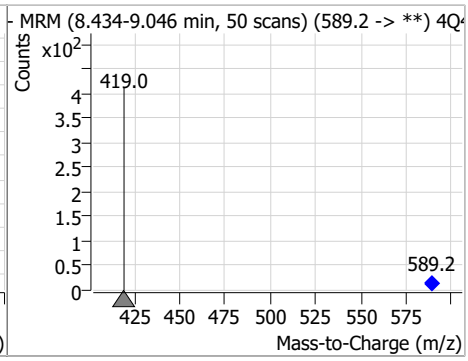


Perfluorinated Compounds by LC/MS/MS

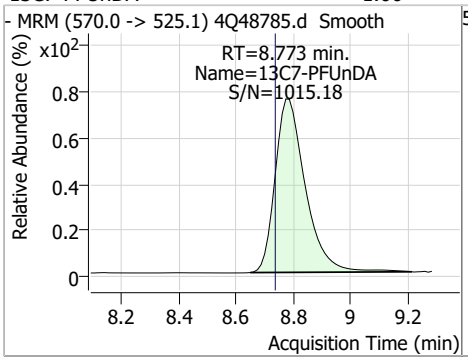
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.37	8.58	0.04	13592				

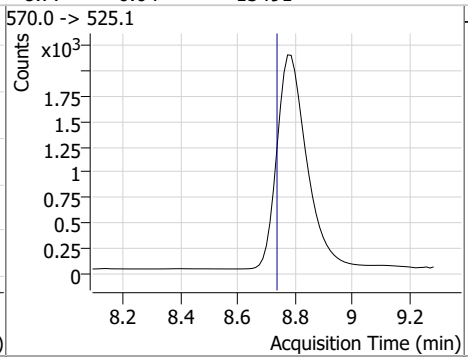


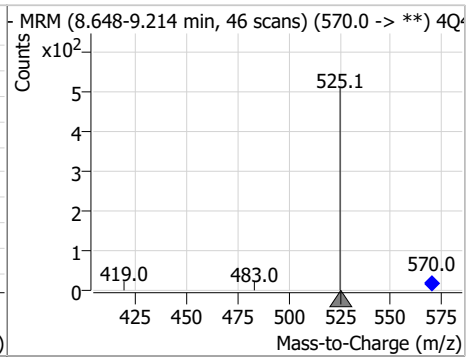




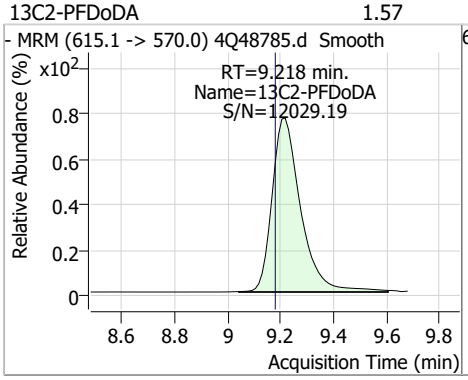
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.66	8.77	0.04	15491				

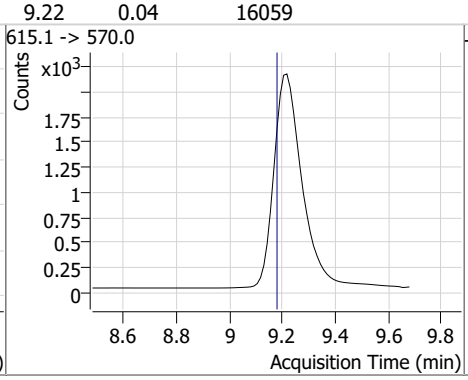


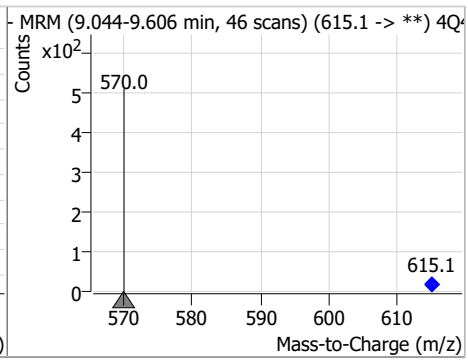




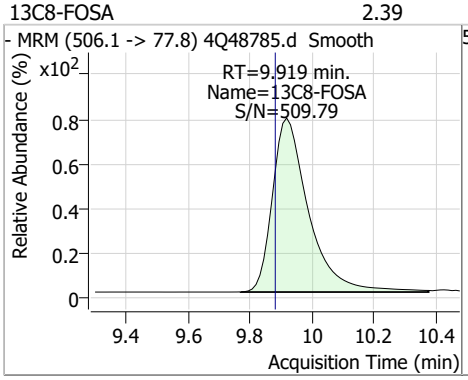
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.57	9.22	0.04	16059				

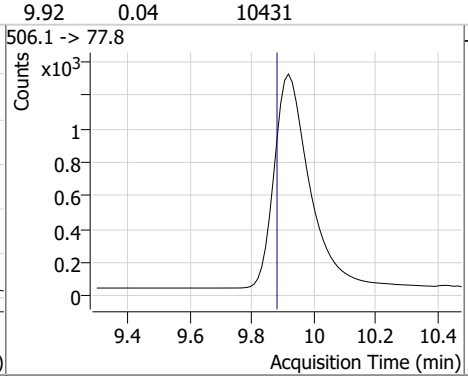


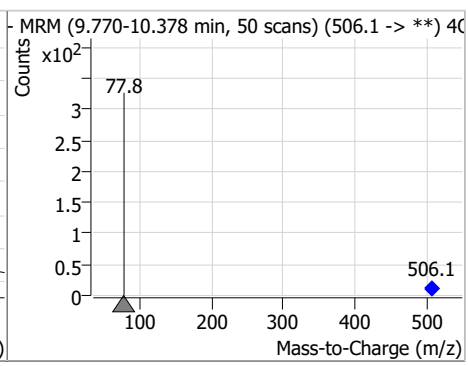




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.39	9.92	0.04	10431				

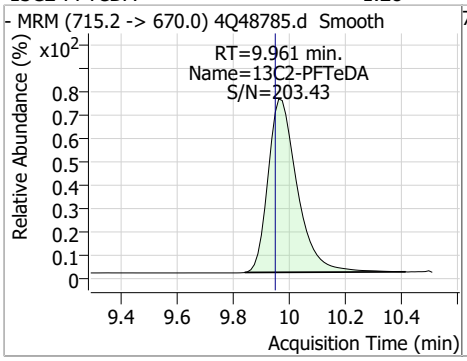


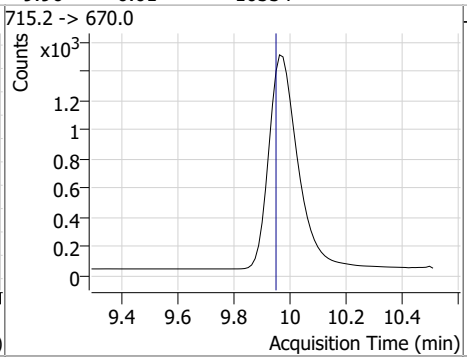


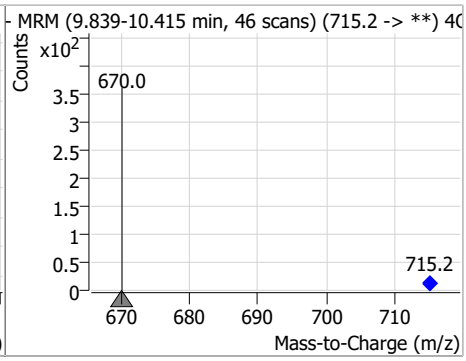


Perfluorinated Compounds by LC/MS/MS

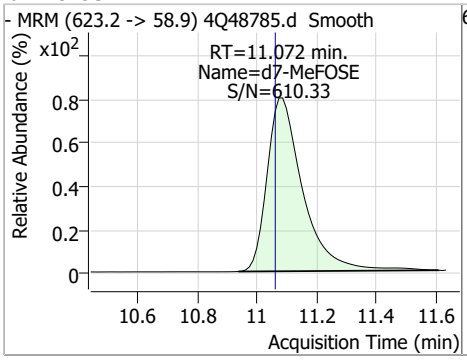
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.96	0.01	10554				

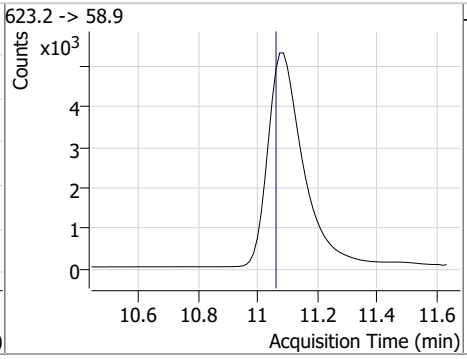


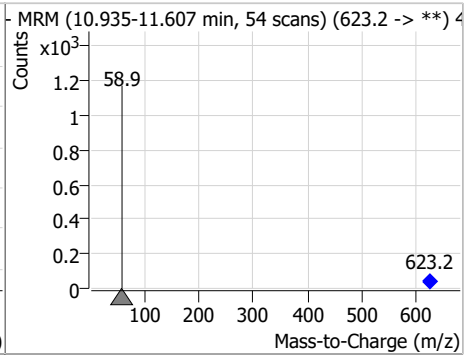




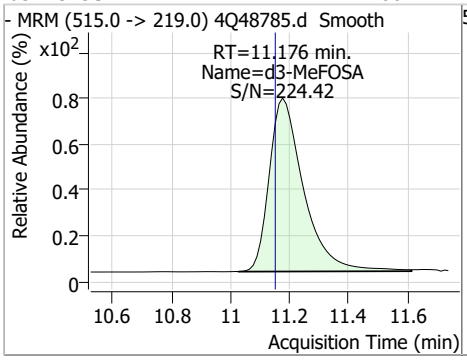
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.42	11.07	0.01	44004				

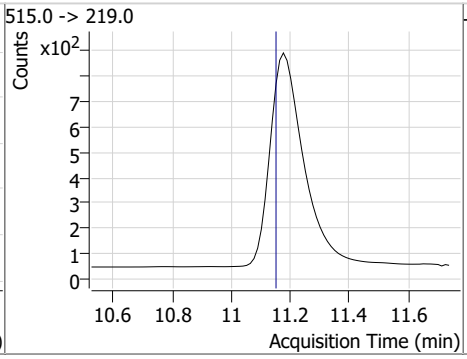


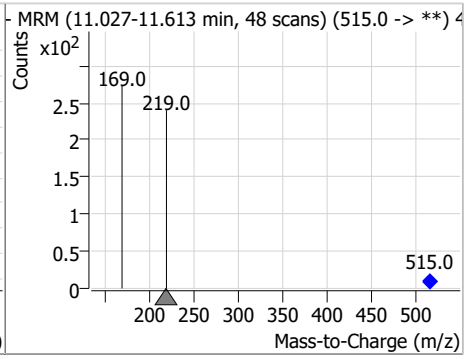




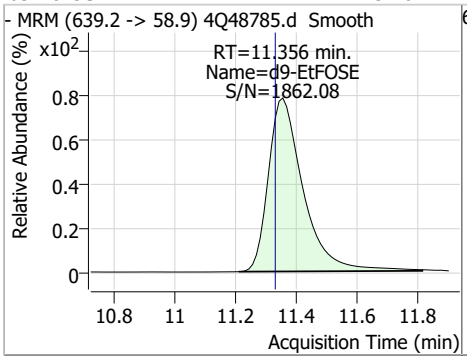
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.66	11.18	0.02	6825				

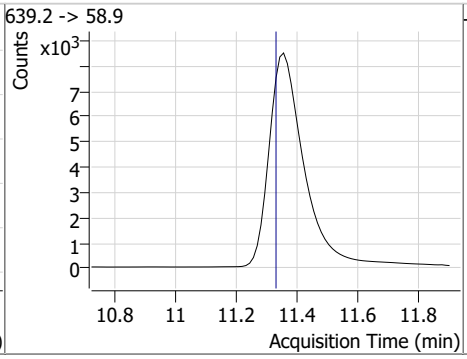


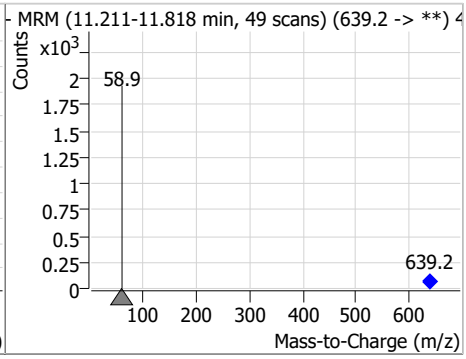




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.40	11.36	0.02	67419				

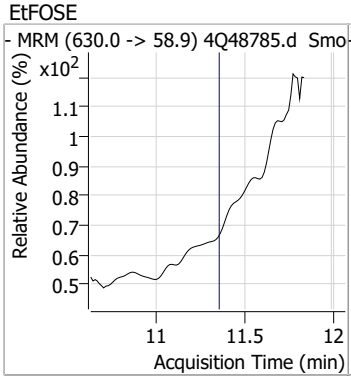


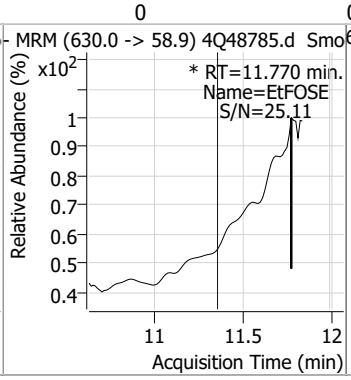


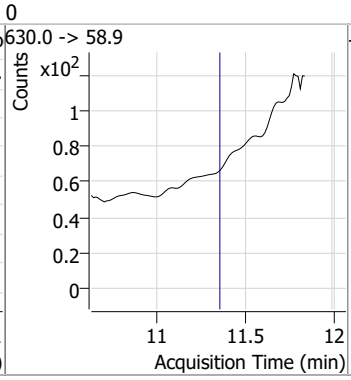


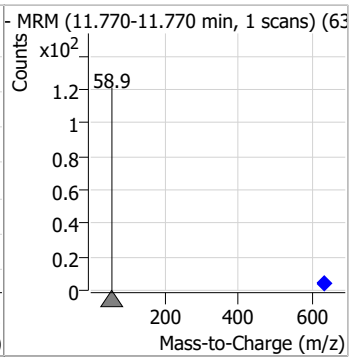
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE		0		0				

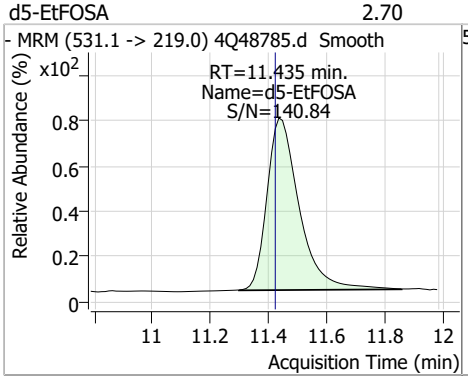


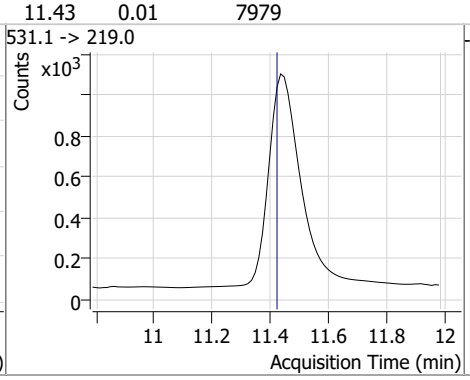


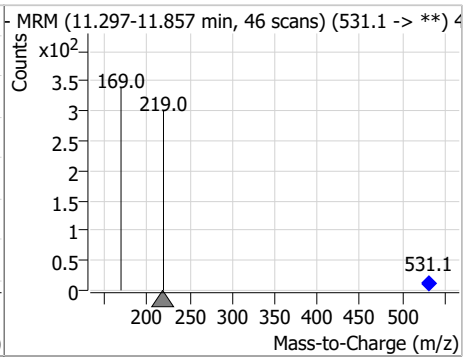




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.70	11.43	0.01	7979				







Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48786.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 8:46:44 PM
Sample Name : fc8439-2
Vial : P4-D8
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	54221	10.00	µg/L	0.025
M5-PFPeA	4.425	268.3 -> 223.0	56077	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	38536	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	27477	2.50	µg/L	0.025
M8-PFOA	7.263	421.1 -> 376.0	44974	2.50	µg/L	0.037
M9-PFNA	7.810	472.1 -> 427.0	18851	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	13523	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	15283	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	15561	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	10579	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	10529	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9571	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6531	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8118	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	886	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1512	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2314	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	15405	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	30083	10.00	µg/L	0.025
M5-EtFOSAA	8.584	589.2 -> 419.0	13135	5.00	µg/L	0.037
M7-MeFOSE	11.084	623.2 -> 58.9	44584	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	65716	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	7888	2.50	µg/L	0.025
M3-MeFOSA	11.189	515.0 -> 219.0	6897	2.50	µg/L	0.037
13C4-PFOS	8.443	502.8 -> 79.9	7607	2.50	µg/L	0.025
13C3-PFBA	2.941	216.0 -> 172.0	47062	5.00	µg/L	0.037
18O2-PFHxS	7.341	403.0 -> 83.9	3876	2.50	µg/L	0.025
13C4-PFOA	7.263	417.1 -> 372.0	43996	2.50	µg/L	0.037
13C2-PFDA	8.304	515.1 -> 470.1	12796	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	19193	1.25	µg/L	0.025
13C2-PFHxA	5.635	315.1 -> 270.0	29046	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	886	9.15	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 182.9%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1512	8.17	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 163.4%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2314	8.24	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 164.7%		
13C2-PFDoDA	9.205	615.1 -> 570.0	15561	1.42	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.6%		
13C2-PFTeDA	9.974	715.2 -> 670.0	10579	1.20	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C3-PFBS	5.502	302.1 -> 79.9	9571	2.90	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.0%		
13C3-PFHxS	7.342	402.1 -> 79.9	6531	3.04	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 = 121.7%	
13C4-PFBA	2.936	216.8 -> 171.9	54221	6.74 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.4%	
13C4-PFHpA	6.580	367.1 -> 322.0	27477	3.18 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.0%	
13C5-PFHxA	5.622	318.0 -> 273.0	38536	3.17 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 126.6%	
13C5-PFPeA	4.425	268.3 -> 223.0	56077	5.52 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C6-PFDA	8.303	519.1 -> 474.1	13523	1.53 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.2%	
13C7-PFUnDA	8.773	570.0 -> 525.1	15283	1.53 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.6%	
13C8-FOSA	9.919	506.1 -> 77.8	10529	2.22 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C8-PFOA	7.263	421.1 -> 376.0	44974	3.10 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 124.2%	
13C8-PFOS	8.442	507.1 -> 79.9	8118	2.66 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C9-PFNA	7.810	472.1 -> 427.0	18851	1.30 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
d3-MeFOSAA	8.373	573.2 -> 419.0	15405	5.46 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	30083	10.87 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
d3-MeFOSA	11.189	515.0 -> 219.0	6897	2.47 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSAA	8.584	589.2 -> 419.0	13135	5.66 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.2%	
d7-MeFOSE	11.084	623.2 -> 58.9	44584	19.96 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.8%	
d9-EtFOSE	11.356	639.2 -> 58.9	65716	20.98 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
d5-EtFOSA	11.447	531.1 -> 219.0	7888	2.45 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
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

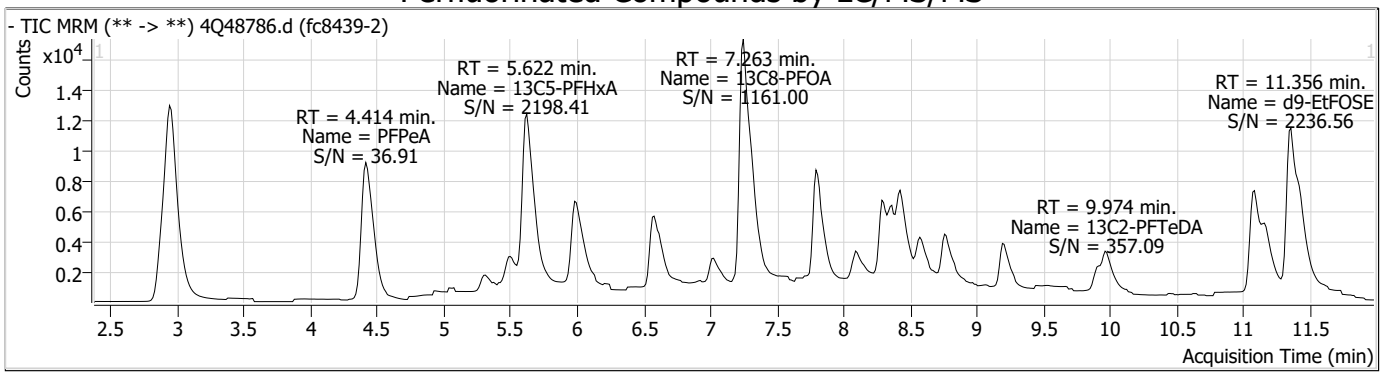
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	5.625	313.0 -> 269.0	801	0.07	µg/L		97
		313.0 -> 118.9	33				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.564	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	4.414	263.0 -> 219.0	1665	0.17	µg/L		100
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

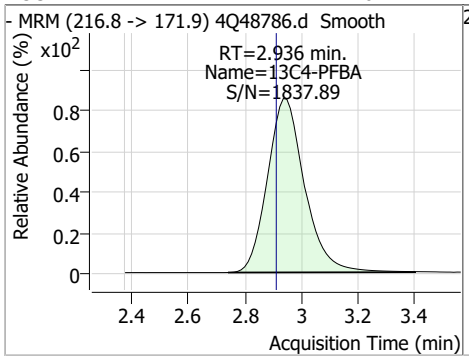
Perfluorinated Compounds by LC/MS/MS

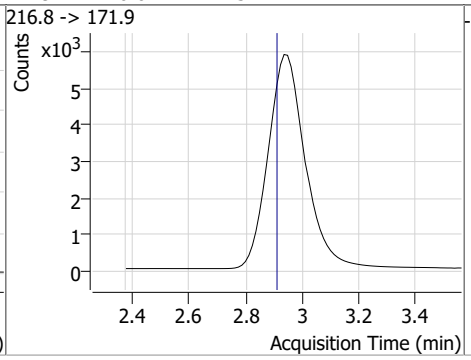
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

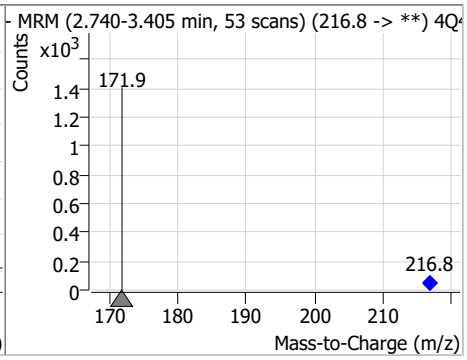
Perfluorinated Compounds by LC/MS/MS



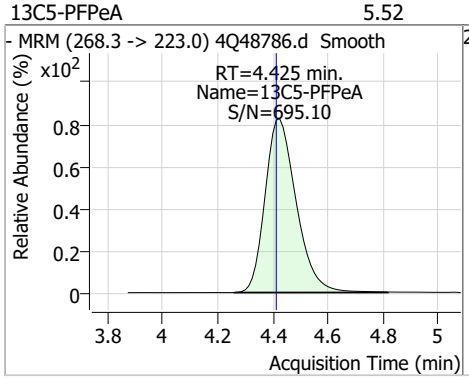
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	6.74	2.94	0.02	54221				

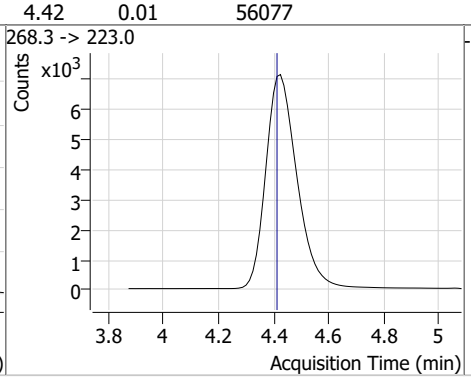


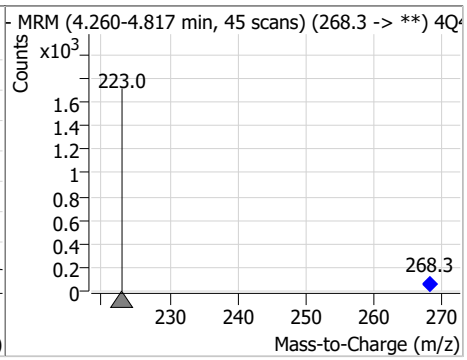




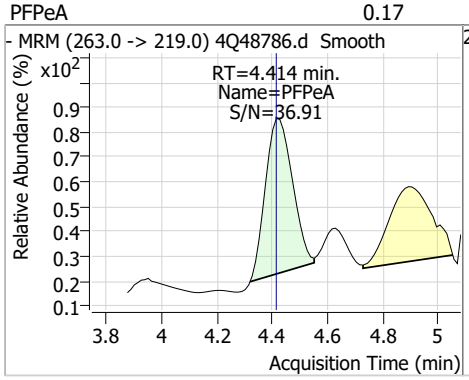
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.52	4.42	0.01	56077				

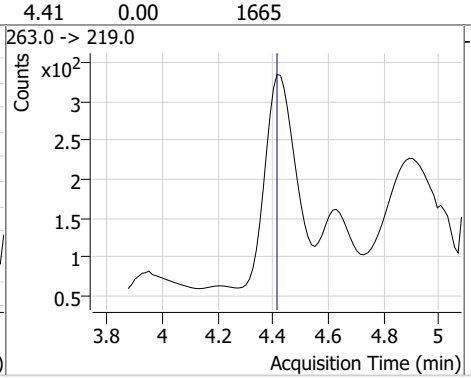


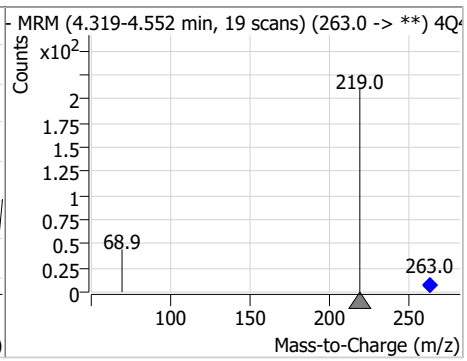




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.17	4.41	0.00	1665				

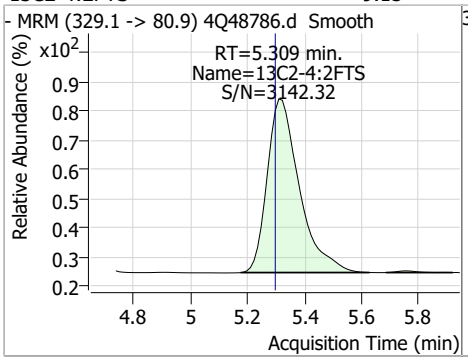


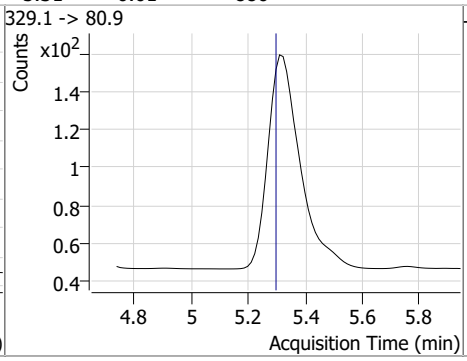


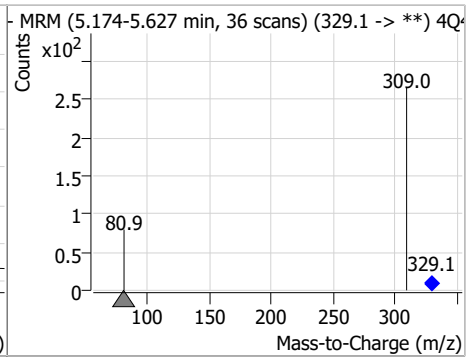


Perfluorinated Compounds by LC/MS/MS

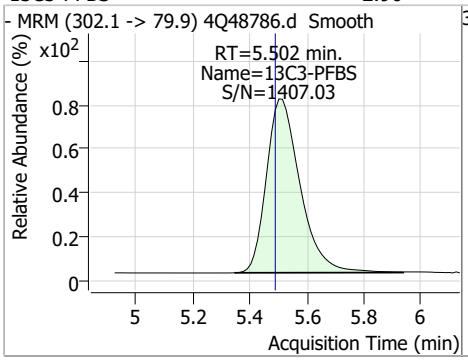
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.15	5.31	0.01	886				

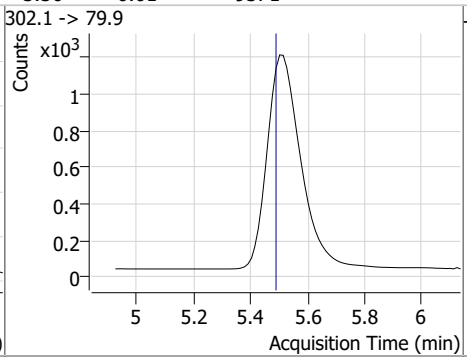


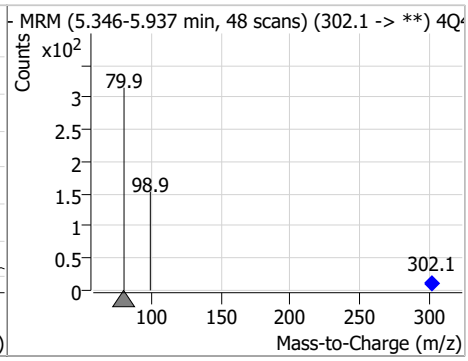




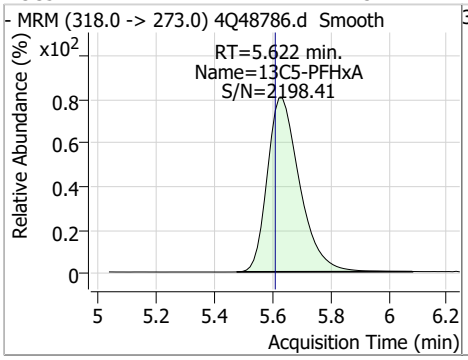
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.90	5.50	0.01	9571				

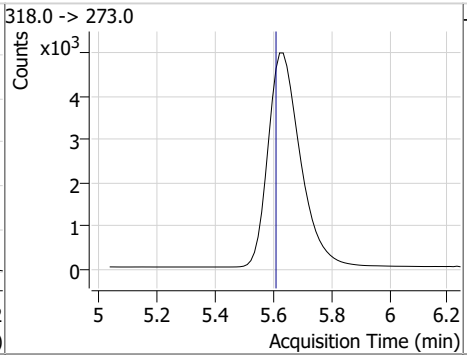


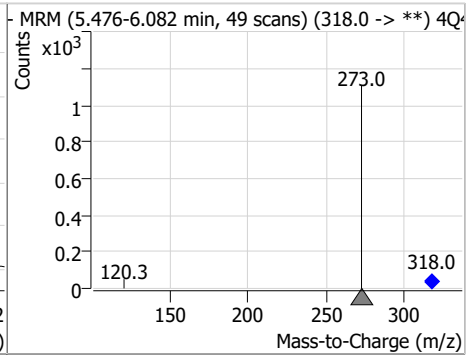




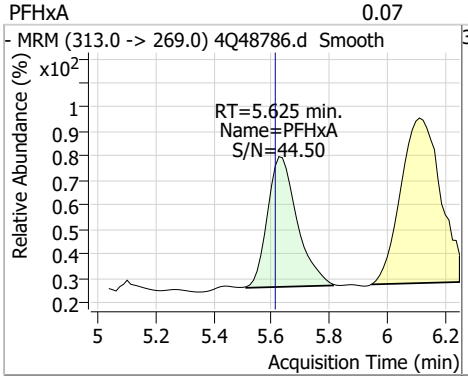
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.17	5.62	0.01	38536				

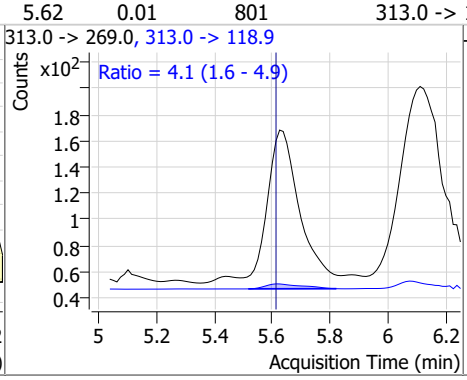


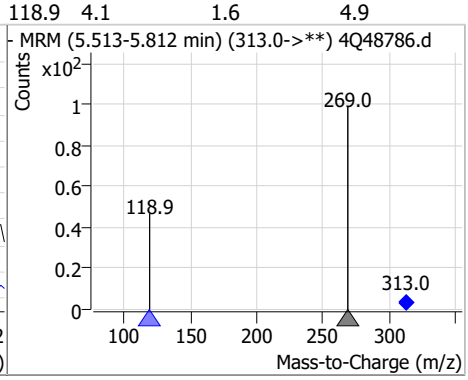




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.07	5.62	0.01	801	313.0 -> 118.9	4.1	1.6	4.9

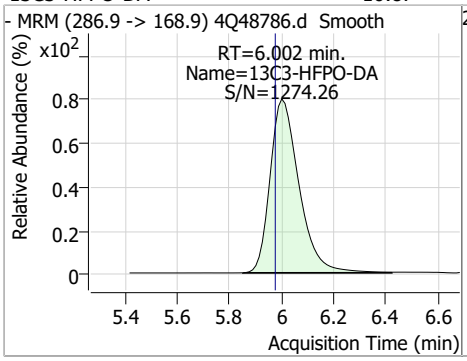


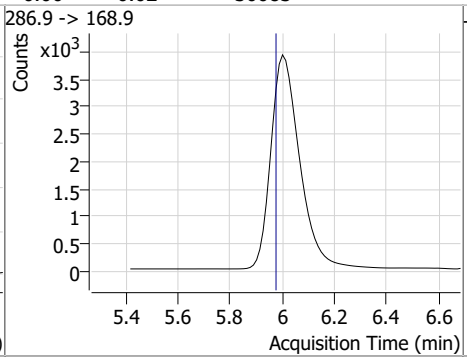


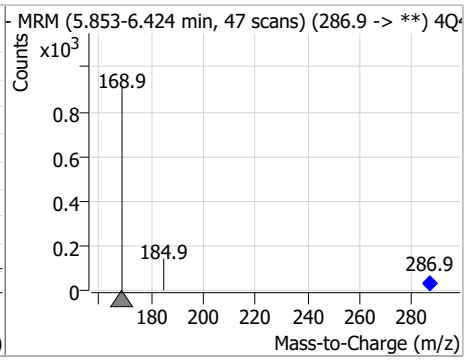


Perfluorinated Compounds by LC/MS/MS

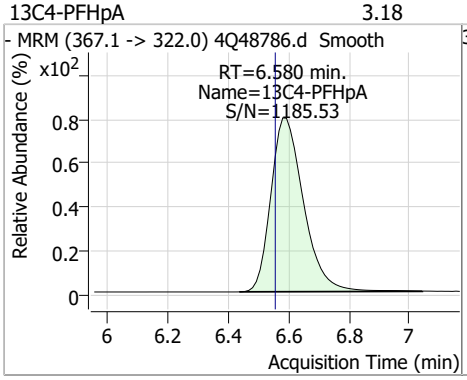
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.87	6.00	0.02	30083				

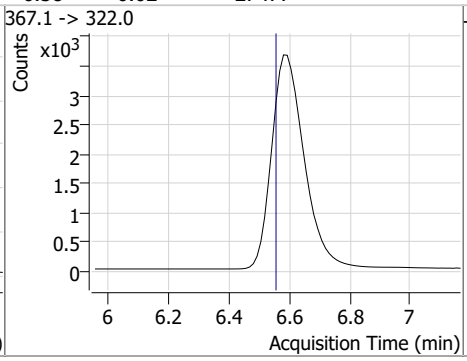


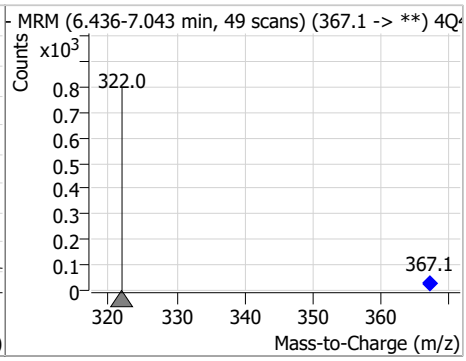




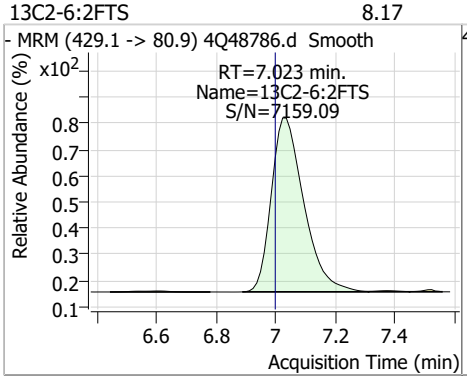
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.18	6.58	0.02	27477				

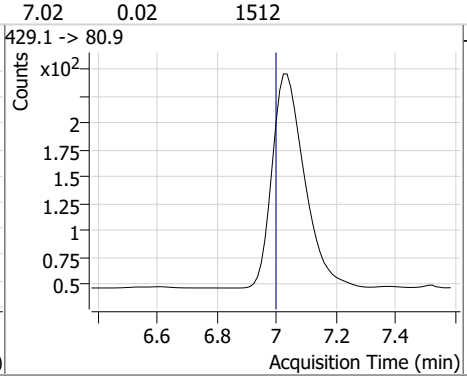


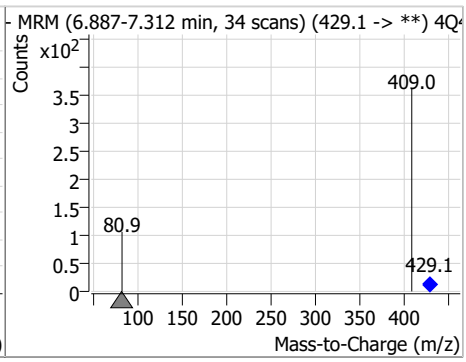




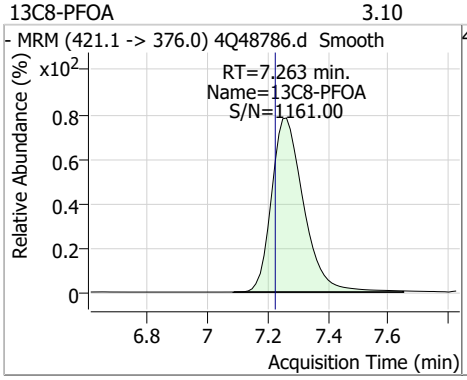
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.17	7.02	0.02	1512				

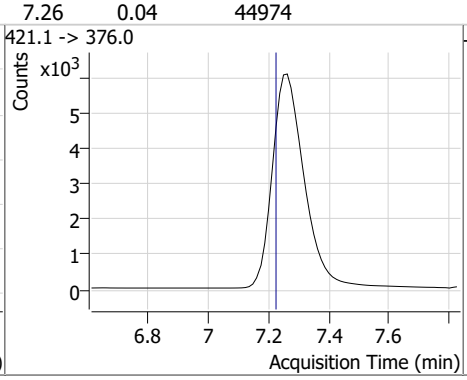


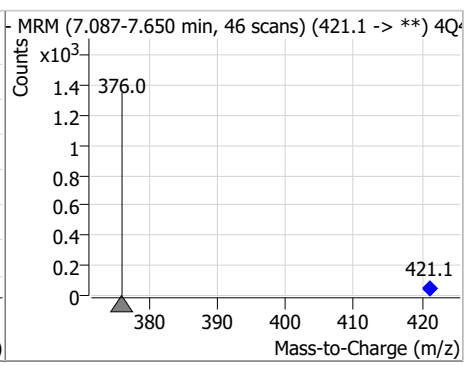




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.10	7.26	0.04	44974				

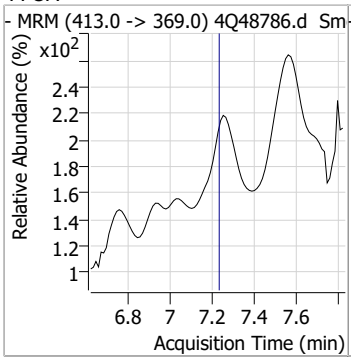


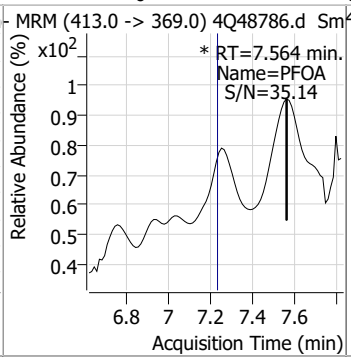


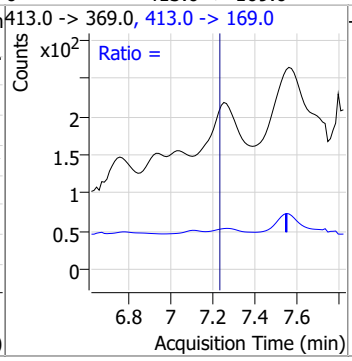


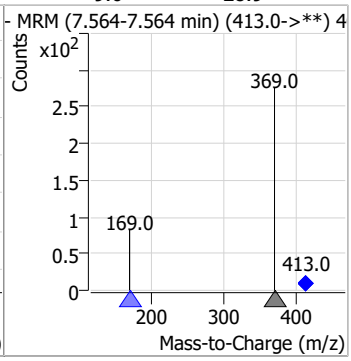
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		9.6	28.9

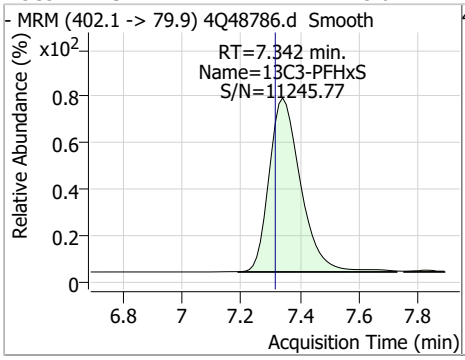


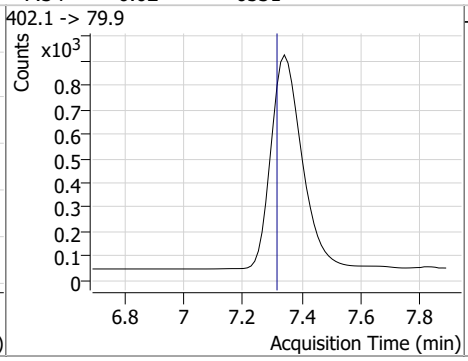


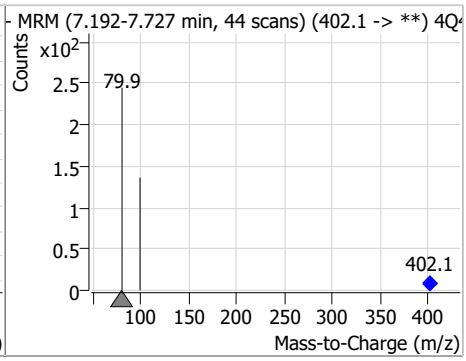




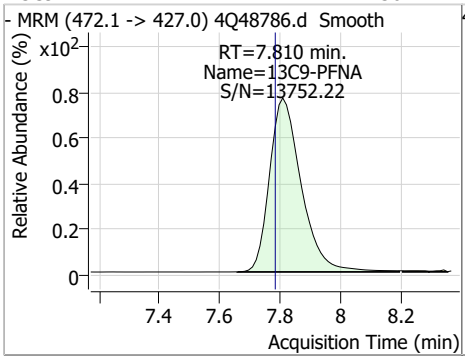
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.04	7.34	0.02	6531				

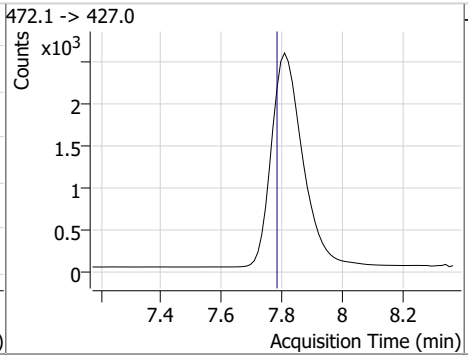


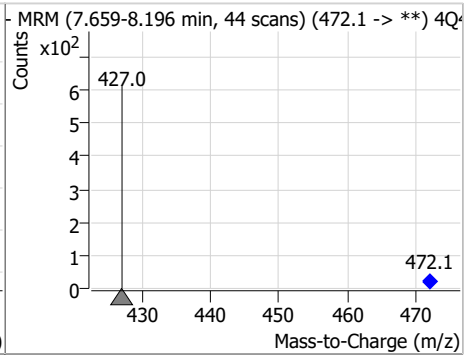




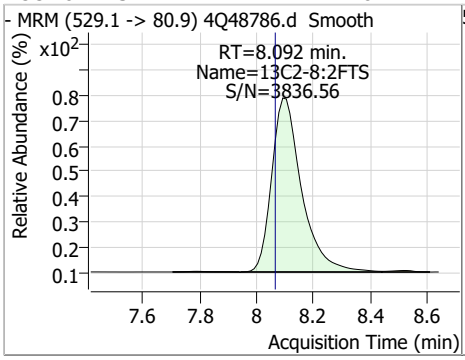
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.81	0.02	18851				

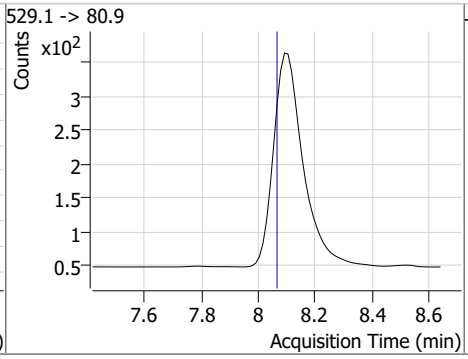


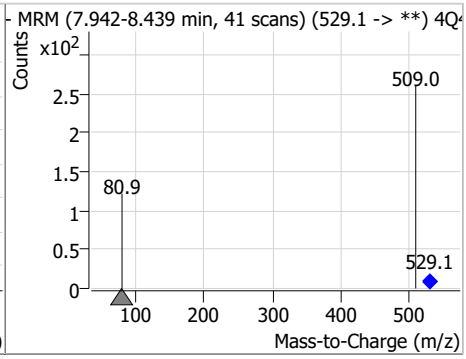




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.24	8.09	0.03	2314				

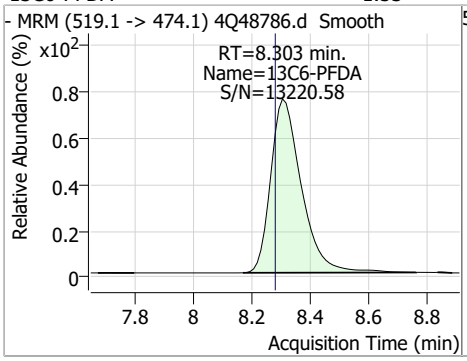


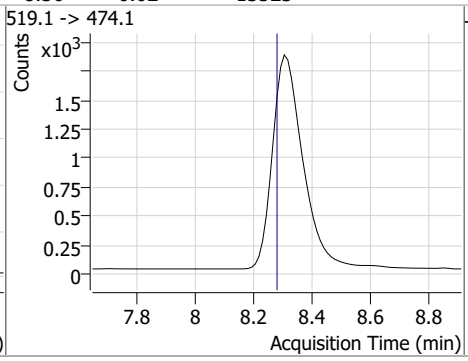


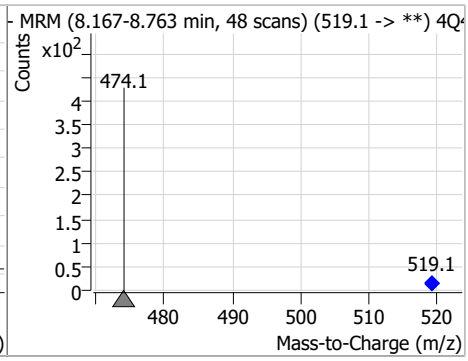


Perfluorinated Compounds by LC/MS/MS

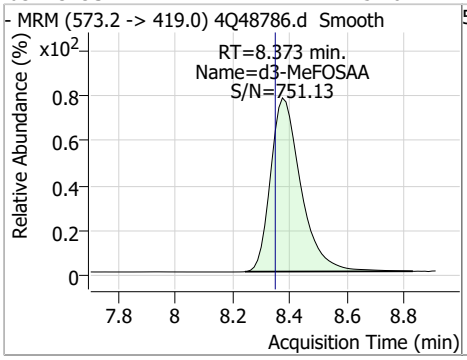
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.53	8.30	0.02	13523				

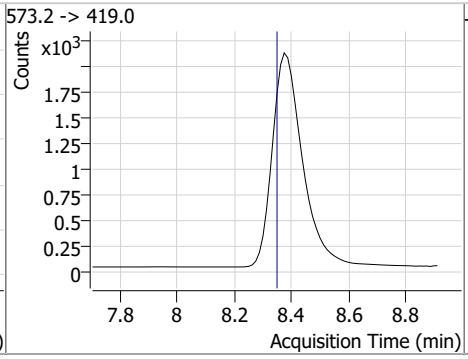


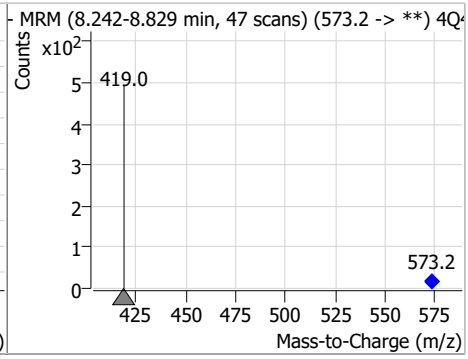




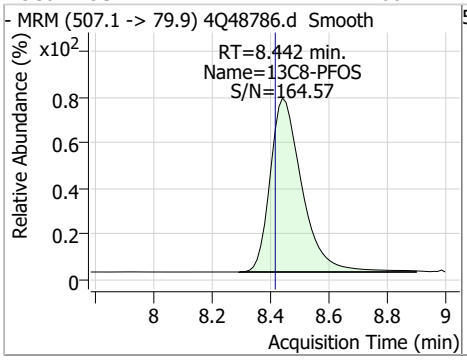
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.46	8.37	0.03	15405				

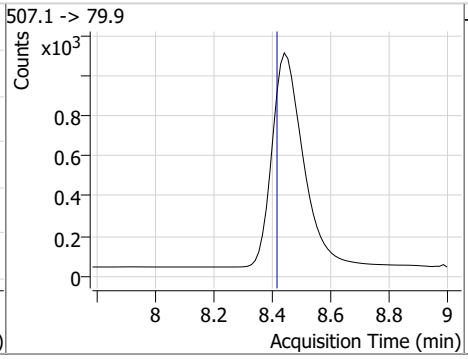


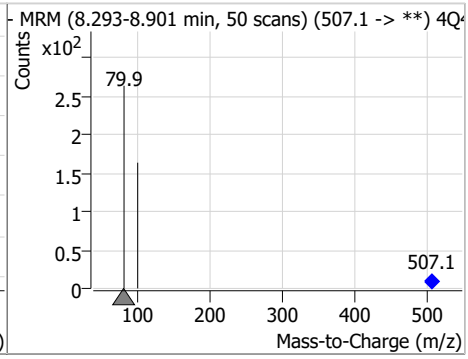




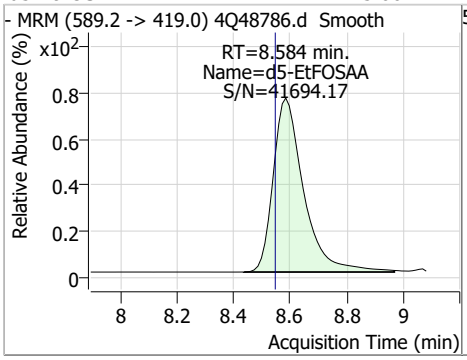
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.66	8.44	0.02	8118				

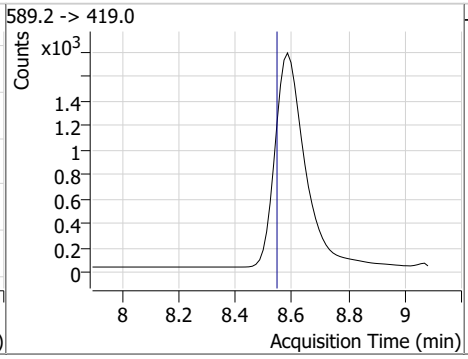


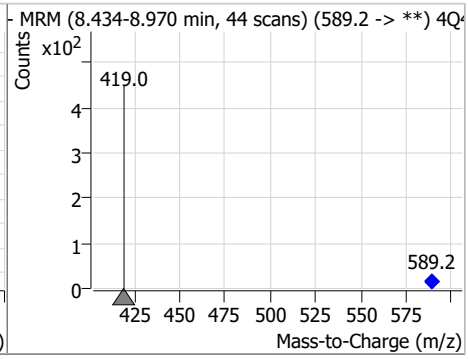




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.66	8.58	0.04	13135				

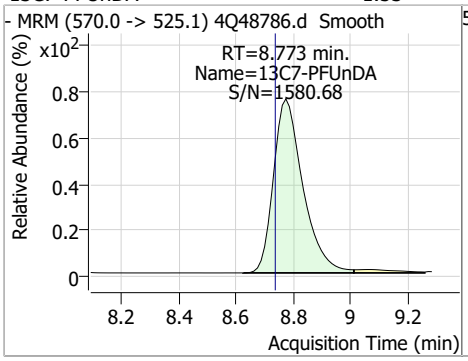


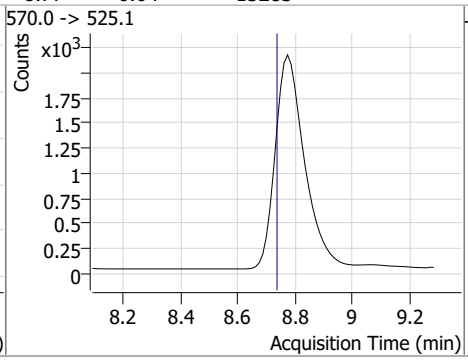


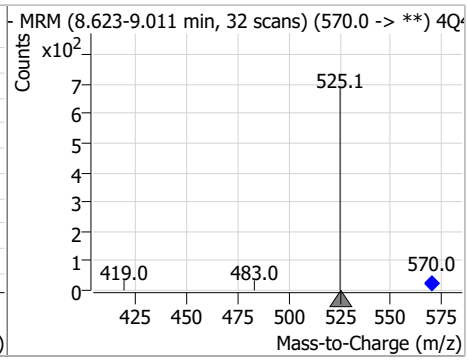


Perfluorinated Compounds by LC/MS/MS

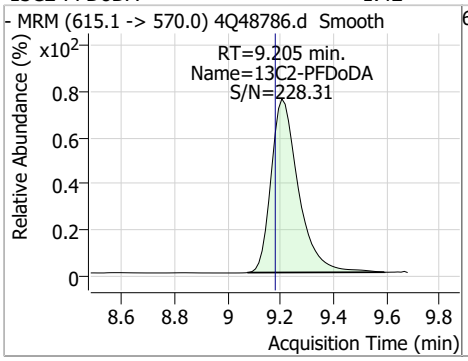
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.53	8.77	0.04	15283				

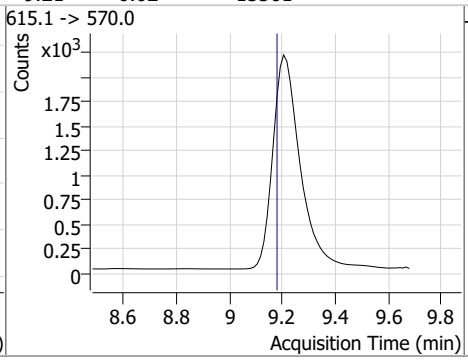


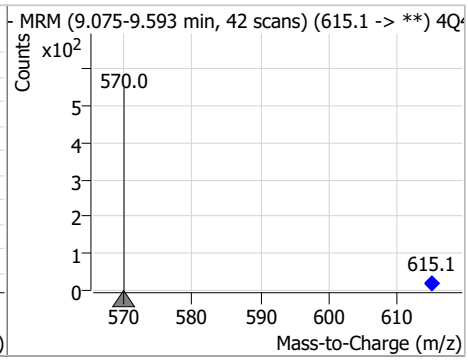




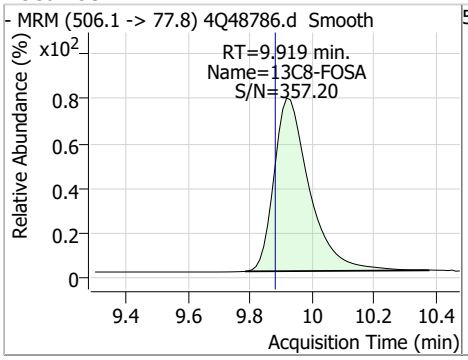
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.42	9.21	0.02	15561				

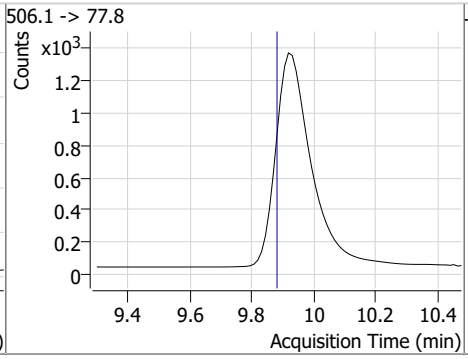


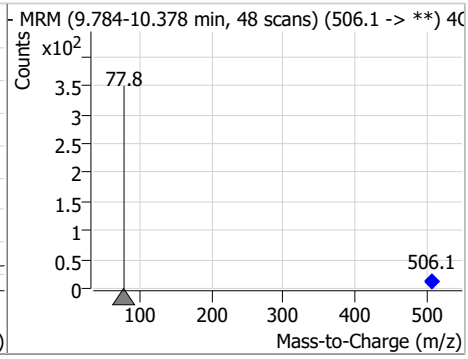




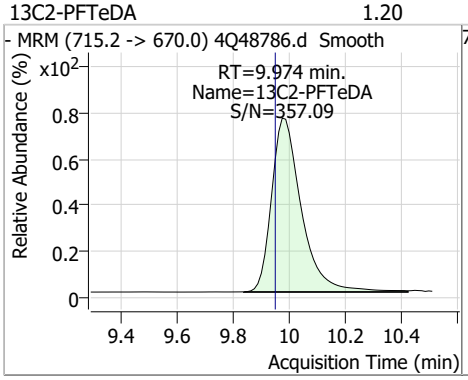
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.22	9.92	0.04	10529				

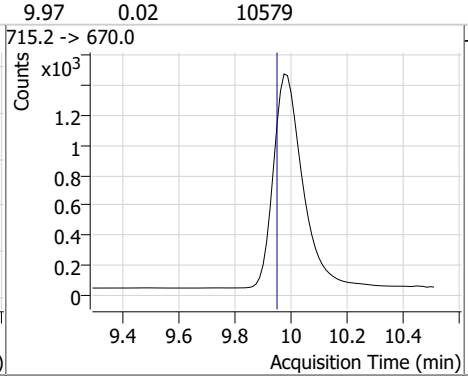


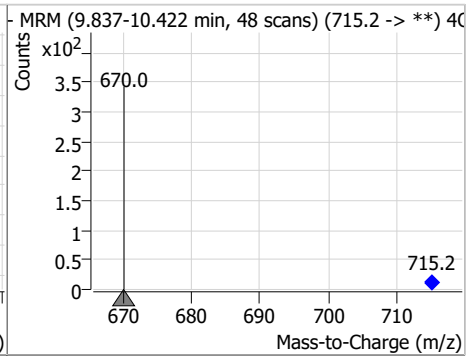




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	9.97	0.02	10579				

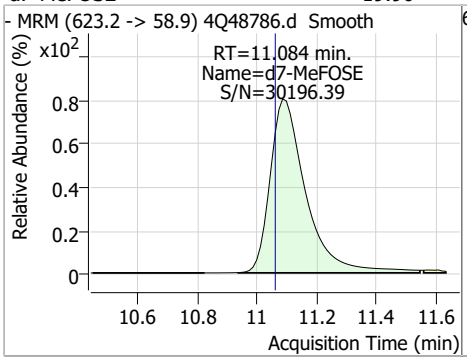


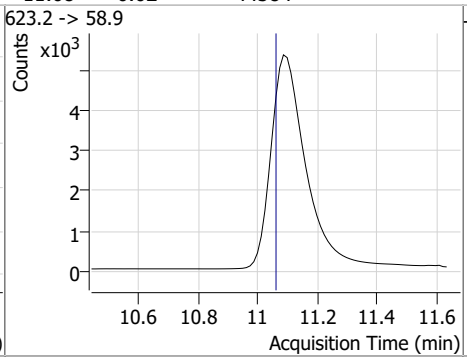


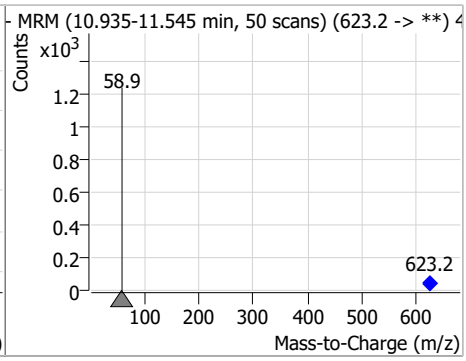


Perfluorinated Compounds by LC/MS/MS

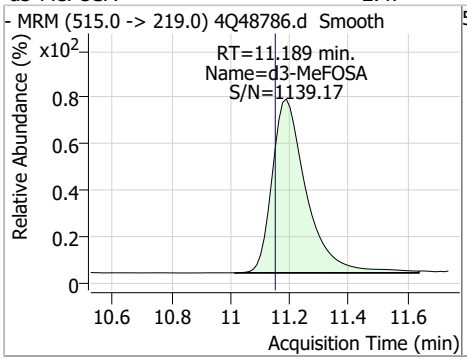
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	19.96	11.08	0.02	44584				

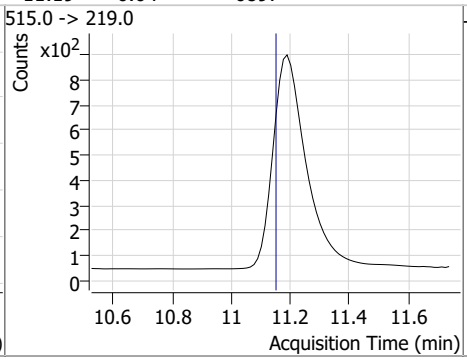


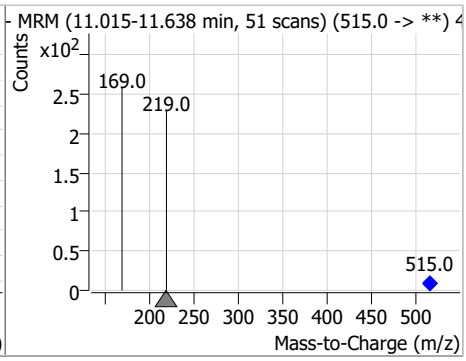




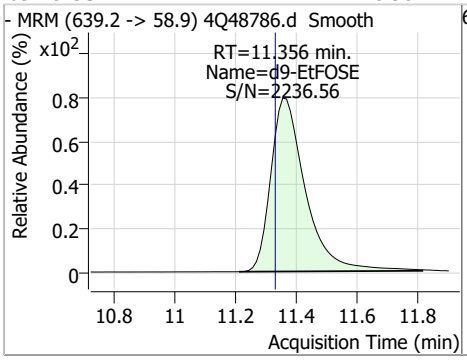
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	11.19	0.04	6897				

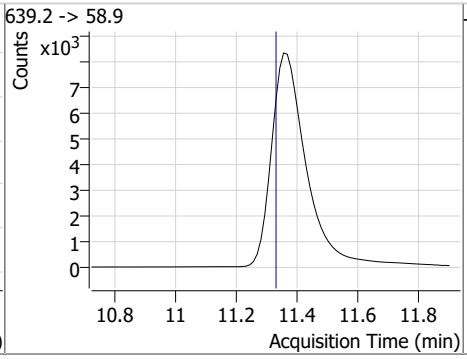


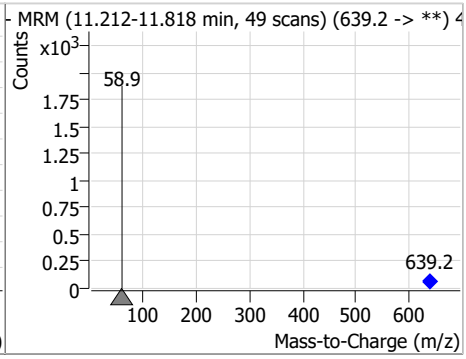




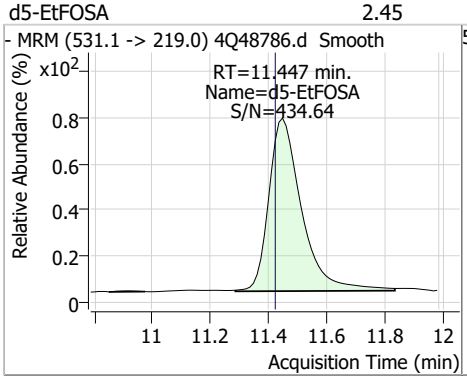
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.98	11.36	0.02	65716				

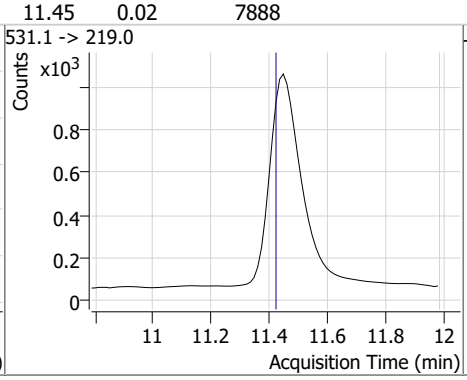


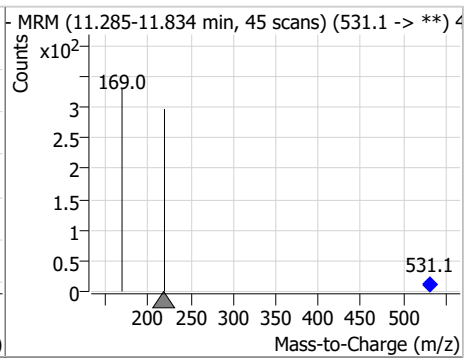




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	11.45	0.02	7888				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22666.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 7:50:39 PM
Sample Name : FC8439-2
Vial : P4-A7
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98297,S6Q330,500,,,5.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	16695	2.00	µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	10608	1.00	µg/L	0.012
M5-PFHxA	5.668	318.0 -> 273.0	11671	0.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	10938	0.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	17324	0.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	7847	0.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	4228	0.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	5273	0.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	4914	0.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	2523	0.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	4885	0.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	4124	0.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	2760	0.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	2032	0.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	633	1.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	932	1.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	849	1.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	5625	1.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	7096	2.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	4882	1.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	15578	5.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	22287	5.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	2028	0.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	2203	0.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	2716	0.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	11435	1.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	1642	0.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	14853	0.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	5078	0.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	8285	0.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	9127	0.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	633	1.29	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 25.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	932	1.32	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 26.3%		
13C2-8:2FTS	8.039	529.1 -> 80.9	849	1.23	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 24.5%		
13C2-PFDoDA	9.148	615.1 -> 570.0	4914	0.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 22.9%		
13C2-PFTeDA	9.851	715.2 -> 670.0	2523	0.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 20.5%		
13C3-PFBS	5.610	302.1 -> 79.9	4124	0.59	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 23.7%		
13C3-PFHxS	7.355	402.1 -> 79.9	2760	0.61	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 = 24.5%	
13C4-PFBA	3.010	216.8 -> 171.9	16695	1.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.4%	
13C4-PFHpA	6.608	367.1 -> 322.0	10938	0.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 23.7%	
13C5-PFHxA	5.668	318.0 -> 273.0	11671	0.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 24.8%	
13C5-PFPeA	4.459	268.3 -> 223.0	10608	1.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 24.7%	
13C6-PFDA	8.250	519.1 -> 474.1	4228	0.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 23.6%	
13C7-PFUnDA	8.717	570.0 -> 525.1	5273	0.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 22.2%	
13C8-FOSA	9.662	506.1 -> 77.8	4885	0.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 19.1%	
13C8-PFOA	7.239	421.1 -> 376.0	17324	0.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 25.3%	
13C8-PFOS	8.414	507.1 -> 79.9	2032	0.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 20.4%	
13C9-PFNA	7.770	472.1 -> 427.0	7847	0.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 23.4%	
d3-MeFOSAA	8.297	573.2 -> 419.0	5625	1.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 22.9%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	7096	2.40 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 24.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	2203	0.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 21.0%	
d5-EtFOSAA	8.492	589.2 -> 419.0	4882	1.08 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 21.5%	
d7-MeFOSE	10.685	623.2 -> 58.9	15578	4.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 17.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	22287	4.55 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 18.2%	
d5-EtFOSA	10.983	531.1 -> 219.0	2028	0.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 19.2%	
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	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDoDA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

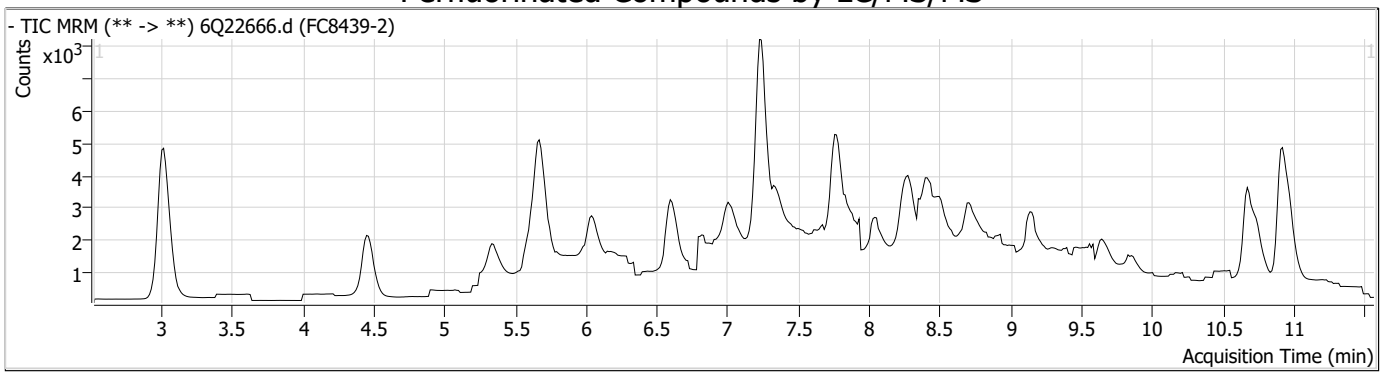
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.452	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

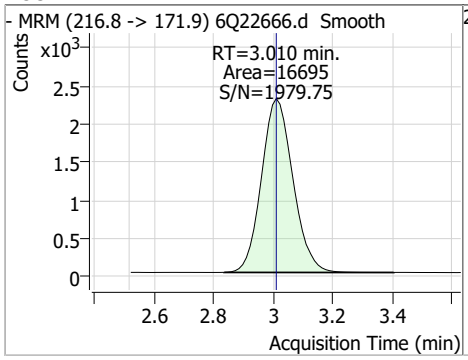
Perfluorinated Compounds by LC/MS/MS

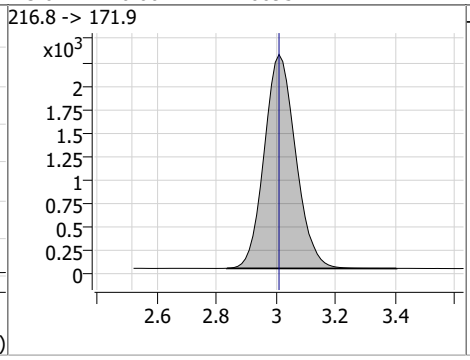
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

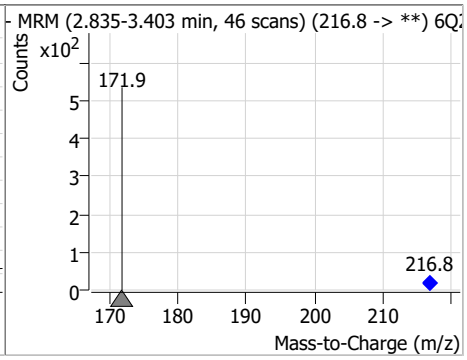
Perfluorinated Compounds by LC/MS/MS



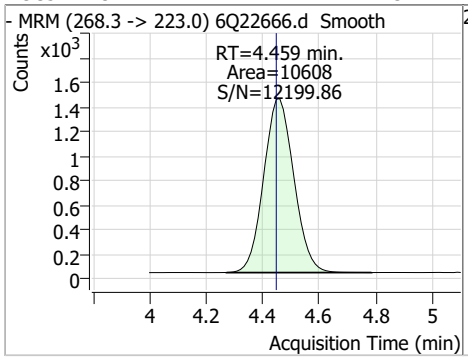
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.24	3.01	0.00	16695				

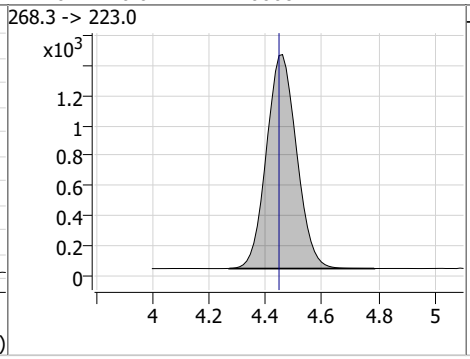


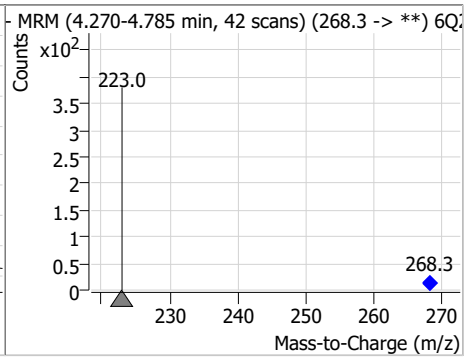




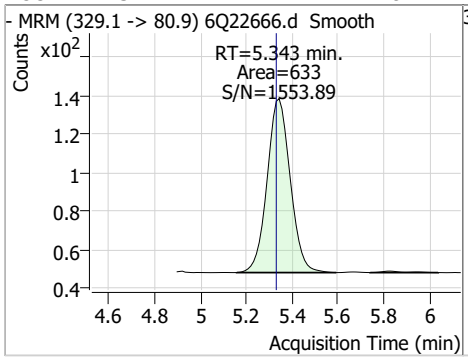
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.23	4.46	0.01	10608				

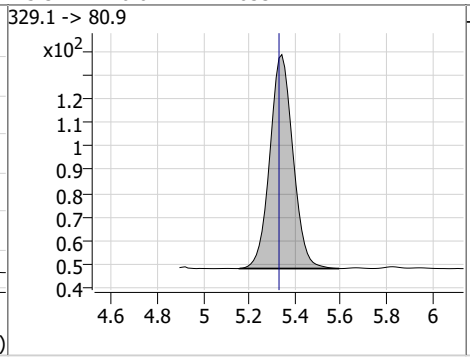


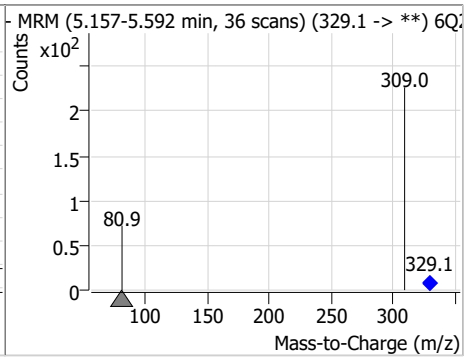




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.29	5.34	0.01	633				

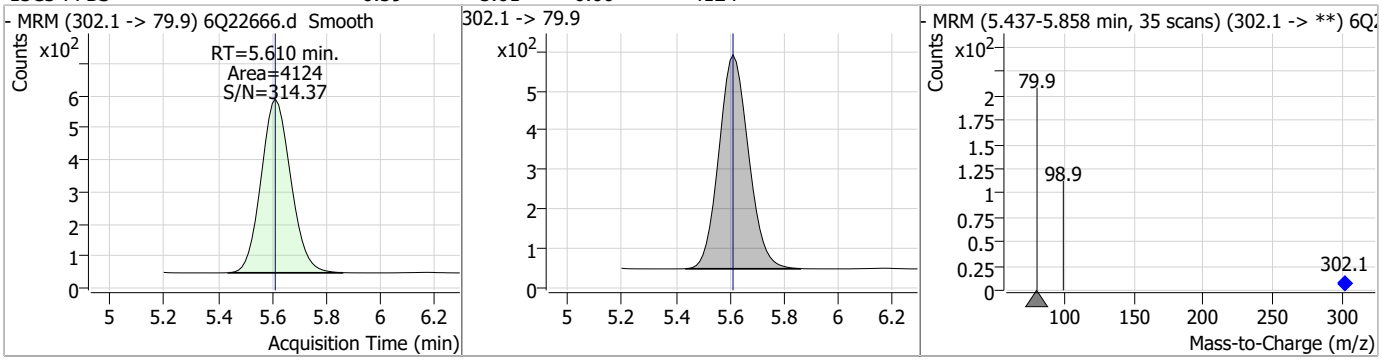




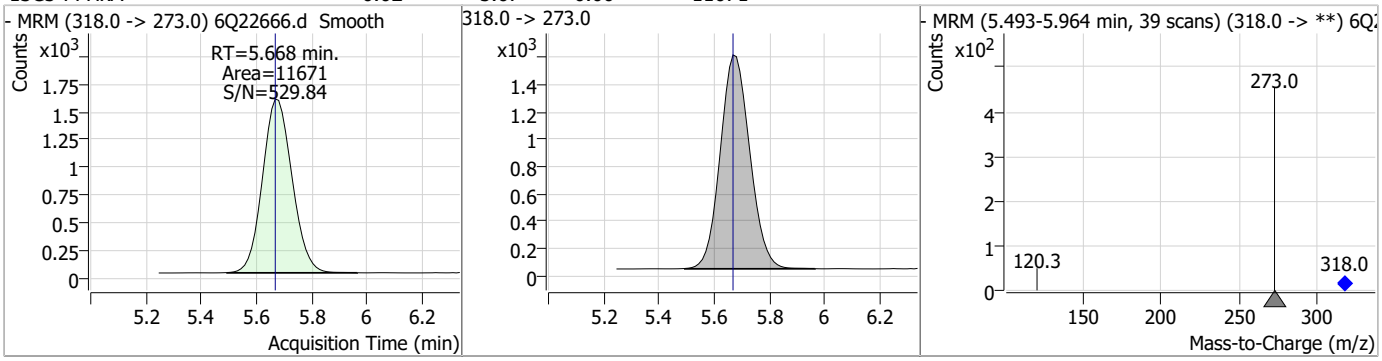


Perfluorinated Compounds by LC/MS/MS

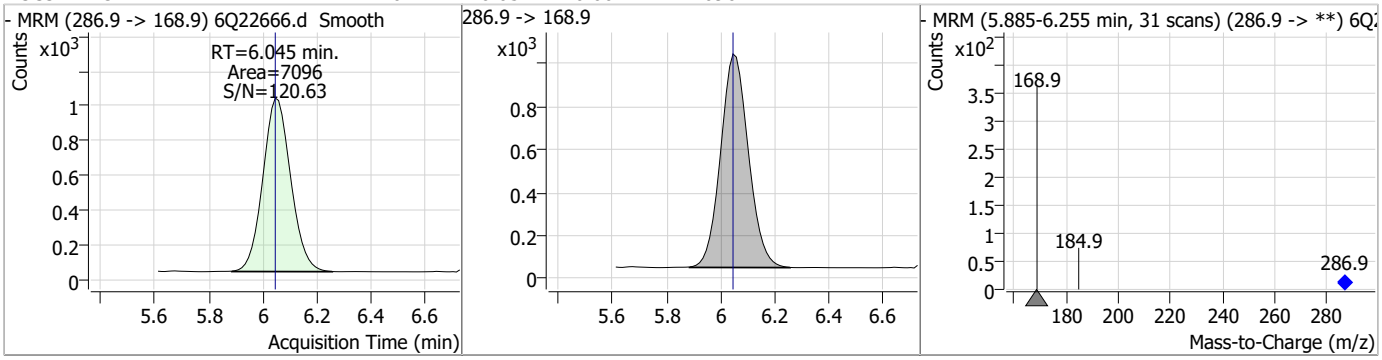
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	0.59	5.61	0.00	4124				



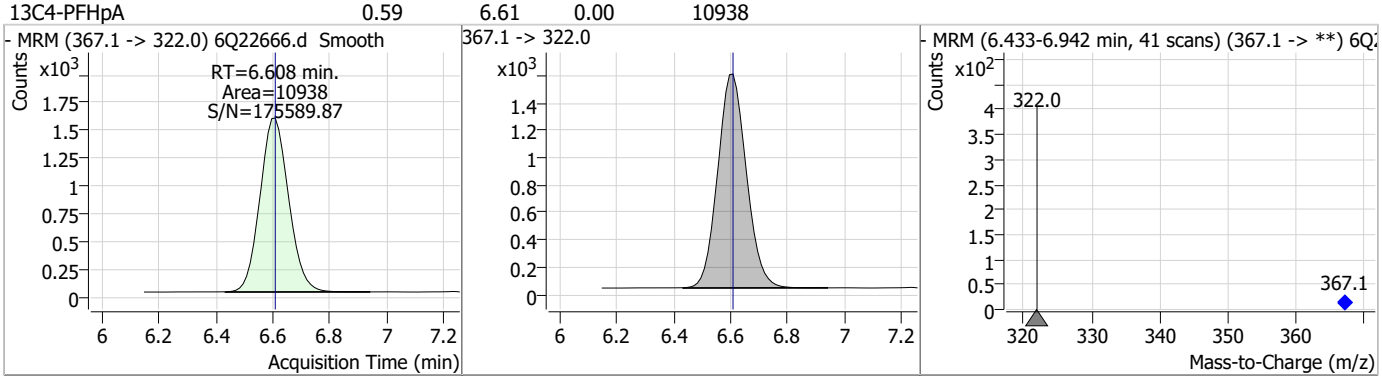
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	0.62	5.67	0.00	11671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.40	6.05	0.00	7096				

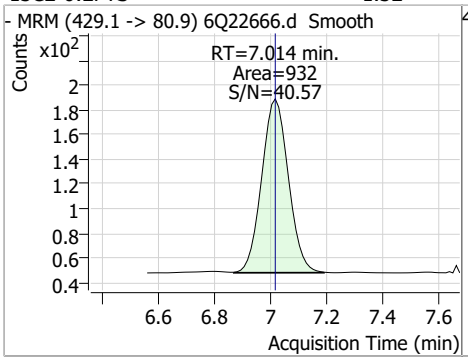


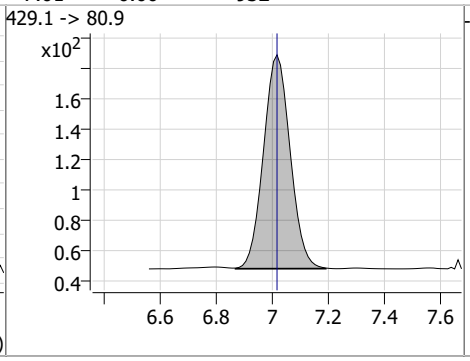
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	0.59	6.61	0.00	10938				

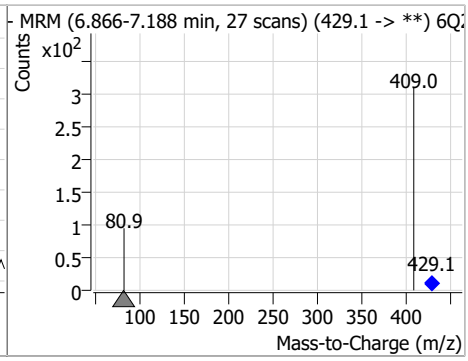


Perfluorinated Compounds by LC/MS/MS

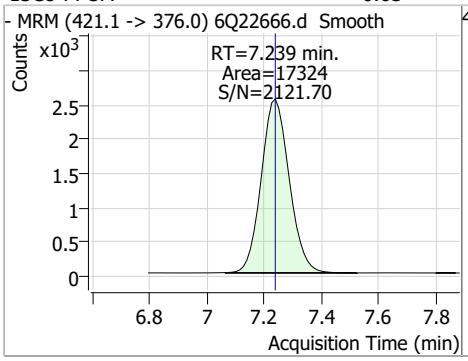
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.32	7.01	0.00	932				

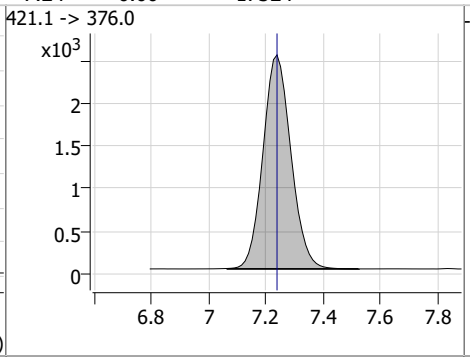


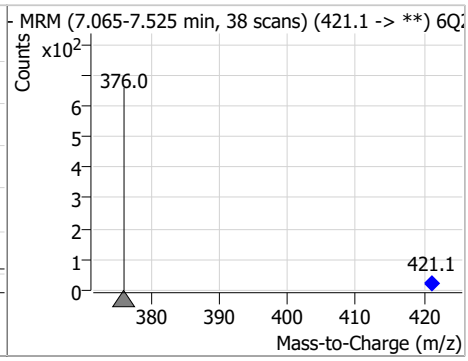




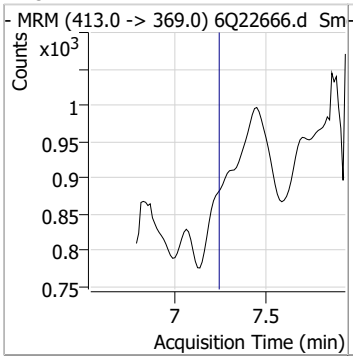
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	0.63	7.24	0.00	17324				

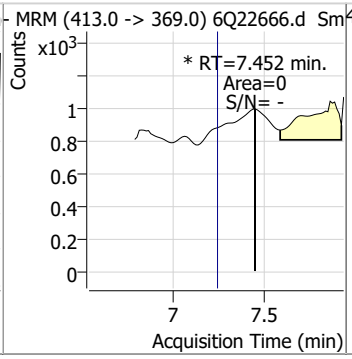


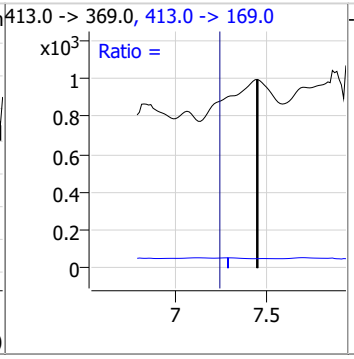


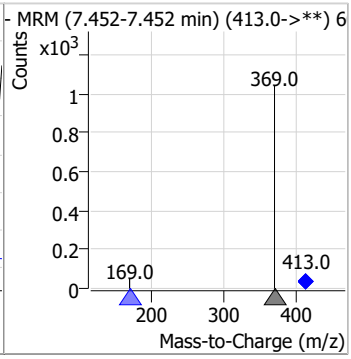


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		8.1	24.3

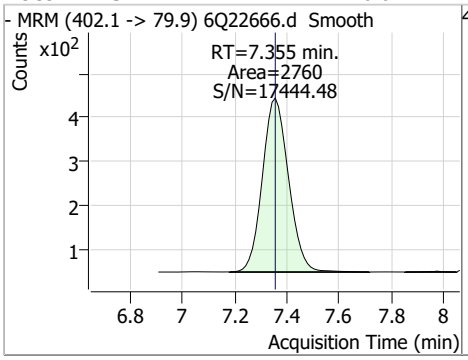


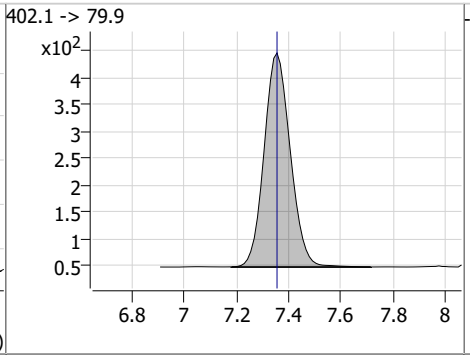


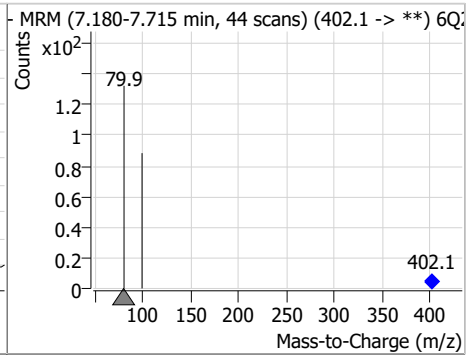




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	0.61	7.35	0.00	2760				

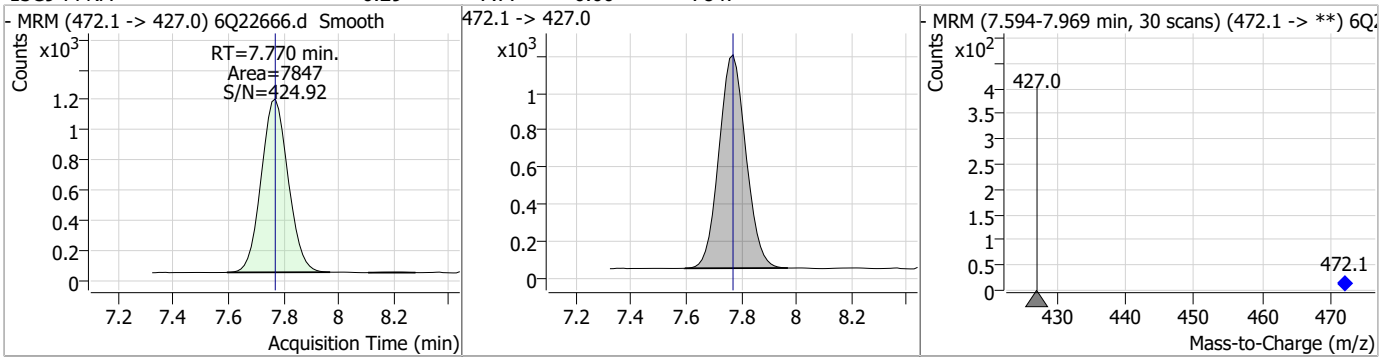




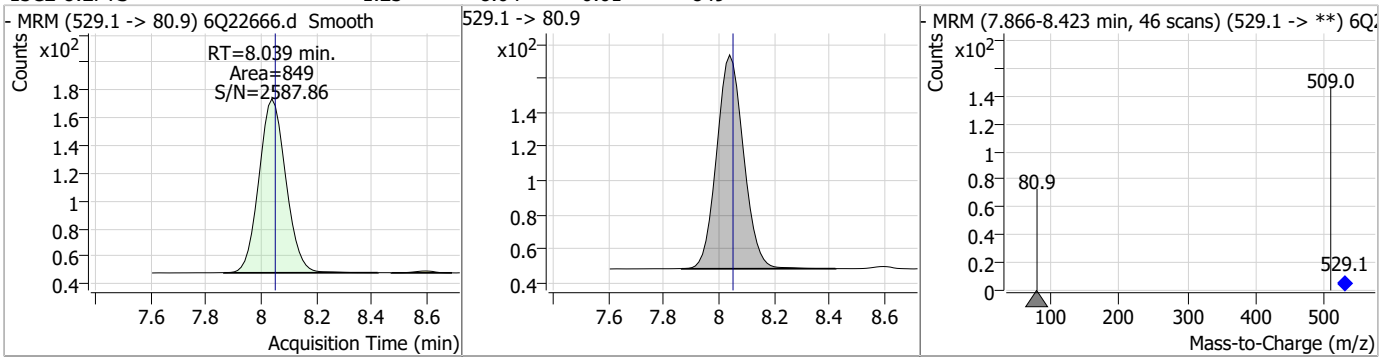


Perfluorinated Compounds by LC/MS/MS

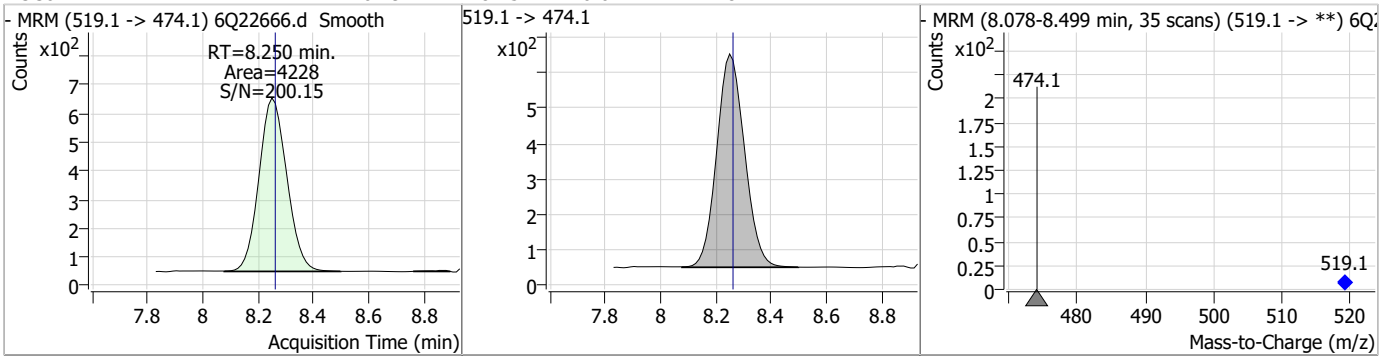
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	0.29	7.77	0.00	7847				



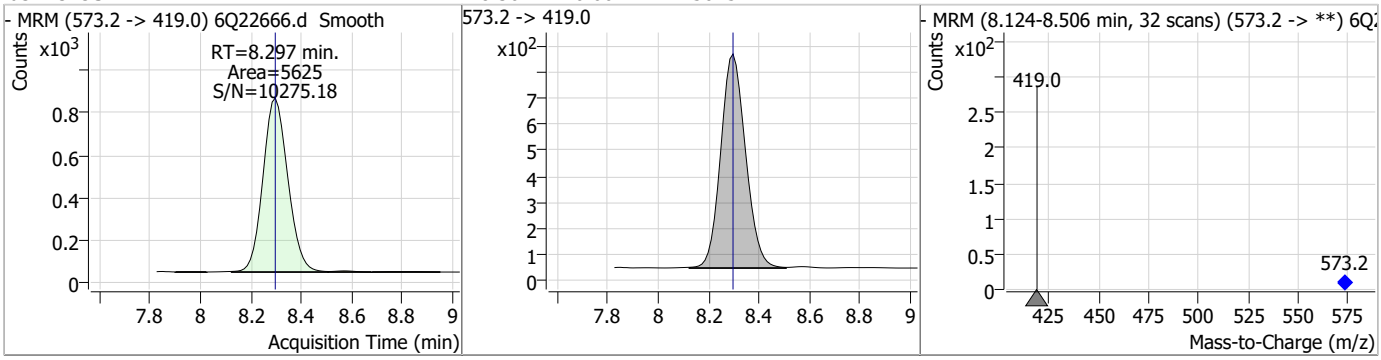
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.23	8.04	-0.01	849				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	0.29	8.25	-0.01	4228				

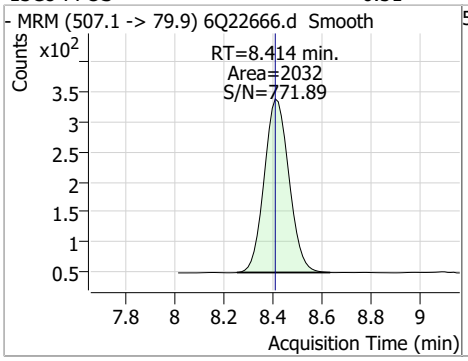


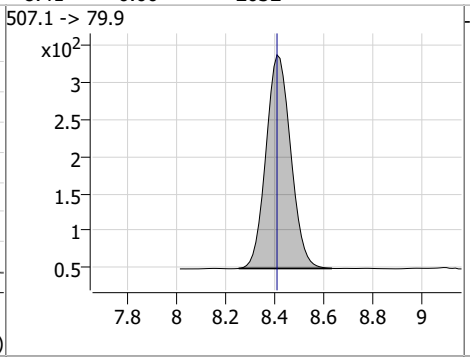
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.14	8.30	0.00	5625				

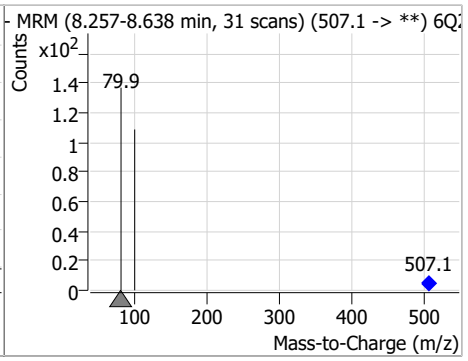


Perfluorinated Compounds by LC/MS/MS

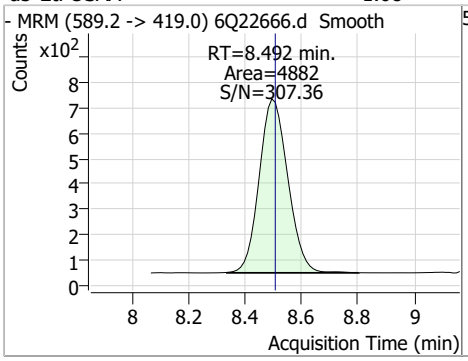
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	0.51	8.41	0.00	2032				

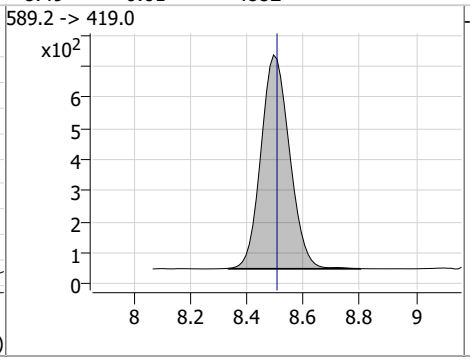


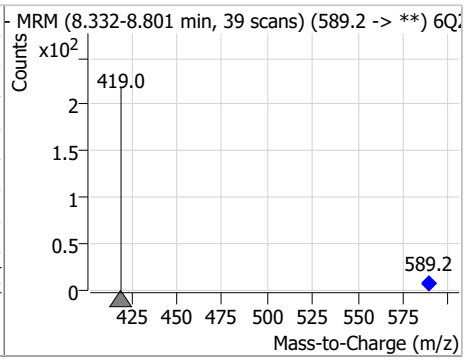




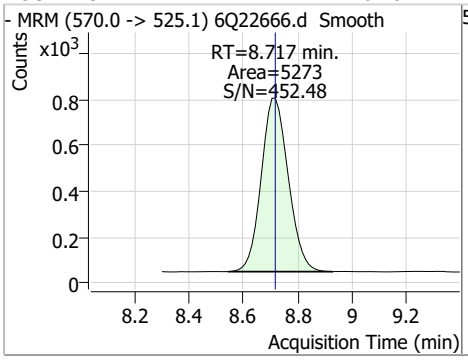
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.08	8.49	-0.01	4882				

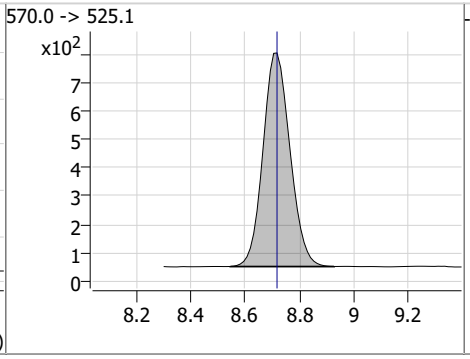


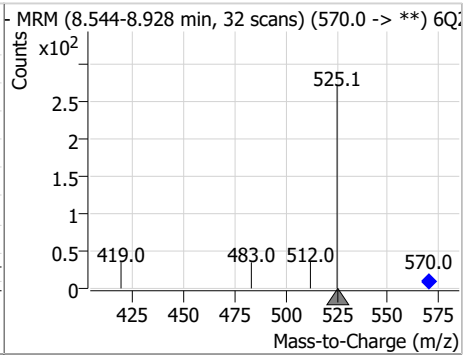




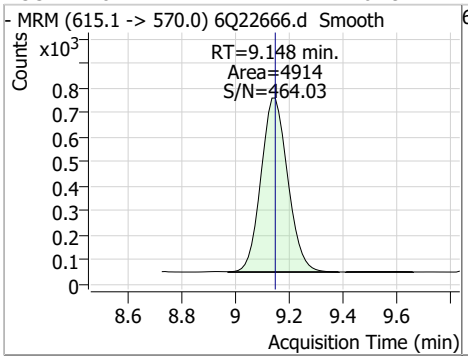
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.28	8.72	0.00	5273				

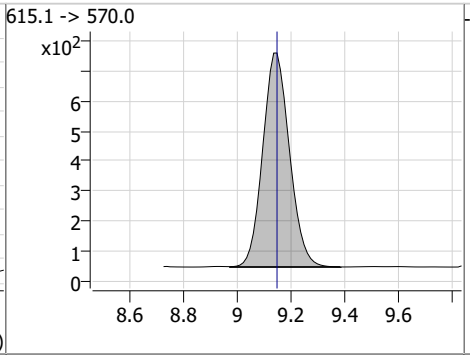


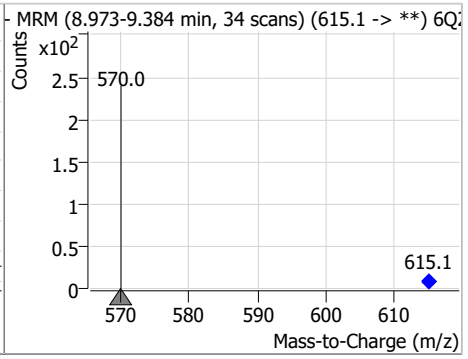




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.29	9.15	0.00	4914				

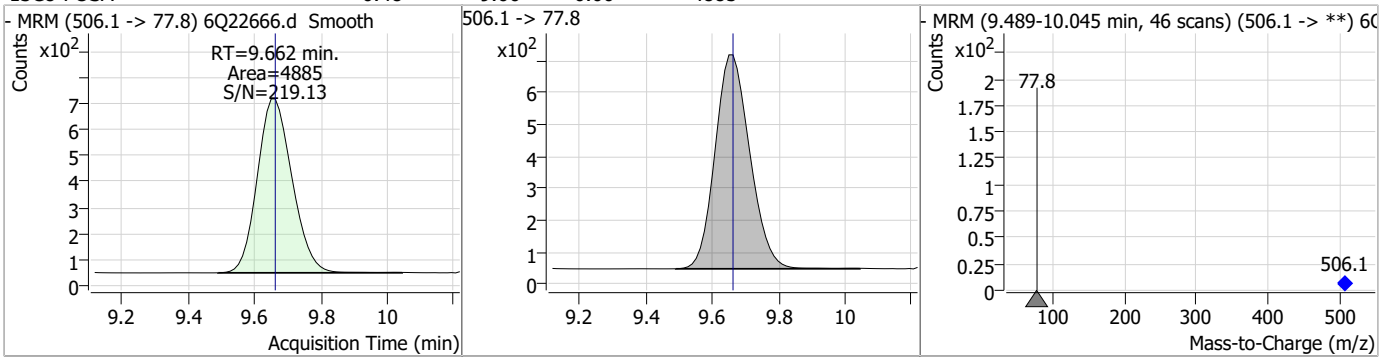




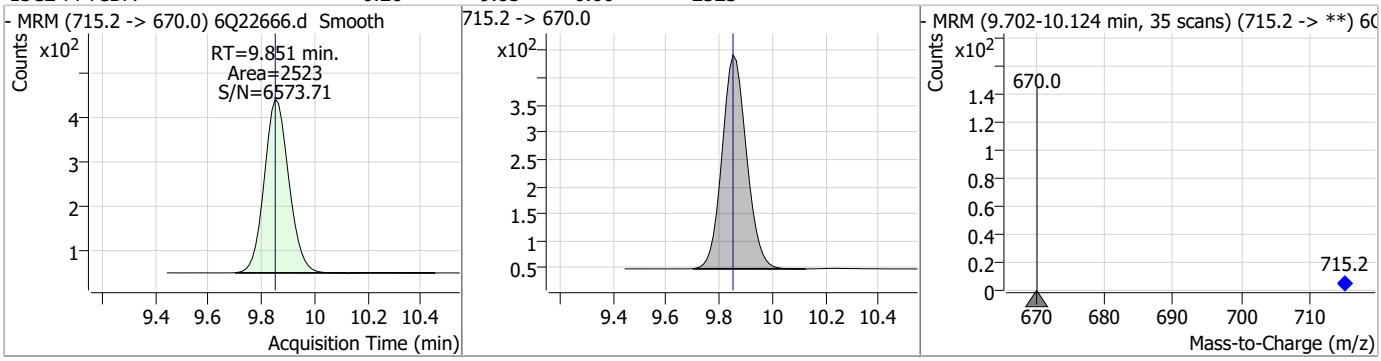


Perfluorinated Compounds by LC/MS/MS

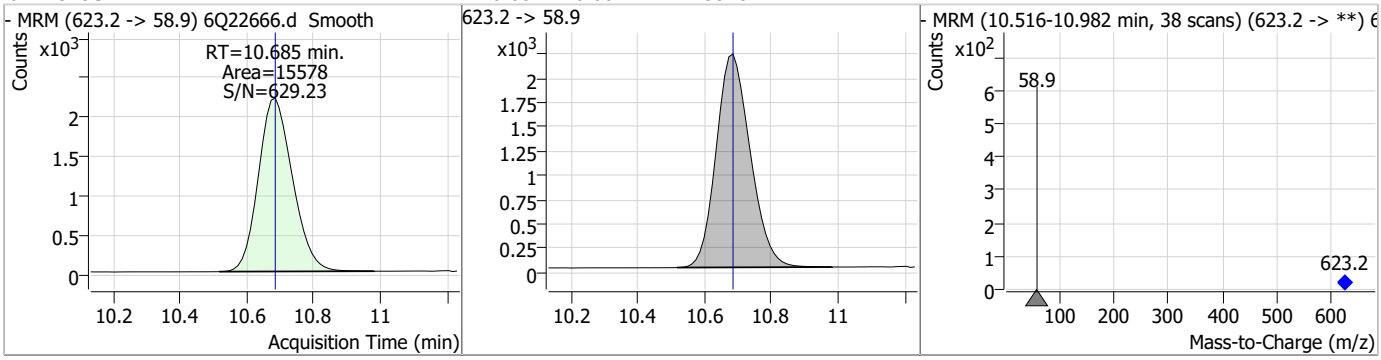
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.48	9.66	0.00	4885				



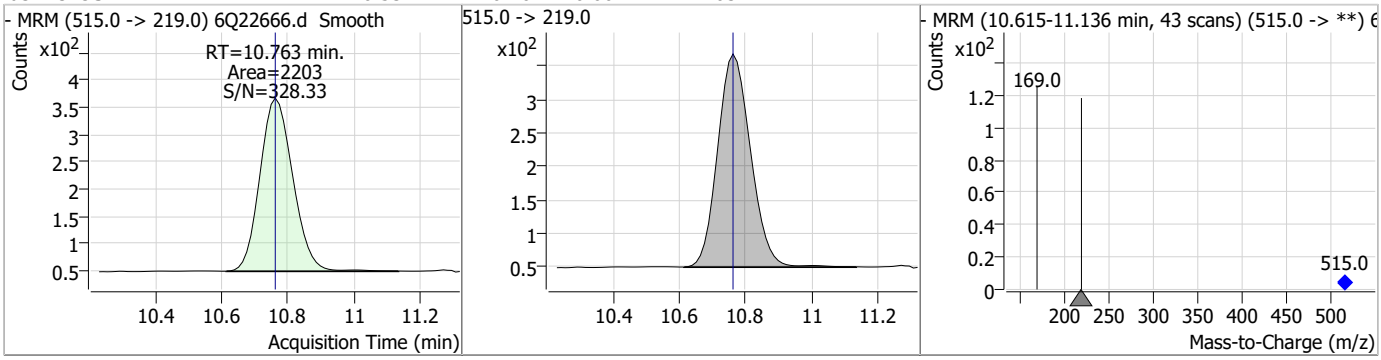
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.26	9.85	0.00	2523				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	4.24	10.68	0.00	15578				

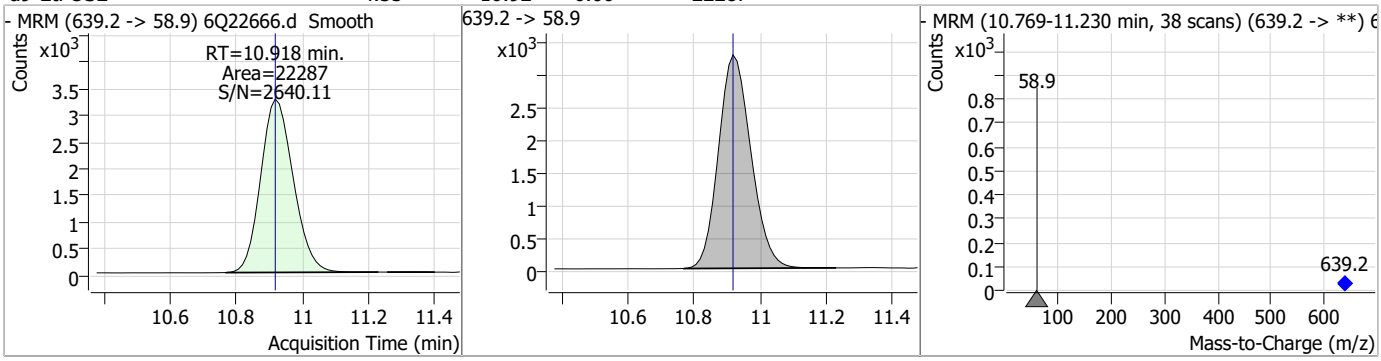


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.53	10.76	0.00	2203				

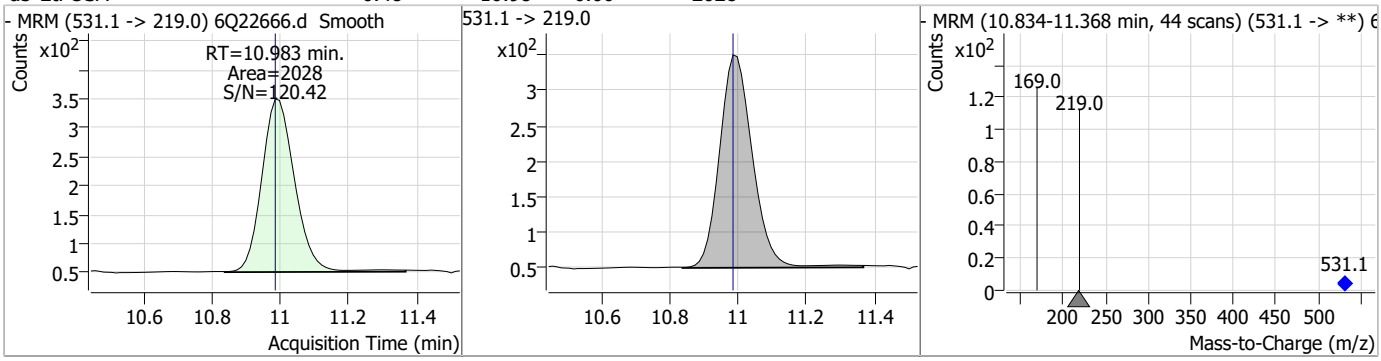


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	4.55	10.92	0.00	22287				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	0.48	10.98	0.00	2028				



Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48789.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 9:30:56 PM
Sample Name : fc8439-3
Vial : P4-D9
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.924	216.8 -> 171.9	89663	10.00	µg/L	0.012
M5-PFPeA	4.425	268.3 -> 223.0	54875	5.00	µg/L	0.012
M5-PFHxA	5.634	318.0 -> 273.0	39007	2.50	µg/L	0.025
M4-PFHpA	6.593	367.1 -> 322.0	27902	2.50	µg/L	0.037
M8-PFOA	7.251	421.1 -> 376.0	44217	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	19026	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	14440	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	17112	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	16890	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	11476	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	10852	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9332	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6359	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8811	2.50	µg/L	0.025
M2-4:2FTS	5.321	329.1 -> 80.9	791	5.00	µg/L	0.025
M2-6:2FTS	7.023	429.1 -> 80.9	1566	5.00	µg/L	0.025
M2-8:2FTS	8.104	529.1 -> 80.9	2421	5.00	µg/L	0.039
M3-MeFOSAA	8.373	573.2 -> 419.0	15625	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	29473	10.00	µg/L	0.025
M5-EtFOSAA	8.584	589.2 -> 419.0	14113	5.00	µg/L	0.037
M7-MeFOSE	11.084	623.2 -> 58.9	46253	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	69064	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	7471	2.50	µg/L	0.025
M3-MeFOSA	11.189	515.0 -> 219.0	7176	2.50	µg/L	0.037
13C4-PFOS	8.443	502.8 -> 79.9	7728	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	48462	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	4047	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	44667	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	13671	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	19673	1.25	µg/L	0.025
13C2-PFHxA	5.635	315.1 -> 270.0	29136	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.321	329.1 -> 80.9	791	7.82	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 156.5%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1566	8.11	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 162.1%		
13C2-8:2FTS	8.104	529.1 -> 80.9	2421	8.25	µg/L	0.039
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 165.1%		
13C2-PFDoDA	9.205	615.1 -> 570.0	16890	1.44	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.4%		
13C2-PFTeDA	9.974	715.2 -> 670.0	11476	1.22	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C3-PFBS	5.502	302.1 -> 79.9	9332	2.71	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C3-PFHxS	7.342	402.1 -> 79.9	6359	2.84	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 = 113.5%	
13C4-PFBA	2.924	216.8 -> 171.9	89663	10.82 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C4-PFHpA	6.593	367.1 -> 322.0	27902	3.21 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 128.6%	
13C5-PFHxA	5.634	318.0 -> 273.0	39007	3.19 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.8%	
13C5-PFPeA	4.425	268.3 -> 223.0	54875	5.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C6-PFDA	8.303	519.1 -> 474.1	14440	1.53 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.1%	
13C7-PFUnDA	8.773	570.0 -> 525.1	17112	1.61 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 128.5%	
13C8-FOSA	9.919	506.1 -> 77.8	10852	2.25 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.0%	
13C8-PFOA	7.251	421.1 -> 376.0	44217	3.01 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.3%	
13C8-PFOS	8.442	507.1 -> 79.9	8811	2.84 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.5%	
13C9-PFNA	7.810	472.1 -> 427.0	19026	1.28 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.373	573.2 -> 419.0	15625	5.45 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	29473	10.62 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d3-MeFOSA	11.189	515.0 -> 219.0	7176	2.53 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
d5-EtFOSAA	8.584	589.2 -> 419.0	14113	5.98 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.7%	
d7-MeFOSE	11.084	623.2 -> 58.9	46253	20.38 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.5%	
d9-EtFOSE	11.356	639.2 -> 58.9	69064	21.70 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.8%	
d5-EtFOSA	11.447	531.1 -> 219.0	7471	2.29 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
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	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

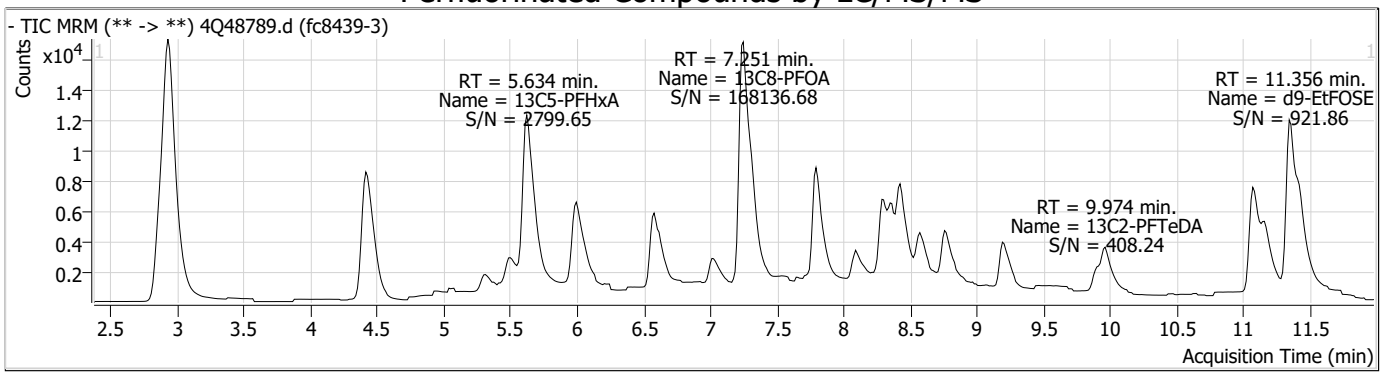
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.957	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.109	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	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	4.919	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	9.539	713.1 -> 669.0	0		µg/L	m	1
		713.1 -> 168.9	0				
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

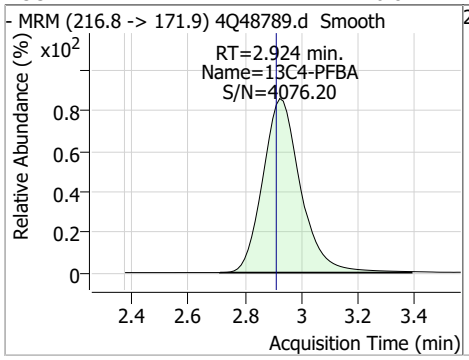
Perfluorinated Compounds by LC/MS/MS

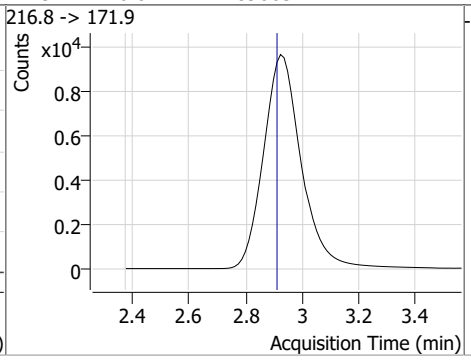
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

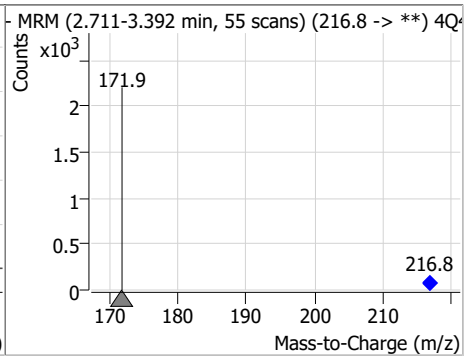
Perfluorinated Compounds by LC/MS/MS



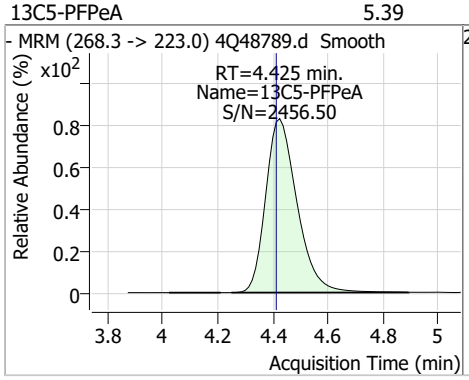
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.82	2.92	0.01	89663				

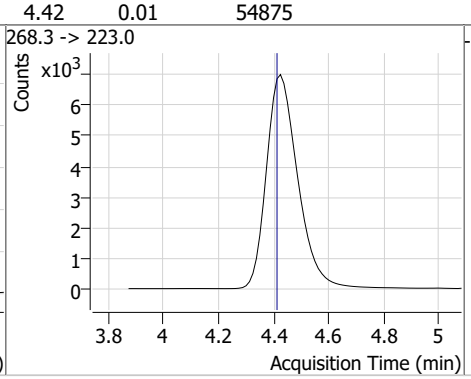


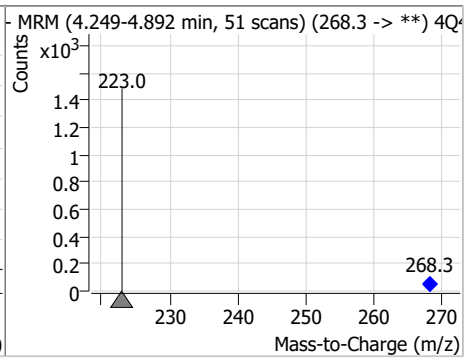




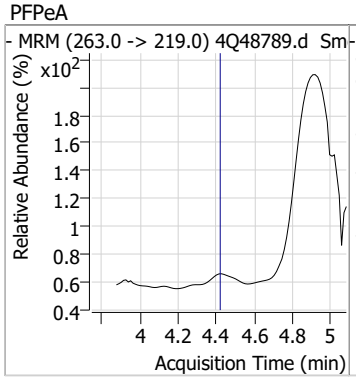
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.39	4.42	0.01	54875				

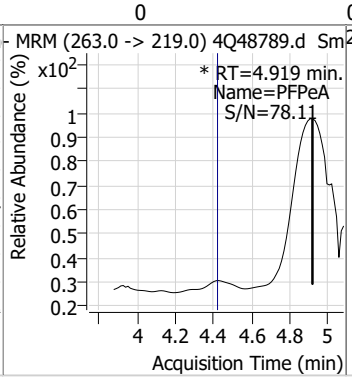


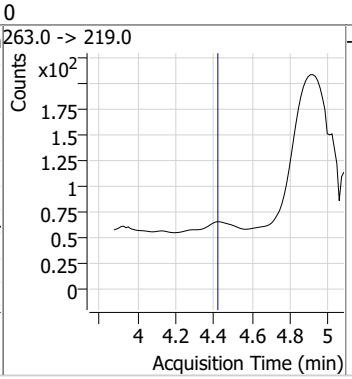


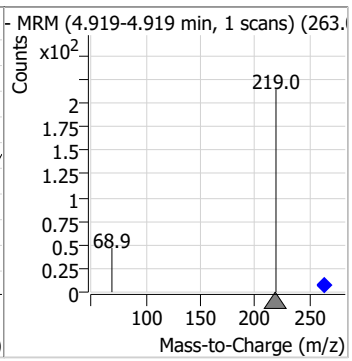


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



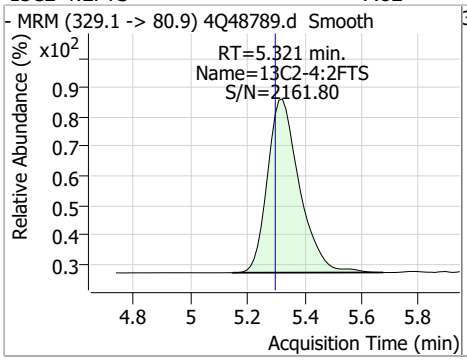


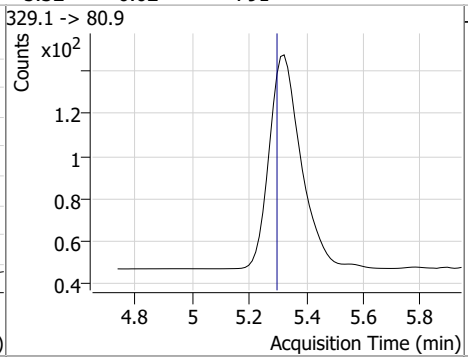


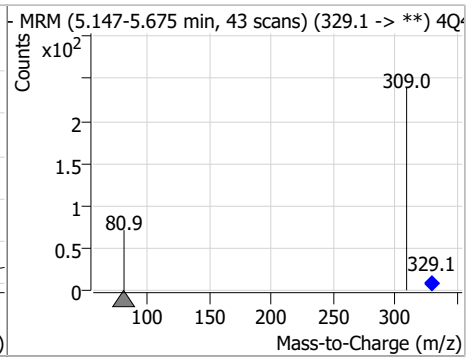


Perfluorinated Compounds by LC/MS/MS

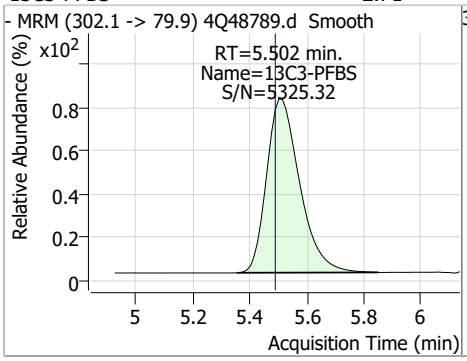
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.82	5.32	0.02	791				

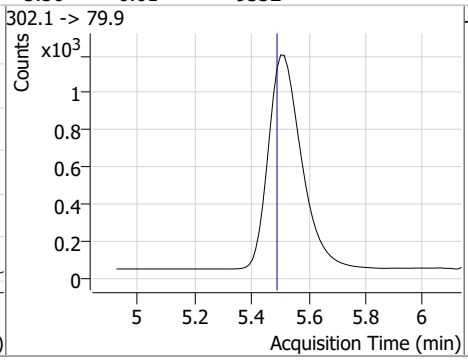


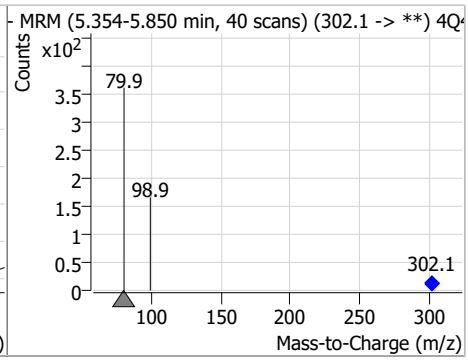




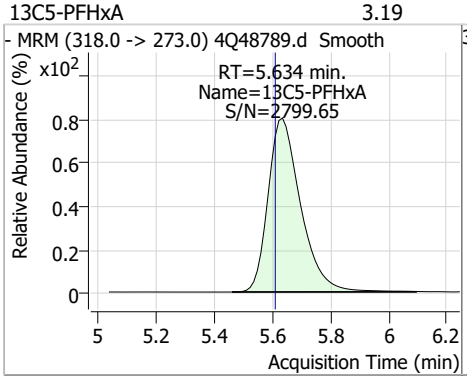
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.71	5.50	0.01	9332				

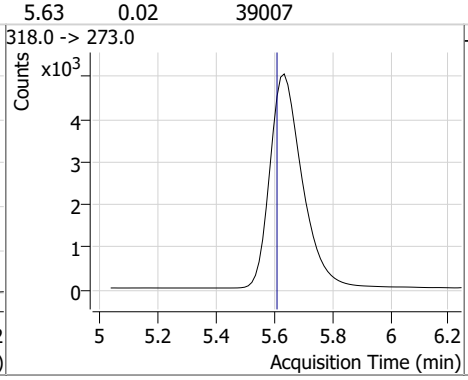


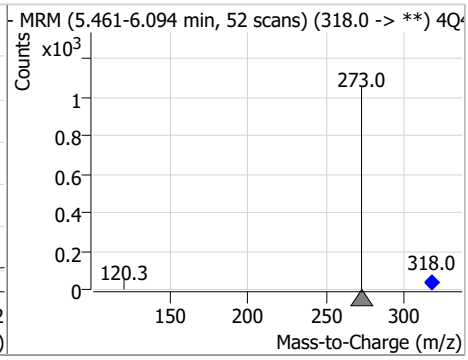




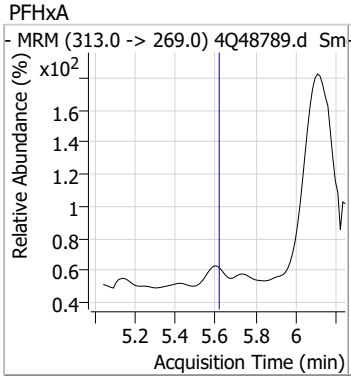
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.19	5.63	0.02	39007				

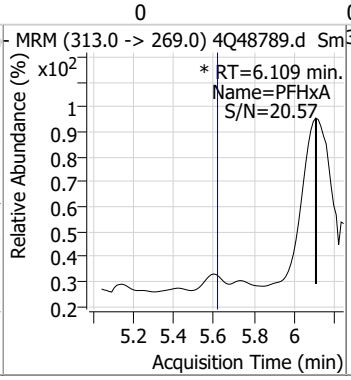


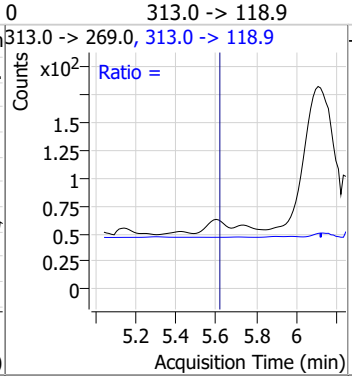


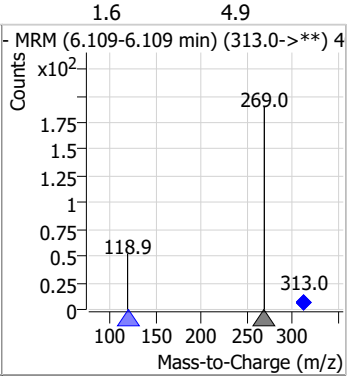


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



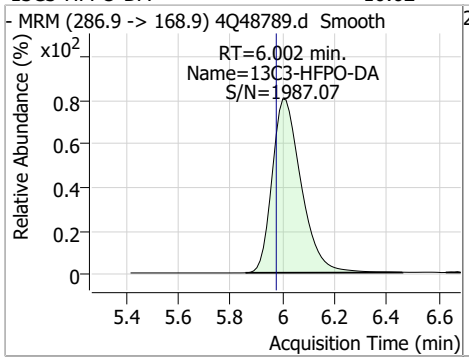


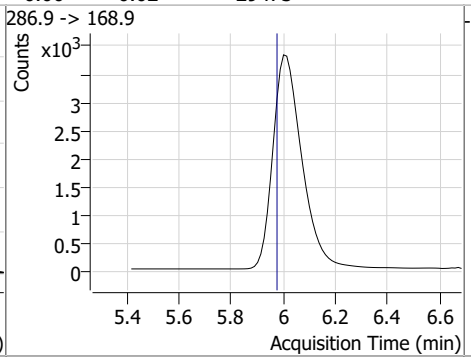


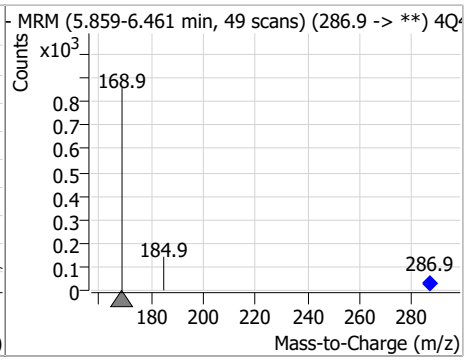


Perfluorinated Compounds by LC/MS/MS

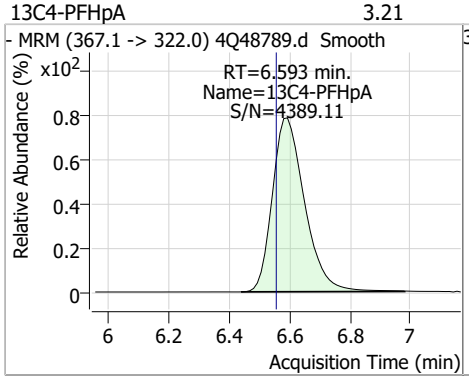
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.62	6.00	0.02	29473				

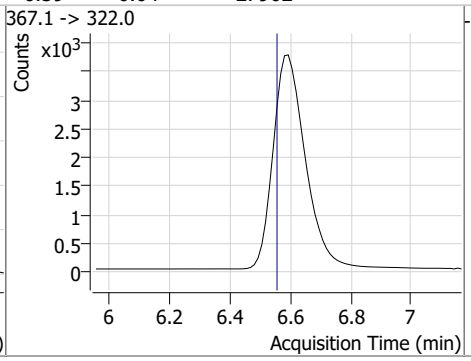


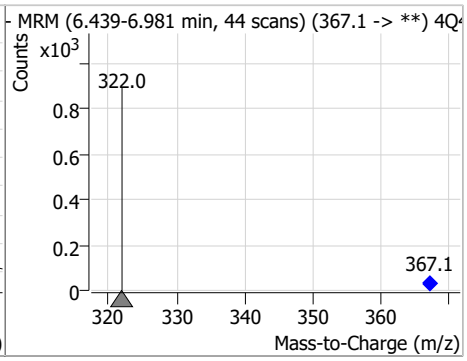




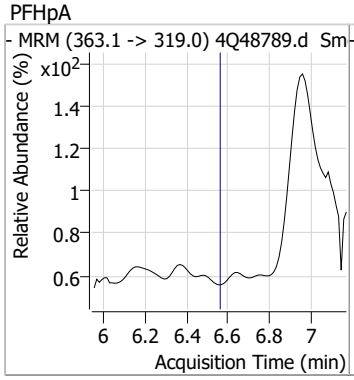
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.21	6.59	0.04	27902				

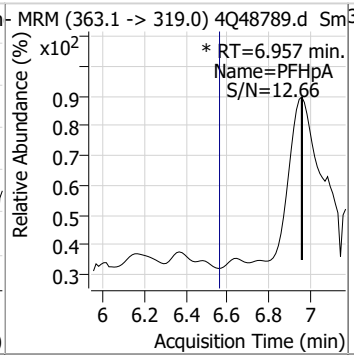


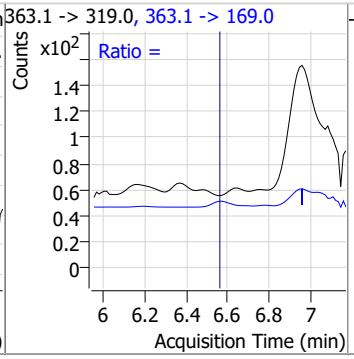


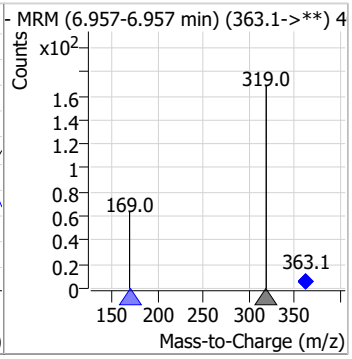


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

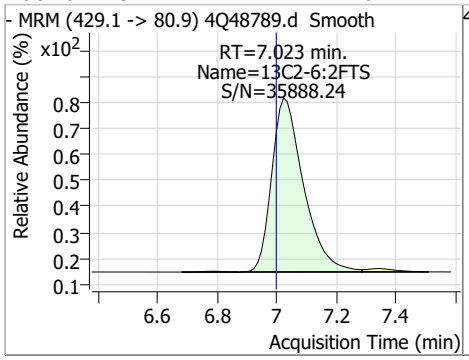


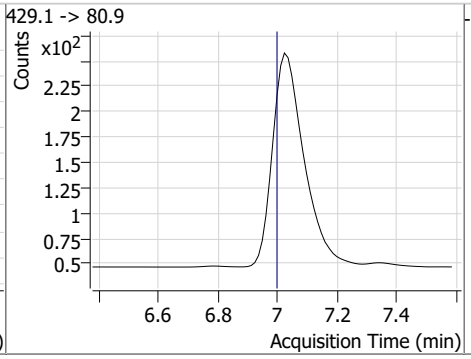


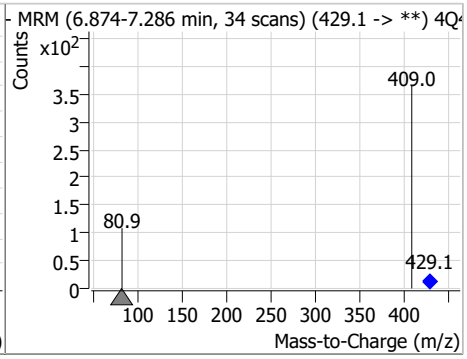




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.11	7.02	0.02	1566				

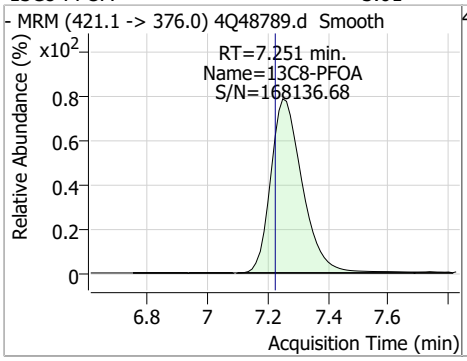


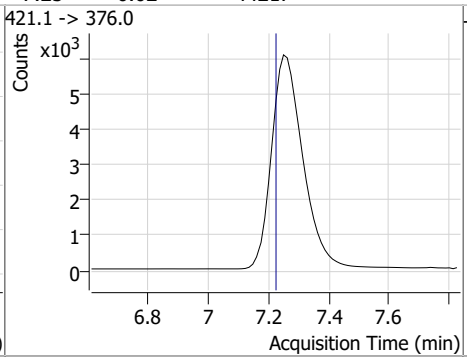


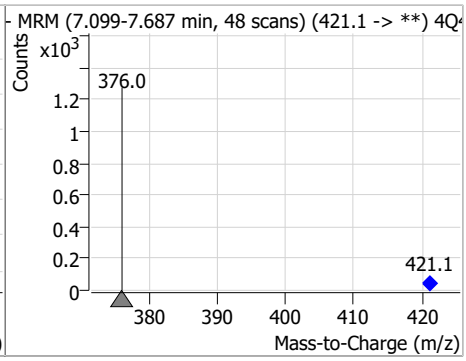


Perfluorinated Compounds by LC/MS/MS

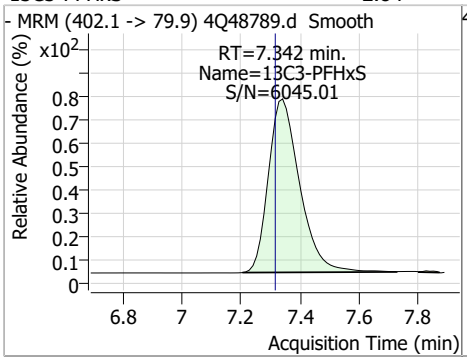
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.01	7.25	0.02	44217				

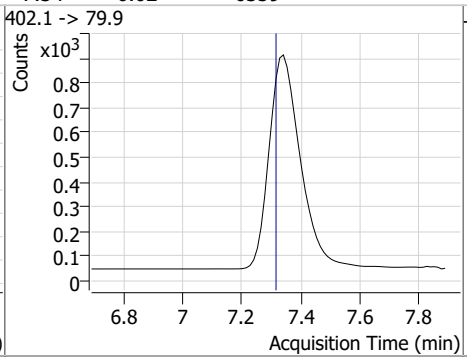


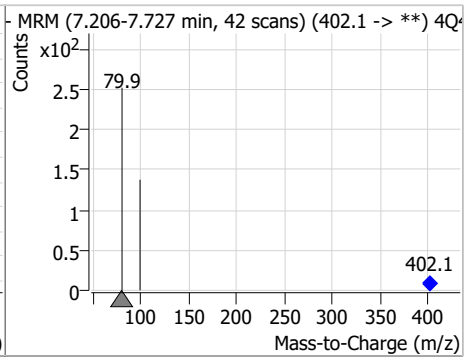




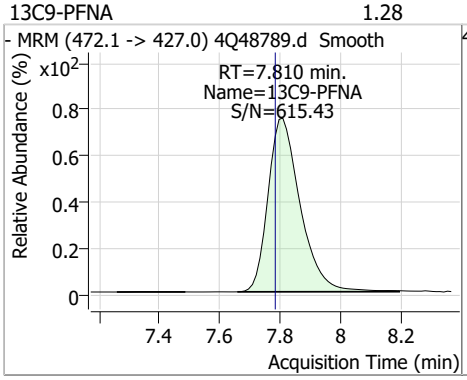
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.84	7.34	0.02	6359				

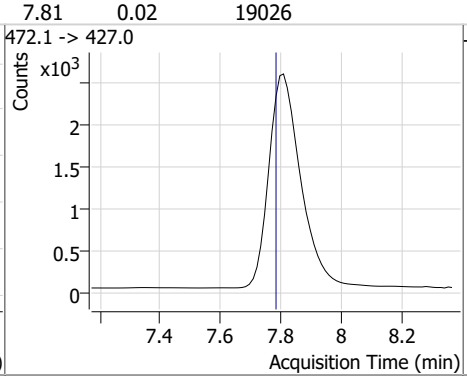


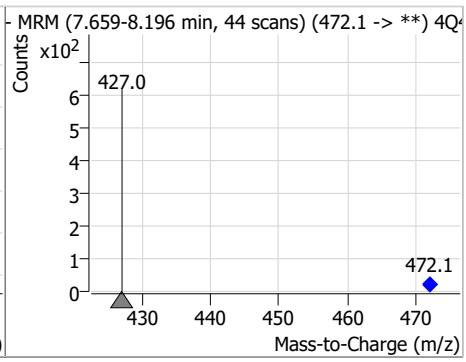




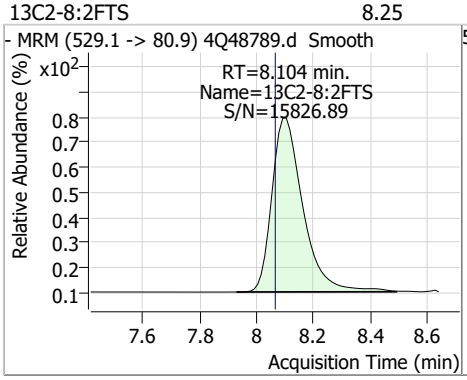
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.81	0.02	19026				

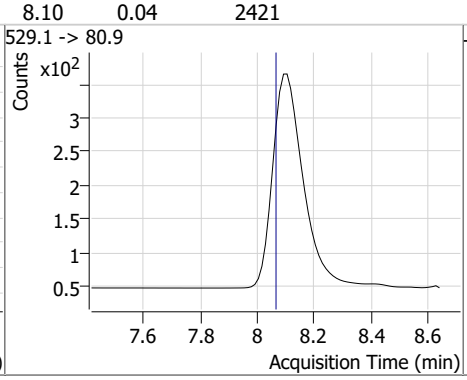


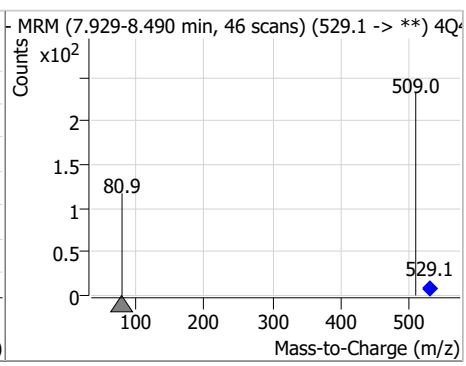




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.25	8.10	0.04	2421				

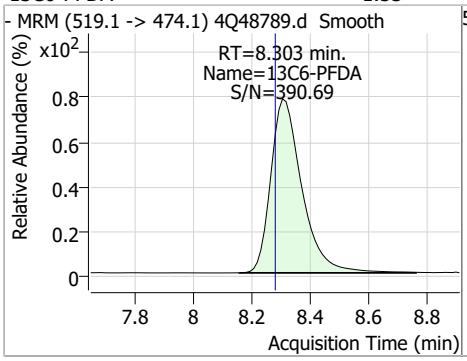


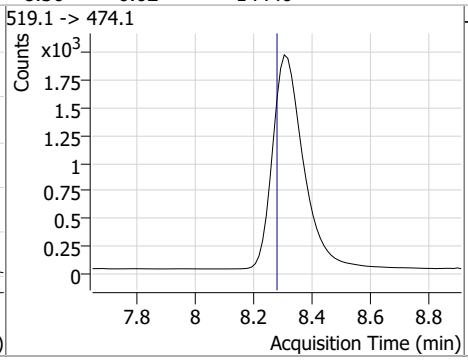


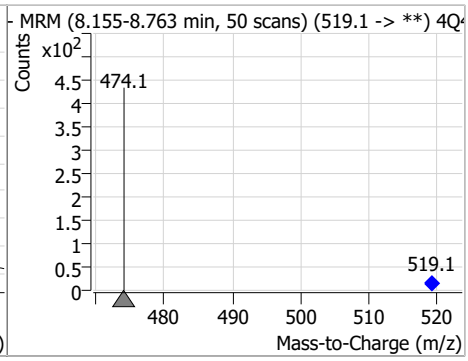


Perfluorinated Compounds by LC/MS/MS

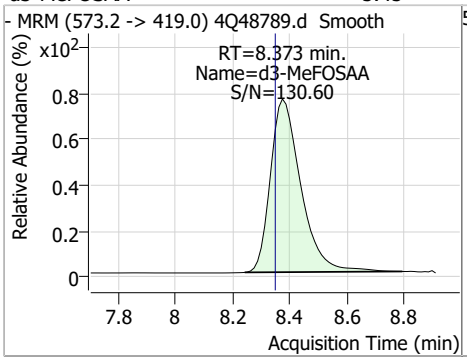
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.53	8.30	0.02	14440				

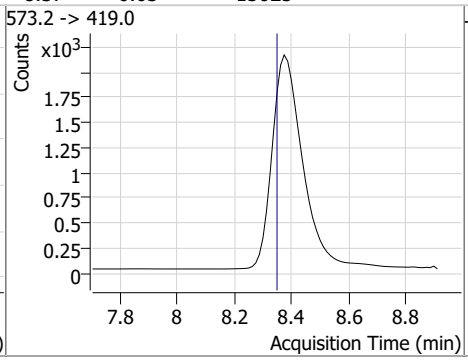


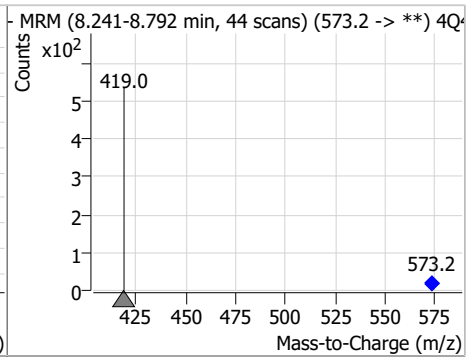




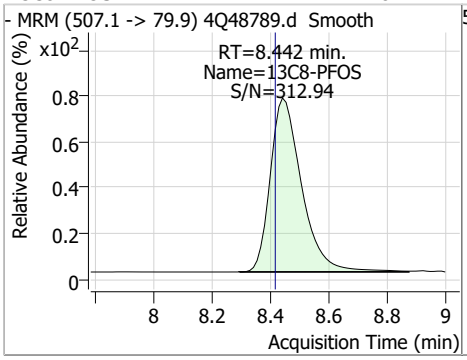
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.45	8.37	0.03	15625				

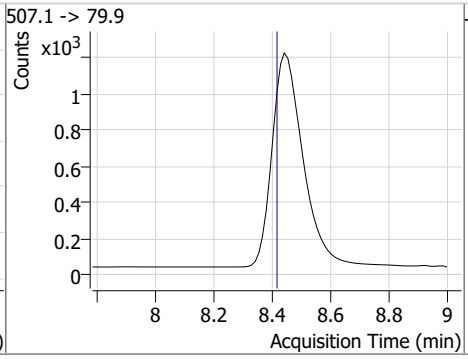


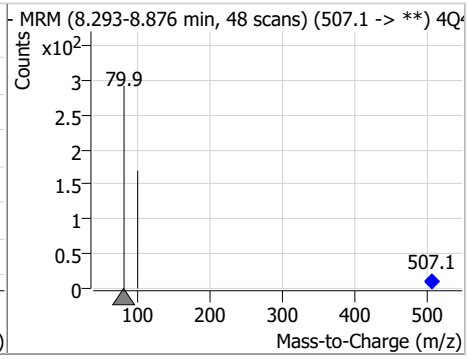




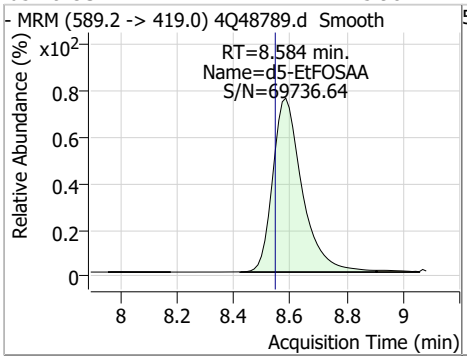
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.84	8.44	0.02	8811				

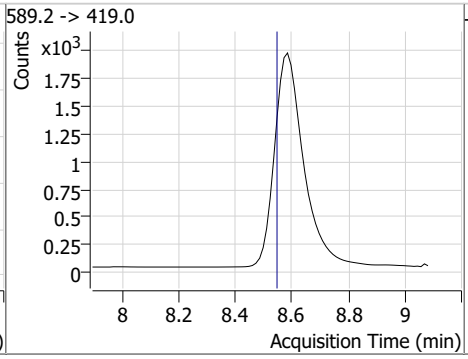


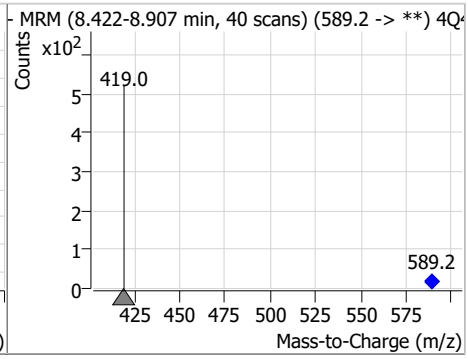




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.98	8.58	0.04	14113				

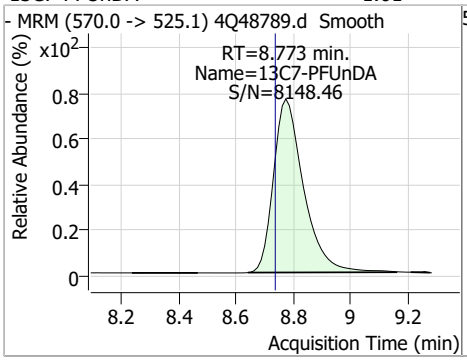


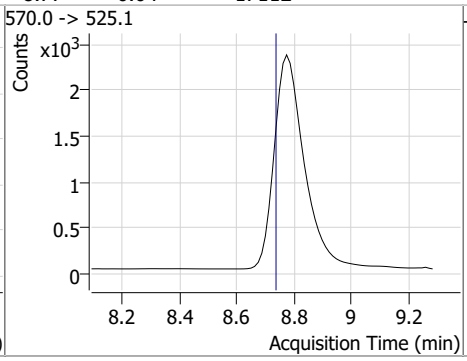


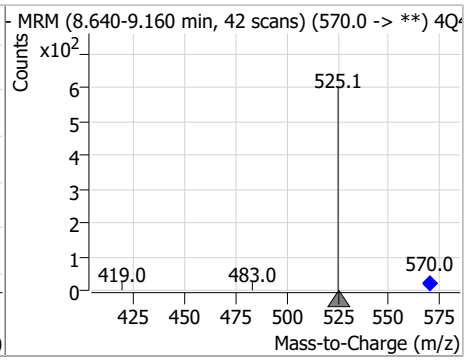


Perfluorinated Compounds by LC/MS/MS

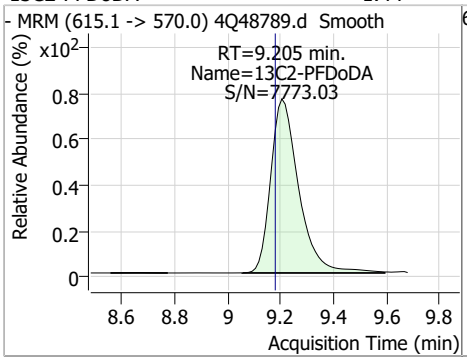
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.61	8.77	0.04	17112				

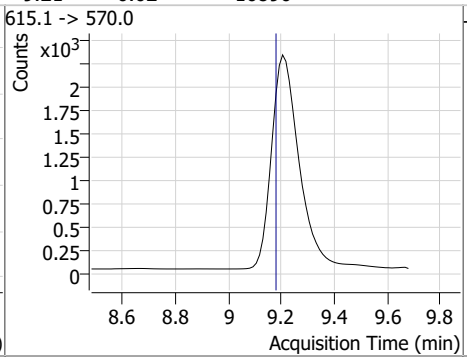


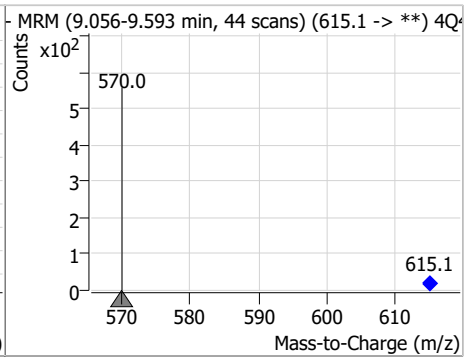




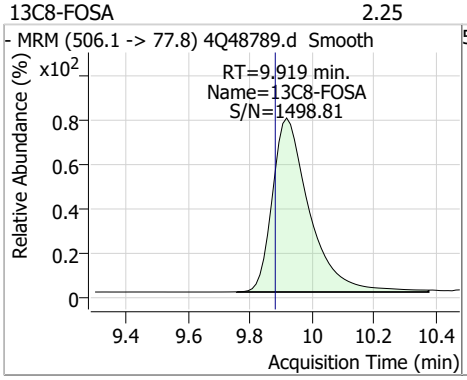
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.44	9.21	0.02	16890				

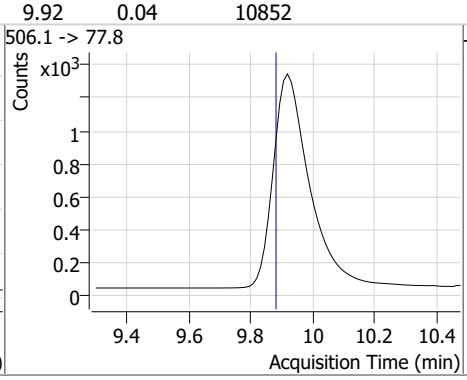


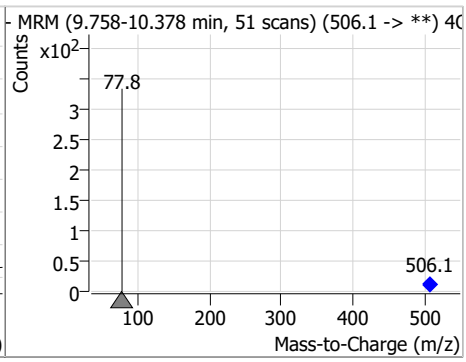




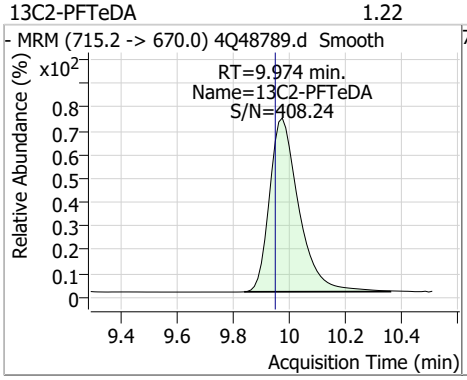
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.25	9.92	0.04	10852				

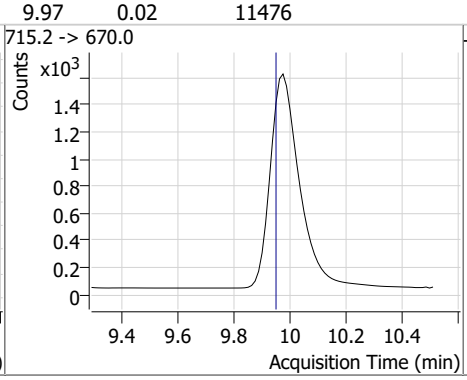


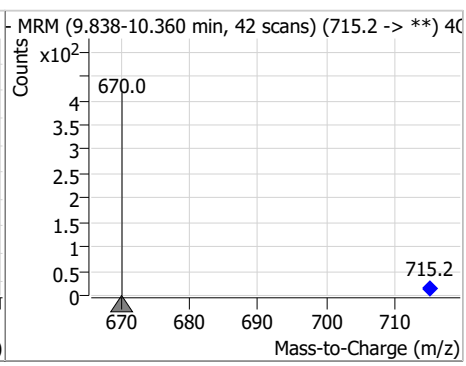




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.97	0.02	11476				

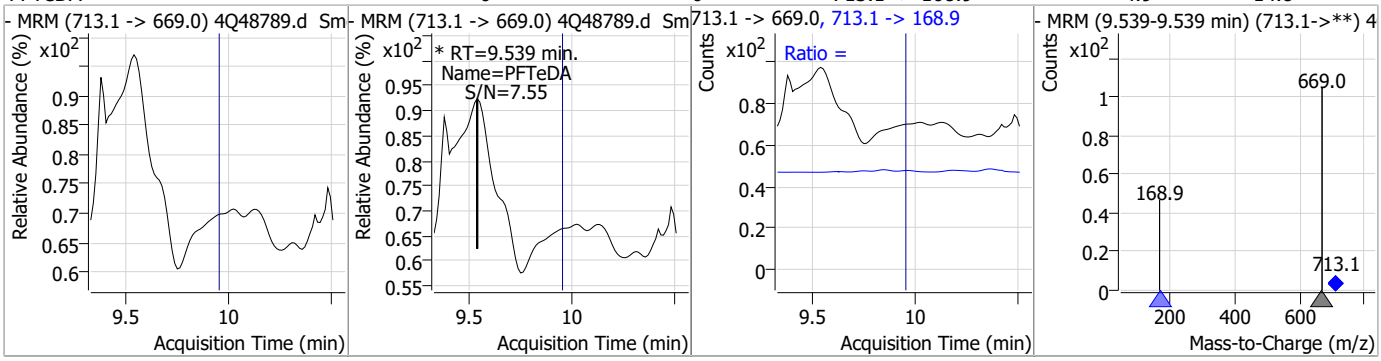




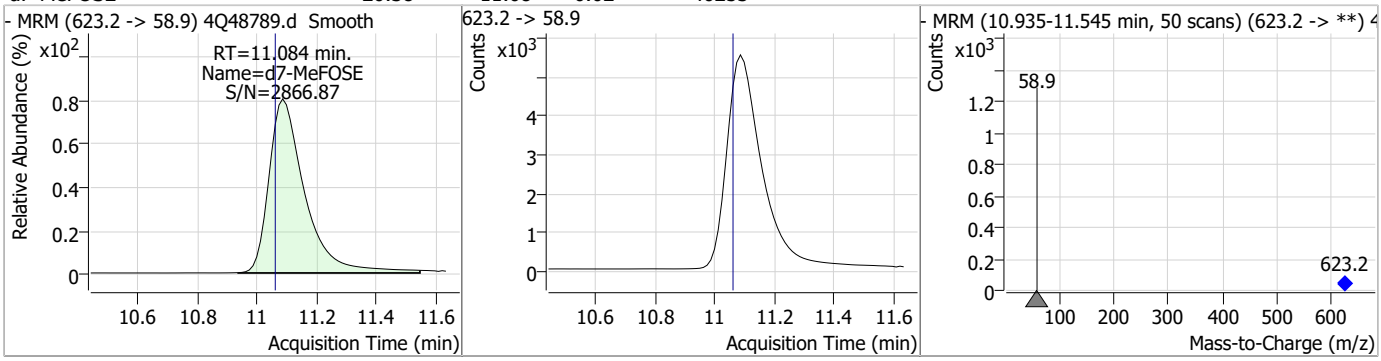


Perfluorinated Compounds by LC/MS/MS

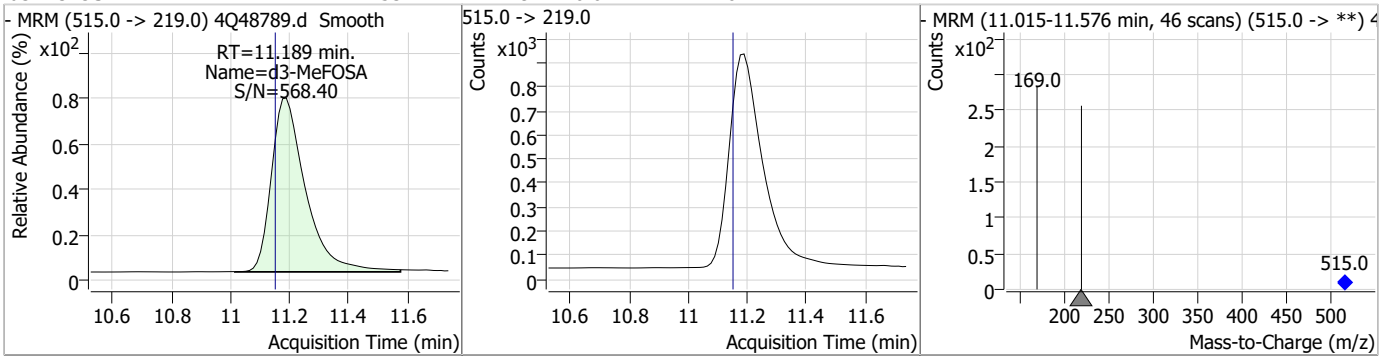
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA		0		0	713.1 -> 168.9		4.9	14.8



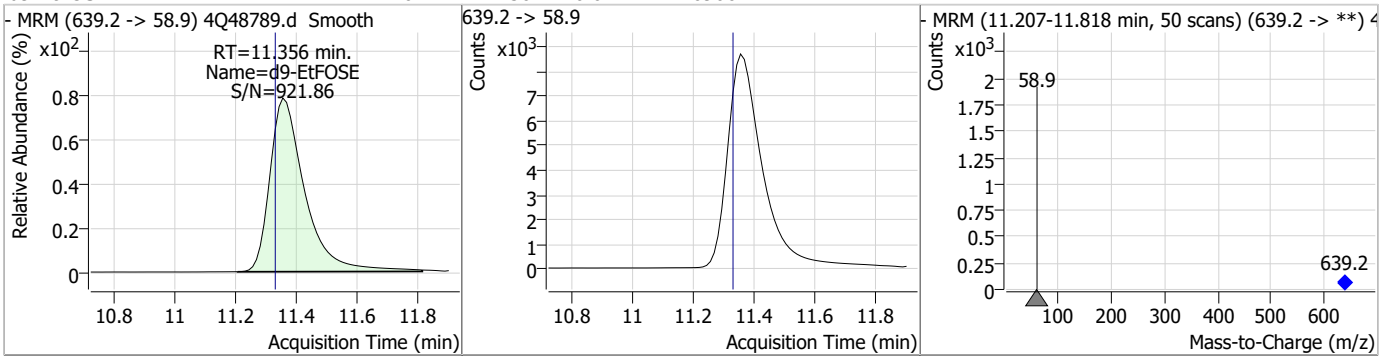
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.38	11.08	0.02	46253				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	11.19	0.04	7176				

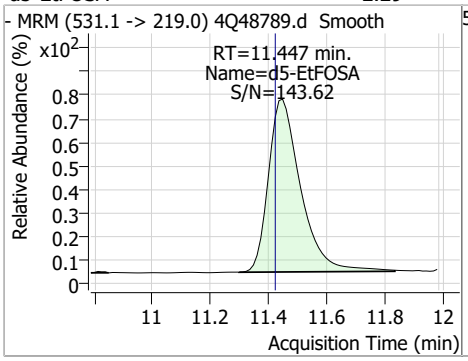


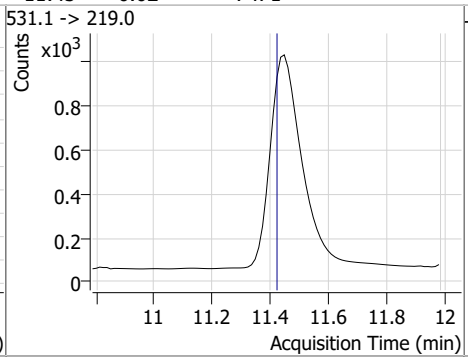
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.70	11.36	0.02	69064				

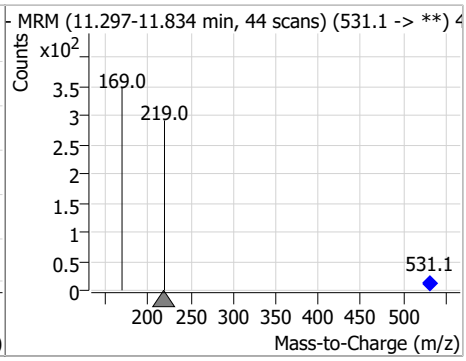


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.45	0.02	7471				







Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48791.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 10:00:25 PM
Sample Name : fc8439-4
Vial : P4-E2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.924	216.8 -> 171.9	42115	10.00	µg/L	0.012
M5-PFPeA	4.412	268.3 -> 223.0	41211	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	40547	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	30561	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	45701	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	20609	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	15078	1.25	µg/L	0.025
M7-PFUnDA	8.760	570.0 -> 525.1	18204	1.25	µg/L	0.025
M2-PFDoDA	9.193	615.1 -> 570.0	16907	1.25	µg/L	0.012
M2-PFTeDA	9.961	715.2 -> 670.0	10500	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	12046	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	9192	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6067	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8554	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	1222	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	2052	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2530	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	18201	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	25919	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	15808	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	44900	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	67645	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	6924	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	6632	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	7117	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	25747	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	3787	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	47002	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	13847	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	20500	1.25	µg/L	0.025
13C2-PFHxA	5.623	315.1 -> 270.0	29588	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	1222	12.91	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 258.2%		
13C2-6:2FTS	7.023	429.1 -> 80.9	2052	11.35	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 227.0%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2530	9.22	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 184.3%		
13C2-PFDoDA	9.193	615.1 -> 570.0	16907	1.43	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.0%		
13C2-PFTeDA	9.961	715.2 -> 670.0	10500	1.10	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C3-PFBS	5.502	302.1 -> 79.9	9192	2.85	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.1%		
13C3-PFHxS	7.342	402.1 -> 79.9	6067	2.89	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 = 115.7%	
13C4-PFBA	2.924	216.8 -> 171.9	42115	9.57 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFHpA	6.580	367.1 -> 322.0	30561	3.47 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 138.7%	
13C5-PFHxA	5.622	318.0 -> 273.0	40547	3.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 130.8%	
13C5-PFPeA	4.412	268.3 -> 223.0	41211	3.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 79.7%	
13C6-PFDA	8.303	519.1 -> 474.1	15078	1.57 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 125.9%	
13C7-PFUnDA	8.760	570.0 -> 525.1	18204	1.69 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 134.9%	
13C8-FOSA	9.907	506.1 -> 77.8	12046	2.71 µg/L	0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C8-PFOA	7.251	421.1 -> 376.0	45701	2.95 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C8-PFOS	8.442	507.1 -> 79.9	8554	2.99 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.7%	
13C9-PFNA	7.810	472.1 -> 427.0	20609	1.33 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
d3-MeFOSAA	8.373	573.2 -> 419.0	18201	6.89 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 137.8%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	25919	9.20 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSA	11.176	515.0 -> 219.0	6632	2.54 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
d5-EtFOSAA	8.571	589.2 -> 419.0	15808	7.28 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 145.6%	
d7-MeFOSE	11.072	623.2 -> 58.9	44900	21.48 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.9%	
d9-EtFOSE	11.356	639.2 -> 58.9	67645	23.08 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
d5-EtFOSA	11.435	531.1 -> 219.0	6924	2.30 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	7.024	427.1 -> 407.0	585	0.34 µg/L	95
		427.1 -> 80.9	190		
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	3.071	212.8 -> 168.9	0	µg/L m	1
PFBS	4.941	298.7 -> 79.9	0	µg/L m	1
		298.7 -> 98.8	0		
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDoDA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

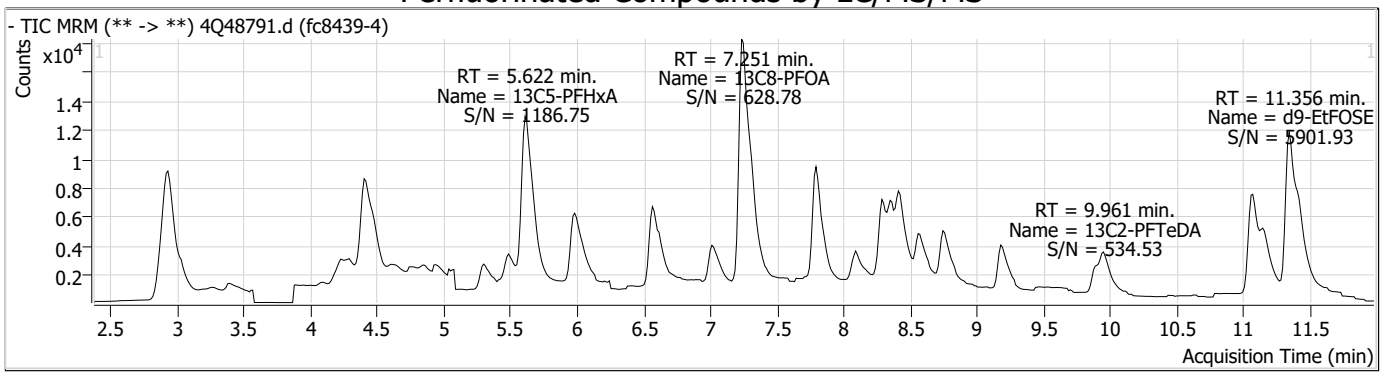
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.264	413.0 -> 369.0	1864	0.10	µg/L		81
		413.0 -> 169.0	203				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	4.489	263.0 -> 219.0	0		µg/L	m	1
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	11.770	630.0 -> 58.9	0		µg/L	m	1
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

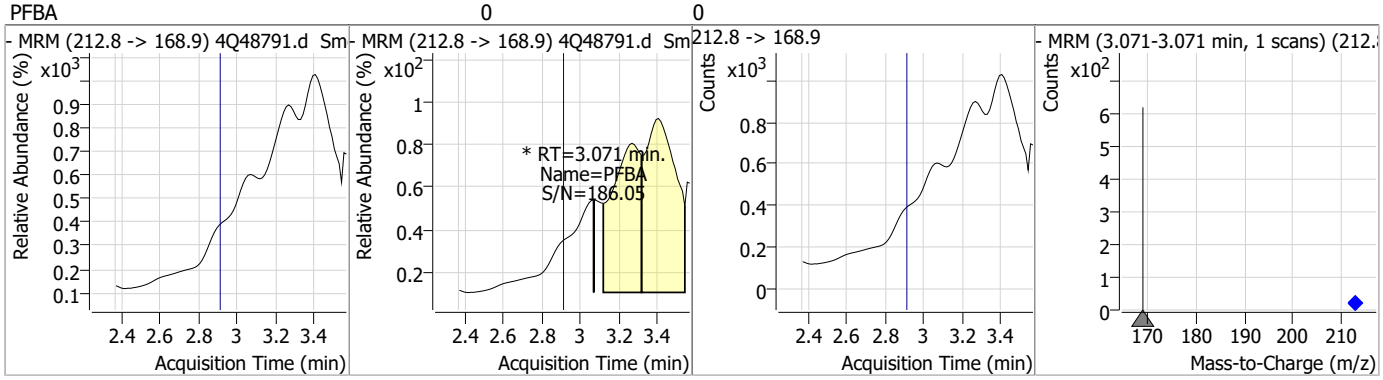
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

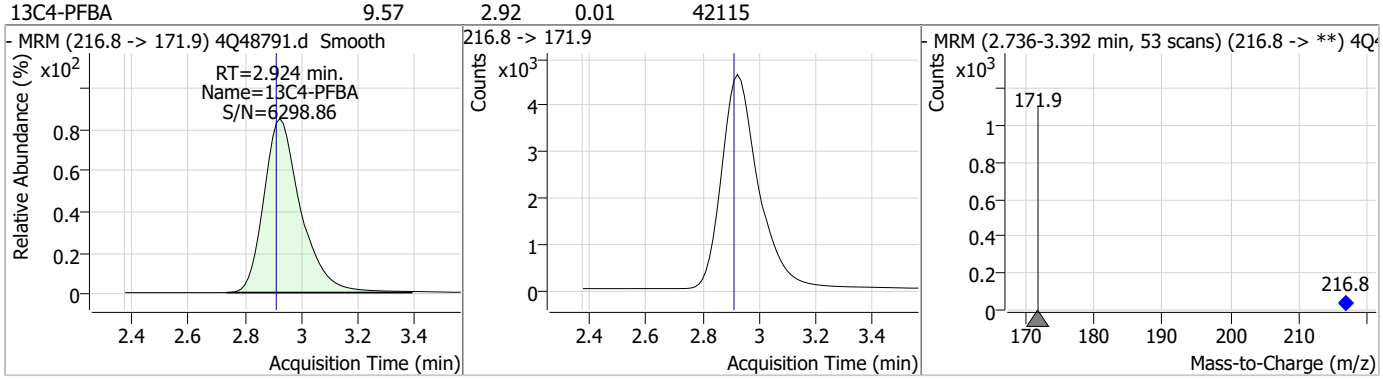
Perfluorinated Compounds by LC/MS/MS



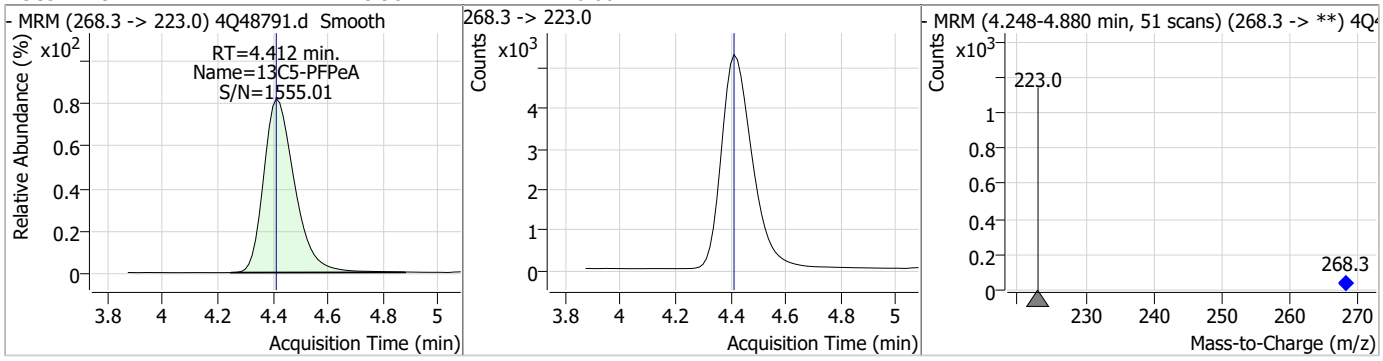
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.57	2.92	0.01	42115				

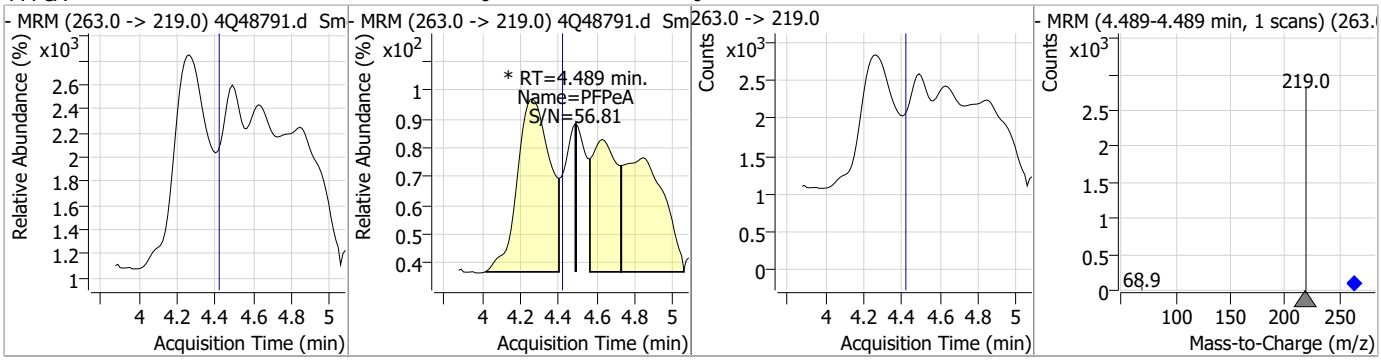


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.98	4.41	0.00	41211				

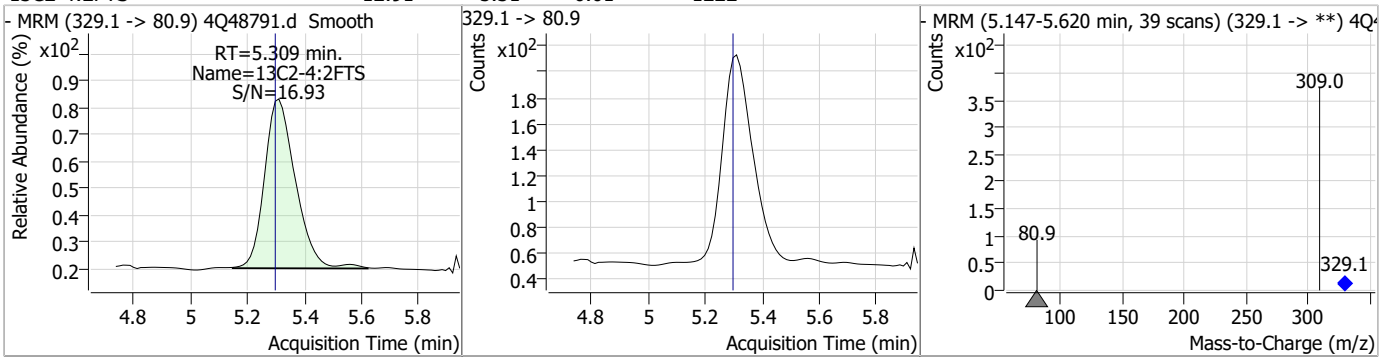


Perfluorinated Compounds by LC/MS/MS

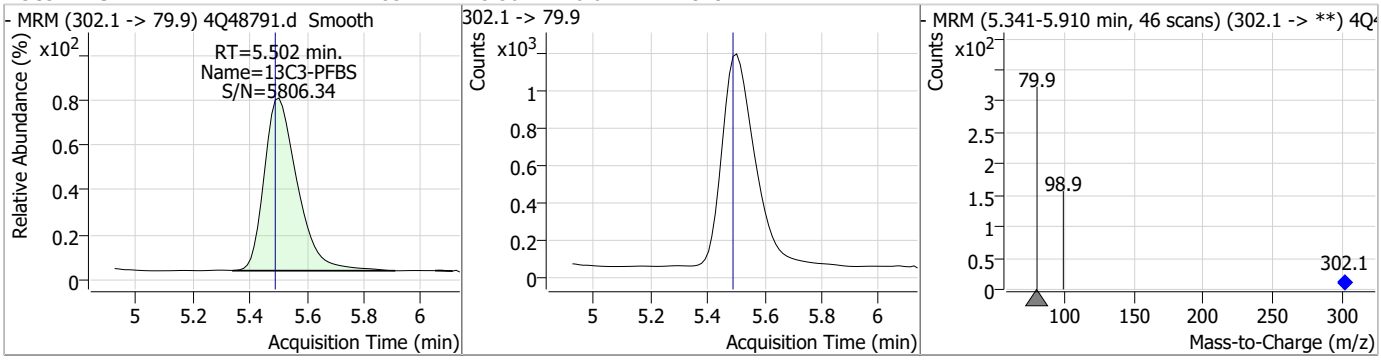
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



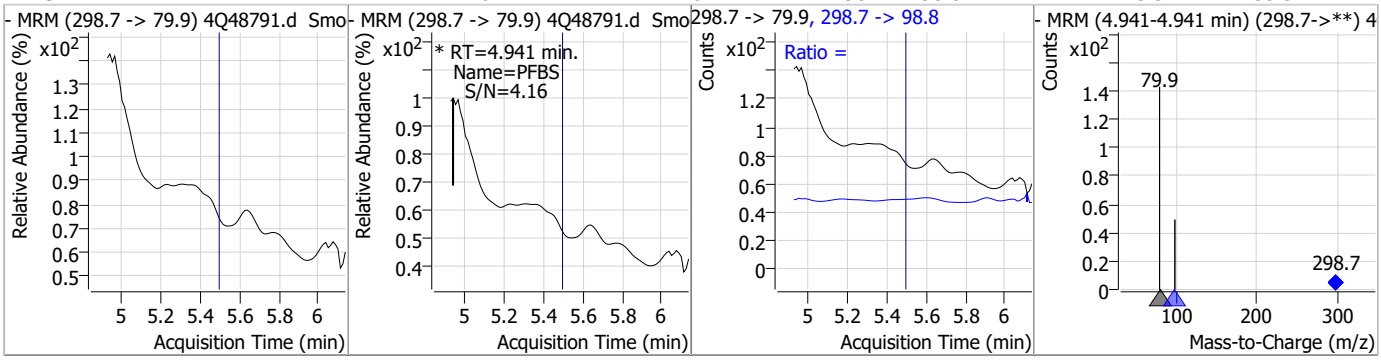
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.91	5.31	0.01	1222				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.85	5.50	0.01	9192				

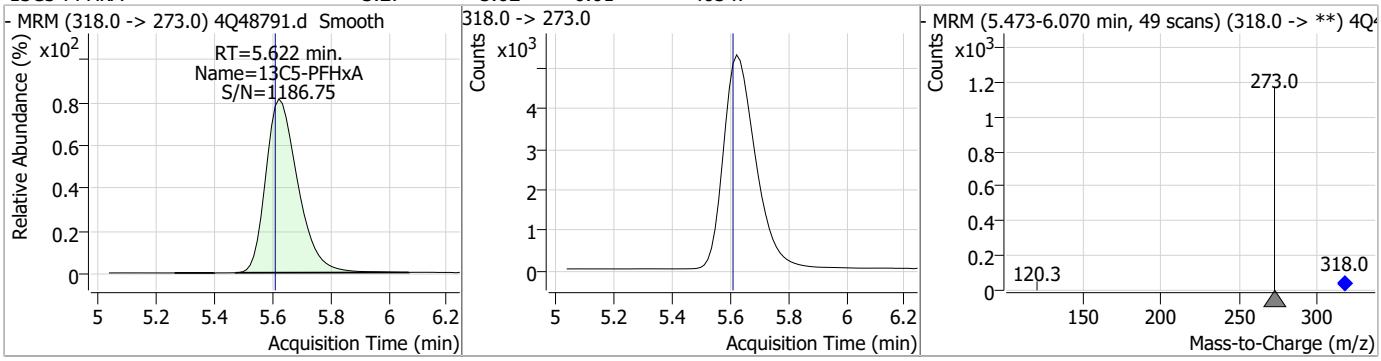


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	298.7 -> 98.8		18.5	55.5

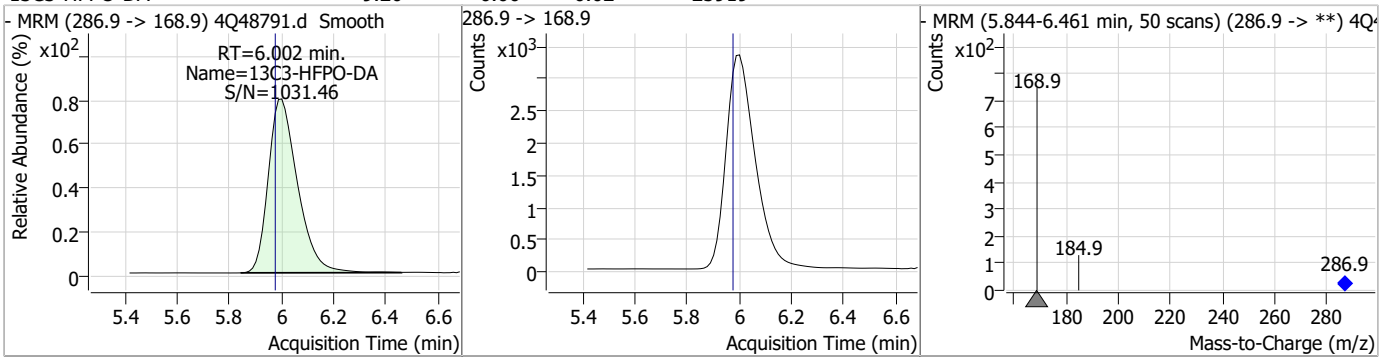


Perfluorinated Compounds by LC/MS/MS

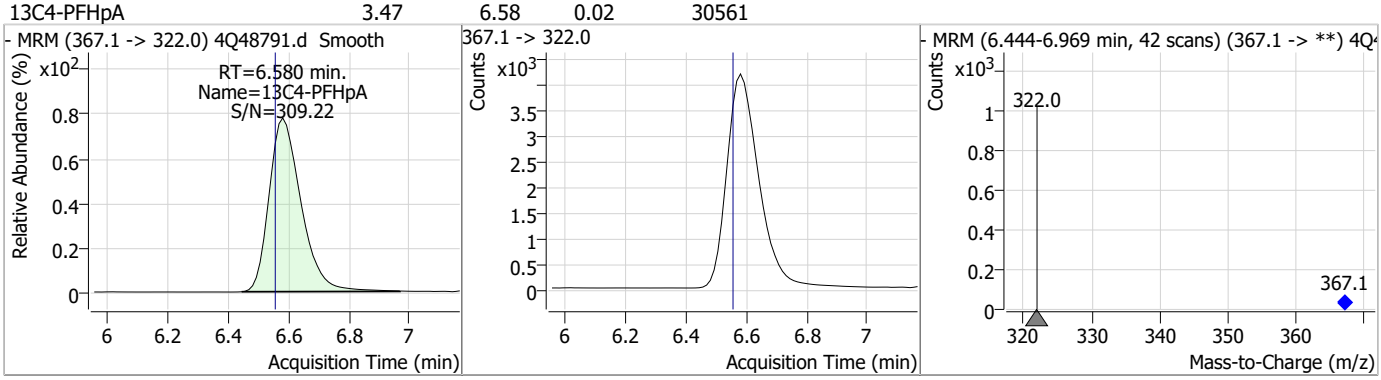
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.27	5.62	0.01	40547				



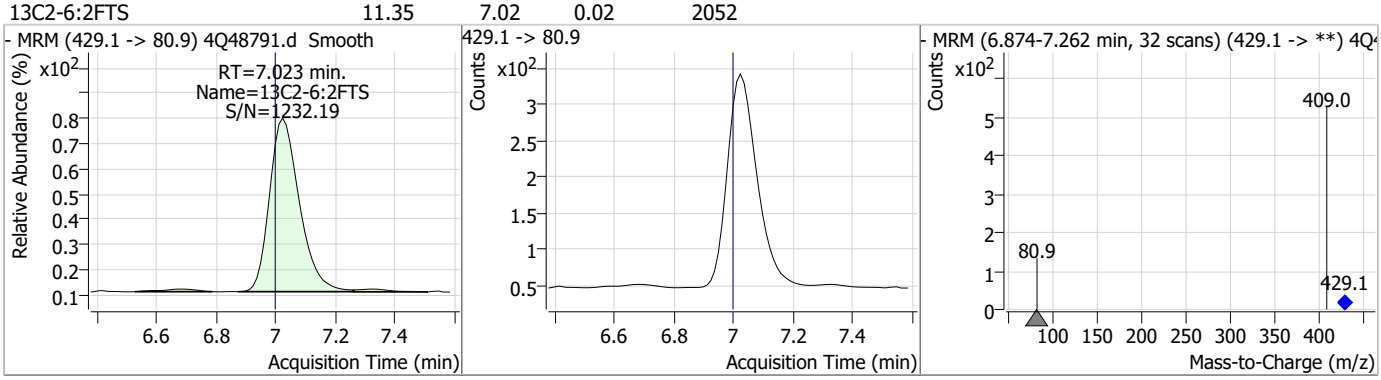
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.20	6.00	0.02	25919				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.47	6.58	0.02	30561				

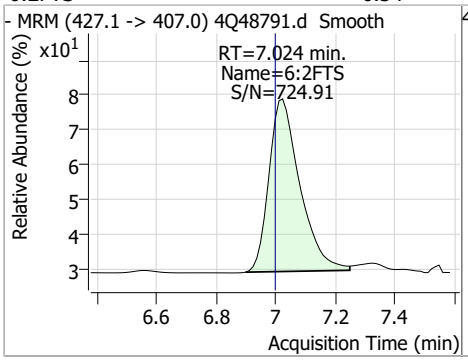


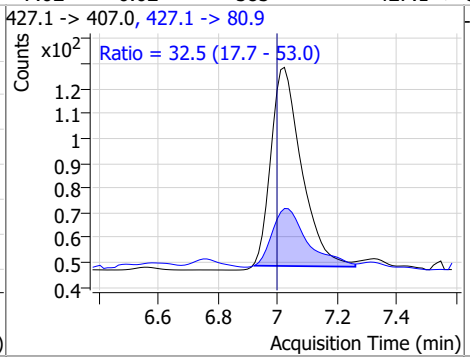
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.35	7.02	0.02	2052				

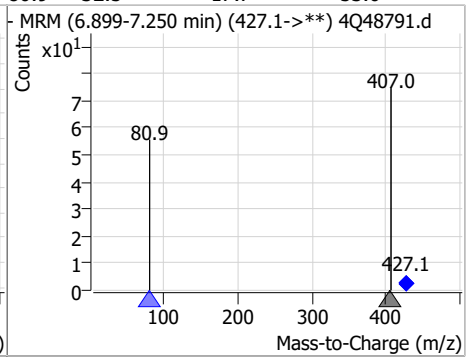


Perfluorinated Compounds by LC/MS/MS

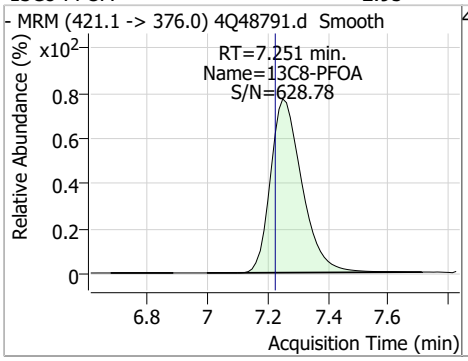
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.34	7.02	0.02	585	427.1 -> 80.9	32.5	17.7	53.0

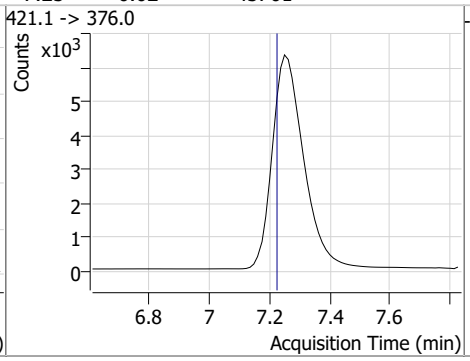


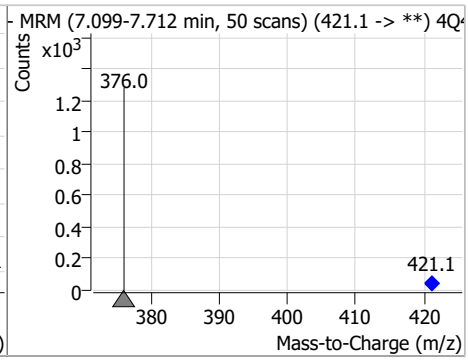




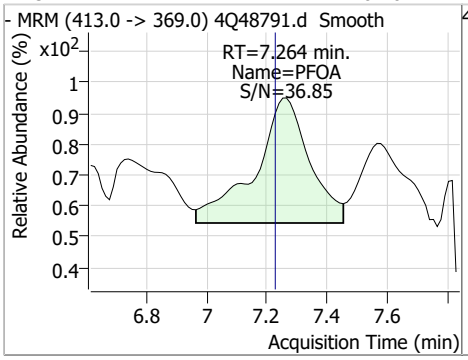
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.95	7.25	0.02	45701				

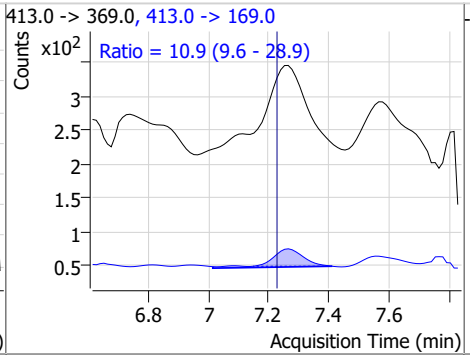


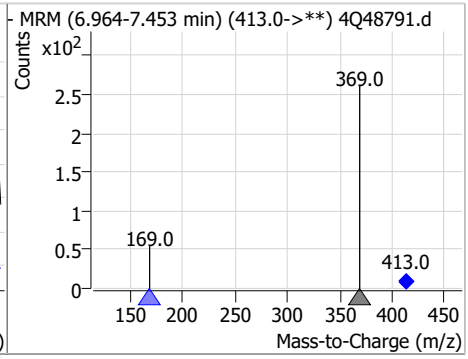




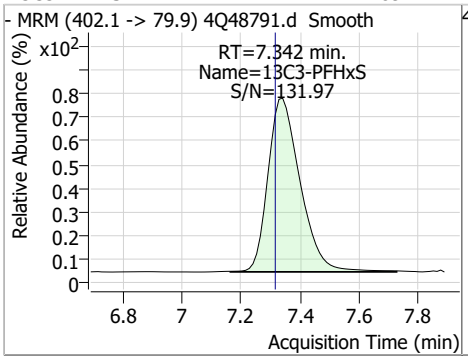
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.10	7.26	0.04	1864	413.0 -> 169.0	10.9	9.6	28.9

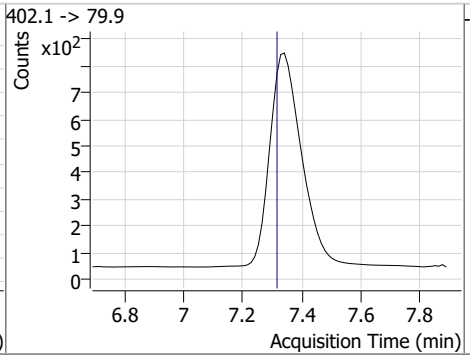


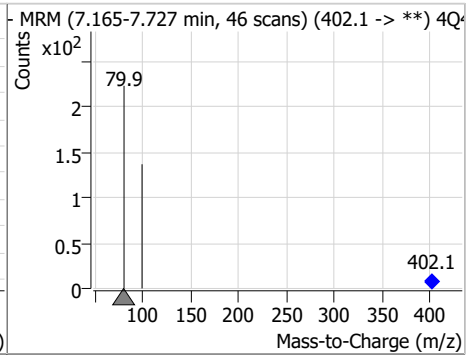




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.89	7.34	0.02	6067				

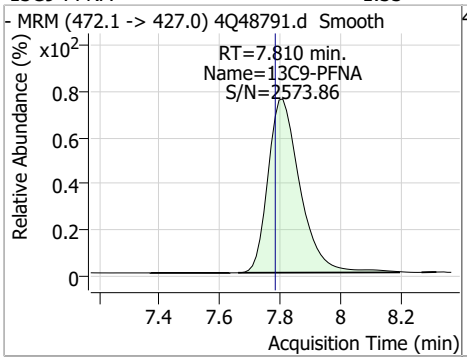


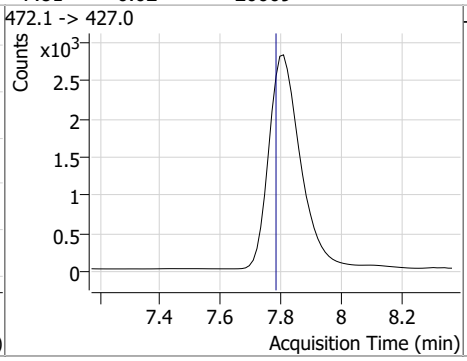


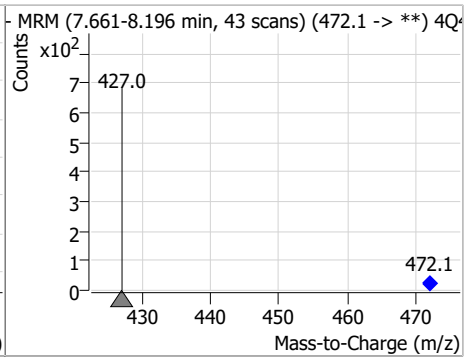


Perfluorinated Compounds by LC/MS/MS

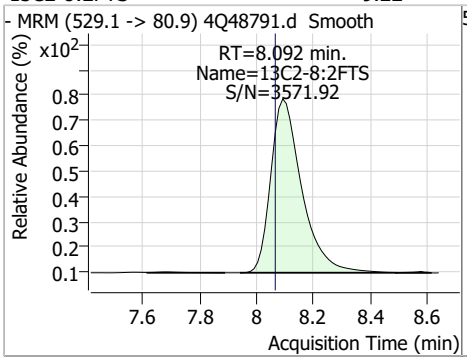
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.33	7.81	0.02	20609				

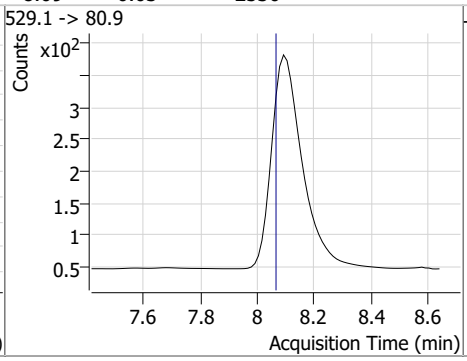


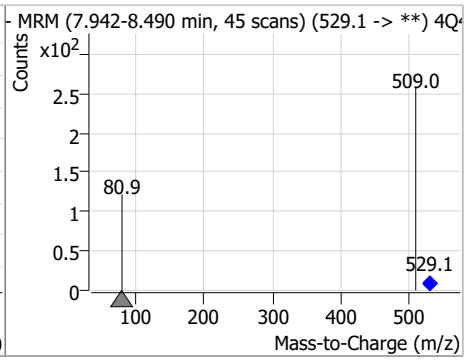




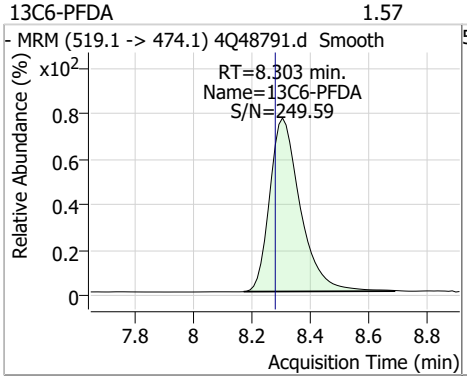
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.22	8.09	0.03	2530				

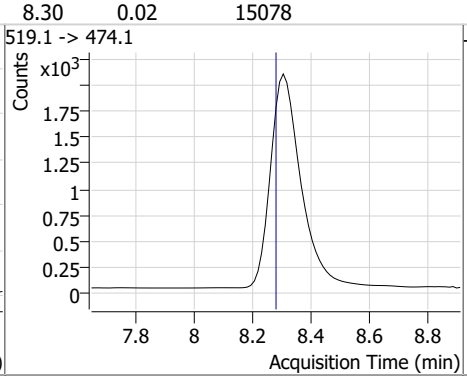


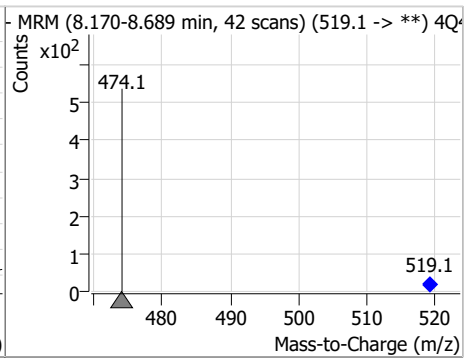




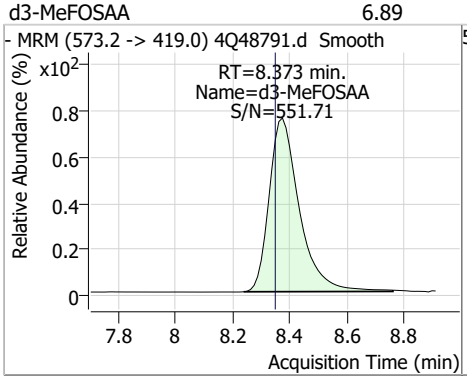
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.57	8.30	0.02	15078				

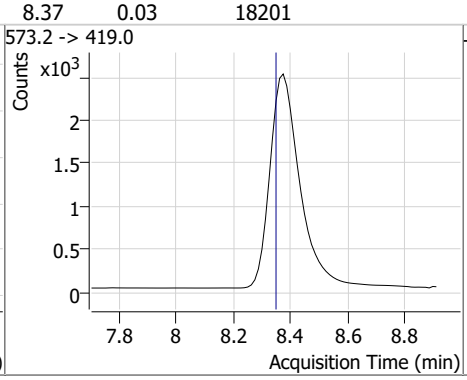


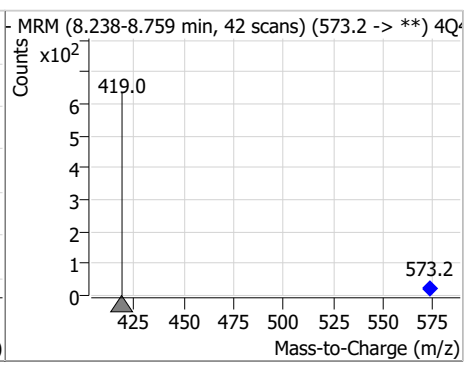




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.89	8.37	0.03	18201				

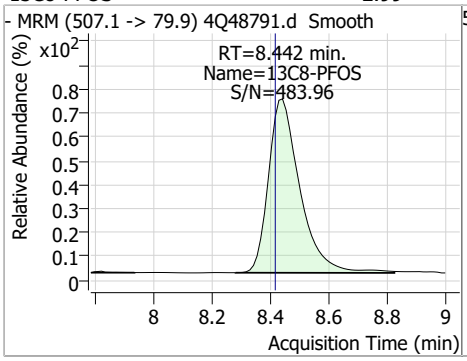


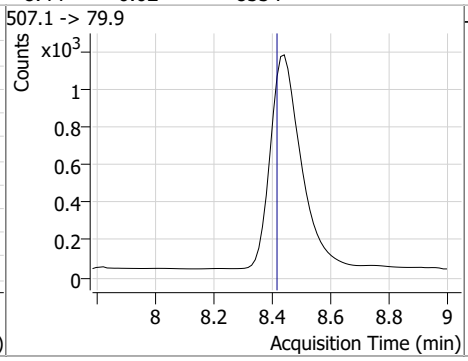


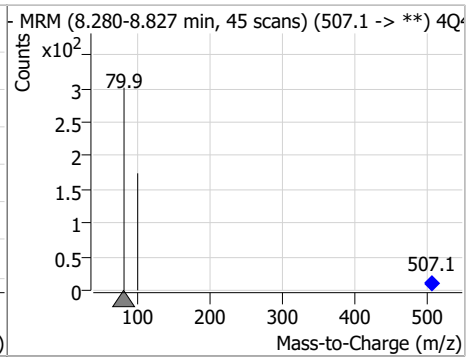


Perfluorinated Compounds by LC/MS/MS

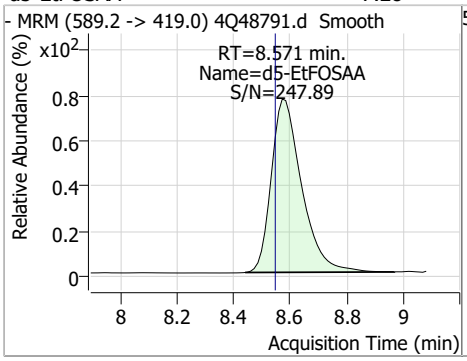
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.99	8.44	0.02	8554				

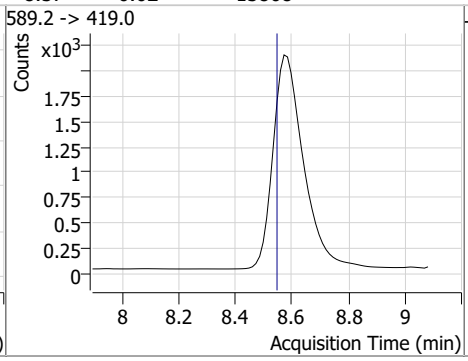


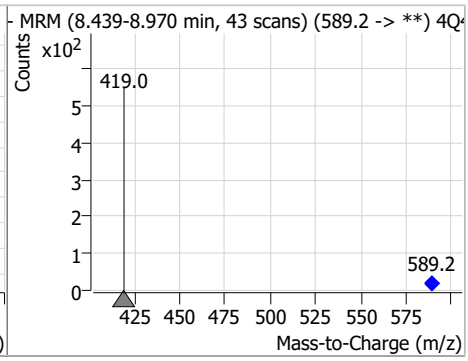




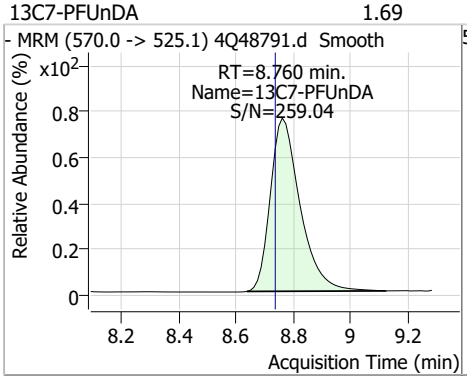
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.28	8.57	0.02	15808				

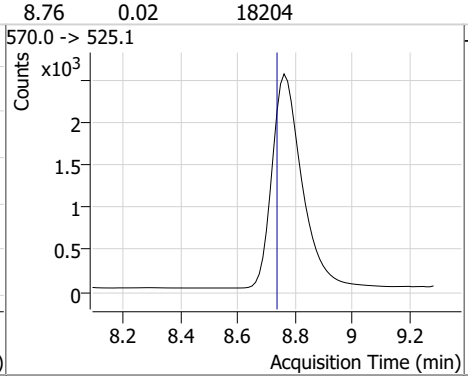


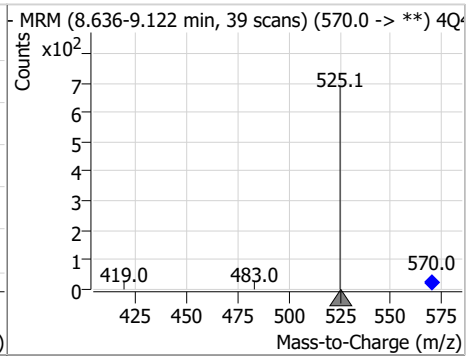




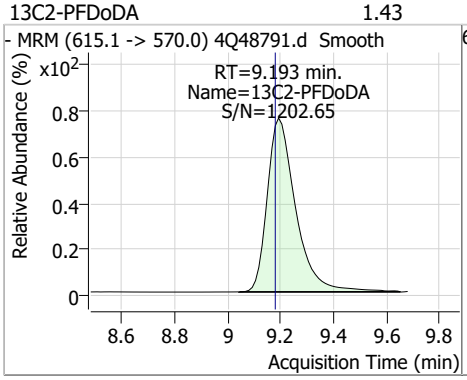
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.69	8.76	0.02	18204				

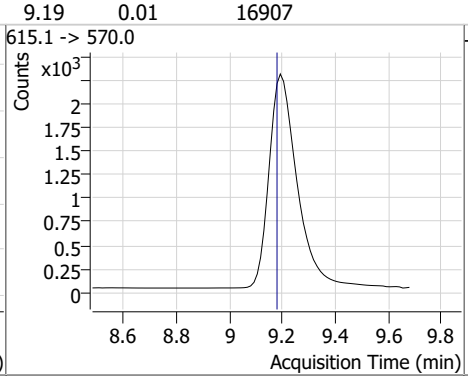


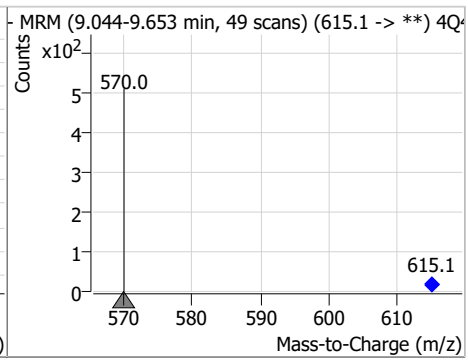




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.43	9.19	0.01	16907				

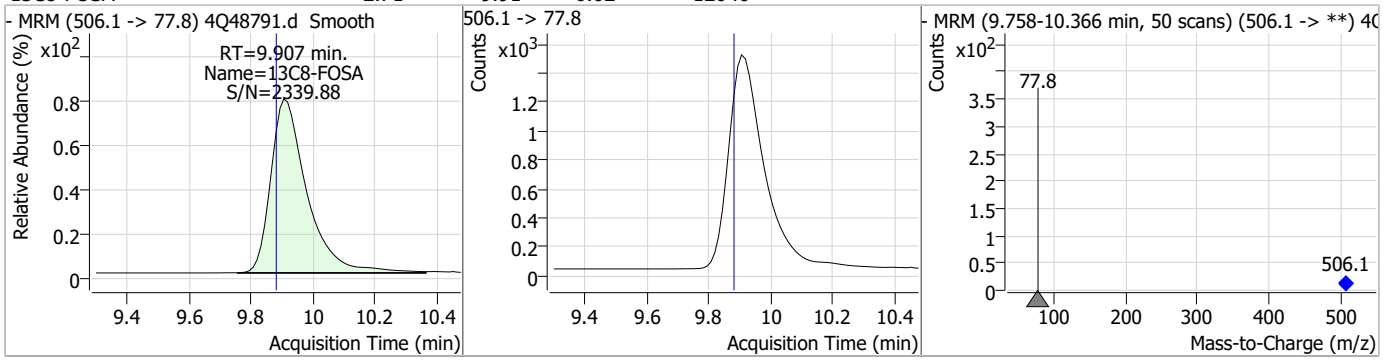




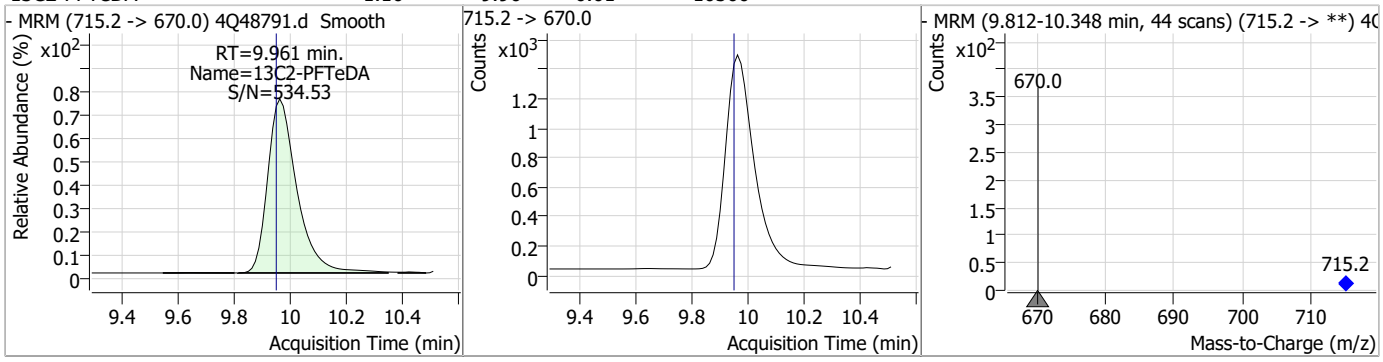


Perfluorinated Compounds by LC/MS/MS

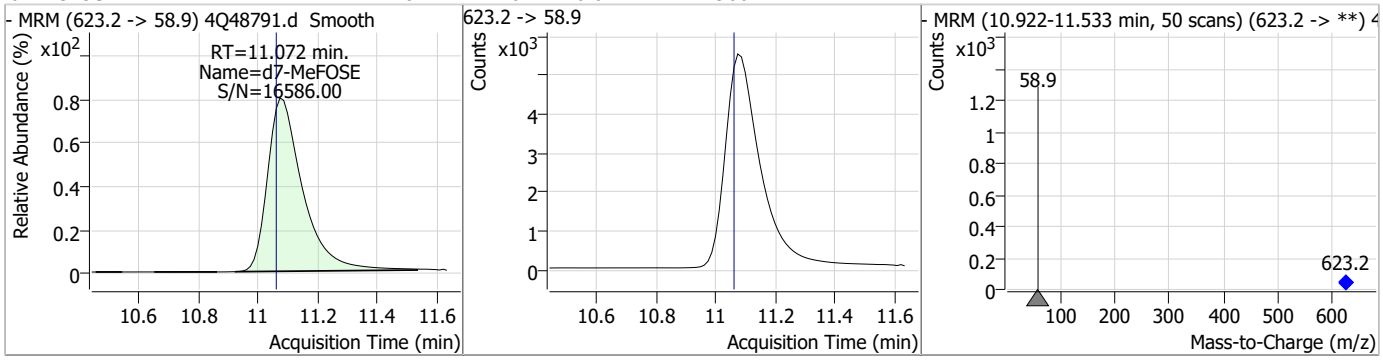
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.71	9.91	0.02	12046				



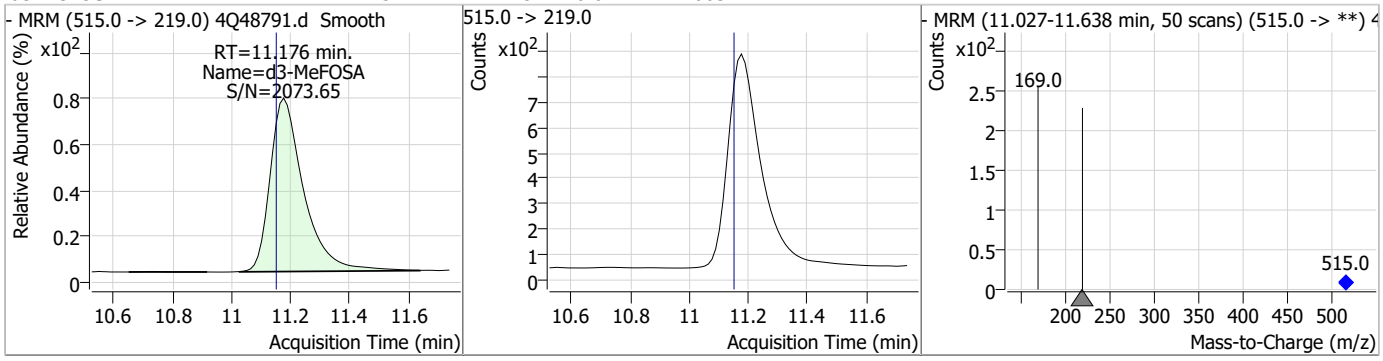
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.10	9.96	0.01	10500				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.48	11.07	0.01	44900				

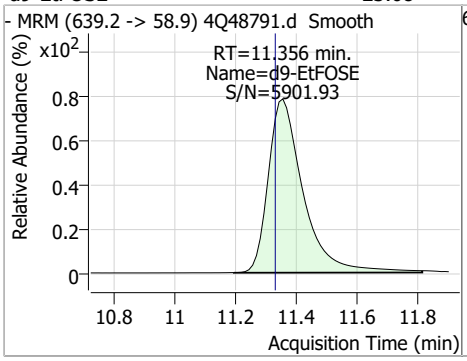


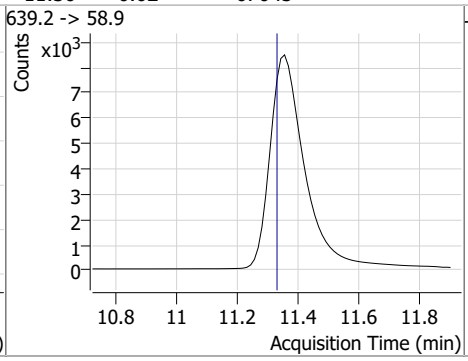
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	11.18	0.02	6632				

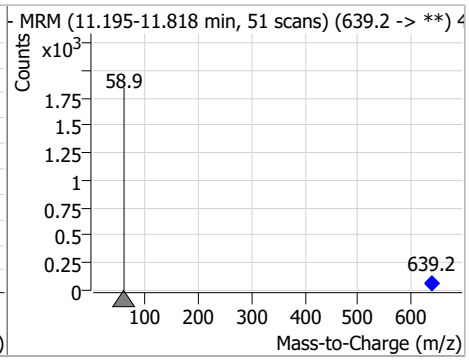


Perfluorinated Compounds by LC/MS/MS

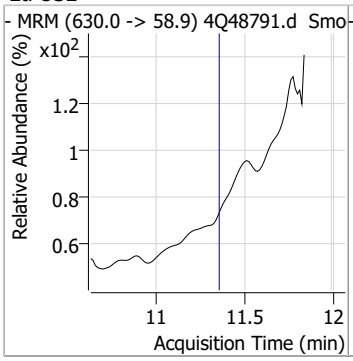
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.08	11.36	0.02	67645				

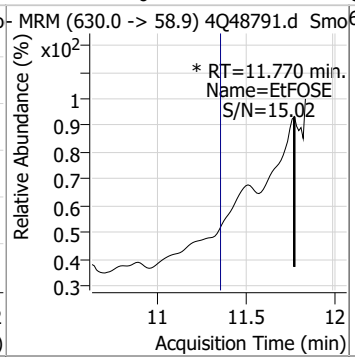


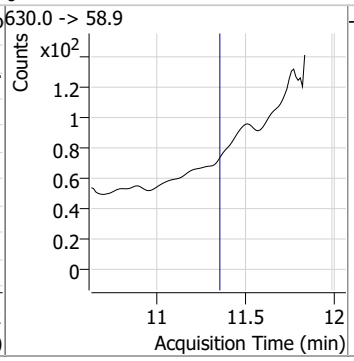


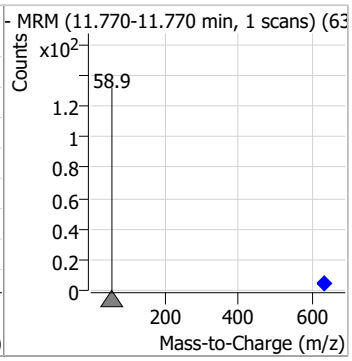


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE		0		0				

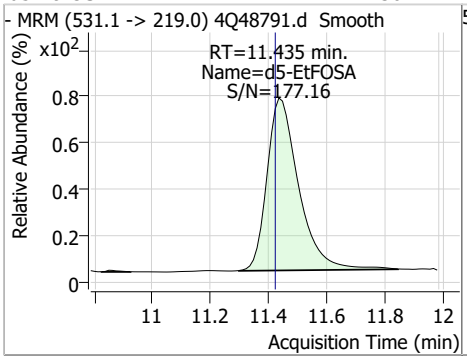


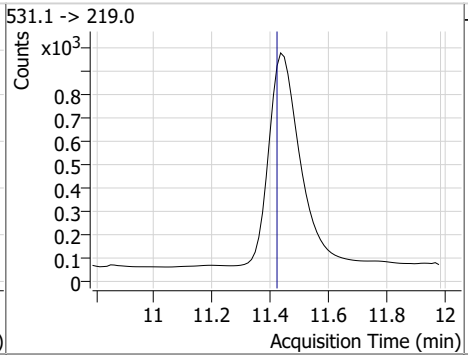


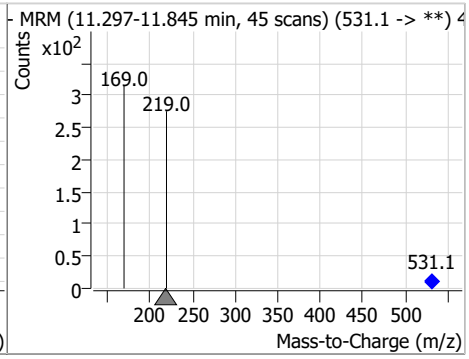




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	11.43	0.01	6924				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22667.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 8:04:59 PM
Sample Name : FC8439-4
Vial : P4-A8
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98297,S6Q330,540,,,5.0,10,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	10208	1.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	4597	0.50	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	5296	0.25	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	5334	0.25	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	7839	0.25	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	3596	0.13	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	2098	0.13	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	2767	0.13	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	2221	0.13	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	1082	0.13	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	2525	0.25	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	1911	0.25	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	1197	0.25	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	1048	0.25	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	252	0.50	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	458	0.50	µg/L	-0.012
M2-8:2FTS	8.051	529.1 -> 80.9	464	0.50	µg/L	0.000
M3-MeFOSAA	8.297	573.2 -> 419.0	2588	0.50	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	3126	1.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	2246	0.50	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	7892	2.50	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	10668	2.50	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	924	0.25	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	870	0.25	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	1264	0.25	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	4756	0.50	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	775	0.25	µg/L	0.000
13C4-PFOA	7.227	417.1 -> 372.0	7280	0.25	µg/L	-0.012
13C2-PFDA	8.251	515.1 -> 470.1	2453	0.13	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	3843	0.13	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	4039	0.25	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	252	0.54	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 10.9%		
13C2-6:2FTS	7.001	429.1 -> 80.9	458	0.69	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 13.7%		
13C2-8:2FTS	8.051	529.1 -> 80.9	464	0.71	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 14.2%		
13C2-PFDoDA	9.135	615.1 -> 570.0	2221	0.13	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.7%		
13C2-PFTeDA	9.851	715.2 -> 670.0	1082	0.11	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 9.1%		
13C3-PFBS	5.610	302.1 -> 79.9	1911	0.29	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 11.6%		
13C3-PFHxS	7.355	402.1 -> 79.9	1197	0.28	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 = 11.3%			
13C4-PFBA	3.010	216.8 -> 171.9	10208	0.91	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.1%			
13C4-PFHpA	6.596	367.1 -> 322.0	5334	0.33	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.1%			
13C5-PFHxA	5.668	318.0 -> 273.0	5296	0.32	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 12.7%			
13C5-PFPeA	4.447	268.3 -> 223.0	4597	0.60	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 12.1%			
13C6-PFDA	8.250	519.1 -> 474.1	2098	0.15	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 12.1%			
13C7-PFUnDA	8.705	570.0 -> 525.1	2767	0.15	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 12.1%			
13C8-FOSA	9.662	506.1 -> 77.8	2525	0.26	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.6%			
13C8-PFOA	7.239	421.1 -> 376.0	7839	0.29	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 11.7%			
13C8-PFOS	8.414	507.1 -> 79.9	1048	0.28	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 11.3%			
13C9-PFNA	7.758	472.1 -> 427.0	3596	0.14	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 11.5%			
d3-MeFOSAA	8.297	573.2 -> 419.0	2588	0.57	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 11.3%			
13C3-HFPO-DA	6.045	286.9 -> 168.9	3126	1.20	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.0%			
d3-MeFOSA	10.763	515.0 -> 219.0	870	0.22	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 8.9%			
d5-EtFOSAA	8.492	589.2 -> 419.0	2246	0.53	µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 10.6%			
d7-MeFOSE	10.685	623.2 -> 58.9	7892	2.31	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.2%			
d9-EtFOSE	10.918	639.2 -> 58.9	10668	2.34	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.4%			
d5-EtFOSA	10.996	531.1 -> 219.0	924	0.23	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 9.4%			
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	3.169	212.8 -> 168.9	0		µg/L	m	1
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

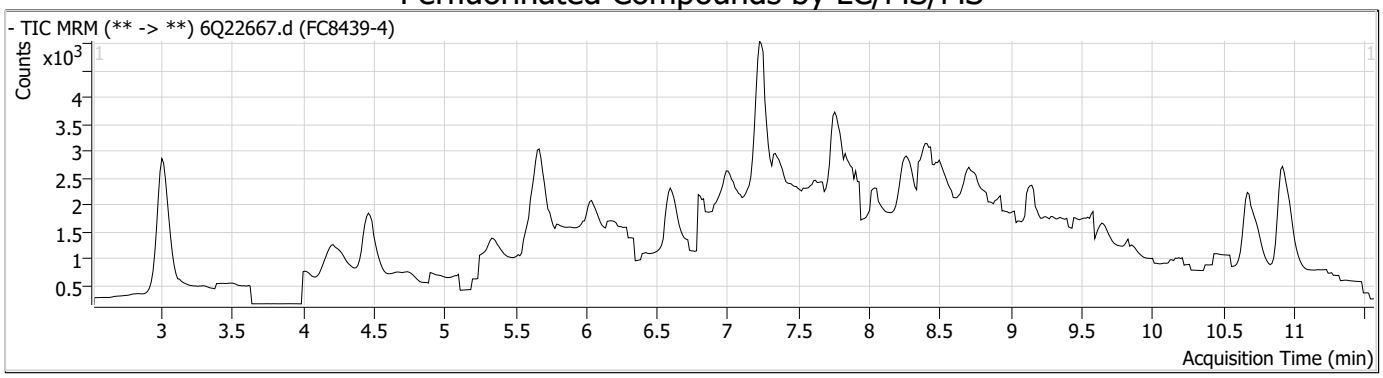
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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	4.486	263.0 -> 219.0	4216	0.42	µg/L	100
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

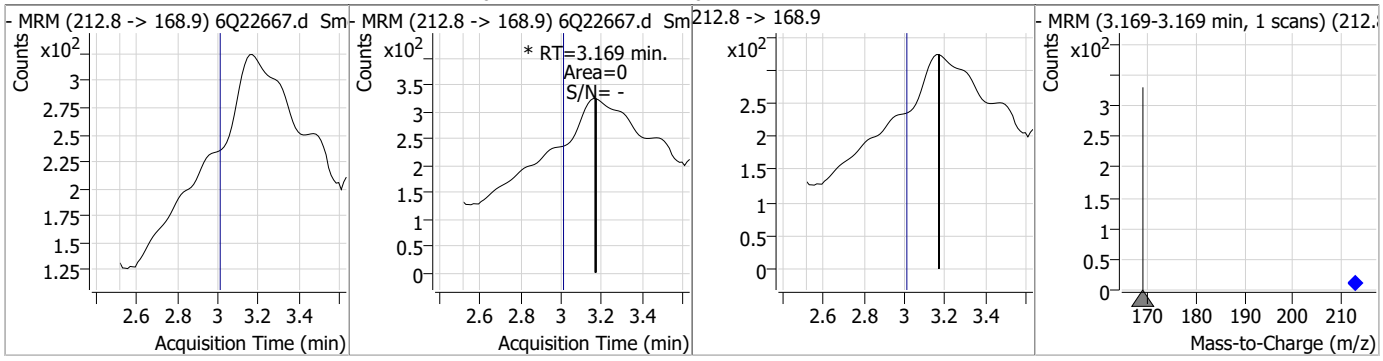
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

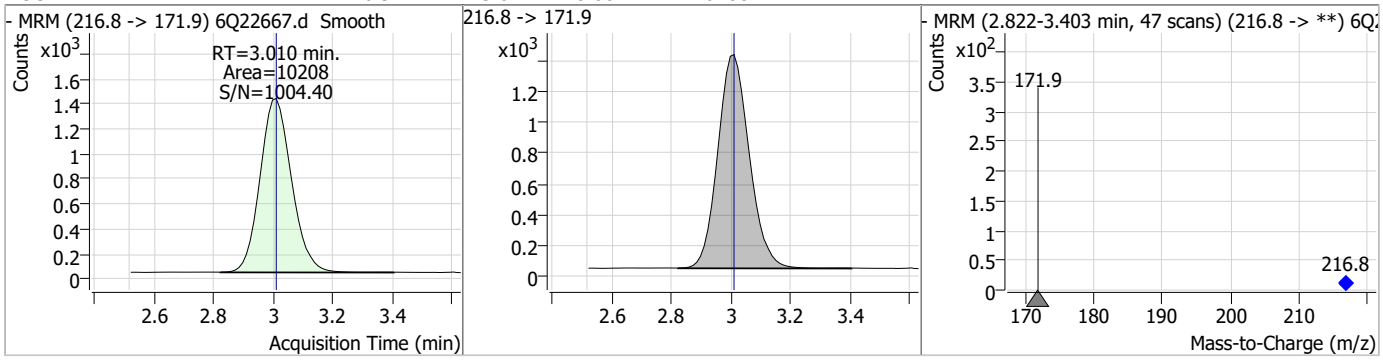
Perfluorinated Compounds by LC/MS/MS



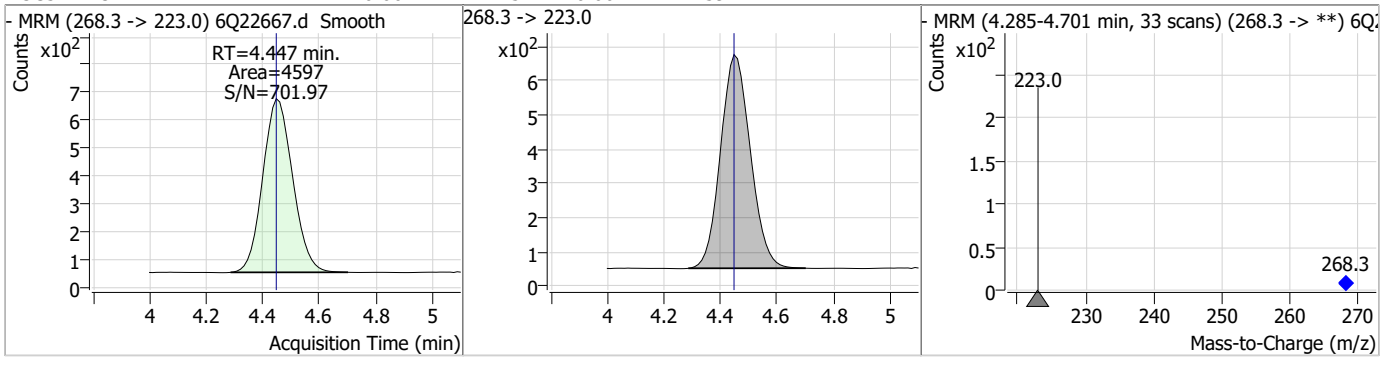
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	0.91	3.01	0.00	10208				

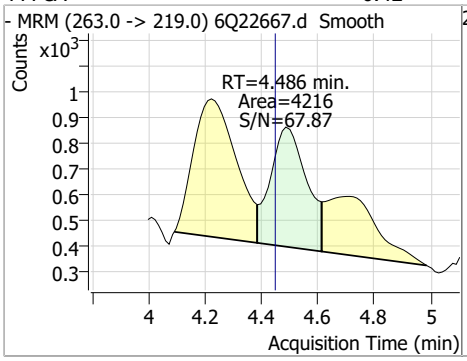


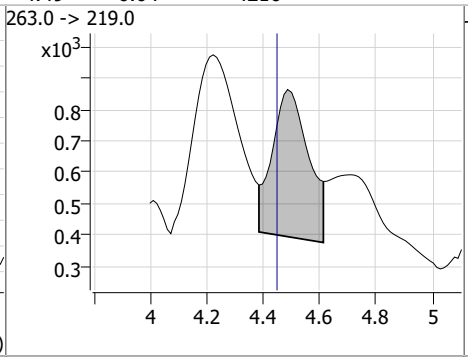
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	0.60	4.45	0.00	4597				

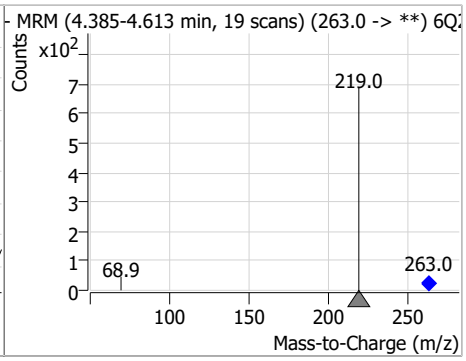


Perfluorinated Compounds by LC/MS/MS

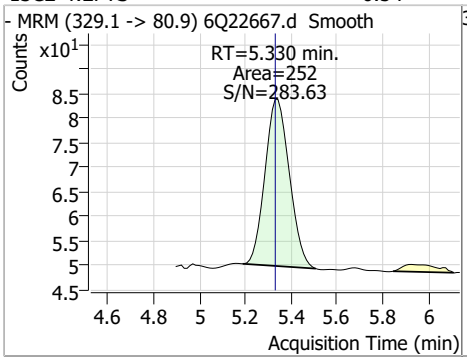
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.42	4.49	0.04	4216				

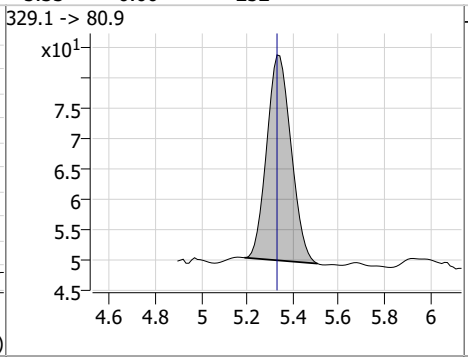


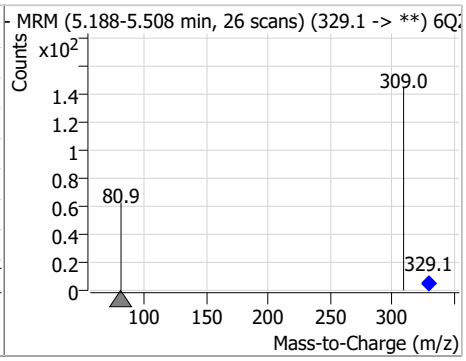




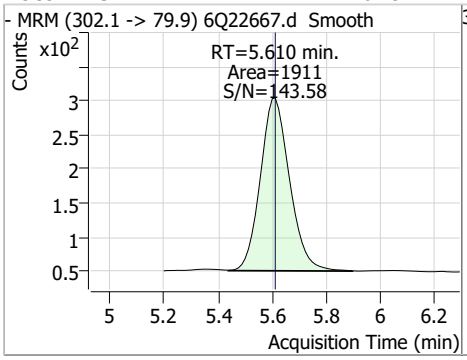
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	0.54	5.33	0.00	252				

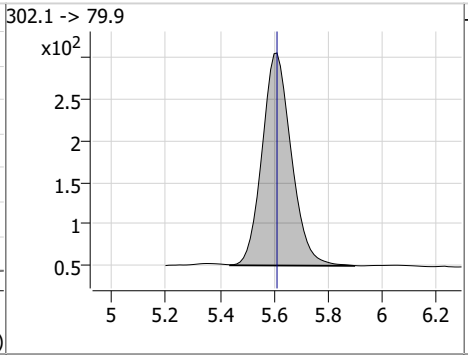


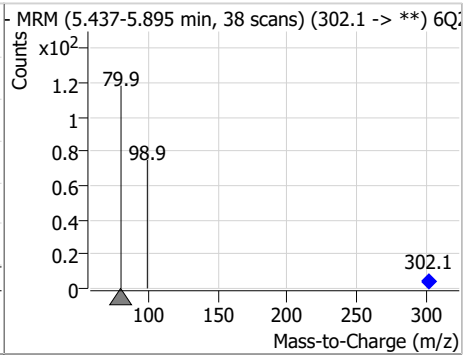




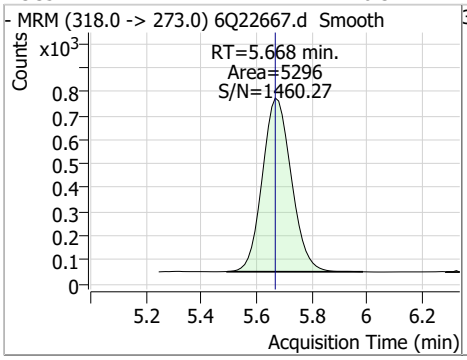
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	0.29	5.61	0.00	1911				

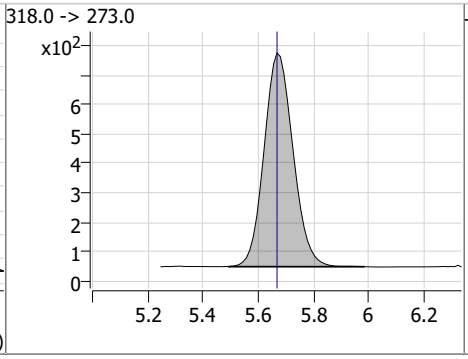


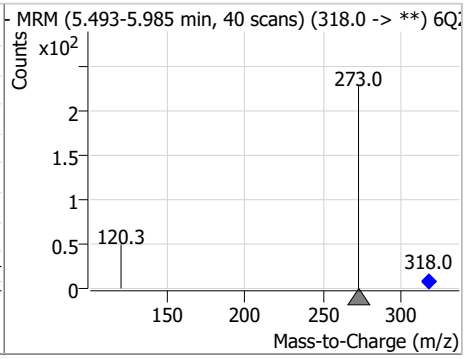




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	0.32	5.67	0.00	5296				

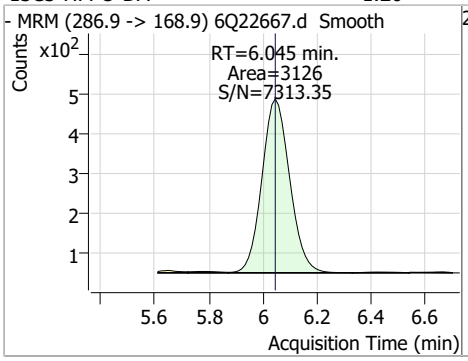


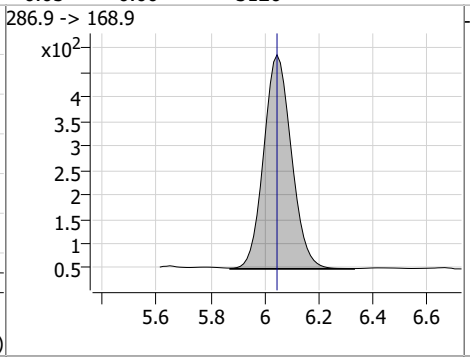


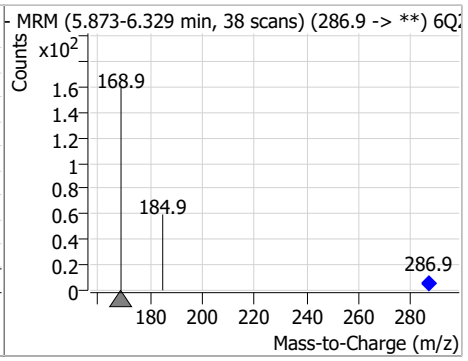


Perfluorinated Compounds by LC/MS/MS

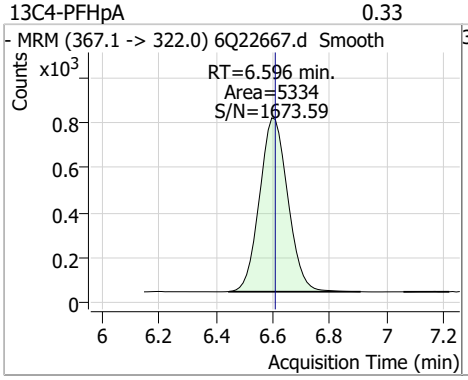
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.20	6.05	0.00	3126				

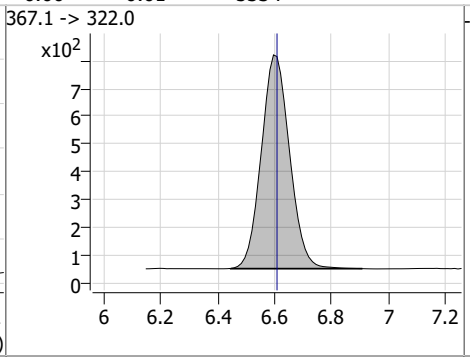


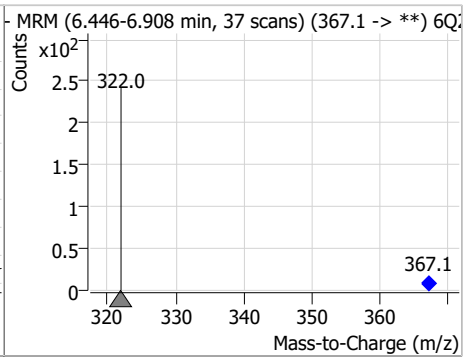




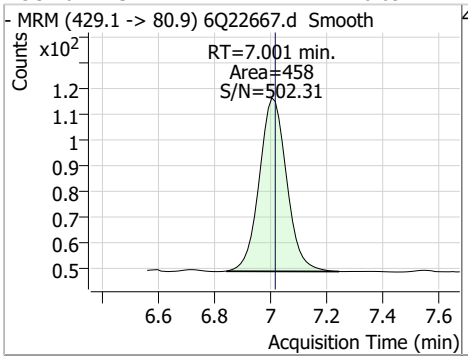
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	0.33	6.60	-0.01	5334				

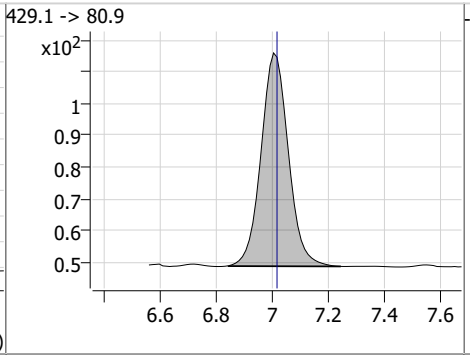


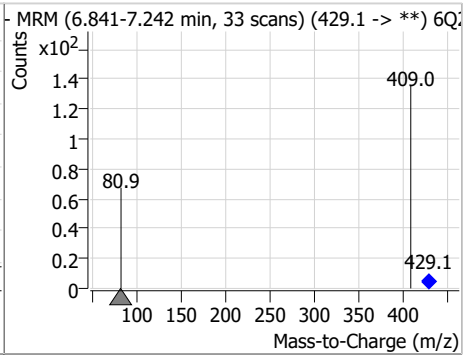




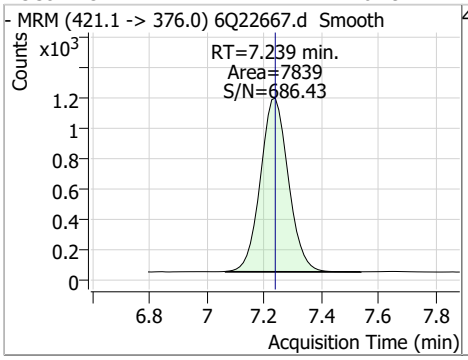
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	0.69	7.00	-0.01	458				

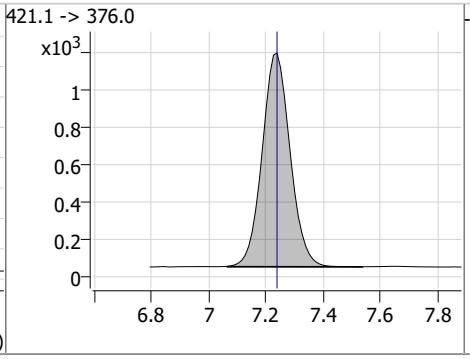


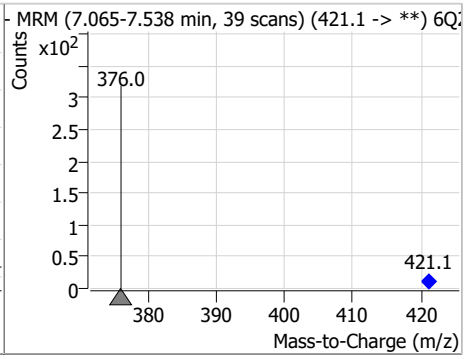




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	0.29	7.24	0.00	7839				

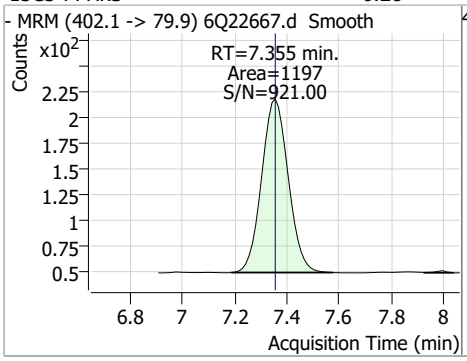


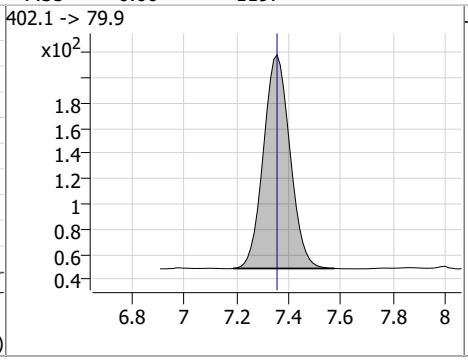


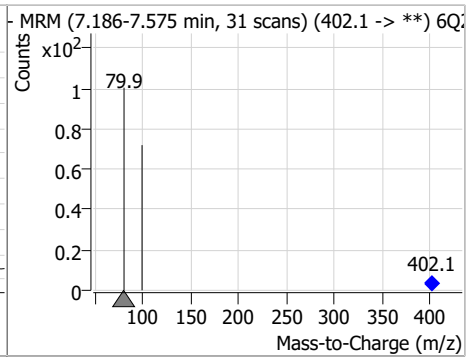


Perfluorinated Compounds by LC/MS/MS

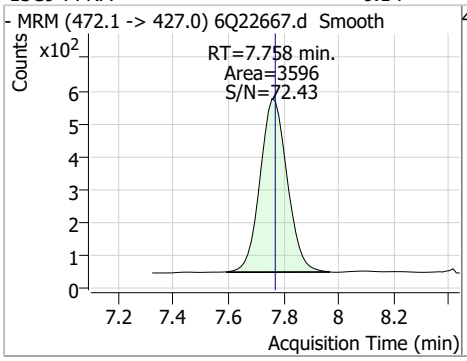
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	0.28	7.35	0.00	1197				

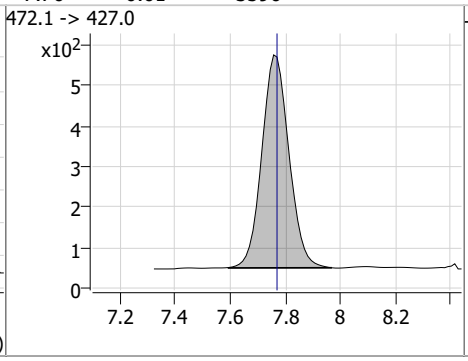


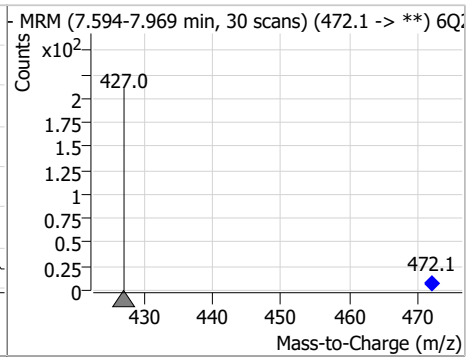




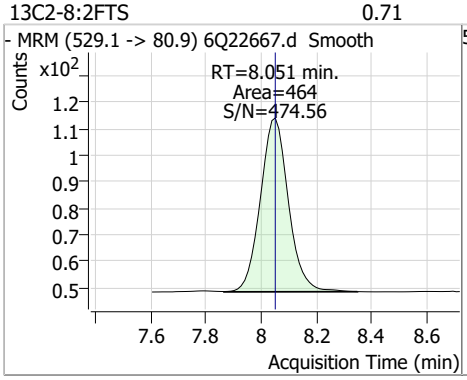
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	0.14	7.76	-0.01	3596				

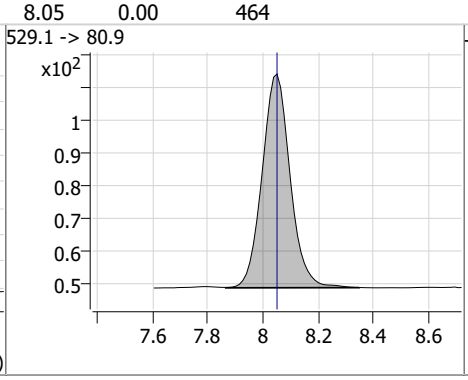


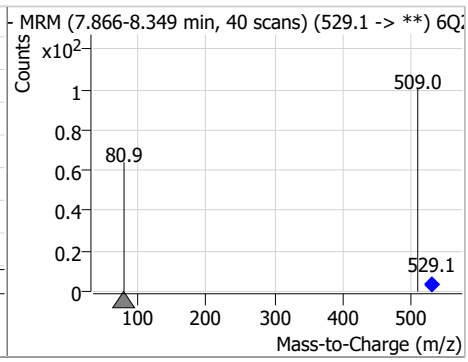




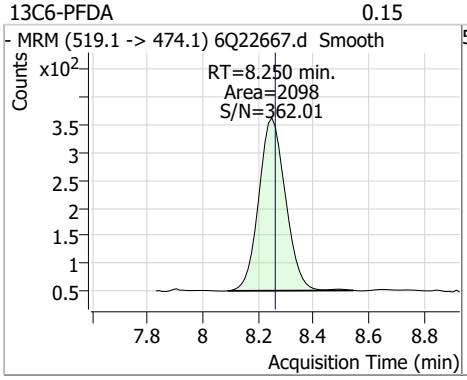
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	0.71	8.05	0.00	464				

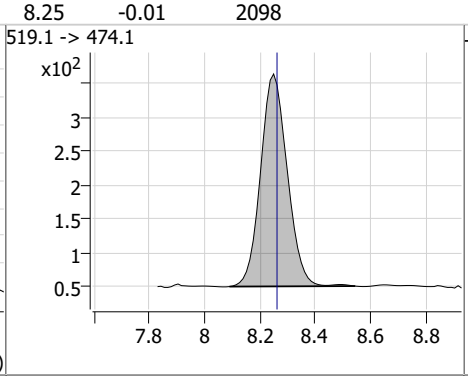


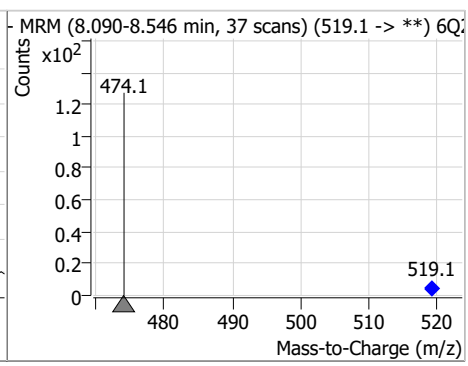




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	0.15	8.25	-0.01	2098				

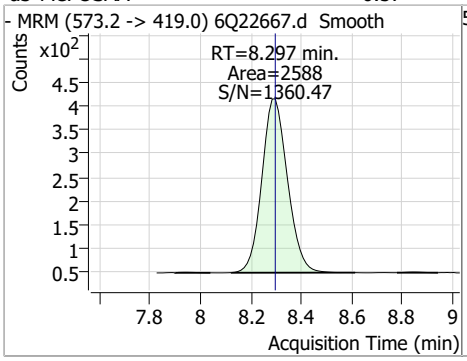


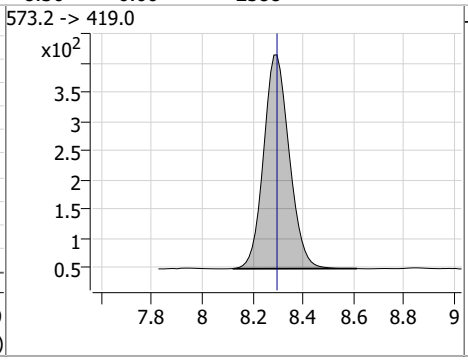


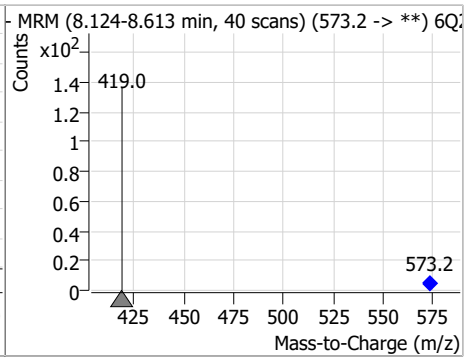


Perfluorinated Compounds by LC/MS/MS

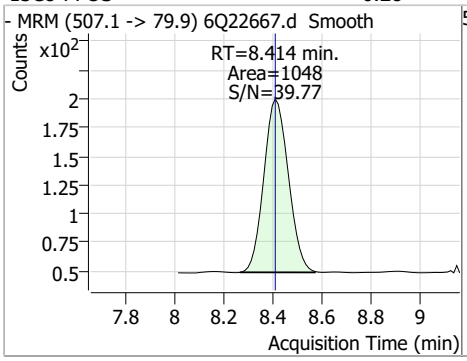
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	0.57	8.30	0.00	2588				

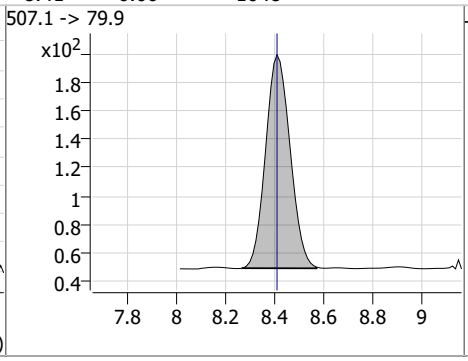


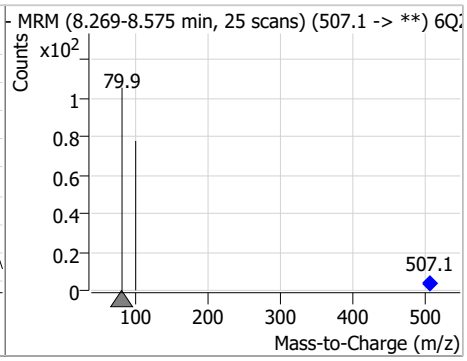




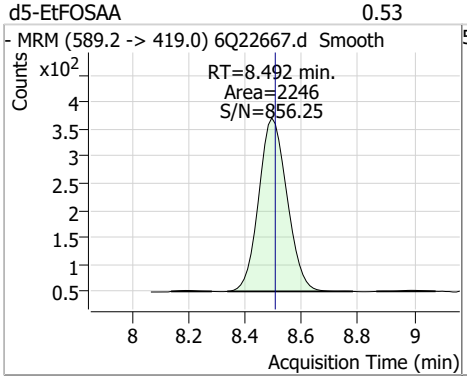
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	0.28	8.41	0.00	1048				

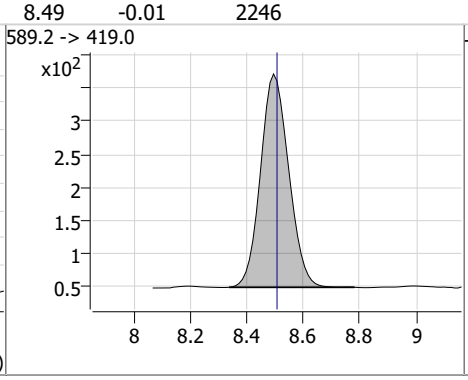


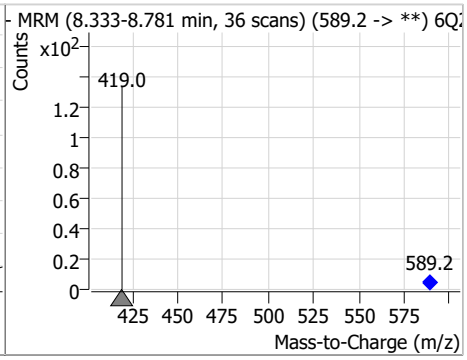




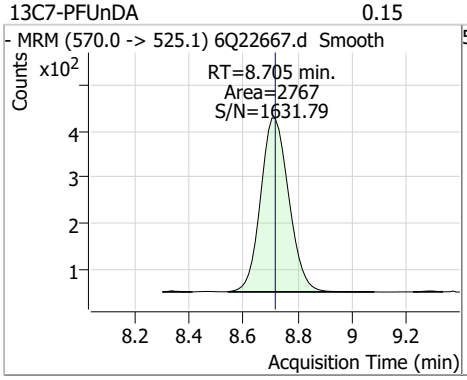
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	0.53	8.49	-0.01	2246				

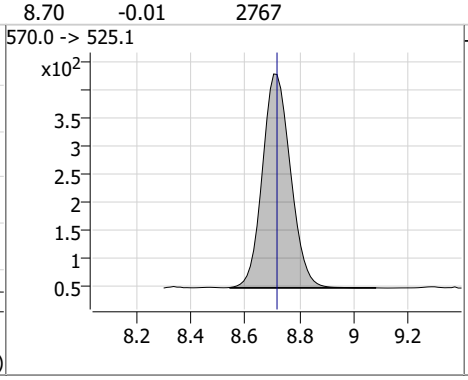


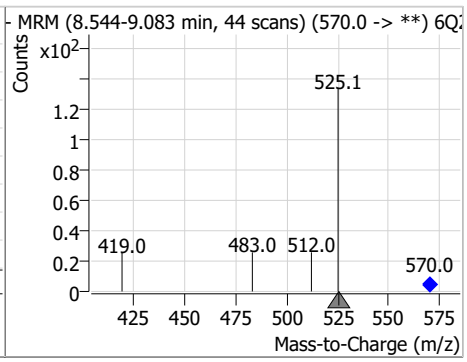




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.15	8.70	-0.01	2767				

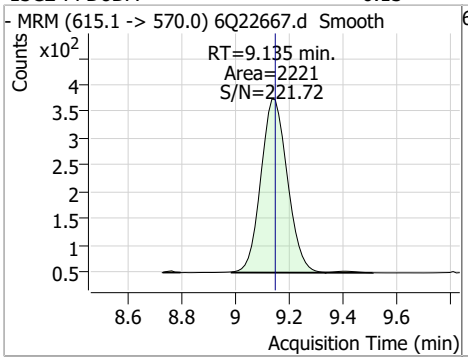


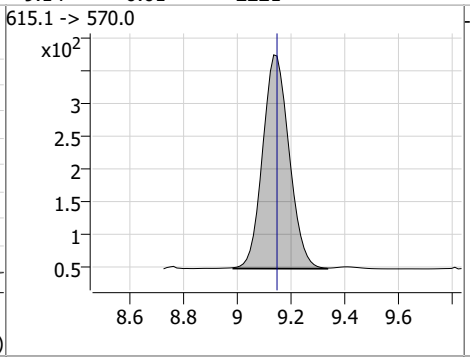


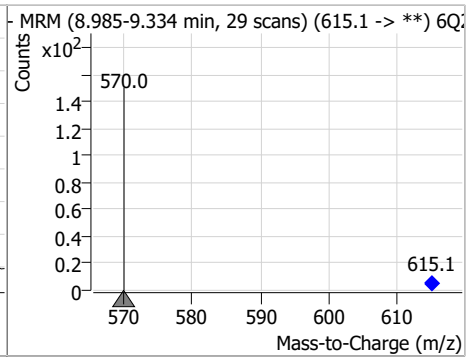


Perfluorinated Compounds by LC/MS/MS

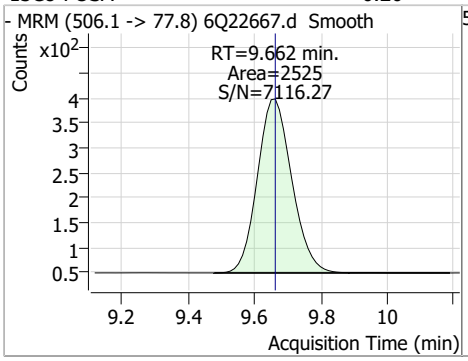
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.13	9.14	-0.01	2221				

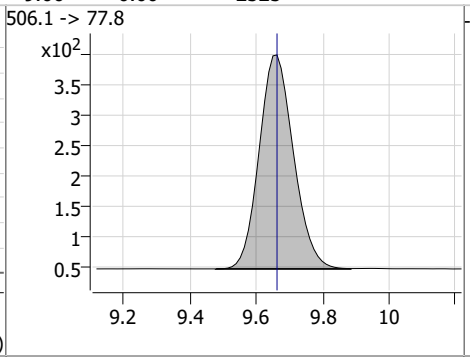


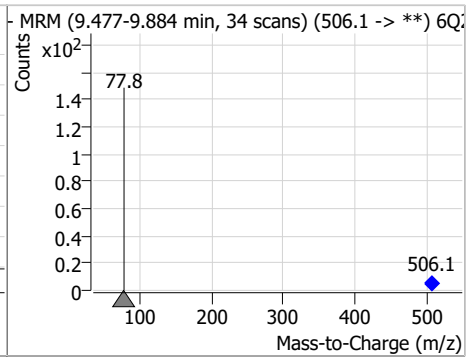




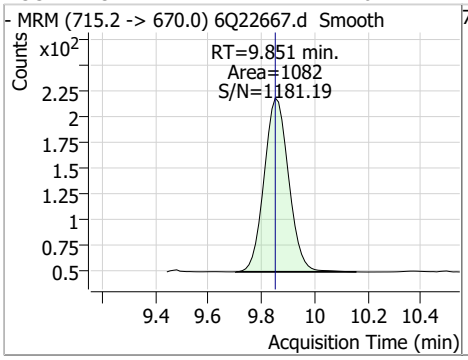
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.26	9.66	0.00	2525				

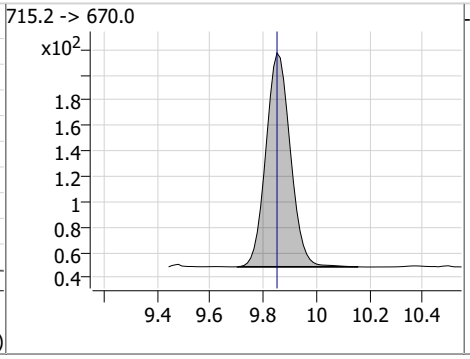


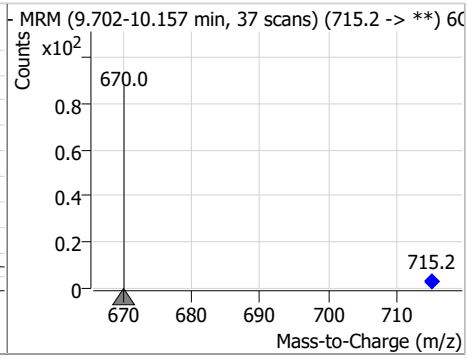




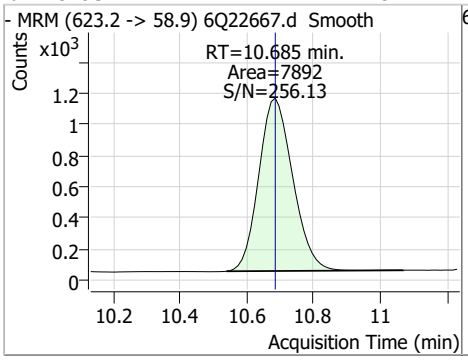
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.11	9.85	0.00	1082				

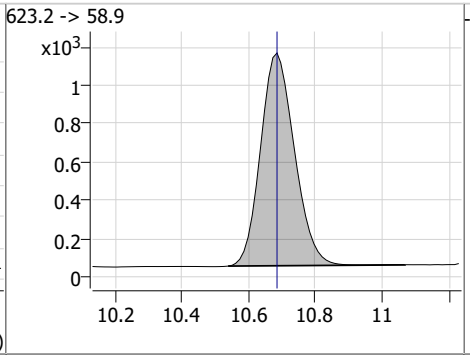


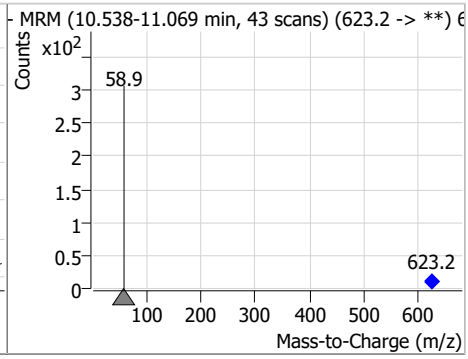




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	2.31	10.68	0.00	7892				

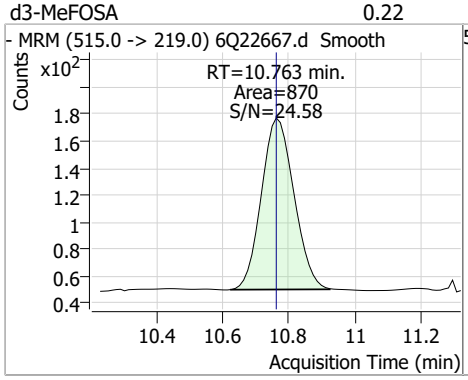


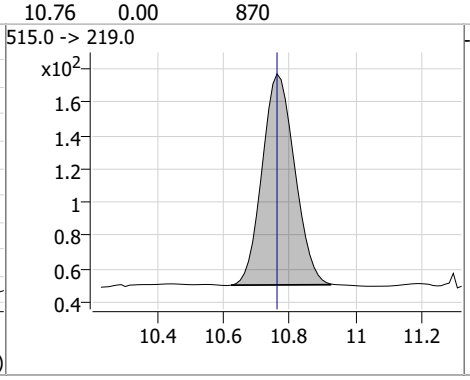


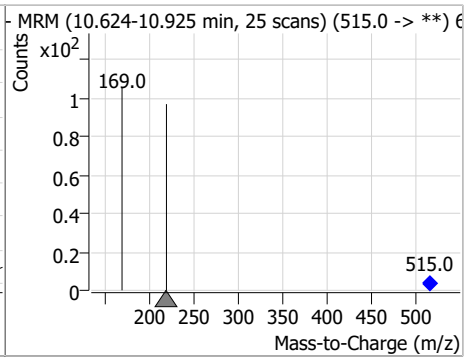


Perfluorinated Compounds by LC/MS/MS

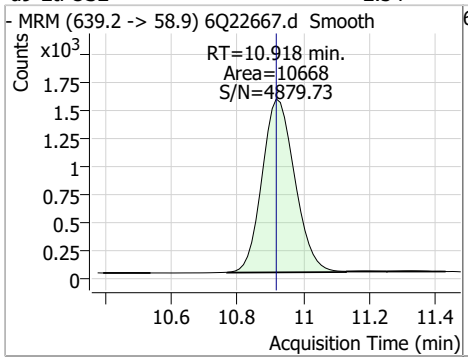
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.22	10.76	0.00	870				

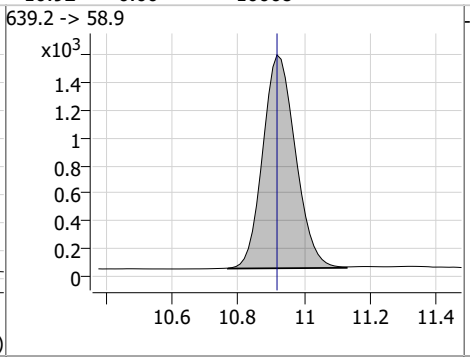


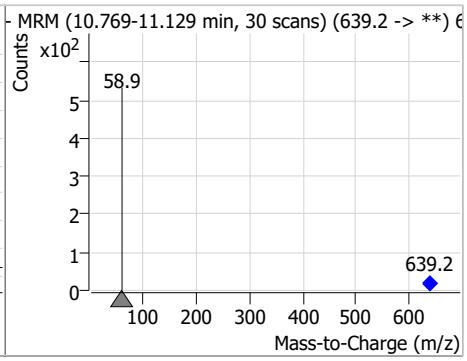




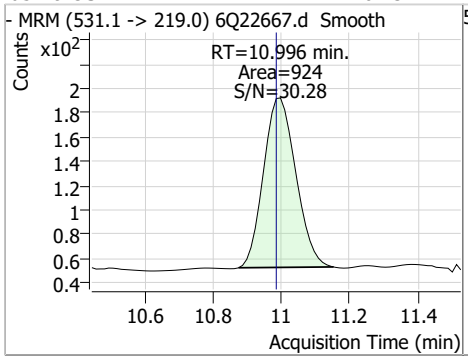
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	2.34	10.92	0.00	10668				

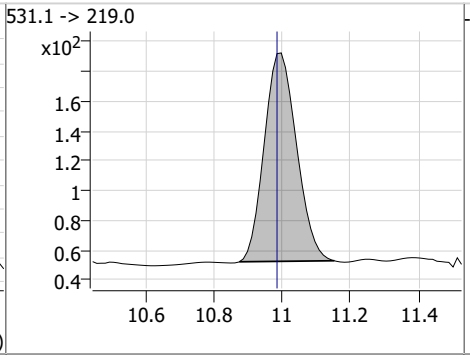


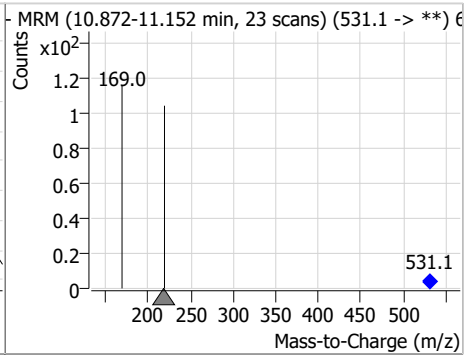




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	0.23	11.00	0.01	924				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:59

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48793.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 10:29:55 PM
Sample Name : fc8439-5
Vial : P4-E4
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	39950	10.00	µg/L	0.025
M5-PFPeA	4.412	268.3 -> 223.0	39446	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	36135	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	27509	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	42906	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	19100	1.25	µg/L	0.013
M6-PFDA	8.291	519.1 -> 474.1	14184	1.25	µg/L	0.013
M7-PFUnDA	8.760	570.0 -> 525.1	16967	1.25	µg/L	0.025
M2-PFDoDA	9.193	615.1 -> 570.0	16071	1.25	µg/L	0.012
M2-PFTeDA	9.961	715.2 -> 670.0	10220	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	10497	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	8478	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	5690	2.50	µg/L	0.012
M8-PFOS	8.430	507.1 -> 79.9	7541	2.50	µg/L	0.013
M2-4:2FTS	5.309	329.1 -> 80.9	1176	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1727	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	1937	5.00	µg/L	0.026
M3-MeFOSAA	8.361	573.2 -> 419.0	16323	5.00	µg/L	0.013
M3-HFPO-DA	6.002	286.9 -> 168.9	24466	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	14634	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	40632	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	63438	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	6700	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	6292	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	6176	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	22770	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	3042	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	37878	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	11288	1.25	µg/L	0.025
13C5-PFNA	7.798	468.0 -> 423.0	16425	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	24747	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	1176	15.48	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 309.5%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1727	11.90	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 237.9%		
13C2-8:2FTS	8.092	529.1 -> 80.9	1937	8.78	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 175.7%		
13C2-PFDoDA	9.193	615.1 -> 570.0	16071	1.66	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 132.9%		
13C2-PFTeDA	9.961	715.2 -> 670.0	10220	1.32	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C3-PFBS	5.502	302.1 -> 79.9	8478	3.27	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 131.0%		
13C3-PFHxS	7.329	402.1 -> 79.9	5690	3.38	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 = 135.2%		
13C4-PFBA	2.936	216.8 -> 171.9	39950	10.27 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFHpA	6.580	367.1 -> 322.0	27509	3.73 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 149.3%		
13C5-PFHxA	5.622	318.0 -> 273.0	36135	3.48 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 139.4%		
13C5-PFPeA	4.412	268.3 -> 223.0	39446	4.56 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C6-PFDA	8.291	519.1 -> 474.1	14184	1.82 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 145.2%		
13C7-PFUnDA	8.760	570.0 -> 525.1	16967	1.93 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 154.3%		
13C8-FOSA	9.907	506.1 -> 77.8	10497	2.72 µg/L		0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C8-PFOA	7.251	421.1 -> 376.0	42906	3.44 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 137.6%		
13C8-PFOS	8.430	507.1 -> 79.9	7541	3.04 µg/L		0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.6%		
13C9-PFNA	7.797	472.1 -> 427.0	19100	1.54 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 122.8%		
d3-MeFOSAA	8.361	573.2 -> 419.0	16323	7.12 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 142.4%		
13C3-HFPO-DA	6.002	286.9 -> 168.9	24466	10.38 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d3-MeFOSA	11.176	515.0 -> 219.0	6292	2.77 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.9%		
d5-EtFOSAA	8.571	589.2 -> 419.0	14634	7.77 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 155.3%		
d7-MeFOSE	11.072	623.2 -> 58.9	40632	22.40 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.6%		
d9-EtFOSE	11.356	639.2 -> 58.9	63438	24.94 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d5-EtFOSA	11.435	531.1 -> 219.0	6700	2.56 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
Target Compounds						QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.		
		327.1 -> 80.9				
6:2FTS	7.024	427.1 -> 407.0	558	0.38 µg/L		98
		427.1 -> 80.9	190			
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	3.409	212.8 -> 168.9	0	µg/L	m	1
PFBS	4.966	298.7 -> 79.9	0	µg/L	m	1
		298.7 -> 98.8	0			
PFDA	-	512.9 -> 469.0	-	N.D.		
		512.9 -> 219.0				
PFDoDA	-	613.1 -> 569.0	-	N.D.		
		613.1 -> 319.0				
PFDS	-	599.0 -> 79.9	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

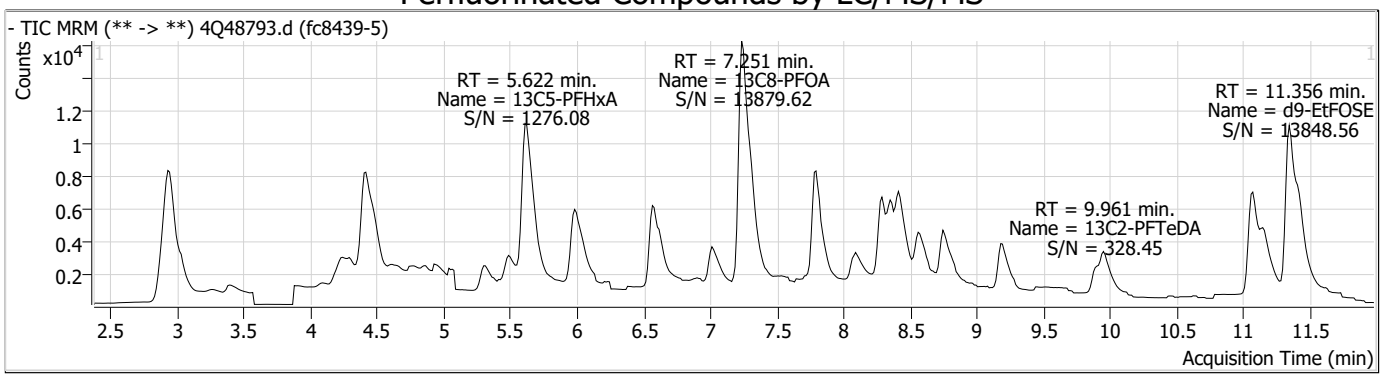
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.581	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.085	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.252	413.0 -> 369.0	1270	0.07	µg/L	#m	77
		413.0 -> 169.0	114				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	4.489	263.0 -> 219.0	0		µg/L	m	1
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	9.061	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

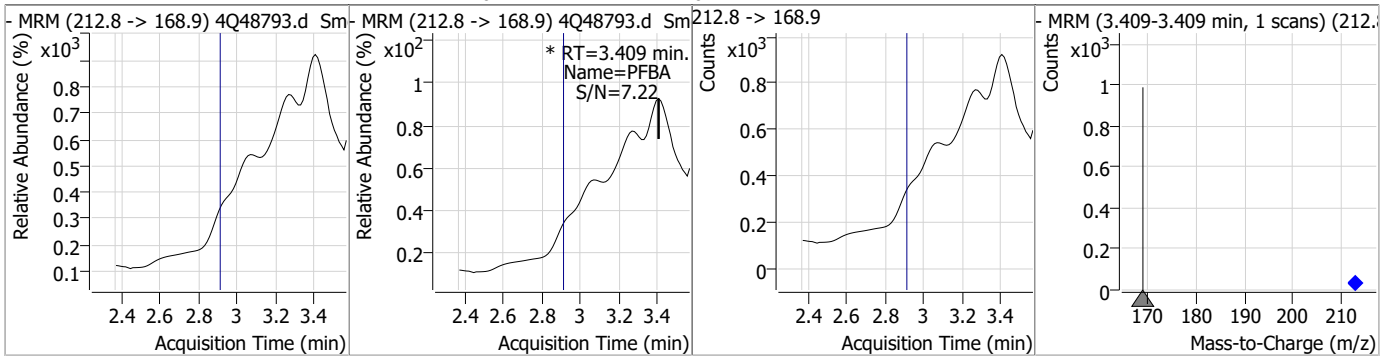
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

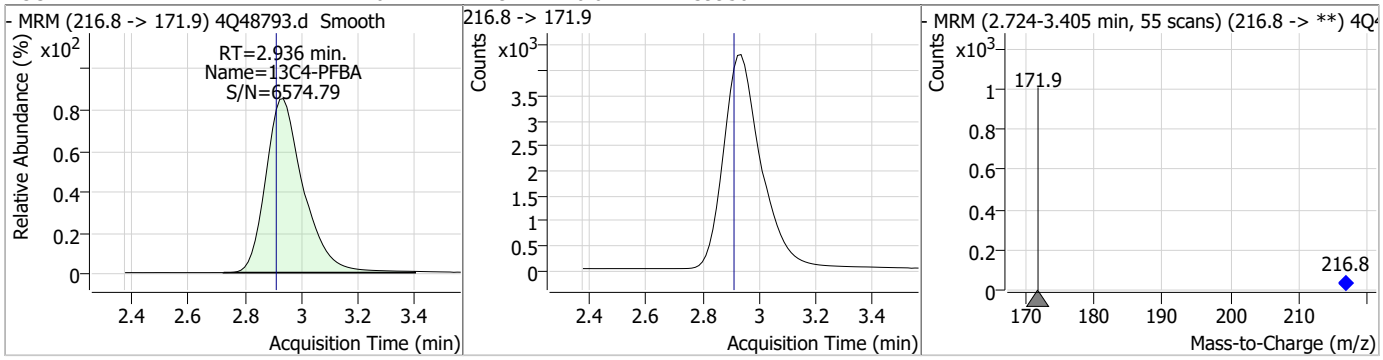
Perfluorinated Compounds by LC/MS/MS



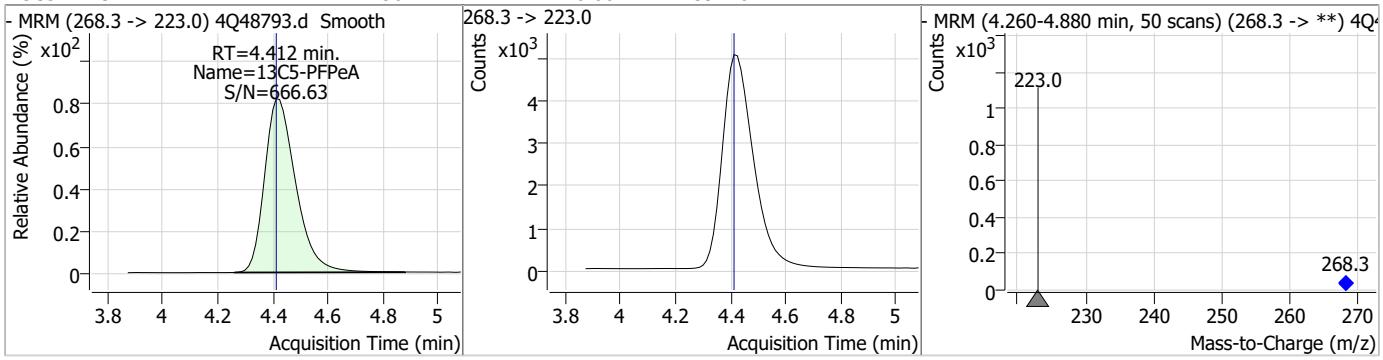
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.27	2.94	0.02	39950				

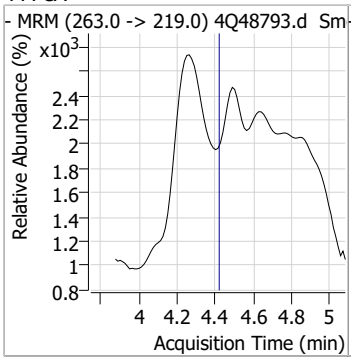


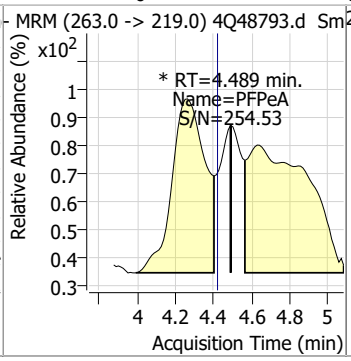
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.56	4.41	0.00	39446				

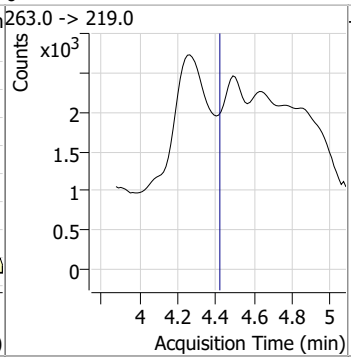


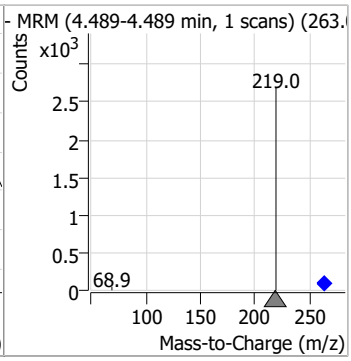
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				

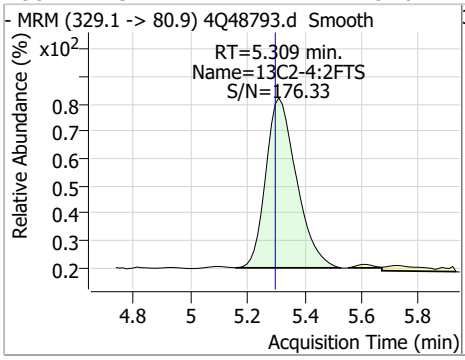


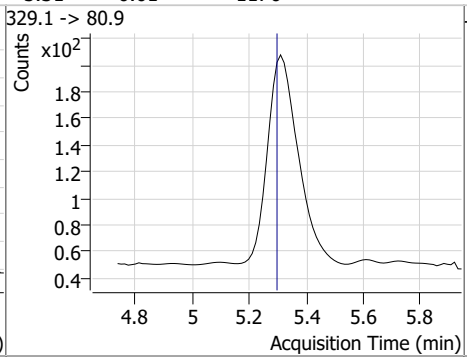


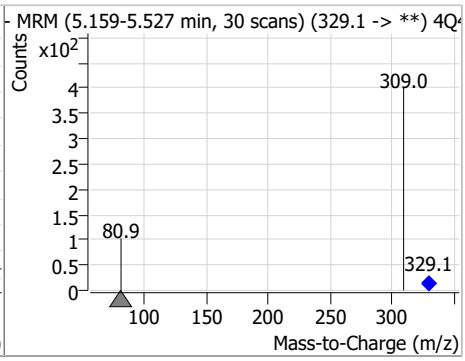




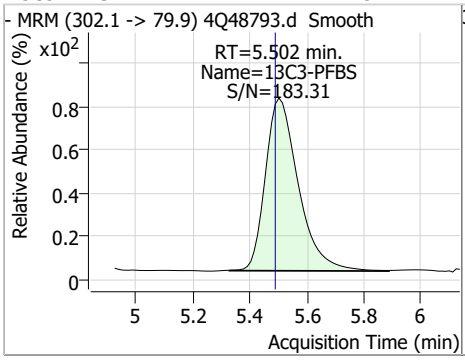
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.48	5.31	0.01	1176				

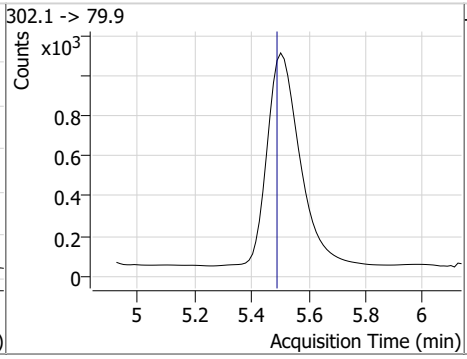


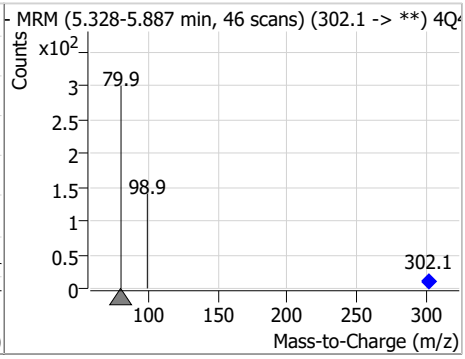




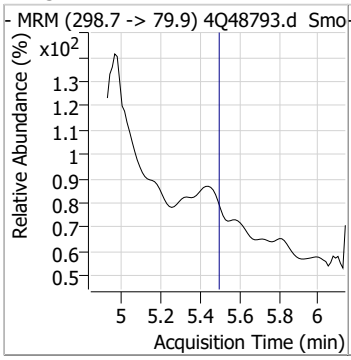
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.27	5.50	0.01	8478				

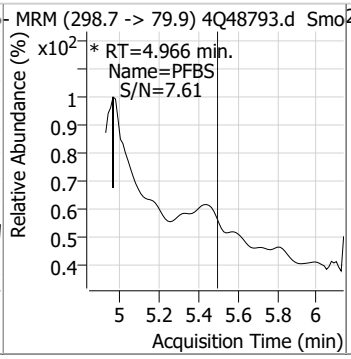


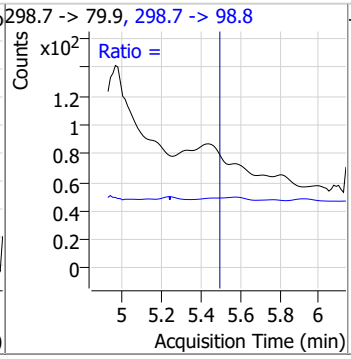


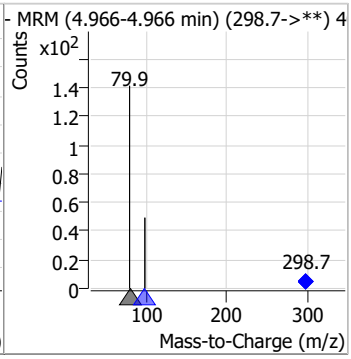


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	298.7 -> 98.8		18.5	55.5



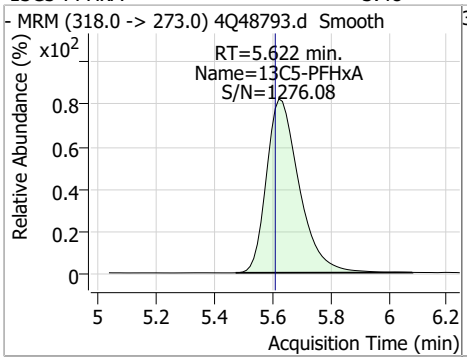


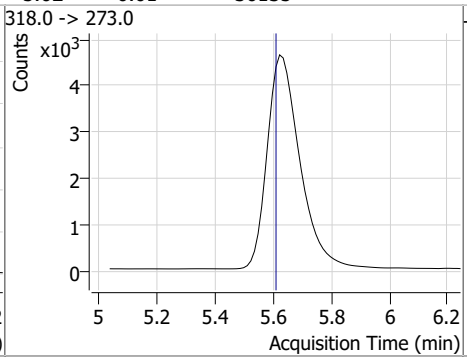


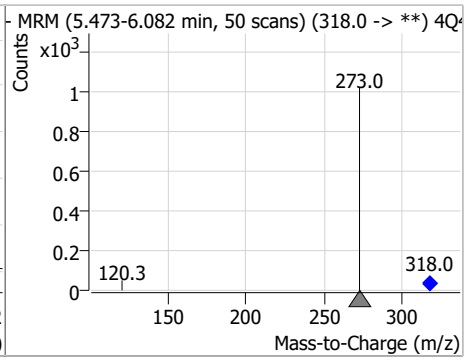


Perfluorinated Compounds by LC/MS/MS

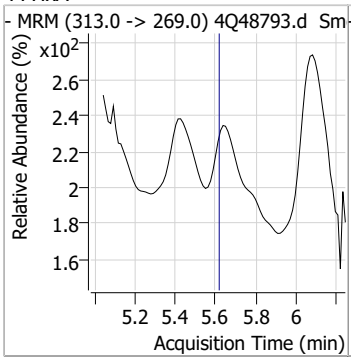
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.48	5.62	0.01	36135				

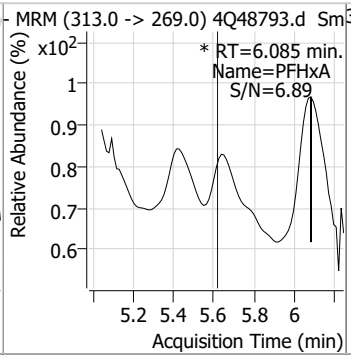


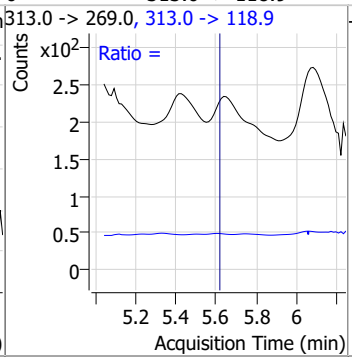


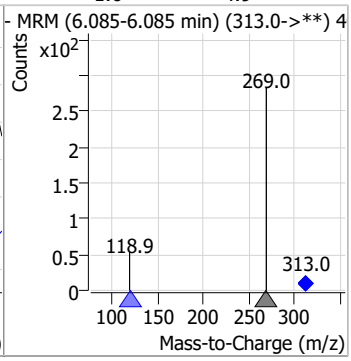


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9

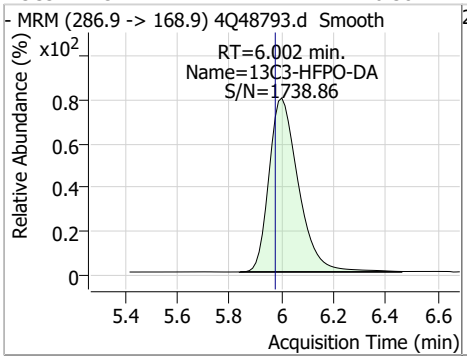


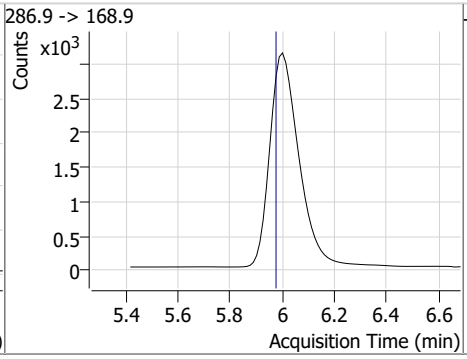


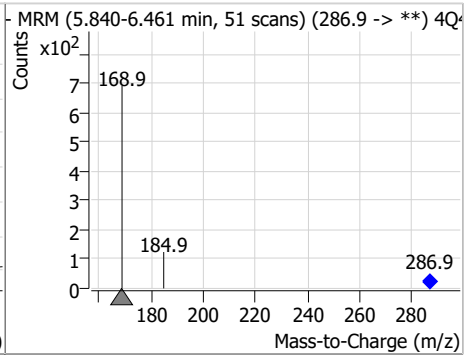




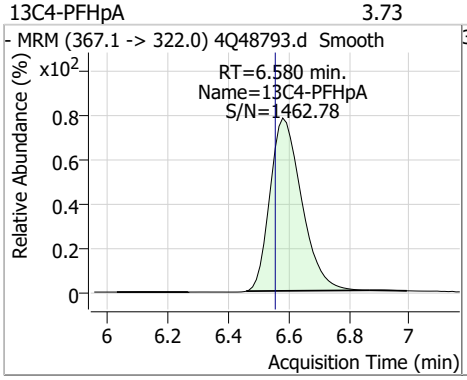
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.38	6.00	0.02	24466				

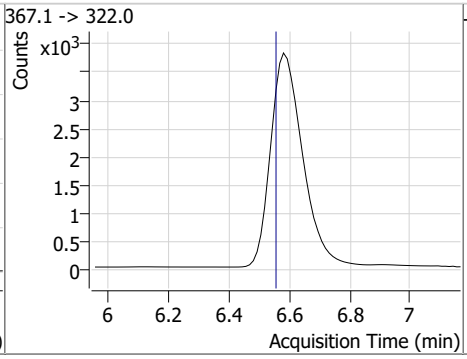


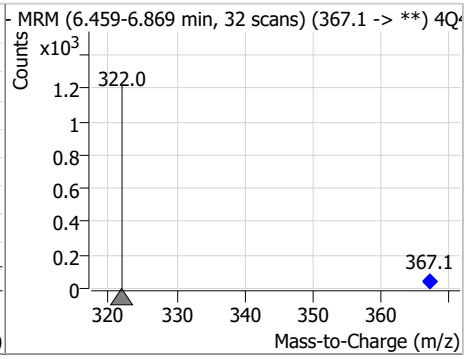




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.73	6.58	0.02	27509				

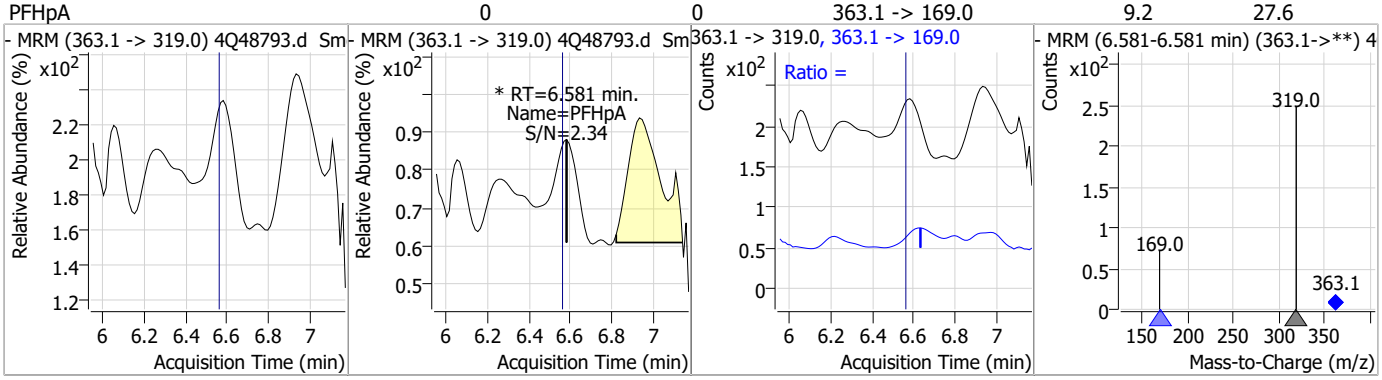




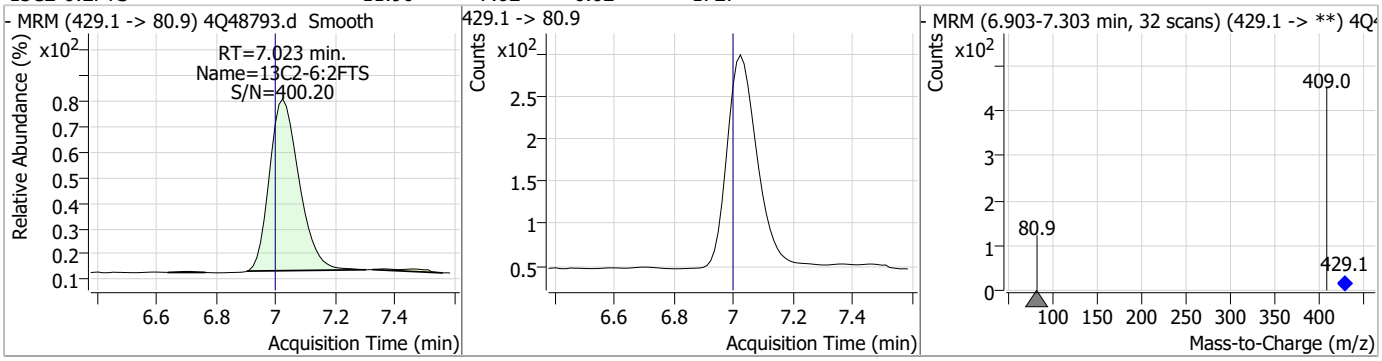


Perfluorinated Compounds by LC/MS/MS

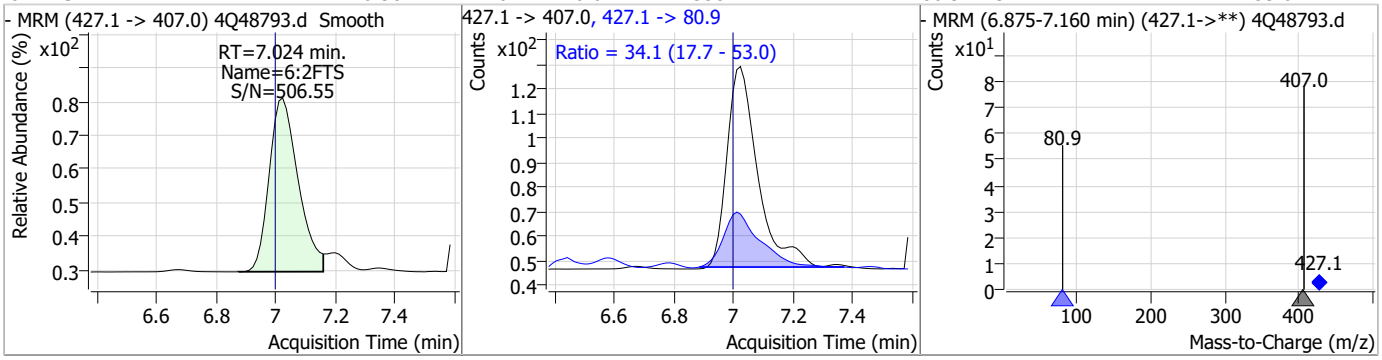
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6



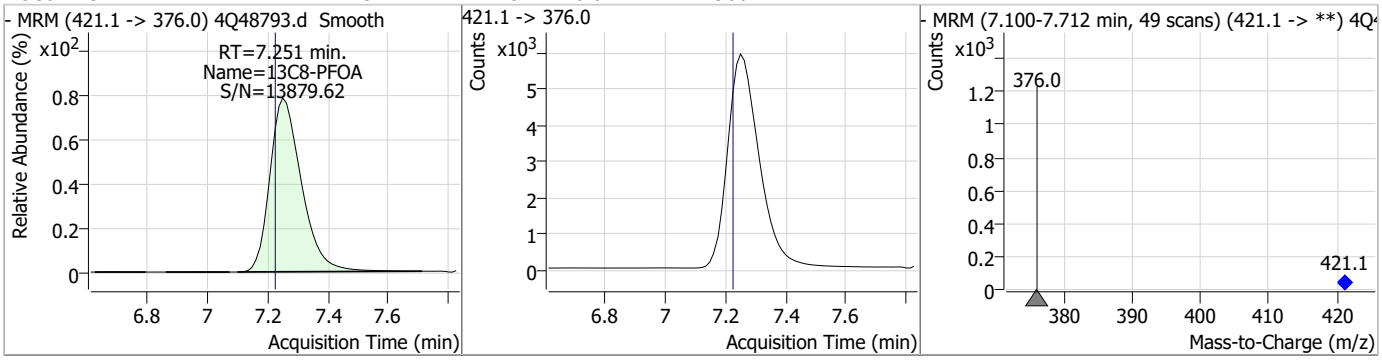
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.90	7.02	0.02	1727				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.38	7.02	0.02	558	427.1 -> 80.9	34.1	17.7	53.0

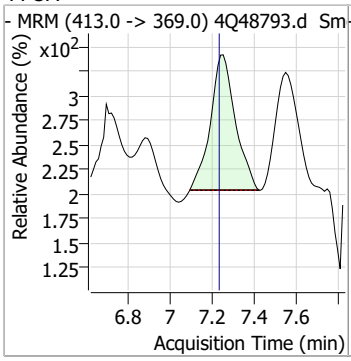


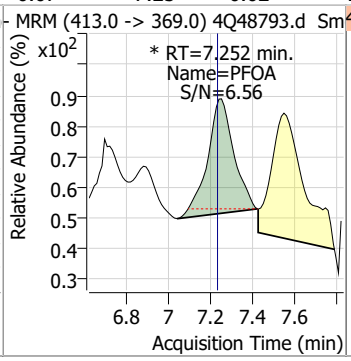
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.44	7.25	0.02	42906				

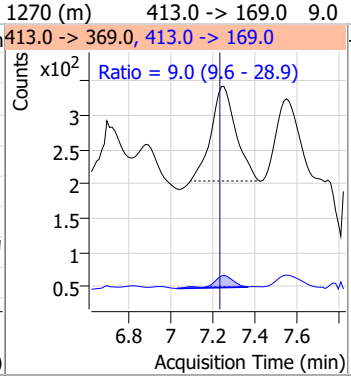


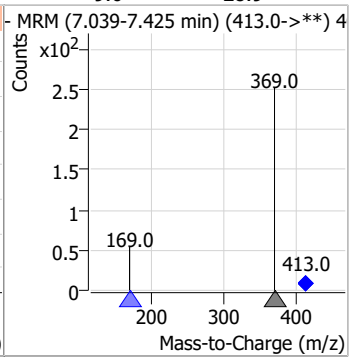
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.07	7.25	0.02	1270 (m)	413.0 -> 169.0	9.0	9.6	28.9

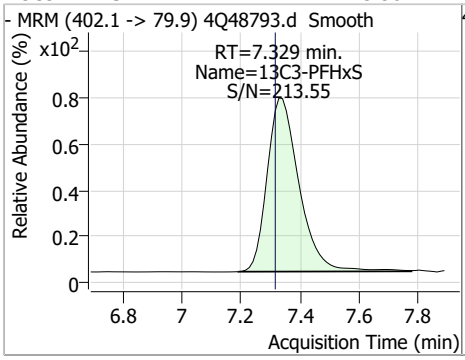


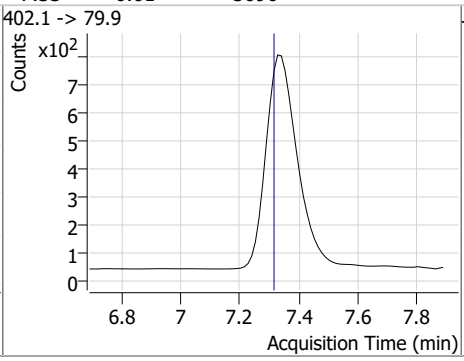


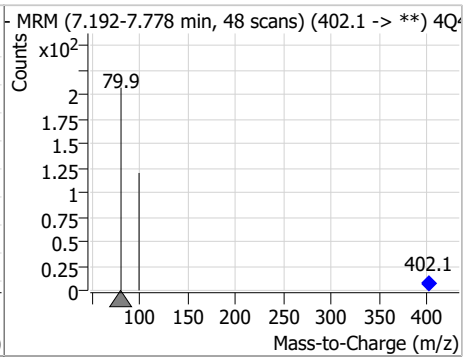




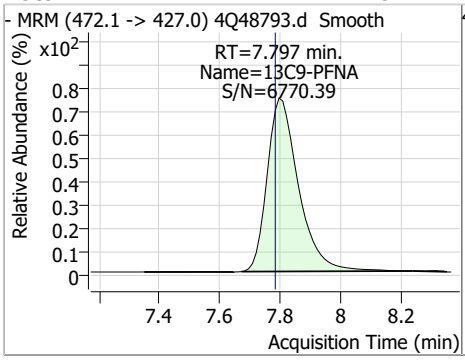
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.38	7.33	0.01	5690				

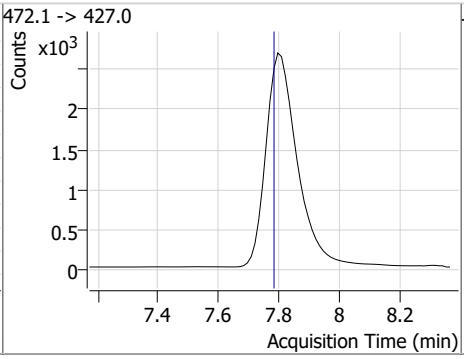


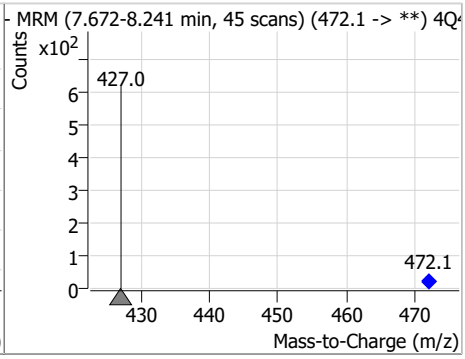




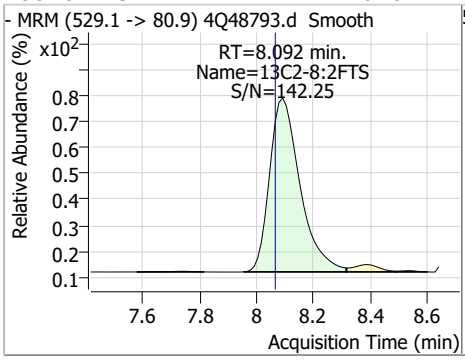
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.54	7.80	0.01	19100				

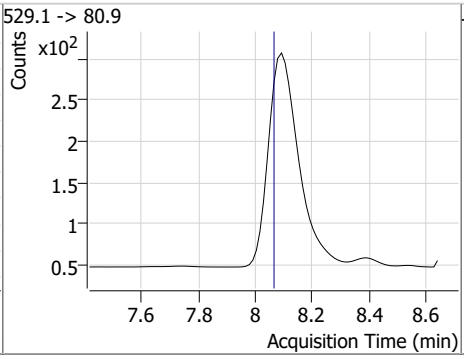


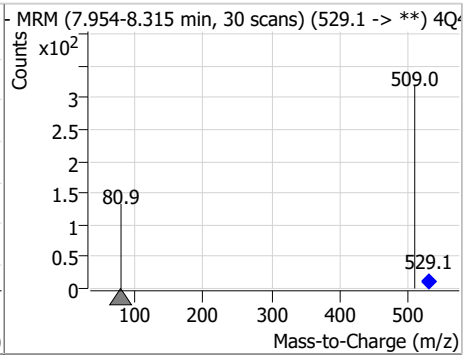




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.78	8.09	0.03	1937				

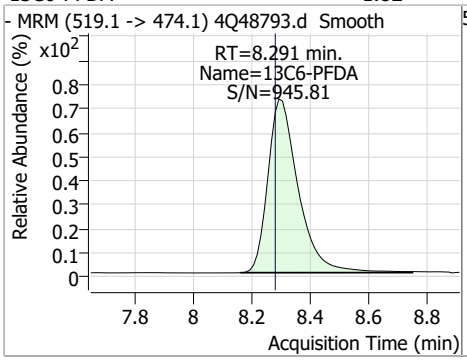


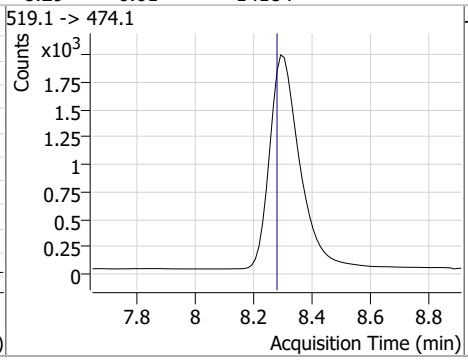


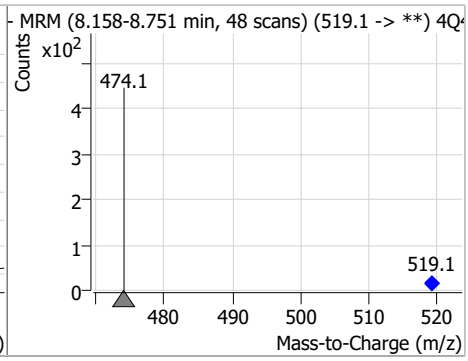


Perfluorinated Compounds by LC/MS/MS

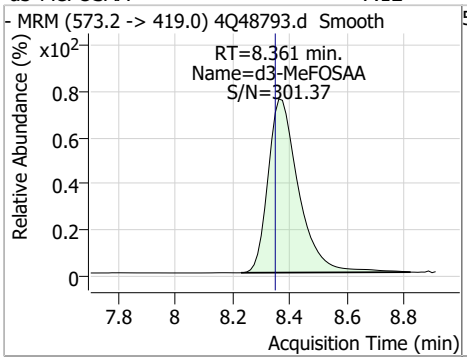
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.82	8.29	0.01	14184				

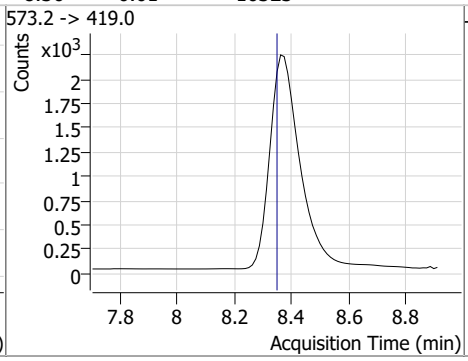


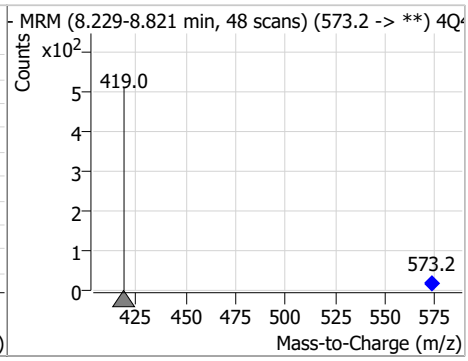




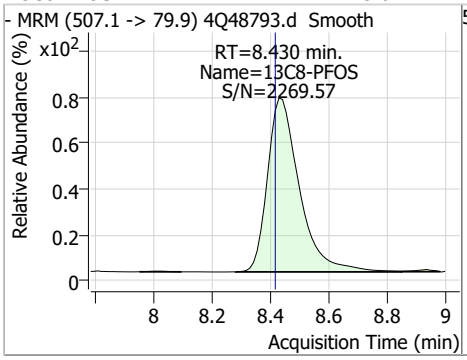
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.12	8.36	0.01	16323				

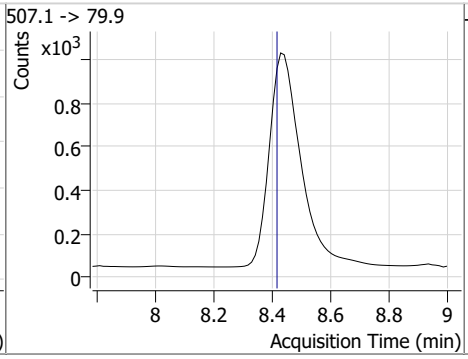


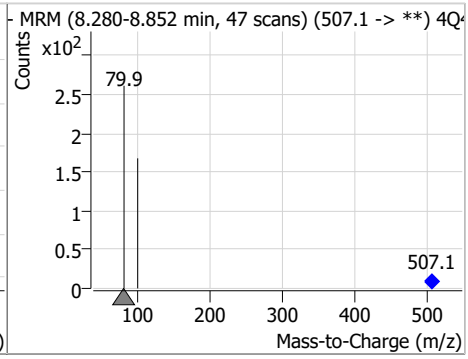




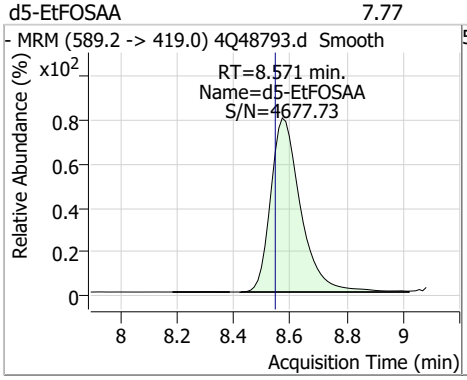
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.04	8.43	0.01	7541				

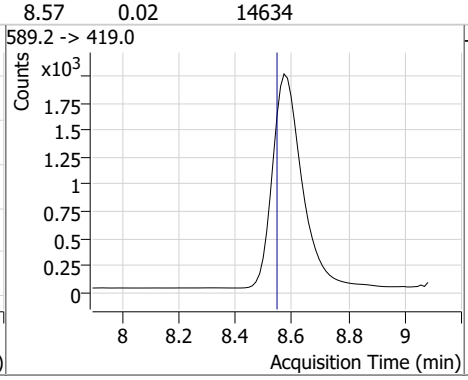


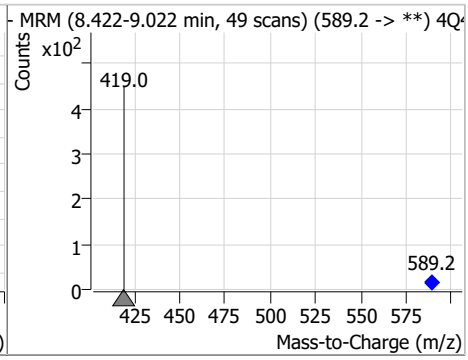




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.77	8.57	0.02	14634				

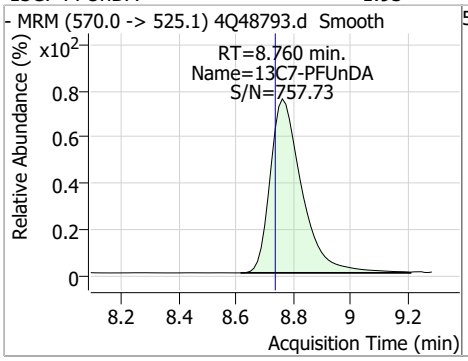


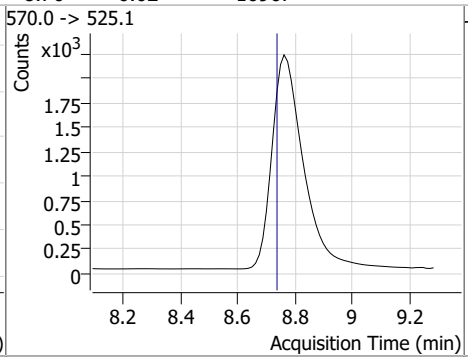


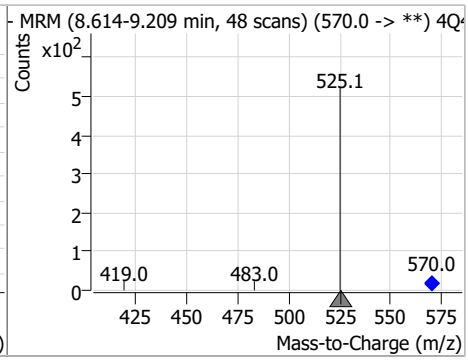


Perfluorinated Compounds by LC/MS/MS

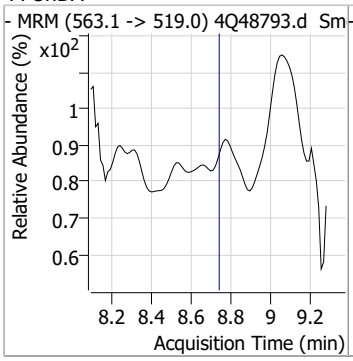
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.93	8.76	0.02	16967				

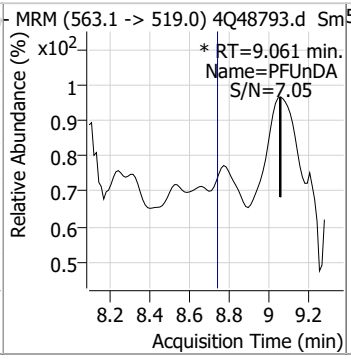


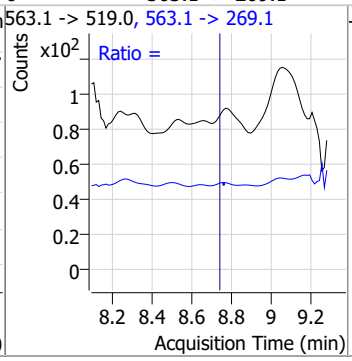


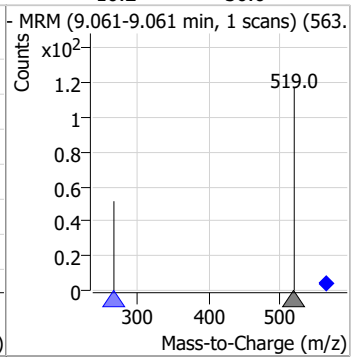


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA		0		0	563.1 -> 269.1		10.2	30.6

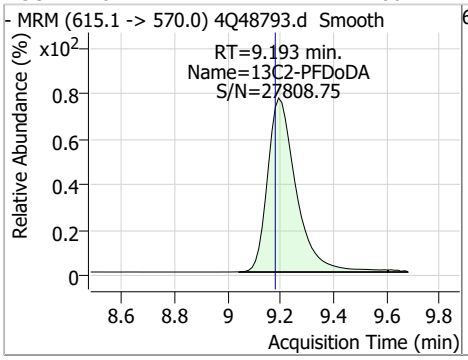


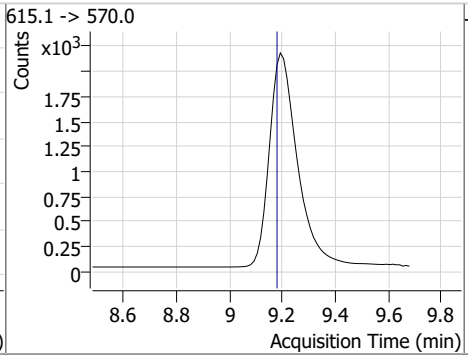


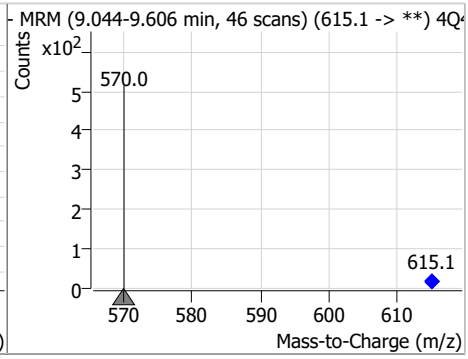




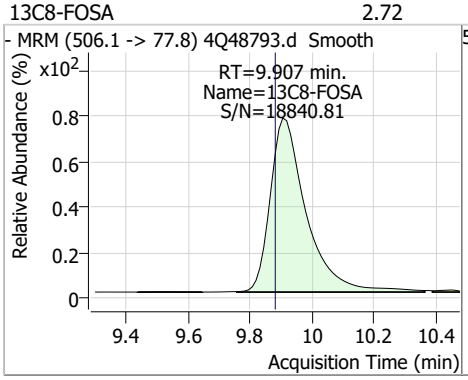
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.66	9.19	0.01	16071				

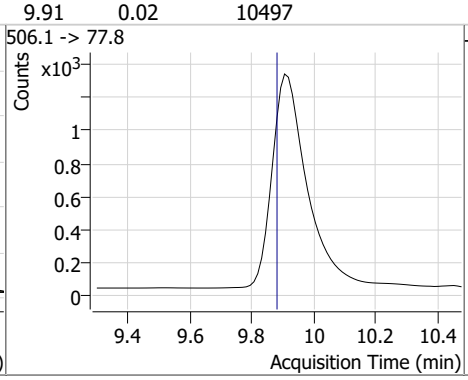


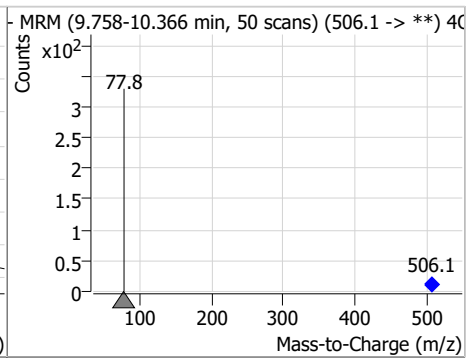




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.72	9.91	0.02	10497				

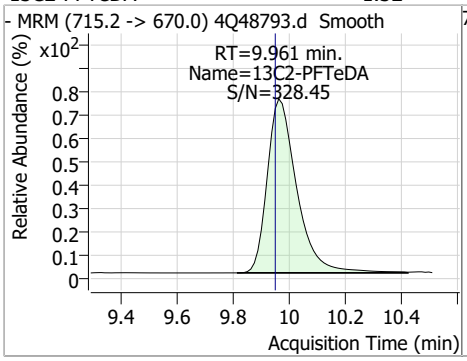


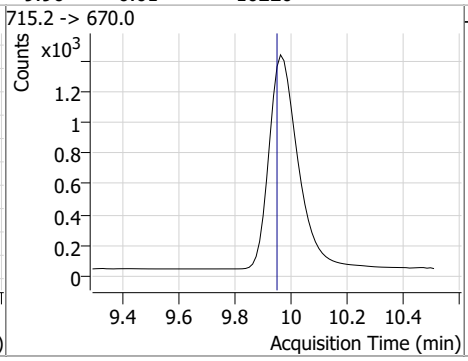


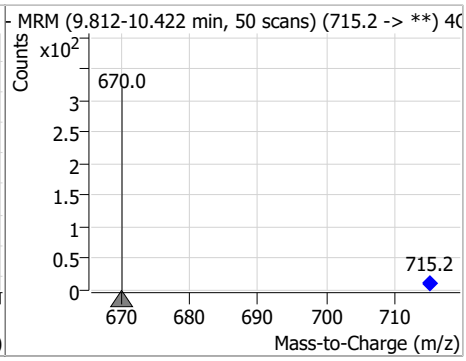


Perfluorinated Compounds by LC/MS/MS

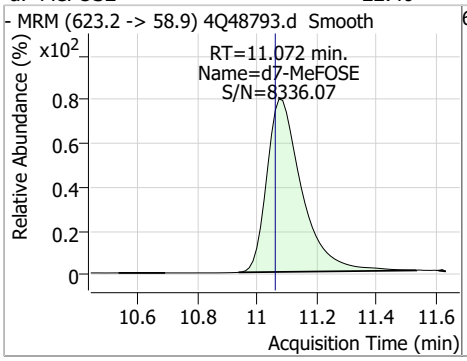
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	9.96	0.01	10220				

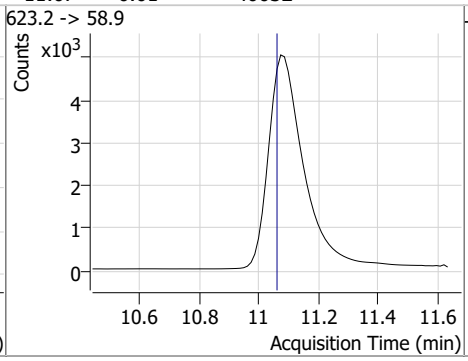


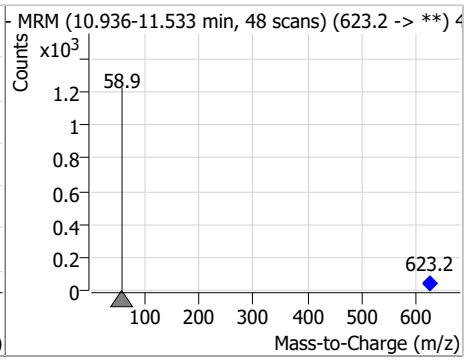




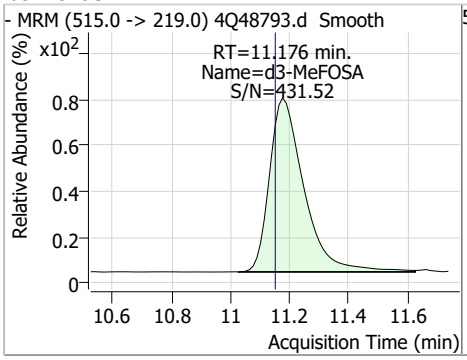
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.40	11.07	0.01	40632				

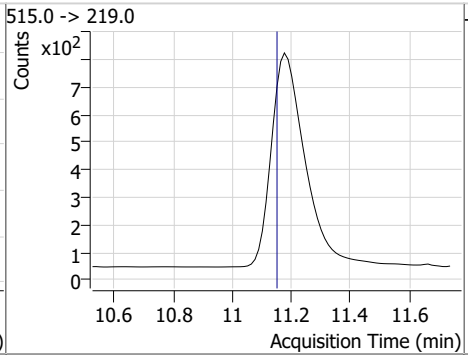


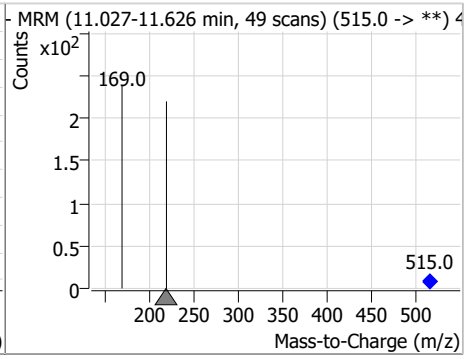




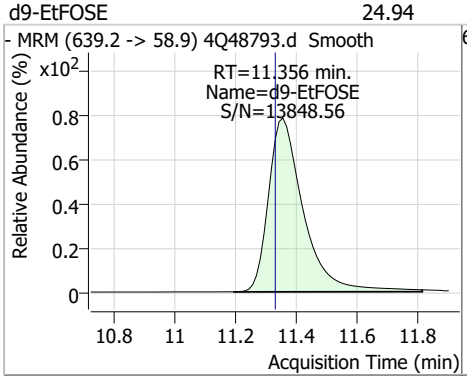
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.77	11.18	0.02	6292				

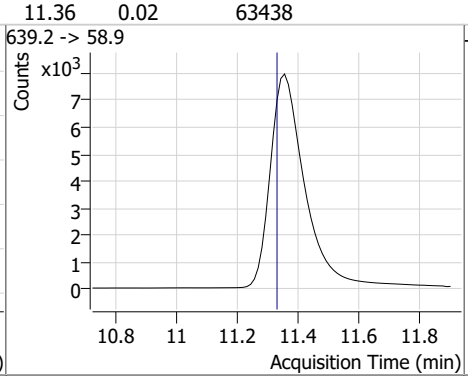


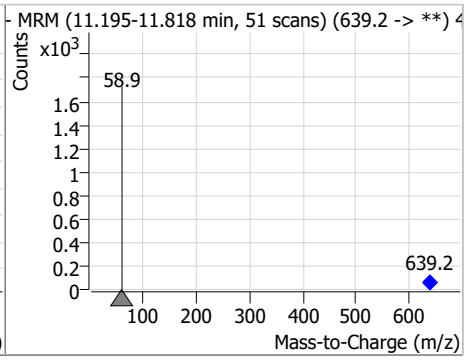




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.94	11.36	0.02	63438				

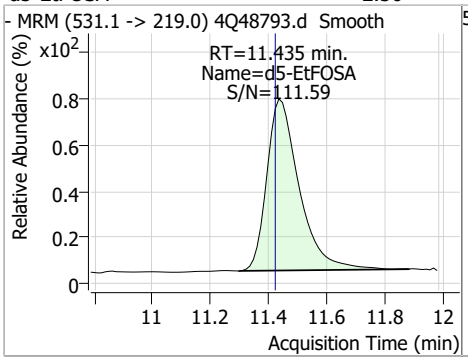


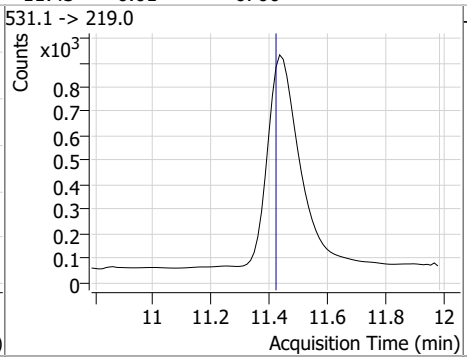


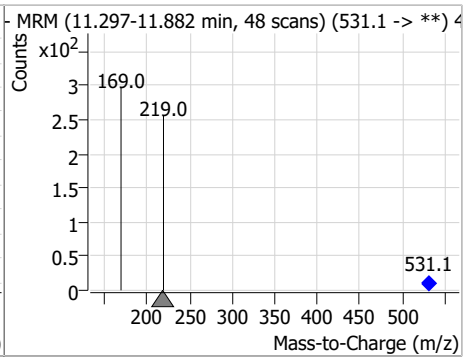


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	11.43	0.01	6700				







Manual Integration Approval Summary

Sample Number:	FC8439-5	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48793.D	**Analyst approved:**	08/13/23 14:24 Martha Valls
Injection Time:	08/09/23 22:29	**Supervisor approved:**	08/14/23 14:59 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.25	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22669.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 8:33:40 PM
Sample Name : FC8439-5
Vial : P4-B1
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98297,S6Q330,540,,,5.0,10,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	9589	1.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	4237	0.50	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	4919	0.25	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	4889	0.25	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	7315	0.25	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	3632	0.13	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	1974	0.13	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	2386	0.13	µg/L	0.000
M2-PFDoDA	9.135	615.1 -> 570.0	1817	0.13	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	1010	0.13	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	2127	0.25	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	1770	0.25	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	1115	0.25	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	977	0.25	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	262	0.50	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	375	0.50	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	382	0.50	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	2326	0.50	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	2771	1.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	2021	0.50	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	7093	2.50	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	9935	2.50	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	834	0.25	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	887	0.25	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	1055	0.25	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	4413	0.50	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	625	0.25	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	6438	0.25	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	2103	0.13	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	3528	0.13	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	3668	0.25	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	262	0.70	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C2-6:2FTS	7.001	429.1 -> 80.9	375	0.70	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C2-8:2FTS	8.039	529.1 -> 80.9	382	0.72	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 14.5%		
13C2-PFDoDA	9.135	615.1 -> 570.0	1817	0.13	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.2%		
13C2-PFTeDA	9.851	715.2 -> 670.0	1010	0.12	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 9.9%		
13C3-PFBS	5.610	302.1 -> 79.9	1770	0.33	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.3%		
13C3-PFHxS	7.355	402.1 -> 79.9	1115	0.32	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 = 13.0%			
13C4-PFBA	3.010	216.8 -> 171.9	9589	0.92	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.2%			
13C4-PFHpA	6.596	367.1 -> 322.0	4889	0.33	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.2%			
13C5-PFHxA	5.668	318.0 -> 273.0	4919	0.32	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.0%			
13C5-PFPeA	4.447	268.3 -> 223.0	4237	0.61	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 12.3%			
13C6-PFDA	8.250	519.1 -> 474.1	1974	0.17	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 13.3%			
13C7-PFUnDA	8.717	570.0 -> 525.1	2386	0.15	µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 12.1%			
13C8-FOSA	9.650	506.1 -> 77.8	2127	0.27	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.7%			
13C8-PFOA	7.239	421.1 -> 376.0	7315	0.31	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 12.3%			
13C8-PFOS	8.414	507.1 -> 79.9	977	0.32	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 12.7%			
13C9-PFNA	7.758	472.1 -> 427.0	3632	0.16	µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 12.7%			
d3-MeFOSAA	8.297	573.2 -> 419.0	2326	0.61	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 12.2%			
13C3-HFPO-DA	6.045	286.9 -> 168.9	2771	1.17	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.7%			
d3-MeFOSA	10.763	515.0 -> 219.0	887	0.27	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.9%			
d5-EtFOSAA	8.492	589.2 -> 419.0	2021	0.57	µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 11.5%			
d7-MeFOSE	10.685	623.2 -> 58.9	7093	2.49	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.9%			
d9-EtFOSE	10.918	639.2 -> 58.9	9935	2.61	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 10.4%			
d5-EtFOSA	10.983	531.1 -> 219.0	834	0.25	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.2%			
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	3.144	212.8 -> 168.9	0		µg/L	m	1
PFBS	-	298.7 -> 79.9	-	N.D.			
		298.7 -> 98.8					
PFDA	-	512.9 -> 469.0	-	N.D.			
		512.9 -> 219.0					
PFDoDA	-	613.1 -> 569.0	-	N.D.			
		613.1 -> 319.0					
PFDS	-	599.0 -> 79.9	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

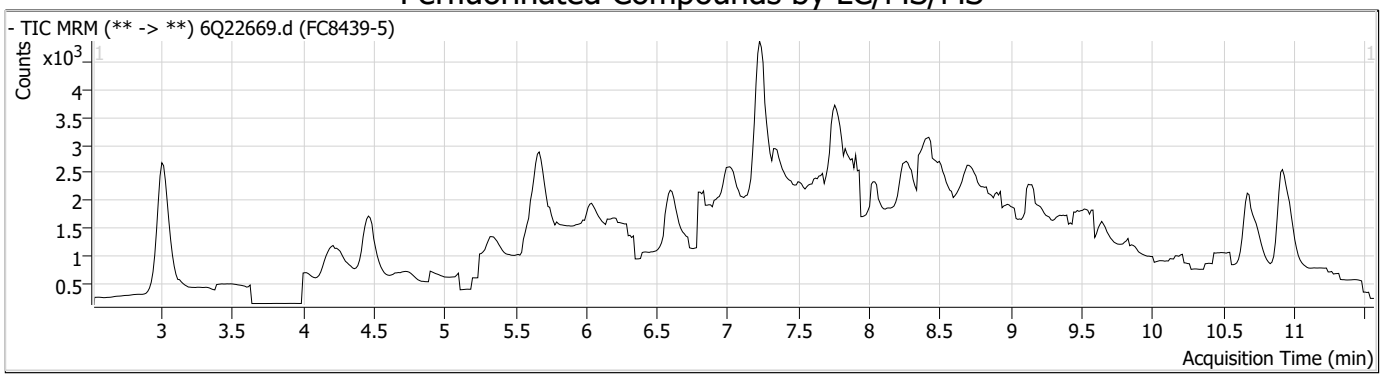
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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	4.486	263.0 -> 219.0	3087	0.33	µg/L	100
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

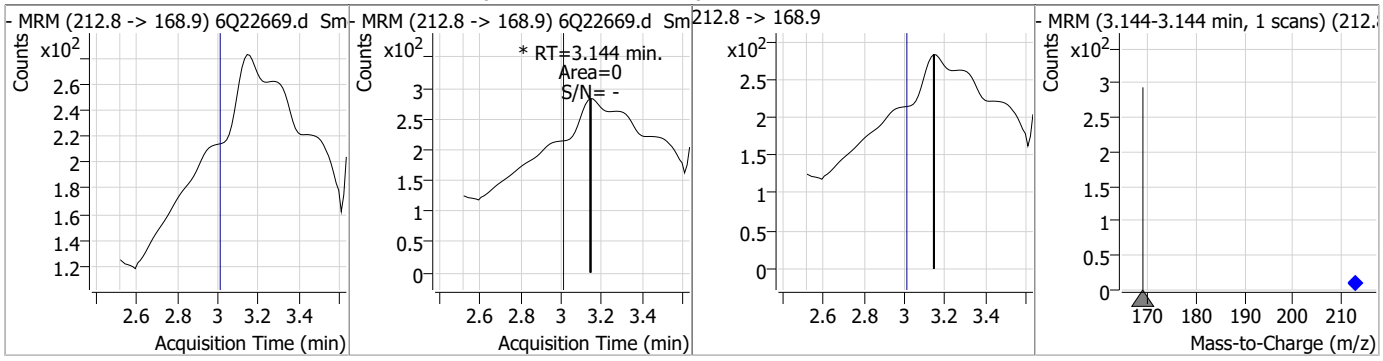
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

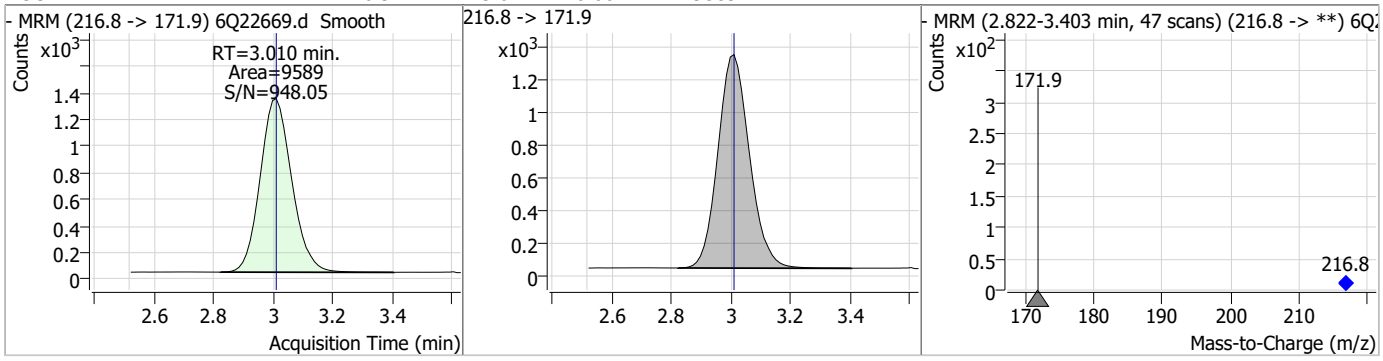
Perfluorinated Compounds by LC/MS/MS



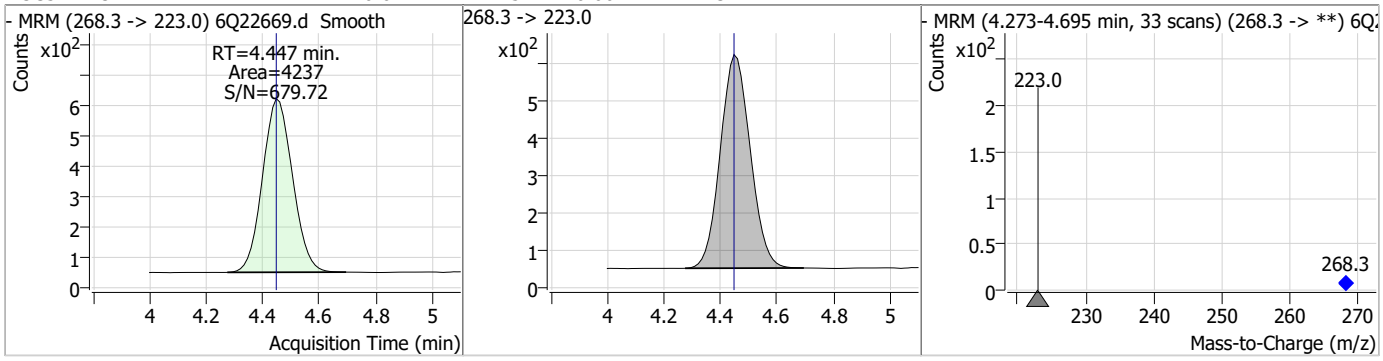
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	0.92	3.01	0.00	9589				

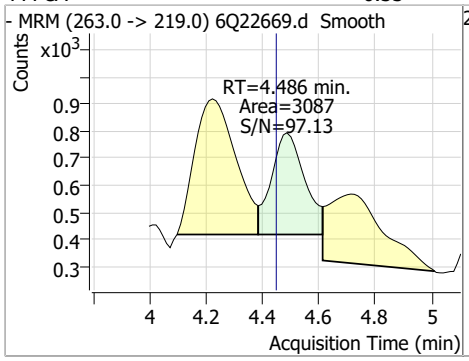


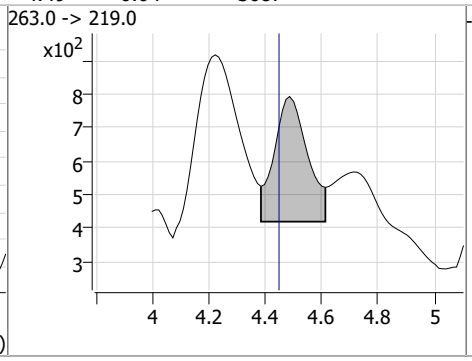
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	0.61	4.45	0.00	4237				

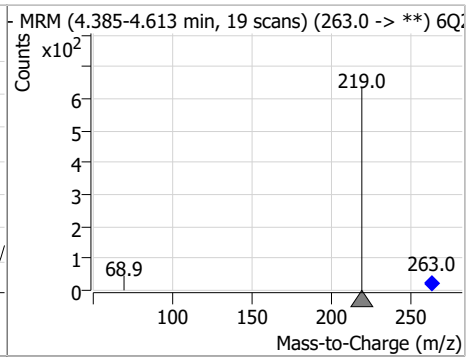


Perfluorinated Compounds by LC/MS/MS

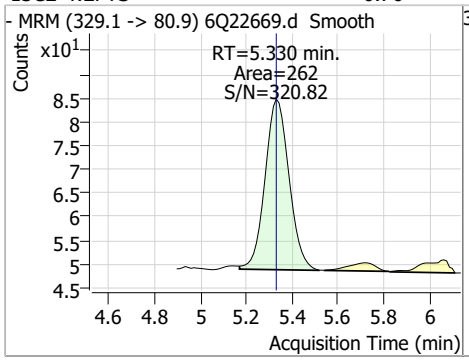
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.33	4.49	0.04	3087				

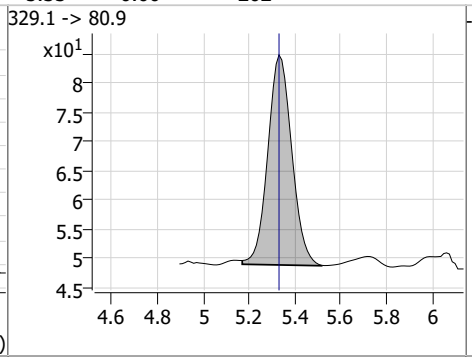


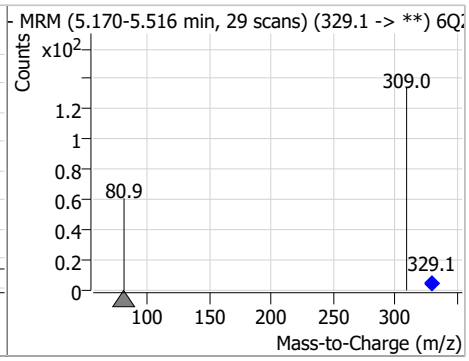




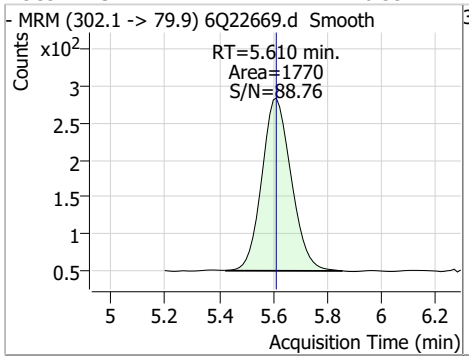
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	0.70	5.33	0.00	262				

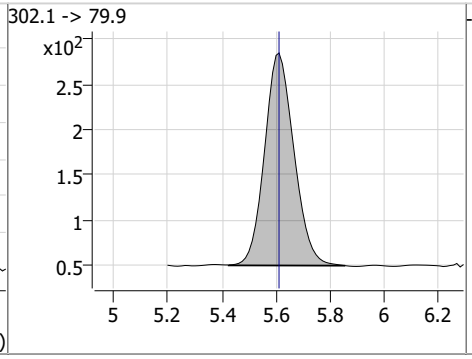


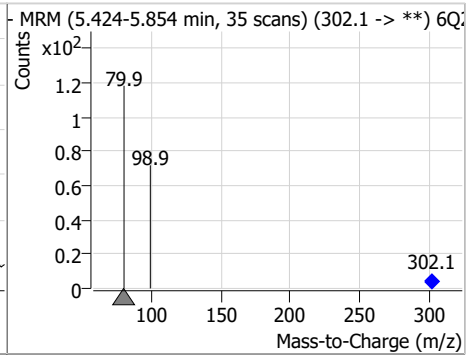




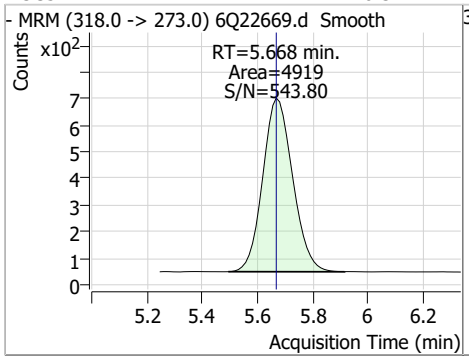
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	0.33	5.61	0.00	1770				

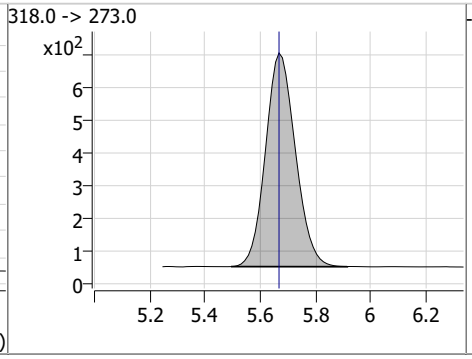


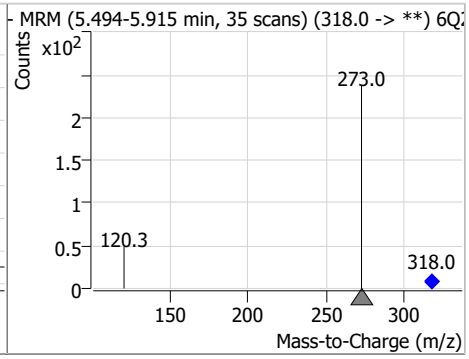




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	0.32	5.67	0.00	4919				

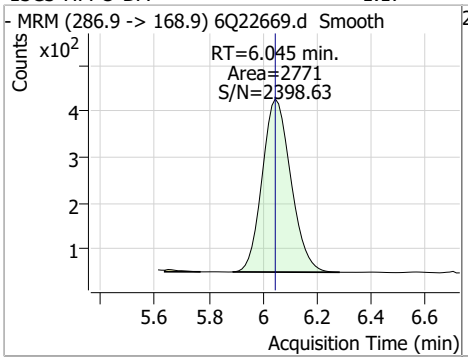


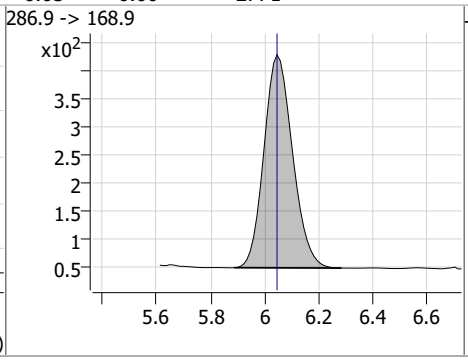


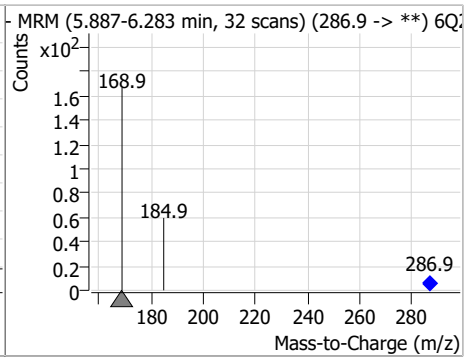


Perfluorinated Compounds by LC/MS/MS

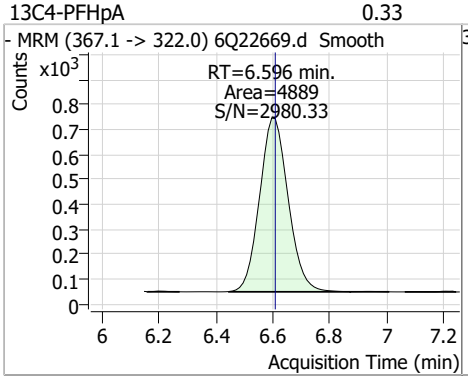
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.17	6.05	0.00	2771				

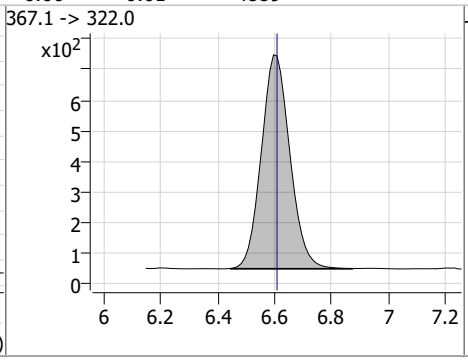


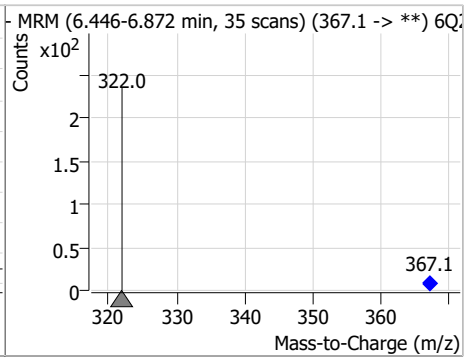




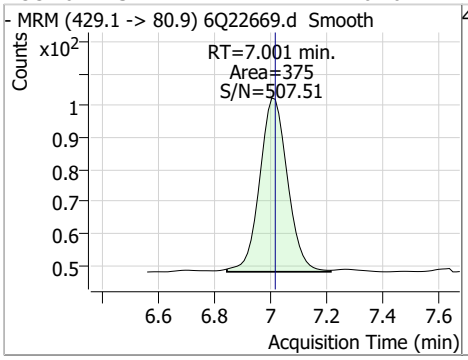
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	0.33	6.60	-0.01	4889				

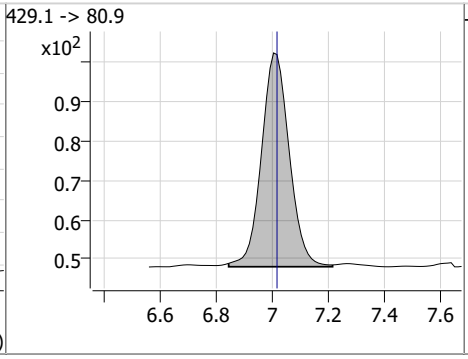


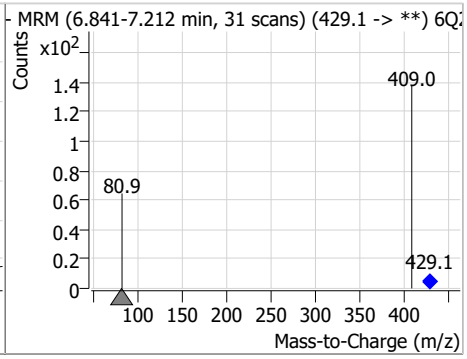




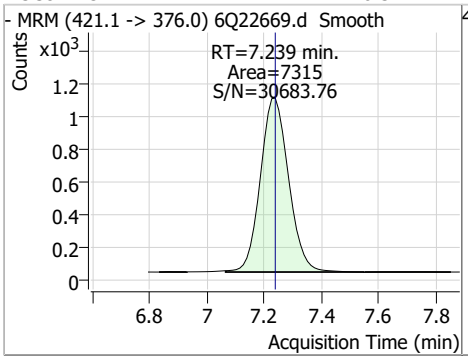
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	0.70	7.00	-0.01	375				

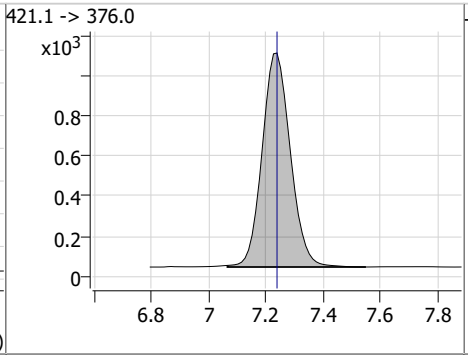


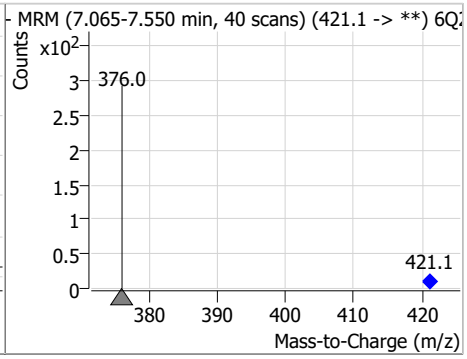




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	0.31	7.24	0.00	7315				

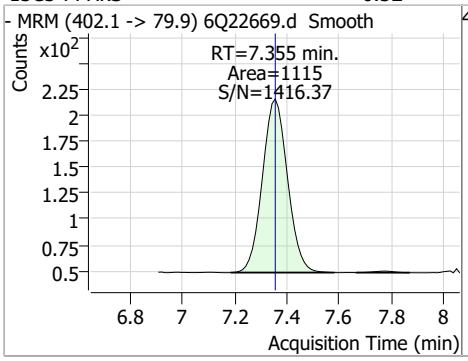


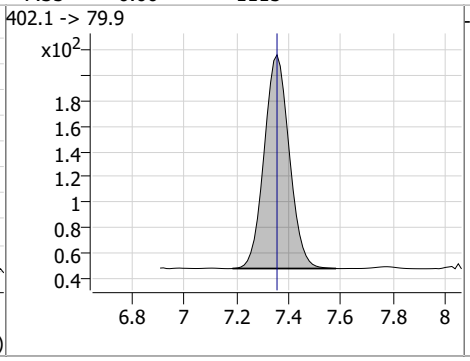


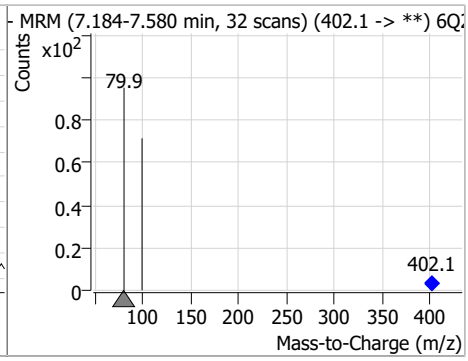


Perfluorinated Compounds by LC/MS/MS

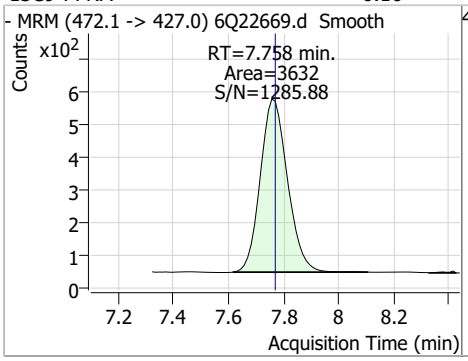
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	0.32	7.35	0.00	1115				

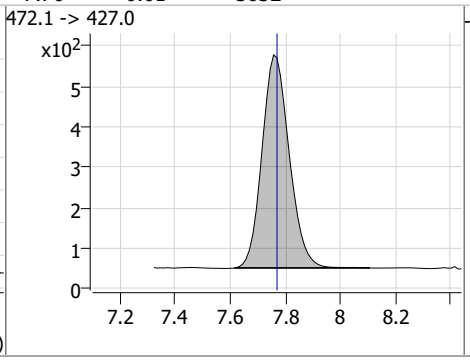


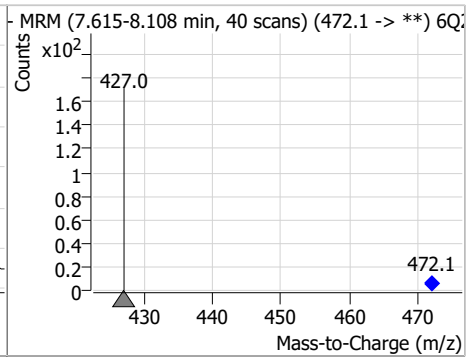




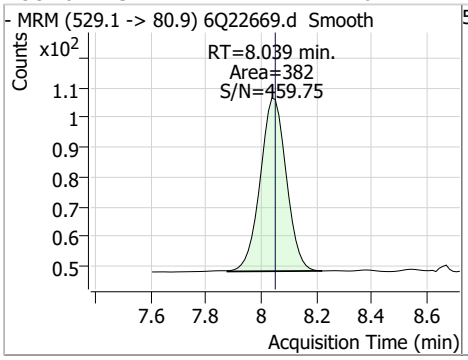
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	0.16	7.76	-0.01	3632				

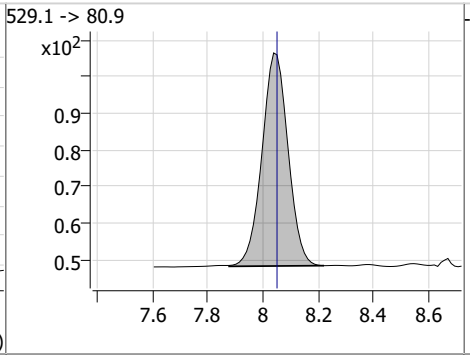


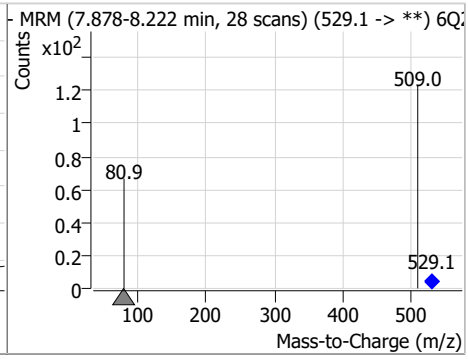




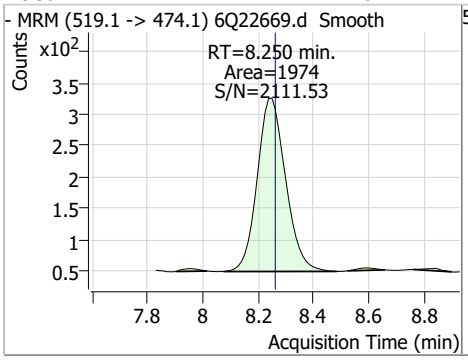
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	0.72	8.04	-0.01	382				

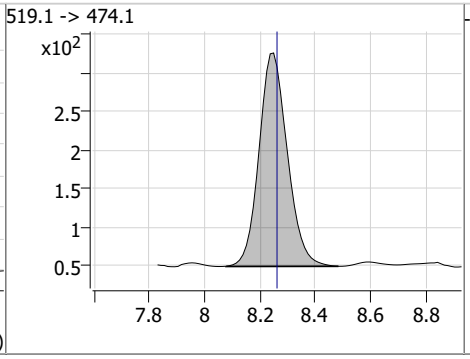


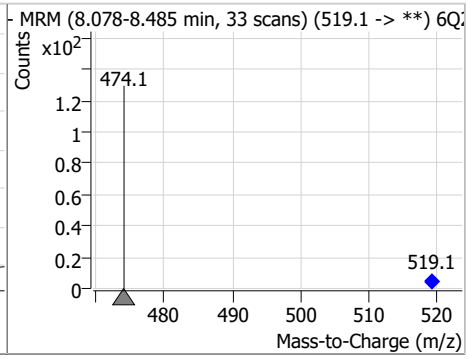




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	0.17	8.25	-0.01	1974				

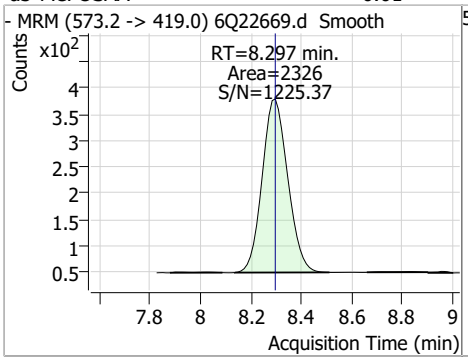


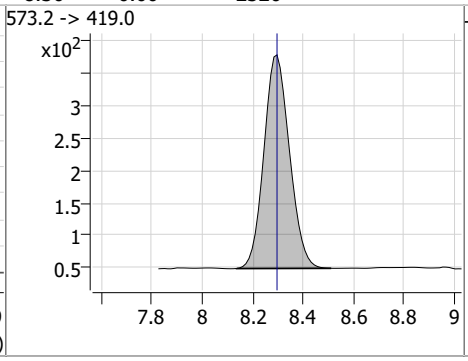


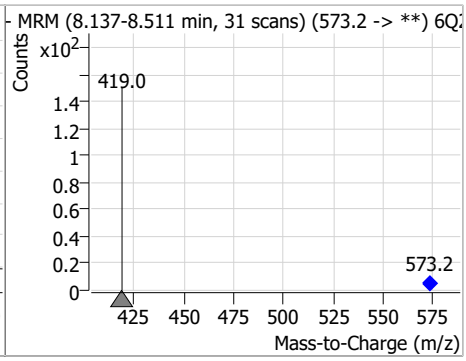


Perfluorinated Compounds by LC/MS/MS

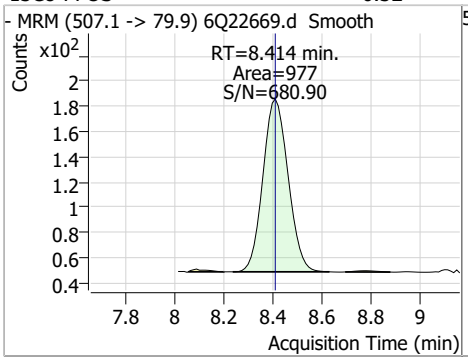
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	0.61	8.30	0.00	2326				

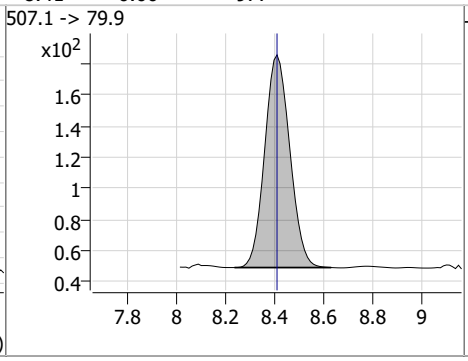


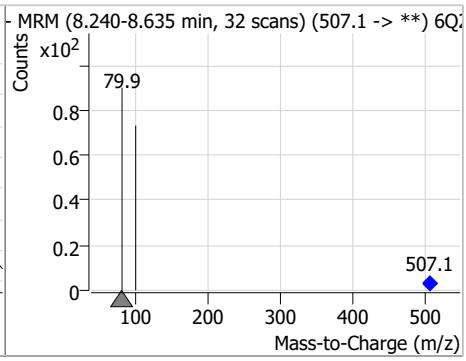




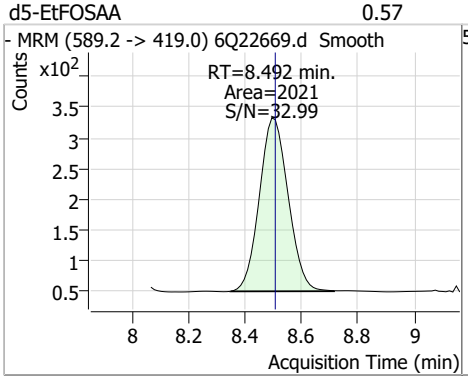
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	0.32	8.41	0.00	977				

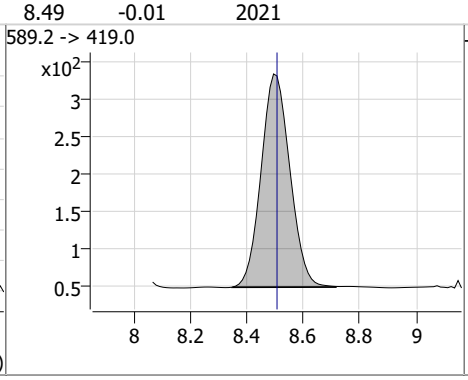


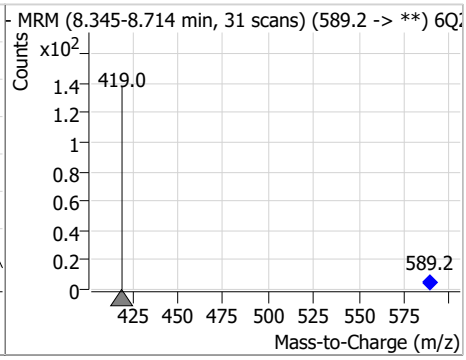




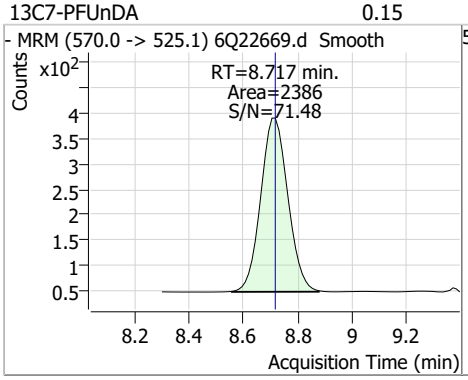
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	0.57	8.49	-0.01	2021				

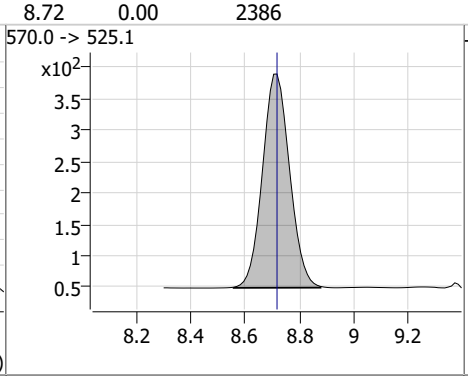


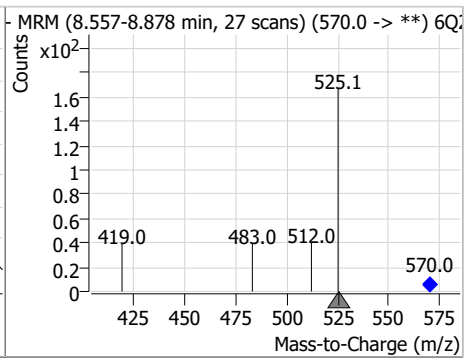




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.15	8.72	0.00	2386				

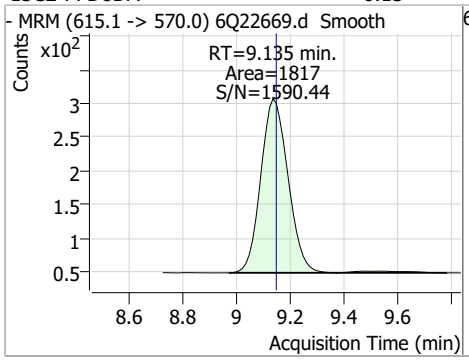


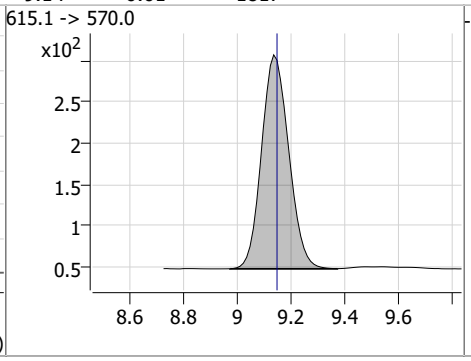


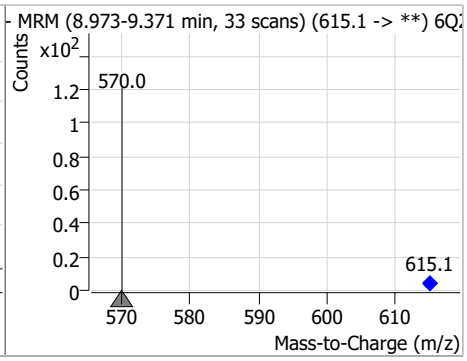


Perfluorinated Compounds by LC/MS/MS

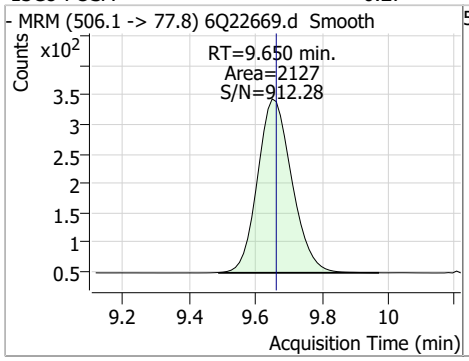
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.13	9.14	-0.01	1817				

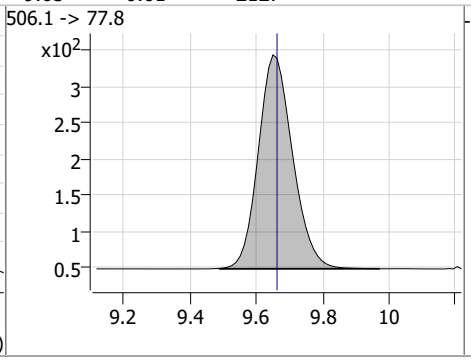


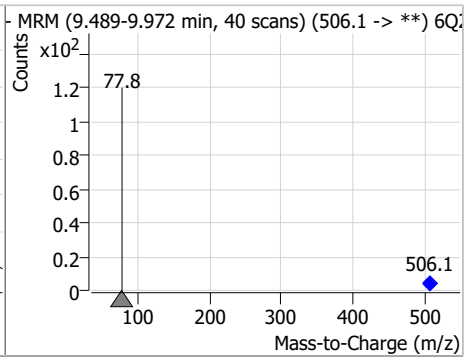




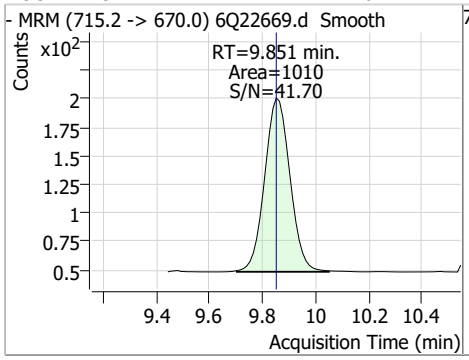
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.27	9.65	-0.01	2127				

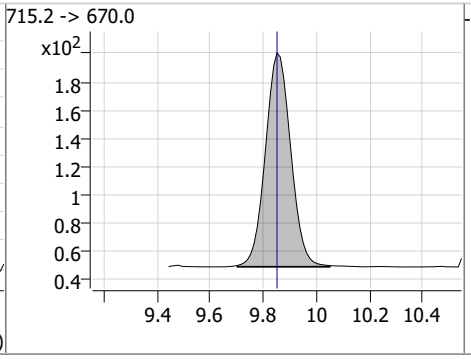


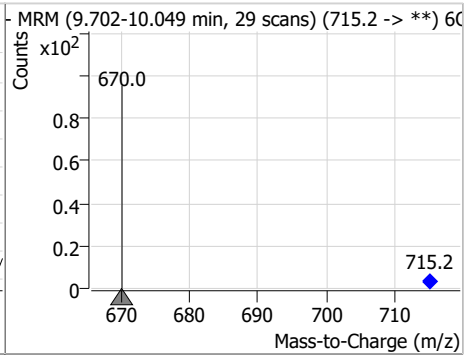




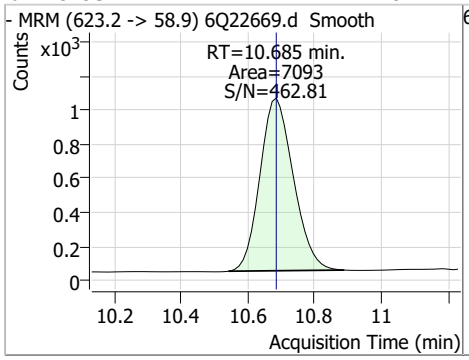
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.12	9.85	0.00	1010				

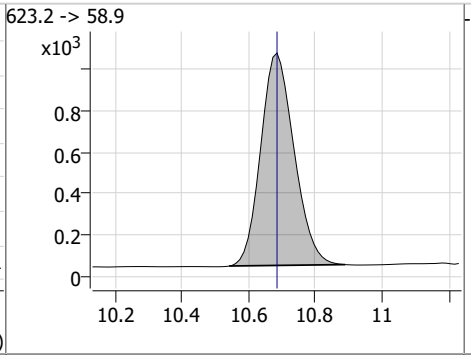


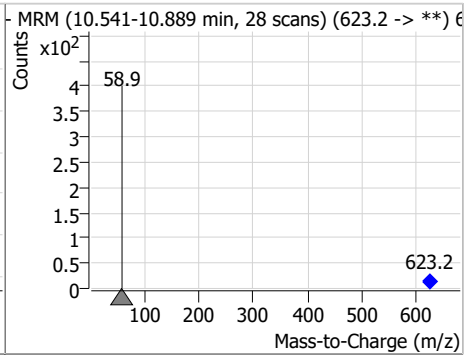




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	2.49	10.68	0.00	7093				

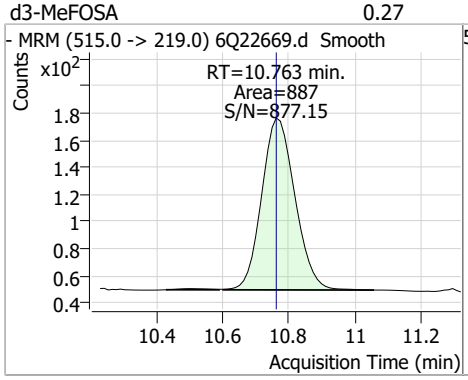


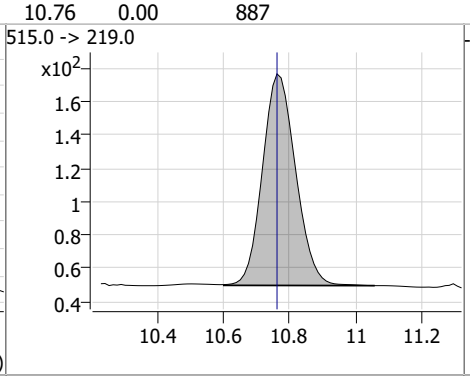


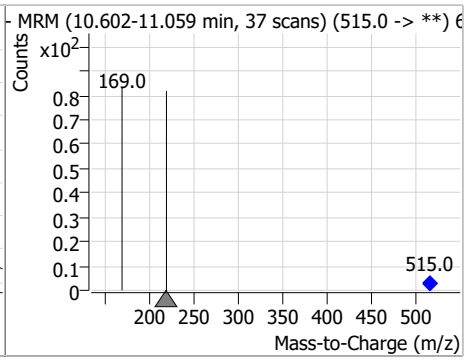


Perfluorinated Compounds by LC/MS/MS

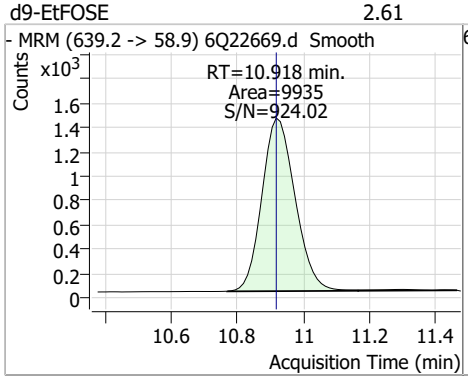
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.27	10.76	0.00	887				

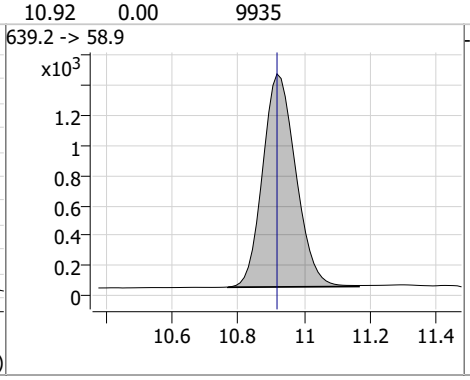


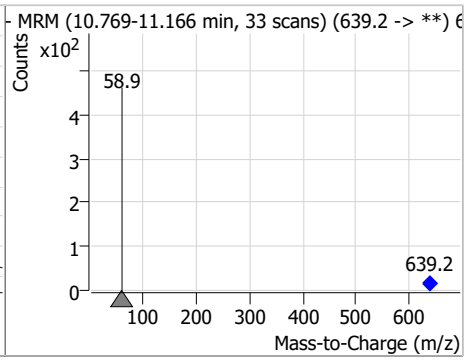




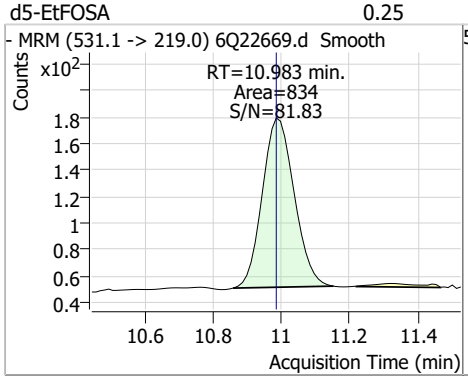
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	2.61	10.92	0.00	9935				

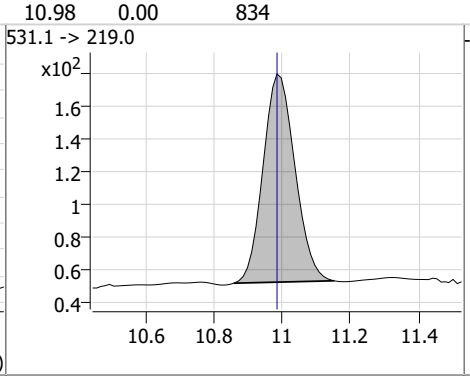


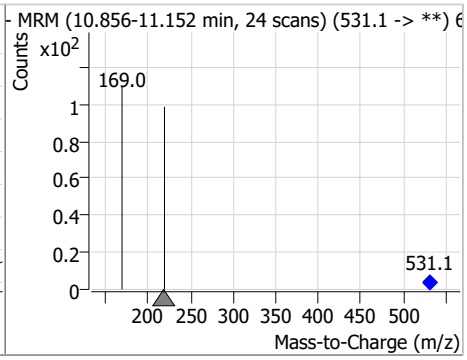




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	0.25	10.98	0.00	834				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 16:33

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48794.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 10:44:41 PM
Sample Name : fc8439-6
Vial : P4-E5
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,520,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.949	216.8 -> 171.9	89566	10.00	µg/L	0.037
M5-PFPeA	4.425	268.3 -> 223.0	51404	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	37537	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	26818	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	41756	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	17505	1.25	µg/L	0.013
M6-PFDA	8.291	519.1 -> 474.1	12741	1.25	µg/L	0.013
M7-PFUnDA	8.760	570.0 -> 525.1	15367	1.25	µg/L	0.025
M2-PFDoDA	9.193	615.1 -> 570.0	14375	1.25	µg/L	0.012
M2-PFTeDA	9.974	715.2 -> 670.0	9055	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	8375	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	8724	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	5793	2.50	µg/L	0.012
M8-PFOS	8.430	507.1 -> 79.9	7222	2.50	µg/L	0.013
M2-4:2FTS	5.309	329.1 -> 80.9	806	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1373	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	1618	5.00	µg/L	0.026
M3-MeFOSAA	8.361	573.2 -> 419.0	14748	5.00	µg/L	0.013
M3-HFPO-DA	6.002	286.9 -> 168.9	27517	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	12616	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	34855	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	51701	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	6262	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	5637	2.50	µg/L	0.025
13C4-PFOS	8.430	502.8 -> 79.9	5102	2.50	µg/L	0.013
13C3-PFBA	2.941	216.0 -> 172.0	32827	5.00	µg/L	0.037
18O2-PFHxS	7.328	403.0 -> 83.9	2834	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	32800	2.50	µg/L	0.025
13C2-PFDA	8.291	515.1 -> 470.1	10104	1.25	µg/L	0.013
13C5-PFNA	7.798	468.0 -> 423.0	14096	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	21350	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	806	11.38	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 227.6%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1373	10.15	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 202.9%		
13C2-8:2FTS	8.092	529.1 -> 80.9	1618	7.88	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 157.5%		
13C2-PFDoDA	9.193	615.1 -> 570.0	14375	1.66	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 132.9%		
13C2-PFTeDA	9.974	715.2 -> 670.0	9055	1.30	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C3-PFBS	5.502	302.1 -> 79.9	8724	3.62	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 144.7%		
13C3-PFHxS	7.329	402.1 -> 79.9	5793	3.69	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 = 147.7%	
13C4-PFBA	2.949	216.8 -> 171.9	89566	15.96 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 159.6%	
13C4-PFHpA	6.580	367.1 -> 322.0	26818	4.22 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 168.7%	
13C5-PFHxA	5.622	318.0 -> 273.0	37537	4.20 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 167.8%	
13C5-PFPeA	4.425	268.3 -> 223.0	51404	6.89 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 137.8%	
13C6-PFDA	8.291	519.1 -> 474.1	12741	1.82 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 145.8%	
13C7-PFUnDA	8.760	570.0 -> 525.1	15367	1.95 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 156.1%	
13C8-FOSA	9.919	506.1 -> 77.8	8375	2.63 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C8-PFOA	7.251	421.1 -> 376.0	41756	3.87 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 154.7%	
13C8-PFOS	8.430	507.1 -> 79.9	7222	3.52 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 141.0%	
13C9-PFNA	7.797	472.1 -> 427.0	17505	1.64 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 131.1%	
d3-MeFOSAA	8.361	573.2 -> 419.0	14748	7.79 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 155.8%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	27517	13.53 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 135.3%	
d3-MeFOSA	11.176	515.0 -> 219.0	5637	3.01 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.3%	
d5-EtFOSAA	8.571	589.2 -> 419.0	12616	8.10 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 162.1%	
d7-MeFOSE	11.072	623.2 -> 58.9	34855	23.26 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
d9-EtFOSE	11.356	639.2 -> 58.9	51701	24.60 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	11.435	531.1 -> 219.0	6262	2.90 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.0%	
Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	7.024	427.1 -> 407.0	743	0.64 µg/L	89
		427.1 -> 80.9	213		
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	5.367	298.7 -> 79.9	0	µg/L m	1
		298.7 -> 98.8	0		
PFDA	8.727	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

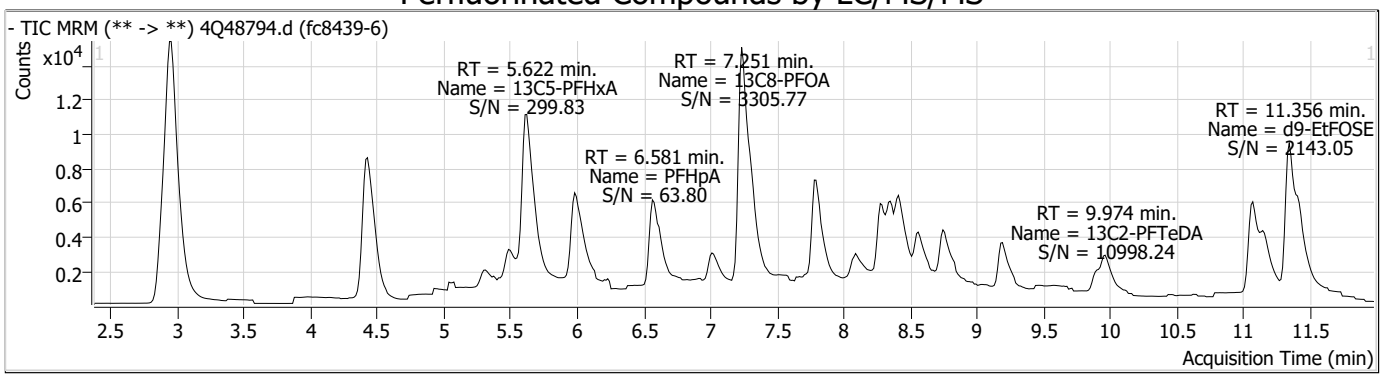
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.581	363.1 -> 319.0	1569	0.13	µg/L	m	98
		363.1 -> 169.0	301				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	5.625	313.0 -> 269.0	1227	0.11	µg/L	#	93
		313.0 -> 118.9	68				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		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	4.427	263.0 -> 219.0	1978	0.22	µg/L		100
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

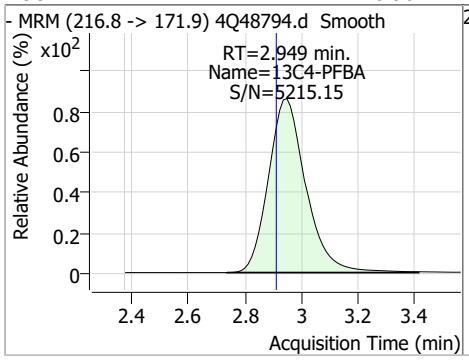
Perfluorinated Compounds by LC/MS/MS

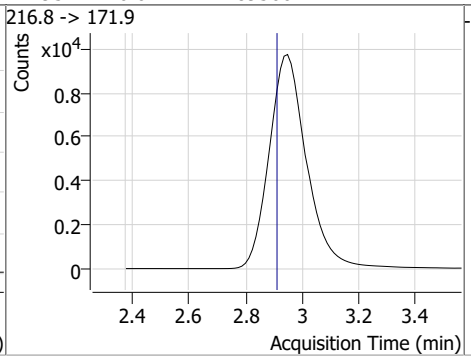
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

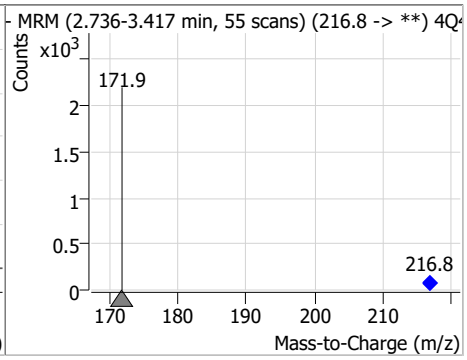
Perfluorinated Compounds by LC/MS/MS



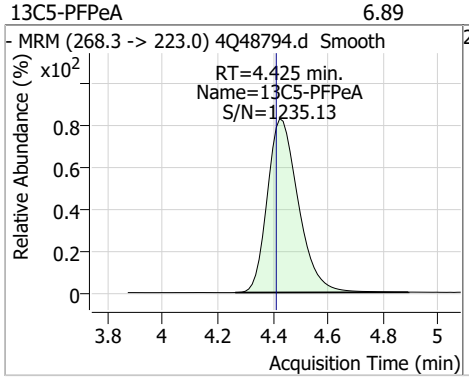
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.96	2.95	0.04	89566				

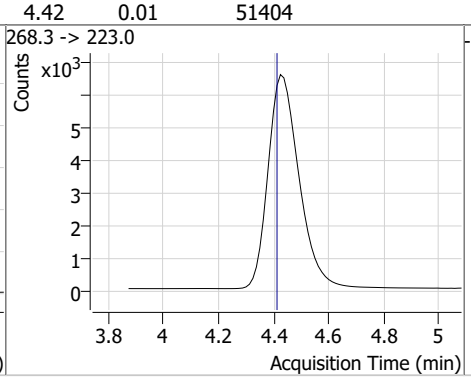


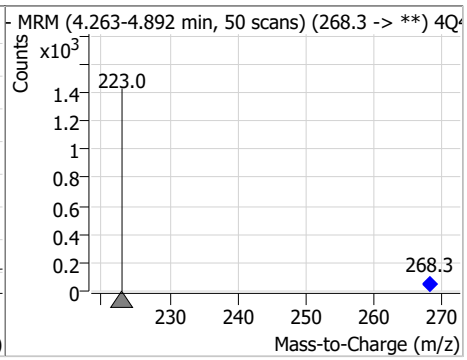




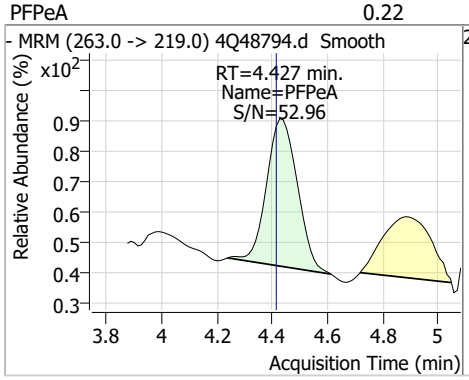
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.89	4.42	0.01	51404				

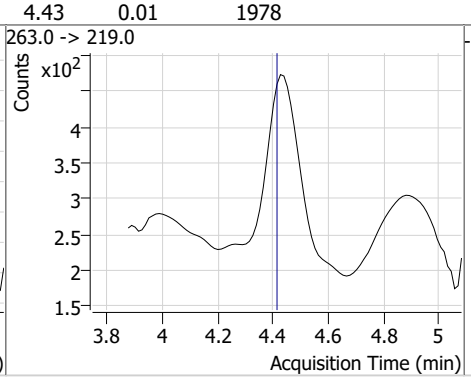


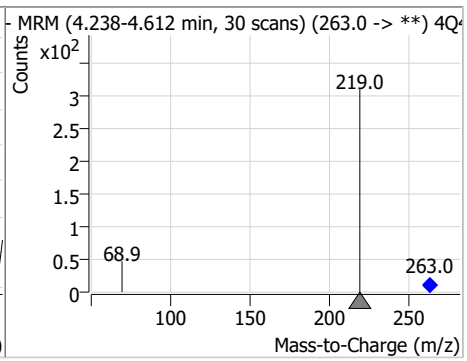




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.22	4.43	0.01	1978				

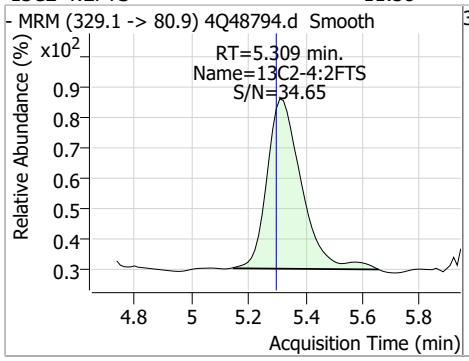


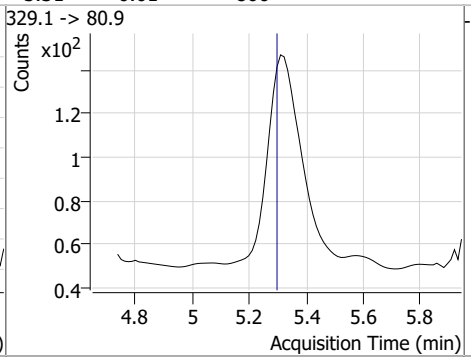


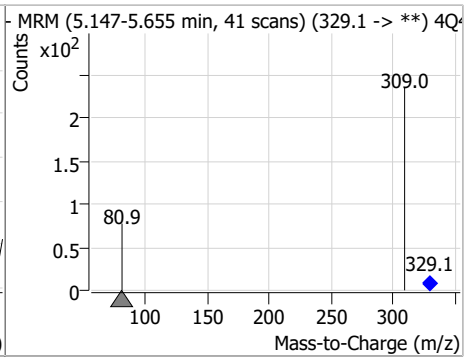


Perfluorinated Compounds by LC/MS/MS

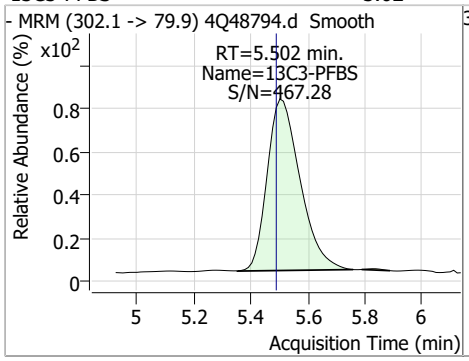
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.38	5.31	0.01	806				

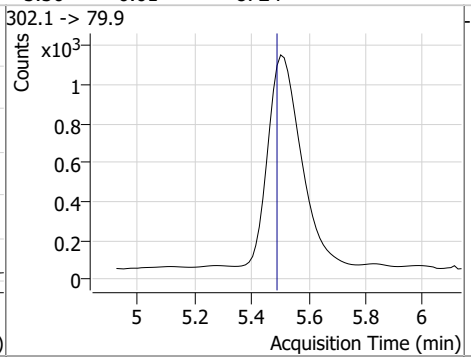


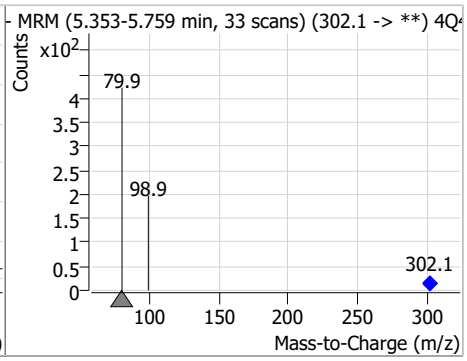




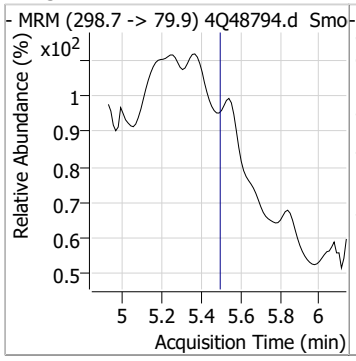
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.62	5.50	0.01	8724				

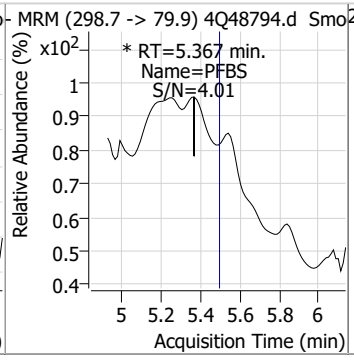


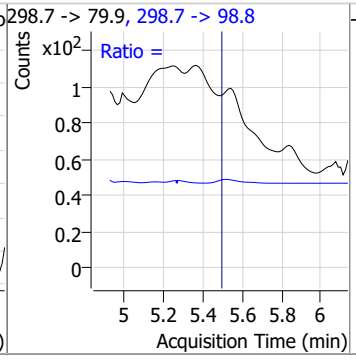


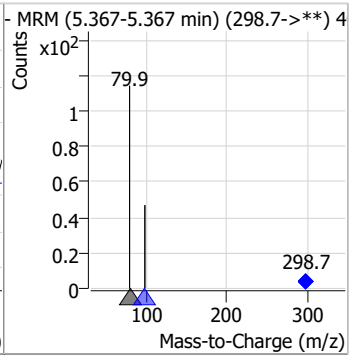


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0		0		298.7 -> 98.8		18.5	55.5

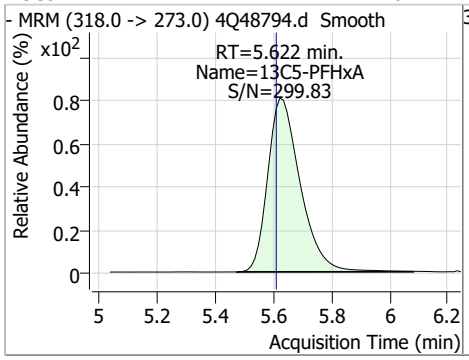


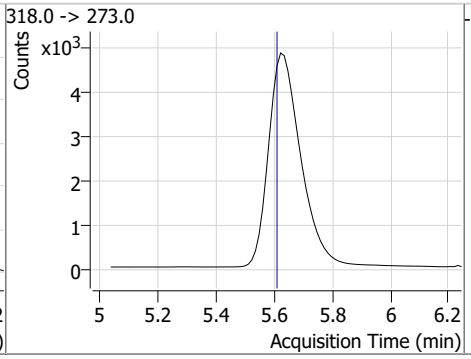


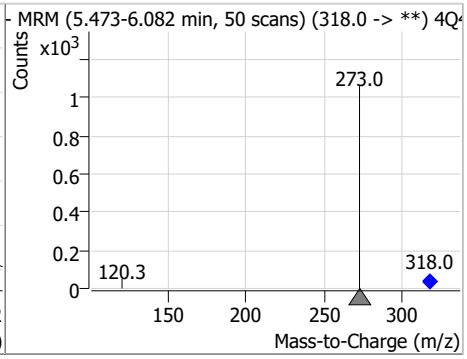




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	4.20	5.62	0.01	37537				

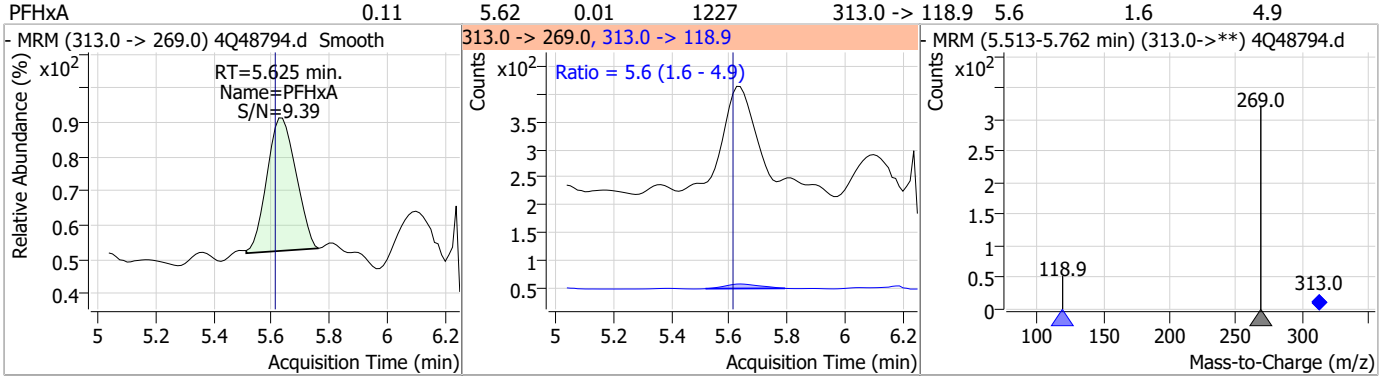




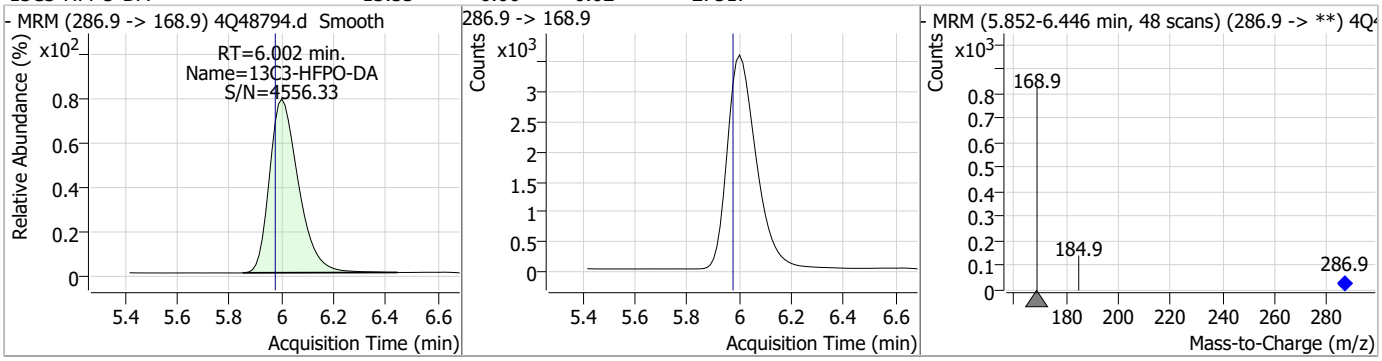


Perfluorinated Compounds by LC/MS/MS

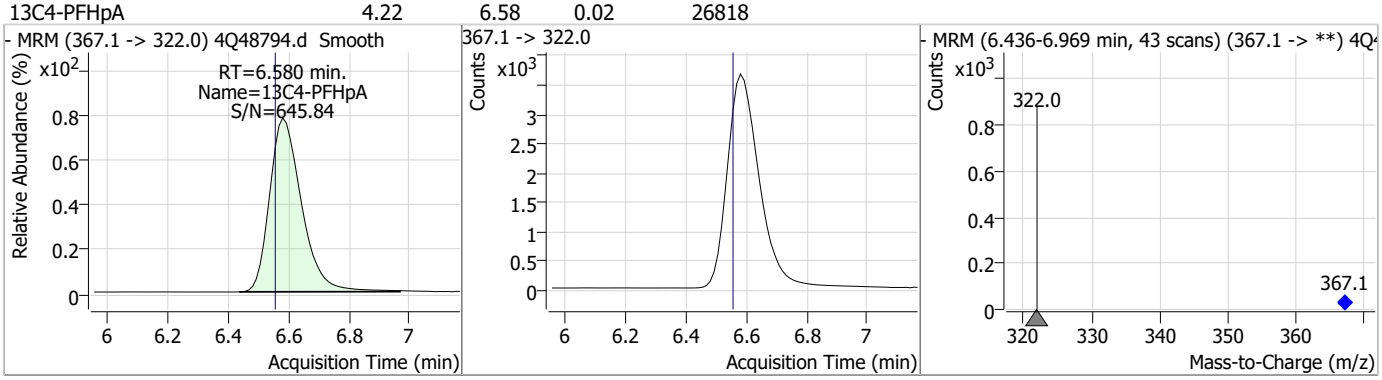
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.11	5.62	0.01	1227	313.0 -> 118.9	5.6	1.6	4.9



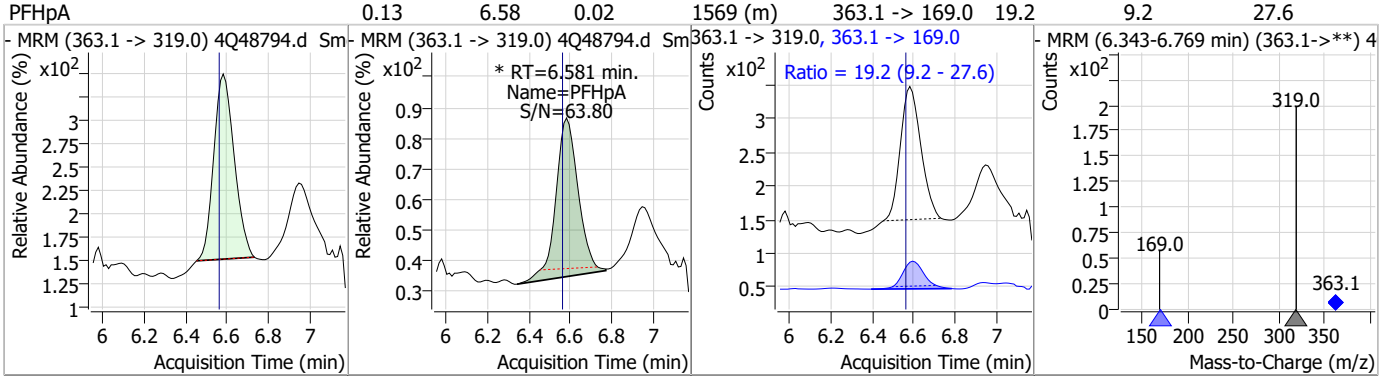
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.53	6.00	0.02	27517				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	4.22	6.58	0.02	26818				

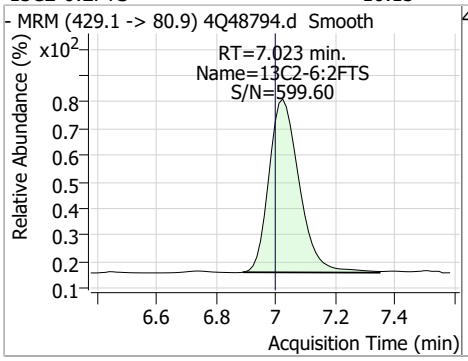


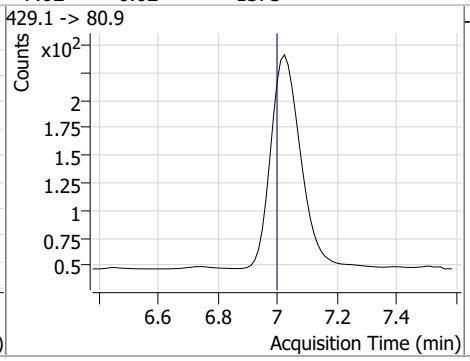
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.13	6.58	0.02	1569 (m)	363.1 -> 169.0	19.2	9.2	27.6

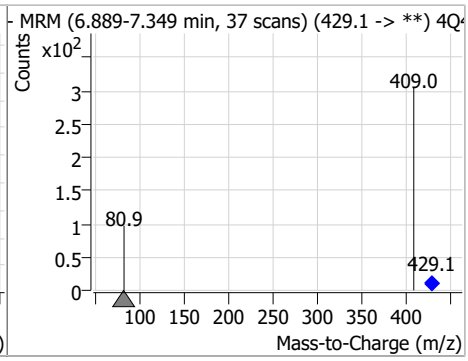


Perfluorinated Compounds by LC/MS/MS

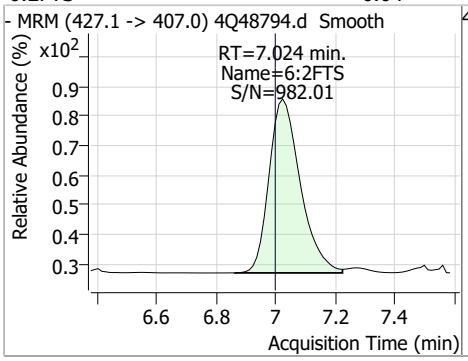
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.15	7.02	0.02	1373				

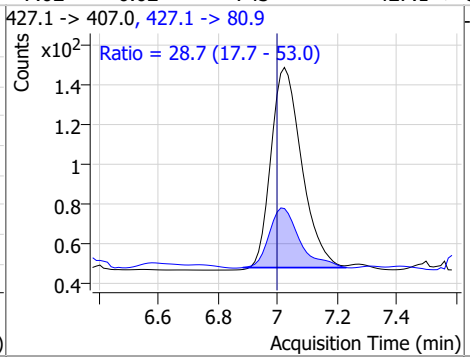


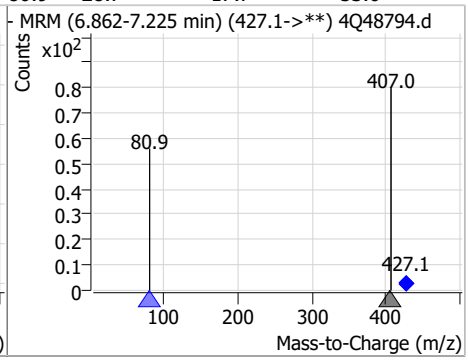




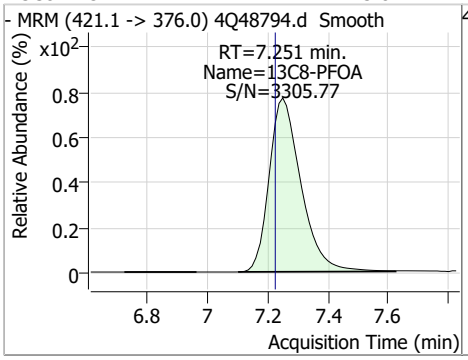
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.64	7.02	0.02	743	427.1 -> 80.9	28.7	17.7	53.0

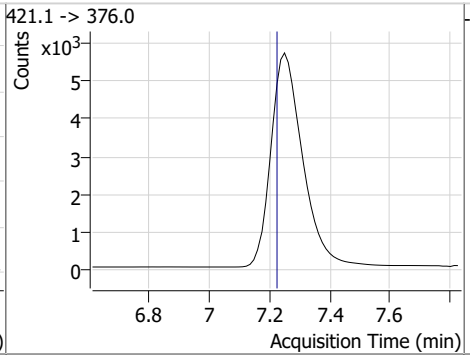


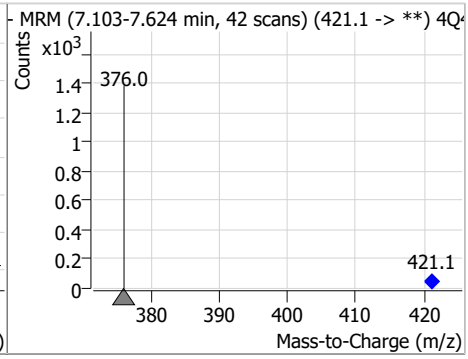




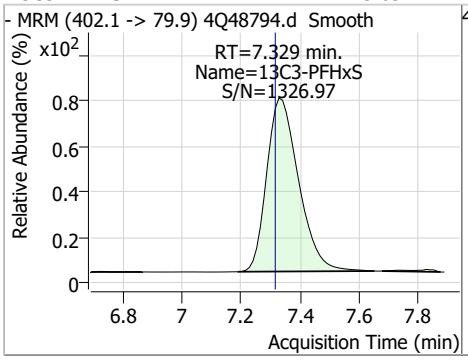
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.87	7.25	0.02	41756				

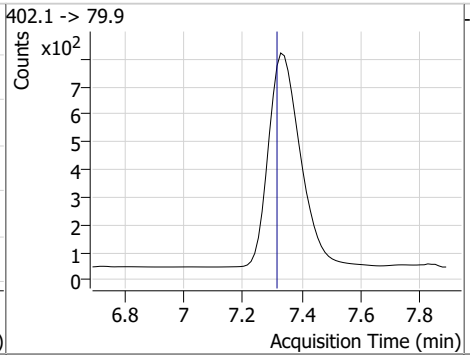


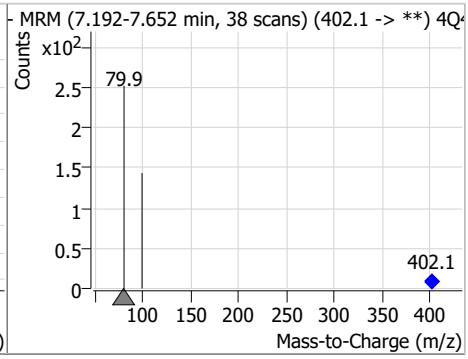




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.69	7.33	0.01	5793				

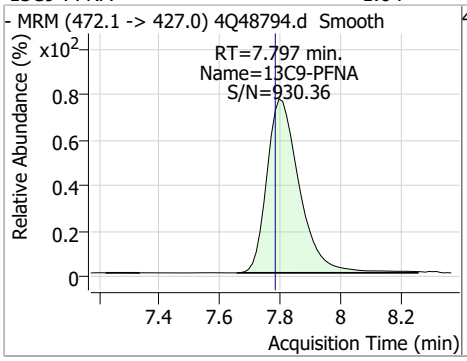


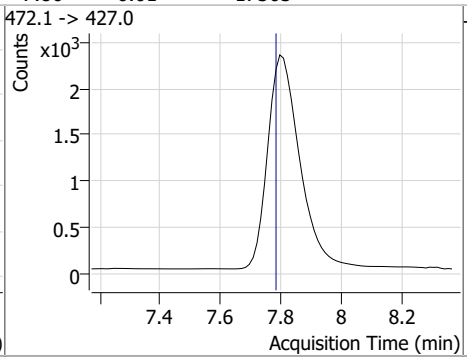


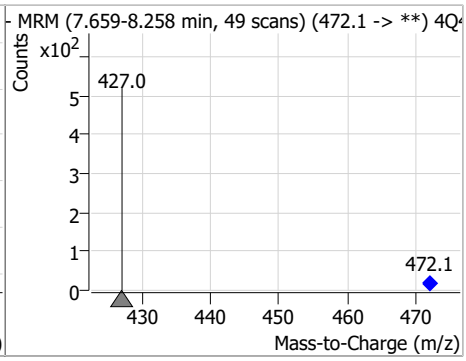


Perfluorinated Compounds by LC/MS/MS

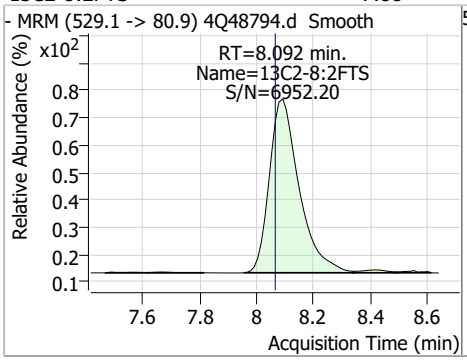
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.64	7.80	0.01	17505				

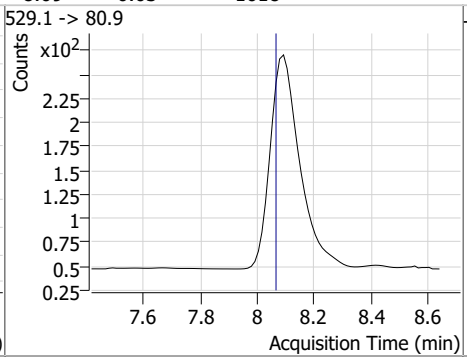


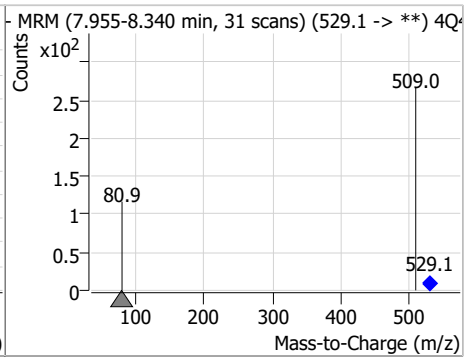




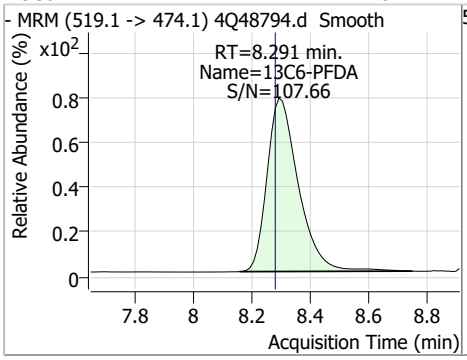
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.88	8.09	0.03	1618				

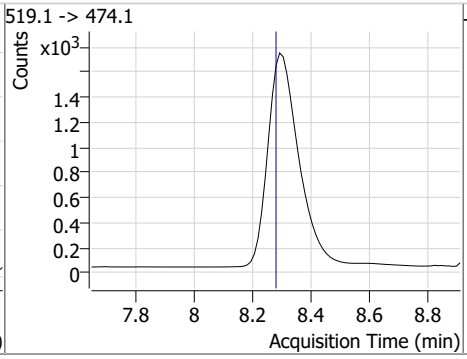


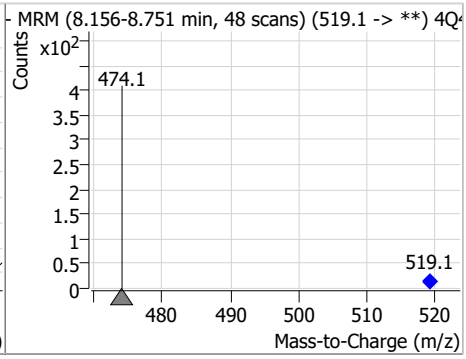




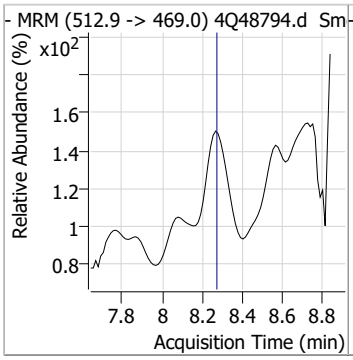
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.82	8.29	0.01	12741				

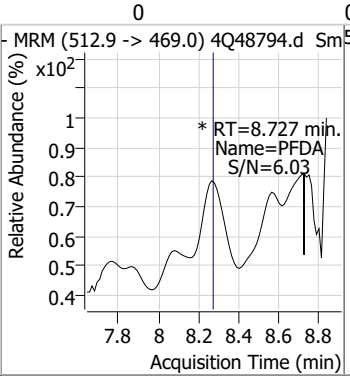


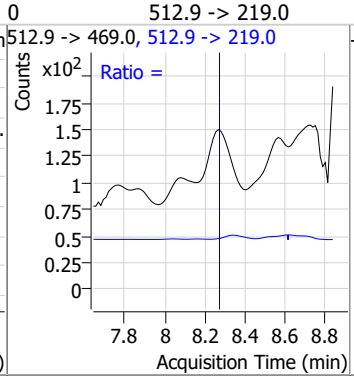


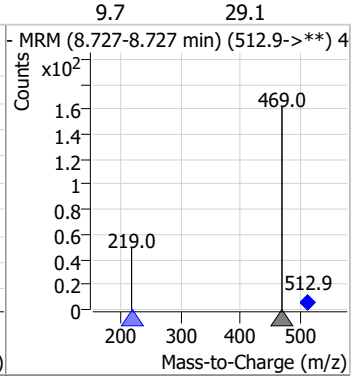


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA		0		0	512.9 -> 219.0		9.7	29.1



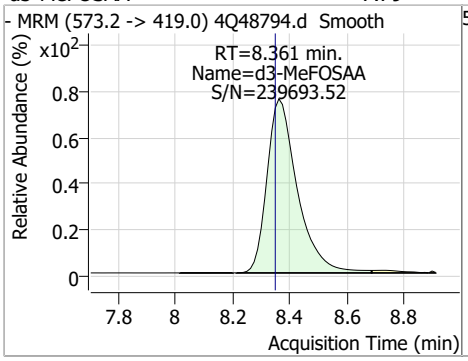


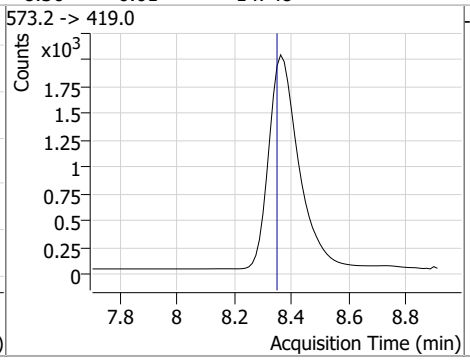


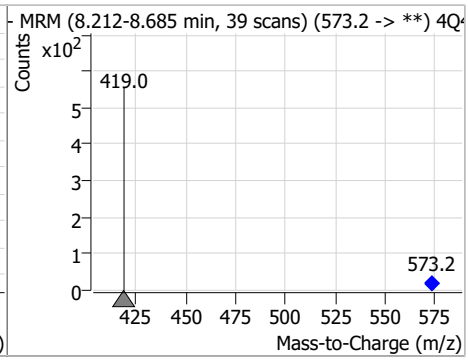


Perfluorinated Compounds by LC/MS/MS

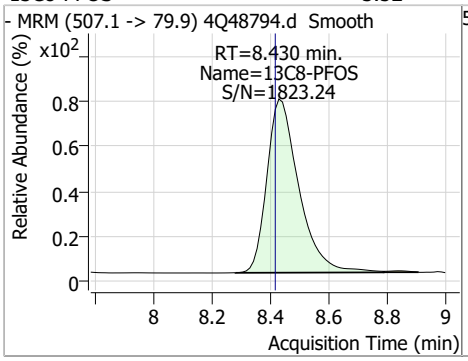
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.79	8.36	0.01	14748				

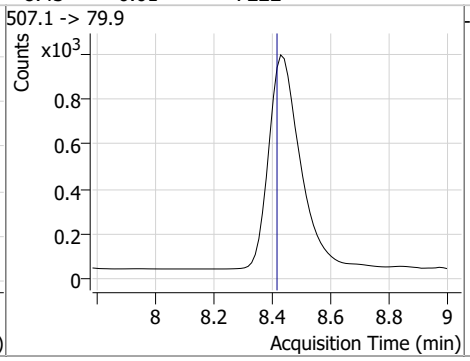


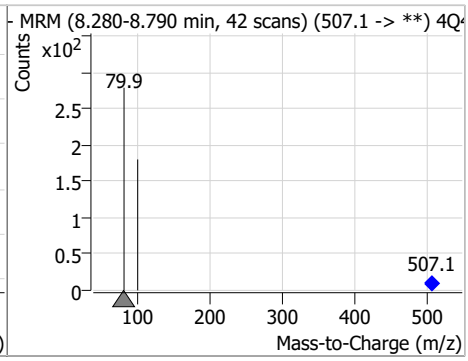




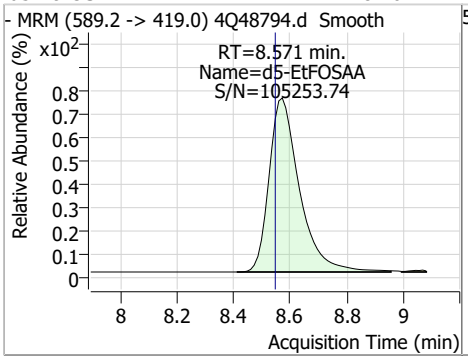
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.52	8.43	0.01	7222				

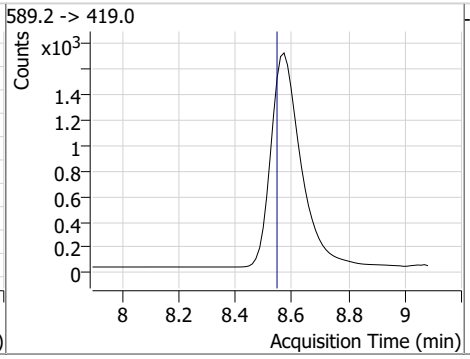


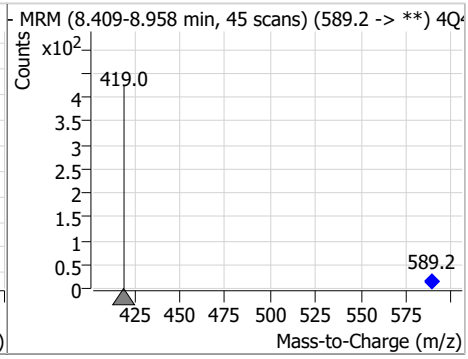




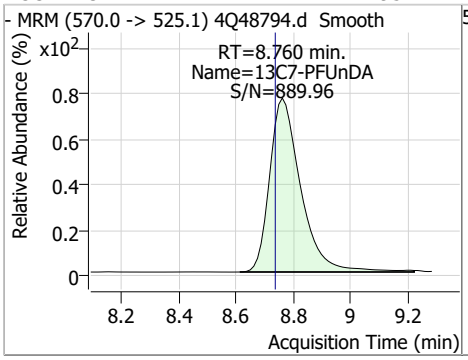
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.10	8.57	0.02	12616				

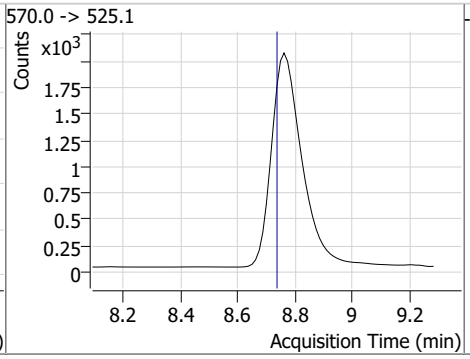


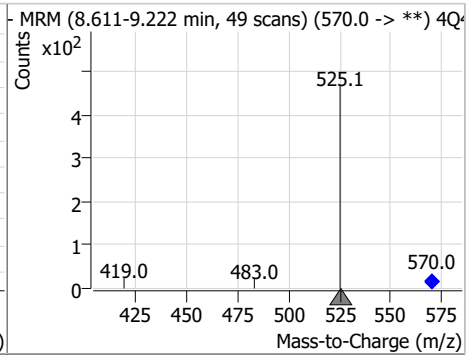




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.95	8.76	0.02	15367				

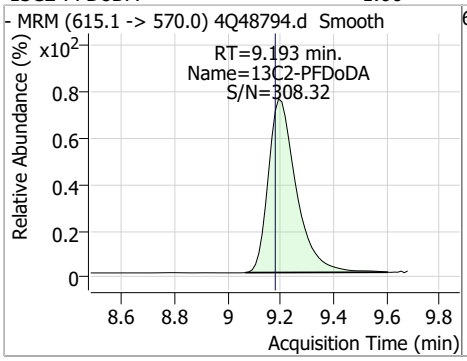


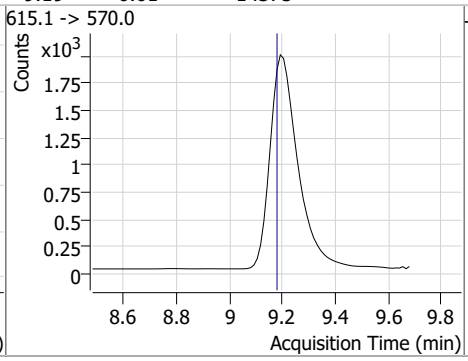


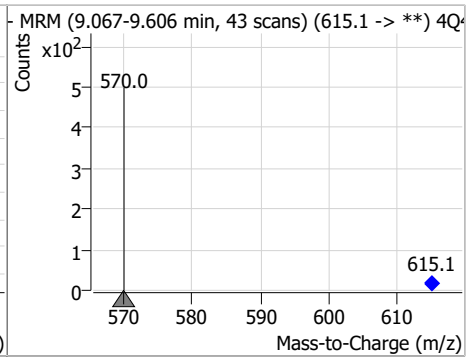


Perfluorinated Compounds by LC/MS/MS

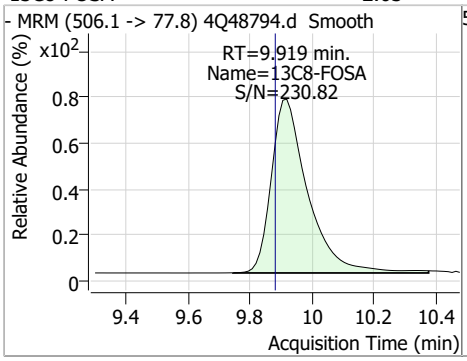
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.66	9.19	0.01	14375				

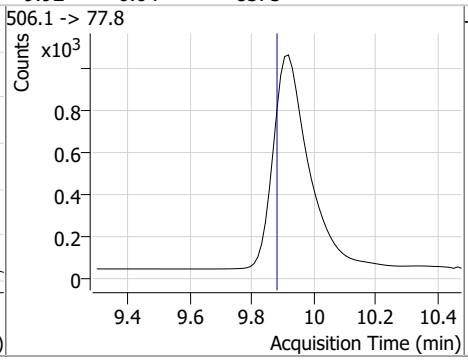


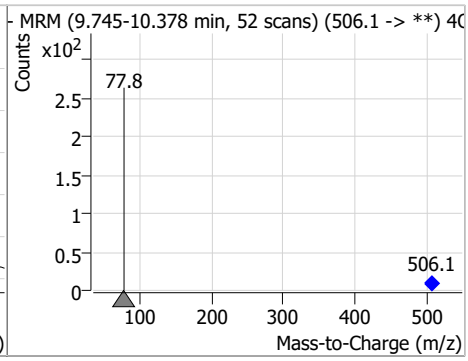




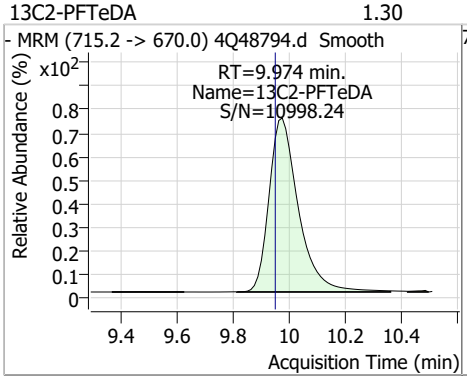
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.63	9.92	0.04	8375				

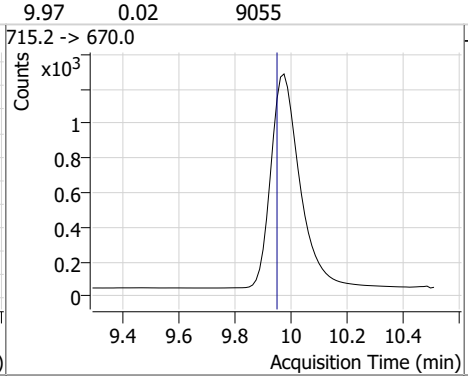


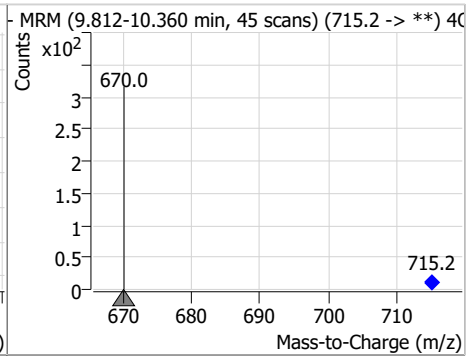




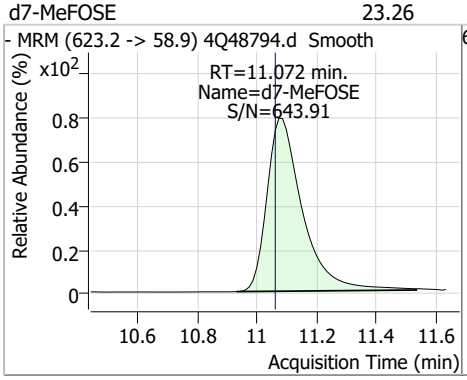
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.97	0.02	9055				

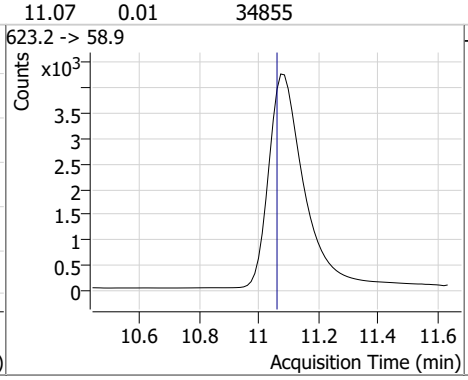


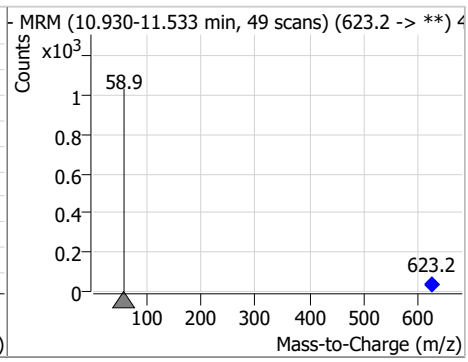




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.26	11.07	0.01	34855				

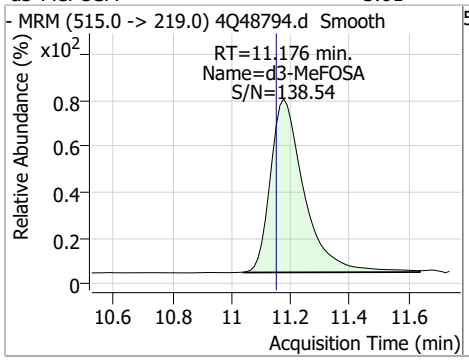


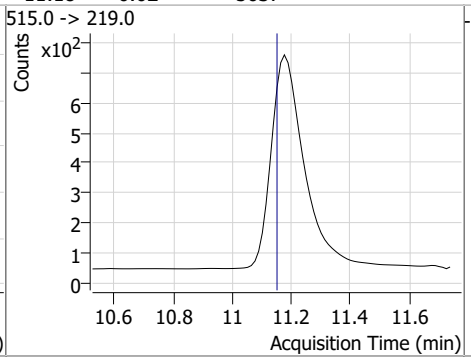


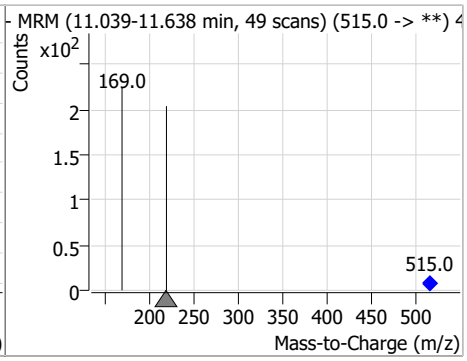


Perfluorinated Compounds by LC/MS/MS

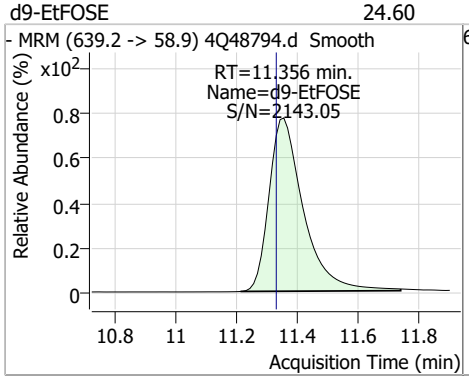
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	3.01	11.18	0.02	5637				

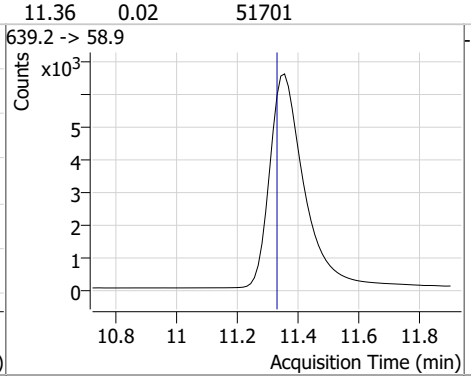


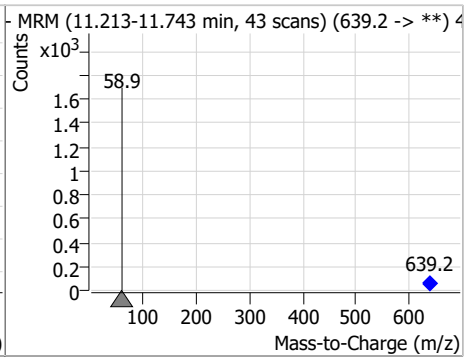




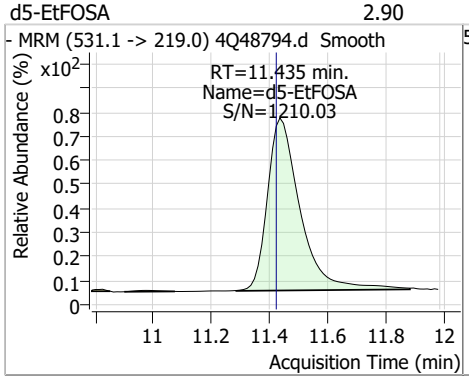
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.60	11.36	0.02	51701				

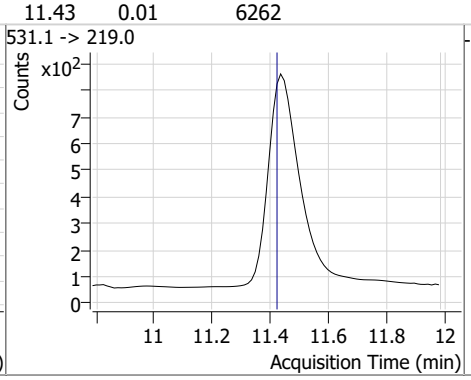


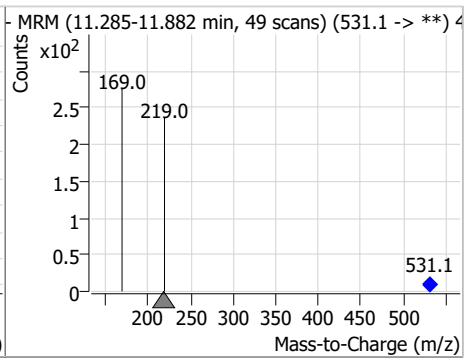




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.90	11.43	0.01	6262				







Manual Integration Approval Summary

Sample Number:	FC8439-6	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48794.D	**Analyst approved:**	08/14/23 16:33 Natasha Gumtie
Injection Time:	08/09/23 22:44	**Supervisor approved:**	08/14/23 16:33 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.58	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22670.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 8:48:02 PM
Sample Name : FC8439-6
Vial : P4-B2
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98297,S6Q330,520,,,5.0,10,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	13997	1.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	4866	0.50	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	5429	0.25	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	5340	0.25	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	8683	0.25	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	3666	0.13	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	2000	0.13	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	2362	0.13	µg/L	0.000
M2-PFDoDA	9.135	615.1 -> 570.0	2128	0.13	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	1022	0.13	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	1949	0.25	µg/L	-0.012
M3-PFBS	5.599	302.1 -> 79.9	2108	0.25	µg/L	-0.011
M3-PFHxS	7.355	402.1 -> 79.9	1199	0.25	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	1145	0.25	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	268	0.50	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	446	0.50	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	360	0.50	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	2621	0.50	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	3159	1.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	2117	0.50	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	6025	2.50	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	9052	2.50	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	928	0.25	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	848	0.25	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	1093	0.25	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	4859	0.50	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	734	0.25	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	6403	0.25	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	2449	0.13	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	3337	0.13	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	3833	0.25	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	268	0.61	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C2-6:2FTS	7.001	429.1 -> 80.9	446	0.70	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C2-8:2FTS	8.039	529.1 -> 80.9	360	0.58	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 11.6%		
13C2-PFDoDA	9.135	615.1 -> 570.0	2128	0.13	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.3%		
13C2-PFTeDA	9.851	715.2 -> 670.0	1022	0.11	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 8.6%		
13C3-PFBS	5.599	302.1 -> 79.9	2108	0.34	µg/L	-0.011
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.5%		
13C3-PFHxS	7.355	402.1 -> 79.9	1199	0.30	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 = 11.9%	
13C4-PFBA	3.010	216.8 -> 171.9	13997	1.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.2%	
13C4-PFHpA	6.596	367.1 -> 322.0	5340	0.35 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.8%	
13C5-PFHxA	5.668	318.0 -> 273.0	5429	0.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 13.7%	
13C5-PFPeA	4.447	268.3 -> 223.0	4866	0.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 13.5%	
13C6-PFDA	8.250	519.1 -> 474.1	2000	0.14 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 11.6%	
13C7-PFUnDA	8.717	570.0 -> 525.1	2362	0.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 10.3%	
13C8-FOSA	9.650	506.1 -> 77.8	1949	0.24 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 9.4%	
13C8-PFOA	7.239	421.1 -> 376.0	8683	0.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 14.7%	
13C8-PFOS	8.414	507.1 -> 79.9	1145	0.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 14.3%	
13C9-PFNA	7.770	472.1 -> 427.0	3666	0.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 13.5%	
d3-MeFOSAA	8.297	573.2 -> 419.0	2621	0.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 13.3%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	3159	1.27 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	848	0.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.0%	
d5-EtFOSAA	8.492	589.2 -> 419.0	2117	0.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 11.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	6025	2.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 8.2%	
d9-EtFOSE	10.918	639.2 -> 58.9	9052	2.30 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 9.2%	
d5-EtFOSA	10.996	531.1 -> 219.0	928	0.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 10.9%	
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

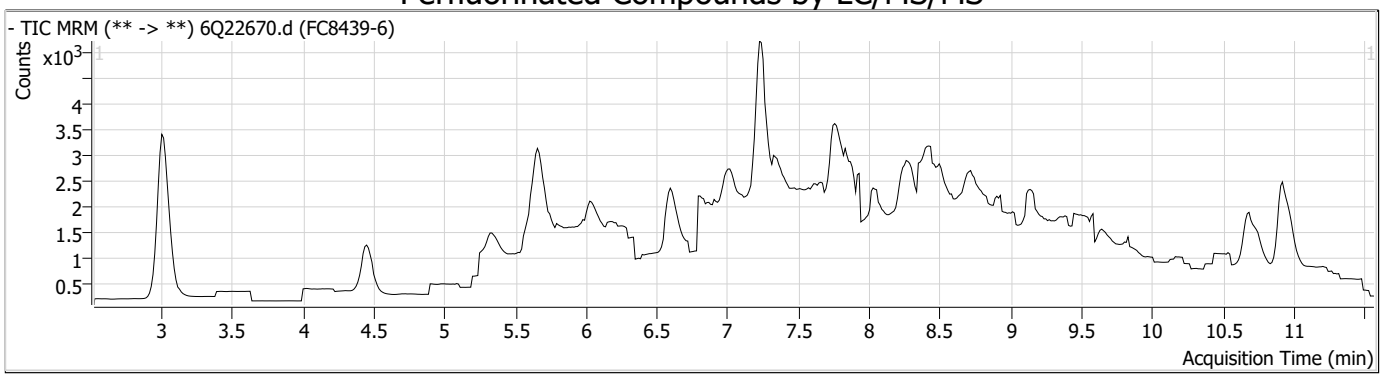
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.849	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

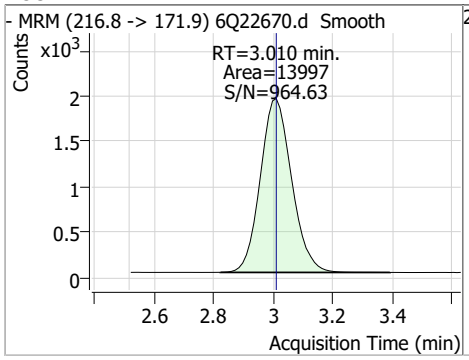
Perfluorinated Compounds by LC/MS/MS

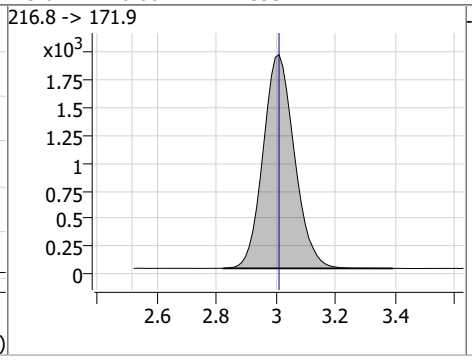
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

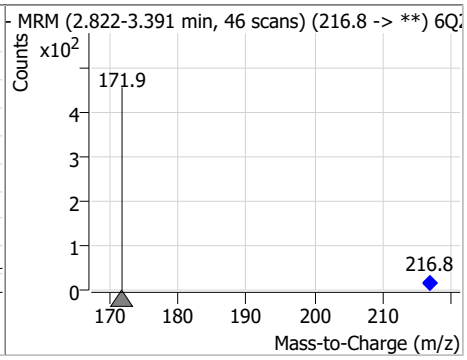
Perfluorinated Compounds by LC/MS/MS



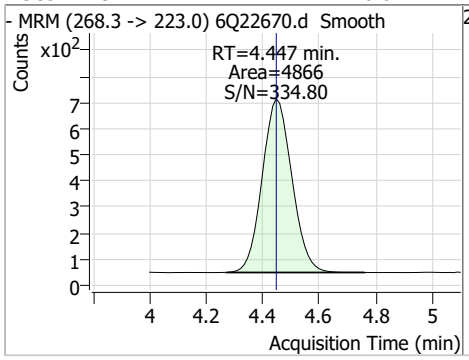
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.22	3.01	0.00	13997				

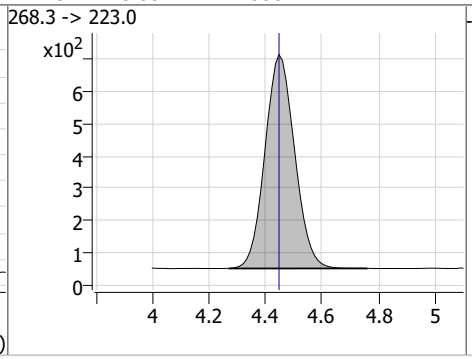


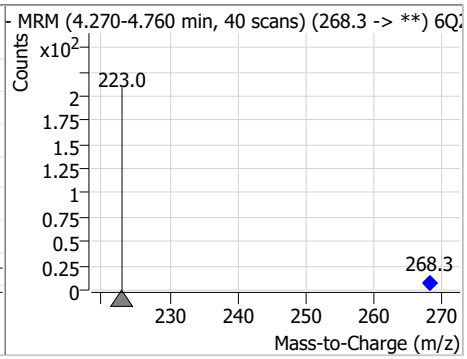




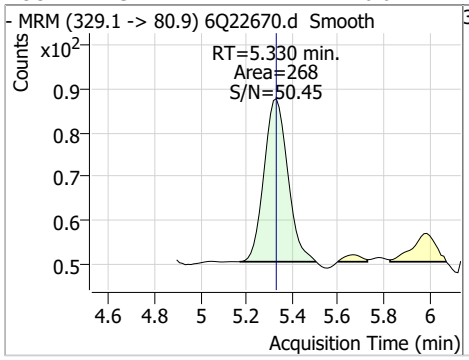
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	0.67	4.45	0.00	4866				

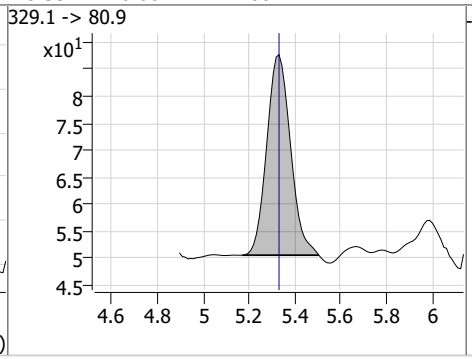


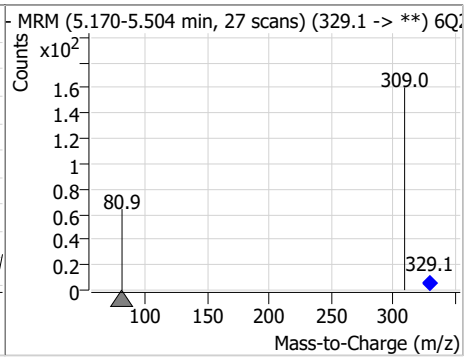




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	0.61	5.33	0.00	268				

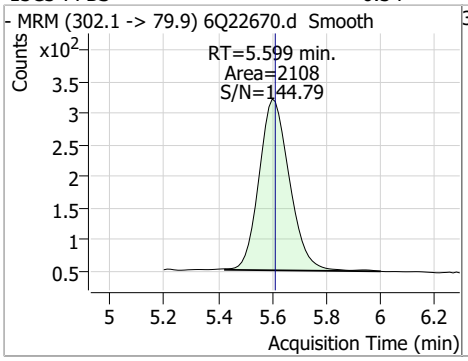


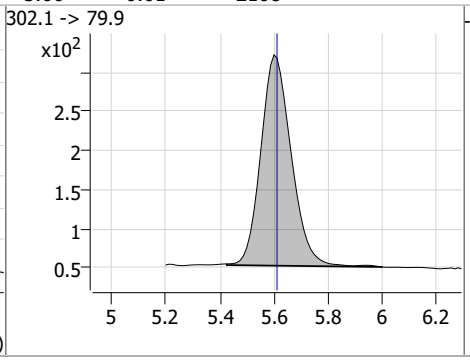


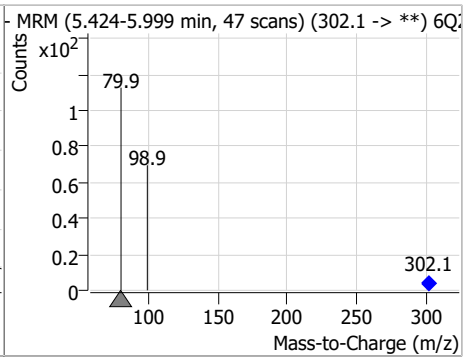


Perfluorinated Compounds by LC/MS/MS

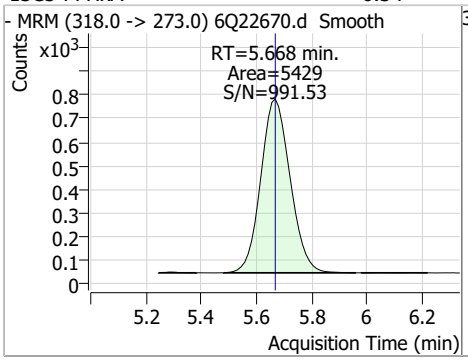
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	0.34	5.60	-0.01	2108				

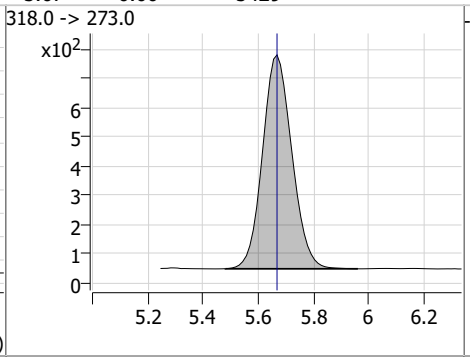


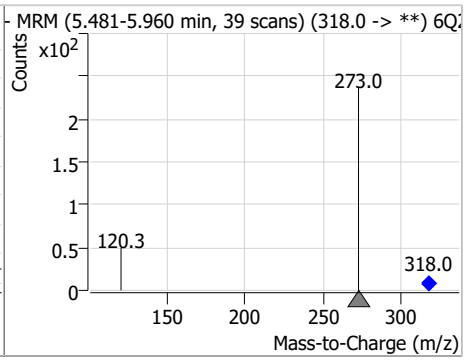




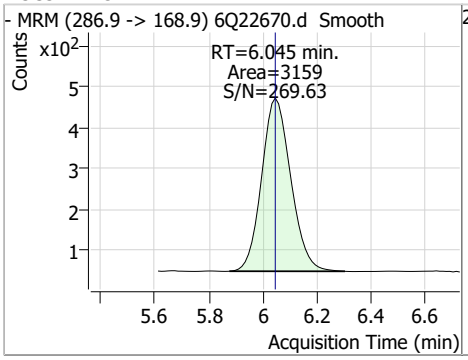
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	0.34	5.67	0.00	5429				

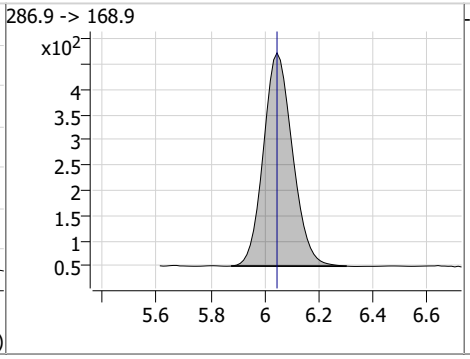


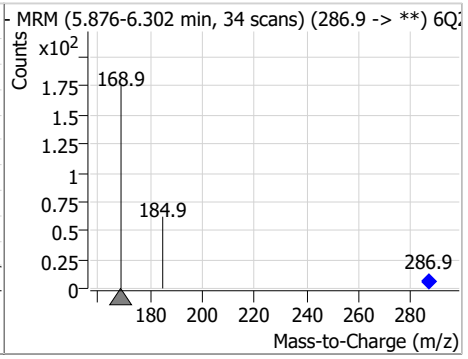




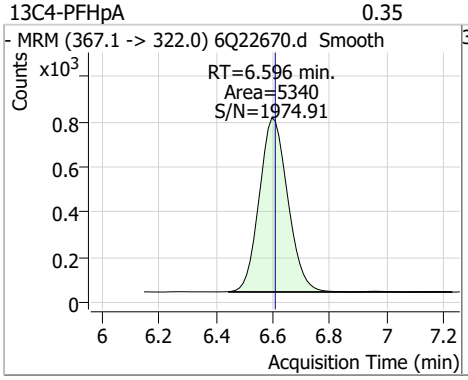
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.27	6.05	0.00	3159				

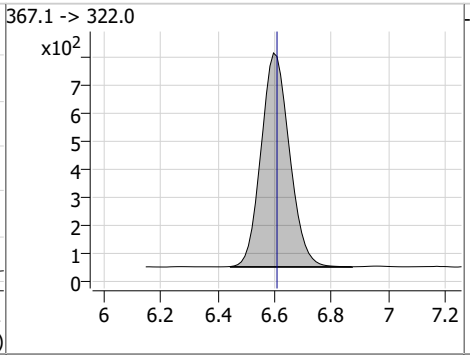


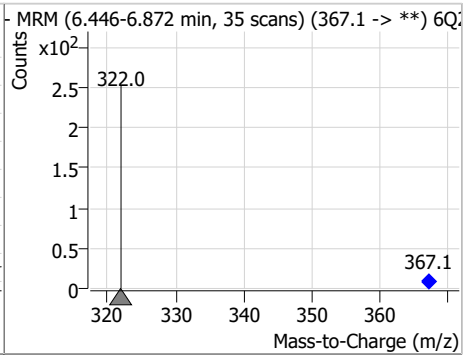




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	0.35	6.60	-0.01	5340				

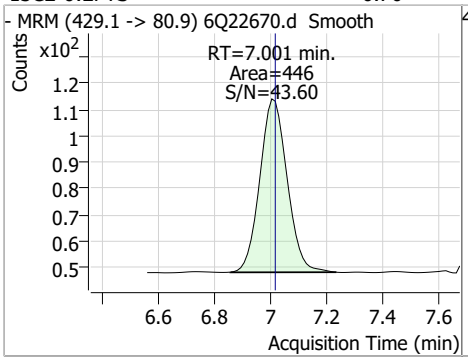


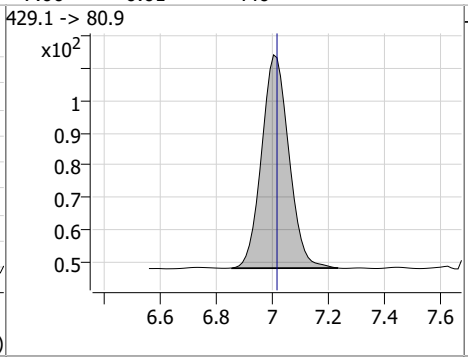


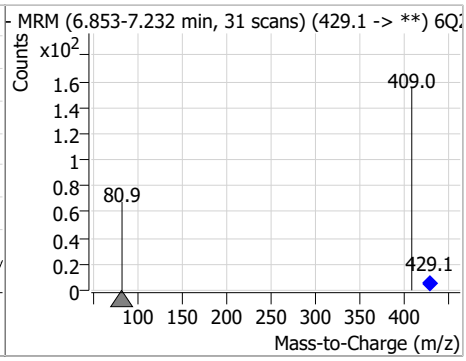


Perfluorinated Compounds by LC/MS/MS

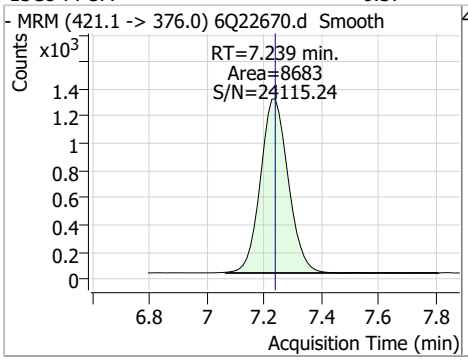
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	0.70	7.00	-0.01	446				

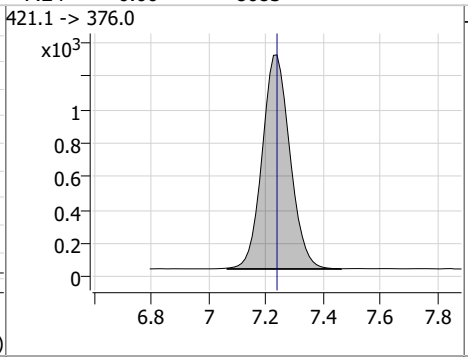


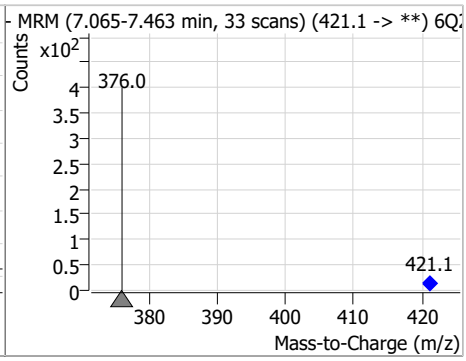




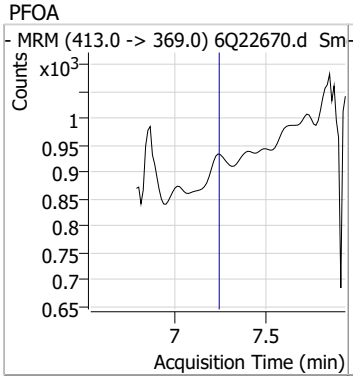
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	0.37	7.24	0.00	8683				

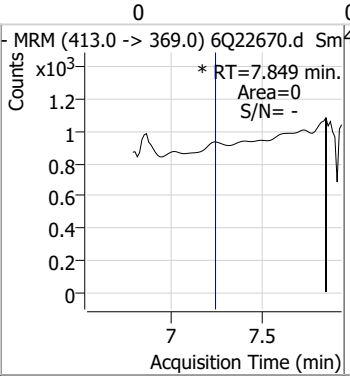


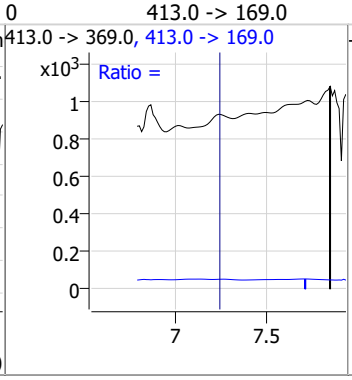


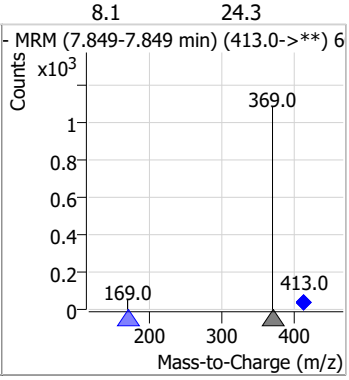


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		8.1	24.3

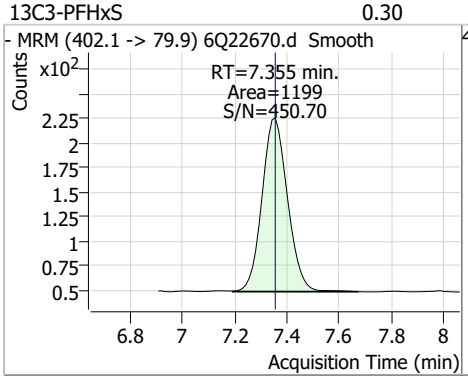


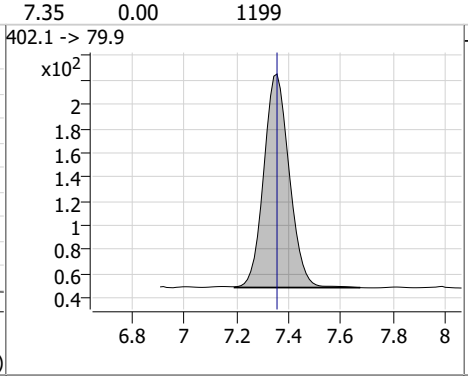


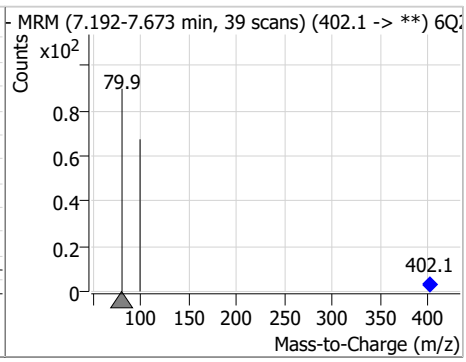




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	0.30	7.35	0.00	1199				

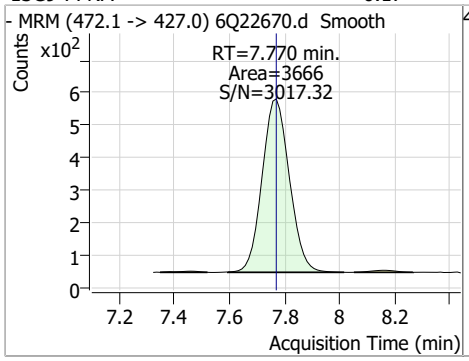


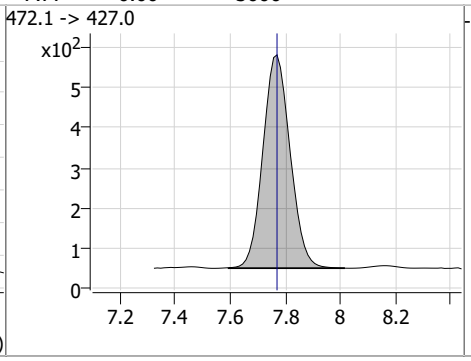


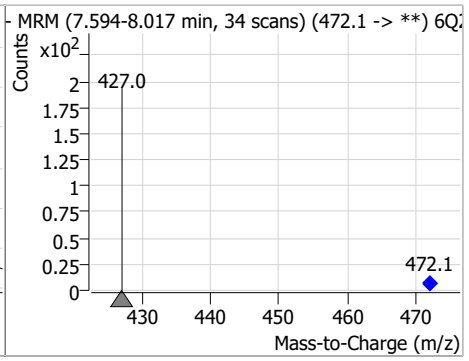


Perfluorinated Compounds by LC/MS/MS

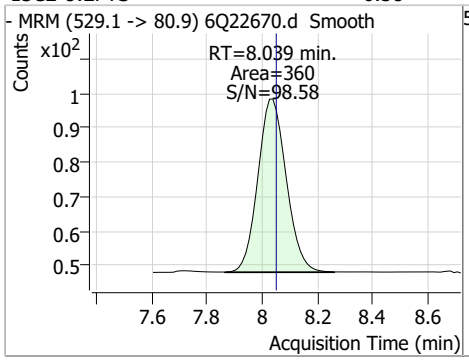
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	0.17	7.77	0.00	3666				

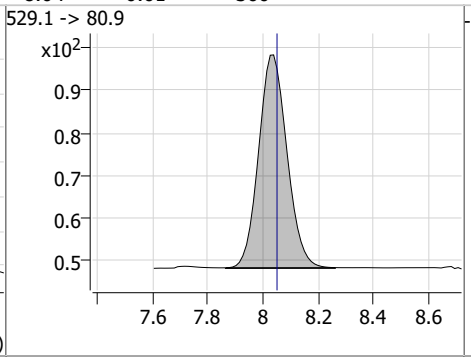


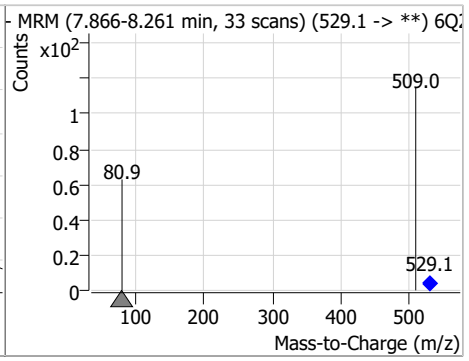




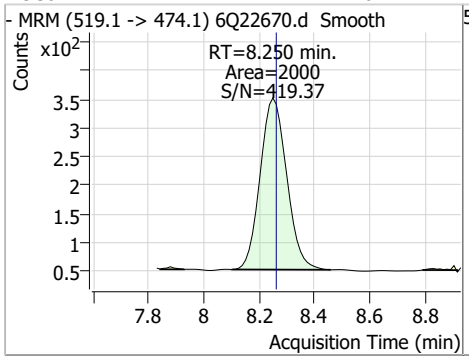
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	0.58	8.04	-0.01	360				

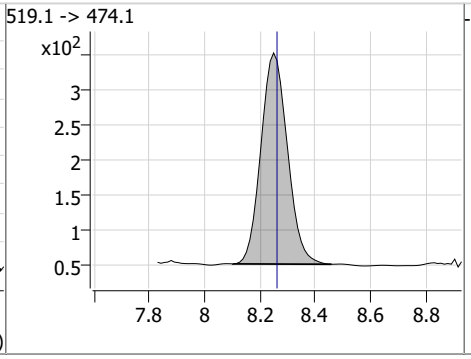


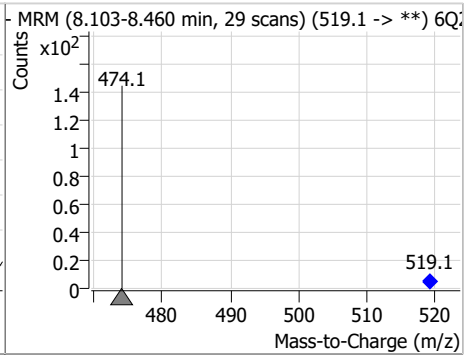




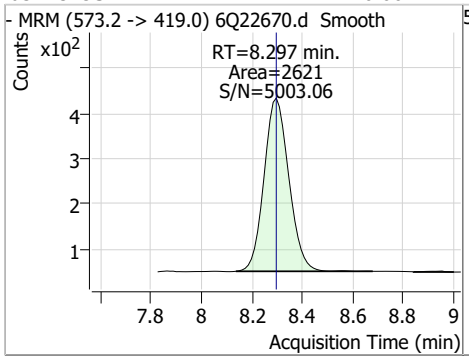
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	0.14	8.25	-0.01	2000				

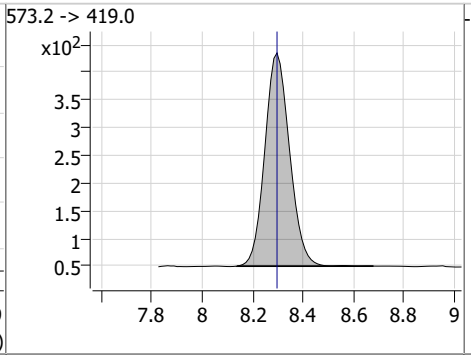


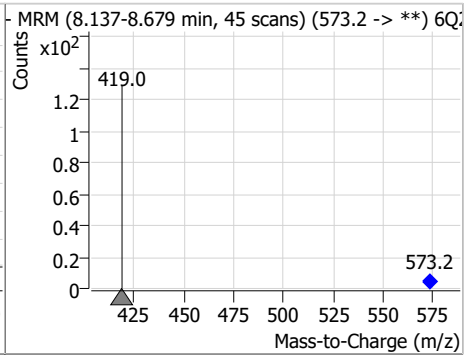




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	0.66	8.30	0.00	2621				

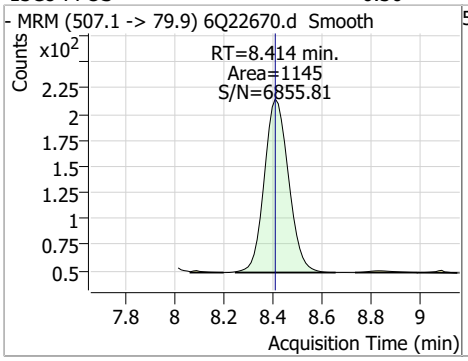


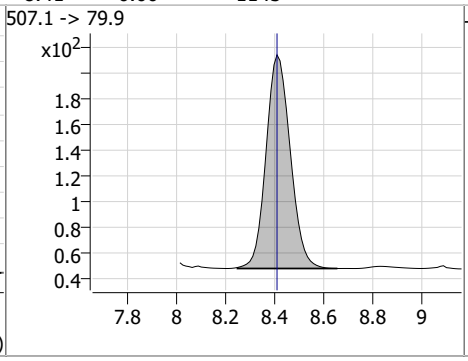


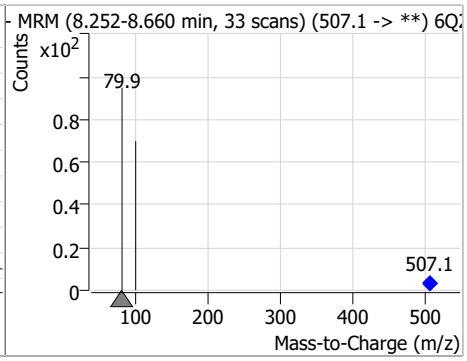


Perfluorinated Compounds by LC/MS/MS

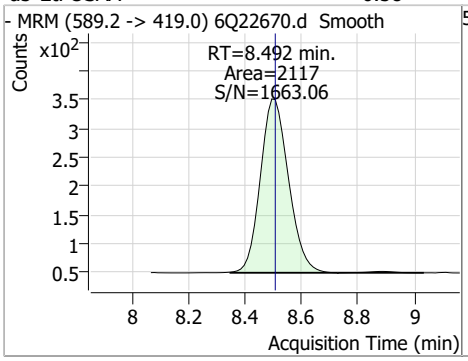
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	0.36	8.41	0.00	1145				

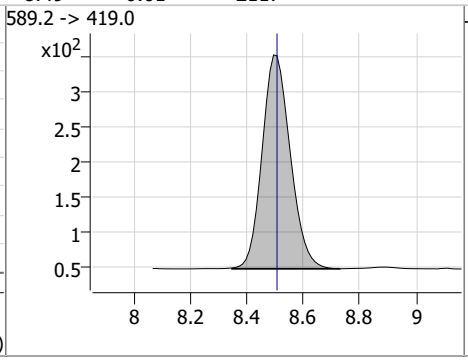


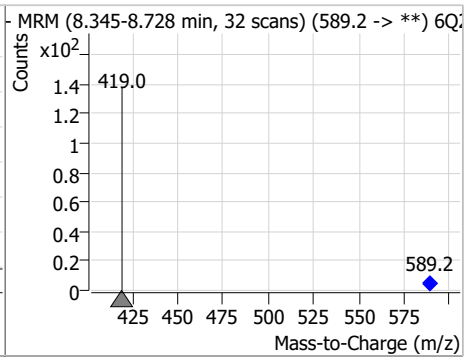




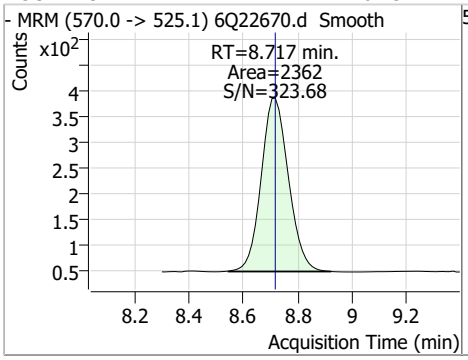
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	0.58	8.49	-0.01	2117				

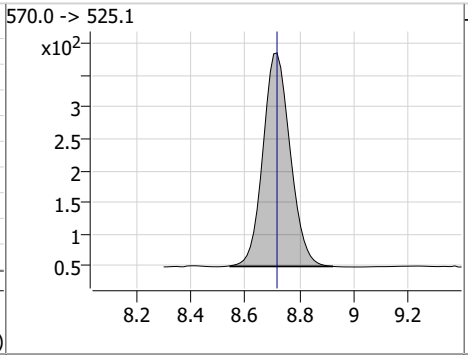


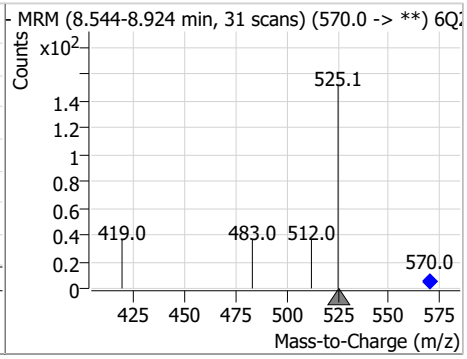




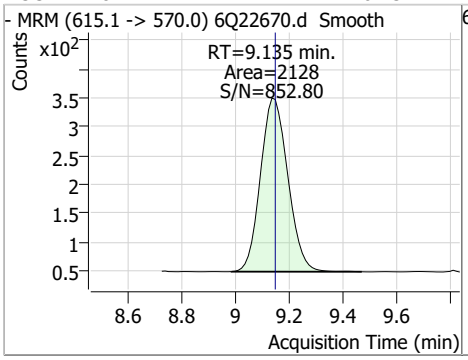
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.13	8.72	0.00	2362				

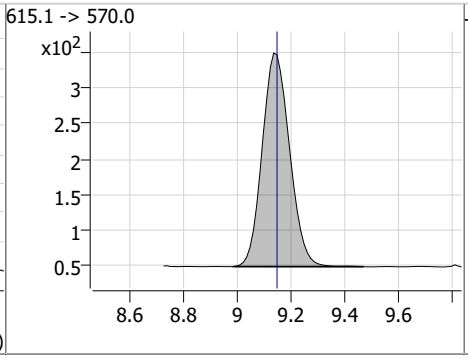


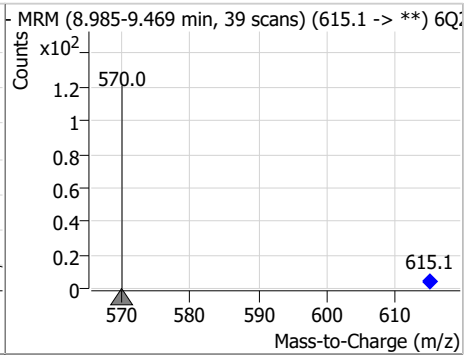




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.13	9.14	-0.01	2128				

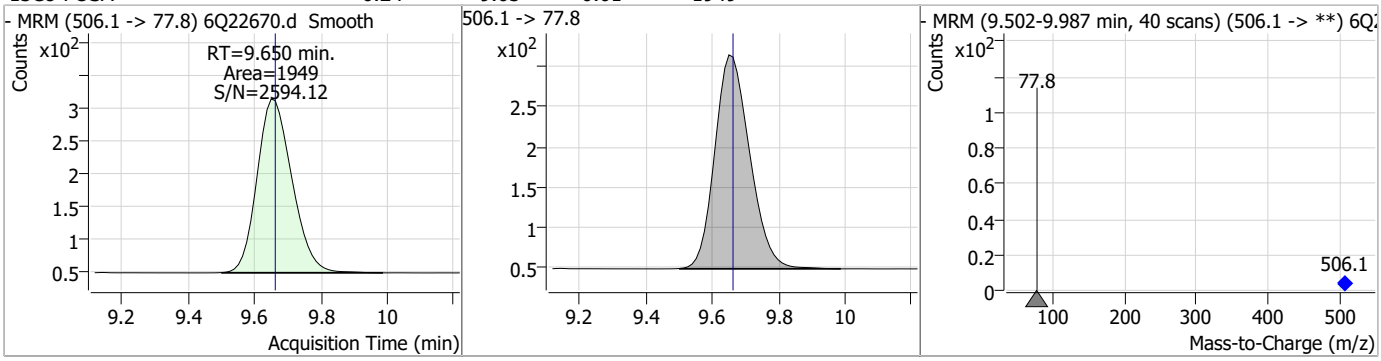




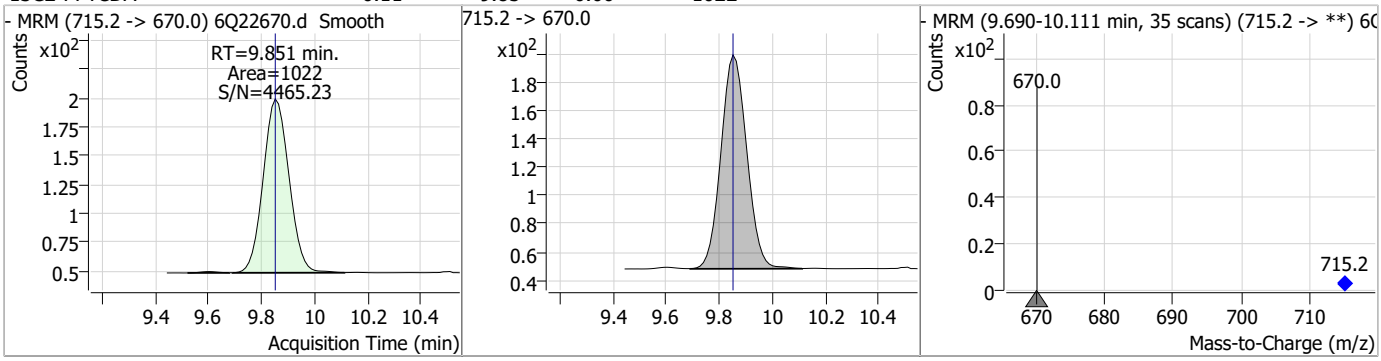


Perfluorinated Compounds by LC/MS/MS

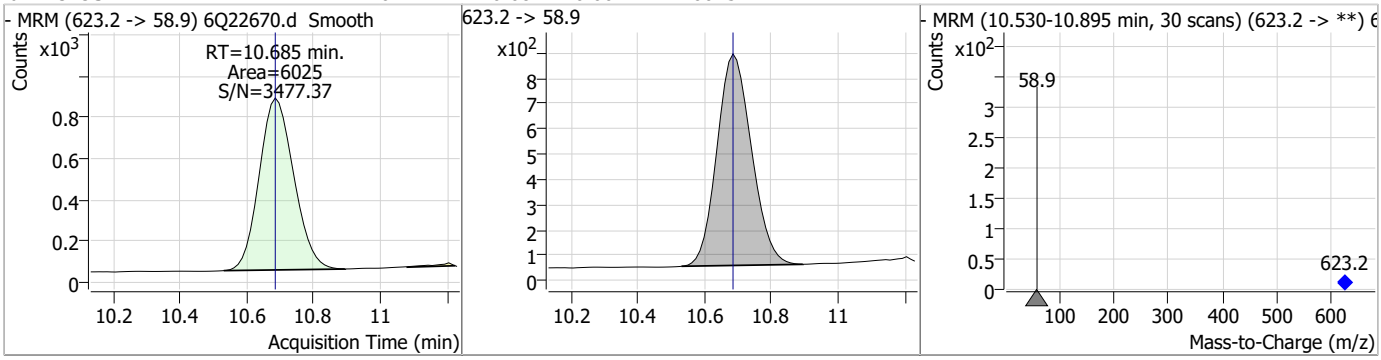
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.24	9.65	-0.01	1949				



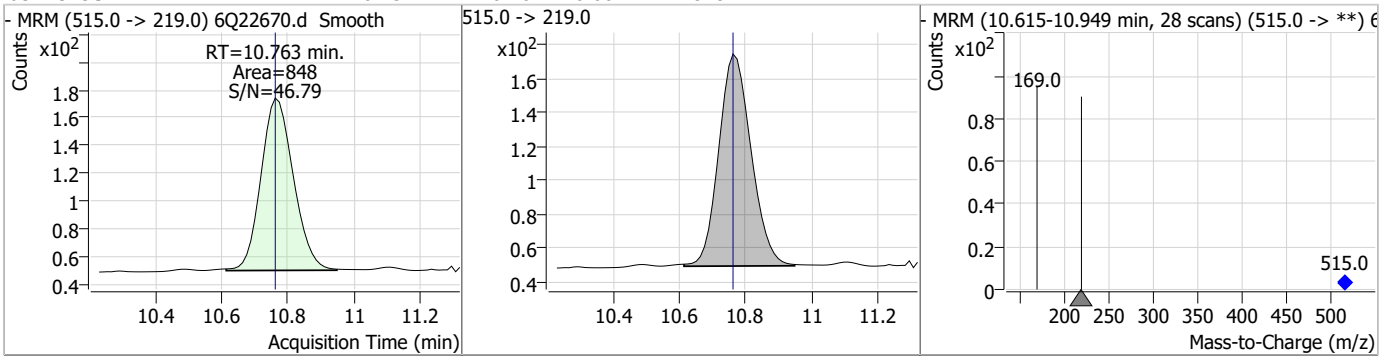
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.11	9.85	0.00	1022				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	2.04	10.68	0.00	6025				

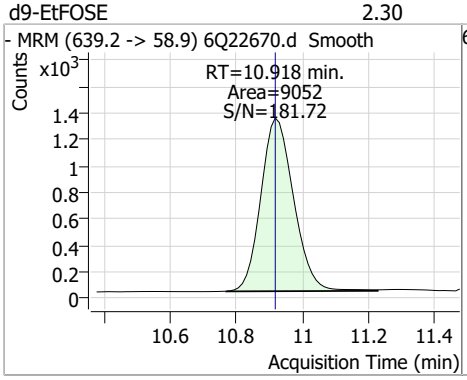


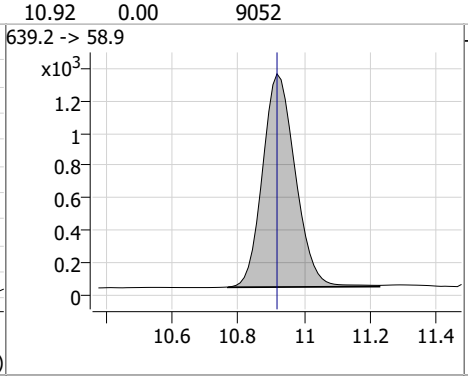
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.25	10.76	0.00	848				

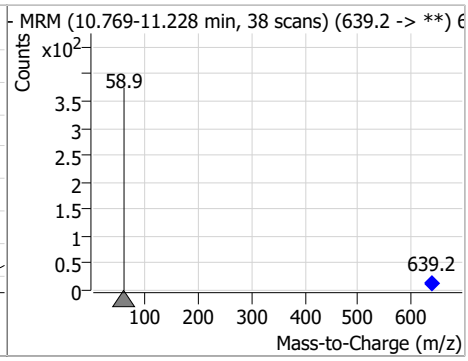


Perfluorinated Compounds by LC/MS/MS

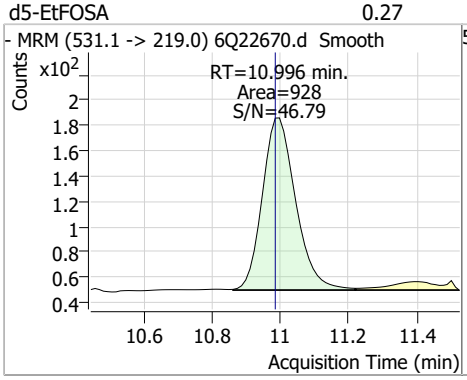
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	2.30	10.92	0.00	9052				

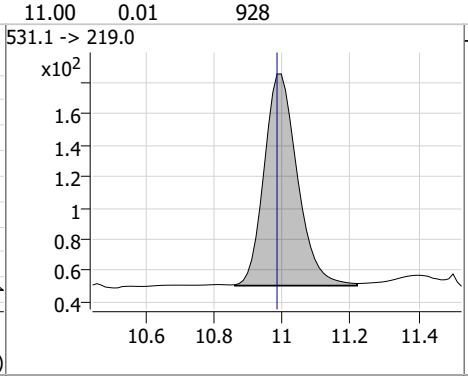


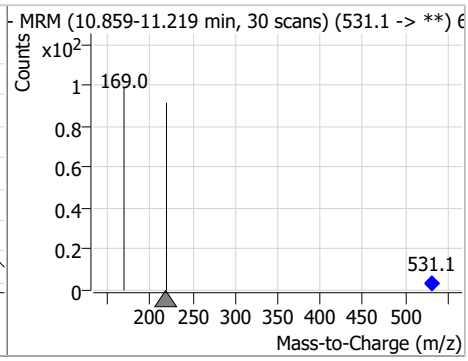




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	0.27	11.00	0.01	928				







7.1.10

7

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48781.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 7:33:02 PM
Sample Name : op98297-mb
Vial : P4-D3
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.924	216.8 -> 171.9	87478	10.00	µg/L	0.012
M5-PFPeA	4.425	268.3 -> 223.0	46245	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	30072	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	22360	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	36028	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	15577	1.25	µg/L	0.013
M6-PFDA	8.303	519.1 -> 474.1	12148	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	13836	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	14746	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	10876	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	6434	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	7840	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	5246	2.50	µg/L	0.012
M8-PFOS	8.442	507.1 -> 79.9	7632	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	675	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1273	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	1821	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	13382	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	24830	10.00	µg/L	0.025
M5-EtFOSAA	8.584	589.2 -> 419.0	11779	5.00	µg/L	0.037
M7-MeFOSE	11.084	623.2 -> 58.9	25557	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	43570	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	5079	2.50	µg/L	0.025
M3-MeFOSA	11.189	515.0 -> 219.0	4253	2.50	µg/L	0.037
13C4-PFOS	8.443	502.8 -> 79.9	4702	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	30165	5.00	µg/L	0.025
18O2-PFHxS	7.328	403.0 -> 83.9	2413	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	28337	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	8929	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	11445	1.25	µg/L	0.025
13C2-PFHxA	5.623	315.1 -> 270.0	17789	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	675	11.20	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 224.0%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1273	11.06	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 221.1%		
13C2-8:2FTS	8.092	529.1 -> 80.9	1821	10.41	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 208.2%		
13C2-PFDoDA	9.205	615.1 -> 570.0	14746	1.93	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 154.2%		
13C2-PFTeDA	9.974	715.2 -> 670.0	10876	1.77	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 141.7%		
13C3-PFBS	5.502	302.1 -> 79.9	7840	3.82	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 152.7%		
13C3-PFHxS	7.329	402.1 -> 79.9	5246	3.93	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 = 157.1%	
13C4-PFBA	2.924	216.8 -> 171.9	87478	16.97 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 169.7%	
13C4-PFHpA	6.580	367.1 -> 322.0	22360	4.22 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 168.8%	
13C5-PFHxA	5.622	318.0 -> 273.0	30072	4.03 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 161.4%	
13C5-PFPeA	4.425	268.3 -> 223.0	46245	7.44 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 148.7%	
13C6-PFDA	8.303	519.1 -> 474.1	12148	1.97 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 157.3%	
13C7-PFUnDA	8.773	570.0 -> 525.1	13836	1.99 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 159.0%	
13C8-FOSA	9.919	506.1 -> 77.8	6434	2.19 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C8-PFOA	7.251	421.1 -> 376.0	36028	3.86 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 154.5%	
13C8-PFOS	8.442	507.1 -> 79.9	7632	4.04 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 161.6%	
13C9-PFNA	7.797	472.1 -> 427.0	15577	1.80 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 143.7%	
d3-MeFOSAA	8.373	573.2 -> 419.0	13382	7.67 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 153.4%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	24830	14.65 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 146.5%	
d3-MeFOSA	11.189	515.0 -> 219.0	4253	2.46 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSAA	8.584	589.2 -> 419.0	11779	8.21 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 164.2%	
d7-MeFOSE	11.084	623.2 -> 58.9	25557	18.51 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.0%	
d9-EtFOSE	11.356	639.2 -> 58.9	43570	22.50 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.0%	
d5-EtFOSA	11.447	531.1 -> 219.0	5079	2.55 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
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	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

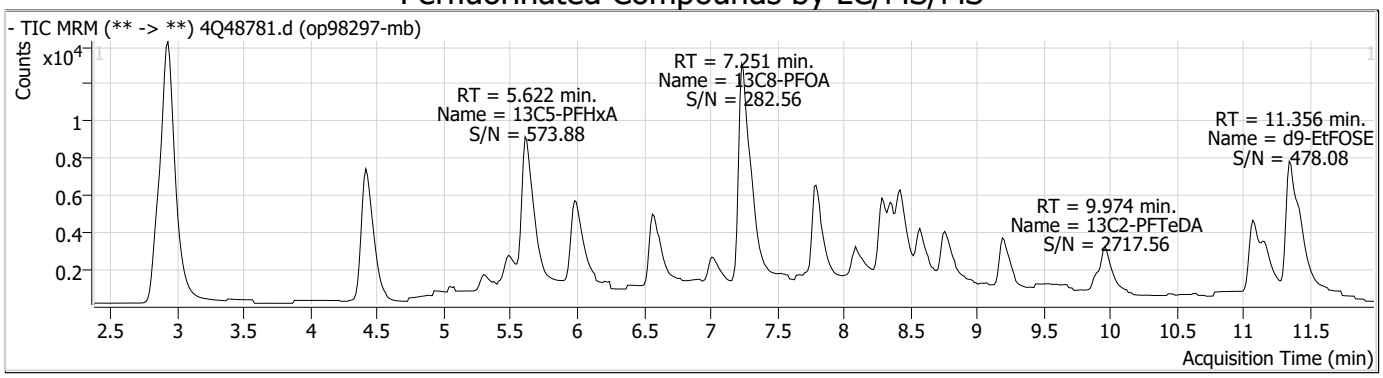
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.970	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.097	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	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	4.894	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	9.551	713.1 -> 669.0	0		µg/L	m	1
		713.1 -> 168.9	0				
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

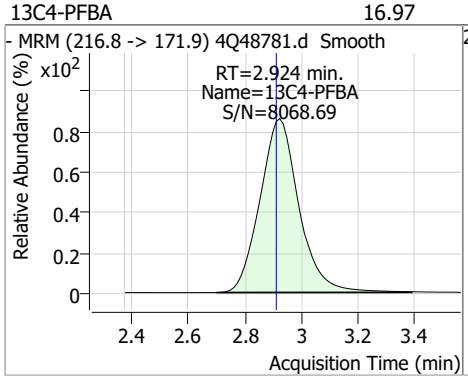
Perfluorinated Compounds by LC/MS/MS

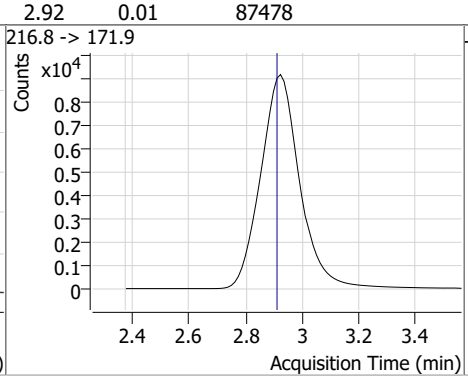
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

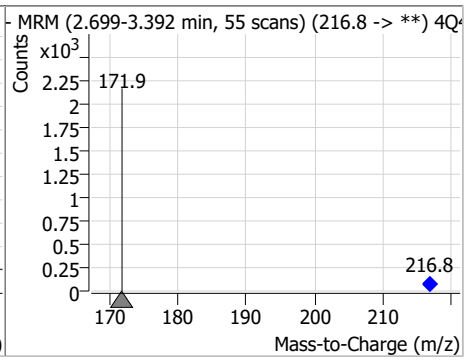
Perfluorinated Compounds by LC/MS/MS



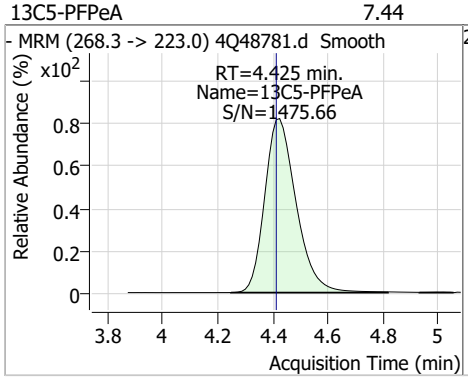
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.97	2.92	0.01	87478				

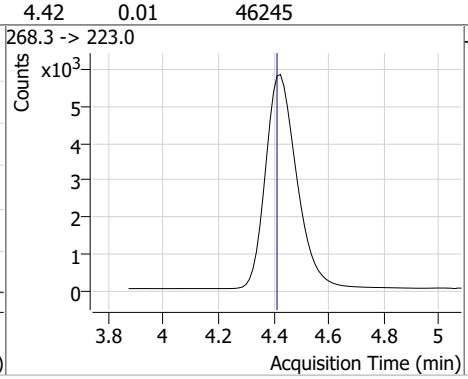


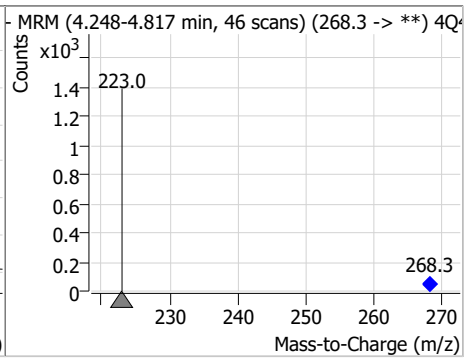




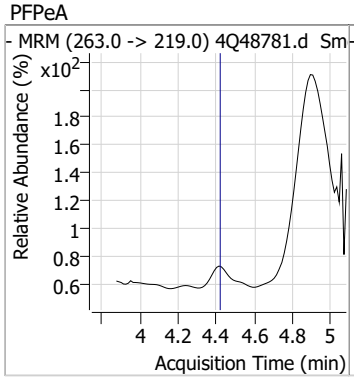
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.44	4.42	0.01	46245				

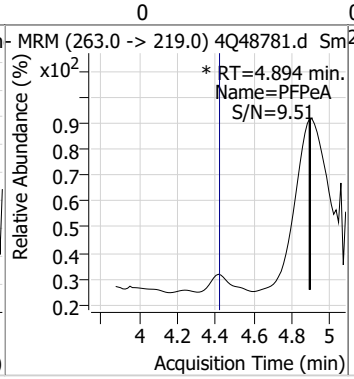


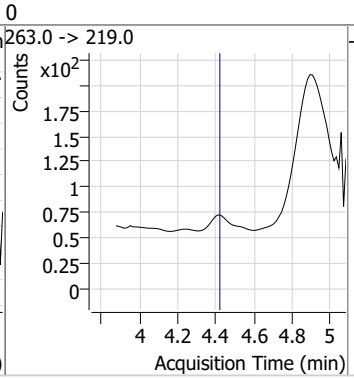


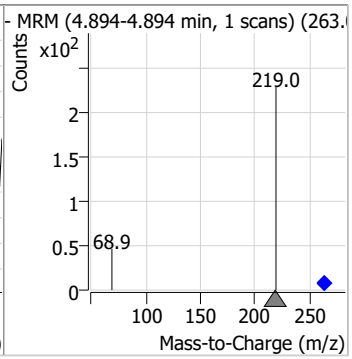


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



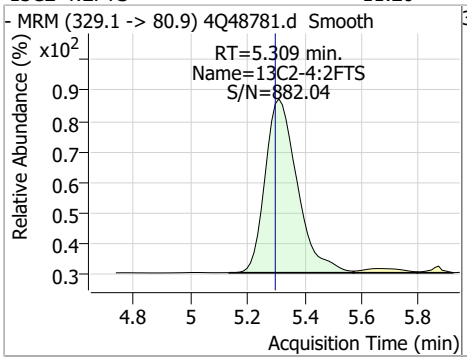


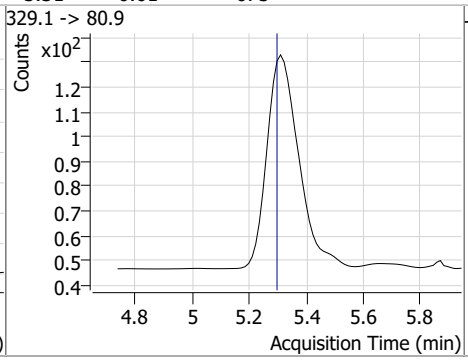


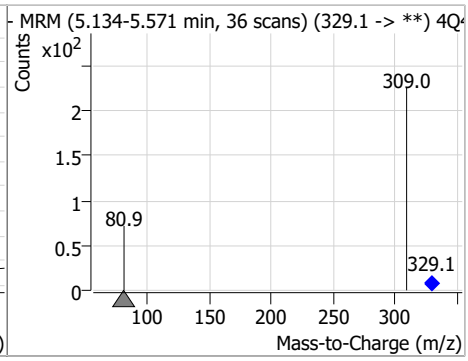


Perfluorinated Compounds by LC/MS/MS

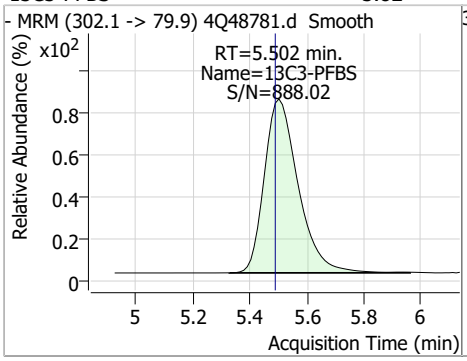
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.20	5.31	0.01	675				

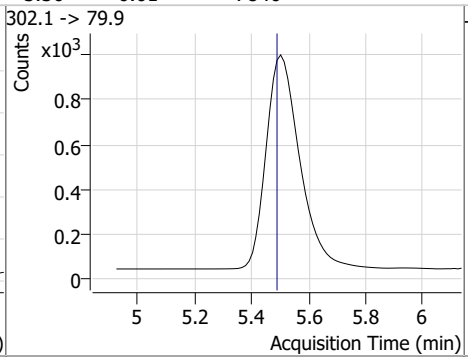


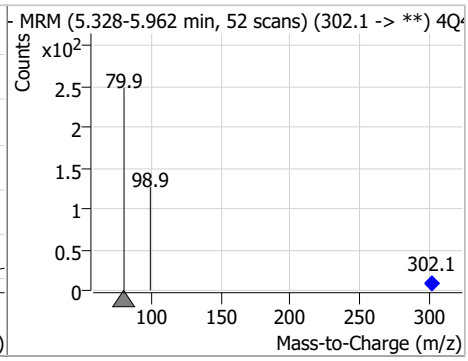




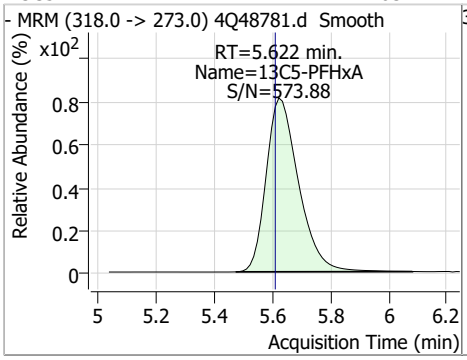
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.82	5.50	0.01	7840				

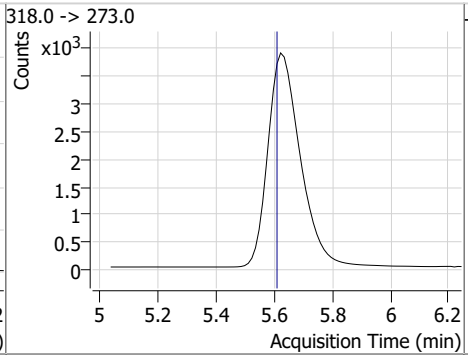


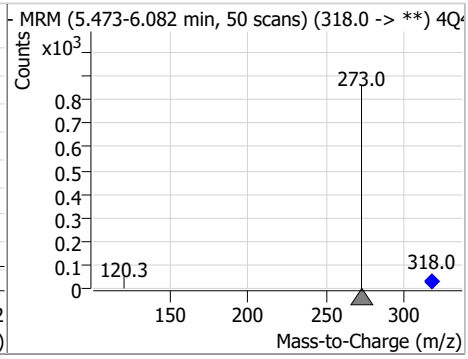




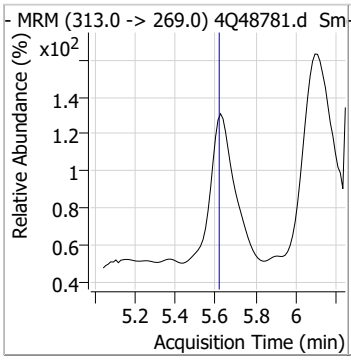
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	4.03	5.62	0.01	30072				

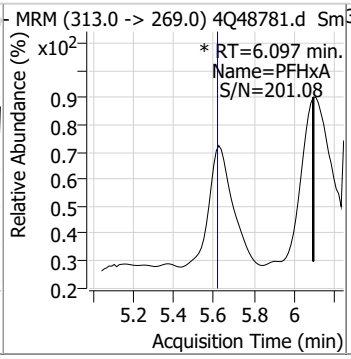


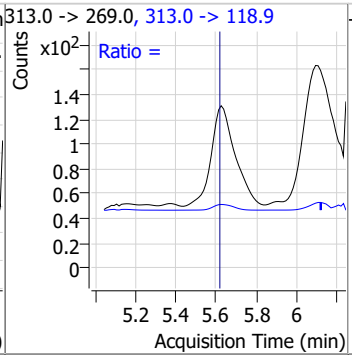


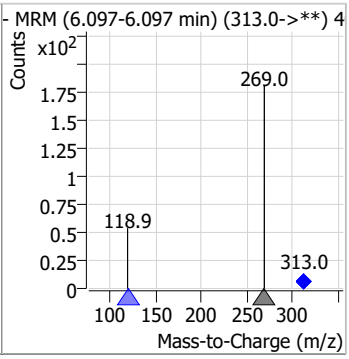


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



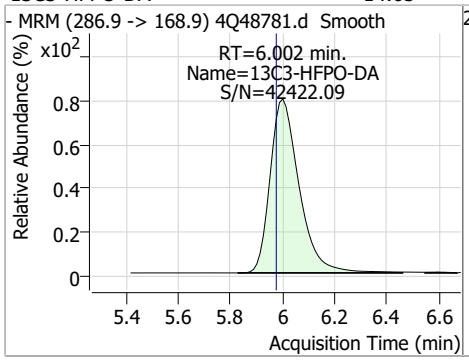


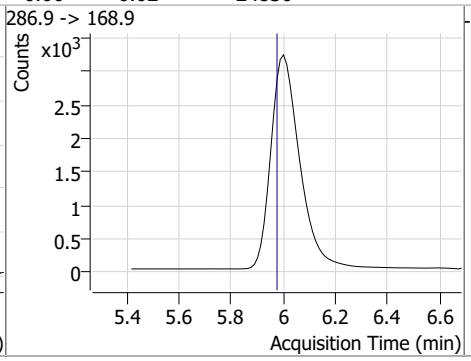


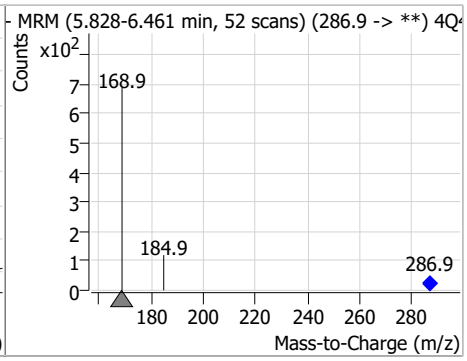


Perfluorinated Compounds by LC/MS/MS

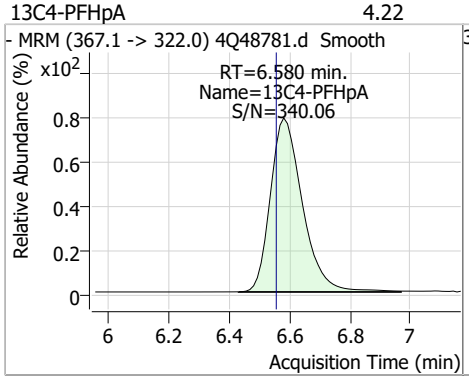
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.65	6.00	0.02	24830				

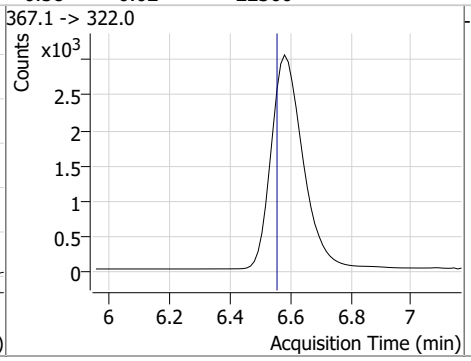


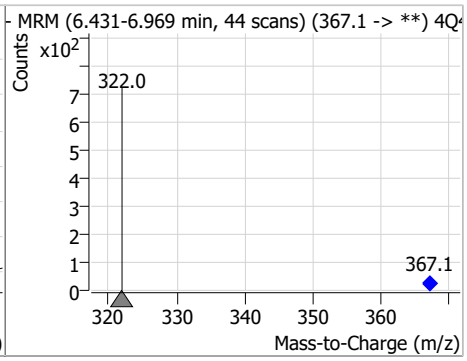




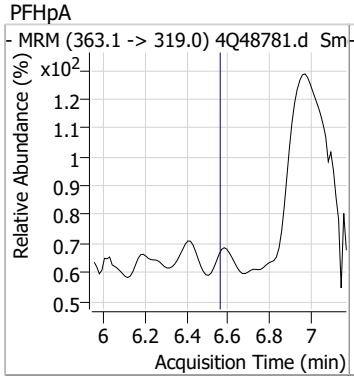
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	4.22	6.58	0.02	22360				

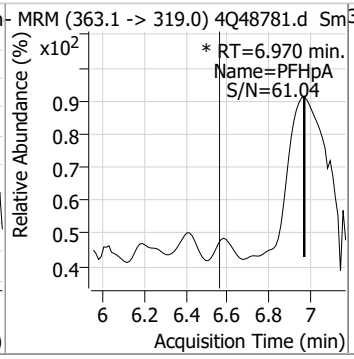


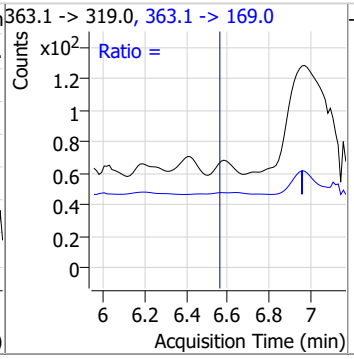


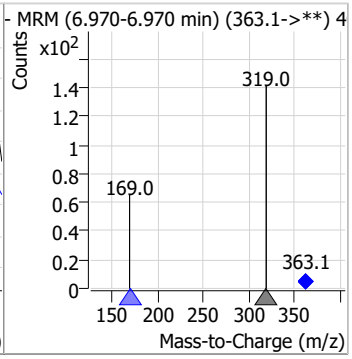


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

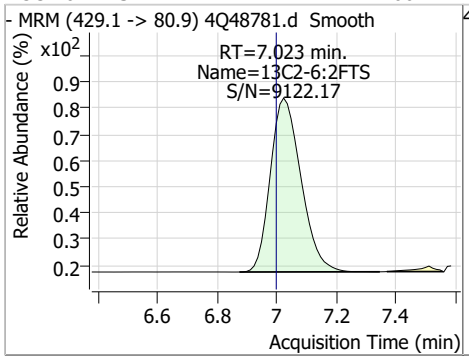


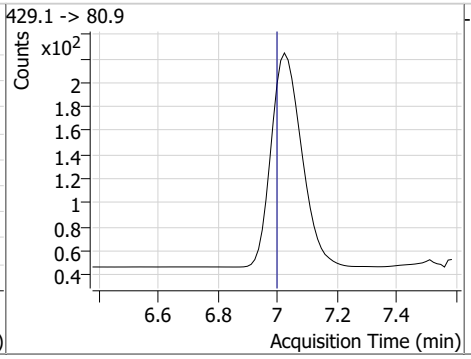


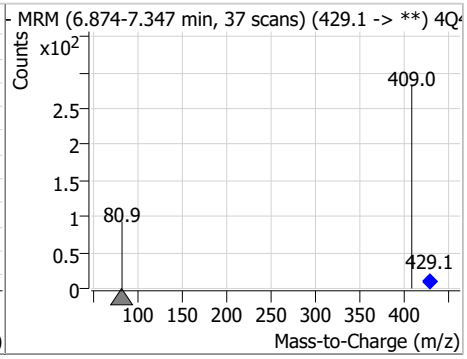




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.06	7.02	0.02	1273				

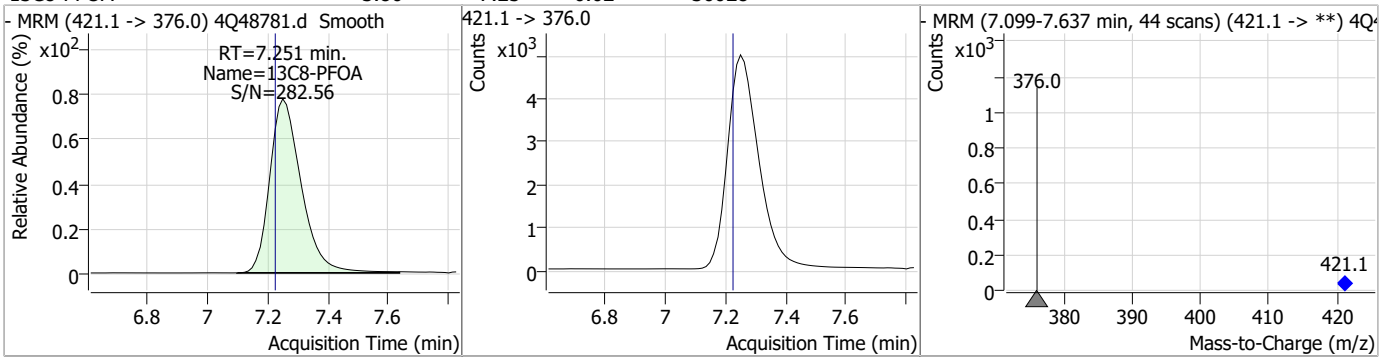




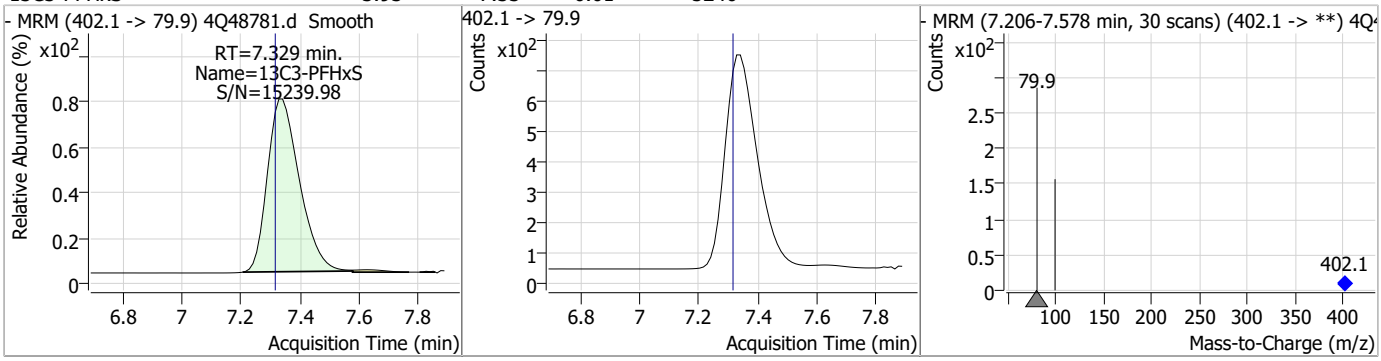


Perfluorinated Compounds by LC/MS/MS

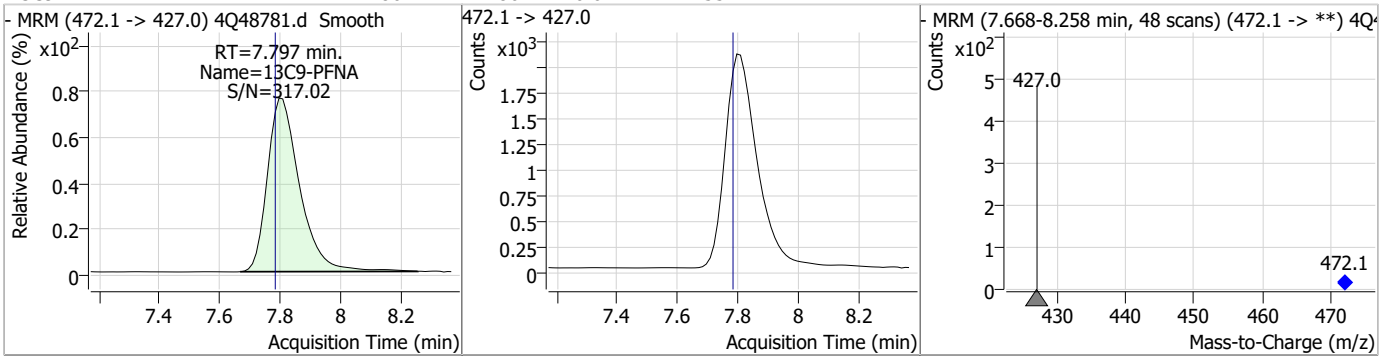
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.86	7.25	0.02	36028				



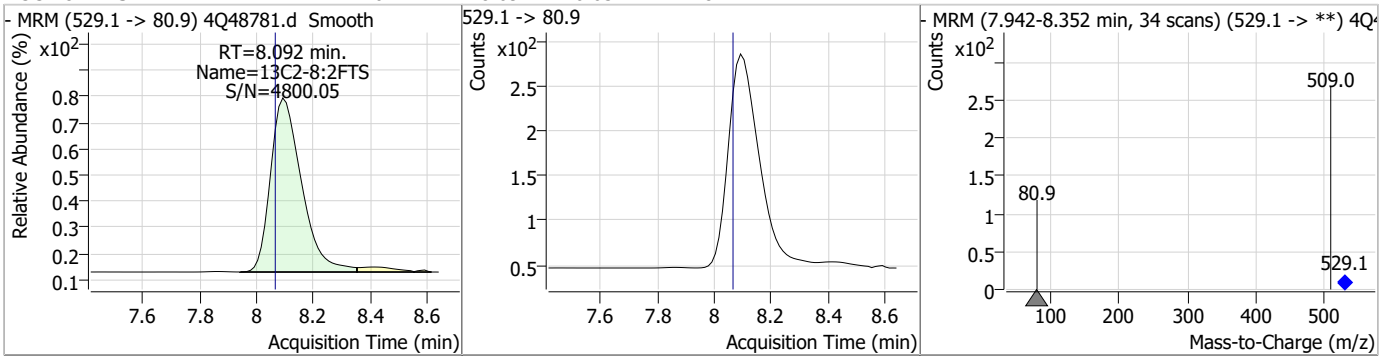
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.93	7.33	0.01	5246				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.80	7.80	0.01	15577				

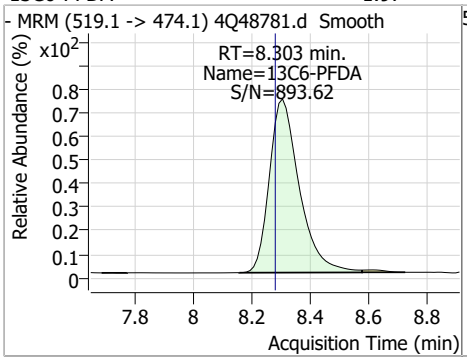


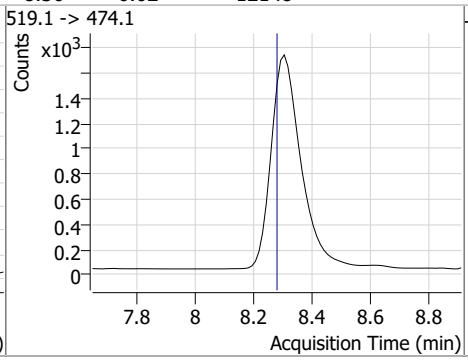
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.41	8.09	0.03	1821				

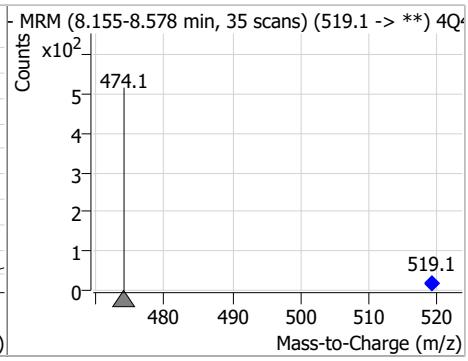


Perfluorinated Compounds by LC/MS/MS

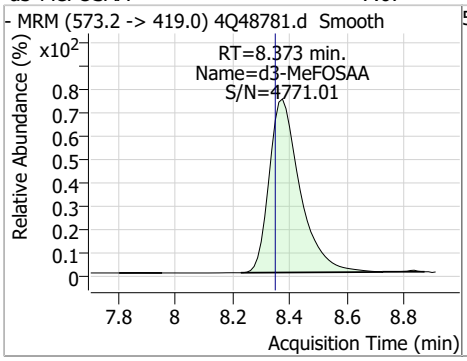
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.97	8.30	0.02	12148				

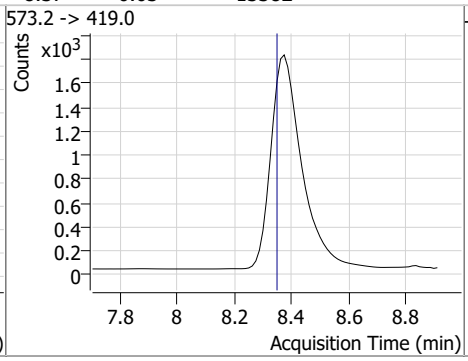


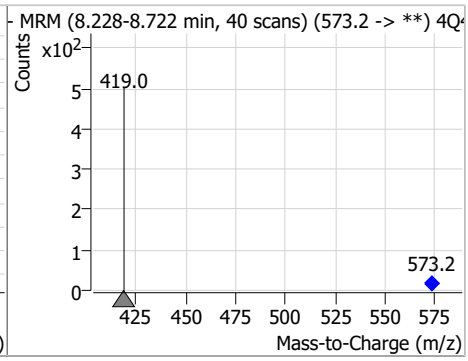




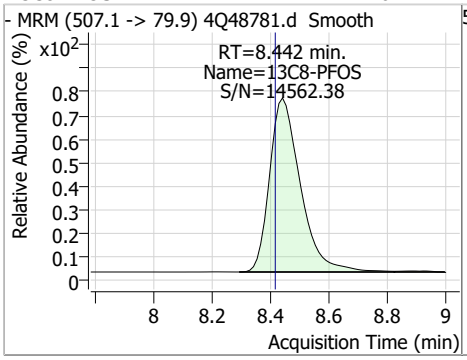
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.67	8.37	0.03	13382				

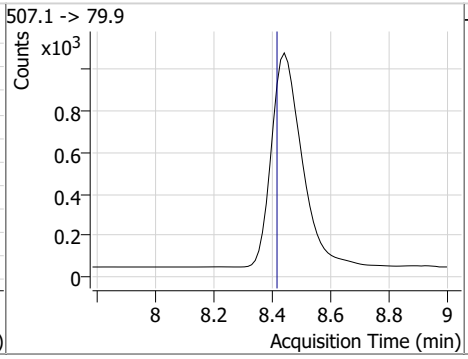


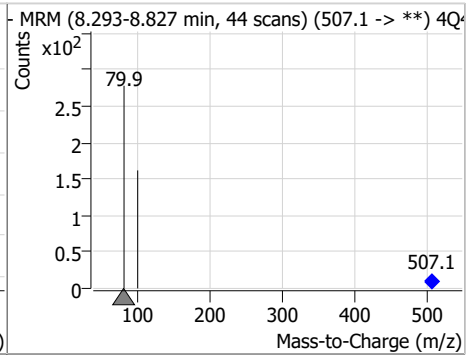




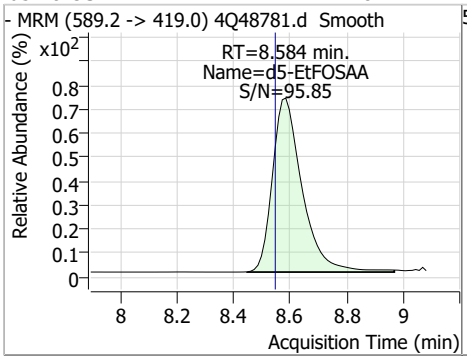
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	4.04	8.44	0.02	7632				

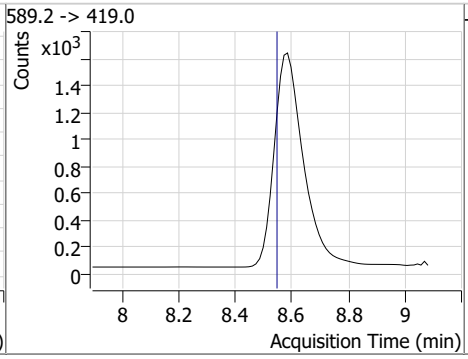


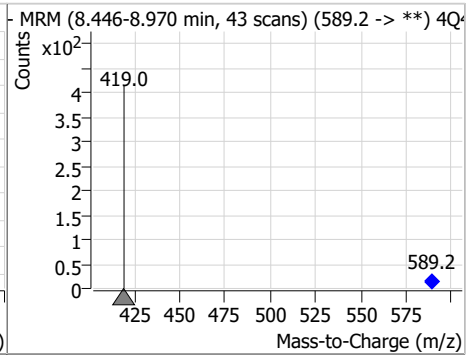




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.21	8.58	0.04	11779				

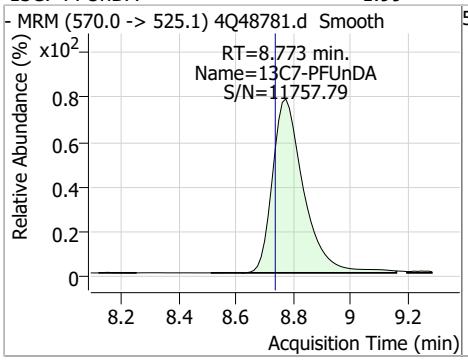


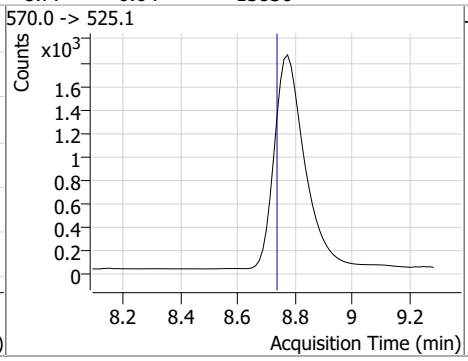


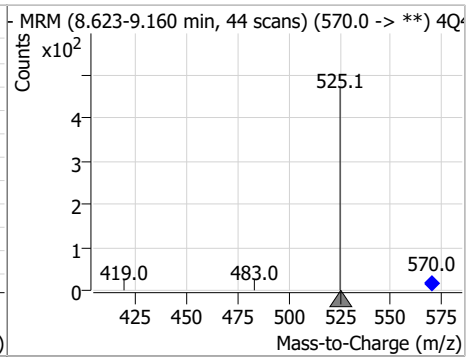


Perfluorinated Compounds by LC/MS/MS

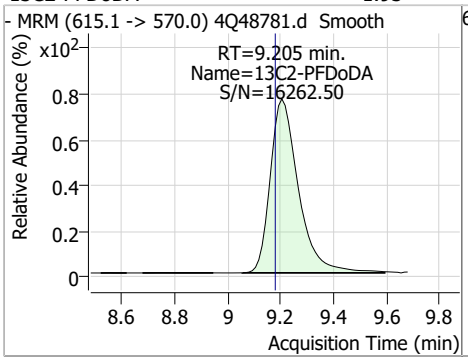
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.99	8.77	0.04	13836				

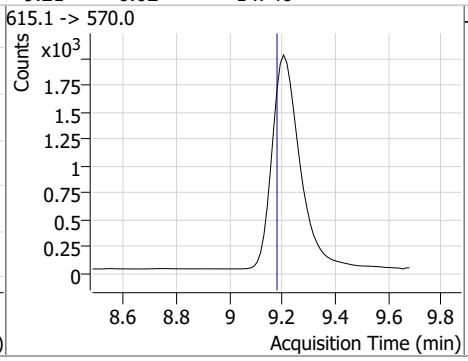


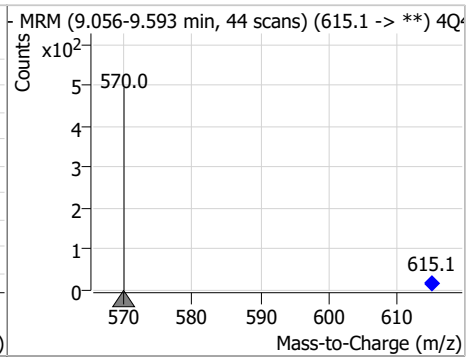




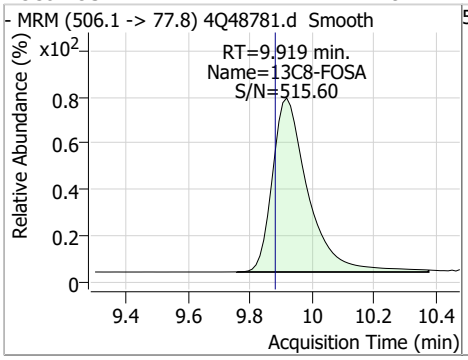
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.93	9.21	0.02	14746				

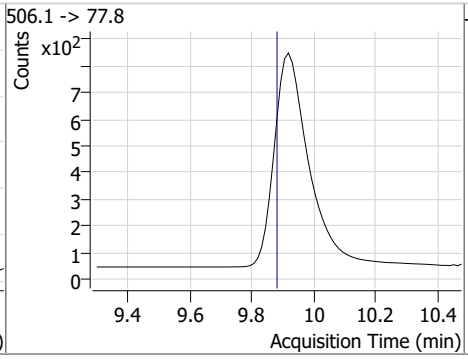


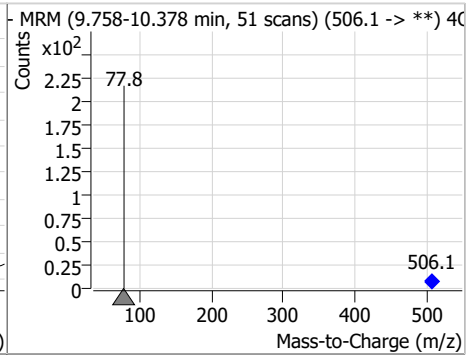




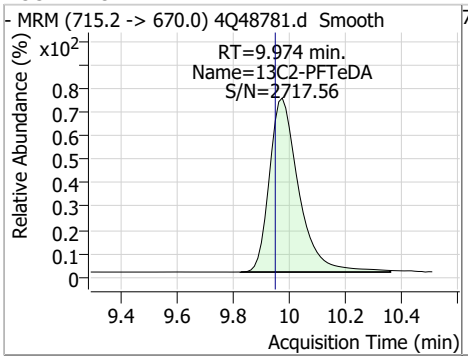
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.19	9.92	0.04	6434				

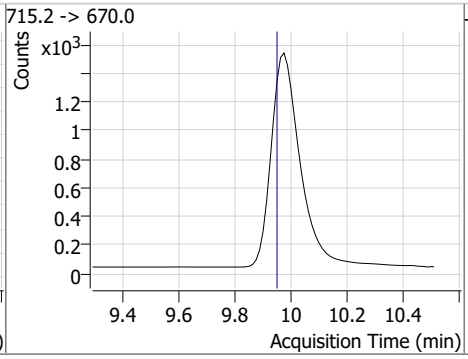


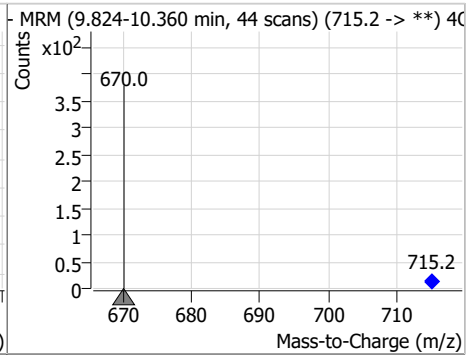




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.77	9.97	0.02	10876				

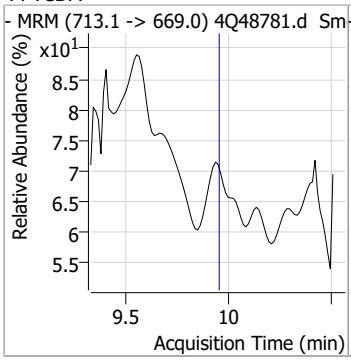


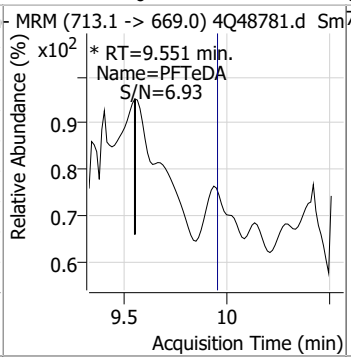


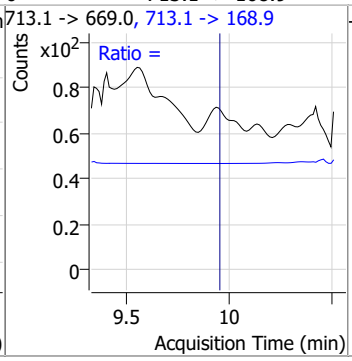


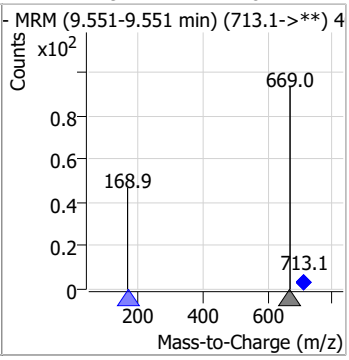
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA		0		0	713.1 -> 168.9		4.9	14.8

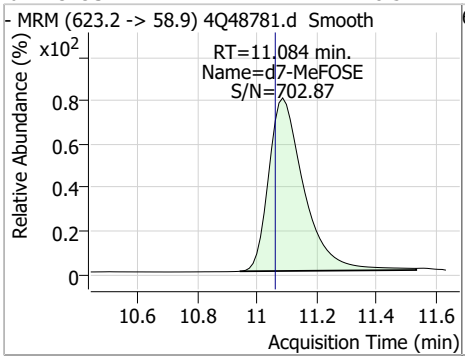


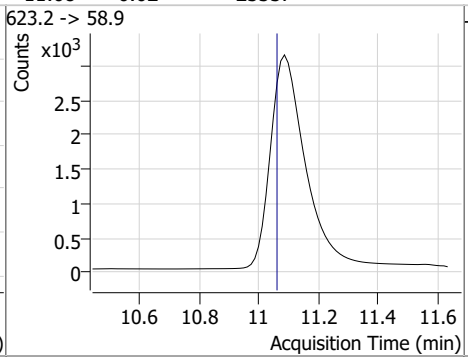


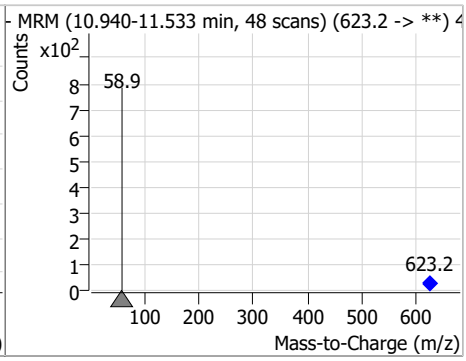




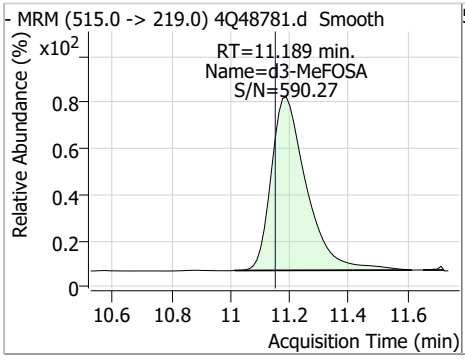
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	18.51	11.08	0.02	25557				

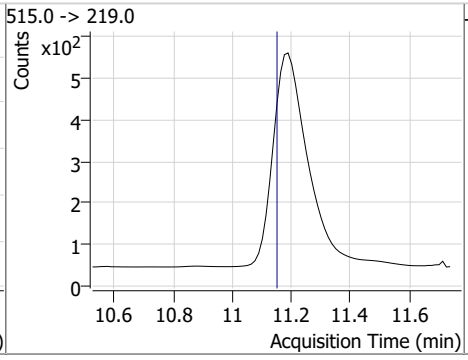


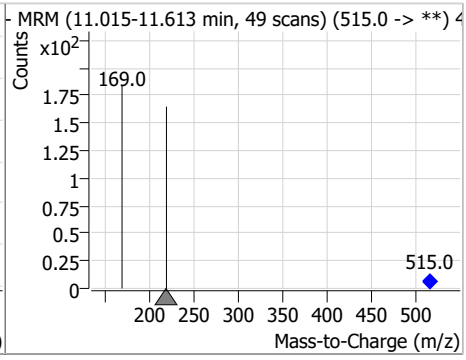




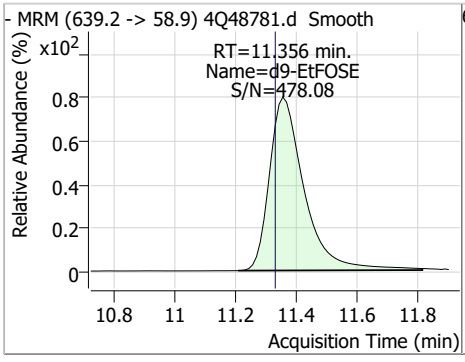
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	11.19	0.04	4253				

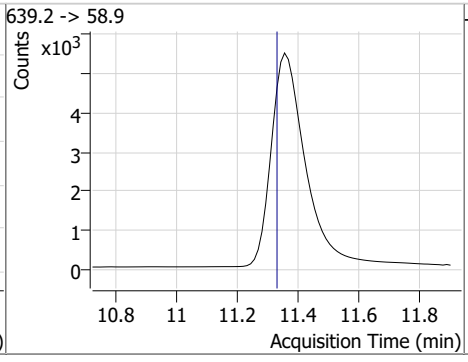


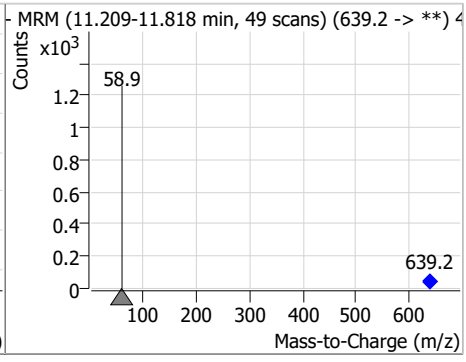




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.50	11.36	0.02	43570				

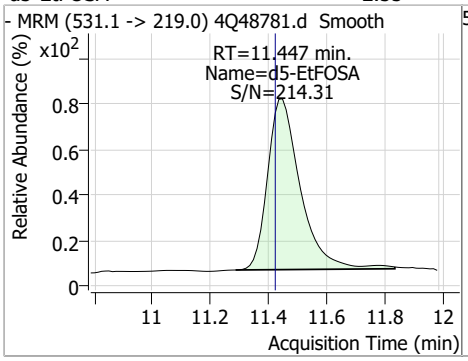


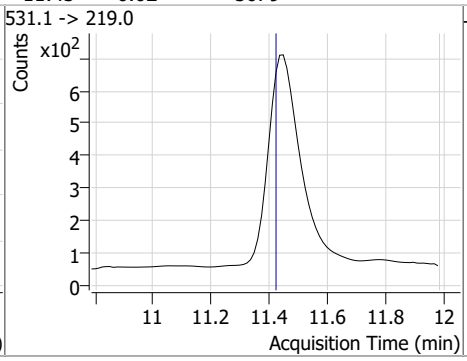


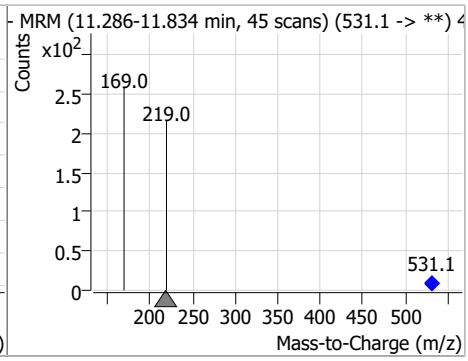


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	11.45	0.02	5079				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48763.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 3:01:19 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.886	216.8 -> 171.9	99751	10.00	µg/L	-0.025
M5-PFPeA	4.400	268.3 -> 223.0	56718	5.00	µg/L	-0.012
M5-PFHxA	5.610	318.0 -> 273.0	35705	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	25650	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	43374	2.50	µg/L	0.012
M9-PFNA	7.797	472.1 -> 427.0	20302	1.25	µg/L	0.013
M6-PFDA	8.291	519.1 -> 474.1	14136	1.25	µg/L	0.013
M7-PFUnDA	8.748	570.0 -> 525.1	17359	1.25	µg/L	0.012
M2-PFDoDA	9.193	615.1 -> 570.0	17313	1.25	µg/L	0.012
M2-PFTeDA	9.961	715.2 -> 670.0	13783	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	13060	2.50	µg/L	0.024
M3-PFBS	5.489	302.1 -> 79.9	9098	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6141	2.50	µg/L	0.000
M8-PFOS	8.430	507.1 -> 79.9	8268	2.50	µg/L	0.013
M2-4:2FTS	5.284	329.1 -> 80.9	874	5.00	µg/L	-0.012
M2-6:2FTS	7.011	429.1 -> 80.9	1472	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	2375	5.00	µg/L	0.013
M3-MeFOSAA	8.361	573.2 -> 419.0	17684	5.00	µg/L	0.013
M3-HFPO-DA	5.977	286.9 -> 168.9	31289	10.00	µg/L	0.000
M5-EtFOSAA	8.559	589.2 -> 419.0	14208	5.00	µg/L	0.013
M7-MeFOSE	11.072	623.2 -> 58.9	57451	25.00	µg/L	0.012
M9-EtFOSE	11.344	639.2 -> 58.9	84338	25.00	µg/L	0.013
M5-EtFOSA	11.435	531.1 -> 219.0	9204	2.50	µg/L	0.012
M3-MeFOSA	11.164	515.0 -> 219.0	7948	2.50	µg/L	0.012
13C4-PFOS	8.430	502.8 -> 79.9	9073	2.50	µg/L	0.013
13C3-PFBA	2.891	216.0 -> 172.0	54834	5.00	µg/L	-0.013
18O2-PFHxS	7.316	403.0 -> 83.9	4733	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	53278	2.50	µg/L	0.012
13C2-PFDA	8.291	515.1 -> 470.1	15996	1.25	µg/L	0.013
13C5-PFNA	7.785	468.0 -> 423.0	22418	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	34124	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.284	329.1 -> 80.9	874	7.39	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 147.9%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1472	6.52	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 130.3%		
13C2-8:2FTS	8.078	529.1 -> 80.9	2375	6.92	µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 138.5%		
13C2-PFDoDA	9.193	615.1 -> 570.0	17313	1.26	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-PFTeDA	9.961	715.2 -> 670.0	13783	1.25	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-PFBS	5.489	302.1 -> 79.9	9098	2.26	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C3-PFHxS	7.317	402.1 -> 79.9	6141	2.34	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 = 93.8%	
13C4-PFBA	2.886	216.8 -> 171.9	99751	10.64 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C4-PFHpA	6.568	367.1 -> 322.0	25650	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFHxA	5.610	318.0 -> 273.0	35705	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C5-PFPeA	4.400	268.3 -> 223.0	56718	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C6-PFDA	8.291	519.1 -> 474.1	14136	1.28 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C7-PFUnDA	8.748	570.0 -> 525.1	17359	1.39 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C8-FOSA	9.907	506.1 -> 77.8	13060	2.31 µg/L	0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-PFOA	7.238	421.1 -> 376.0	43374	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOS	8.430	507.1 -> 79.9	8268	2.27 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.8%	
13C9-PFNA	7.797	472.1 -> 427.0	20302	1.20 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
d3-MeFOSAA	8.361	573.2 -> 419.0	17684	5.25 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C3-HFPO-DA	5.977	286.9 -> 168.9	31289	9.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d3-MeFOSA	11.164	515.0 -> 219.0	7948	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
d5-EtFOSAA	8.559	589.2 -> 419.0	14208	5.13 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d7-MeFOSE	11.072	623.2 -> 58.9	57451	21.56 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
d9-EtFOSE	11.344	639.2 -> 58.9	84338	22.57 µg/L	0.013
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.3%	
d5-EtFOSA	11.435	531.1 -> 219.0	9204	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
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	8.374	570.1 -> 419.0	104	0.05 µg/L	81
		570.1 -> 483.0	11		
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	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

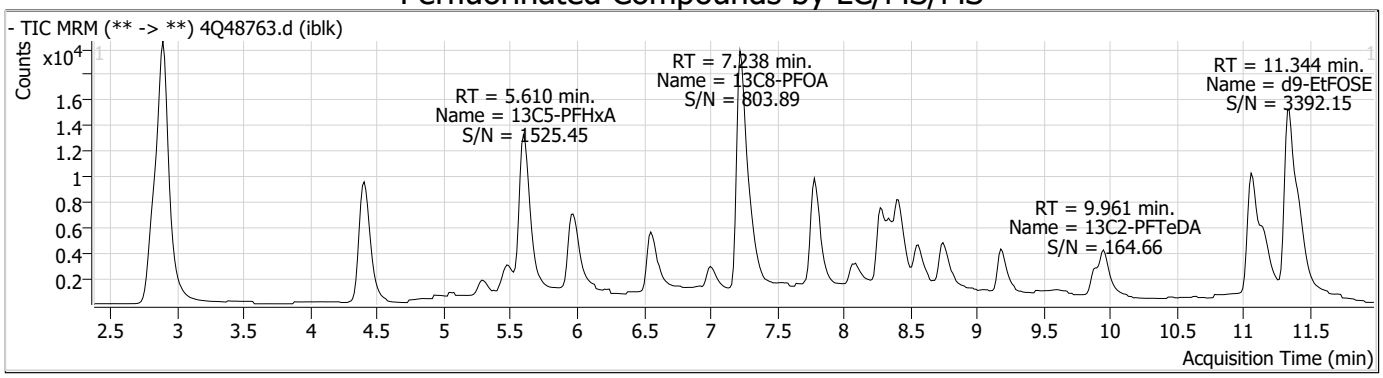
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.945	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.085	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.564	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	4.881	263.0 -> 219.0	0		µg/L	m	1
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	11.412	526.0 -> 219.0	667	0.20	µg/L	m	98
		526.0 -> 169.0	914				
EtFOSE	11.320	630.0 -> 58.9	730	0.28	µg/L	m	100
MeFOSA	11.041	511.9 -> 219.0	0		µg/L	m	1
		511.9 -> 169.0	0				
MeFOSE	11.073	616.1 -> 58.9	329	0.16	µg/L	m	100
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

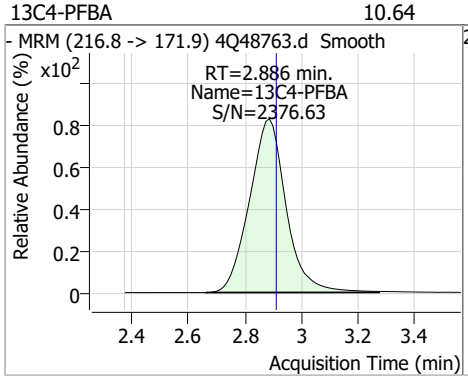
Perfluorinated Compounds by LC/MS/MS

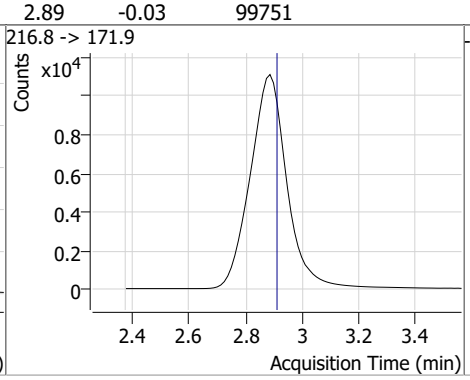
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

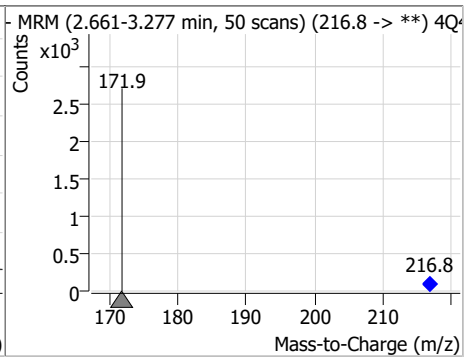
Perfluorinated Compounds by LC/MS/MS



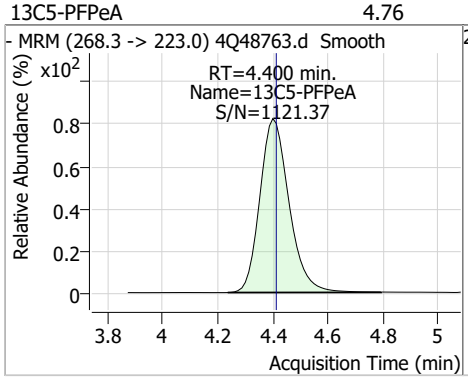
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.64	2.89	-0.03	99751				

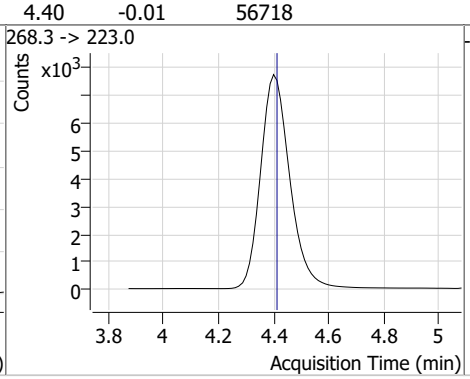


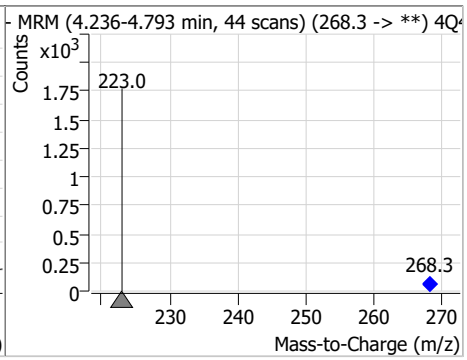




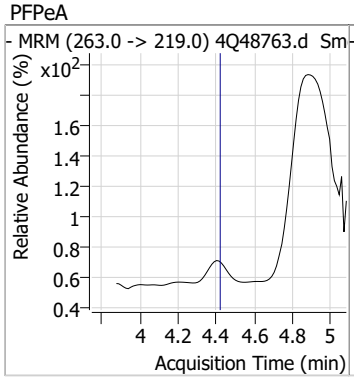
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.76	4.40	-0.01	56718				

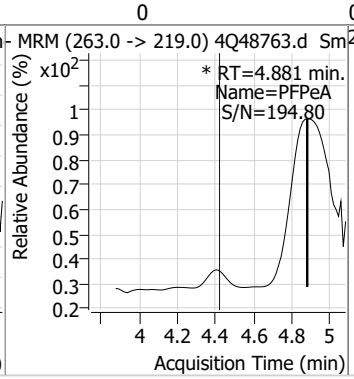


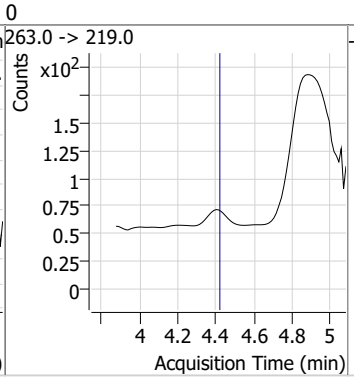


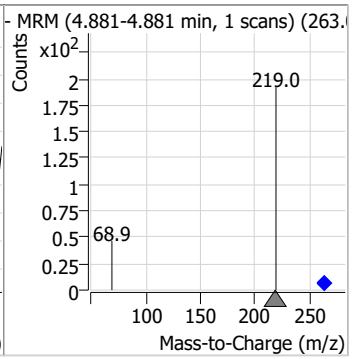


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



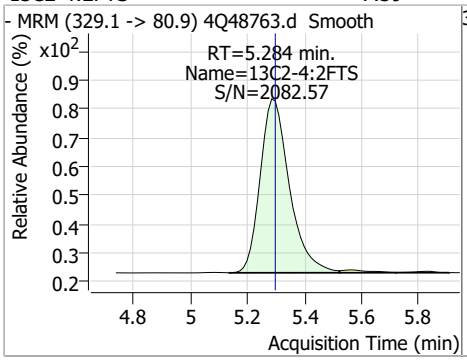


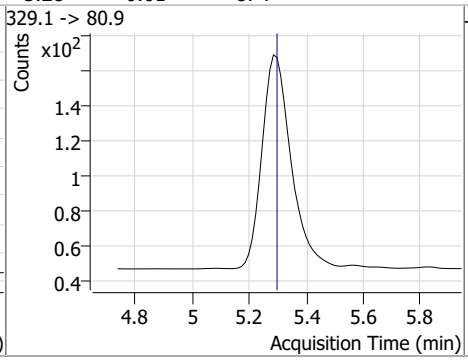


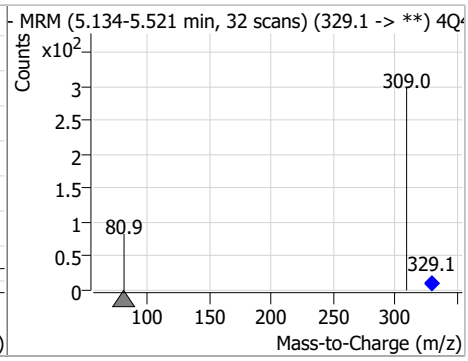


Perfluorinated Compounds by LC/MS/MS

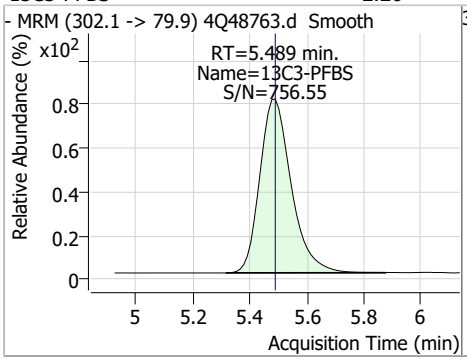
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.39	5.28	-0.01	874				

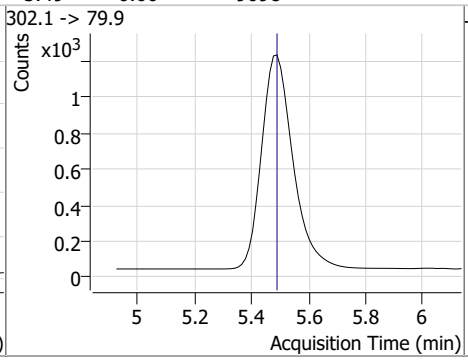


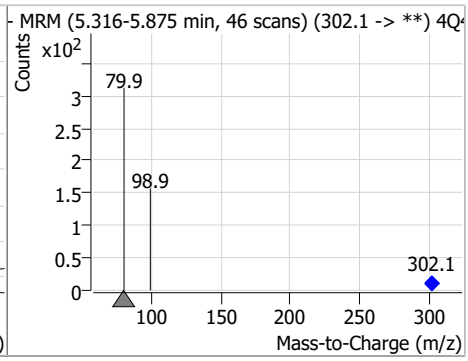




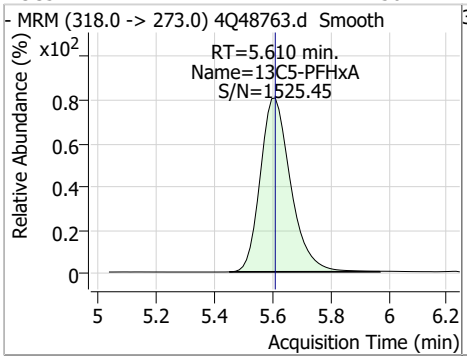
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.26	5.49	0.00	9098				

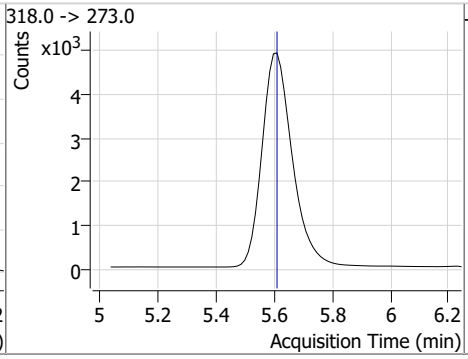


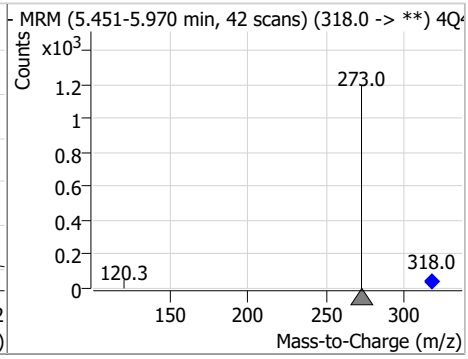




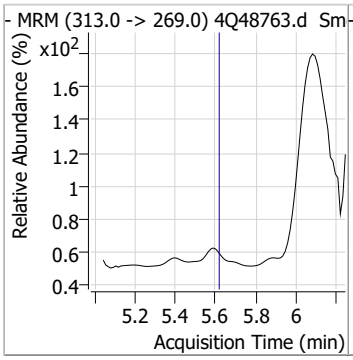
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.61	0.00	35705				

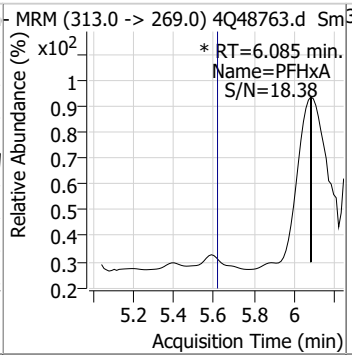


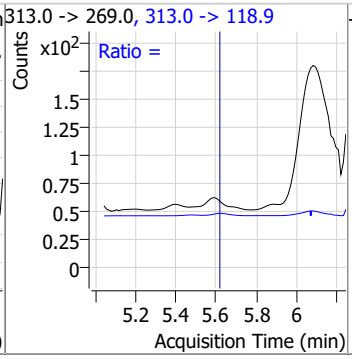


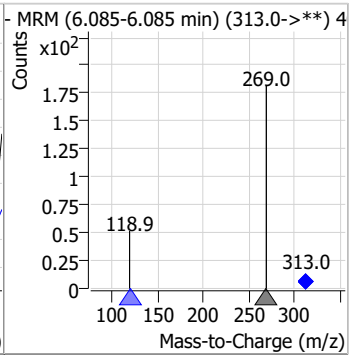


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



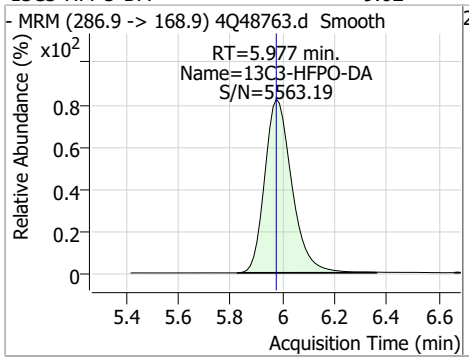


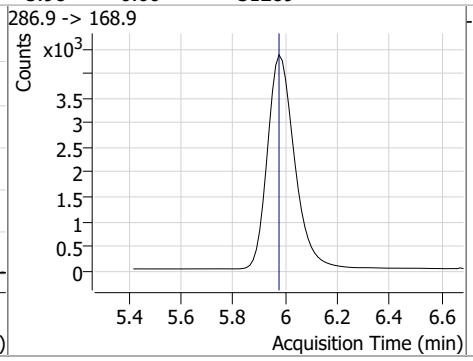


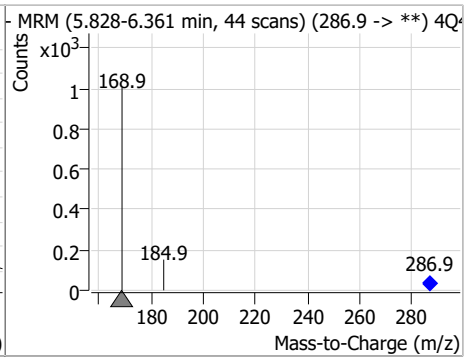


Perfluorinated Compounds by LC/MS/MS

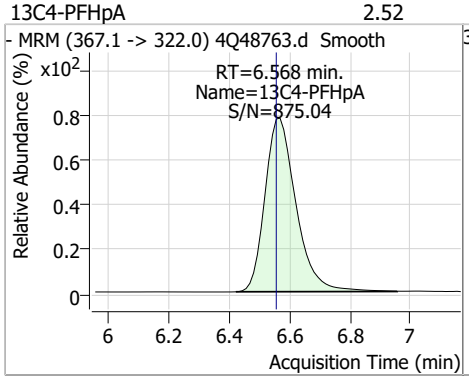
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.62	5.98	0.00	31289				

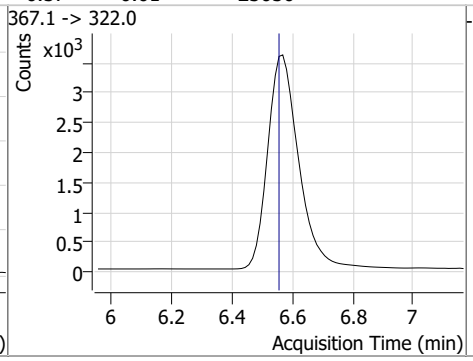


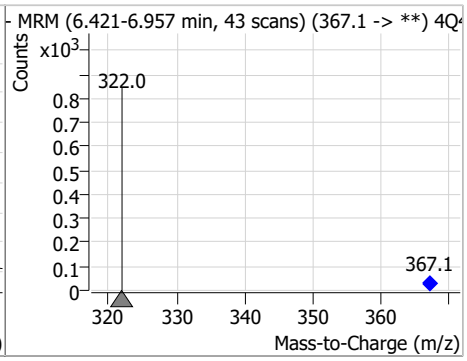




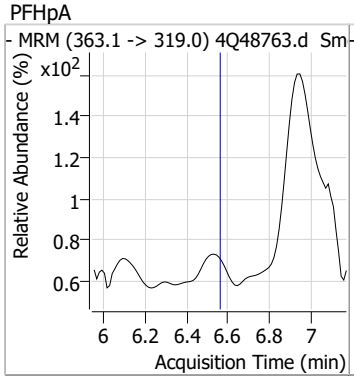
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.57	0.01	25650				

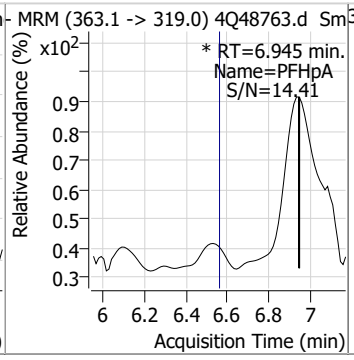


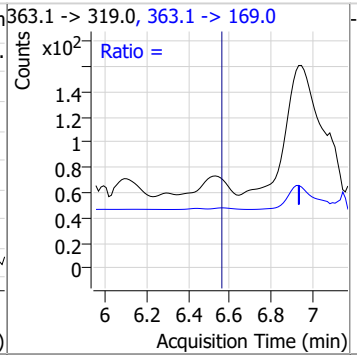


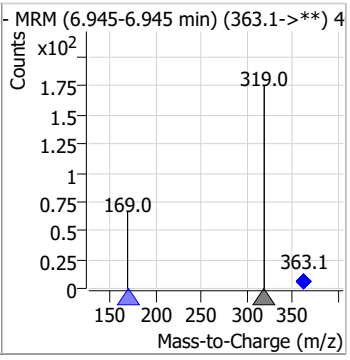


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

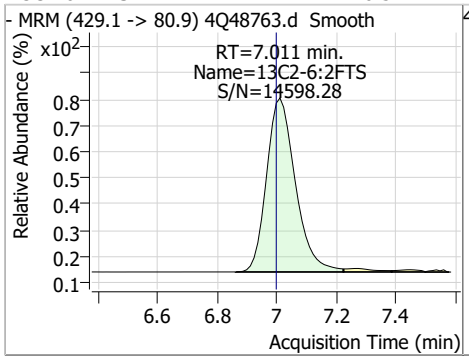


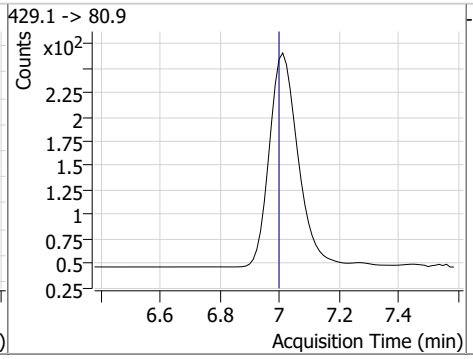


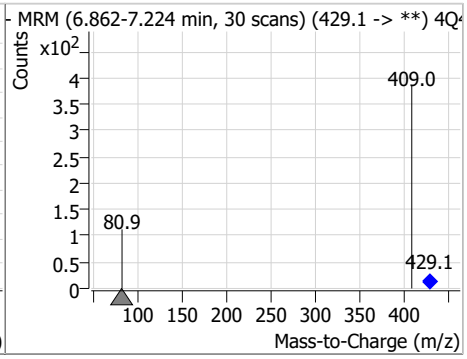




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.52	7.01	0.01	1472				

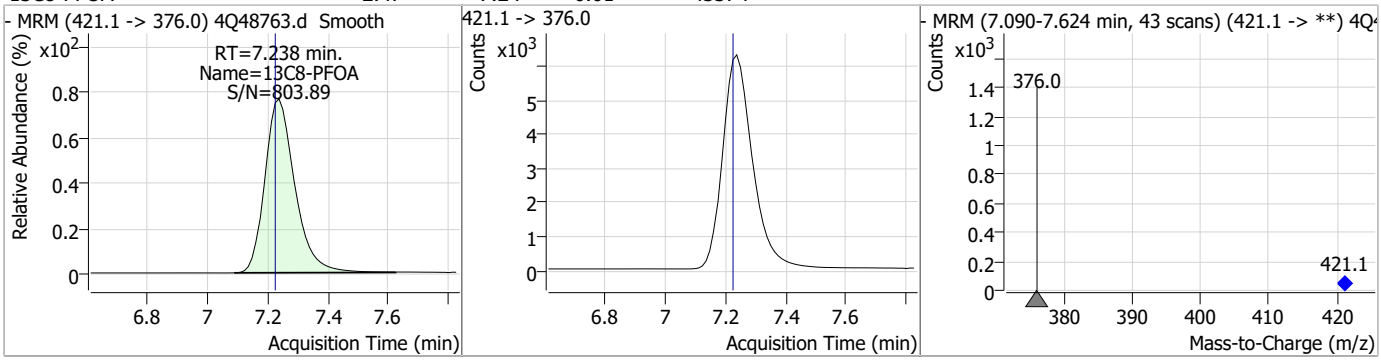




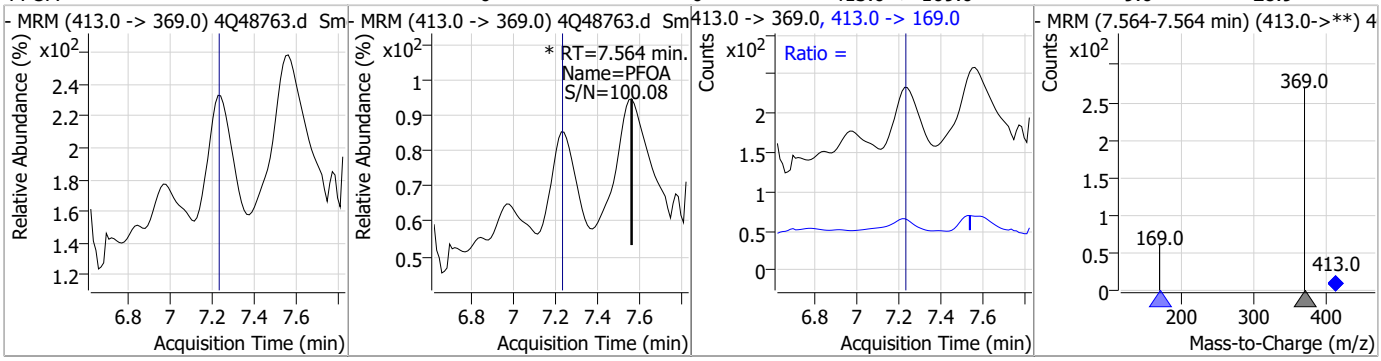


Perfluorinated Compounds by LC/MS/MS

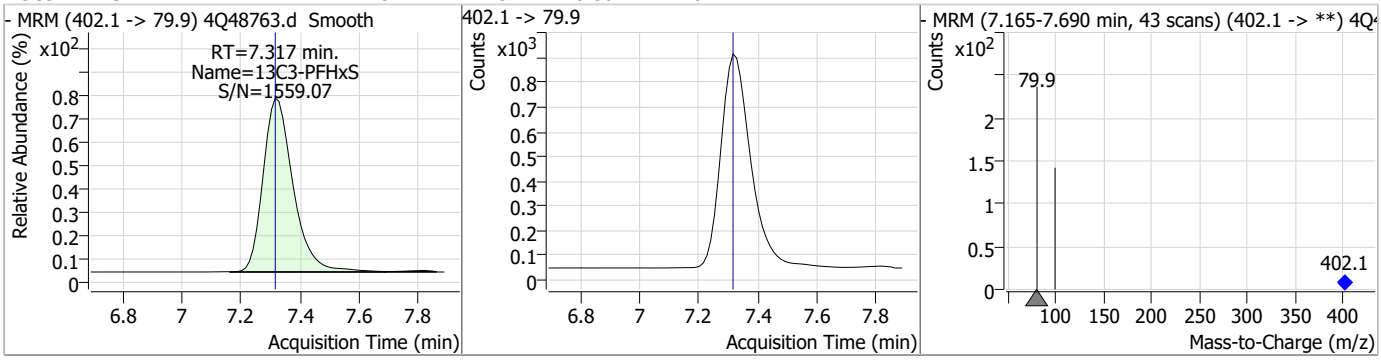
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	7.24	0.01	43374				



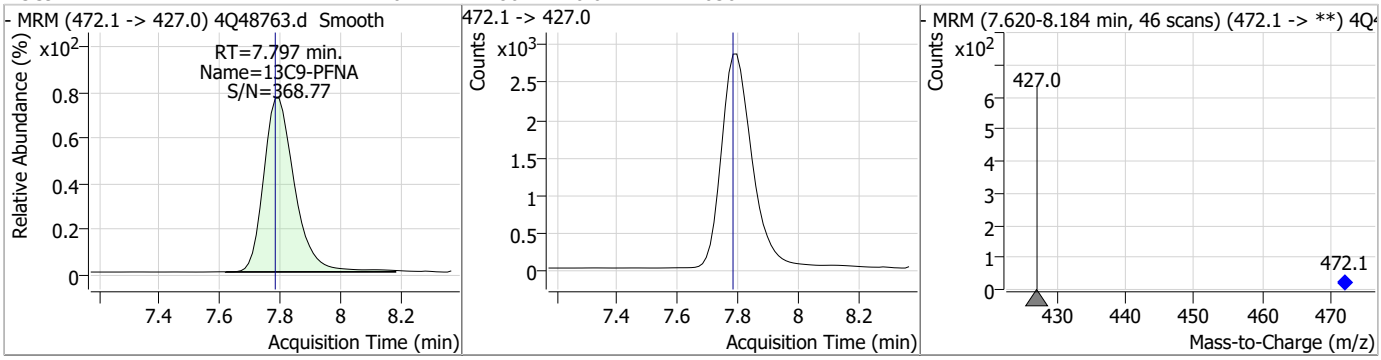
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA		0		0	413.0 -> 169.0		9.6	28.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.34	7.32	0.00	6141				

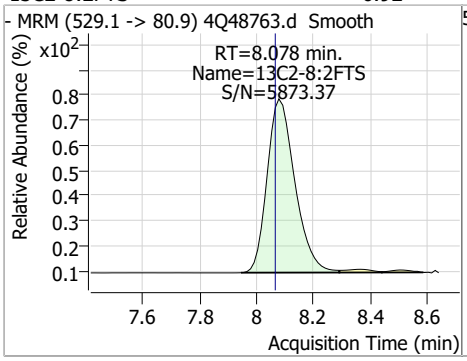


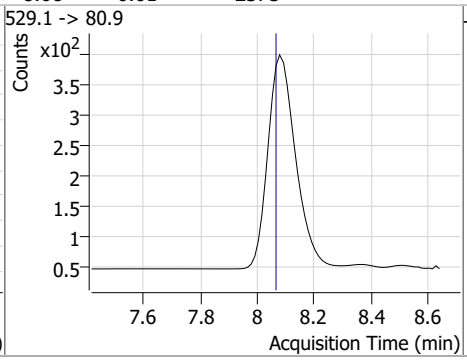
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.20	7.80	0.01	20302				

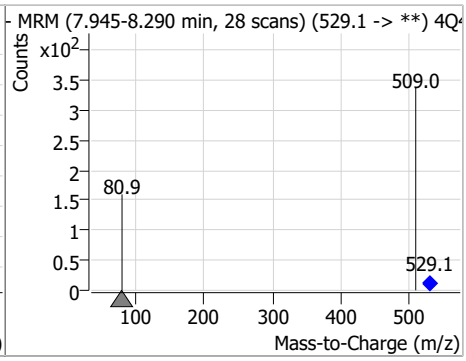


Perfluorinated Compounds by LC/MS/MS

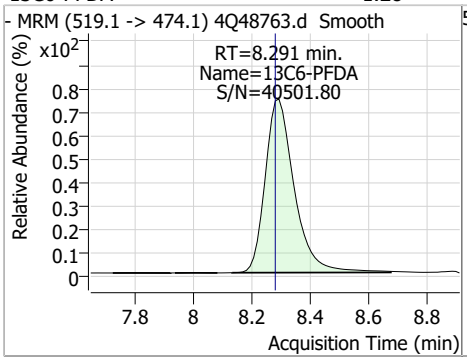
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.92	8.08	0.01	2375				

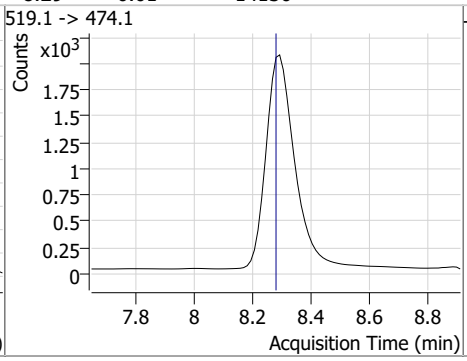


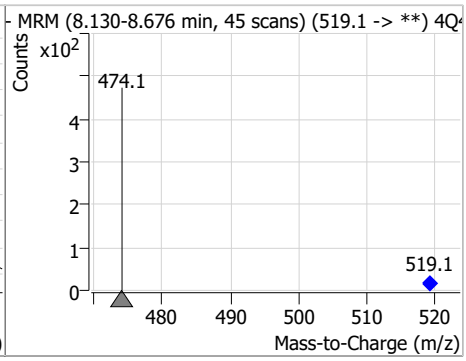




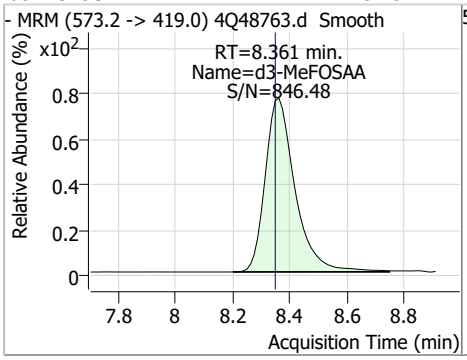
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.29	0.01	14136				

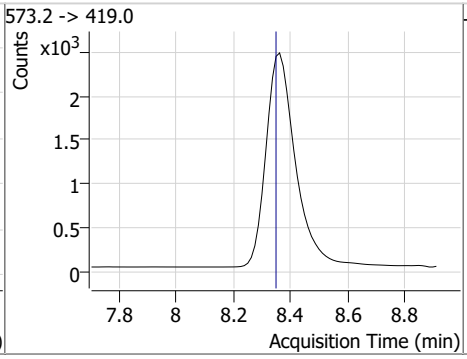


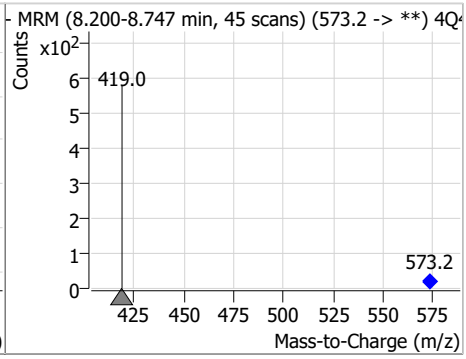




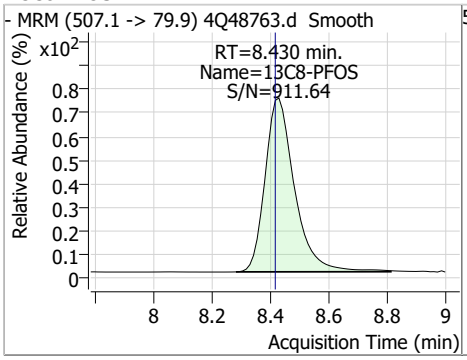
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.25	8.36	0.01	17684				

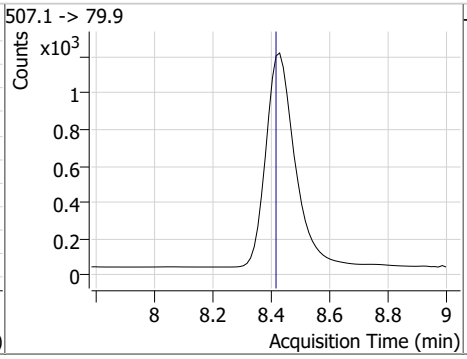


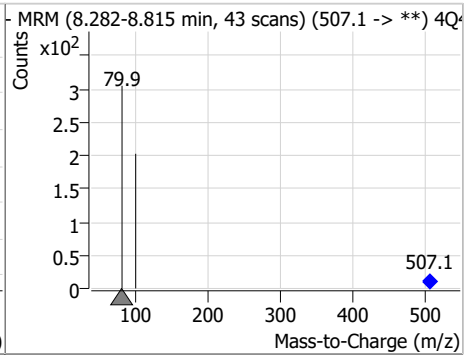




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.27	8.43	0.01	8268				

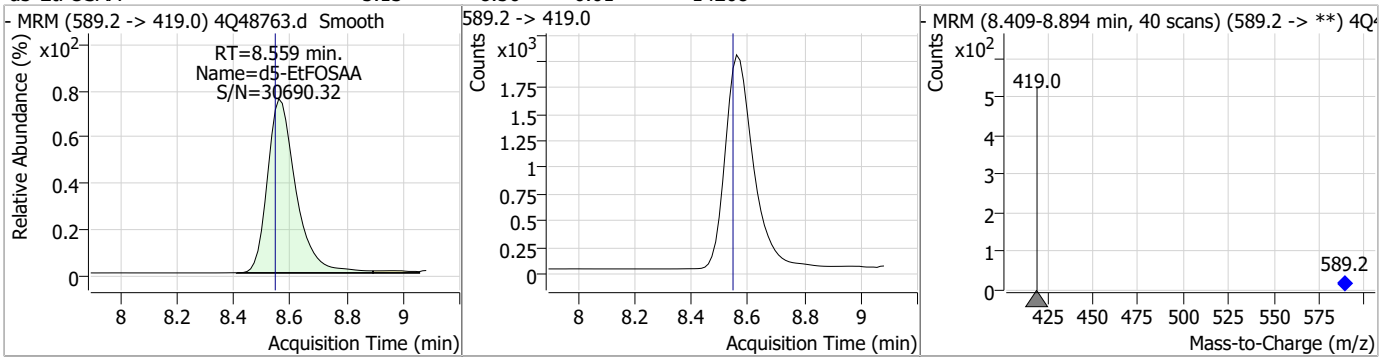




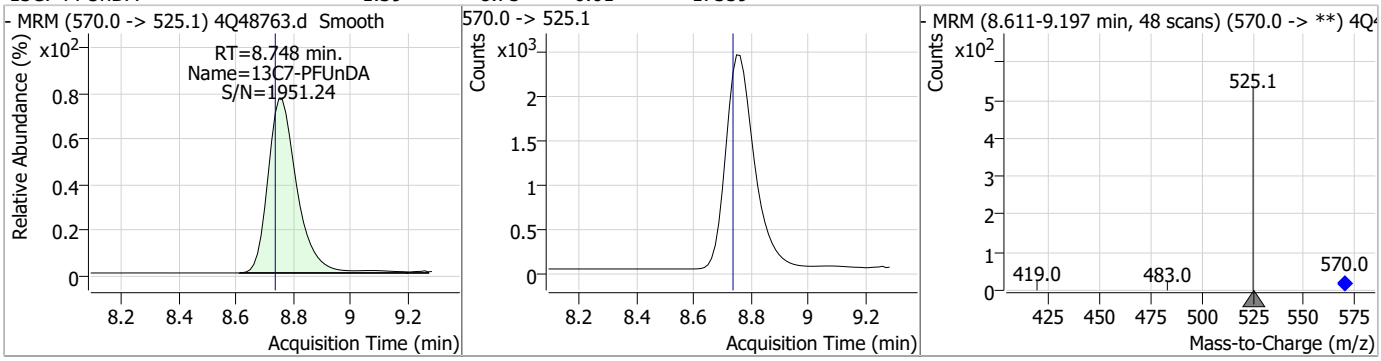


Perfluorinated Compounds by LC/MS/MS

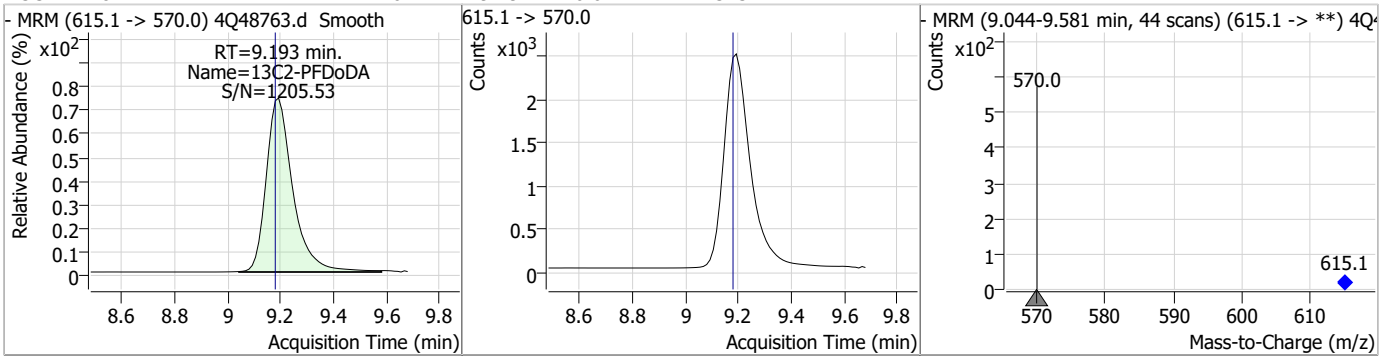
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.13	8.56	0.01	14208				



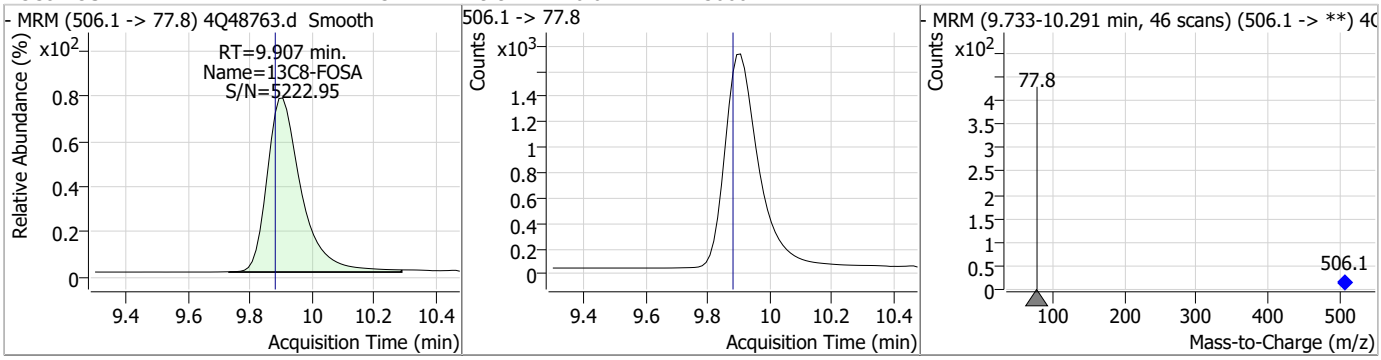
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.39	8.75	0.01	17359				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	9.19	0.01	17313				

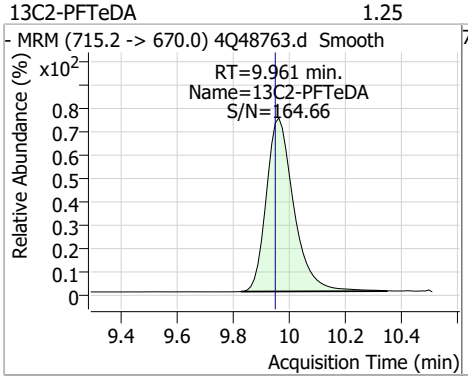


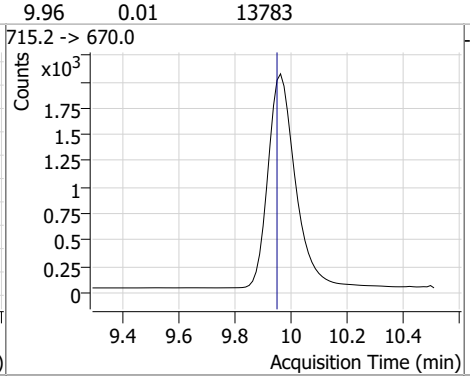
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.31	9.91	0.02	13060				

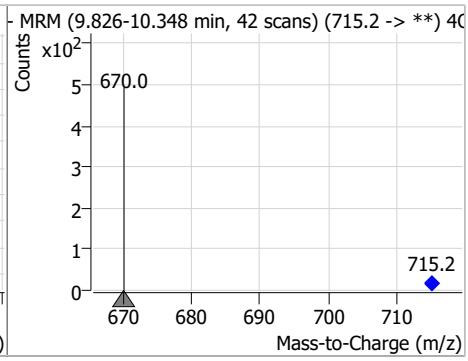


Perfluorinated Compounds by LC/MS/MS

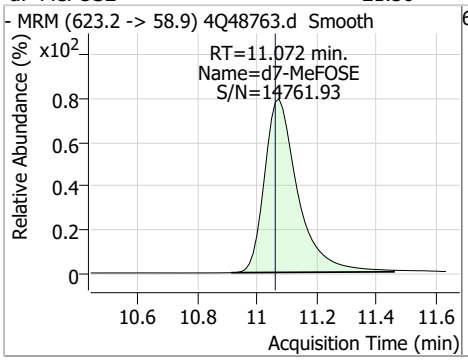
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.96	0.01	13783				

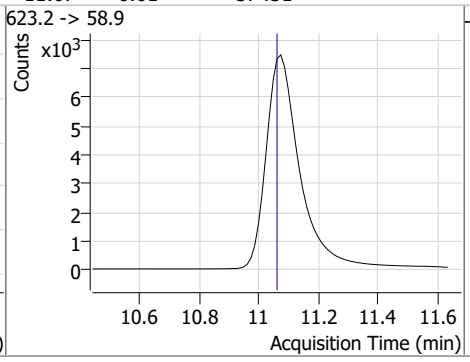


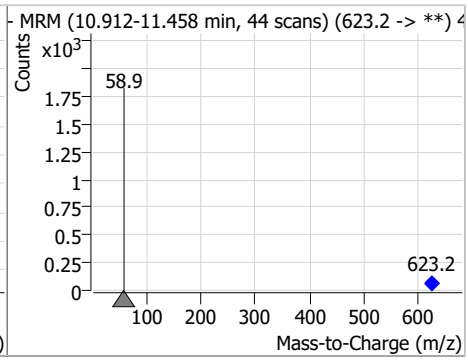




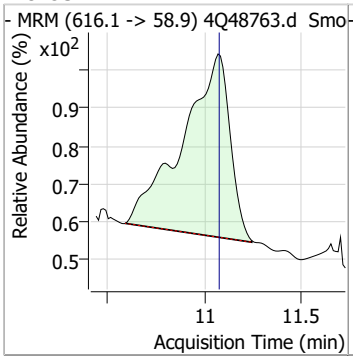
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.56	11.07	0.01	57451				

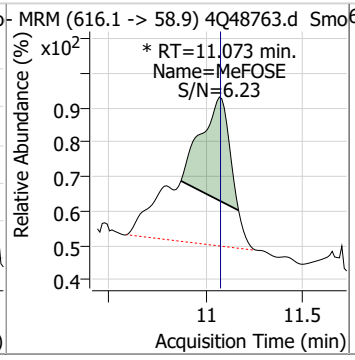


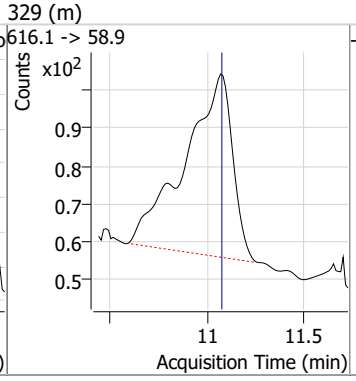


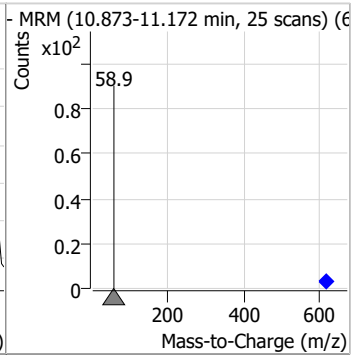


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.16	11.07	0.00	329 (m)				

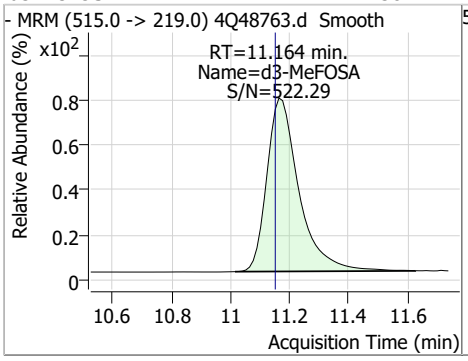


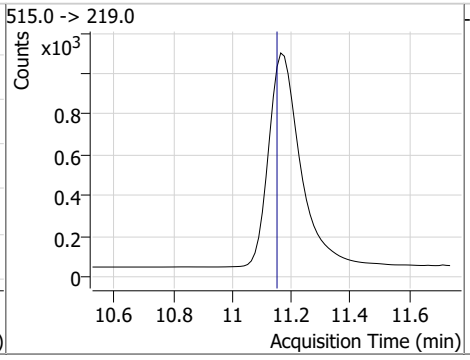


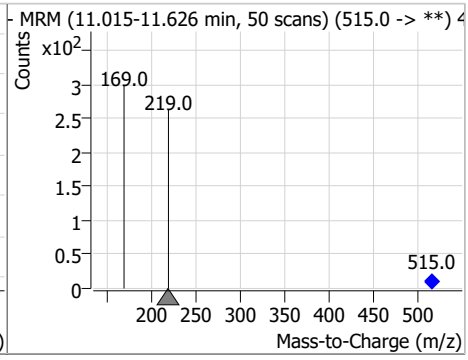




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.38	11.16	0.01	7948				

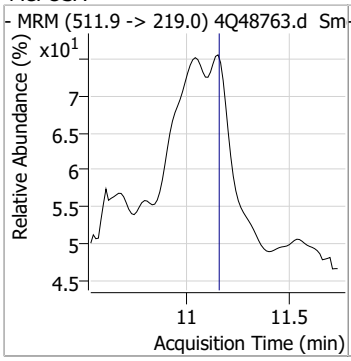


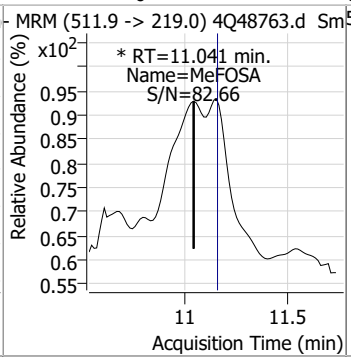


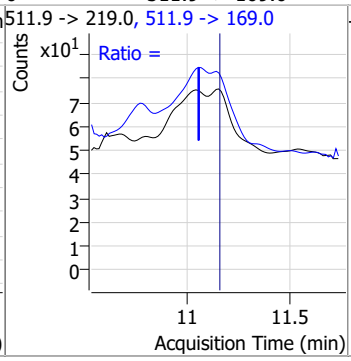


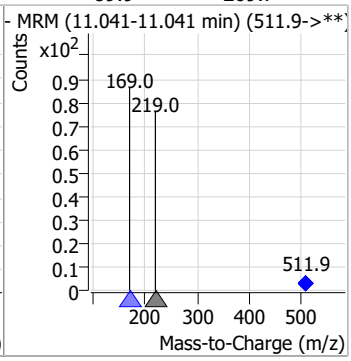
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	511.9 -> 169.0		89.9	269.7

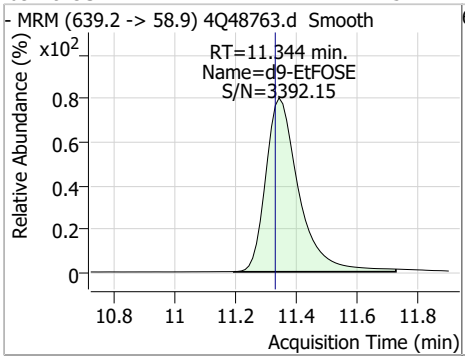


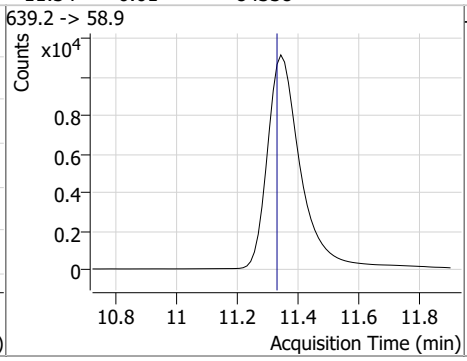


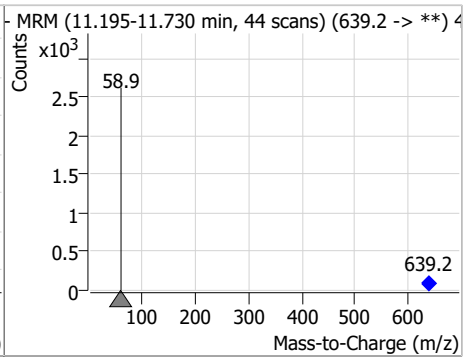




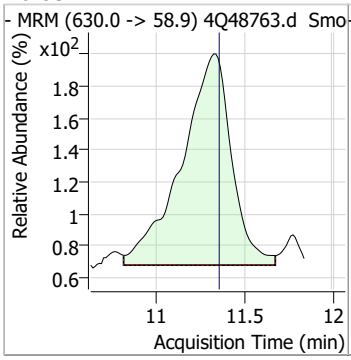
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.57	11.34	0.01	84338				

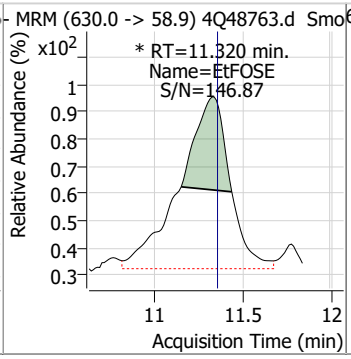


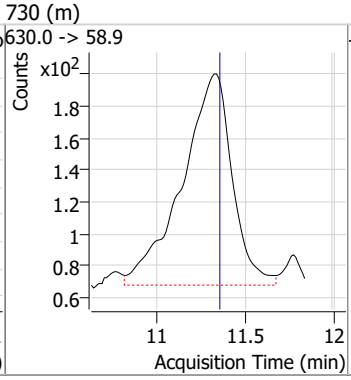


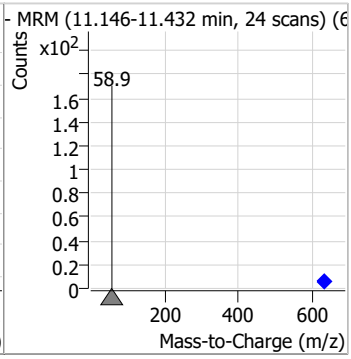


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.28	11.32	-0.02	730 (m)				

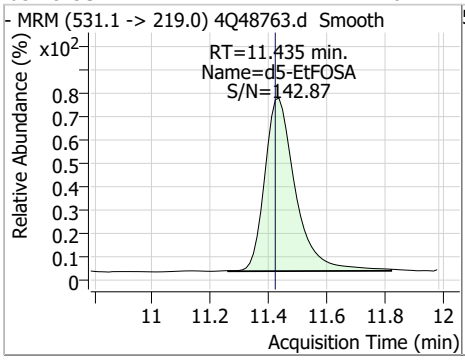


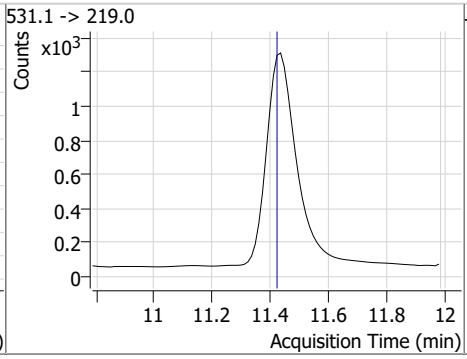


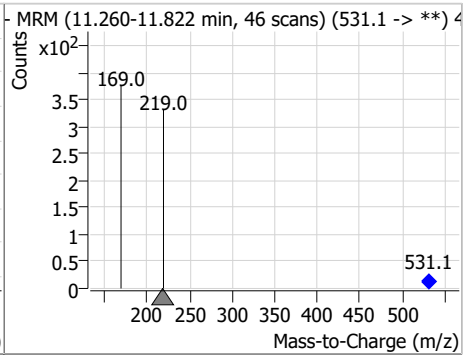




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.40	11.43	0.01	9204				

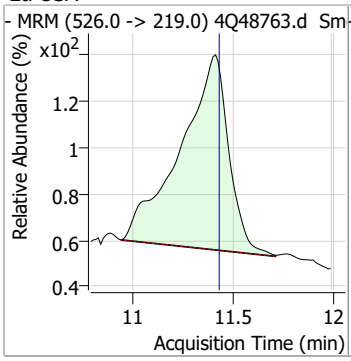


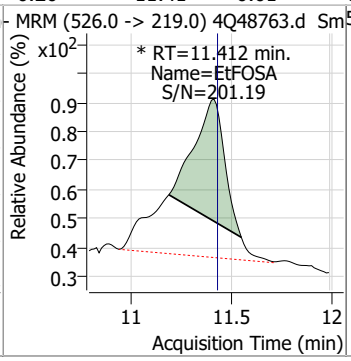


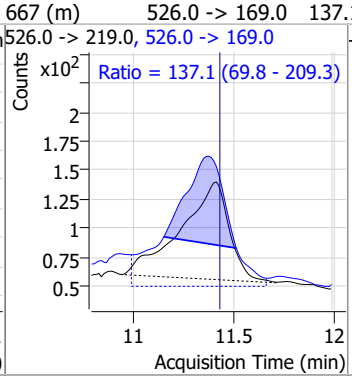


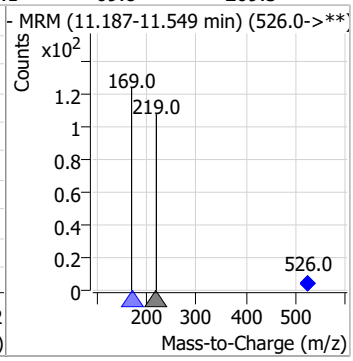
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.20	11.41	-0.01	667 (m)	526.0 -> 169.0	137.1	69.8	209.3









7.2.2

7

Manual Integration Approval Summary

Sample Number: S4Q713-IBLK
Lab FileID: 4Q48763.D
Injection Time: 08/09/23 15:01
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSE	24448-09-7		11.07	Split peak
EtFOSE	1691-99-2		11.32	Split peak
EtFOSA	4151-50-2		11.41	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48777.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 6:33:57 PM
Sample Name : iccb
Vial : P1-A1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.886	216.8 -> 171.9	108010	10.00	µg/L	-0.025
M5-PFPeA	4.412	268.3 -> 223.0	56108	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	38790	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	27823	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	44309	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	20388	1.25	µg/L	0.013
M6-PFDA	8.303	519.1 -> 474.1	15421	1.25	µg/L	0.025
M7-PFUnDA	8.760	570.0 -> 525.1	17867	1.25	µg/L	0.025
M2-PFDoDA	9.205	615.1 -> 570.0	19367	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	14750	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	13157	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9254	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	6489	2.50	µg/L	0.012
M8-PFOS	8.442	507.1 -> 79.9	8492	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	753	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1547	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2325	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	17914	5.00	µg/L	0.025
M3-HFPO-DA	5.989	286.9 -> 168.9	30868	10.00	µg/L	0.012
M5-EtFOSAA	8.571	589.2 -> 419.0	14983	5.00	µg/L	0.025
M7-MeFOSE	11.084	623.2 -> 58.9	60308	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	83857	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	8820	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	8503	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	9086	2.50	µg/L	0.025
13C3-PFBA	2.878	216.0 -> 172.0	57476	5.00	µg/L	-0.025
18O2-PFHxS	7.328	403.0 -> 83.9	4812	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	53437	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	16671	1.25	µg/L	0.025
13C5-PFNA	7.798	468.0 -> 423.0	23201	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	36124	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	753	6.26	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 125.2%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1547	6.73	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 134.7%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2325	6.66	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 133.3%		
13C2-PFDoDA	9.205	615.1 -> 570.0	19367	1.36	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C2-PFTeDA	9.974	715.2 -> 670.0	14750	1.29	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-PFBS	5.502	302.1 -> 79.9	9254	2.26	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.4%		
13C3-PFHxS	7.329	402.1 -> 79.9	6489	2.44	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 = 97.4%	
13C4-PFBA	2.886	216.8 -> 171.9	108010	10.99 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C4-PFHpA	6.580	367.1 -> 322.0	27823	2.59 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C5-PFHxA	5.622	318.0 -> 273.0	38790	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFPeA	4.412	268.3 -> 223.0	56108	4.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C6-PFDA	8.303	519.1 -> 474.1	15421	1.34 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C7-PFUnDA	8.760	570.0 -> 525.1	17867	1.37 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C8-FOSA	9.919	506.1 -> 77.8	13157	2.32 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C8-PFOA	7.251	421.1 -> 376.0	44309	2.52 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOS	8.442	507.1 -> 79.9	8492	2.33 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C9-PFNA	7.797	472.1 -> 427.0	20388	1.16 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.8%	
d3-MeFOSAA	8.373	573.2 -> 419.0	17914	5.31 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C3-HFPO-DA	5.989	286.9 -> 168.9	30868	8.97 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.7%	
d3-MeFOSA	11.176	515.0 -> 219.0	8503	2.55 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
d5-EtFOSAA	8.571	589.2 -> 419.0	14983	5.40 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
d7-MeFOSE	11.084	623.2 -> 58.9	60308	22.60 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
d9-EtFOSE	11.356	639.2 -> 58.9	83857	22.41 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.6%	
d5-EtFOSA	11.435	531.1 -> 219.0	8820	2.29 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.8%	
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

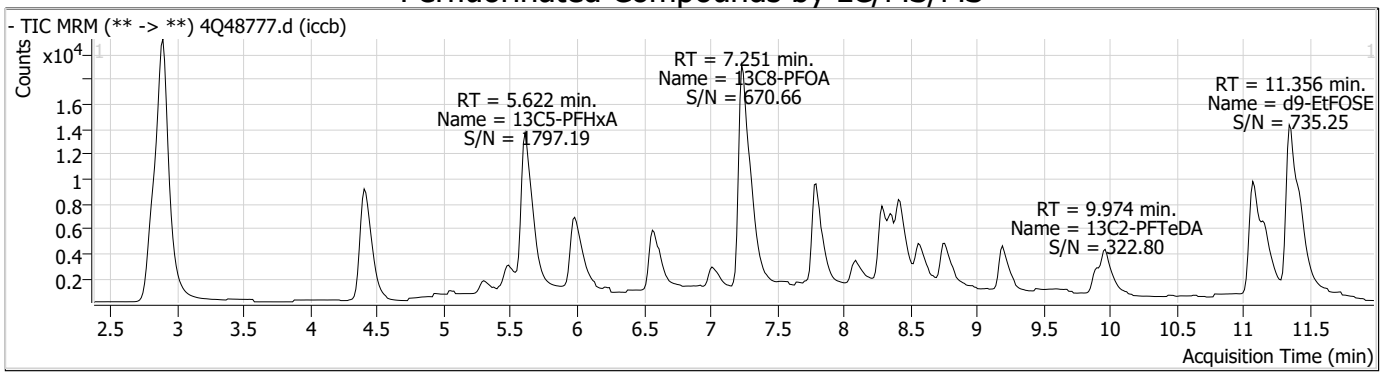
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.097	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	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	4.894	263.0 -> 219.0	0		µg/L	m	1
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

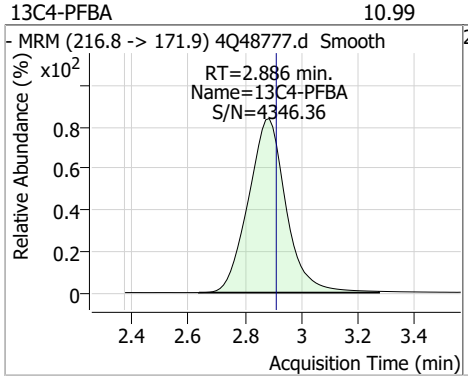
Perfluorinated Compounds by LC/MS/MS

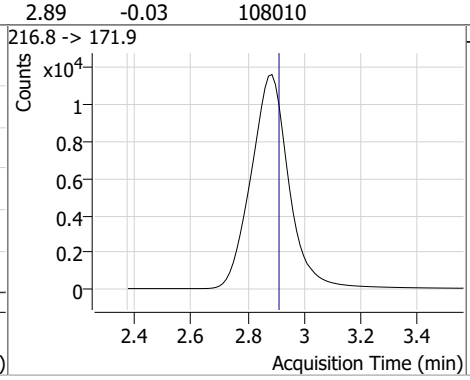
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

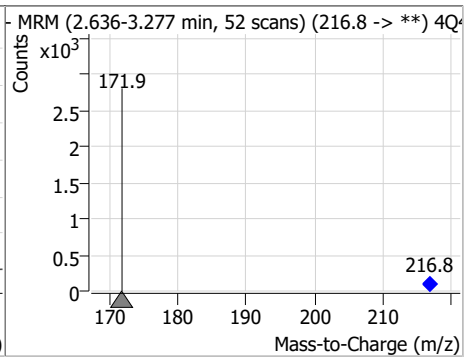
Perfluorinated Compounds by LC/MS/MS



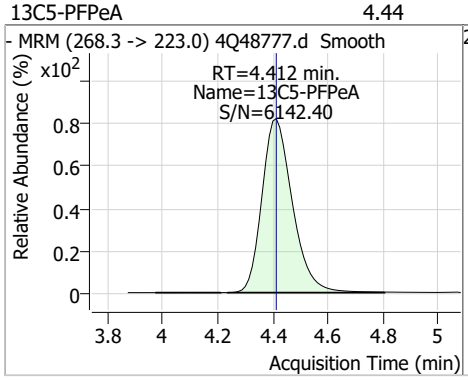
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.99	2.89	-0.03	108010				

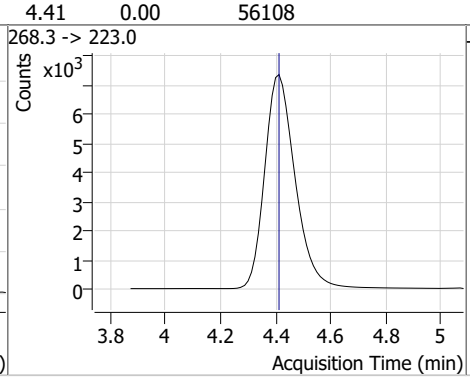


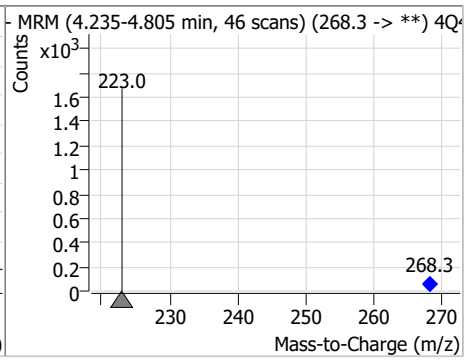




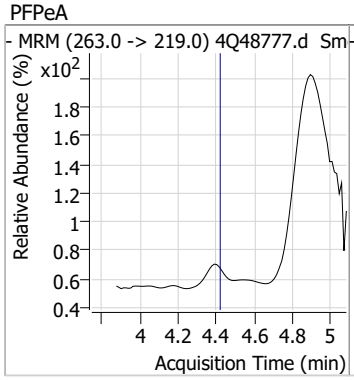
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.44	4.41	0.00	56108				

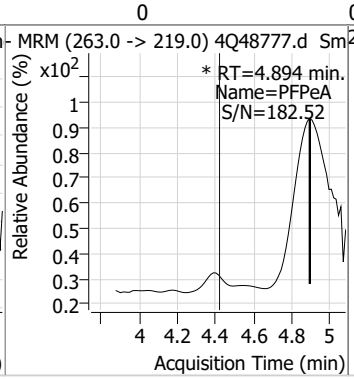


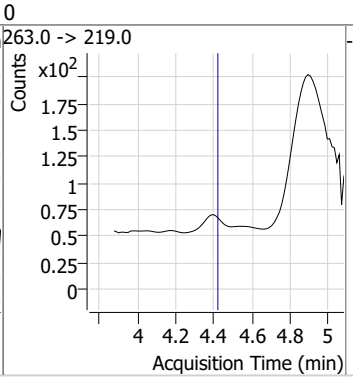


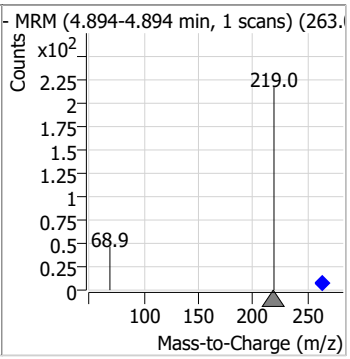


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



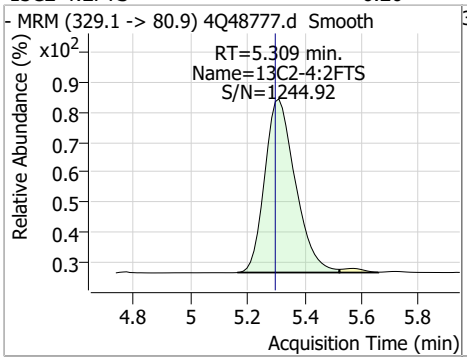


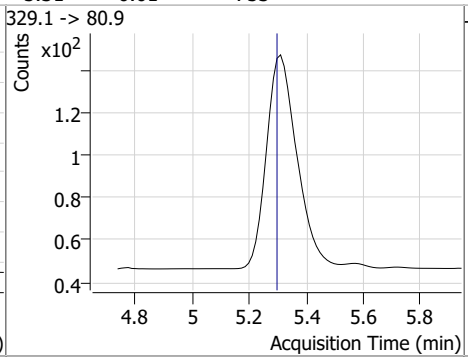


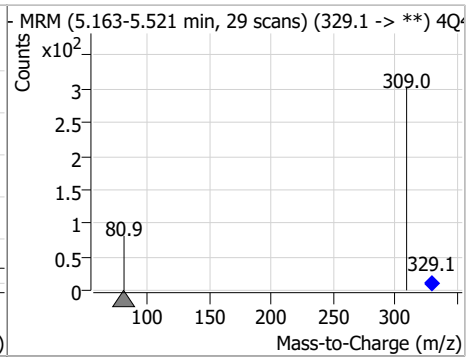


Perfluorinated Compounds by LC/MS/MS

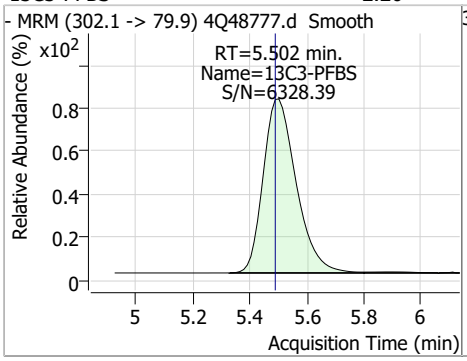
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.26	5.31	0.01	753				

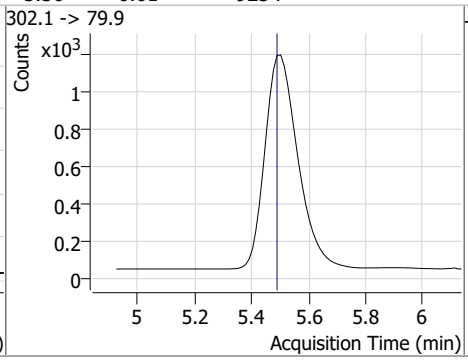


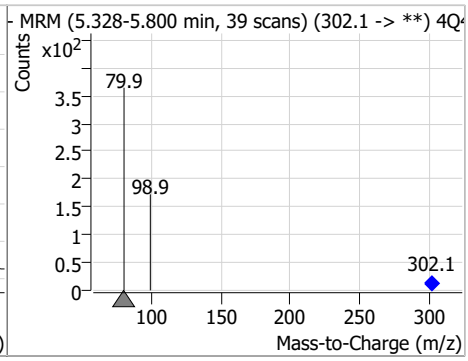




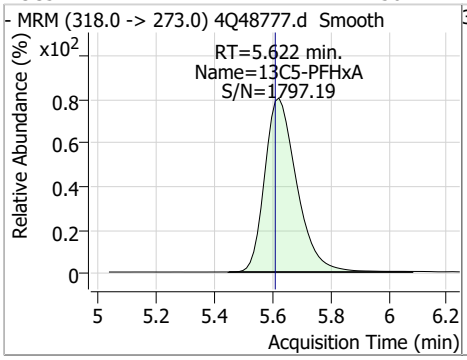
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.26	5.50	0.01	9254				

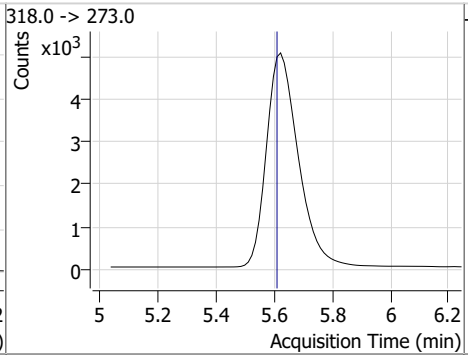


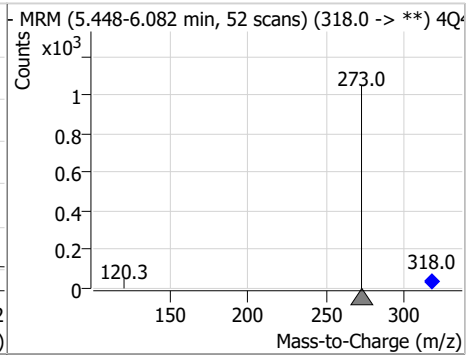




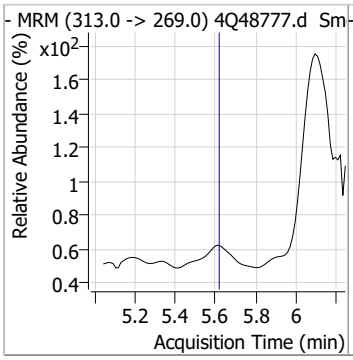
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.62	0.01	38790				

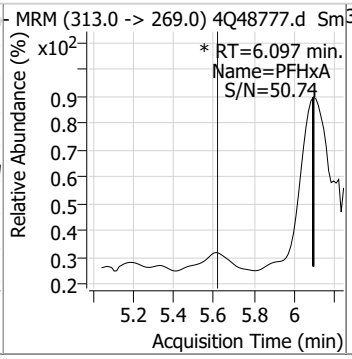


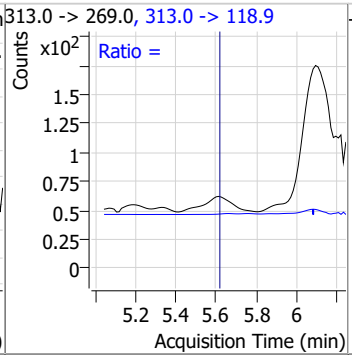


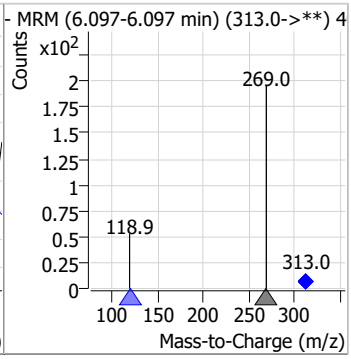


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



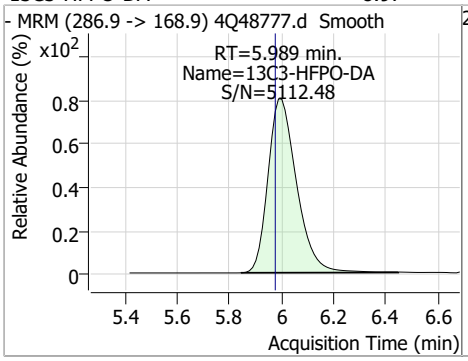


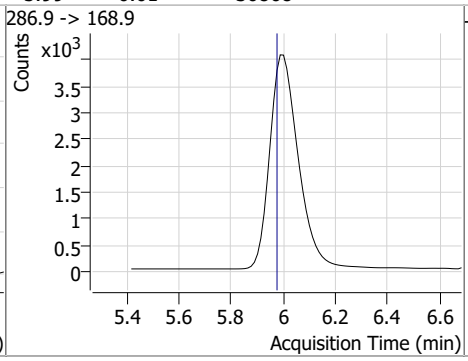


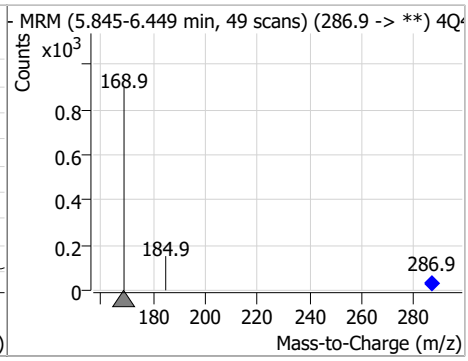


Perfluorinated Compounds by LC/MS/MS

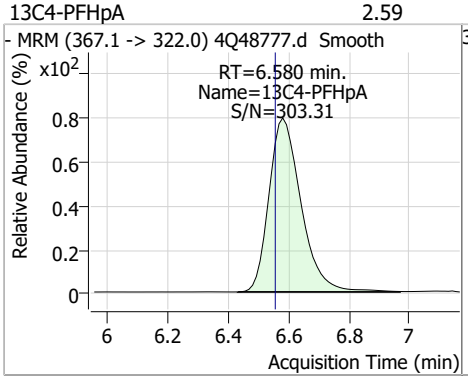
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.97	5.99	0.01	30868				

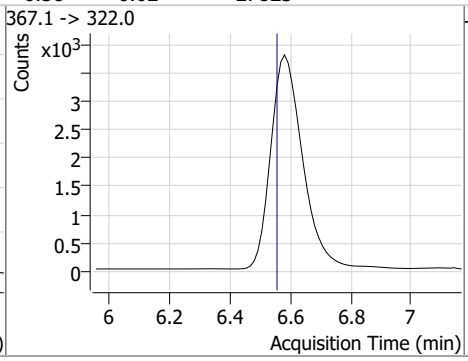


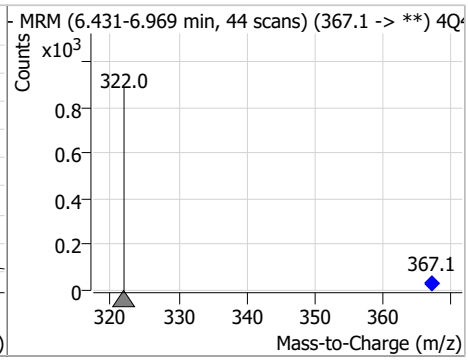




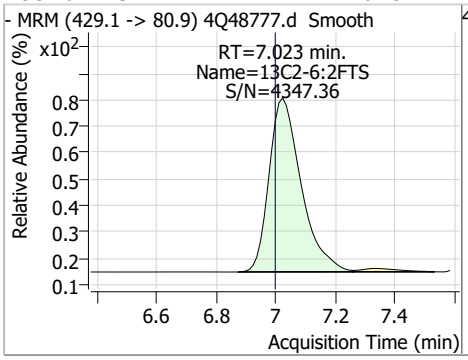
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.58	0.02	27823				

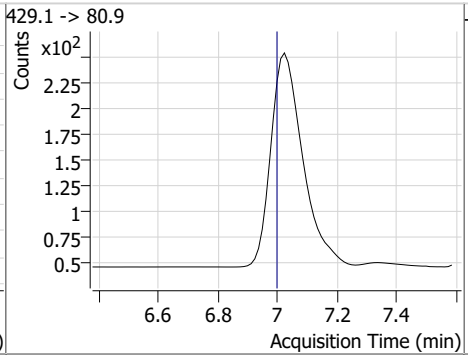


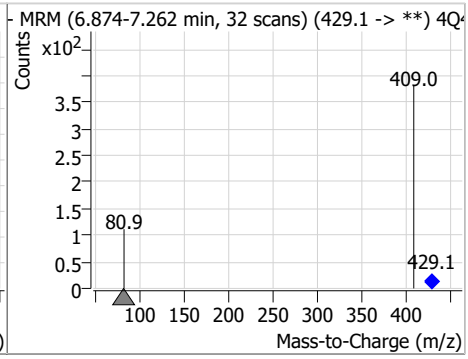




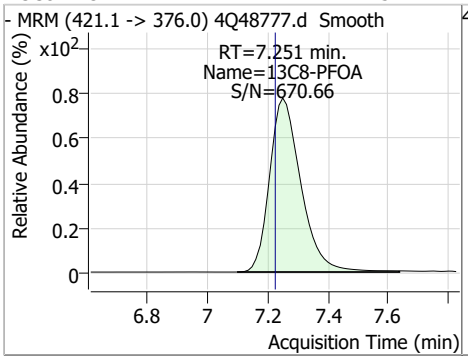
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.73	7.02	0.02	1547				

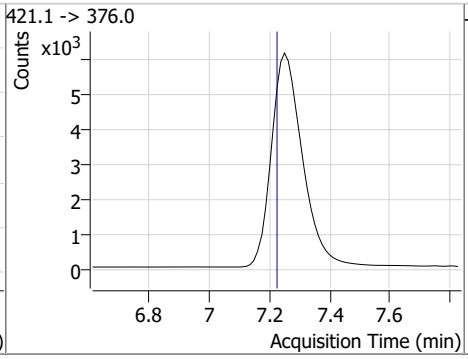


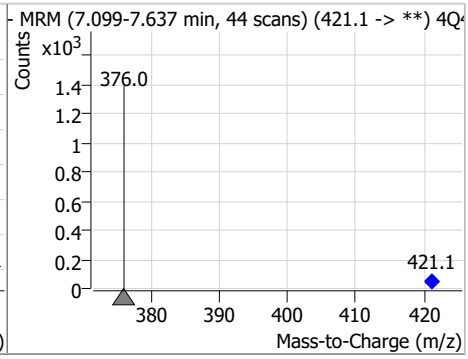




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.25	0.02	44309				

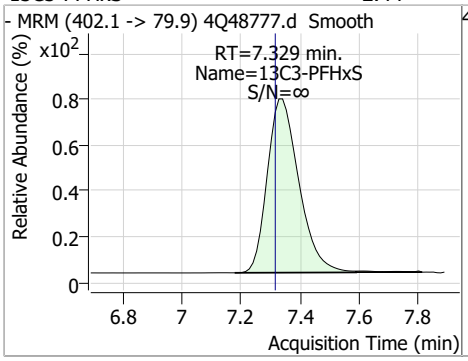


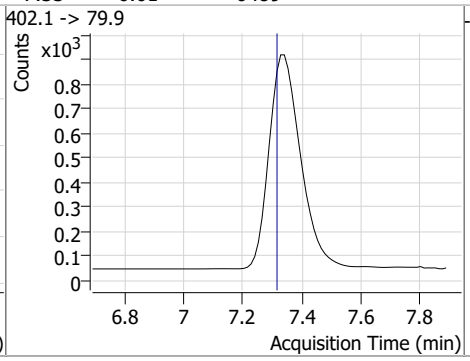


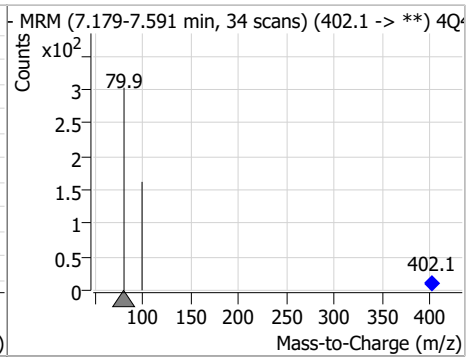


Perfluorinated Compounds by LC/MS/MS

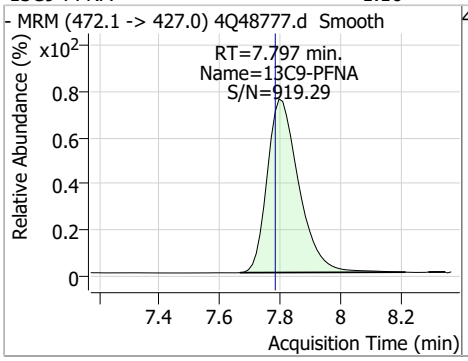
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.44	7.33	0.01	6489				

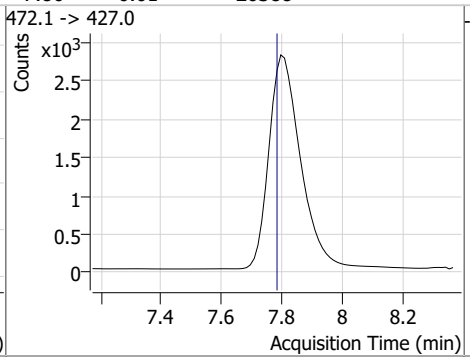


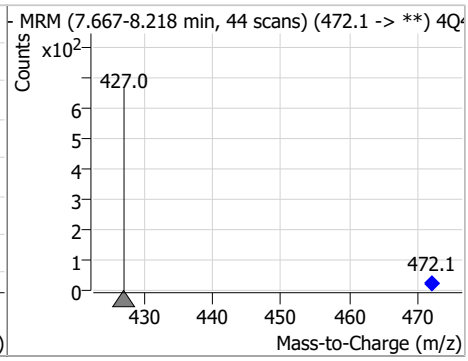




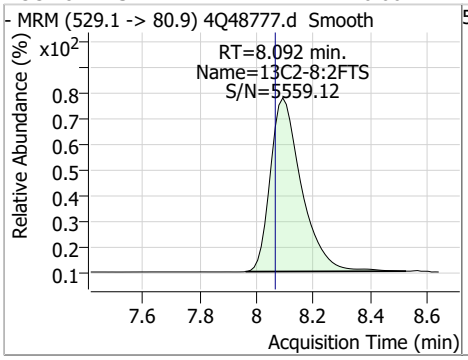
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.80	0.01	20388				

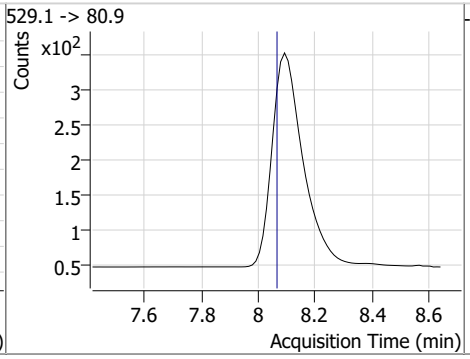


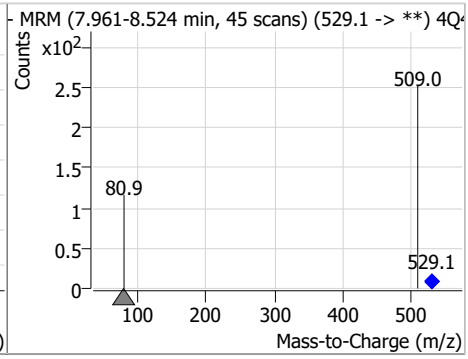




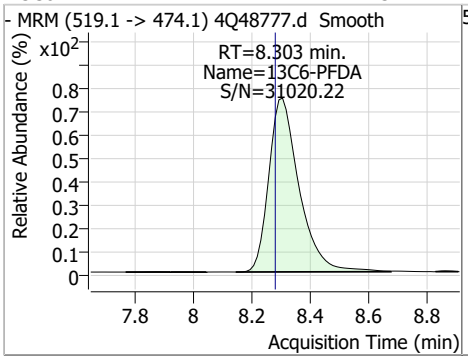
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.66	8.09	0.03	2325				

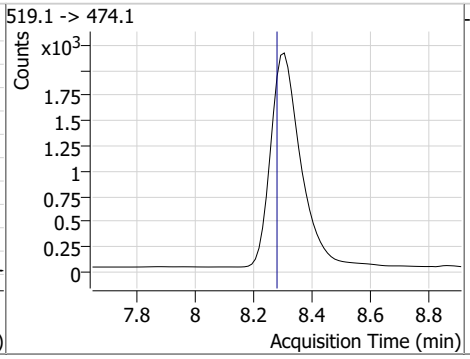


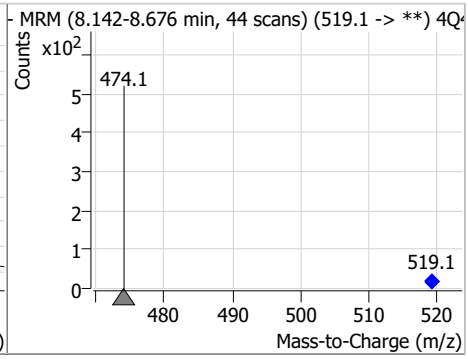




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.34	8.30	0.02	15421				

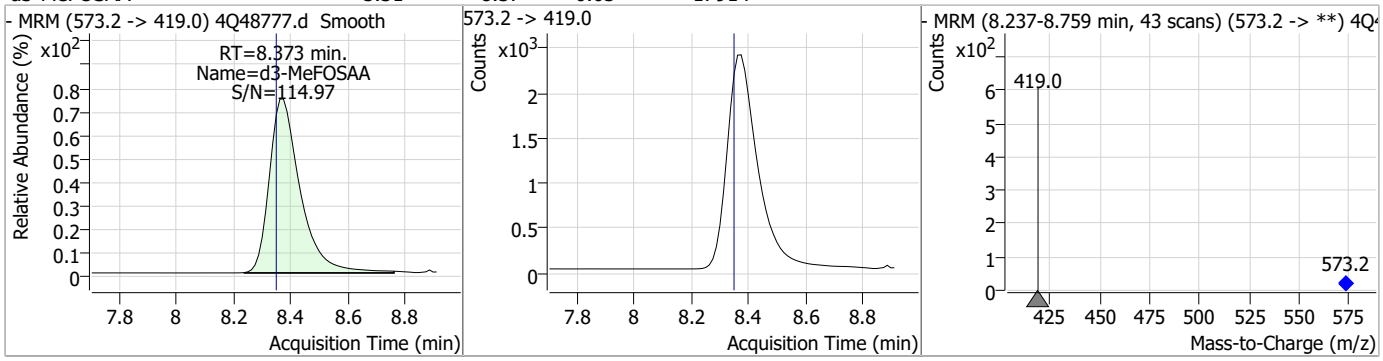




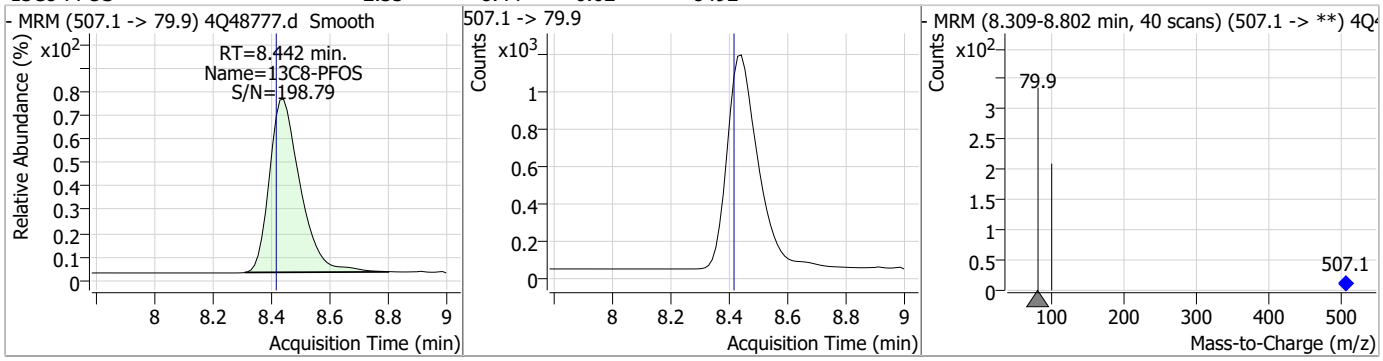


Perfluorinated Compounds by LC/MS/MS

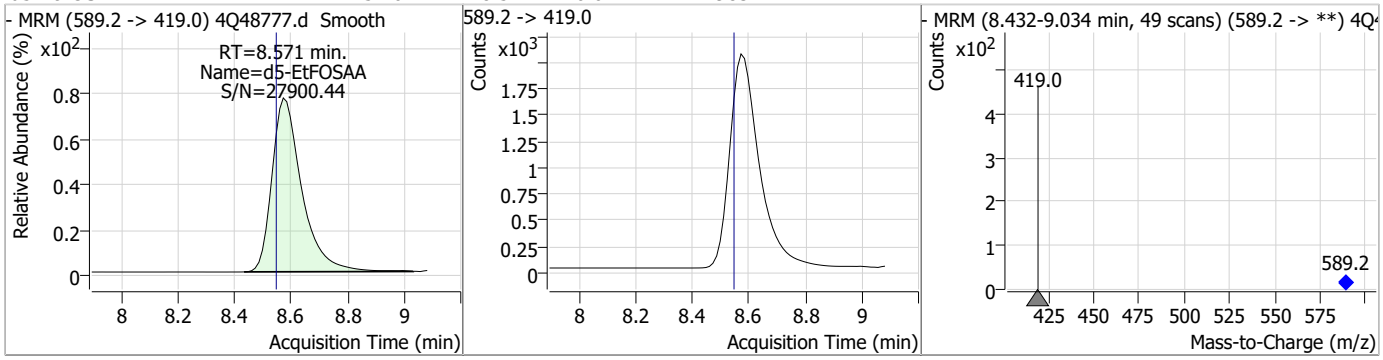
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.31	8.37	0.03	17914				



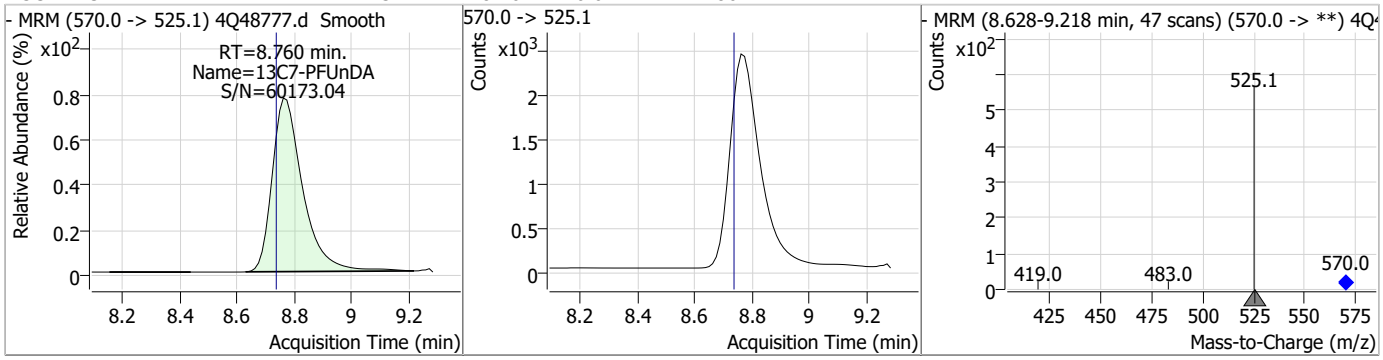
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.33	8.44	0.02	8492				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.40	8.57	0.02	14983				

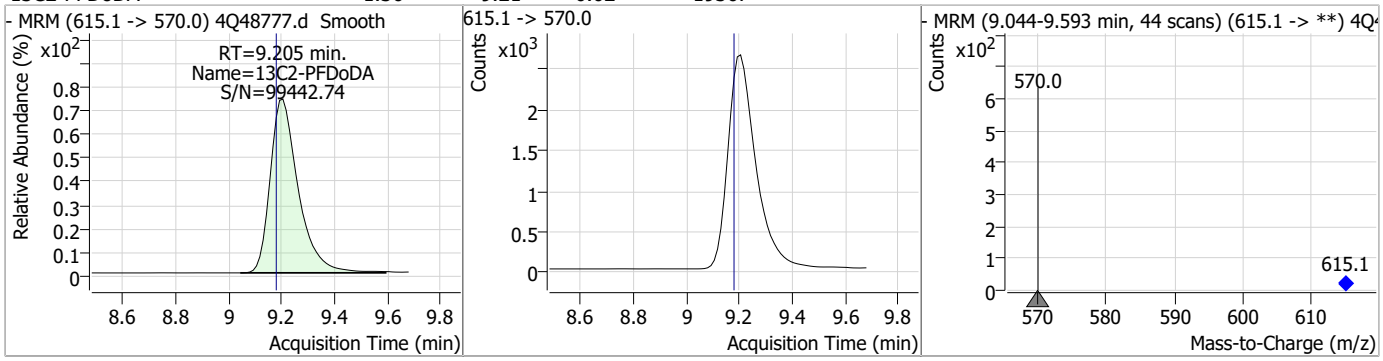


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	8.76	0.02	17867				

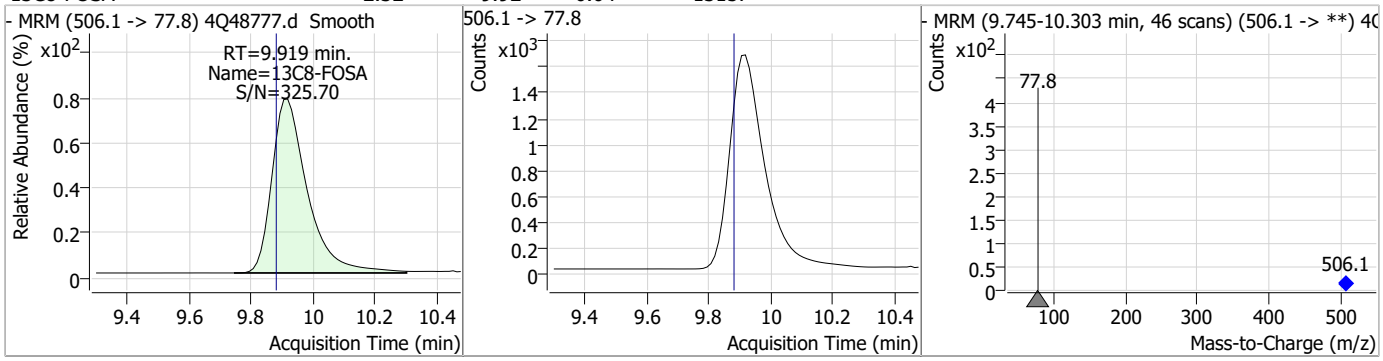


Perfluorinated Compounds by LC/MS/MS

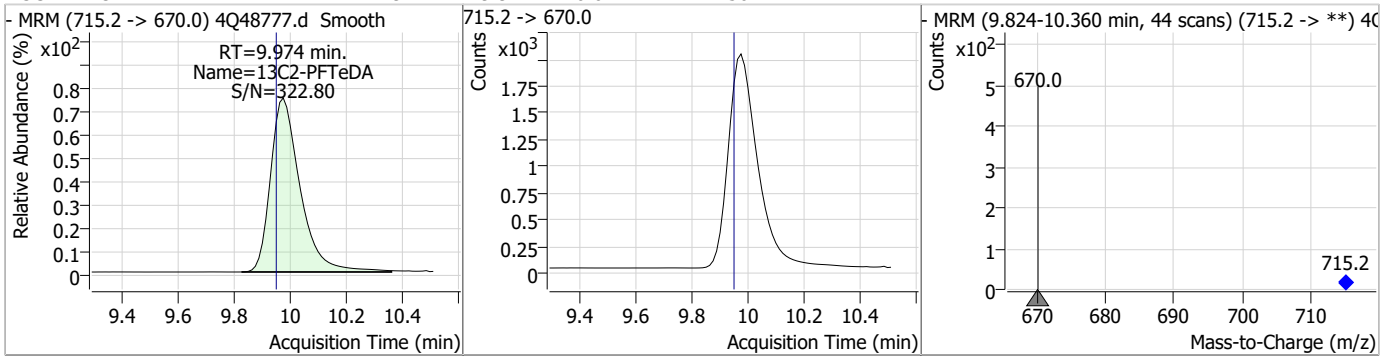
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.36	9.21	0.02	19367				



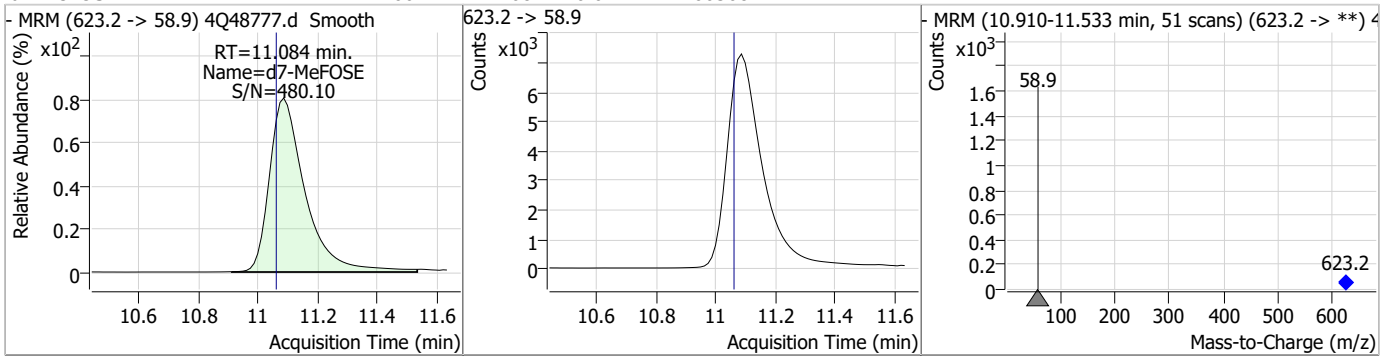
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.32	9.92	0.04	13157				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	9.97	0.02	14750				

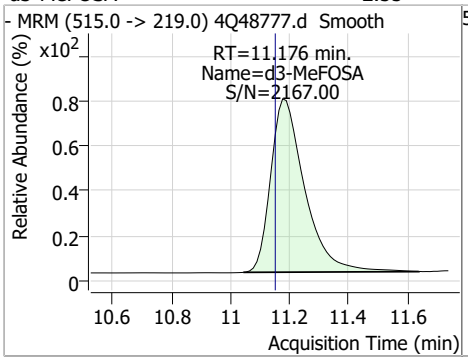


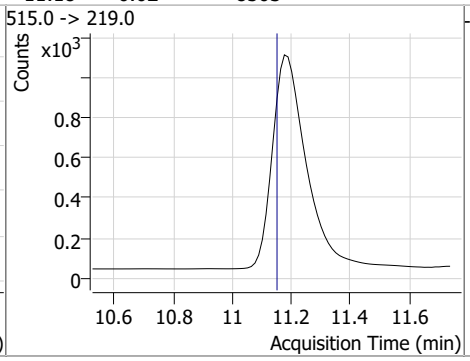
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.60	11.08	0.02	60308				

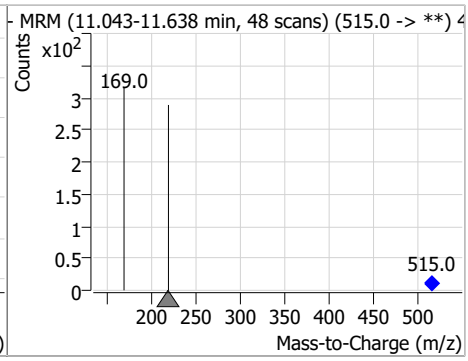


Perfluorinated Compounds by LC/MS/MS

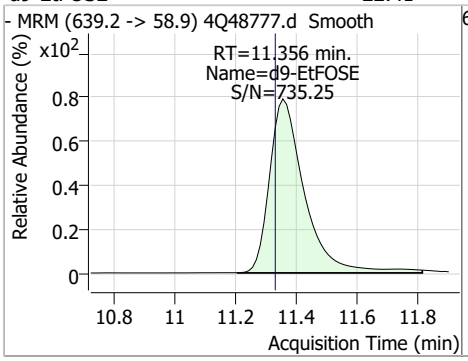
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.55	11.18	0.02	8503				

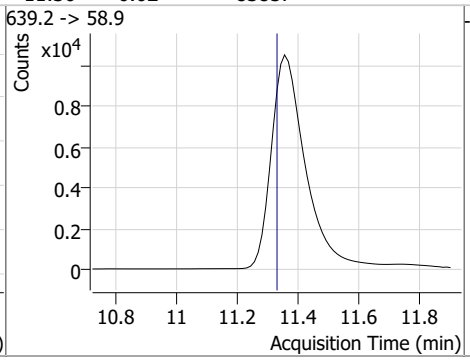


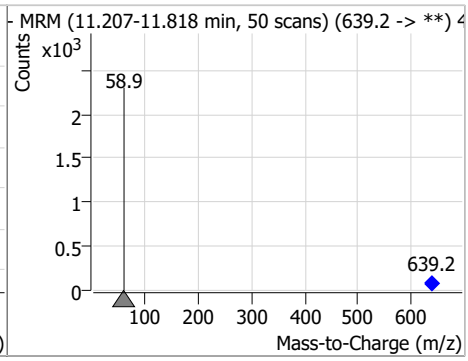




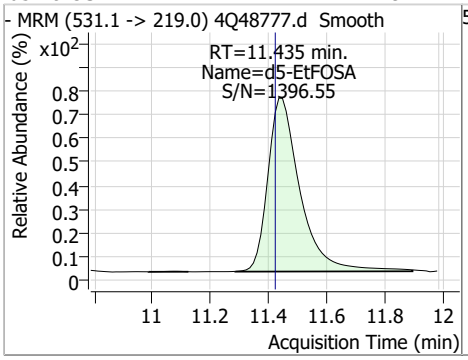
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.41	11.36	0.02	83857				

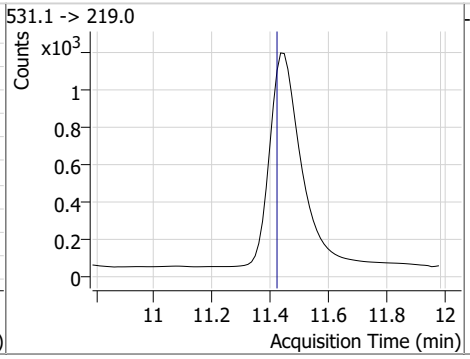


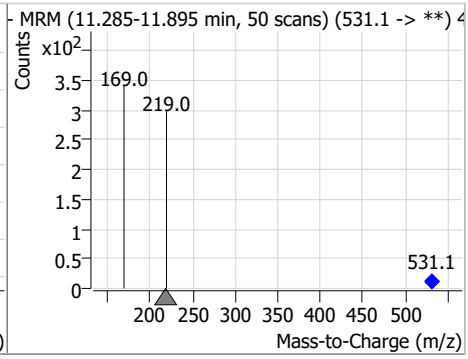




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.43	0.01	8820				







Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48788.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 9:16:12 PM
Sample Name : iccb
Vial : P1-A1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.886	216.8 -> 171.9	110231	10.00	µg/L	-0.025
M5-PFPeA	4.425	268.3 -> 223.0	56595	5.00	µg/L	0.012
M5-PFHxA	5.610	318.0 -> 273.0	38105	2.50	µg/L	0.000
M4-PFHpA	6.555	367.1 -> 322.0	28133	2.50	µg/L	0.000
M8-PFOA	7.226	421.1 -> 376.0	45207	2.50	µg/L	0.000
M9-PFNA	7.785	472.1 -> 427.0	19475	1.25	µg/L	0.000
M6-PFDA	8.291	519.1 -> 474.1	14747	1.25	µg/L	0.013
M7-PFUnDA	8.760	570.0 -> 525.1	19115	1.25	µg/L	0.025
M2-PFDoDA	9.205	615.1 -> 570.0	19131	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	14354	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	13303	2.50	µg/L	0.037
M3-PFBS	5.489	302.1 -> 79.9	9460	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6656	2.50	µg/L	0.000
M8-PFOS	8.430	507.1 -> 79.9	8600	2.50	µg/L	0.013
M2-4:2FTS	5.309	329.1 -> 80.9	861	5.00	µg/L	0.012
M2-6:2FTS	6.998	429.1 -> 80.9	1382	5.00	µg/L	0.000
M2-8:2FTS	8.078	529.1 -> 80.9	2453	5.00	µg/L	0.013
M3-MeFOSAA	8.361	573.2 -> 419.0	17754	5.00	µg/L	0.013
M3-HFPO-DA	5.977	286.9 -> 168.9	30721	10.00	µg/L	0.000
M5-EtFOSAA	8.571	589.2 -> 419.0	14666	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	60496	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	84598	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	8994	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	8547	2.50	µg/L	0.025
13C4-PFOS	8.430	502.8 -> 79.9	9226	2.50	µg/L	0.013
13C3-PFBA	2.891	216.0 -> 172.0	57955	5.00	µg/L	-0.013
18O2-PFHxS	7.316	403.0 -> 83.9	4874	2.50	µg/L	0.000
13C4-PFOA	7.226	417.1 -> 372.0	53942	2.50	µg/L	0.000
13C2-PFDA	8.291	515.1 -> 470.1	16908	1.25	µg/L	0.013
13C5-PFNA	7.785	468.0 -> 423.0	24412	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	36670	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	861	7.07	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 141.4%		
13C2-6:2FTS	6.998	429.1 -> 80.9	1382	5.94	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.8%		
13C2-8:2FTS	8.078	529.1 -> 80.9	2453	6.94	µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 138.8%		
13C2-PFDoDA	9.205	615.1 -> 570.0	19131	1.32	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C2-PFTeDA	9.974	715.2 -> 670.0	14354	1.23	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.489	302.1 -> 79.9	9460	2.28	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C3-PFHxS	7.317	402.1 -> 79.9	6656	2.47	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 = 98.7%	
13C4-PFBA	2.886	216.8 -> 171.9	110231	11.13 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C4-PFHpA	6.555	367.1 -> 322.0	28133	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFHxA	5.610	318.0 -> 273.0	38105	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFPeA	4.425	268.3 -> 223.0	56595	4.42 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.3%	
13C6-PFDA	8.291	519.1 -> 474.1	14747	1.26 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C7-PFUnDA	8.760	570.0 -> 525.1	19115	1.45 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.0%	
13C8-FOSA	9.919	506.1 -> 77.8	13303	2.31 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
13C8-PFOA	7.226	421.1 -> 376.0	45207	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOS	8.430	507.1 -> 79.9	8600	2.32 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C9-PFNA	7.785	472.1 -> 427.0	19475	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 84.2%	
d3-MeFOSAA	8.361	573.2 -> 419.0	17754	5.18 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C3-HFPO-DA	5.977	286.9 -> 168.9	30721	8.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.9%	
d3-MeFOSA	11.176	515.0 -> 219.0	8547	2.52 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSAA	8.571	589.2 -> 419.0	14666	5.21 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
d7-MeFOSE	11.072	623.2 -> 58.9	60496	22.33 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
d9-EtFOSE	11.356	639.2 -> 58.9	84598	22.26 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
d5-EtFOSA	11.435	531.1 -> 219.0	8994	2.30 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.2%	

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

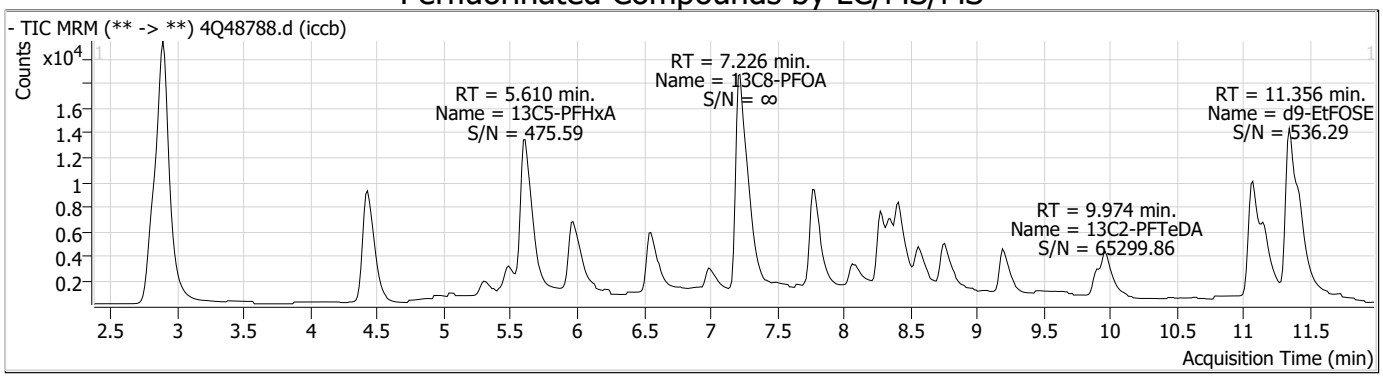
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.097	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	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	4.894	263.0 -> 219.0	0		µg/L	m	1
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

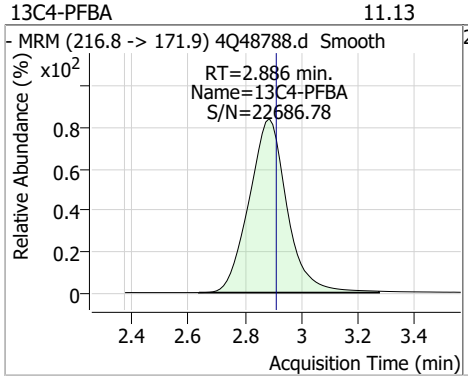
Perfluorinated Compounds by LC/MS/MS

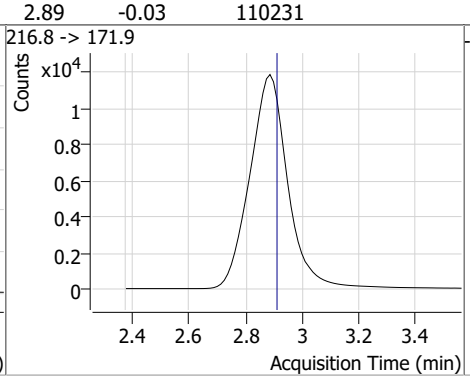
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

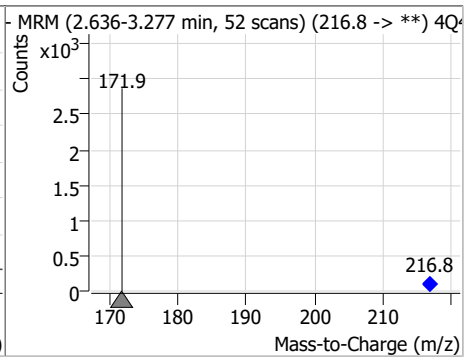
Perfluorinated Compounds by LC/MS/MS



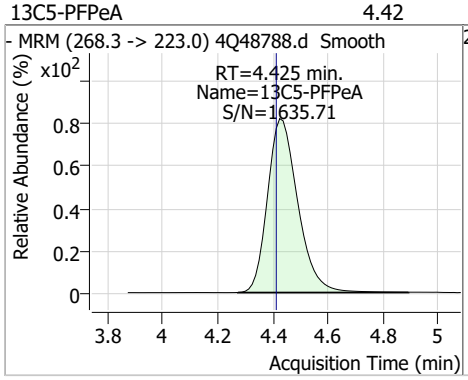
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.13	2.89	-0.03	110231				

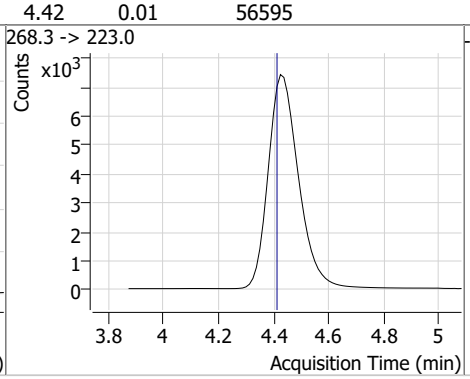


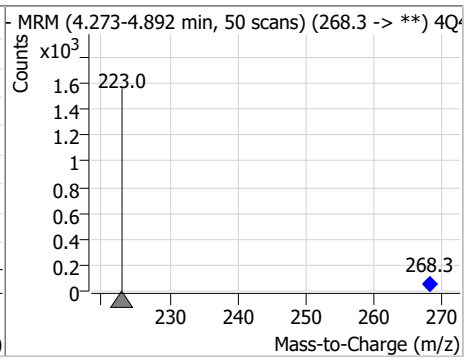




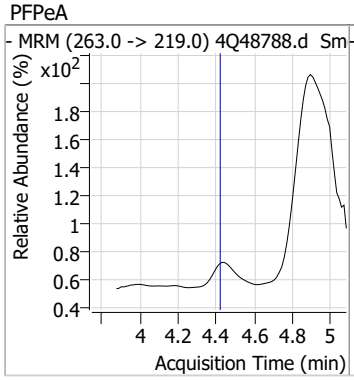
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.42	4.42	0.01	56595				

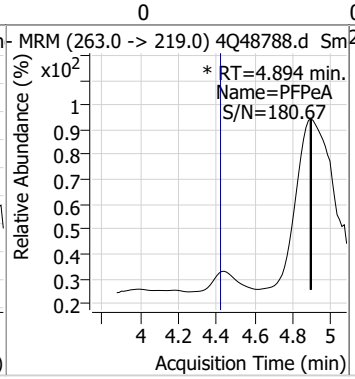


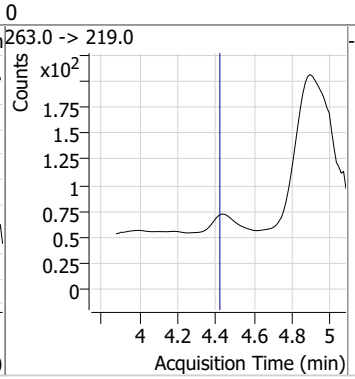


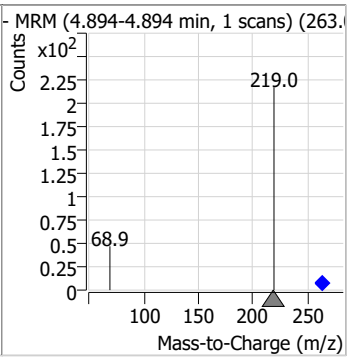


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



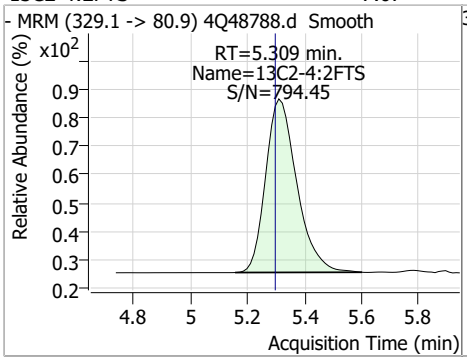


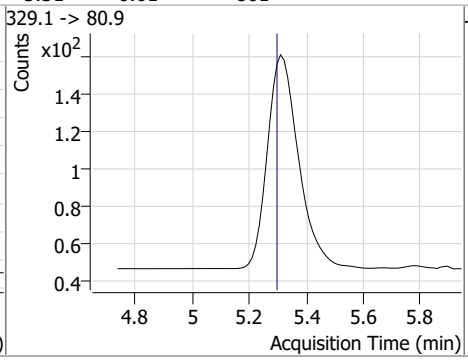


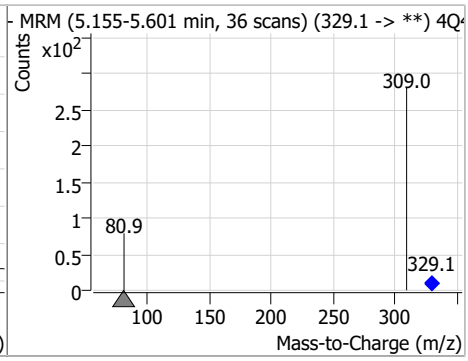


Perfluorinated Compounds by LC/MS/MS

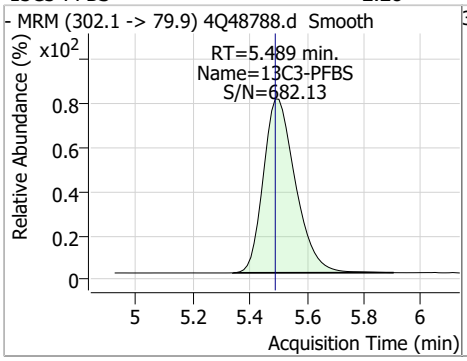
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.07	5.31	0.01	861				

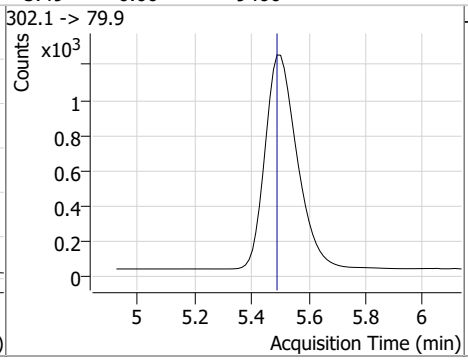


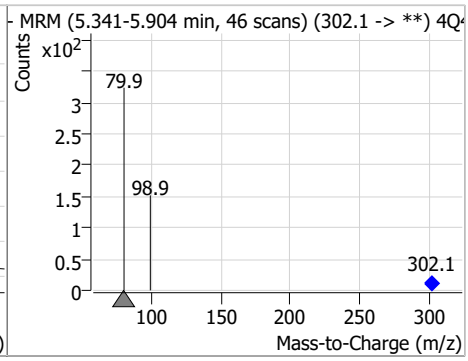




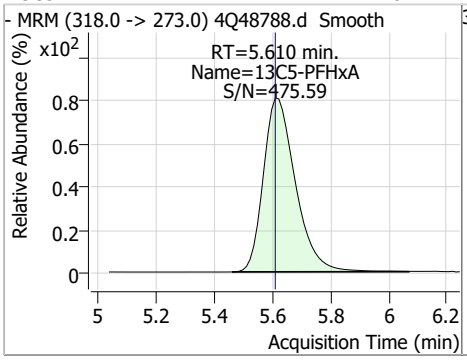
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.28	5.49	0.00	9460				

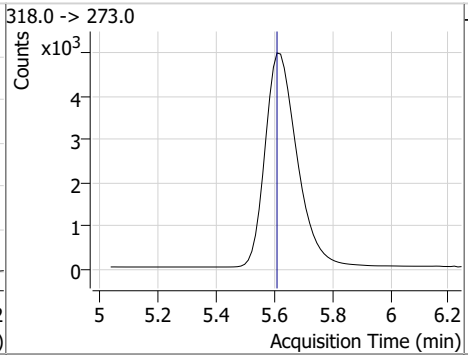


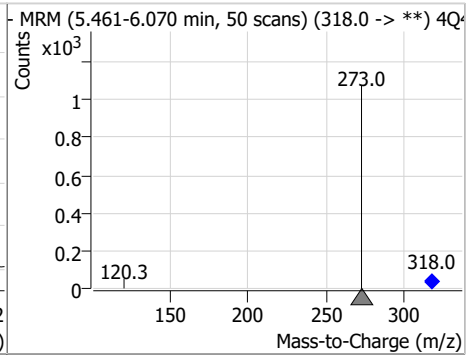




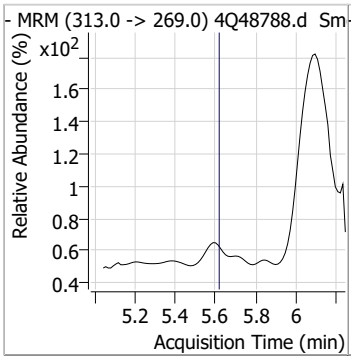
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.61	0.00	38105				

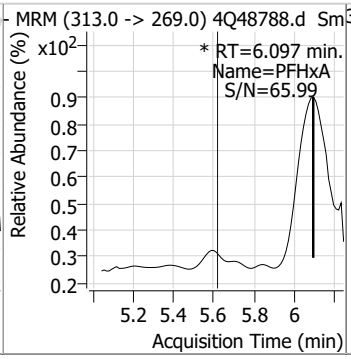


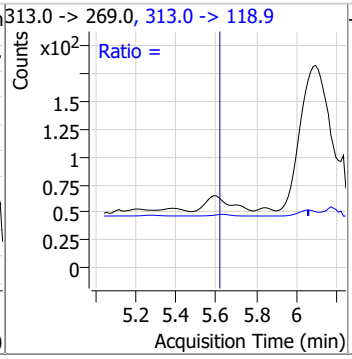


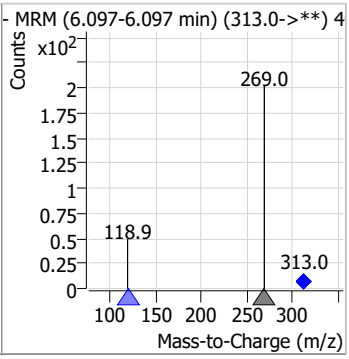


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



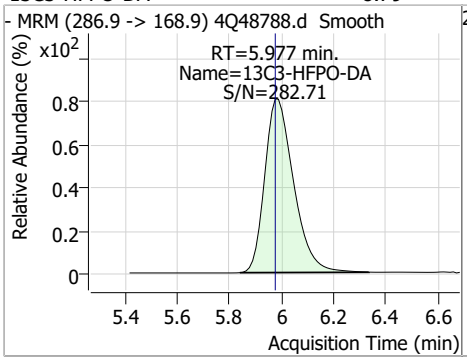


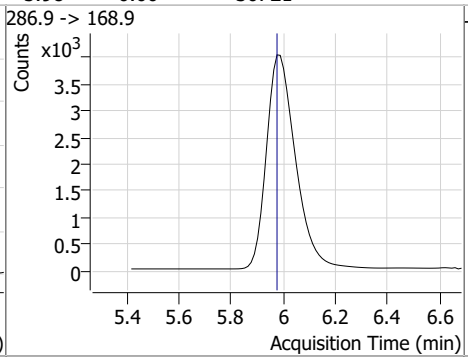


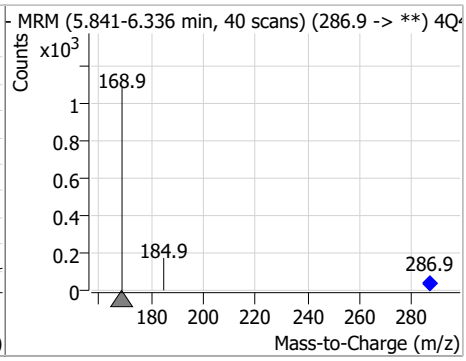


Perfluorinated Compounds by LC/MS/MS

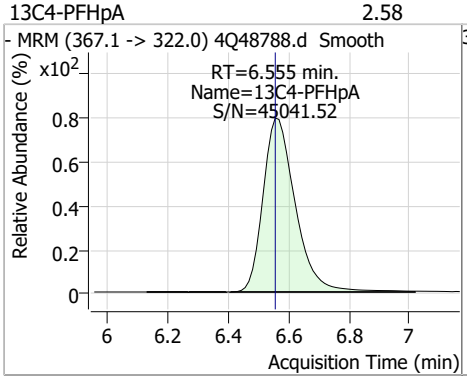
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.79	5.98	0.00	30721				

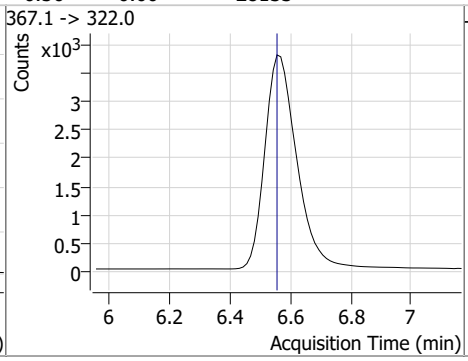


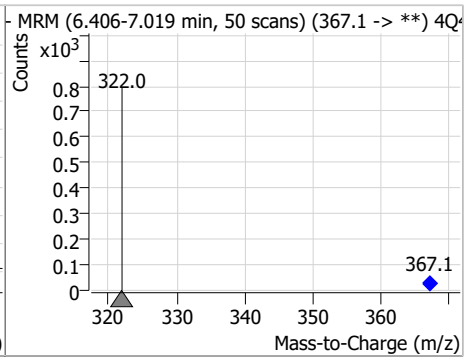




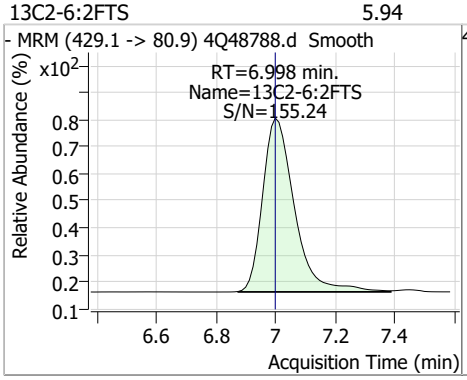
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.56	0.00	28133				

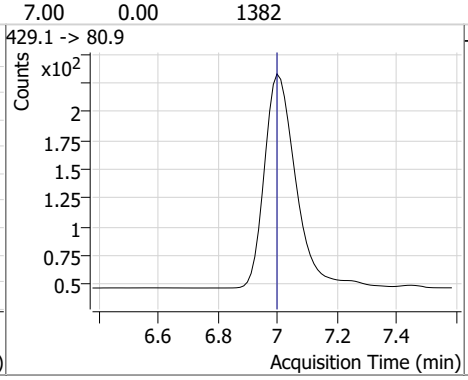


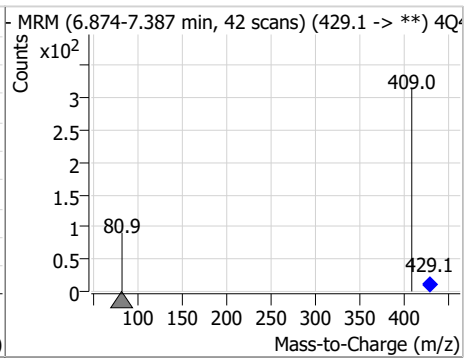




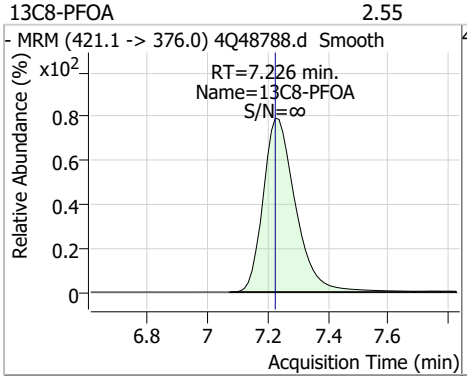
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.94	7.00	0.00	1382				

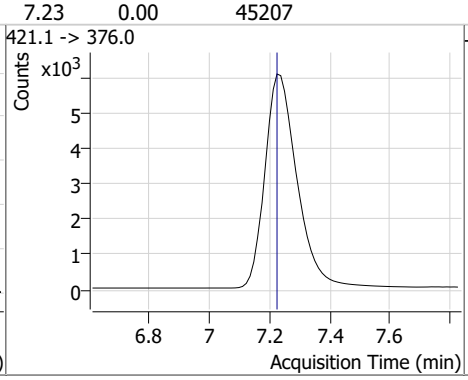


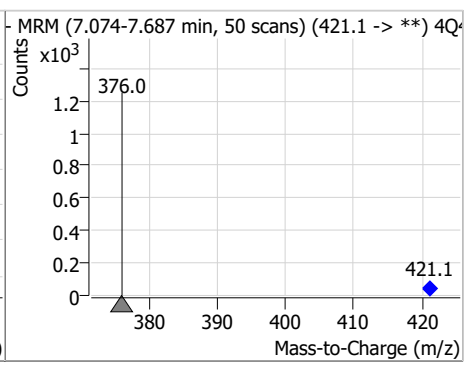




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.55	7.23	0.00	45207				

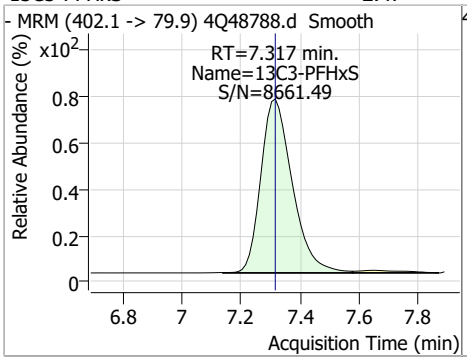


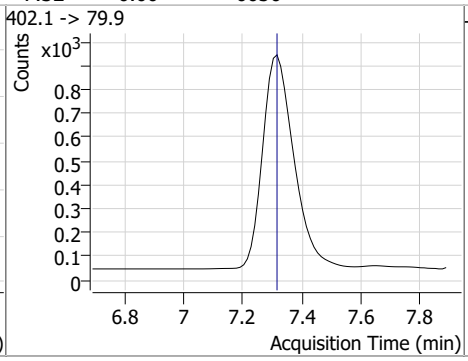


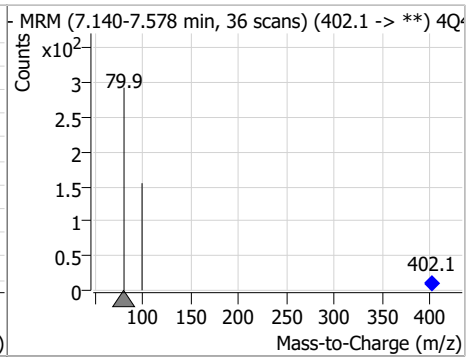


Perfluorinated Compounds by LC/MS/MS

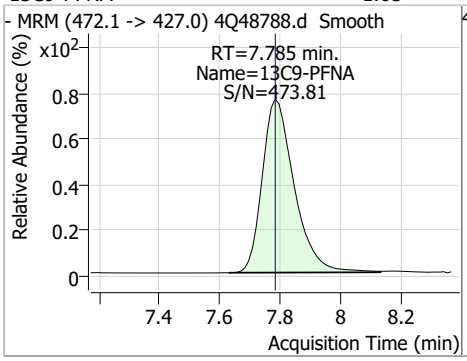
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.47	7.32	0.00	6656				

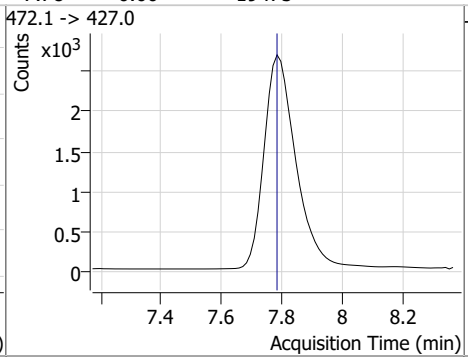


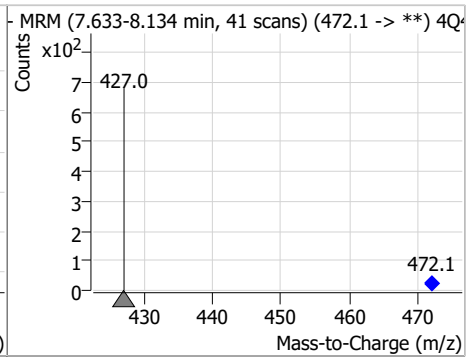




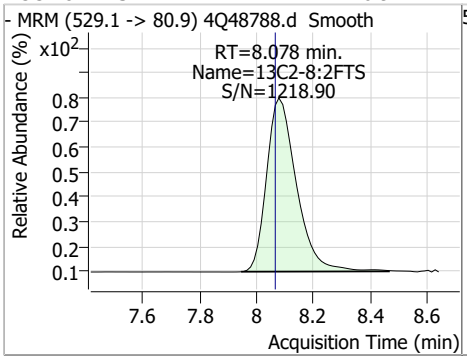
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.05	7.78	0.00	19475				

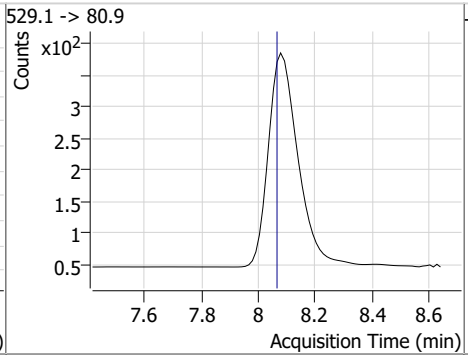


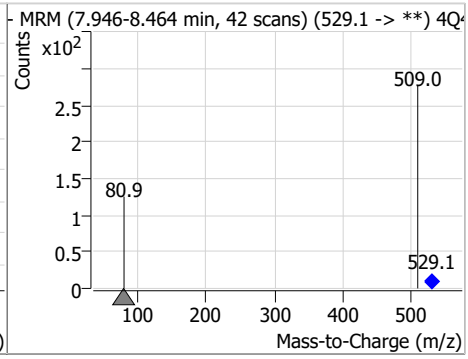




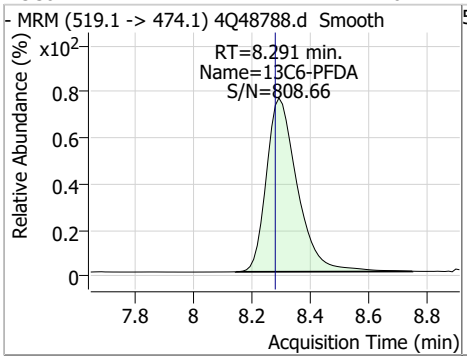
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.94	8.08	0.01	2453				

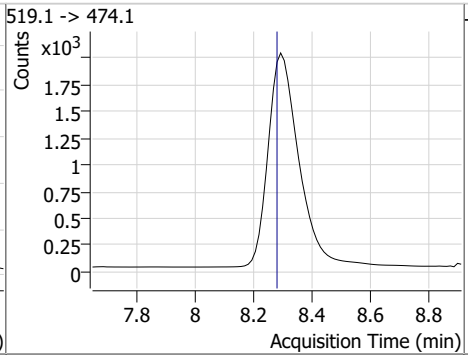


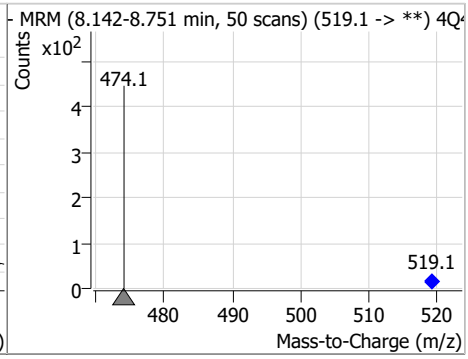




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.29	0.01	14747				

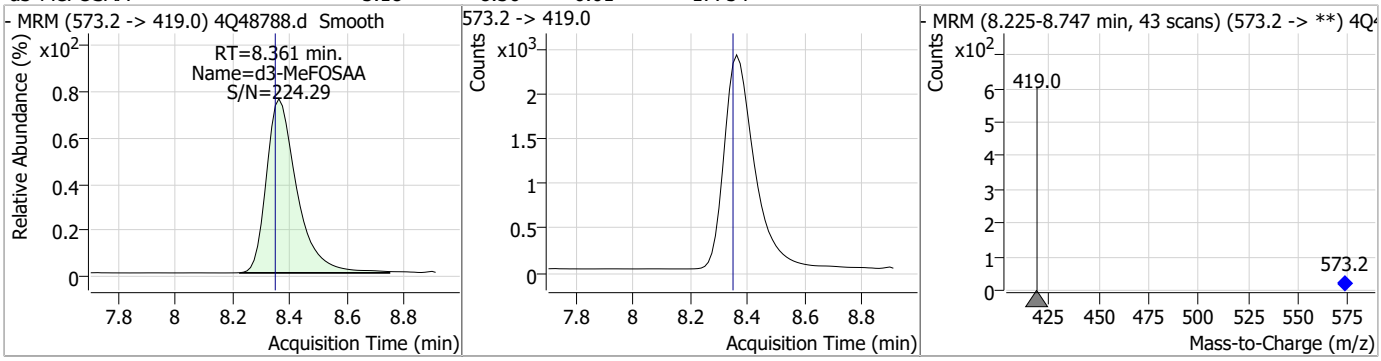




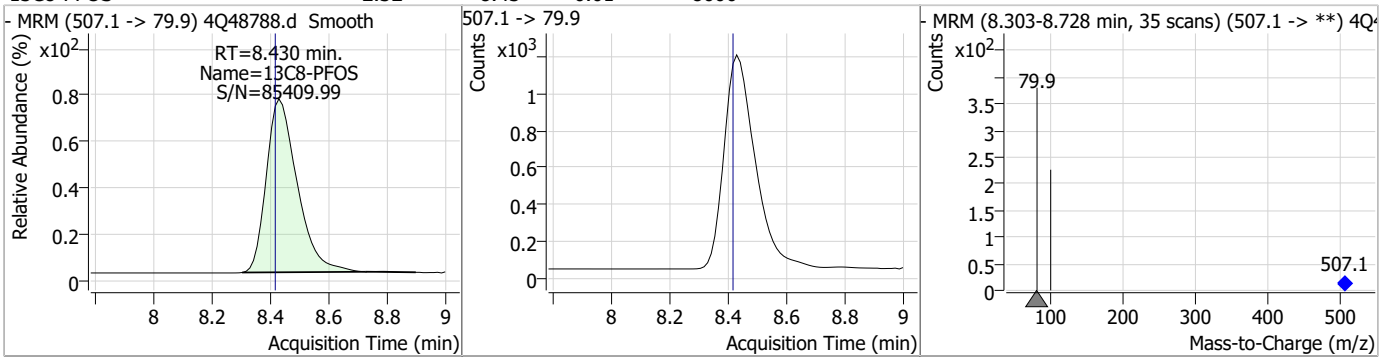


Perfluorinated Compounds by LC/MS/MS

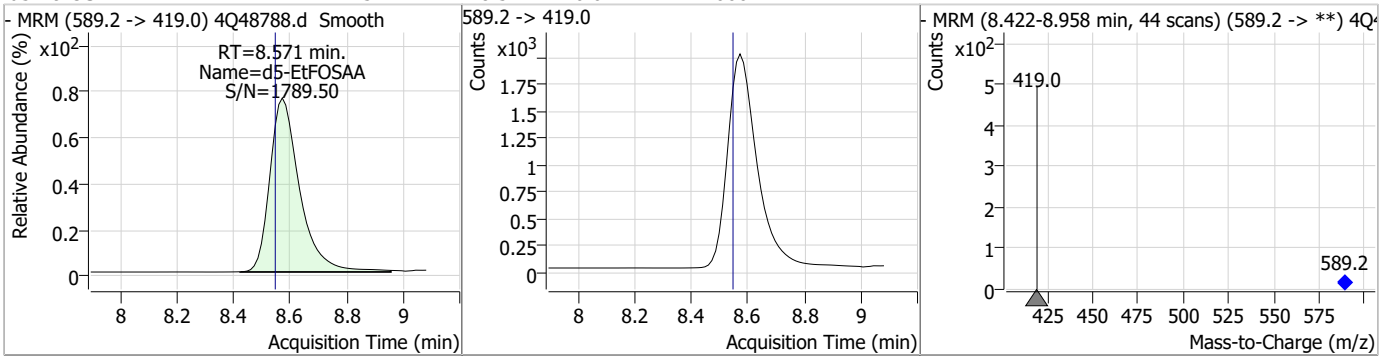
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.18	8.36	0.01	17754				



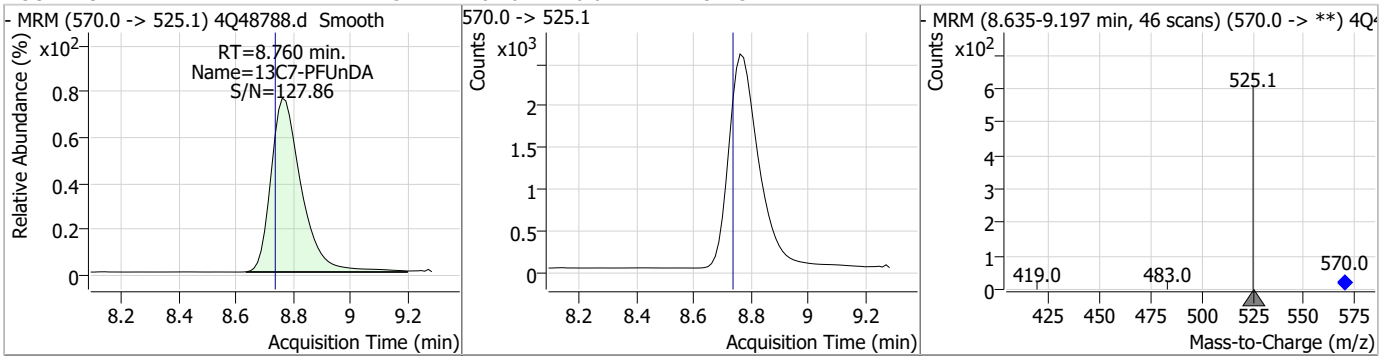
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.43	0.01	8600				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.21	8.57	0.02	14666				

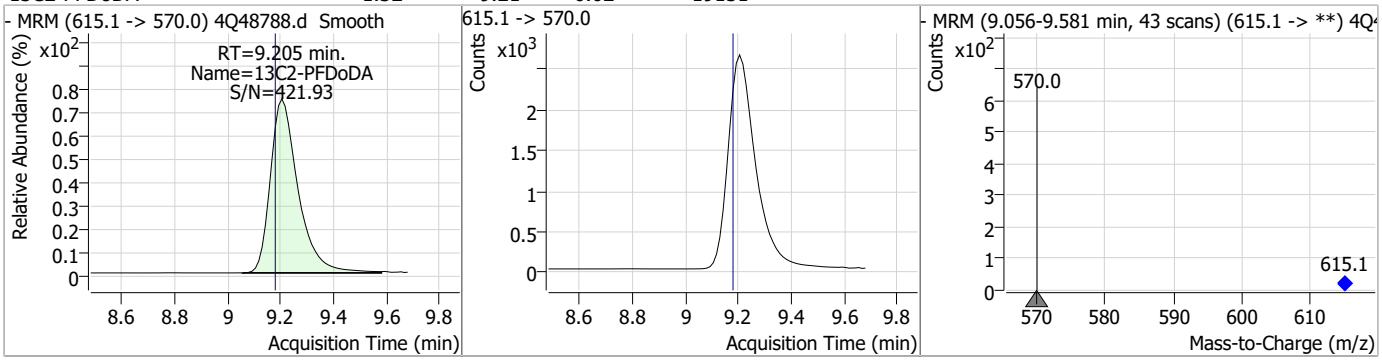


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.45	8.76	0.02	19115				

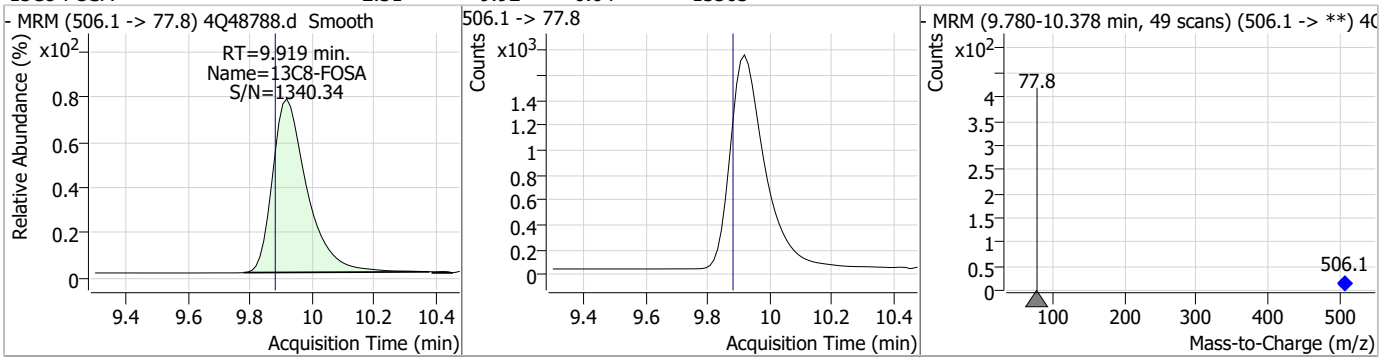


Perfluorinated Compounds by LC/MS/MS

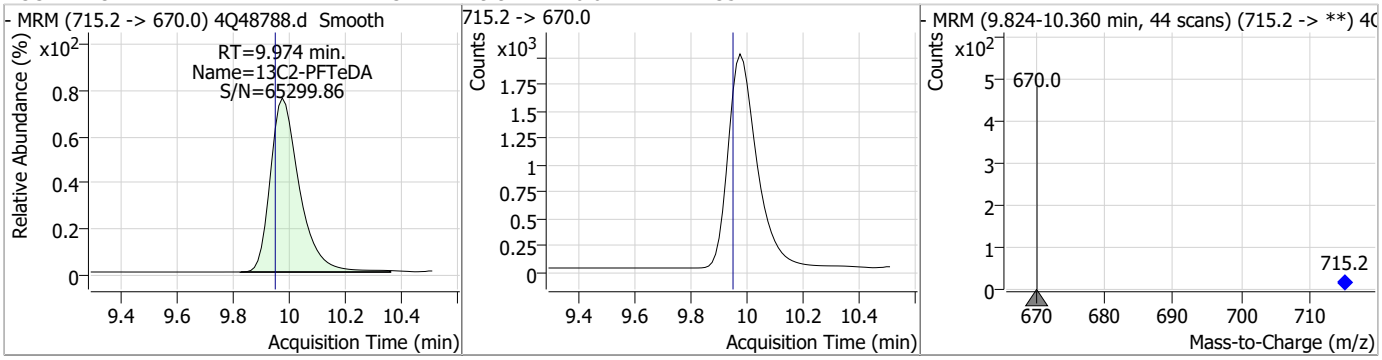
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.32	9.21	0.02	19131				



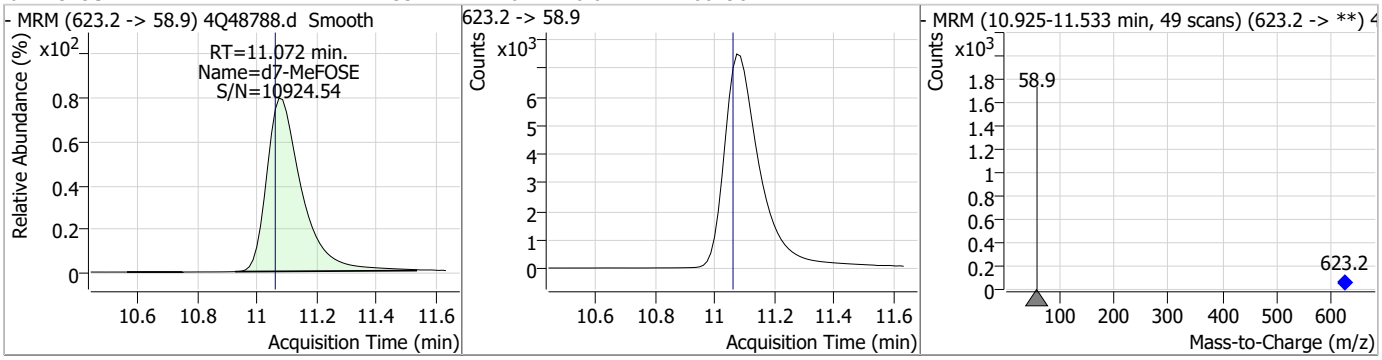
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.31	9.92	0.04	13303				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.97	0.02	14354				

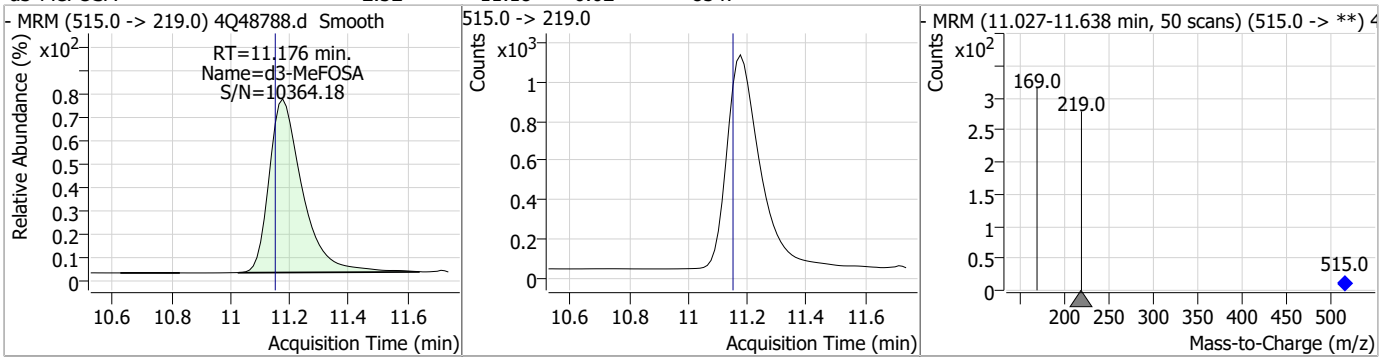


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.33	11.07	0.01	60496				

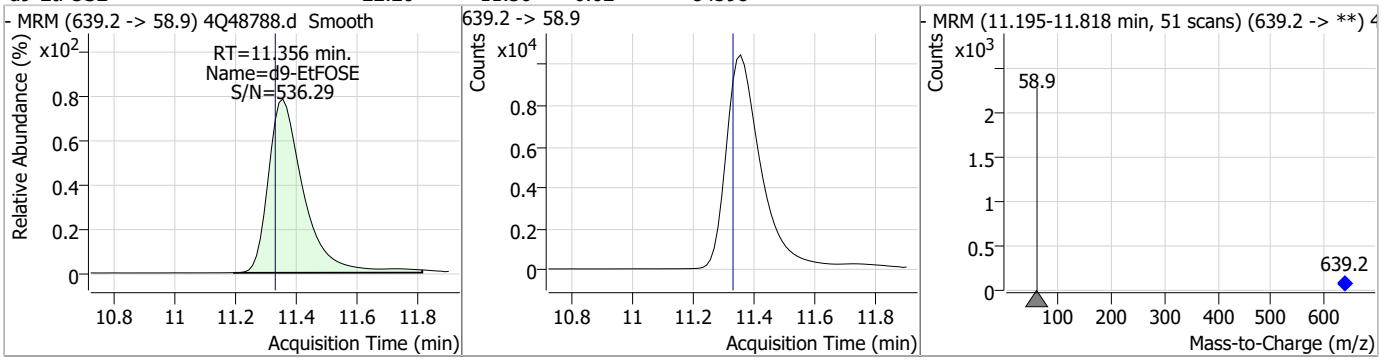


Perfluorinated Compounds by LC/MS/MS

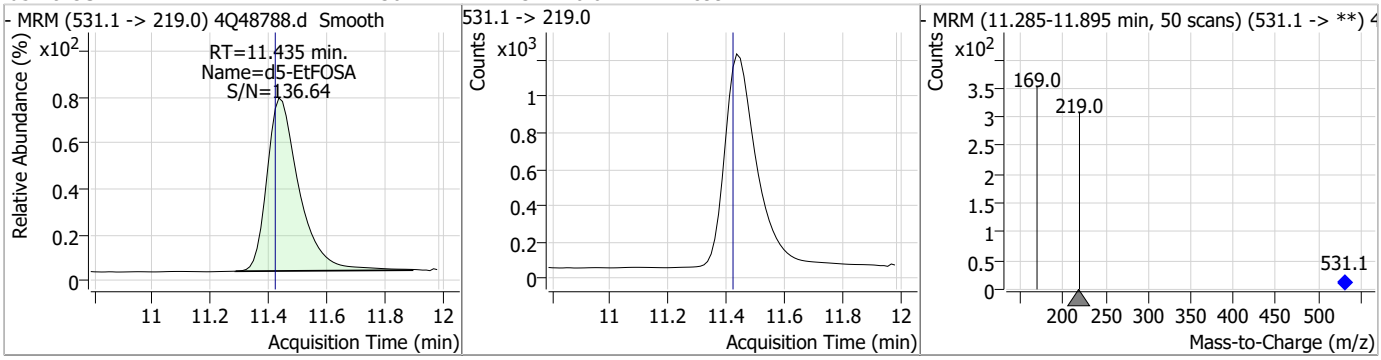
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.52	11.18	0.02	8547				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.26	11.36	0.02	84598				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	11.43	0.01	8994				



Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48800.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/10/2023 12:13:18 AM
Sample Name : iccb
Vial : P1-A1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	109148	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	57364	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	37827	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	27442	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	45301	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	20916	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	15105	1.25	µg/L	0.025
M7-PFUnDA	8.760	570.0 -> 525.1	17865	1.25	µg/L	0.025
M2-PFDoDA	9.193	615.1 -> 570.0	19249	1.25	µg/L	0.012
M2-PFTeDA	9.961	715.2 -> 670.0	14134	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	13521	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	9369	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6902	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8865	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	794	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1590	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2509	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	17291	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	31375	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	14808	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	57730	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	82339	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	9195	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	8431	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	9734	2.50	µg/L	0.025
13C3-PFBA	2.903	216.0 -> 172.0	57530	5.00	µg/L	0.000
18O2-PFHxS	7.341	403.0 -> 83.9	4866	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	54940	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	17442	1.25	µg/L	0.025
13C5-PFNA	7.798	468.0 -> 423.0	23653	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	37402	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	794	6.53	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 130.6%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1590	6.84	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 136.9%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2509	7.11	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 142.2%		
13C2-PFDoDA	9.193	615.1 -> 570.0	19249	1.29	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-PFTeDA	9.961	715.2 -> 670.0	14134	1.18	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C3-PFBS	5.502	302.1 -> 79.9	9369	2.26	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C3-PFHxS	7.342	402.1 -> 79.9	6902	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	2.899	216.8 -> 171.9	109148	11.10 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C4-PFHpA	6.580	367.1 -> 322.0	27442	2.46 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFHxA	5.622	318.0 -> 273.0	37827	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.412	268.3 -> 223.0	57364	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C6-PFDA	8.303	519.1 -> 474.1	15105	1.25 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C7-PFUnDA	8.760	570.0 -> 525.1	17865	1.31 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-FOSA	9.907	506.1 -> 77.8	13521	2.23 µg/L	0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.1%	
13C8-PFOA	7.251	421.1 -> 376.0	45301	2.50 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-PFOS	8.442	507.1 -> 79.9	8865	2.27 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C9-PFNA	7.810	472.1 -> 427.0	20916	1.17 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.4%	
d3-MeFOSAA	8.373	573.2 -> 419.0	17291	4.79 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	31375	8.81 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.1%	
d3-MeFOSA	11.176	515.0 -> 219.0	8431	2.36 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
d5-EtFOSAA	8.571	589.2 -> 419.0	14808	4.99 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d7-MeFOSE	11.072	623.2 -> 58.9	57730	20.19 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.8%	
d9-EtFOSE	11.356	639.2 -> 58.9	82339	20.54 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.2%	
d5-EtFOSA	11.435	531.1 -> 219.0	9195	2.23 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.3%	

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

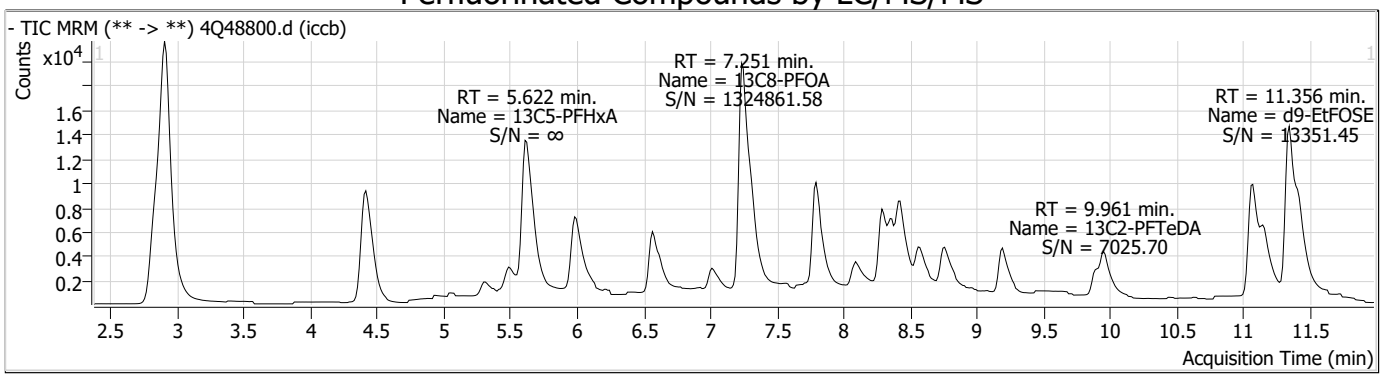
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.945	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	6.097	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	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	4.894	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	9.402	713.1 -> 669.0	0		µg/L	m	1
		713.1 -> 168.9	0				
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

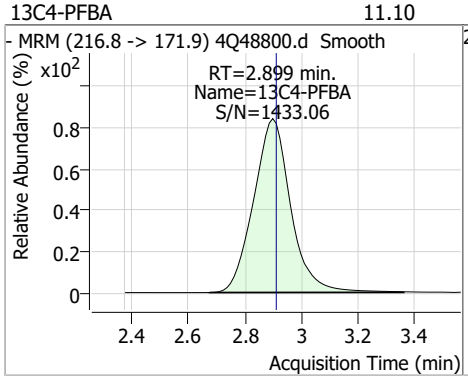
Perfluorinated Compounds by LC/MS/MS

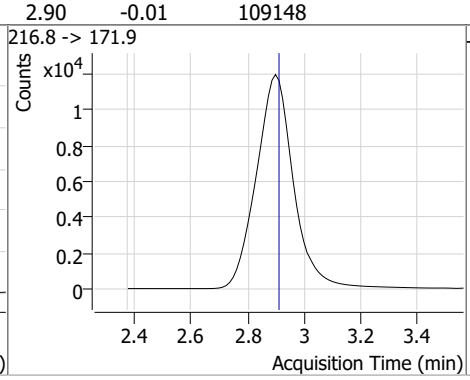
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

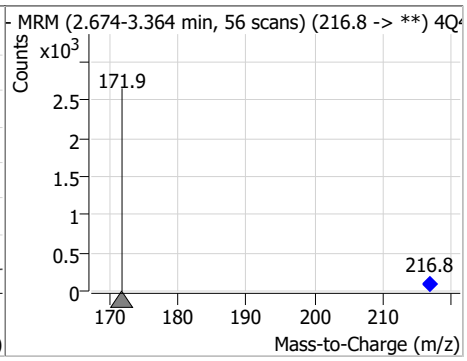
Perfluorinated Compounds by LC/MS/MS



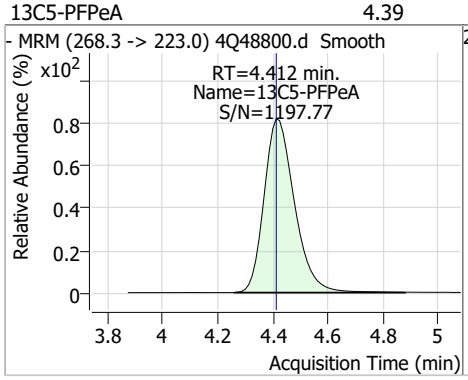
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.10	2.90	-0.01	109148				

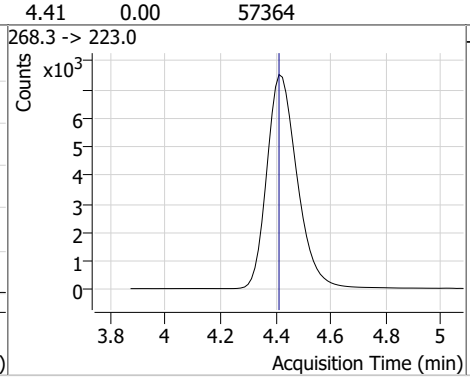


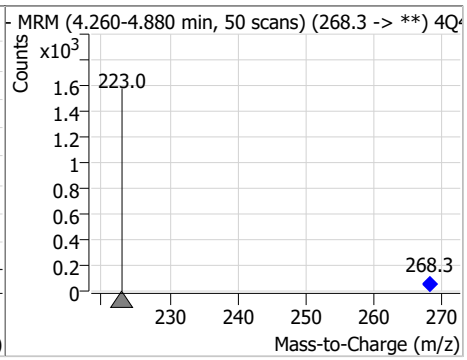




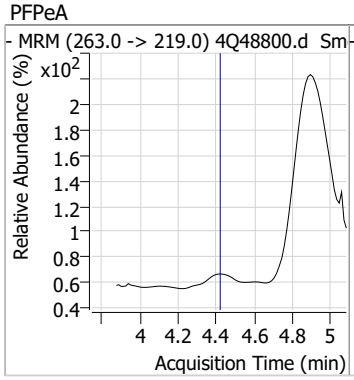
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.39	4.41	0.00	57364				

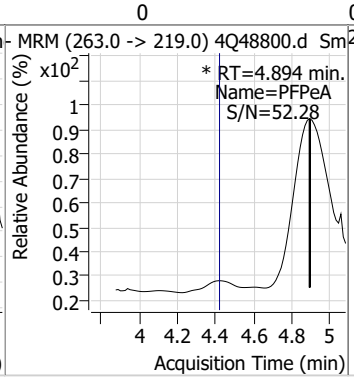


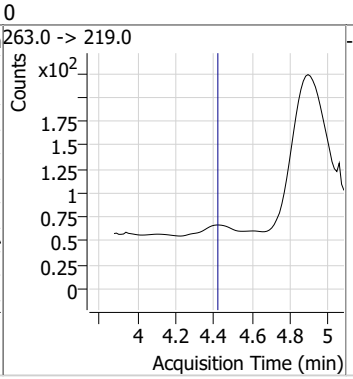


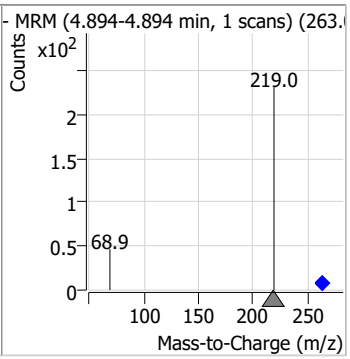


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



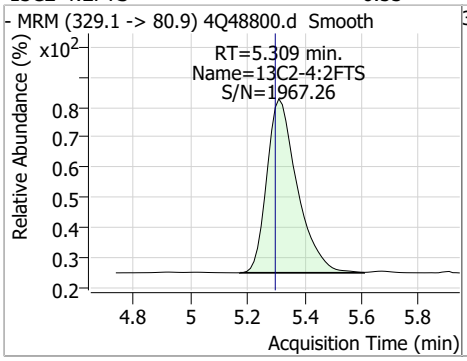


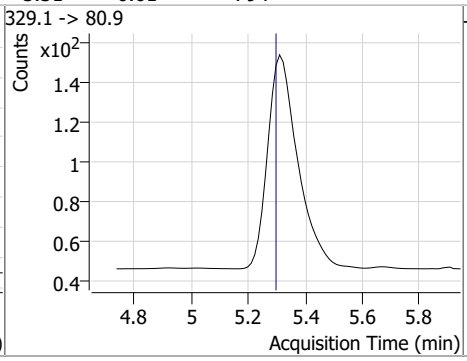


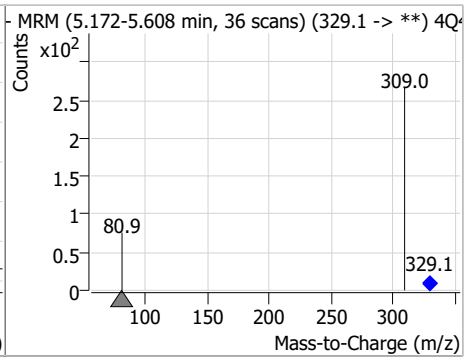


Perfluorinated Compounds by LC/MS/MS

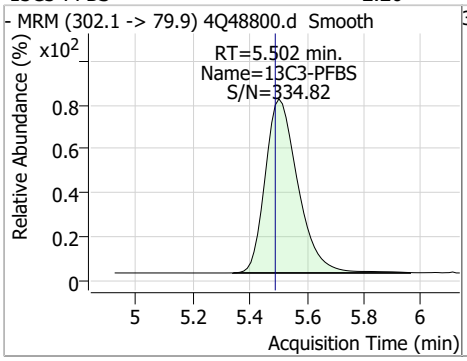
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.53	5.31	0.01	794				

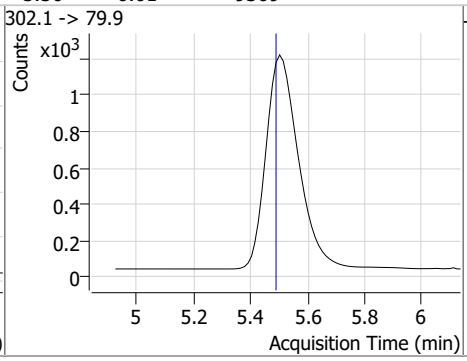


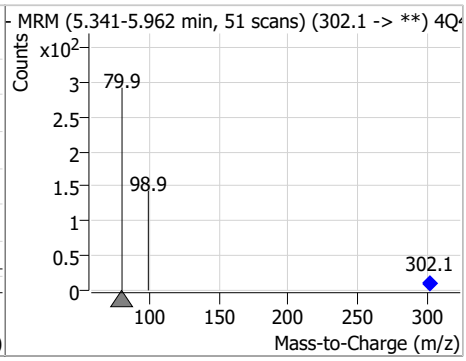




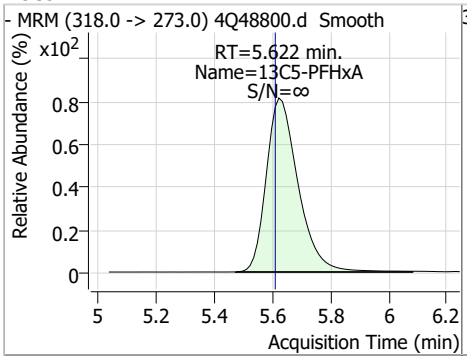
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.26	5.50	0.01	9369				

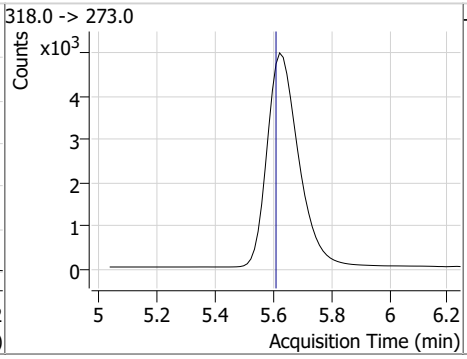


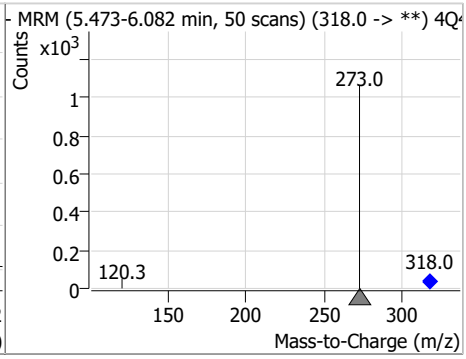




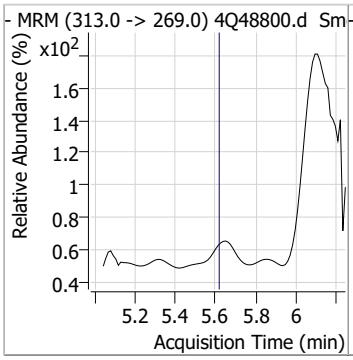
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.62	0.01	37827				

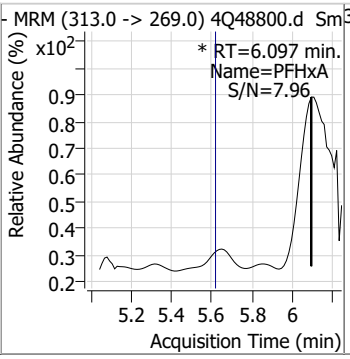


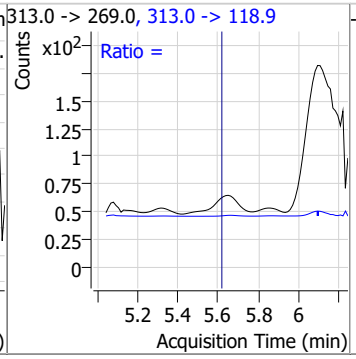


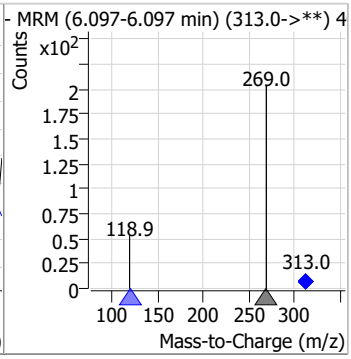


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9



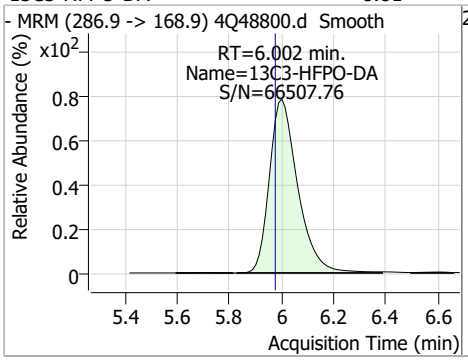


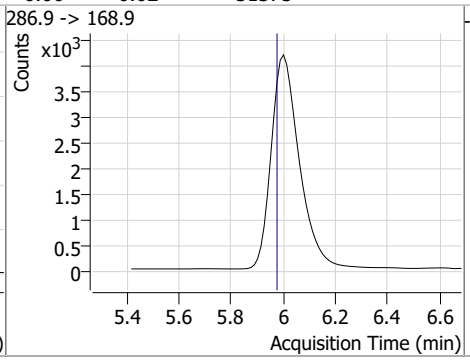


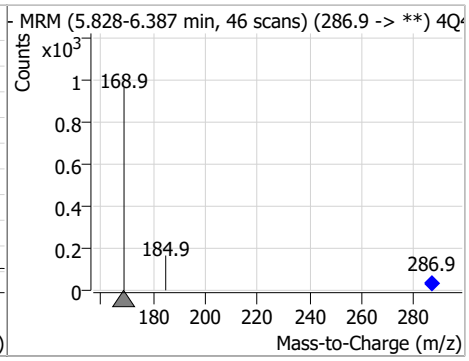


Perfluorinated Compounds by LC/MS/MS

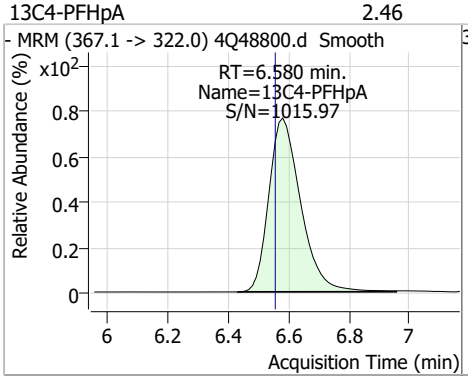
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.81	6.00	0.02	31375				

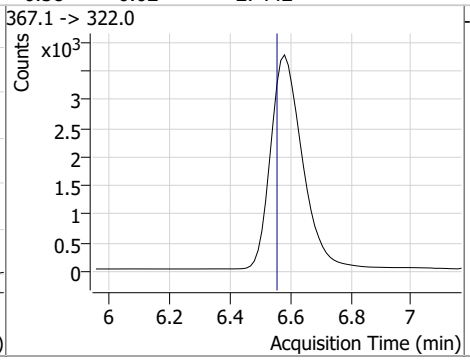


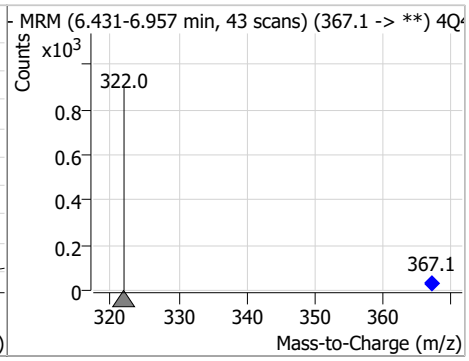




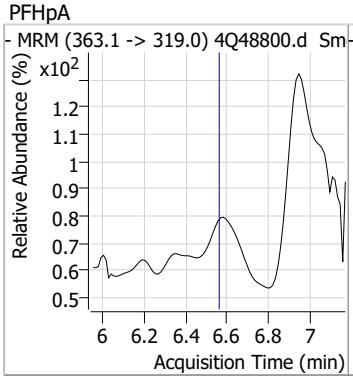
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.58	0.02	27442				

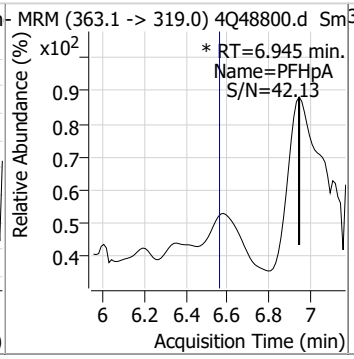


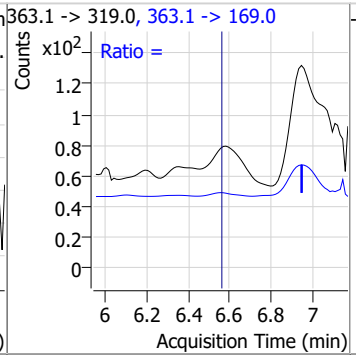


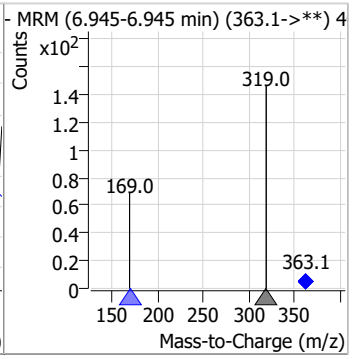


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

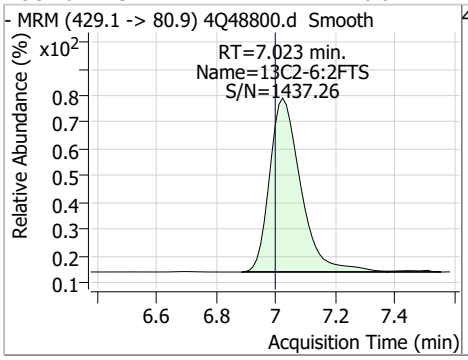


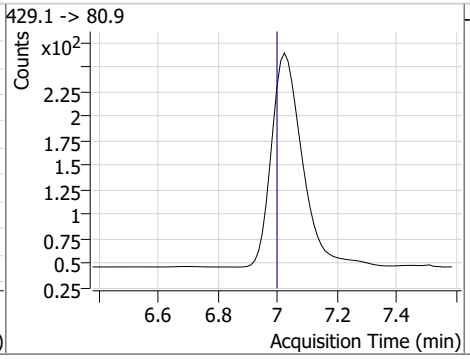


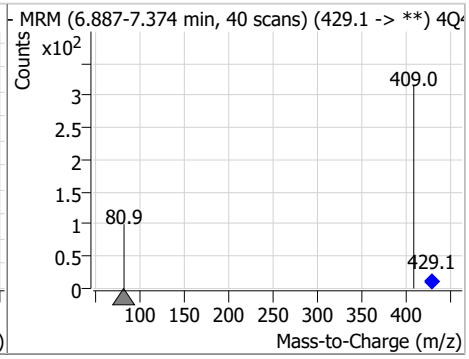




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.84	7.02	0.02	1590				

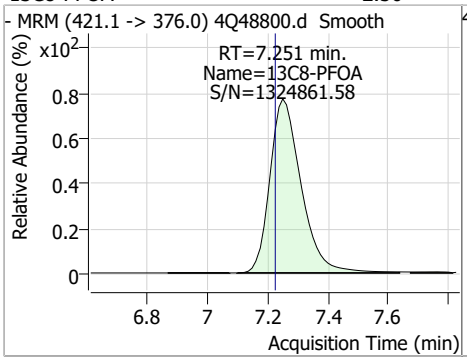


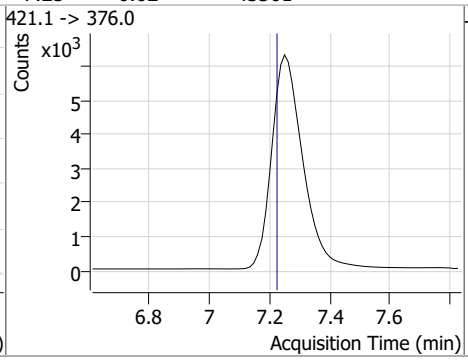


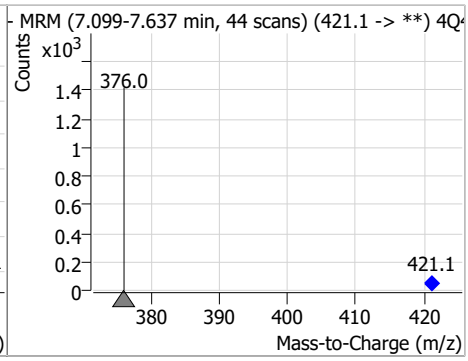


Perfluorinated Compounds by LC/MS/MS

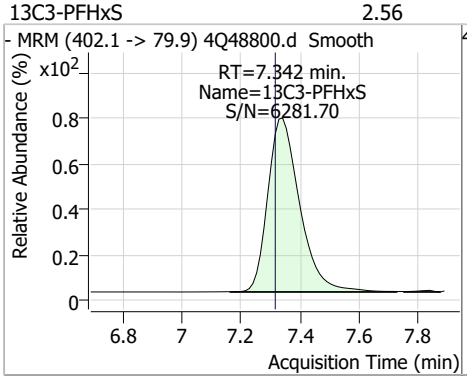
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.50	7.25	0.02	45301				

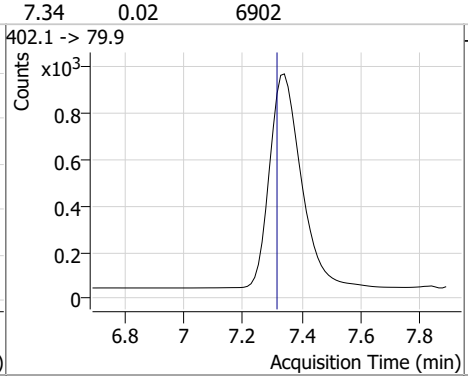


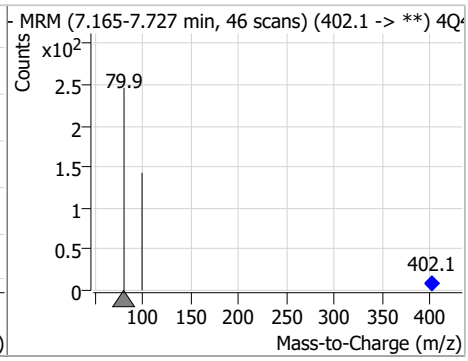




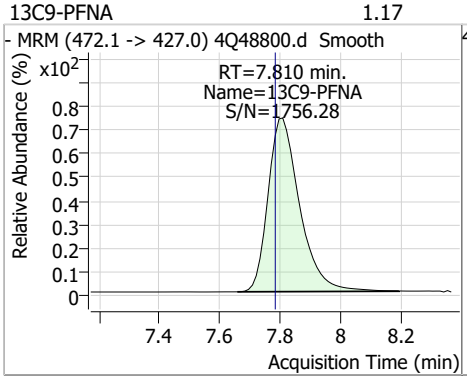
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.34	0.02	6902				

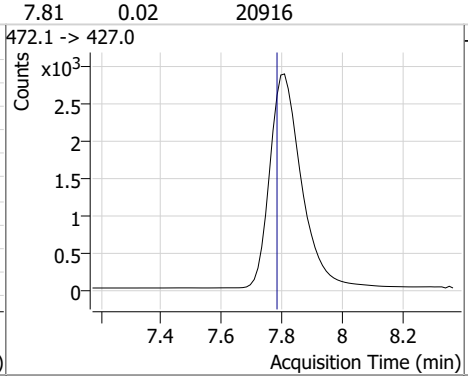


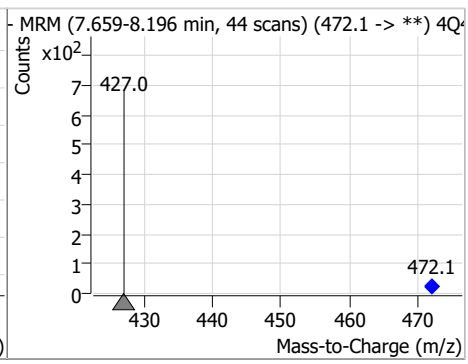




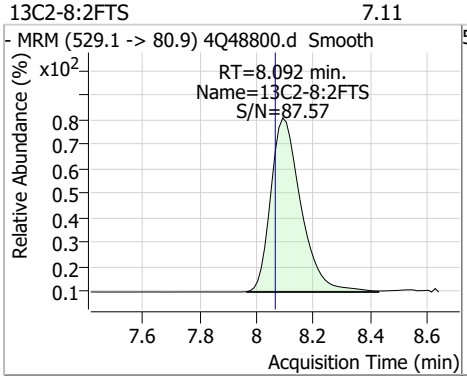
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.17	7.81	0.02	20916				

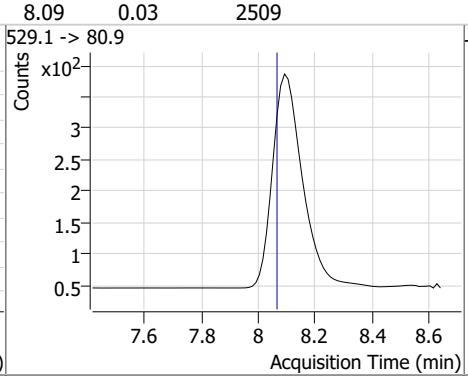


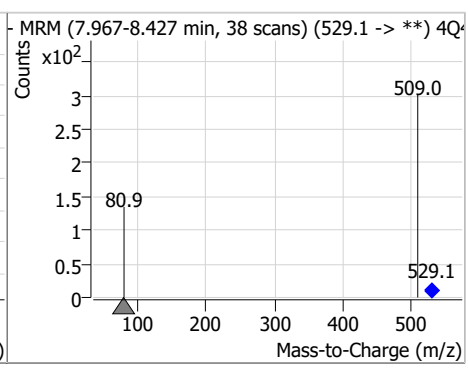




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.11	8.09	0.03	2509				

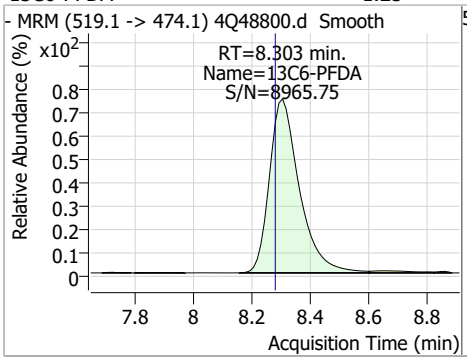


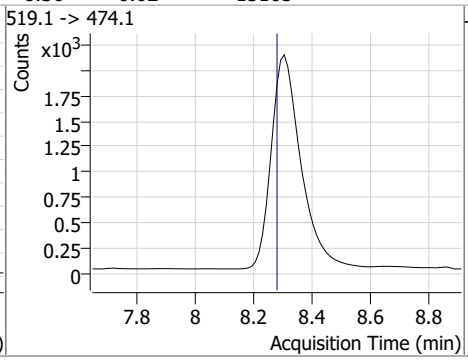


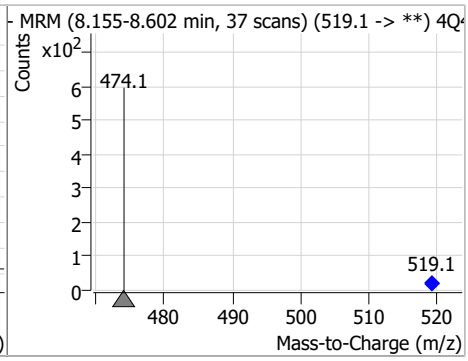


Perfluorinated Compounds by LC/MS/MS

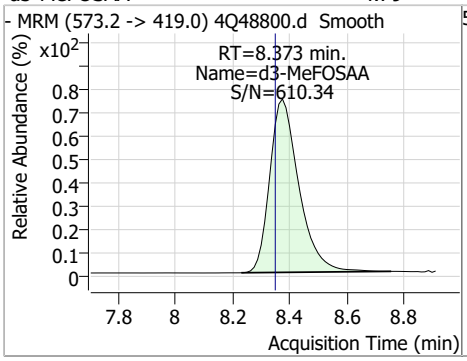
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.30	0.02	15105				

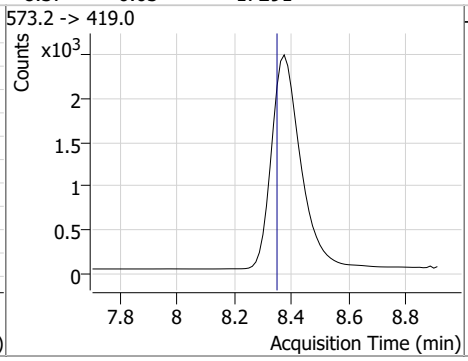


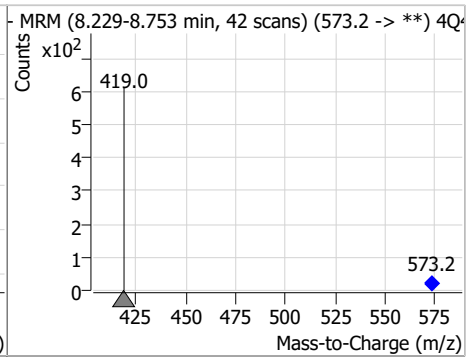




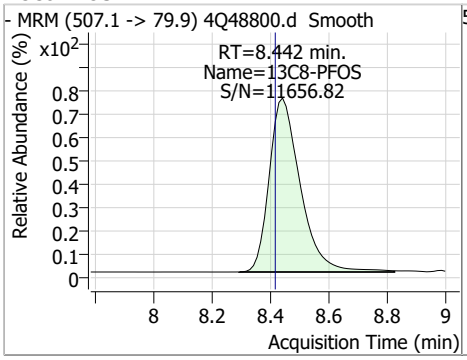
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.79	8.37	0.03	17291				

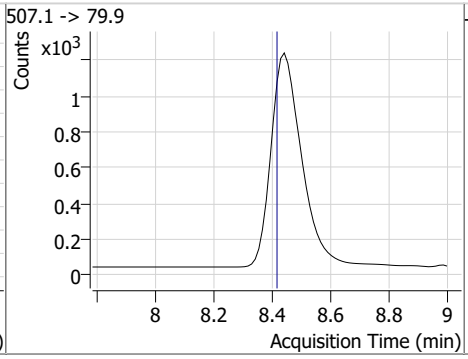


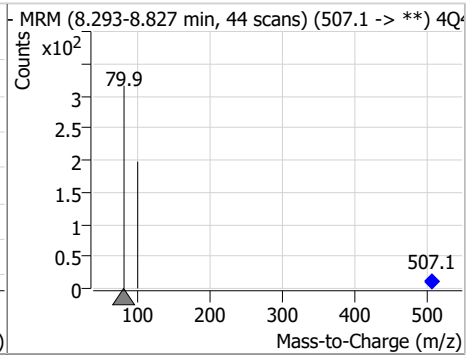




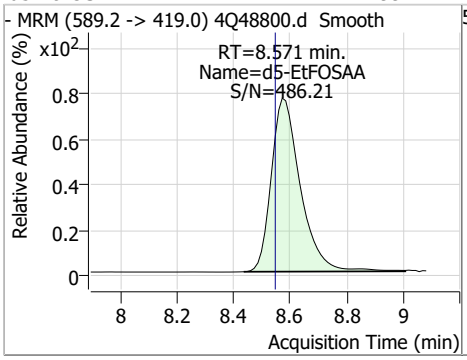
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.27	8.44	0.02	8865				

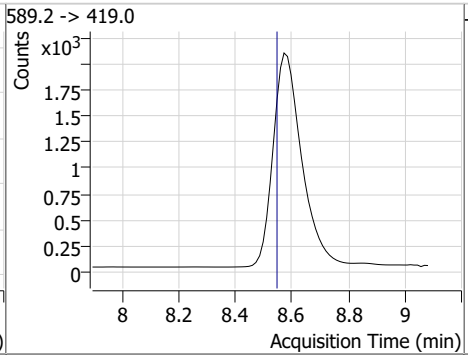


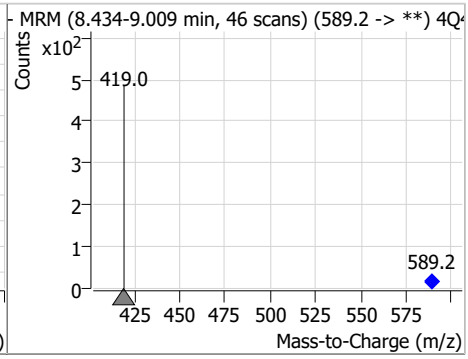




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.99	8.57	0.02	14808				

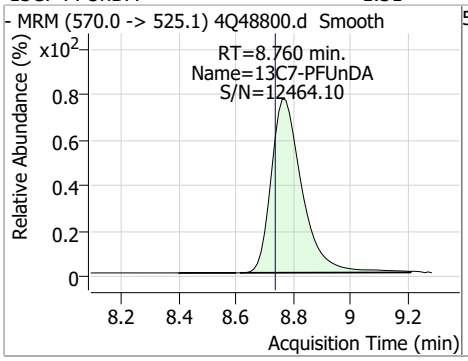


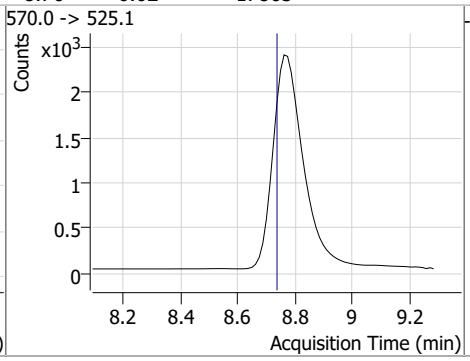


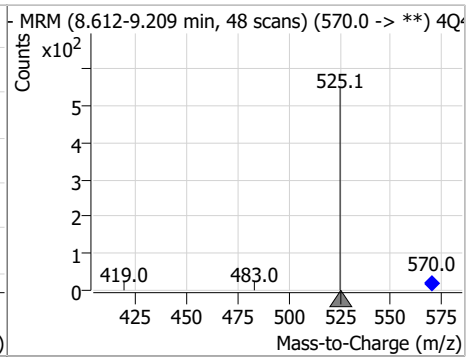


Perfluorinated Compounds by LC/MS/MS

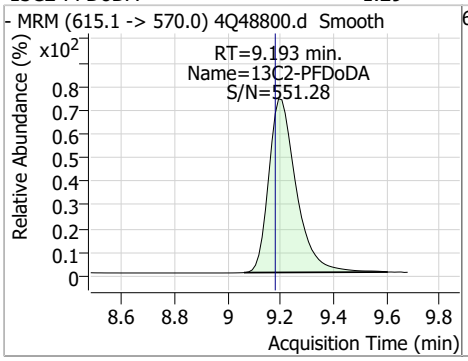
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.76	0.02	17865				

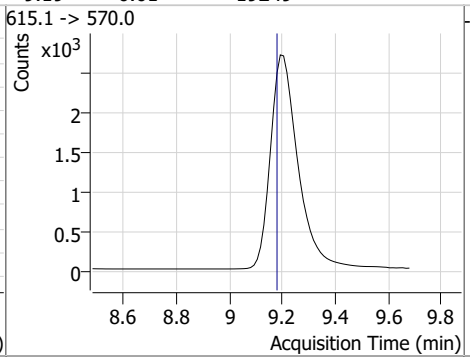


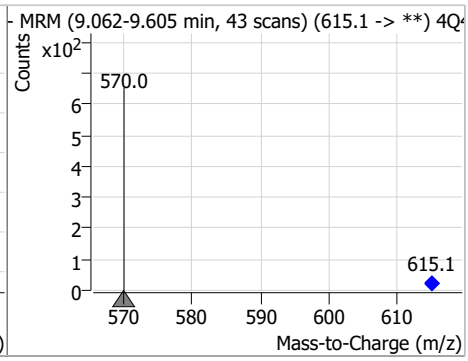




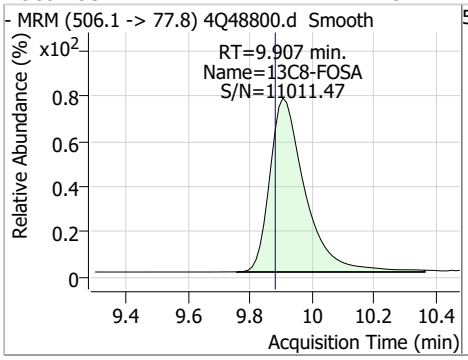
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.19	0.01	19249				

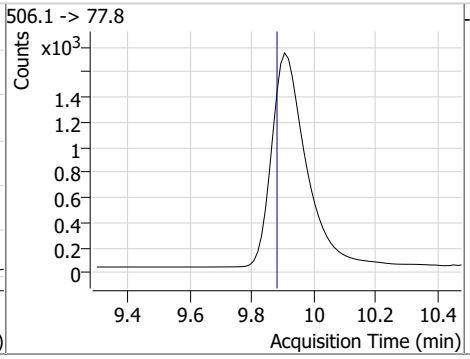


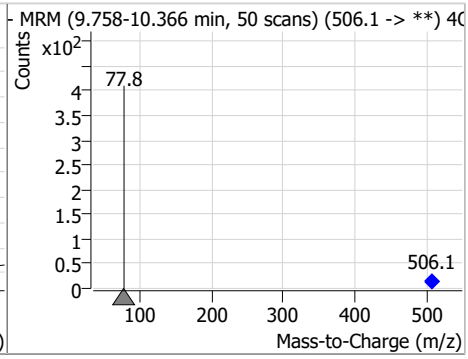




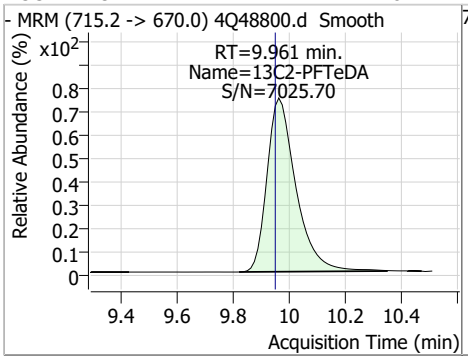
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.23	9.91	0.02	13521				

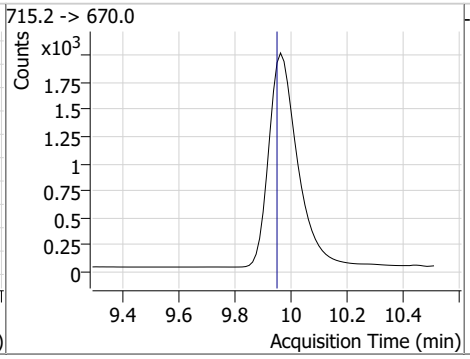


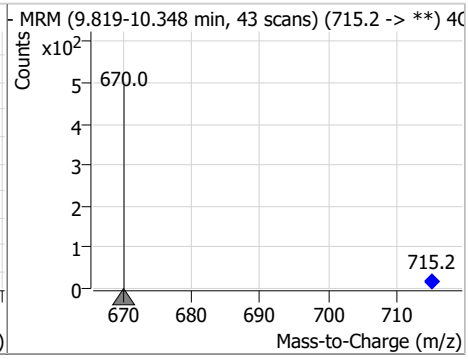




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.96	0.01	14134				

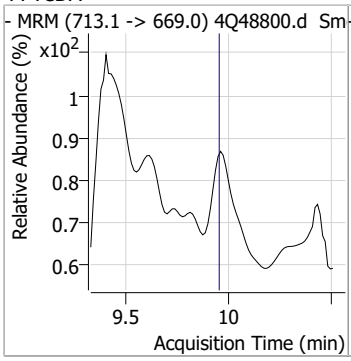


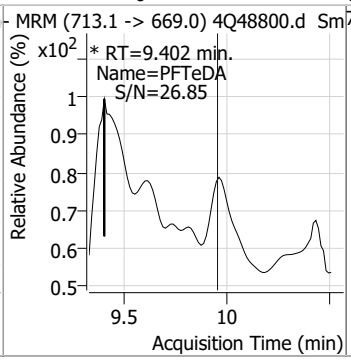


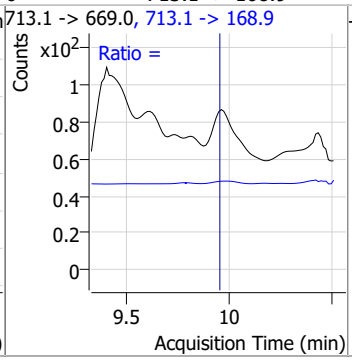


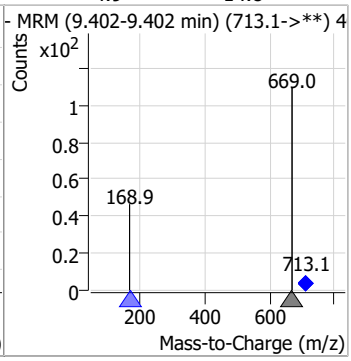
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA		0		0	713.1 -> 168.9		4.9	14.8

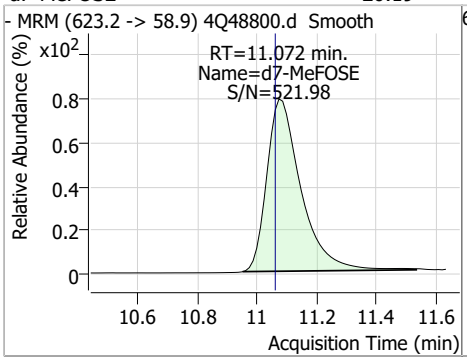


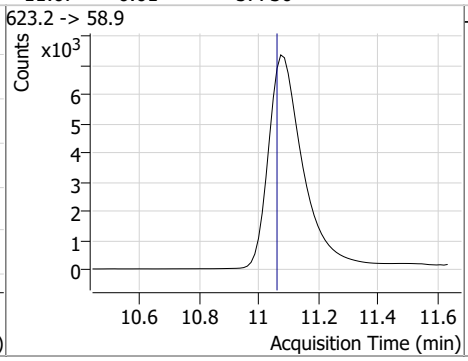


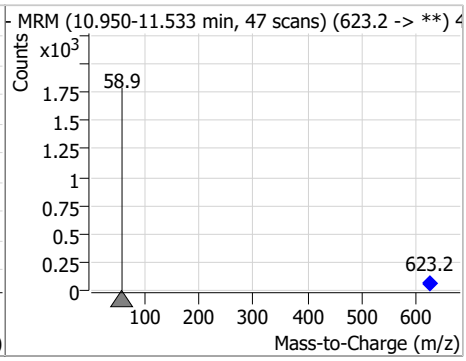




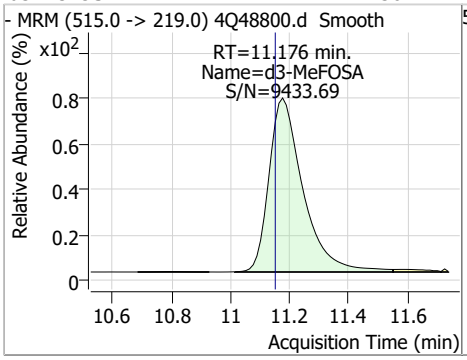
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.19	11.07	0.01	57730				

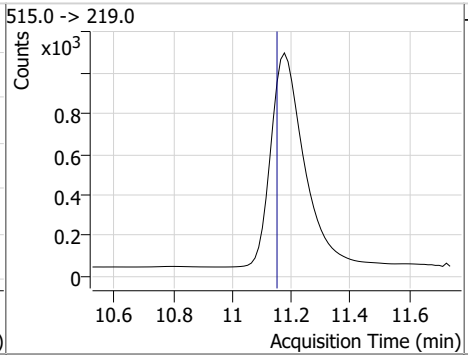


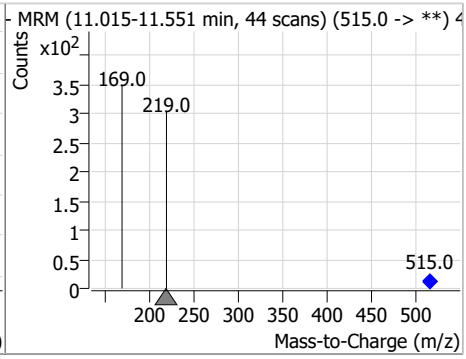




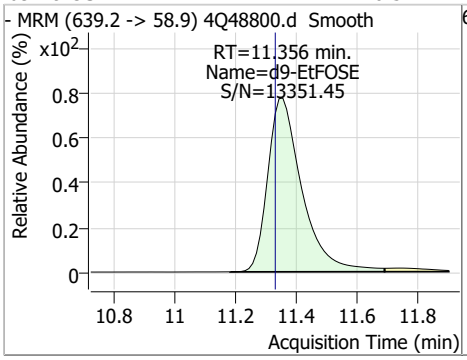
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	11.18	0.02	8431				

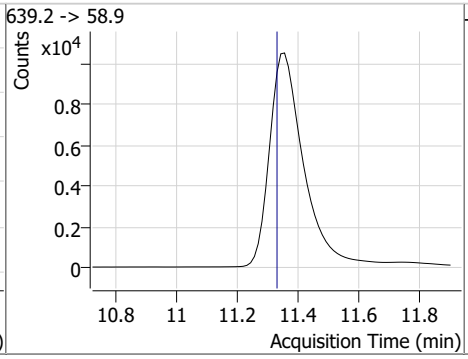


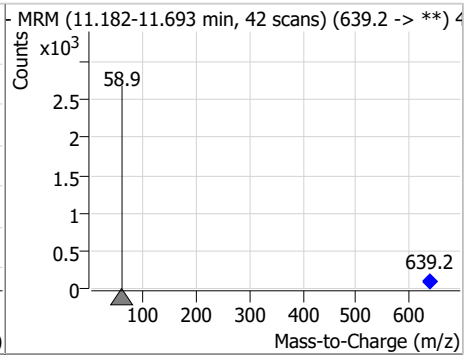




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.54	11.36	0.02	82339				

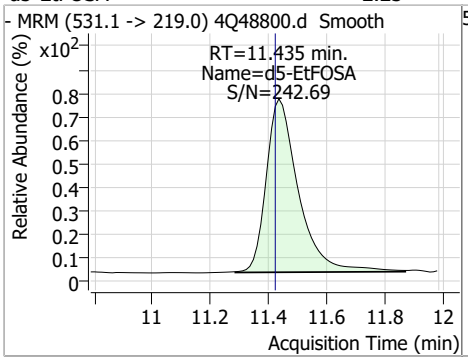


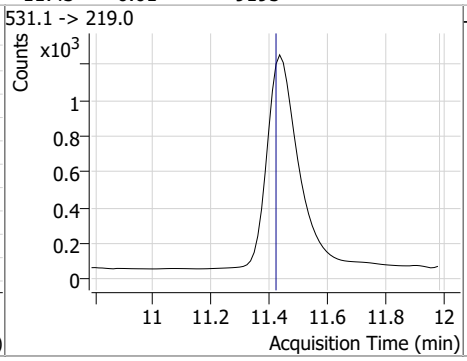


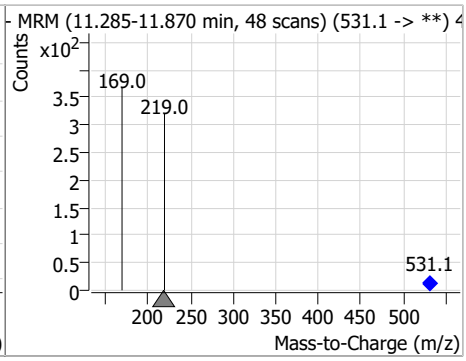


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.23	11.43	0.01	9195				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22648.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 3:32:31 PM
Sample Name : IBLK
Vial : P1-A1
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	197670	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	63482	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	68524	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	67967	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	102149	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	48621	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	28071	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	35995	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	33459	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	19041	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	37630	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	24324	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	16697	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14674	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3800	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	5500	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5447	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	36721	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42956	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	31927	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	133956	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	178685	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	15667	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14708	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19180	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	83652	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11619	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	117330	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	40060	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	63054	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	65563	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3800	5.47	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5500	5.49	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5447	5.55	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C2-PFDoDA	9.148	615.1 -> 570.0	33459	1.24	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-PFTeDA	9.851	715.2 -> 670.0	19041	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-PFBS	5.610	302.1 -> 79.9	24324	2.47	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFHxS	7.355	402.1 -> 79.9	16697	2.61	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 = 104.6%	
13C4-PFBA	3.010	216.8 -> 171.9	197670	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.608	367.1 -> 322.0	67967	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFHxA	5.668	318.0 -> 273.0	68524	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFPeA	4.447	268.3 -> 223.0	63482	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C6-PFDA	8.250	519.1 -> 474.1	28071	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.717	570.0 -> 525.1	35995	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-FOSA	9.650	506.1 -> 77.8	37630	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOA	7.239	421.1 -> 376.0	102149	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-PFOS	8.414	507.1 -> 79.9	14674	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C9-PFNA	7.770	472.1 -> 427.0	48621	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%	
d3-MeFOSAA	8.297	573.2 -> 419.0	36721	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	42956	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.763	515.0 -> 219.0	14708	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSAA	8.492	589.2 -> 419.0	31927	4.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d7-MeFOSE	10.685	623.2 -> 58.9	133956	25.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d9-EtFOSE	10.918	639.2 -> 58.9	178685	25.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d5-EtFOSA	10.996	531.1 -> 219.0	15667	2.62 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	

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

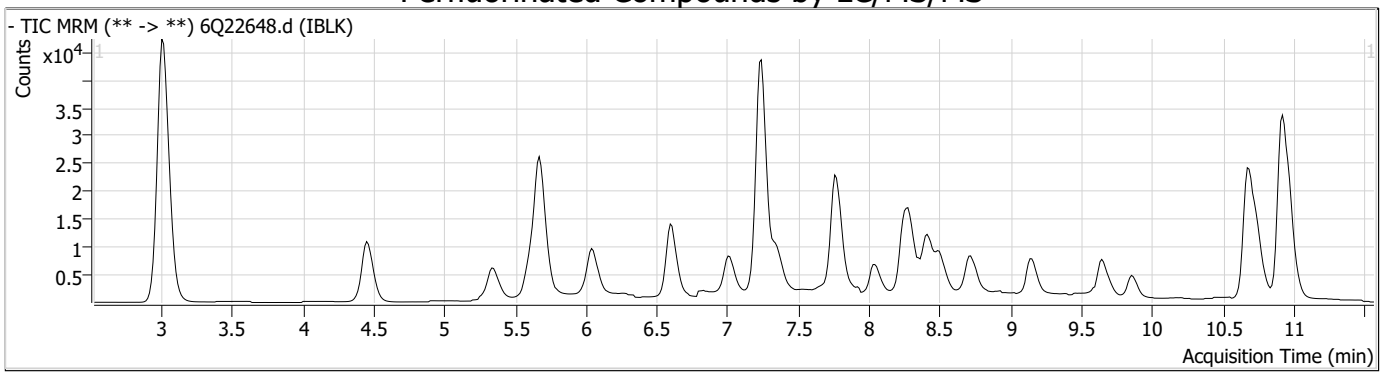
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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

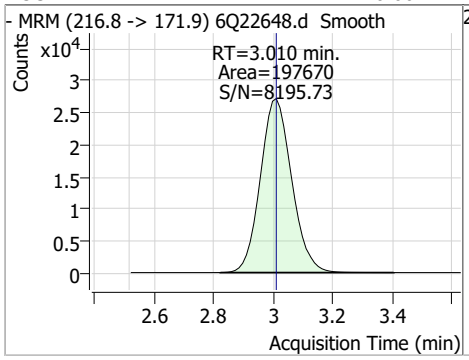
Perfluorinated Compounds by LC/MS/MS

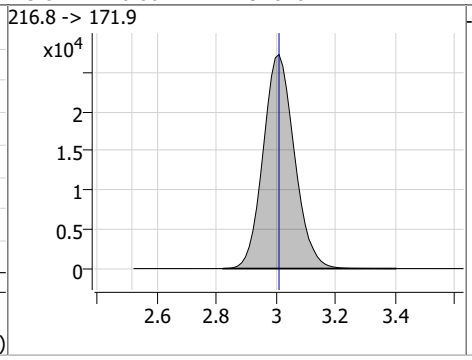
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

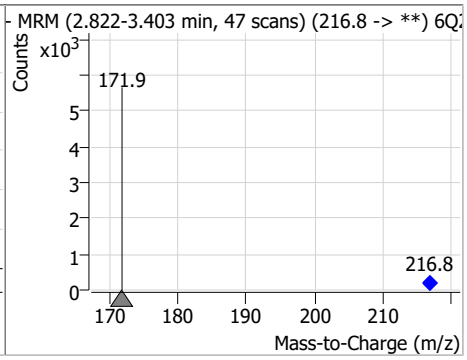
Perfluorinated Compounds by LC/MS/MS



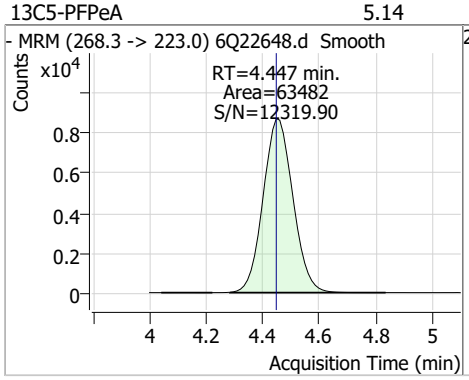
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.00	3.01	0.00	197670				

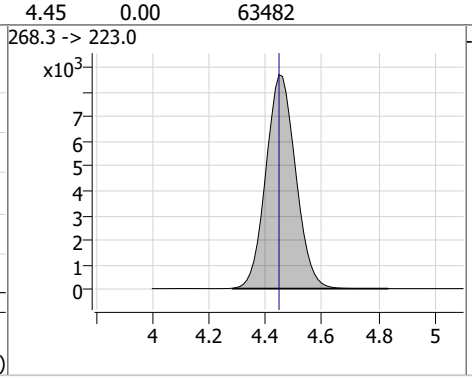


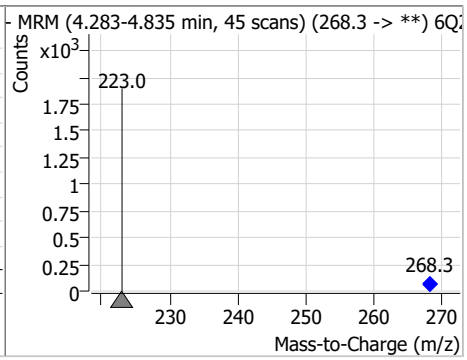




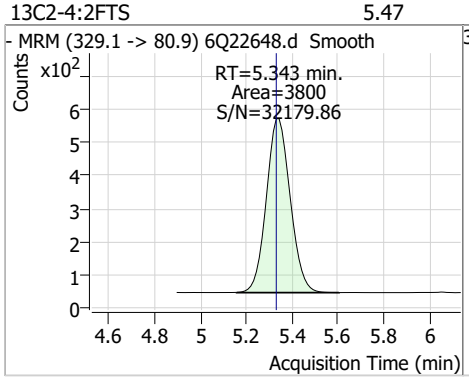
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.14	4.45	0.00	63482				

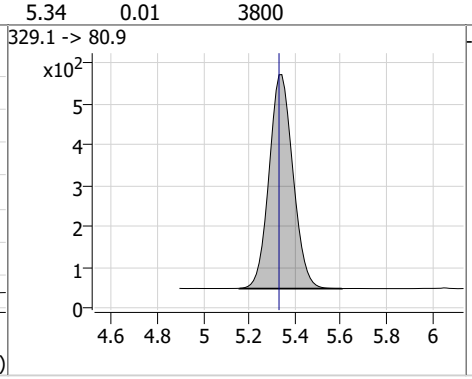


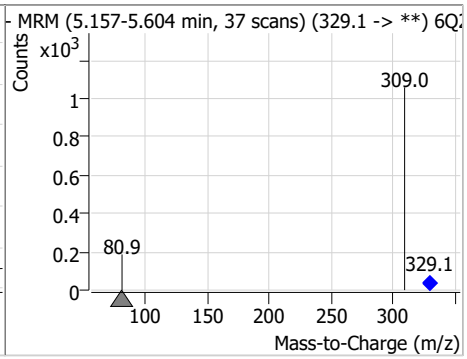




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.47	5.34	0.01	3800				

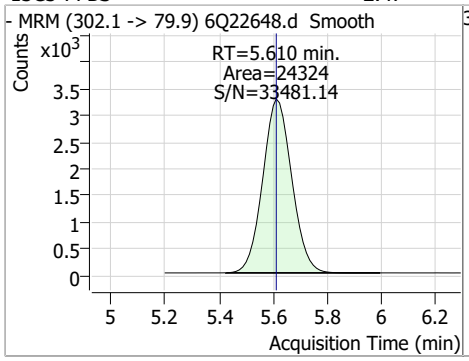


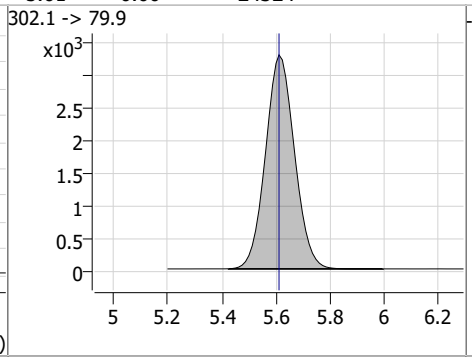


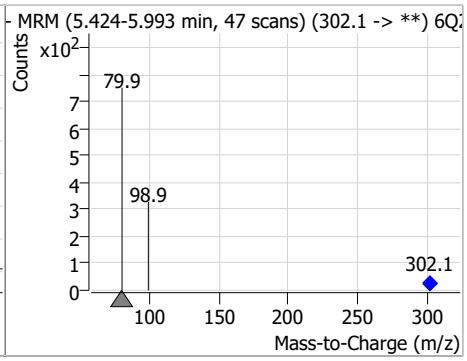


Perfluorinated Compounds by LC/MS/MS

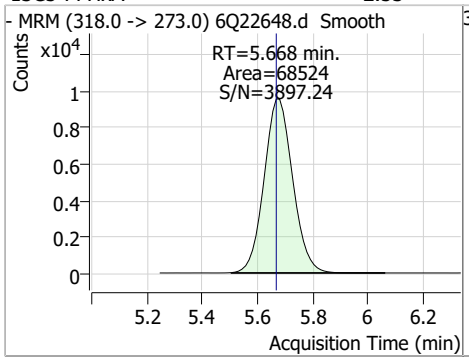
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.47	5.61	0.00	24324				

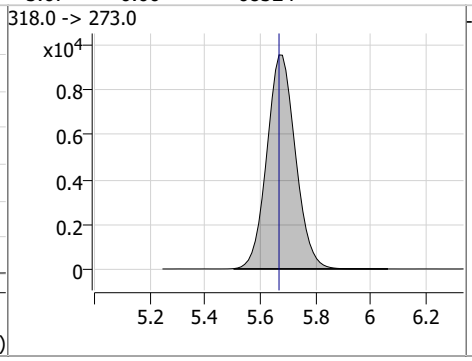


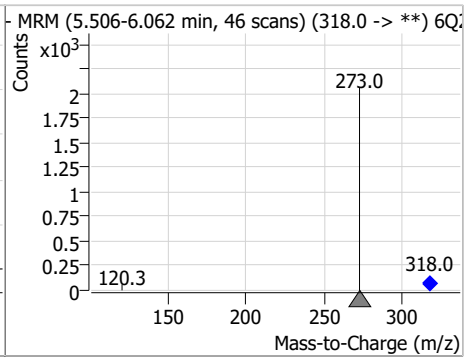




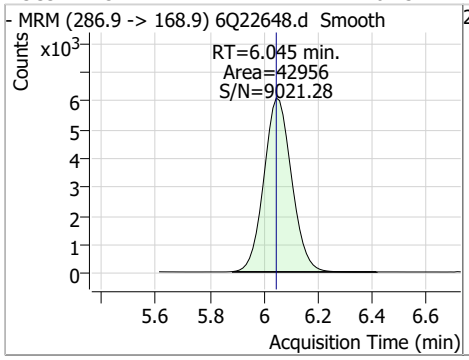
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.67	0.00	68524				

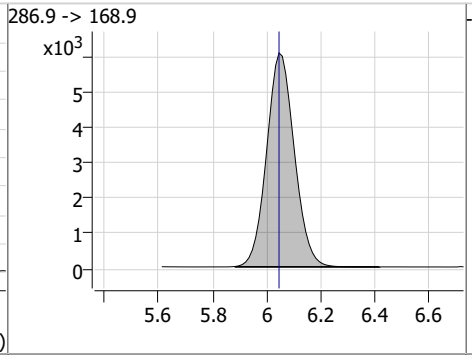


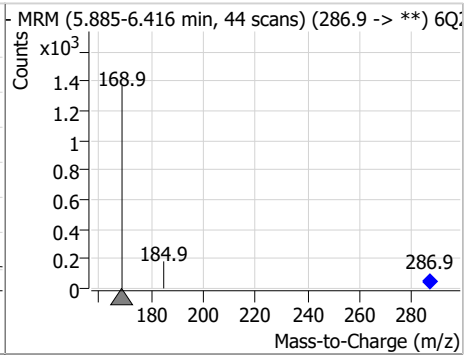




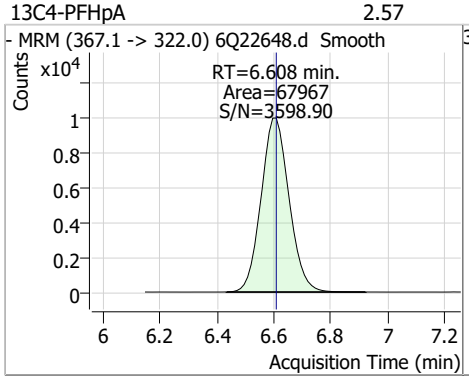
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	6.05	0.00	42956				

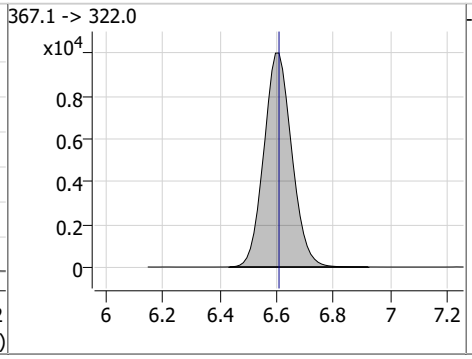


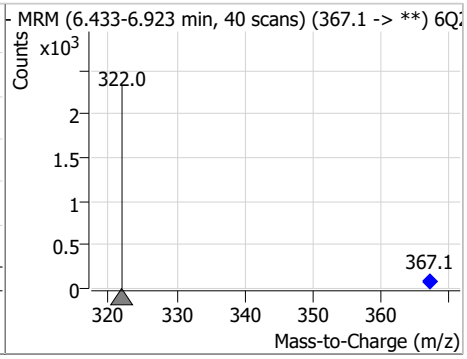




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	6.61	0.00	67967				

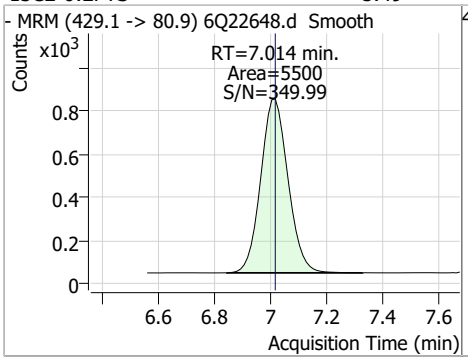


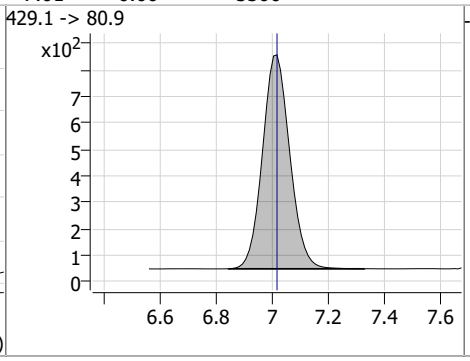


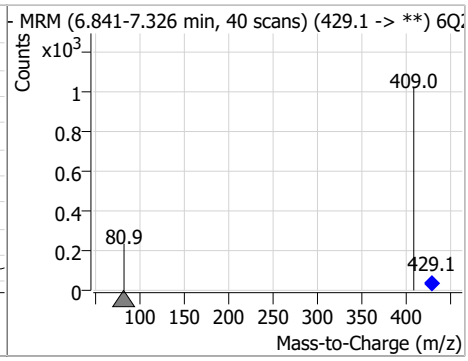


Perfluorinated Compounds by LC/MS/MS

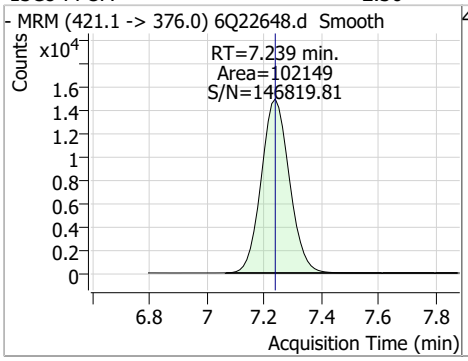
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.49	7.01	0.00	5500				

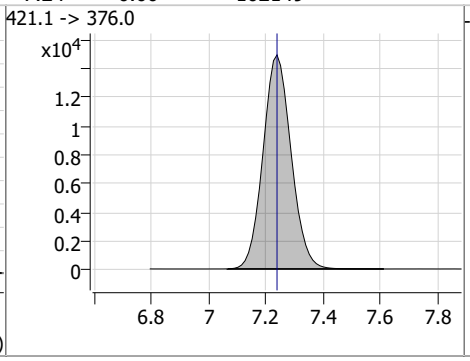


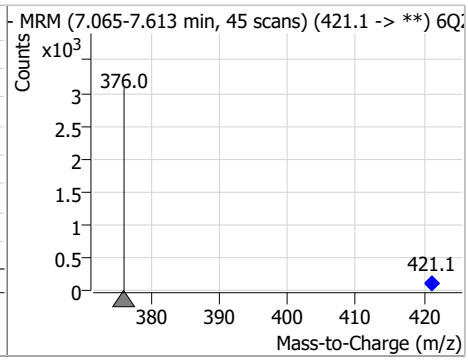




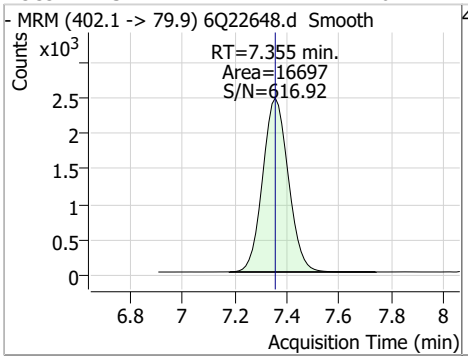
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.36	7.24	0.00	102149				

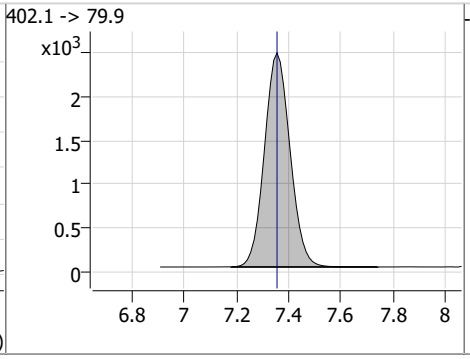


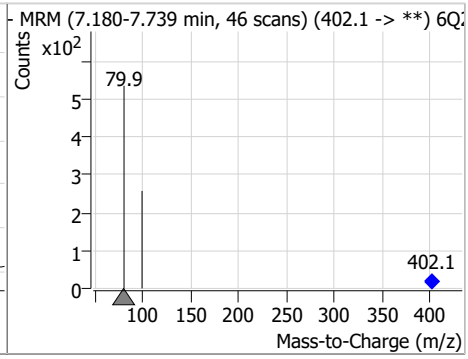




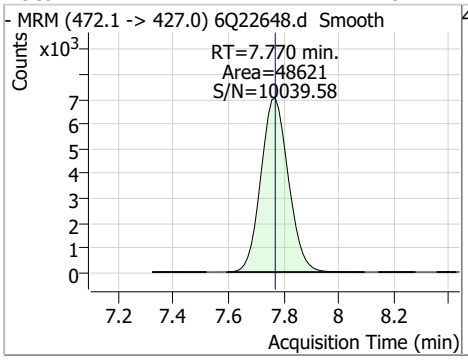
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.61	7.35	0.00	16697				

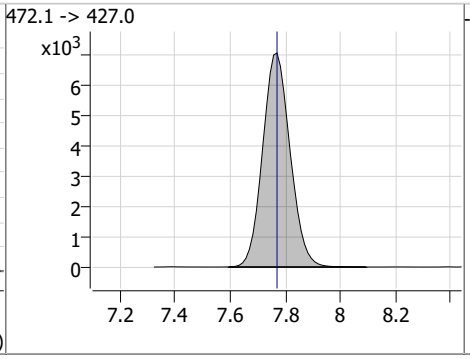


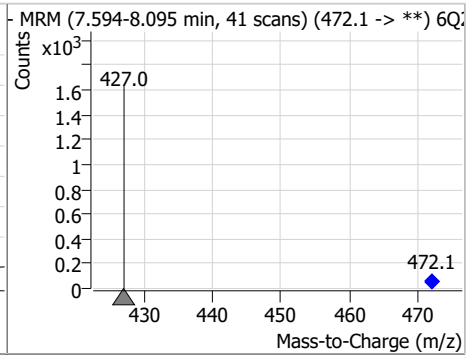




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.19	7.77	0.00	48621				

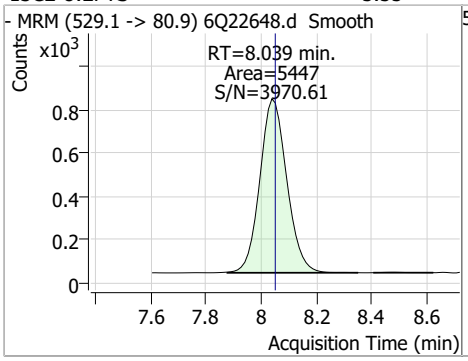


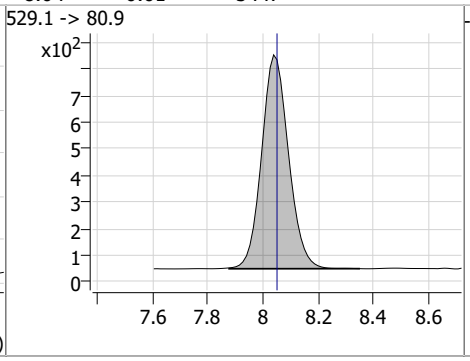


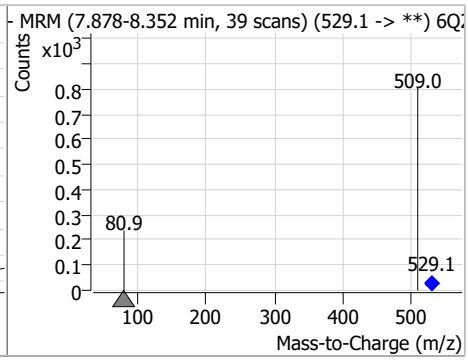


Perfluorinated Compounds by LC/MS/MS

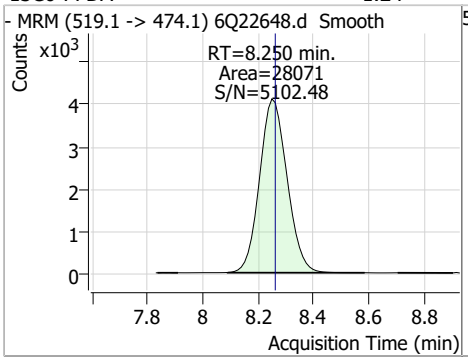
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.55	8.04	-0.01	5447				

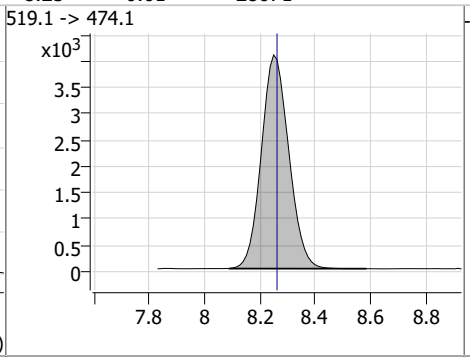


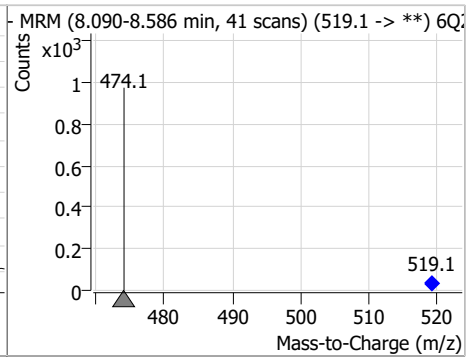




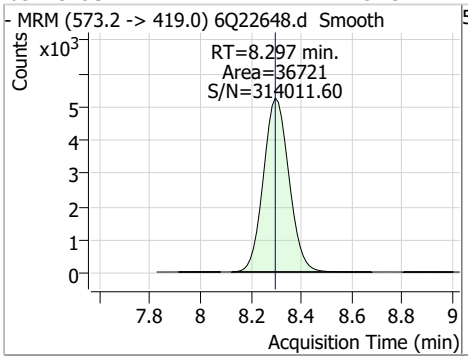
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.24	8.25	-0.01	28071				

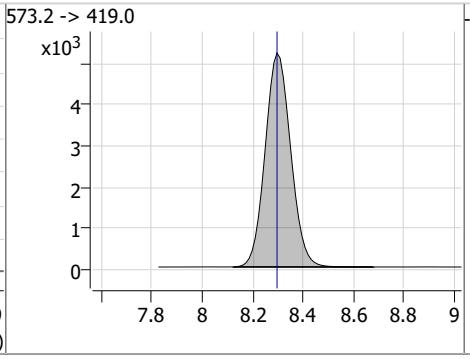


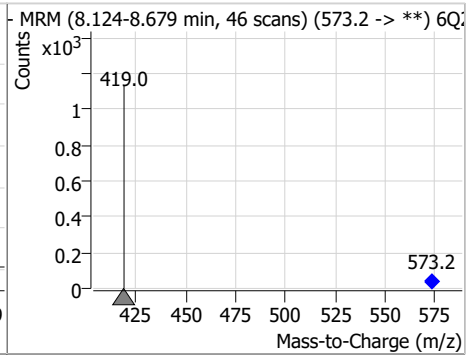




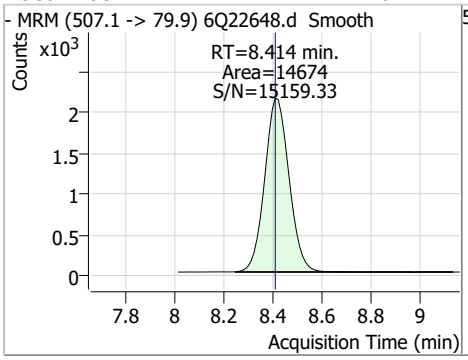
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.29	8.30	0.00	36721				

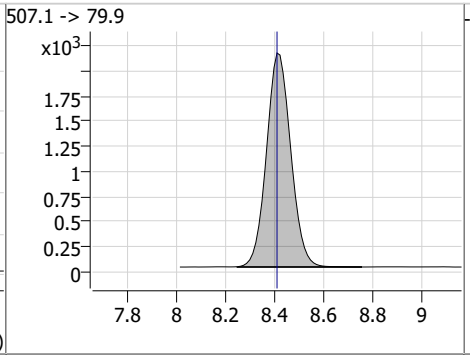


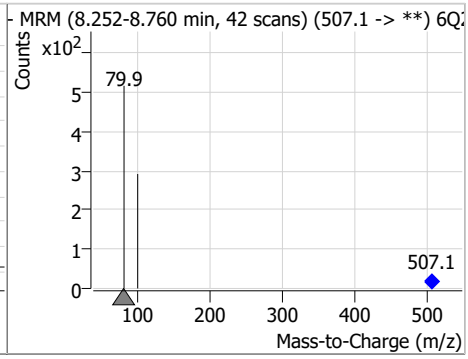




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.61	8.41	0.00	14674				

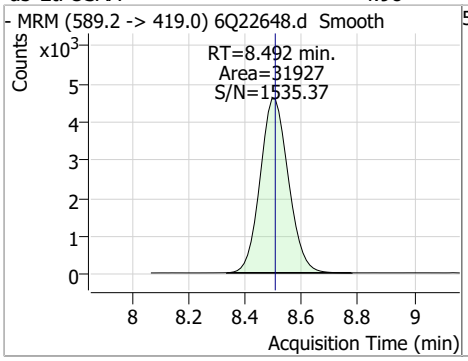


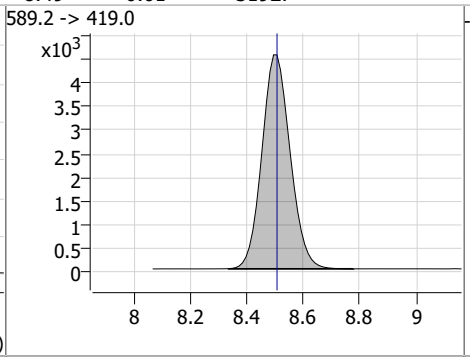


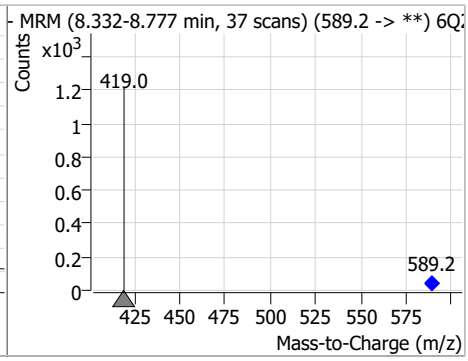


Perfluorinated Compounds by LC/MS/MS

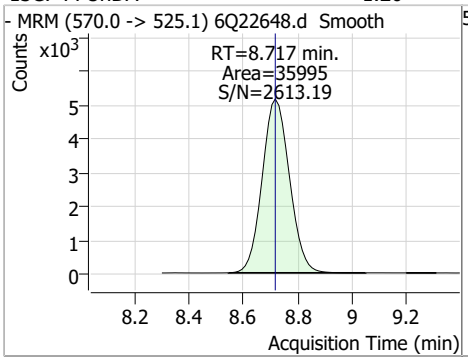
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.98	8.49	-0.01	31927				

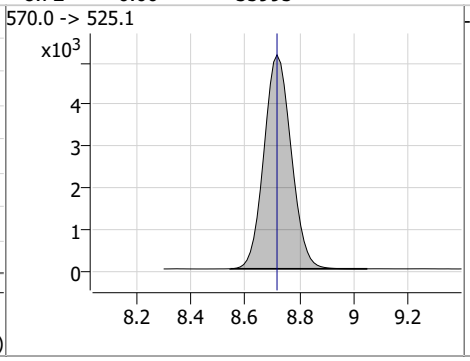


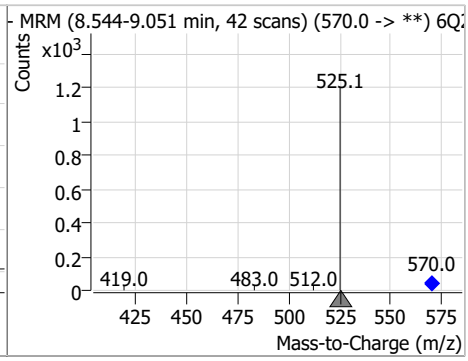




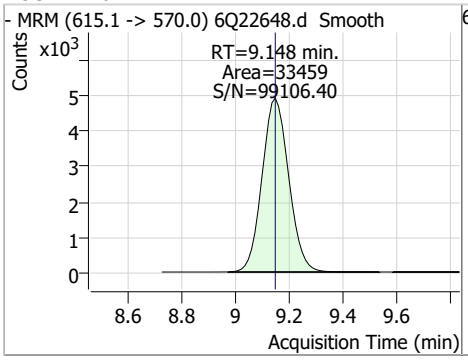
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.20	8.72	0.00	35995				

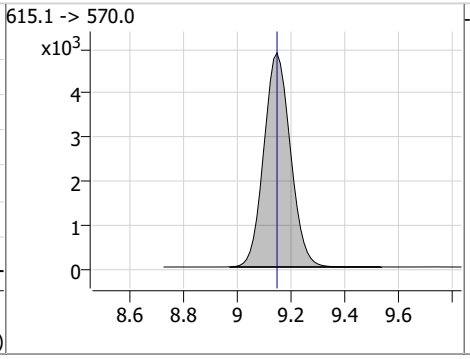


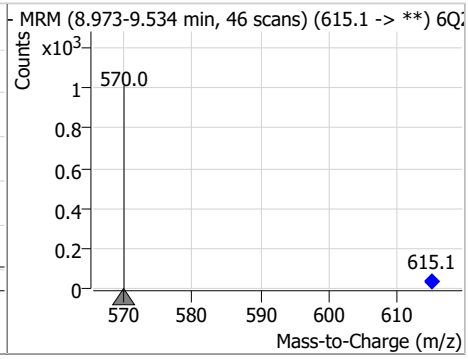




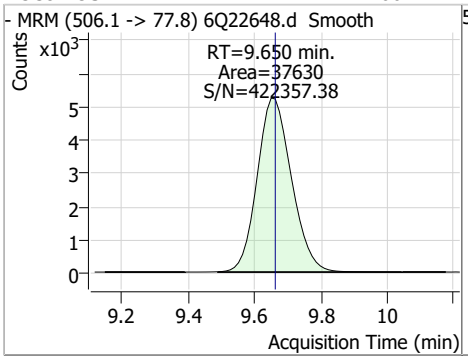
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	9.15	0.00	33459				

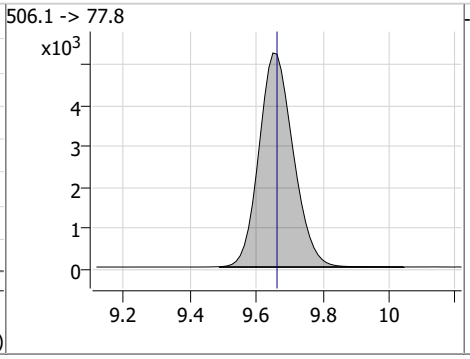


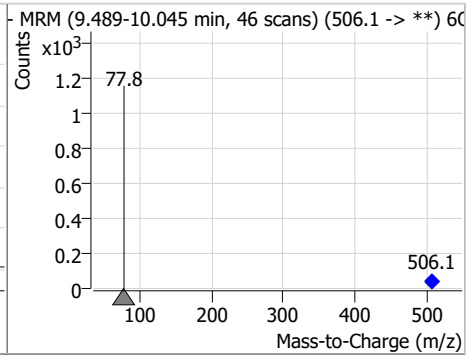




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.60	9.65	-0.01	37630				

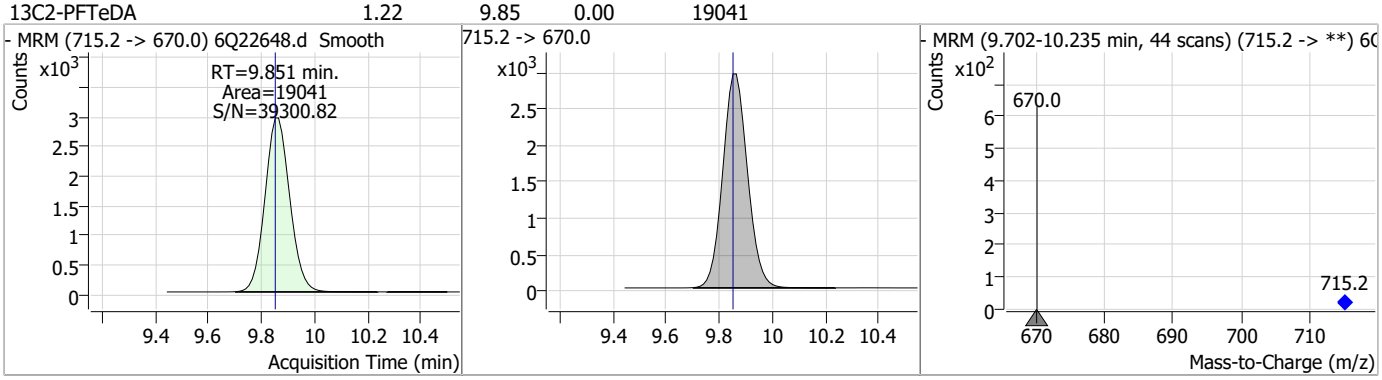




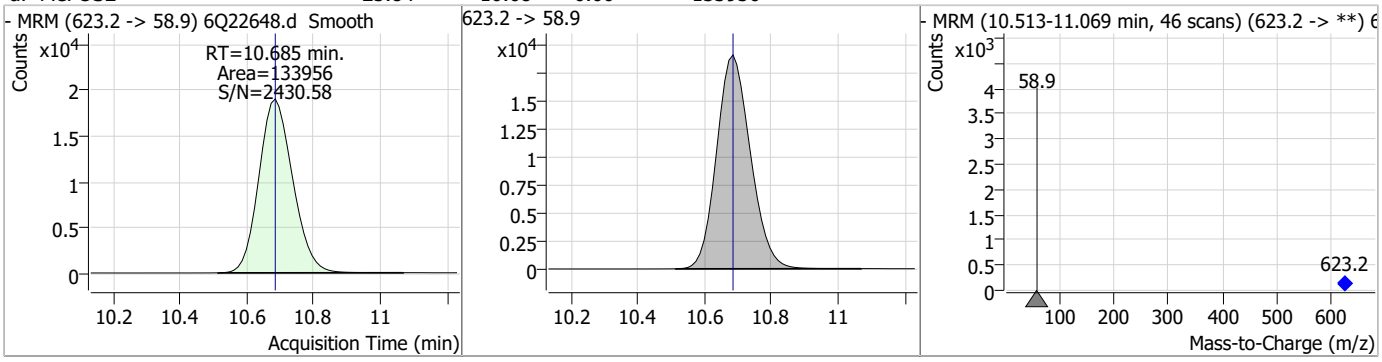


Perfluorinated Compounds by LC/MS/MS

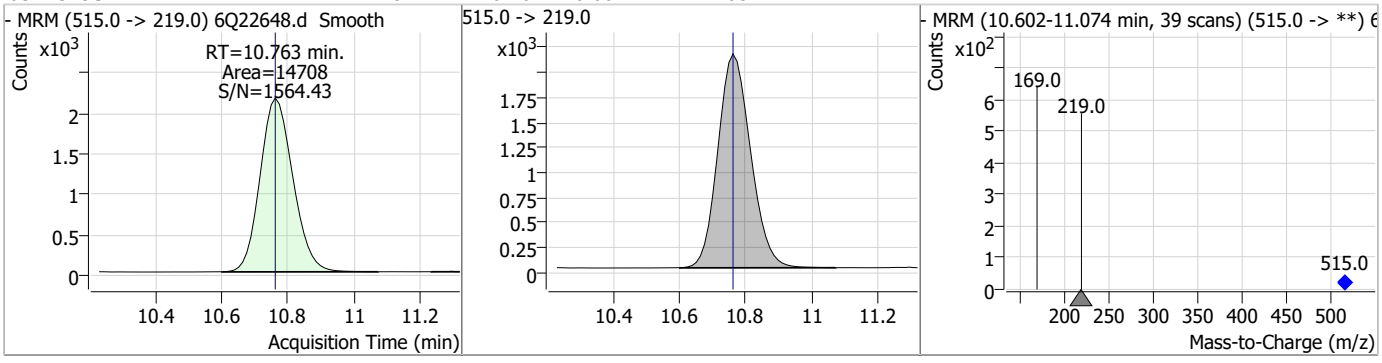
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.85	0.00	19041				



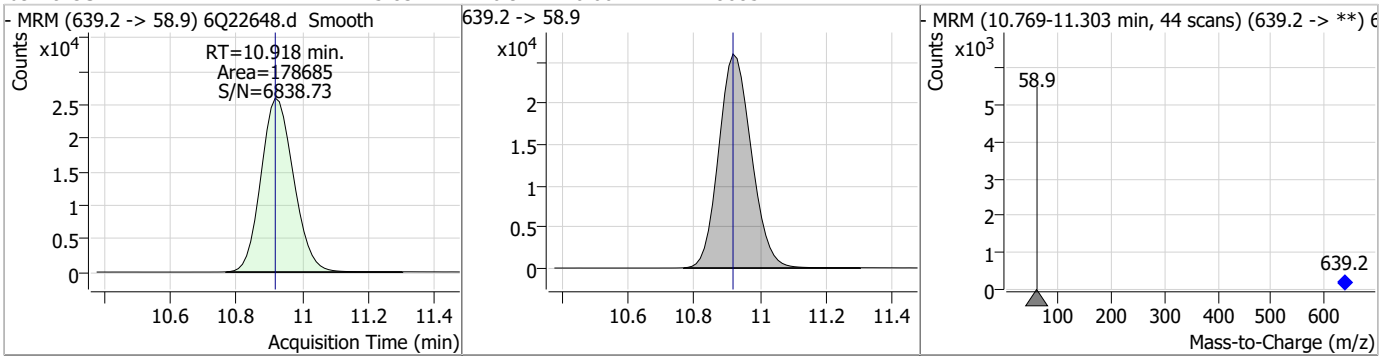
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.84	10.68	0.00	133956				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.48	10.76	0.00	14708				

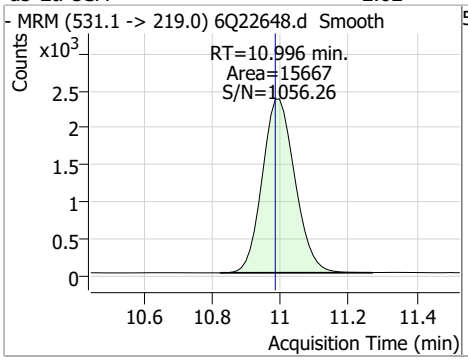


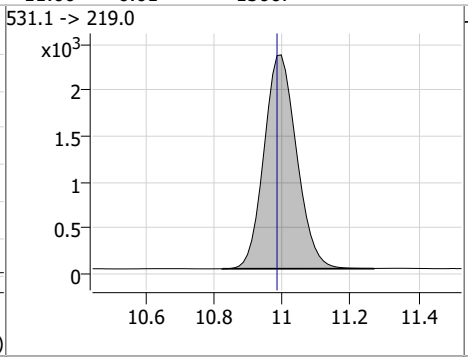
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.83	10.92	0.00	178685				

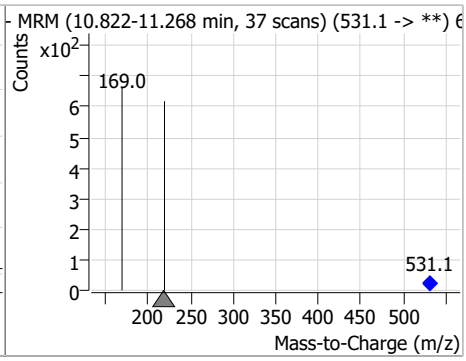


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.62	11.00	0.01	15667				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22663.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 7:07:36 PM
Sample Name : iccb
Vial : P1-A1
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	196312	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	62493	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	65127	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	67128	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	106537	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	49216	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	28399	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	35944	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	33208	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	18549	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	36718	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	24528	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15707	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14987	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3609	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5098	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	4904	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	35893	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42000	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	33067	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	132272	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	185018	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	15893	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14993	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	20420	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	82681	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11657	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	110857	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38404	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	60110	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	66105	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3609	5.18	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5098	5.07	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4904	4.98	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C2-PFDoDA	9.148	615.1 -> 570.0	33208	1.28	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18549	1.24	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFBS	5.610	302.1 -> 79.9	24528	2.48	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFHxS	7.355	402.1 -> 79.9	15707	2.45	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 = 98.1%	
13C4-PFBA	3.010	216.8 -> 171.9	196312	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.608	367.1 -> 322.0	67128	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFHxA	5.668	318.0 -> 273.0	65127	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C5-PFPeA	4.447	268.3 -> 223.0	62493	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	8.250	519.1 -> 474.1	28399	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C7-PFUnDA	8.717	570.0 -> 525.1	35944	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-FOSA	9.662	506.1 -> 77.8	36718	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C8-PFOA	7.239	421.1 -> 376.0	106537	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOS	8.414	507.1 -> 79.9	14987	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C9-PFNA	7.770	472.1 -> 427.0	49216	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSAA	8.297	573.2 -> 419.0	35893	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	42000	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d3-MeFOSA	10.763	515.0 -> 219.0	14993	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSAA	8.492	589.2 -> 419.0	33067	4.85 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	132272	23.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
d9-EtFOSE	10.918	639.2 -> 58.9	185018	25.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSA	10.996	531.1 -> 219.0	15893	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	

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

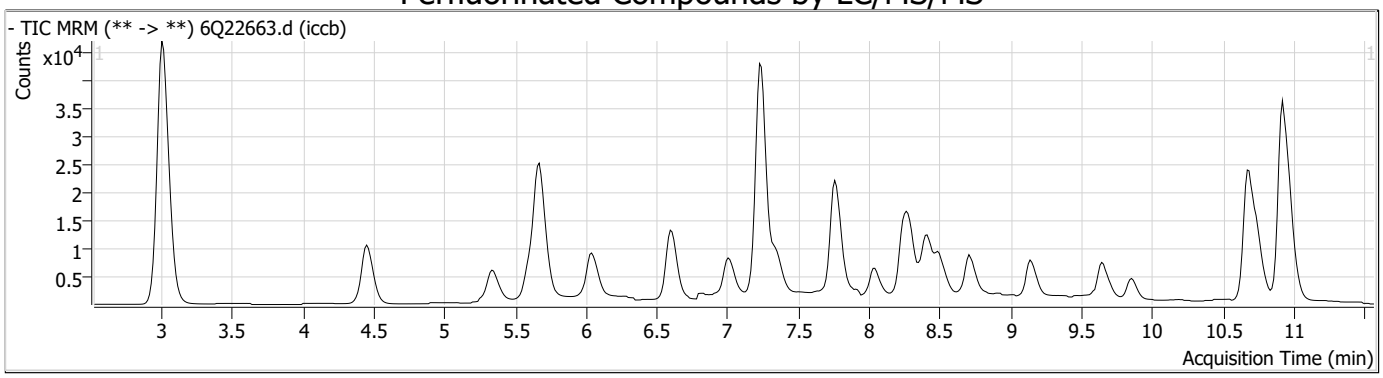
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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

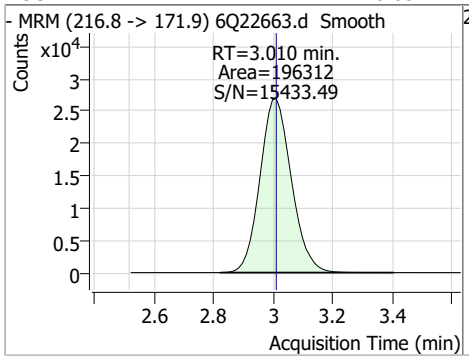
Perfluorinated Compounds by LC/MS/MS

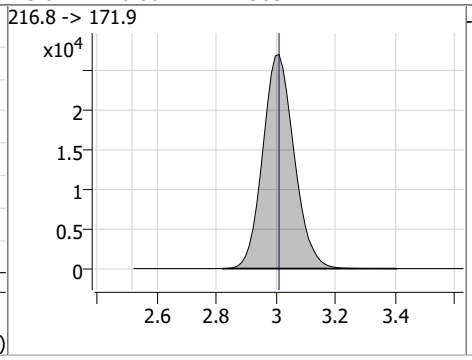
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

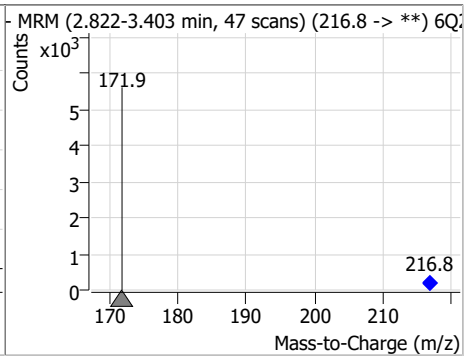
Perfluorinated Compounds by LC/MS/MS



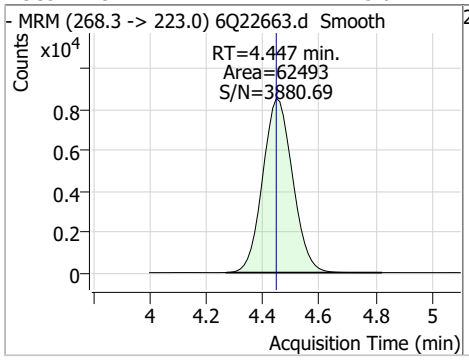
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.05	3.01	0.00	196312				

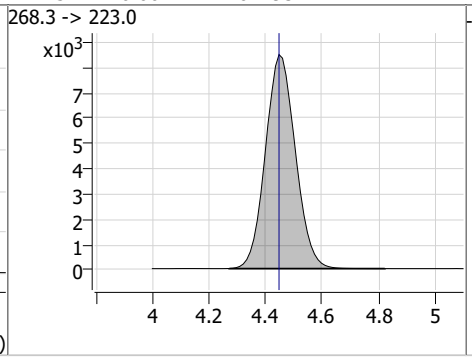


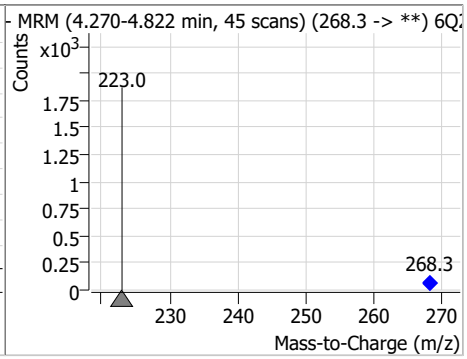




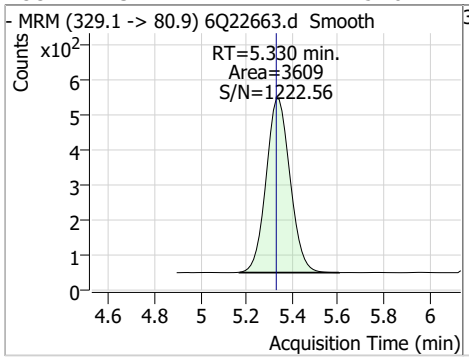
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.02	4.45	0.00	62493				

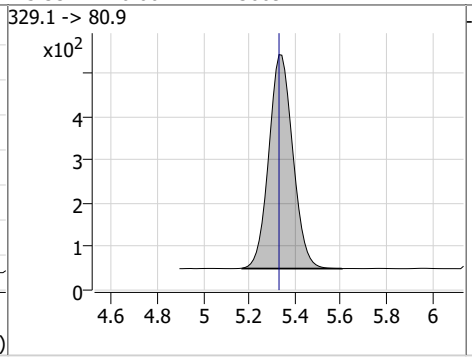


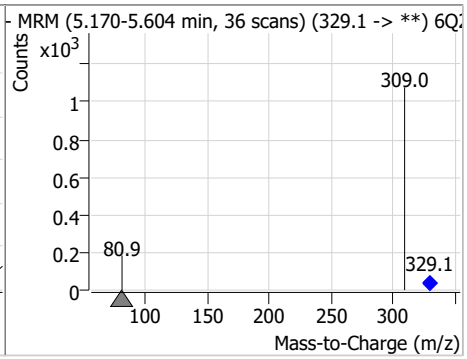




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.18	5.33	0.00	3609				

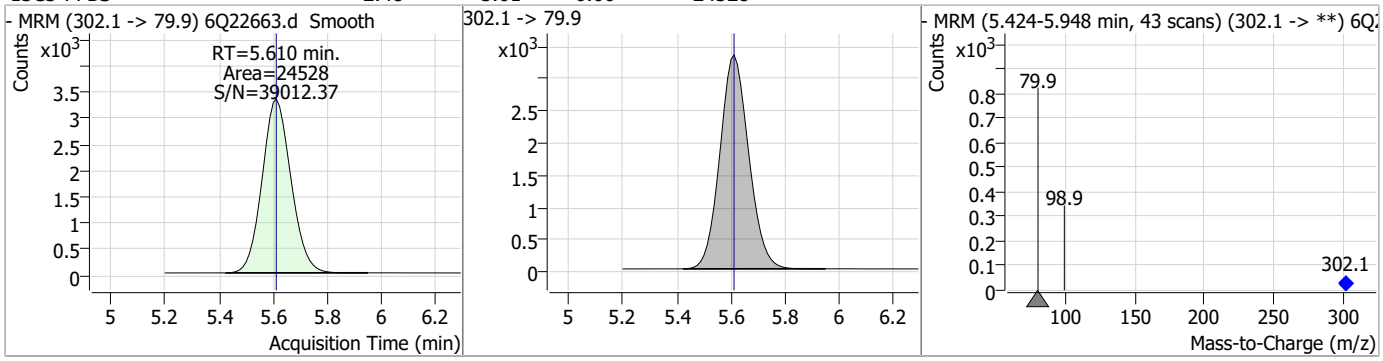




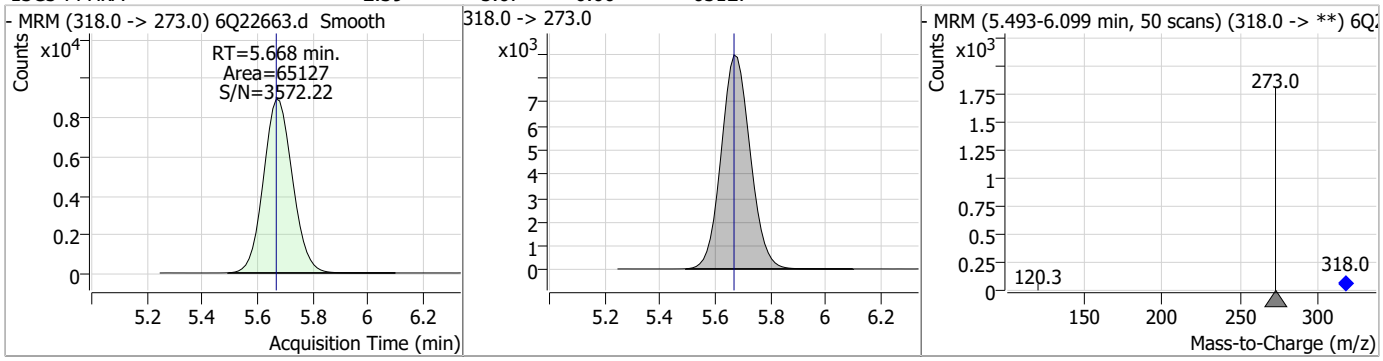


Perfluorinated Compounds by LC/MS/MS

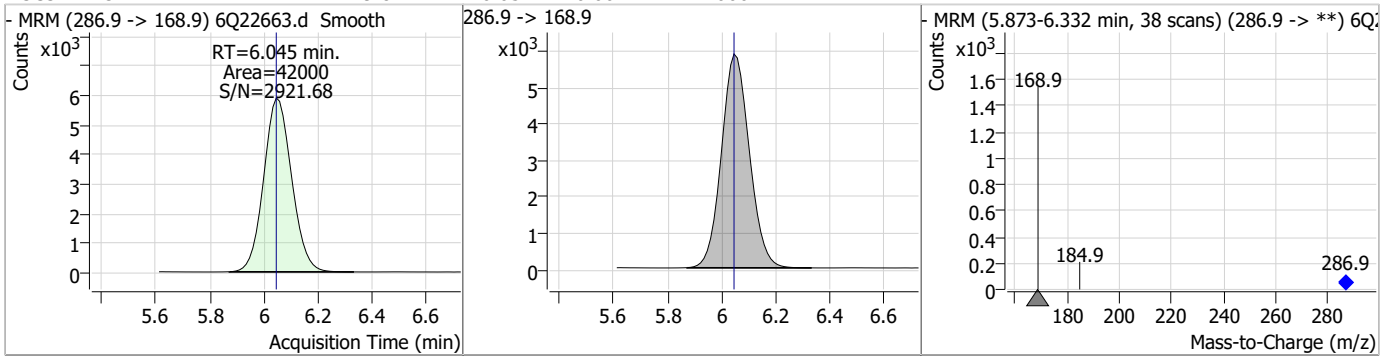
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.48	5.61	0.00	24528				



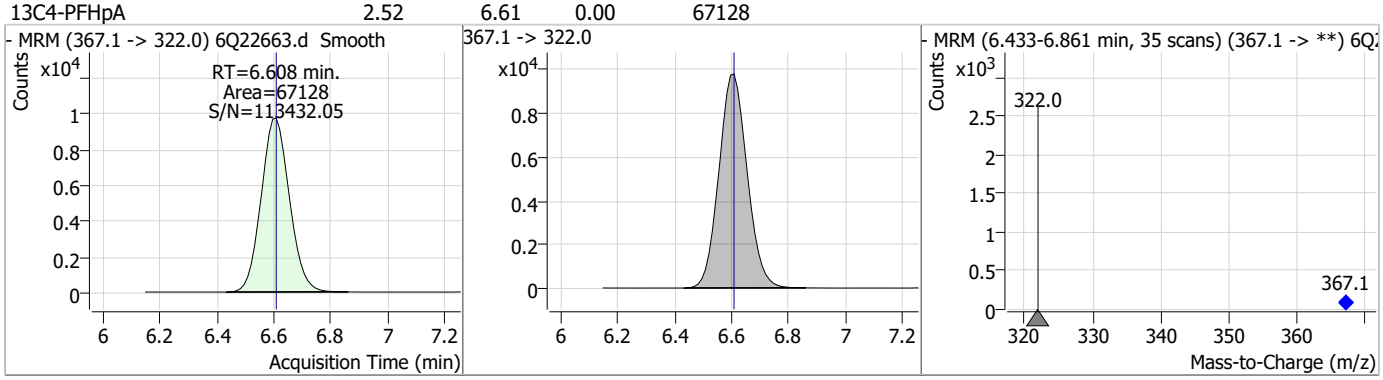
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.67	0.00	65127				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.82	6.05	0.00	42000				

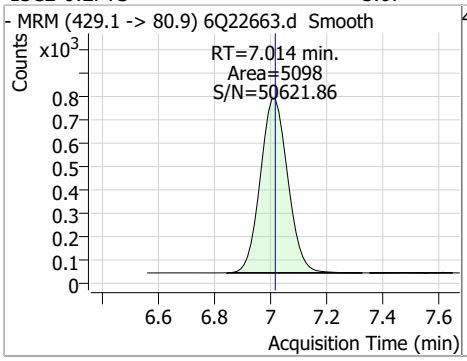


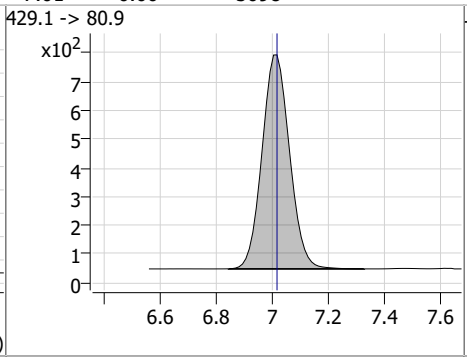
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.61	0.00	67128				

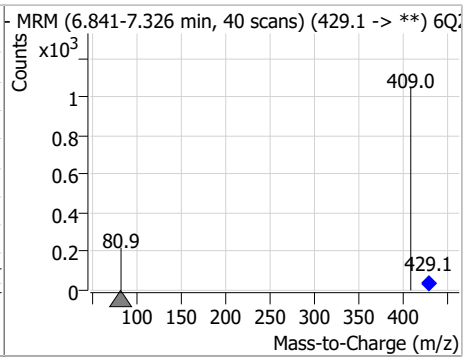


Perfluorinated Compounds by LC/MS/MS

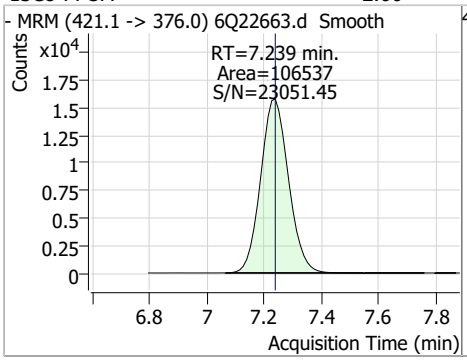
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.07	7.01	0.00	5098				

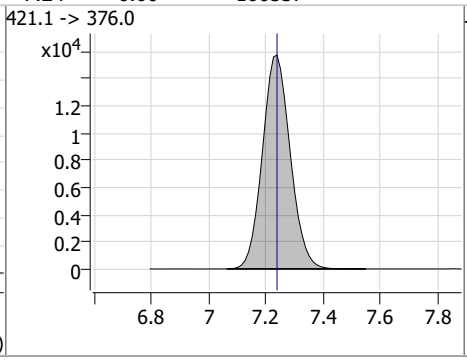


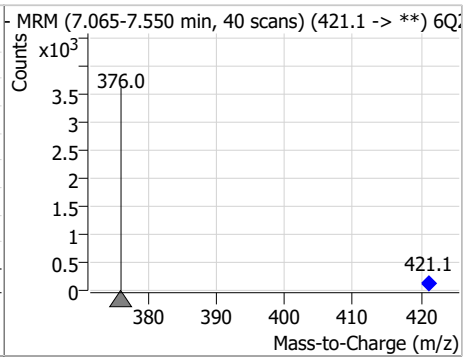




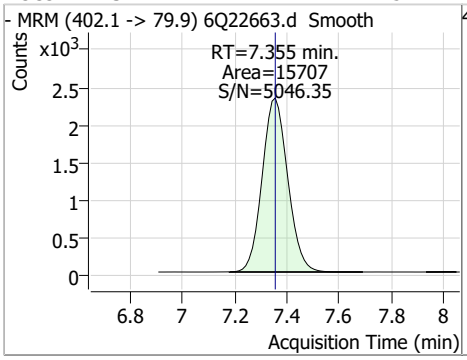
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.60	7.24	0.00	106537				

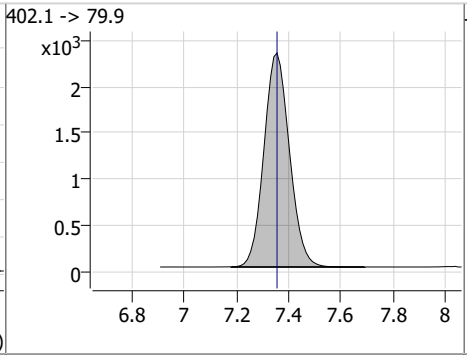


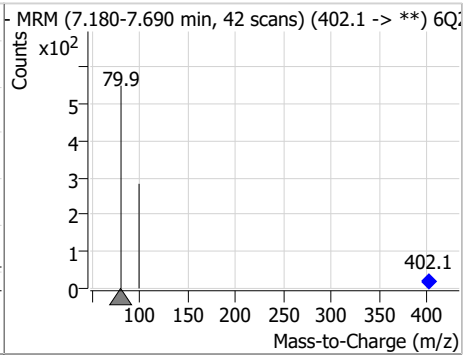




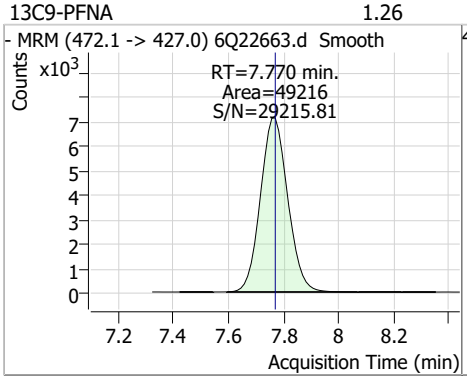
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.45	7.35	0.00	15707				

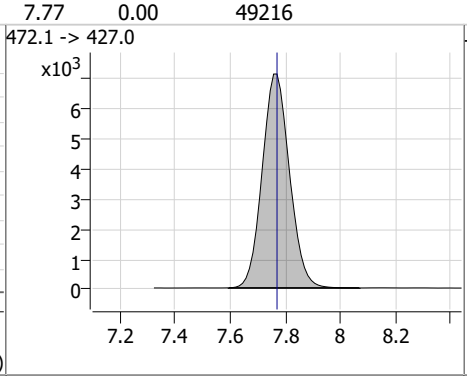


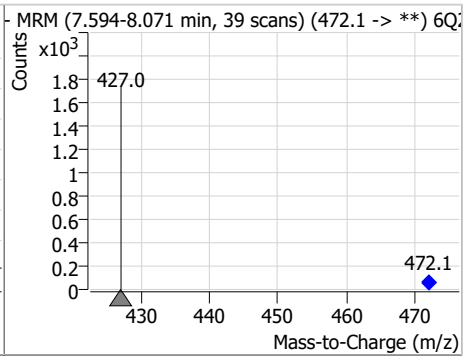




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.77	0.00	49216				

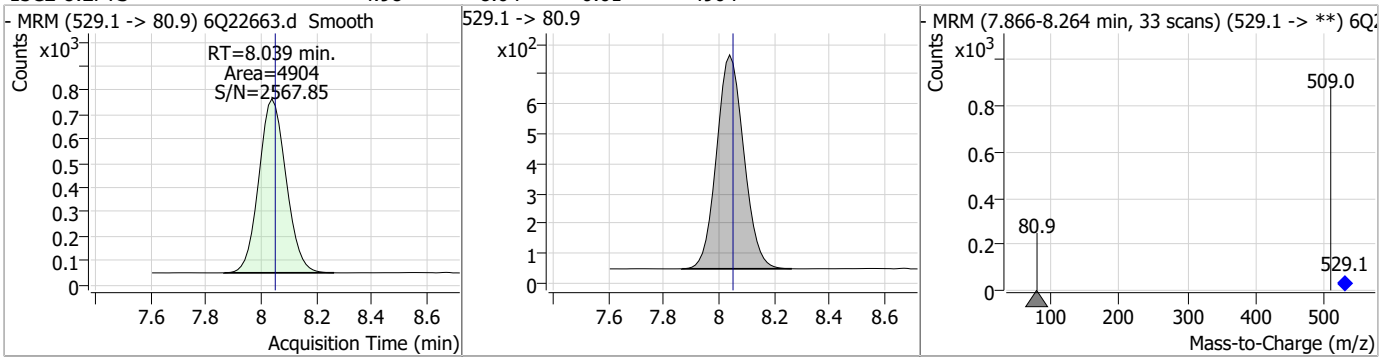




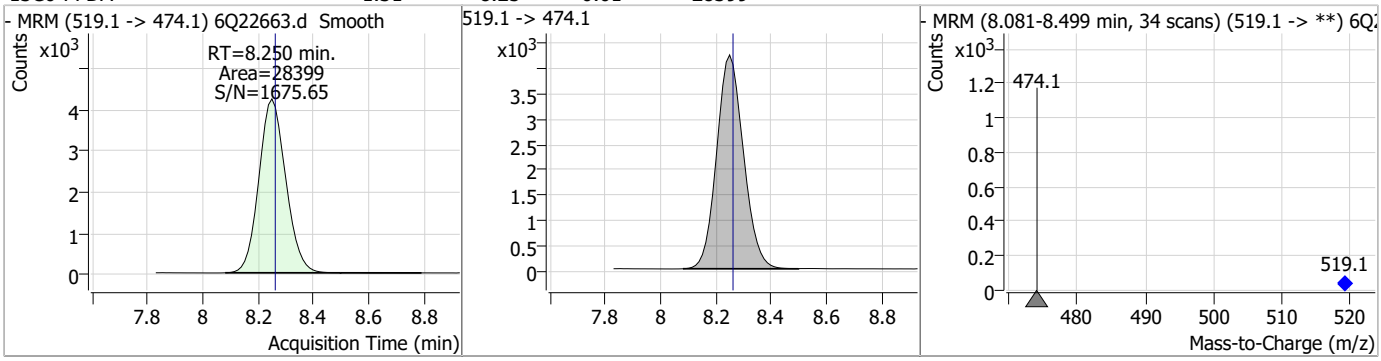


Perfluorinated Compounds by LC/MS/MS

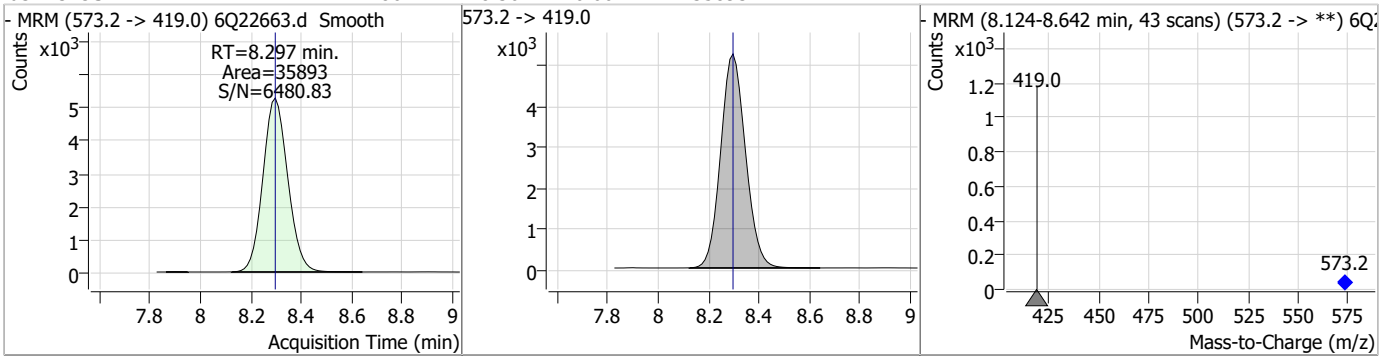
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.98	8.04	-0.01	4904				



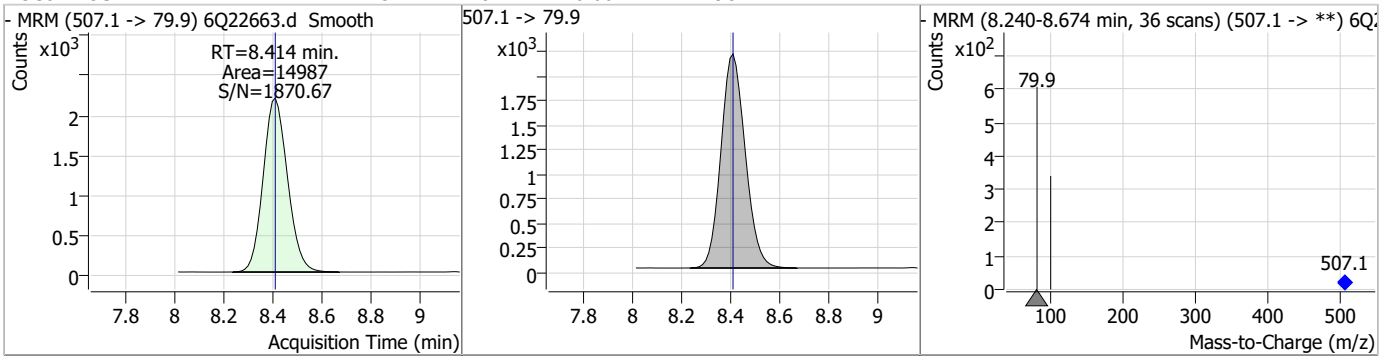
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.25	-0.01	28399				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.86	8.30	0.00	35893				

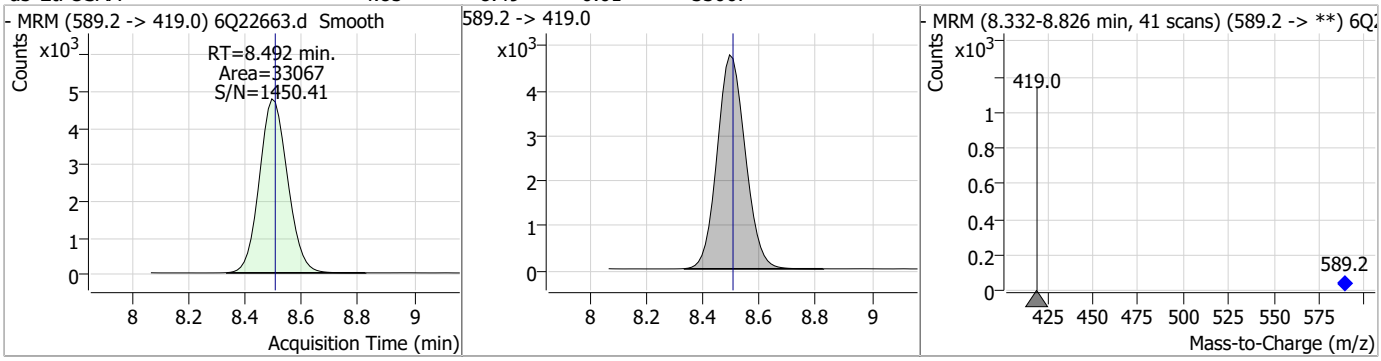


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.51	8.41	0.00	14987				

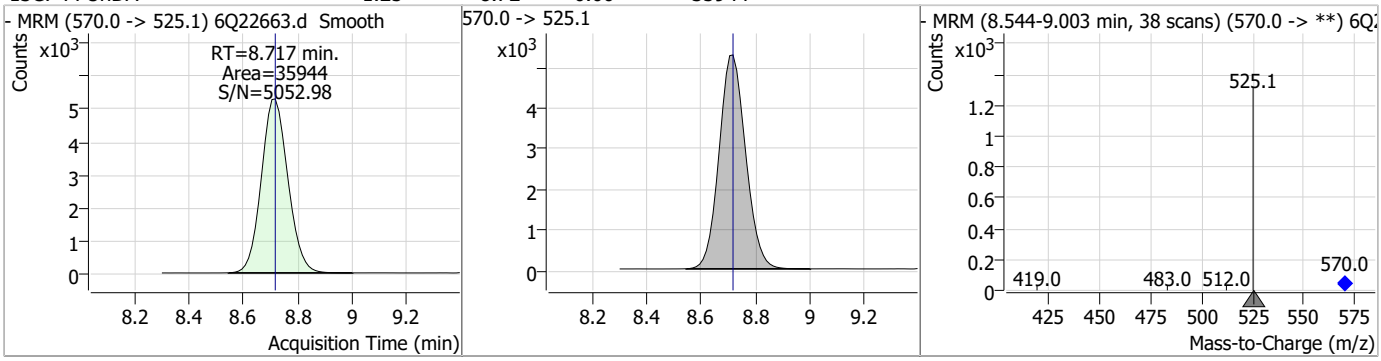


Perfluorinated Compounds by LC/MS/MS

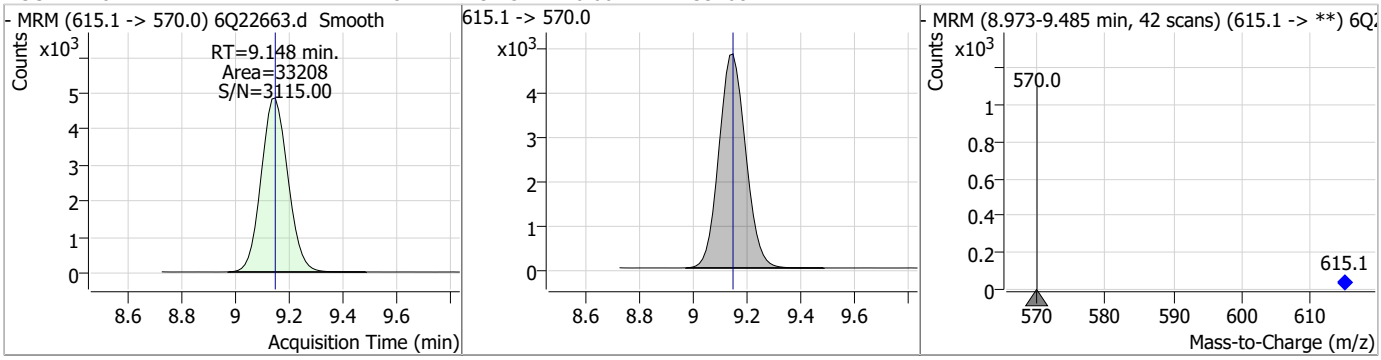
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.85	8.49	-0.01	33067				



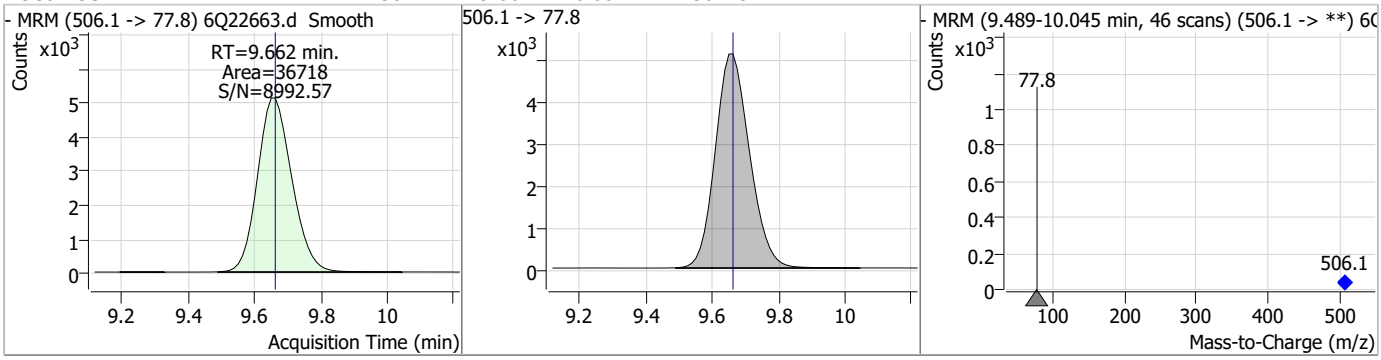
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.72	0.00	35944				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.15	0.00	33208				

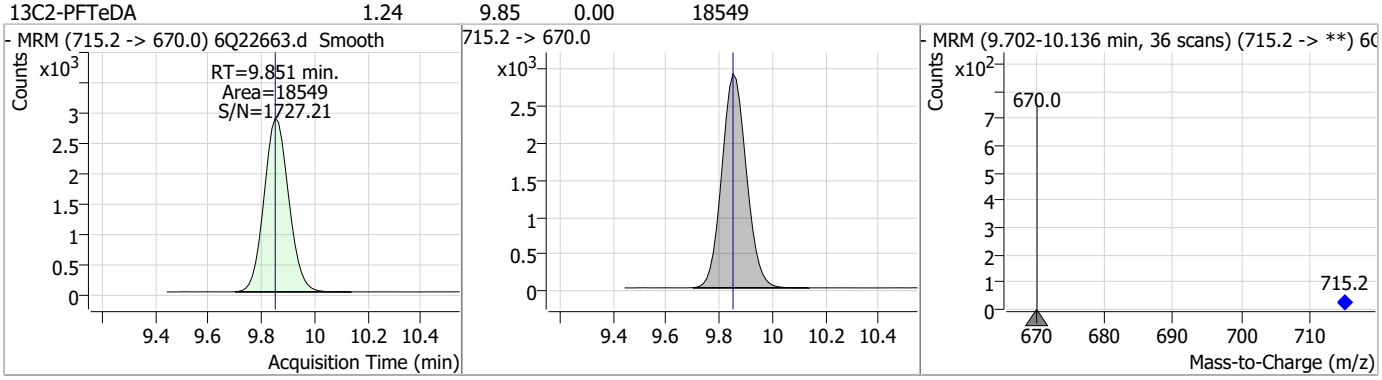


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.38	9.66	0.00	36718				

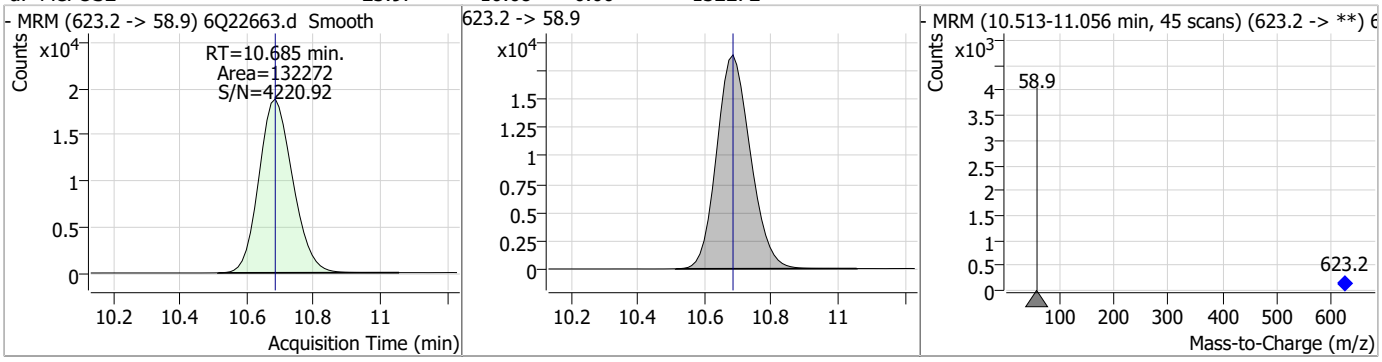


Perfluorinated Compounds by LC/MS/MS

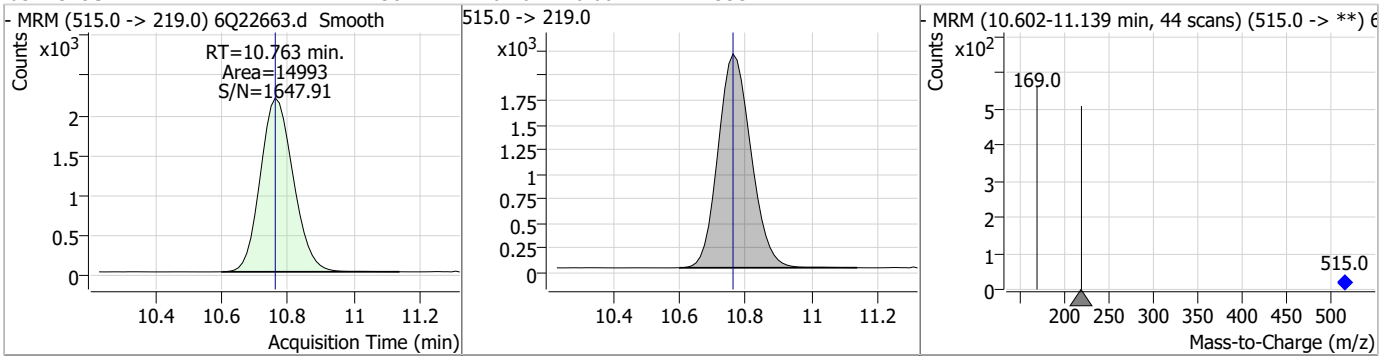
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.85	0.00	18549				



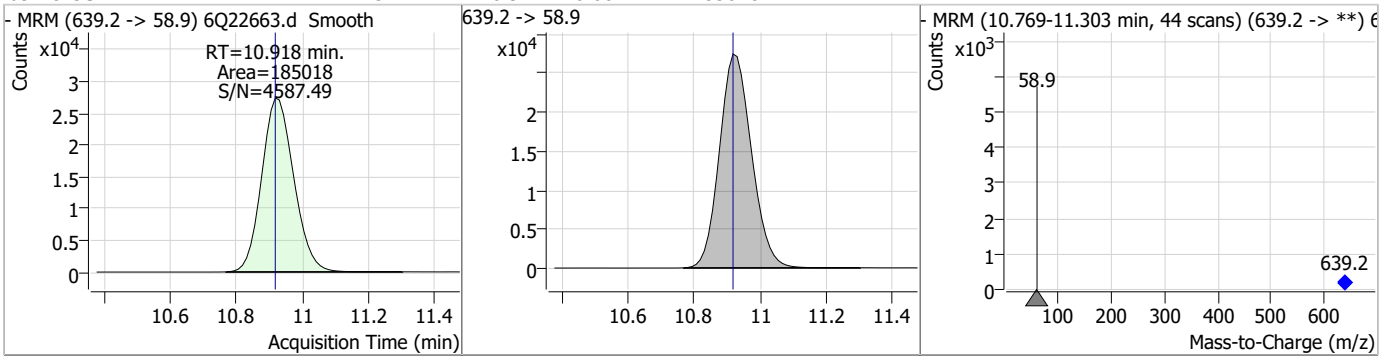
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.97	10.68	0.00	132272				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.38	10.76	0.00	14993				

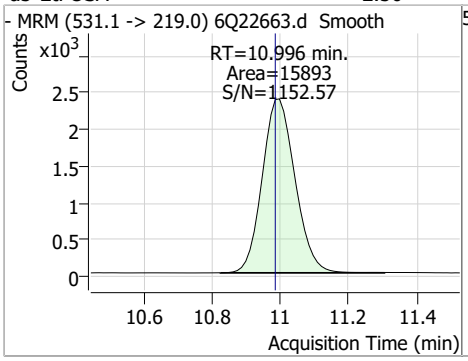


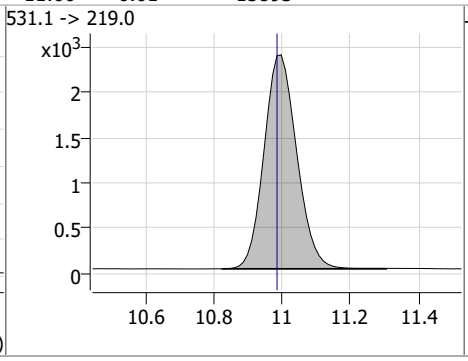
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.12	10.92	0.00	185018				

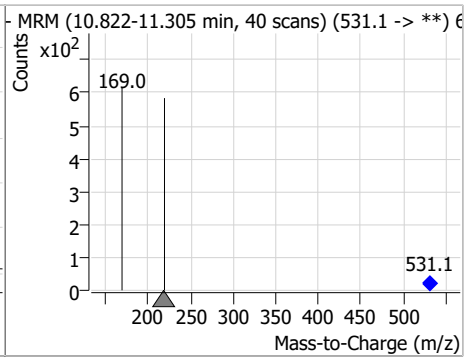


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	11.00	0.01	15893				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22737.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 12:48:32 PM
Sample Name : IBLK
Vial : P1-A1
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	200262	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	64115	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	68253	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	70503	2.50	µg/L	-0.012
M8-PFOA	7.226	421.1 -> 376.0	107631	2.50	µg/L	-0.012
M9-PFNA	7.758	472.1 -> 427.0	47873	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	28944	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	36682	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	33044	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	19066	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	37856	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	25593	2.50	µg/L	0.000
M3-PFHxS	7.342	402.1 -> 79.9	16428	2.50	µg/L	-0.012
M8-PFOS	8.414	507.1 -> 79.9	14517	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3782	5.00	µg/L	0.012
M2-6:2FTS	7.001	429.1 -> 80.9	5475	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	5431	5.00	µg/L	-0.012
M3-MeFOSAA	8.284	573.2 -> 419.0	36185	5.00	µg/L	-0.012
M3-HFPO-DA	6.045	286.9 -> 168.9	43792	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	35082	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	132799	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	181608	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	16151	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	15416	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19985	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	84562	5.00	µg/L	0.000
18O2-PFHxS	7.341	403.0 -> 83.9	12420	2.50	µg/L	-0.012
13C4-PFOA	7.227	417.1 -> 372.0	117442	2.50	µg/L	-0.012
13C2-PFDA	8.251	515.1 -> 470.1	39937	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	61829	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	67440	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3782	5.10	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-6:2FTS	7.001	429.1 -> 80.9	5475	5.11	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5431	5.18	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFDoDA	9.135	615.1 -> 570.0	33044	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFTeDA	9.851	715.2 -> 670.0	19066	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C3-PFBS	5.610	302.1 -> 79.9	25593	2.43	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C3-PFHxS	7.342	402.1 -> 79.9	16428	2.41	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 = 96.3%	
13C4-PFBA	3.010	216.8 -> 171.9	200262	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.596	367.1 -> 322.0	70503	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.668	318.0 -> 273.0	68253	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFPeA	4.447	268.3 -> 223.0	64115	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.250	519.1 -> 474.1	28944	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C7-PFUnDA	8.705	570.0 -> 525.1	36682	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-FOSA	9.650	506.1 -> 77.8	37856	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOA	7.226	421.1 -> 376.0	107631	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOS	8.414	507.1 -> 79.9	14517	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C9-PFNA	7.758	472.1 -> 427.0	47873	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.5%	
d3-MeFOSAA	8.284	573.2 -> 419.0	36185	5.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	43792	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
d3-MeFOSA	10.763	515.0 -> 219.0	15416	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
d5-EtFOSAA	8.492	589.2 -> 419.0	35082	5.26 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d7-MeFOSE	10.685	623.2 -> 58.9	132799	24.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d9-EtFOSE	10.918	639.2 -> 58.9	181608	25.19 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
d5-EtFOSA	10.996	531.1 -> 219.0	16151	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
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	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

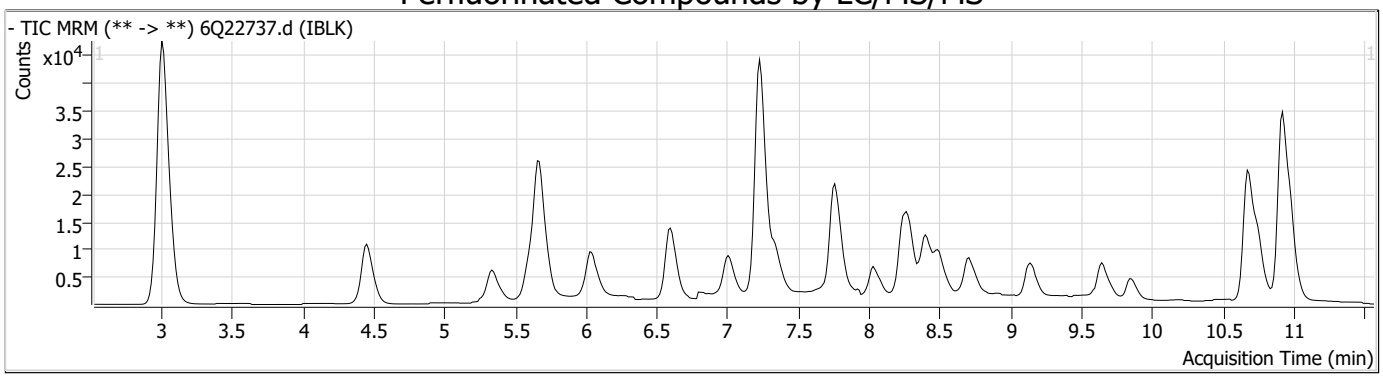
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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

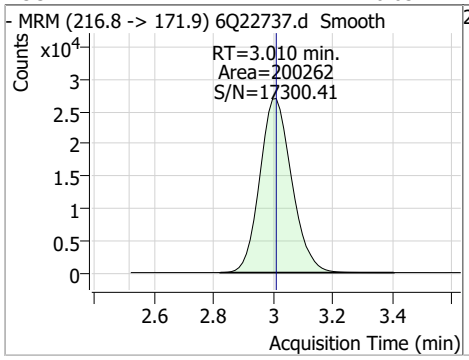
Perfluorinated Compounds by LC/MS/MS

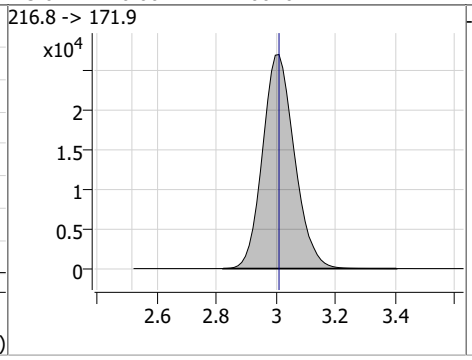
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

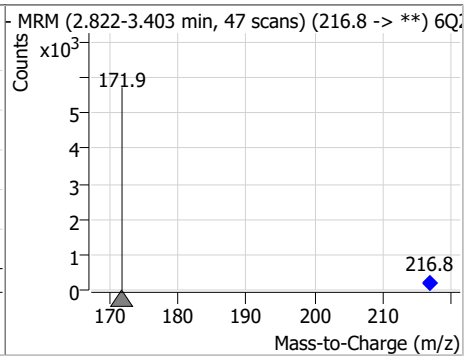
Perfluorinated Compounds by LC/MS/MS



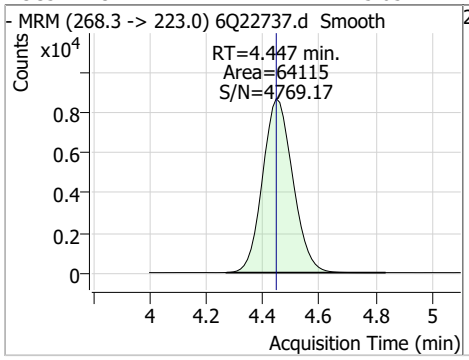
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.03	3.01	0.00	200262				

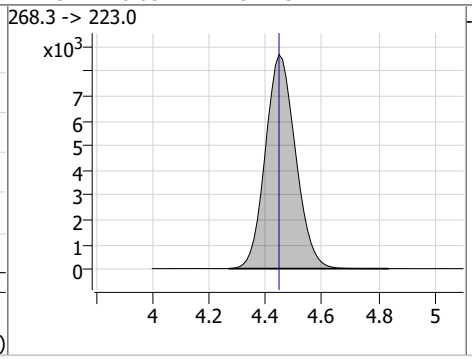


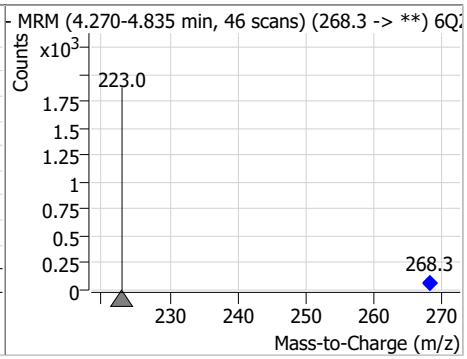




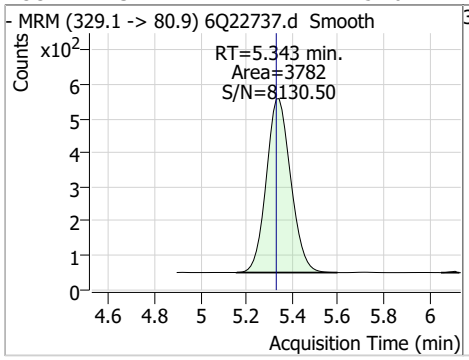
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.45	0.00	64115				

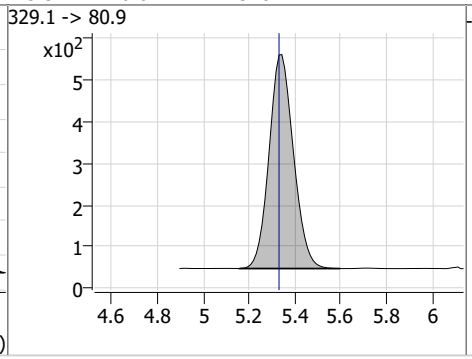


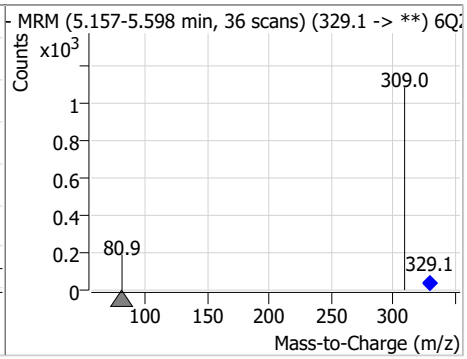




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.10	5.34	0.01	3782				

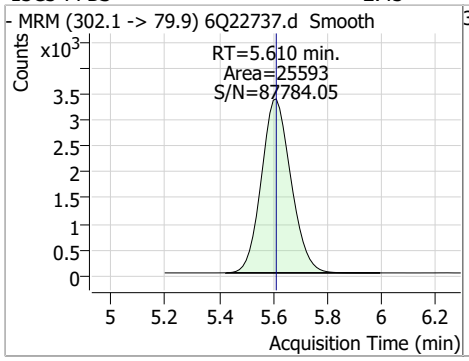


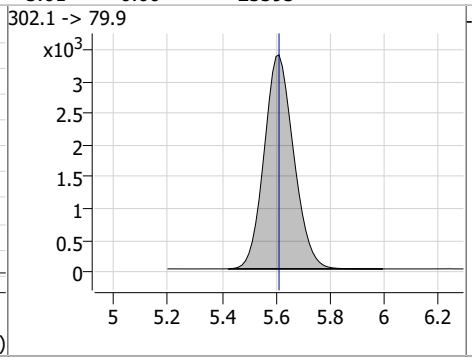


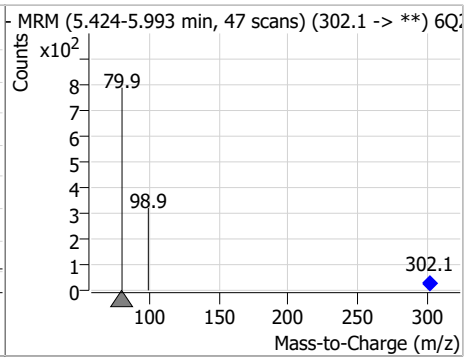


Perfluorinated Compounds by LC/MS/MS

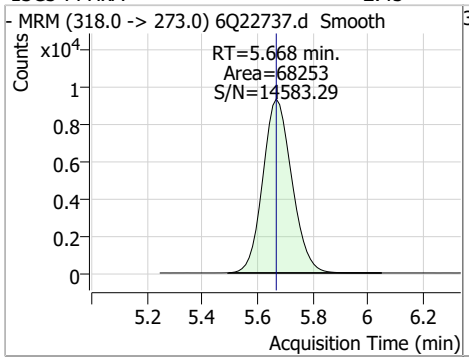
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.43	5.61	0.00	25593				

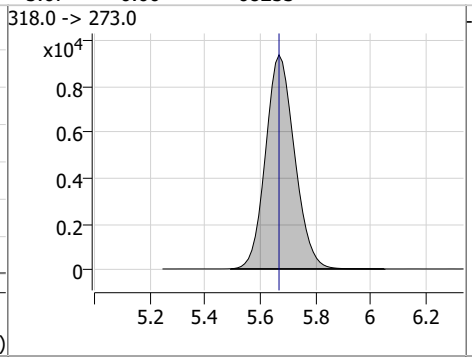


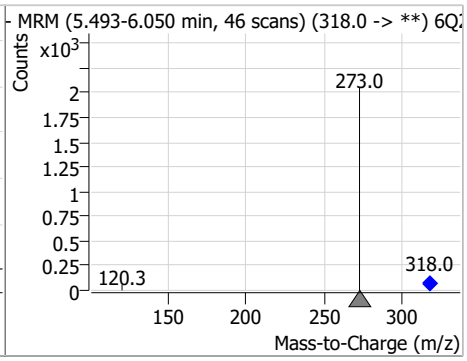




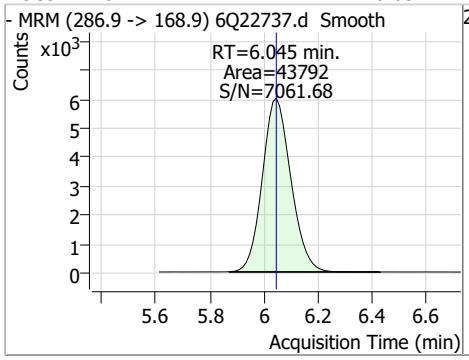
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.45	5.67	0.00	68253				

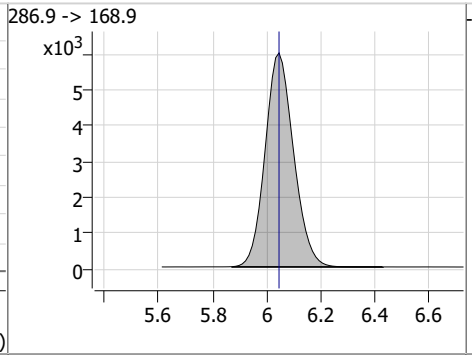


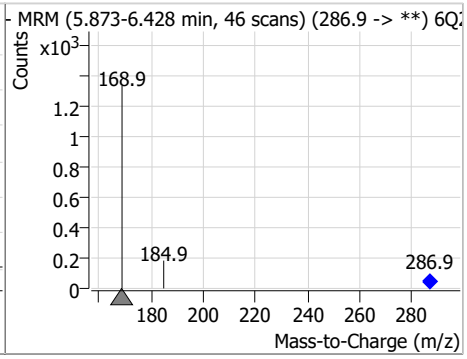




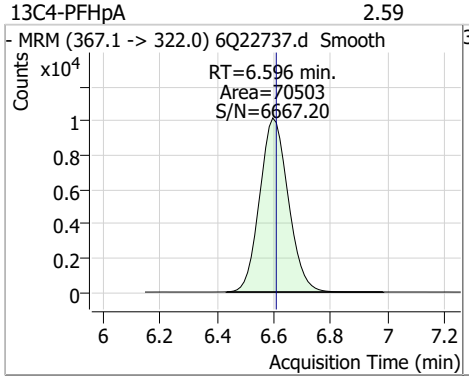
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.03	6.05	0.00	43792				

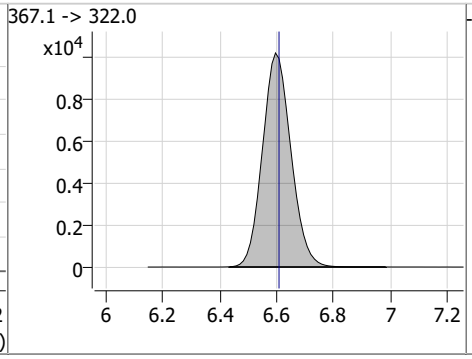


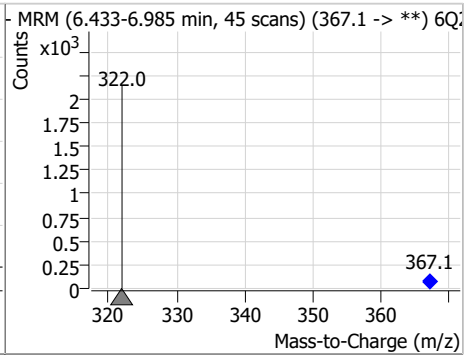




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.60	-0.01	70503				

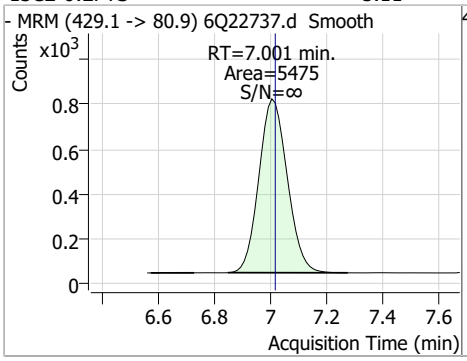


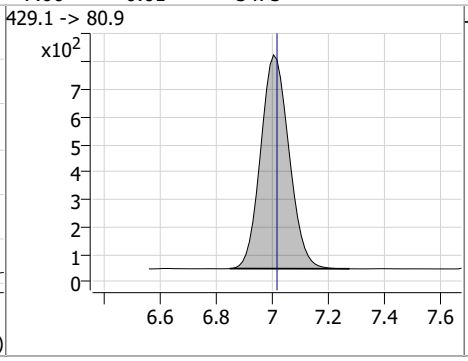


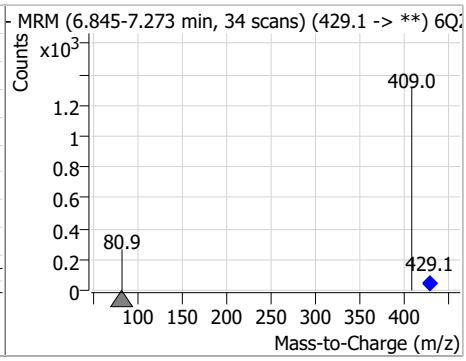


Perfluorinated Compounds by LC/MS/MS

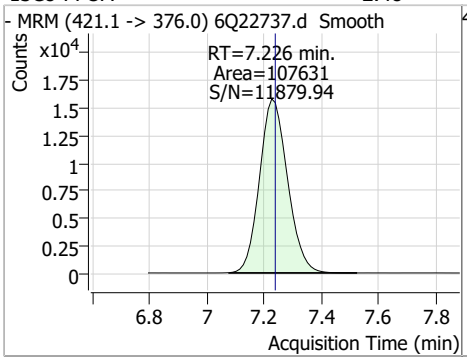
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.11	7.00	-0.01	5475				

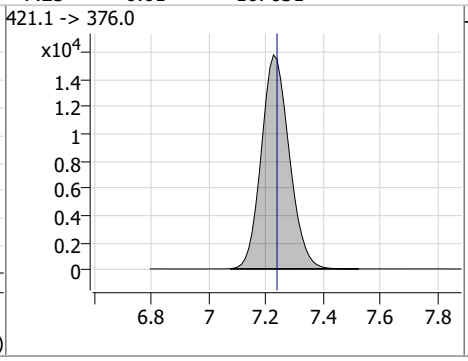


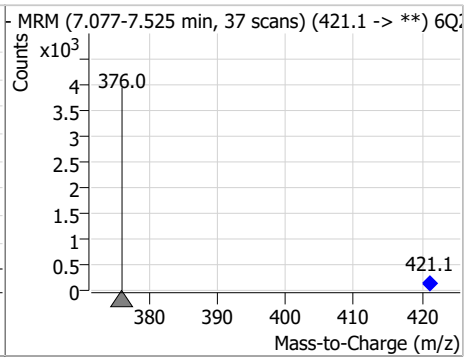




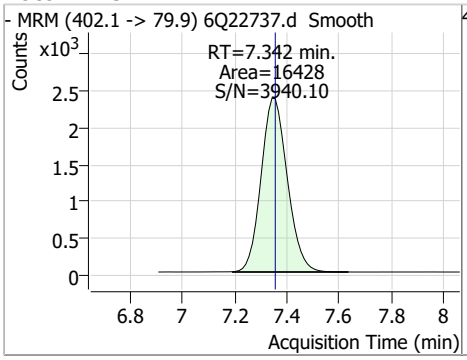
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	7.23	-0.01	107631				

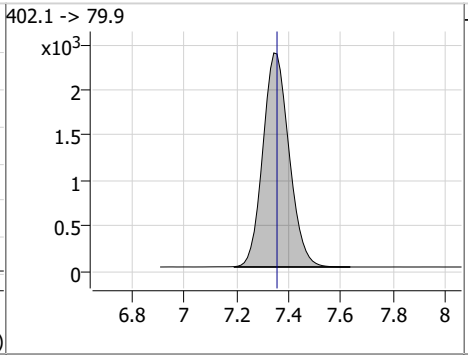


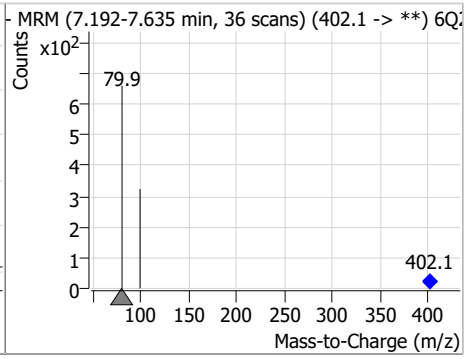




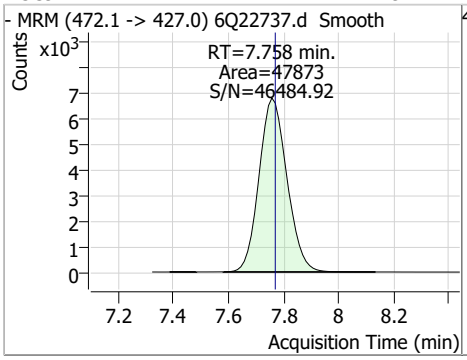
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.41	7.34	-0.01	16428				

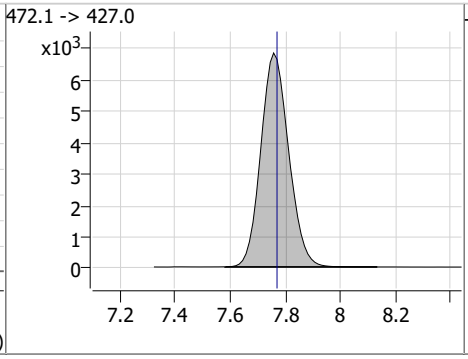


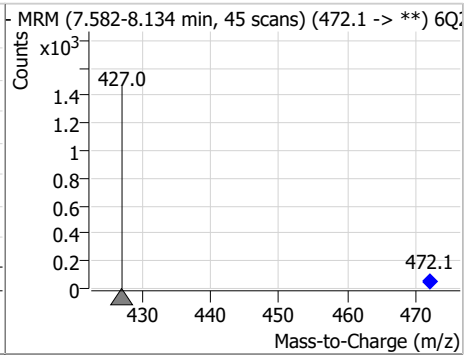




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.19	7.76	-0.01	47873				

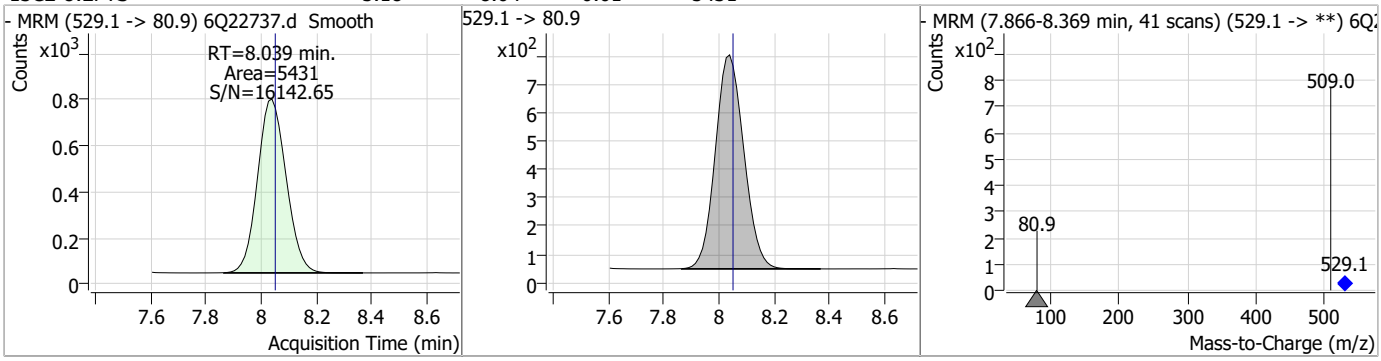




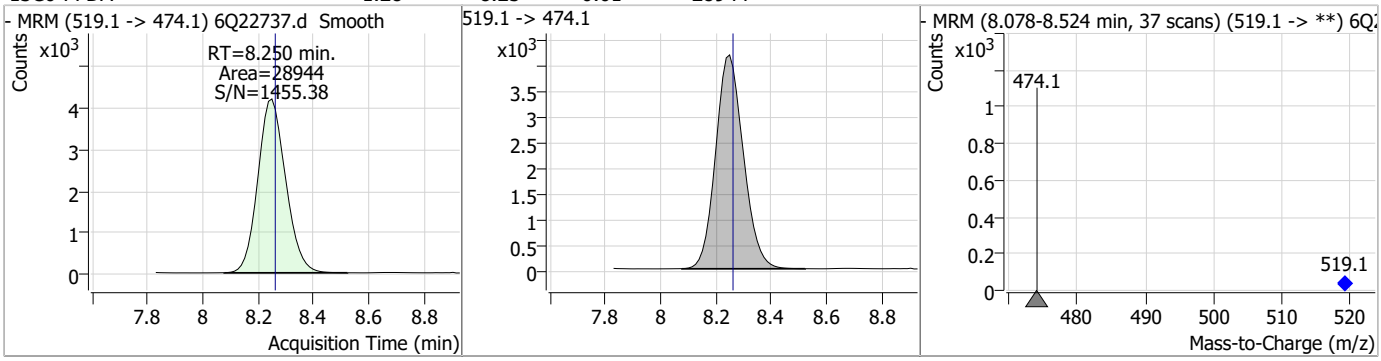


Perfluorinated Compounds by LC/MS/MS

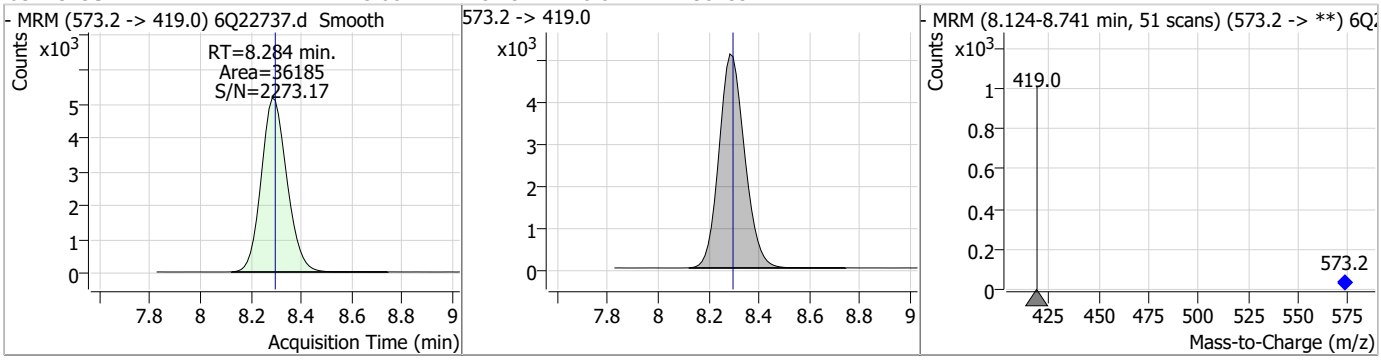
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.18	8.04	-0.01	5431				



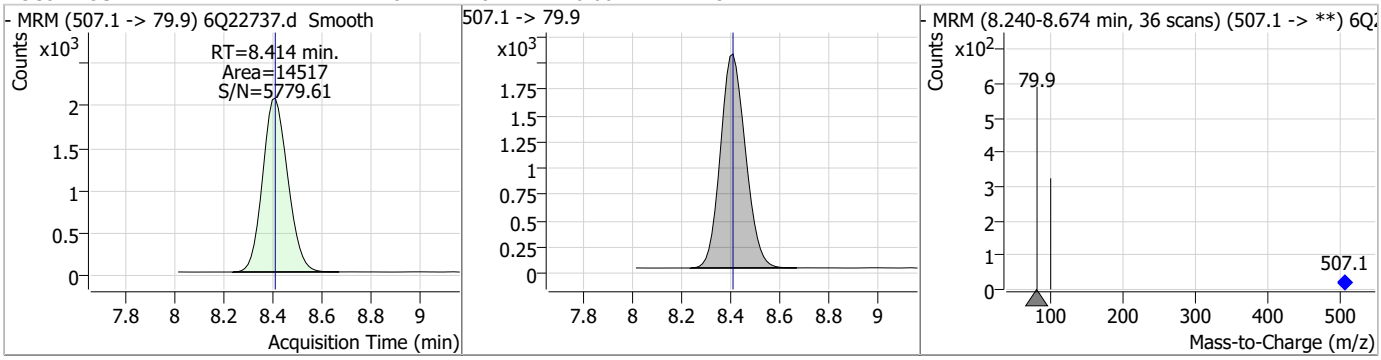
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.25	-0.01	28944				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.00	8.28	-0.01	36185				

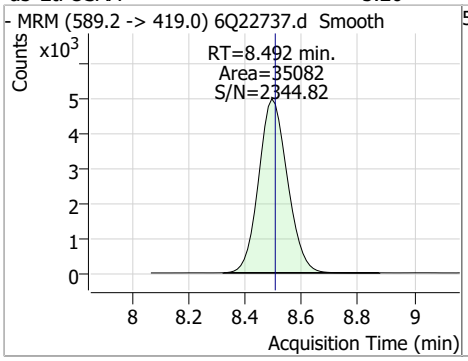


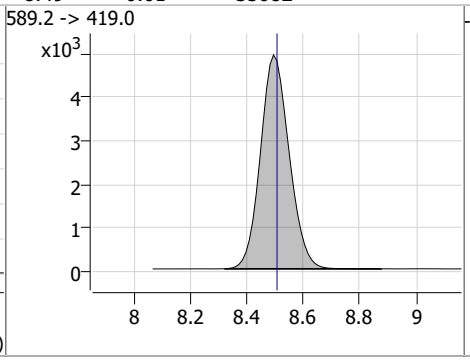
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.48	8.41	0.00	14517				

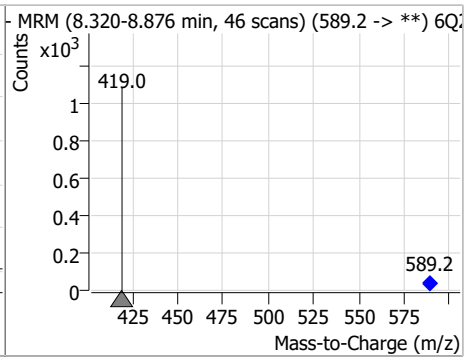


Perfluorinated Compounds by LC/MS/MS

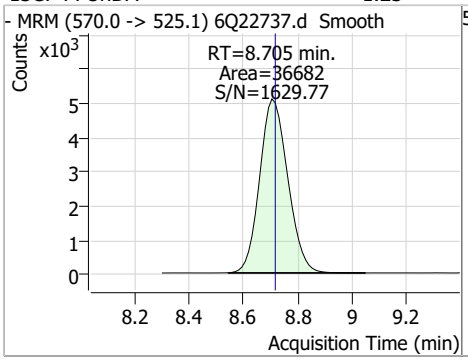
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.26	8.49	-0.01	35082				

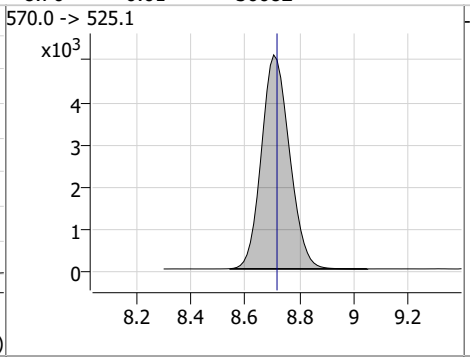


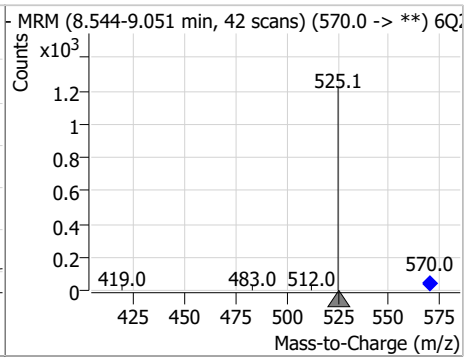




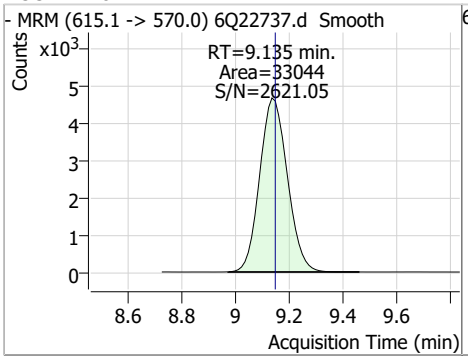
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	8.70	-0.01	36682				

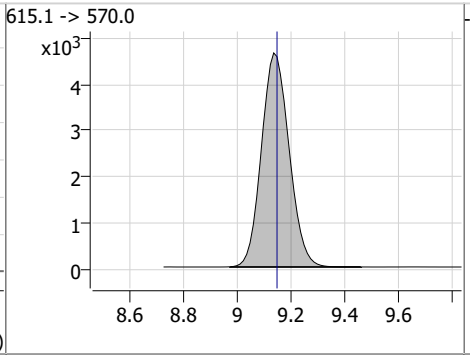


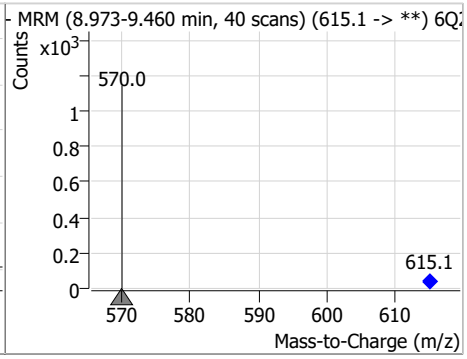




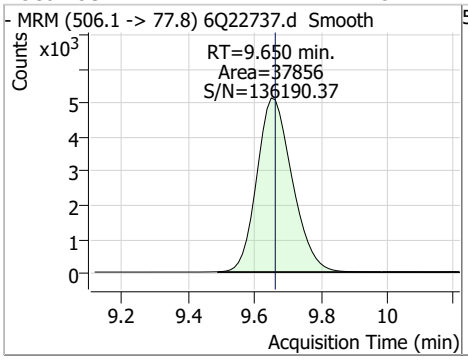
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.14	-0.01	33044				

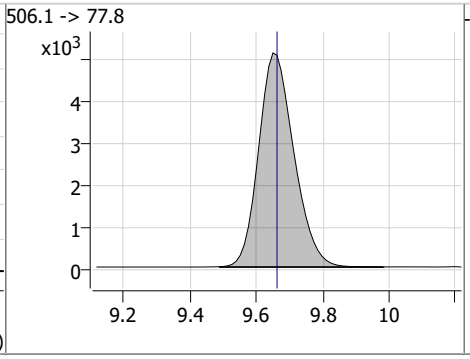


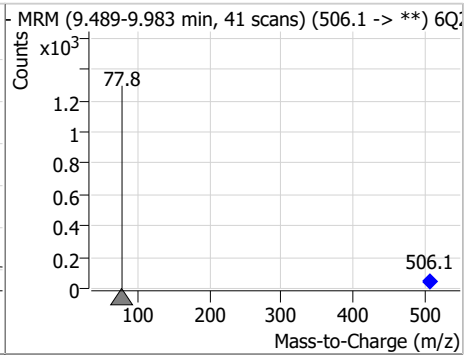




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	9.65	-0.01	37856				

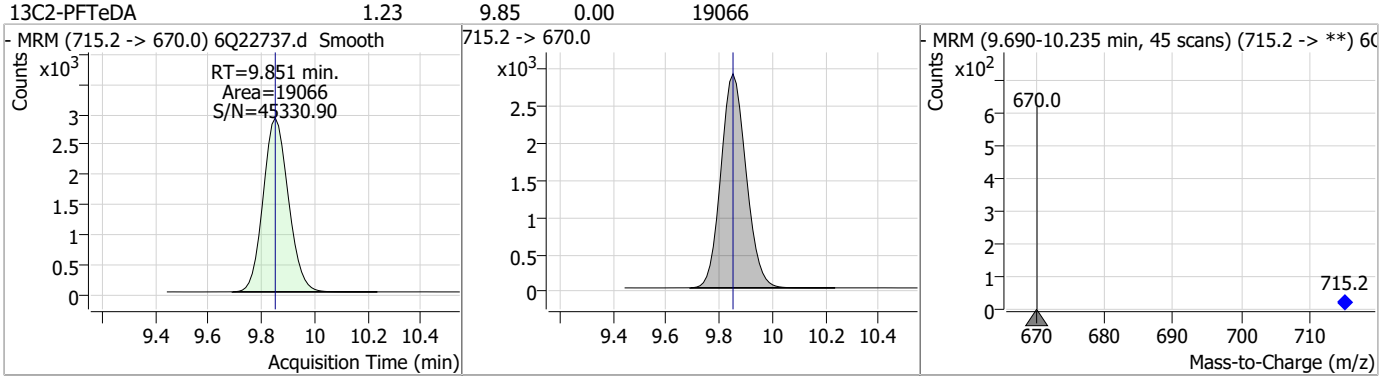




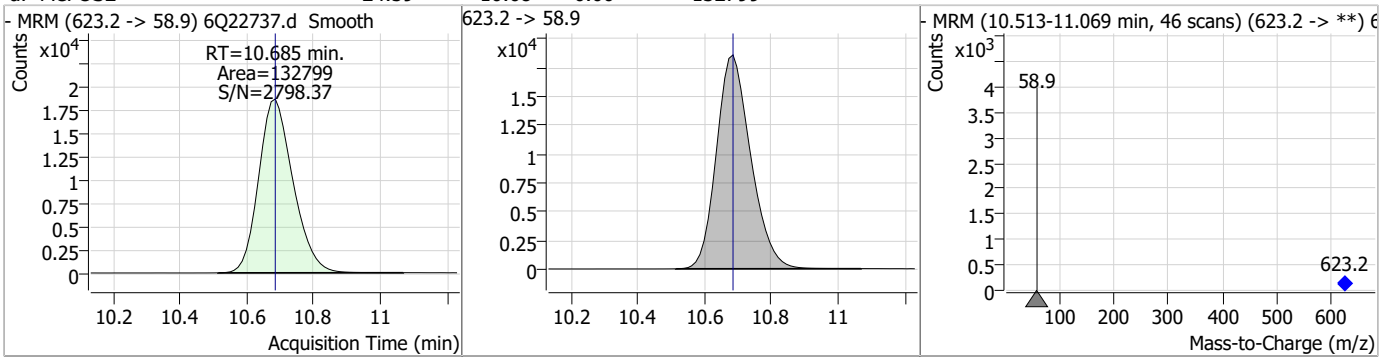


Perfluorinated Compounds by LC/MS/MS

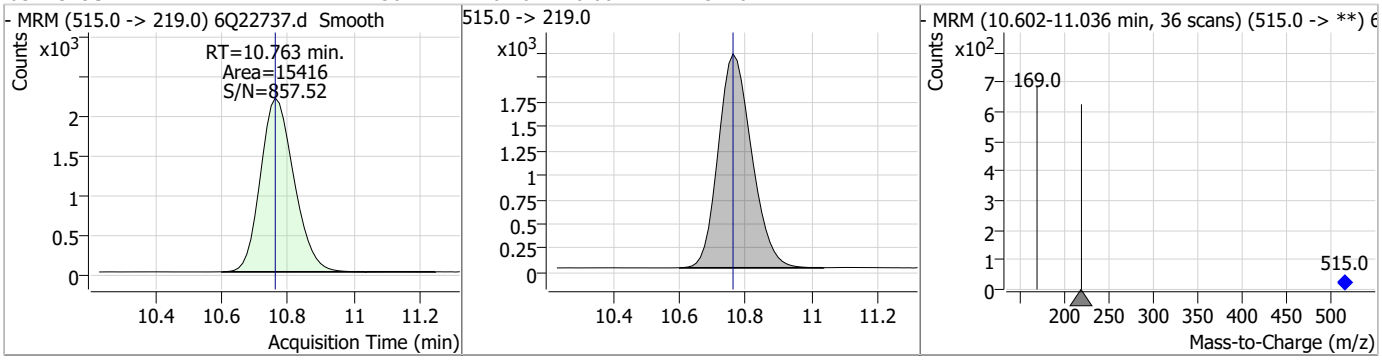
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.85	0.00	19066				



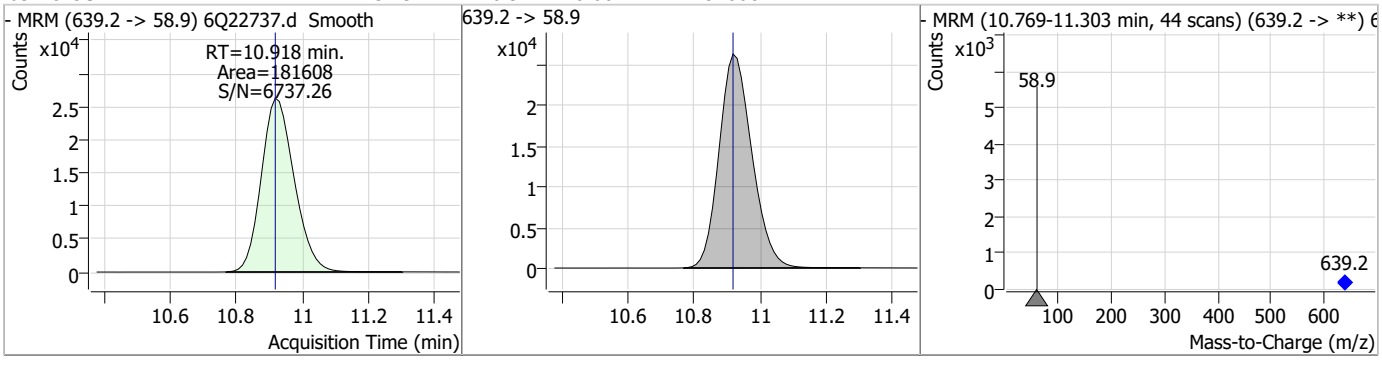
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.59	10.68	0.00	132799				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	10.76	0.00	15416				

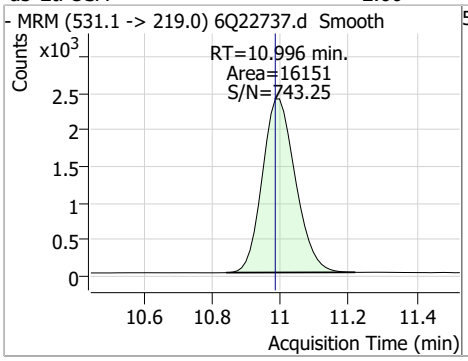


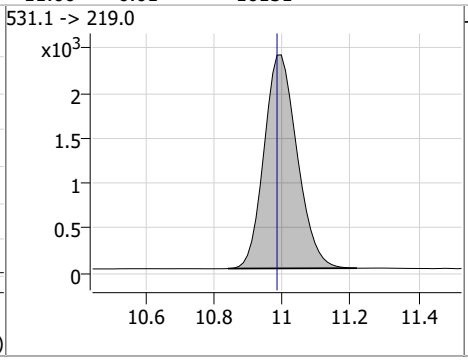
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.19	10.92	0.00	181608				

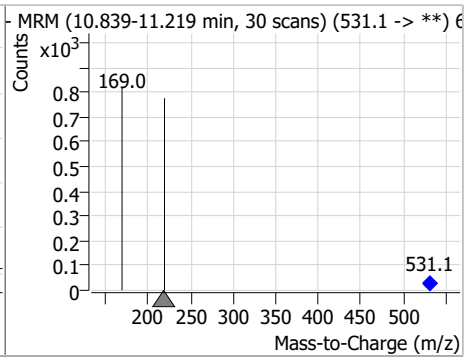


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	11.00	0.01	16151				







Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q22733.d
Operator	:	marthav
Acq. Method	:	1633full.m
Acq. Date-Time	:	8/11/2023 11:51:09 AM
Sample Name	:	iccb
Vial	:	P1-A1
DA Method File	:	1633_081023_S6Q330.quantmethod.xml
Batch Name	:	s6q330.batch.bin
Sample Information	:	OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	204488	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	65614	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	73085	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	67039	2.50	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	107779	2.50	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	50284	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	28590	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	38071	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	33847	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	18546	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	37657	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	25524	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	16925	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	15099	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3715	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	5230	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	4853	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	36881	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	41860	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	34740	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	136128	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	181163	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	16515	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	15586	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	20128	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	86117	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	12203	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	117509	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38768	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	62578	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	66535	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3715	5.10	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-6:2FTS	7.001	429.1 -> 80.9	5230	4.97	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4853	4.71	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-PFDoDA	9.135	615.1 -> 570.0	33847	1.29	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18546	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C3-PFBS	5.610	302.1 -> 79.9	25524	2.46	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFHxS	7.355	402.1 -> 79.9	16925	2.52	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 = 100.9%	
13C4-PFBA	3.010	216.8 -> 171.9	204488	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.596	367.1 -> 322.0	67039	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.668	318.0 -> 273.0	73085	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C5-PFPeA	4.447	268.3 -> 223.0	65614	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C6-PFDA	8.250	519.1 -> 474.1	28590	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C7-PFUnDA	8.705	570.0 -> 525.1	38071	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-FOSA	9.650	506.1 -> 77.8	37657	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOA	7.239	421.1 -> 376.0	107779	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-PFOS	8.414	507.1 -> 79.9	15099	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C9-PFNA	7.758	472.1 -> 427.0	50284	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.297	573.2 -> 419.0	36881	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	41860	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.763	515.0 -> 219.0	15586	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
d5-EtFOSAA	8.492	589.2 -> 419.0	34740	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d7-MeFOSE	10.685	623.2 -> 58.9	136128	25.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d9-EtFOSE	10.918	639.2 -> 58.9	181163	24.95 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.996	531.1 -> 219.0	16515	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
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	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

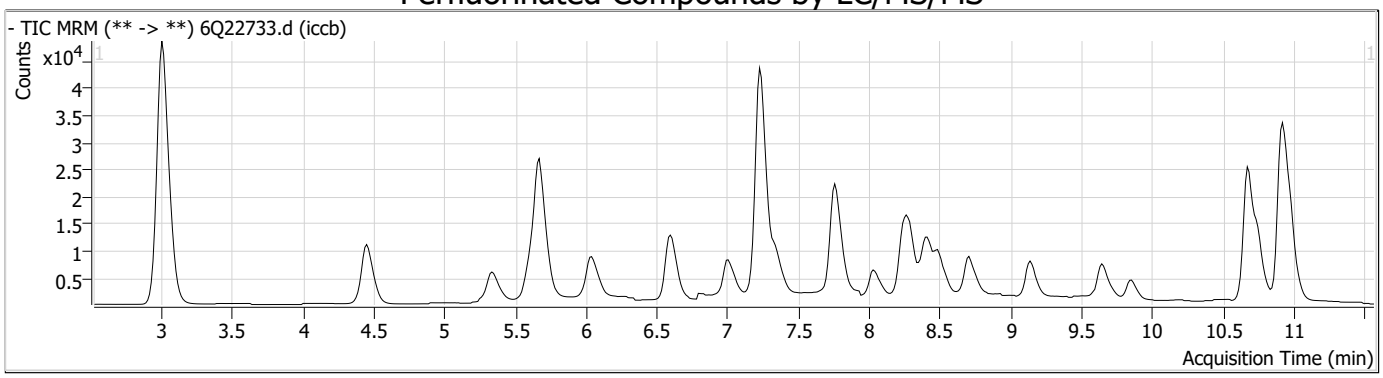
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	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

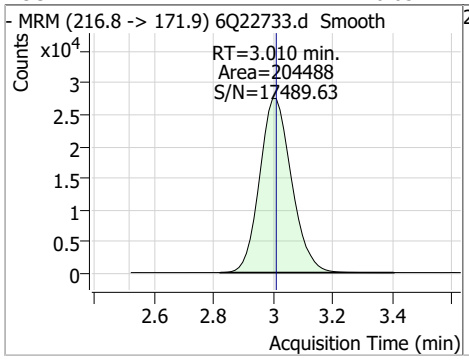
Perfluorinated Compounds by LC/MS/MS

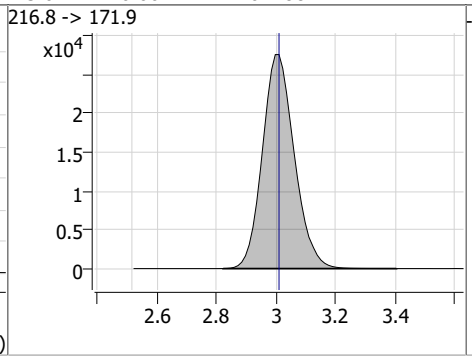
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

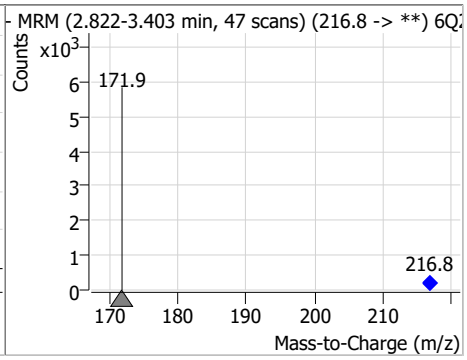
Perfluorinated Compounds by LC/MS/MS



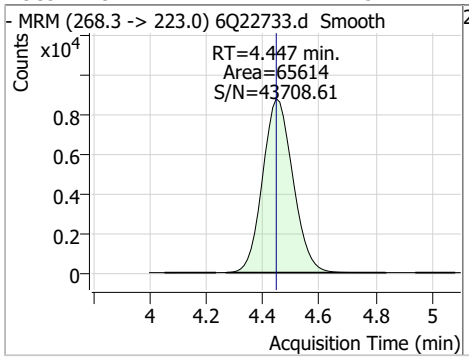
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.05	3.01	0.00	204488				

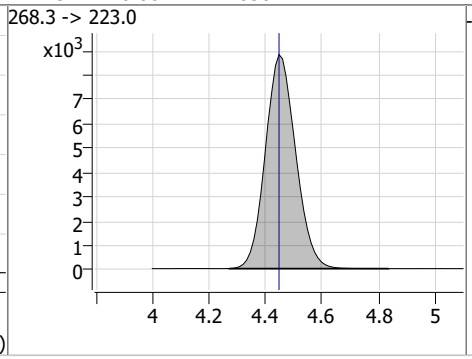


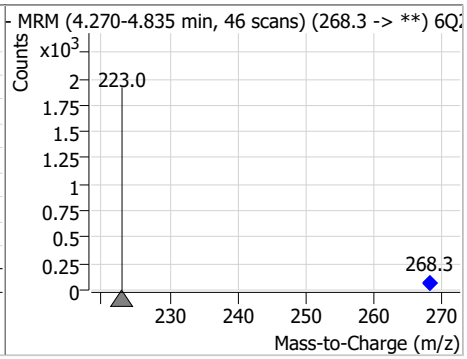




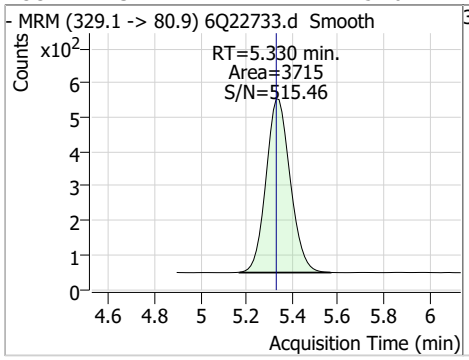
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.24	4.45	0.00	65614				

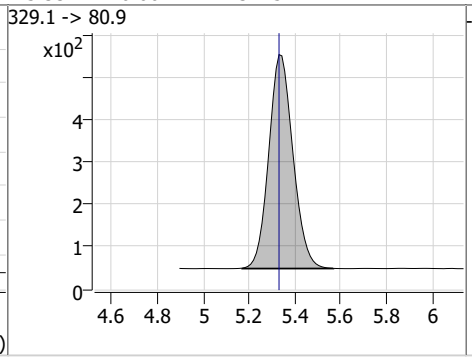


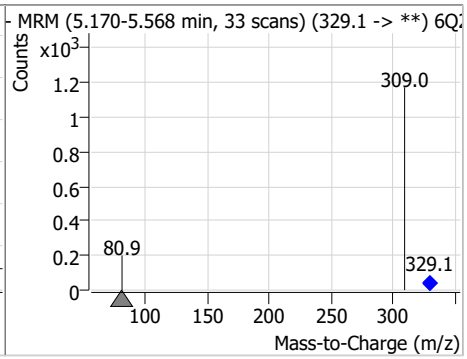




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.10	5.33	0.00	3715				

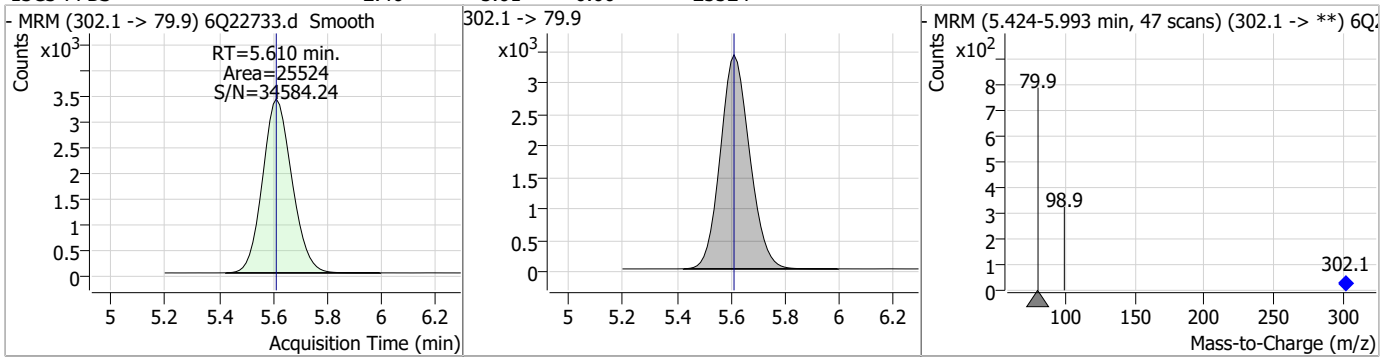




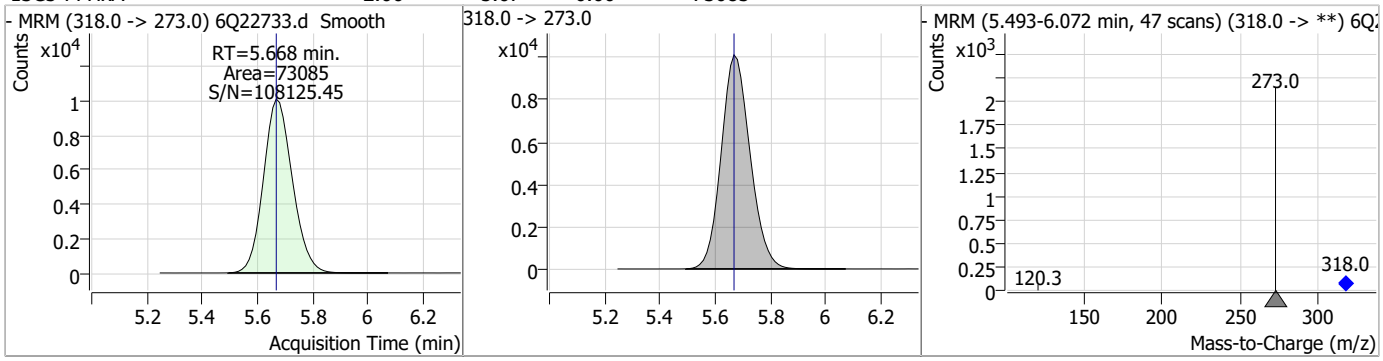


Perfluorinated Compounds by LC/MS/MS

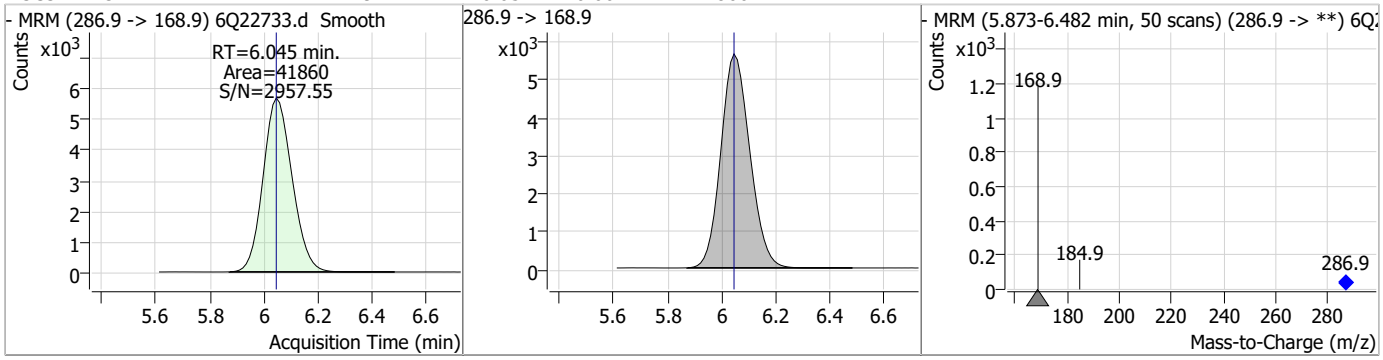
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.46	5.61	0.00	25524				



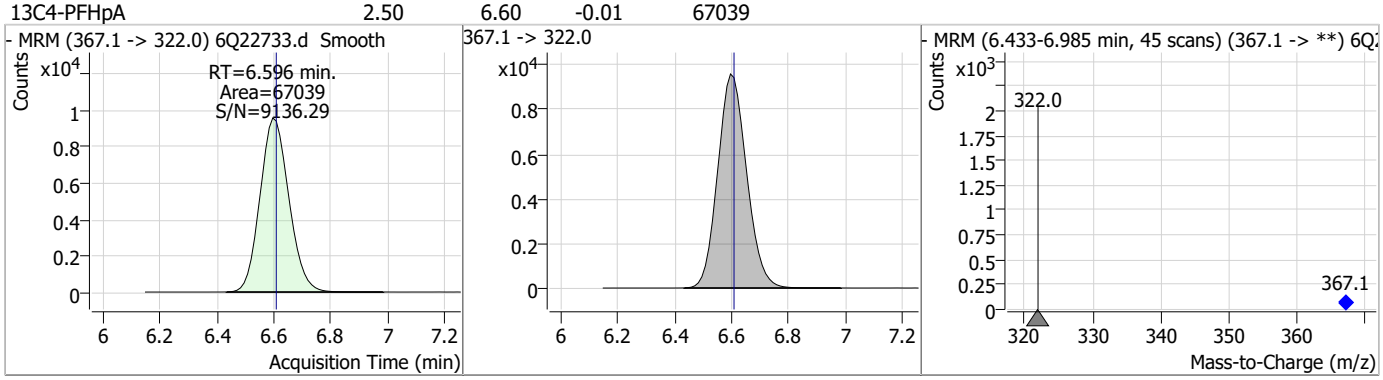
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.66	5.67	0.00	73085				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.72	6.05	0.00	41860				

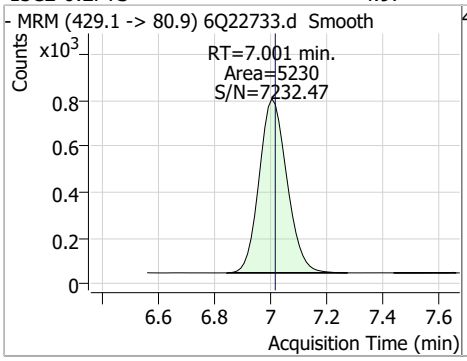


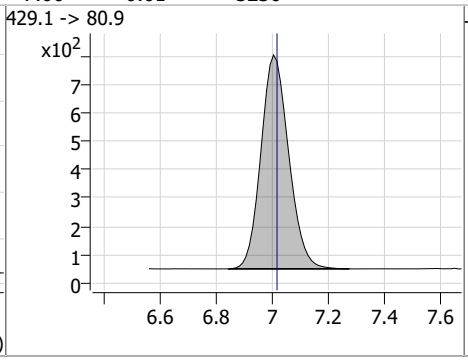
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.60	-0.01	67039				

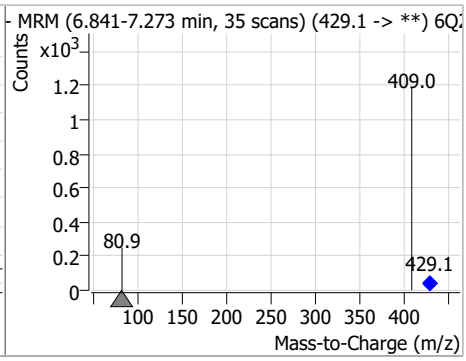


Perfluorinated Compounds by LC/MS/MS

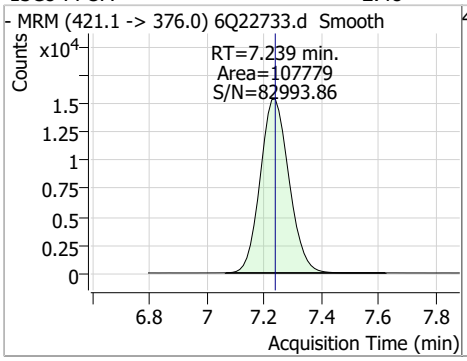
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.97	7.00	-0.01	5230				

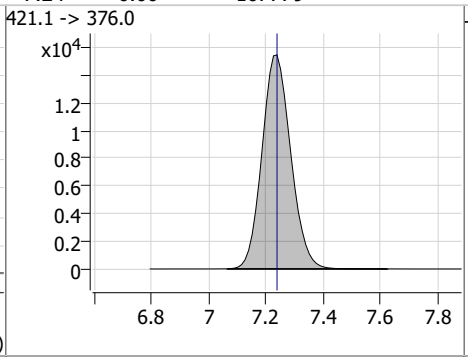


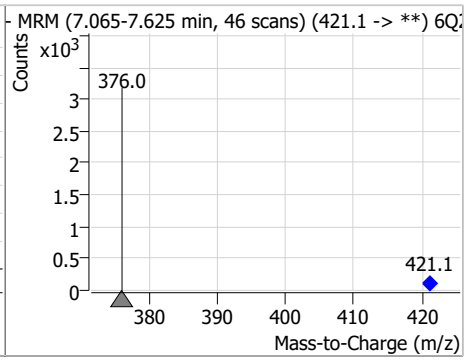




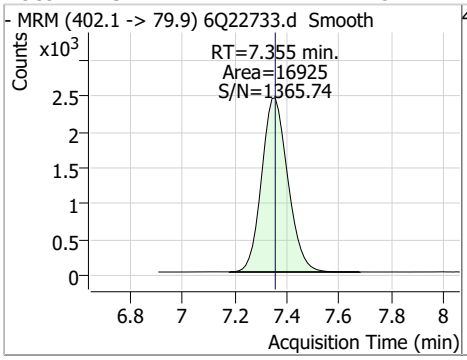
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	7.24	0.00	107779				

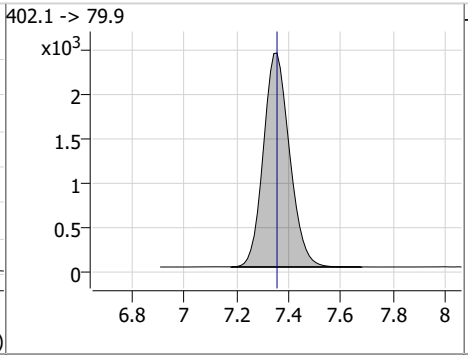


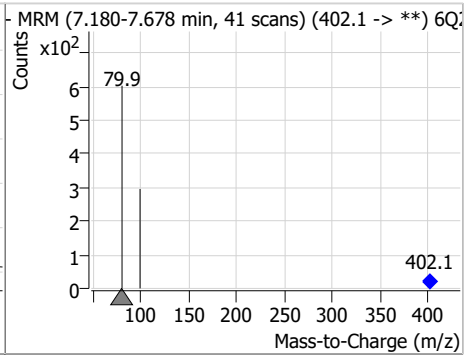




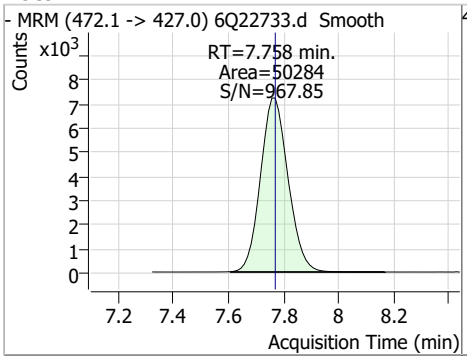
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.52	7.35	0.00	16925				

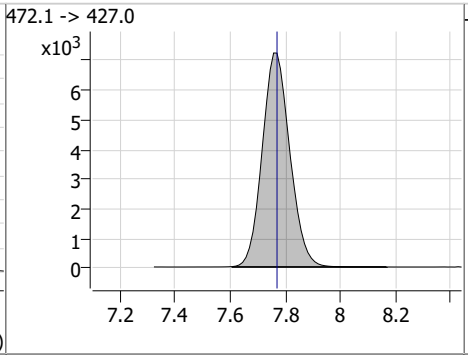


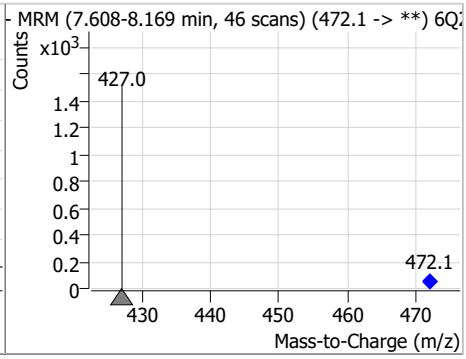




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.76	-0.01	50284				

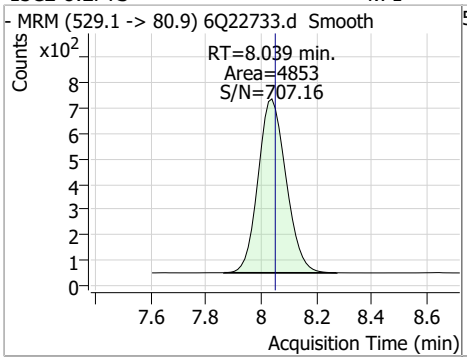


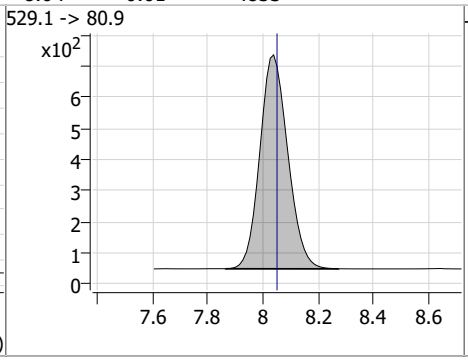


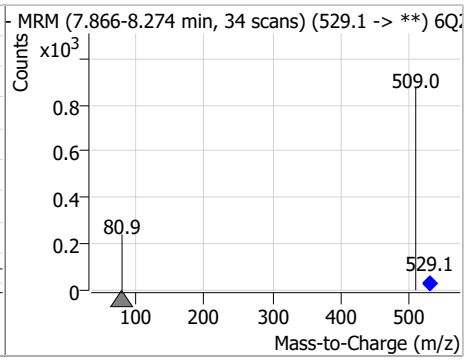


Perfluorinated Compounds by LC/MS/MS

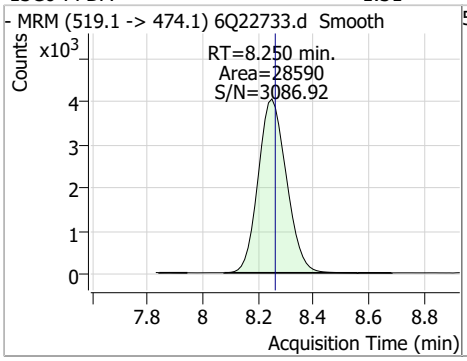
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.71	8.04	-0.01	4853				

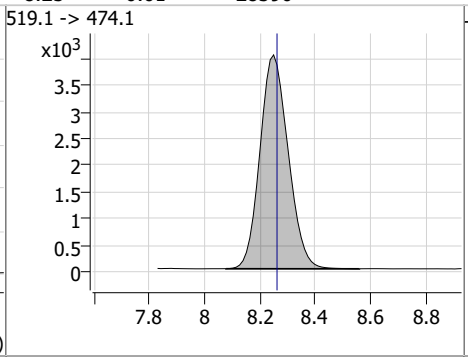


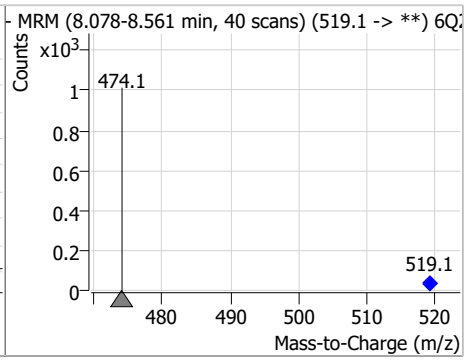




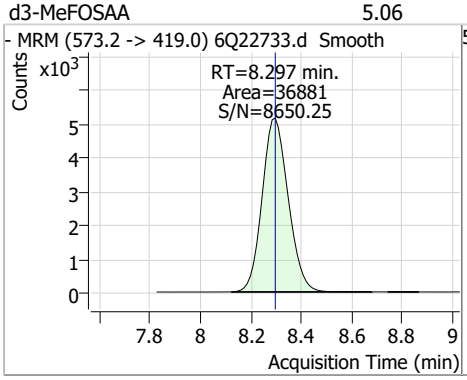
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.25	-0.01	28590				

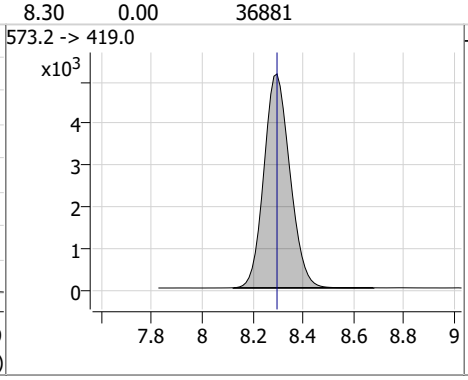


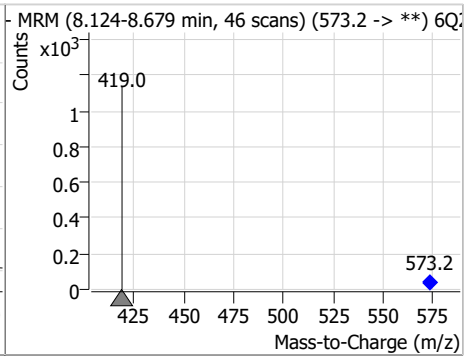




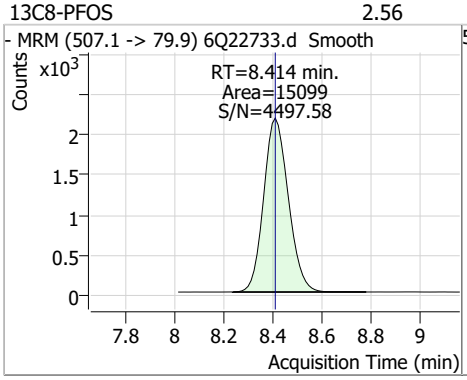
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.06	8.30	0.00	36881				

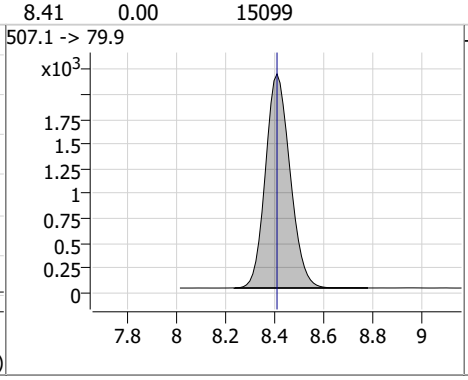


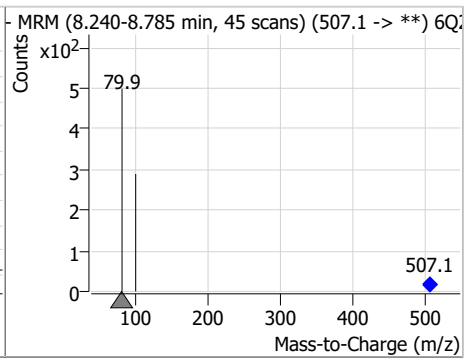




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.56	8.41	0.00	15099				

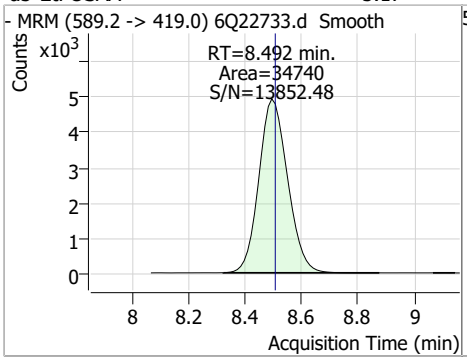


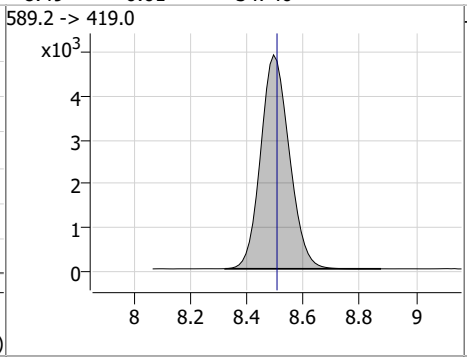


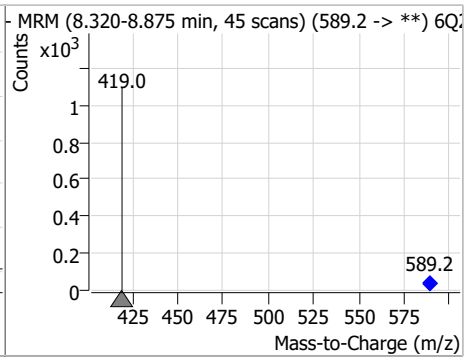


Perfluorinated Compounds by LC/MS/MS

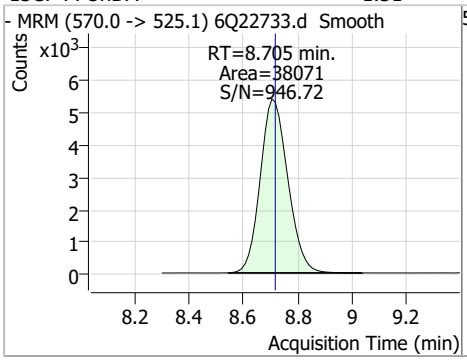
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.17	8.49	-0.01	34740				

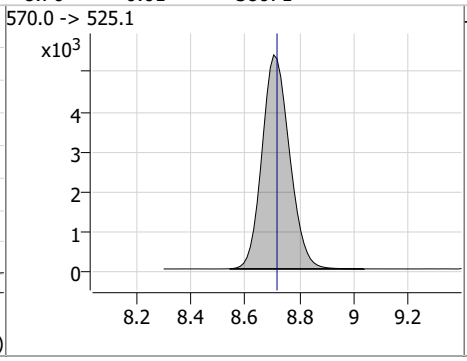


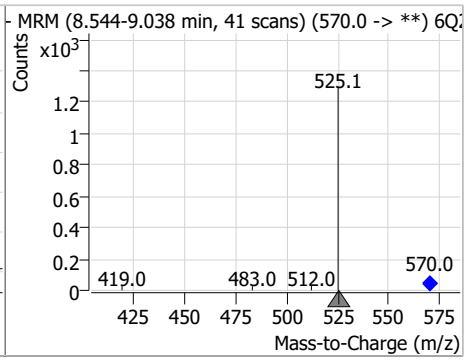




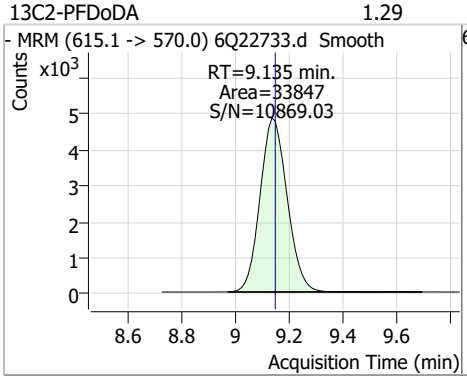
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.70	-0.01	38071				

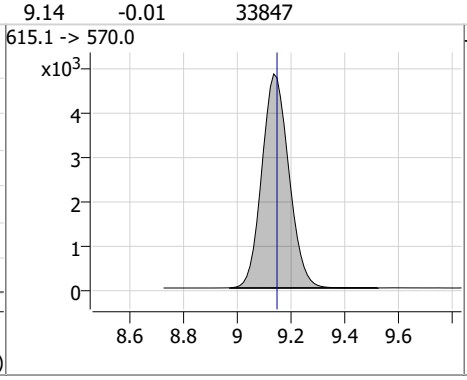


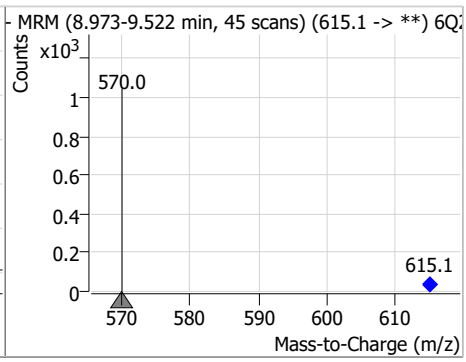




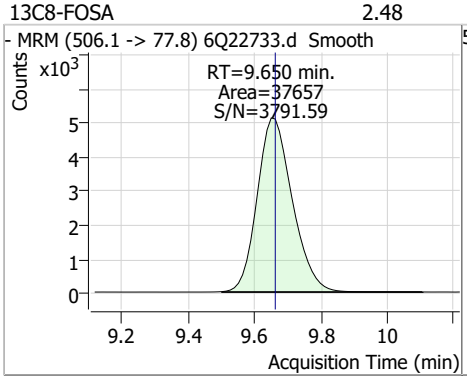
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.14	-0.01	33847				

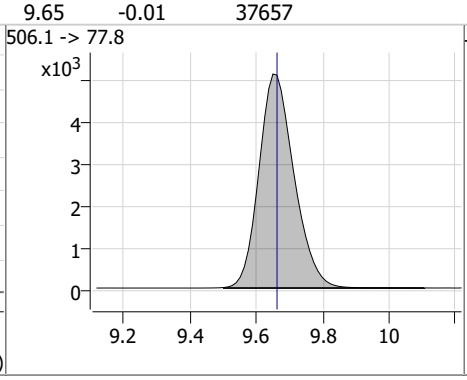


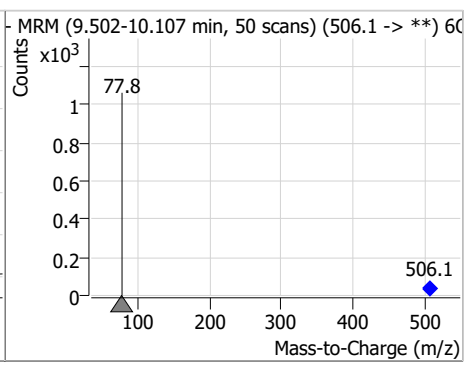




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.65	-0.01	37657				

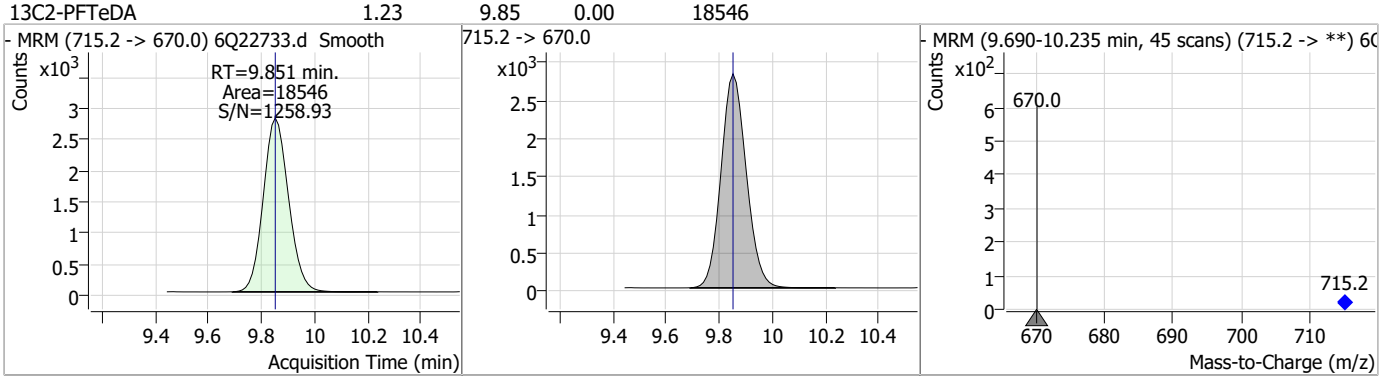




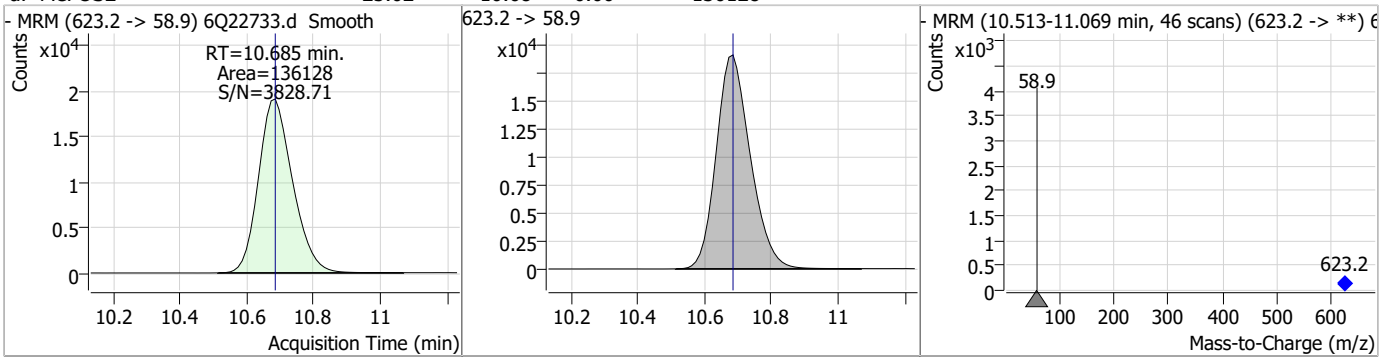


Perfluorinated Compounds by LC/MS/MS

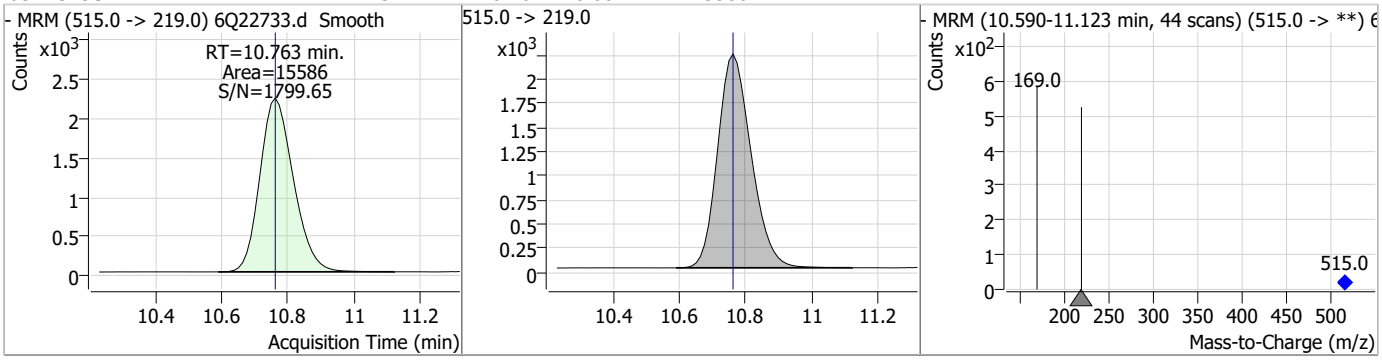
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.85	0.00	18546				



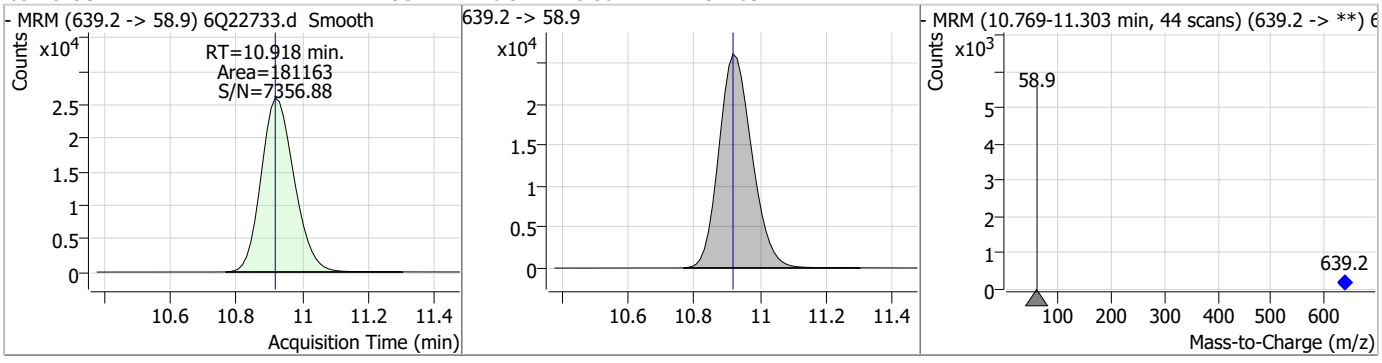
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.02	10.68	0.00	136128				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.51	10.76	0.00	15586				

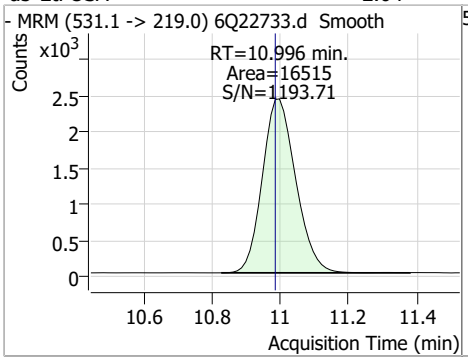


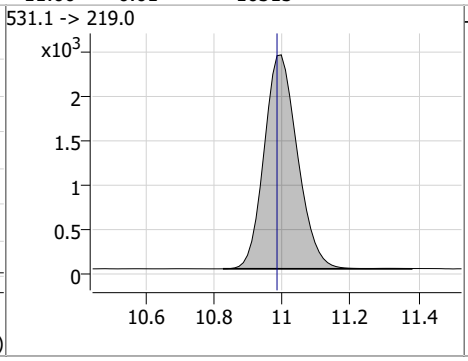
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.95	10.92	0.00	181163				

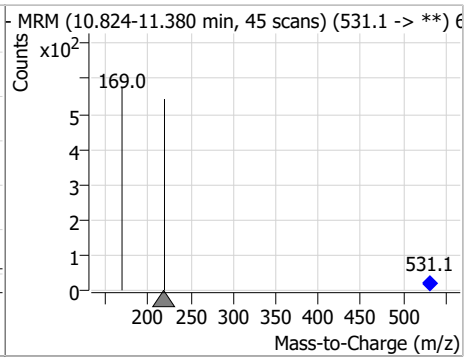


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.64	11.00	0.01	16515				







7.2.9

7

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 16:34

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48779.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 7:03:31 PM
Sample Name : op98297-bs
Vial : P4-D1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.924	216.8 -> 171.9	110386	10.00	µg/L	0.012
M5-PFPeA	4.425	268.3 -> 223.0	54850	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	38436	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	28277	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	44452	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	18929	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	14586	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	17260	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	18728	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	12844	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	8019	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9289	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6614	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8560	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	759	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1534	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2401	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	17303	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	30550	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	11721	5.00	µg/L	0.025
M7-MeFOSE	11.084	623.2 -> 58.9	32557	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	54207	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	5986	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	5172	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	7610	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	46030	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	3832	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	42499	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	12930	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	18465	1.25	µg/L	0.025
13C2-PFHxA	5.623	315.1 -> 270.0	28192	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	759	7.93	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 158.5%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1534	8.39	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 167.7%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2401	8.64	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 172.9%		
13C2-PFDoDA	9.205	615.1 -> 570.0	18728	1.69	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 135.3%		
13C2-PFTeDA	9.974	715.2 -> 670.0	12844	1.44	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.5%		
13C3-PFBS	5.502	302.1 -> 79.9	9289	2.85	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C3-PFHxS	7.342	402.1 -> 79.9	6614	3.12	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 = 124.7%		
13C4-PFBA	2.924	216.8 -> 171.9	110386	14.03 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 140.3%		
13C4-PFHpA	6.580	367.1 -> 322.0	28277	3.37 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 134.7%		
13C5-PFHxA	5.622	318.0 -> 273.0	38436	3.25 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 130.1%		
13C5-PFPeA	4.425	268.3 -> 223.0	54850	5.57 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C6-PFDA	8.303	519.1 -> 474.1	14586	1.63 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 130.4%		
13C7-PFUnDA	8.773	570.0 -> 525.1	17260	1.71 µg/L		0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 137.0%		
13C8-FOSA	9.919	506.1 -> 77.8	8019	1.69 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 67.6%		
13C8-PFOA	7.251	421.1 -> 376.0	44452	3.18 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.1%		
13C8-PFOS	8.442	507.1 -> 79.9	8560	2.80 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C9-PFNA	7.810	472.1 -> 427.0	18929	1.35 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.3%		
d3-MeFOSAA	8.373	573.2 -> 419.0	17303	6.13 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 122.5%		
13C3-HFPO-DA	6.002	286.9 -> 168.9	30550	11.37 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.7%		
d3-MeFOSA	11.176	515.0 -> 219.0	5172	1.85 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.0%		
d5-EtFOSAA	8.571	589.2 -> 419.0	11721	5.05 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
d7-MeFOSE	11.084	623.2 -> 58.9	32557	14.57 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 58.3%		
d9-EtFOSE	11.356	639.2 -> 58.9	54207	17.30 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 69.2%		
d5-EtFOSA	11.435	531.1 -> 219.0	5986	1.86 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.4%		
Target Compounds						**QValue**
4:2FTS	5.309	327.1 -> 307.0	11083	10.83 µg/L		95
		327.1 -> 80.9	4918			
6:2FTS	7.024	427.1 -> 407.0	14025	10.77 µg/L		99
		427.1 -> 80.9	5060			
8:2FTS	8.092	527.1 -> 507.0	11504	11.93 µg/L		91
		527.1 -> 80.8	4378			
EtFOSAA	8.584	584.2 -> 419.1	5768	3.60 µg/L	m	95
		584.2 -> 526.0	2549			
FOSA	9.911	498.1 -> 77.9	7605	2.93 µg/L		99
		498.1 -> 478.0	213			
MeFOSAA	8.374	570.1 -> 419.0	6698	3.10 µg/L		98
		570.1 -> 483.0	1325			
PFBA	2.932	212.8 -> 168.9	28306	11.14 µg/L		100
PFBS	5.503	298.7 -> 79.9	7143	3.15 µg/L		99
		298.7 -> 98.8	2620			
PFDA	8.304	512.9 -> 469.0	32567	3.18 µg/L		99
		512.9 -> 219.0	6444			
PFDoDA	9.206	613.1 -> 569.0	32157	2.74 µg/L		99
		613.1 -> 319.0	5080			
PFDS	9.347	599.0 -> 79.9	4837	2.74 µg/L		99

Perfluorinated Compounds by LC/MS/MS

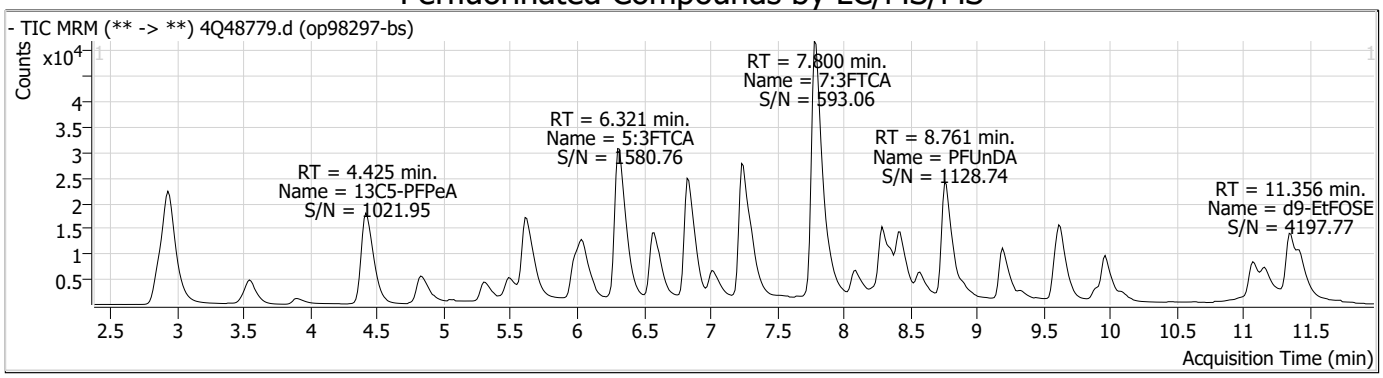
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2431				
PFHpA	6.581	363.1 -> 319.0	36027	2.82	µg/L		98
		363.1 -> 169.0	6307				
PFHpS	7.925	449.0 -> 79.9	7037	2.72	µg/L		97
		449.0 -> 98.9	3388				
PFHxA	5.625	313.0 -> 269.0	31551	2.84	µg/L		100
		313.0 -> 118.9	994				
PFHxS	7.342	398.7 -> 79.9	5683	2.99	µg/L	m	99
		398.7 -> 98.9	3056				
PFNA	7.810	463.0 -> 419.0	31440	3.19	µg/L		98
		463.0 -> 219.0	7139				
PFNS	8.911	548.8 -> 79.9	5144	3.08	µg/L		99
		548.8 -> 98.9	2715				
PFOA	7.252	413.0 -> 369.0	52827	3.00	µg/L		100
		413.0 -> 169.0	10080				
PFOS	8.443	498.9 -> 79.9	9097	2.99	µg/L	m	83
		498.9 -> 98.8	4562				
PFPeA	4.427	263.0 -> 219.0	61274	6.43	µg/L		100
PFPeS	6.595	349.1 -> 79.9	4590	2.57	µg/L		99
		349.1 -> 98.9	2077				
PFTeDA	9.975	713.1 -> 669.0	27194	3.02	µg/L		99
		713.1 -> 168.9	2622				
PFTrDA	9.603	663.0 -> 619.0	36776	3.04	µg/L		98
		663.0 -> 168.9	4328				
PFUnDA	8.761	563.1 -> 519.0	32836	2.92	µg/L		98
		563.1 -> 269.1	6416				
11Cl-PF3OUdS	9.630	630.9 -> 450.9	38921	6.08	µg/L		97
		632.9 -> 452.9	12539				
9Cl-PF3ONS	8.775	530.8 -> 351.0	56711	6.29	µg/L		97
		532.8 -> 353.0	16767				
ADONA	6.843	376.9 -> 250.9	107017	6.04	µg/L		100
		376.9 -> 84.8	27916				
HFPO-DA	6.003	284.9 -> 168.9	13688	5.44	µg/L		97
		284.9 -> 184.9	1610				
3:3FTCA	3.905	241.0 -> 177.0	6116	9.53	µg/L		96
		241.0 -> 117.0	512				
5:3FTCA	6.321	341.0 -> 237.1	110795	61.04	µg/L		97
		341.0 -> 217.0	76461				
7:3FTCA	7.800	441.0 -> 316.9	67228	67.21	µg/L		95
		441.0 -> 336.9	159914				
EtFOSA	11.437	526.0 -> 219.0	12371	5.62	µg/L		99
		526.0 -> 169.0	17481				
EtFOSE	11.370	630.0 -> 58.9	23345	13.76	µg/L		100
MeFOSA	11.178	511.9 -> 219.0	9588	5.33	µg/L	m	77
		511.9 -> 169.0	14100				
MeFOSE	11.097	616.1 -> 58.9	16292	13.99	µg/L		100
PFDoDS	10.102	699.1 -> 79.9	3805	2.80	µg/L		98
		699.1 -> 98.8	2021				
NFDHA	5.503	295.0 -> 201.0	4125	5.77	µg/L		98
		295.0 -> 84.9	993				
PFMBA	4.841	279.0 -> 85.1	33769	6.32	µg/L		100
PFMPA	3.540	229.0 -> 84.9	32339	6.21	µg/L		100
PFEESA	6.059	314.8 -> 134.9	43715	4.89	µg/L		100
		314.8 -> 82.9	1568				

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

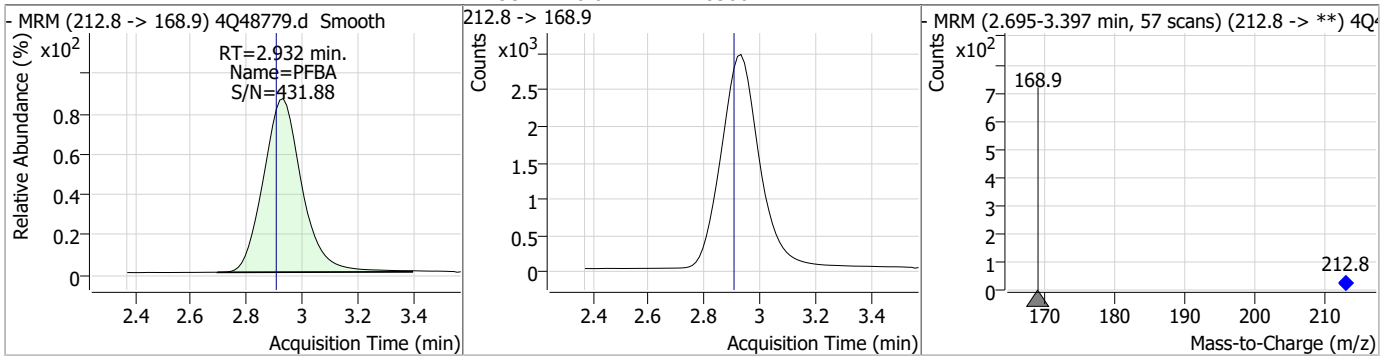
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

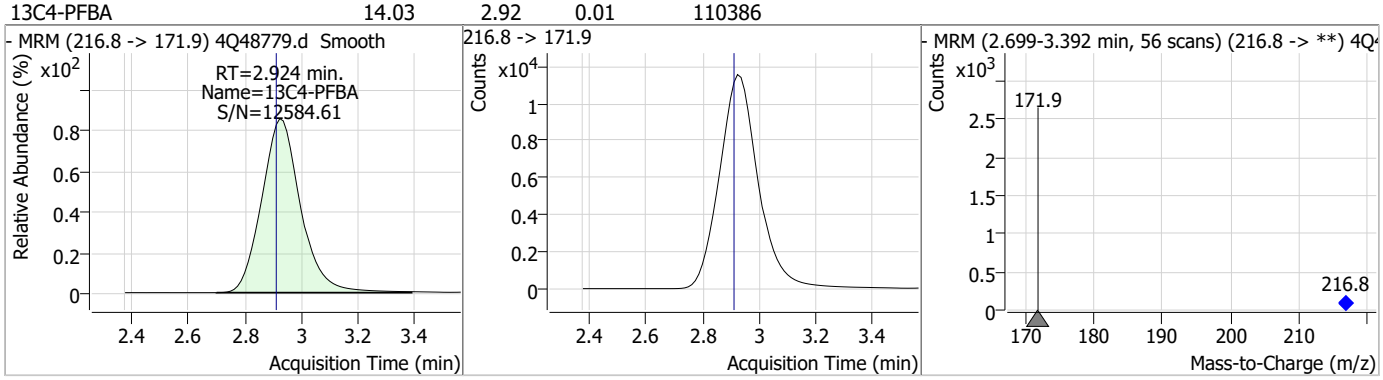
Perfluorinated Compounds by LC/MS/MS



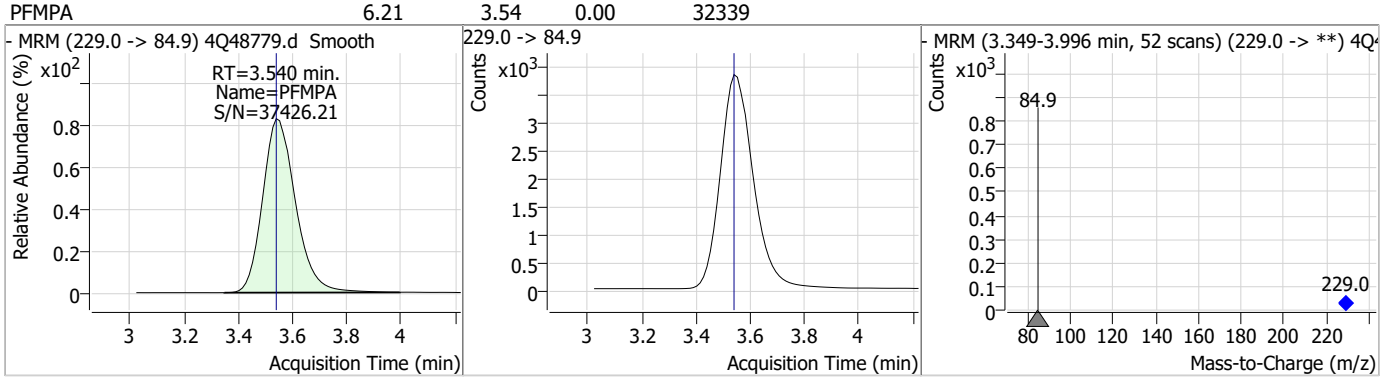
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.14	2.93	0.02	28306				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.03	2.92	0.01	110386				

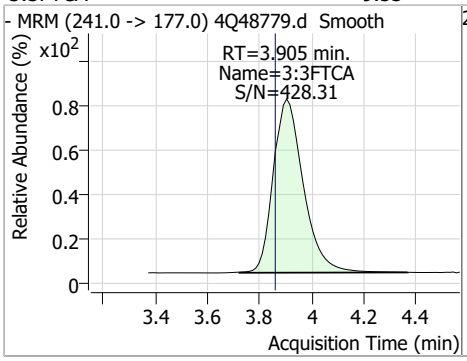


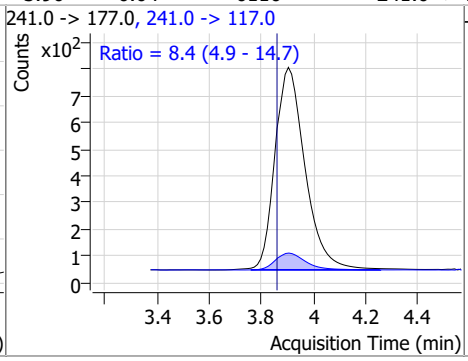
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	6.21	3.54	0.00	32339				

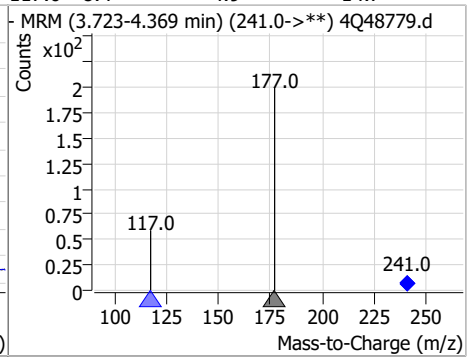


Perfluorinated Compounds by LC/MS/MS

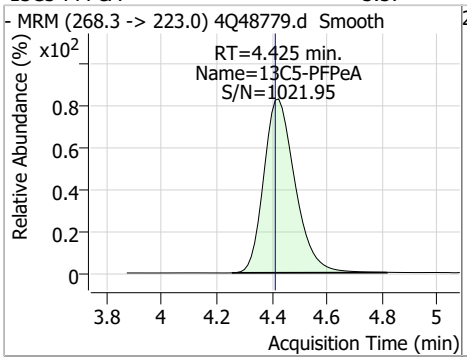
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	9.53	3.90	0.04	6116	241.0 -> 117.0	8.4	4.9	14.7

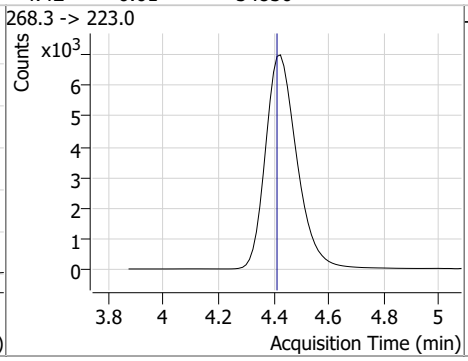


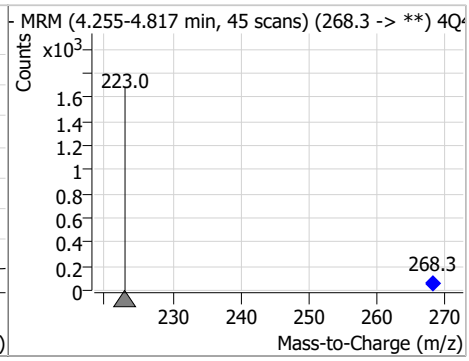




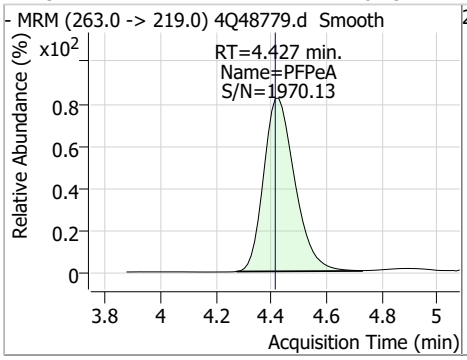
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.57	4.42	0.01	54850				

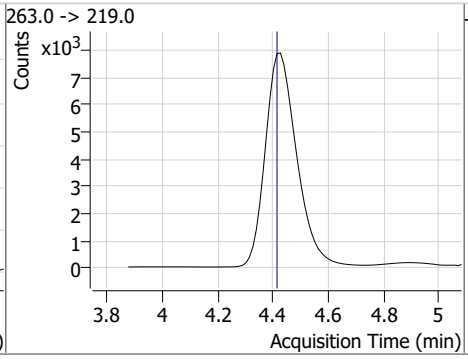


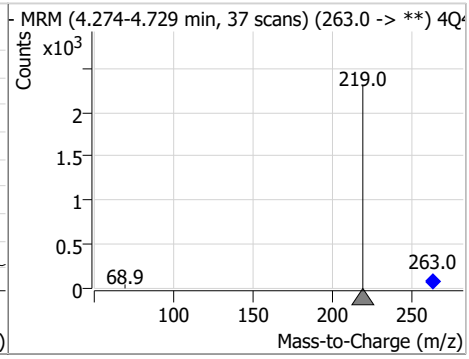




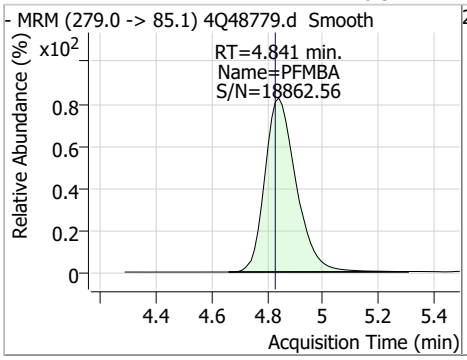
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	6.43	4.43	0.01	61274				

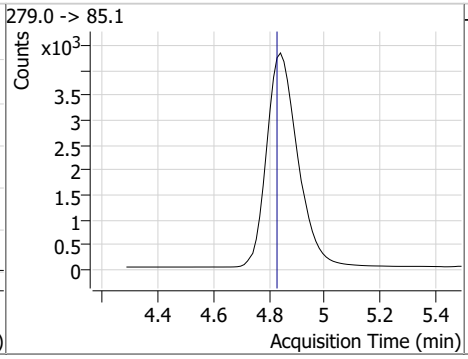


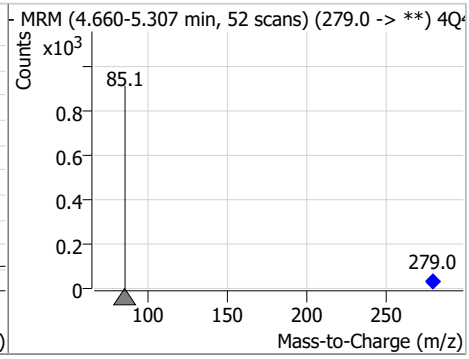




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	6.32	4.84	0.01	33769				

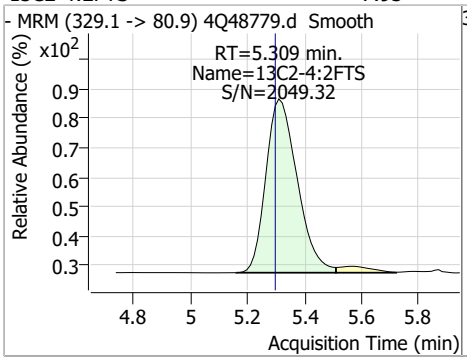


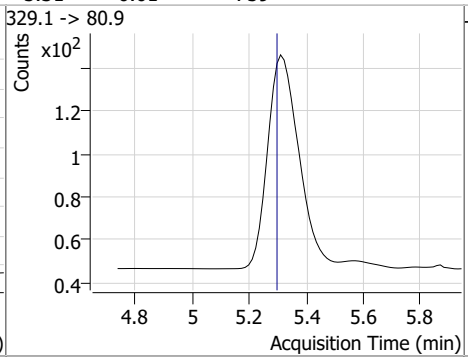


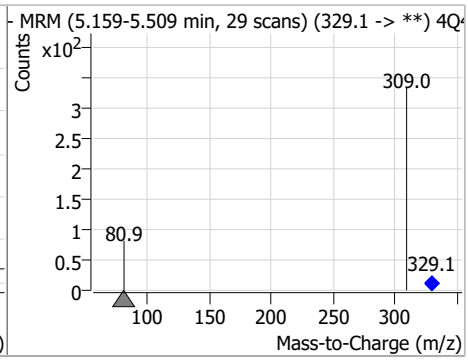


Perfluorinated Compounds by LC/MS/MS

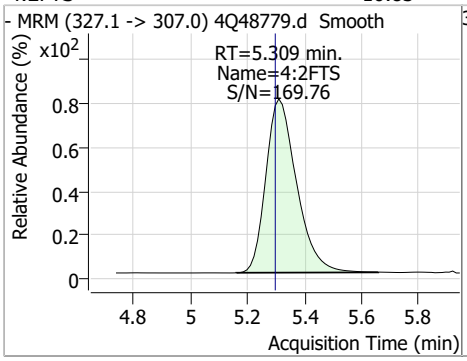
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.93	5.31	0.01	759				

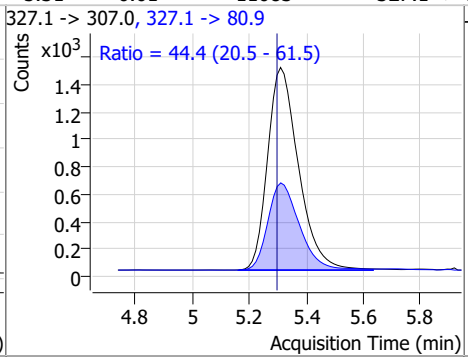


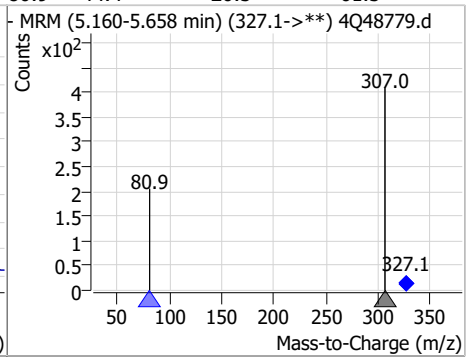




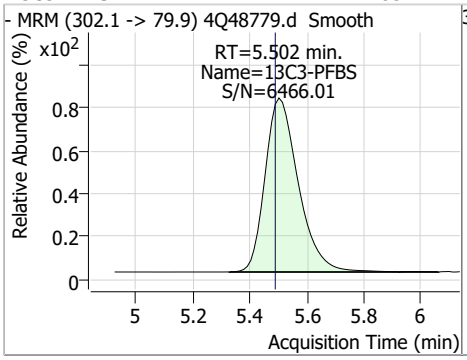
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.83	5.31	0.01	11083	327.1 -> 80.9	44.4	20.5	61.5

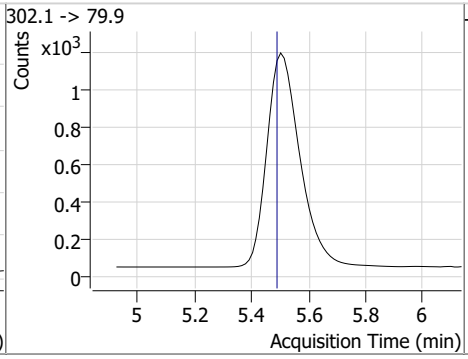


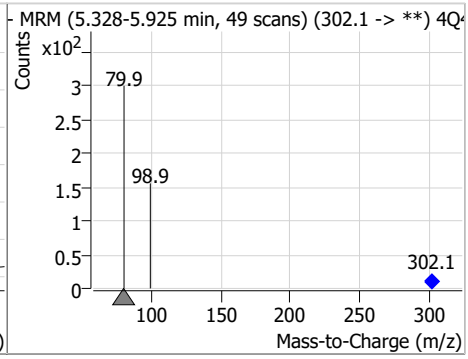




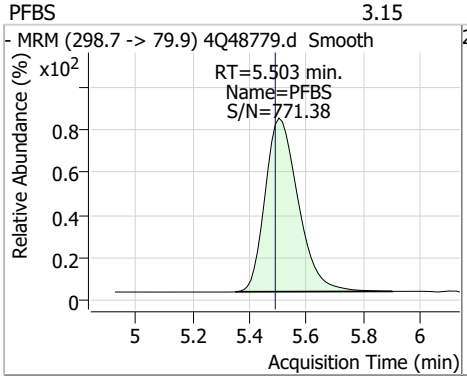
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.85	5.50	0.01	9289				

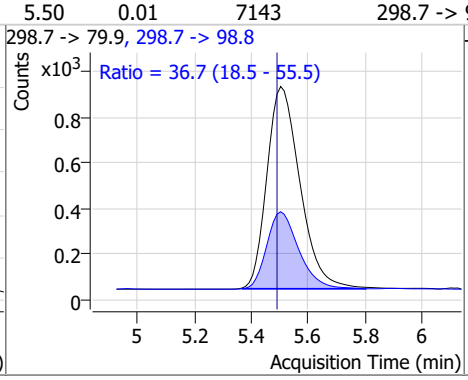


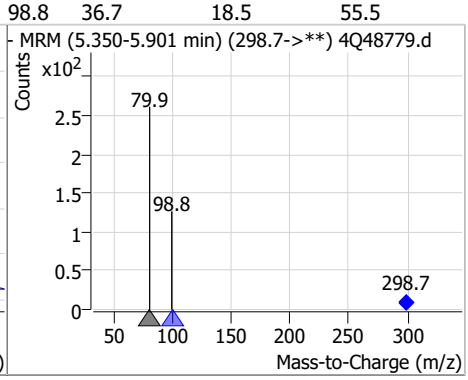




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	3.15	5.50	0.01	7143	298.7 -> 98.8	36.7	18.5	55.5

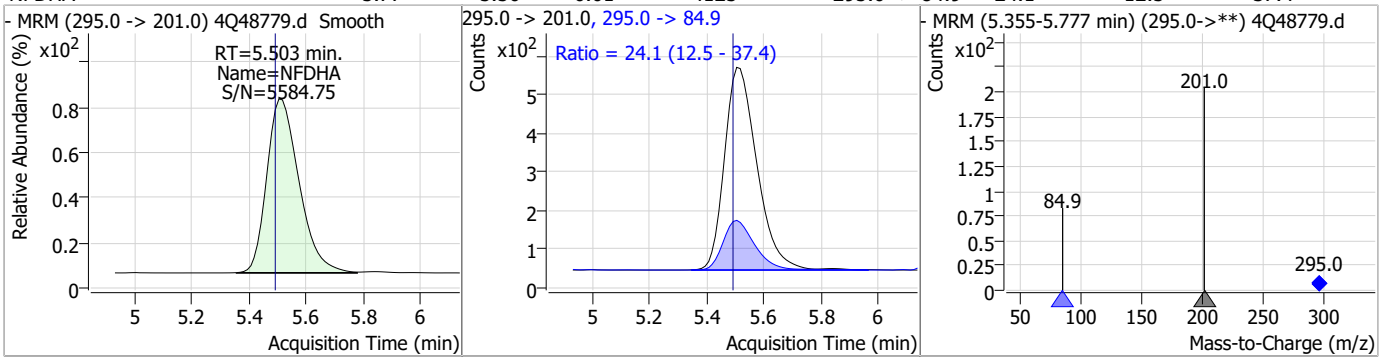




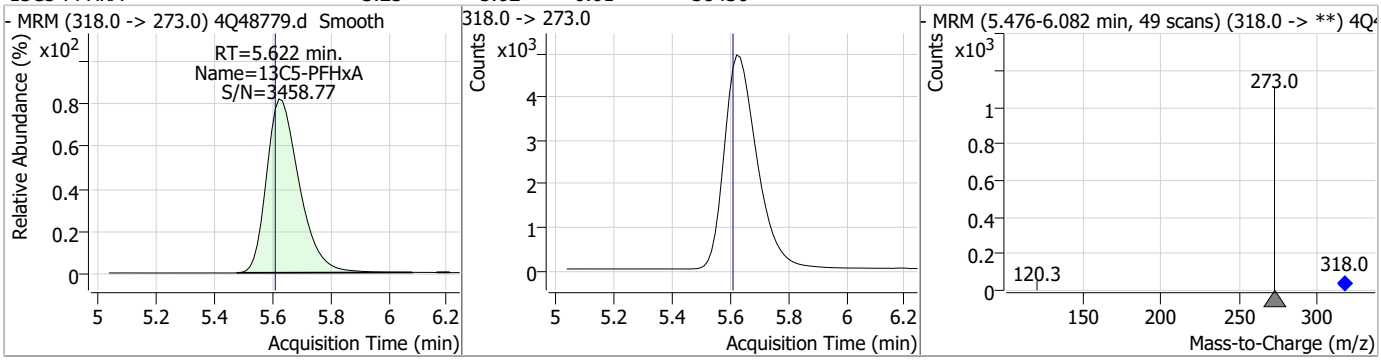


Perfluorinated Compounds by LC/MS/MS

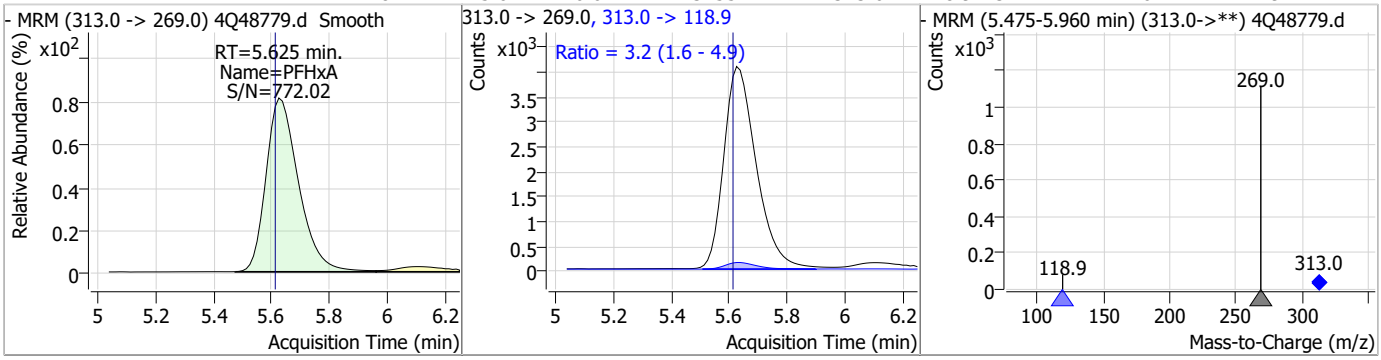
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.77	5.50	0.01	4125	295.0 -> 84.9	24.1	12.5	37.4



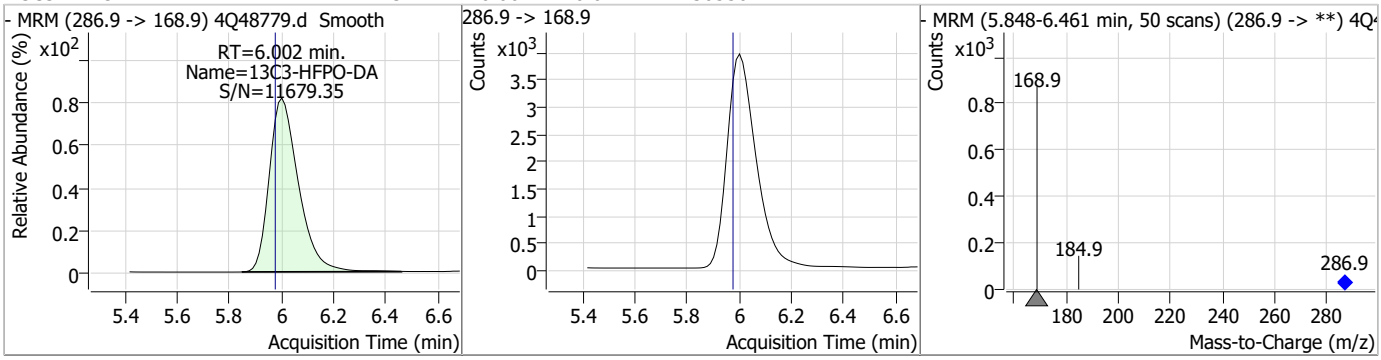
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.25	5.62	0.01	38436				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.84	5.62	0.01	31551	313.0 -> 118.9	3.2	1.6	4.9

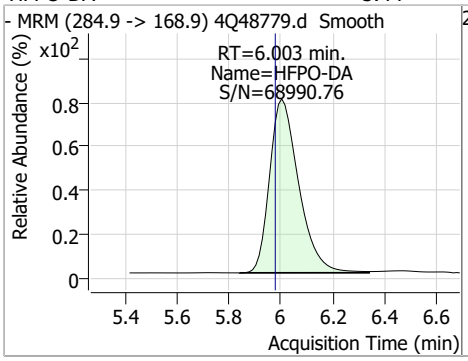


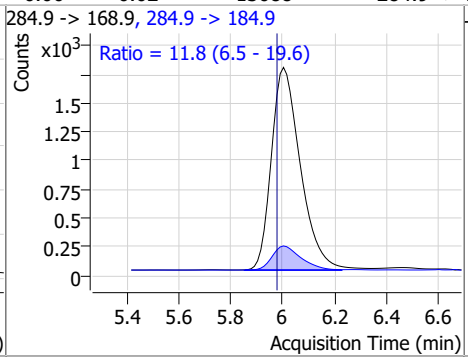
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.37	6.00	0.02	30550				

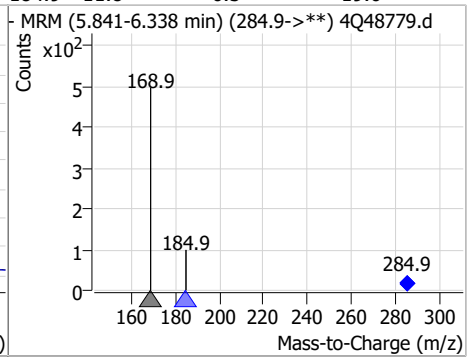


Perfluorinated Compounds by LC/MS/MS

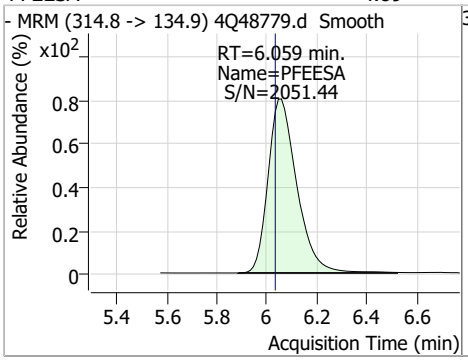
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.44	6.00	0.02	13688	284.9 -> 184.9	11.8	6.5	19.6

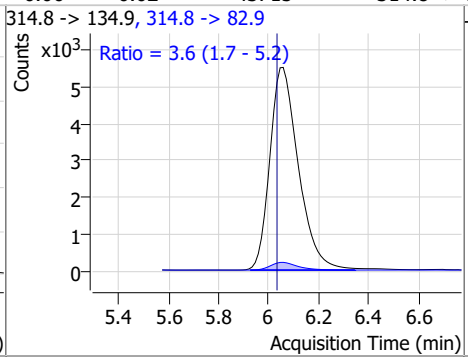


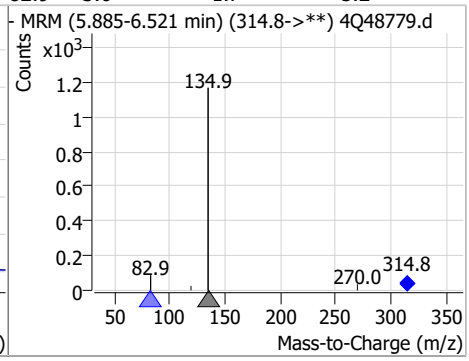




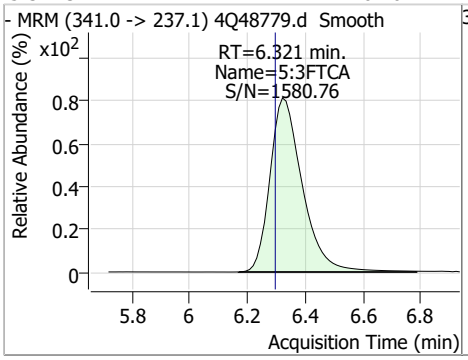
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.89	6.06	0.02	43715	314.8 -> 82.9	3.6	1.7	5.2

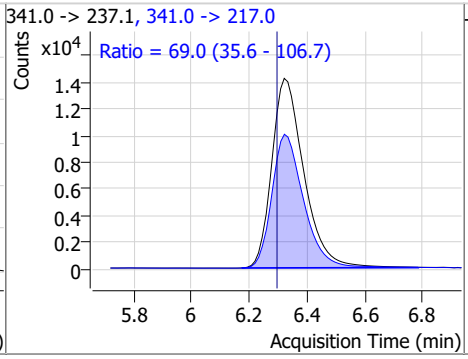


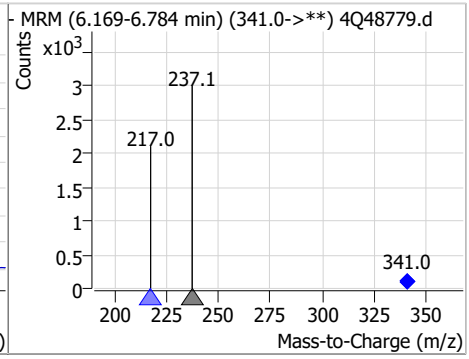




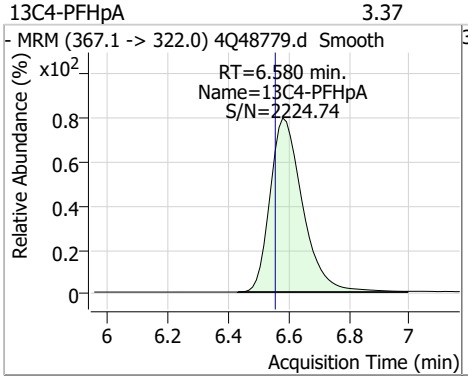
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.04	6.32	0.02	110795	341.0 -> 217.0	69.0	35.6	106.7

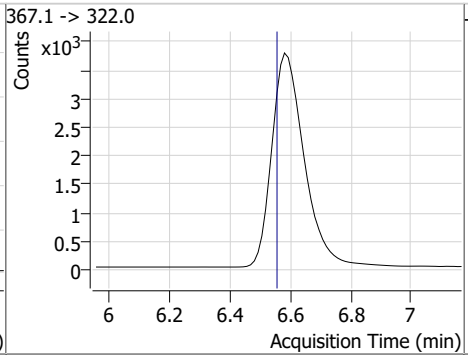


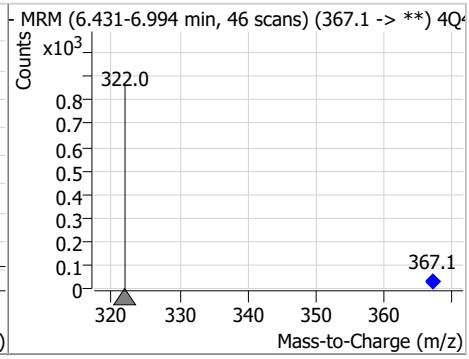




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.37	6.58	0.02	28277				

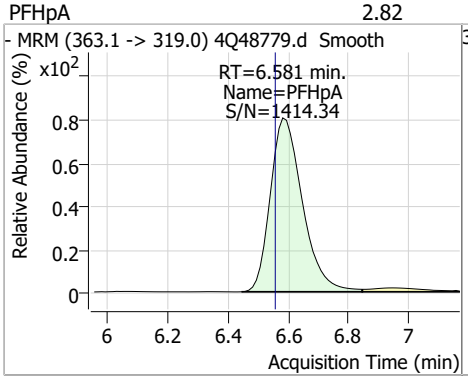


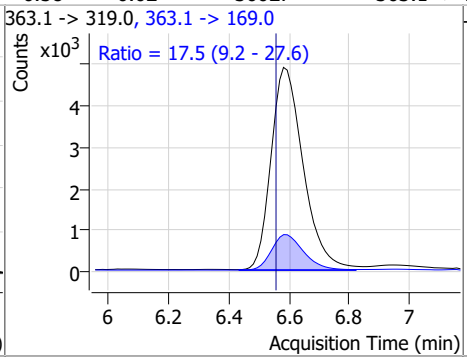


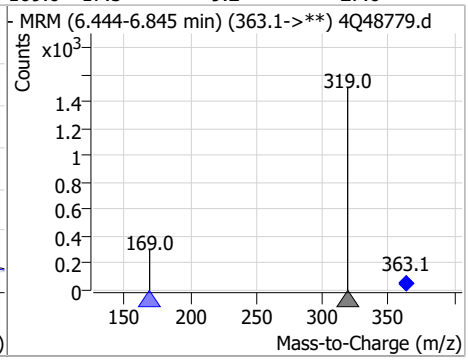


Perfluorinated Compounds by LC/MS/MS

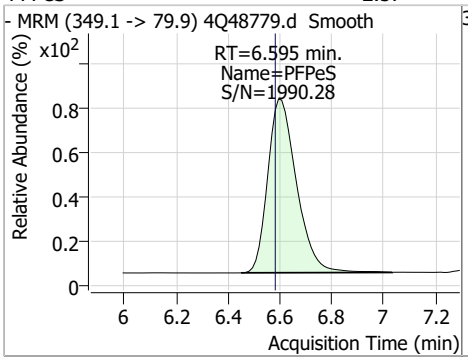
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.82	6.58	0.02	36027	363.1 -> 169.0	17.5	9.2	27.6

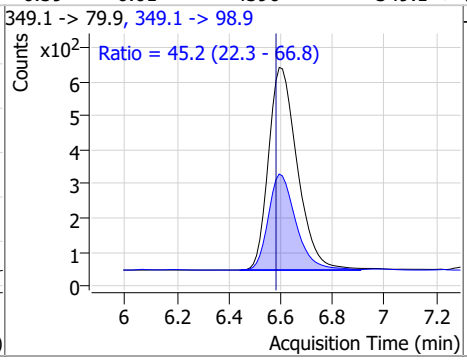


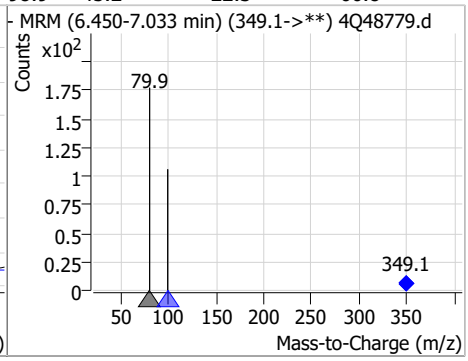




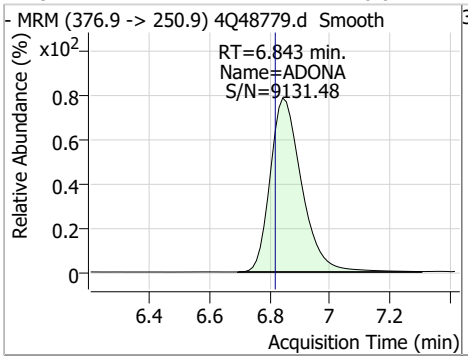
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.57	6.59	0.01	4590	349.1 -> 98.9	45.2	22.3	66.8

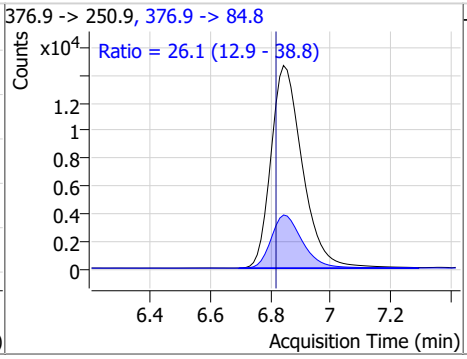


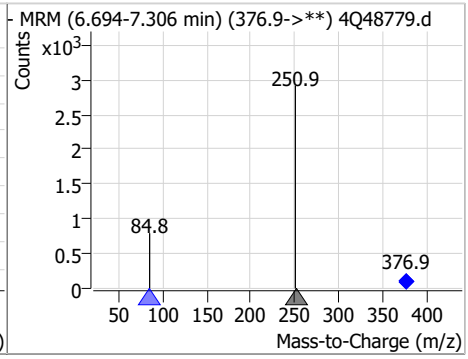




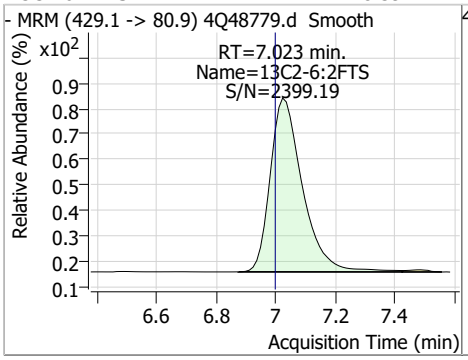
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	6.04	6.84	0.02	107017	376.9 -> 84.8	26.1	12.9	38.8

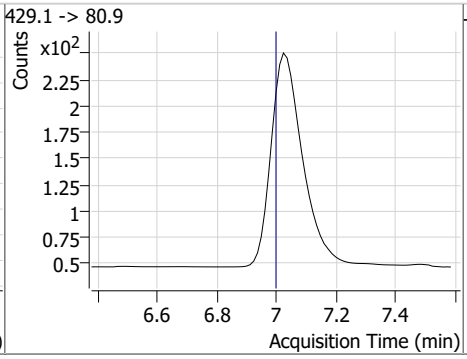


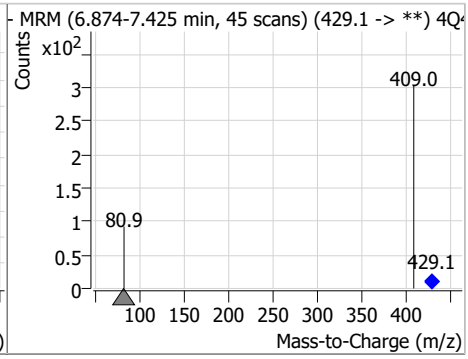




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.39	7.02	0.02	1534				

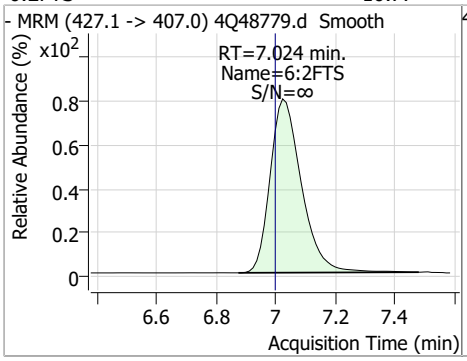


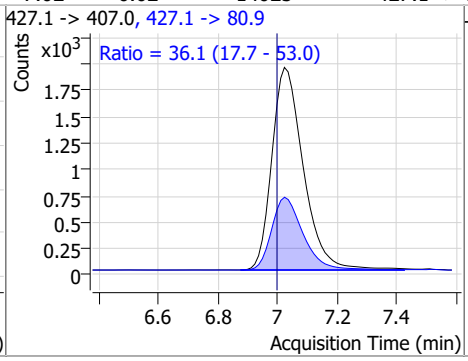


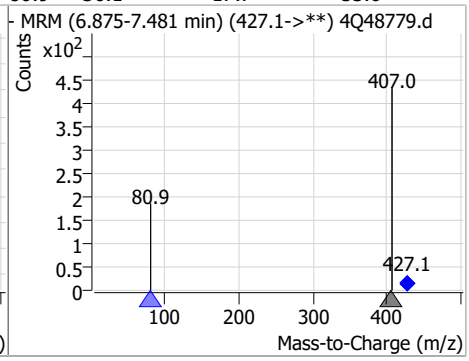


Perfluorinated Compounds by LC/MS/MS

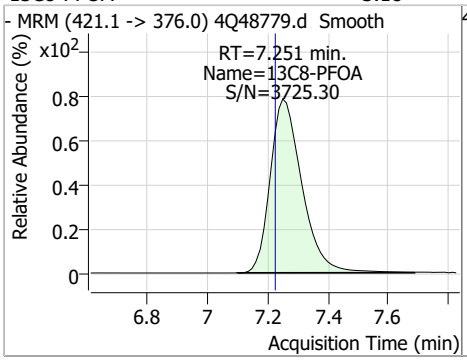
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.77	7.02	0.02	14025	427.1 -> 80.9	36.1	17.7	53.0

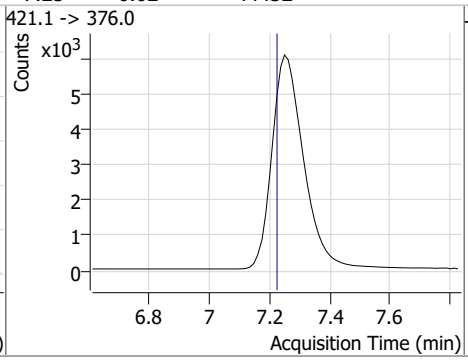


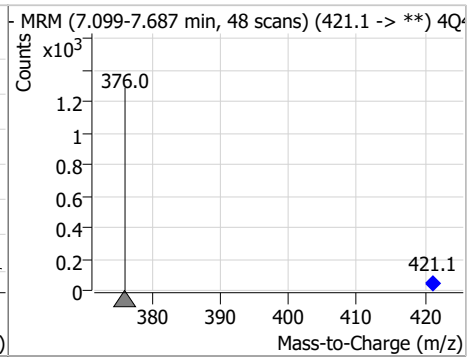




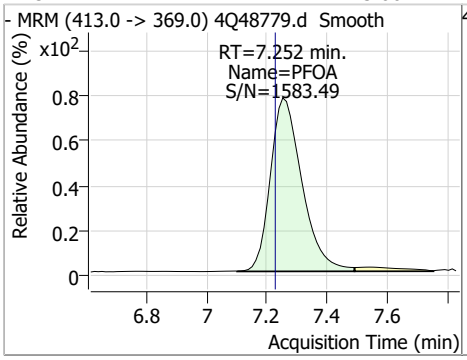
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.18	7.25	0.02	44452				

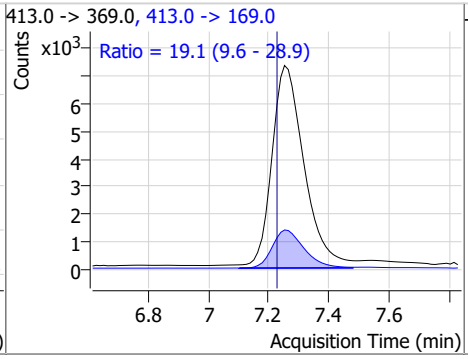


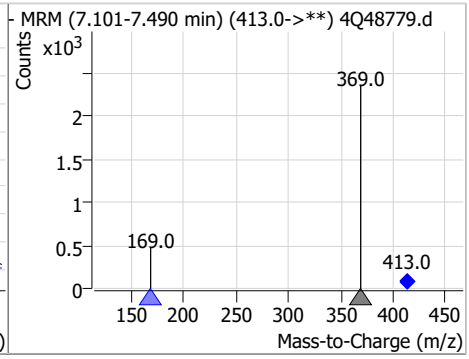




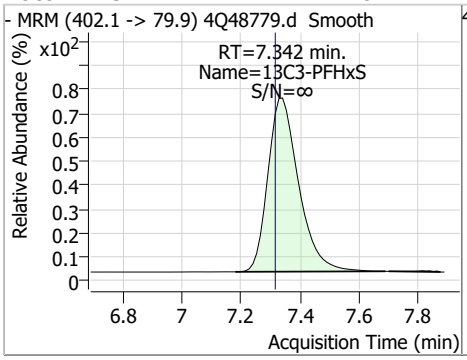
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.00	7.25	0.02	52827	413.0 -> 169.0	19.1	9.6	28.9

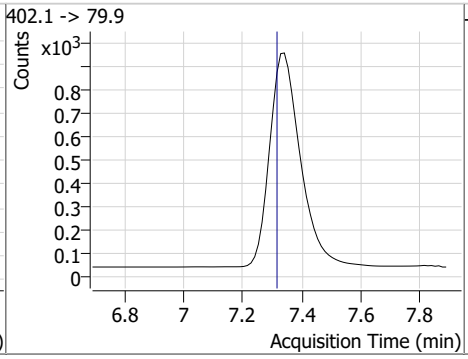


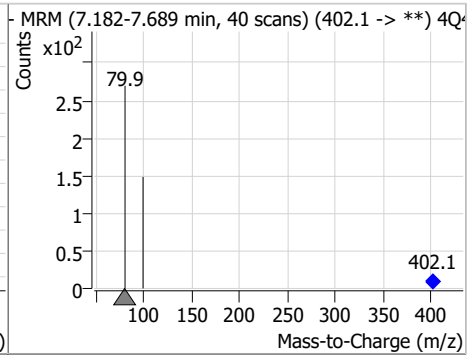




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.12	7.34	0.02	6614				

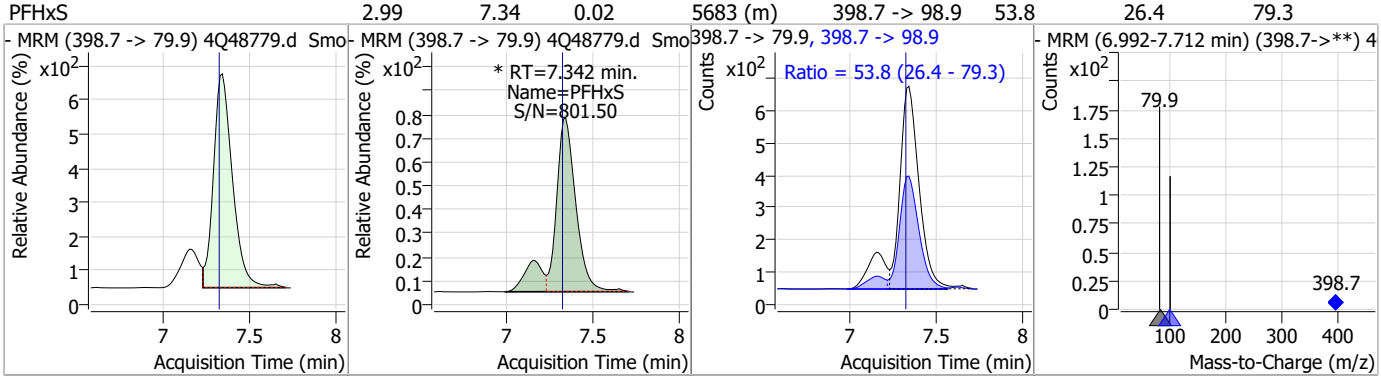




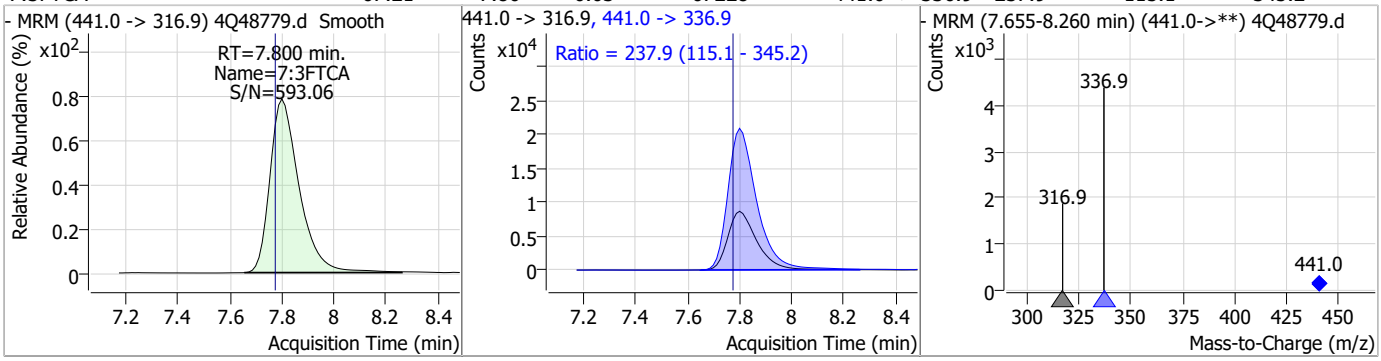


Perfluorinated Compounds by LC/MS/MS

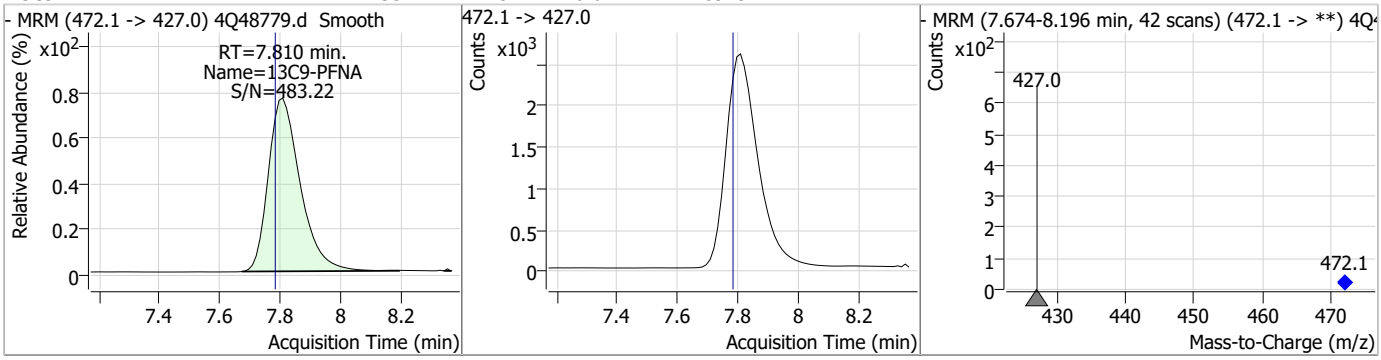
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.99	7.34	0.02	5683 (m)	398.7 -> 98.9	53.8	26.4	79.3



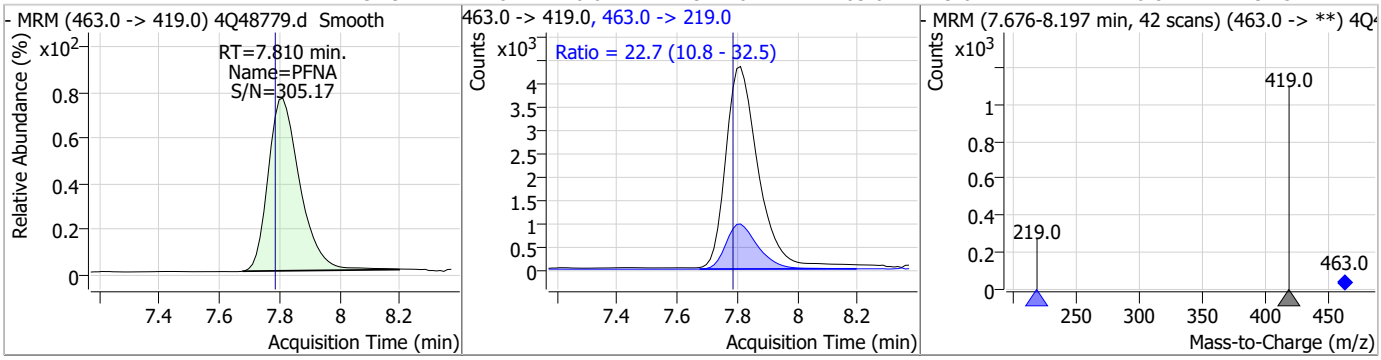
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	67.21	7.80	0.03	67228	441.0 -> 336.9	237.9	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.35	7.81	0.02	18929				

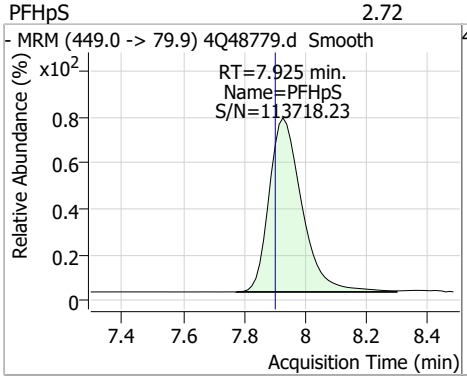


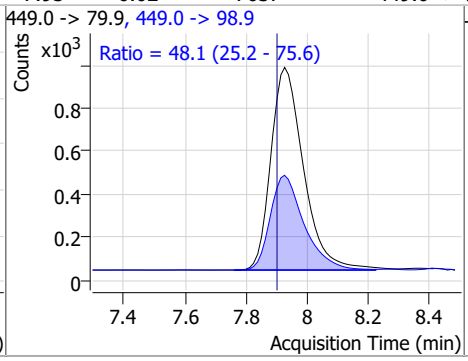
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.19	7.81	0.02	31440	463.0 -> 219.0	22.7	10.8	32.5

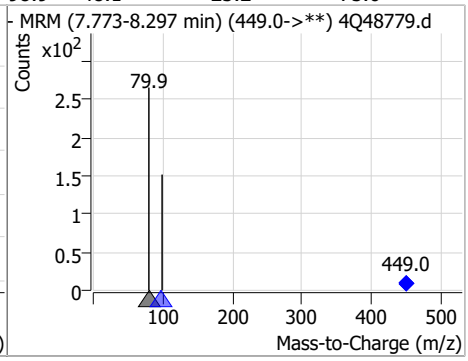


Perfluorinated Compounds by LC/MS/MS

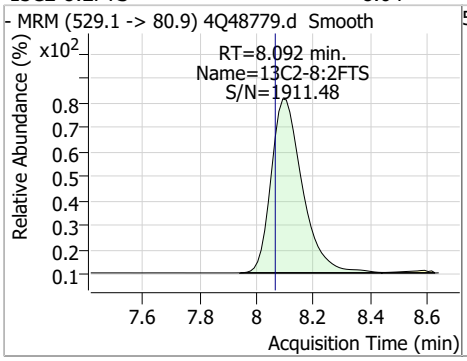
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.72	7.93	0.02	7037	449.0 -> 98.9	48.1	25.2	75.6

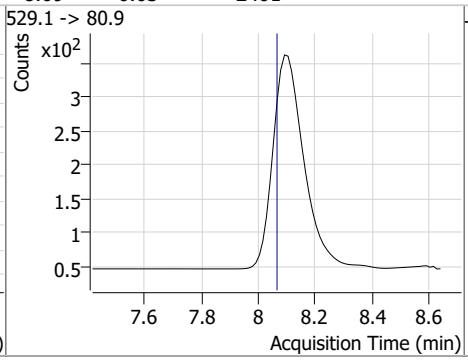


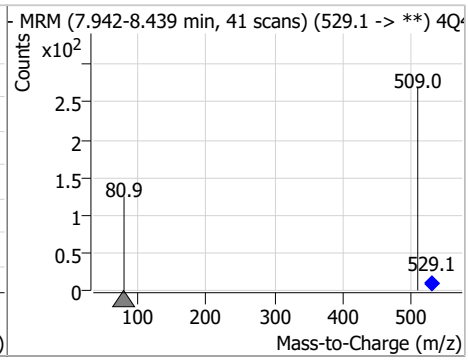




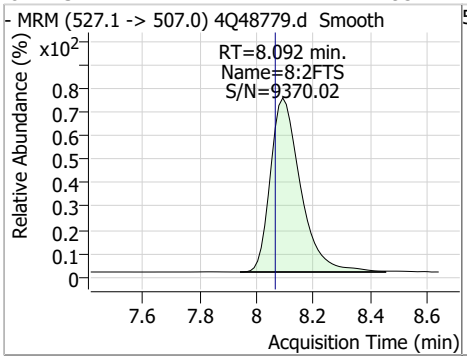
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.64	8.09	0.03	2401				

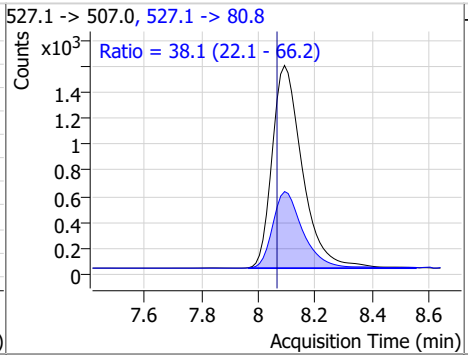


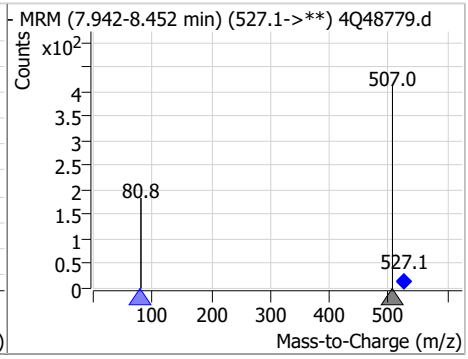




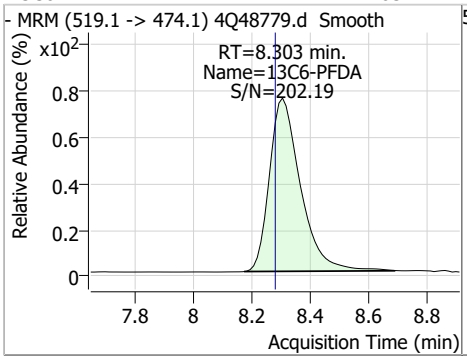
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.93	8.09	0.03	11504	527.1 -> 80.8	38.1	22.1	66.2

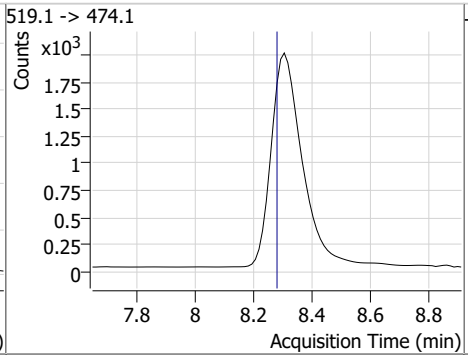


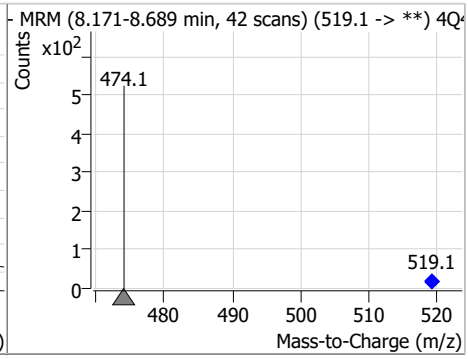




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.63	8.30	0.02	14586				

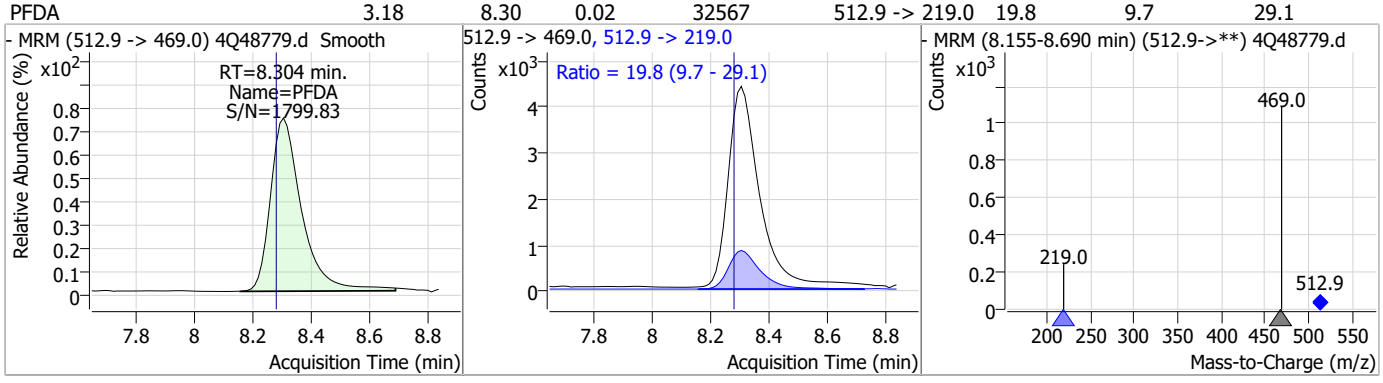




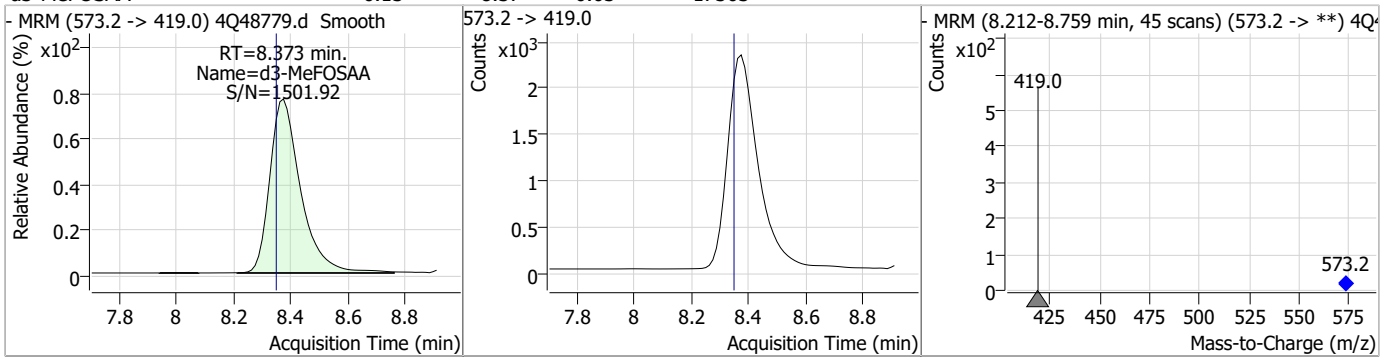


Perfluorinated Compounds by LC/MS/MS

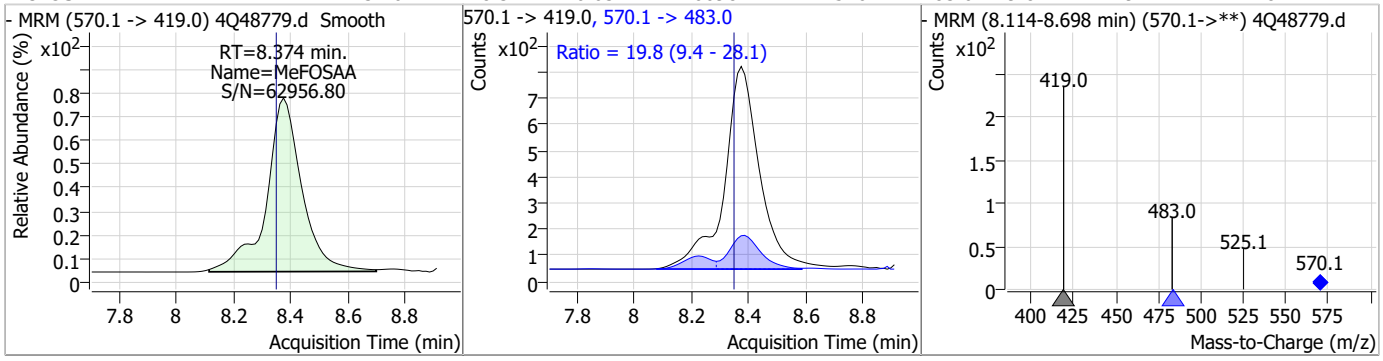
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	3.18	8.30	0.02	32567	512.9 -> 219.0	19.8	9.7	29.1



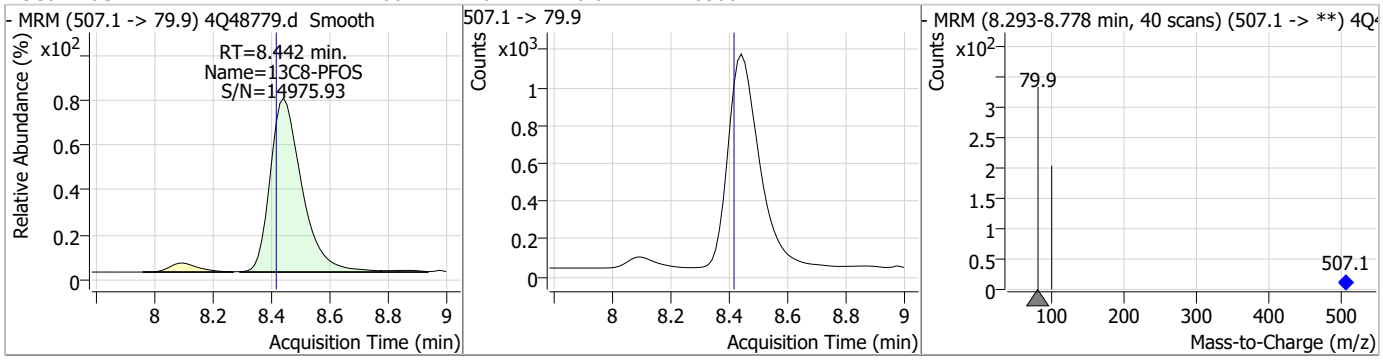
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.13	8.37	0.03	17303				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	3.10	8.37	0.03	6698	570.1 -> 483.0	19.8	9.4	28.1

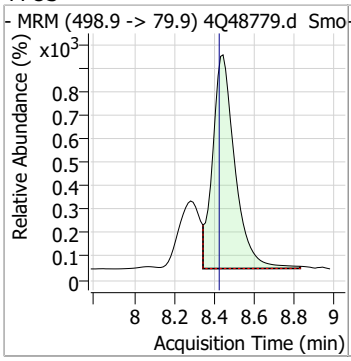


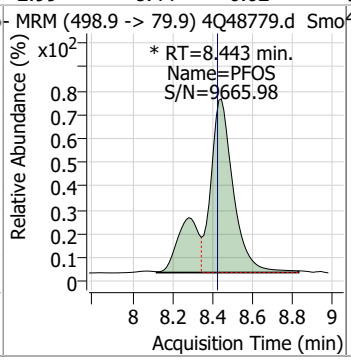
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.80	8.44	0.02	8560				

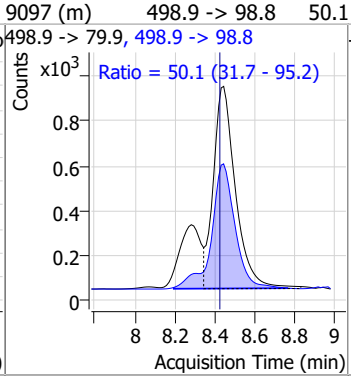


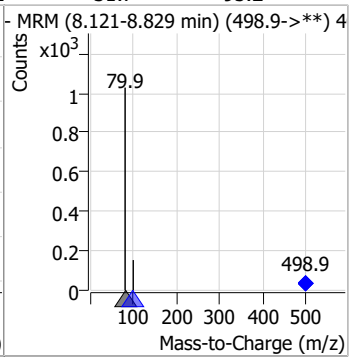
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.99	8.44	0.02	9097 (m)	498.9 -> 98.8	50.1	31.7	95.2

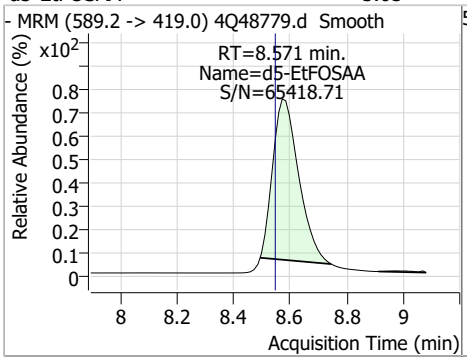


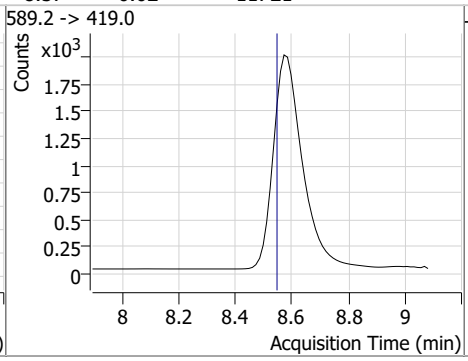


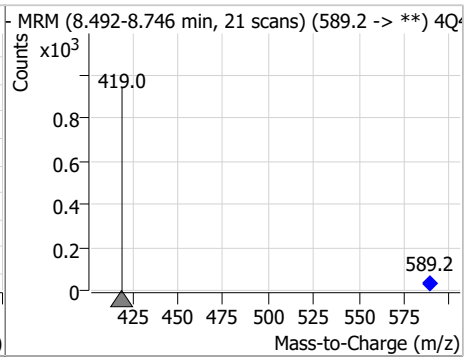




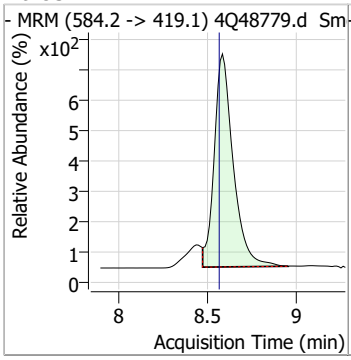
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.05	8.57	0.02	11721				

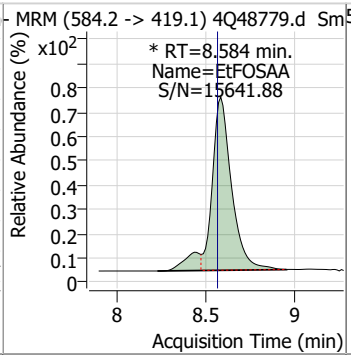


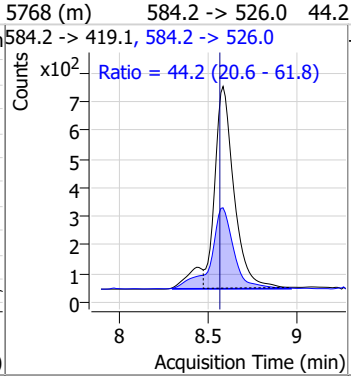


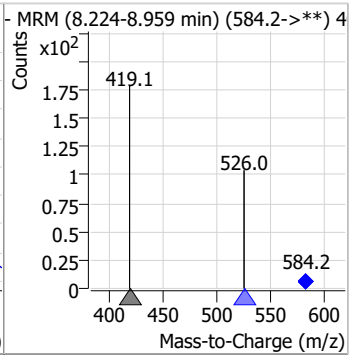


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	3.60	8.58	0.02	5768 (m)	584.2 -> 526.0	44.2	20.6	61.8

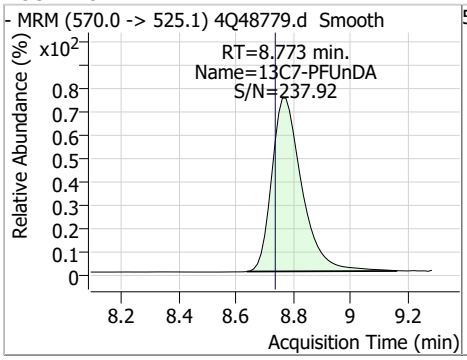


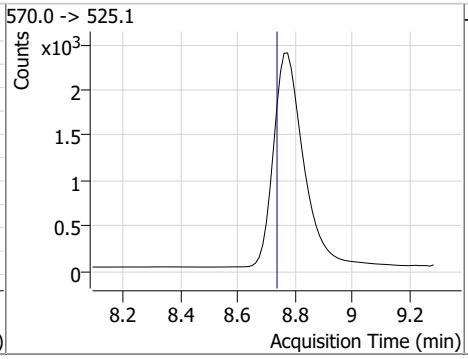


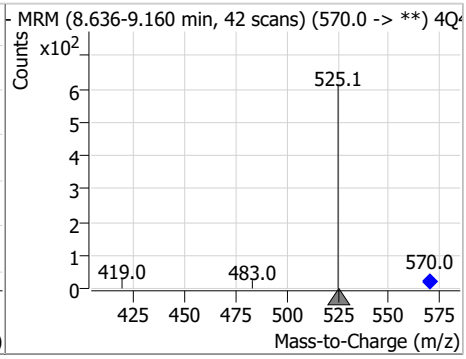




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.71	8.77	0.04	17260				

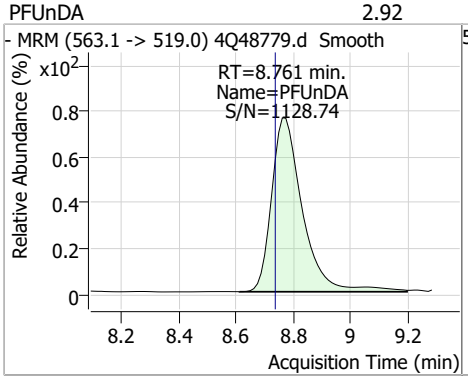


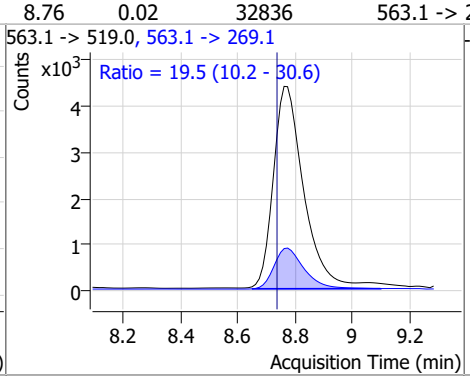


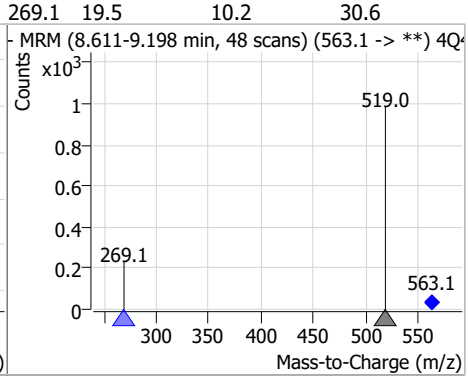


Perfluorinated Compounds by LC/MS/MS

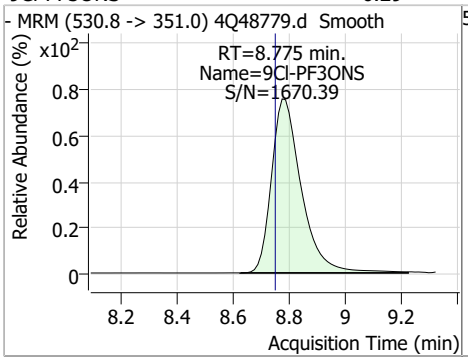
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.92	8.76	0.02	32836	563.1 -> 269.1	19.5	10.2	30.6

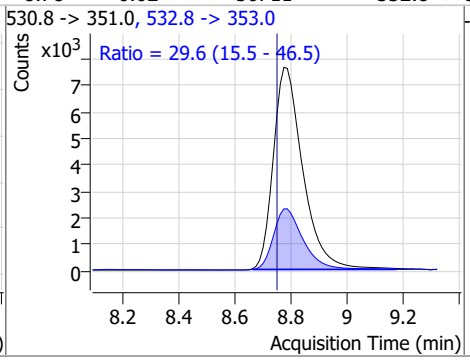


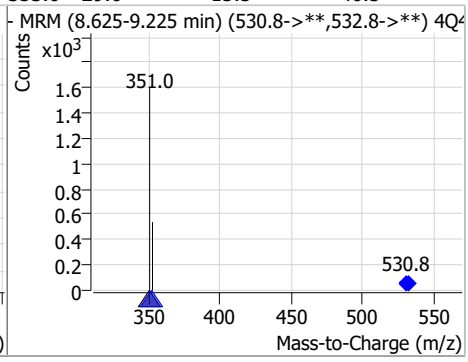




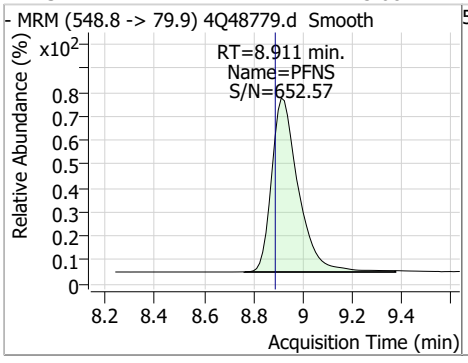
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	6.29	8.78	0.02	56711	532.8 -> 353.0	29.6	15.5	46.5

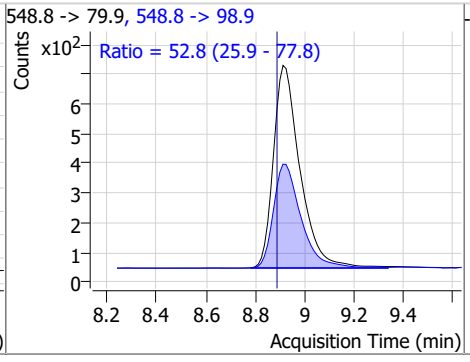


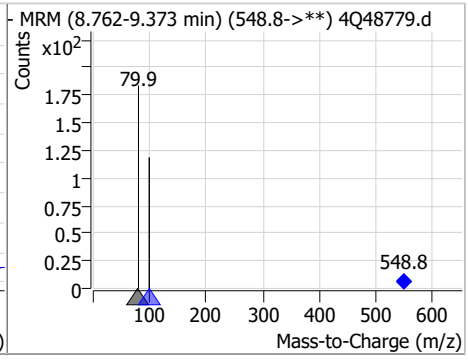




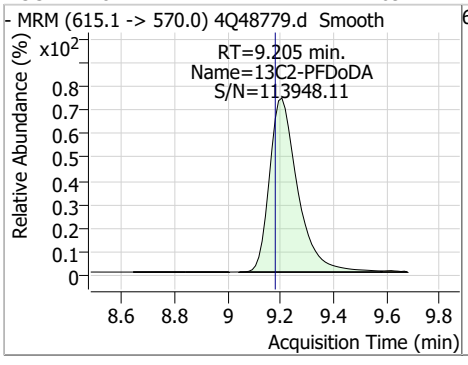
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	3.08	8.91	0.02	5144	548.8 -> 98.9	52.8	25.9	77.8

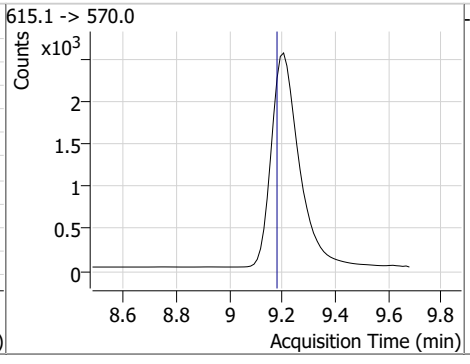


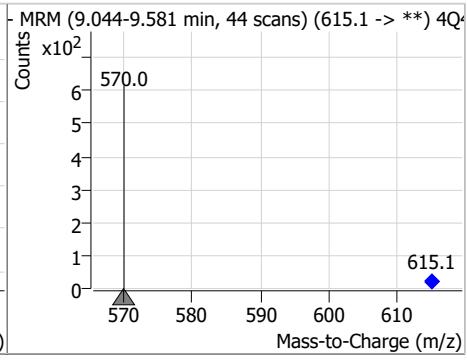




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.69	9.21	0.02	18728				

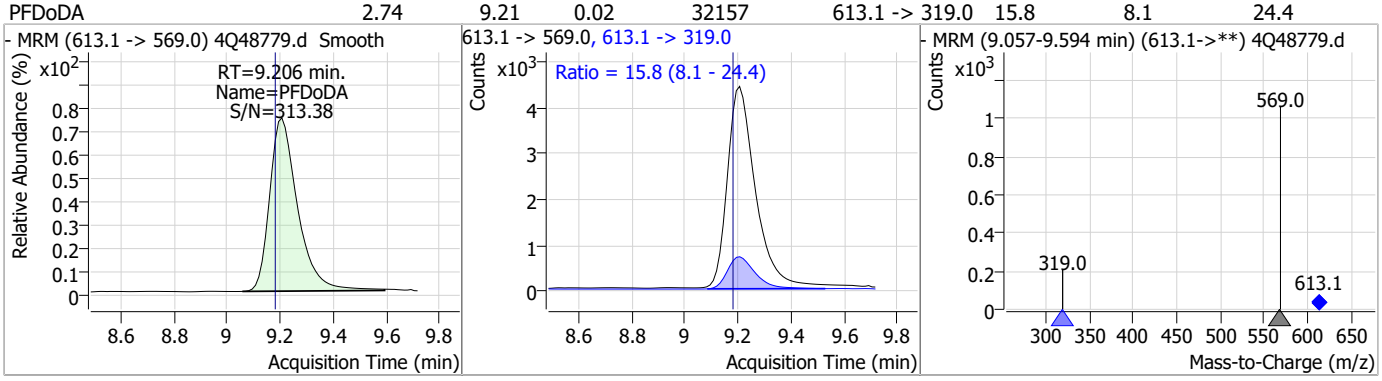




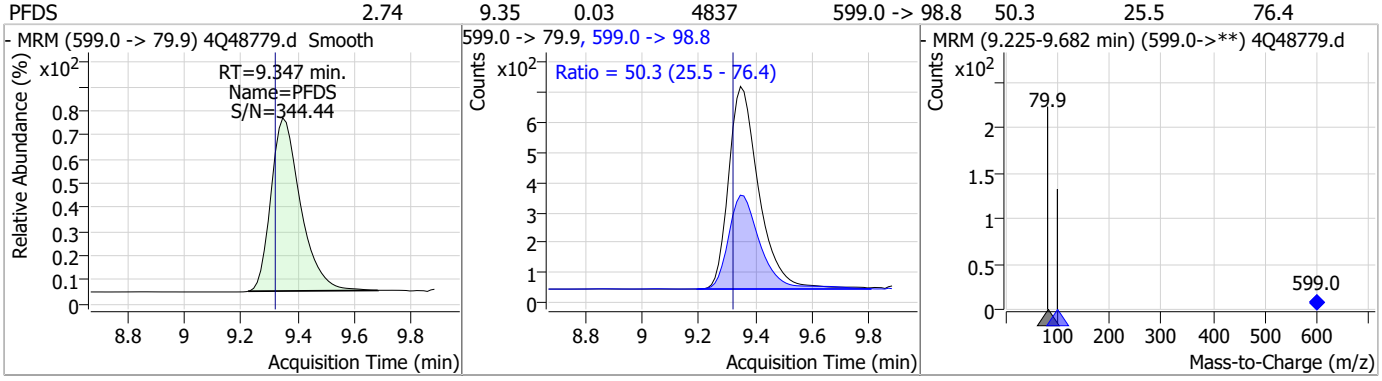


Perfluorinated Compounds by LC/MS/MS

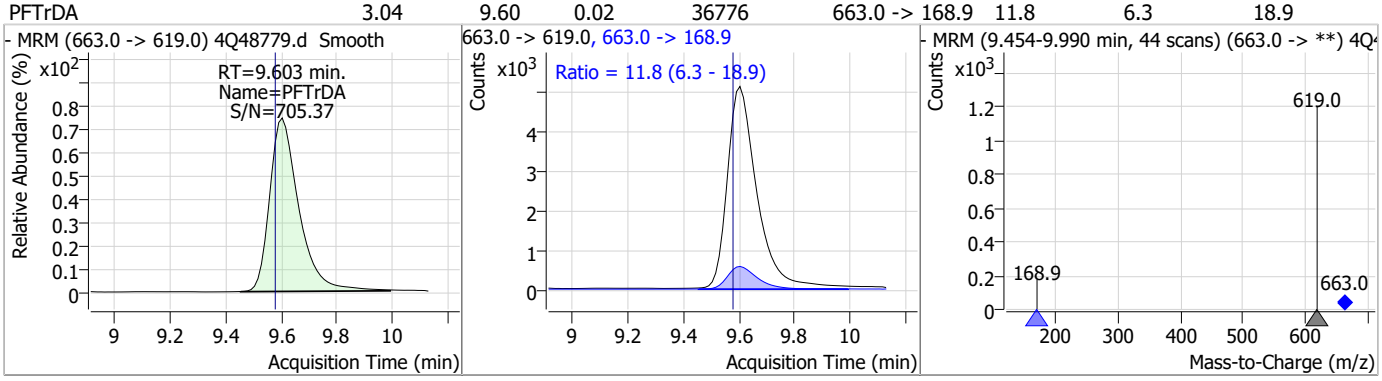
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.74	9.21	0.02	32157	613.1 -> 319.0	15.8	8.1	24.4



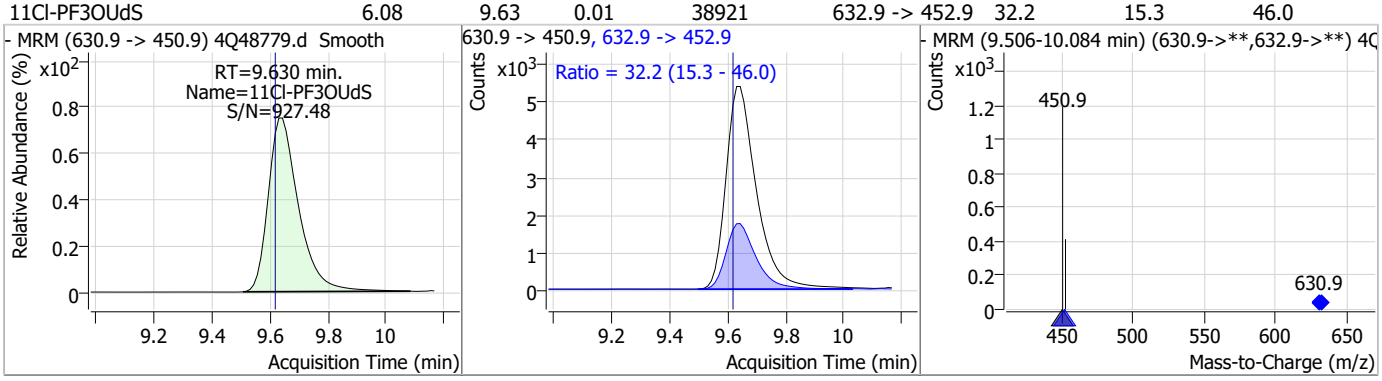
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.74	9.35	0.03	4837	599.0 -> 98.8	50.3	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	3.04	9.60	0.02	36776	663.0 -> 168.9	11.8	6.3	18.9

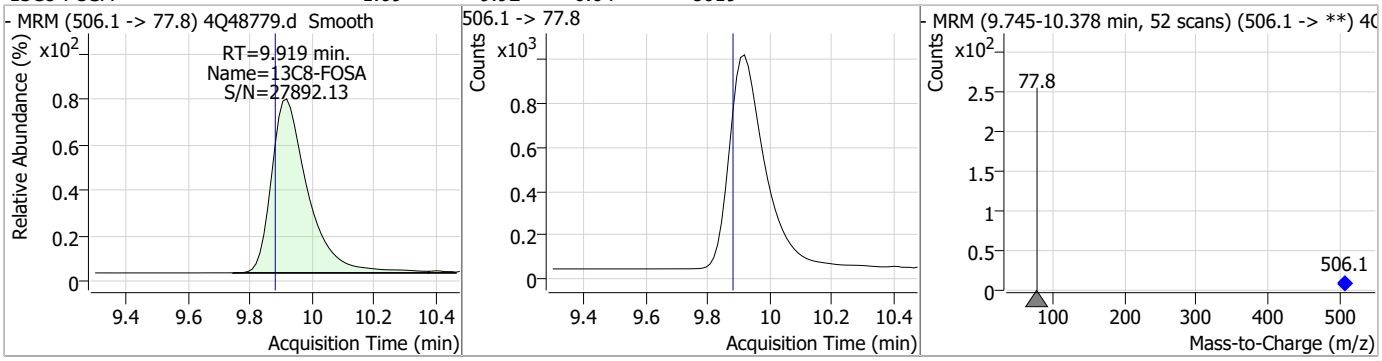


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	6.08	9.63	0.01	38921	632.9 -> 452.9	32.2	15.3	46.0

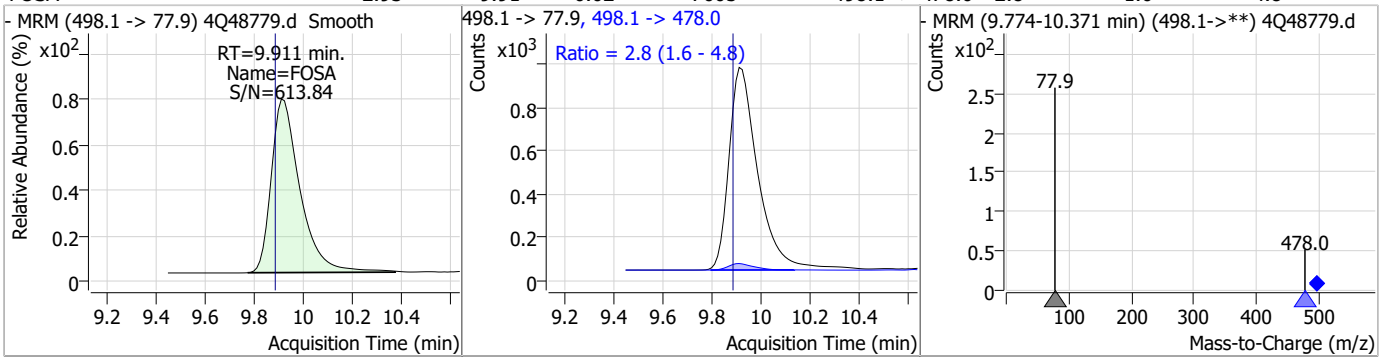


Perfluorinated Compounds by LC/MS/MS

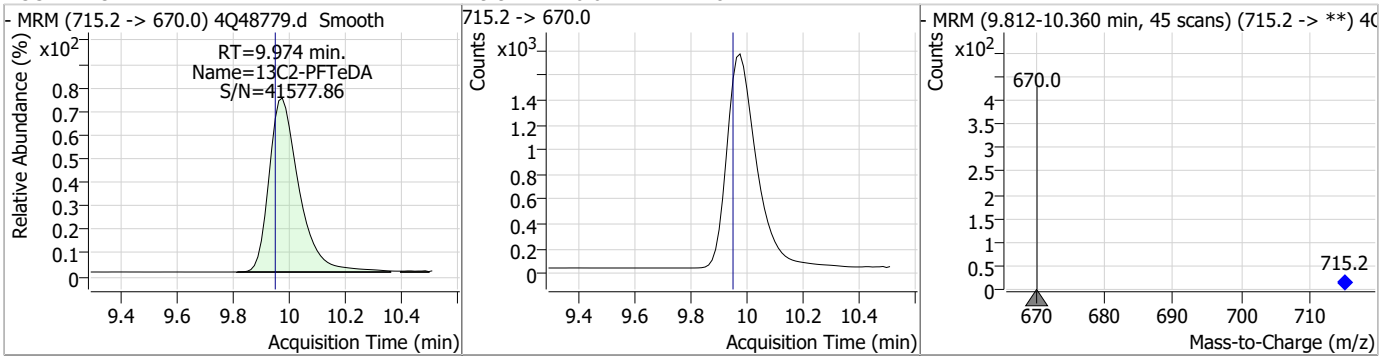
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.69	9.92	0.04	8019				



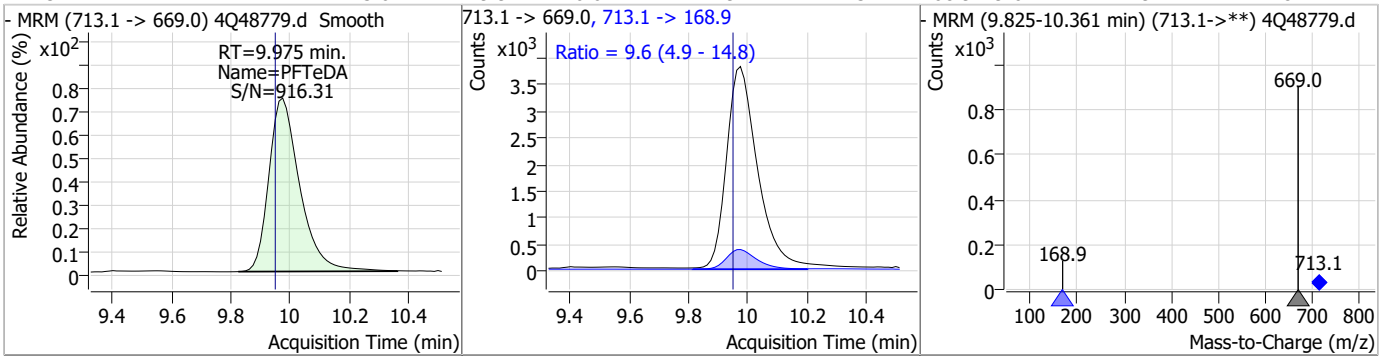
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.93	9.91	0.02	7605	498.1 -> 478.0	2.8	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.44	9.97	0.02	12844				

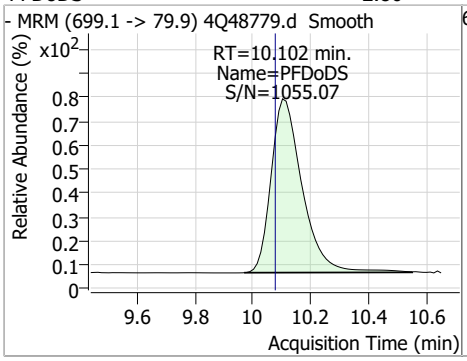


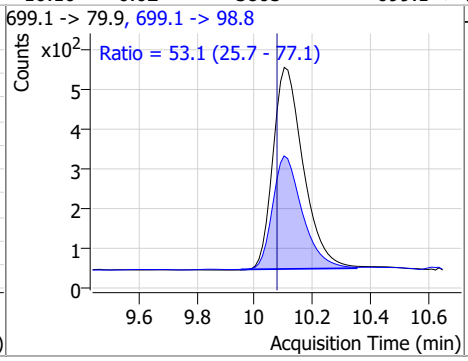
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	3.02	9.97	0.02	27194	713.1 -> 168.9	9.6	4.9	14.8

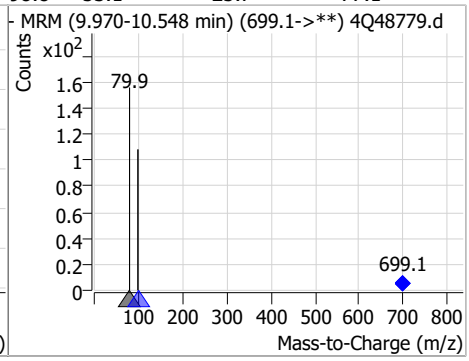


Perfluorinated Compounds by LC/MS/MS

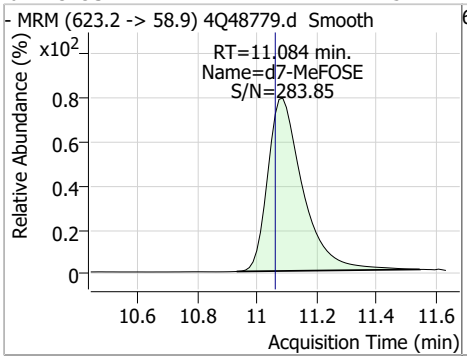
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.80	10.10	0.02	3805	699.1 -> 98.8	53.1	25.7	77.1

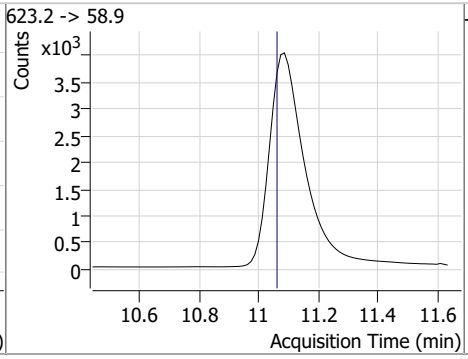


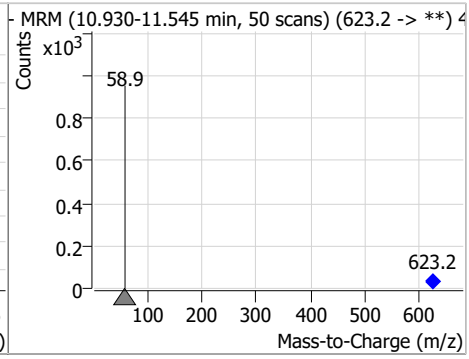




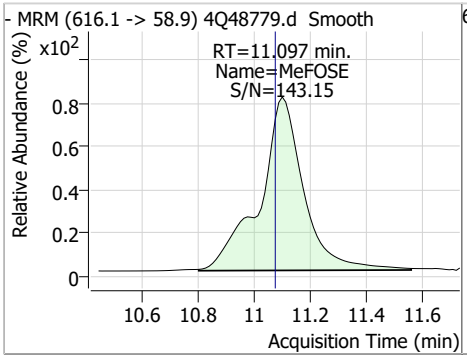
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	14.57	11.08	0.02	32557				

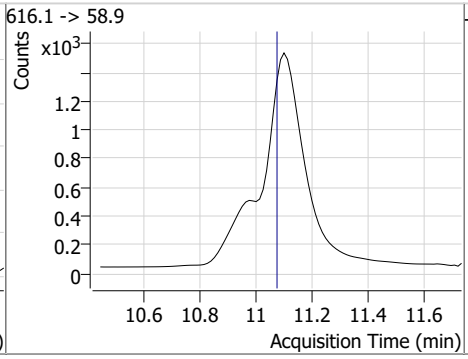


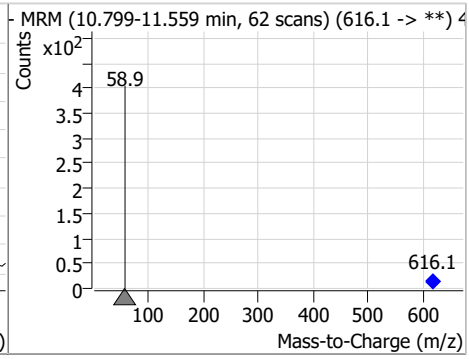




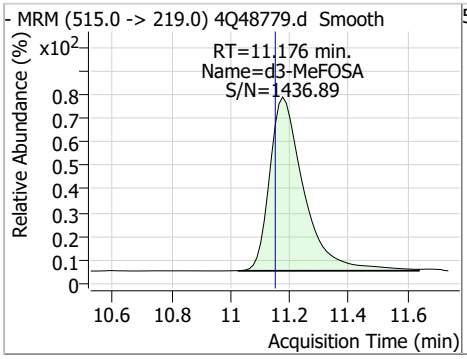
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.99	11.10	0.02	16292				

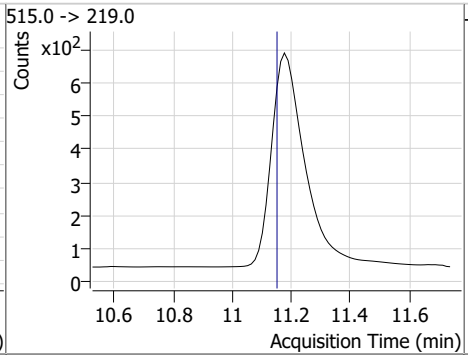


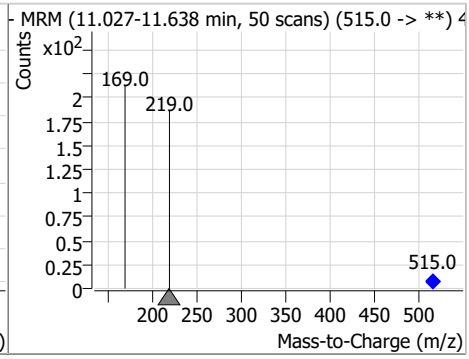




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.85	11.18	0.02	5172				

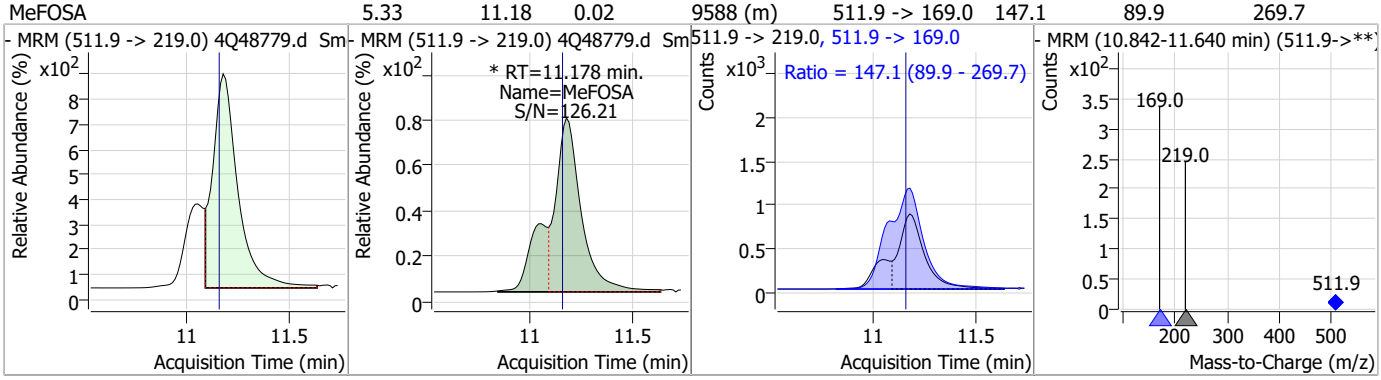




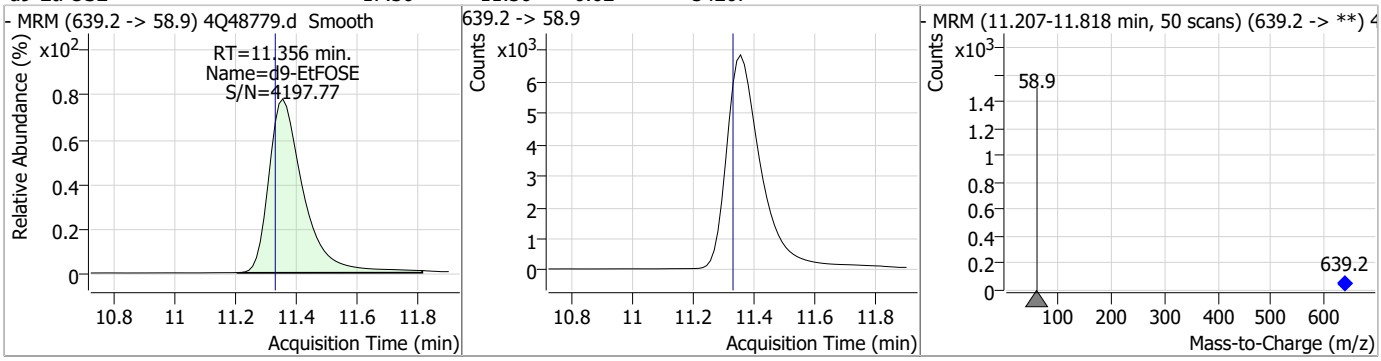


Perfluorinated Compounds by LC/MS/MS

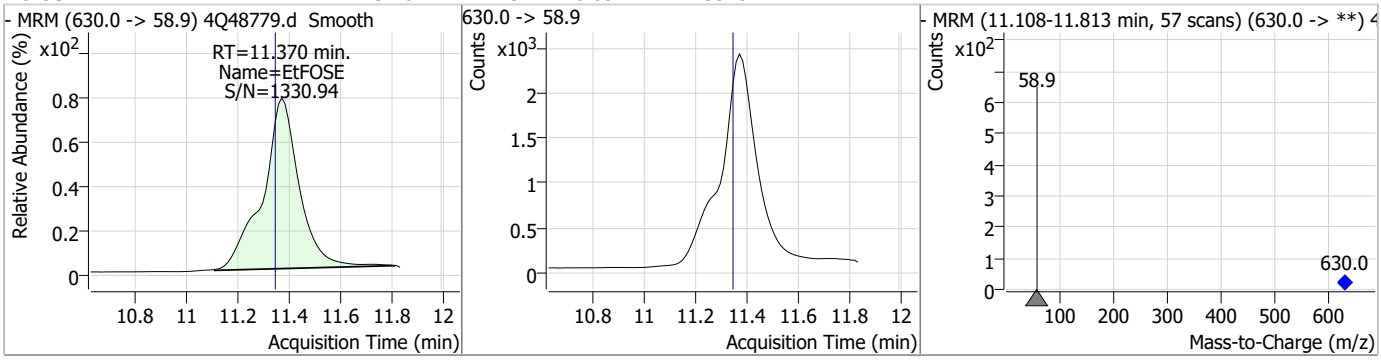
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.33	11.18	0.02	9588 (m)	511.9 -> 169.0	147.1	89.9	269.7



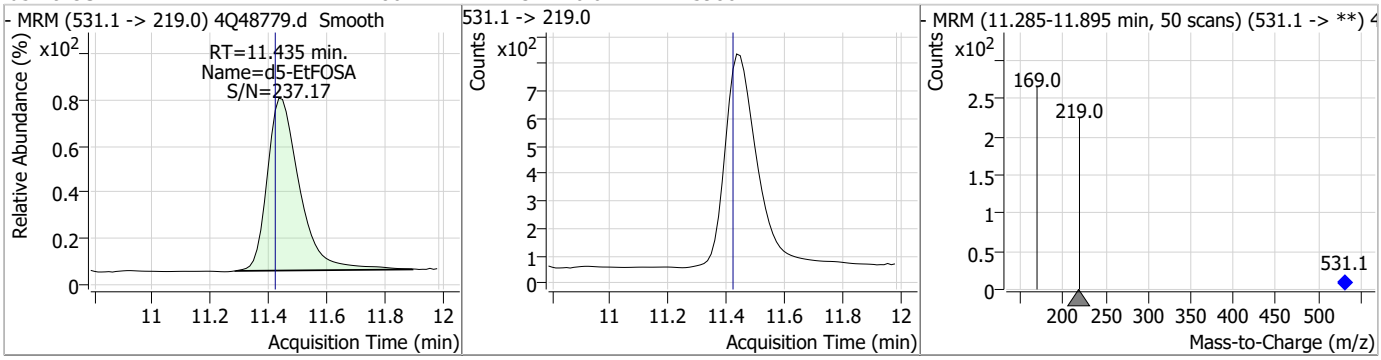
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.30	11.36	0.02	54207				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	13.76	11.37	0.03	23345				

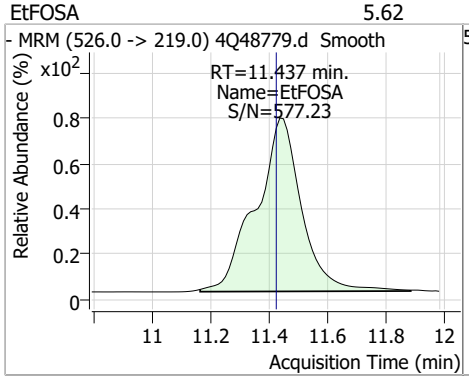


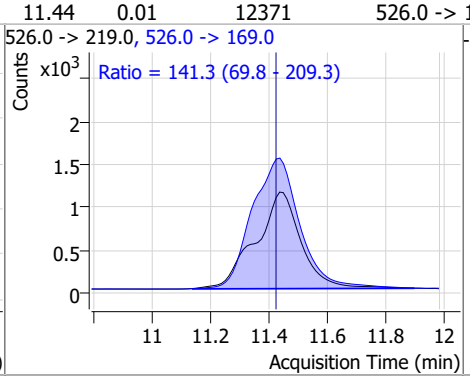
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.86	11.43	0.01	5986				

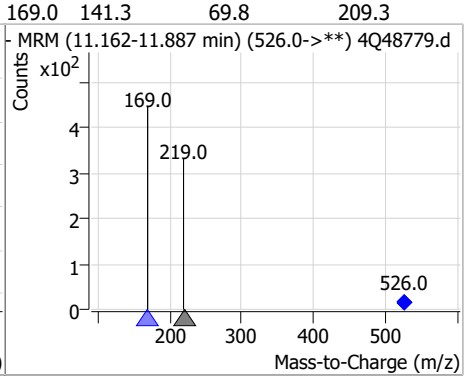


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.62	11.44	0.01	12371	526.0 -> 169.0	141.3	69.8	209.3







Manual Integration Approval Summary

Sample Number:	OP98297-BS	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48779.D	**Analyst approved:**	08/10/23 10:42 Anna Ludwig
Injection Time:	08/09/23 19:03	**Supervisor approved:**	08/14/23 16:34 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.44	Split peak
EtFOSAA	2991-50-6		8.58	Split peak
MeFOSA	31506-32-8		11.18	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 16:34

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48780.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 7:18:18 PM
Sample Name : op98297-llbs:3
Vial : P4-D2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	114824	10.00	µg/L	0.025
M5-PFPeA	4.425	268.3 -> 223.0	57668	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	39901	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	29365	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	46209	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	20484	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	14350	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	16929	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	16481	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	11899	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	7248	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9760	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6677	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8637	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	799	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1639	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2757	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	16965	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	31260	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	14178	5.00	µg/L	0.025
M7-MeFOSE	11.084	623.2 -> 58.9	32847	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	55661	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	6048	2.50	µg/L	0.025
M3-MeFOSA	11.189	515.0 -> 219.0	5181	2.50	µg/L	0.037
13C4-PFOS	8.443	502.8 -> 79.9	7719	2.50	µg/L	0.025
13C3-PFBA	2.941	216.0 -> 172.0	47443	5.00	µg/L	0.037
18O2-PFHxS	7.341	403.0 -> 83.9	3802	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	44104	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	13090	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	18881	1.25	µg/L	0.025
13C2-PFHxA	5.623	315.1 -> 270.0	28837	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	799	8.42	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 168.3%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1639	9.03	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 180.6%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2757	10.00	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 200.1%		
13C2-PFDoDA	9.205	615.1 -> 570.0	16481	1.47	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.6%		
13C2-PFTeDA	9.974	715.2 -> 670.0	11899	1.32	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C3-PFBS	5.502	302.1 -> 79.9	9760	3.02	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.7%		
13C3-PFHxS	7.342	402.1 -> 79.9	6677	3.17	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 = 126.9%		
13C4-PFBA	2.936	216.8 -> 171.9	114824	14.16 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 141.6%		
13C4-PFHpA	6.580	367.1 -> 322.0	29365	3.42 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 136.7%		
13C5-PFHxA	5.622	318.0 -> 273.0	39901	3.30 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 132.1%		
13C5-PFPeA	4.425	268.3 -> 223.0	57668	5.72 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.4%		
13C6-PFDA	8.303	519.1 -> 474.1	14350	1.58 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 126.7%		
13C7-PFUnDA	8.773	570.0 -> 525.1	16929	1.66 µg/L		0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 132.7%		
13C8-FOSA	9.919	506.1 -> 77.8	7248	1.51 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 60.2%		
13C8-PFOA	7.251	421.1 -> 376.0	46209	3.18 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.3%		
13C8-PFOS	8.442	507.1 -> 79.9	8637	2.79 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C9-PFNA	7.810	472.1 -> 427.0	20484	1.43 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.6%		
d3-MeFOSAA	8.373	573.2 -> 419.0	16965	5.92 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.4%		
13C3-HFPO-DA	6.002	286.9 -> 168.9	31260	11.38 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.8%		
d3-MeFOSA	11.189	515.0 -> 219.0	5181	1.83 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.1%		
d5-EtFOSAA	8.571	589.2 -> 419.0	14178	6.02 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
d7-MeFOSE	11.084	623.2 -> 58.9	32847	14.49 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 58.0%		
d9-EtFOSE	11.356	639.2 -> 58.9	55661	17.51 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
d5-EtFOSA	11.447	531.1 -> 219.0	6048	1.85 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.1%		
Target Compounds						QValue
4:2FTS	5.309	327.1 -> 307.0	3463	3.21 µg/L		93
		327.1 -> 80.9	1561			
6:2FTS	7.024	427.1 -> 407.0	4394	3.16 µg/L		99
		427.1 -> 80.9	1520			
8:2FTS	8.092	527.1 -> 507.0	3146	2.84 µg/L		89
		527.1 -> 80.8	1156			
EtFOSAA	8.584	584.2 -> 419.1	1531	0.79 µg/L	m	99
		584.2 -> 526.0	645			
FOSA	9.923	498.1 -> 77.9	1948	0.83 µg/L		100
		498.1 -> 478.0	60			
MeFOSAA	8.374	570.1 -> 419.0	1915	0.90 µg/L	m	98
		570.1 -> 483.0	338			
PFBA	2.932	212.8 -> 168.9	8440	3.19 µg/L		100
PFBS	5.503	298.7 -> 79.9	2010	0.84 µg/L		89
		298.7 -> 98.8	878			
PFDA	8.304	512.9 -> 469.0	8503	0.84 µg/L		96
		512.9 -> 219.0	1809			
PFDoDA	9.206	613.1 -> 569.0	8276	0.80 µg/L		97
		613.1 -> 319.0	1460			
PFDS	9.347	599.0 -> 79.9	1369	0.77 µg/L		100

Perfluorinated Compounds by LC/MS/MS

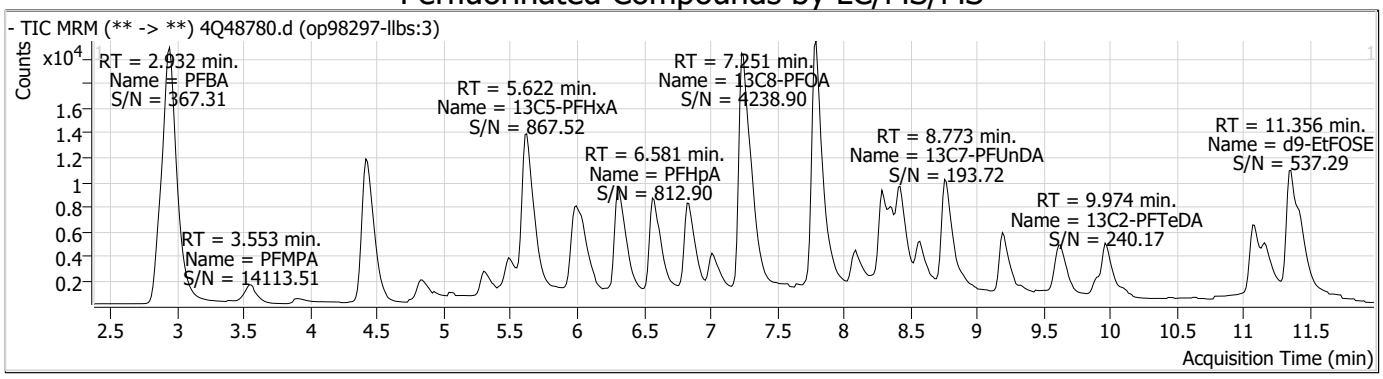
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	703				
PFHpA	6.581	363.1 -> 319.0	10326	0.78	µg/L		99
		363.1 -> 169.0	1869				
PFHpS	7.925	449.0 -> 79.9	1872	0.72	µg/L		79
		449.0 -> 98.9	1219				
PFHxA	5.625	313.0 -> 269.0	10385	0.90	µg/L		98
		313.0 -> 118.9	284				
PFHxS	7.330	398.7 -> 79.9	1570	0.82	µg/L	m	90
		398.7 -> 98.9	943				
PFNA	7.810	463.0 -> 419.0	9419	0.88	µg/L		96
		463.0 -> 219.0	1847				
PFNS	8.911	548.8 -> 79.9	1385	0.82	µg/L		92
		548.8 -> 98.9	798				
PFOA	7.252	413.0 -> 369.0	16551	0.90	µg/L		98
		413.0 -> 169.0	3013				
PFOS	8.443	498.9 -> 79.9	2764	0.90	µg/L	m	80
		498.9 -> 98.8	1326				
PFPeA	4.427	263.0 -> 219.0	18010	1.80	µg/L		100
PFPeS	6.607	349.1 -> 79.9	1432	0.79	µg/L		90
		349.1 -> 98.9	547				
PFTeDA	9.975	713.1 -> 669.0	6981	0.84	µg/L		99
		713.1 -> 168.9	705				
PFTrDA	9.603	663.0 -> 619.0	9458	0.89	µg/L		97
		663.0 -> 168.9	1307				
PFUnDA	8.773	563.1 -> 519.0	8665	0.79	µg/L		94
		563.1 -> 269.1	2000				
11Cl-PF3OUdS	9.642	630.9 -> 450.9	10275	1.57	µg/L		99
		632.9 -> 452.9	3079				
9Cl-PF3ONS	8.788	530.8 -> 351.0	16159	1.75	µg/L		98
		532.8 -> 353.0	5166				
ADONA	6.843	376.9 -> 250.9	31644	1.74	µg/L		100
		376.9 -> 84.8	8193				
HFPO-DA	6.003	284.9 -> 168.9	4278	1.66	µg/L		97
		284.9 -> 184.9	514				
3:3FTCA	3.905	241.0 -> 177.0	1654	2.48	µg/L		98
		241.0 -> 117.0	152				
5:3FTCA	6.321	341.0 -> 237.1	32454	17.22	µg/L		96
		341.0 -> 217.0	22123				
7:3FTCA	7.800	441.0 -> 316.9	19974	19.24	µg/L		97
		441.0 -> 336.9	45097				
EtFOSA	11.449	526.0 -> 219.0	3514	1.58	µg/L		99
		526.0 -> 169.0	4939				
EtFOSE	11.370	630.0 -> 58.9	6314	3.62	µg/L		100
MeFOSA	11.190	511.9 -> 219.0	2492	1.38	µg/L	m	83
		511.9 -> 169.0	3877				
MeFOSE	11.097	616.1 -> 58.9	4472	3.81	µg/L		100
PFDoDS	10.114	699.1 -> 79.9	1087	0.79	µg/L		92
		699.1 -> 98.8	502				
NFDHA	5.503	295.0 -> 201.0	1142	1.54	µg/L		90
		295.0 -> 84.9	340				
PFMBA	4.841	279.0 -> 85.1	9916	1.77	µg/L		100
PFMPA	3.553	229.0 -> 84.9	9571	1.75	µg/L		100
PFEESA	6.047	314.8 -> 134.9	13039	1.41	µg/L		99
		314.8 -> 82.9	481				

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

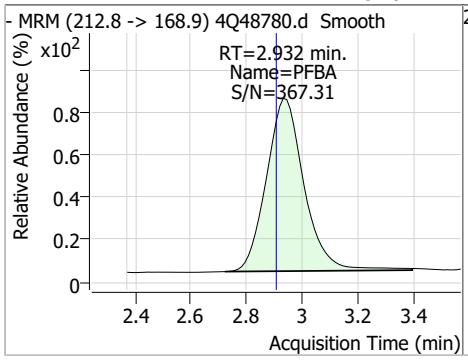
Perfluorinated Compounds by LC/MS/MS

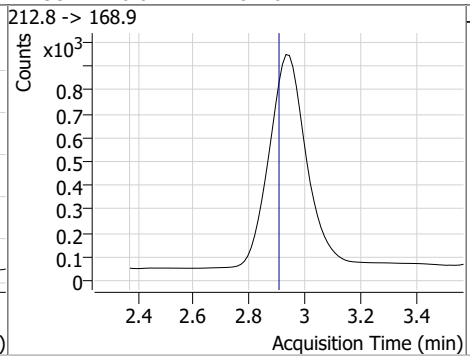
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

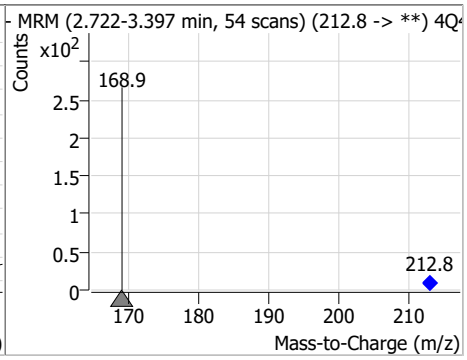
Perfluorinated Compounds by LC/MS/MS



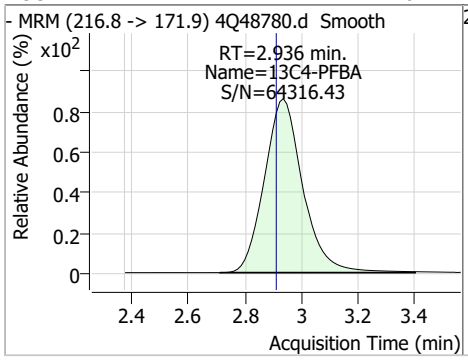
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.19	2.93	0.02	8440				

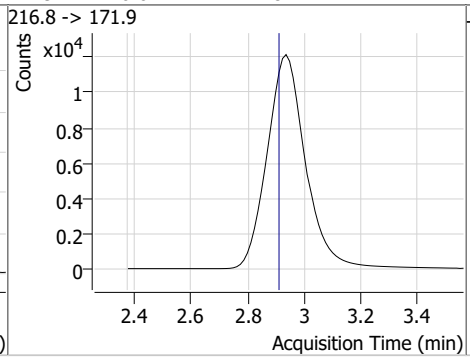


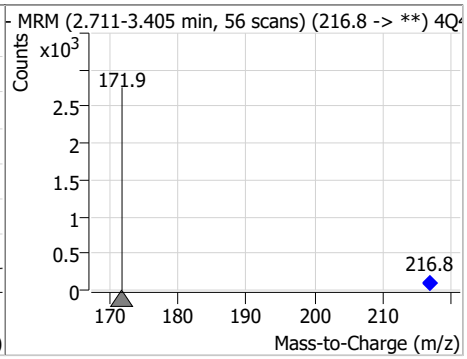




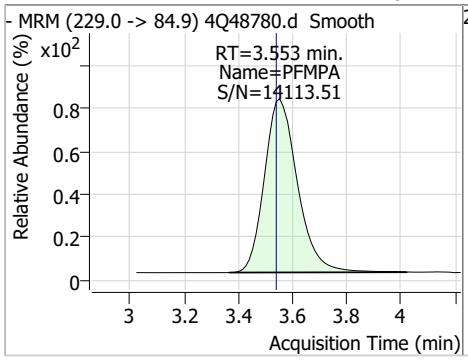
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.16	2.94	0.02	114824				

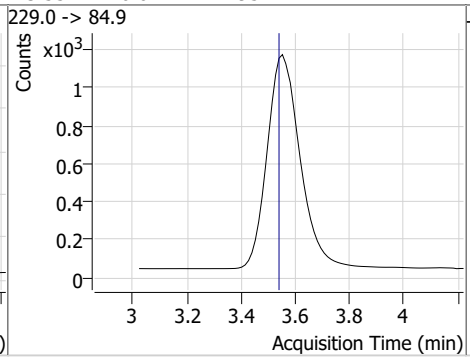


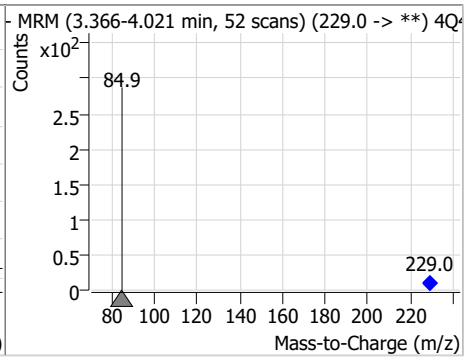




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	1.75	3.55	0.01	9571				

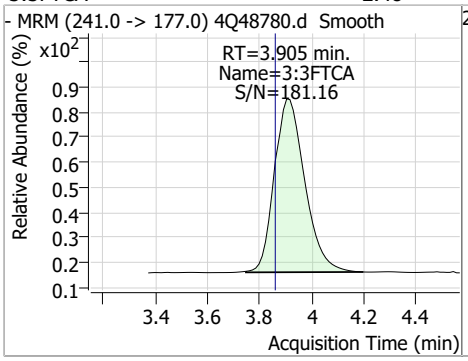


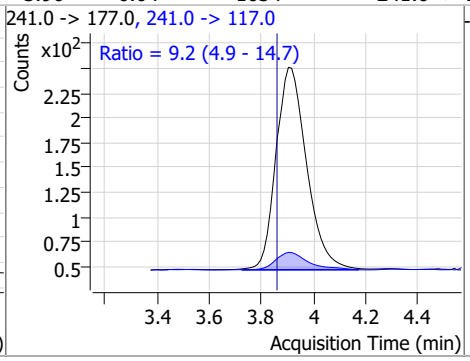


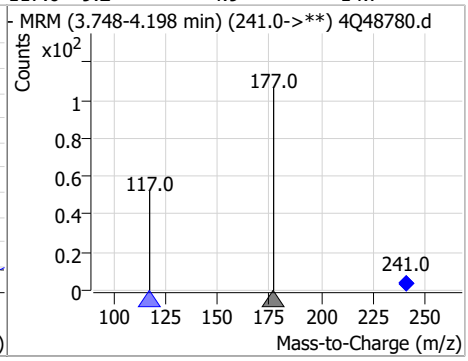


Perfluorinated Compounds by LC/MS/MS

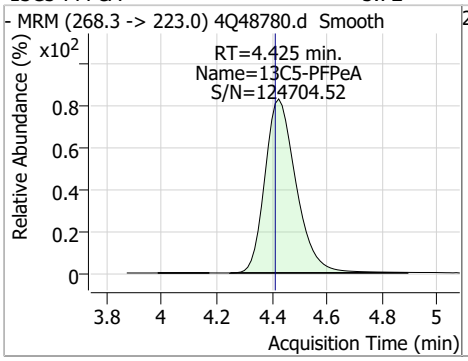
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.48	3.90	0.04	1654	241.0 -> 117.0	9.2	4.9	14.7

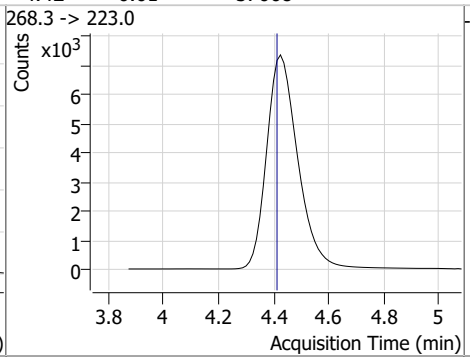


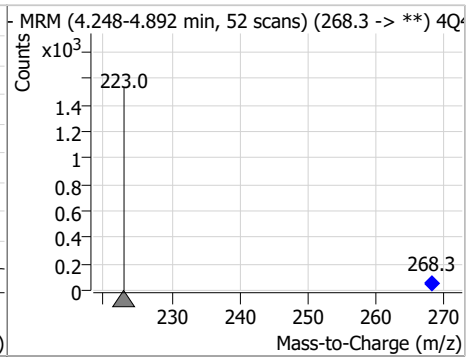




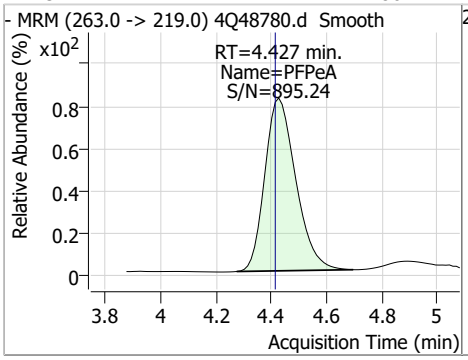
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.72	4.42	0.01	57668				

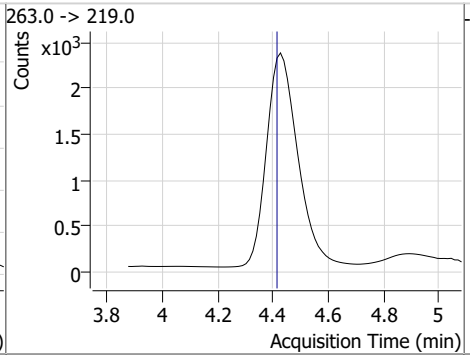


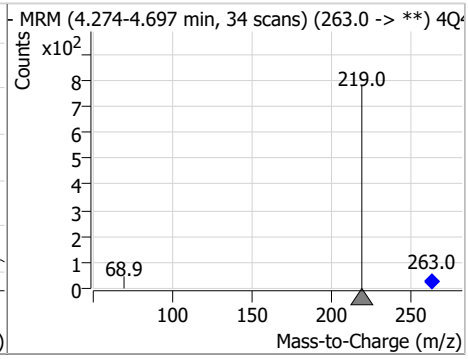




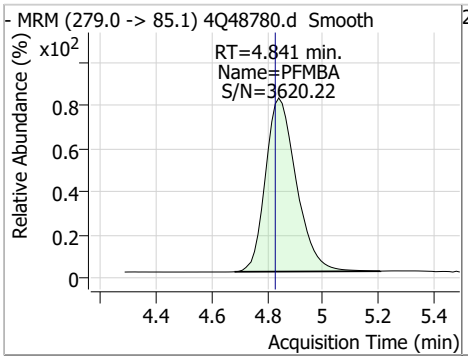
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.80	4.43	0.01	18010				

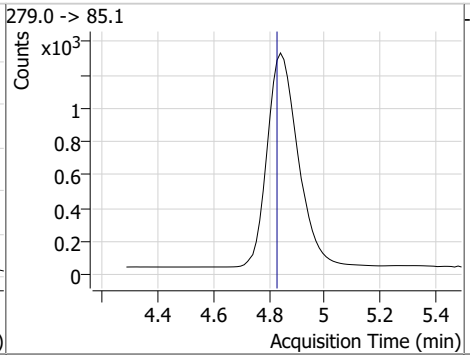


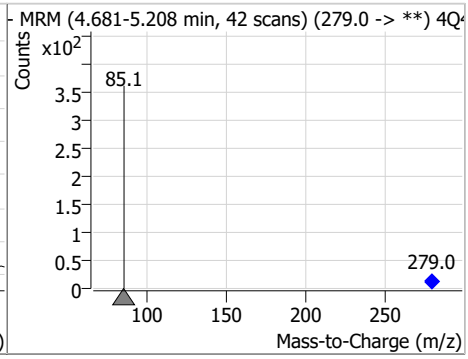




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.77	4.84	0.01	9916				

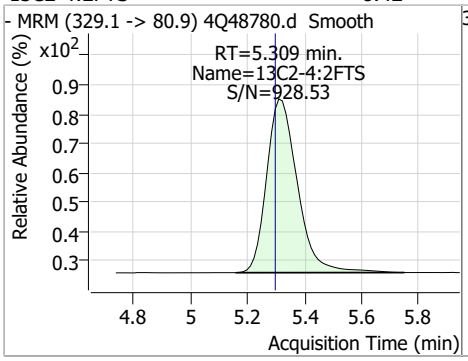


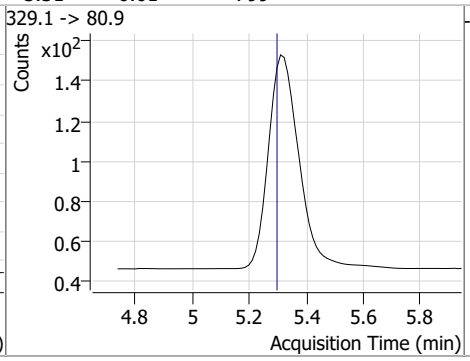


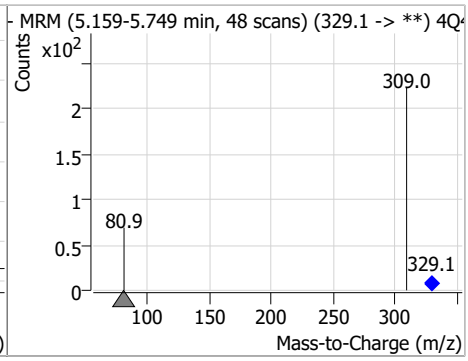


Perfluorinated Compounds by LC/MS/MS

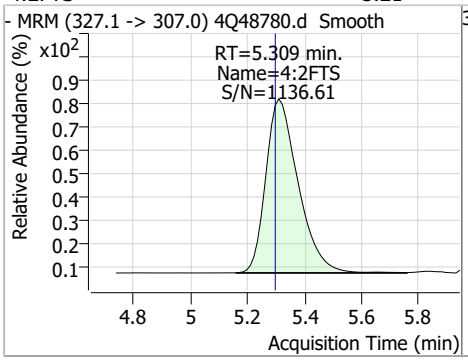
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.42	5.31	0.01	799				

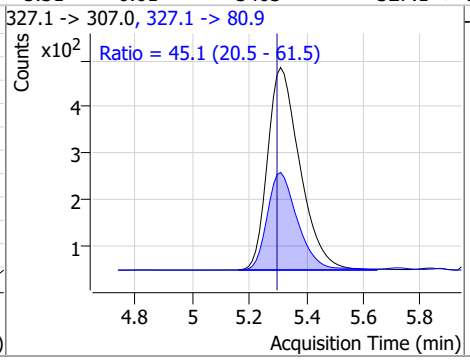


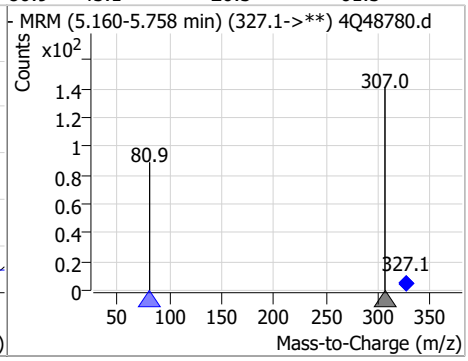




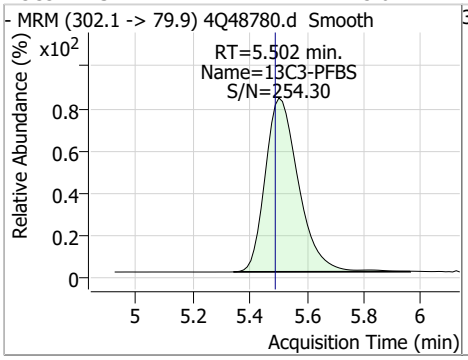
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	3.21	5.31	0.01	3463	327.1 -> 80.9	45.1	20.5	61.5

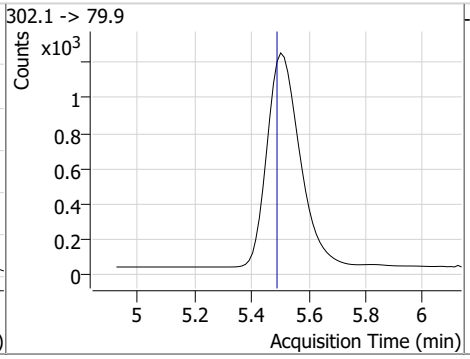


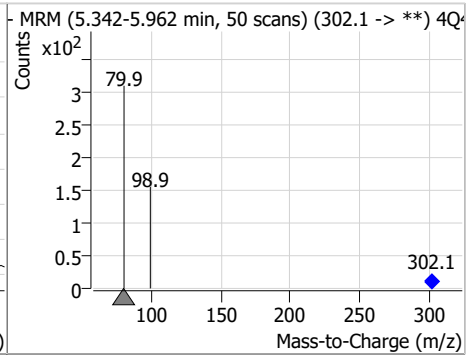




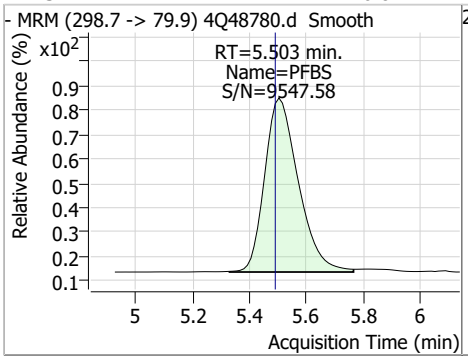
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.02	5.50	0.01	9760				

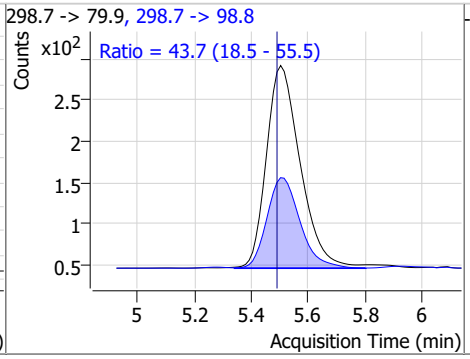


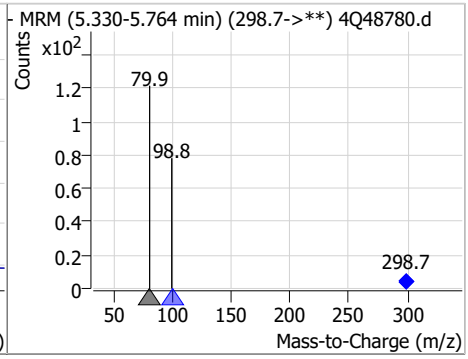




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.84	5.50	0.01	2010	298.7 -> 98.8	43.7	18.5	55.5

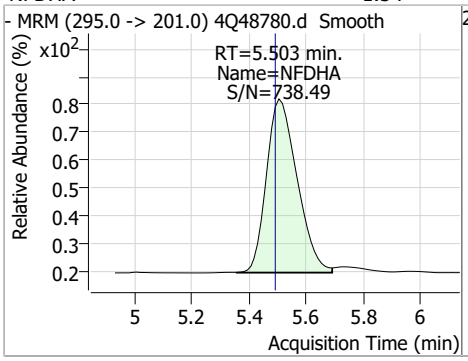


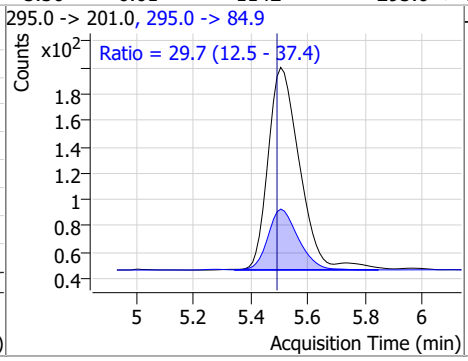


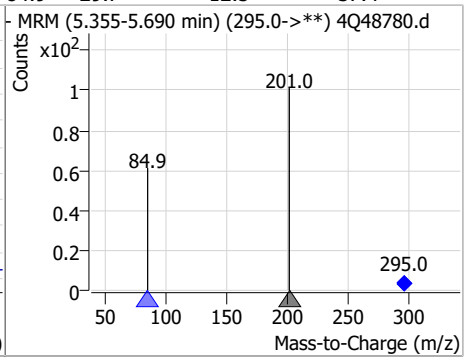


Perfluorinated Compounds by LC/MS/MS

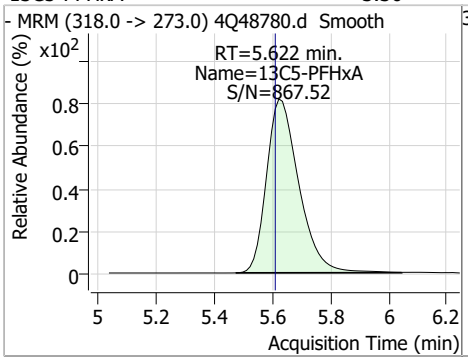
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	1.54	5.50	0.01	1142	295.0 -> 84.9	29.7	12.5	37.4

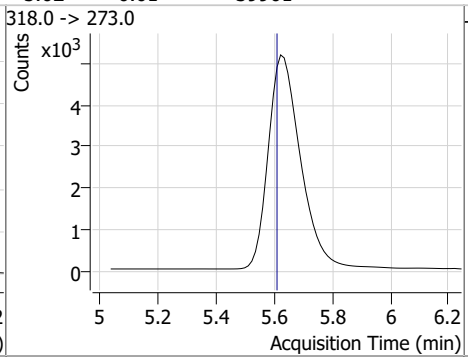


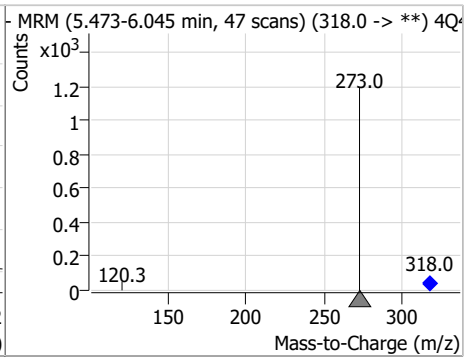




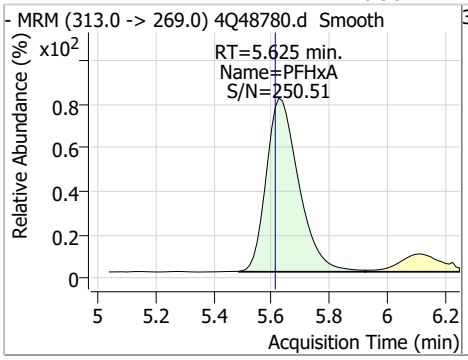
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.30	5.62	0.01	39901				

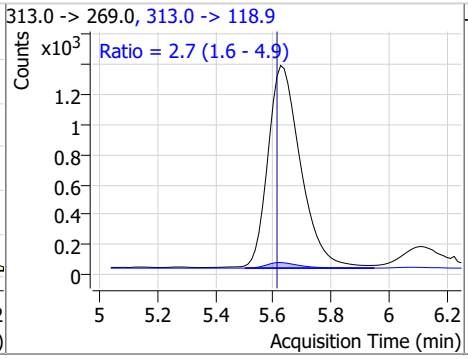


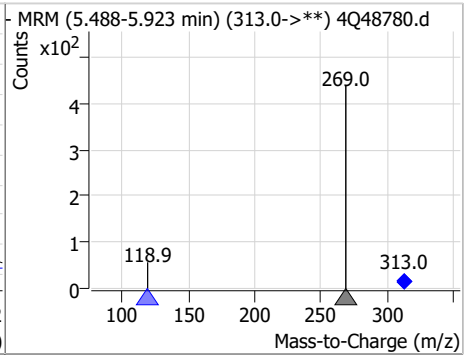




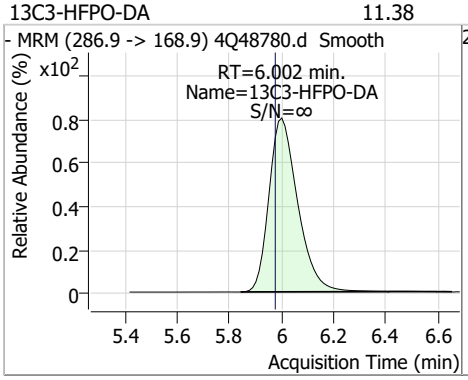
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.90	5.62	0.01	10385	313.0 -> 118.9	2.7	1.6	4.9

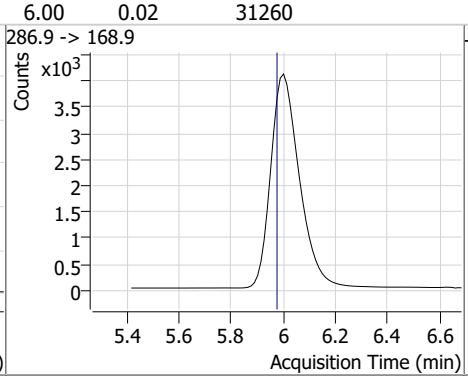


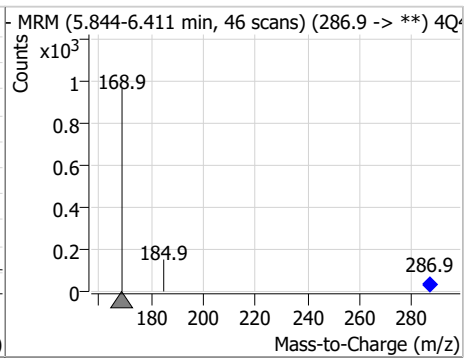




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.38	6.00	0.02	31260				

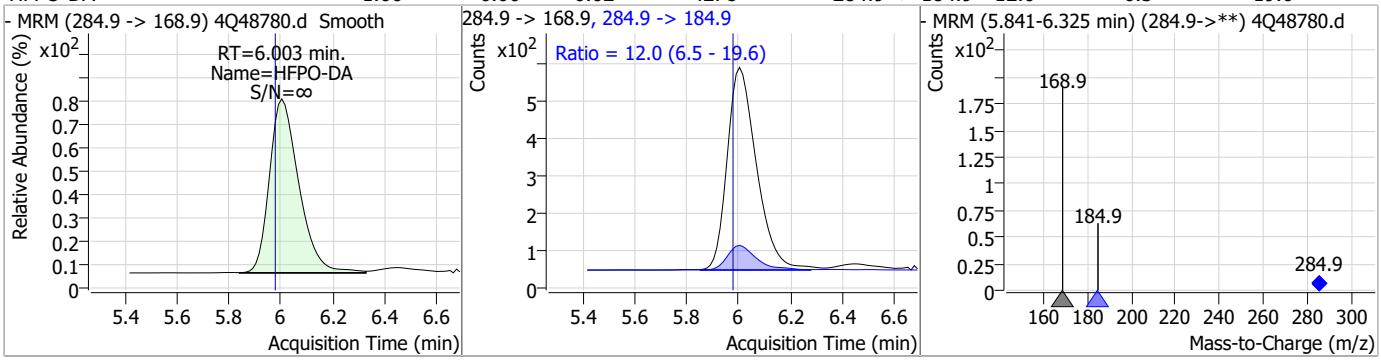




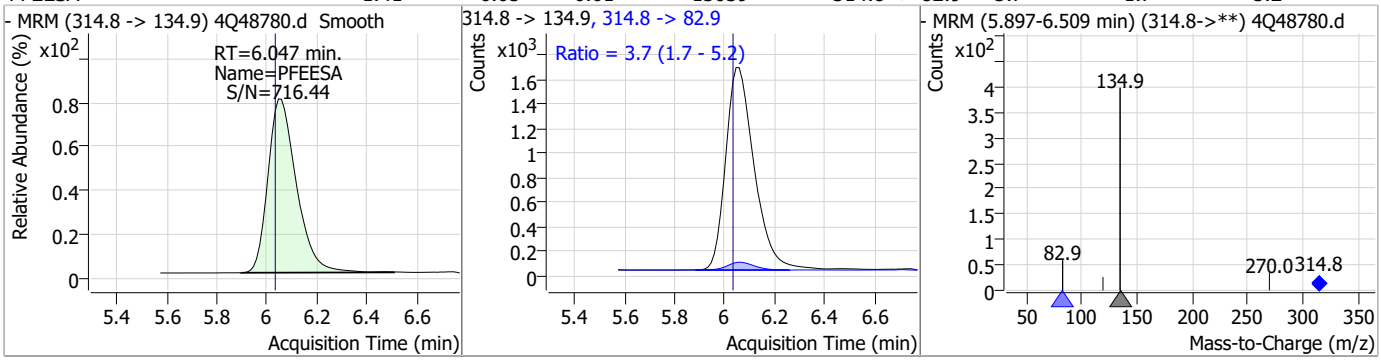


Perfluorinated Compounds by LC/MS/MS

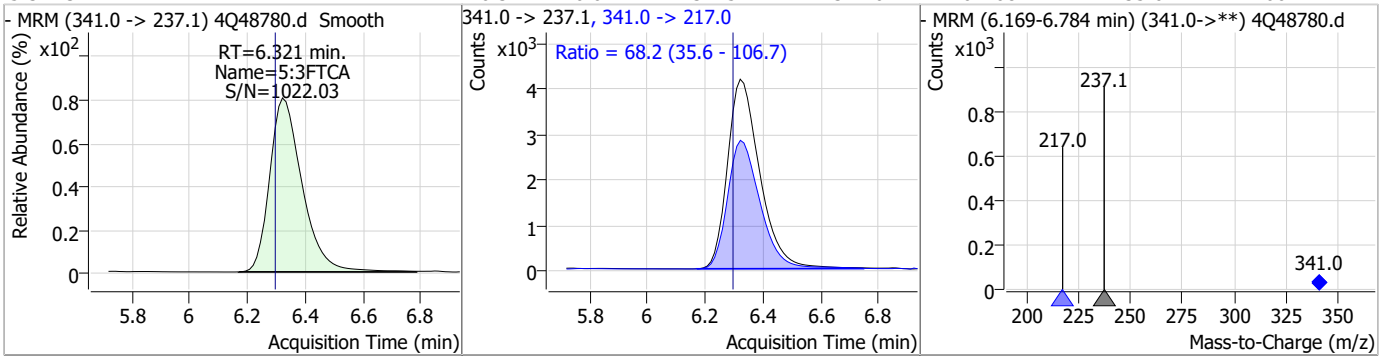
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.66	6.00	0.02	4278	284.9 -> 184.9	12.0	6.5	19.6



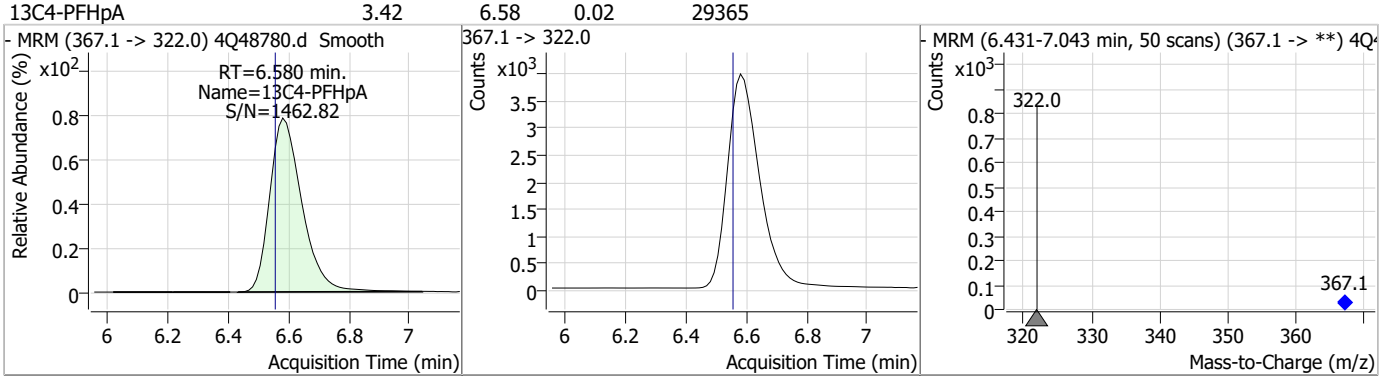
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.41	6.05	0.01	13039	314.8 -> 82.9	3.7	1.7	5.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	17.22	6.32	0.02	32454	341.0 -> 217.0	68.2	35.6	106.7

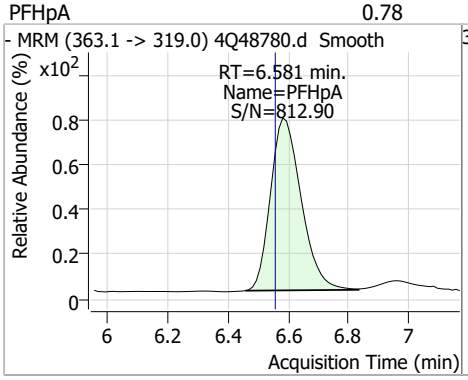


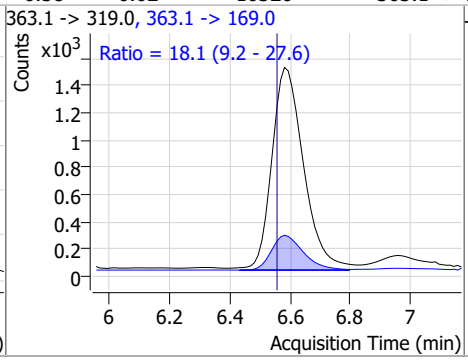
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.42	6.58	0.02	29365				

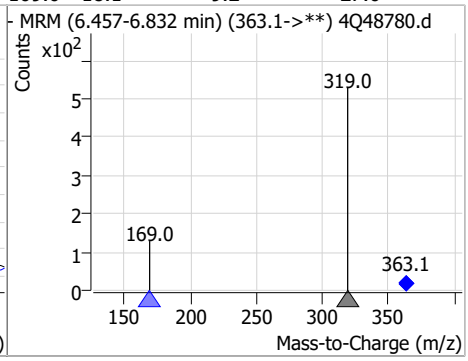


Perfluorinated Compounds by LC/MS/MS

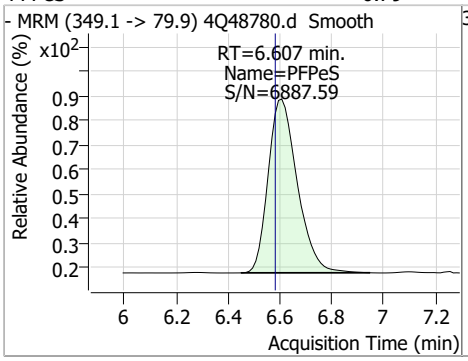
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.78	6.58	0.02	10326	363.1 -> 169.0	18.1	9.2	27.6

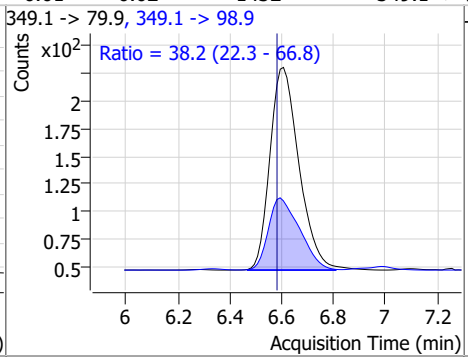


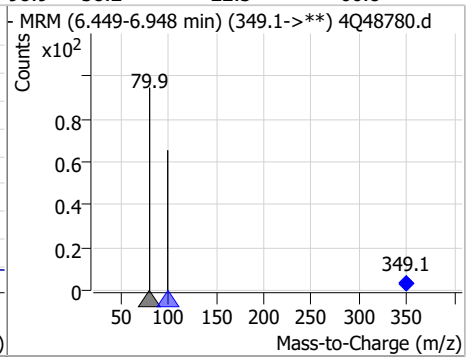




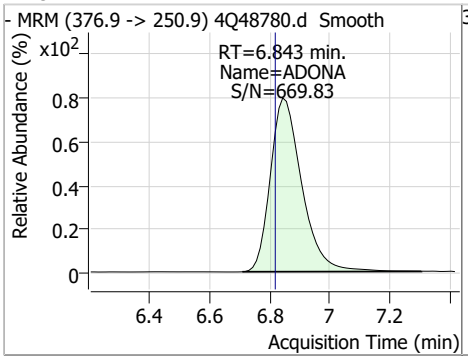
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.79	6.61	0.02	1432	349.1 -> 98.9	38.2	22.3	66.8

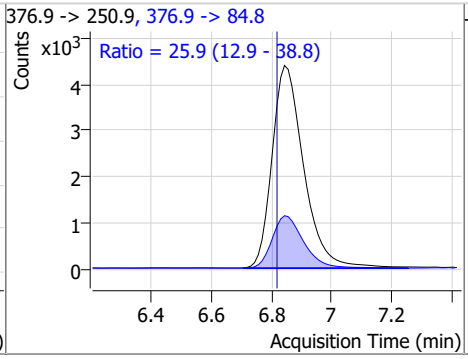


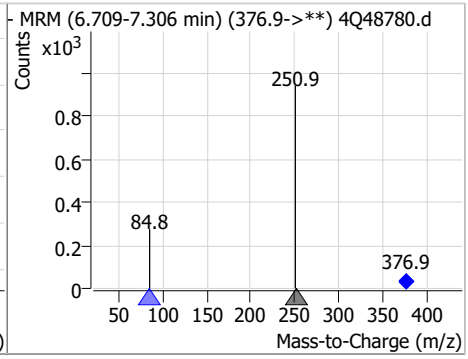




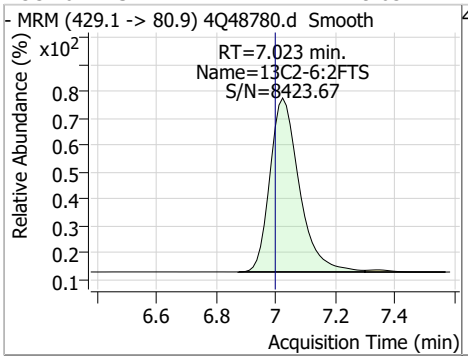
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.74	6.84	0.02	31644	376.9 -> 84.8	25.9	12.9	38.8

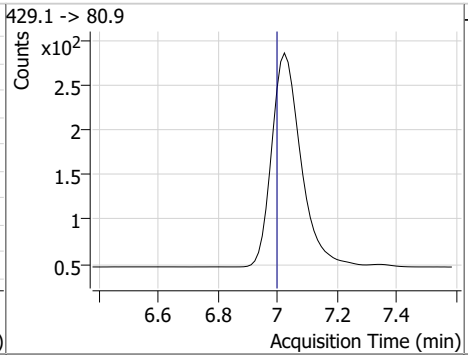


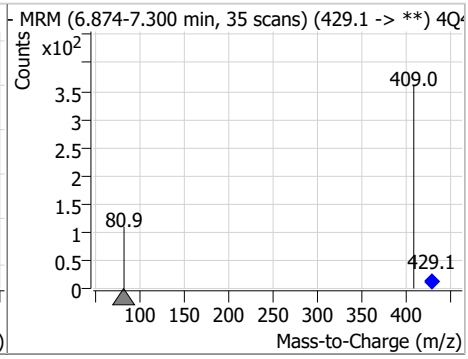




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.03	7.02	0.02	1639				

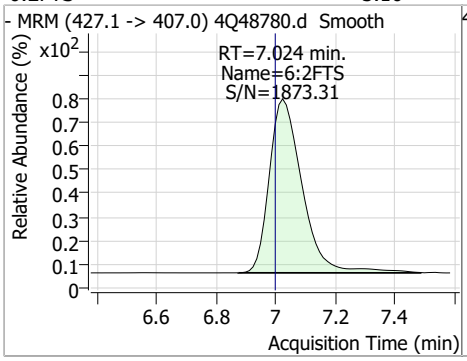


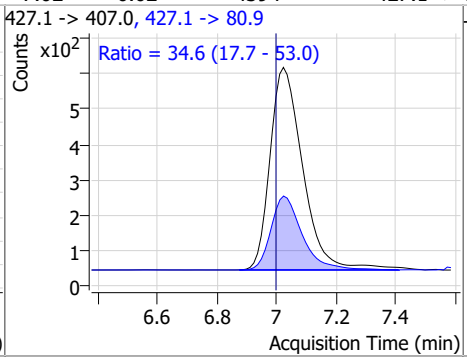


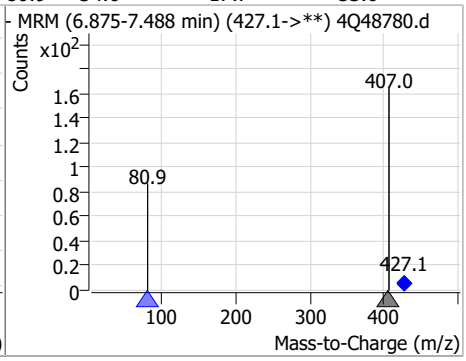


Perfluorinated Compounds by LC/MS/MS

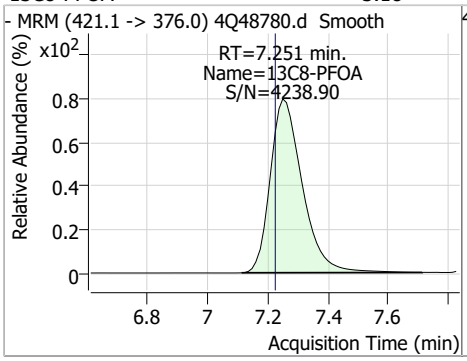
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	3.16	7.02	0.02	4394	427.1 -> 80.9	34.6	17.7	53.0

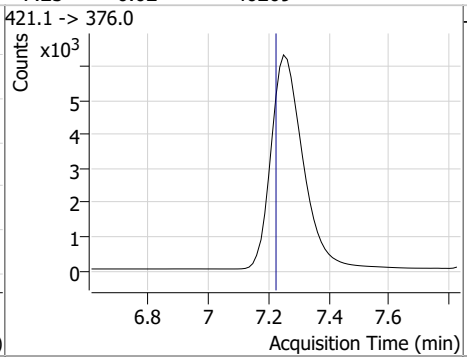


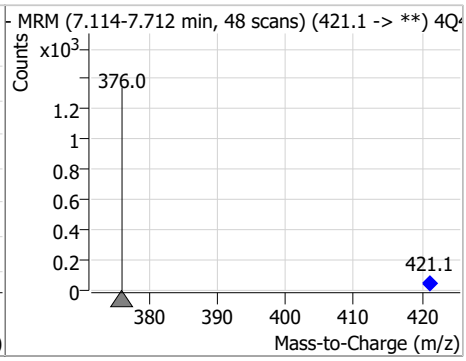




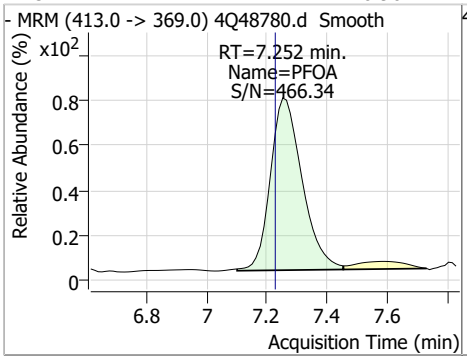
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.18	7.25	0.02	46209				

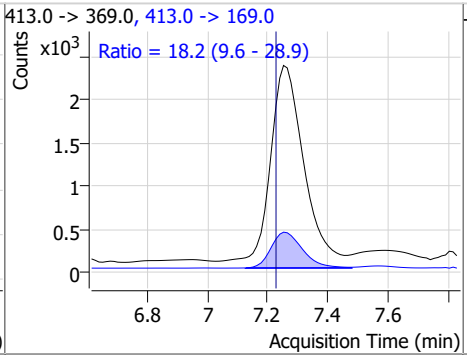


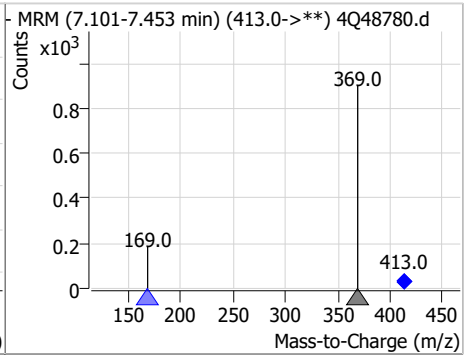




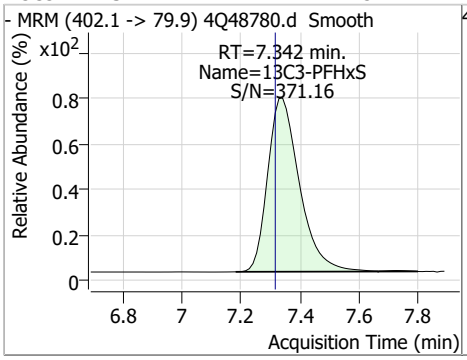
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.90	7.25	0.02	16551	413.0 -> 169.0	18.2	9.6	28.9

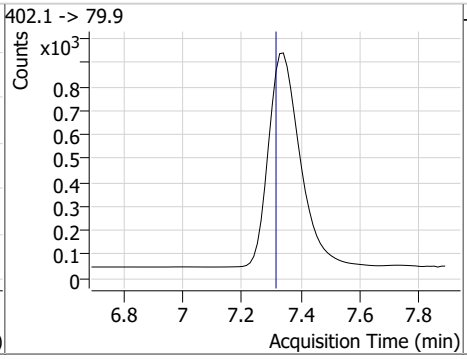


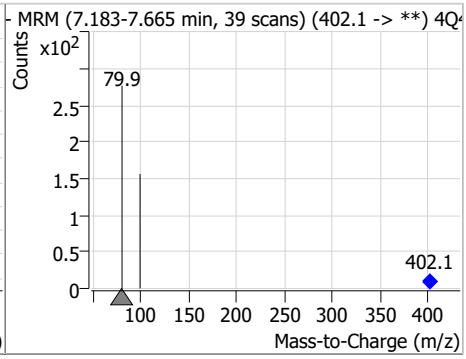




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.17	7.34	0.02	6677				

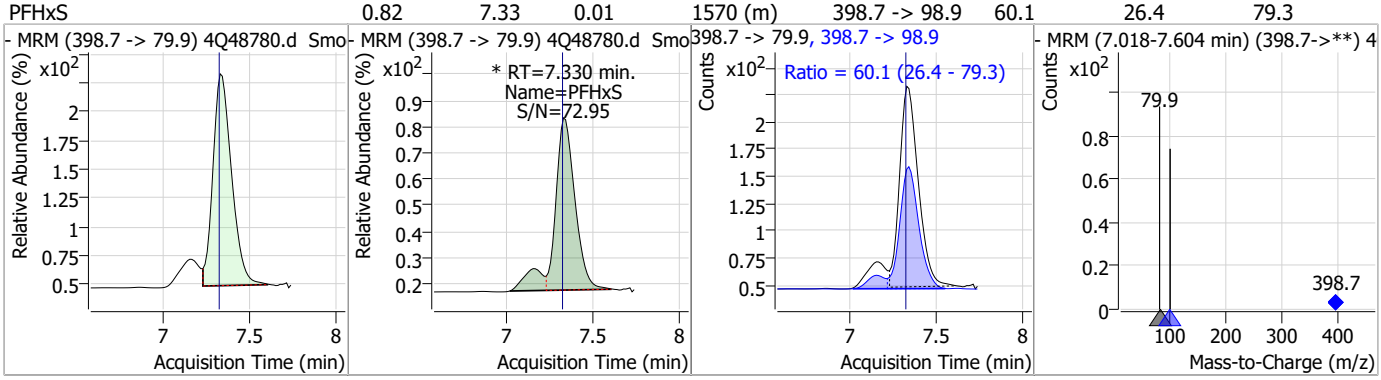




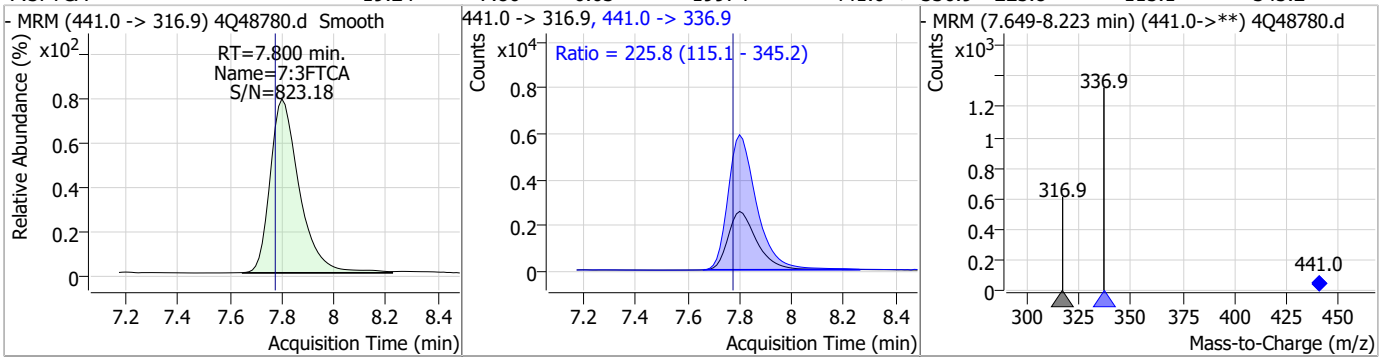


Perfluorinated Compounds by LC/MS/MS

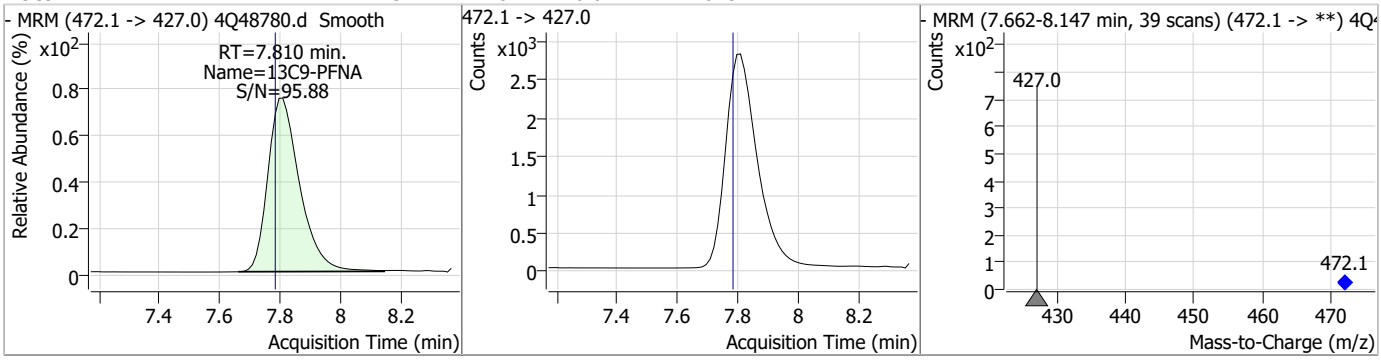
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.82	7.33	0.01	1570 (m)	398.7 -> 98.9	60.1	26.4	79.3



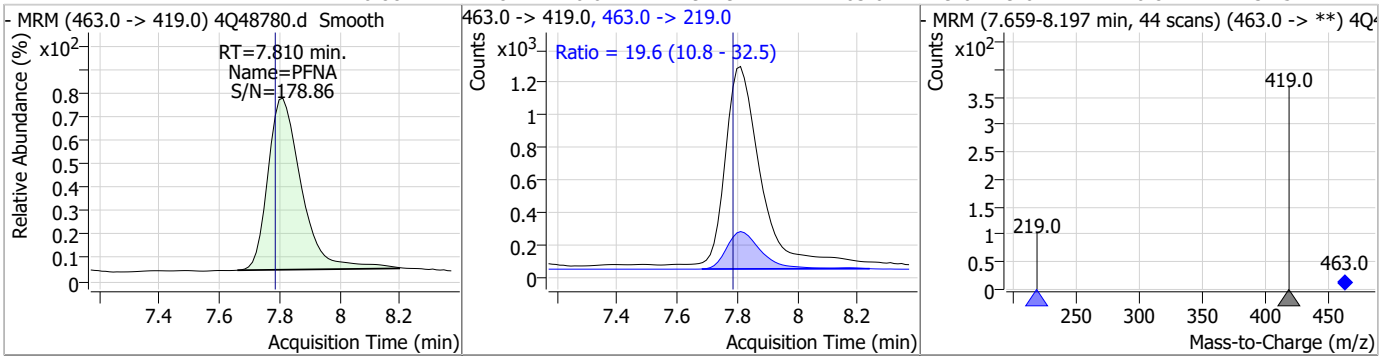
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	19.24	7.80	0.03	19974	441.0 -> 336.9	225.8	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.43	7.81	0.02	20484				

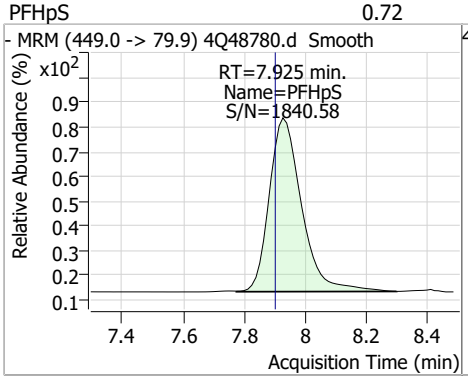


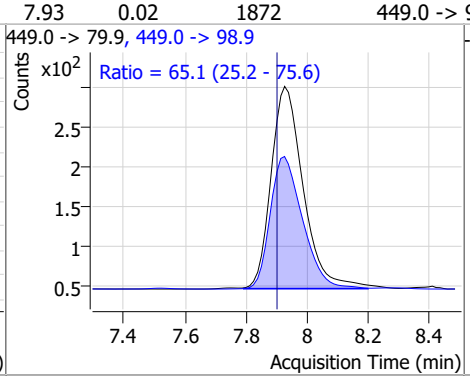
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.88	7.81	0.02	9419	463.0 -> 219.0	19.6	10.8	32.5

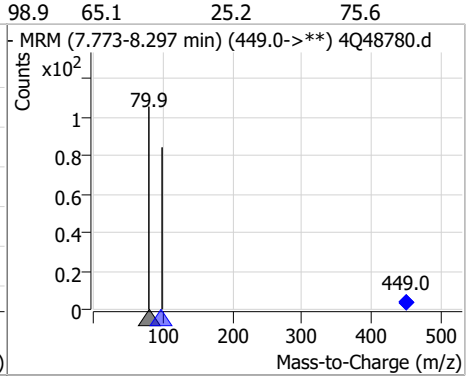


Perfluorinated Compounds by LC/MS/MS

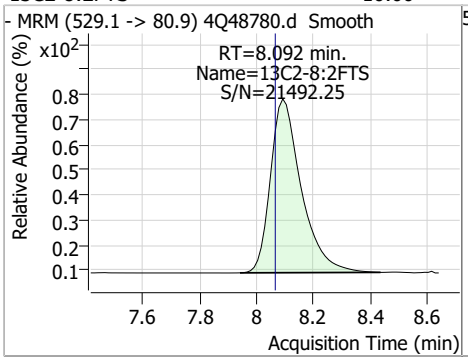
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.72	7.93	0.02	1872	449.0 -> 98.9	65.1	25.2	75.6

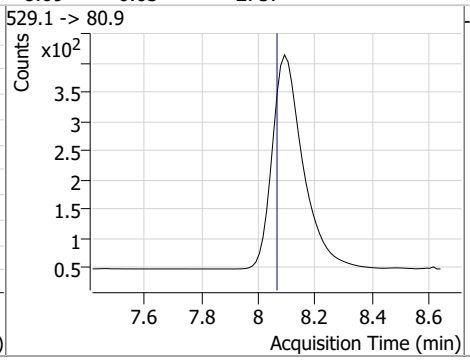


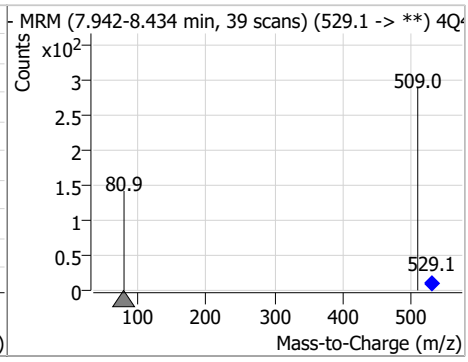




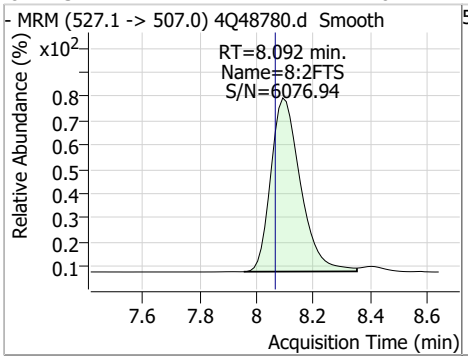
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.00	8.09	0.03	2757				

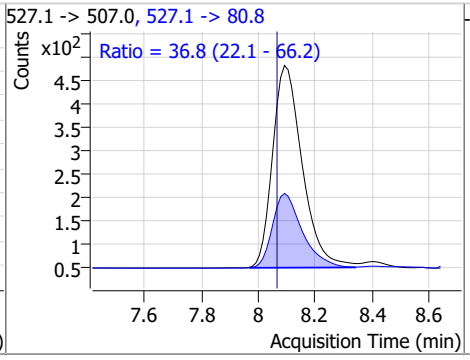


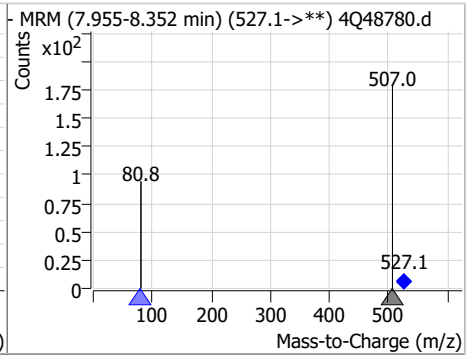




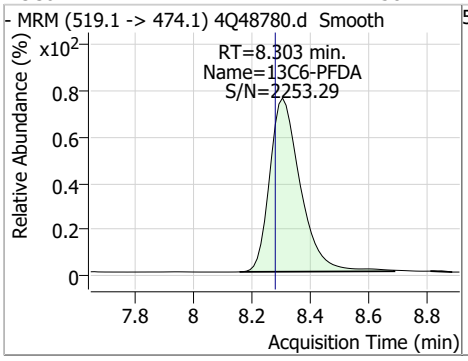
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.84	8.09	0.03	3146	527.1 -> 80.8	36.8	22.1	66.2

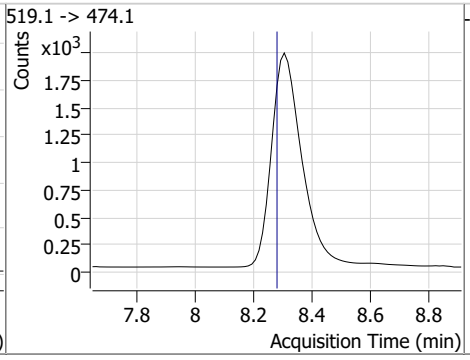


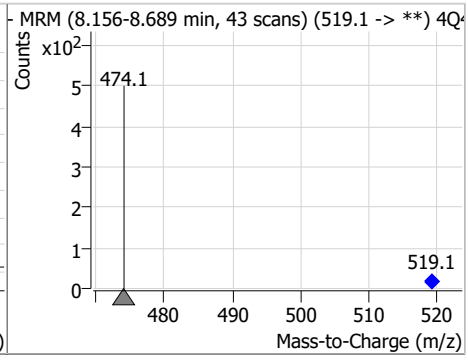




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.58	8.30	0.02	14350				

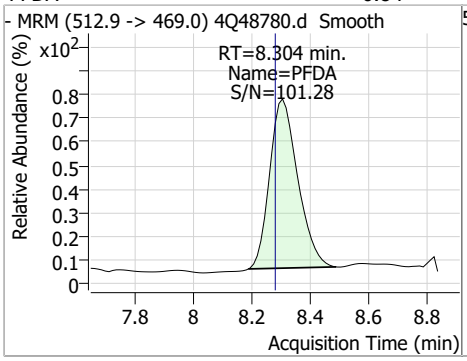


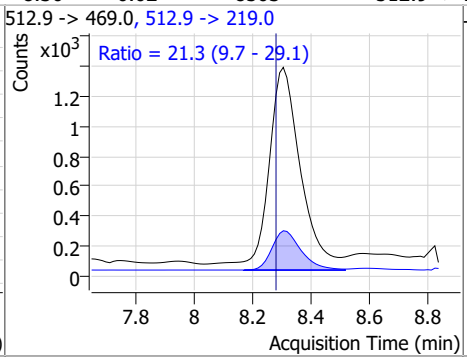


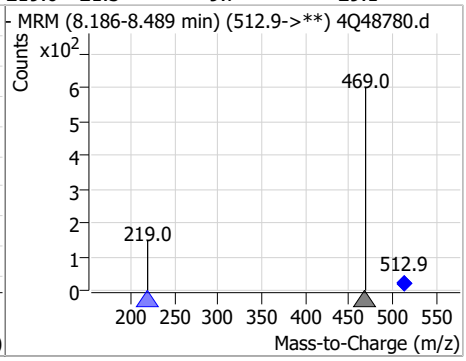


Perfluorinated Compounds by LC/MS/MS

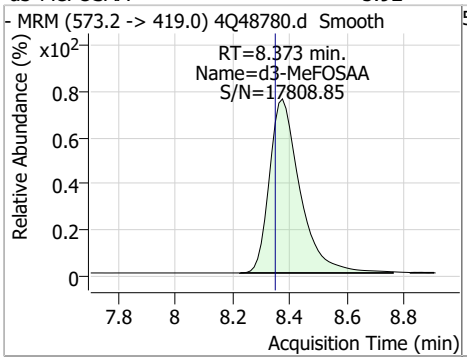
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.84	8.30	0.02	8503	512.9 -> 219.0	21.3	9.7	29.1

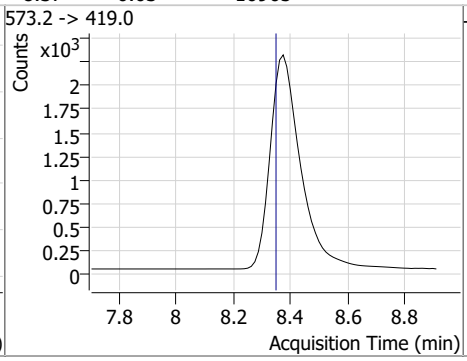


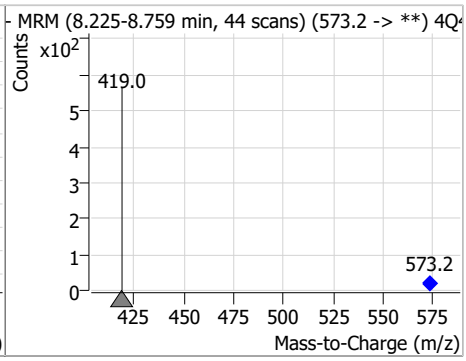




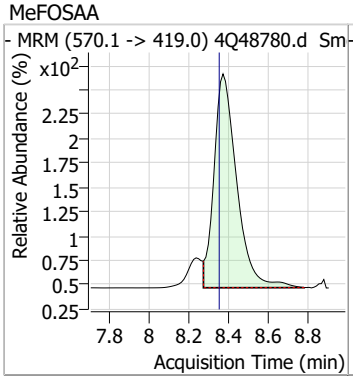
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.92	8.37	0.03	16965				

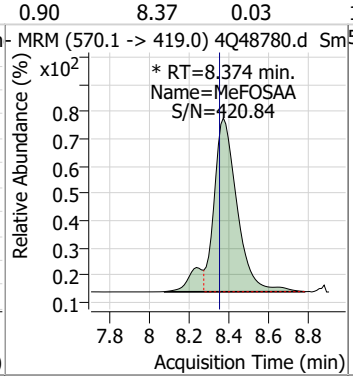


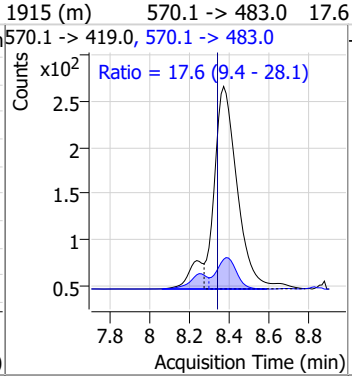


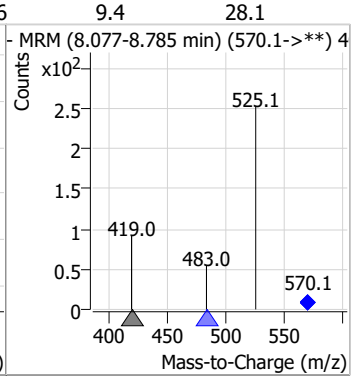


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.90	8.37	0.03	1915 (m)	570.1 -> 483.0	17.6	9.4	28.1

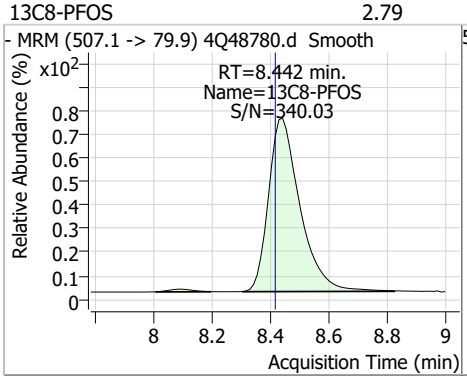


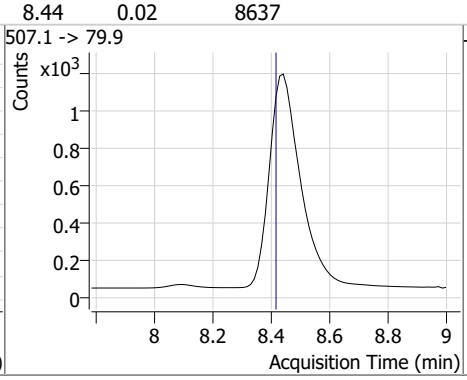


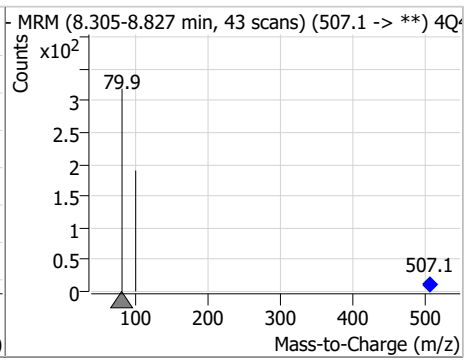




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.79	8.44	0.02	8637				

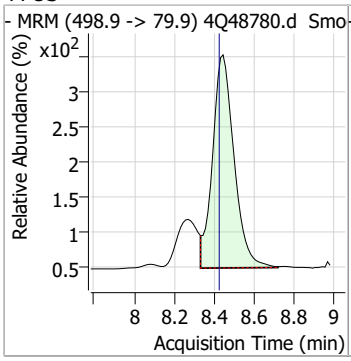


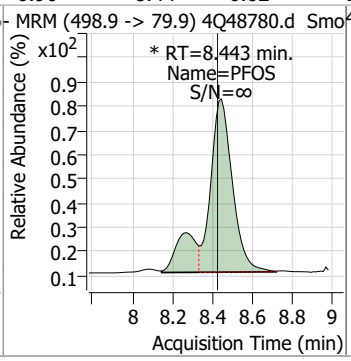


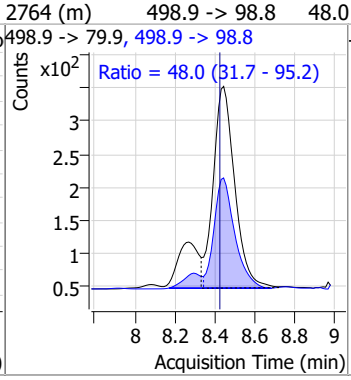


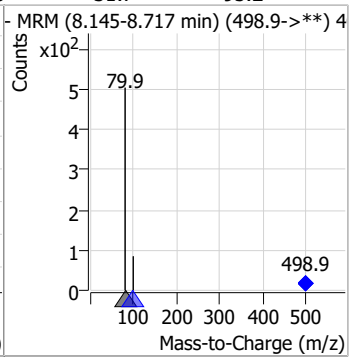
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.90	8.44	0.02	2764 (m)	498.9 -> 98.8	48.0	31.7	95.2

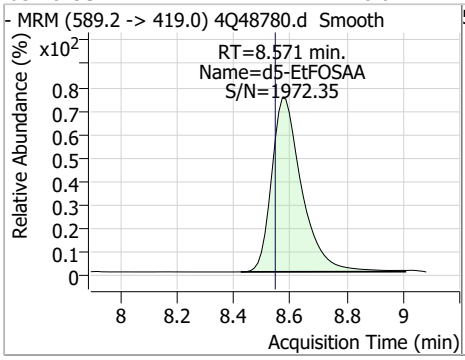


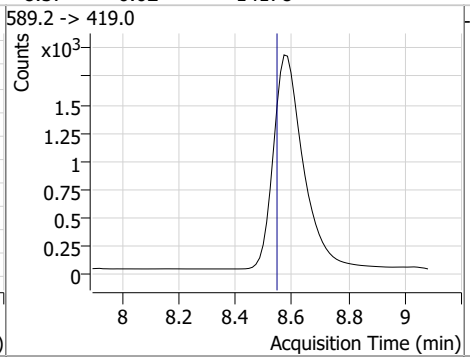


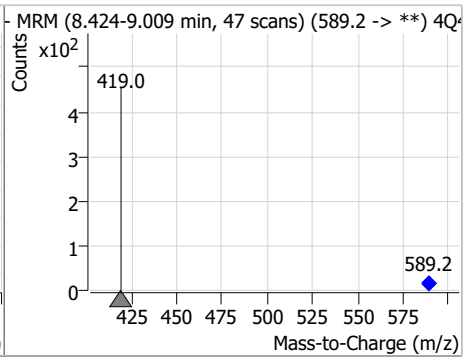




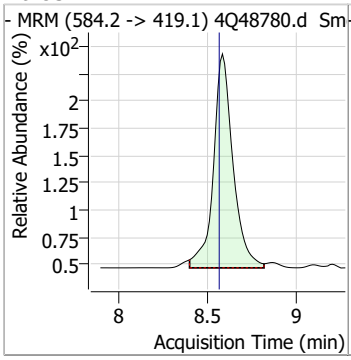
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.02	8.57	0.02	14178				

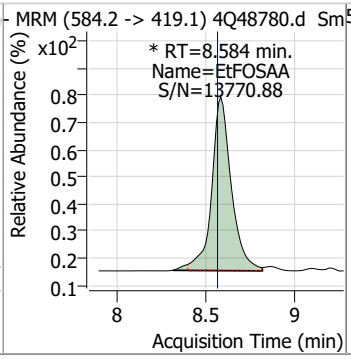


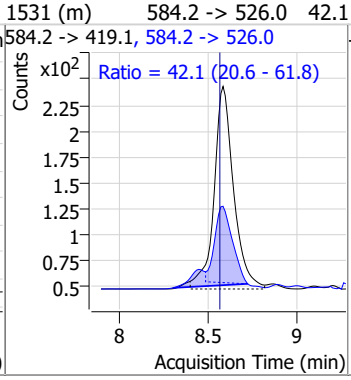


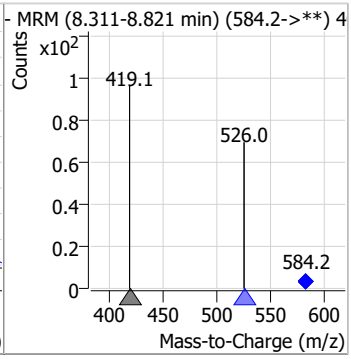


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.79	8.58	0.02	1531 (m)	584.2 -> 526.0	42.1	20.6	61.8

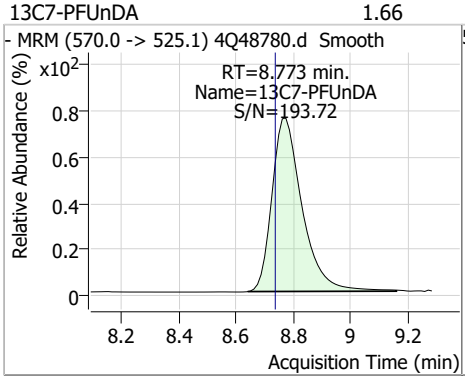


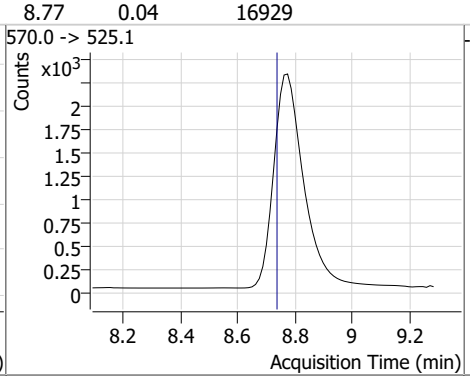


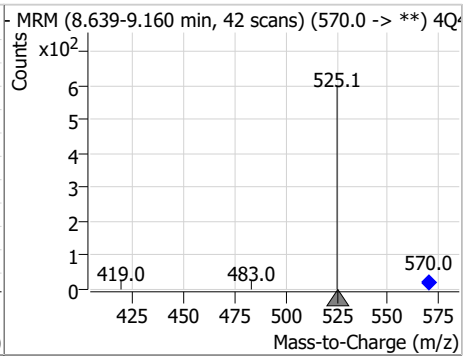




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.66	8.77	0.04	16929				

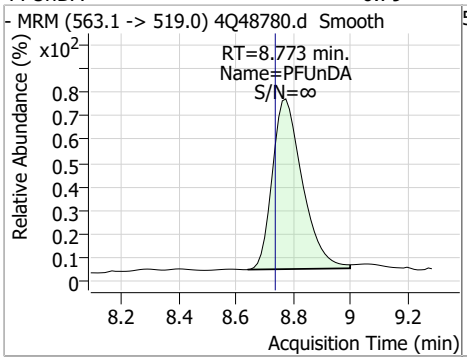


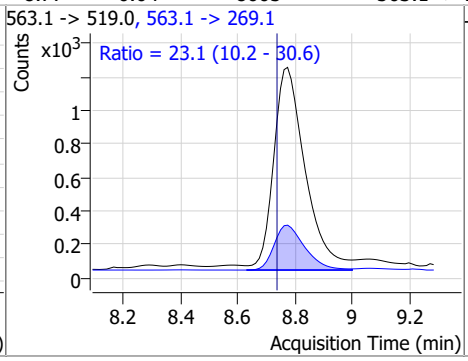


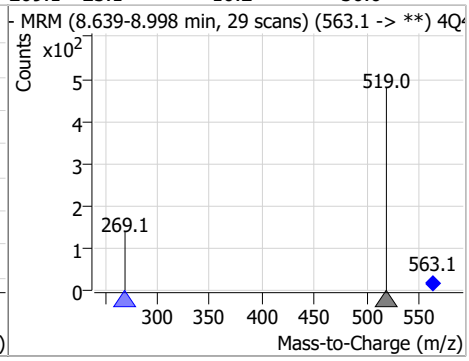


Perfluorinated Compounds by LC/MS/MS

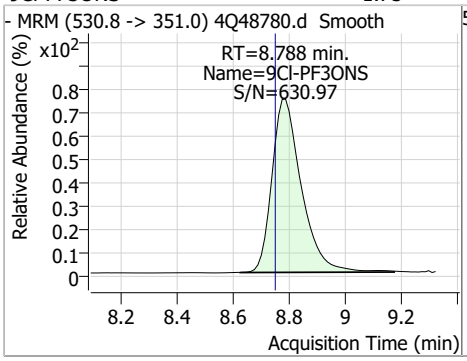
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.79	8.77	0.04	8665	563.1 -> 269.1	23.1	10.2	30.6

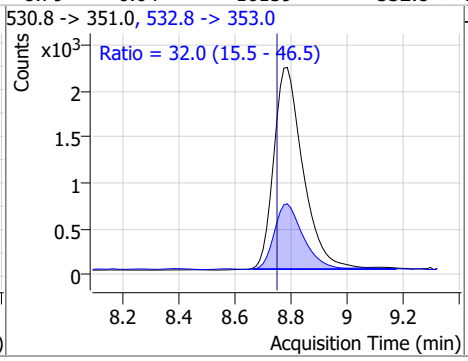


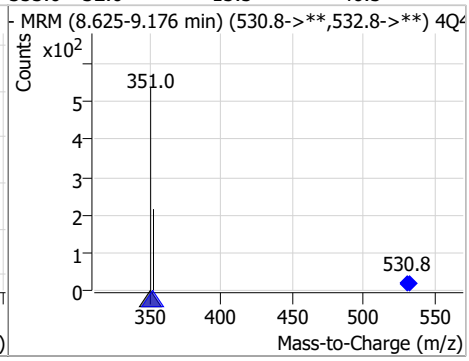




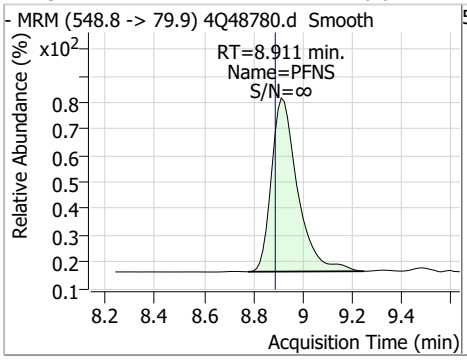
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.75	8.79	0.04	16159	532.8 -> 353.0	32.0	15.5	46.5

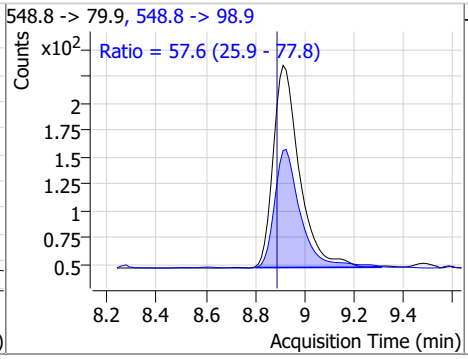


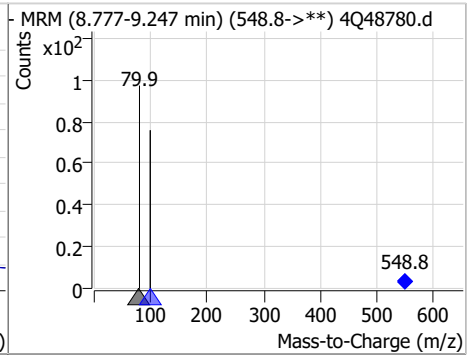




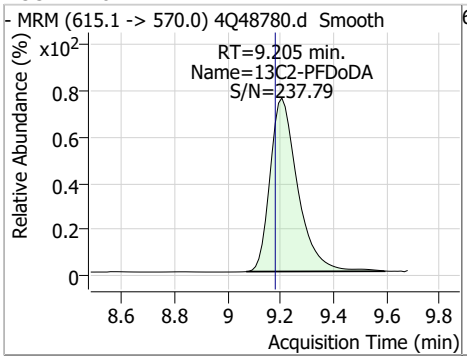
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.82	8.91	0.02	1385	548.8 -> 98.9	57.6	25.9	77.8

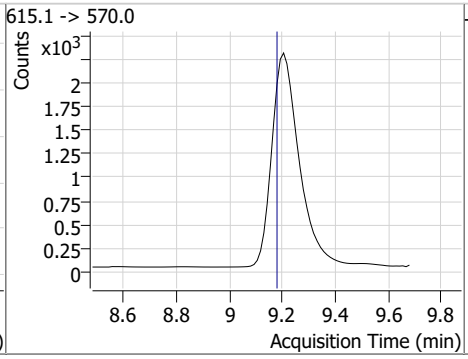


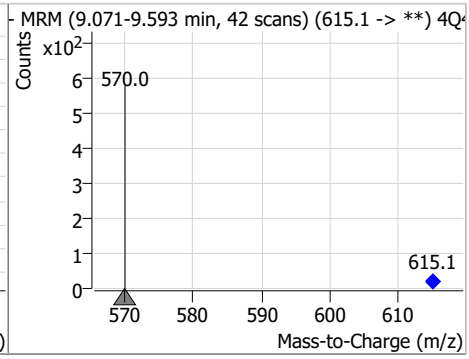




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.47	9.21	0.02	16481				

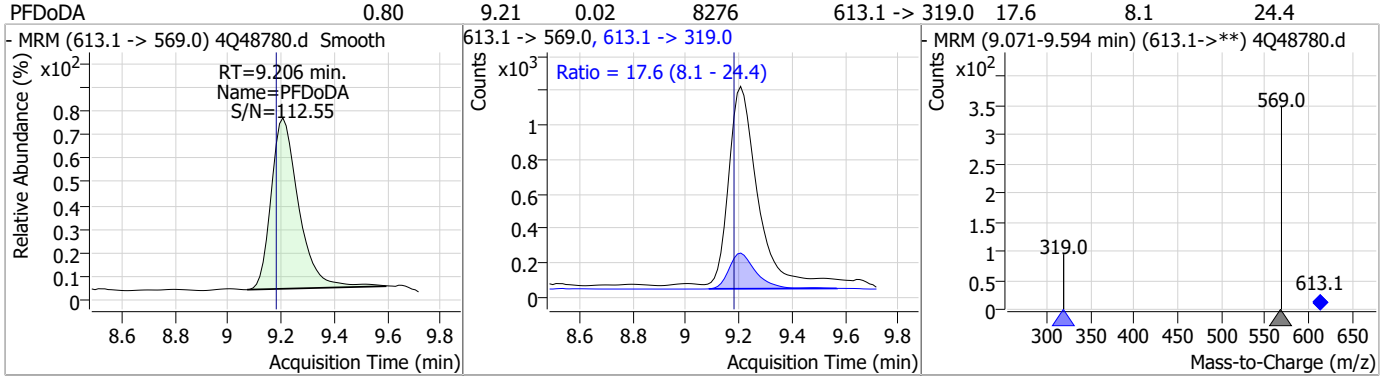




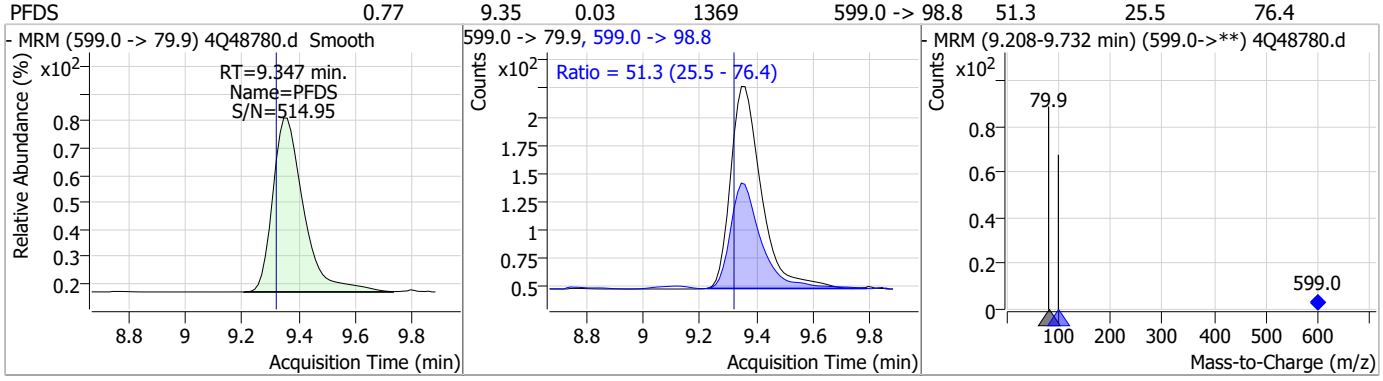


Perfluorinated Compounds by LC/MS/MS

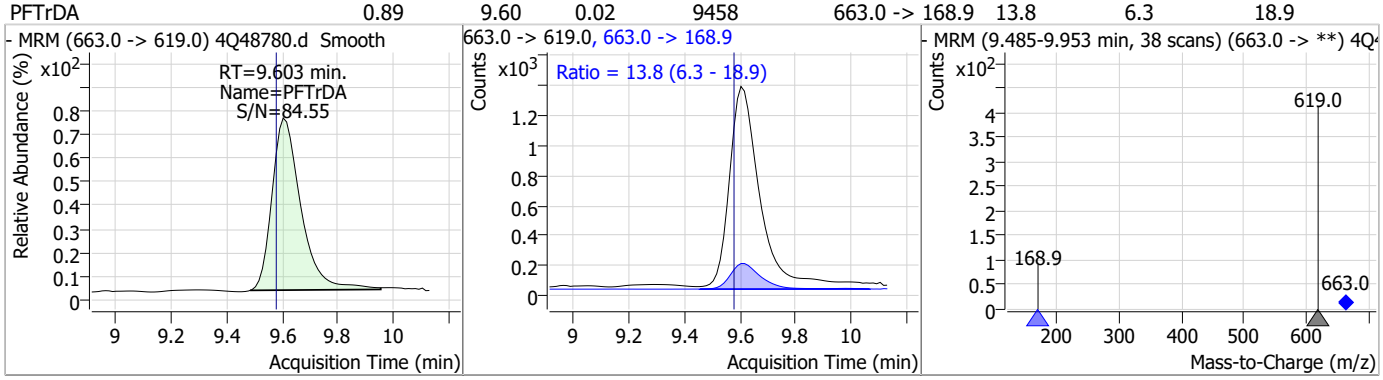
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.80	9.21	0.02	8276	613.1 -> 319.0	17.6	8.1	24.4



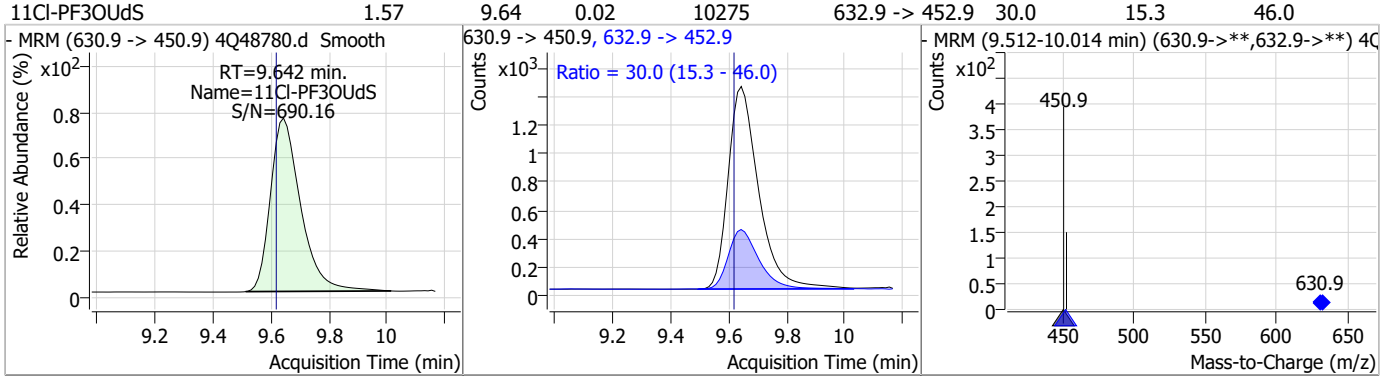
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.77	9.35	0.03	1369	599.0 -> 98.8	51.3	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.89	9.60	0.02	9458	663.0 -> 168.9	13.8	6.3	18.9

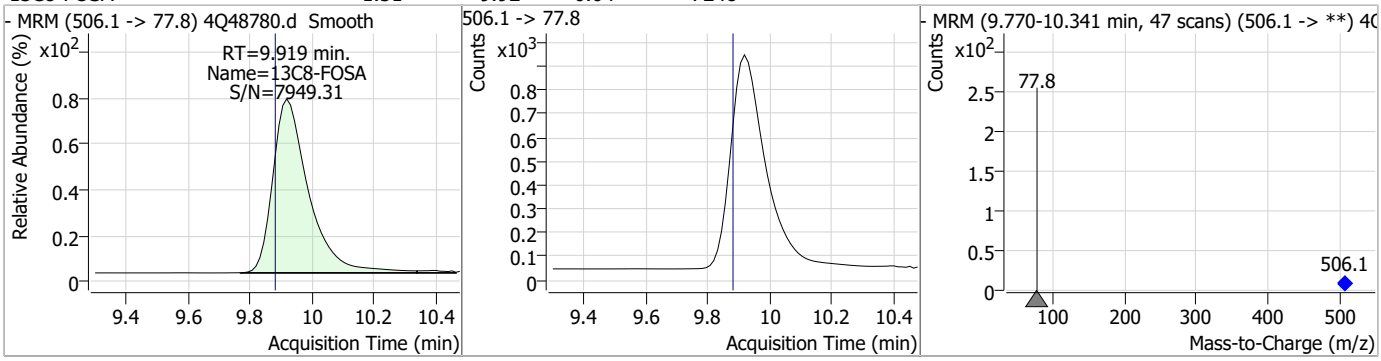


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.57	9.64	0.02	10275	632.9 -> 452.9	30.0	15.3	46.0

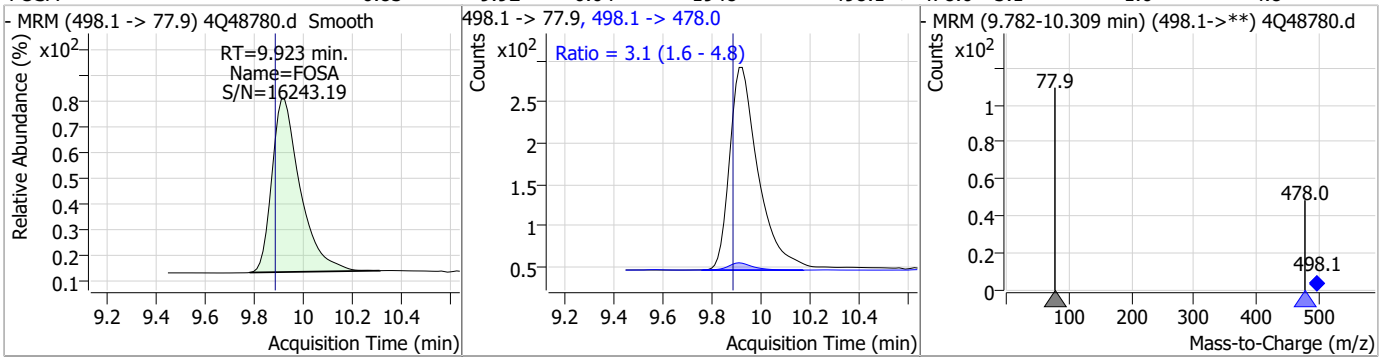


Perfluorinated Compounds by LC/MS/MS

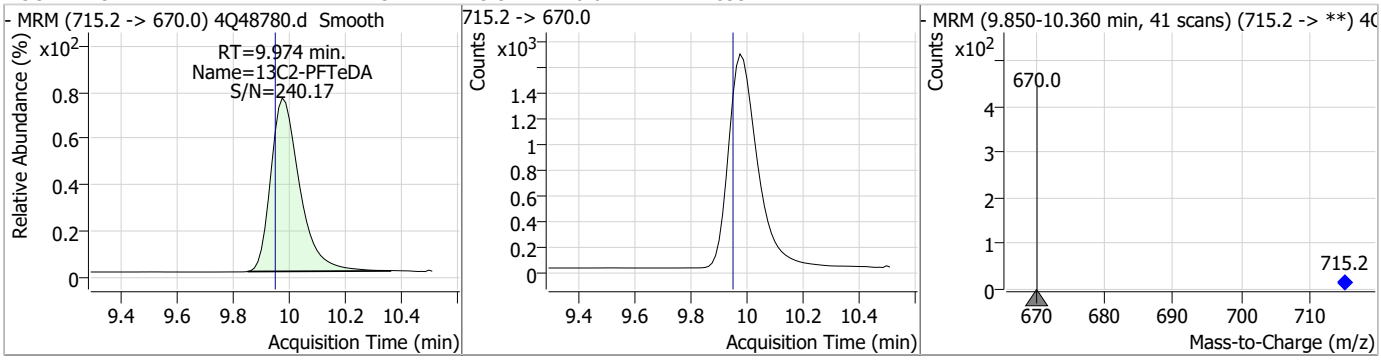
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.51	9.92	0.04	7248				



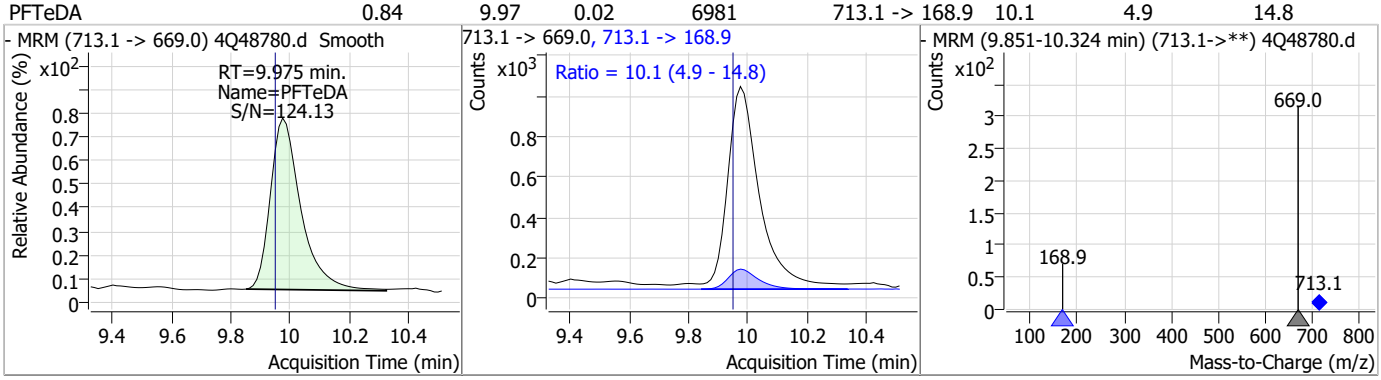
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.83	9.92	0.04	1948	498.1 -> 478.0	3.1	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	9.97	0.02	11899				

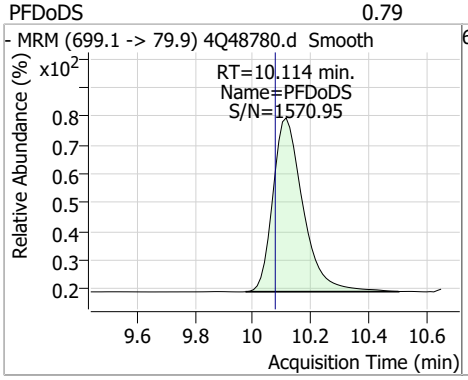


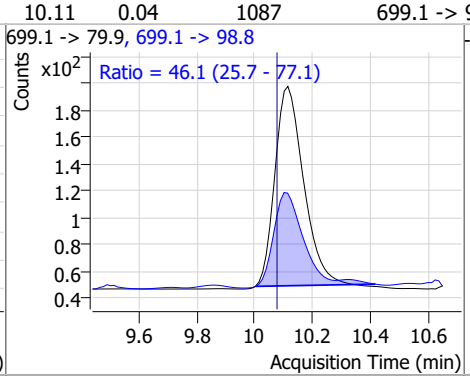
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.84	9.97	0.02	6981	713.1 -> 168.9	10.1	4.9	14.8

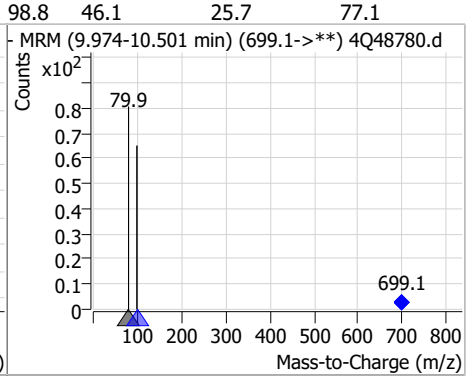


Perfluorinated Compounds by LC/MS/MS

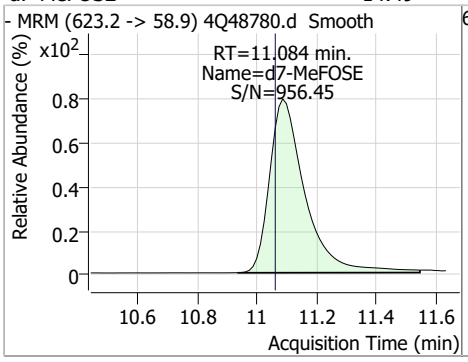
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.79	10.11	0.04	1087	699.1 -> 98.8	46.1	25.7	77.1

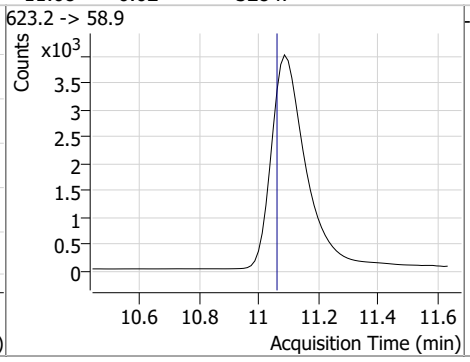


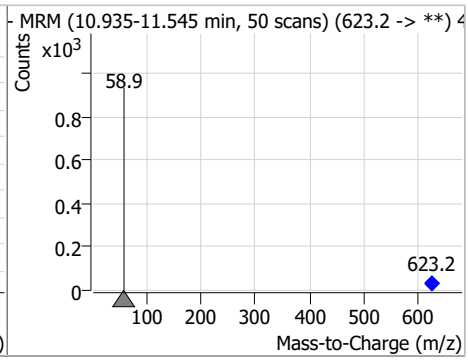




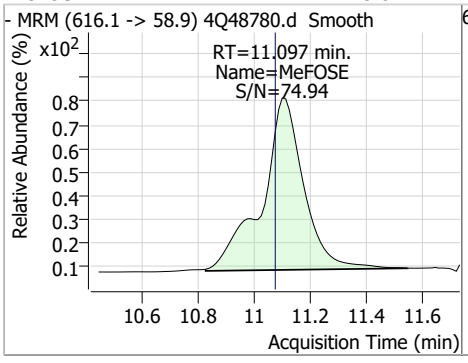
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	14.49	11.08	0.02	32847				

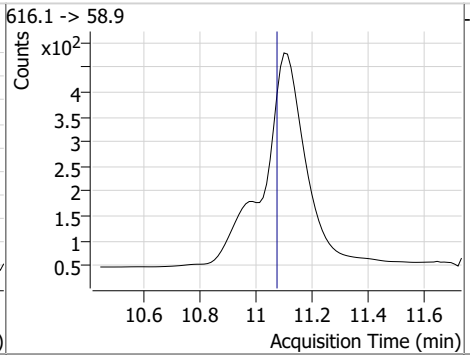


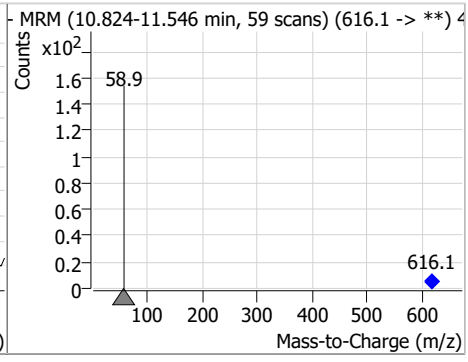




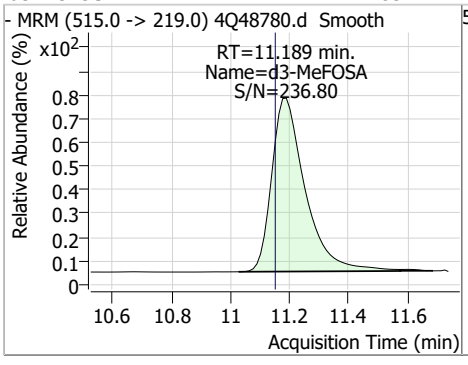
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	3.81	11.10	0.02	4472				

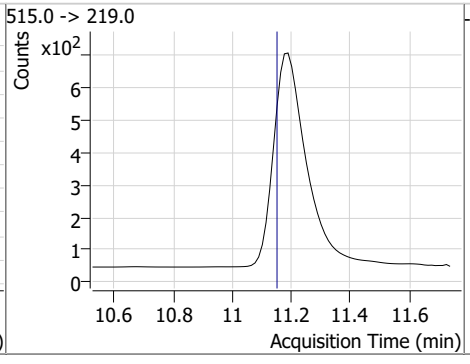


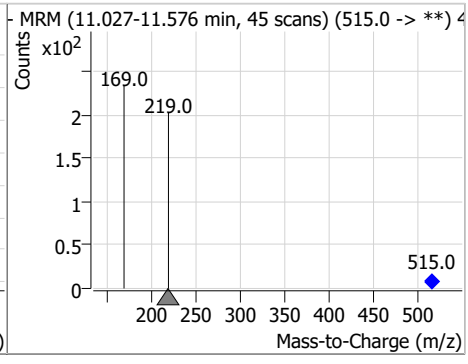




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.83	11.19	0.04	5181				

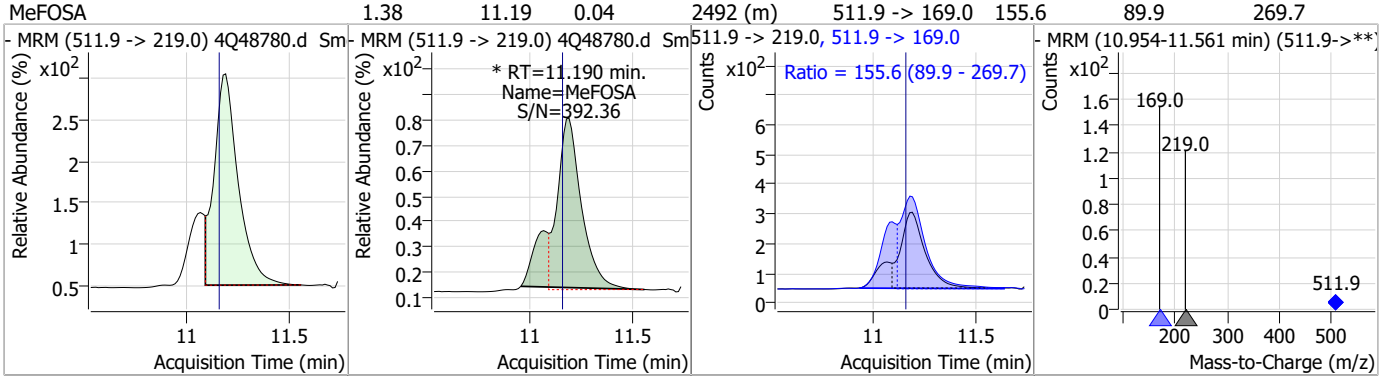




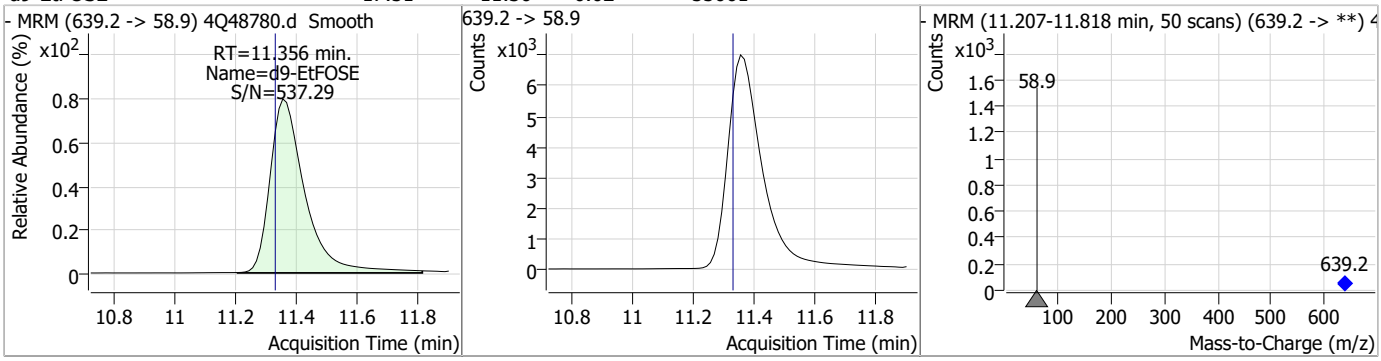


Perfluorinated Compounds by LC/MS/MS

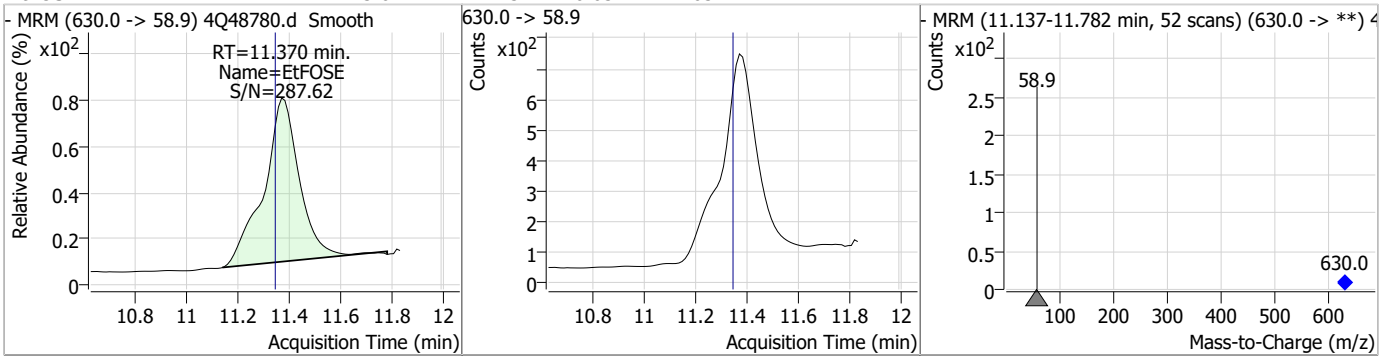
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.38	11.19	0.04	2492 (m)	511.9 -> 169.0	155.6	89.9	269.7



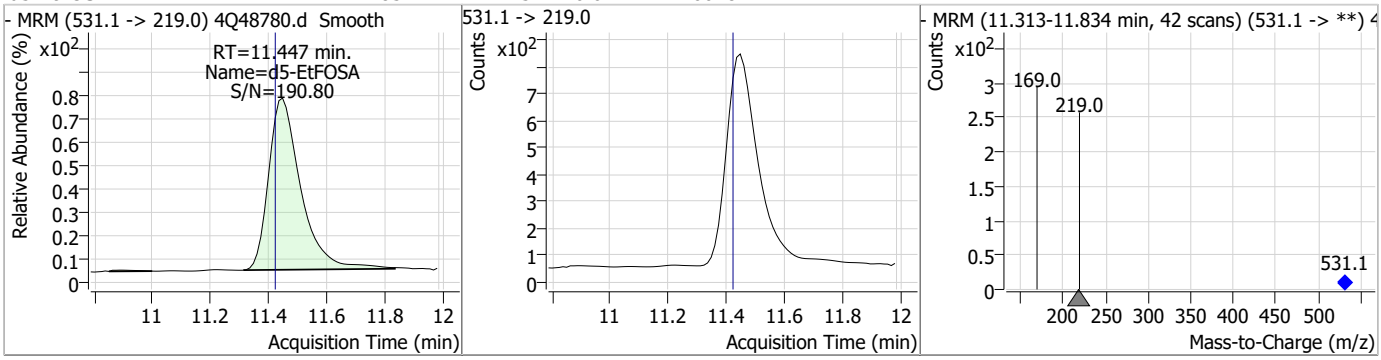
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.51	11.36	0.02	55661				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	3.62	11.37	0.03	6314				

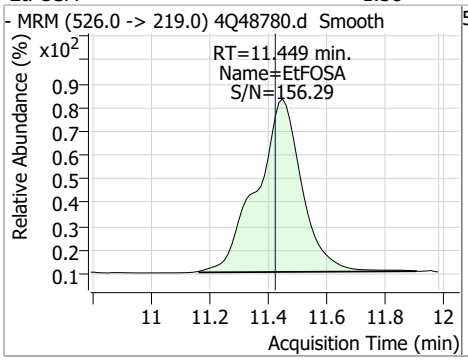


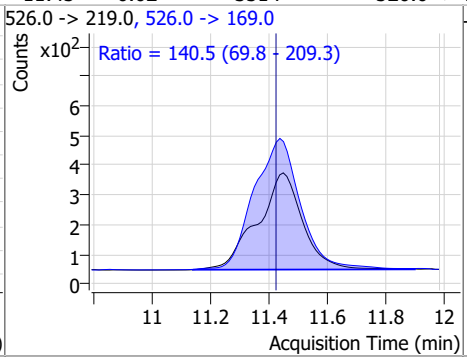
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.85	11.45	0.02	6048				

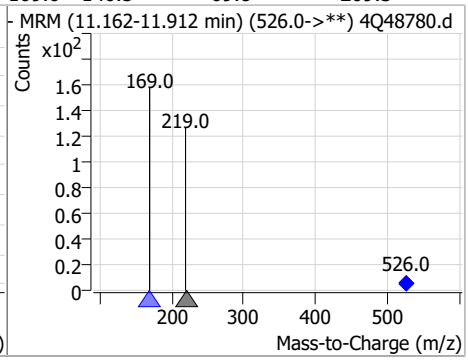


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	1.58	11.45	0.02	3514	526.0 -> 169.0	140.5	69.8	209.3







Manual Integration Approval Summary

Sample Number: OP98297-LLBS
Lab FileID: 4Q48780.D
Injection Time: 08/09/23 19:18
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/14/23 16:34 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.37	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.44	Split peak
EtFOSAA	2991-50-6		8.58	Split peak
MeFOSA	31506-32-8		11.19	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 16:34

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48790.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 9:45:42 PM
Sample Name : op98297-ms
Vial : P4-E1
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	85592	10.00	µg/L	0.025
M5-PFPeA	4.425	268.3 -> 223.0	53960	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	37511	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	27120	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	43118	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	18697	1.25	µg/L	0.013
M6-PFDA	8.303	519.1 -> 474.1	14084	1.25	µg/L	0.025
M7-PFUnDA	8.760	570.0 -> 525.1	16218	1.25	µg/L	0.025
M2-PFDoDA	9.205	615.1 -> 570.0	16870	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	11281	1.25	µg/L	0.025
M8-FOSA	9.919	506.1 -> 77.8	9318	2.50	µg/L	0.037
M3-PFBS	5.502	302.1 -> 79.9	9172	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	6443	2.50	µg/L	0.012
M8-PFOS	8.430	507.1 -> 79.9	8103	2.50	µg/L	0.013
M2-4:2FTS	5.309	329.1 -> 80.9	764	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1539	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2025	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	15737	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	29418	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	13824	5.00	µg/L	0.025
M7-MeFOSE	11.084	623.2 -> 58.9	39400	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	62919	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	6925	2.50	µg/L	0.025
M3-MeFOSA	11.189	515.0 -> 219.0	6678	2.50	µg/L	0.037
13C4-PFOS	8.430	502.8 -> 79.9	7161	2.50	µg/L	0.013
13C3-PFBA	2.941	216.0 -> 172.0	46989	5.00	µg/L	0.037
18O2-PFHxS	7.328	403.0 -> 83.9	3595	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	43614	2.50	µg/L	0.025
13C2-PFDA	8.291	515.1 -> 470.1	12799	1.25	µg/L	0.013
13C5-PFNA	7.798	468.0 -> 423.0	19557	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	28932	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	764	8.50	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 170.1%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1539	8.97	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 179.4%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2025	7.77	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 155.4%		
13C2-PFDoDA	9.205	615.1 -> 570.0	16870	1.54	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 123.1%		
13C2-PFTeDA	9.974	715.2 -> 670.0	11281	1.28	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C3-PFBS	5.502	302.1 -> 79.9	9172	3.00	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.9%		
13C3-PFHxS	7.329	402.1 -> 79.9	6443	3.24	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 = 129.5%			
13C4-PFBA	2.936	216.8 -> 171.9	85592	10.66	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C4-PFHpA	6.580	367.1 -> 322.0	27120	3.15	µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 125.9%			
13C5-PFHxA	5.622	318.0 -> 273.0	37511	3.09	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.7%			
13C5-PFPeA	4.425	268.3 -> 223.0	53960	5.34	µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.7%			
13C6-PFDA	8.303	519.1 -> 474.1	14084	1.59	µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 127.2%			
13C7-PFUnDA	8.760	570.0 -> 525.1	16218	1.63	µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 130.1%			
13C8-FOSA	9.919	506.1 -> 77.8	9318	2.09	µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.4%			
13C8-PFOA	7.251	421.1 -> 376.0	43118	3.00	µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.1%			
13C8-PFOS	8.430	507.1 -> 79.9	8103	2.82	µg/L		0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.7%			
13C9-PFNA	7.797	472.1 -> 427.0	18697	1.26	µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%			
d3-MeFOSAA	8.373	573.2 -> 419.0	15737	5.92	µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.4%			
13C3-HFPO-DA	6.002	286.9 -> 168.9	29418	10.67	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%			
d3-MeFOSA	11.189	515.0 -> 219.0	6678	2.54	µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%			
d5-EtFOSAA	8.571	589.2 -> 419.0	13824	6.33	µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 126.5%			
d7-MeFOSE	11.084	623.2 -> 58.9	39400	18.73	µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.9%			
d9-EtFOSE	11.356	639.2 -> 58.9	62919	21.33	µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.3%			
d5-EtFOSA	11.447	531.1 -> 219.0	6925	2.29	µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%			
Target Compounds							QValue
4:2FTS	5.309	327.1 -> 307.0	11227	10.90	µg/L		99
		327.1 -> 80.9	4547				
6:2FTS	7.024	427.1 -> 407.0	14102	10.79	µg/L		99
		427.1 -> 80.9	5032				
8:2FTS	8.092	527.1 -> 507.0	11886	14.62	µg/L		93
		527.1 -> 80.8	4737				
EtFOSAA	8.584	584.2 -> 419.1	5279	2.79	µg/L	m	94
		584.2 -> 526.0	2387				
FOSA	9.911	498.1 -> 77.9	9260	3.07	µg/L		100
		498.1 -> 478.0	298				
MeFOSAA	8.374	570.1 -> 419.0	7108	3.61	µg/L		98
		570.1 -> 483.0	1252				
PFBA	2.945	212.8 -> 168.9	23041	11.69	µg/L		100
PFBS	5.503	298.7 -> 79.9	7279	3.25	µg/L		97
		298.7 -> 98.8	2803				
PFDA	8.304	512.9 -> 469.0	31792	3.21	µg/L		99
		512.9 -> 219.0	6050				
PFDoDA	9.206	613.1 -> 569.0	31188	2.95	µg/L		99
		613.1 -> 319.0	4896				
PFDS	9.347	599.0 -> 79.9	4543	2.71	µg/L		96

Perfluorinated Compounds by LC/MS/MS

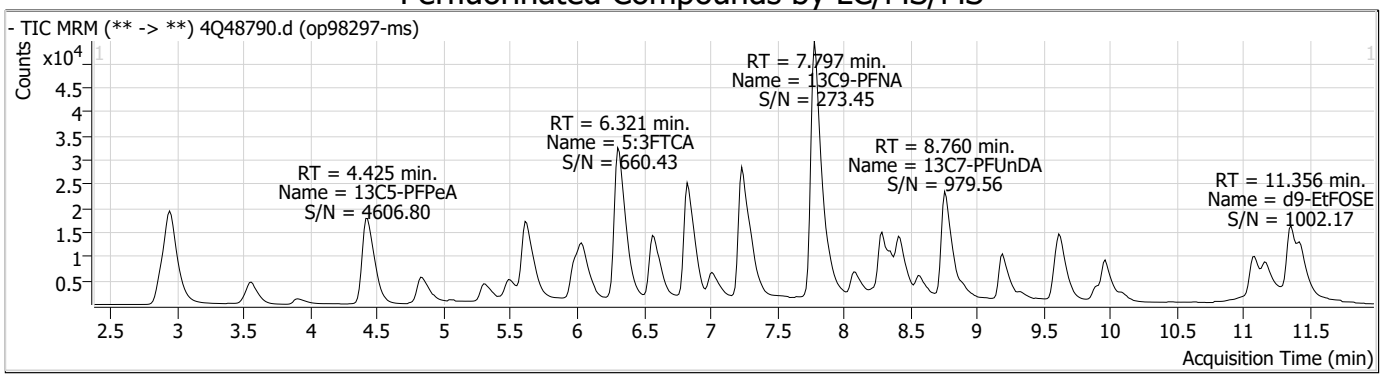
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2431				
PFHpA	6.581	363.1 -> 319.0	36100	2.95	µg/L		100
		363.1 -> 169.0	6571				
PFHpS	7.913	449.0 -> 79.9	6742	2.75	µg/L		92
		449.0 -> 98.9	3764				
PFHxA	5.625	313.0 -> 269.0	31001	2.86	µg/L		99
		313.0 -> 118.9	1077				
PFHxS	7.330	398.7 -> 79.9	5744	3.11	µg/L	m	99
		398.7 -> 98.9	3061				
PFNA	7.798	463.0 -> 419.0	29884	3.07	µg/L		95
		463.0 -> 219.0	7223				
PFNS	8.911	548.8 -> 79.9	4906	3.10	µg/L		93
		548.8 -> 98.9	2304				
PFOA	7.252	413.0 -> 369.0	54636	3.20	µg/L		99
		413.0 -> 169.0	10205				
PFOS	8.431	498.9 -> 79.9	7979	2.77	µg/L	m	93
		498.9 -> 98.8	4636				
PFPeA	4.427	263.0 -> 219.0	62163	6.63	µg/L		100
PFPeS	6.595	349.1 -> 79.9	4980	2.86	µg/L		99
		349.1 -> 98.9	2200				
PFTeDA	9.975	713.1 -> 669.0	24680	3.12	µg/L		99
		713.1 -> 168.9	2349				
PFTrDA	9.603	663.0 -> 619.0	33131	3.04	µg/L		100
		663.0 -> 168.9	4112				
PFUnDA	8.761	563.1 -> 519.0	31429	2.98	µg/L		98
		563.1 -> 269.1	6708				
11Cl-PF3OUdS	9.642	630.9 -> 450.9	37223	6.03	µg/L		100
		632.9 -> 452.9	11423				
9Cl-PF3ONS	8.775	530.8 -> 351.0	56089	6.46	µg/L		97
		532.8 -> 353.0	16549				
ADONA	6.843	376.9 -> 250.9	107841	6.32	µg/L		100
		376.9 -> 84.8	27794				
HFPO-DA	6.003	284.9 -> 168.9	13627	5.63	µg/L		99
		284.9 -> 184.9	1707				
3:3FTCA	3.917	241.0 -> 177.0	6085	12.23	µg/L		97
		241.0 -> 117.0	533				
5:3FTCA	6.321	341.0 -> 237.1	115602	65.26	µg/L		99
		341.0 -> 217.0	80922				
7:3FTCA	7.800	441.0 -> 316.9	71353	73.09	µg/L		99
		441.0 -> 336.9	165873				
EtFOSA	11.449	526.0 -> 219.0	15276	6.00	µg/L		97
		526.0 -> 169.0	20691				
EtFOSE	11.382	630.0 -> 58.9	27270	13.85	µg/L		100
MeFOSA	11.190	511.9 -> 219.0	12098	5.21	µg/L	m	73
		511.9 -> 169.0	17130				
MeFOSE	11.097	616.1 -> 58.9	18701	13.27	µg/L	m	100
PFDoDS	10.102	699.1 -> 79.9	3539	2.75	µg/L		93
		699.1 -> 98.8	1987				
NFDHA	5.503	295.0 -> 201.0	4021	5.76	µg/L		96
		295.0 -> 84.9	1087				
PFMBA	4.841	279.0 -> 85.1	33961	6.46	µg/L		100
PFMPA	3.553	229.0 -> 84.9	30900	6.03	µg/L		100
PFEESA	6.047	314.8 -> 134.9	43092	4.94	µg/L		99
		314.8 -> 82.9	1662				

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

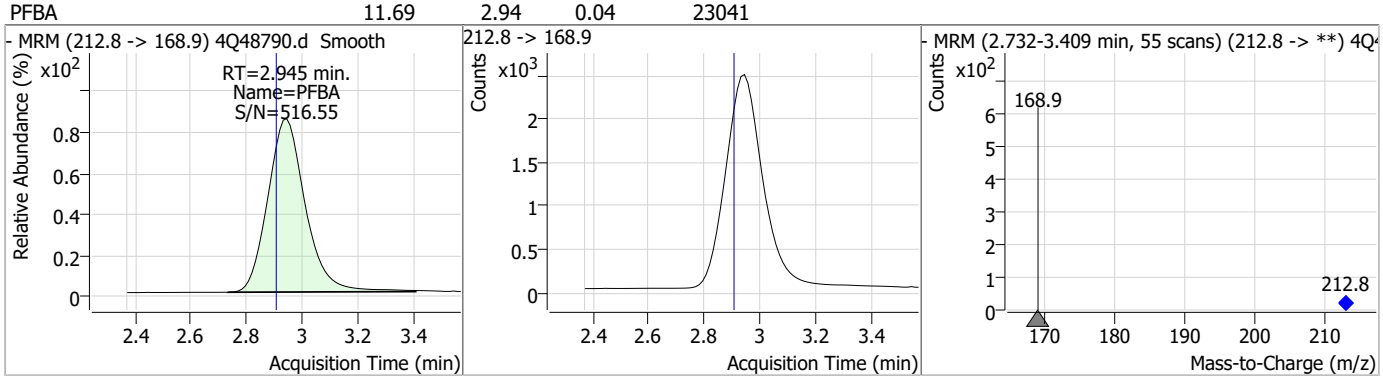
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

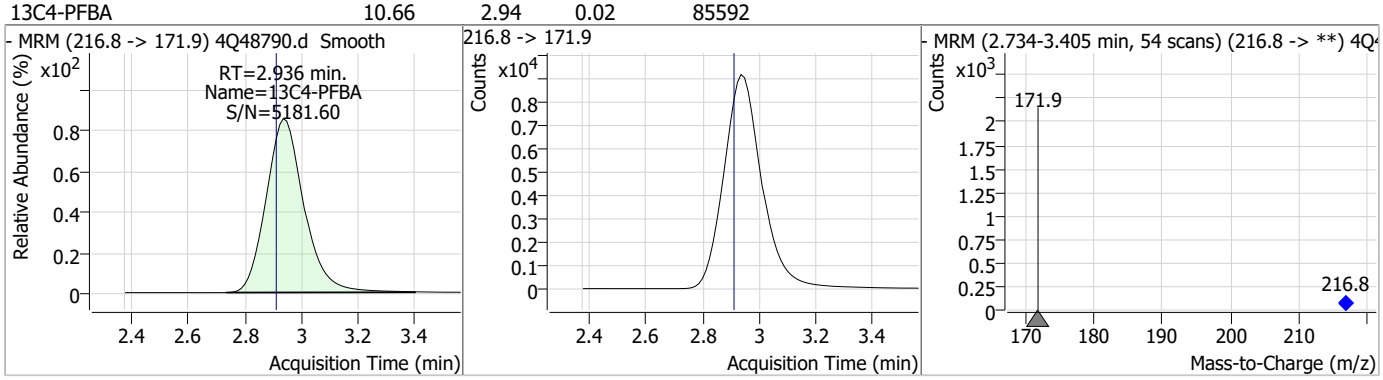
Perfluorinated Compounds by LC/MS/MS



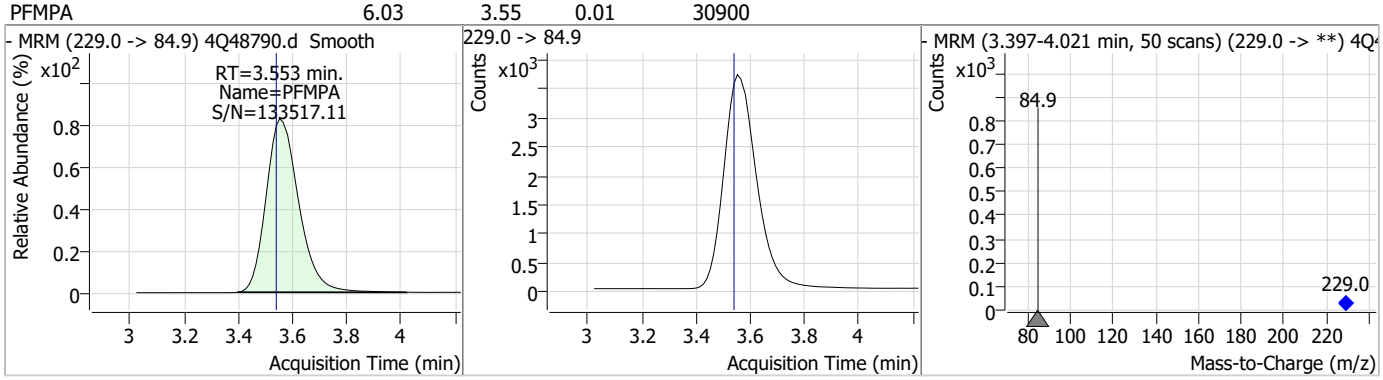
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.69	2.94	0.04	23041				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.66	2.94	0.02	85592				

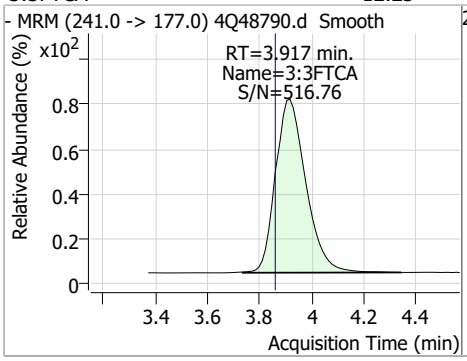


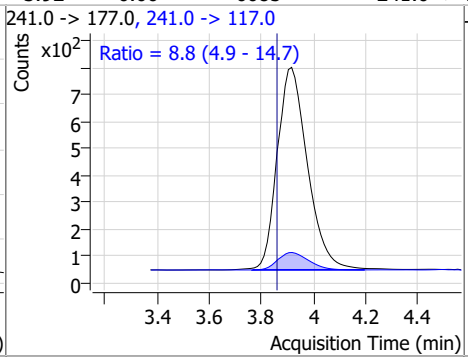
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	6.03	3.55	0.01	30900				

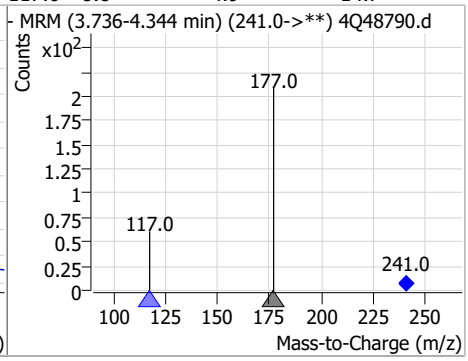


Perfluorinated Compounds by LC/MS/MS

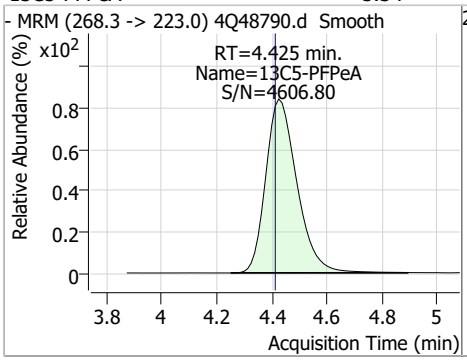
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.23	3.92	0.06	6085	241.0 -> 117.0	8.8	4.9	14.7

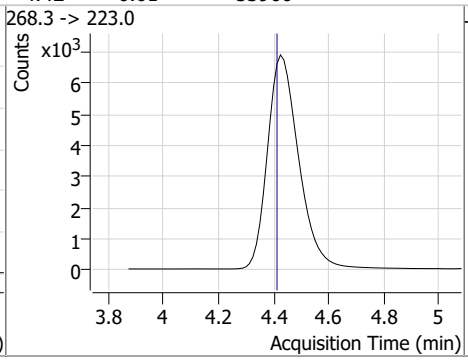


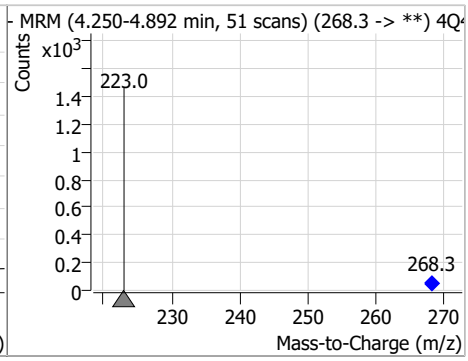




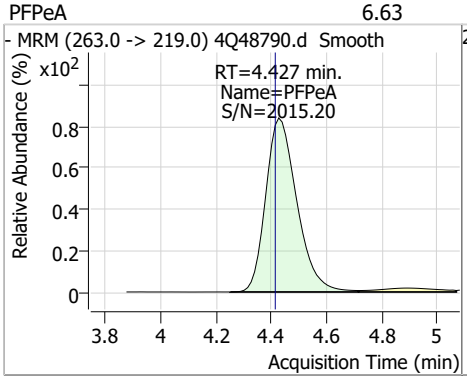
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.34	4.42	0.01	53960				

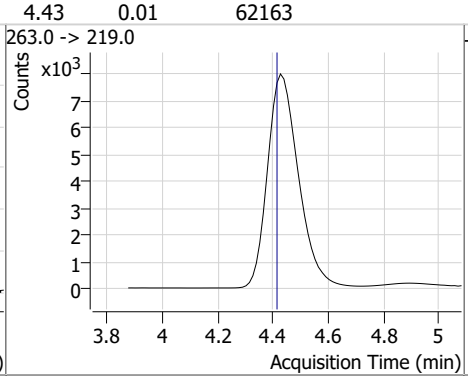


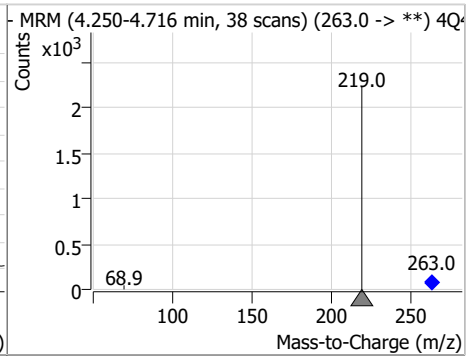




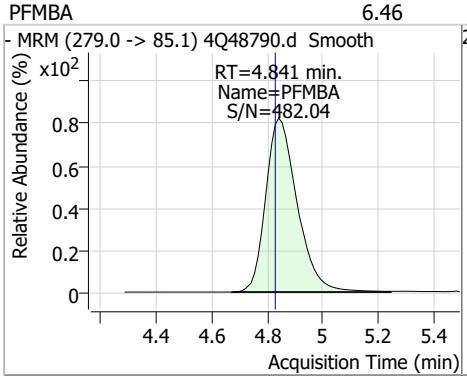
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	6.63	4.43	0.01	62163				

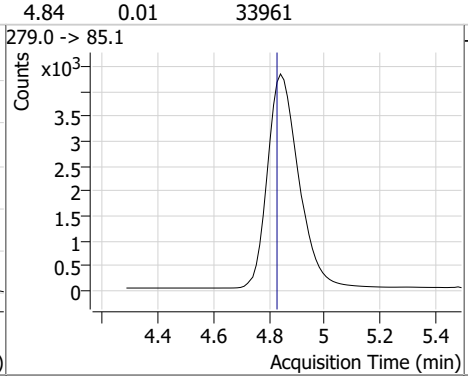


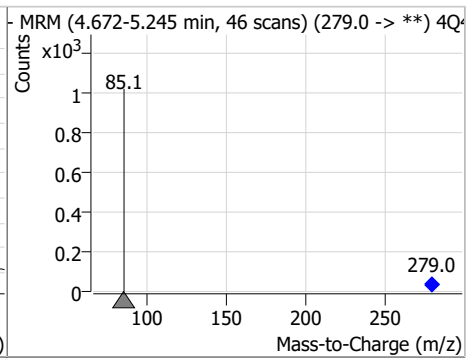




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	6.46	4.84	0.01	33961				

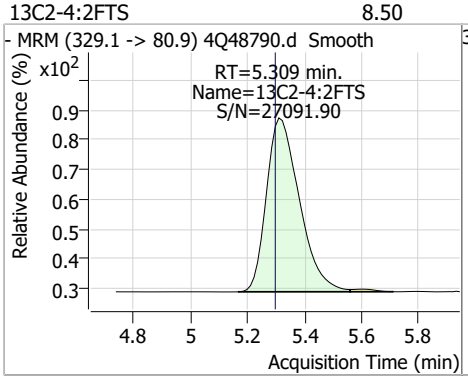


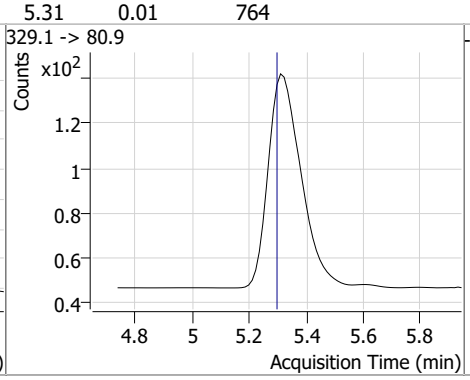


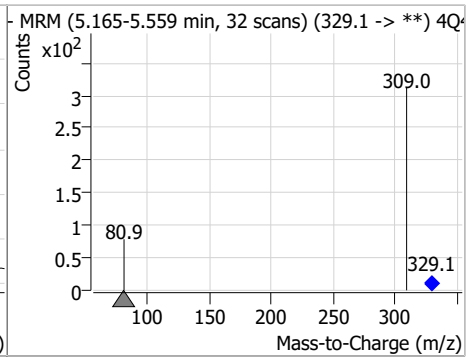


Perfluorinated Compounds by LC/MS/MS

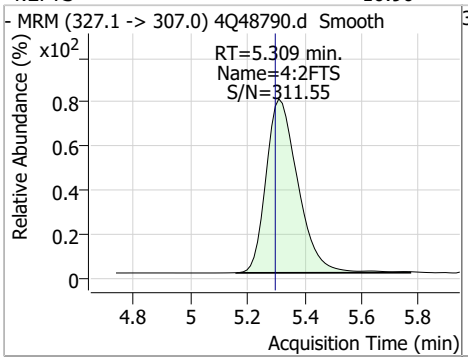
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.50	5.31	0.01	764				

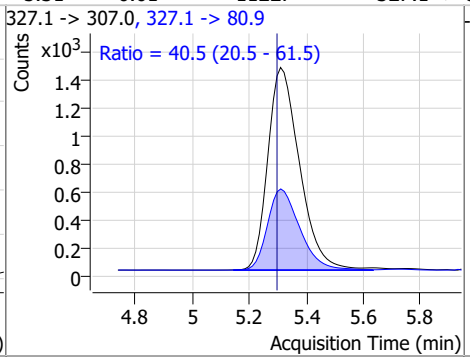


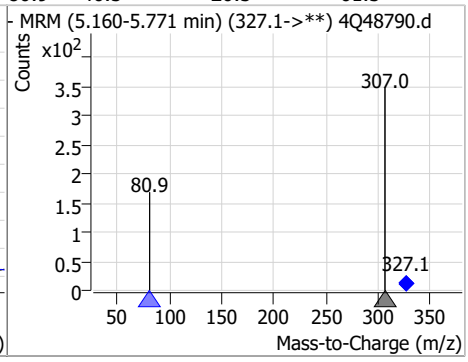




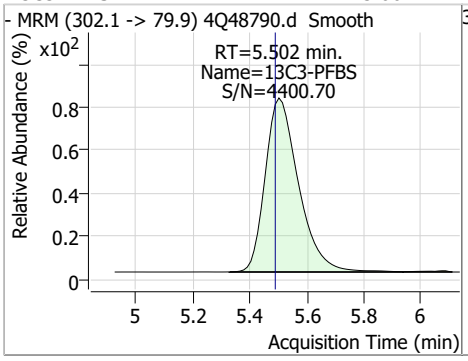
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.90	5.31	0.01	11227	327.1 -> 80.9	40.5	20.5	61.5

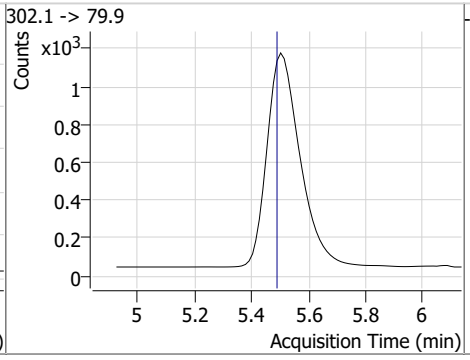


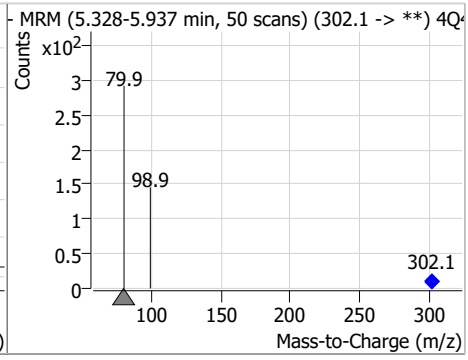




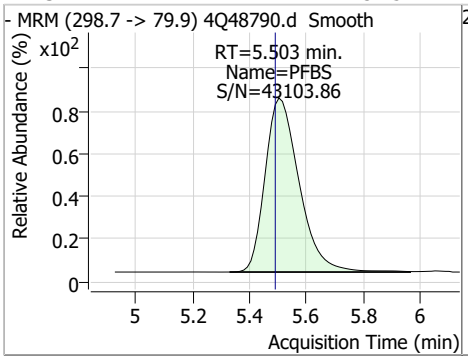
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.00	5.50	0.01	9172				

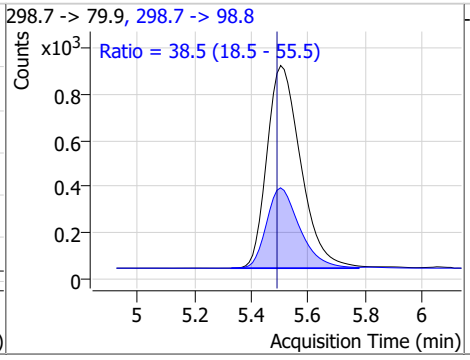


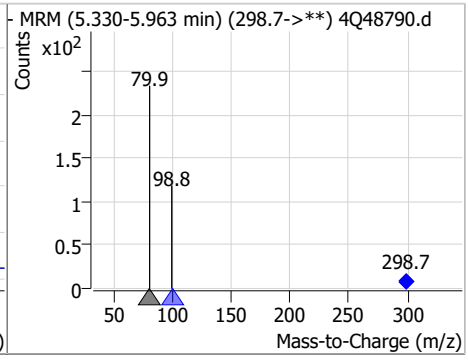




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	3.25	5.50	0.01	7279	298.7 -> 98.8	38.5	18.5	55.5

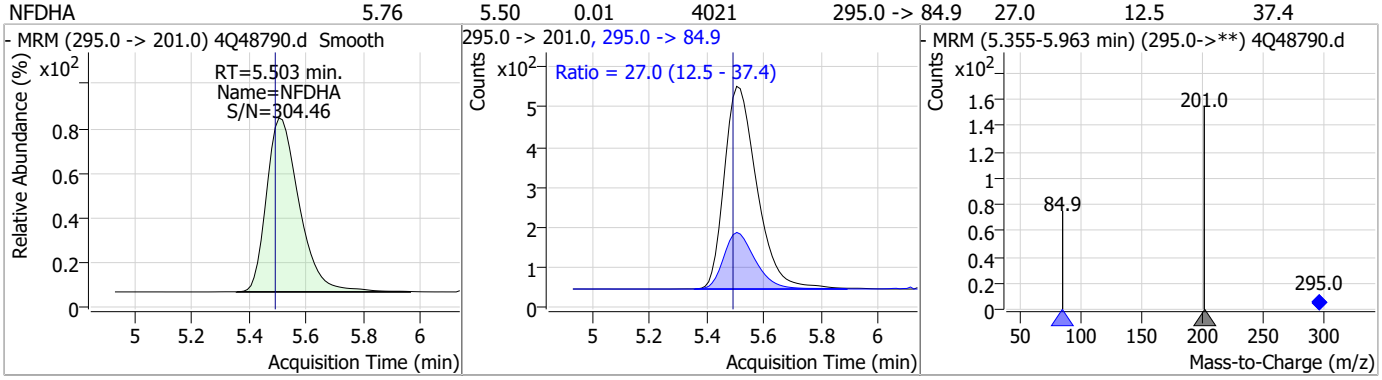




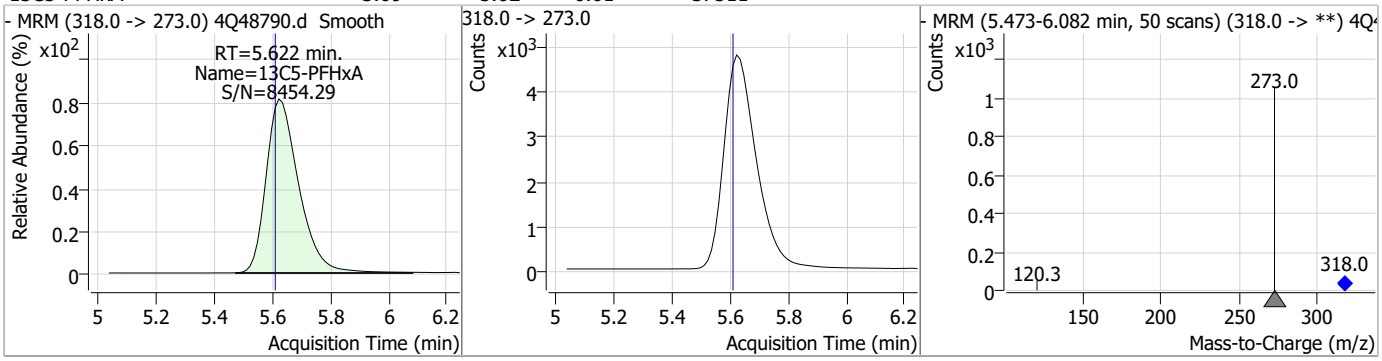


Perfluorinated Compounds by LC/MS/MS

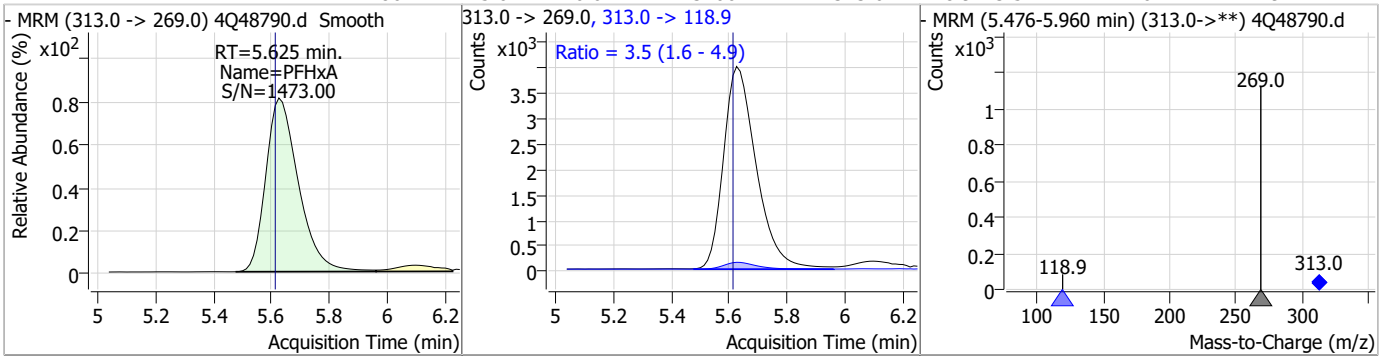
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.76	5.50	0.01	4021	295.0 -> 84.9	27.0	12.5	37.4



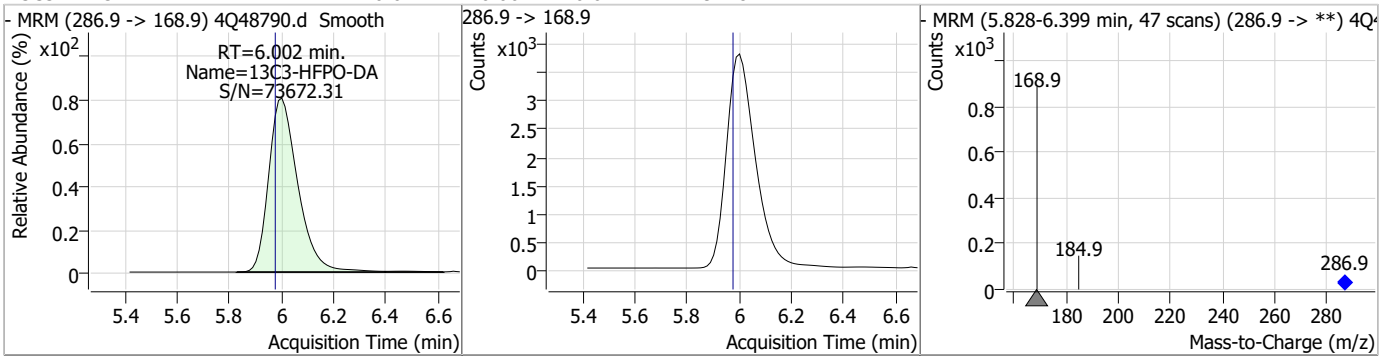
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.09	5.62	0.01	37511				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.86	5.62	0.01	31001	313.0 -> 118.9	3.5	1.6	4.9

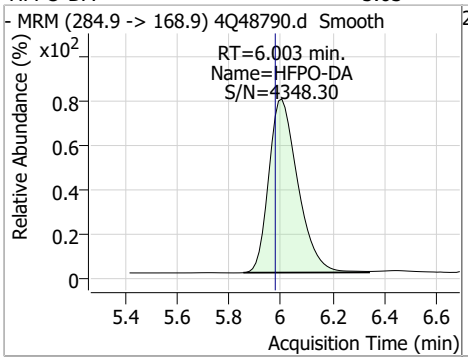


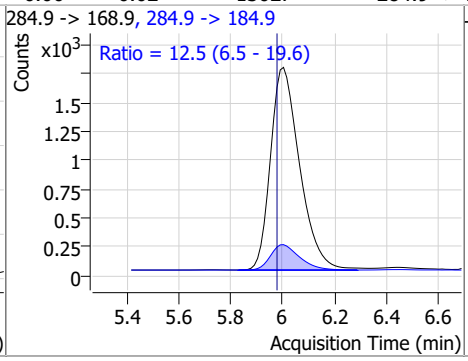
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	6.00	0.02	29418				

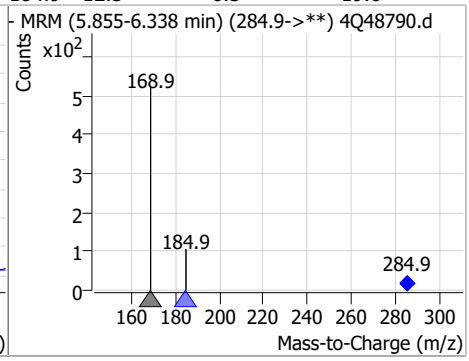


Perfluorinated Compounds by LC/MS/MS

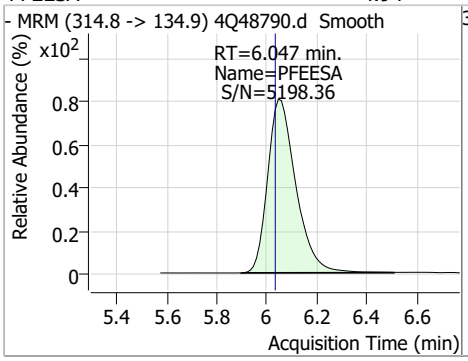
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.63	6.00	0.02	13627	284.9 -> 184.9	12.5	6.5	19.6

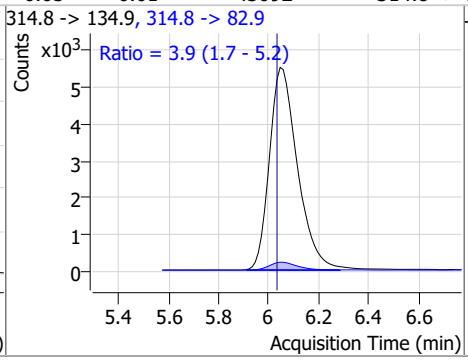


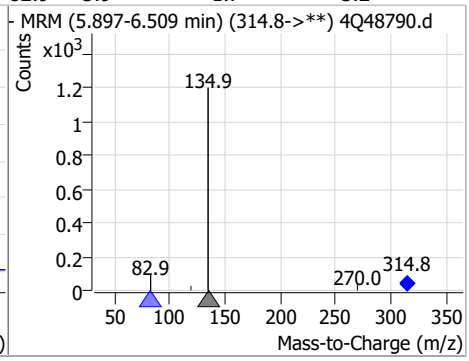




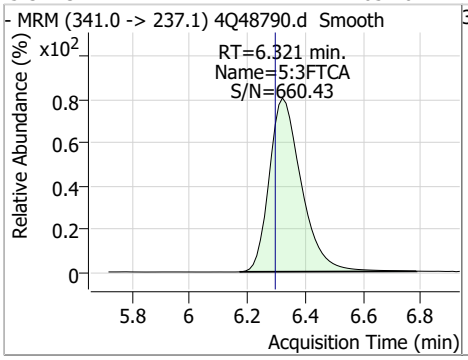
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.94	6.05	0.01	43092	314.8 -> 82.9	3.9	1.7	5.2

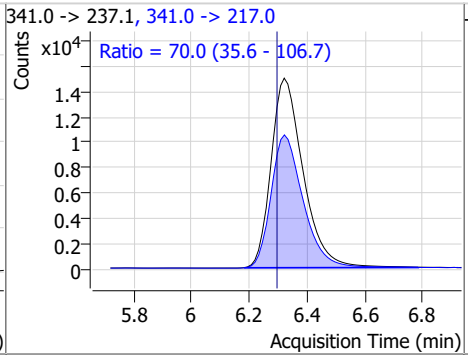


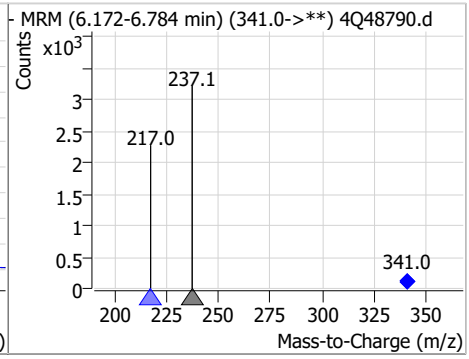




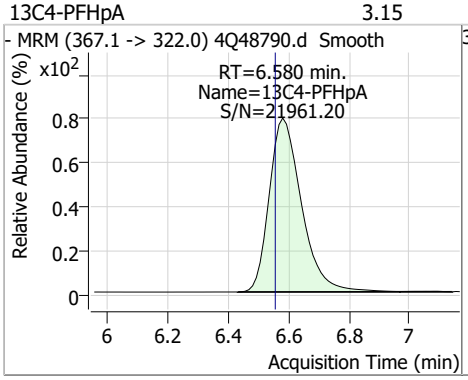
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.26	6.32	0.02	115602	341.0 -> 217.0	70.0	35.6	106.7

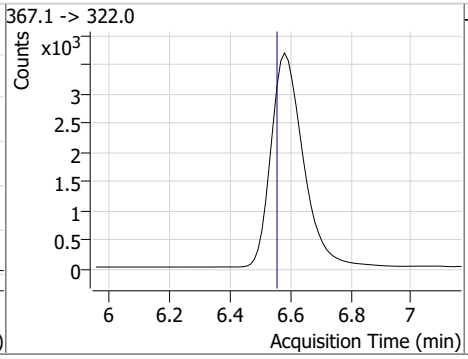


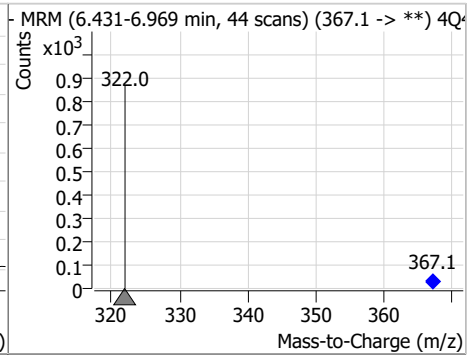




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.15	6.58	0.02	27120				

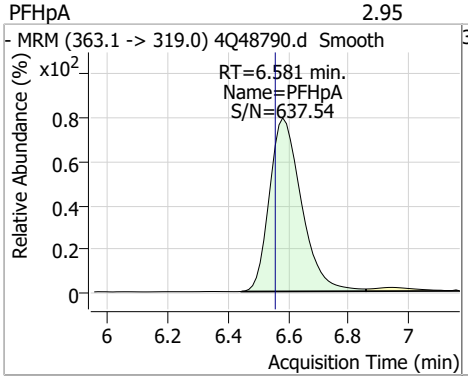


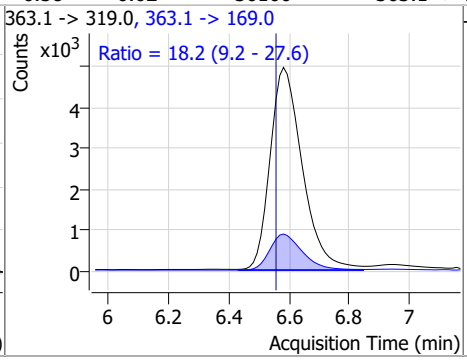


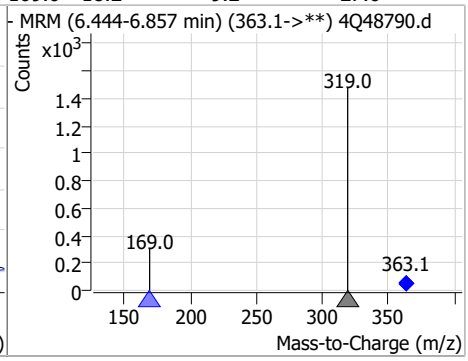


Perfluorinated Compounds by LC/MS/MS

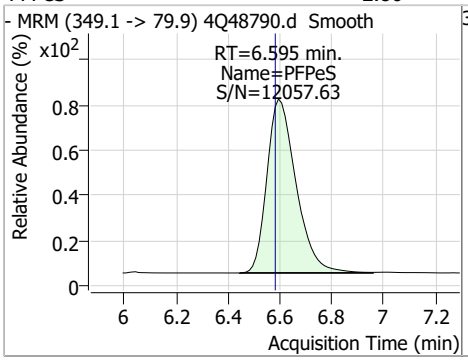
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.95	6.58	0.02	36100	363.1 -> 169.0	18.2	9.2	27.6

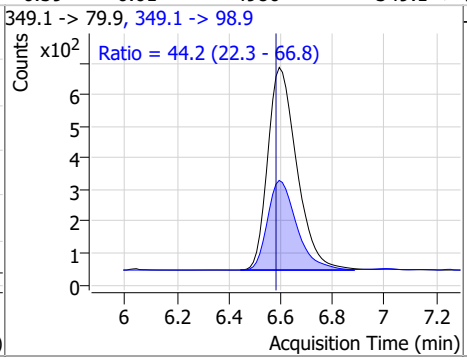


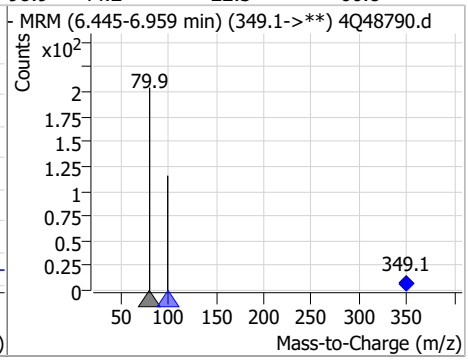




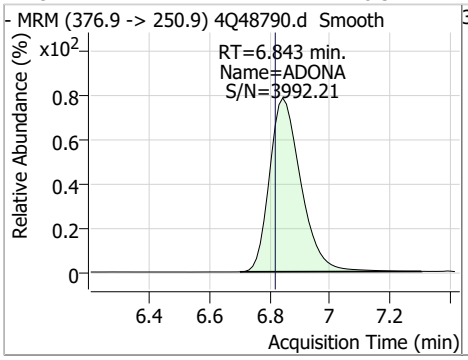
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.86	6.59	0.01	4980	349.1 -> 98.9	44.2	22.3	66.8

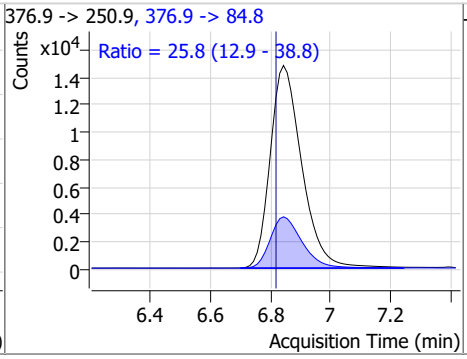


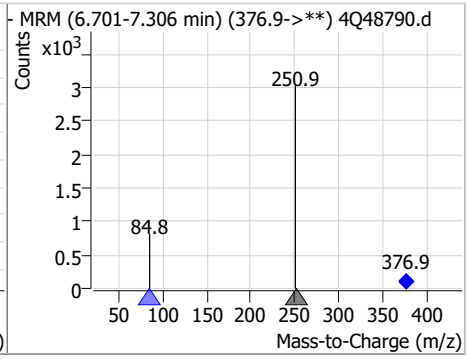




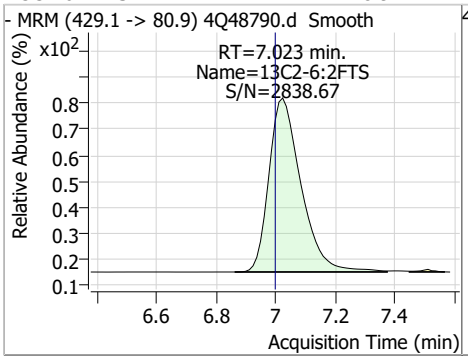
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	6.32	6.84	0.02	107841	376.9 -> 84.8	25.8	12.9	38.8

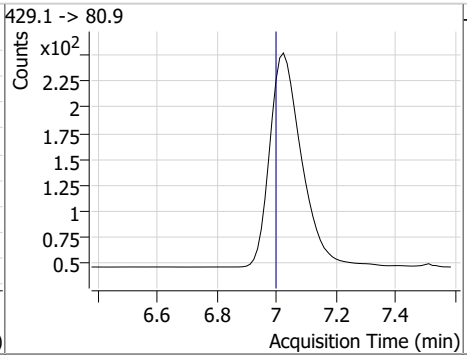


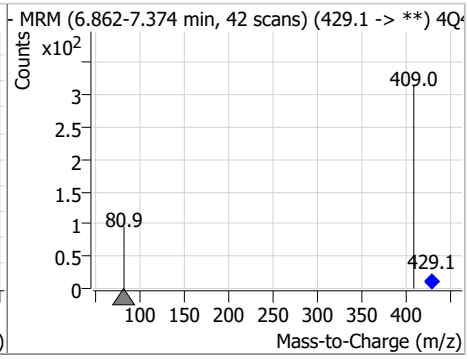




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.97	7.02	0.02	1539				

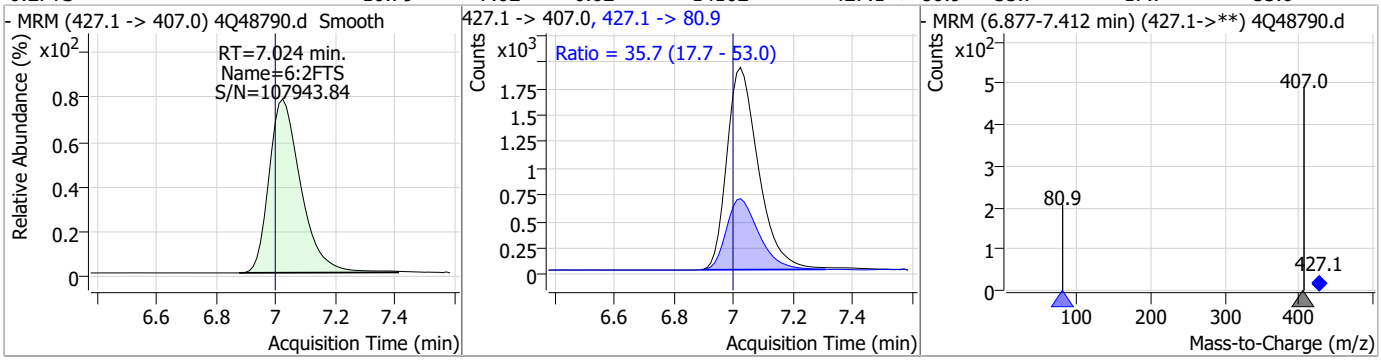




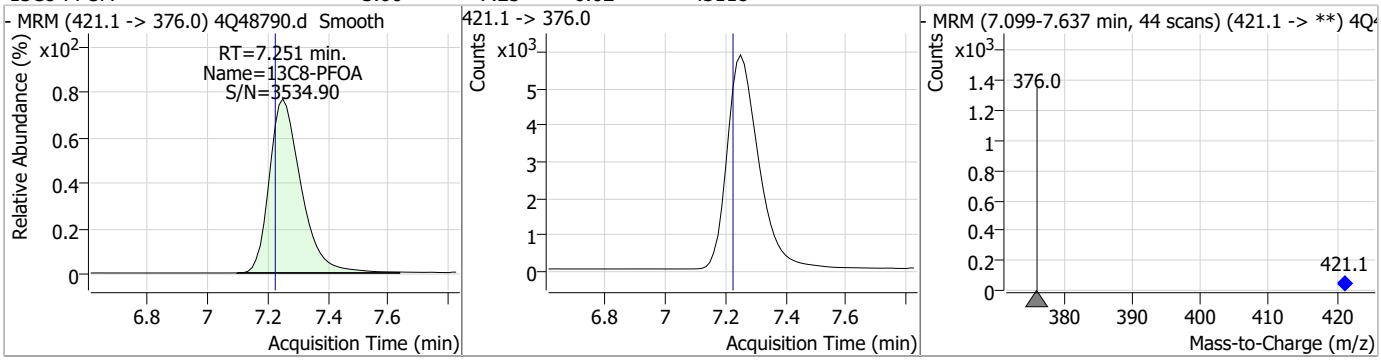


Perfluorinated Compounds by LC/MS/MS

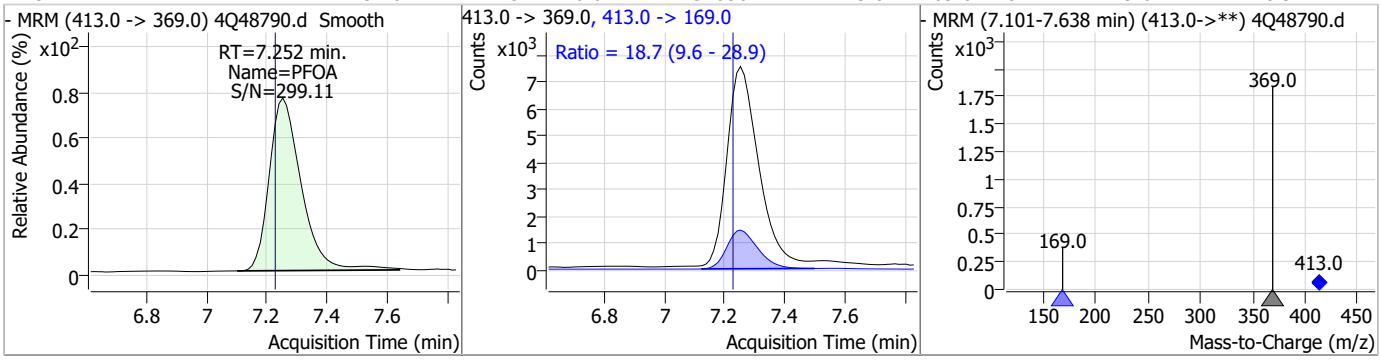
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.79	7.02	0.02	14102	427.1 -> 80.9	35.7	17.7	53.0



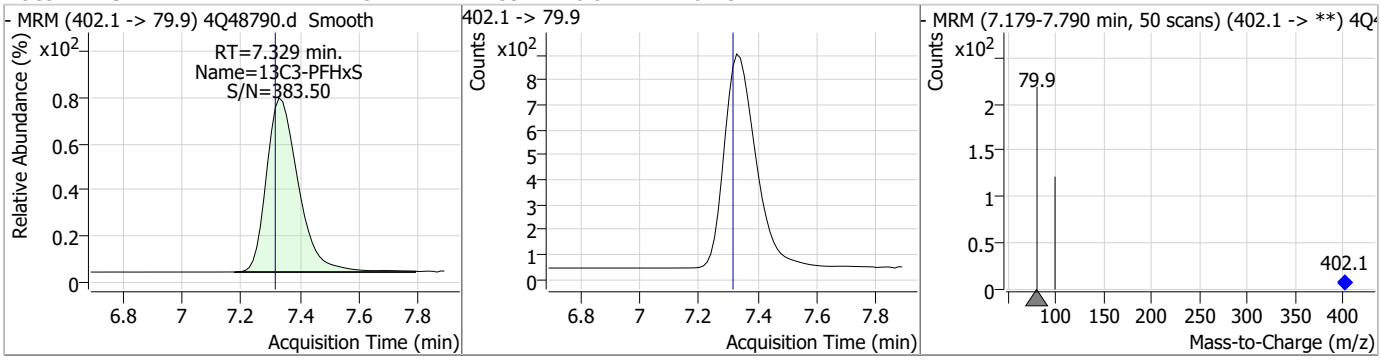
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.00	7.25	0.02	43118				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.20	7.25	0.02	54636	413.0 -> 169.0	18.7	9.6	28.9

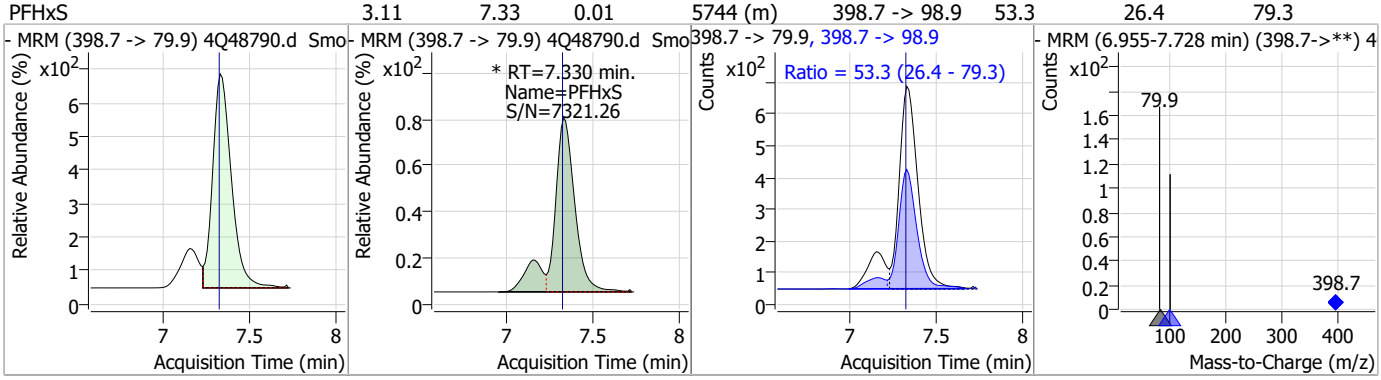


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.24	7.33	0.01	6443				

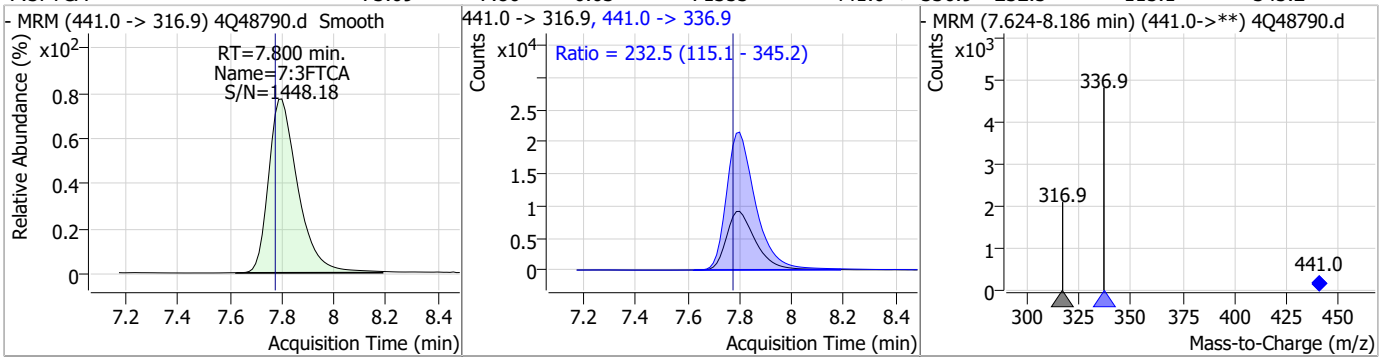


Perfluorinated Compounds by LC/MS/MS

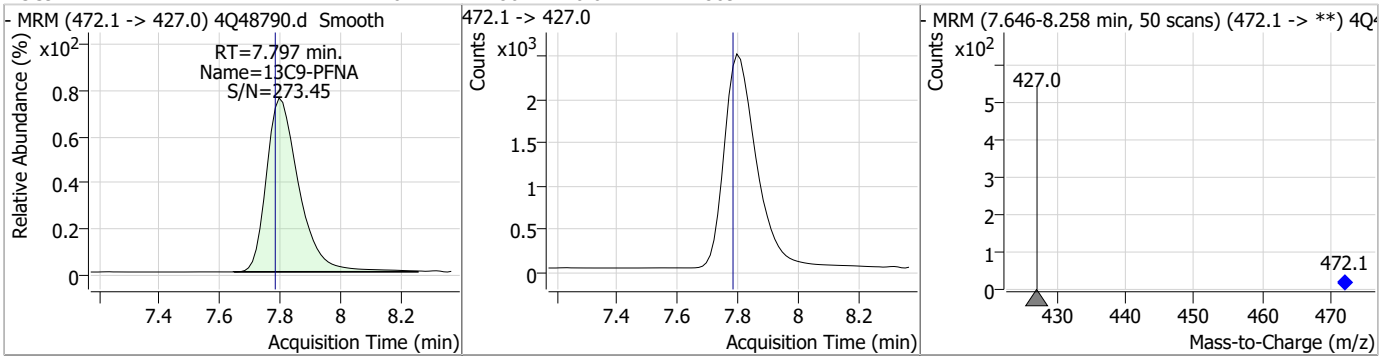
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	3.11	7.33	0.01	5744 (m)	398.7 -> 98.9	53.3	26.4	79.3



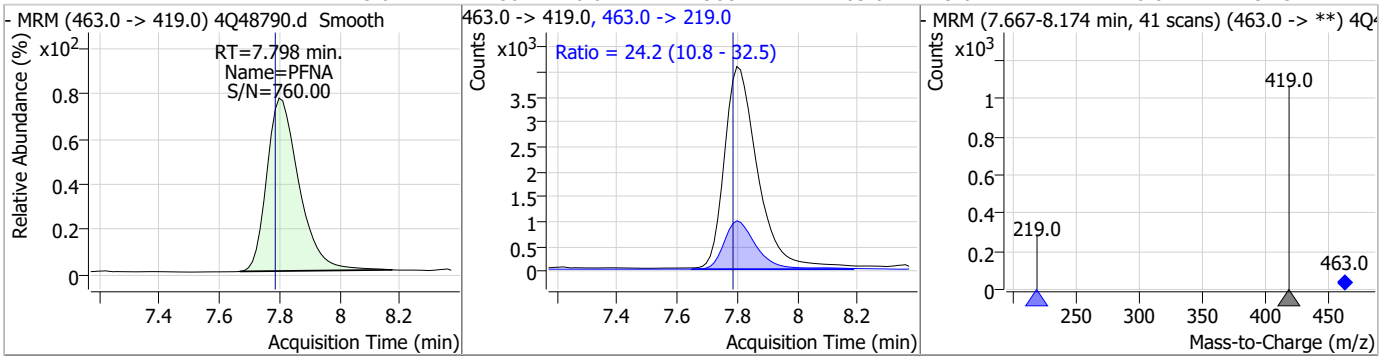
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	73.09	7.80	0.03	71353	441.0 -> 336.9	232.5	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.80	0.01	18697				

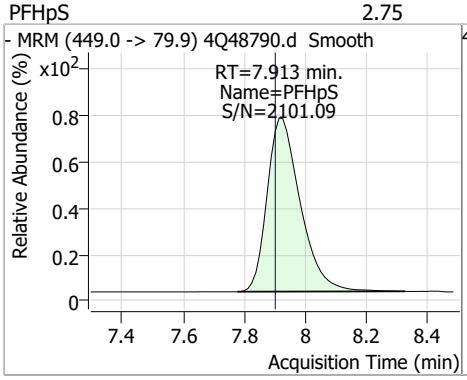


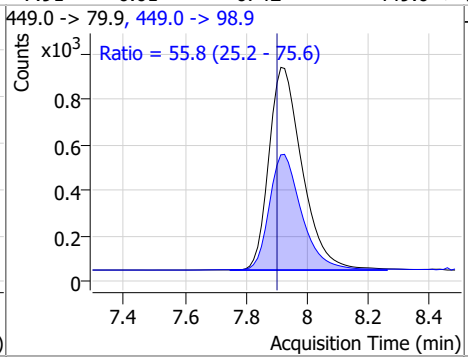
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.07	7.80	0.01	29884	463.0 -> 219.0	24.2	10.8	32.5

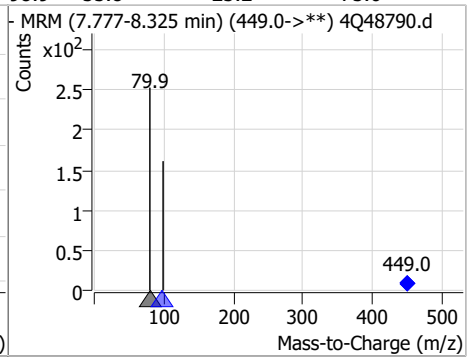


Perfluorinated Compounds by LC/MS/MS

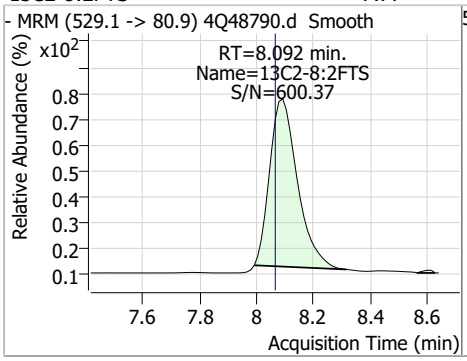
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.75	7.91	0.01	6742	449.0 -> 98.9	55.8	25.2	75.6

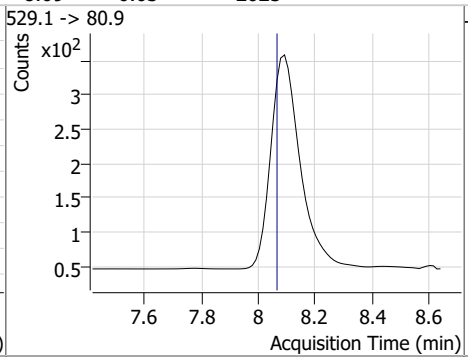


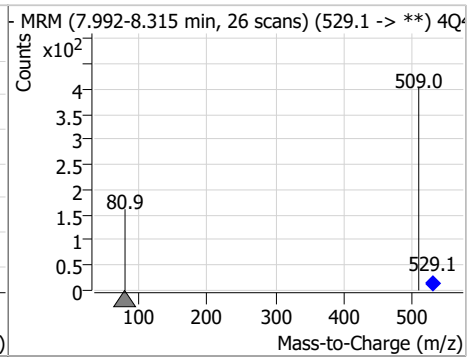




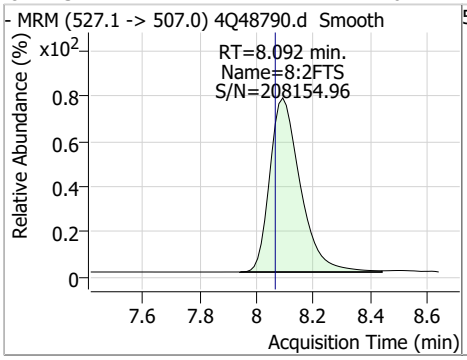
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.77	8.09	0.03	2025				

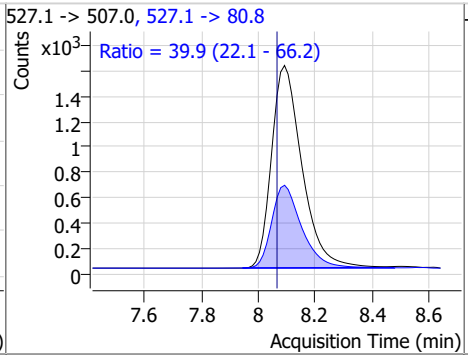


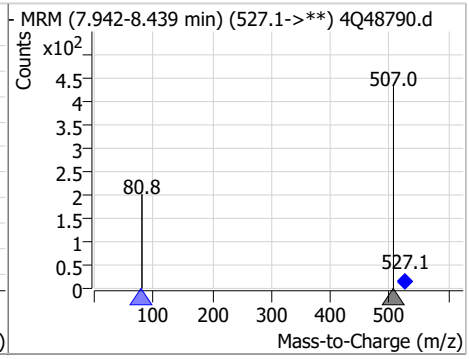




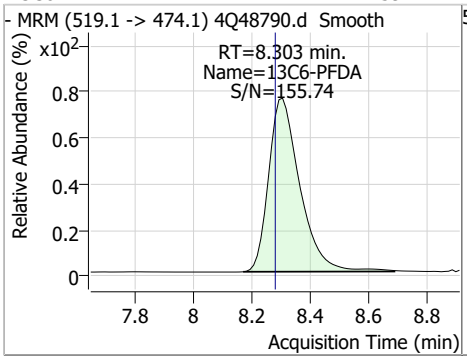
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	14.62	8.09	0.03	11886	527.1 -> 80.8	39.9	22.1	66.2

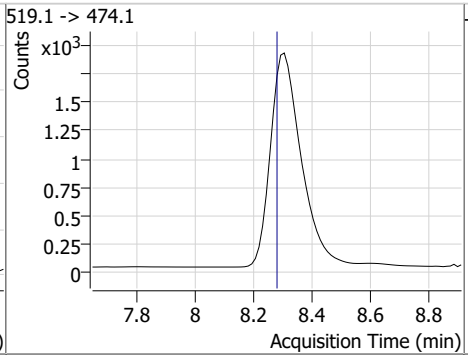


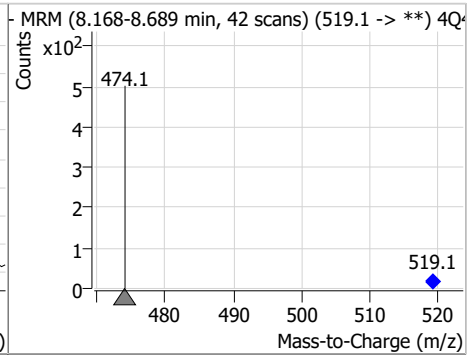




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.59	8.30	0.02	14084				

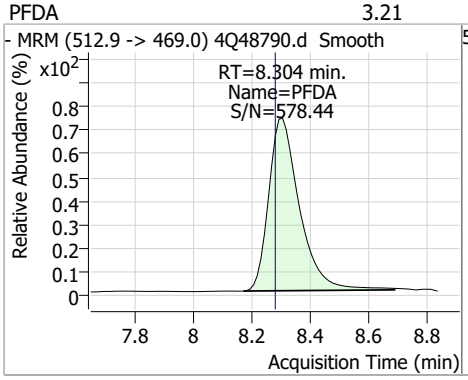


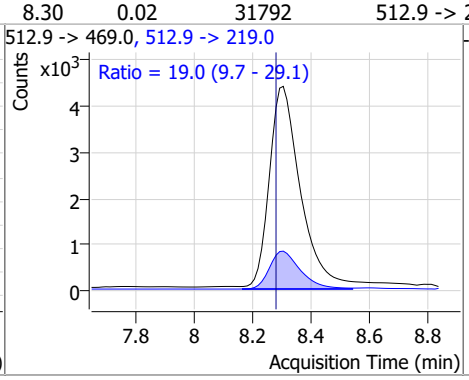


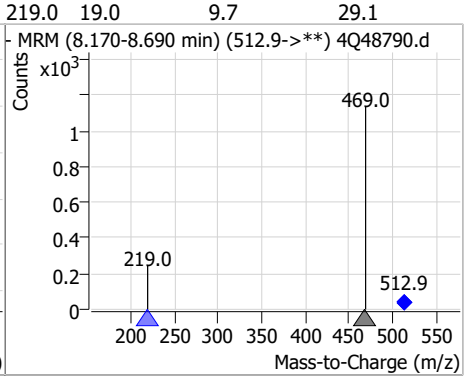


Perfluorinated Compounds by LC/MS/MS

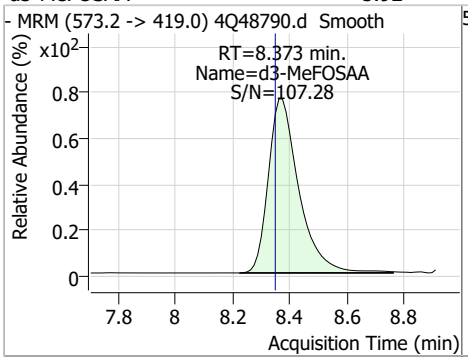
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	3.21	8.30	0.02	31792	512.9 -> 219.0	19.0	9.7	29.1

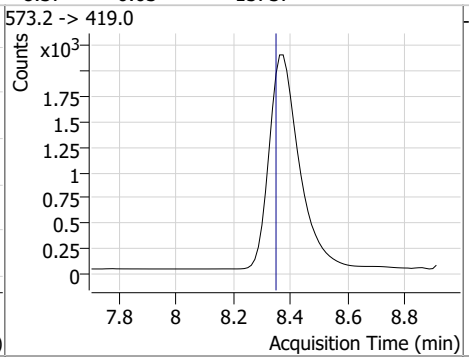


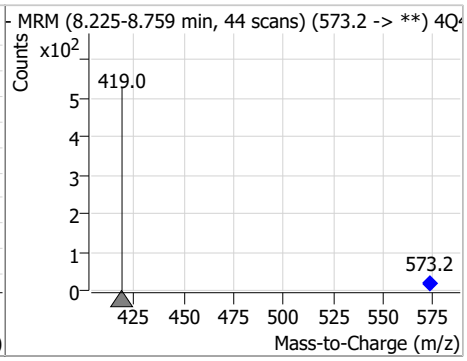




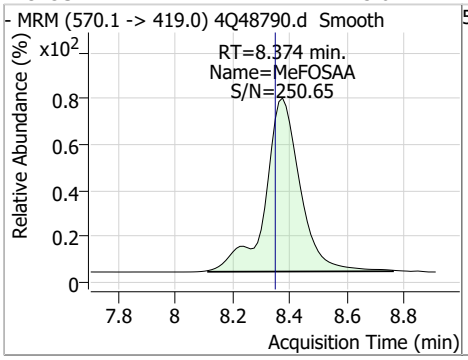
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.92	8.37	0.03	15737				

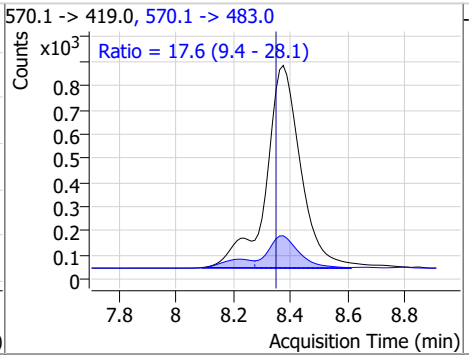


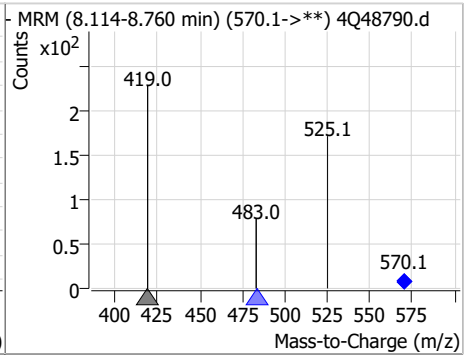




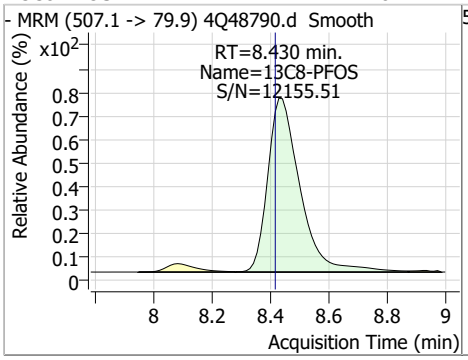
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	3.61	8.37	0.03	7108	570.1 -> 483.0	17.6	9.4	28.1

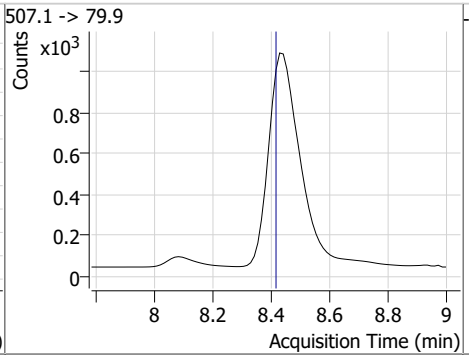


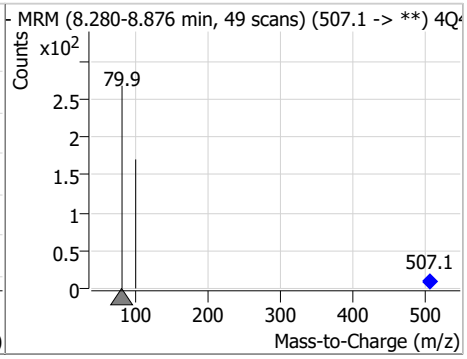




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.82	8.43	0.01	8103				

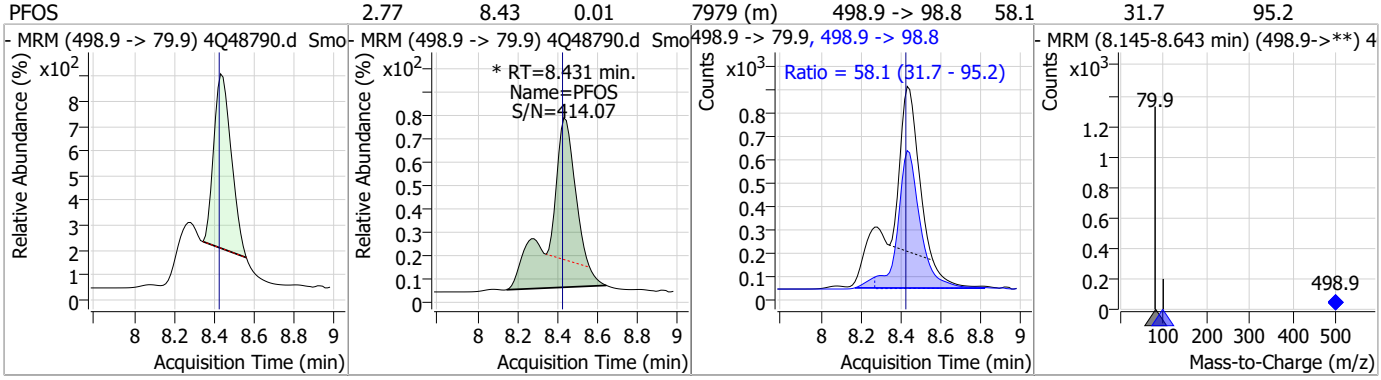




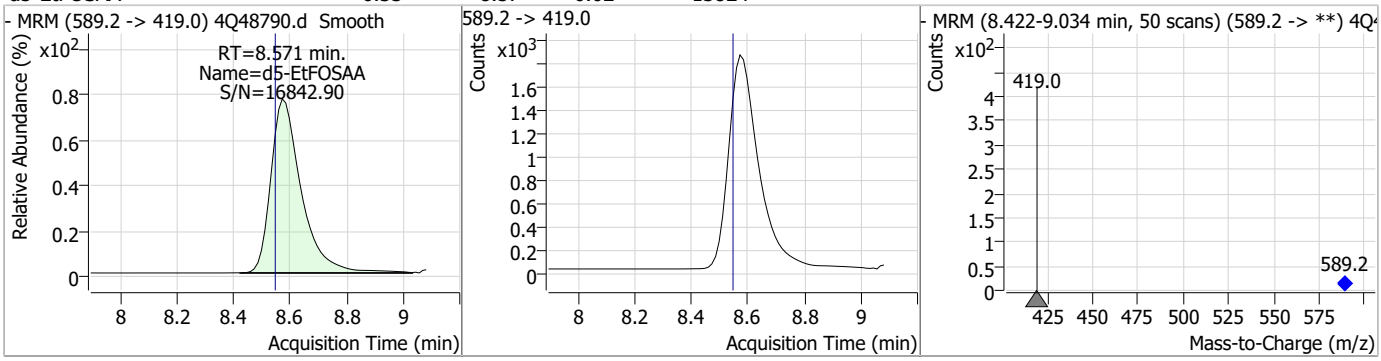


Perfluorinated Compounds by LC/MS/MS

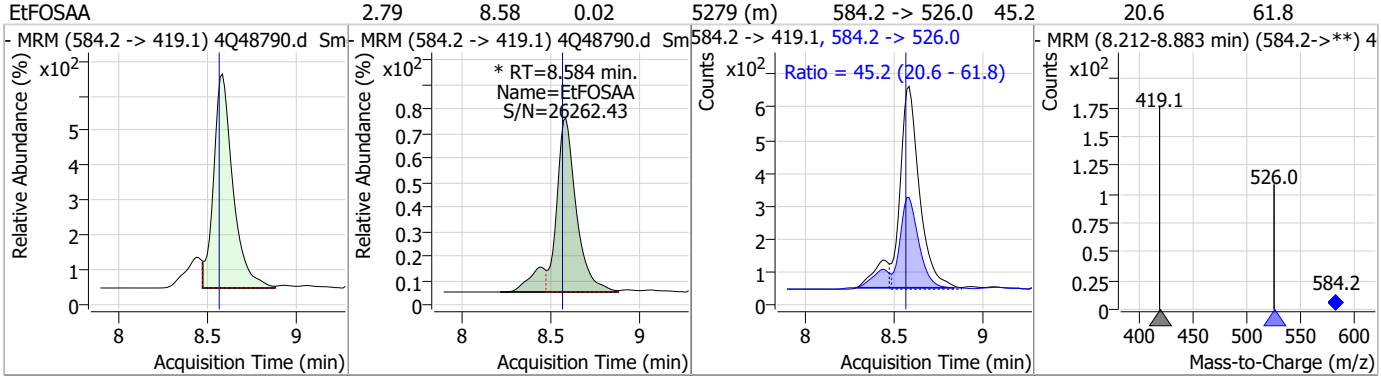
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.77	8.43	0.01	7979 (m)	498.9 -> 98.8	58.1	31.7	95.2



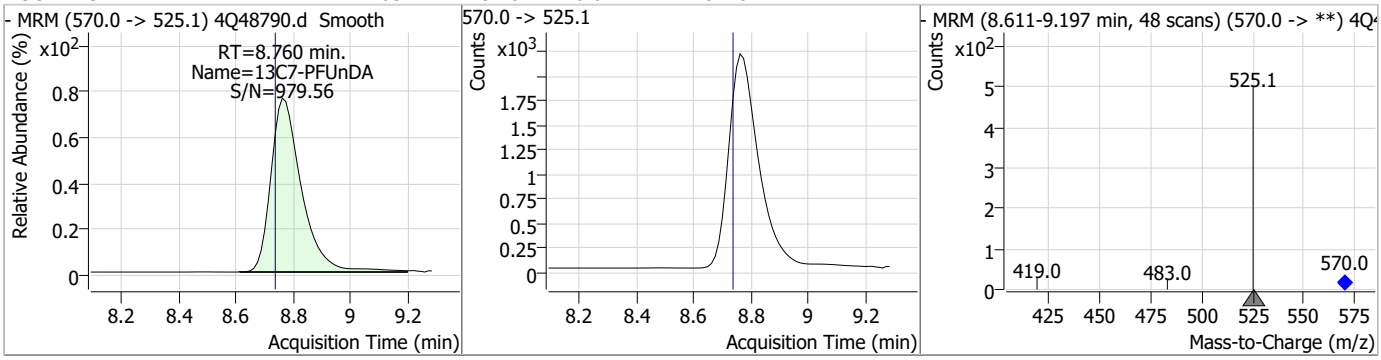
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.33	8.57	0.02	13824				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.79	8.58	0.02	5279 (m)	584.2 -> 526.0	45.2	20.6	61.8

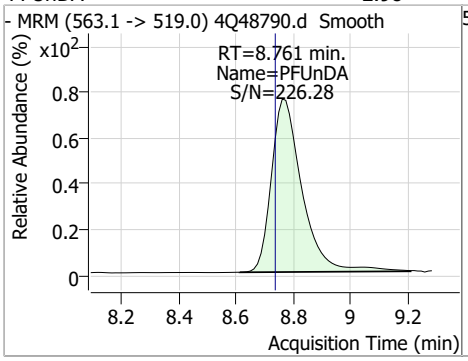


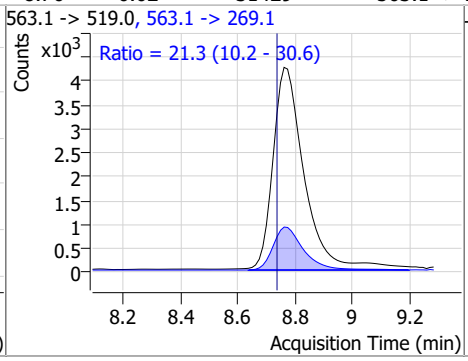
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.63	8.76	0.02	16218				

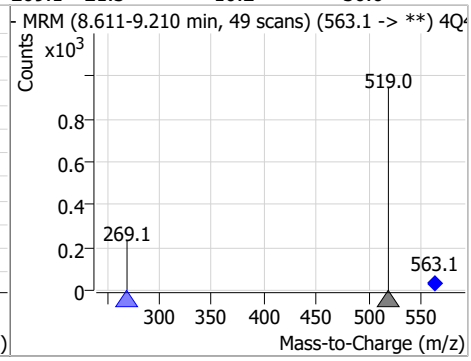


Perfluorinated Compounds by LC/MS/MS

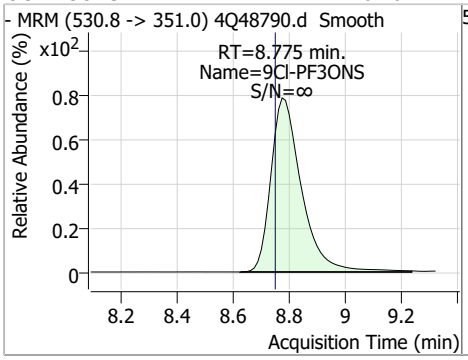
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.98	8.76	0.02	31429	563.1 -> 269.1	21.3	10.2	30.6

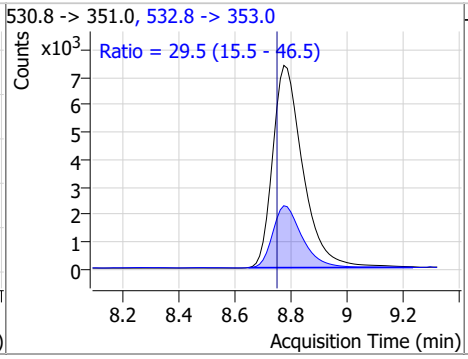


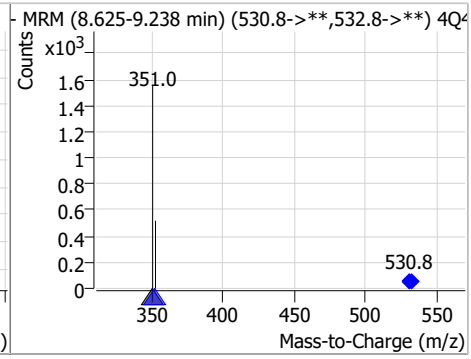




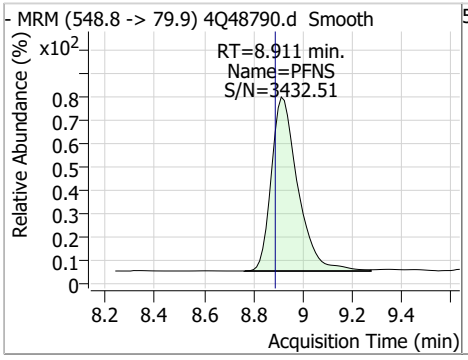
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	6.46	8.78	0.02	56089	532.8 -> 353.0	29.5	15.5	46.5

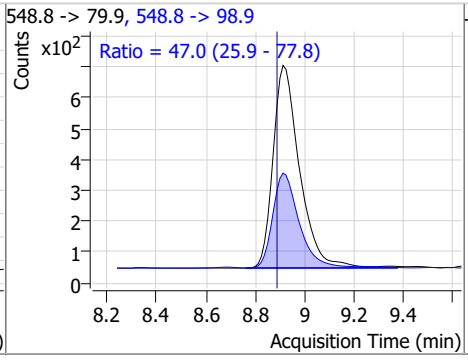


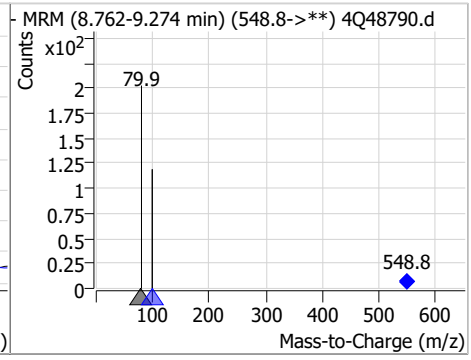




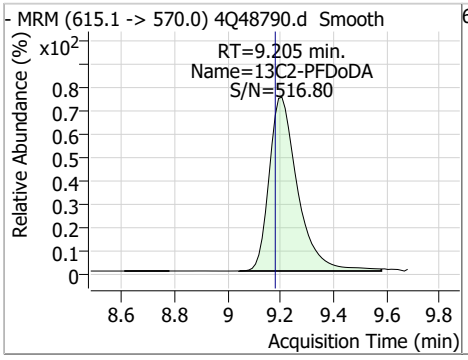
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	3.10	8.91	0.02	4906	548.8 -> 98.9	47.0	25.9	77.8

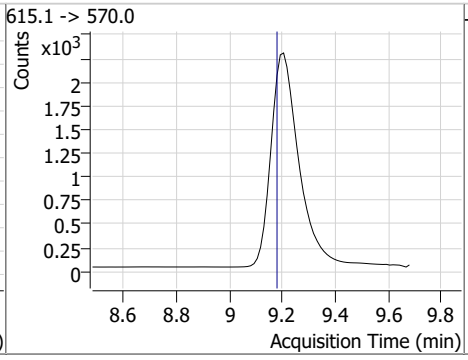


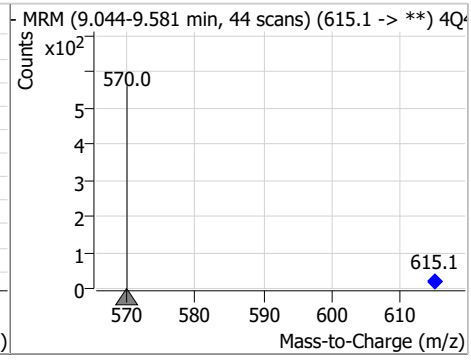




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.54	9.21	0.02	16870				

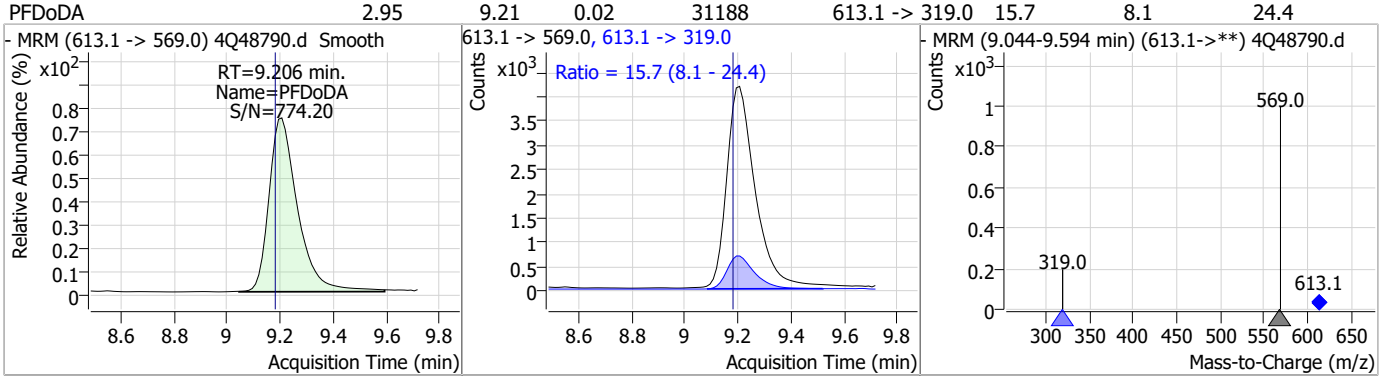




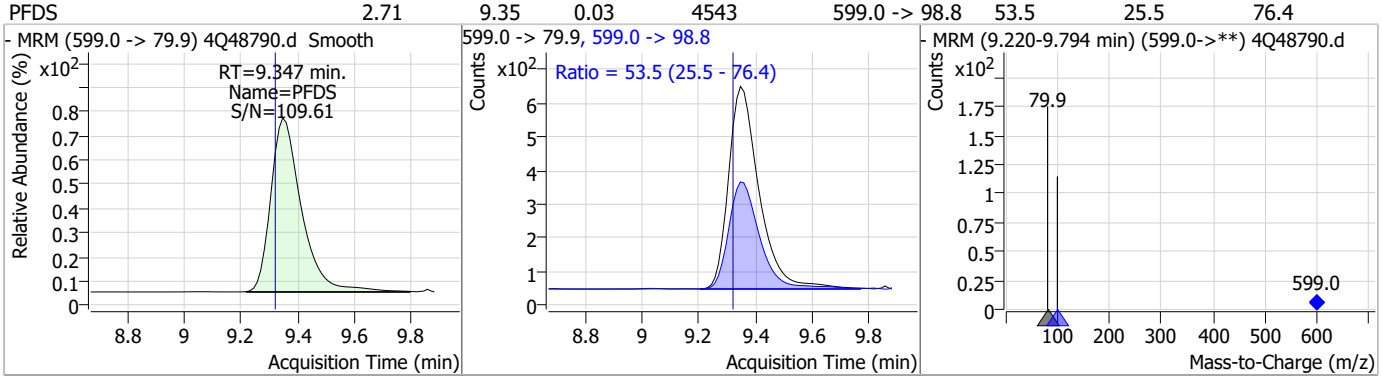


Perfluorinated Compounds by LC/MS/MS

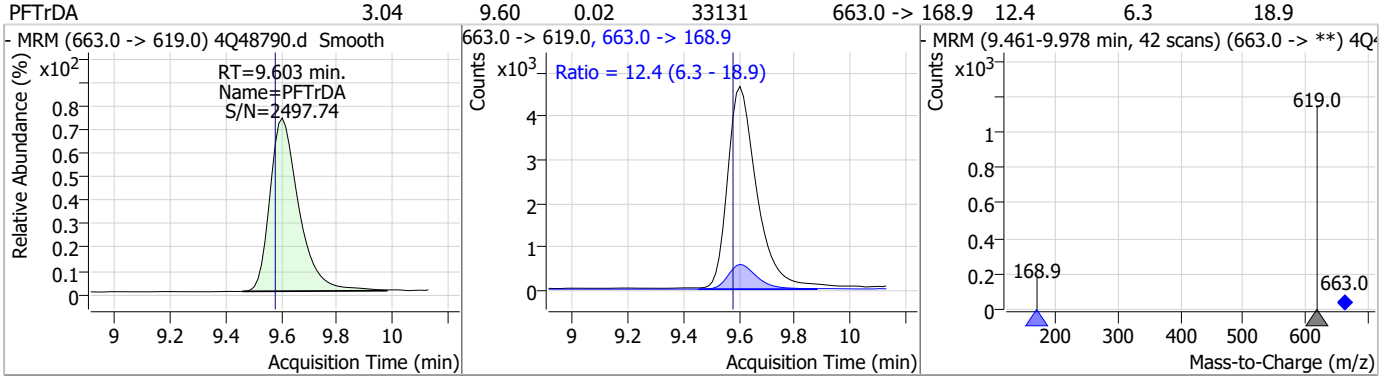
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.95	9.21	0.02	31188	613.1 -> 319.0	15.7	8.1	24.4



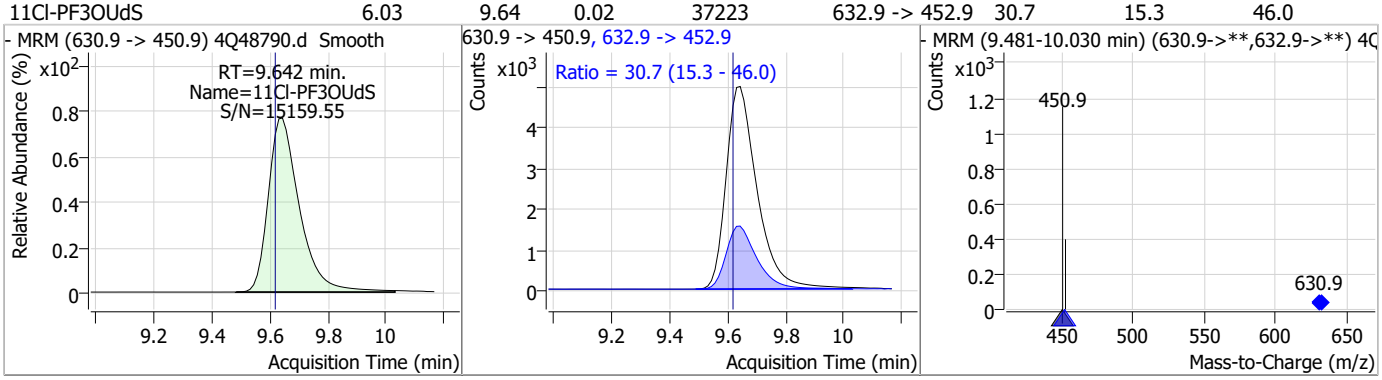
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.71	9.35	0.03	4543	599.0 -> 98.8	53.5	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	3.04	9.60	0.02	33131	663.0 -> 168.9	12.4	6.3	18.9

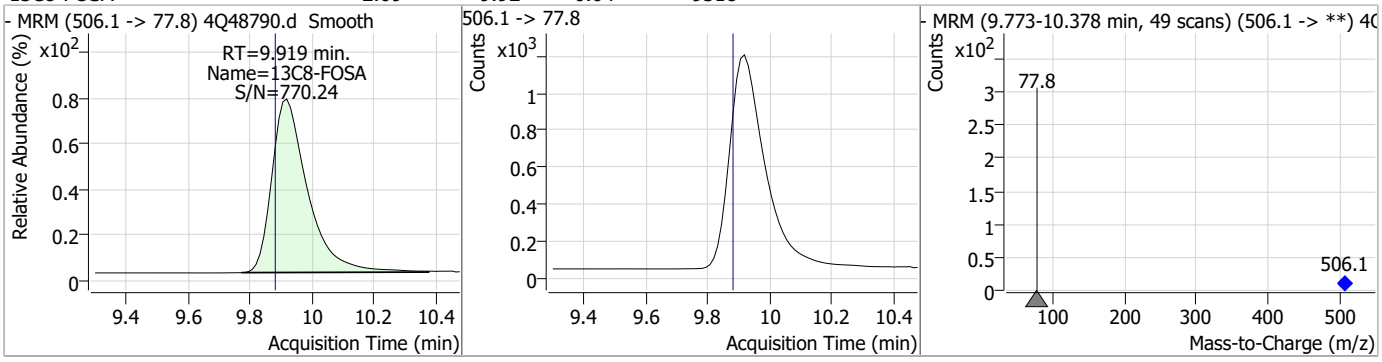


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	6.03	9.64	0.02	37223	632.9 -> 452.9	30.7	15.3	46.0

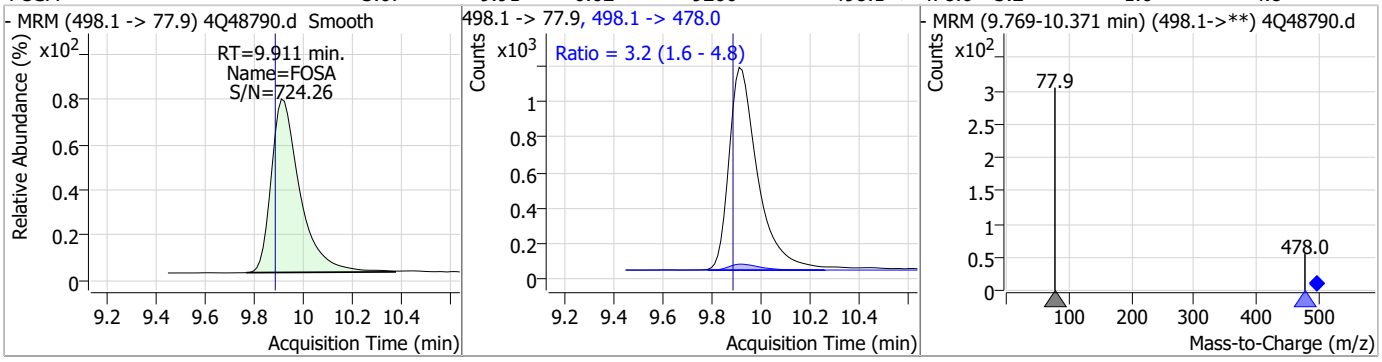


Perfluorinated Compounds by LC/MS/MS

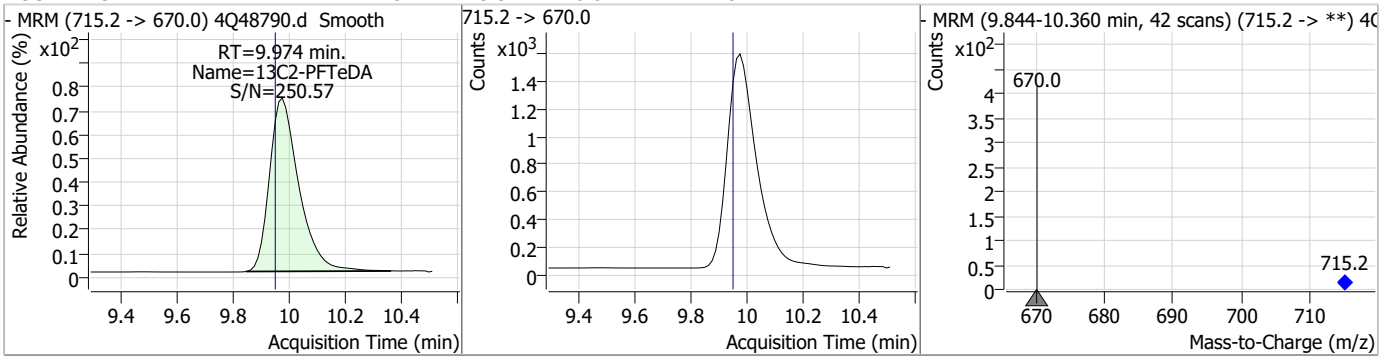
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.09	9.92	0.04	9318				



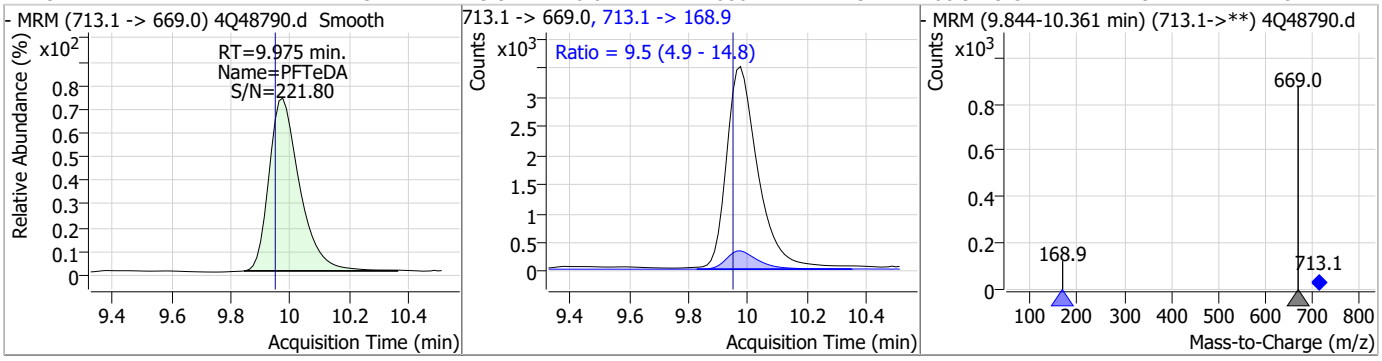
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	3.07	9.91	0.02	9260	498.1 -> 478.0	3.2	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.97	0.02	11281				

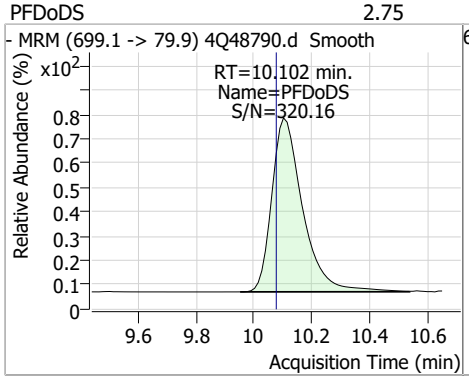


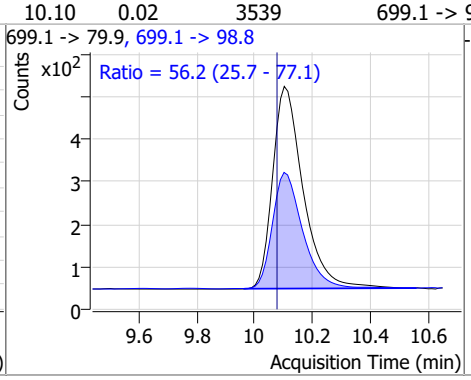
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	3.12	9.97	0.02	24680	713.1 -> 168.9	9.5	4.9	14.8

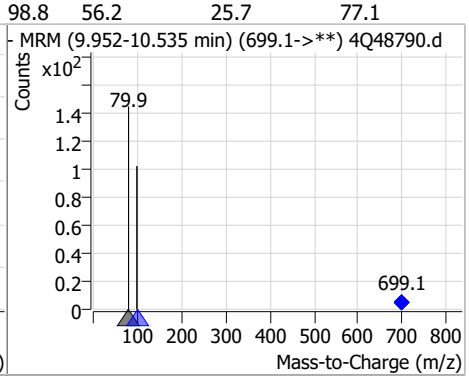


Perfluorinated Compounds by LC/MS/MS

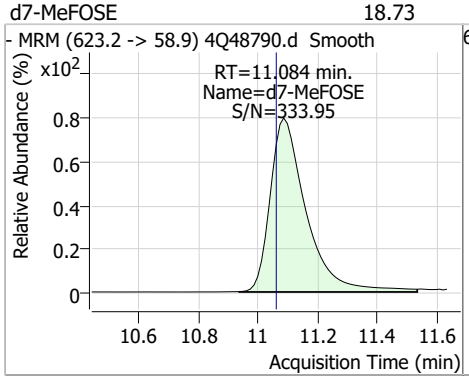
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.75	10.10	0.02	3539	699.1 -> 98.8	56.2	25.7	77.1

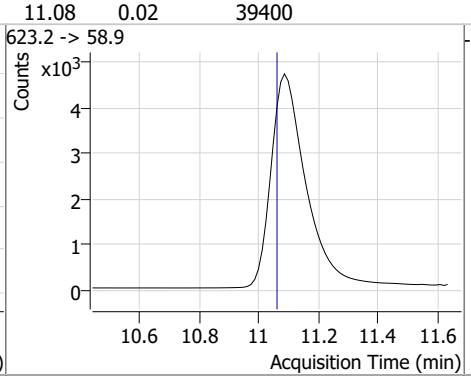


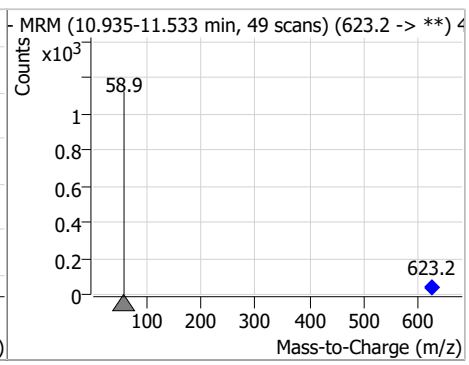




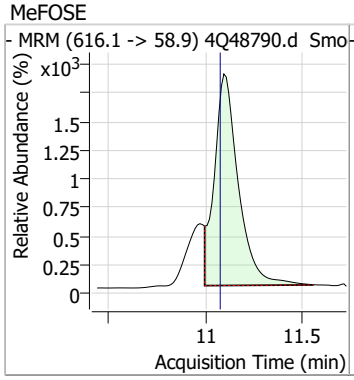
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	18.73	11.08	0.02	39400				

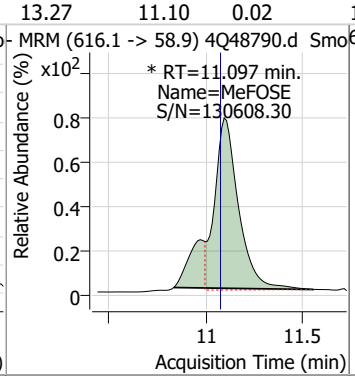


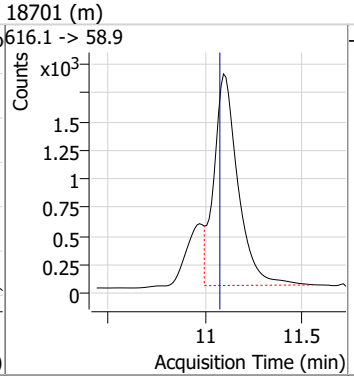


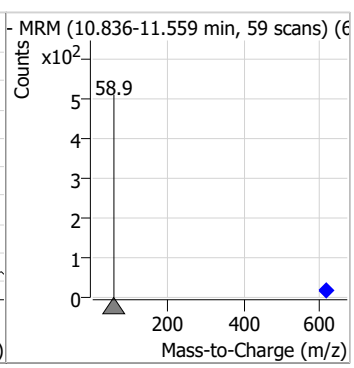


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.27	11.10	0.02	18701 (m)				

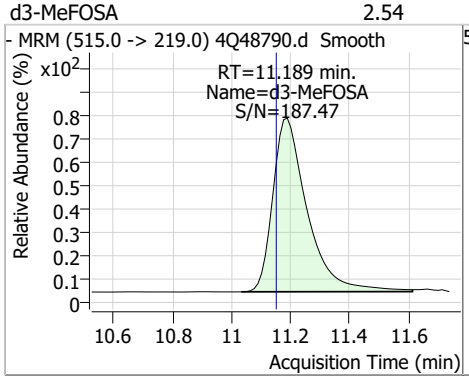


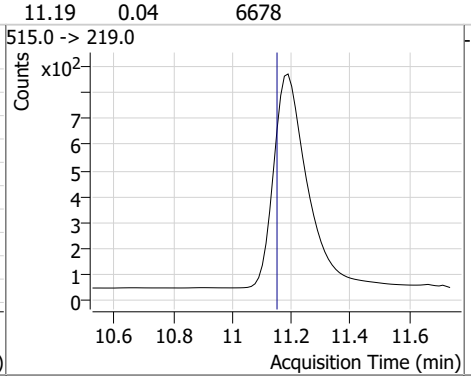


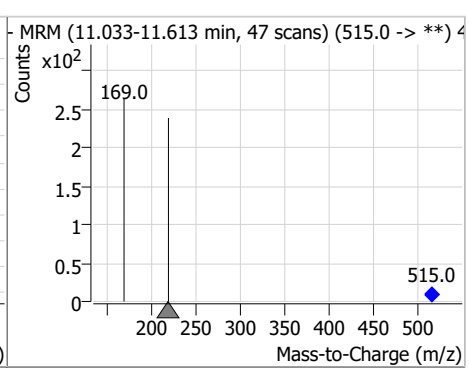




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	11.19	0.04	6678				

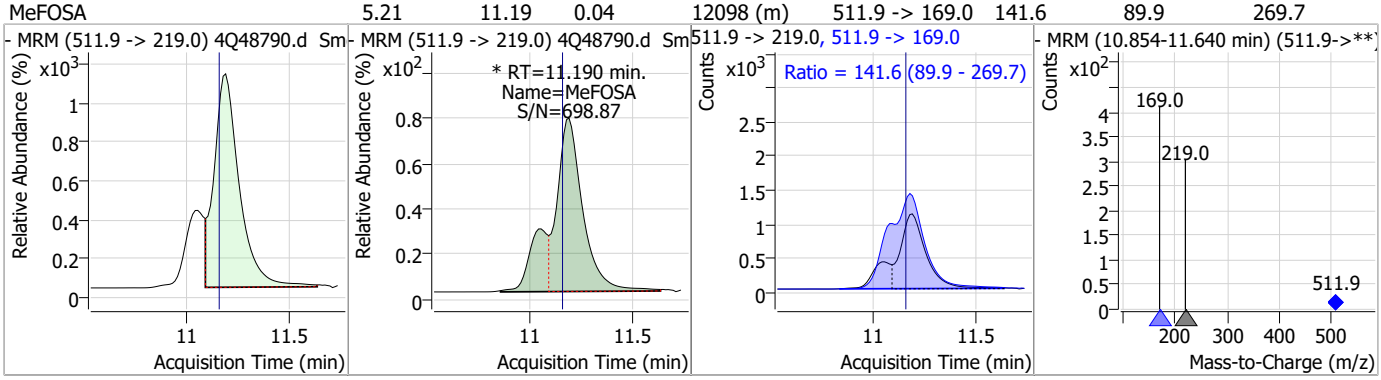




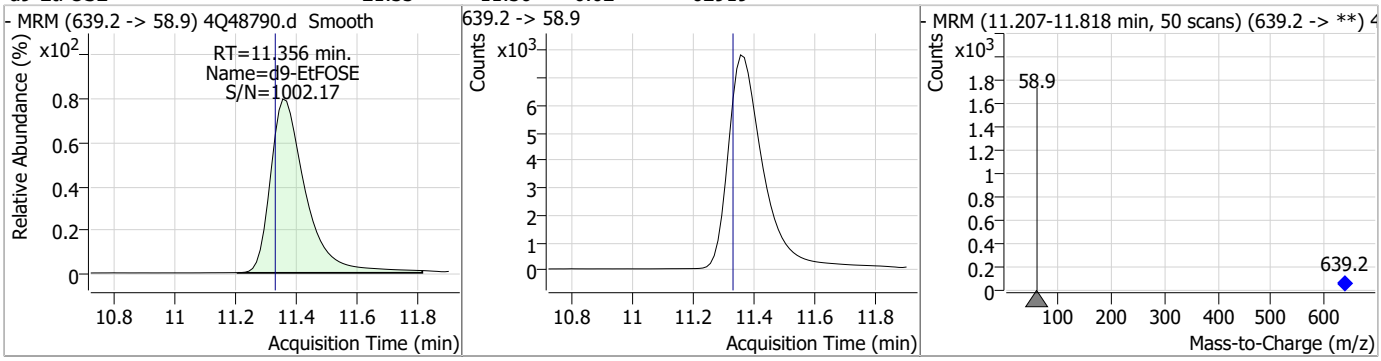


Perfluorinated Compounds by LC/MS/MS

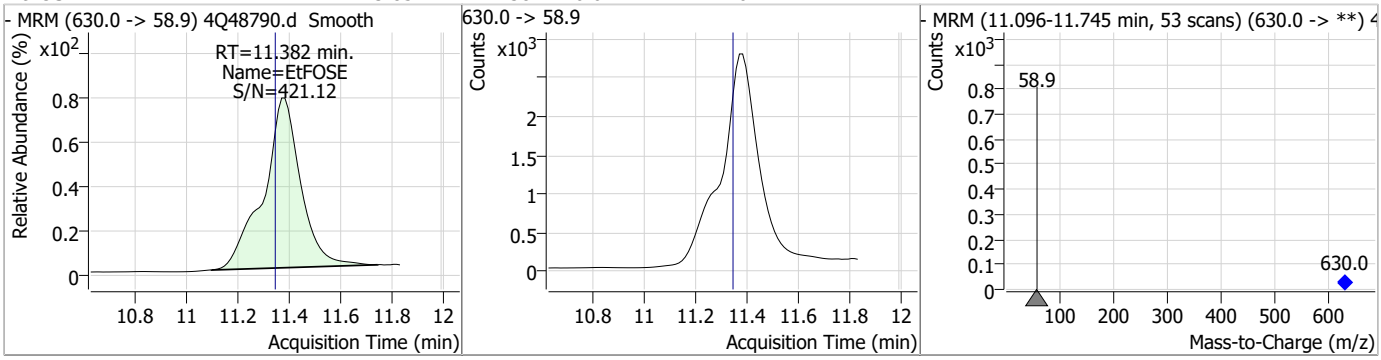
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.21	11.19	0.04	12098 (m)	511.9 -> 169.0	141.6	89.9	269.7



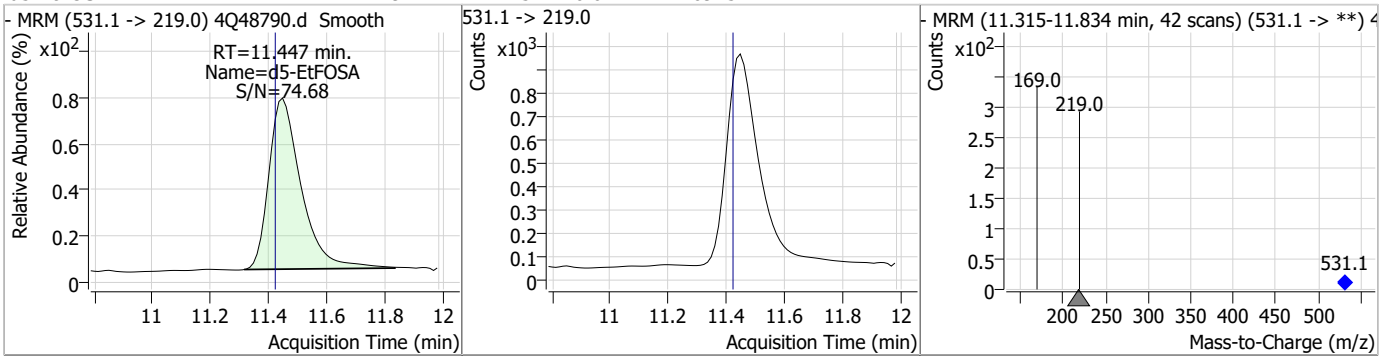
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.33	11.36	0.02	62919				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	13.85	11.38	0.04	27270				

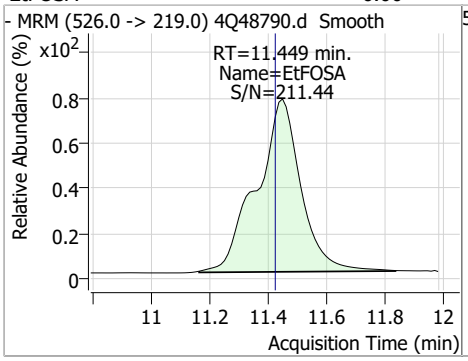


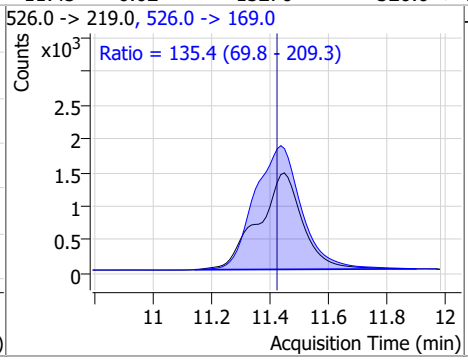
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.45	0.02	6925				

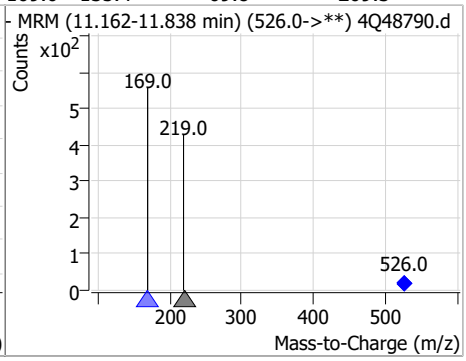


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	6.00	11.45	0.02	15276	526.0 -> 169.0	135.4	69.8	209.3







Manual Integration Approval Summary

Sample Number: OP98297-MS
Lab FileID: 4Q48790.D
Injection Time: 08/09/23 21:45
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 11:07 Anna Ludwig
Supervisor approved: 08/14/23 16:34 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.58	Split peak
MeFOSE	24448-09-7		11.10	Split peak
MeFOSA	31506-32-8		11.19	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48792.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 10:15:09 PM
Sample Name : op98297-dup
Vial : P4-E3
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98297,S4Q713,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.924	216.8 -> 171.9	40354	10.00	µg/L	0.012
M5-PFPeA	4.412	268.3 -> 223.0	42288	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	41032	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	31029	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	47830	2.50	µg/L	0.025
M9-PFNA	7.810	472.1 -> 427.0	21697	1.25	µg/L	0.025
M6-PFDA	8.303	519.1 -> 474.1	15255	1.25	µg/L	0.025
M7-PFUnDA	8.773	570.0 -> 525.1	17729	1.25	µg/L	0.037
M2-PFDoDA	9.205	615.1 -> 570.0	16717	1.25	µg/L	0.025
M2-PFTeDA	9.961	715.2 -> 670.0	10351	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	11449	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	9214	2.50	µg/L	0.013
M3-PFHxS	7.342	402.1 -> 79.9	6757	2.50	µg/L	0.025
M8-PFOS	8.442	507.1 -> 79.9	8014	2.50	µg/L	0.025
M2-4:2FTS	5.309	329.1 -> 80.9	1265	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	2317	5.00	µg/L	0.025
M2-8:2FTS	8.104	529.1 -> 80.9	2491	5.00	µg/L	0.039
M3-MeFOSAA	8.373	573.2 -> 419.0	18559	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	26251	10.00	µg/L	0.025
M5-EtFOSAA	8.584	589.2 -> 419.0	15983	5.00	µg/L	0.037
M7-MeFOSE	11.084	623.2 -> 58.9	43936	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	63316	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	7188	2.50	µg/L	0.025
M3-MeFOSA	11.176	515.0 -> 219.0	6548	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	7246	2.50	µg/L	0.025
13C3-PFBA	2.928	216.0 -> 172.0	26877	5.00	µg/L	0.025
18O2-PFHxS	7.341	403.0 -> 83.9	3821	2.50	µg/L	0.025
13C4-PFOA	7.251	417.1 -> 372.0	47947	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	14713	1.25	µg/L	0.025
13C5-PFNA	7.810	468.0 -> 423.0	21496	1.25	µg/L	0.025
13C2-PFHxA	5.623	315.1 -> 270.0	31391	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	1265	13.26	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 265.1%		
13C2-6:2FTS	7.023	429.1 -> 80.9	2317	12.71	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 254.1%		
13C2-8:2FTS	8.104	529.1 -> 80.9	2491	8.99	µg/L	0.039
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 179.9%		
13C2-PFDoDA	9.205	615.1 -> 570.0	16717	1.33	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-PFTeDA	9.961	715.2 -> 670.0	10351	1.02	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 81.8%		
13C3-PFBS	5.502	302.1 -> 79.9	9214	2.83	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.3%		
13C3-PFHxS	7.342	402.1 -> 79.9	6757	3.19	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 = 127.8%	
13C4-PFBA	2.924	216.8 -> 171.9	40354	8.78 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C4-PFHpA	6.580	367.1 -> 322.0	31029	3.32 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 132.7%	
13C5-PFHxA	5.622	318.0 -> 273.0	41032	3.12 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 124.8%	
13C5-PFPeA	4.412	268.3 -> 223.0	42288	3.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 77.1%	
13C6-PFDA	8.303	519.1 -> 474.1	15255	1.50 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C7-PFUnDA	8.773	570.0 -> 525.1	17729	1.55 µg/L	0.037
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 123.7%	
13C8-FOSA	9.907	506.1 -> 77.8	11449	2.53 µg/L	0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.251	421.1 -> 376.0	47830	3.03 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.2%	
13C8-PFOS	8.442	507.1 -> 79.9	8014	2.75 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C9-PFNA	7.810	472.1 -> 427.0	21697	1.33 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.6%	
d3-MeFOSAA	8.373	573.2 -> 419.0	18559	6.90 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 138.0%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	26251	8.78 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
d3-MeFOSA	11.176	515.0 -> 219.0	6548	2.46 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSAA	8.584	589.2 -> 419.0	15983	7.23 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 144.6%	
d7-MeFOSE	11.084	623.2 -> 58.9	43936	20.65 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.6%	
d9-EtFOSE	11.356	639.2 -> 58.9	63316	21.22 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.9%	
d5-EtFOSA	11.447	531.1 -> 219.0	7188	2.34 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
Target Compounds					**QValue**
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	7.024	427.1 -> 407.0	606	0.31 µg/L	99
		427.1 -> 80.9	219		
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	3.397	212.8 -> 168.9	0	µg/L m	1
PFBS	4.953	298.7 -> 79.9	0	µg/L m	1
		298.7 -> 98.8	0		
PFDA	8.665	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

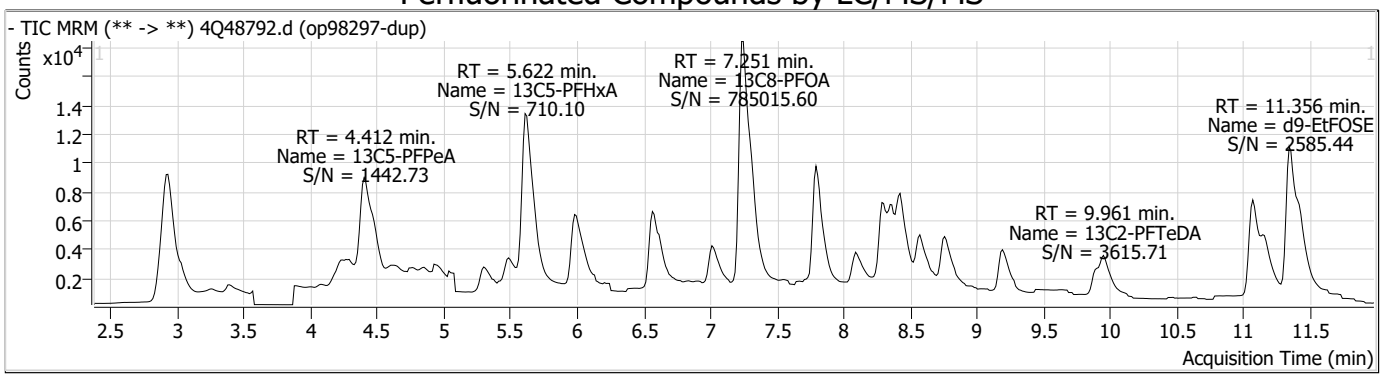
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	6.957	363.1 -> 319.0	0		µg/L	m	1
		363.1 -> 169.0	0				
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	5.613	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 118.9	0				
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	7.252	413.0 -> 369.0	1146	0.06	µg/L		95
		413.0 -> 169.0	246				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	4.489	263.0 -> 219.0	0		µg/L	m	1
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

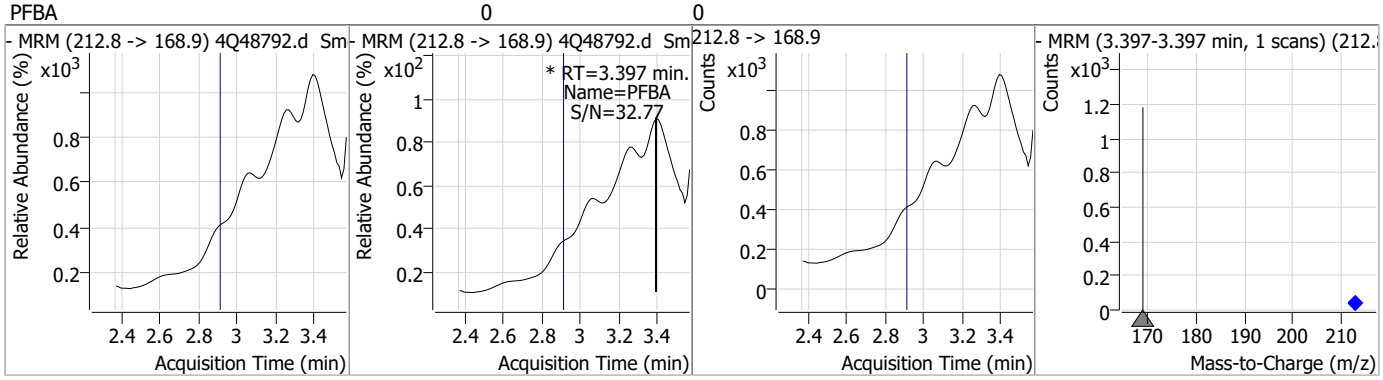
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

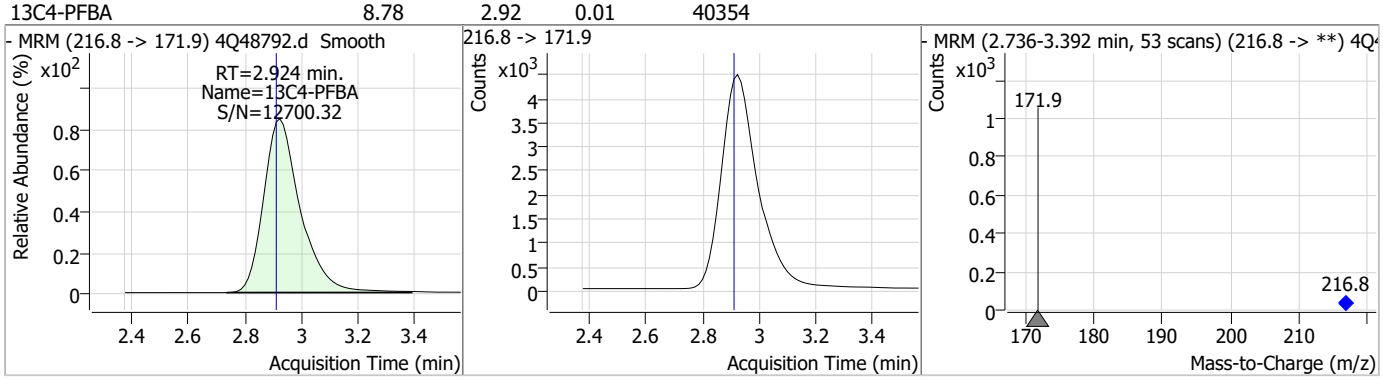
Perfluorinated Compounds by LC/MS/MS



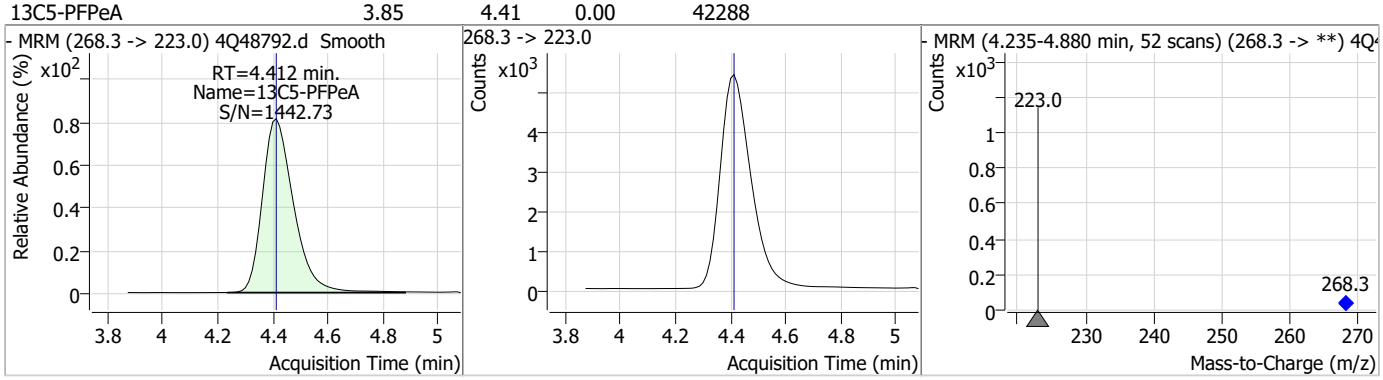
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.78	2.92	0.01	40354				

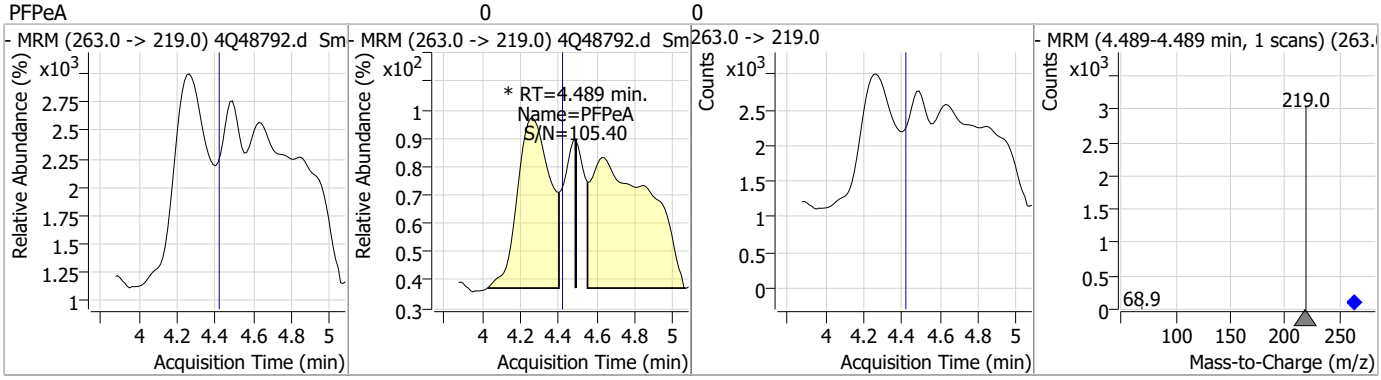


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.85	4.41	0.00	42288				

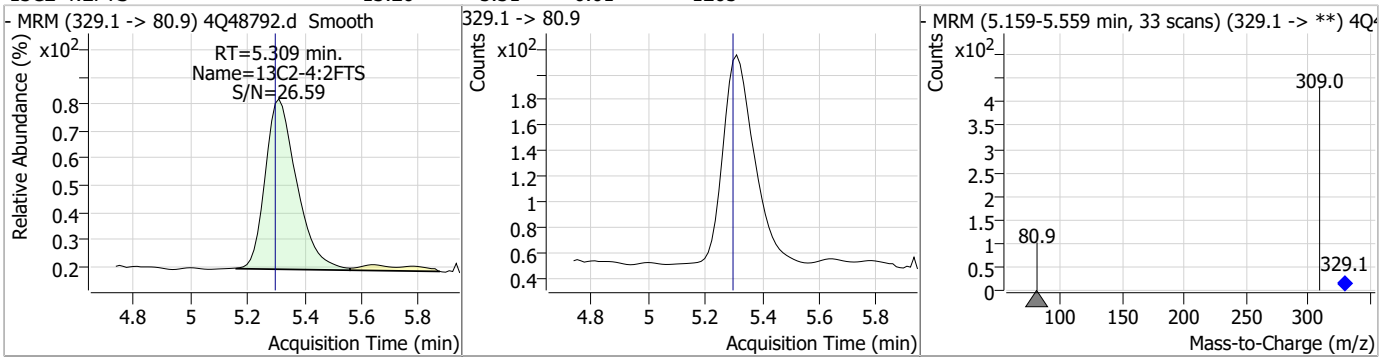


Perfluorinated Compounds by LC/MS/MS

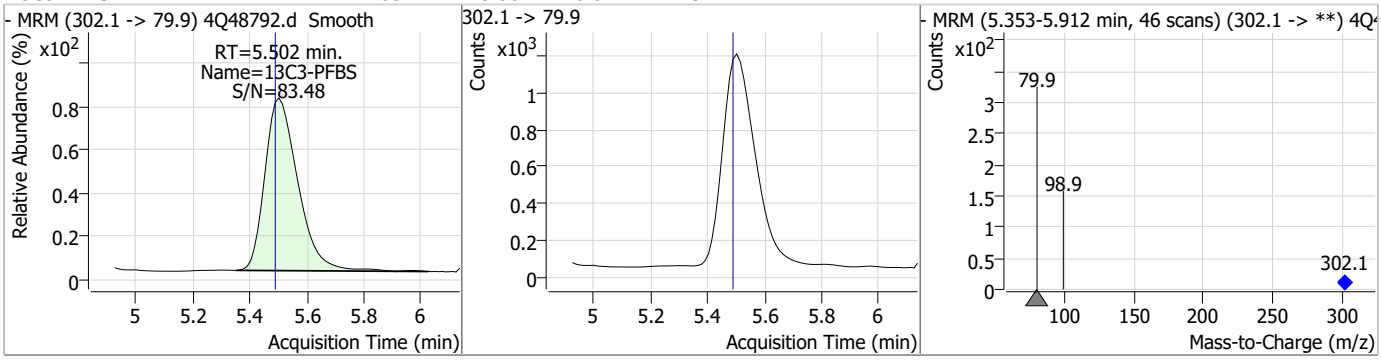
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



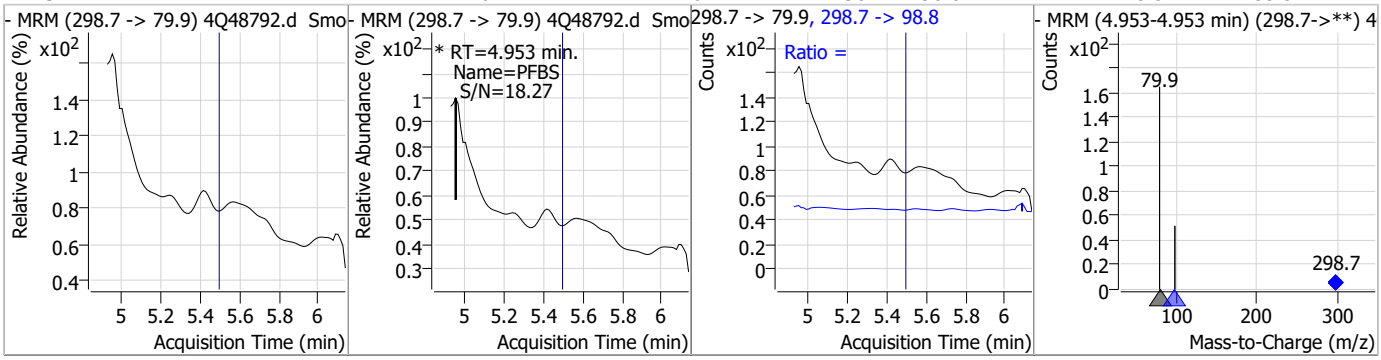
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.26	5.31	0.01	1265				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.83	5.50	0.01	9214				

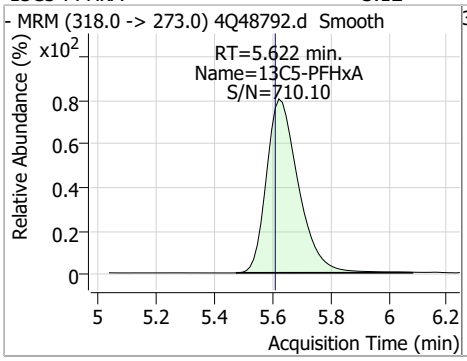


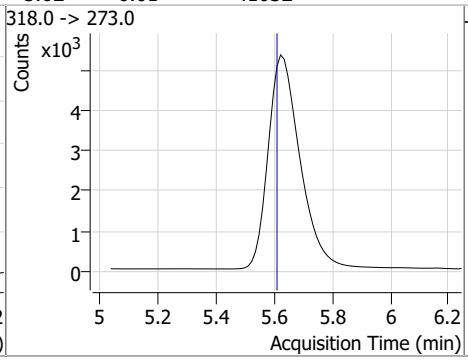
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	298.7 -> 98.8		18.5	55.5

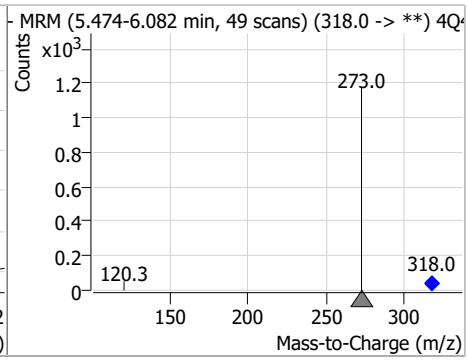


Perfluorinated Compounds by LC/MS/MS

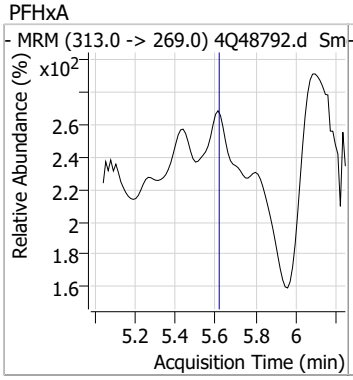
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.12	5.62	0.01	41032				

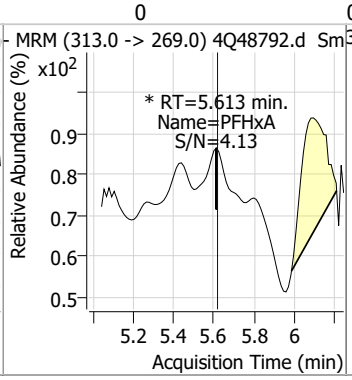


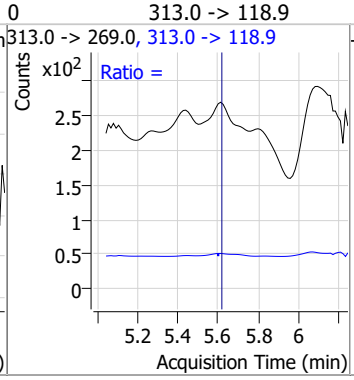


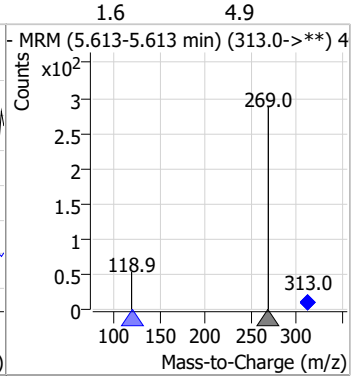


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 118.9		1.6	4.9

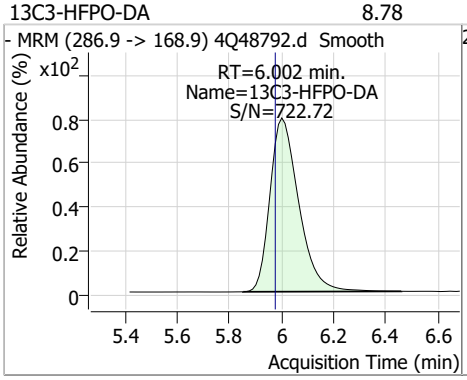


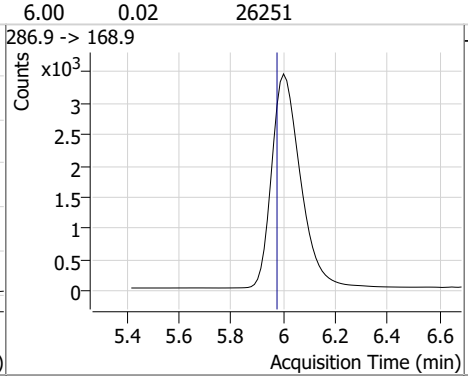


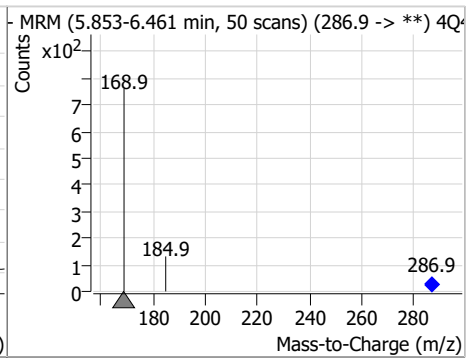




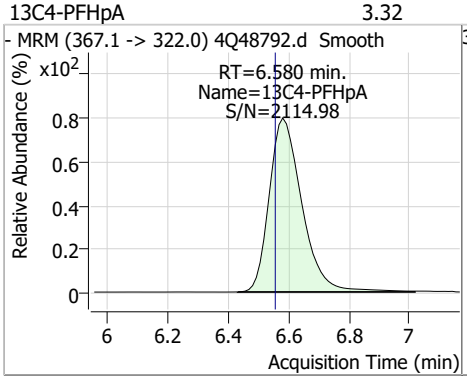
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.78	6.00	0.02	26251				

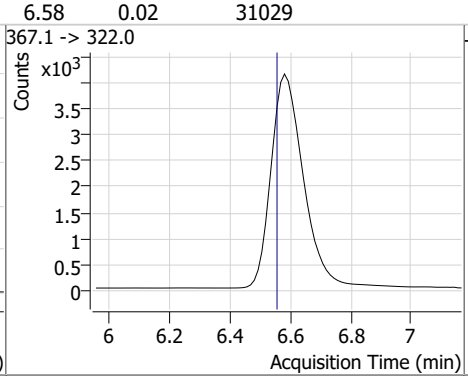


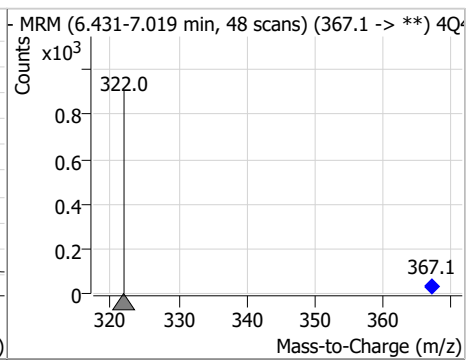




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.32	6.58	0.02	31029				

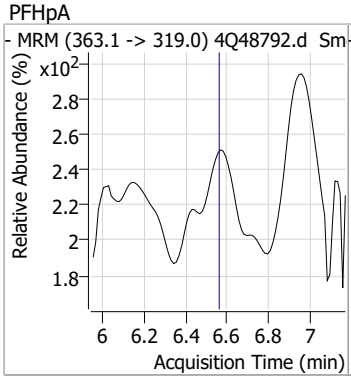


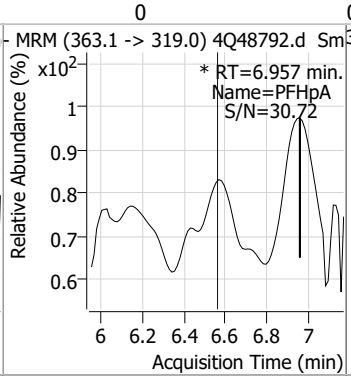


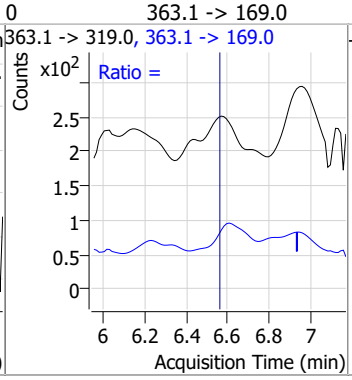


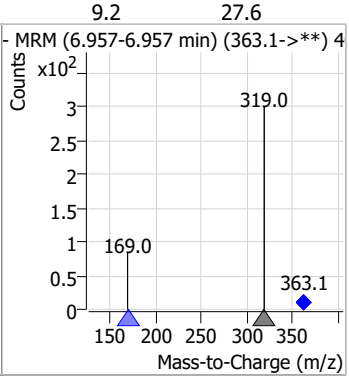
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.1 -> 169.0		9.2	27.6

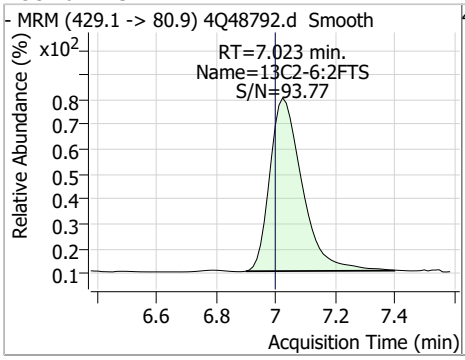


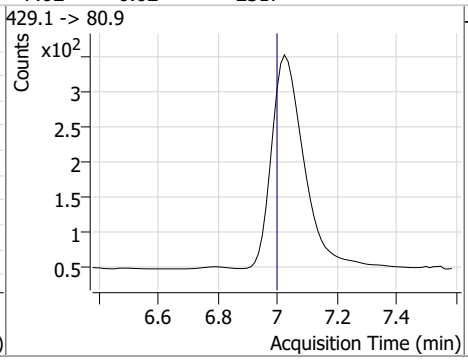


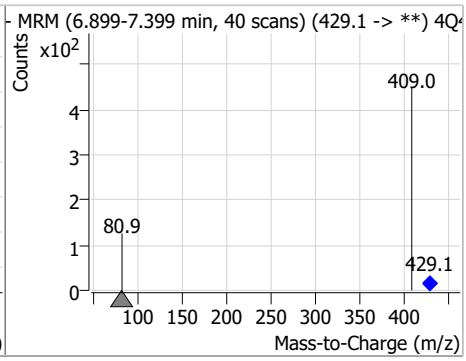




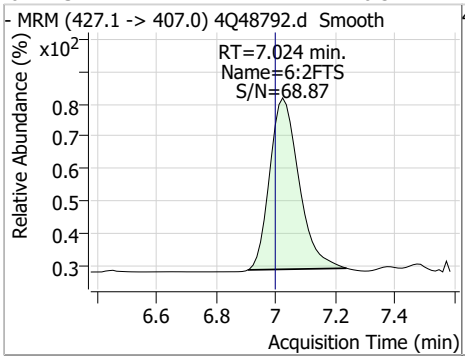
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.71	7.02	0.02	2317				

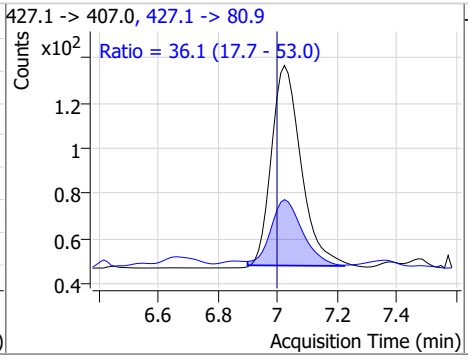


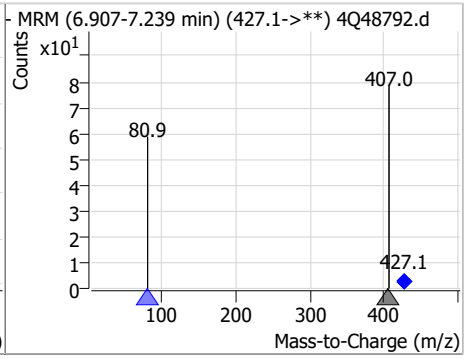




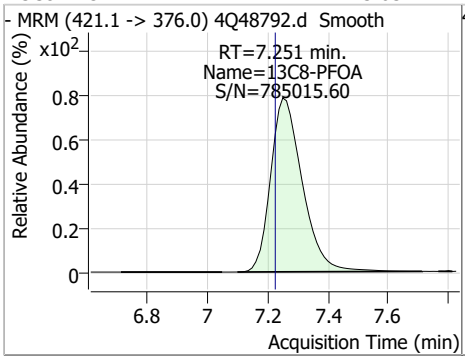
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.31	7.02	0.02	606	427.1 -> 80.9	36.1	17.7	53.0

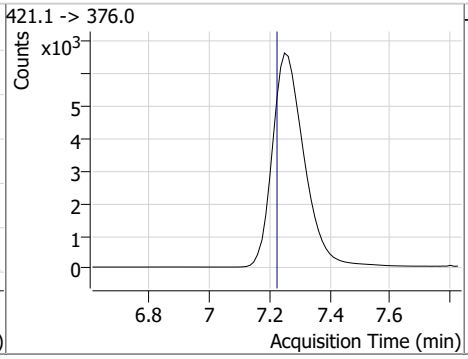


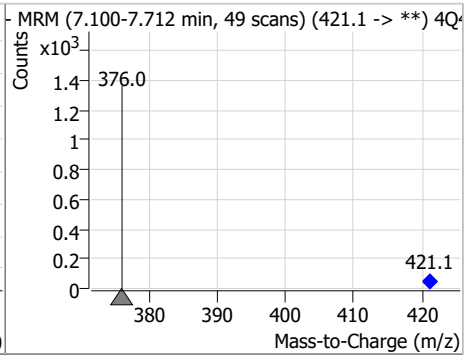




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.03	7.25	0.02	47830				

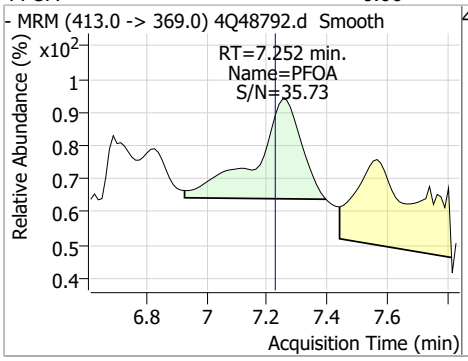


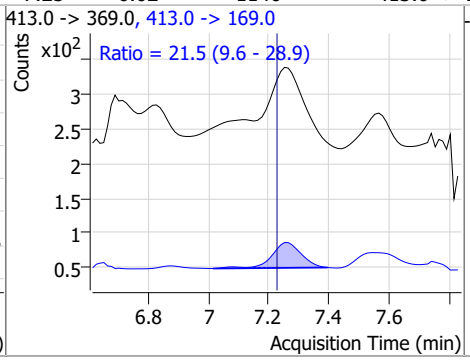


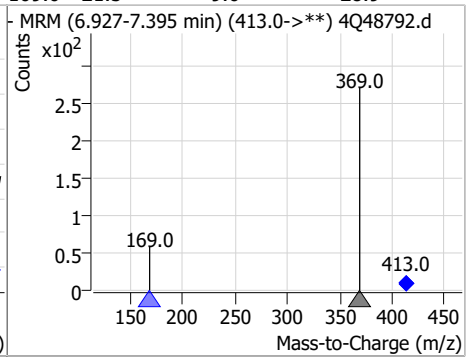


Perfluorinated Compounds by LC/MS/MS

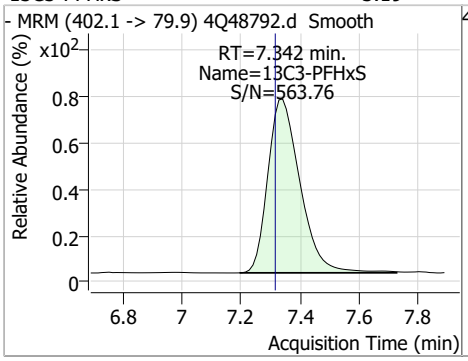
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.06	7.25	0.02	1146	413.0 -> 169.0	21.5	9.6	28.9

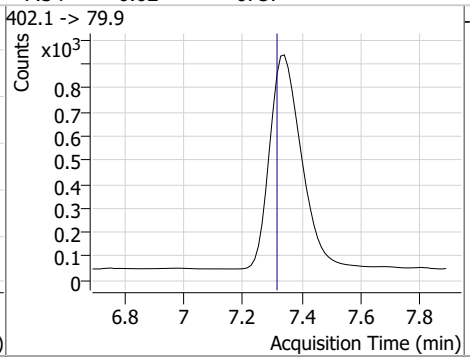


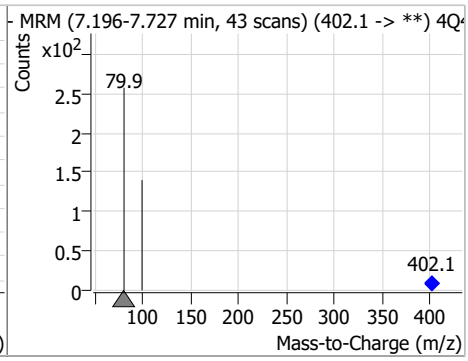




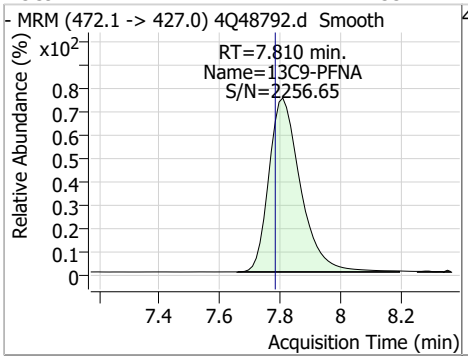
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.19	7.34	0.02	6757				

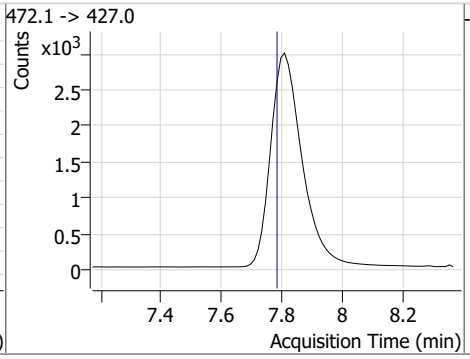


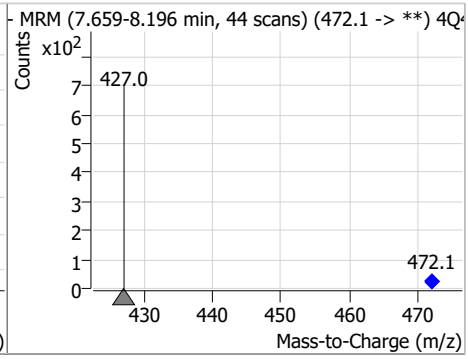




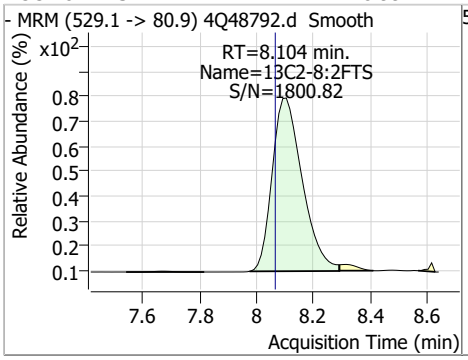
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.33	7.81	0.02	21697				

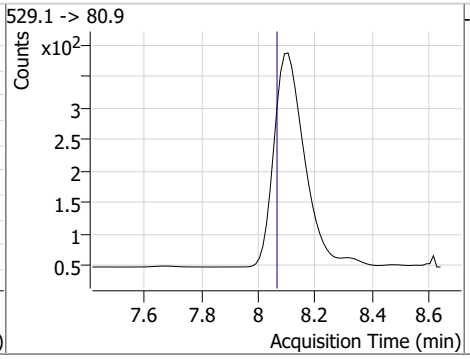


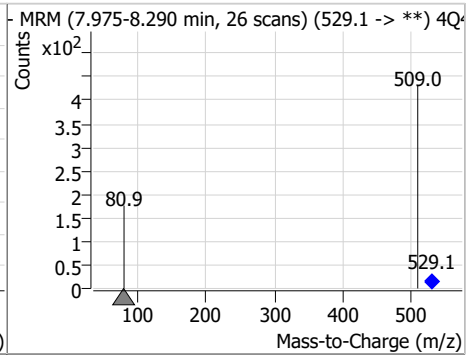




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.99	8.10	0.04	2491				

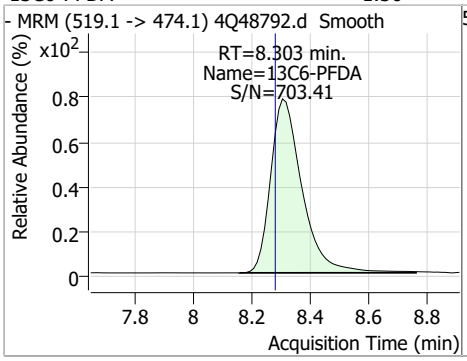


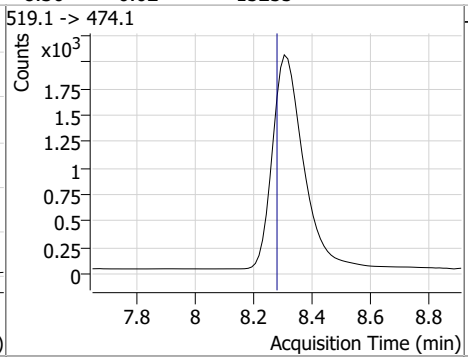


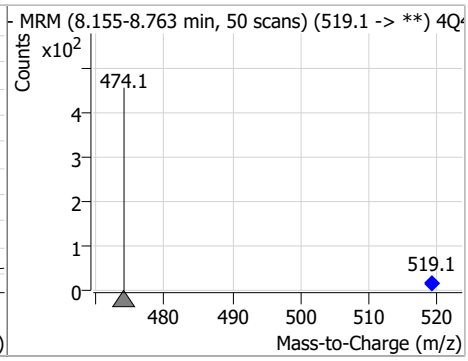


Perfluorinated Compounds by LC/MS/MS

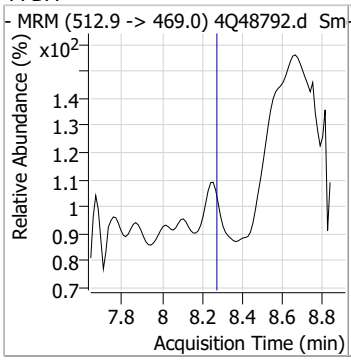
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.50	8.30	0.02	15255				

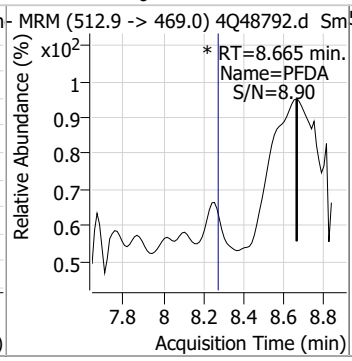


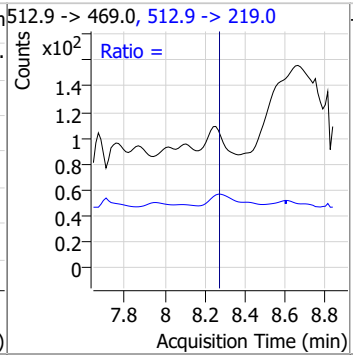


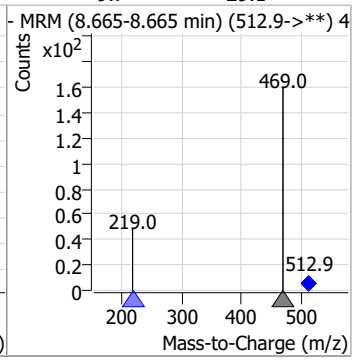


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA		0		0	512.9 -> 219.0		9.7	29.1

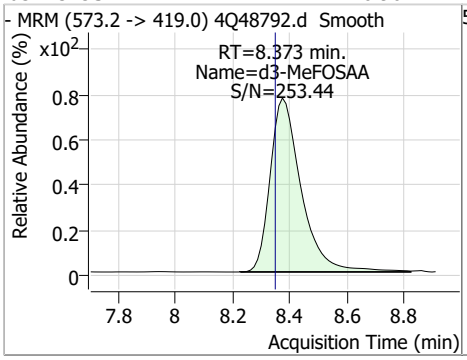


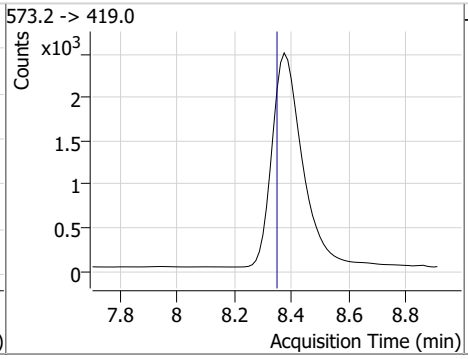


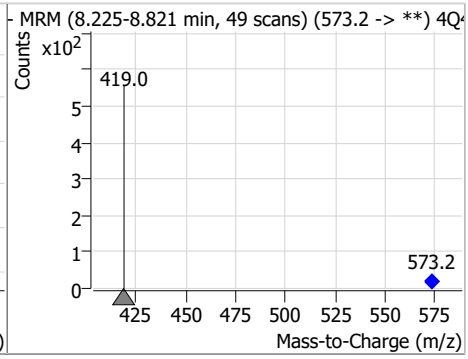




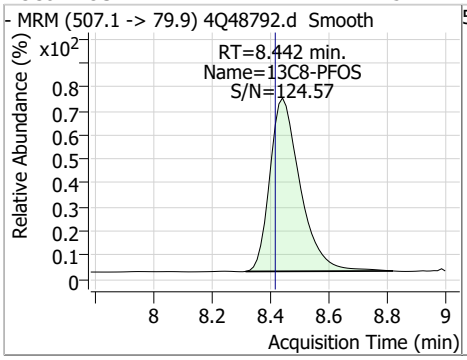
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.90	8.37	0.03	18559				

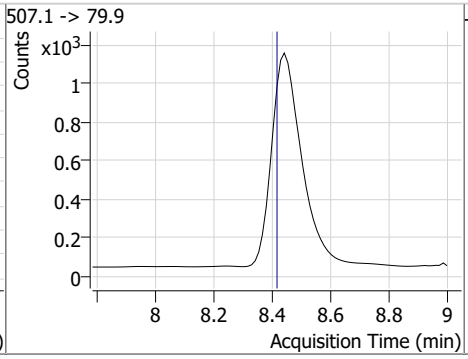


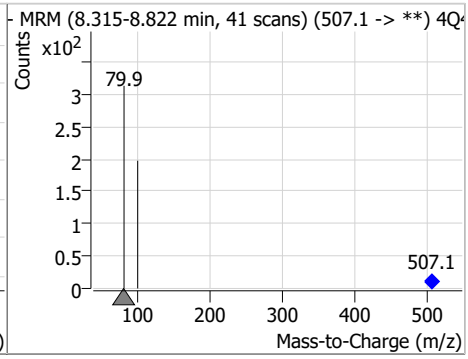




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.75	8.44	0.02	8014				

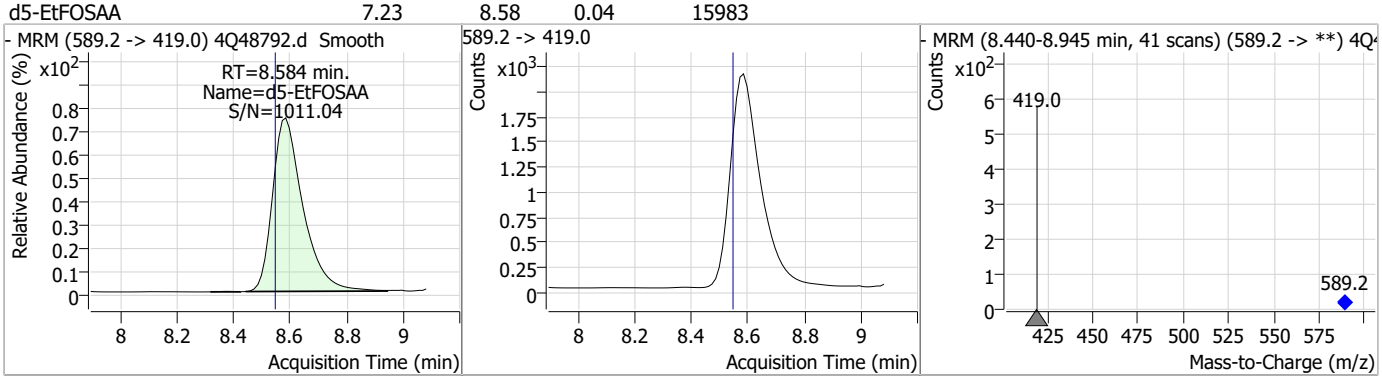




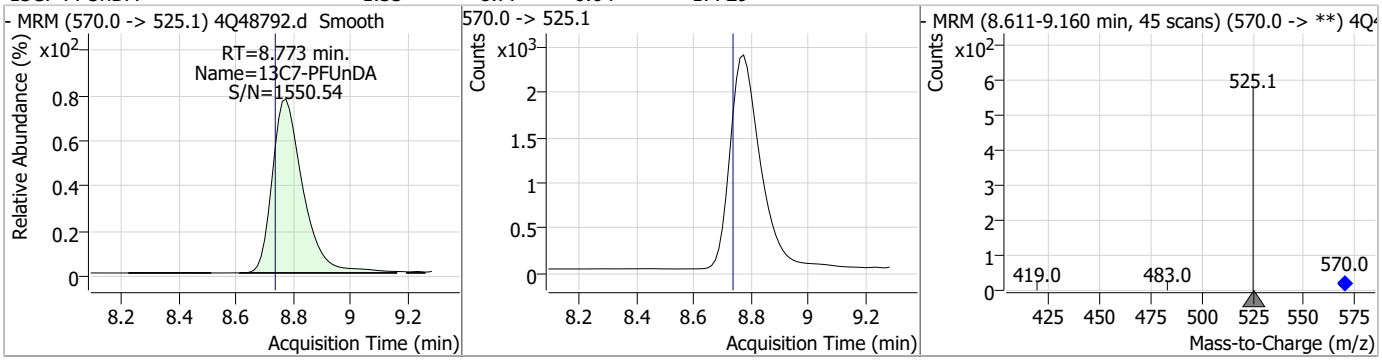


Perfluorinated Compounds by LC/MS/MS

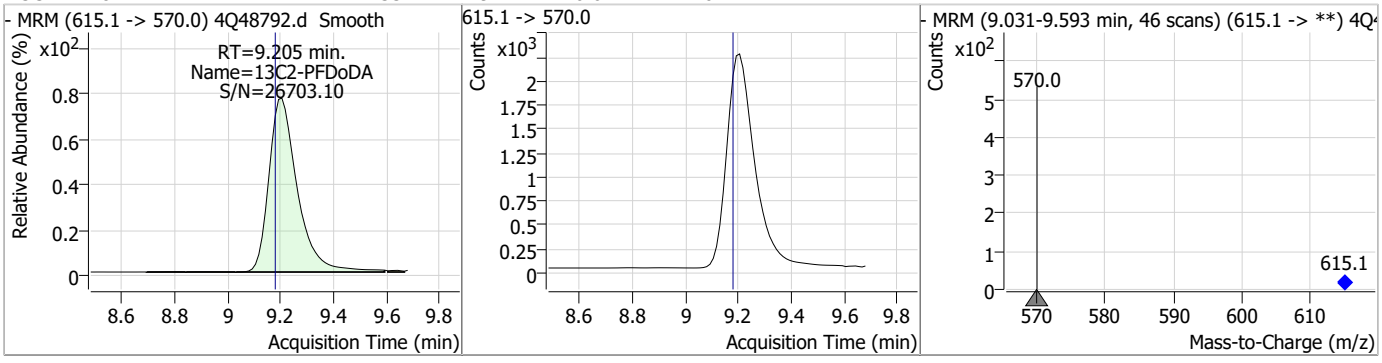
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.23	8.58	0.04	15983				



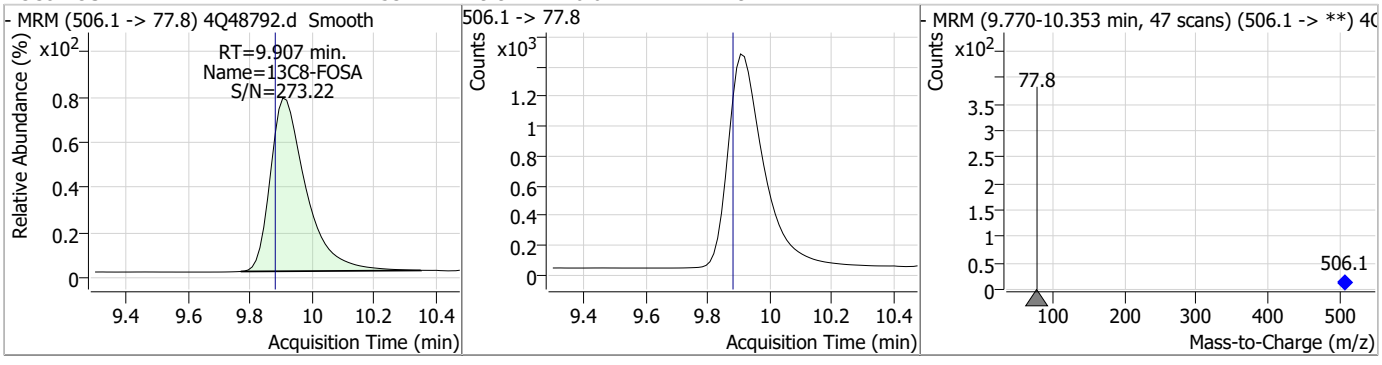
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.55	8.77	0.04	17729				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.33	9.21	0.02	16717				

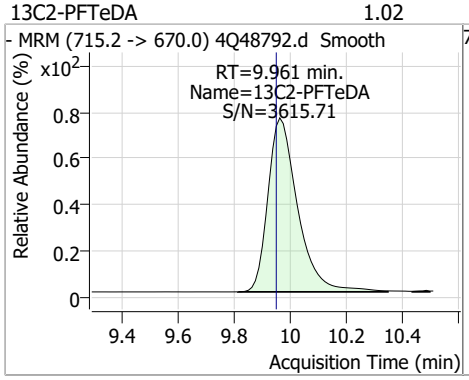


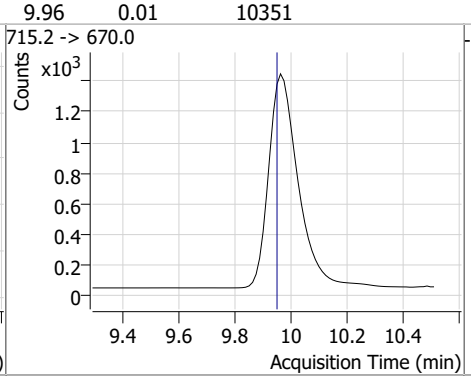
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.91	0.02	11449				

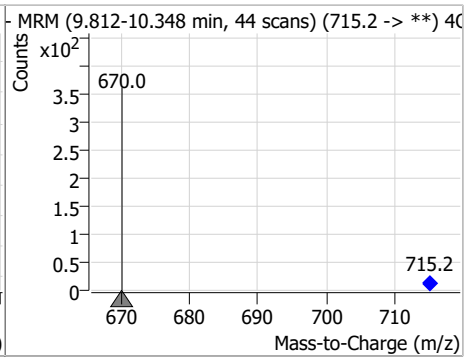


Perfluorinated Compounds by LC/MS/MS

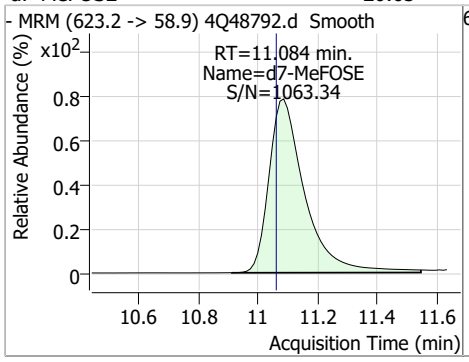
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.02	9.96	0.01	10351				

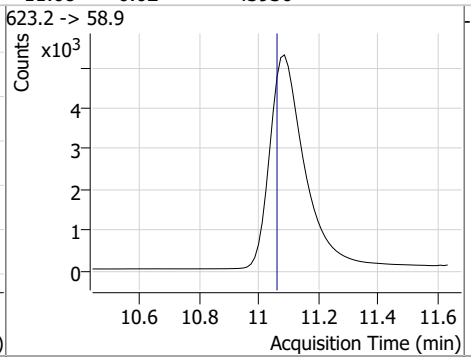


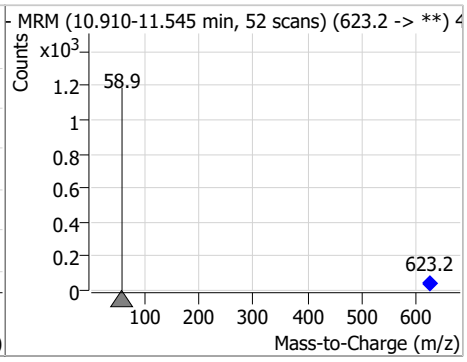




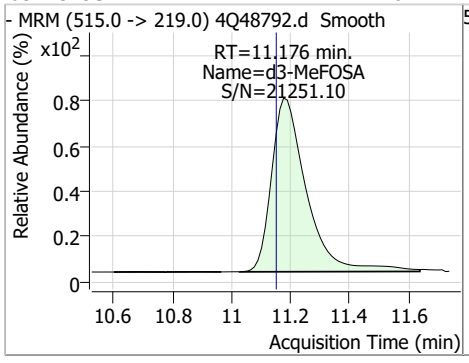
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.65	11.08	0.02	43936				

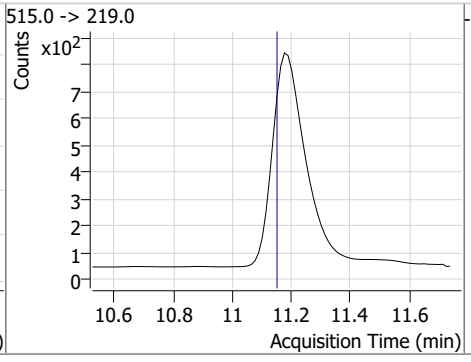


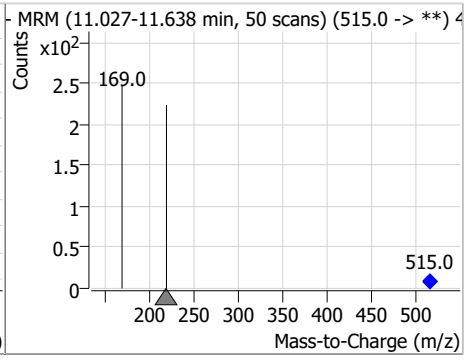




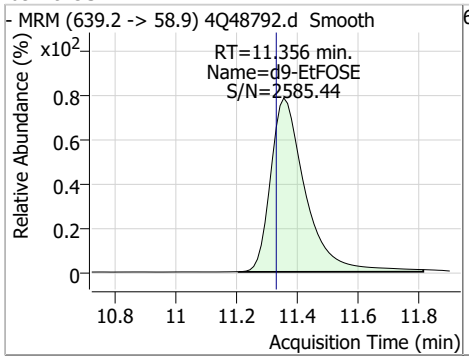
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	11.18	0.02	6548				

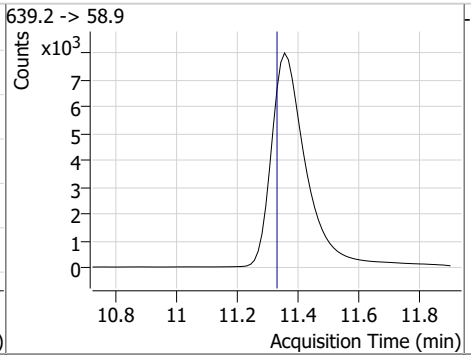


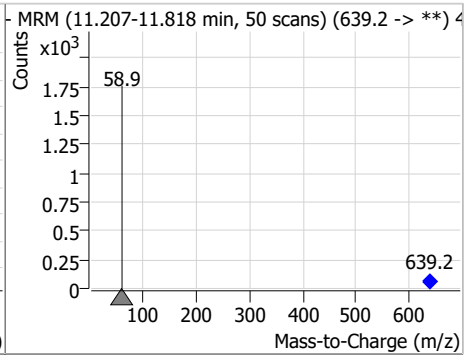




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.22	11.36	0.02	63316				

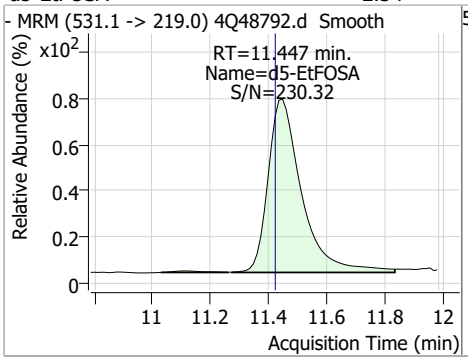


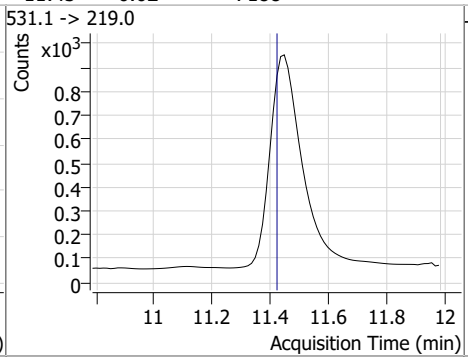


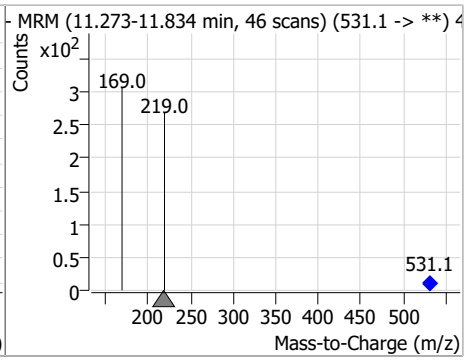


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.34	11.45	0.02	7188				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 08/09/23 10:50

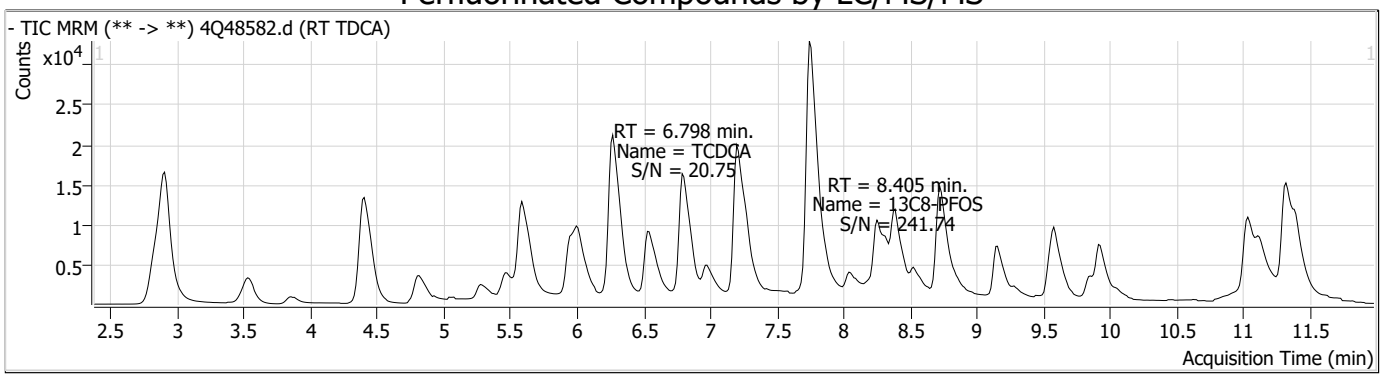
Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q48582.d
Operator	:	annal
Acq. Method	:	1633full_4Q.m
Acq. Date-Time	:	8/7/2023 3:28:01 PM
Sample Name	:	RT TDCA
Vial	:	P1-B1
DA Method File	:	TDCA.quantmethod.xml
Batch Name	:	s4q711_TDCA.batch.bin
Sample Information	:	OP97964,S4Q711,500,,,5.0,1,water

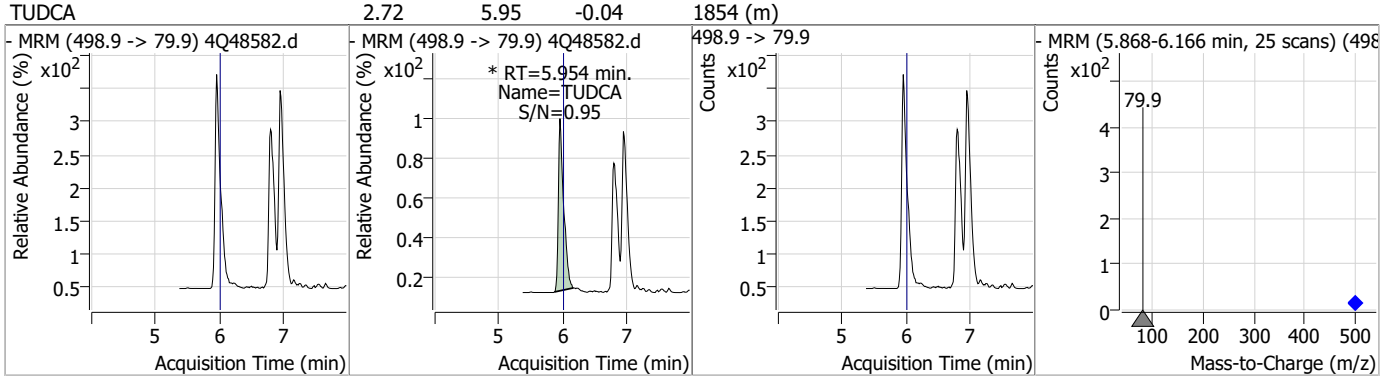
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	8.405	507.1 -> 79.9	7699	2.50	µg/L		-0.049
13C4-PFOS	8.405	502.8 -> 79.9	8652	2.50	µg/L		-0.049
System Monitoring Compounds							
13C8-PFOS	8.405	507.1 -> 79.9	7699	2.26	µg/L		-0.049
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.3%			
Target Compounds							QValue
PFOS	8.406	498.9 -> 79.9	6804	2.59	µg/L	m	96
		498.9 -> 98.8	3579				
TCDCA	6.798	498.9 -> 79.9	1178	3.32	ng/ml		100
TDCA	6.947	498.9 -> 79.9	1846	5.74	ng/ml		100
TUDCA	5.954	498.9 -> 79.9	1854	2.72	ng/ml	m	100

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

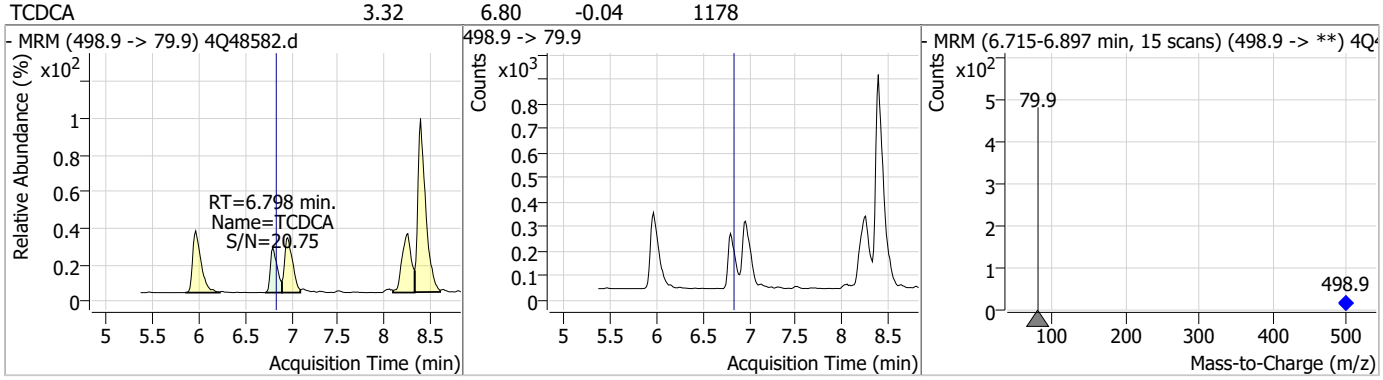
Perfluorinated Compounds by LC/MS/MS



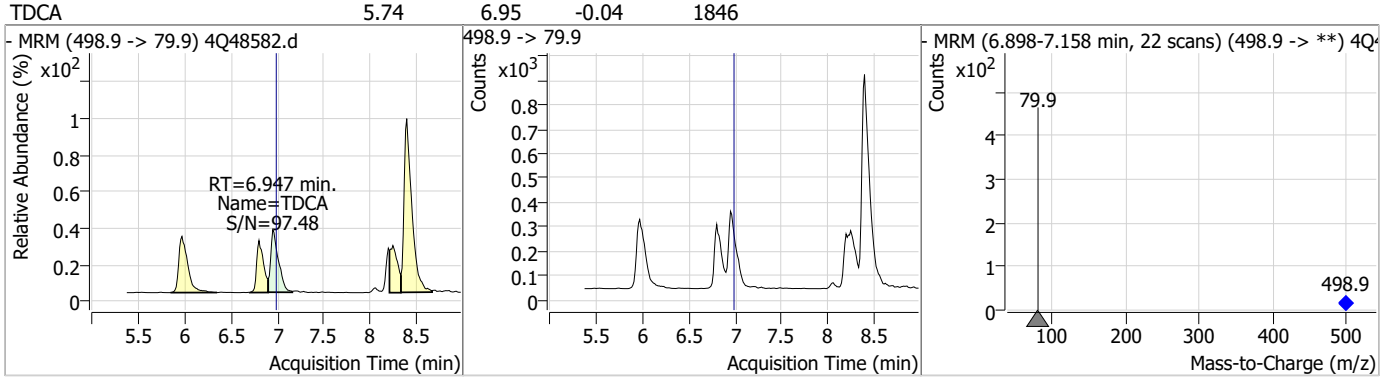
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	2.72	5.95	-0.04	1854 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	3.32	6.80	-0.04	1178				

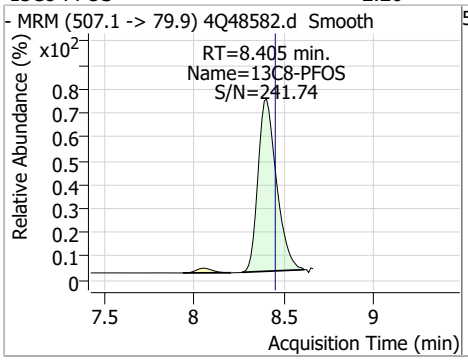


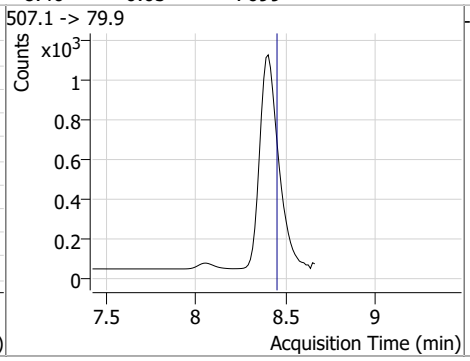
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	5.74	6.95	-0.04	1846				

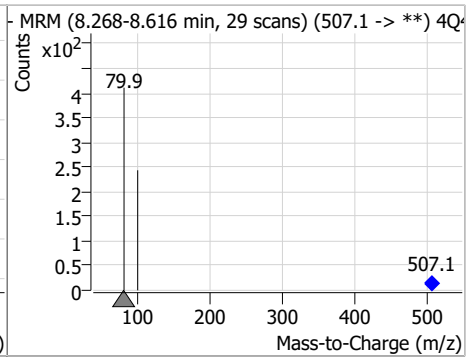


Perfluorinated Compounds by LC/MS/MS

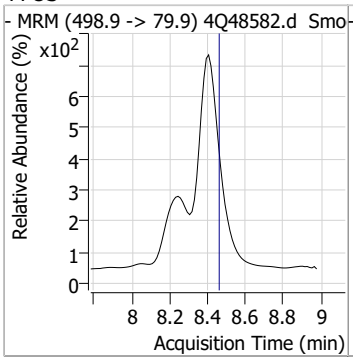
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.26	8.40	-0.05	7699				

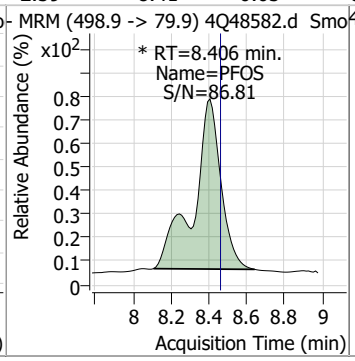


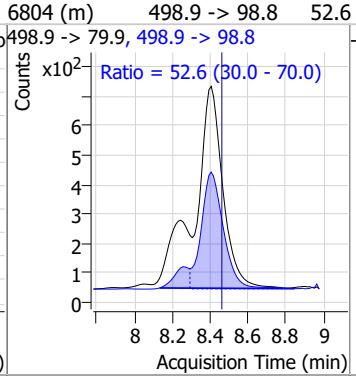


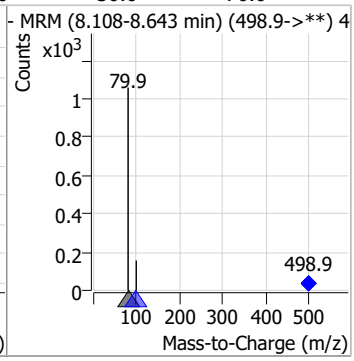


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.59	8.41	-0.05	6804 (m)	498.9 -> 98.8	52.6	30.0	70.0









Manual Integration Approval Summary

Sample Number:	S4Q711-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48582.D	**Analyst approved:**	08/09/23 10:49 Norman Farmer
Injection Time:	08/07/23 15:28	**Supervisor approved:**	08/09/23 10:50 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48583.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 3:56:45 PM
Sample Name : RT br/ln
Vial : P1-B2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.999	216.8 -> 171.9	92135	10.00	µg/L	0.087
M5-PFPeA	4.475	268.3 -> 223.0	61151	5.00	µg/L	0.062
M5-PFHxA	5.647	318.0 -> 273.0	36890	2.50	µg/L	0.037
M4-PFHpA	6.580	367.1 -> 322.0	25518	2.50	µg/L	0.025
M8-PFOA	7.238	421.1 -> 376.0	42514	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	18914	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14133	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	15429	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	18106	1.25	µg/L	0.000
M2-PFTeDA	9.936	715.2 -> 670.0	15389	1.25	µg/L	-0.012
M8-FOSA	9.882	506.1 -> 77.8	13885	2.50	µg/L	0.000
M3-PFBS	5.527	302.1 -> 79.9	9684	2.50	µg/L	0.038
M3-PFHxS	7.329	402.1 -> 79.9	6407	2.50	µg/L	0.012
M8-PFOS	8.417	507.1 -> 79.9	7973	2.50	µg/L	0.000
M2-4:2FTS	5.333	329.1 -> 80.9	570	5.00	µg/L	0.037
M2-6:2FTS	7.011	429.1 -> 80.9	1016	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	1434	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	15354	5.00	µg/L	0.000
M3-HFPO-DA	6.014	286.9 -> 168.9	33152	10.00	µg/L	0.037
M5-EtFOSAA	8.559	589.2 -> 419.0	13270	5.00	µg/L	0.012
M7-MeFOSE	11.047	623.2 -> 58.9	69436	25.00	µg/L	-0.012
M9-EtFOSE	11.331	639.2 -> 58.9	92722	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	8431	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	7573	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	8049	2.50	µg/L	0.000
13C3-PFBA	3.003	216.0 -> 172.0	53576	5.00	µg/L	0.100
18O2-PFHxS	7.328	403.0 -> 83.9	4113	2.50	µg/L	0.012
13C4-PFOA	7.239	417.1 -> 372.0	50942	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	16359	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	19472	1.25	µg/L	0.000
13C2-PFHxA	5.648	315.1 -> 270.0	33708	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.333	329.1 -> 80.9	570	5.55	µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1016	5.17	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1434	4.81	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFDoDA	9.180	615.1 -> 570.0	18106	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-PFTeDA	9.936	715.2 -> 670.0	15389	1.37	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C3-PFBS	5.527	302.1 -> 79.9	9684	2.77	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C3-PFHxS	7.329	402.1 -> 79.9	6407	2.81	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 = 112.6%		
13C4-PFBA	2.999	216.8 -> 171.9	92135	10.06 µg/L		0.087
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C4-PFHpA	6.580	367.1 -> 322.0	25518	2.54 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C5-PFHxA	5.647	318.0 -> 273.0	36890	2.61 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C5-PFPeA	4.475	268.3 -> 223.0	61151	5.19 µg/L		0.062
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C6-PFDA	8.279	519.1 -> 474.1	14133	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C7-PFUnDA	8.748	570.0 -> 525.1	15429	1.21 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C8-FOSA	9.882	506.1 -> 77.8	13885	2.77 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C8-PFOA	7.238	421.1 -> 376.0	42514	2.53 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C8-PFOS	8.417	507.1 -> 79.9	7973	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C9-PFNA	7.785	472.1 -> 427.0	18914	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15354	5.14 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-HFPO-DA	6.014	286.9 -> 168.9	33152	10.32 µg/L		0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
d3-MeFOSA	11.151	515.0 -> 219.0	7573	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%		
d5-EtFOSAA	8.559	589.2 -> 419.0	13270	5.40 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
d7-MeFOSE	11.047	623.2 -> 58.9	69436	29.37 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 117.5%		
d9-EtFOSE	11.331	639.2 -> 58.9	92722	27.97 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
d5-EtFOSA	11.422	531.1 -> 219.0	8431	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%		
Target Compounds						**QValue**
4:2FTS	5.334	327.1 -> 307.0	37378	48.62 µg/L		100
		327.1 -> 80.9	15440			
6:2FTS	7.011	427.1 -> 407.0	43582	50.56 µg/L		98
		427.1 -> 80.9	15845			
8:2FTS	8.078	527.1 -> 507.0	33025	57.36 µg/L		97
		527.1 -> 80.8	13852			
EtFOSAA	8.559	584.2 -> 419.1	22345	12.32 µg/L	m	95
		584.2 -> 526.0	9937			
FOSA	9.886	498.1 -> 77.9	140450	31.26 µg/L		99
		498.1 -> 478.0	4113			
MeFOSAA	8.361	570.1 -> 419.0	24437	12.73 µg/L		96
		570.1 -> 483.0	4969			
PFBA	2.995	212.8 -> 168.9	108203	51.00 µg/L		100
PFBS	5.528	298.7 -> 79.9	26979	11.41 µg/L		98
		298.7 -> 98.8	10352			
PFDA	8.279	512.9 -> 469.0	122031	12.29 µg/L		99
		512.9 -> 219.0	22929			
PFDoDA	9.181	613.1 -> 569.0	141758	12.51 µg/L		98
		613.1 -> 319.0	22141			
PFDS	9.321	599.0 -> 79.9	21312	12.94 µg/L		99

Perfluorinated Compounds by LC/MS/MS

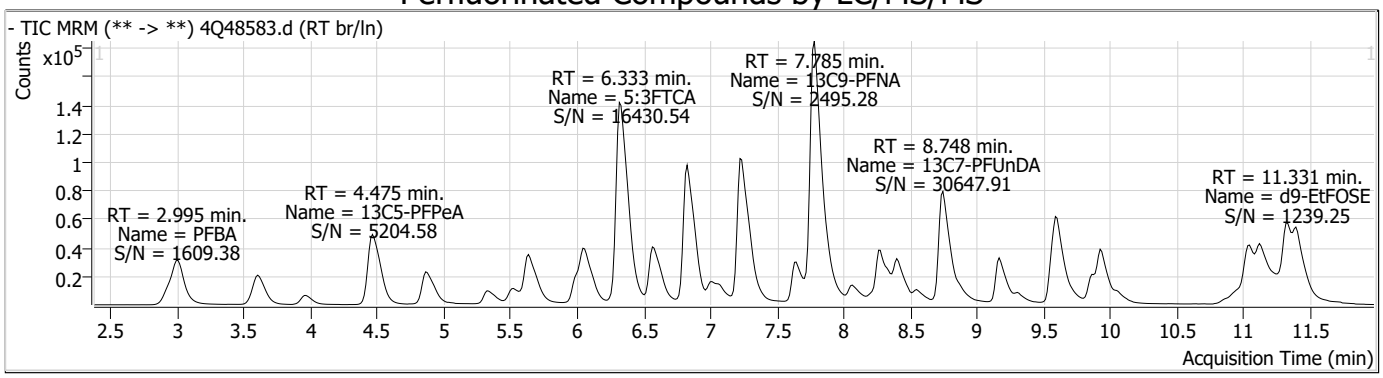
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	10730				
PFHpA	6.581	363.1 -> 319.0	157841	13.71	µg/L		98
		363.1 -> 169.0	27810				
PFHpS	7.913	449.0 -> 79.9	29248	12.14	µg/L		98
		449.0 -> 98.9	15244				
PFHxA	5.650	313.0 -> 269.0	137933	12.96	µg/L		100
		313.0 -> 118.9	4454				
PFHxS	7.330	398.7 -> 79.9	19934	10.84	µg/L	m	93
		398.7 -> 98.9	9584				
PFNA	7.785	463.0 -> 419.0	262294	26.65	µg/L	m	97
		463.0 -> 219.0	61121				
PFNS	8.899	548.8 -> 79.9	19912	12.79	µg/L		96
		548.8 -> 98.9	10942				
PFOA	7.240	413.0 -> 369.0	466277	27.66	µg/L	m	99
		413.0 -> 169.0	91928				
PFOS	8.419	498.9 -> 79.9	34399	12.13	µg/L	m	81
		498.9 -> 98.8	16641				
PFPeA	4.477	263.0 -> 219.0	275189	25.89	µg/L		100
PFPeS	6.595	349.1 -> 79.9	21931	12.68	µg/L		95
		349.1 -> 98.9	8988				
PFTeDA	9.937	713.1 -> 669.0	130669	12.12	µg/L		98
		713.1 -> 168.9	12179				
PFTrDA	9.579	663.0 -> 619.0	154919	13.23	µg/L		98
		663.0 -> 168.9	18418				
PFUnDA	8.749	563.1 -> 519.0	130847	13.02	µg/L		99
		563.1 -> 269.1	25921				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	178077	25.62	µg/L		99
		632.9 -> 452.9	55300				
9Cl-PF3ONS	8.763	530.8 -> 351.0	236463	24.17	µg/L		100
		532.8 -> 353.0	73105				
ADONA	6.843	376.9 -> 250.9	469291	24.39	µg/L		99
		376.9 -> 84.8	119301				
HFPO-DA	6.015	284.9 -> 168.9	69579	25.51	µg/L		95
		284.9 -> 184.9	7793				
3:3FTCA	3.967	241.0 -> 177.0	35755	66.79	µg/L		99
		241.0 -> 117.0	3340				
5:3FTCA	6.333	341.0 -> 237.1	548138	314.62	µg/L		99
		341.0 -> 217.0	383511				
7:3FTCA	7.799	441.0 -> 316.9	290903	303.02	µg/L		97
		441.0 -> 336.9	681661				
EtFOSA	11.412	526.0 -> 219.0	127734	41.21	µg/L		99
		526.0 -> 169.0	176895				
EtFOSE	11.345	630.0 -> 58.9	244632	84.32	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	107843	40.94	µg/L	m	80
		511.9 -> 169.0	163583				
MeFOSE	11.060	616.1 -> 58.9	204990	82.56	µg/L		100
PFDoDS	10.077	699.1 -> 79.9	17744	14.00	µg/L		95
		699.1 -> 98.8	9709				
NFDHA	5.528	295.0 -> 201.0	17280	25.19	µg/L		97
		295.0 -> 84.9	4068				
PFMBA	4.878	279.0 -> 85.1	152560	25.62	µg/L		100
PFMPA	3.607	229.0 -> 84.9	145046	24.97	µg/L		100
PFEESA	6.071	314.8 -> 134.9	189363	22.08	µg/L		100
		314.8 -> 82.9	6781				

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

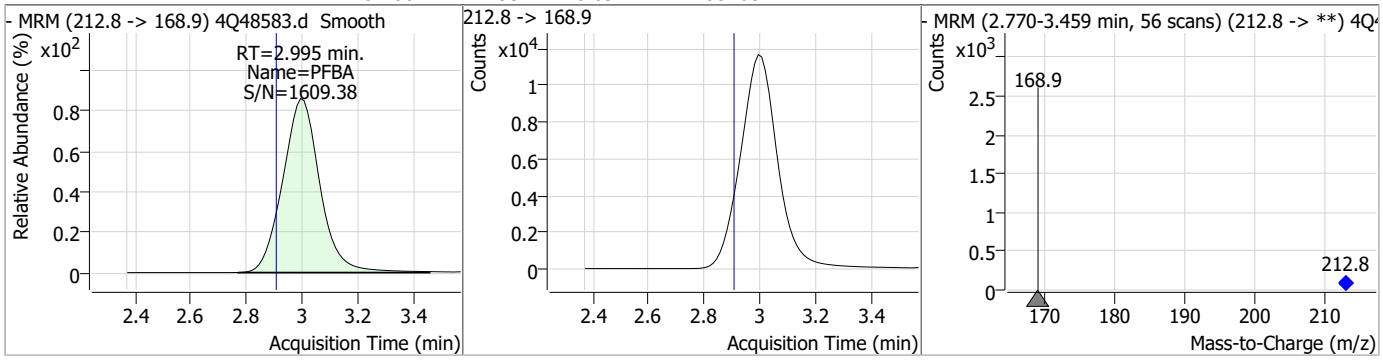
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

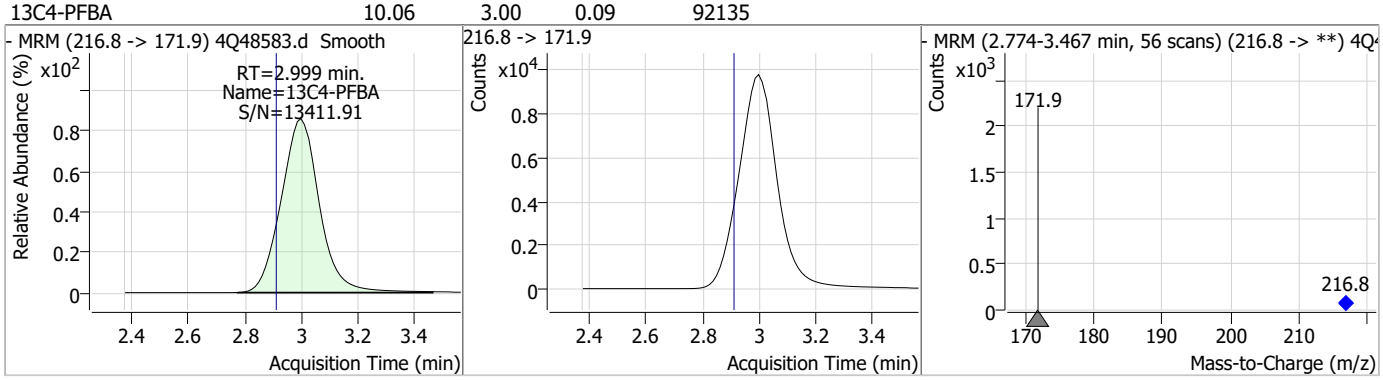
Perfluorinated Compounds by LC/MS/MS



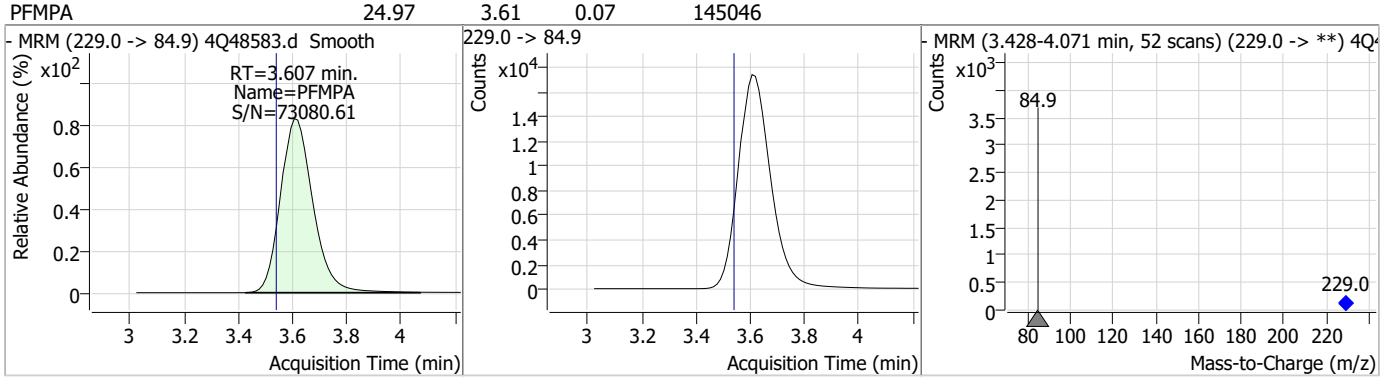
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	51.00	2.99	0.09	108203				



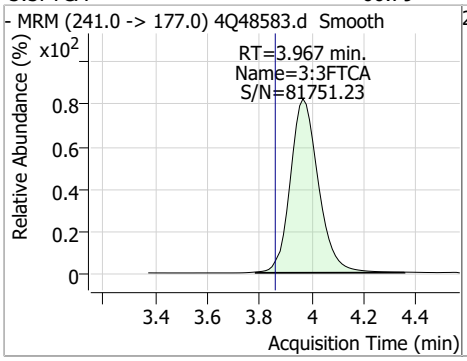
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.06	3.00	0.09	92135				

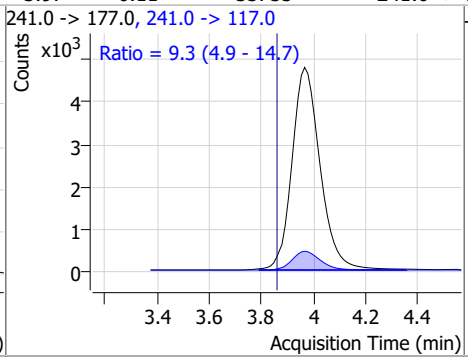


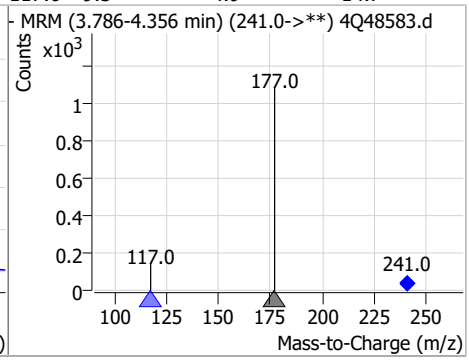
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	24.97	3.61	0.07	145046				



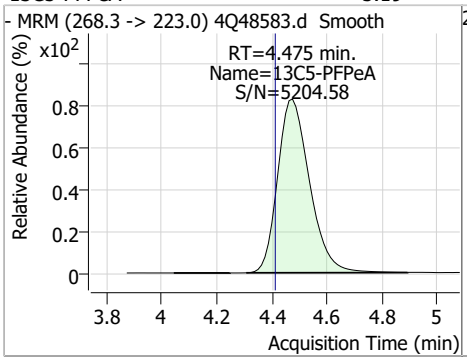
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	66.79	3.97	0.11	35755	241.0 -> 117.0	9.3	4.9	14.7

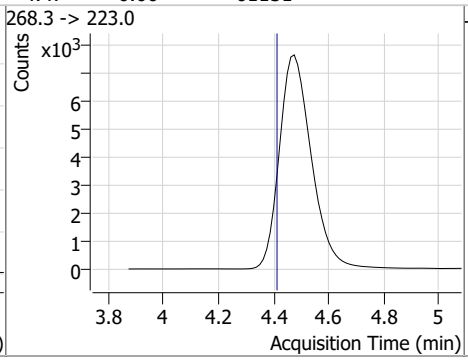


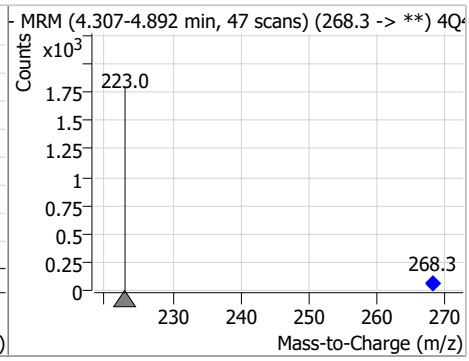




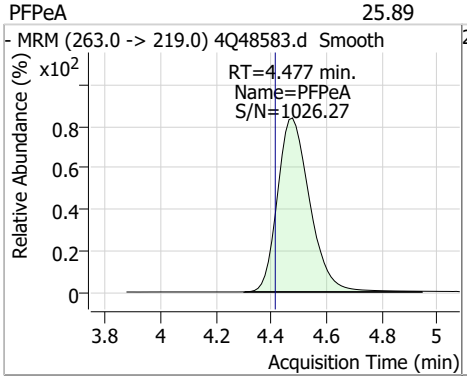
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.19	4.47	0.06	61151				

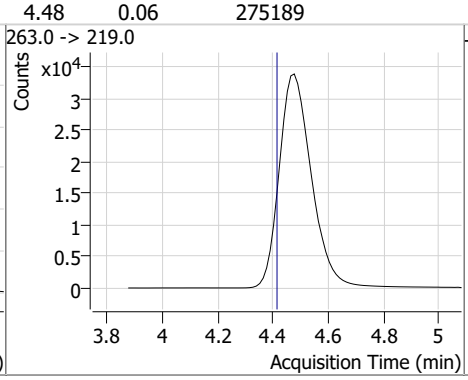


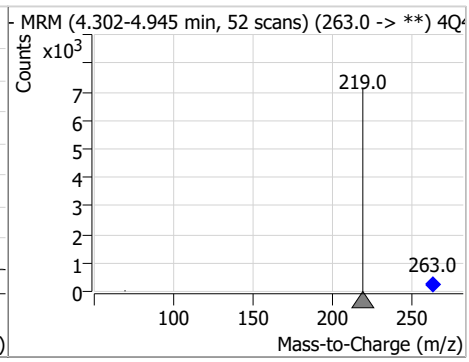




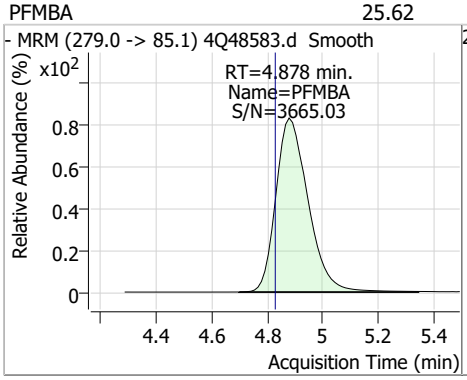
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.89	4.48	0.06	275189				

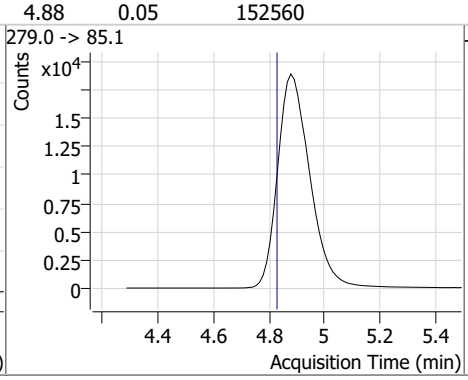


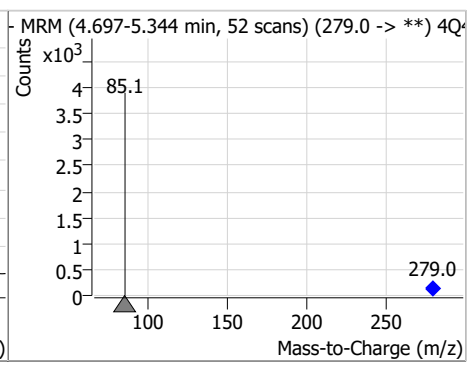




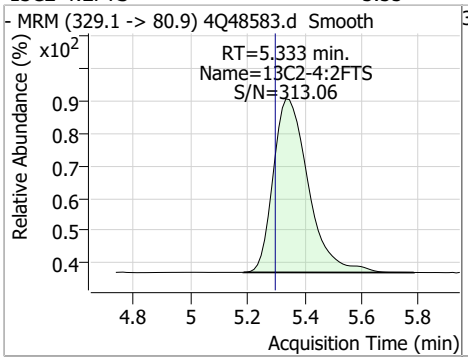
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.62	4.88	0.05	152560				

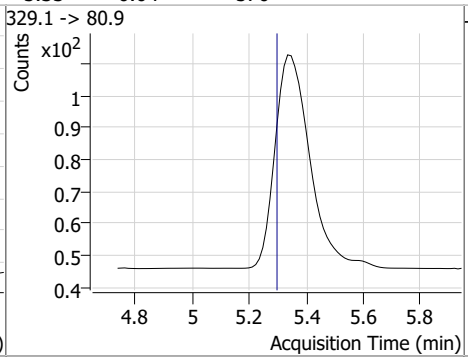


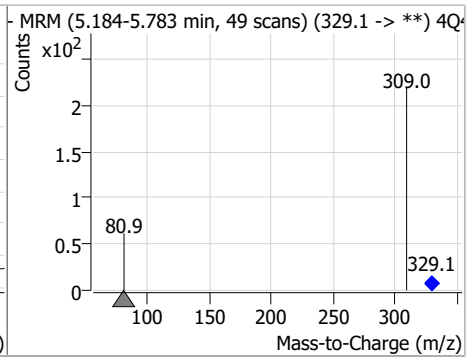




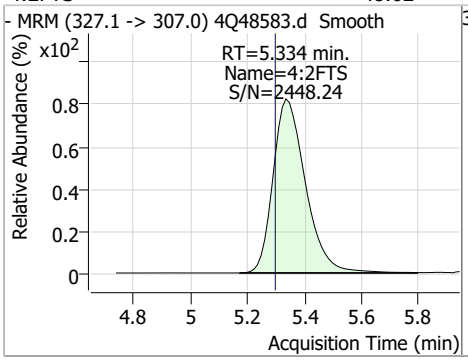
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.55	5.33	0.04	570				

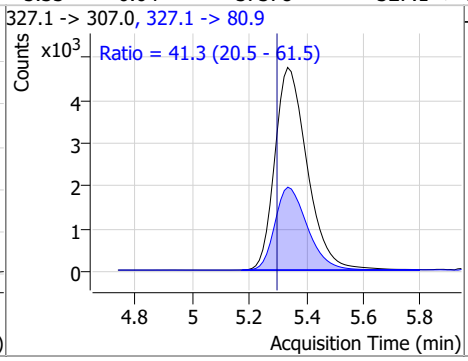


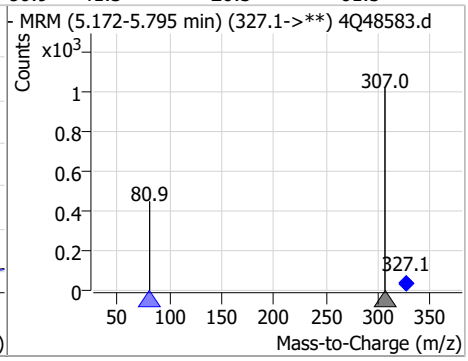




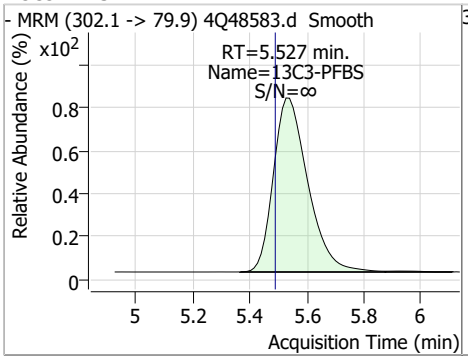
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.62	5.33	0.04	37378	327.1 -> 80.9	41.3	20.5	61.5

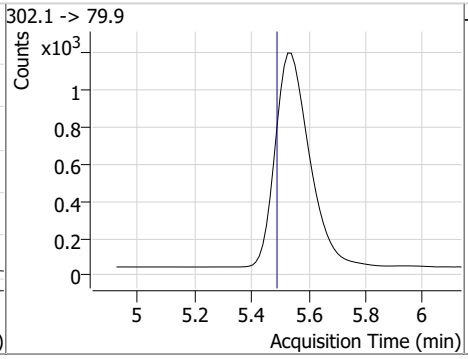


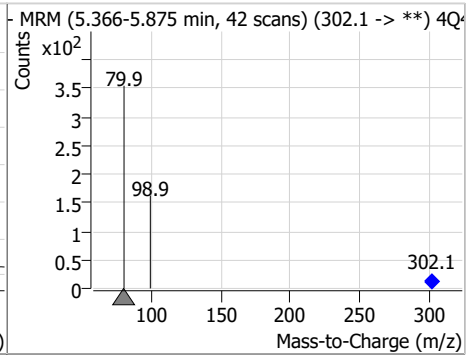




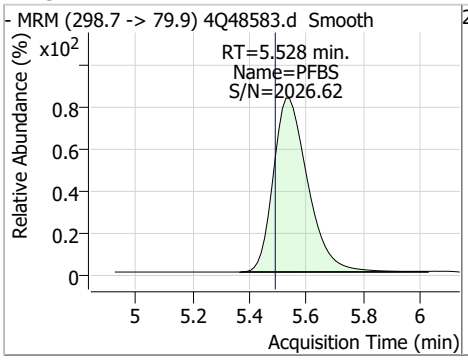
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.77	5.53	0.04	9684				

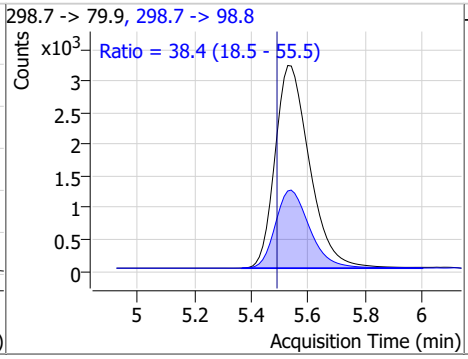


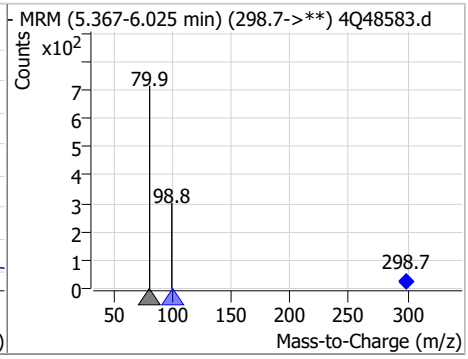




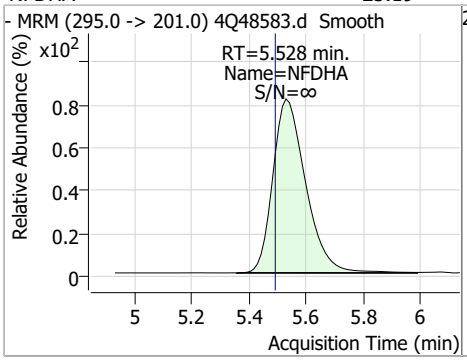
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.41	5.53	0.04	26979	298.7 -> 98.8	38.4	18.5	55.5

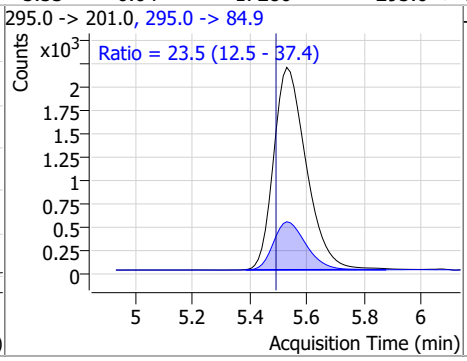


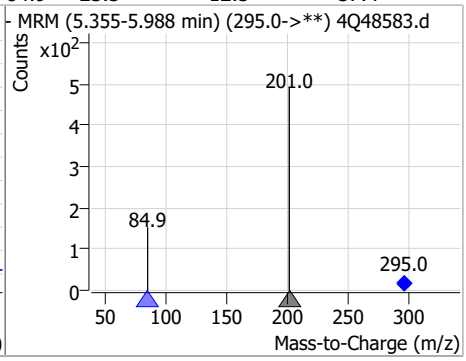




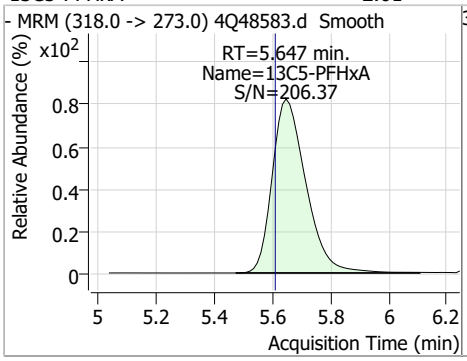
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	25.19	5.53	0.04	17280	295.0 -> 84.9	23.5	12.5	37.4

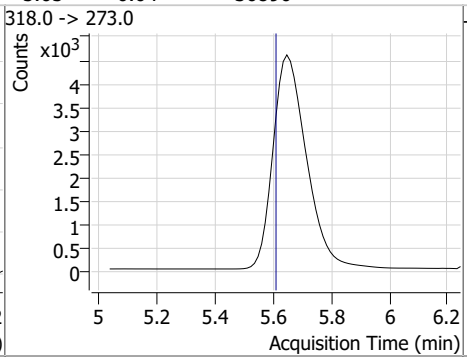


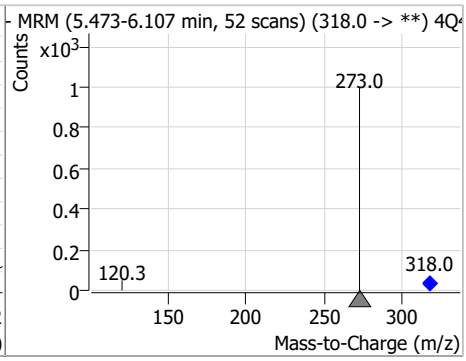




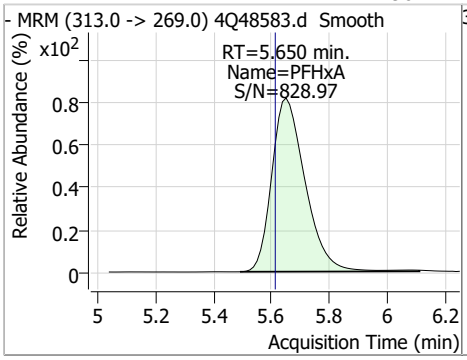
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.61	5.65	0.04	36890				

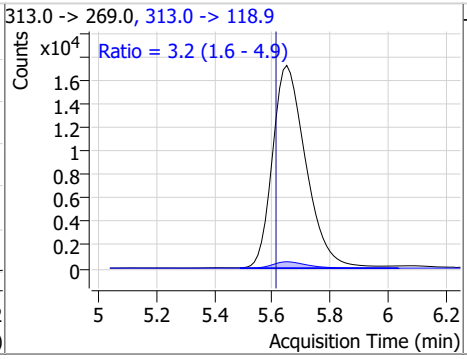


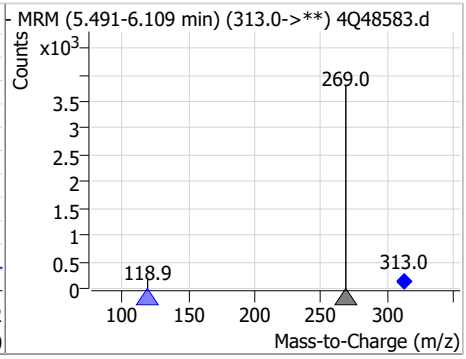




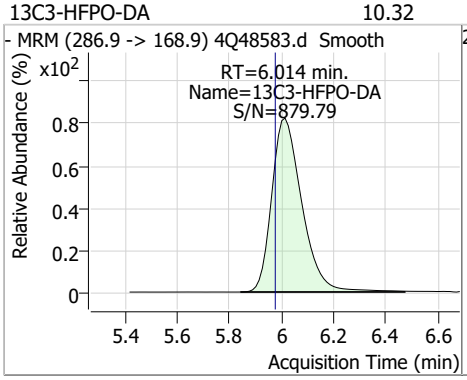
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.96	5.65	0.04	137933	313.0 -> 118.9	3.2	1.6	4.9

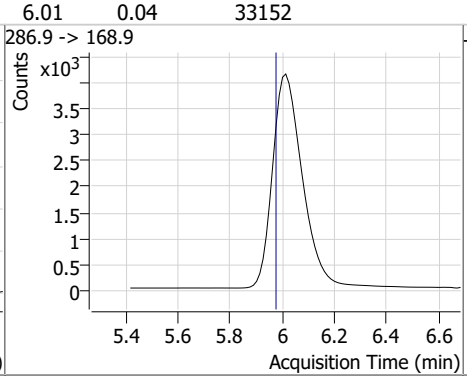


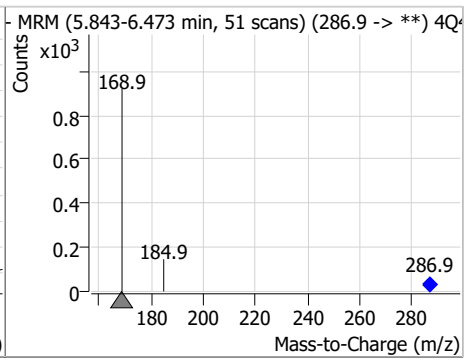




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.32	6.01	0.04	33152				

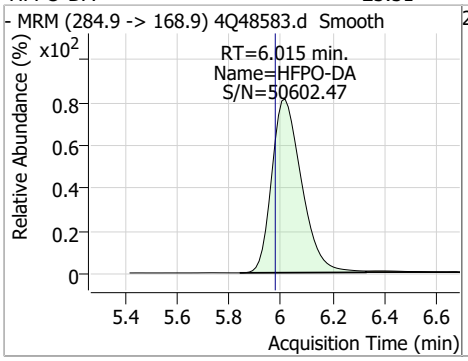


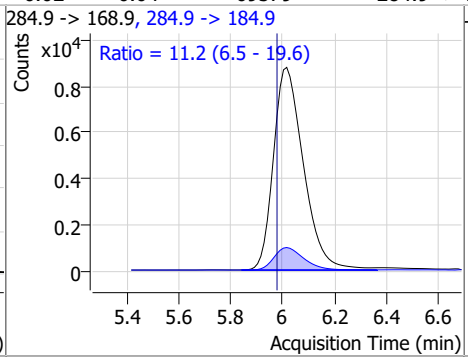


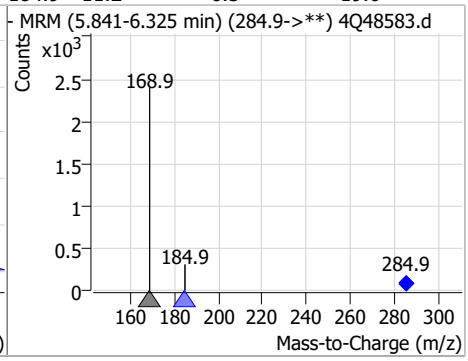


Perfluorinated Compounds by LC/MS/MS

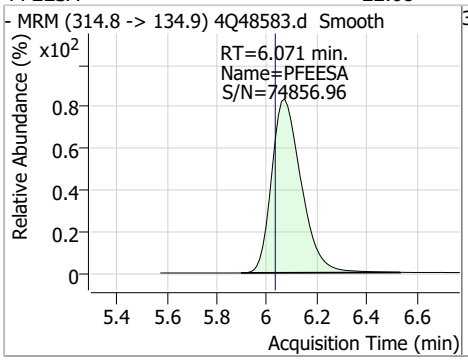
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.51	6.02	0.04	69579	284.9 -> 184.9	11.2	6.5	19.6

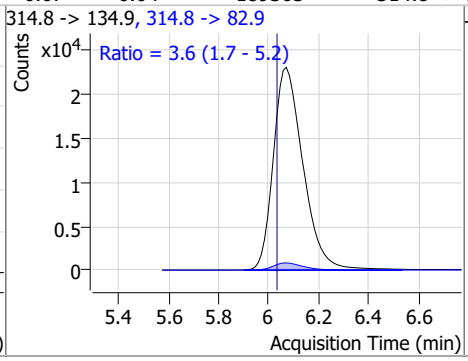


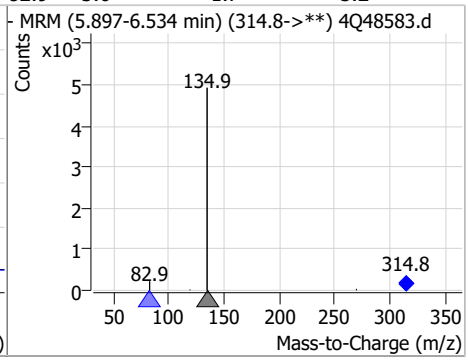




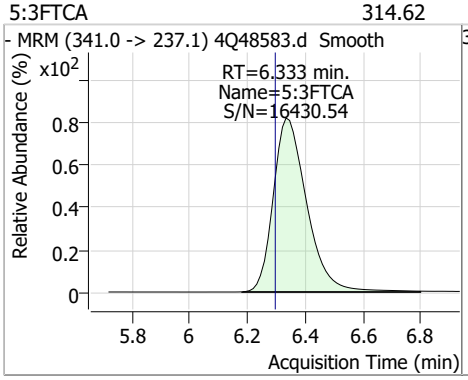
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.08	6.07	0.04	189363	314.8 -> 82.9	3.6	1.7	5.2

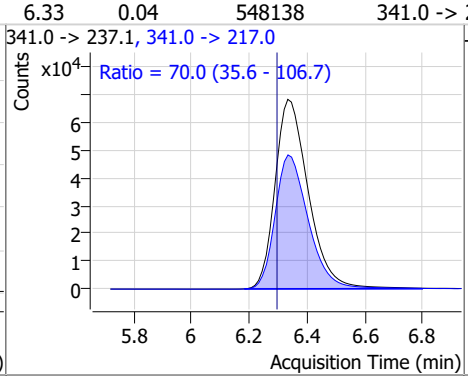


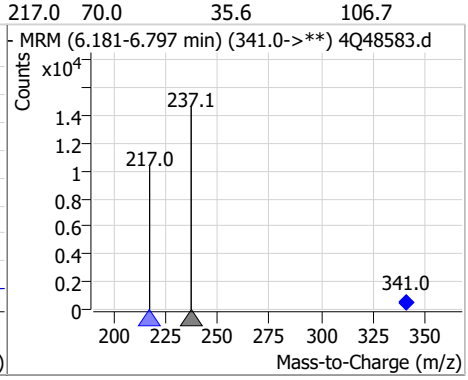




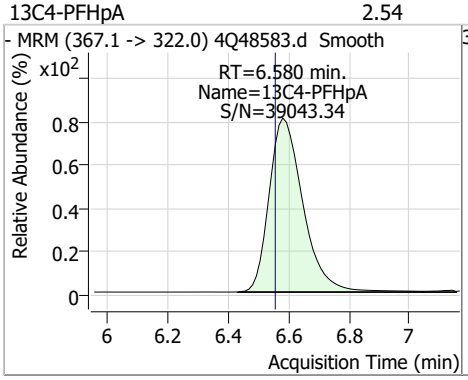
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	314.62	6.33	0.04	548138	341.0 -> 217.0	70.0	35.6	106.7

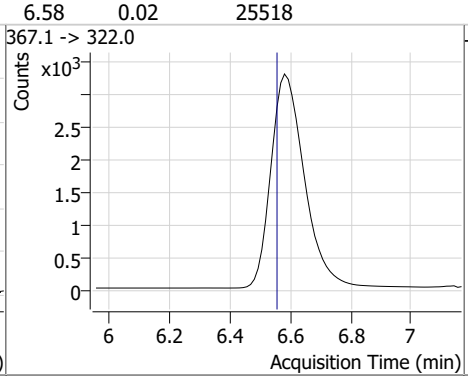


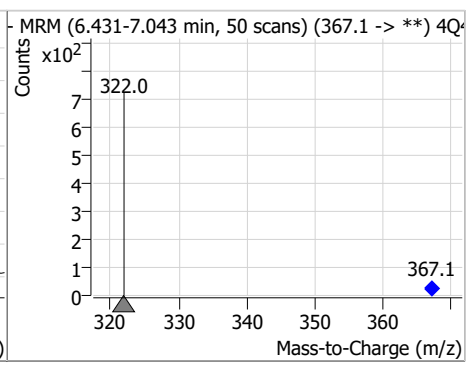




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.58	0.02	25518				

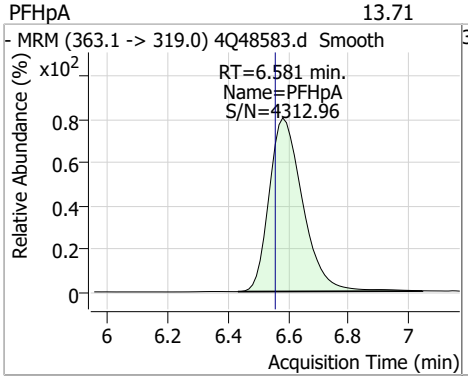


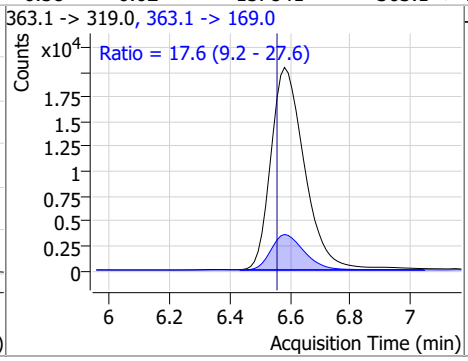


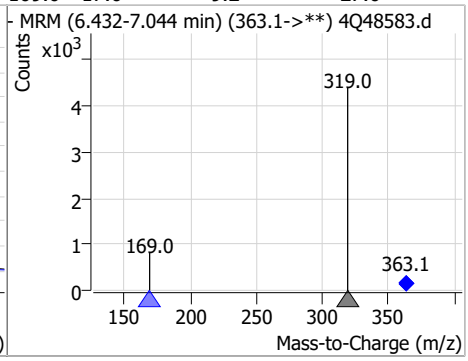


Perfluorinated Compounds by LC/MS/MS

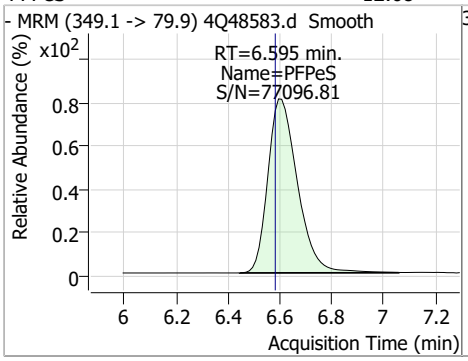
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.71	6.58	0.02	157841	363.1 -> 169.0	17.6	9.2	27.6

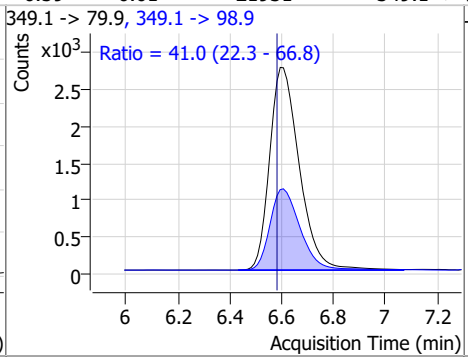


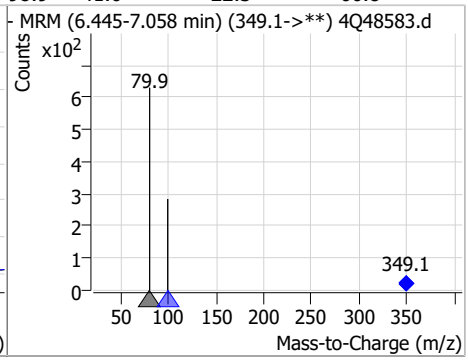




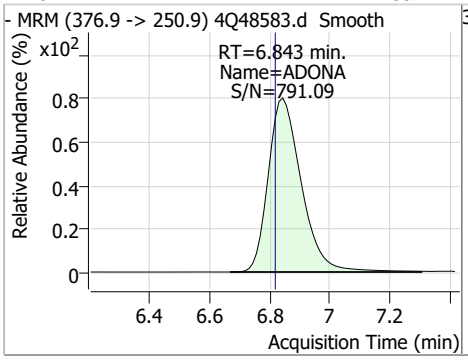
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.68	6.59	0.01	21931	349.1 -> 98.9	41.0	22.3	66.8

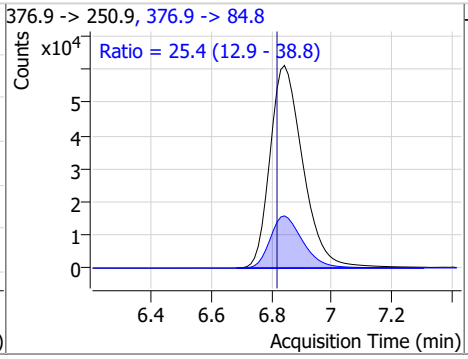


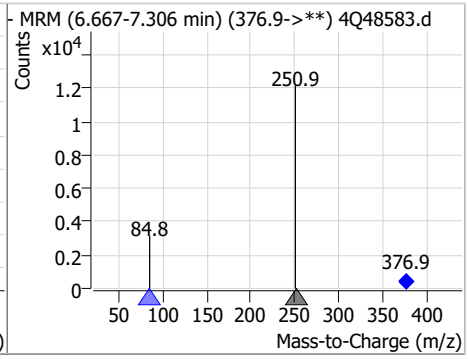




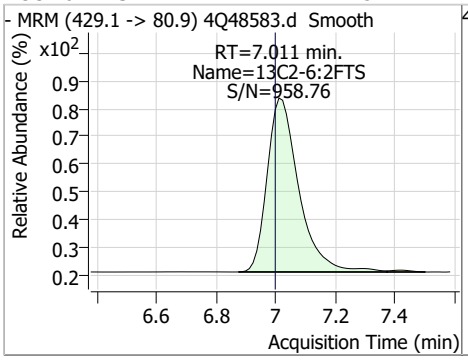
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	24.39	6.84	0.02	469291	376.9 -> 84.8	25.4	12.9	38.8

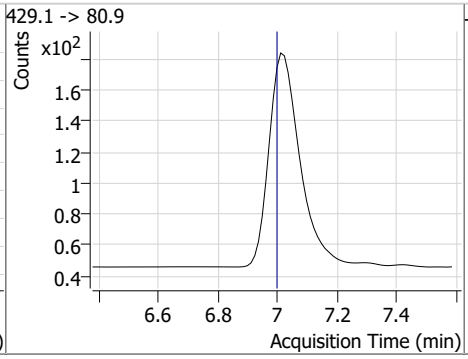


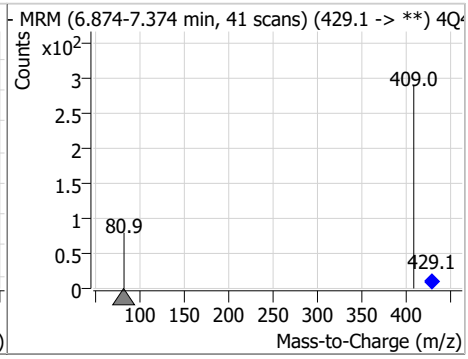




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.17	7.01	0.01	1016				

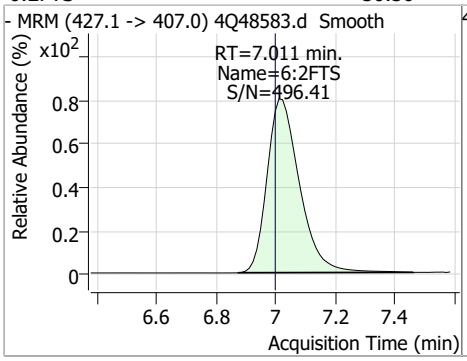


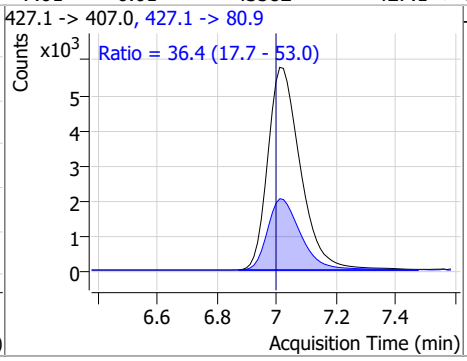


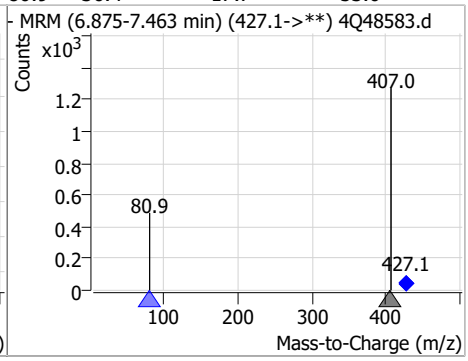


Perfluorinated Compounds by LC/MS/MS

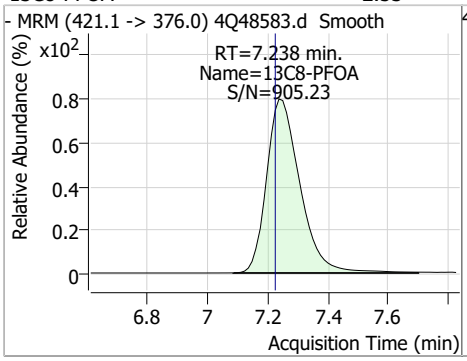
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.56	7.01	0.01	43582	427.1 -> 80.9	36.4	17.7	53.0

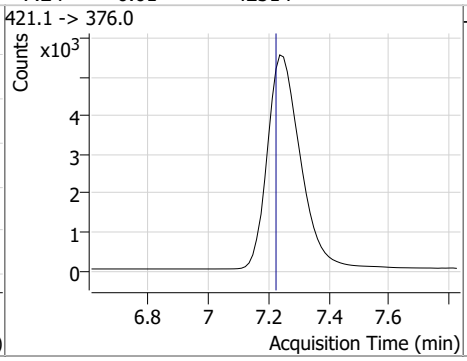


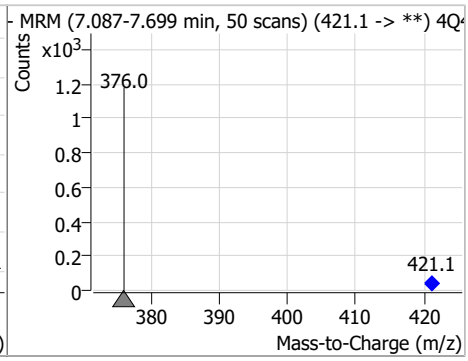




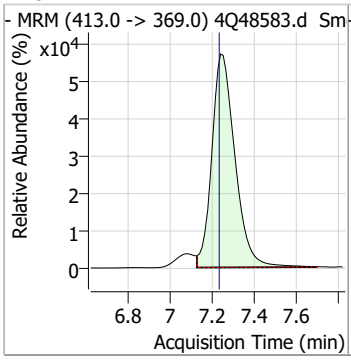
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	7.24	0.01	42514				

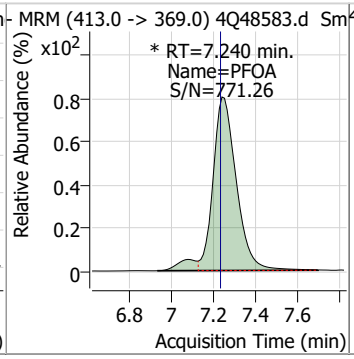


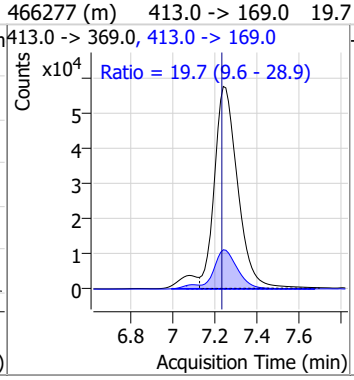


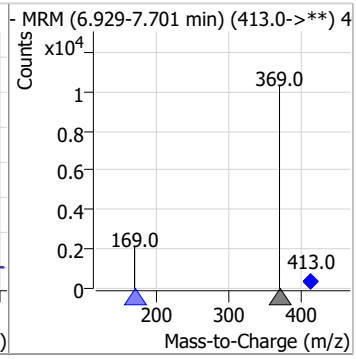


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	27.66	7.24	0.01	466277 (m)	413.0 -> 169.0	19.7	9.6	28.9

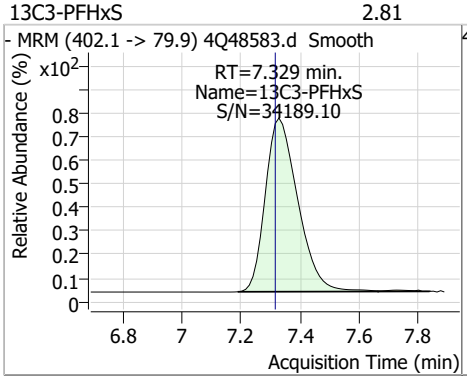


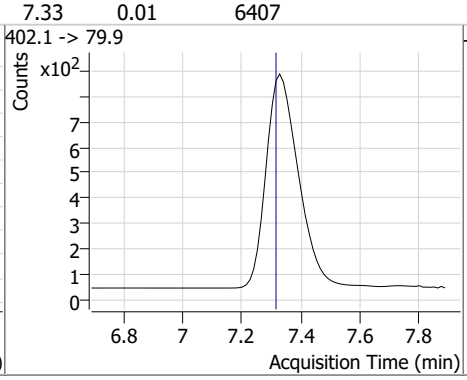


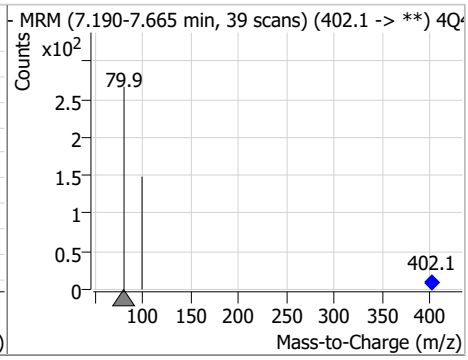




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.81	7.33	0.01	6407				

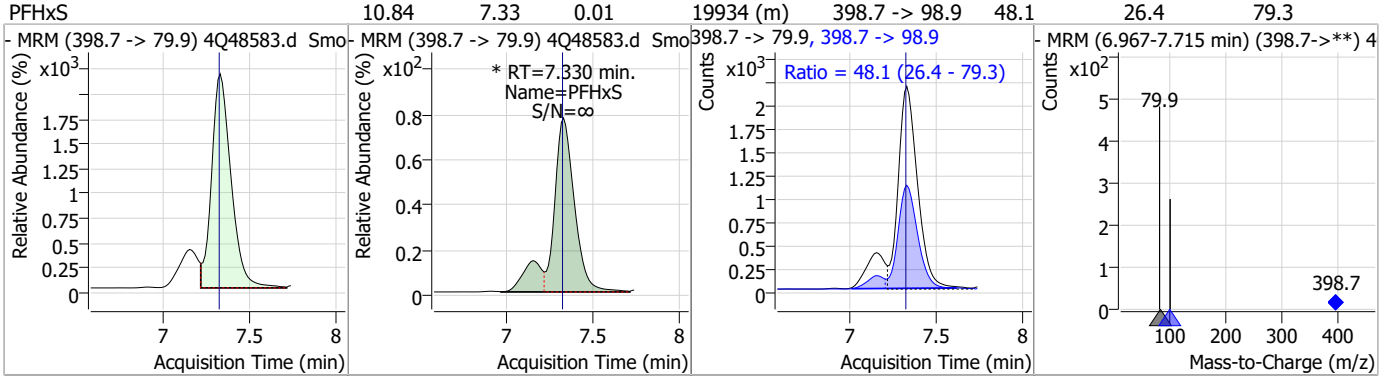




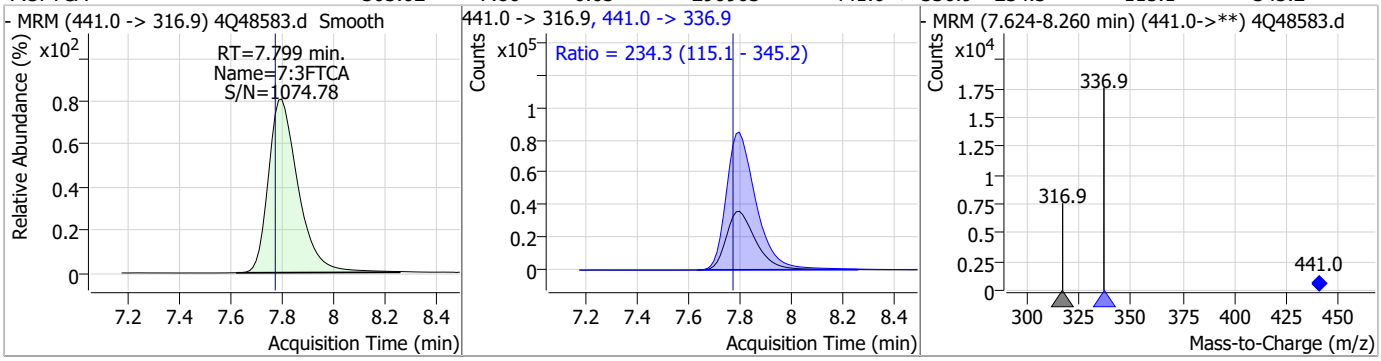


Perfluorinated Compounds by LC/MS/MS

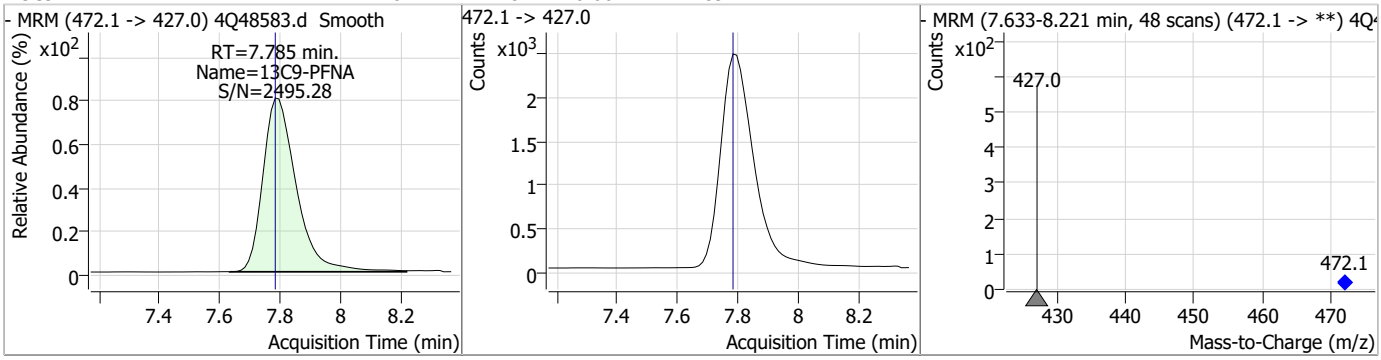
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.84	7.33	0.01	19934 (m)	398.7 -> 98.9	48.1	26.4	79.3



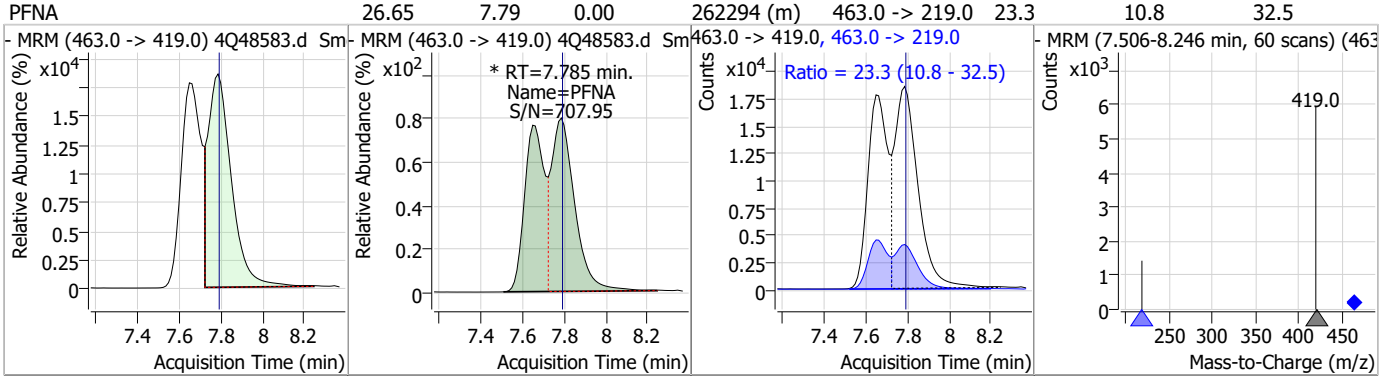
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	303.02	7.80	0.03	290903	441.0 -> 336.9	234.3	115.1	345.2



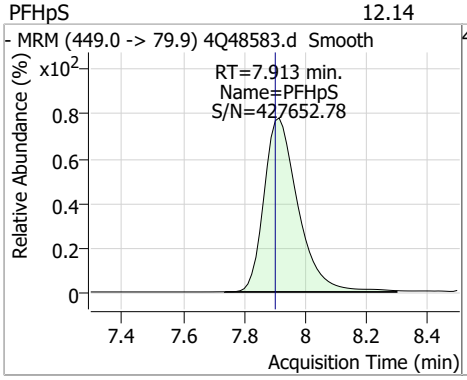
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.78	0.00	18914				

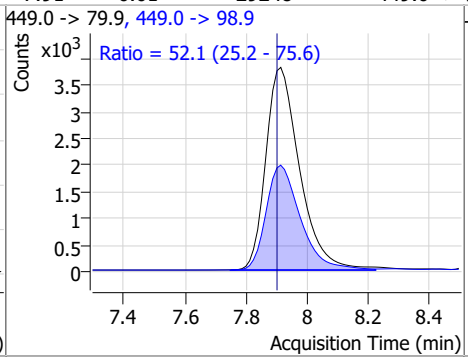


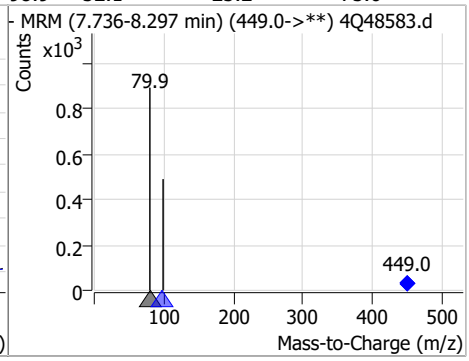
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	26.65	7.79	0.00	262294 (m)	463.0 -> 219.0	23.3	10.8	32.5



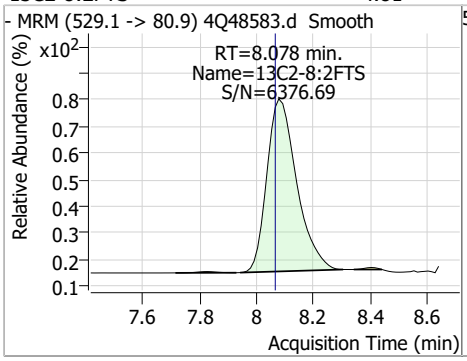
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.14	7.91	0.01	29248	449.0 -> 98.9	52.1	25.2	75.6

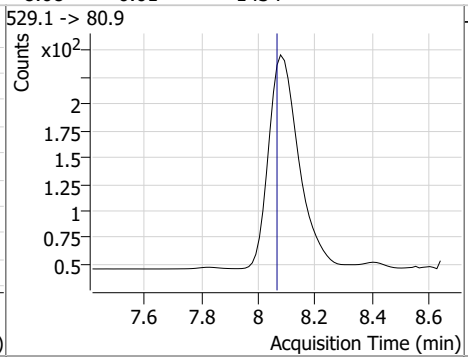


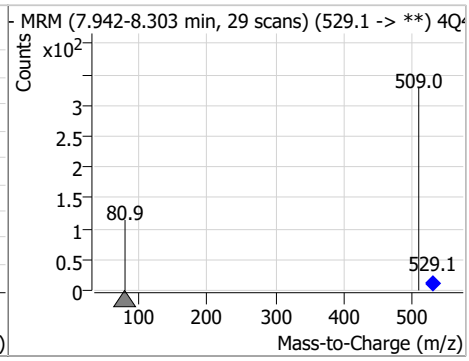




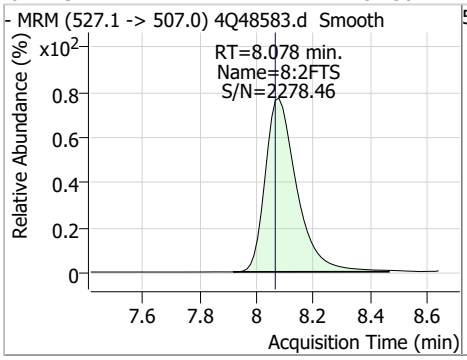
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.81	8.08	0.01	1434				

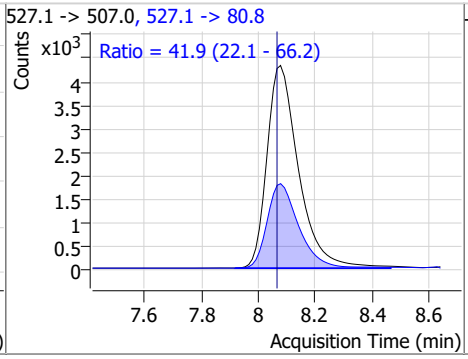


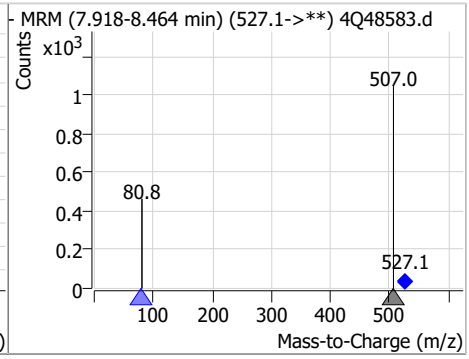




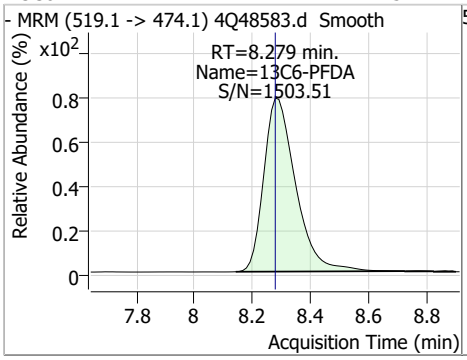
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	57.36	8.08	0.01	33025	527.1 -> 80.8	41.9	22.1	66.2

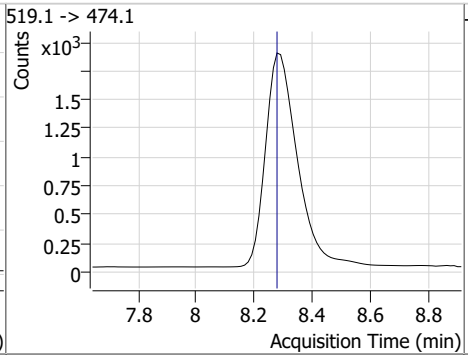


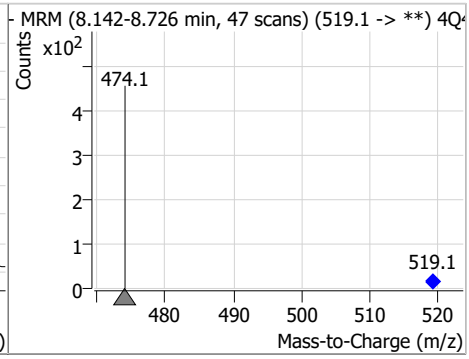




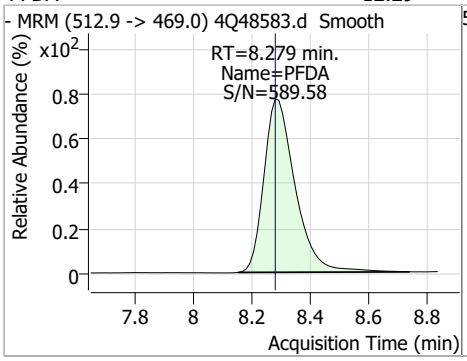
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.28	0.00	14133				

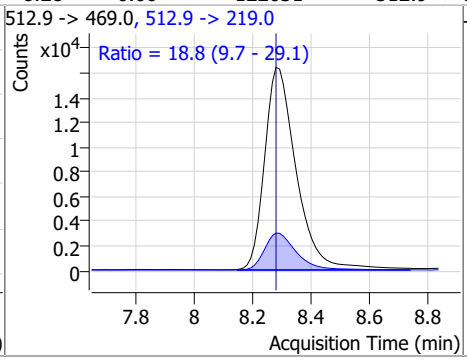


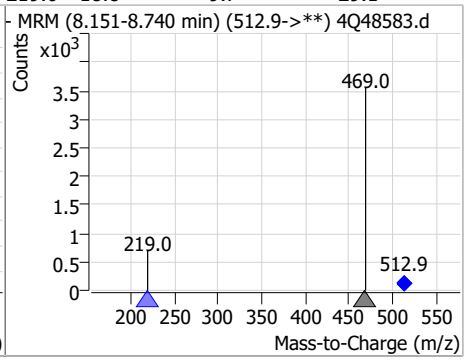




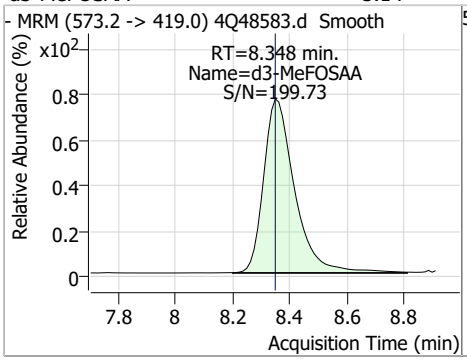
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.29	8.28	0.00	122031	512.9 -> 219.0	18.8	9.7	29.1

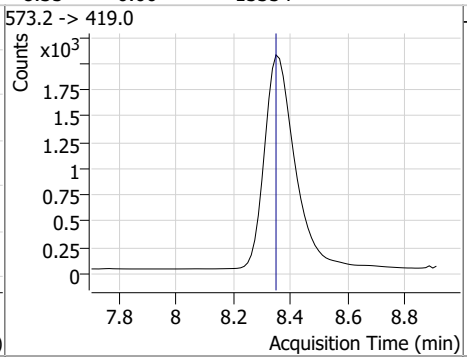


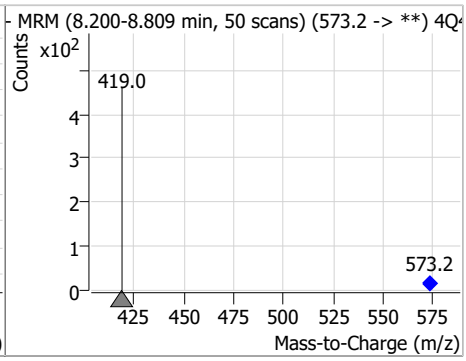




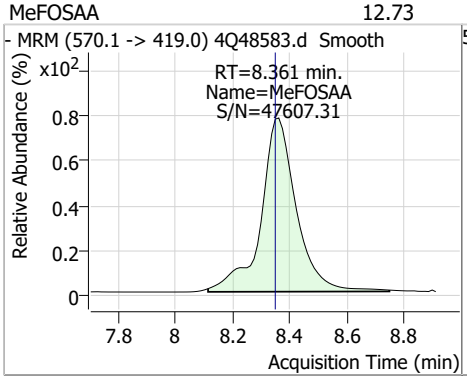
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.14	8.35	0.00	15354				

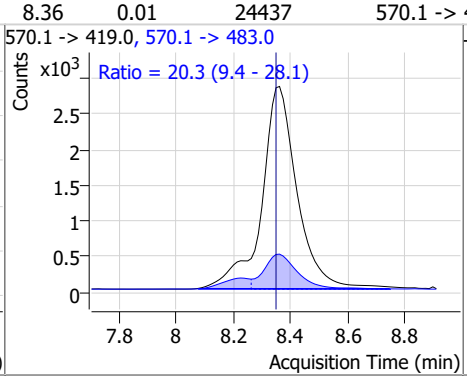


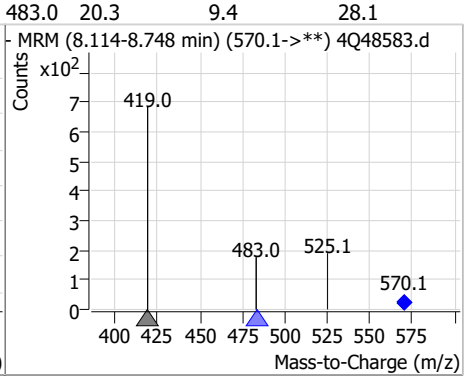




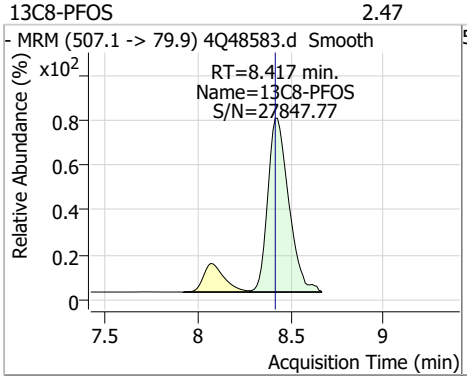
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	12.73	8.36	0.01	24437	570.1 -> 483.0	20.3	9.4	28.1

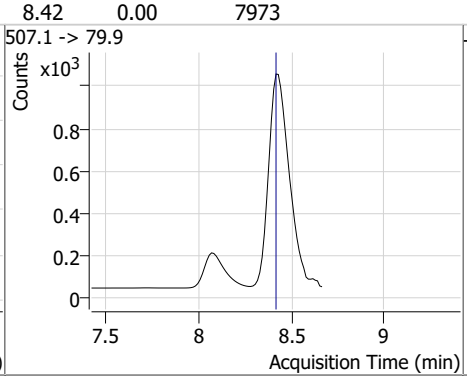


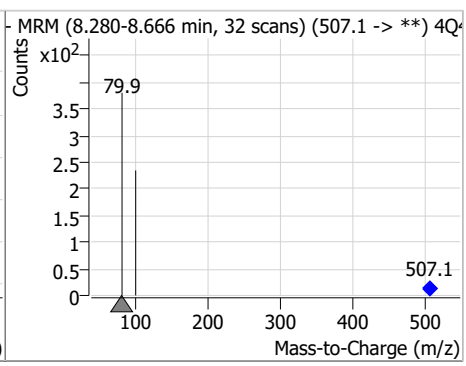




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.47	8.42	0.00	7973				

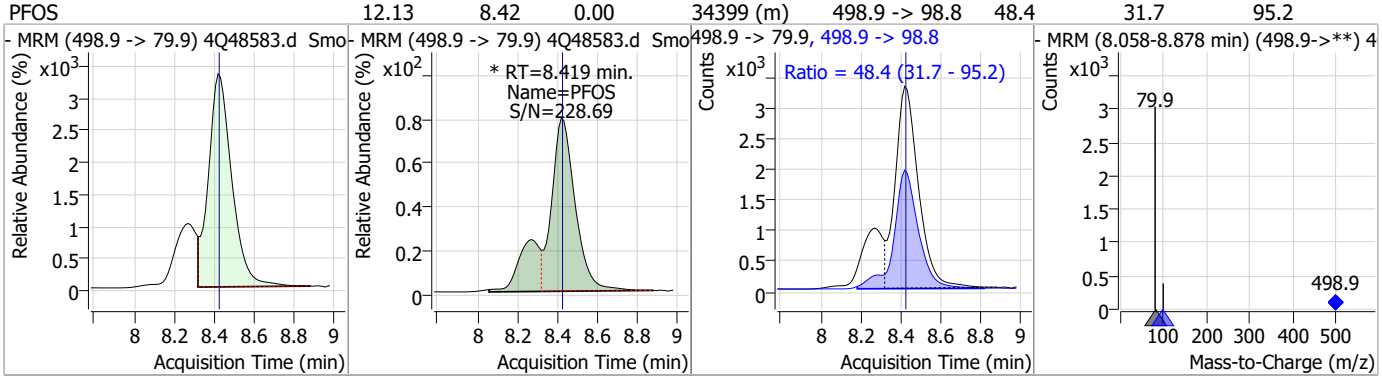




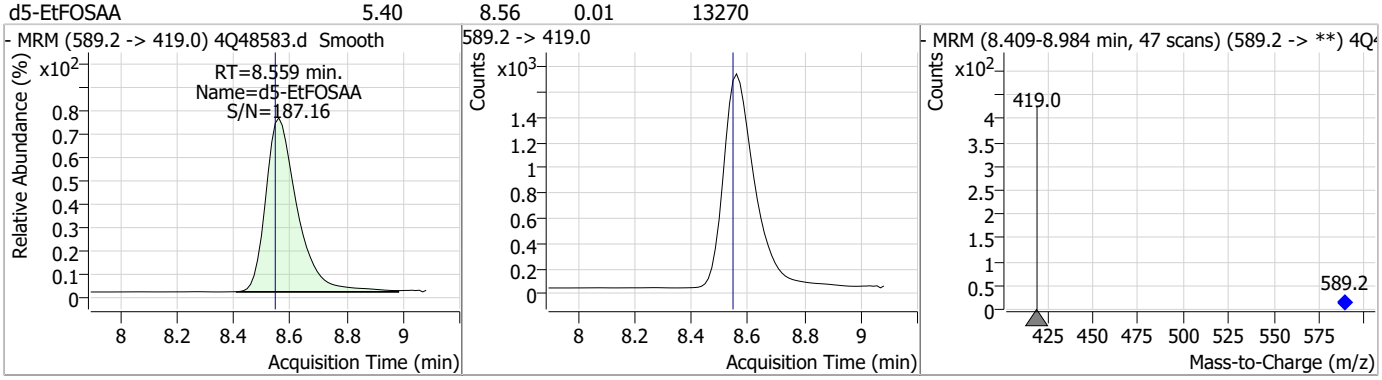


Perfluorinated Compounds by LC/MS/MS

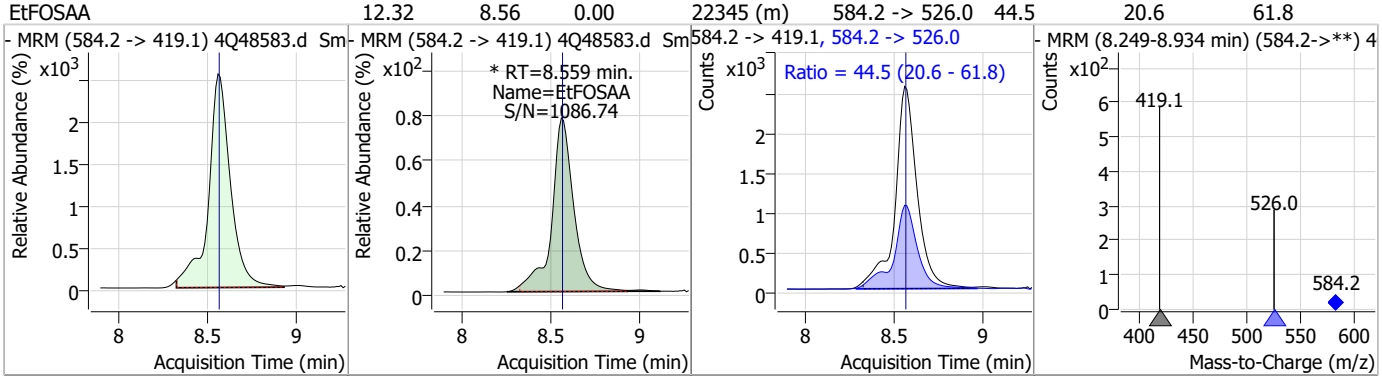
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.13	8.42	0.00	34399 (m)	498.9 -> 98.8	48.4	31.7	95.2



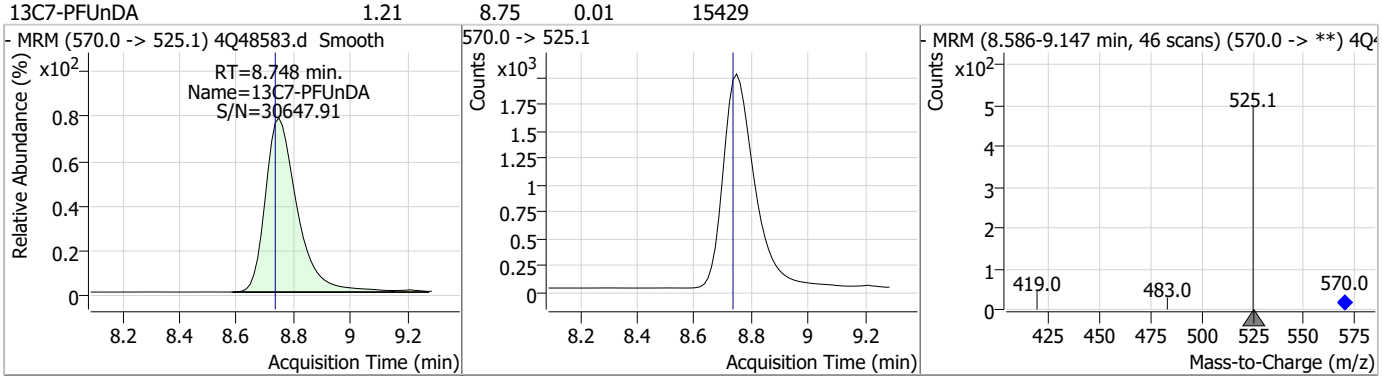
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.40	8.56	0.01	13270				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.32	8.56	0.00	22345 (m)	584.2 -> 526.0	44.5	20.6	61.8

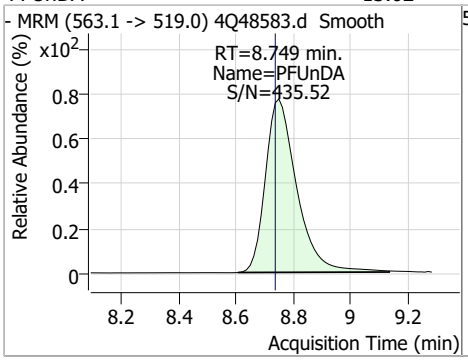


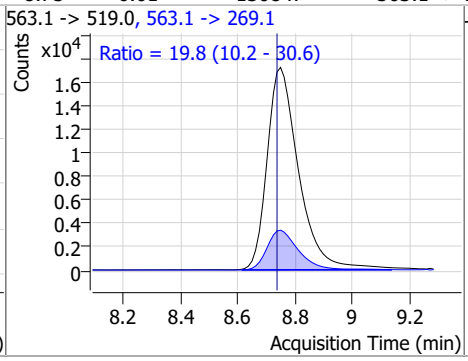
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.75	0.01	15429				

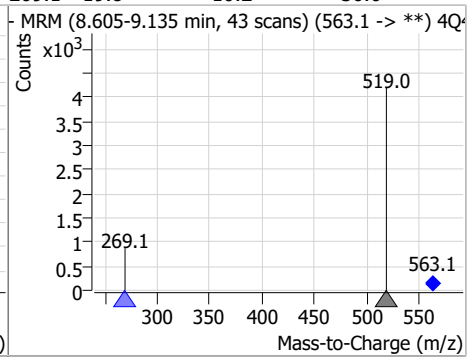


Perfluorinated Compounds by LC/MS/MS

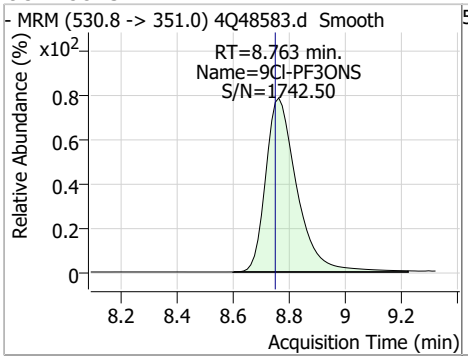
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.02	8.75	0.01	130847	563.1 -> 269.1	19.8	10.2	30.6

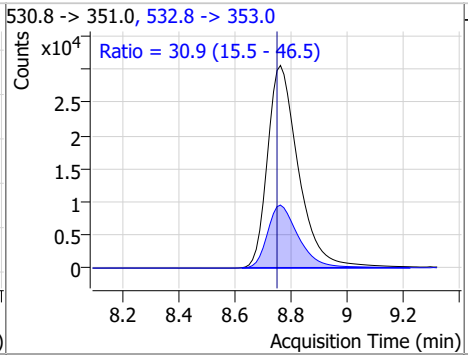


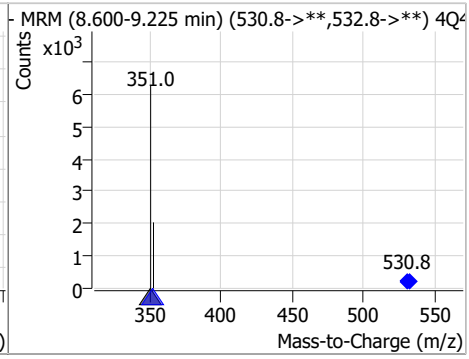




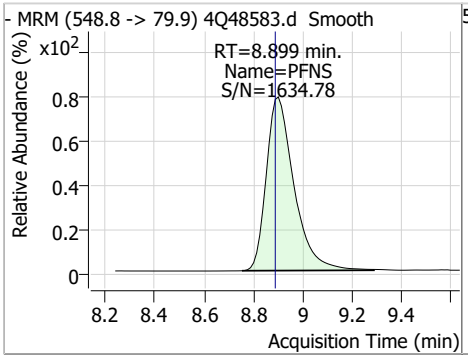
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	24.17	8.76	0.01	236463	532.8 -> 353.0	30.9	15.5	46.5

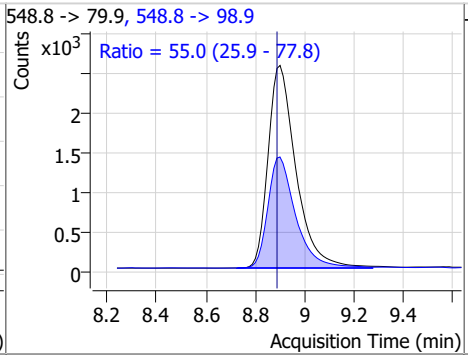


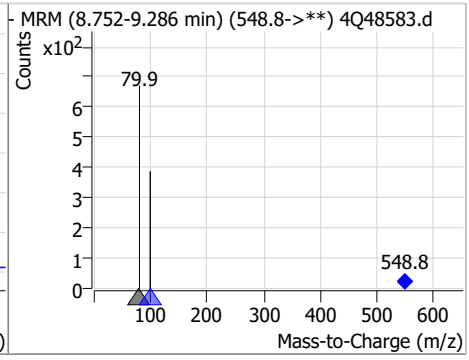




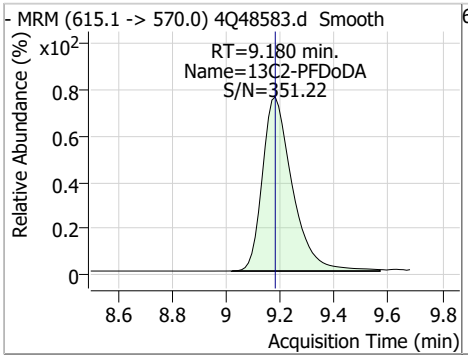
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.79	8.90	0.01	19912	548.8 -> 98.9	55.0	25.9	77.8

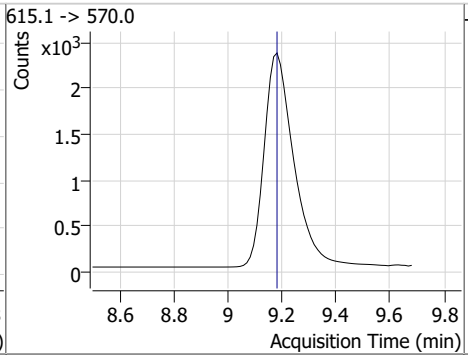


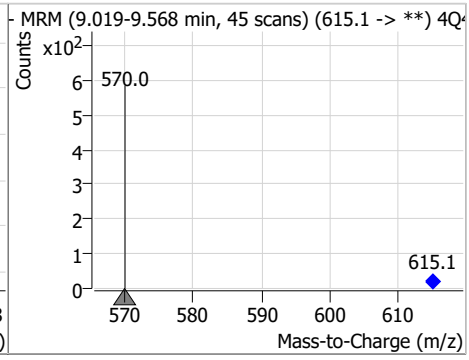




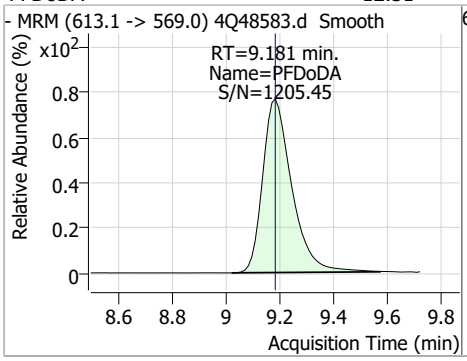
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.18	0.00	18106				

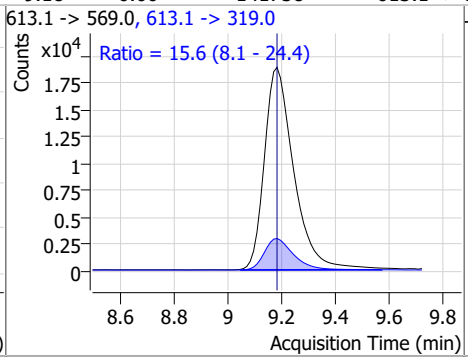


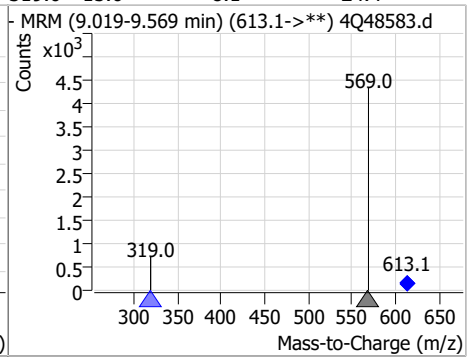




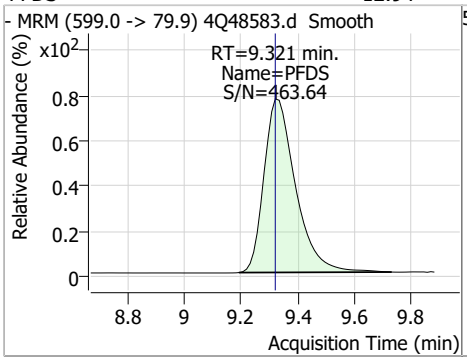
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	12.51	9.18	0.00	141758	613.1 -> 319.0	15.6	8.1	24.4

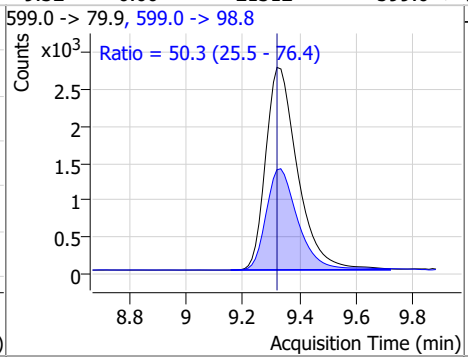


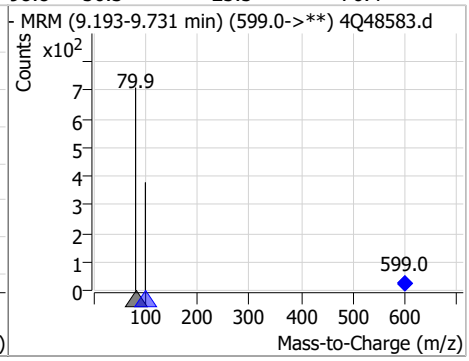




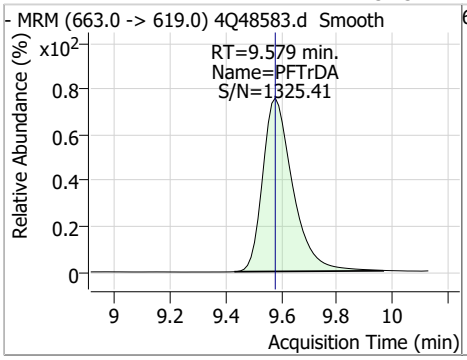
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.94	9.32	0.00	21312	599.0 -> 98.8	50.3	25.5	76.4

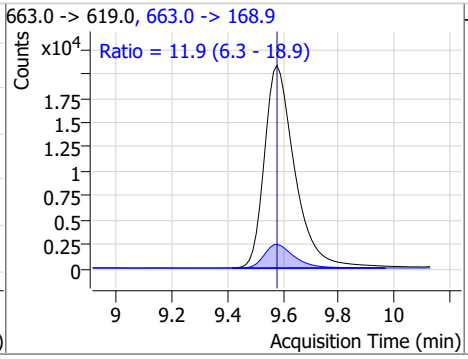


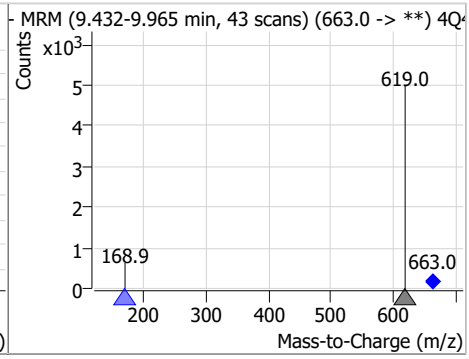




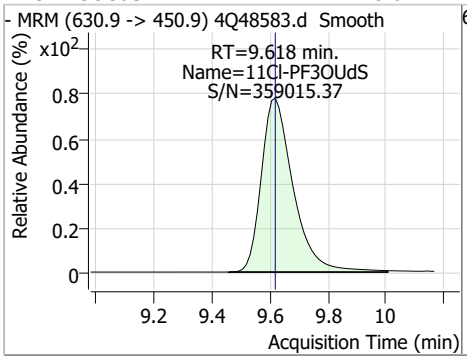
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.23	9.58	0.00	154919	663.0 -> 168.9	11.9	6.3	18.9

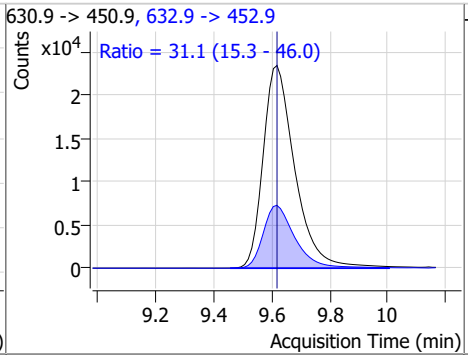


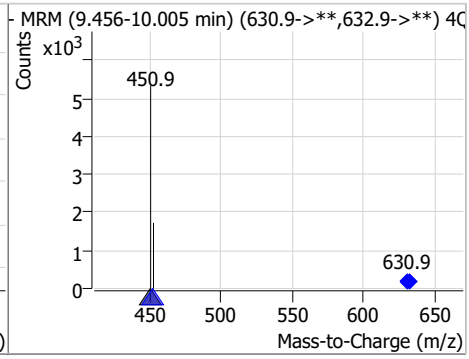




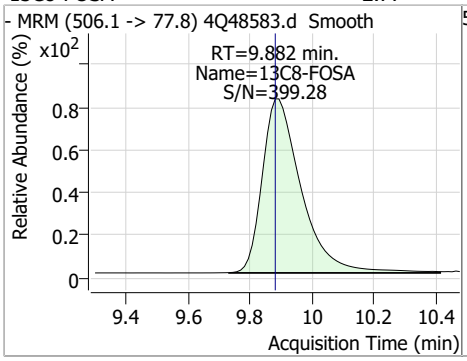
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	25.62	9.62	0.00	178077	632.9 -> 452.9	31.1	15.3	46.0

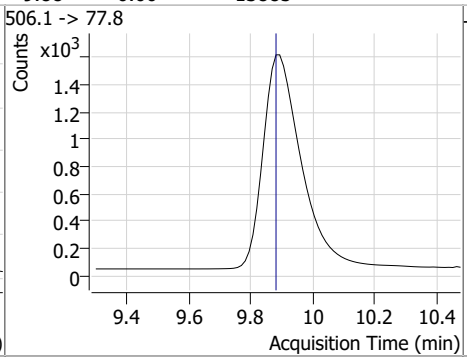


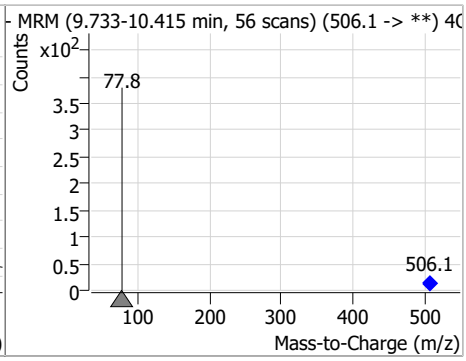




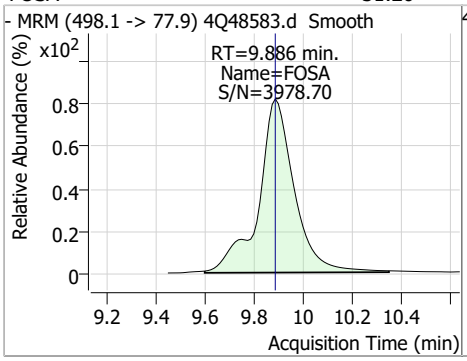
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.77	9.88	0.00	13885				

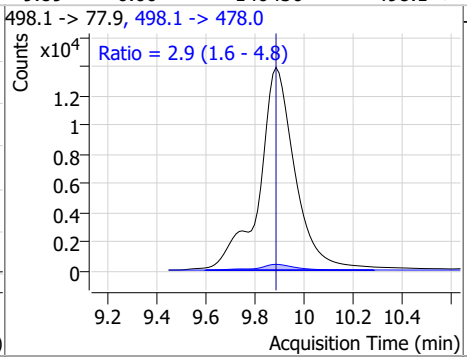


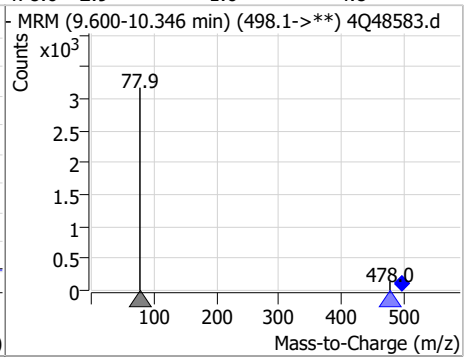




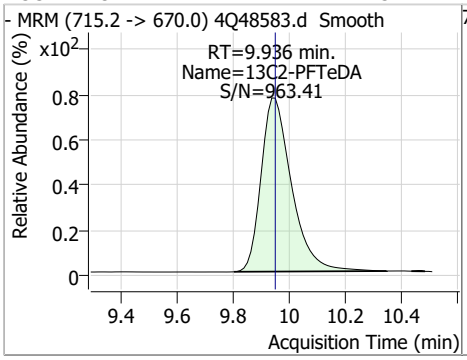
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	31.26	9.89	0.00	140450	498.1 -> 478.0	2.9	1.6	4.8

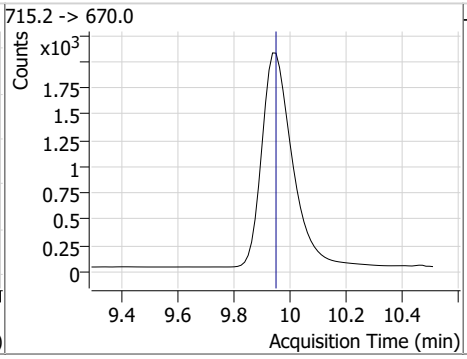


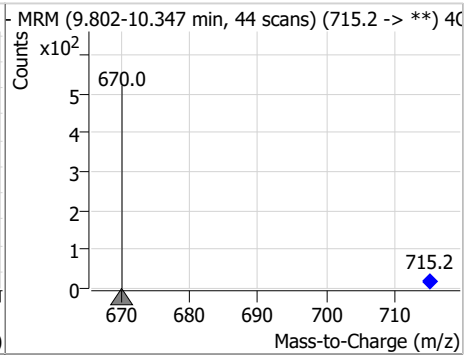




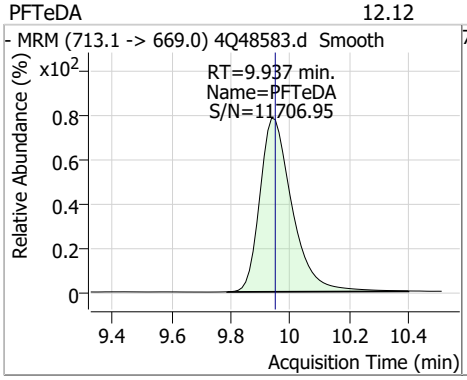
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.37	9.94	-0.01	15389				

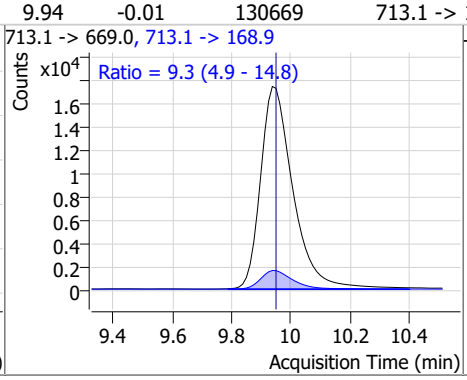


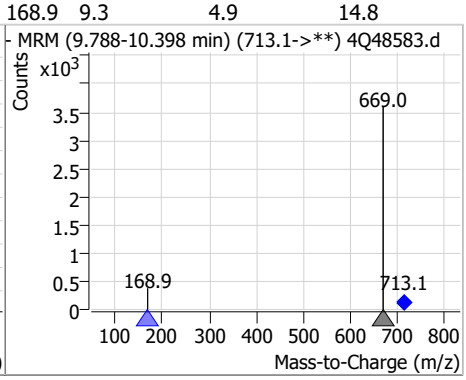




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.12	9.94	-0.01	130669	713.1 -> 168.9	9.3	4.9	14.8

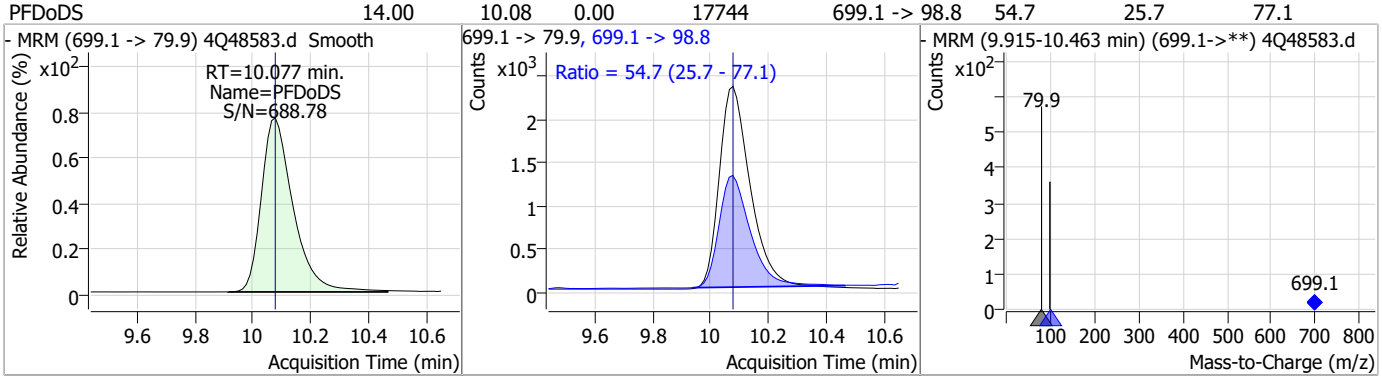




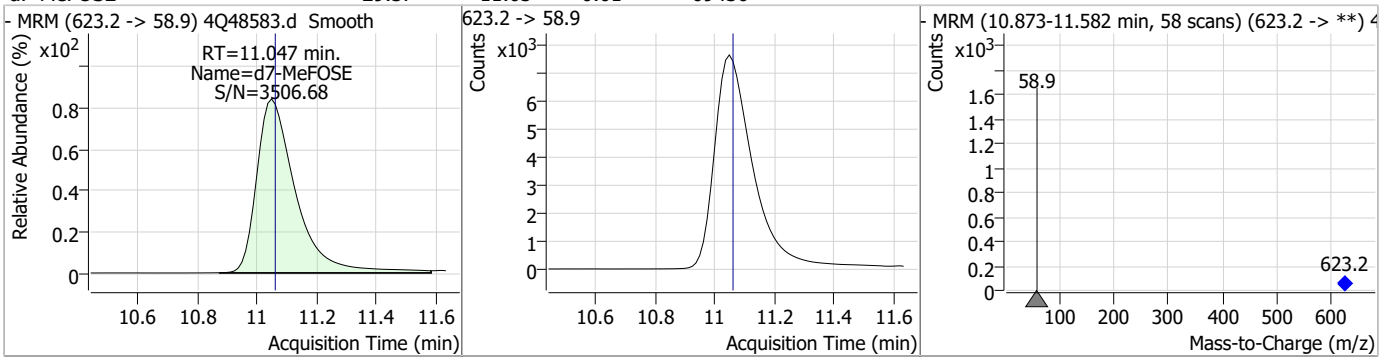


Perfluorinated Compounds by LC/MS/MS

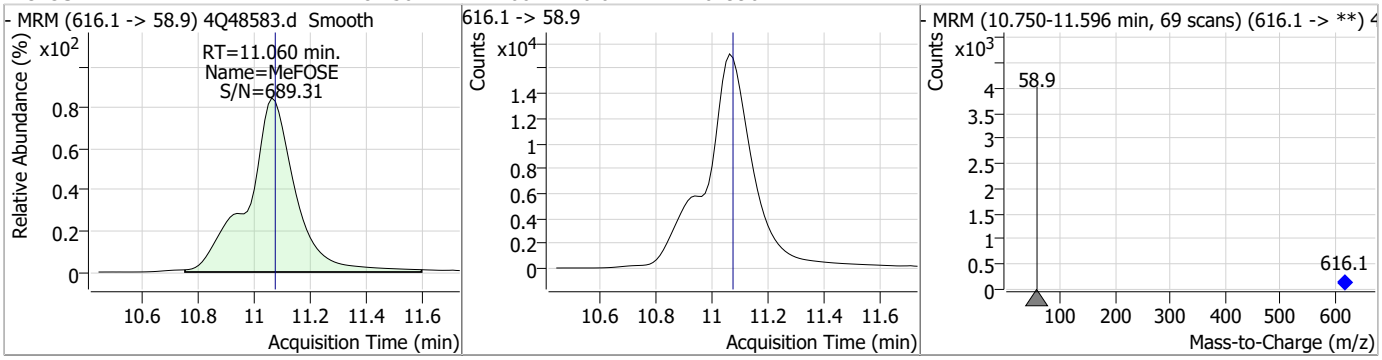
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	14.00	10.08	0.00	17744	699.1 -> 98.8	54.7	25.7	77.1



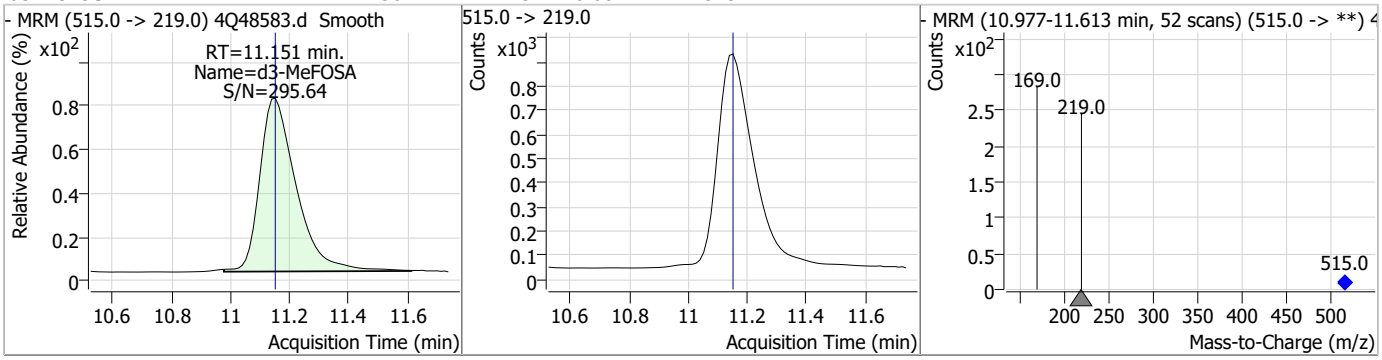
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	29.37	11.05	-0.01	69436				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	82.56	11.06	-0.01	204990				

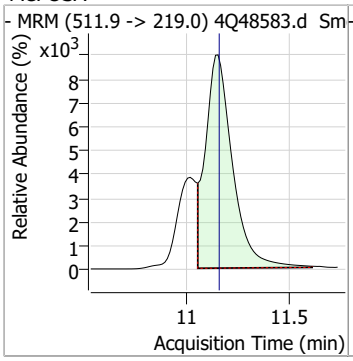


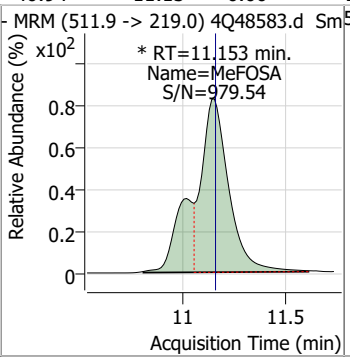
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	11.15	0.00	7573				

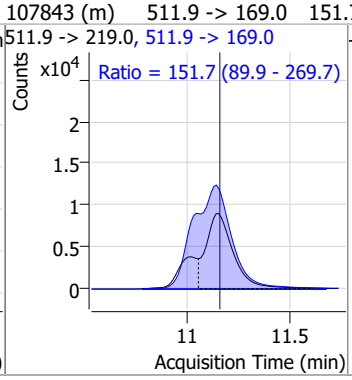


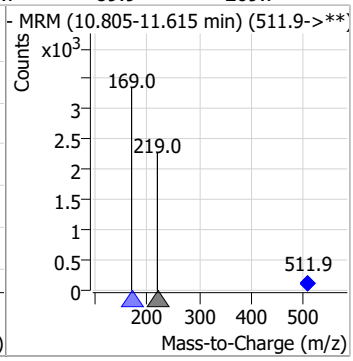
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	40.94	11.15	0.00	107843 (m)	511.9 -> 169.0	151.7	89.9	269.7

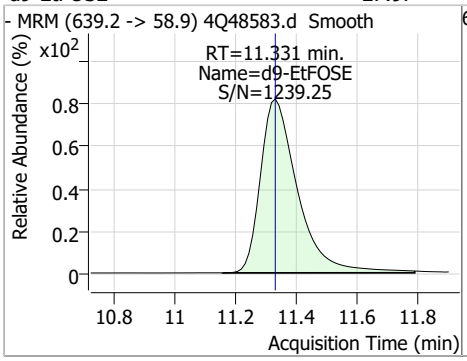


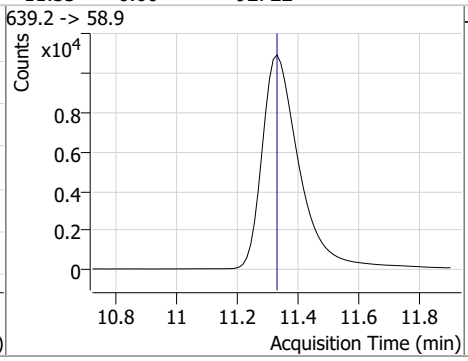


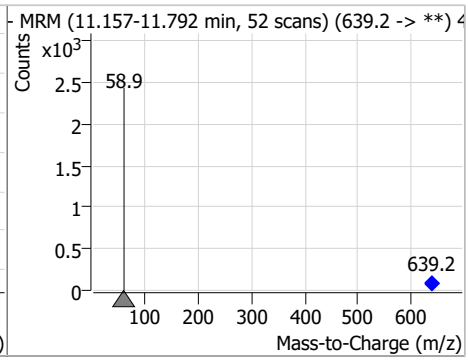




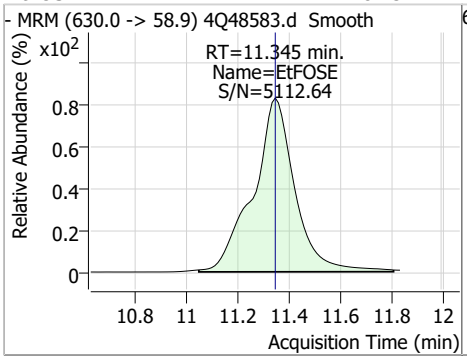
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.97	11.33	0.00	92722				

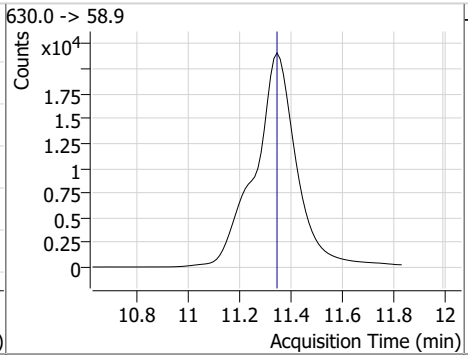


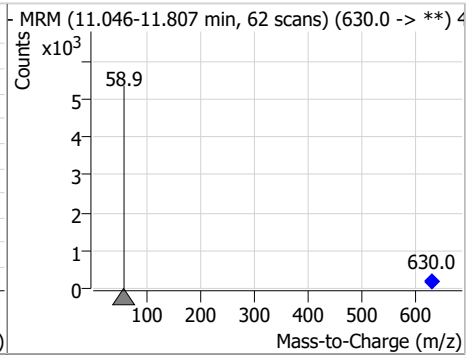




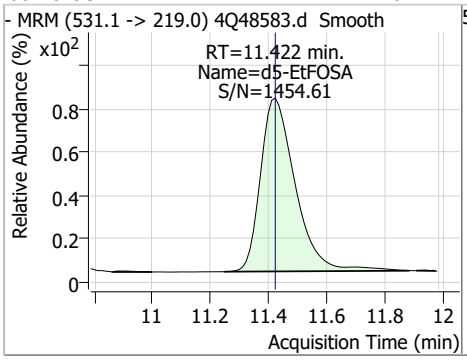
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	84.32	11.34	0.00	244632				

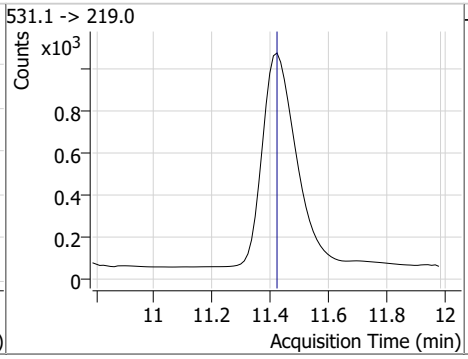


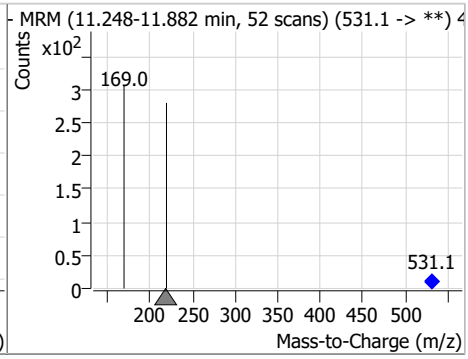




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.48	11.42	0.00	8431				

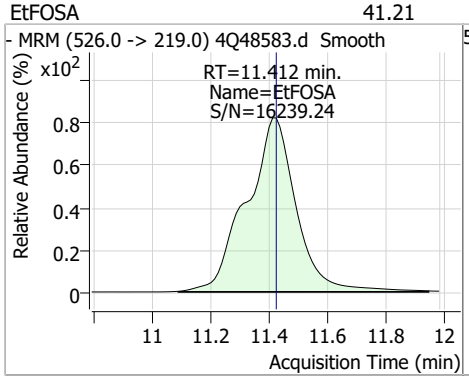


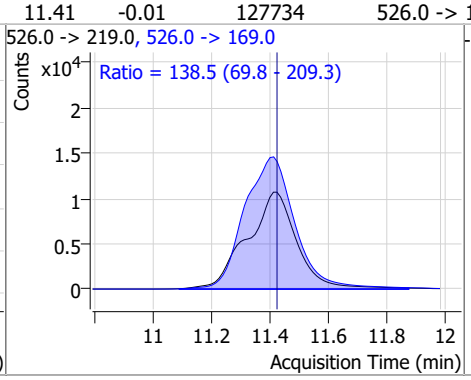


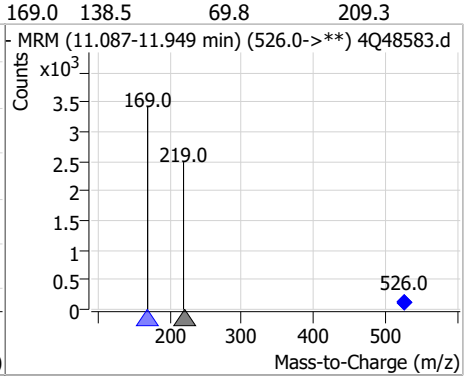


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	41.21	11.41	-0.01	127734	526.0 -> 169.0	138.5	69.8	209.3







7.6.2

7

Manual Integration Approval Summary

Sample Number: S4Q711-RT
Lab FileID: 4Q48583.D
Injection Time: 08/07/23 15:56
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.24	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
Perfluorononanoic acid	375-95-1		7.79	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSA	31506-32-8		11.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

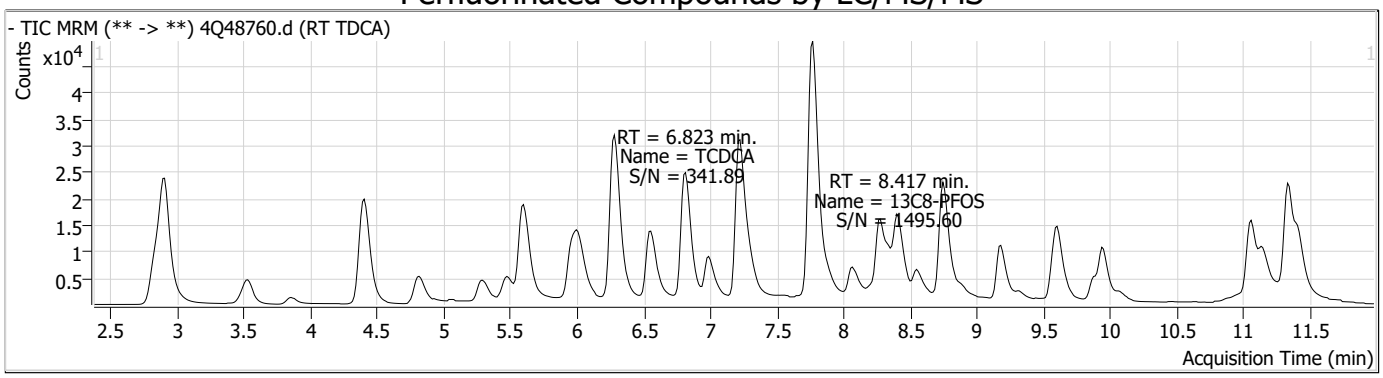
Data File	:	4Q48760.d
Operator	:	annal
Acq. Method	:	1633full_4Q.m
Acq. Date-Time	:	8/9/2023 2:15:43 PM
Sample Name	:	RT TDCA
Vial	:	P1-B1
DA Method File	:	TDCA.quantmethod.xml
Batch Name	:	s4q713_TDCA.batch.bin
Sample Information	:	OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	8.417	507.1 -> 79.9	11578	2.50	µg/L		-0.037
13C4-PFOS	8.418	502.8 -> 79.9	12106	2.50	µg/L		-0.036
System Monitoring Compounds							
13C8-PFOS	8.417	507.1 -> 79.9	11578	2.43	µg/L		-0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%			
Target Compounds							**QValue**
PFOS	8.419	498.9 -> 79.9	10591	2.68	µg/L	m	83
		498.9 -> 98.8	4681				
TCDCA	6.823	498.9 -> 79.9	2301	4.31	ng/ml		100
TDCA	6.972	498.9 -> 79.9	2947	6.09	ng/ml		100
TUDCA	5.979	498.9 -> 79.9	3784	3.69	ng/ml		100

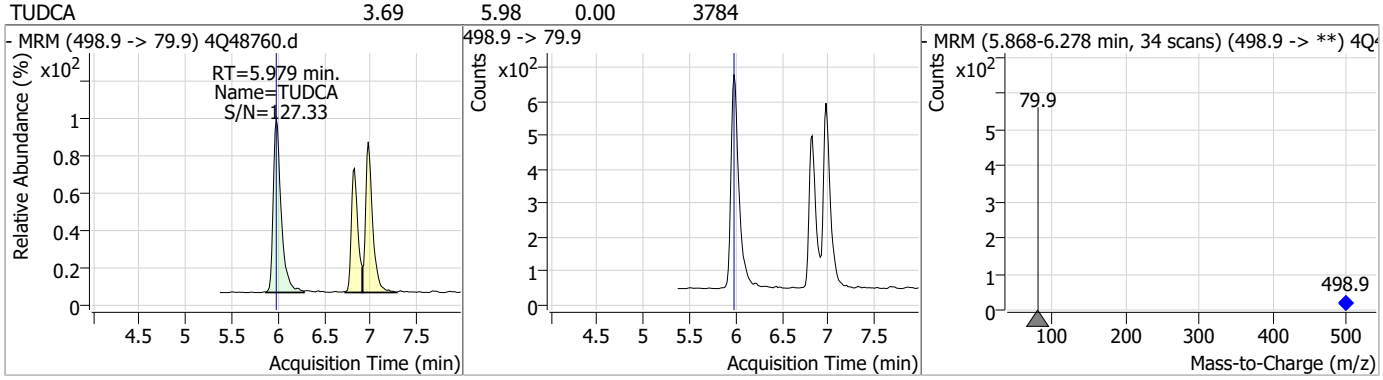
 # = Qualifier out of range, m = manually integrated, + = Area summed

7.9.3
7

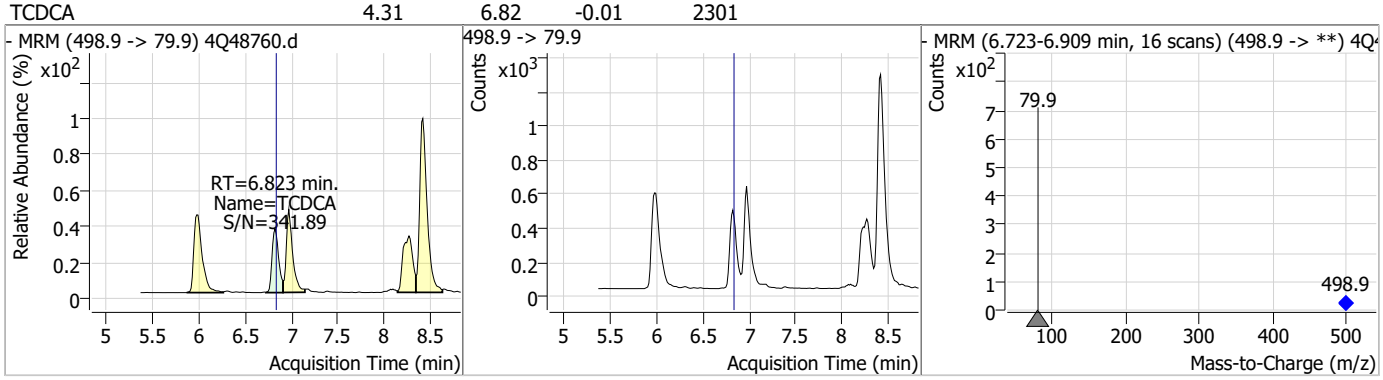
Perfluorinated Compounds by LC/MS/MS



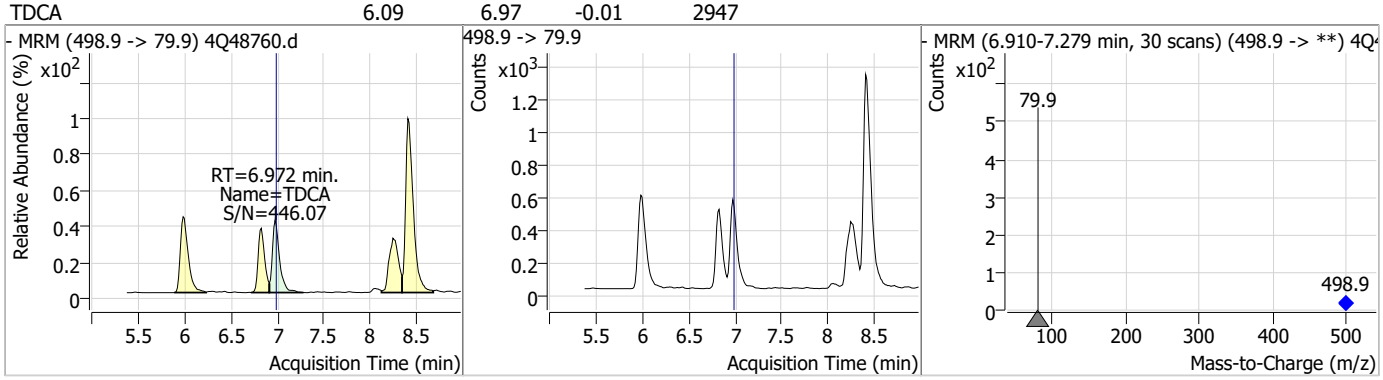
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	3.69	5.98	0.00	3784				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	4.31	6.82	-0.01	2301				

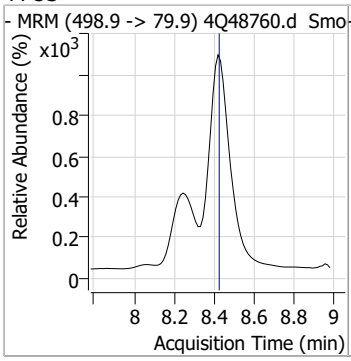


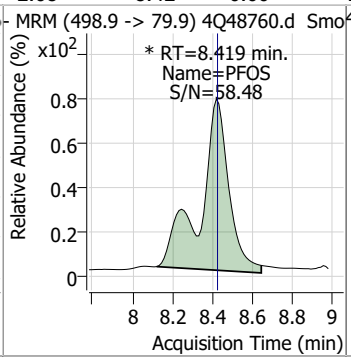
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	6.09	6.97	-0.01	2947				

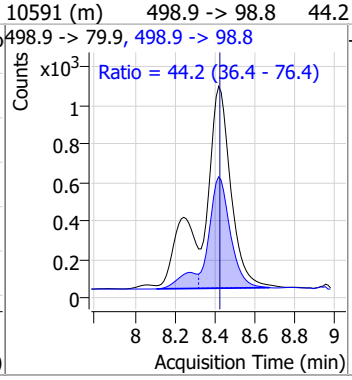


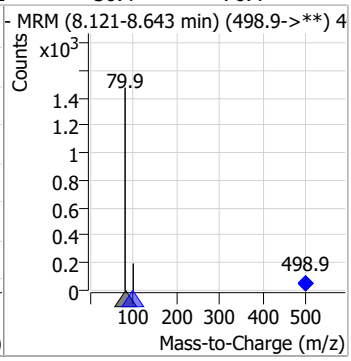
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.68	8.42	0.00	10591 (m)	498.9 -> 98.8	44.2	36.4	76.4

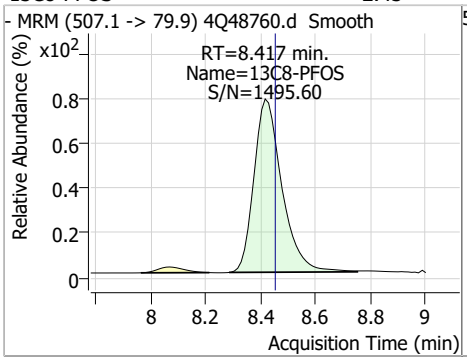


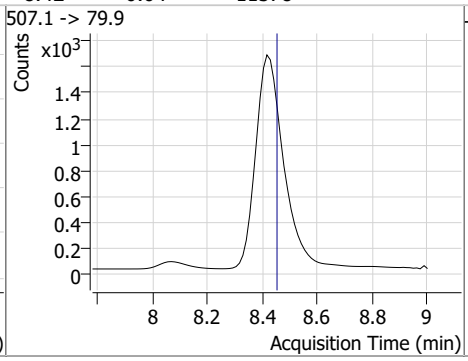


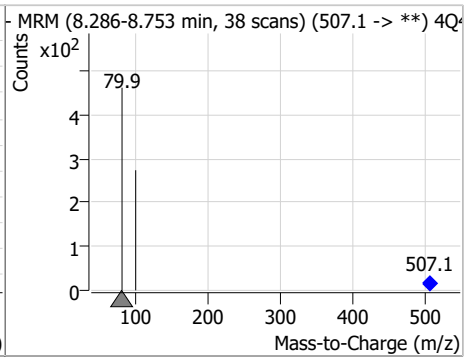




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.43	8.42	-0.04	11578				







Manual Integration Approval Summary

Sample Number:	S4Q713-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48760.D	**Analyst approved:**	08/11/23 10:12 Anna Ludwig
Injection Time:	08/09/23 14:15	**Supervisor approved:**	08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48761.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 2:31:48 PM
Sample Name : RT br/ln
Vial : P1-B2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	97126	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	60393	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	37670	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	26855	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	44524	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	20803	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14435	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	17108	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	19098	1.25	µg/L	0.000
M2-PFTeDA	9.961	715.2 -> 670.0	15066	1.25	µg/L	0.013
M8-FOSA	9.894	506.1 -> 77.8	13497	2.50	µg/L	0.012
M3-PFBS	5.489	302.1 -> 79.9	9238	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6702	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8970	2.50	µg/L	0.000
M2-4:2FTS	5.296	329.1 -> 80.9	783	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	1532	5.00	µg/L	0.000
M2-8:2FTS	8.078	529.1 -> 80.9	2369	5.00	µg/L	0.013
M3-MeFOSAA	8.348	573.2 -> 419.0	18190	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	32325	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	15135	5.00	µg/L	0.013
M7-MeFOSE	11.072	623.2 -> 58.9	57344	25.00	µg/L	0.012
M9-EtFOSE	11.344	639.2 -> 58.9	81171	25.00	µg/L	0.013
M5-EtFOSA	11.435	531.1 -> 219.0	8863	2.50	µg/L	0.012
M3-MeFOSA	11.164	515.0 -> 219.0	8044	2.50	µg/L	0.012
13C4-PFOS	8.418	502.8 -> 79.9	8800	2.50	µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	55301	5.00	µg/L	0.012
18O2-PFHxS	7.316	403.0 -> 83.9	4434	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	54234	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	18579	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	22110	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	36156	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	783	7.07	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 141.4%		
13C2-6:2FTS	6.998	429.1 -> 80.9	1532	7.24	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 144.7%		
13C2-8:2FTS	8.078	529.1 -> 80.9	2369	7.37	µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 147.4%		
13C2-PFDoDA	9.180	615.1 -> 570.0	19098	1.20	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-PFTeDA	9.961	715.2 -> 670.0	15066	1.18	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C3-PFBS	5.489	302.1 -> 79.9	9238	2.45	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFHxS	7.317	402.1 -> 79.9	6702	2.73	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 = 109.2%		
13C4-PFBA	2.911	216.8 -> 171.9	97126	10.28 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C4-PFHpA	6.568	367.1 -> 322.0	26855	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFHxA	5.610	318.0 -> 273.0	37670	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C5-PFPeA	4.412	268.3 -> 223.0	60393	4.78 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C6-PFDA	8.279	519.1 -> 474.1	14435	1.12 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C7-PFUnDA	8.748	570.0 -> 525.1	17108	1.18 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C8-FOSA	9.894	506.1 -> 77.8	13497	2.46 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C8-PFOA	7.238	421.1 -> 376.0	44524	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C8-PFOS	8.417	507.1 -> 79.9	8970	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C9-PFNA	7.785	472.1 -> 427.0	20803	1.24 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%		
d3-MeFOSAA	8.348	573.2 -> 419.0	18190	5.57 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	32325	9.38 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
d3-MeFOSA	11.164	515.0 -> 219.0	8044	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
d5-EtFOSAA	8.559	589.2 -> 419.0	15135	5.64 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
d7-MeFOSE	11.072	623.2 -> 58.9	57344	22.19 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
d9-EtFOSE	11.344	639.2 -> 58.9	81171	22.40 µg/L		0.013
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.6%		
d5-EtFOSA	11.435	531.1 -> 219.0	8863	2.38 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%		
Target Compounds						QValue
4:2FTS	5.297	327.1 -> 307.0	47373	44.88 µg/L		98
		327.1 -> 80.9	19927			
6:2FTS	6.999	427.1 -> 407.0	62522	48.09 µg/L		100
		427.1 -> 80.9	21962			
8:2FTS	8.078	527.1 -> 507.0	52220	54.91 µg/L		92
		527.1 -> 80.8	20158			
EtFOSAA	8.560	584.2 -> 419.1	25969	12.56 µg/L	m	96
		584.2 -> 526.0	11360			
FOSA	9.898	498.1 -> 77.9	137375	31.45 µg/L	m	99
		498.1 -> 478.0	4155			
MeFOSAA	8.349	570.1 -> 419.0	29535	12.99 µg/L		97
		570.1 -> 483.0	5905			
PFBA	2.920	212.8 -> 168.9	113143	50.59 µg/L		100
PFBS	5.490	298.7 -> 79.9	27574	12.22 µg/L		94
		298.7 -> 98.8	11198			
PFDA	8.279	512.9 -> 469.0	137404	13.54 µg/L		98
		512.9 -> 219.0	25176			
PFDoDA	9.181	613.1 -> 569.0	153102	12.81 µg/L		98
		613.1 -> 319.0	23478			
PFDS	9.335	599.0 -> 79.9	22787	12.30 µg/L		100

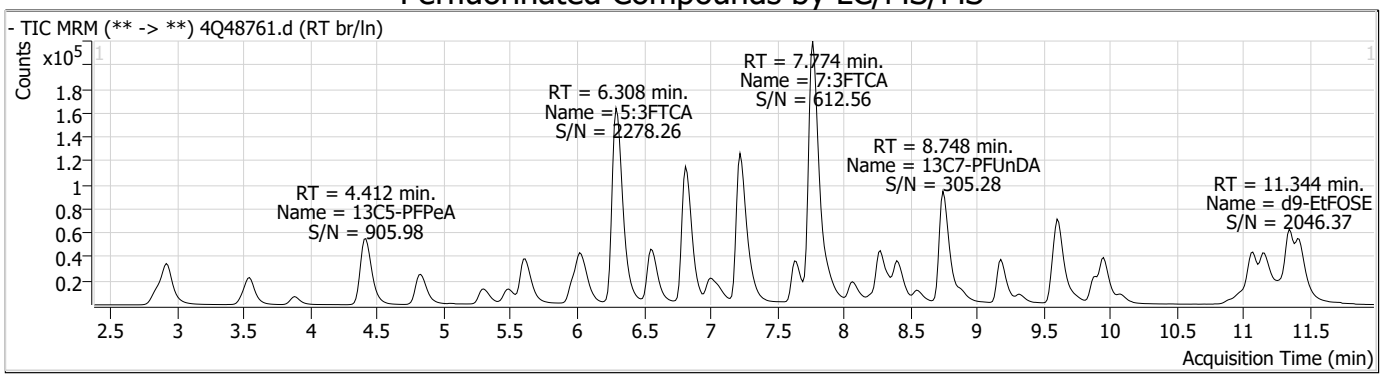
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	11557				
PFHpA	6.568	363.1 -> 319.0	162146	13.38	µg/L		100
		363.1 -> 169.0	29516				
PFHpS	7.901	449.0 -> 79.9	31913	11.77	µg/L		96
		449.0 -> 98.9	17002				
PFHxA	5.613	313.0 -> 269.0	139575	12.84	µg/L		99
		313.0 -> 118.9	4301				
PFHxS	7.318	398.7 -> 79.9	21812	11.34	µg/L	m	96
		398.7 -> 98.9	10926				
PFNA	7.647	463.0 -> 419.0	289393	26.73	µg/L	m	95
		463.0 -> 219.0	68986				
PFNS	8.899	548.8 -> 79.9	21678	12.37	µg/L		98
		548.8 -> 98.9	11576				
PFOA	7.240	413.0 -> 369.0	519882	29.44	µg/L	m	99
		413.0 -> 169.0	101762				
PFOS	8.419	498.9 -> 79.9	38054	11.92	µg/L	m	79
		498.9 -> 98.8	18046				
PFPeA	4.414	263.0 -> 219.0	277683	26.46	µg/L		100
PFPeS	6.582	349.1 -> 79.9	21108	11.66	µg/L		97
		349.1 -> 98.9	9045				
PFTeDA	9.962	713.1 -> 669.0	133792	12.68	µg/L		99
		713.1 -> 168.9	12813				
PFTrDA	9.591	663.0 -> 619.0	167952	13.60	µg/L		98
		663.0 -> 168.9	20144				
PFUnDA	8.748	563.1 -> 519.0	141488	12.70	µg/L		100
		563.1 -> 269.1	28862				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	188140	27.76	µg/L		99
		632.9 -> 452.9	56722				
9Cl-PF3ONS	8.763	530.8 -> 351.0	256447	26.89	µg/L		99
		532.8 -> 353.0	78004				
ADONA	6.831	376.9 -> 250.9	495961	26.44	µg/L		99
		376.9 -> 84.8	126864				
HFPO-DA	5.990	284.9 -> 168.9	69028	25.95	µg/L		97
		284.9 -> 184.9	8119				
3:3FTCA	3.880	241.0 -> 177.0	34491	61.11	µg/L		99
		241.0 -> 117.0	3242				
5:3FTCA	6.308	341.0 -> 237.1	564584	317.35	µg/L		99
		341.0 -> 217.0	395407				
7:3FTCA	7.774	441.0 -> 316.9	312013	318.27	µg/L		97
		441.0 -> 336.9	731099				
EtFOSA	11.437	526.0 -> 219.0	141909	43.55	µg/L		98
		526.0 -> 169.0	195288				
EtFOSE	11.357	630.0 -> 58.9	220717	86.90	µg/L		100
MeFOSA	11.166	511.9 -> 219.0	116864	41.77	µg/L	m	75
		511.9 -> 169.0	168401				
MeFOSE	11.085	616.1 -> 58.9	175890	85.77	µg/L	m	100
PFDoDS	10.089	699.1 -> 79.9	17824	12.50	µg/L		95
		699.1 -> 98.8	9790				
NFDHA	5.491	295.0 -> 201.0	18143	25.90	µg/L		96
		295.0 -> 84.9	4876				
PFMBA	4.828	279.0 -> 85.1	152727	25.97	µg/L		100
PFMPA	3.540	229.0 -> 84.9	147163	25.65	µg/L		100
PFEESA	6.034	314.8 -> 134.9	196770	22.47	µg/L		100
		314.8 -> 82.9	6668				

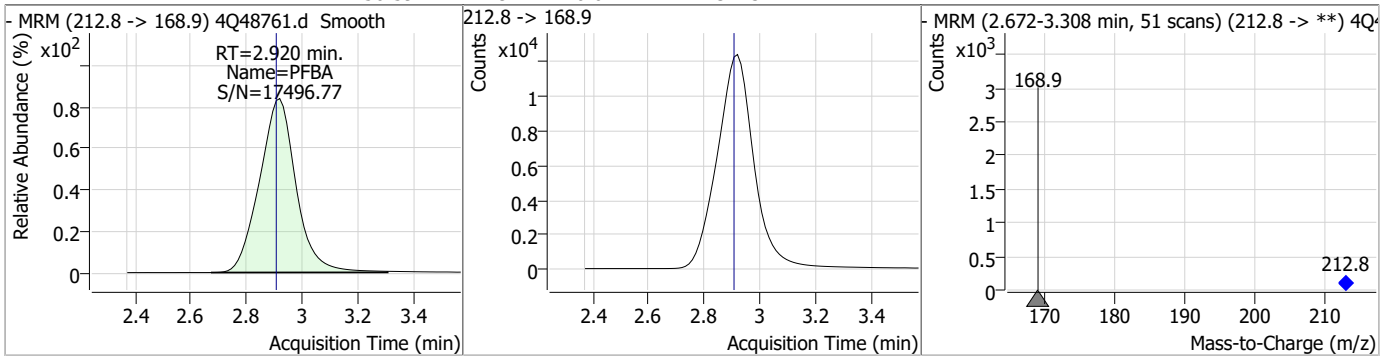
 # = Qualifier out of range, m = manually integrated, + = Area summed

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

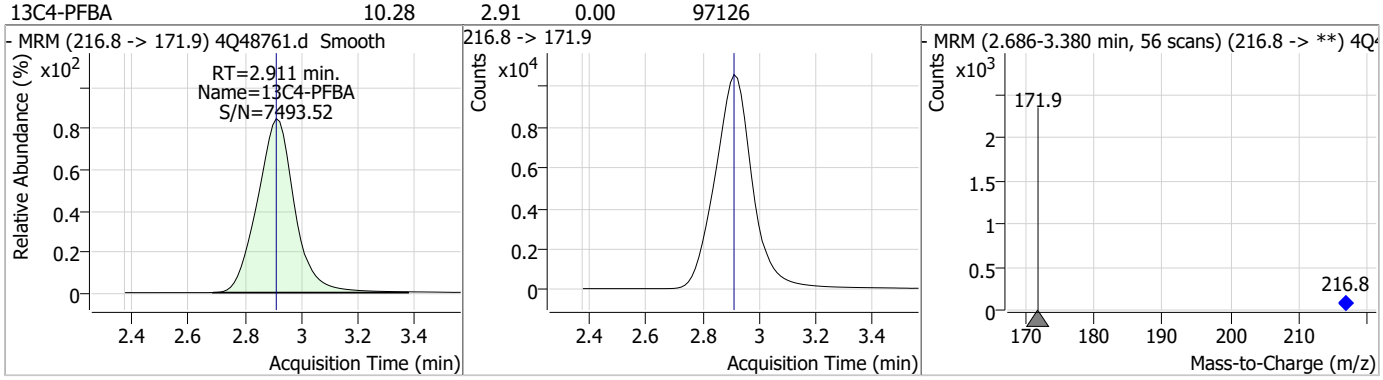
Perfluorinated Compounds by LC/MS/MS



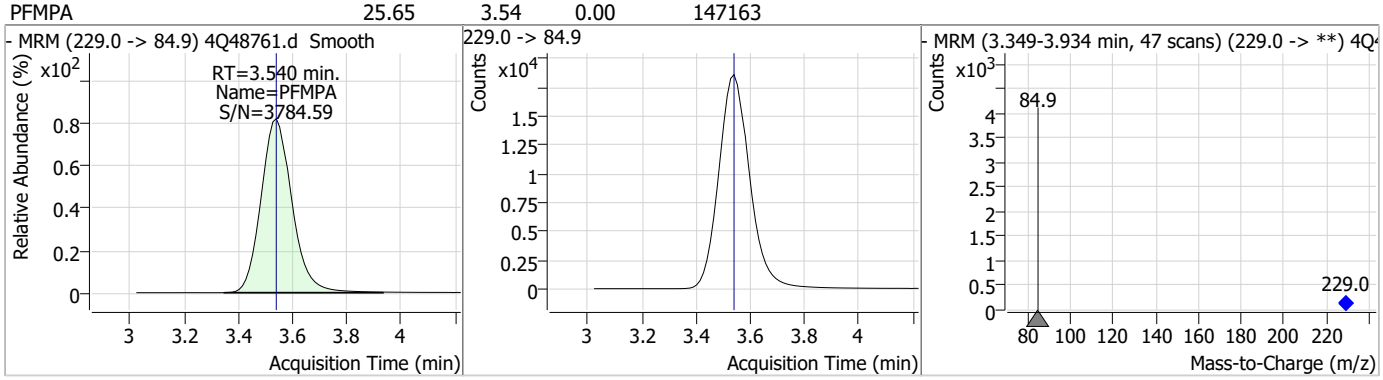
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.59	2.92	0.01	113143				



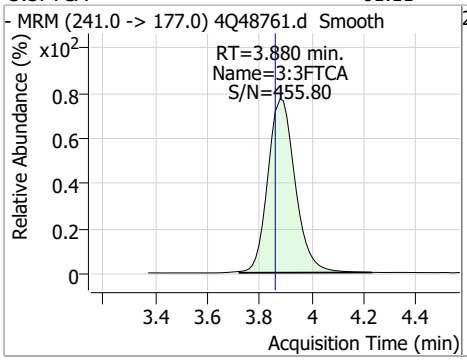
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.28	2.91	0.00	97126				

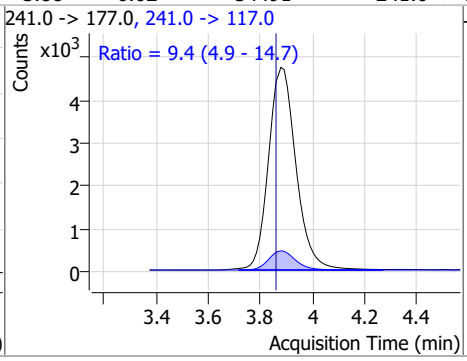


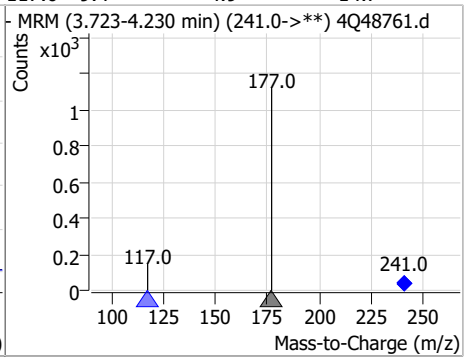
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	25.65	3.54	0.00	147163				



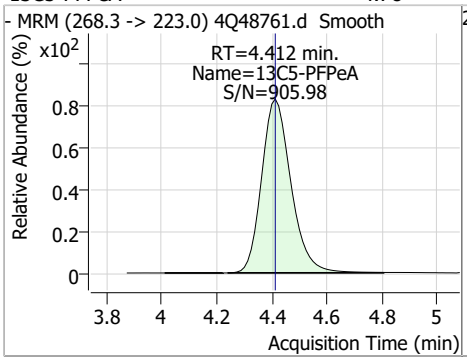
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	61.11	3.88	0.02	34491	241.0 -> 117.0	9.4	4.9	14.7

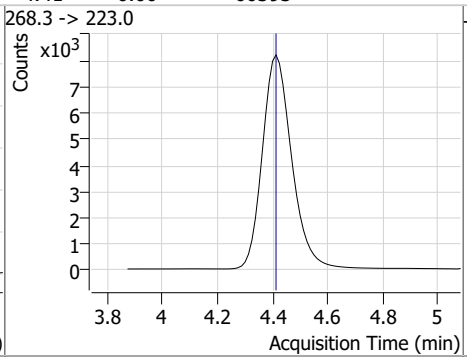


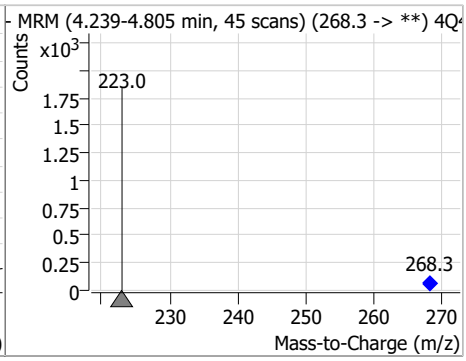




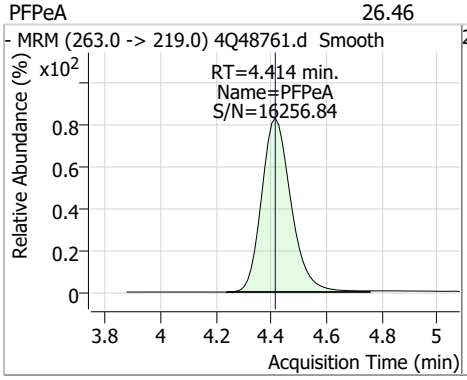
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.78	4.41	0.00	60393				

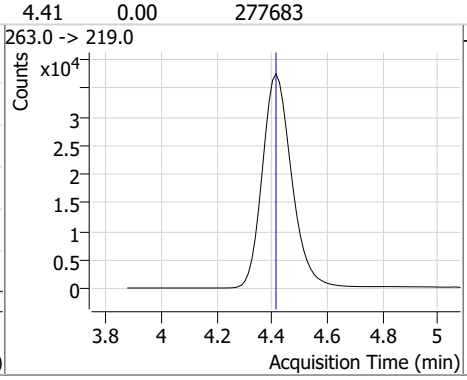


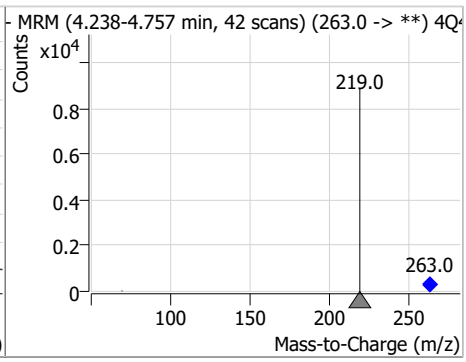




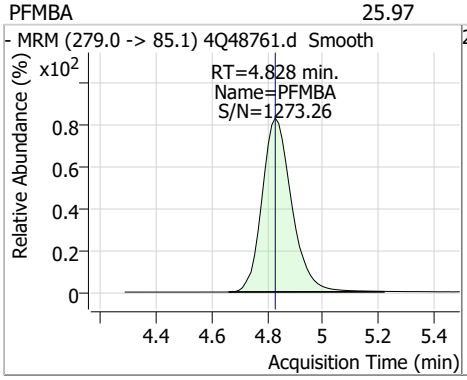
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.46	4.41	0.00	277683				

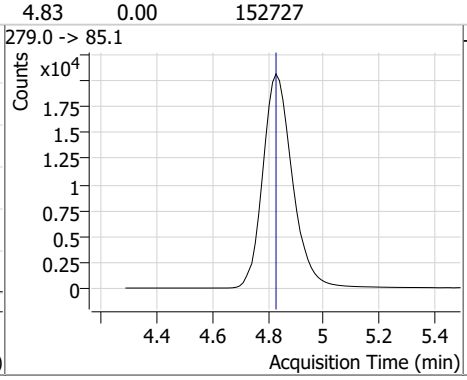


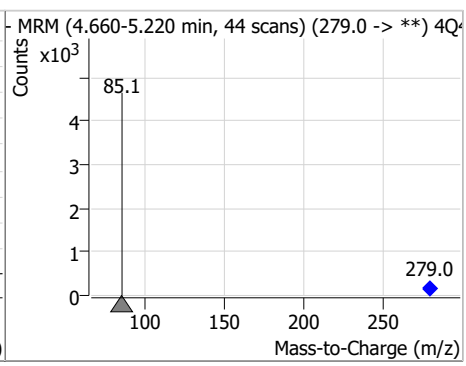




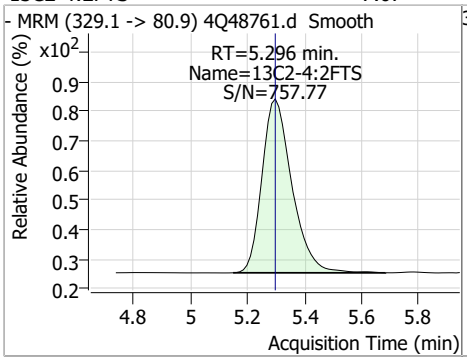
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.97	4.83	0.00	152727				

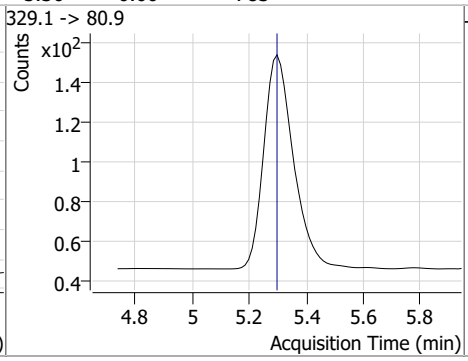


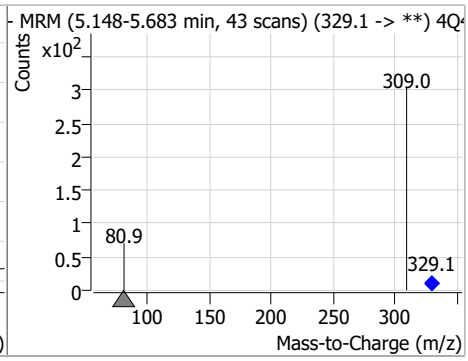




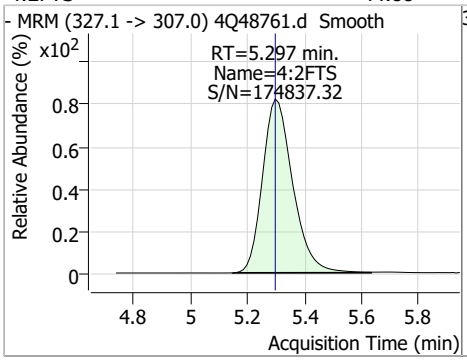
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.07	5.30	0.00	783				

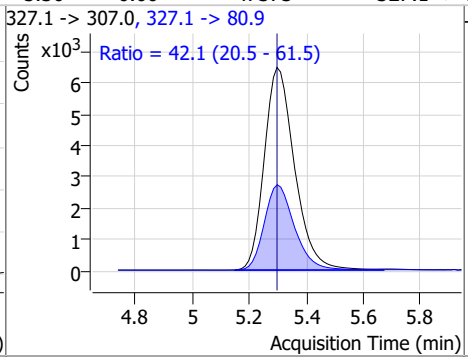


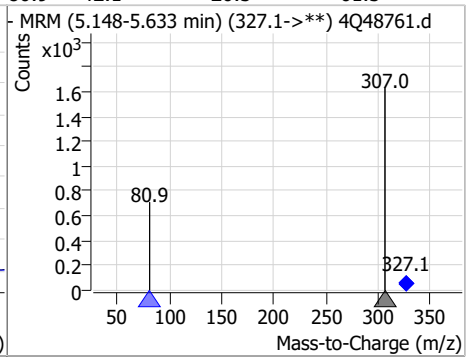




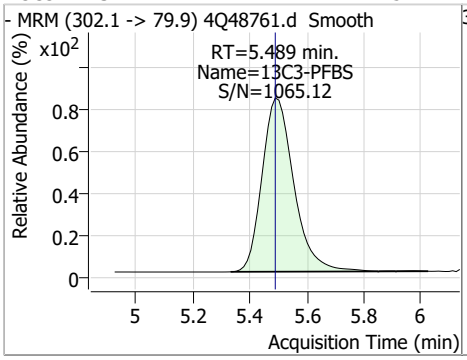
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	44.88	5.30	0.00	47373	327.1 -> 80.9	42.1	20.5	61.5

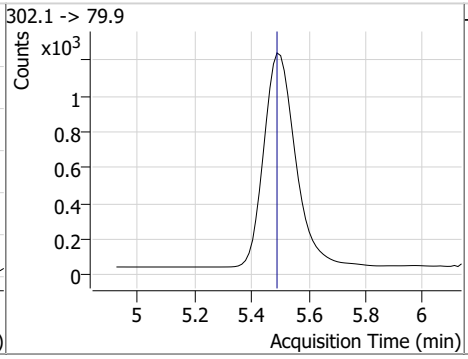


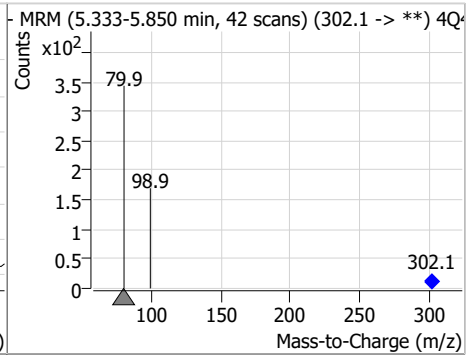




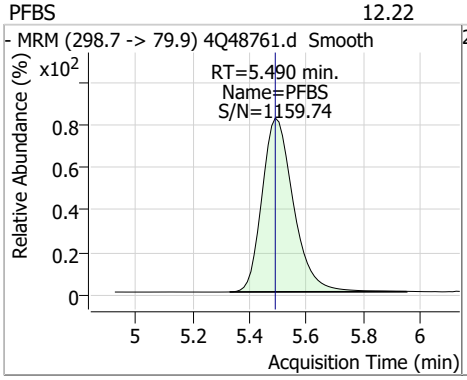
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.45	5.49	0.00	9238				

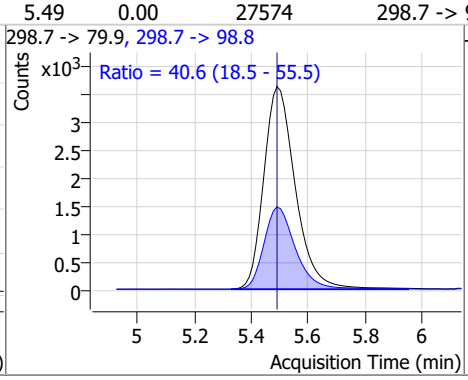


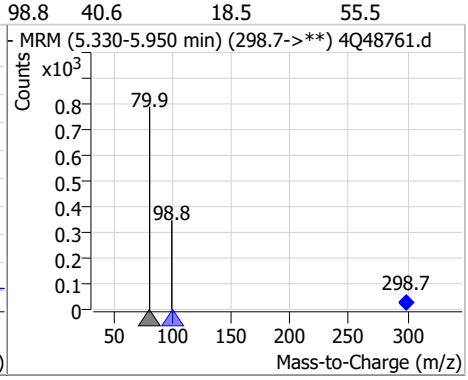




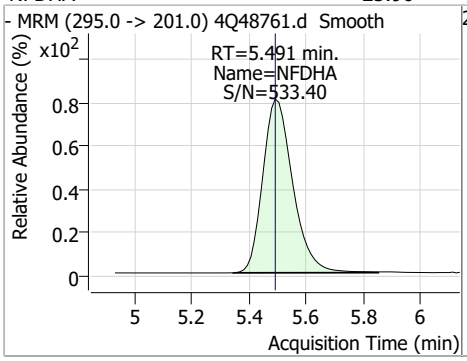
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	12.22	5.49	0.00	27574	298.7 -> 98.8	40.6	18.5	55.5

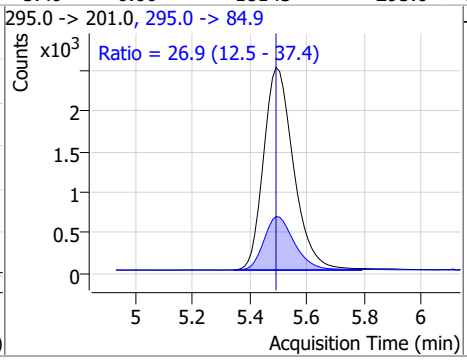


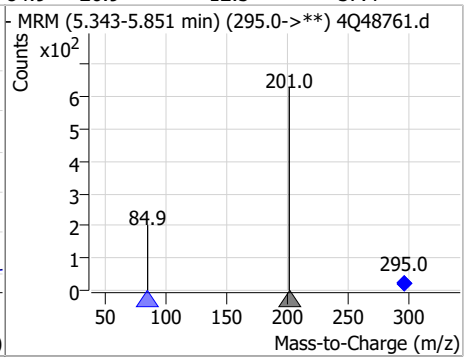




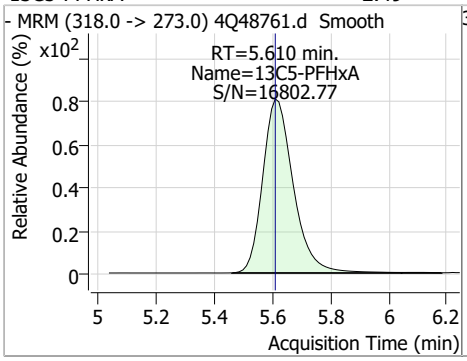
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	25.90	5.49	0.00	18143	295.0 -> 84.9	26.9	12.5	37.4

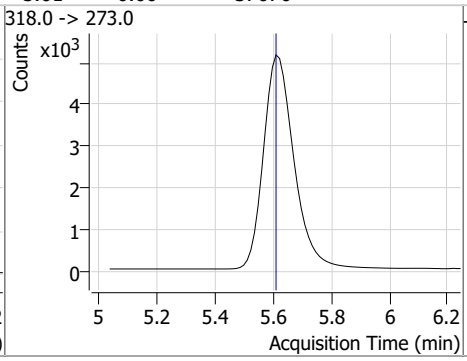


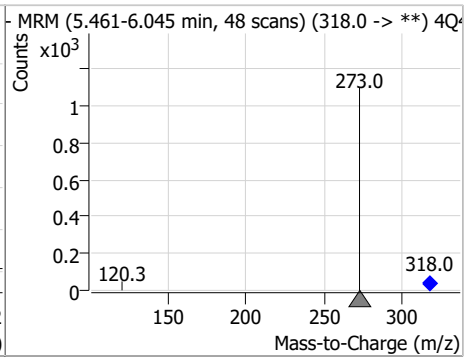




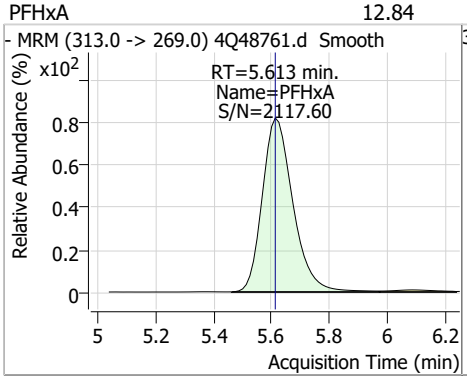
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.61	0.00	37670				

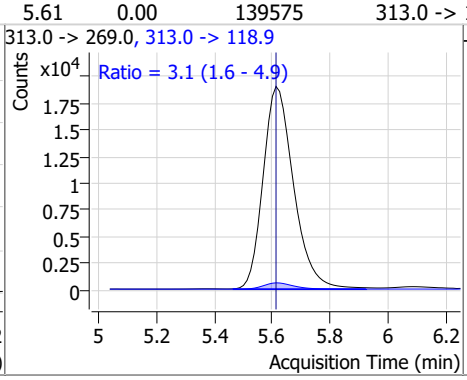


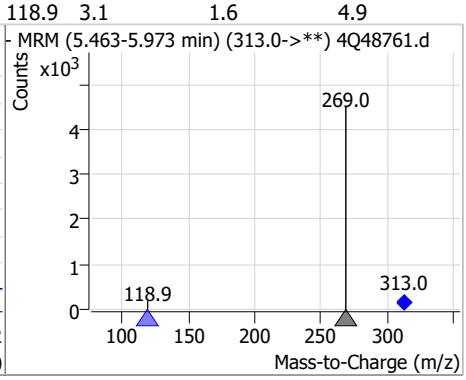




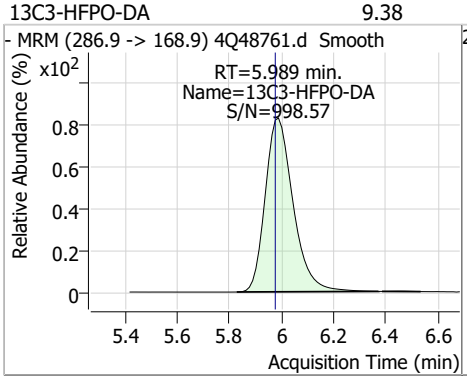
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.84	5.61	0.00	139575	313.0 -> 118.9	3.1	1.6	4.9

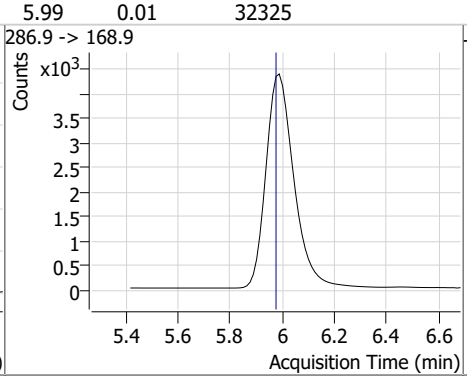


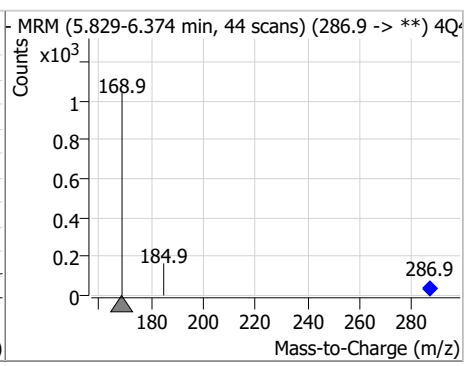




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.38	5.99	0.01	32325				

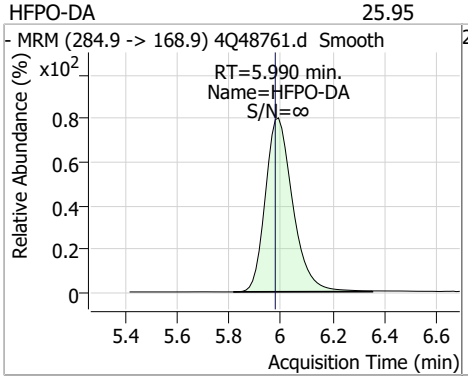


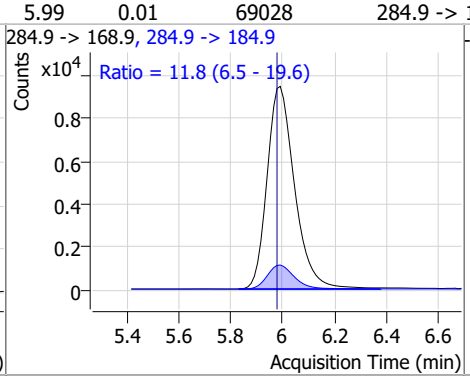


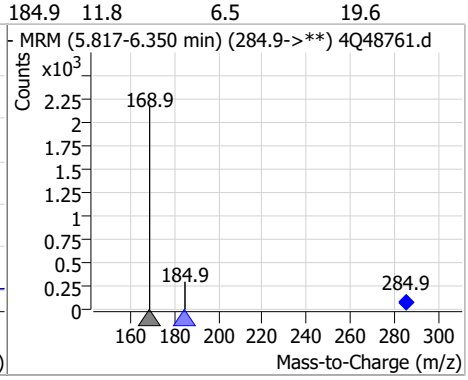


Perfluorinated Compounds by LC/MS/MS

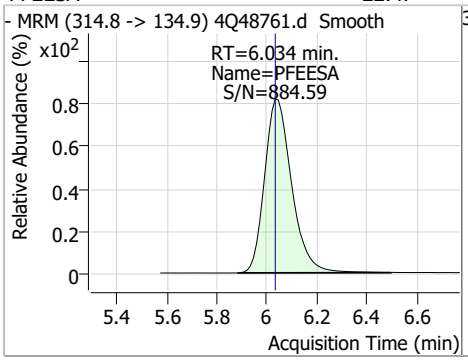
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.95	5.99	0.01	69028	284.9 -> 184.9	11.8	6.5	19.6

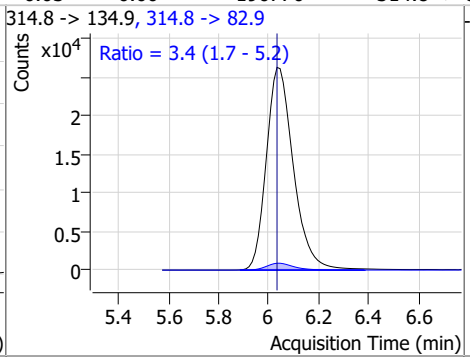


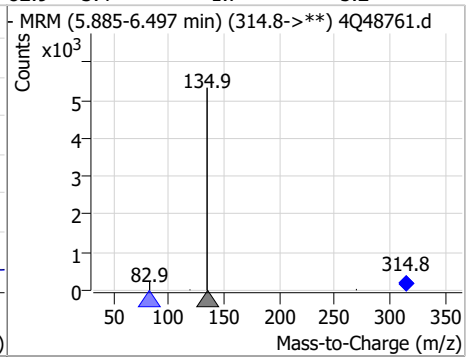




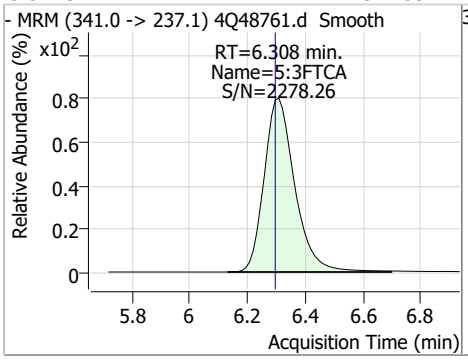
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.47	6.03	0.00	196770	314.8 -> 82.9	3.4	1.7	5.2

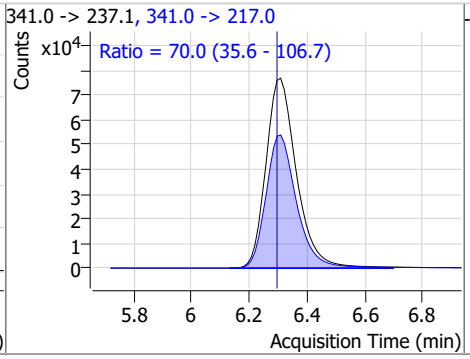


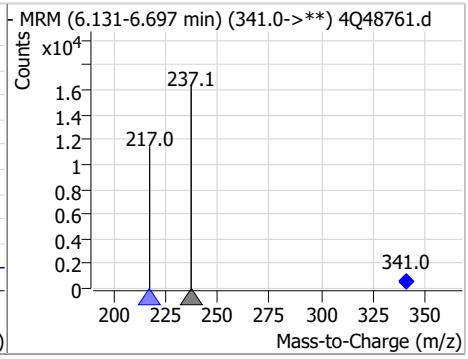




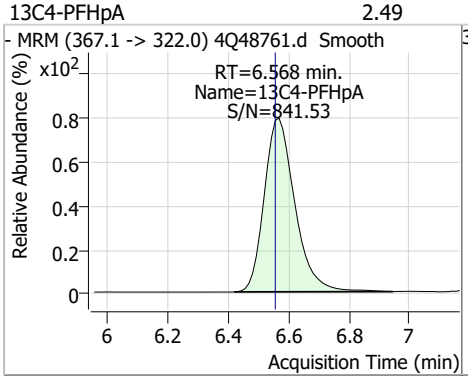
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	317.35	6.31	0.01	564584	341.0 -> 217.0	70.0	35.6	106.7

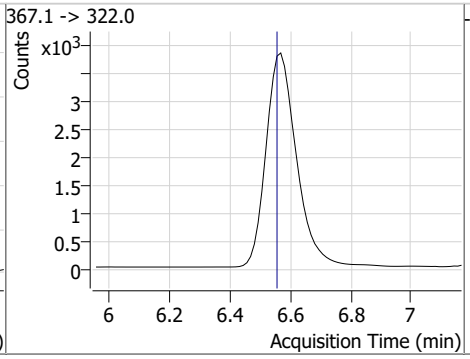


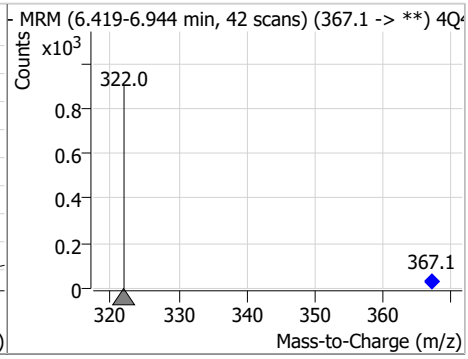




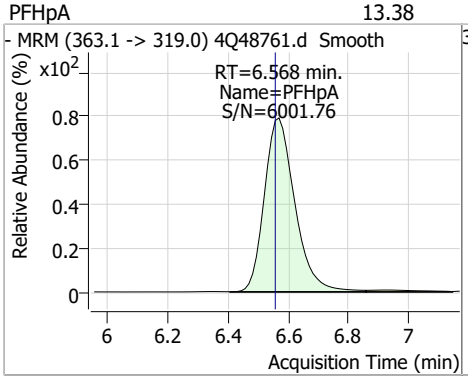
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.57	0.01	26855				

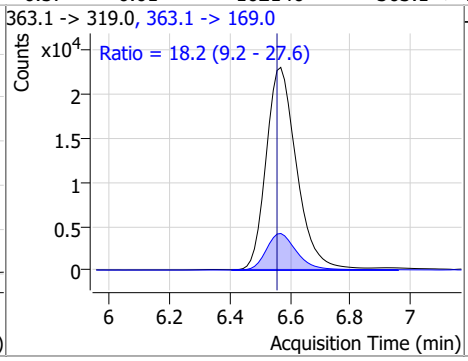


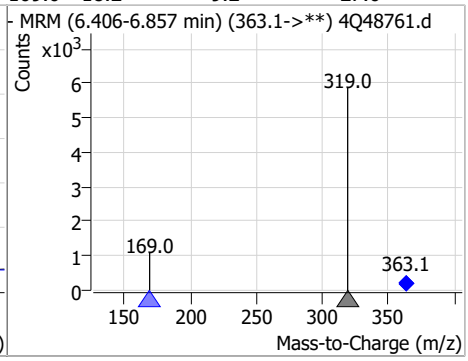




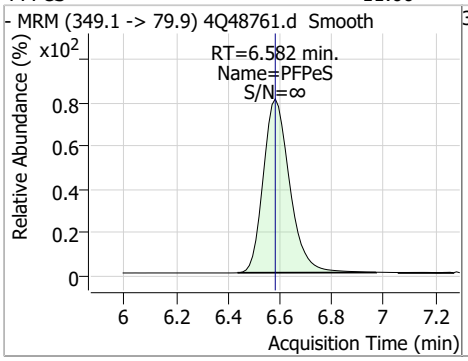
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.38	6.57	0.01	162146	363.1 -> 169.0	18.2	9.2	27.6

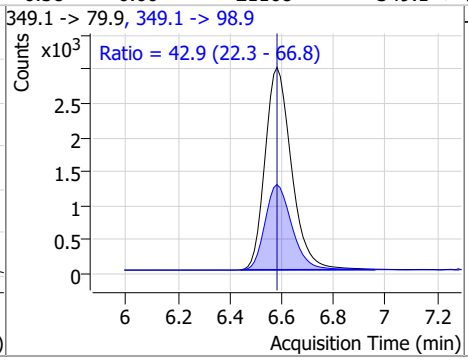


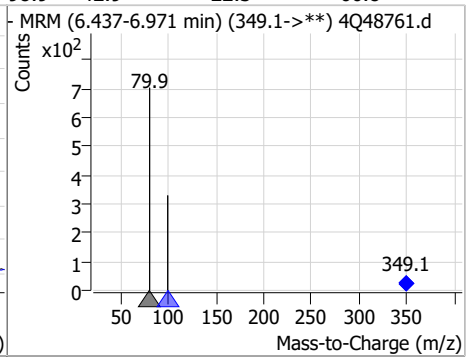




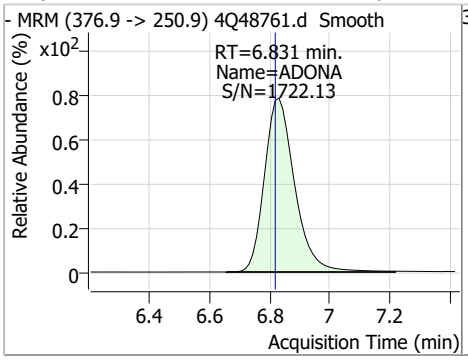
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	11.66	6.58	0.00	21108	349.1 -> 98.9	42.9	22.3	66.8

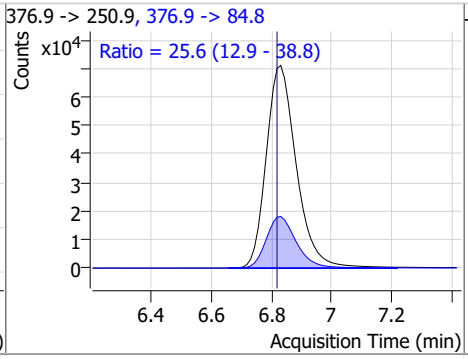


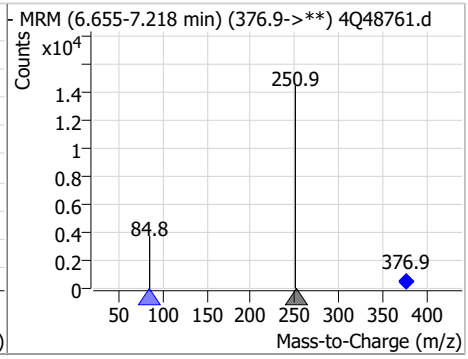




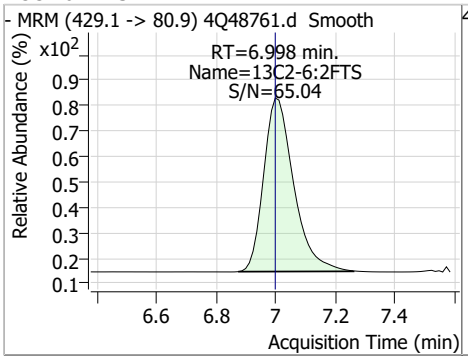
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	26.44	6.83	0.01	495961	376.9 -> 84.8	25.6	12.9	38.8

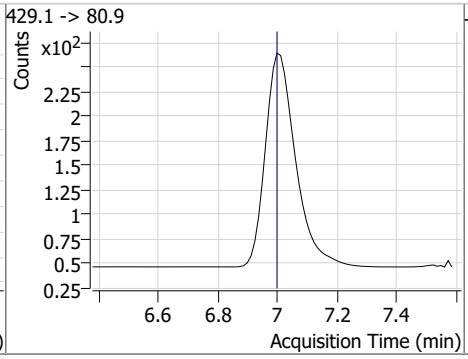


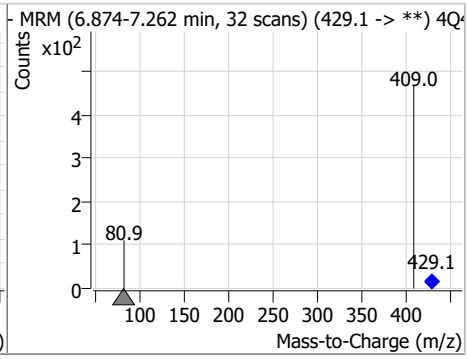




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.24	7.00	0.00	1532				

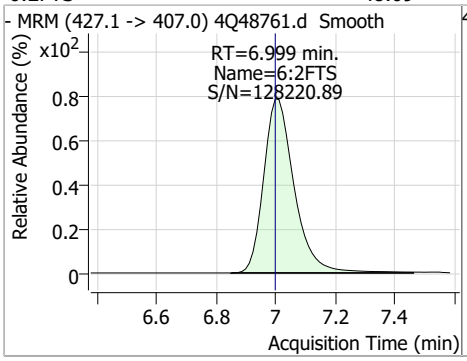


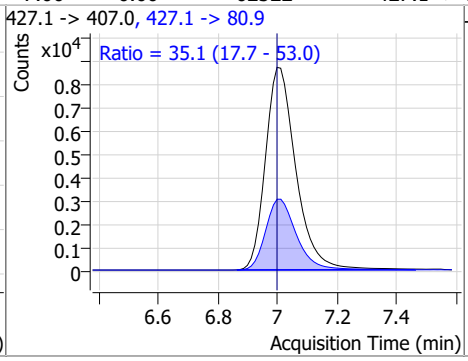


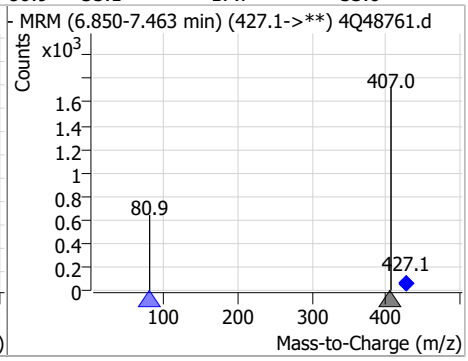


Perfluorinated Compounds by LC/MS/MS

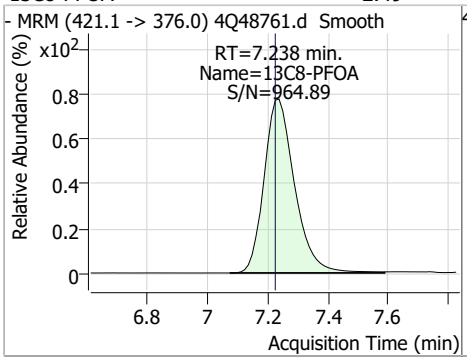
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.09	7.00	0.00	62522	427.1 -> 80.9	35.1	17.7	53.0

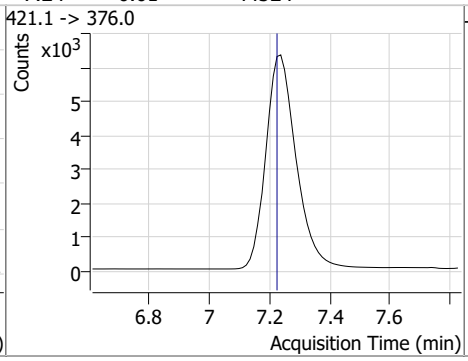


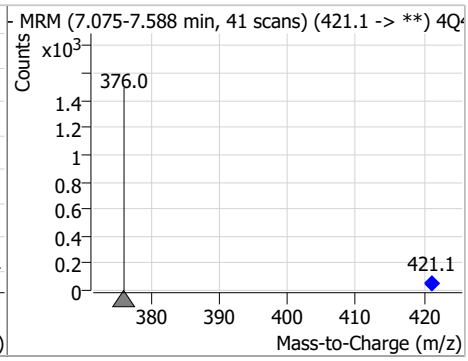




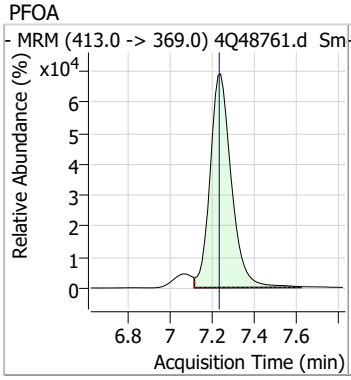
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.24	0.01	44524				

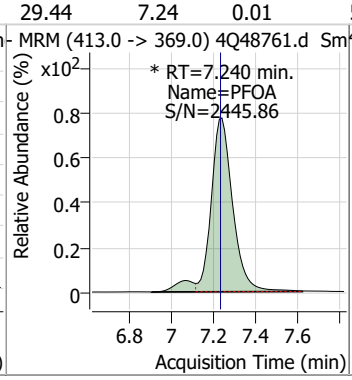


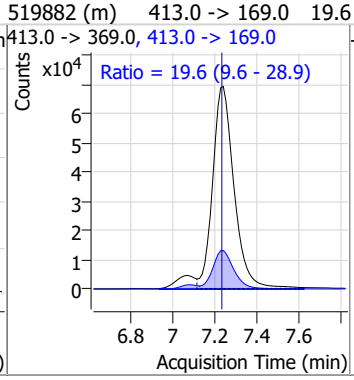


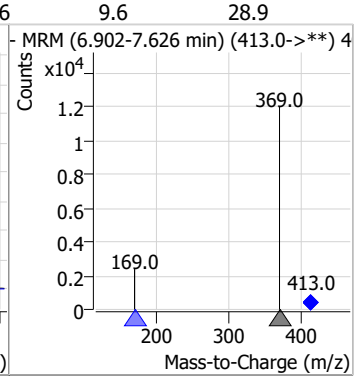


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	29.44	7.24	0.01	519882 (m)	413.0 -> 169.0	19.6	9.6	28.9

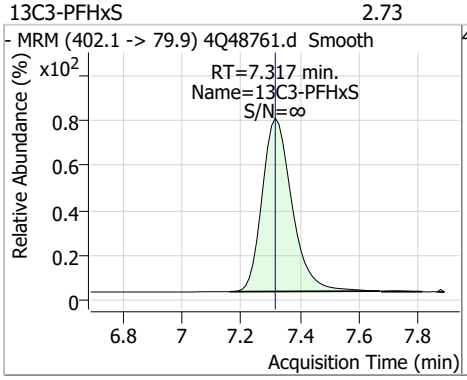


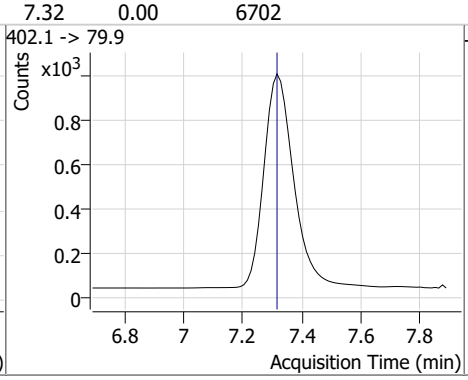


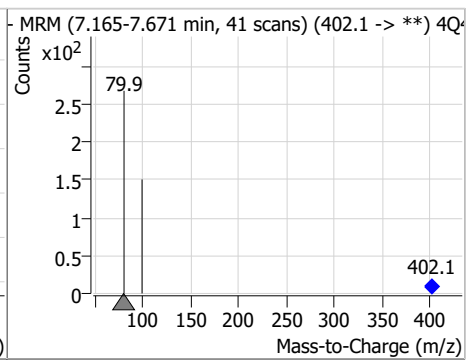




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.73	7.32	0.00	6702				

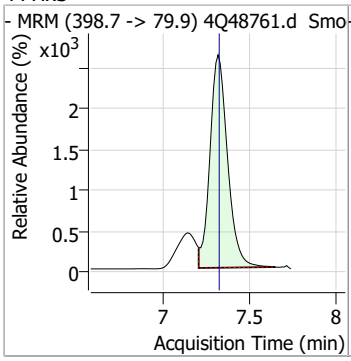


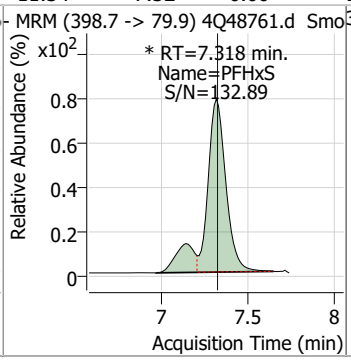


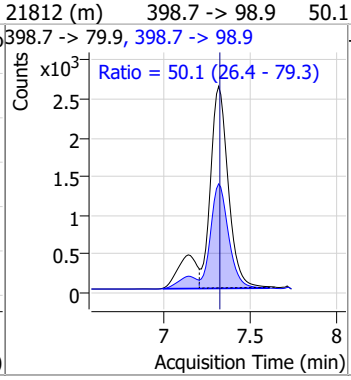


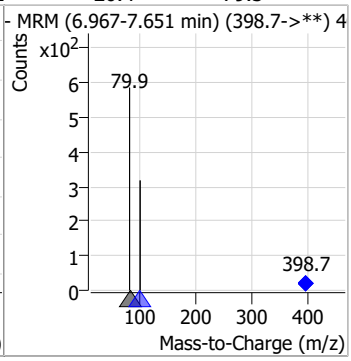
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.34	7.32	0.00	21812 (m)	398.7 -> 98.9	50.1	26.4	79.3

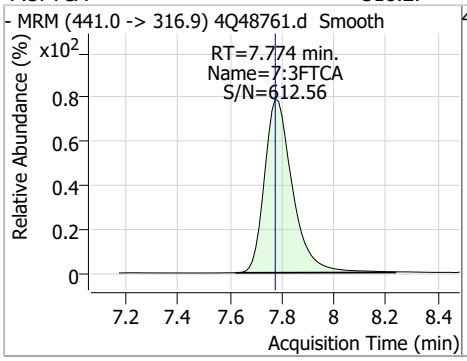


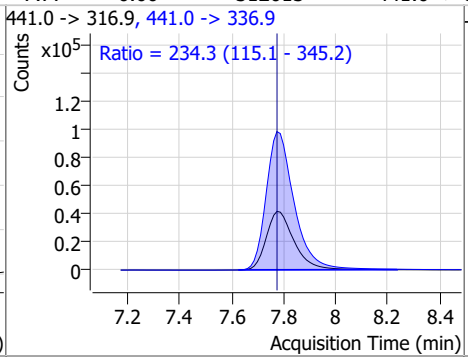


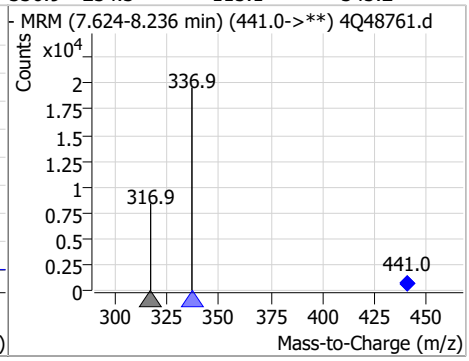




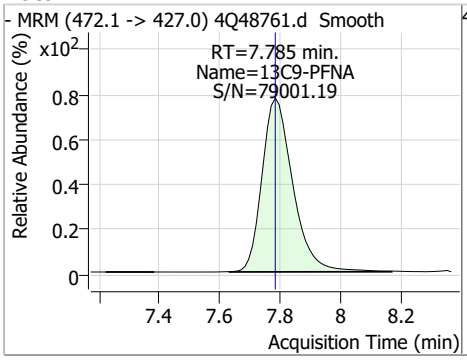
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	318.27	7.77	0.00	312013	441.0 -> 336.9	234.3	115.1	345.2

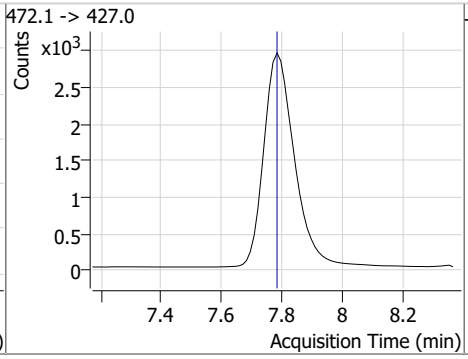


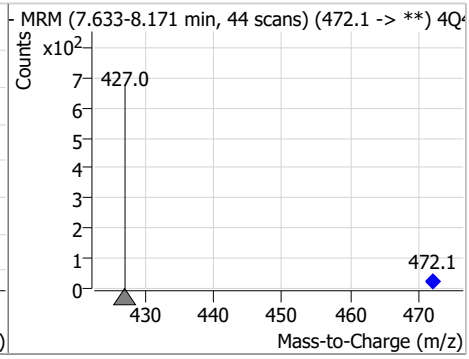




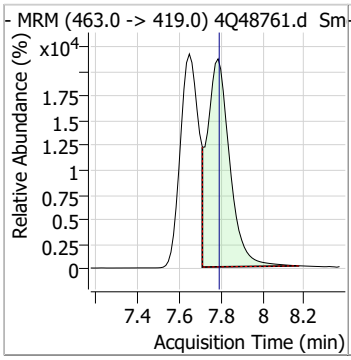
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.78	0.00	20803				

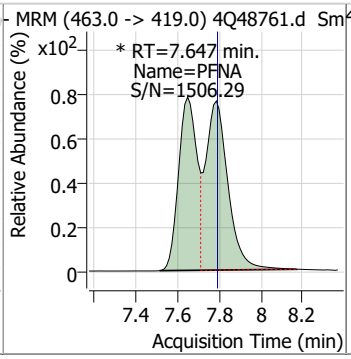


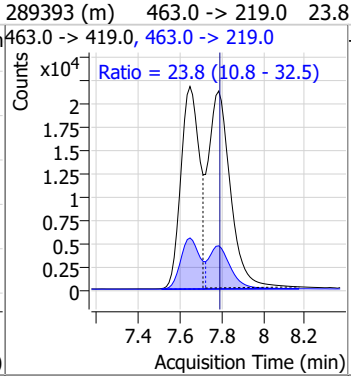


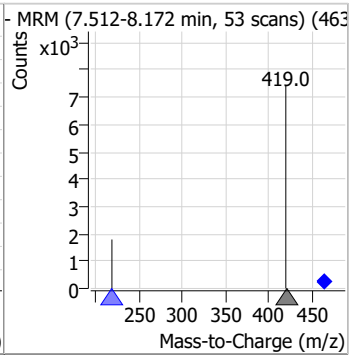


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	26.73	7.65	-0.14	289393 (m)	463.0 -> 219.0	23.8	10.8	32.5

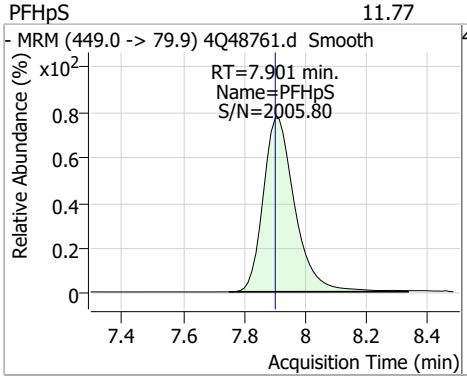


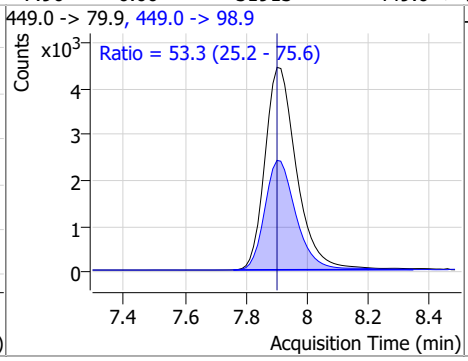


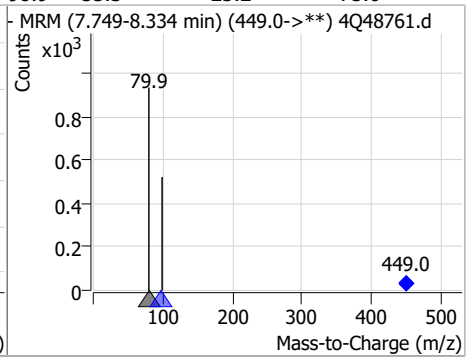




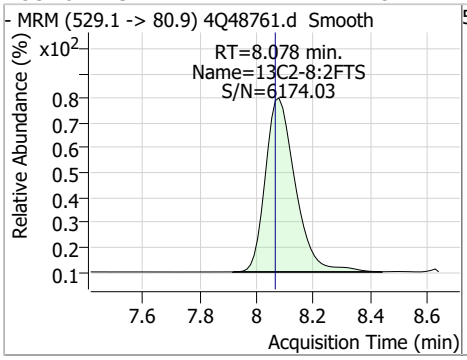
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.77	7.90	0.00	31913	449.0 -> 98.9	53.3	25.2	75.6

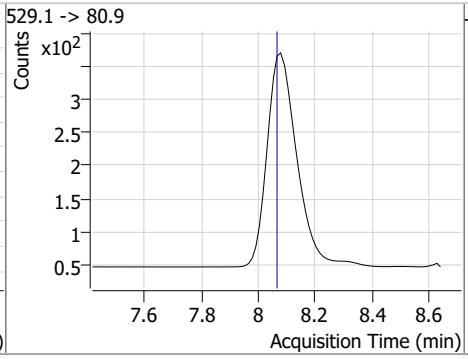


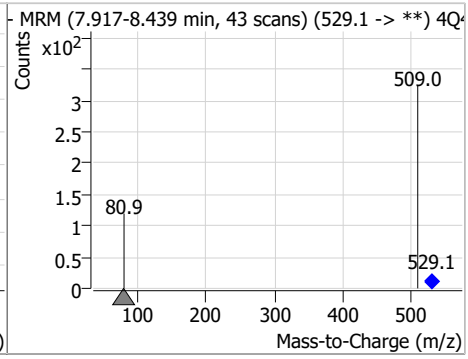




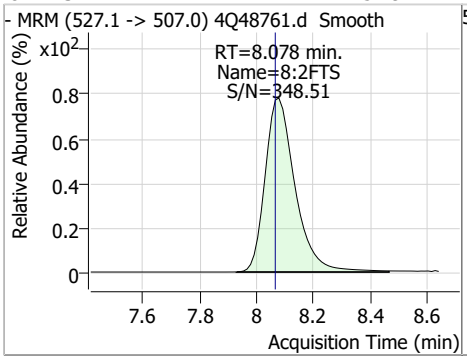
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.37	8.08	0.01	2369				

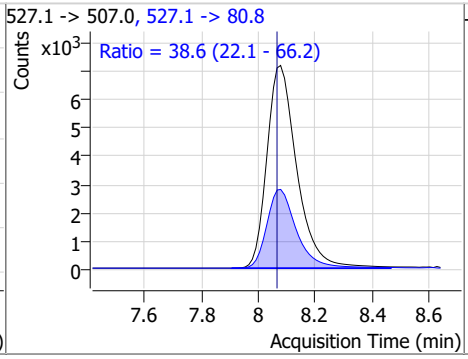


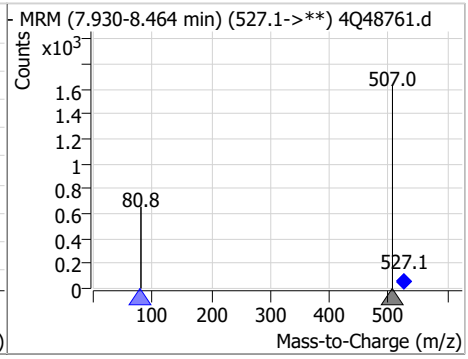




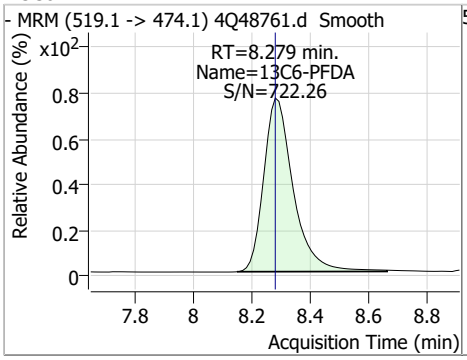
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	54.91	8.08	0.01	52220	527.1 -> 80.8	38.6	22.1	66.2

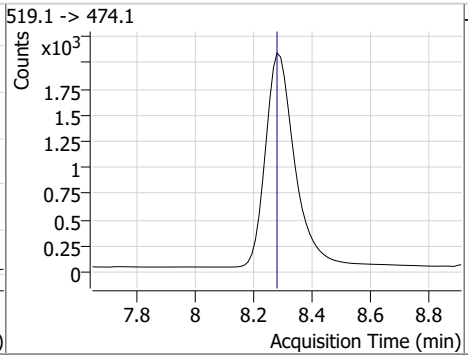


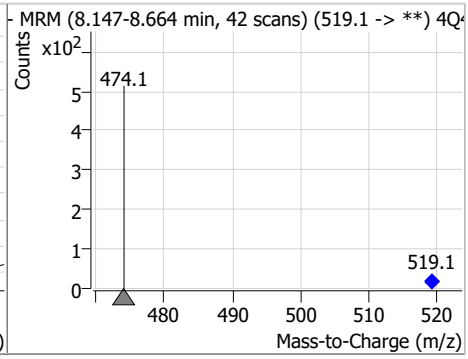




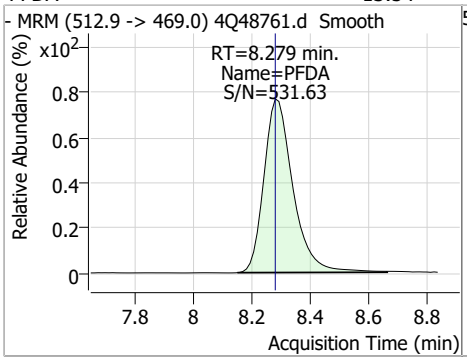
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.12	8.28	0.00	14435				

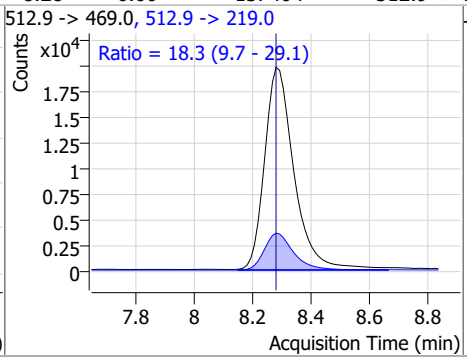


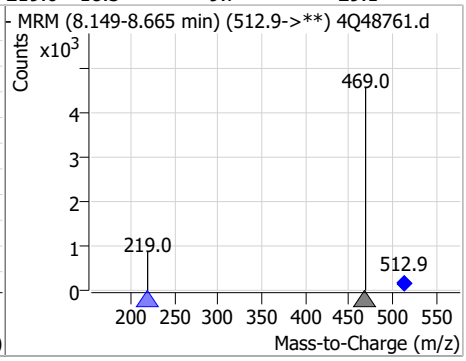




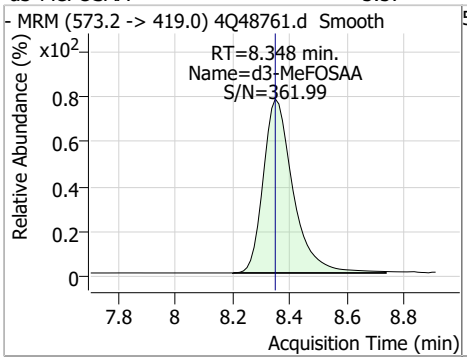
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	13.54	8.28	0.00	137404	512.9 -> 219.0	18.3	9.7	29.1

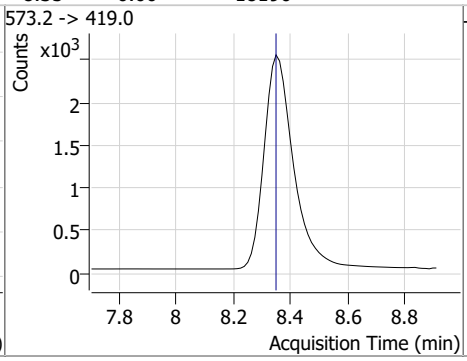


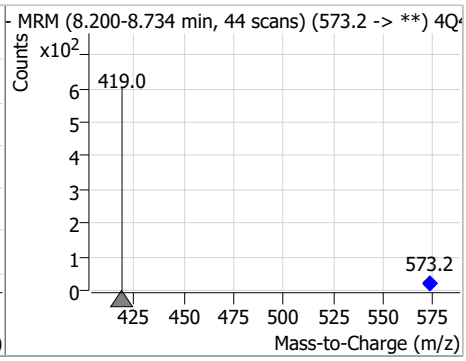




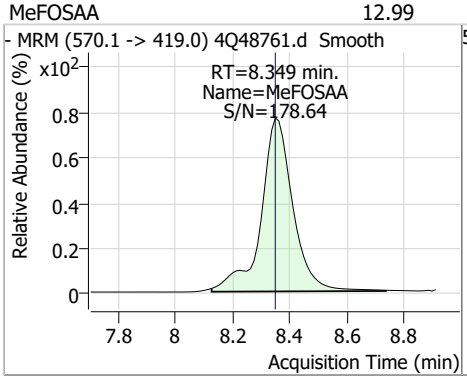
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.57	8.35	0.00	18190				

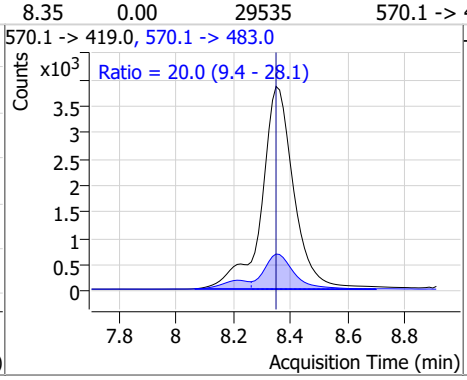


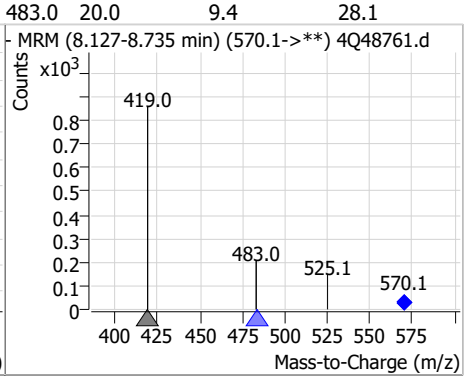




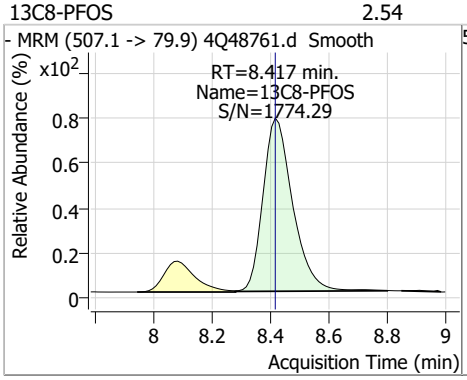
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	12.99	8.35	0.00	29535	570.1 -> 483.0	20.0	9.4	28.1

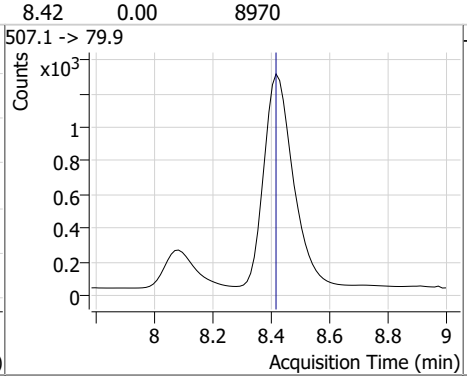


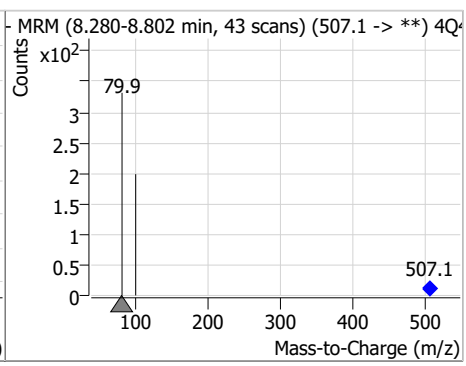




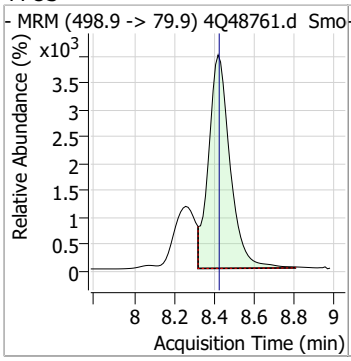
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.54	8.42	0.00	8970				

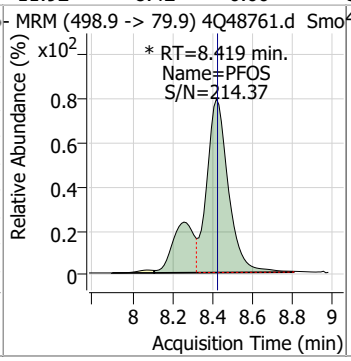


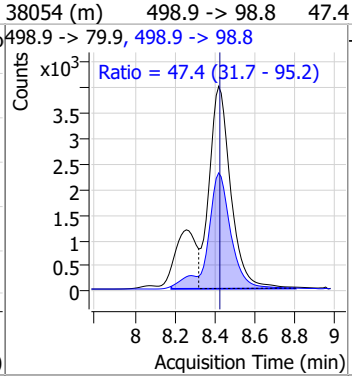


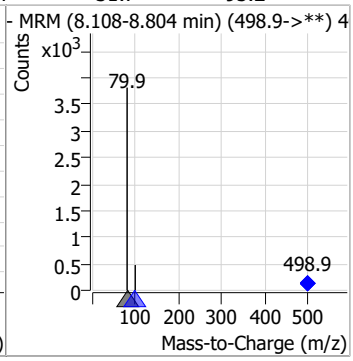


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.92	8.42	0.00	38054 (m)	498.9 -> 98.8	47.4	31.7	95.2

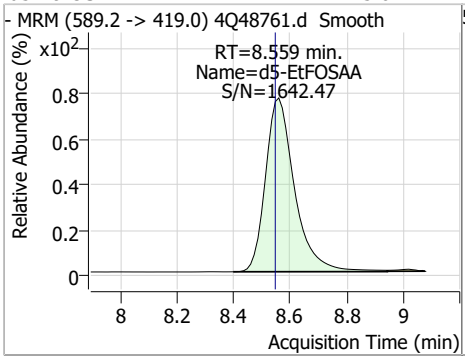


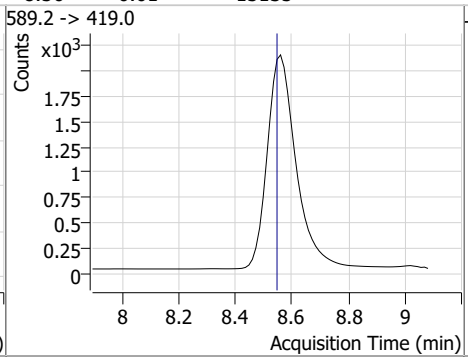


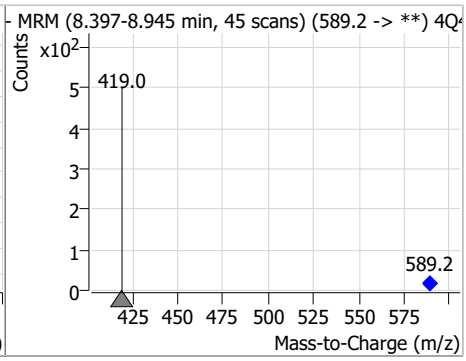




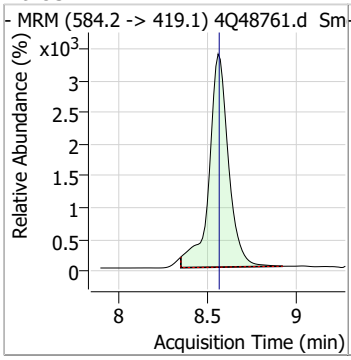
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.64	8.56	0.01	15135				

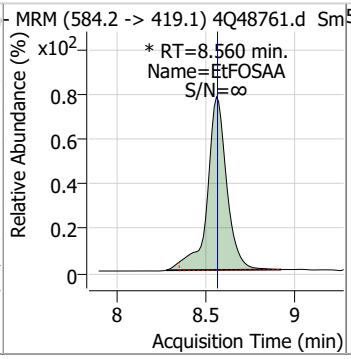


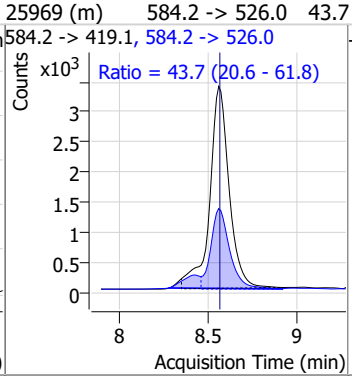


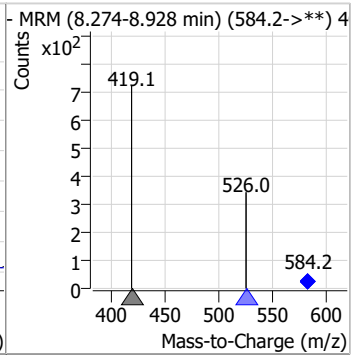


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.56	8.56	0.00	25969 (m)	584.2 -> 526.0	43.7	20.6	61.8

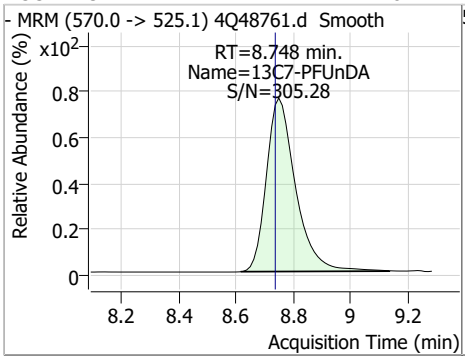


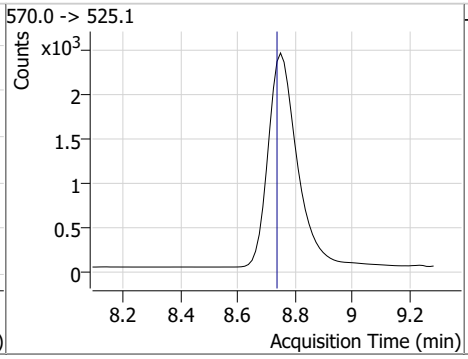


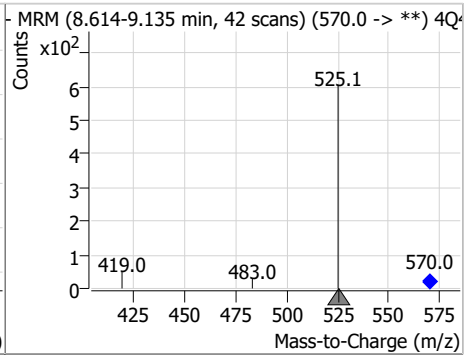




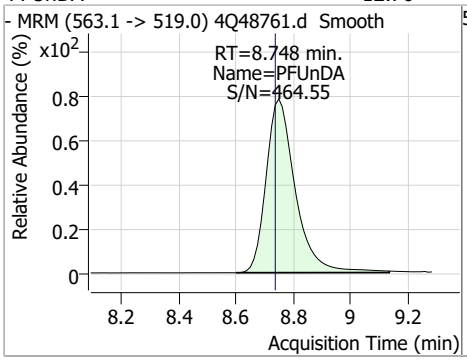
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.18	8.75	0.01	17108				

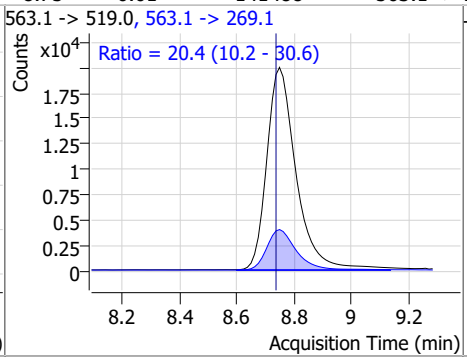


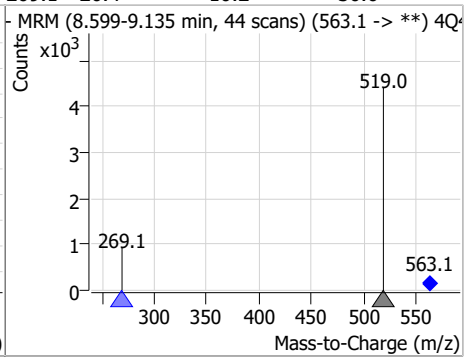




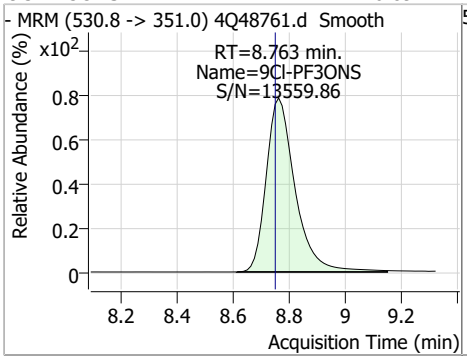
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.70	8.75	0.01	141488	563.1 -> 269.1	20.4	10.2	30.6

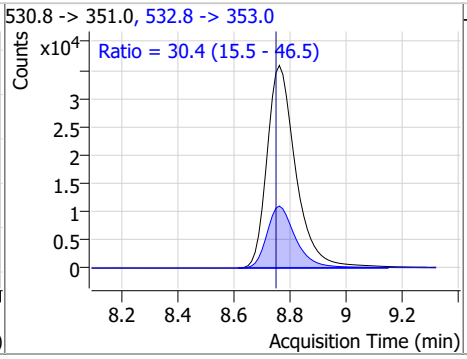


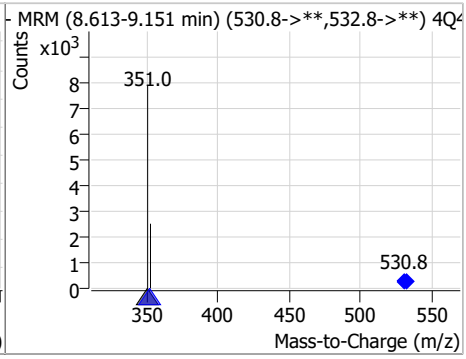




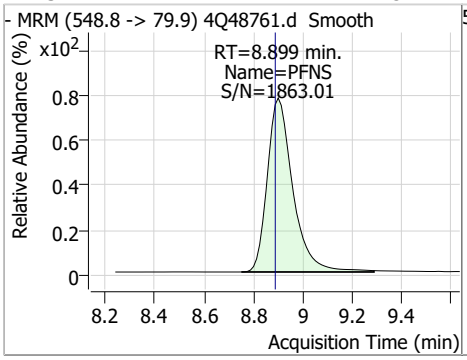
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	26.89	8.76	0.01	256447	532.8 -> 353.0	30.4	15.5	46.5

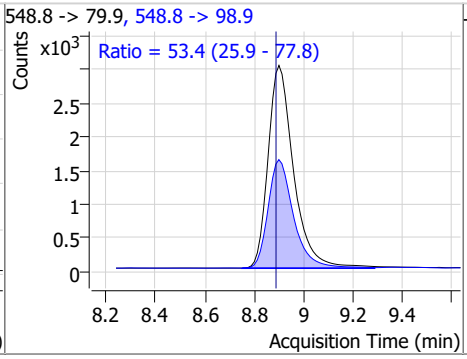


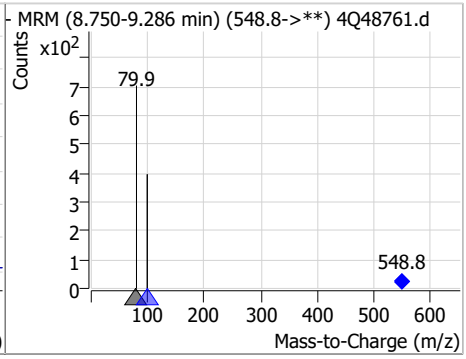




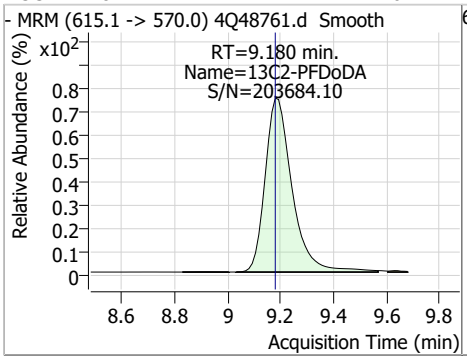
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.37	8.90	0.01	21678	548.8 -> 98.9	53.4	25.9	77.8

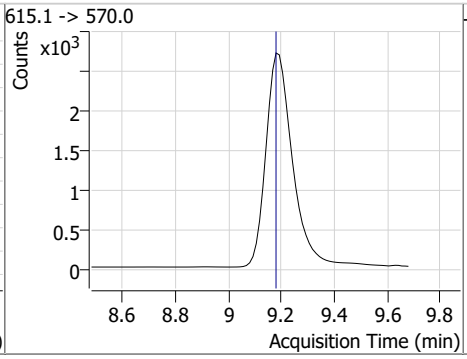


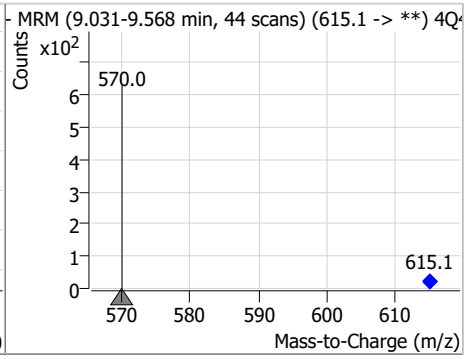




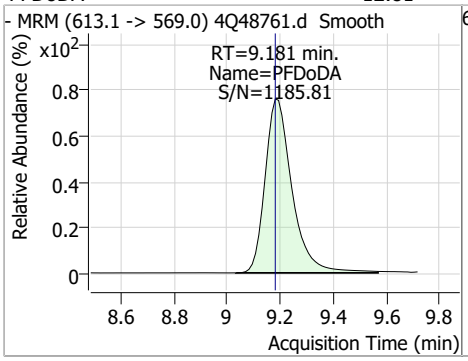
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.18	0.00	19098				

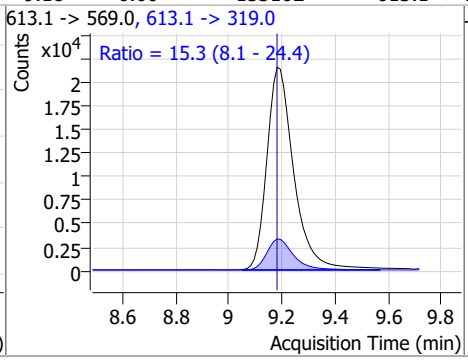


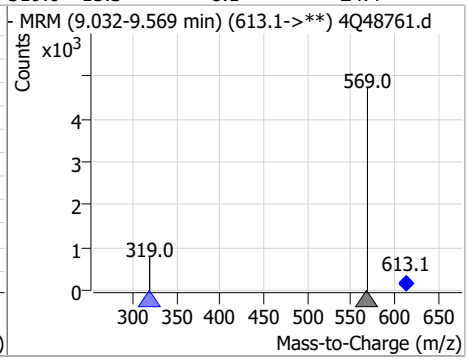




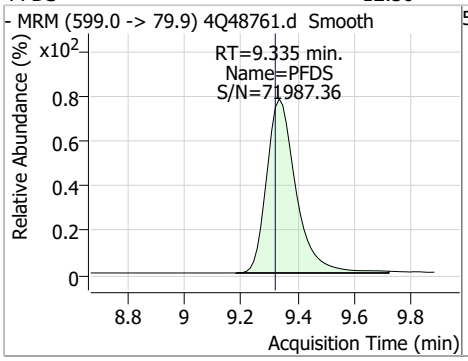
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	12.81	9.18	0.00	153102	613.1 -> 319.0	15.3	8.1	24.4

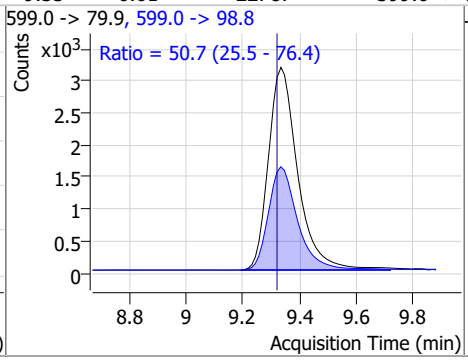


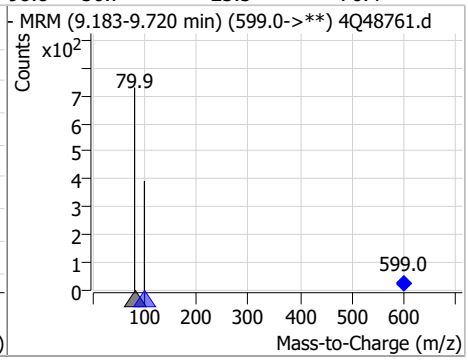




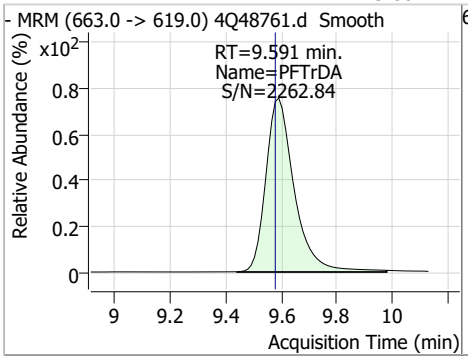
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.30	9.33	0.01	22787	599.0 -> 98.8	50.7	25.5	76.4

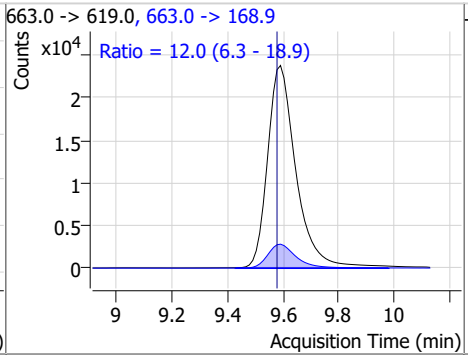


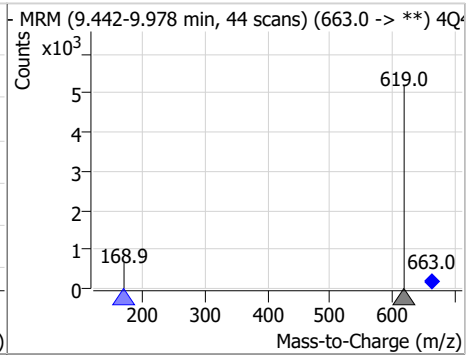




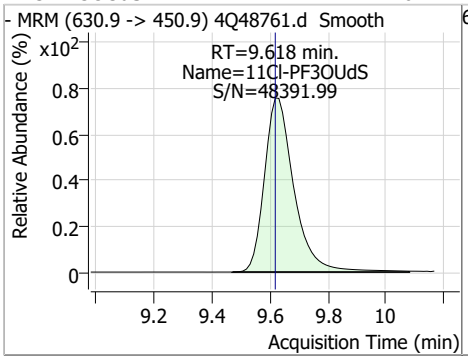
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.60	9.59	0.01	167952	663.0 -> 168.9	12.0	6.3	18.9

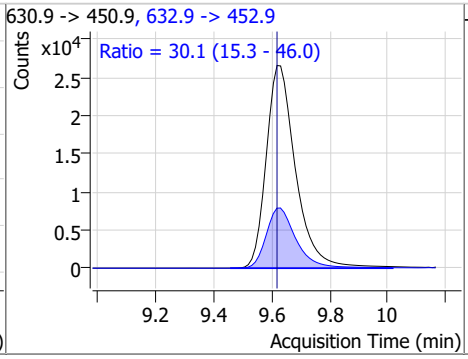


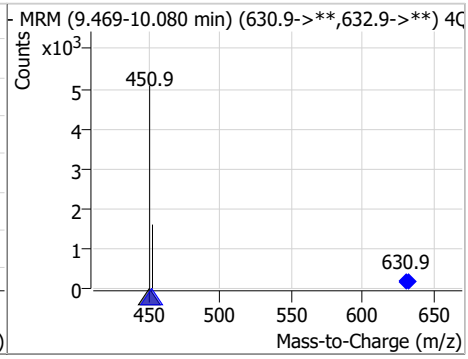




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	27.76	9.62	0.00	188140	632.9 -> 452.9	30.1	15.3	46.0

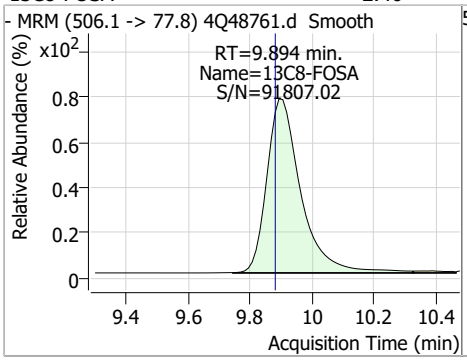


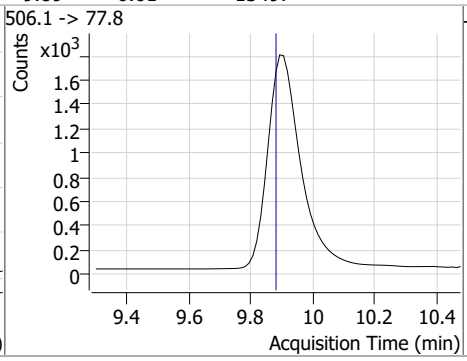


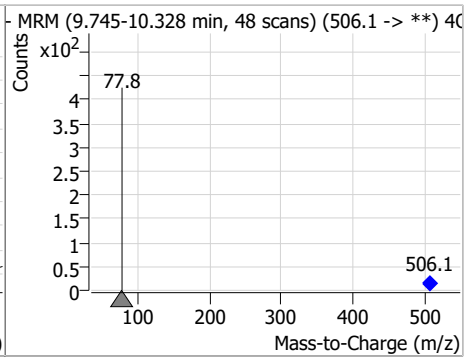


Perfluorinated Compounds by LC/MS/MS

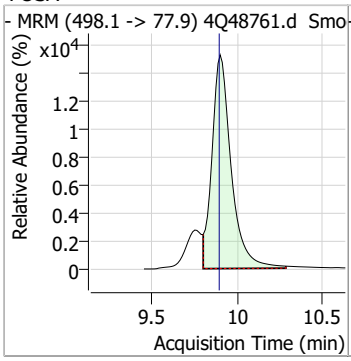
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.46	9.89	0.01	13497				

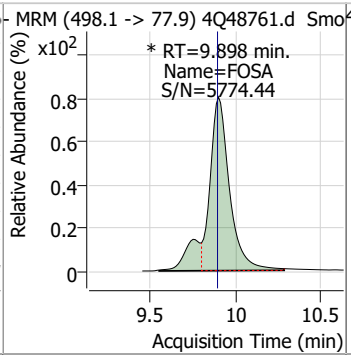


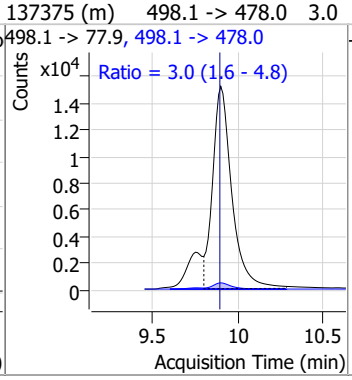


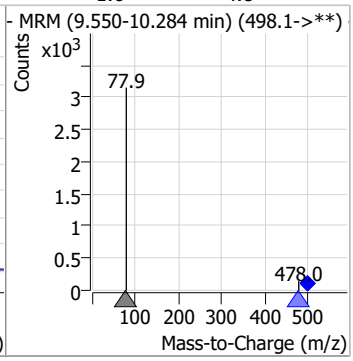


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	31.45	9.90	0.01	137375 (m)	498.1 -> 478.0	3.0	1.6	4.8

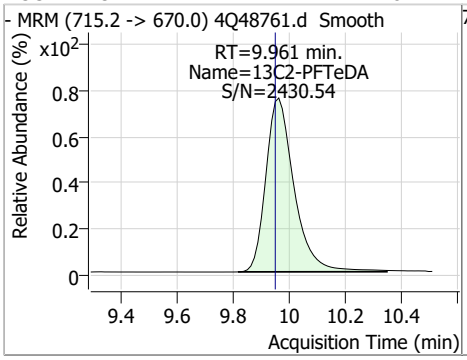


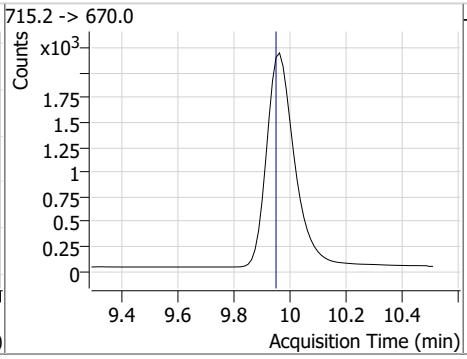


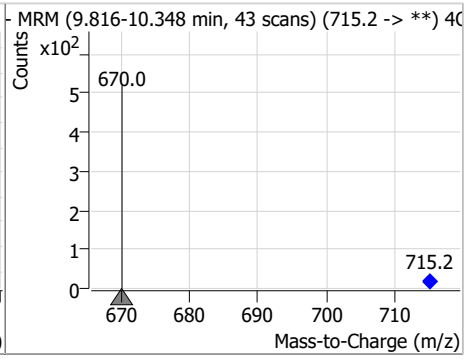




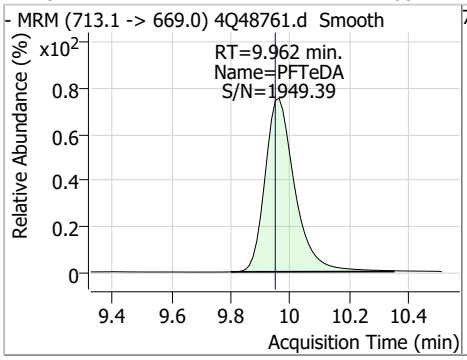
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.96	0.01	15066				

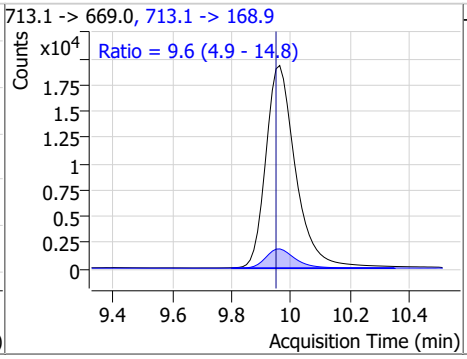


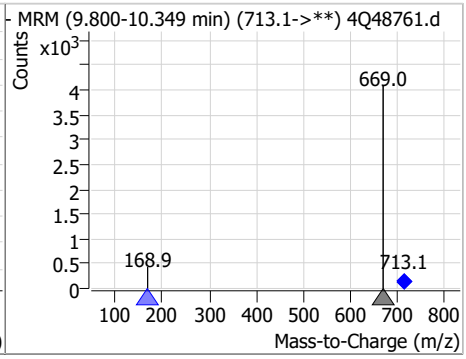




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.68	9.96	0.01	133792	713.1 -> 168.9	9.6	4.9	14.8

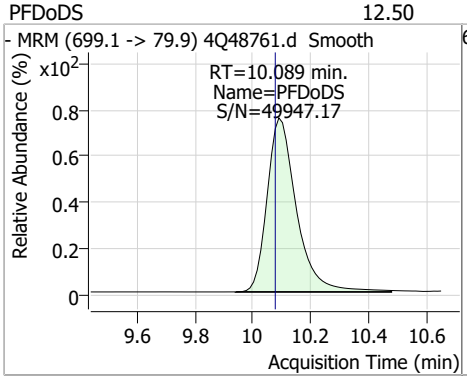


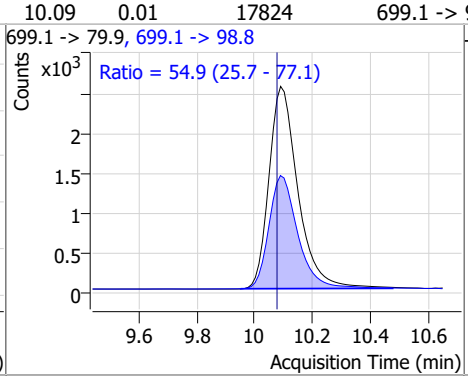


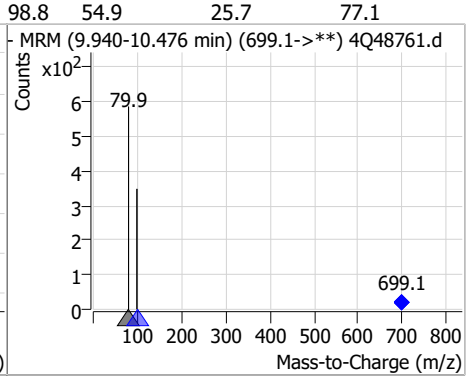


Perfluorinated Compounds by LC/MS/MS

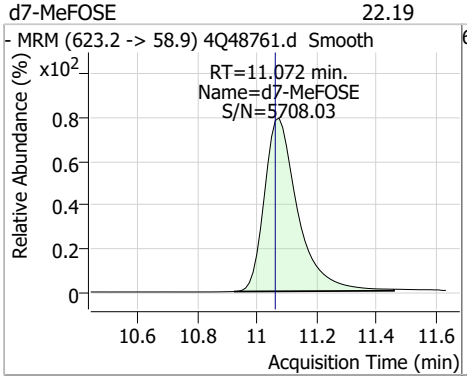
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	12.50	10.09	0.01	17824	699.1 -> 98.8	54.9	25.7	77.1

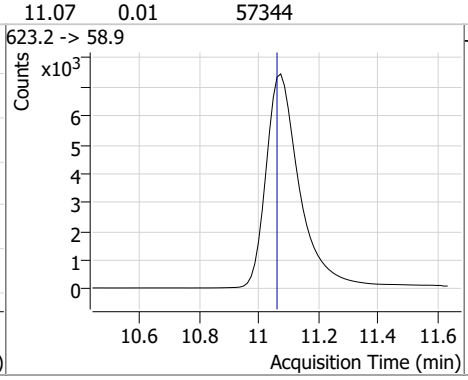


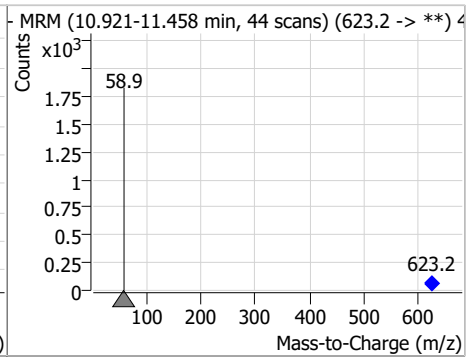




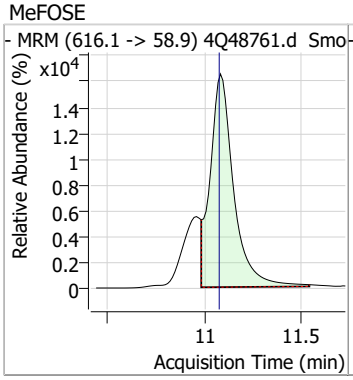
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.19	11.07	0.01	57344				

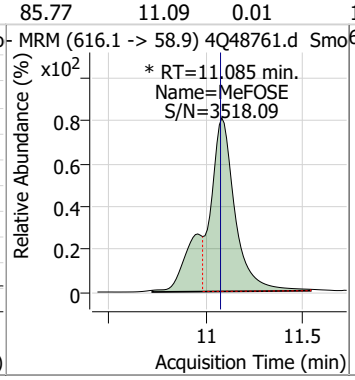


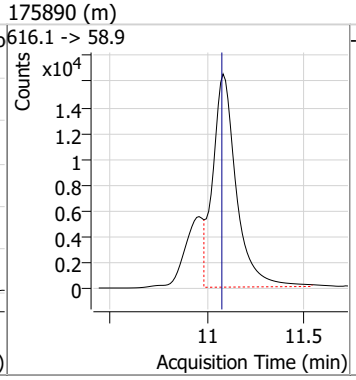


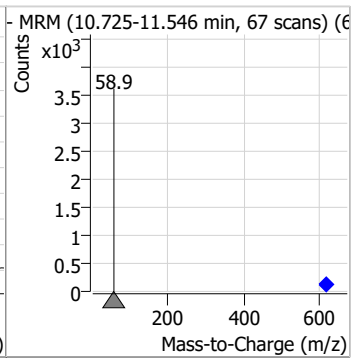


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	85.77	11.09	0.01	175890 (m)				

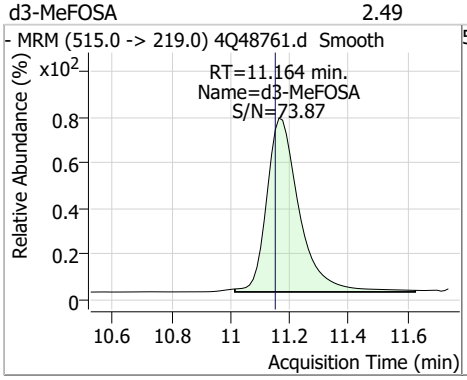


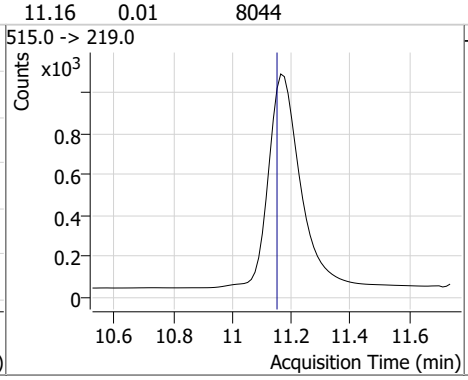


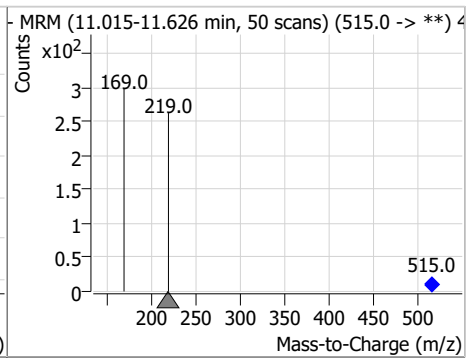




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.49	11.16	0.01	8044				

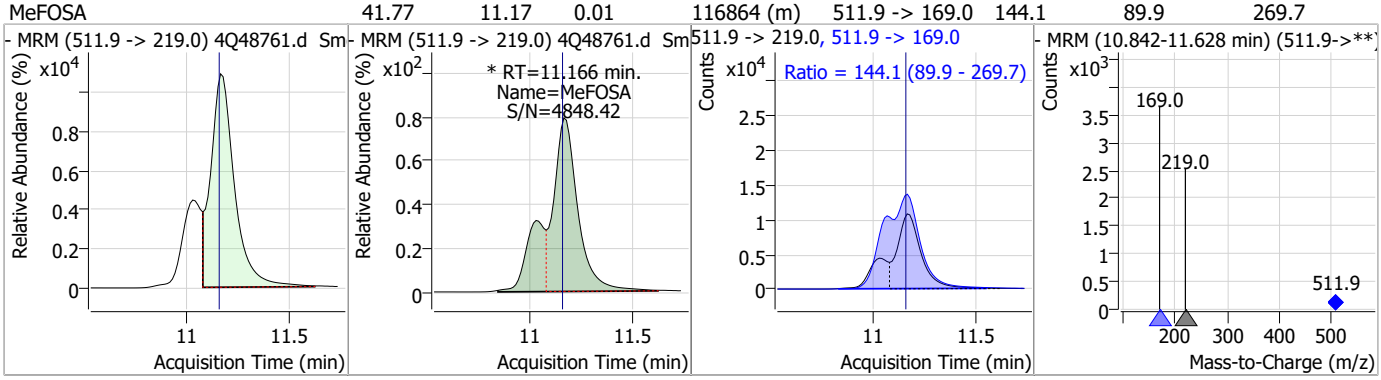




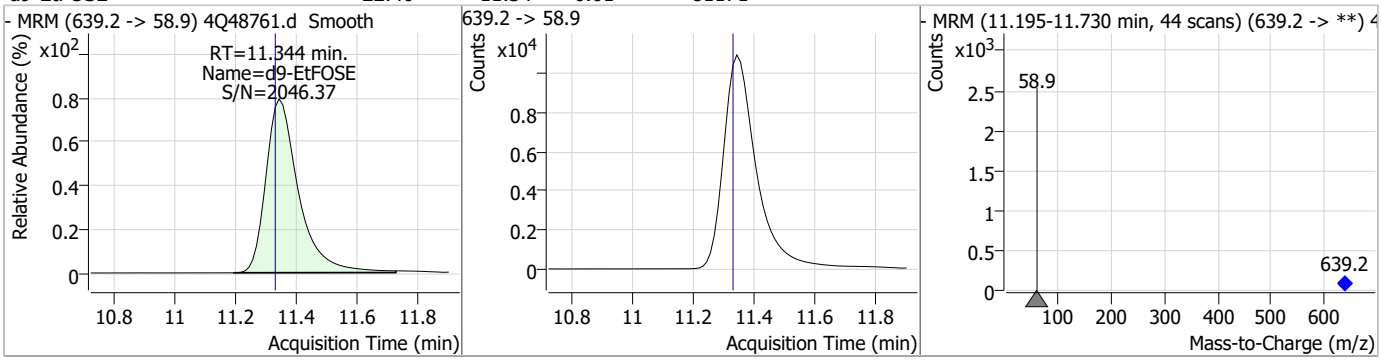


Perfluorinated Compounds by LC/MS/MS

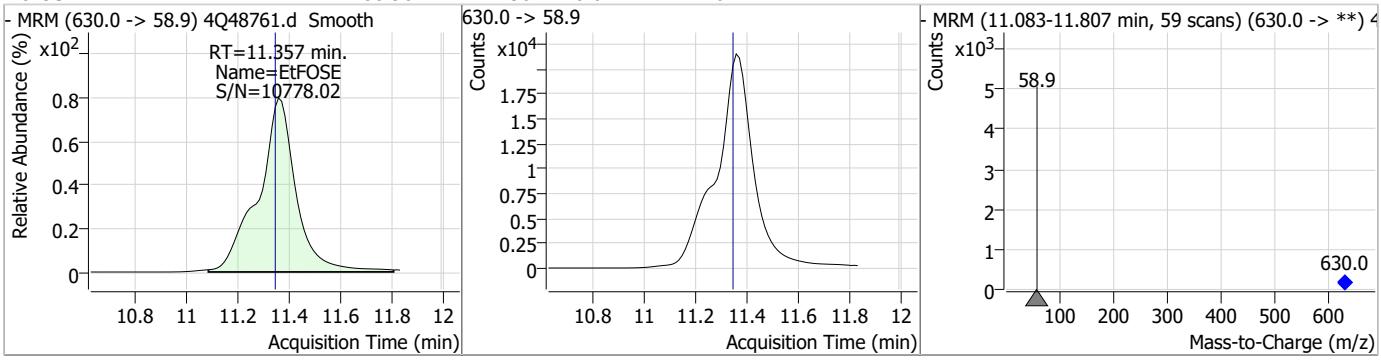
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	41.77	11.17	0.01	116864 (m)	511.9 -> 169.0	144.1	89.9	269.7



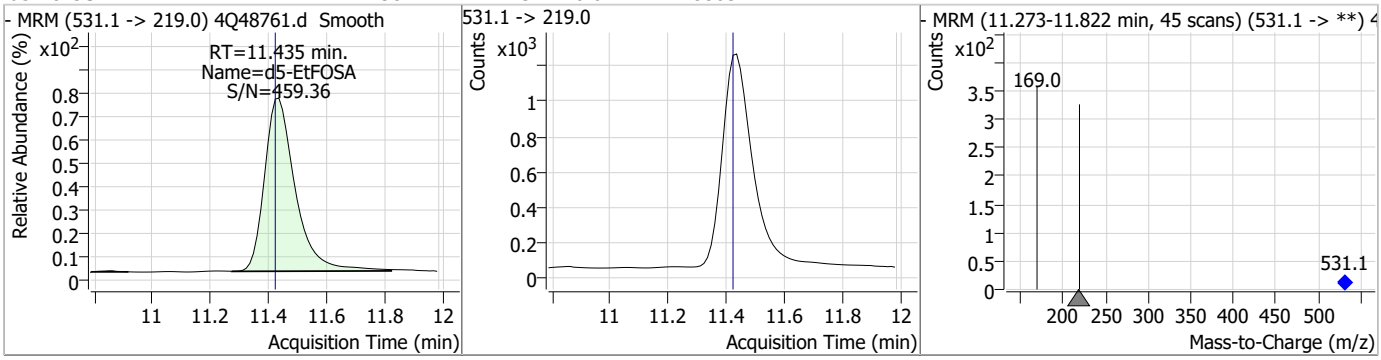
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.40	11.34	0.01	81171				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	86.90	11.36	0.01	220717				

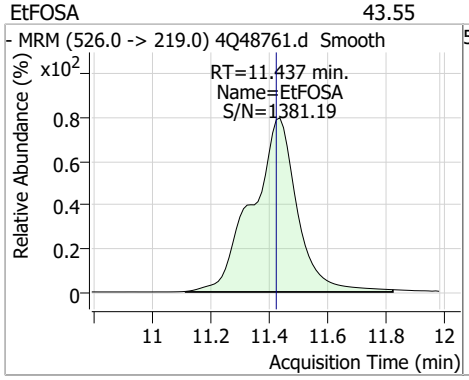


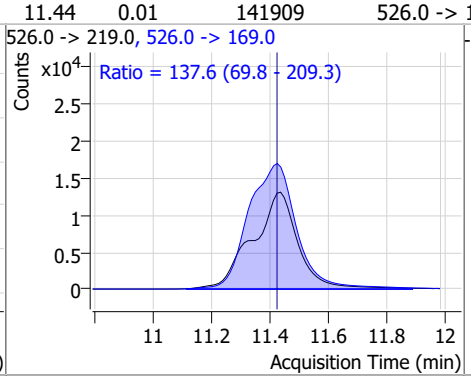
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	11.43	0.01	8863				

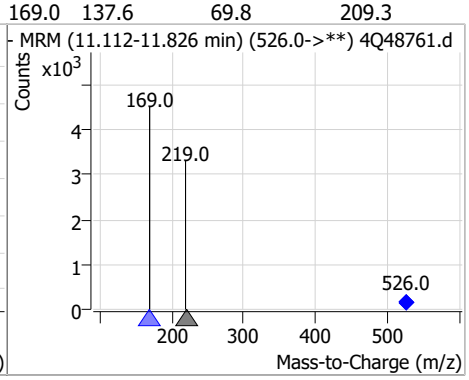


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	43.55	11.44	0.01	141909	526.0 -> 169.0	137.6	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q713-RT
Lab FileID: 4Q48761.D
Injection Time: 08/09/23 14:31
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.24	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorononanoic acid	375-95-1		7.65	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
PFOSA	754-91-6		9.90	Split peak
MeFOSE	24448-09-7		11.09	Split peak
MeFOSA	31506-32-8		11.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

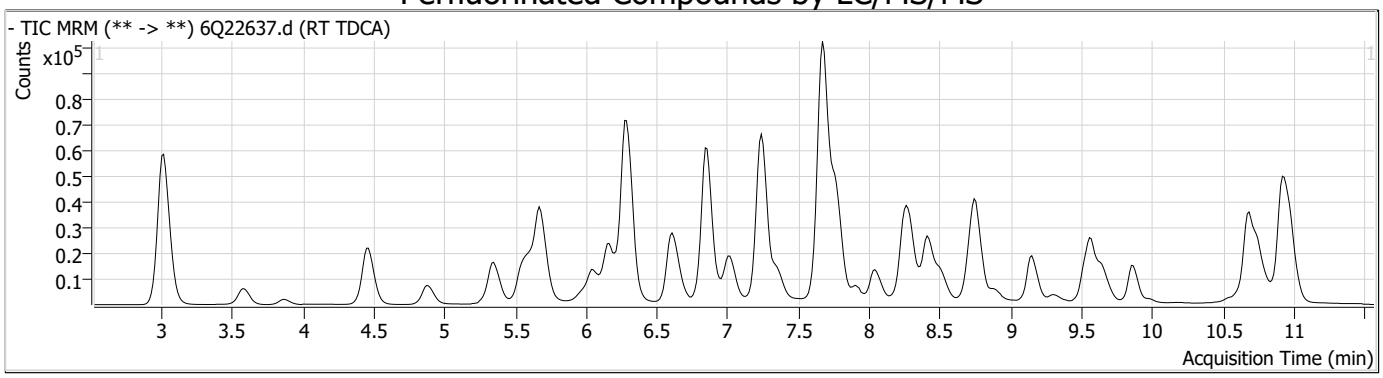
Data File : 6Q22637.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 12:54:43 PM
Sample Name : RT TDCA
Vial : P1-B3
DA Method File : TDCA.quantmethod.xml
Batch Name : s6q330 TDCA.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	8.414	507.1 -> 79.9	19468	2.50	µg/L		-0.012
13C4-PFOS	8.427	502.8 -> 79.9	24714	2.50	µg/L		0.000
System Monitoring Compounds							
13C8-PFOS	8.414	507.1 -> 79.9	19468	2.00	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.9%			
Target Compounds							QValue
PFOS	8.415	498.9 -> 79.9	18487	2.78	µg/L	m	99
		498.9 -> 98.8	9328				
TCDCA	6.789	498.9 -> 79.9	3882	4.32	ng/ml		100
TDCA	6.951	498.9 -> 79.9	5108	6.28	ng/ml		100
TUDCA	5.961	498.9 -> 79.9	6728	3.90	ng/ml		100

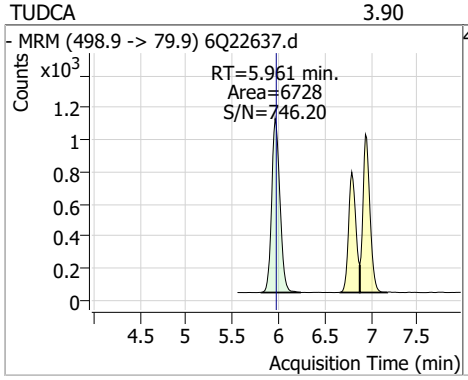
 # = Qualifier out of range, m = manually integrated, + = Area summed

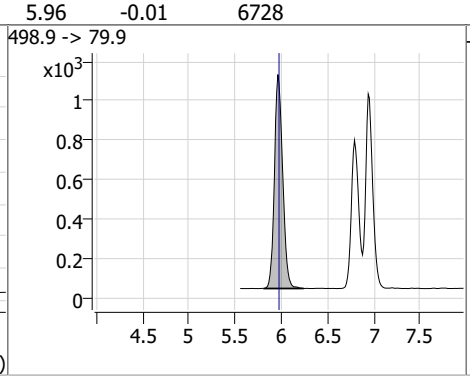
7.9.5
7

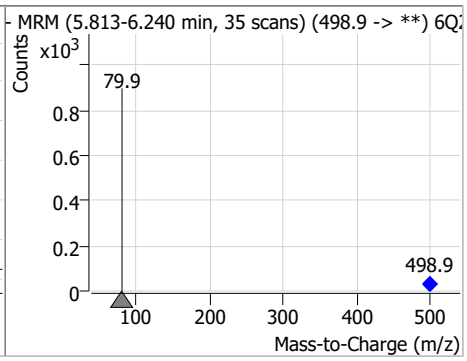
Perfluorinated Compounds by LC/MS/MS



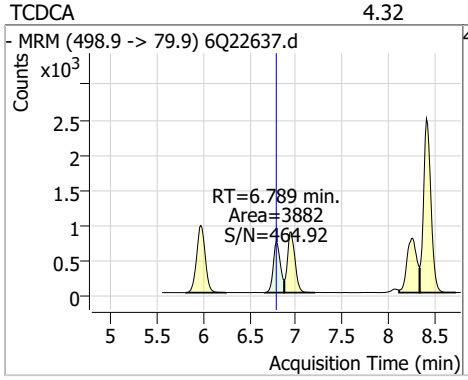
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	3.90	5.96	-0.01	6728				

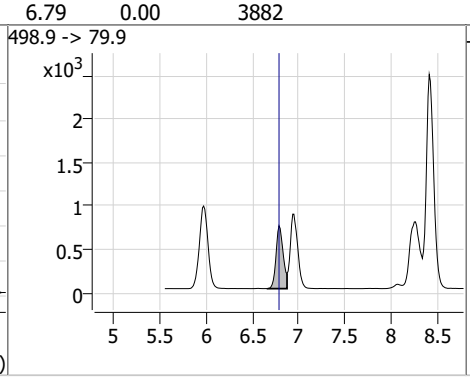


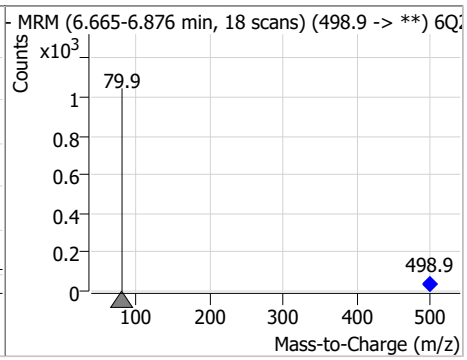




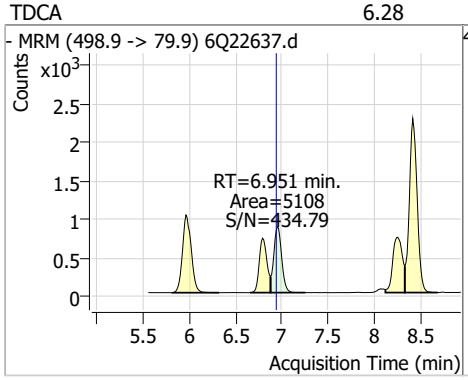
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	4.32	6.79	0.00	3882				

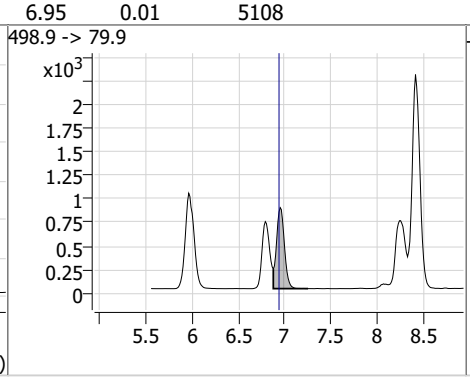


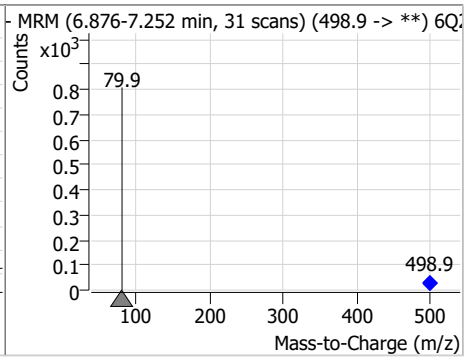




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	6.28	6.95	0.01	5108				

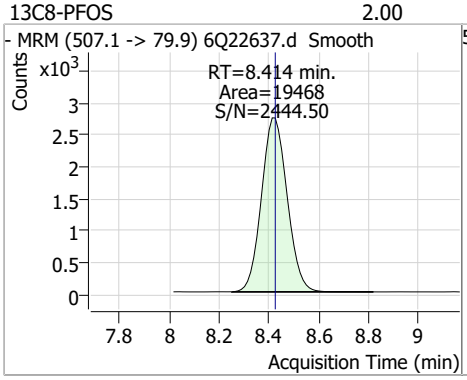


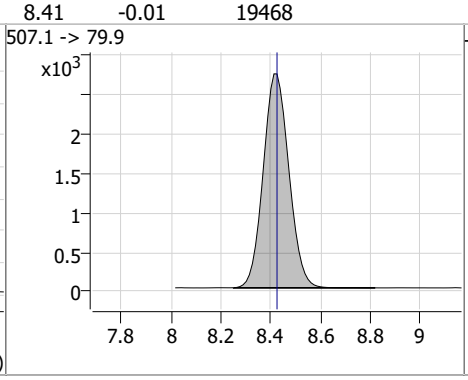


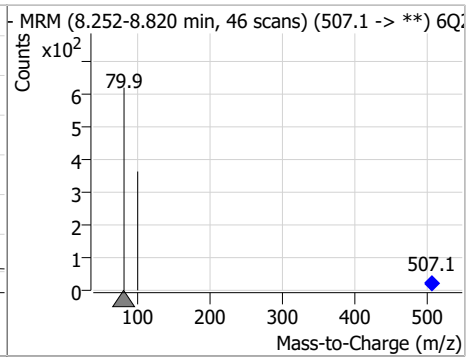


Perfluorinated Compounds by LC/MS/MS

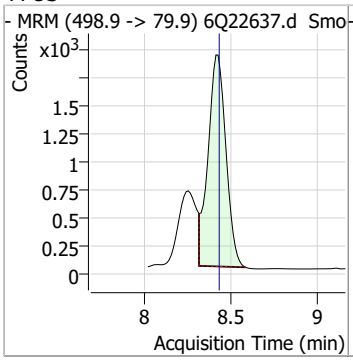
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.00	8.41	-0.01	19468				

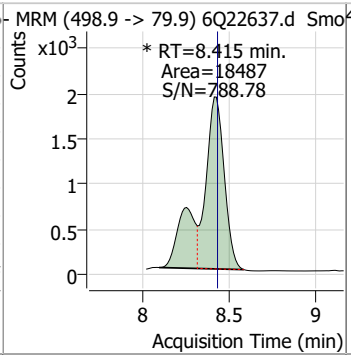


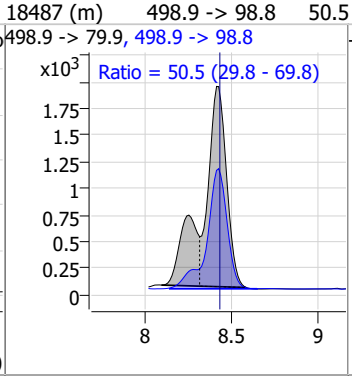


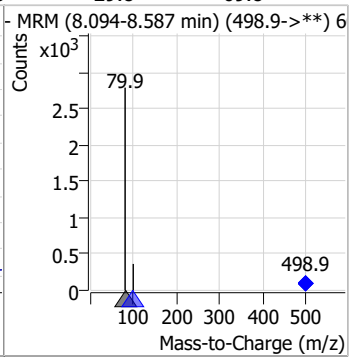


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.78	8.41	-0.01	18487 (m)	498.9 -> 98.8	50.5	29.8	69.8









Manual Integration Approval Summary

Sample Number:	S6Q330-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22637.D	**Analyst approved:**	08/13/23 14:26 Martha Valls
Injection Time:	08/10/23 12:54	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22638.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 1:09:04 PM
Sample Name : RT BR-LN
Vial : P1-B4
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	183251	10.00	µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	59381	5.00	µg/L	0.012
M5-PFHxA	5.680	318.0 -> 273.0	63545	2.50	µg/L	0.012
M4-PFHpA	6.608	367.1 -> 322.0	63985	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	102182	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	45809	1.25	µg/L	0.000
M6-PFDA	8.263	519.1 -> 474.1	26124	1.25	µg/L	0.000
M7-PFUnDA	8.717	570.0 -> 525.1	33595	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	31989	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	17639	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	34689	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	23125	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15292	2.50	µg/L	0.000
M8-PFOS	8.426	507.1 -> 79.9	13388	2.50	µg/L	0.012
M2-4:2FTS	5.343	329.1 -> 80.9	3236	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4575	5.00	µg/L	0.000
M2-8:2FTS	8.051	529.1 -> 80.9	4535	5.00	µg/L	0.000
M3-MeFOSAA	8.297	573.2 -> 419.0	32922	5.00	µg/L	0.000
M3-HFPO-DA	6.057	286.9 -> 168.9	40354	10.00	µg/L	0.012
M5-EtFOSAA	8.505	589.2 -> 419.0	31812	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	123070	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	160673	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14631	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	14308	2.50	µg/L	0.000
13C4-PFOS	8.427	502.8 -> 79.9	18331	2.50	µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	77783	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	11078	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	99496	2.50	µg/L	0.000
13C2-PFDA	8.263	515.1 -> 470.1	36804	1.25	µg/L	0.012
13C5-PFNA	7.770	468.0 -> 423.0	52638	1.25	µg/L	0.000
13C2-PFHxA	5.681	315.1 -> 270.0	61457	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3236	4.89	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4575	4.79	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-8:2FTS	8.051	529.1 -> 80.9	4535	4.85	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFDoDA	9.148	615.1 -> 570.0	31989	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C2-PFTeDA	9.863	715.2 -> 670.0	17639	1.23	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.610	302.1 -> 79.9	23125	2.46	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C3-PFHxS	7.355	402.1 -> 79.9	15292	2.51	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 = 100.5%		
13C4-PFBA	3.010	216.8 -> 171.9	183251	9.97 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	6.608	367.1 -> 322.0	63985	2.58 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFHxA	5.680	318.0 -> 273.0	63545	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFPeA	4.459	268.3 -> 223.0	59381	5.13 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C6-PFDA	8.263	519.1 -> 474.1	26124	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C7-PFUnDA	8.717	570.0 -> 525.1	33595	1.22 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C8-FOSA	9.662	506.1 -> 77.8	34689	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-PFOA	7.239	421.1 -> 376.0	102182	2.78 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C8-PFOS	8.426	507.1 -> 79.9	13388	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C9-PFNA	7.770	472.1 -> 427.0	45809	1.34 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%		
d3-MeFOSAA	8.297	573.2 -> 419.0	32922	4.96 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C3-HFPO-DA	6.057	286.9 -> 168.9	40354	10.15 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSA	10.763	515.0 -> 219.0	14308	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
d5-EtFOSAA	8.505	589.2 -> 419.0	31812	5.20 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
d7-MeFOSE	10.685	623.2 -> 58.9	123070	24.84 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d9-EtFOSE	10.918	639.2 -> 58.9	160673	24.30 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
d5-EtFOSA	10.983	531.1 -> 219.0	14631	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
Target Compounds						QValue
4:2FTS	5.343	327.1 -> 307.0	204171	48.77 µg/L		99
		327.1 -> 80.9	78431			
6:2FTS	7.014	427.1 -> 407.0	207397	50.68 µg/L		100
		427.1 -> 80.9	70093			
8:2FTS	8.052	527.1 -> 507.0	126263	52.03 µg/L		100
		527.1 -> 80.8	46180			
EtFOSAA	8.518	584.2 -> 419.1	50519	12.60 µg/L	m	96
		584.2 -> 526.0	27129			
FOSA	9.652	498.1 -> 77.9	325295	29.88 µg/L		100
		498.1 -> 478.0	10246			
MeFOSAA	8.310	570.1 -> 419.0	88812	14.11 µg/L		99
		570.1 -> 483.0	16082			
PFBA	3.018	212.8 -> 168.9	300586	52.50 µg/L		100
PFBS	5.611	298.7 -> 79.9	90193	11.94 µg/L		100
		298.7 -> 98.8	33607			
PFDA	8.264	512.9 -> 469.0	404708	13.07 µg/L		99
		512.9 -> 219.0	56994			
PFDoDA	9.148	613.1 -> 569.0	270514	12.91 µg/L		97
		613.1 -> 319.0	37441			
PFDS	9.312	599.0 -> 79.9	43526	13.55 µg/L		95

Perfluorinated Compounds by LC/MS/MS

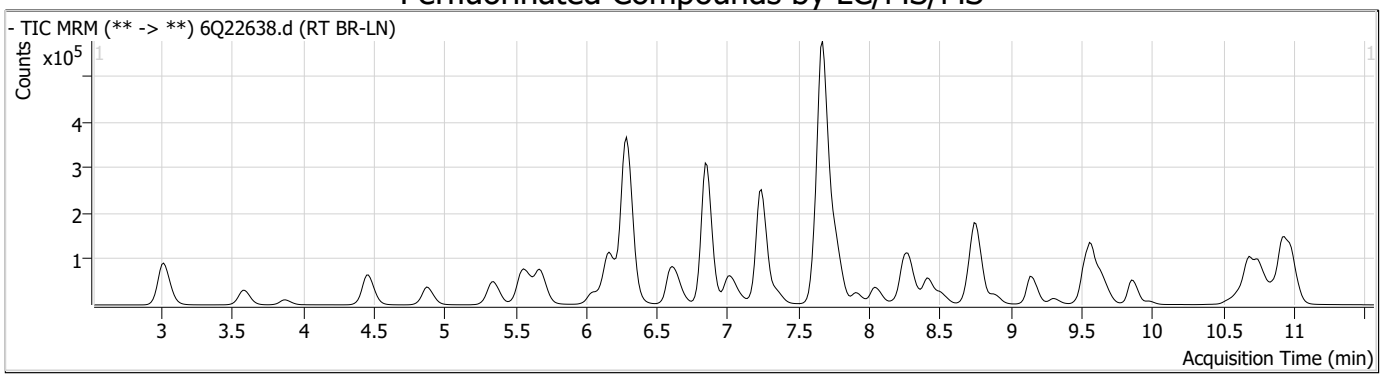
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	20188				
PFHpA	6.609	363.1 -> 319.0	333518	13.22	µg/L		99
		363.1 -> 169.0	53993				
PFHpS	7.922	449.0 -> 79.9	80342	13.14	µg/L		95
		449.0 -> 98.9	40238				
PFHxA	5.682	313.0 -> 269.0	257643	13.86	µg/L		99
		313.0 -> 118.9	13045				
PFHxS	7.356	398.7 -> 79.9	78514	11.64	µg/L	m	97
		398.7 -> 98.9	36445				
PFNA	7.771	463.0 -> 419.0	808257	25.67	µg/L	m	98
		463.0 -> 219.0	160424				
PFNS	8.893	548.8 -> 79.9	69356	12.56	µg/L		99
		548.8 -> 98.9	36721				
PFOA	7.240	413.0 -> 369.0	1052119	25.19	µg/L	m	93
		413.0 -> 169.0	201057				
PFOS	8.427	498.9 -> 79.9	71547	12.43	µg/L	m	99
		498.9 -> 98.8	38061				
PFPeA	4.461	263.0 -> 219.0	345384	26.40	µg/L		100
PFPeS	6.672	349.1 -> 79.9	75270	12.02	µg/L		99
		349.1 -> 98.9	34967				
PFTeDA	9.864	713.1 -> 669.0	225119	13.14	µg/L		99
		713.1 -> 168.9	18486				
PFTrDA	9.532	663.0 -> 619.0	287486	13.29	µg/L		99
		663.0 -> 168.9	30089				
PFUnDA	8.717	563.1 -> 519.0	255600	13.21	µg/L		98
		563.1 -> 269.1	43487				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	368722	25.60	µg/L		92
		632.9 -> 452.9	109828				
9Cl-PF3ONS	8.758	530.8 -> 351.0	604662	25.97	µg/L		98
		532.8 -> 353.0	187099				
ADONA	6.858	376.9 -> 250.9	1333371	25.94	µg/L		99
		376.9 -> 84.8	347510				
HFPO-DA	6.058	284.9 -> 168.9	92915	27.06	µg/L		98
		284.9 -> 184.9	9115				
3:3FTCA	3.871	241.0 -> 177.0	58285	64.38	µg/L		100
		241.0 -> 117.0	7908				
5:3FTCA	6.285	341.0 -> 237.1	1262997	330.36	µg/L		97
		341.0 -> 217.0	931603				
7:3FTCA	7.673	441.0 -> 316.9	900216	318.37	µg/L		95
		441.0 -> 336.9	2127896				
EtFOSA	10.985	526.0 -> 219.0	272383	42.27	µg/L		98
		526.0 -> 169.0	354521				
EtFOSE	10.931	630.0 -> 58.9	567914	87.23	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	227664	42.93	µg/L		97
		511.9 -> 169.0	320727				
MeFOSE	10.697	616.1 -> 58.9	390201	84.81	µg/L		100
PFDoDS	9.990	699.1 -> 79.9	20106	13.44	µg/L		99
		699.1 -> 98.8	10998				
NFDHA	5.564	295.0 -> 201.0	65585	27.74	µg/L		93
		295.0 -> 84.9	16292				
PFMBA	4.869	279.0 -> 85.1	240574	26.00	µg/L		100
PFMPA	3.588	229.0 -> 84.9	196366	26.52	µg/L		100
PFEESA	6.163	314.8 -> 134.9	607107	24.31	µg/L		99
		314.8 -> 82.9	19488				

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

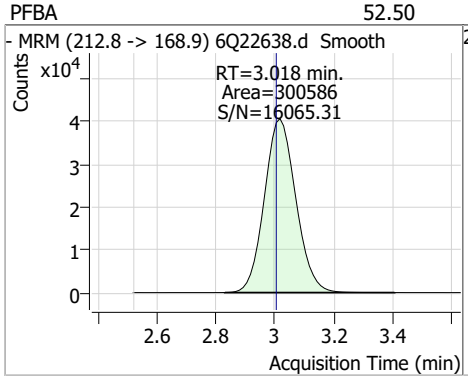
Perfluorinated Compounds by LC/MS/MS

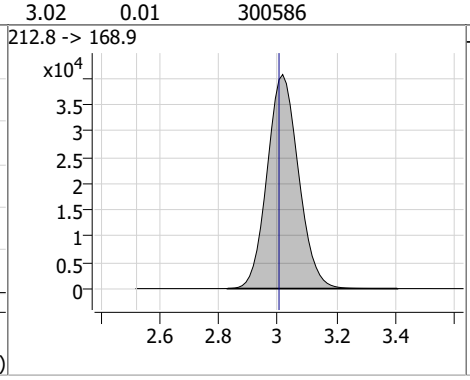
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

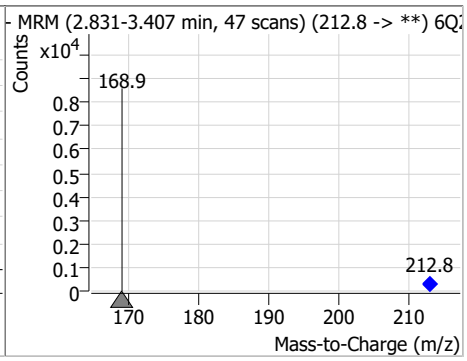
Perfluorinated Compounds by LC/MS/MS



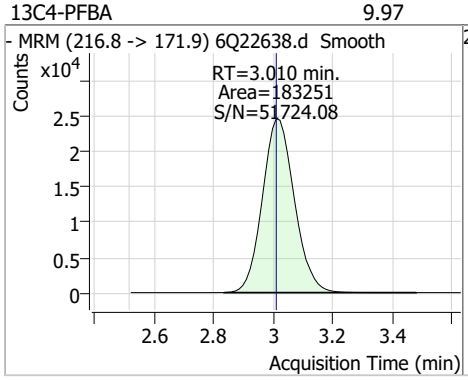
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	52.50	3.02	0.01	300586				

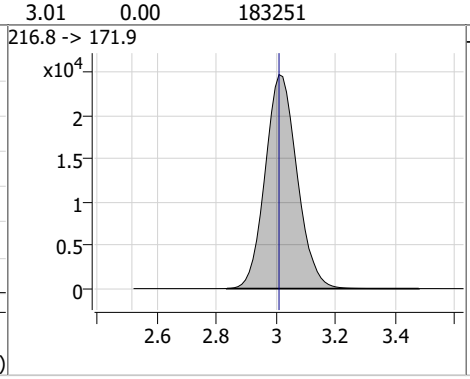


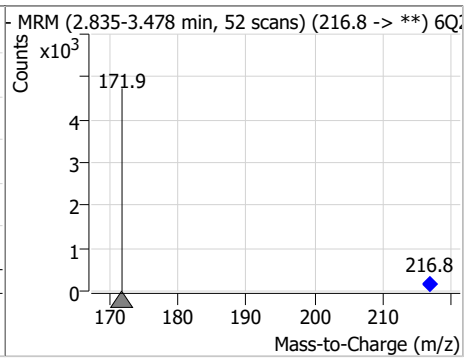




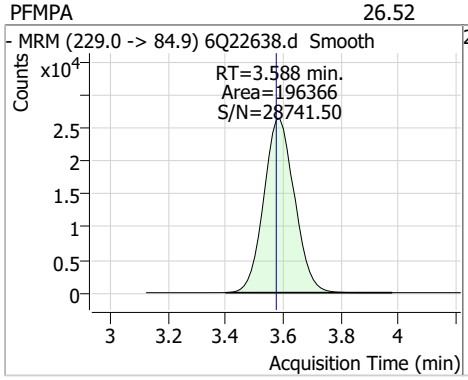
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.97	3.01	0.00	183251				

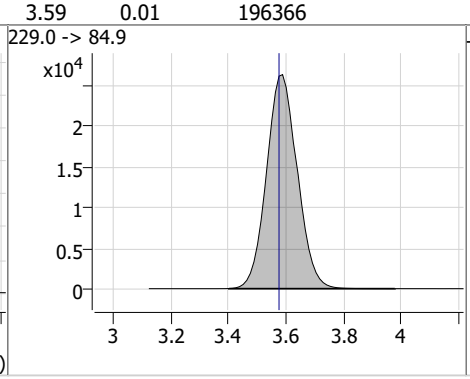


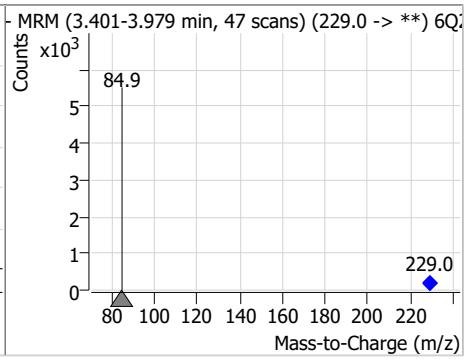




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	26.52	3.59	0.01	196366				

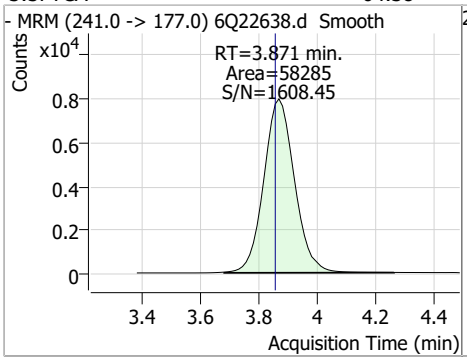


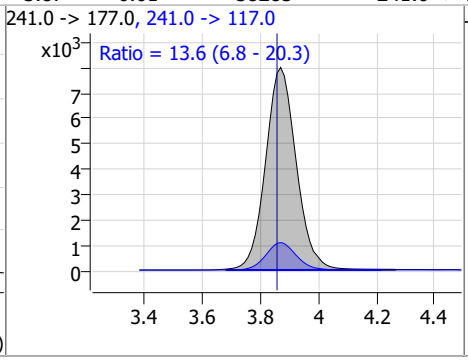


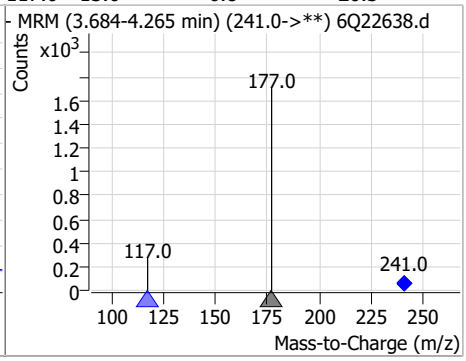


Perfluorinated Compounds by LC/MS/MS

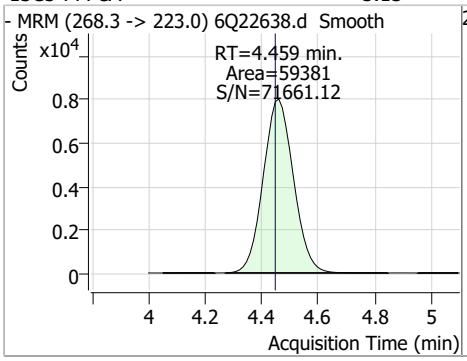
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.38	3.87	0.01	58285	241.0 -> 117.0	13.6	6.8	20.3

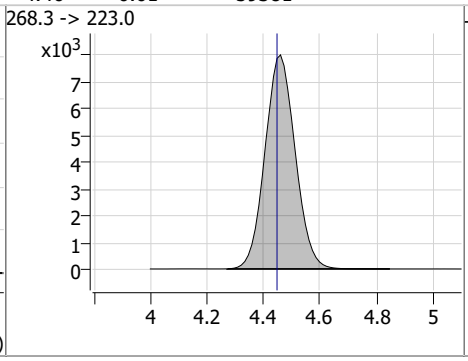


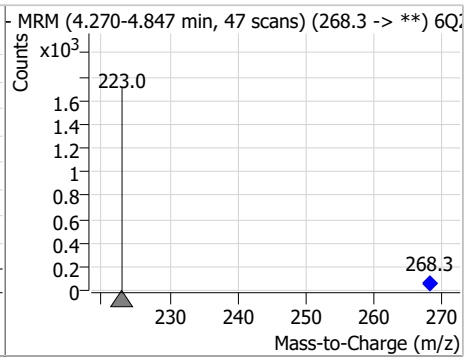




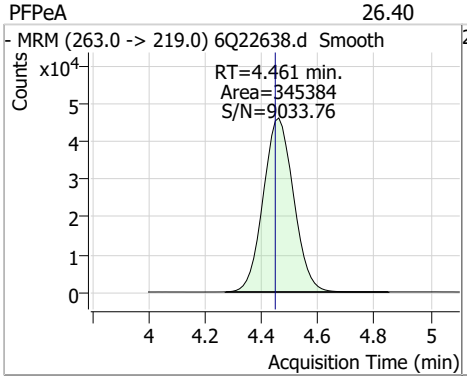
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.13	4.46	0.01	59381				

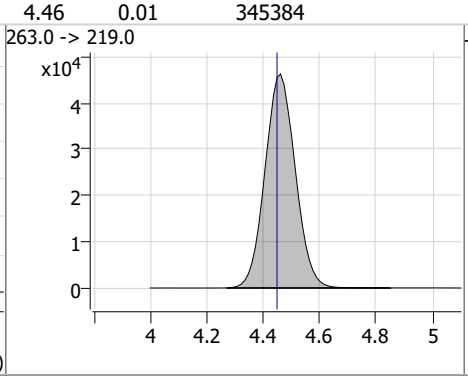


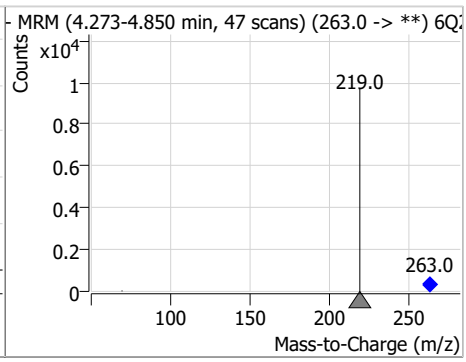




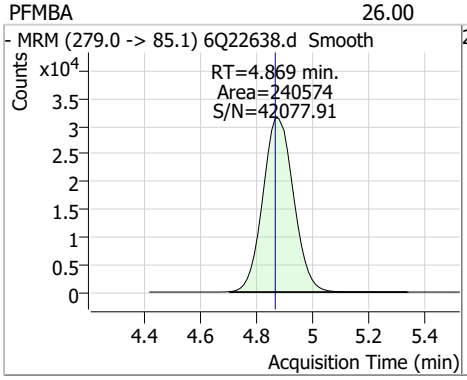
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.40	4.46	0.01	345384				

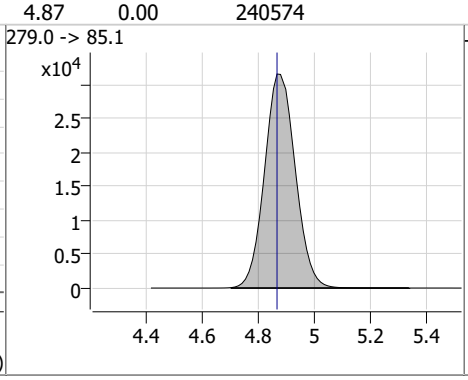


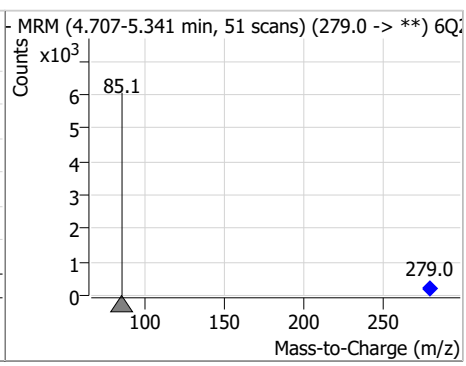




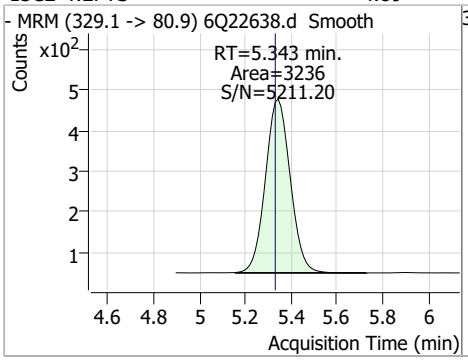
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.00	4.87	0.00	240574				

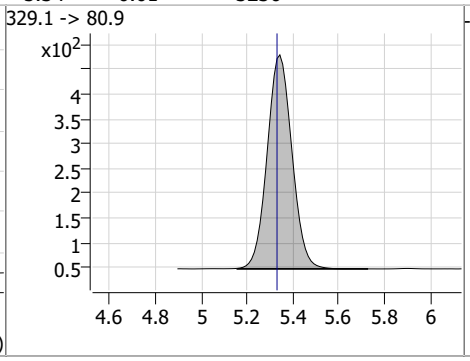


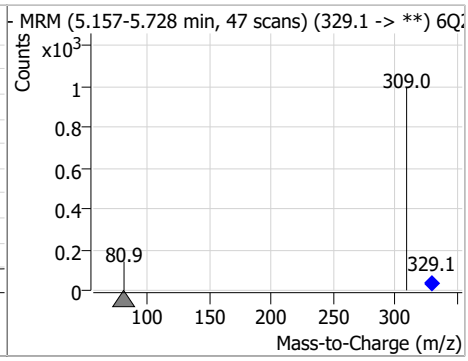




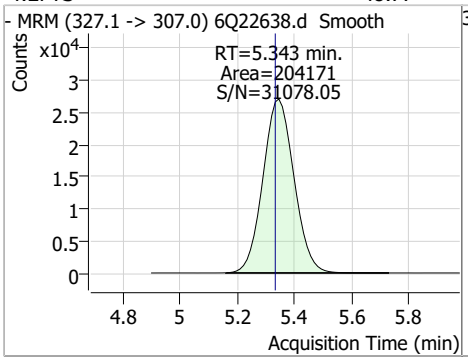
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.89	5.34	0.01	3236				

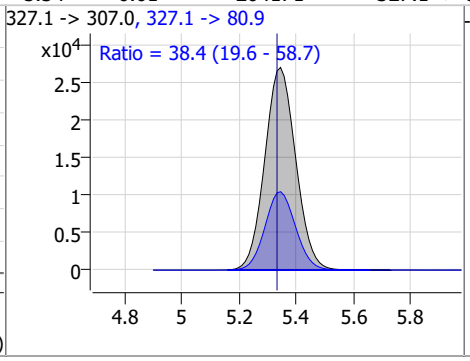


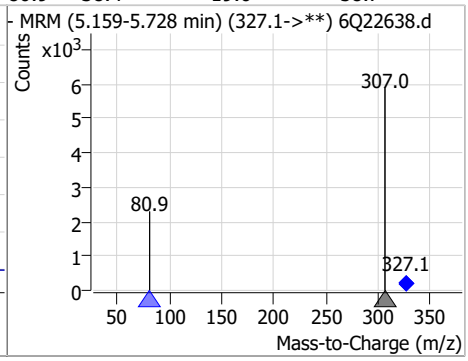




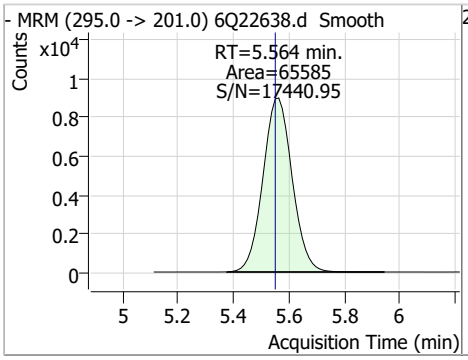
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.77	5.34	0.01	204171	327.1 -> 80.9	38.4	19.6	58.7

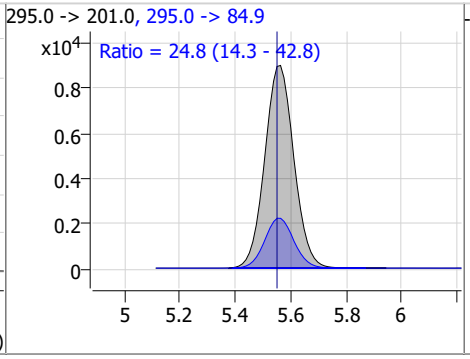


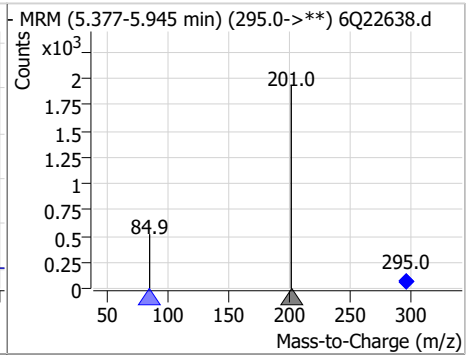




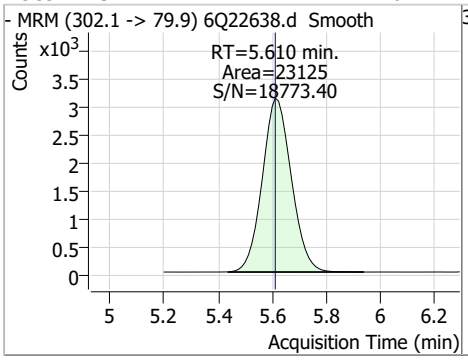
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	27.74	5.56	0.01	65585	295.0 -> 84.9	24.8	14.3	42.8

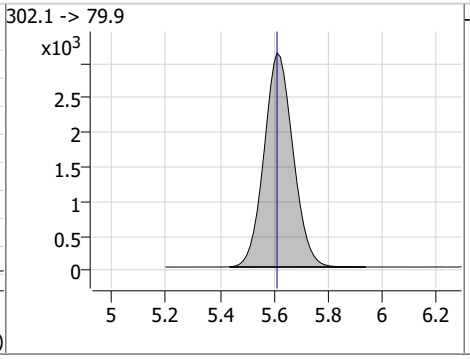


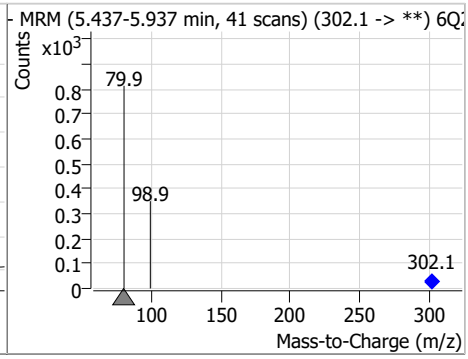




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.46	5.61	0.00	23125				

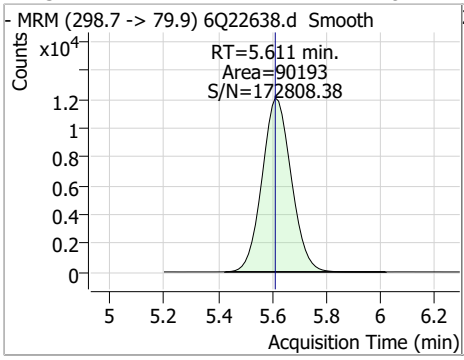


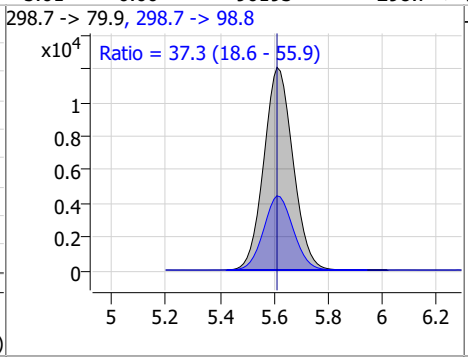


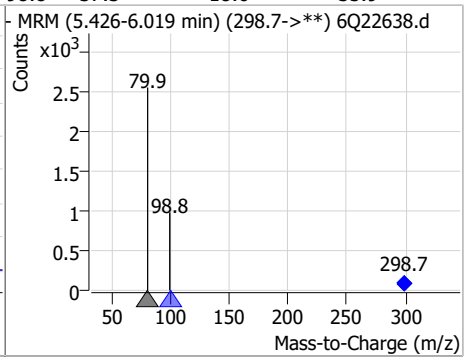


Perfluorinated Compounds by LC/MS/MS

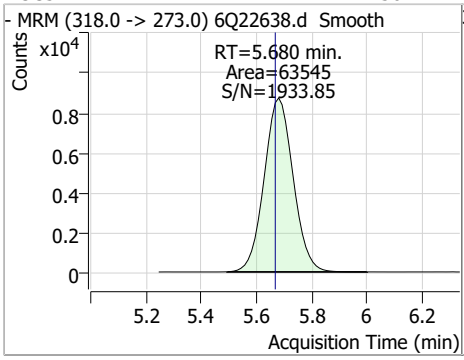
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.94	5.61	0.00	90193	298.7 -> 98.8	37.3	18.6	55.9

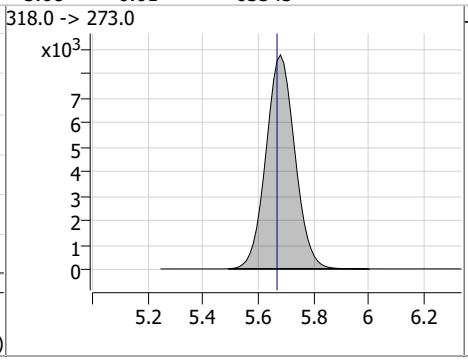


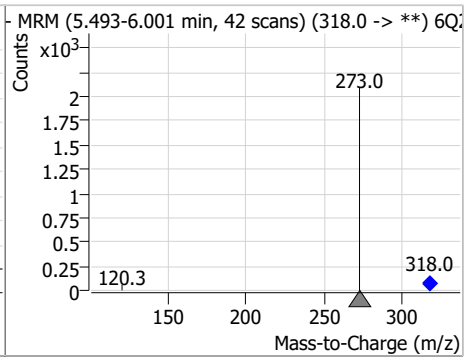




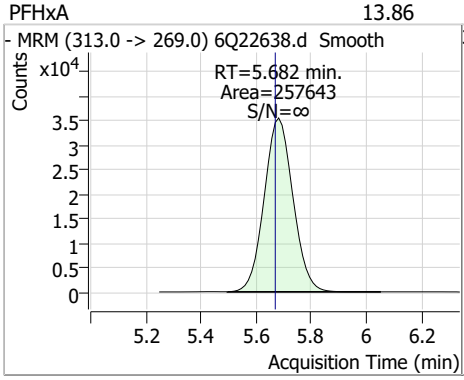
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.68	0.01	63545				

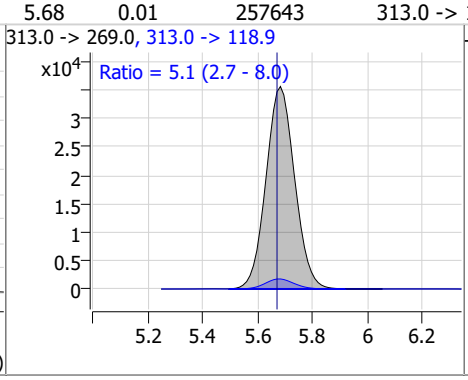


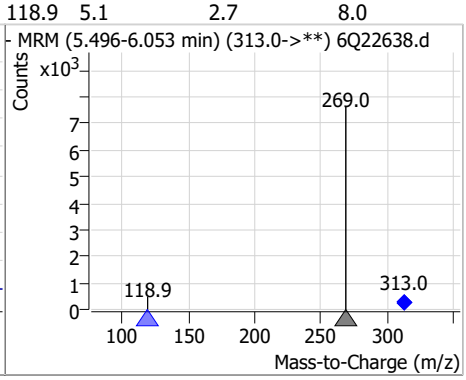




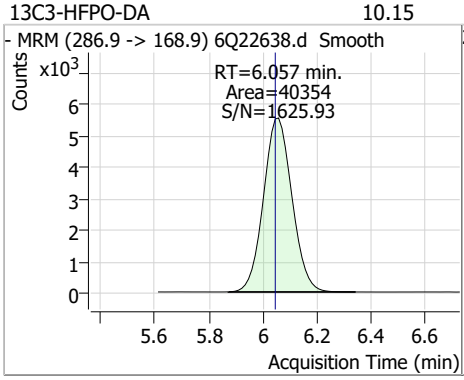
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.86	5.68	0.01	257643	313.0 -> 118.9	5.1	2.7	8.0

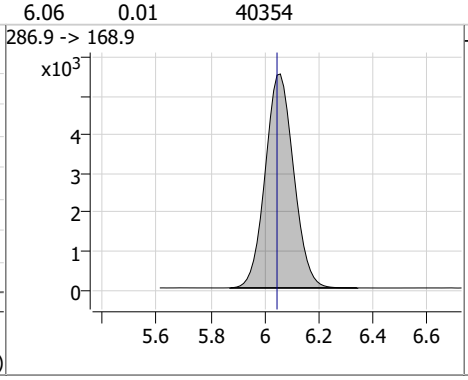


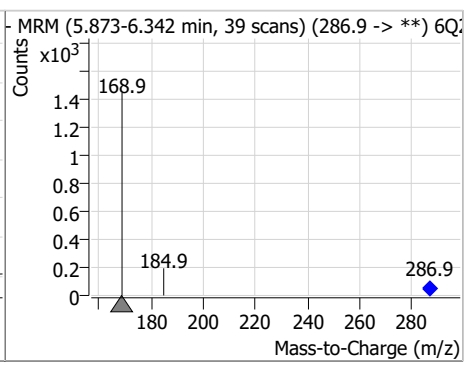




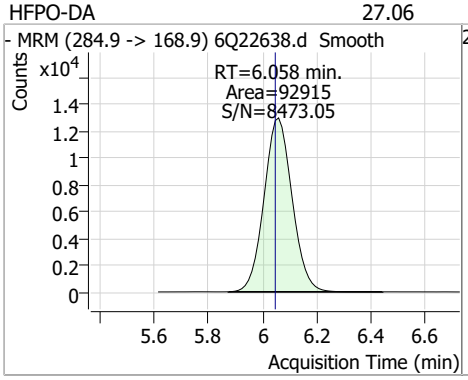
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.15	6.06	0.01	40354				

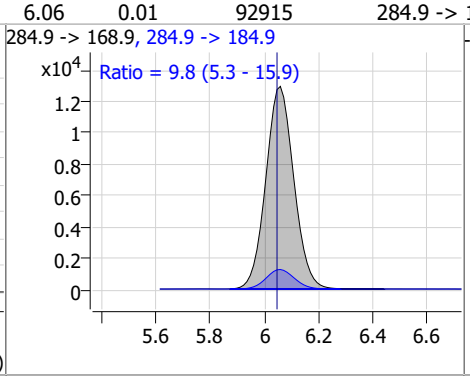


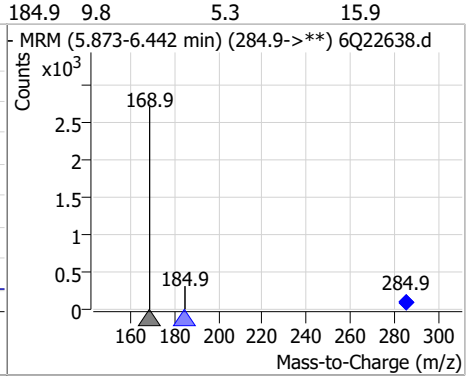




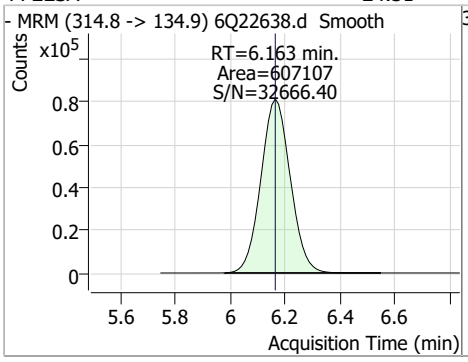
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	27.06	6.06	0.01	92915	284.9 -> 184.9	9.8	5.3	15.9

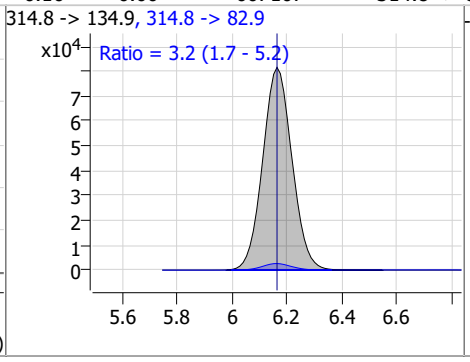


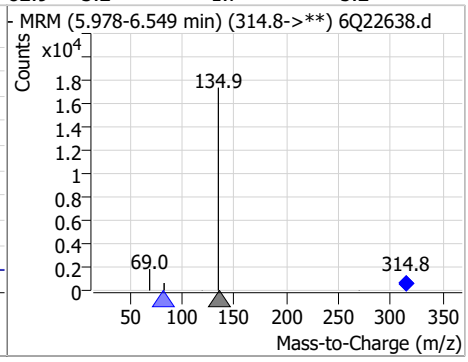




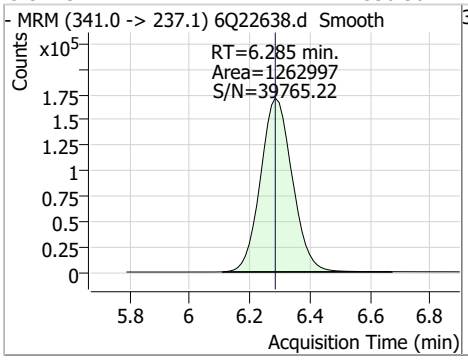
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	24.31	6.16	0.00	607107	314.8 -> 82.9	3.2	1.7	5.2

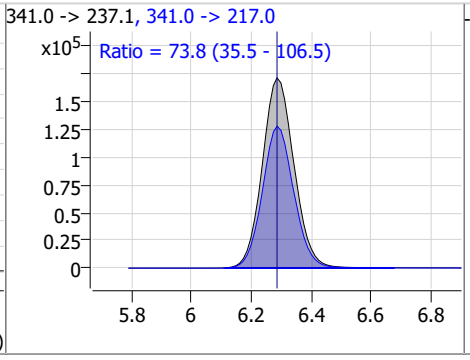


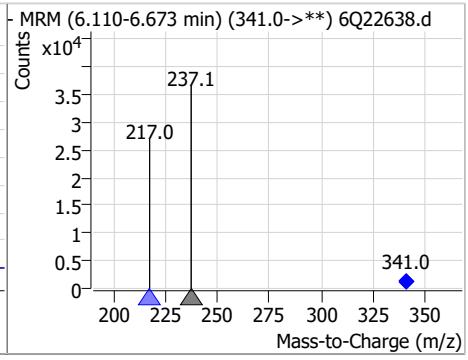




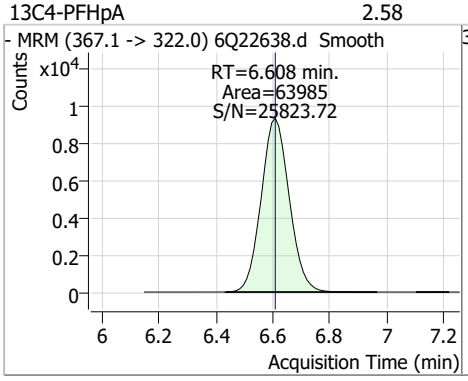
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	330.36	6.28	0.00	1262997	341.0 -> 217.0	73.8	35.5	106.5

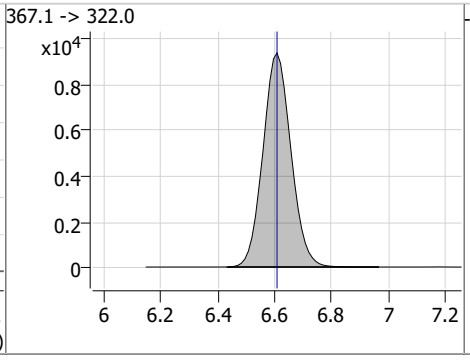


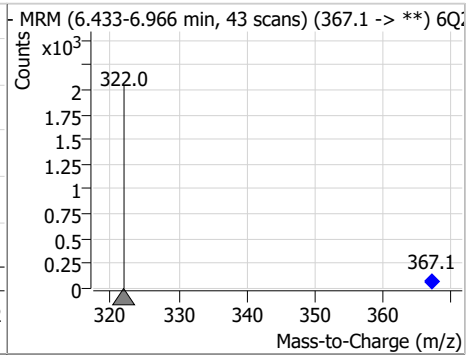




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.61	0.00	63985				

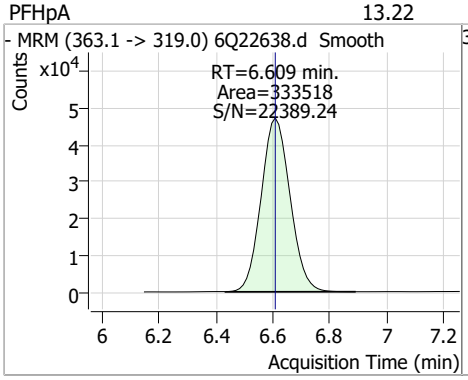


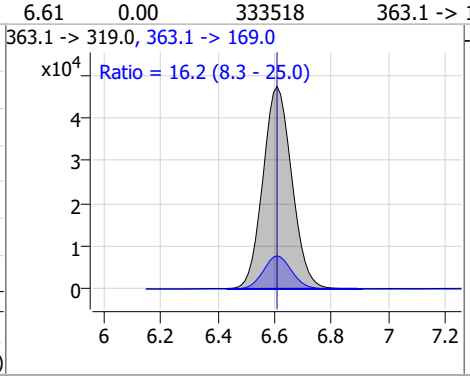


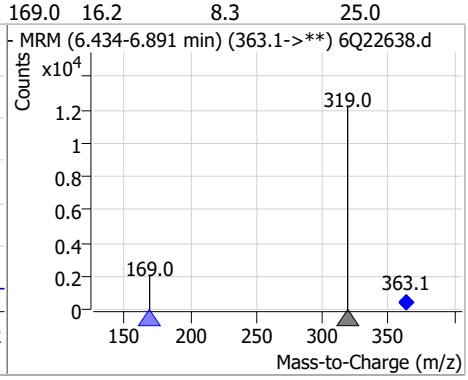


Perfluorinated Compounds by LC/MS/MS

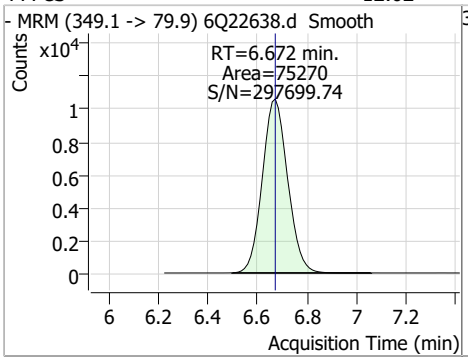
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.22	6.61	0.00	333518	363.1 -> 169.0	16.2	8.3	25.0

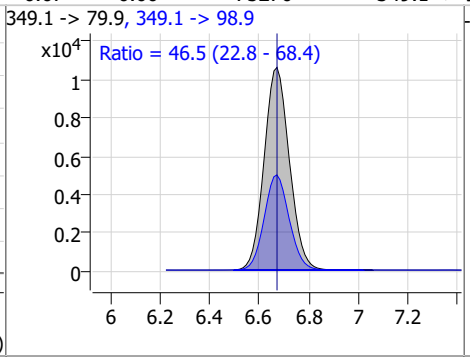


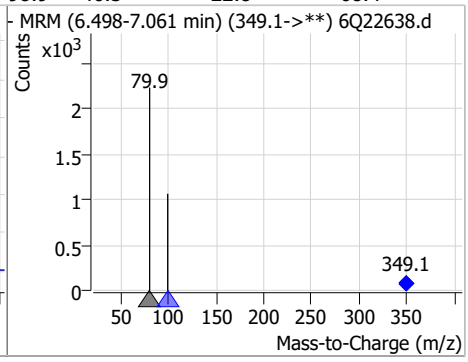




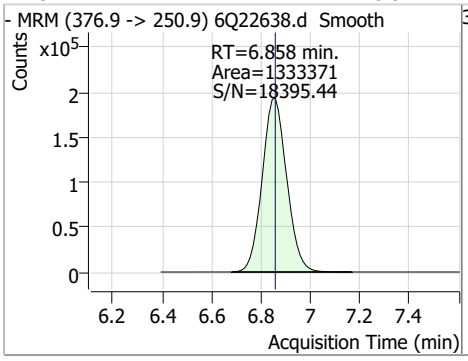
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.02	6.67	0.00	75270	349.1 -> 98.9	46.5	22.8	68.4

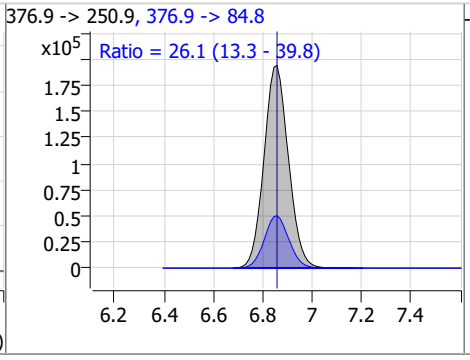


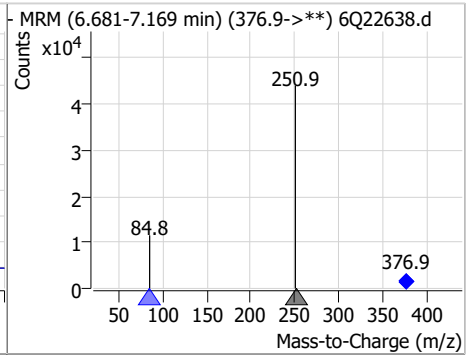




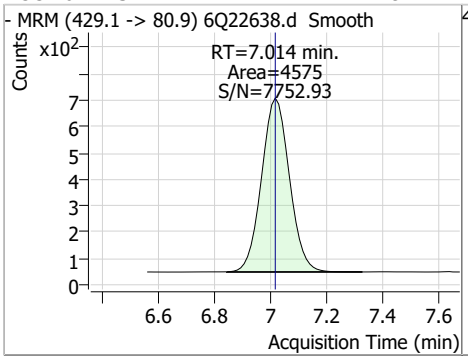
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	25.94	6.86	0.00	1333371	376.9 -> 84.8	26.1	13.3	39.8

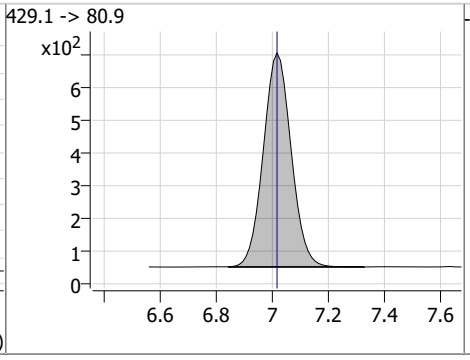


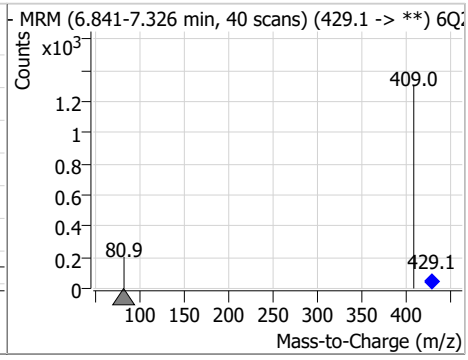




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.79	7.01	0.00	4575				

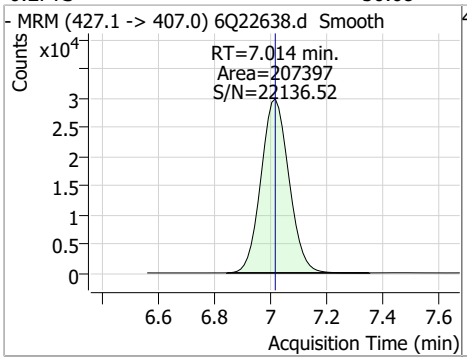


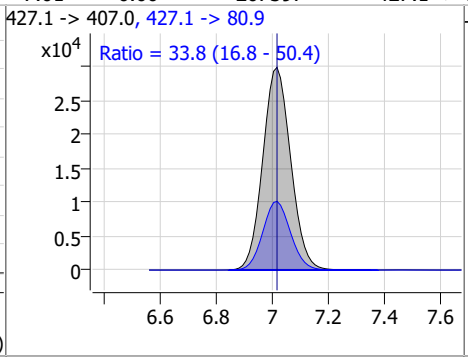


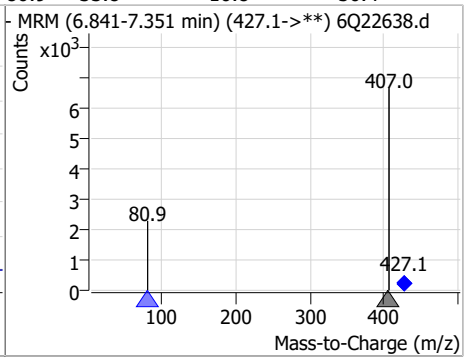


Perfluorinated Compounds by LC/MS/MS

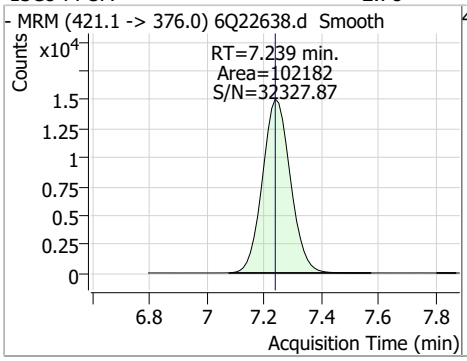
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.68	7.01	0.00	207397	427.1 -> 80.9	33.8	16.8	50.4

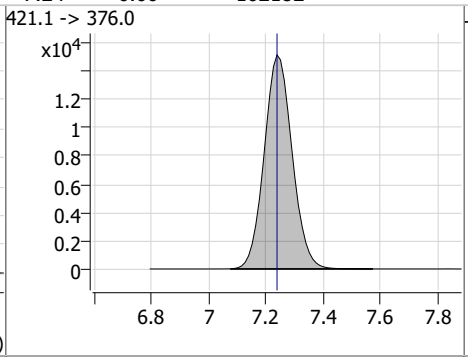


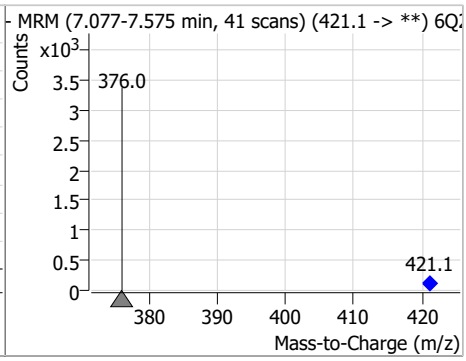




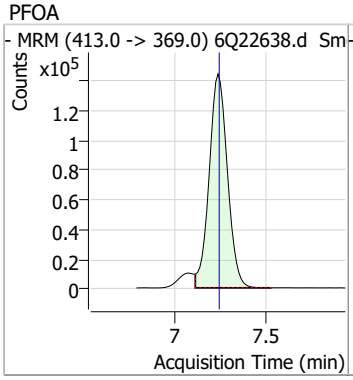
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.78	7.24	0.00	102182				

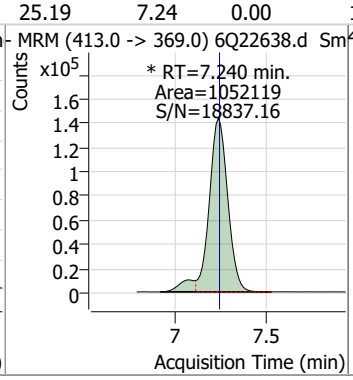


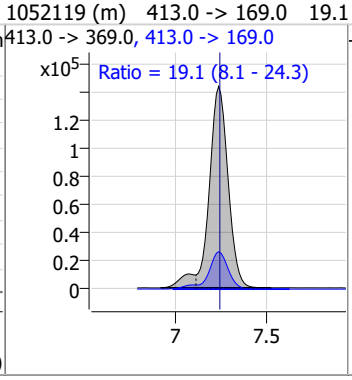


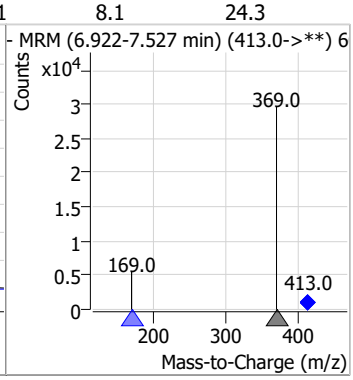


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	25.19	7.24	0.00	1052119 (m)	413.0 -> 169.0	19.1	8.1	24.3

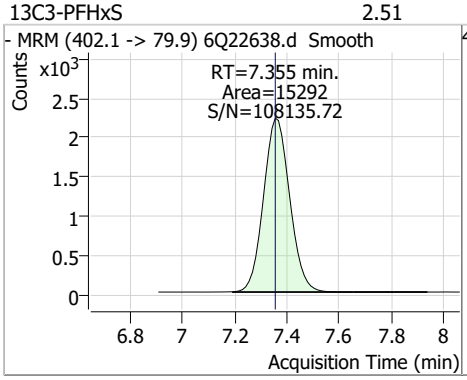


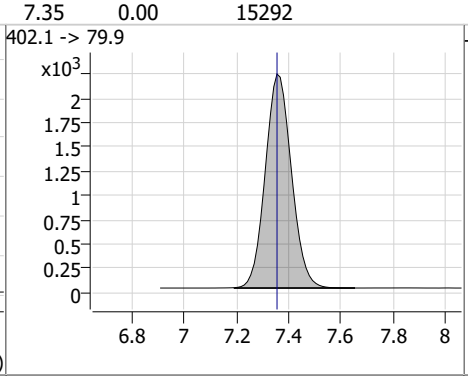


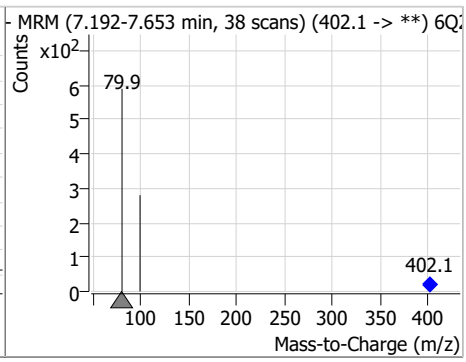




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.35	0.00	15292				

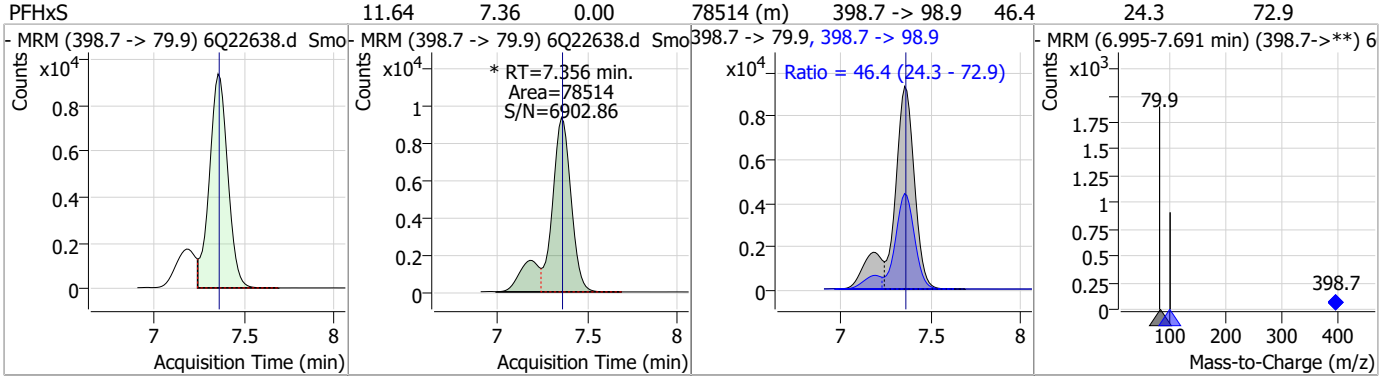




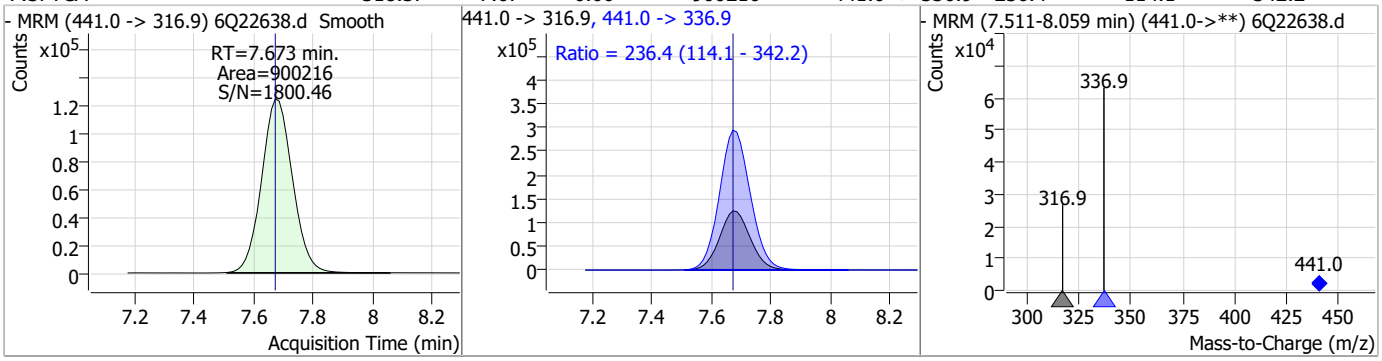


Perfluorinated Compounds by LC/MS/MS

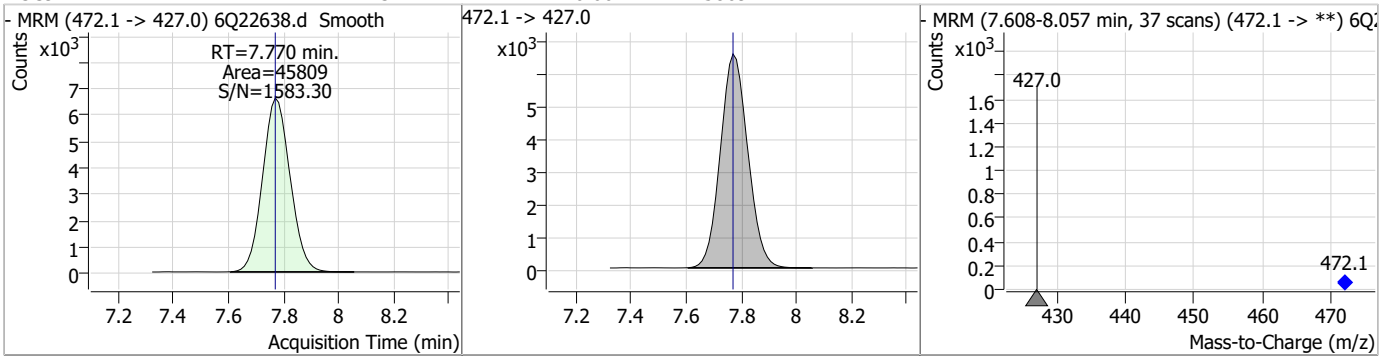
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.64	7.36	0.00	78514 (m)	398.7 -> 98.9	46.4	24.3	72.9



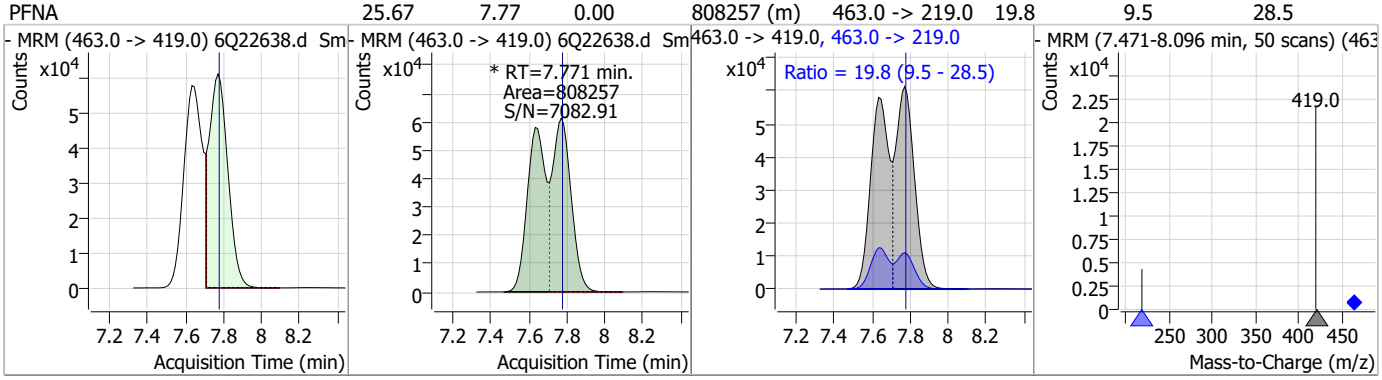
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	318.37	7.67	0.00	900216	441.0 -> 336.9	236.4	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.34	7.77	0.00	45809				

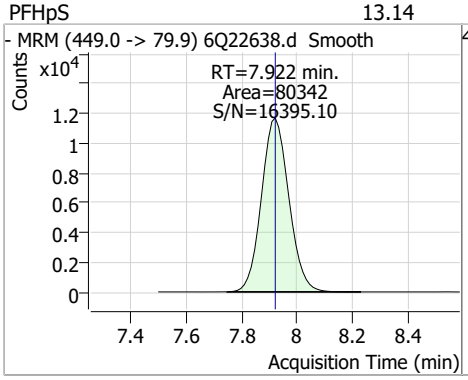


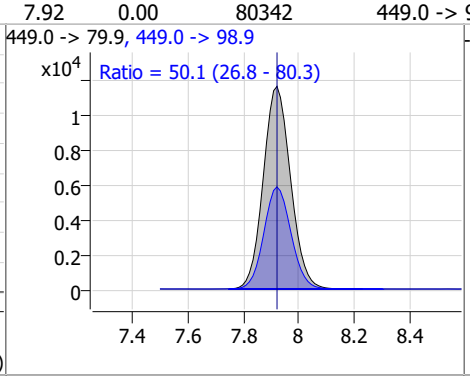
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	25.67	7.77	0.00	808257 (m)	463.0 -> 219.0	19.8	9.5	28.5

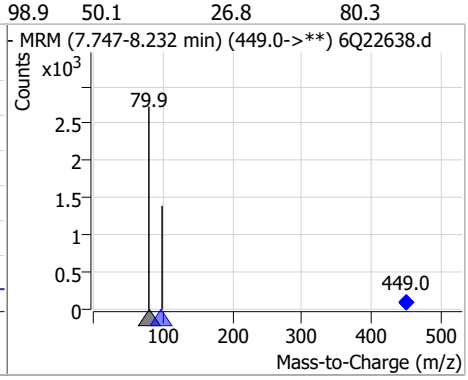


Perfluorinated Compounds by LC/MS/MS

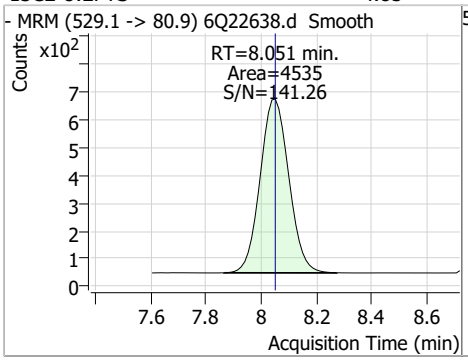
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.14	7.92	0.00	80342	449.0 -> 98.9	50.1	26.8	80.3

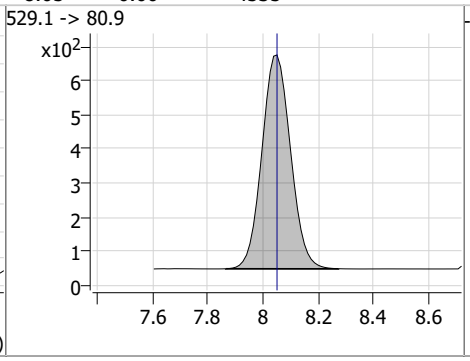


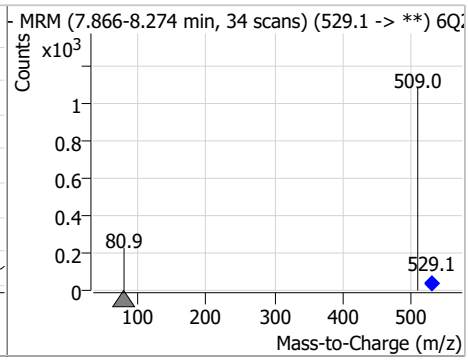




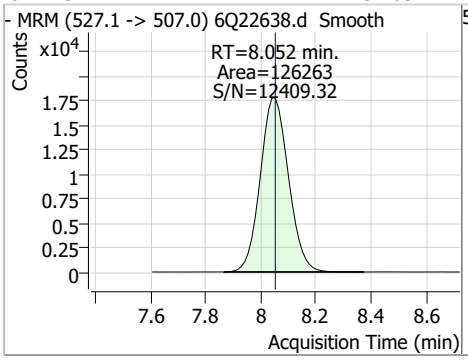
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.85	8.05	0.00	4535				

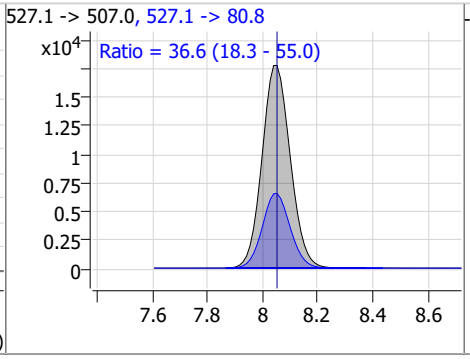


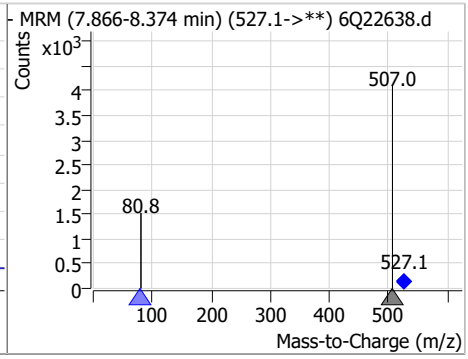




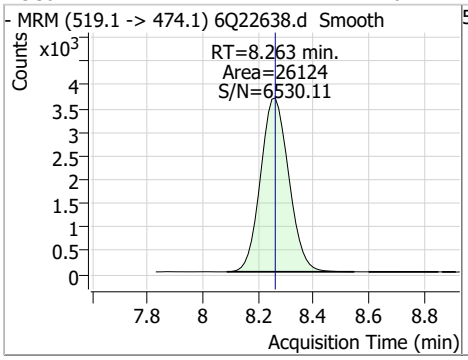
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	52.03	8.05	0.00	126263	527.1 -> 80.8	36.6	18.3	55.0

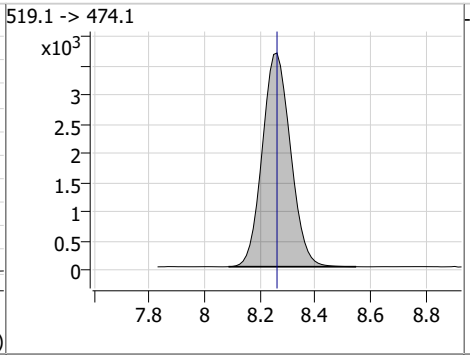


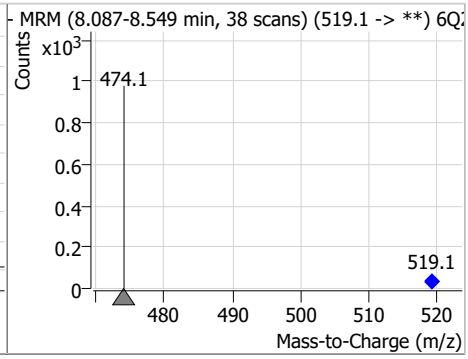




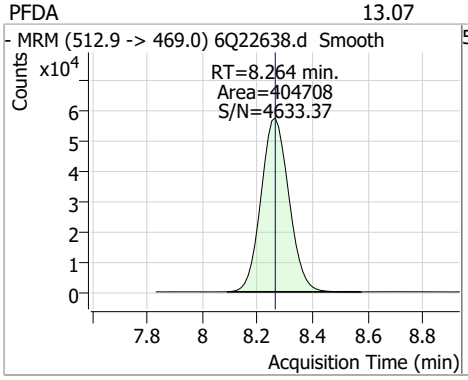
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.26	0.00	26124				

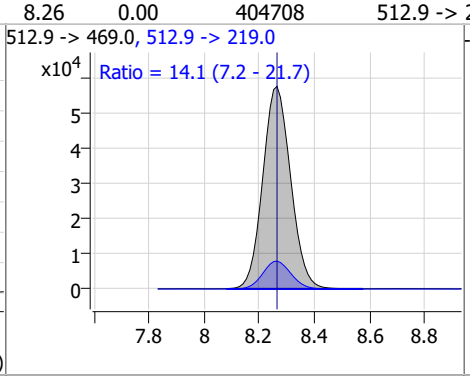


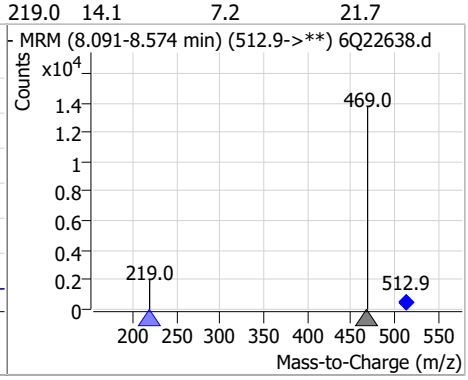




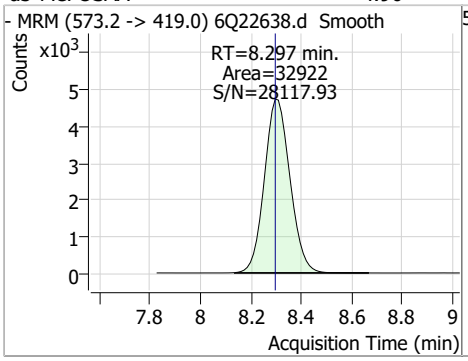
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	13.07	8.26	0.00	404708	512.9 -> 219.0	14.1	7.2	21.7

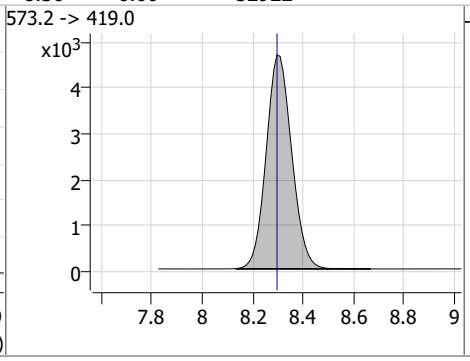


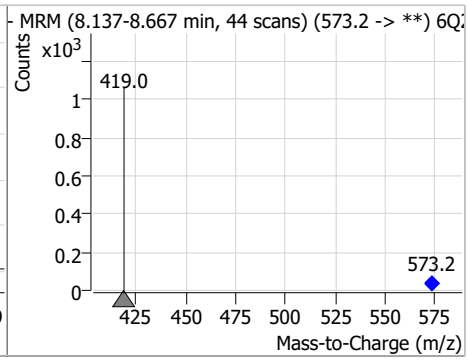




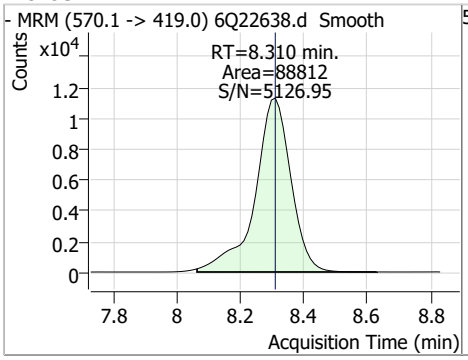
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.96	8.30	0.00	32922				

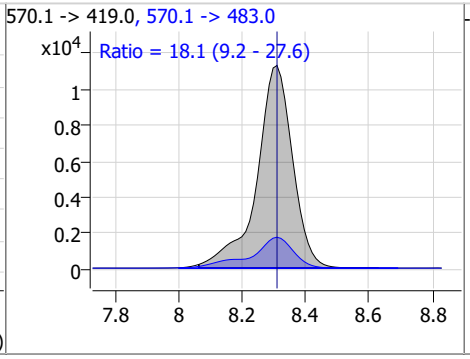


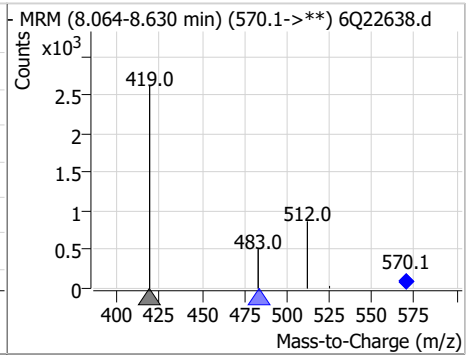




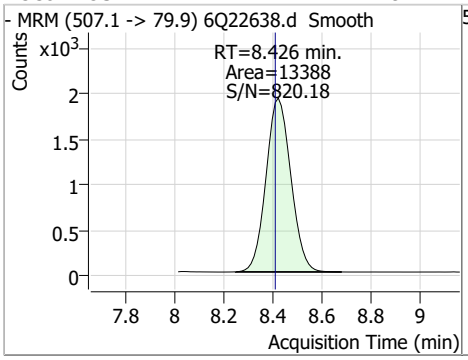
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.11	8.31	0.00	88812	570.1 -> 483.0	18.1	9.2	27.6

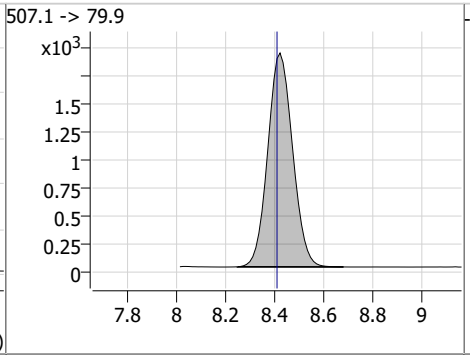


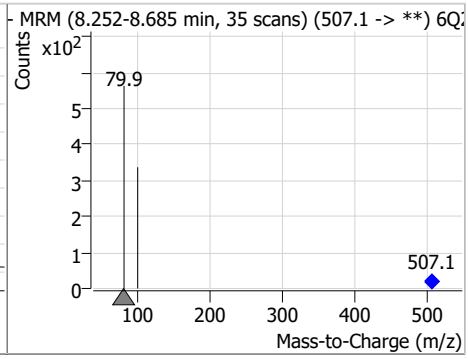




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.49	8.43	0.01	13388				

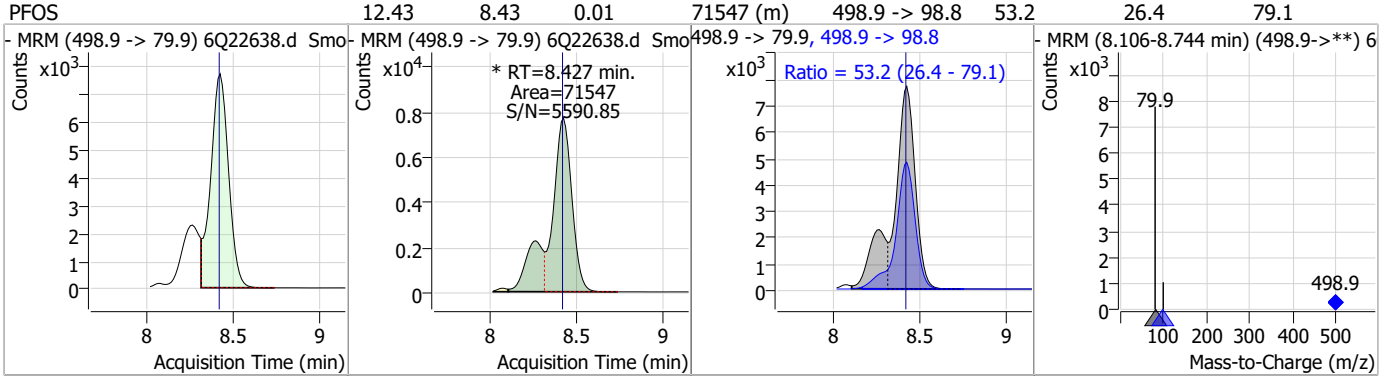




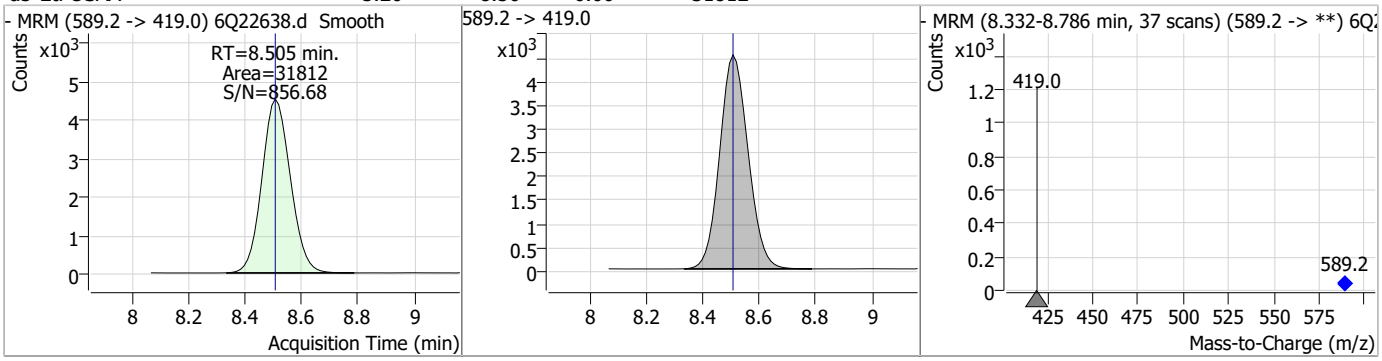


Perfluorinated Compounds by LC/MS/MS

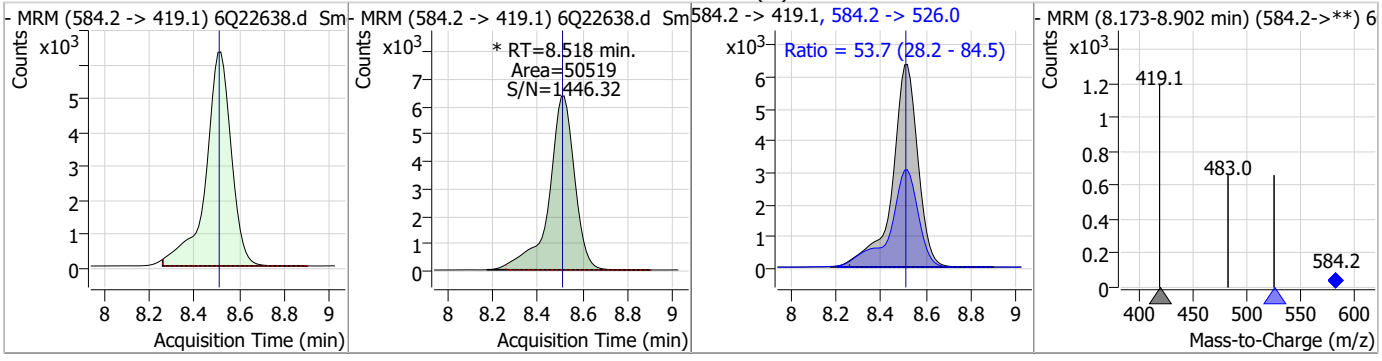
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.43	8.43	0.01	71547 (m)	498.9 -> 98.8	53.2	26.4	79.1



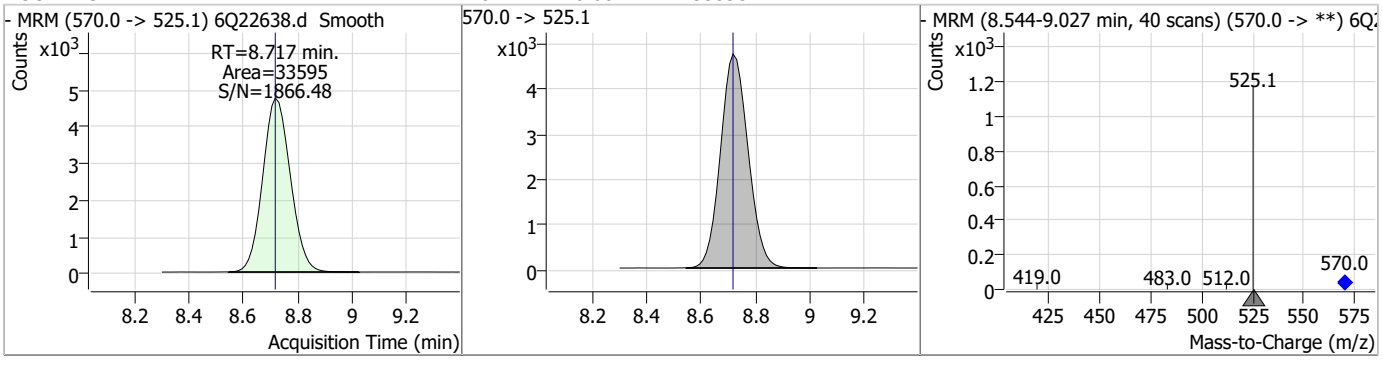
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.20	8.50	0.00	31812				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.60	8.52	0.01	50519 (m)	584.2 -> 526.0	53.7	28.2	84.5

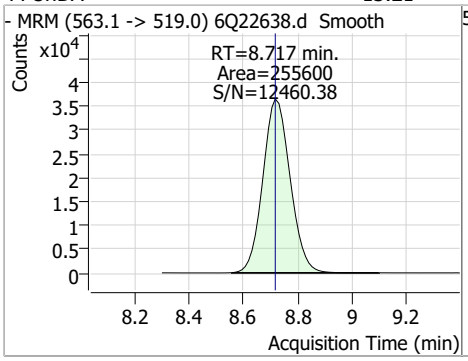


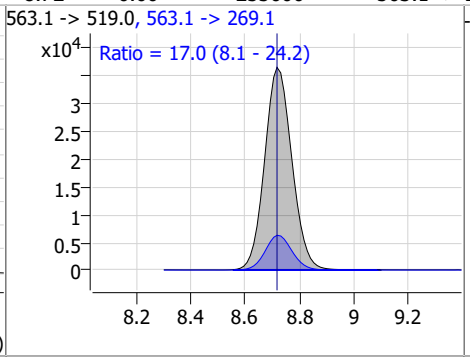
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.72	0.00	33595				

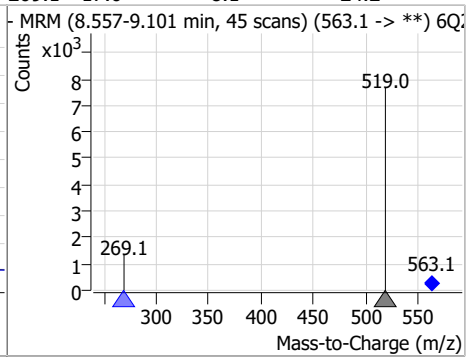


Perfluorinated Compounds by LC/MS/MS

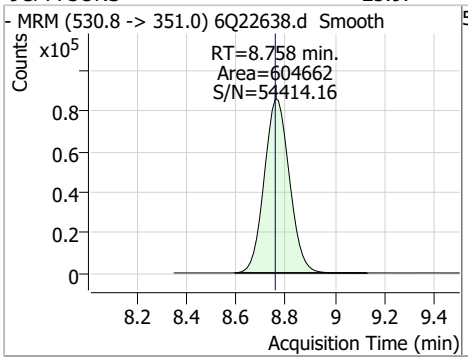
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.21	8.72	0.00	255600	563.1 -> 269.1	17.0	8.1	24.2

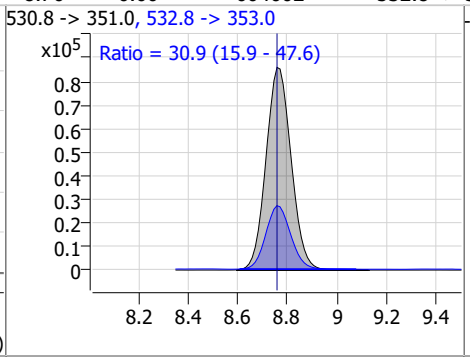


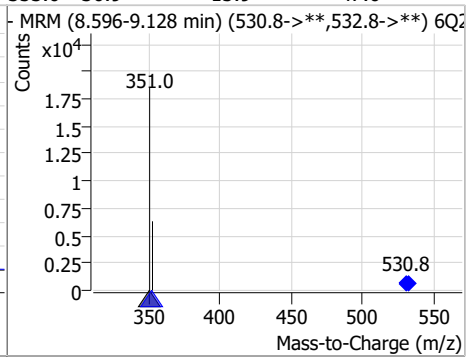




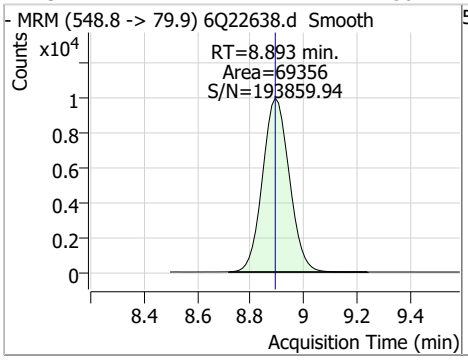
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	25.97	8.76	0.00	604662	532.8 -> 353.0	30.9	15.9	47.6

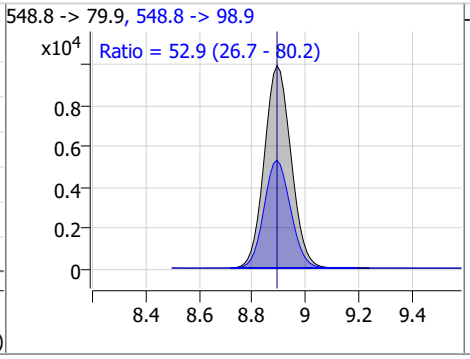


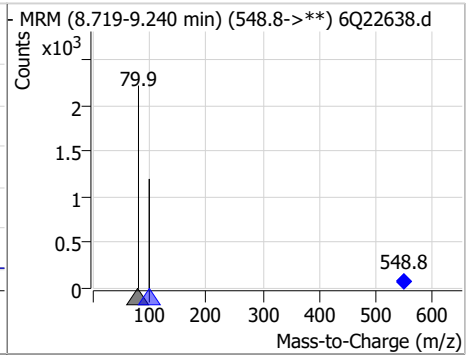




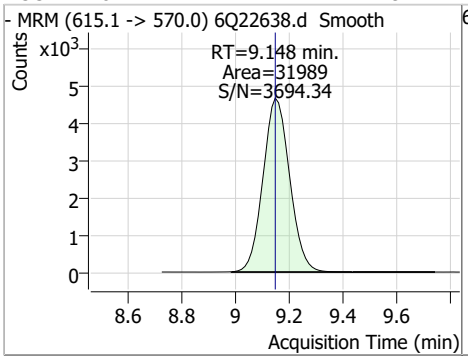
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.56	8.89	0.00	69356	548.8 -> 98.9	52.9	26.7	80.2

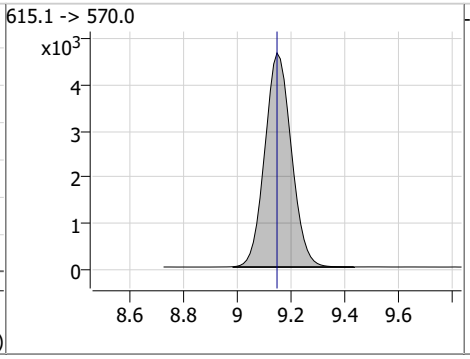


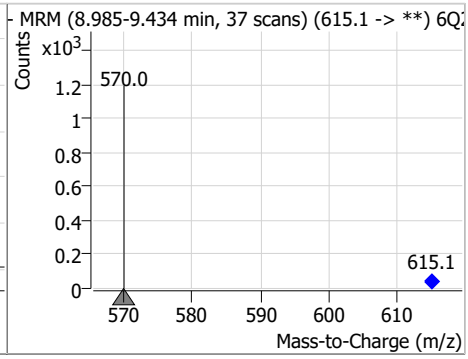




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.15	0.00	31989				

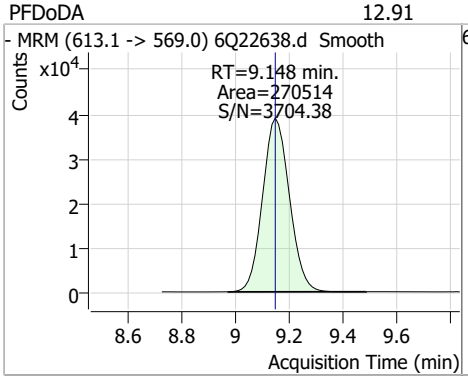


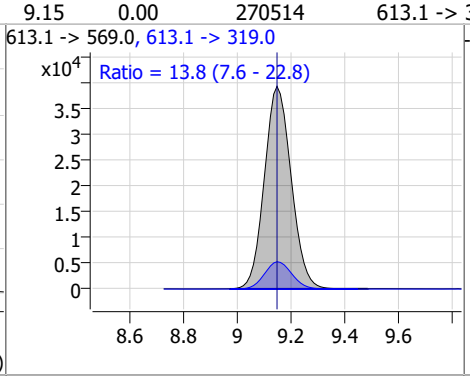


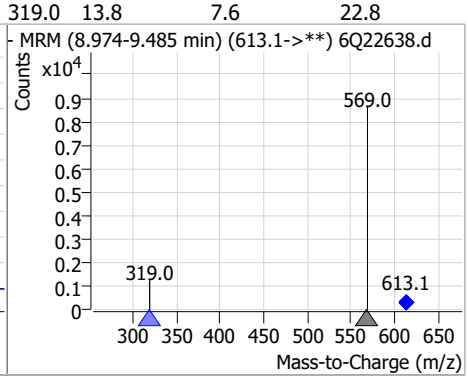


Perfluorinated Compounds by LC/MS/MS

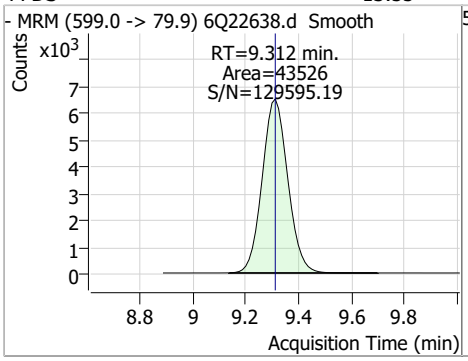
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	12.91	9.15	0.00	270514	613.1 -> 319.0	13.8	7.6	22.8

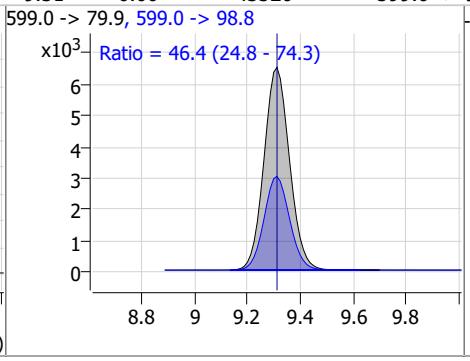


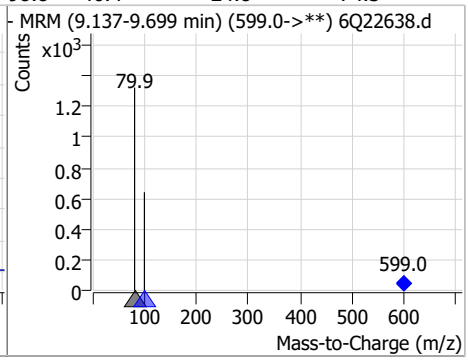




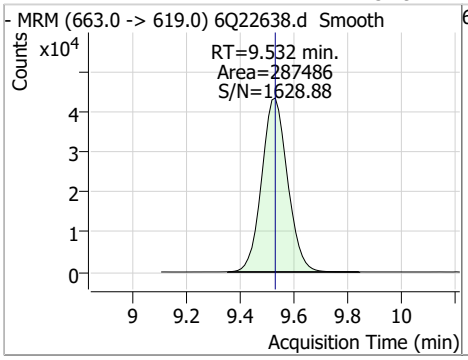
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	13.55	9.31	0.00	43526	599.0 -> 98.8	46.4	24.8	74.3

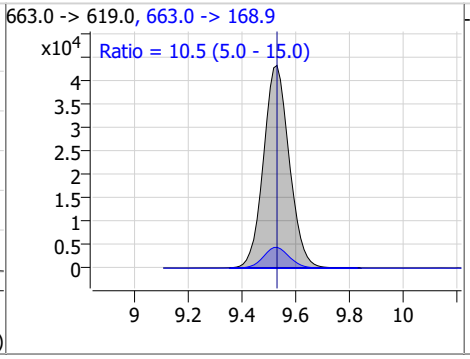


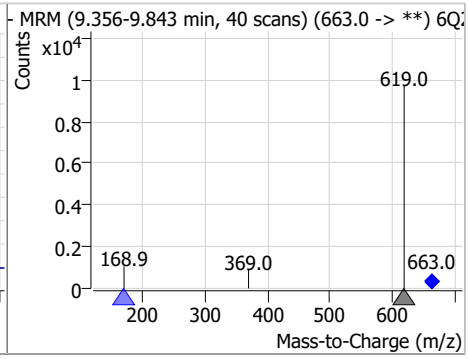




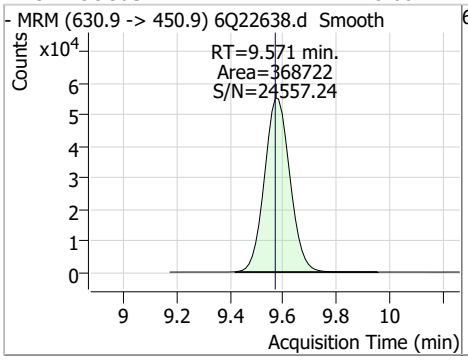
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.29	9.53	0.00	287486	663.0 -> 168.9	10.5	5.0	15.0

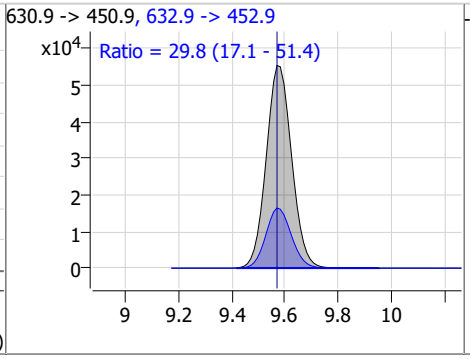


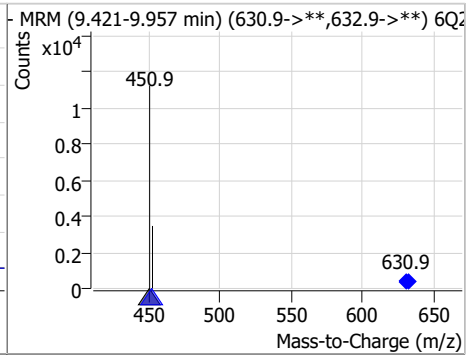




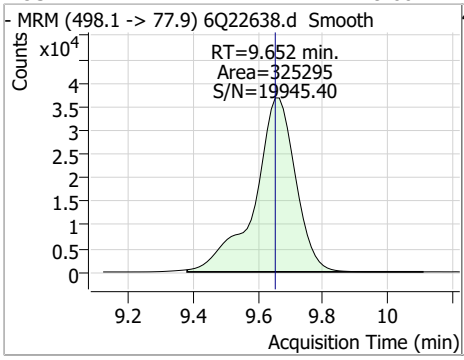
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	25.60	9.57	0.00	368722	632.9 -> 452.9	29.8	17.1	51.4

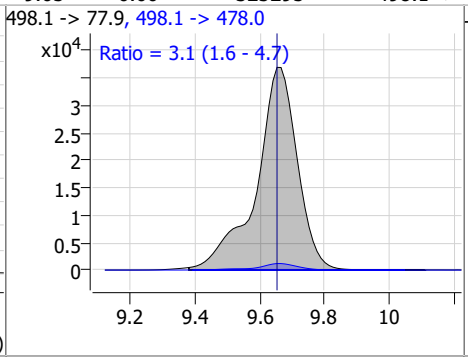


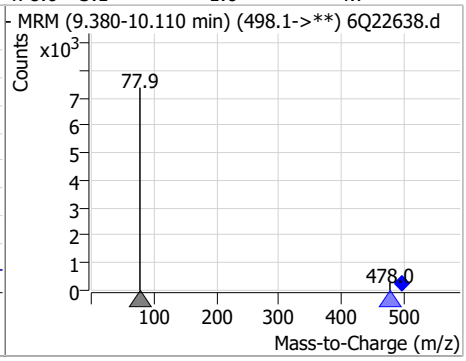




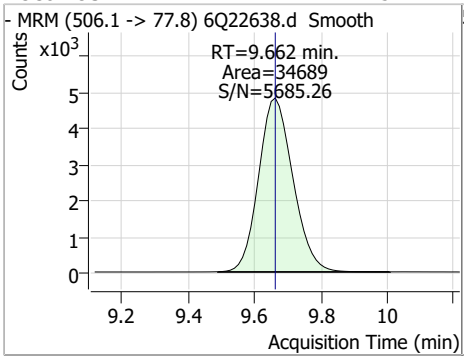
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	29.88	9.65	0.00	325295	498.1 -> 478.0	3.1	1.6	4.7

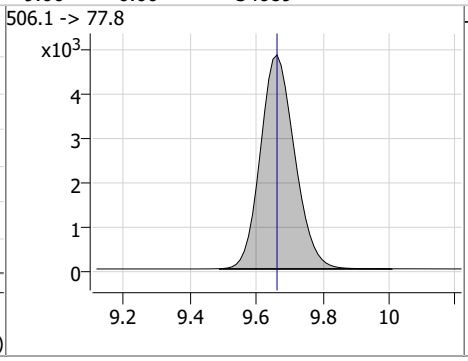


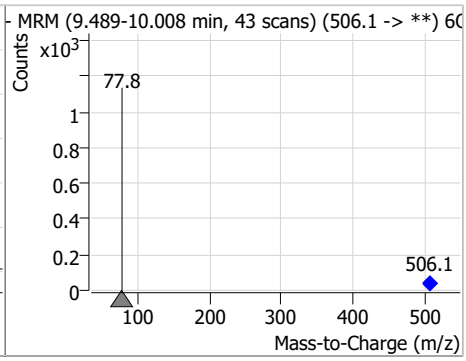




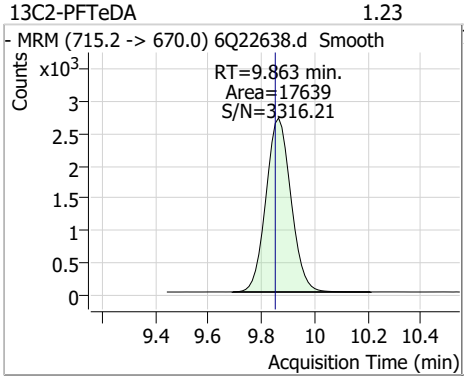
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	9.66	0.00	34689				

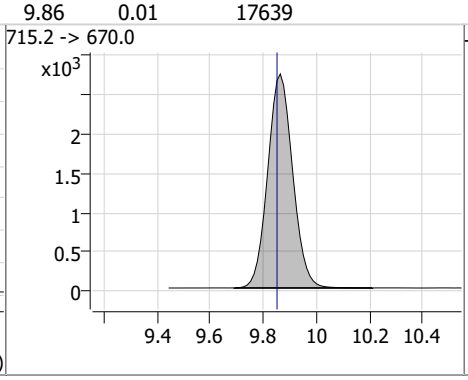


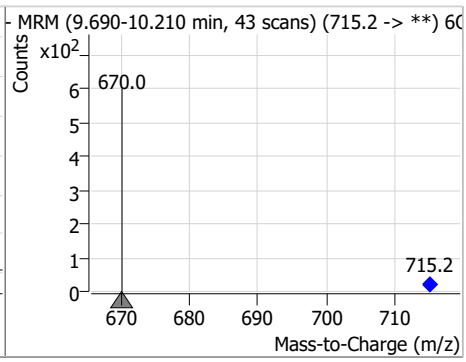




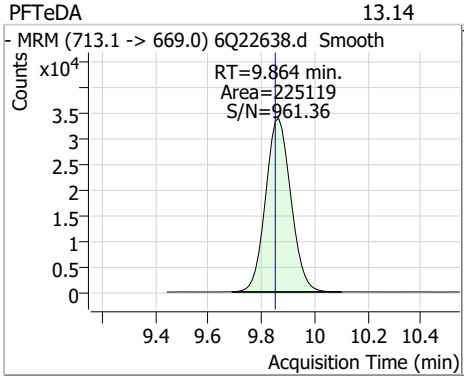
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.86	0.01	17639				

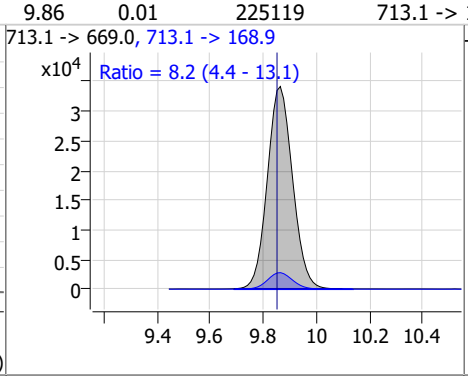


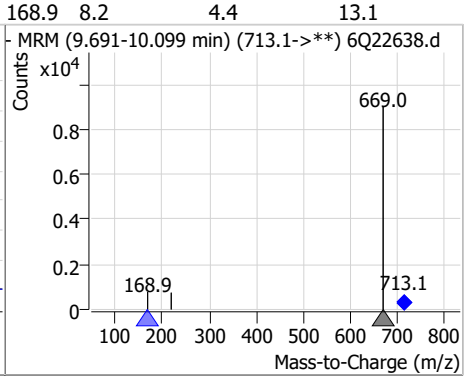




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.14	9.86	0.01	225119	713.1 -> 168.9	8.2	4.4	13.1

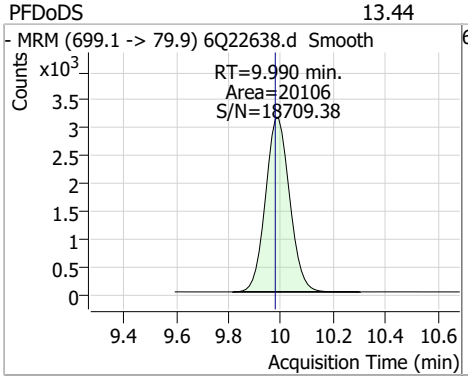


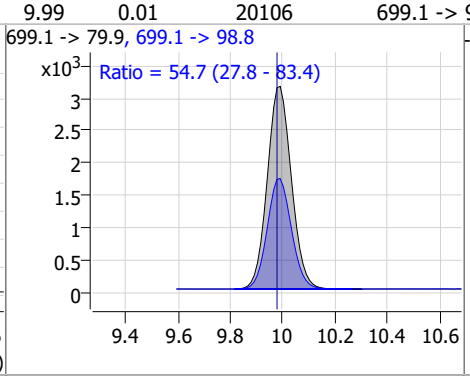


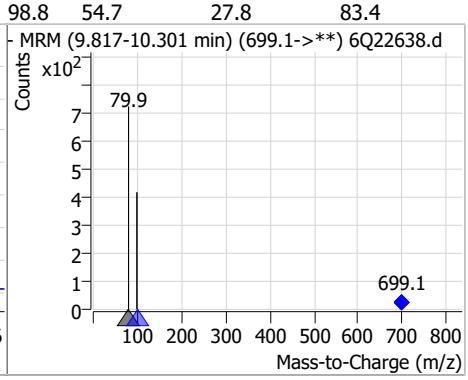


Perfluorinated Compounds by LC/MS/MS

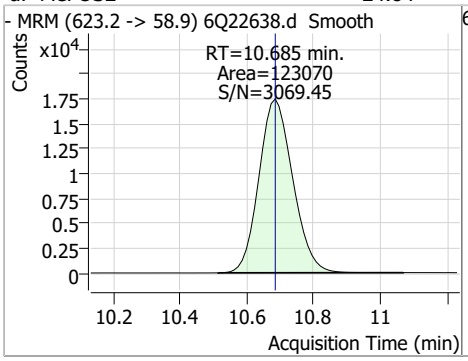
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	13.44	9.99	0.01	20106	699.1 -> 98.8	54.7	27.8	83.4

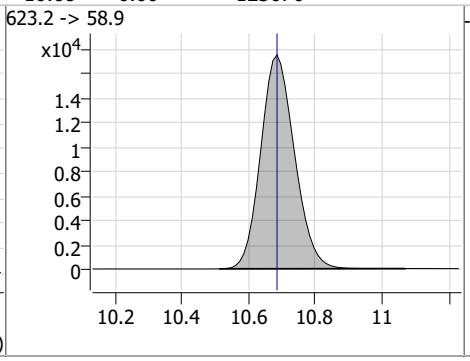


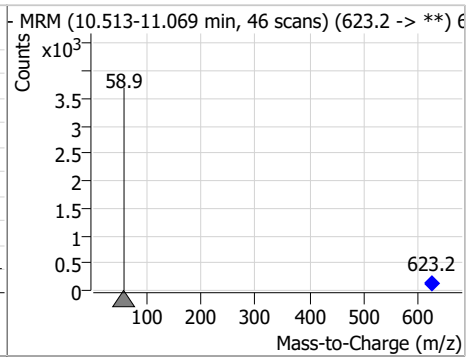




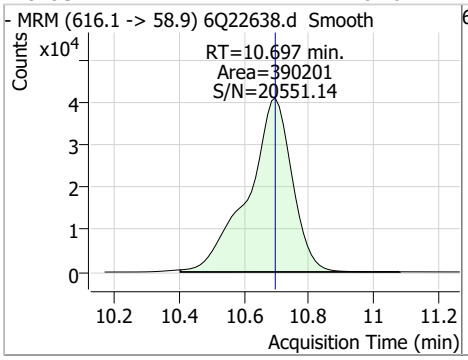
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.84	10.68	0.00	123070				

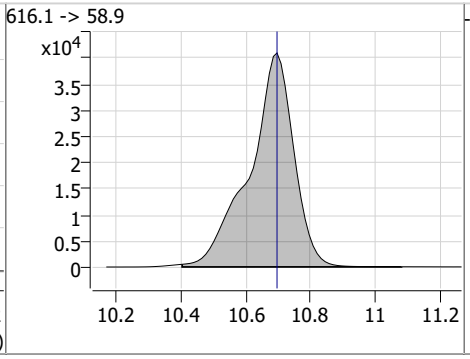


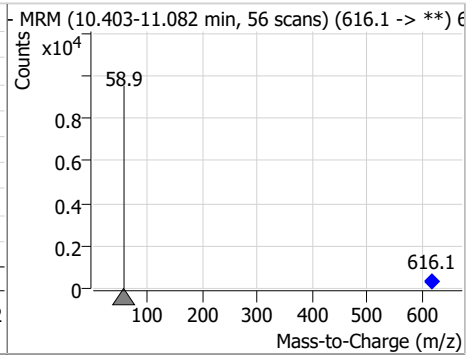




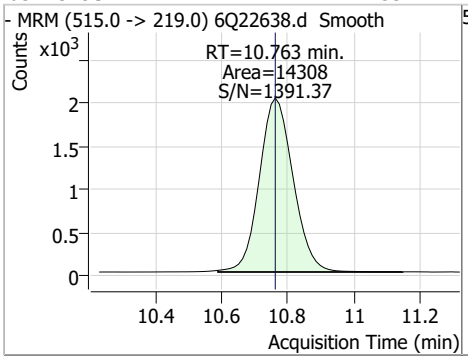
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	84.81	10.70	0.00	390201				

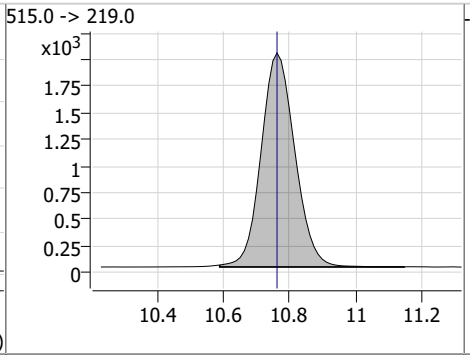


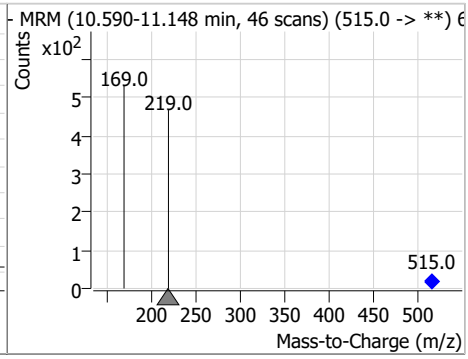




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.76	0.00	14308				

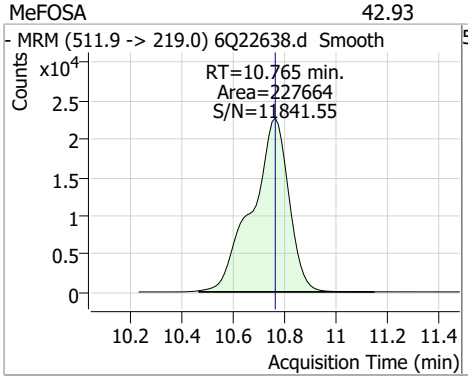


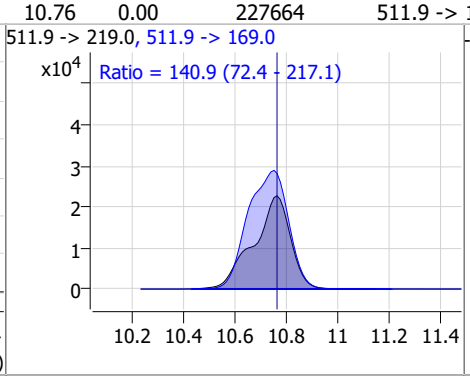


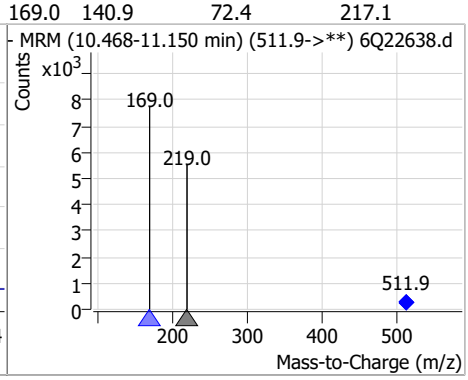


Perfluorinated Compounds by LC/MS/MS

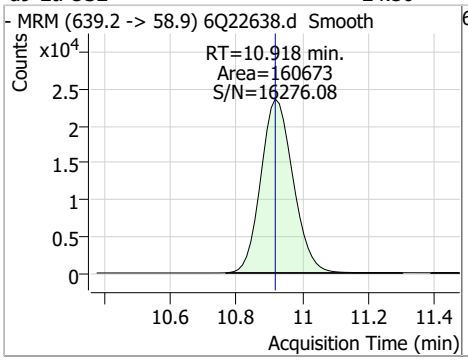
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	42.93	10.76	0.00	227664	511.9 -> 169.0	140.9	72.4	217.1

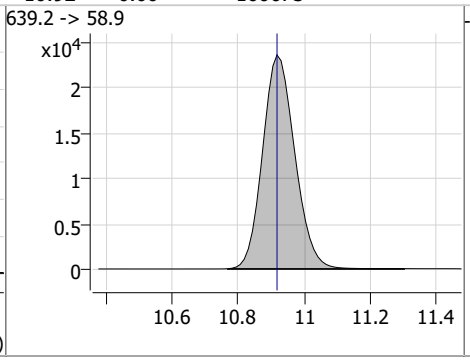


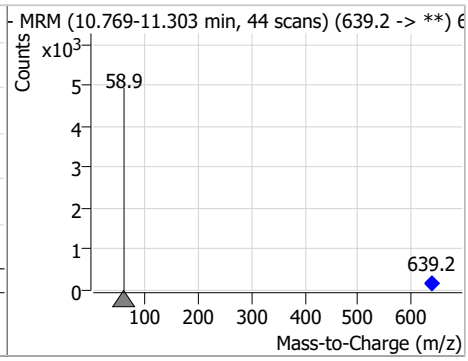




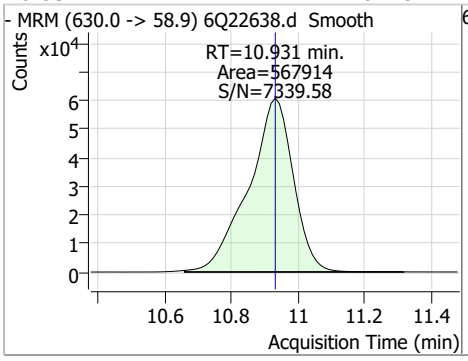
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.30	10.92	0.00	160673				

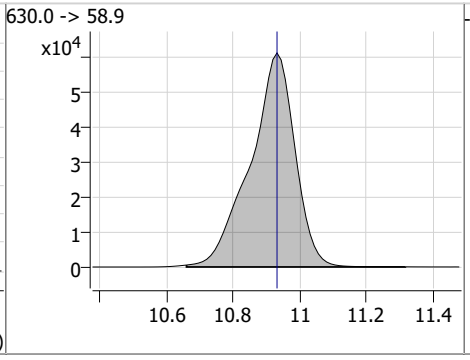


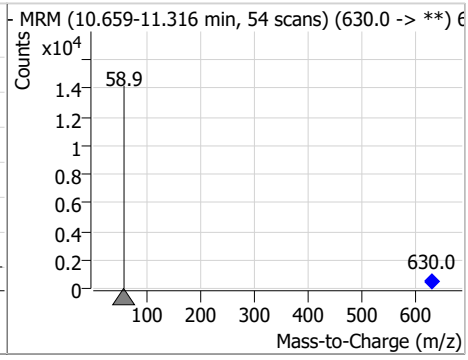




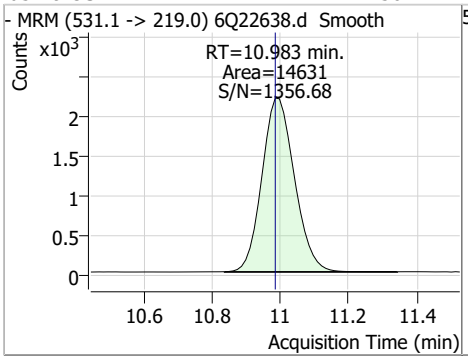
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	87.23	10.93	0.00	567914				

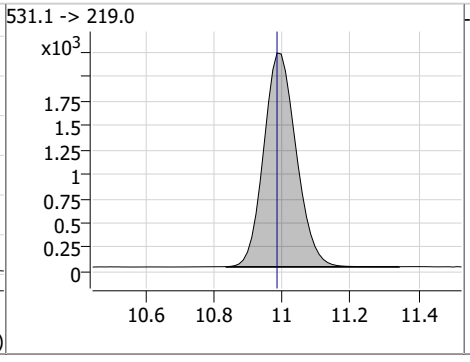


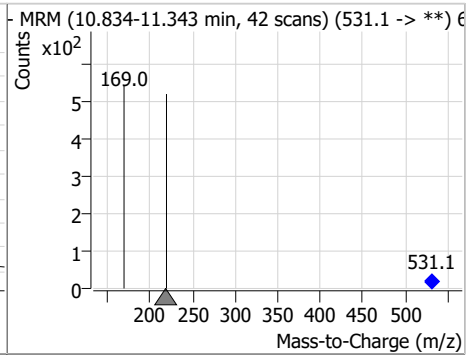




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	10.98	0.00	14631				

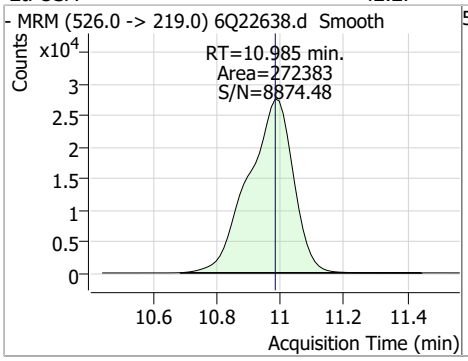


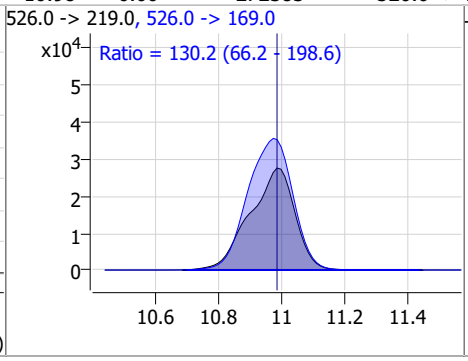


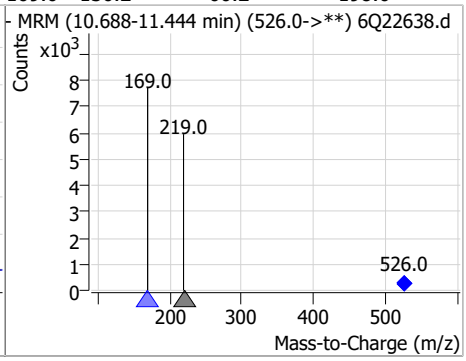


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	42.27	10.98	0.00	272383	526.0 -> 169.0	130.2	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-RT
Lab FileID: 6Q22638.D
Injection Time: 08/10/23 13:09
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.24	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorononanoic acid	375-95-1		7.77	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.52	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

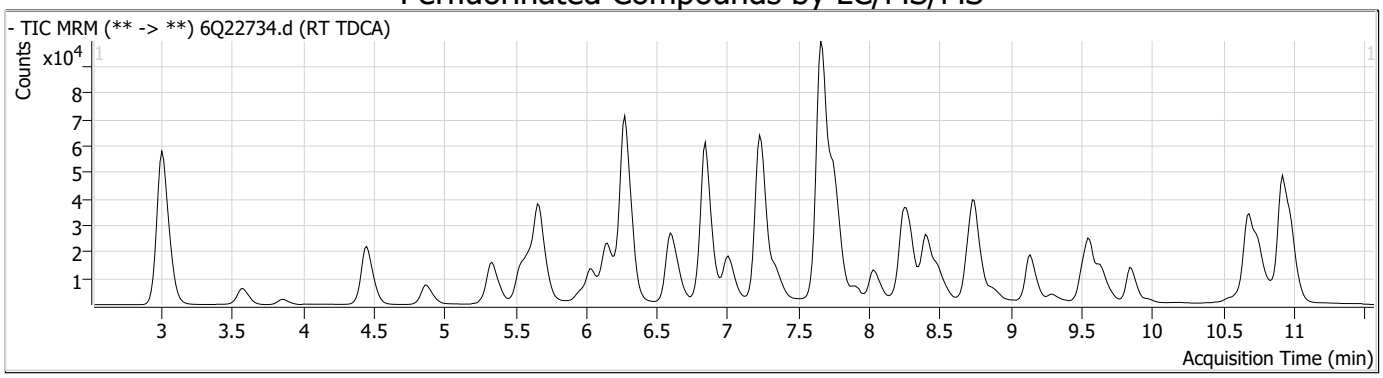
Data File : 6Q22734.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 12:05:28 PM
Sample Name : RT TDCA
Vial : P1-B3
DA Method File : TDCA.quantmethod.xml
Batch Name : s6q330 TDCA.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	8.414	507.1 -> 79.9	17209	2.50	µg/L		-0.012
13C4-PFOS	8.414	502.8 -> 79.9	26511	2.50	µg/L		-0.012
System Monitoring Compounds							
13C8-PFOS	8.414	507.1 -> 79.9	17209	1.65	µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.9%			
Target Compounds							QValue
PFOS	8.415	498.9 -> 79.9	17988	3.06	µg/L	m	96
		498.9 -> 98.8	9512				
TCDCA	6.777	498.9 -> 79.9	3999	5.04	ng/ml		100
TDCA	6.938	498.9 -> 79.9	4865	6.77	ng/ml		100
TUDCA	5.949	498.9 -> 79.9	6396	4.19	ng/ml		100

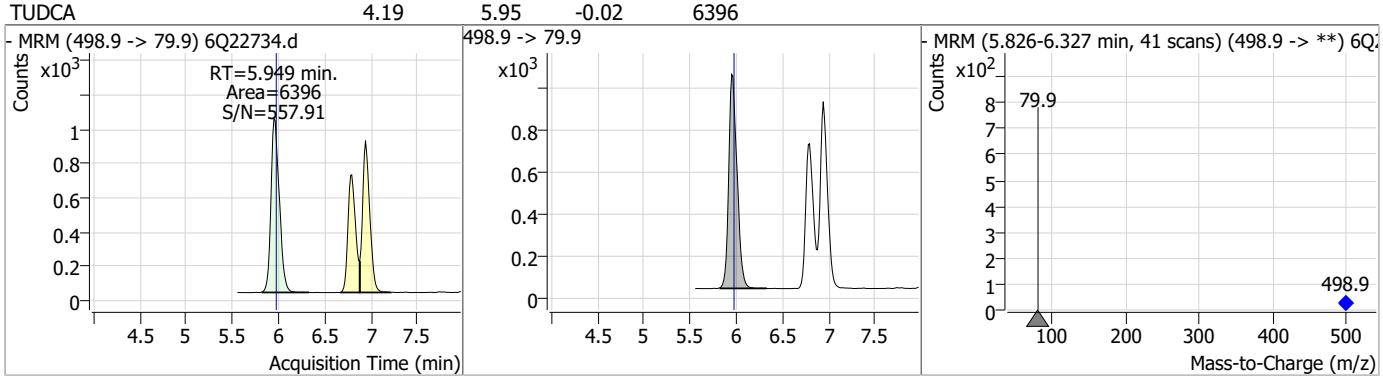
 # = Qualifier out of range, m = manually integrated, + = Area summed

7.6.7
7

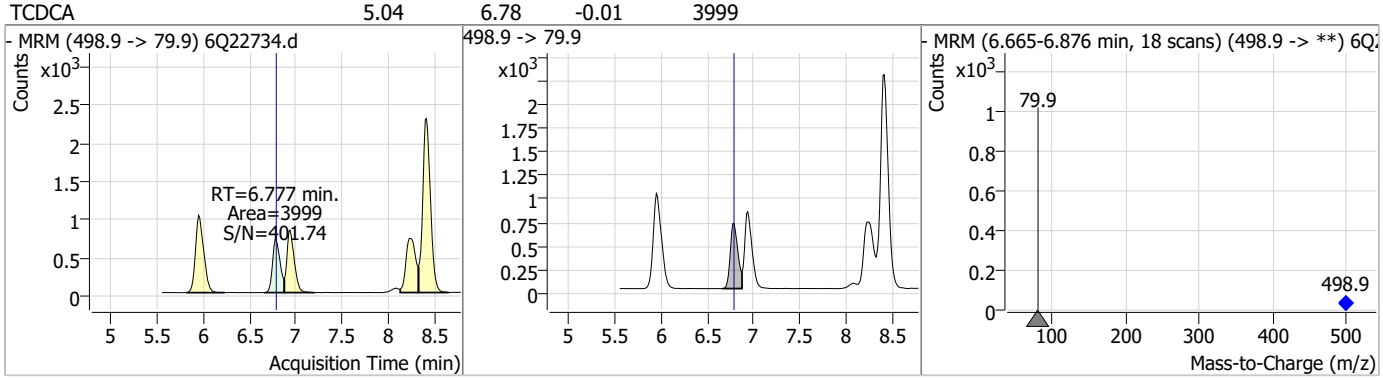
Perfluorinated Compounds by LC/MS/MS



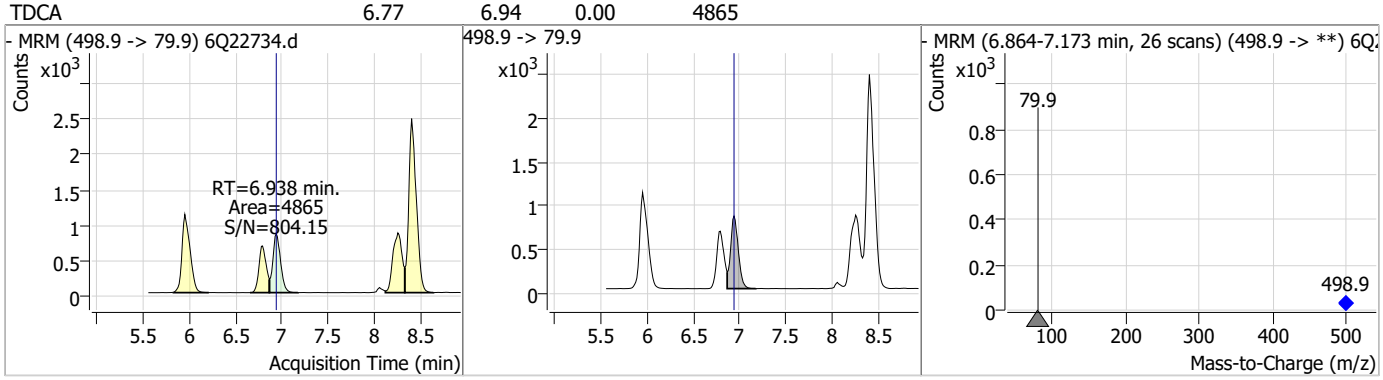
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	4.19	5.95	-0.02	6396				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	5.04	6.78	-0.01	3999				

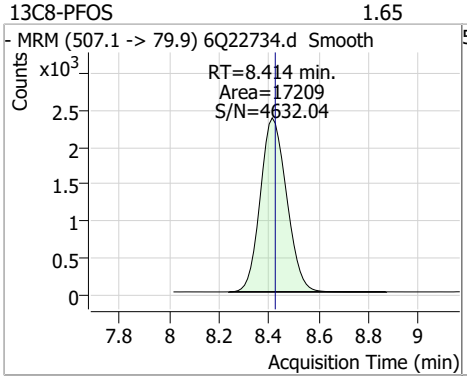


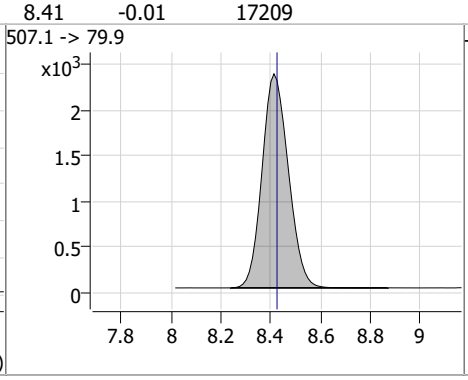
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	6.77	6.94	0.00	4865				

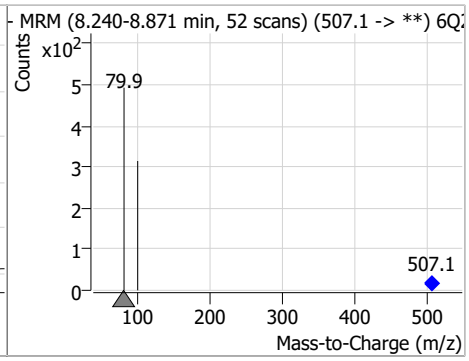


Perfluorinated Compounds by LC/MS/MS

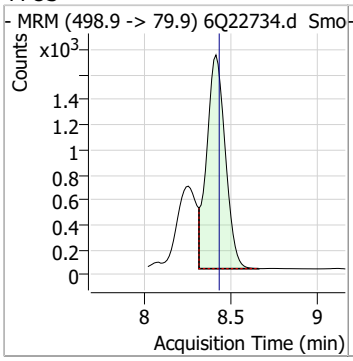
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.65	8.41	-0.01	17209				

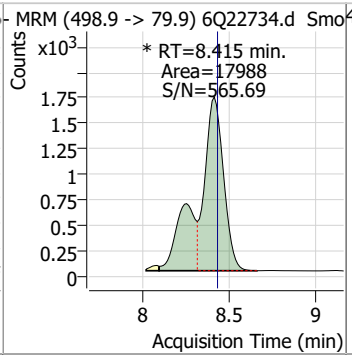


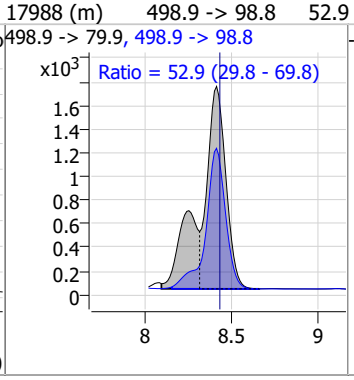


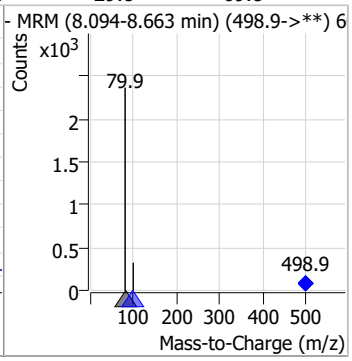


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.06	8.41	-0.01	17988 (m)	498.9 -> 98.8	52.9	29.8	69.8









Manual Integration Approval Summary

Sample Number:	S6Q330-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22734.D	**Analyst approved:**	08/13/23 14:26 Martha Valls
Injection Time:	08/11/23 12:05	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22735.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 12:19:51 PM
Sample Name : RT BR-LN
Vial : P1-B4
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	188168	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	60075	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	67812	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	63153	2.50	µg/L	-0.012
M8-PFOA	7.226	421.1 -> 376.0	100116	2.50	µg/L	-0.012
M9-PFNA	7.770	472.1 -> 427.0	45302	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	27137	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	34429	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	31571	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	17857	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	35669	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	24198	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15626	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13666	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	2959	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	4508	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	4919	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	35454	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	40394	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	31295	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	126874	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	163123	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	13980	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14442	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19361	2.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	79016	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	11886	2.50	µg/L	0.000
13C4-PFOA	7.227	417.1 -> 372.0	103395	2.50	µg/L	-0.012
13C2-PFDA	8.251	515.1 -> 470.1	37973	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	61403	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	64552	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	2959	4.17	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C2-6:2FTS	7.001	429.1 -> 80.9	4508	4.40	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4919	4.90	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFDoDA	9.135	615.1 -> 570.0	31571	1.23	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFTeDA	9.851	715.2 -> 670.0	17857	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-PFBS	5.610	302.1 -> 79.9	24198	2.40	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFHxS	7.355	402.1 -> 79.9	15626	2.39	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 = 95.7%	
13C4-PFBA	3.010	216.8 -> 171.9	188168	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.596	367.1 -> 322.0	63153	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.668	318.0 -> 273.0	67812	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFPeA	4.447	268.3 -> 223.0	60075	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.250	519.1 -> 474.1	27137	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C7-PFUnDA	8.705	570.0 -> 525.1	34429	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-FOSA	9.650	506.1 -> 77.8	35669	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.226	421.1 -> 376.0	100116	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOS	8.414	507.1 -> 79.9	13666	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C9-PFNA	7.770	472.1 -> 427.0	45302	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.0%	
d3-MeFOSAA	8.297	573.2 -> 419.0	35454	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	40394	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	14442	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSAA	8.492	589.2 -> 419.0	31295	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d7-MeFOSE	10.685	623.2 -> 58.9	126874	24.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	163123	23.36 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d5-EtFOSA	10.996	531.1 -> 219.0	13980	2.32 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	211929	55.36 µg/L	97
		327.1 -> 80.9	78389		
6:2FTS	7.002	427.1 -> 407.0	214348	53.15 µg/L	95
		427.1 -> 80.9	66219		
8:2FTS	8.040	527.1 -> 507.0	125340	47.62 µg/L	99
		527.1 -> 80.8	46541		
EtFOSAA	8.493	584.2 -> 419.1	53215	13.49 µg/L	96
		584.2 -> 526.0	28432		
FOSA	9.652	498.1 -> 77.9	327918	29.29 µg/L	100
		498.1 -> 478.0	10059		
MeFOSAA	8.298	570.1 -> 419.0	80037	11.81 µg/L	95
		570.1 -> 483.0	16390		
PFBA	3.006	212.8 -> 168.9	306609	52.15 µg/L	100
PFBS	5.600	298.7 -> 79.9	90889	11.49 µg/L	99
		298.7 -> 98.8	34674		
PFDA	8.251	512.9 -> 469.0	394414	12.27 µg/L	100
		512.9 -> 219.0	57703		
PFDoDA	9.148	613.1 -> 569.0	247222	11.95 µg/L	98
		613.1 -> 319.0	39808		
PFDS	9.299	599.0 -> 79.9	41440	12.64 µg/L	99

Perfluorinated Compounds by LC/MS/MS

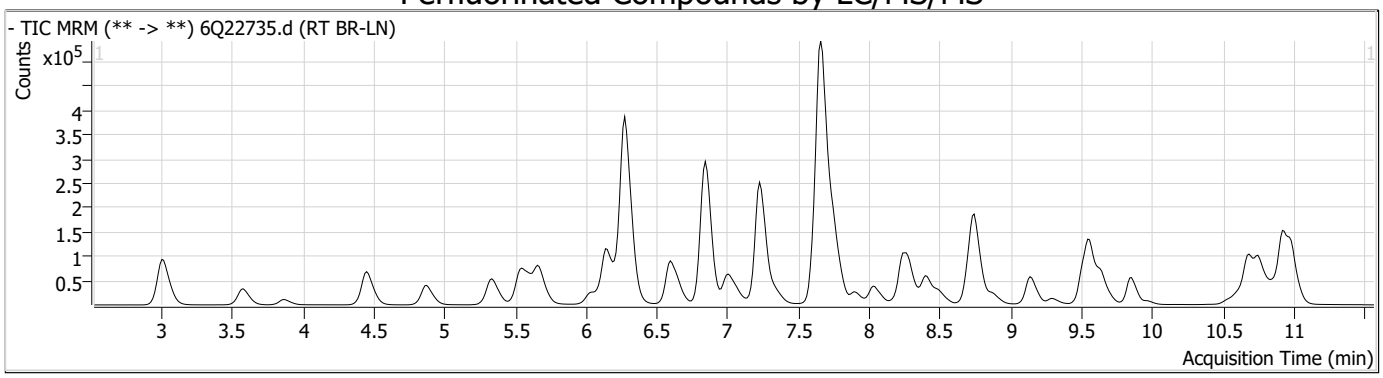
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	20140				
PFHpA	6.596	363.1 -> 319.0	347150	13.94	µg/L		98
		363.1 -> 169.0	54935				
PFHpS	7.909	449.0 -> 79.9	82902	13.28	µg/L		90
		449.0 -> 98.9	38366				
PFHxA	5.670	313.0 -> 269.0	256347	12.92	µg/L		100
		313.0 -> 118.9	13608				
PFHxS	7.356	398.7 -> 79.9	78643	11.41	µg/L	m	100
		398.7 -> 98.9	38421				
PFNA	7.758	463.0 -> 419.0	808418	25.97	µg/L	m	97
		463.0 -> 219.0	163276				
PFNS	8.880	548.8 -> 79.9	69434	12.32	µg/L		97
		548.8 -> 98.9	38604				
PFOA	7.228	413.0 -> 369.0	1051699	25.70	µg/L	m	93
		413.0 -> 169.0	203889				
PFOS	8.415	498.9 -> 79.9	72824	12.40	µg/L	m	99
		498.9 -> 98.8	38737				
PFPeA	4.449	263.0 -> 219.0	354294	26.77	µg/L		100
PFPeS	6.660	349.1 -> 79.9	76955	12.03	µg/L		97
		349.1 -> 98.9	36709				
PFTeDA	9.852	713.1 -> 669.0	232473	13.40	µg/L		99
		713.1 -> 168.9	19404				
PFTrDA	9.519	663.0 -> 619.0	282201	13.22	µg/L		99
		663.0 -> 168.9	29700				
PFUnDA	8.705	563.1 -> 519.0	266657	13.45	µg/L		99
		563.1 -> 269.1	43992				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	361809	25.10	µg/L		96
		632.9 -> 452.9	115496				
9Cl-PF3ONS	8.758	530.8 -> 351.0	612719	26.29	µg/L		99
		532.8 -> 353.0	191950				
ADONA	6.846	376.9 -> 250.9	1295796	25.19	µg/L		98
		376.9 -> 84.8	353530				
HFPO-DA	6.046	284.9 -> 168.9	89096	25.92	µg/L		97
		284.9 -> 184.9	10395				
3:3FTCA	3.859	241.0 -> 177.0	58743	63.19	µg/L		100
		241.0 -> 117.0	7898				
5:3FTCA	6.272	341.0 -> 237.1	1334623	327.13	µg/L		97
		341.0 -> 217.0	909744				
7:3FTCA	7.673	441.0 -> 316.9	899050	297.94	µg/L		98
		441.0 -> 336.9	2021019				
EtFOSA	10.985	526.0 -> 219.0	283233	46.00	µg/L		98
		526.0 -> 169.0	367290				
EtFOSE	10.931	630.0 -> 58.9	575926	87.13	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	230172	43.00	µg/L		98
		511.9 -> 169.0	327786				
MeFOSE	10.697	616.1 -> 58.9	387450	81.68	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	19637	12.86	µg/L		98
		699.1 -> 98.8	11153				
NFDHA	5.551	295.0 -> 201.0	64806	25.69	µg/L		96
		295.0 -> 84.9	17034				
PFMBA	4.869	279.0 -> 85.1	247689	26.46	µg/L		100
PFMPA	3.576	229.0 -> 84.9	198389	26.48	µg/L		100
PFEESA	6.151	314.8 -> 134.9	611127	22.94	µg/L		100
		314.8 -> 82.9	21055				

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

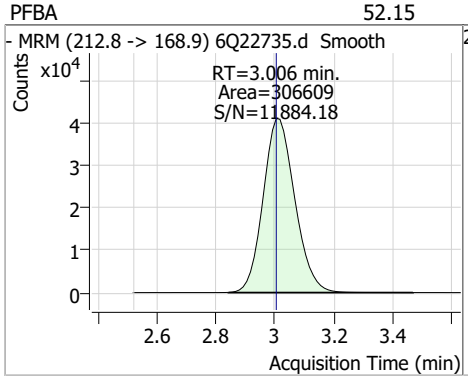
Perfluorinated Compounds by LC/MS/MS

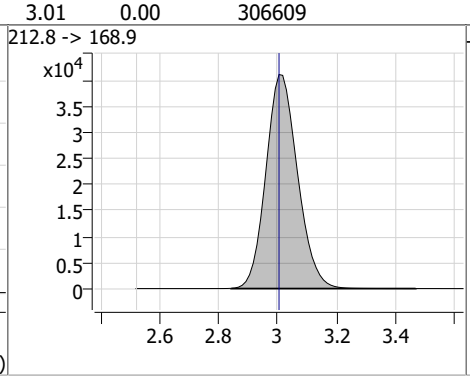
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

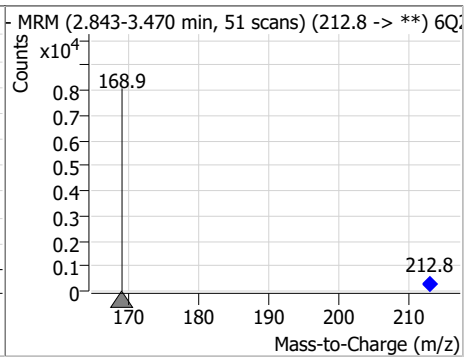
Perfluorinated Compounds by LC/MS/MS



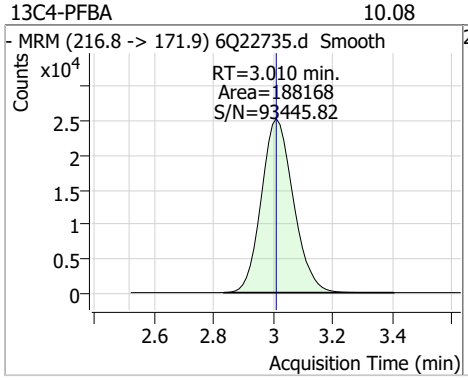
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	52.15	3.01	0.00	306609				

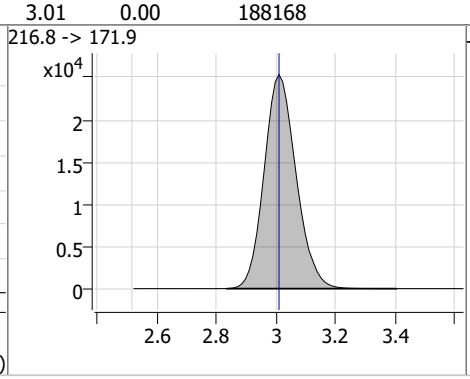


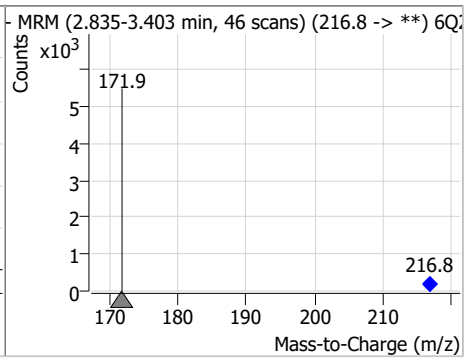




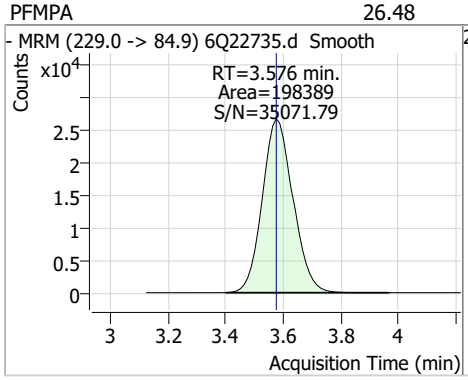
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.08	3.01	0.00	188168				

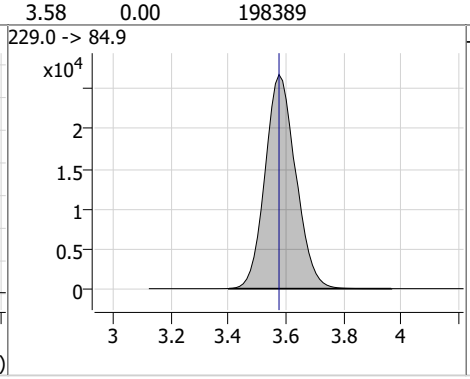


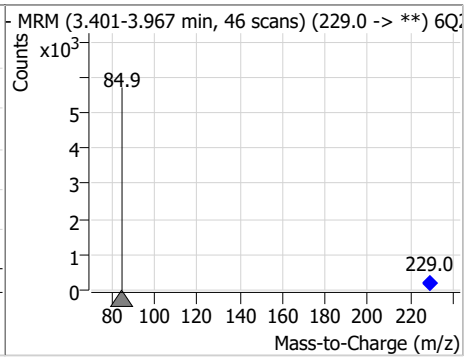




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	26.48	3.58	0.00	198389				

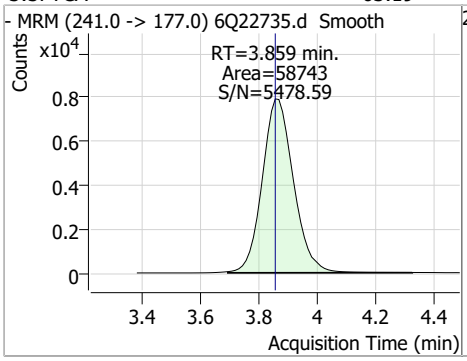


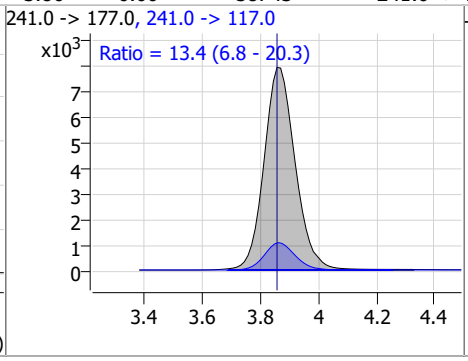


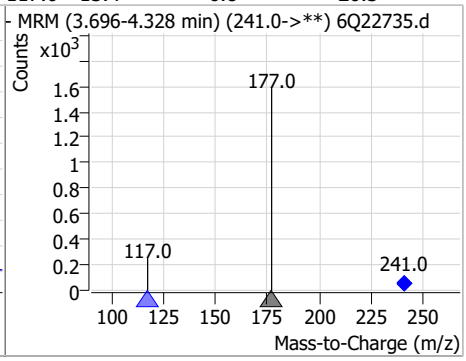


Perfluorinated Compounds by LC/MS/MS

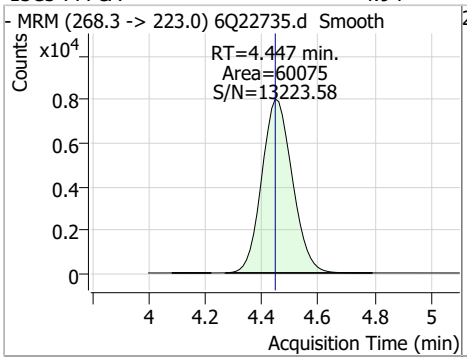
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	63.19	3.86	0.00	58743	241.0 -> 117.0	13.4	6.8	20.3

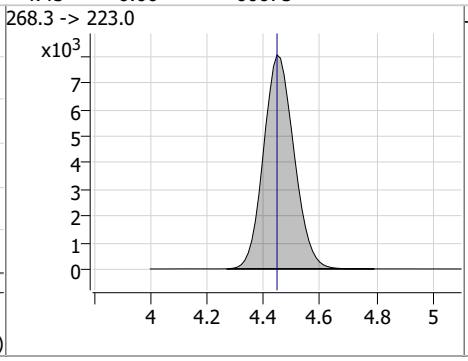


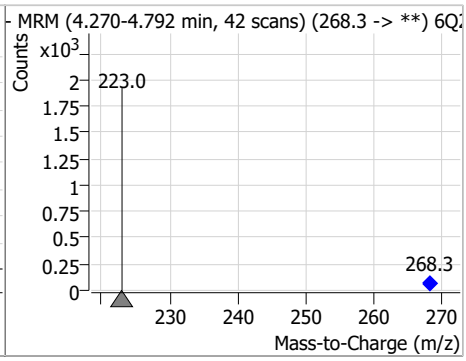




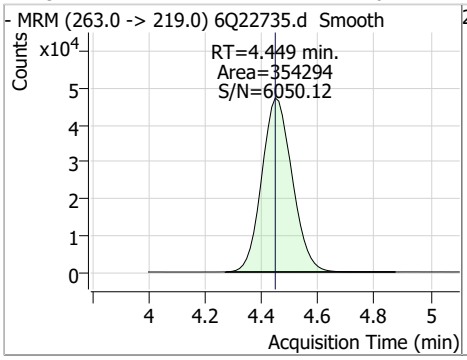
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.45	0.00	60075				

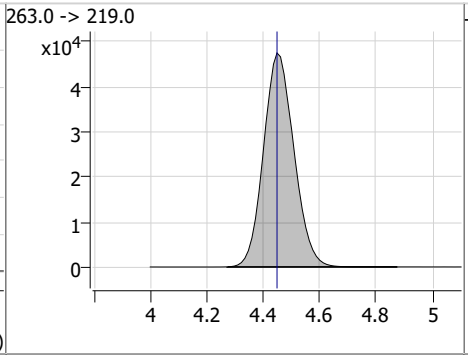


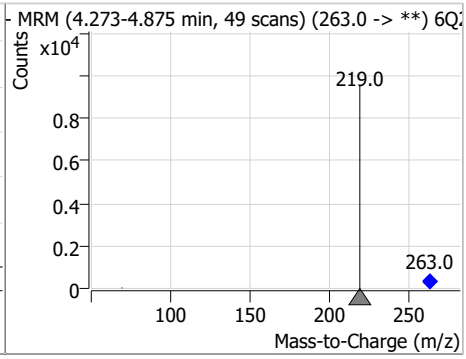




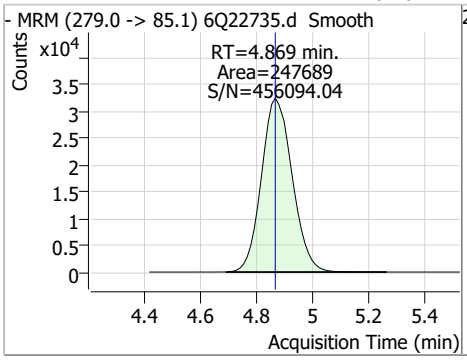
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.77	4.45	0.00	354294				

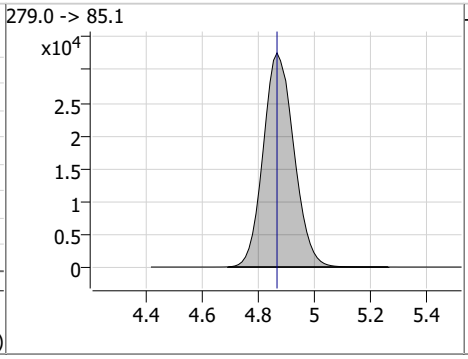


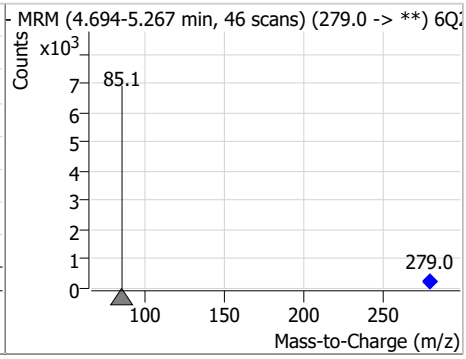




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.46	4.87	0.00	247689				

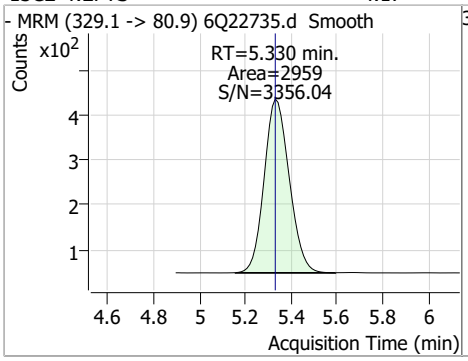


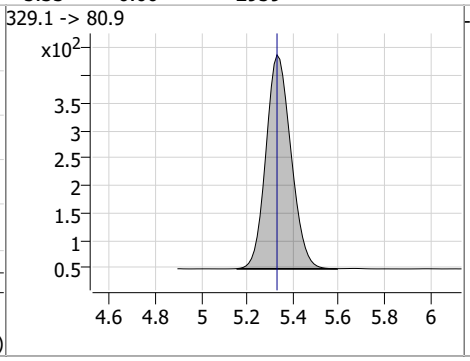


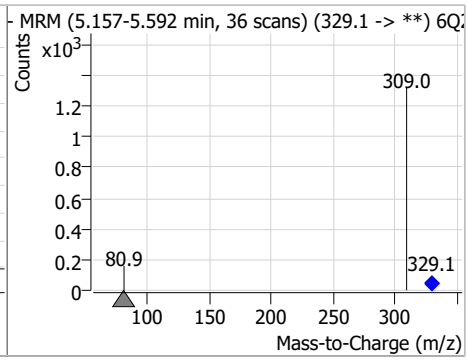


Perfluorinated Compounds by LC/MS/MS

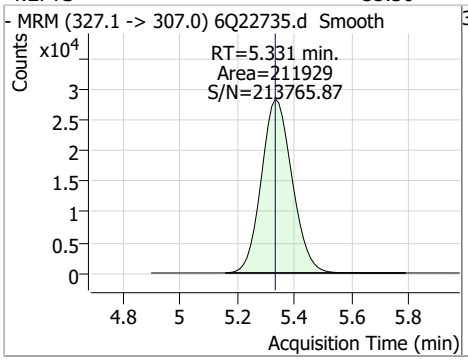
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.17	5.33	0.00	2959				

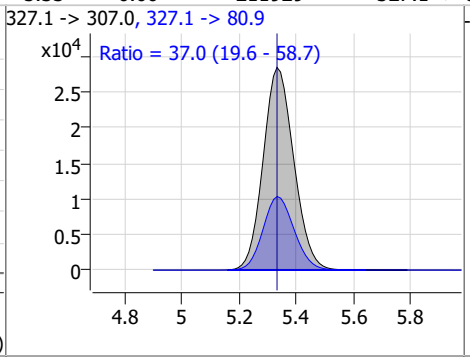


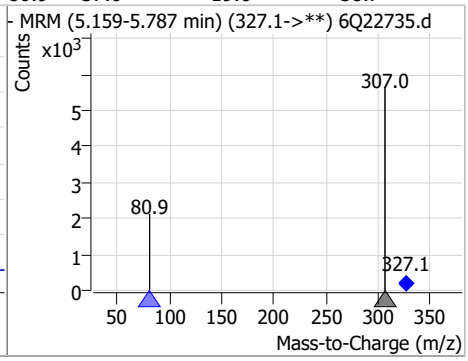




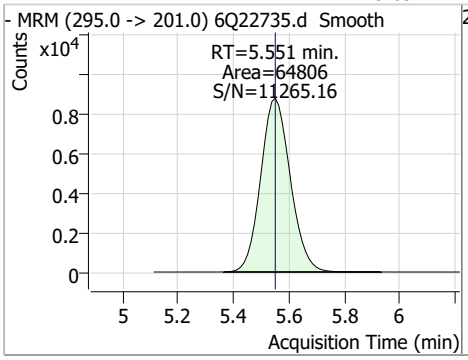
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	55.36	5.33	0.00	211929	327.1 -> 80.9	37.0	19.6	58.7

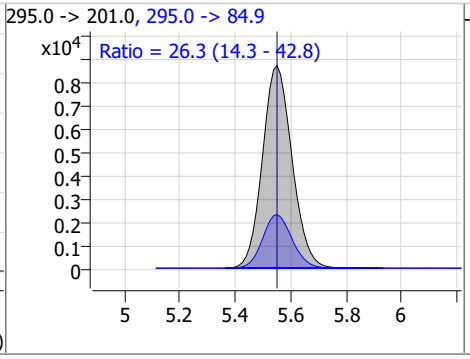


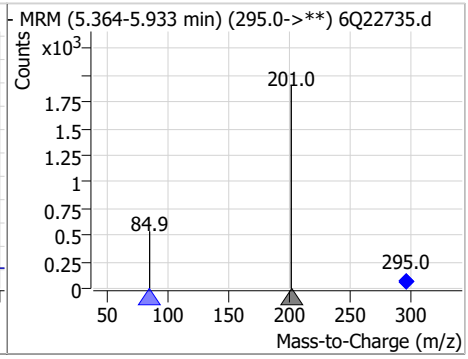




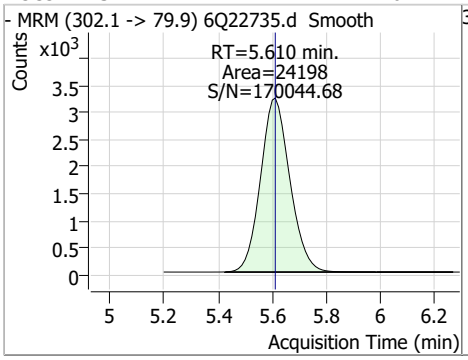
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	25.69	5.55	0.00	64806	295.0 -> 84.9	26.3	14.3	42.8

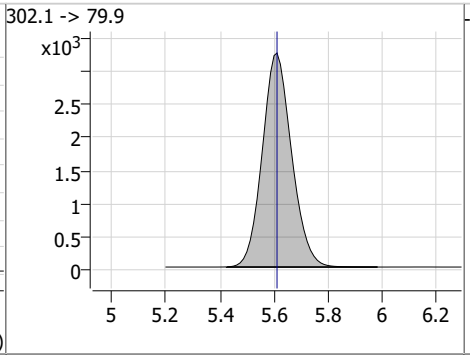


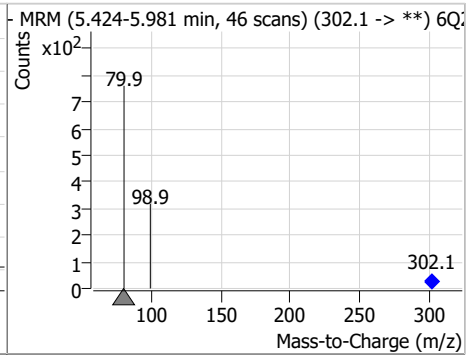




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.40	5.61	0.00	24198				

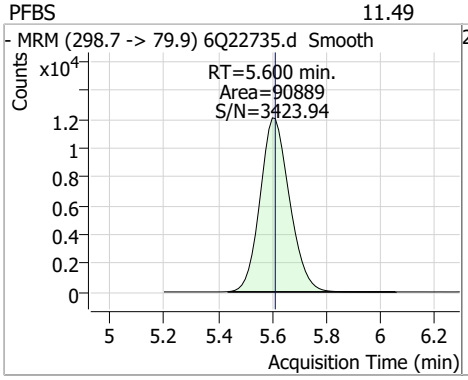


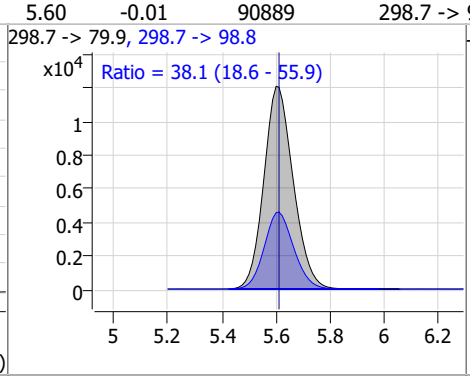


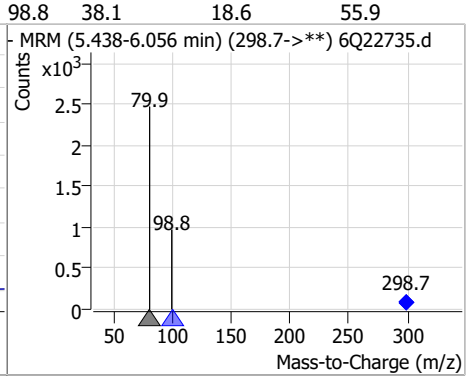


Perfluorinated Compounds by LC/MS/MS

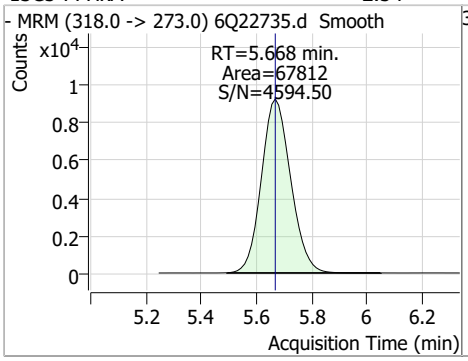
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.49	5.60	-0.01	90889	298.7 -> 98.8	38.1	18.6	55.9

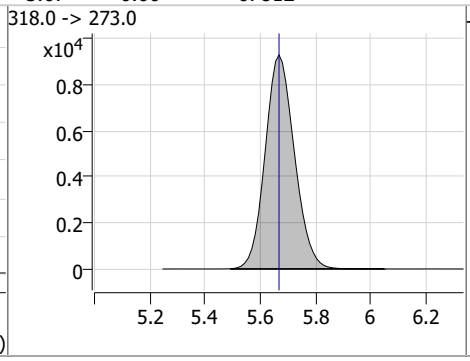


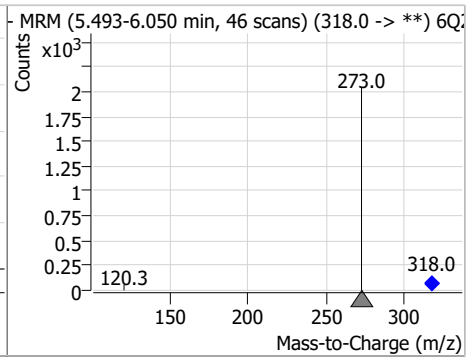




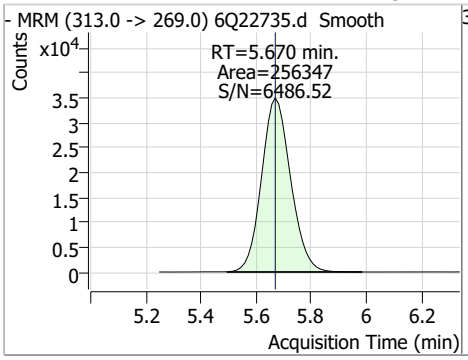
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.67	0.00	67812				

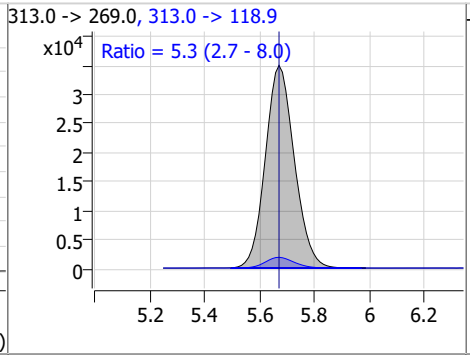


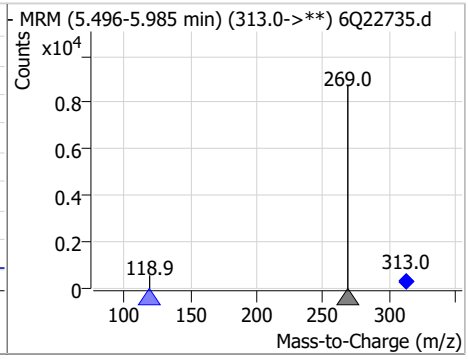




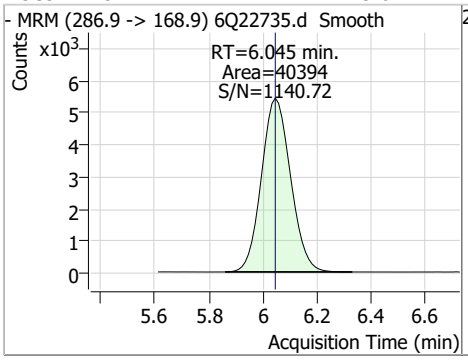
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.92	5.67	0.00	256347	313.0 -> 118.9	5.3	2.7	8.0

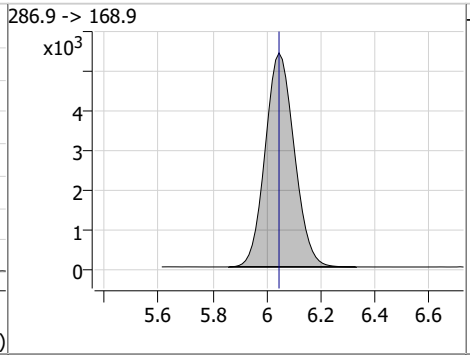


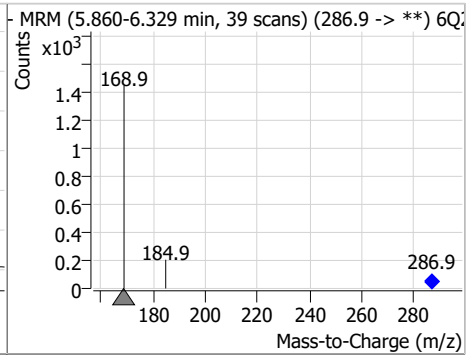




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.67	6.05	0.00	40394				

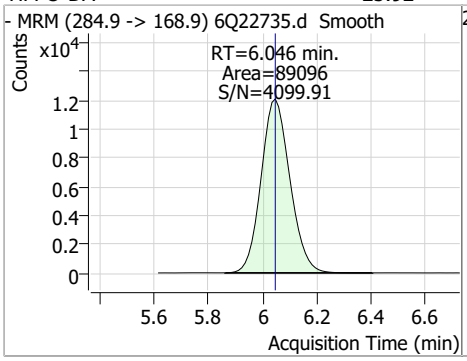


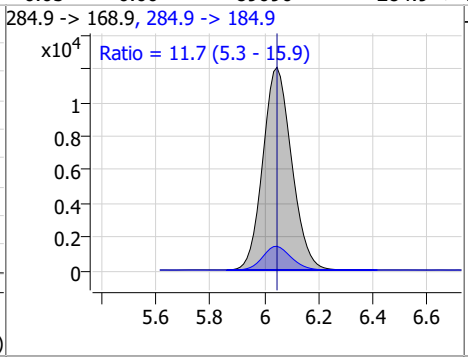


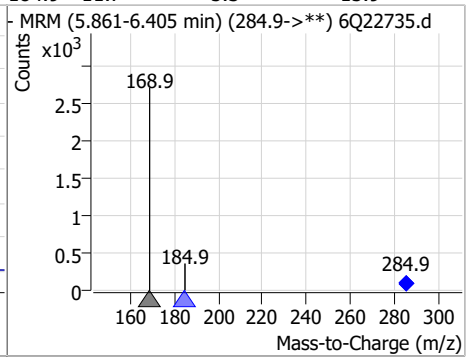


Perfluorinated Compounds by LC/MS/MS

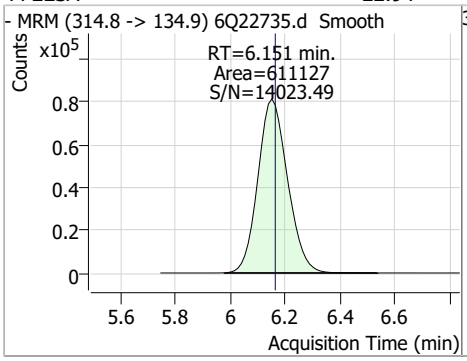
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.92	6.05	0.00	89096	284.9 -> 184.9	11.7	5.3	15.9

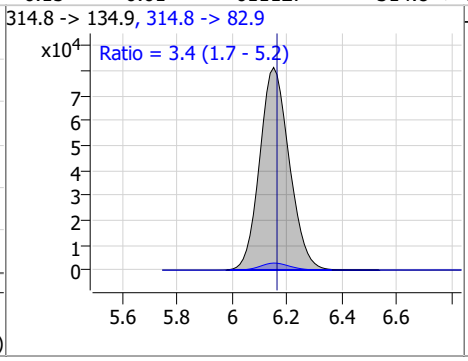


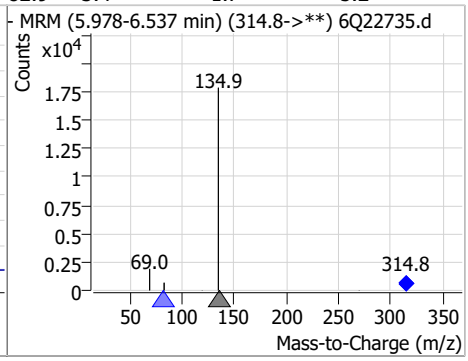




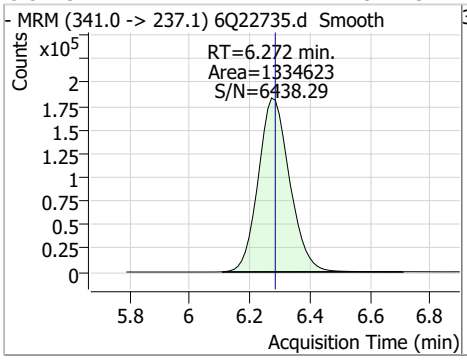
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.94	6.15	-0.01	611127	314.8 -> 82.9	3.4	1.7	5.2

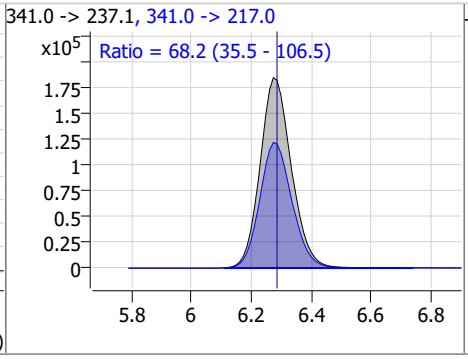


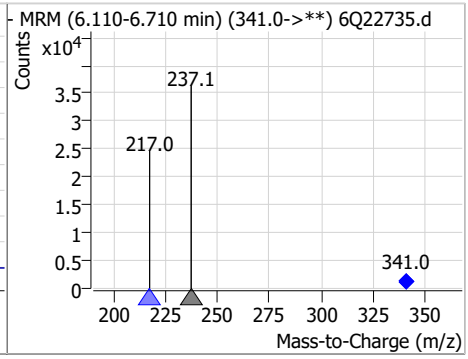




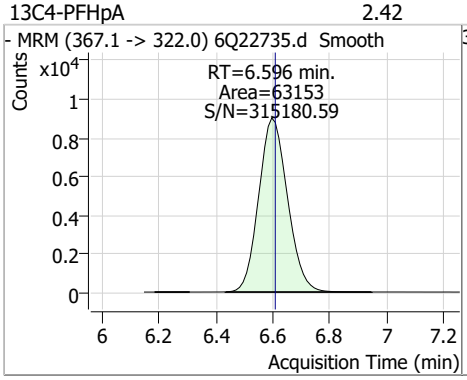
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	327.13	6.27	-0.01	1334623	341.0 -> 217.0	68.2	35.5	106.5

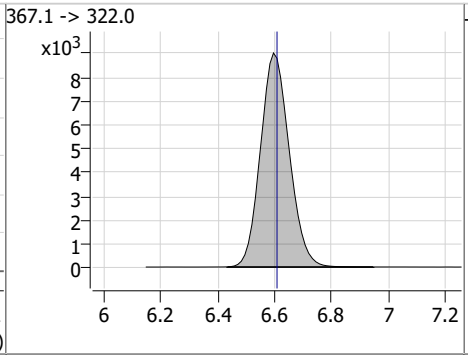


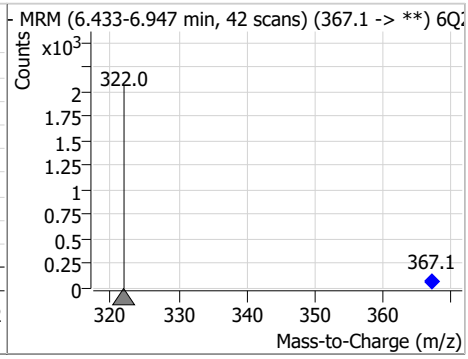




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.60	-0.01	63153				

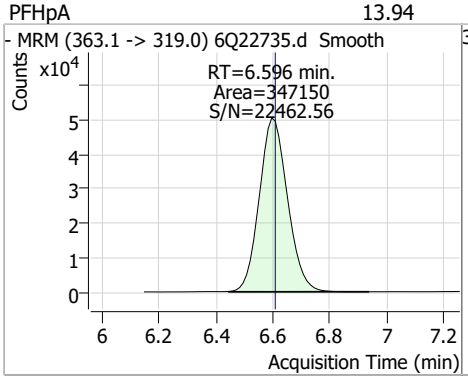


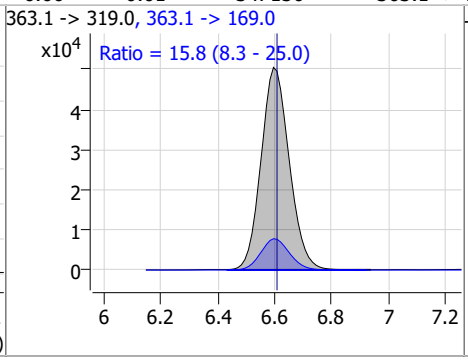


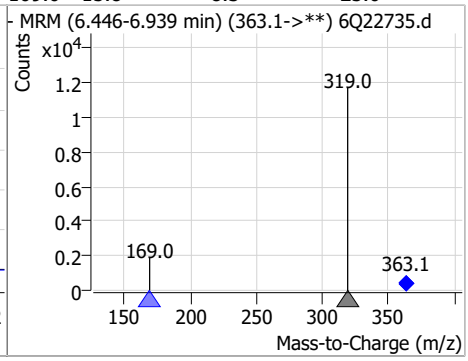


Perfluorinated Compounds by LC/MS/MS

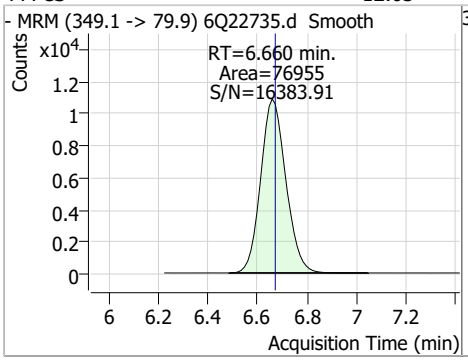
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.94	6.60	-0.01	347150	363.1 -> 169.0	15.8	8.3	25.0

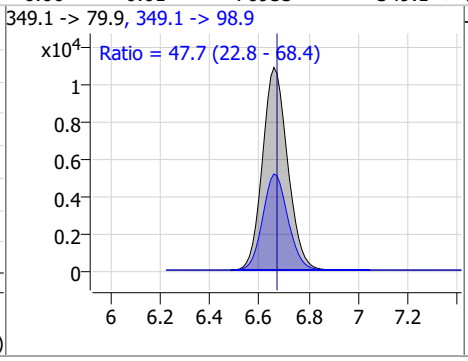


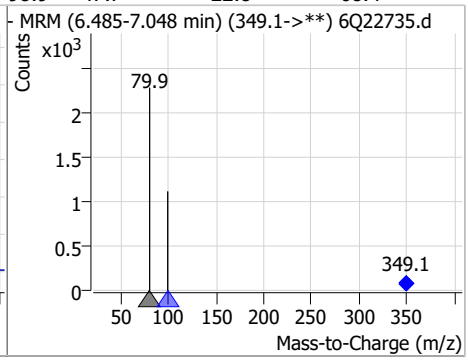




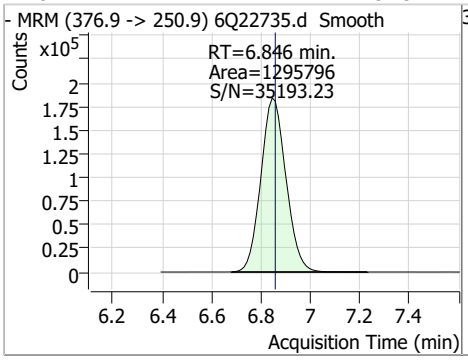
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.03	6.66	-0.01	76955	349.1 -> 98.9	47.7	22.8	68.4

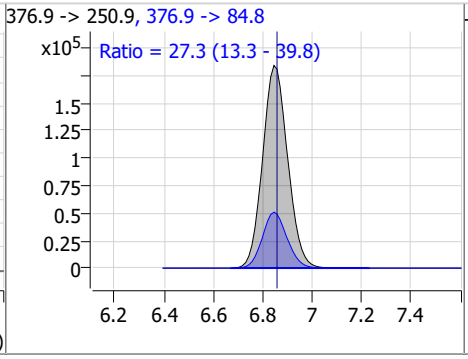


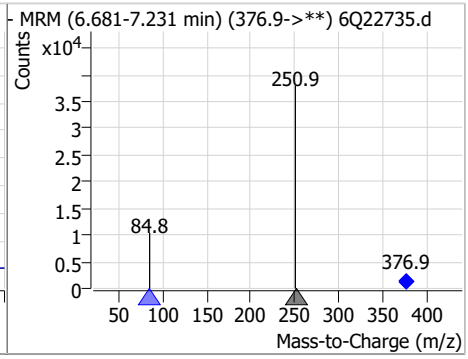




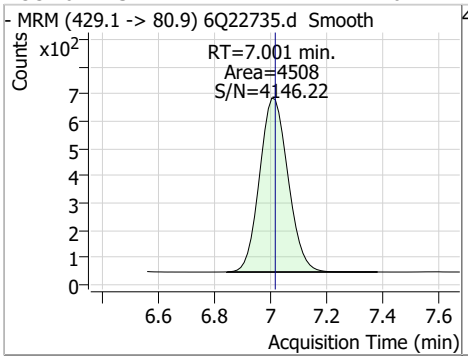
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	25.19	6.85	-0.01	1295796	376.9 -> 84.8	27.3	13.3	39.8

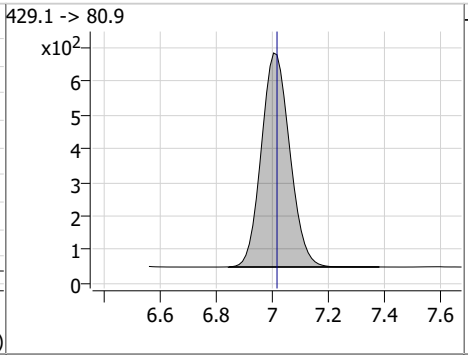


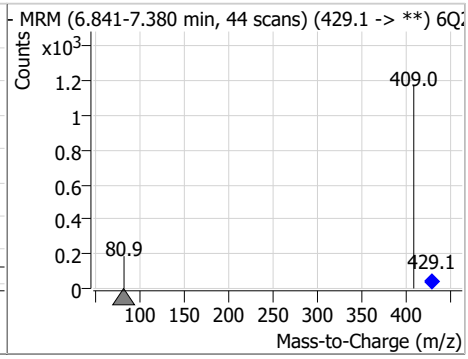




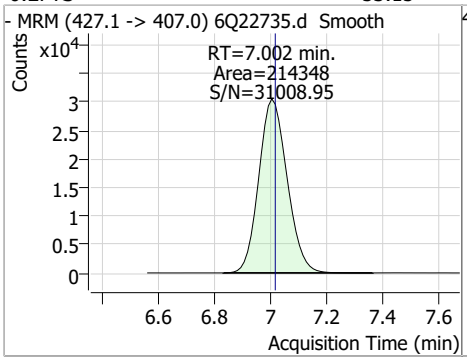
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.40	7.00	-0.01	4508				

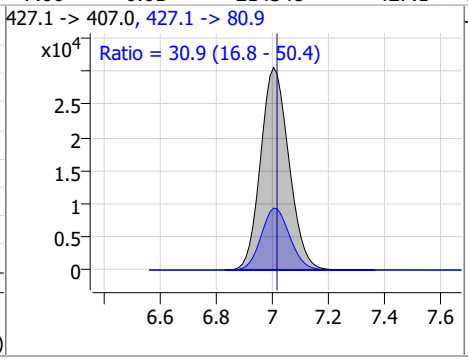


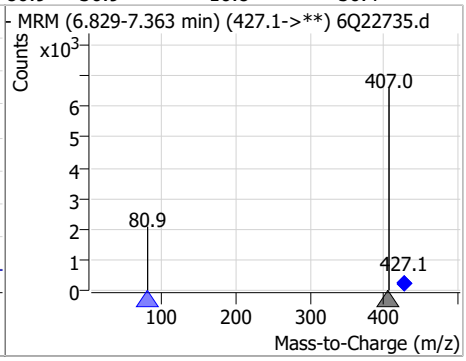




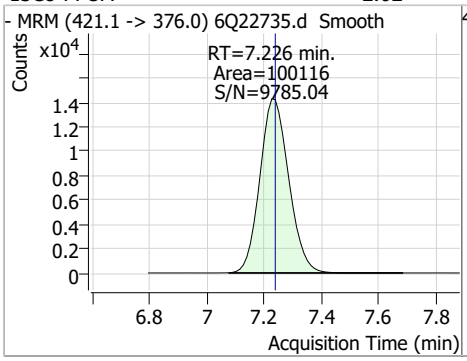
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	53.15	7.00	-0.01	214348	427.1 -> 80.9	30.9	16.8	50.4

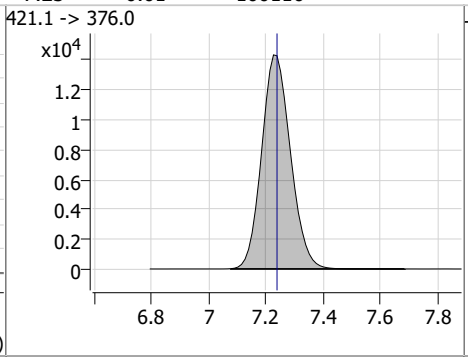


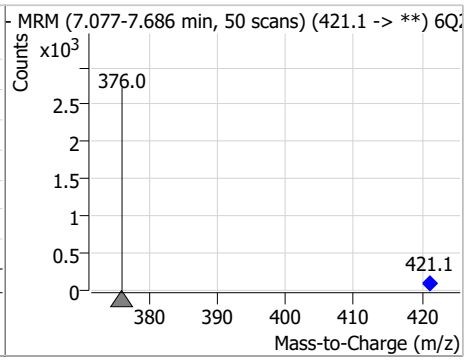




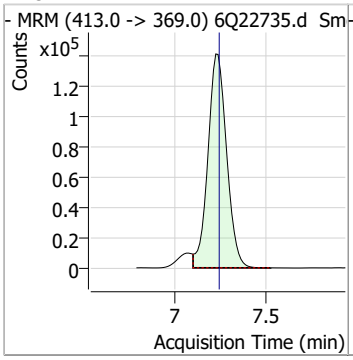
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.62	7.23	-0.01	100116				

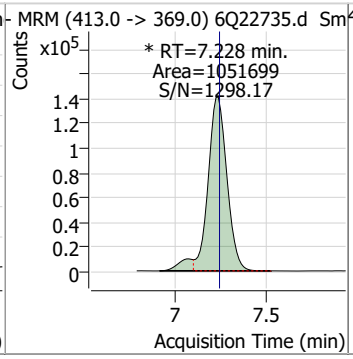


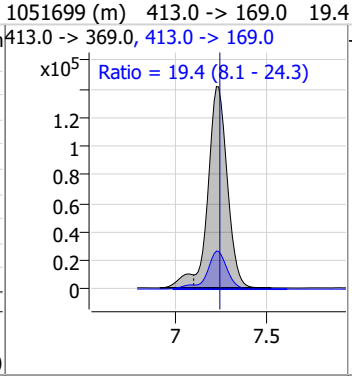


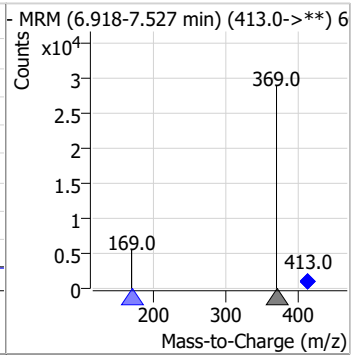


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	25.70	7.23	-0.01	1051699 (m)	413.0 -> 169.0	19.4	8.1	24.3

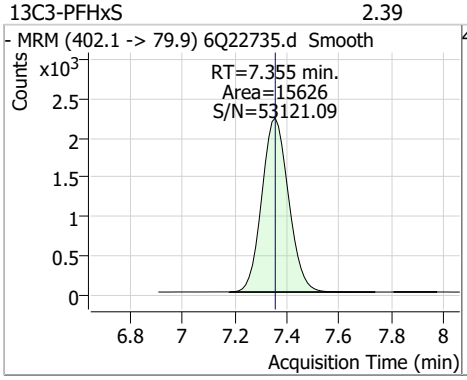


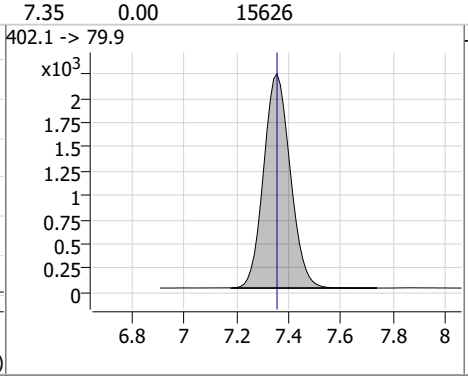


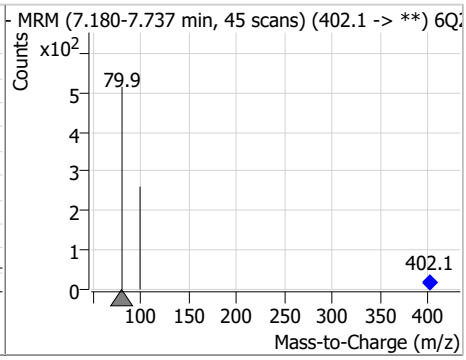




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.39	7.35	0.00	15626				

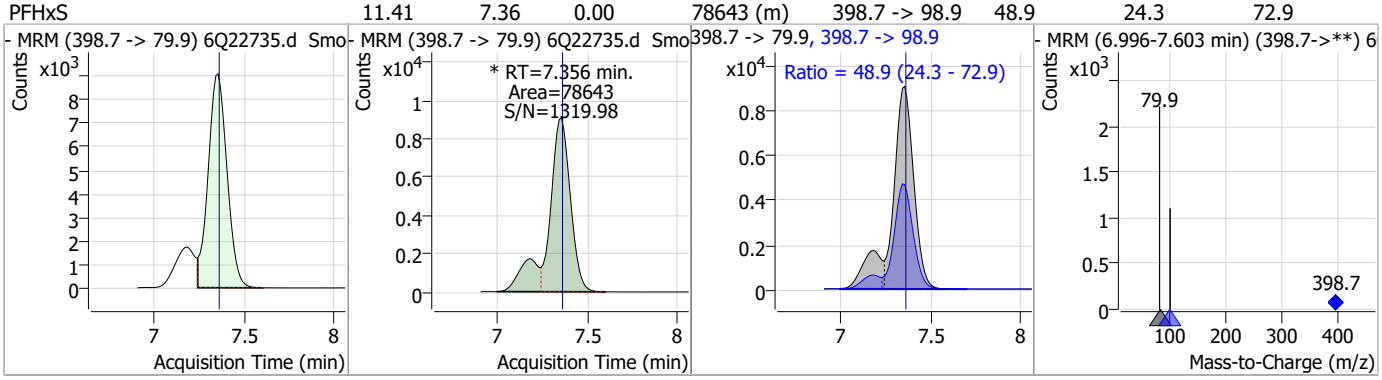




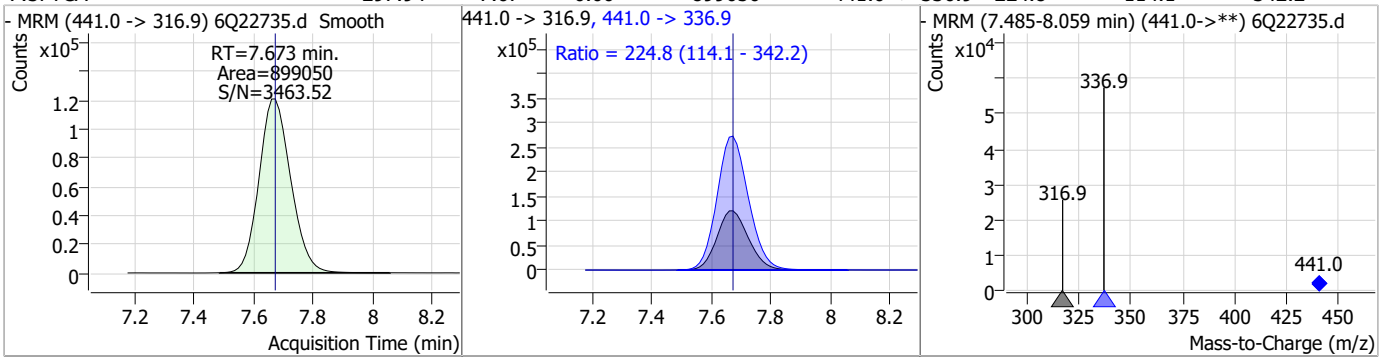


Perfluorinated Compounds by LC/MS/MS

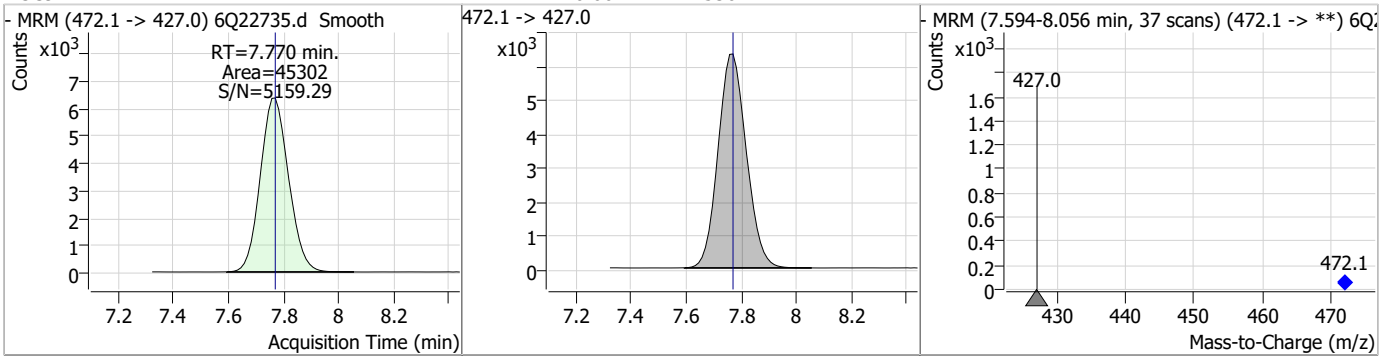
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.41	7.36	0.00	78643 (m)	398.7 -> 98.9	48.9	24.3	72.9



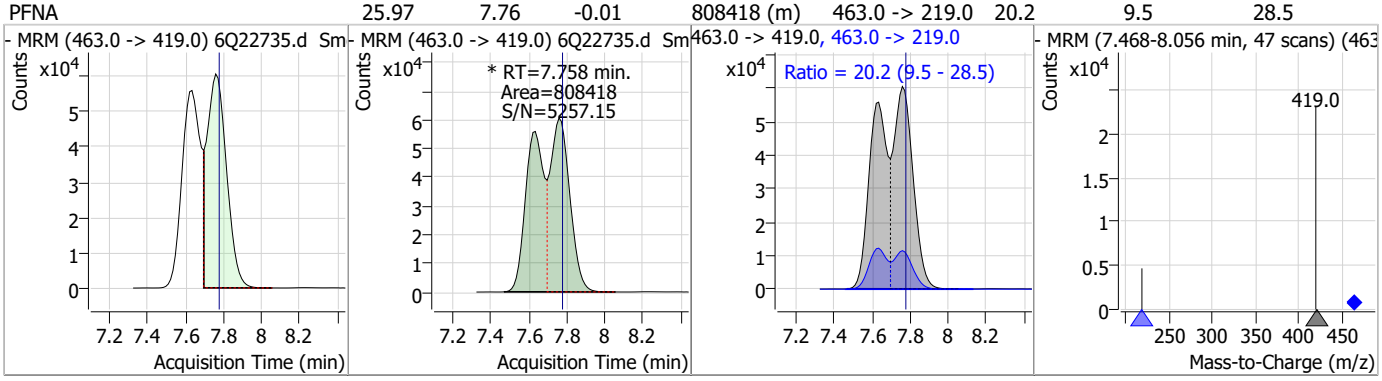
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	297.94	7.67	0.00	899050	441.0 -> 336.9	224.8	114.1	342.2



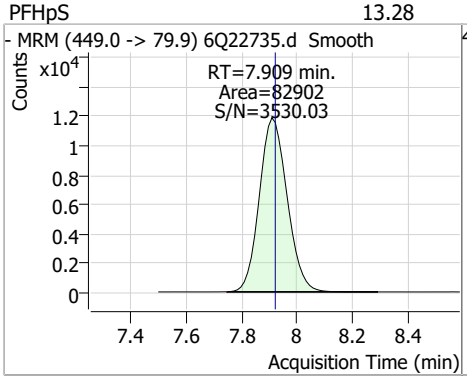
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.14	7.77	0.00	45302				

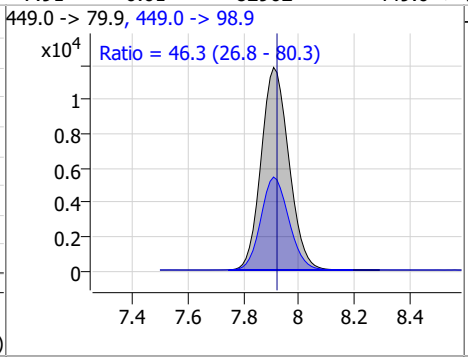


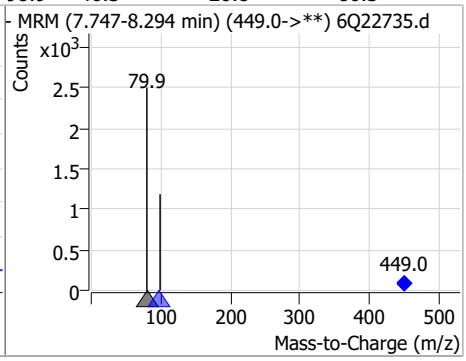
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	25.97	7.76	-0.01	808418 (m)	463.0 -> 219.0	20.2	9.5	28.5



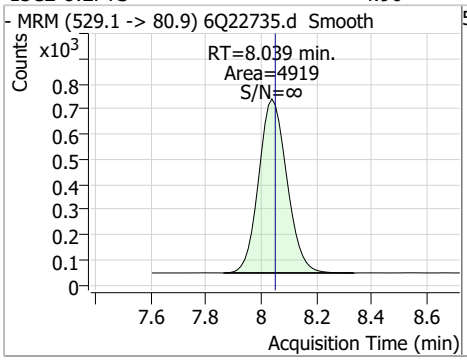
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.28	7.91	-0.01	82902	449.0 -> 98.9	46.3	26.8	80.3

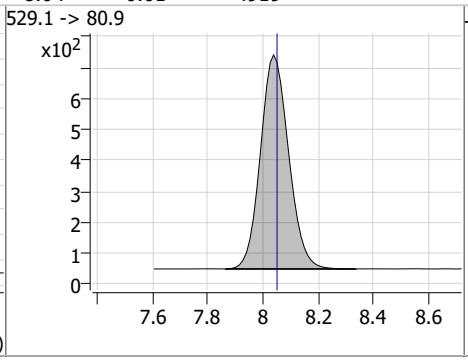


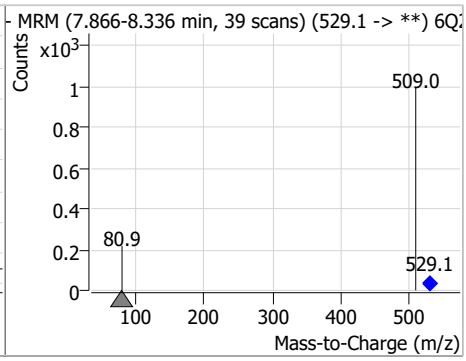




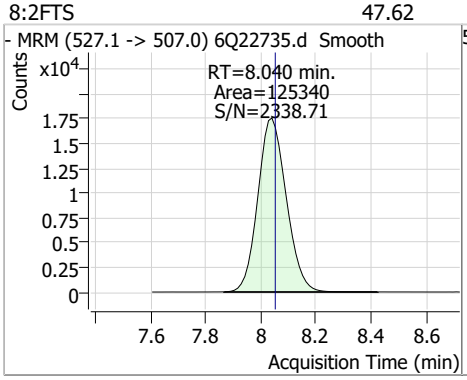
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.90	8.04	-0.01	4919				

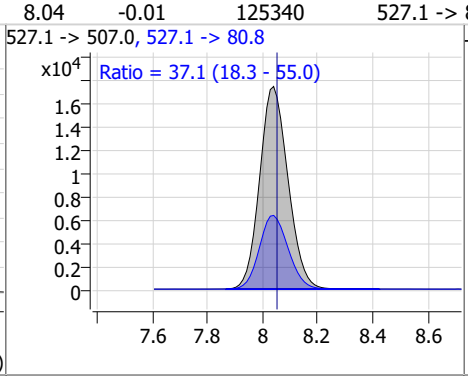


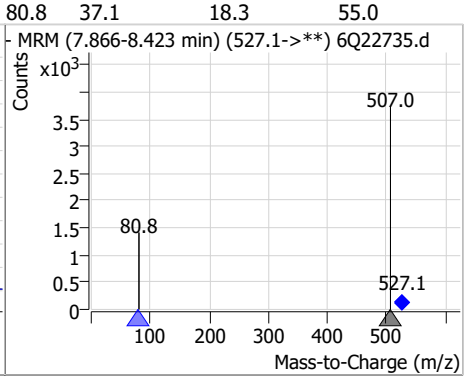




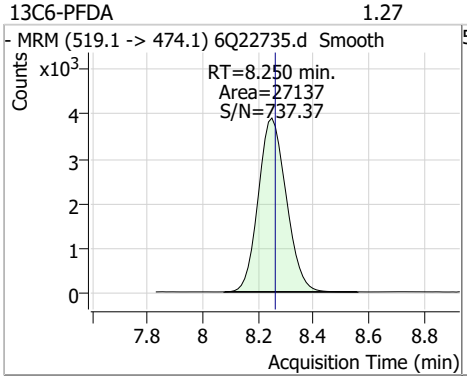
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	47.62	8.04	-0.01	125340	527.1 -> 80.8	37.1	18.3	55.0

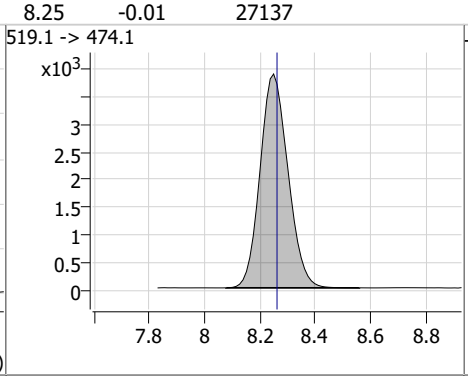


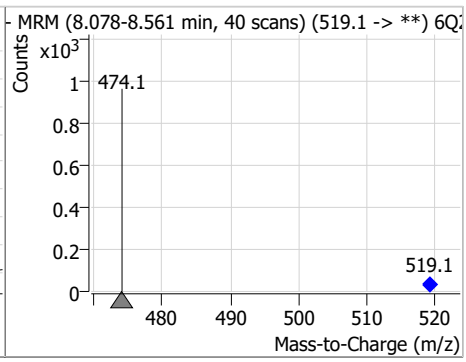




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.25	-0.01	27137				

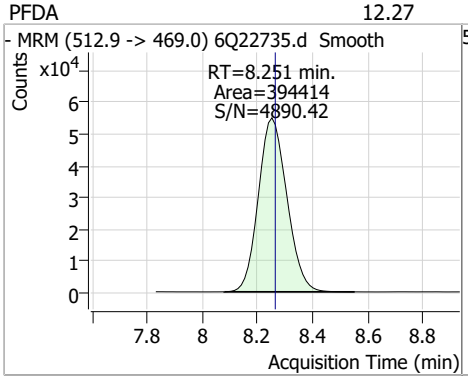


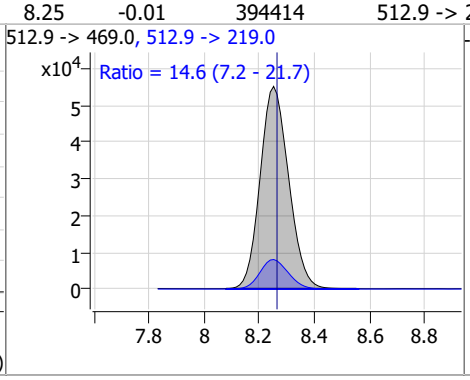


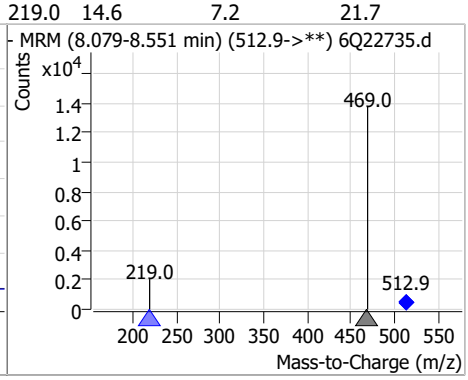


Perfluorinated Compounds by LC/MS/MS

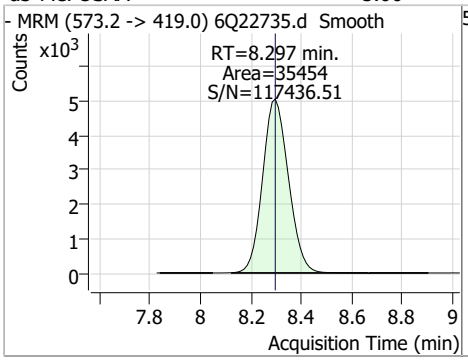
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.27	8.25	-0.01	394414	512.9 -> 219.0	14.6	7.2	21.7

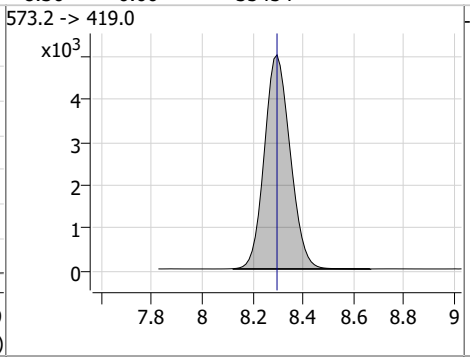


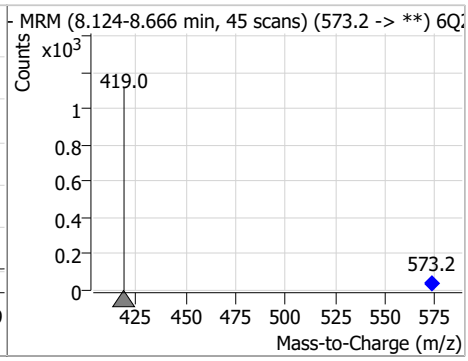




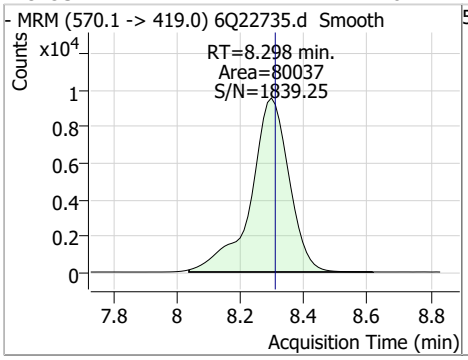
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.06	8.30	0.00	35454				

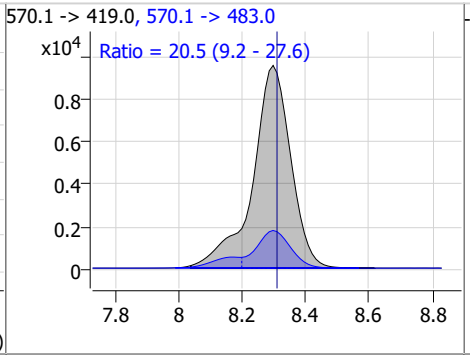


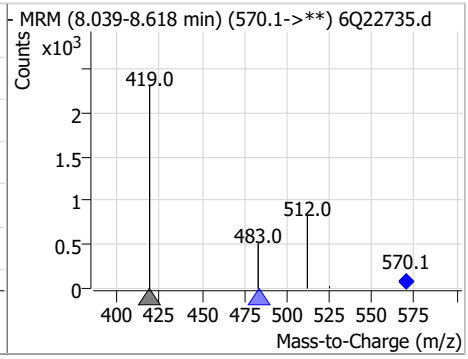




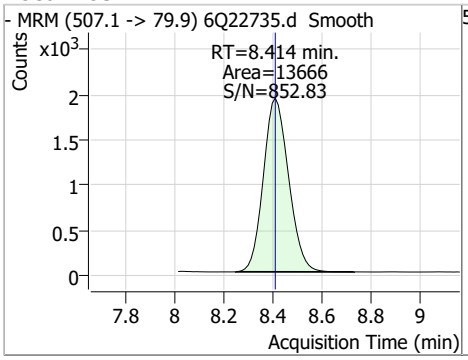
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	11.81	8.30	-0.01	80037	570.1 -> 483.0	20.5	9.2	27.6

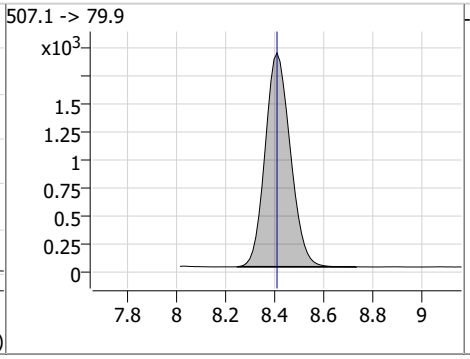


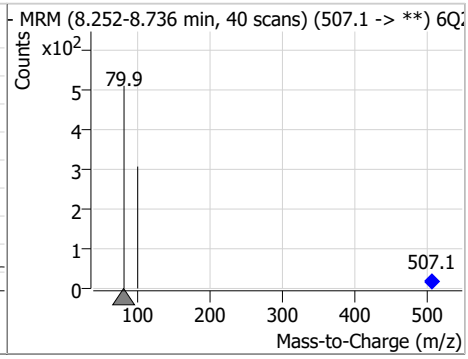




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.41	8.41	0.00	13666				

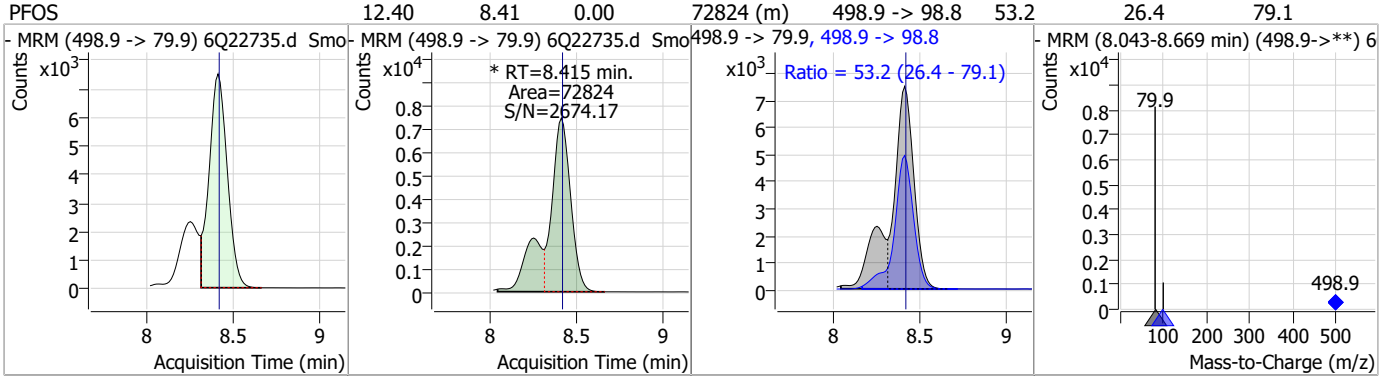




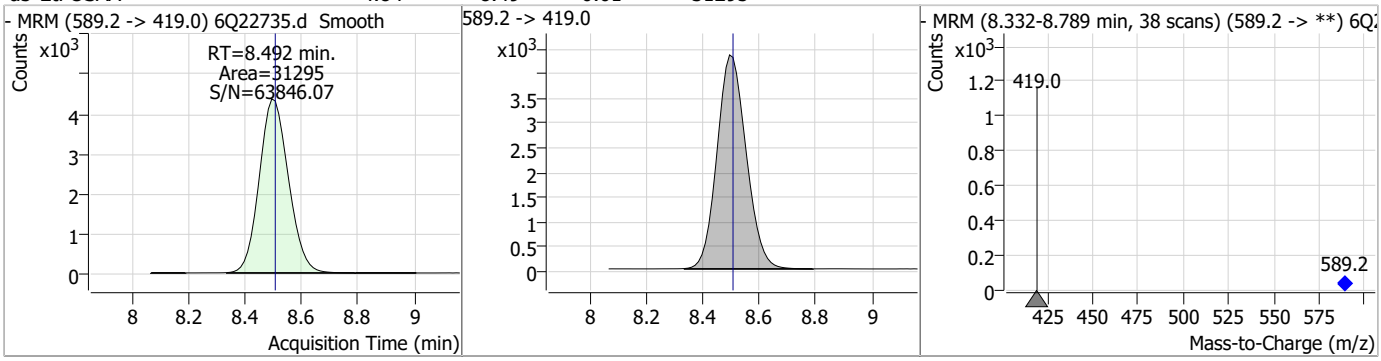


Perfluorinated Compounds by LC/MS/MS

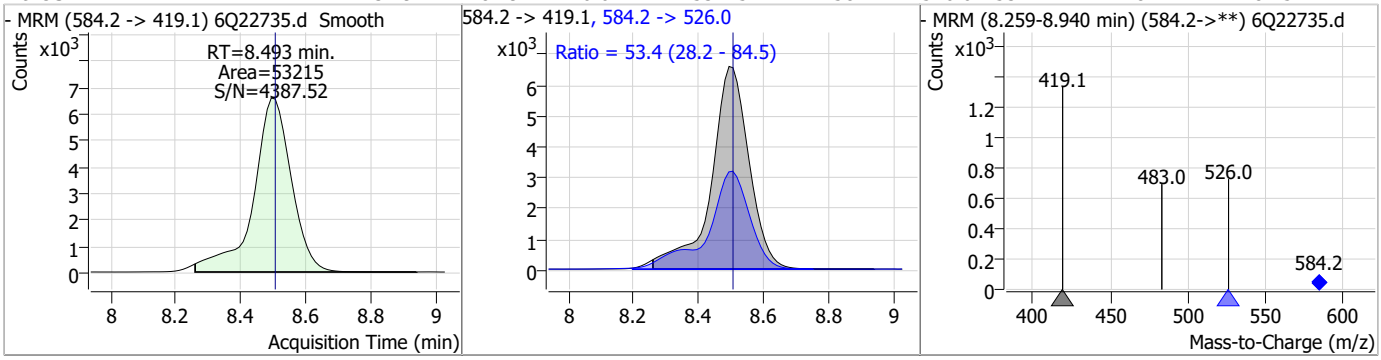
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.40	8.41	0.00	72824 (m)	498.9 -> 98.8	53.2	26.4	79.1



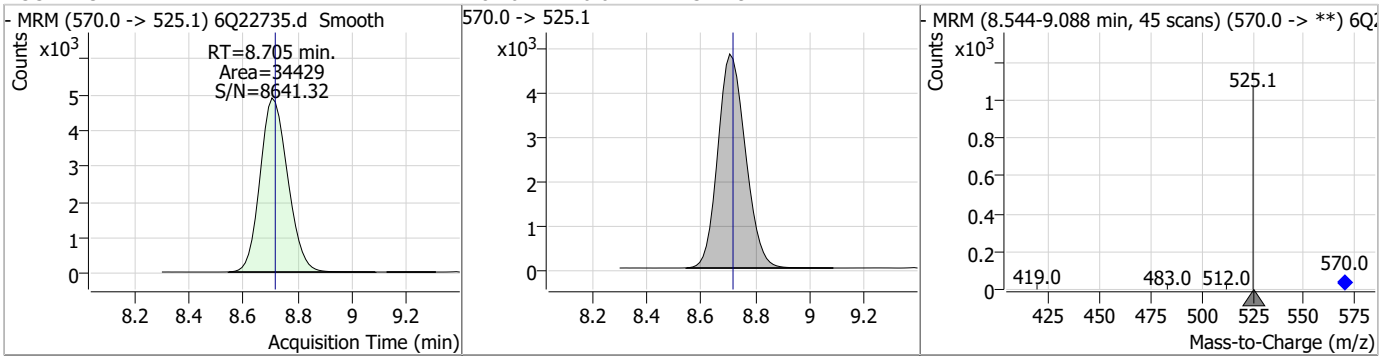
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.84	8.49	-0.01	31295				



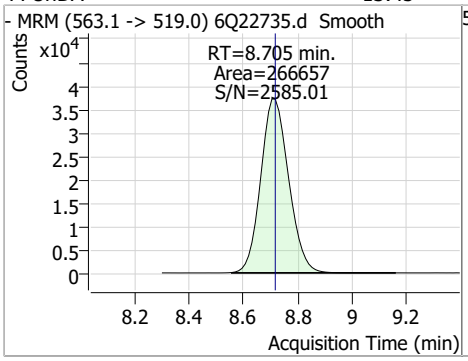
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	13.49	8.49	-0.01	53215	584.2 -> 526.0	53.4	28.2	84.5

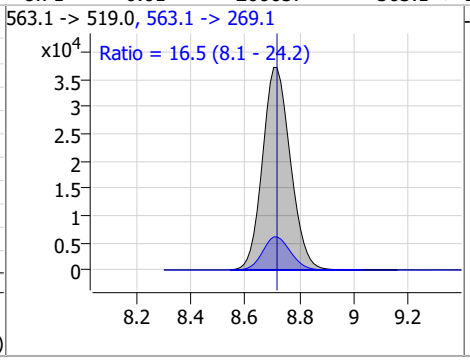


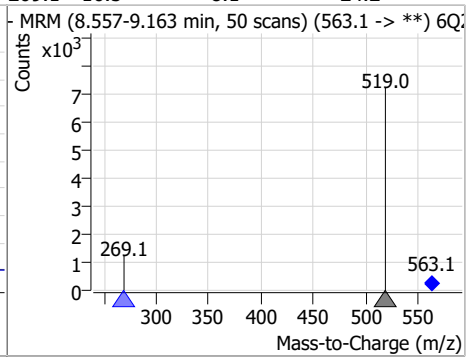
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.70	-0.01	34429				



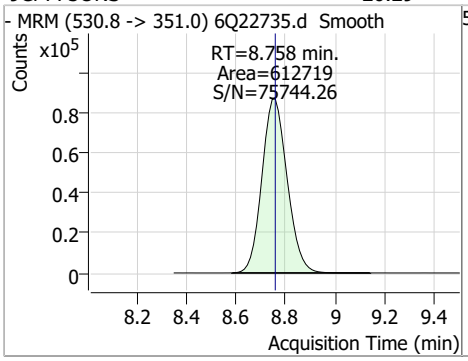
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.45	8.71	-0.01	266657	563.1 -> 269.1	16.5	8.1	24.2

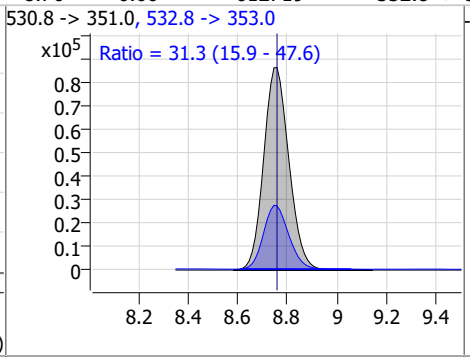


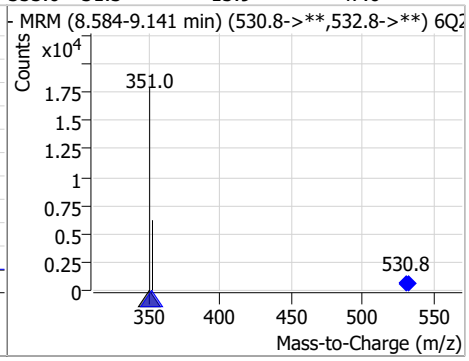




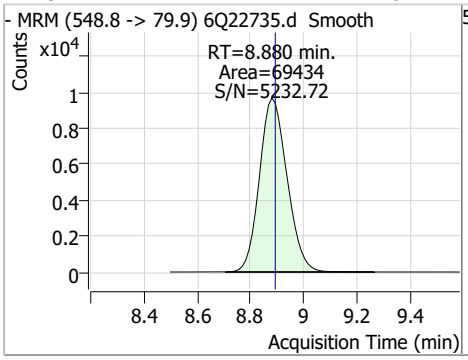
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	26.29	8.76	0.00	612719	532.8 -> 353.0	31.3	15.9	47.6

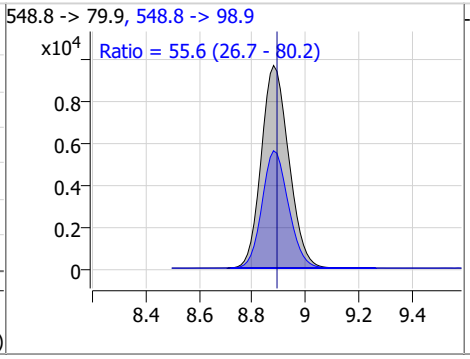


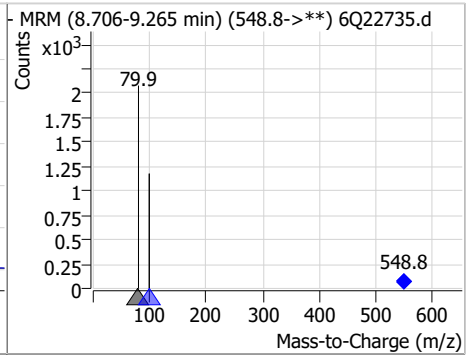




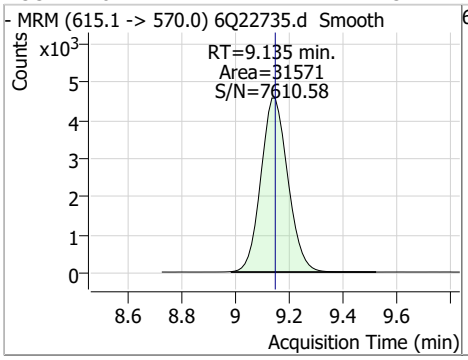
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.32	8.88	-0.01	69434	548.8 -> 98.9	55.6	26.7	80.2

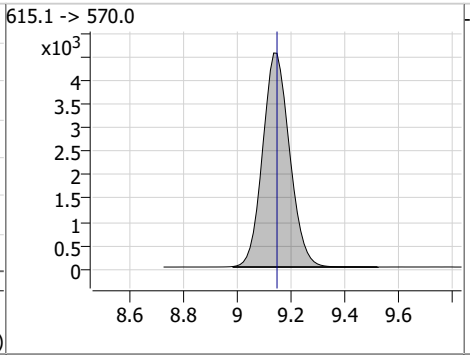


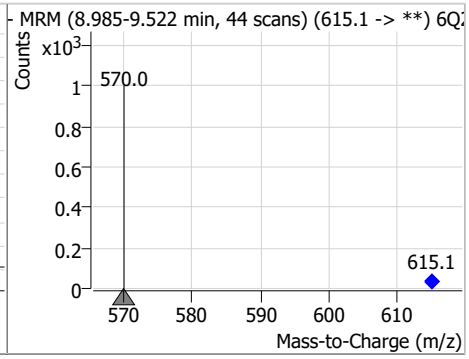




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	9.14	-0.01	31571				

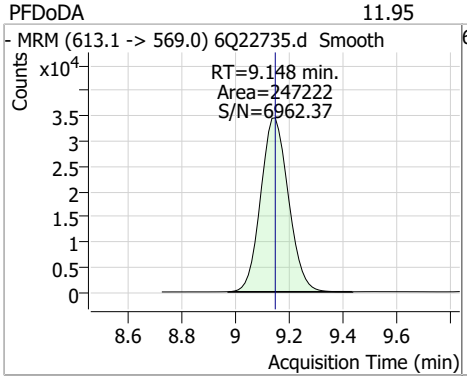


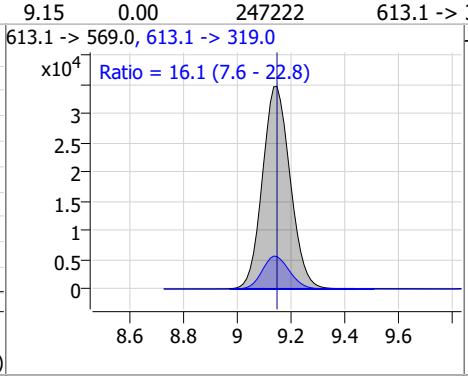


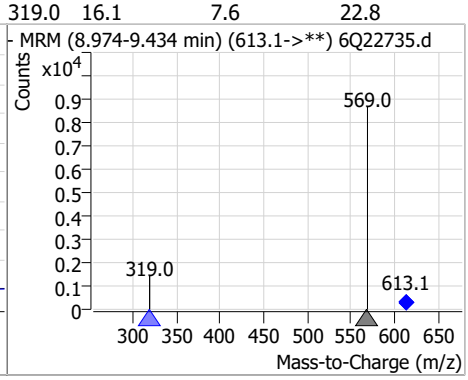


Perfluorinated Compounds by LC/MS/MS

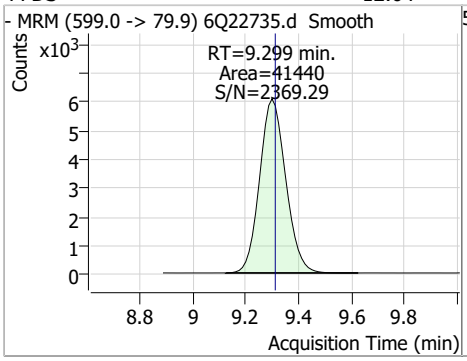
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	11.95	9.15	0.00	247222	613.1 -> 319.0	16.1	7.6	22.8

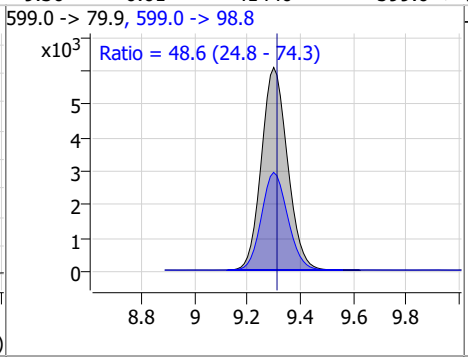


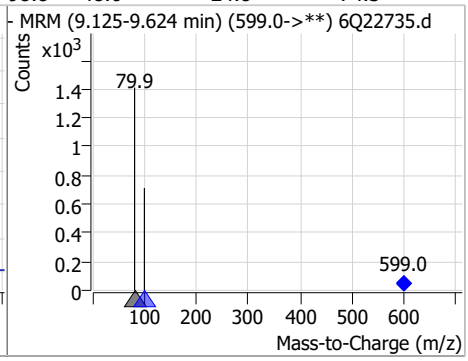




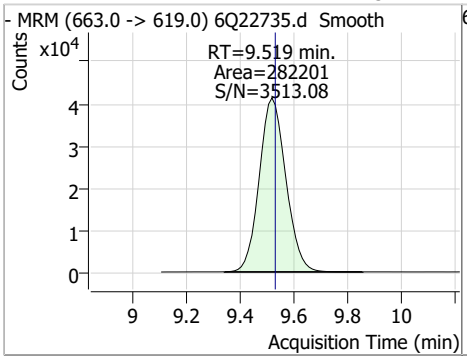
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.64	9.30	-0.01	41440	599.0 -> 98.8	48.6	24.8	74.3

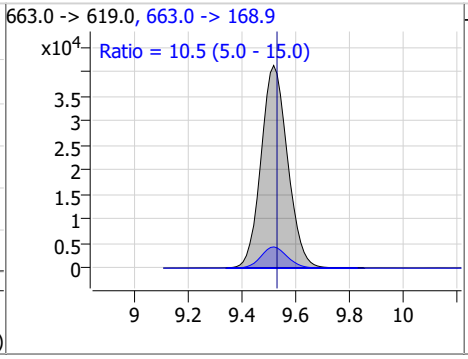


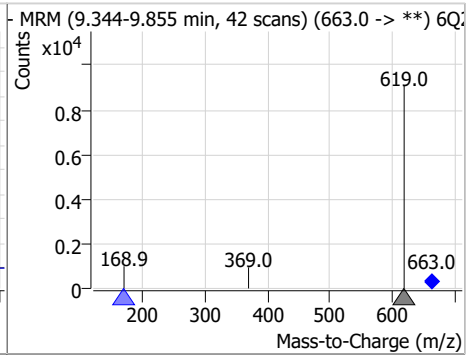




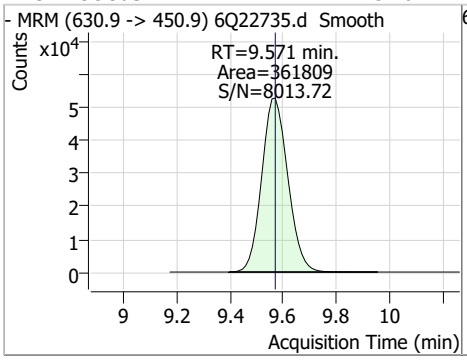
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.22	9.52	-0.01	282201	663.0 -> 168.9	10.5	5.0	15.0

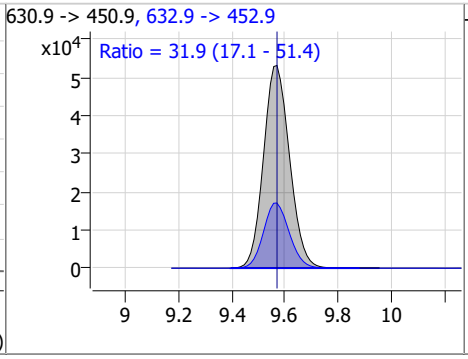


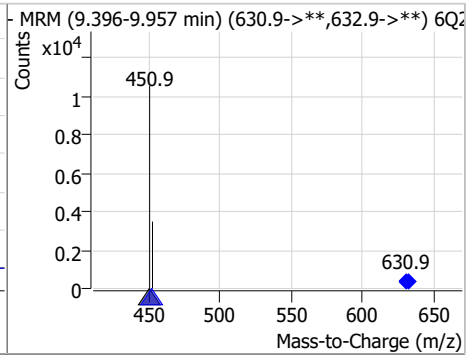




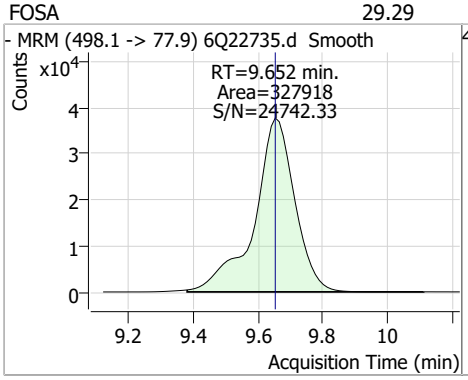
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	25.10	9.57	0.00	361809	632.9 -> 452.9	31.9	17.1	51.4

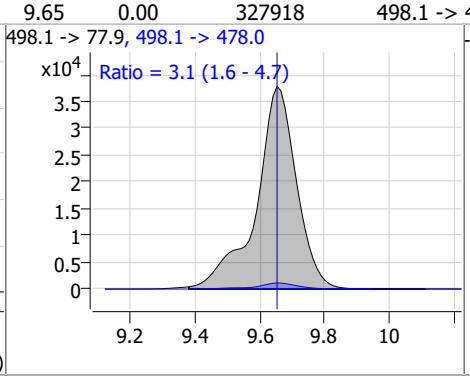


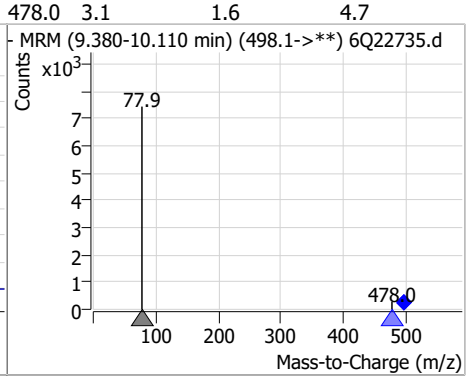




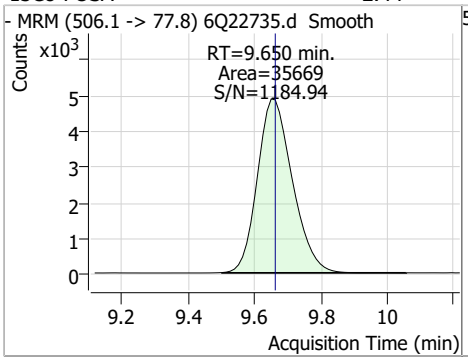
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	29.29	9.65	0.00	327918	498.1 -> 478.0	3.1	1.6	4.7

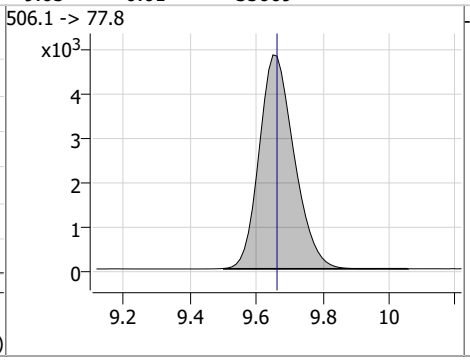


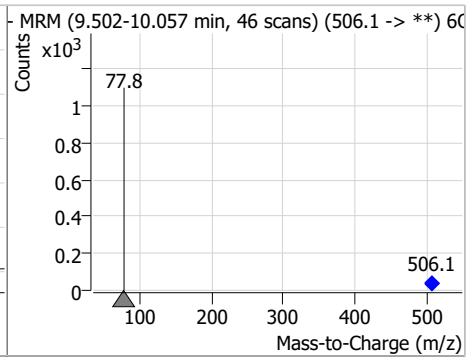




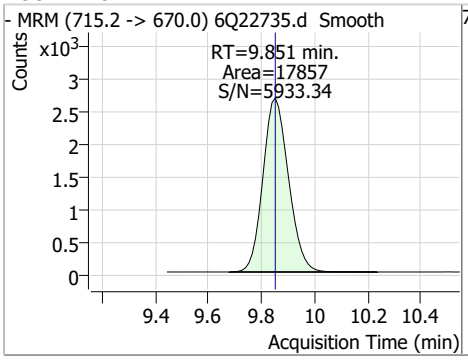
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	9.65	-0.01	35669				

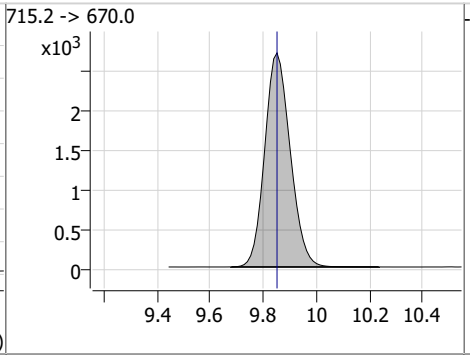


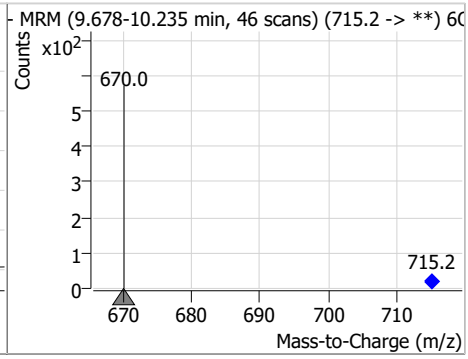




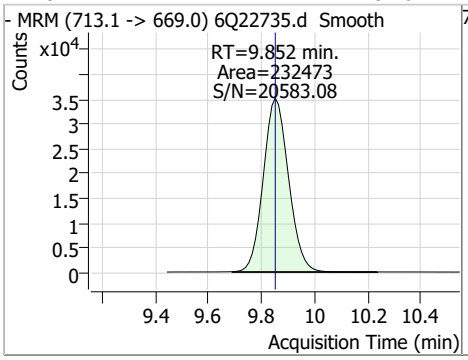
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.85	0.00	17857				

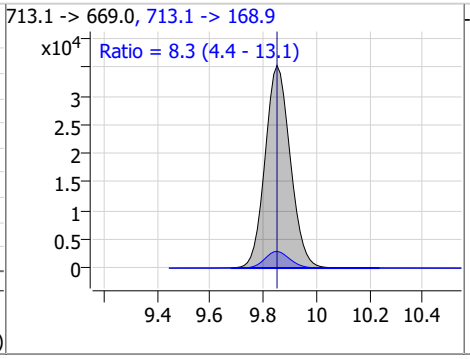


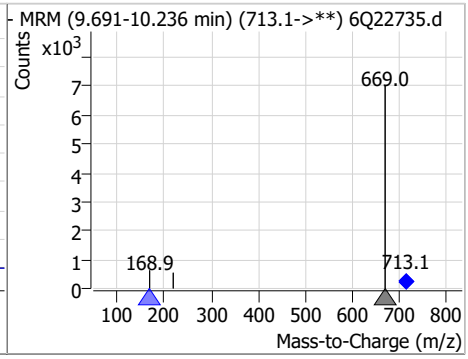




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.40	9.85	0.00	232473	713.1 -> 168.9	8.3	4.4	13.1

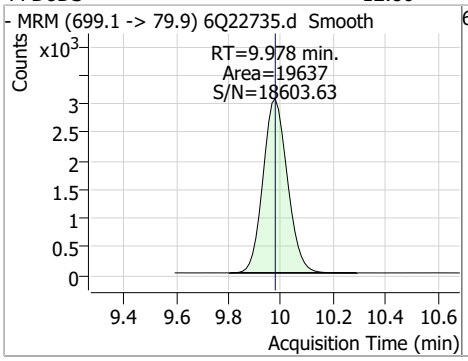


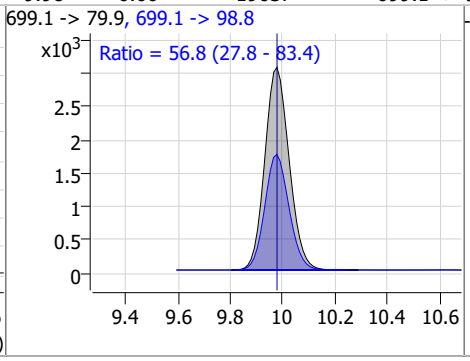


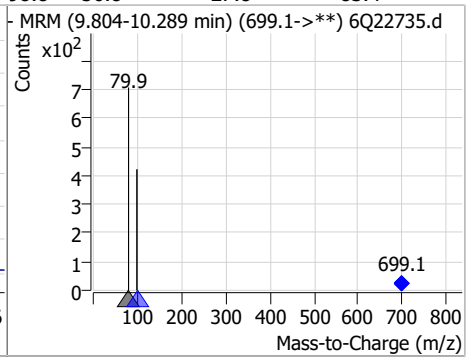


Perfluorinated Compounds by LC/MS/MS

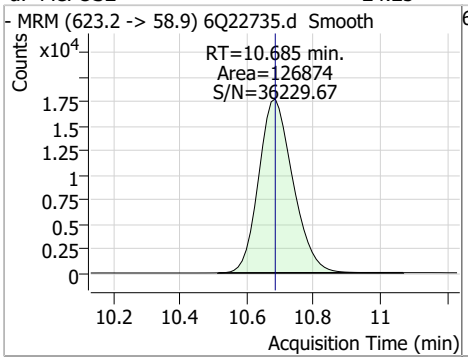
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	12.86	9.98	0.00	19637	699.1 -> 98.8	56.8	27.8	83.4

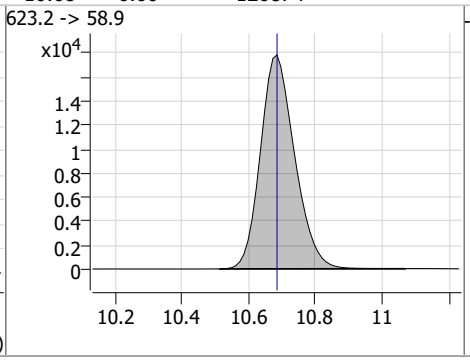


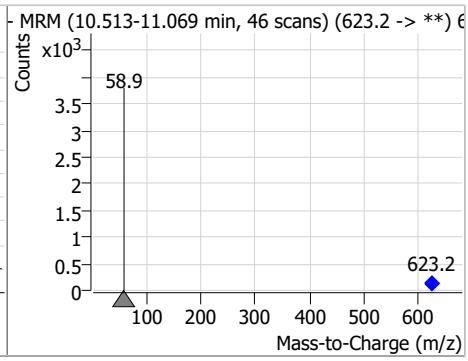




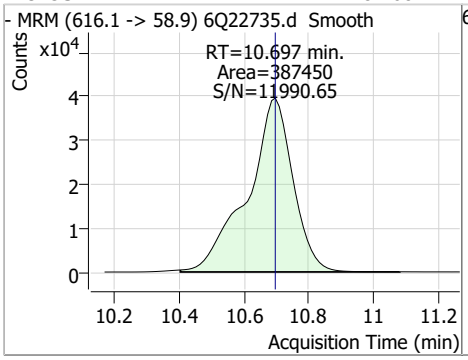
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.25	10.68	0.00	126874				

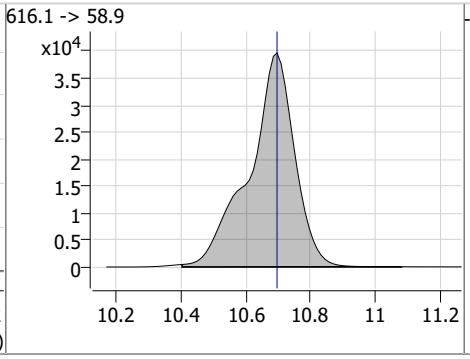


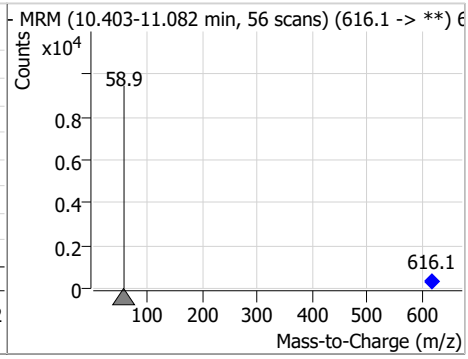




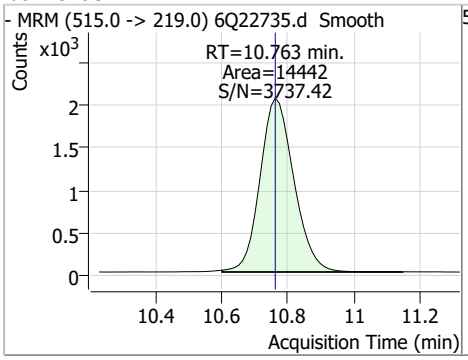
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	81.68	10.70	0.00	387450				

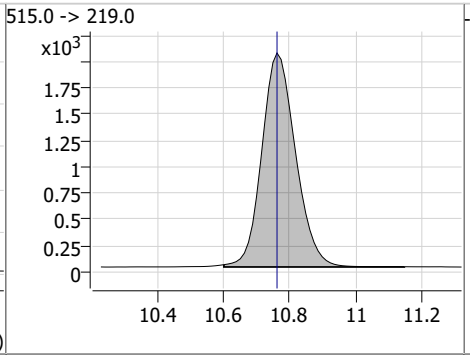


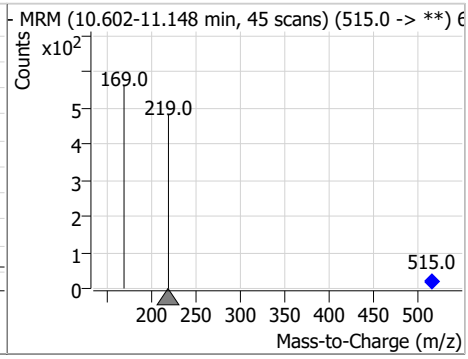




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.41	10.76	0.00	14442				

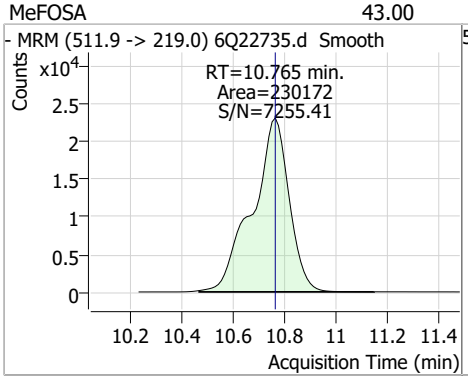


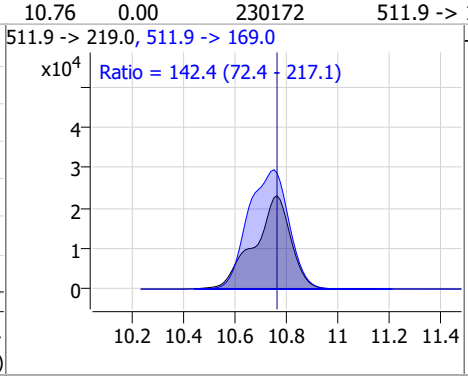


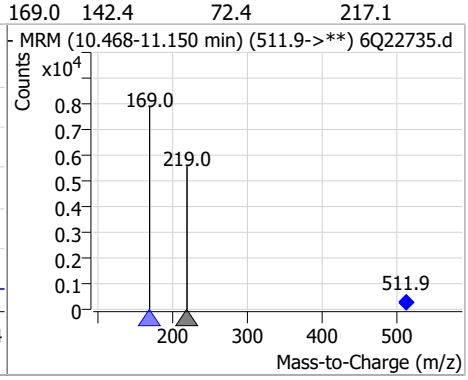


Perfluorinated Compounds by LC/MS/MS

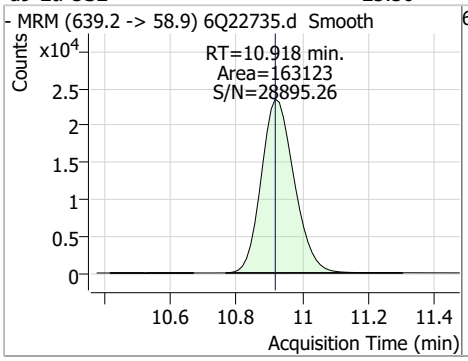
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	43.00	10.76	0.00	230172	511.9 -> 169.0	142.4	72.4	217.1

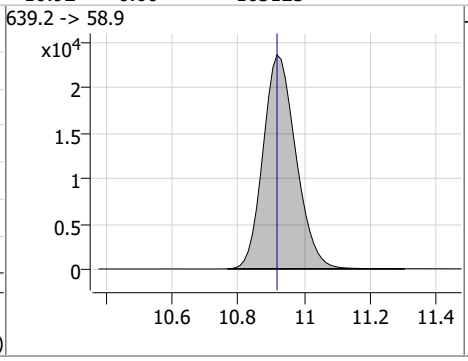


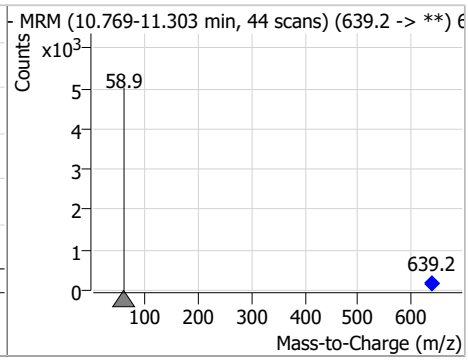




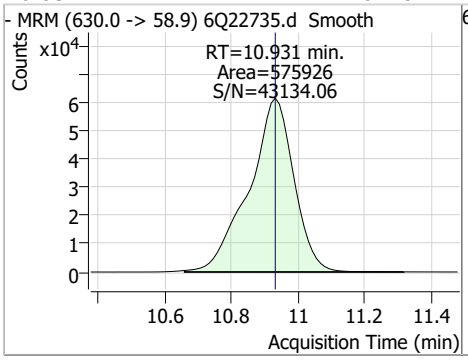
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.36	10.92	0.00	163123				

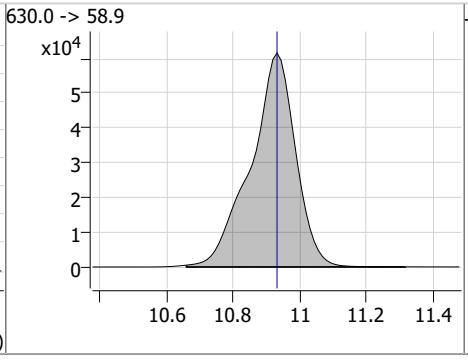


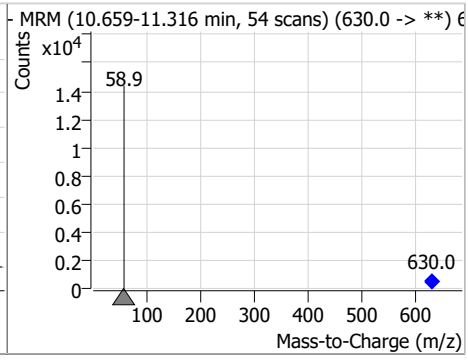




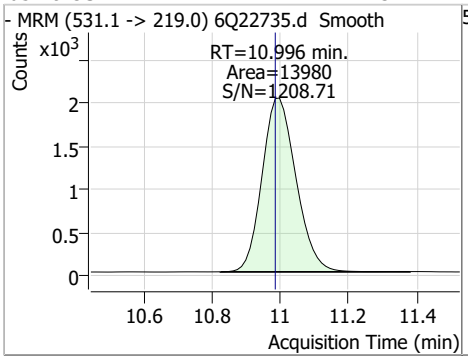
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	87.13	10.93	0.00	575926				

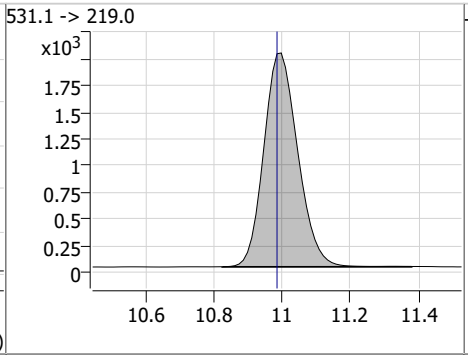


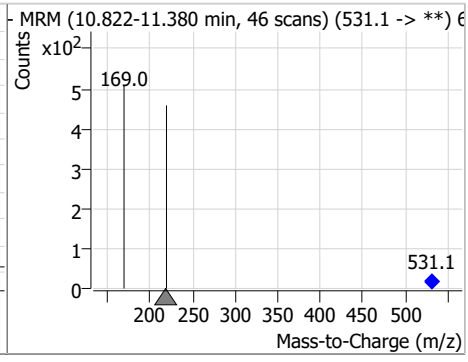




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	11.00	0.01	13980				

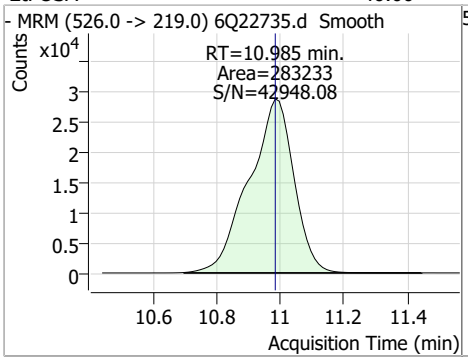


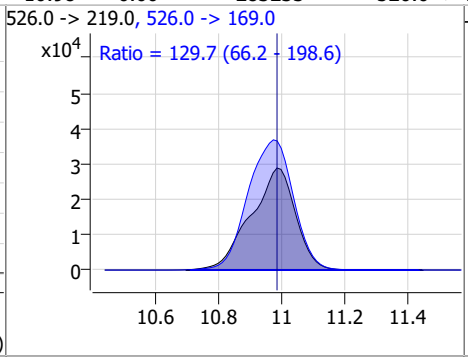


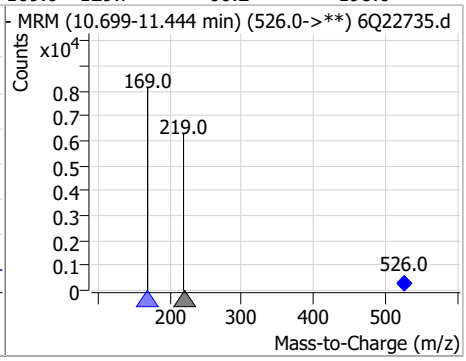


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	46.00	10.98	0.00	283233	526.0 -> 169.0	129.7	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22735.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/11/23 12:19	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.23	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorononanoic acid	375-95-1		7.76	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	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	31 July 2023 12:14:07
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.77E+0 [R] (Torr); 3.60E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	4000
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	0.73	0.03	Pass	258805
302.00	302.06	0.06	Pass	0.70	0.64	-0.06	Pass	96593
601.98	602.05	0.07	Pass	0.70	0.61	-0.09	Pass	282362
1033.99	1034.00	0.01	Pass	0.70	0.61	-0.09	Pass	354750
1633.95	1633.87	-0.08	Pass	0.70	0.63	-0.07	Pass	647401
2233.91	2233.66	-0.25	Pass	0.70	0.66	-0.04	Pass	340958

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.08	0.08	Pass	0.70	0.59	-0.11	Pass	64988
112.99	112.98	-0.01	Pass	0.70	0.71	0.01	Pass	181929
302.00	301.97	-0.03	Pass	0.70	0.69	-0.01	Pass	112962
601.98	601.90	-0.08	Pass	0.70	0.67	-0.03	Pass	280833
1033.99	1033.89	-0.10	Pass	0.70	0.65	-0.05	Pass	335185
1633.95	1633.76	-0.19	Pass	0.70	0.63	-0.07	Pass	556215
2233.91	2233.61	-0.30	Pass	0.70	0.65	-0.05	Pass	364028

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.01	0.02	Pass	1.20	1.28	0.08	Pass	307430
302.00	302.01	0.01	Pass	1.20	1.27	0.07	Pass	142426
601.98	601.97	-0.01	Pass	1.20	1.37	0.17	Pass	495657
1033.99	1033.92	-0.07	Pass	1.20	1.42	0.22	Pass	783690
1633.95	1633.80	-0.15	Pass	1.20	1.30	0.10	Pass	2001846
2233.91	2233.65	-0.26	Pass	1.20	1.19	-0.01	Pass	1100778

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	1.20	1.08	-0.12	Pass	85341
112.99	112.97	-0.02	Pass	1.20	1.20	0.00	Pass	255703
302.00	301.95	-0.05	Pass	1.20	1.38	0.18	Pass	166071
601.98	601.88	-0.10	Pass	1.20	1.44	0.24	Pass	527892
1033.99	1033.84	-0.15	Pass	1.20	1.43	0.23	Pass	734318
1633.95	1633.70	-0.25	Pass	1.20	1.33	0.13	Pass	2006089
2233.91	2233.59	-0.32	Pass	1.20	1.12	-0.08	Pass	1219530

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.98	-0.01	Pass	2.50	2.46	-0.04	Pass	366656
302.00	301.99	-0.01	Pass	2.50	2.44	-0.06	Pass	180260
601.98	601.96	-0.02	Pass	2.50	2.56	0.06	Pass	689762
1033.99	1033.92	-0.07	Pass	2.50	2.59	0.09	Pass	1293848
1633.95	1633.81	-0.14	Pass	2.50	2.44	-0.06	Pass	4205428
2233.91	2233.56	-0.35	Pass	2.50	2.33	-0.17	Pass	2968877

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	2.50	2.33	-0.17	Pass	108028
112.99	112.96	-0.03	Pass	2.50	2.45	-0.05	Pass	324921
302.00	301.96	-0.04	Pass	2.50	2.62	0.12	Pass	208767
601.98	601.90	-0.08	Pass	2.50	2.68	0.18	Pass	711726
1033.99	1033.85	-0.14	Pass	2.50	2.61	0.11	Pass	1188983
1633.95	1633.73	-0.22	Pass	2.50	2.38	-0.12	Pass	3945586
2233.91	2233.60	-0.31	Pass	2.50	2.19	-0.31	Pass	3344974

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48585.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 4:26:15 PM
Sample Name : ic711-1
Vial : P1-A2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	79767	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	50617	5.00	µg/L	0.000
M5-PFHxA	5.597	318.0 -> 273.0	30039	2.50	µg/L	-0.012
M4-PFHpA	6.555	367.1 -> 322.0	21134	2.50	µg/L	0.000
M8-PFOA	7.226	421.1 -> 376.0	35337	2.50	µg/L	0.000
M9-PFNA	7.772	472.1 -> 427.0	15578	1.25	µg/L	-0.013
M6-PFDA	8.266	519.1 -> 474.1	10929	1.25	µg/L	-0.012
M7-PFUnDA	8.723	570.0 -> 525.1	12454	1.25	µg/L	-0.012
M2-PFDoDA	9.168	615.1 -> 570.0	13491	1.25	µg/L	-0.012
M2-PFTeDA	9.936	715.2 -> 670.0	10771	1.25	µg/L	-0.012
M8-FOSA	9.870	506.1 -> 77.8	11120	2.50	µg/L	-0.012
M3-PFBS	5.489	302.1 -> 79.9	8158	2.50	µg/L	0.000
M3-PFHxS	7.304	402.1 -> 79.9	5418	2.50	µg/L	-0.012
M8-PFOS	8.405	507.1 -> 79.9	7048	2.50	µg/L	-0.012
M2-4:2FTS	5.296	329.1 -> 80.9	441	5.00	µg/L	0.000
M2-6:2FTS	6.986	429.1 -> 80.9	912	5.00	µg/L	-0.012
M2-8:2FTS	8.053	529.1 -> 80.9	1382	5.00	µg/L	-0.012
M3-MeFOSAA	8.336	573.2 -> 419.0	12570	5.00	µg/L	-0.012
M3-HFPO-DA	5.964	286.9 -> 168.9	26909	10.00	µg/L	-0.012
M5-EtFOSAA	8.546	589.2 -> 419.0	10167	5.00	µg/L	0.000
M7-MeFOSE	11.047	623.2 -> 58.9	51047	25.00	µg/L	-0.012
M9-EtFOSE	11.331	639.2 -> 58.9	69923	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	7071	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	6032	2.50	µg/L	0.000
13C4-PFOS	8.405	502.8 -> 79.9	6794	2.50	µg/L	-0.012
13C3-PFBA	2.903	216.0 -> 172.0	46752	5.00	µg/L	0.000
18O2-PFHxS	7.303	403.0 -> 83.9	3668	2.50	µg/L	-0.012
13C4-PFOA	7.226	417.1 -> 372.0	41338	2.50	µg/L	0.000
13C2-PFDA	8.267	515.1 -> 470.1	12886	1.25	µg/L	-0.012
13C5-PFNA	7.772	468.0 -> 423.0	15657	1.25	µg/L	-0.013
13C2-PFHxA	5.598	315.1 -> 270.0	28285	2.50	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	441	4.81	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-6:2FTS	6.986	429.1 -> 80.9	912	5.21	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-8:2FTS	8.053	529.1 -> 80.9	1382	5.20	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-PFDoDA	9.168	615.1 -> 570.0	13491	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFTeDA	9.936	715.2 -> 670.0	10771	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C3-PFBS	5.489	302.1 -> 79.9	8158	2.61	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C3-PFHxS	7.304	402.1 -> 79.9	5418	2.67	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 = 106.7%		
13C4-PFBA	2.899	216.8 -> 171.9	79767	9.98 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C4-PFHpA	6.555	367.1 -> 322.0	21134	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFHxA	5.597	318.0 -> 273.0	30039	2.53 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C5-PFPeA	4.412	268.3 -> 223.0	50617	5.12 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C6-PFDA	8.266	519.1 -> 474.1	10929	1.23 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C7-PFUnDA	8.723	570.0 -> 525.1	12454	1.24 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C8-FOSA	9.870	506.1 -> 77.8	11120	2.62 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-PFOA	7.226	421.1 -> 376.0	35337	2.60 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C8-PFOS	8.405	507.1 -> 79.9	7048	2.58 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C9-PFNA	7.772	472.1 -> 427.0	15578	1.31 µg/L		-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%		
d3-MeFOSAA	8.336	573.2 -> 419.0	12570	4.98 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-HFPO-DA	5.964	286.9 -> 168.9	26909	9.99 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d3-MeFOSA	11.151	515.0 -> 219.0	6032	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%		
d5-EtFOSAA	8.546	589.2 -> 419.0	10167	4.90 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
d7-MeFOSE	11.047	623.2 -> 58.9	51047	25.58 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
d9-EtFOSE	11.331	639.2 -> 58.9	69923	24.99 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSA	11.422	531.1 -> 219.0	7071	2.46 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
Target Compounds						**QValue**
4:2FTS	5.284	327.1 -> 307.0	444	0.75 µg/L		95
		327.1 -> 80.9	196			
6:2FTS	6.987	427.1 -> 407.0	466	0.60 µg/L		83
		427.1 -> 80.9	210			
8:2FTS	8.066	527.1 -> 507.0	414	0.75 µg/L		84
		527.1 -> 80.8	141			
EtFOSAA	8.547	584.2 -> 419.1	252	0.18 µg/L		89
		584.2 -> 526.0	121			
FOSA	9.873	498.1 -> 77.9	619	0.17 µg/L		99
		498.1 -> 478.0	22			
MeFOSAA	8.336	570.1 -> 419.0	225	0.14 µg/L	#m	75
		570.1 -> 483.0	16			
PFBA	2.907	212.8 -> 168.9	1378	0.75 µg/L		100
PFBS	5.478	298.7 -> 79.9	279	0.14 µg/L		89
		298.7 -> 98.8	85			
PFDA	8.267	512.9 -> 469.0	1326	0.17 µg/L		96
		512.9 -> 219.0	236			
PFDoDA	9.168	613.1 -> 569.0	1592	0.19 µg/L		87
		613.1 -> 319.0	171			
PFDS	9.321	599.0 -> 79.9	252	0.17 µg/L		91

Perfluorinated Compounds by LC/MS/MS

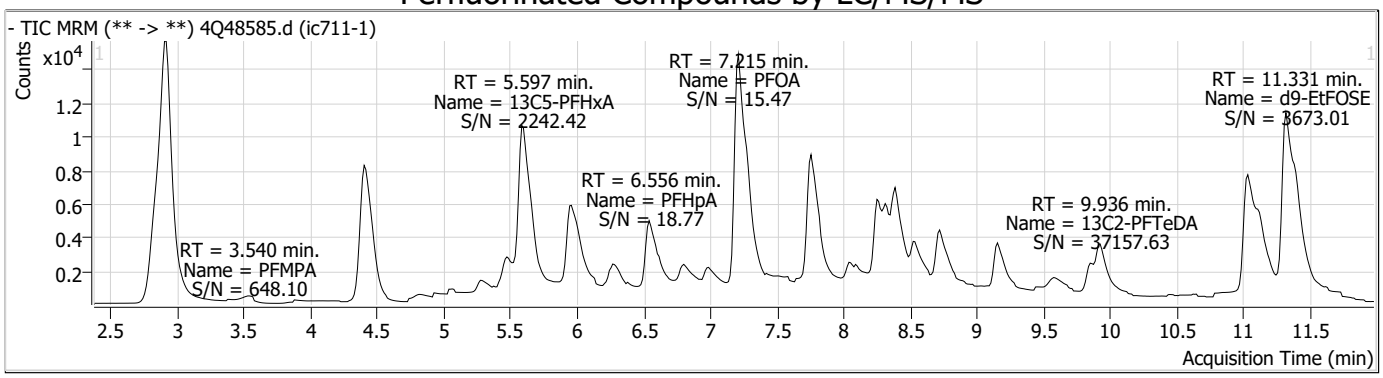
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	144				
PFHpA	6.556	363.1 -> 319.0	1689	0.18	µg/L		99
		363.1 -> 169.0	318				
PFHpS	7.887	449.0 -> 79.9	381	0.18	µg/L		87
		449.0 -> 98.9	157				
PFHxA	5.600	313.0 -> 269.0	1490	0.17	µg/L		100
		313.0 -> 118.9	49				
PFHxS	7.305	398.7 -> 79.9	209	0.13	µg/L	m	84
		398.7 -> 98.9	135				
PFNA	7.772	463.0 -> 419.0	1395	0.17	µg/L		86
		463.0 -> 219.0	393				
PFNS	8.887	548.8 -> 79.9	226	0.16	µg/L		81
		548.8 -> 98.9	147				
PFOA	7.215	413.0 -> 369.0	2967	0.21	µg/L		100
		413.0 -> 169.0	573				
PFOS	8.419	498.9 -> 79.9	469	0.19	µg/L	m	67
		498.9 -> 98.8	178				
PFPeA	4.414	263.0 -> 219.0	3098	0.35	µg/L		100
PFPeS	6.570	349.1 -> 79.9	217	0.15	µg/L		98
		349.1 -> 98.9	100				
PFTeDA	9.937	713.1 -> 669.0	1404	0.19	µg/L		98
		713.1 -> 168.9	147				
PFTrDA	9.566	663.0 -> 619.0	1438	0.16	µg/L		94
		663.0 -> 168.9	213				
PFUnDA	8.724	563.1 -> 519.0	1537	0.19	µg/L		98
		563.1 -> 269.1	298				
11Cl-PF3OUdS	9.605	630.9 -> 450.9	1789	0.32	µg/L		95
		632.9 -> 452.9	600				
9Cl-PF3ONS	8.751	530.8 -> 351.0	2545	0.32	µg/L		94
		532.8 -> 353.0	876				
ADONA	6.818	376.9 -> 250.9	5019	0.32	µg/L		95
		376.9 -> 84.8	1417				
HFPO-DA	5.978	284.9 -> 168.9	730	0.33	µg/L		95
		284.9 -> 184.9	80				
3:3FTCA	3.861	241.0 -> 177.0	422	0.91	µg/L		99
		241.0 -> 117.0	40				
5:3FTCA	6.283	341.0 -> 237.1	5928	4.18	µg/L		95
		341.0 -> 217.0	4464				
7:3FTCA	7.762	441.0 -> 316.9	3495	4.47	µg/L		97
		441.0 -> 336.9	7896				
EtFOSA	11.424	526.0 -> 219.0	975	0.37	µg/L		90
		526.0 -> 169.0	1237				
EtFOSE	11.345	630.0 -> 58.9	1764	0.81	µg/L		100
MeFOSA	11.141	511.9 -> 219.0	764	0.36	µg/L		76
		511.9 -> 169.0	1117				
MeFOSE	11.060	616.1 -> 58.9	1460	0.80	µg/L		100
PFDoDS	10.064	699.1 -> 79.9	197	0.18	µg/L		92
		699.1 -> 98.8	91				
NFDHA	5.491	295.0 -> 201.0	209	0.37	µg/L		99
		295.0 -> 84.9	51				
PFMBA	4.828	279.0 -> 85.1	1665	0.34	µg/L		100
PFMPA	3.540	229.0 -> 84.9	1721	0.36	µg/L		100
PFEESA	6.034	314.8 -> 134.9	2140	0.31	µg/L		96
		314.8 -> 82.9	44				

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

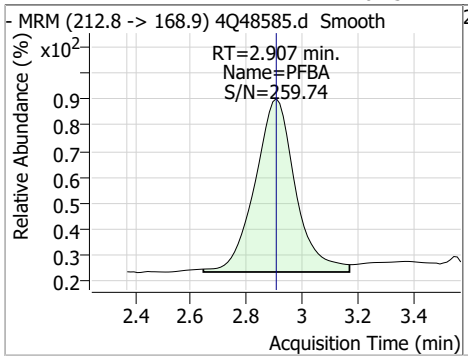
Perfluorinated Compounds by LC/MS/MS

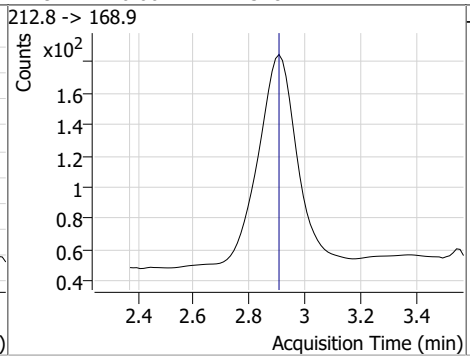
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

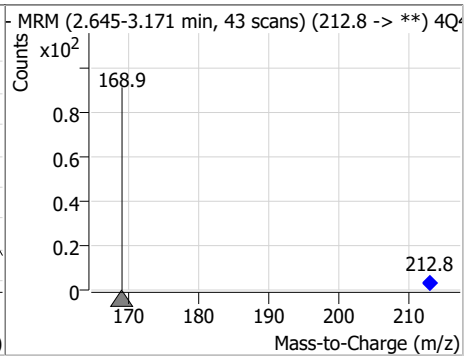
Perfluorinated Compounds by LC/MS/MS



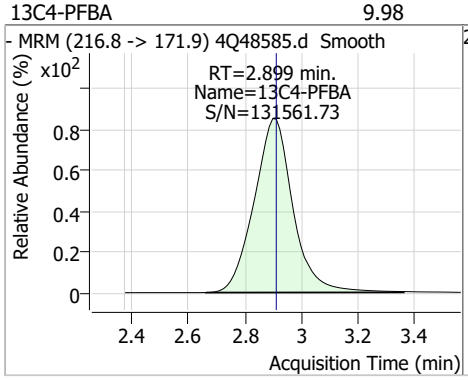
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.75	2.91	0.00	1378				

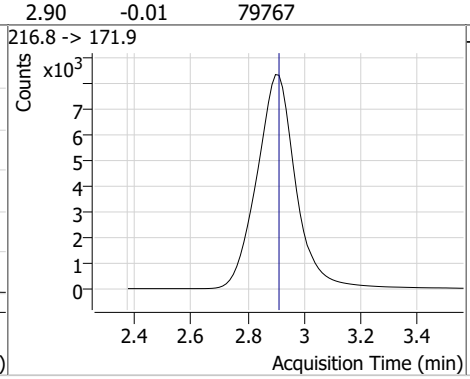


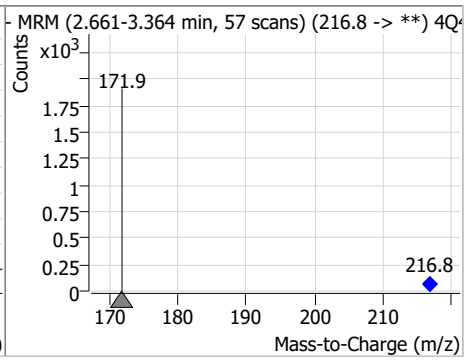




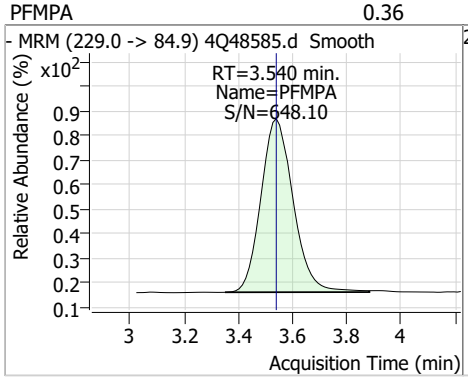
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.98	2.90	-0.01	79767				

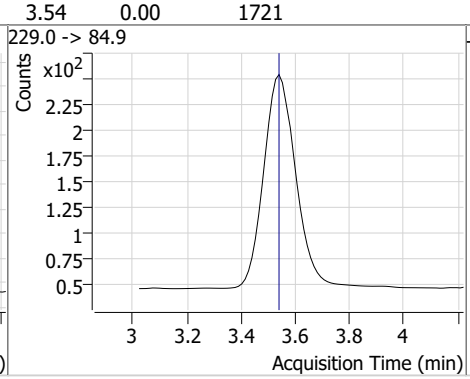


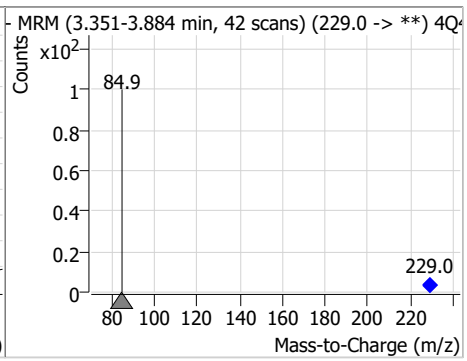




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.36	3.54	0.00	1721				

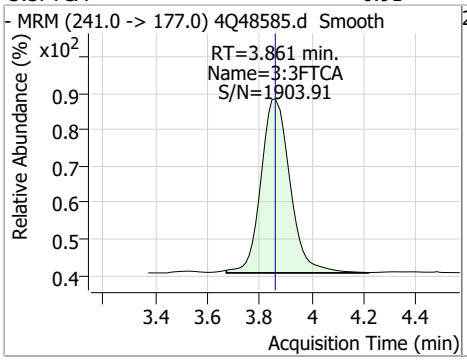


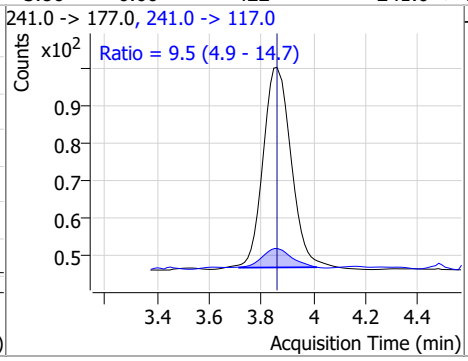


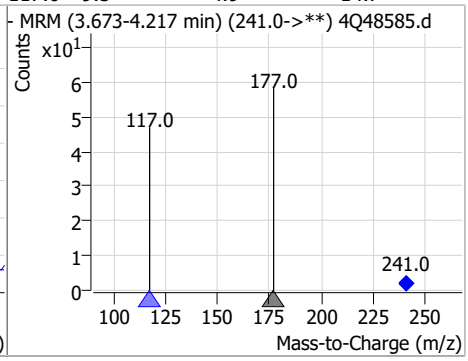


Perfluorinated Compounds by LC/MS/MS

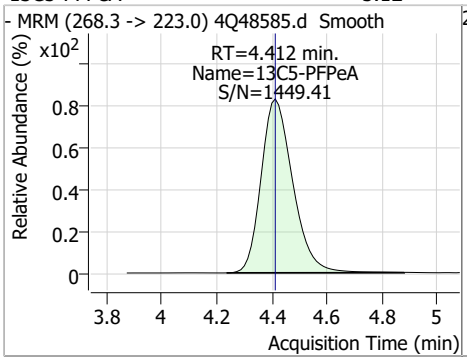
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.91	3.86	0.00	422	241.0 -> 117.0	9.5	4.9	14.7

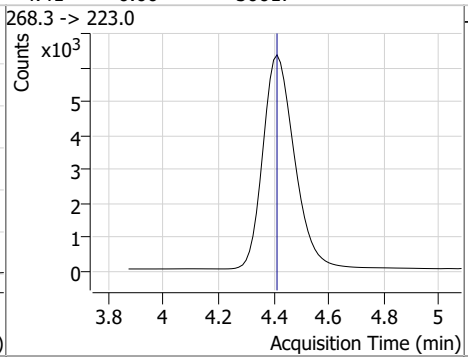


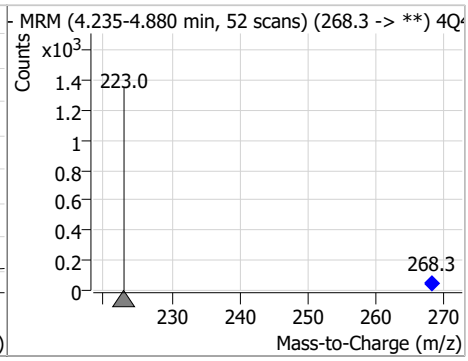




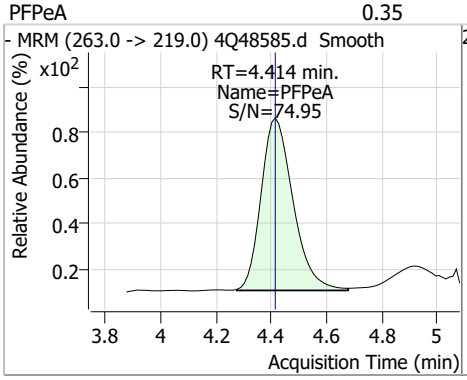
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.12	4.41	0.00	50617				

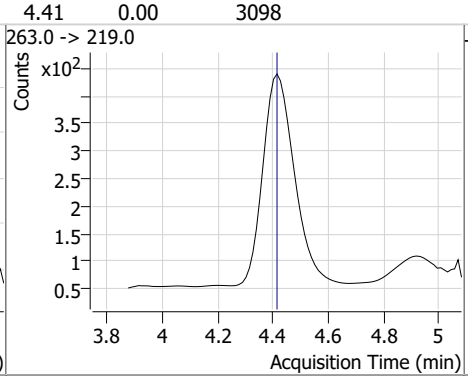


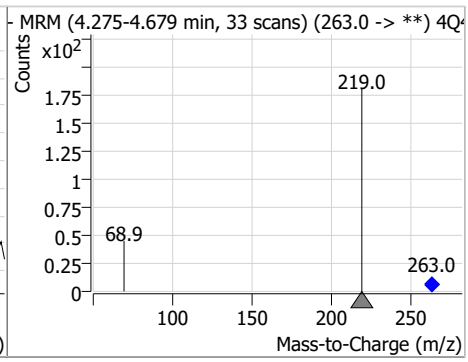




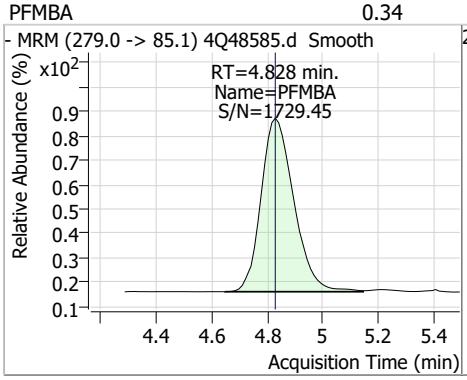
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.35	4.41	0.00	3098				

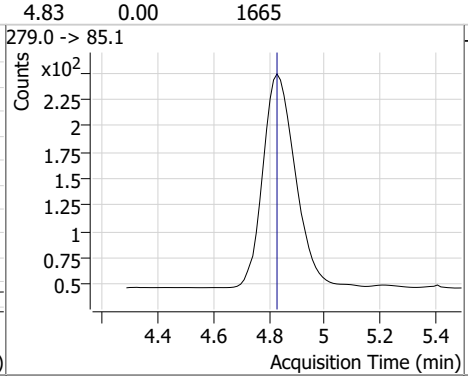


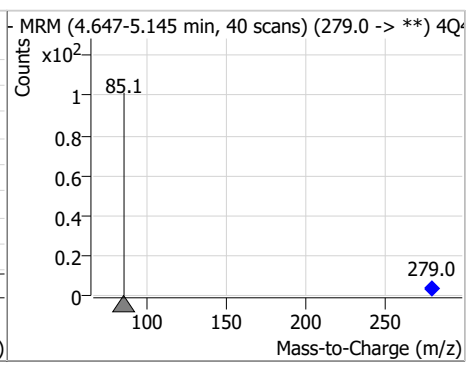




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.34	4.83	0.00	1665				

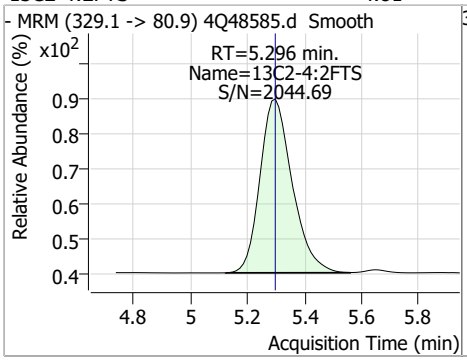


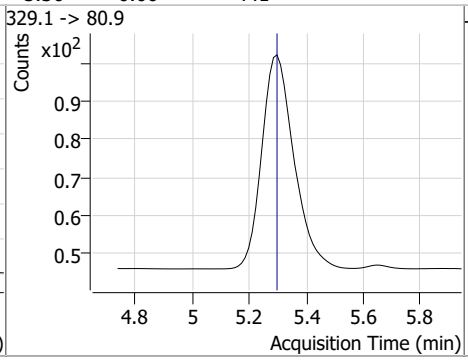


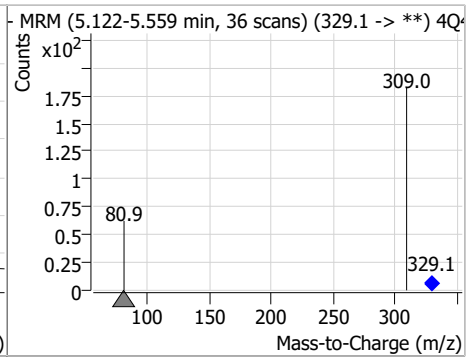


Perfluorinated Compounds by LC/MS/MS

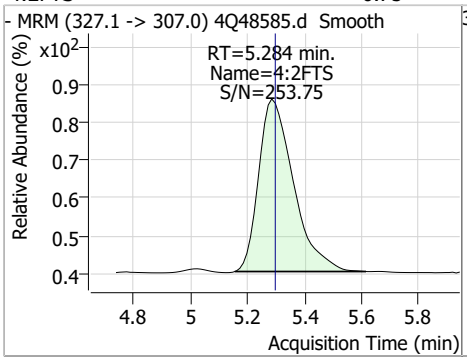
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.81	5.30	0.00	441				

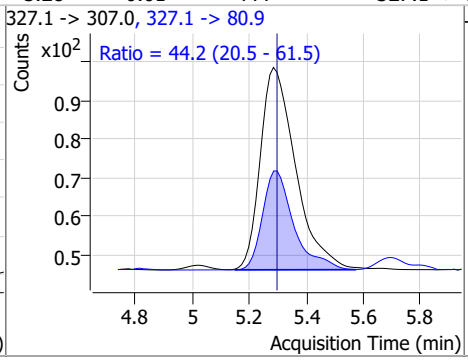


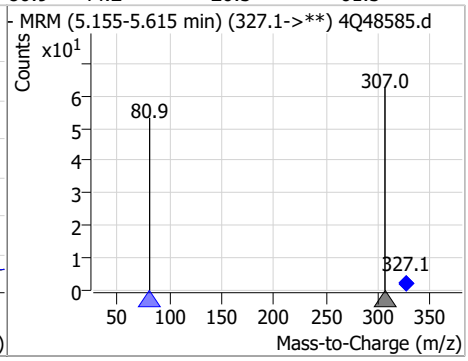




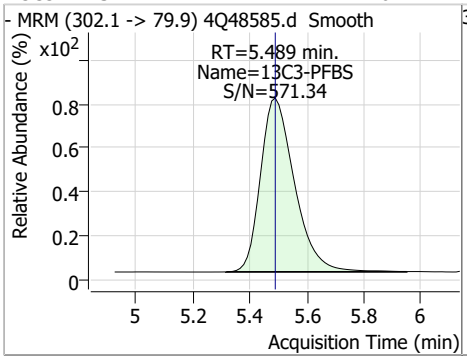
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.75	5.28	-0.01	444	327.1 -> 80.9	44.2	20.5	61.5

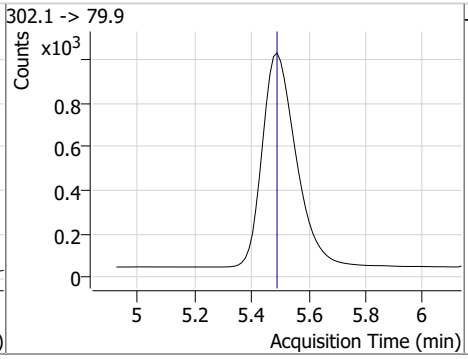


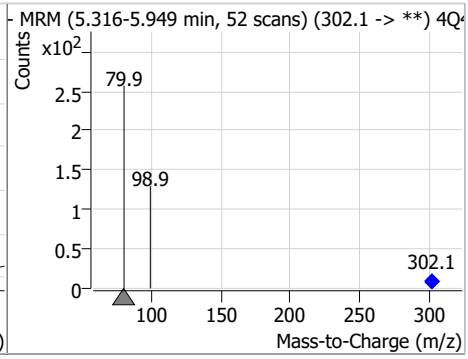




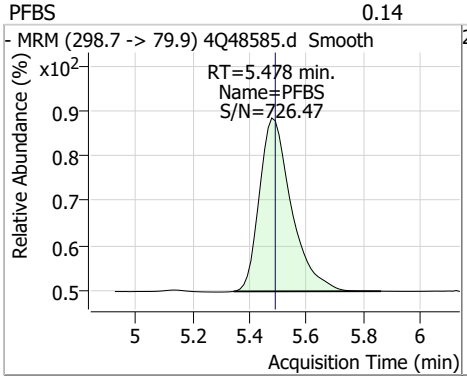
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	5.49	0.00	8158				

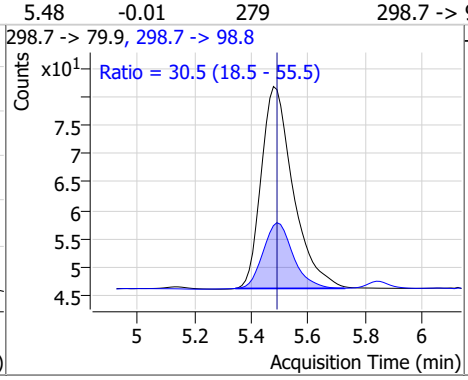


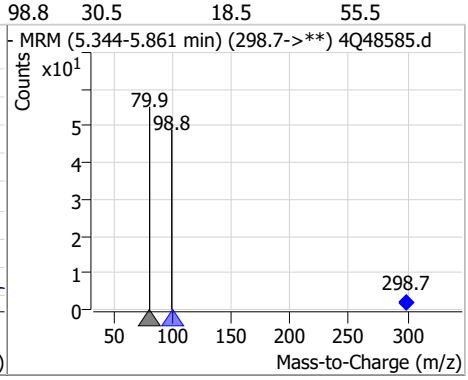




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.14	5.48	-0.01	279	298.7 -> 98.8	30.5	18.5	55.5

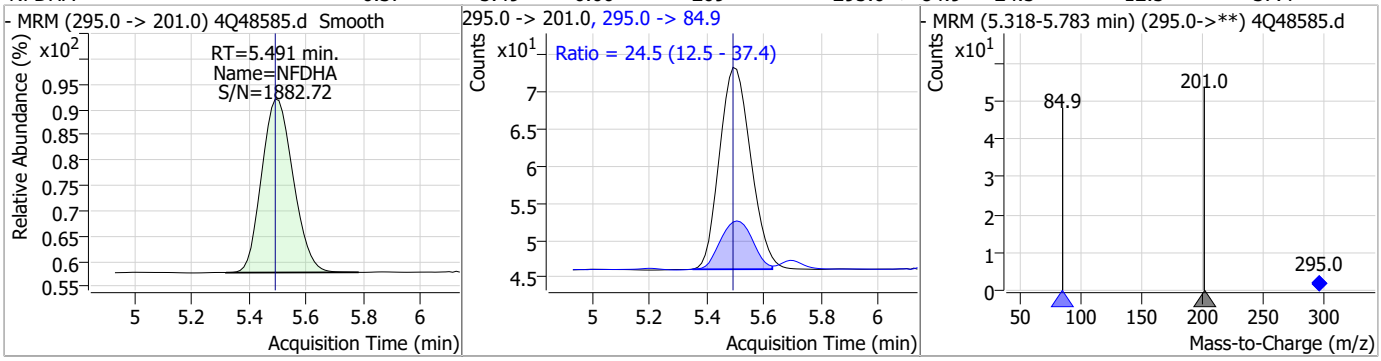




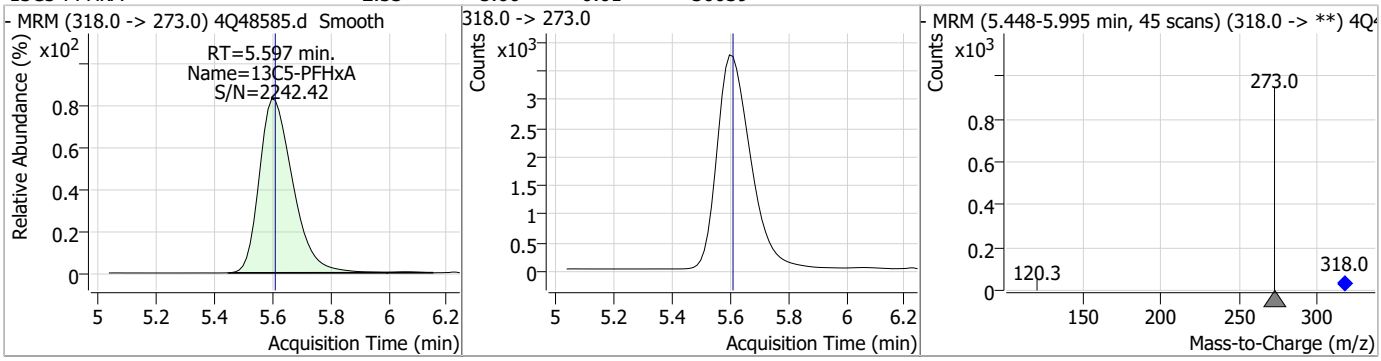


Perfluorinated Compounds by LC/MS/MS

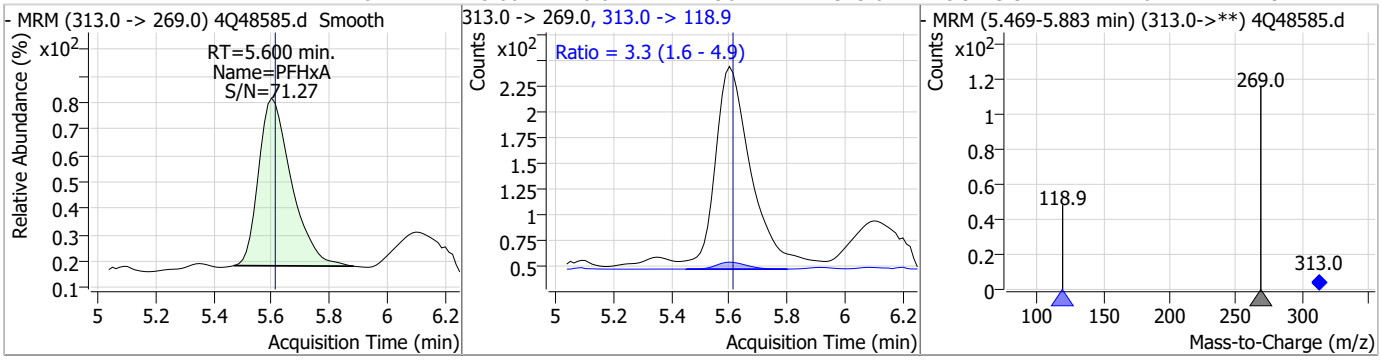
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.37	5.49	0.00	209	295.0 -> 84.9	24.5	12.5	37.4



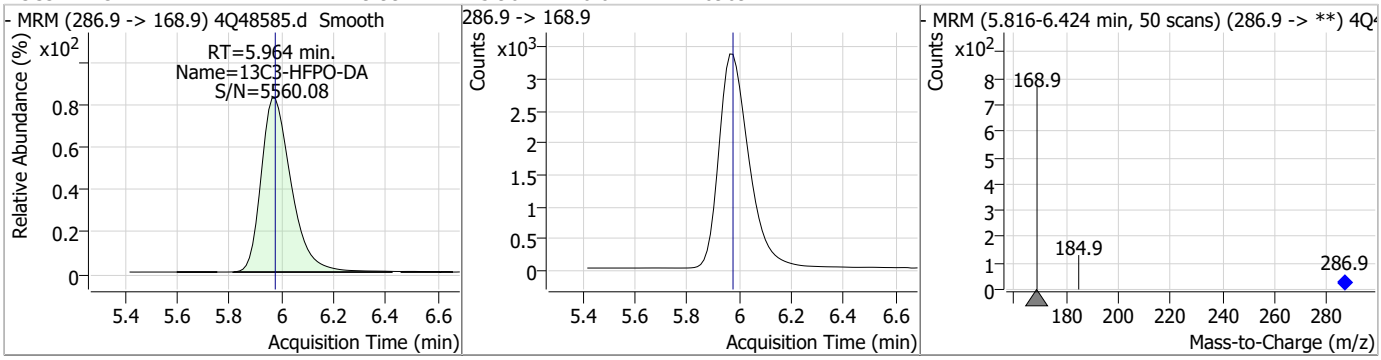
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.60	-0.01	30039				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.17	5.60	-0.01	1490	313.0 -> 118.9	3.3	1.6	4.9

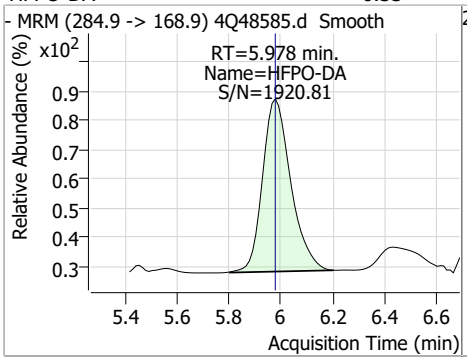


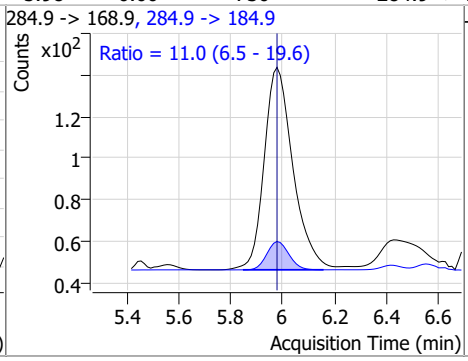
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.99	5.96	-0.01	26909				

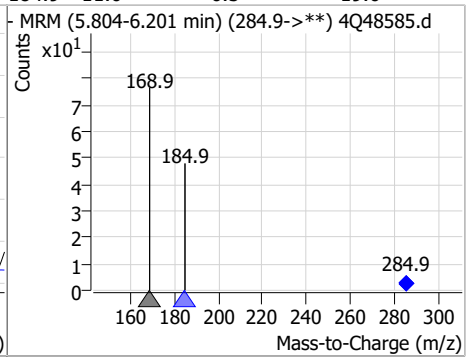


Perfluorinated Compounds by LC/MS/MS

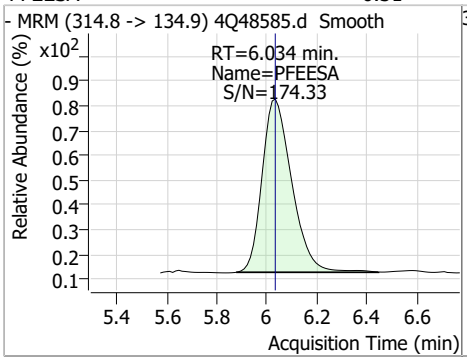
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.33	5.98	0.00	730	284.9 -> 184.9	11.0	6.5	19.6

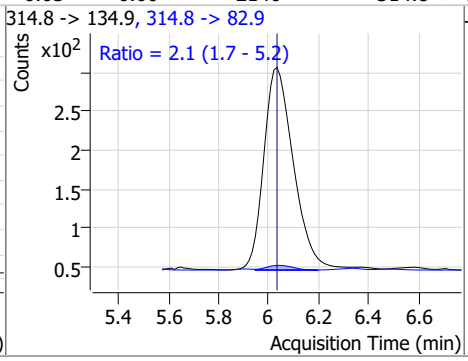


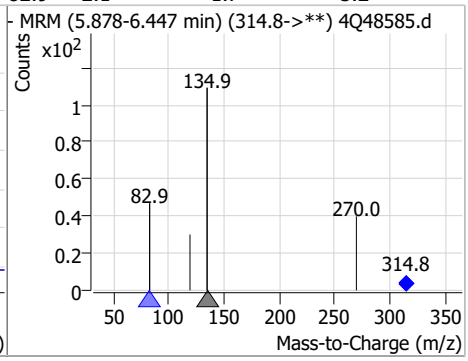




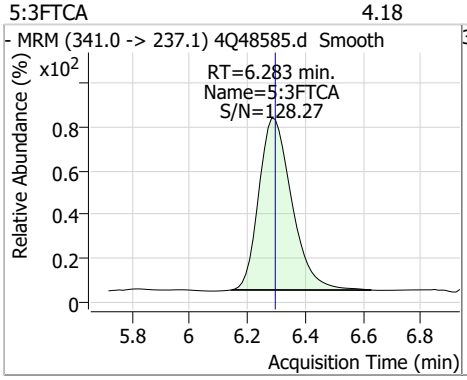
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.31	6.03	0.00	2140	314.8 -> 82.9	2.1	1.7	5.2

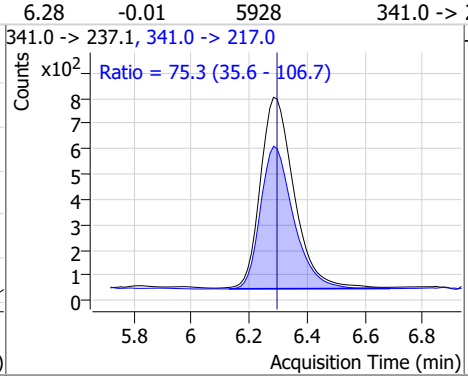


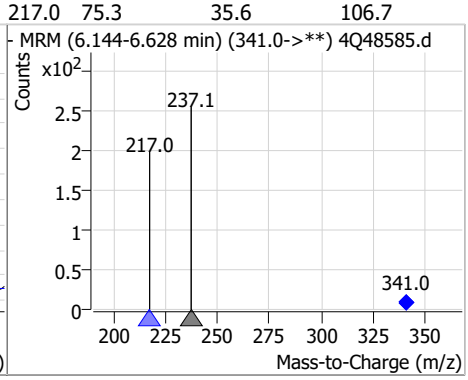




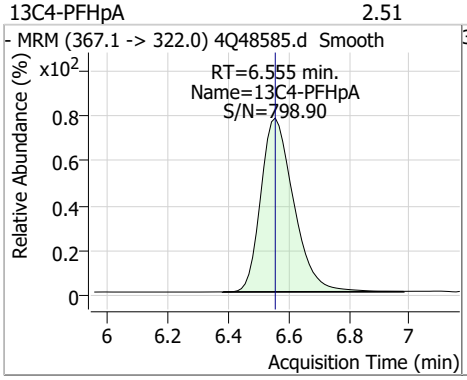
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.18	6.28	-0.01	5928	341.0 -> 217.0	75.3	35.6	106.7

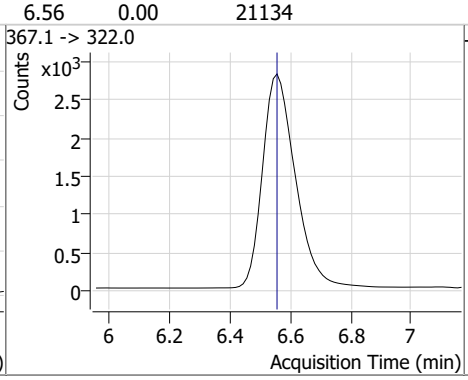


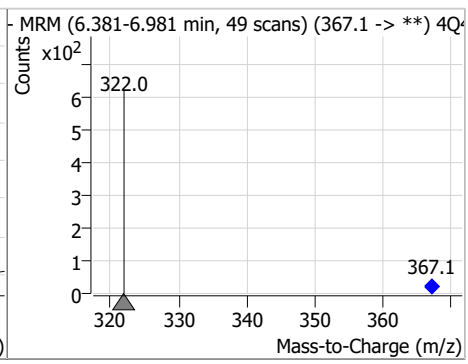




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	6.56	0.00	21134				

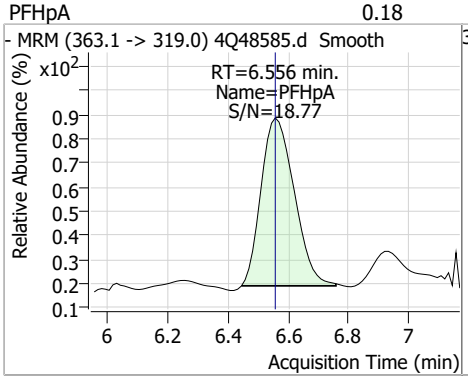


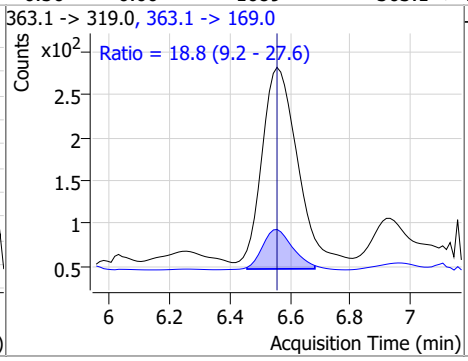


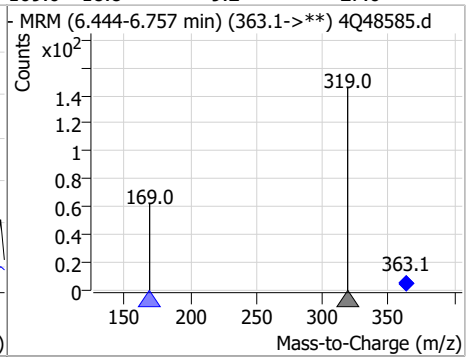


Perfluorinated Compounds by LC/MS/MS

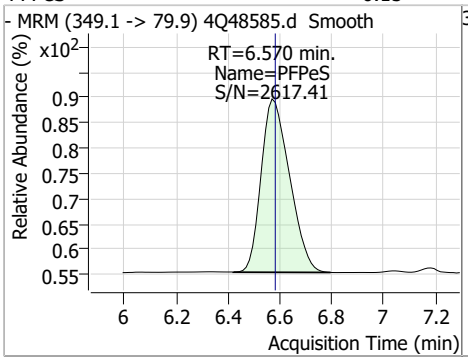
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.18	6.56	0.00	1689	363.1 -> 169.0	18.8	9.2	27.6

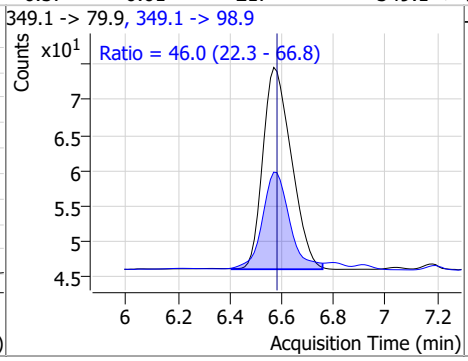


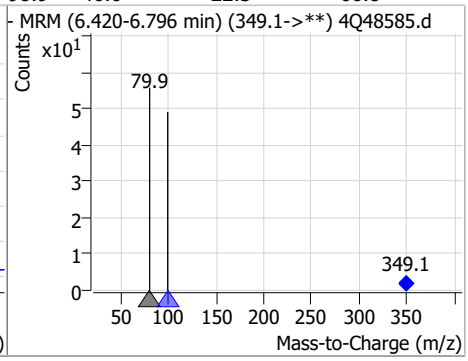




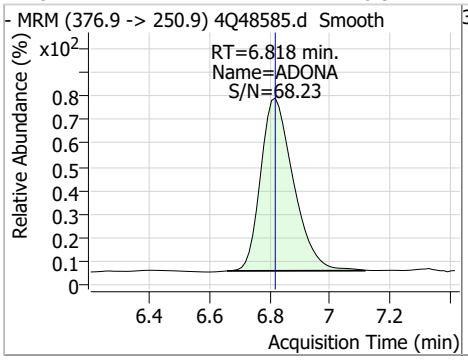
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.15	6.57	-0.01	217	349.1 -> 98.9	46.0	22.3	66.8

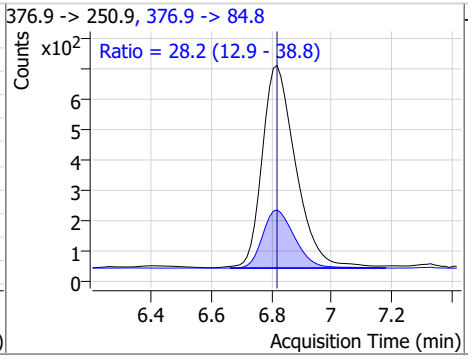


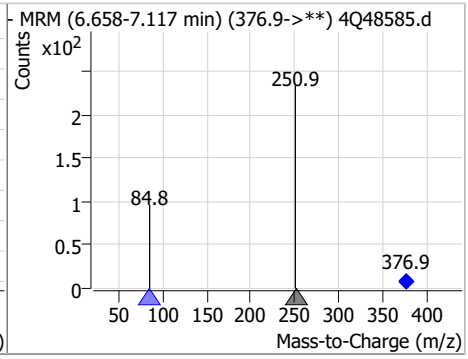




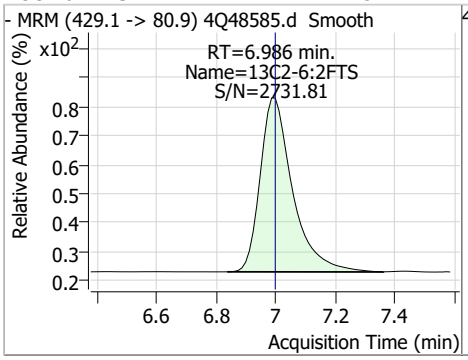
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.32	6.82	0.00	5019	376.9 -> 84.8	28.2	12.9	38.8

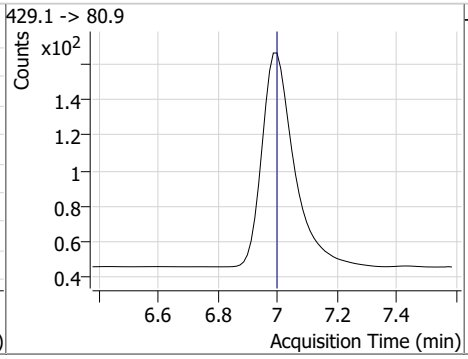


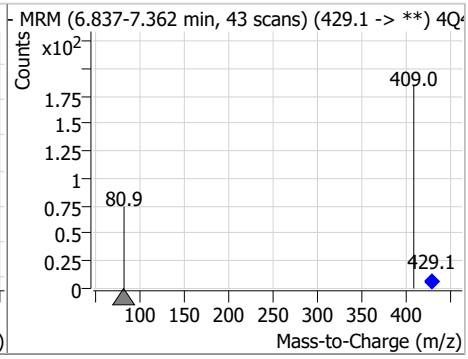




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.21	6.99	-0.01	912				

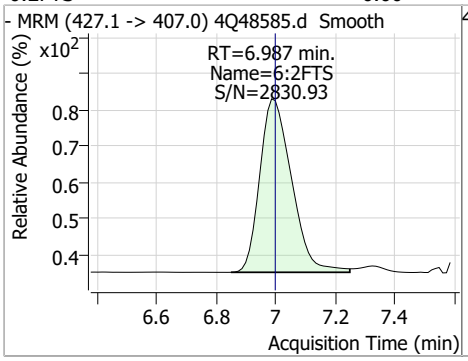


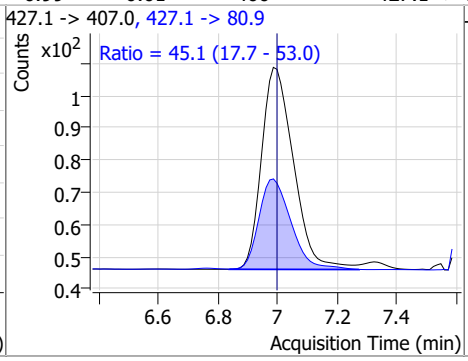


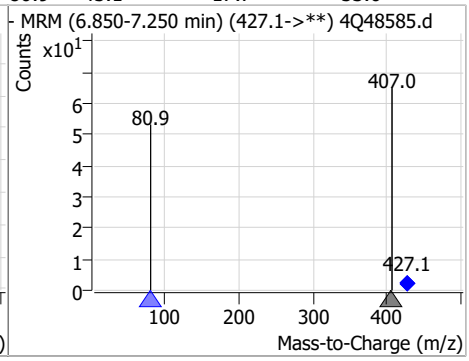


Perfluorinated Compounds by LC/MS/MS

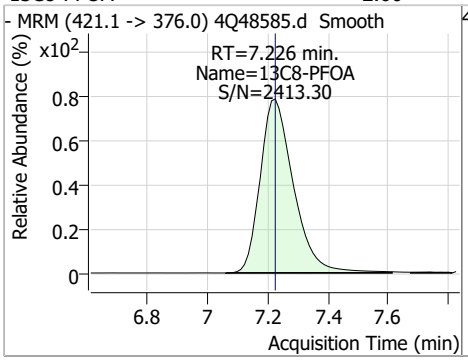
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.60	6.99	-0.01	466	427.1 -> 80.9	45.1	17.7	53.0

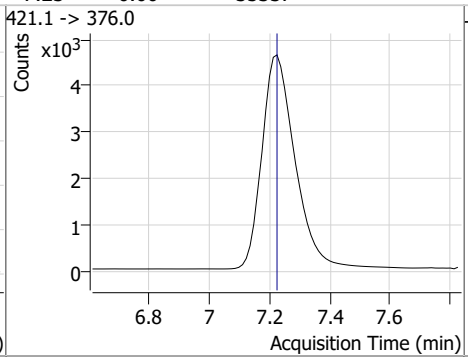


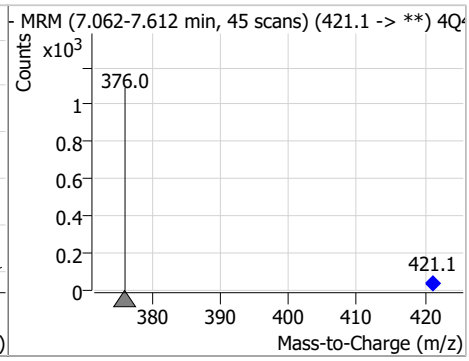




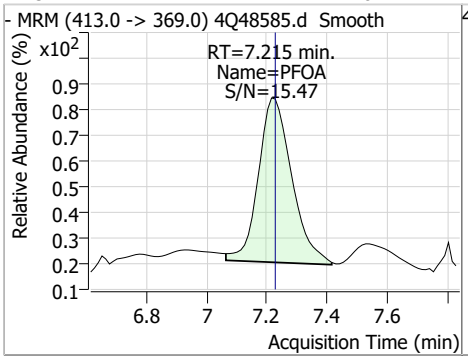
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.60	7.23	0.00	35337				

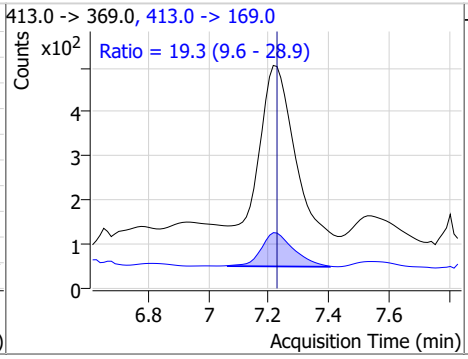


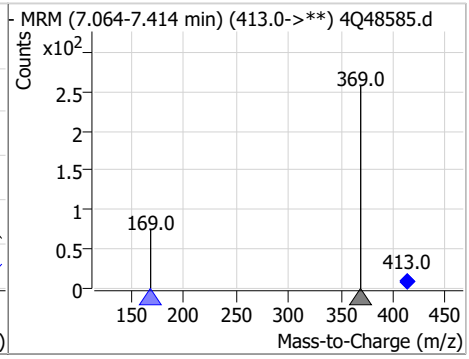




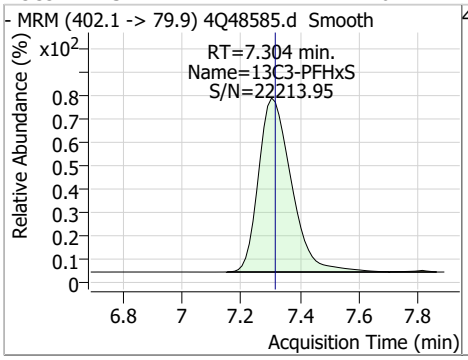
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.21	7.21	-0.01	2967	413.0 -> 169.0	19.3	9.6	28.9

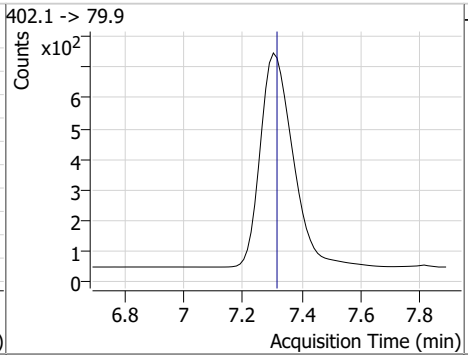


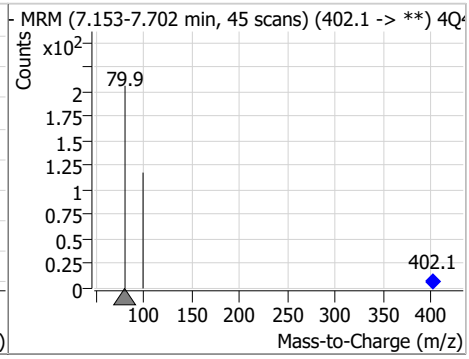




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.67	7.30	-0.01	5418				

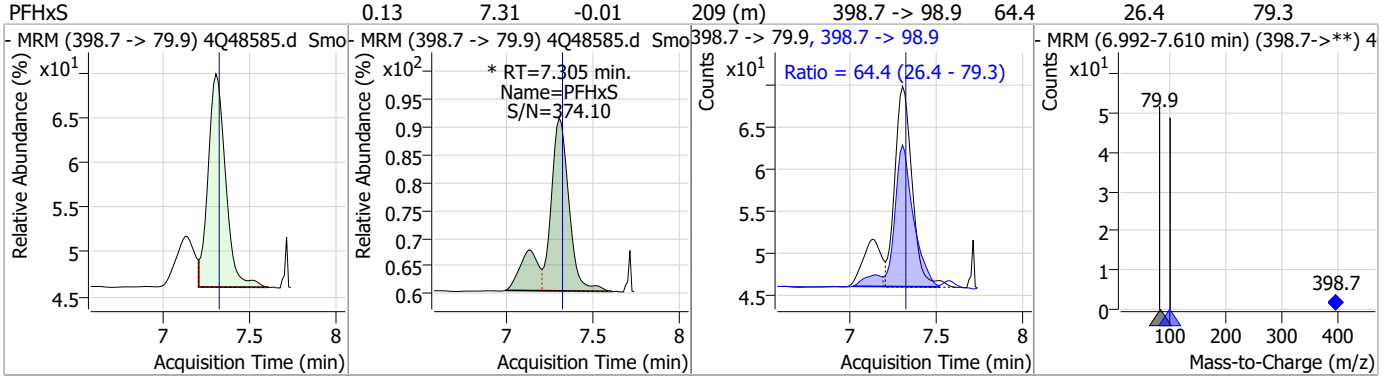




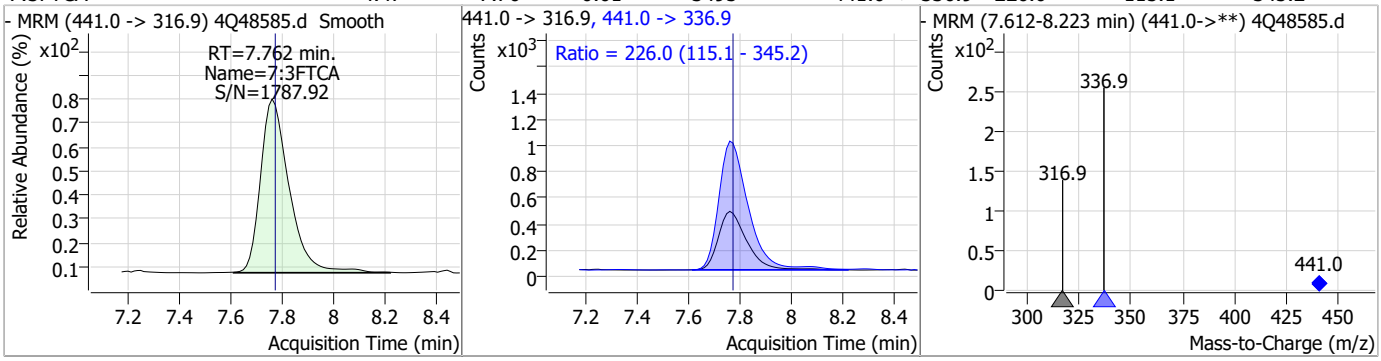


Perfluorinated Compounds by LC/MS/MS

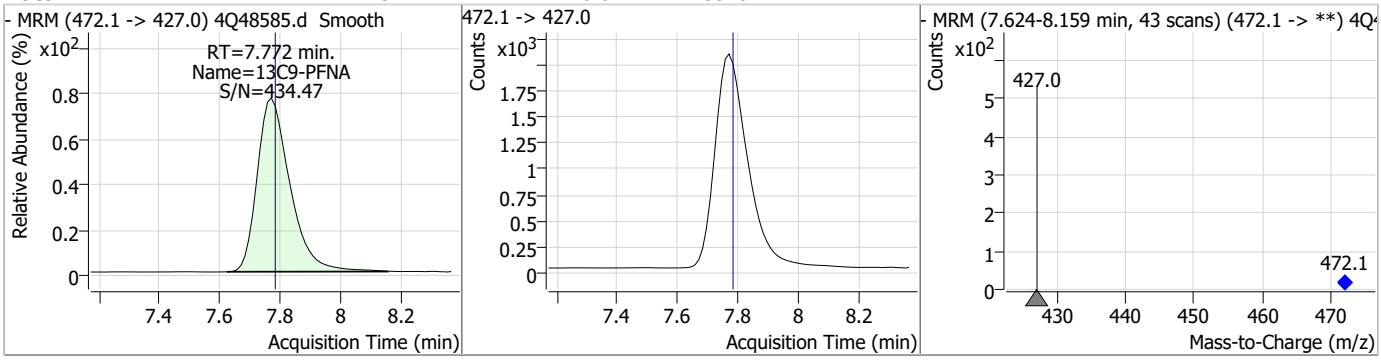
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.13	7.31	-0.01	209 (m)	398.7 -> 98.9	64.4	26.4	79.3



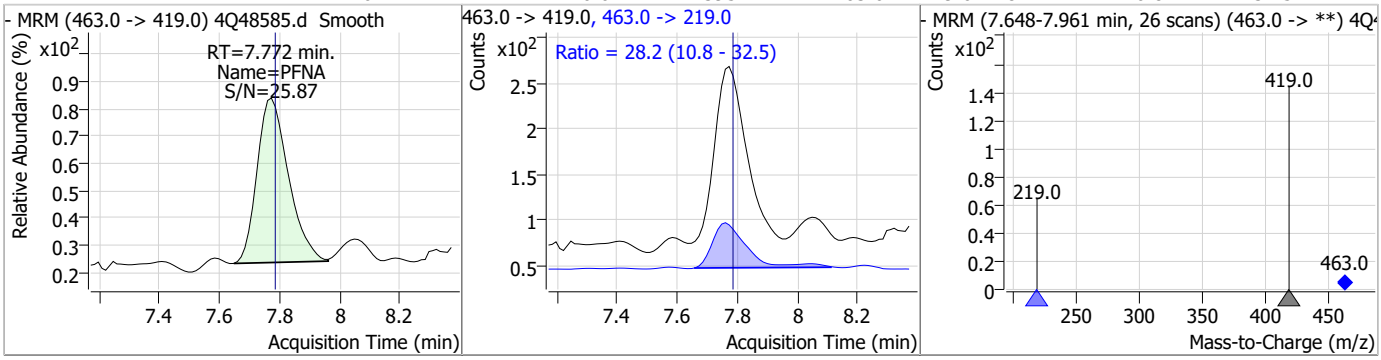
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.47	7.76	-0.01	3495	441.0 -> 336.9	226.0	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	7.77	-0.01	15578				

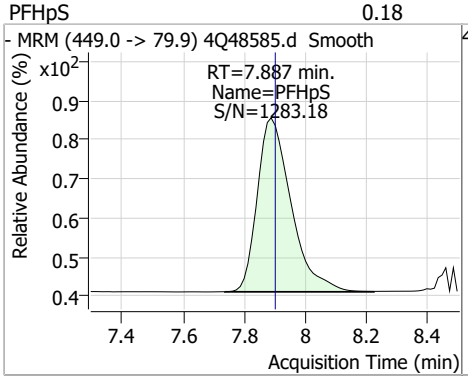


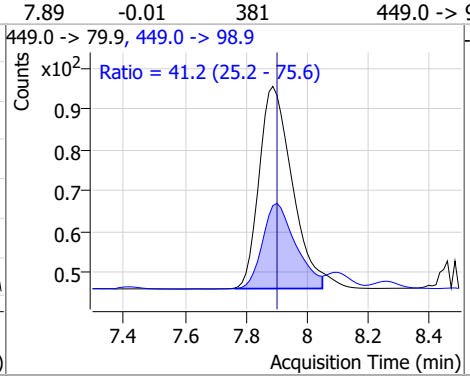
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.17	7.77	-0.01	1395	463.0 -> 219.0	28.2	10.8	32.5

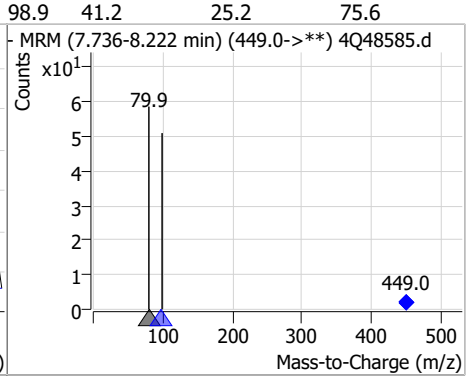


Perfluorinated Compounds by LC/MS/MS

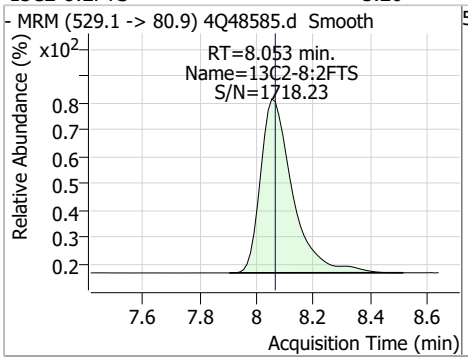
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.18	7.89	-0.01	381	449.0 -> 98.9	41.2	25.2	75.6

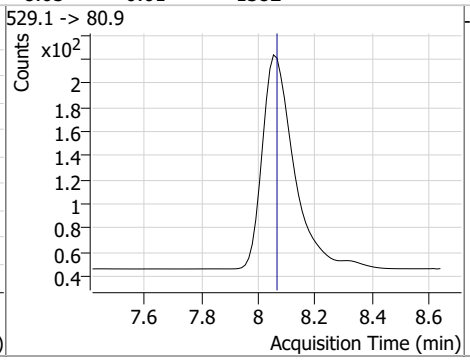


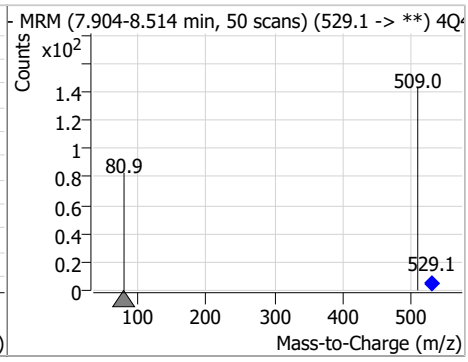




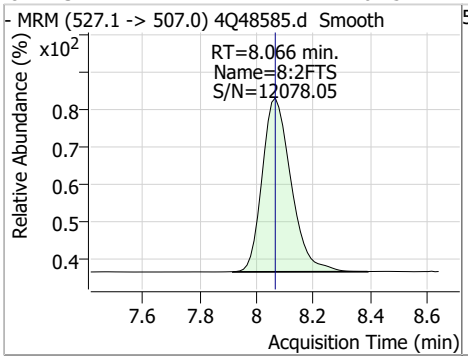
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.20	8.05	-0.01	1382				

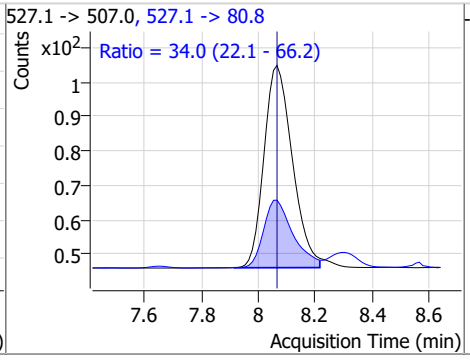


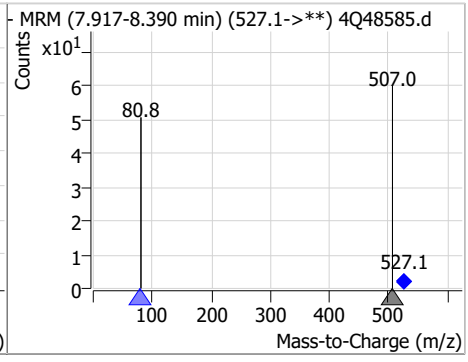




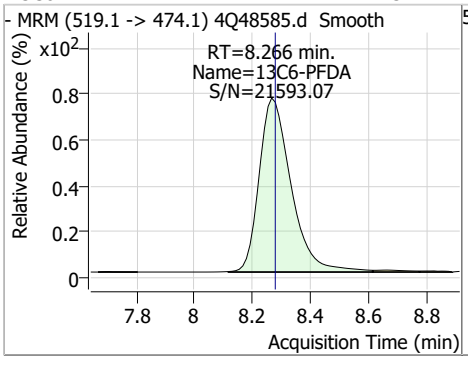
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.75	8.07	0.00	414	527.1 -> 80.8	34.0	22.1	66.2

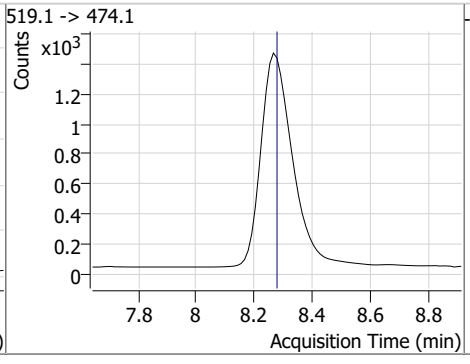


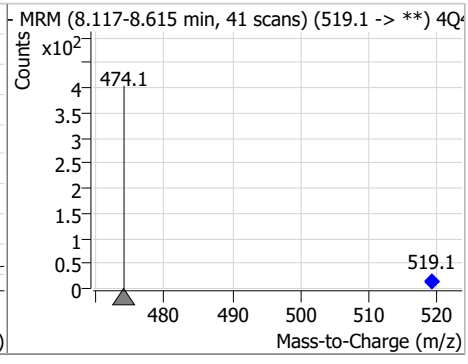




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.23	8.27	-0.01	10929				

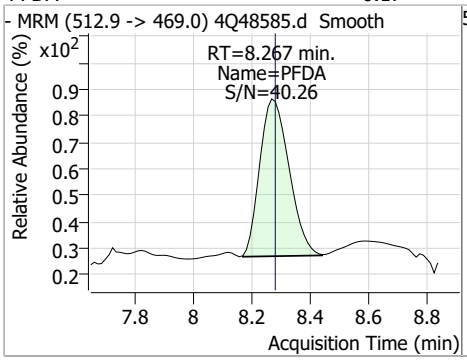


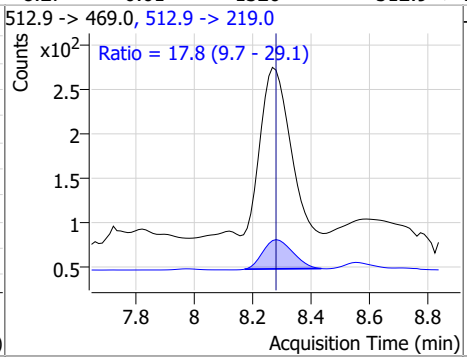


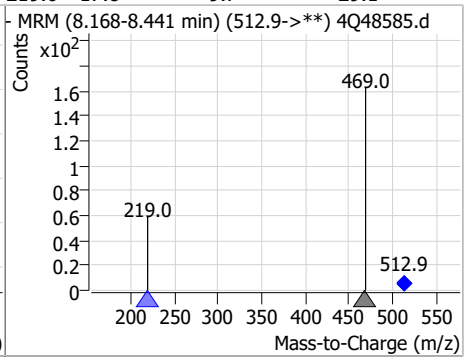


Perfluorinated Compounds by LC/MS/MS

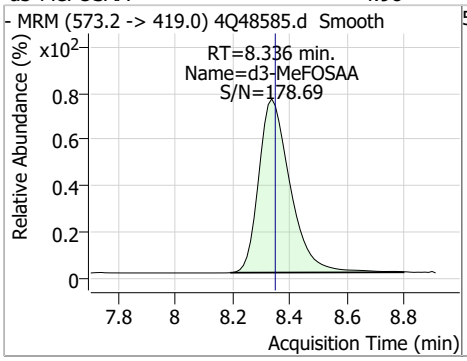
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.17	8.27	-0.01	1326	512.9 -> 219.0	17.8	9.7	29.1

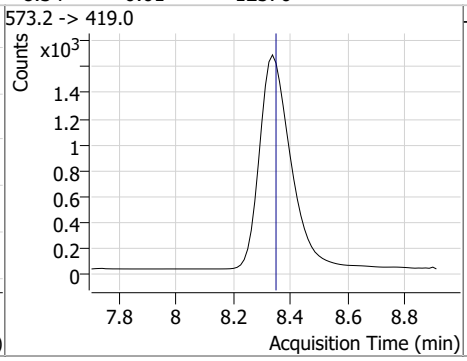


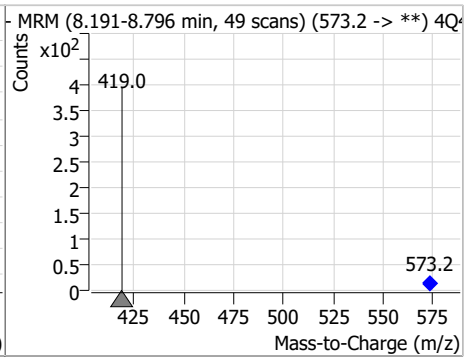




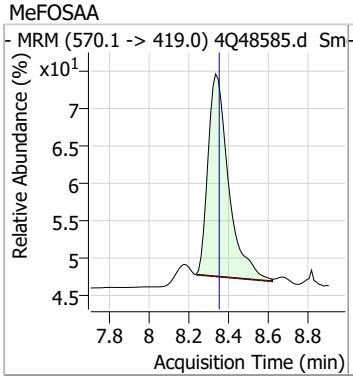
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.98	8.34	-0.01	12570				

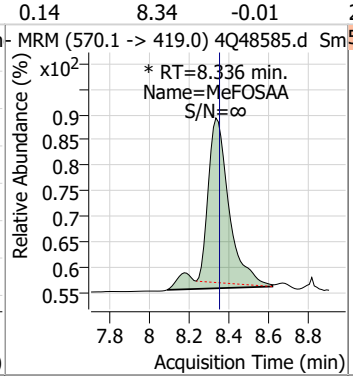


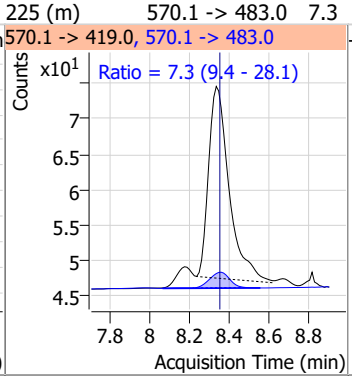


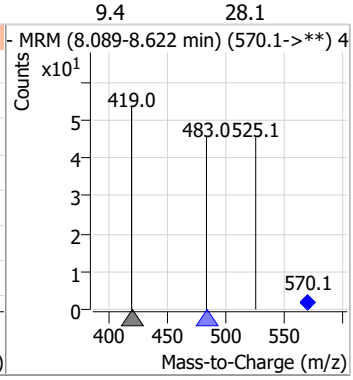


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.14	8.34	-0.01	225 (m)	570.1 -> 483.0	7.3	9.4	28.1

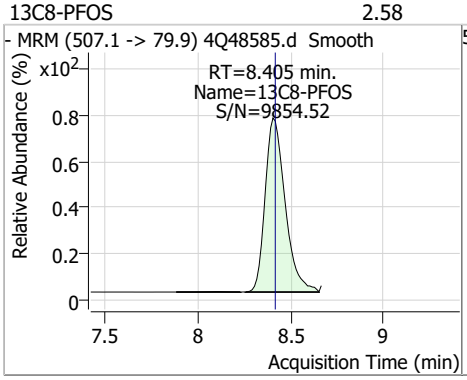


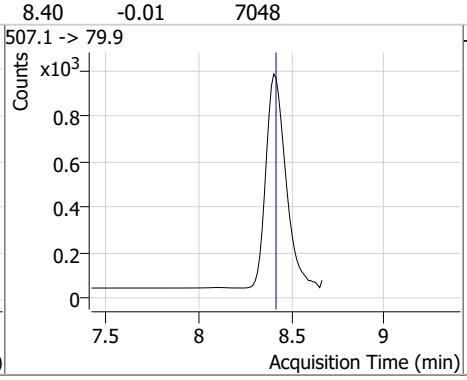


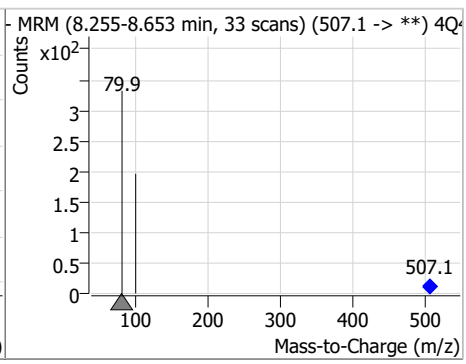




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	8.40	-0.01	7048				

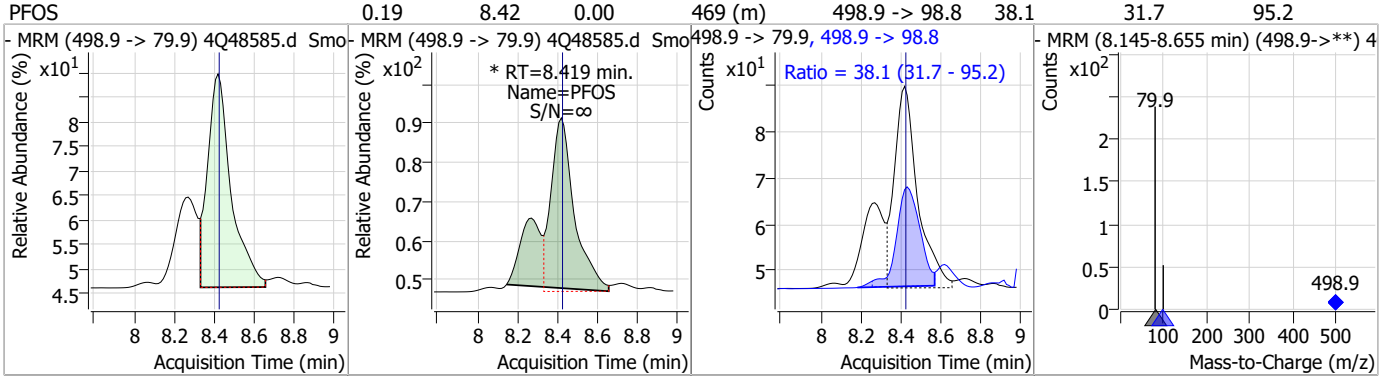




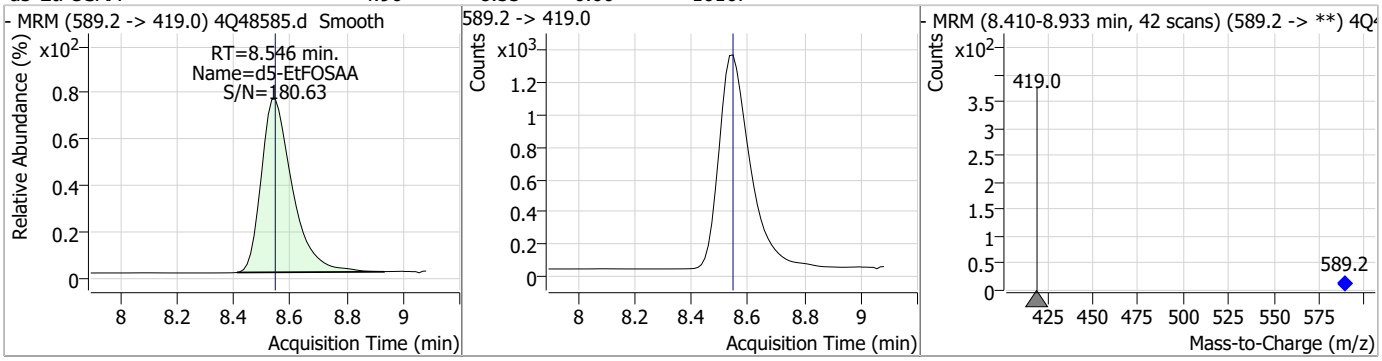


Perfluorinated Compounds by LC/MS/MS

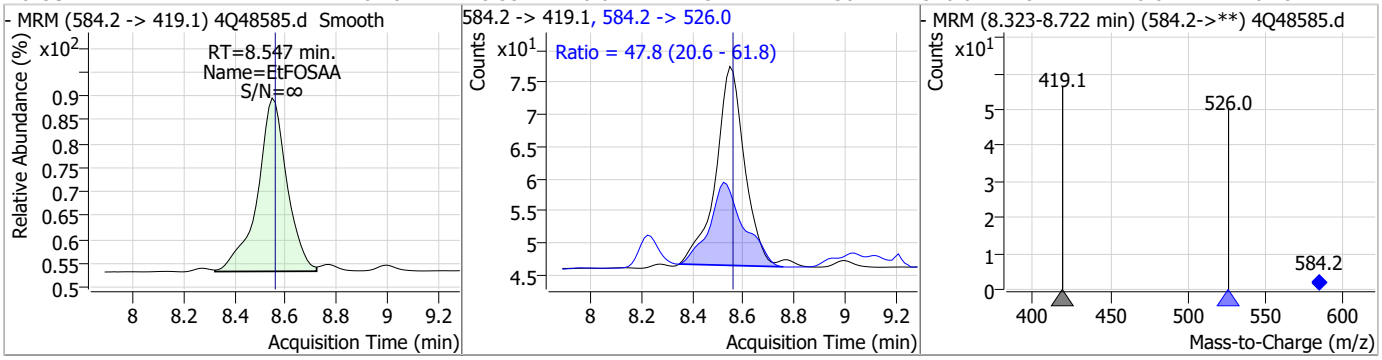
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.42	0.00	469 (m)	498.9 -> 98.8	38.1	31.7	95.2



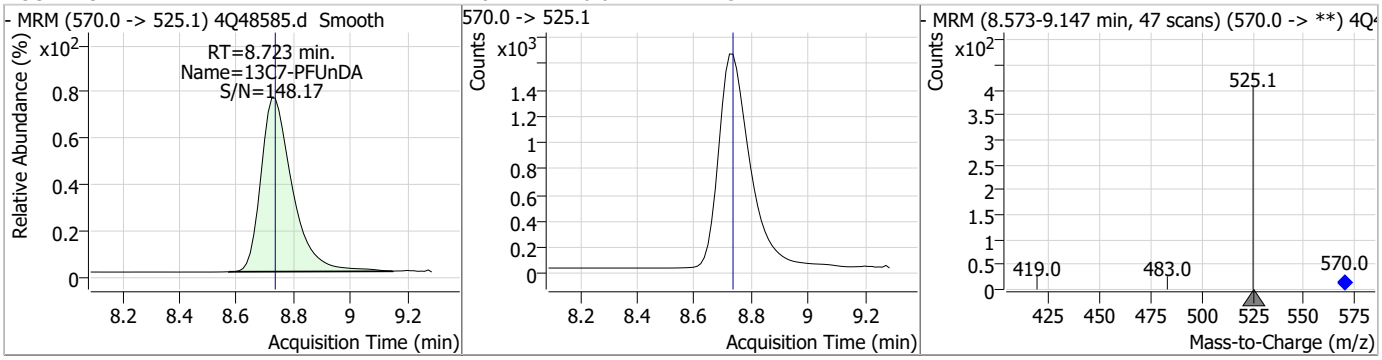
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.90	8.55	0.00	10167				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.18	8.55	-0.01	252	584.2 -> 526.0	47.8	20.6	61.8

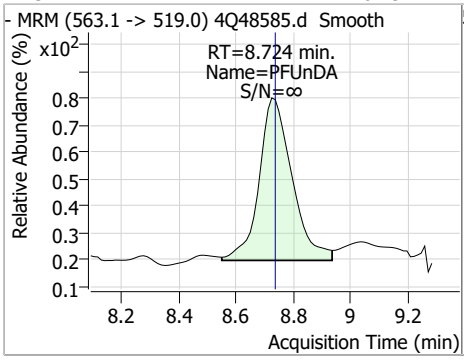


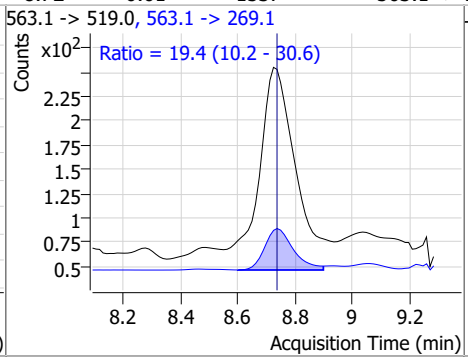
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.72	-0.01	12454				

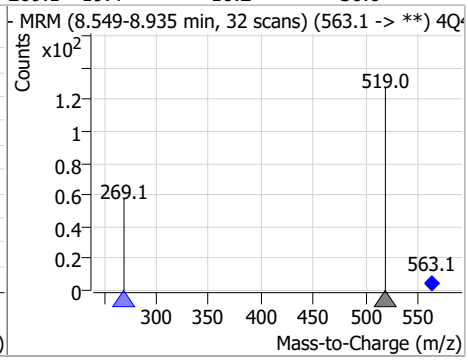


Perfluorinated Compounds by LC/MS/MS

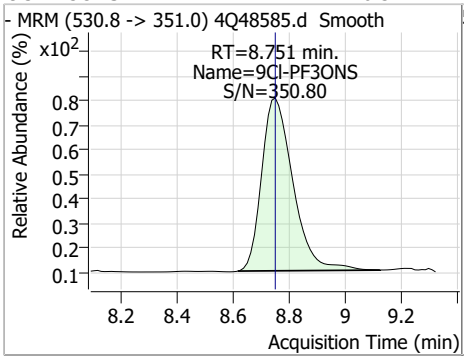
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.19	8.72	-0.01	1537	563.1 -> 269.1	19.4	10.2	30.6

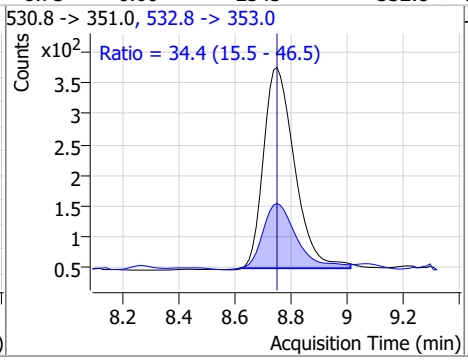


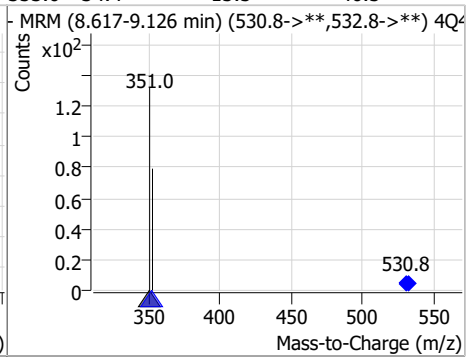




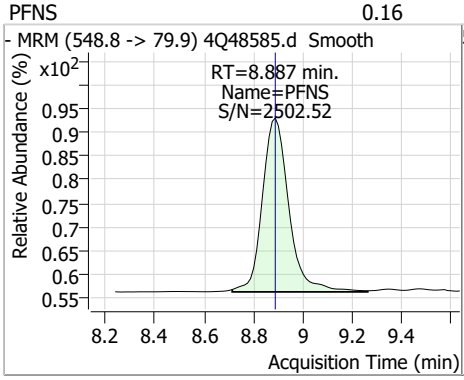
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.32	8.75	0.00	2545	532.8 -> 353.0	34.4	15.5	46.5

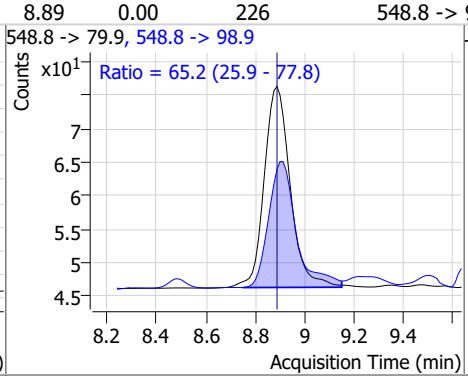


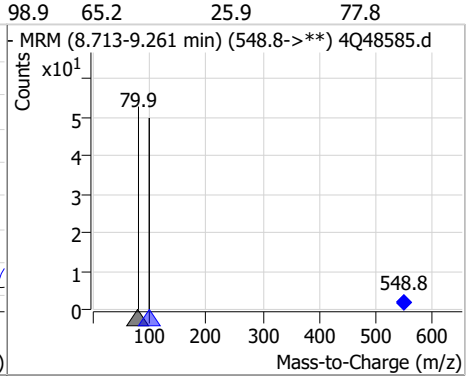




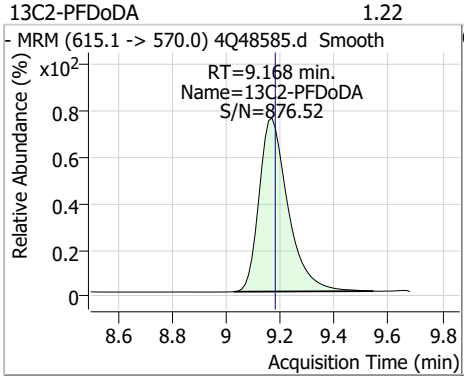
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.16	8.89	0.00	226	548.8 -> 98.9	65.2	25.9	77.8

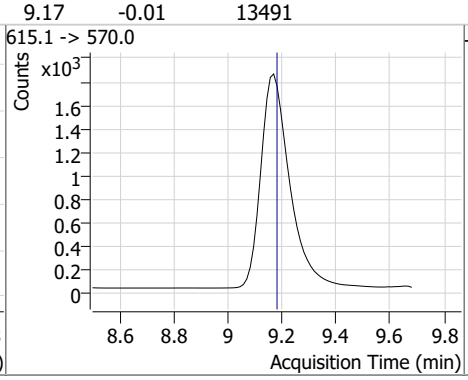


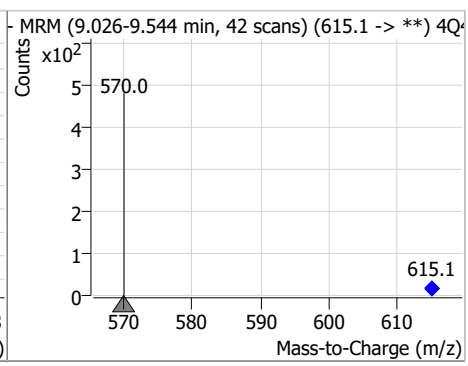




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.17	-0.01	13491				

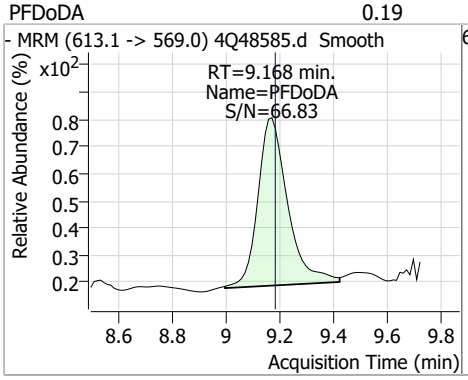


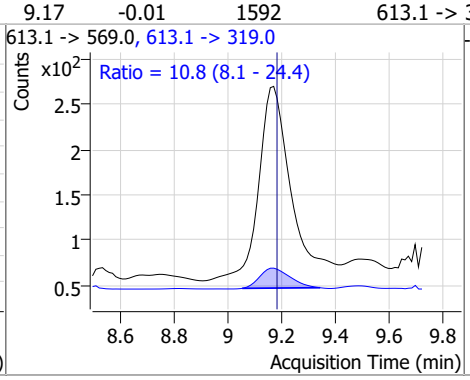


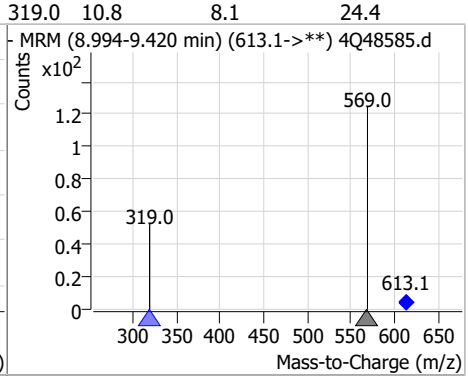


Perfluorinated Compounds by LC/MS/MS

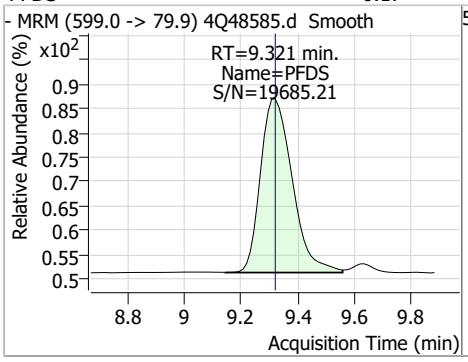
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.19	9.17	-0.01	1592	613.1 -> 319.0	10.8	8.1	24.4

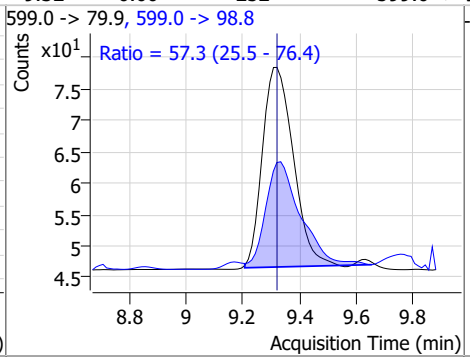


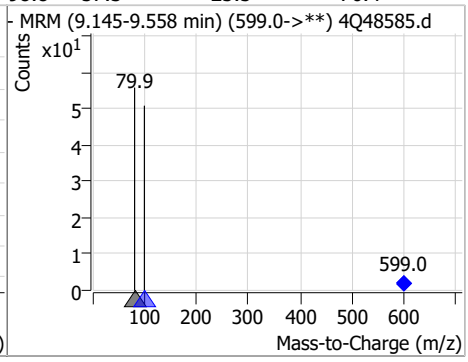




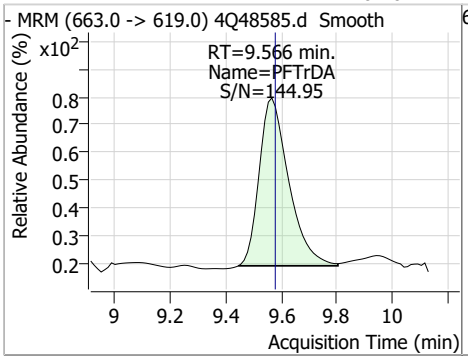
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.17	9.32	0.00	252	599.0 -> 98.8	57.3	25.5	76.4

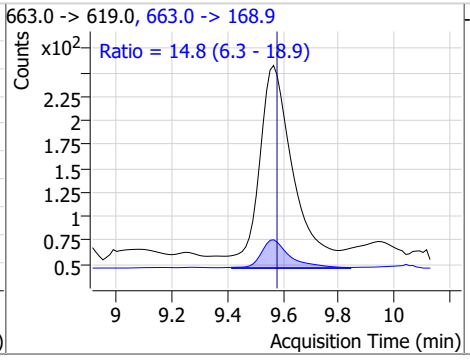


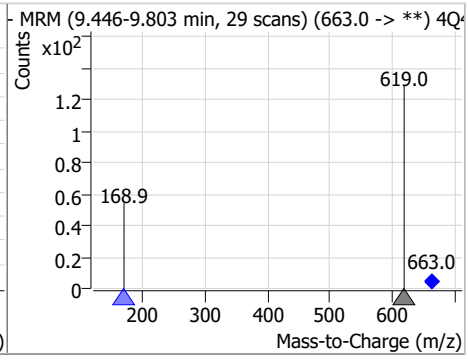




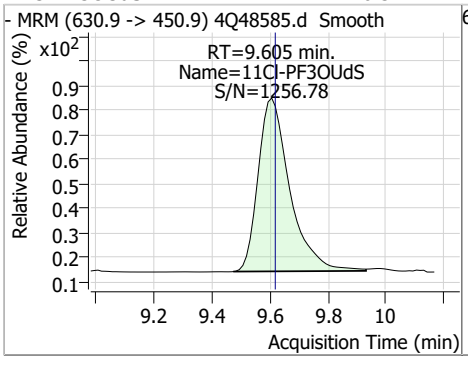
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.16	9.57	-0.01	1438	663.0 -> 168.9	14.8	6.3	18.9

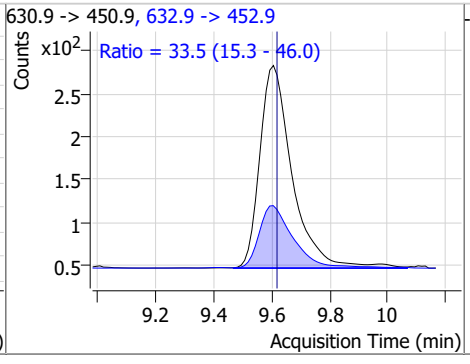


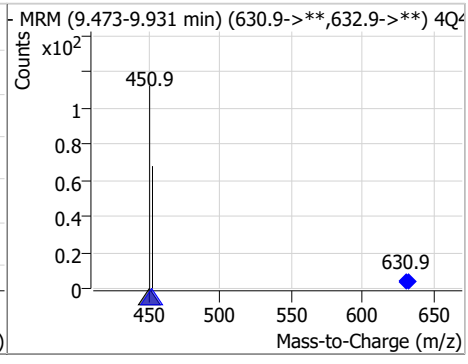




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.32	9.61	-0.01	1789	632.9 -> 452.9	33.5	15.3	46.0

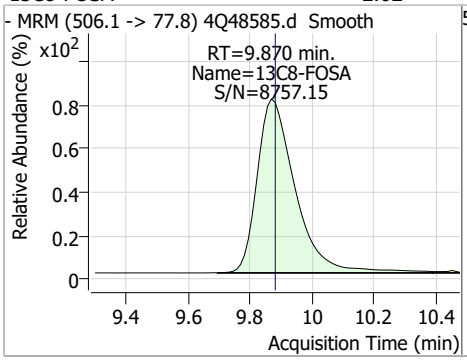


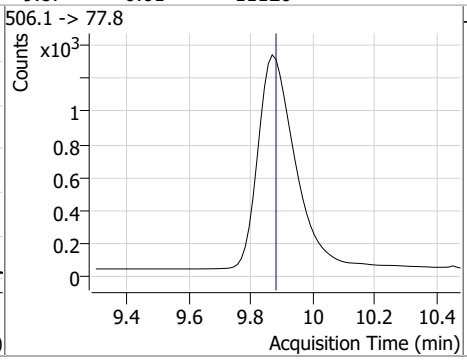


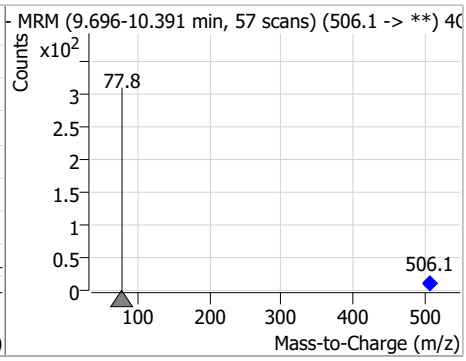


Perfluorinated Compounds by LC/MS/MS

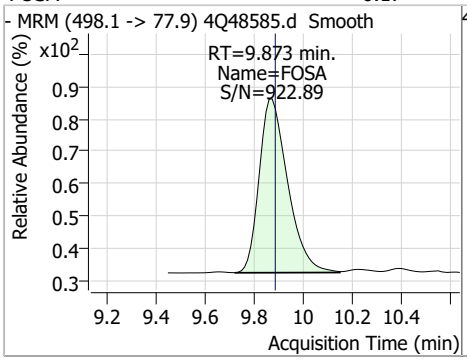
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	9.87	-0.01	11120				

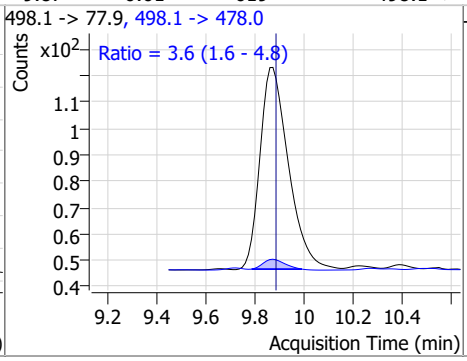


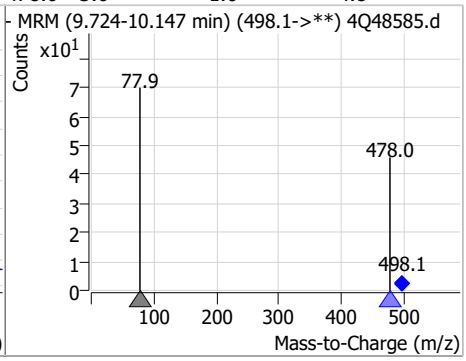




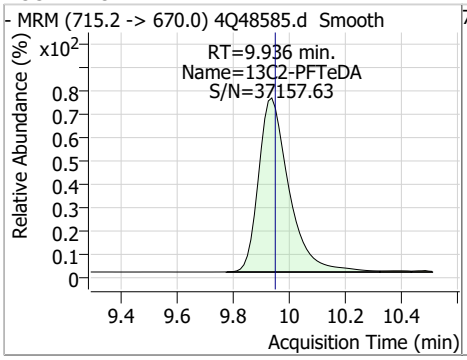
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.17	9.87	-0.01	619	498.1 -> 478.0	3.6	1.6	4.8

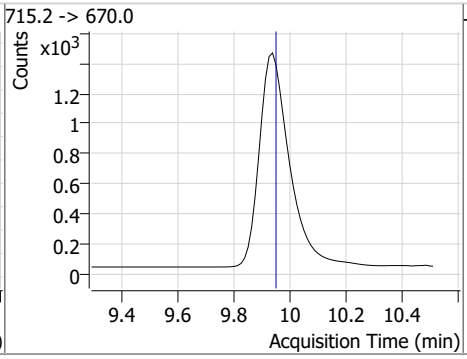


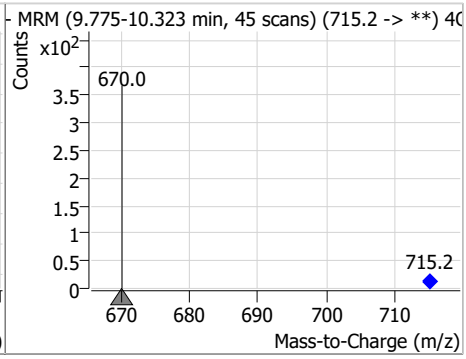




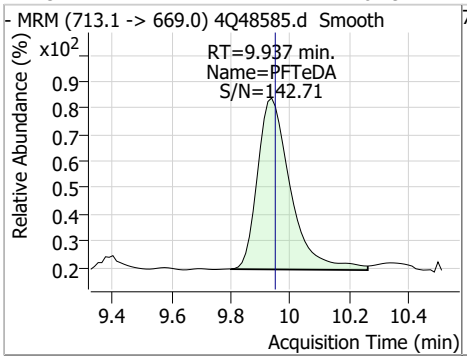
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.94	-0.01	10771				

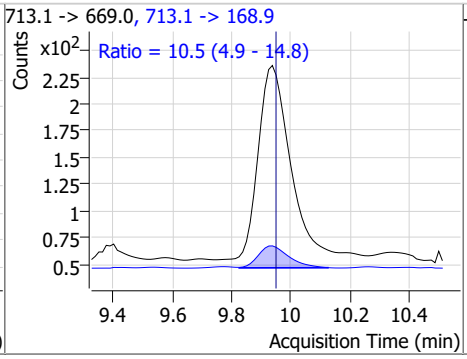


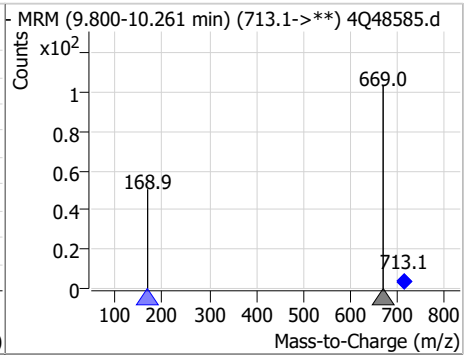




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.19	9.94	-0.01	1404	713.1 -> 168.9	10.5	4.9	14.8

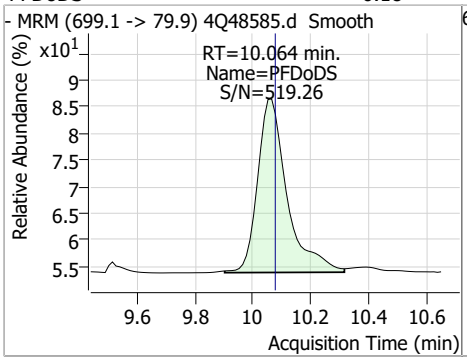


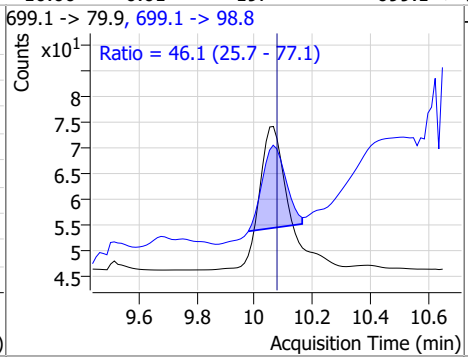


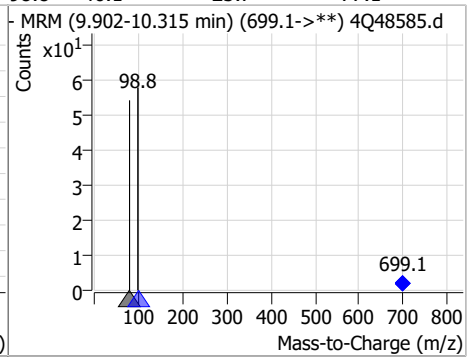


Perfluorinated Compounds by LC/MS/MS

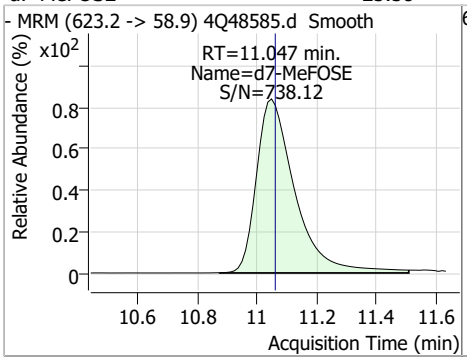
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.18	10.06	-0.01	197	699.1 -> 98.8	46.1	25.7	77.1

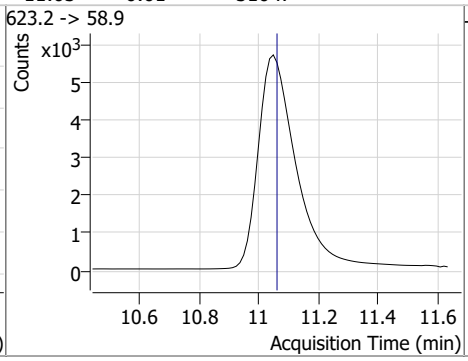


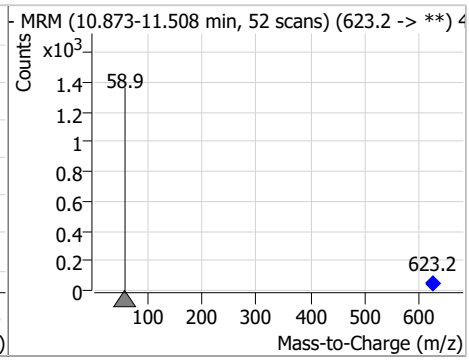




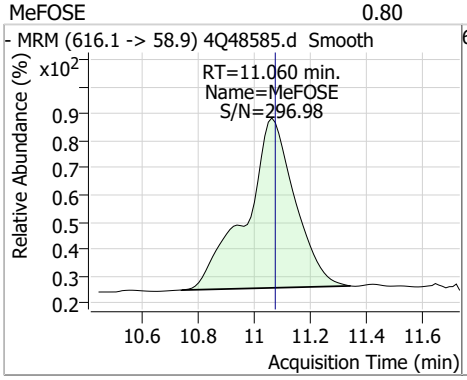
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.58	11.05	-0.01	51047				

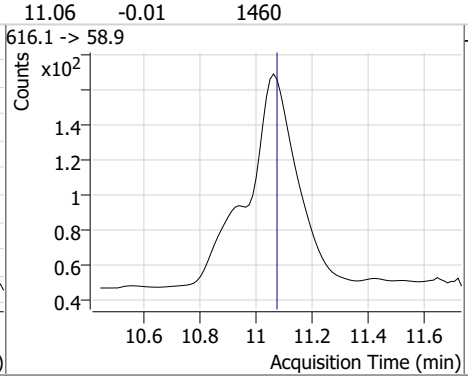


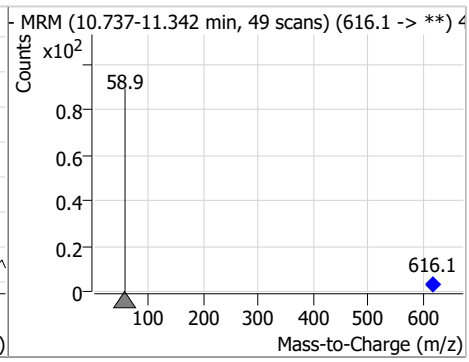




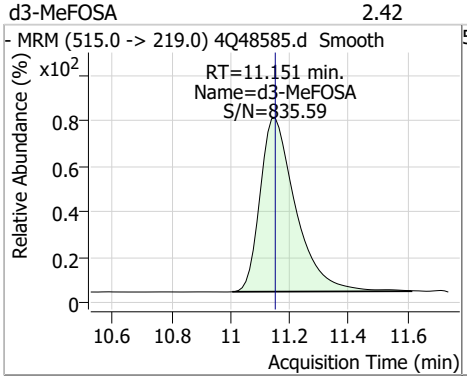
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.80	11.06	-0.01	1460				

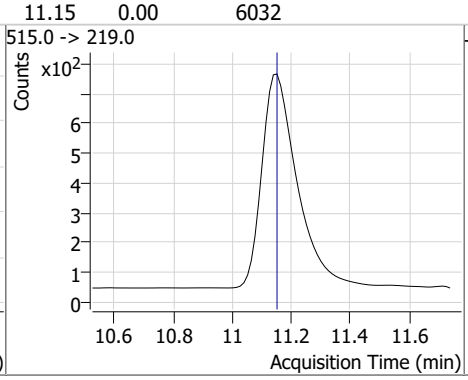


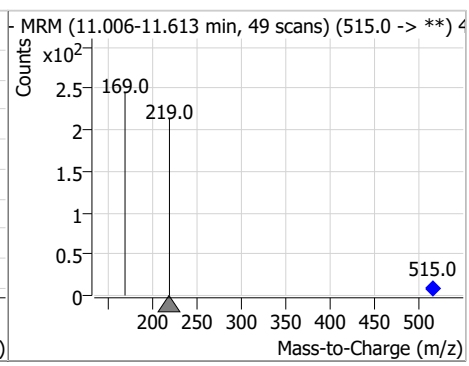




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	11.15	0.00	6032				

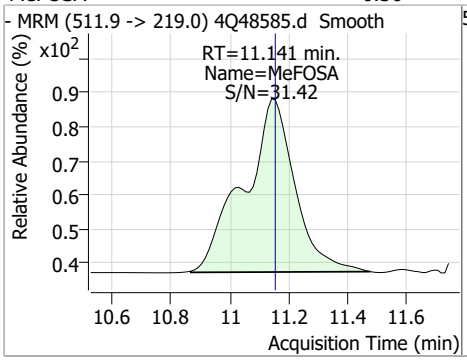


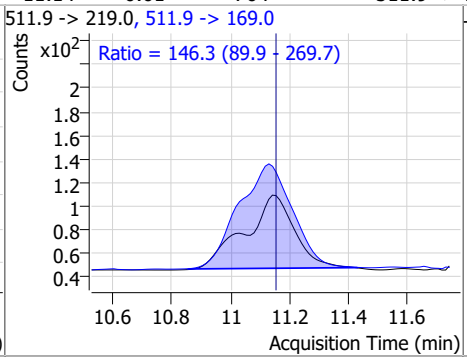


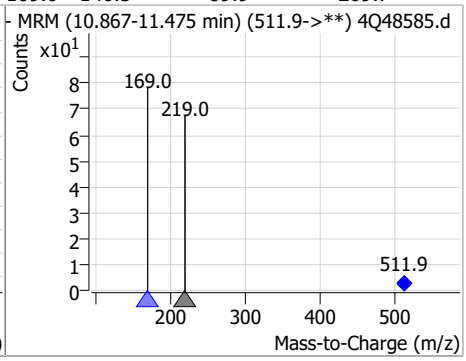


Perfluorinated Compounds by LC/MS/MS

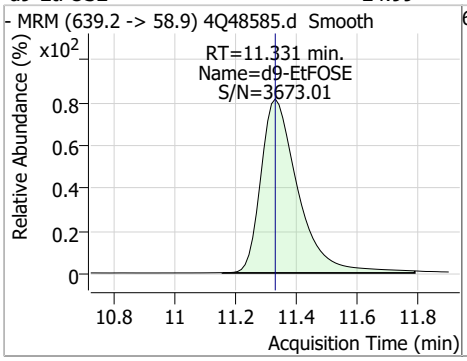
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.36	11.14	-0.01	764	511.9 -> 169.0	146.3	89.9	269.7

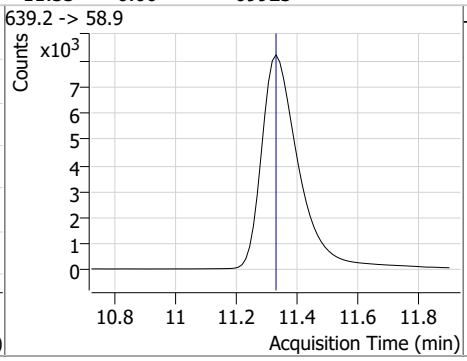


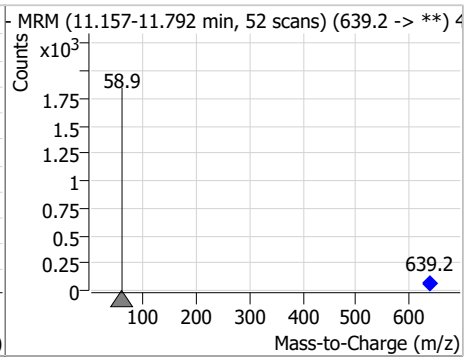




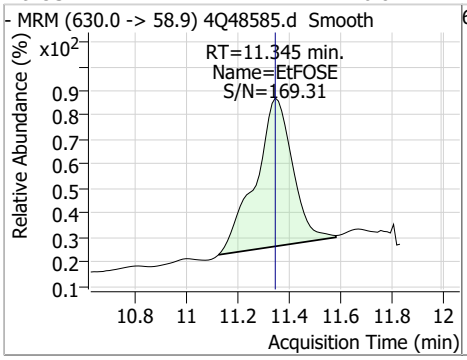
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.99	11.33	0.00	69923				

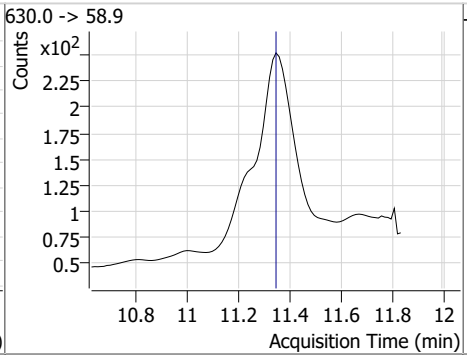


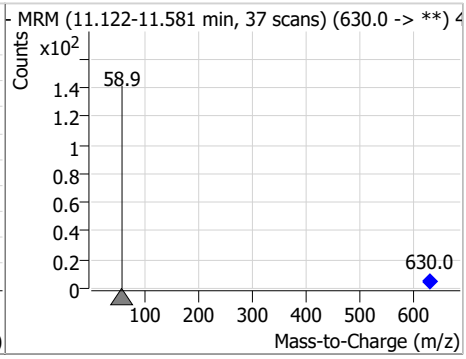




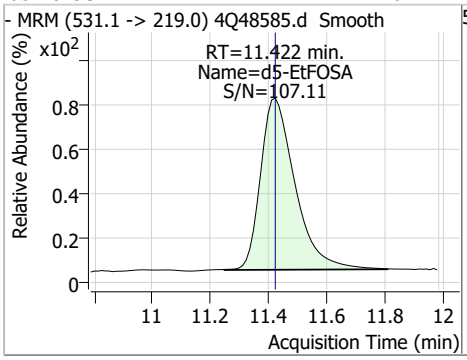
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.81	11.34	0.00	1764				

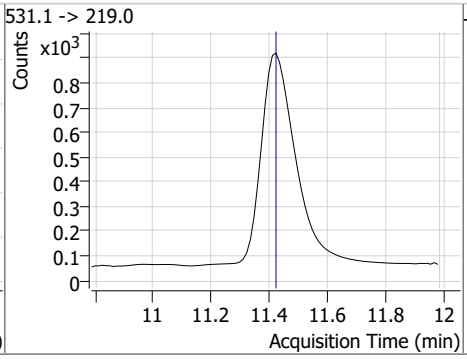


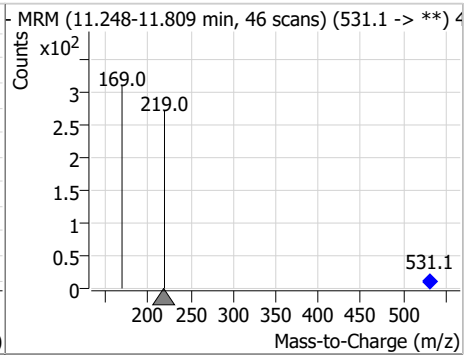




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.46	11.42	0.00	7071				

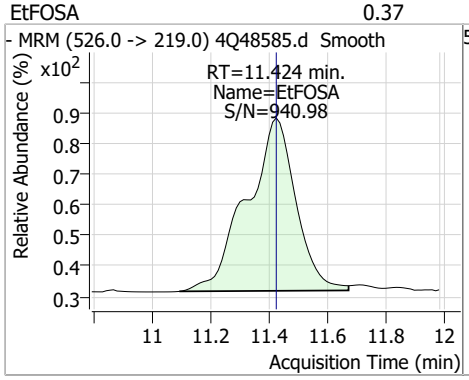


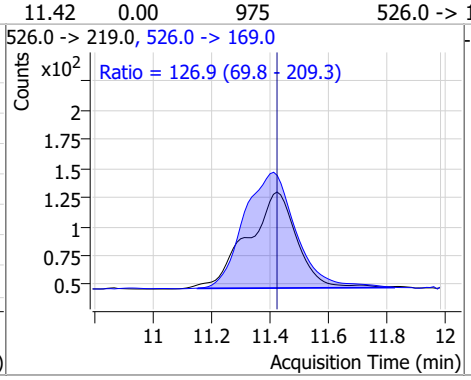


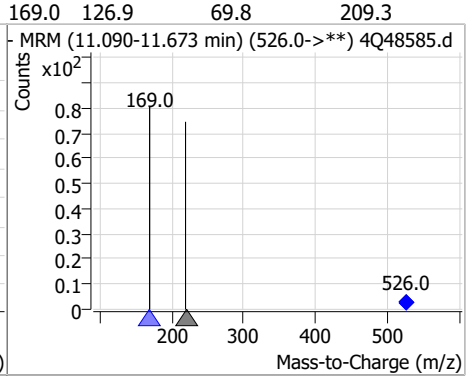


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.37	11.42	0.00	975	526.0 -> 169.0	126.9	69.8	209.3







7.7.2

7

Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48585.D
Injection Time: 08/07/23 16:26
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.30	Split peak
MeFOSAA	2355-31-9		8.34	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48586.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 4:41:00 PM
Sample Name : ic711-2
Vial : P1-A3
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	75160	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	47710	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	27989	2.50	µg/L	0.000
M4-PFHpA	6.555	367.1 -> 322.0	19722	2.50	µg/L	0.000
M8-PFOA	7.226	421.1 -> 376.0	34735	2.50	µg/L	0.000
M9-PFNA	7.772	472.1 -> 427.0	14429	1.25	µg/L	-0.013
M6-PFDA	8.266	519.1 -> 474.1	10589	1.25	µg/L	-0.012
M7-PFUnDA	8.736	570.0 -> 525.1	11818	1.25	µg/L	0.000
M2-PFDoDA	9.168	615.1 -> 570.0	12935	1.25	µg/L	-0.012
M2-PFTeDA	9.936	715.2 -> 670.0	10335	1.25	µg/L	-0.012
M8-FOSA	9.870	506.1 -> 77.8	10028	2.50	µg/L	-0.012
M3-PFBS	5.489	302.1 -> 79.9	7778	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	4898	2.50	µg/L	0.000
M8-PFOS	8.405	507.1 -> 79.9	6719	2.50	µg/L	-0.012
M2-4:2FTS	5.296	329.1 -> 80.9	392	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	864	5.00	µg/L	0.000
M2-8:2FTS	8.065	529.1 -> 80.9	1286	5.00	µg/L	0.000
M3-MeFOSAA	8.336	573.2 -> 419.0	12097	5.00	µg/L	-0.012
M3-HFPO-DA	5.977	286.9 -> 168.9	25277	10.00	µg/L	0.000
M5-EtFOSAA	8.546	589.2 -> 419.0	9472	5.00	µg/L	0.000
M7-MeFOSE	11.047	623.2 -> 58.9	48401	25.00	µg/L	-0.012
M9-EtFOSE	11.331	639.2 -> 58.9	68253	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	6569	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	5645	2.50	µg/L	0.000
13C4-PFOS	8.405	502.8 -> 79.9	6492	2.50	µg/L	-0.012
13C3-PFBA	2.903	216.0 -> 172.0	44054	5.00	µg/L	0.000
18O2-PFHxS	7.316	403.0 -> 83.9	3325	2.50	µg/L	0.000
13C4-PFOA	7.226	417.1 -> 372.0	39117	2.50	µg/L	0.000
13C2-PFDA	8.267	515.1 -> 470.1	12215	1.25	µg/L	-0.012
13C5-PFNA	7.772	468.0 -> 423.0	15440	1.25	µg/L	-0.013
13C2-PFHxA	5.611	315.1 -> 270.0	26664	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	392	4.72	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C2-6:2FTS	6.998	429.1 -> 80.9	864	5.45	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C2-8:2FTS	8.065	529.1 -> 80.9	1286	5.33	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
13C2-PFDoDA	9.168	615.1 -> 570.0	12935	1.24	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-PFTeDA	9.936	715.2 -> 670.0	10335	1.23	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C3-PFBS	5.489	302.1 -> 79.9	7778	2.75	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C3-PFHxS	7.317	402.1 -> 79.9	4898	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 = 106.4%		
13C4-PFBA	2.899	216.8 -> 171.9	75160	9.98 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C4-PFHpA	6.555	367.1 -> 322.0	19722	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFHxA	5.610	318.0 -> 273.0	27989	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFPeA	4.412	268.3 -> 223.0	47710	5.12 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C6-PFDA	8.266	519.1 -> 474.1	10589	1.25 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C7-PFUnDA	8.736	570.0 -> 525.1	11818	1.24 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C8-FOSA	9.870	506.1 -> 77.8	10028	2.48 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C8-PFOA	7.226	421.1 -> 376.0	34735	2.70 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C8-PFOS	8.405	507.1 -> 79.9	6719	2.58 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C9-PFNA	7.772	472.1 -> 427.0	14429	1.23 µg/L		-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
d3-MeFOSAA	8.336	573.2 -> 419.0	12097	5.02 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-HFPO-DA	5.977	286.9 -> 168.9	25277	9.95 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
d3-MeFOSA	11.151	515.0 -> 219.0	5645	2.37 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%		
d5-EtFOSAA	8.546	589.2 -> 419.0	9472	4.78 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
d7-MeFOSE	11.047	623.2 -> 58.9	48401	25.39 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d9-EtFOSE	11.331	639.2 -> 58.9	68253	25.53 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
d5-EtFOSA	11.422	531.1 -> 219.0	6569	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
Target Compounds						QValue
4:2FTS	5.284	327.1 -> 307.0	913	1.73 µg/L		91
		327.1 -> 80.9	323			
6:2FTS	6.987	427.1 -> 407.0	1062	1.45 µg/L		100
		427.1 -> 80.9	374			
8:2FTS	8.066	527.1 -> 507.0	814	1.58 µg/L		94
		527.1 -> 80.8	389			
EtFOSAA	8.559	584.2 -> 419.1	511	0.39 µg/L	m	95
		584.2 -> 526.0	227			
FOSA	9.873	498.1 -> 77.9	1275	0.39 µg/L		90
		498.1 -> 478.0				
MeFOSAA	8.349	570.1 -> 419.0	569	0.38 µg/L	m	95
		570.1 -> 483.0	119			
PFBA	2.907	212.8 -> 168.9	2465	1.42 µg/L		100
PFBS	5.478	298.7 -> 79.9	568	0.30 µg/L		98
		298.7 -> 98.8	218			
PFDA	8.279	512.9 -> 469.0	2515	0.34 µg/L		95
		512.9 -> 219.0	541			
PFDoDA	9.168	613.1 -> 569.0	2764	0.34 µg/L		99
		613.1 -> 319.0	457			
PFDS	9.321	599.0 -> 79.9	514	0.37 µg/L		91

Perfluorinated Compounds by LC/MS/MS

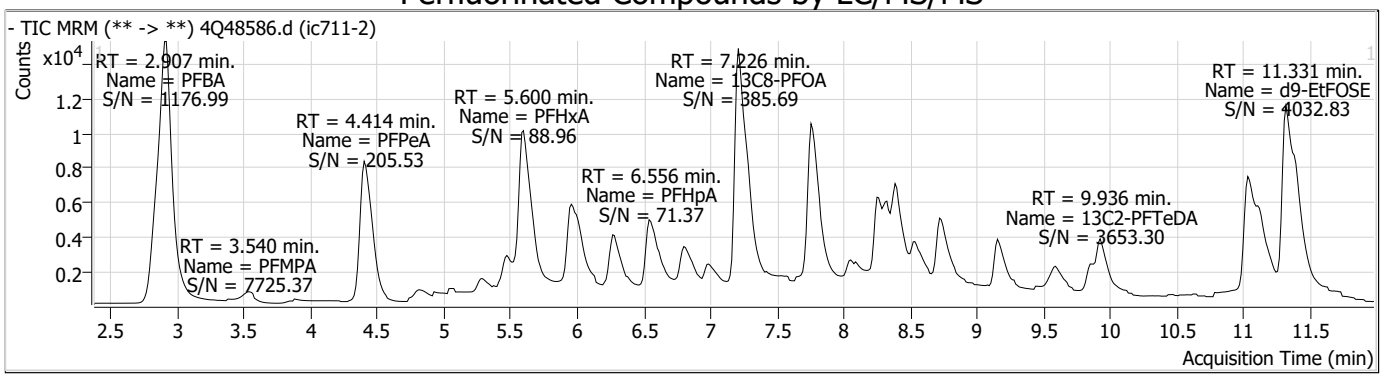
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	228				
PFHpA	6.556	363.1 -> 319.0	3146	0.35	µg/L		96
		363.1 -> 169.0	638				
PFHpS	7.900	449.0 -> 79.9	713	0.35	µg/L		95
		449.0 -> 98.9	337				
PFHxA	5.600	313.0 -> 269.0	3152	0.39	µg/L		99
		313.0 -> 118.9	111				
PFHxS	7.318	398.7 -> 79.9	537	0.38	µg/L	m	92
		398.7 -> 98.9	255				
PFNA	7.772	463.0 -> 419.0	2951	0.39	µg/L		86
		463.0 -> 219.0	447				
PFNS	8.887	548.8 -> 79.9	449	0.34	µg/L		98
		548.8 -> 98.9	239				
PFOA	7.227	413.0 -> 369.0	4365	0.32	µg/L		98
		413.0 -> 169.0	873				
PFOS	8.406	498.9 -> 79.9	861	0.36	µg/L	m	89
		498.9 -> 98.8	470				
PFPeA	4.414	263.0 -> 219.0	5995	0.72	µg/L		100
PFPeS	6.570	349.1 -> 79.9	422	0.32	µg/L		81
		349.1 -> 98.9	239				
PFTeDA	9.937	713.1 -> 669.0	2730	0.38	µg/L		99
		713.1 -> 168.9	264				
PFTrDA	9.566	663.0 -> 619.0	2848	0.34	µg/L		97
		663.0 -> 168.9	320				
PFUnDA	8.736	563.1 -> 519.0	2877	0.37	µg/L		97
		563.1 -> 269.1	622				
11Cl-PF3OUdS	9.605	630.9 -> 450.9	3610	0.68	µg/L		93
		632.9 -> 452.9	970				
9Cl-PF3ONS	8.751	530.8 -> 351.0	5376	0.72	µg/L		97
		532.8 -> 353.0	1590				
ADONA	6.818	376.9 -> 250.9	10192	0.69	µg/L		99
		376.9 -> 84.8	2701				
HFPO-DA	5.978	284.9 -> 168.9	1644	0.79	µg/L		93
		284.9 -> 184.9	167				
3:3FTCA	3.848	241.0 -> 177.0	746	1.71	µg/L		96
		241.0 -> 117.0	83				
5:3FTCA	6.283	341.0 -> 237.1	12036	9.11	µg/L		98
		341.0 -> 217.0	8398				
7:3FTCA	7.774	441.0 -> 316.9	6353	8.72	µg/L		96
		441.0 -> 336.9	15065				
EtFOSA	11.424	526.0 -> 219.0	1903	0.79	µg/L		97
		526.0 -> 169.0	2592				
EtFOSE	11.345	630.0 -> 58.9	3526	1.65	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	1544	0.79	µg/L		69
		511.9 -> 169.0	2092				
MeFOSE	11.073	616.1 -> 58.9	3149	1.82	µg/L		100
PFDoDS	10.064	699.1 -> 79.9	350	0.33	µg/L		92
		699.1 -> 98.8	199				
NFDHA	5.478	295.0 -> 201.0	411	0.79	µg/L		100
		295.0 -> 84.9	102				
PFMBA	4.828	279.0 -> 85.1	3411	0.73	µg/L		100
PFMPA	3.540	229.0 -> 84.9	3309	0.73	µg/L		100
PFEESA	6.034	314.8 -> 134.9	4432	0.68	µg/L		99
		314.8 -> 82.9	163				

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

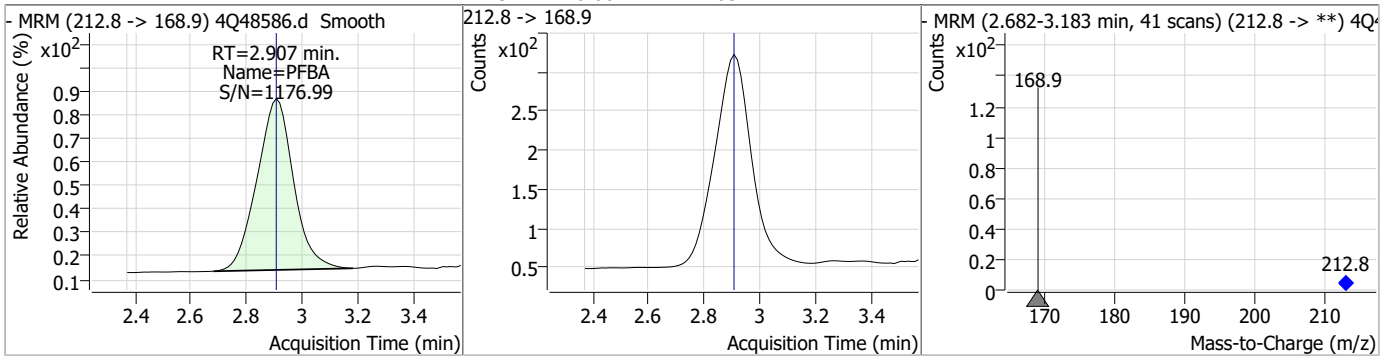
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

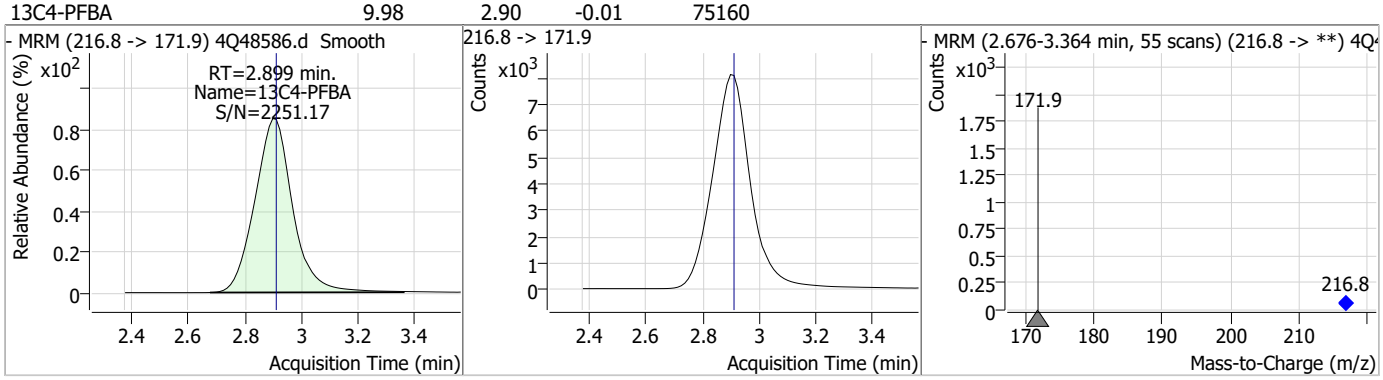
Perfluorinated Compounds by LC/MS/MS



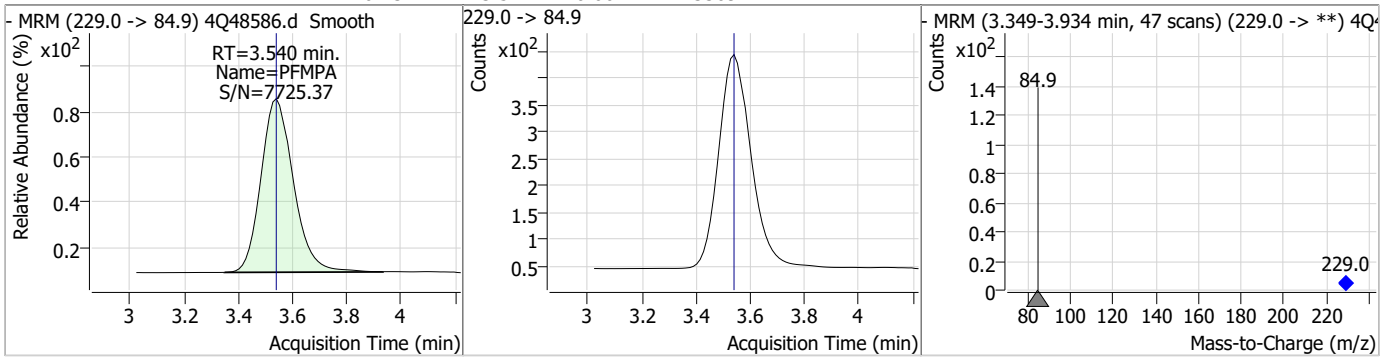
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.42	2.91	0.00	2465				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.98	2.90	-0.01	75160				

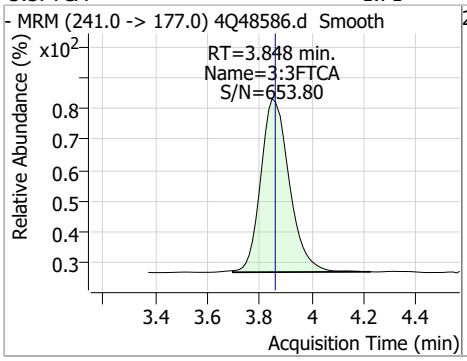


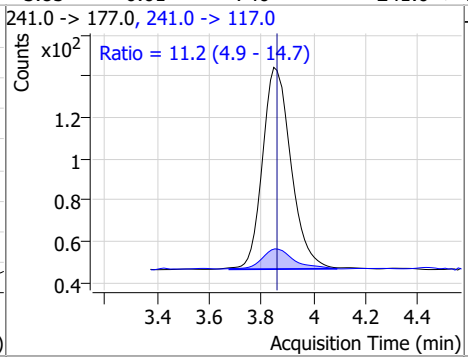
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.73	3.54	0.00	3309				

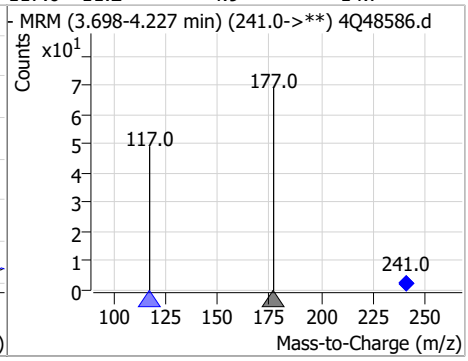


Perfluorinated Compounds by LC/MS/MS

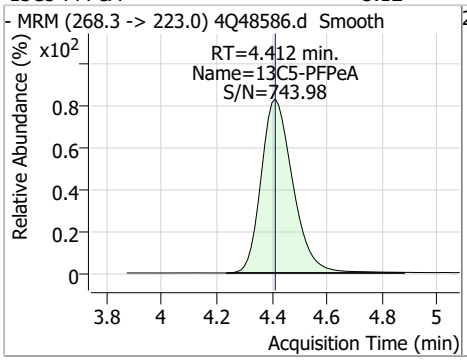
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.71	3.85	-0.01	746	241.0 -> 117.0	11.2	4.9	14.7

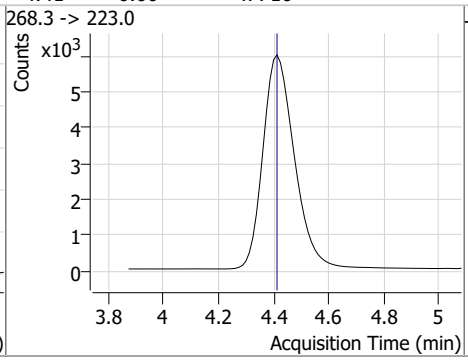


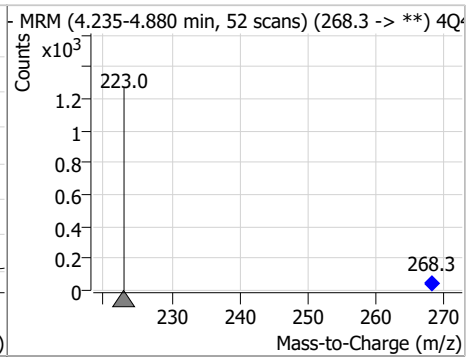




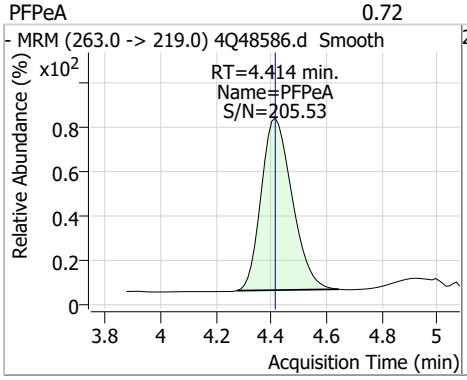
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.12	4.41	0.00	47710				

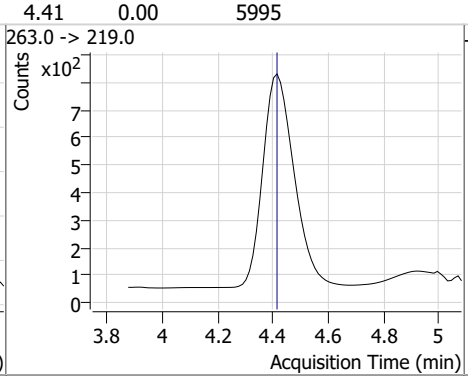


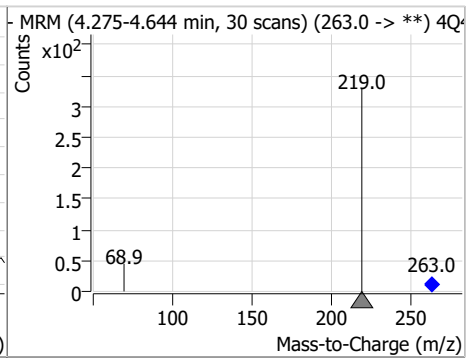




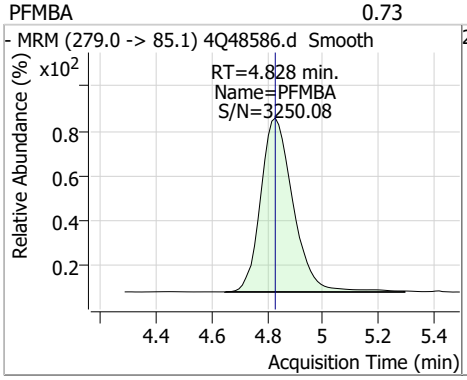
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.72	4.41	0.00	5995				

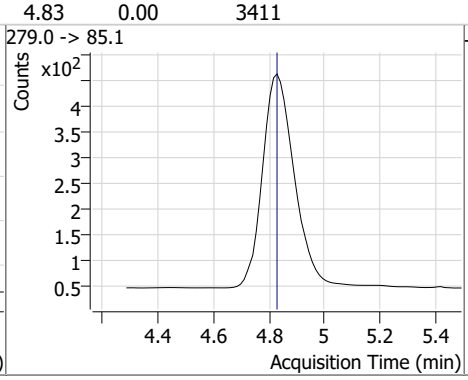


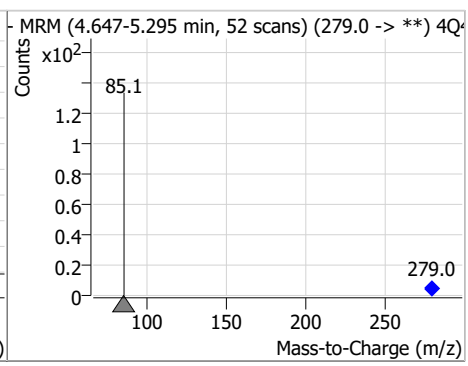




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.73	4.83	0.00	3411				

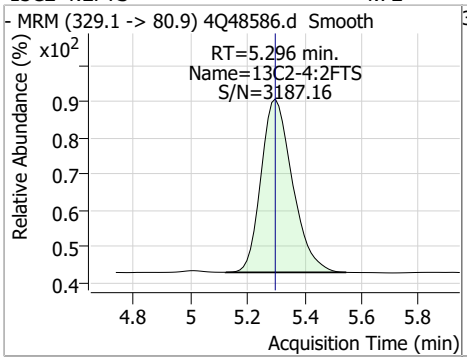


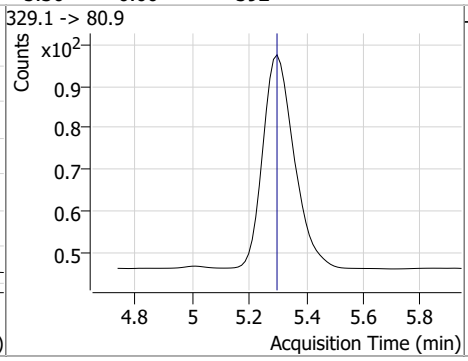


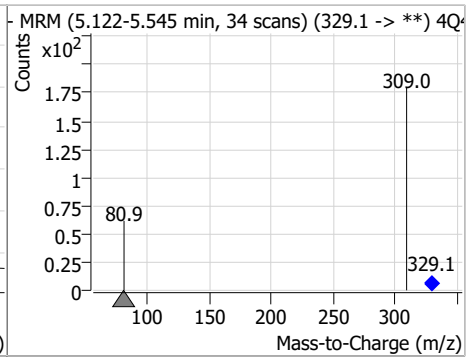


Perfluorinated Compounds by LC/MS/MS

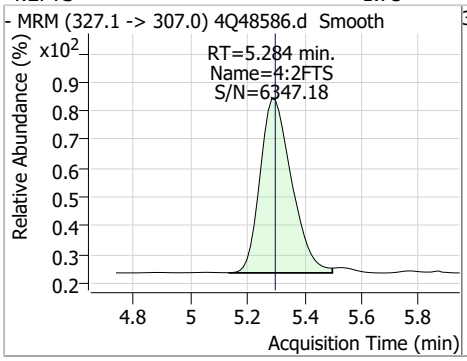
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.72	5.30	0.00	392				

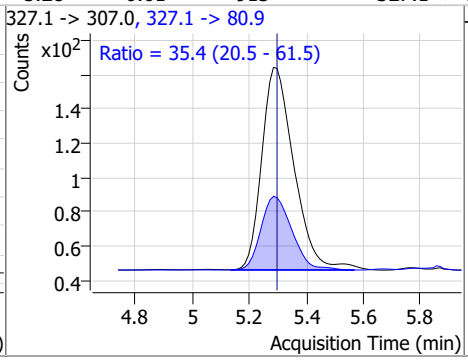


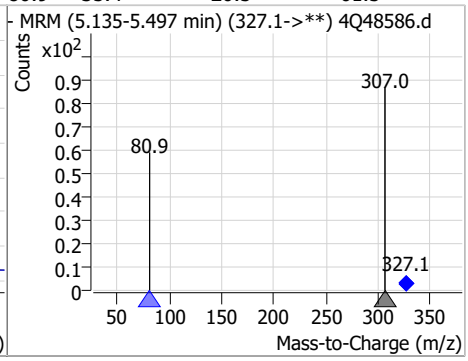




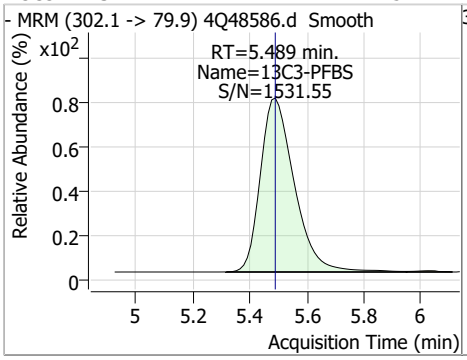
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.73	5.28	-0.01	913	327.1 -> 80.9	35.4	20.5	61.5

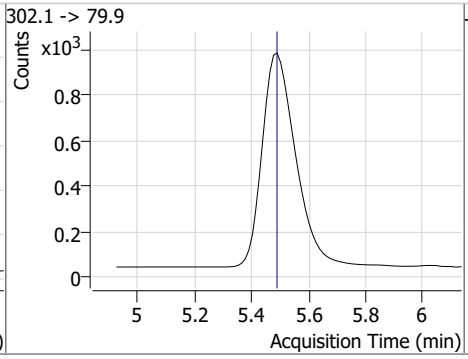


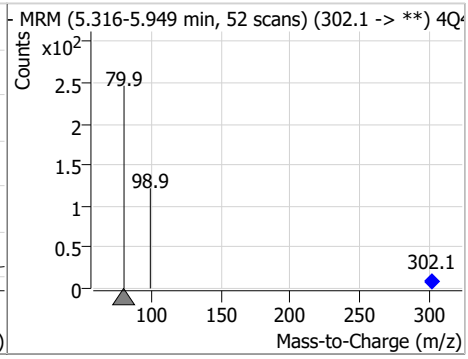




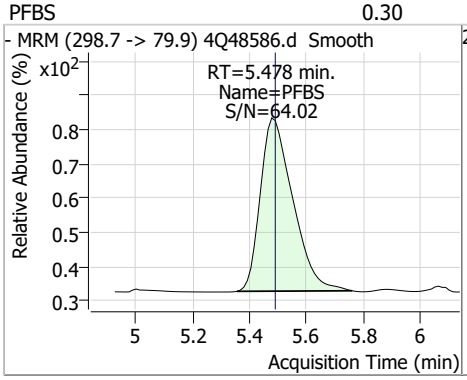
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.75	5.49	0.00	7778				

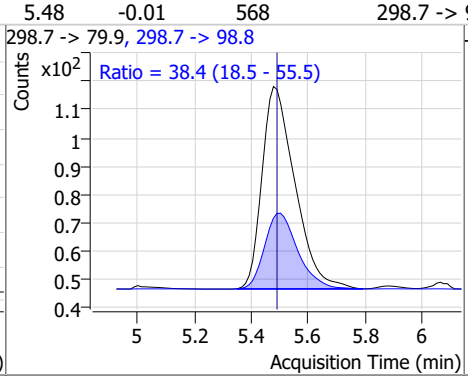


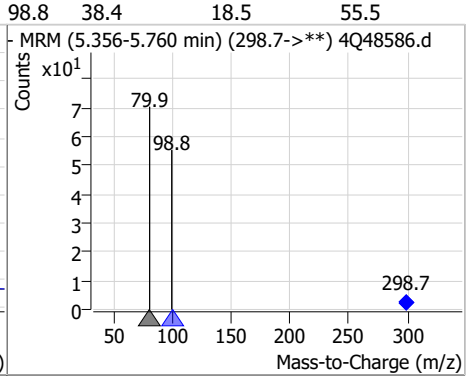




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.30	5.48	-0.01	568	298.7 -> 98.8	38.4	18.5	55.5

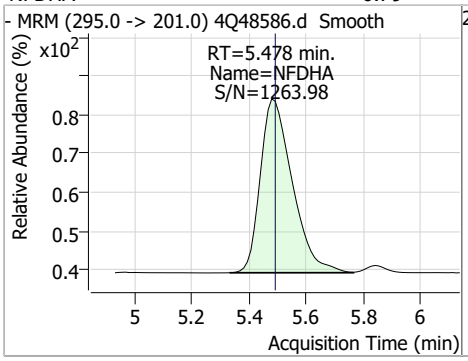


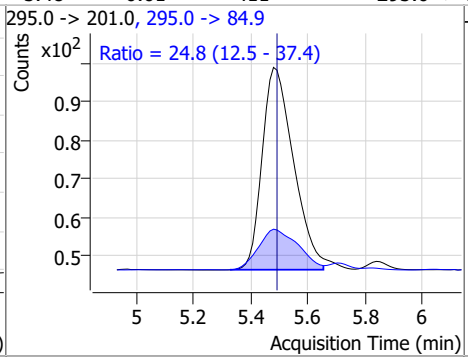


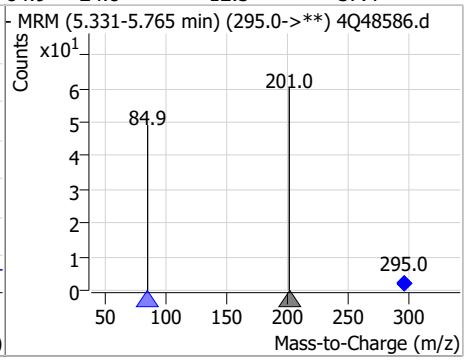


Perfluorinated Compounds by LC/MS/MS

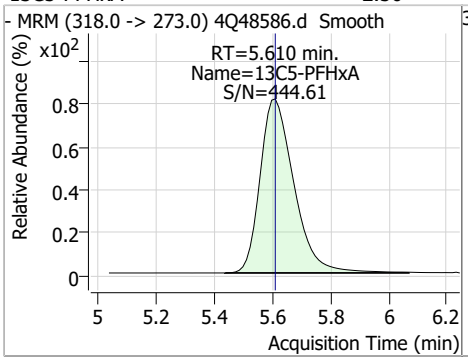
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.79	5.48	-0.01	411	295.0 -> 84.9	24.8	12.5	37.4

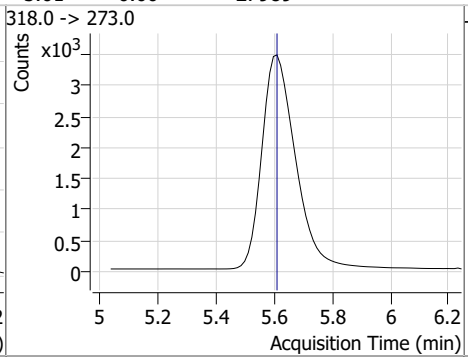


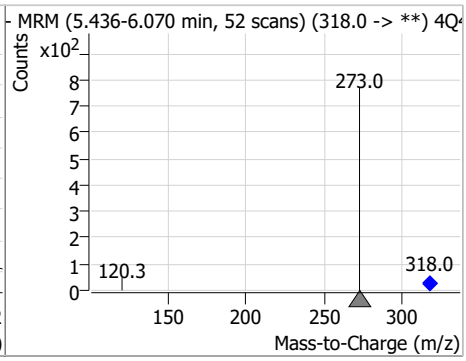




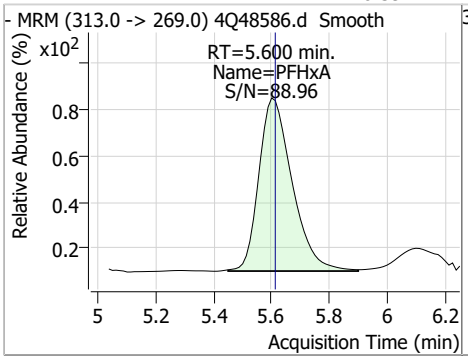
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.61	0.00	27989				

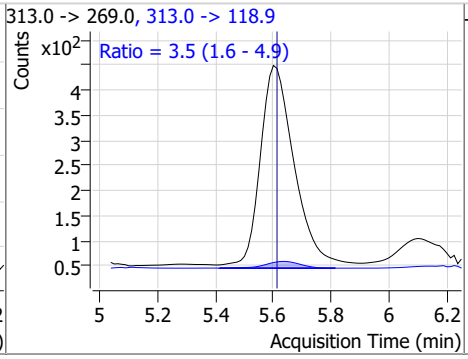


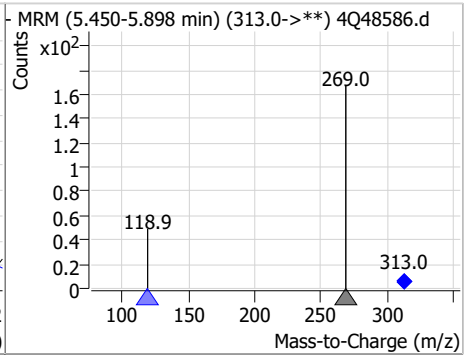




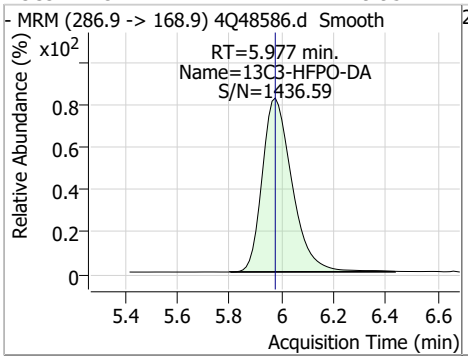
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.39	5.60	-0.01	3152	313.0 -> 118.9	3.5	1.6	4.9

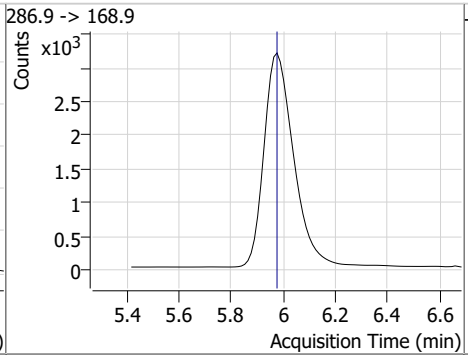


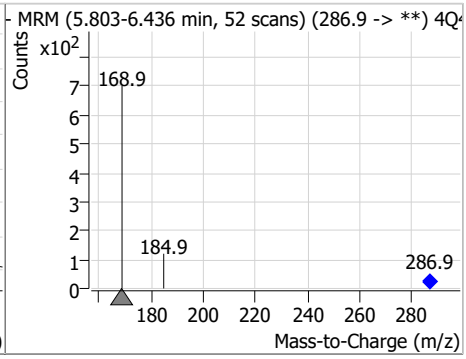




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.95	5.98	0.00	25277				

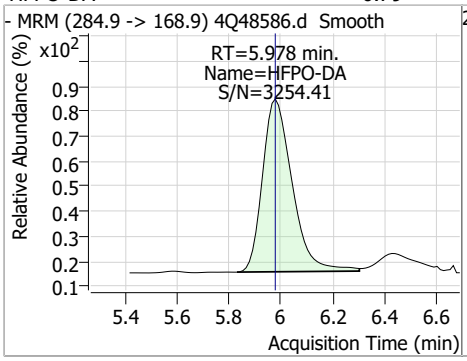


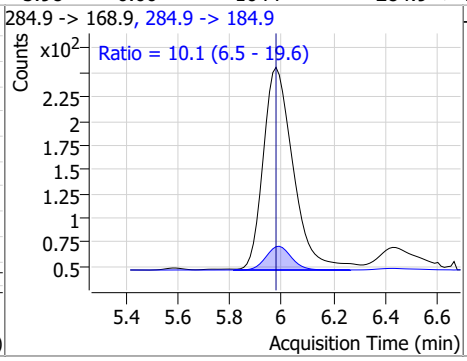


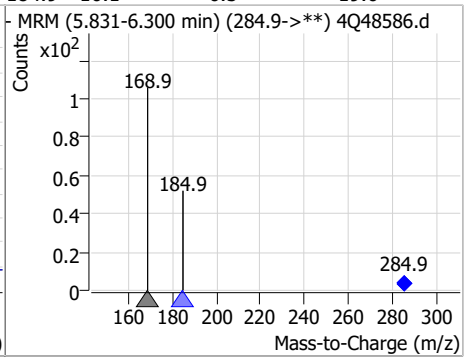


Perfluorinated Compounds by LC/MS/MS

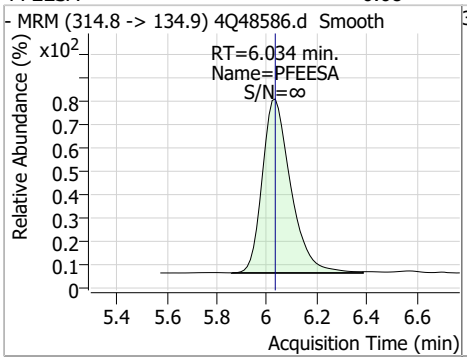
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.79	5.98	0.00	1644	284.9 -> 184.9	10.1	6.5	19.6

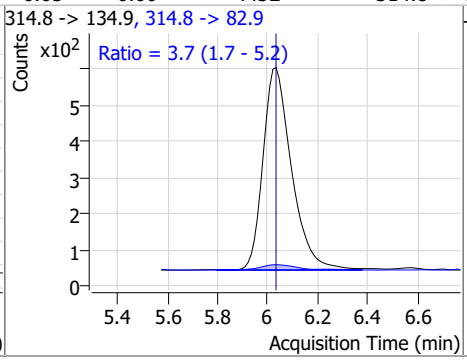


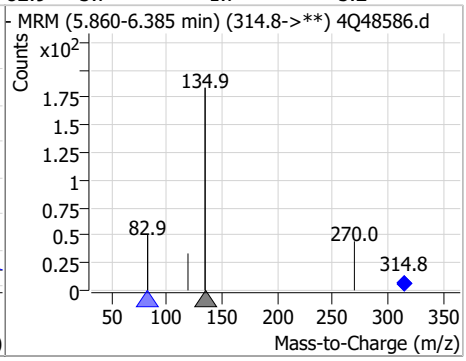




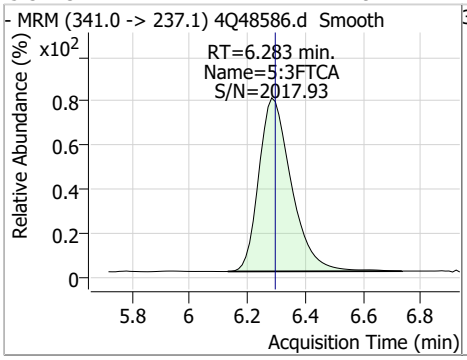
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.68	6.03	0.00	4432	314.8 -> 82.9	3.7	1.7	5.2

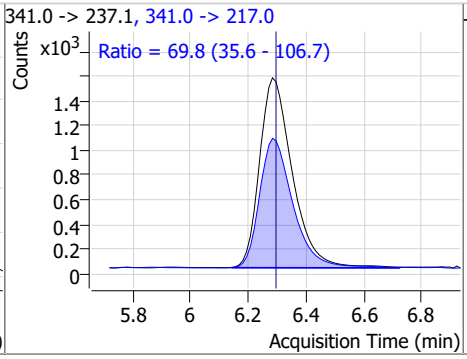


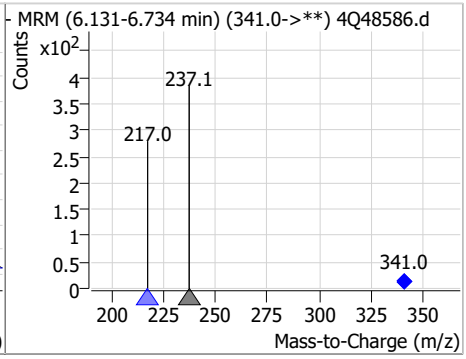




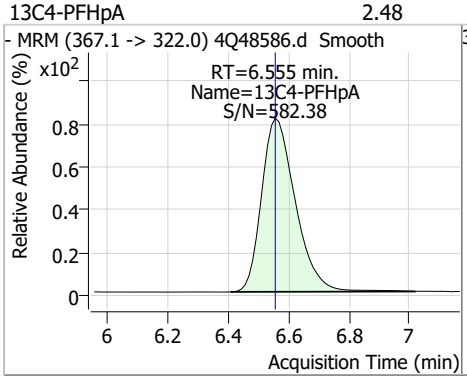
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	9.11	6.28	-0.01	12036	341.0 -> 217.0	69.8	35.6	106.7

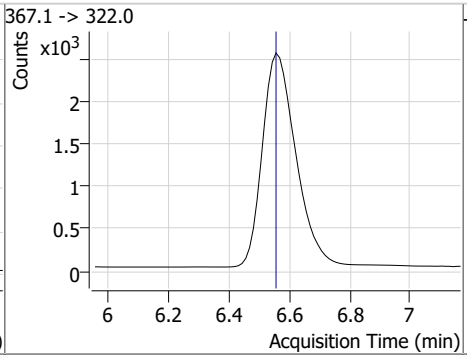


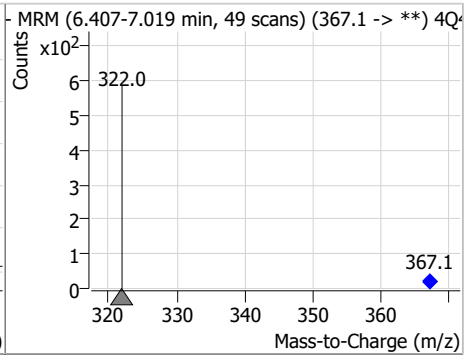




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.56	0.00	19722				

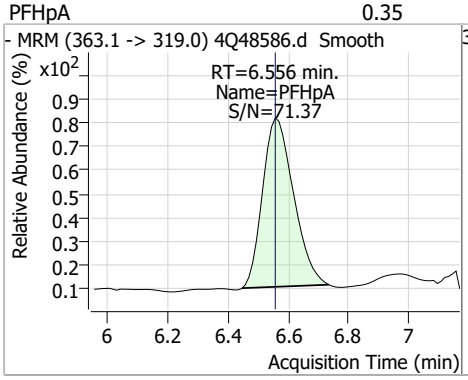


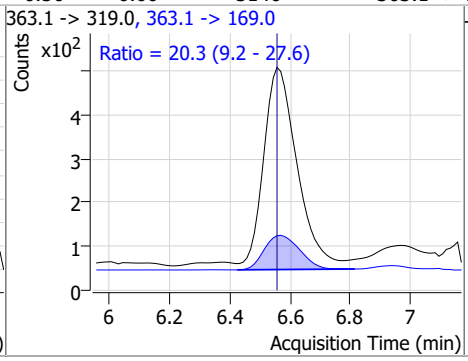


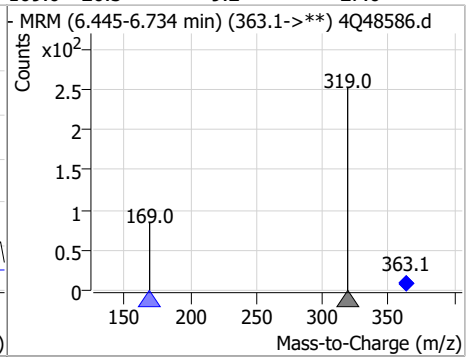


Perfluorinated Compounds by LC/MS/MS

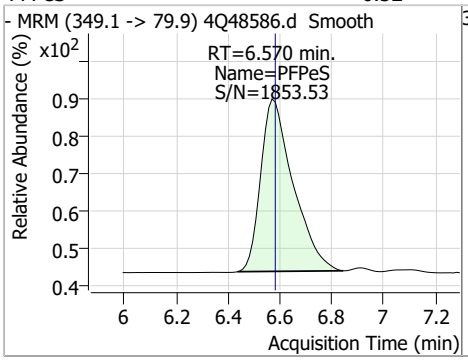
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.35	6.56	0.00	3146	363.1 -> 169.0	20.3	9.2	27.6

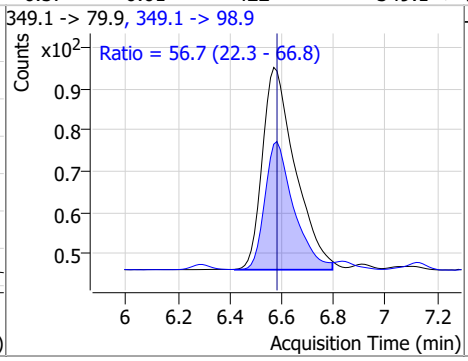


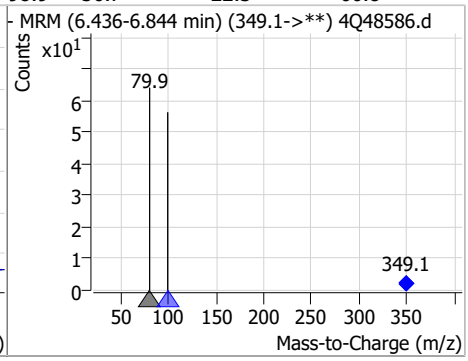




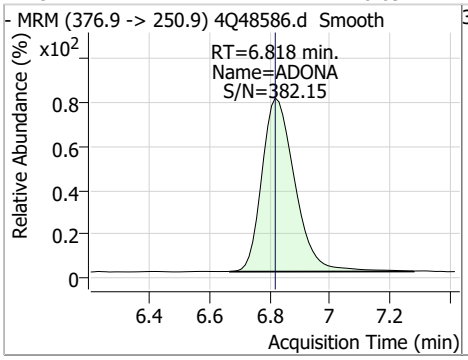
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.32	6.57	-0.01	422	349.1 -> 98.9	56.7	22.3	66.8

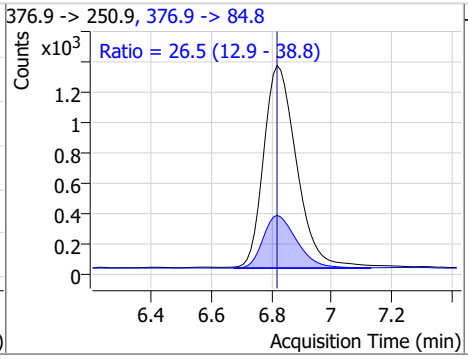


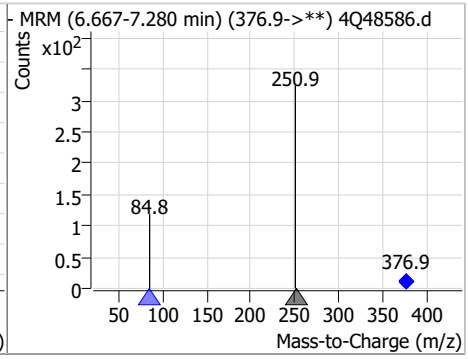




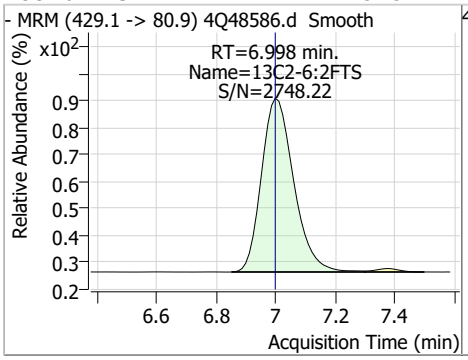
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.69	6.82	0.00	10192	376.9 -> 84.8	26.5	12.9	38.8

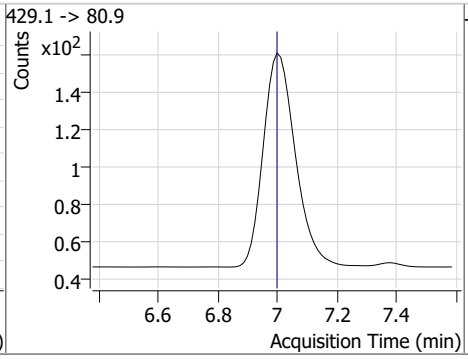


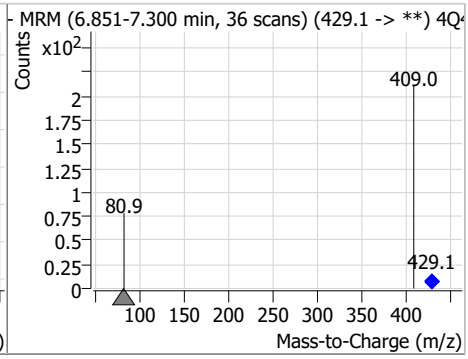




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.45	7.00	0.00	864				

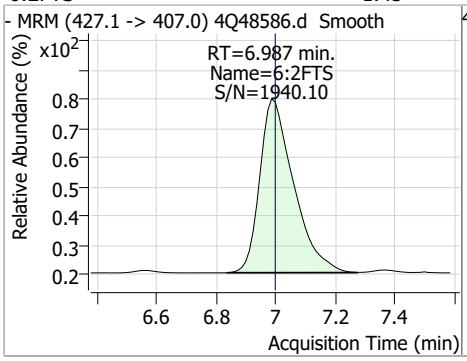


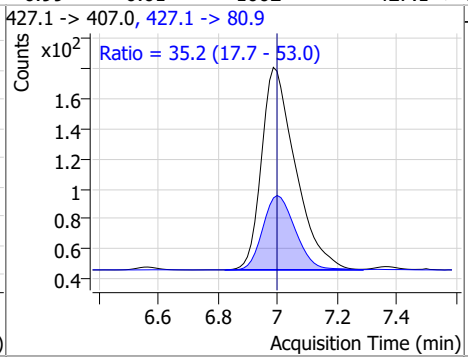


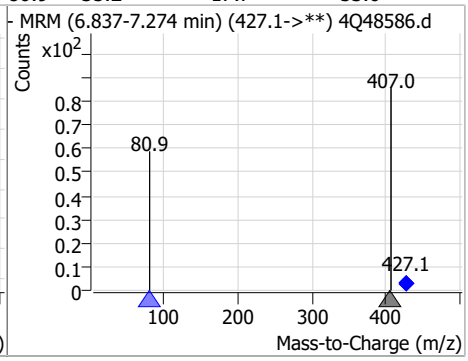


Perfluorinated Compounds by LC/MS/MS

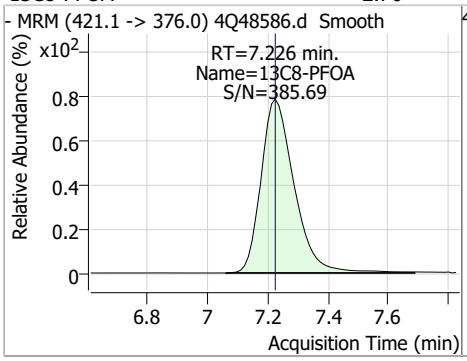
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.45	6.99	-0.01	1062	427.1 -> 80.9	35.2	17.7	53.0

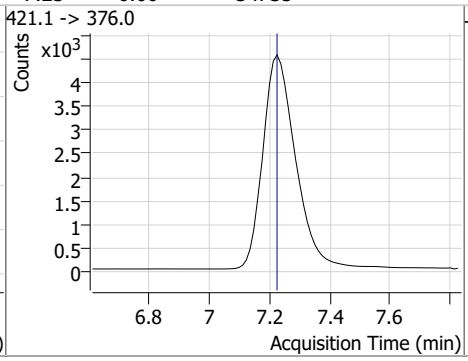


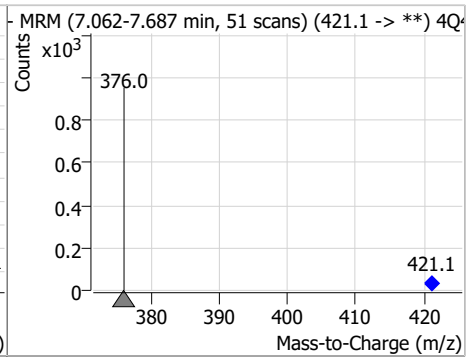




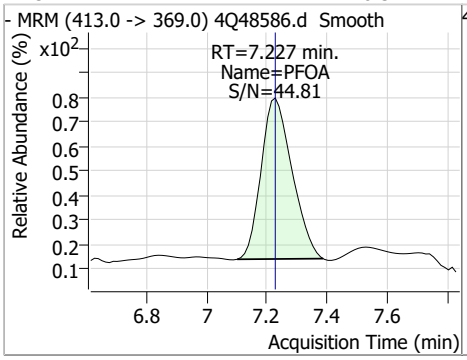
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.70	7.23	0.00	34735				

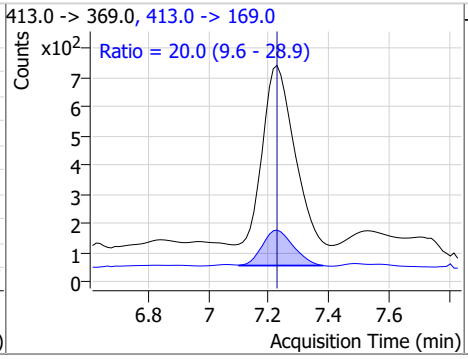


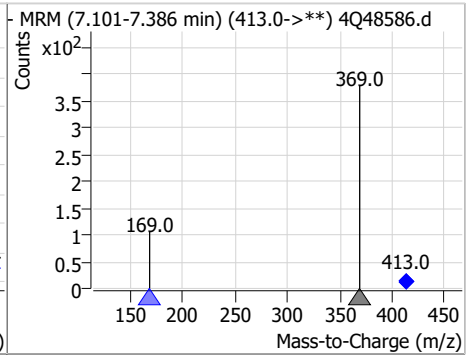




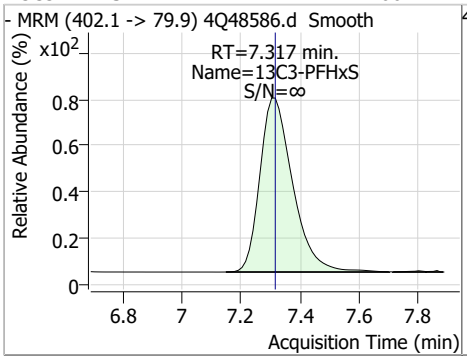
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.32	7.23	0.00	4365	413.0 -> 169.0	20.0	9.6	28.9

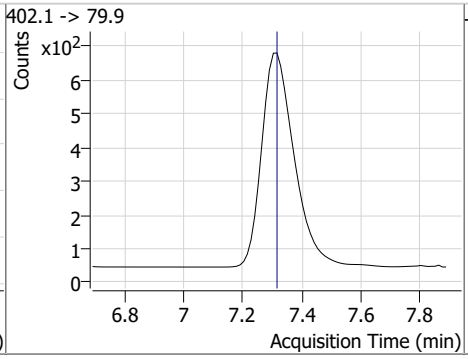


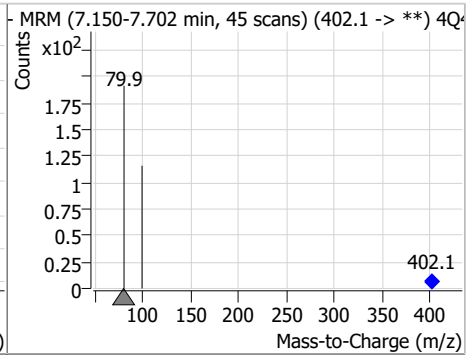




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.66	7.32	0.00	4898				

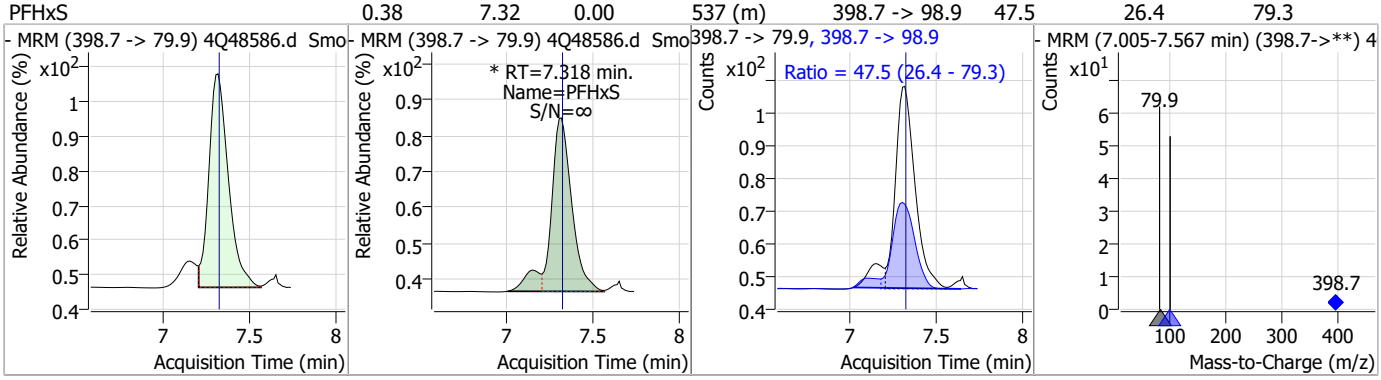




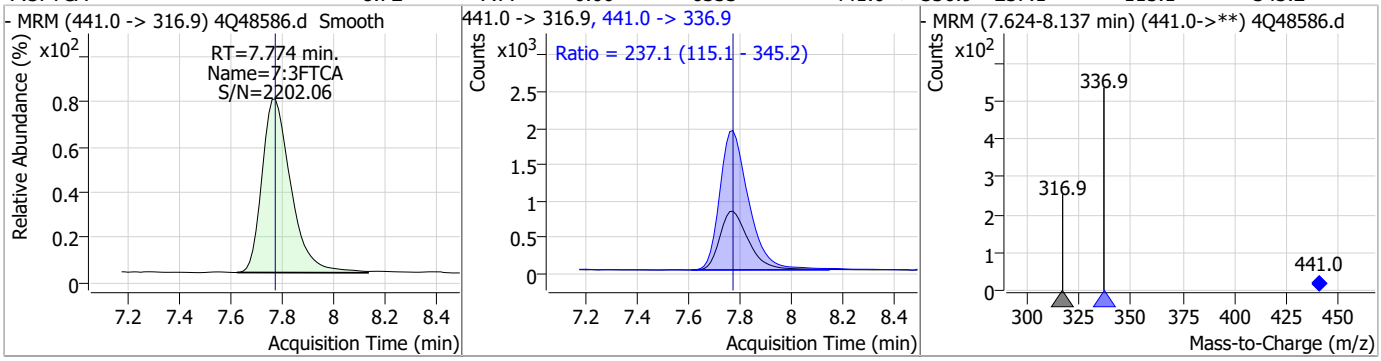


Perfluorinated Compounds by LC/MS/MS

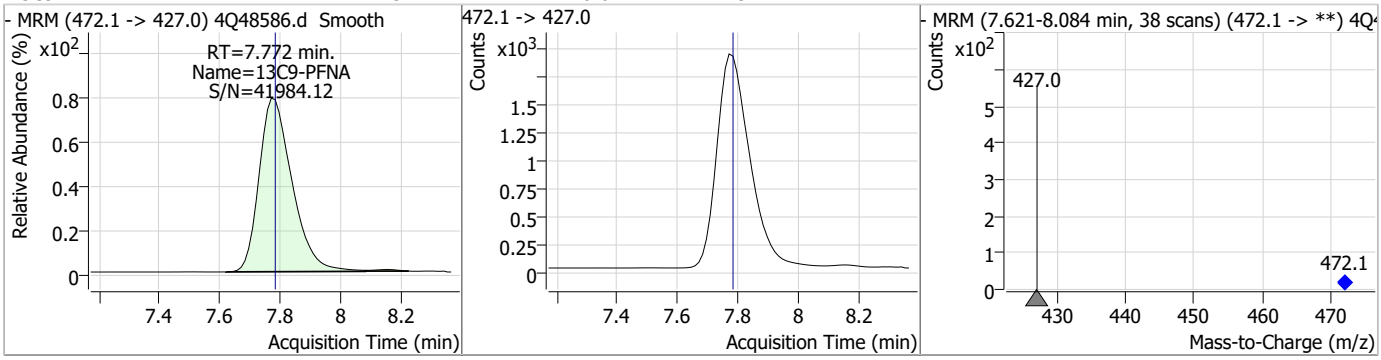
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.38	7.32	0.00	537 (m)	398.7 -> 98.9	47.5	26.4	79.3



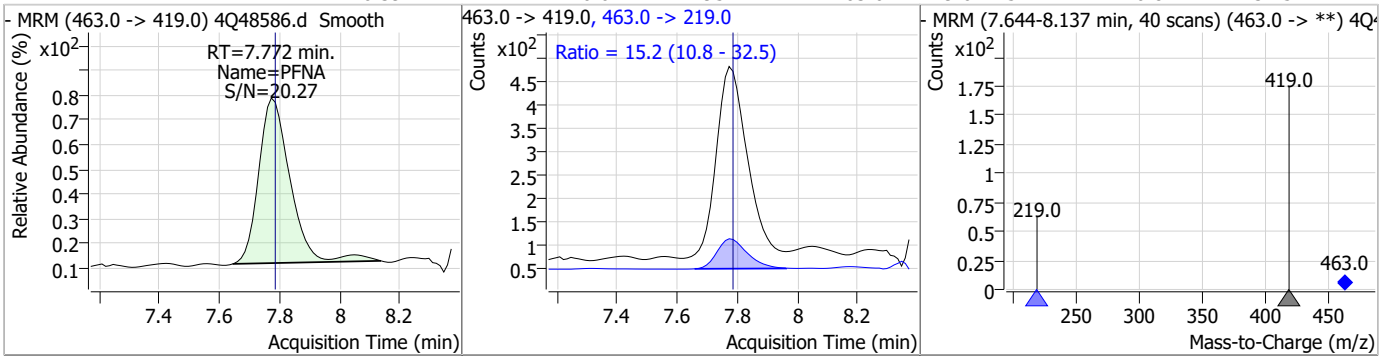
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	8.72	7.77	0.00	6353	441.0 -> 336.9	237.1	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.77	-0.01	14429				

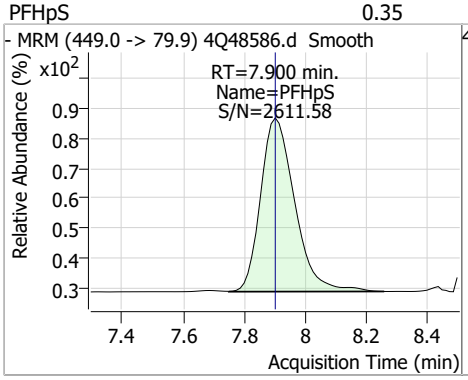


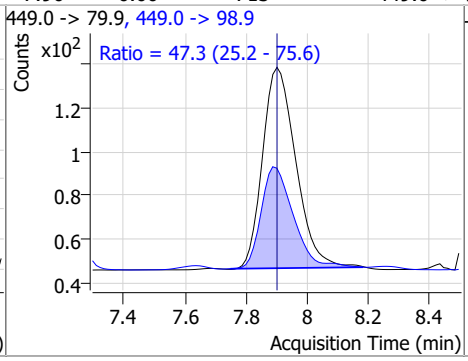
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.39	7.77	-0.01	2951	463.0 -> 219.0	15.2	10.8	32.5

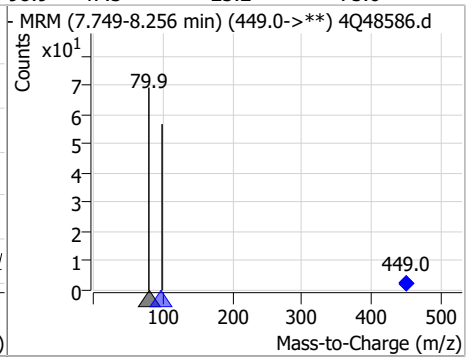


Perfluorinated Compounds by LC/MS/MS

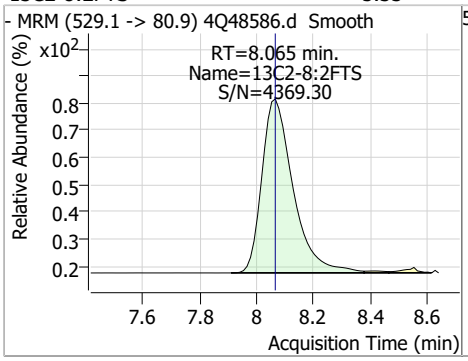
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.35	7.90	0.00	713	449.0 -> 98.9	47.3	25.2	75.6

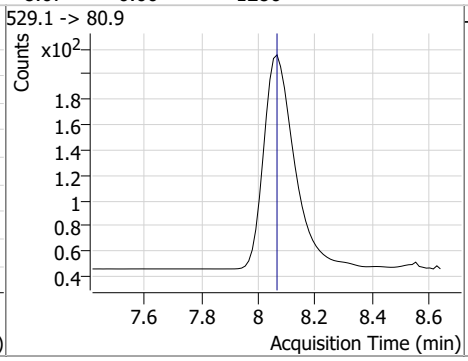


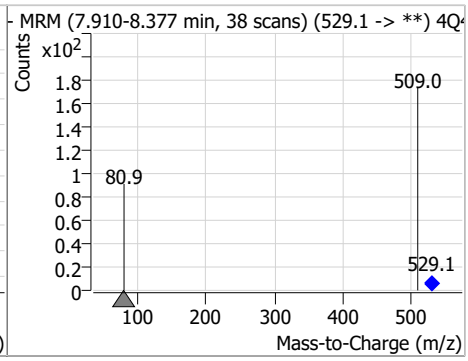




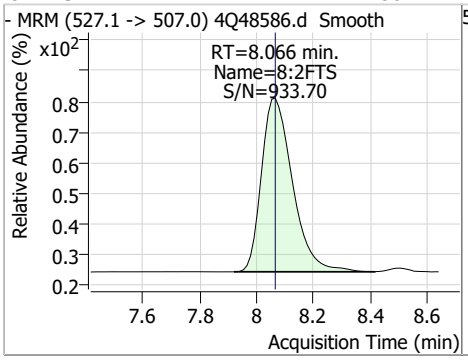
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.33	8.07	0.00	1286				

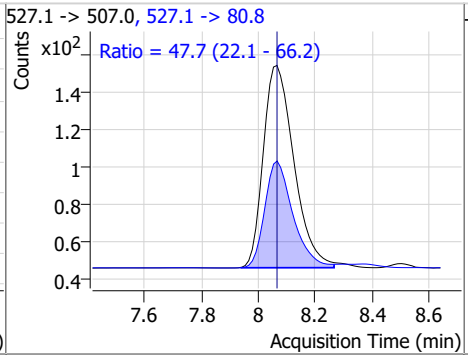


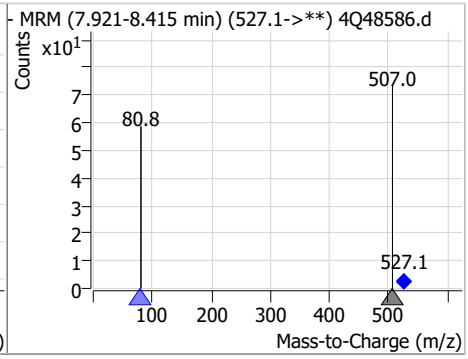




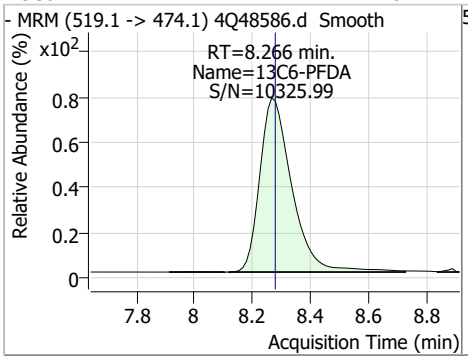
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.58	8.07	0.00	814	527.1 -> 80.8	47.7	22.1	66.2

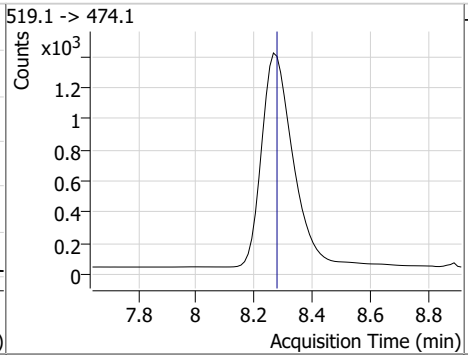


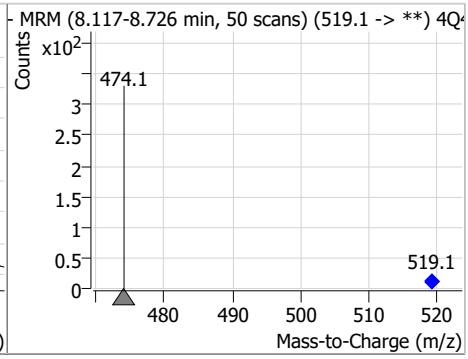




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.27	-0.01	10589				

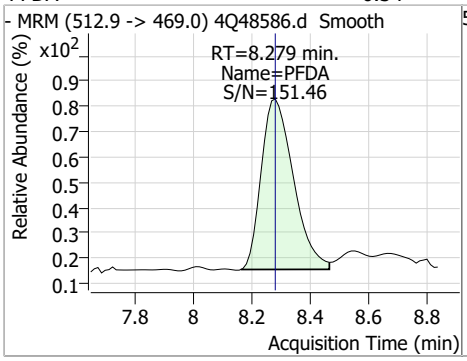


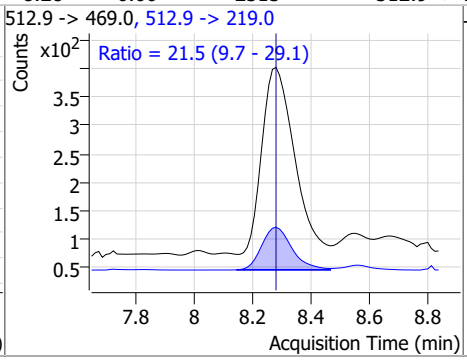


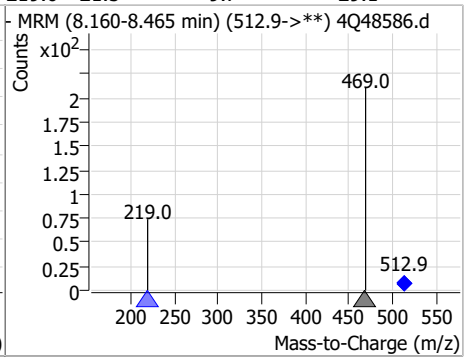


Perfluorinated Compounds by LC/MS/MS

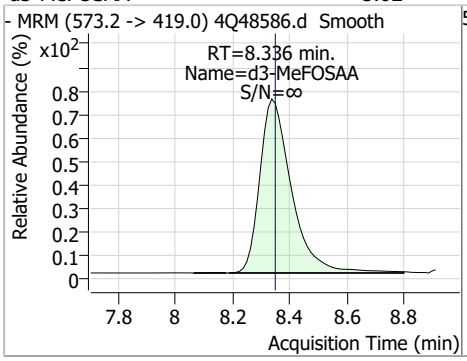
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.34	8.28	0.00	2515	512.9 -> 219.0	21.5	9.7	29.1

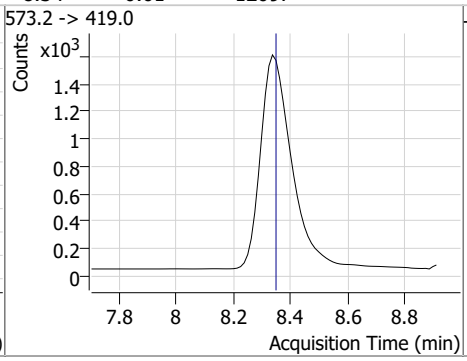


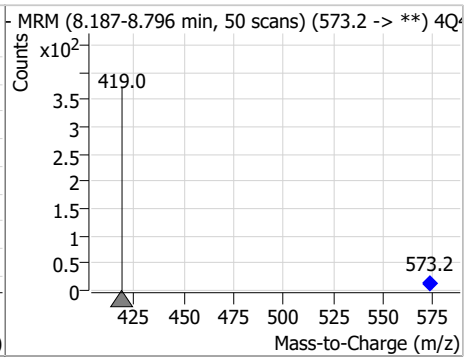




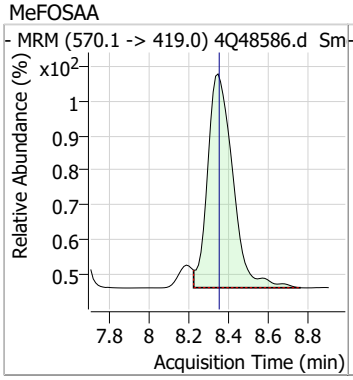
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.02	8.34	-0.01	12097				

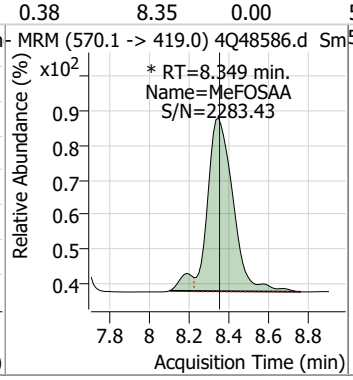


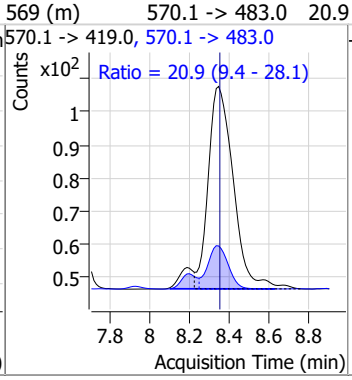


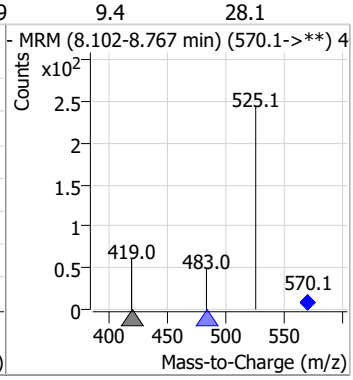


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.38	8.35	0.00	569 (m)	570.1 -> 483.0	20.9	9.4	28.1

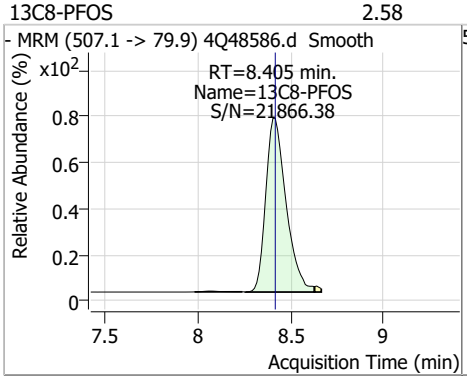


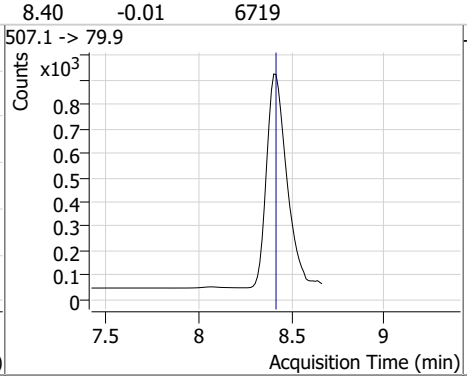


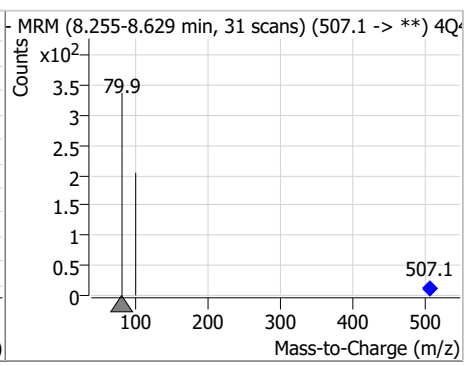




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	8.40	-0.01	6719				

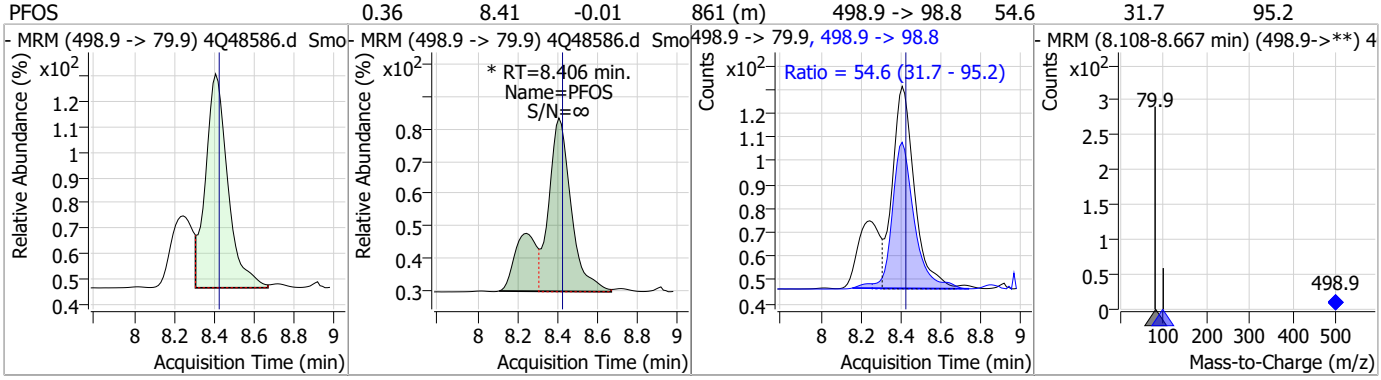




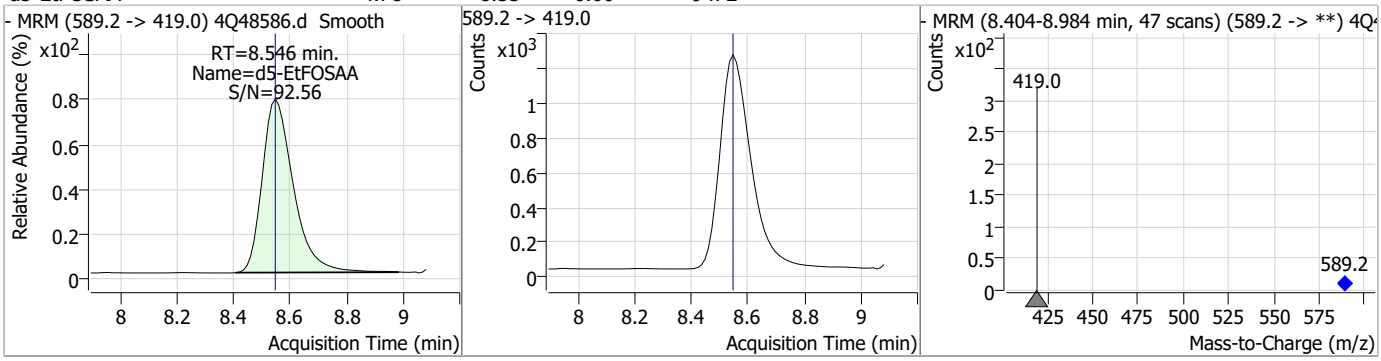


Perfluorinated Compounds by LC/MS/MS

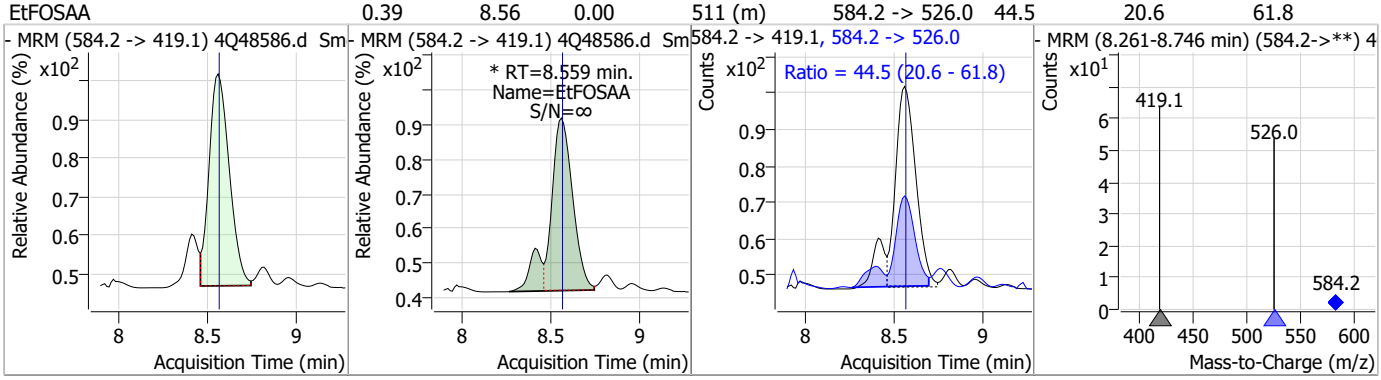
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.36	8.41	-0.01	861 (m)	498.9 -> 98.8	54.6	31.7	95.2



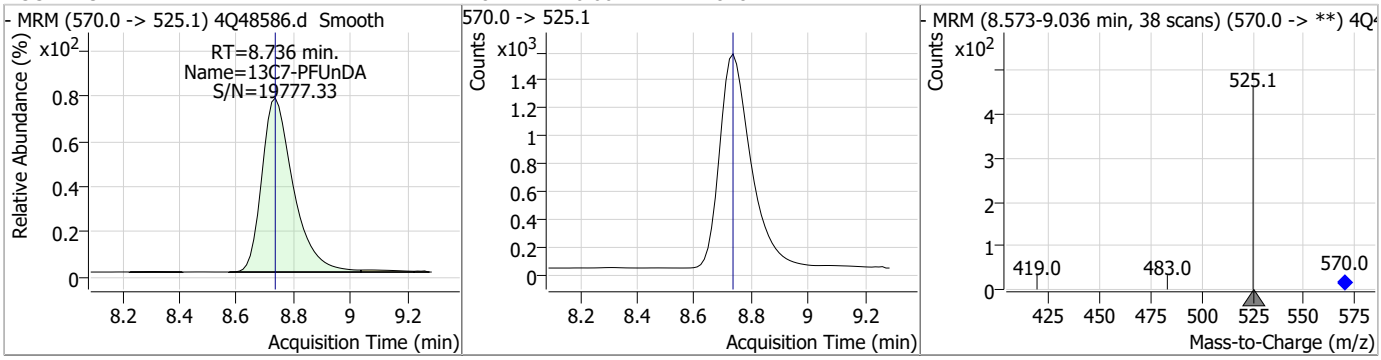
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.78	8.55	0.00	9472				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.39	8.56	0.00	511 (m)	584.2 -> 526.0	44.5	20.6	61.8

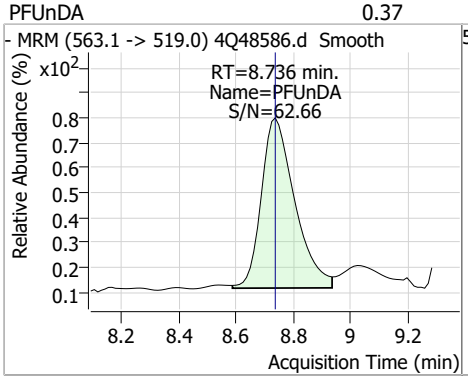


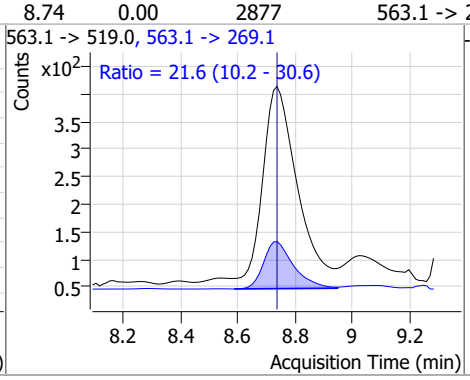
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.74	0.00	11818				

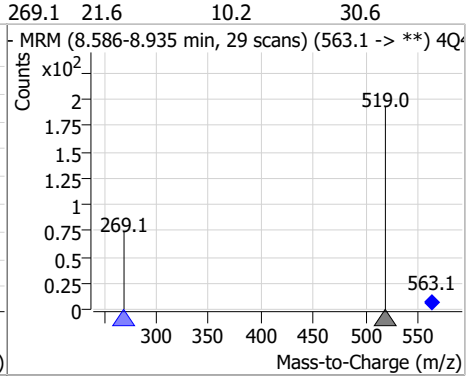


Perfluorinated Compounds by LC/MS/MS

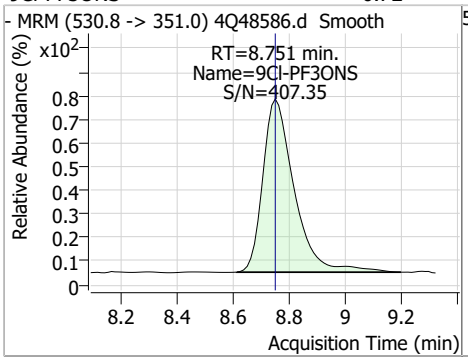
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.37	8.74	0.00	2877	563.1 -> 269.1	21.6	10.2	30.6

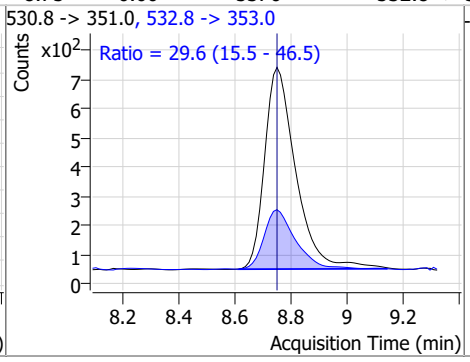


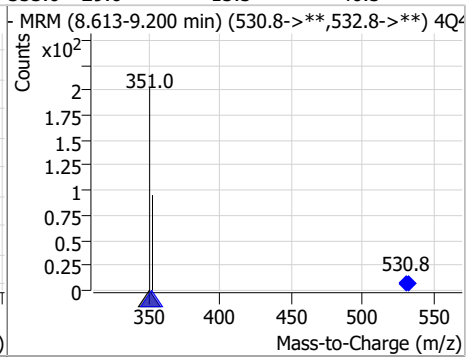




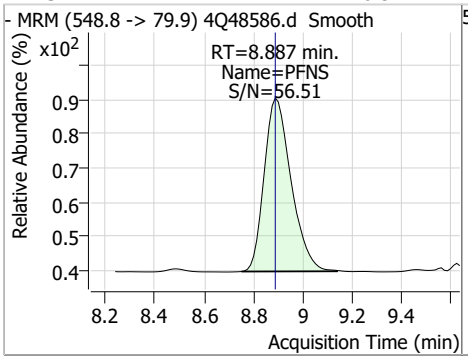
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.72	8.75	0.00	5376	532.8 -> 353.0	29.6	15.5	46.5

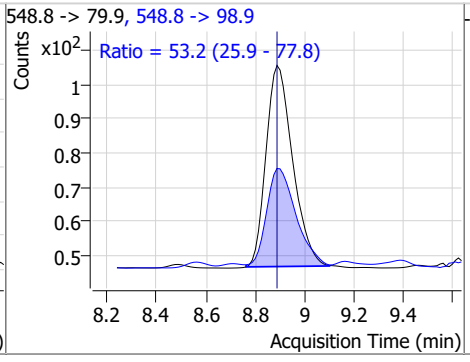


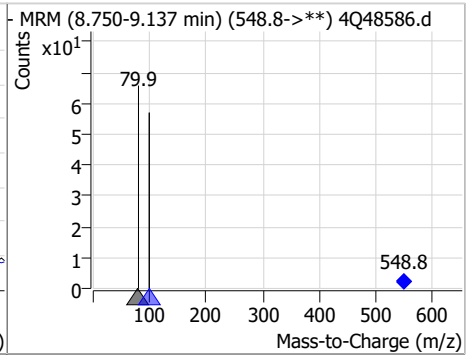




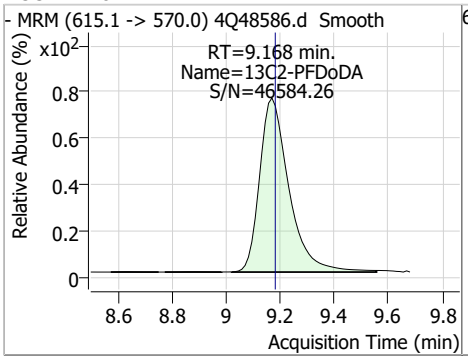
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.34	8.89	0.00	449	548.8 -> 98.9	53.2	25.9	77.8

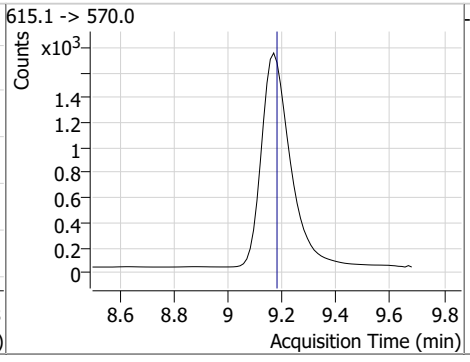


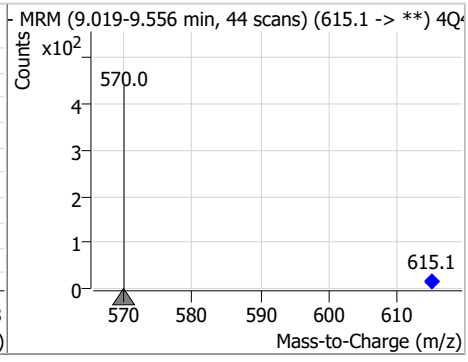




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	9.17	-0.01	12935				

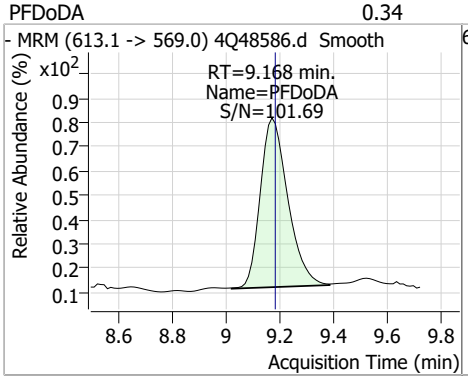


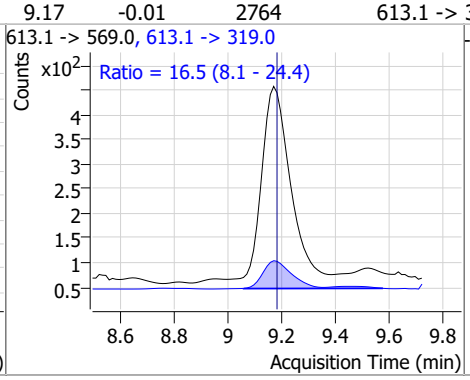


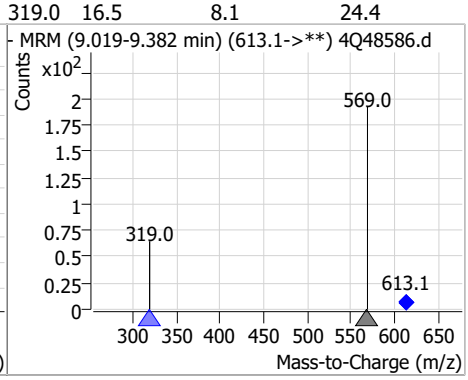


Perfluorinated Compounds by LC/MS/MS

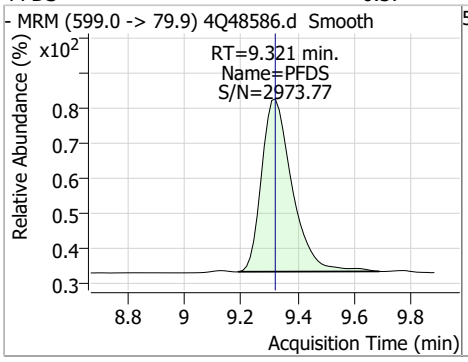
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.34	9.17	-0.01	2764	613.1 -> 319.0	16.5	8.1	24.4

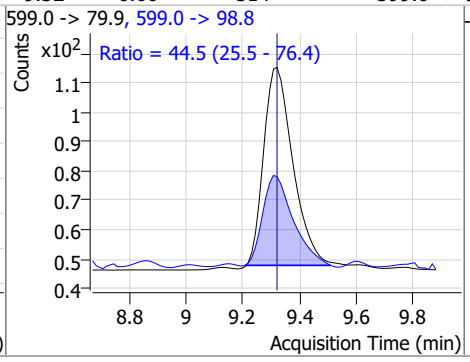


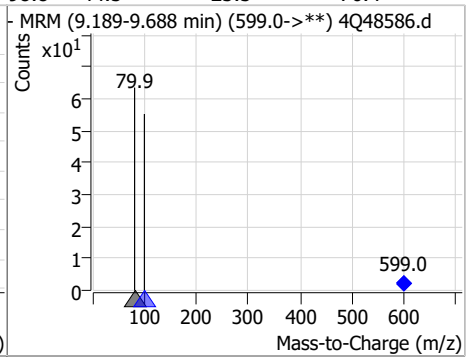




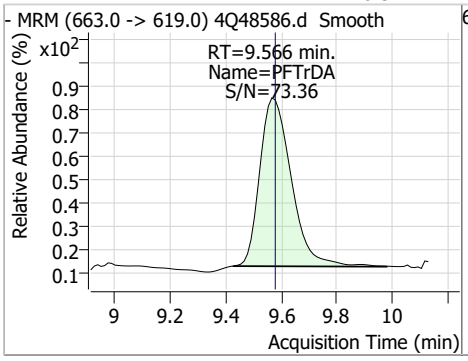
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.37	9.32	0.00	514	599.0 -> 98.8	44.5	25.5	76.4

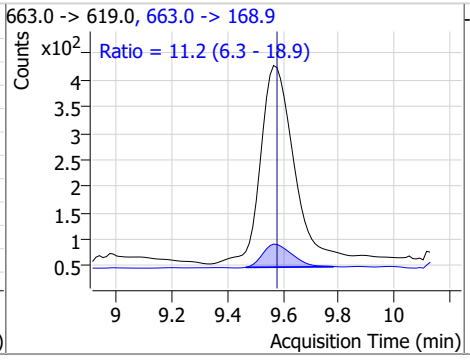


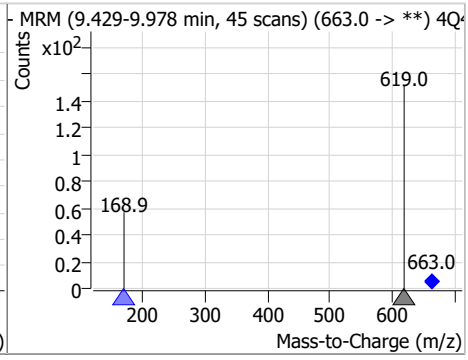




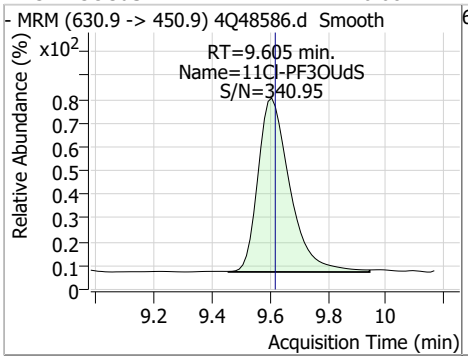
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.34	9.57	-0.01	2848	663.0 -> 168.9	11.2	6.3	18.9

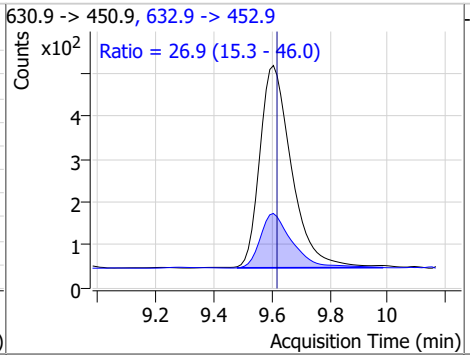


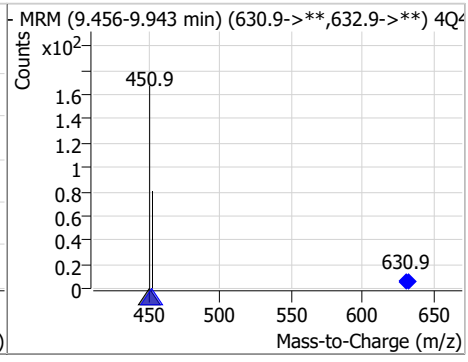




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.68	9.61	-0.01	3610	632.9 -> 452.9	26.9	15.3	46.0

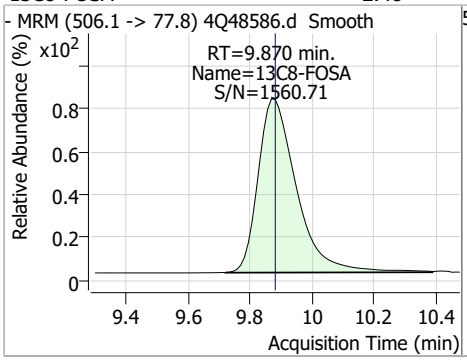


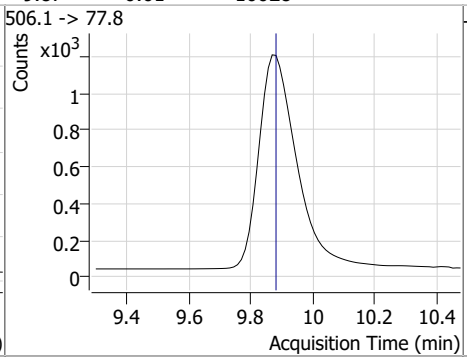


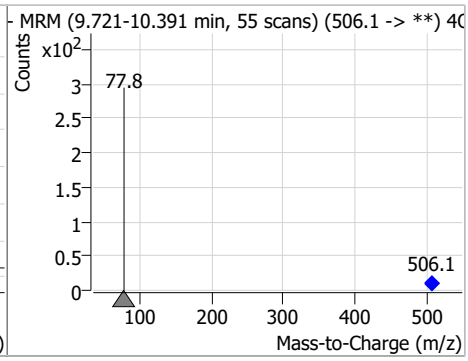


Perfluorinated Compounds by LC/MS/MS

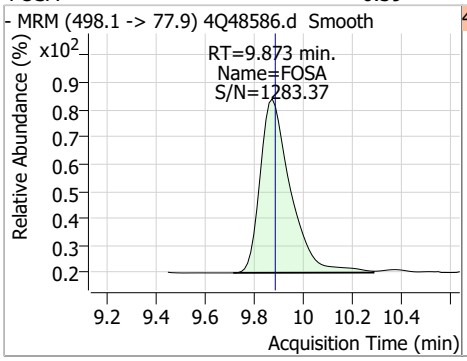
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.87	-0.01	10028				

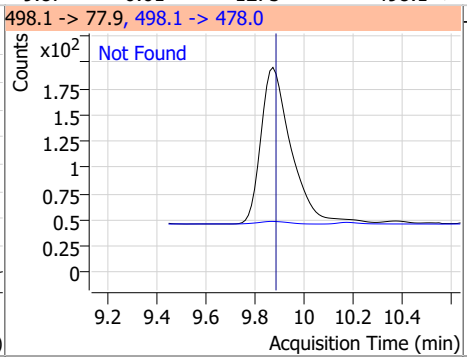


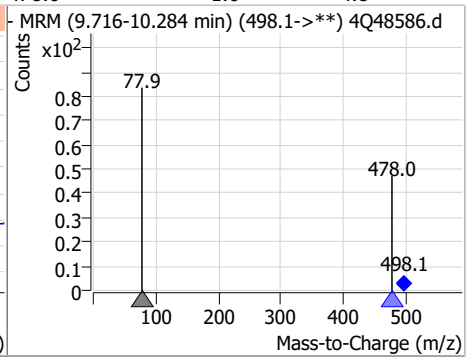




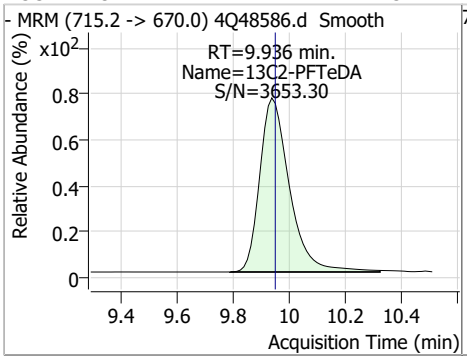
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.39	9.87	-0.01	1275	498.1 -> 478.0		1.6	4.8

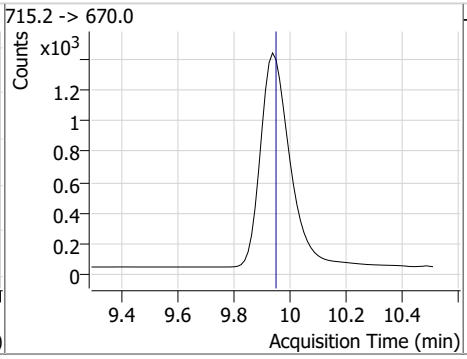


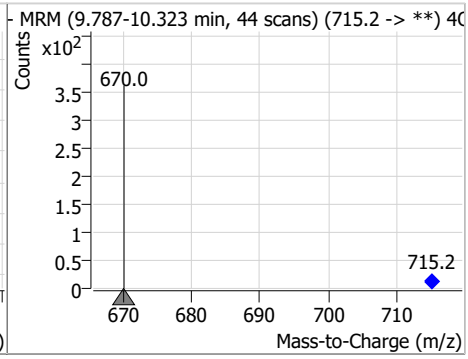




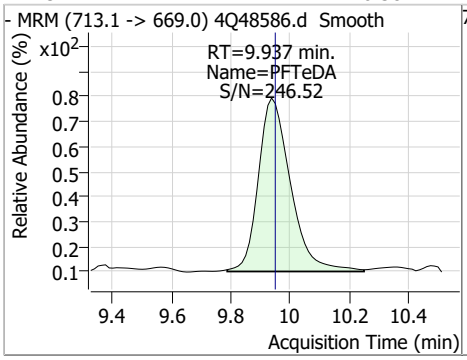
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.94	-0.01	10335				

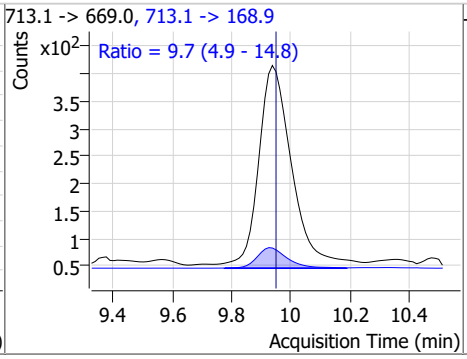


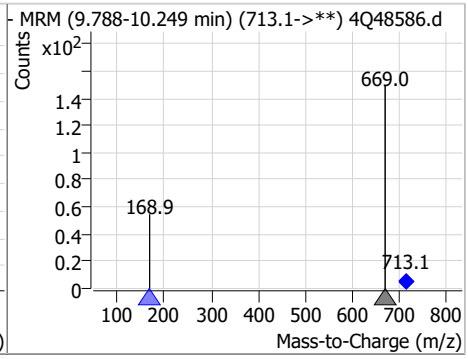




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.38	9.94	-0.01	2730	713.1 -> 168.9	9.7	4.9	14.8

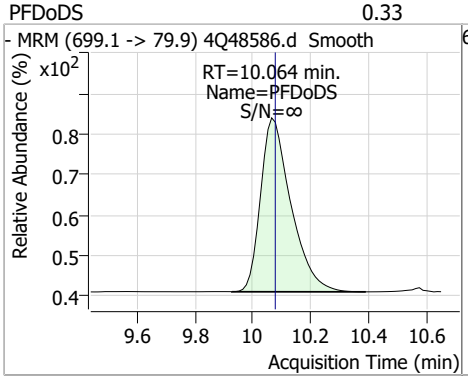


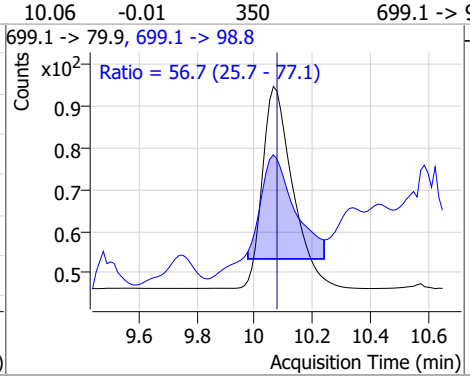


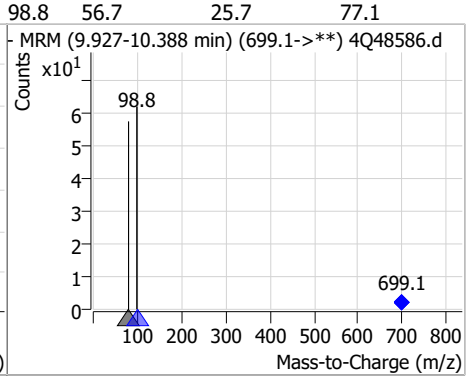


Perfluorinated Compounds by LC/MS/MS

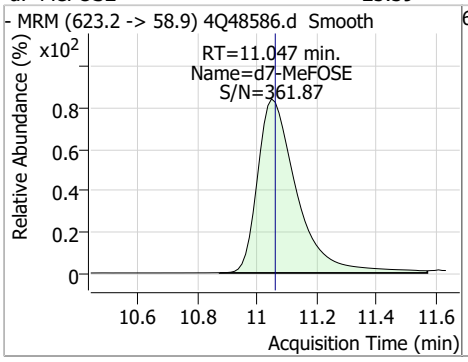
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.33	10.06	-0.01	350	699.1 -> 98.8	56.7	25.7	77.1

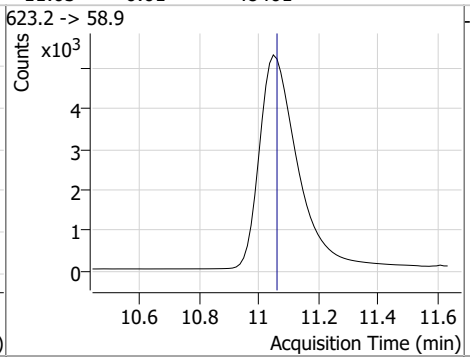


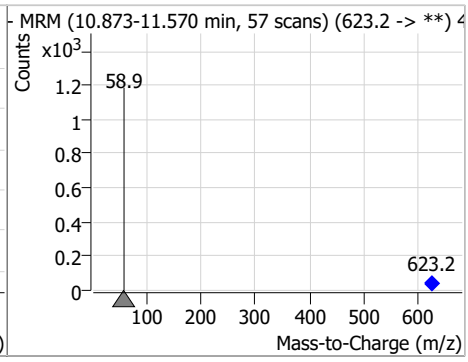




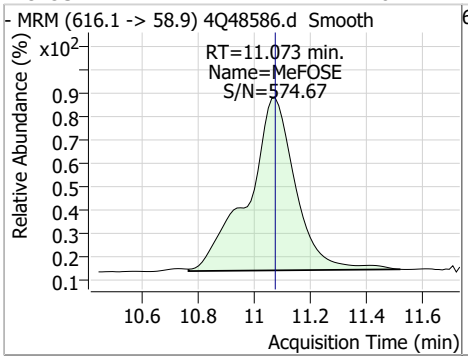
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.39	11.05	-0.01	48401				

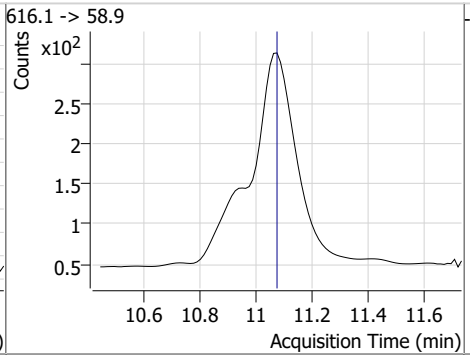


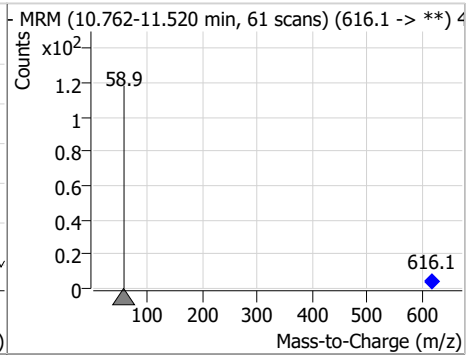




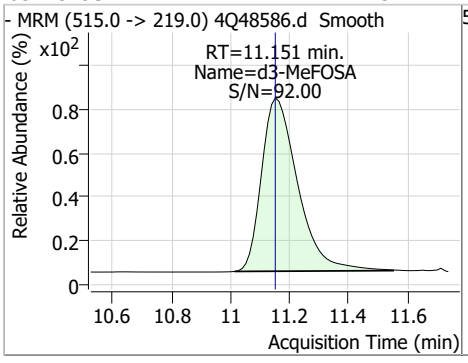
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.82	11.07	0.00	3149				

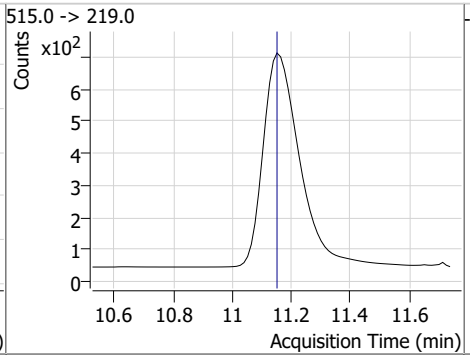


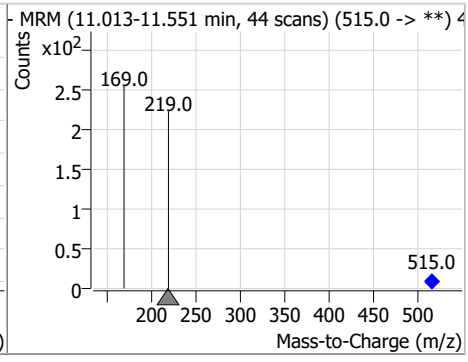




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.37	11.15	0.00	5645				

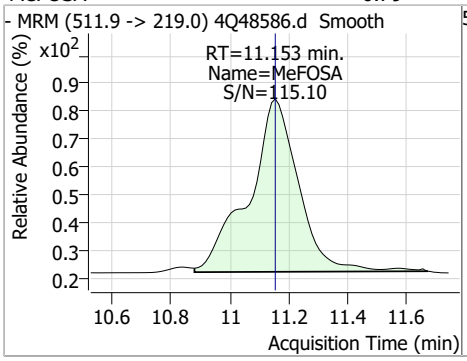


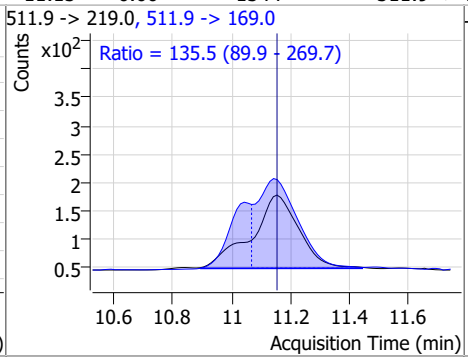


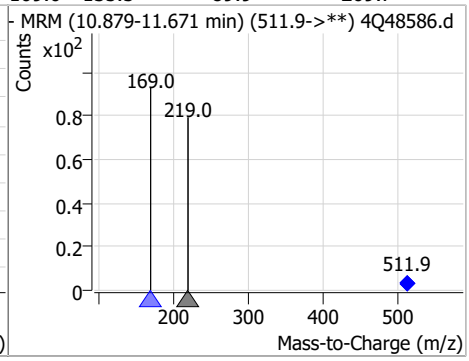


Perfluorinated Compounds by LC/MS/MS

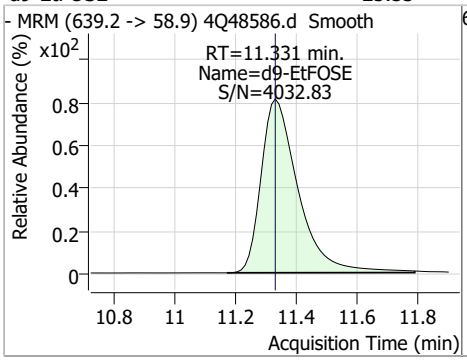
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.79	11.15	0.00	1544	511.9 -> 169.0	135.5	89.9	269.7

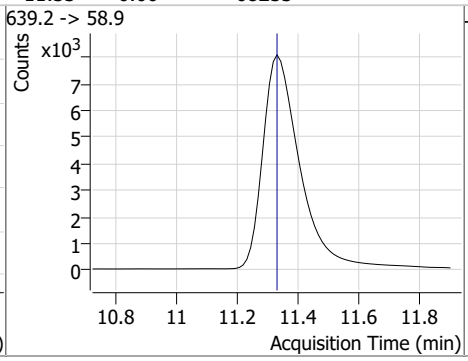


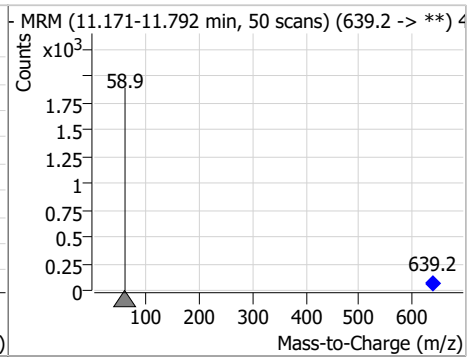




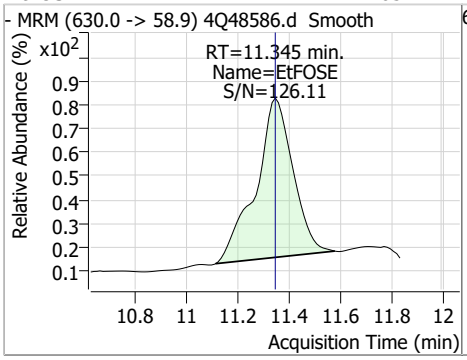
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.53	11.33	0.00	68253				

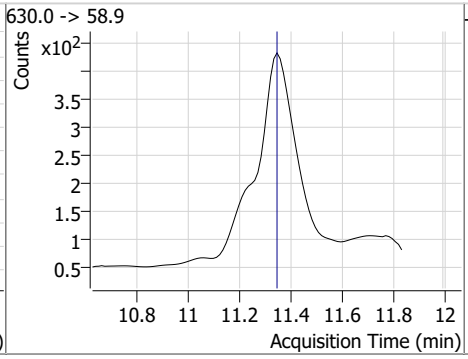


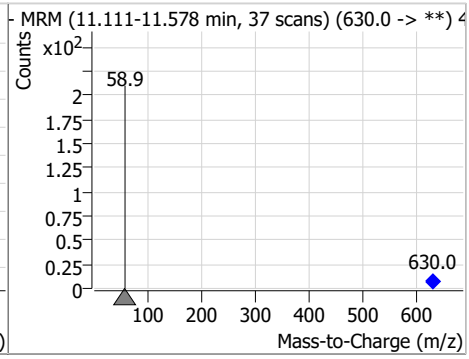




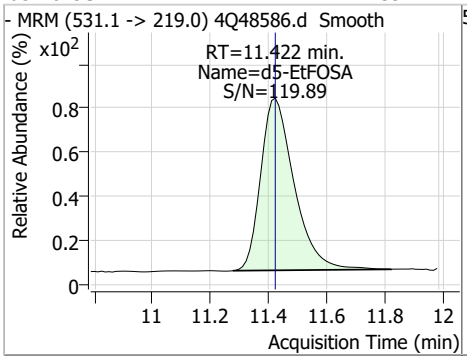
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.65	11.34	0.00	3526				

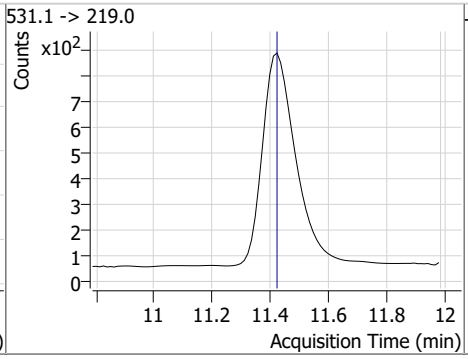


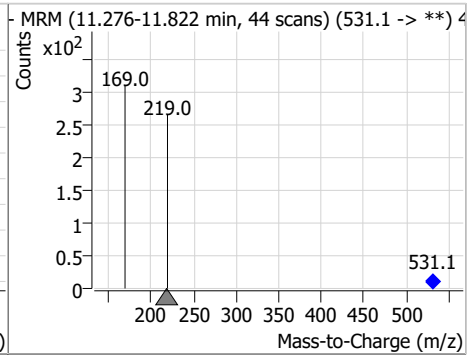




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.39	11.42	0.00	6569				

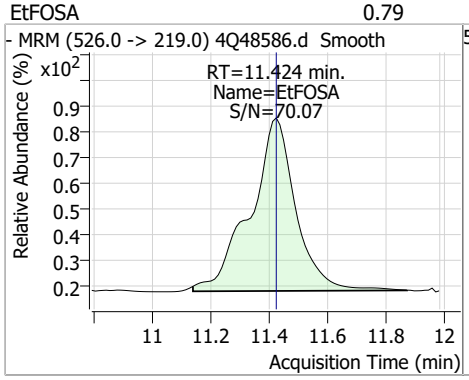


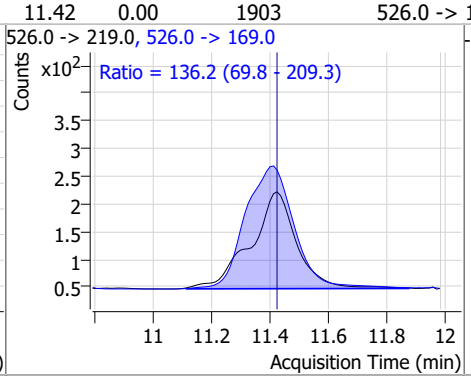


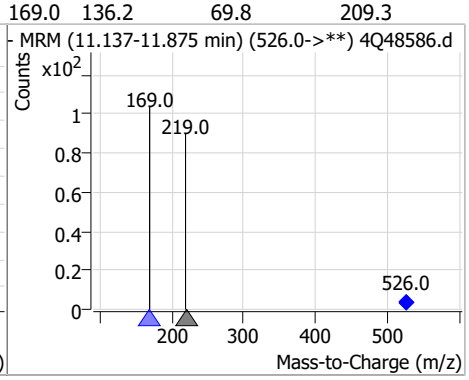


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.79	11.42	0.00	1903	526.0 -> 169.0	136.2	69.8	209.3







7.7.3

7

Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48586.D
Injection Time: 08/07/23 16:41
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak
EtFOSAA	2991-50-6		8.56	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48587.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 4:59:17 PM
Sample Name : ic711-3
Vial : P1-A4
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.961	216.8 -> 171.9	100094	10.00	µg/L	0.050
M5-PFPeA	4.437	268.3 -> 223.0	62944	5.00	µg/L	0.025
M5-PFHxA	5.622	318.0 -> 273.0	37768	2.50	µg/L	0.012
M4-PFHpA	6.568	367.1 -> 322.0	26814	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	43568	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	19802	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14123	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	16303	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	17010	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	14113	1.25	µg/L	0.000
M8-FOSA	9.894	506.1 -> 77.8	13582	2.50	µg/L	0.012
M3-PFBS	5.502	302.1 -> 79.9	9836	2.50	µg/L	0.013
M3-PFHxS	7.317	402.1 -> 79.9	6375	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8743	2.50	µg/L	0.000
M2-4:2FTS	5.309	329.1 -> 80.9	661	5.00	µg/L	0.012
M2-6:2FTS	7.011	429.1 -> 80.9	1160	5.00	µg/L	0.012
M2-8:2FTS	8.065	529.1 -> 80.9	1686	5.00	µg/L	0.000
M3-MeFOSAA	8.348	573.2 -> 419.0	15775	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	34045	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	13340	5.00	µg/L	0.012
M7-MeFOSE	11.047	623.2 -> 58.9	64942	25.00	µg/L	-0.012
M9-EtFOSE	11.331	639.2 -> 58.9	88469	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	9468	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	7877	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	8916	2.50	µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	58599	5.00	µg/L	0.062
18O2-PFHxS	7.328	403.0 -> 83.9	4542	2.50	µg/L	0.012
13C4-PFOA	7.239	417.1 -> 372.0	54097	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	16365	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	20611	1.25	µg/L	0.000
13C2-PFHxA	5.623	315.1 -> 270.0	36020	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	661	5.83	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.5%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1160	5.35	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-8:2FTS	8.065	529.1 -> 80.9	1686	5.12	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFDoDA	9.180	615.1 -> 570.0	17010	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-PFTeDA	9.949	715.2 -> 670.0	14113	1.25	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	5.502	302.1 -> 79.9	9836	2.54	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-PFHxS	7.317	402.1 -> 79.9	6375	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 = 101.4%		
13C4-PFBA	2.961	216.8 -> 171.9	100094	9.99 µg/L		0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C4-PFHpA	6.568	367.1 -> 322.0	26814	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C5-PFHxA	5.622	318.0 -> 273.0	37768	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C5-PFPeA	4.437	268.3 -> 223.0	62944	5.00 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C6-PFDA	8.279	519.1 -> 474.1	14123	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C7-PFUnDA	8.748	570.0 -> 525.1	16303	1.28 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C8-FOSA	9.894	506.1 -> 77.8	13582	2.44 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C8-PFOA	7.238	421.1 -> 376.0	43568	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C8-PFOS	8.417	507.1 -> 79.9	8743	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C9-PFNA	7.785	472.1 -> 427.0	19802	1.27 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15775	4.77 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	34045	9.92 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSA	11.151	515.0 -> 219.0	7877	2.41 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%		
d5-EtFOSAA	8.559	589.2 -> 419.0	13340	4.90 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
d7-MeFOSE	11.047	623.2 -> 58.9	64942	24.80 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d9-EtFOSE	11.331	639.2 -> 58.9	88469	24.09 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
d5-EtFOSA	11.422	531.1 -> 219.0	9468	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
Target Compounds						QValue
4:2FTS	5.309	327.1 -> 307.0	3518	3.95 µg/L		94
		327.1 -> 80.9	1576			
6:2FTS	6.999	427.1 -> 407.0	4429	4.50 µg/L		100
		427.1 -> 80.9	1558			
8:2FTS	8.078	527.1 -> 507.0	3227	4.77 µg/L		100
		527.1 -> 80.8	1413			
EtFOSAA	8.559	584.2 -> 419.1	1985	1.09 µg/L	m	98
		584.2 -> 526.0	845			
FOSA	9.886	498.1 -> 77.9	5382	1.22 µg/L		98
		498.1 -> 478.0	202			
MeFOSAA	8.349	570.1 -> 419.0	2420	1.23 µg/L		88
		570.1 -> 483.0	585			
PFBA	2.970	212.8 -> 168.9	10889	4.72 µg/L		100
PFBS	5.503	298.7 -> 79.9	2674	1.11 µg/L		91
		298.7 -> 98.8	1135			
PFDA	8.279	512.9 -> 469.0	12566	1.27 µg/L		100
		512.9 -> 219.0	2420			
PFDoDA	9.181	613.1 -> 569.0	13765	1.29 µg/L		96
		613.1 -> 319.0	2021			
PFDS	9.335	599.0 -> 79.9	1998	1.11 µg/L		97

Perfluorinated Compounds by LC/MS/MS

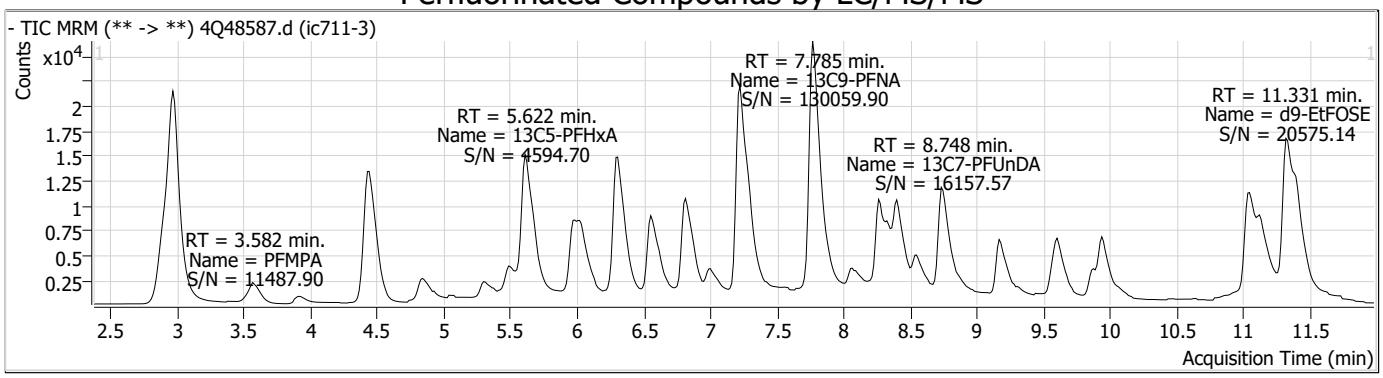
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	972				
PFHpA	6.568	363.1 -> 319.0	14852	1.23	µg/L		97
		363.1 -> 169.0	2539				
PFHpS	7.913	449.0 -> 79.9	2946	1.11	µg/L		98
		449.0 -> 98.9	1534				
PFHxA	5.625	313.0 -> 269.0	12832	1.18	µg/L		99
		313.0 -> 118.9	456				
PFHxS	7.318	398.7 -> 79.9	2056	1.12	µg/L	m	92
		398.7 -> 98.9	966				
PFNA	7.785	463.0 -> 419.0	12986	1.26	µg/L		99
		463.0 -> 219.0	2727				
PFNS	8.899	548.8 -> 79.9	2011	1.18	µg/L		88
		548.8 -> 98.9	1208				
PFOA	7.240	413.0 -> 369.0	19949	1.15	µg/L		100
		413.0 -> 169.0	3872				
PFOS	8.419	498.9 -> 79.9	3575	1.15	µg/L	m	78
		498.9 -> 98.8	1660				
PFPeA	4.439	263.0 -> 219.0	26285	2.40	µg/L		100
PFPeS	6.582	349.1 -> 79.9	1989	1.16	µg/L		93
		349.1 -> 98.9	971				
PFTeDA	9.950	713.1 -> 669.0	11701	1.18	µg/L		98
		713.1 -> 168.9	1080				
PFTrDA	9.579	663.0 -> 619.0	13346	1.21	µg/L		98
		663.0 -> 168.9	1811				
PFUnDA	8.749	563.1 -> 519.0	12568	1.18	µg/L		96
		563.1 -> 269.1	2773				
11Cl-PF3OUdS	9.617	630.9 -> 450.9	16171	2.27	µg/L		98
		632.9 -> 452.9	5116				
9Cl-PF3ONS	8.763	530.8 -> 351.0	23463	2.34	µg/L		96
		532.8 -> 353.0	6787				
ADONA	6.831	376.9 -> 250.9	45080	2.28	µg/L		99
		376.9 -> 84.8	11873				
HFPO-DA	5.990	284.9 -> 168.9	6802	2.43	µg/L		97
		284.9 -> 184.9	973				
3:3FTCA	3.917	241.0 -> 177.0	3406	5.86	µg/L		97
		241.0 -> 117.0	366				
5:3FTCA	6.308	341.0 -> 237.1	52730	29.56	µg/L		99
		341.0 -> 217.0	37167				
7:3FTCA	7.787	441.0 -> 316.9	28535	29.03	µg/L		93
		441.0 -> 336.9	68927				
EtFOSA	11.424	526.0 -> 219.0	8067	2.32	µg/L		96
		526.0 -> 169.0	10859				
EtFOSE	11.345	630.0 -> 58.9	17565	6.34	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	6779	2.47	µg/L		77
		511.9 -> 169.0	9973				
MeFOSE	11.073	616.1 -> 58.9	13883	5.98	µg/L	m	100
PFDoDS	10.089	699.1 -> 79.9	1503	1.08	µg/L		80
		699.1 -> 98.8	979				
NFDHA	5.503	295.0 -> 201.0	1742	2.48	µg/L		95
		295.0 -> 84.9	391				
PFMBA	4.853	279.0 -> 85.1	14950	2.44	µg/L		100
PFMPA	3.582	229.0 -> 84.9	14004	2.34	µg/L		100
PFEESA	6.047	314.8 -> 134.9	18077	2.06	µg/L		99
		314.8 -> 82.9	698				

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

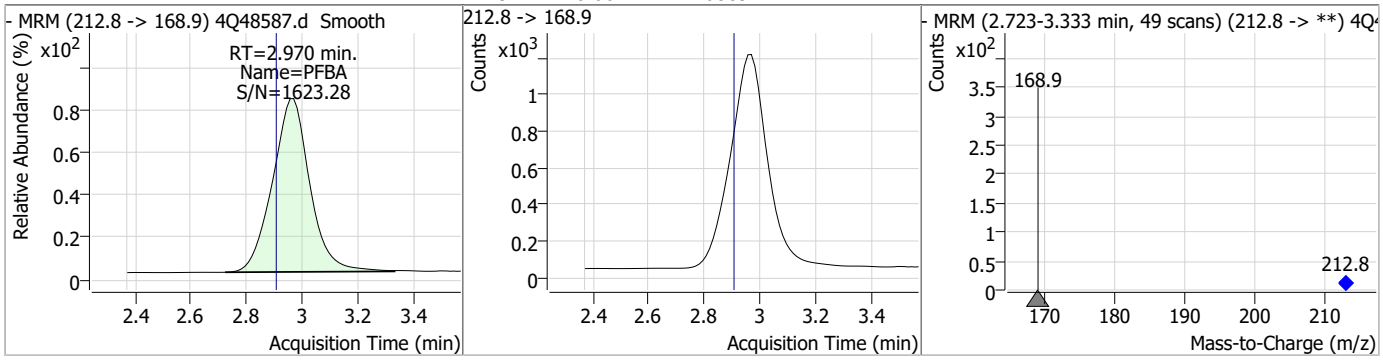
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

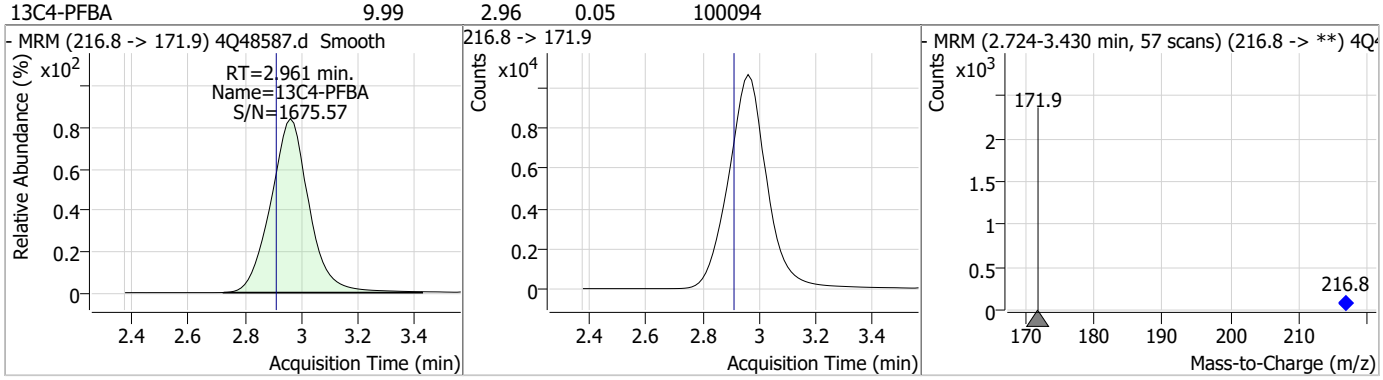
Perfluorinated Compounds by LC/MS/MS



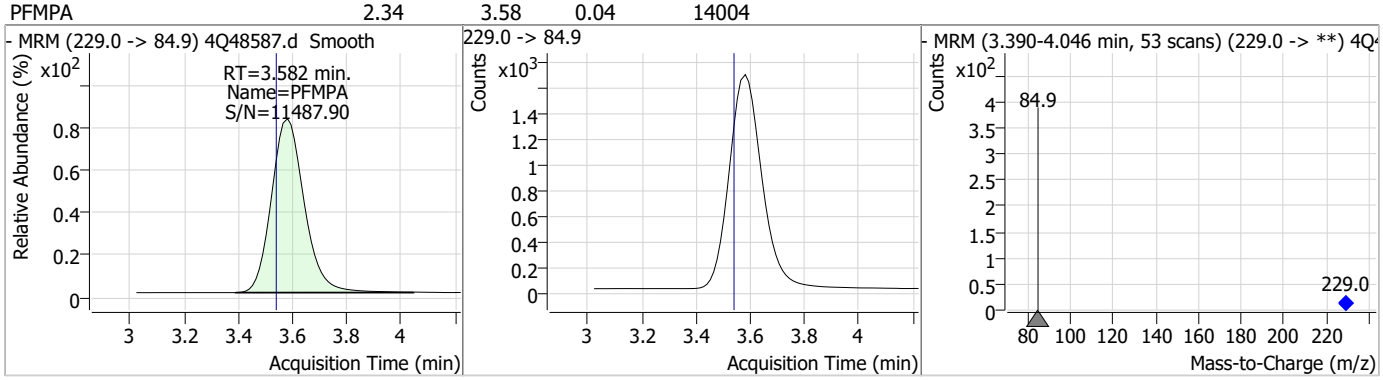
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.72	2.97	0.06	10889				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.99	2.96	0.05	100094				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	2.34	3.58	0.04	14004				



7.7.4

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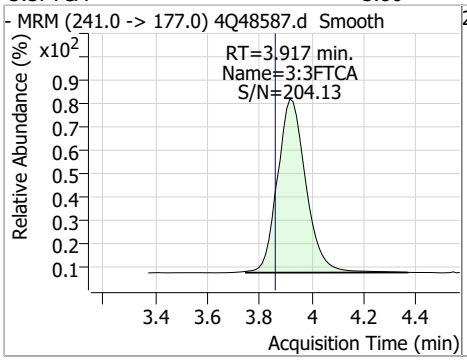
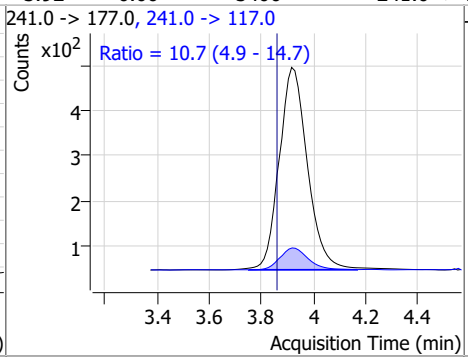
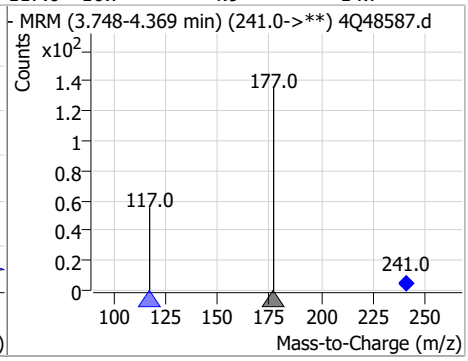
Perfluorinated Compounds by LC/MS/MS

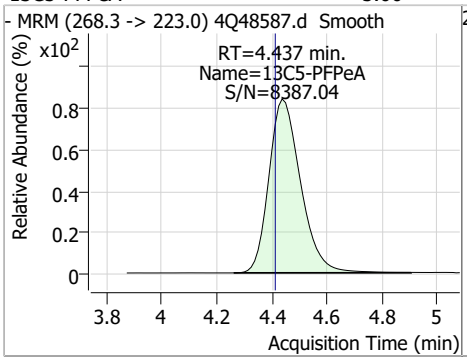
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	5.86	3.92	0.06	3406	241.0 -> 117.0	10.7	4.9	14.7

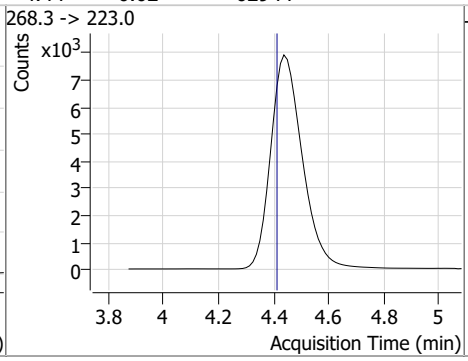


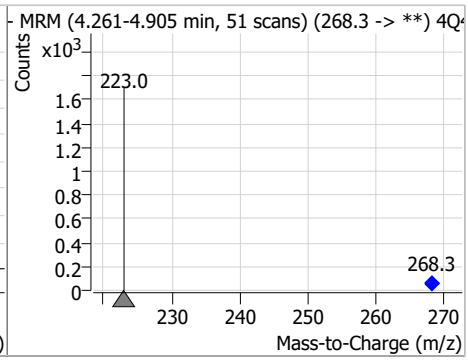




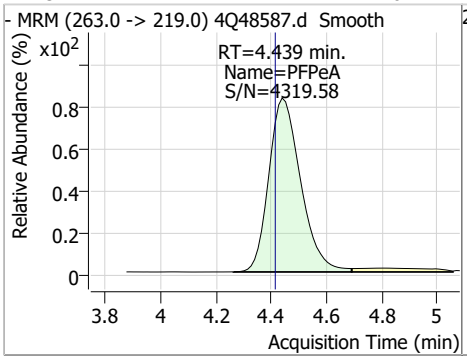
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.00	4.44	0.02	62944				

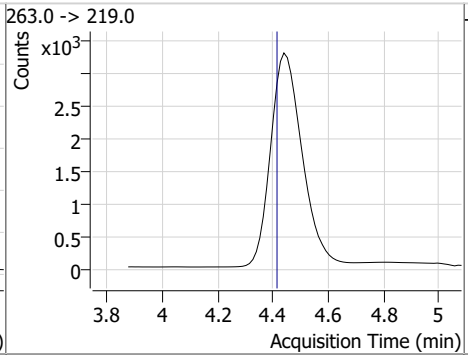


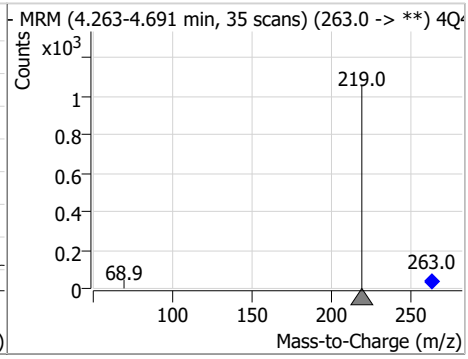




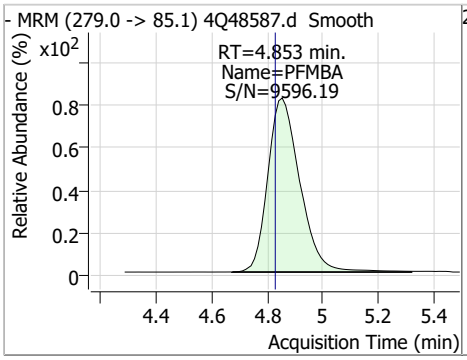
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.40	4.44	0.02	26285				

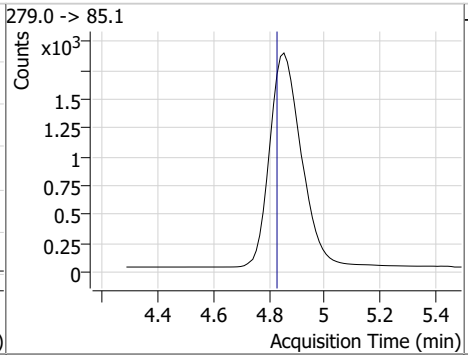


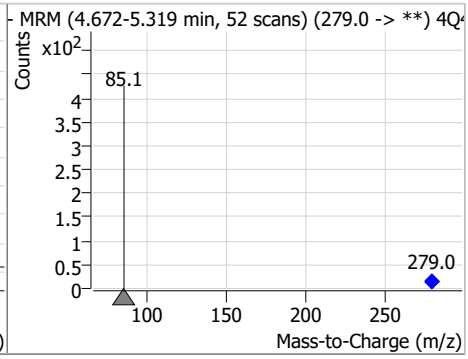




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.44	4.85	0.02	14950				

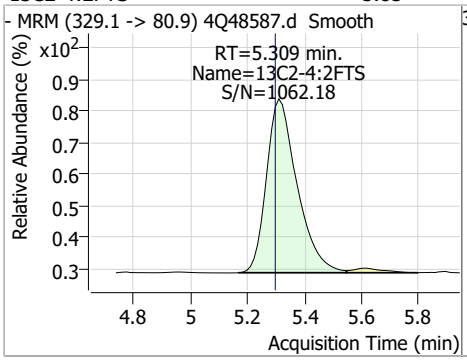


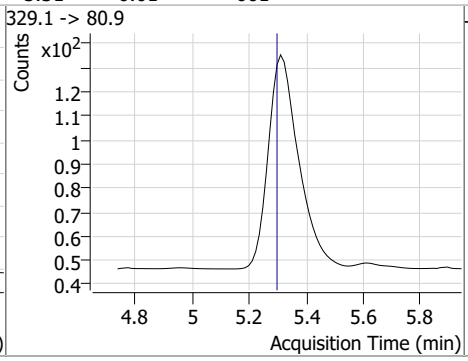


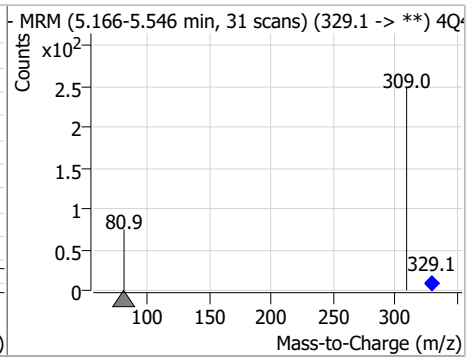


Perfluorinated Compounds by LC/MS/MS

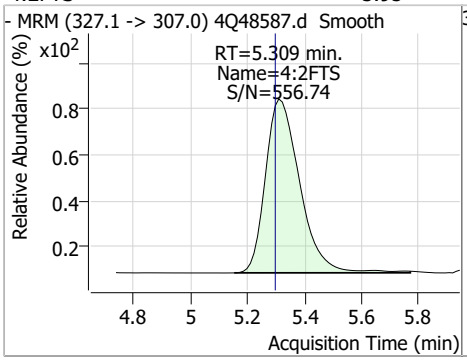
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.83	5.31	0.01	661				

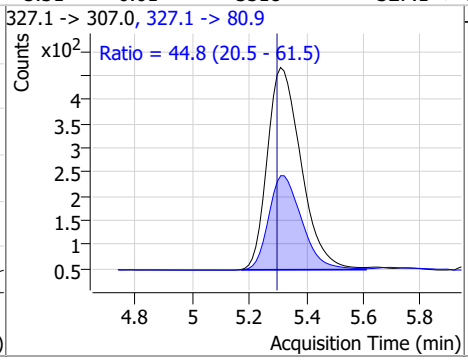


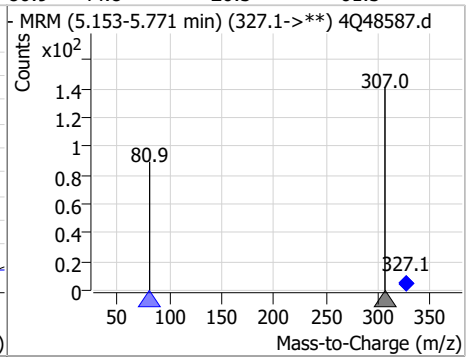




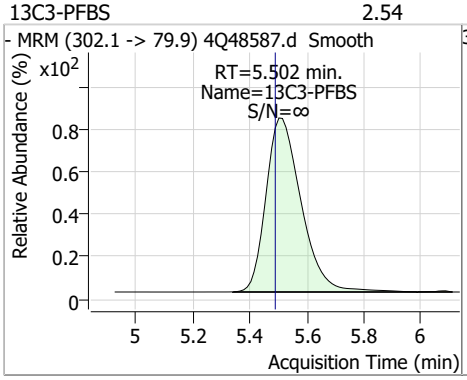
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	3.95	5.31	0.01	3518	327.1 -> 80.9	44.8	20.5	61.5

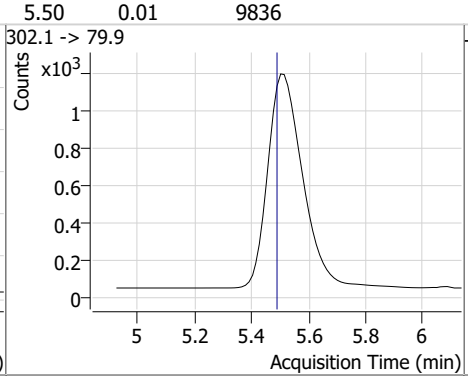


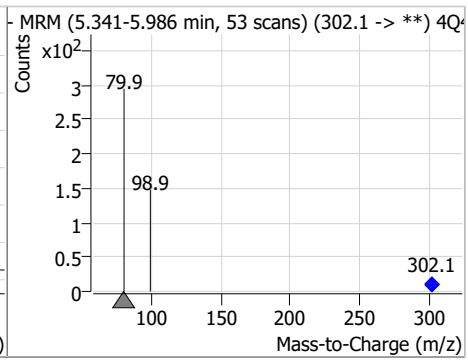




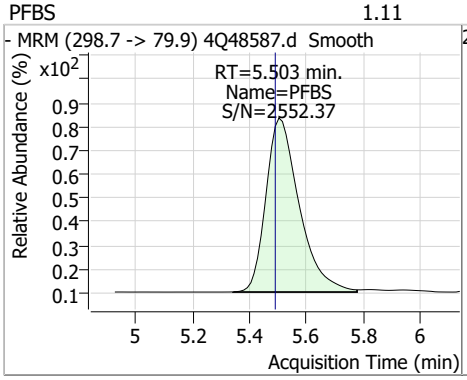
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.54	5.50	0.01	9836				

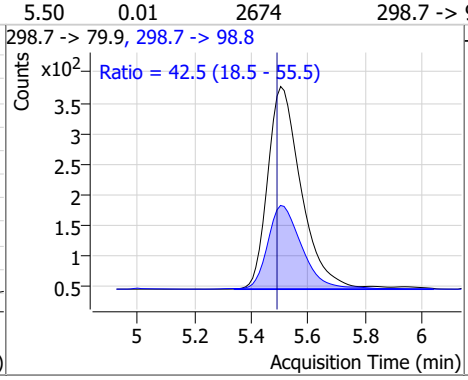


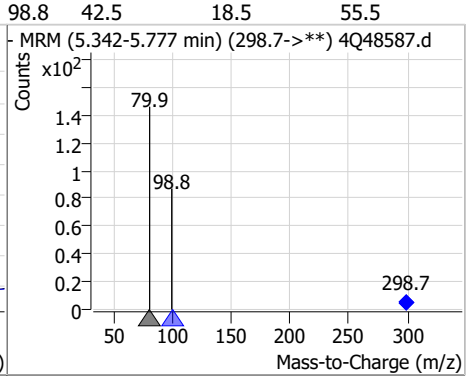




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.11	5.50	0.01	2674	298.7 -> 98.8	42.5	18.5	55.5

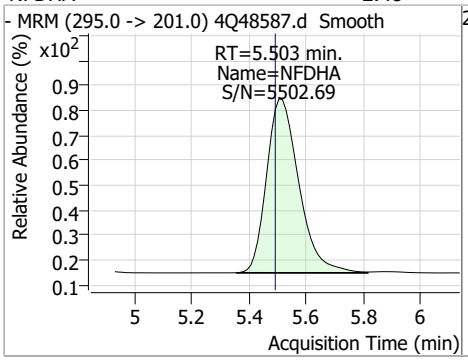


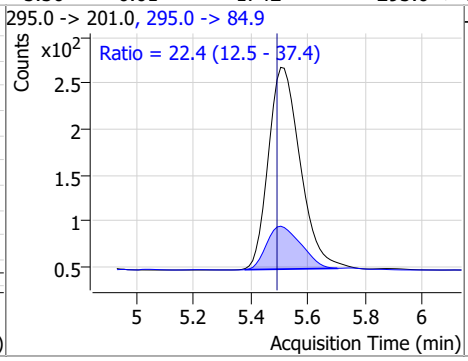


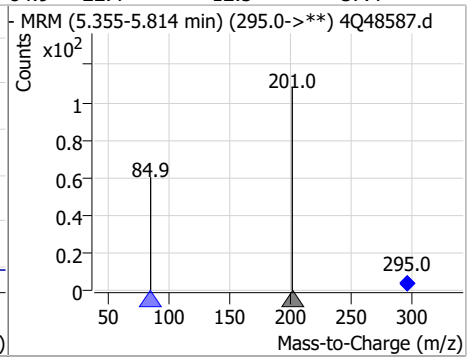


Perfluorinated Compounds by LC/MS/MS

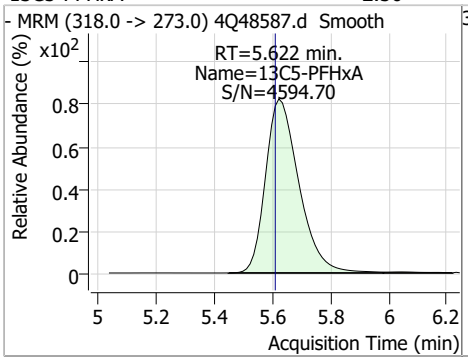
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	2.48	5.50	0.01	1742	295.0 -> 84.9	22.4	12.5	37.4

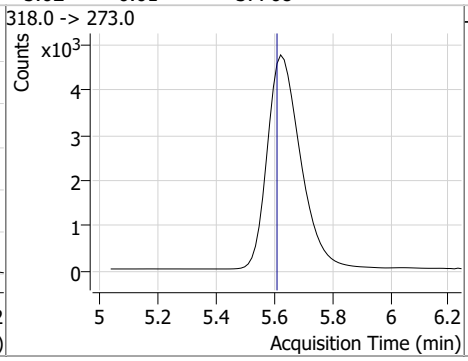


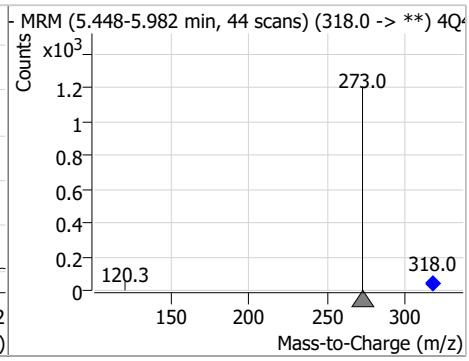




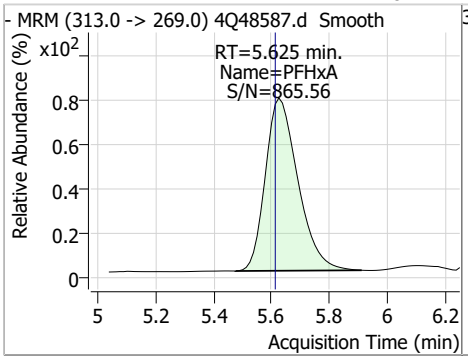
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.62	0.01	37768				

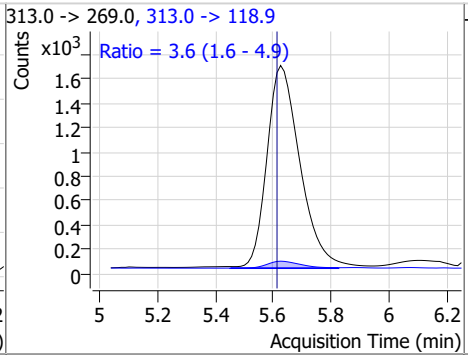


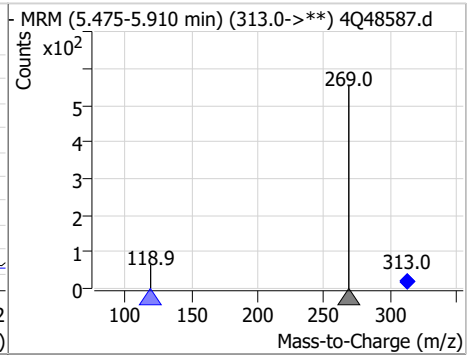




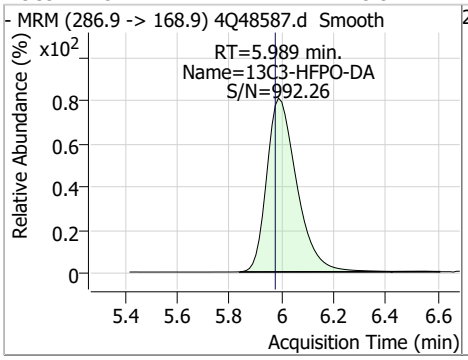
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.18	5.62	0.01	12832	313.0 -> 118.9	3.6	1.6	4.9

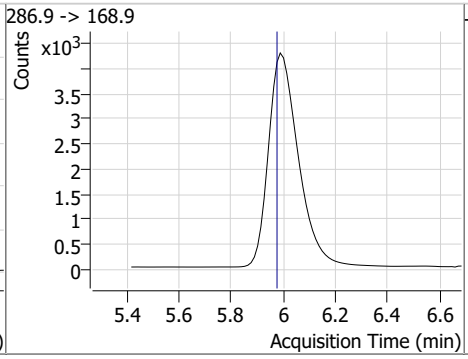


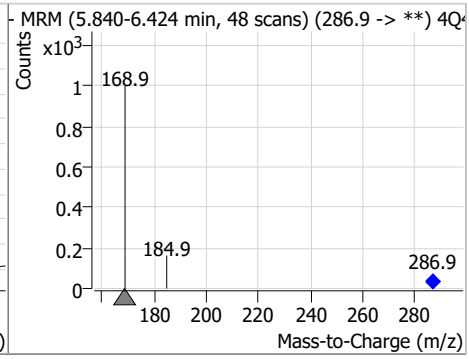




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.92	5.99	0.01	34045				

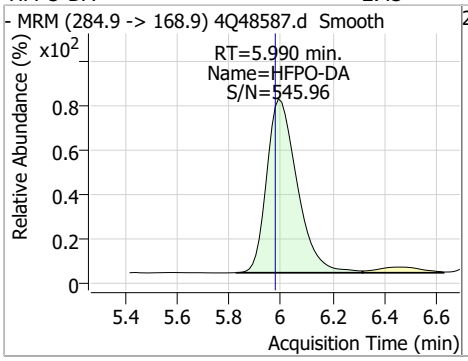


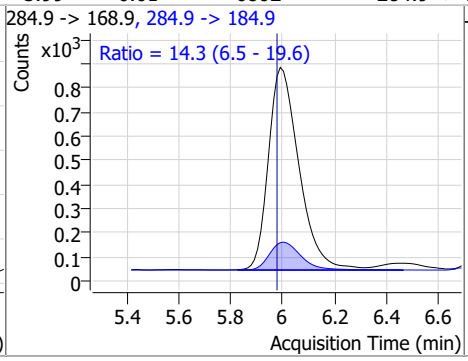


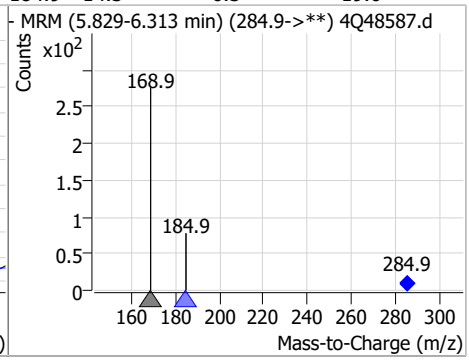


Perfluorinated Compounds by LC/MS/MS

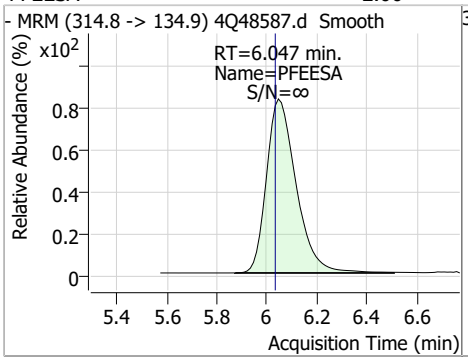
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.43	5.99	0.01	6802	284.9 -> 184.9	14.3	6.5	19.6

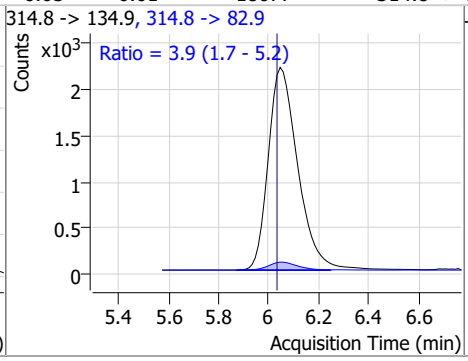


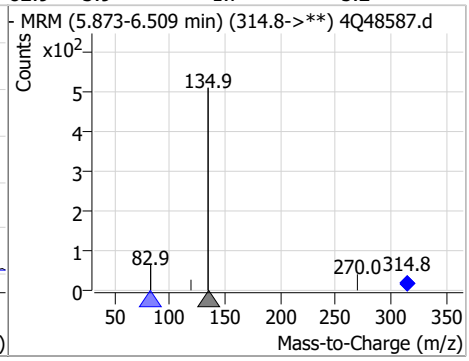




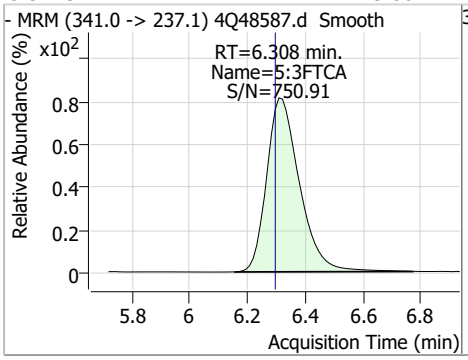
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.06	6.05	0.01	18077	314.8 -> 82.9	3.9	1.7	5.2

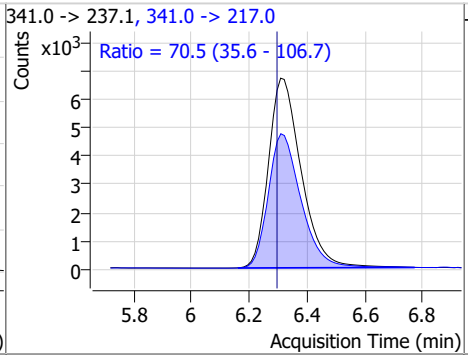


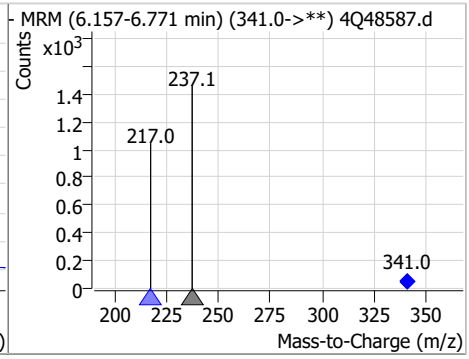




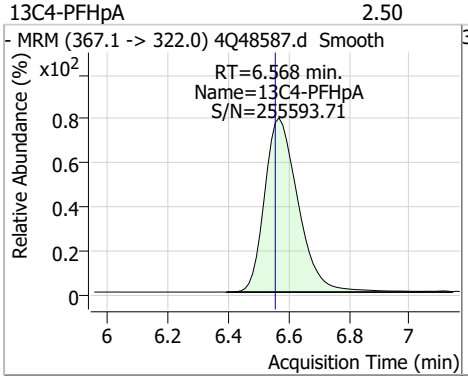
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	29.56	6.31	0.01	52730	341.0 -> 217.0	70.5	35.6	106.7

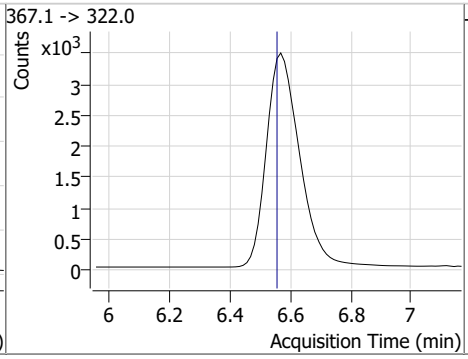


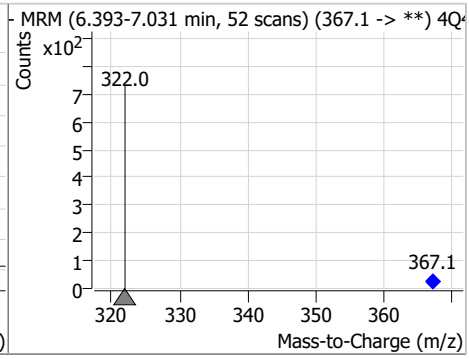




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.57	0.01	26814				

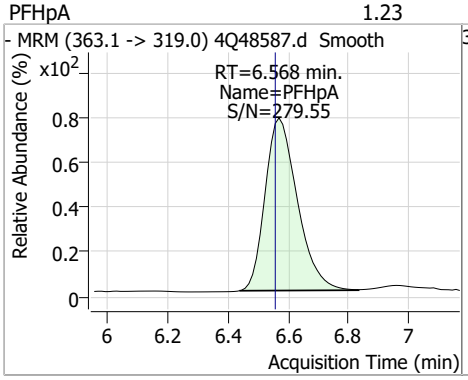


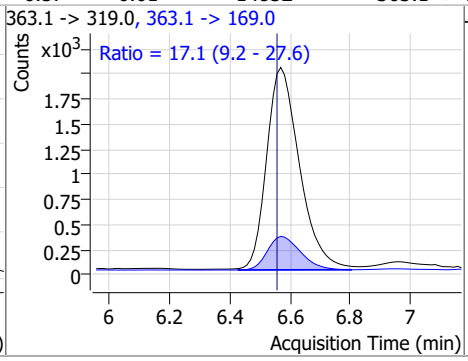


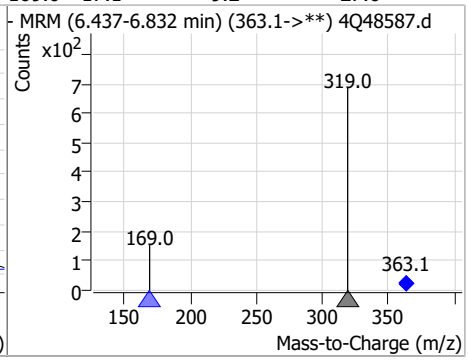


Perfluorinated Compounds by LC/MS/MS

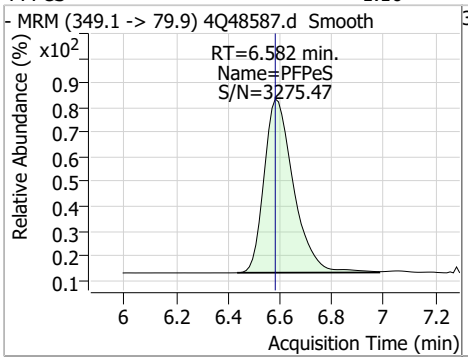
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.23	6.57	0.01	14852	363.1 -> 169.0	17.1	9.2	27.6

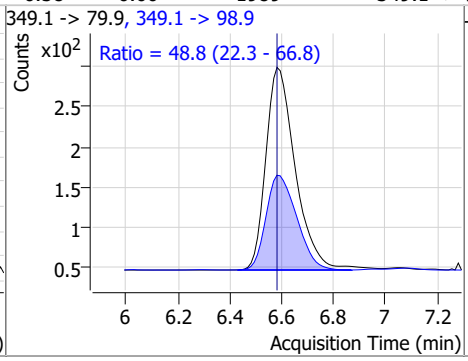


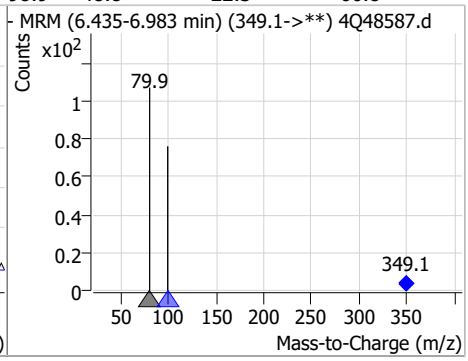




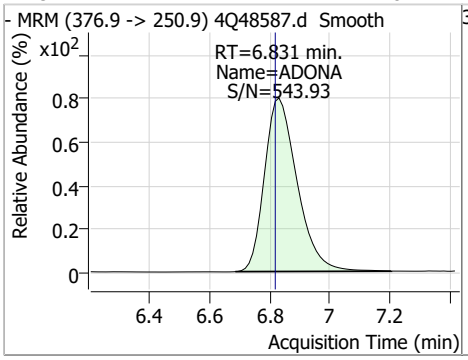
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.16	6.58	0.00	1989	349.1 -> 98.9	48.8	22.3	66.8

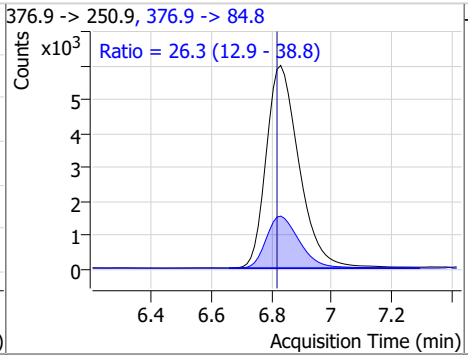


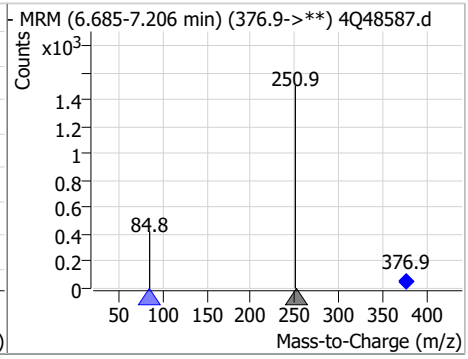




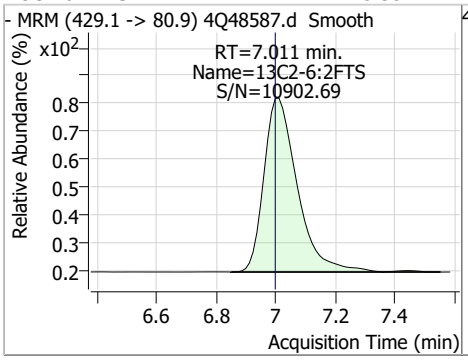
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	2.28	6.83	0.01	45080	376.9 -> 84.8	26.3	12.9	38.8

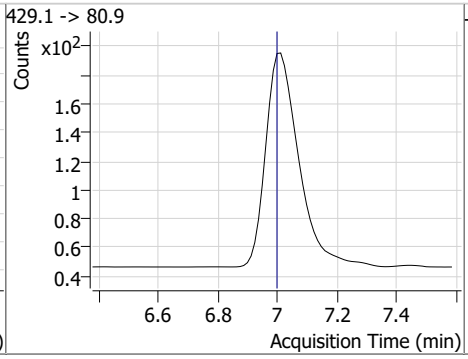


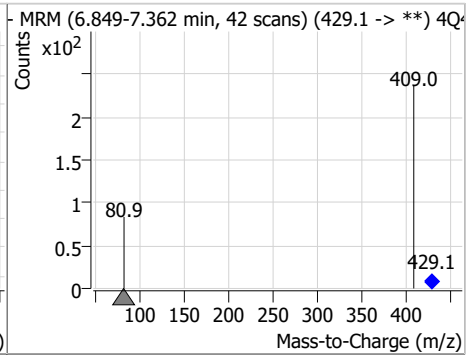




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.35	7.01	0.01	1160				

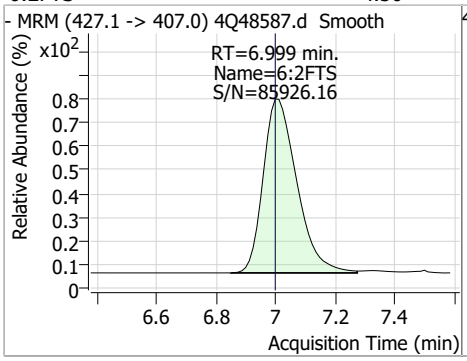


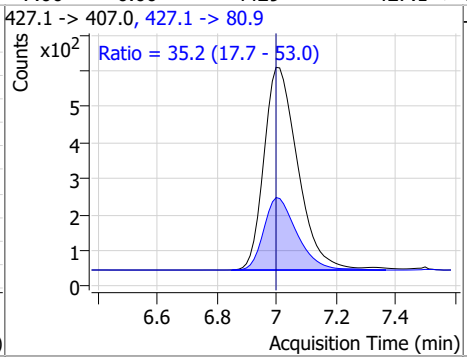


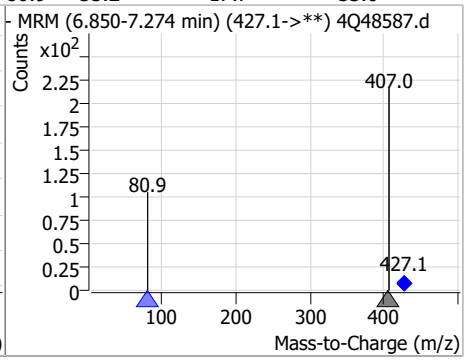


Perfluorinated Compounds by LC/MS/MS

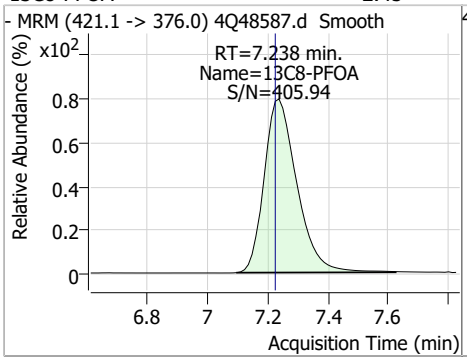
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.50	7.00	0.00	4429	427.1 -> 80.9	35.2	17.7	53.0

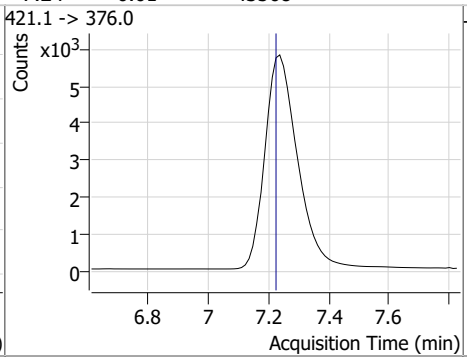


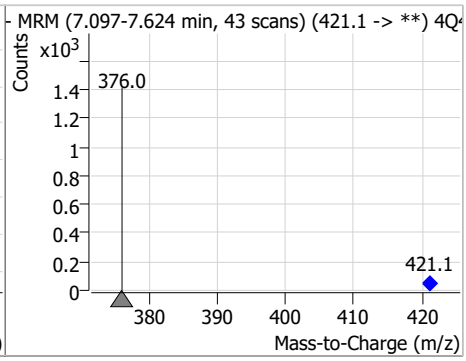




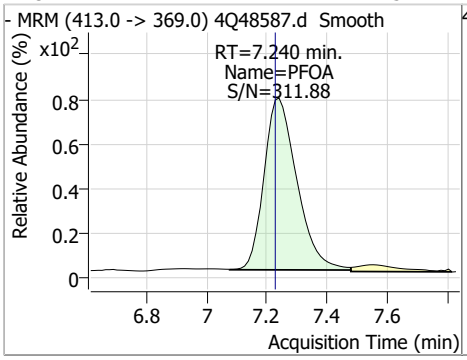
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	7.24	0.01	43568				

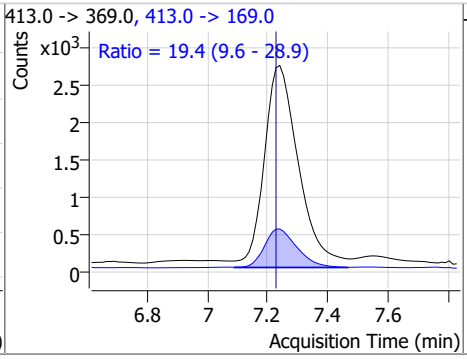


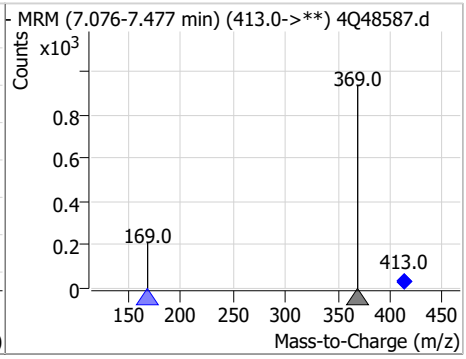




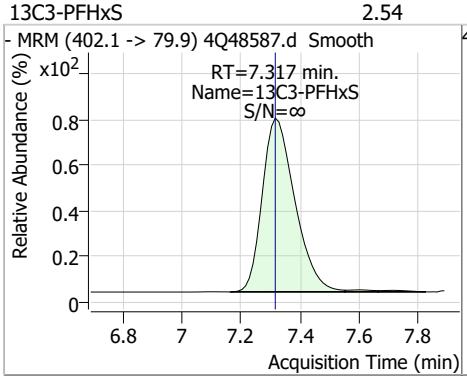
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.15	7.24	0.01	19949	413.0 -> 169.0	19.4	9.6	28.9

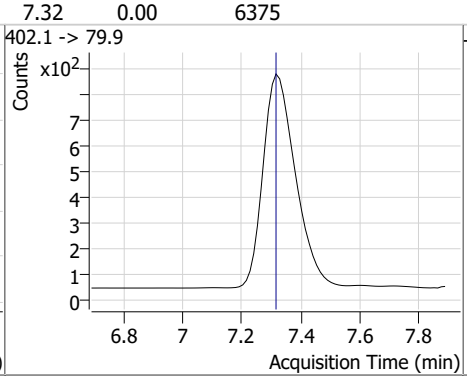


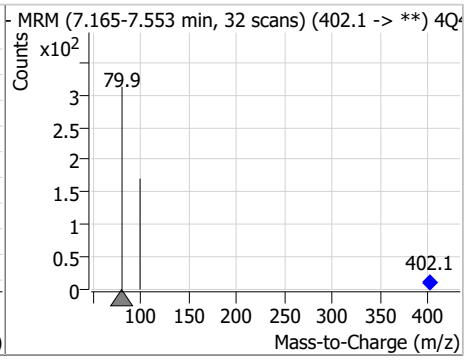




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.54	7.32	0.00	6375				

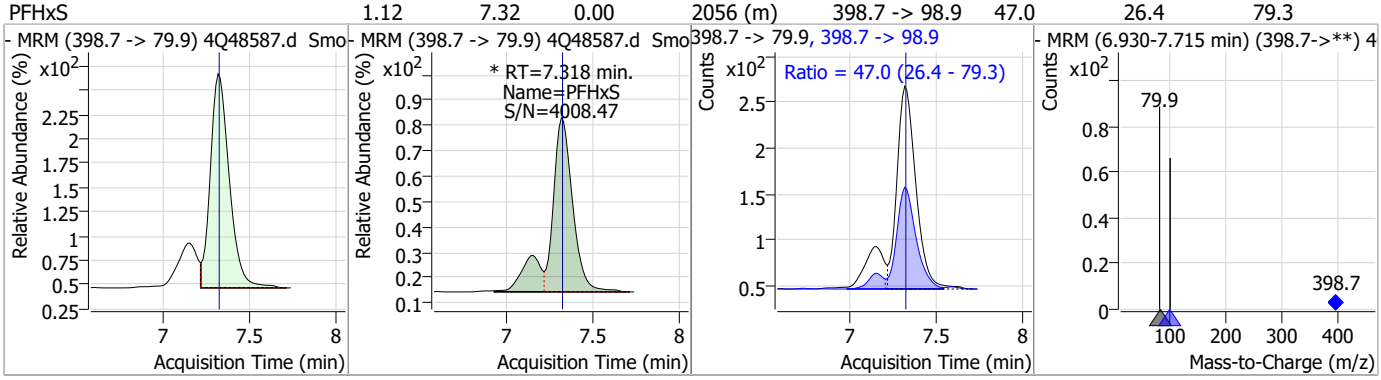




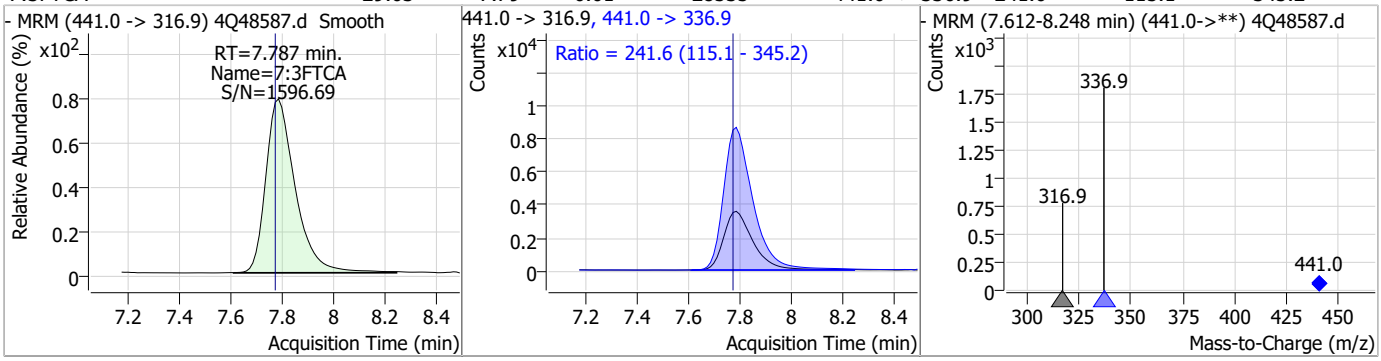


Perfluorinated Compounds by LC/MS/MS

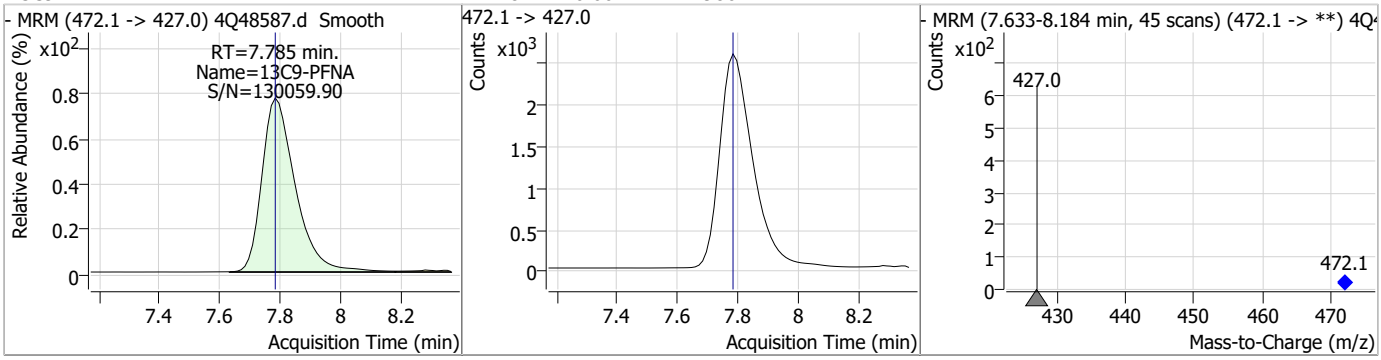
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.12	7.32	0.00	2056 (m)	398.7 -> 98.9	47.0	26.4	79.3



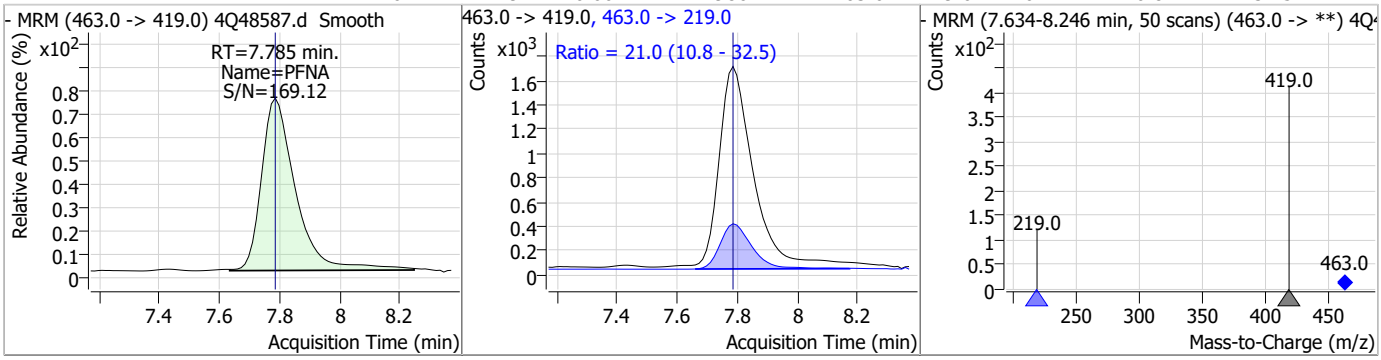
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	29.03	7.79	0.01	28535	441.0 -> 336.9	241.6	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.78	0.00	19802				

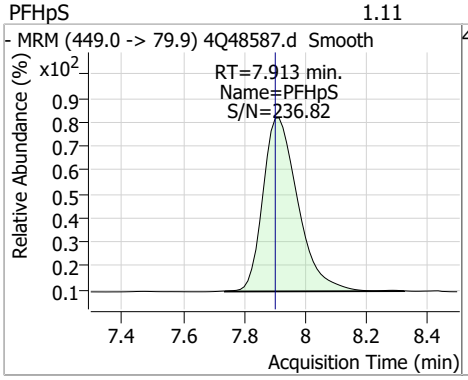


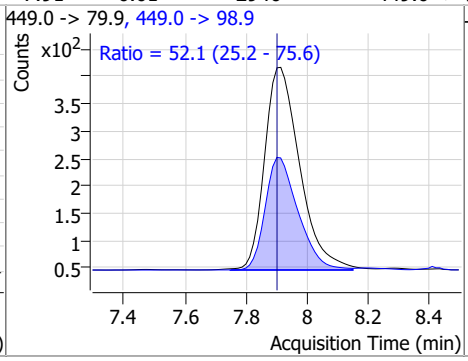
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.26	7.79	0.00	12986	463.0 -> 219.0	21.0	10.8	32.5

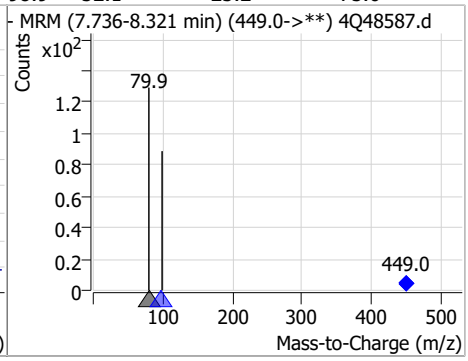


Perfluorinated Compounds by LC/MS/MS

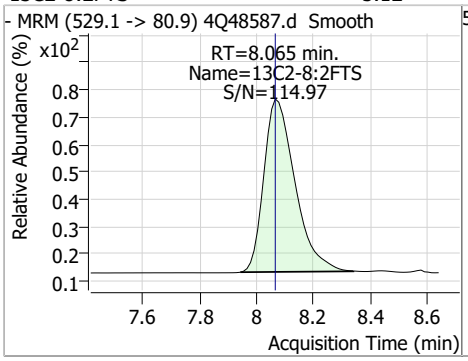
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.11	7.91	0.01	2946	449.0 -> 98.9	52.1	25.2	75.6

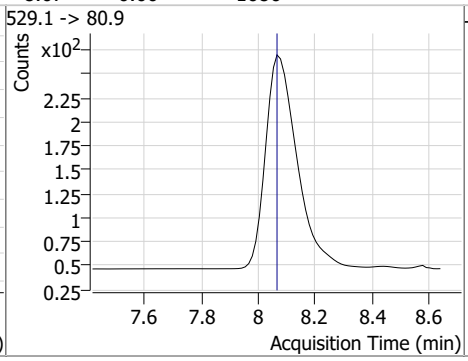


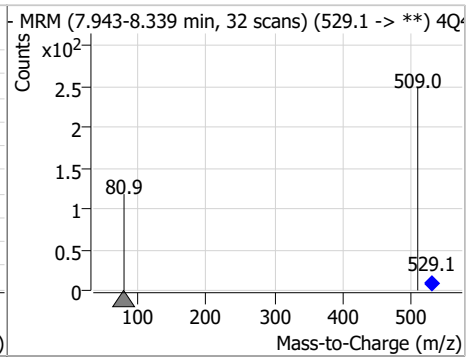




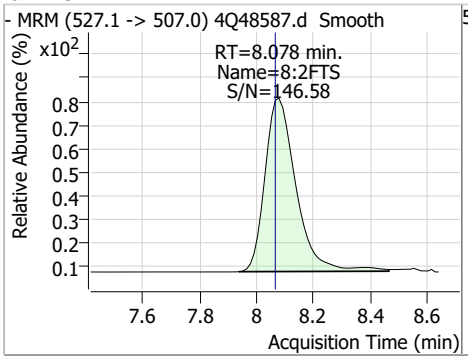
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.12	8.07	0.00	1686				

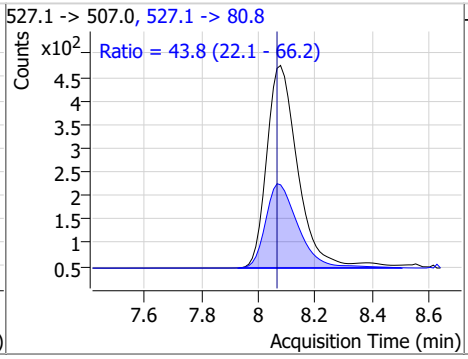


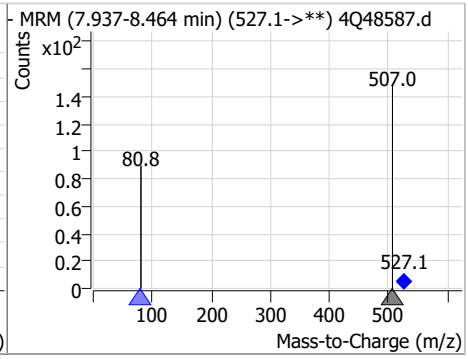




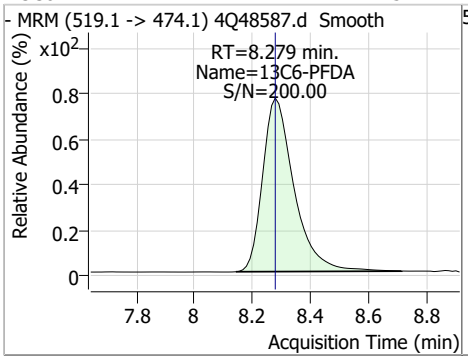
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.77	8.08	0.01	3227	527.1 -> 80.8	43.8	22.1	66.2

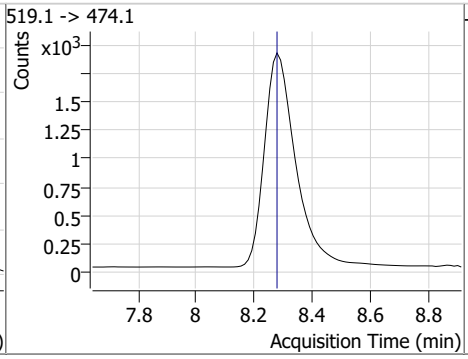


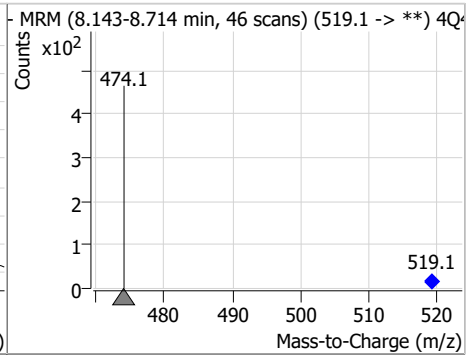




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.28	0.00	14123				

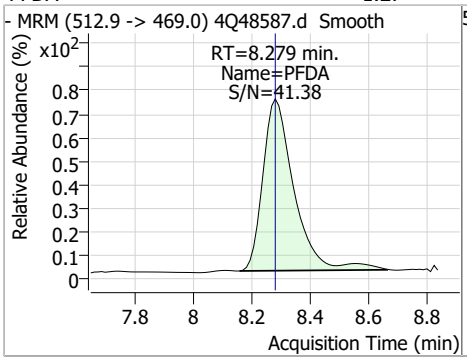


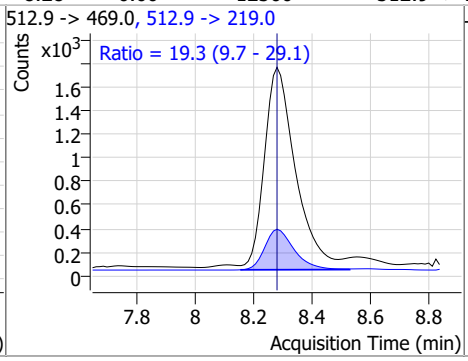


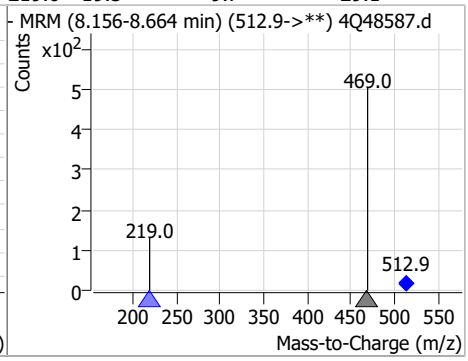


Perfluorinated Compounds by LC/MS/MS

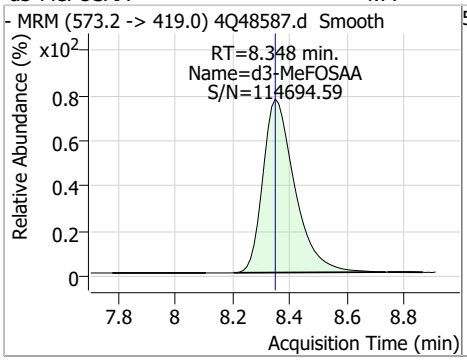
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.27	8.28	0.00	12566	512.9 -> 219.0	19.3	9.7	29.1

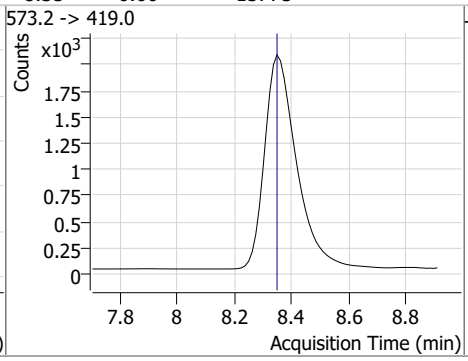


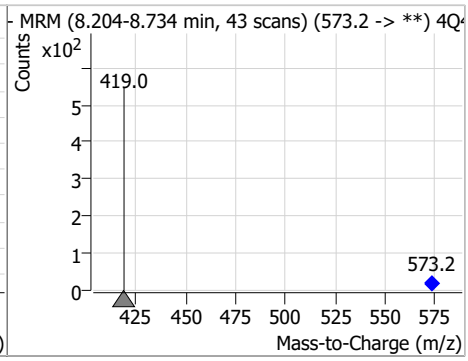




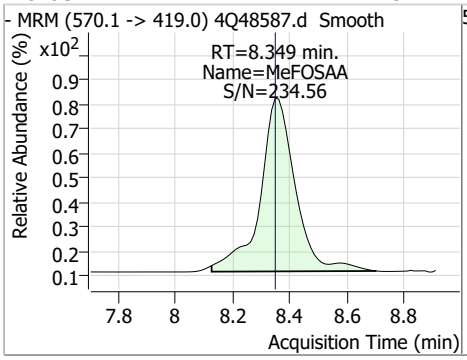
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.77	8.35	0.00	15775				

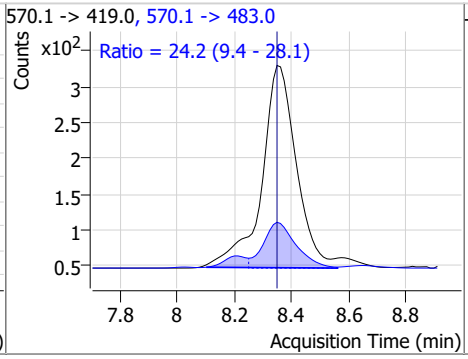


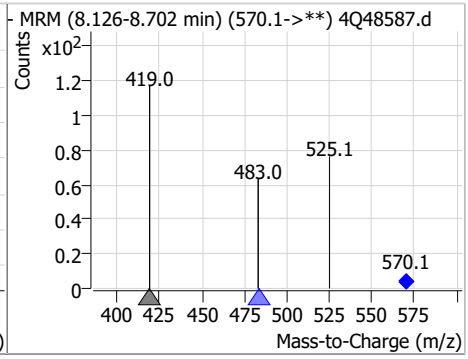




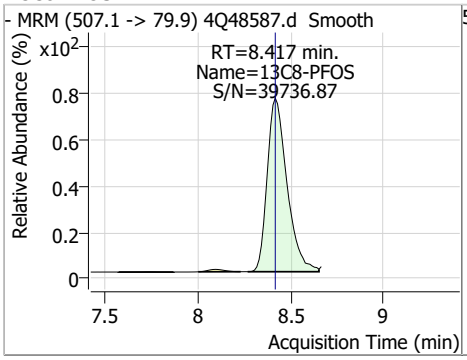
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.23	8.35	0.00	2420	570.1 -> 483.0	24.2	9.4	28.1

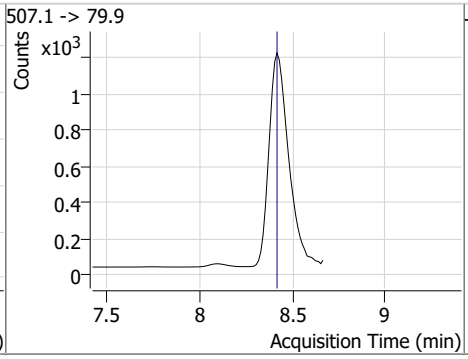


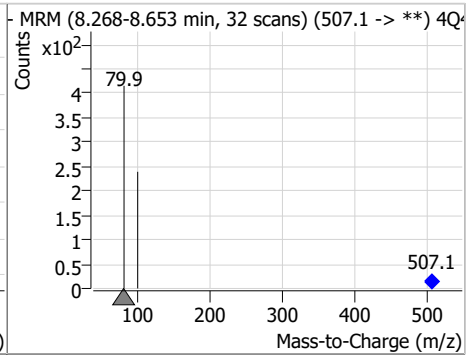




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.42	0.00	8743				

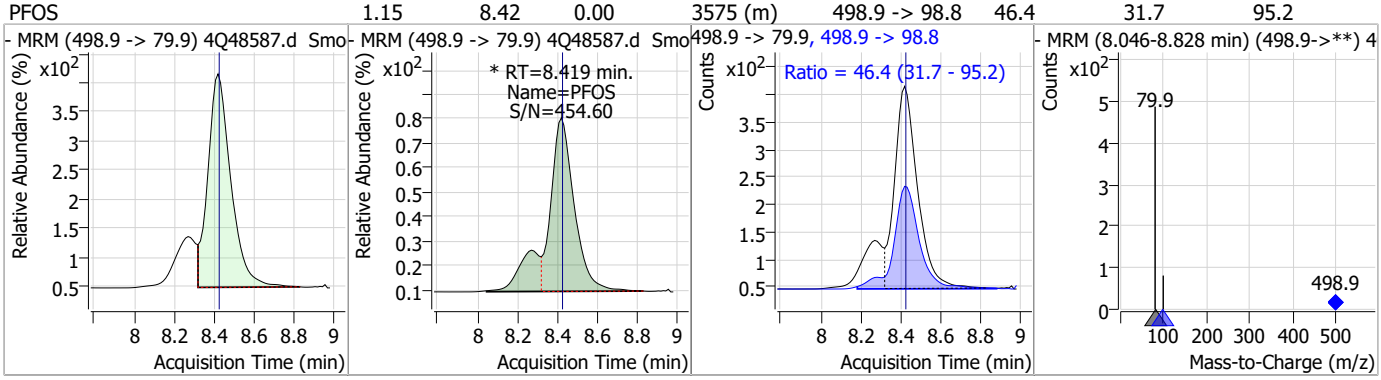




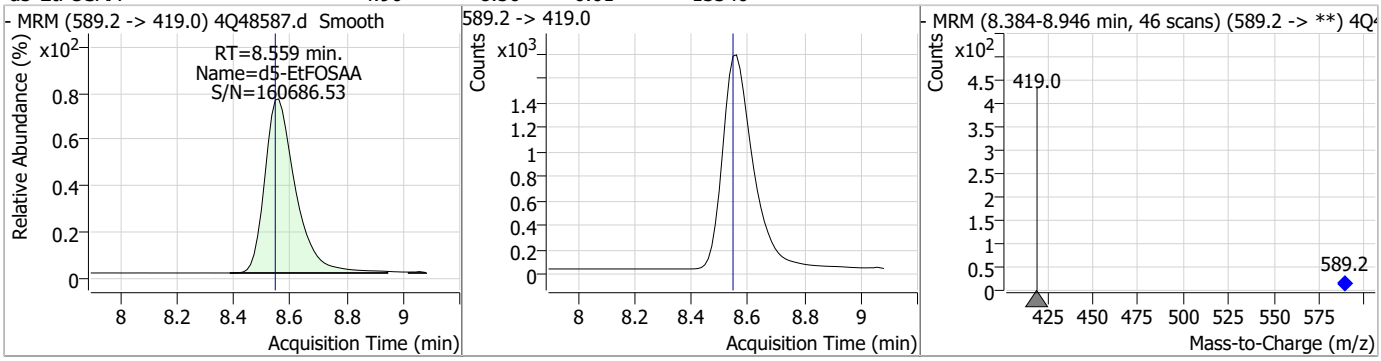


Perfluorinated Compounds by LC/MS/MS

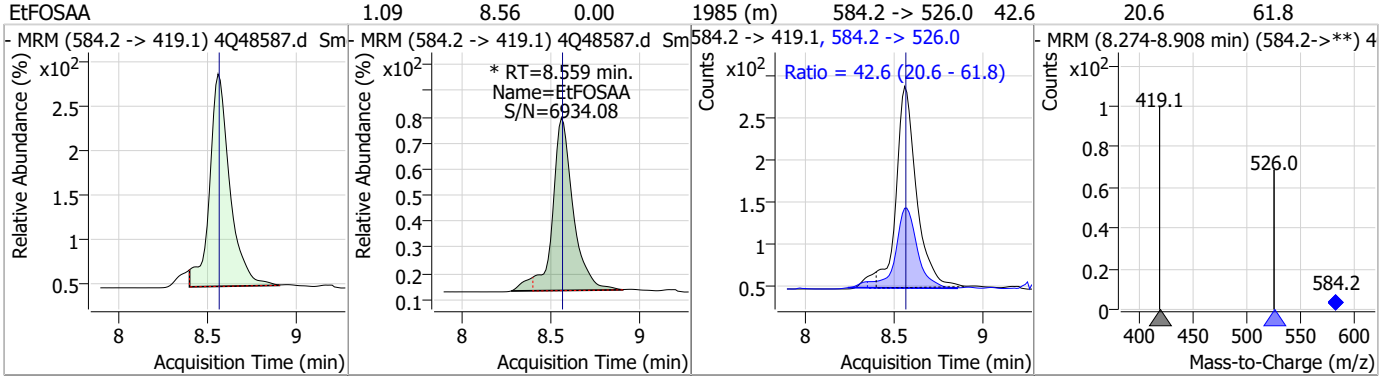
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.15	8.42	0.00	3575 (m)	498.9 -> 98.8	46.4	31.7	95.2



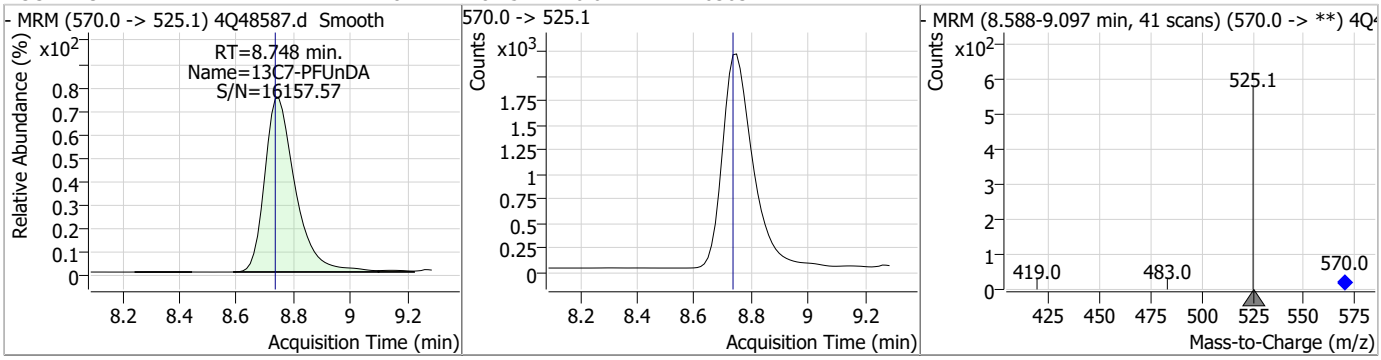
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.90	8.56	0.01	13340				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.09	8.56	0.00	1985 (m)	584.2 -> 526.0	42.6	20.6	61.8

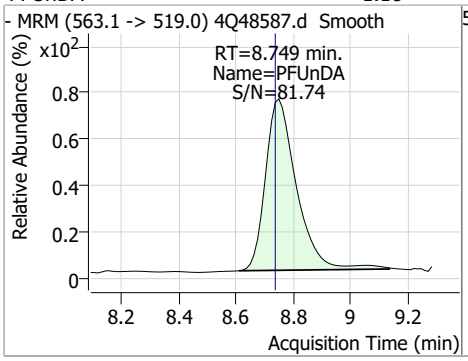


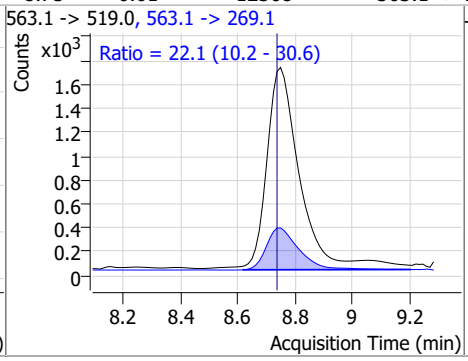
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.75	0.01	16303				

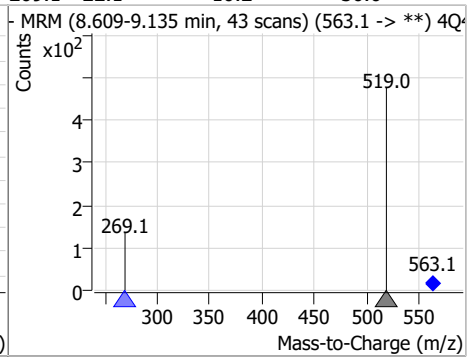


Perfluorinated Compounds by LC/MS/MS

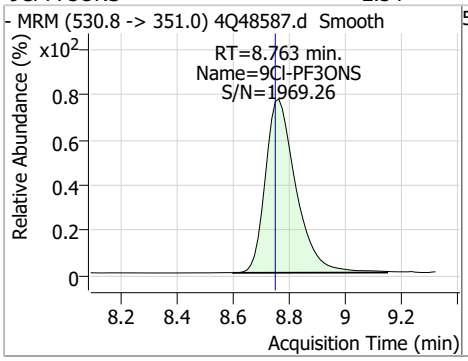
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.18	8.75	0.01	12568	563.1 -> 269.1	22.1	10.2	30.6

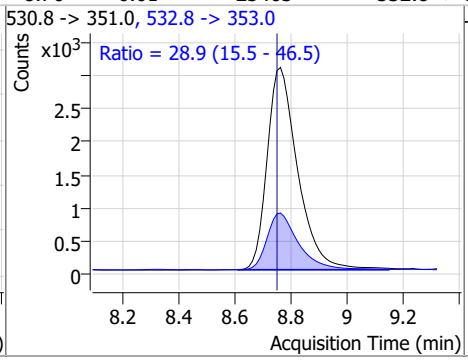


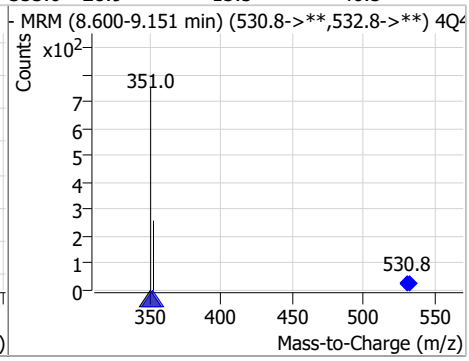




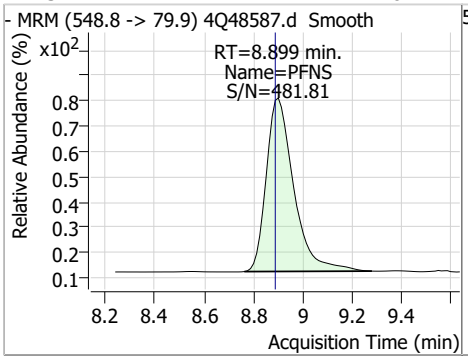
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	2.34	8.76	0.01	23463	532.8 -> 353.0	28.9	15.5	46.5

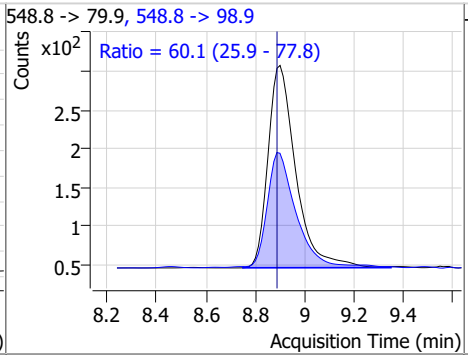


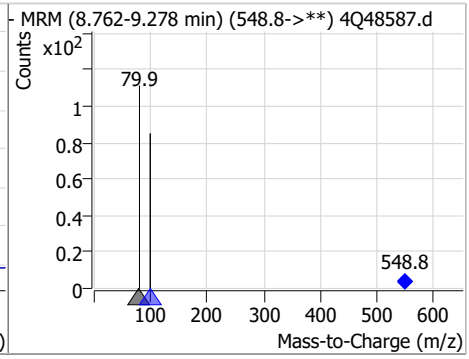




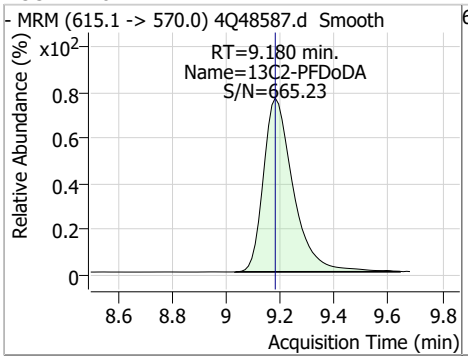
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.18	8.90	0.01	2011	548.8 -> 98.9	60.1	25.9	77.8

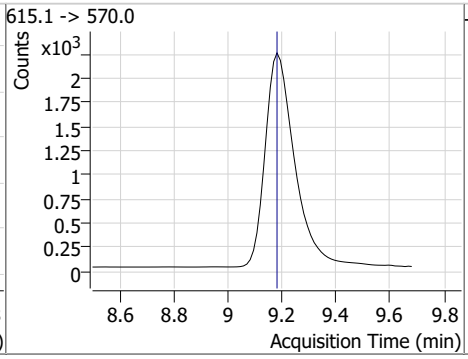


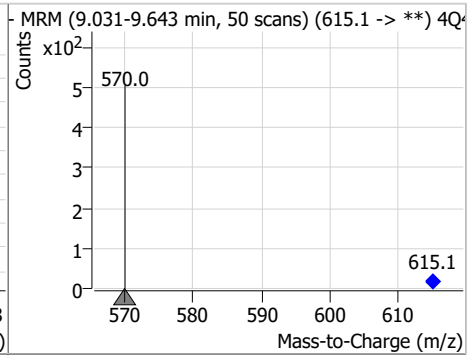




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	9.18	0.00	17010				

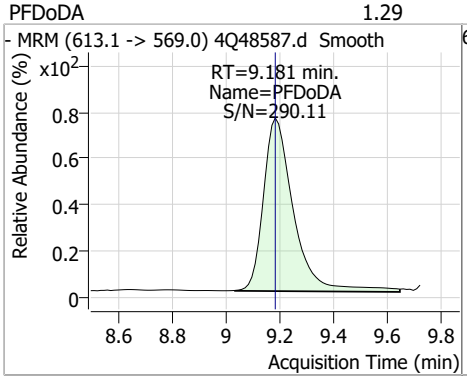


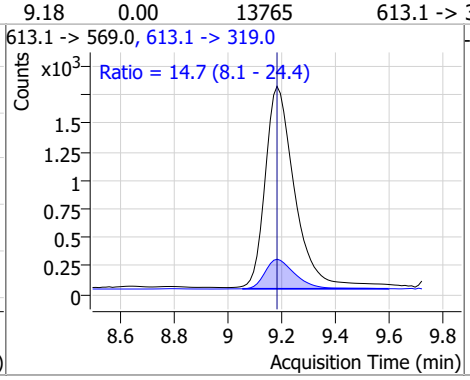


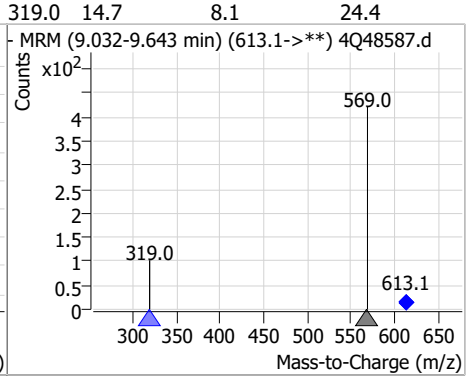


Perfluorinated Compounds by LC/MS/MS

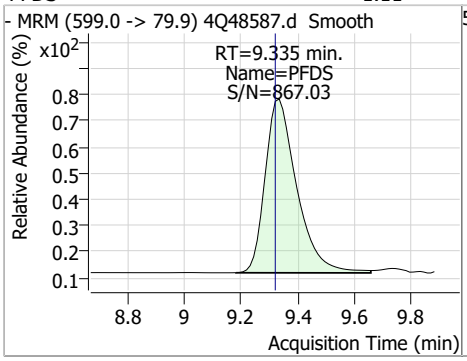
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.29	9.18	0.00	13765	613.1 -> 319.0	14.7	8.1	24.4

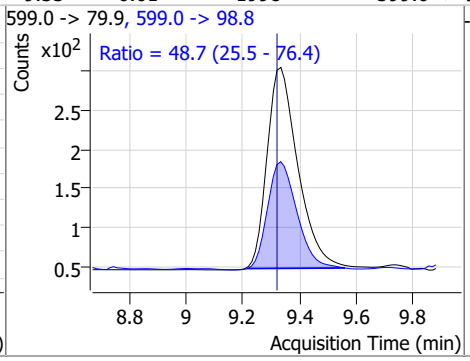


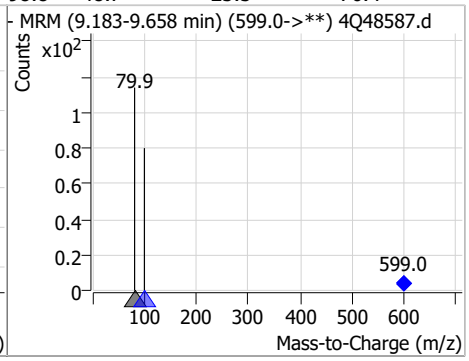




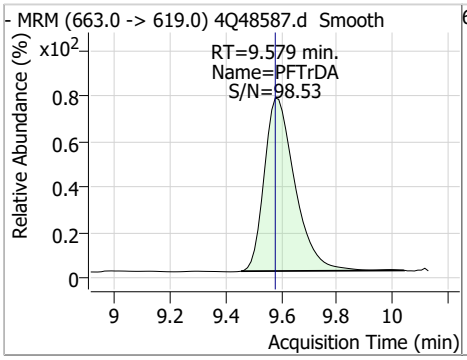
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.11	9.33	0.01	1998	599.0 -> 98.8	48.7	25.5	76.4

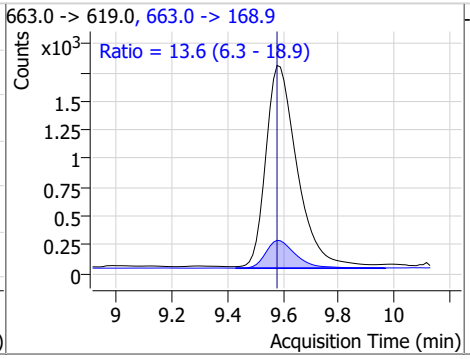


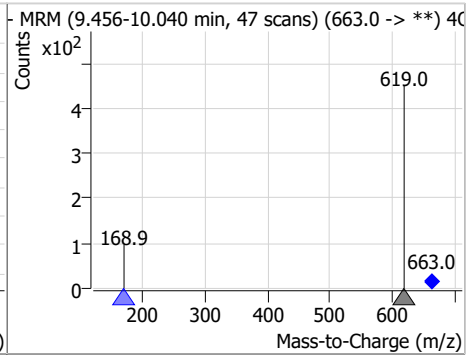




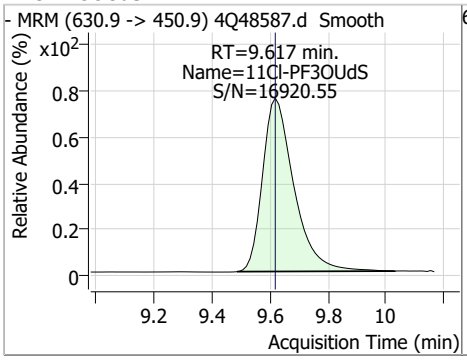
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.21	9.58	0.00	13346	663.0 -> 168.9	13.6	6.3	18.9

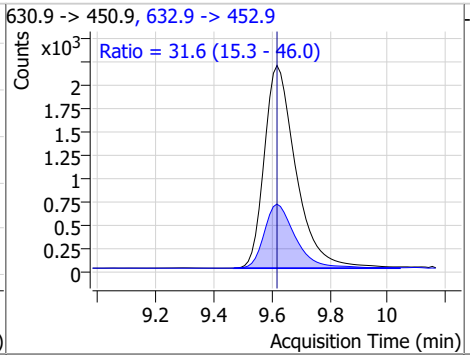


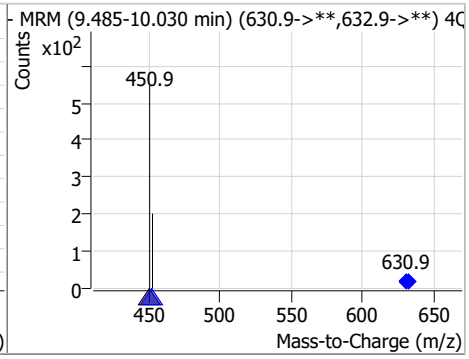




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.27	9.62	0.00	16171	632.9 -> 452.9	31.6	15.3	46.0

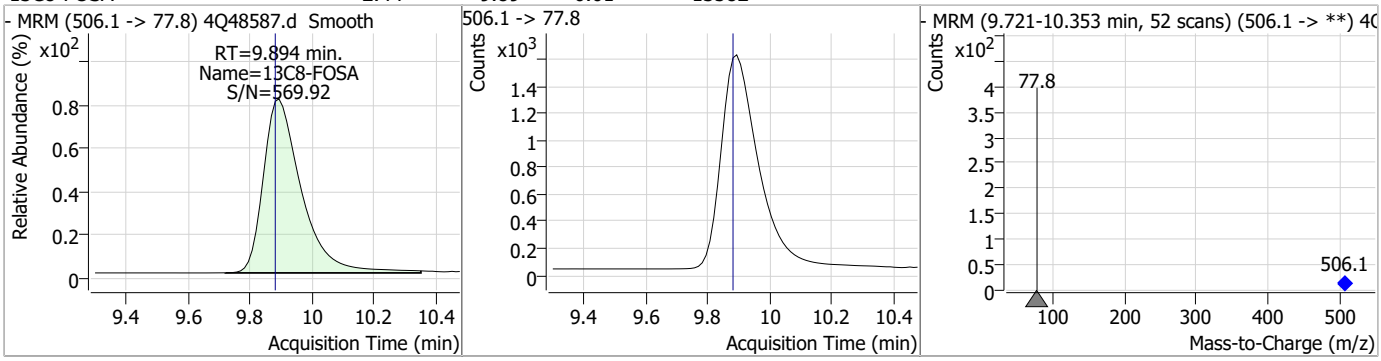




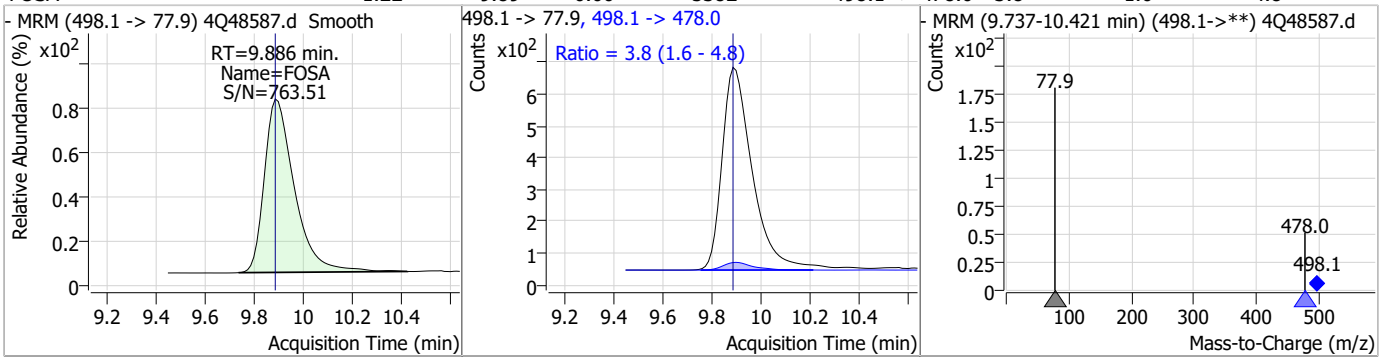


Perfluorinated Compounds by LC/MS/MS

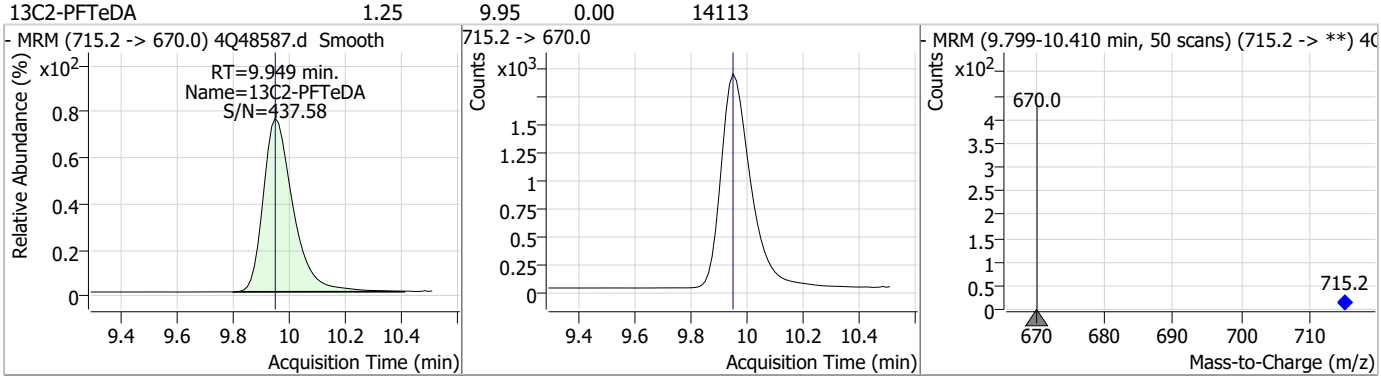
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	9.89	0.01	13582				



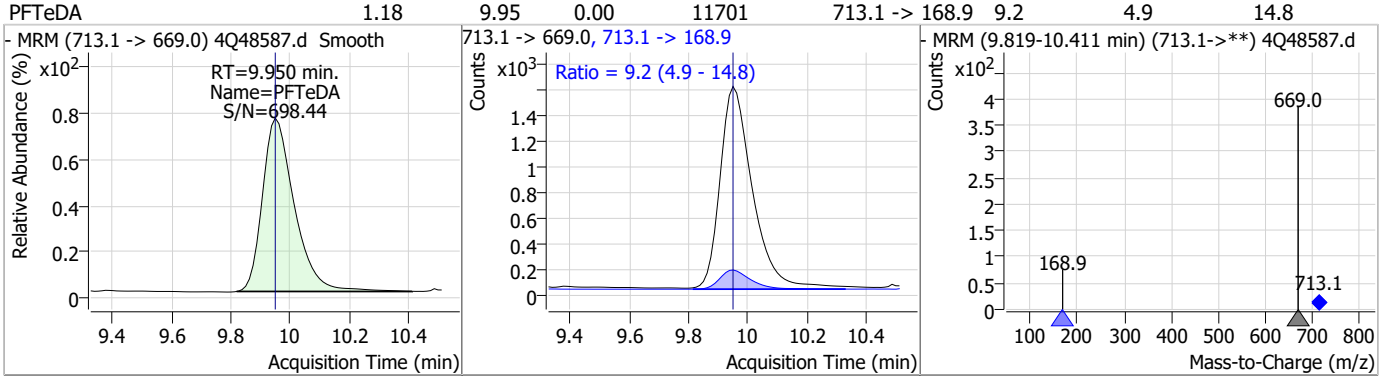
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.22	9.89	0.00	5382	498.1 -> 478.0	3.8	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.95	0.00	14113				

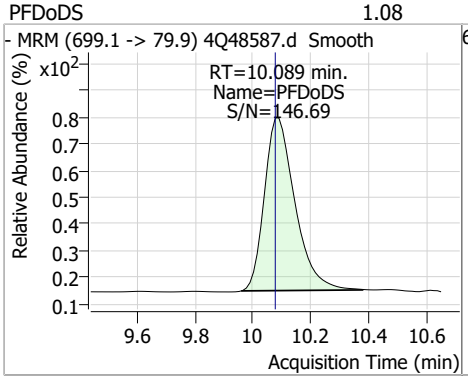


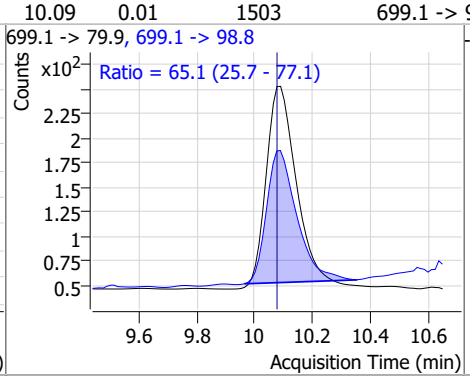
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.18	9.95	0.00	11701	713.1 -> 168.9	9.2	4.9	14.8

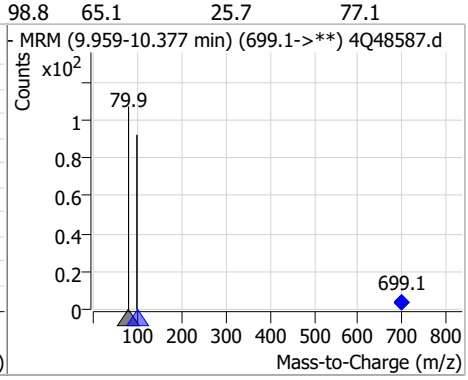


Perfluorinated Compounds by LC/MS/MS

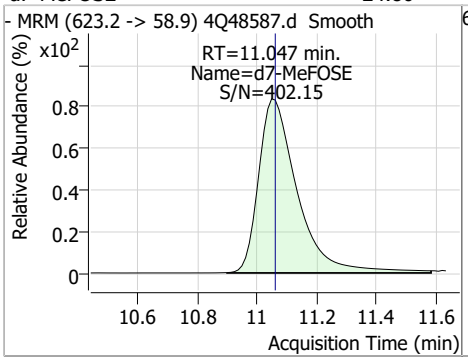
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	1.08	10.09	0.01	1503	699.1 -> 98.8	65.1	25.7	77.1

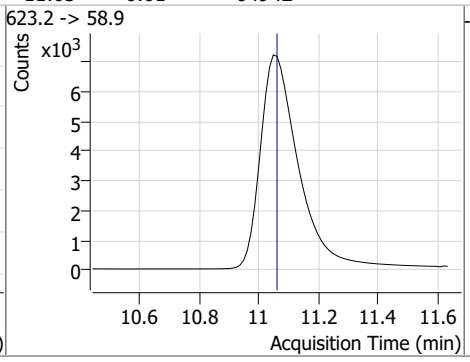


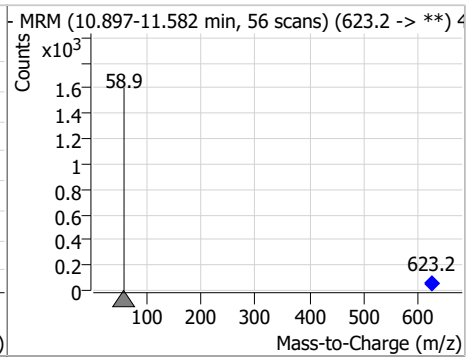




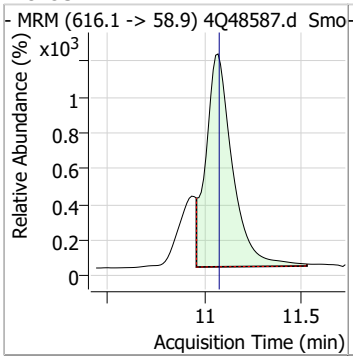
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.80	11.05	-0.01	64942				

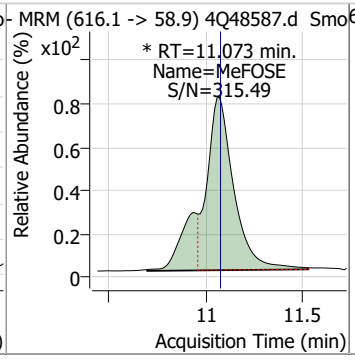


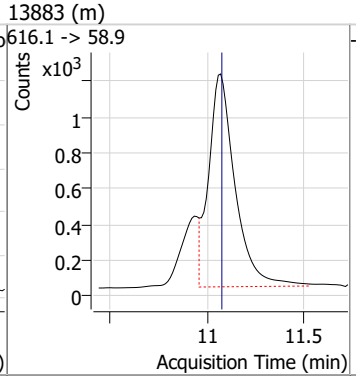


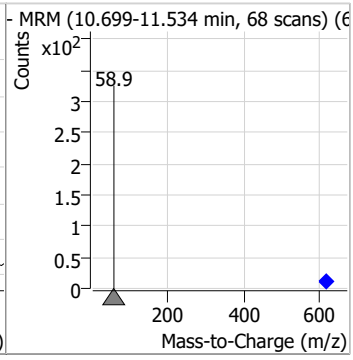


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	5.98	11.07	0.00	13883 (m)				

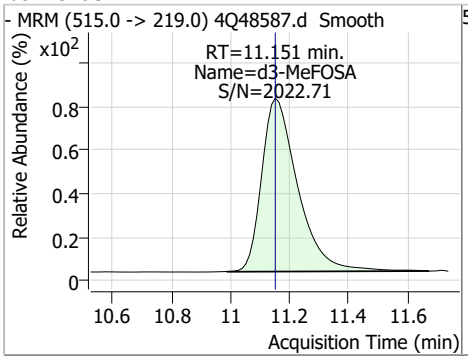


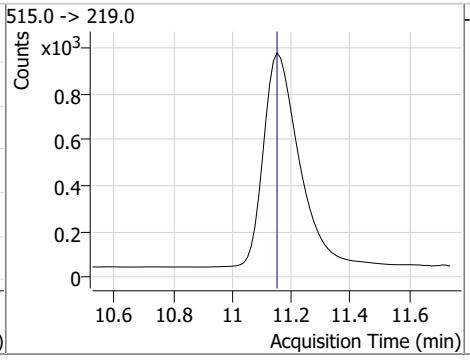


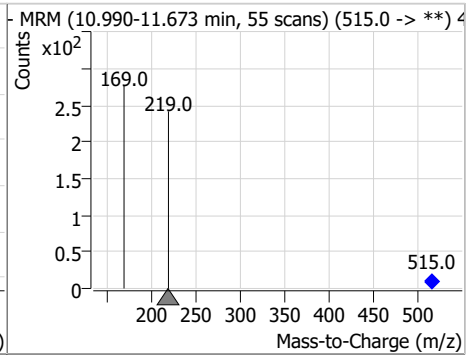




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.41	11.15	0.00	7877				

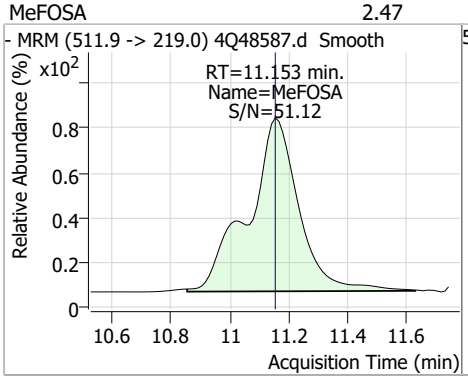


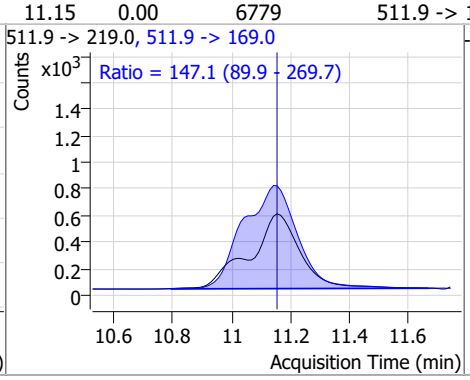


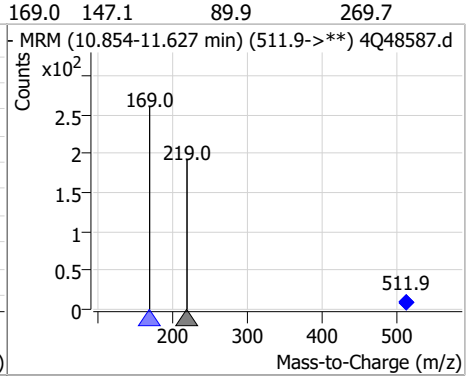


Perfluorinated Compounds by LC/MS/MS

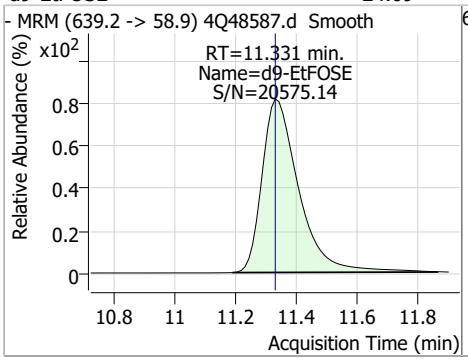
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.47	11.15	0.00	6779	511.9 -> 169.0	147.1	89.9	269.7

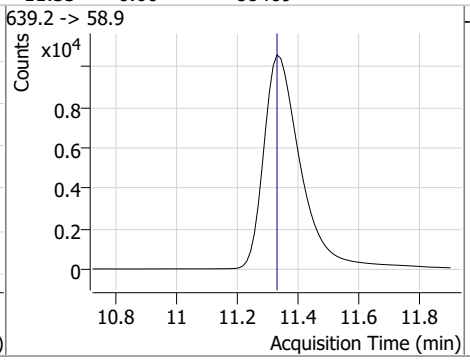


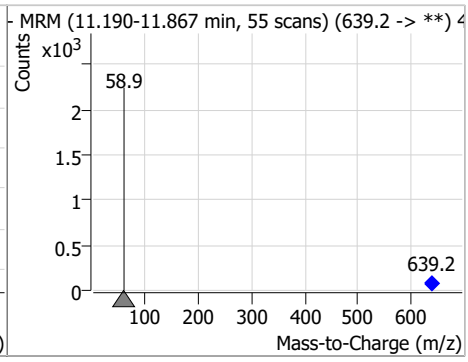




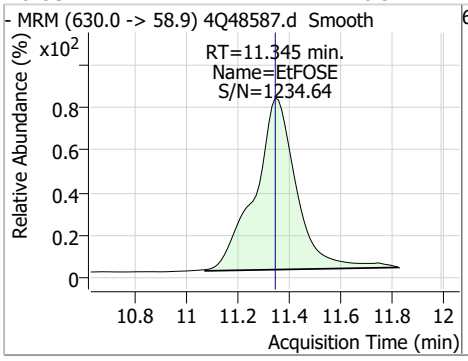
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.09	11.33	0.00	88469				

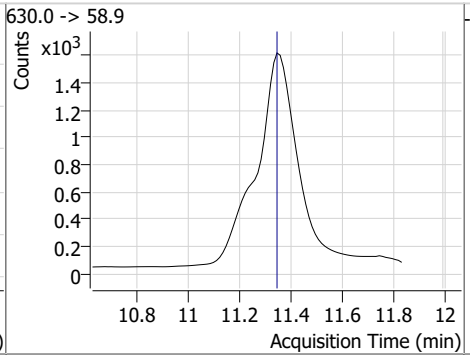


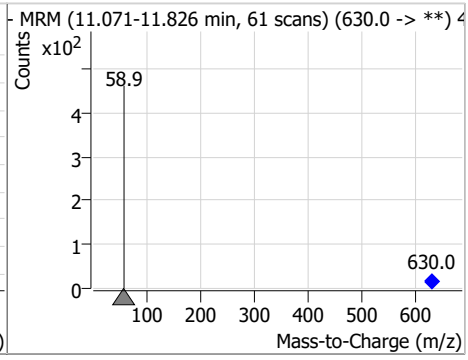




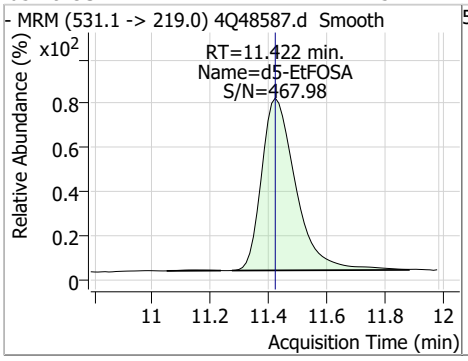
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	6.34	11.34	0.00	17565				

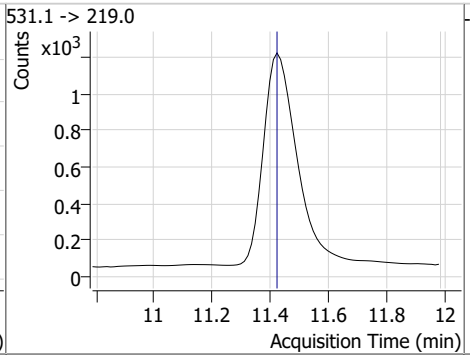


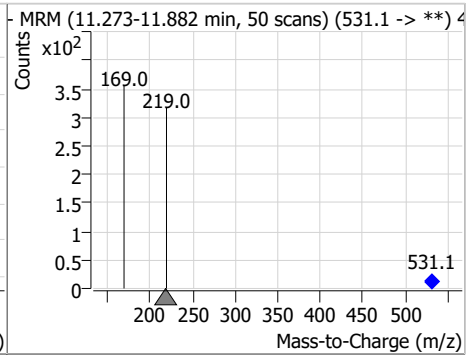




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.51	11.42	0.00	9468				

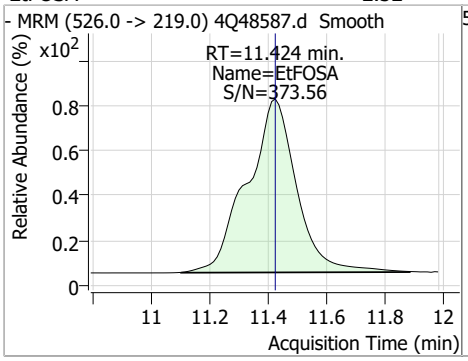


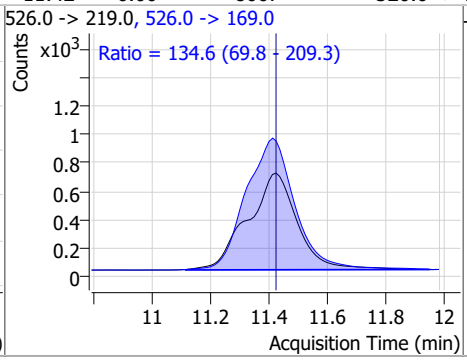


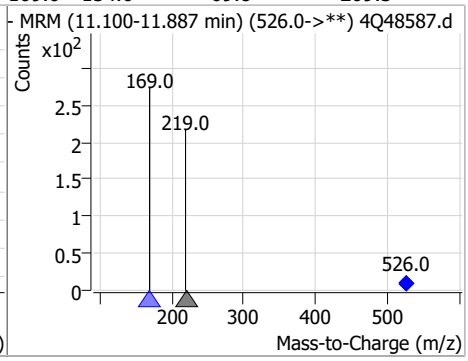


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.32	11.42	0.00	8067	526.0 -> 169.0	134.6	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48587.D
Injection Time: 08/07/23 16:59
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSE	24448-09-7		11.07	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48588.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 5:14:04 PM
Sample Name : icc711-4
Vial : P1-A5
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	98007	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	61172	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	36323	2.50	µg/L	0.000
M4-PFHpA	6.555	367.1 -> 322.0	25759	2.50	µg/L	0.000
M8-PFOA	7.226	421.1 -> 376.0	42435	2.50	µg/L	0.000
M9-PFNA	7.785	472.1 -> 427.0	19286	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14349	1.25	µg/L	0.000
M7-PFUnDA	8.736	570.0 -> 525.1	15525	1.25	µg/L	0.000
M2-PFDoDA	9.180	615.1 -> 570.0	16889	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	13748	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	12909	2.50	µg/L	0.000
M3-PFBS	5.489	302.1 -> 79.9	9621	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6165	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8157	2.50	µg/L	0.000
M2-4:2FTS	5.296	329.1 -> 80.9	607	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	1033	5.00	µg/L	0.000
M2-8:2FTS	8.065	529.1 -> 80.9	1582	5.00	µg/L	0.000
M3-MeFOSAA	8.348	573.2 -> 419.0	15543	5.00	µg/L	0.000
M3-HFPO-DA	5.977	286.9 -> 168.9	33060	10.00	µg/L	0.000
M5-EtFOSAA	8.546	589.2 -> 419.0	12288	5.00	µg/L	0.000
M7-MeFOSE	11.059	623.2 -> 58.9	61626	25.00	µg/L	0.000
M9-EtFOSE	11.331	639.2 -> 58.9	88855	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	9050	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	7667	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	8361	2.50	µg/L	0.000
13C3-PFBA	2.903	216.0 -> 172.0	57062	5.00	µg/L	0.000
18O2-PFHxS	7.316	403.0 -> 83.9	4529	2.50	µg/L	0.000
13C4-PFOA	7.226	417.1 -> 372.0	51944	2.50	µg/L	0.000
13C2-PFDA	8.279	515.1 -> 470.1	15426	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	20136	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	33840	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	607	5.36	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C2-6:2FTS	6.998	429.1 -> 80.9	1033	4.78	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C2-8:2FTS	8.065	529.1 -> 80.9	1582	4.82	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-PFDoDA	9.180	615.1 -> 570.0	16889	1.28	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C2-PFTeDA	9.949	715.2 -> 670.0	13748	1.30	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C3-PFBS	5.489	302.1 -> 79.9	9621	2.50	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFHxS	7.317	402.1 -> 79.9	6165	2.46	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 = 98.4%		
13C4-PFBA	2.911	216.8 -> 171.9	98007	10.05 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFHpA	6.555	367.1 -> 322.0	25759	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFHxA	5.610	318.0 -> 273.0	36323	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	4.412	268.3 -> 223.0	61172	5.17 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C6-PFDA	8.279	519.1 -> 474.1	14349	1.34 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C7-PFUnDA	8.736	570.0 -> 525.1	15525	1.29 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-FOSA	9.882	506.1 -> 77.8	12909	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C8-PFOA	7.226	421.1 -> 376.0	42435	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C8-PFOS	8.417	507.1 -> 79.9	8157	2.43 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C9-PFNA	7.785	472.1 -> 427.0	19286	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15543	5.01 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-HFPO-DA	5.977	286.9 -> 168.9	33060	10.25 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d3-MeFOSA	11.151	515.0 -> 219.0	7667	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%		
d5-EtFOSAA	8.546	589.2 -> 419.0	12288	4.82 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
d7-MeFOSE	11.059	623.2 -> 58.9	61626	25.10 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d9-EtFOSE	11.331	639.2 -> 58.9	88855	25.80 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
d5-EtFOSA	11.422	531.1 -> 219.0	9050	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%		
Target Compounds						QValue
4:2FTS	5.297	327.1 -> 307.0	7480	9.14 µg/L		100
		327.1 -> 80.9	3067			
6:2FTS	6.999	427.1 -> 407.0	9080	10.36 µg/L		100
		427.1 -> 80.9	3206			
8:2FTS	8.066	527.1 -> 507.0	6667	10.50 µg/L		100
		527.1 -> 80.8	2943			
EtFOSAA	8.559	584.2 -> 419.1	4628	2.76 µg/L	m	93
		584.2 -> 526.0	1703			
FOSA	9.886	498.1 -> 77.9	11067	2.65 µg/L		100
		498.1 -> 478.0	354			
MeFOSAA	8.349	570.1 -> 419.0	4901	2.52 µg/L	m	93
		570.1 -> 483.0	1060			
PFBA	2.907	212.8 -> 168.9	23334	10.34 µg/L		100
PFBS	5.490	298.7 -> 79.9	5705	2.43 µg/L		100
		298.7 -> 98.8	2110			
PFDA	8.279	512.9 -> 469.0	25643	2.54 µg/L		100
		512.9 -> 219.0	4970			
PFDoDA	9.181	613.1 -> 569.0	27107	2.57 µg/L		100
		613.1 -> 319.0	4415			
PFDS	9.321	599.0 -> 79.9	4320	2.56 µg/L		100

Perfluorinated Compounds by LC/MS/MS

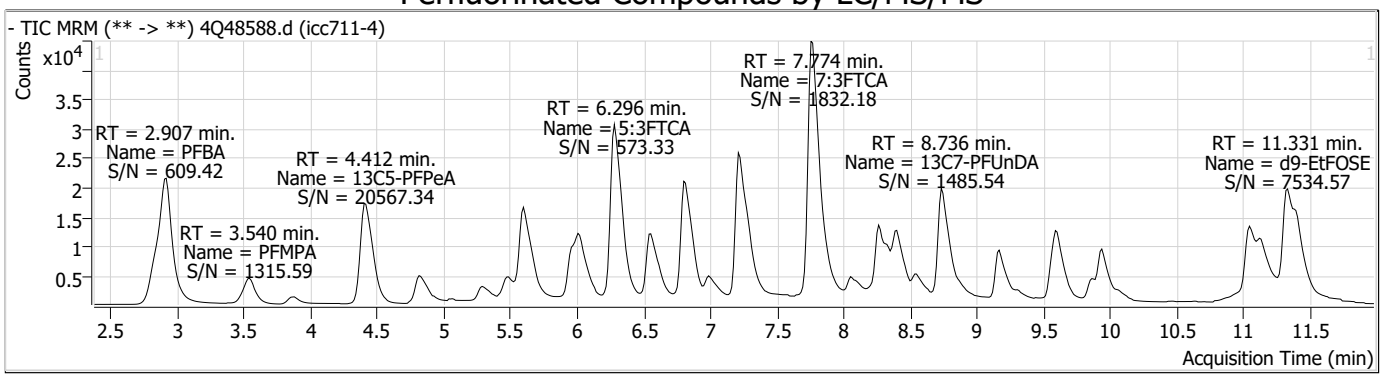
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2201				
PFHpA	6.556	363.1 -> 319.0	30136	2.59	µg/L		100
		363.1 -> 169.0	5540				
PFHpS	7.900	449.0 -> 79.9	6177	2.51	µg/L		100
		449.0 -> 98.9	3113				
PFHxA	5.613	313.0 -> 269.0	26158	2.50	µg/L		100
		313.0 -> 118.9	861				
PFHxS	7.318	398.7 -> 79.9	4284	2.42	µg/L	m	95
		398.7 -> 98.9	2120				
PFNA	7.785	463.0 -> 419.0	25423	2.53	µg/L		100
		463.0 -> 219.0	5505				
PFNS	8.887	548.8 -> 79.9	4218	2.65	µg/L		100
		548.8 -> 98.9	2188				
PFOA	7.227	413.0 -> 369.0	43333	2.58	µg/L		100
		413.0 -> 169.0	8351				
PFOS	8.419	498.9 -> 79.9	7409	2.55	µg/L	m	81
		498.9 -> 98.8	3617				
PFPeA	4.414	263.0 -> 219.0	53695	5.05	µg/L		100
PFPeS	6.582	349.1 -> 79.9	4198	2.52	µg/L		100
		349.1 -> 98.9	1870				
PFTeDA	9.950	713.1 -> 669.0	23997	2.49	µg/L		100
		713.1 -> 168.9	2368				
PFTrDA	9.579	663.0 -> 619.0	29105	2.67	µg/L		100
		663.0 -> 168.9	3661				
PFUnDA	8.736	563.1 -> 519.0	26609	2.63	µg/L		100
		563.1 -> 269.1	5430				
11Cl-PF3OUdS	9.617	630.9 -> 450.9	34454	4.97	µg/L		100
		632.9 -> 452.9	10555				
9Cl-PF3ONS	8.751	530.8 -> 351.0	49612	5.09	µg/L		100
		532.8 -> 353.0	15383				
ADONA	6.818	376.9 -> 250.9	95762	4.99	µg/L		100
		376.9 -> 84.8	24792				
HFPO-DA	5.978	284.9 -> 168.9	13569	4.99	µg/L		100
		284.9 -> 184.9	1774				
3:3FTCA	3.861	241.0 -> 177.0	7029	12.34	µg/L		100
		241.0 -> 117.0	691				
5:3FTCA	6.296	341.0 -> 237.1	110816	64.60	µg/L		100
		341.0 -> 217.0	78827				
7:3FTCA	7.774	441.0 -> 316.9	62333	65.94	µg/L		100
		441.0 -> 336.9	143448				
EtFOSA	11.424	526.0 -> 219.0	16928	5.09	µg/L		100
		526.0 -> 169.0	23615				
EtFOSE	11.345	630.0 -> 58.9	35363	12.72	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	14176	5.32	µg/L	m	74
		511.9 -> 169.0	20283				
MeFOSE	11.073	616.1 -> 58.9	29734	13.49	µg/L		100
PFDoDS	10.077	699.1 -> 79.9	3447	2.66	µg/L		100
		699.1 -> 98.8	1772				
NFDHA	5.491	295.0 -> 201.0	3695	5.47	µg/L		100
		295.0 -> 84.9	921				
PFMBA	4.828	279.0 -> 85.1	30696	5.15	µg/L		100
PFMPA	3.540	229.0 -> 84.9	29835	5.13	µg/L		100
PFEESA	6.034	314.8 -> 134.9	39277	4.65	µg/L		100
		314.8 -> 82.9	1358				

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

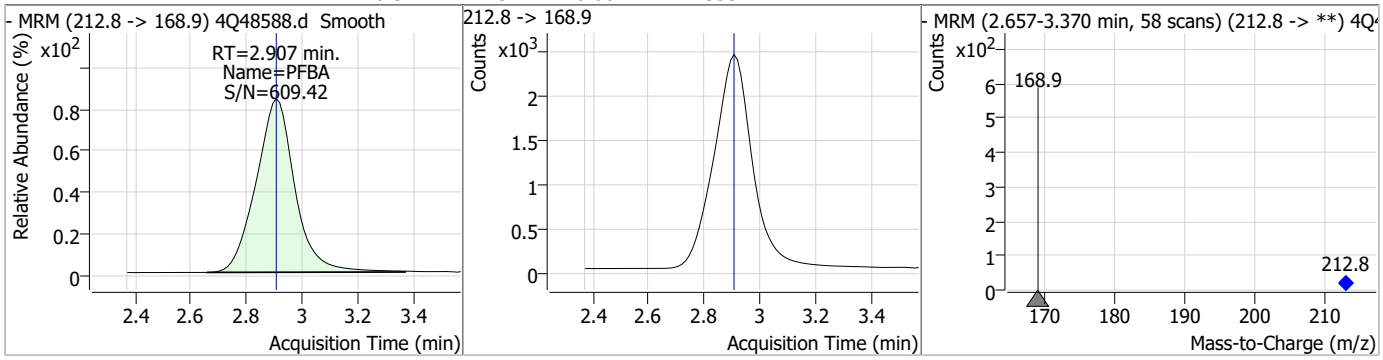
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

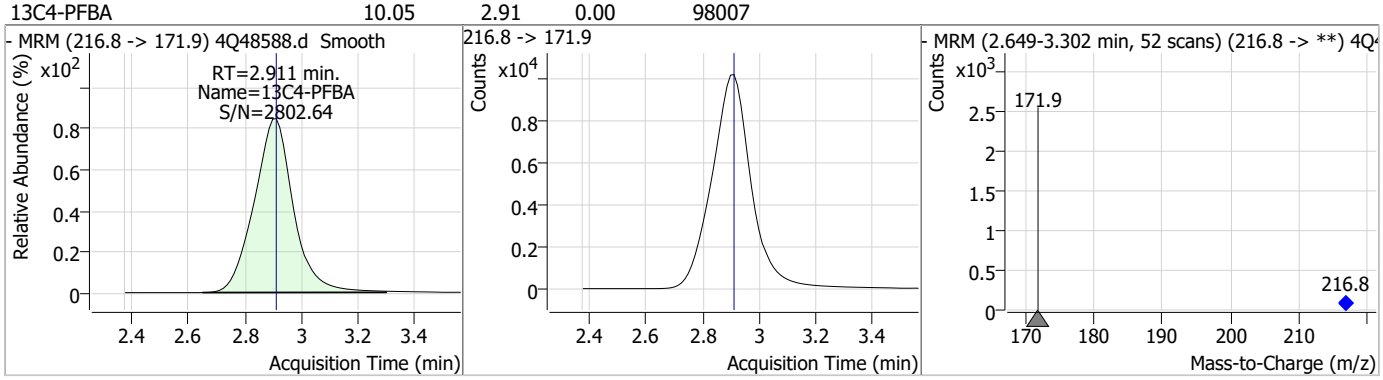
Perfluorinated Compounds by LC/MS/MS



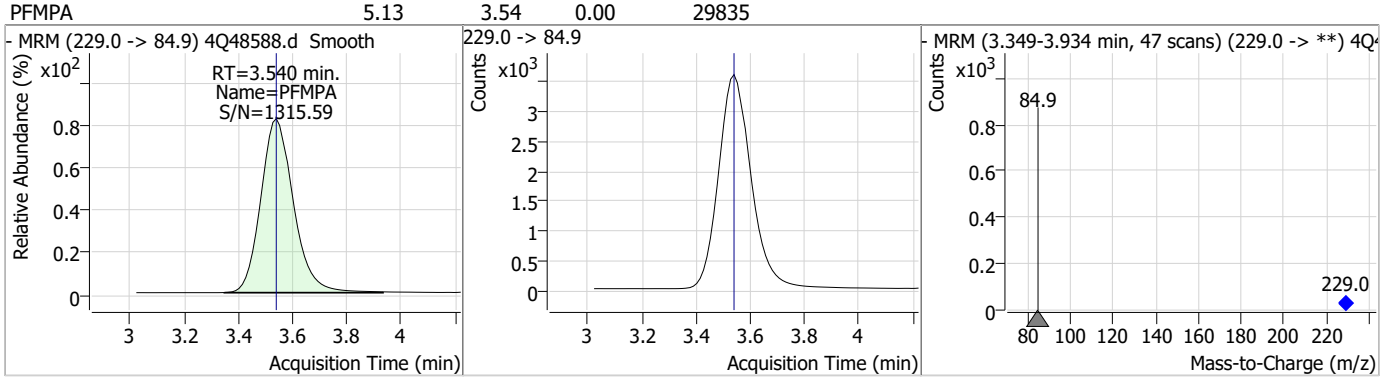
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.34	2.91	0.00	23334				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.05	2.91	0.00	98007				

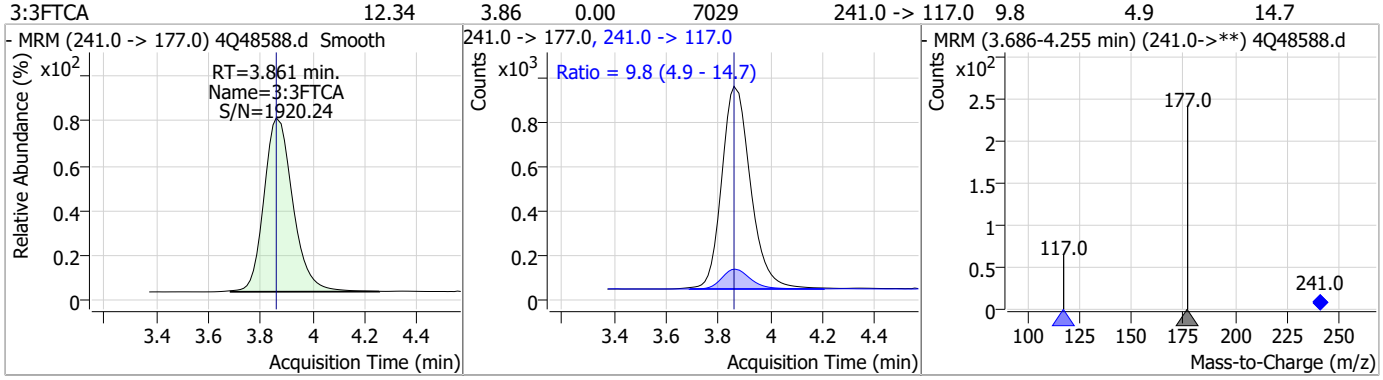


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.13	3.54	0.00	29835				

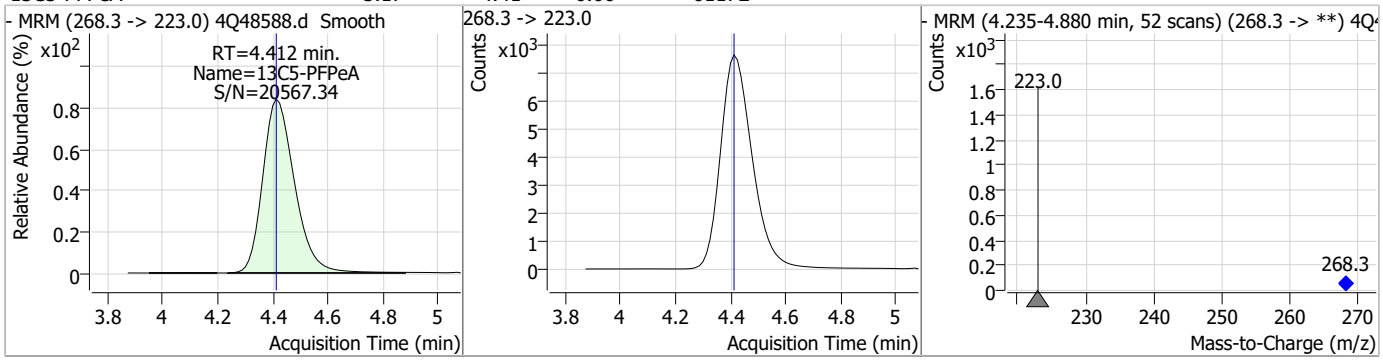


Perfluorinated Compounds by LC/MS/MS

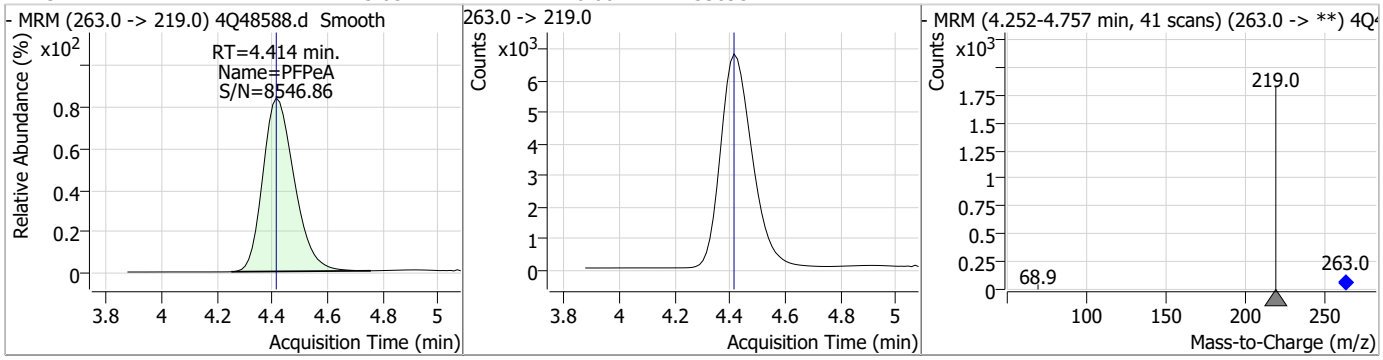
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.34	3.86	0.00	7029	241.0 -> 117.0	9.8	4.9	14.7



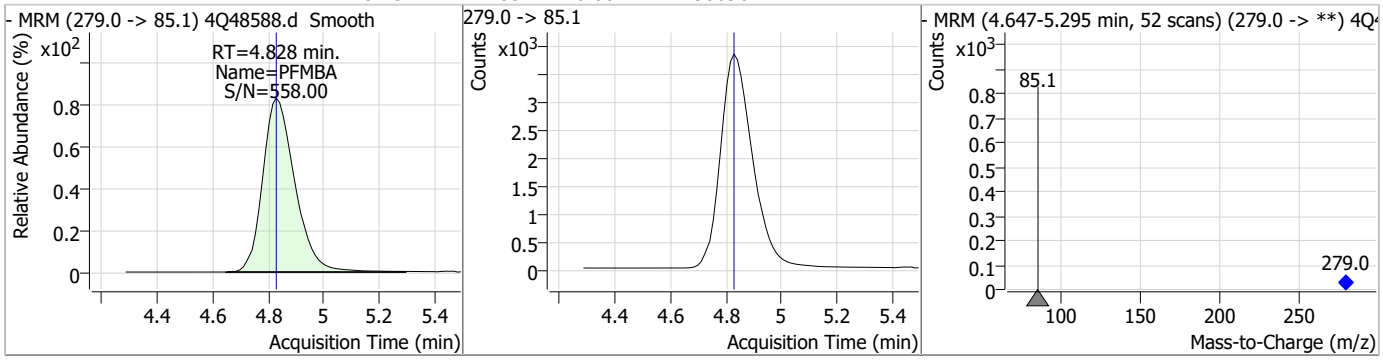
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.17	4.41	0.00	61172				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.05	4.41	0.00	53695				

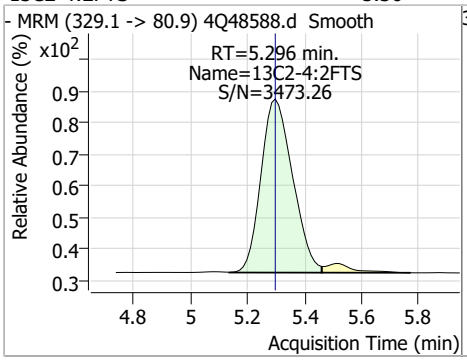


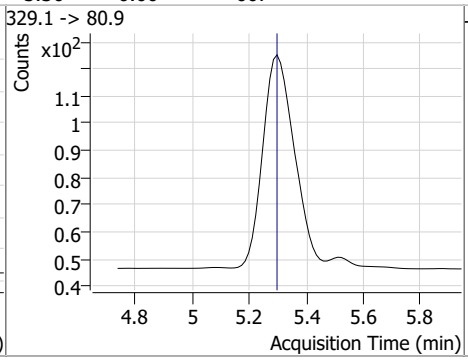
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.15	4.83	0.00	30696				

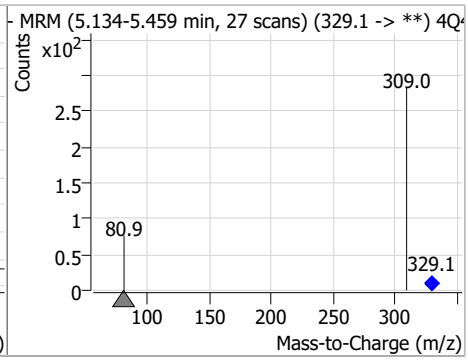


Perfluorinated Compounds by LC/MS/MS

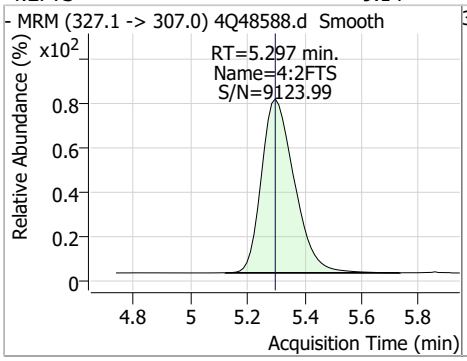
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.36	5.30	0.00	607				

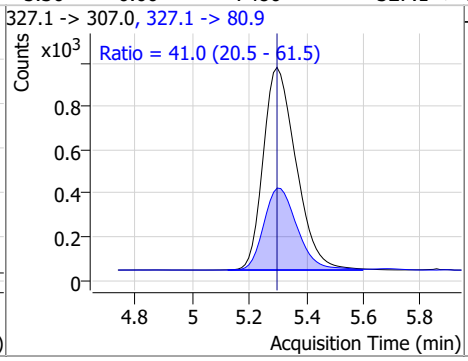


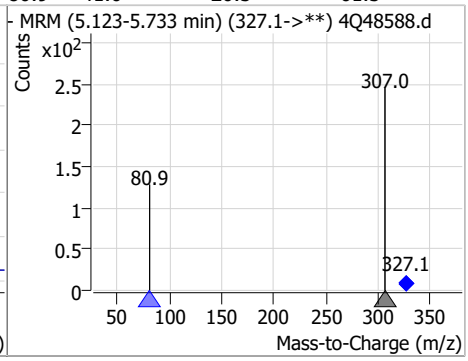




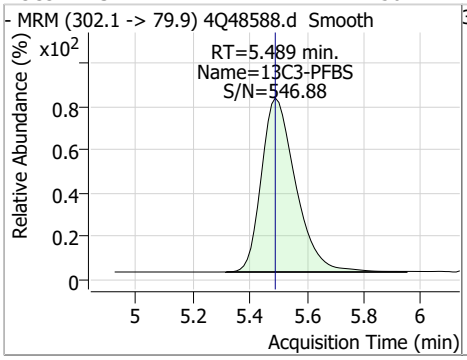
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.14	5.30	0.00	7480	327.1 -> 80.9	41.0	20.5	61.5

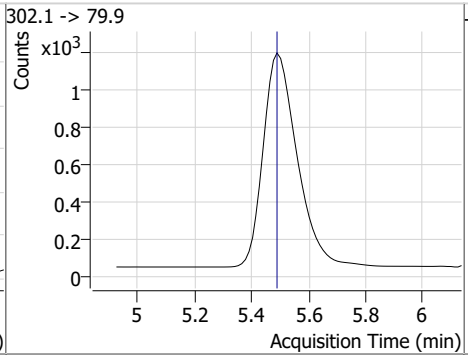


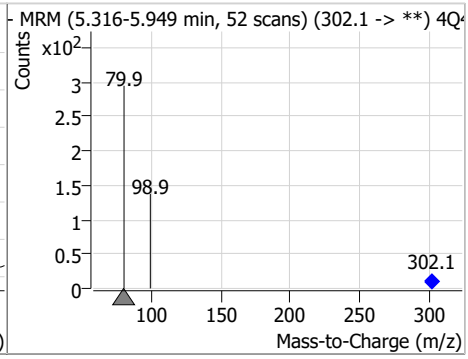




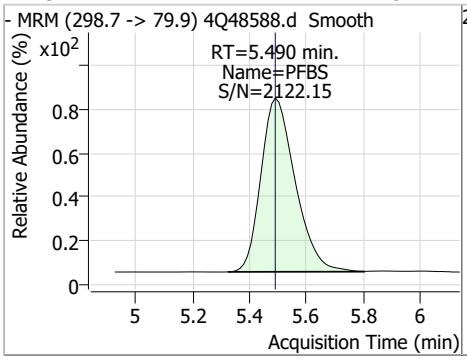
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.50	5.49	0.00	9621				

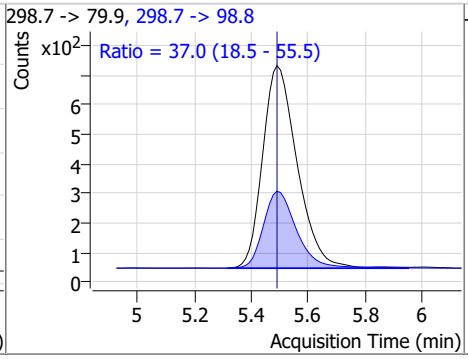


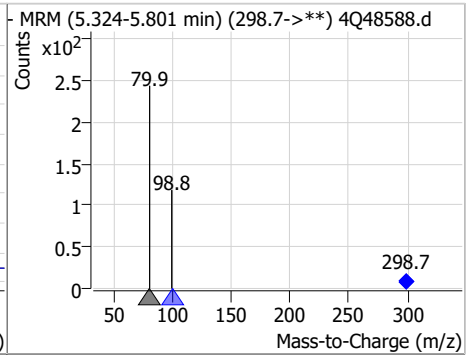




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.43	5.49	0.00	5705	298.7 -> 98.8	37.0	18.5	55.5

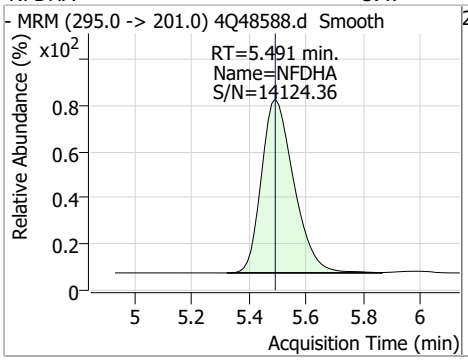


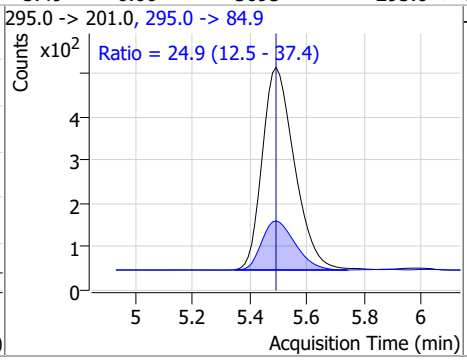


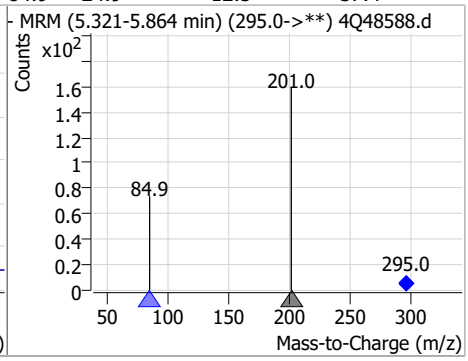


Perfluorinated Compounds by LC/MS/MS

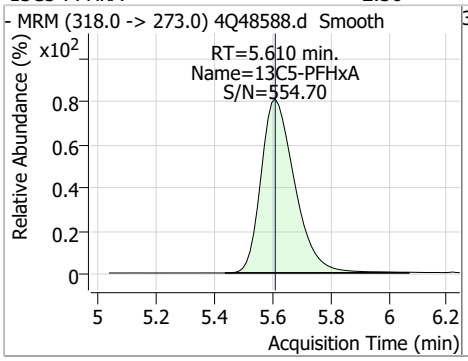
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.47	5.49	0.00	3695	295.0 -> 84.9	24.9	12.5	37.4

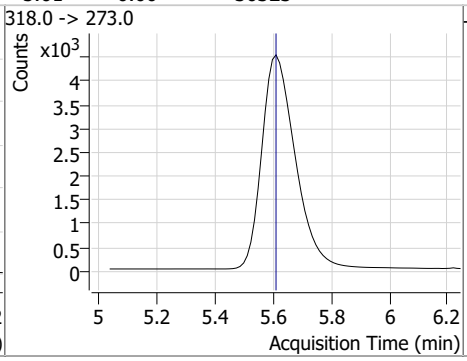


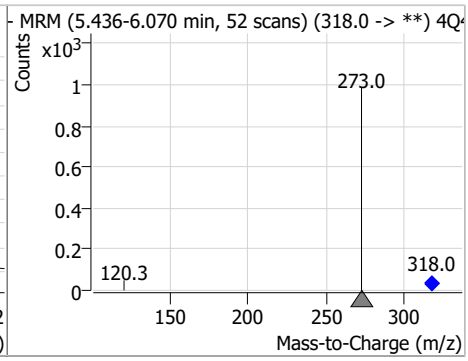




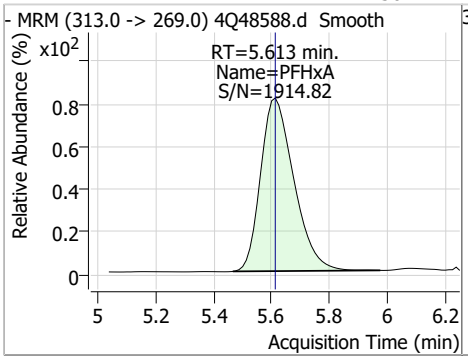
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.61	0.00	36323				

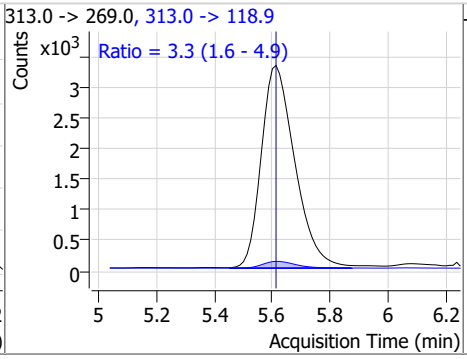


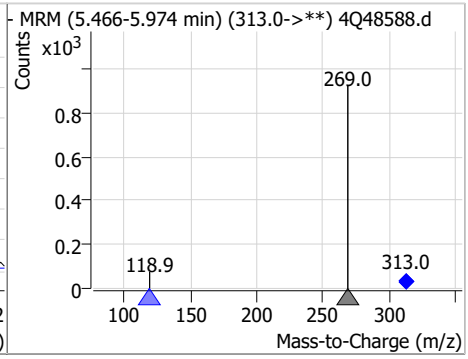




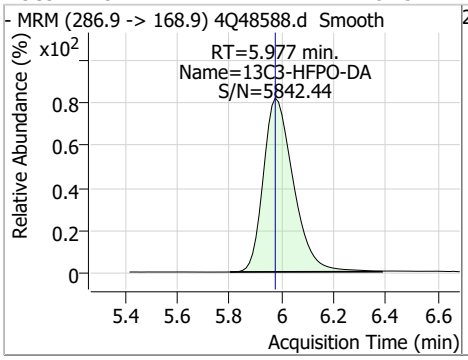
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.50	5.61	0.00	26158	313.0 -> 118.9	3.3	1.6	4.9

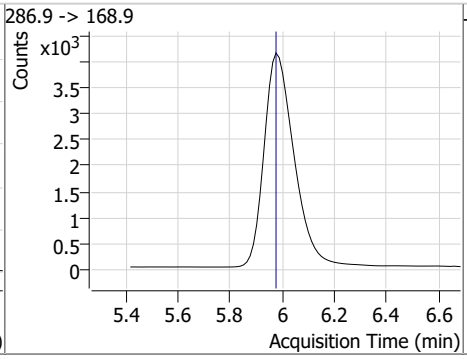


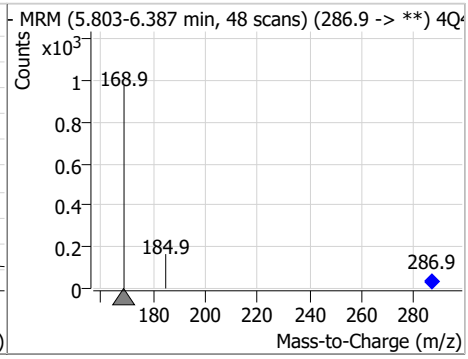




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.25	5.98	0.00	33060				

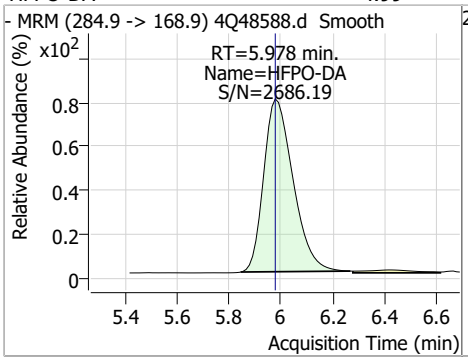


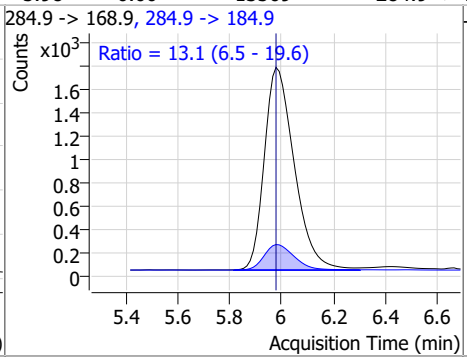


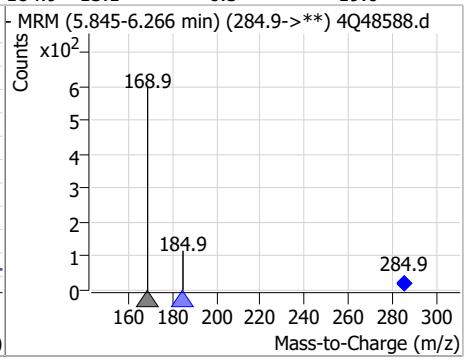


Perfluorinated Compounds by LC/MS/MS

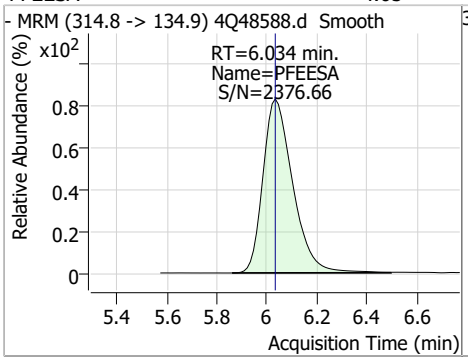
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.99	5.98	0.00	13569	284.9 -> 184.9	13.1	6.5	19.6

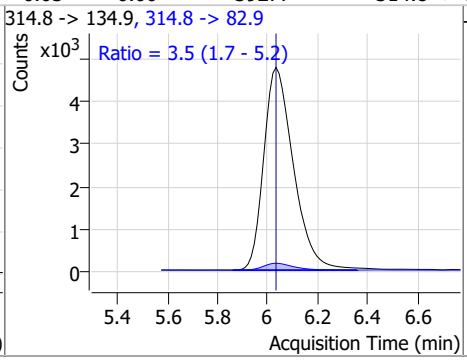


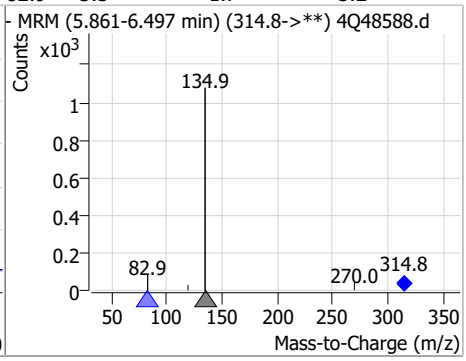




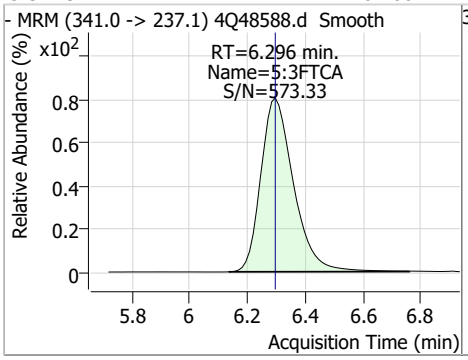
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.65	6.03	0.00	39277	314.8 -> 82.9	3.5	1.7	5.2

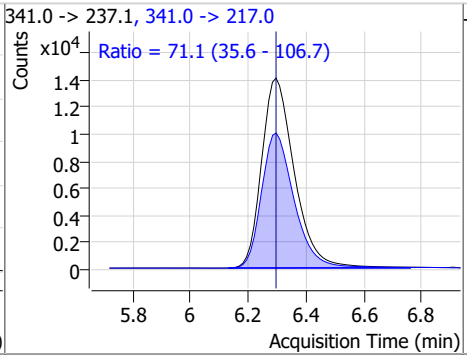


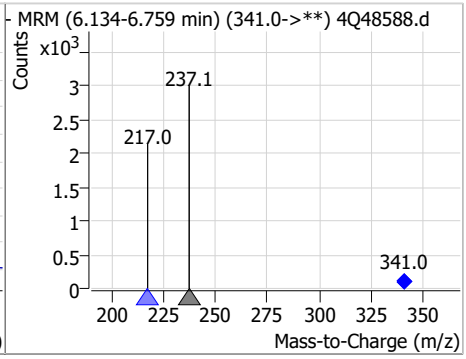




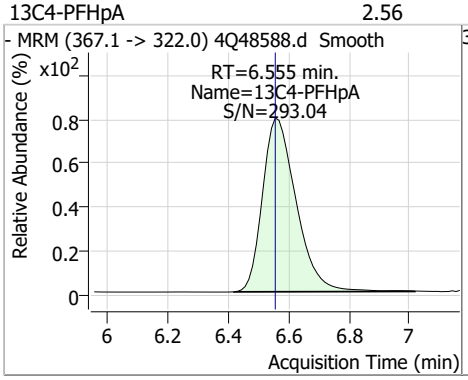
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	64.60	6.30	0.00	110816	341.0 -> 217.0	71.1	35.6	106.7

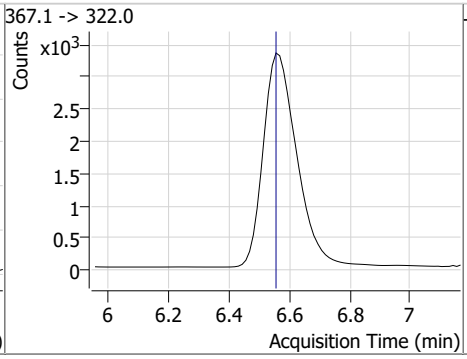


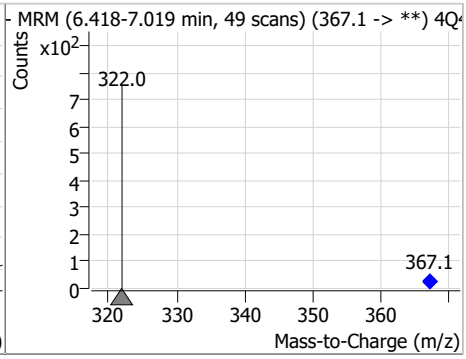




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.56	0.00	25759				

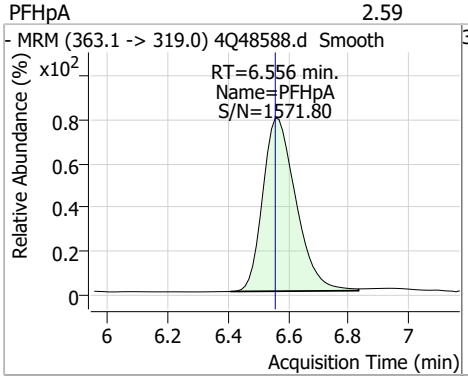


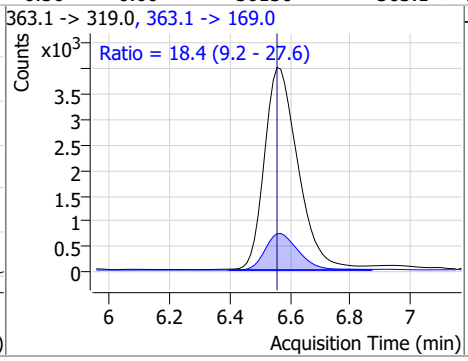


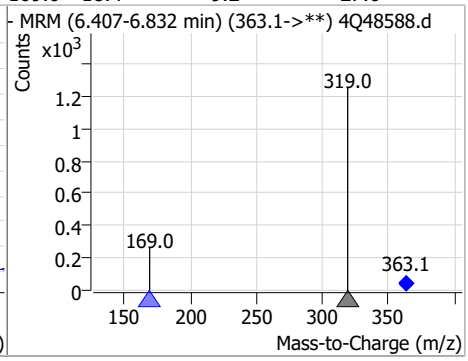


Perfluorinated Compounds by LC/MS/MS

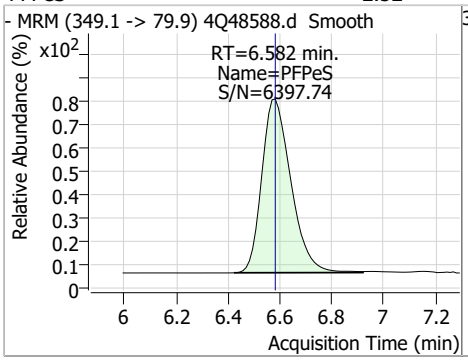
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.59	6.56	0.00	30136	363.1 -> 169.0	18.4	9.2	27.6

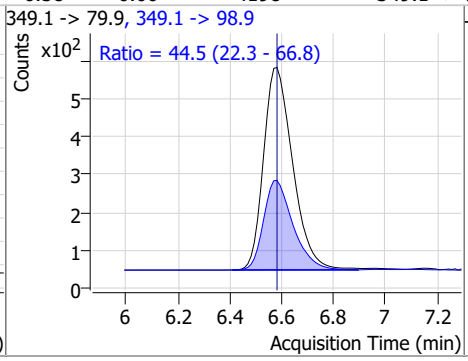


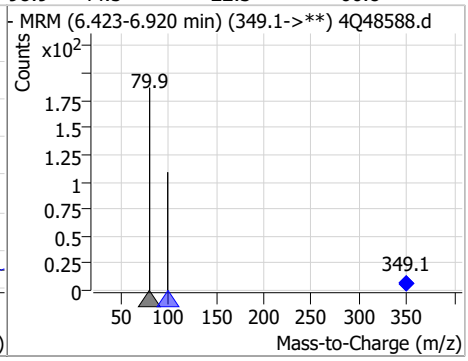




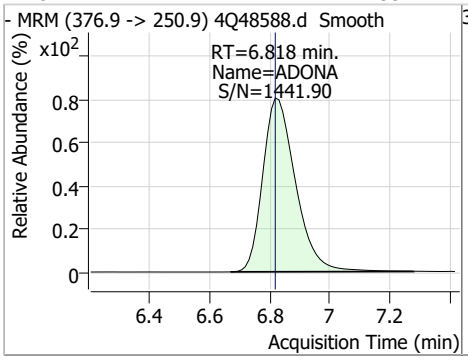
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.52	6.58	0.00	4198	349.1 -> 98.9	44.5	22.3	66.8

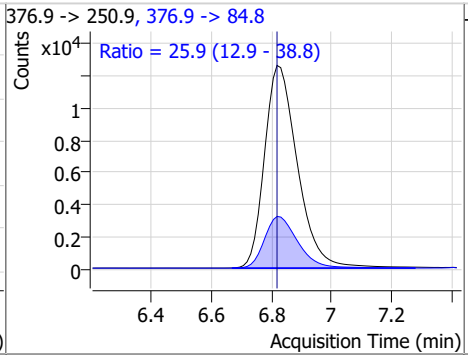


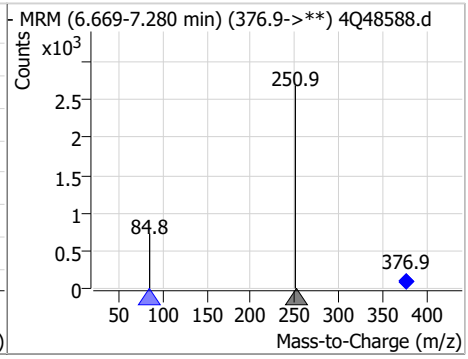




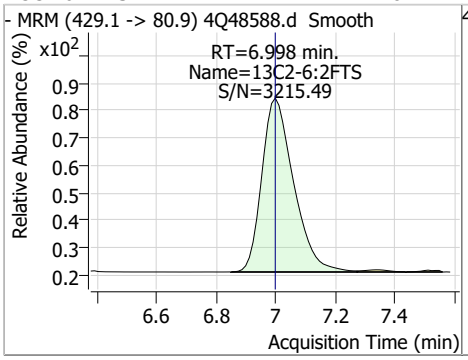
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.99	6.82	0.00	95762	376.9 -> 84.8	25.9	12.9	38.8

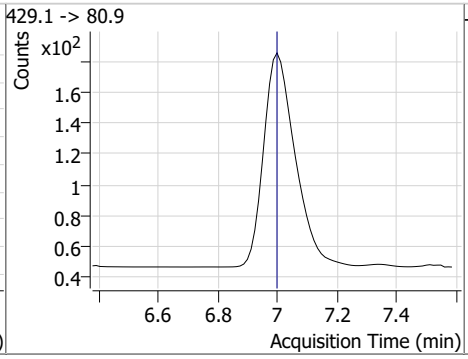


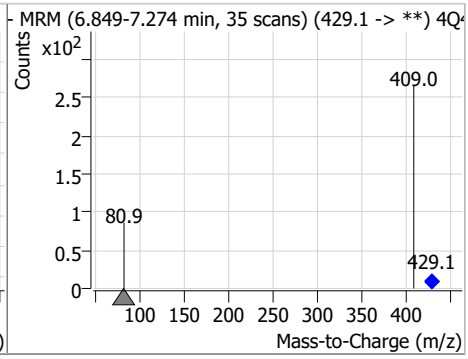




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.78	7.00	0.00	1033				

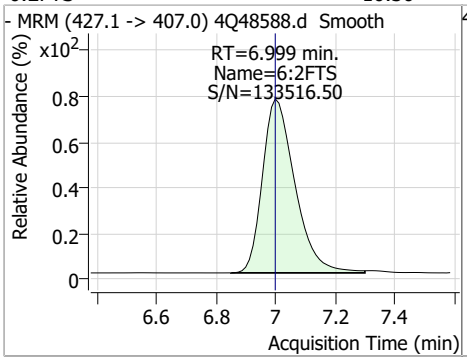


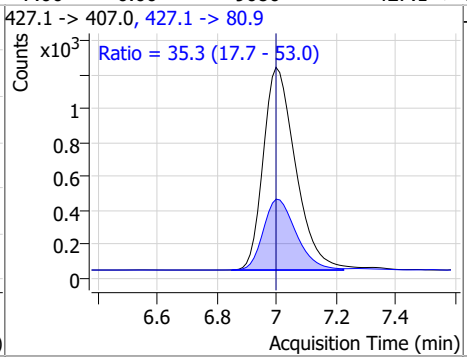


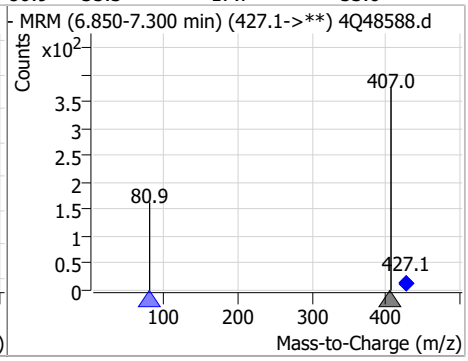


Perfluorinated Compounds by LC/MS/MS

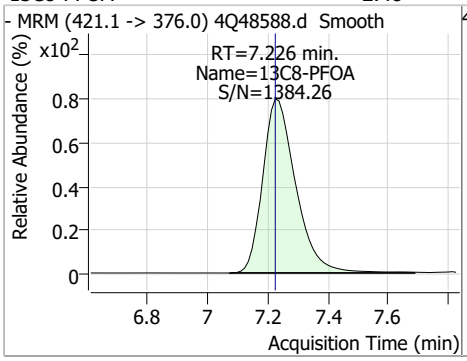
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.36	7.00	0.00	9080	427.1 -> 80.9	35.3	17.7	53.0

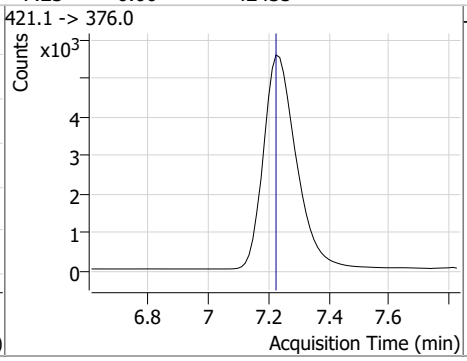


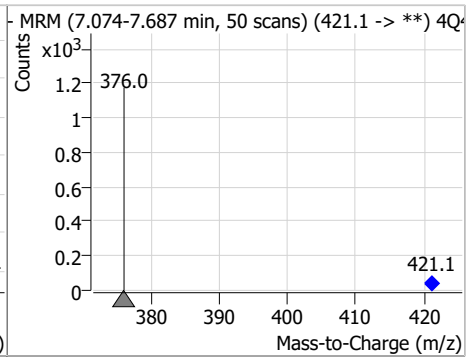




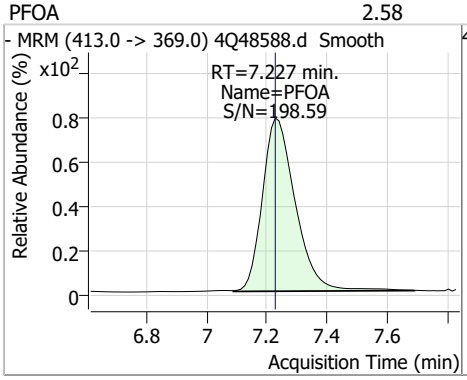
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	7.23	0.00	42435				

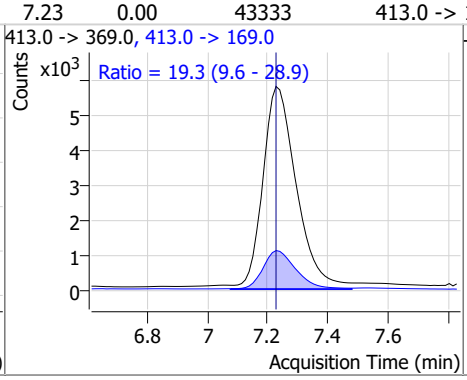


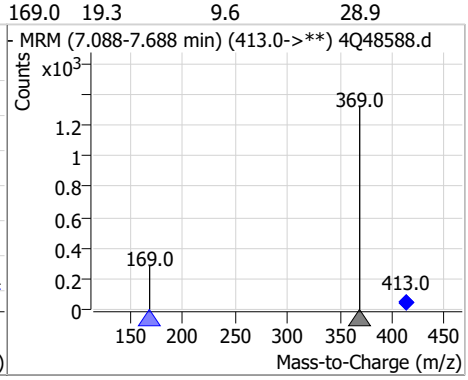




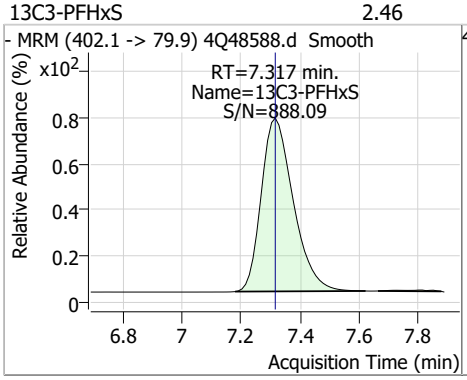
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.58	7.23	0.00	43333	413.0 -> 169.0	19.3	9.6	28.9

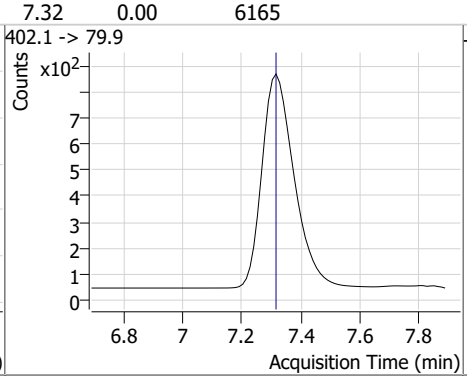


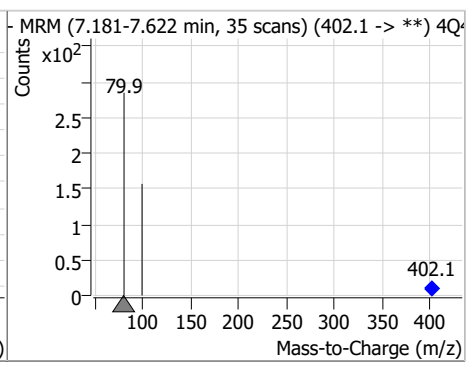




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.46	7.32	0.00	6165				

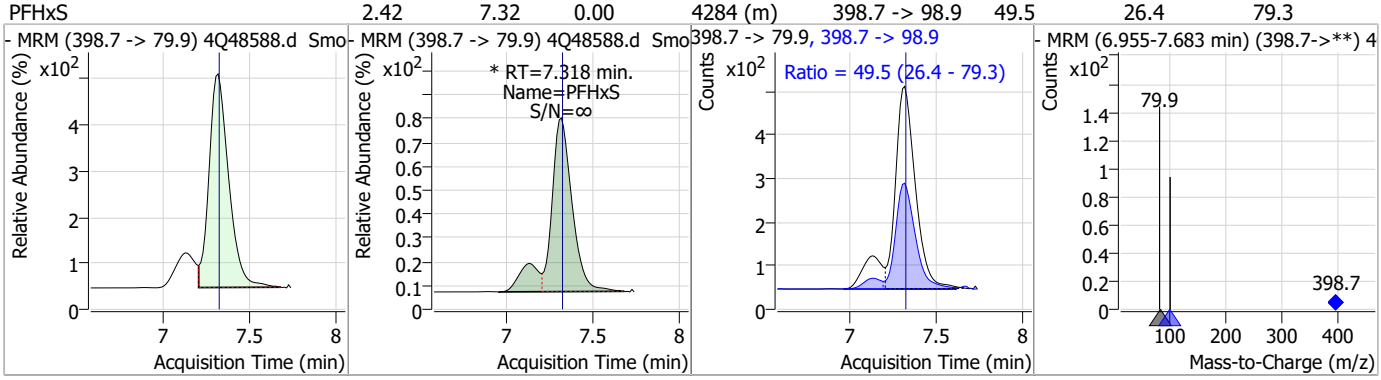




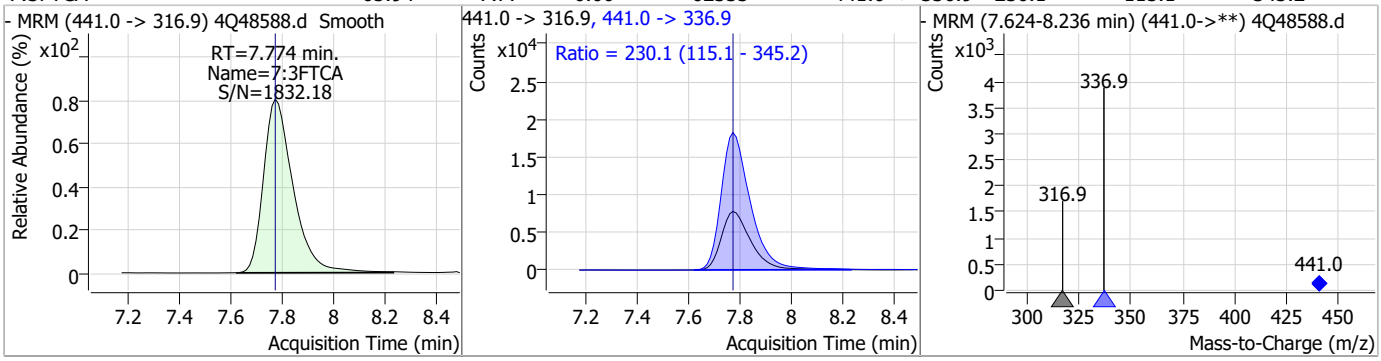


Perfluorinated Compounds by LC/MS/MS

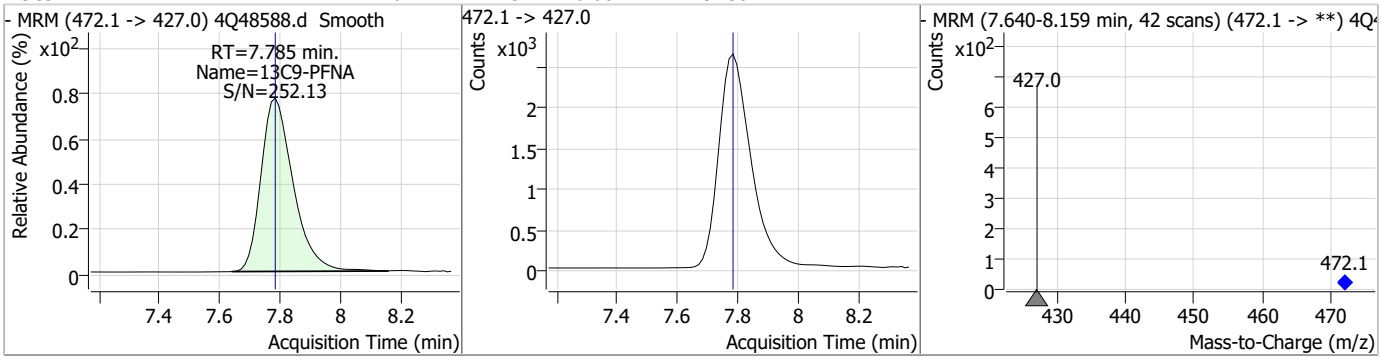
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.42	7.32	0.00	4284 (m)	398.7 -> 98.9	49.5	26.4	79.3



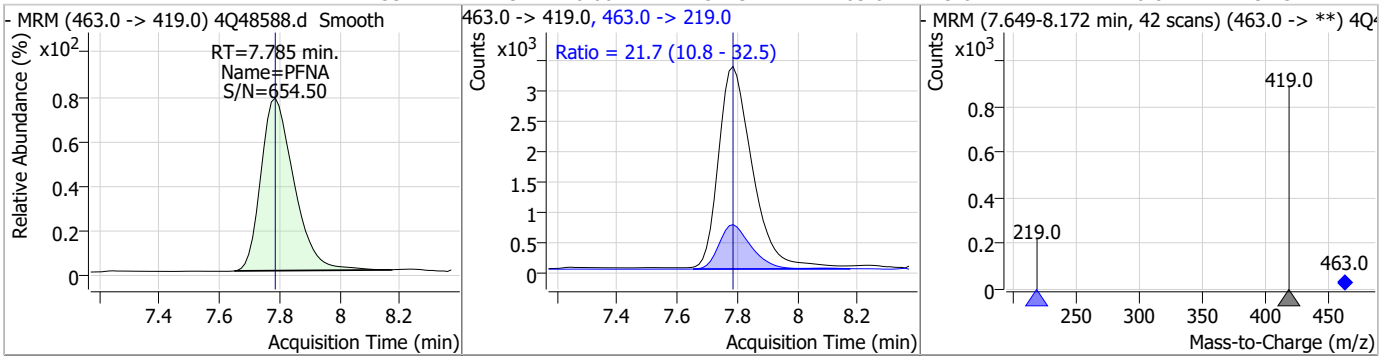
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	65.94	7.77	0.00	62333	441.0 -> 336.9	230.1	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.78	0.00	19286				

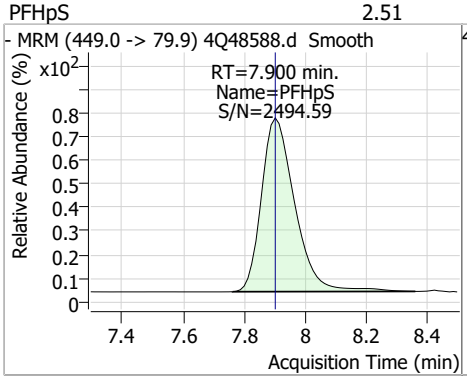


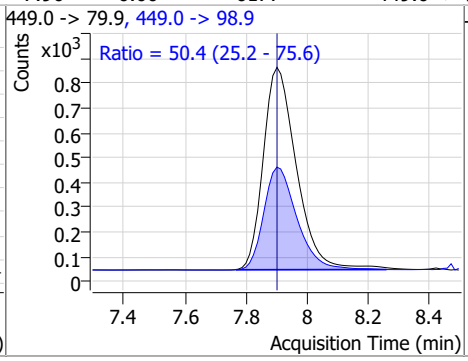
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.53	7.79	0.00	25423	463.0 -> 219.0	21.7	10.8	32.5

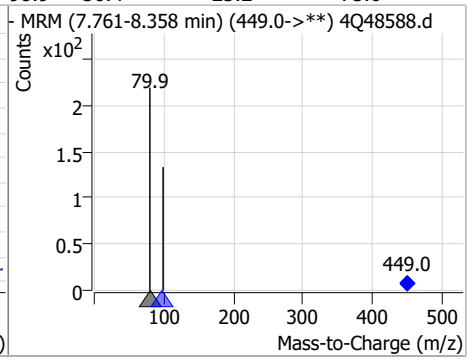


Perfluorinated Compounds by LC/MS/MS

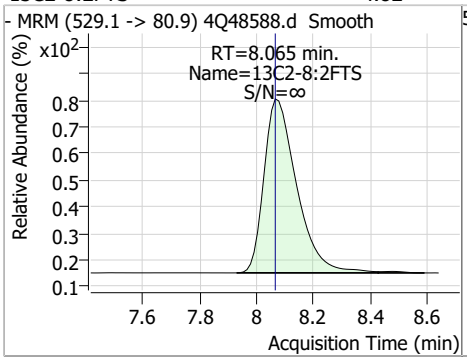
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.51	7.90	0.00	6177	449.0 -> 98.9	50.4	25.2	75.6

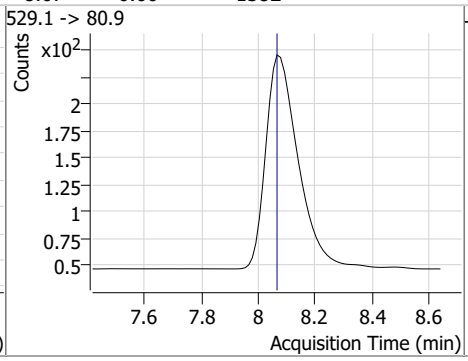


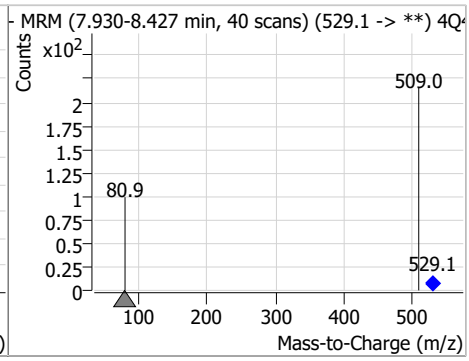




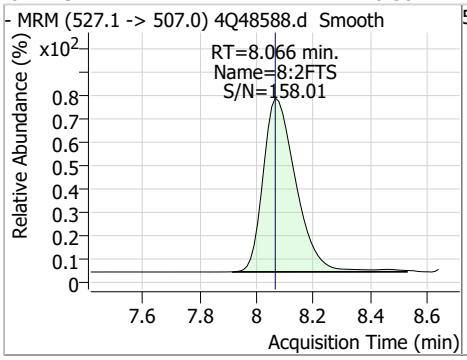
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.82	8.07	0.00	1582				

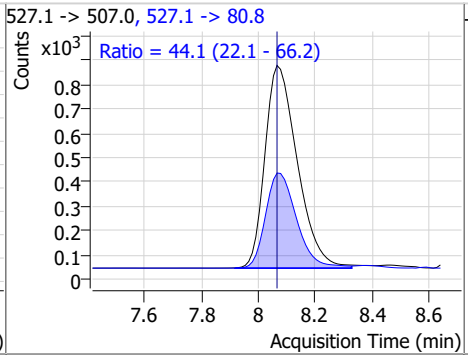


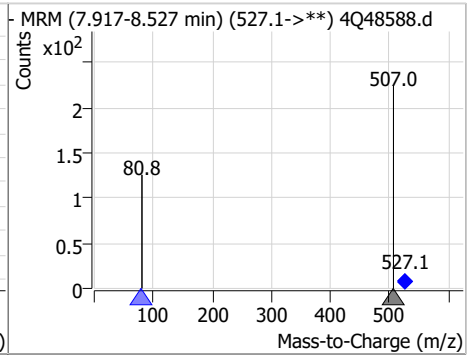




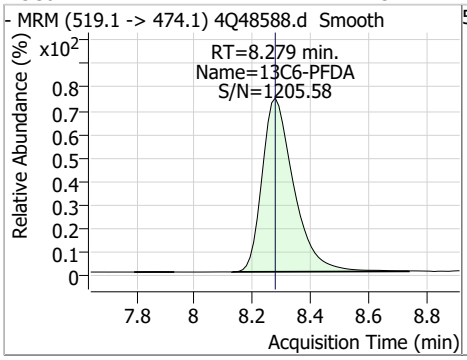
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.50	8.07	0.00	6667	527.1 -> 80.8	44.1	22.1	66.2

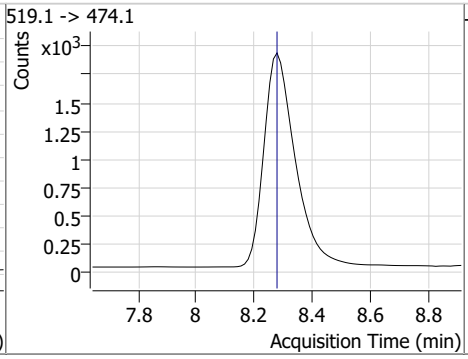


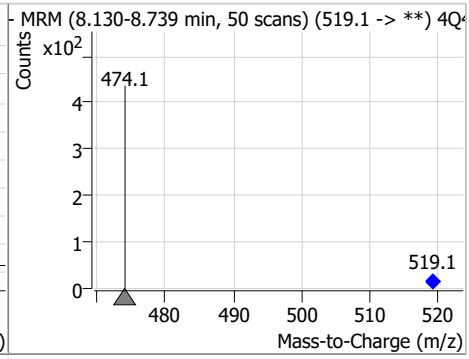




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.34	8.28	0.00	14349				

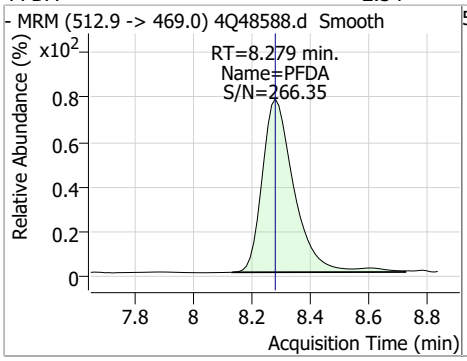


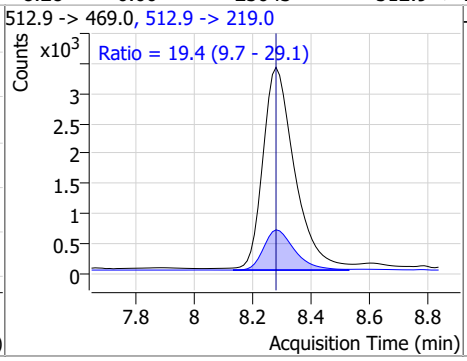


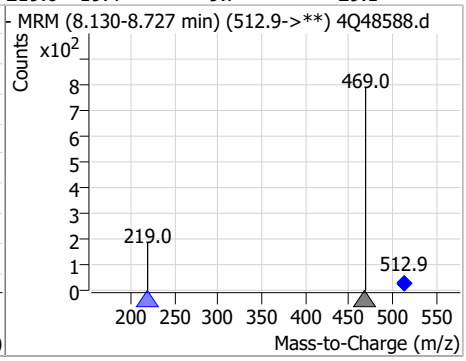


Perfluorinated Compounds by LC/MS/MS

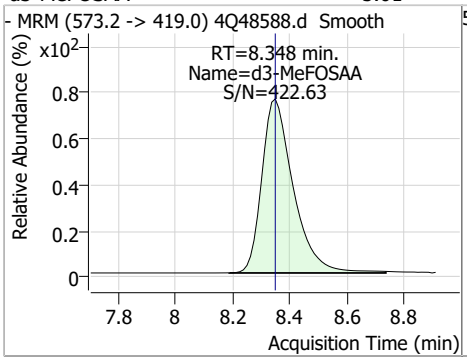
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.54	8.28	0.00	25643	512.9 -> 219.0	19.4	9.7	29.1

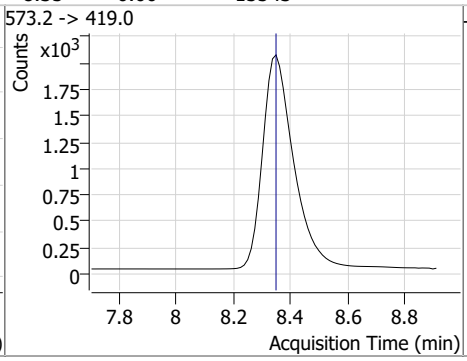


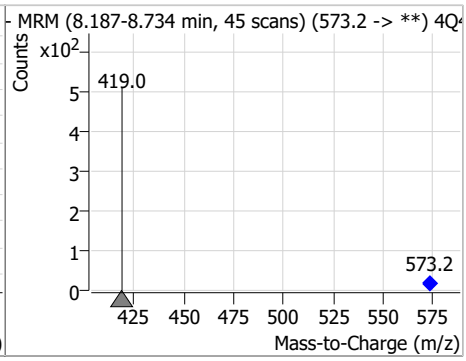




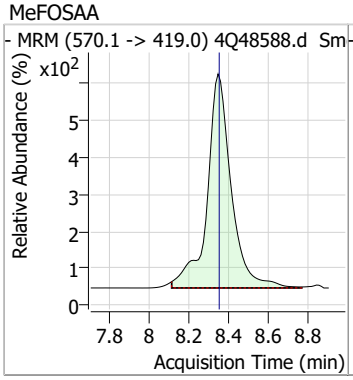
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.01	8.35	0.00	15543				

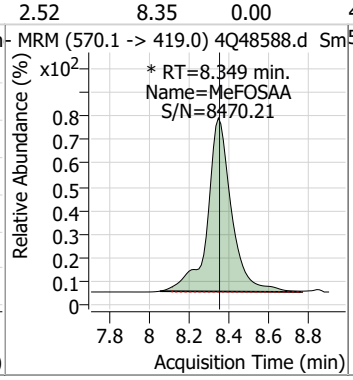


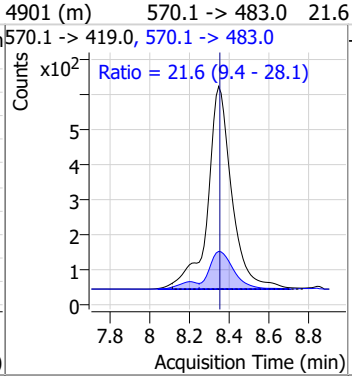


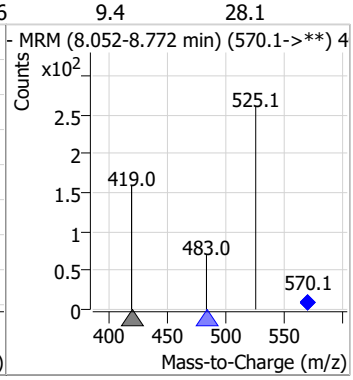


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.52	8.35	0.00	4901 (m)	570.1 -> 483.0	21.6	9.4	28.1

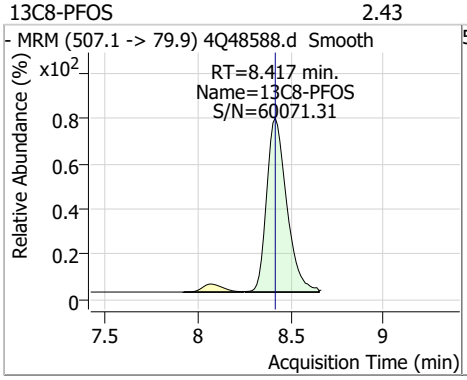


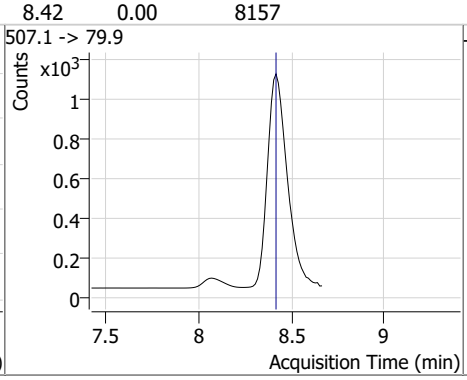


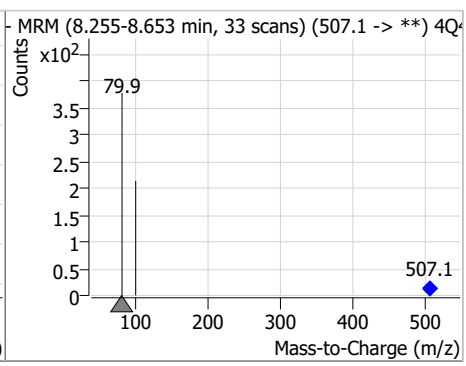




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.43	8.42	0.00	8157				

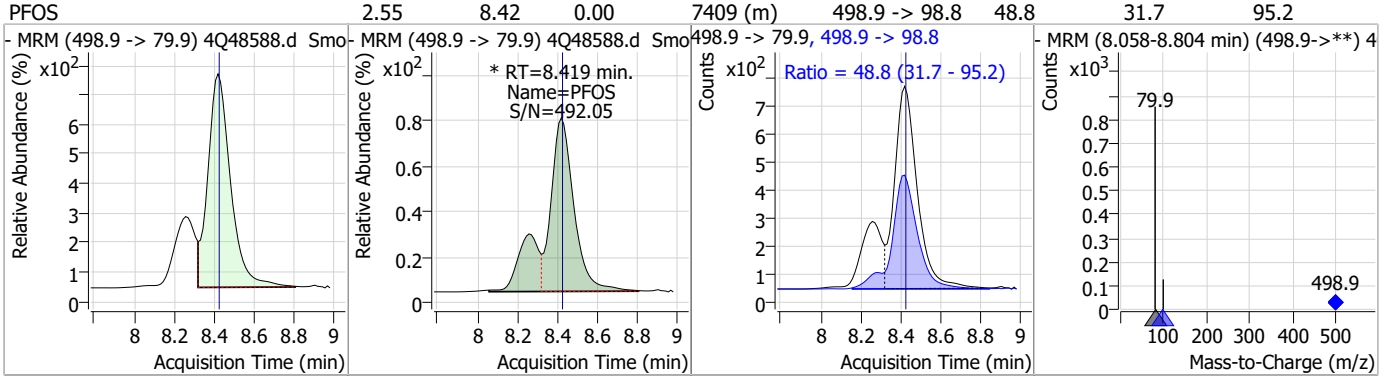




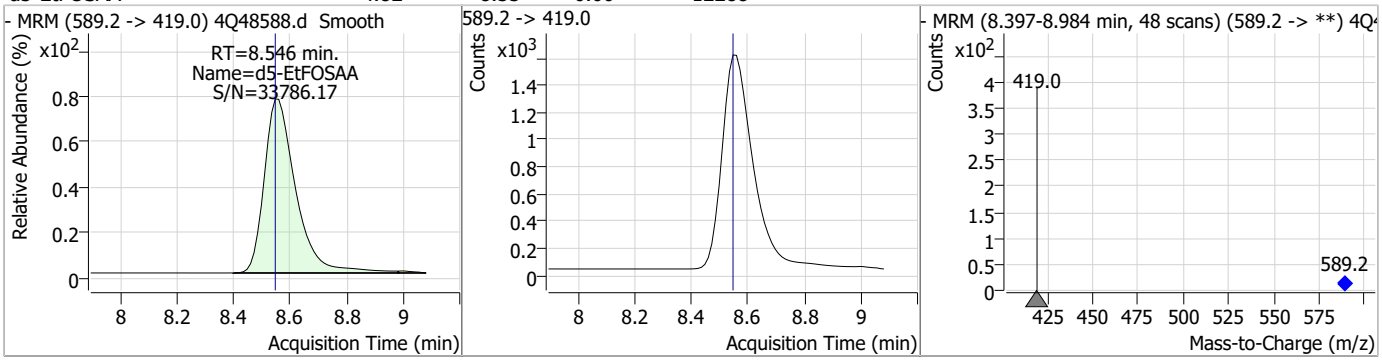


Perfluorinated Compounds by LC/MS/MS

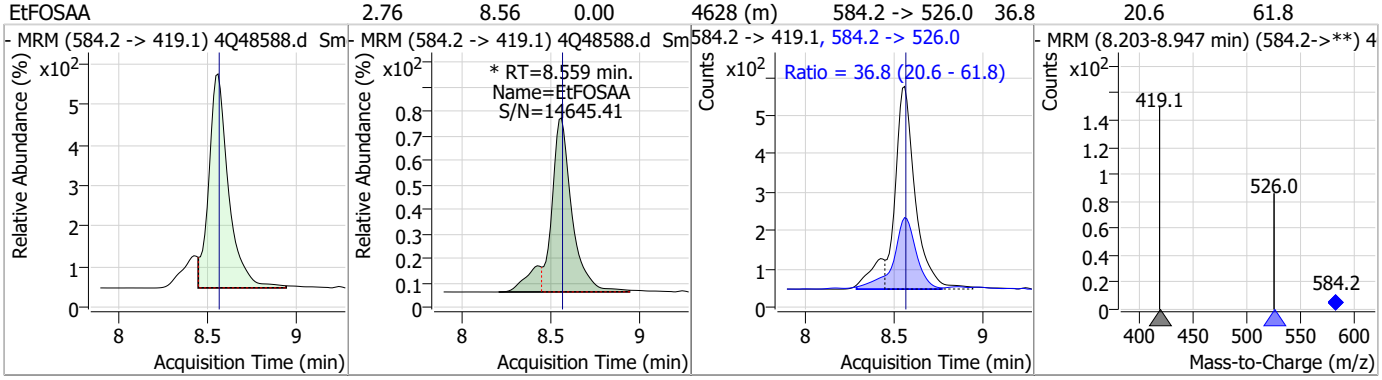
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.55	8.42	0.00	7409 (m)	498.9 -> 98.8	48.8	31.7	95.2



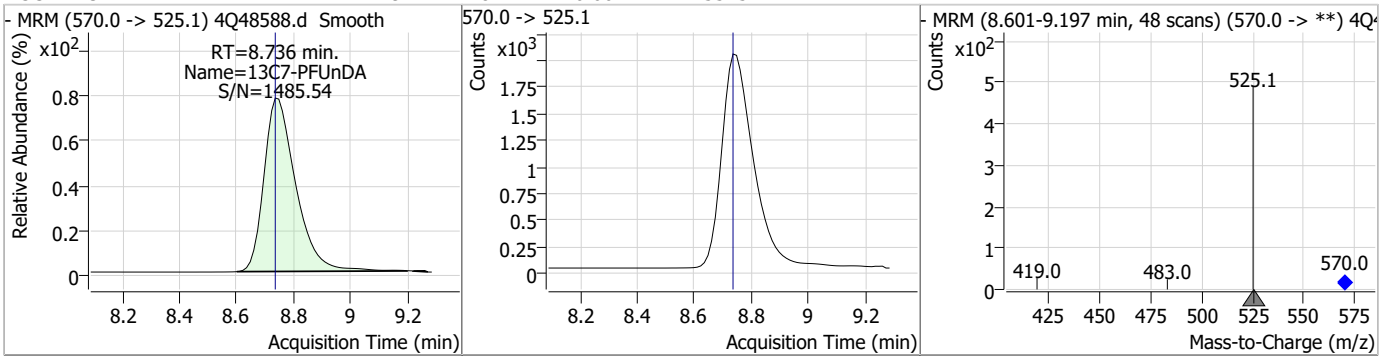
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.82	8.55	0.00	12288				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.76	8.56	0.00	4628 (m)	584.2 -> 526.0	36.8	20.6	61.8

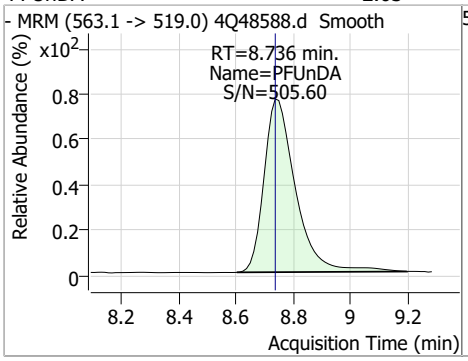


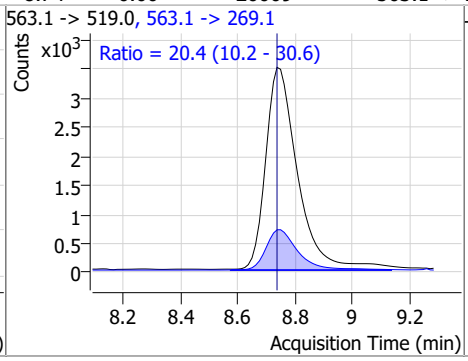
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.74	0.00	15525				

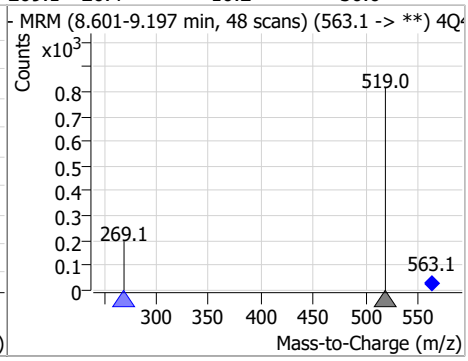


Perfluorinated Compounds by LC/MS/MS

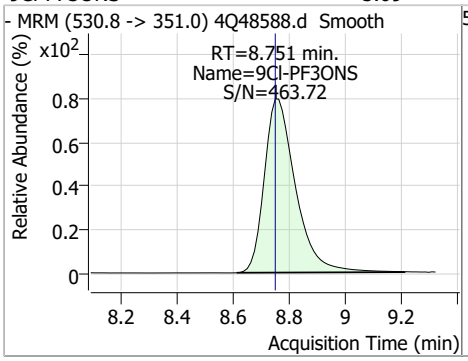
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.63	8.74	0.00	26609	563.1 -> 269.1	20.4	10.2	30.6

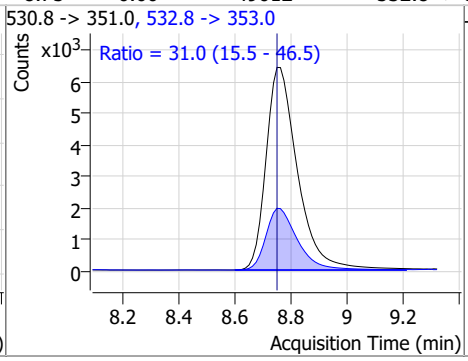


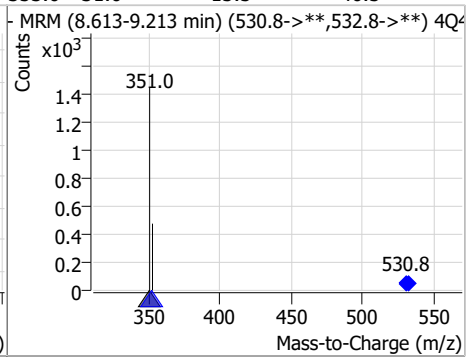




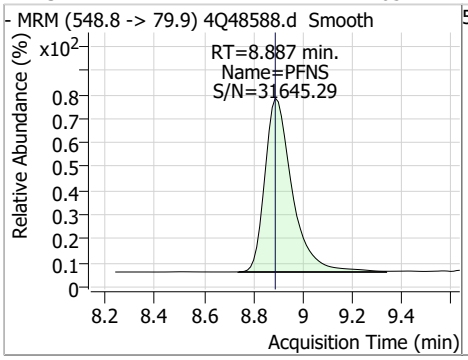
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.09	8.75	0.00	49612	532.8 -> 353.0	31.0	15.5	46.5

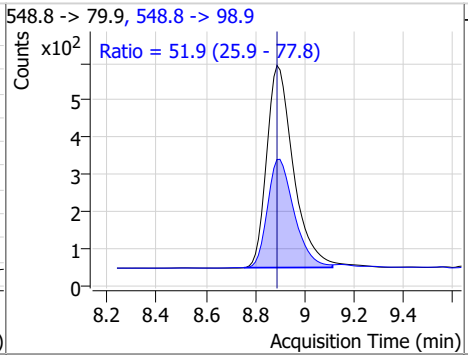


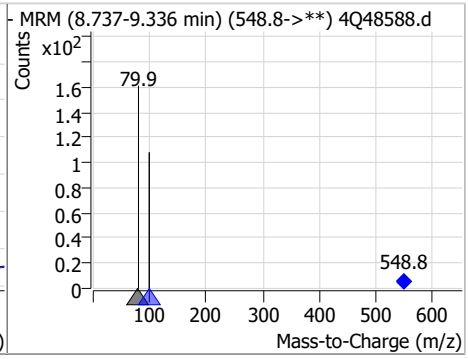




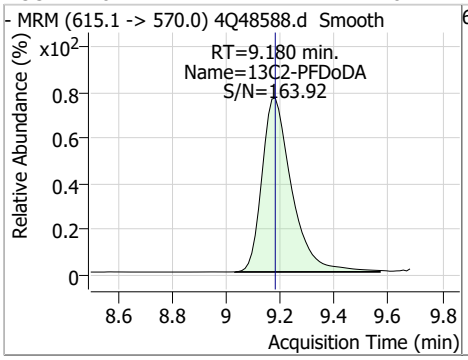
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.65	8.89	0.00	4218	548.8 -> 98.9	51.9	25.9	77.8

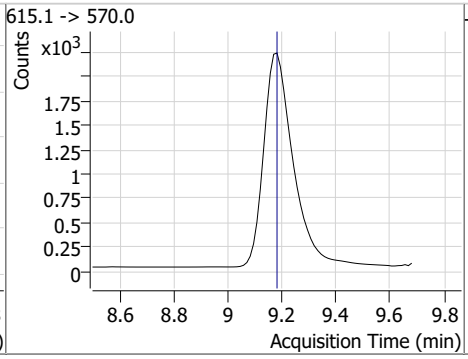


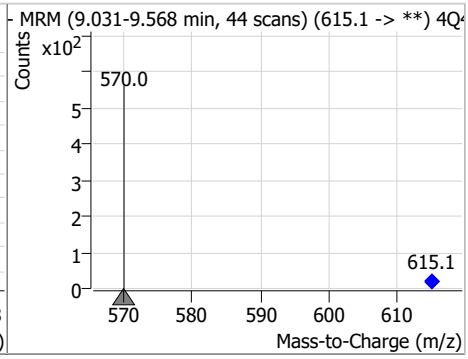




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.18	0.00	16889				

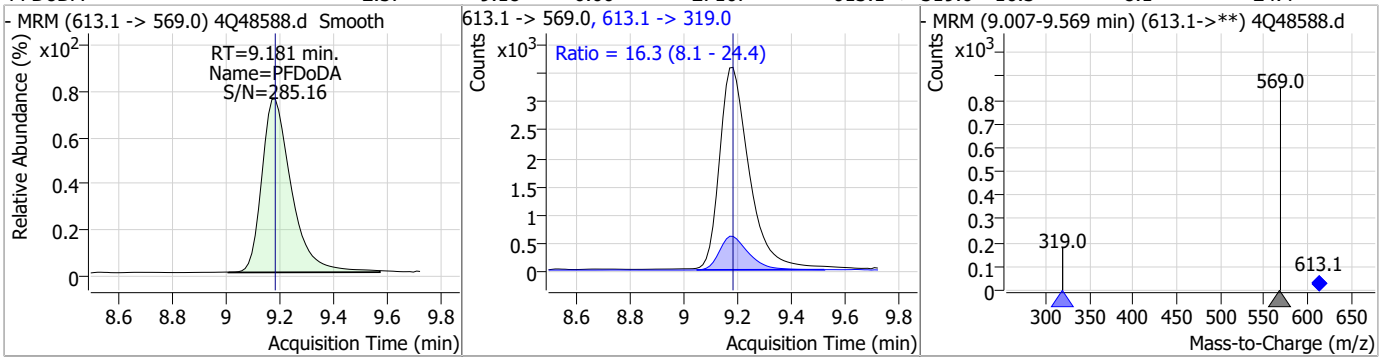




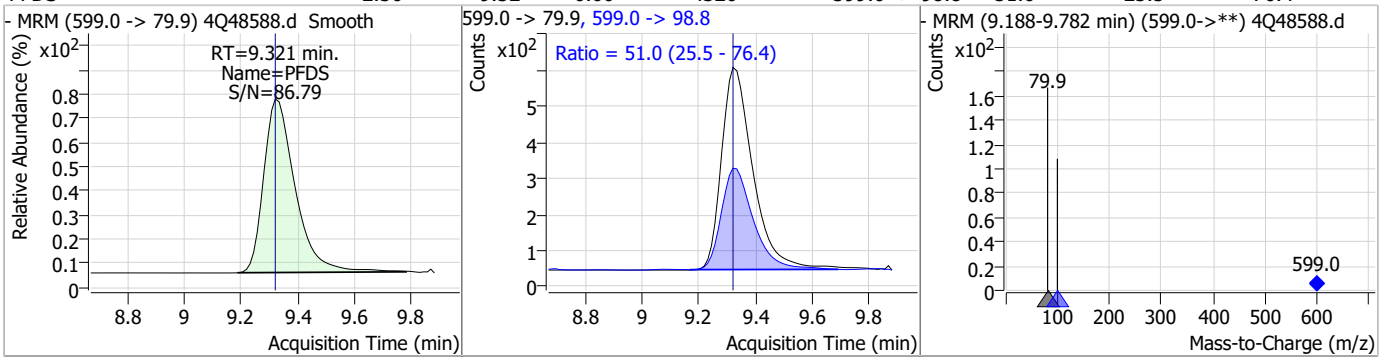


Perfluorinated Compounds by LC/MS/MS

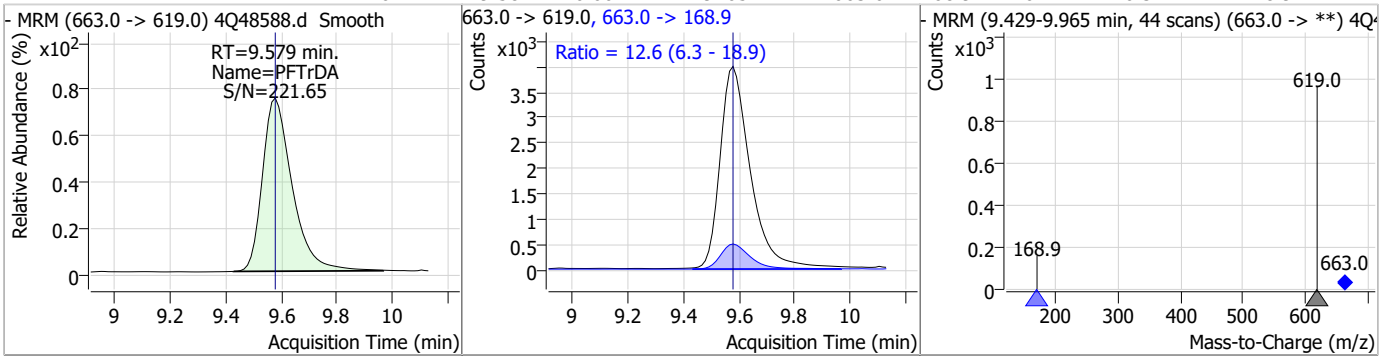
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.57	9.18	0.00	27107	613.1 -> 319.0	16.3	8.1	24.4



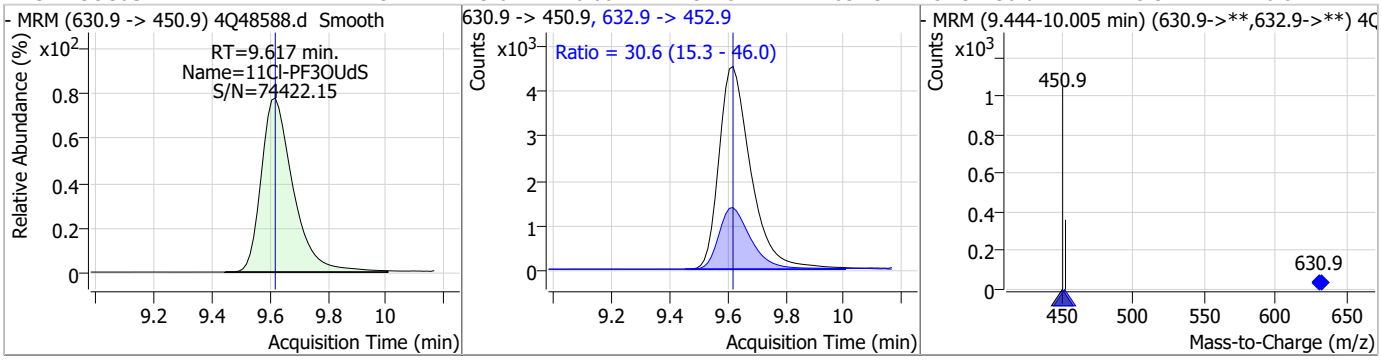
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.56	9.32	0.00	4320	599.0 -> 98.8	51.0	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.67	9.58	0.00	29105	663.0 -> 168.9	12.6	6.3	18.9

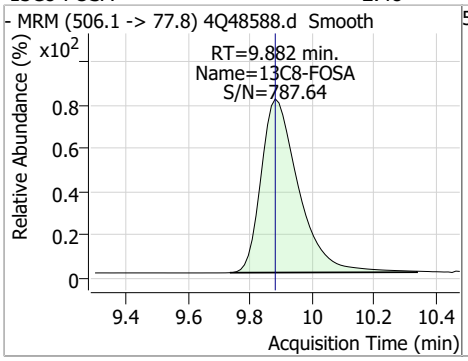


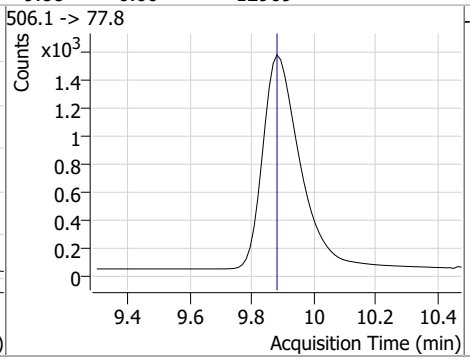
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.97	9.62	0.00	34454	632.9 -> 452.9	30.6	15.3	46.0

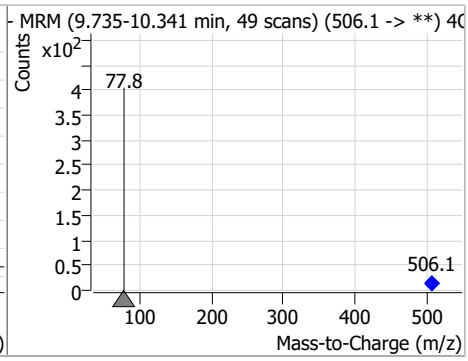


Perfluorinated Compounds by LC/MS/MS

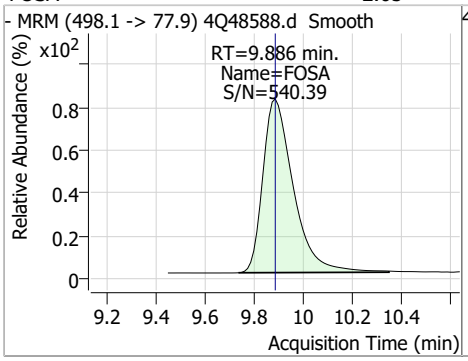
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.88	0.00	12909				

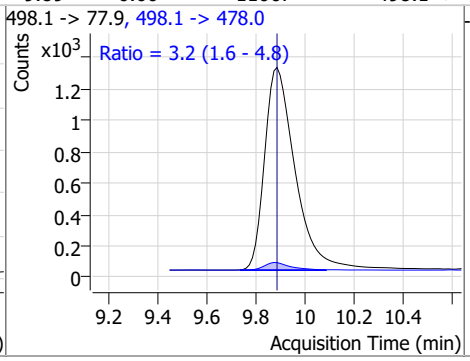


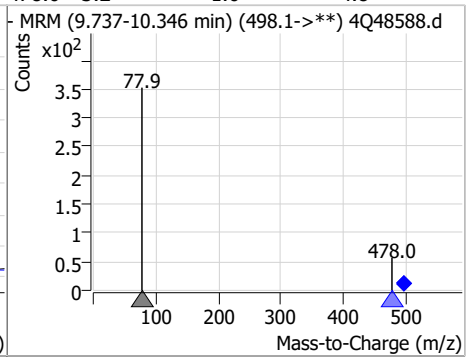




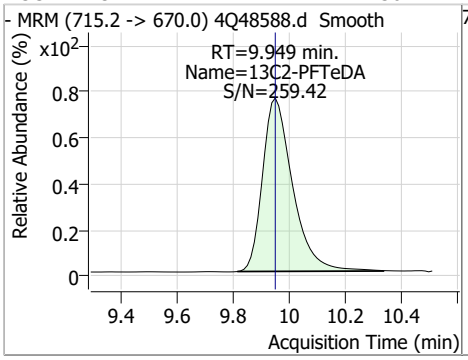
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.65	9.89	0.00	11067	498.1 -> 478.0	3.2	1.6	4.8

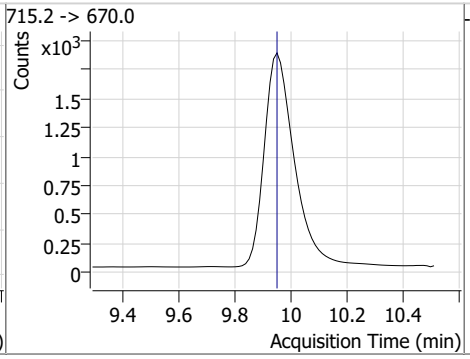


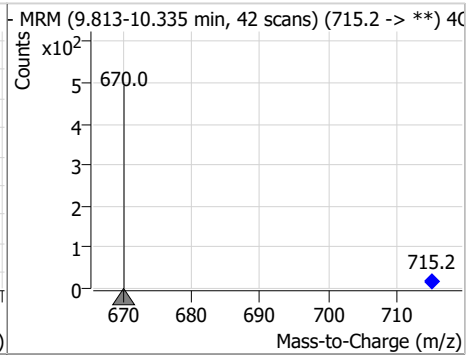




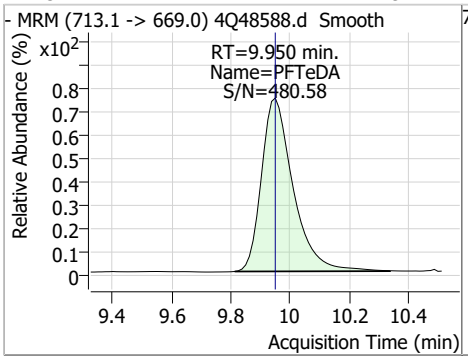
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.95	0.00	13748				

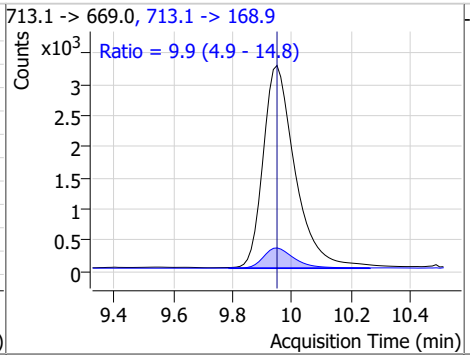


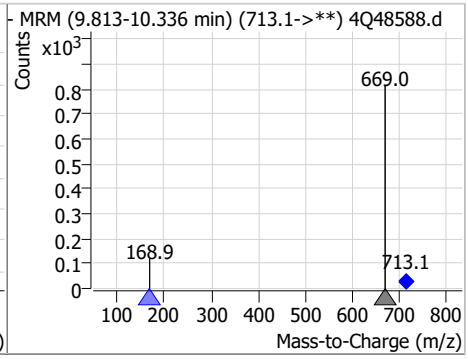




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.49	9.95	0.00	23997	713.1 -> 168.9	9.9	4.9	14.8

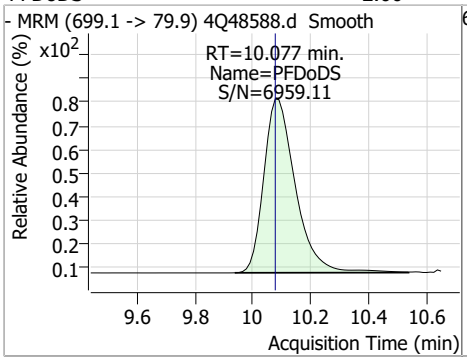


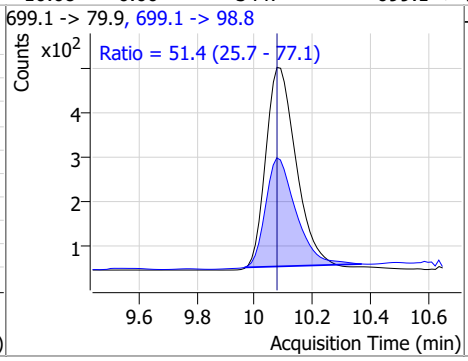


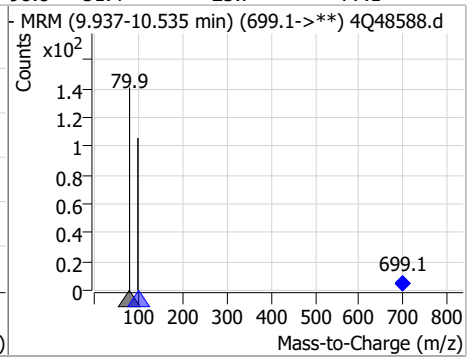


Perfluorinated Compounds by LC/MS/MS

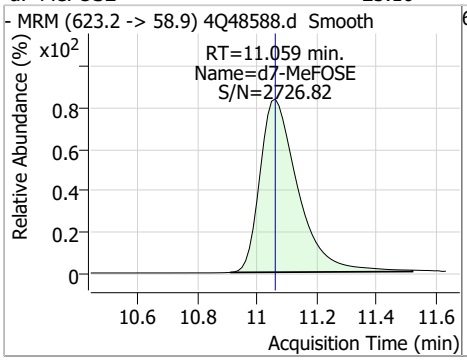
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.66	10.08	0.00	3447	699.1 -> 98.8	51.4	25.7	77.1

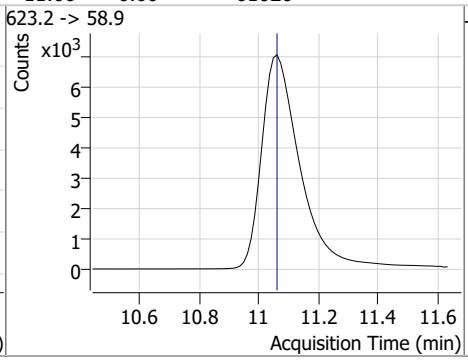


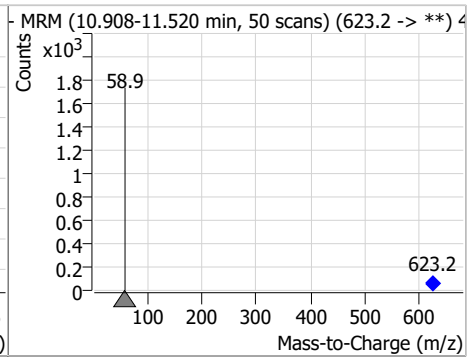




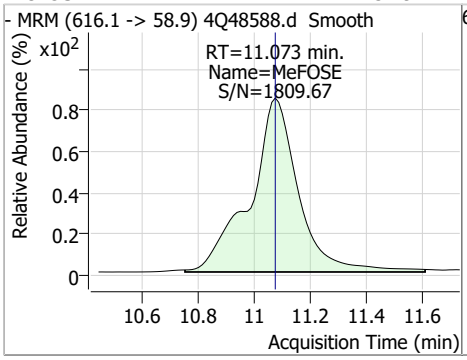
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.10	11.06	0.00	61626				

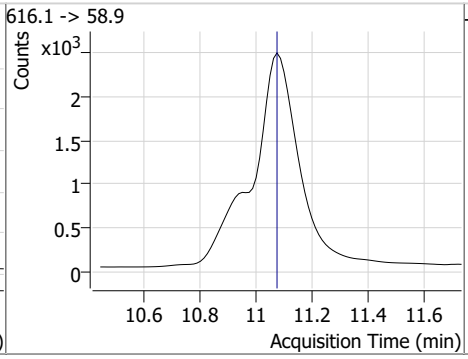


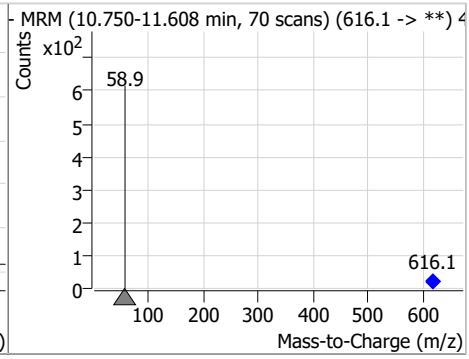




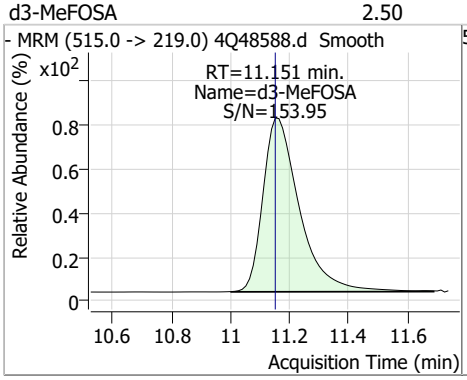
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.49	11.07	0.00	29734				

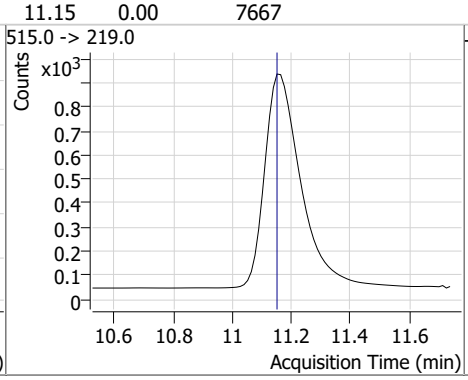


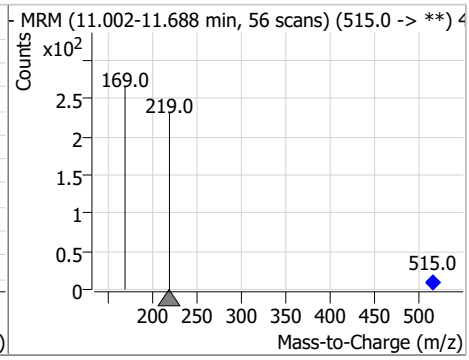




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	11.15	0.00	7667				

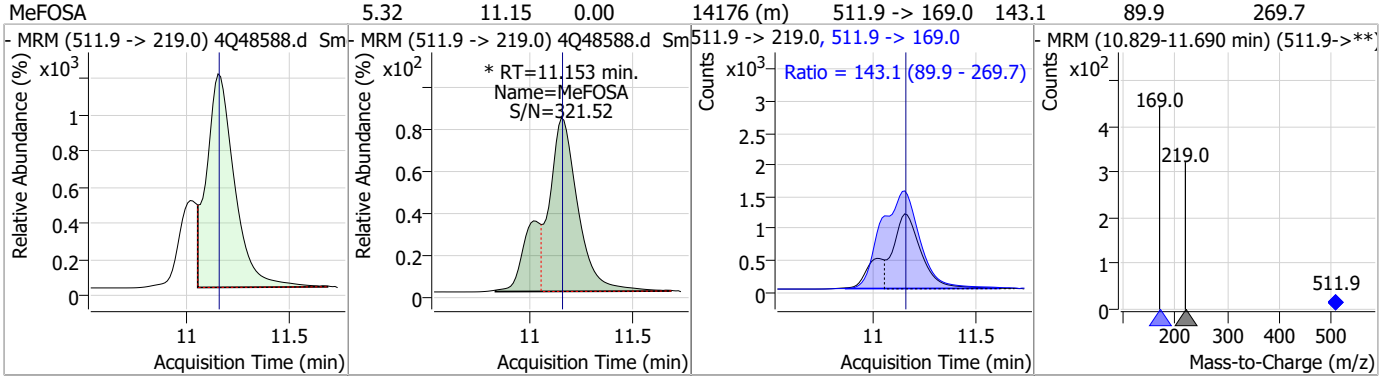




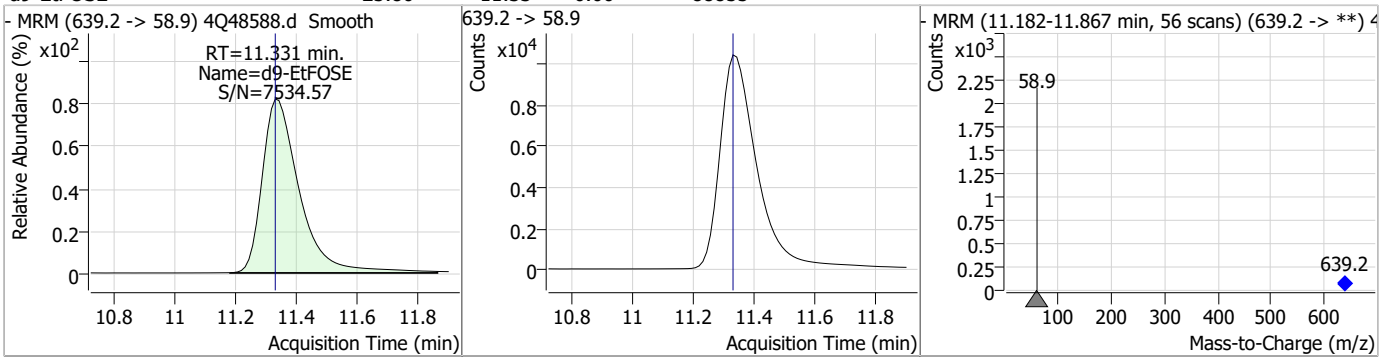


Perfluorinated Compounds by LC/MS/MS

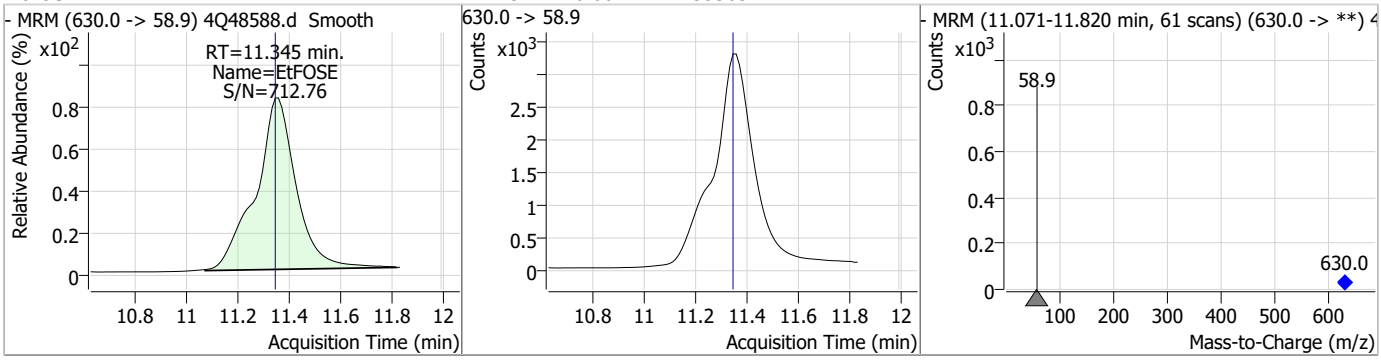
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.32	11.15	0.00	14176 (m)	511.9 -> 169.0	143.1	89.9	269.7



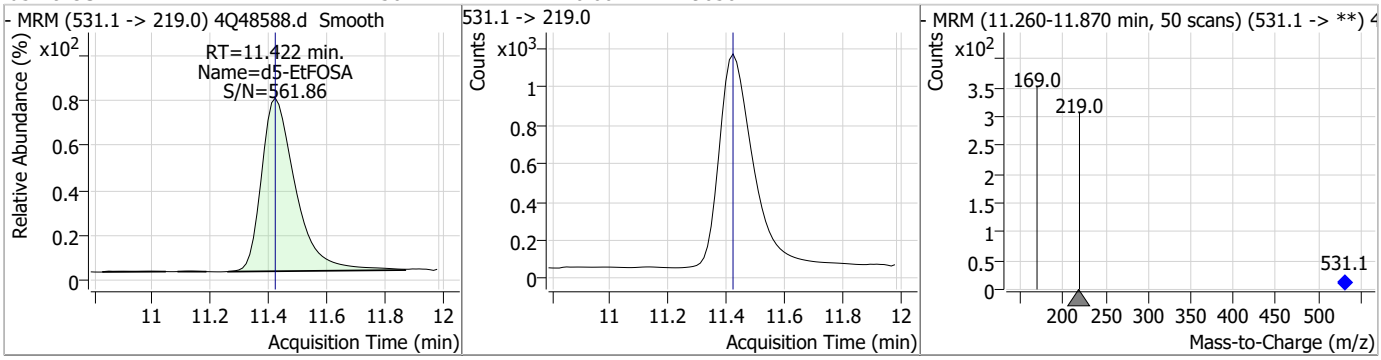
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.80	11.33	0.00	88855				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.72	11.34	0.00	35363				

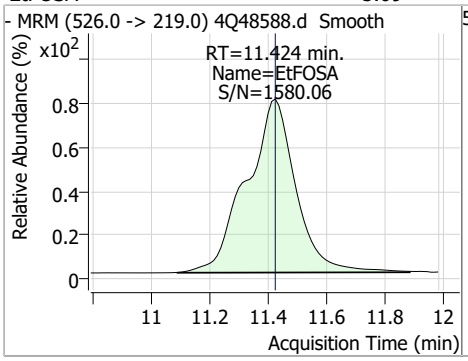


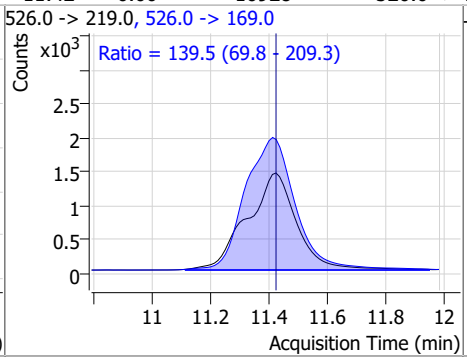
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	11.42	0.00	9050				

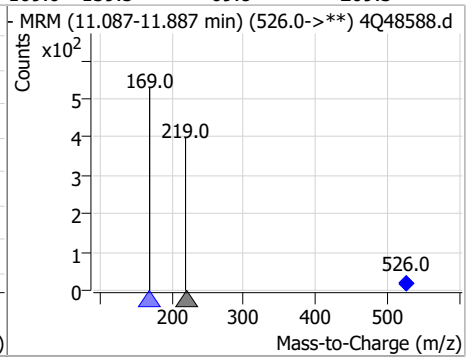


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.09	11.42	0.00	16928	526.0 -> 169.0	139.5	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-ICC711
Lab FileID: 4Q48588.D
Injection Time: 08/07/23 17:14
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSA	31506-32-8		11.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48589.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 5:28:48 PM
Sample Name : ic711-5
Vial : P1-A6
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	72366	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	44838	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	26202	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	18558	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	30799	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	13057	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	9227	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	10451	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	11443	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	8587	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	9323	2.50	µg/L	0.000
M3-PFBS	5.489	302.1 -> 79.9	7246	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	4272	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	5963	2.50	µg/L	0.000
M2-4:2FTS	5.296	329.1 -> 80.9	388	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	700	5.00	µg/L	0.000
M2-8:2FTS	8.065	529.1 -> 80.9	1150	5.00	µg/L	0.000
M3-MeFOSAA	8.348	573.2 -> 419.0	10751	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	23397	10.00	µg/L	0.012
M5-EtFOSAA	8.546	589.2 -> 419.0	8824	5.00	µg/L	0.000
M7-MeFOSE	11.059	623.2 -> 58.9	41614	25.00	µg/L	0.000
M9-EtFOSE	11.331	639.2 -> 58.9	58362	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	6191	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	5256	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	6164	2.50	µg/L	0.000
13C3-PFBA	2.891	216.0 -> 172.0	42751	5.00	µg/L	-0.013
18O2-PFHxS	7.316	403.0 -> 83.9	3427	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	36716	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	11264	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	14874	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	25141	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	388	4.53	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C2-6:2FTS	6.998	429.1 -> 80.9	700	4.28	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C2-8:2FTS	8.065	529.1 -> 80.9	1150	4.63	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-PFDoDA	9.180	615.1 -> 570.0	11443	1.19	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-PFTeDA	9.949	715.2 -> 670.0	8587	1.11	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C3-PFBS	5.489	302.1 -> 79.9	7246	2.48	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	7.317	402.1 -> 79.9	4272	2.25	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 = 90.1%			
13C4-PFBA	2.899	216.8 -> 171.9	72366	9.90	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C4-PFHpA	6.568	367.1 -> 322.0	18558	2.48	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C5-PFHxA	5.610	318.0 -> 273.0	26202	2.49	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C5-PFPeA	4.412	268.3 -> 223.0	44838	5.10	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C6-PFDA	8.279	519.1 -> 474.1	9227	1.18	µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C7-PFUnDA	8.748	570.0 -> 525.1	10451	1.19	µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C8-FOSA	9.882	506.1 -> 77.8	9323	2.42	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%			
13C8-PFOA	7.238	421.1 -> 376.0	30799	2.55	µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-PFOS	8.417	507.1 -> 79.9	5963	2.41	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%			
13C9-PFNA	7.785	472.1 -> 427.0	13057	1.16	µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.7%			
d3-MeFOSAA	8.348	573.2 -> 419.0	10751	4.70	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C3-HFPO-DA	5.989	286.9 -> 168.9	23397	9.77	µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
d3-MeFOSA	11.151	515.0 -> 219.0	5256	2.32	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%			
d5-EtFOSAA	8.546	589.2 -> 419.0	8824	4.69	µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
d7-MeFOSE	11.059	623.2 -> 58.9	41614	22.99	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.9%			
d9-EtFOSE	11.331	639.2 -> 58.9	58362	22.99	µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
d5-EtFOSA	11.422	531.1 -> 219.0	6191	2.37	µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%			
Target Compounds							**QValue**
4:2FTS	5.297	327.1 -> 307.0	11084	21.19	µg/L		97
		327.1 -> 80.9	4720				
6:2FTS	6.999	427.1 -> 407.0	14233	23.94	µg/L		100
		427.1 -> 80.9	5052				
8:2FTS	8.066	527.1 -> 507.0	10502	22.75	µg/L		96
		527.1 -> 80.8	4346				
EtFOSAA	8.559	584.2 -> 419.1	6310	5.23	µg/L	m	86
		584.2 -> 526.0	3166				
FOSA	9.886	498.1 -> 77.9	16162	5.36	µg/L		99
		498.1 -> 478.0	477				
MeFOSAA	8.349	570.1 -> 419.0	7965	5.93	µg/L	m	97
		570.1 -> 483.0	1366				
PFBA	2.895	212.8 -> 168.9	36620	21.98	µg/L		100
PFBS	5.490	298.7 -> 79.9	8291	4.68	µg/L		96
		298.7 -> 98.8	3244				
PFDA	8.279	512.9 -> 469.0	36496	5.63	µg/L		99
		512.9 -> 219.0	6895				
PFDoDA	9.181	613.1 -> 569.0	37713	5.27	µg/L		98
		613.1 -> 319.0	5754				
PFDS	9.321	599.0 -> 79.9	5985	4.86	µg/L		100

Perfluorinated Compounds by LC/MS/MS

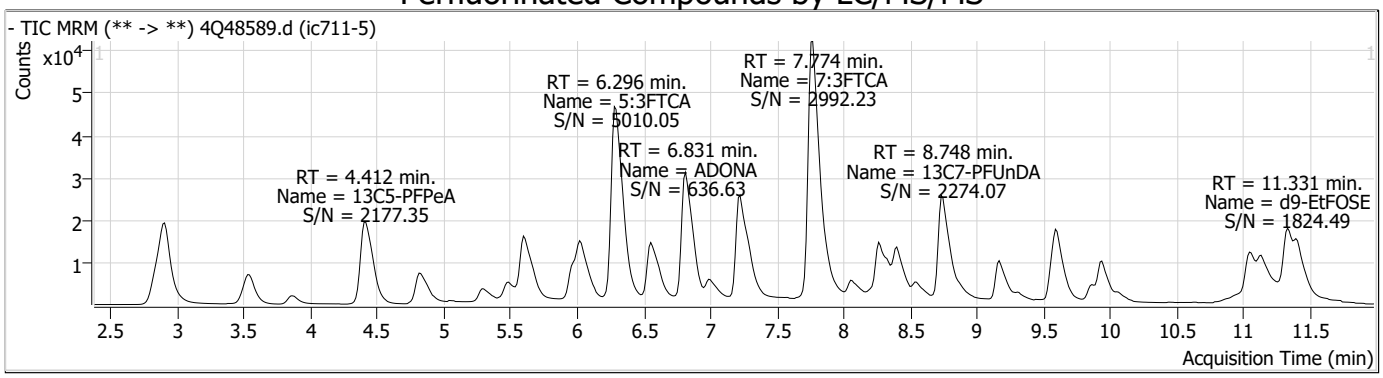
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3063				
PFHpA	6.568	363.1 -> 319.0	45462	5.43	µg/L		100
		363.1 -> 169.0	8391				
PFHpS	7.900	449.0 -> 79.9	9244	5.13	µg/L		98
		449.0 -> 98.9	4763				
PFHxA	5.613	313.0 -> 269.0	41202	5.45	µg/L		100
		313.0 -> 118.9	1371				
PFHxS	7.318	398.7 -> 79.9	6294	5.13	µg/L	m	100
		398.7 -> 98.9	3317				
PFNA	7.785	463.0 -> 419.0	37226	5.48	µg/L		95
		463.0 -> 219.0	8923				
PFNS	8.887	548.8 -> 79.9	5838	5.01	µg/L		90
		548.8 -> 98.9	3447				
PFOA	7.240	413.0 -> 369.0	64838	5.31	µg/L		99
		413.0 -> 169.0	12883				
PFOS	8.419	498.9 -> 79.9	10650	5.02	µg/L	m	80
		498.9 -> 98.8	5110				
PFPeA	4.414	263.0 -> 219.0	85165	10.93	µg/L		100
PFPeS	6.582	349.1 -> 79.9	6720	5.83	µg/L		98
		349.1 -> 98.9	2913				
PFTeDA	9.950	713.1 -> 669.0	33398	5.55	µg/L		100
		713.1 -> 168.9	3304				
PFTrDA	9.579	663.0 -> 619.0	41394	5.59	µg/L		98
		663.0 -> 168.9	4911				
PFUnDA	8.749	563.1 -> 519.0	37310	5.48	µg/L		98
		563.1 -> 269.1	7935				
11Cl-PF3OUdS	9.617	630.9 -> 450.9	48369	9.86	µg/L		100
		632.9 -> 452.9	14834				
9Cl-PF3ONS	8.763	530.8 -> 351.0	71339	10.33	µg/L		100
		532.8 -> 353.0	22126				
ADONA	6.831	376.9 -> 250.9	142913	10.53	µg/L		100
		376.9 -> 84.8	37075				
HFPO-DA	5.990	284.9 -> 168.9	21598	11.22	µg/L		96
		284.9 -> 184.9	2510				
3:3FTCA	3.861	241.0 -> 177.0	11100	26.40	µg/L		100
		241.0 -> 117.0	1102				
5:3FTCA	6.296	341.0 -> 237.1	174001	140.62	µg/L		99
		341.0 -> 217.0	122605				
7:3FTCA	7.774	441.0 -> 316.9	93752	137.49	µg/L		97
		441.0 -> 336.9	220609				
EtFOSA	11.424	526.0 -> 219.0	24579	10.80	µg/L		99
		526.0 -> 169.0	33968				
EtFOSE	11.357	630.0 -> 58.9	52374	28.68	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	20306	11.11	µg/L	m	77
		511.9 -> 169.0	29865				
MeFOSE	11.073	616.1 -> 58.9	40529	27.23	µg/L		100
PFDoDS	10.077	699.1 -> 79.9	4579	4.83	µg/L		93
		699.1 -> 98.8	2580				
NFDHA	5.491	295.0 -> 201.0	5613	11.52	µg/L		99
		295.0 -> 84.9	1417				
PFMBA	4.828	279.0 -> 85.1	47291	10.83	µg/L		100
PFMPA	3.540	229.0 -> 84.9	46600	10.94	µg/L		100
PFEESA	6.034	314.8 -> 134.9	61024	10.02	µg/L		99
		314.8 -> 82.9	2278				

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

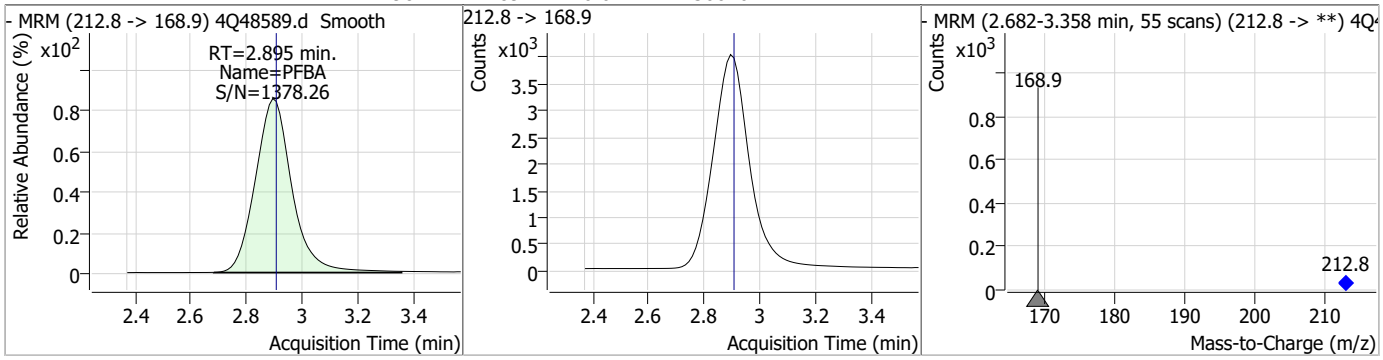
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

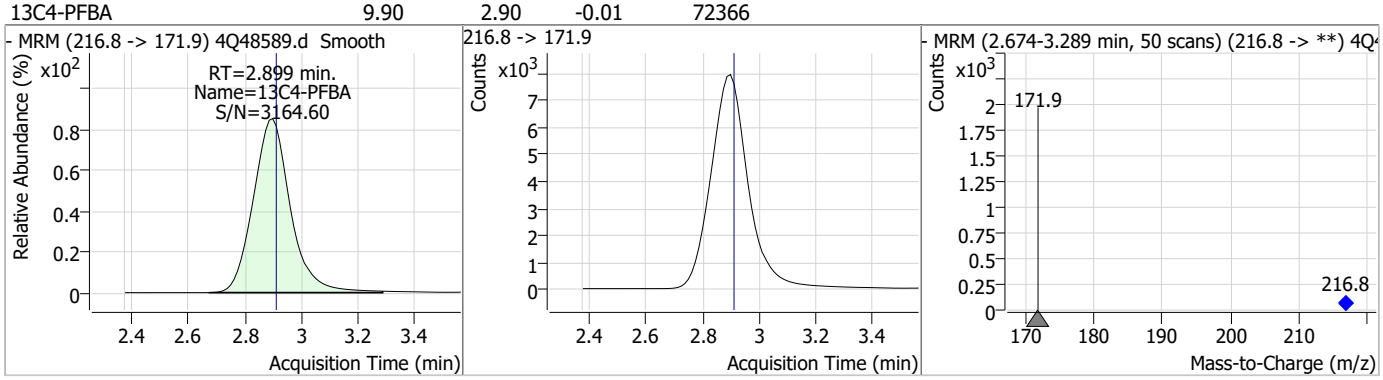
Perfluorinated Compounds by LC/MS/MS



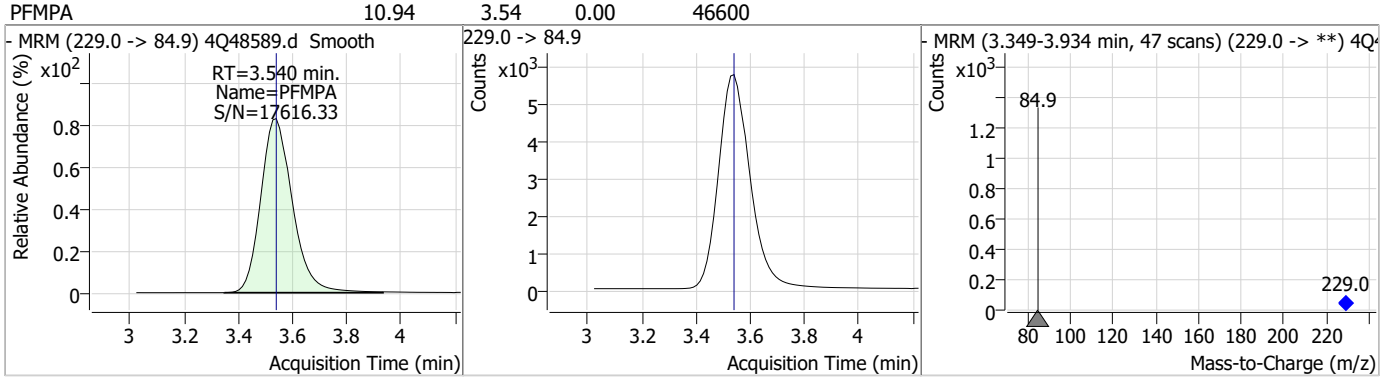
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.98	2.89	-0.01	36620				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.90	2.90	-0.01	72366				

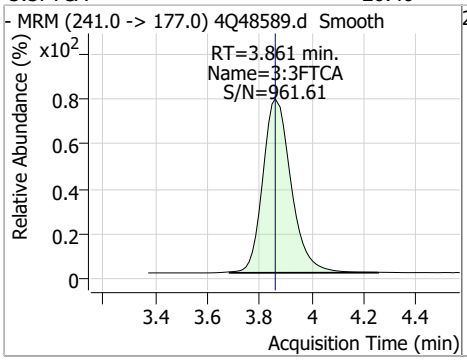


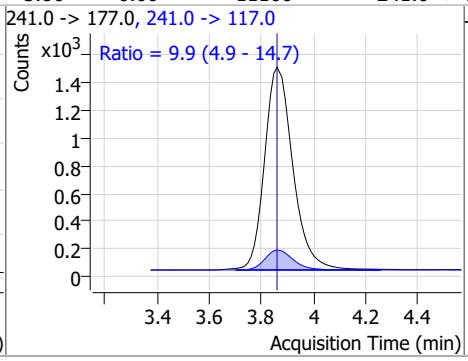
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	10.94	3.54	0.00	46600				

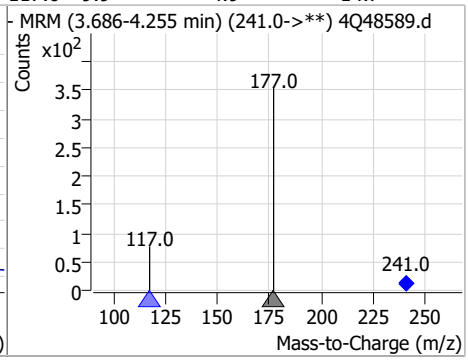


Perfluorinated Compounds by LC/MS/MS

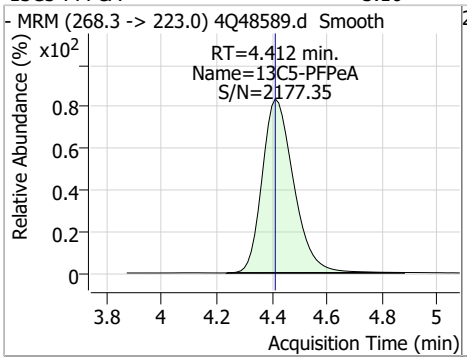
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	26.40	3.86	0.00	11100	241.0 -> 117.0	9.9	4.9	14.7

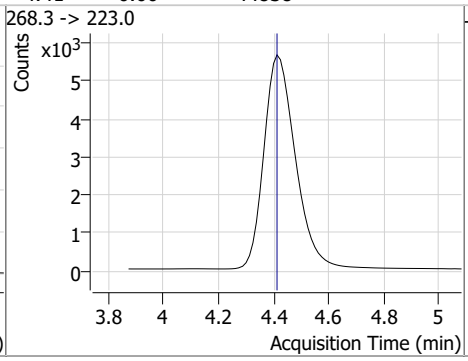


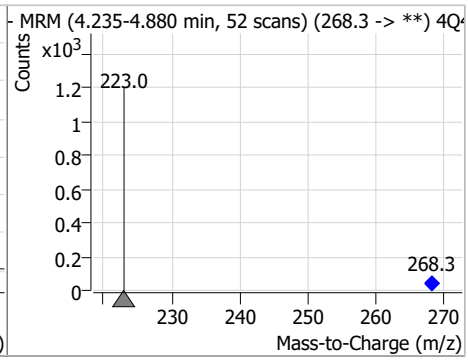




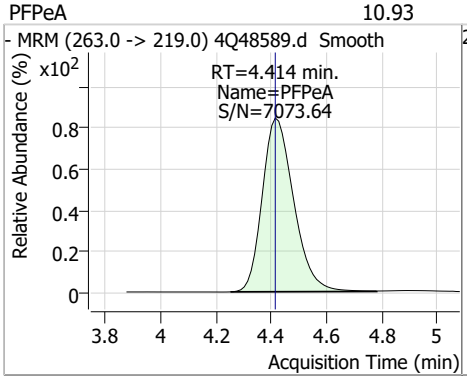
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.41	0.00	44838				

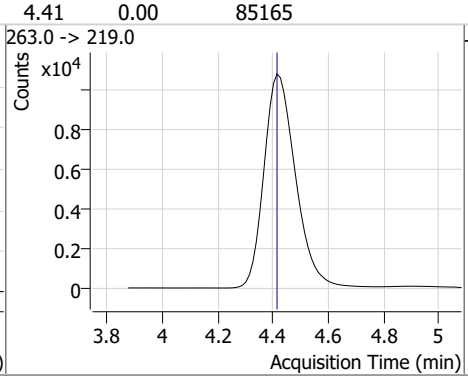


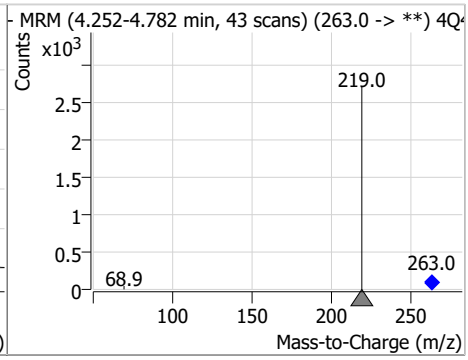




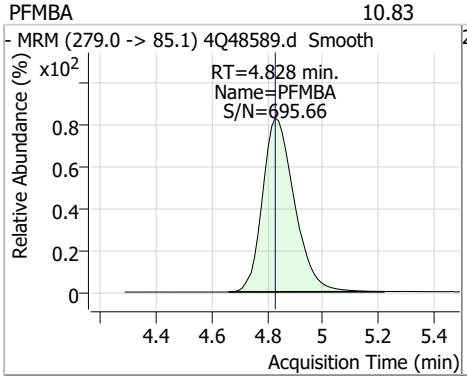
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.93	4.41	0.00	85165				

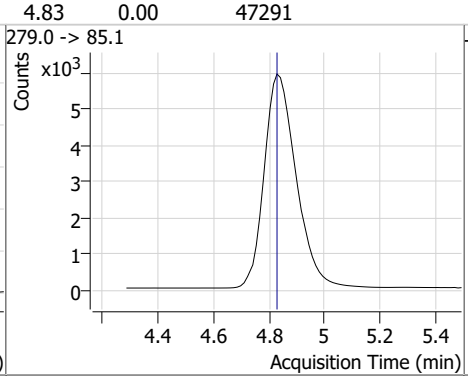


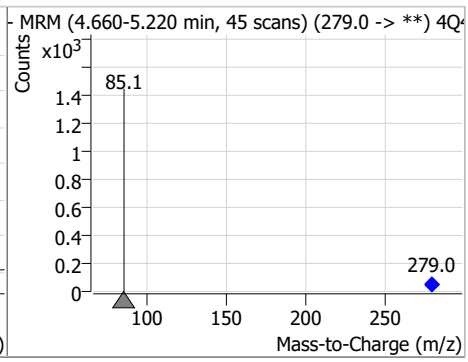




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	10.83	4.83	0.00	47291				

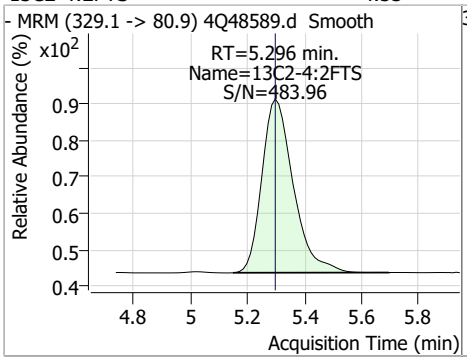


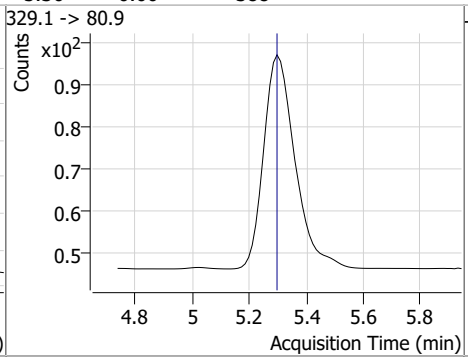


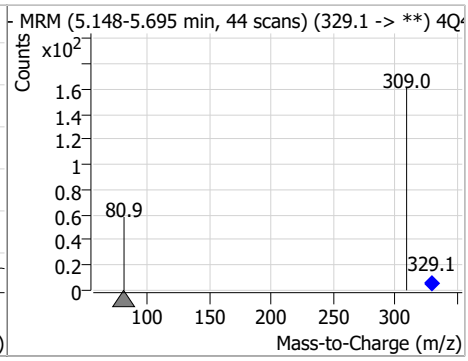


Perfluorinated Compounds by LC/MS/MS

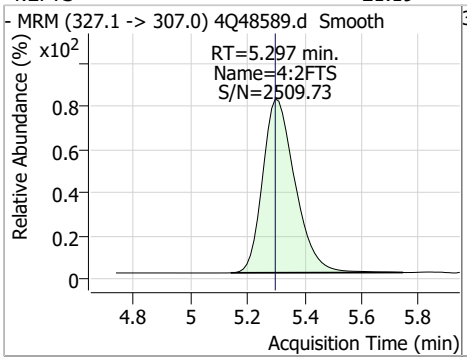
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.53	5.30	0.00	388				

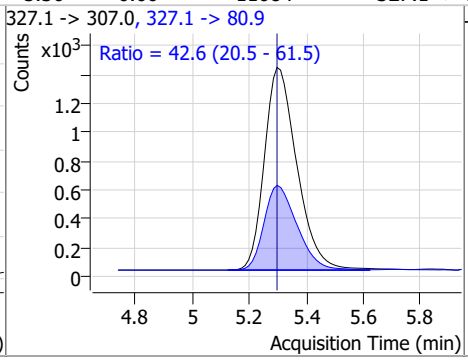


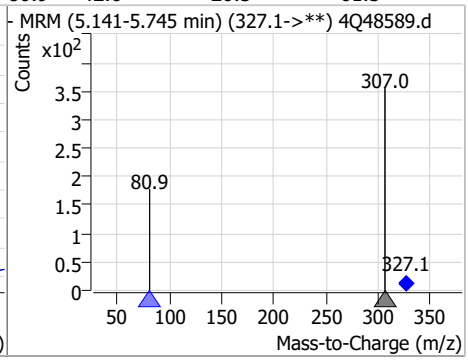




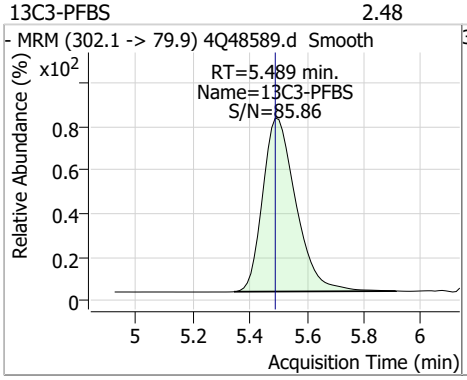
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.19	5.30	0.00	11084	327.1 -> 80.9	42.6	20.5	61.5

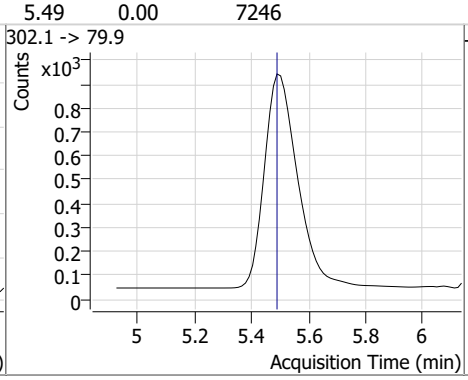


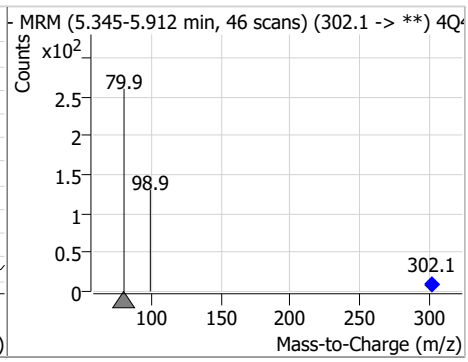




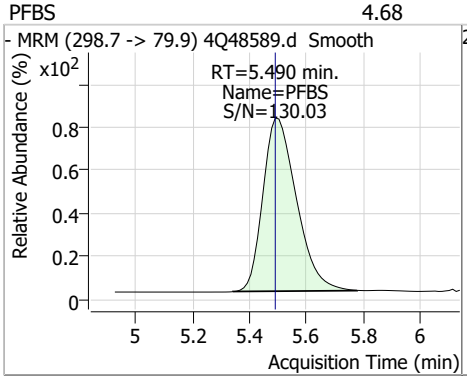
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.48	5.49	0.00	7246				

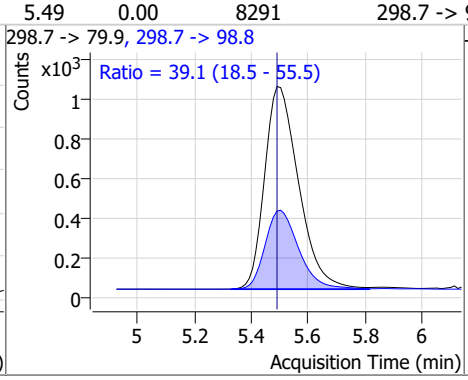


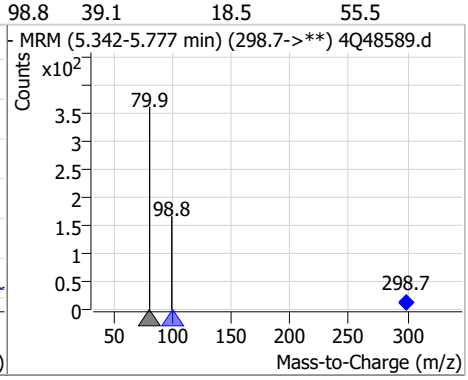




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.68	5.49	0.00	8291	298.7 -> 98.8	39.1	18.5	55.5

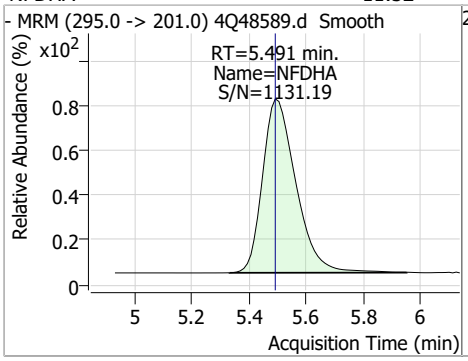


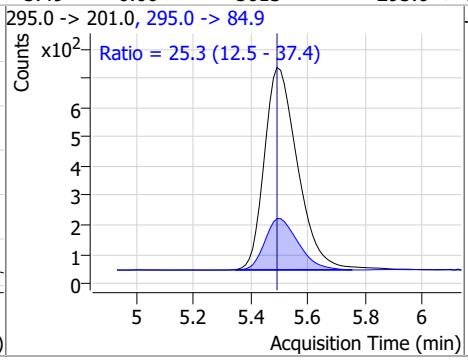


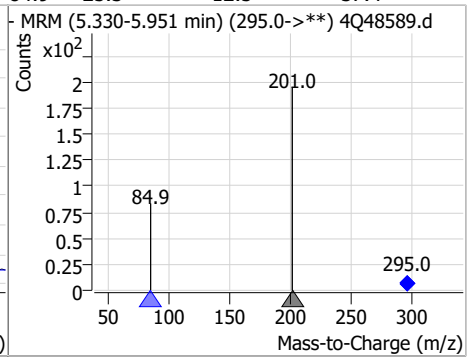


Perfluorinated Compounds by LC/MS/MS

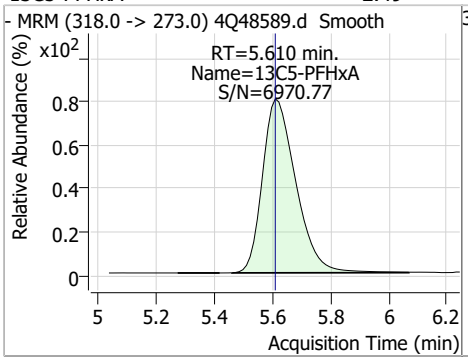
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	11.52	5.49	0.00	5613	295.0 -> 84.9	25.3	12.5	37.4

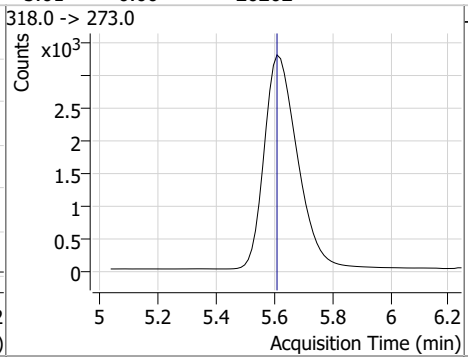


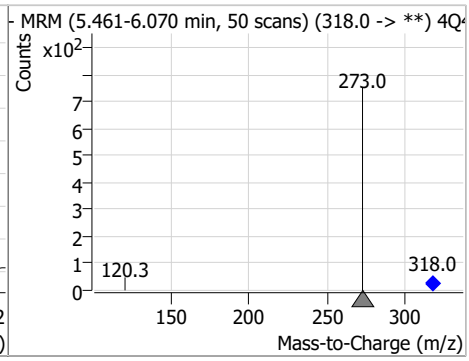




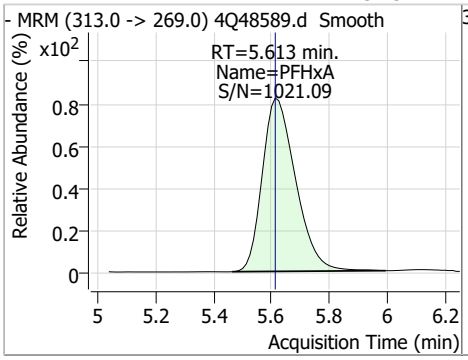
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.61	0.00	26202				

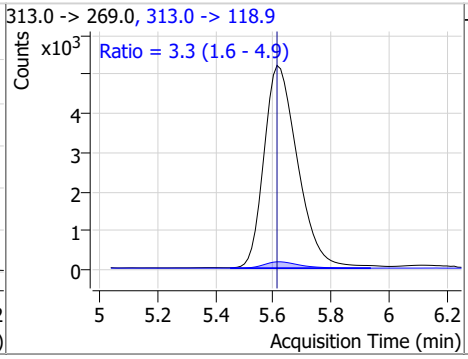


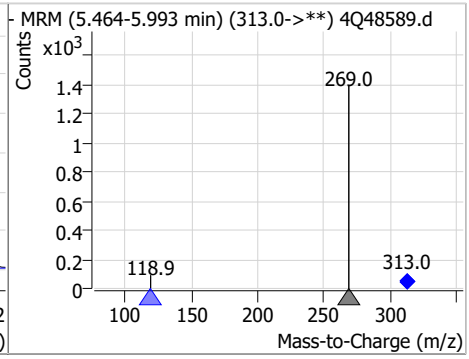




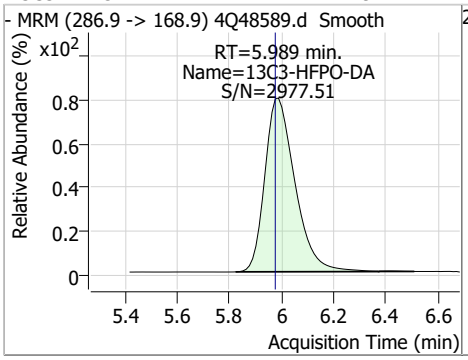
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.45	5.61	0.00	41202	313.0 -> 118.9	3.3	1.6	4.9

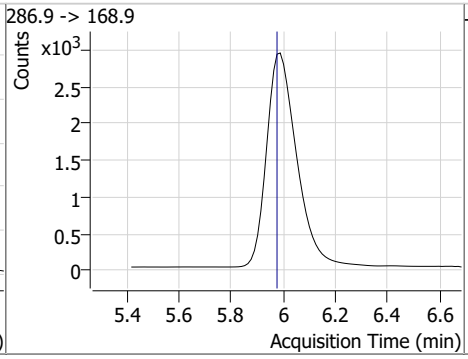


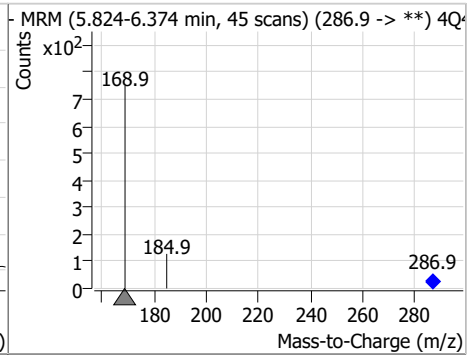




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.77	5.99	0.01	23397				

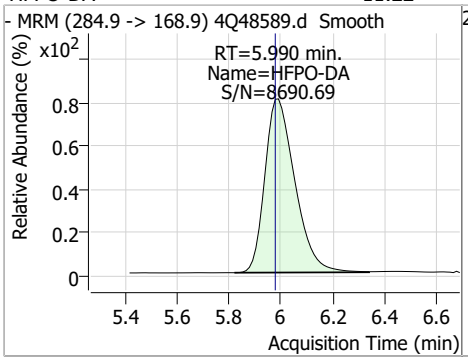


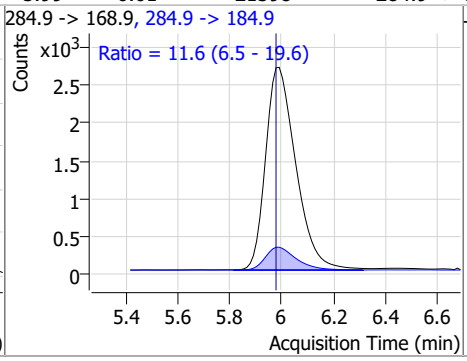


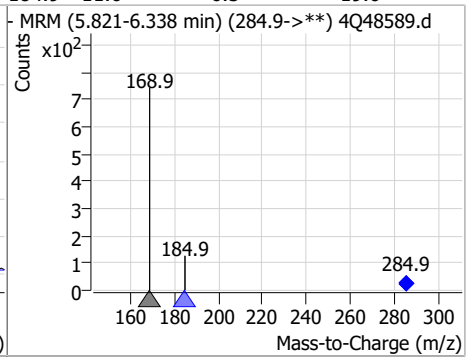


Perfluorinated Compounds by LC/MS/MS

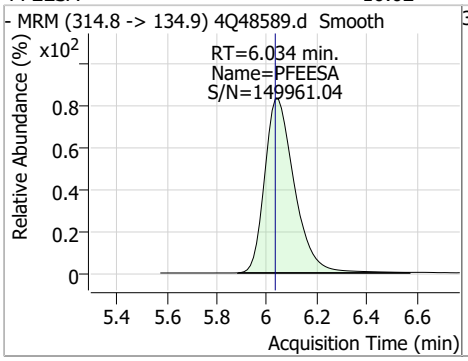
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	11.22	5.99	0.01	21598	284.9 -> 184.9	11.6	6.5	19.6

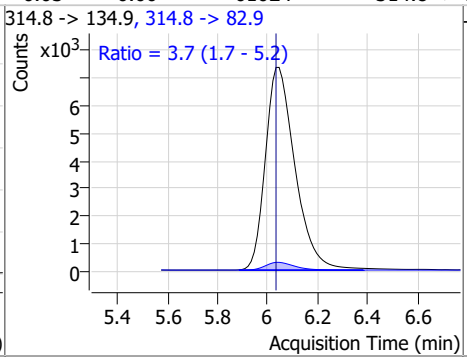


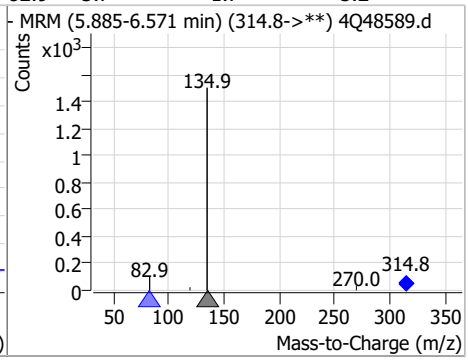




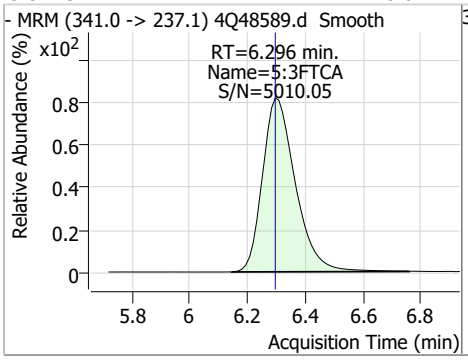
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	10.02	6.03	0.00	61024	314.8 -> 82.9	3.7	1.7	5.2

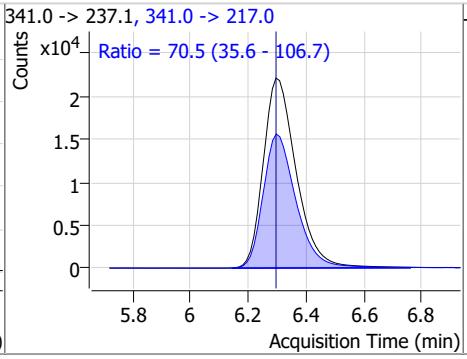


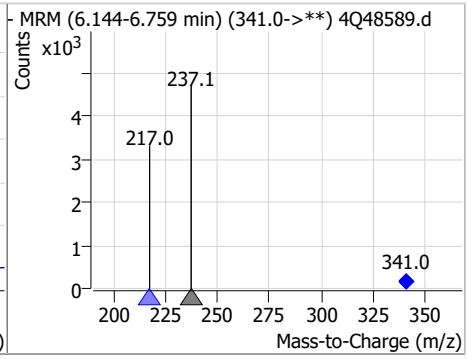




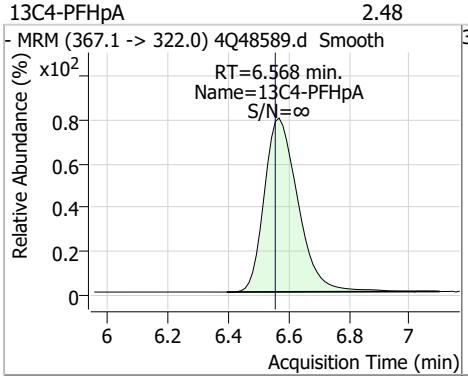
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	140.62	6.30	0.00	174001	341.0 -> 217.0	70.5	35.6	106.7

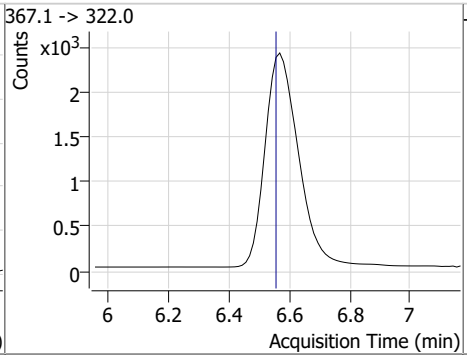


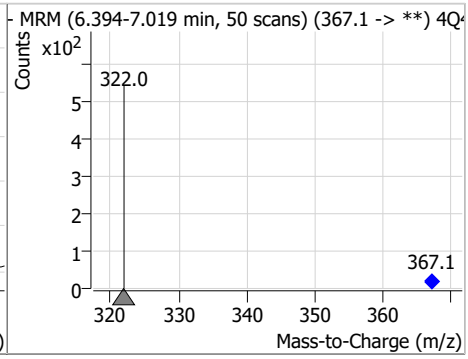




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.57	0.01	18558				

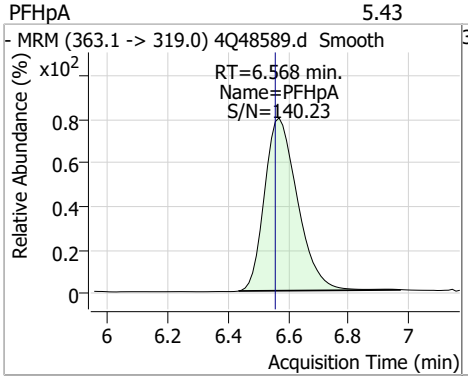


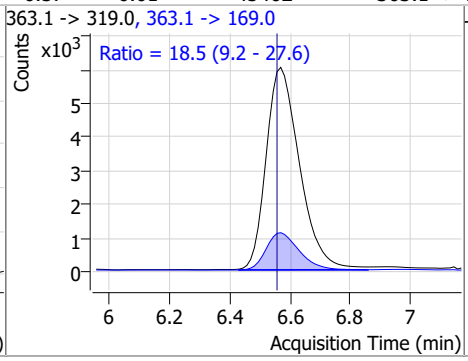


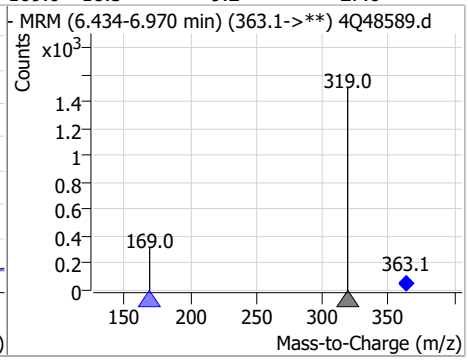


Perfluorinated Compounds by LC/MS/MS

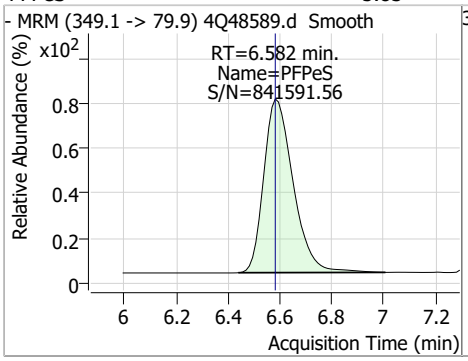
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.43	6.57	0.01	45462	363.1 -> 169.0	18.5	9.2	27.6

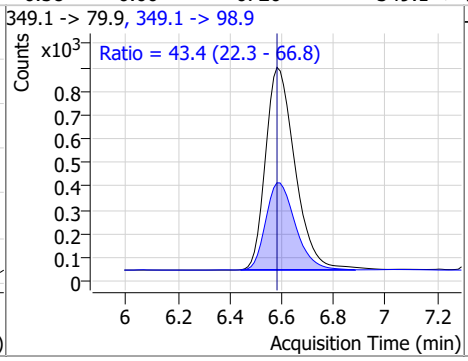


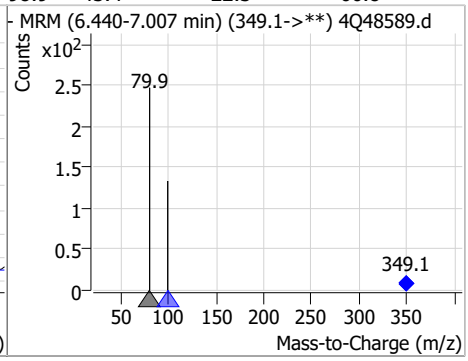




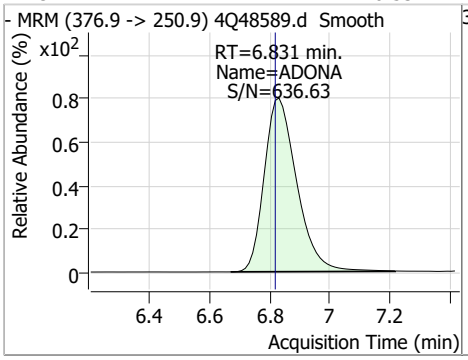
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.83	6.58	0.00	6720	349.1 -> 98.9	43.4	22.3	66.8

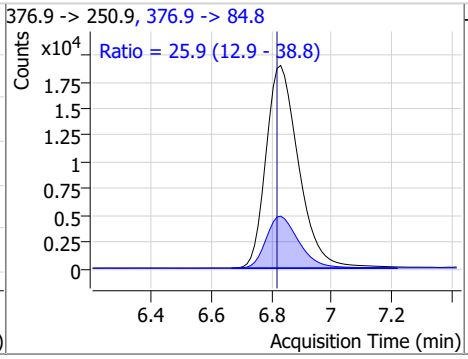


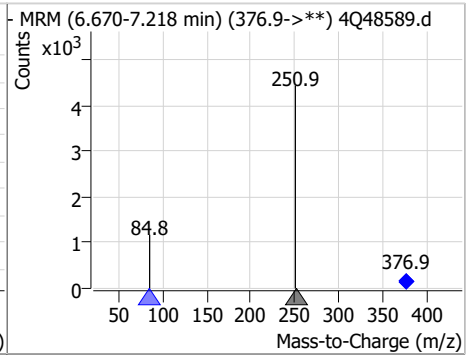




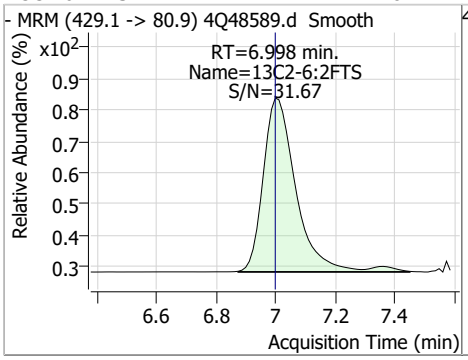
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.53	6.83	0.01	142913	376.9 -> 84.8	25.9	12.9	38.8

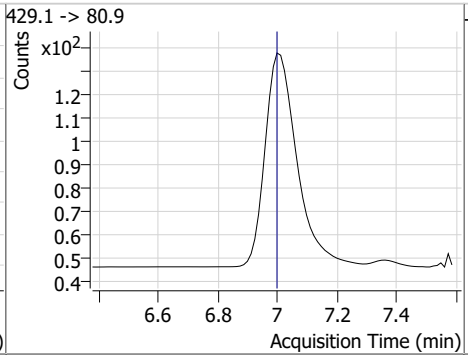


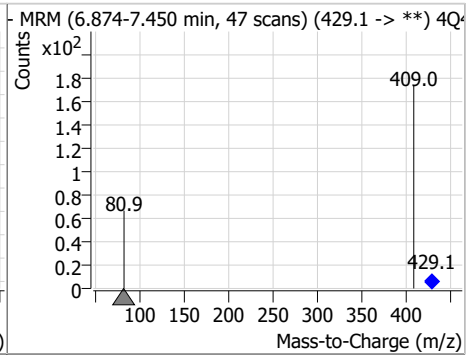




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.28	7.00	0.00	700				

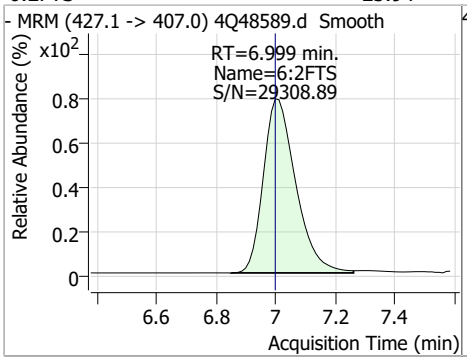


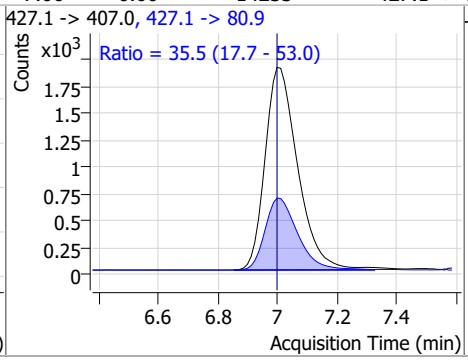


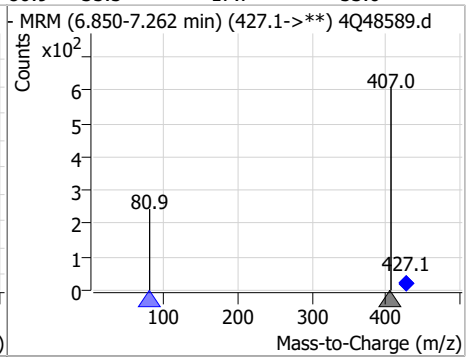


Perfluorinated Compounds by LC/MS/MS

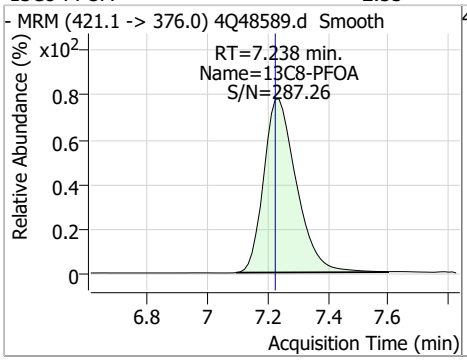
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	23.94	7.00	0.00	14233	427.1 -> 80.9	35.5	17.7	53.0

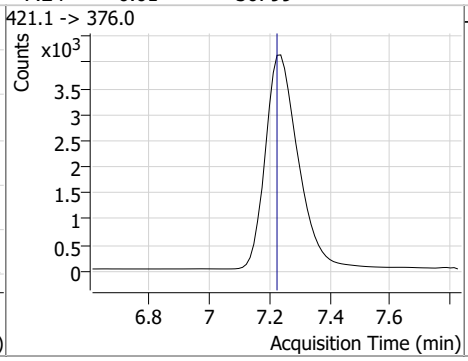


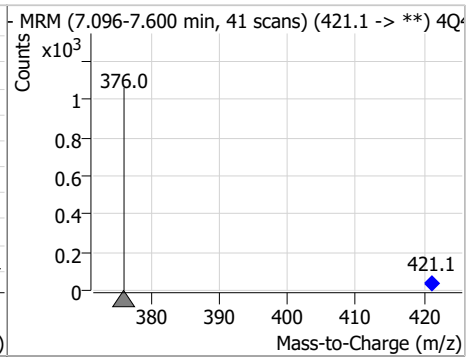




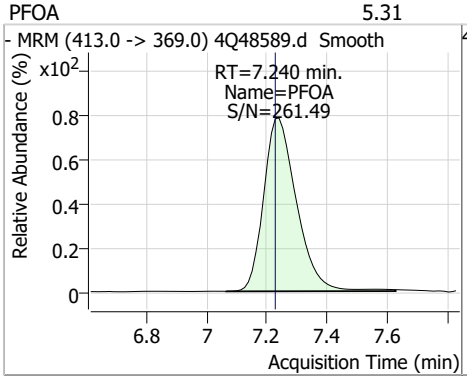
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.55	7.24	0.01	30799				

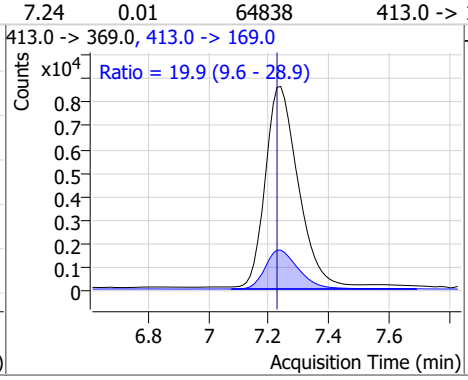


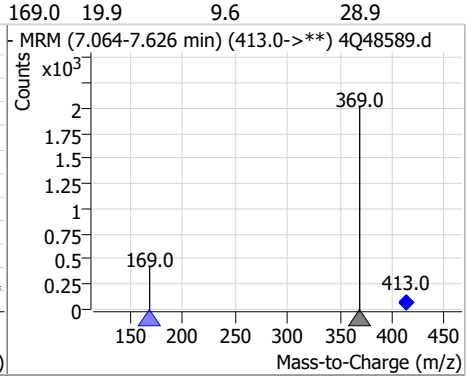




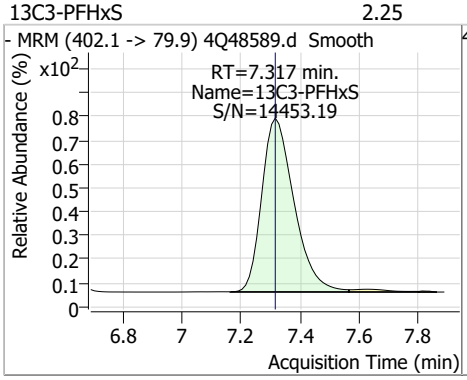
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.31	7.24	0.01	64838	413.0 -> 169.0	19.9	9.6	28.9

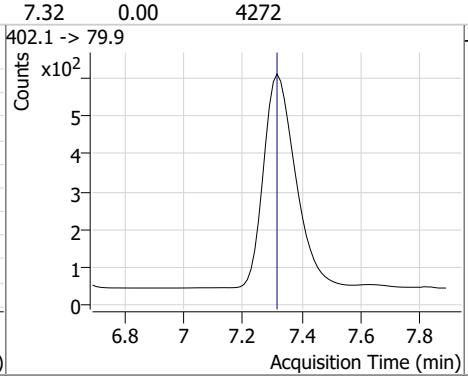


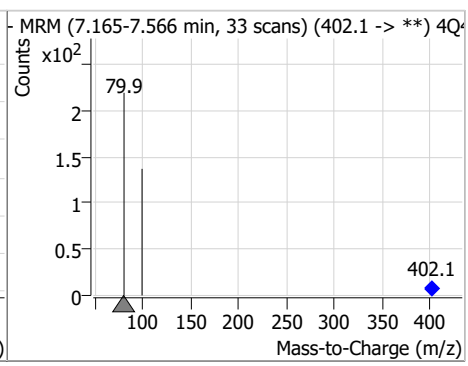




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.25	7.32	0.00	4272				

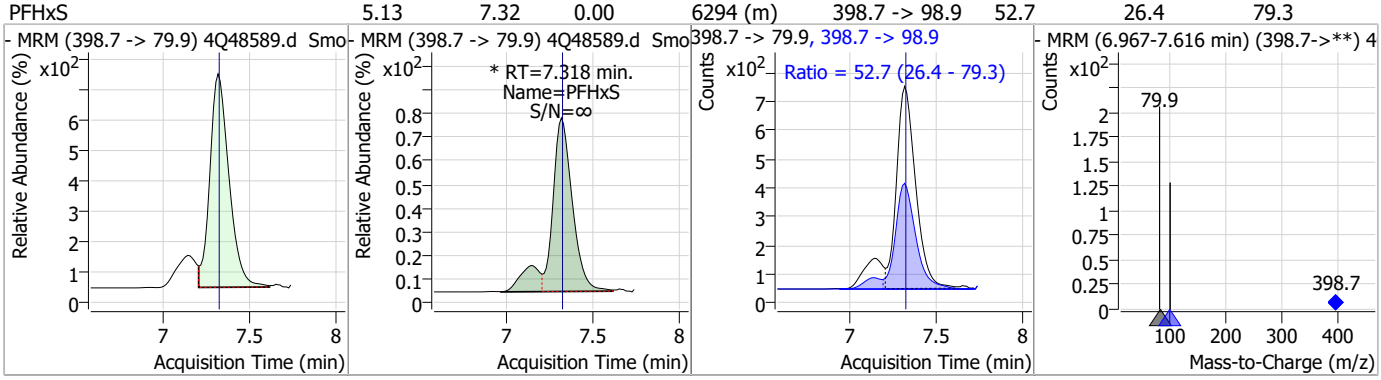




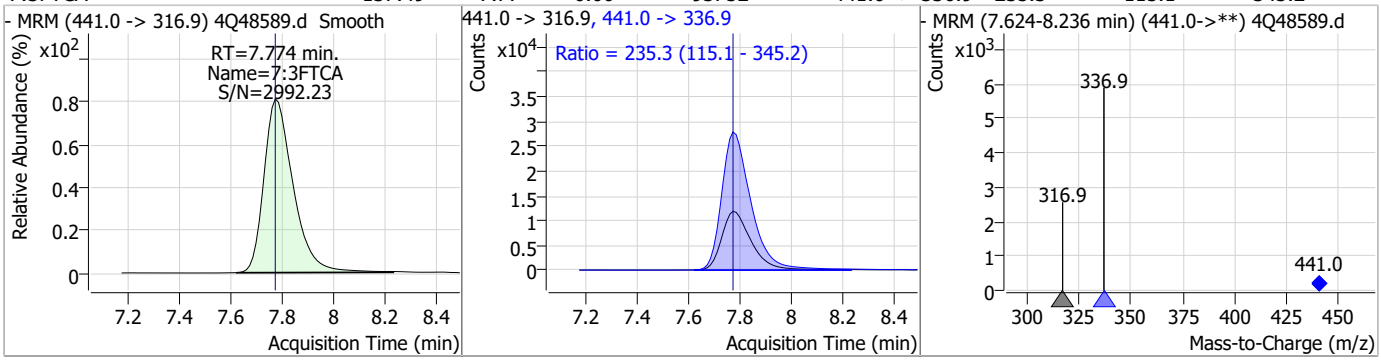


Perfluorinated Compounds by LC/MS/MS

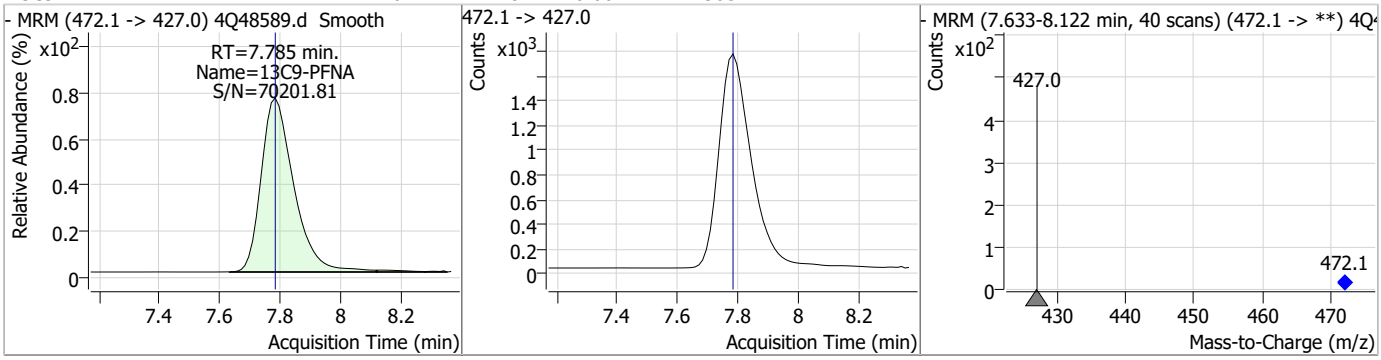
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.13	7.32	0.00	6294 (m)	398.7 -> 98.9	52.7	26.4	79.3



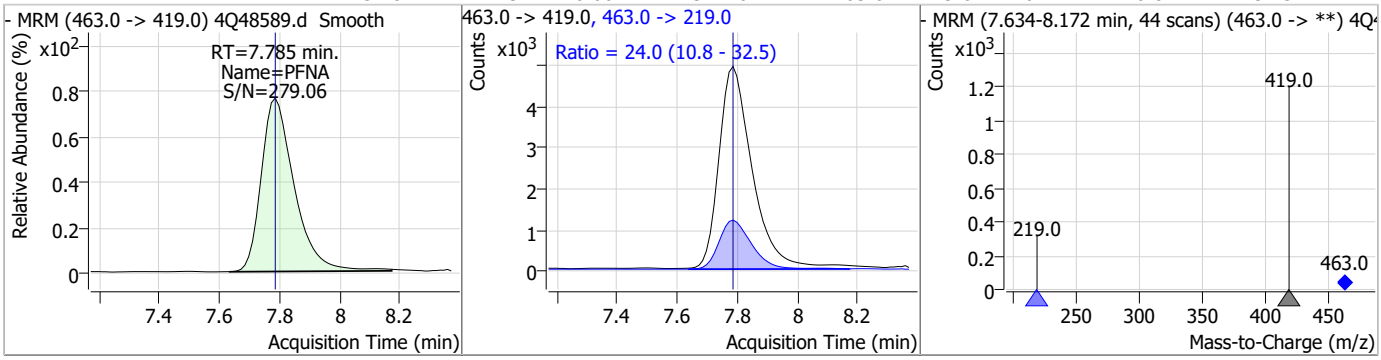
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	137.49	7.77	0.00	93752	441.0 -> 336.9	235.3	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.78	0.00	13057				

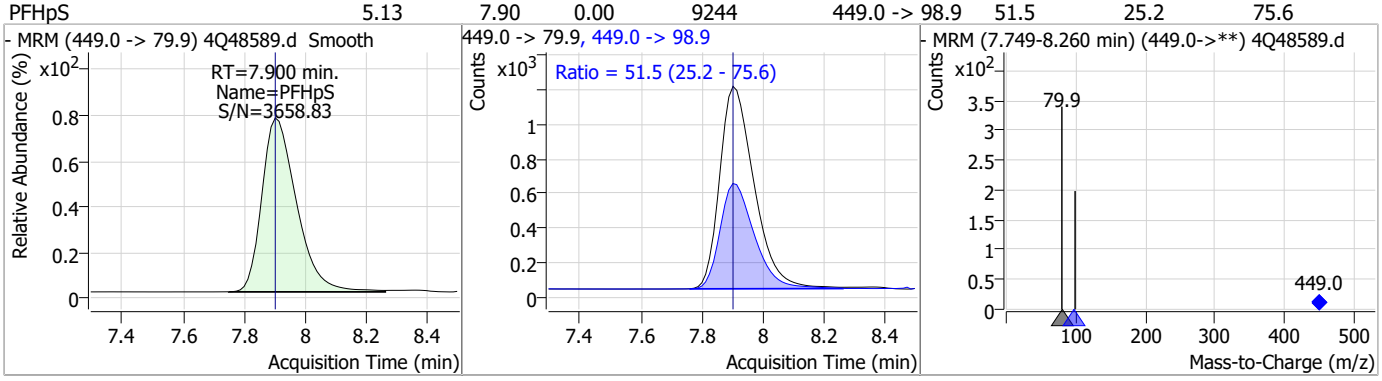


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.48	7.79	0.00	37226	463.0 -> 219.0	24.0	10.8	32.5

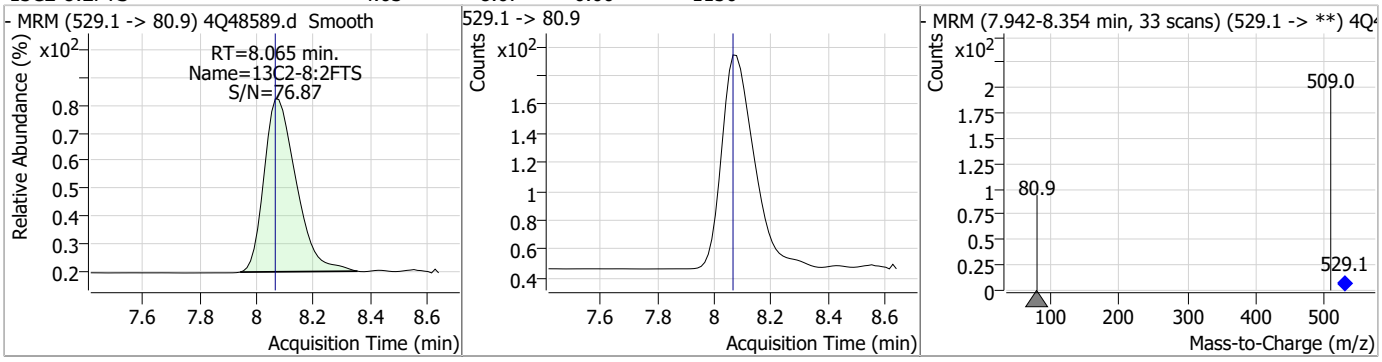


Perfluorinated Compounds by LC/MS/MS

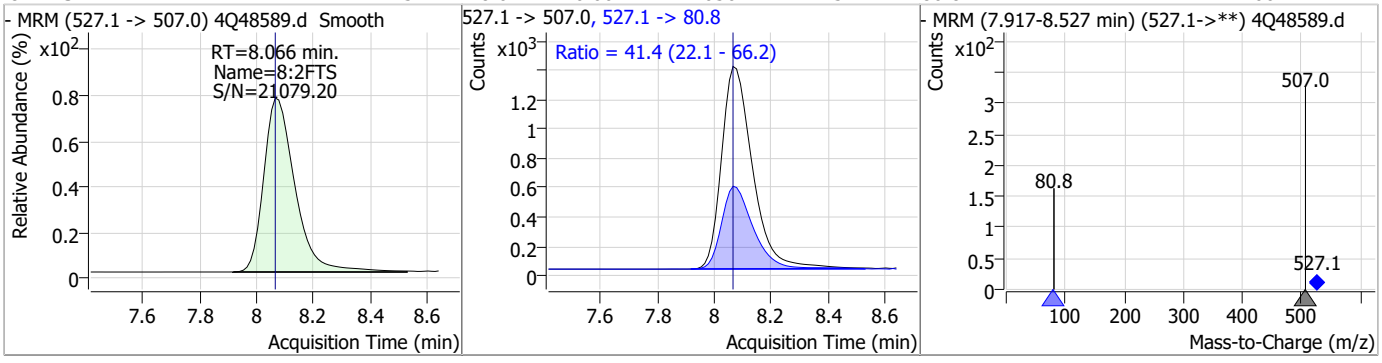
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.13	7.90	0.00	9244	449.0 -> 98.9	51.5	25.2	75.6



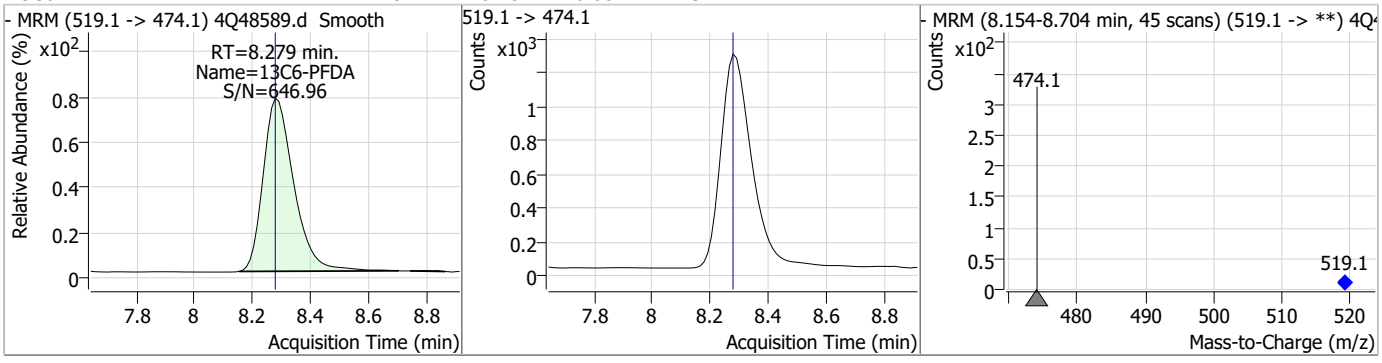
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.63	8.07	0.00	1150				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.75	8.07	0.00	10502	527.1 -> 80.8	41.4	22.1	66.2

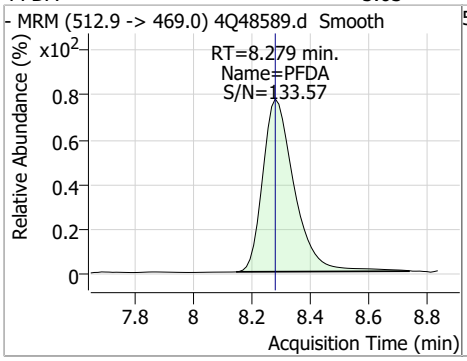


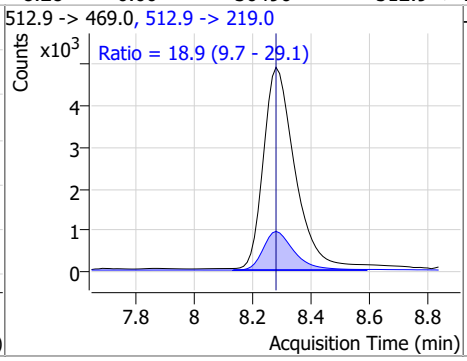
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.18	8.28	0.00	9227				

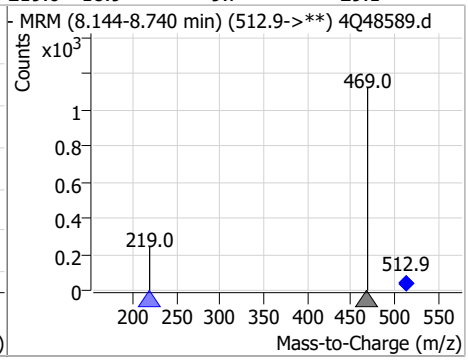


Perfluorinated Compounds by LC/MS/MS

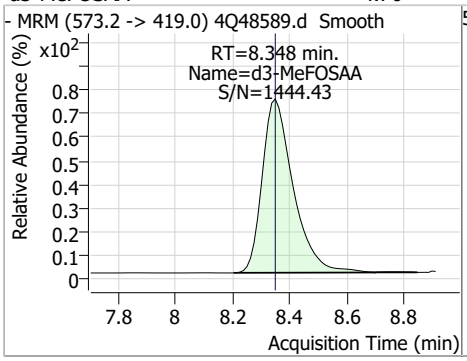
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.63	8.28	0.00	36496	512.9 -> 219.0	18.9	9.7	29.1

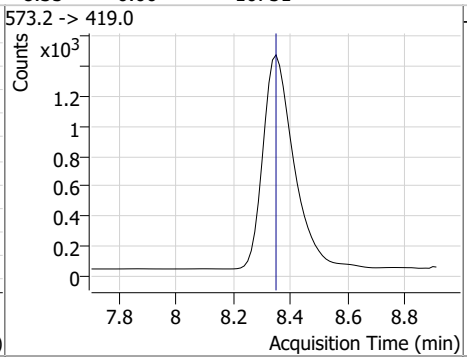


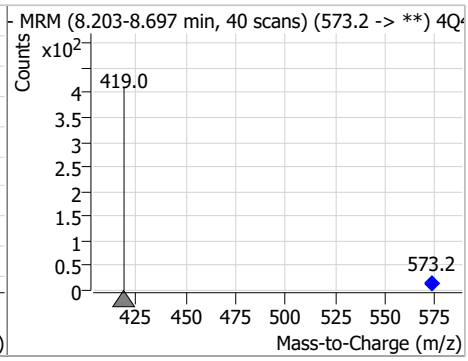




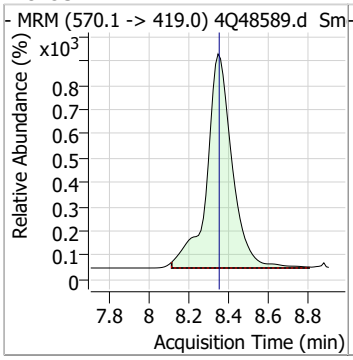
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.70	8.35	0.00	10751				

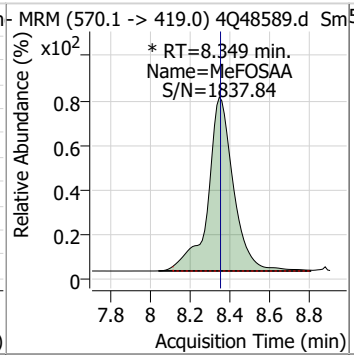


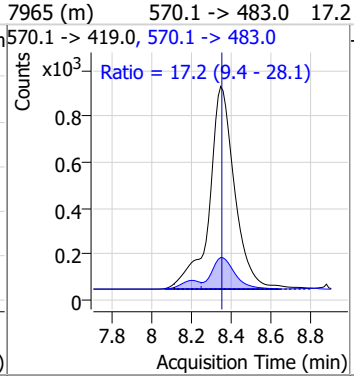


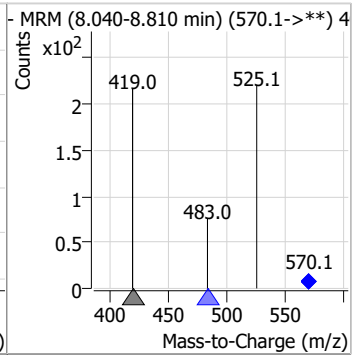


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.93	8.35	0.00	7965 (m)	570.1 -> 483.0	17.2	9.4	28.1

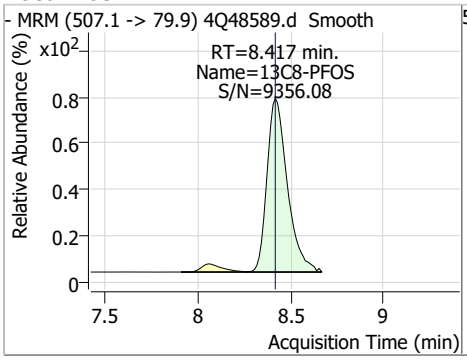


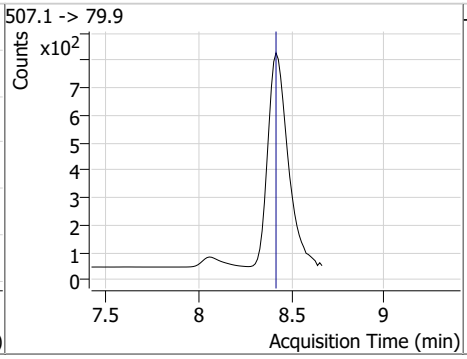


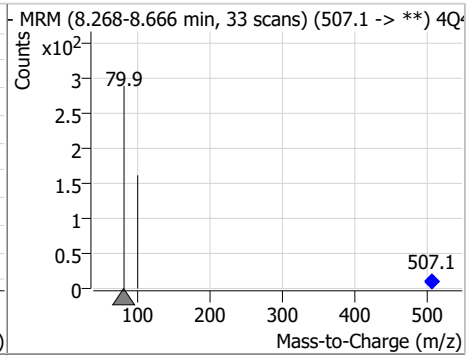




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.41	8.42	0.00	5963				

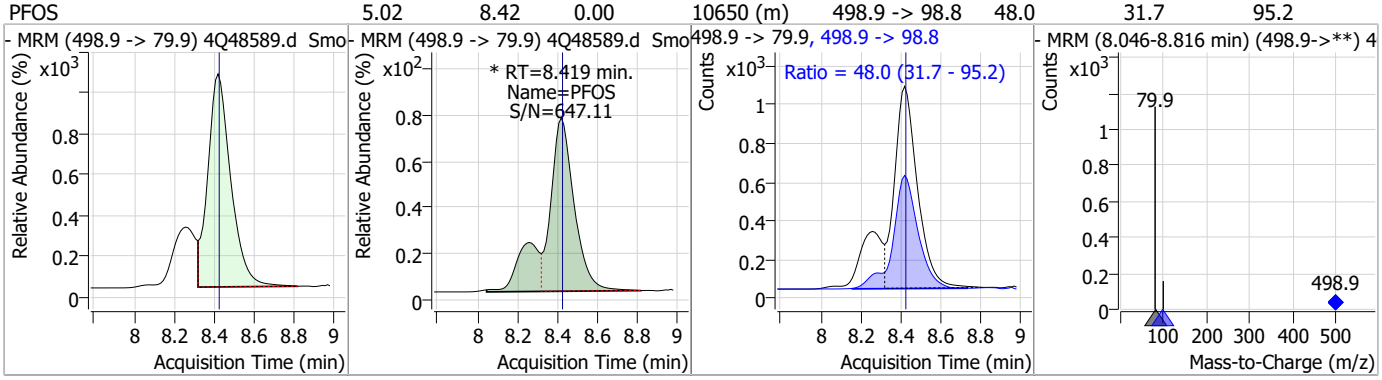




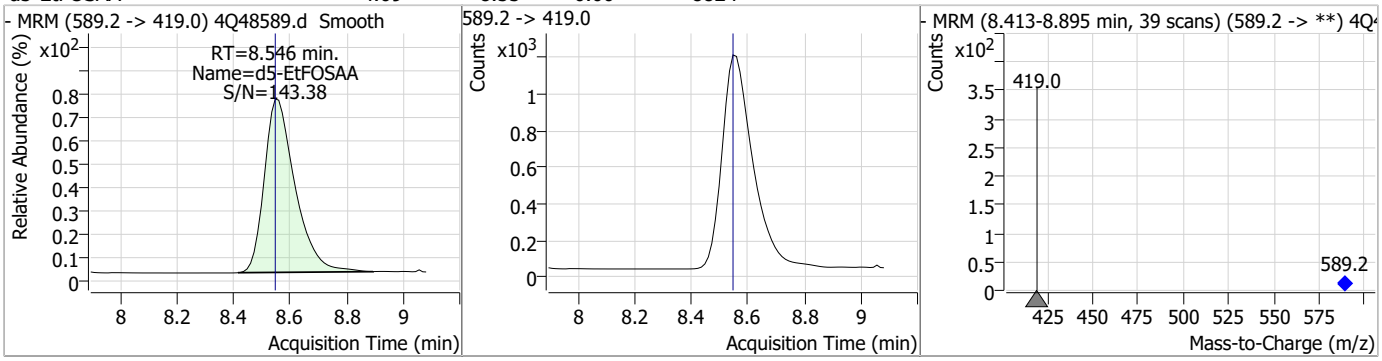


Perfluorinated Compounds by LC/MS/MS

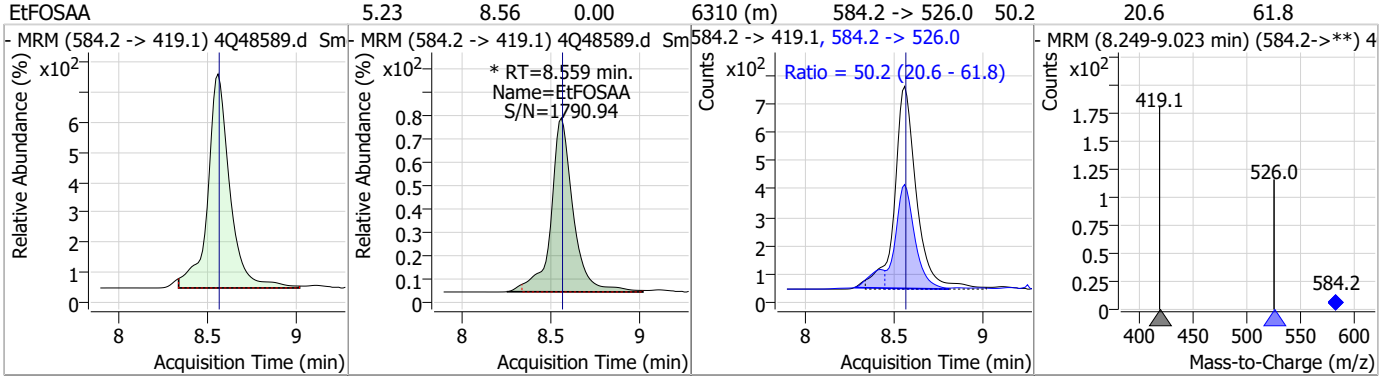
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5.02	8.42	0.00	10650 (m)	498.9 -> 98.8	48.0	31.7	95.2



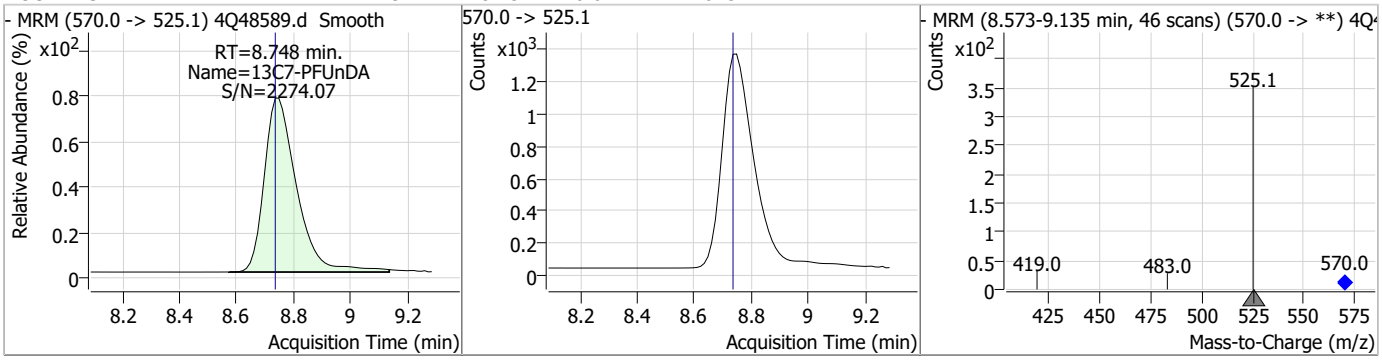
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.69	8.55	0.00	8824				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.23	8.56	0.00	6310 (m)	584.2 -> 526.0	50.2	20.6	61.8

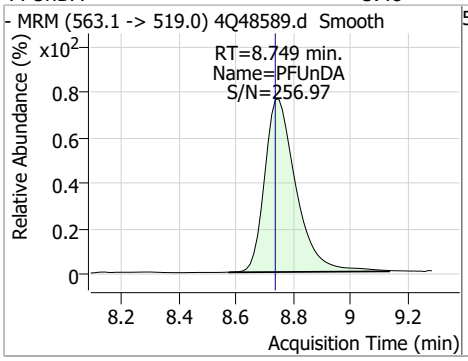


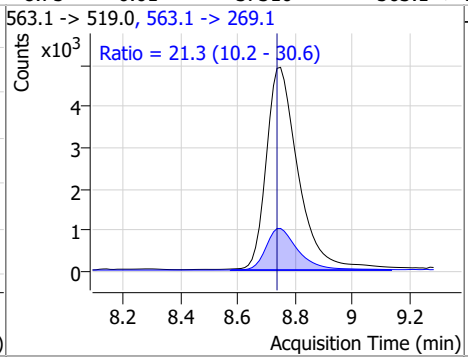
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.19	8.75	0.01	10451				

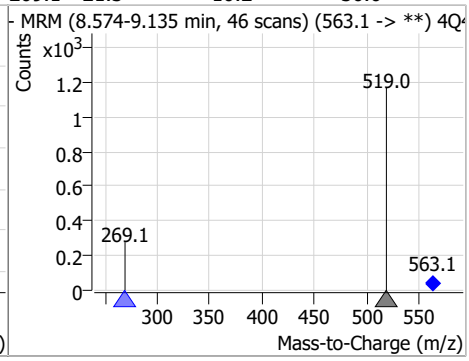


Perfluorinated Compounds by LC/MS/MS

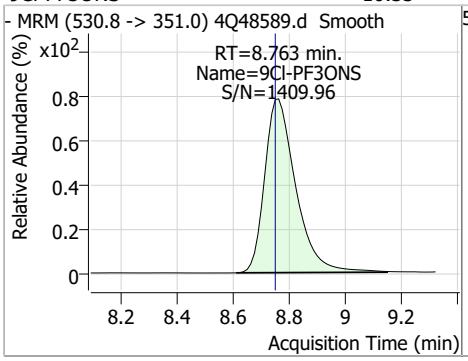
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.48	8.75	0.01	37310	563.1 -> 269.1	21.3	10.2	30.6

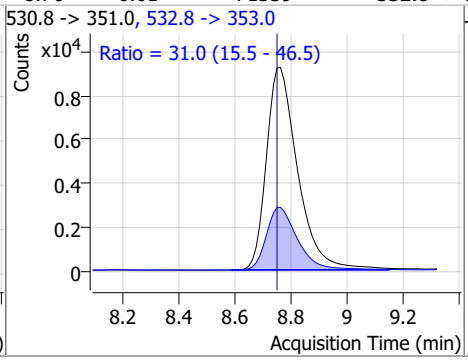


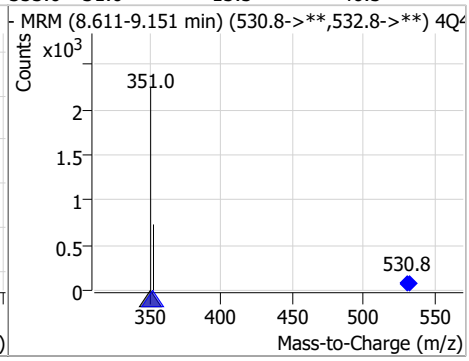




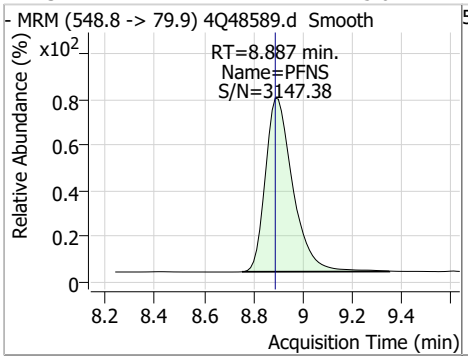
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	10.33	8.76	0.01	71339	532.8 -> 353.0	31.0	15.5	46.5

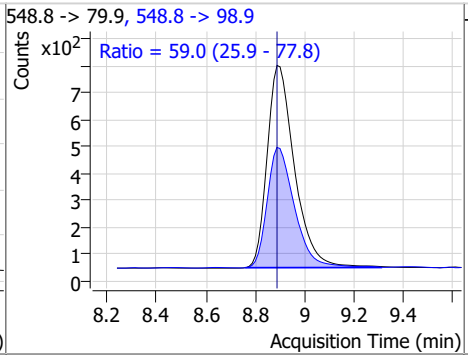


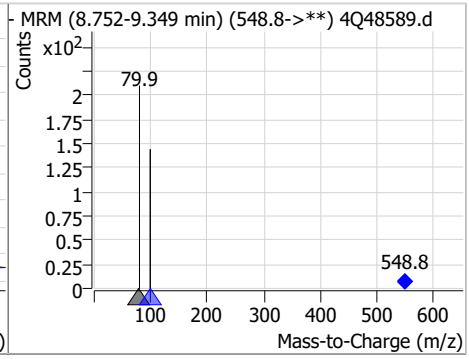




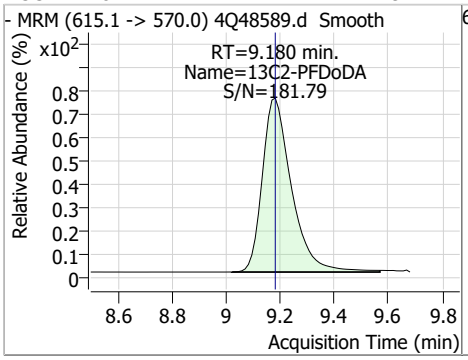
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.01	8.89	0.00	5838	548.8 -> 98.9	59.0	25.9	77.8

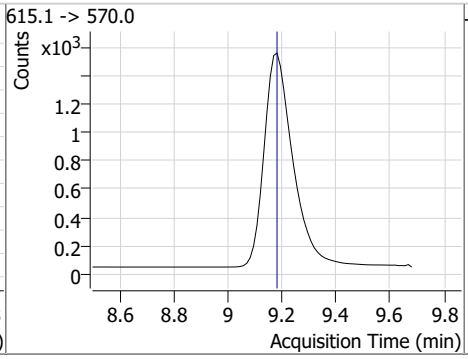


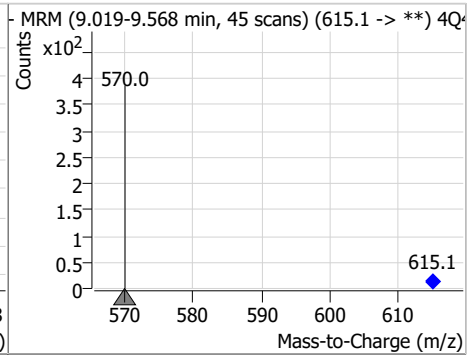




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	9.18	0.00	11443				

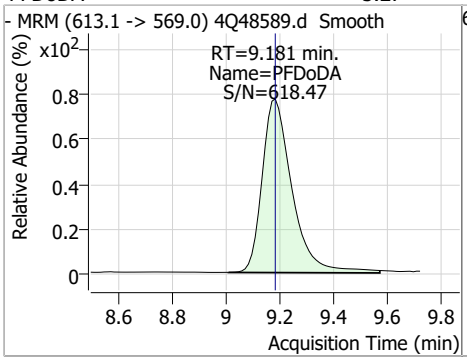


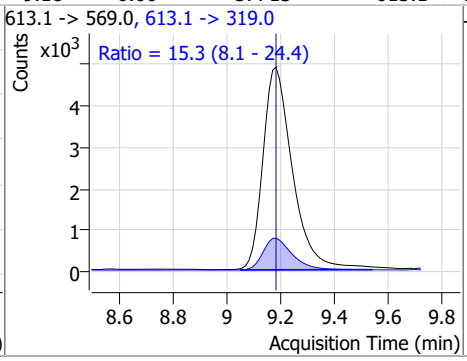


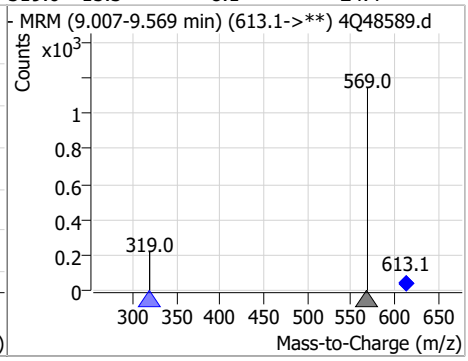


Perfluorinated Compounds by LC/MS/MS

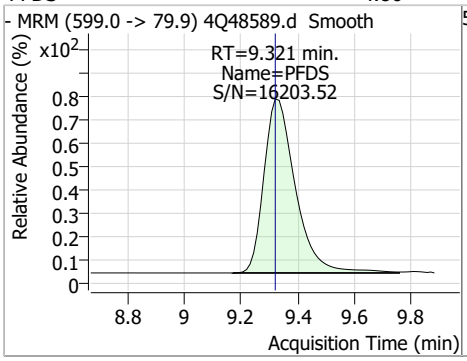
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.27	9.18	0.00	37713	613.1 -> 319.0	15.3	8.1	24.4

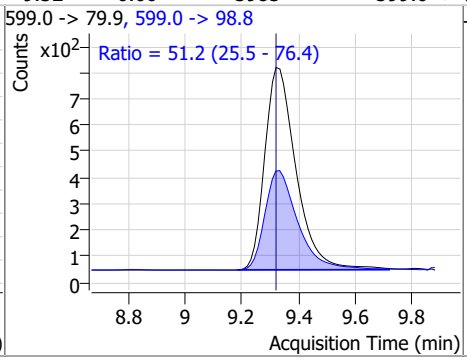


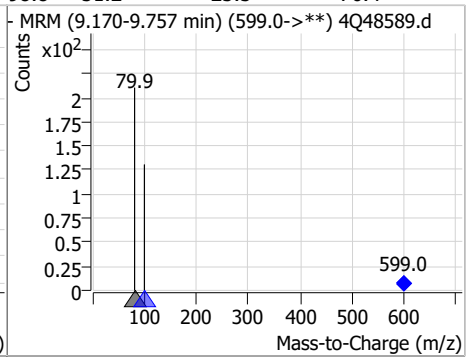




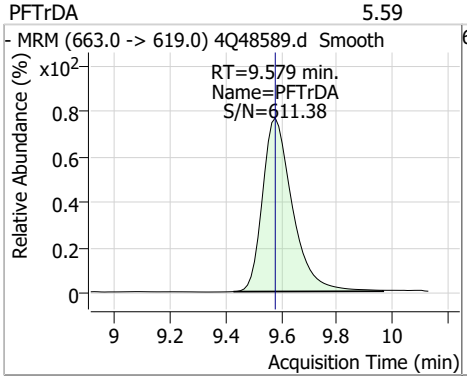
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.86	9.32	0.00	5985	599.0 -> 98.8	51.2	25.5	76.4

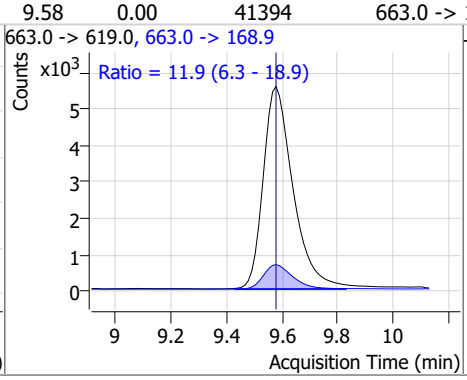


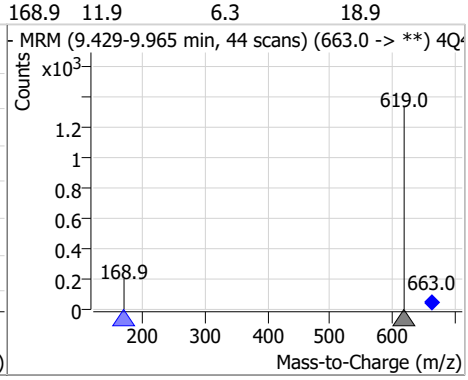




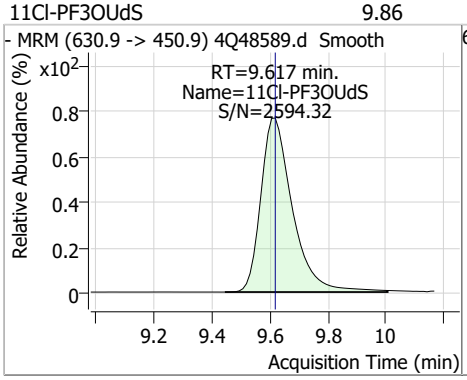
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.59	9.58	0.00	41394	663.0 -> 168.9	11.9	6.3	18.9

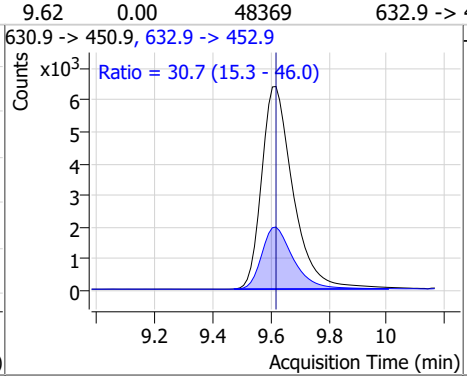


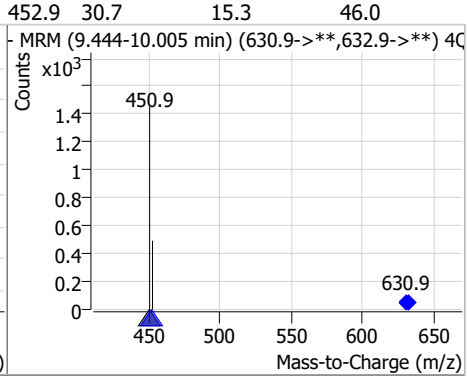




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.86	9.62	0.00	48369	632.9 -> 452.9	30.7	15.3	46.0

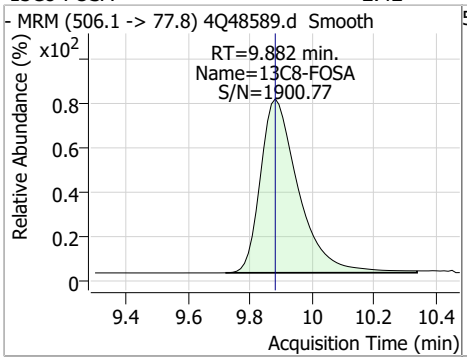


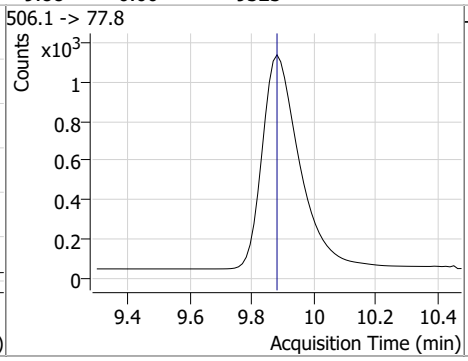


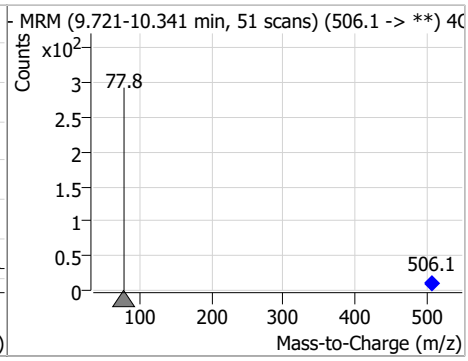


Perfluorinated Compounds by LC/MS/MS

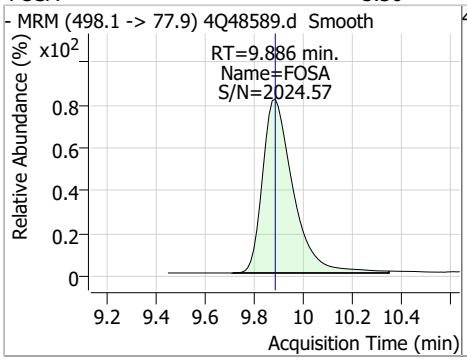
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.42	9.88	0.00	9323				

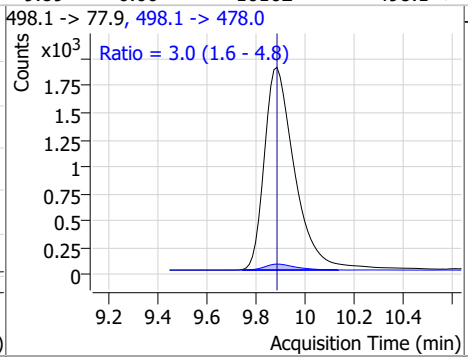


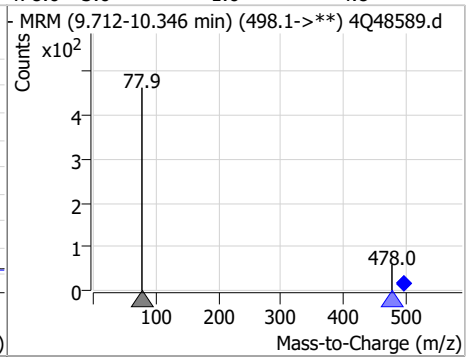




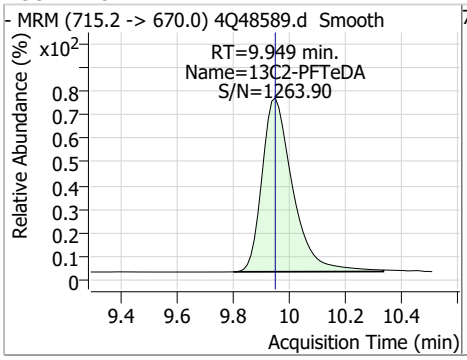
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.36	9.89	0.00	16162	498.1 -> 478.0	3.0	1.6	4.8

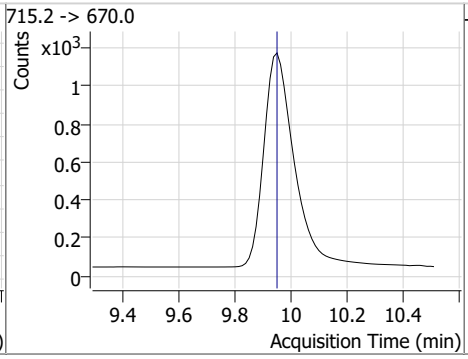


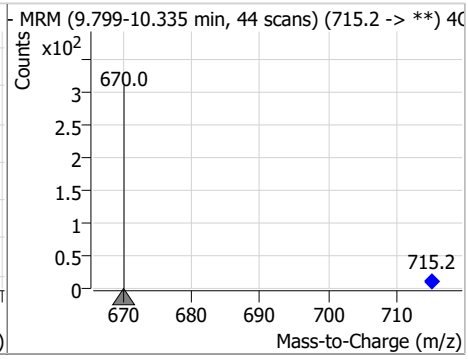




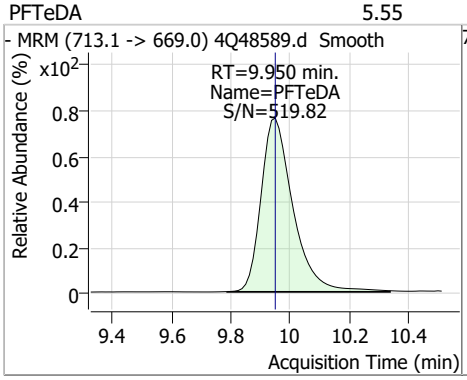
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.11	9.95	0.00	8587				

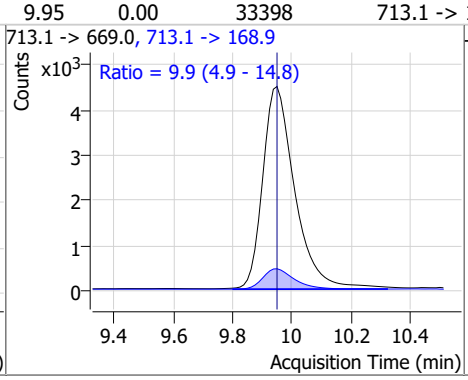


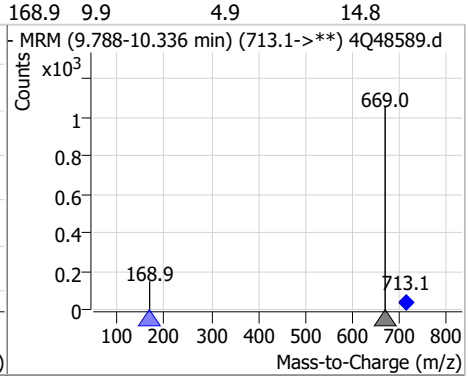




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.55	9.95	0.00	33398	713.1 -> 168.9	9.9	4.9	14.8

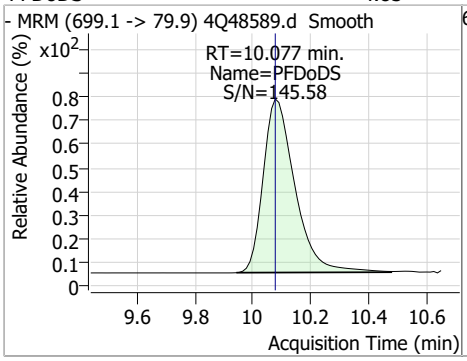


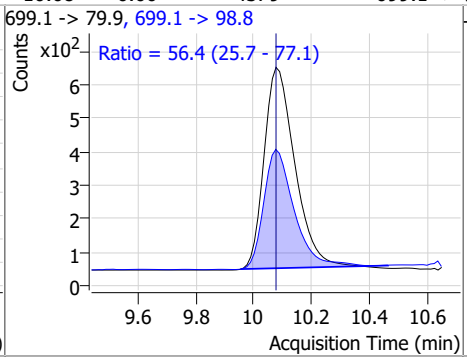


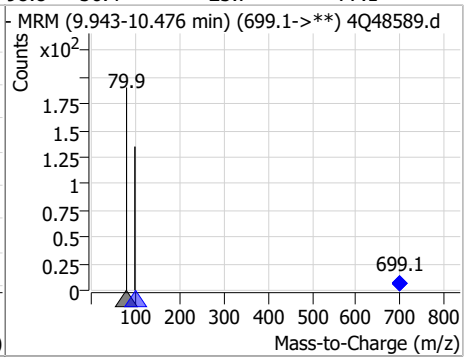


Perfluorinated Compounds by LC/MS/MS

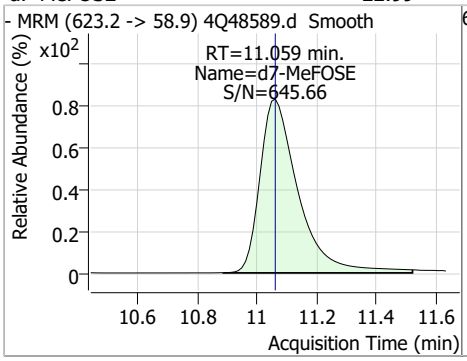
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	4.83	10.08	0.00	4579	699.1 -> 98.8	56.4	25.7	77.1

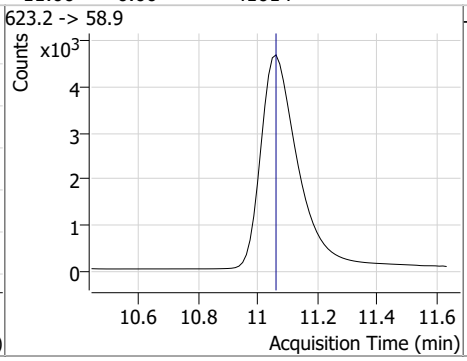


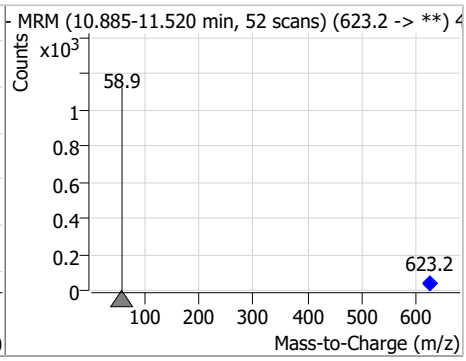




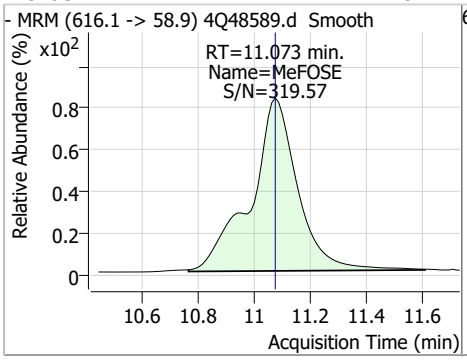
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.99	11.06	0.00	41614				

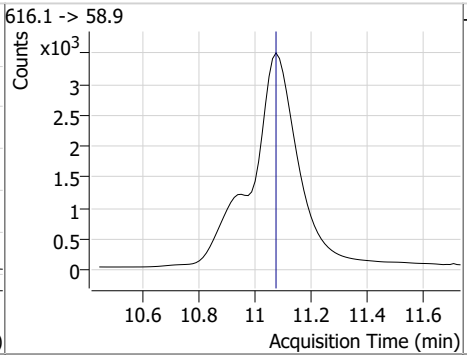


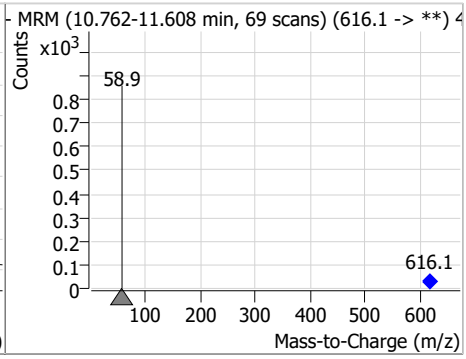




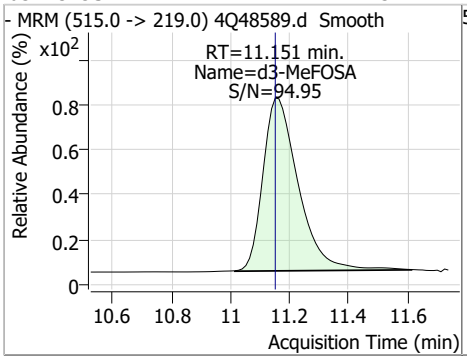
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	27.23	11.07	0.00	40529				

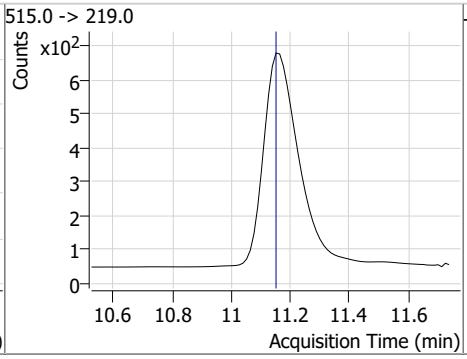


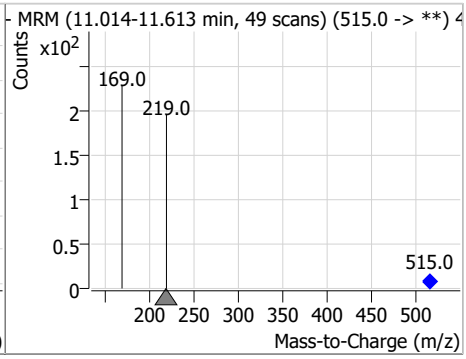




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.32	11.15	0.00	5256				

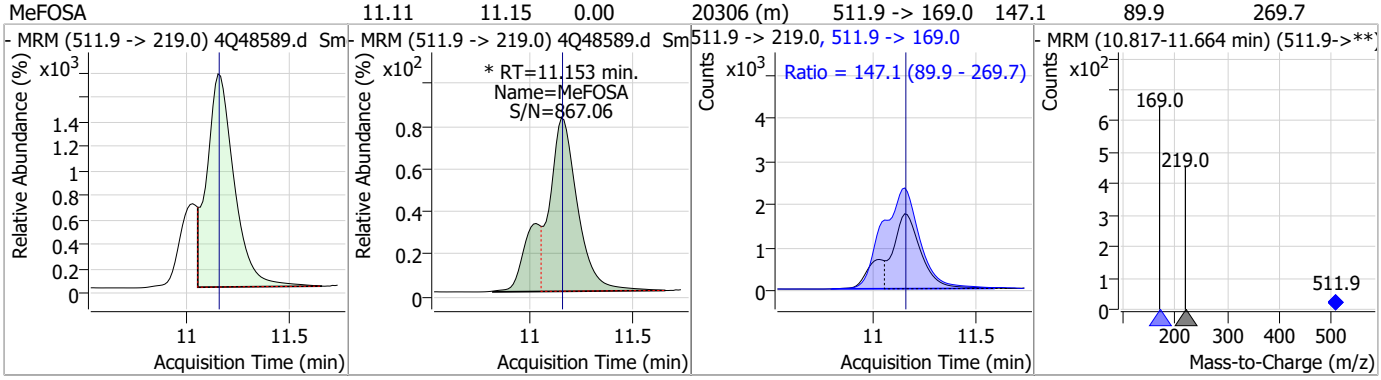




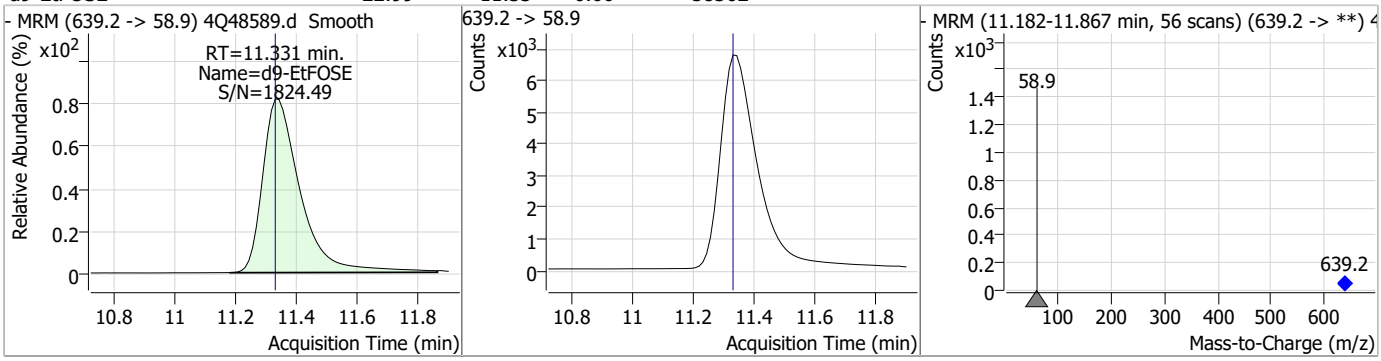


Perfluorinated Compounds by LC/MS/MS

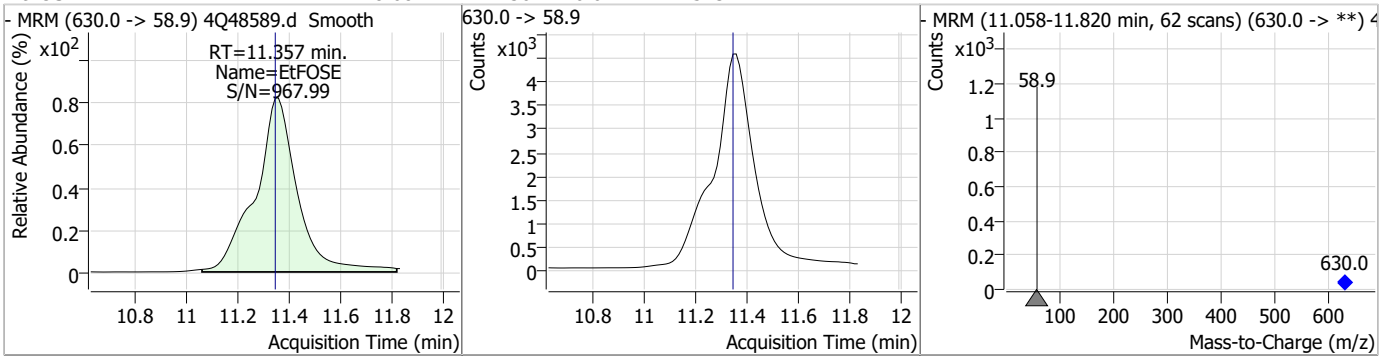
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	11.11	11.15	0.00	20306 (m)	511.9 -> 169.0	147.1	89.9	269.7



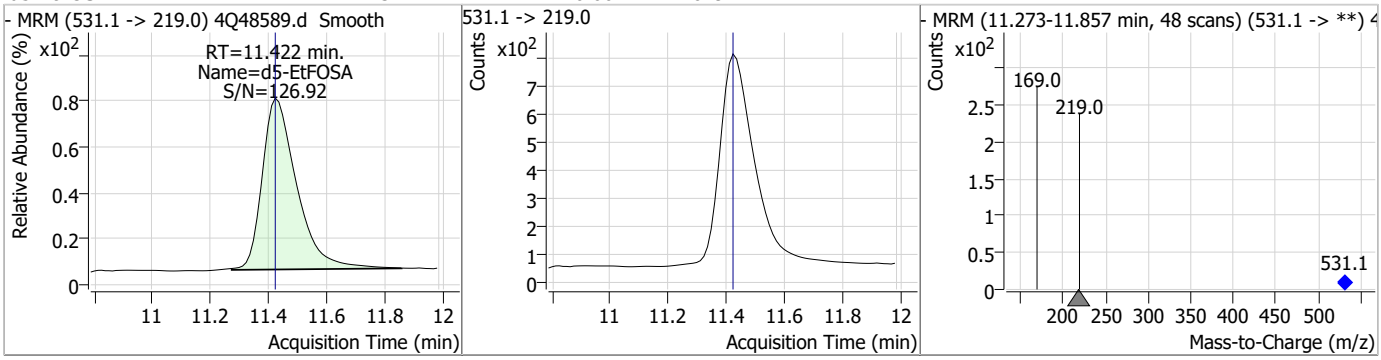
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.99	11.33	0.00	58362				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	28.68	11.36	0.01	52374				

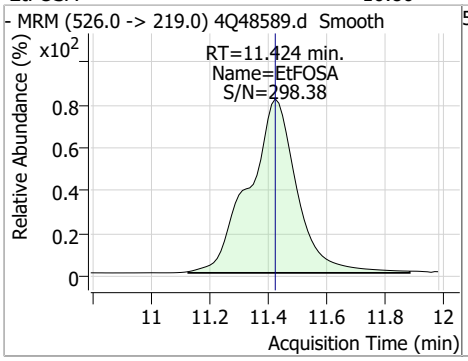


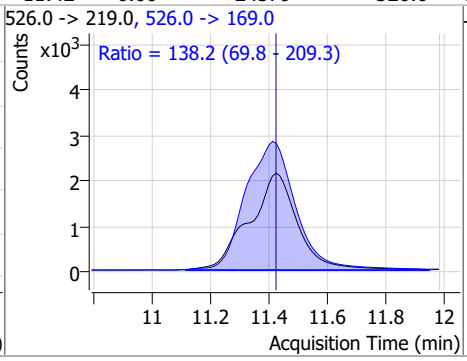
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.37	11.42	0.00	6191				

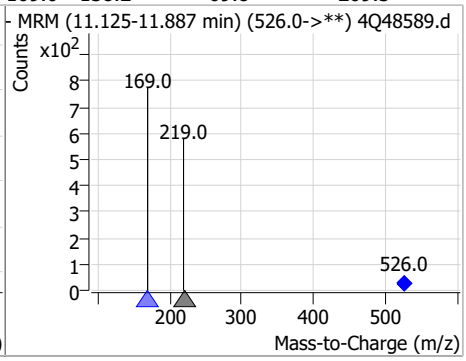


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	10.80	11.42	0.00	24579	526.0 -> 169.0	138.2	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48589.D
Injection Time: 08/07/23 17:28
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSA	31506-32-8		11.15	Split peak

4Q48590.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48590.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 5:43:35 PM
Sample Name : ic711-6
Vial : P1-A7
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	99124	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	61719	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	37215	2.50	µg/L	0.000
M4-PFHpA	6.555	367.1 -> 322.0	26897	2.50	µg/L	0.000
M8-PFOA	7.226	421.1 -> 376.0	44058	2.50	µg/L	0.000
M9-PFNA	7.785	472.1 -> 427.0	20279	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14668	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	16184	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	16949	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	13662	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	13310	2.50	µg/L	0.000
M3-PFBS	5.489	302.1 -> 79.9	9714	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6388	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8290	2.50	µg/L	0.000
M2-4:2FTS	5.296	329.1 -> 80.9	574	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	1101	5.00	µg/L	0.000
M2-8:2FTS	8.078	529.1 -> 80.9	1848	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	15713	5.00	µg/L	0.000
M3-HFPO-DA	5.977	286.9 -> 168.9	34180	10.00	µg/L	0.000
M5-EtFOSAA	8.559	589.2 -> 419.0	13257	5.00	µg/L	0.012
M7-MeFOSE	11.047	623.2 -> 58.9	61116	25.00	µg/L	-0.012
M9-EtFOSE	11.331	639.2 -> 58.9	90365	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	9390	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	7783	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	7983	2.50	µg/L	0.000
13C3-PFBA	2.903	216.0 -> 172.0	57790	5.00	µg/L	0.000
18O2-PFHxS	7.316	403.0 -> 83.9	4769	2.50	µg/L	0.000
13C4-PFOA	7.226	417.1 -> 372.0	55360	2.50	µg/L	0.000
13C2-PFDA	8.279	515.1 -> 470.1	15345	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	21386	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	35555	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	574	4.81	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-6:2FTS	6.998	429.1 -> 80.9	1101	4.84	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1848	5.35	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C2-PFDoDA	9.180	615.1 -> 570.0	16949	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-PFTeDA	9.949	715.2 -> 670.0	13662	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFBS	5.489	302.1 -> 79.9	9714	2.39	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFHxS	7.317	402.1 -> 79.9	6388	2.42	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 = 96.8%		
13C4-PFBA	2.911	216.8 -> 171.9	99124	10.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C4-PFHpA	6.555	367.1 -> 322.0	26897	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C5-PFHxA	5.610	318.0 -> 273.0	37215	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C5-PFPeA	4.412	268.3 -> 223.0	61719	4.97 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C6-PFDA	8.279	519.1 -> 474.1	14668	1.38 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C7-PFUnDA	8.748	570.0 -> 525.1	16184	1.35 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C8-FOSA	9.882	506.1 -> 77.8	13310	2.67 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C8-PFOA	7.226	421.1 -> 376.0	44058	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C8-PFOS	8.417	507.1 -> 79.9	8290	2.59 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C9-PFNA	7.785	472.1 -> 427.0	20279	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.1%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15713	5.30 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C3-HFPO-DA	5.977	286.9 -> 168.9	34180	10.09 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSA	11.151	515.0 -> 219.0	7783	2.65 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%		
d5-EtFOSAA	8.559	589.2 -> 419.0	13257	5.44 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
d7-MeFOSE	11.047	623.2 -> 58.9	61116	26.07 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d9-EtFOSE	11.331	639.2 -> 58.9	90365	27.48 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
d5-EtFOSA	11.422	531.1 -> 219.0	9390	2.78 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.2%		
Target Compounds						**QValue**
4:2FTS	5.297	327.1 -> 307.0	35296	45.64 µg/L		99
		327.1 -> 80.9	14636			
6:2FTS	6.999	427.1 -> 407.0	45253	48.42 µg/L		98
		427.1 -> 80.9	16430			
8:2FTS	8.078	527.1 -> 507.0	35785	48.22 µg/L		91
		527.1 -> 80.8	13719			
EtFOSAA	8.559	584.2 -> 419.1	22780	12.57 µg/L	m	94
		584.2 -> 526.0	10201			
FOSA	9.886	498.1 -> 77.9	54166	12.57 µg/L		99
		498.1 -> 478.0	1595			
MeFOSAA	8.349	570.1 -> 419.0	25866	13.17 µg/L		98
		570.1 -> 483.0	4582			
PFBA	2.907	212.8 -> 168.9	115750	50.71 µg/L		100
PFBS	5.490	298.7 -> 79.9	28070	11.83 µg/L		100
		298.7 -> 98.8	10462			
PFDA	8.279	512.9 -> 469.0	129059	12.52 µg/L		99
		512.9 -> 219.0	24244			
PFDoDA	9.181	613.1 -> 569.0	140678	13.27 µg/L		98
		613.1 -> 319.0	21996			
PFDS	9.321	599.0 -> 79.9	21986	12.84 µg/L		99

Perfluorinated Compounds by LC/MS/MS

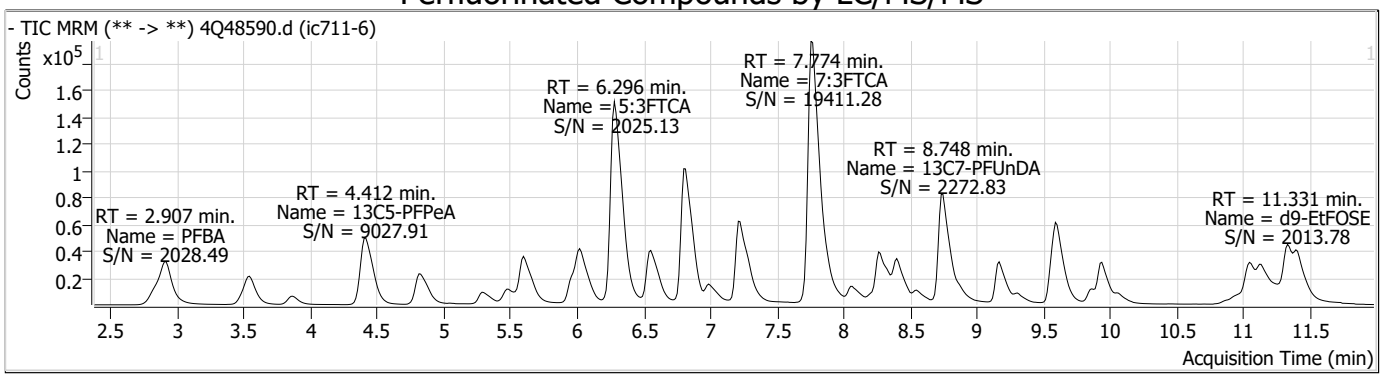
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	11130				
PFHpA	6.556	363.1 -> 319.0	156998	12.93	µg/L		99
		363.1 -> 169.0	28274				
PFHpS	7.900	449.0 -> 79.9	31103	12.41	µg/L		98
		449.0 -> 98.9	16022				
PFHxA	5.613	313.0 -> 269.0	139445	12.98	µg/L		99
		313.0 -> 118.9	4125				
PFHxS	7.318	398.7 -> 79.9	21301	11.62	µg/L	m	98
		398.7 -> 98.9	10967				
PFNA	7.785	463.0 -> 419.0	133907	12.69	µg/L		100
		463.0 -> 219.0	28955				
PFNS	8.887	548.8 -> 79.9	20865	12.89	µg/L		99
		548.8 -> 98.9	11041				
PFOA	7.227	413.0 -> 369.0	223055	12.77	µg/L		100
		413.0 -> 169.0	43497				
PFOS	8.419	498.9 -> 79.9	37030	12.55	µg/L	m	81
		498.9 -> 98.8	17872				
PFPeA	4.414	263.0 -> 219.0	279867	26.09	µg/L		100
PFPeS	6.582	349.1 -> 79.9	21156	12.26	µg/L		99
		349.1 -> 98.9	9489				
PFTeDA	9.950	713.1 -> 669.0	125206	13.08	µg/L		99
		713.1 -> 168.9	11786				
PFTrDA	9.579	663.0 -> 619.0	148428	13.54	µg/L		98
		663.0 -> 168.9	17763				
PFUnDA	8.749	563.1 -> 519.0	133677	12.68	µg/L		99
		563.1 -> 269.1	26592				
11Cl-PF3OUdS	9.617	630.9 -> 450.9	177156	24.72	µg/L		98
		632.9 -> 452.9	56366				
9Cl-PF3ONS	8.763	530.8 -> 351.0	249345	24.72	µg/L		99
		532.8 -> 353.0	78141				
ADONA	6.818	376.9 -> 250.9	494628	24.94	µg/L		99
		376.9 -> 84.8	125921				
HFPO-DA	5.978	284.9 -> 168.9	72153	25.65	µg/L		98
		284.9 -> 184.9	8808				
3:3FTCA	3.861	241.0 -> 177.0	35718	62.01	µg/L		99
		241.0 -> 117.0	3384				
5:3FTCA	6.296	341.0 -> 237.1	574110	326.65	µg/L		99
		341.0 -> 217.0	404842				
7:3FTCA	7.774	441.0 -> 316.9	318700	329.07	µg/L		99
		441.0 -> 336.9	739663				
EtFOSA	11.424	526.0 -> 219.0	85316	24.71	µg/L		98
		526.0 -> 169.0	116875				
EtFOSE	11.345	630.0 -> 58.9	183159	64.77	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	70709	26.12	µg/L		76
		511.9 -> 169.0	103405				
MeFOSE	11.073	616.1 -> 58.9	147148	67.33	µg/L		100
PFDoDS	10.077	699.1 -> 79.9	17531	13.31	µg/L		93
		699.1 -> 98.8	9845				
NFDHA	5.491	295.0 -> 201.0	17244	24.92	µg/L		96
		295.0 -> 84.9	4598				
PFMBA	4.828	279.0 -> 85.1	155438	25.86	µg/L		100
PFMPA	3.540	229.0 -> 84.9	150499	25.67	µg/L		100
PFEESA	6.034	314.8 -> 134.9	198327	22.93	µg/L		99
		314.8 -> 82.9	7485				

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

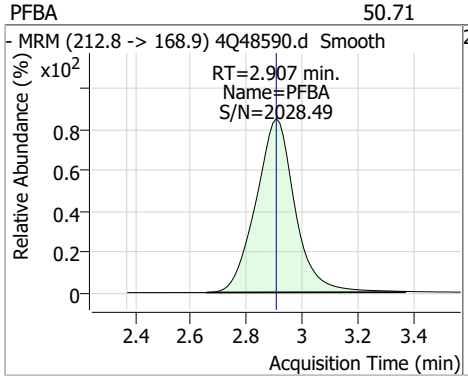
Perfluorinated Compounds by LC/MS/MS

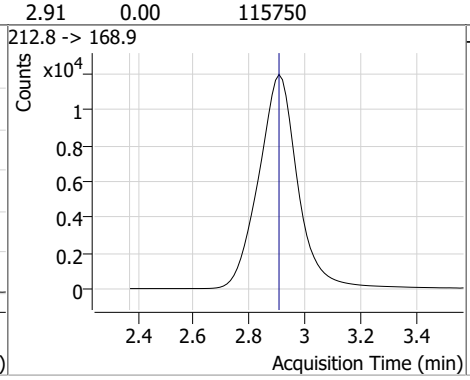
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

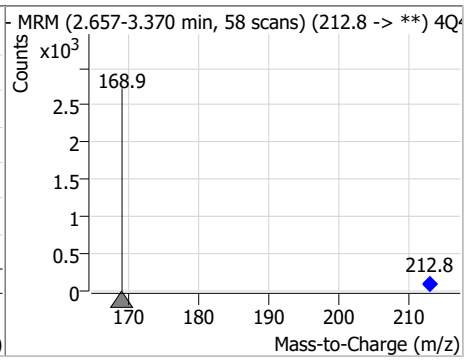
Perfluorinated Compounds by LC/MS/MS



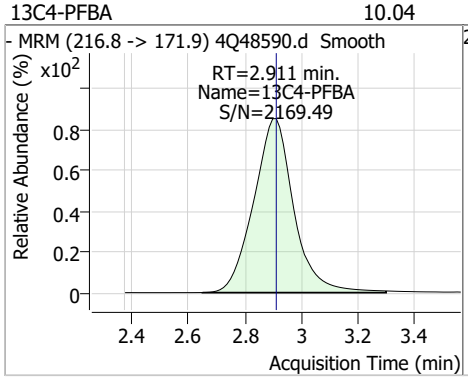
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.71	2.91	0.00	115750				

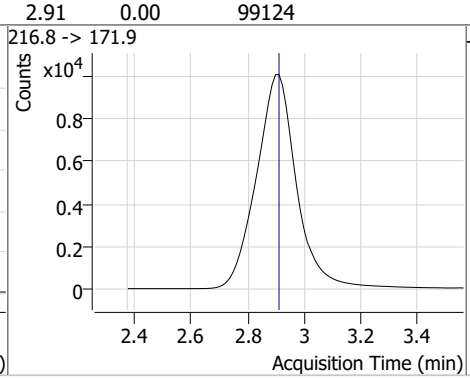


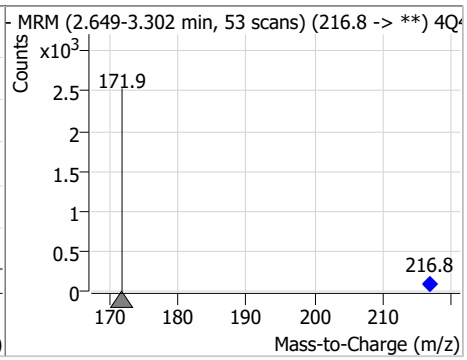




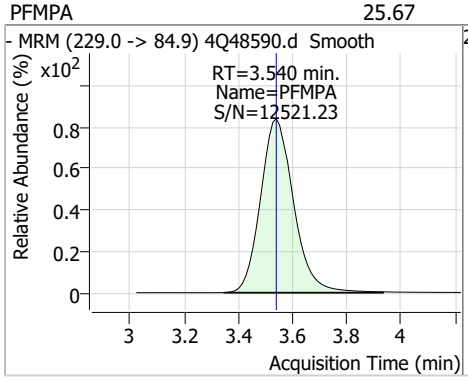
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.04	2.91	0.00	99124				

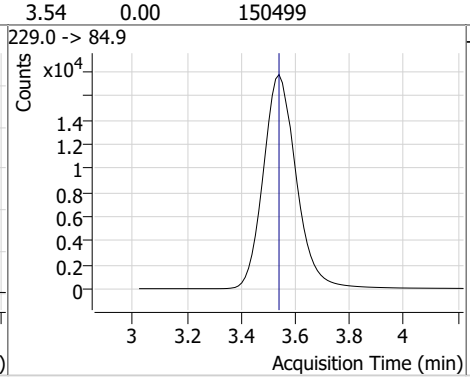


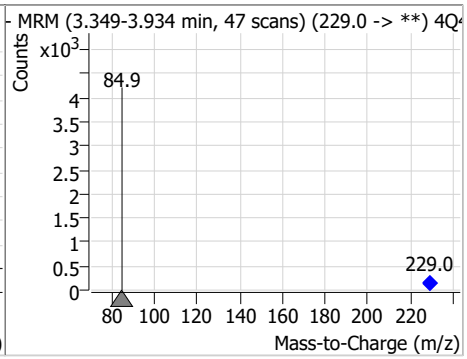




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	25.67	3.54	0.00	150499				

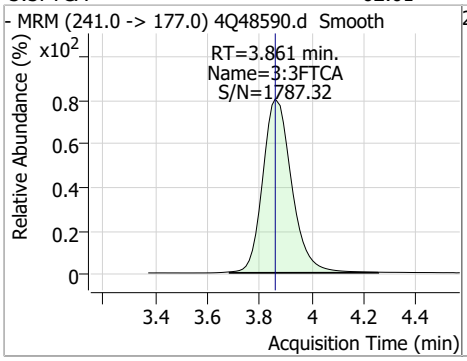


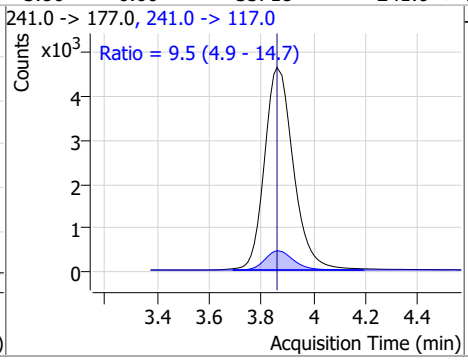


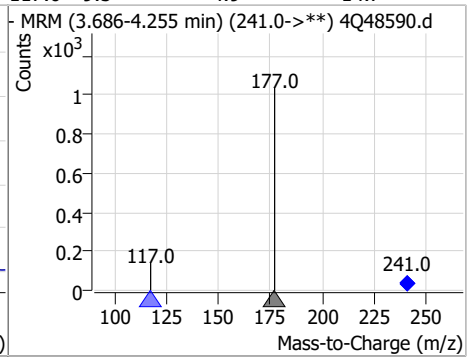


Perfluorinated Compounds by LC/MS/MS

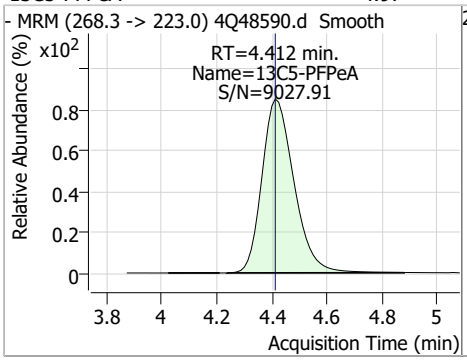
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	62.01	3.86	0.00	35718	241.0 -> 117.0	9.5	4.9	14.7

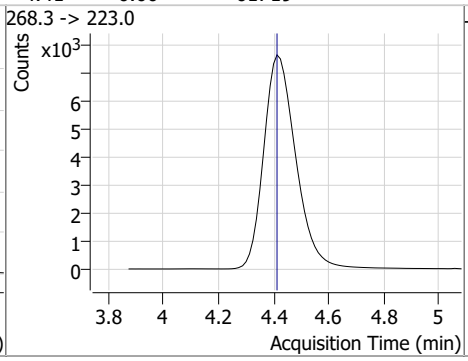


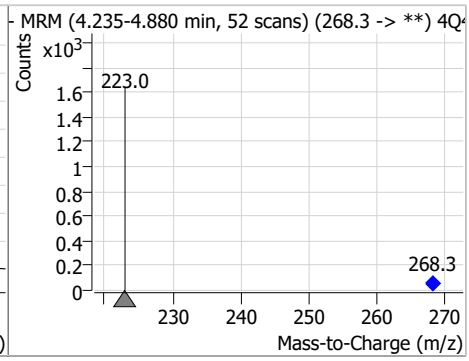




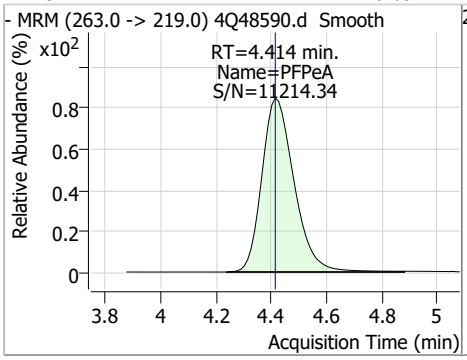
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.97	4.41	0.00	61719				

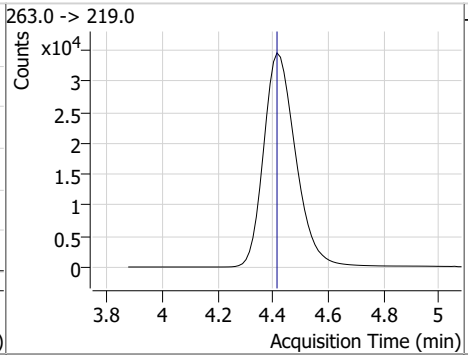


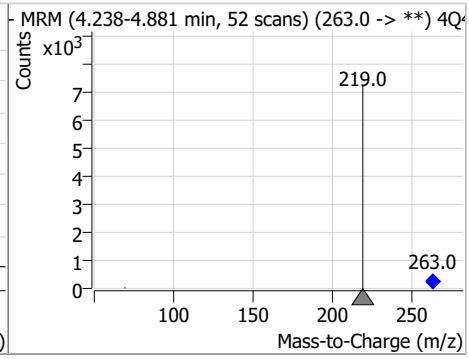




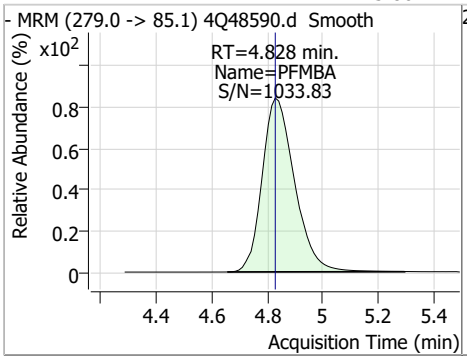
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.09	4.41	0.00	279867				

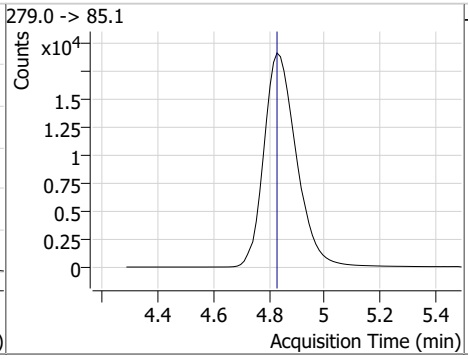


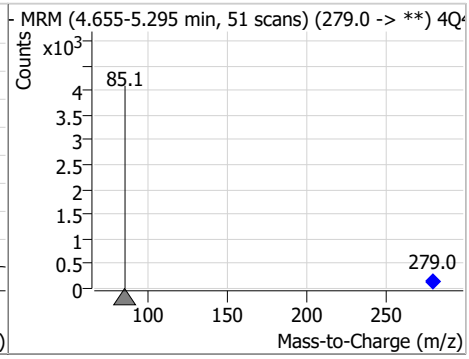




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.86	4.83	0.00	155438				

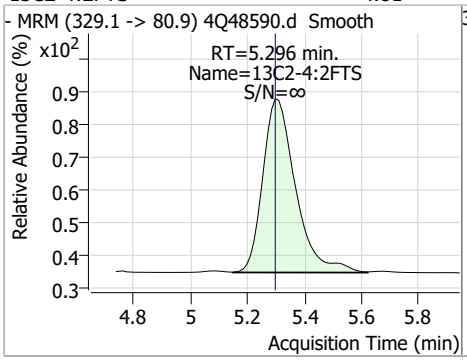


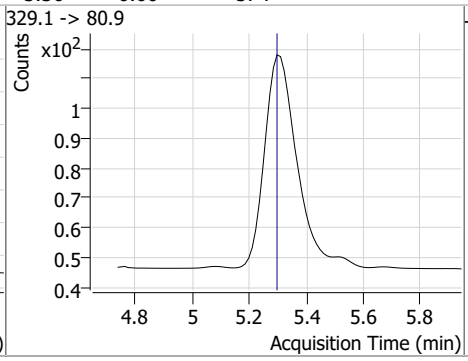


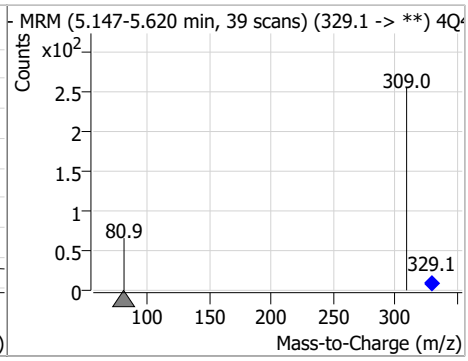


Perfluorinated Compounds by LC/MS/MS

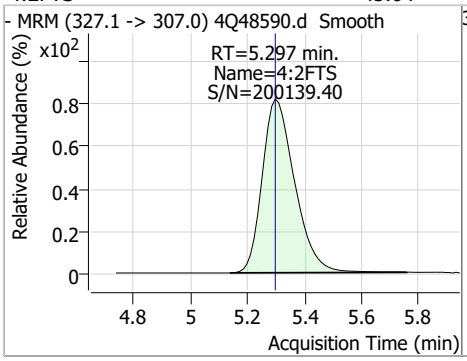
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.81	5.30	0.00	574				

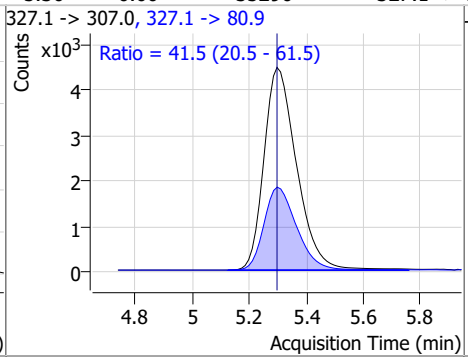


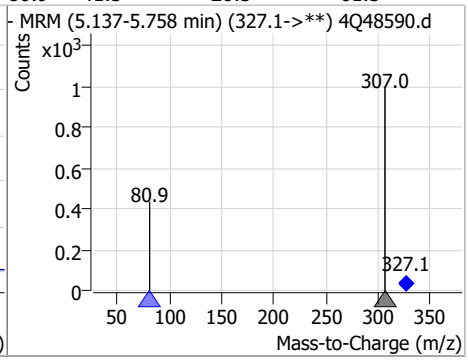




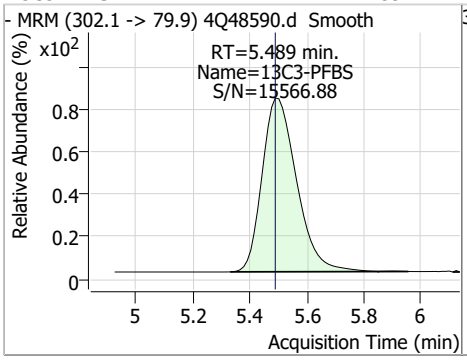
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	45.64	5.30	0.00	35296	327.1 -> 80.9	41.5	20.5	61.5

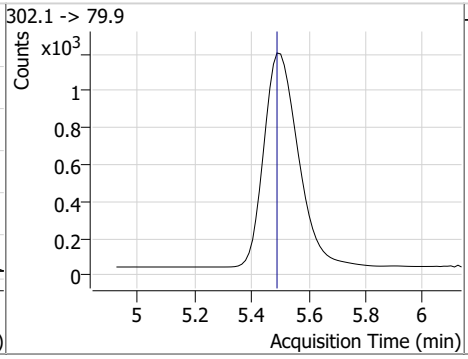


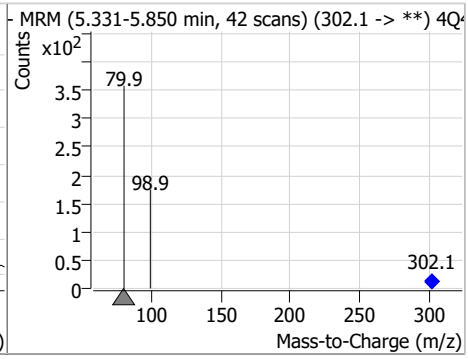




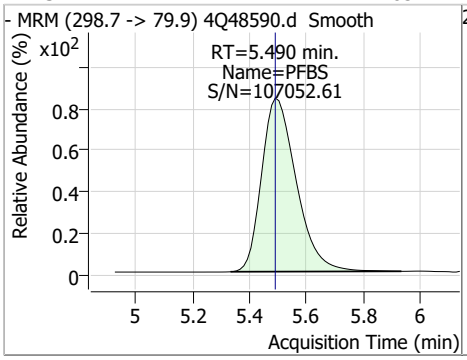
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	5.49	0.00	9714				

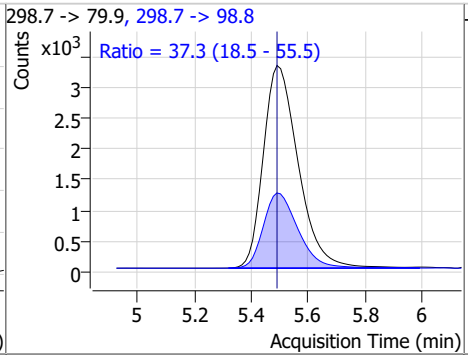


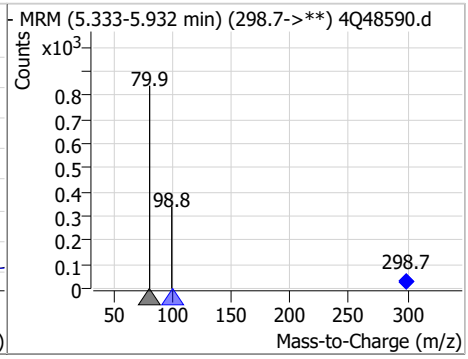




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.83	5.49	0.00	28070	298.7 -> 98.8	37.3	18.5	55.5

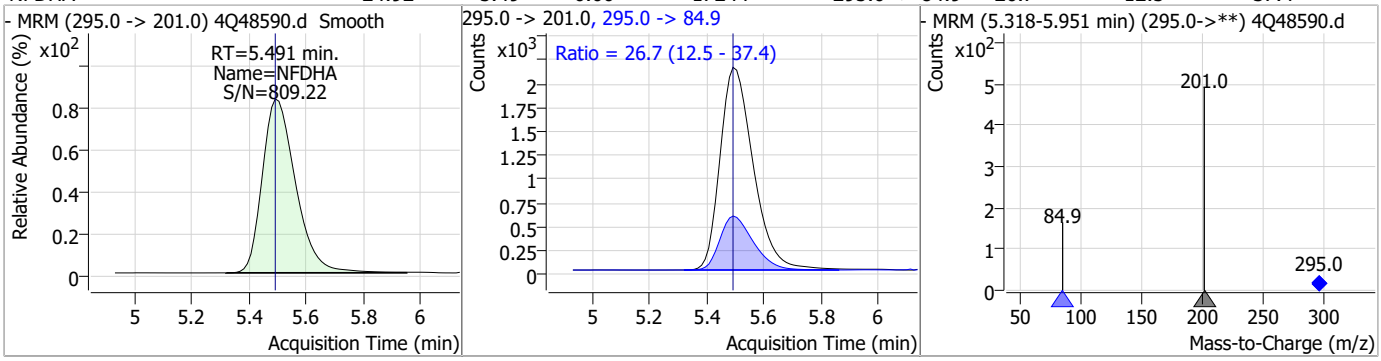




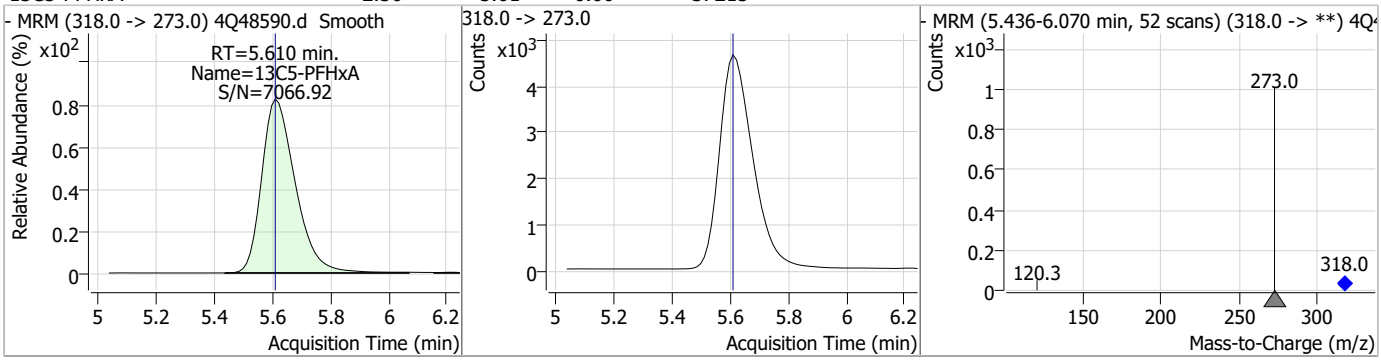


Perfluorinated Compounds by LC/MS/MS

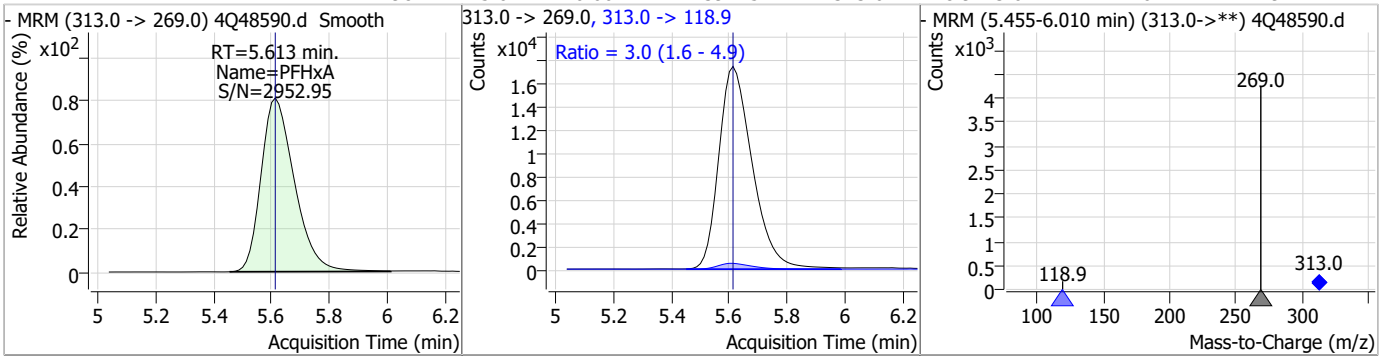
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	24.92	5.49	0.00	17244	295.0 -> 84.9	26.7	12.5	37.4



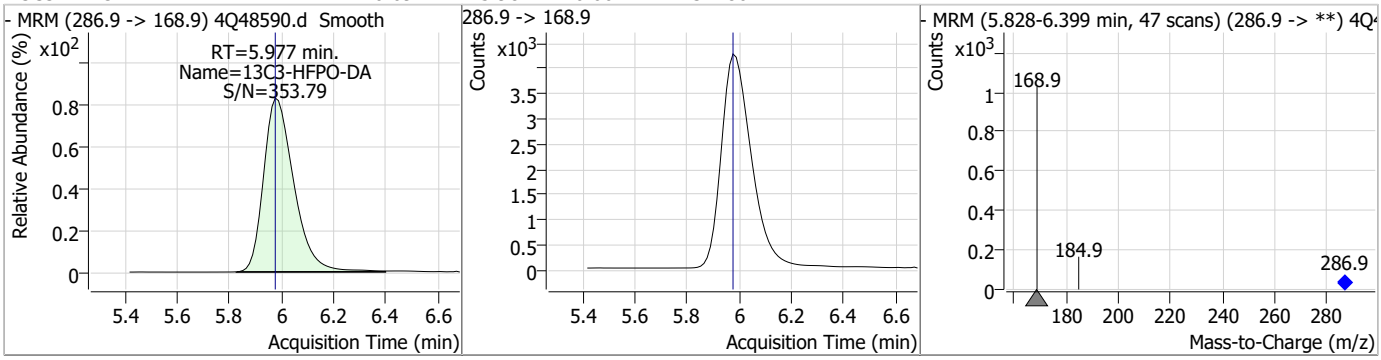
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.61	0.00	37215				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.98	5.61	0.00	139445	313.0 -> 118.9	3.0	1.6	4.9

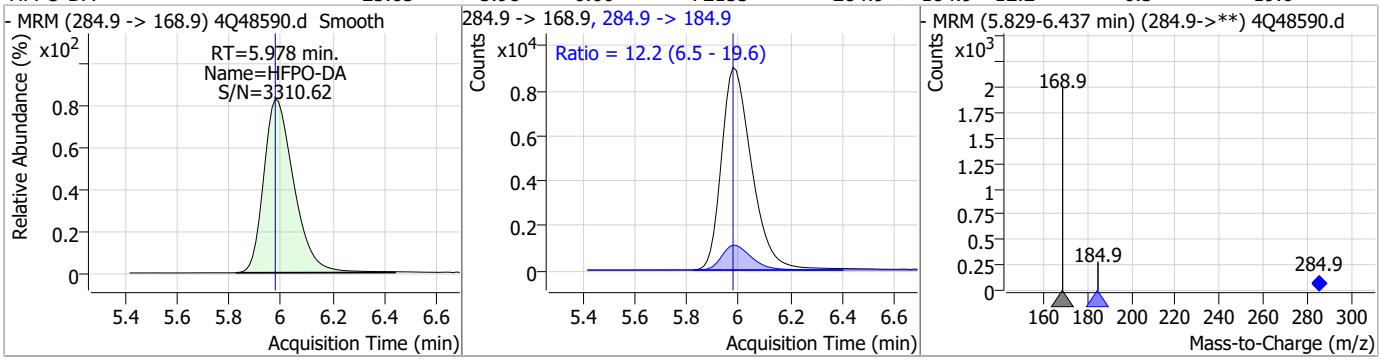


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.09	5.98	0.00	34180				

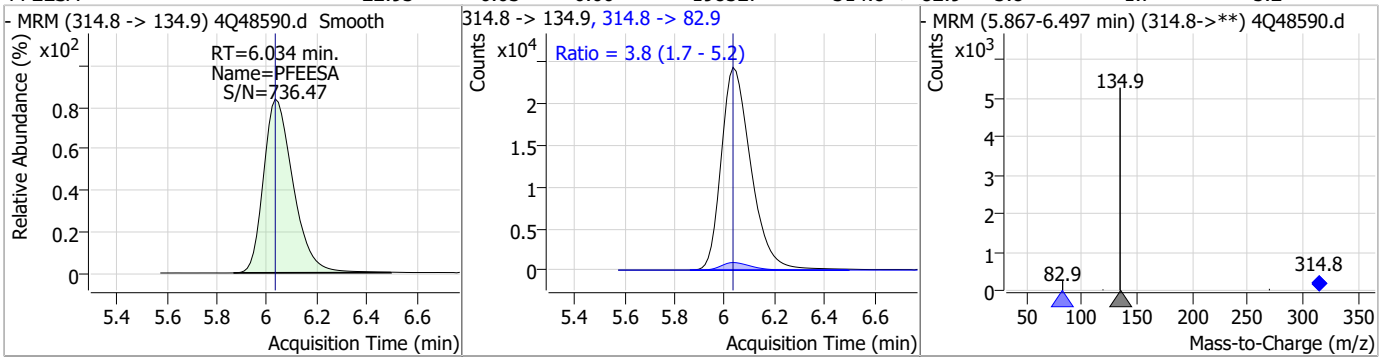


Perfluorinated Compounds by LC/MS/MS

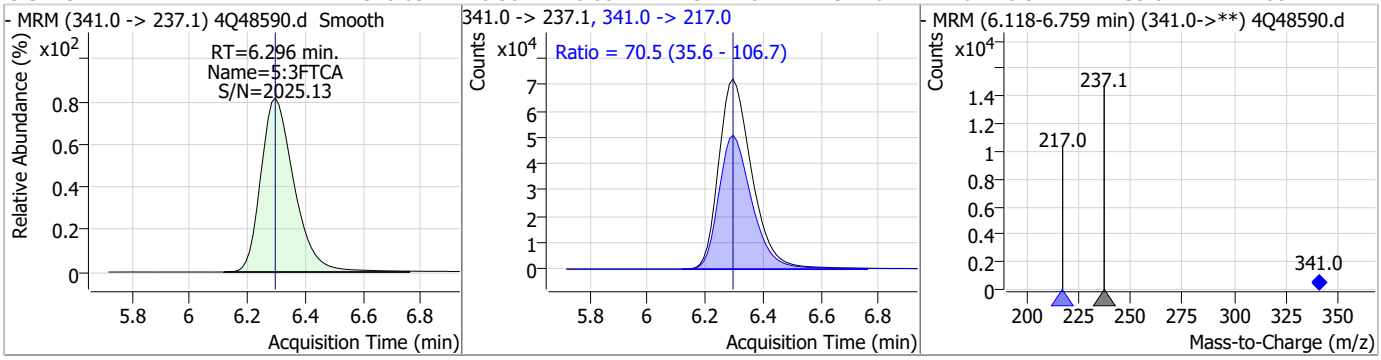
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.65	5.98	0.00	72153	284.9 -> 184.9	12.2	6.5	19.6



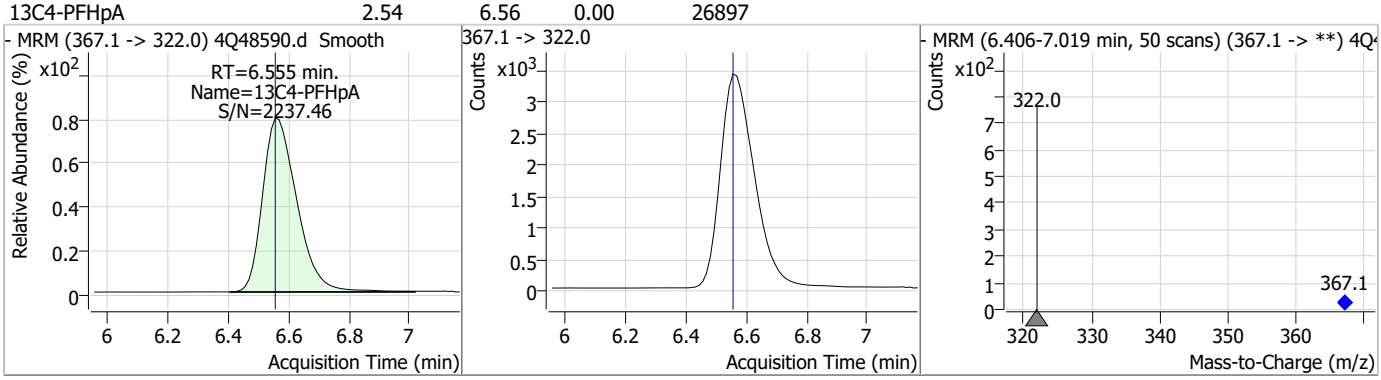
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.93	6.03	0.00	198327	314.8 -> 82.9	3.8	1.7	5.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	326.65	6.30	0.00	574110	341.0 -> 217.0	70.5	35.6	106.7

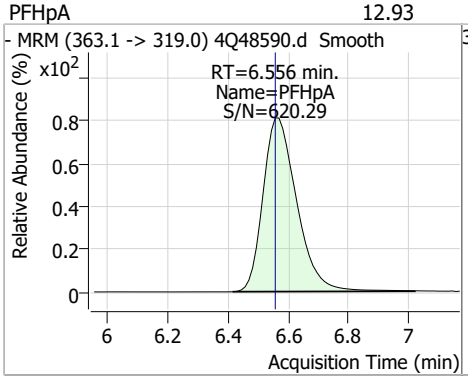


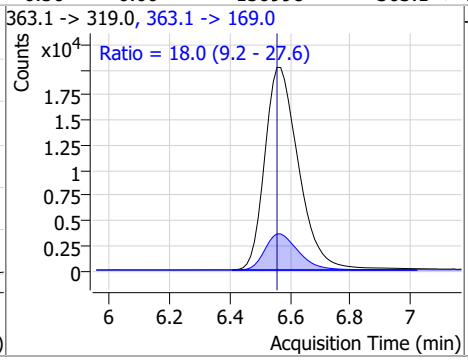
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.56	0.00	26897				

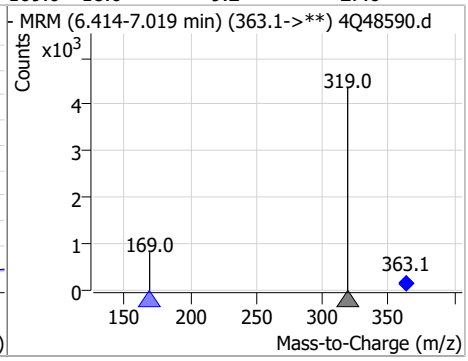


Perfluorinated Compounds by LC/MS/MS

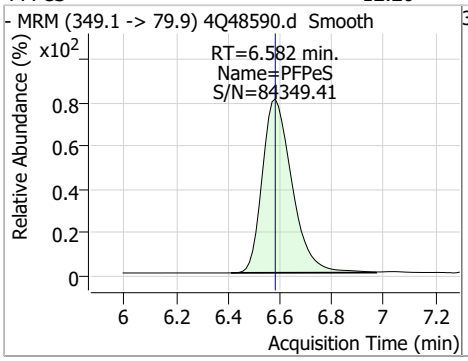
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	12.93	6.56	0.00	156998	363.1 -> 169.0	18.0	9.2	27.6

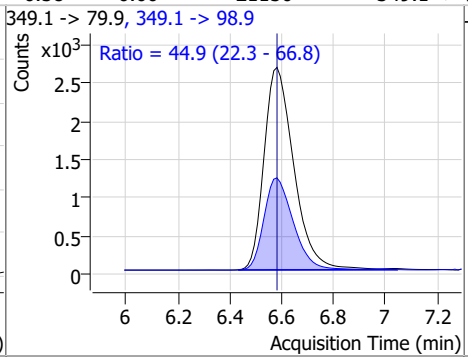


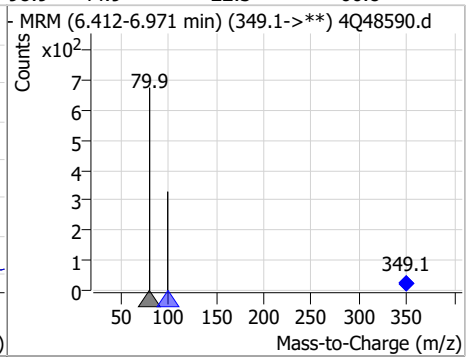




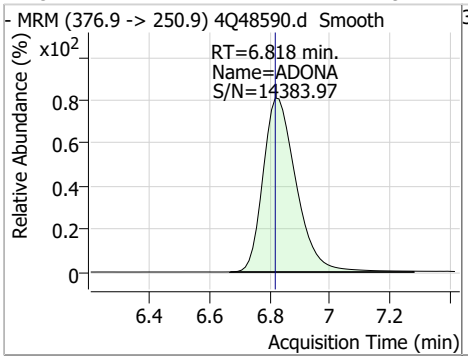
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.26	6.58	0.00	21156	349.1 -> 98.9	44.9	22.3	66.8

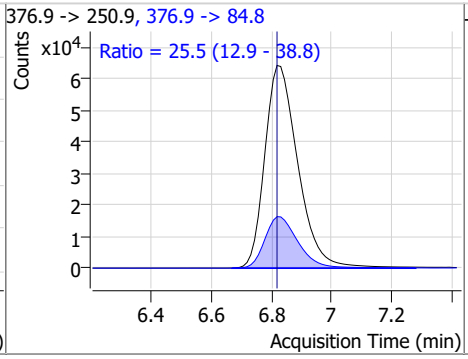


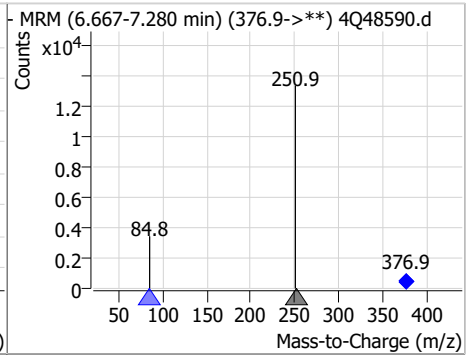




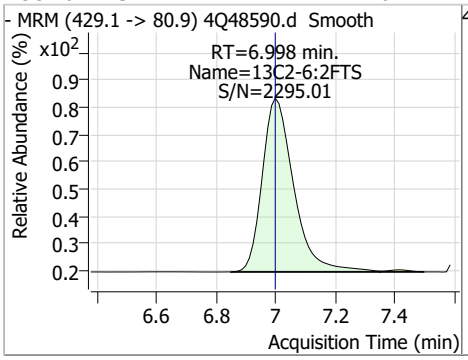
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	24.94	6.82	0.00	494628	376.9 -> 84.8	25.5	12.9	38.8

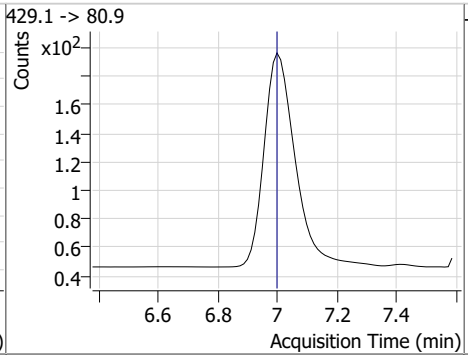


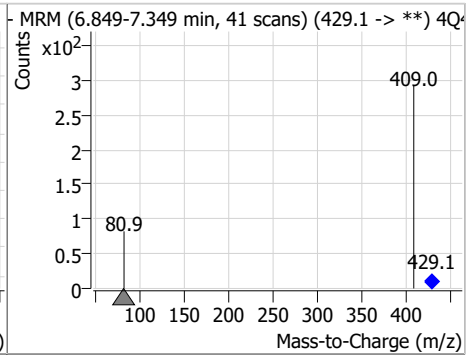




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.84	7.00	0.00	1101				

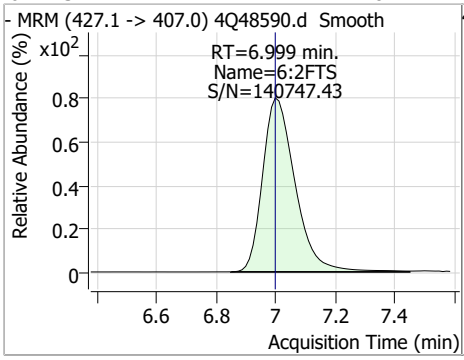


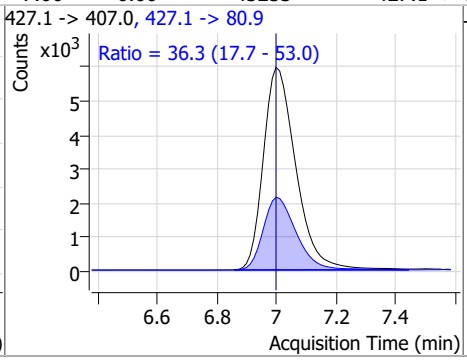


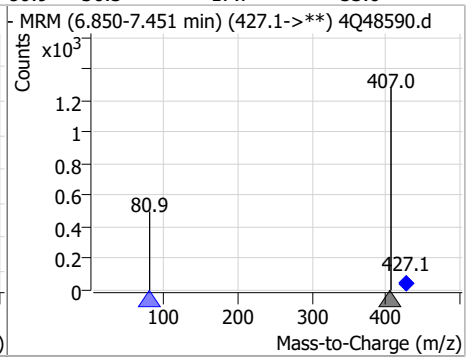


Perfluorinated Compounds by LC/MS/MS

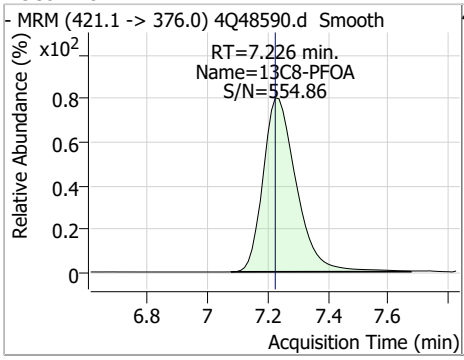
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.42	7.00	0.00	45253	427.1 -> 80.9	36.3	17.7	53.0

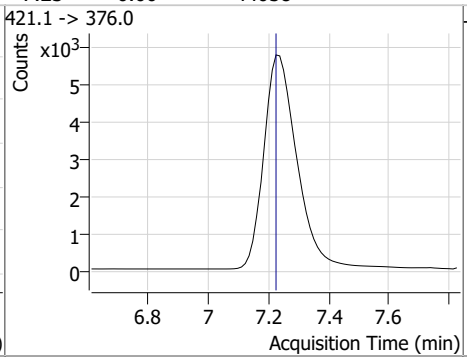


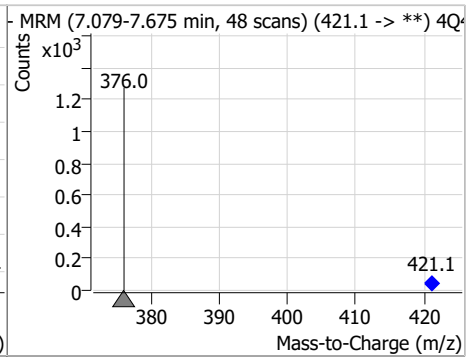




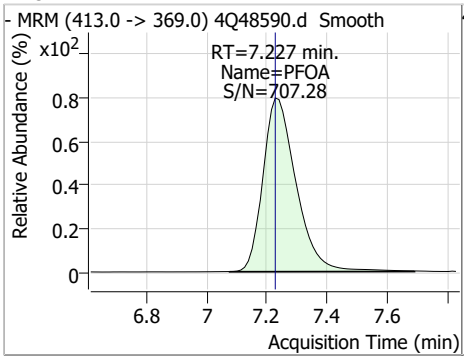
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.42	7.23	0.00	44058				

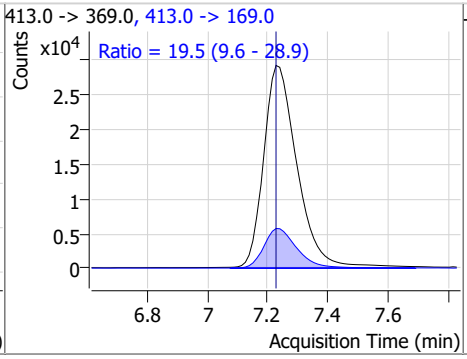


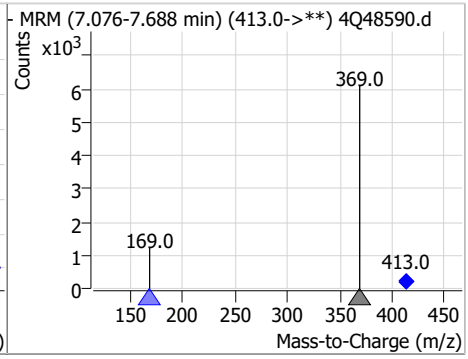




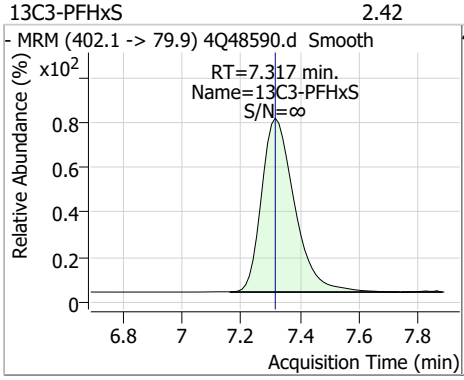
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	12.77	7.23	0.00	223055	413.0 -> 169.0	19.5	9.6	28.9

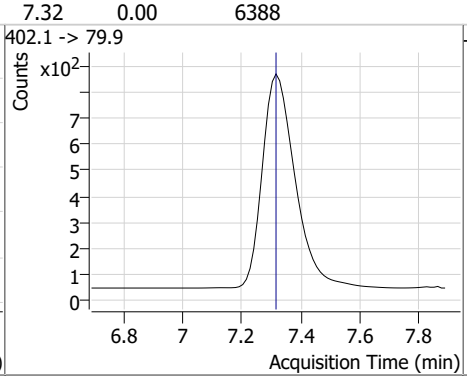


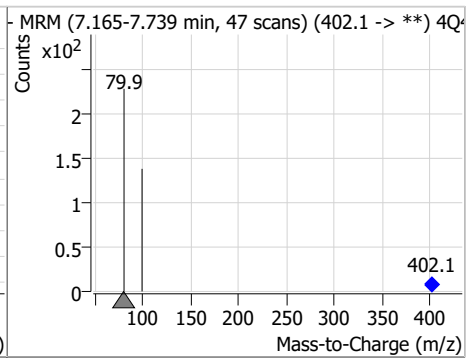




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.42	7.32	0.00	6388				

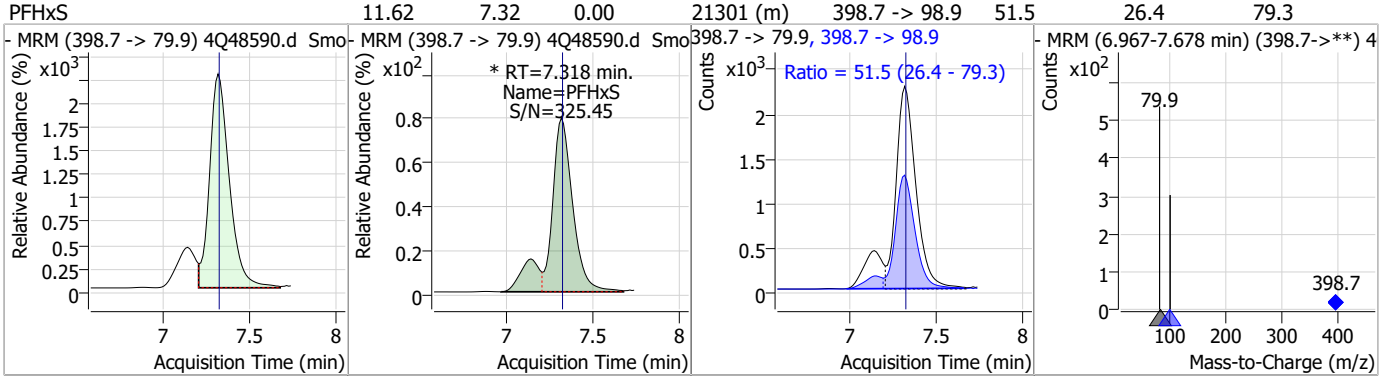




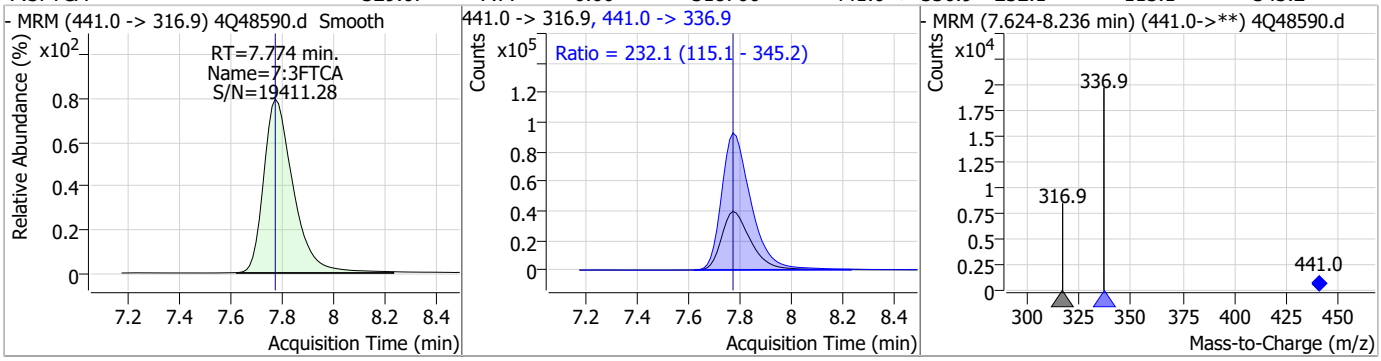


Perfluorinated Compounds by LC/MS/MS

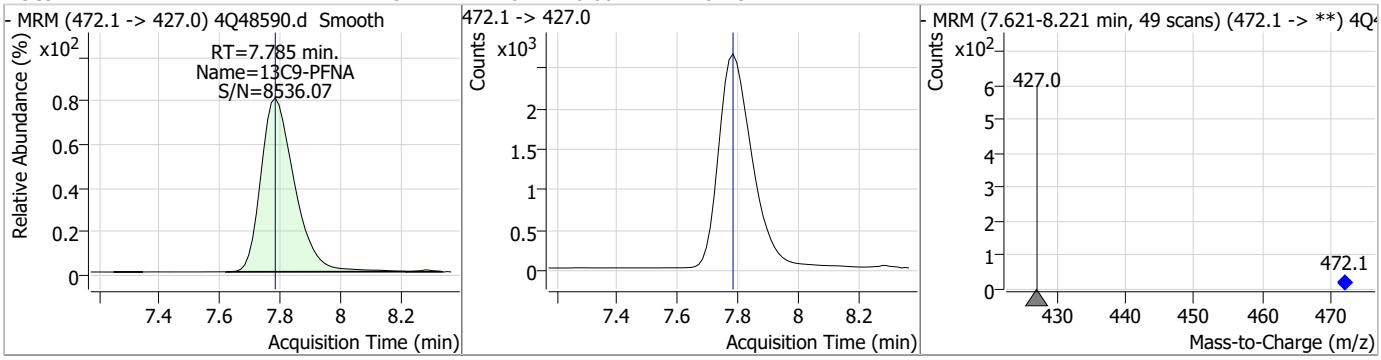
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.62	7.32	0.00	21301 (m)	398.7 -> 98.9	51.5	26.4	79.3



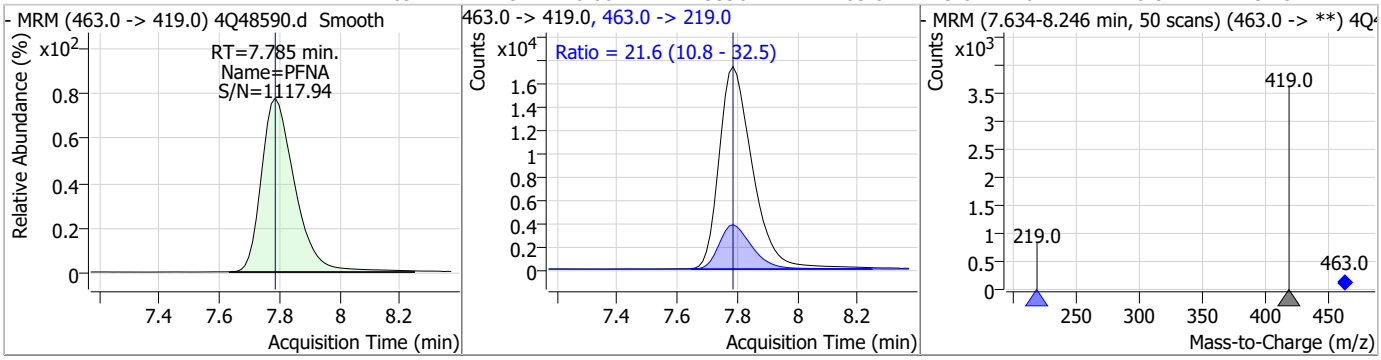
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	329.07	7.77	0.00	318700	441.0 -> 336.9	232.1	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.78	0.00	20279				

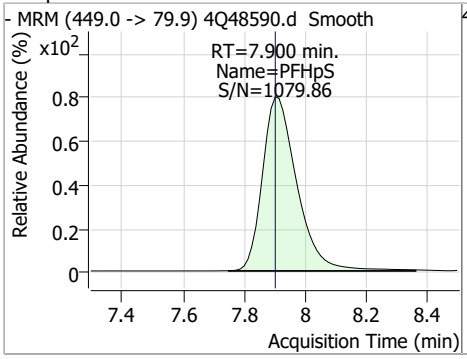


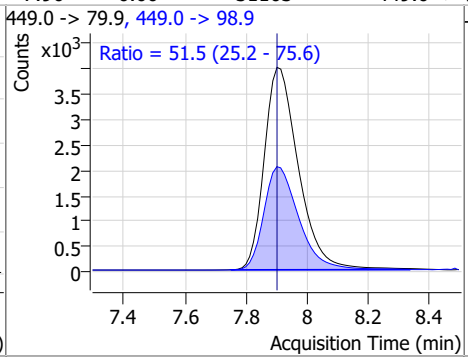
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	12.69	7.79	0.00	133907	463.0 -> 219.0	21.6	10.8	32.5

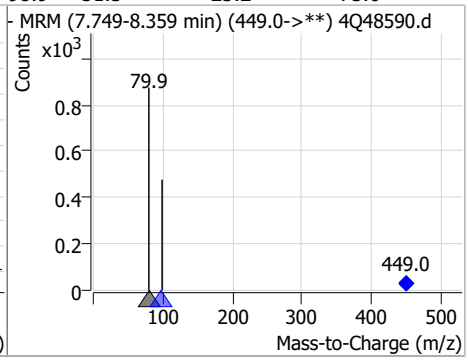


Perfluorinated Compounds by LC/MS/MS

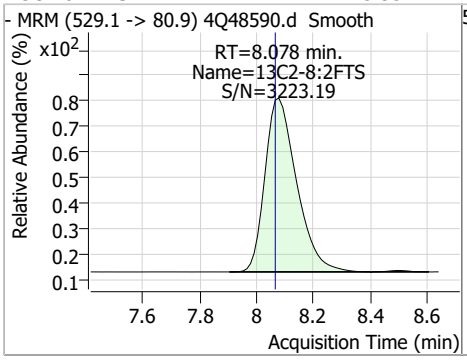
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.41	7.90	0.00	31103	449.0 -> 98.9	51.5	25.2	75.6

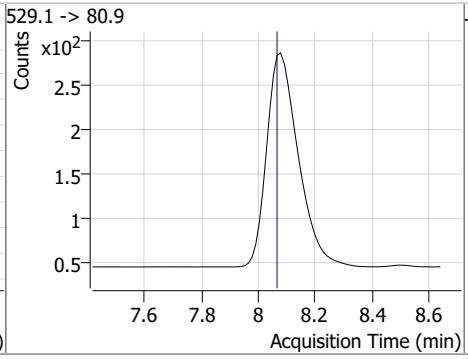


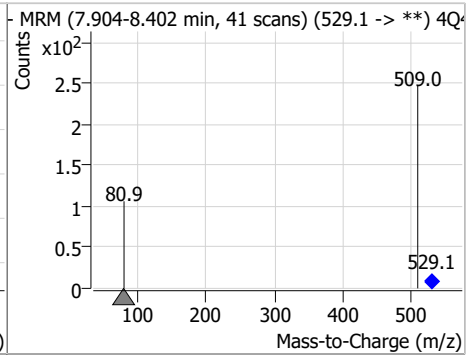




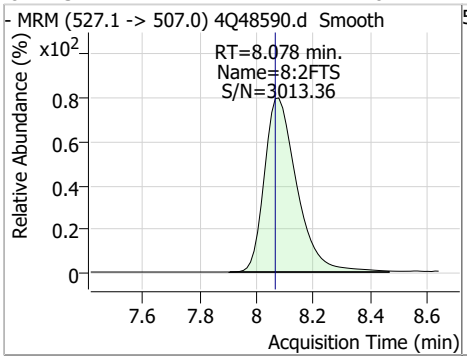
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.35	8.08	0.01	1848				

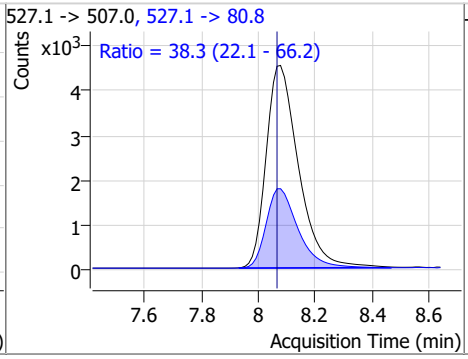


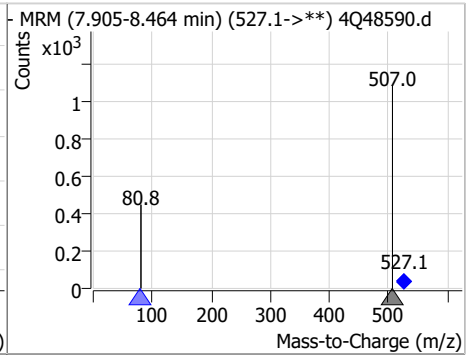




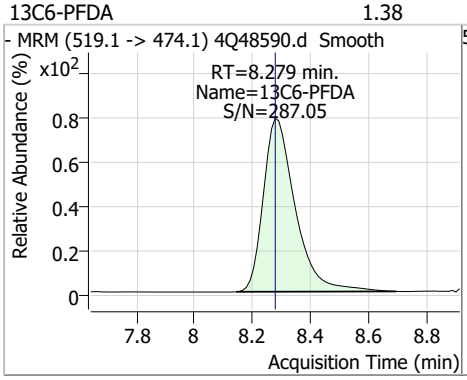
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	48.22	8.08	0.01	35785	527.1 -> 80.8	38.3	22.1	66.2

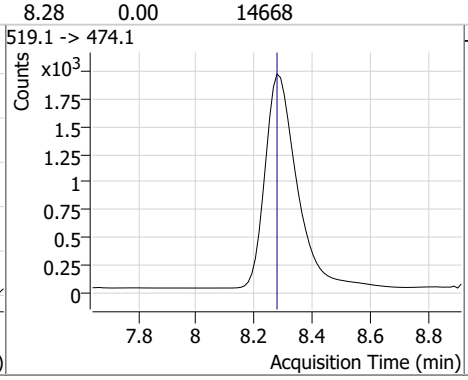


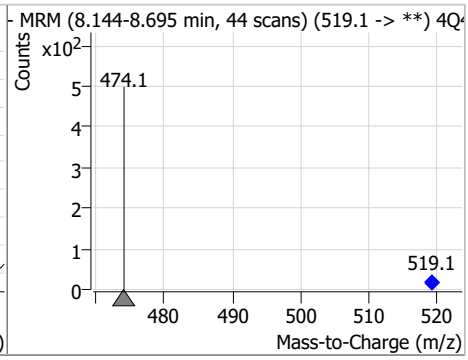




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.38	8.28	0.00	14668				

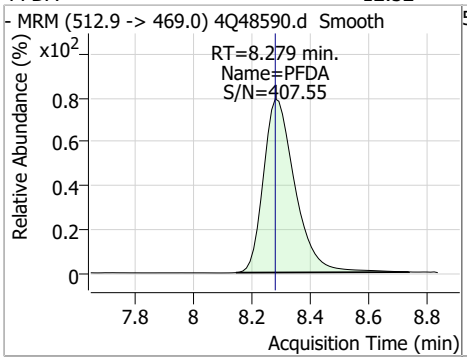


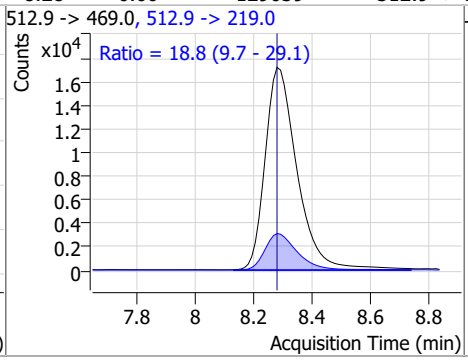


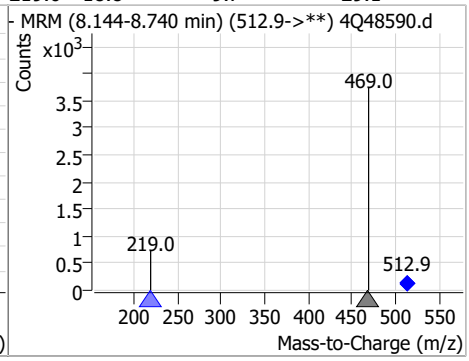


Perfluorinated Compounds by LC/MS/MS

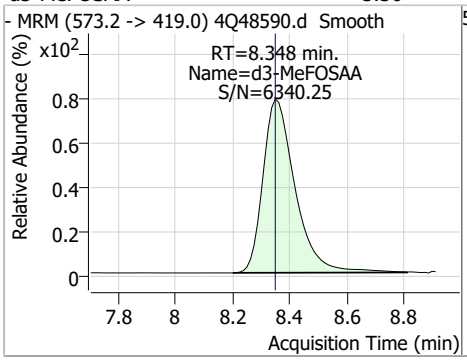
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.52	8.28	0.00	129059	512.9 -> 219.0	18.8	9.7	29.1

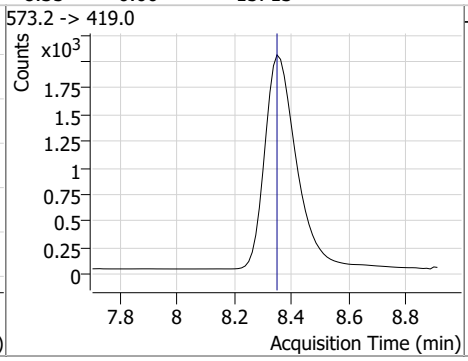


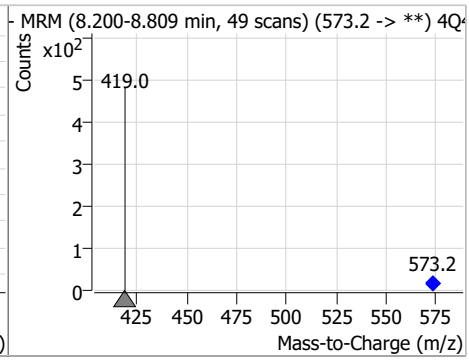




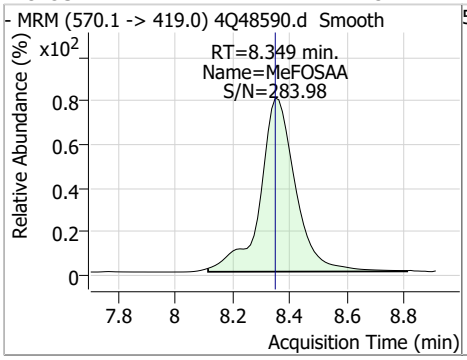
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.30	8.35	0.00	15713				

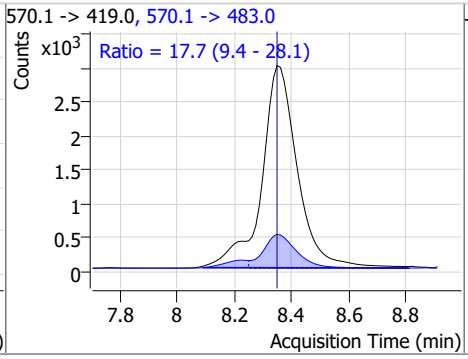


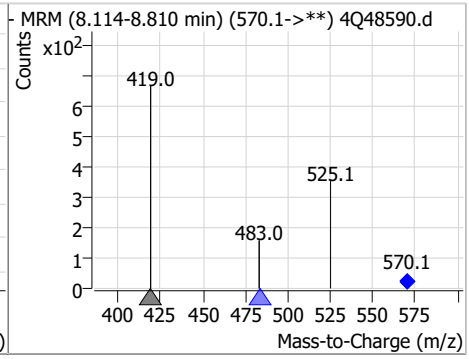




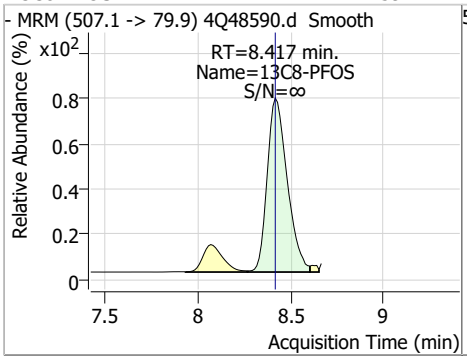
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	13.17	8.35	0.00	25866	570.1 -> 483.0	17.7	9.4	28.1

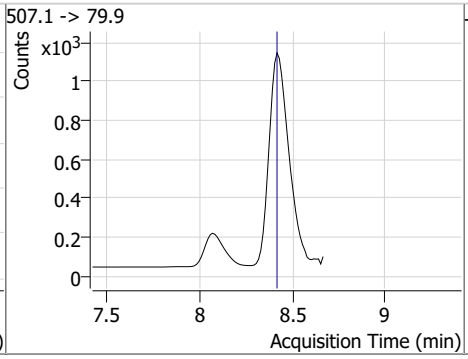


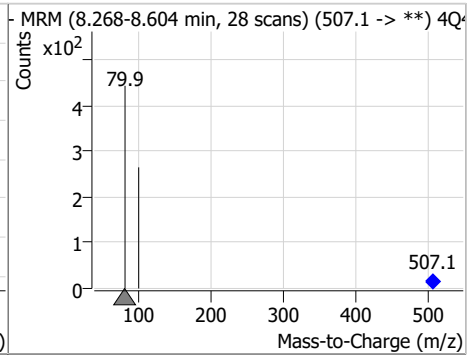




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.59	8.42	0.00	8290				

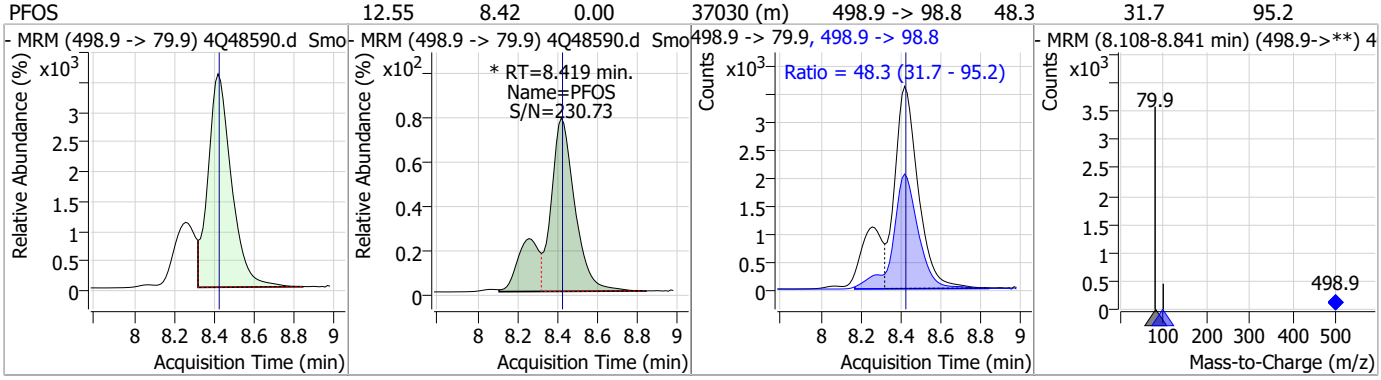




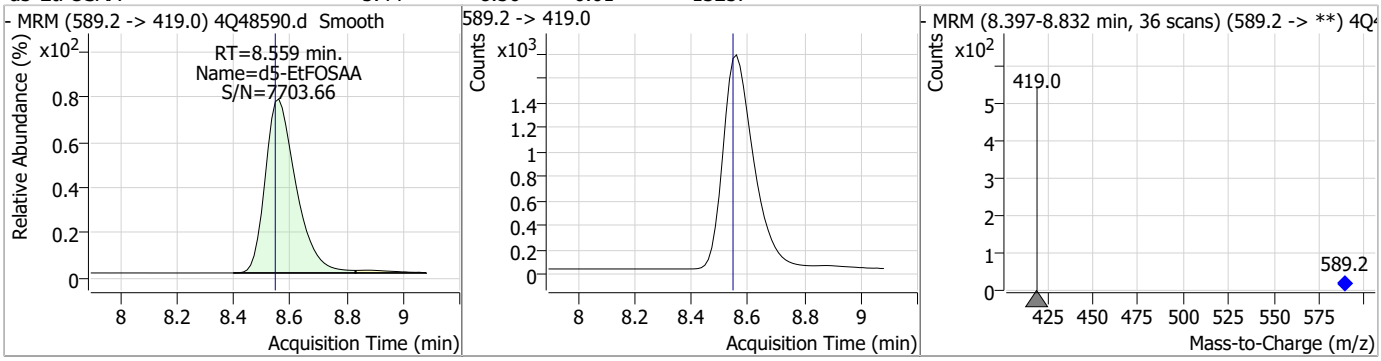


Perfluorinated Compounds by LC/MS/MS

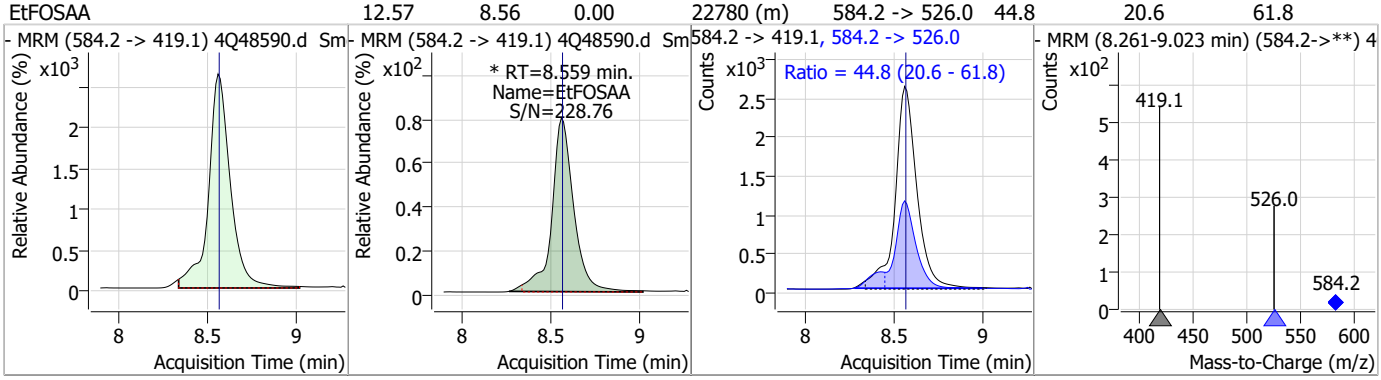
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.55	8.42	0.00	37030 (m)	498.9 -> 98.8	48.3	31.7	95.2



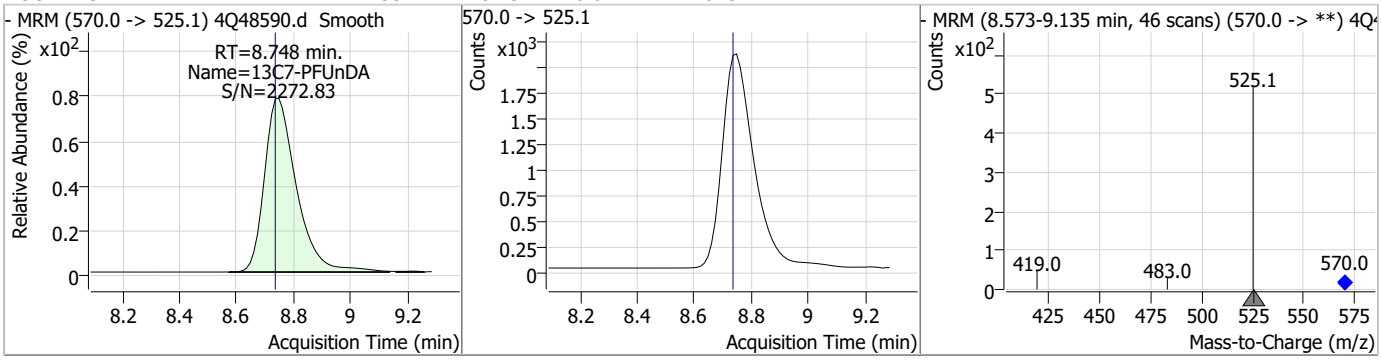
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.44	8.56	0.01	13257				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.57	8.56	0.00	22780 (m)	584.2 -> 526.0	44.8	20.6	61.8

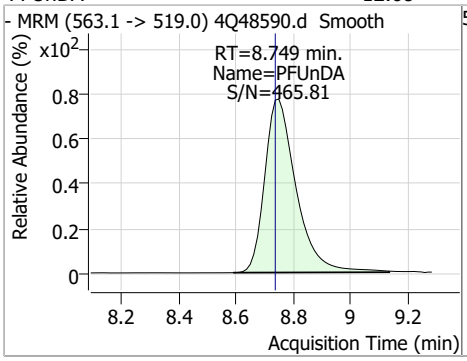


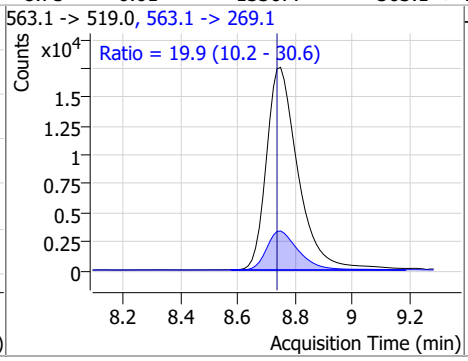
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.75	0.01	16184				

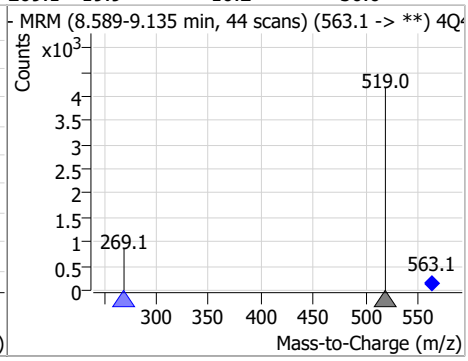


Perfluorinated Compounds by LC/MS/MS

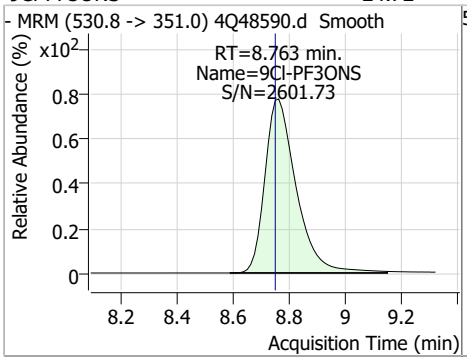
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.68	8.75	0.01	133677	563.1 -> 269.1	19.9	10.2	30.6

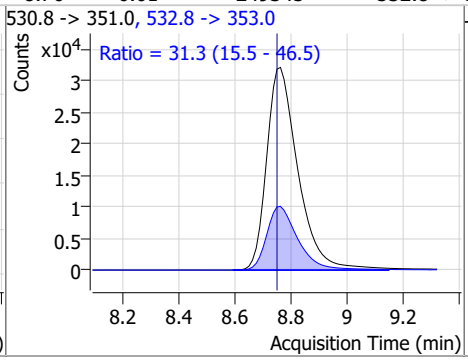


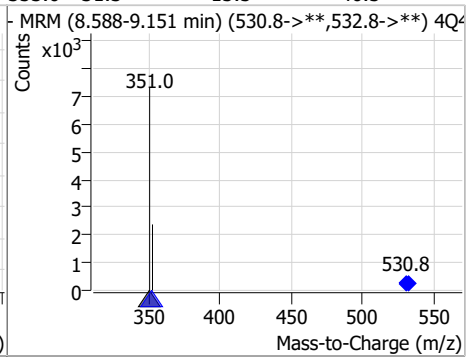




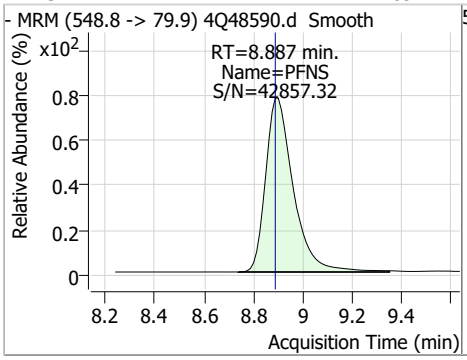
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	24.72	8.76	0.01	249345	532.8 -> 353.0	31.3	15.5	46.5

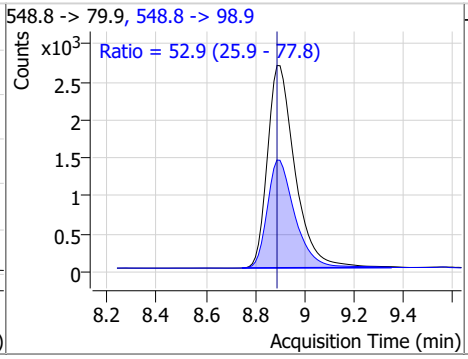


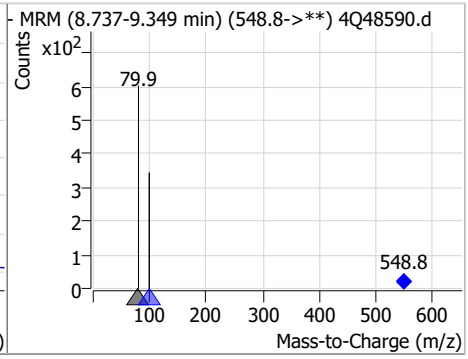




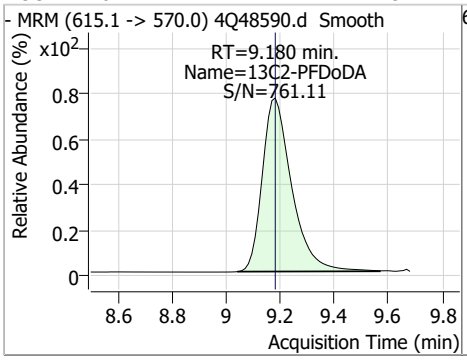
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.89	8.89	0.00	20865	548.8 -> 98.9	52.9	25.9	77.8

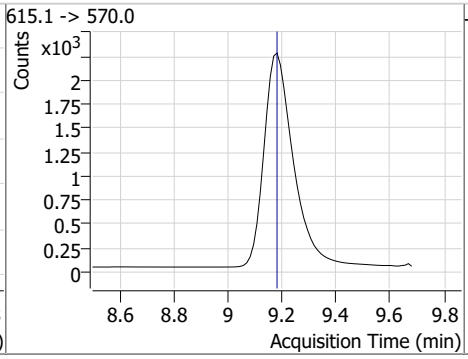


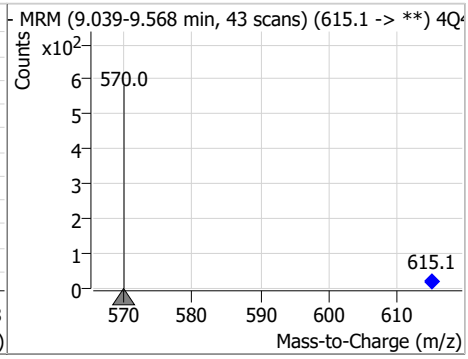




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.18	0.00	16949				

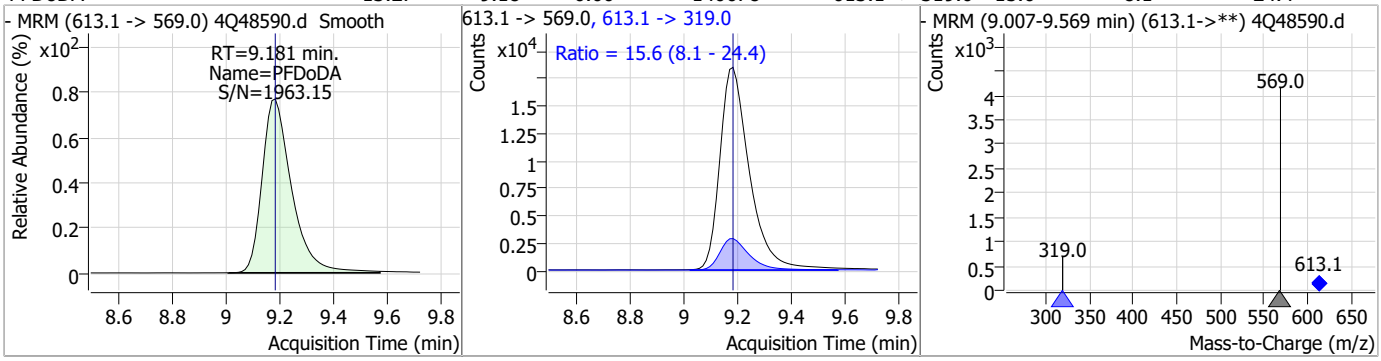




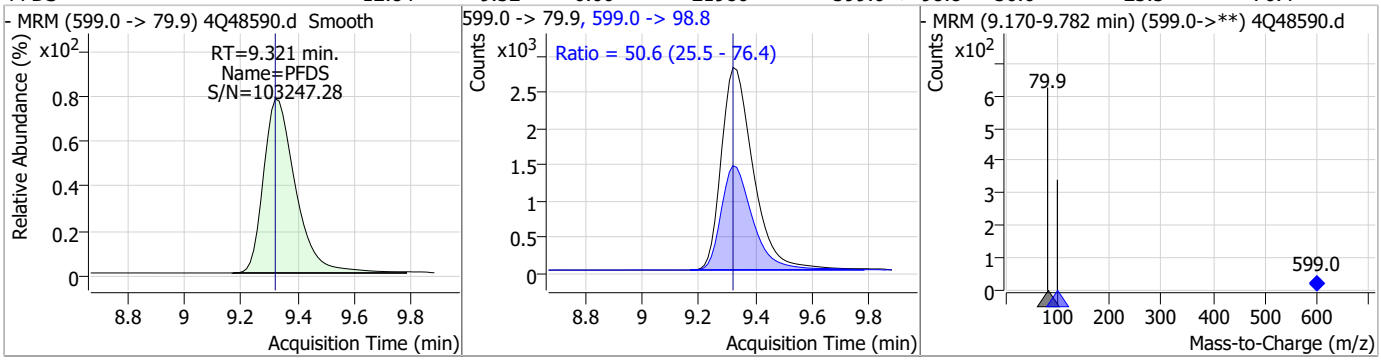


Perfluorinated Compounds by LC/MS/MS

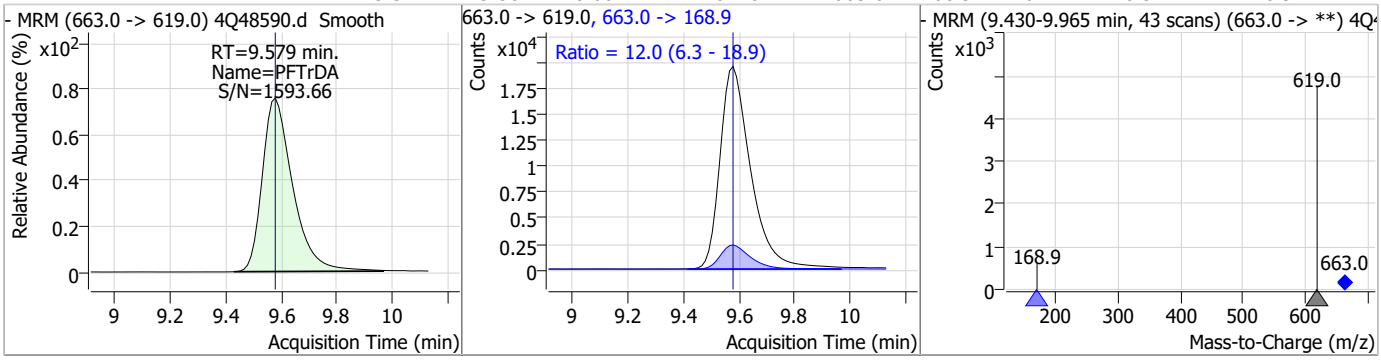
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	13.27	9.18	0.00	140678	613.1 -> 319.0	15.6	8.1	24.4



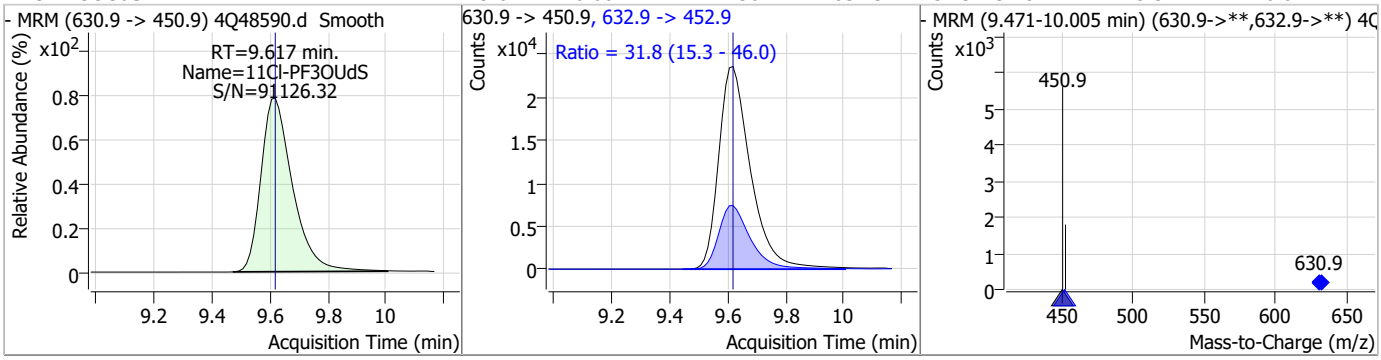
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.84	9.32	0.00	21986	599.0 -> 98.8	50.6	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.54	9.58	0.00	148428	663.0 -> 168.9	12.0	6.3	18.9

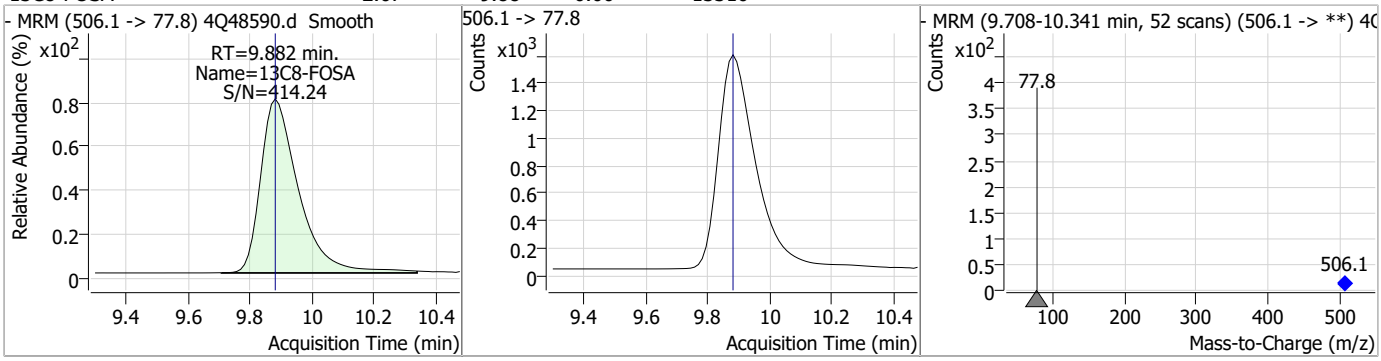


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	24.72	9.62	0.00	177156	632.9 -> 452.9	31.8	15.3	46.0

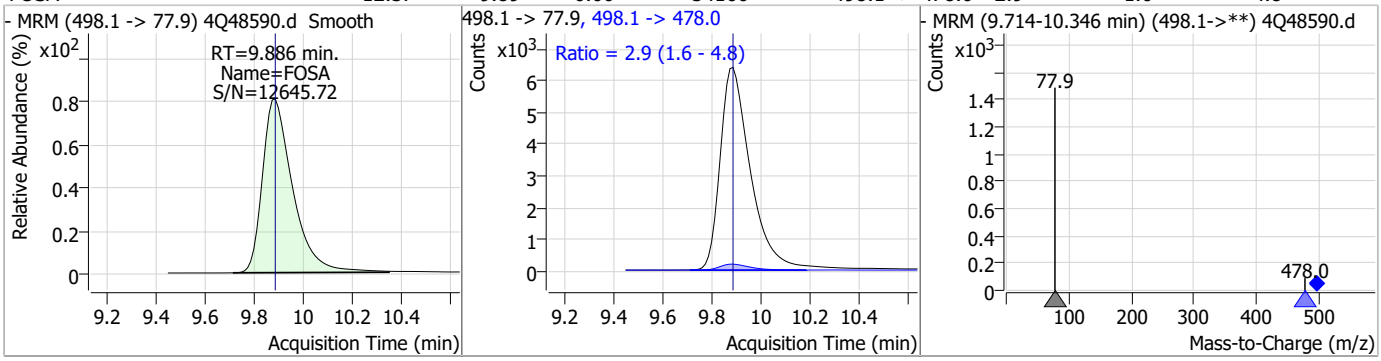


Perfluorinated Compounds by LC/MS/MS

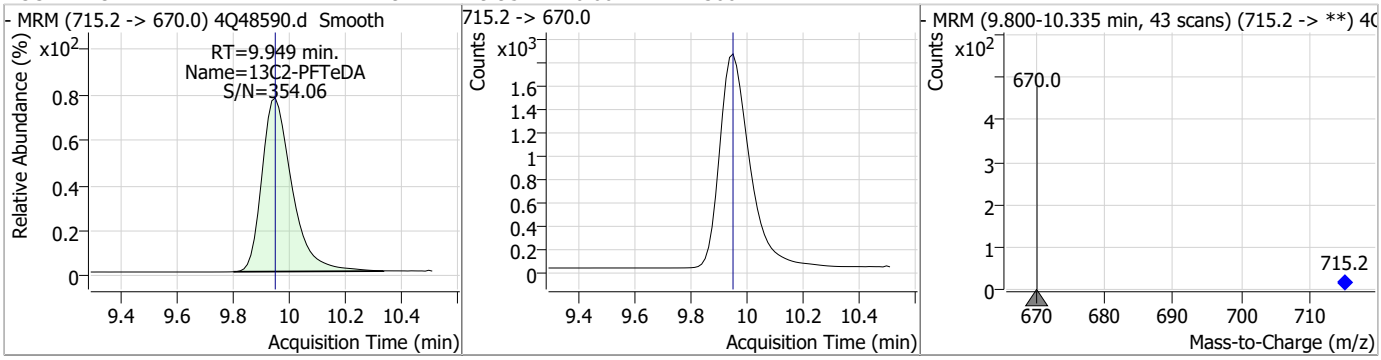
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.67	9.88	0.00	13310				



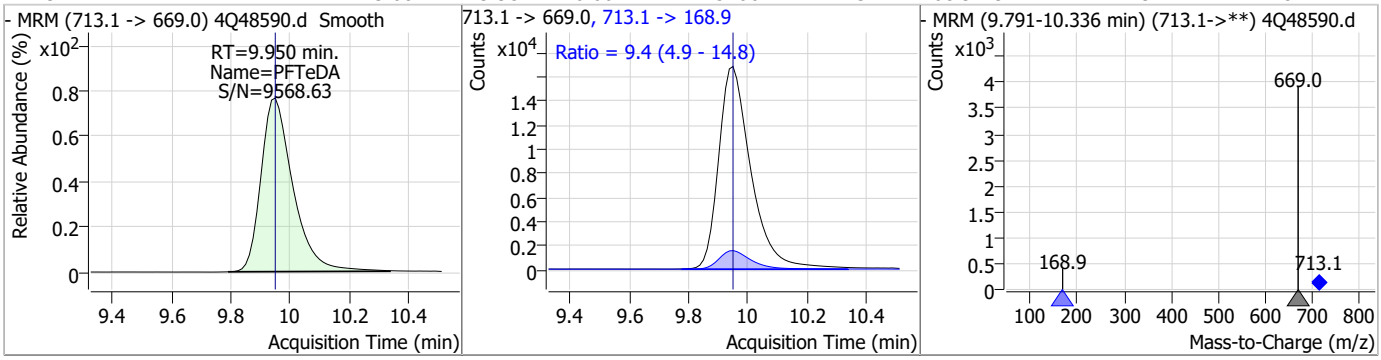
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	12.57	9.89	0.00	54166	498.1 -> 478.0	2.9	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	9.95	0.00	13662				

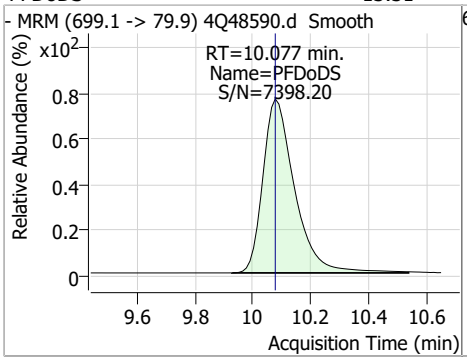


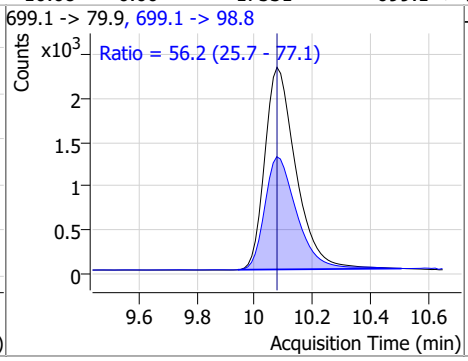
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.08	9.95	0.00	125206	713.1 -> 168.9	9.4	4.9	14.8

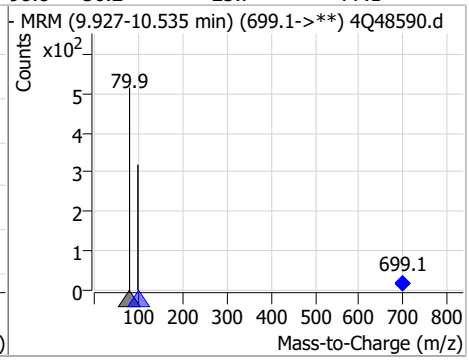


Perfluorinated Compounds by LC/MS/MS

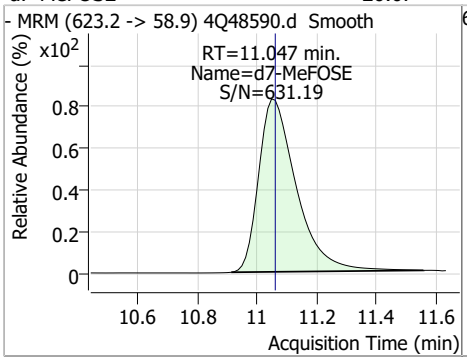
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	13.31	10.08	0.00	17531	699.1 -> 98.8	56.2	25.7	77.1

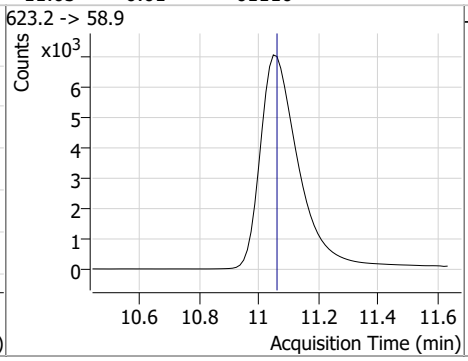


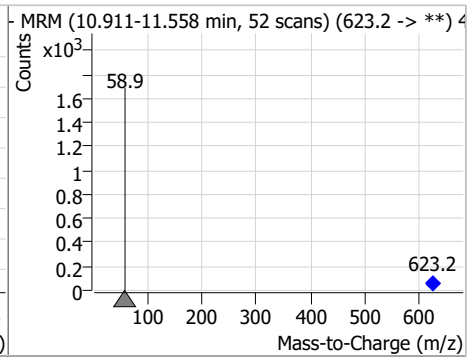




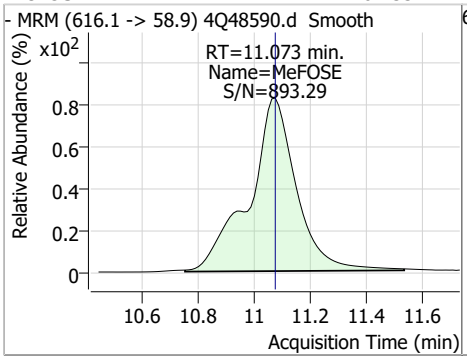
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.07	11.05	-0.01	61116				

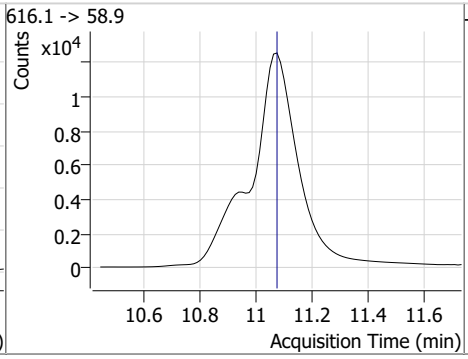


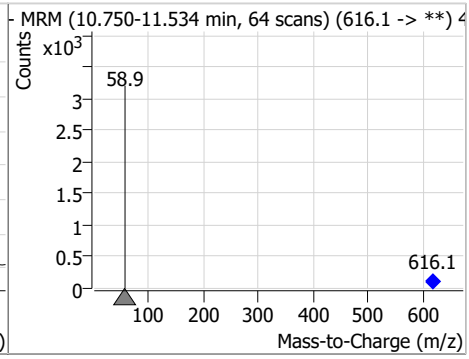




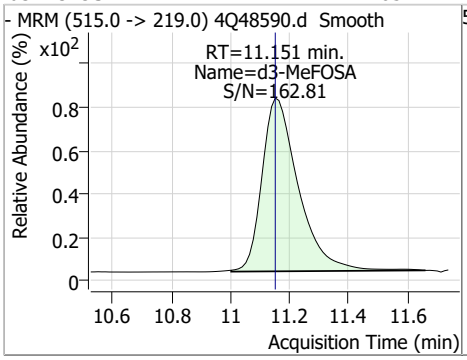
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	67.33	11.07	0.00	147148				

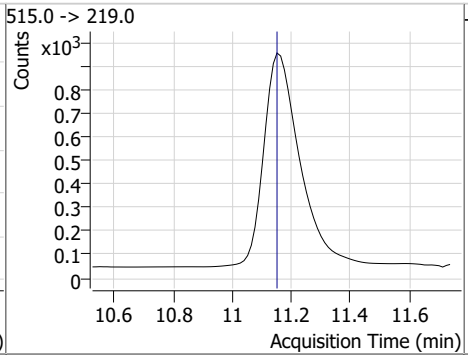


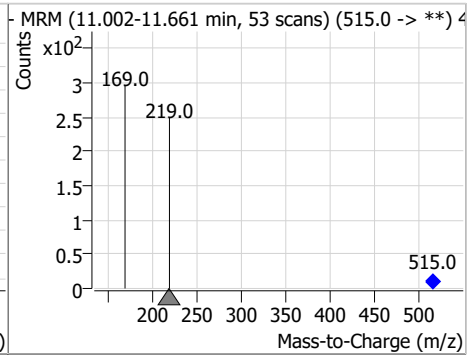




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.65	11.15	0.00	7783				

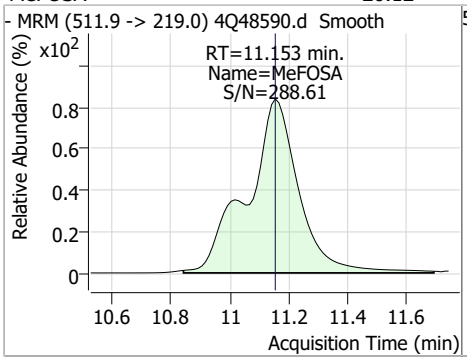


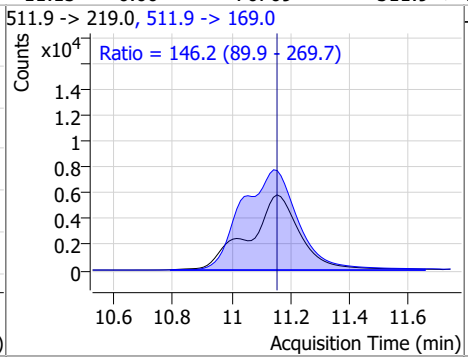


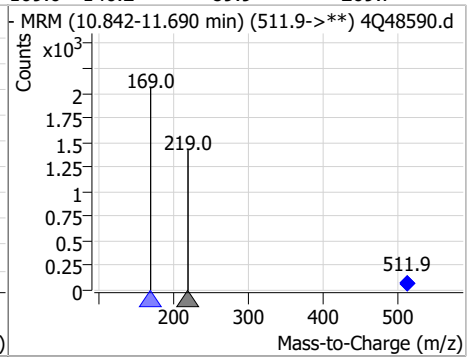


Perfluorinated Compounds by LC/MS/MS

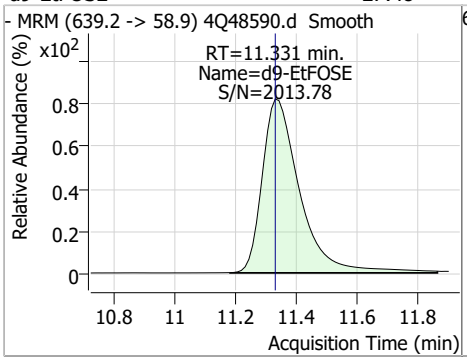
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	26.12	11.15	0.00	70709	511.9 -> 169.0	146.2	89.9	269.7

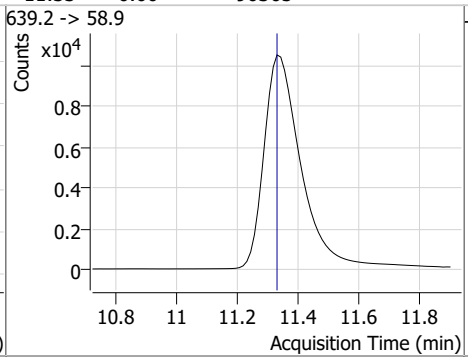


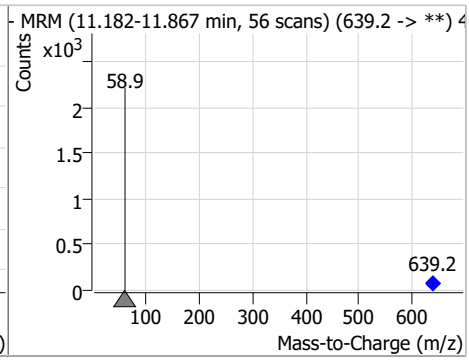




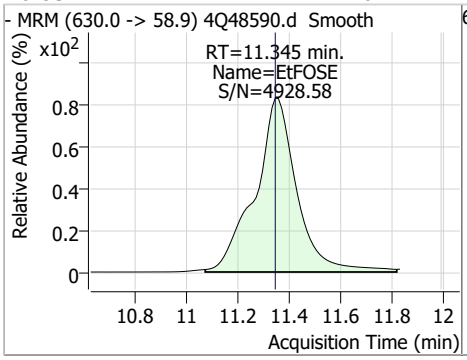
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.48	11.33	0.00	90365				

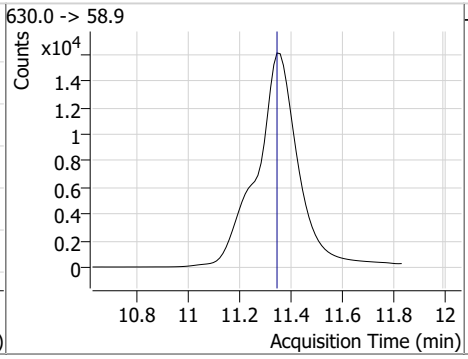


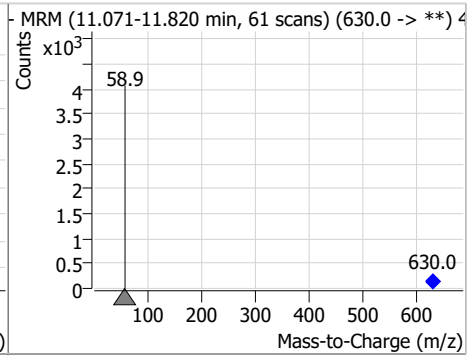




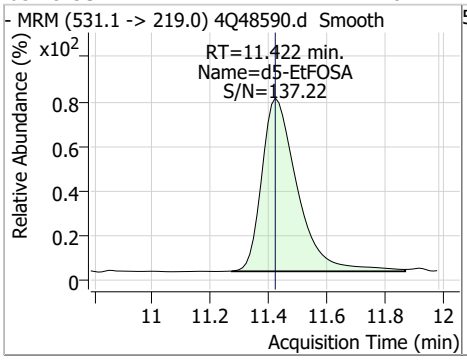
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	64.77	11.34	0.00	183159				

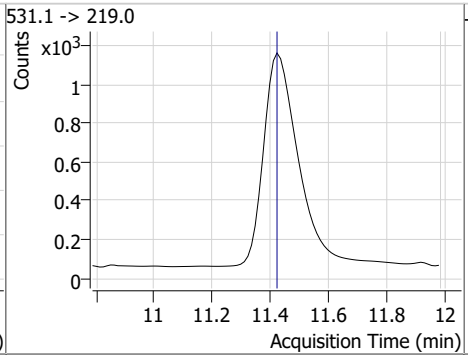


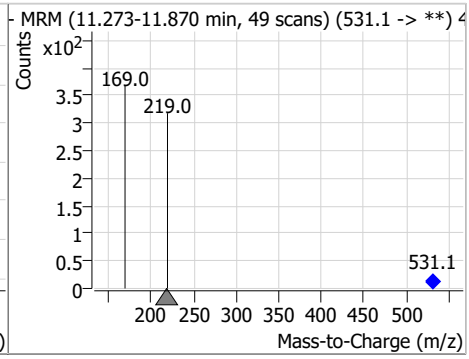




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.78	11.42	0.00	9390				

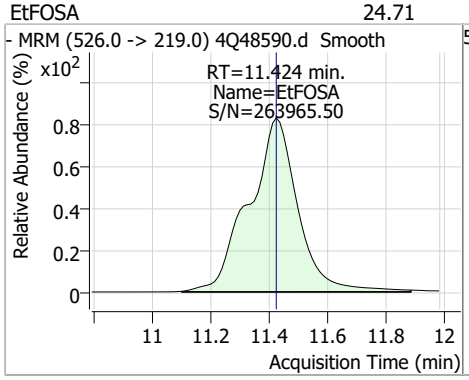


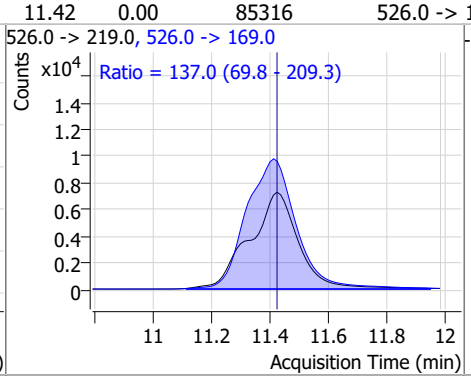


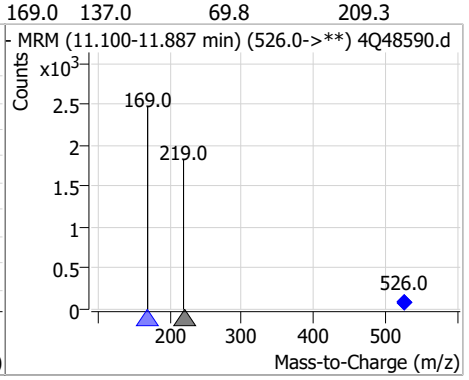


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	24.71	11.42	0.00	85316	526.0 -> 169.0	137.0	69.8	209.3







7.7.7

7

Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48590.D
Injection Time: 08/07/23 17:43
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48591.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 5:58:22 PM
Sample Name : ic711-7
Vial : P1-A8
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	95552	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	60760	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	37419	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	26561	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	43985	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	20033	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	13449	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	16153	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	17988	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	14660	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	13248	2.50	µg/L	0.000
M3-PFBS	5.489	302.1 -> 79.9	9460	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	6673	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8493	2.50	µg/L	0.000
M2-4:2FTS	5.296	329.1 -> 80.9	604	5.00	µg/L	0.000
M2-6:2FTS	6.998	429.1 -> 80.9	1061	5.00	µg/L	0.000
M2-8:2FTS	8.078	529.1 -> 80.9	1564	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	15969	5.00	µg/L	0.000
M3-HFPO-DA	5.977	286.9 -> 168.9	34489	10.00	µg/L	0.000
M5-EtFOSAA	8.559	589.2 -> 419.0	13299	5.00	µg/L	0.012
M7-MeFOSE	11.059	623.2 -> 58.9	63921	25.00	µg/L	0.000
M9-EtFOSE	11.344	639.2 -> 58.9	85407	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	9114	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	8095	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	8666	2.50	µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	55858	5.00	µg/L	0.012
18O2-PFHxS	7.316	403.0 -> 83.9	4819	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	54254	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	16329	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	21081	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	35422	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	604	5.02	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-6:2FTS	6.998	429.1 -> 80.9	1061	4.61	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1564	4.48	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C2-PFDoDA	9.180	615.1 -> 570.0	17988	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C2-PFTeDA	9.949	715.2 -> 670.0	14660	1.31	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-PFBS	5.489	302.1 -> 79.9	9460	2.31	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C3-PFHxS	7.317	402.1 -> 79.9	6673	2.50	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 = 100.1%		
13C4-PFBA	2.911	216.8 -> 171.9	95552	10.01 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C4-PFHpA	6.568	367.1 -> 322.0	26561	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFHxA	5.610	318.0 -> 273.0	37419	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C5-PFPeA	4.412	268.3 -> 223.0	60760	4.91 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C6-PFDA	8.279	519.1 -> 474.1	13449	1.19 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C7-PFUnDA	8.748	570.0 -> 525.1	16153	1.27 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C8-FOSA	9.882	506.1 -> 77.8	13248	2.45 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C8-PFOA	7.238	421.1 -> 376.0	43985	2.46 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C8-PFOS	8.417	507.1 -> 79.9	8493	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C9-PFNA	7.785	472.1 -> 427.0	20033	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15969	4.96 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C3-HFPO-DA	5.977	286.9 -> 168.9	34489	10.22 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
d3-MeFOSA	11.151	515.0 -> 219.0	8095	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%		
d5-EtFOSAA	8.559	589.2 -> 419.0	13299	5.03 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
d7-MeFOSE	11.059	623.2 -> 58.9	63921	25.12 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
d9-EtFOSE	11.344	639.2 -> 58.9	85407	23.93 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
d5-EtFOSA	11.422	531.1 -> 219.0	9114	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
Target Compounds						**QValue**
4:2FTS	5.297	327.1 -> 307.0	70269	86.24 µg/L		99
		327.1 -> 80.9	29426			
6:2FTS	6.999	427.1 -> 407.0	88161	97.87 µg/L		99
		427.1 -> 80.9	31492			
8:2FTS	8.078	527.1 -> 507.0	69168	110.15 µg/L		93
		527.1 -> 80.8	27272			
EtFOSAA	8.559	584.2 -> 419.1	47134	25.93 µg/L	m	95
		584.2 -> 526.0	20994			
FOSA	9.886	498.1 -> 77.9	108238	25.24 µg/L		99
		498.1 -> 478.0	3232			
MeFOSAA	8.349	570.1 -> 419.0	51815	25.96 µg/L		100
		570.1 -> 483.0	9627			
PFBA	2.920	212.8 -> 168.9	225518	102.50 µg/L		100
PFBS	5.490	298.7 -> 79.9	55080	23.84 µg/L		96
		298.7 -> 98.8	21660			
PFDA	8.279	512.9 -> 469.0	259671	27.47 µg/L		98
		512.9 -> 219.0	47636			
PFDoDA	9.181	613.1 -> 569.0	286028	25.41 µg/L		99
		613.1 -> 319.0	45160			
PFDS	9.335	599.0 -> 79.9	43368	24.72 µg/L		98

Perfluorinated Compounds by LC/MS/MS

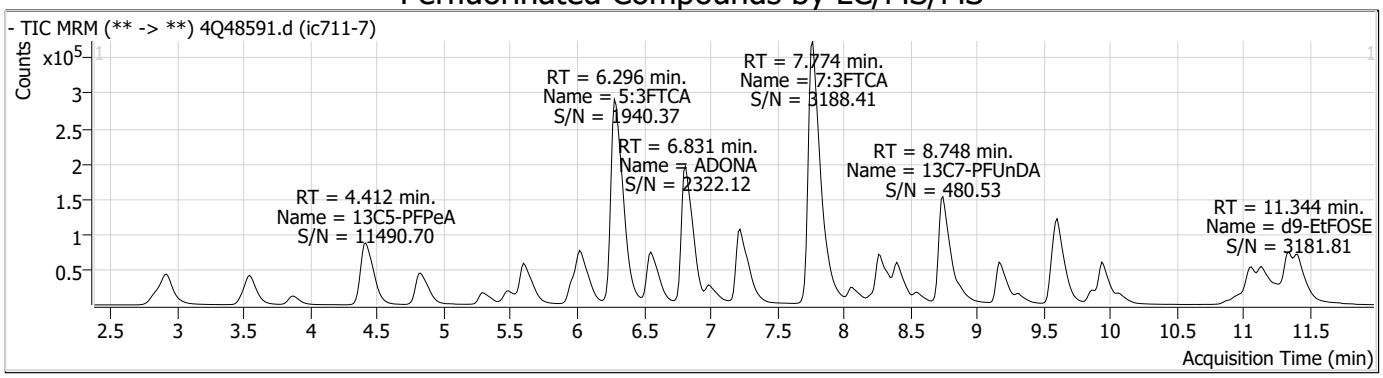
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	21410				
PFHpA	6.568	363.1 -> 319.0	312761	26.09	µg/L		99
		363.1 -> 169.0	55642				
PFHpS	7.900	449.0 -> 79.9	61338	23.89	µg/L		96
		449.0 -> 98.9	32594				
PFHxA	5.613	313.0 -> 269.0	277112	25.66	µg/L		100
		313.0 -> 118.9	9132				
PFHxS	7.318	398.7 -> 79.9	42642	22.27	µg/L	m	99
		398.7 -> 98.9	22212				
PFNA	7.785	463.0 -> 419.0	263119	25.24	µg/L		99
		463.0 -> 219.0	58954				
PFNS	8.899	548.8 -> 79.9	40889	24.65	µg/L		99
		548.8 -> 98.9	21483				
PFOA	7.240	413.0 -> 369.0	447883	25.68	µg/L		98
		413.0 -> 169.0	83062				
PFOS	8.419	498.9 -> 79.9	72394	23.96	µg/L	m	79
		498.9 -> 98.8	34015				
PFPeA	4.414	263.0 -> 219.0	552213	52.30	µg/L		100
PFPeS	6.582	349.1 -> 79.9	41030	22.77	µg/L		97
		349.1 -> 98.9	18930				
PFTeDA	9.950	713.1 -> 669.0	260239	25.34	µg/L		98
		713.1 -> 168.9	23524				
PFTrDA	9.579	663.0 -> 619.0	307599	26.45	µg/L		98
		663.0 -> 168.9	36745				
PFUnDA	8.749	563.1 -> 519.0	260701	24.78	µg/L		98
		563.1 -> 269.1	50537				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	365599	50.56	µg/L		100
		632.9 -> 452.9	111956				
9Cl-PF3ONS	8.763	530.8 -> 351.0	479050	47.08	µg/L		99
		532.8 -> 353.0	145769				
ADONA	6.831	376.9 -> 250.9	957641	47.85	µg/L		100
		376.9 -> 84.8	248824				
HFPO-DA	5.978	284.9 -> 168.9	145804	51.38	µg/L		96
		284.9 -> 184.9	16711				
3:3FTCA	3.861	241.0 -> 177.0	72325	130.27	µg/L		98
		241.0 -> 117.0	6678				
5:3FTCA	6.296	341.0 -> 237.1	1143229	646.92	µg/L		99
		341.0 -> 217.0	805552				
7:3FTCA	7.774	441.0 -> 316.9	625787	642.63	µg/L		100
		441.0 -> 336.9	1441981				
EtFOSA	11.424	526.0 -> 219.0	167372	49.95	µg/L		99
		526.0 -> 169.0	232223				
EtFOSE	11.357	630.0 -> 58.9	363905	136.17	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	138711	49.26	µg/L	m	75
		511.9 -> 169.0	200314				
MeFOSE	11.073	616.1 -> 58.9	290490	127.08	µg/L		100
PFDoDS	10.089	699.1 -> 79.9	35037	25.96	µg/L		93
		699.1 -> 98.8	19696				
NFDHA	5.491	295.0 -> 201.0	33275	47.82	µg/L		100
		295.0 -> 84.9	8258				
PFMBA	4.828	279.0 -> 85.1	309734	52.34	µg/L		100
PFMPA	3.540	229.0 -> 84.9	300542	52.07	µg/L		100
PFEESA	6.034	314.8 -> 134.9	396207	45.55	µg/L		100
		314.8 -> 82.9	13858				

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

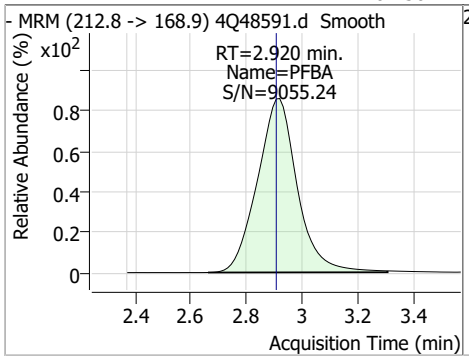
Perfluorinated Compounds by LC/MS/MS

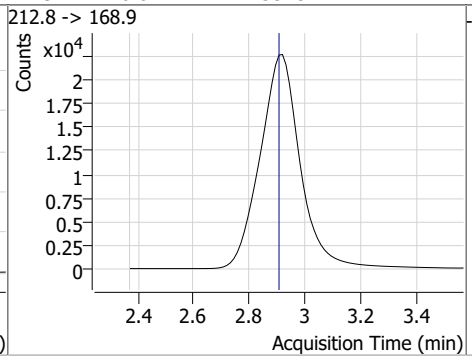
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

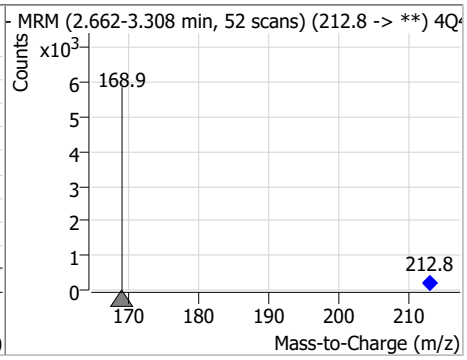
Perfluorinated Compounds by LC/MS/MS



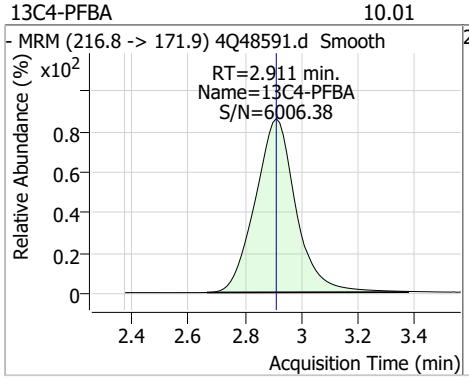
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	102.50	2.92	0.01	225518				

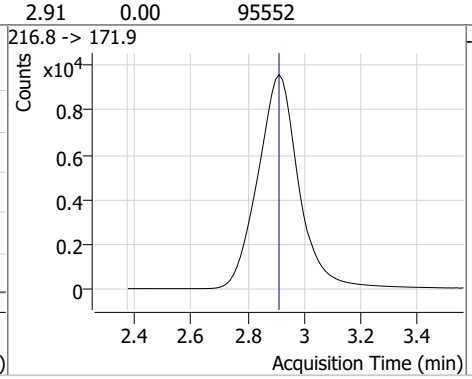


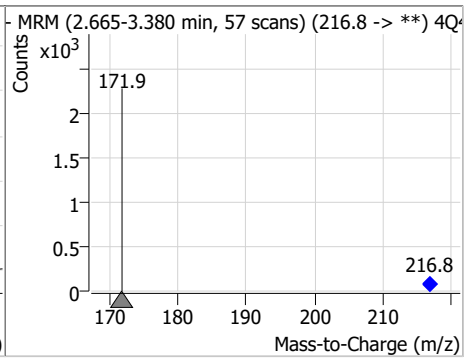




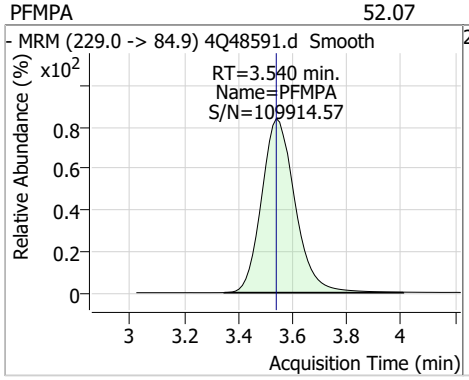
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.01	2.91	0.00	95552				

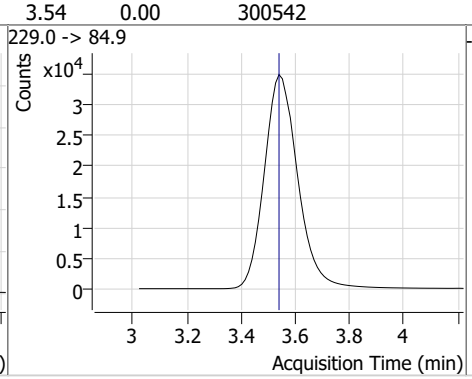


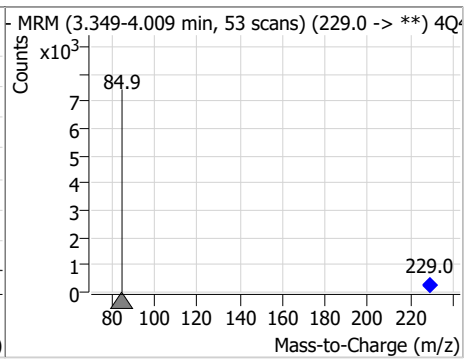




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	52.07	3.54	0.00	300542				

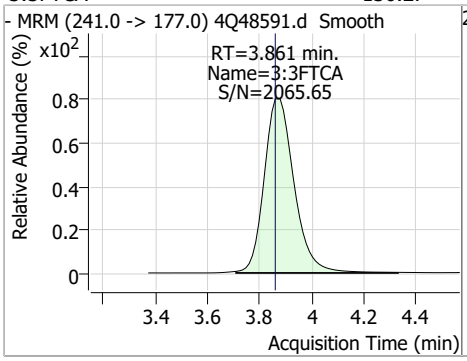


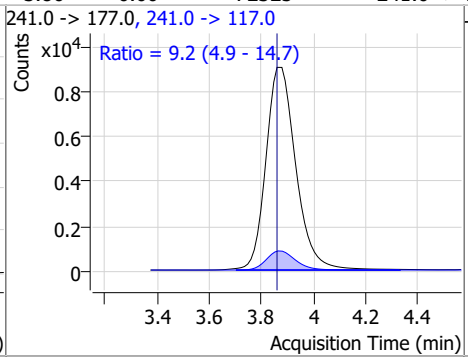


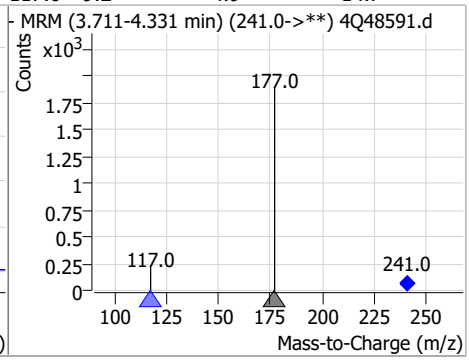


Perfluorinated Compounds by LC/MS/MS

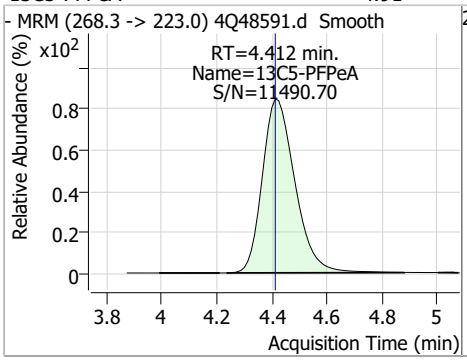
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	130.27	3.86	0.00	72325	241.0 -> 117.0	9.2	4.9	14.7

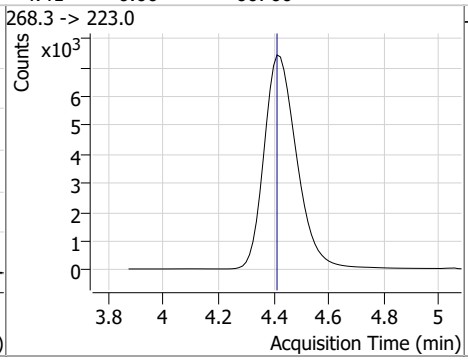


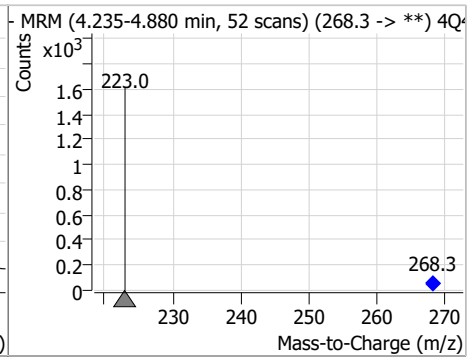




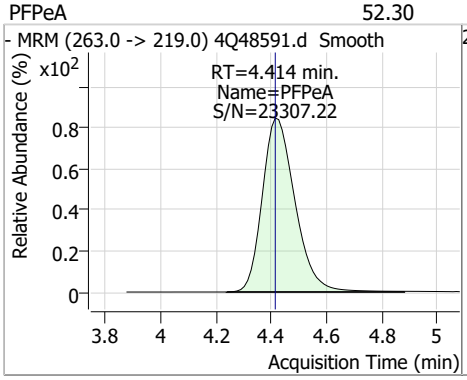
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.91	4.41	0.00	60760				

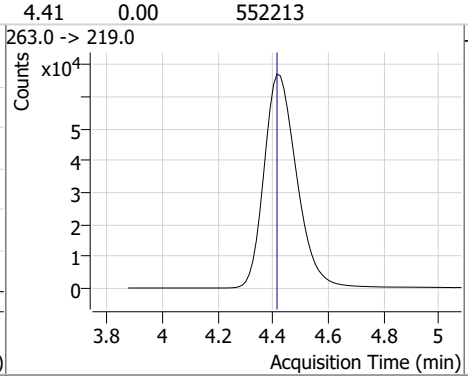


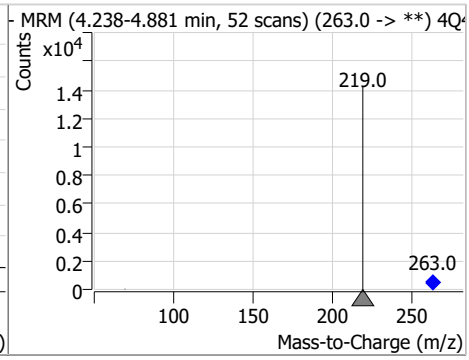




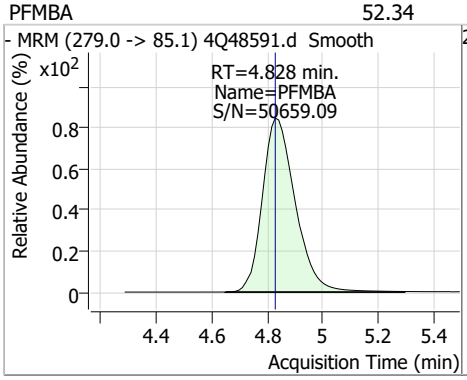
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	52.30	4.41	0.00	552213				

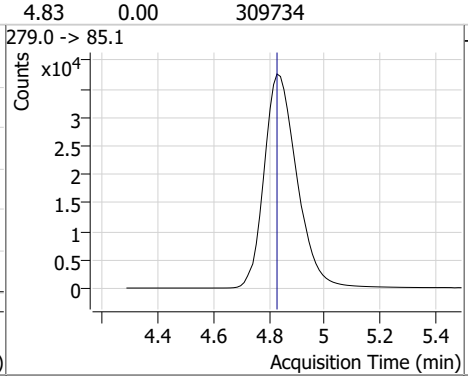


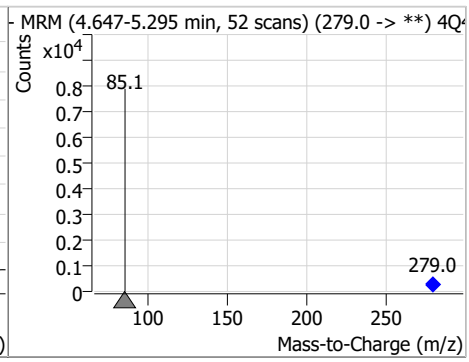




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	52.34	4.83	0.00	309734				

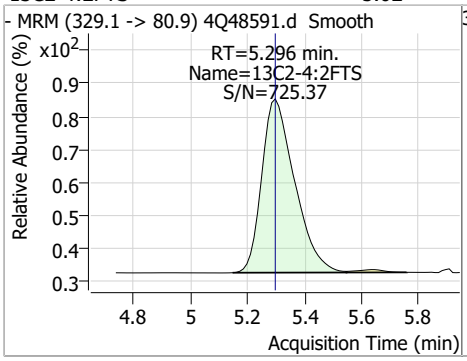


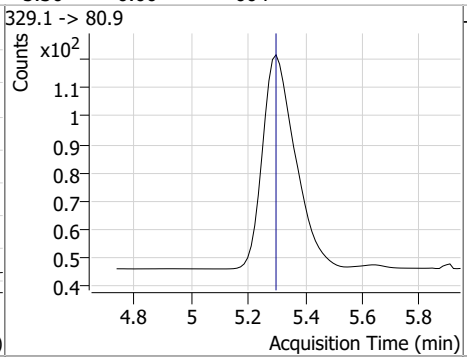


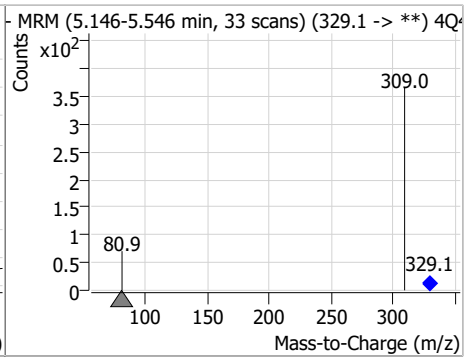


Perfluorinated Compounds by LC/MS/MS

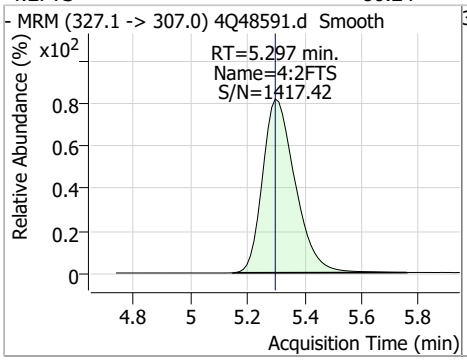
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.02	5.30	0.00	604				

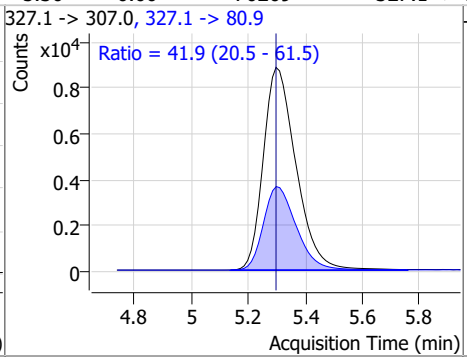


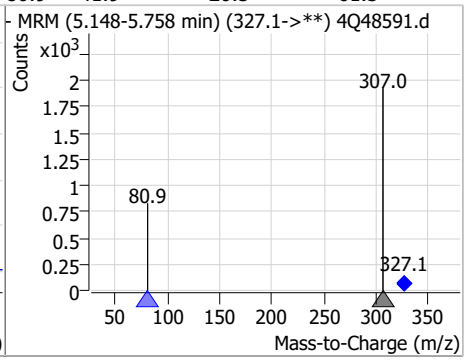




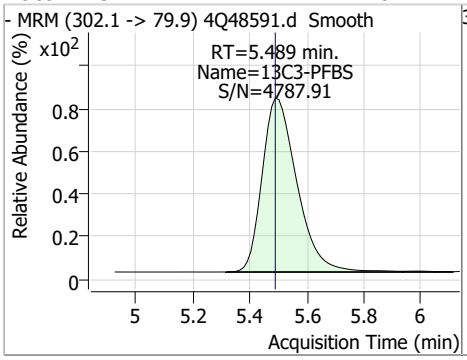
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	86.24	5.30	0.00	70269	327.1 -> 80.9	41.9	20.5	61.5

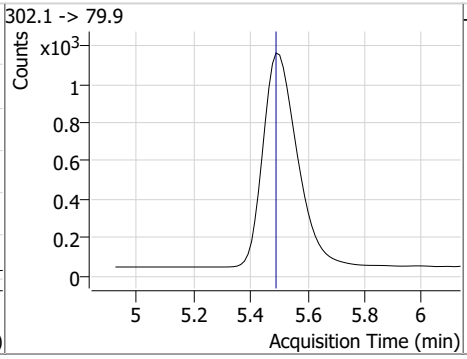


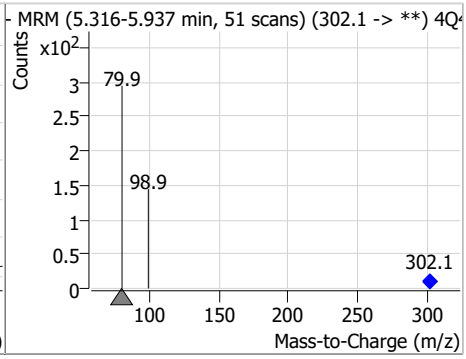




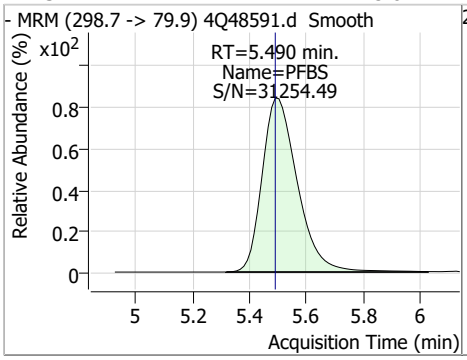
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.31	5.49	0.00	9460				

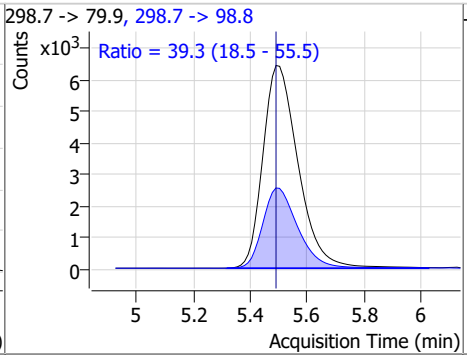


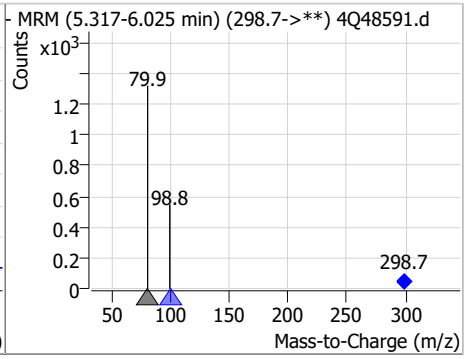




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.84	5.49	0.00	55080	298.7 -> 98.8	39.3	18.5	55.5

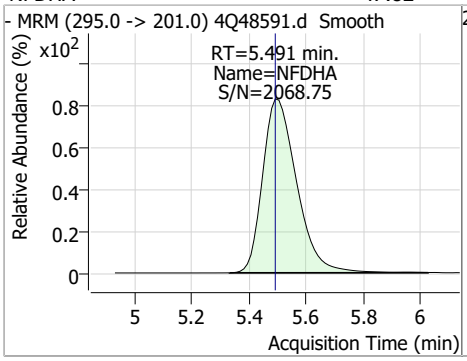


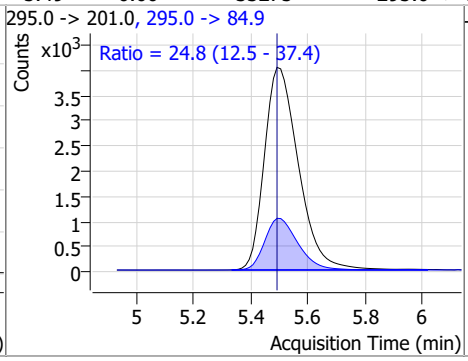


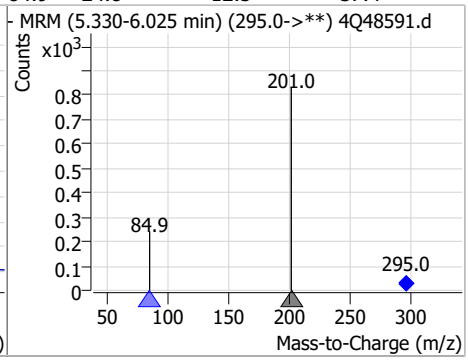


Perfluorinated Compounds by LC/MS/MS

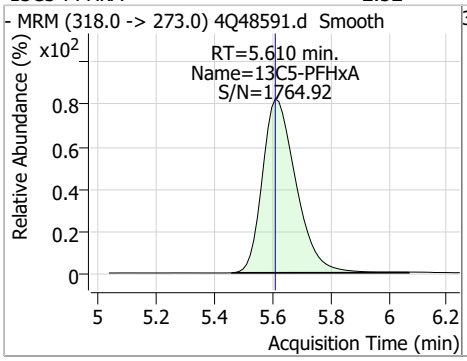
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	47.82	5.49	0.00	33275	295.0 -> 84.9	24.8	12.5	37.4

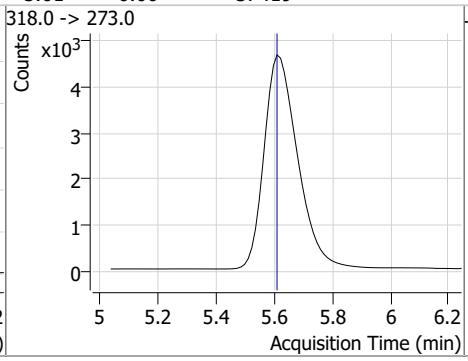


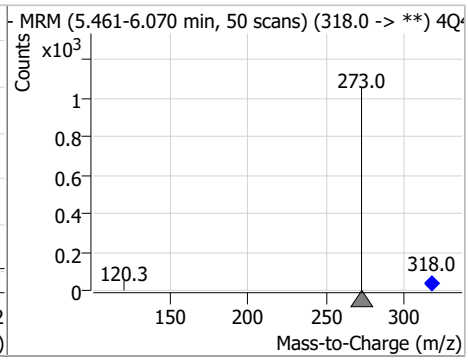




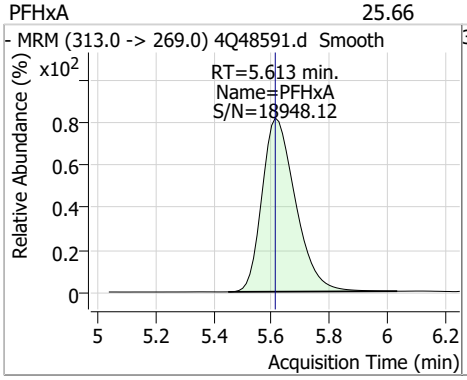
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.61	0.00	37419				

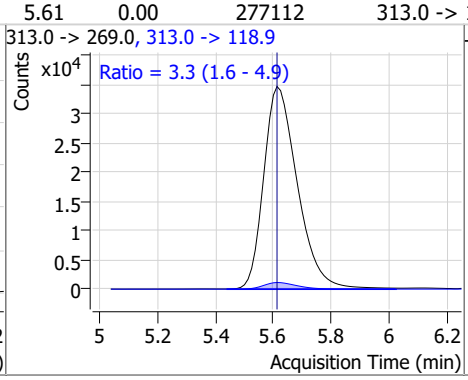


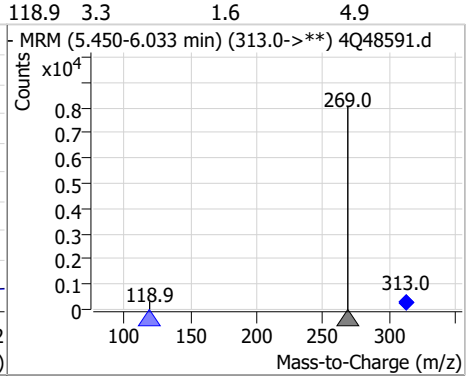




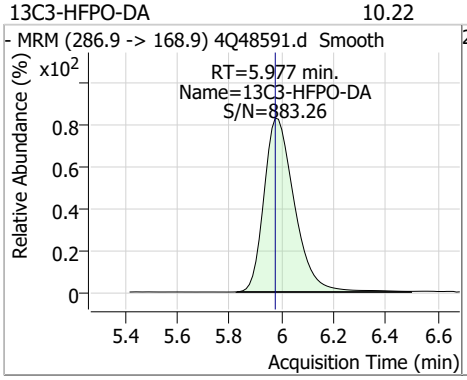
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	25.66	5.61	0.00	277112	313.0 -> 118.9	3.3	1.6	4.9

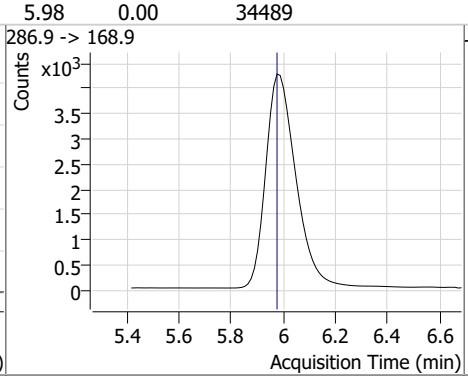


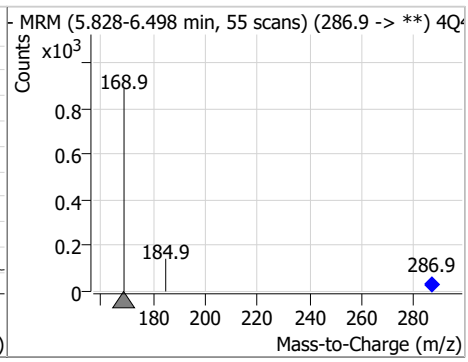




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.22	5.98	0.00	34489				

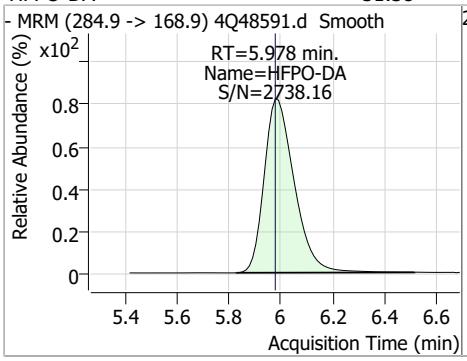


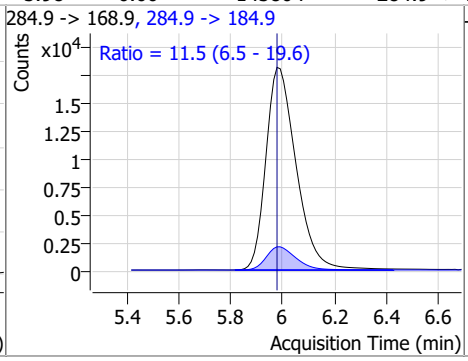


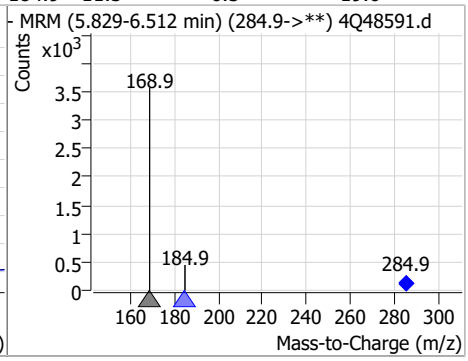


Perfluorinated Compounds by LC/MS/MS

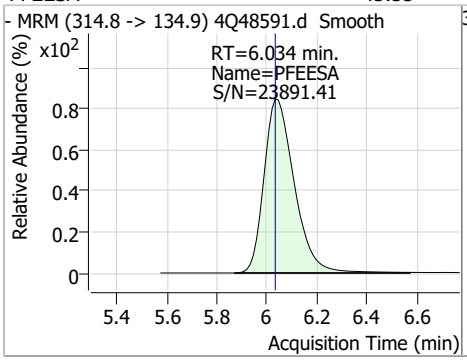
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	51.38	5.98	0.00	145804	284.9 -> 184.9	11.5	6.5	19.6

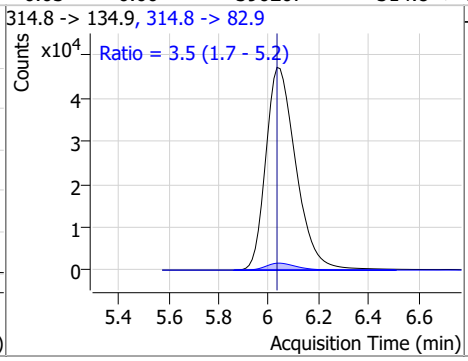


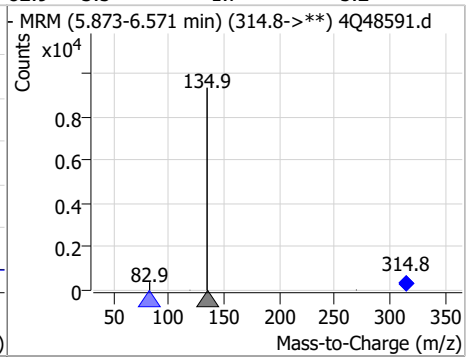




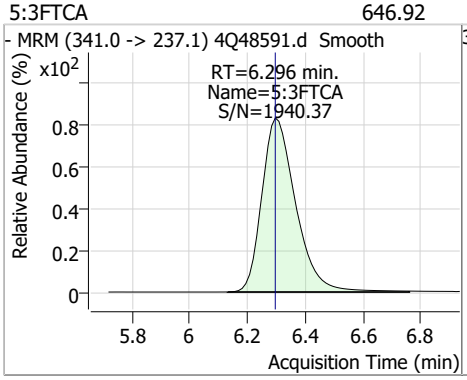
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	45.55	6.03	0.00	396207	314.8 -> 82.9	3.5	1.7	5.2

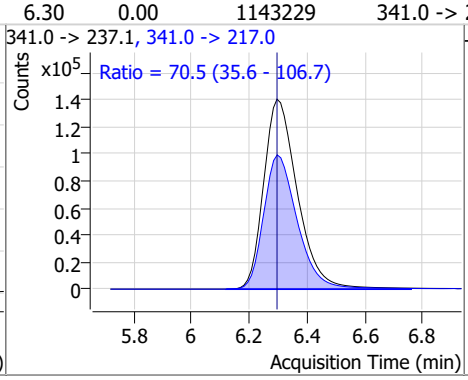


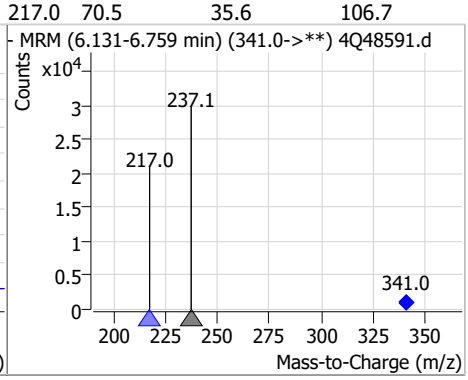




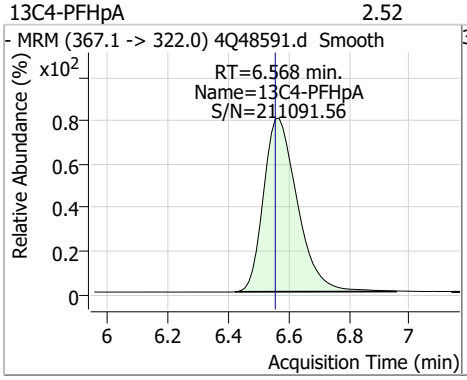
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	646.92	6.30	0.00	1143229	341.0 -> 217.0	70.5	35.6	106.7

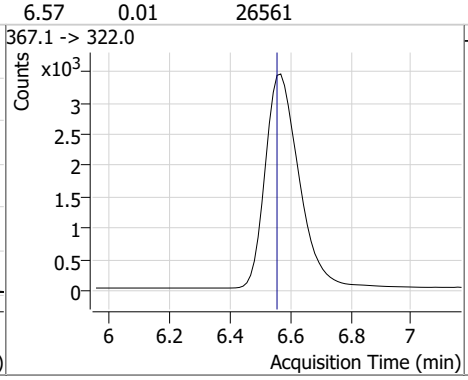


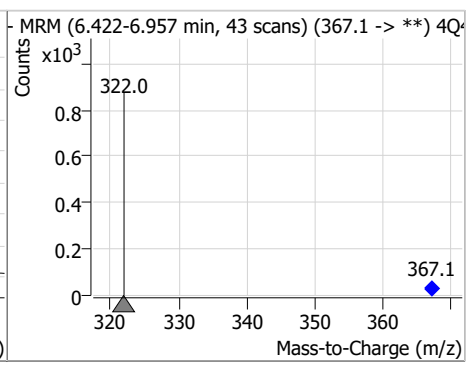




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.57	0.01	26561				

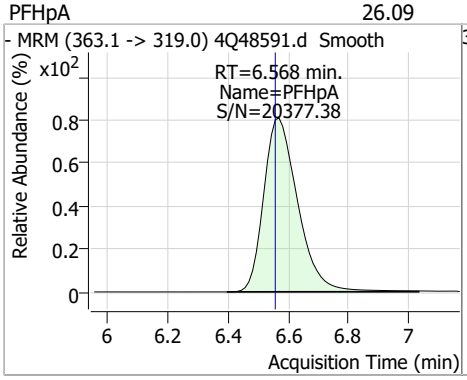


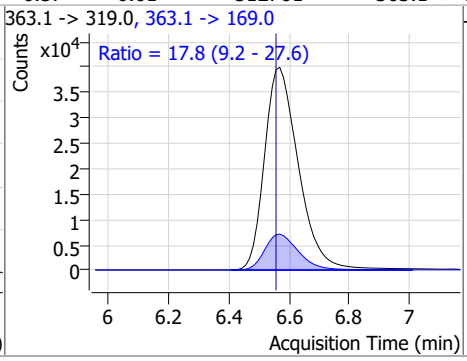


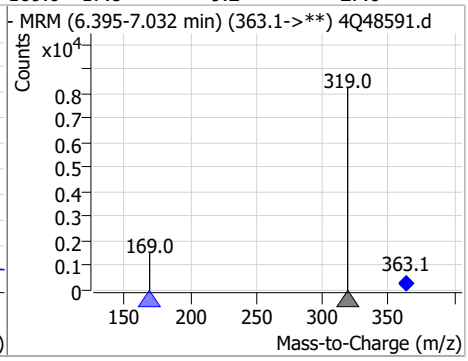


Perfluorinated Compounds by LC/MS/MS

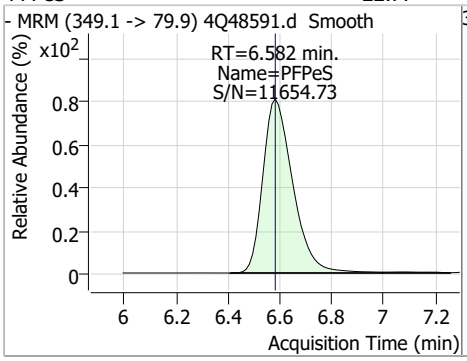
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	26.09	6.57	0.01	312761	363.1 -> 169.0	17.8	9.2	27.6

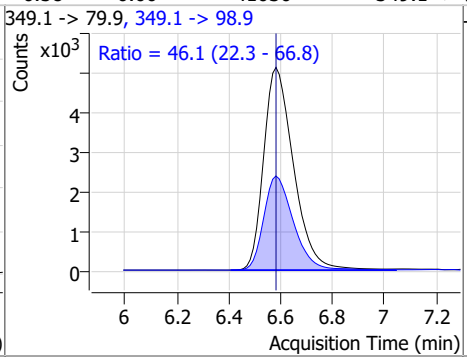


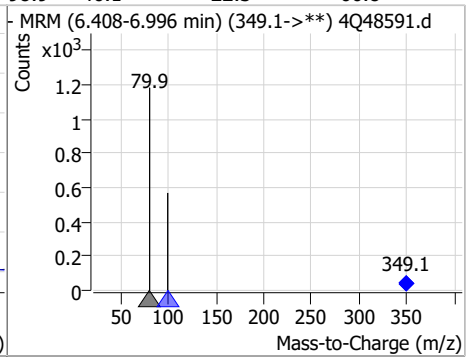




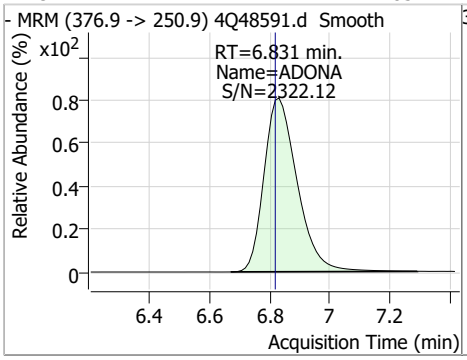
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.77	6.58	0.00	41030	349.1 -> 98.9	46.1	22.3	66.8

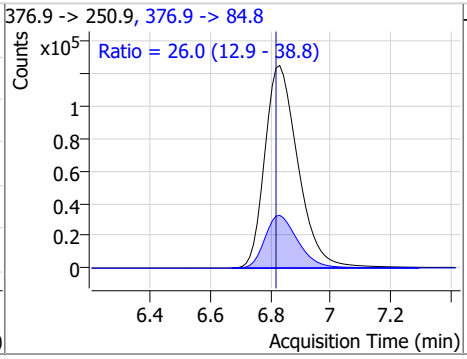


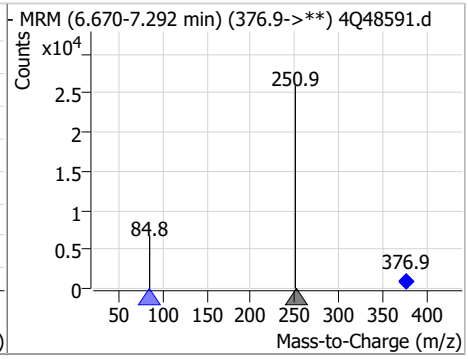




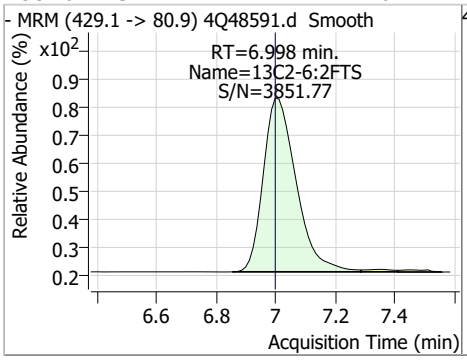
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	47.85	6.83	0.01	957641	376.9 -> 84.8	26.0	12.9	38.8

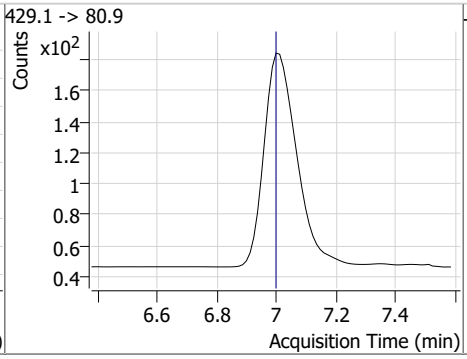


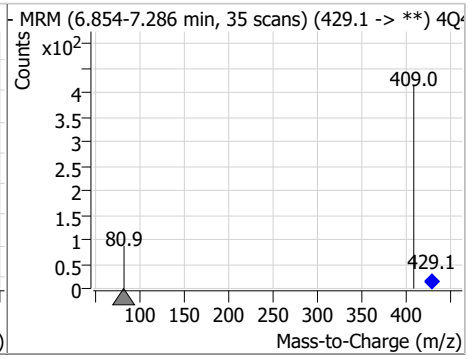




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.61	7.00	0.00	1061				

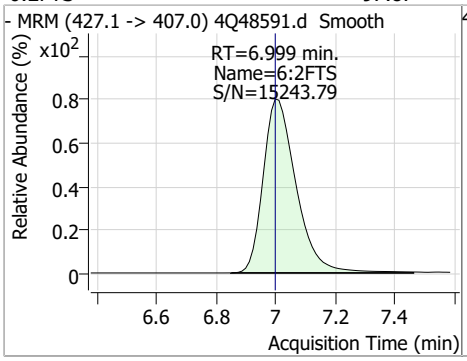


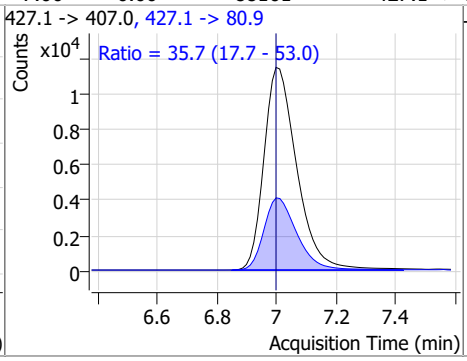


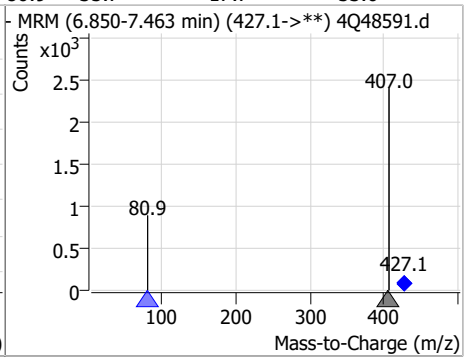


Perfluorinated Compounds by LC/MS/MS

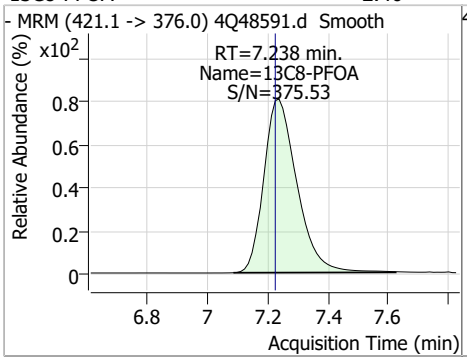
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	97.87	7.00	0.00	88161	427.1 -> 80.9	35.7	17.7	53.0

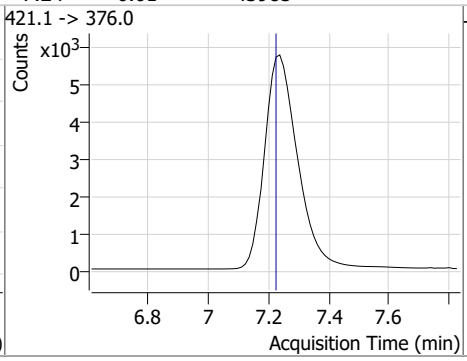


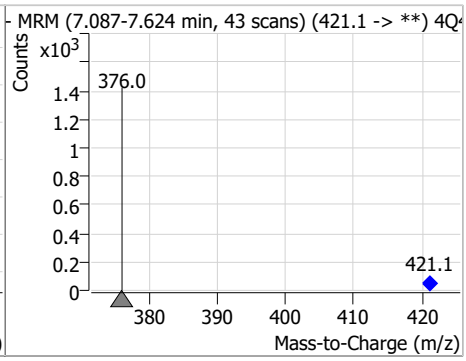




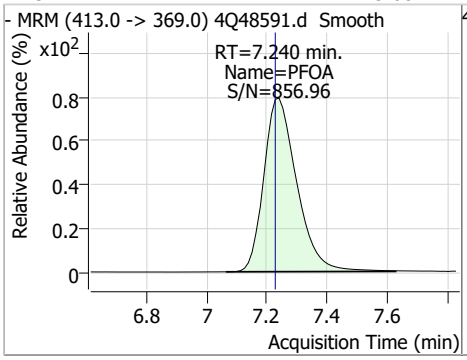
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.46	7.24	0.01	43985				

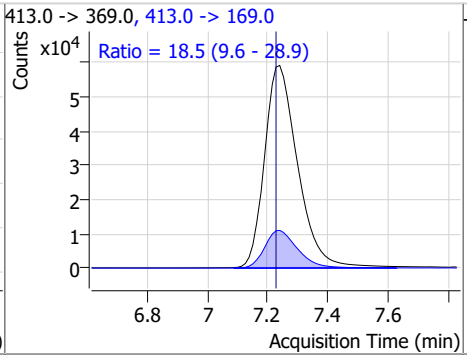


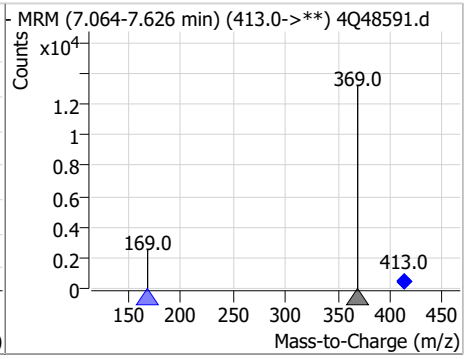




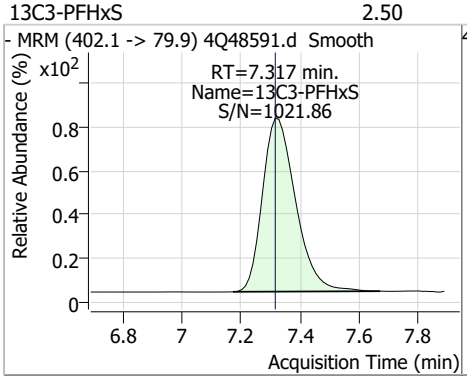
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	25.68	7.24	0.01	447883	413.0 -> 169.0	18.5	9.6	28.9

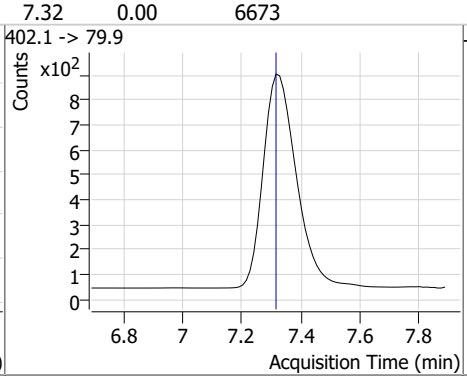


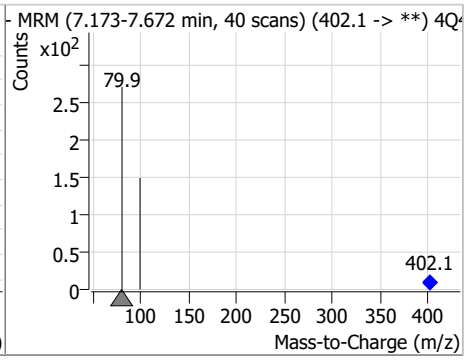




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.50	7.32	0.00	6673				

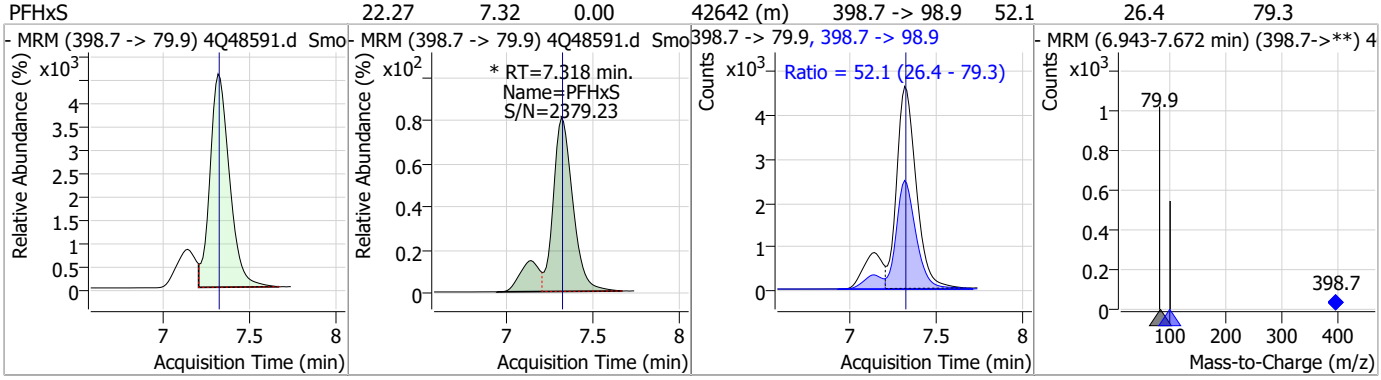




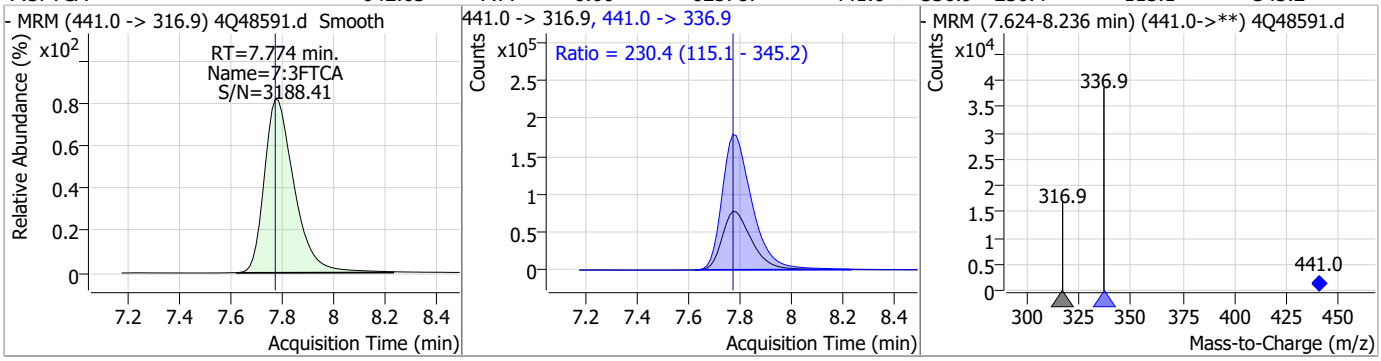


Perfluorinated Compounds by LC/MS/MS

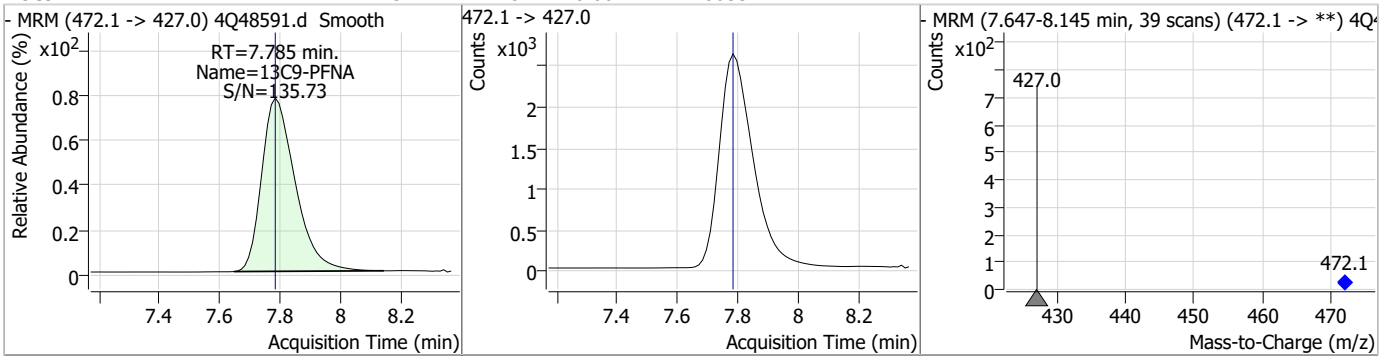
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.27	7.32	0.00	42642 (m)	398.7 -> 98.9	52.1	26.4	79.3



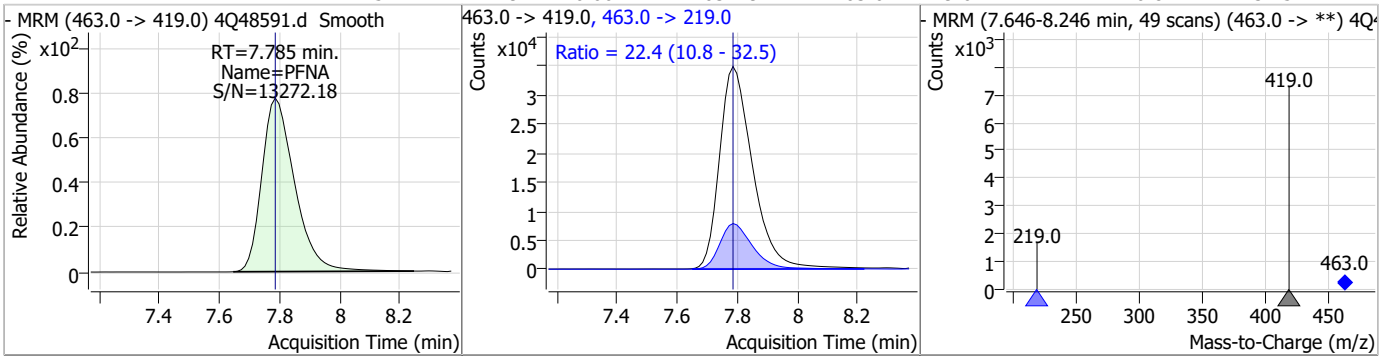
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	642.63	7.77	0.00	625787	441.0 -> 336.9	230.4	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.78	0.00	20033				

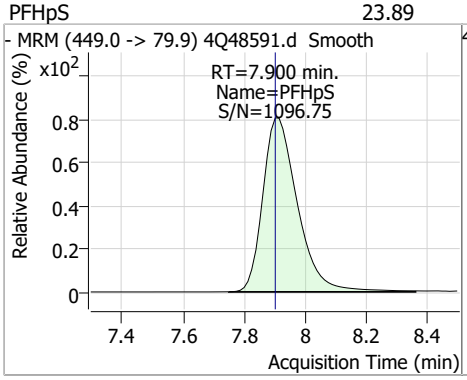


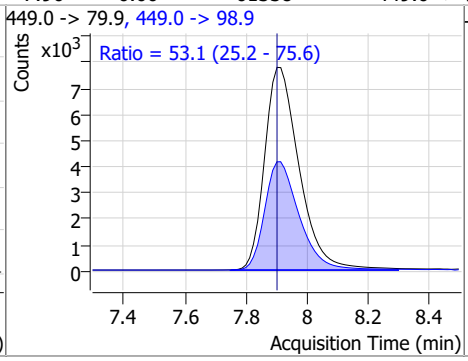
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	25.24	7.79	0.00	263119	463.0 -> 219.0	22.4	10.8	32.5

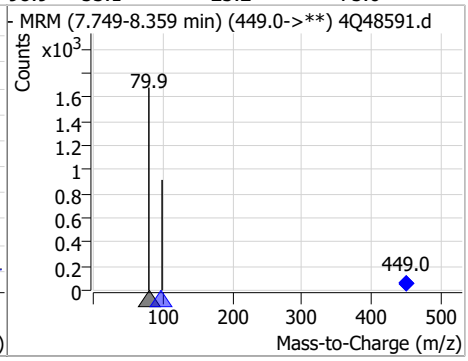


Perfluorinated Compounds by LC/MS/MS

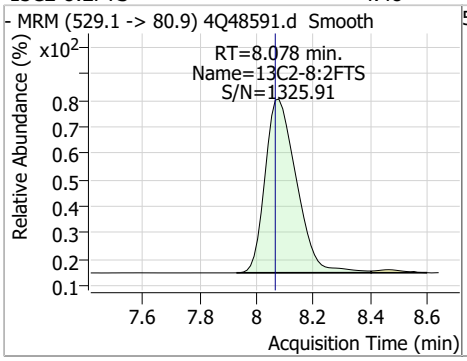
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	23.89	7.90	0.00	61338	449.0 -> 98.9	53.1	25.2	75.6

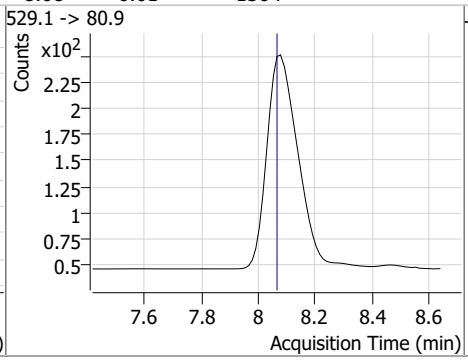


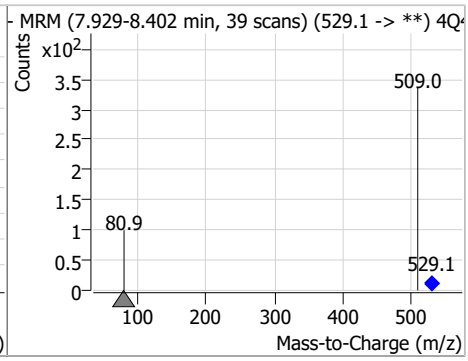




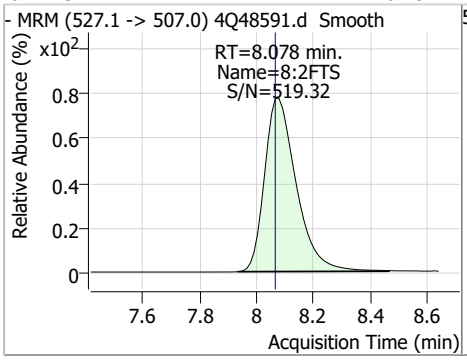
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.48	8.08	0.01	1564				

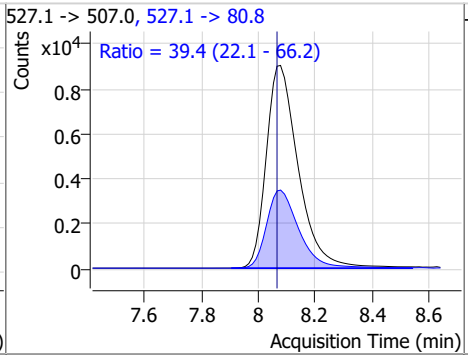


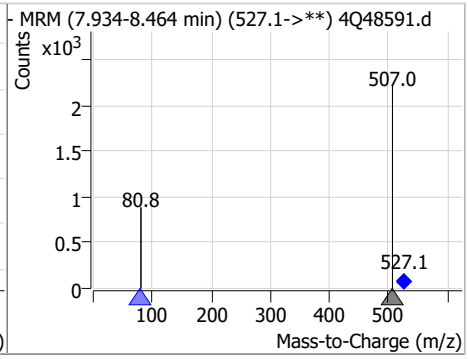




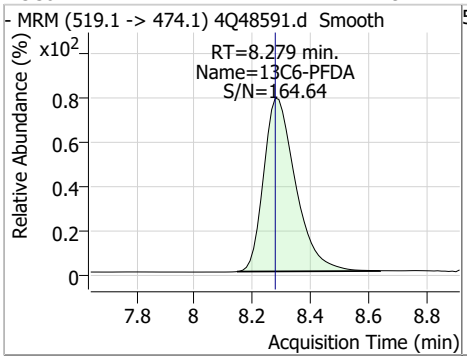
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	110.15	8.08	0.01	69168	527.1 -> 80.8	39.4	22.1	66.2

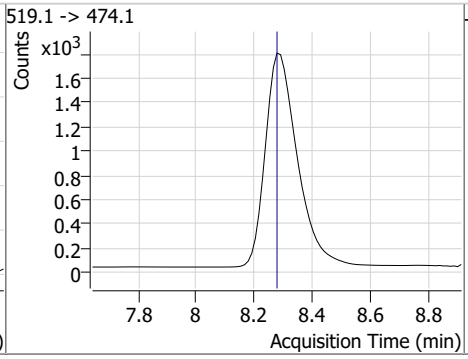


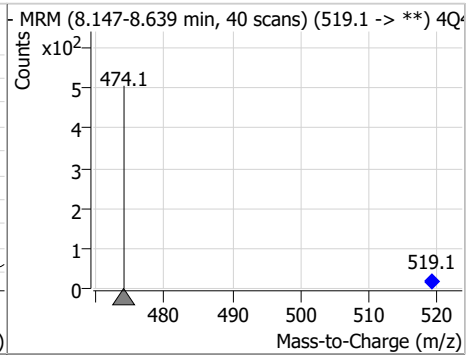




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.19	8.28	0.00	13449				

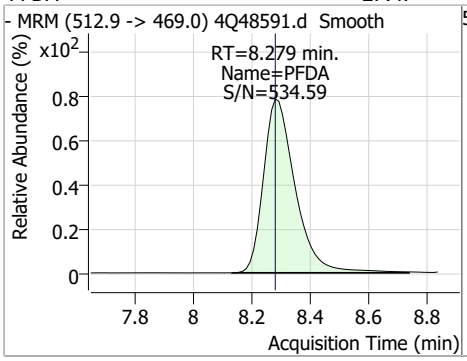


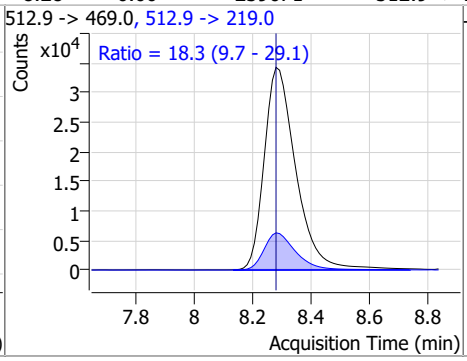


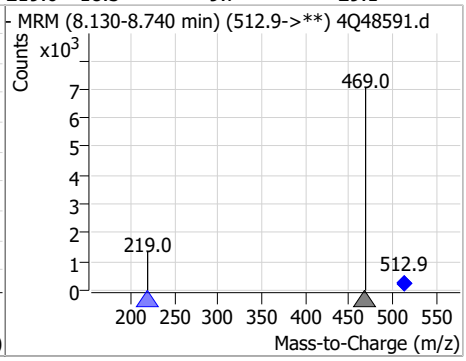


Perfluorinated Compounds by LC/MS/MS

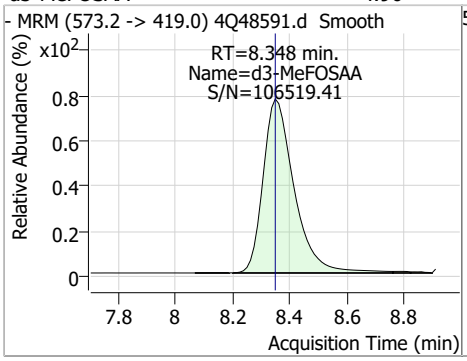
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	27.47	8.28	0.00	259671	512.9 -> 219.0	18.3	9.7	29.1

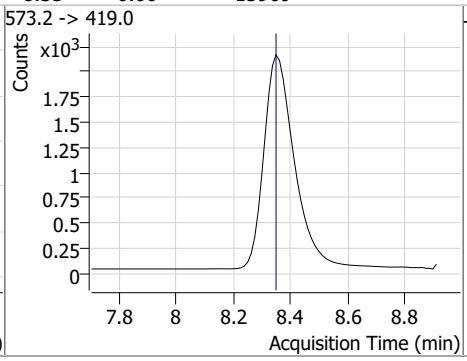


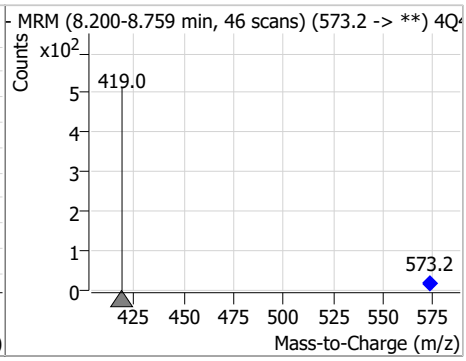




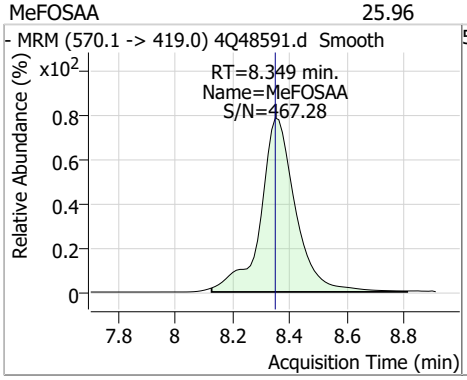
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.96	8.35	0.00	15969				

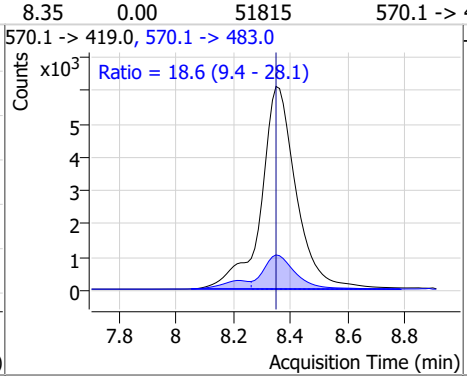


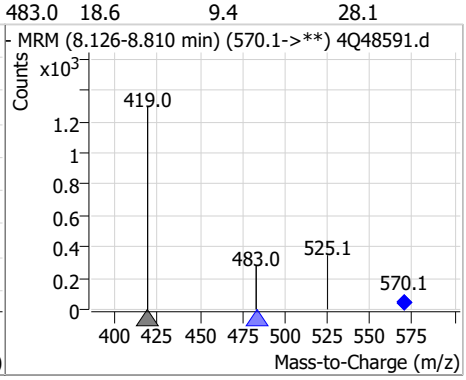




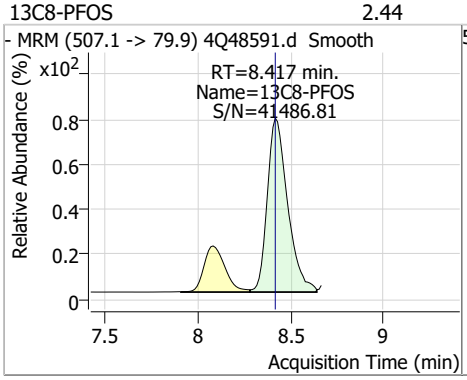
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	25.96	8.35	0.00	51815	570.1 -> 483.0	18.6	9.4	28.1

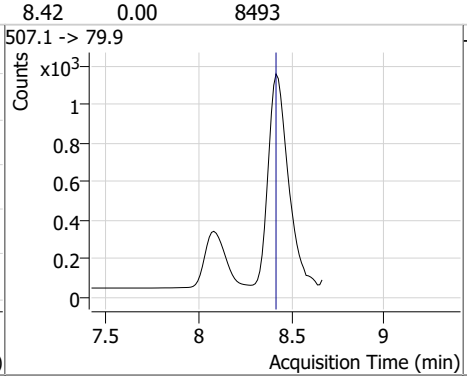


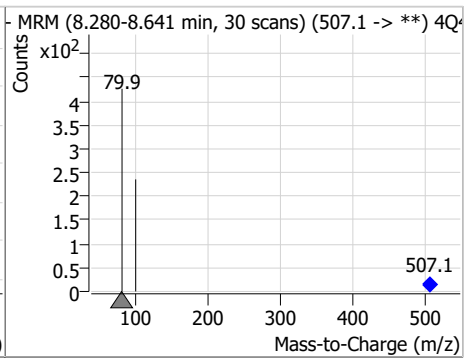




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.42	0.00	8493				

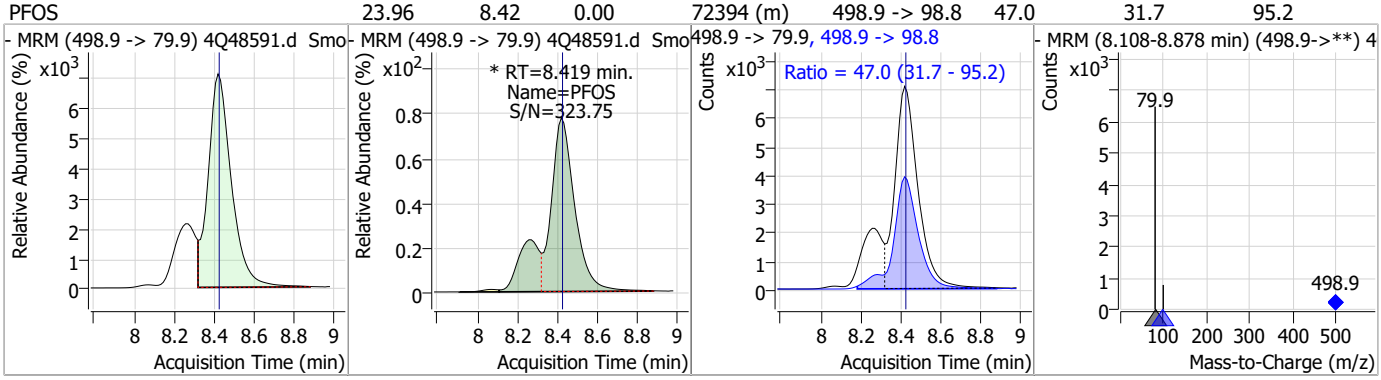




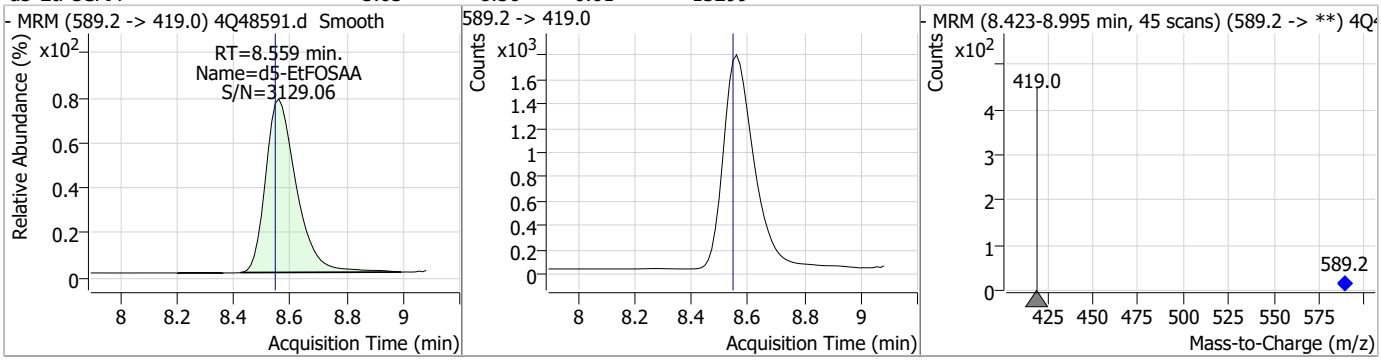


Perfluorinated Compounds by LC/MS/MS

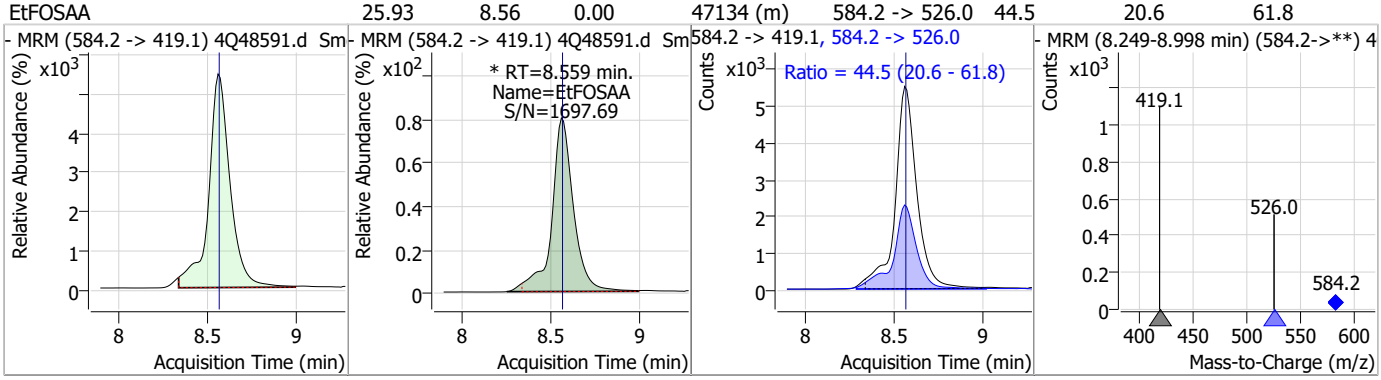
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.96	8.42	0.00	72394 (m)	498.9 -> 98.8	47.0	31.7	95.2



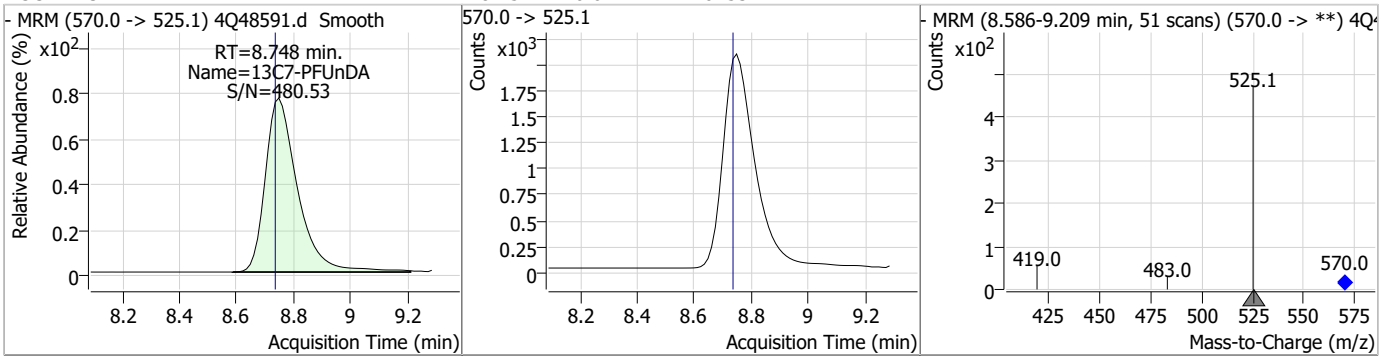
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.03	8.56	0.01	13299				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	25.93	8.56	0.00	47134 (m)	584.2 -> 526.0	44.5	20.6	61.8

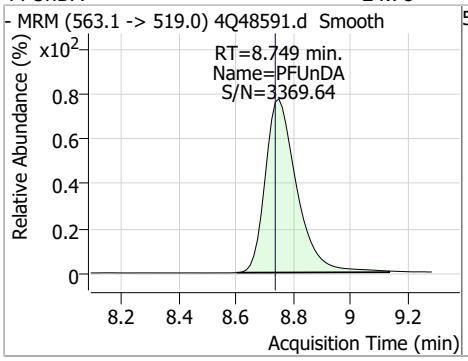


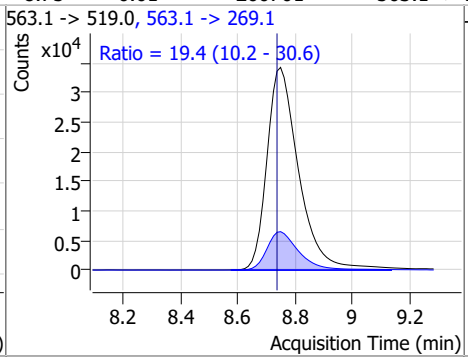
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.75	0.01	16153				

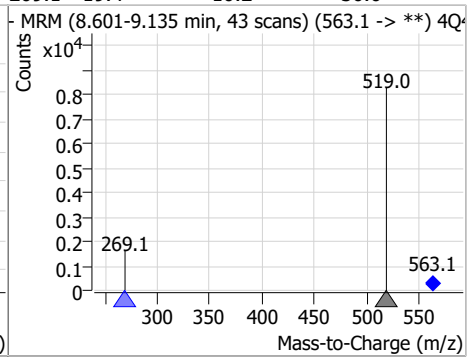


Perfluorinated Compounds by LC/MS/MS

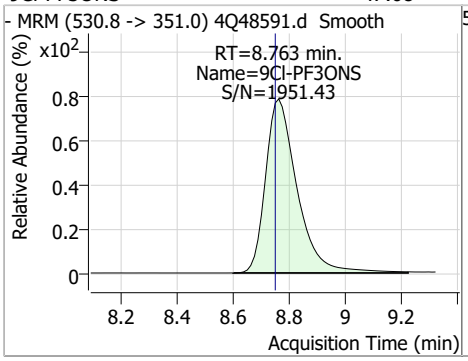
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	24.78	8.75	0.01	260701	563.1 -> 269.1	19.4	10.2	30.6

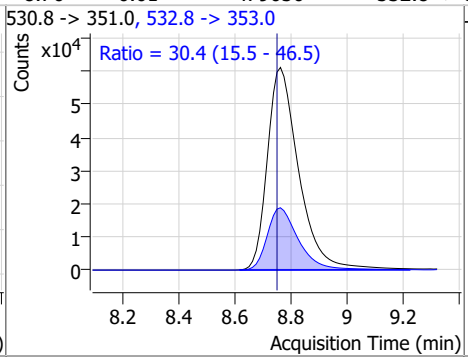


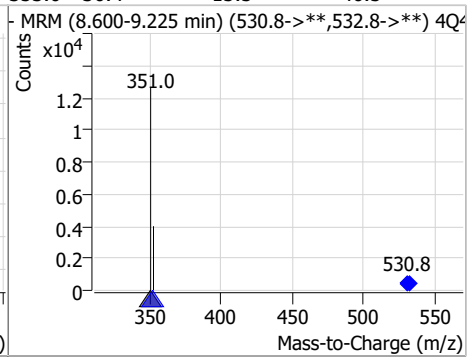




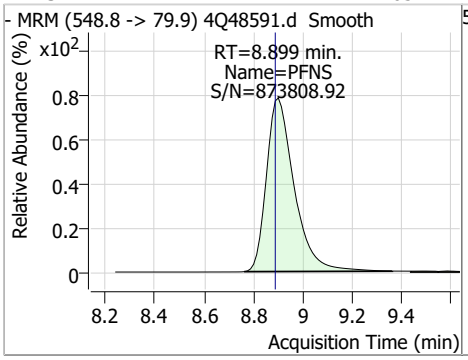
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	47.08	8.76	0.01	479050	532.8 -> 353.0	30.4	15.5	46.5

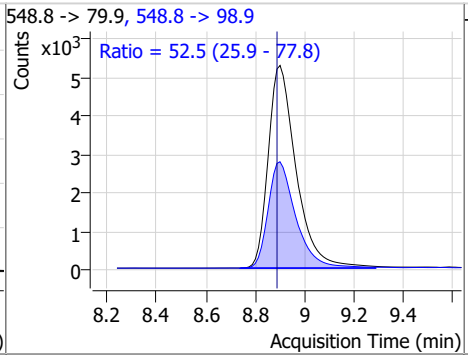


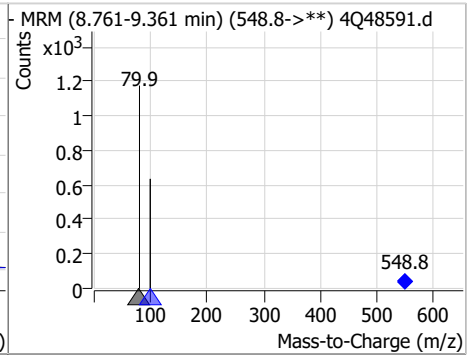




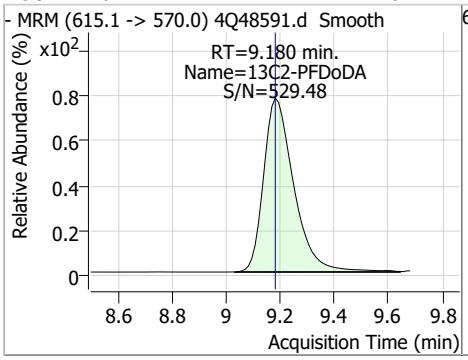
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.65	8.90	0.01	40889	548.8 -> 98.9	52.5	25.9	77.8

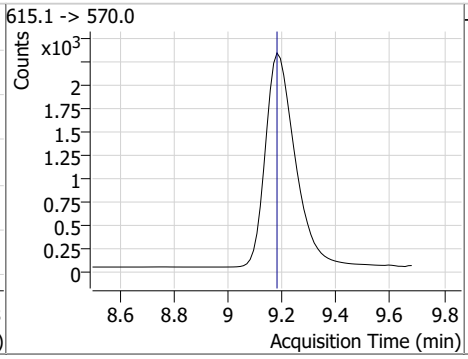


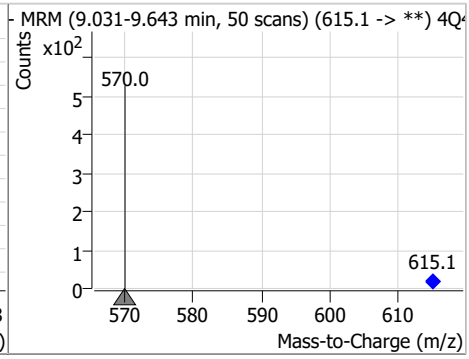




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.18	0.00	17988				

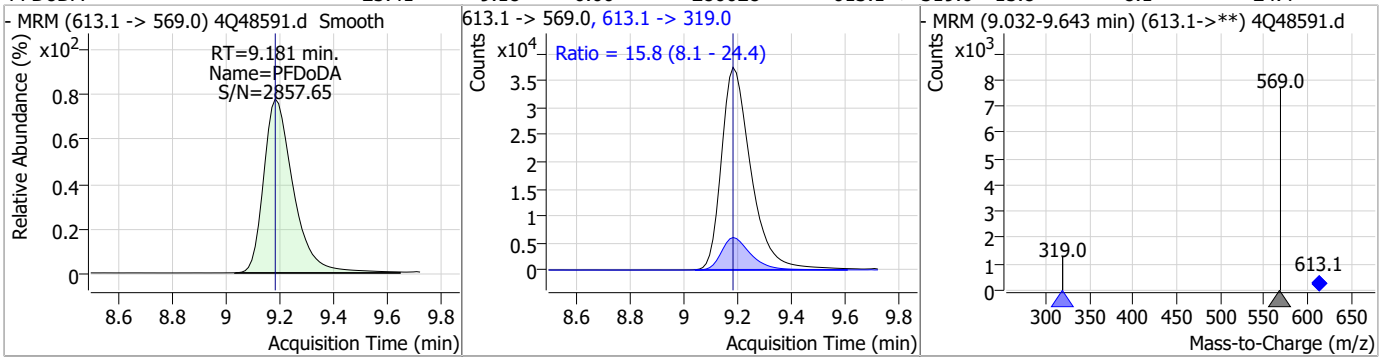




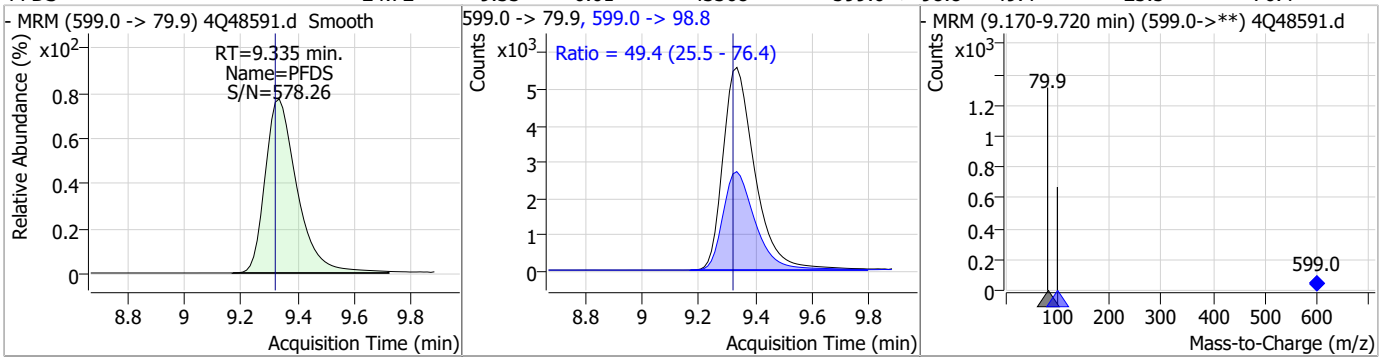


Perfluorinated Compounds by LC/MS/MS

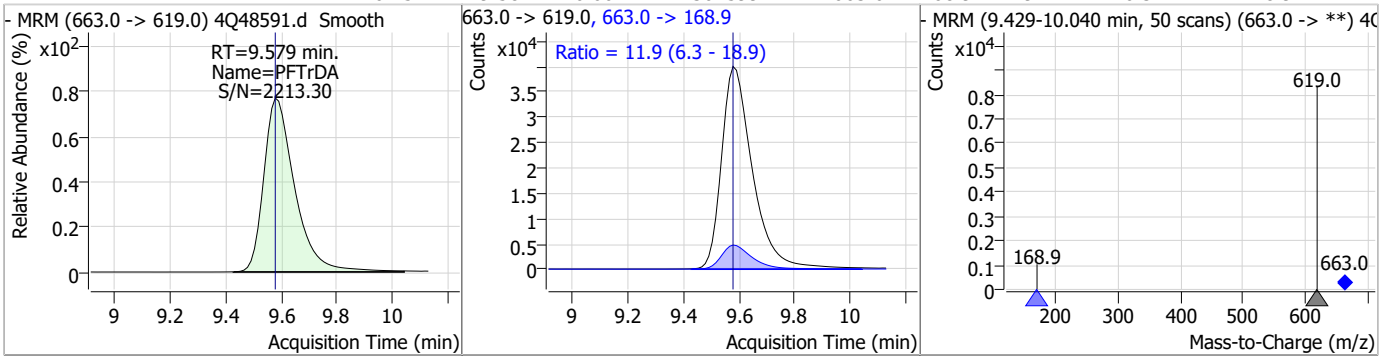
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	25.41	9.18	0.00	286028	613.1 -> 319.0	15.8	8.1	24.4



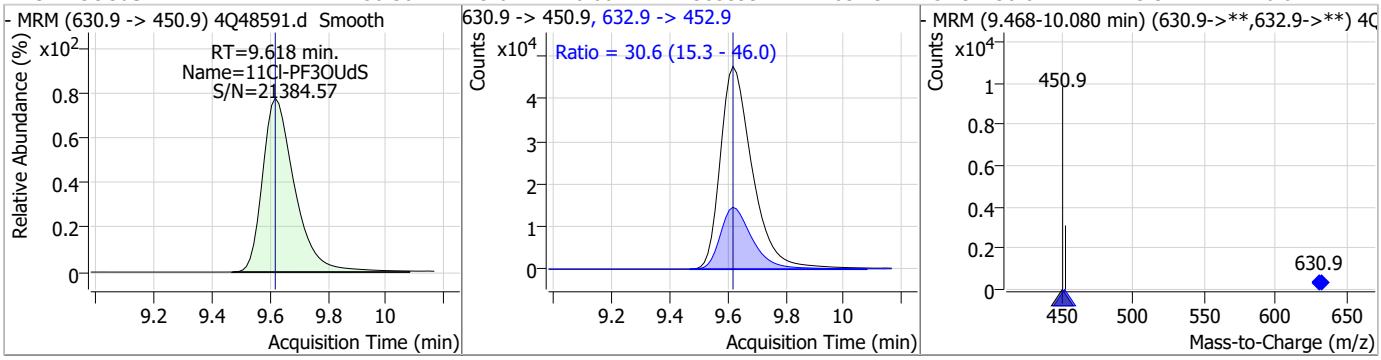
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	24.72	9.33	0.01	43368	599.0 -> 98.8	49.4	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	26.45	9.58	0.00	307599	663.0 -> 168.9	11.9	6.3	18.9

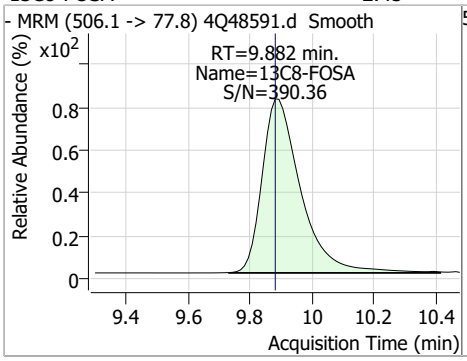


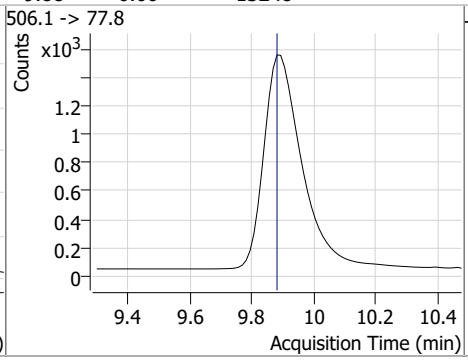
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	50.56	9.62	0.00	365599	632.9 -> 452.9	30.6	15.3	46.0

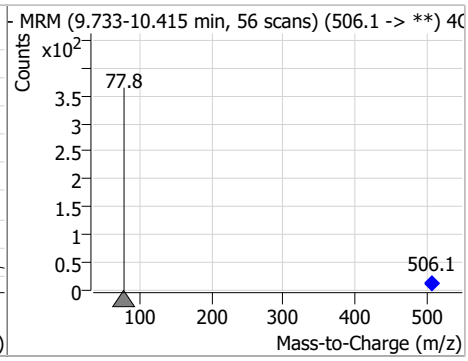


Perfluorinated Compounds by LC/MS/MS

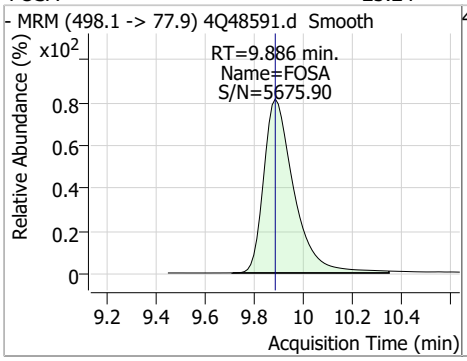
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.45	9.88	0.00	13248				

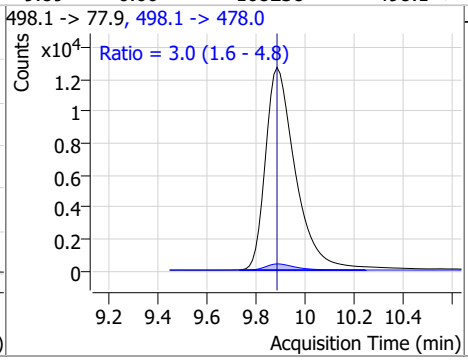


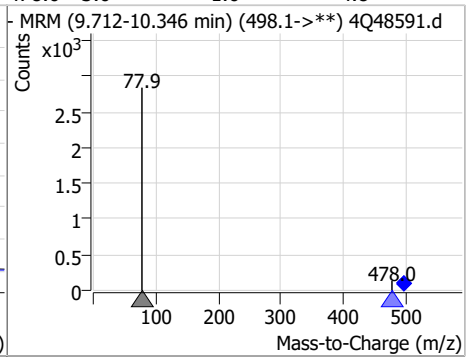




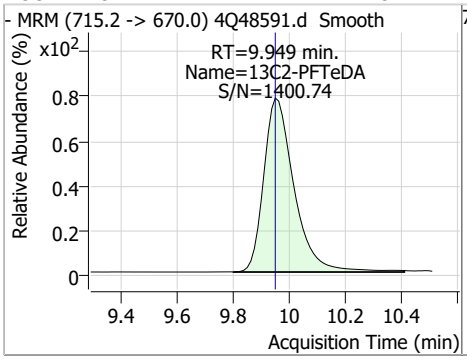
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	25.24	9.89	0.00	108238	498.1 -> 478.0	3.0	1.6	4.8

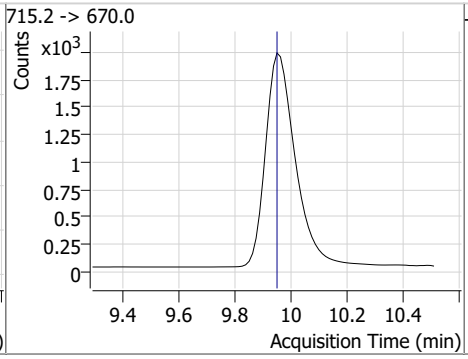


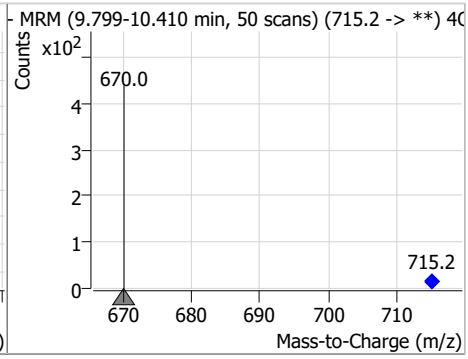




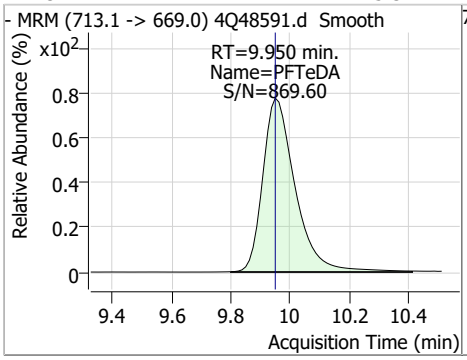
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.31	9.95	0.00	14660				

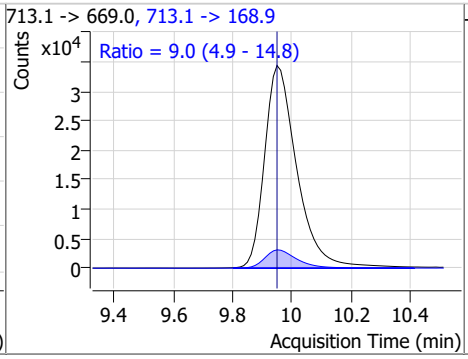


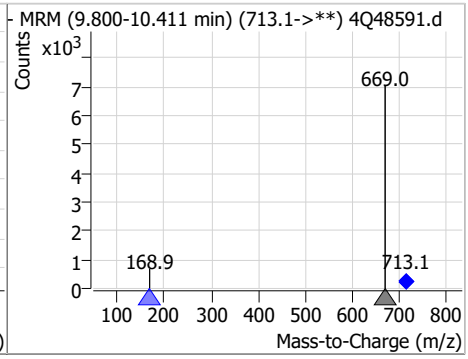




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	25.34	9.95	0.00	260239	713.1 -> 168.9	9.0	4.9	14.8

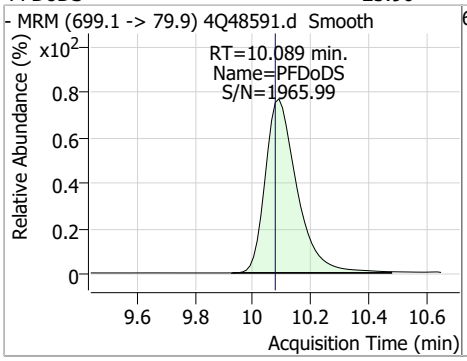


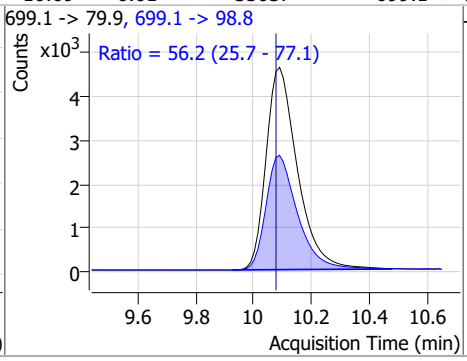


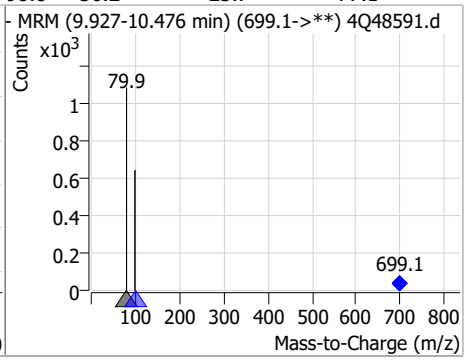


Perfluorinated Compounds by LC/MS/MS

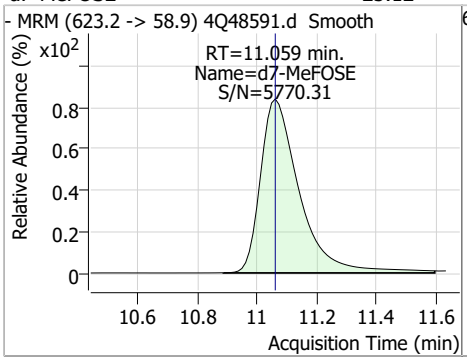
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	25.96	10.09	0.01	35037	699.1 -> 98.8	56.2	25.7	77.1

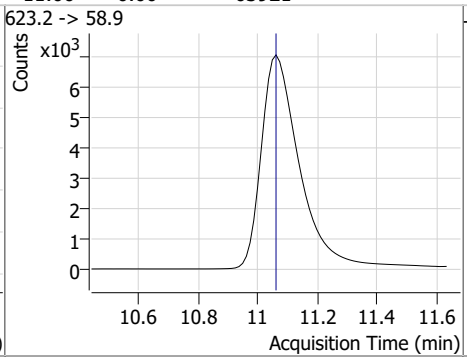


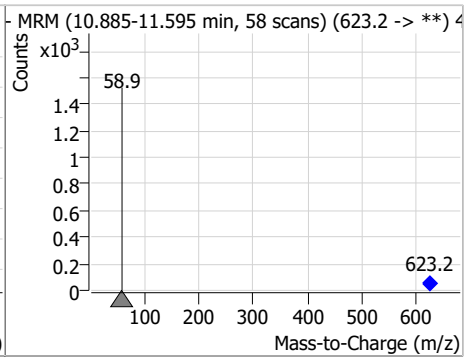




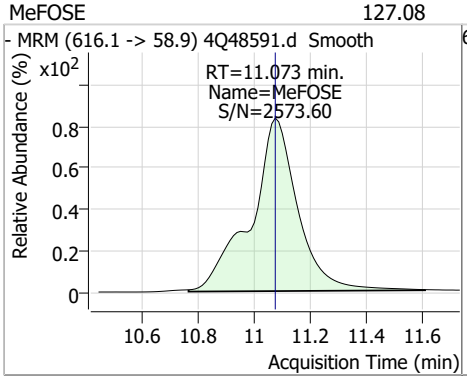
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.12	11.06	0.00	63921				

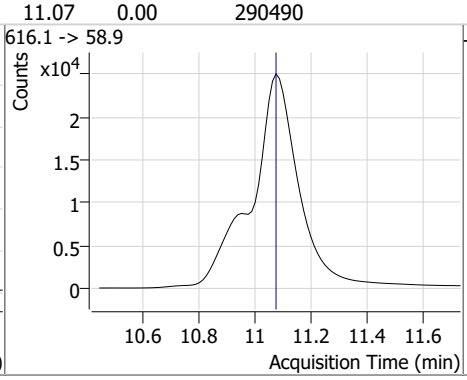


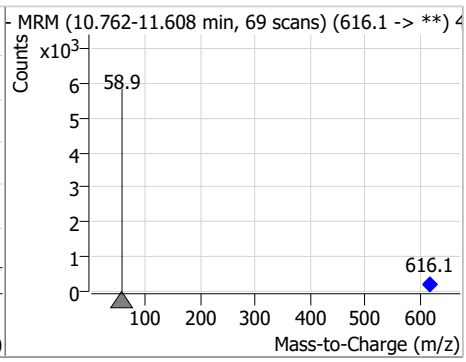




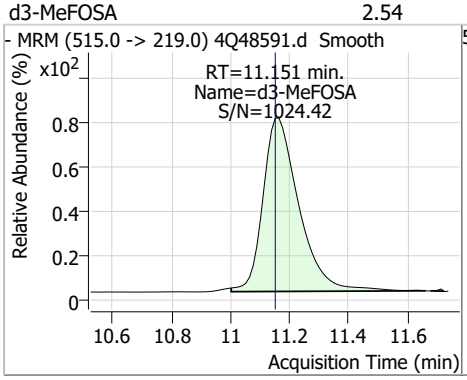
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	127.08	11.07	0.00	290490				

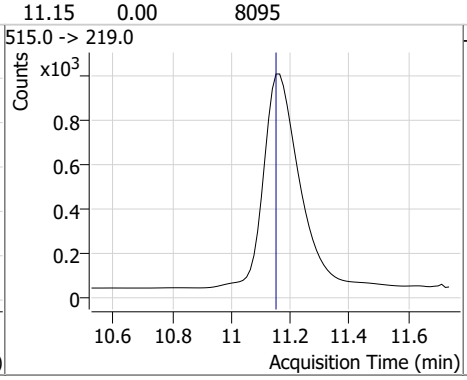


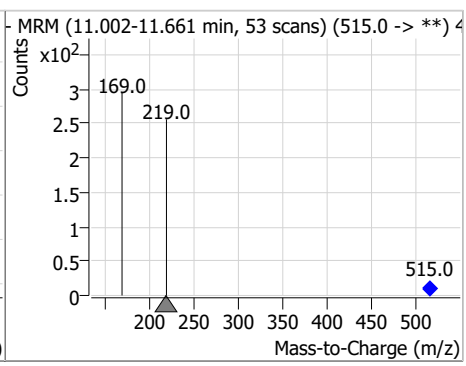




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	11.15	0.00	8095				

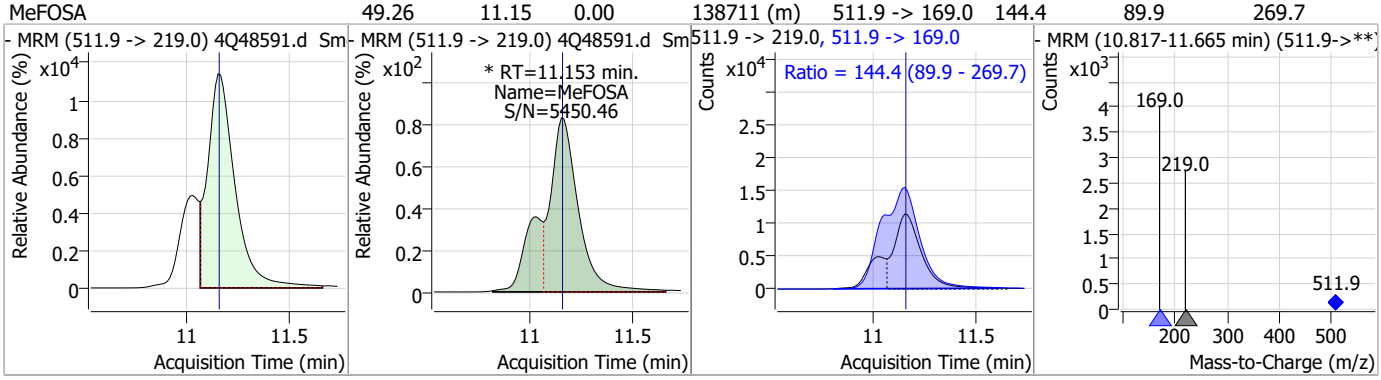




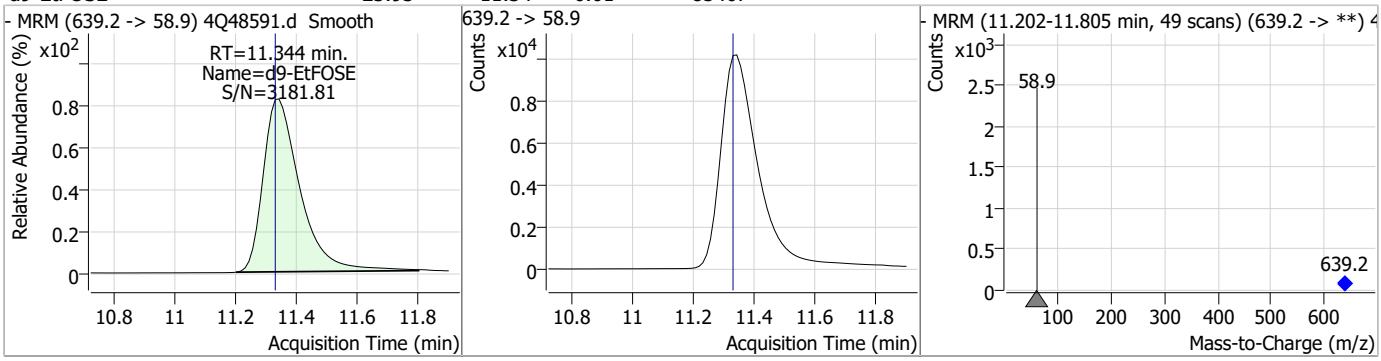


Perfluorinated Compounds by LC/MS/MS

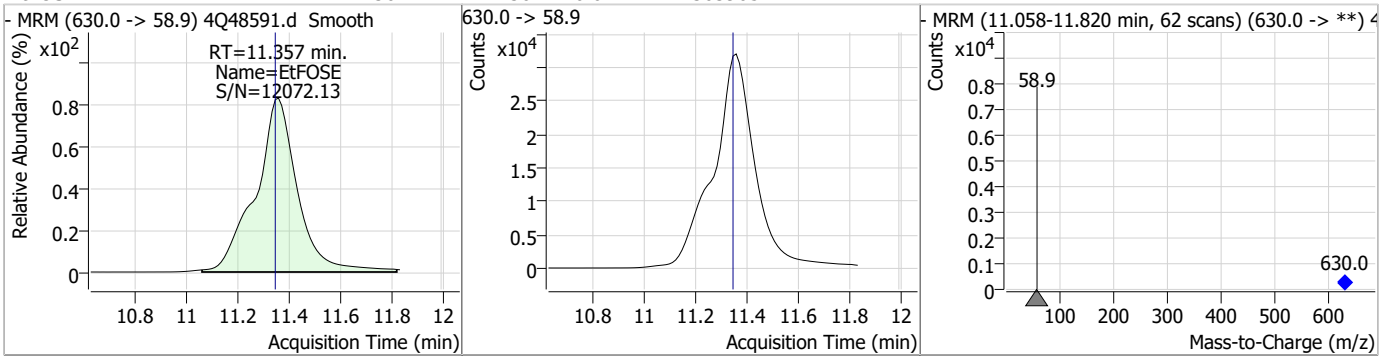
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.26	11.15	0.00	138711 (m)	511.9 -> 169.0	144.4	89.9	269.7



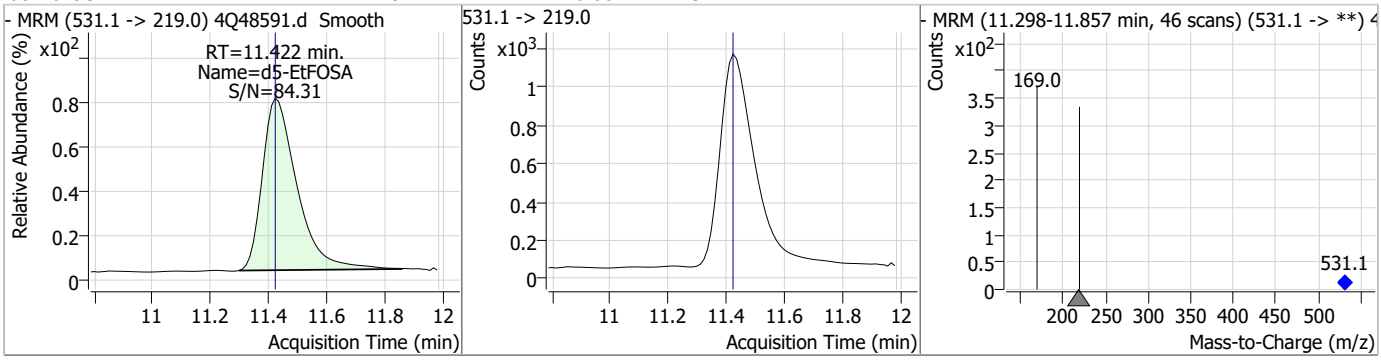
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.93	11.34	0.01	85407				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	136.17	11.36	0.01	363905				

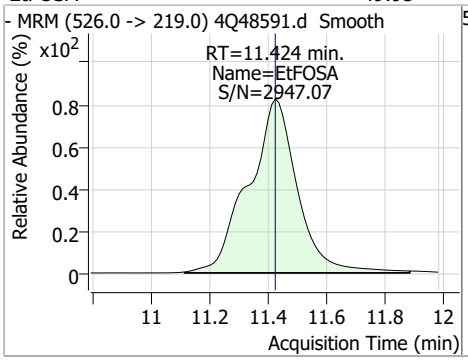


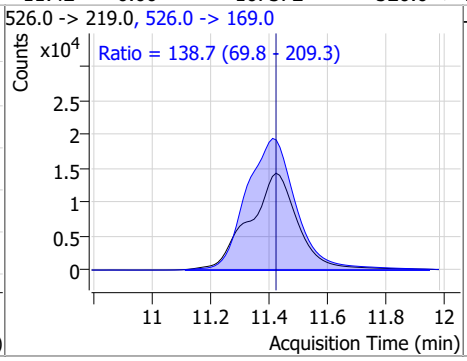
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.49	11.42	0.00	9114				

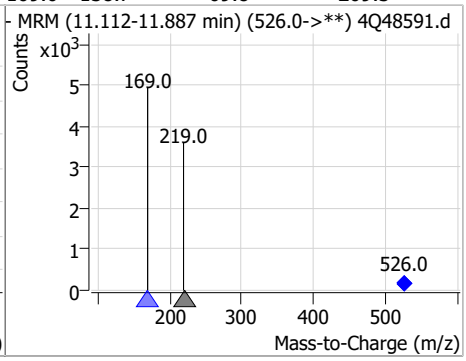


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	49.95	11.42	0.00	167372	526.0 -> 169.0	138.7	69.8	209.3







Manual Integration Approval Summary

Sample Number:	S4Q711-IC711	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q48591.D	**Analyst approved:**	08/09/23 11:54 Anna Ludwig
Injection Time:	08/07/23 17:58	**Supervisor approved:**	08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSA	31506-32-8		11.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48592.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 6:13:07 PM
Sample Name : ic711-8
Vial : P1-A9
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.936	216.8 -> 171.9	83745	10.00	µg/L	0.025
M5-PFPeA	4.425	268.3 -> 223.0	55674	5.00	µg/L	0.012
M5-PFHxA	5.622	318.0 -> 273.0	34622	2.50	µg/L	0.012
M4-PFHpA	6.568	367.1 -> 322.0	24894	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	39239	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	18926	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	12840	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	13977	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	17432	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	14075	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	11802	2.50	µg/L	0.000
M3-PFBS	5.502	302.1 -> 79.9	8876	2.50	µg/L	0.013
M3-PFHxS	7.317	402.1 -> 79.9	5985	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	7921	2.50	µg/L	0.000
M2-4:2FTS	5.309	329.1 -> 80.9	529	5.00	µg/L	0.012
M2-6:2FTS	7.011	429.1 -> 80.9	1131	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	1590	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	15161	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	32253	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	12886	5.00	µg/L	0.012
M7-MeFOSE	11.059	623.2 -> 58.9	56992	25.00	µg/L	0.000
M9-EtFOSE	11.331	639.2 -> 58.9	80627	25.00	µg/L	0.000
M5-EtFOSA	11.422	531.1 -> 219.0	8026	2.50	µg/L	0.000
M3-MeFOSA	11.151	515.0 -> 219.0	7985	2.50	µg/L	0.000
13C4-PFOS	8.418	502.8 -> 79.9	7774	2.50	µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	48774	5.00	µg/L	0.037
18O2-PFHxS	7.316	403.0 -> 83.9	4319	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	50670	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	15771	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	19906	1.25	µg/L	0.000
13C2-PFHxA	5.623	315.1 -> 270.0	34520	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	529	4.90	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1131	5.48	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1590	5.08	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-PFDoDA	9.180	615.1 -> 570.0	17432	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-PFTeDA	9.949	715.2 -> 670.0	14075	1.30	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C3-PFBS	5.502	302.1 -> 79.9	8876	2.41	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFHxS	7.317	402.1 -> 79.9	5985	2.50	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 = 100.1%		
13C4-PFBA	2.936	216.8 -> 171.9	83745	10.05 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFHpA	6.568	367.1 -> 322.0	24894	2.42 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C5-PFHxA	5.622	318.0 -> 273.0	34622	2.39 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C5-PFPeA	4.425	268.3 -> 223.0	55674	4.61 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C6-PFDA	8.279	519.1 -> 474.1	12840	1.18 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C7-PFUnDA	8.748	570.0 -> 525.1	13977	1.14 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C8-FOSA	9.882	506.1 -> 77.8	11802	2.43 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C8-PFOA	7.238	421.1 -> 376.0	39239	2.35 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C8-PFOS	8.417	507.1 -> 79.9	7921	2.54 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C9-PFNA	7.785	472.1 -> 427.0	18926	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15161	5.25 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	32253	9.81 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
d3-MeFOSA	11.151	515.0 -> 219.0	7985	2.80 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.8%		
d5-EtFOSAA	8.559	589.2 -> 419.0	12886	5.43 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
d7-MeFOSE	11.059	623.2 -> 58.9	56992	24.96 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d9-EtFOSE	11.331	639.2 -> 58.9	80627	25.18 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d5-EtFOSA	11.422	531.1 -> 219.0	8026	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
Target Compounds						QValue
4:2FTS	5.309	327.1 -> 307.0	169407	237.44 µg/L		100
		327.1 -> 80.9	69245			
6:2FTS	7.011	427.1 -> 407.0	206915	215.61 µg/L		99
		427.1 -> 80.9	74390			
8:2FTS	8.078	527.1 -> 507.0	171124	268.06 µg/L		88
		527.1 -> 80.8	62475			
EtFOSAA	8.559	584.2 -> 419.1	114896	65.25 µg/L	m	95
		584.2 -> 526.0	50655			
FOSA	9.886	498.1 -> 77.9	246205	64.46 µg/L		100
		498.1 -> 478.0	7652			
MeFOSAA	8.349	570.1 -> 419.0	127248	67.15 µg/L		96
		570.1 -> 483.0	21461			
PFBA	2.945	212.8 -> 168.9	508592	263.75 µg/L		100
PFBS	5.503	298.7 -> 79.9	128607	59.32 µg/L		99
		298.7 -> 98.8	48339			
PFDA	8.279	512.9 -> 469.0	583979	64.71 µg/L		99
		512.9 -> 219.0	109809			
PFDoDA	9.181	613.1 -> 569.0	689360	63.21 µg/L		99
		613.1 -> 319.0	108191			
PFDS	9.335	599.0 -> 79.9	105532	64.50 µg/L		97

Perfluorinated Compounds by LC/MS/MS

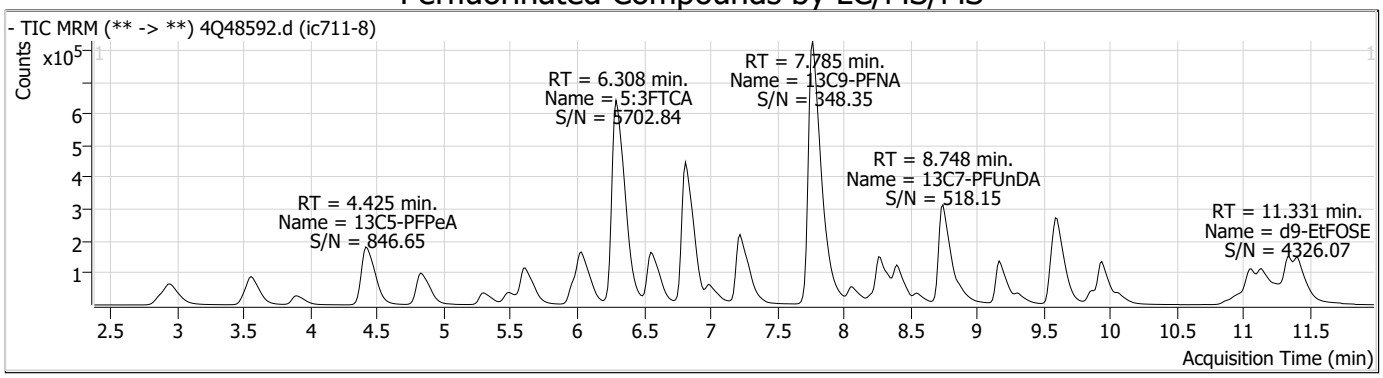
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	51585				
PFHpA	6.568	363.1 -> 319.0	735927	65.51	µg/L		99
		363.1 -> 169.0	130570				
PFHpS	7.900	449.0 -> 79.9	147457	61.59	µg/L		98
		449.0 -> 98.9	76147				
PFHxA	5.625	313.0 -> 269.0	668094	66.87	µg/L		99
		313.0 -> 118.9	19926				
PFHxS	7.318	398.7 -> 79.9	104345	60.75	µg/L	m	96
		398.7 -> 98.9	52348				
PFNA	7.785	463.0 -> 419.0	625292	63.48	µg/L		99
		463.0 -> 219.0	139003				
PFNS	8.899	548.8 -> 79.9	96460	62.35	µg/L		100
		548.8 -> 98.9	49794				
PFOA	7.240	413.0 -> 369.0	1055733	67.85	µg/L		100
		413.0 -> 169.0	202783				
PFOS	8.419	498.9 -> 79.9	166017	58.90	µg/L	m	80
		498.9 -> 98.8	79575				
PFPeA	4.427	263.0 -> 219.0	1284443	132.75	µg/L		100
PFPeS	6.582	349.1 -> 79.9	100738	62.33	µg/L		97
		349.1 -> 98.9	42598				
PFTeDA	9.950	713.1 -> 669.0	623978	63.29	µg/L		98
		713.1 -> 168.9	56743				
PFTrDA	9.579	663.0 -> 619.0	723946	64.23	µg/L		98
		663.0 -> 168.9	85375				
PFUnDA	8.749	563.1 -> 519.0	578841	63.58	µg/L		97
		563.1 -> 269.1	111181				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	869871	128.64	µg/L		99
		632.9 -> 452.9	270775				
9Cl-PF3ONS	8.763	530.8 -> 351.0	1025392	107.75	µg/L		99
		532.8 -> 353.0	323863				
ADONA	6.831	376.9 -> 250.9	2268857	121.22	µg/L		100
		376.9 -> 84.8	588240				
HFPO-DA	5.990	284.9 -> 168.9	346208	130.45	µg/L		95
		284.9 -> 184.9	38994				
3:3FTCA	3.905	241.0 -> 177.0	183618	377.35	µg/L		98
		241.0 -> 117.0	16871				
5:3FTCA	6.308	341.0 -> 237.1	2682735	1640.71	µg/L		99
		341.0 -> 217.0	1919713				
7:3FTCA	7.787	441.0 -> 316.9	1478238	1640.65	µg/L		100
		441.0 -> 336.9	3407708				
EtFOSA	11.424	526.0 -> 219.0	393099	133.22	µg/L		98
		526.0 -> 169.0	538798				
EtFOSE	11.357	630.0 -> 58.9	837932	332.13	µg/L		100
MeFOSA	11.153	511.9 -> 219.0	317073	114.17	µg/L	m	77
		511.9 -> 169.0	464799				
MeFOSE	11.073	616.1 -> 58.9	682208	334.74	µg/L		100
PFDoDS	10.077	699.1 -> 79.9	83517	66.35	µg/L		91
		699.1 -> 98.8	47909				
NFDHA	5.503	295.0 -> 201.0	71133	110.49	µg/L		99
		295.0 -> 84.9	17992				
PFMBA	4.841	279.0 -> 85.1	724017	133.52	µg/L		100
PFMPA	3.553	229.0 -> 84.9	704971	133.30	µg/L		100
PFEESA	6.047	314.8 -> 134.9	923732	114.78	µg/L		100
		314.8 -> 82.9	32006				

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

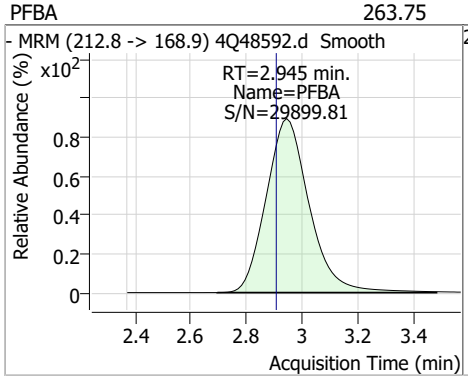
Perfluorinated Compounds by LC/MS/MS

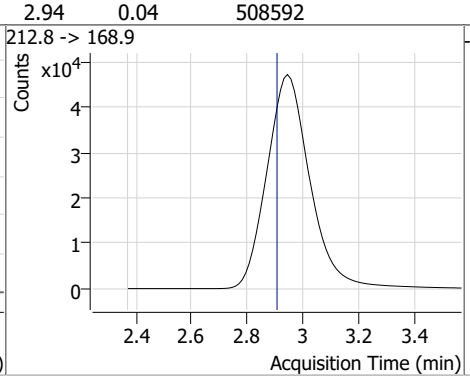
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

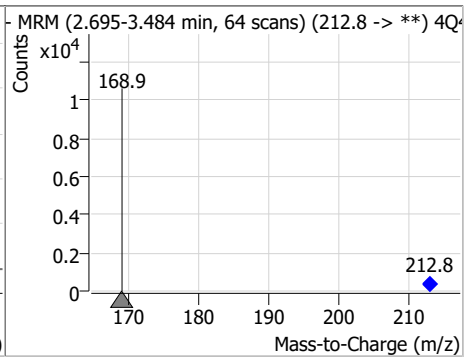
Perfluorinated Compounds by LC/MS/MS



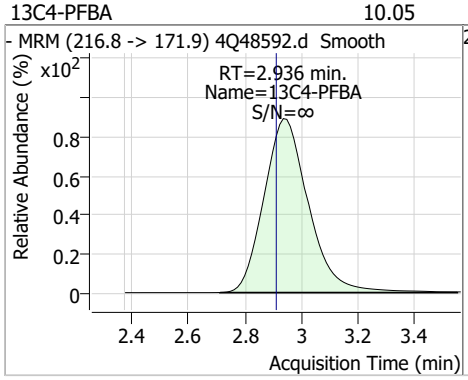
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	263.75	2.94	0.04	508592				

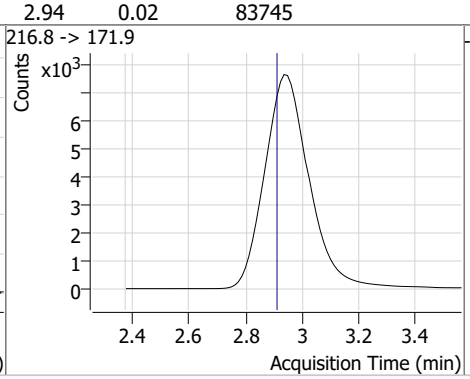


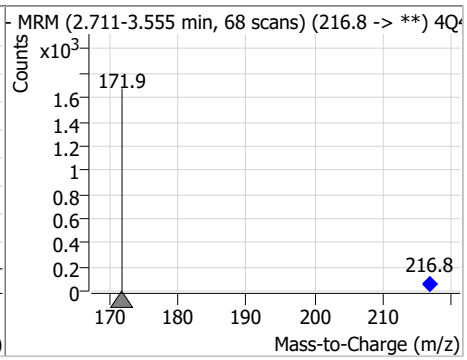




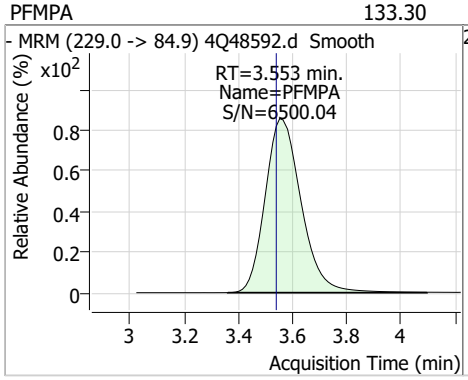
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.05	2.94	0.02	83745				

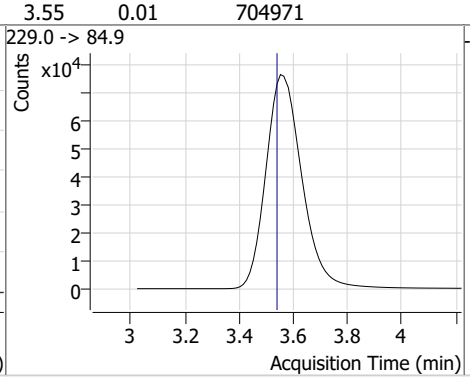


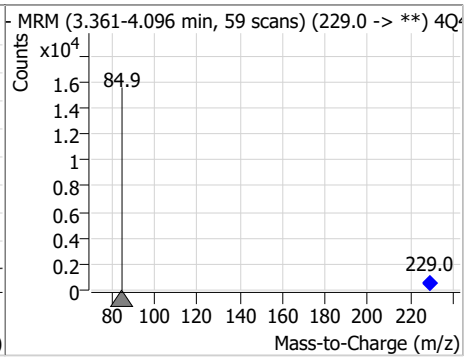




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	133.30	3.55	0.01	704971				

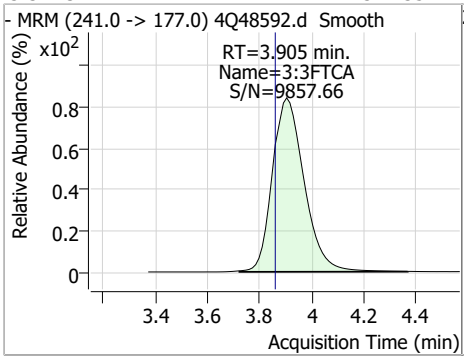


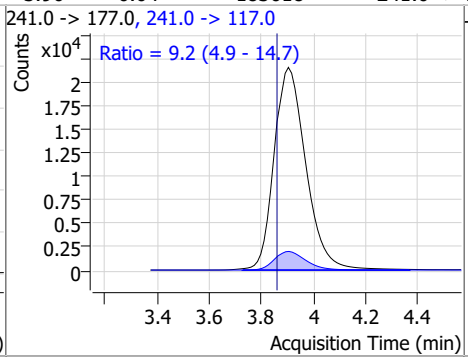


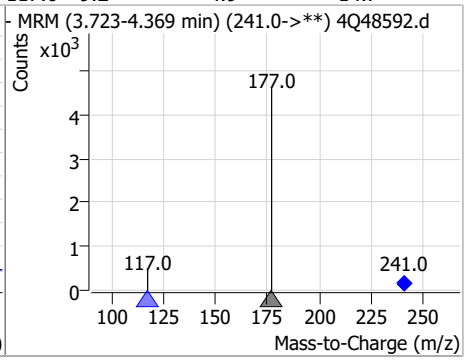


Perfluorinated Compounds by LC/MS/MS

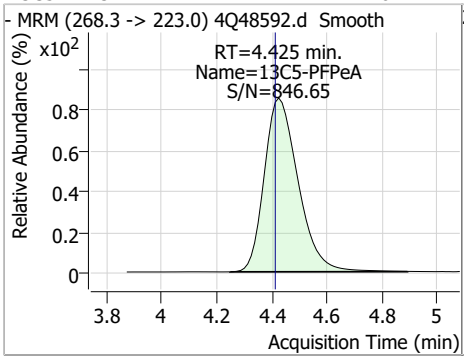
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	377.35	3.90	0.04	183618	241.0 -> 117.0	9.2	4.9	14.7

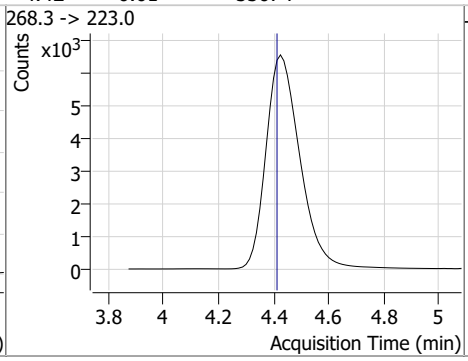


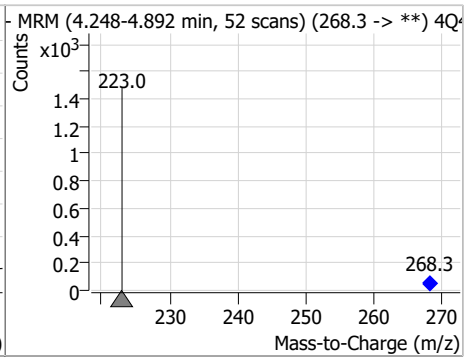




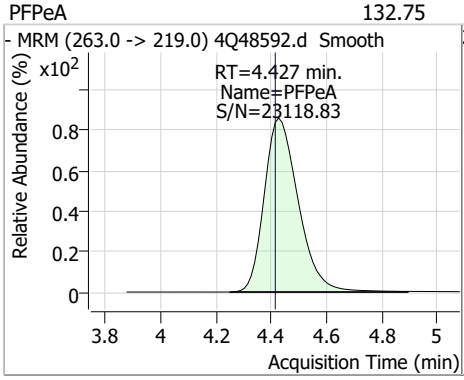
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.61	4.42	0.01	55674				

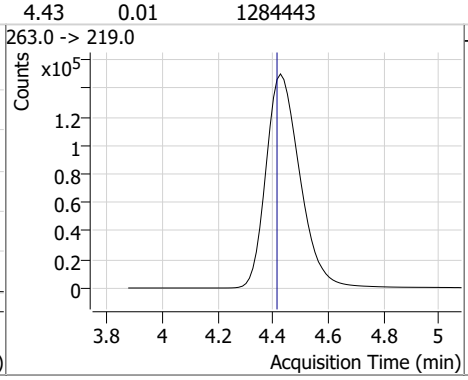


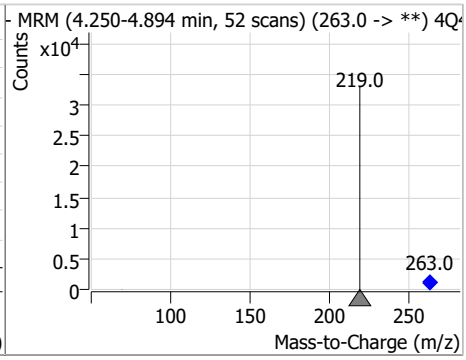




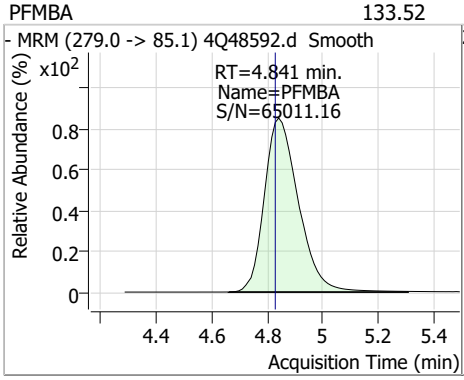
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	132.75	4.43	0.01	1284443				

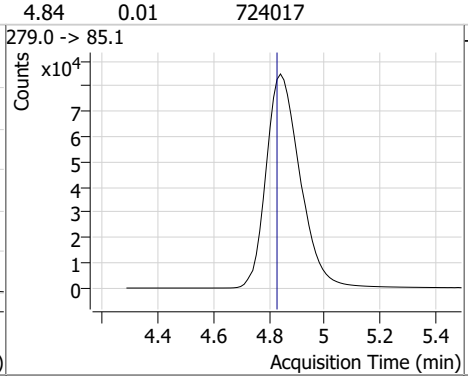


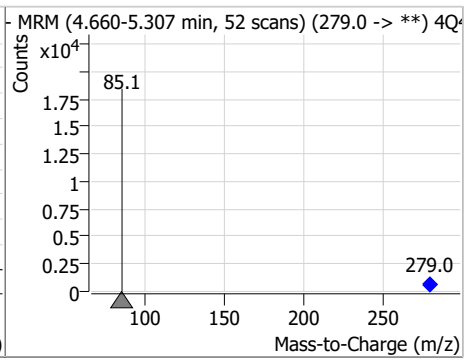




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	133.52	4.84	0.01	724017				

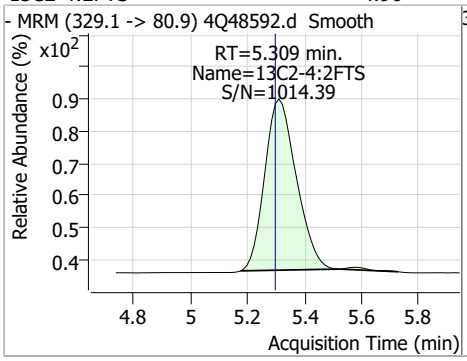


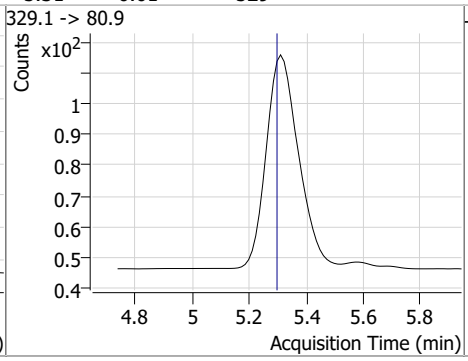


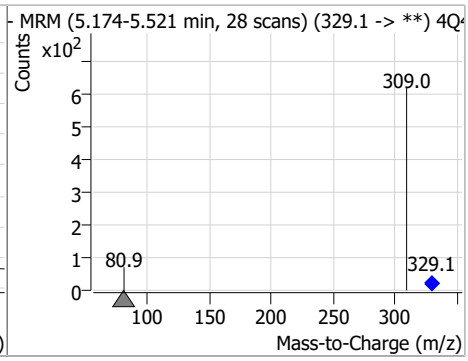


Perfluorinated Compounds by LC/MS/MS

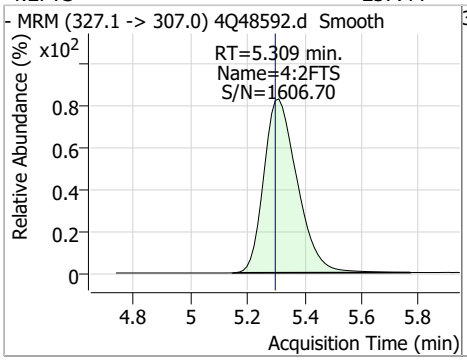
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.90	5.31	0.01	529				

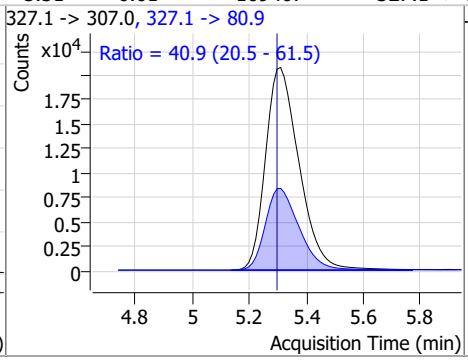


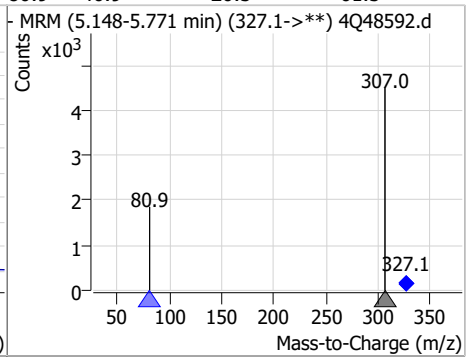




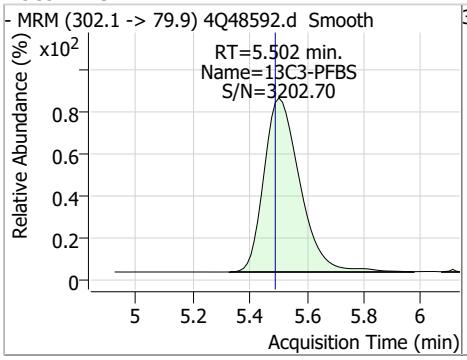
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	237.44	5.31	0.01	169407	327.1 -> 80.9	40.9	20.5	61.5

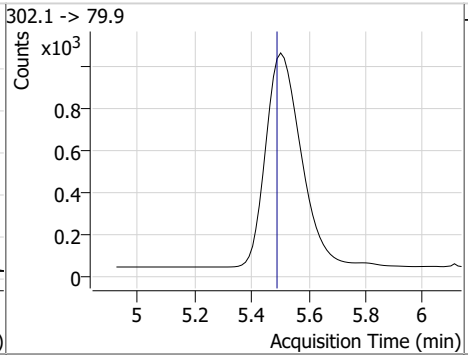


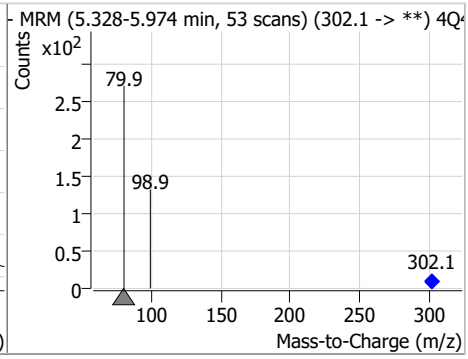




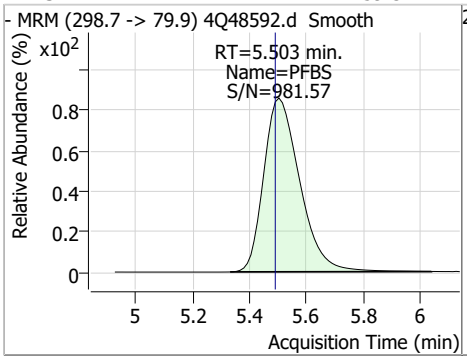
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.41	5.50	0.01	8876				

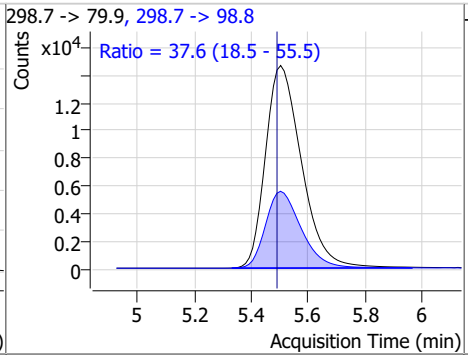


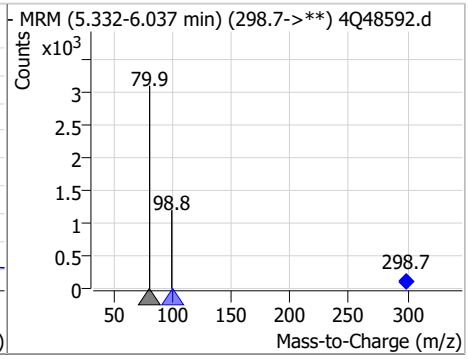




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	59.32	5.50	0.01	128607	298.7 -> 98.8	37.6	18.5	55.5

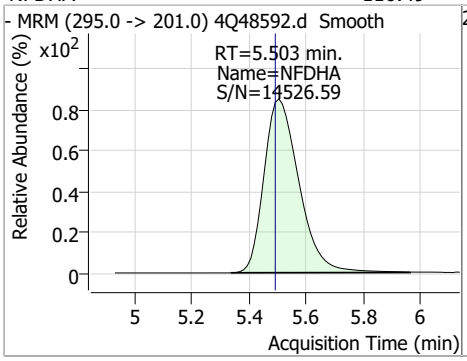


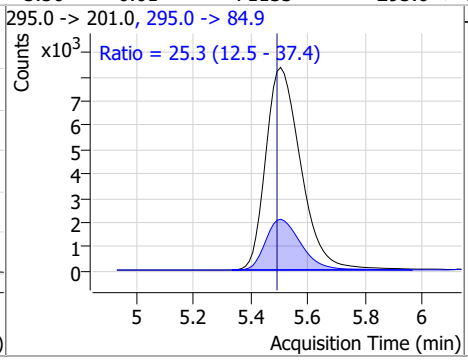


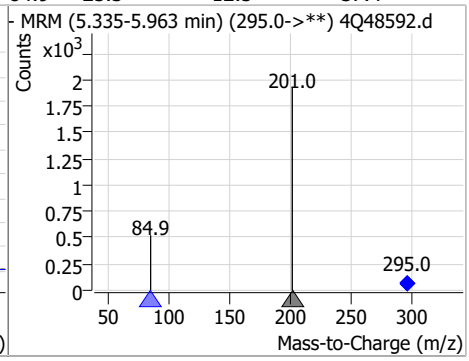


Perfluorinated Compounds by LC/MS/MS

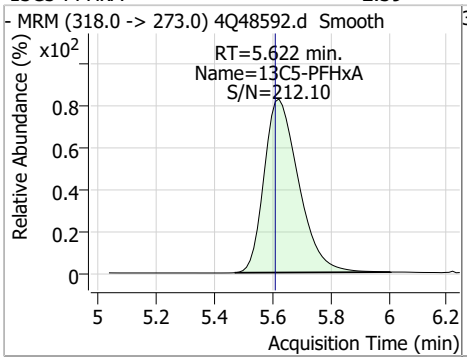
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	110.49	5.50	0.01	71133	295.0 -> 84.9	25.3	12.5	37.4

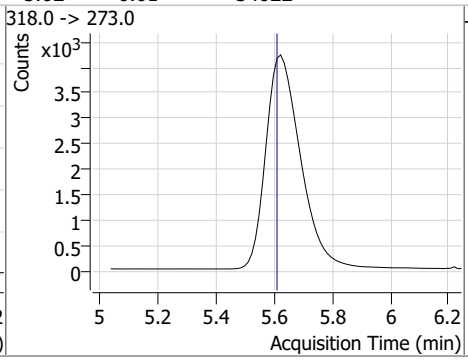


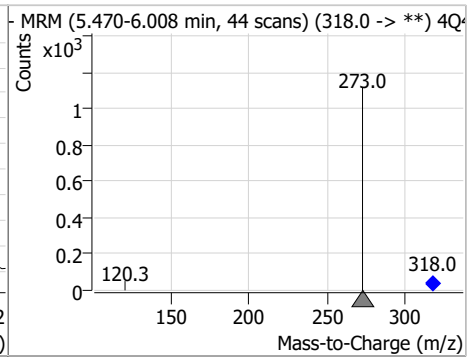




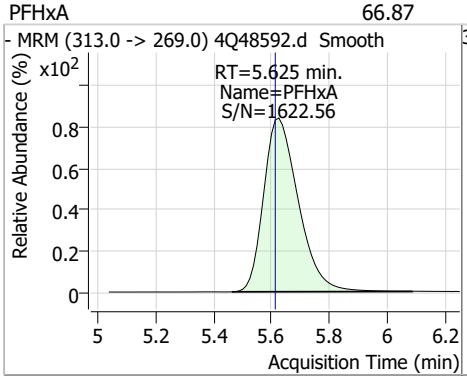
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.62	0.01	34622				

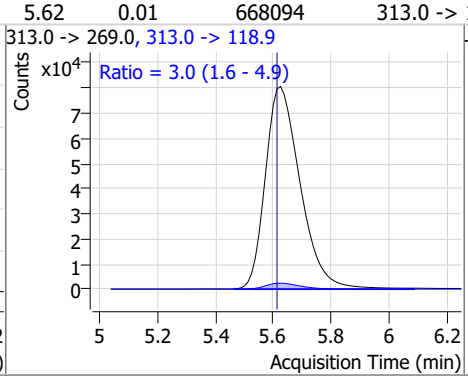


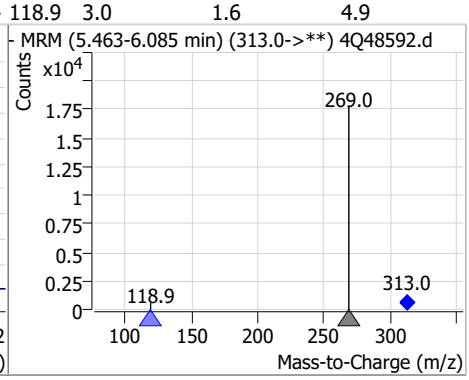




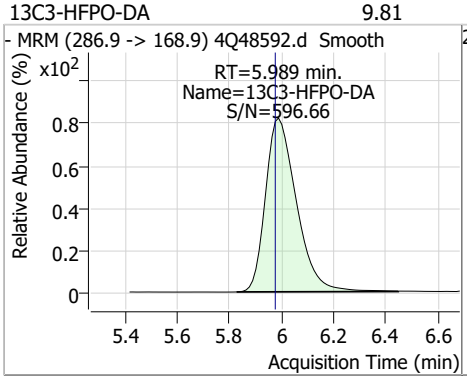
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	66.87	5.62	0.01	668094	313.0 -> 118.9	3.0	1.6	4.9

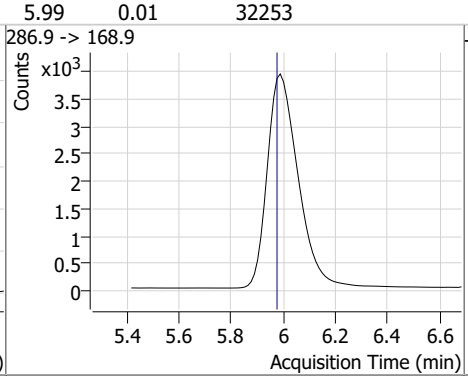


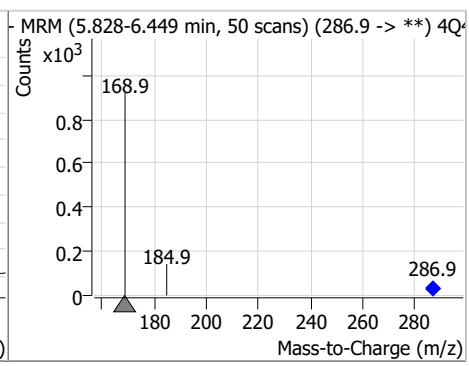




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	5.99	0.01	32253				

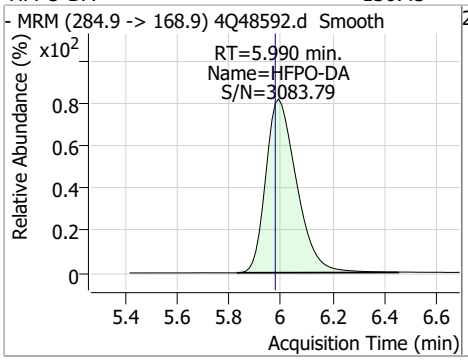


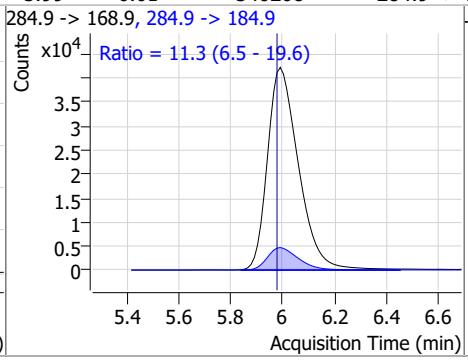


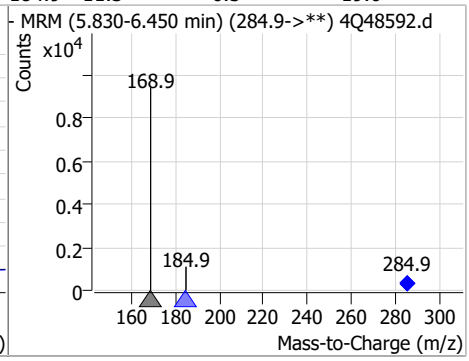


Perfluorinated Compounds by LC/MS/MS

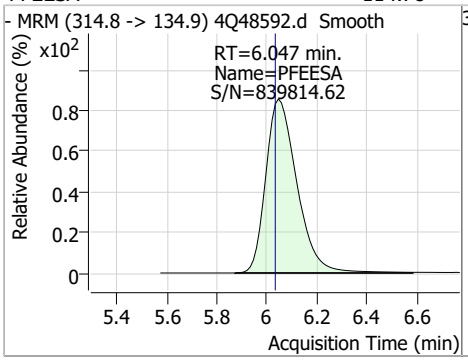
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	130.45	5.99	0.01	346208	284.9 -> 184.9	11.3	6.5	19.6

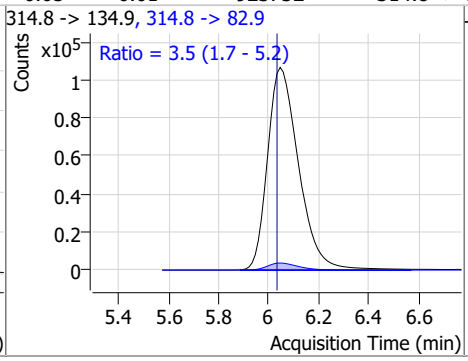


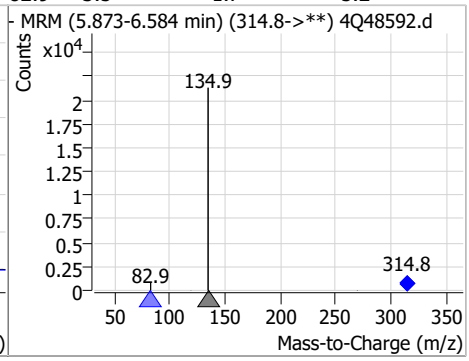




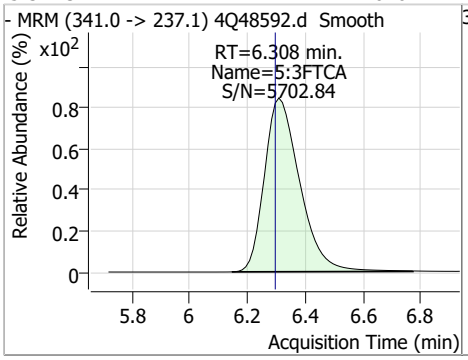
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	114.78	6.05	0.01	923732	314.8 -> 82.9	3.5	1.7	5.2

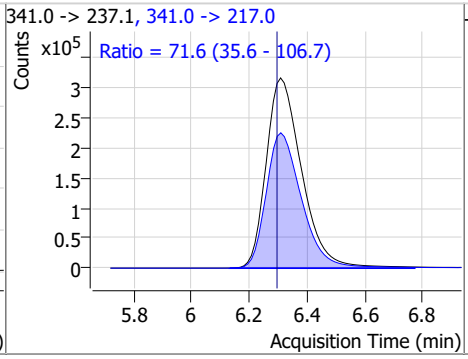


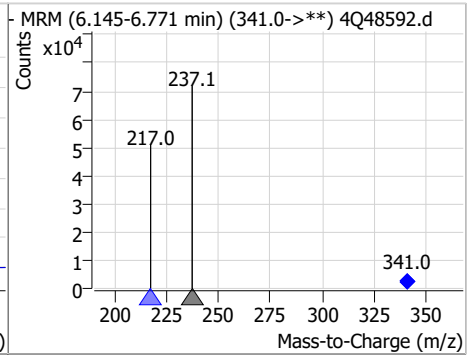




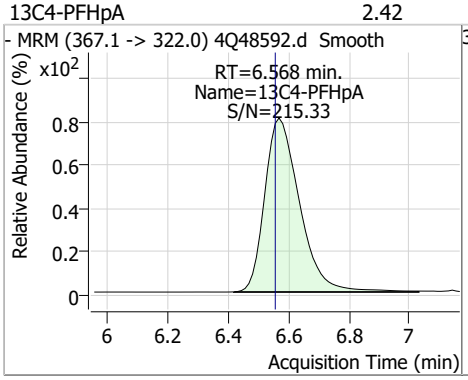
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1640.71	6.31	0.01	2682735	341.0 -> 217.0	71.6	35.6	106.7

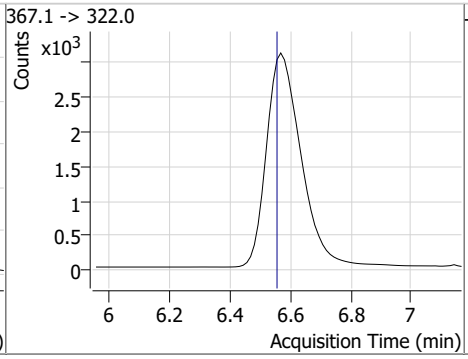


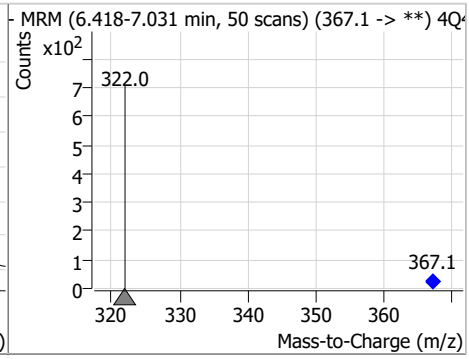




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.57	0.01	24894				

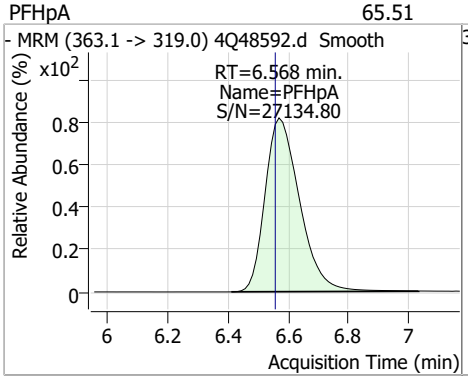


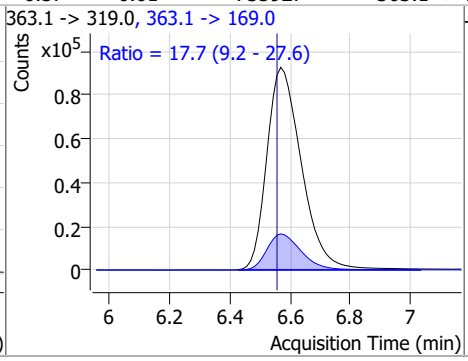


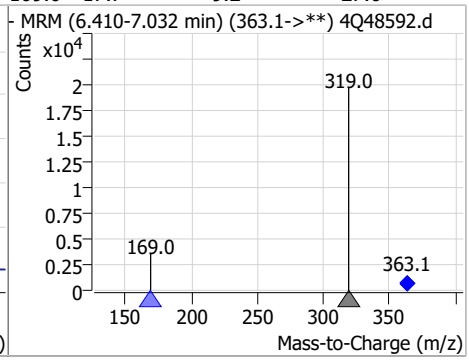


Perfluorinated Compounds by LC/MS/MS

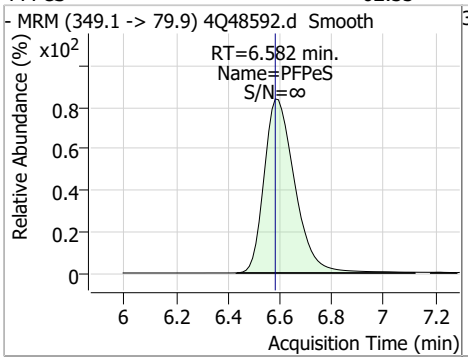
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	65.51	6.57	0.01	735927	363.1 -> 169.0	17.7	9.2	27.6

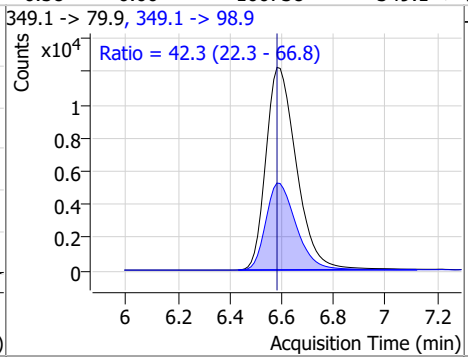


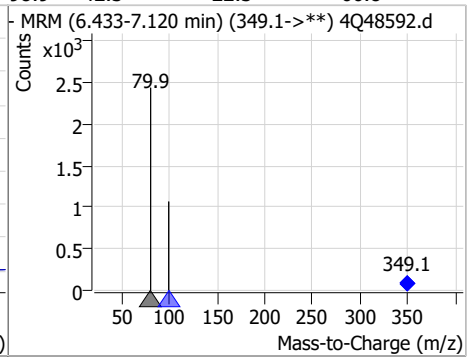




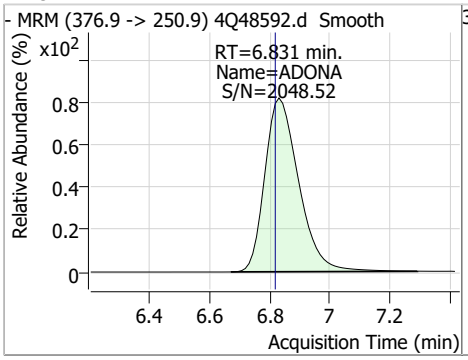
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	62.33	6.58	0.00	100738	349.1 -> 98.9	42.3	22.3	66.8

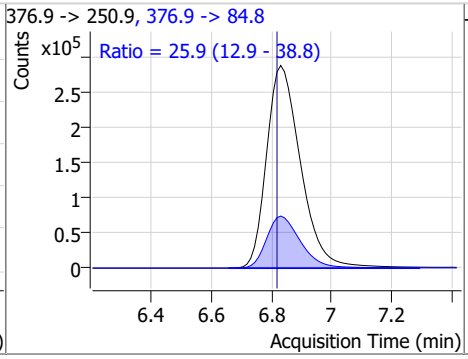


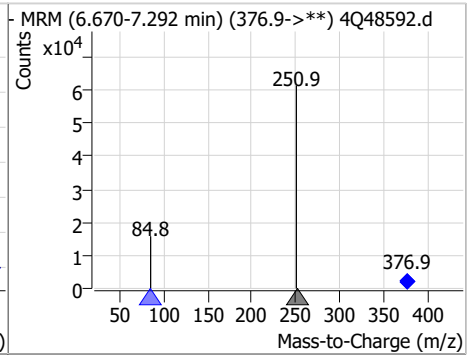




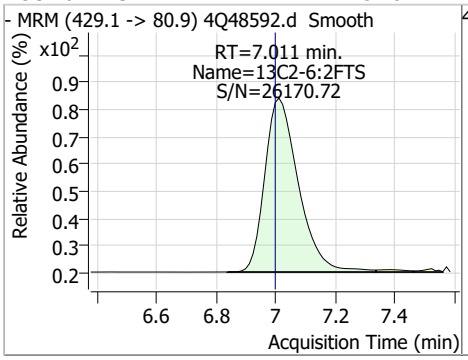
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	121.22	6.83	0.01	2268857	376.9 -> 84.8	25.9	12.9	38.8

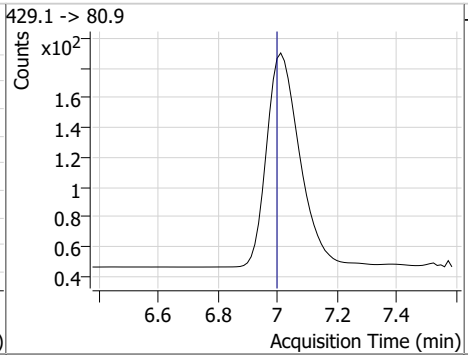


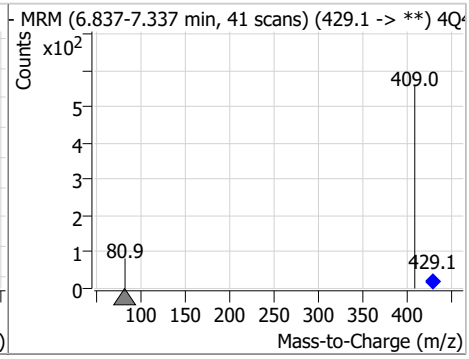




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.48	7.01	0.01	1131				

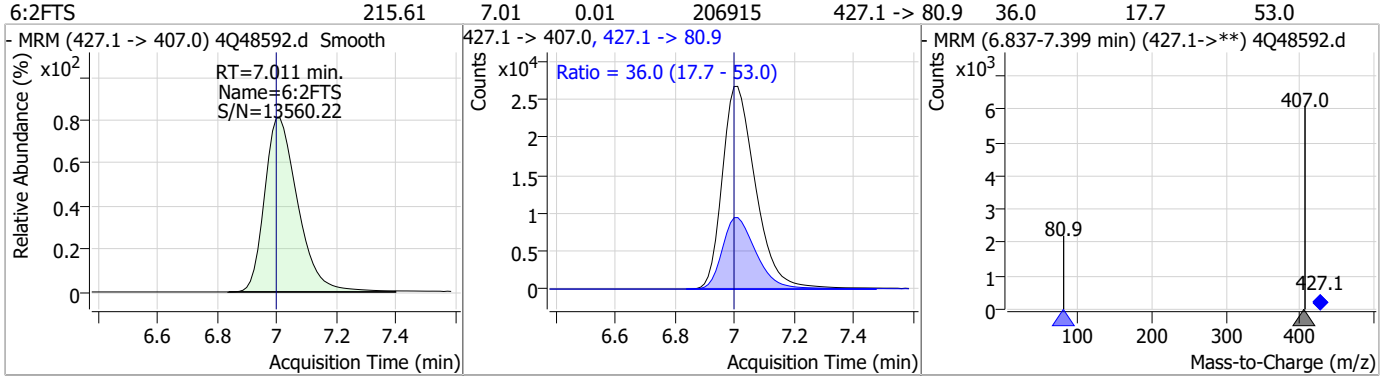




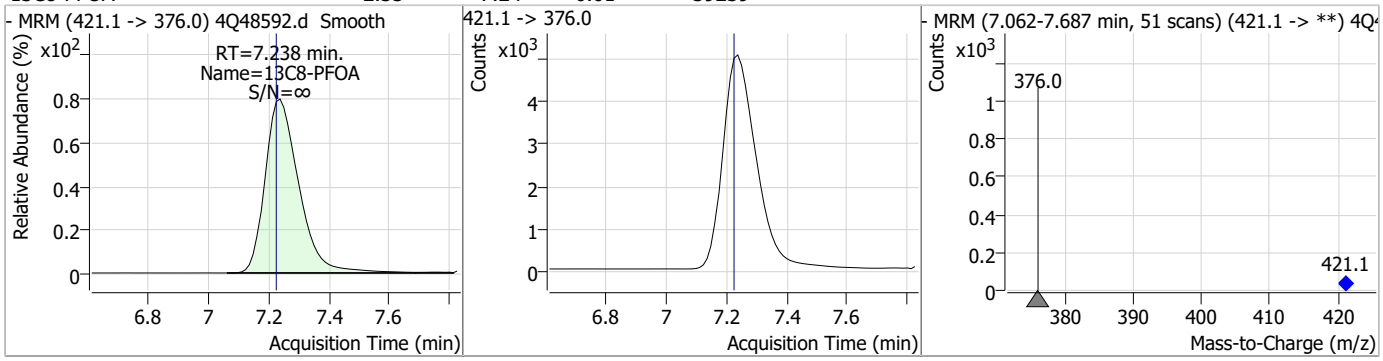


Perfluorinated Compounds by LC/MS/MS

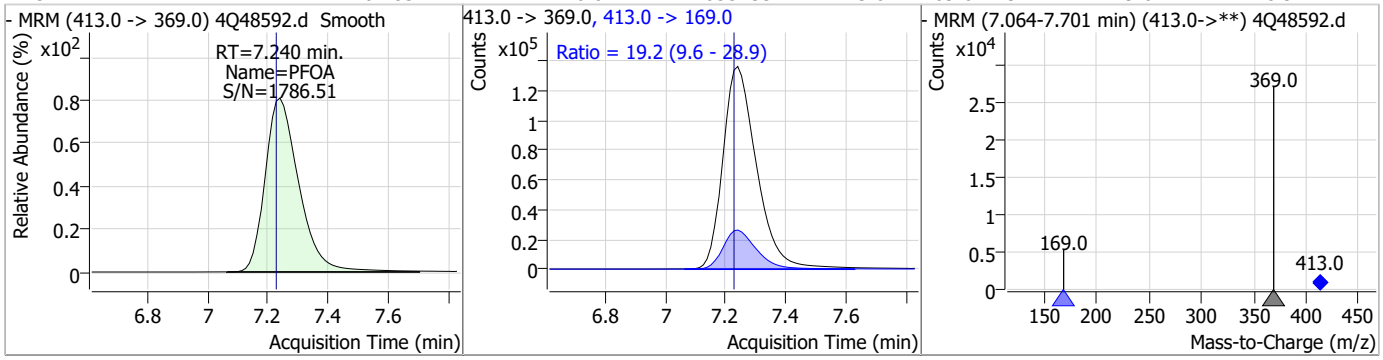
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	215.61	7.01	0.01	206915	427.1 -> 80.9	36.0	17.7	53.0



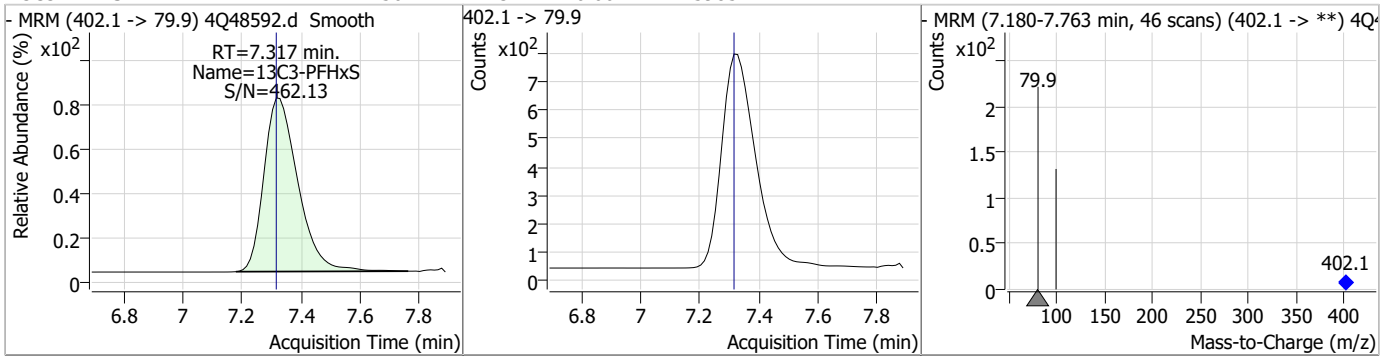
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.35	7.24	0.01	39239				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	67.85	7.24	0.01	1055733	413.0 -> 169.0	19.2	9.6	28.9

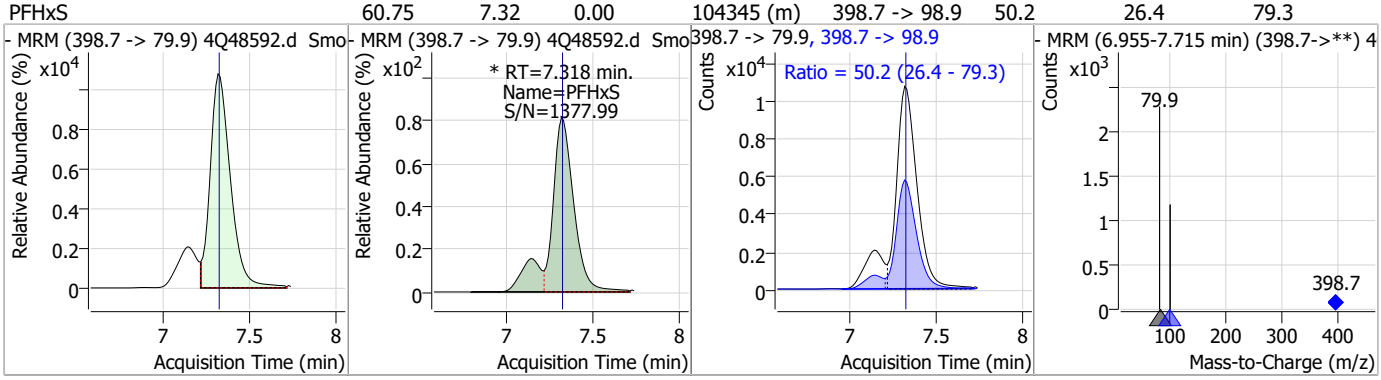


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.50	7.32	0.00	5985				

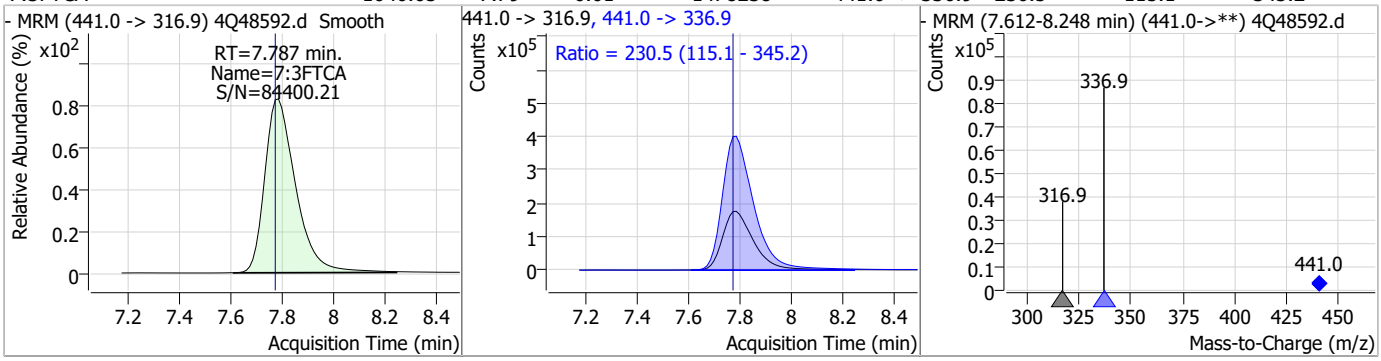


Perfluorinated Compounds by LC/MS/MS

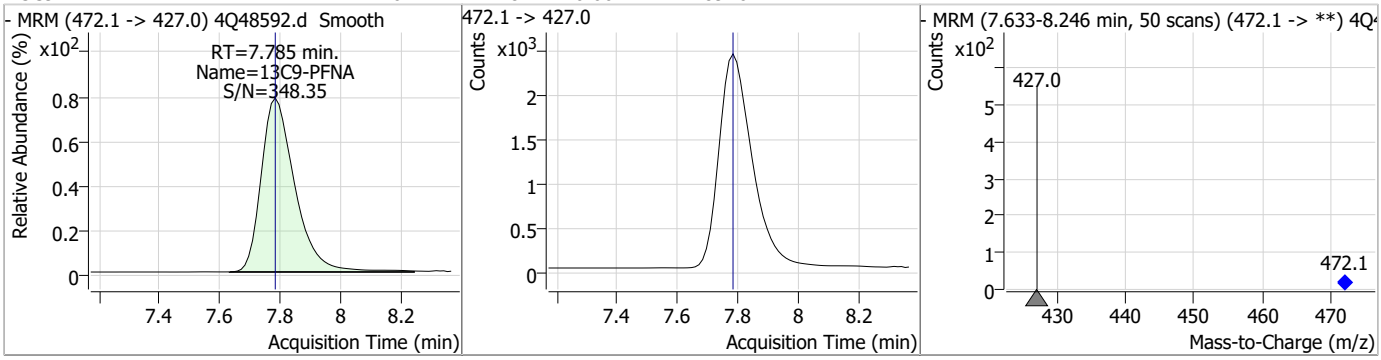
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	60.75	7.32	0.00	104345 (m)	398.7 -> 98.9	50.2	26.4	79.3



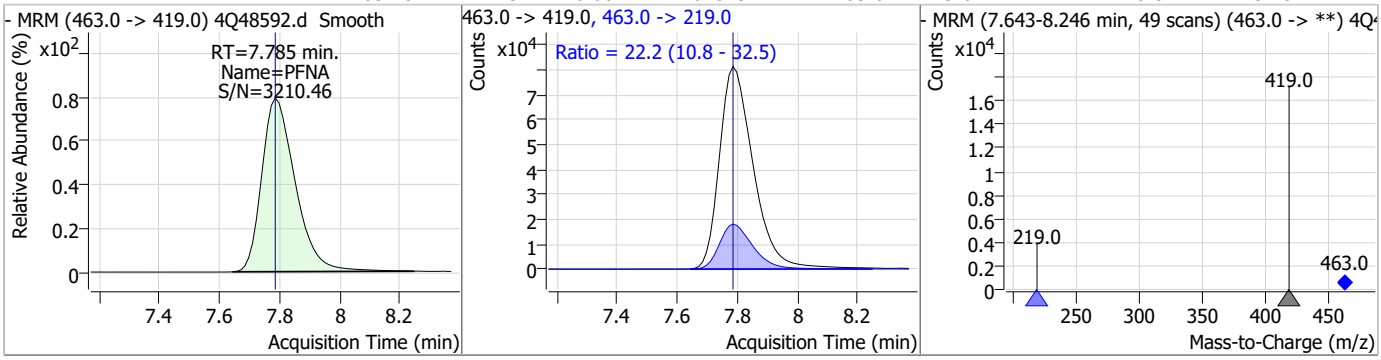
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1640.65	7.79	0.01	1478238	441.0 -> 336.9	230.5	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.78	0.00	18926				

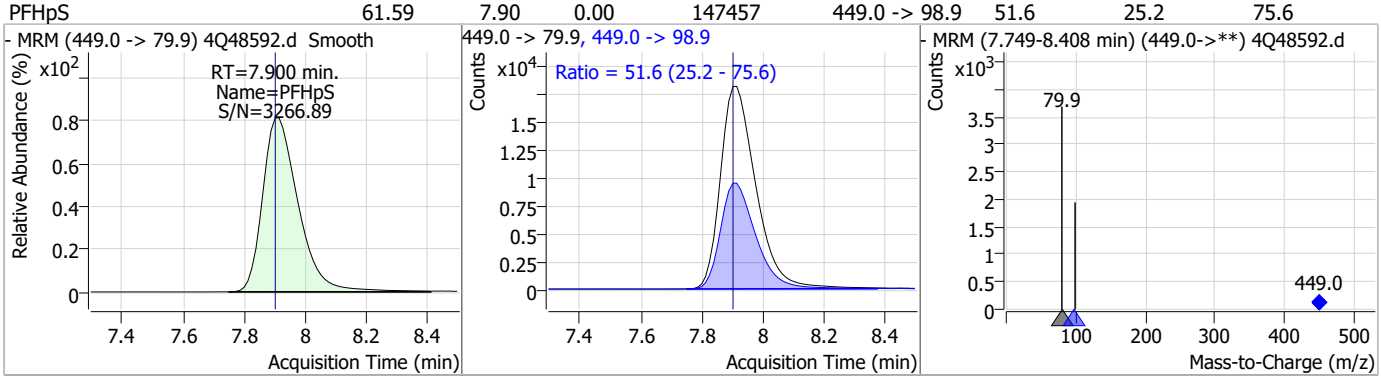


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	63.48	7.79	0.00	625292	463.0 -> 219.0	22.2	10.8	32.5

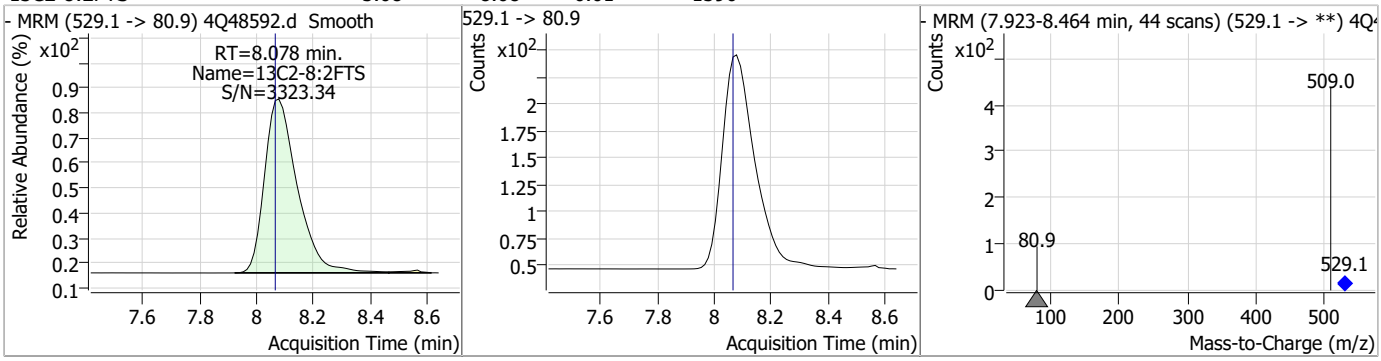


Perfluorinated Compounds by LC/MS/MS

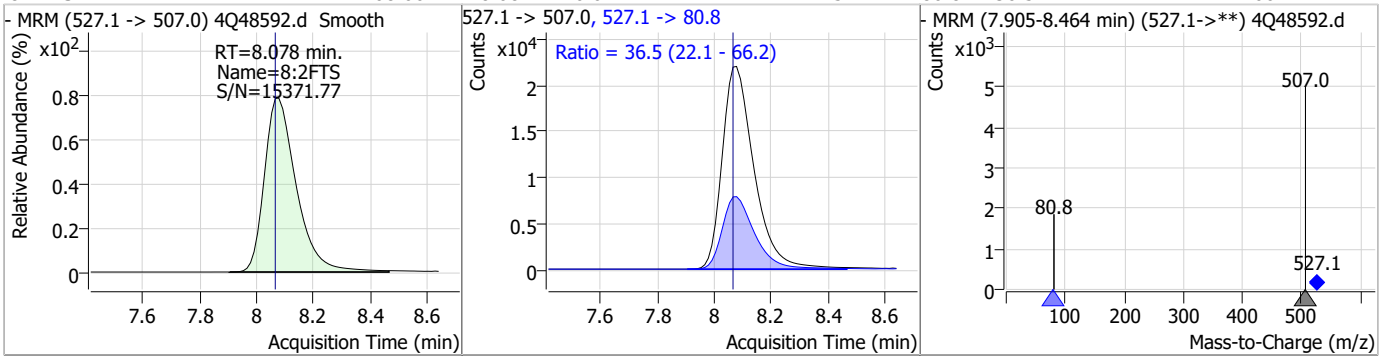
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	61.59	7.90	0.00	147457	449.0 -> 98.9	51.6	25.2	75.6



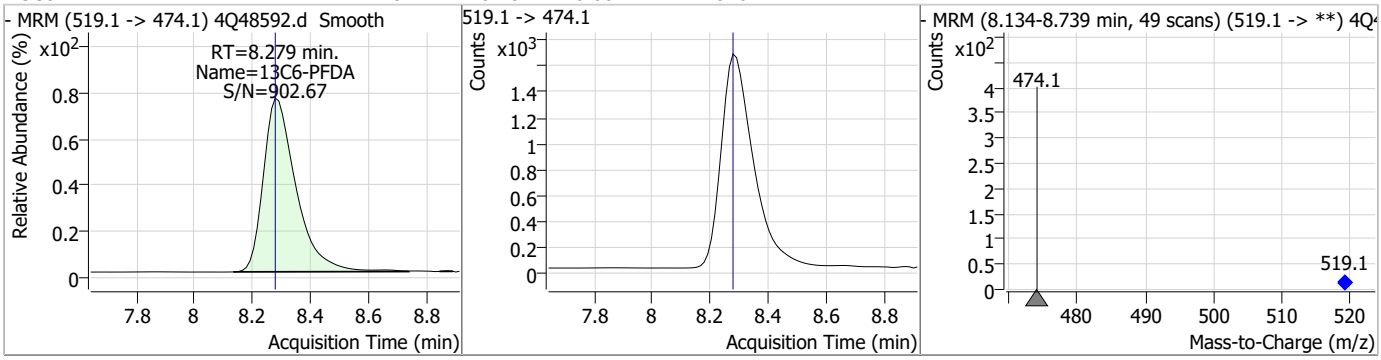
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.08	8.08	0.01	1590				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	268.06	8.08	0.01	171124	527.1 -> 80.8	36.5	22.1	66.2

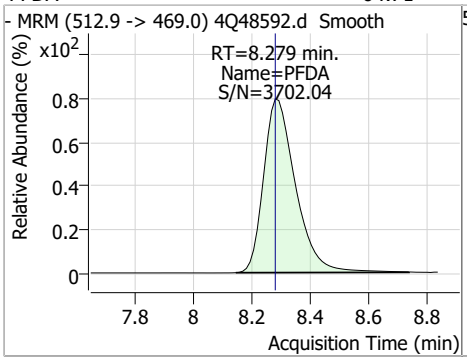


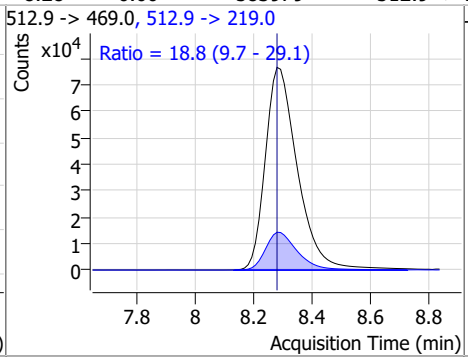
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.18	8.28	0.00	12840				

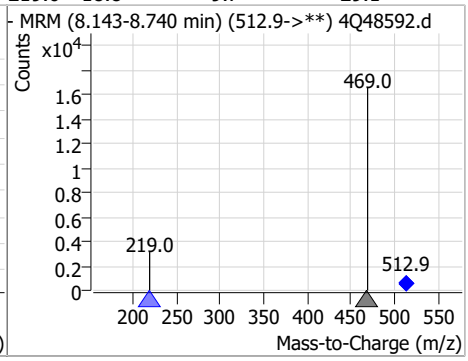


Perfluorinated Compounds by LC/MS/MS

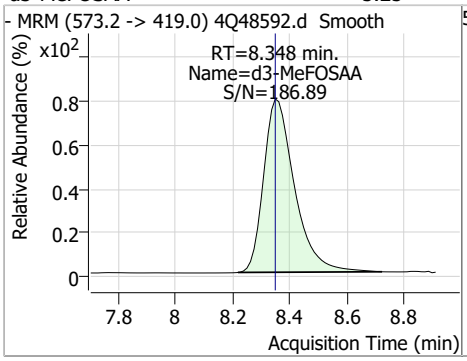
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	64.71	8.28	0.00	583979	512.9 -> 219.0	18.8	9.7	29.1

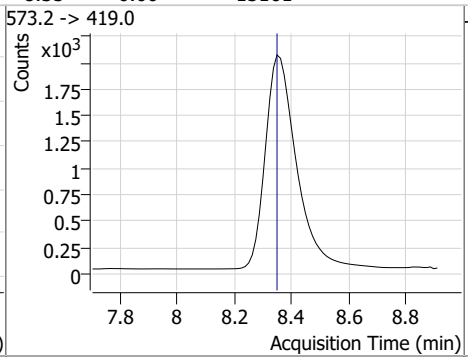


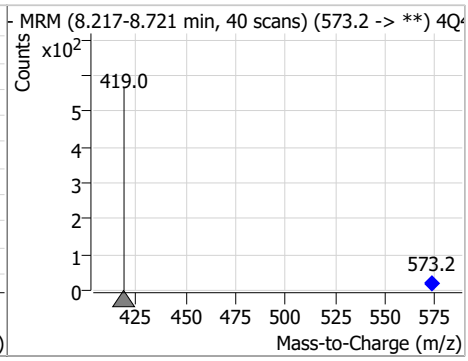




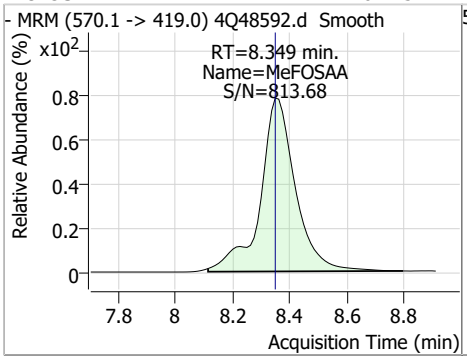
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.25	8.35	0.00	15161				

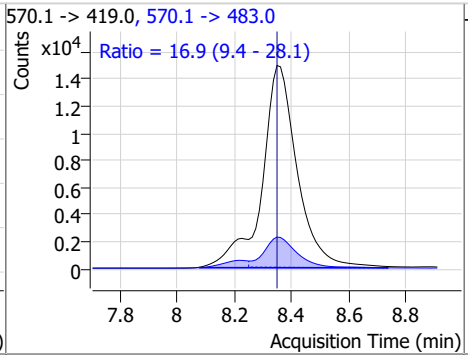


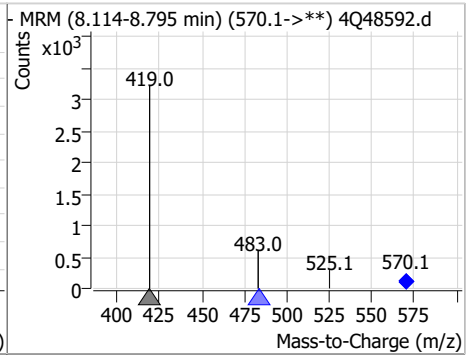




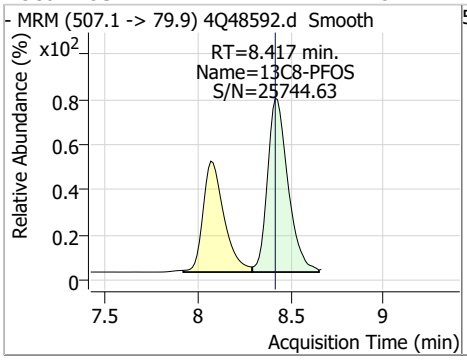
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	67.15	8.35	0.00	127248	570.1 -> 483.0	16.9	9.4	28.1

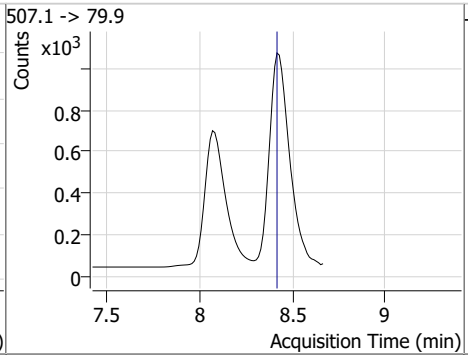


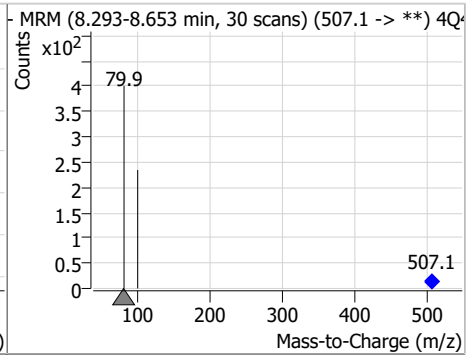




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.54	8.42	0.00	7921				

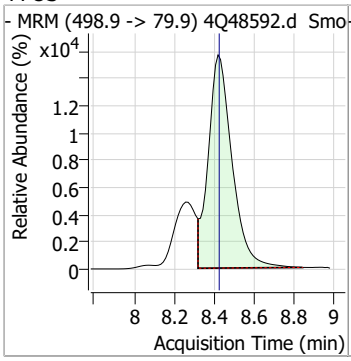


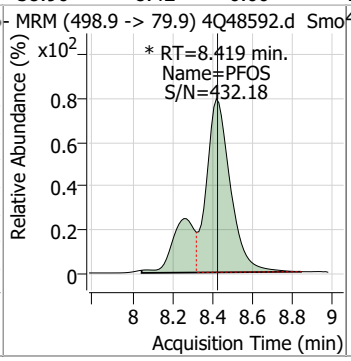


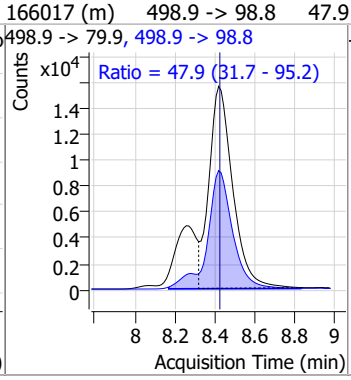


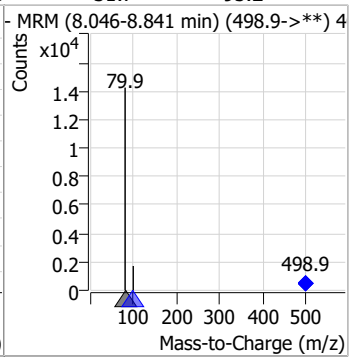
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	58.90	8.42	0.00	166017 (m)	498.9 -> 98.8	47.9	31.7	95.2

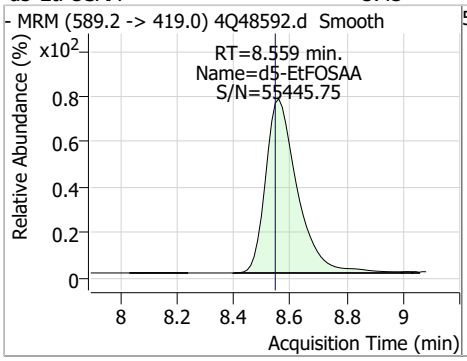


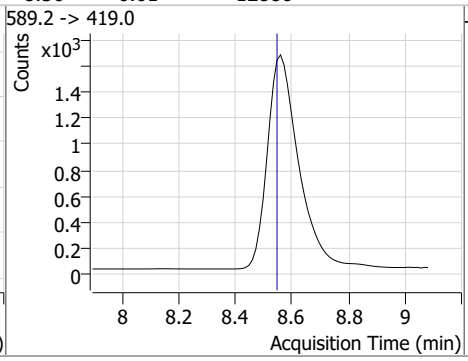


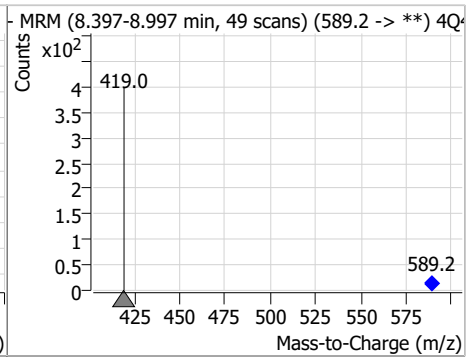




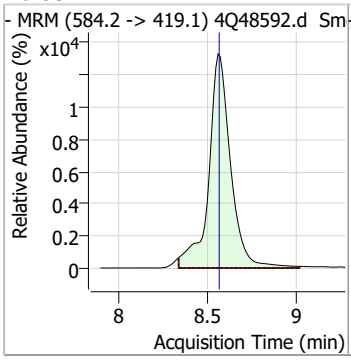
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.43	8.56	0.01	12886				

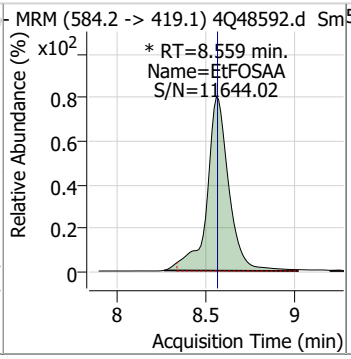


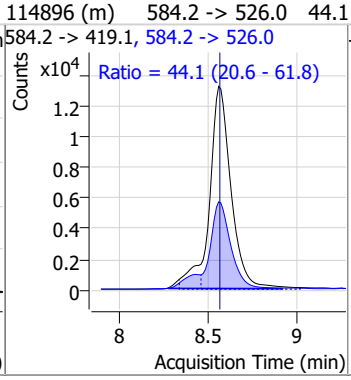


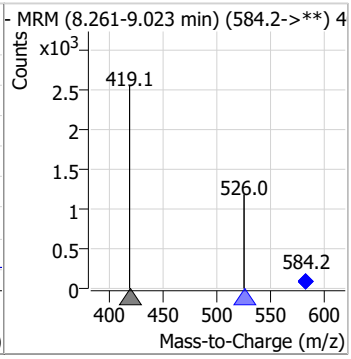


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	65.25	8.56	0.00	114896 (m)	584.2 -> 526.0	44.1	20.6	61.8

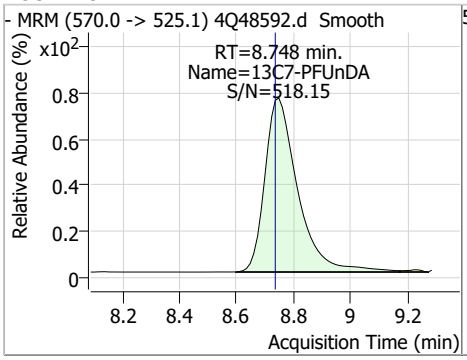


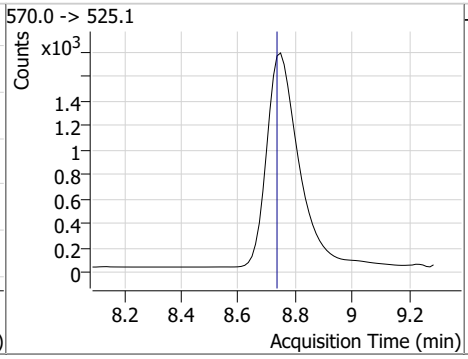


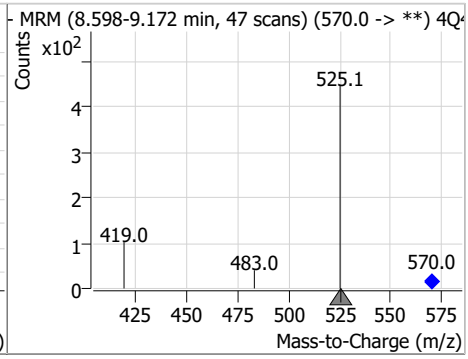




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.14	8.75	0.01	13977				

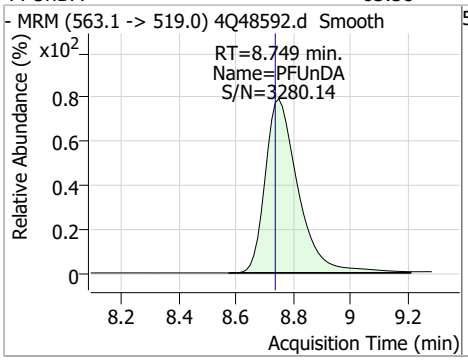


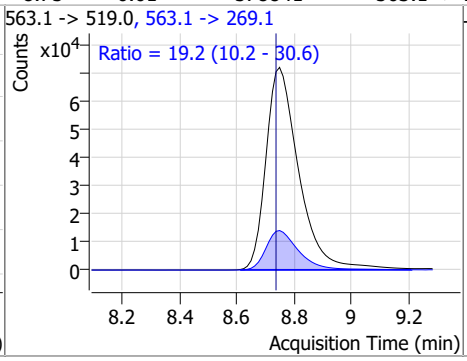


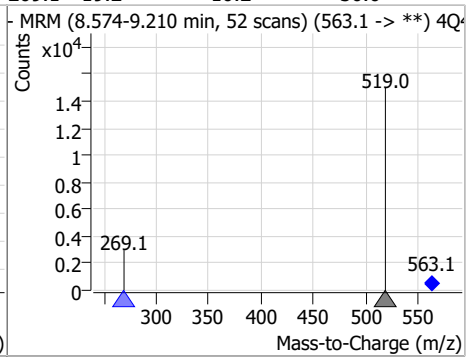


Perfluorinated Compounds by LC/MS/MS

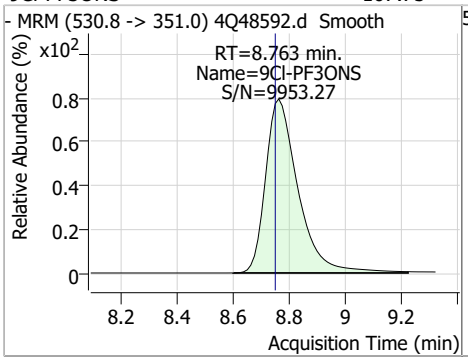
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	63.58	8.75	0.01	578841	563.1 -> 269.1	19.2	10.2	30.6

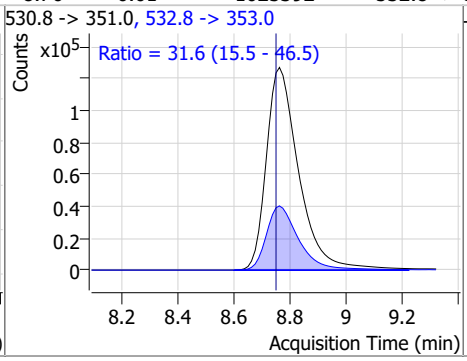


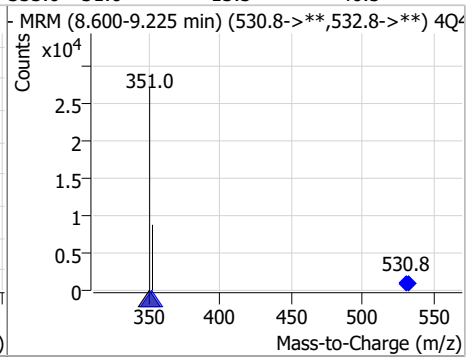




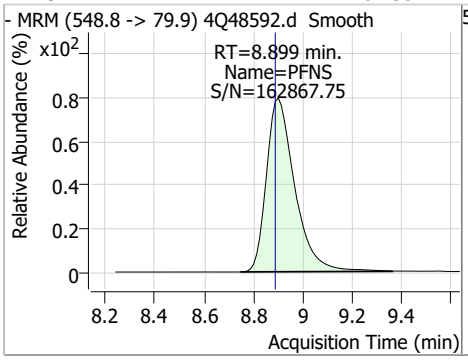
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	107.75	8.76	0.01	1025392	532.8 -> 353.0	31.6	15.5	46.5

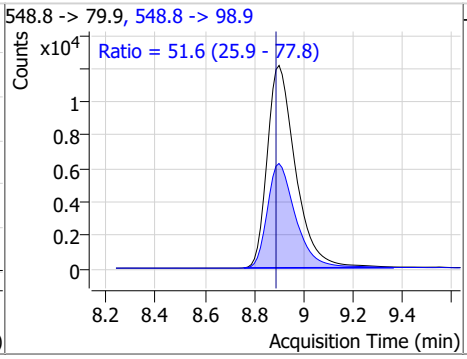


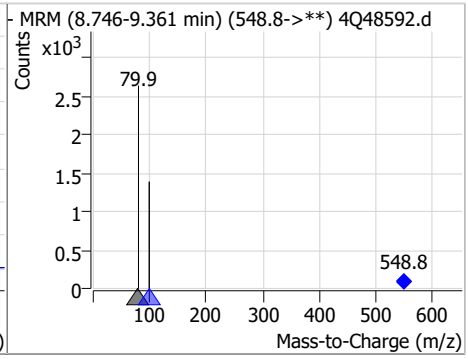




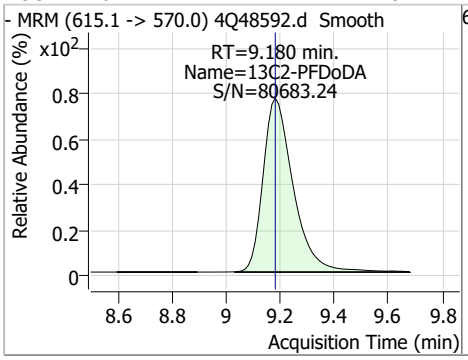
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	62.35	8.90	0.01	96460	548.8 -> 98.9	51.6	25.9	77.8

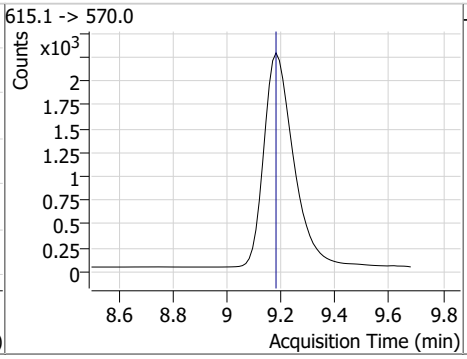


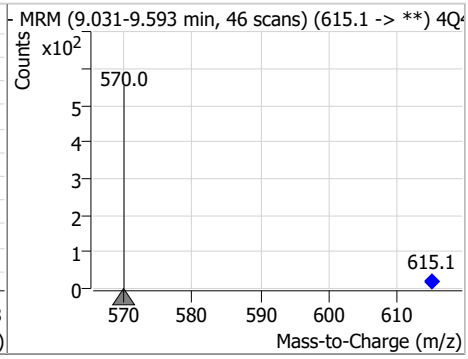




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.18	0.00	17432				

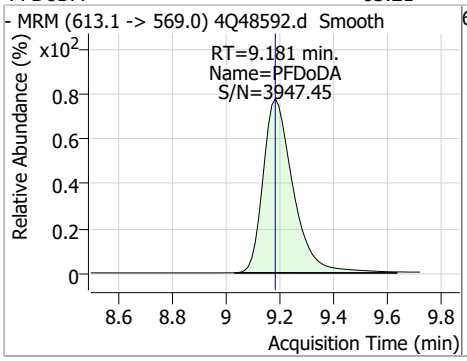


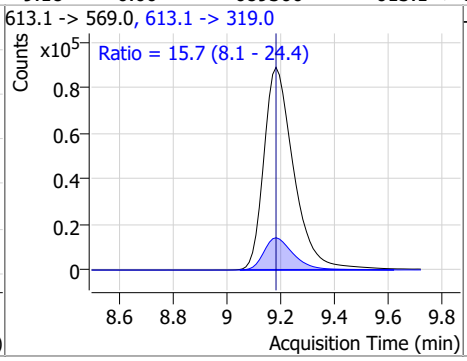


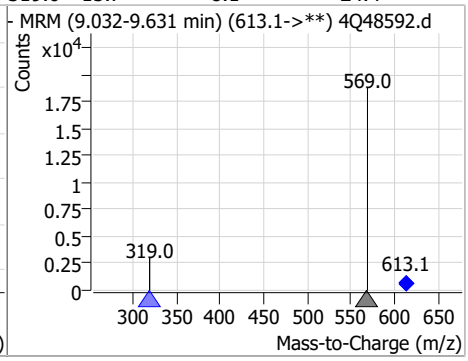


Perfluorinated Compounds by LC/MS/MS

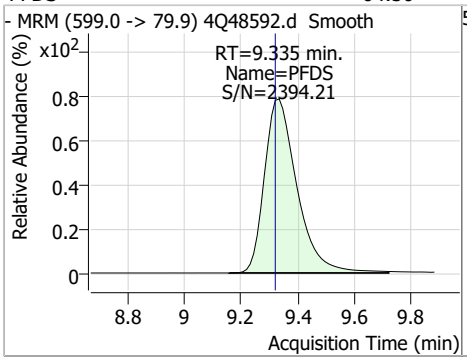
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	63.21	9.18	0.00	689360	613.1 -> 319.0	15.7	8.1	24.4

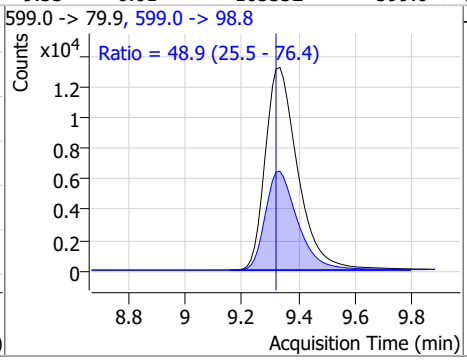


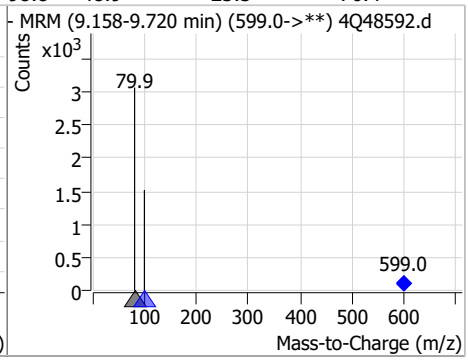




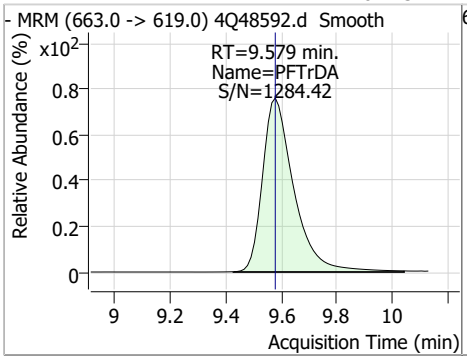
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	64.50	9.33	0.01	105532	599.0 -> 98.8	48.9	25.5	76.4

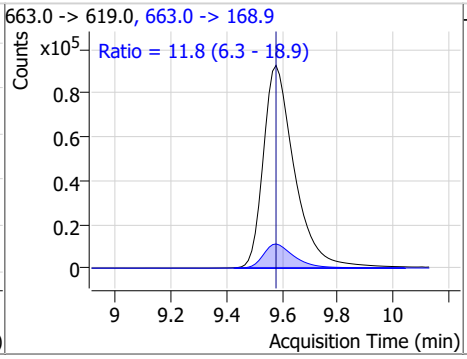


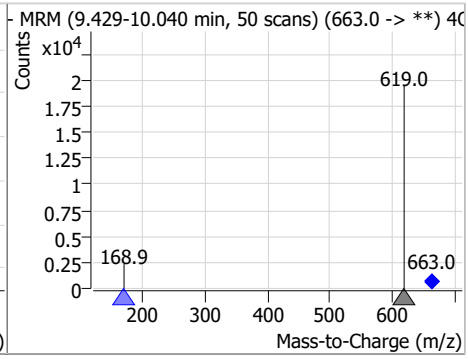




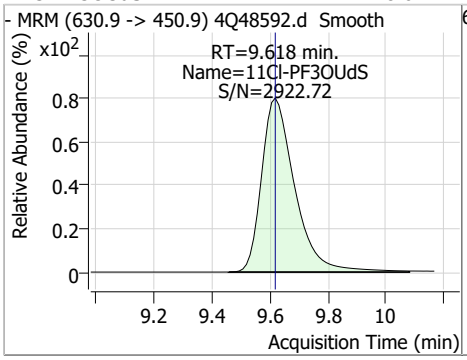
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	64.23	9.58	0.00	723946	663.0 -> 168.9	11.8	6.3	18.9

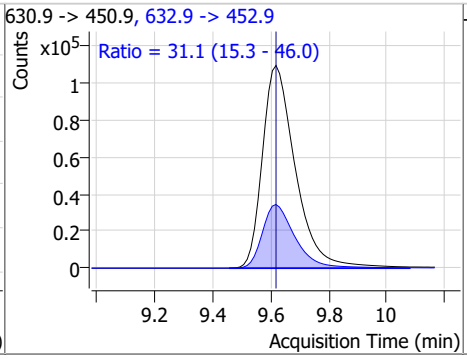


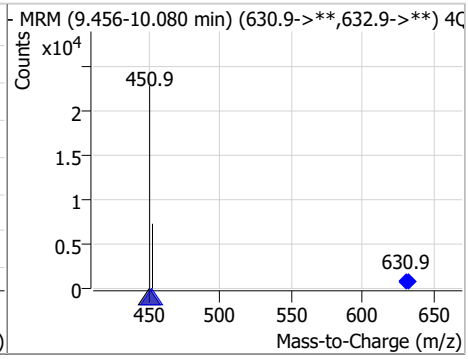




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	128.64	9.62	0.00	869871	632.9 -> 452.9	31.1	15.3	46.0

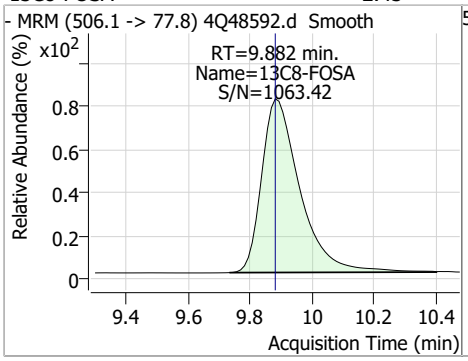


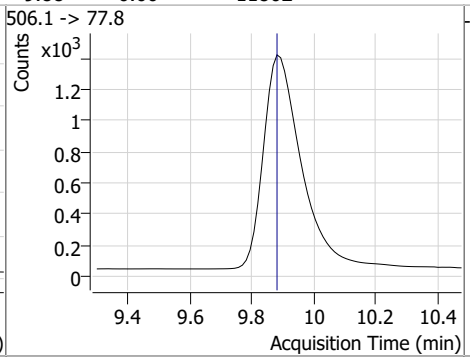


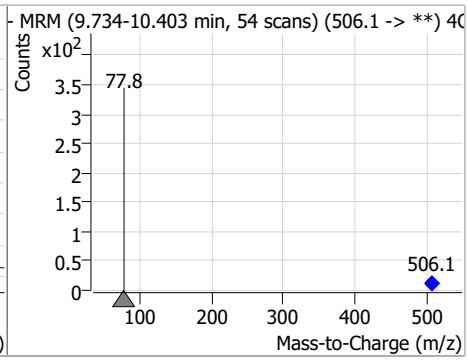


Perfluorinated Compounds by LC/MS/MS

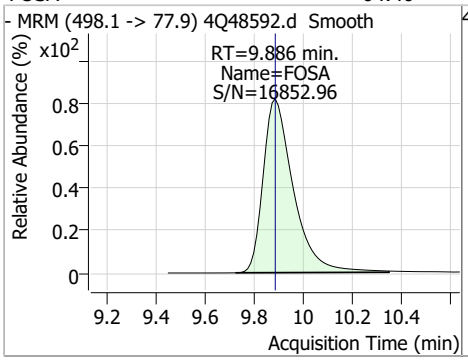
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.43	9.88	0.00	11802				

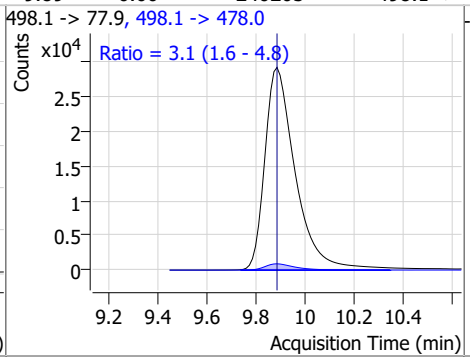


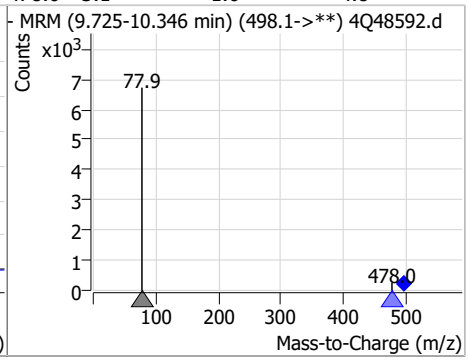




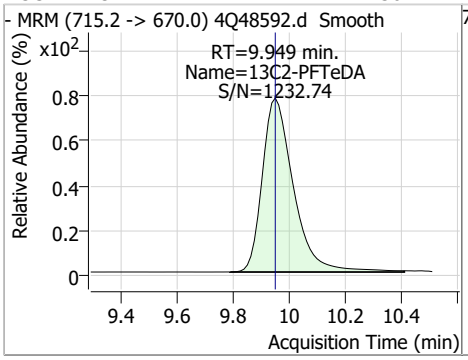
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	64.46	9.89	0.00	246205	498.1 -> 478.0	3.1	1.6	4.8

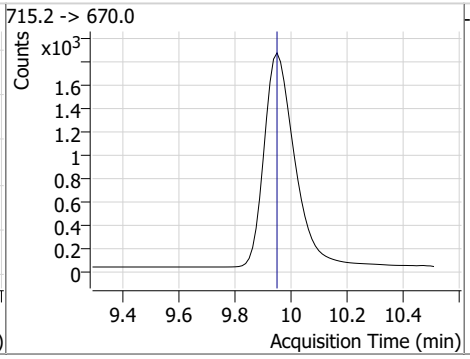


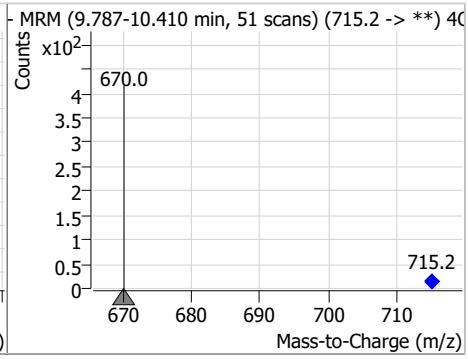




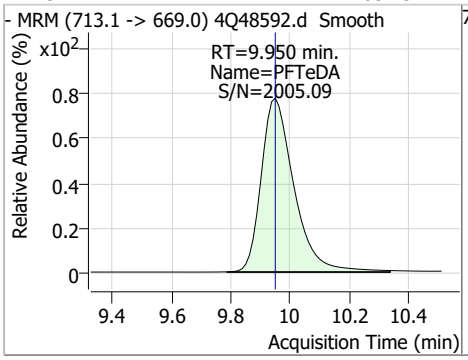
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.95	0.00	14075				

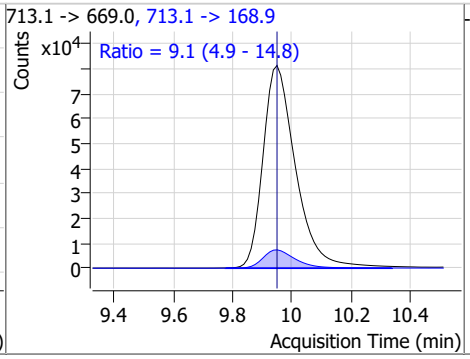


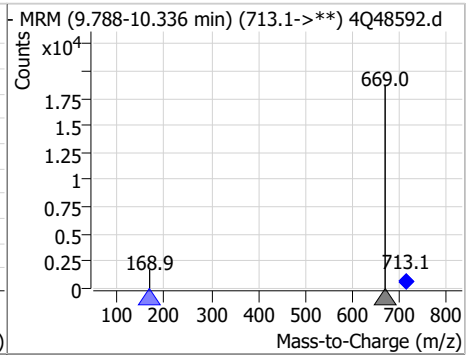




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	63.29	9.95	0.00	623978	713.1 -> 168.9	9.1	4.9	14.8

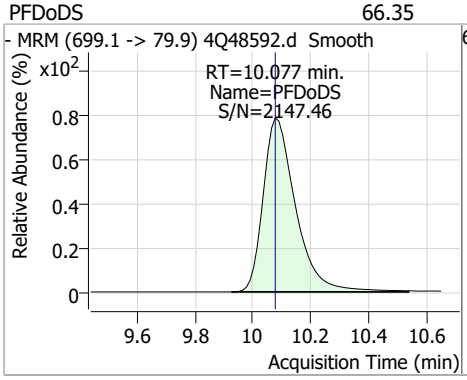


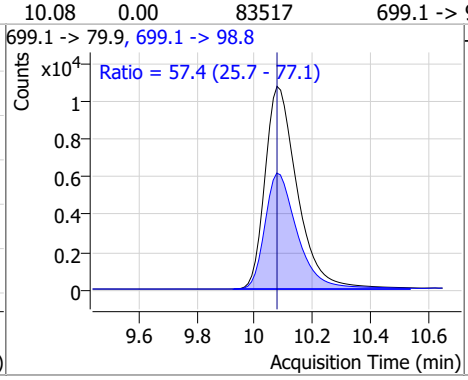


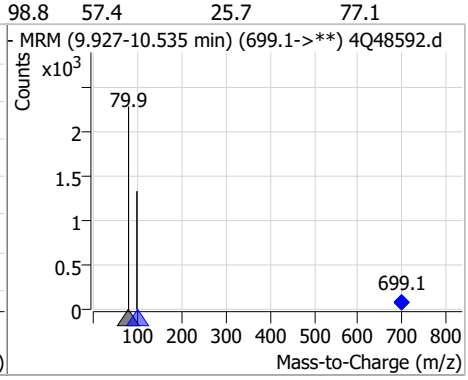


Perfluorinated Compounds by LC/MS/MS

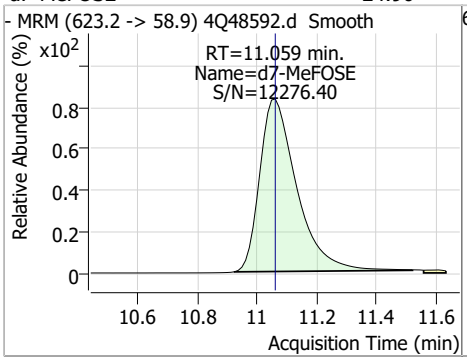
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	66.35	10.08	0.00	83517	699.1 -> 98.8	57.4	25.7	77.1

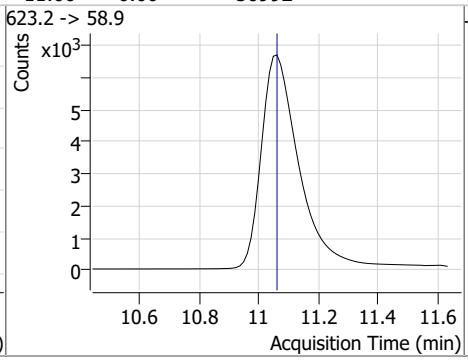


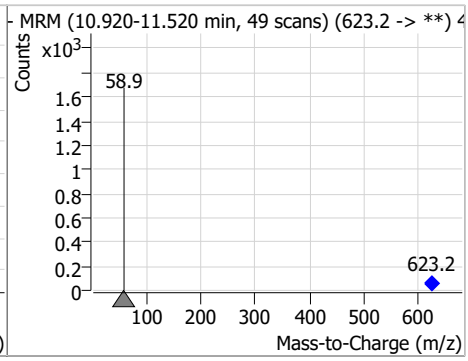




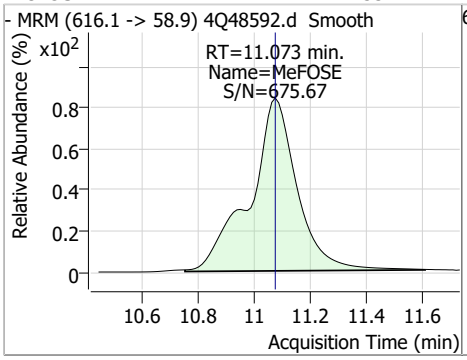
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.96	11.06	0.00	56992				

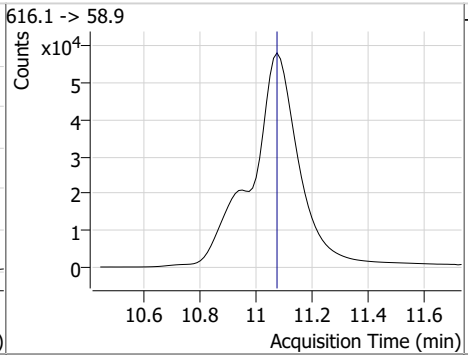


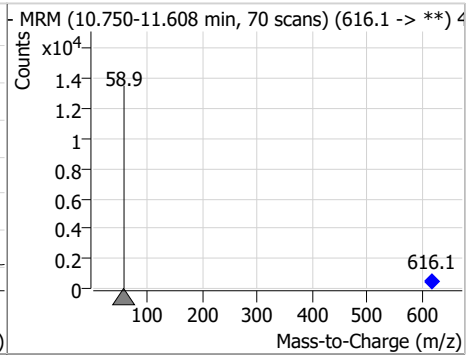




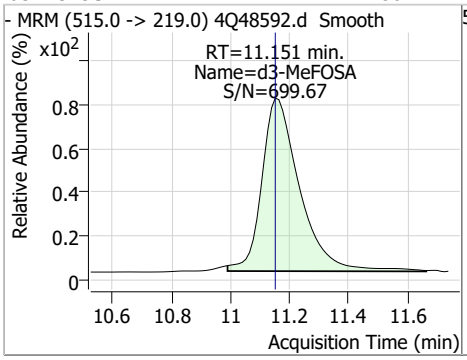
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	334.74	11.07	0.00	682208				

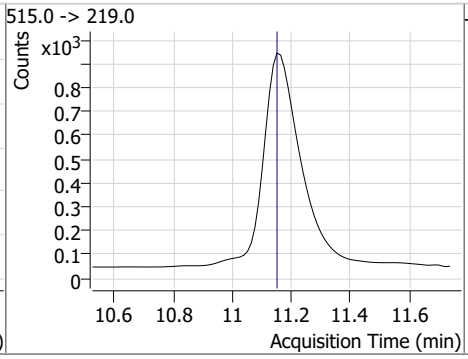


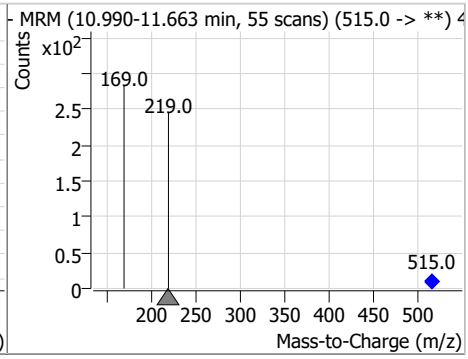




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.80	11.15	0.00	7985				

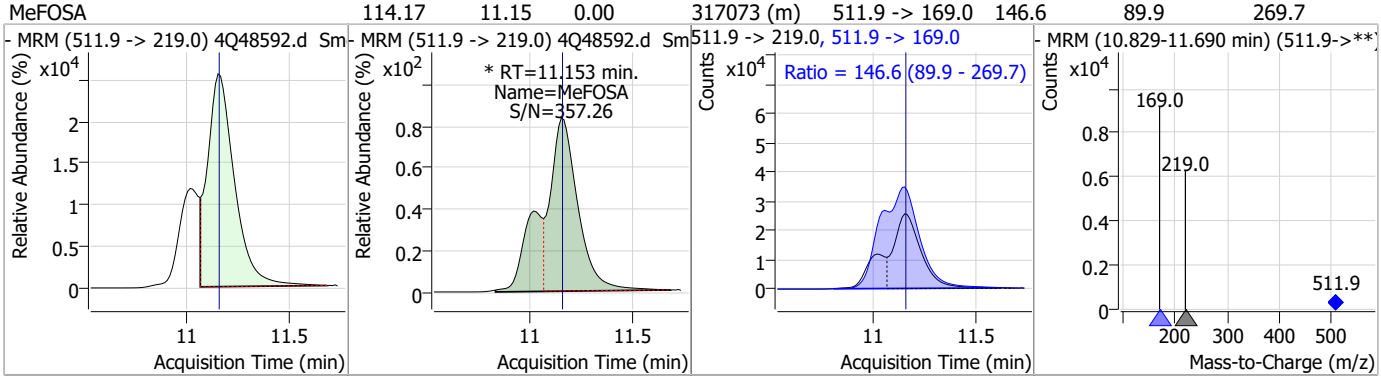




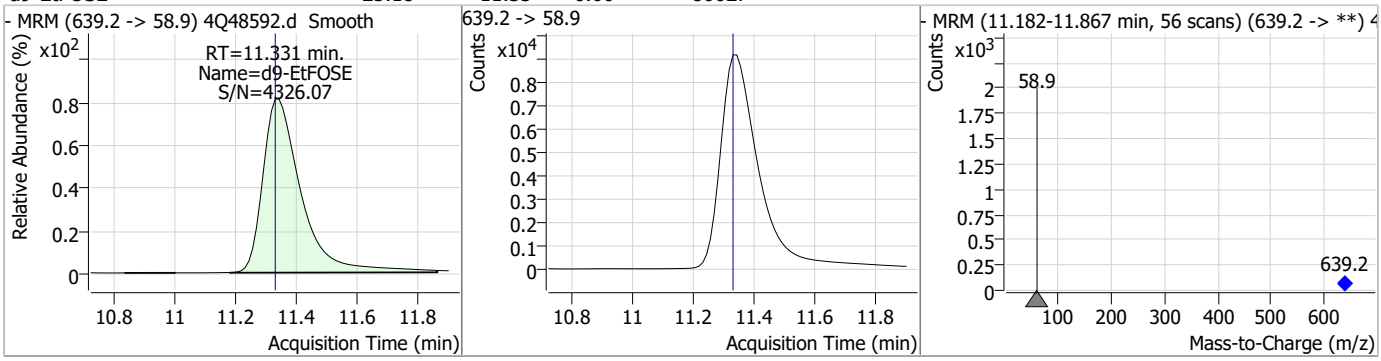


Perfluorinated Compounds by LC/MS/MS

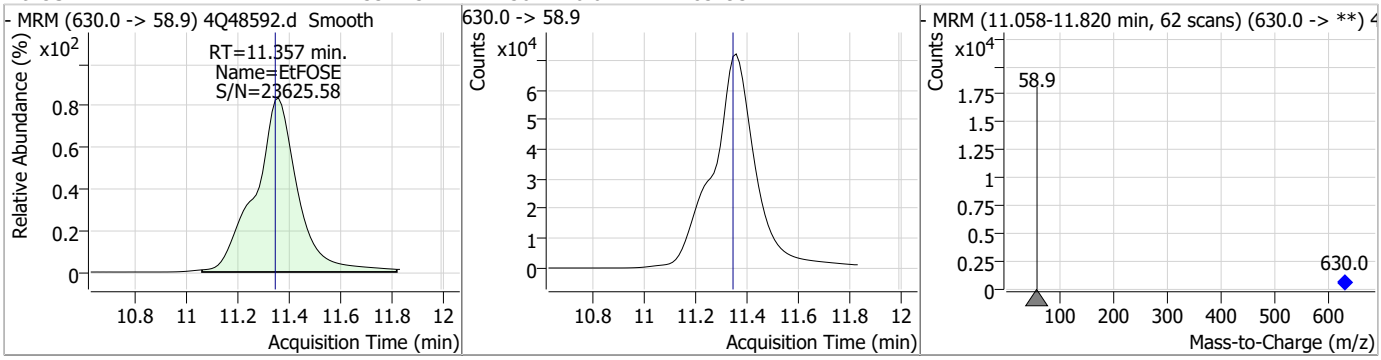
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	114.17	11.15	0.00	317073 (m)	511.9 -> 169.0	146.6	89.9	269.7



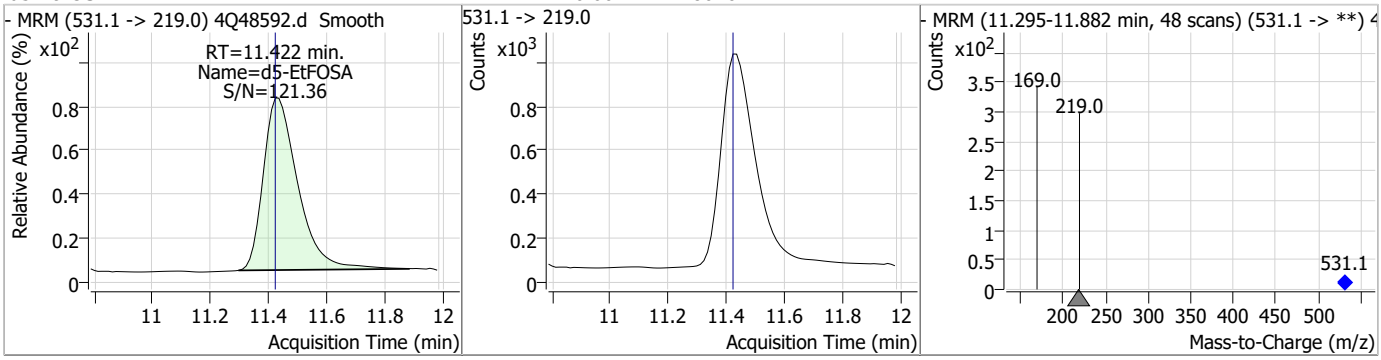
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.18	11.33	0.00	80627				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	332.13	11.36	0.01	837932				

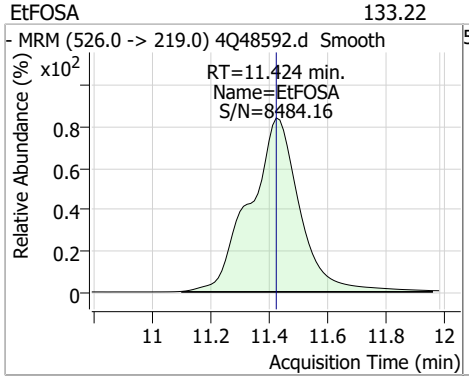


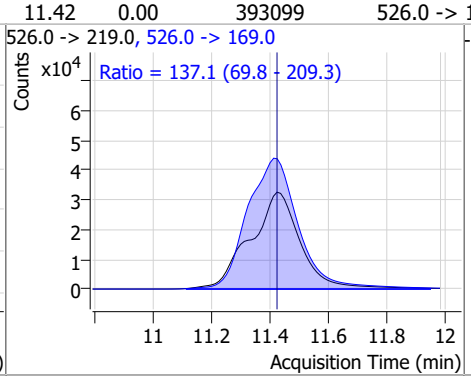
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	11.42	0.00	8026				

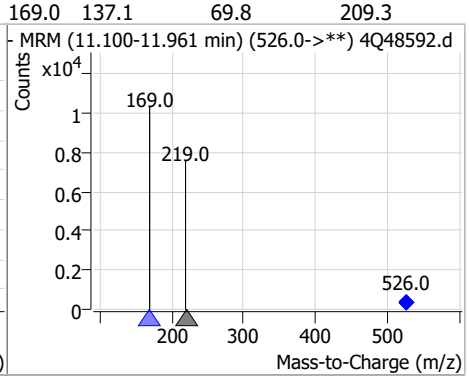


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	133.22	11.42	0.00	393099	526.0 -> 169.0	137.1	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-IC711
Lab FileID: 4Q48592.D
Injection Time: 08/07/23 18:13
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak
MeFOSA	31506-32-8		11.15	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48594.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 6:42:40 PM
Sample Name : icv711-4
Vial : P1-B3
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	95737	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	58583	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	34982	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	25272	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	41706	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	18835	1.25	µg/L	0.000
M6-PFDA	8.291	519.1 -> 474.1	13830	1.25	µg/L	0.012
M7-PFUnDA	8.748	570.0 -> 525.1	15473	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	16088	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	13254	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	12632	2.50	µg/L	0.000
M3-PFBS	5.489	302.1 -> 79.9	9228	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	5994	2.50	µg/L	0.000
M8-PFOS	8.429	507.1 -> 79.9	8302	2.50	µg/L	0.012
M2-4:2FTS	5.296	329.1 -> 80.9	563	5.00	µg/L	0.000
M2-6:2FTS	7.011	429.1 -> 80.9	1018	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	1679	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	15129	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	31144	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	12264	5.00	µg/L	0.012
M7-MeFOSE	11.059	623.2 -> 58.9	59819	25.00	µg/L	0.000
M9-EtFOSE	11.344	639.2 -> 58.9	83041	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	9133	2.50	µg/L	0.000
M3-MeFOSA	11.164	515.0 -> 219.0	7870	2.50	µg/L	0.012
13C4-PFOS	8.430	502.8 -> 79.9	8425	2.50	µg/L	0.012
13C3-PFBA	2.903	216.0 -> 172.0	54995	5.00	µg/L	0.000
18O2-PFHxS	7.328	403.0 -> 83.9	4187	2.50	µg/L	0.012
13C4-PFOA	7.239	417.1 -> 372.0	50758	2.50	µg/L	0.012
13C2-PFDA	8.291	515.1 -> 470.1	15372	1.25	µg/L	0.012
13C5-PFNA	7.785	468.0 -> 423.0	20185	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	33258	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	563	5.38	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1018	5.10	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1679	5.53	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C2-PFDoDA	9.180	615.1 -> 570.0	16088	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFTeDA	9.949	715.2 -> 670.0	13254	1.25	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	5.489	302.1 -> 79.9	9228	2.59	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-PFHxS	7.317	402.1 -> 79.9	5994	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 = 103.4%		
13C4-PFBA	2.911	216.8 -> 171.9	95737	10.19 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFHpA	6.568	367.1 -> 322.0	25272	2.55 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C5-PFHxA	5.610	318.0 -> 273.0	34982	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C5-PFPeA	4.412	268.3 -> 223.0	58583	5.04 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C6-PFDA	8.291	519.1 -> 474.1	13830	1.30 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C7-PFUnDA	8.748	570.0 -> 525.1	15473	1.29 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-FOSA	9.882	506.1 -> 77.8	12632	2.40 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C8-PFOA	7.238	421.1 -> 376.0	41706	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C8-PFOS	8.429	507.1 -> 79.9	8302	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C9-PFNA	7.785	472.1 -> 427.0	18835	1.23 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
d3-MeFOSAA	8.348	573.2 -> 419.0	15129	4.84 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	31144	9.83 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
d3-MeFOSA	11.164	515.0 -> 219.0	7870	2.54 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%		
d5-EtFOSAA	8.559	589.2 -> 419.0	12264	4.77 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
d7-MeFOSE	11.059	623.2 -> 58.9	59819	24.18 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
d9-EtFOSE	11.344	639.2 -> 58.9	83041	23.93 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
d5-EtFOSA	11.422	531.1 -> 219.0	9133	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
Target Compounds						QValue
4:2FTS	5.297	327.1 -> 307.0	7805	10.29 µg/L		99
		327.1 -> 80.9	3159			
6:2FTS	7.011	427.1 -> 407.0	9039	10.46 µg/L		92
		427.1 -> 80.9	3625			
8:2FTS	8.078	527.1 -> 507.0	7686	11.40 µg/L		96
		527.1 -> 80.8	3175			
EtFOSAA	8.572	584.2 -> 419.1	4714	2.81 µg/L	m	93
		584.2 -> 526.0	2156			
FOSA	9.886	498.1 -> 77.9	11586	2.83 µg/L		100
		498.1 -> 478.0	357			
MeFOSAA	8.361	570.1 -> 419.0	5571	2.95 µg/L	m	96
		570.1 -> 483.0	1130			
PFBA	2.907	212.8 -> 168.9	24319	11.03 µg/L		100
PFBS	5.490	298.7 -> 79.9	5803	2.57 µg/L		98
		298.7 -> 98.8	2228			
PFDA	8.292	512.9 -> 469.0	25866	2.66 µg/L		100
		512.9 -> 219.0	5053			
PFDoDA	9.181	613.1 -> 569.0	27473	2.73 µg/L		98
		613.1 -> 319.0	4239			
PFDS	9.335	599.0 -> 79.9	4654	2.71 µg/L		97

Perfluorinated Compounds by LC/MS/MS

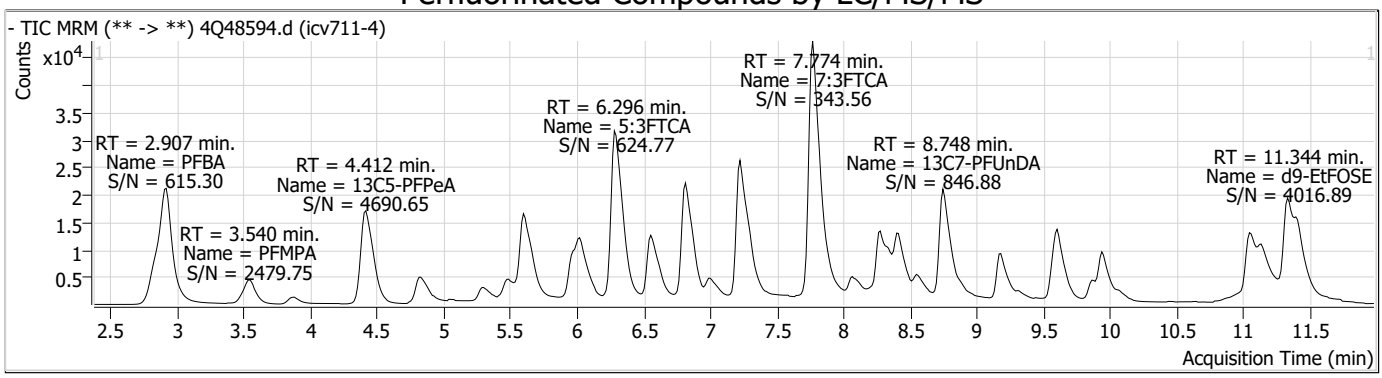
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2283				
PFHpA	6.568	363.1 -> 319.0	32058	2.81	µg/L		99
		363.1 -> 169.0	5992				
PFHpS	7.913	449.0 -> 79.9	6006	2.39	µg/L		90
		449.0 -> 98.9	3430				
PFHxA	5.613	313.0 -> 269.0	28056	2.78	µg/L		100
		313.0 -> 118.9	880				
PFHxS	7.318	398.7 -> 79.9	4297	2.50	µg/L	m	99
		398.7 -> 98.9	2249				
PFNA	7.785	463.0 -> 419.0	26721	2.73	µg/L		97
		463.0 -> 219.0	6189				
PFNS	8.899	548.8 -> 79.9	4325	2.67	µg/L		94
		548.8 -> 98.9	2419				
PFOA	7.240	413.0 -> 369.0	44431	2.69	µg/L		98
		413.0 -> 169.0	8962				
PFOS	8.431	498.9 -> 79.9	7877	2.67	µg/L	m	80
		498.9 -> 98.8	3760				
PFPeA	4.414	263.0 -> 219.0	56231	5.52	µg/L		100
PFPeS	6.582	349.1 -> 79.9	4326	2.67	µg/L		98
		349.1 -> 98.9	1866				
PFTeDA	9.950	713.1 -> 669.0	25504	2.75	µg/L		99
		713.1 -> 168.9	2468				
PFTrDA	9.579	663.0 -> 619.0	31135	2.99	µg/L		99
		663.0 -> 168.9	3785				
PFUnDA	8.749	563.1 -> 519.0	27722	2.75	µg/L		96
		563.1 -> 269.1	5142				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	36322	5.56	µg/L		100
		632.9 -> 452.9	11137				
9Cl-PF3ONS	8.763	530.8 -> 351.0	52484	5.71	µg/L		97
		532.8 -> 353.0	17259				
ADONA	6.831	376.9 -> 250.9	100888	5.58	µg/L		98
		376.9 -> 84.8	25197				
HFPO-DA	5.978	284.9 -> 168.9	14598	5.70	µg/L		96
		284.9 -> 184.9	1695				
3:3FTCA	3.861	241.0 -> 177.0	7303	13.13	µg/L		99
		241.0 -> 117.0	691				
5:3FTCA	6.296	341.0 -> 237.1	114325	69.20	µg/L		99
		341.0 -> 217.0	81914				
7:3FTCA	7.774	441.0 -> 316.9	64321	70.65	µg/L		96
		441.0 -> 336.9	152779				
EtFOSA	11.424	526.0 -> 219.0	17738	5.28	µg/L		100
		526.0 -> 169.0	24781				
EtFOSE	11.357	630.0 -> 58.9	38051	14.64	µg/L		100
MeFOSA	11.165	511.9 -> 219.0	14470	5.29	µg/L		75
		511.9 -> 169.0	20982				
MeFOSE	11.073	616.1 -> 58.9	29903	13.98	µg/L		100
PFDoDS	10.089	699.1 -> 79.9	3557	2.70	µg/L		87
		699.1 -> 98.8	2146				
NFDHA	5.503	295.0 -> 201.0	3806	5.85	µg/L		100
		295.0 -> 84.9	955				
PFMBA	4.828	279.0 -> 85.1	31575	5.53	µg/L		100
PFMPA	3.540	229.0 -> 84.9	30498	5.48	µg/L		100
PFEESA	6.034	314.8 -> 134.9	40661	5.00	µg/L		99
		314.8 -> 82.9	1517				

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

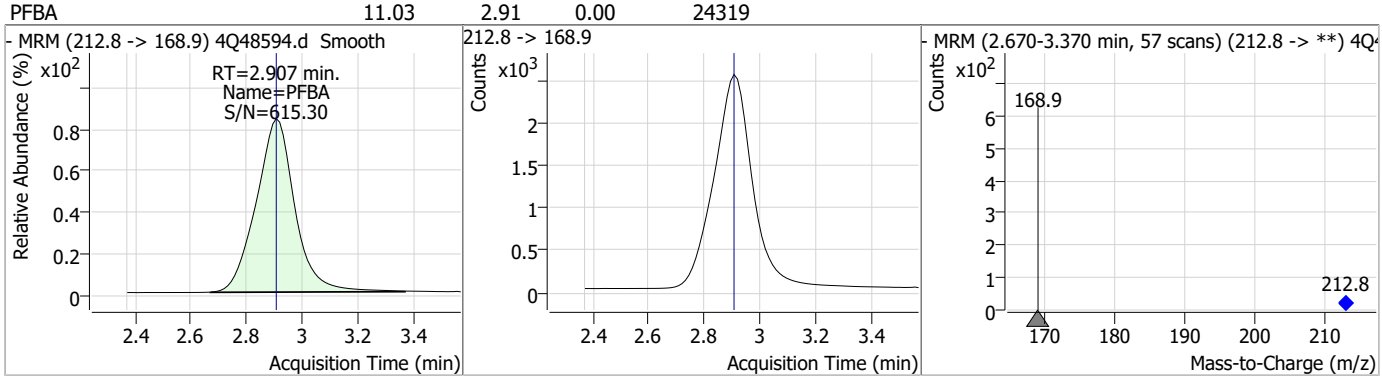
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

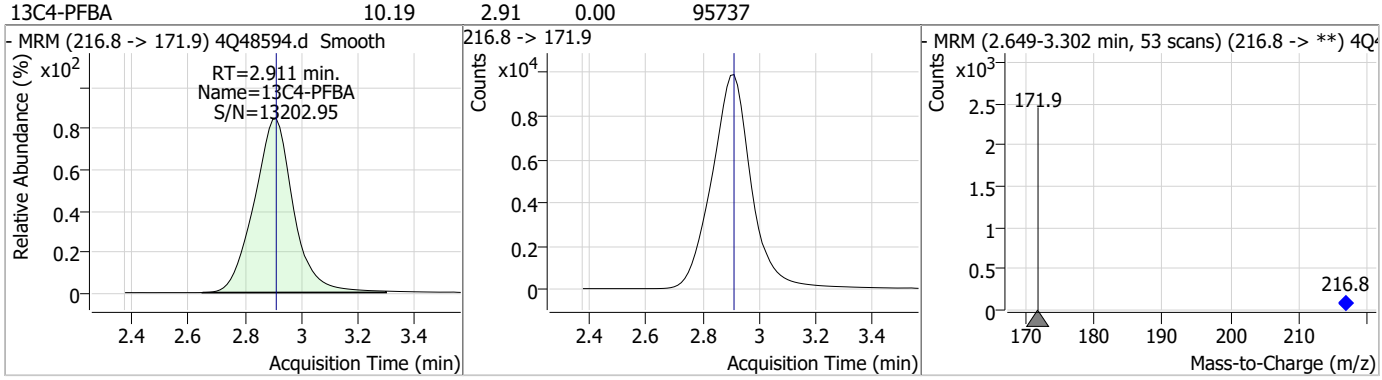
Perfluorinated Compounds by LC/MS/MS



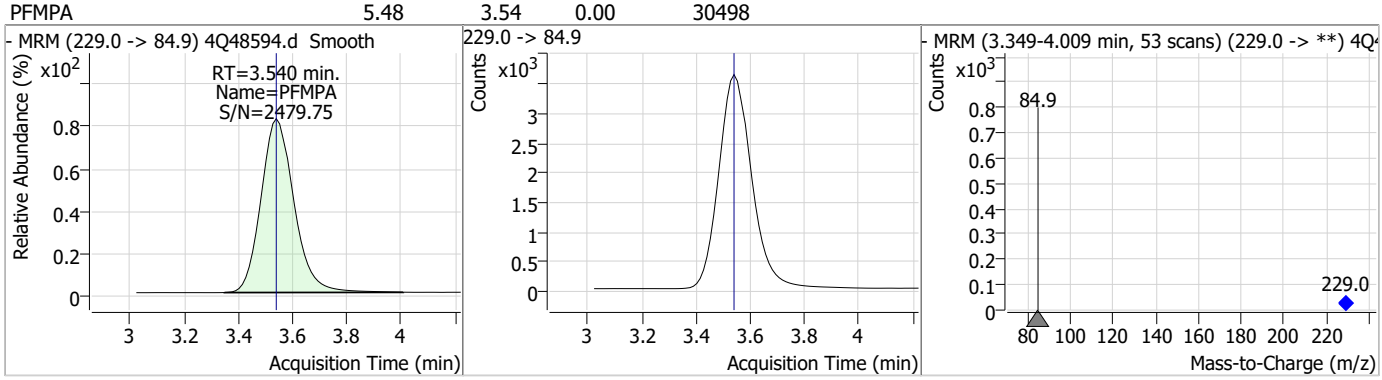
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	11.03	2.91	0.00	24319				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.19	2.91	0.00	95737				

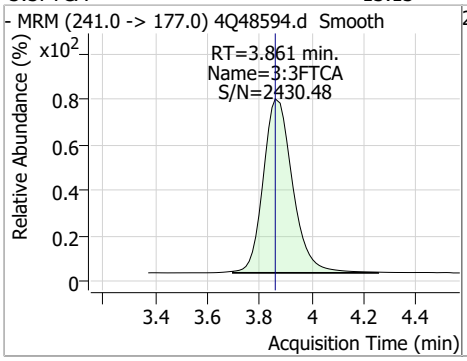


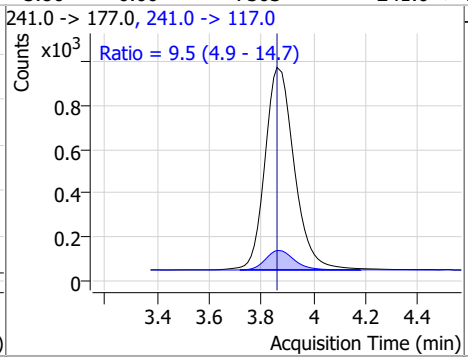
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.48	3.54	0.00	30498				

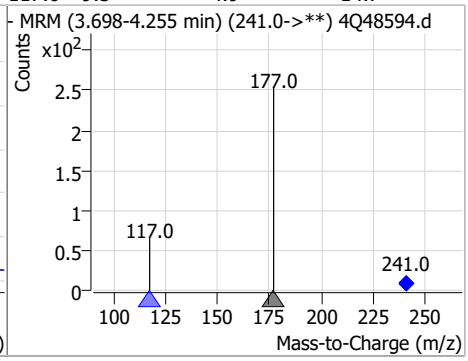


Perfluorinated Compounds by LC/MS/MS

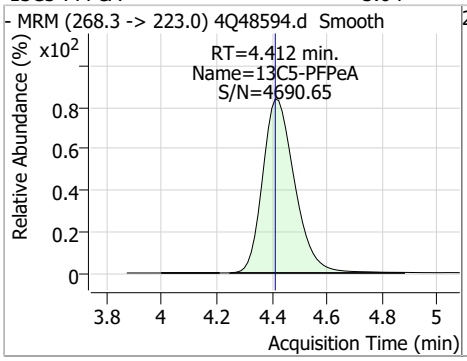
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	13.13	3.86	0.00	7303	241.0 -> 117.0	9.5	4.9	14.7

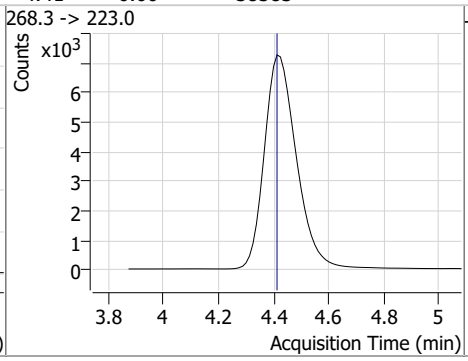


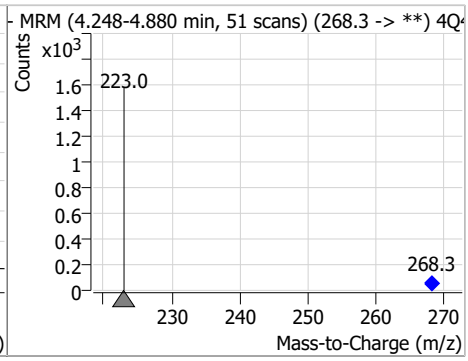




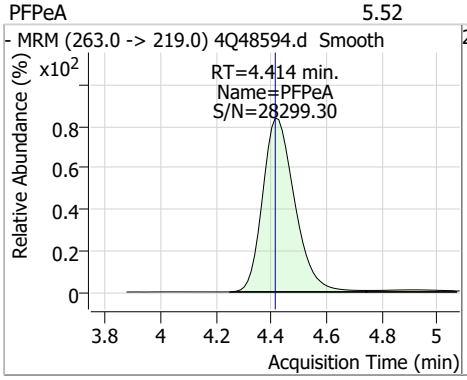
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.41	0.00	58583				

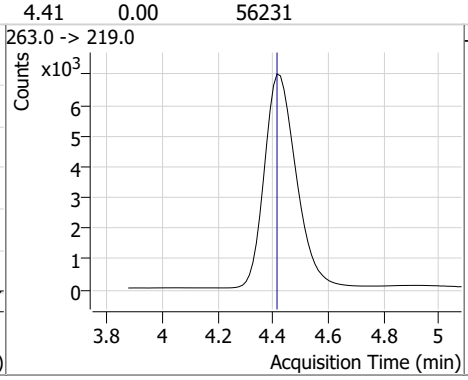


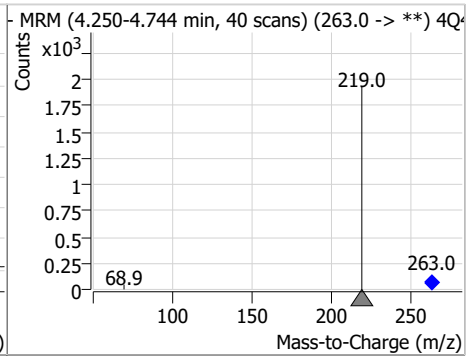




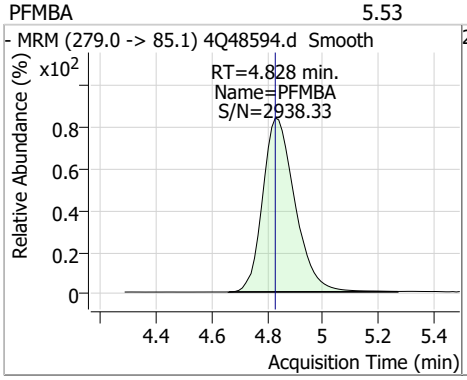
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.52	4.41	0.00	56231				

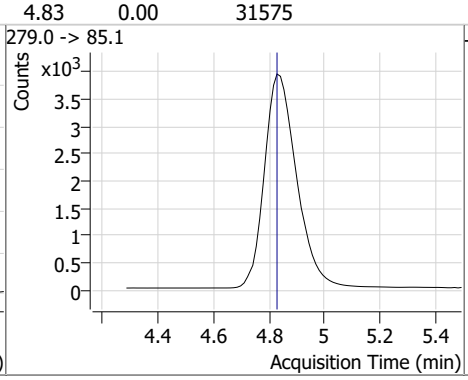


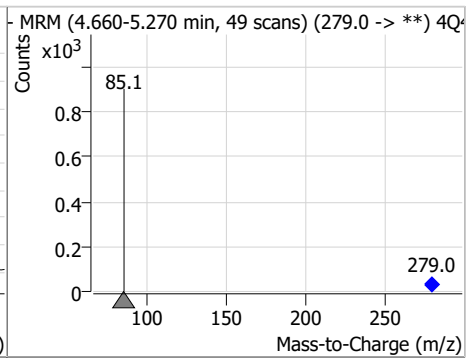




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.53	4.83	0.00	31575				

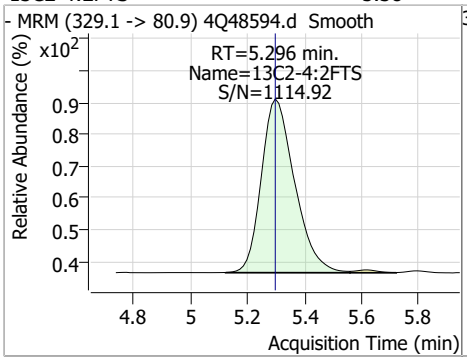


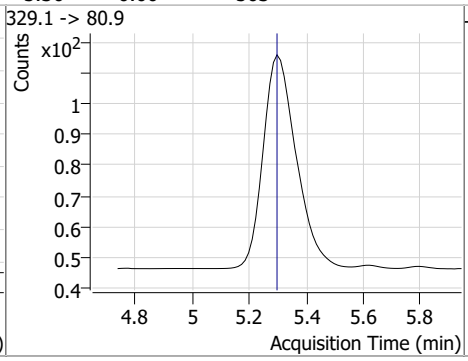


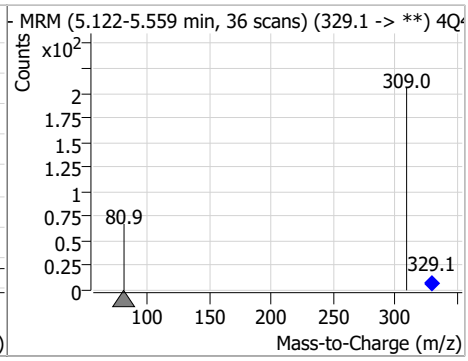


Perfluorinated Compounds by LC/MS/MS

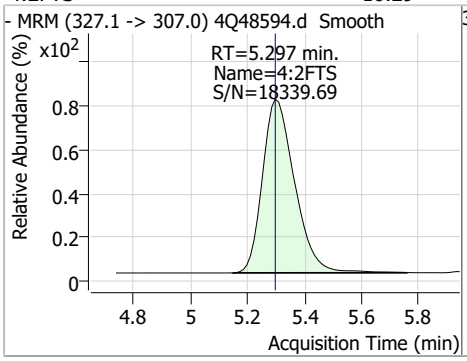
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.38	5.30	0.00	563				

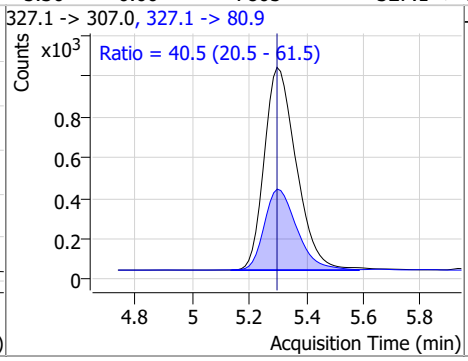


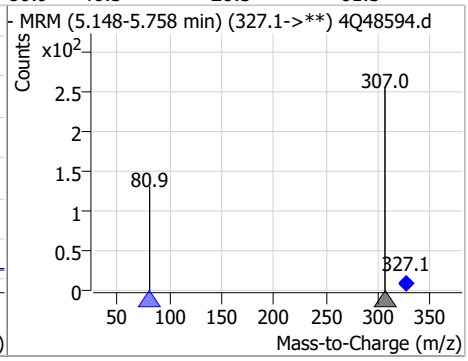




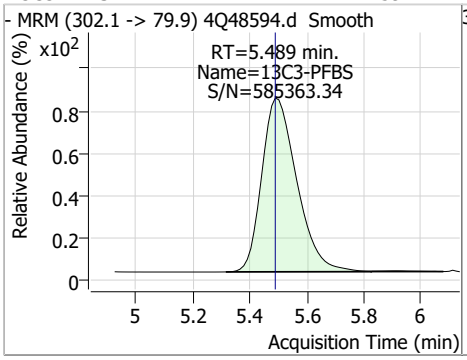
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.29	5.30	0.00	7805	327.1 -> 80.9	40.5	20.5	61.5

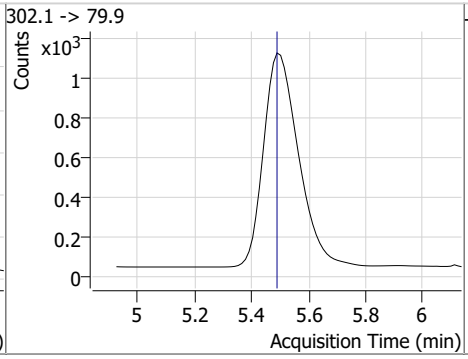


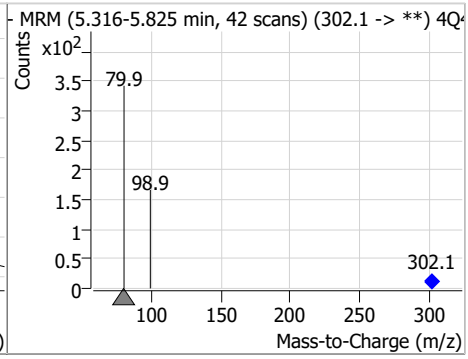




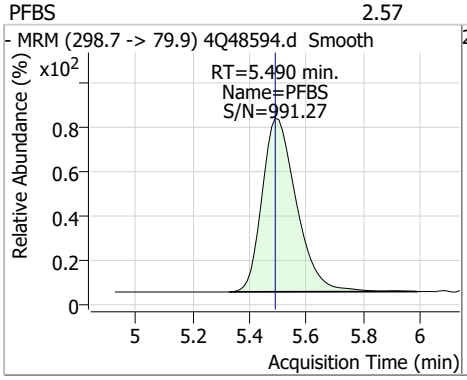
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.59	5.49	0.00	9228				

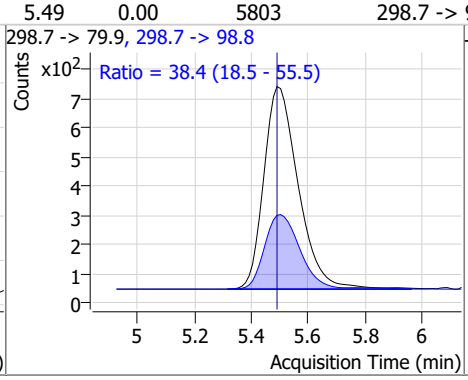


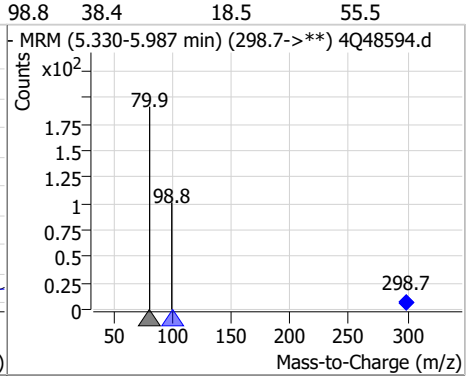




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.57	5.49	0.00	5803	298.7 -> 98.8	38.4	18.5	55.5

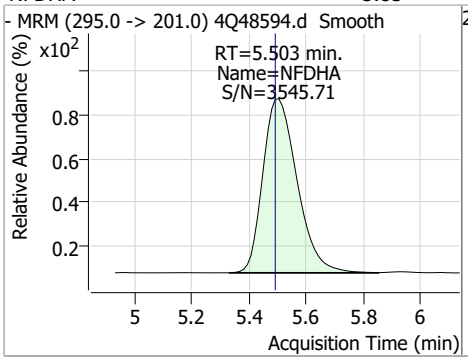


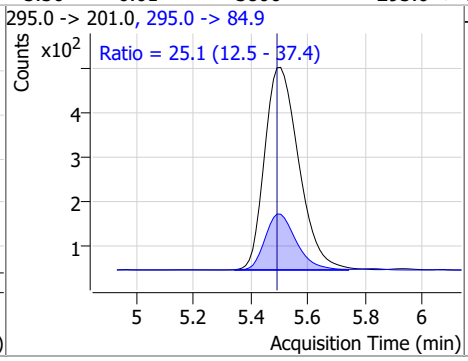


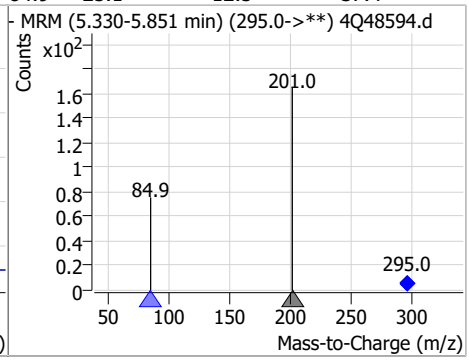


Perfluorinated Compounds by LC/MS/MS

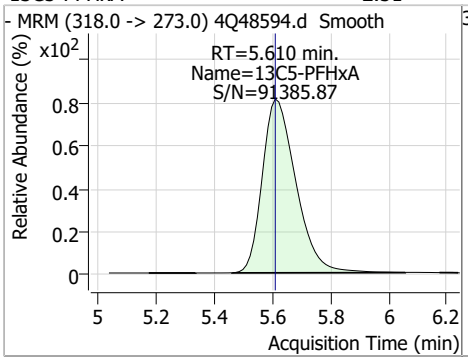
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.85	5.50	0.01	3806	295.0 -> 84.9	25.1	12.5	37.4

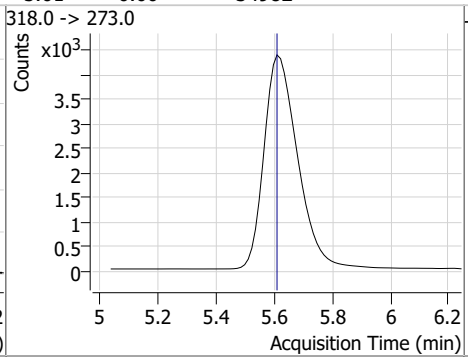


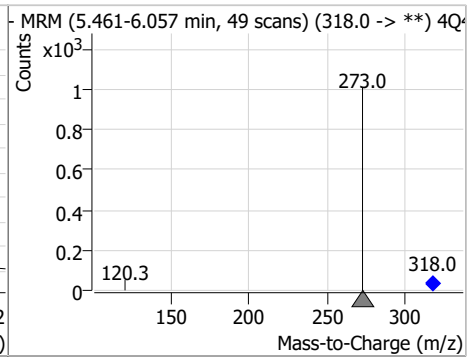




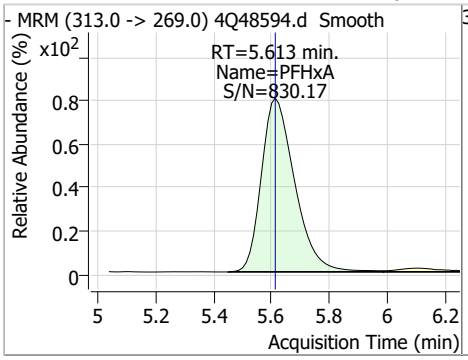
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.51	5.61	0.00	34982				

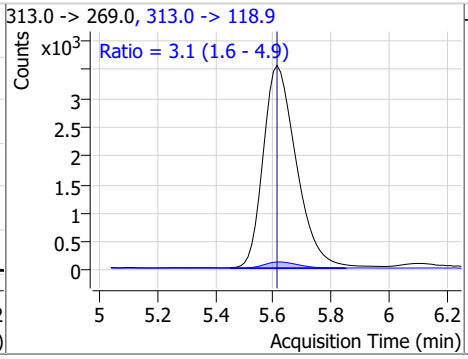


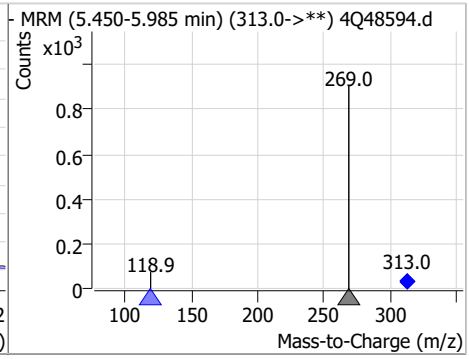




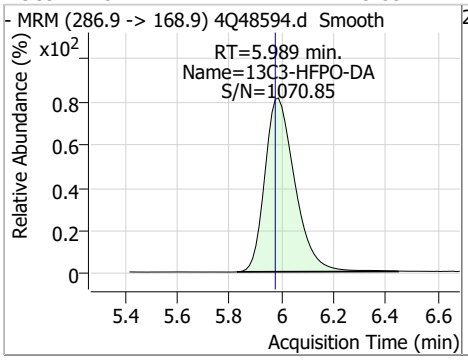
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.78	5.61	0.00	28056	313.0 -> 118.9	3.1	1.6	4.9

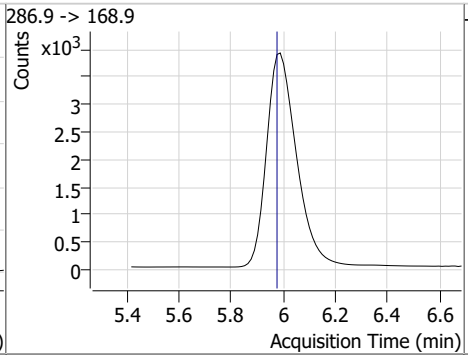


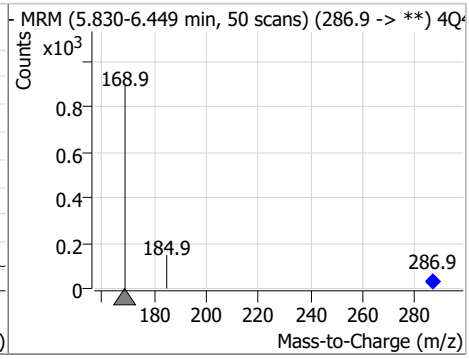




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.83	5.99	0.01	31144				

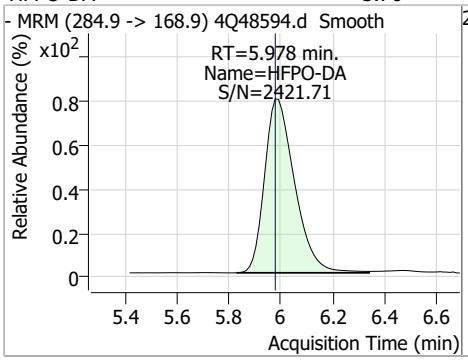


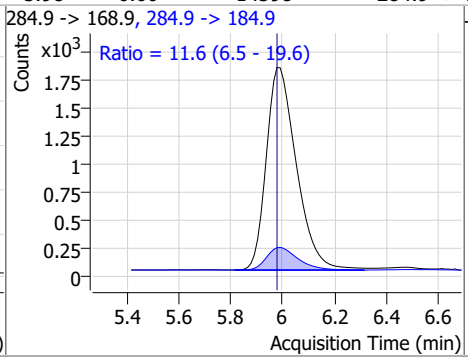


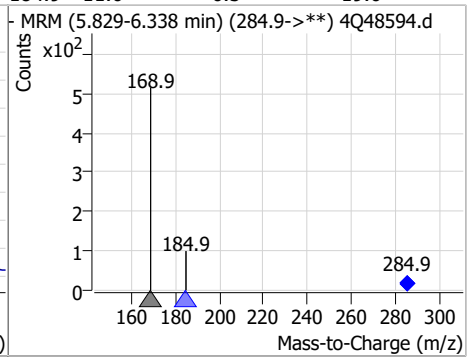


Perfluorinated Compounds by LC/MS/MS

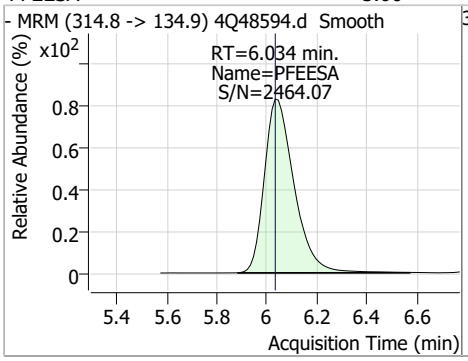
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.70	5.98	0.00	14598	284.9 -> 184.9	11.6	6.5	19.6

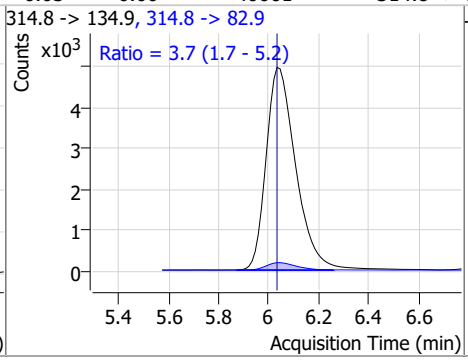


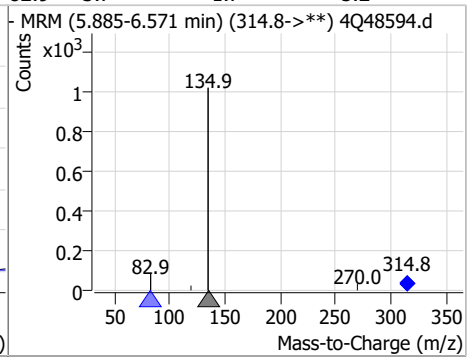




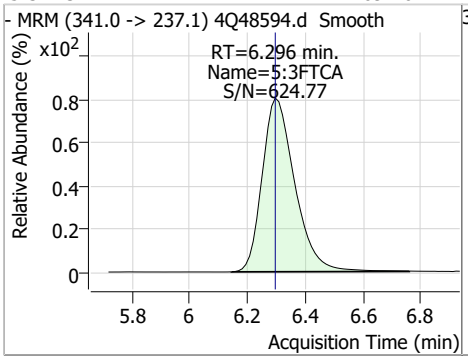
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.00	6.03	0.00	40661	314.8 -> 82.9	3.7	1.7	5.2

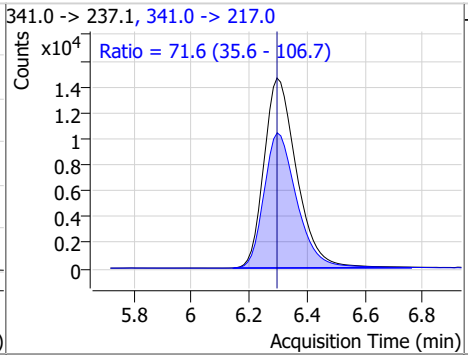


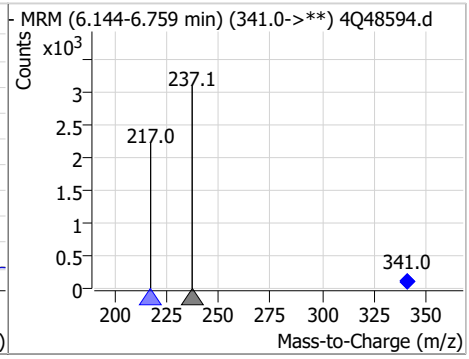




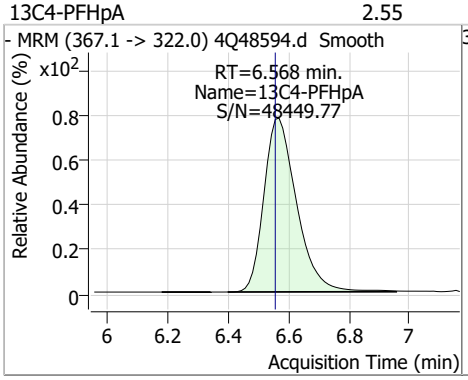
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	69.20	6.30	0.00	114325	341.0 -> 217.0	71.6	35.6	106.7

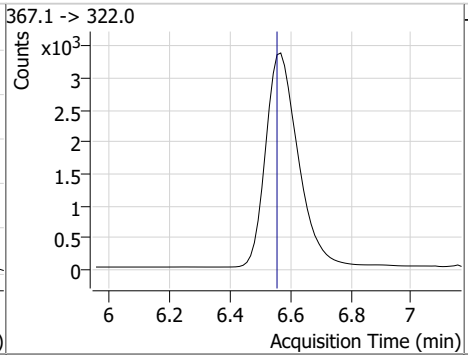


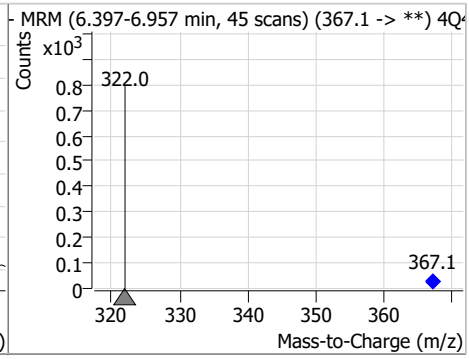




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.57	0.01	25272				

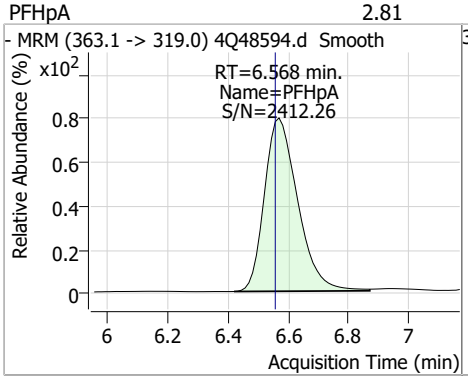


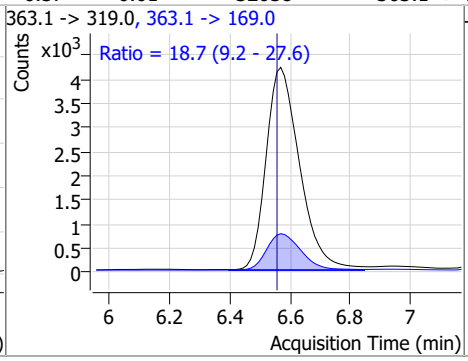


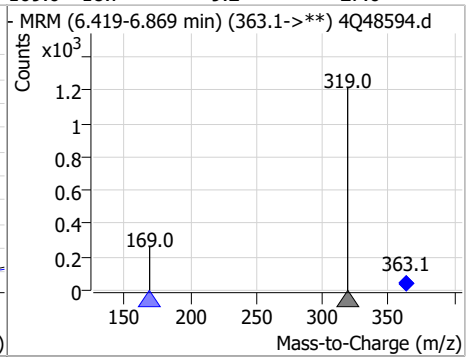


Perfluorinated Compounds by LC/MS/MS

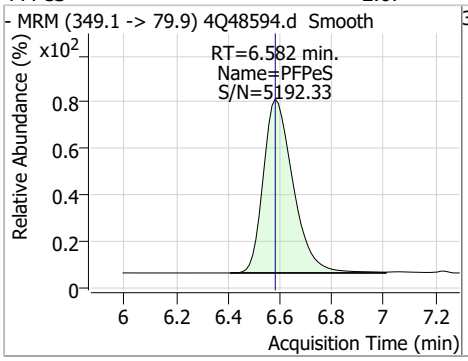
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.81	6.57	0.01	32058	363.1 -> 169.0	18.7	9.2	27.6

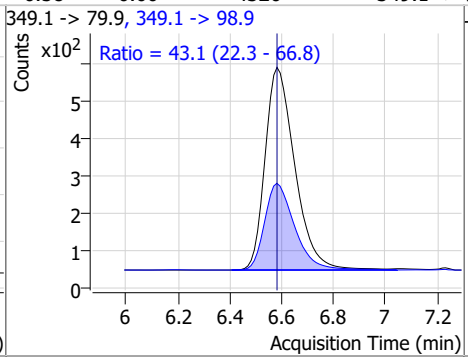


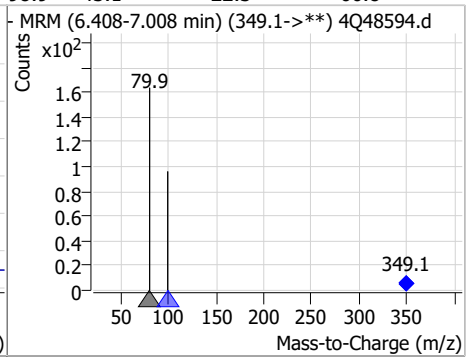




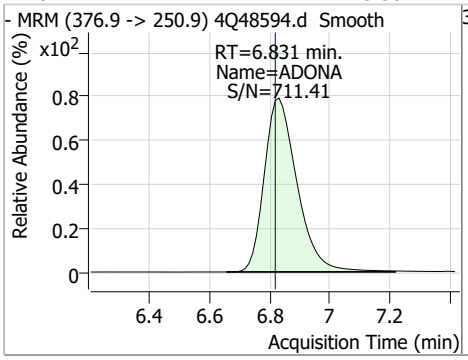
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.67	6.58	0.00	4326	349.1 -> 98.9	43.1	22.3	66.8

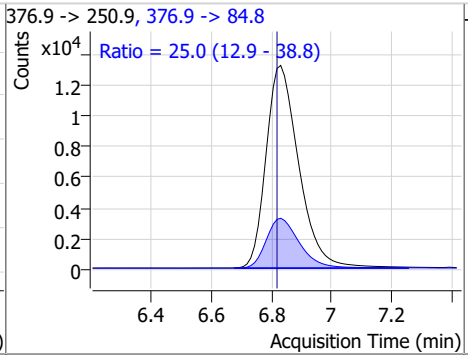


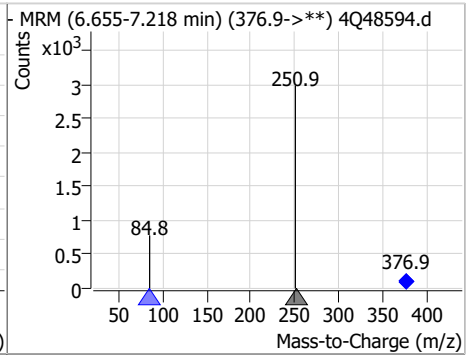




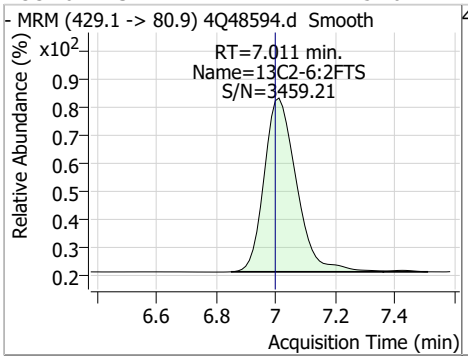
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.58	6.83	0.01	100888	376.9 -> 84.8	25.0	12.9	38.8

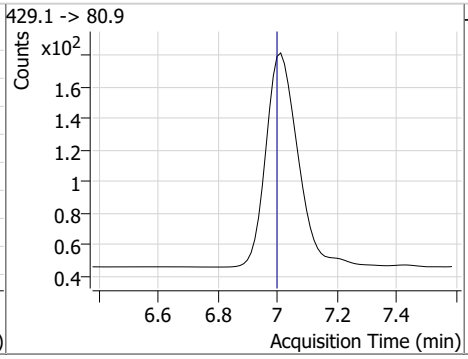


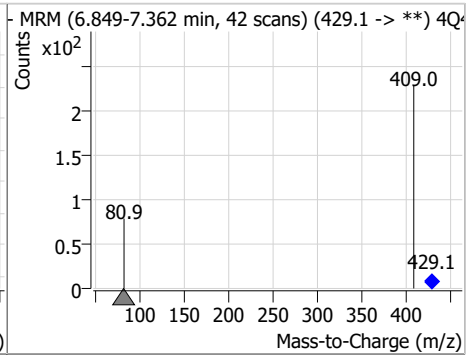




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.10	7.01	0.01	1018				

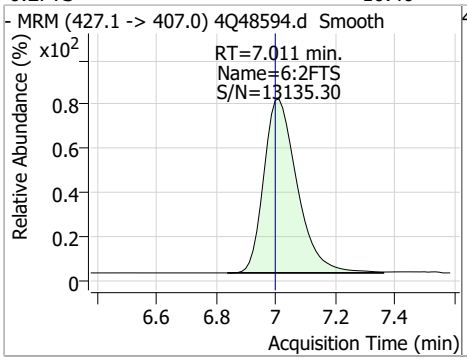


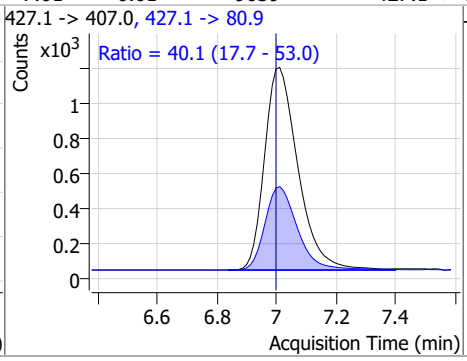


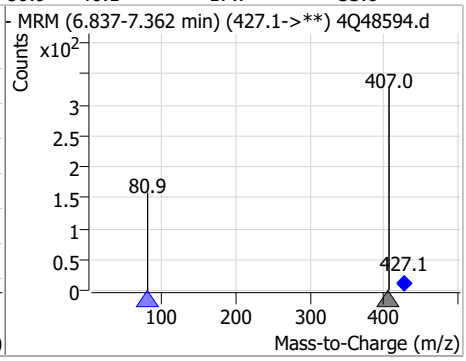


Perfluorinated Compounds by LC/MS/MS

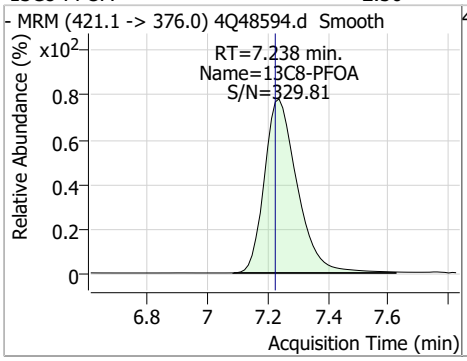
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.46	7.01	0.01	9039	427.1 -> 80.9	40.1	17.7	53.0

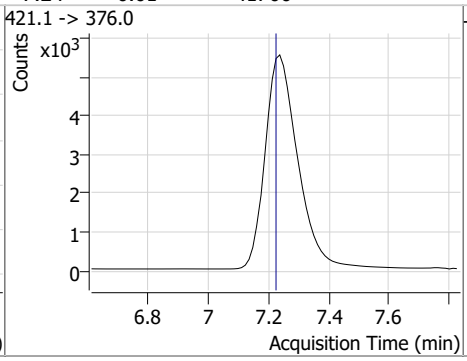


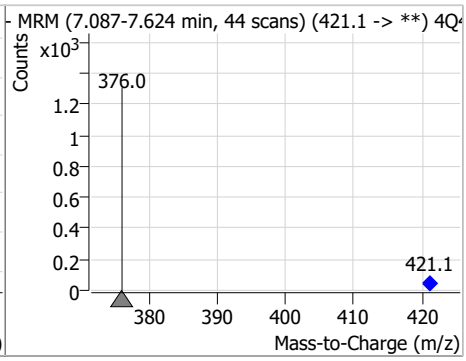




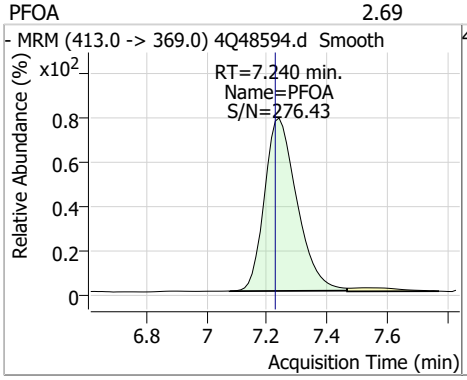
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.50	7.24	0.01	41706				

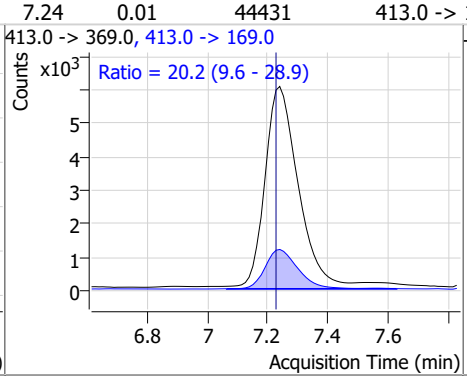


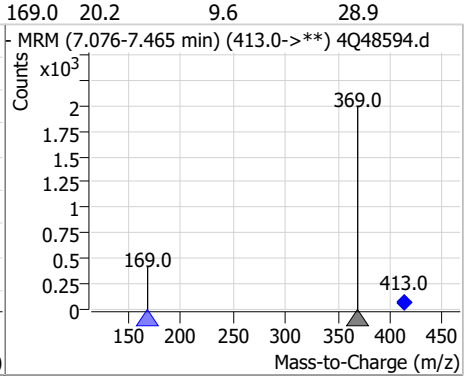




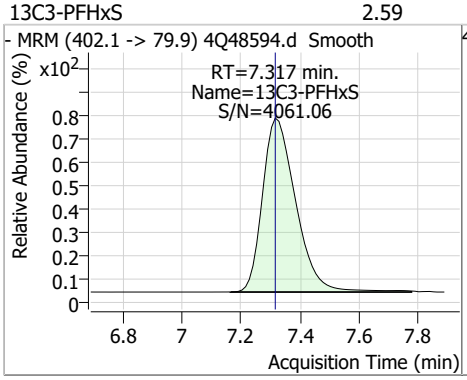
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.69	7.24	0.01	44431	413.0 -> 169.0	20.2	9.6	28.9

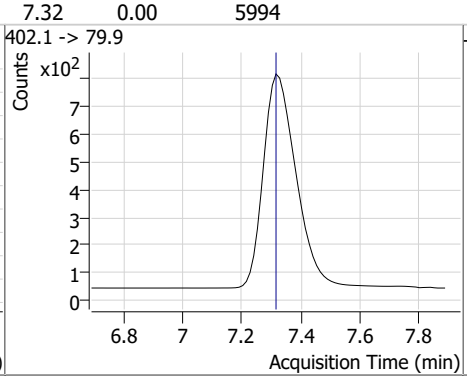


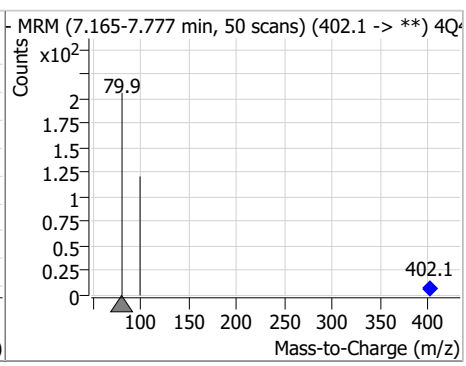




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.59	7.32	0.00	5994				

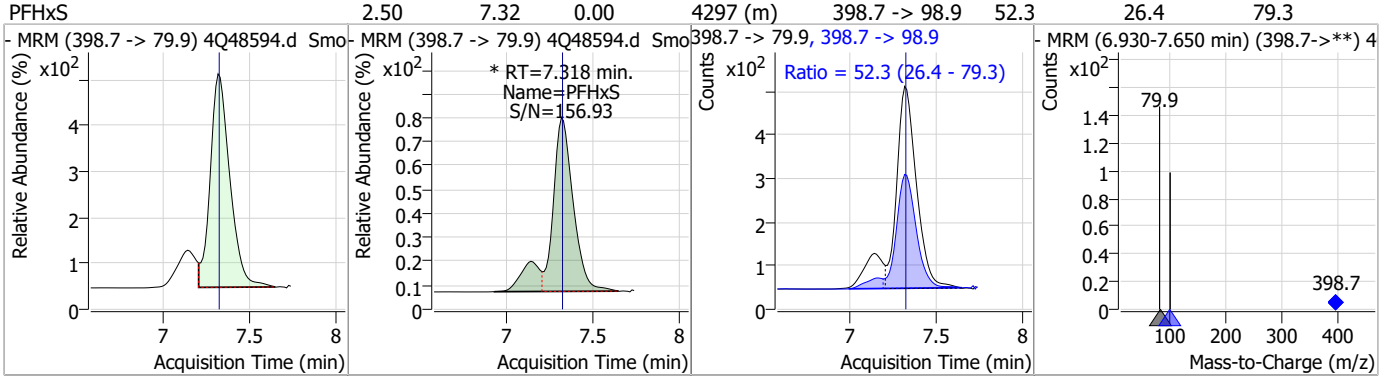




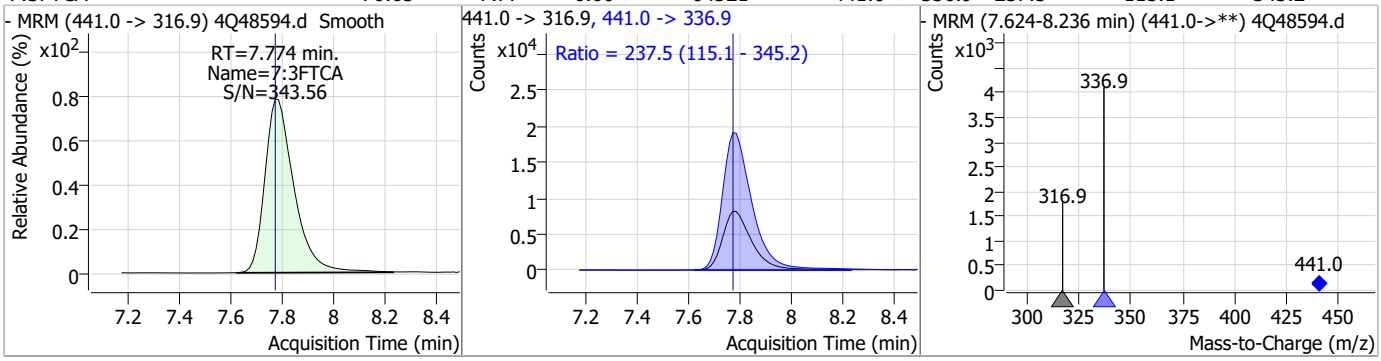


Perfluorinated Compounds by LC/MS/MS

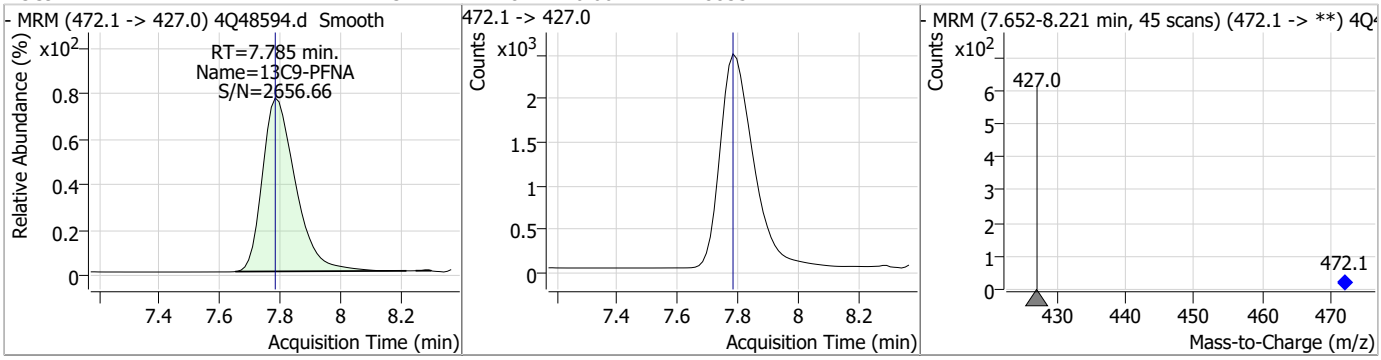
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.50	7.32	0.00	4297 (m)	398.7 -> 98.9	52.3	26.4	79.3



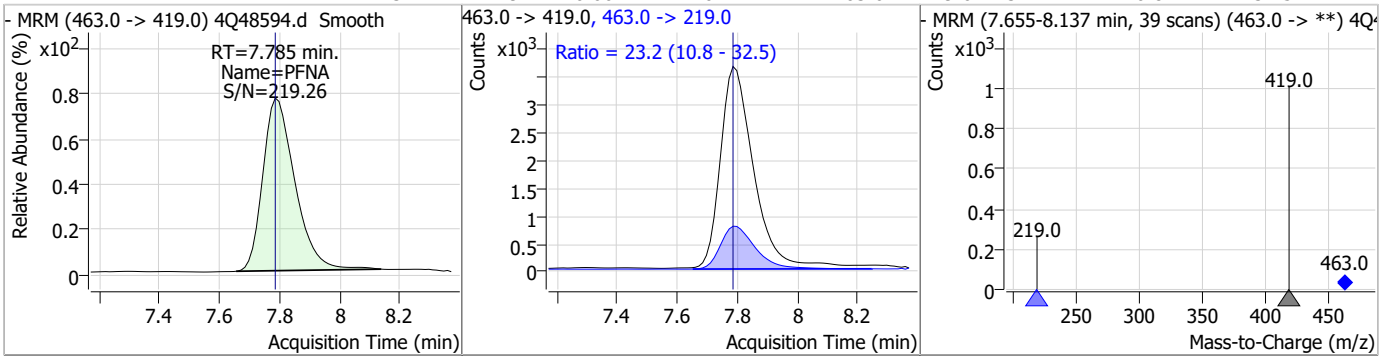
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	70.65	7.77	0.00	64321	441.0 -> 336.9	237.5	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.78	0.00	18835				

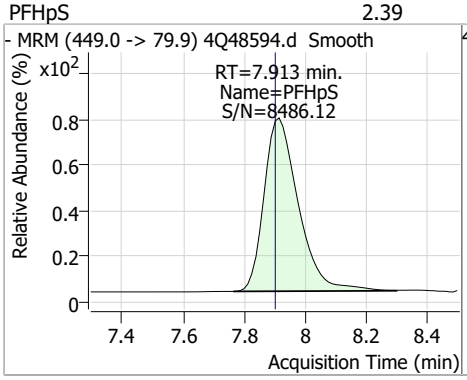


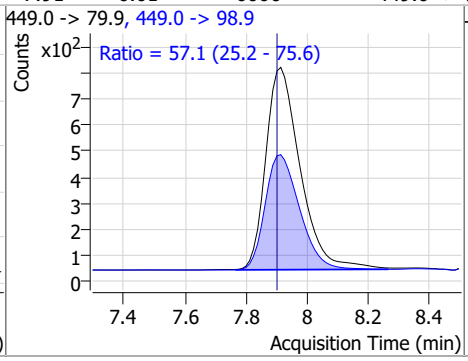
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.73	7.79	0.00	26721	463.0 -> 219.0	23.2	10.8	32.5

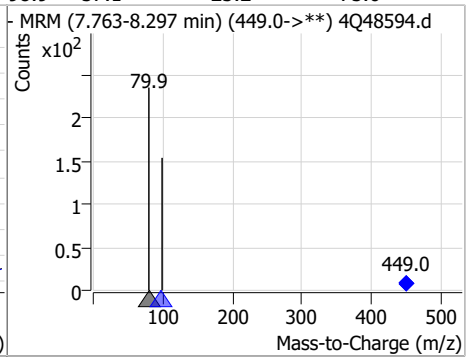


Perfluorinated Compounds by LC/MS/MS

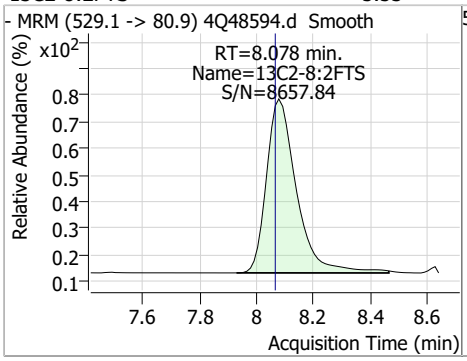
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.39	7.91	0.01	6006	449.0 -> 98.9	57.1	25.2	75.6

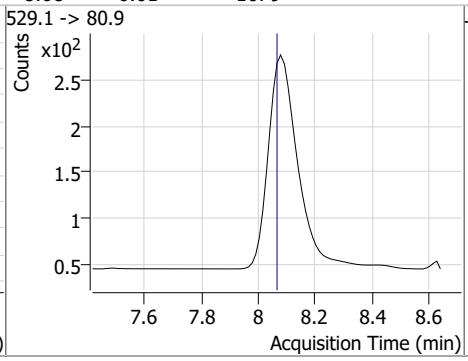


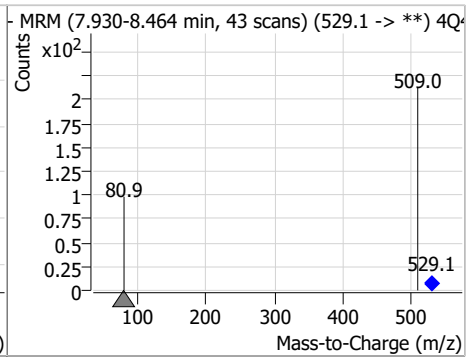




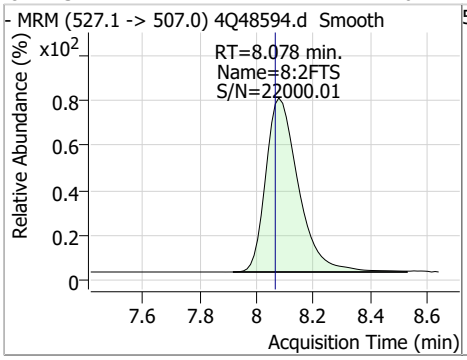
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.53	8.08	0.01	1679				

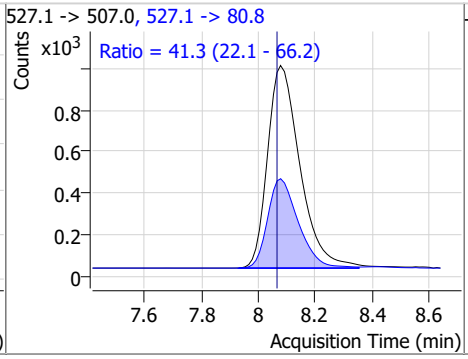


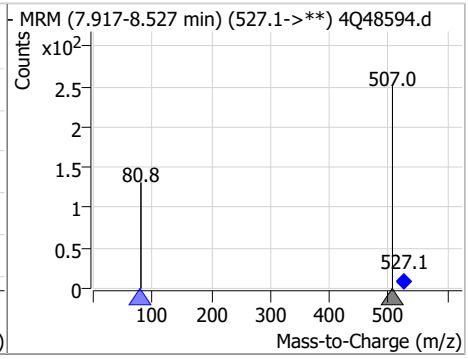




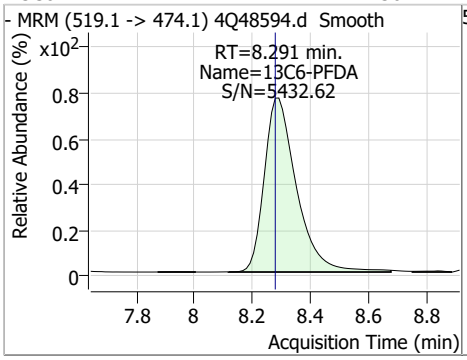
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.40	8.08	0.01	7686	527.1 -> 80.8	41.3	22.1	66.2

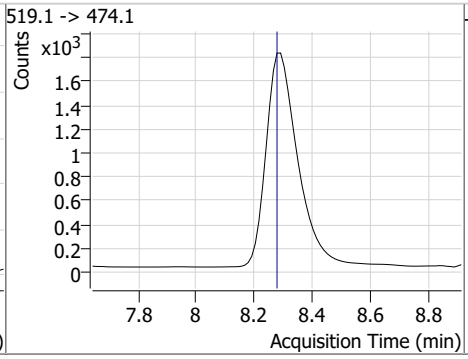


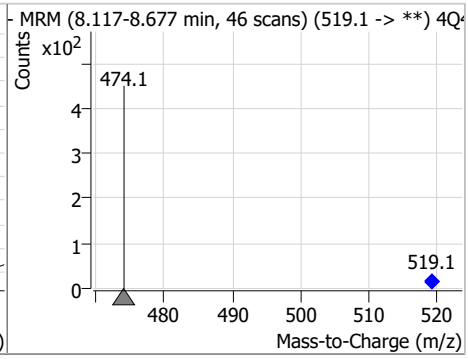




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.30	8.29	0.01	13830				

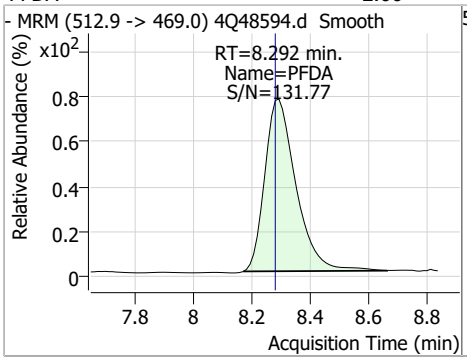


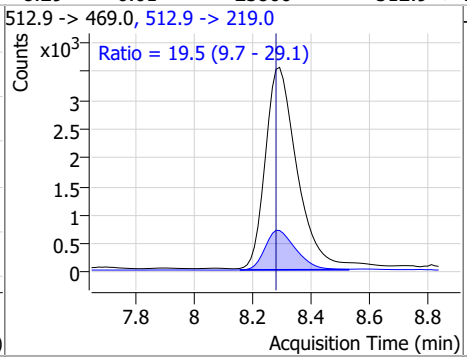


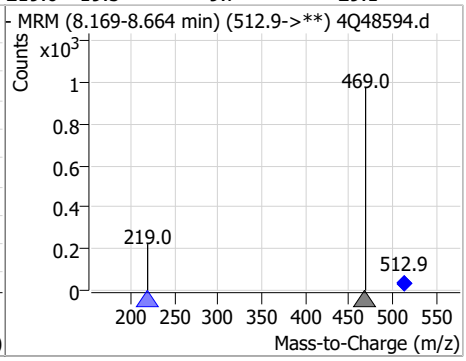


Perfluorinated Compounds by LC/MS/MS

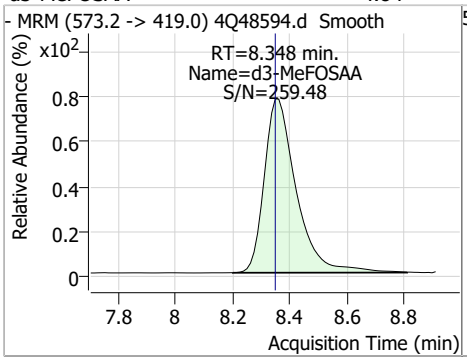
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.66	8.29	0.01	25866	512.9 -> 219.0	19.5	9.7	29.1

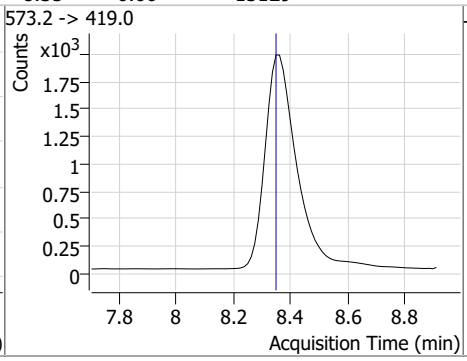


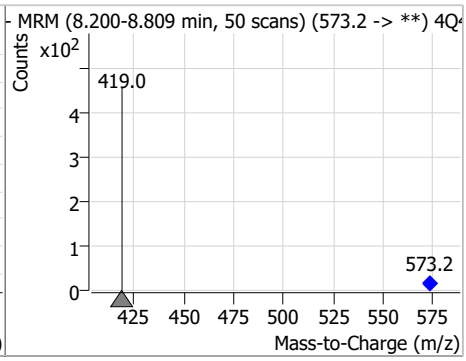




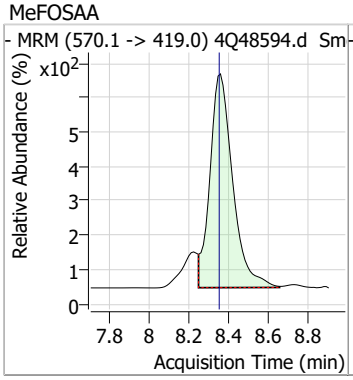
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.84	8.35	0.00	15129				

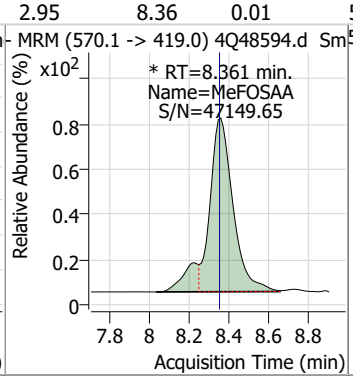


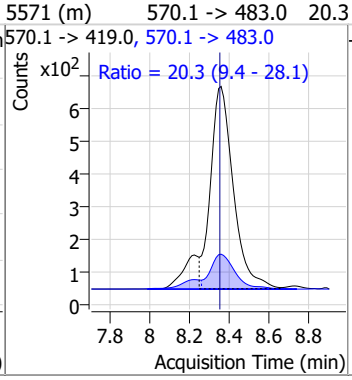


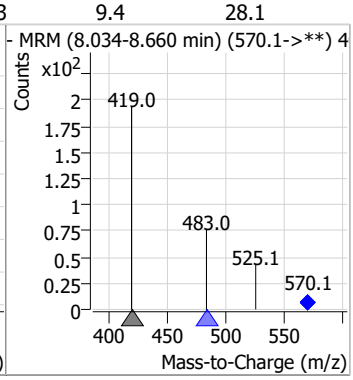


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.95	8.36	0.01	5571 (m)	570.1 -> 483.0	20.3	9.4	28.1

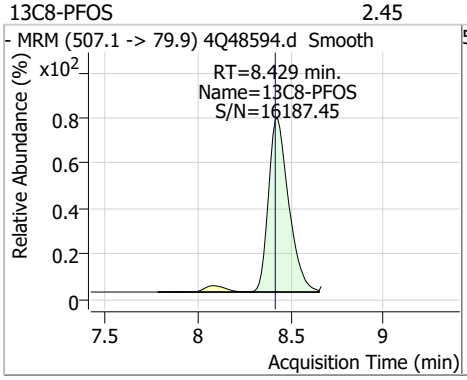


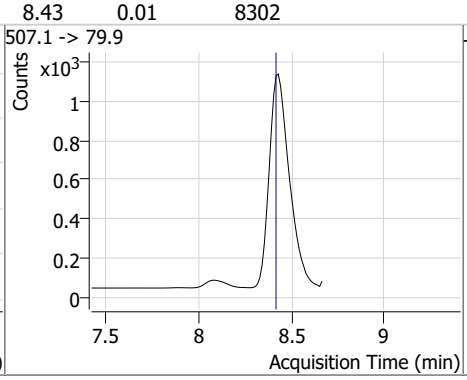


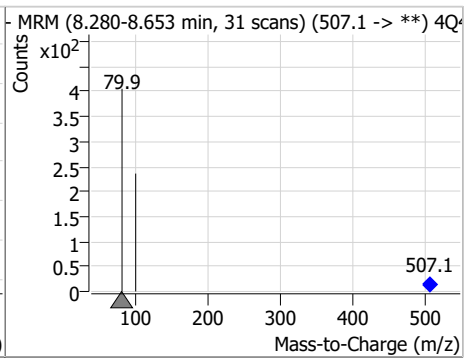




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.45	8.43	0.01	8302				

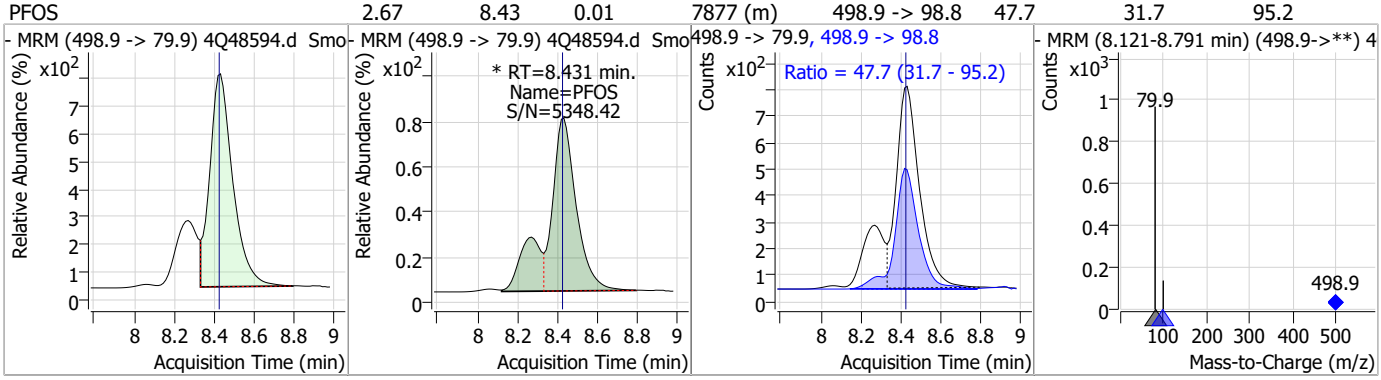




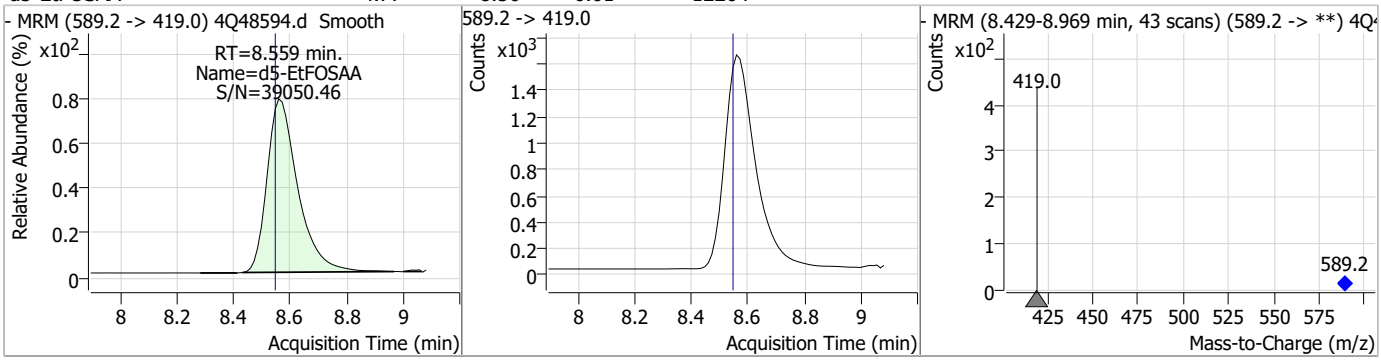


Perfluorinated Compounds by LC/MS/MS

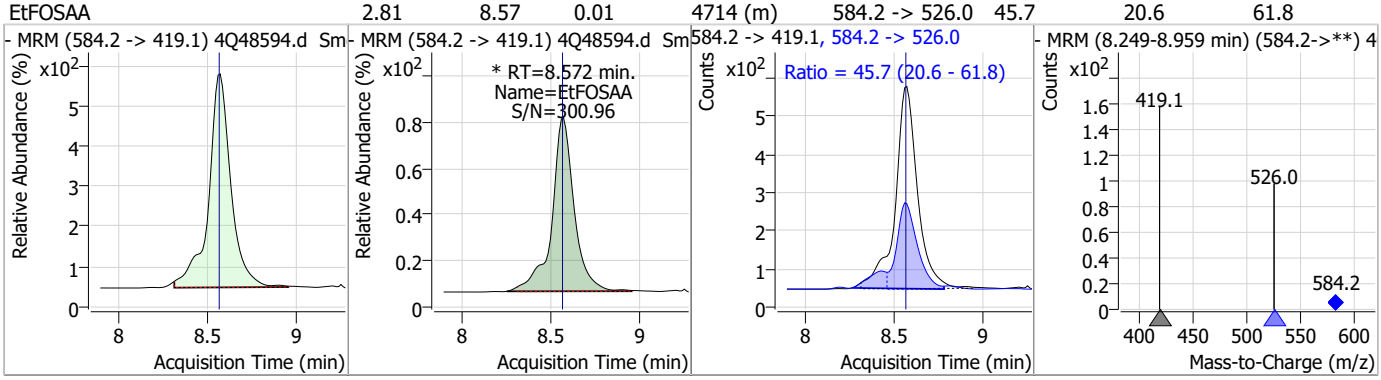
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.67	8.43	0.01	7877 (m)	498.9 -> 98.8	47.7	31.7	95.2



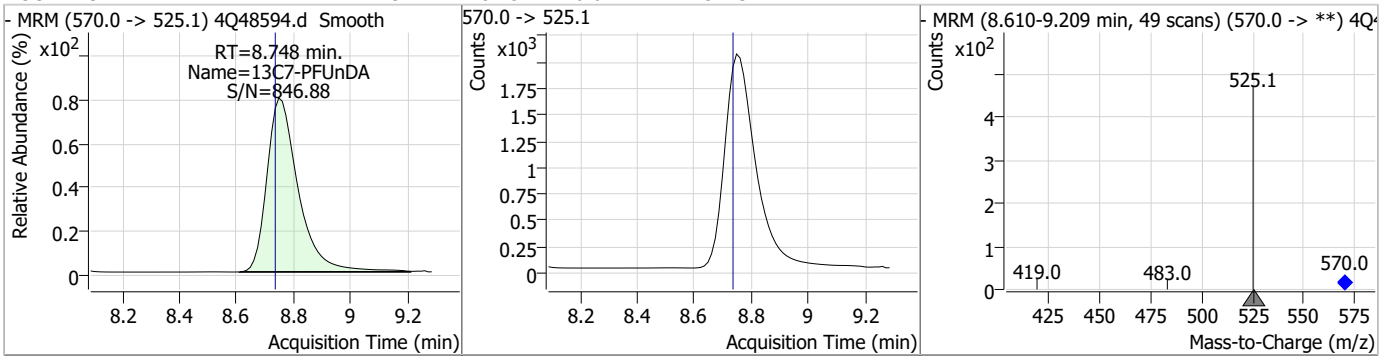
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.77	8.56	0.01	12264				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.81	8.57	0.01	4714 (m)	584.2 -> 526.0	45.7	20.6	61.8

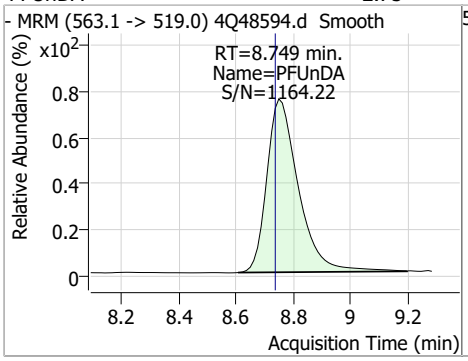


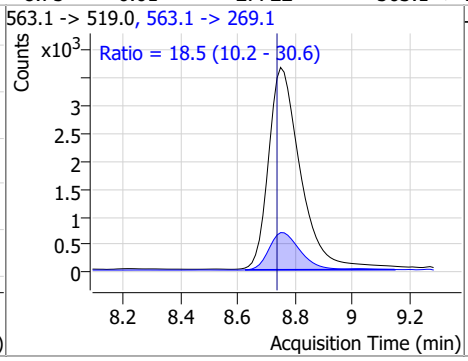
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.75	0.01	15473				

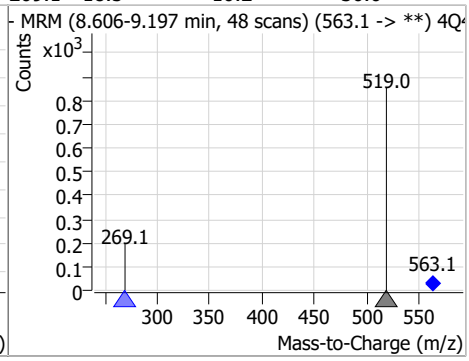


Perfluorinated Compounds by LC/MS/MS

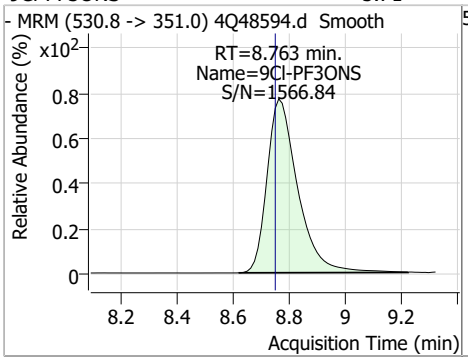
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.75	8.75	0.01	27722	563.1 -> 269.1	18.5	10.2	30.6

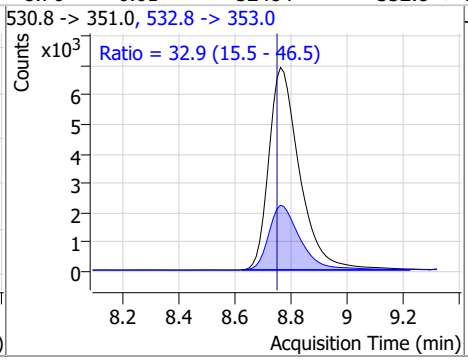


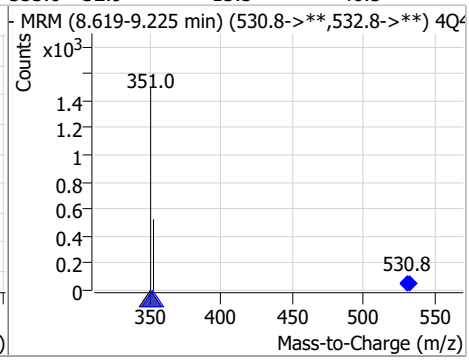




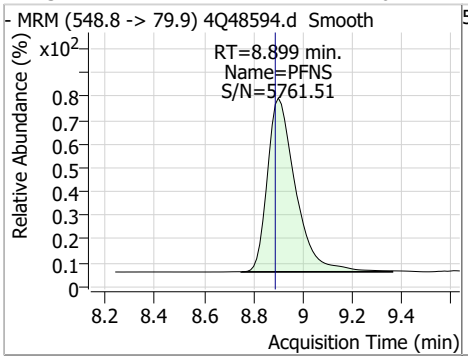
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.71	8.76	0.01	52484	532.8 -> 353.0	32.9	15.5	46.5

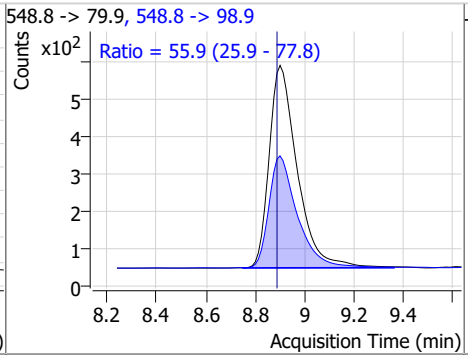


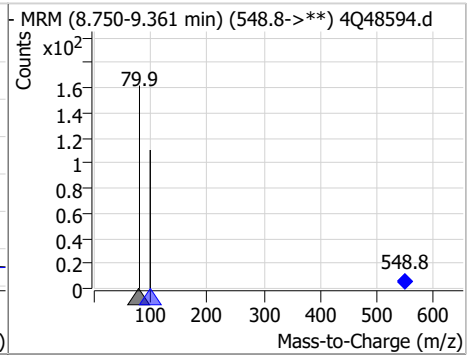




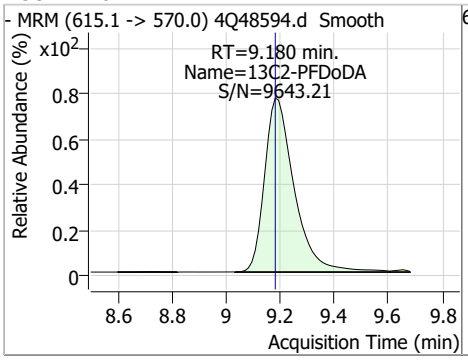
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.67	8.90	0.01	4325	548.8 -> 98.9	55.9	25.9	77.8

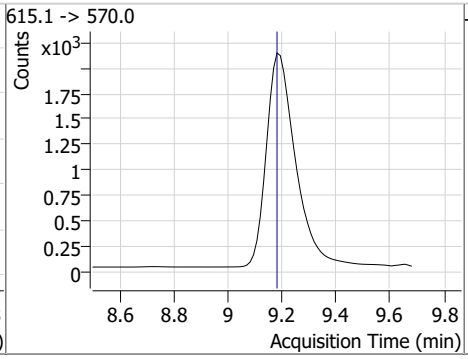


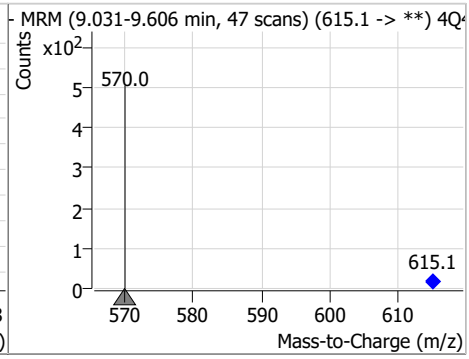




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.18	0.00	16088				

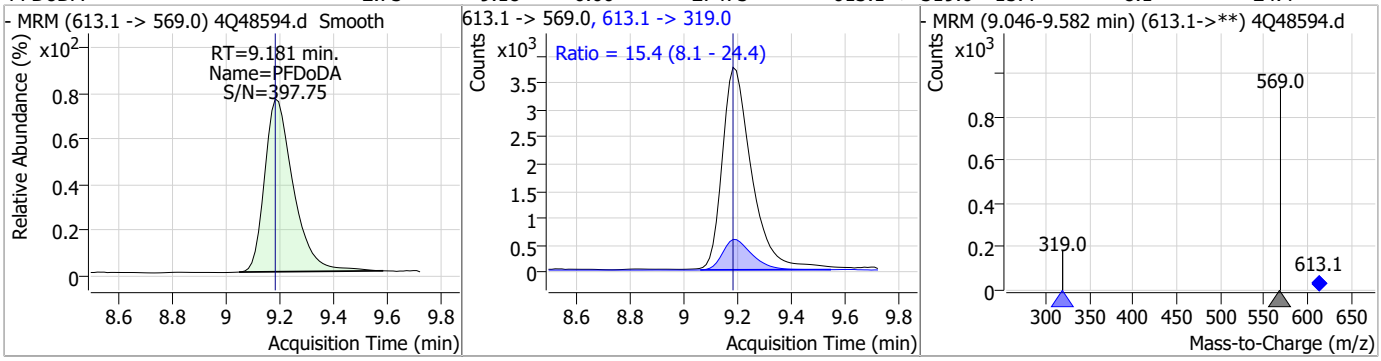




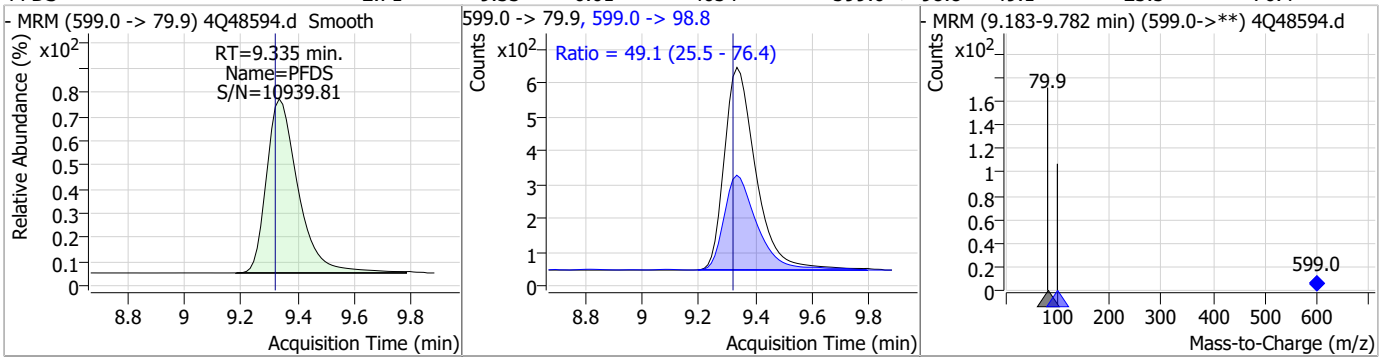


Perfluorinated Compounds by LC/MS/MS

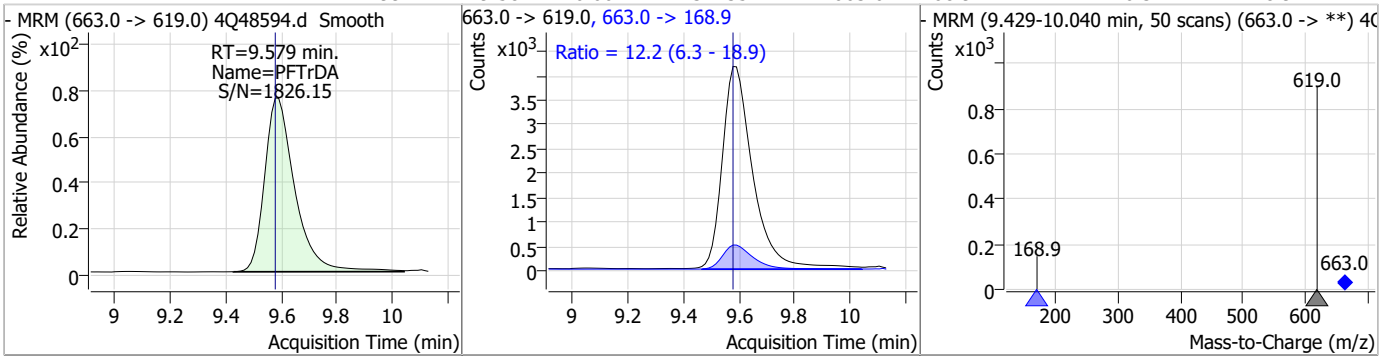
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.73	9.18	0.00	27473	613.1 -> 319.0	15.4	8.1	24.4



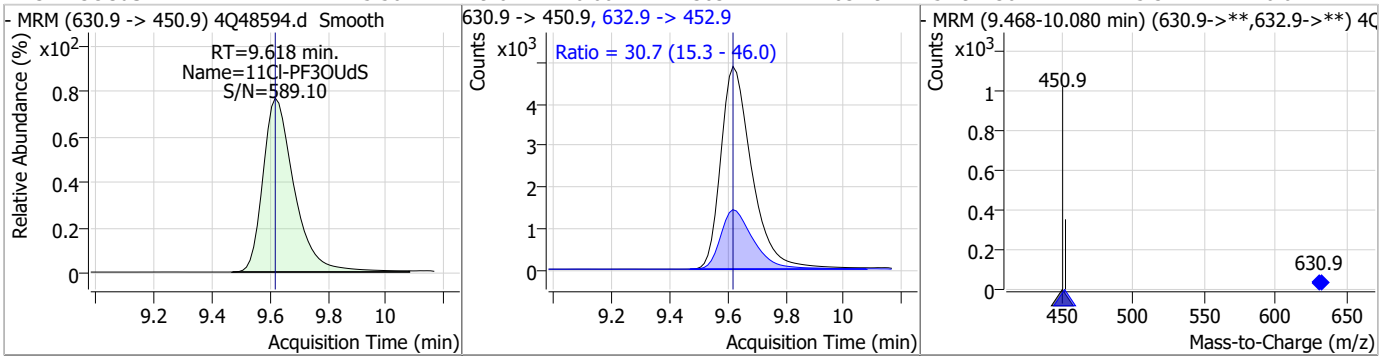
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.71	9.33	0.01	4654	599.0 -> 98.8	49.1	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.99	9.58	0.00	31135	663.0 -> 168.9	12.2	6.3	18.9

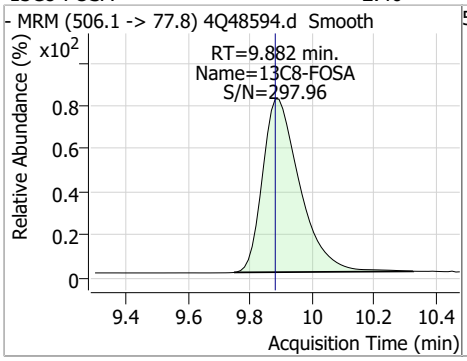


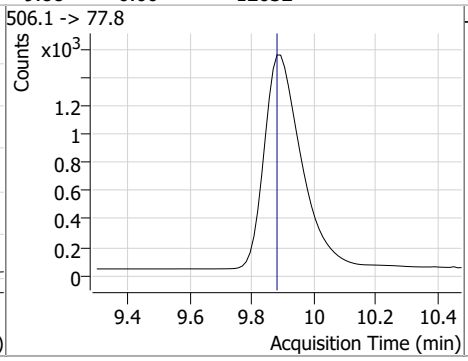
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.56	9.62	0.00	36322	632.9 -> 452.9	30.7	15.3	46.0

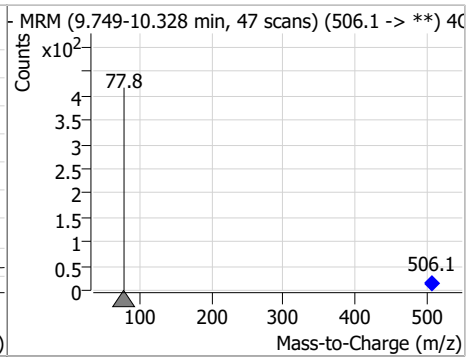


Perfluorinated Compounds by LC/MS/MS

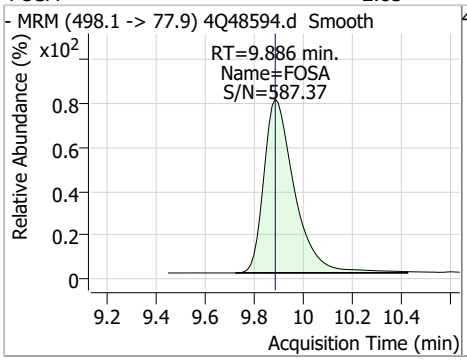
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	9.88	0.00	12632				

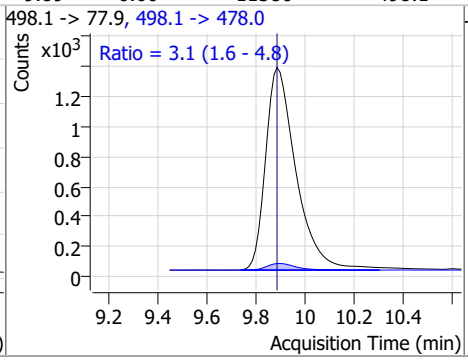


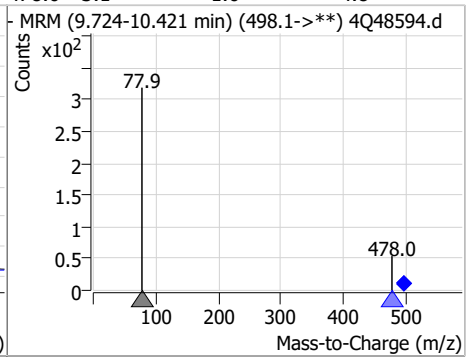




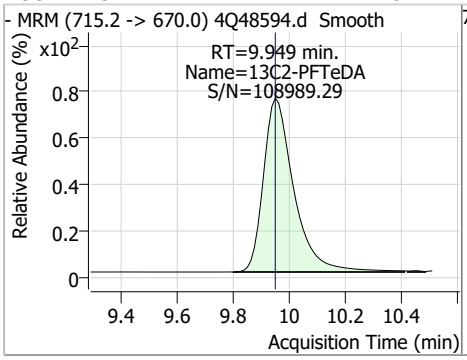
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.83	9.89	0.00	11586	498.1 -> 478.0	3.1	1.6	4.8

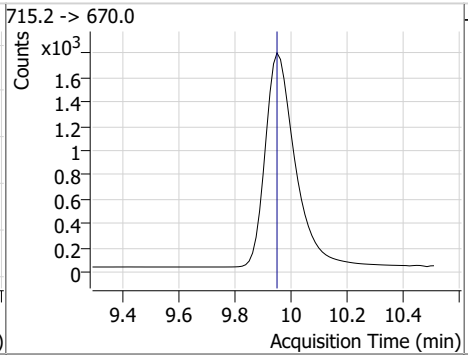


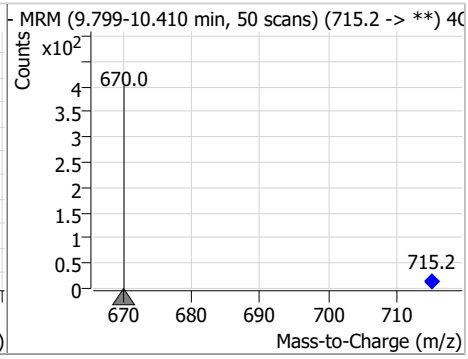




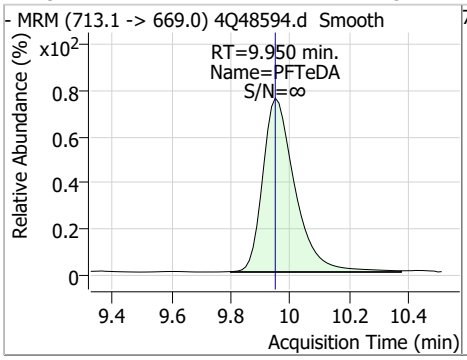
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.95	0.00	13254				

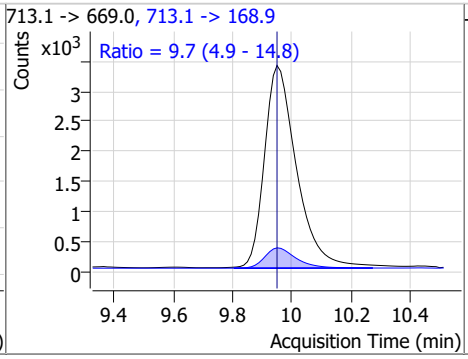


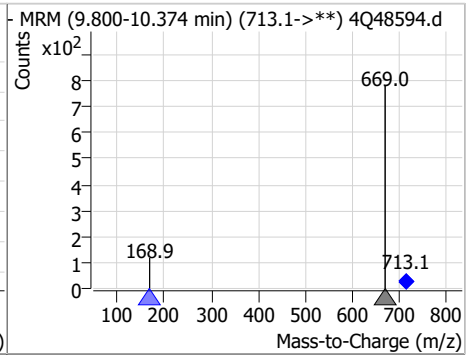




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.75	9.95	0.00	25504	713.1 -> 168.9	9.7	4.9	14.8

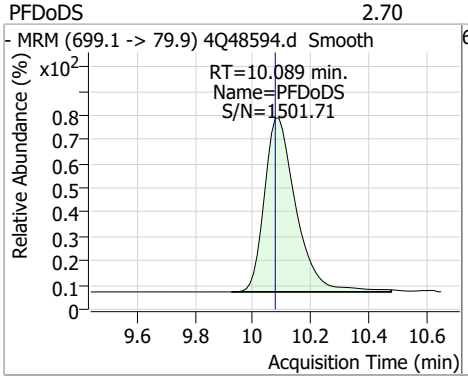


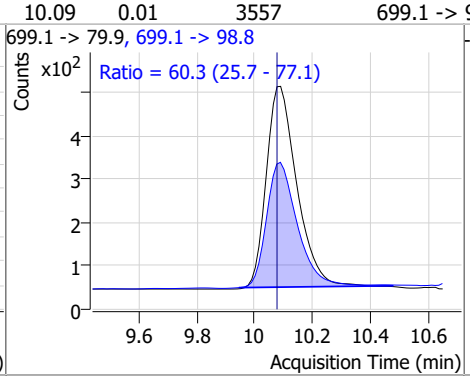


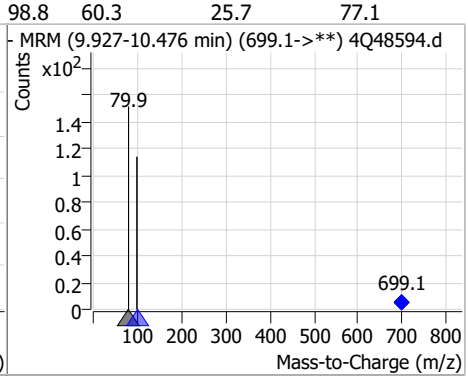


Perfluorinated Compounds by LC/MS/MS

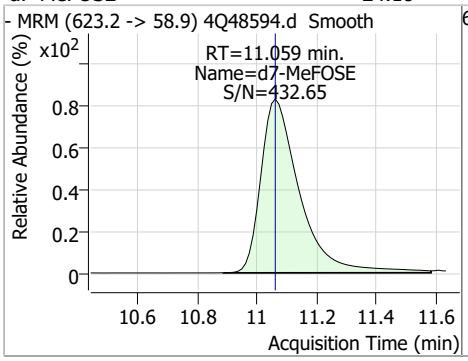
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.70	10.09	0.01	3557	699.1 -> 98.8	60.3	25.7	77.1

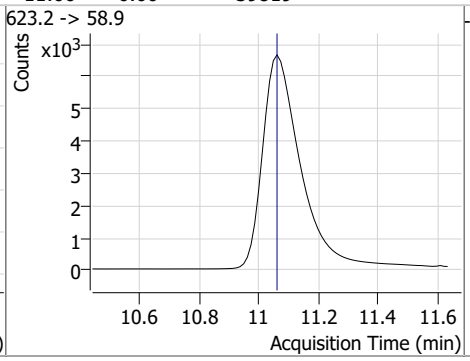


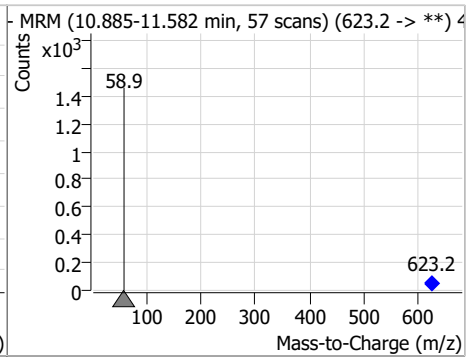




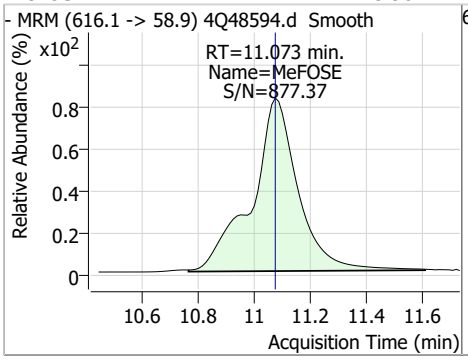
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.18	11.06	0.00	59819				

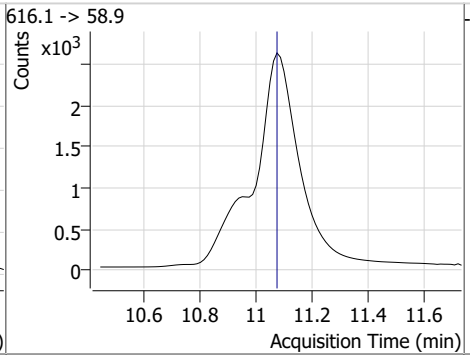


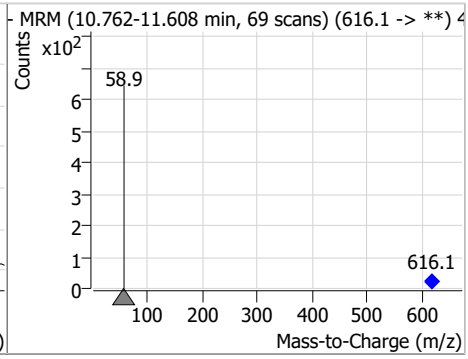




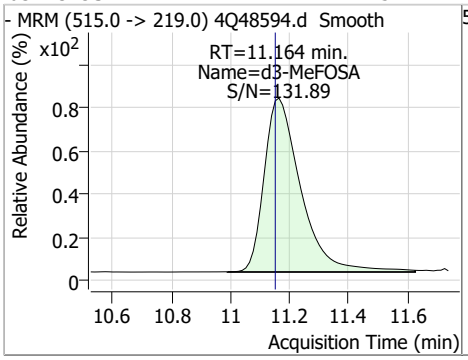
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.98	11.07	0.00	29903				

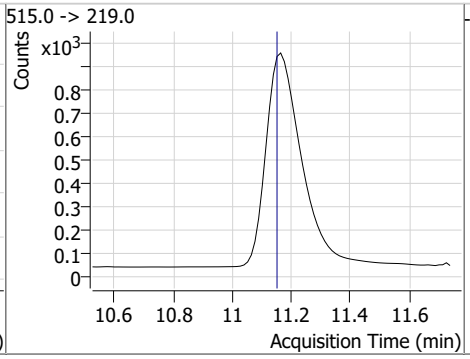


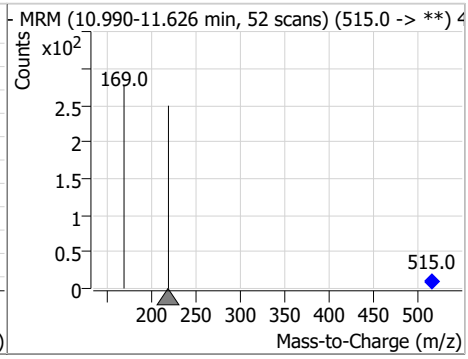




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	11.16	0.01	7870				

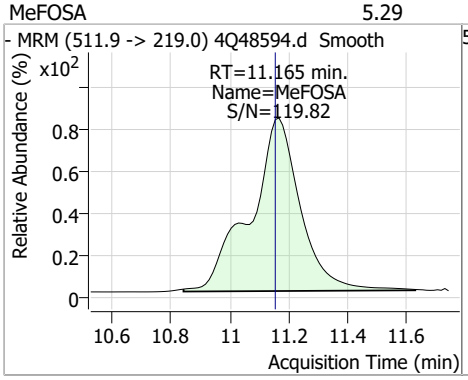


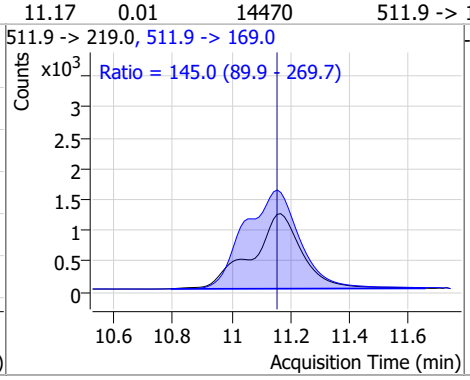


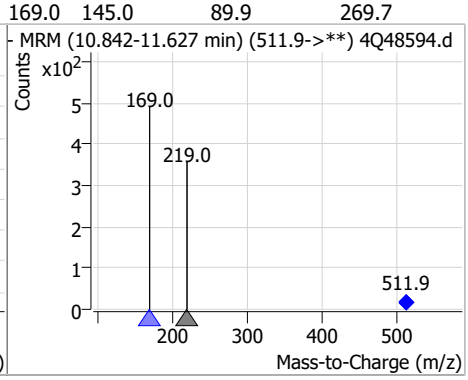


Perfluorinated Compounds by LC/MS/MS

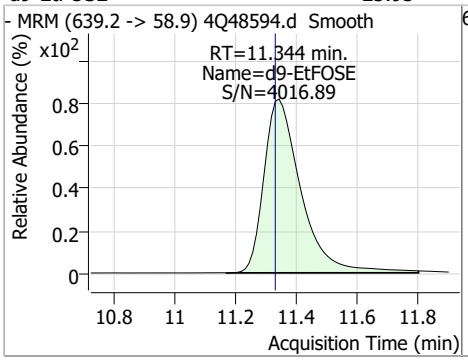
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.29	11.17	0.01	14470	511.9 -> 169.0	145.0	89.9	269.7

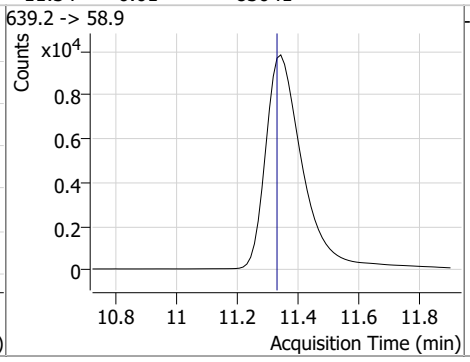


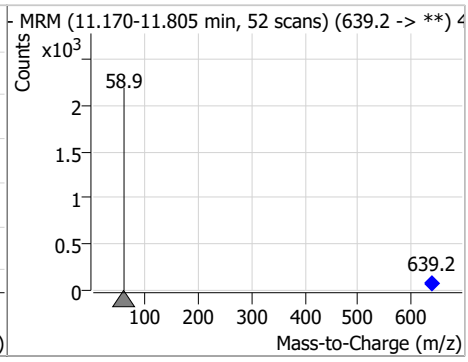




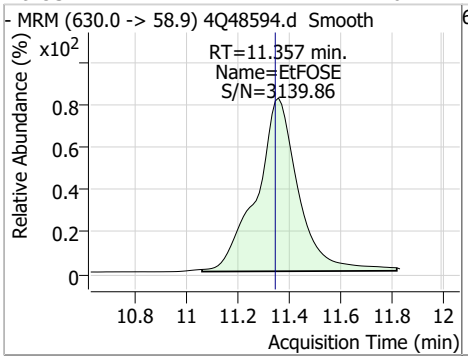
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.93	11.34	0.01	83041				

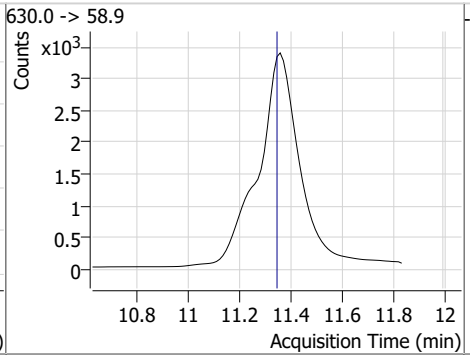


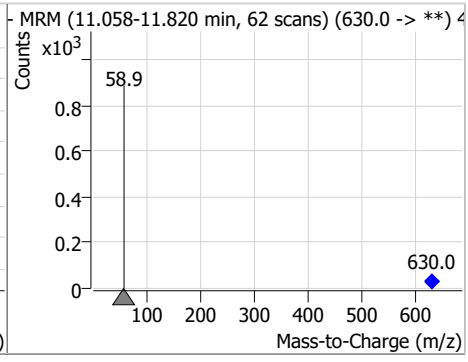




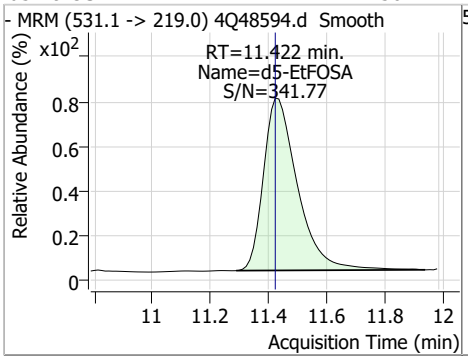
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	14.64	11.36	0.01	38051				

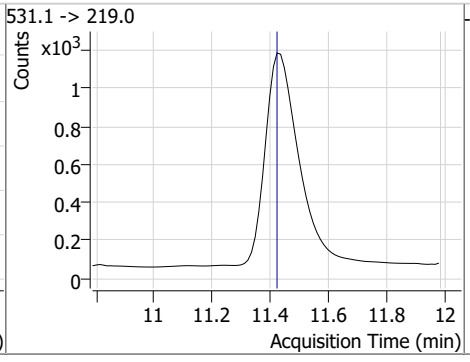


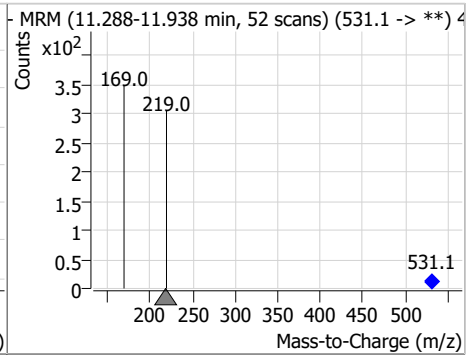




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	11.42	0.00	9133				

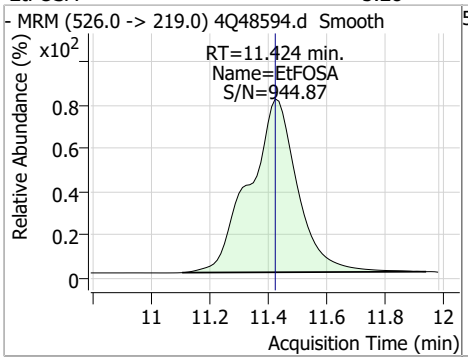


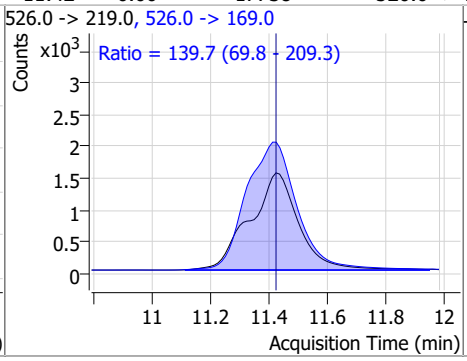


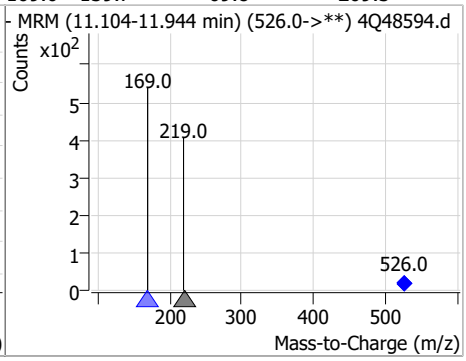


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.28	11.42	0.00	17738	526.0 -> 169.0	139.7	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-ICV711
Lab FileID: 4Q48594.D
Injection Time: 08/07/23 18:42

Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
MeFOSAA	2355-31-9		8.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/09/23 14:46

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48595.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/7/2023 6:57:24 PM
Sample Name : icv711-20
Vial : P1-B4
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q711.batch.bin
Sample Information : OP97964,S4Q711,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	107092	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	64229	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	37909	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	27566	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	45419	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	19366	1.25	µg/L	0.000
M6-PFDA	8.279	519.1 -> 474.1	14724	1.25	µg/L	0.000
M7-PFUnDA	8.748	570.0 -> 525.1	17166	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	19044	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	14774	1.25	µg/L	0.000
M8-FOSA	9.882	506.1 -> 77.8	13818	2.50	µg/L	0.000
M3-PFBS	5.502	302.1 -> 79.9	9898	2.50	µg/L	0.013
M3-PFHxS	7.317	402.1 -> 79.9	6526	2.50	µg/L	0.000
M8-PFOS	8.417	507.1 -> 79.9	8681	2.50	µg/L	0.000
M2-4:2FTS	5.309	329.1 -> 80.9	639	5.00	µg/L	0.012
M2-6:2FTS	7.011	429.1 -> 80.9	1201	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	1583	5.00	µg/L	0.012
M3-MeFOSAA	8.348	573.2 -> 419.0	16551	5.00	µg/L	0.000
M3-HFPO-DA	5.989	286.9 -> 168.9	35054	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	13631	5.00	µg/L	0.012
M7-MeFOSE	11.059	623.2 -> 58.9	64821	25.00	µg/L	0.000
M9-EtFOSE	11.344	639.2 -> 58.9	88633	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	9481	2.50	µg/L	0.000
M3-MeFOSA	11.164	515.0 -> 219.0	8284	2.50	µg/L	0.012
13C4-PFOS	8.418	502.8 -> 79.9	8691	2.50	µg/L	0.000
13C3-PFBA	2.903	216.0 -> 172.0	61499	5.00	µg/L	0.000
18O2-PFHxS	7.316	403.0 -> 83.9	4632	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	54984	2.50	µg/L	0.012
13C2-PFDA	8.279	515.1 -> 470.1	16407	1.25	µg/L	0.000
13C5-PFNA	7.785	468.0 -> 423.0	21747	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	36803	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	639	5.53	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1201	5.43	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C2-8:2FTS	8.078	529.1 -> 80.9	1583	4.71	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFDoDA	9.180	615.1 -> 570.0	19044	1.35	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C2-PFTeDA	9.949	715.2 -> 670.0	14774	1.31	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C3-PFBS	5.502	302.1 -> 79.9	9898	2.51	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-PFHxS	7.317	402.1 -> 79.9	6526	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 = 101.8%		
13C4-PFBA	2.899	216.8 -> 171.9	107092	10.19 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFHpA	6.568	367.1 -> 322.0	27566	2.51 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C5-PFHxA	5.610	318.0 -> 273.0	37909	2.46 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFPeA	4.412	268.3 -> 223.0	64229	4.99 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C6-PFDA	8.279	519.1 -> 474.1	14724	1.30 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C7-PFUnDA	8.748	570.0 -> 525.1	17166	1.34 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C8-FOSA	9.882	506.1 -> 77.8	13818	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C8-PFOA	7.238	421.1 -> 376.0	45419	2.51 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-PFOS	8.417	507.1 -> 79.9	8681	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C9-PFNA	7.785	472.1 -> 427.0	19366	1.18 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.0%		
d3-MeFOSAA	8.348	573.2 -> 419.0	16551	5.13 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	35054	10.00 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d3-MeFOSA	11.164	515.0 -> 219.0	8284	2.59 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%		
d5-EtFOSAA	8.559	589.2 -> 419.0	13631	5.14 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
d7-MeFOSE	11.059	623.2 -> 58.9	64821	25.40 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d9-EtFOSE	11.344	639.2 -> 58.9	88633	24.76 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
d5-EtFOSA	11.422	531.1 -> 219.0	9481	2.58 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%		
Target Compounds						**QValue**
4:2FTS	5.297	327.1 -> 307.0	16963	19.68 µg/L		99
		327.1 -> 80.9	7061			
6:2FTS	7.011	427.1 -> 407.0	20655	20.26 µg/L		97
		427.1 -> 80.9	7697			
8:2FTS	8.078	527.1 -> 507.0	15965	25.12 µg/L		94
		527.1 -> 80.8	6401			
EtFOSAA	8.559	584.2 -> 419.1	38576	20.71 µg/L	m	95
		584.2 -> 526.0	17152			
FOSA	9.886	498.1 -> 77.9	87730	19.62 µg/L		99
		498.1 -> 478.0	2587			
MeFOSAA	8.349	570.1 -> 419.0	44332	21.43 µg/L		99
		570.1 -> 483.0	8577			
PFBA	2.907	212.8 -> 168.9	48340	19.60 µg/L		100
PFBS	5.503	298.7 -> 79.9	56198	23.25 µg/L		99
		298.7 -> 98.8	21257			
PFDA	8.279	512.9 -> 469.0	217573	21.03 µg/L		99
		512.9 -> 219.0	41186			
PFDoDA	9.181	613.1 -> 569.0	212654	17.85 µg/L		99
		613.1 -> 319.0	33890			
PFDS	9.335	599.0 -> 79.9	37366	20.84 µg/L		98

Perfluorinated Compounds by LC/MS/MS

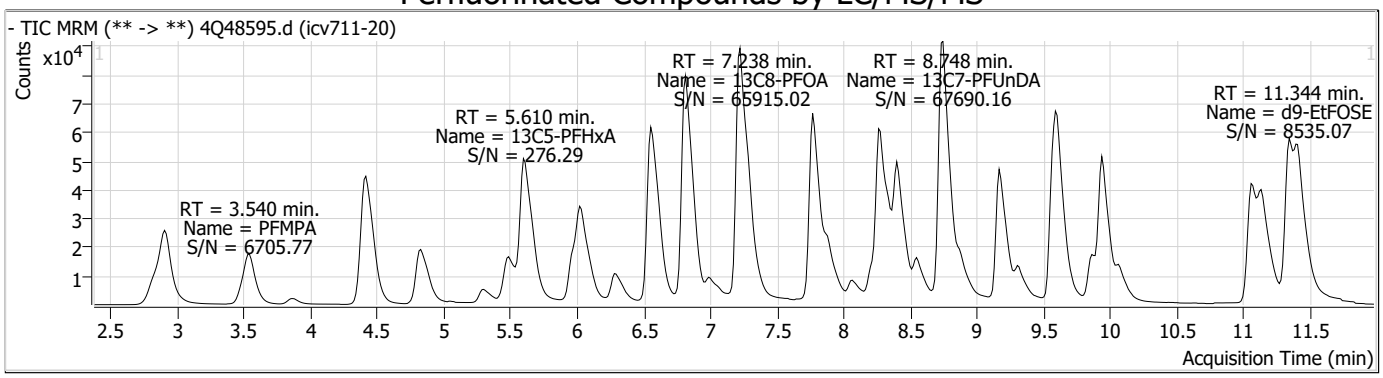
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	18636				
PFHpA	6.568	363.1 -> 319.0	261564	21.03	µg/L		99
		363.1 -> 169.0	46429				
PFHpS	7.913	449.0 -> 79.9	53638	20.44	µg/L		98
		449.0 -> 98.9	27951				
PFHxA	5.613	313.0 -> 269.0	231989	21.21	µg/L		99
		313.0 -> 118.9	7024				
PFHxS	7.318	398.7 -> 79.9	41855	22.35	µg/L	m	94
		398.7 -> 98.9	20275				
PFNA	7.785	463.0 -> 419.0	230603	22.88	µg/L		100
		463.0 -> 219.0	50335				
PFNS	8.899	548.8 -> 79.9	36118	21.30	µg/L		99
		548.8 -> 98.9	18983				
PFOA	7.240	413.0 -> 369.0	357088	19.83	µg/L		99
		413.0 -> 169.0	68026				
PFOS	8.419	498.9 -> 79.9	63385	20.52	µg/L	m	79
		498.9 -> 98.8	29898				
PFPeA	4.414	263.0 -> 219.0	240694	21.56	µg/L		100
PFPeS	6.582	349.1 -> 79.9	38422	21.80	µg/L		98
		349.1 -> 98.9	16544				
PFTeDA	9.950	713.1 -> 669.0	216786	20.95	µg/L		99
		713.1 -> 168.9	20596				
PFTrDA	9.579	663.0 -> 619.0	223651	18.16	µg/L		99
		663.0 -> 168.9	27375				
PFUnDA	8.749	563.1 -> 519.0	211885	18.95	µg/L		100
		563.1 -> 269.1	42978				
11Cl-PF3OUdS	9.617	630.9 -> 450.9	155511	21.16	µg/L		99
		632.9 -> 452.9	48199				
9Cl-PF3ONS	8.763	530.8 -> 351.0	217596	21.04	µg/L		99
		532.8 -> 353.0	65814				
ADONA	6.831	376.9 -> 250.9	379216	18.64	µg/L		99
		376.9 -> 84.8	95785				
HFPO-DA	5.990	284.9 -> 168.9	54882	19.03	µg/L		96
		284.9 -> 184.9	6308				
3:3FTCA	3.861	241.0 -> 177.0	11571	18.59	µg/L		99
		241.0 -> 117.0	1112				
5:3FTCA	6.296	341.0 -> 237.1	37248	20.81	µg/L		99
		341.0 -> 217.0	26023				
7:3FTCA	7.774	441.0 -> 316.9	19213	19.47	µg/L		92
		441.0 -> 336.9	46680				
EtFOSA	11.437	526.0 -> 219.0	64113	18.39	µg/L		79
		526.0 -> 169.0	73388				
EtFOSE	11.357	630.0 -> 58.9	309821	111.71	µg/L		100
MeFOSA	11.165	511.9 -> 219.0	53021	18.40	µg/L		56
		511.9 -> 169.0	62175				
MeFOSE	11.085	616.1 -> 58.9	252269	108.83	µg/L		100
PFDoDS	10.089	699.1 -> 79.9	29040	21.05	µg/L		93
		699.1 -> 98.8	16312				
NFDHA	5.491	295.0 -> 201.0	14340	20.34	µg/L		94
		295.0 -> 84.9	3979				
PFMBA	4.828	279.0 -> 85.1	128115	20.48	µg/L		100
PFMPA	3.540	229.0 -> 84.9	124204	20.36	µg/L		100
PFEESA	6.034	314.8 -> 134.9	159809	18.14	µg/L		100
		314.8 -> 82.9	5706				

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

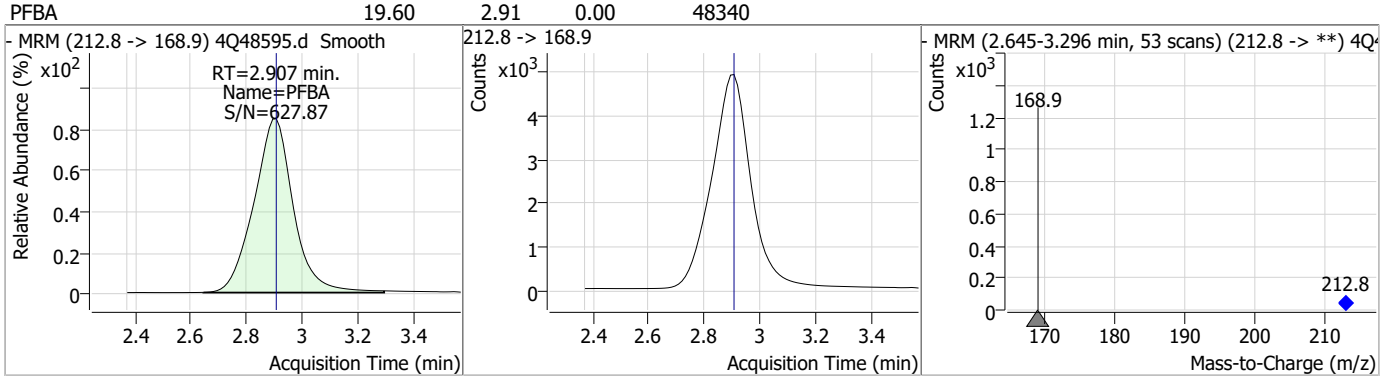
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

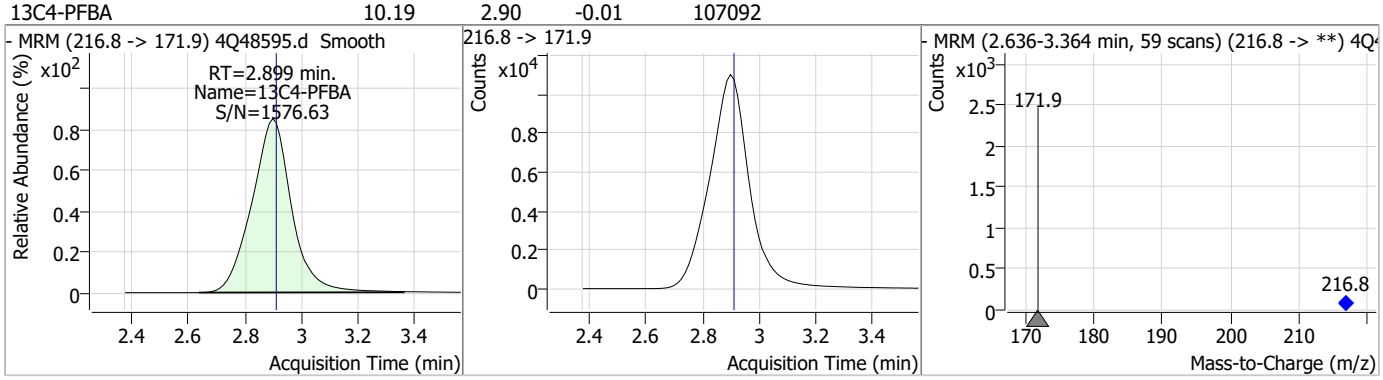
Perfluorinated Compounds by LC/MS/MS



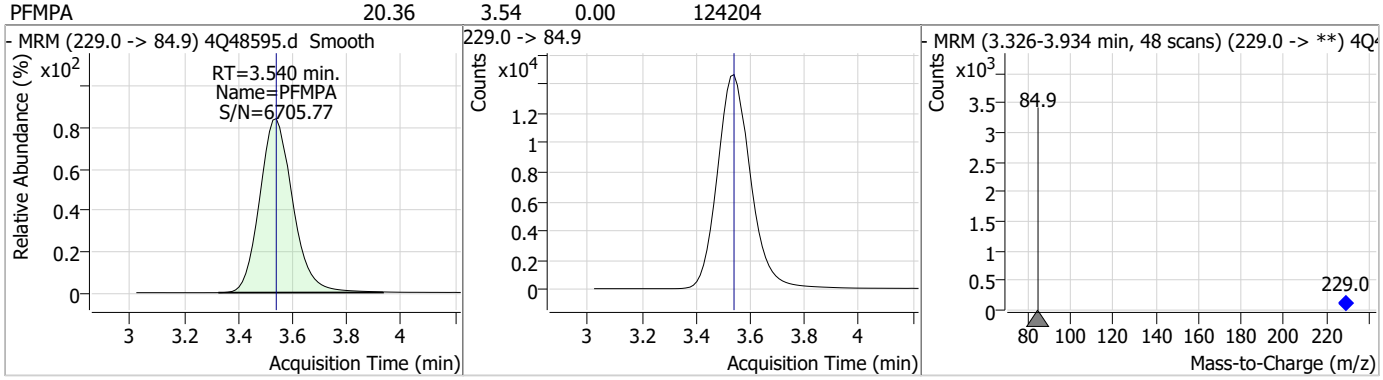
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.60	2.91	0.00	48340				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.19	2.90	-0.01	107092				

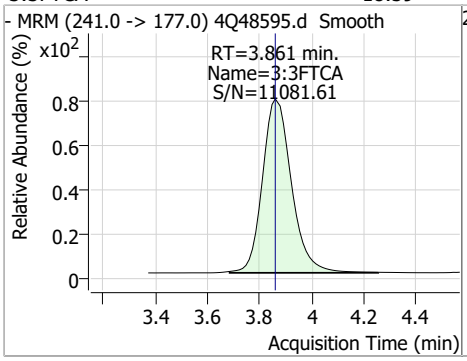


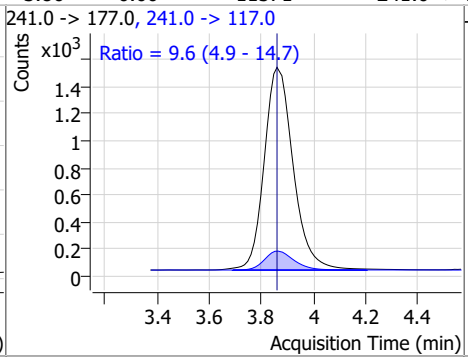
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	20.36	3.54	0.00	124204				

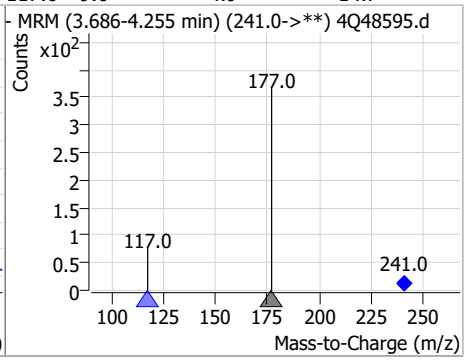


Perfluorinated Compounds by LC/MS/MS

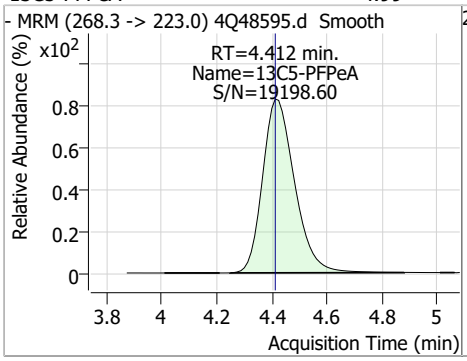
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	18.59	3.86	0.00	11571	241.0 -> 117.0	9.6	4.9	14.7

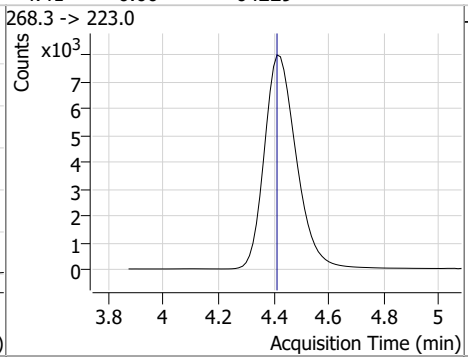


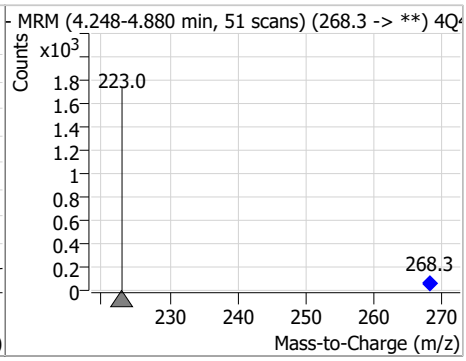




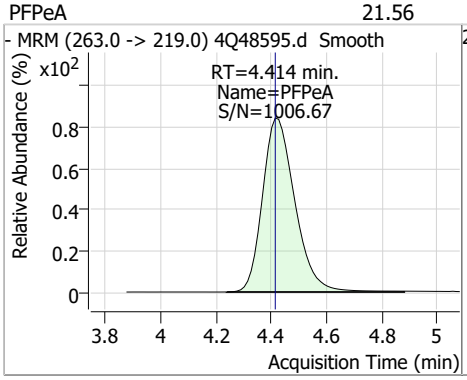
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.99	4.41	0.00	64229				

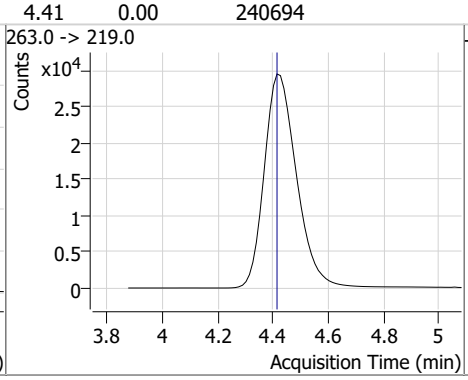


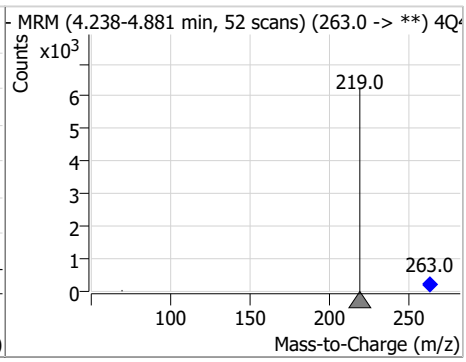




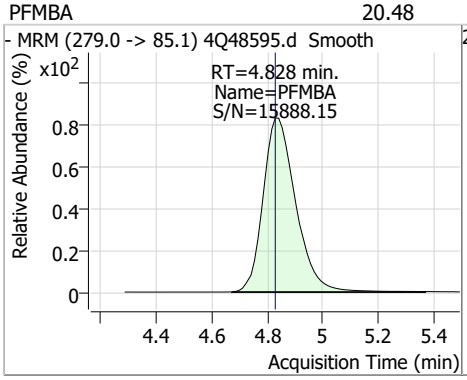
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.56	4.41	0.00	240694				

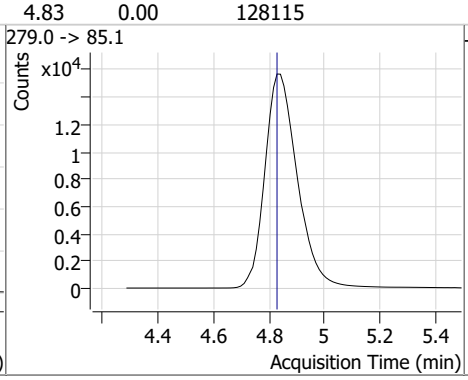


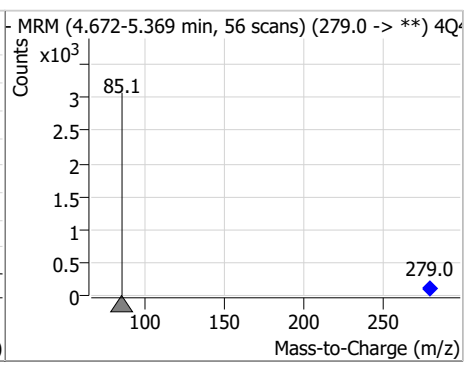




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	20.48	4.83	0.00	128115				

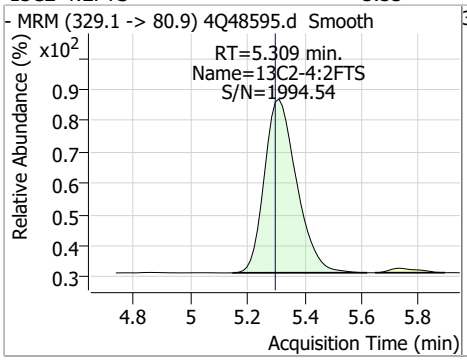


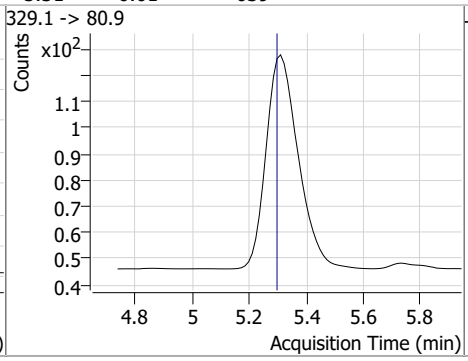


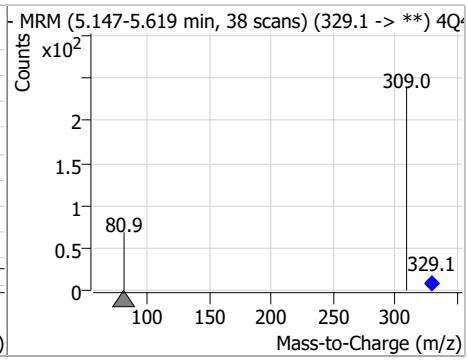


Perfluorinated Compounds by LC/MS/MS

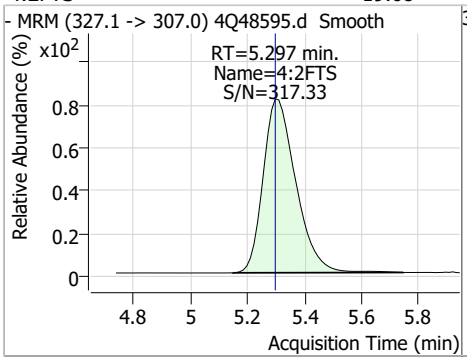
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.53	5.31	0.01	639				

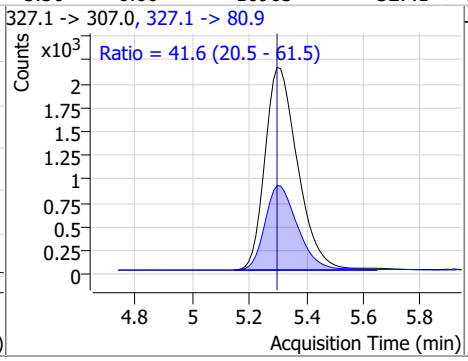


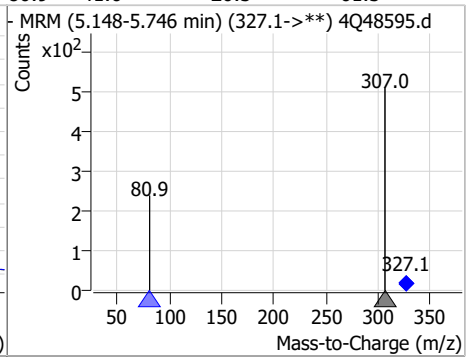




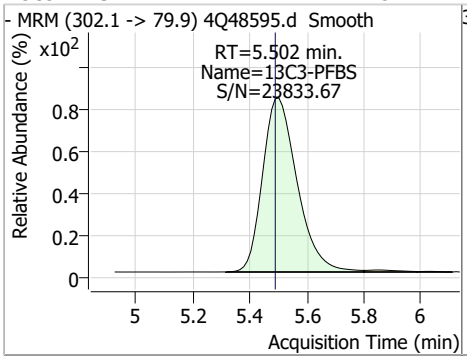
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.68	5.30	0.00	16963	327.1 -> 80.9	41.6	20.5	61.5

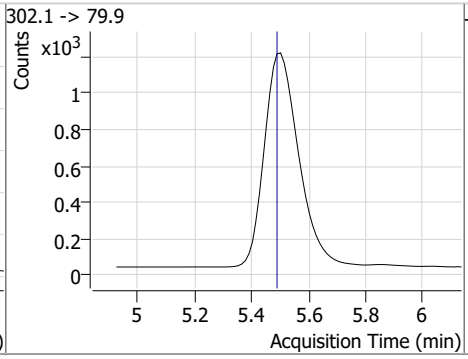


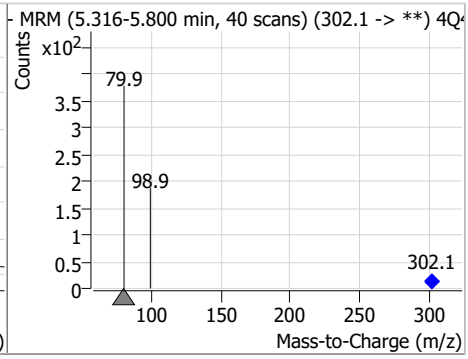




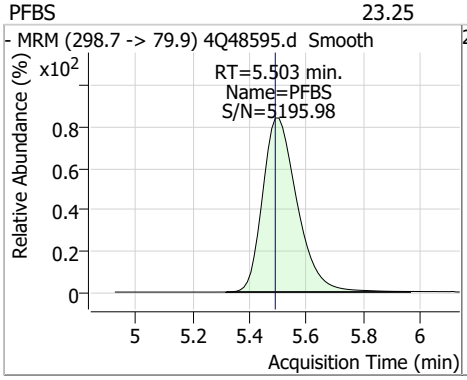
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.50	0.01	9898				

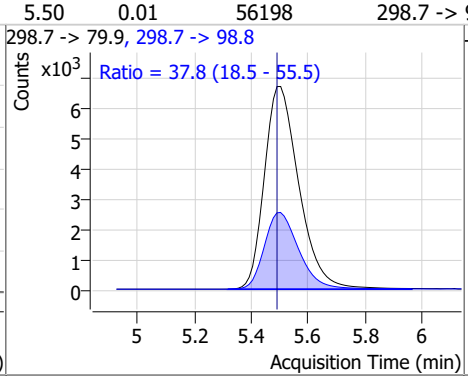


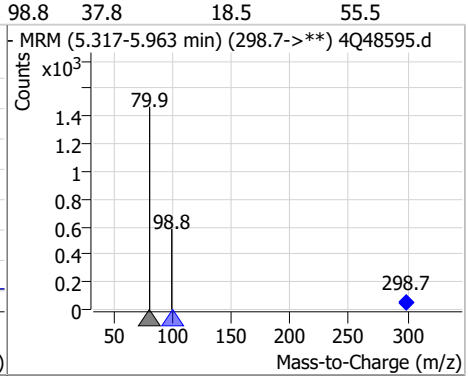




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.25	5.50	0.01	56198	298.7 -> 98.8	37.8	18.5	55.5

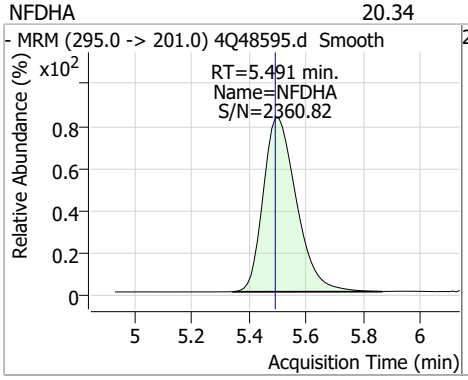


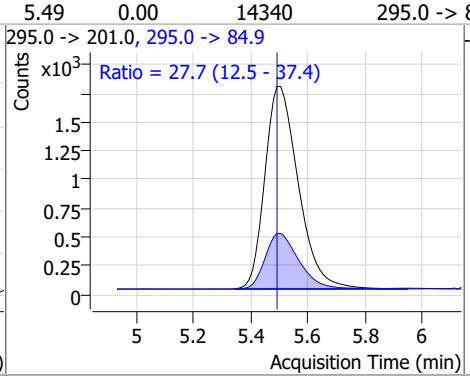


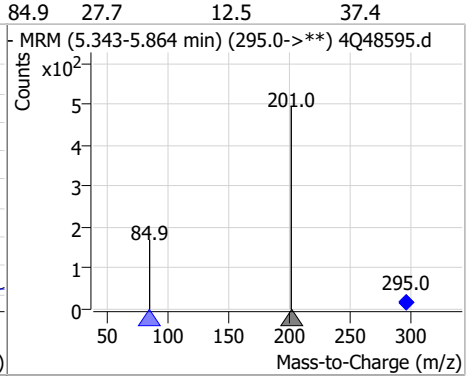


Perfluorinated Compounds by LC/MS/MS

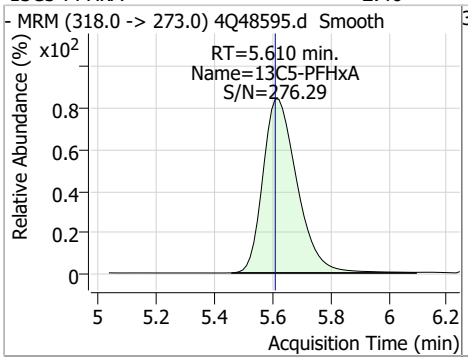
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	20.34	5.49	0.00	14340	295.0 -> 84.9	27.7	12.5	37.4

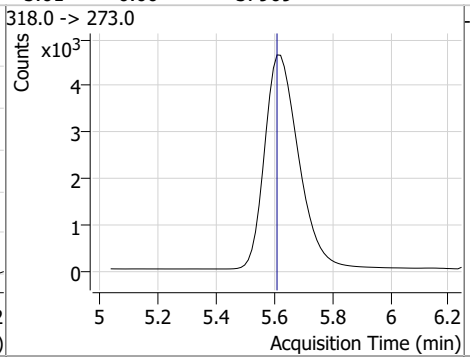


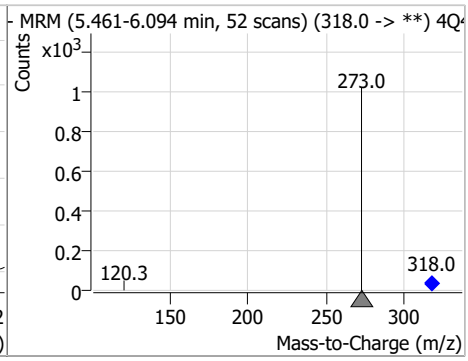




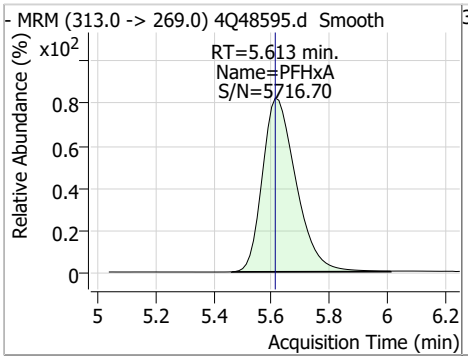
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.61	0.00	37909				

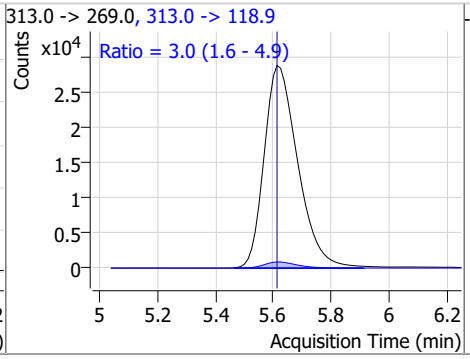


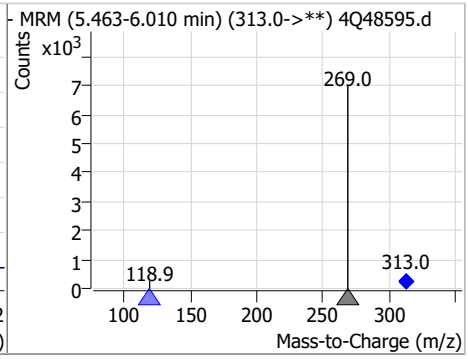




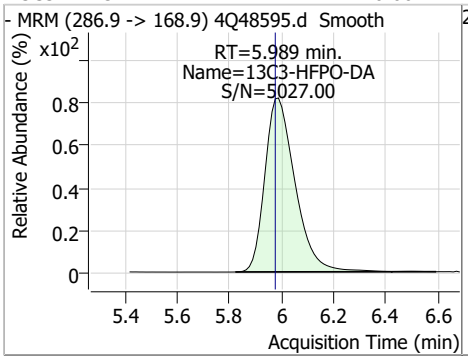
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.21	5.61	0.00	231989	313.0 -> 118.9	3.0	1.6	4.9

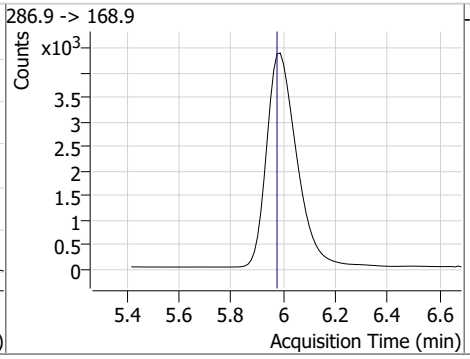


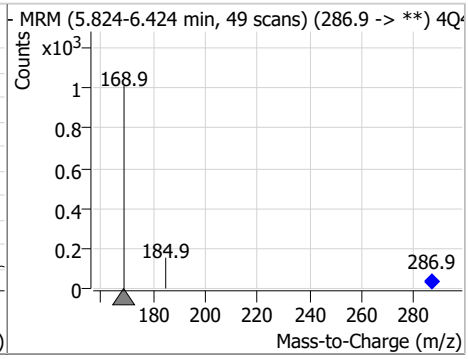




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.00	5.99	0.01	35054				

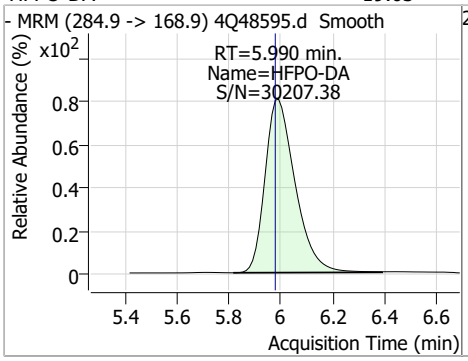


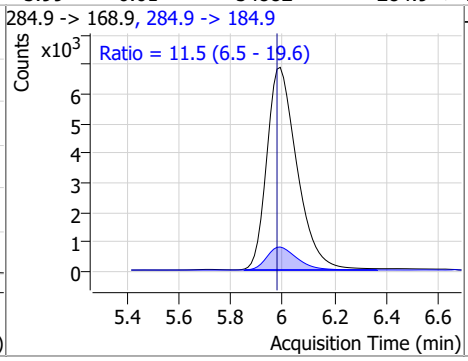


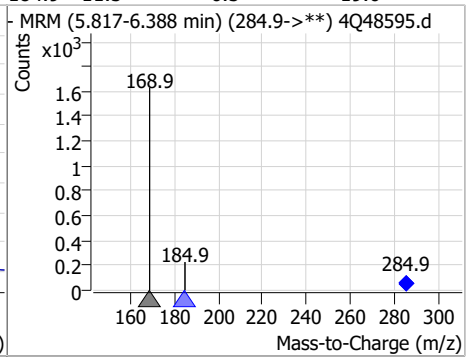


Perfluorinated Compounds by LC/MS/MS

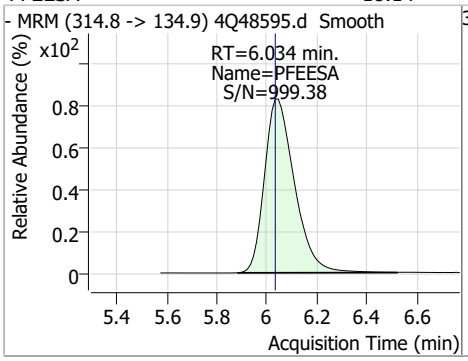
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.03	5.99	0.01	54882	284.9 -> 184.9	11.5	6.5	19.6

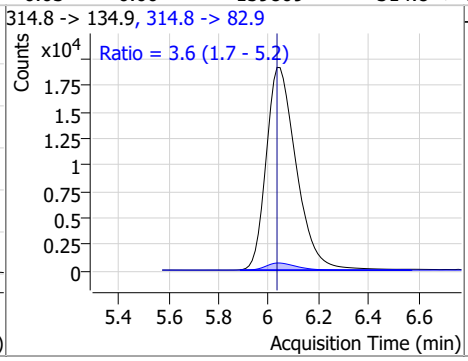


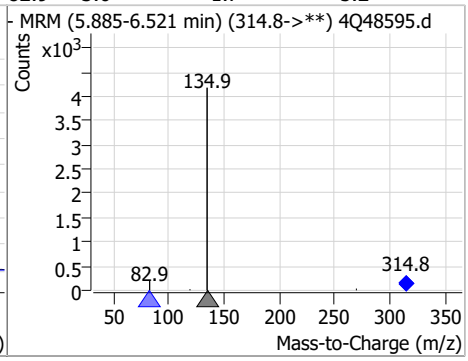




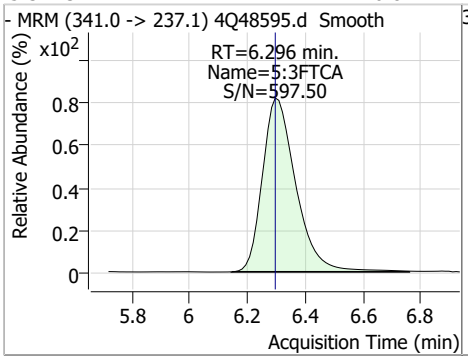
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	18.14	6.03	0.00	159809	314.8 -> 82.9	3.6	1.7	5.2

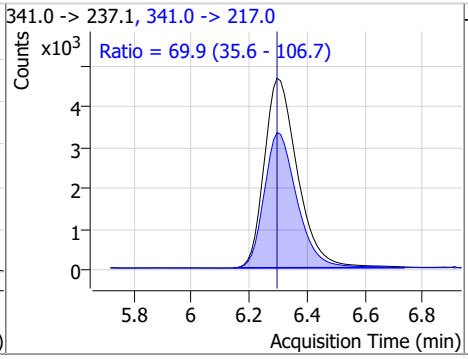


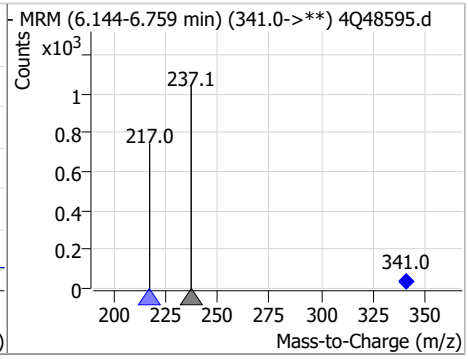




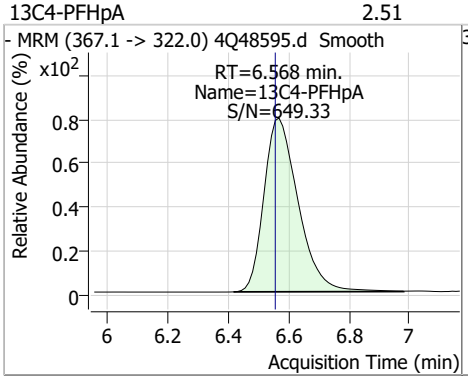
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	20.81	6.30	0.00	37248	341.0 -> 217.0	69.9	35.6	106.7

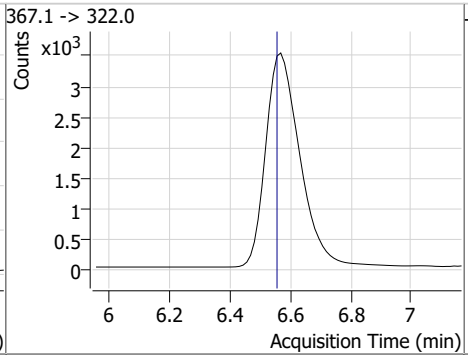


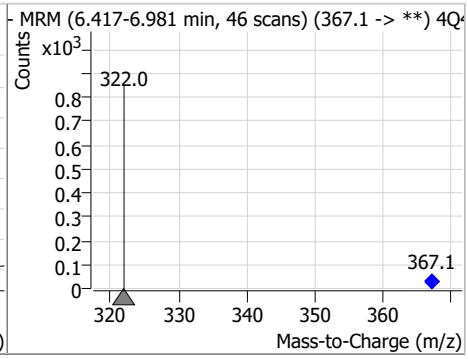




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	6.57	0.01	27566				

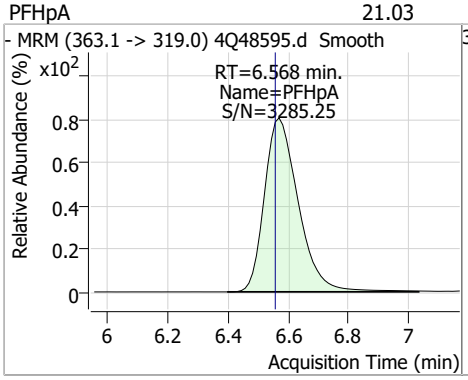


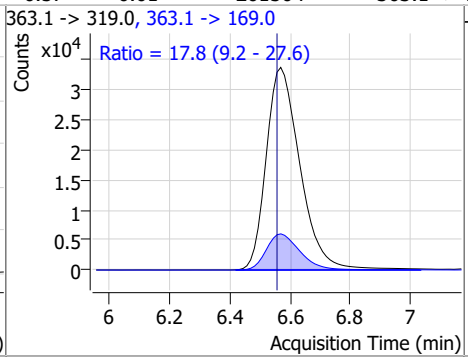


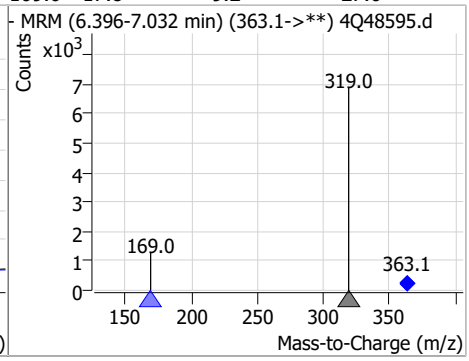


Perfluorinated Compounds by LC/MS/MS

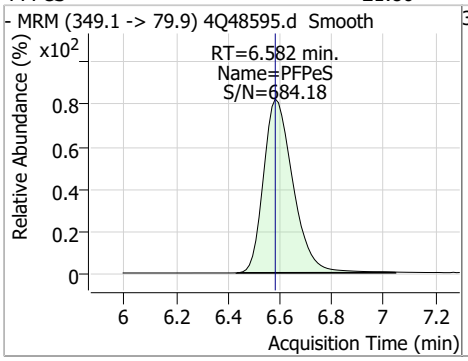
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.03	6.57	0.01	261564	363.1 -> 169.0	17.8	9.2	27.6

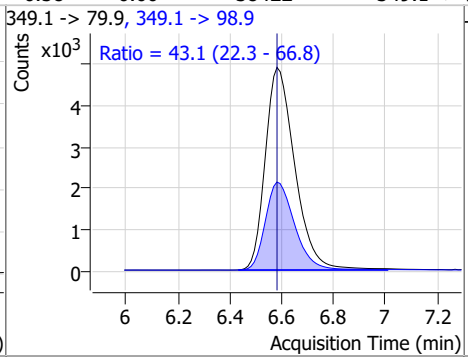


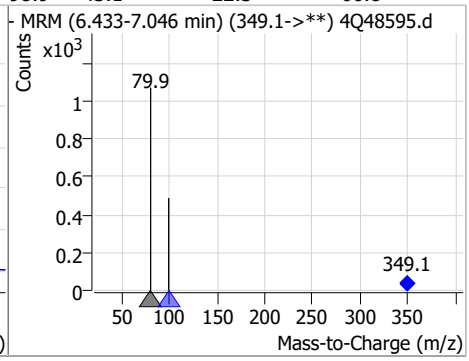




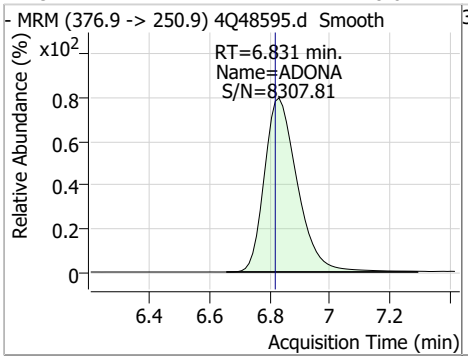
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.80	6.58	0.00	38422	349.1 -> 98.9	43.1	22.3	66.8

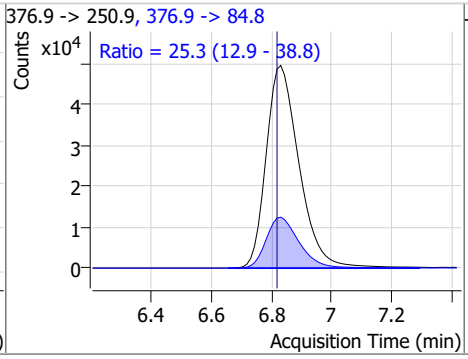


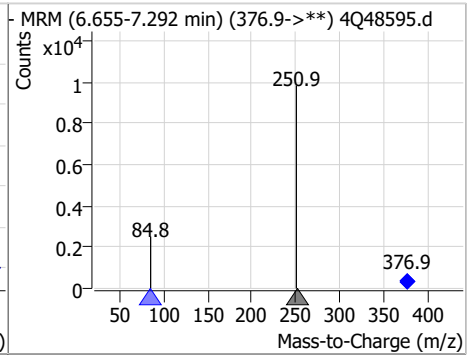




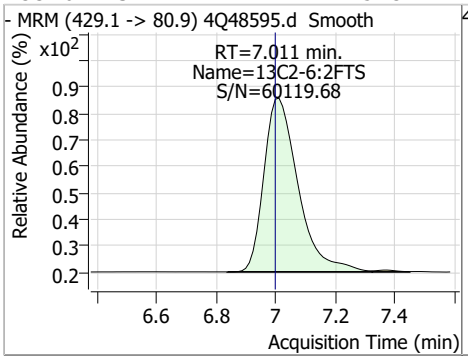
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.64	6.83	0.01	379216	376.9 -> 84.8	25.3	12.9	38.8

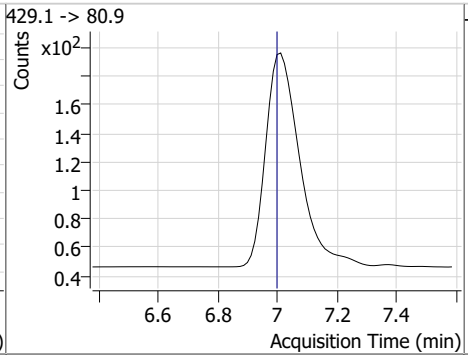


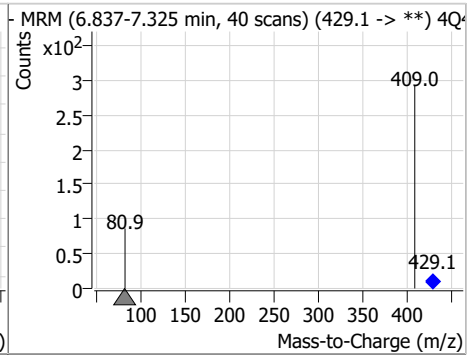




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.43	7.01	0.01	1201				

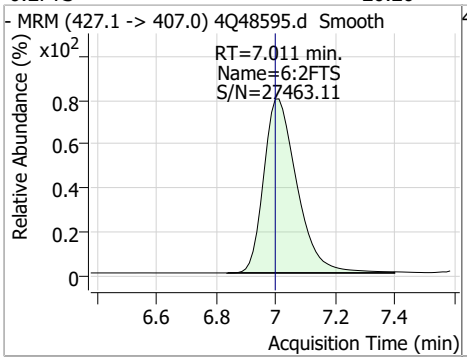


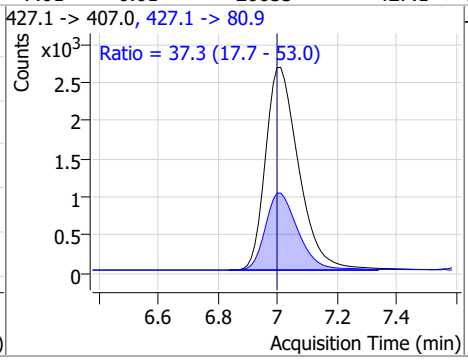


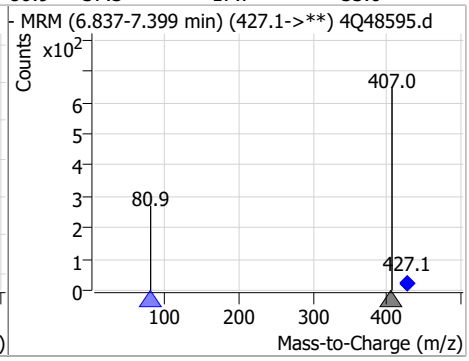


Perfluorinated Compounds by LC/MS/MS

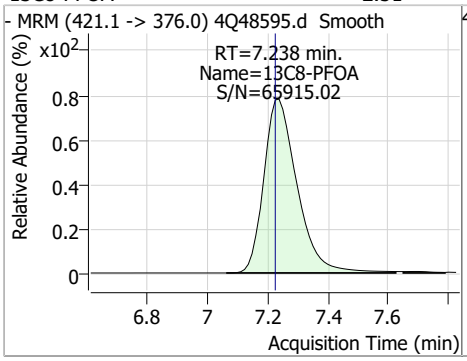
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.26	7.01	0.01	20655	427.1 -> 80.9	37.3	17.7	53.0

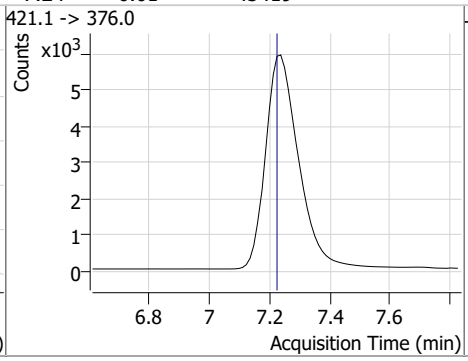


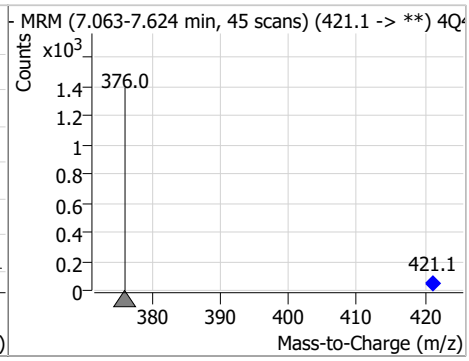




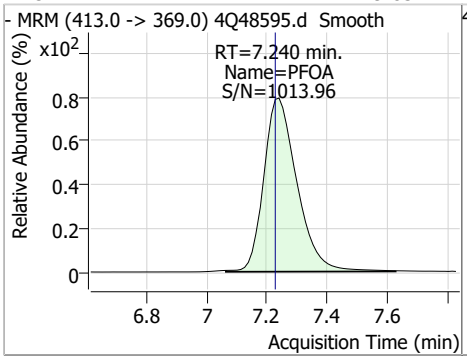
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.51	7.24	0.01	45419				

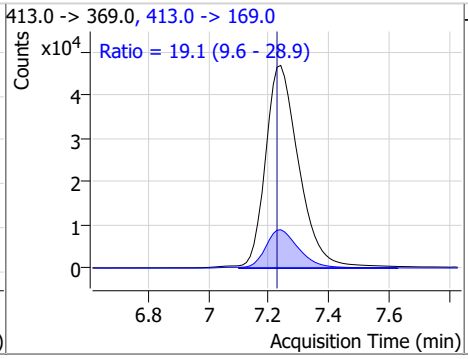


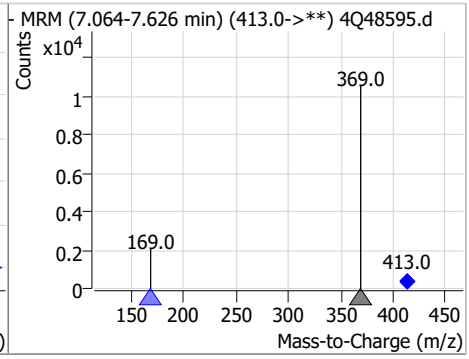




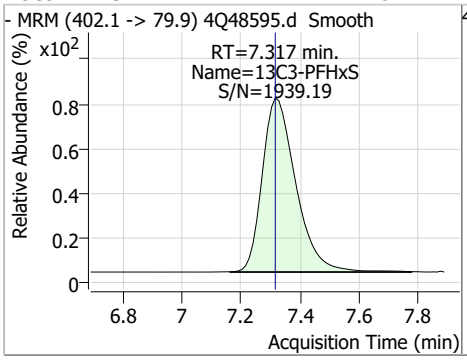
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.83	7.24	0.01	357088	413.0 -> 169.0	19.1	9.6	28.9

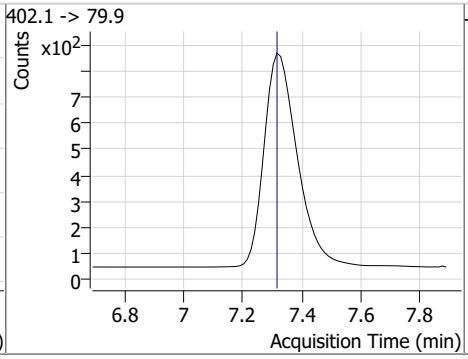


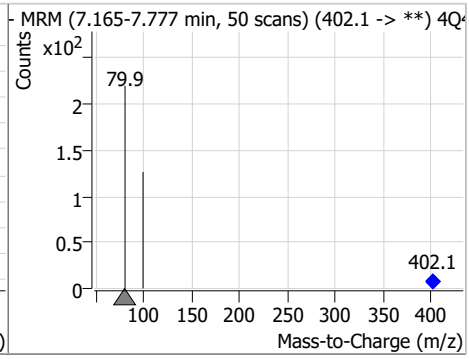




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.54	7.32	0.00	6526				

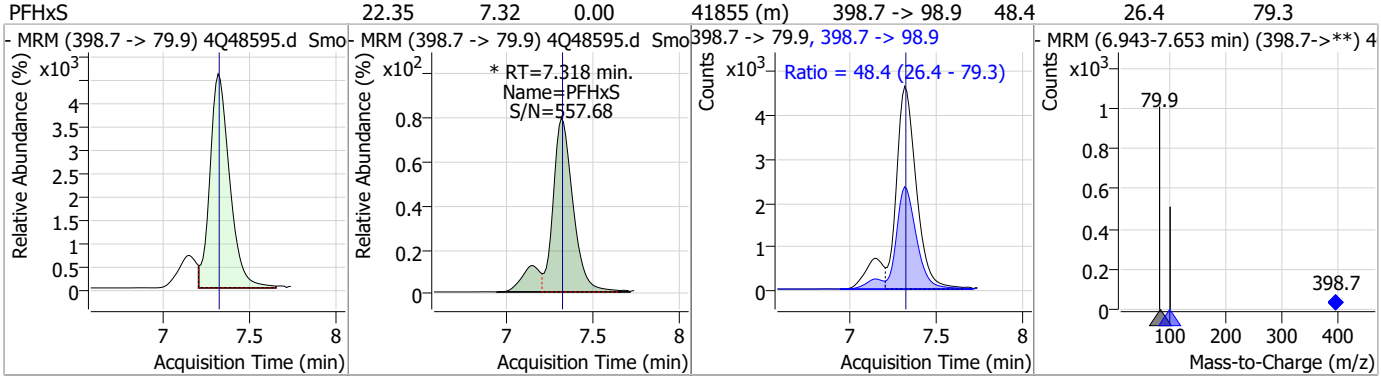




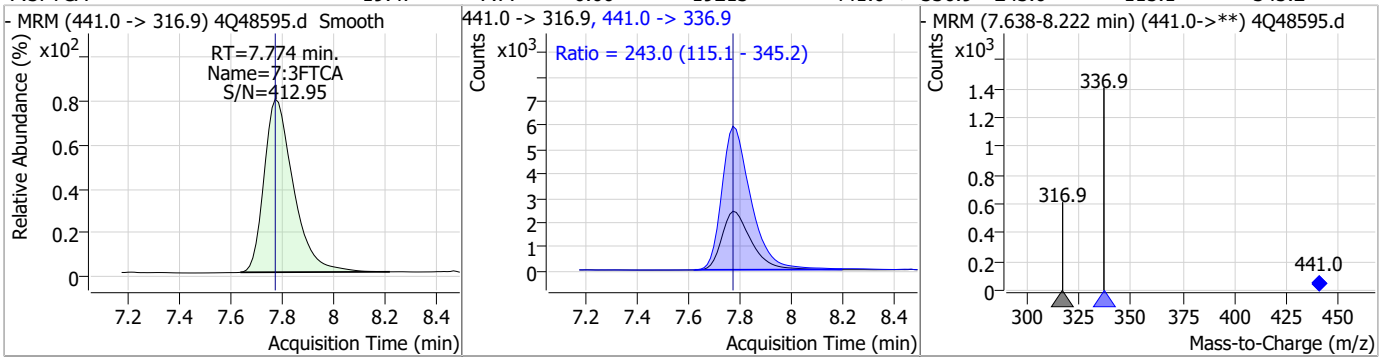


Perfluorinated Compounds by LC/MS/MS

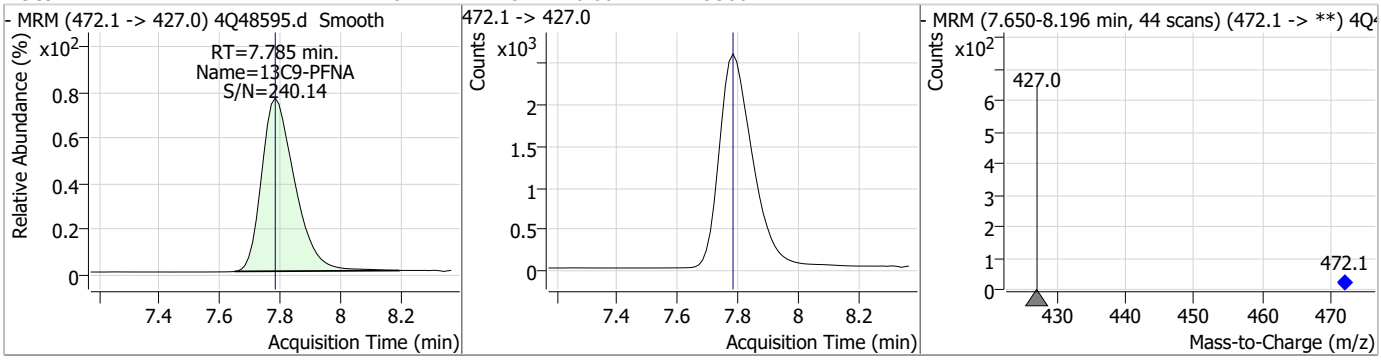
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.35	7.32	0.00	41855 (m)	398.7 -> 98.9	48.4	26.4	79.3



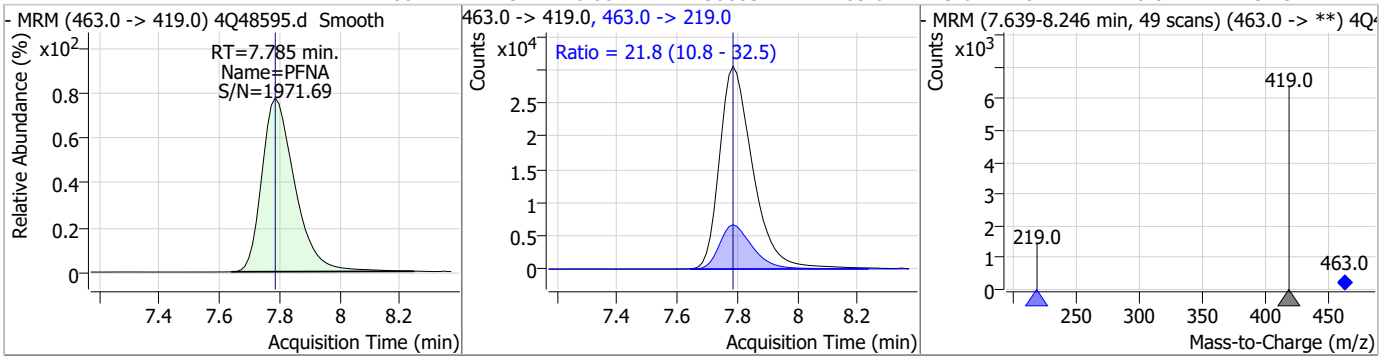
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	19.47	7.77	0.00	19213	441.0 -> 336.9	243.0	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.78	0.00	19366				

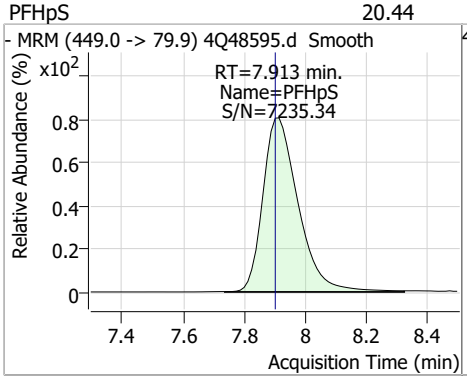


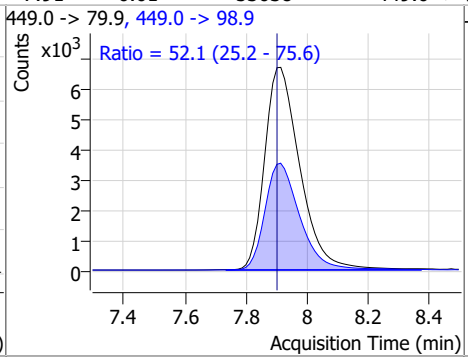
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	22.88	7.79	0.00	230603	463.0 -> 219.0	21.8	10.8	32.5

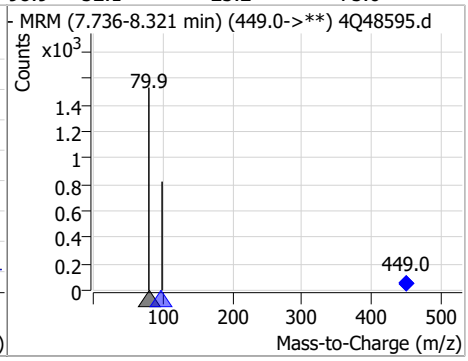


Perfluorinated Compounds by LC/MS/MS

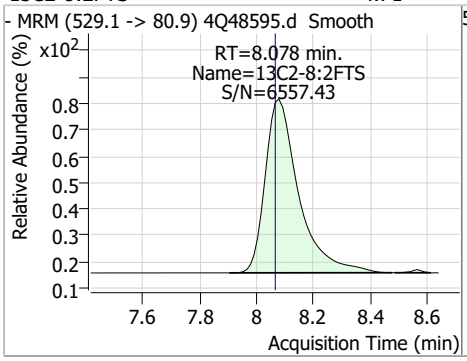
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.44	7.91	0.01	53638	449.0 -> 98.9	52.1	25.2	75.6

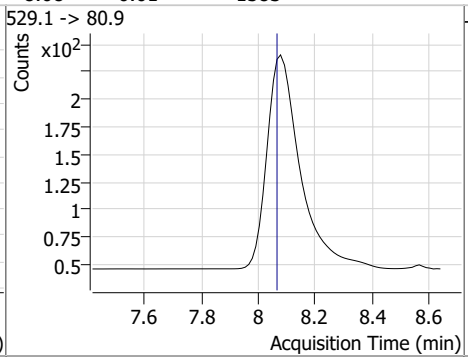


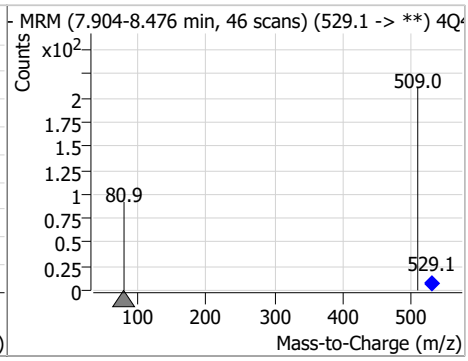




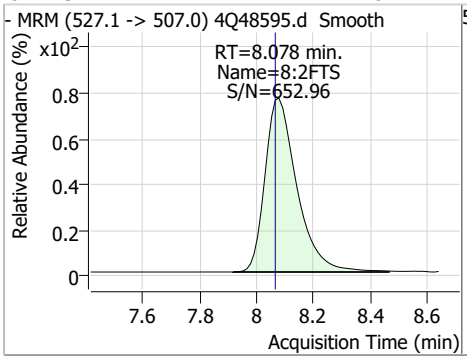
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.71	8.08	0.01	1583				

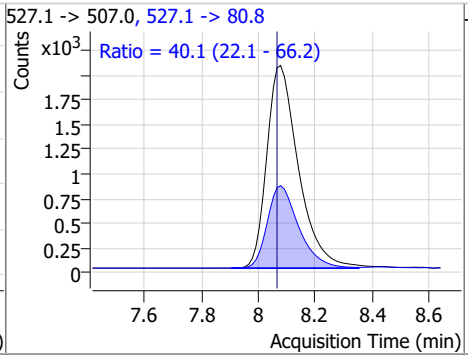


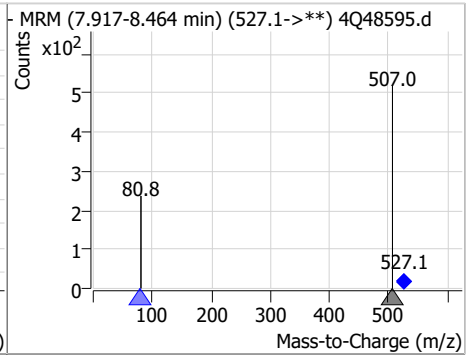




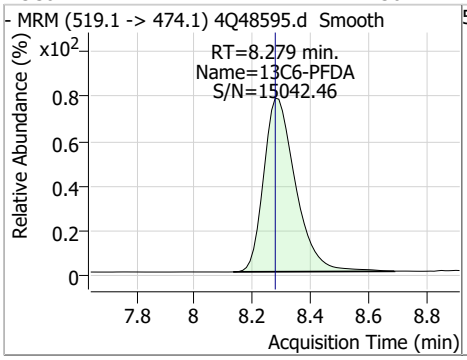
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	25.12	8.08	0.01	15965	527.1 -> 80.8	40.1	22.1	66.2

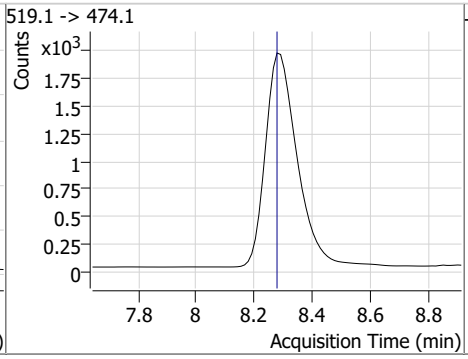


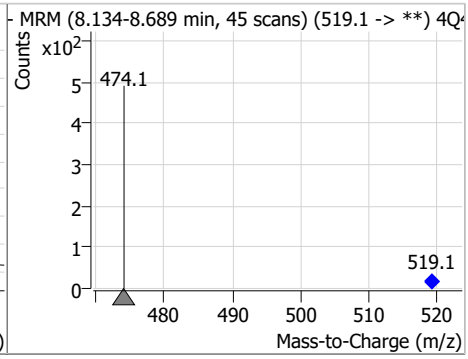




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.30	8.28	0.00	14724				

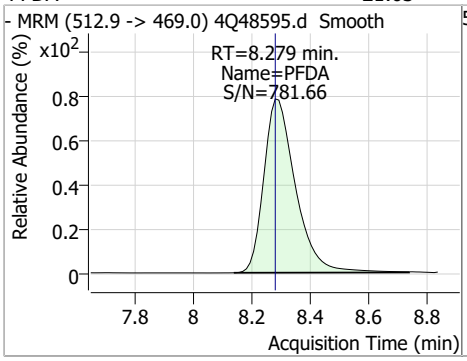


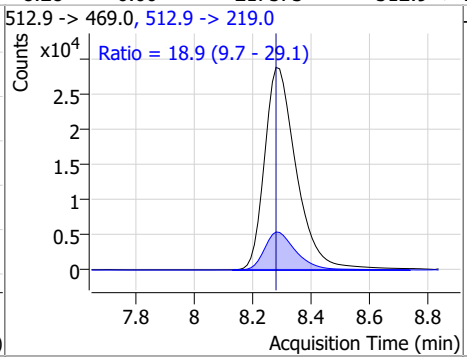


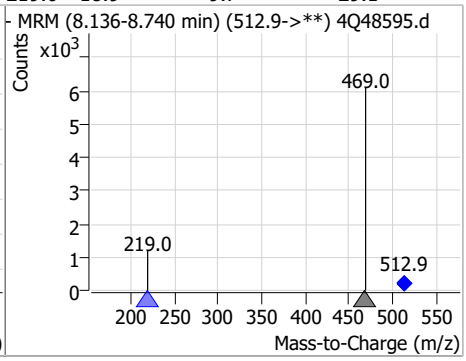


Perfluorinated Compounds by LC/MS/MS

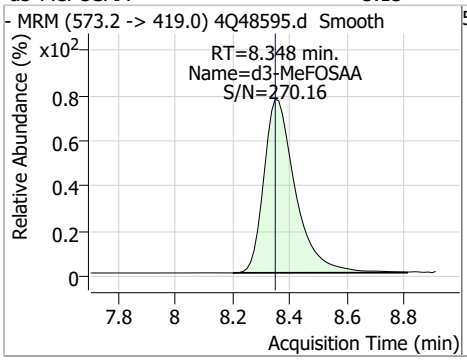
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.03	8.28	0.00	217573	512.9 -> 219.0	18.9	9.7	29.1

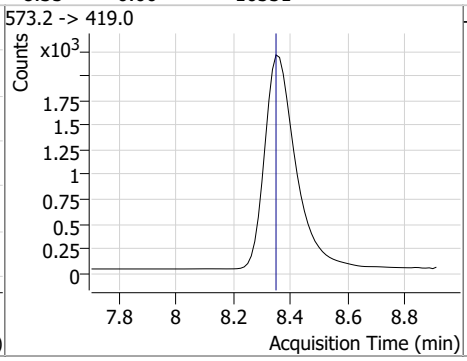


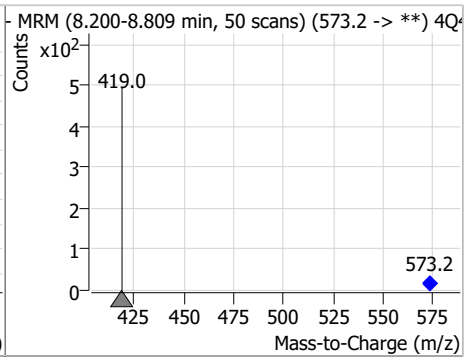




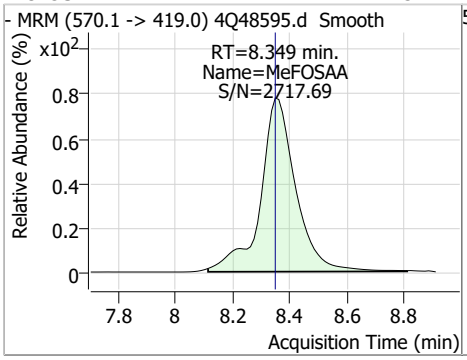
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.13	8.35	0.00	16551				

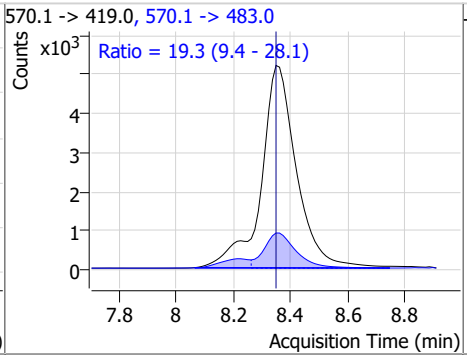


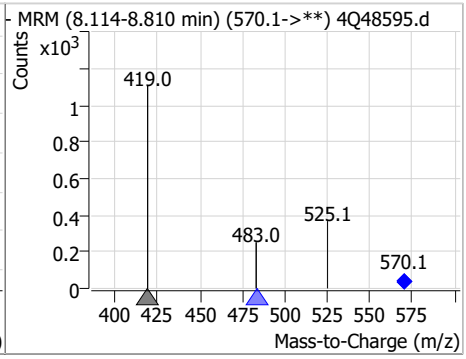




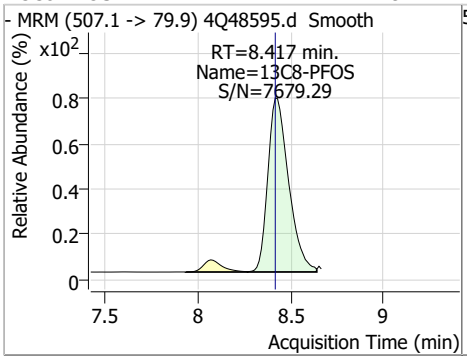
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.43	8.35	0.00	44332	570.1 -> 483.0	19.3	9.4	28.1

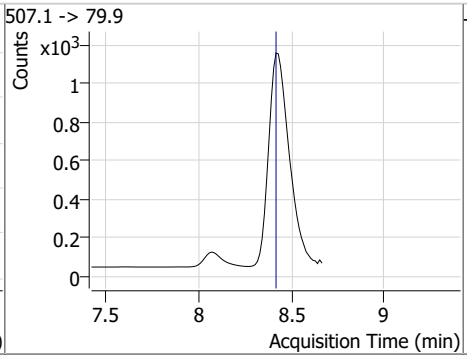


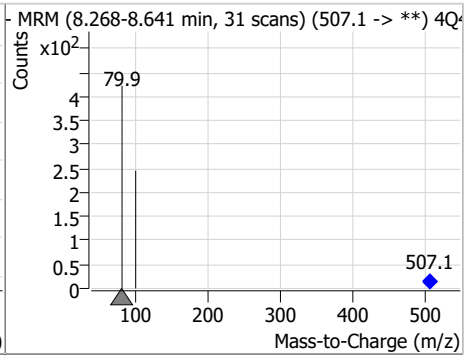




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.49	8.42	0.00	8681				

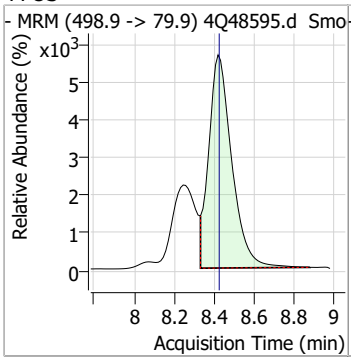


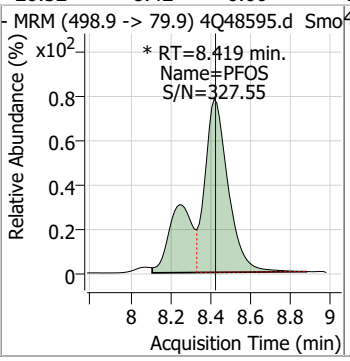


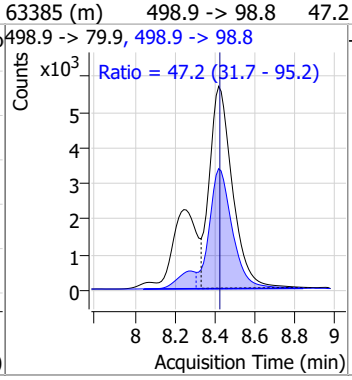


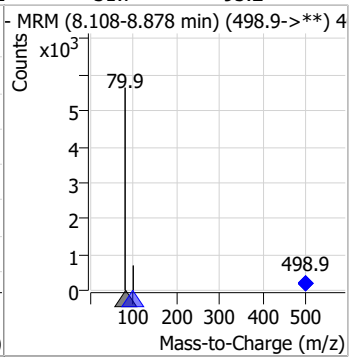
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.52	8.42	0.00	63385 (m)	498.9 -> 98.8	47.2	31.7	95.2

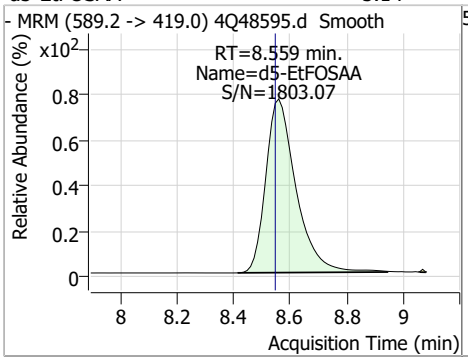


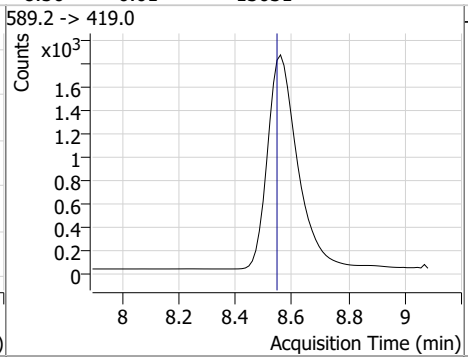


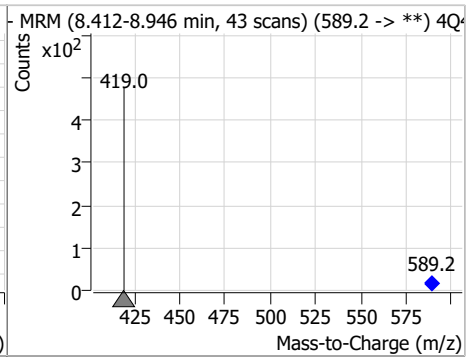




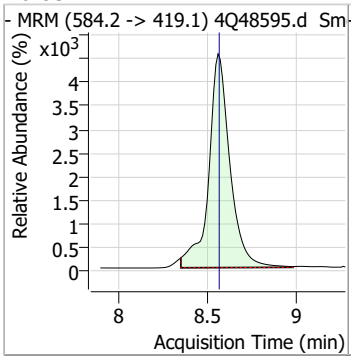
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.14	8.56	0.01	13631				

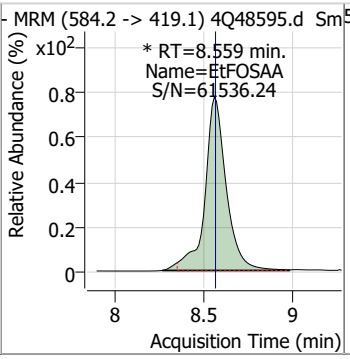


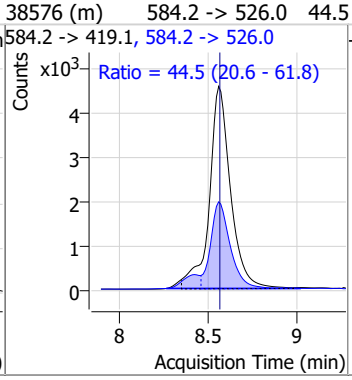


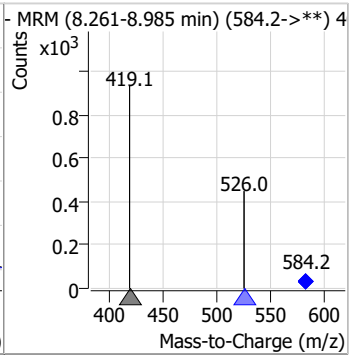


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.71	8.56	0.00	38576 (m)	584.2 -> 526.0	44.5	20.6	61.8

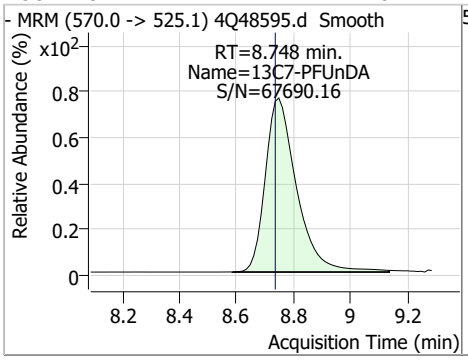


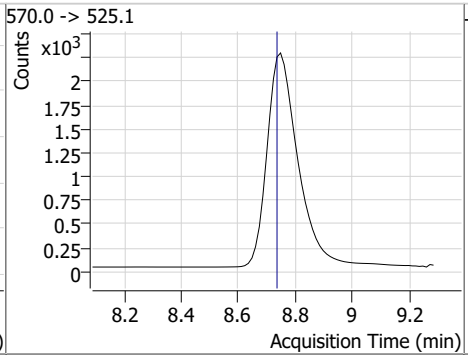


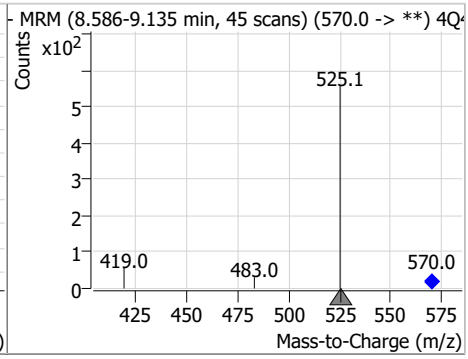




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.75	0.01	17166				

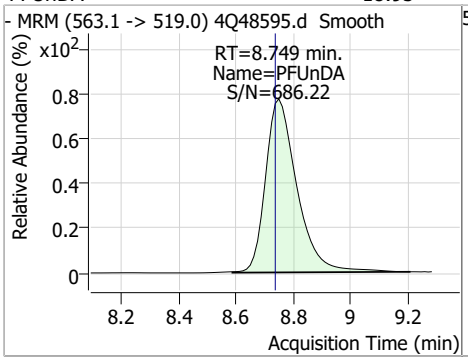


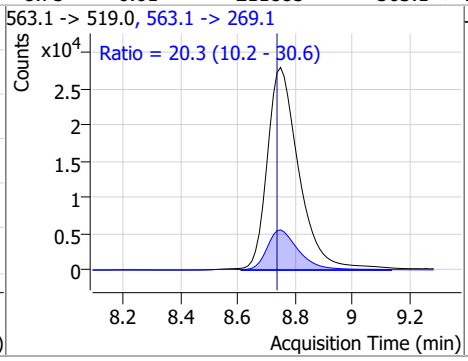


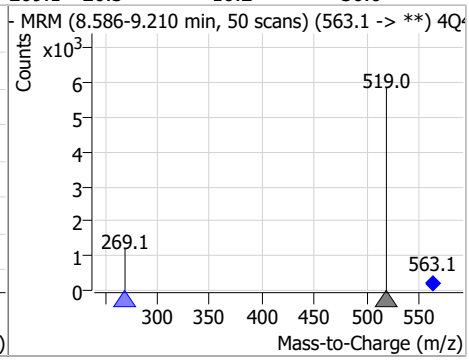


Perfluorinated Compounds by LC/MS/MS

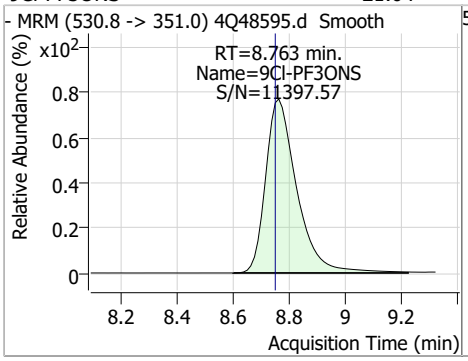
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.95	8.75	0.01	211885	563.1 -> 269.1	20.3	10.2	30.6

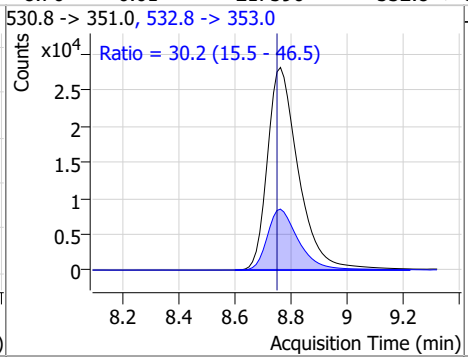


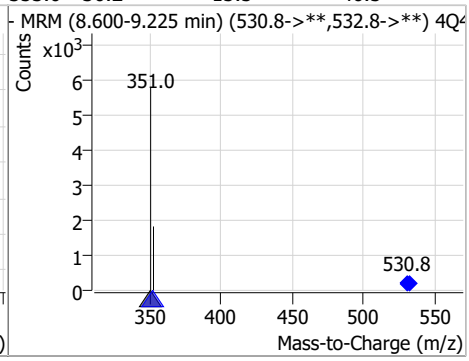




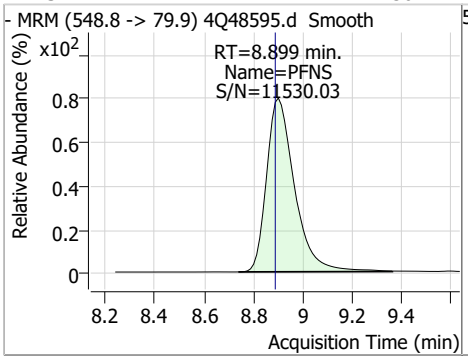
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.04	8.76	0.01	217596	532.8 -> 353.0	30.2	15.5	46.5

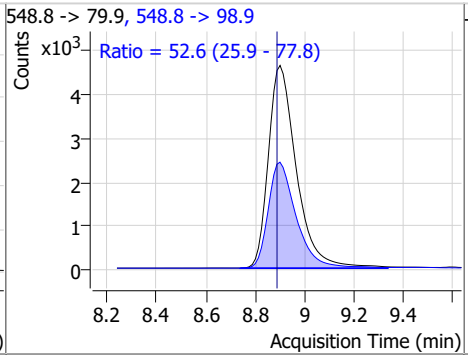


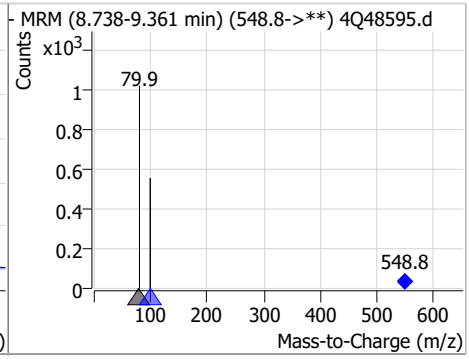




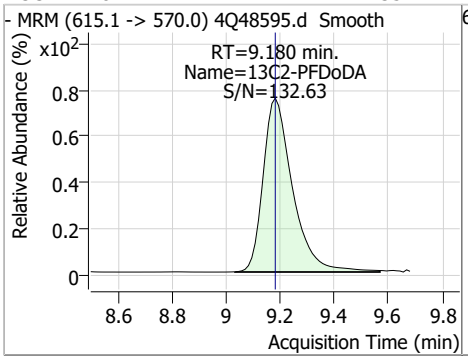
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.30	8.90	0.01	36118	548.8 -> 98.9	52.6	25.9	77.8

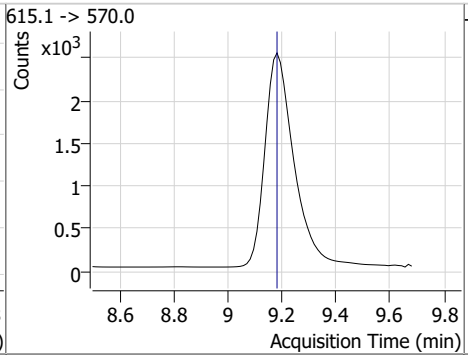


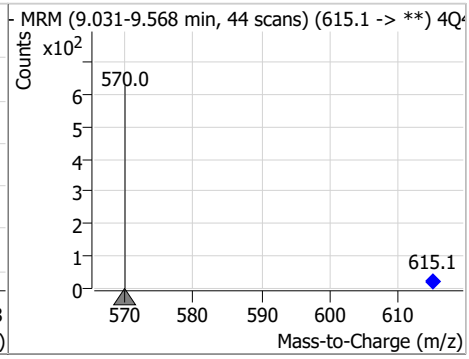




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.35	9.18	0.00	19044				

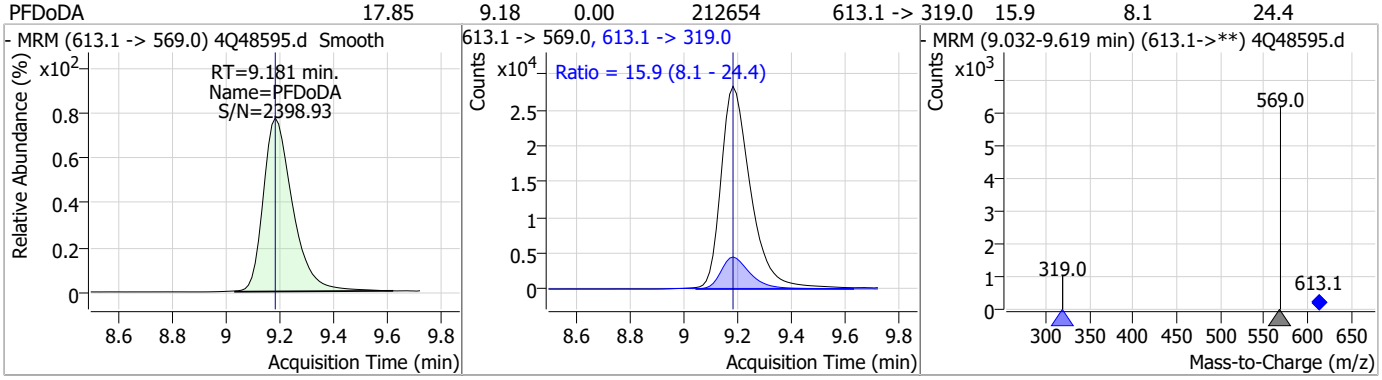




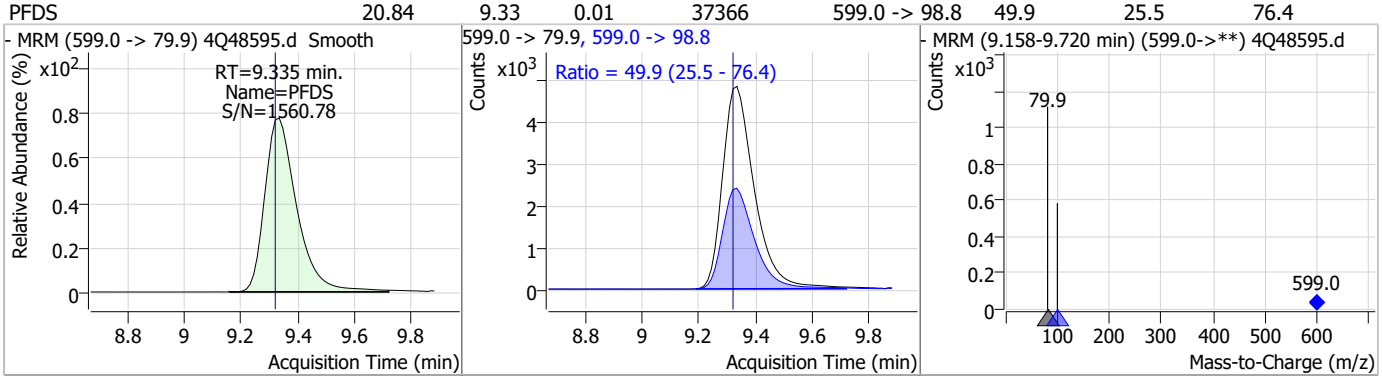


Perfluorinated Compounds by LC/MS/MS

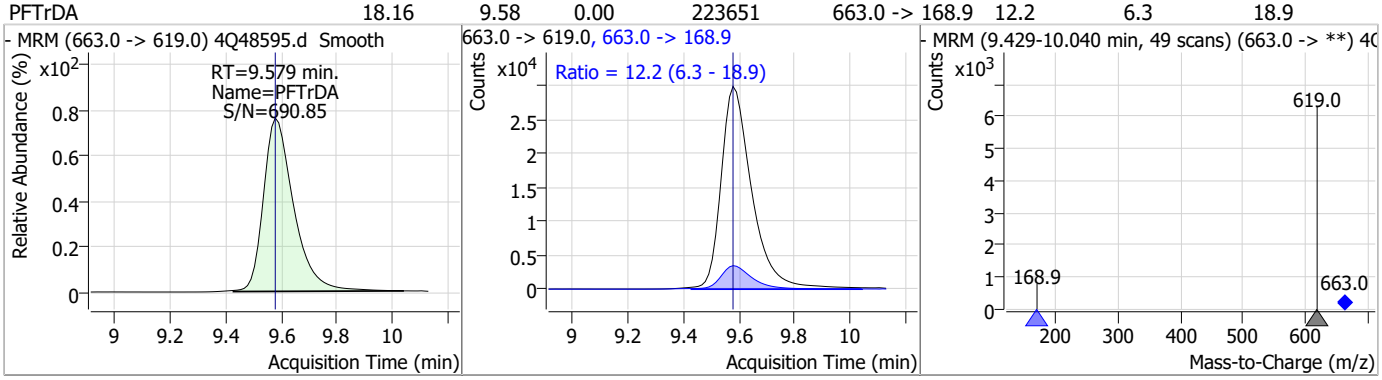
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.85	9.18	0.00	212654	613.1 -> 319.0	15.9	8.1	24.4



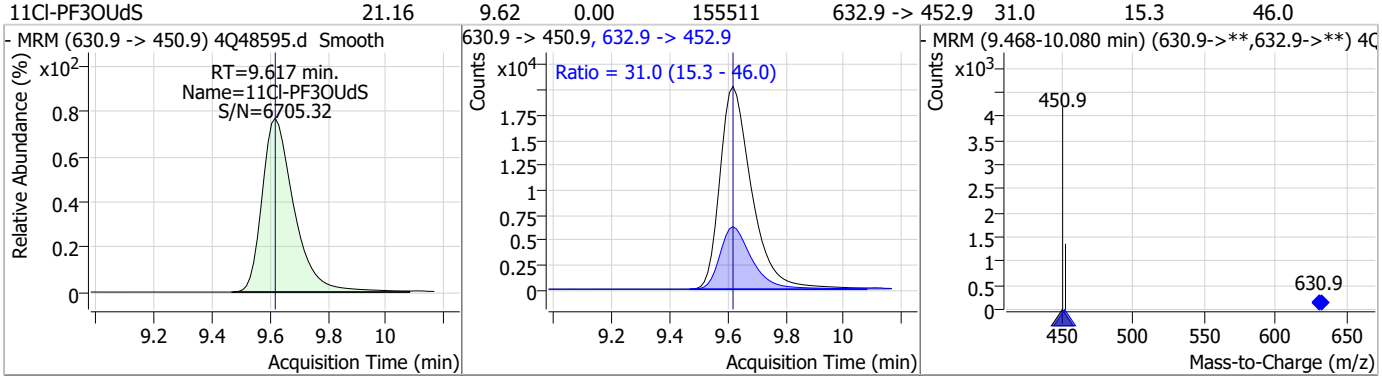
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.84	9.33	0.01	37366	599.0 -> 98.8	49.9	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.16	9.58	0.00	223651	663.0 -> 168.9	12.2	6.3	18.9

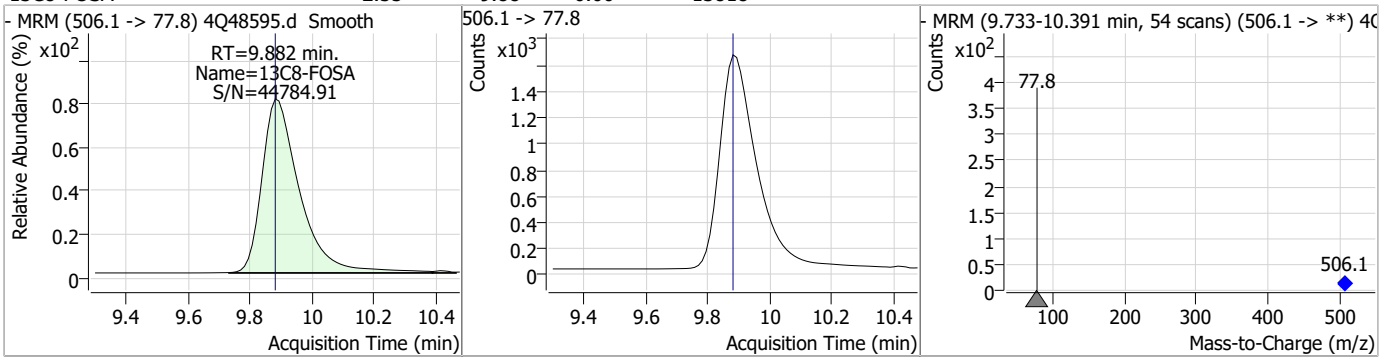


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.16	9.62	0.00	155511	632.9 -> 452.9	31.0	15.3	46.0

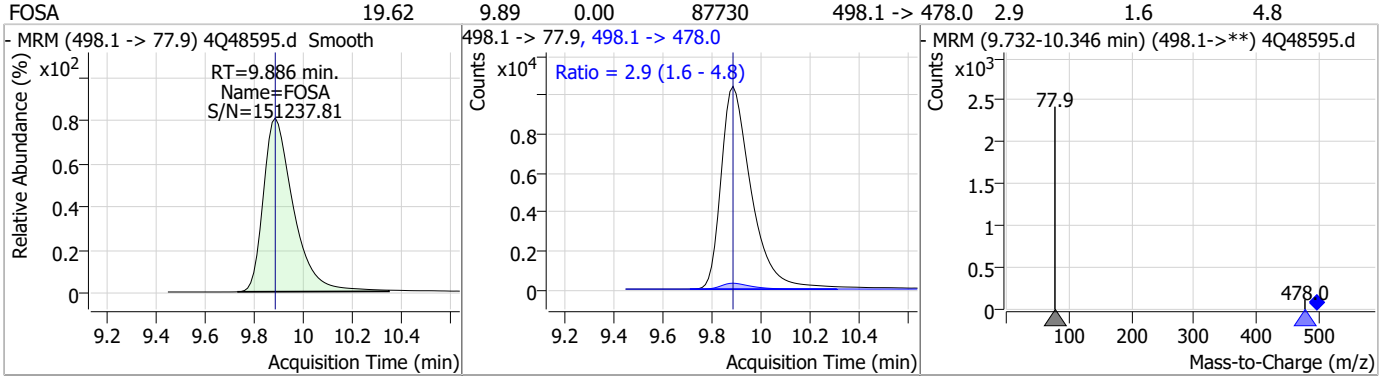


Perfluorinated Compounds by LC/MS/MS

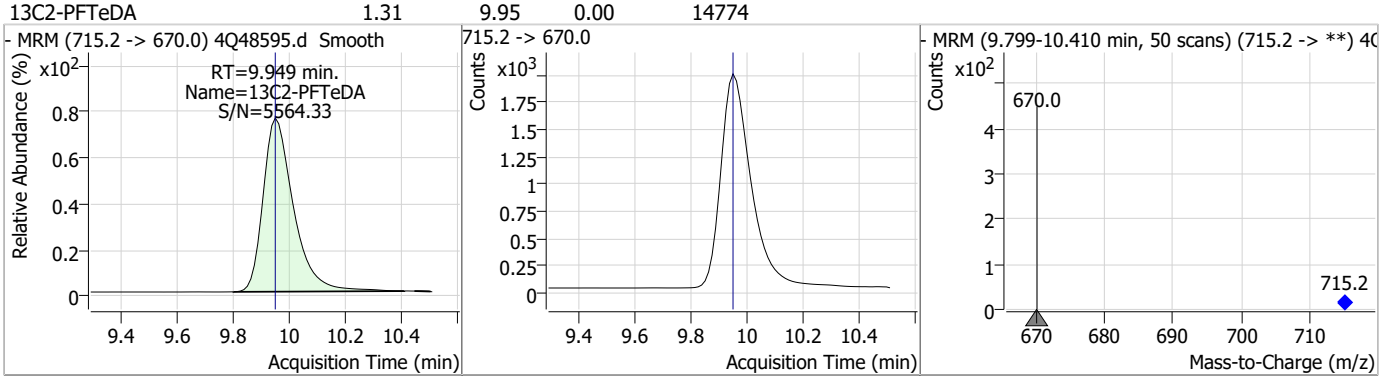
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.55	9.88	0.00	13818				



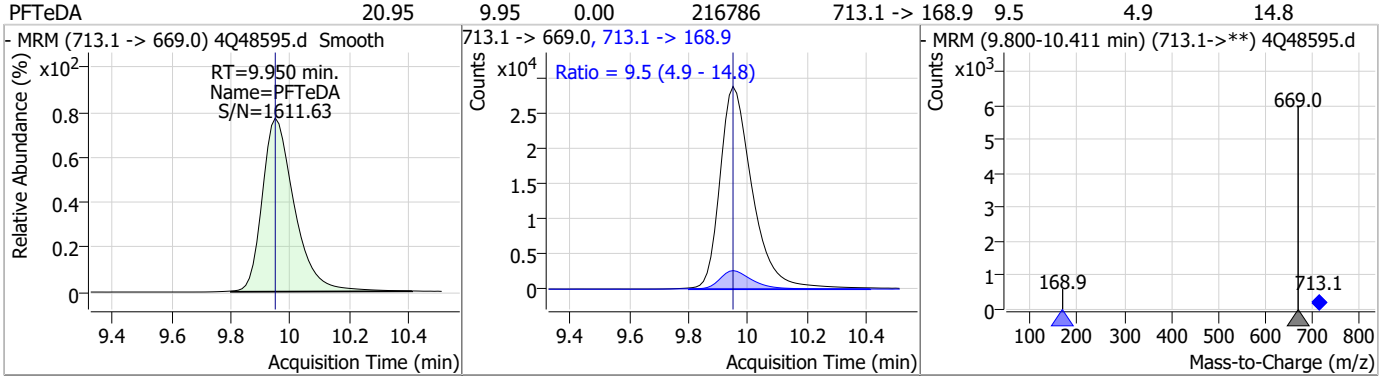
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.62	9.89	0.00	87730	498.1 -> 478.0	2.9	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.31	9.95	0.00	14774				

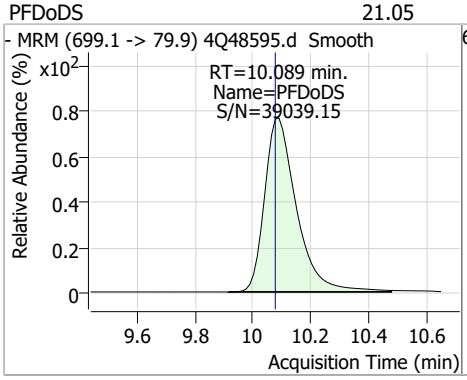


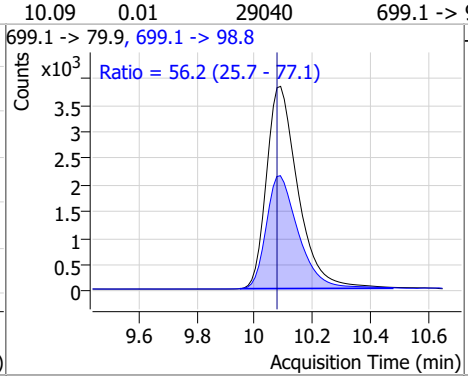
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.95	9.95	0.00	216786	713.1 -> 168.9	9.5	4.9	14.8

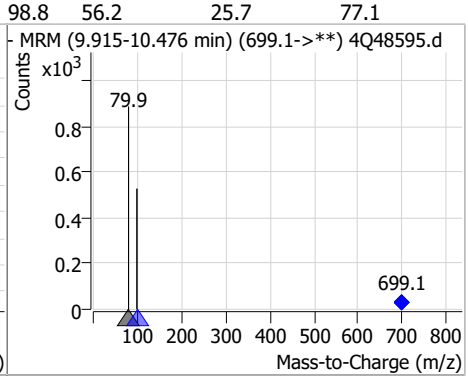


Perfluorinated Compounds by LC/MS/MS

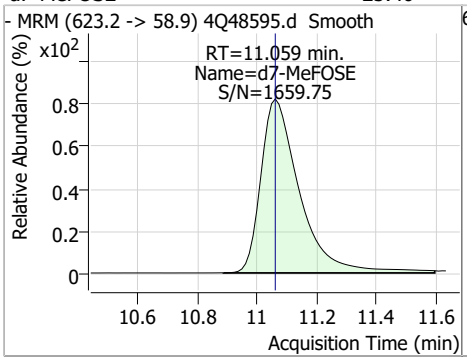
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	21.05	10.09	0.01	29040	699.1 -> 98.8	56.2	25.7	77.1

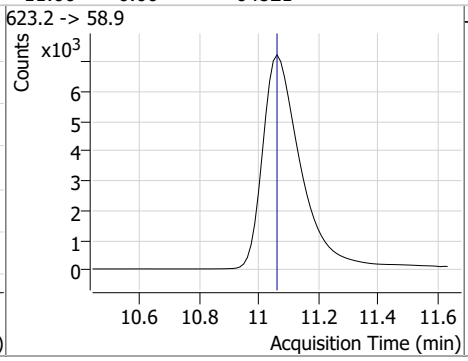


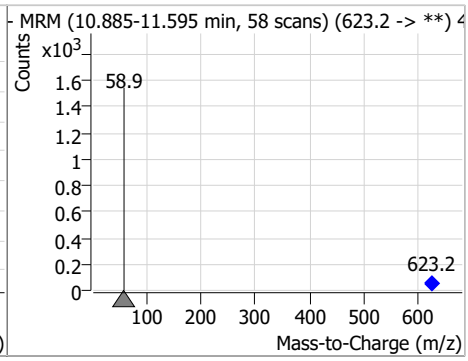




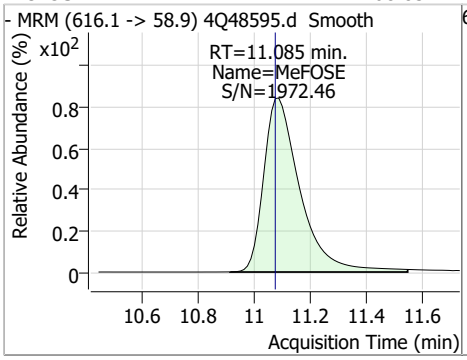
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.40	11.06	0.00	64821				

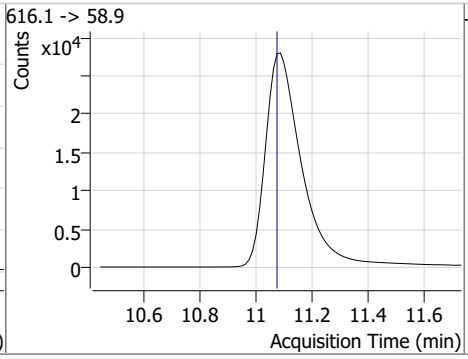


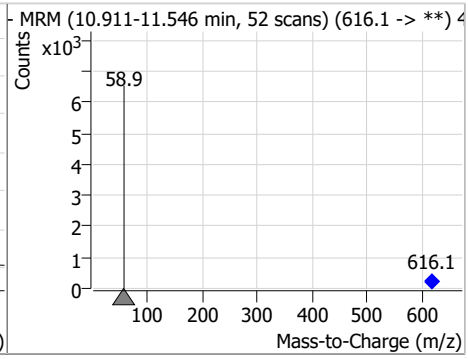




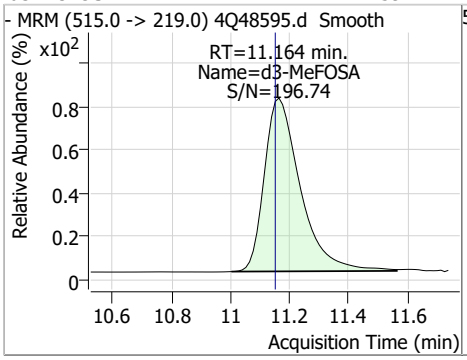
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	108.83	11.08	0.01	252269				

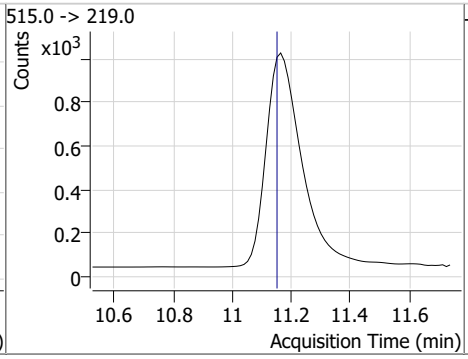


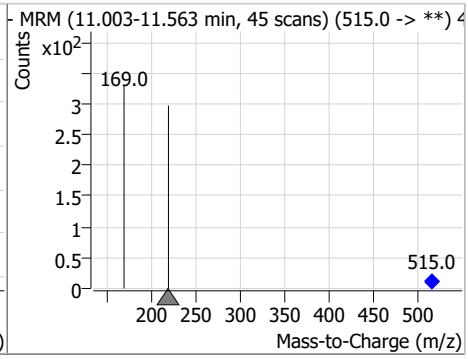




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.59	11.16	0.01	8284				

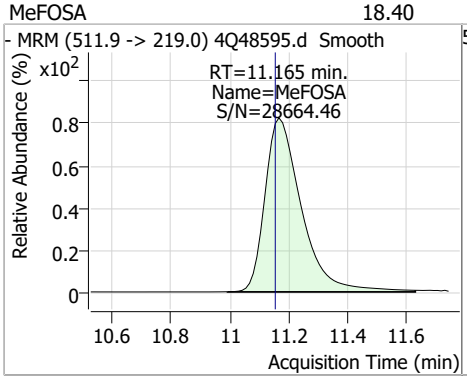


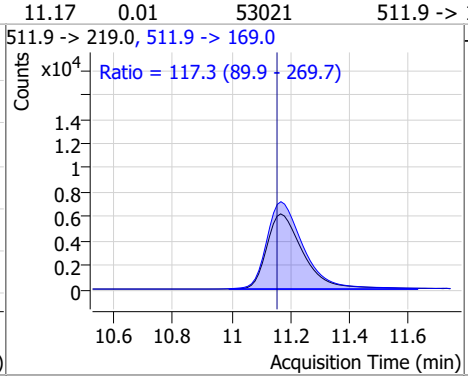


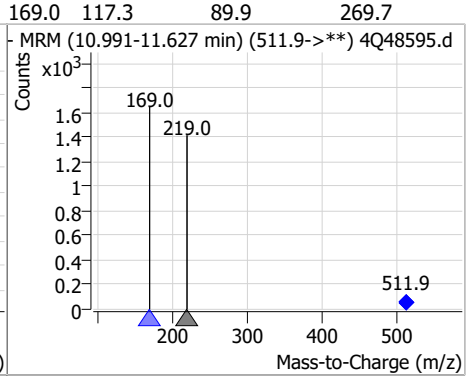


Perfluorinated Compounds by LC/MS/MS

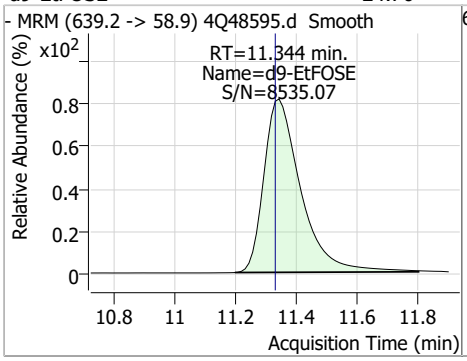
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.40	11.17	0.01	53021	511.9 -> 169.0	117.3	89.9	269.7

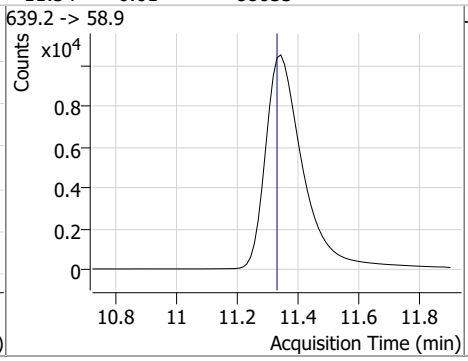


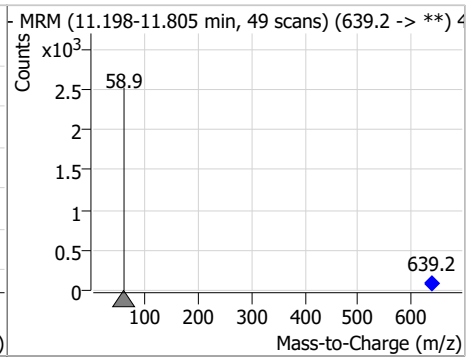




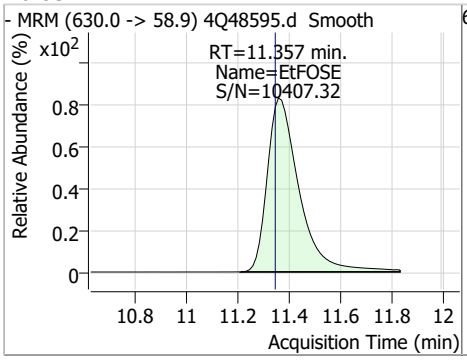
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.76	11.34	0.01	88633				

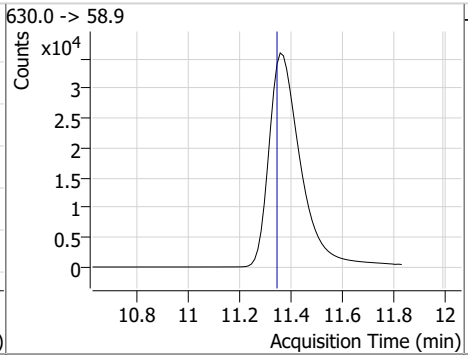


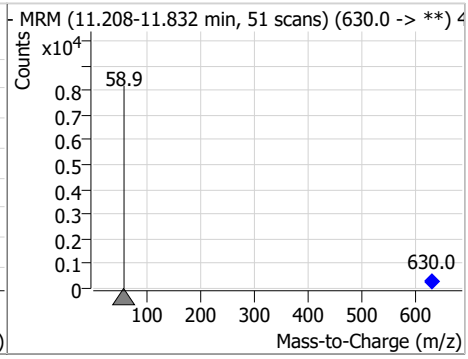




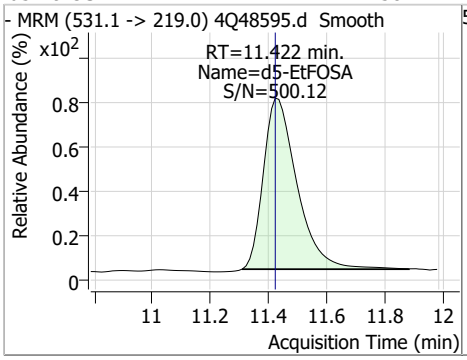
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	111.71	11.36	0.01	309821				

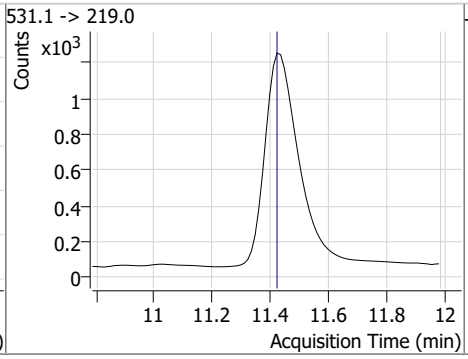


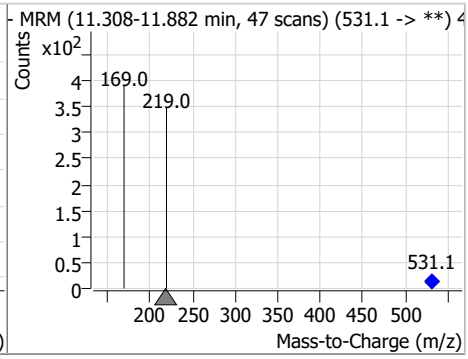




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	11.42	0.00	9481				

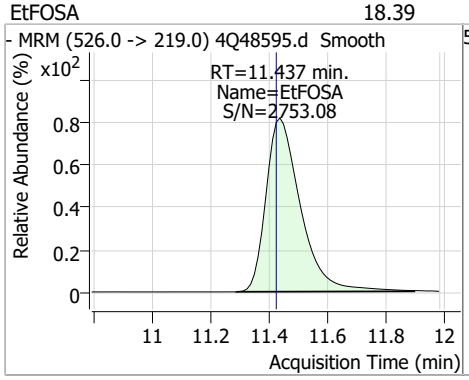


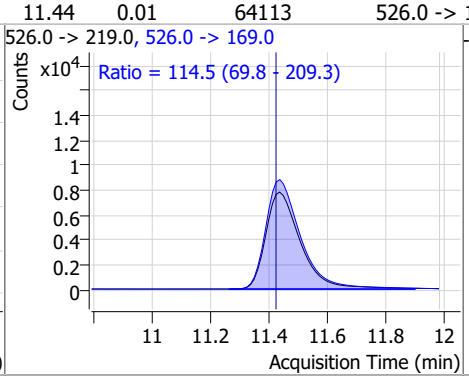


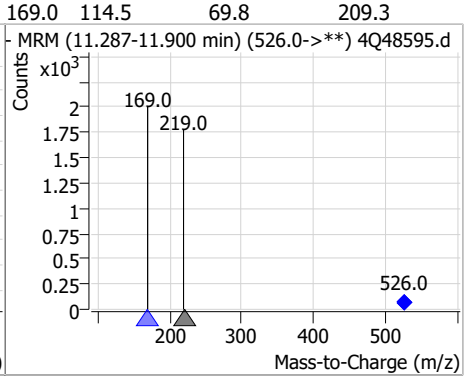


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	18.39	11.44	0.01	64113	526.0 -> 169.0	114.5	69.8	209.3







Manual Integration Approval Summary

Sample Number: S4Q711-ICV711
Lab FileID: 4Q48595.D
Injection Time: 08/07/23 18:57
Method: EPA DRAFT 1633
Analyst approved: 08/09/23 11:54 Anna Ludwig
Supervisor approved: 08/09/23 14:46 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.42	Split peak
EtFOSAA	2991-50-6		8.56	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48765.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 3:30:48 PM
Sample Name : cc711-1.0LL
Vial : P1-A2
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.874	216.8 -> 171.9	100749	10.00	µg/L	-0.037
M5-PFPeA	4.400	268.3 -> 223.0	55371	5.00	µg/L	-0.012
M5-PFHxA	5.610	318.0 -> 273.0	35443	2.50	µg/L	0.000
M4-PFHpA	6.568	367.1 -> 322.0	25847	2.50	µg/L	0.012
M8-PFOA	7.238	421.1 -> 376.0	43006	2.50	µg/L	0.012
M9-PFNA	7.785	472.1 -> 427.0	18418	1.25	µg/L	0.000
M6-PFDA	8.291	519.1 -> 474.1	14987	1.25	µg/L	0.013
M7-PFUnDA	8.748	570.0 -> 525.1	16840	1.25	µg/L	0.012
M2-PFDoDA	9.193	615.1 -> 570.0	17978	1.25	µg/L	0.012
M2-PFTeDA	9.961	715.2 -> 670.0	13464	1.25	µg/L	0.013
M8-FOSA	9.907	506.1 -> 77.8	12400	2.50	µg/L	0.024
M3-PFBS	5.489	302.1 -> 79.9	9200	2.50	µg/L	0.000
M3-PFHxS	7.317	402.1 -> 79.9	5958	2.50	µg/L	0.000
M8-PFOS	8.430	507.1 -> 79.9	8374	2.50	µg/L	0.013
M2-4:2FTS	5.296	329.1 -> 80.9	768	5.00	µg/L	0.000
M2-6:2FTS	7.011	429.1 -> 80.9	1524	5.00	µg/L	0.012
M2-8:2FTS	8.078	529.1 -> 80.9	2321	5.00	µg/L	0.013
M3-MeFOSAA	8.361	573.2 -> 419.0	16189	5.00	µg/L	0.013
M3-HFPO-DA	5.989	286.9 -> 168.9	30708	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	14261	5.00	µg/L	0.013
M7-MeFOSE	11.072	623.2 -> 58.9	57168	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	79716	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	8896	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	7746	2.50	µg/L	0.025
13C4-PFOS	8.430	502.8 -> 79.9	8571	2.50	µg/L	0.013
13C3-PFBA	2.878	216.0 -> 172.0	54780	5.00	µg/L	-0.025
18O2-PFHxS	7.328	403.0 -> 83.9	4558	2.50	µg/L	0.012
13C4-PFOA	7.239	417.1 -> 372.0	50784	2.50	µg/L	0.012
13C2-PFDA	8.291	515.1 -> 470.1	16106	1.25	µg/L	0.013
13C5-PFNA	7.785	468.0 -> 423.0	22318	1.25	µg/L	0.000
13C2-PFHxA	5.611	315.1 -> 270.0	34201	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	768	6.74	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 134.8%		
13C2-6:2FTS	7.011	429.1 -> 80.9	1524	7.00	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 140.1%		
13C2-8:2FTS	8.078	529.1 -> 80.9	2321	7.02	µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 140.5%		
13C2-PFDoDA	9.193	615.1 -> 570.0	17978	1.30	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-PFTeDA	9.961	715.2 -> 670.0	13464	1.22	µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C3-PFBS	5.489	302.1 -> 79.9	9200	2.37	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C3-PFHxS	7.317	402.1 -> 79.9	5958	2.36	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 = 94.4%		
13C4-PFBA	2.874	216.8 -> 171.9	100749	10.76 µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C4-PFHpA	6.568	367.1 -> 322.0	25847	2.54 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C5-PFHxA	5.610	318.0 -> 273.0	35443	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFPeA	4.400	268.3 -> 223.0	55371	4.63 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C6-PFDA	8.291	519.1 -> 474.1	14987	1.34 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C7-PFUnDA	8.748	570.0 -> 525.1	16840	1.34 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C8-FOSA	9.907	506.1 -> 77.8	12400	2.32 µg/L		0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C8-PFOA	7.238	421.1 -> 376.0	43006	2.57 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C8-PFOS	8.430	507.1 -> 79.9	8374	2.43 µg/L		0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C9-PFNA	7.785	472.1 -> 427.0	18418	1.09 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.2%		
d3-MeFOSAA	8.361	573.2 -> 419.0	16189	5.09 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	30708	9.42 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
d3-MeFOSA	11.176	515.0 -> 219.0	7746	2.46 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
d5-EtFOSAA	8.559	589.2 -> 419.0	14261	5.45 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
d7-MeFOSE	11.072	623.2 -> 58.9	57168	22.71 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
d9-EtFOSE	11.356	639.2 -> 58.9	79716	22.58 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
d5-EtFOSA	11.435	531.1 -> 219.0	8896	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
Target Compounds						QValue
4:2FTS	5.297	327.1 -> 307.0	722	0.70 µg/L		95
		327.1 -> 80.9	274			
6:2FTS	7.011	427.1 -> 407.0	819	0.63 µg/L		96
		427.1 -> 80.9	271			
8:2FTS	8.078	527.1 -> 507.0	779	0.84 µg/L		95
		527.1 -> 80.8	317			
EtFOSAA	8.572	584.2 -> 419.1	411	0.21 µg/L	m	86
		584.2 -> 526.0	133			
FOSA	9.898	498.1 -> 77.9	790	0.20 µg/L		96
		498.1 -> 478.0	16			
MeFOSAA	8.361	570.1 -> 419.0	439	0.22 µg/L		92
		570.1 -> 483.0	97			
PFBA	2.882	212.8 -> 168.9	1576	0.68 µg/L		100
PFBS	5.478	298.7 -> 79.9	370	0.16 µg/L		71
		298.7 -> 98.8	201			
PFDA	8.292	512.9 -> 469.0	1791	0.17 µg/L		91
		512.9 -> 219.0	422			
PFDoDA	9.193	613.1 -> 569.0	1729	0.15 µg/L		94
		613.1 -> 319.0	327			
PFDS	9.335	599.0 -> 79.9	275	0.16 µg/L		85

Perfluorinated Compounds by LC/MS/MS

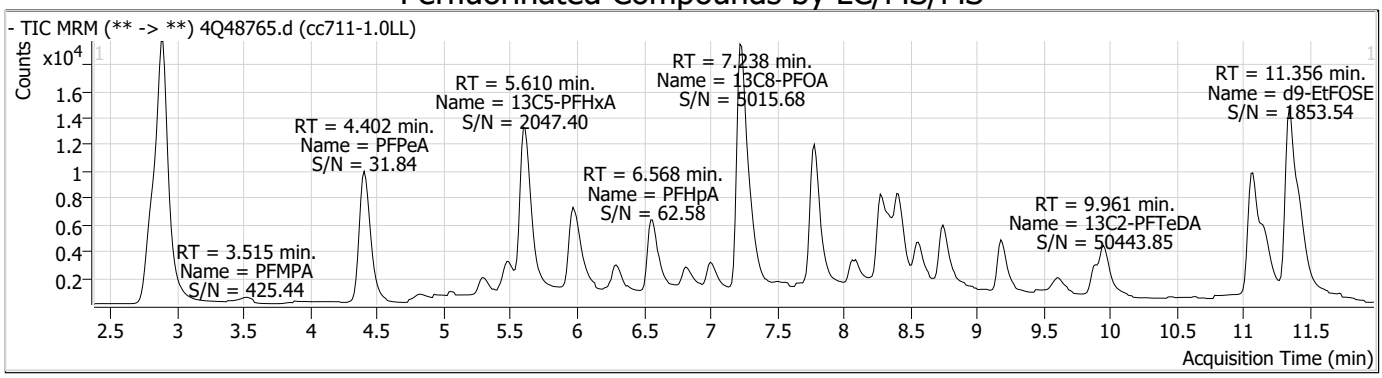
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	169				
PFHpA	6.568	363.1 -> 319.0	2094	0.18	µg/L		90
		363.1 -> 169.0	474				
PFHpS	7.913	449.0 -> 79.9	343	0.14	µg/L	#	63
		449.0 -> 98.9	260				
PFHxA	5.613	313.0 -> 269.0	1798	0.18	µg/L		98
		313.0 -> 118.9	46				
PFHxS	7.318	398.7 -> 79.9	340	0.20	µg/L	m	95
		398.7 -> 98.9	193				
PFNA	7.786	463.0 -> 419.0	1737	0.18	µg/L		99
		463.0 -> 219.0	367				
PFNS	8.899	548.8 -> 79.9	323	0.20	µg/L		97
		548.8 -> 98.9	161				
PFOA	7.240	413.0 -> 369.0	3236	0.19	µg/L		94
		413.0 -> 169.0	715				
PFOS	8.431	498.9 -> 79.9	554	0.19	µg/L	m	84
		498.9 -> 98.8	280				
PFPeA	4.402	263.0 -> 219.0	2917	0.30	µg/L		100
PFPeS	6.582	349.1 -> 79.9	327	0.20	µg/L		93
		349.1 -> 98.9	131				
PFTeDA	9.962	713.1 -> 669.0	1788	0.19	µg/L		98
		713.1 -> 168.9	193				
PFTrDA	9.591	663.0 -> 619.0	2256	0.19	µg/L		94
		663.0 -> 168.9	341				
PFUnDA	8.748	563.1 -> 519.0	1810	0.16	µg/L		96
		563.1 -> 269.1	332				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	2448	0.38	µg/L		94
		632.9 -> 452.9	829				
9Cl-PF3ONS	8.763	530.8 -> 351.0	3479	0.38	µg/L		91
		532.8 -> 353.0	1259				
ADONA	6.831	376.9 -> 250.9	6404	0.36	µg/L		100
		376.9 -> 84.8	1647				
HFPO-DA	5.990	284.9 -> 168.9	966	0.38	µg/L		99
		284.9 -> 184.9	131				
3:3FTCA	3.848	241.0 -> 177.0	471	0.80	µg/L		100
		241.0 -> 117.0	47				
5:3FTCA	6.296	341.0 -> 237.1	7449	4.45	µg/L		94
		341.0 -> 217.0	4951				
7:3FTCA	7.774	441.0 -> 316.9	4222	4.58	µg/L		97
		441.0 -> 336.9	9918				
EtFOSA	11.437	526.0 -> 219.0	1306	0.40	µg/L		99
		526.0 -> 169.0	1810				
EtFOSE	11.370	630.0 -> 58.9	2675	1.07	µg/L		100
MeFOSA	11.178	511.9 -> 219.0	950	0.35	µg/L	m	82
		511.9 -> 169.0	1472				
MeFOSE	11.085	616.1 -> 58.9	1853	0.91	µg/L		100
PFDoDS	10.089	699.1 -> 79.9	246	0.18	µg/L		91
		699.1 -> 98.8	142				
NFDHA	5.491	295.0 -> 201.0	248	0.38	µg/L		90
		295.0 -> 84.9	74				
PFMBA	4.828	279.0 -> 85.1	1980	0.37	µg/L		100
PFMPA	3.515	229.0 -> 84.9	1950	0.37	µg/L		100
PFEESA	6.034	314.8 -> 134.9	2499	0.30	µg/L		95
		314.8 -> 82.9	126				

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

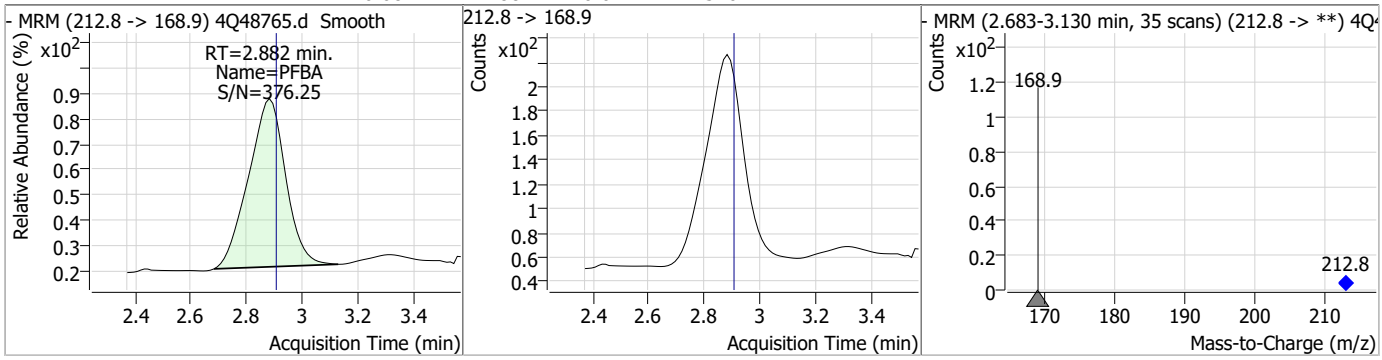
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

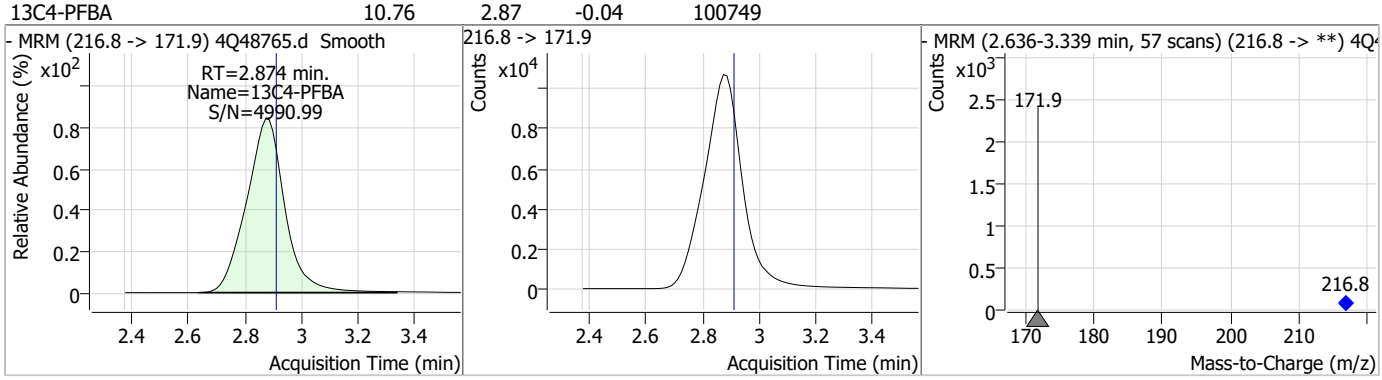
Perfluorinated Compounds by LC/MS/MS



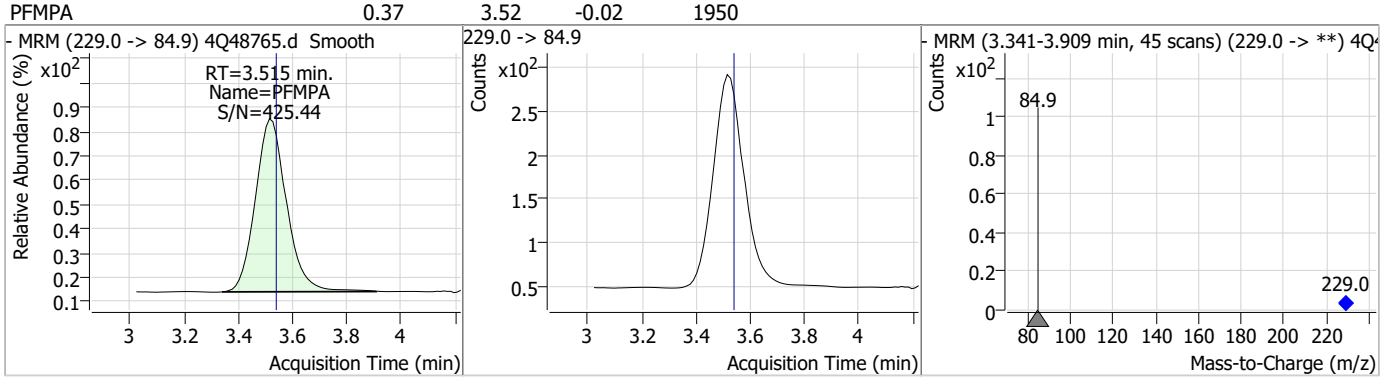
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.68	2.88	-0.02	1576				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.76	2.87	-0.04	100749				

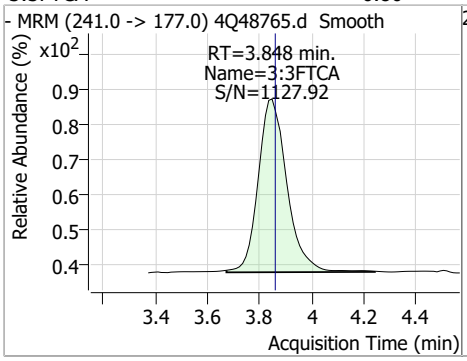


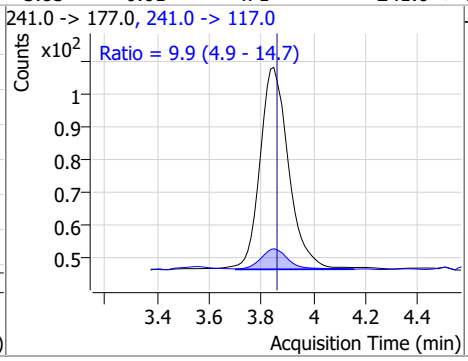
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.37	3.52	-0.02	1950				

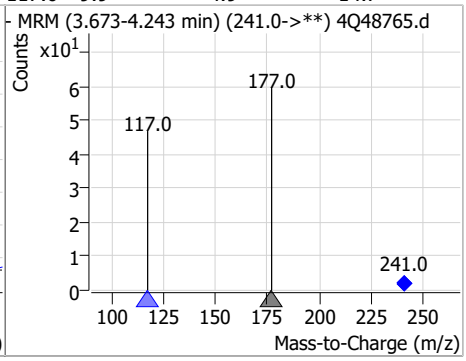


Perfluorinated Compounds by LC/MS/MS

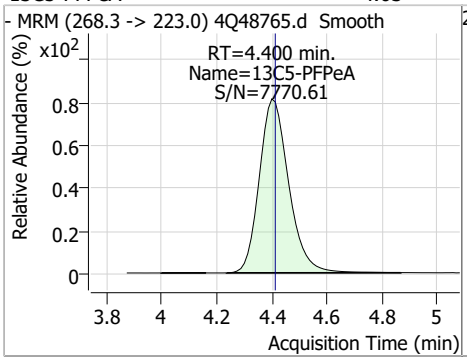
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.80	3.85	-0.01	471	241.0 -> 117.0	9.9	4.9	14.7

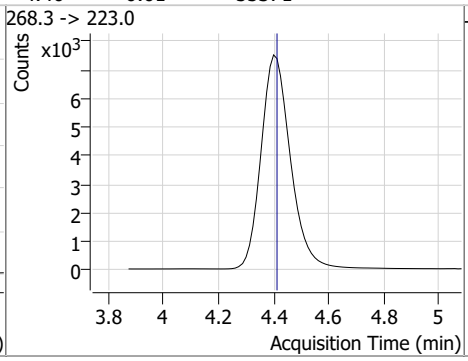


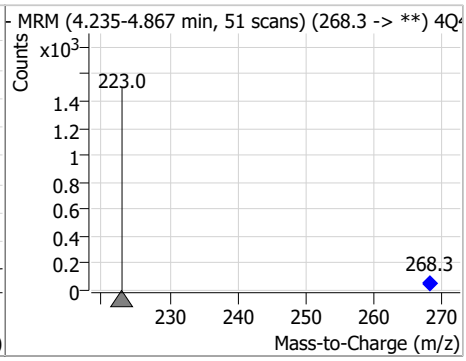




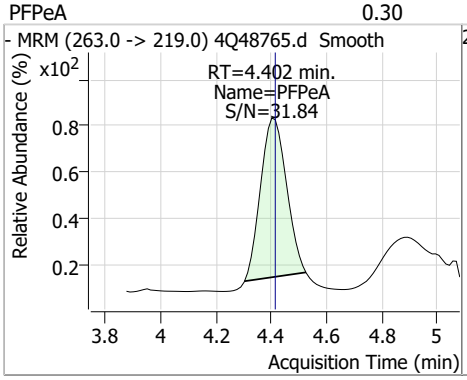
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.63	4.40	-0.01	55371				

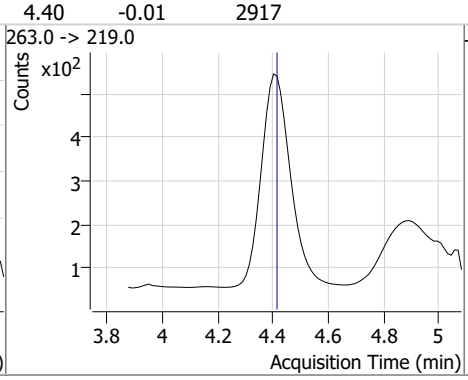


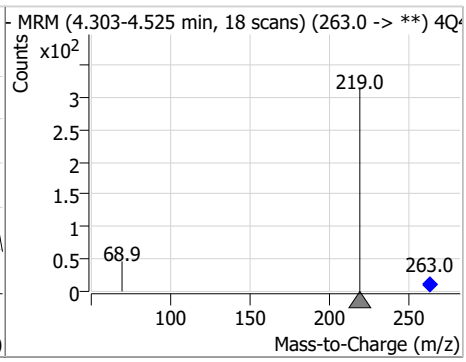




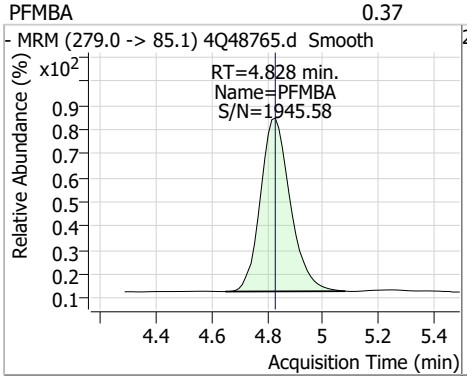
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.30	4.40	-0.01	2917				

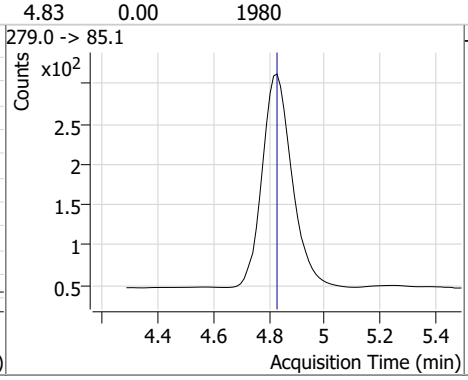


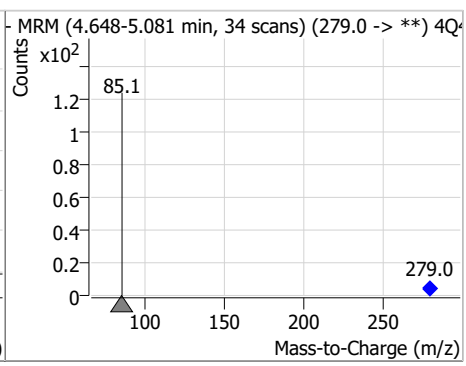




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.37	4.83	0.00	1980				

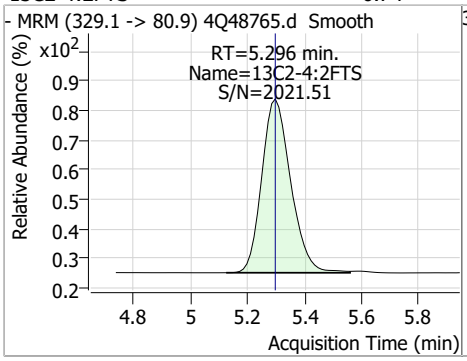


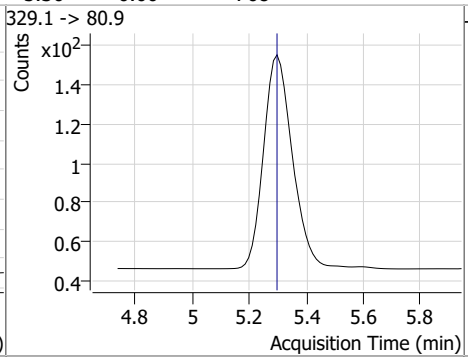


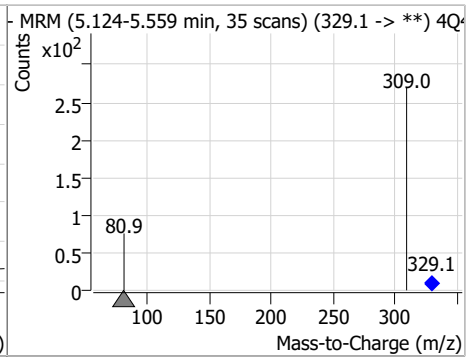


Perfluorinated Compounds by LC/MS/MS

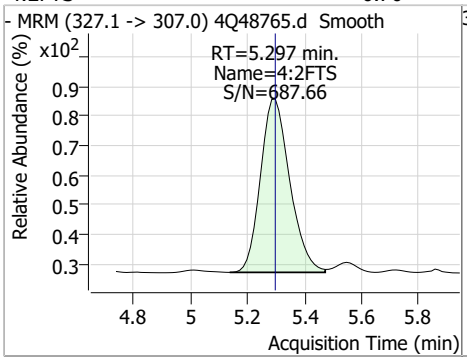
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.74	5.30	0.00	768				

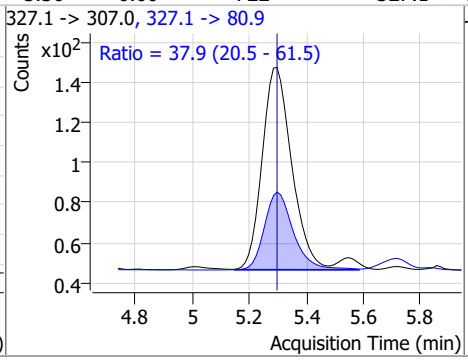


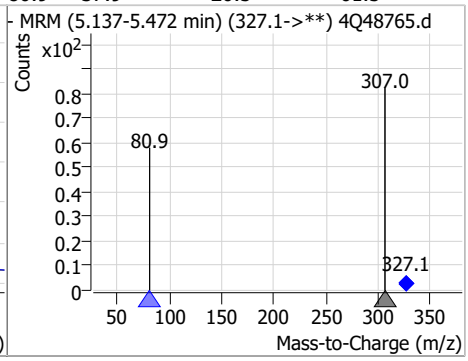




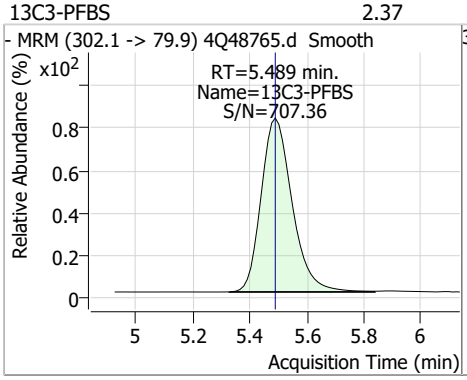
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.70	5.30	0.00	722	327.1 -> 80.9	37.9	20.5	61.5

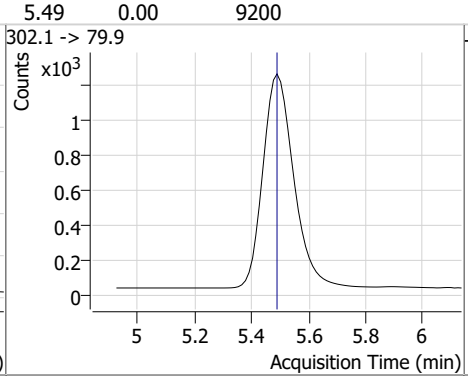


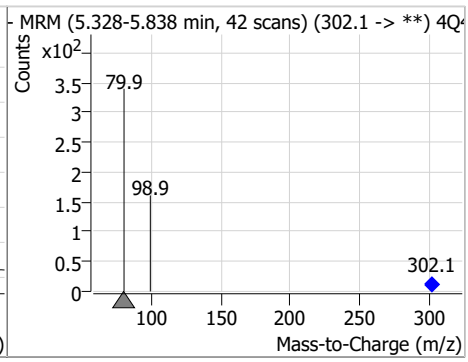




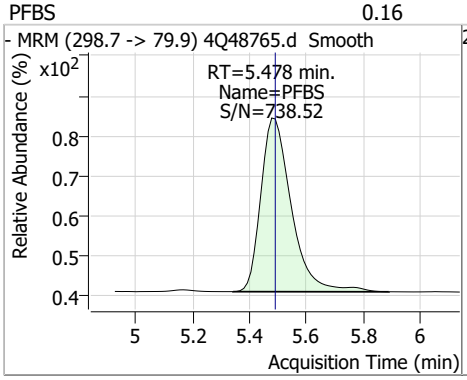
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.37	5.49	0.00	9200				

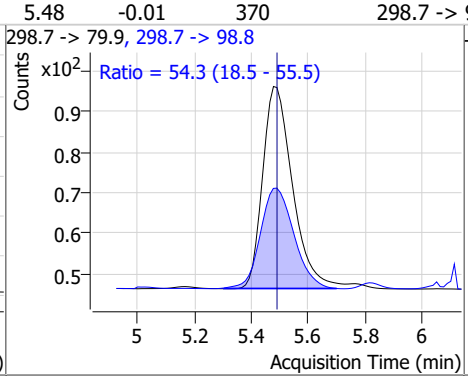


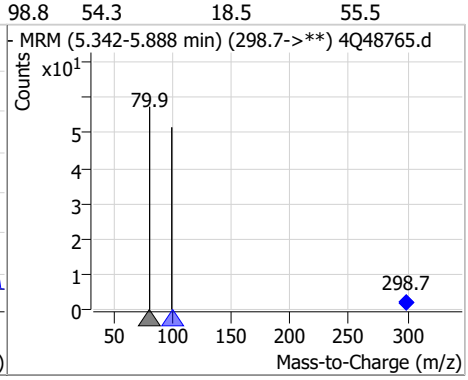




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.16	5.48	-0.01	370	298.7 -> 98.8	54.3	18.5	55.5

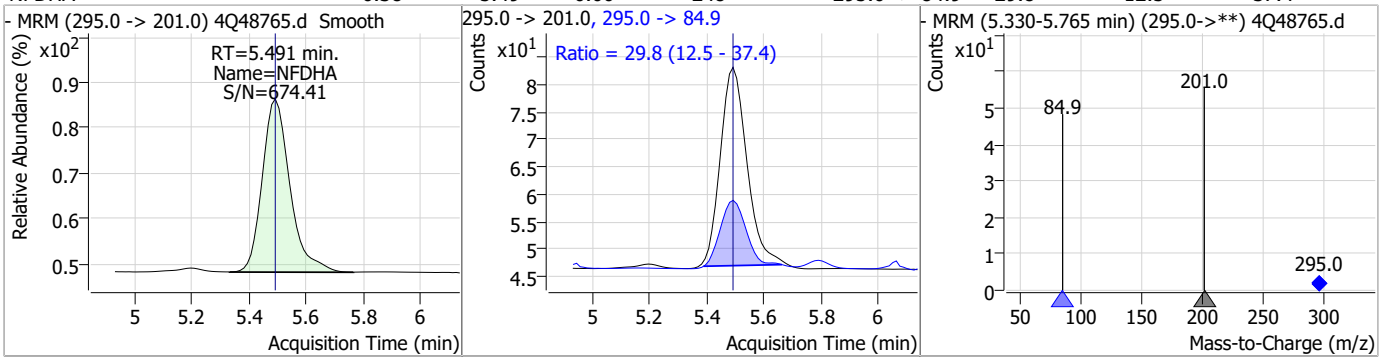




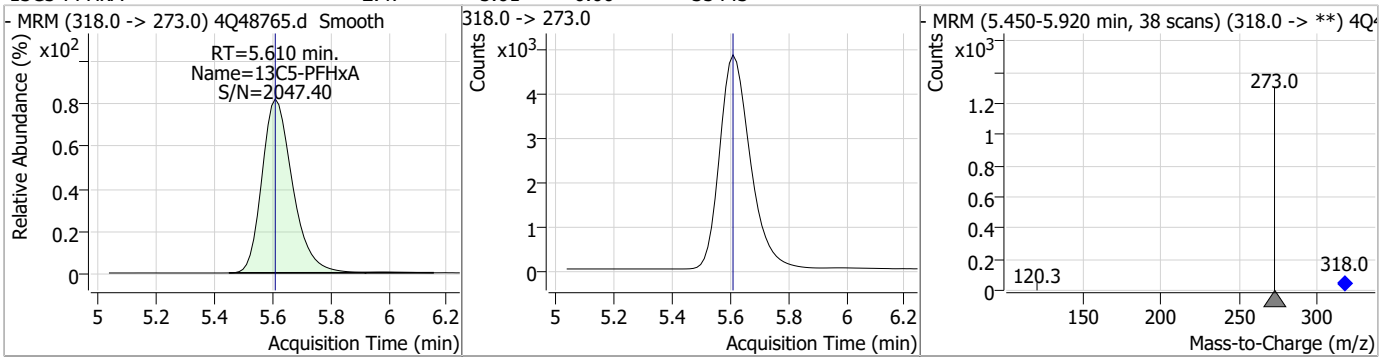


Perfluorinated Compounds by LC/MS/MS

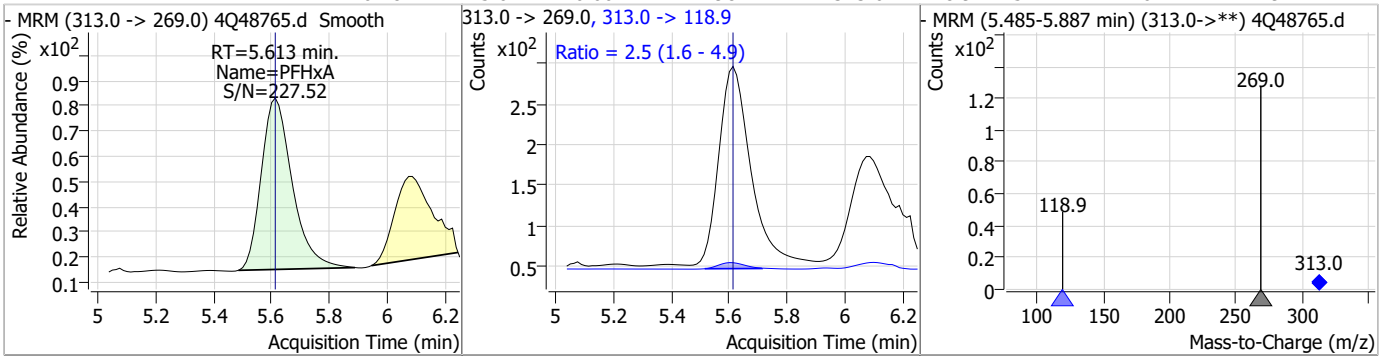
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.38	5.49	0.00	248	295.0 -> 84.9	29.8	12.5	37.4



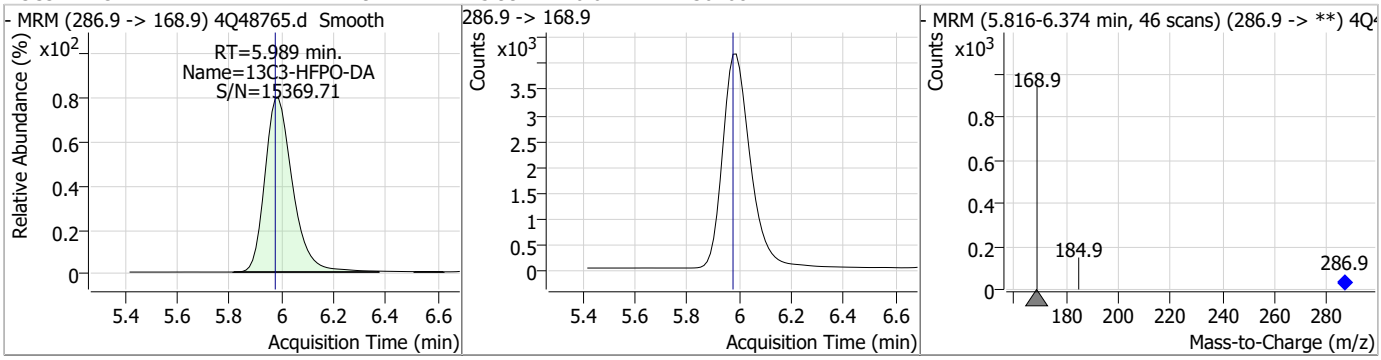
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.61	0.00	35443				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.18	5.61	0.00	1798	313.0 -> 118.9	2.5	1.6	4.9

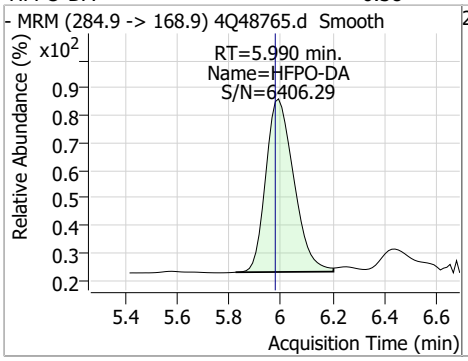


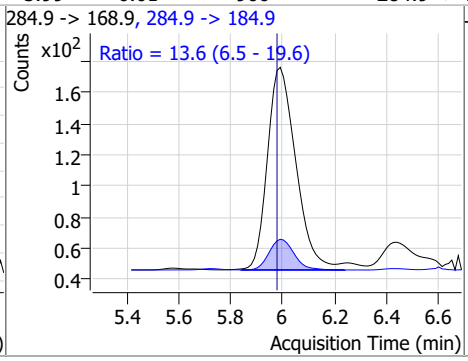
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.42	5.99	0.01	30708				

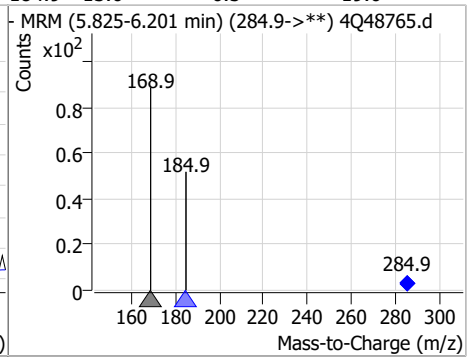


Perfluorinated Compounds by LC/MS/MS

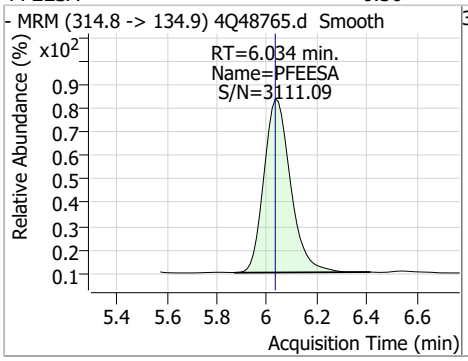
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.38	5.99	0.01	966	284.9 -> 184.9	13.6	6.5	19.6

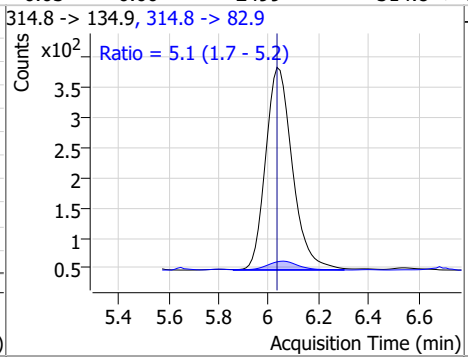


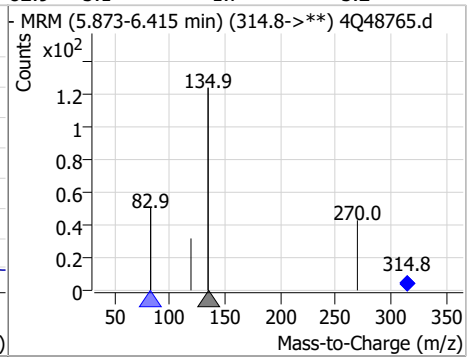




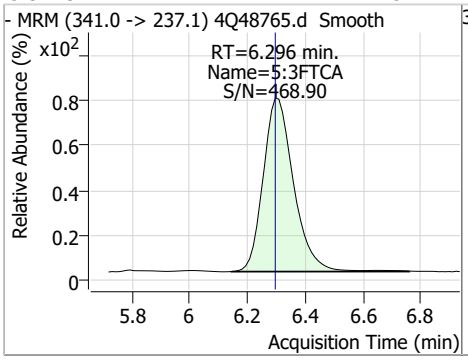
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.30	6.03	0.00	2499	314.8 -> 82.9	5.1	1.7	5.2

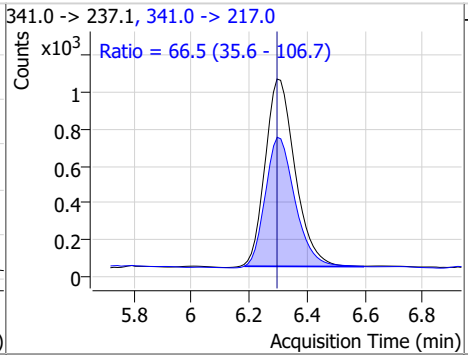


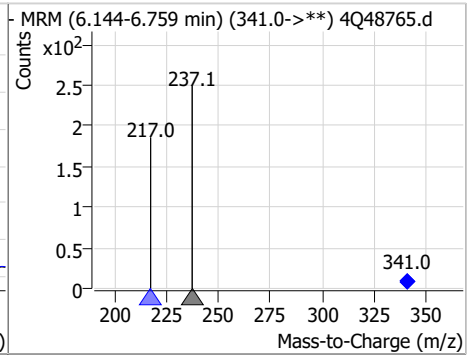




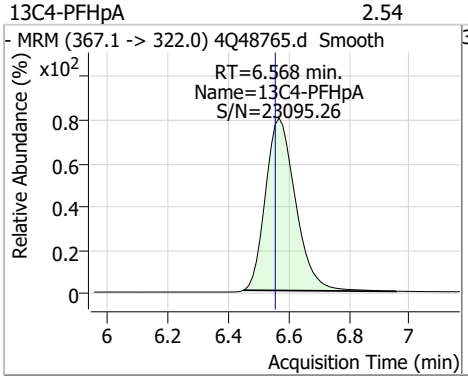
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.45	6.30	0.00	7449	341.0 -> 217.0	66.5	35.6	106.7

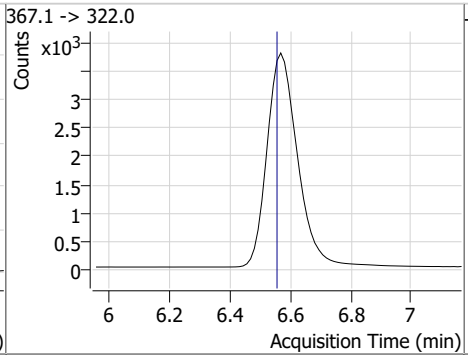


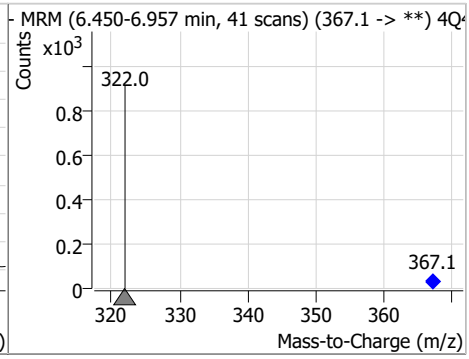




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.57	0.01	25847				

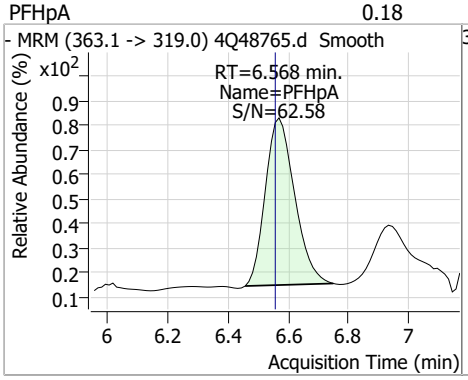


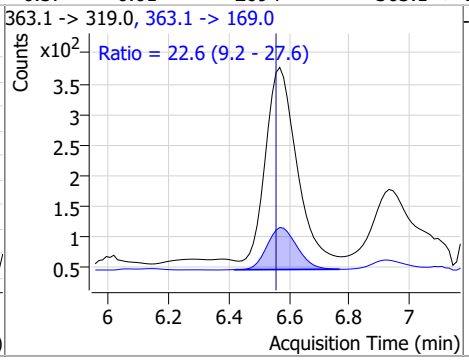


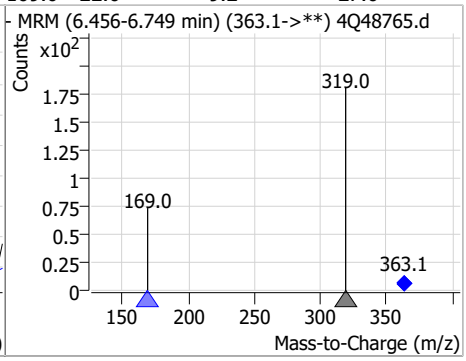


Perfluorinated Compounds by LC/MS/MS

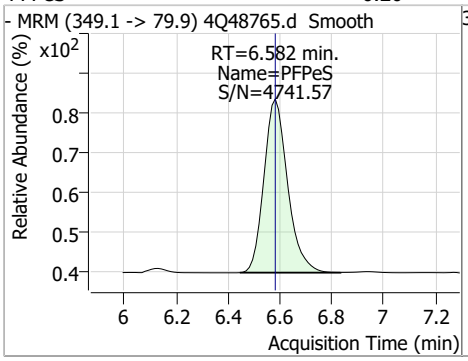
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.18	6.57	0.01	2094	363.1 -> 169.0	22.6	9.2	27.6

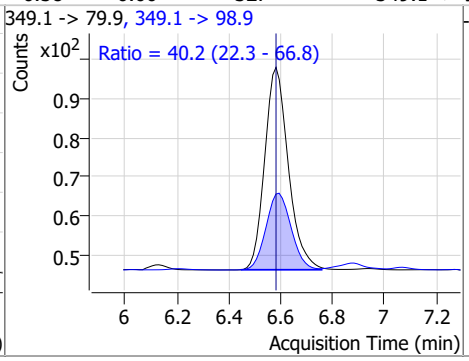


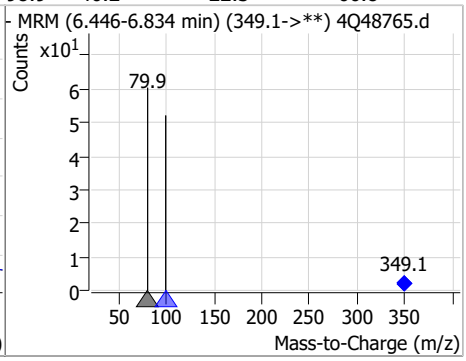




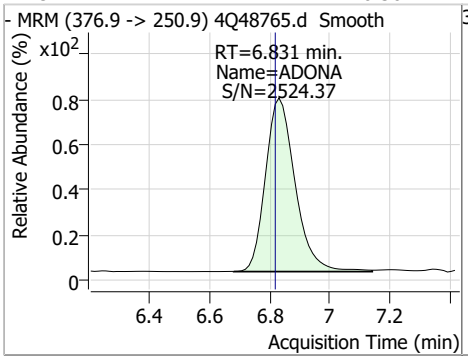
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.20	6.58	0.00	327	349.1 -> 98.9	40.2	22.3	66.8

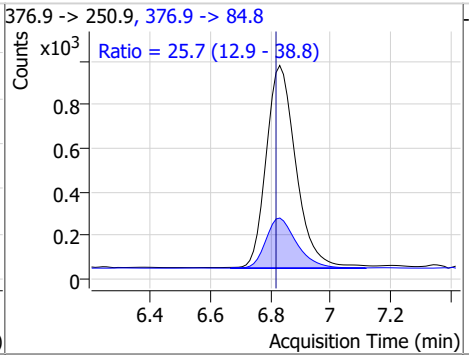


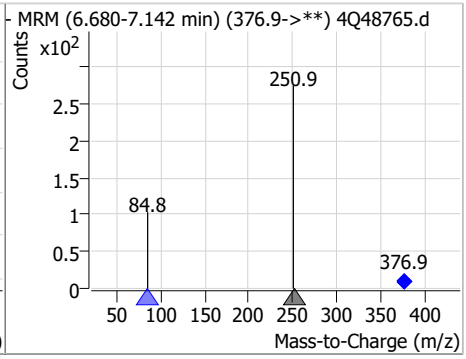




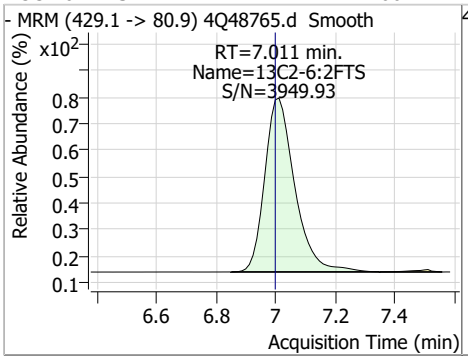
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.36	6.83	0.01	6404	376.9 -> 84.8	25.7	12.9	38.8

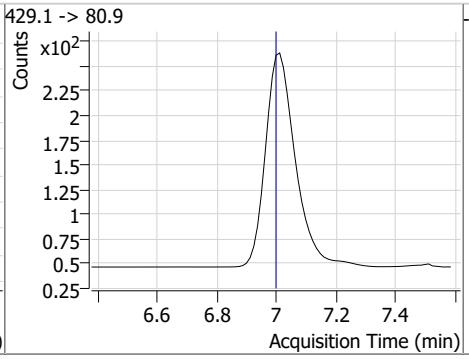


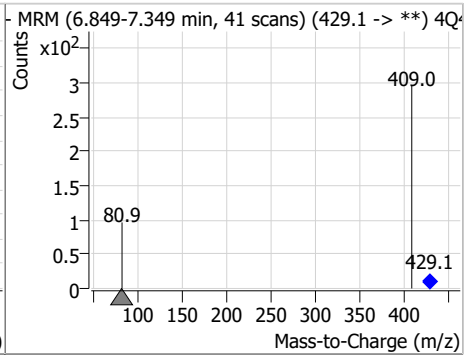




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.00	7.01	0.01	1524				

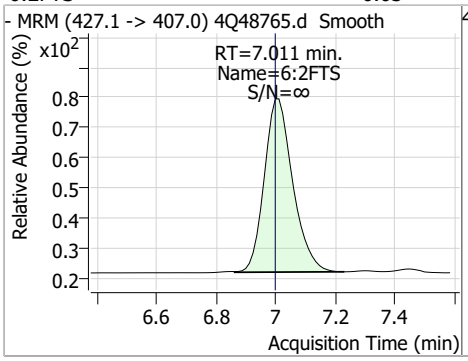


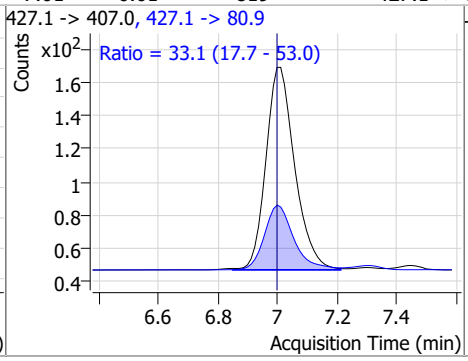


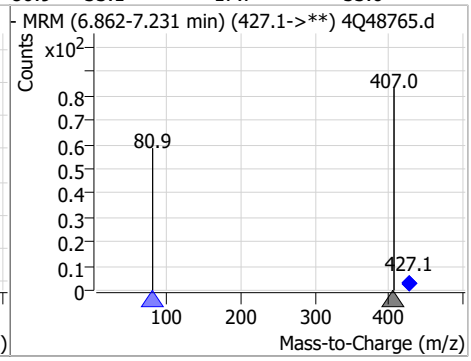


Perfluorinated Compounds by LC/MS/MS

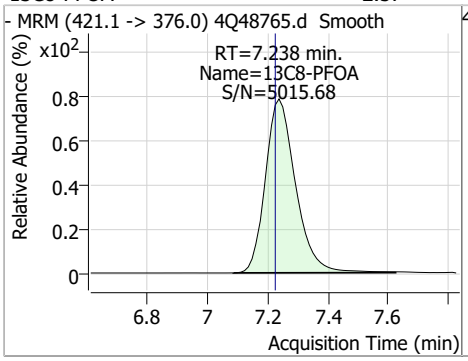
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.63	7.01	0.01	819	427.1 -> 80.9	33.1	17.7	53.0

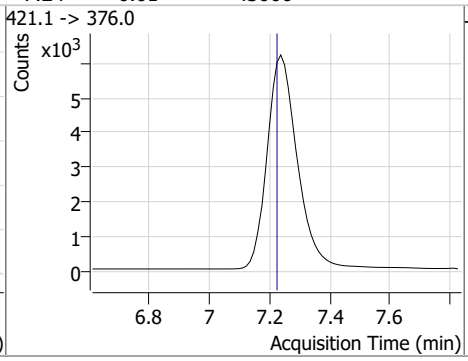


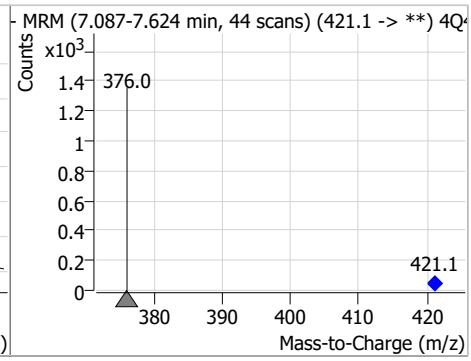




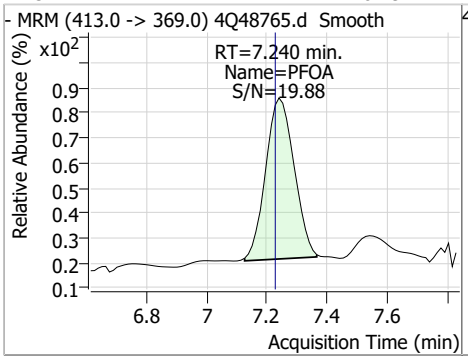
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.57	7.24	0.01	43006				

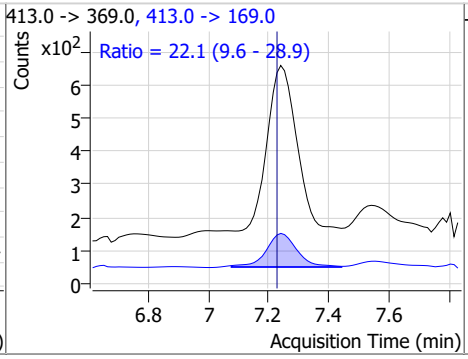


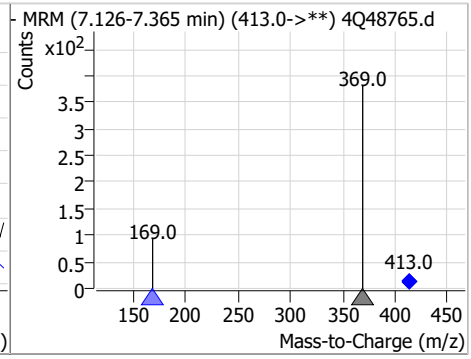




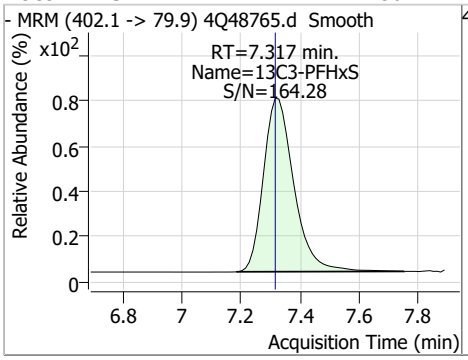
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.19	7.24	0.01	3236	413.0 -> 169.0	22.1	9.6	28.9

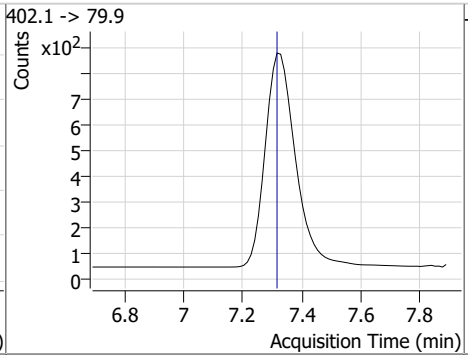


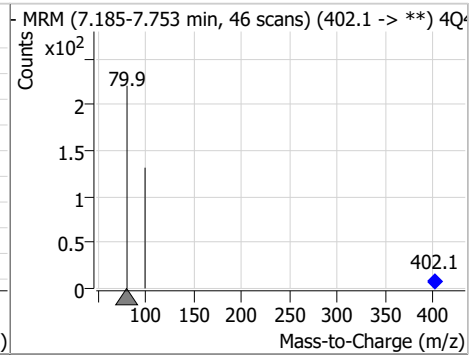




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.36	7.32	0.00	5958				

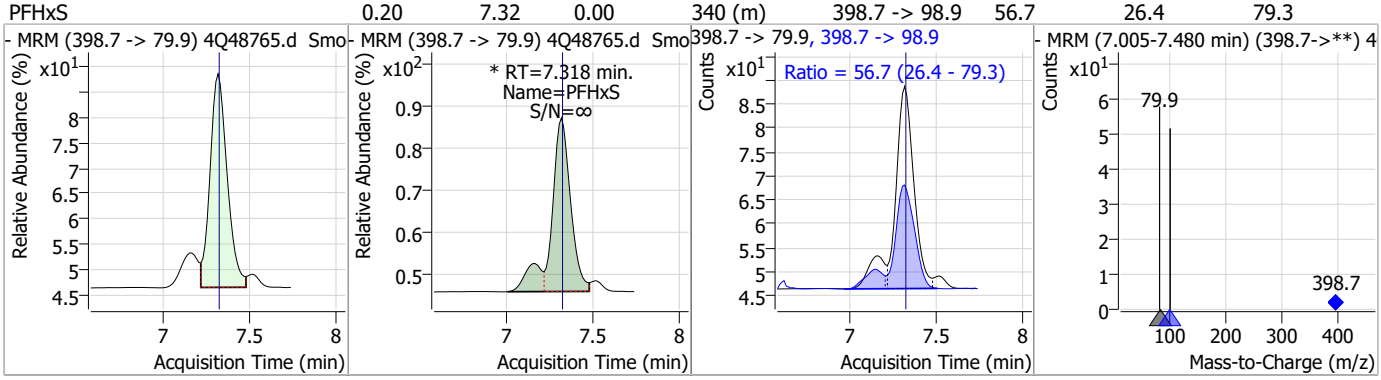




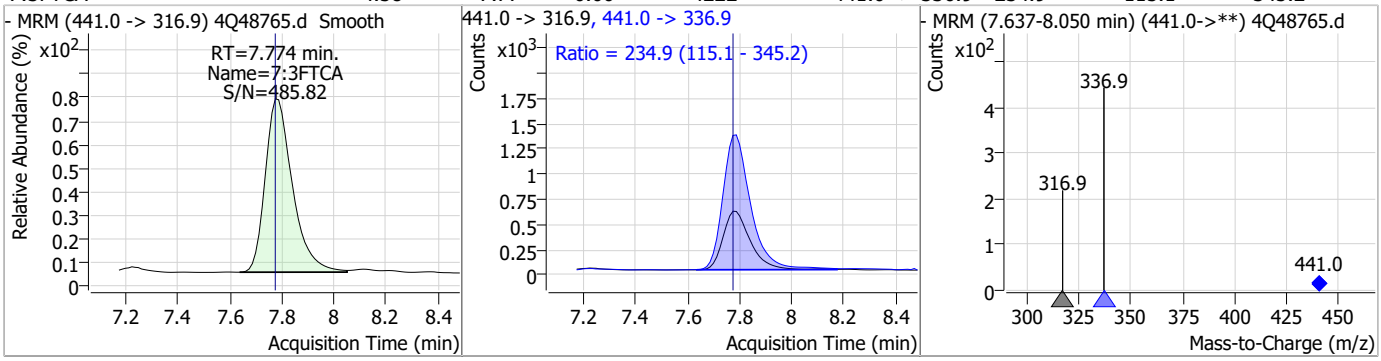


Perfluorinated Compounds by LC/MS/MS

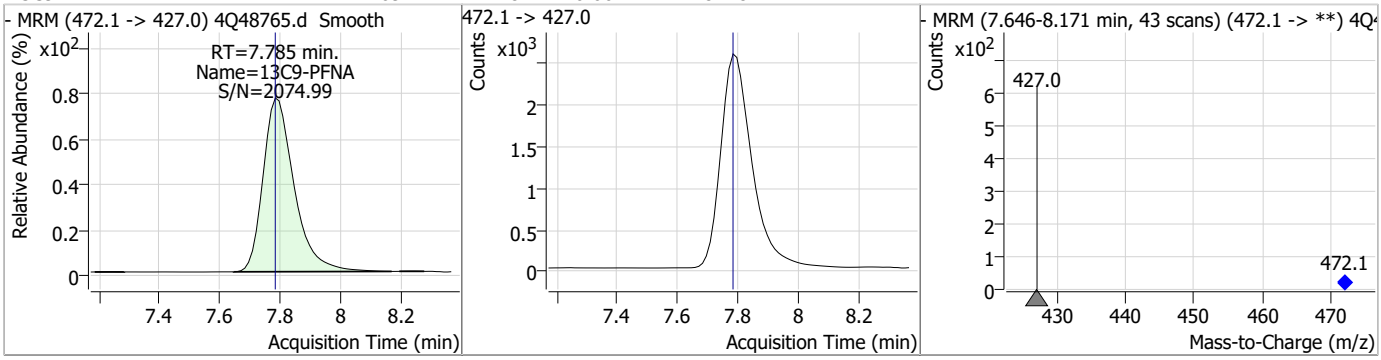
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.20	7.32	0.00	340 (m)	398.7 -> 98.9	56.7	26.4	79.3



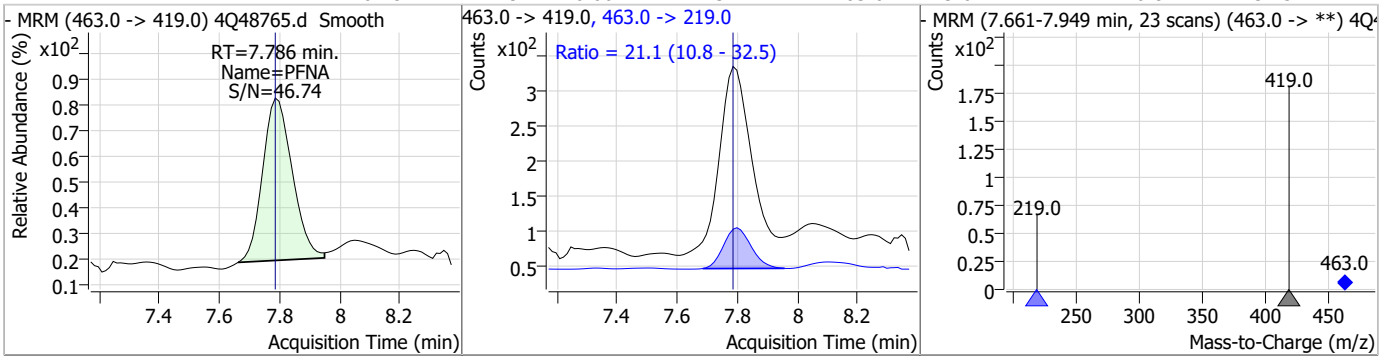
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.58	7.77	0.00	4222	441.0 -> 336.9	234.9	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.09	7.78	0.00	18418				

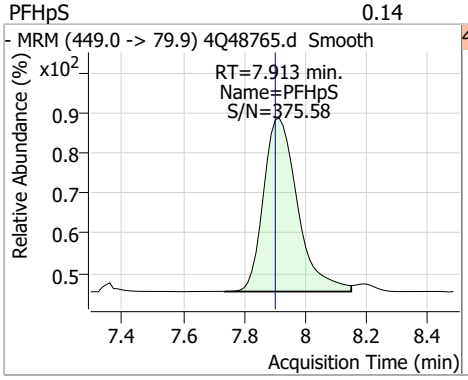


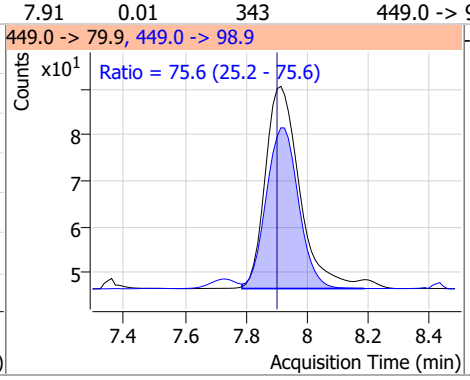
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.18	7.79	0.00	1737	463.0 -> 219.0	21.1	10.8	32.5

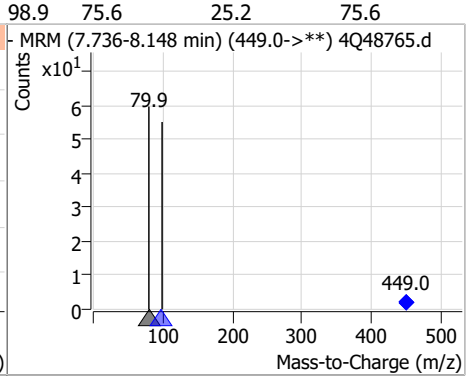


Perfluorinated Compounds by LC/MS/MS

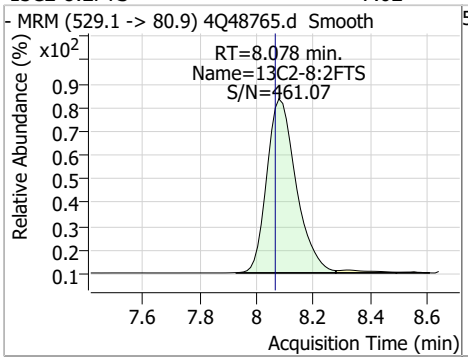
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.14	7.91	0.01	343	449.0 -> 98.9	75.6	25.2	75.6

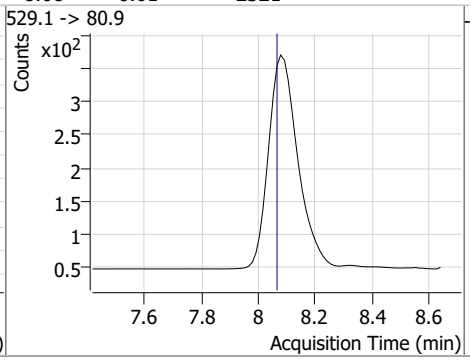


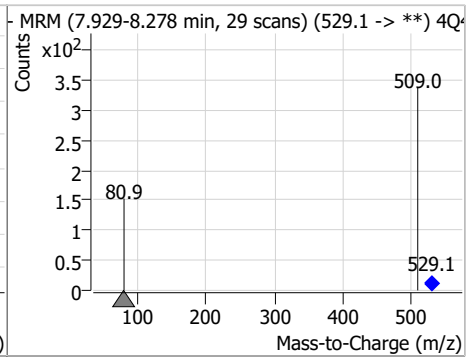




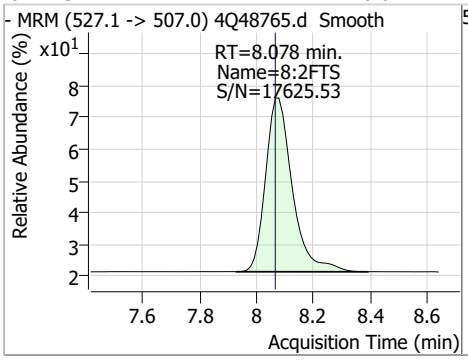
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.02	8.08	0.01	2321				

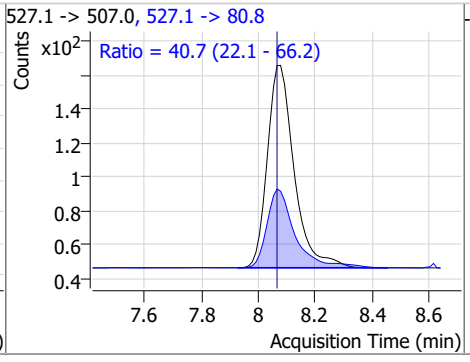


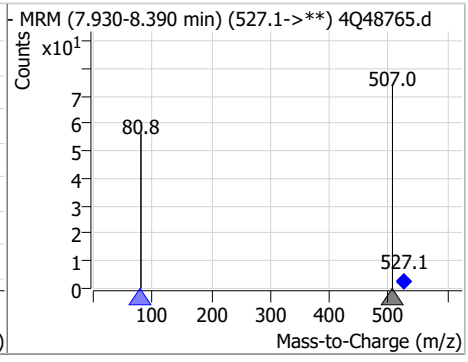




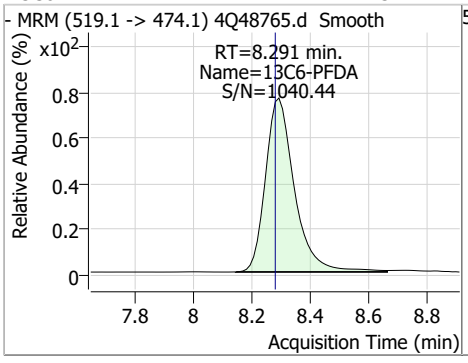
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.84	8.08	0.01	779	527.1 -> 80.8	40.7	22.1	66.2

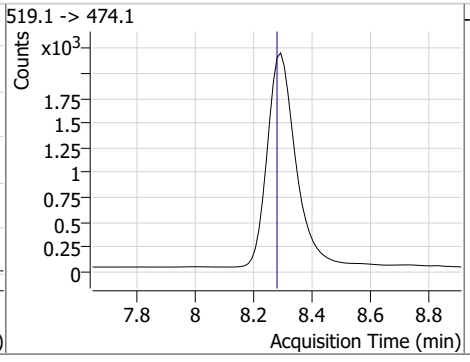


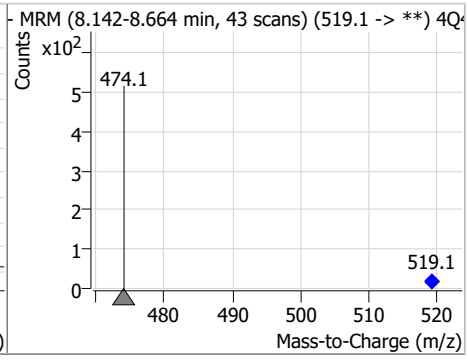




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.34	8.29	0.01	14987				

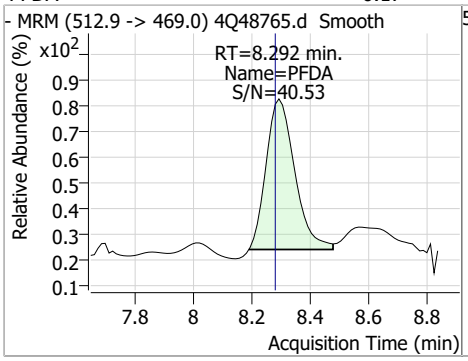


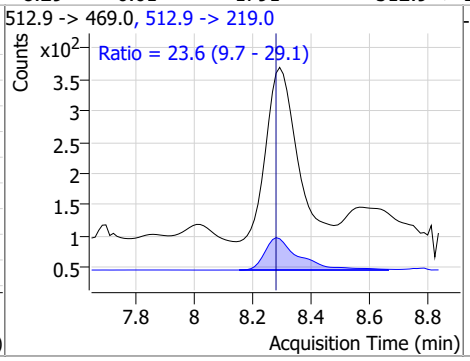


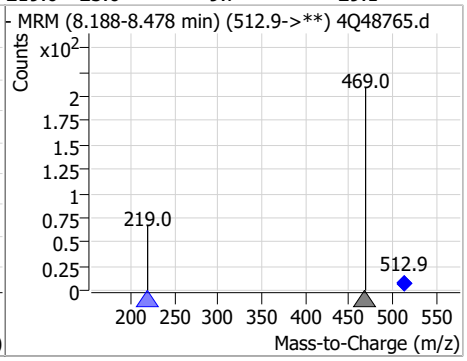


Perfluorinated Compounds by LC/MS/MS

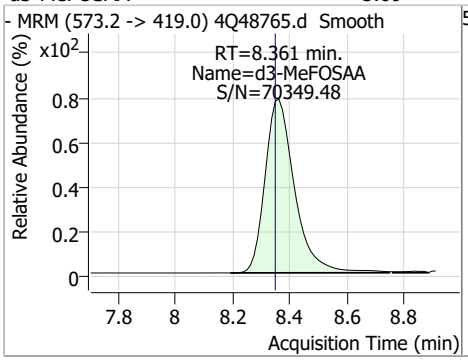
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.17	8.29	0.01	1791	512.9 -> 219.0	23.6	9.7	29.1

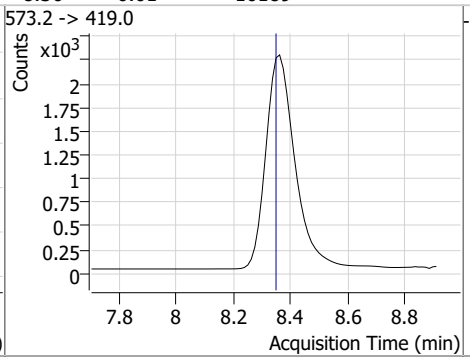


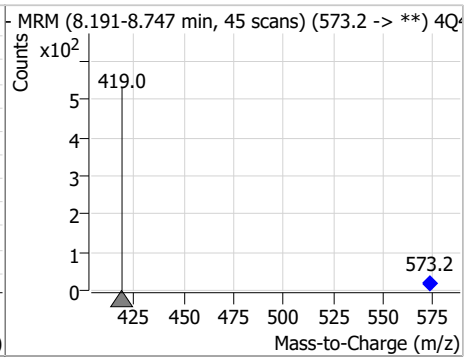




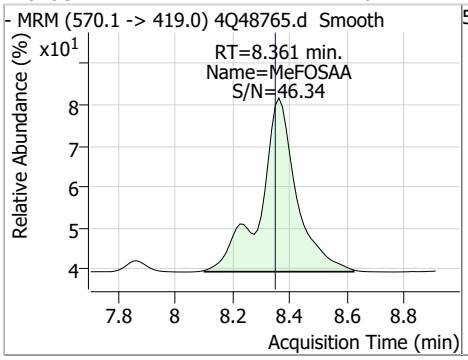
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.09	8.36	0.01	16189				

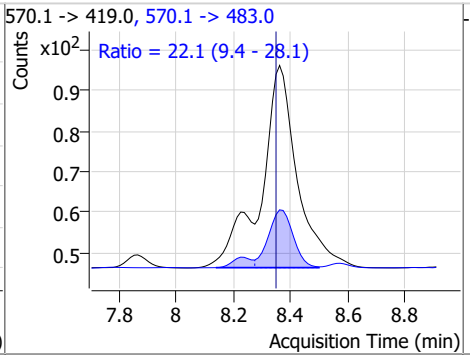


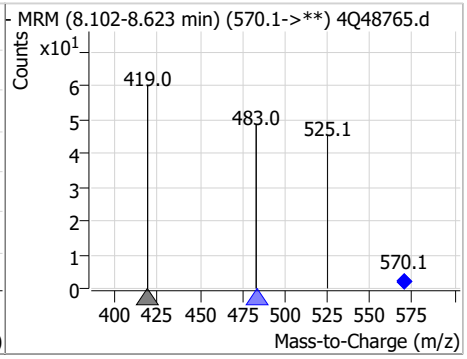




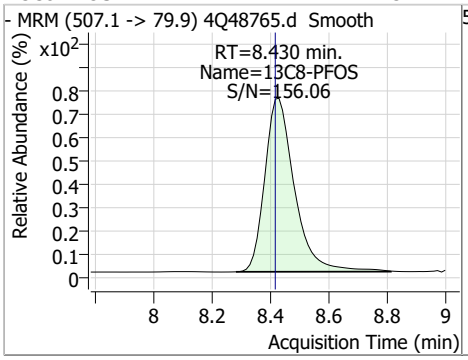
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.22	8.36	0.01	439	570.1 -> 483.0	22.1	9.4	28.1

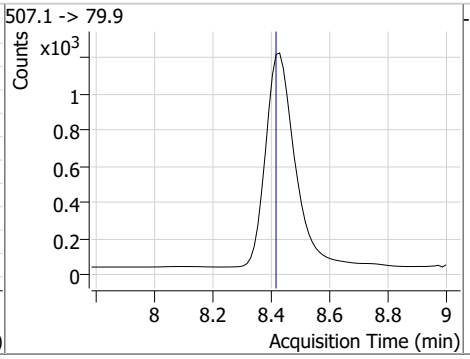


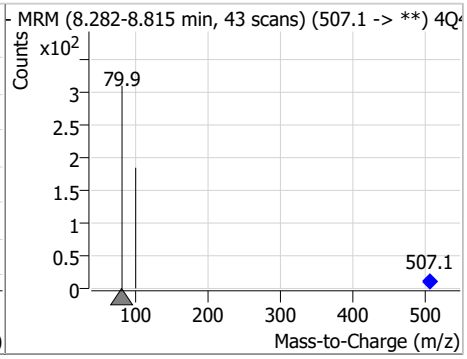




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.43	8.43	0.01	8374				

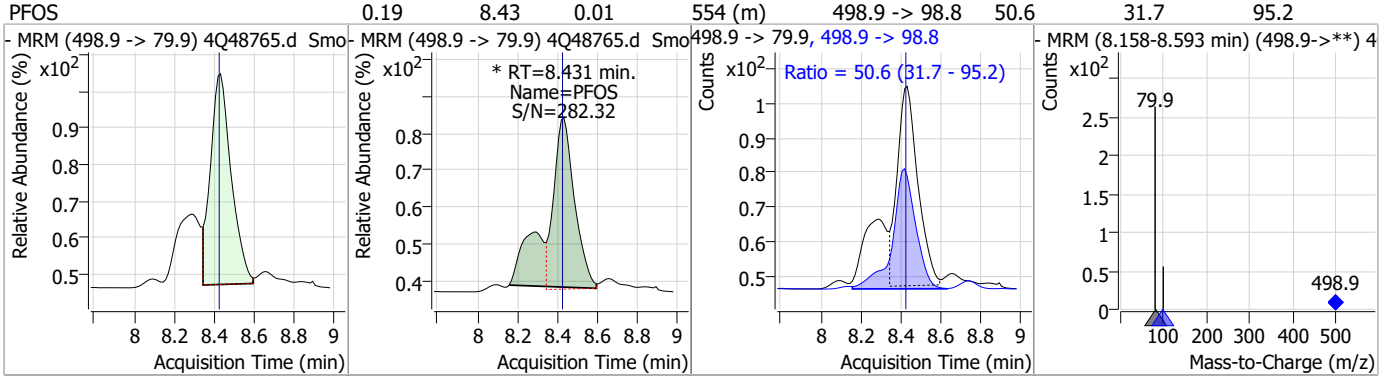




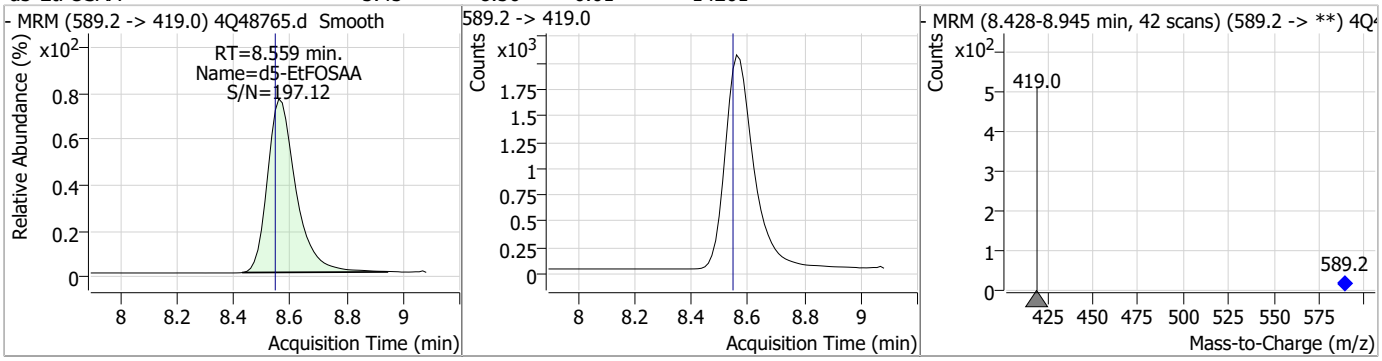


Perfluorinated Compounds by LC/MS/MS

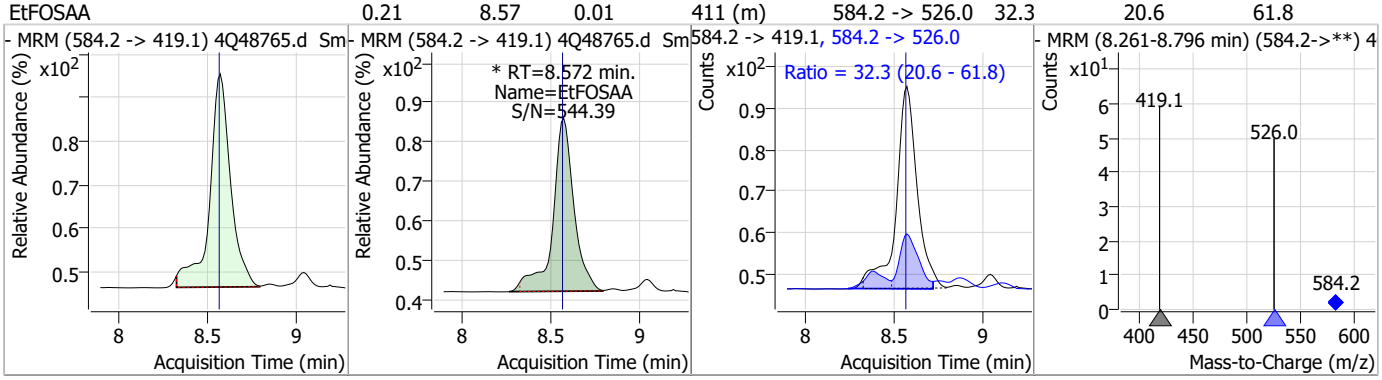
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.43	0.01	554 (m)	498.9 -> 98.8	50.6	31.7	95.2



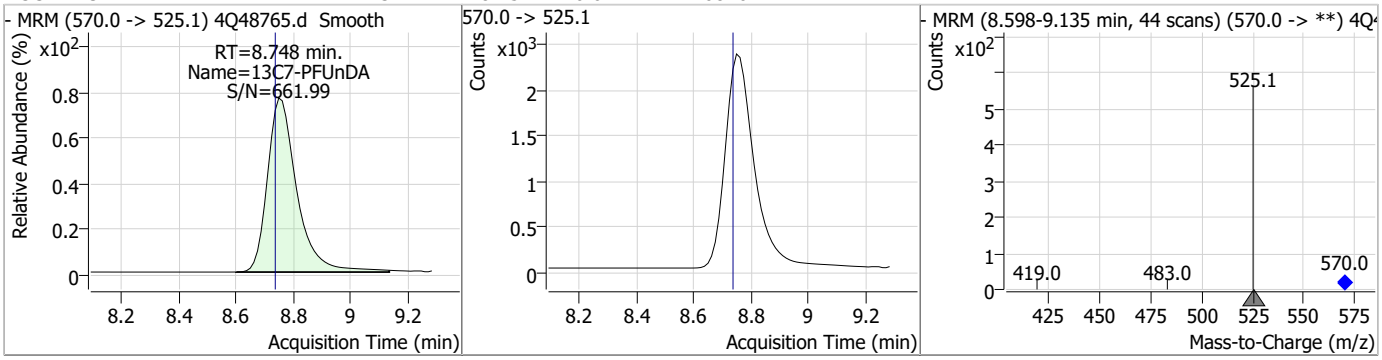
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.45	8.56	0.01	14261				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.21	8.57	0.01	411 (m)	584.2 -> 526.0	32.3	20.6	61.8

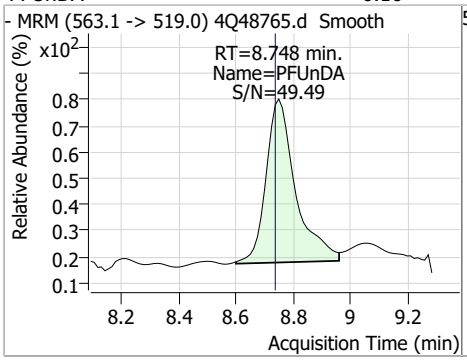


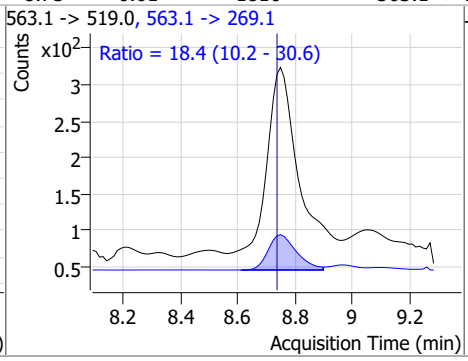
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.75	0.01	16840				

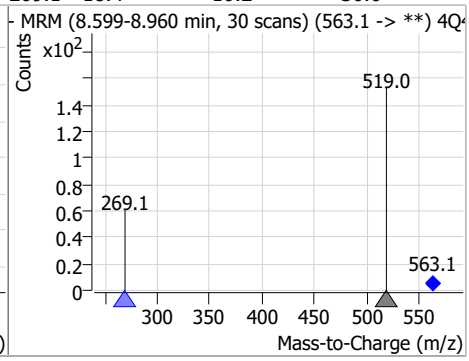


Perfluorinated Compounds by LC/MS/MS

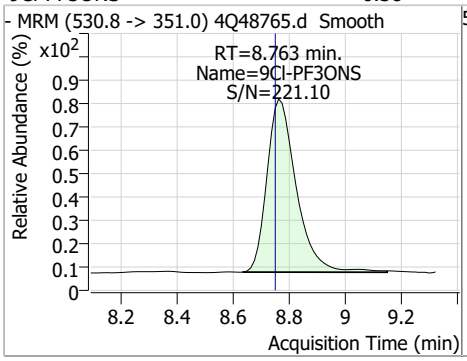
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.16	8.75	0.01	1810	563.1 -> 269.1	18.4	10.2	30.6

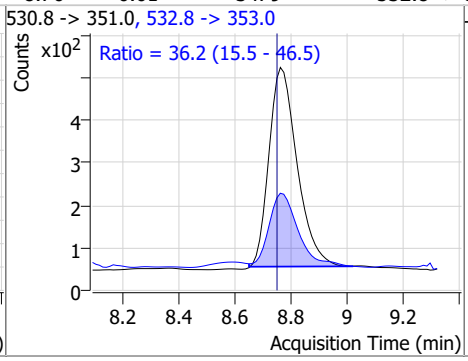


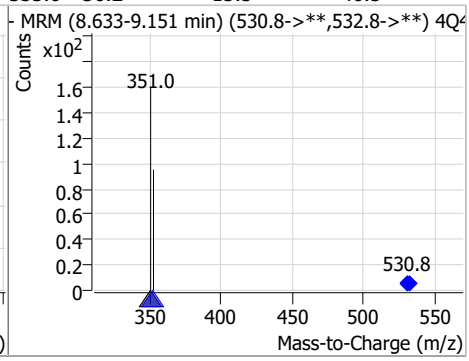




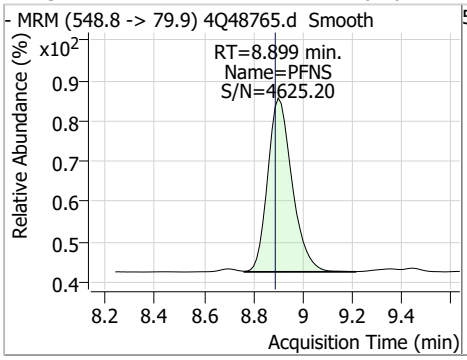
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.38	8.76	0.01	3479	532.8 -> 353.0	36.2	15.5	46.5

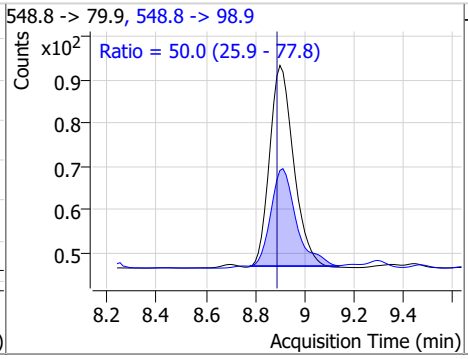


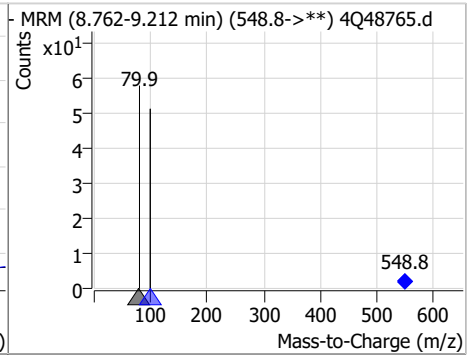




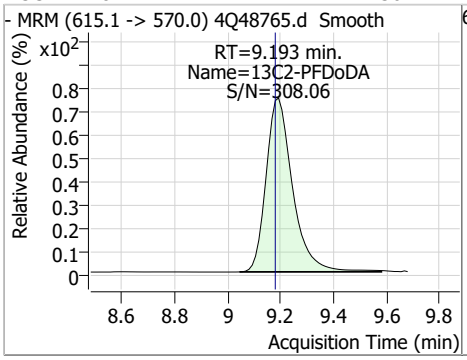
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.20	8.90	0.01	323	548.8 -> 98.9	50.0	25.9	77.8

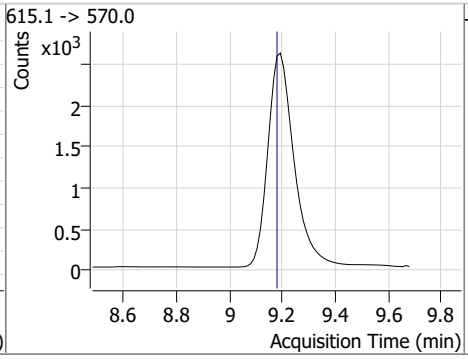


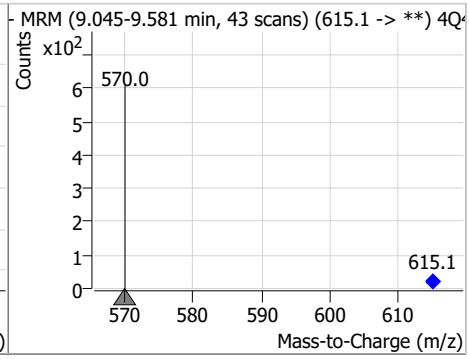




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.30	9.19	0.01	17978				

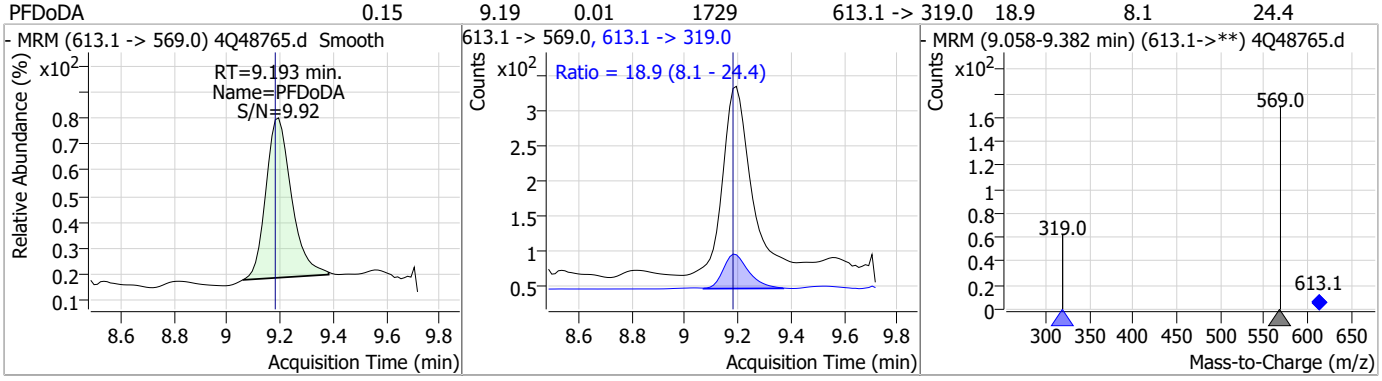




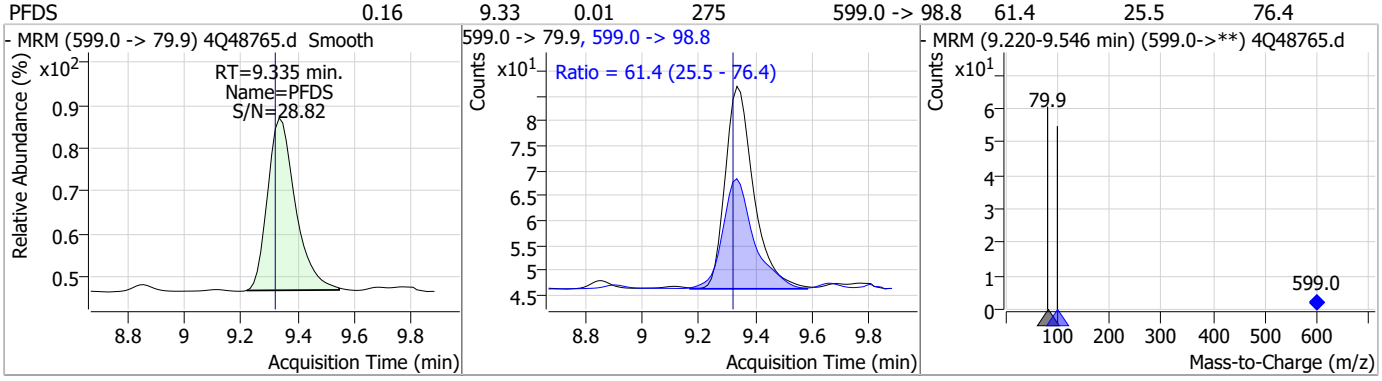


Perfluorinated Compounds by LC/MS/MS

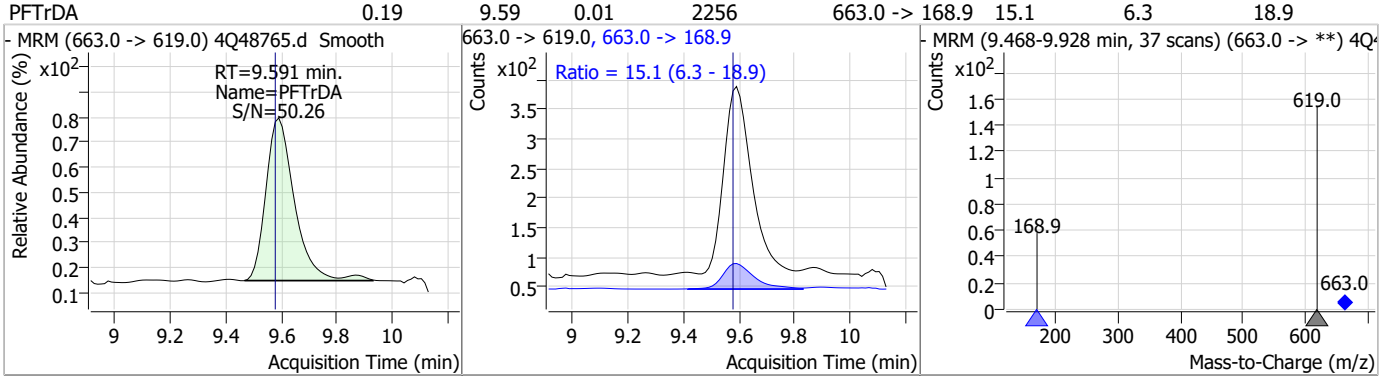
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.15	9.19	0.01	1729	613.1 -> 319.0	18.9	8.1	24.4



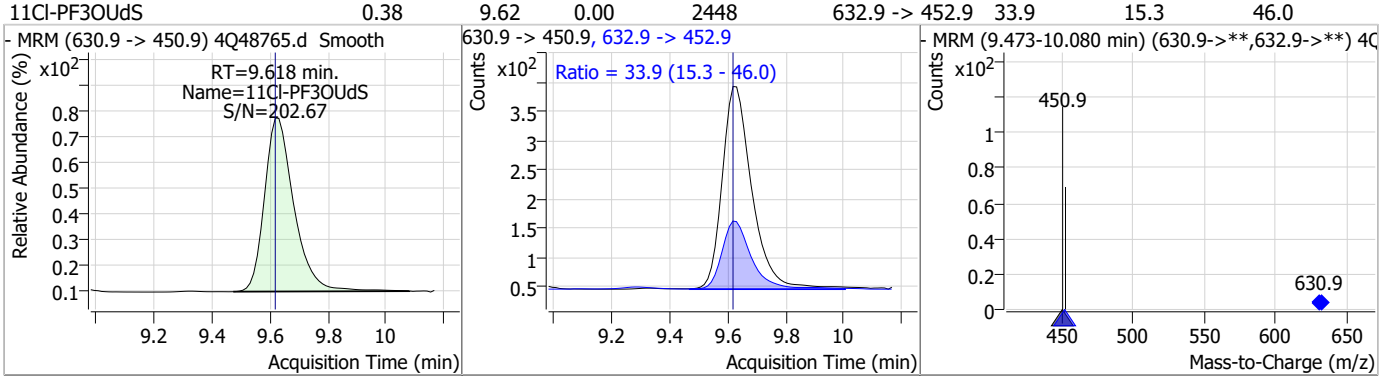
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.16	9.33	0.01	275	599.0 -> 98.8	61.4	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.19	9.59	0.01	2256	663.0 -> 168.9	15.1	6.3	18.9

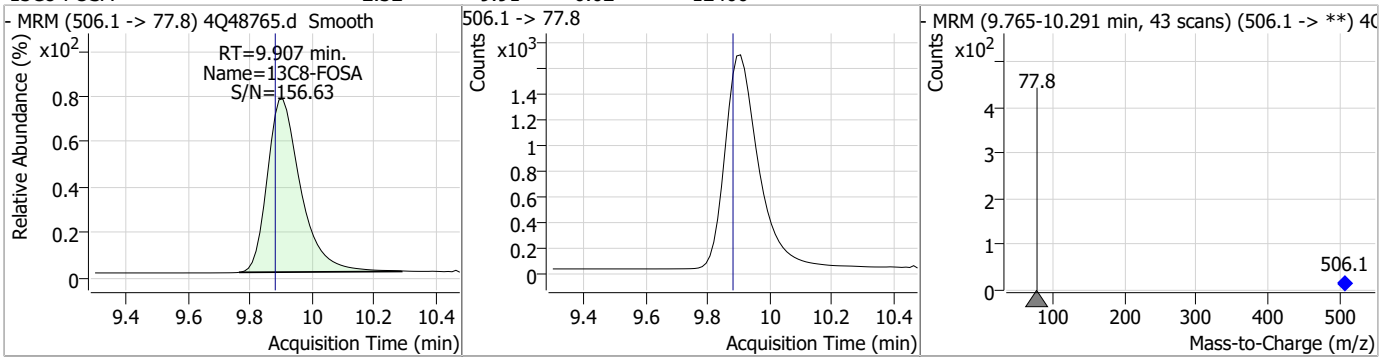


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.38	9.62	0.00	2448	632.9 -> 452.9	33.9	15.3	46.0

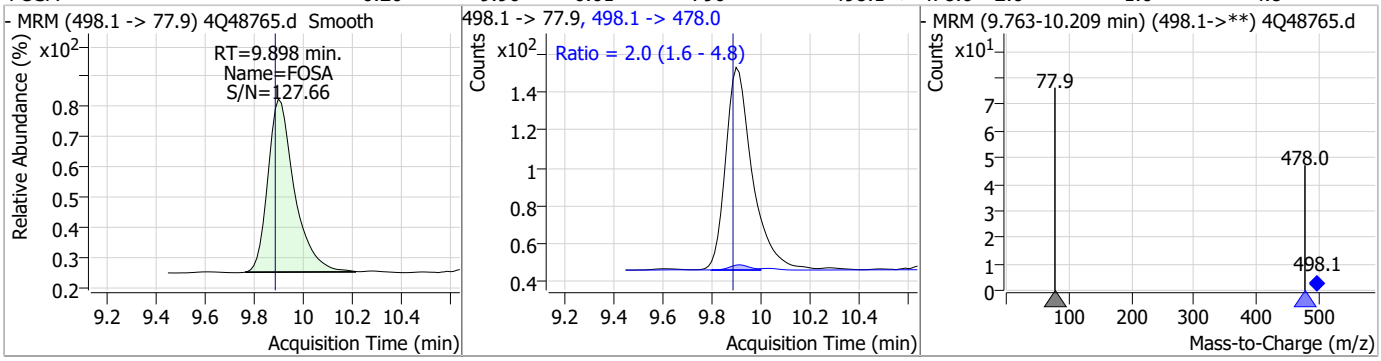


Perfluorinated Compounds by LC/MS/MS

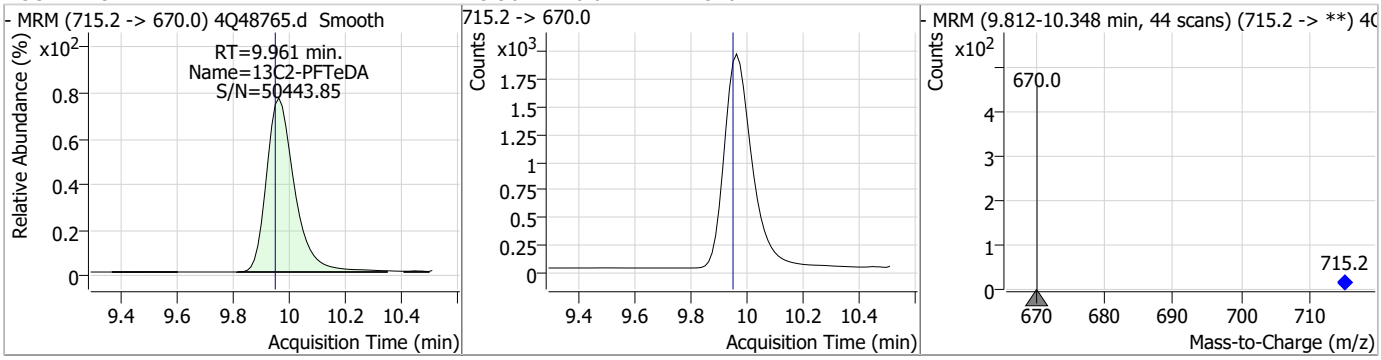
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.32	9.91	0.02	12400				



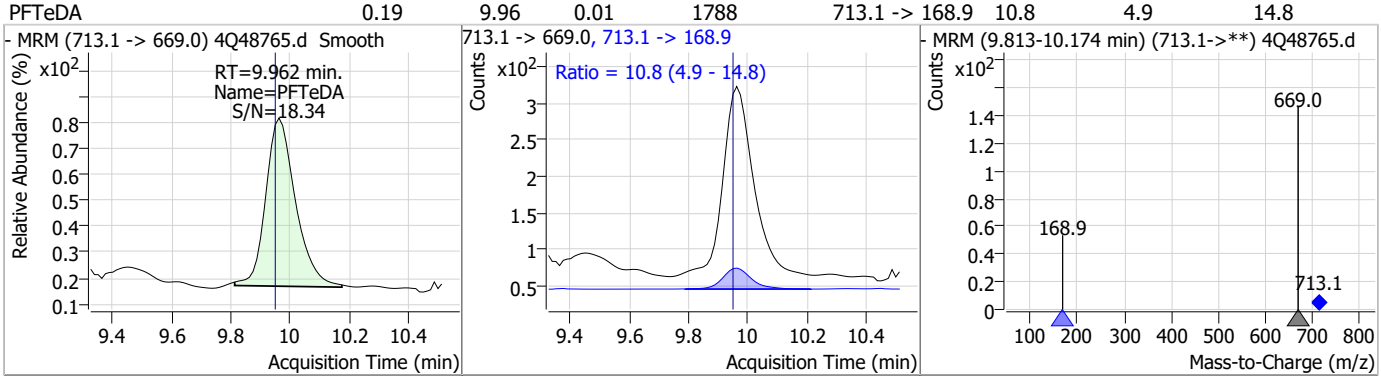
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.20	9.90	0.01	790	498.1 -> 478.0	2.0	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.96	0.01	13464				

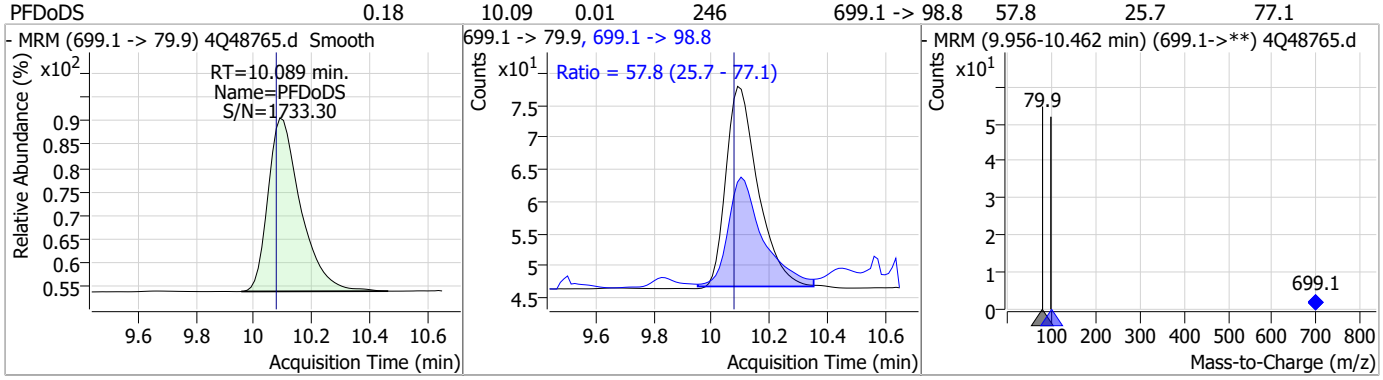


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.19	9.96	0.01	1788	713.1 -> 168.9	10.8	4.9	14.8

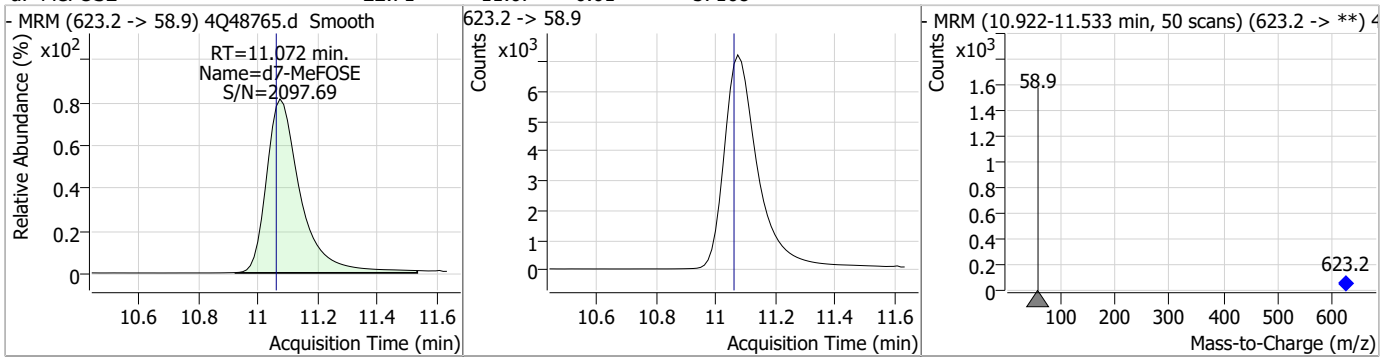


Perfluorinated Compounds by LC/MS/MS

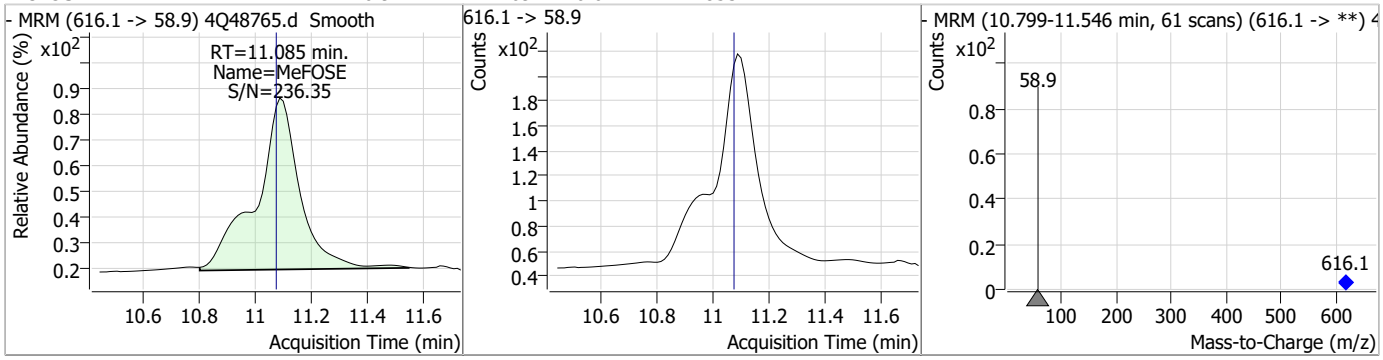
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.18	10.09	0.01	246	699.1 -> 98.8	57.8	25.7	77.1



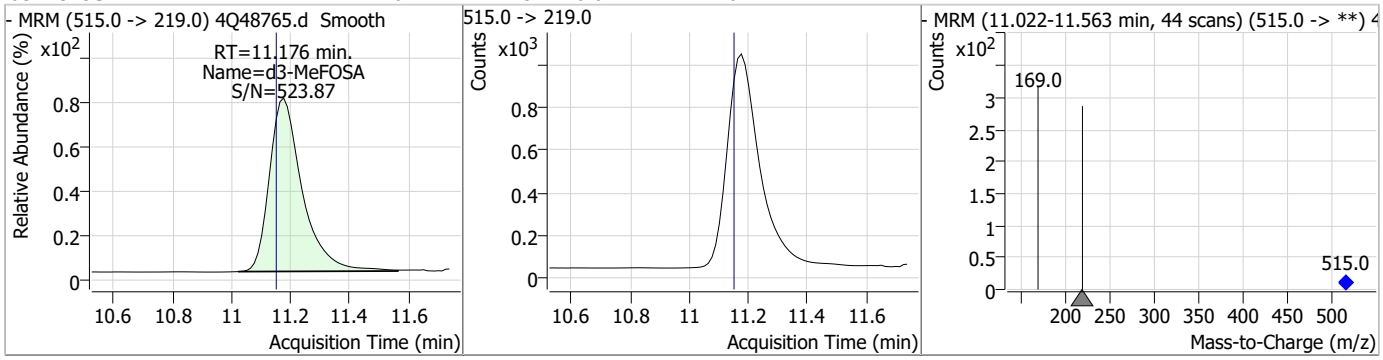
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.71	11.07	0.01	57168				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.91	11.09	0.01	1853				

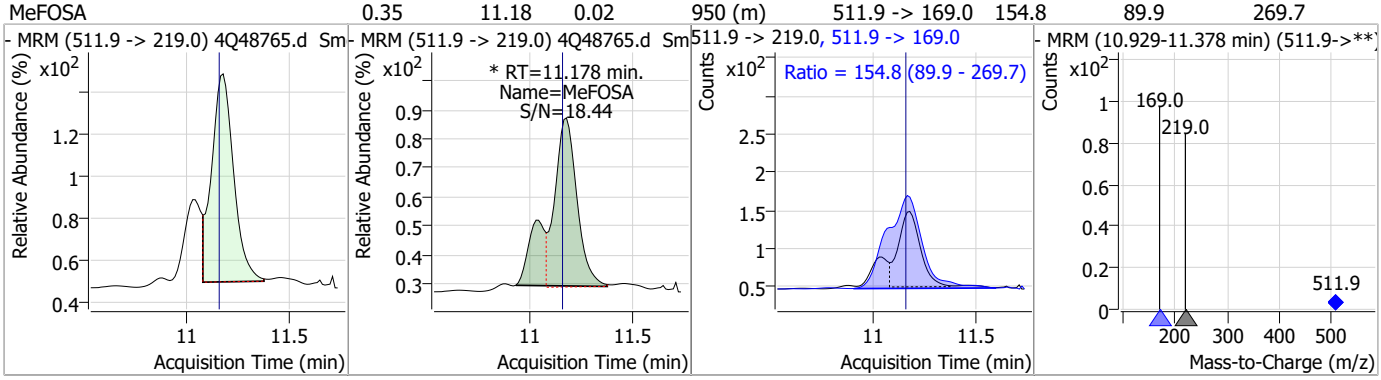


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	11.18	0.02	7746				

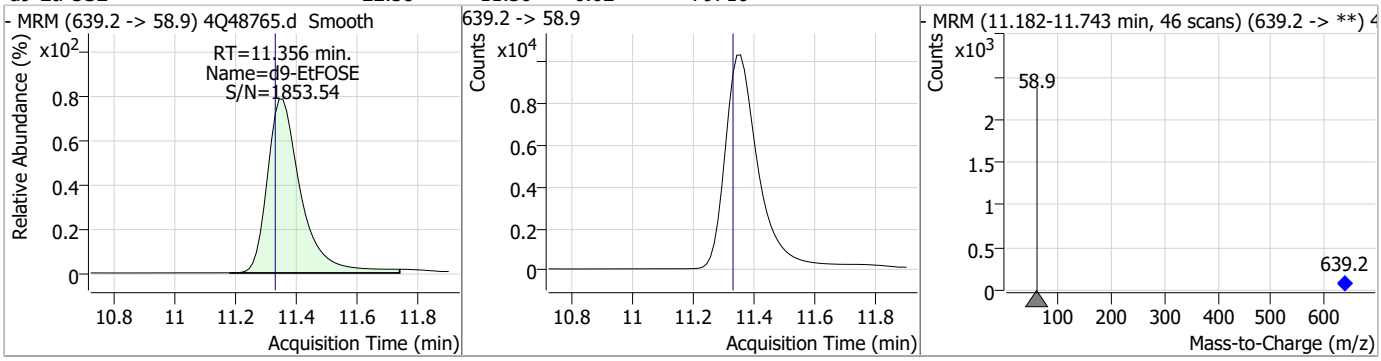


Perfluorinated Compounds by LC/MS/MS

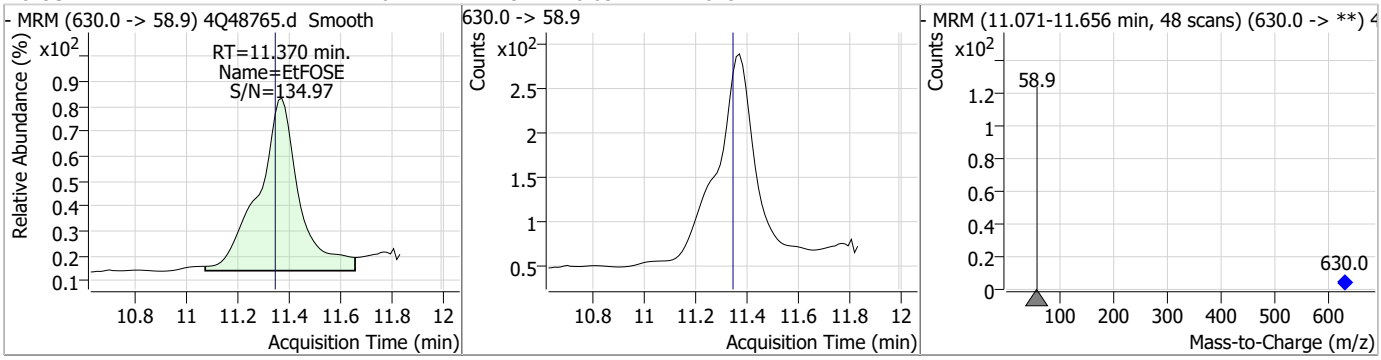
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.35	11.18	0.02	950 (m)	511.9 -> 169.0	154.8	89.9	269.7



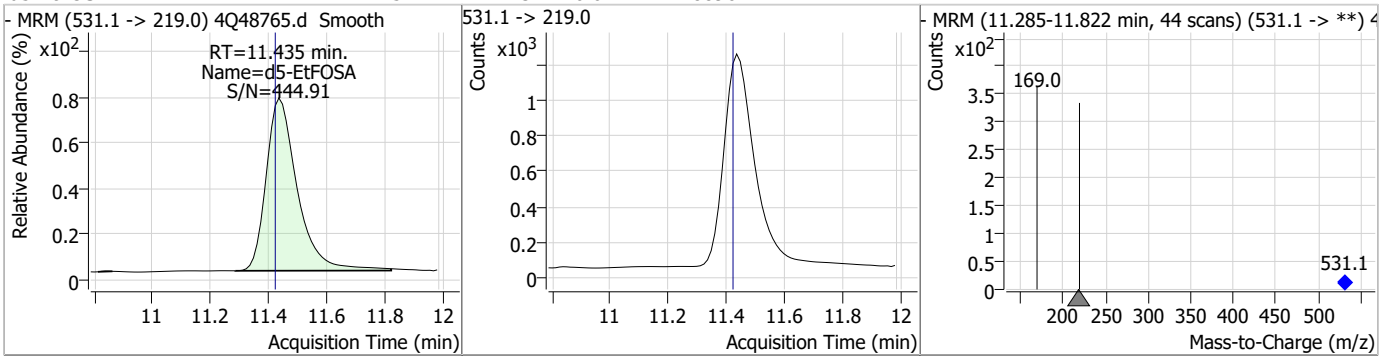
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.58	11.36	0.02	79716				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.07	11.37	0.03	2675				

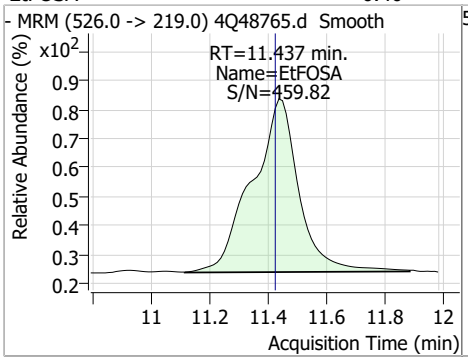


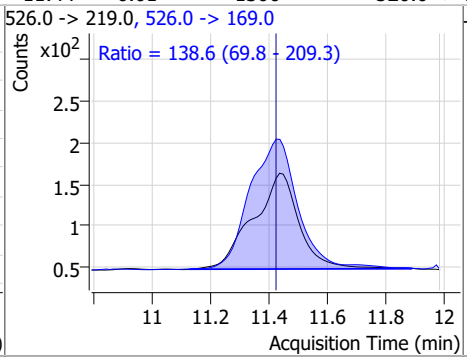
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	11.43	0.01	8896				

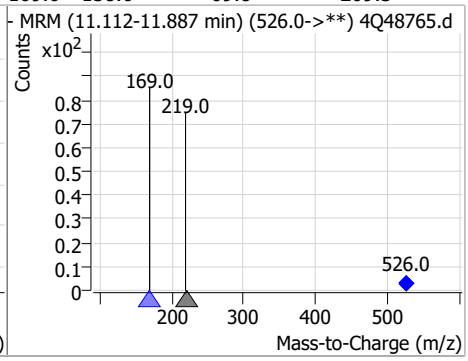


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.40	11.44	0.01	1306	526.0 -> 169.0	138.6	69.8	209.3







7.7.12

7

Manual Integration Approval Summary

Sample Number: S4Q713-CC711
Lab FileID: 4Q48765.D
Injection Time: 08/09/23 15:30
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.32	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.57	Split peak
MeFOSA	31506-32-8		11.18	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48776.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 6:19:13 PM
Sample Name : cc711-4
Vial : P1-A5
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.886	216.8 -> 171.9	113788	10.00	µg/L	-0.025
M5-PFPeA	4.412	268.3 -> 223.0	59798	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	38769	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	28549	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	46965	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	21016	1.25	µg/L	0.013
M6-PFDA	8.303	519.1 -> 474.1	15174	1.25	µg/L	0.025
M7-PFUnDA	8.760	570.0 -> 525.1	19524	1.25	µg/L	0.025
M2-PFDoDA	9.205	615.1 -> 570.0	20253	1.25	µg/L	0.025
M2-PFTeDA	9.974	715.2 -> 670.0	15508	1.25	µg/L	0.025
M8-FOSA	9.907	506.1 -> 77.8	14031	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	9349	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	6720	2.50	µg/L	0.012
M8-PFOS	8.430	507.1 -> 79.9	9101	2.50	µg/L	0.013
M2-4:2FTS	5.309	329.1 -> 80.9	846	5.00	µg/L	0.012
M2-6:2FTS	7.023	429.1 -> 80.9	1455	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2175	5.00	µg/L	0.026
M3-MeFOSAA	8.373	573.2 -> 419.0	18804	5.00	µg/L	0.025
M3-HFPO-DA	6.002	286.9 -> 168.9	33024	10.00	µg/L	0.025
M5-EtFOSAA	8.571	589.2 -> 419.0	16326	5.00	µg/L	0.025
M7-MeFOSE	11.072	623.2 -> 58.9	61867	25.00	µg/L	0.012
M9-EtFOSE	11.356	639.2 -> 58.9	83398	25.00	µg/L	0.025
M5-EtFOSA	11.435	531.1 -> 219.0	9384	2.50	µg/L	0.012
M3-MeFOSA	11.176	515.0 -> 219.0	8515	2.50	µg/L	0.025
13C4-PFOS	8.443	502.8 -> 79.9	9613	2.50	µg/L	0.025
13C3-PFBA	2.891	216.0 -> 172.0	61499	5.00	µg/L	-0.013
18O2-PFHxS	7.328	403.0 -> 83.9	4983	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	57982	2.50	µg/L	0.025
13C2-PFDA	8.304	515.1 -> 470.1	17403	1.25	µg/L	0.025
13C5-PFNA	7.798	468.0 -> 423.0	25592	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	37374	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.309	329.1 -> 80.9	846	6.80	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 136.0%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1455	6.12	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2175	6.02	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
13C2-PFDoDA	9.205	615.1 -> 570.0	20253	1.36	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C2-PFTeDA	9.974	715.2 -> 670.0	15508	1.30	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-PFBS	5.502	302.1 -> 79.9	9349	2.20	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C3-PFHxS	7.329	402.1 -> 79.9	6720	2.44	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 = 97.4%	
13C4-PFBA	2.886	216.8 -> 171.9	113788	10.83 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C4-PFHpA	6.580	367.1 -> 322.0	28549	2.56 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.622	318.0 -> 273.0	38769	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C5-PFPeA	4.412	268.3 -> 223.0	59798	4.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C6-PFDA	8.303	519.1 -> 474.1	15174	1.26 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C7-PFUnDA	8.760	570.0 -> 525.1	19524	1.44 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.1%	
13C8-FOSA	9.907	506.1 -> 77.8	14031	2.34 µg/L	0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C8-PFOA	7.251	421.1 -> 376.0	46965	2.46 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-PFOS	8.430	507.1 -> 79.9	9101	2.36 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.797	472.1 -> 427.0	21016	1.08 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 86.7%	
d3-MeFOSAA	8.373	573.2 -> 419.0	18804	5.27 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C3-HFPO-DA	6.002	286.9 -> 168.9	33024	9.28 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
d3-MeFOSA	11.176	515.0 -> 219.0	8515	2.41 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
d5-EtFOSAA	8.571	589.2 -> 419.0	16326	5.57 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.3%	
d7-MeFOSE	11.072	623.2 -> 58.9	61867	21.91 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
d9-EtFOSE	11.356	639.2 -> 58.9	83398	21.06 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.3%	
d5-EtFOSA	11.435	531.1 -> 219.0	9384	2.31 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
Target Compounds					**QValue**
4:2FTS	5.309	327.1 -> 307.0	10311	9.04 µg/L	100
		327.1 -> 80.9	4253		
6:2FTS	7.024	427.1 -> 407.0	13008	10.54 µg/L	95
		427.1 -> 80.9	4956		
8:2FTS	8.092	527.1 -> 507.0	11422	13.08 µg/L	92
		527.1 -> 80.8	4413		
EtFOSAA	8.584	584.2 -> 419.1	5196	2.33 µg/L	91
		584.2 -> 526.0	2446		
FOSA	9.911	498.1 -> 77.9	11954	2.63 µg/L	100
		498.1 -> 478.0	389		
MeFOSAA	8.374	570.1 -> 419.0	6592	2.80 µg/L	99
		570.1 -> 483.0	1251		
PFBA	2.882	212.8 -> 168.9	26477	10.11 µg/L	100
PFBS	5.490	298.7 -> 79.9	6538	2.86 µg/L	95
		298.7 -> 98.8	2611		
PFDA	8.304	512.9 -> 469.0	29386	2.76 µg/L	100
		512.9 -> 219.0	5673		
PFDoDA	9.193	613.1 -> 569.0	32835	2.59 µg/L	98
		613.1 -> 319.0	5016		
PFDS	9.347	599.0 -> 79.9	4789	2.55 µg/L	99

Perfluorinated Compounds by LC/MS/MS

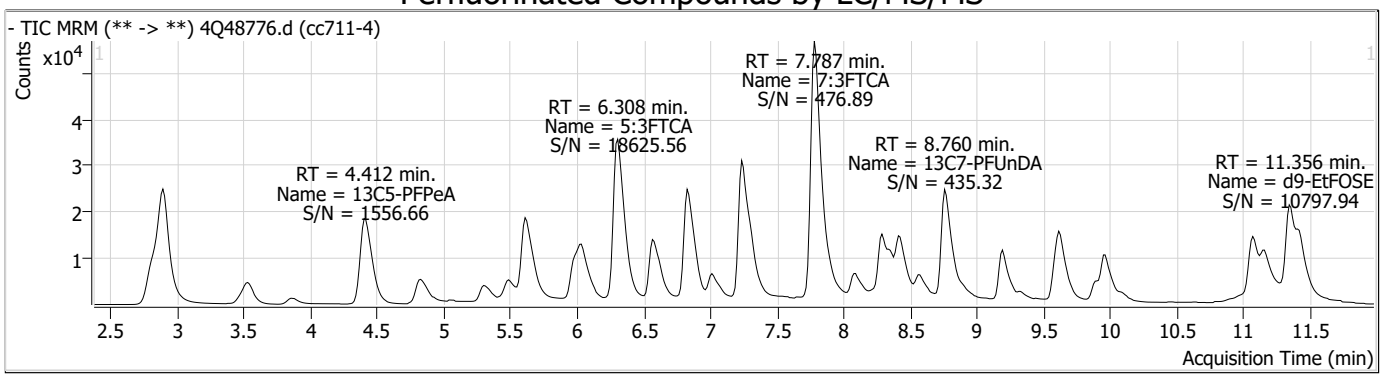
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2477				
PFHpA	6.581	363.1 -> 319.0	34486	2.68	µg/L		97
		363.1 -> 169.0	5848				
PFHpS	7.913	449.0 -> 79.9	6658	2.42	µg/L		98
		449.0 -> 98.9	3453				
PFHxA	5.625	313.0 -> 269.0	29626	2.65	µg/L		100
		313.0 -> 118.9	948				
PFHxS	7.330	398.7 -> 79.9	5108	2.65	µg/L	m	99
		398.7 -> 98.9	2660				
PFNA	7.798	463.0 -> 419.0	31113	2.84	µg/L		100
		463.0 -> 219.0	6758				
PFNS	8.911	548.8 -> 79.9	4708	2.65	µg/L		99
		548.8 -> 98.9	2477				
PFOA	7.252	413.0 -> 369.0	51319	2.76	µg/L		98
		413.0 -> 169.0	9544				
PFOS	8.431	498.9 -> 79.9	8506	2.63	µg/L	m	79
		498.9 -> 98.8	4012				
PFPeA	4.414	263.0 -> 219.0	58103	5.59	µg/L		100
PFPeS	6.595	349.1 -> 79.9	4364	2.40	µg/L		98
		349.1 -> 98.9	1996				
PFTeDA	9.975	713.1 -> 669.0	28440	2.62	µg/L		98
		713.1 -> 168.9	2646				
PFTrDA	9.603	663.0 -> 619.0	36602	2.79	µg/L		100
		663.0 -> 168.9	4566				
PFUnDA	8.761	563.1 -> 519.0	31158	2.45	µg/L		99
		563.1 -> 269.1	6247				
11Cl-PF3OUdS	9.630	630.9 -> 450.9	40115	5.79	µg/L		100
		632.9 -> 452.9	12323				
9Cl-PF3ONS	8.775	530.8 -> 351.0	57662	5.92	µg/L		100
		532.8 -> 353.0	17860				
ADONA	6.843	376.9 -> 250.9	106141	5.54	µg/L		99
		376.9 -> 84.8	26957				
HFPO-DA	6.003	284.9 -> 168.9	13973	5.14	µg/L		96
		284.9 -> 184.9	1597				
3:3FTCA	3.861	241.0 -> 177.0	7425	11.23	µg/L		99
		241.0 -> 117.0	710				
5:3FTCA	6.308	341.0 -> 237.1	125030	68.29	µg/L		98
		341.0 -> 217.0	87333				
7:3FTCA	7.787	441.0 -> 316.9	71429	70.80	µg/L		97
		441.0 -> 336.9	168380				
EtFOSA	11.437	526.0 -> 219.0	19080	5.53	µg/L		97
		526.0 -> 169.0	25900				
EtFOSE	11.370	630.0 -> 58.9	36464	13.97	µg/L		100
MeFOSA	11.178	511.9 -> 219.0	15139	5.11	µg/L	m	75
		511.9 -> 169.0	21873				
MeFOSE	11.097	616.1 -> 58.9	28860	13.04	µg/L		100
PFDoDS	10.102	699.1 -> 79.9	3795	2.62	µg/L		95
		699.1 -> 98.8	2088				
NFDHA	5.503	295.0 -> 201.0	4020	5.58	µg/L		99
		295.0 -> 84.9	977				
PFMBA	4.828	279.0 -> 85.1	32809	5.63	µg/L		100
PFMPA	3.528	229.0 -> 84.9	31534	5.55	µg/L		100
PFEESA	6.047	314.8 -> 134.9	41962	4.66	µg/L		99
		314.8 -> 82.9	1647				

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

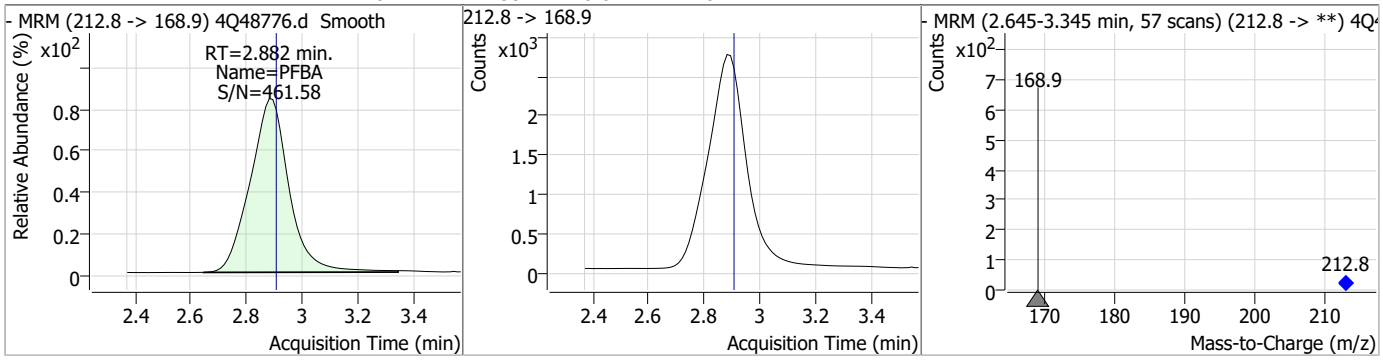
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

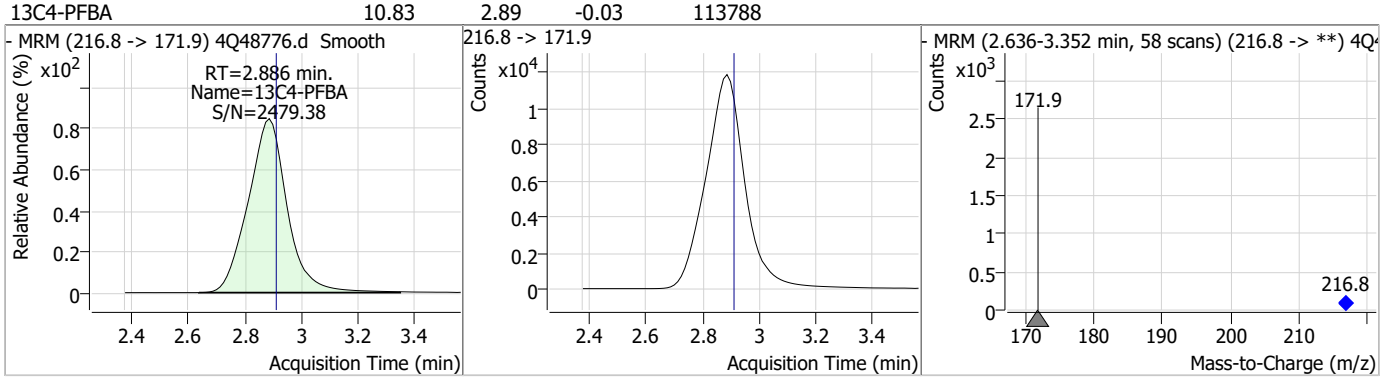
Perfluorinated Compounds by LC/MS/MS



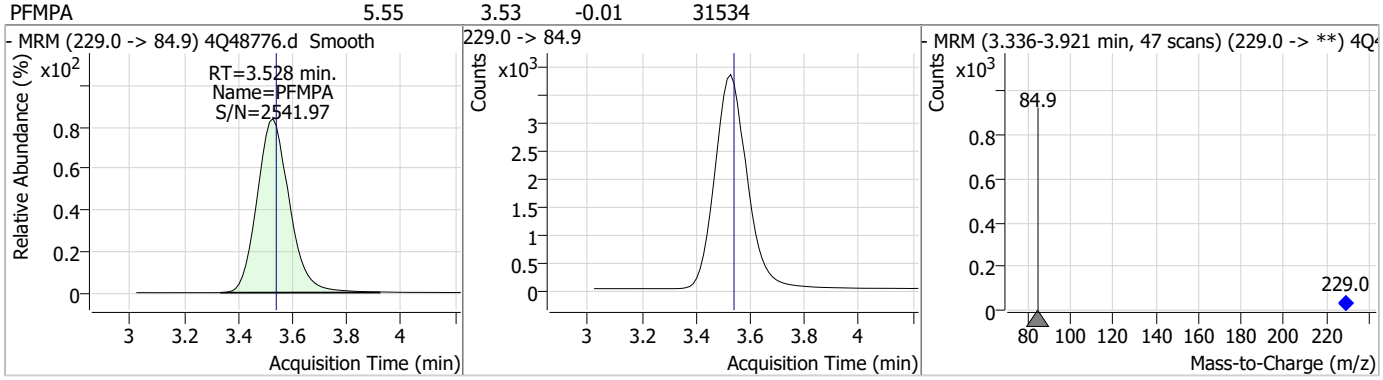
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.11	2.88	-0.02	26477				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.83	2.89	-0.03	113788				

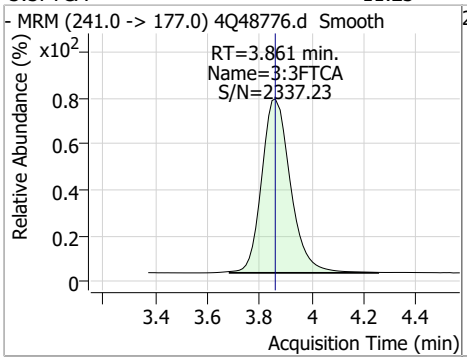


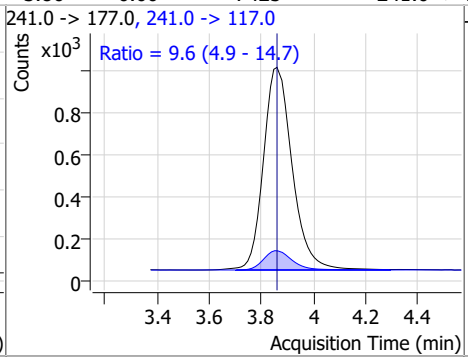
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.55	3.53	-0.01	31534				

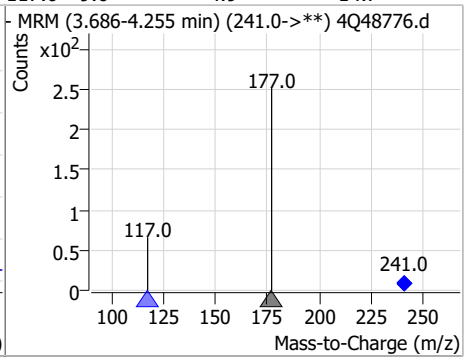


Perfluorinated Compounds by LC/MS/MS

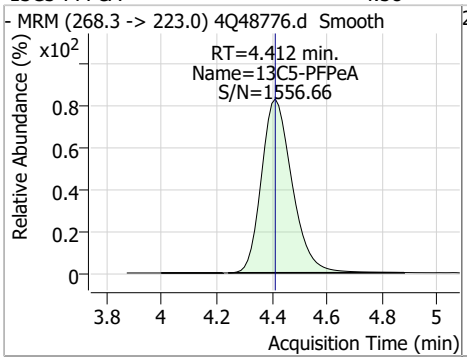
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.23	3.86	0.00	7425	241.0 -> 117.0	9.6	4.9	14.7

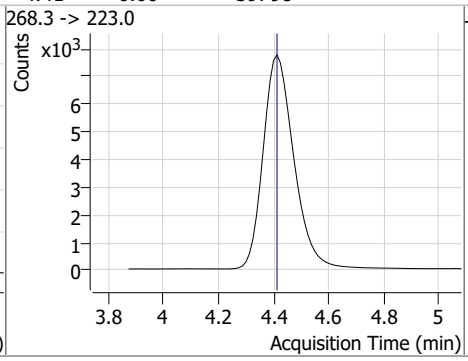


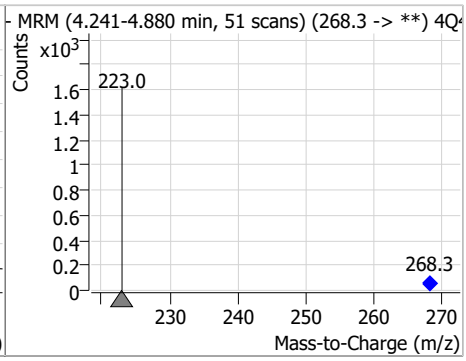




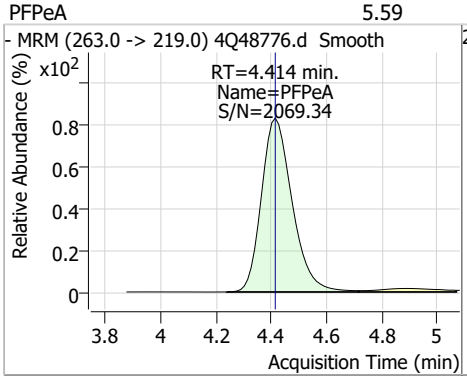
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.58	4.41	0.00	59798				

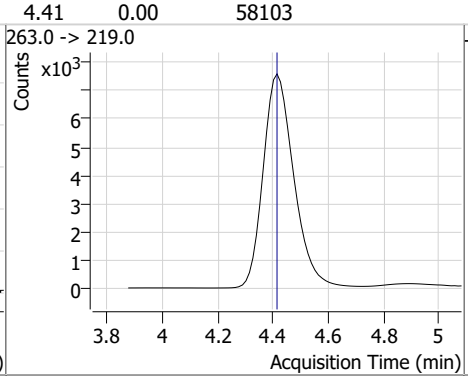


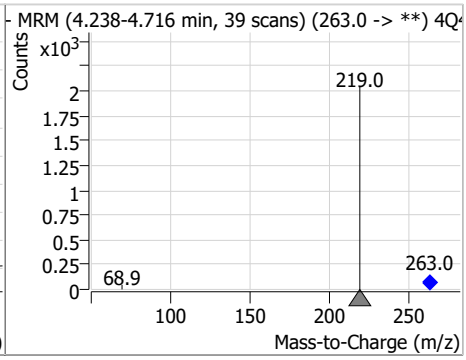




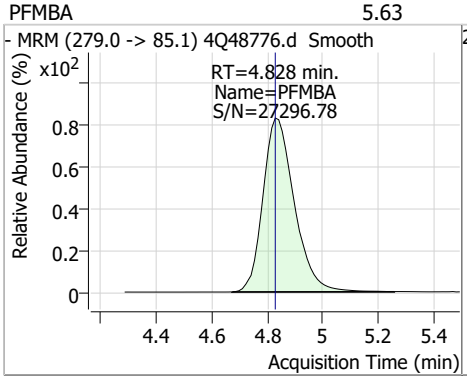
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.59	4.41	0.00	58103				

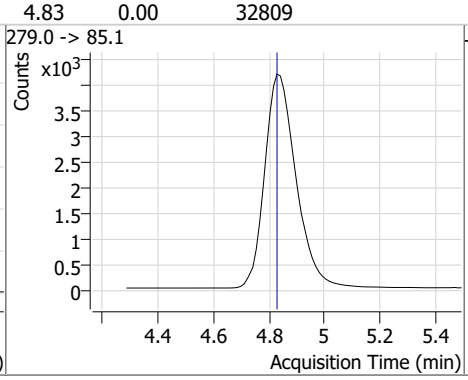


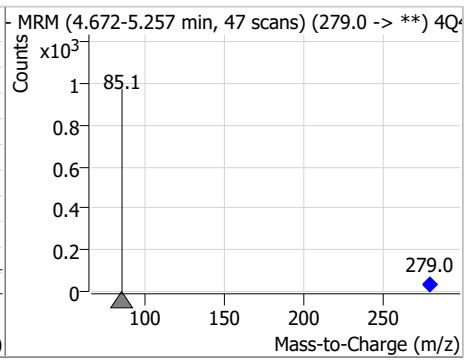




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.63	4.83	0.00	32809				

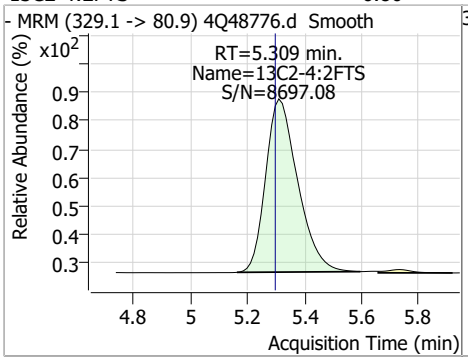


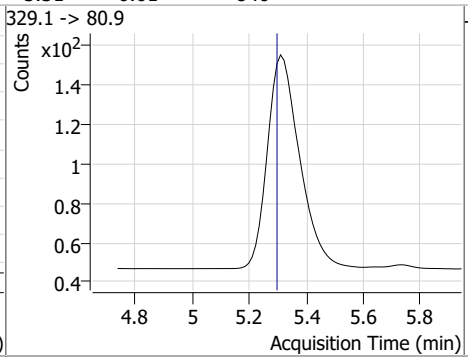


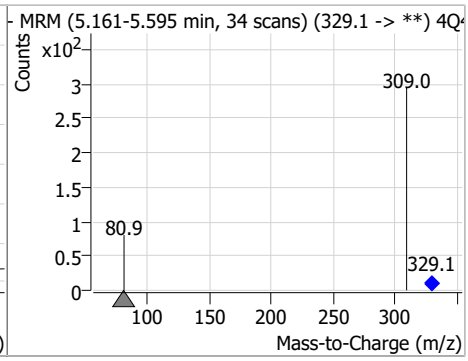


Perfluorinated Compounds by LC/MS/MS

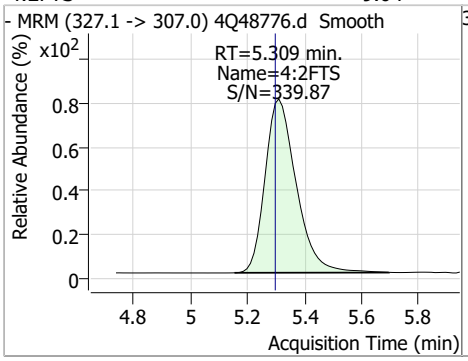
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.80	5.31	0.01	846				

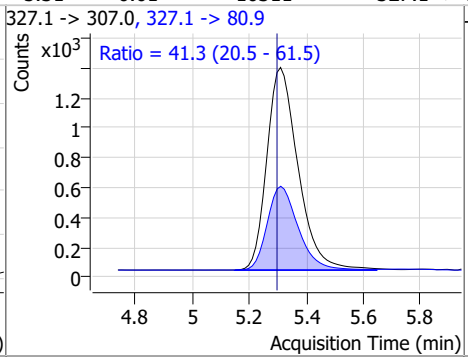


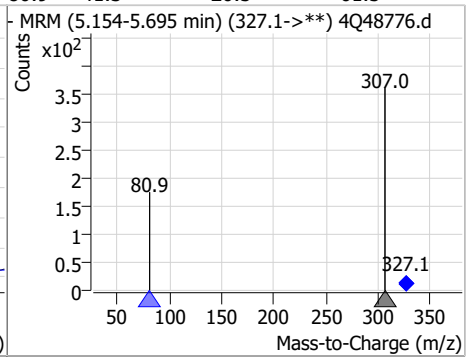




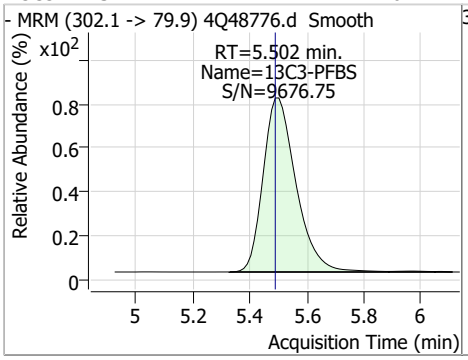
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.04	5.31	0.01	10311	327.1 -> 80.9	41.3	20.5	61.5

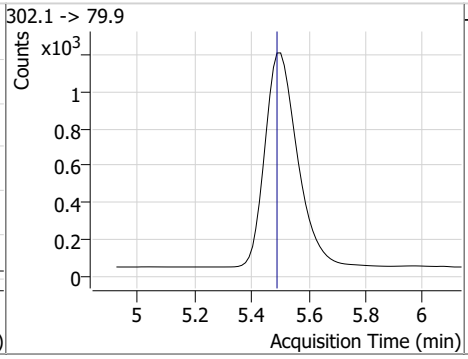


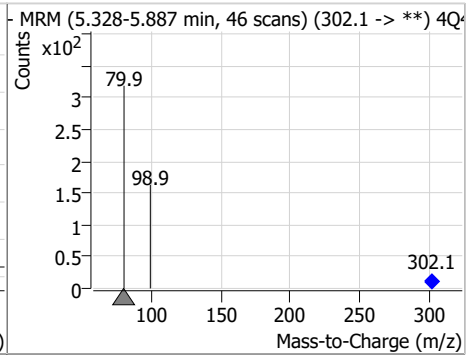




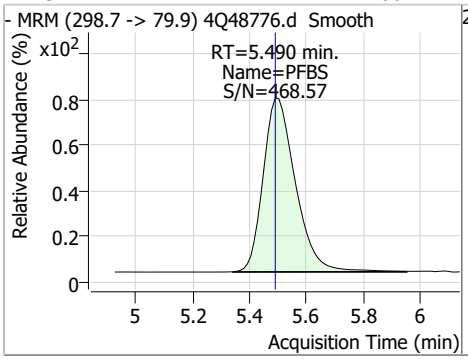
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.20	5.50	0.01	9349				

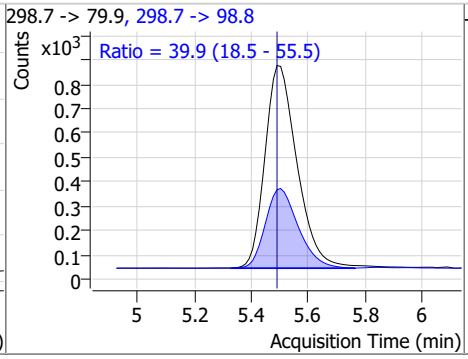


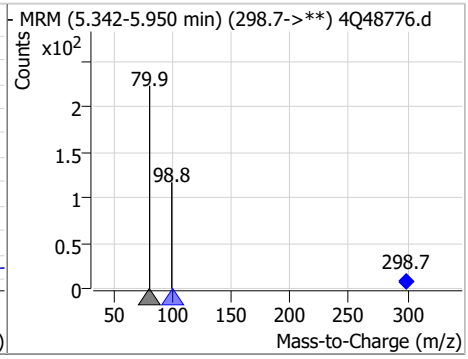




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.86	5.49	0.00	6538	298.7 -> 98.8	39.9	18.5	55.5

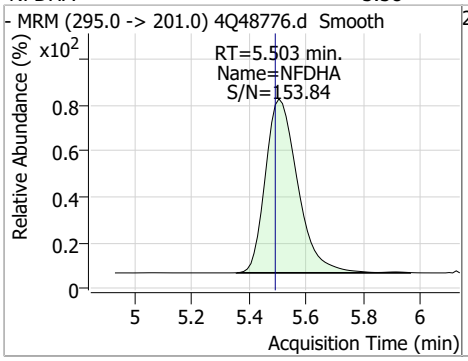


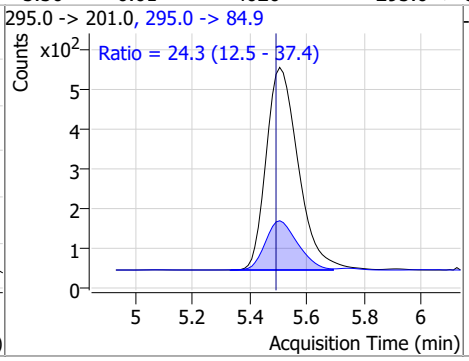


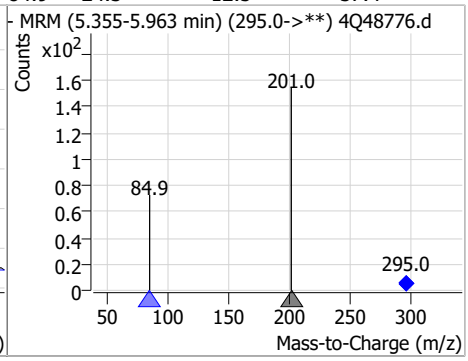


Perfluorinated Compounds by LC/MS/MS

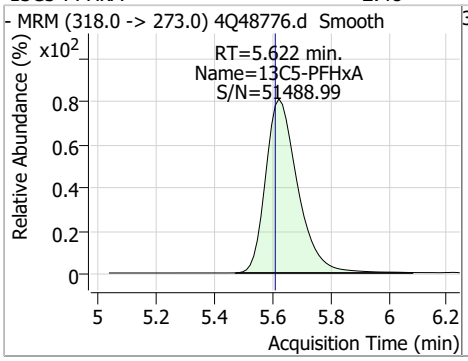
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.58	5.50	0.01	4020	295.0 -> 84.9	24.3	12.5	37.4

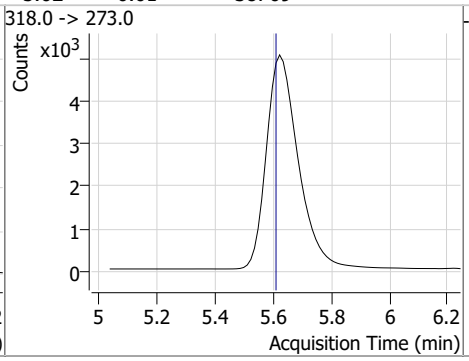


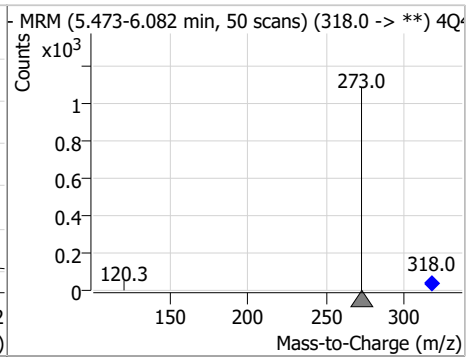




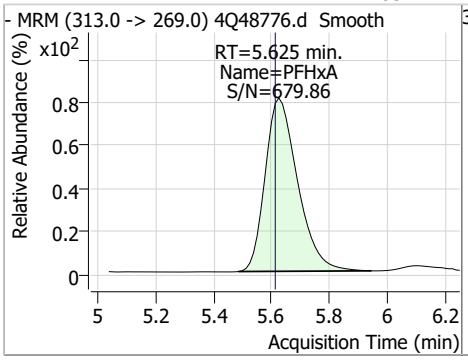
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.62	0.01	38769				

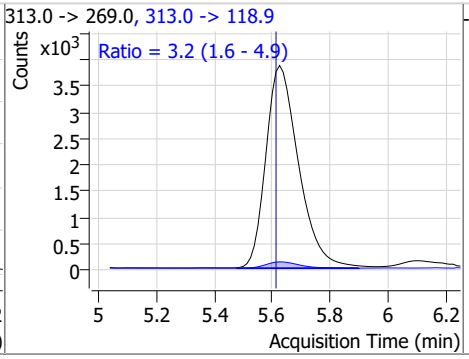


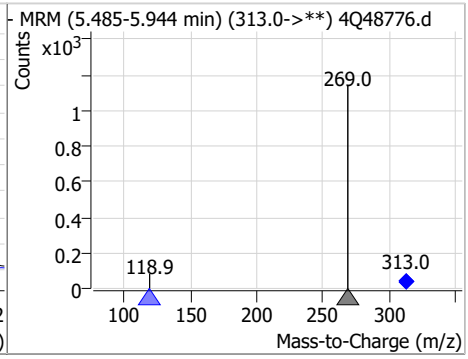




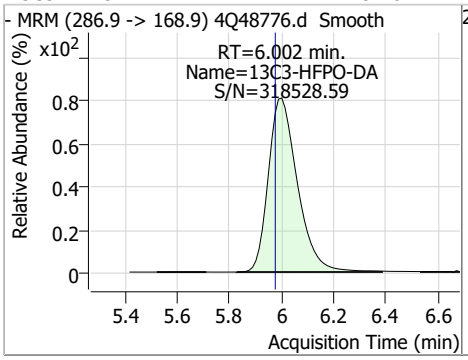
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.65	5.62	0.01	29626	313.0 -> 118.9	3.2	1.6	4.9

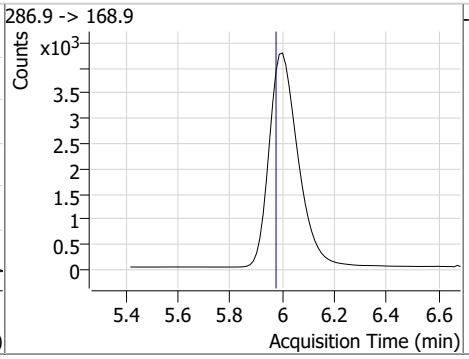


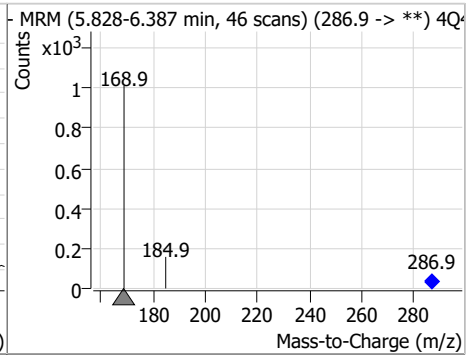




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.28	6.00	0.02	33024				

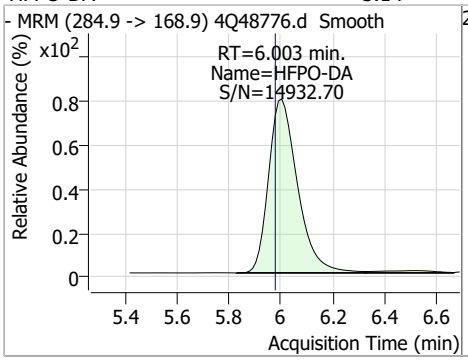


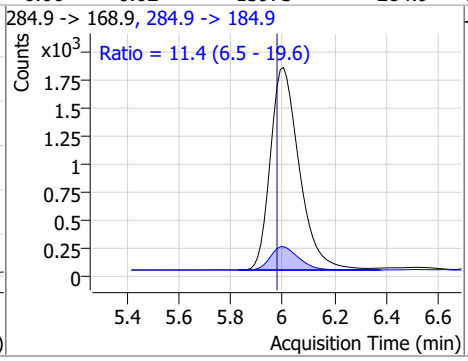


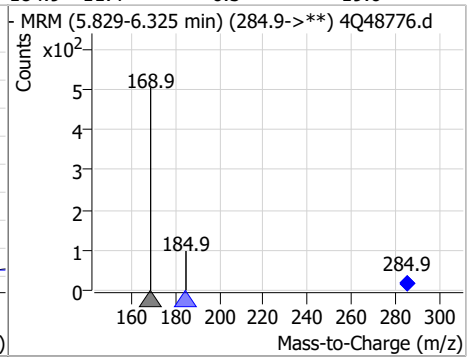


Perfluorinated Compounds by LC/MS/MS

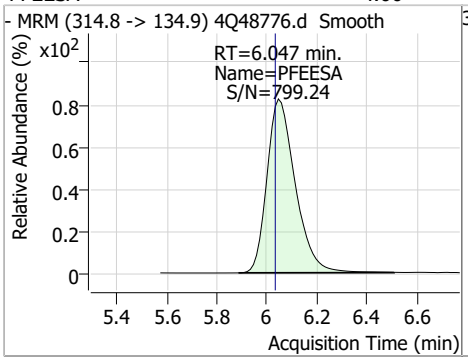
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.14	6.00	0.02	13973	284.9 -> 184.9	11.4	6.5	19.6

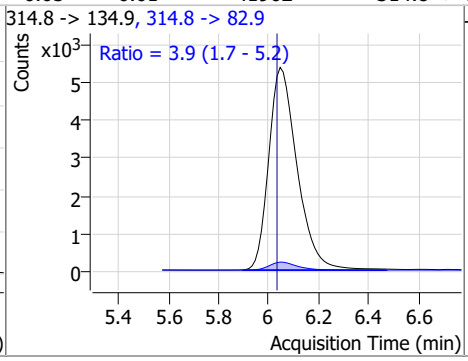


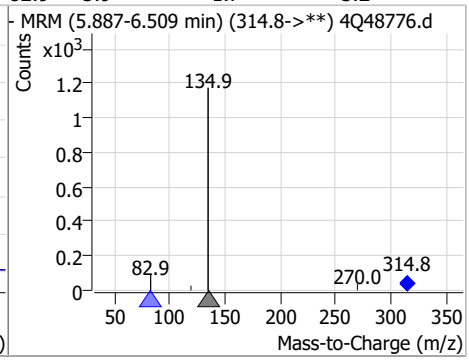




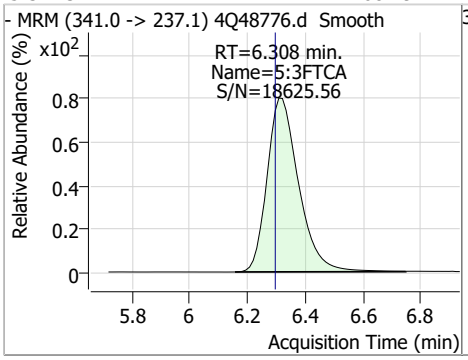
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.66	6.05	0.01	41962	314.8 -> 82.9	3.9	1.7	5.2

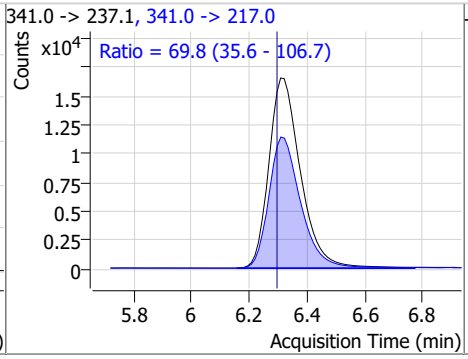


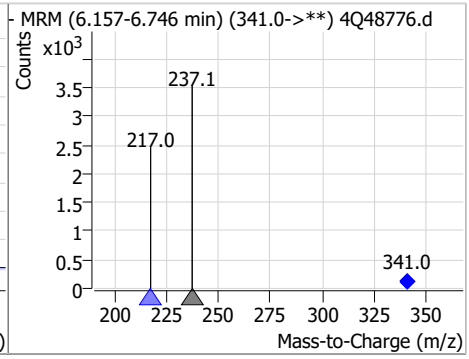




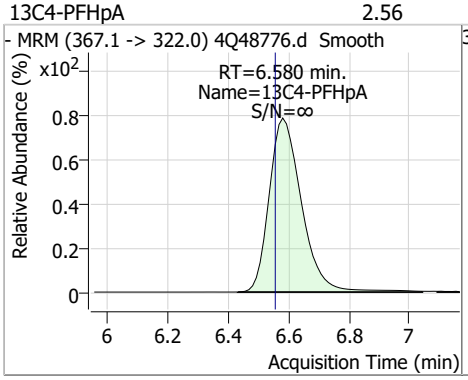
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	68.29	6.31	0.01	125030	341.0 -> 217.0	69.8	35.6	106.7

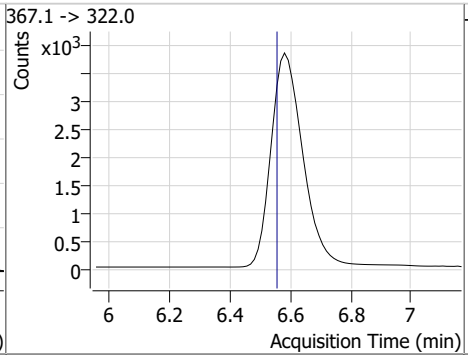


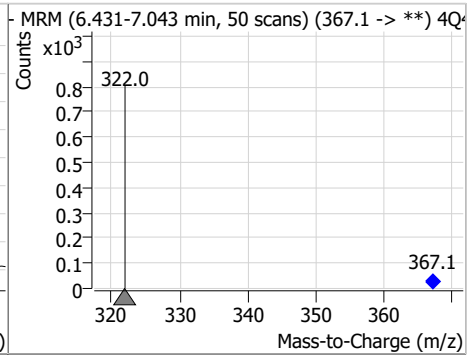




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.58	0.02	28549				

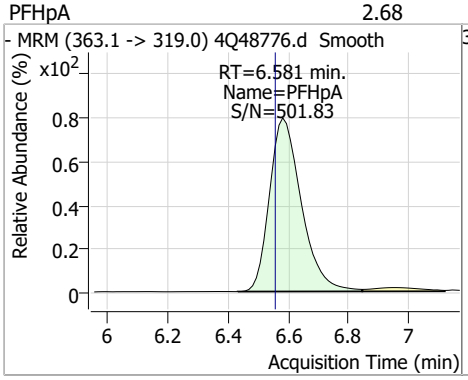


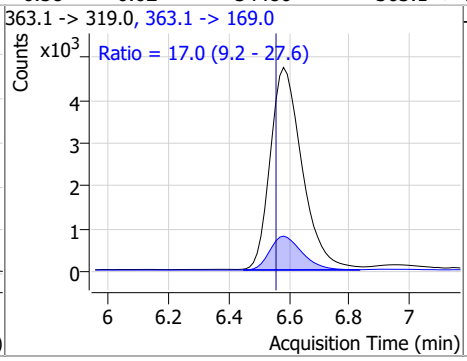


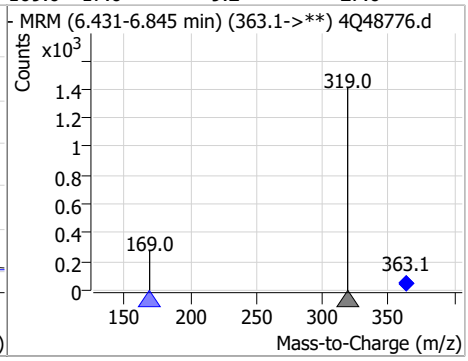


Perfluorinated Compounds by LC/MS/MS

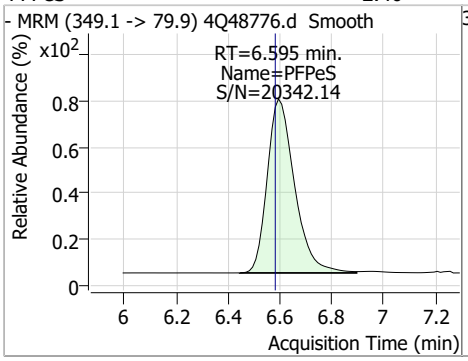
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.68	6.58	0.02	34486	363.1 -> 169.0	17.0	9.2	27.6

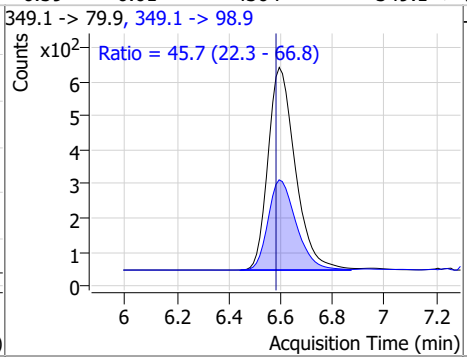


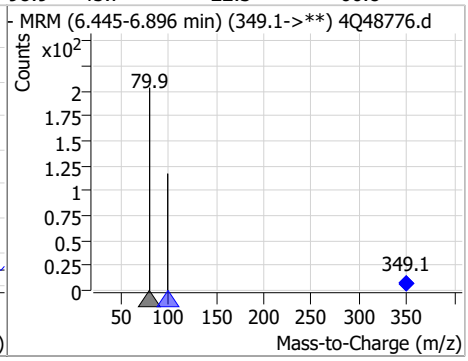




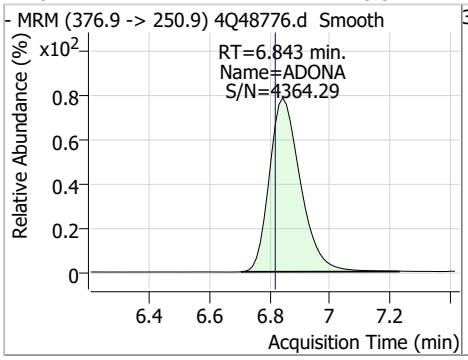
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.40	6.59	0.01	4364	349.1 -> 98.9	45.7	22.3	66.8

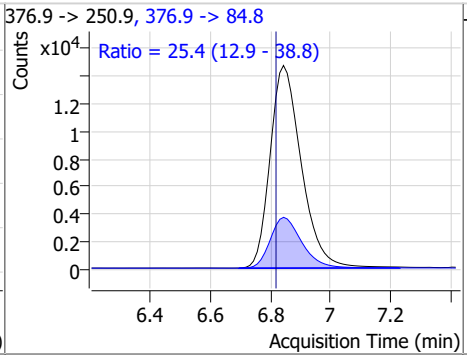


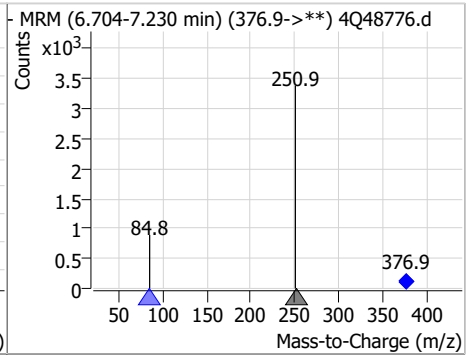




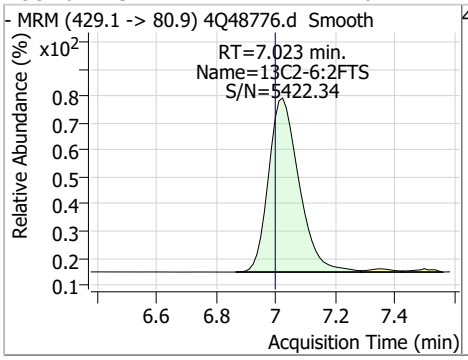
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.54	6.84	0.02	106141	376.9 -> 84.8	25.4	12.9	38.8

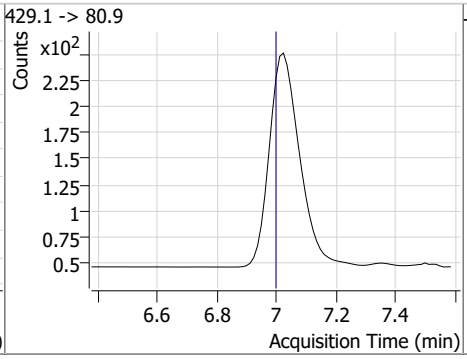


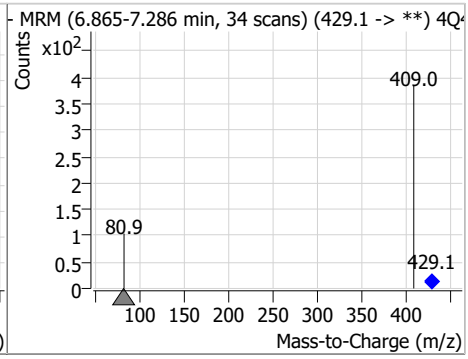




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.12	7.02	0.02	1455				

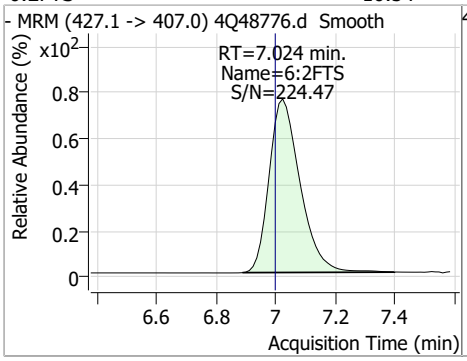


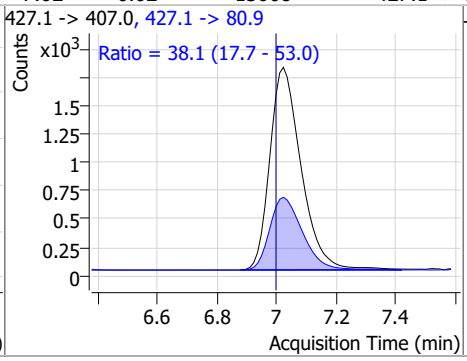


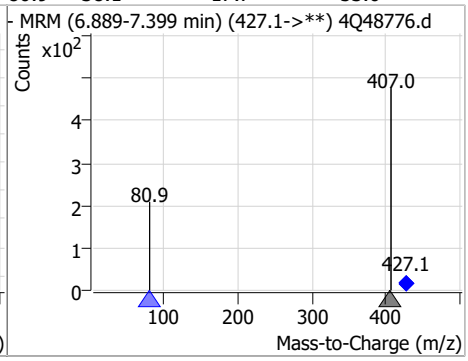


Perfluorinated Compounds by LC/MS/MS

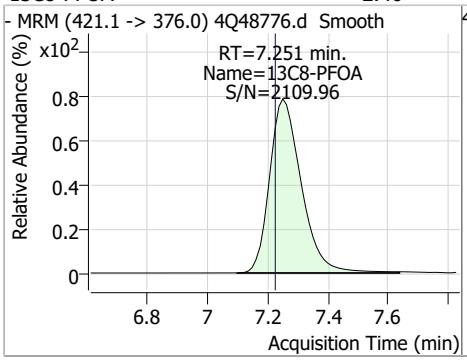
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.54	7.02	0.02	13008	427.1 -> 80.9	38.1	17.7	53.0

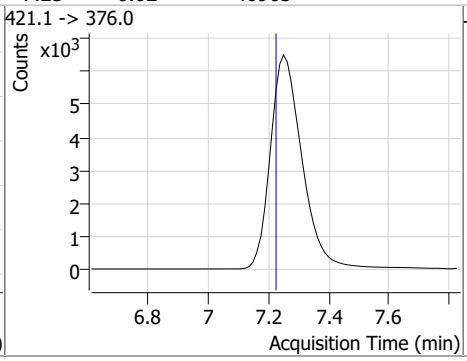


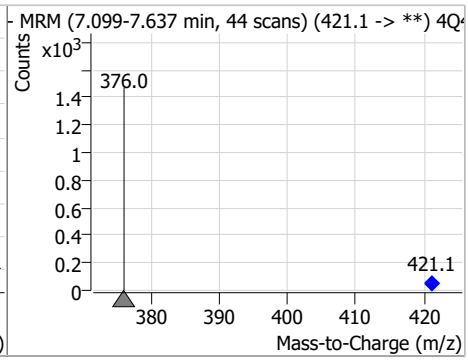




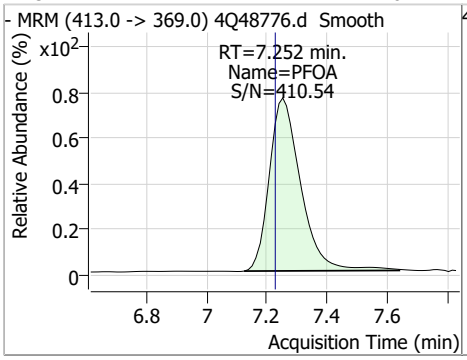
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.46	7.25	0.02	46965				

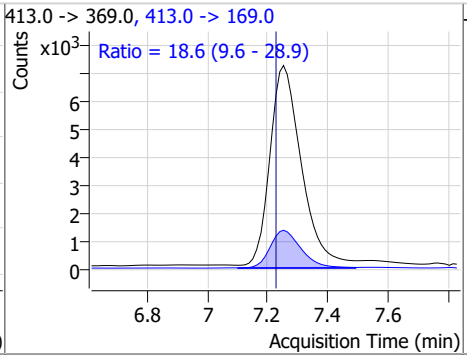


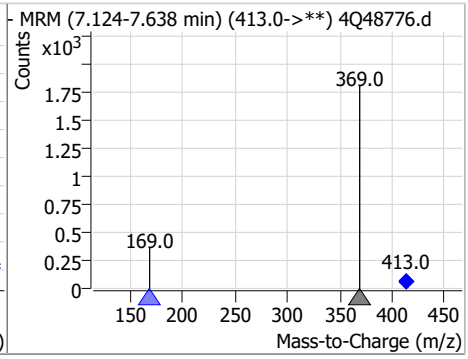




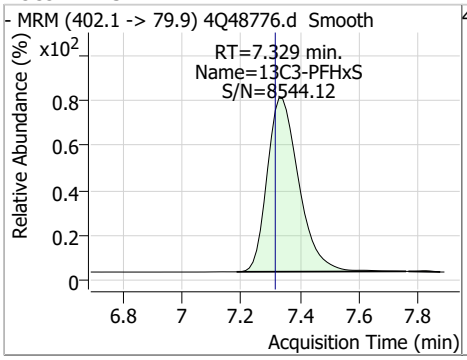
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.76	7.25	0.02	51319	413.0 -> 169.0	18.6	9.6	28.9

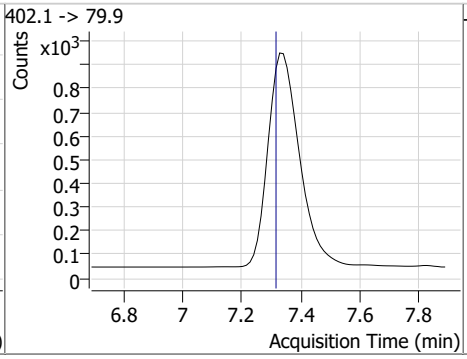


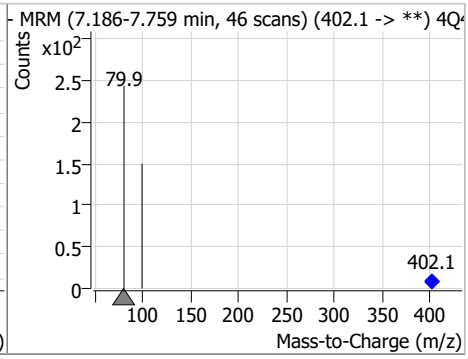




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.44	7.33	0.01	6720				

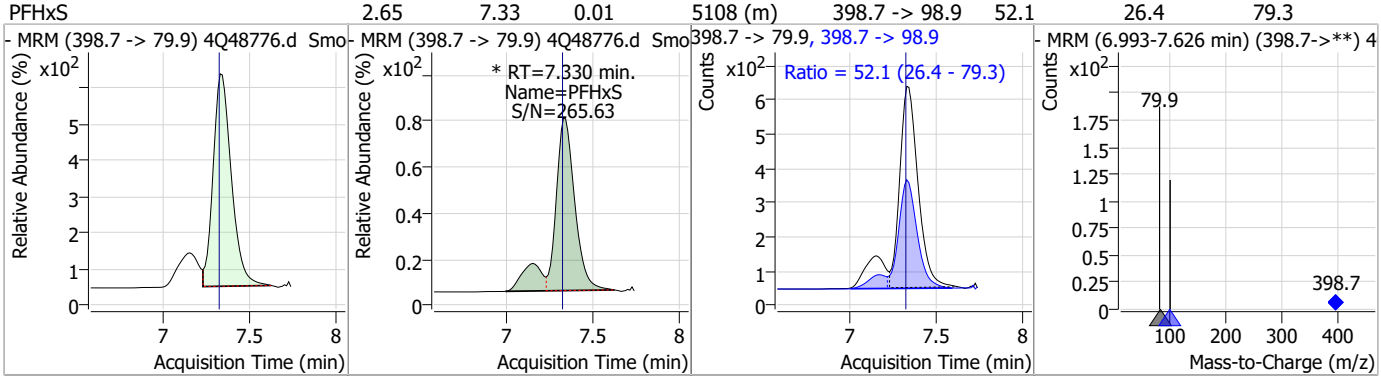




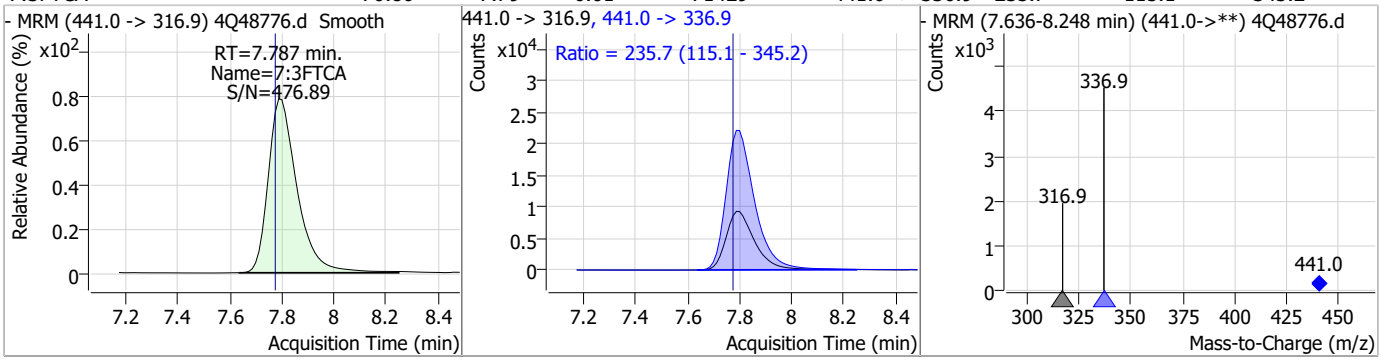


Perfluorinated Compounds by LC/MS/MS

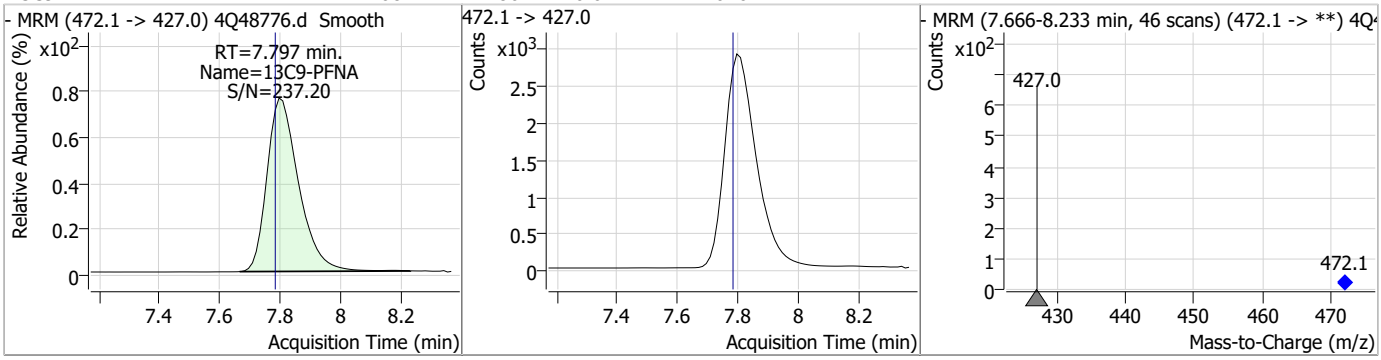
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.65	7.33	0.01	5108 (m)	398.7 -> 98.9	52.1	26.4	79.3



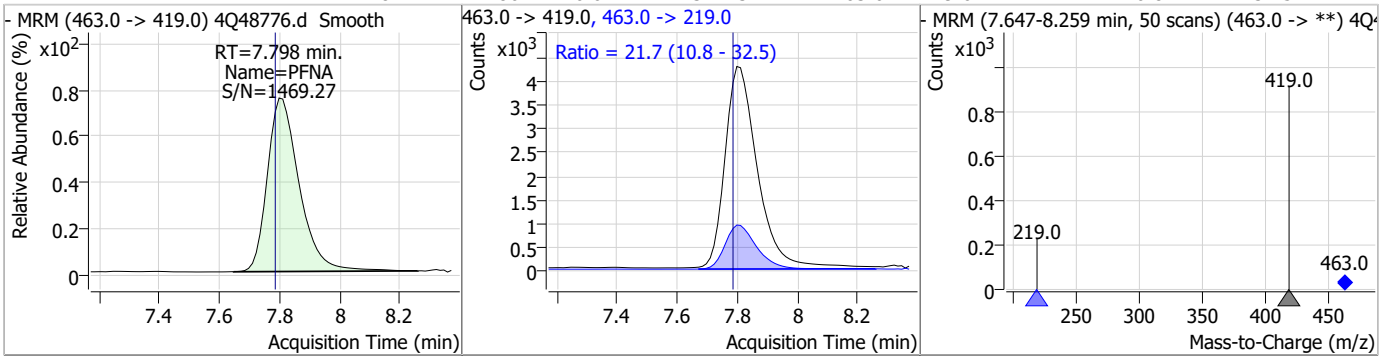
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	70.80	7.79	0.01	71429	441.0 -> 336.9	235.7	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.08	7.80	0.01	21016				

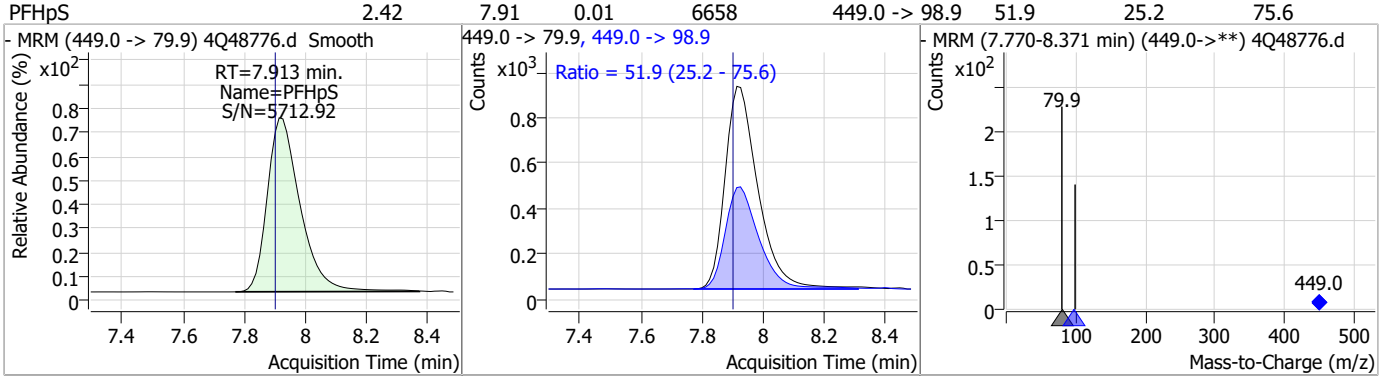


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.84	7.80	0.01	31113	463.0 -> 219.0	21.7	10.8	32.5

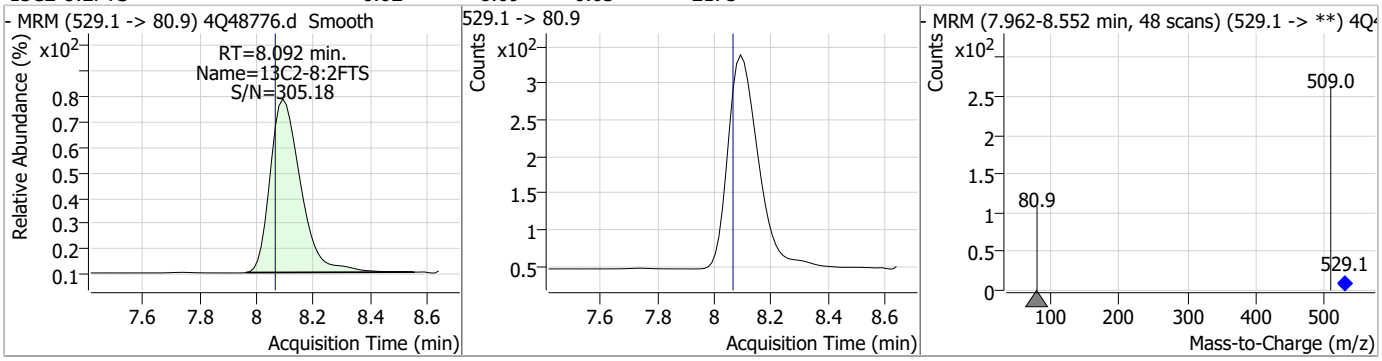


Perfluorinated Compounds by LC/MS/MS

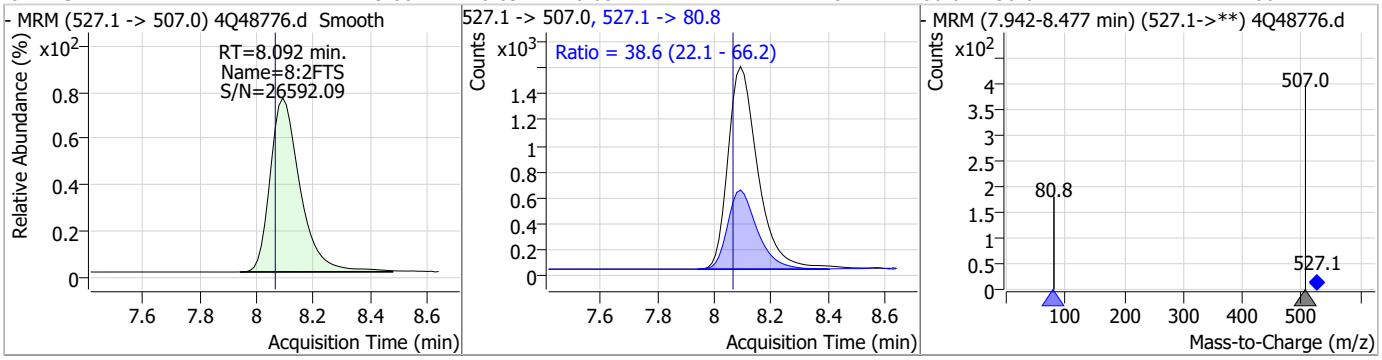
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.42	7.91	0.01	6658	449.0 -> 98.9	51.9	25.2	75.6



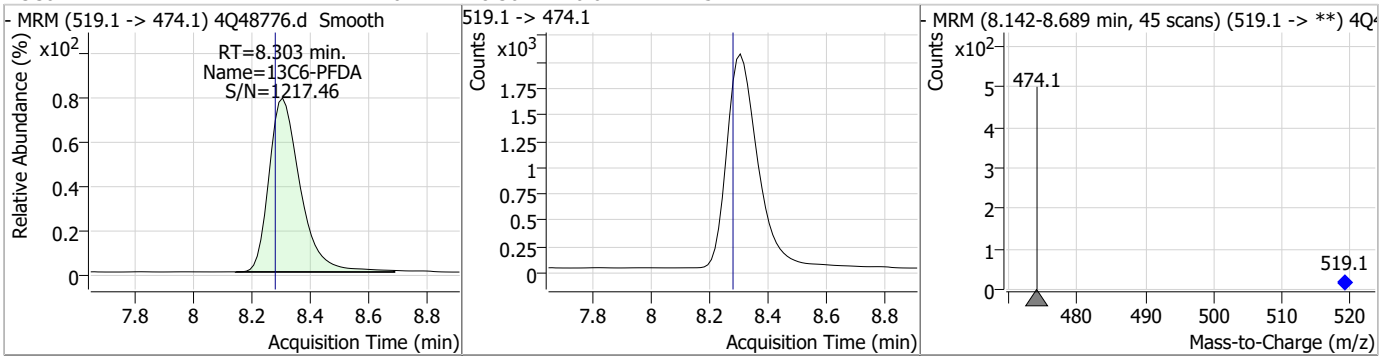
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.02	8.09	0.03	2175				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	13.08	8.09	0.03	11422	527.1 -> 80.8	38.6	22.1	66.2

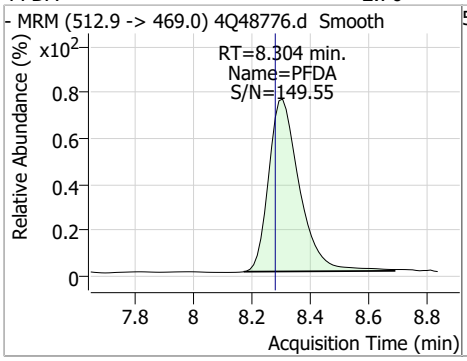


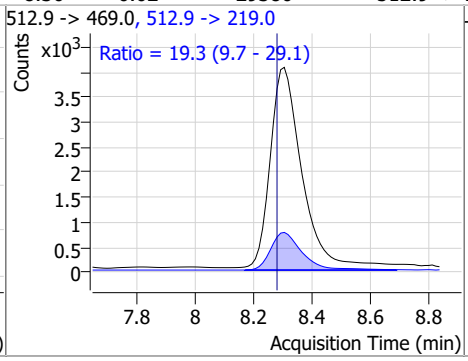
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.30	0.02	15174				

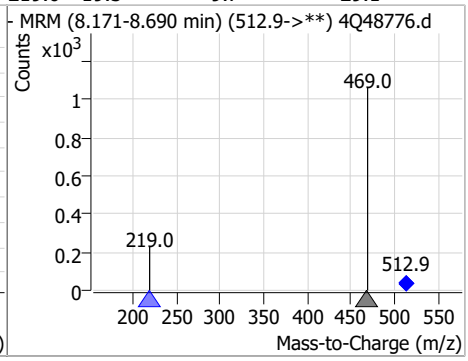


Perfluorinated Compounds by LC/MS/MS

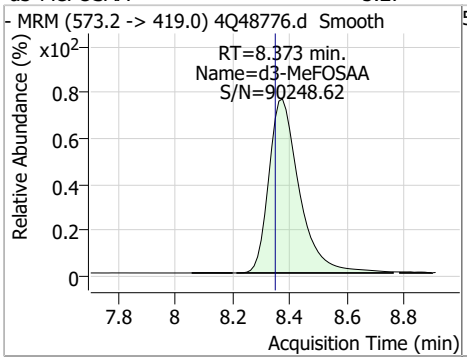
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.76	8.30	0.02	29386	512.9 -> 219.0	19.3	9.7	29.1

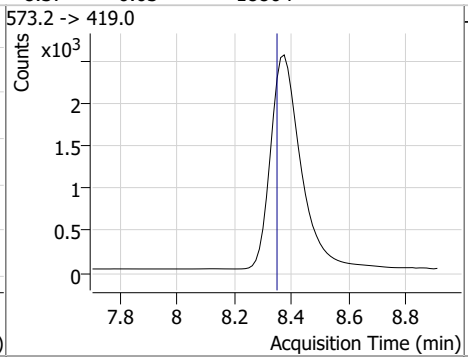


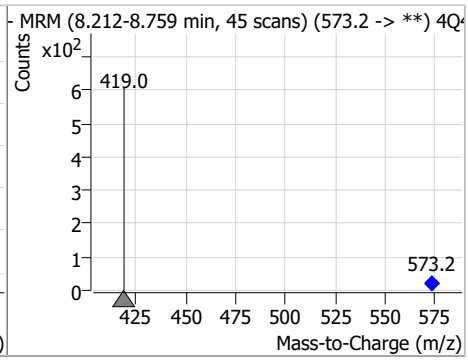




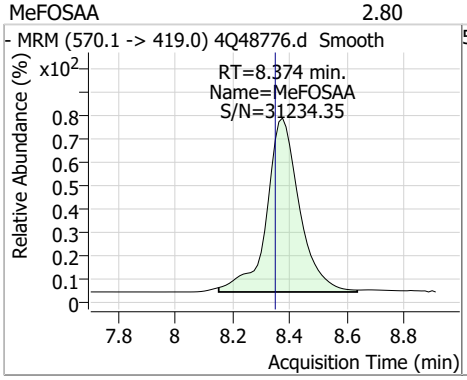
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.27	8.37	0.03	18804				

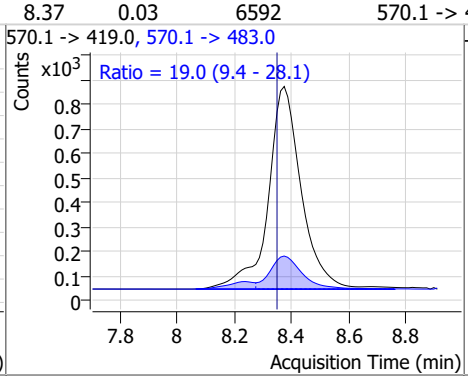


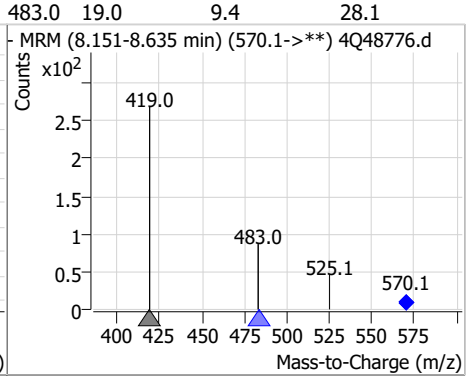




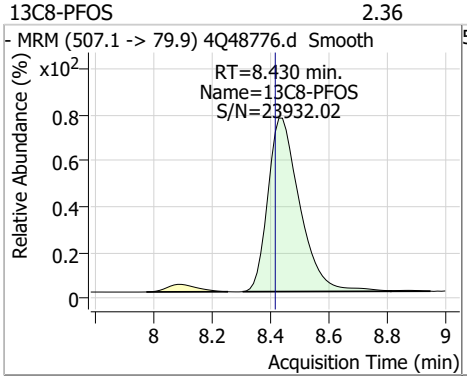
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.80	8.37	0.03	6592	570.1 -> 483.0	19.0	9.4	28.1

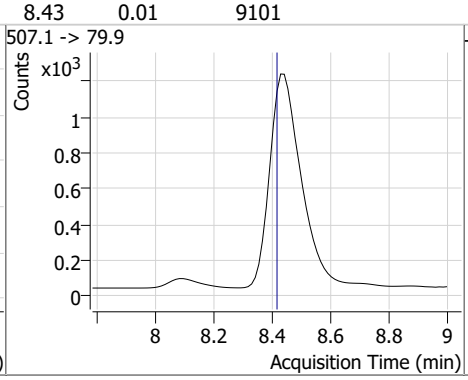


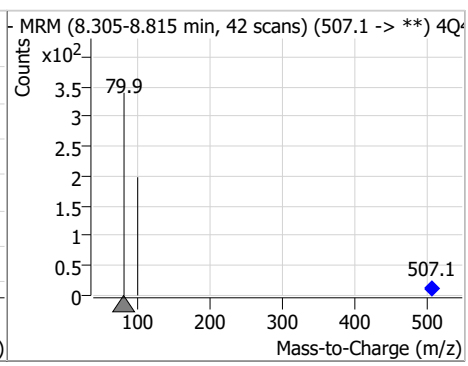




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.36	8.43	0.01	9101				

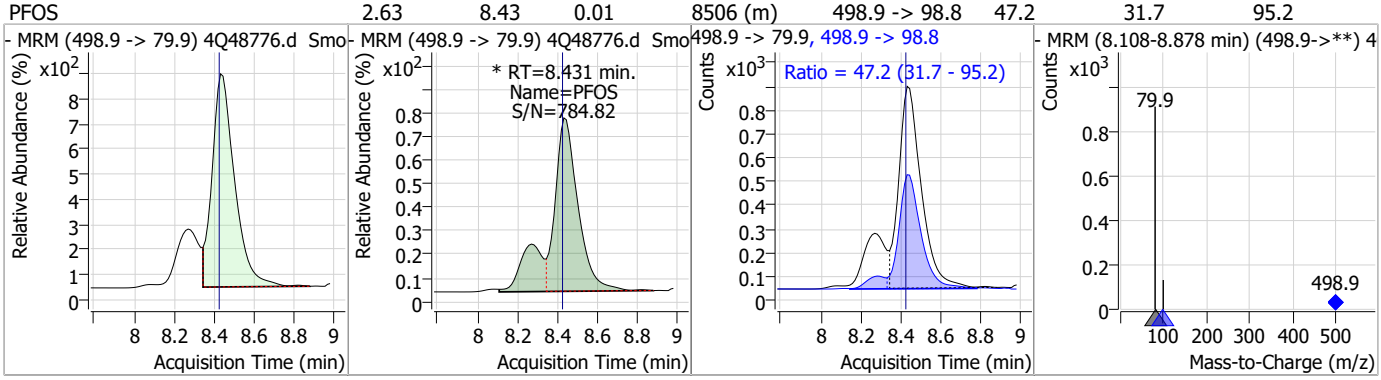




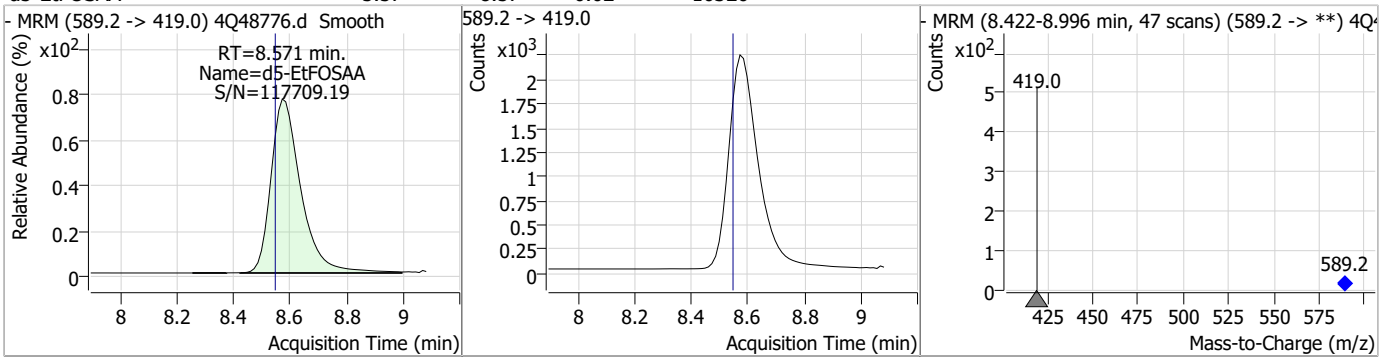


Perfluorinated Compounds by LC/MS/MS

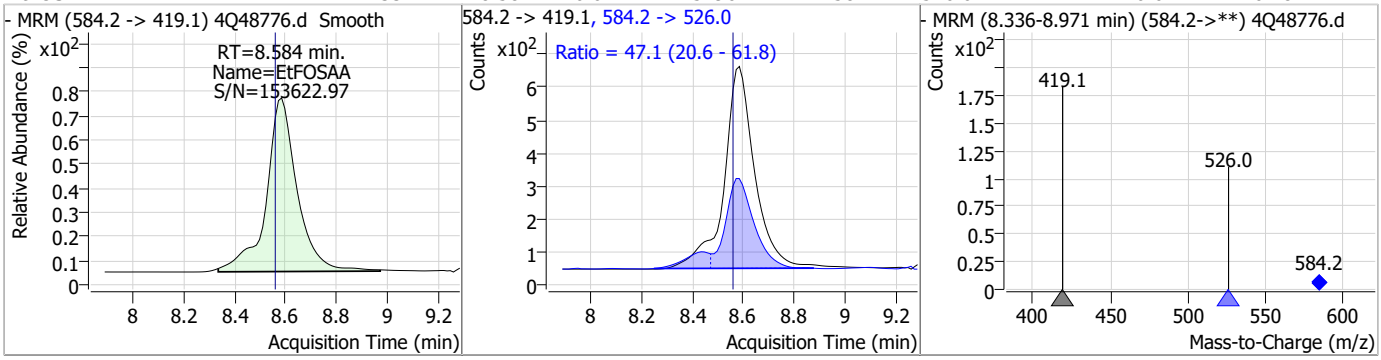
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.63	8.43	0.01	8506 (m)	498.9 -> 98.8	47.2	31.7	95.2



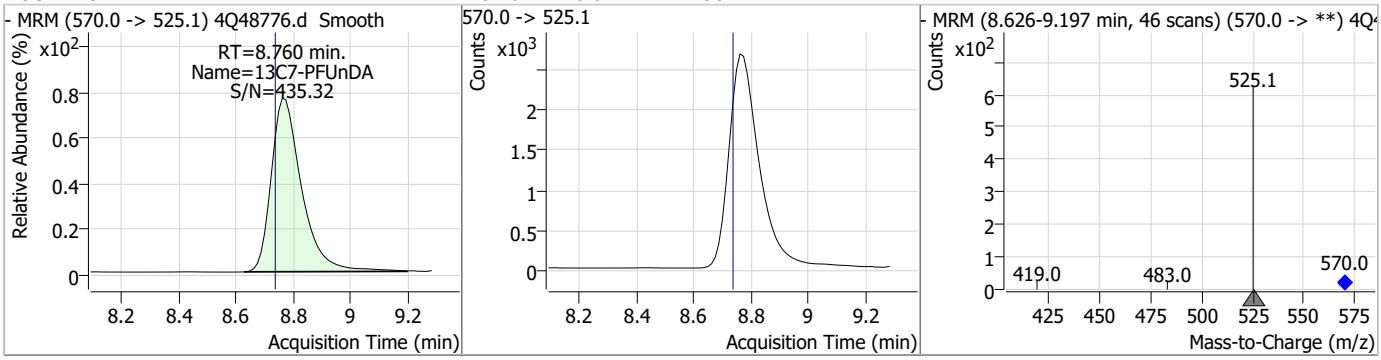
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.57	8.57	0.02	16326				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.33	8.58	0.02	5196	584.2 -> 526.0	47.1	20.6	61.8

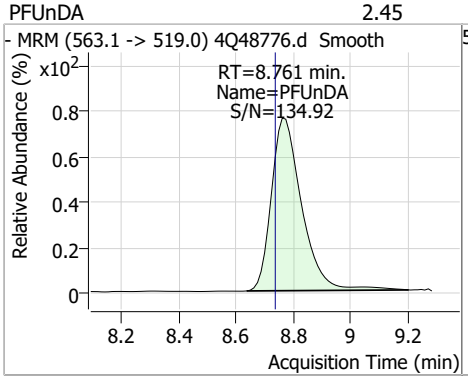


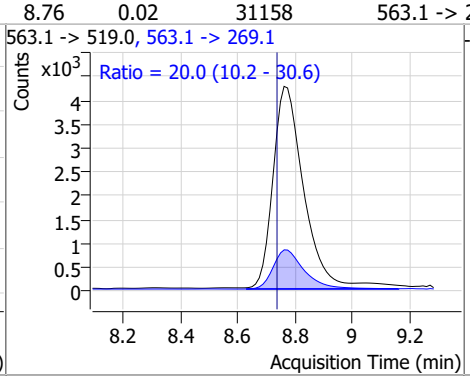
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.44	8.76	0.02	19524				

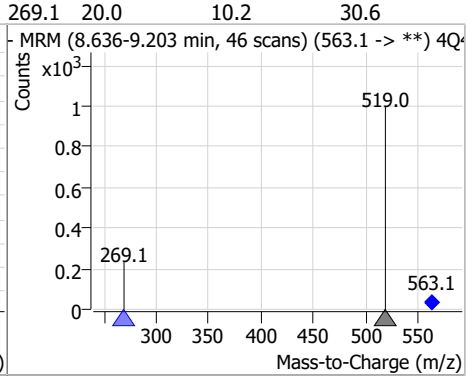


Perfluorinated Compounds by LC/MS/MS

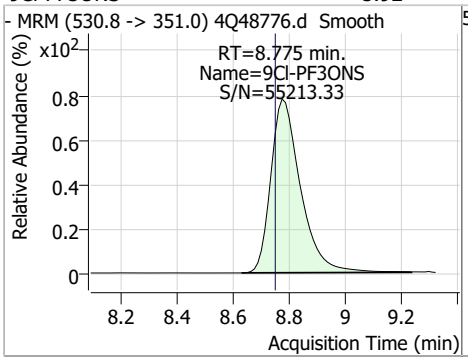
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.45	8.76	0.02	31158	563.1 -> 269.1	20.0	10.2	30.6

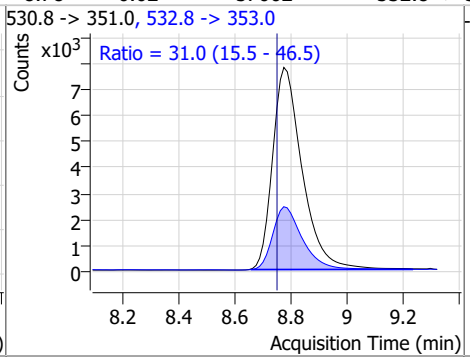


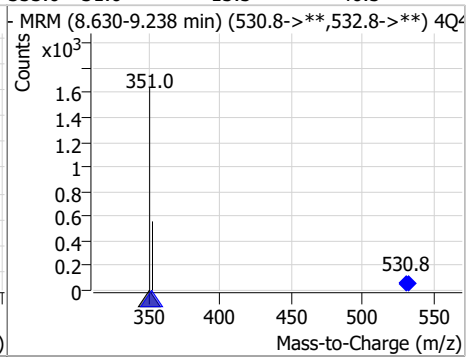




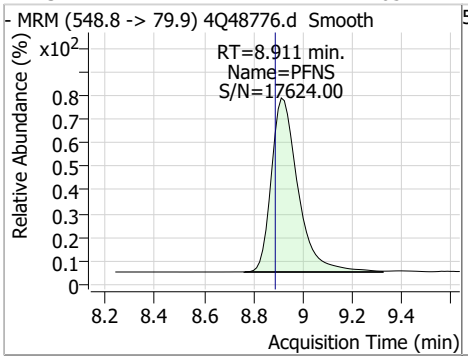
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.92	8.78	0.02	57662	532.8 -> 353.0	31.0	15.5	46.5

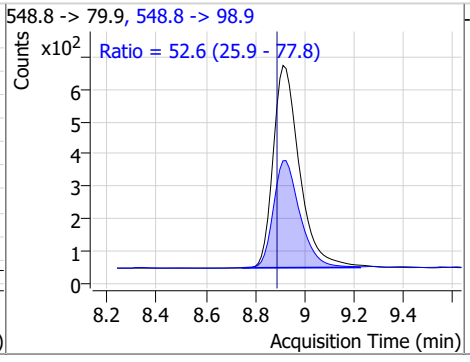


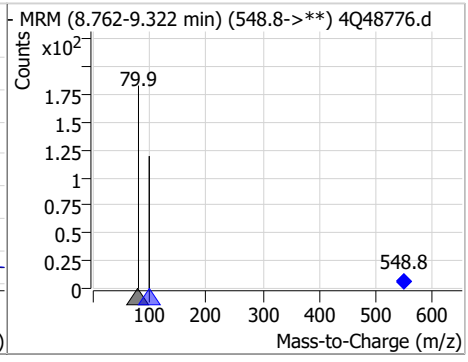




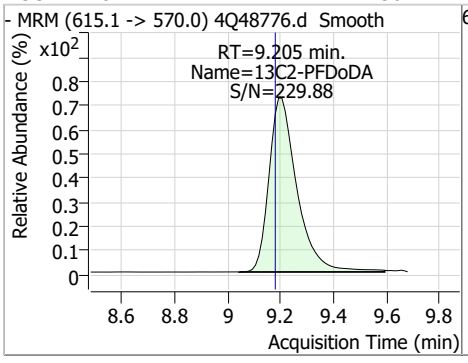
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.65	8.91	0.02	4708	548.8 -> 98.9	52.6	25.9	77.8

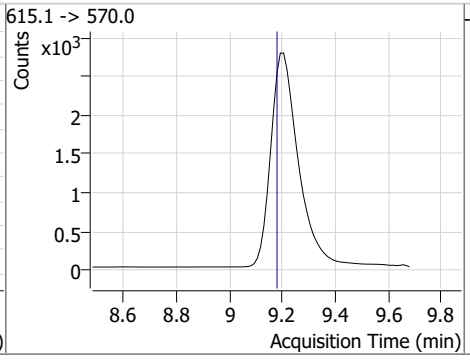


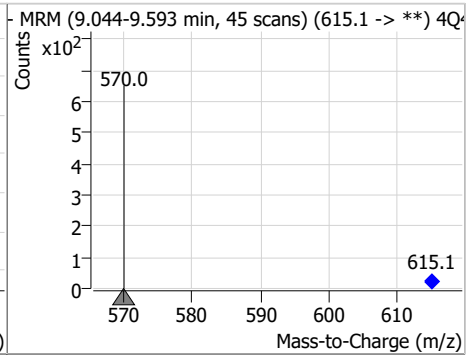




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.36	9.21	0.02	20253				

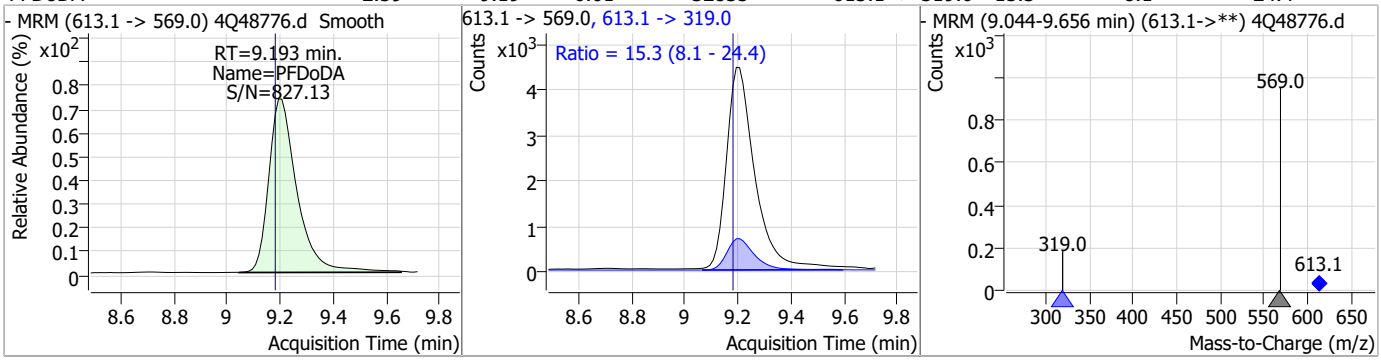




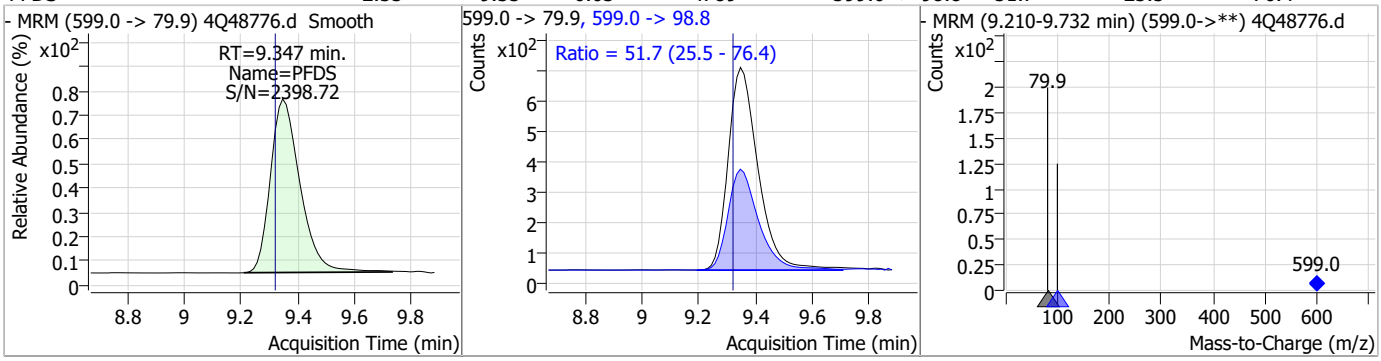


Perfluorinated Compounds by LC/MS/MS

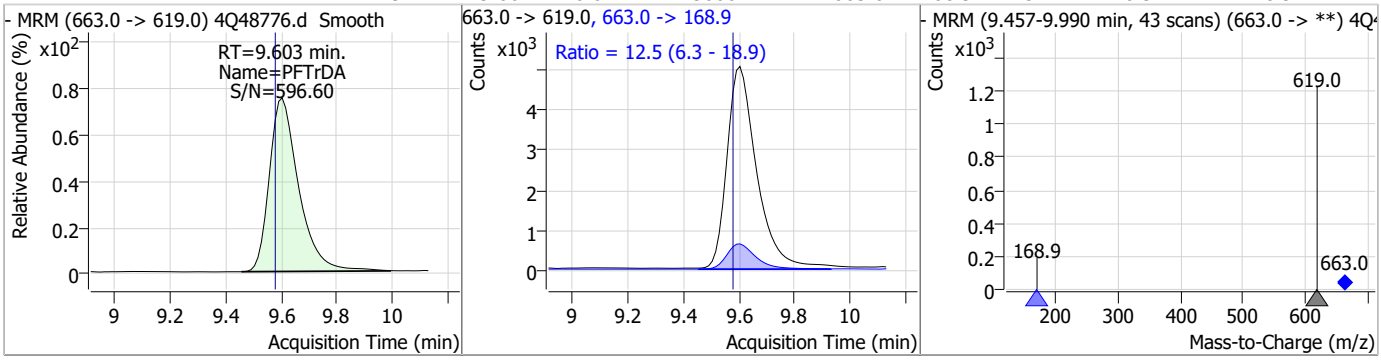
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.59	9.19	0.01	32835	613.1 -> 319.0	15.3	8.1	24.4



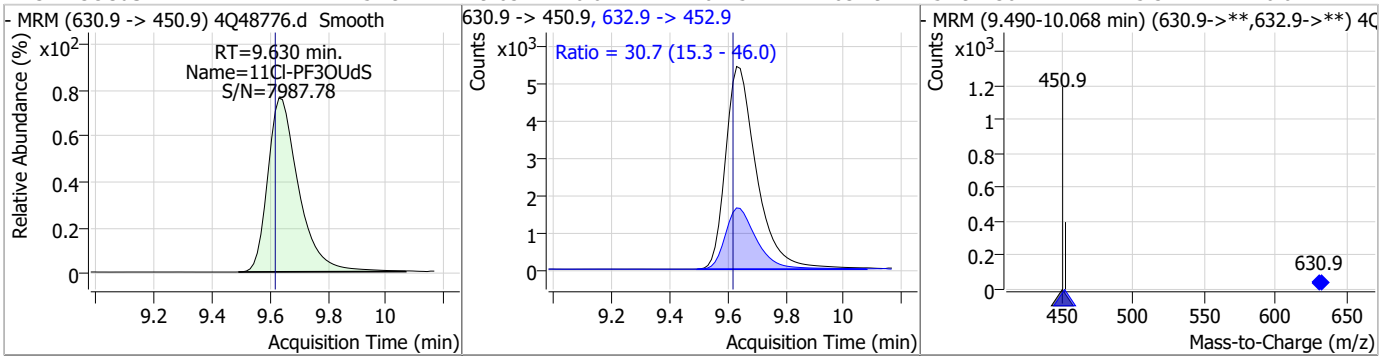
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.55	9.35	0.03	4789	599.0 -> 98.8	51.7	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.79	9.60	0.02	36602	663.0 -> 168.9	12.5	6.3	18.9

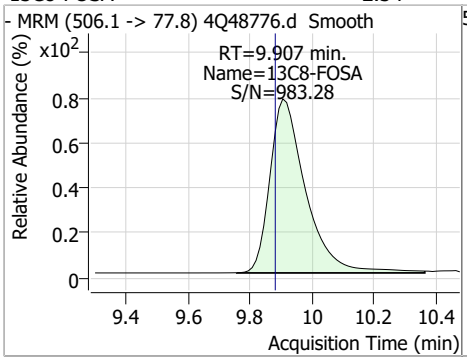


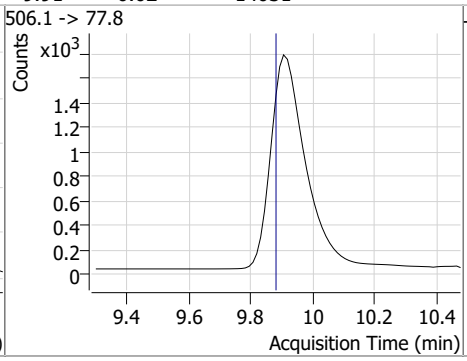
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.79	9.63	0.01	40115	632.9 -> 452.9	30.7	15.3	46.0

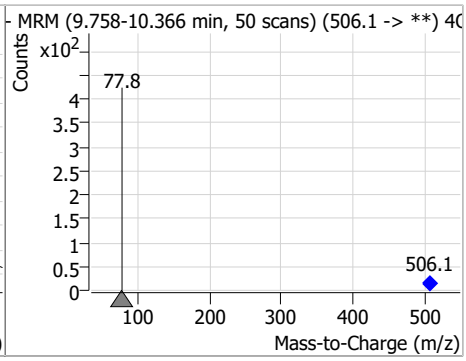


Perfluorinated Compounds by LC/MS/MS

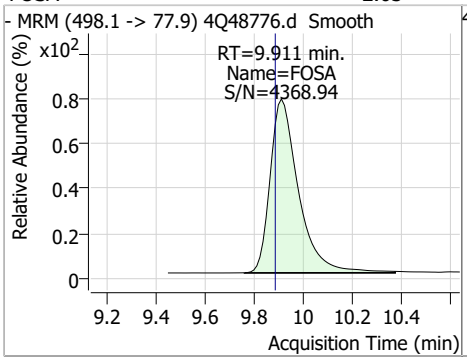
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.34	9.91	0.02	14031				

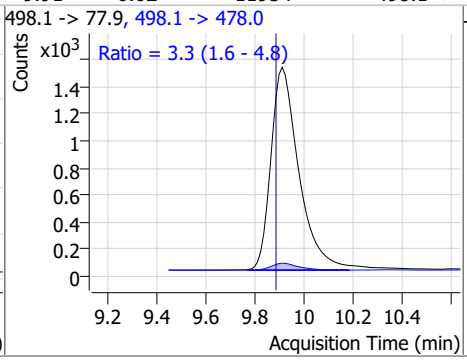


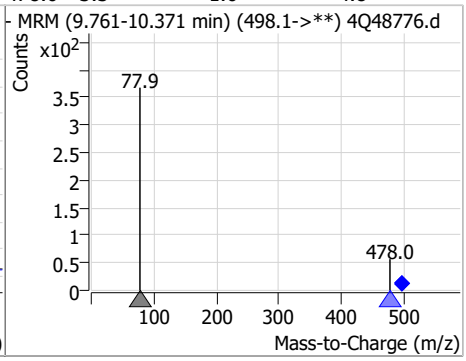




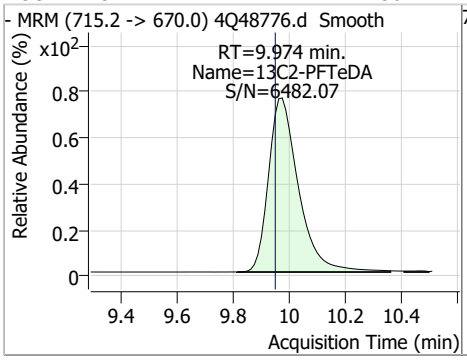
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.63	9.91	0.02	11954	498.1 -> 478.0	3.3	1.6	4.8

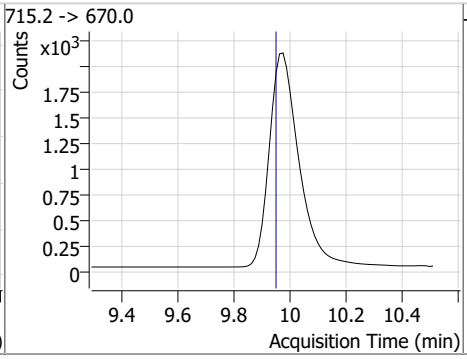


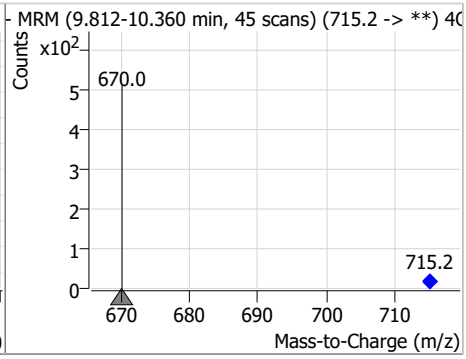




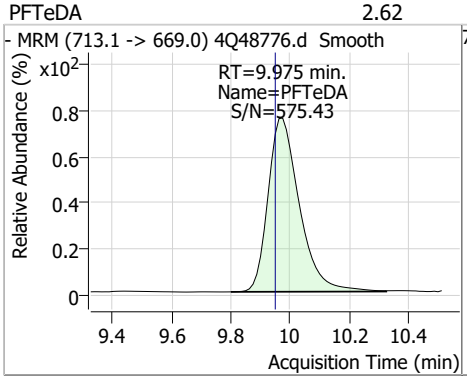
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.97	0.02	15508				

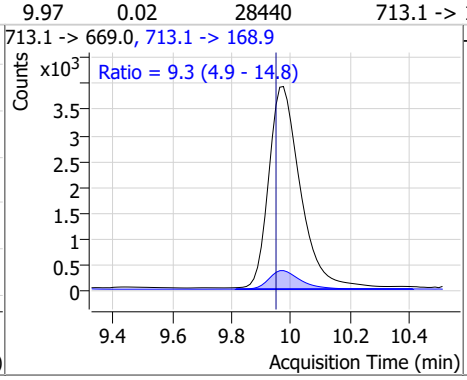


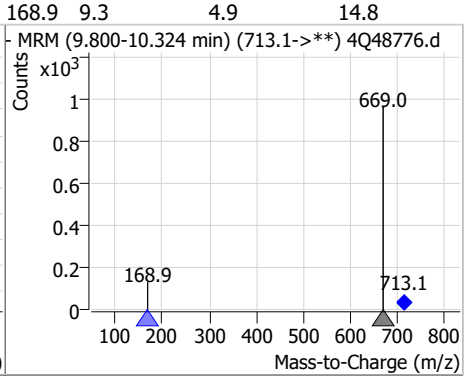




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.62	9.97	0.02	28440	713.1 -> 168.9	9.3	4.9	14.8

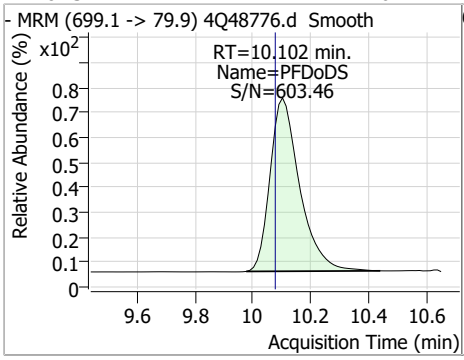


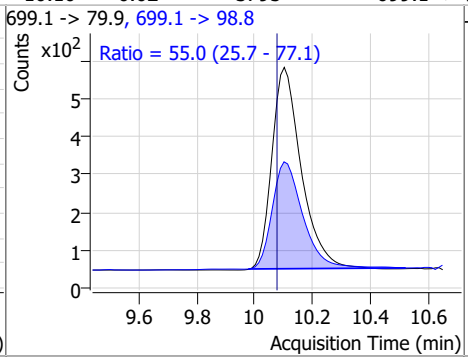


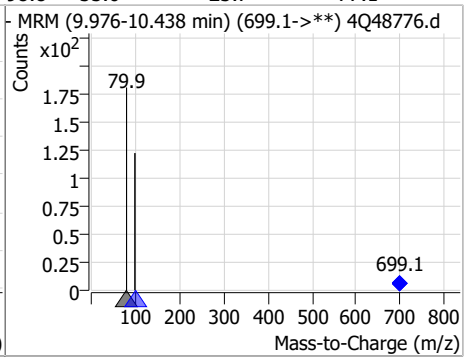


Perfluorinated Compounds by LC/MS/MS

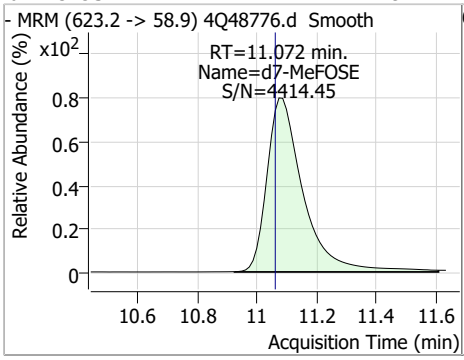
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.62	10.10	0.02	3795	699.1 -> 98.8	55.0	25.7	77.1

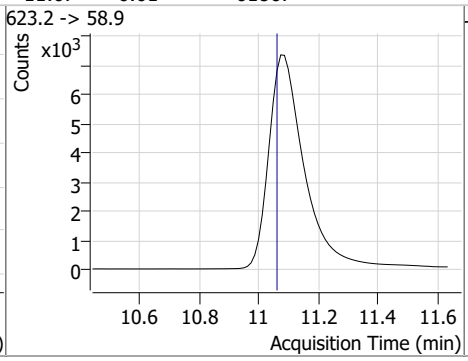


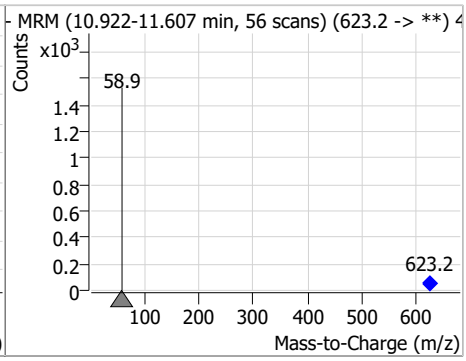




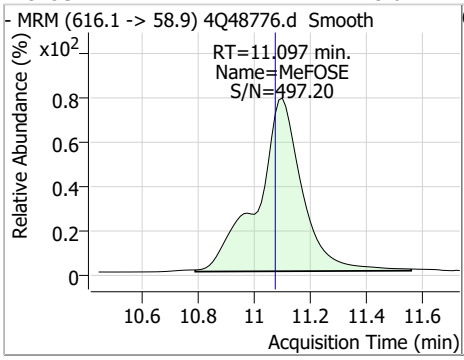
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.91	11.07	0.01	61867				

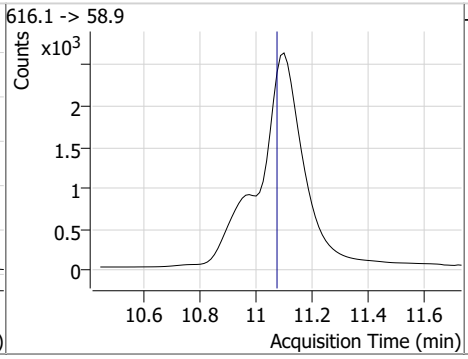


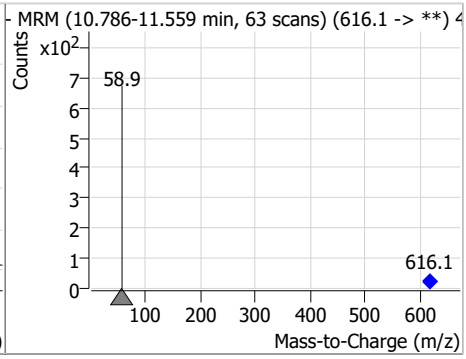




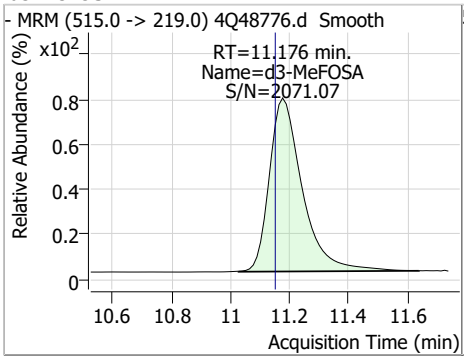
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.04	11.10	0.02	28860				

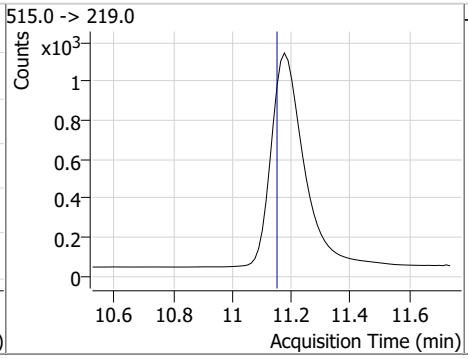


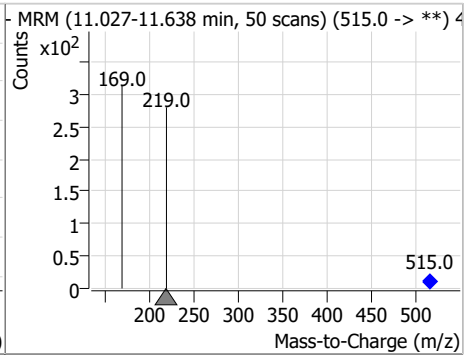




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.41	11.18	0.02	8515				

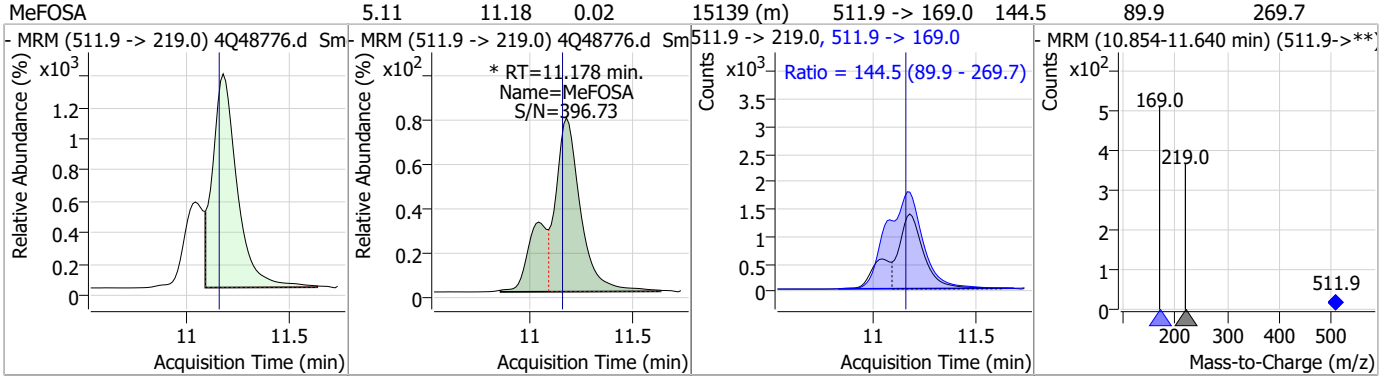




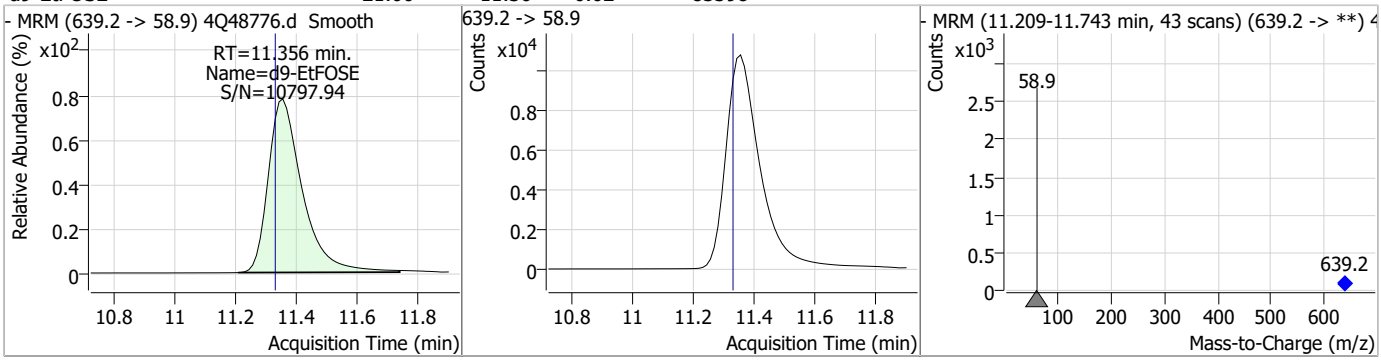


Perfluorinated Compounds by LC/MS/MS

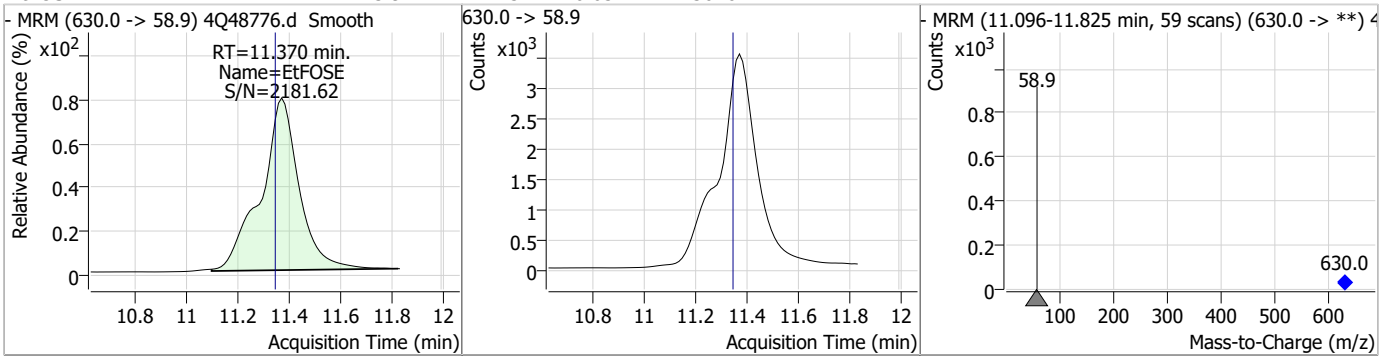
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.11	11.18	0.02	15139 (m)	511.9 -> 169.0	144.5	89.9	269.7



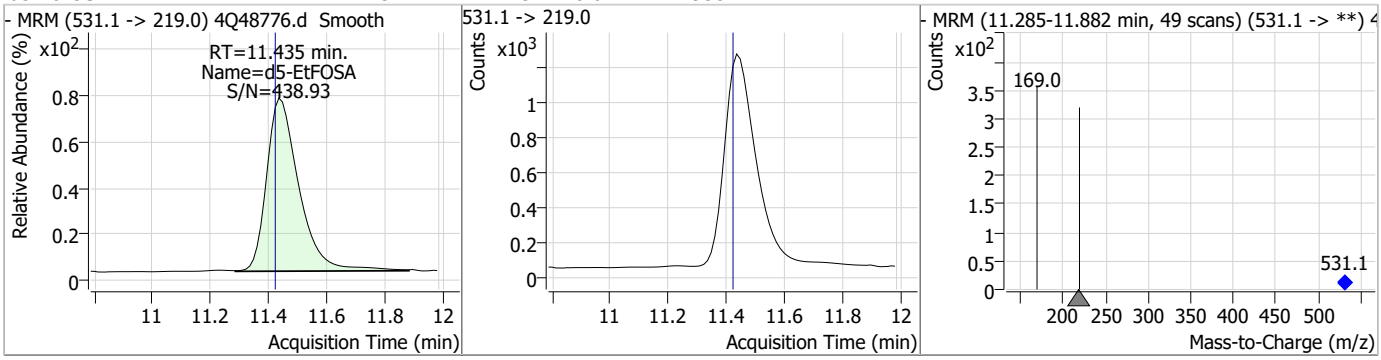
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.06	11.36	0.02	83398				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	13.97	11.37	0.03	36464				

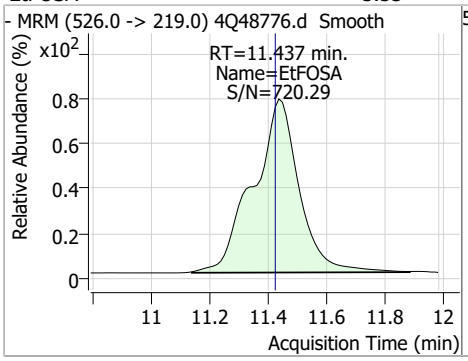


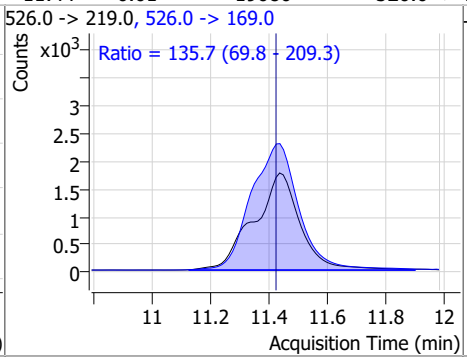
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.31	11.43	0.01	9384				

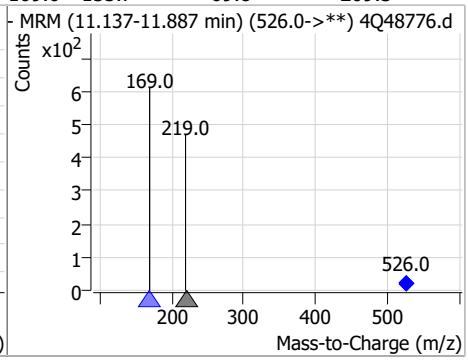


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.53	11.44	0.01	19080	526.0 -> 169.0	135.7	69.8	209.3







7.7.13

7

Manual Integration Approval Summary

Sample Number: S4Q713-CC711
Lab FileID: 4Q48776.D
Injection Time: 08/09/23 18:19

Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
MeFOSA	31506-32-8		11.18	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48787.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 9:01:28 PM
Sample Name : cc711-4
Vial : P1-A5
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.911	216.8 -> 171.9	115554	10.00	µg/L	0.000
M5-PFPeA	4.412	268.3 -> 223.0	59068	5.00	µg/L	0.000
M5-PFHxA	5.610	318.0 -> 273.0	39355	2.50	µg/L	0.000
M4-PFHpA	6.580	367.1 -> 322.0	28579	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	45943	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	20950	1.25	µg/L	0.013
M6-PFDA	8.291	519.1 -> 474.1	14515	1.25	µg/L	0.013
M7-PFUnDA	8.748	570.0 -> 525.1	19233	1.25	µg/L	0.012
M2-PFDoDA	9.180	615.1 -> 570.0	20430	1.25	µg/L	0.000
M2-PFTeDA	9.949	715.2 -> 670.0	14990	1.25	µg/L	0.000
M8-FOSA	9.894	506.1 -> 77.8	14009	2.50	µg/L	0.012
M3-PFBS	5.489	302.1 -> 79.9	10031	2.50	µg/L	0.000
M3-PFHxS	7.342	402.1 -> 79.9	6625	2.50	µg/L	0.025
M8-PFOS	8.430	507.1 -> 79.9	9151	2.50	µg/L	0.013
M2-4:2FTS	5.296	329.1 -> 80.9	940	5.00	µg/L	0.000
M2-6:2FTS	7.023	429.1 -> 80.9	1577	5.00	µg/L	0.025
M2-8:2FTS	8.078	529.1 -> 80.9	2463	5.00	µg/L	0.013
M3-MeFOSAA	8.361	573.2 -> 419.0	18586	5.00	µg/L	0.013
M3-HFPO-DA	5.989	286.9 -> 168.9	32481	10.00	µg/L	0.012
M5-EtFOSAA	8.559	589.2 -> 419.0	16489	5.00	µg/L	0.013
M7-MeFOSE	11.059	623.2 -> 58.9	61585	25.00	µg/L	0.000
M9-EtFOSE	11.344	639.2 -> 58.9	86555	25.00	µg/L	0.013
M5-EtFOSA	11.435	531.1 -> 219.0	9257	2.50	µg/L	0.012
M3-MeFOSA	11.164	515.0 -> 219.0	8669	2.50	µg/L	0.012
13C4-PFOS	8.430	502.8 -> 79.9	9625	2.50	µg/L	0.013
13C3-PFBA	2.916	216.0 -> 172.0	61496	5.00	µg/L	0.012
18O2-PFHxS	7.328	403.0 -> 83.9	4938	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	57522	2.50	µg/L	0.025
13C2-PFDA	8.291	515.1 -> 470.1	17170	1.25	µg/L	0.013
13C5-PFNA	7.798	468.0 -> 423.0	24550	1.25	µg/L	0.013
13C2-PFHxA	5.611	315.1 -> 270.0	37306	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	940	7.62	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 152.4%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1577	6.69	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 133.8%		
13C2-8:2FTS	8.078	529.1 -> 80.9	2463	6.88	µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 137.6%		
13C2-PFDoDA	9.180	615.1 -> 570.0	20430	1.39	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C2-PFTeDA	9.949	715.2 -> 670.0	14990	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C3-PFBS	5.489	302.1 -> 79.9	10031	2.39	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C3-PFHxS	7.342	402.1 -> 79.9	6625	2.42	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 = 97.0%		
13C4-PFBA	2.911	216.8 -> 171.9	115554	10.99 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C4-PFHpA	6.580	367.1 -> 322.0	28579	2.57 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFHxA	5.610	318.0 -> 273.0	39355	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFPeA	4.412	268.3 -> 223.0	59068	4.53 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C6-PFDA	8.291	519.1 -> 474.1	14515	1.22 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C7-PFUnDA	8.748	570.0 -> 525.1	19233	1.44 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.0%		
13C8-FOSA	9.894	506.1 -> 77.8	14009	2.33 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C8-PFOA	7.251	421.1 -> 376.0	45943	2.43 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOS	8.430	507.1 -> 79.9	9151	2.37 µg/L		0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C9-PFNA	7.797	472.1 -> 427.0	20950	1.13 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.1%		
d3-MeFOSAA	8.361	573.2 -> 419.0	18586	5.20 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	32481	9.14 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
d3-MeFOSA	11.164	515.0 -> 219.0	8669	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
d5-EtFOSAA	8.559	589.2 -> 419.0	16489	5.61 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
d7-MeFOSE	11.059	623.2 -> 58.9	61585	21.79 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
d9-EtFOSE	11.344	639.2 -> 58.9	86555	21.84 µg/L		0.013
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
d5-EtFOSA	11.435	531.1 -> 219.0	9257	2.27 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.9%		
Target Compounds						QValue
4:2FTS	5.297	327.1 -> 307.0	10467	8.26 µg/L		98
		327.1 -> 80.9	4393			
6:2FTS	7.024	427.1 -> 407.0	13709	10.24 µg/L		97
		427.1 -> 80.9	5087			
8:2FTS	8.078	527.1 -> 507.0	11729	11.86 µg/L		95
		527.1 -> 80.8	4759			
EtFOSAA	8.572	584.2 -> 419.1	4953	2.20 µg/L	m	80
		584.2 -> 526.0	2655			
FOSA	9.898	498.1 -> 77.9	12004	2.65 µg/L		100
		498.1 -> 478.0	380			
MeFOSAA	8.361	570.1 -> 419.0	7044	3.03 µg/L		95
		570.1 -> 483.0	1155			
PFBA	2.907	212.8 -> 168.9	26801	10.07 µg/L		100
PFBS	5.490	298.7 -> 79.9	6552	2.67 µg/L		98
		298.7 -> 98.8	2483			
PFDA	8.292	512.9 -> 469.0	29201	2.86 µg/L		97
		512.9 -> 219.0	6121			
PFDoDA	9.181	613.1 -> 569.0	32426	2.54 µg/L		99
		613.1 -> 319.0	5148			
PFDS	9.335	599.0 -> 79.9	4773	2.53 µg/L		97

Perfluorinated Compounds by LC/MS/MS

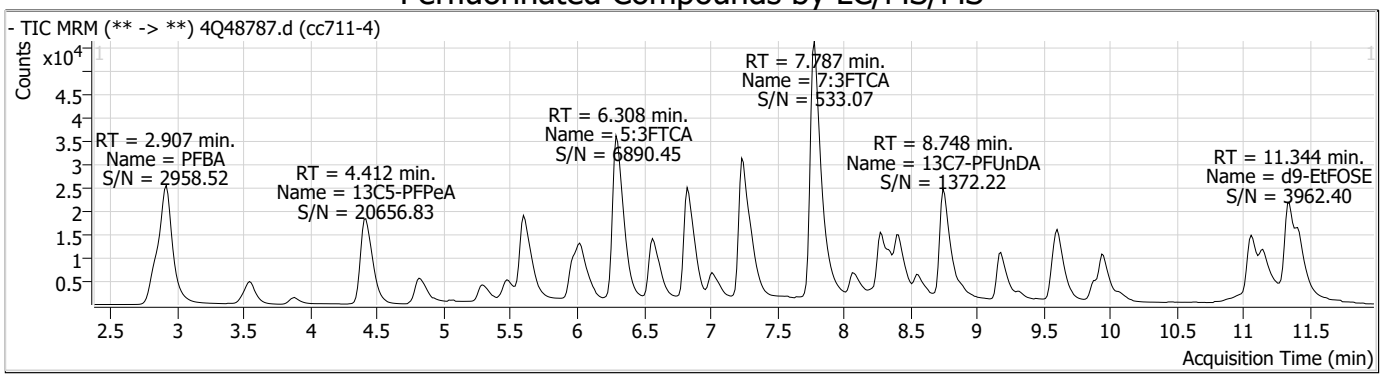
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2522				
PFHpA	6.581	363.1 -> 319.0	33890	2.63	µg/L		97
		363.1 -> 169.0	5807				
PFHpS	7.913	449.0 -> 79.9	6904	2.50	µg/L		99
		449.0 -> 98.9	3511				
PFHxA	5.613	313.0 -> 269.0	29712	2.62	µg/L		99
		313.0 -> 118.9	912				
PFHxS	7.330	398.7 -> 79.9	5088	2.68	µg/L	m	99
		398.7 -> 98.9	2670				
PFNA	7.798	463.0 -> 419.0	29677	2.72	µg/L		98
		463.0 -> 219.0	6703				
PFNS	8.899	548.8 -> 79.9	4825	2.70	µg/L		99
		548.8 -> 98.9	2528				
PFOA	7.252	413.0 -> 369.0	50987	2.80	µg/L		99
		413.0 -> 169.0	10159				
PFOS	8.431	498.9 -> 79.9	8631	2.65	µg/L	m	83
		498.9 -> 98.8	4351				
PFPeA	4.414	263.0 -> 219.0	58179	5.67	µg/L		100
PFPeS	6.595	349.1 -> 79.9	4553	2.55	µg/L		100
		349.1 -> 98.9	2030				
PFTeDA	9.950	713.1 -> 669.0	27378	2.61	µg/L		99
		713.1 -> 168.9	2816				
PFTrDA	9.579	663.0 -> 619.0	36535	2.77	µg/L		99
		663.0 -> 168.9	4476				
PFUnDA	8.748	563.1 -> 519.0	30314	2.42	µg/L		97
		563.1 -> 269.1	6565				
11Cl-PF3OUdS	9.618	630.9 -> 450.9	41001	6.02	µg/L		100
		632.9 -> 452.9	12454				
9Cl-PF3ONS	8.763	530.8 -> 351.0	58298	6.08	µg/L		100
		532.8 -> 353.0	17998				
ADONA	6.843	376.9 -> 250.9	106849	5.67	µg/L		100
		376.9 -> 84.8	27880				
HFPO-DA	5.990	284.9 -> 168.9	13745	5.14	µg/L		97
		284.9 -> 184.9	1643				
3:3FTCA	3.880	241.0 -> 177.0	7462	11.11	µg/L		99
		241.0 -> 117.0	704				
5:3FTCA	6.308	341.0 -> 237.1	126367	67.99	µg/L		98
		341.0 -> 217.0	87612				
7:3FTCA	7.787	441.0 -> 316.9	71495	69.81	µg/L		95
		441.0 -> 336.9	170169				
EtFOSA	11.437	526.0 -> 219.0	20125	5.91	µg/L		94
		526.0 -> 169.0	26714				
EtFOSE	11.357	630.0 -> 58.9	39479	14.58	µg/L		100
MeFOSA	11.166	511.9 -> 219.0	15439	5.12	µg/L	m	75
		511.9 -> 169.0	22205				
MeFOSE	11.085	616.1 -> 58.9	29174	13.25	µg/L	m	100
PFDoDS	10.089	699.1 -> 79.9	3722	2.56	µg/L		92
		699.1 -> 98.8	2120				
NFDHA	5.491	295.0 -> 201.0	3654	4.99	µg/L		97
		295.0 -> 84.9	959				
PFMBA	4.828	279.0 -> 85.1	33474	5.82	µg/L		100
PFMPA	3.540	229.0 -> 84.9	31988	5.70	µg/L		100
PFEESA	6.034	314.8 -> 134.9	43538	4.76	µg/L		99
		314.8 -> 82.9	1407				

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

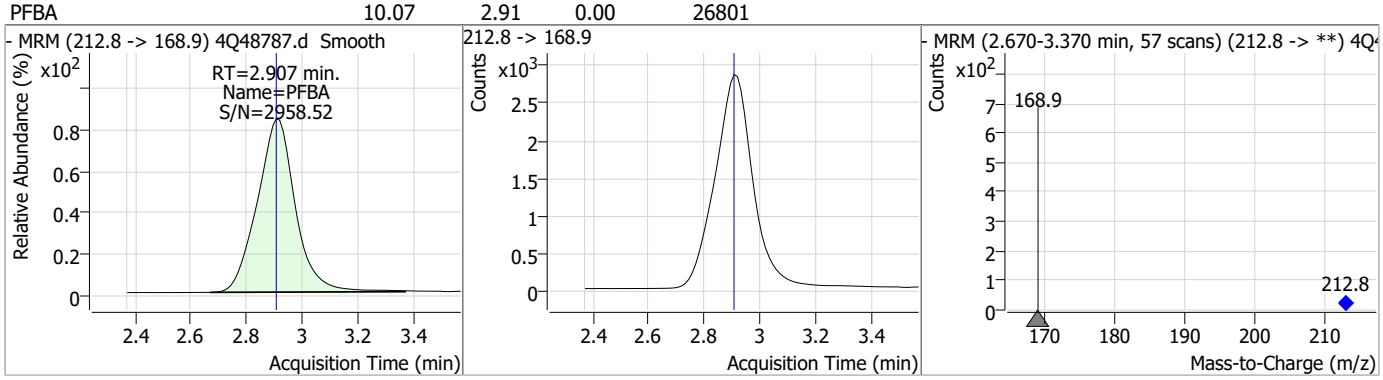
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

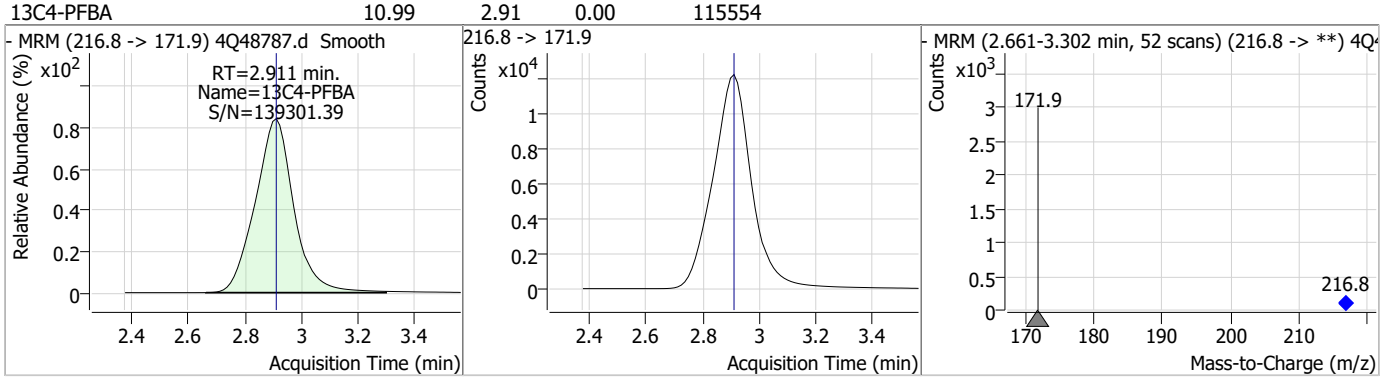
Perfluorinated Compounds by LC/MS/MS



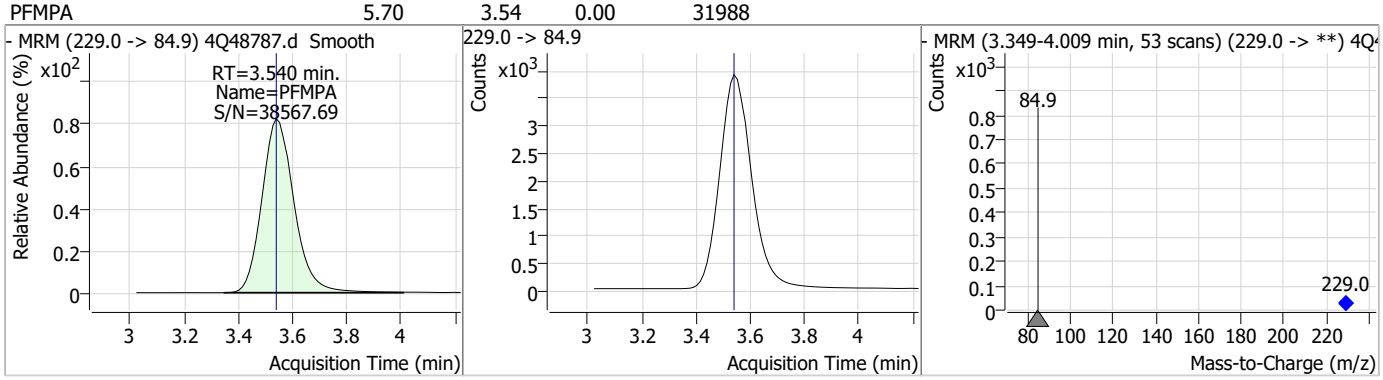
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.07	2.91	0.00	26801				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.99	2.91	0.00	115554				

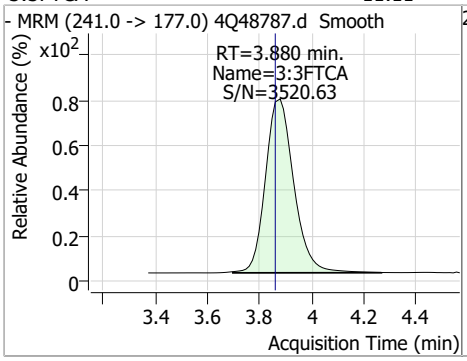


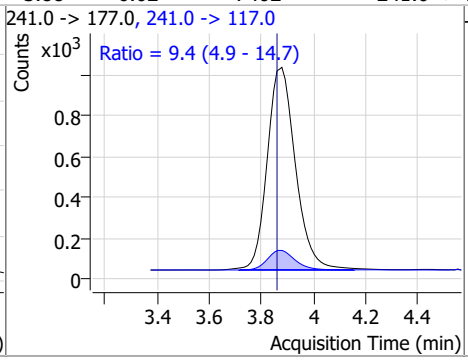
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.70	3.54	0.00	31988				

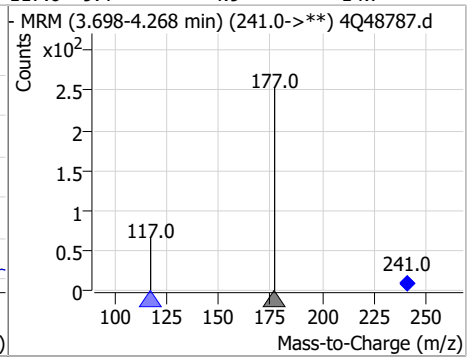


Perfluorinated Compounds by LC/MS/MS

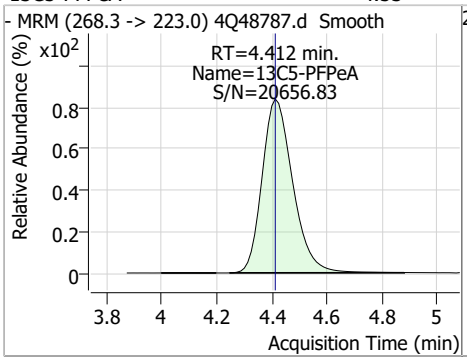
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.11	3.88	0.02	7462	241.0 -> 117.0	9.4	4.9	14.7

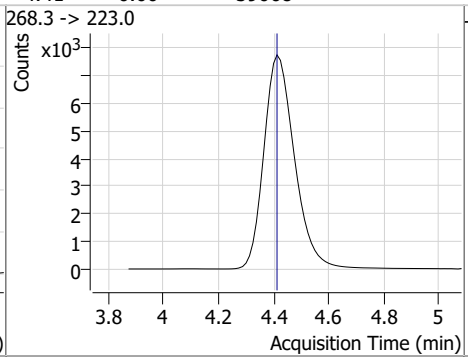


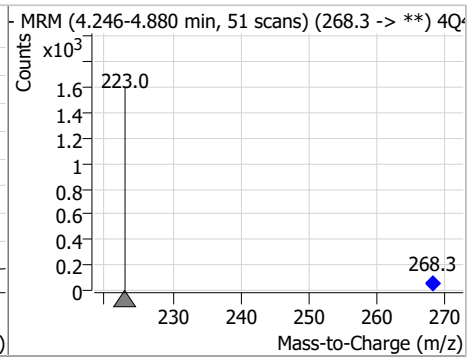




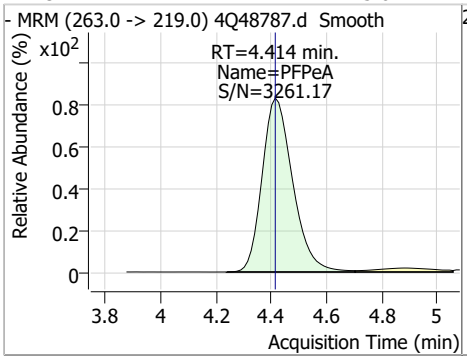
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.53	4.41	0.00	59068				

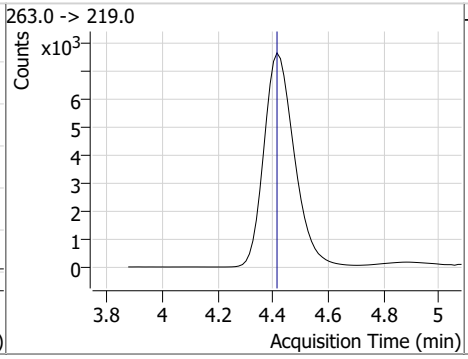


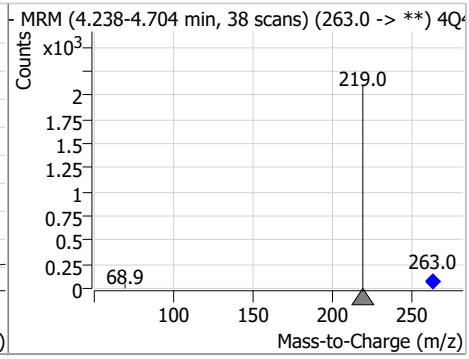




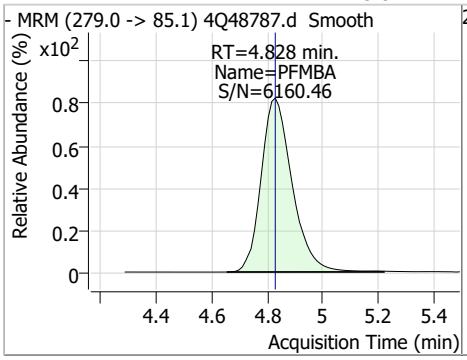
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.67	4.41	0.00	58179				

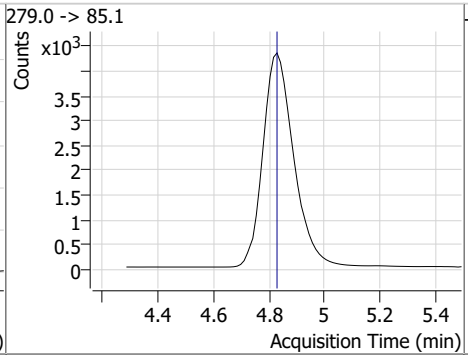


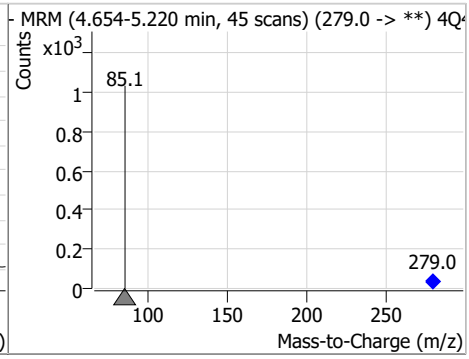




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.82	4.83	0.00	33474				

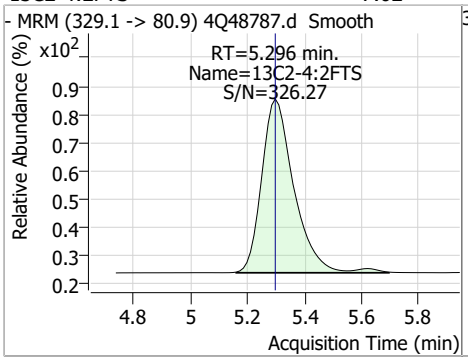


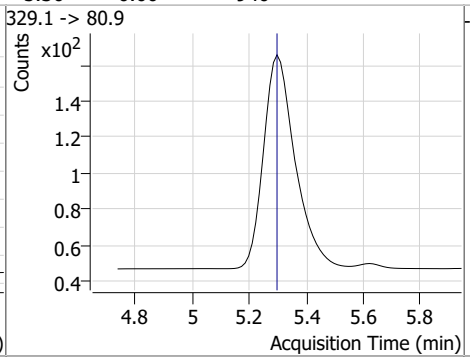


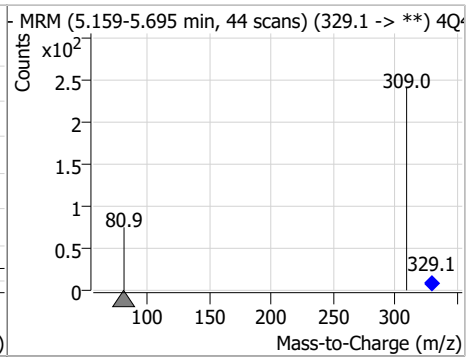


Perfluorinated Compounds by LC/MS/MS

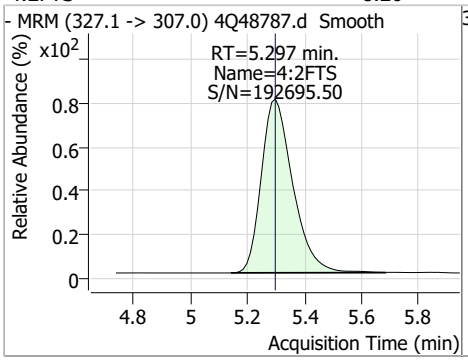
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.62	5.30	0.00	940				

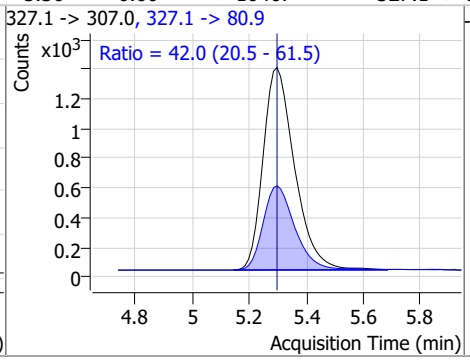


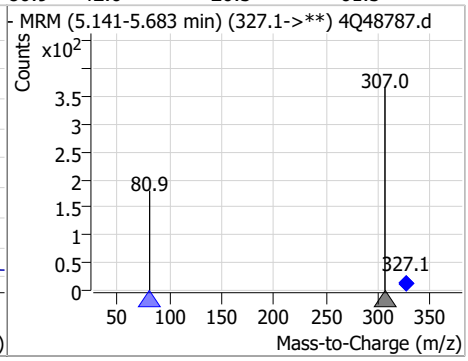




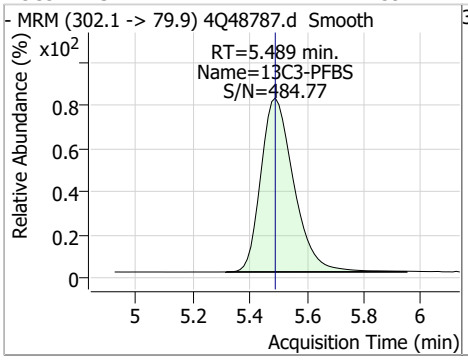
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.26	5.30	0.00	10467	327.1 -> 80.9	42.0	20.5	61.5

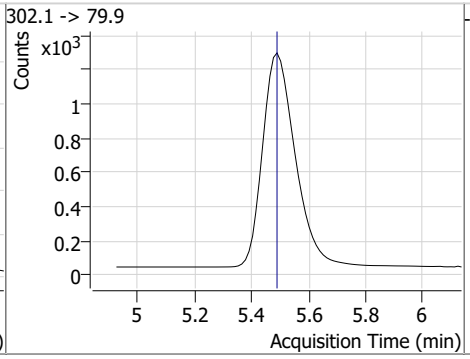


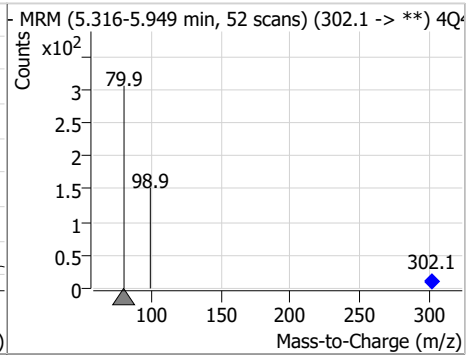




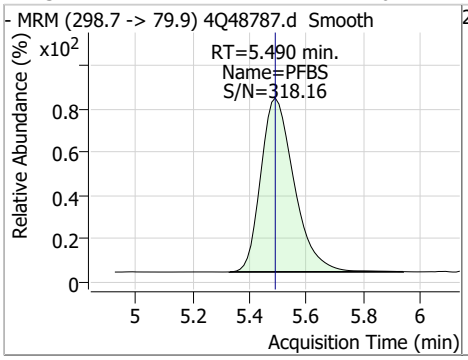
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	5.49	0.00	10031				

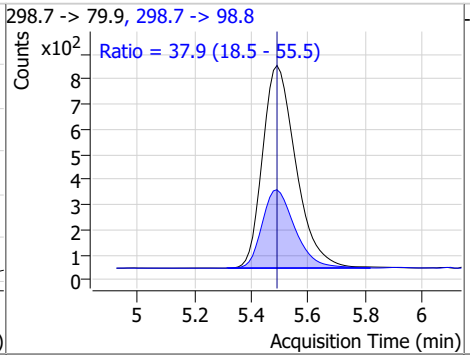


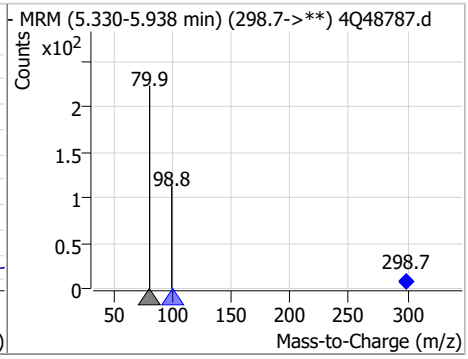




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.67	5.49	0.00	6552	298.7 -> 98.8	37.9	18.5	55.5

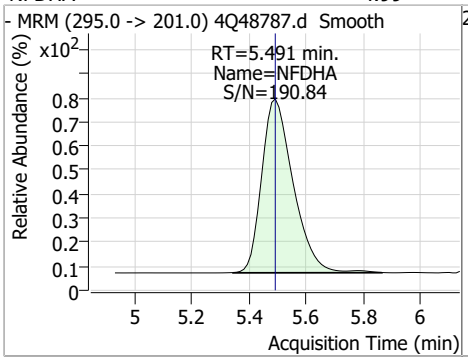


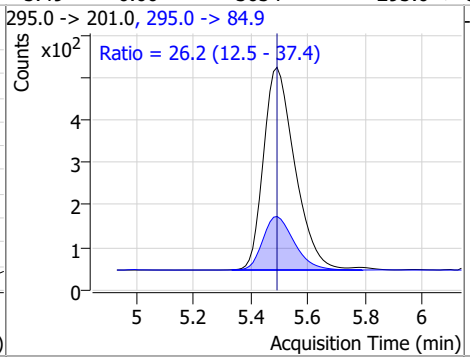


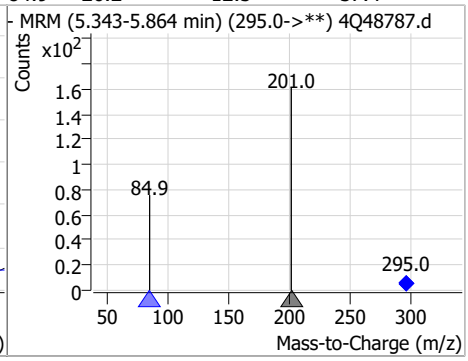


Perfluorinated Compounds by LC/MS/MS

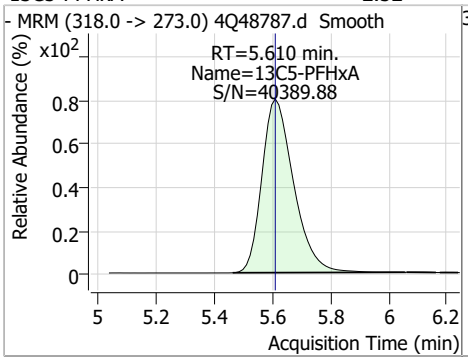
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.99	5.49	0.00	3654	295.0 -> 84.9	26.2	12.5	37.4

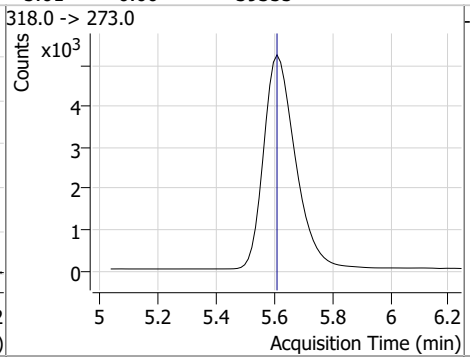


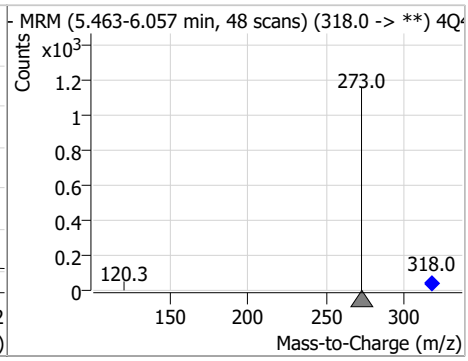




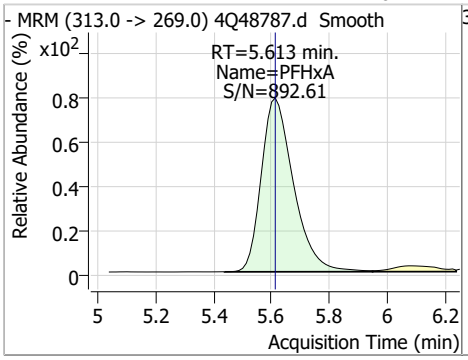
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.61	0.00	39355				

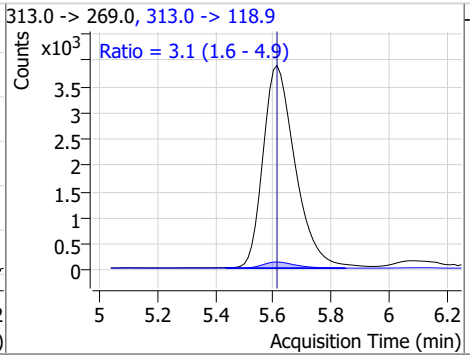


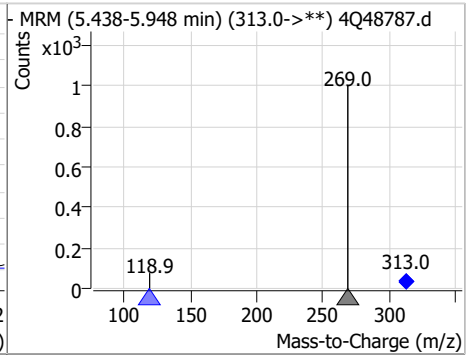




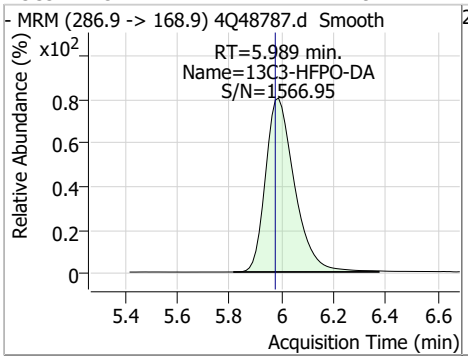
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.62	5.61	0.00	29712	313.0 -> 118.9	3.1	1.6	4.9

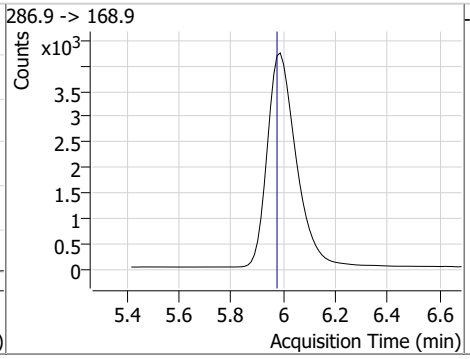


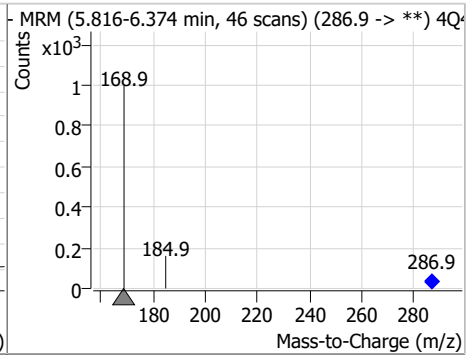




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.14	5.99	0.01	32481				

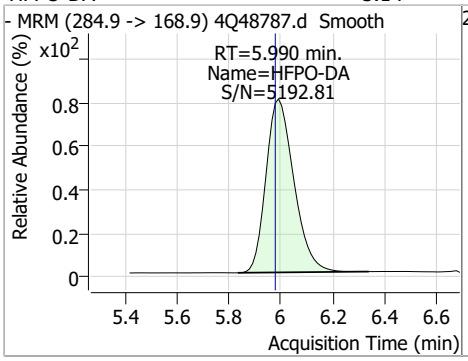


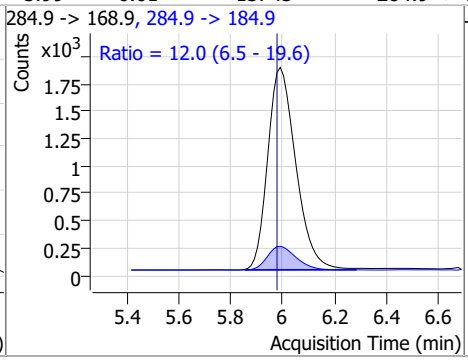


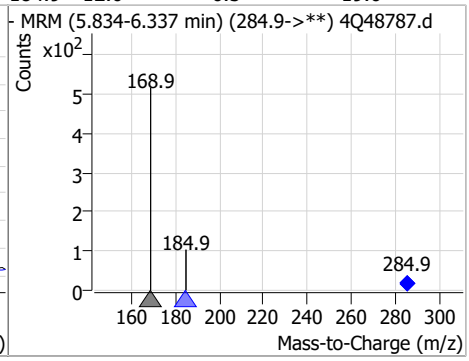


Perfluorinated Compounds by LC/MS/MS

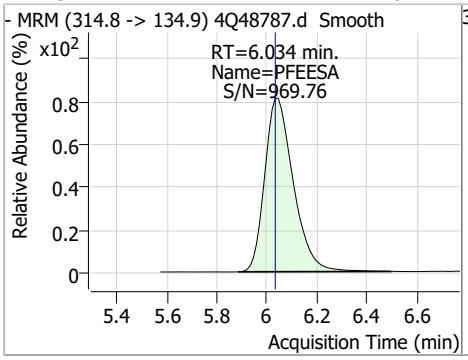
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.14	5.99	0.01	13745	284.9 -> 184.9	12.0	6.5	19.6

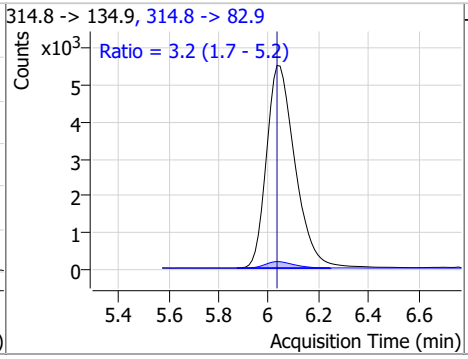


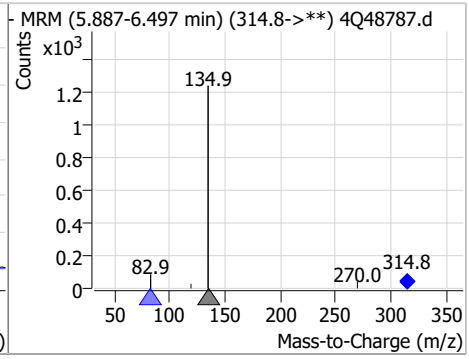




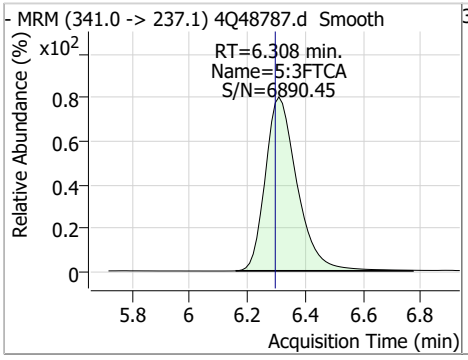
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.76	6.03	0.00	43538	314.8 -> 82.9	3.2	1.7	5.2

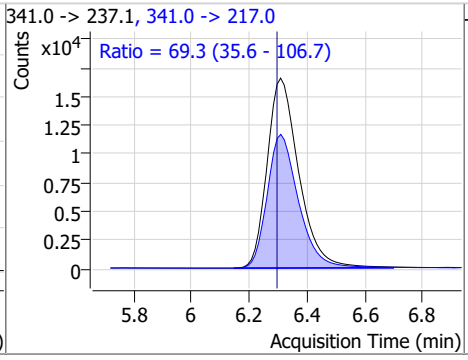


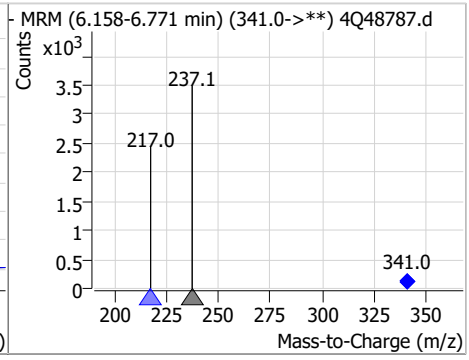




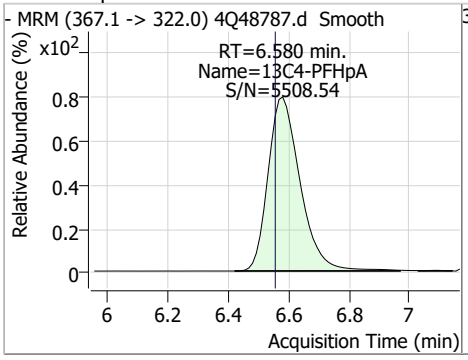
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	67.99	6.31	0.01	126367	341.0 -> 217.0	69.3	35.6	106.7

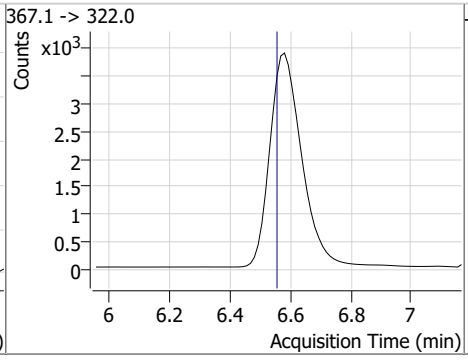


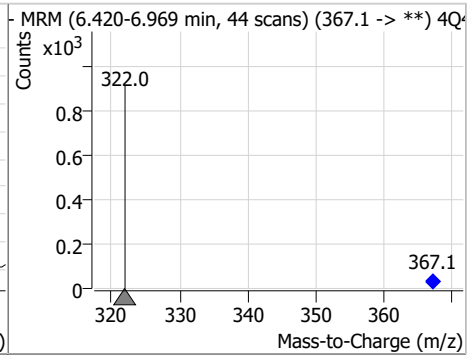




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	6.58	0.02	28579				

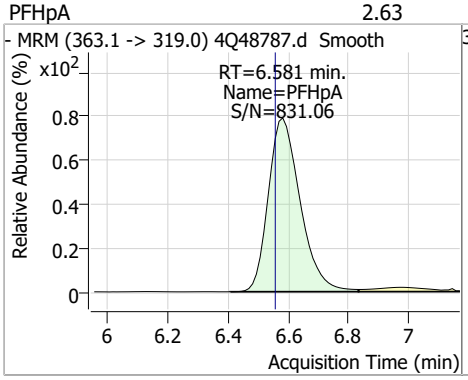


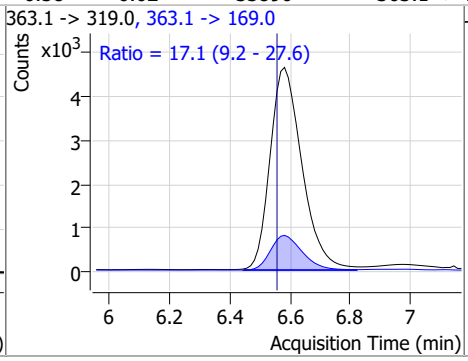


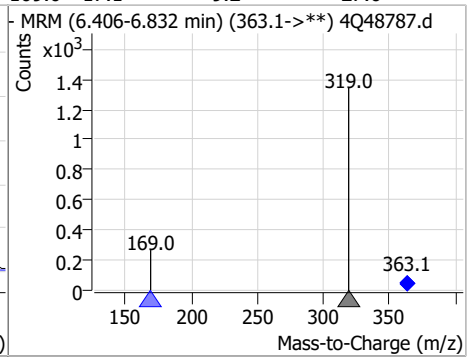


Perfluorinated Compounds by LC/MS/MS

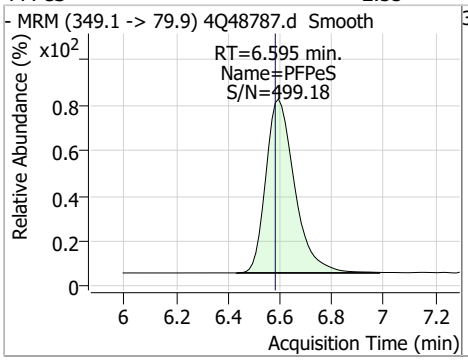
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.63	6.58	0.02	33890	363.1 -> 169.0	17.1	9.2	27.6

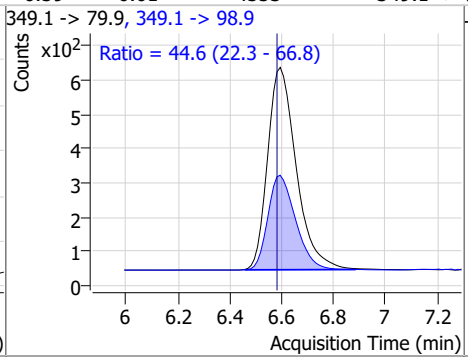


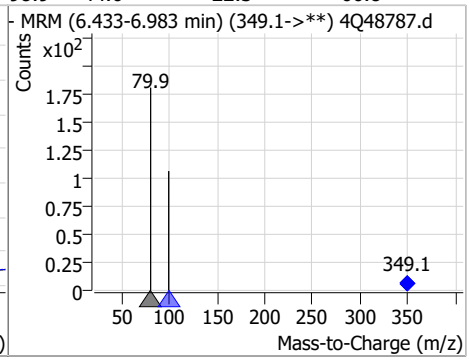




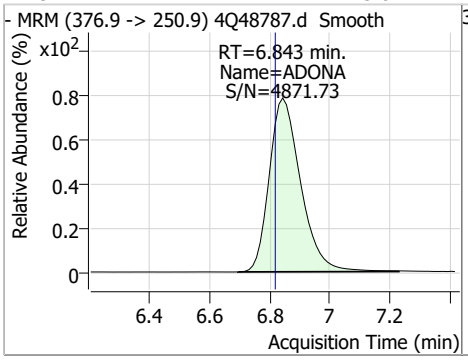
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.55	6.59	0.01	4553	349.1 -> 98.9	44.6	22.3	66.8

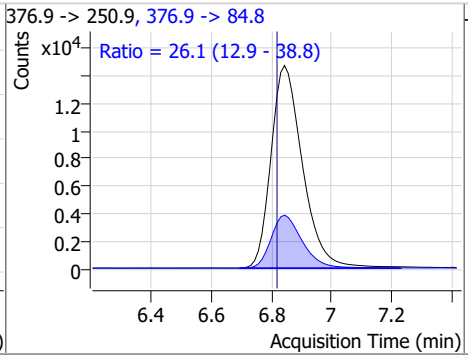


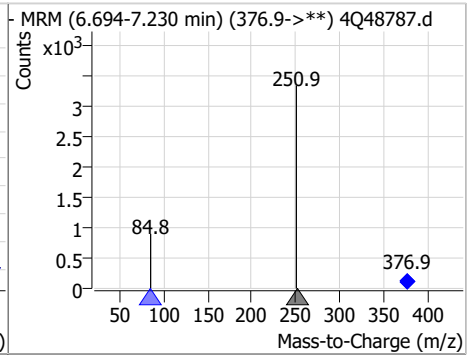




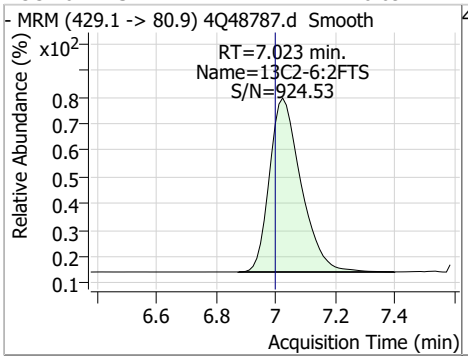
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.67	6.84	0.02	106849	376.9 -> 84.8	26.1	12.9	38.8

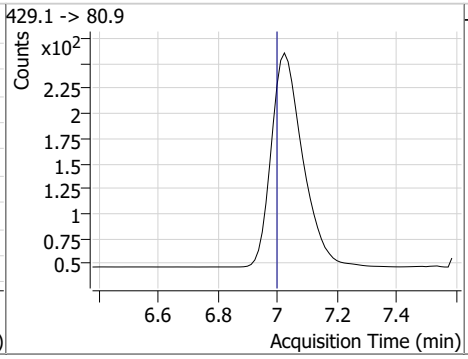


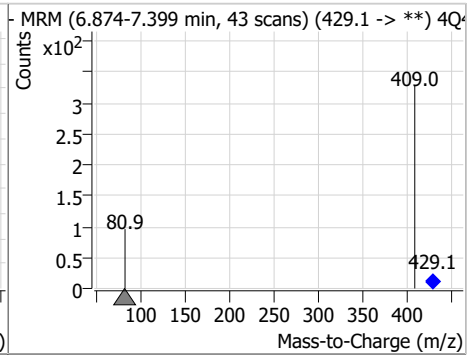




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.69	7.02	0.02	1577				

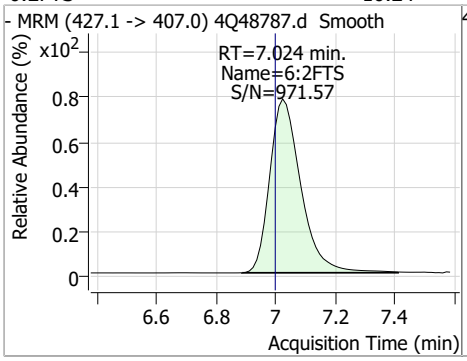


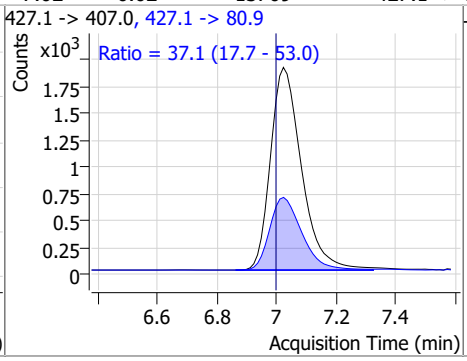


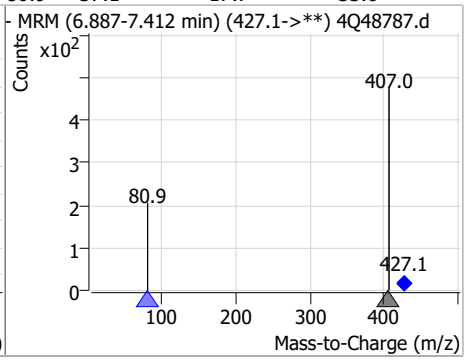


Perfluorinated Compounds by LC/MS/MS

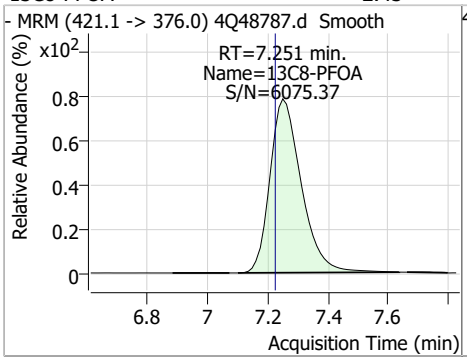
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.24	7.02	0.02	13709	427.1 -> 80.9	37.1	17.7	53.0

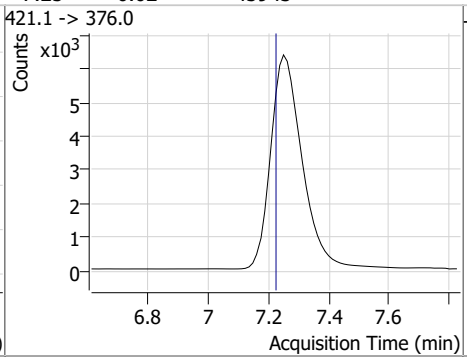


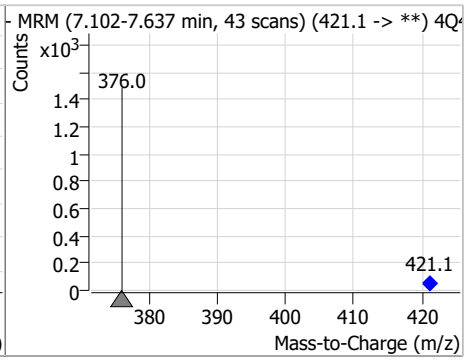




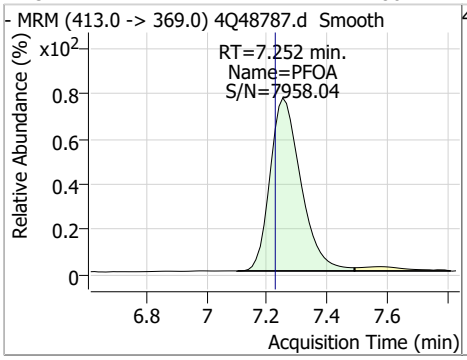
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.43	7.25	0.02	45943				

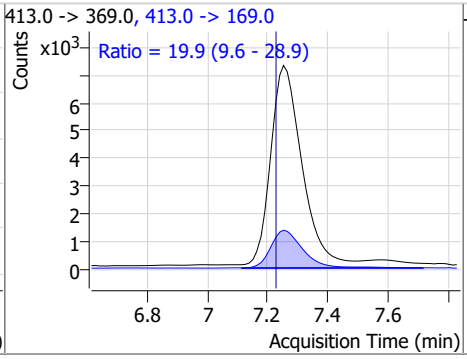


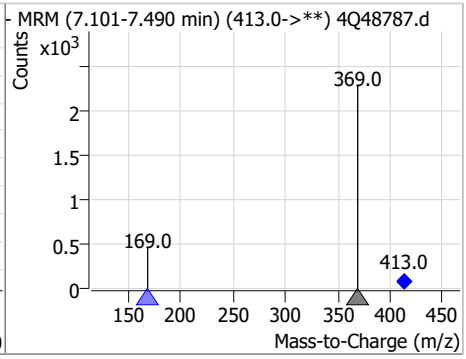




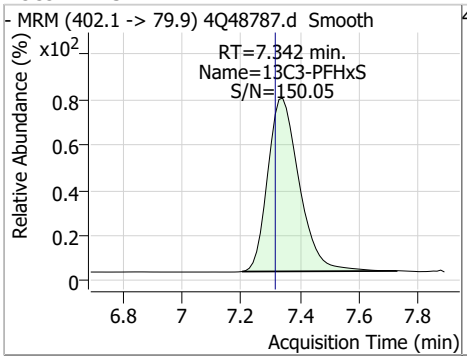
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.80	7.25	0.02	50987	413.0 -> 169.0	19.9	9.6	28.9

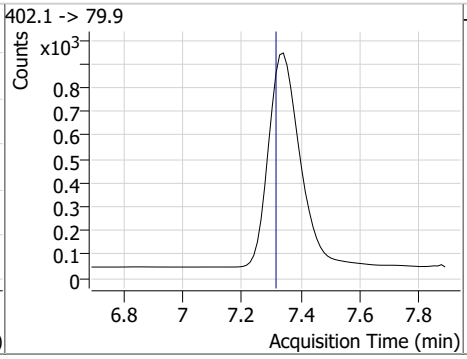


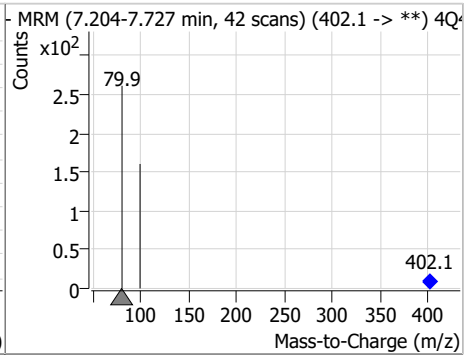




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.42	7.34	0.02	6625				

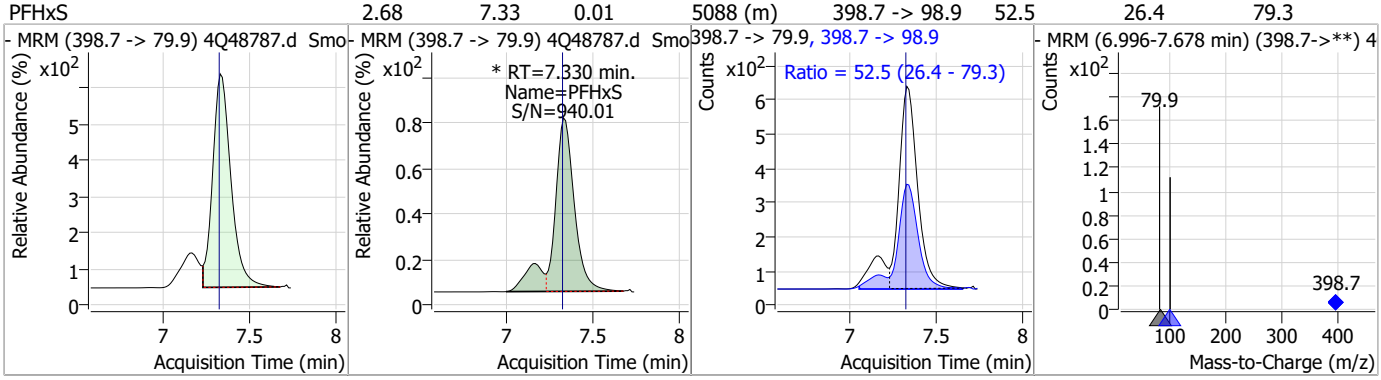




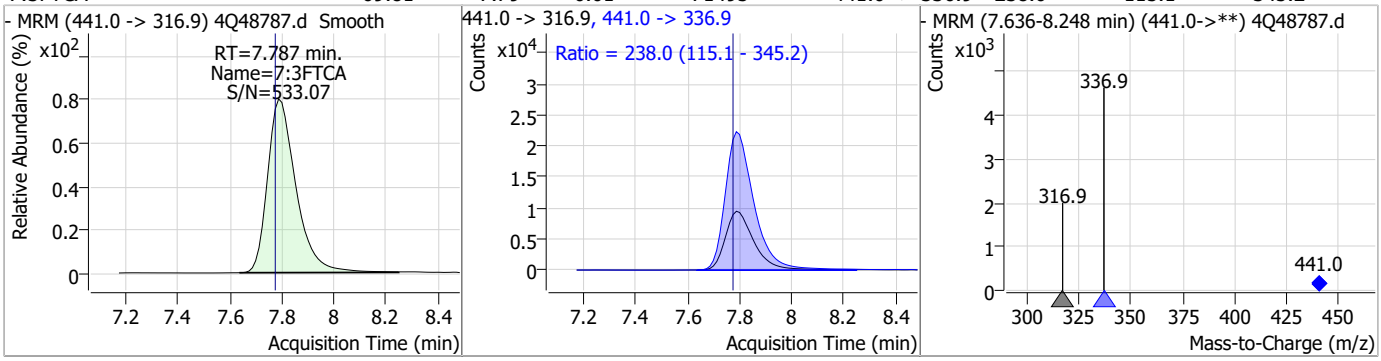


Perfluorinated Compounds by LC/MS/MS

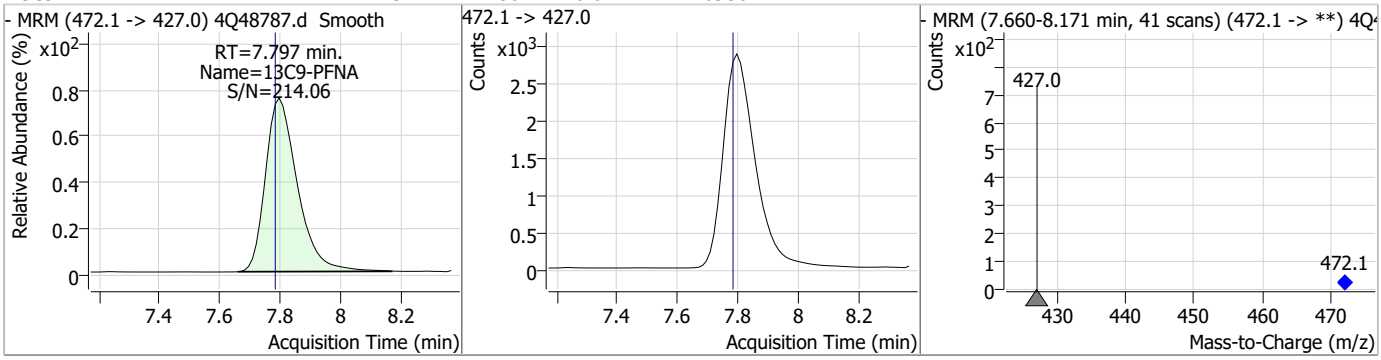
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.68	7.33	0.01	5088 (m)	398.7 -> 98.9	52.5	26.4	79.3



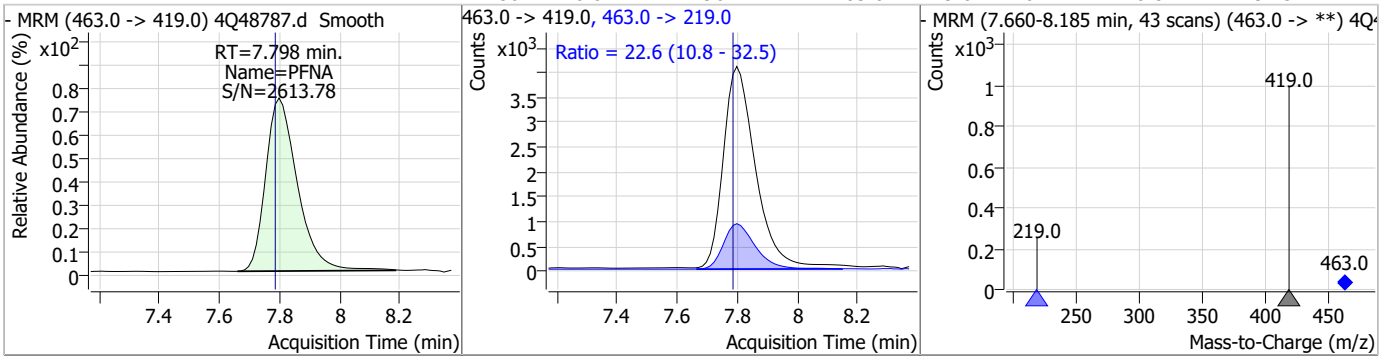
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	69.81	7.79	0.01	71495	441.0 -> 336.9	238.0	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.13	7.80	0.01	20950				

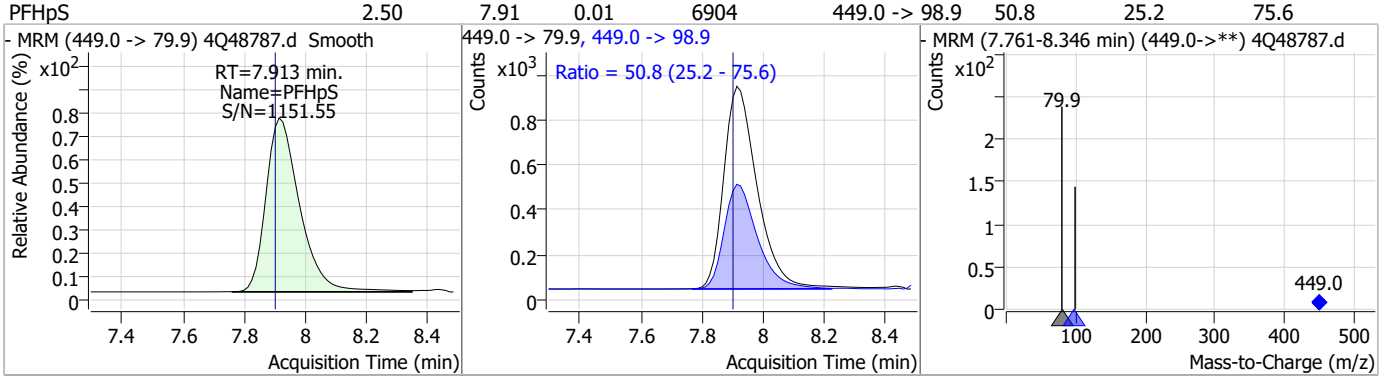


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.72	7.80	0.01	29677	463.0 -> 219.0	22.6	10.8	32.5

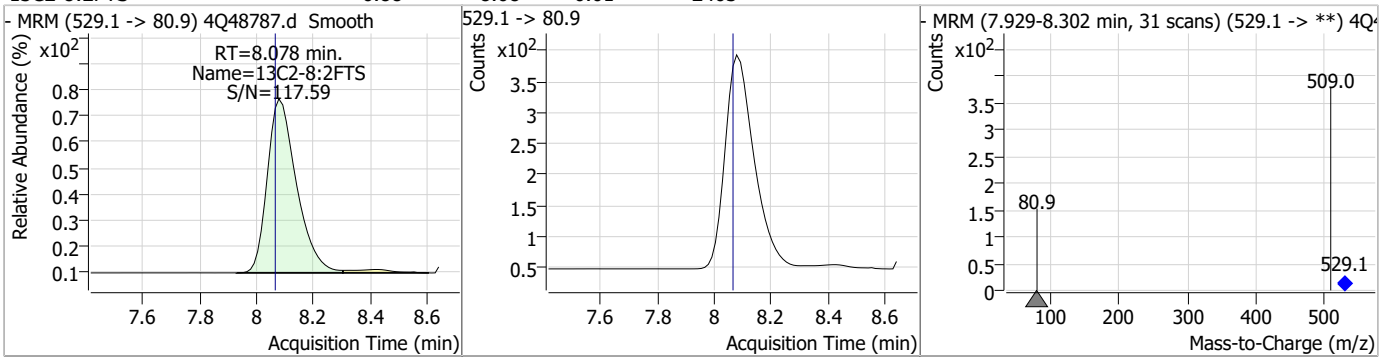


Perfluorinated Compounds by LC/MS/MS

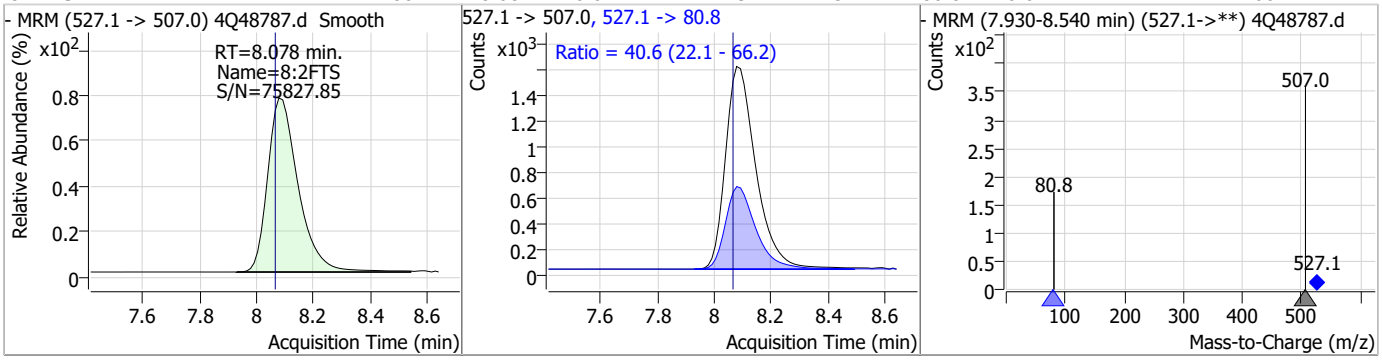
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.50	7.91	0.01	6904	449.0 -> 98.9	50.8	25.2	75.6



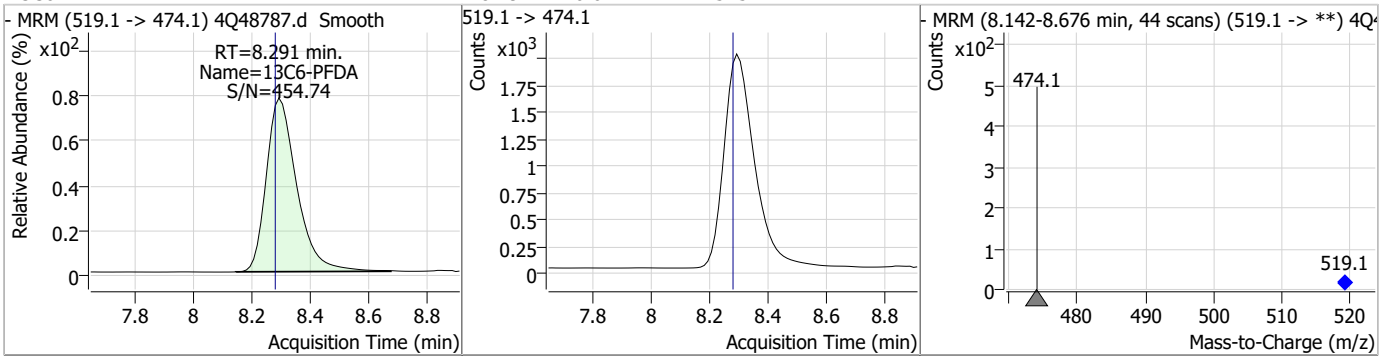
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.88	8.08	0.01	2463				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.86	8.08	0.01	11729	527.1 -> 80.8	40.6	22.1	66.2

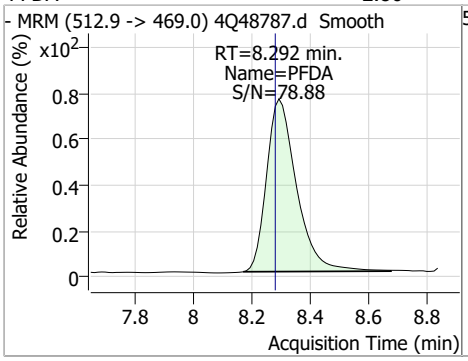


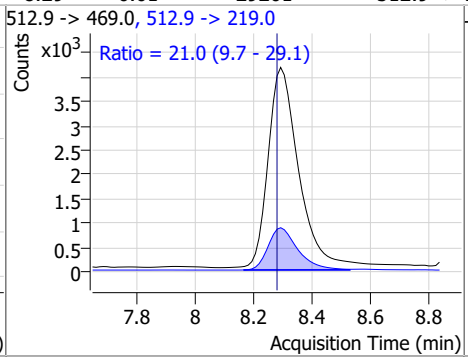
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.29	0.01	14515				

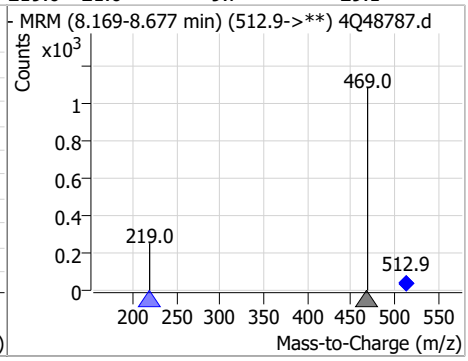


Perfluorinated Compounds by LC/MS/MS

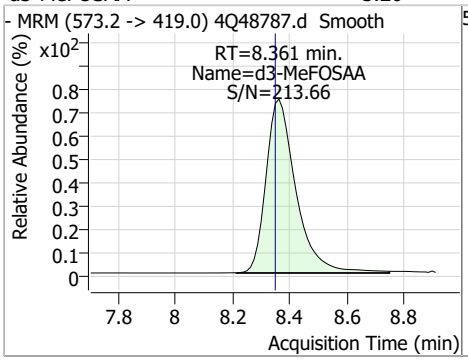
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.86	8.29	0.01	29201	512.9 -> 219.0	21.0	9.7	29.1

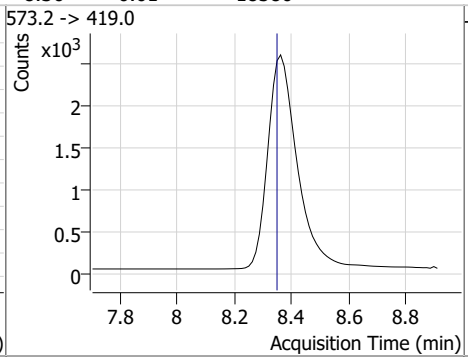


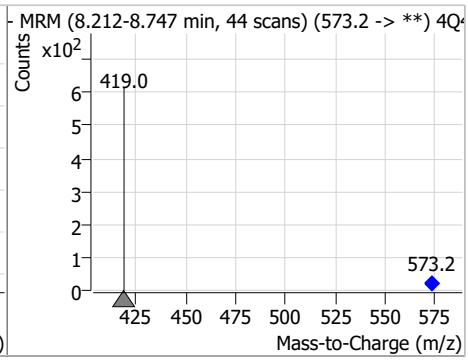




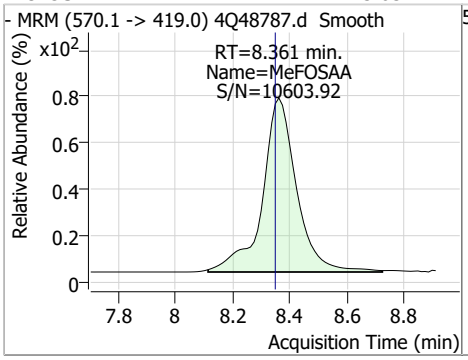
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.20	8.36	0.01	18586				

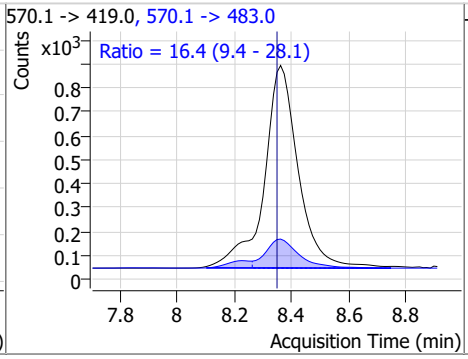


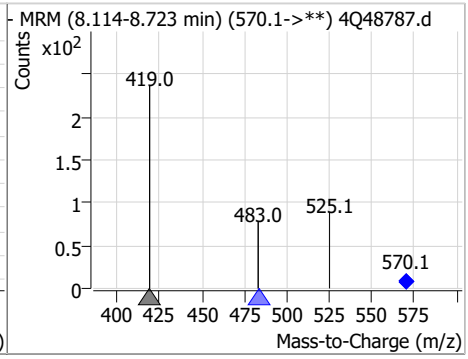




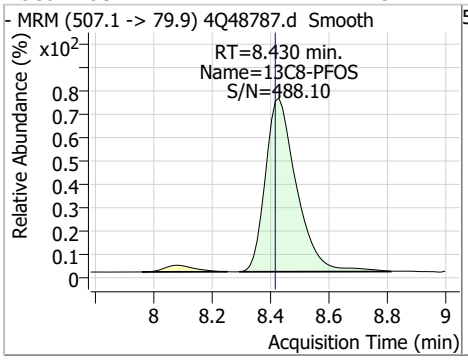
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	3.03	8.36	0.01	7044	570.1 -> 483.0	16.4	9.4	28.1

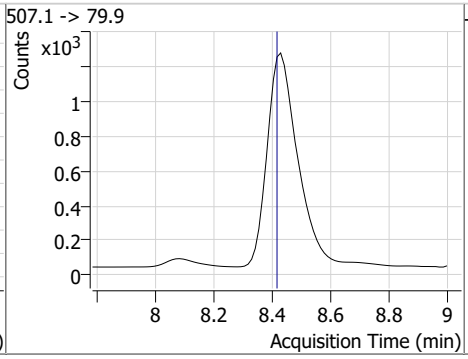


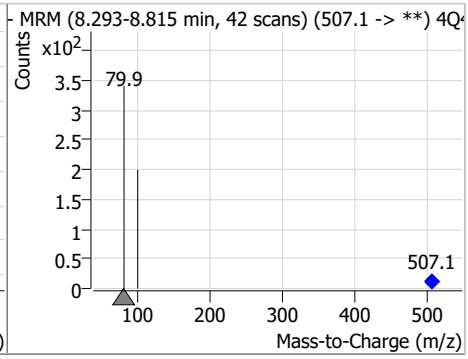




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.37	8.43	0.01	9151				

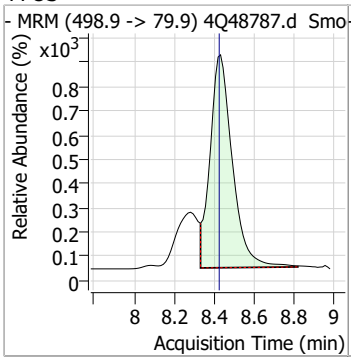


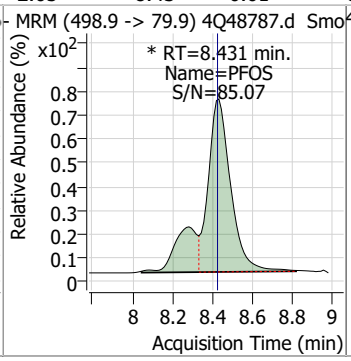


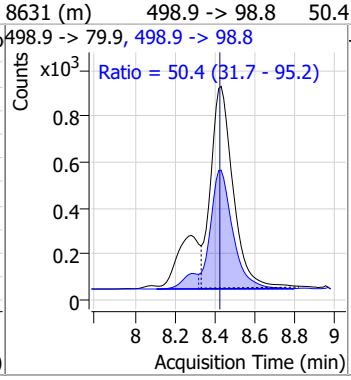


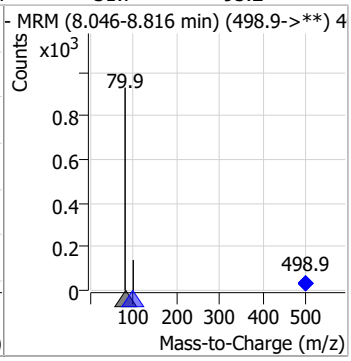
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.65	8.43	0.01	8631 (m)	498.9 -> 98.8	50.4	31.7	95.2

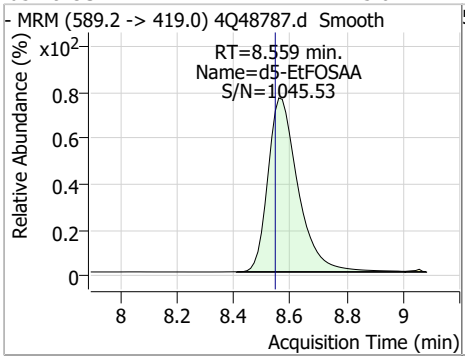


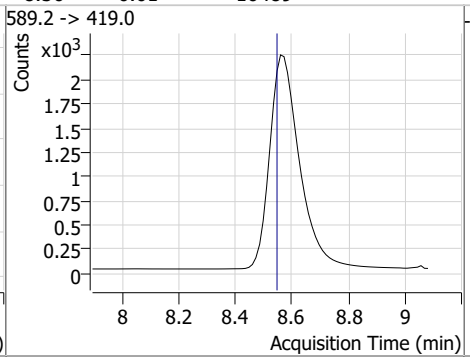


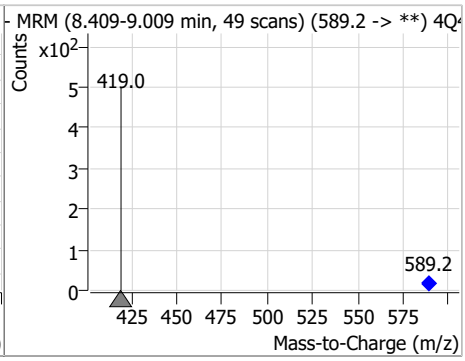




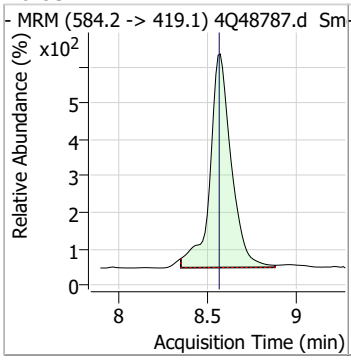
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.61	8.56	0.01	16489				

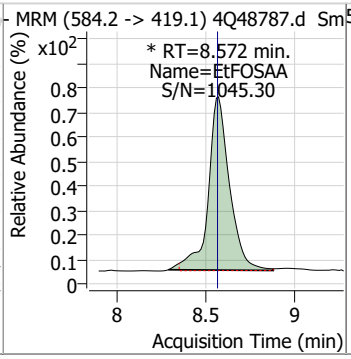


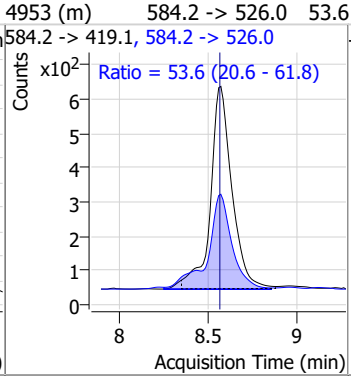


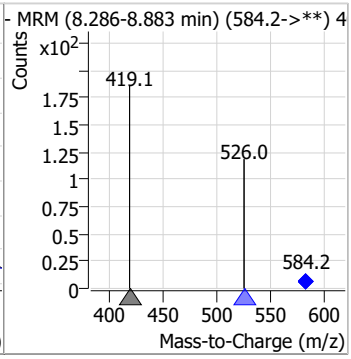


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.20	8.57	0.01	4953 (m)	584.2 -> 526.0	53.6	20.6	61.8

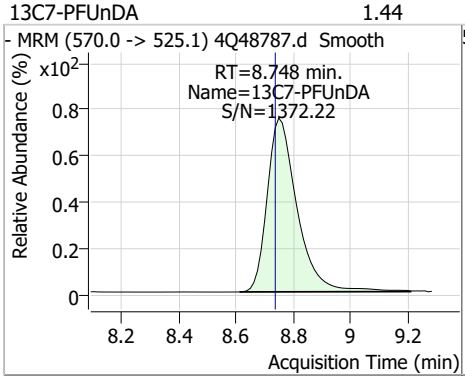


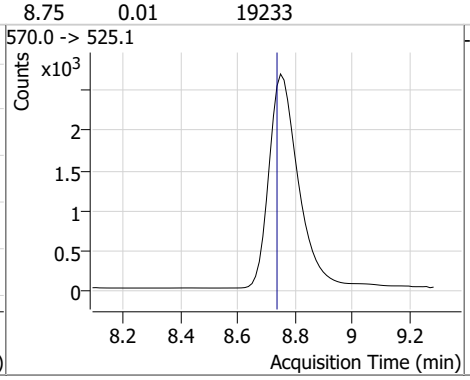


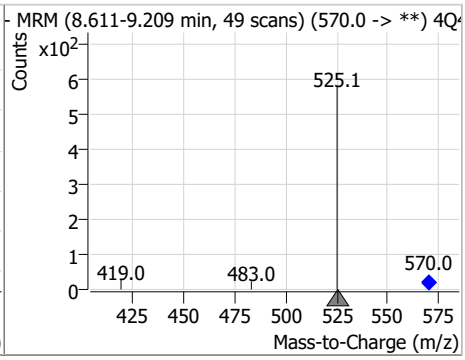




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.44	8.75	0.01	19233				

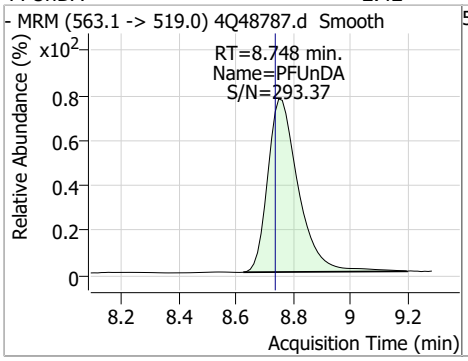


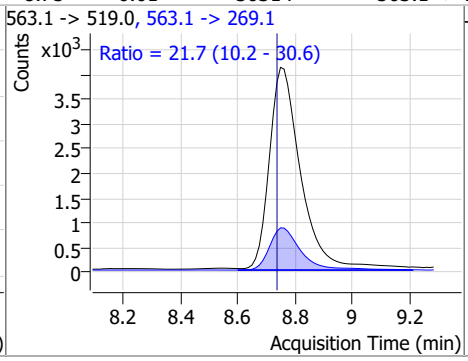


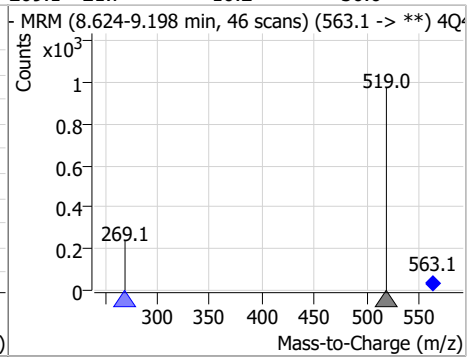


Perfluorinated Compounds by LC/MS/MS

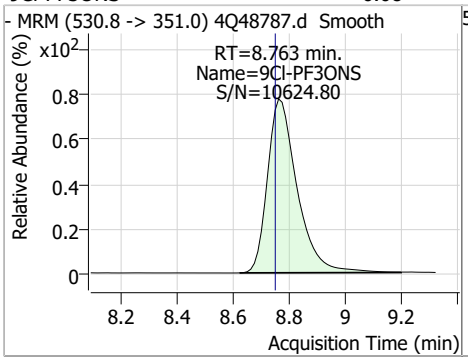
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.42	8.75	0.01	30314	563.1 -> 269.1	21.7	10.2	30.6

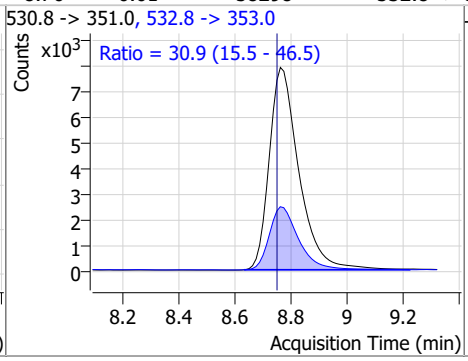


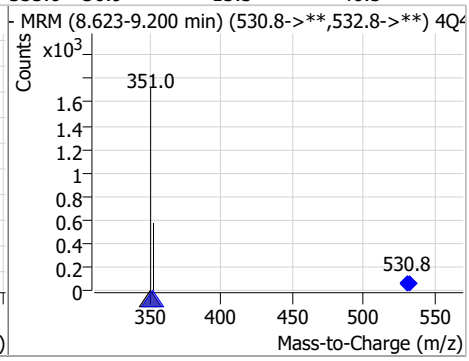




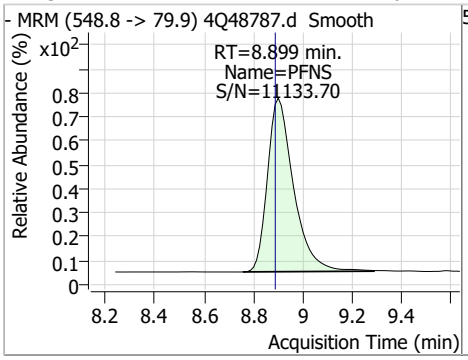
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	6.08	8.76	0.01	58298	532.8 -> 353.0	30.9	15.5	46.5

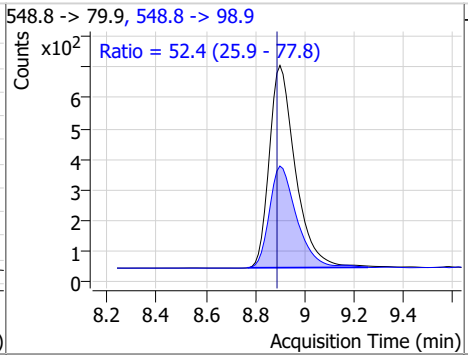


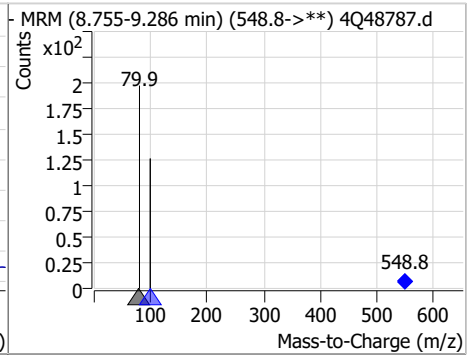




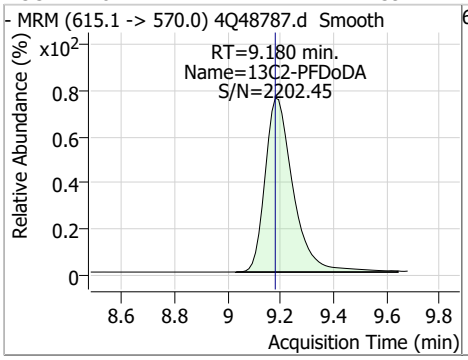
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.70	8.90	0.01	4825	548.8 -> 98.9	52.4	25.9	77.8

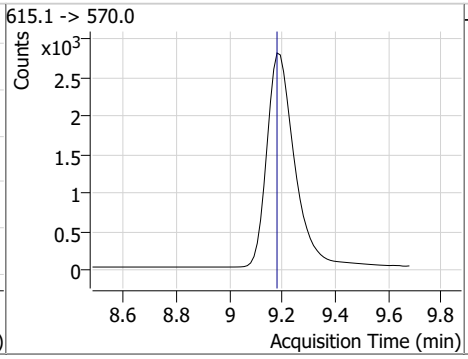


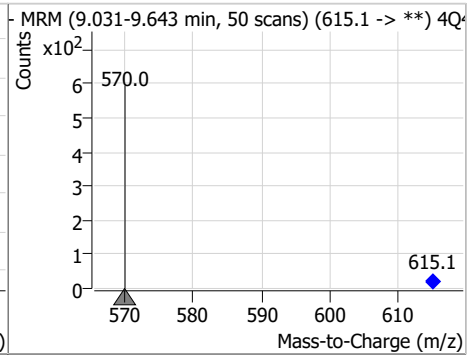




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.39	9.18	0.00	20430				

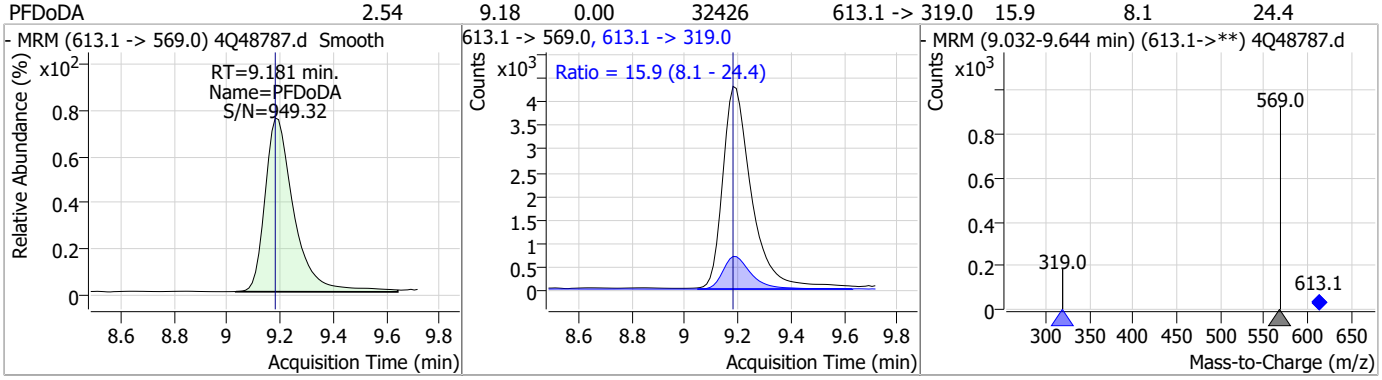




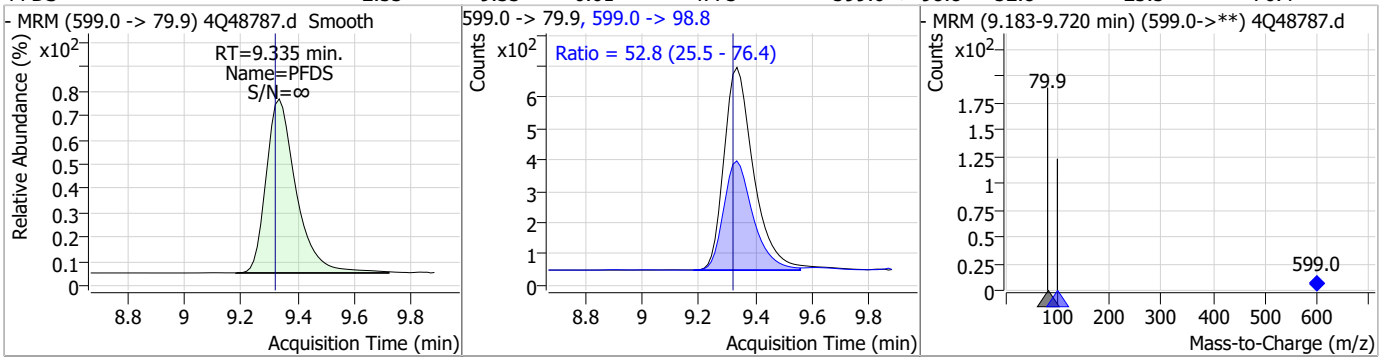


Perfluorinated Compounds by LC/MS/MS

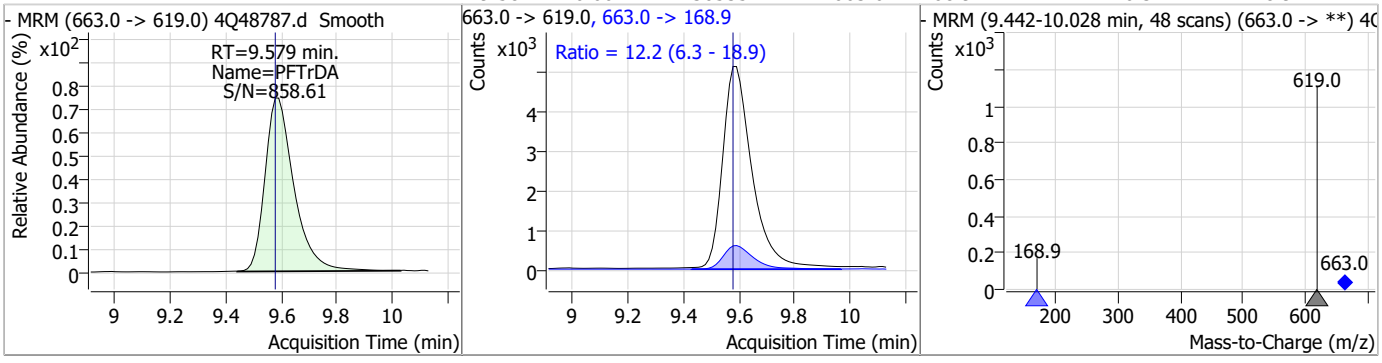
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.54	9.18	0.00	32426	613.1 -> 319.0	15.9	8.1	24.4



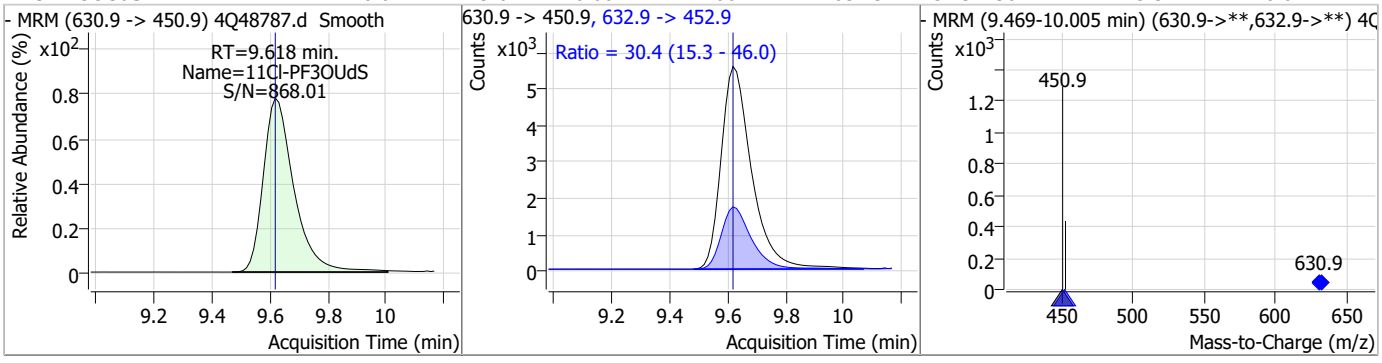
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.53	9.33	0.01	4773	599.0 -> 98.8	52.8	25.5	76.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.77	9.58	0.00	36535	663.0 -> 168.9	12.2	6.3	18.9

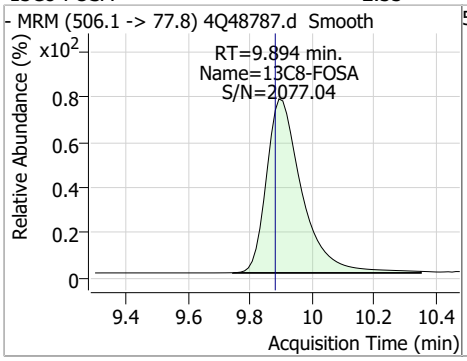


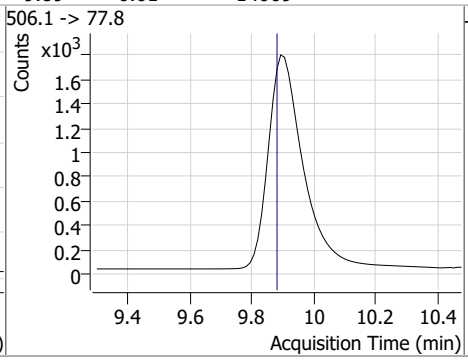
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	6.02	9.62	0.00	41001	632.9 -> 452.9	30.4	15.3	46.0

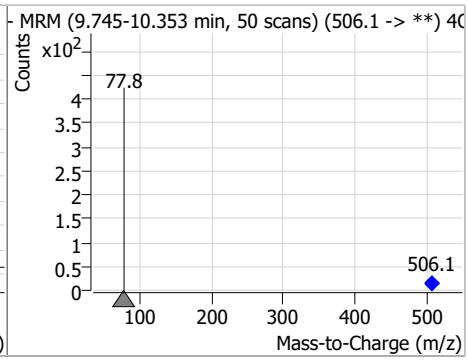


Perfluorinated Compounds by LC/MS/MS

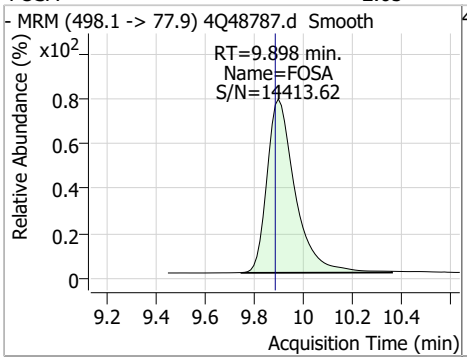
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.33	9.89	0.01	14009				

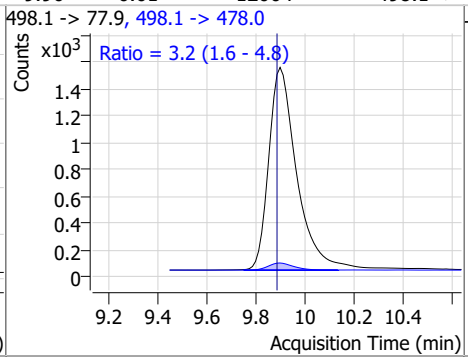


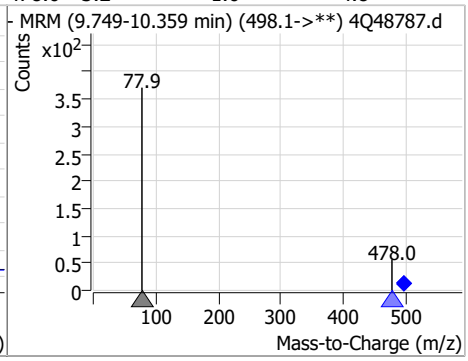




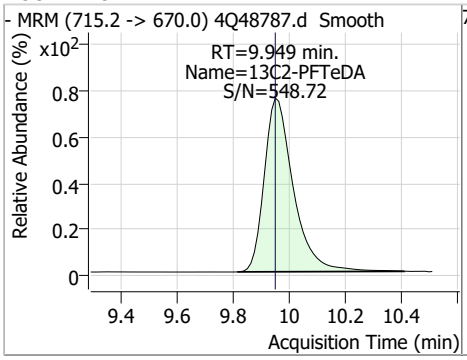
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.65	9.90	0.01	12004	498.1 -> 478.0	3.2	1.6	4.8

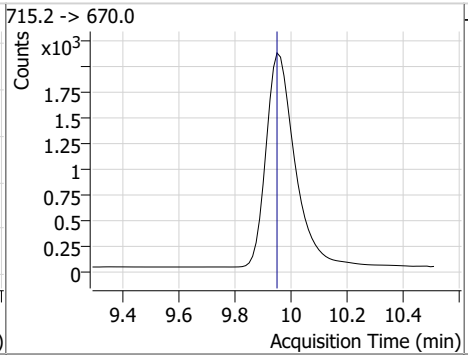


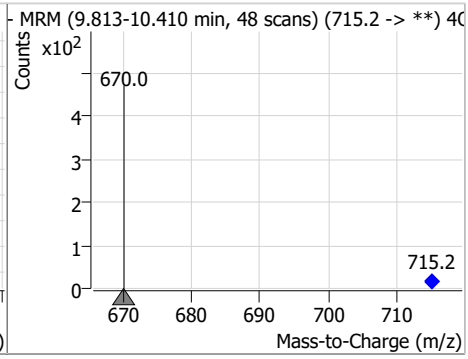




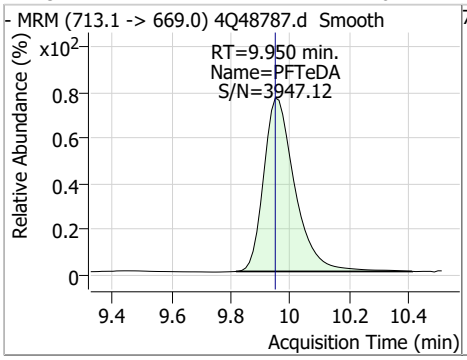
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.95	0.00	14990				

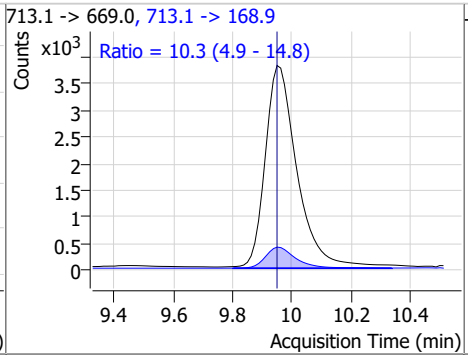


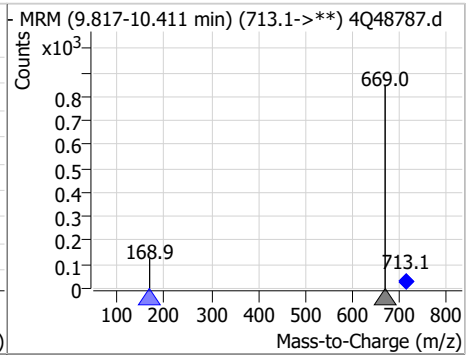




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.61	9.95	0.00	27378	713.1 -> 168.9	10.3	4.9	14.8

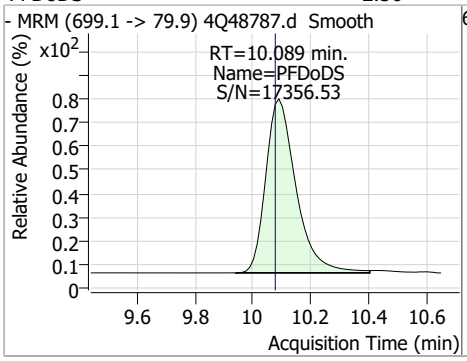


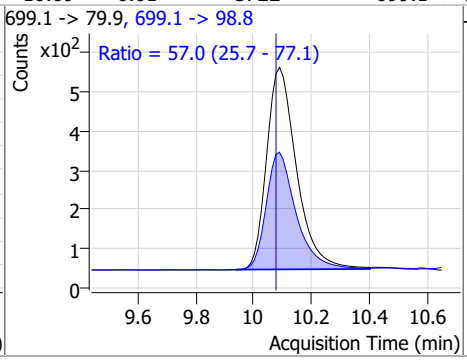


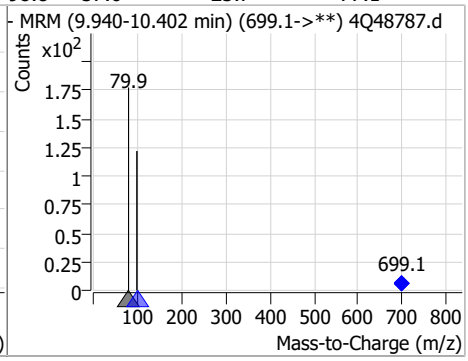


Perfluorinated Compounds by LC/MS/MS

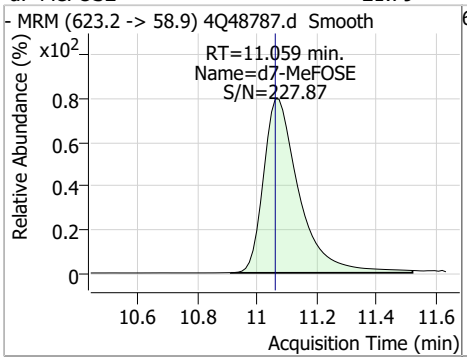
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.56	10.09	0.01	3722	699.1 -> 98.8	57.0	25.7	77.1

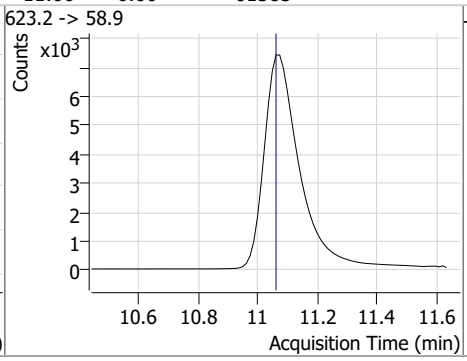


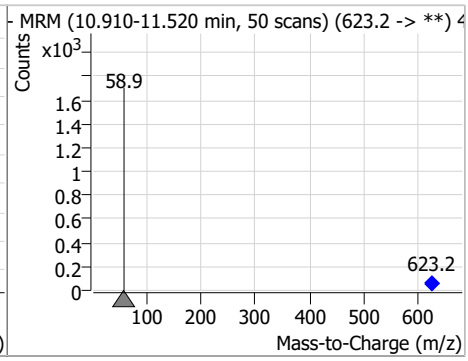




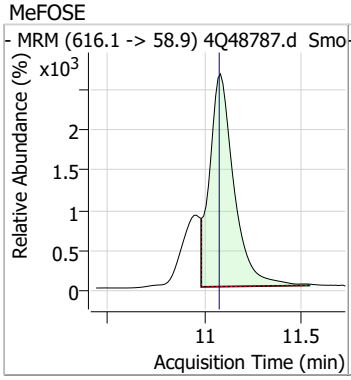
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.79	11.06	0.00	61585				

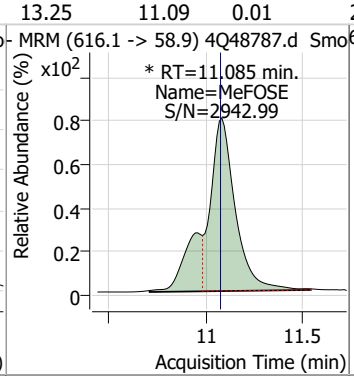


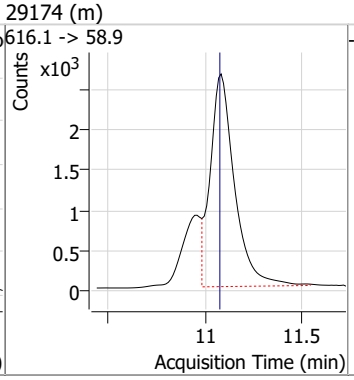


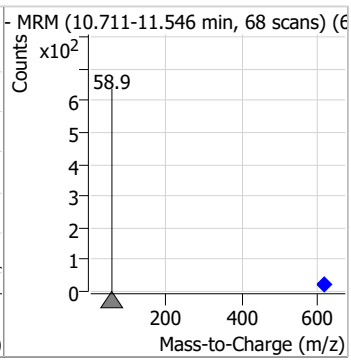


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	13.25	11.09	0.01	29174 (m)				

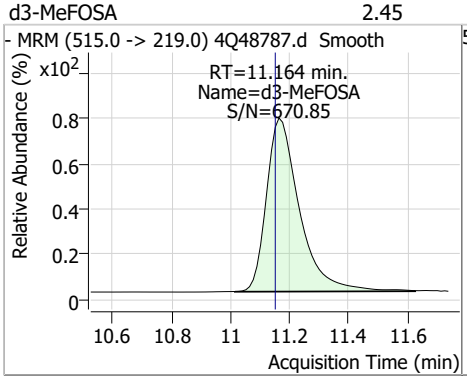


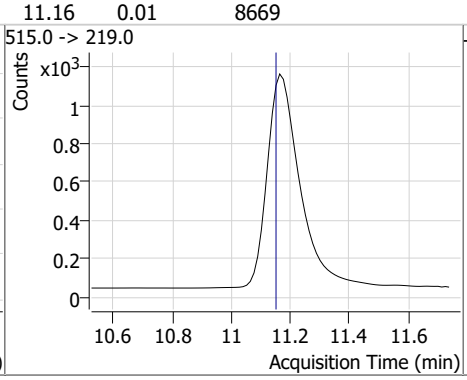


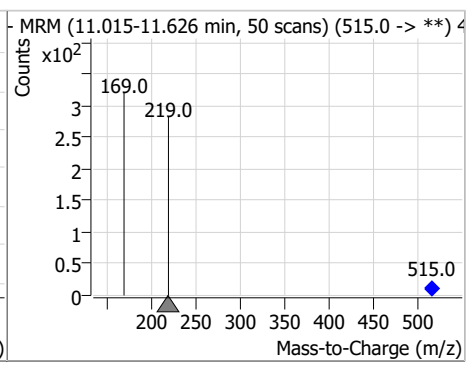




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.45	11.16	0.01	8669				

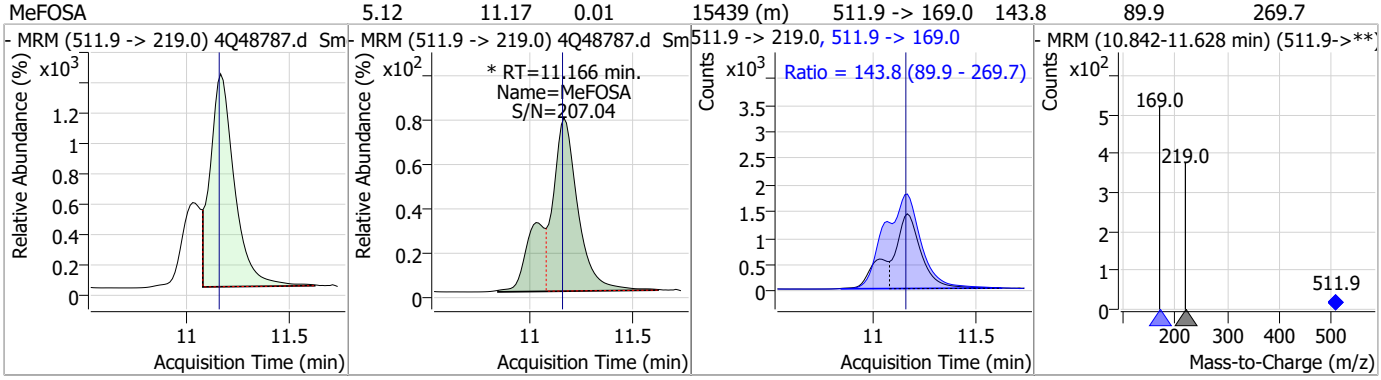




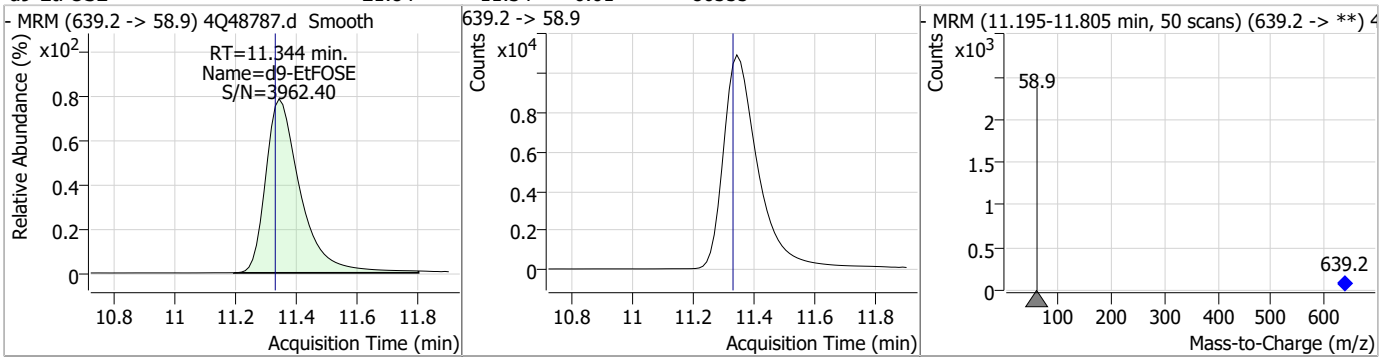


Perfluorinated Compounds by LC/MS/MS

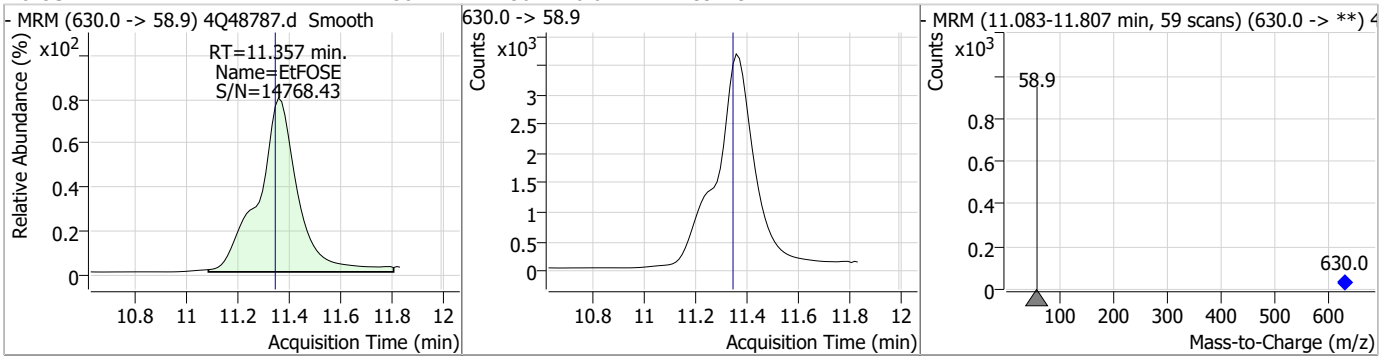
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.12	11.17	0.01	15439 (m)	511.9 -> 169.0	143.8	89.9	269.7



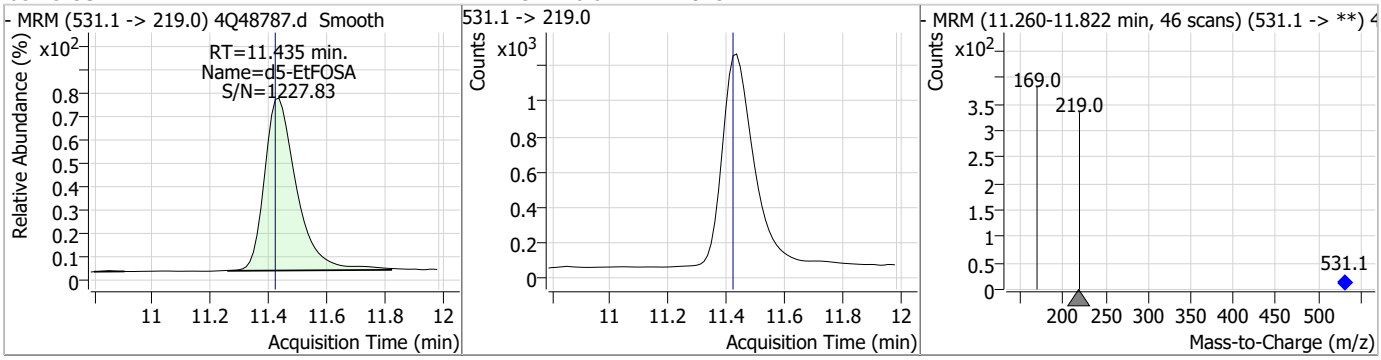
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.84	11.34	0.01	86555				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	14.58	11.36	0.01	39479				

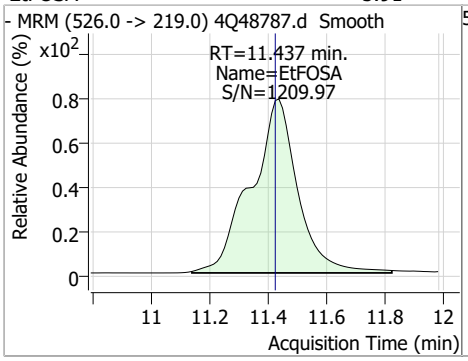


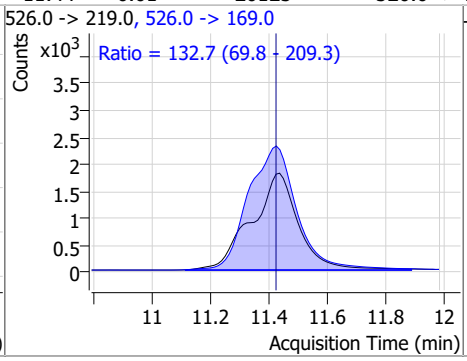
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.27	11.43	0.01	9257				

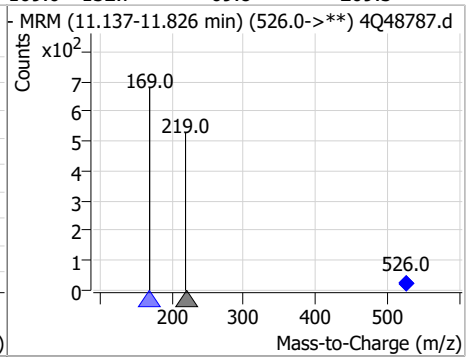


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.91	11.44	0.01	20125	526.0 -> 169.0	132.7	69.8	209.3







7.7.14

Manual Integration Approval Summary

Sample Number: S4Q713-CC711
Lab FileID: 4Q48787.D
Injection Time: 08/09/23 21:01
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
EtFOSAA	2991-50-6		8.57	Split peak
MeFOSE	24448-09-7		11.09	Split peak
MeFOSA	31506-32-8		11.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/11/23 11:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q48799.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 8/9/2023 11:58:31 PM
Sample Name : ecc711-4
Vial : P1-A5
DA Method File : 1633_080723_S4Q711.quantmethod.xml
Batch Name : s4q713.batch.bin
Sample Information : OP98180,S4Q713,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.899	216.8 -> 171.9	116598	10.00	µg/L	-0.013
M5-PFPeA	4.412	268.3 -> 223.0	57974	5.00	µg/L	0.000
M5-PFHxA	5.622	318.0 -> 273.0	41494	2.50	µg/L	0.012
M4-PFHpA	6.580	367.1 -> 322.0	29604	2.50	µg/L	0.025
M8-PFOA	7.251	421.1 -> 376.0	47516	2.50	µg/L	0.025
M9-PFNA	7.797	472.1 -> 427.0	21952	1.25	µg/L	0.013
M6-PFDA	8.291	519.1 -> 474.1	15374	1.25	µg/L	0.013
M7-PFUnDA	8.760	570.0 -> 525.1	19048	1.25	µg/L	0.025
M2-PFDoDA	9.193	615.1 -> 570.0	19824	1.25	µg/L	0.012
M2-PFTeDA	9.974	715.2 -> 670.0	14344	1.25	µg/L	0.025
M8-FOSA	9.907	506.1 -> 77.8	13578	2.50	µg/L	0.024
M3-PFBS	5.502	302.1 -> 79.9	9956	2.50	µg/L	0.013
M3-PFHxS	7.329	402.1 -> 79.9	6763	2.50	µg/L	0.012
M8-PFOS	8.430	507.1 -> 79.9	9405	2.50	µg/L	0.013
M2-4:2FTS	5.296	329.1 -> 80.9	871	5.00	µg/L	0.000
M2-6:2FTS	7.023	429.1 -> 80.9	1634	5.00	µg/L	0.025
M2-8:2FTS	8.092	529.1 -> 80.9	2640	5.00	µg/L	0.026
M3-MeFOSAA	8.361	573.2 -> 419.0	18980	5.00	µg/L	0.013
M3-HFPO-DA	5.989	286.9 -> 168.9	33159	10.00	µg/L	0.012
M5-EtFOSAA	8.571	589.2 -> 419.0	15875	5.00	µg/L	0.025
M7-MeFOSE	11.084	623.2 -> 58.9	61986	25.00	µg/L	0.025
M9-EtFOSE	11.356	639.2 -> 58.9	85755	25.00	µg/L	0.025
M5-EtFOSA	11.447	531.1 -> 219.0	9364	2.50	µg/L	0.025
M3-MeFOSA	11.176	515.0 -> 219.0	8774	2.50	µg/L	0.025
13C4-PFOS	8.430	502.8 -> 79.9	10308	2.50	µg/L	0.013
13C3-PFBA	2.891	216.0 -> 172.0	61642	5.00	µg/L	-0.013
18O2-PFHxS	7.328	403.0 -> 83.9	5244	2.50	µg/L	0.012
13C4-PFOA	7.251	417.1 -> 372.0	58871	2.50	µg/L	0.025
13C2-PFDA	8.291	515.1 -> 470.1	17647	1.25	µg/L	0.013
13C5-PFNA	7.798	468.0 -> 423.0	25059	1.25	µg/L	0.013
13C2-PFHxA	5.623	315.1 -> 270.0	38759	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.296	329.1 -> 80.9	871	6.65	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 132.9%		
13C2-6:2FTS	7.023	429.1 -> 80.9	1634	6.53	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 130.5%		
13C2-8:2FTS	8.092	529.1 -> 80.9	2640	6.94	µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 138.9%		
13C2-PFDoDA	9.193	615.1 -> 570.0	19824	1.31	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C2-PFTeDA	9.974	715.2 -> 670.0	14344	1.18	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C3-PFBS	5.502	302.1 -> 79.9	9956	2.23	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C3-PFHxS	7.329	402.1 -> 79.9	6763	2.33	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 = 93.2%		
13C4-PFBA	2.899	216.8 -> 171.9	116598	11.07 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C4-PFHpA	6.580	367.1 -> 322.0	29604	2.56 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C5-PFHxA	5.622	318.0 -> 273.0	41494	2.55 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFPeA	4.412	268.3 -> 223.0	57974	4.28 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C6-PFDA	8.291	519.1 -> 474.1	15374	1.26 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C7-PFUnDA	8.760	570.0 -> 525.1	19048	1.38 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C8-FOSA	9.907	506.1 -> 77.8	13578	2.11 µg/L		0.024
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.5%		
13C8-PFOA	7.251	421.1 -> 376.0	47516	2.45 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C8-PFOS	8.430	507.1 -> 79.9	9405	2.27 µg/L		0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C9-PFNA	7.797	472.1 -> 427.0	21952	1.16 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.5%		
d3-MeFOSAA	8.361	573.2 -> 419.0	18980	4.96 µg/L		0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-HFPO-DA	5.989	286.9 -> 168.9	33159	8.98 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
d3-MeFOSA	11.176	515.0 -> 219.0	8774	2.32 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
d5-EtFOSAA	8.571	589.2 -> 419.0	15875	5.05 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d7-MeFOSE	11.084	623.2 -> 58.9	61986	20.48 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.9%		
d9-EtFOSE	11.356	639.2 -> 58.9	85755	20.20 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
d5-EtFOSA	11.447	531.1 -> 219.0	9364	2.15 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.9%		
Target Compounds						**QValue**
4:2FTS	5.309	327.1 -> 307.0	10953	9.33 µg/L		98
		327.1 -> 80.9	4652			
6:2FTS	7.011	427.1 -> 407.0	14354	10.35 µg/L		100
		427.1 -> 80.9	5073			
8:2FTS	8.092	527.1 -> 507.0	11407	10.76 µg/L		100
		527.1 -> 80.8	5003			
EtFOSAA	8.584	584.2 -> 419.1	5078	2.34 µg/L		88
		584.2 -> 526.0	2474			
FOSA	9.911	498.1 -> 77.9	11966	2.72 µg/L		99
		498.1 -> 478.0	353			
MeFOSAA	8.361	570.1 -> 419.0	6876	2.90 µg/L	m	98
		570.1 -> 483.0	1210			
PFBA	2.895	212.8 -> 168.9	27404	10.21 µg/L		100
PFBS	5.503	298.7 -> 79.9	6938	2.85 µg/L		99
		298.7 -> 98.8	2512			
PFDA	8.292	512.9 -> 469.0	31732	2.94 µg/L		98
		512.9 -> 219.0	5892			
PFDoDA	9.193	613.1 -> 569.0	32374	2.61 µg/L		98
		613.1 -> 319.0	4980			
PFDS	9.347	599.0 -> 79.9	4981	2.56 µg/L		96

Perfluorinated Compounds by LC/MS/MS

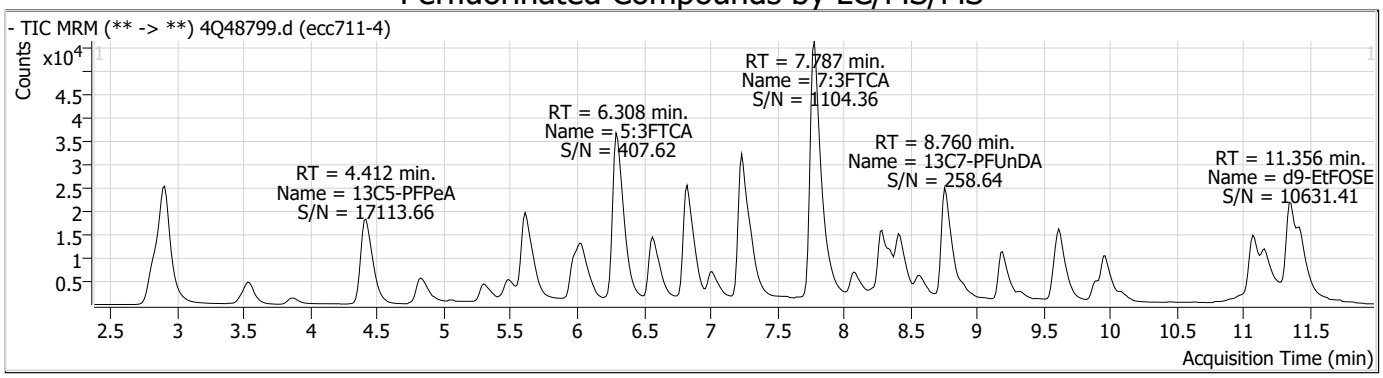
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2418				
PFHpA	6.581	363.1 -> 319.0	34249	2.56	µg/L		96
		363.1 -> 169.0	5617				
PFHpS	7.913	449.0 -> 79.9	6743	2.37	µg/L		98
		449.0 -> 98.9	3505				
PFHxA	5.625	313.0 -> 269.0	29824	2.49	µg/L		100
		313.0 -> 118.9	1032				
PFHxS	7.330	398.7 -> 79.9	5200	2.68	µg/L	m	96
		398.7 -> 98.9	2593				
PFNA	7.798	463.0 -> 419.0	30090	2.63	µg/L		97
		463.0 -> 219.0	6985				
PFNS	8.911	548.8 -> 79.9	5075	2.76	µg/L		95
		548.8 -> 98.9	2466				
PFOA	7.252	413.0 -> 369.0	53032	2.81	µg/L		97
		413.0 -> 169.0	9601				
PFOS	8.431	498.9 -> 79.9	8541	2.55	µg/L	m	78
		498.9 -> 98.8	3966				
PFPeA	4.414	263.0 -> 219.0	58908	5.85	µg/L		100
PFPeS	6.595	349.1 -> 79.9	4453	2.44	µg/L		97
		349.1 -> 98.9	1894				
PFTeDA	9.962	713.1 -> 669.0	27904	2.78	µg/L		99
		713.1 -> 168.9	2684				
PFTrDA	9.603	663.0 -> 619.0	36920	2.88	µg/L		99
		663.0 -> 168.9	4477				
PFUnDA	8.761	563.1 -> 519.0	32404	2.61	µg/L		99
		563.1 -> 269.1	6689				
11Cl-PF3OUdS	9.630	630.9 -> 450.9	41246	5.93	µg/L		99
		632.9 -> 452.9	12323				
9Cl-PF3ONS	8.775	530.8 -> 351.0	57785	5.91	µg/L		100
		532.8 -> 353.0	17919				
ADONA	6.843	376.9 -> 250.9	110054	5.72	µg/L		100
		376.9 -> 84.8	28288				
HFPO-DA	5.990	284.9 -> 168.9	14289	5.24	µg/L		98
		284.9 -> 184.9	1730				
3:3FTCA	3.861	241.0 -> 177.0	7421	10.95	µg/L		99
		241.0 -> 117.0	696				
5:3FTCA	6.308	341.0 -> 237.1	129808	66.24	µg/L		97
		341.0 -> 217.0	88970				
7:3FTCA	7.787	441.0 -> 316.9	70804	65.57	µg/L		92
		441.0 -> 336.9	172129				
EtFOSA	11.437	526.0 -> 219.0	20320	5.90	µg/L		97
		526.0 -> 169.0	27510				
EtFOSE	11.370	630.0 -> 58.9	38656	14.41	µg/L		100
MeFOSA	11.178	511.9 -> 219.0	15703	5.15	µg/L	m	76
		511.9 -> 169.0	22786				
MeFOSE	11.097	616.1 -> 58.9	28493	12.85	µg/L		100
PFDoDS	10.102	699.1 -> 79.9	3754	2.51	µg/L		87
		699.1 -> 98.8	2268				
NFDHA	5.503	295.0 -> 201.0	4112	5.33	µg/L		96
		295.0 -> 84.9	1108				
PFMBA	4.841	279.0 -> 85.1	33993	6.02	µg/L		100
PFMPA	3.528	229.0 -> 84.9	31563	5.73	µg/L		100
PFEESA	6.047	314.8 -> 134.9	43268	4.49	µg/L		98
		314.8 -> 82.9	1743				

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

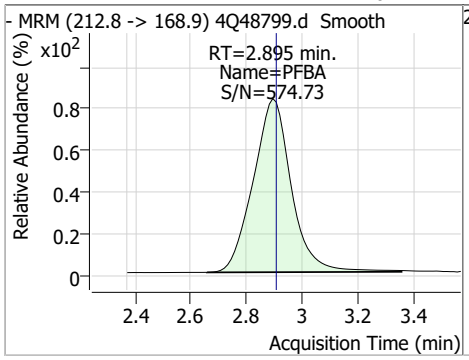
Perfluorinated Compounds by LC/MS/MS

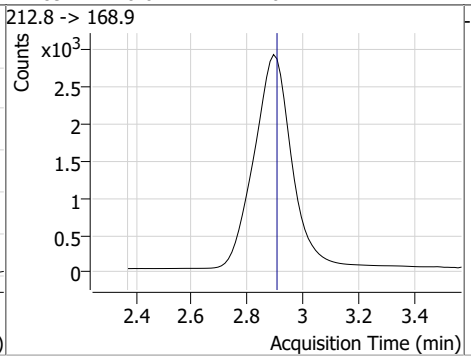
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

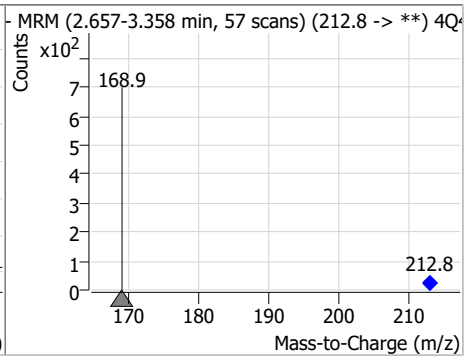
Perfluorinated Compounds by LC/MS/MS



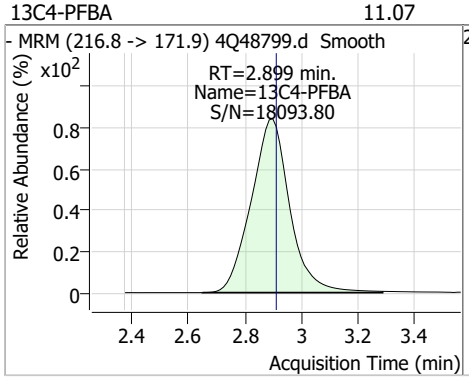
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.21	2.89	-0.01	27404				

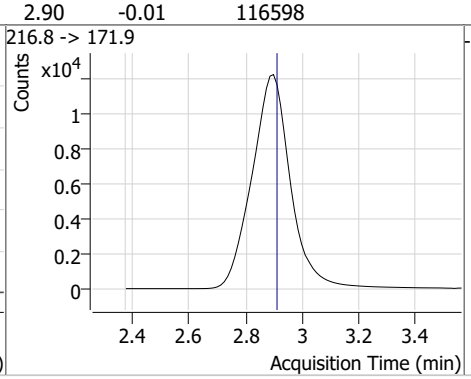


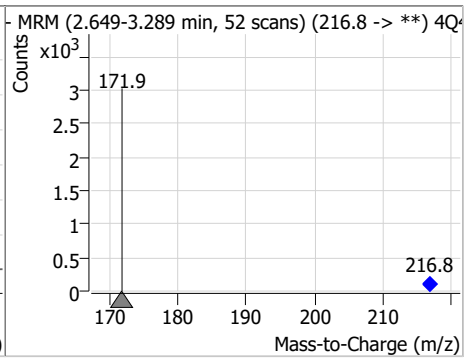




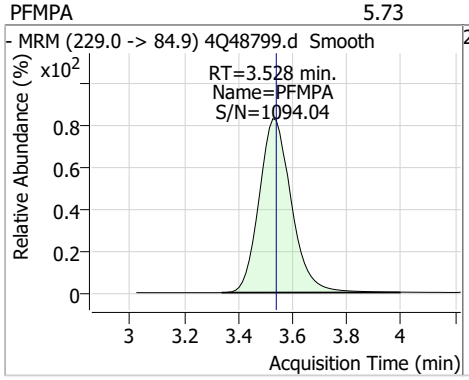
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.07	2.90	-0.01	116598				

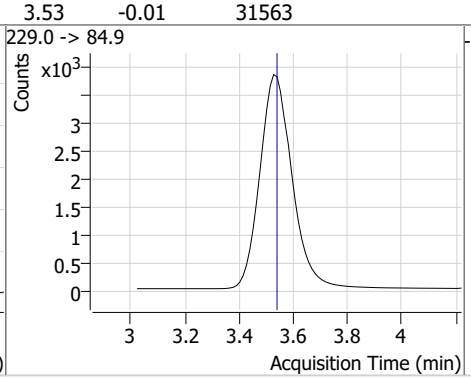


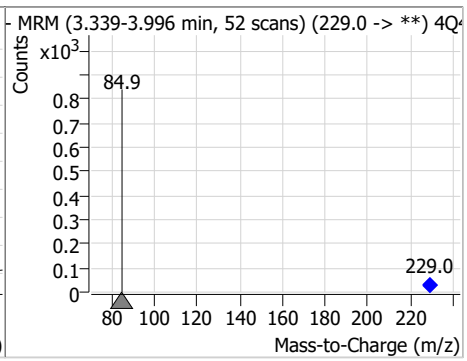




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.73	3.53	-0.01	31563				

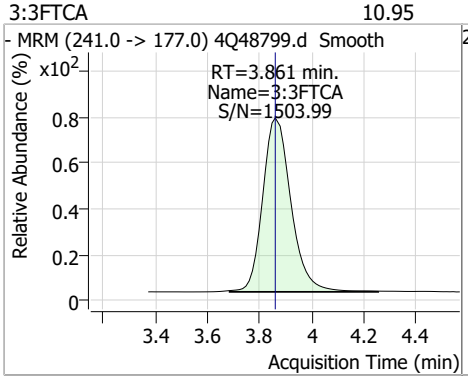


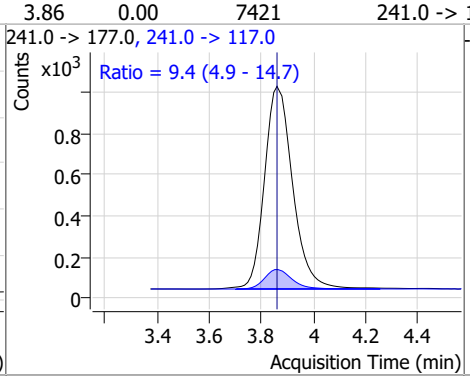


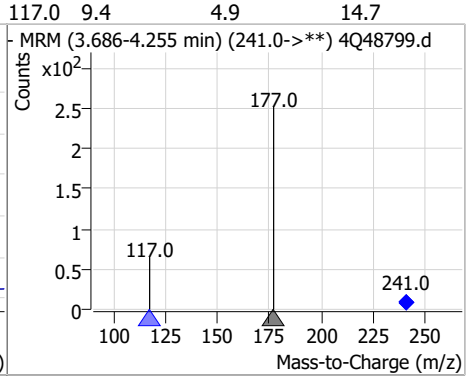


Perfluorinated Compounds by LC/MS/MS

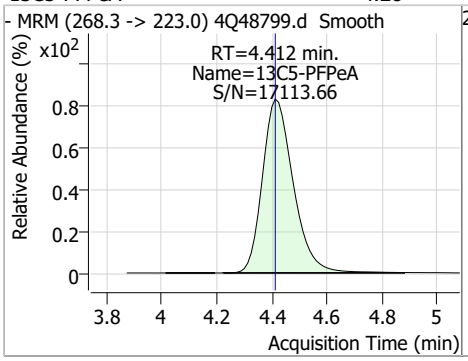
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.95	3.86	0.00	7421	241.0 -> 117.0	9.4	4.9	14.7

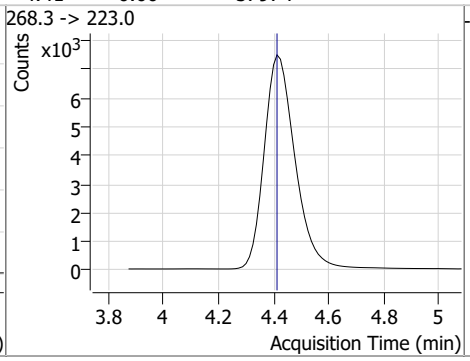


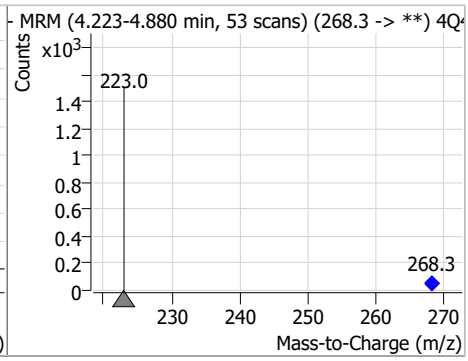




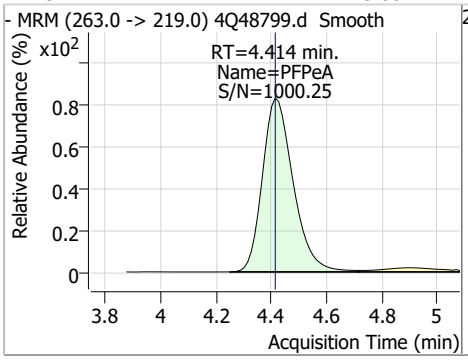
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.28	4.41	0.00	57974				

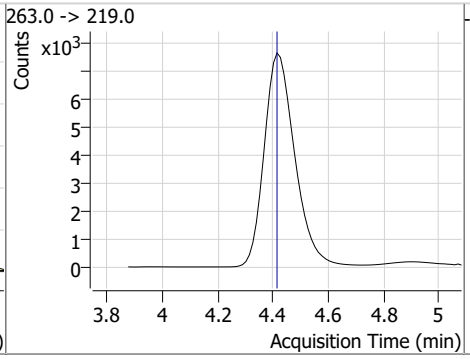


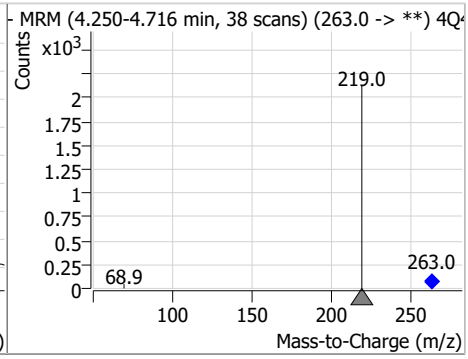




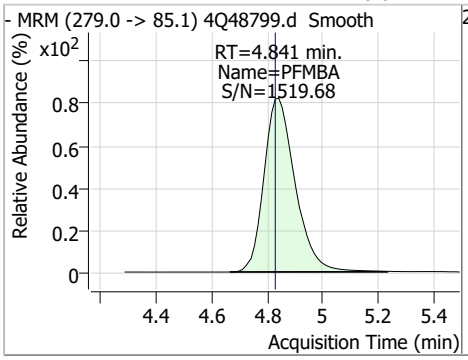
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.85	4.41	0.00	58908				

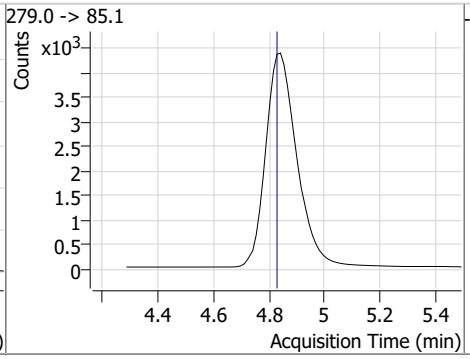


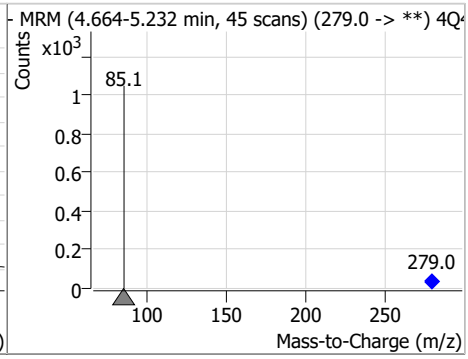




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	6.02	4.84	0.01	33993				

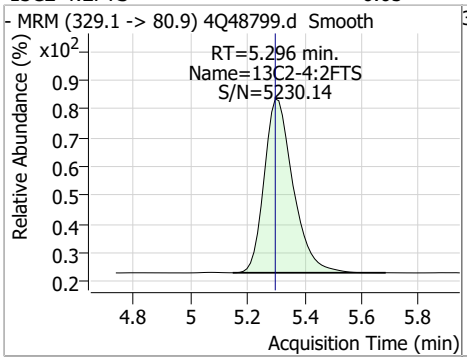


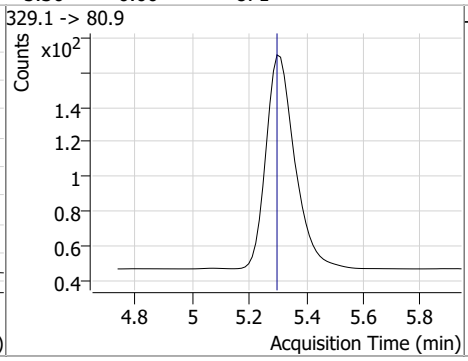


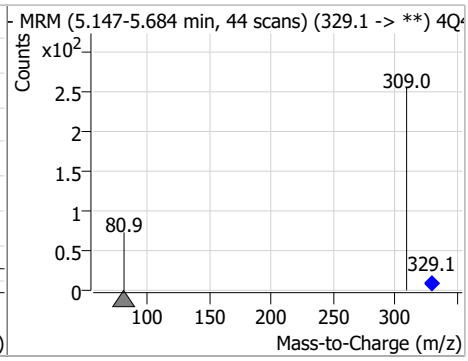


Perfluorinated Compounds by LC/MS/MS

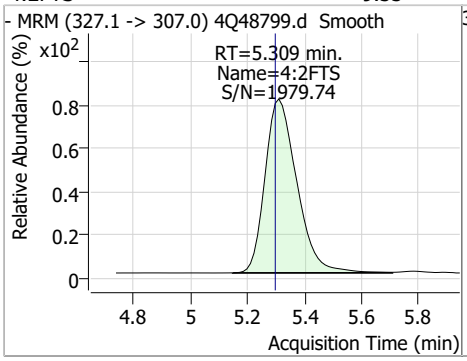
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.65	5.30	0.00	871				

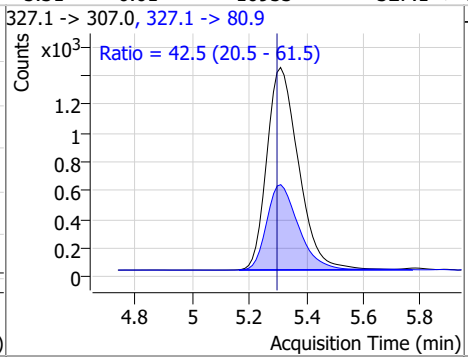


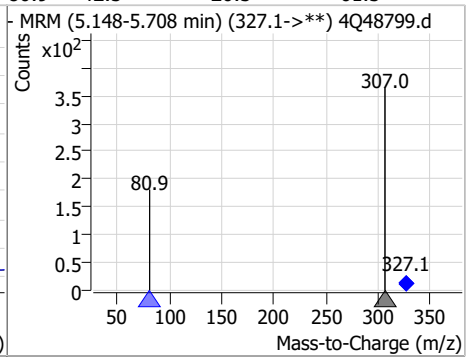




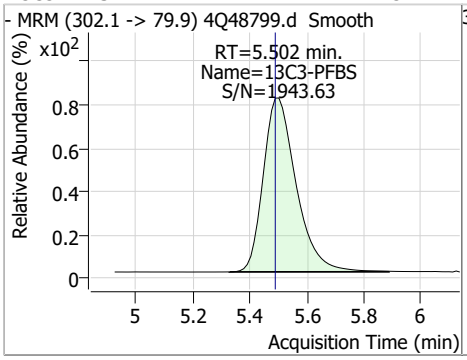
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.33	5.31	0.01	10953	327.1 -> 80.9	42.5	20.5	61.5

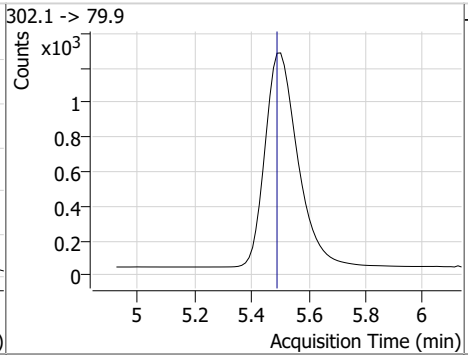


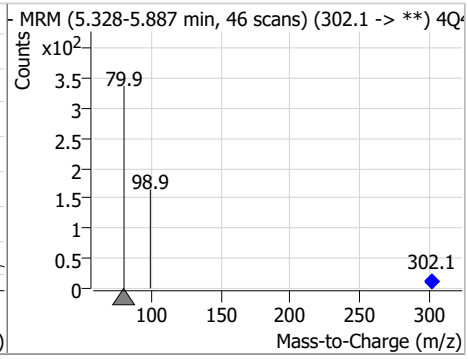




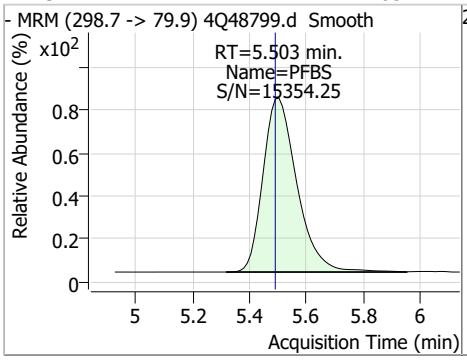
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.23	5.50	0.01	9956				

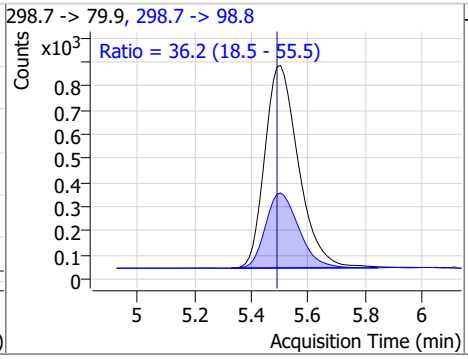


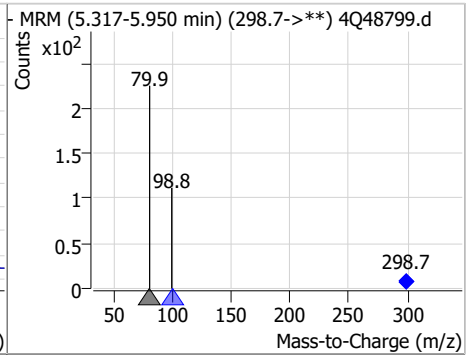




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.85	5.50	0.01	6938	298.7 -> 98.8	36.2	18.5	55.5

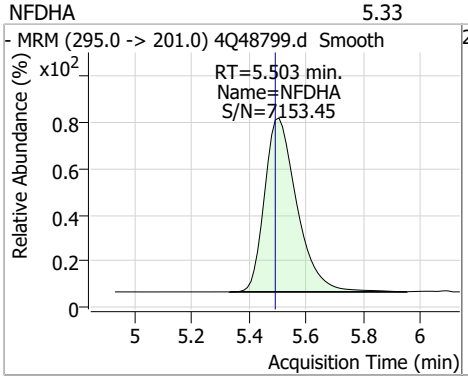


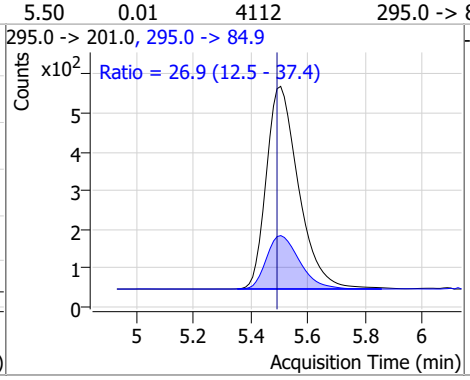


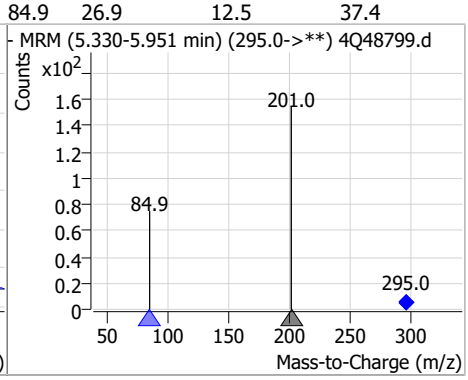


Perfluorinated Compounds by LC/MS/MS

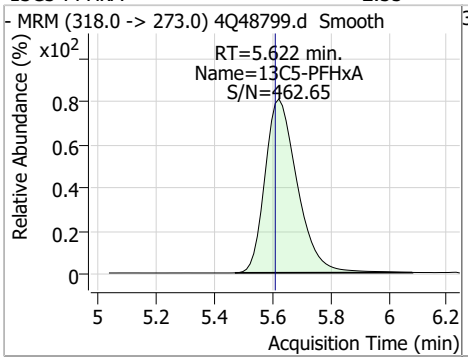
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.33	5.50	0.01	4112	295.0 -> 84.9	26.9	12.5	37.4

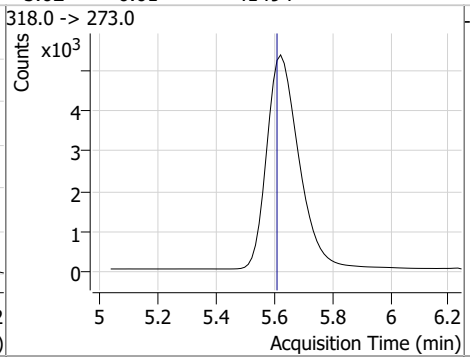


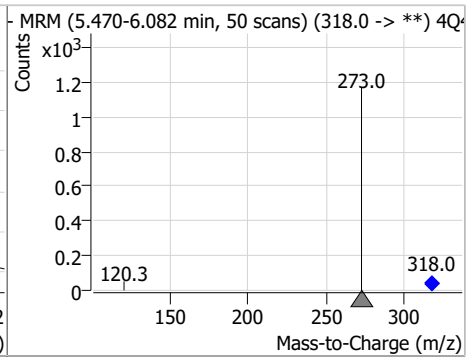




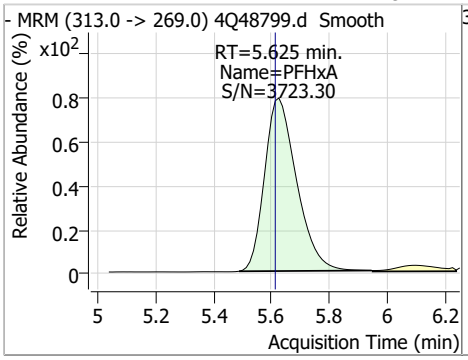
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.55	5.62	0.01	41494				

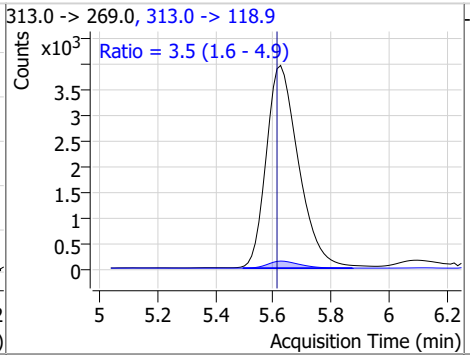


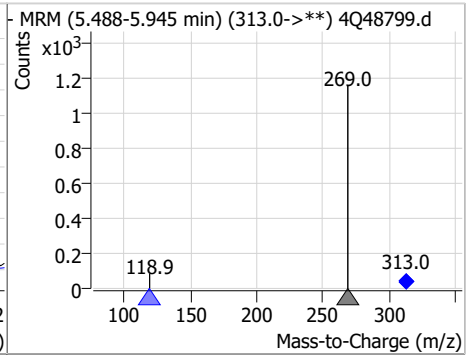




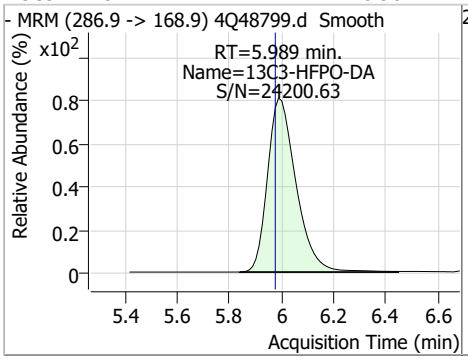
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.49	5.62	0.01	29824	313.0 -> 118.9	3.5	1.6	4.9

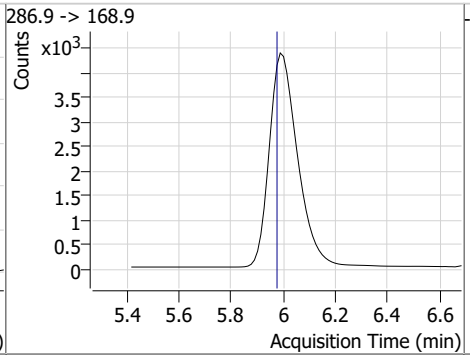


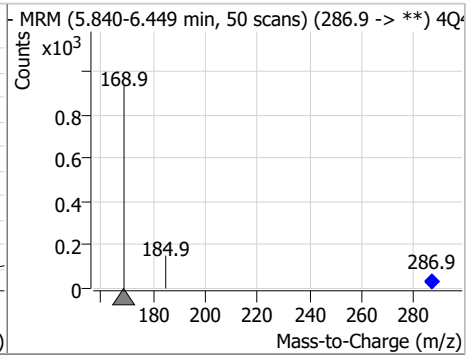




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.98	5.99	0.01	33159				

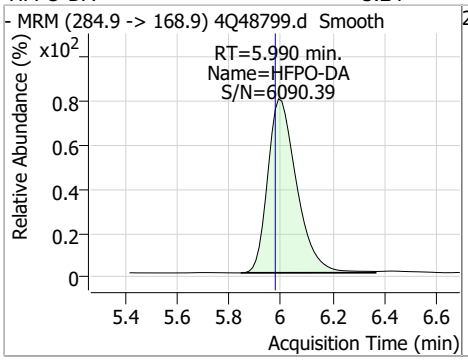


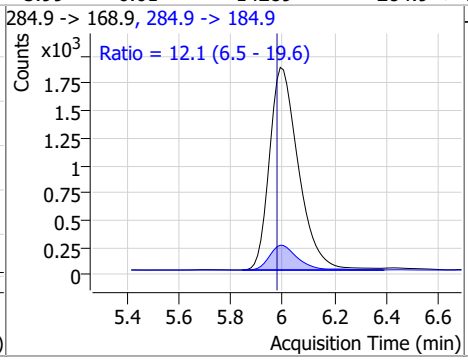


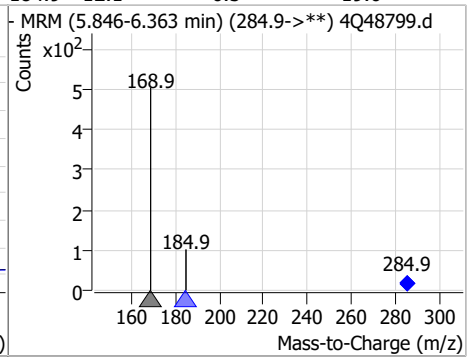


Perfluorinated Compounds by LC/MS/MS

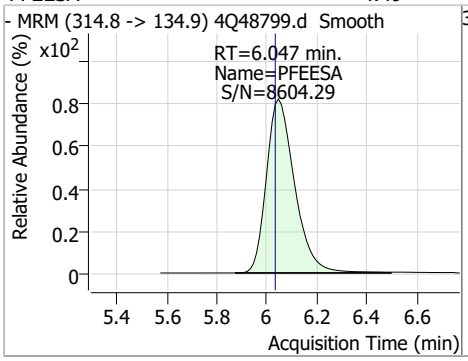
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.24	5.99	0.01	14289	284.9 -> 184.9	12.1	6.5	19.6

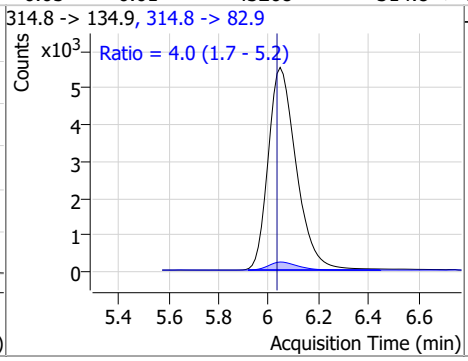


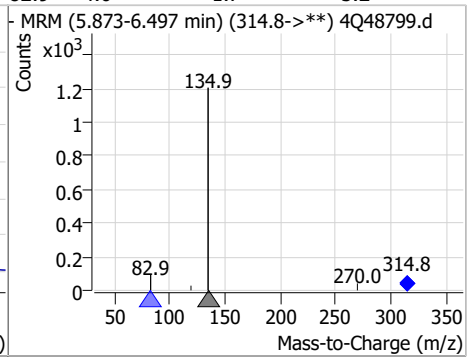




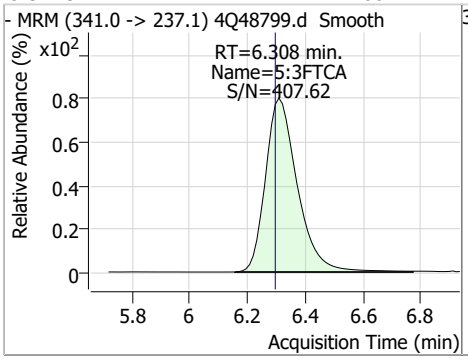
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.49	6.05	0.01	43268	314.8 -> 82.9	4.0	1.7	5.2

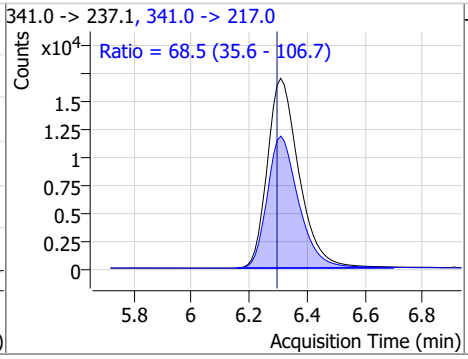


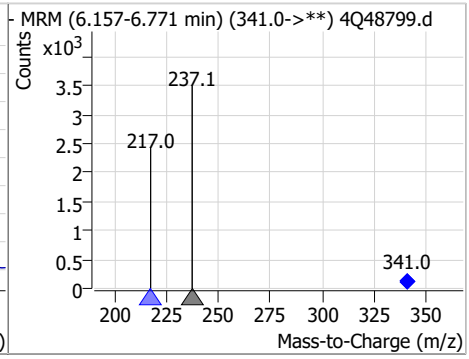




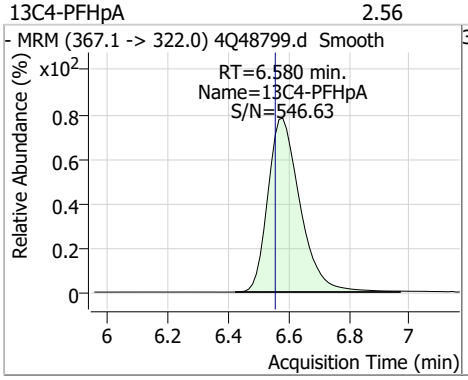
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	66.24	6.31	0.01	129808	341.0 -> 217.0	68.5	35.6	106.7

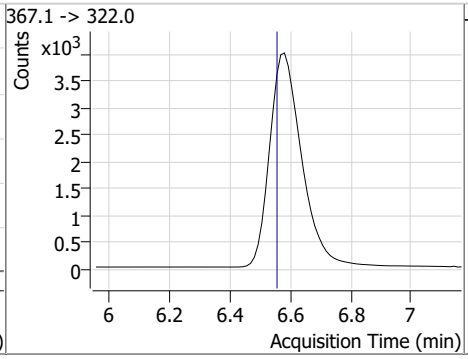


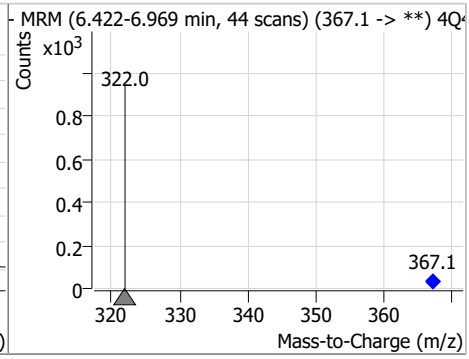




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.58	0.02	29604				

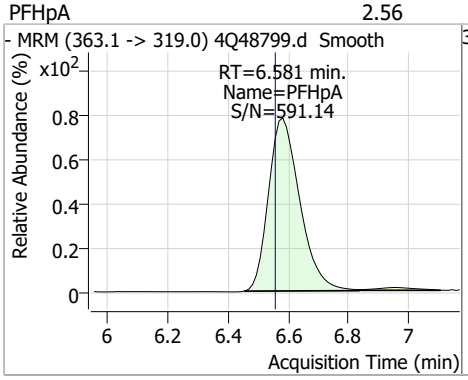


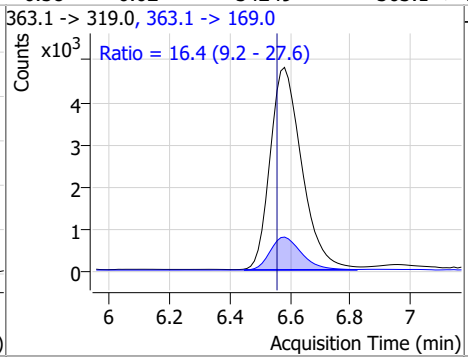


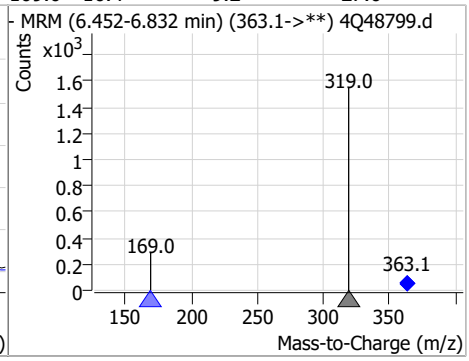


Perfluorinated Compounds by LC/MS/MS

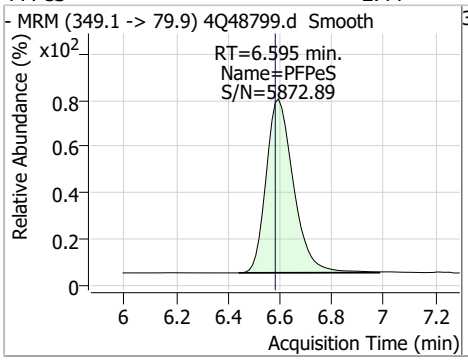
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.56	6.58	0.02	34249	363.1 -> 169.0	16.4	9.2	27.6

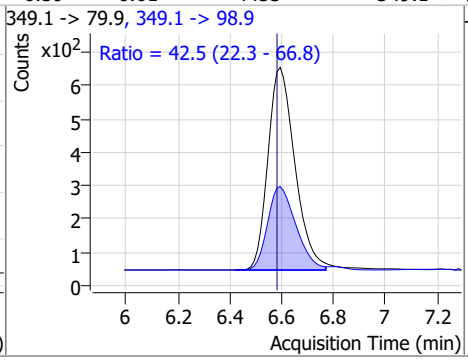


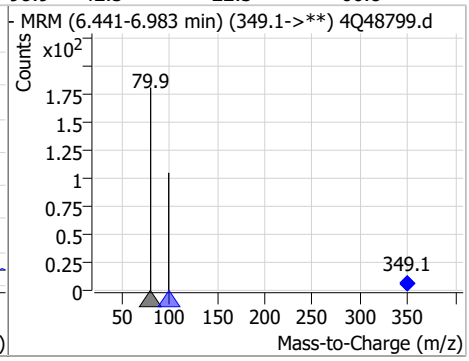




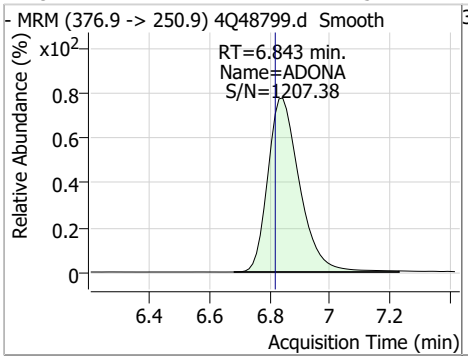
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.44	6.59	0.01	4453	349.1 -> 98.9	42.5	22.3	66.8

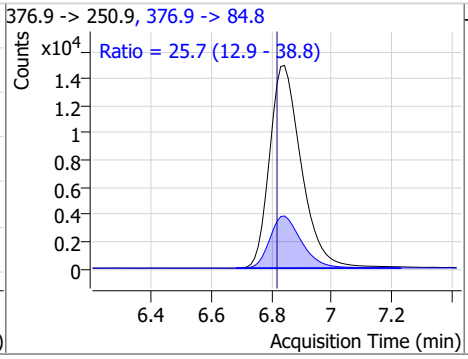


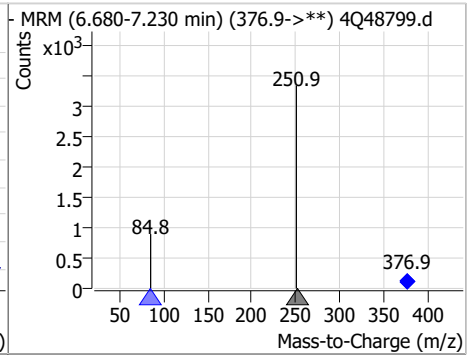




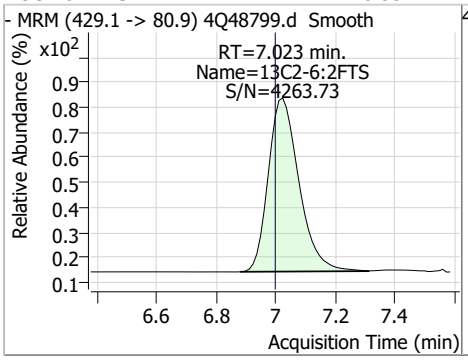
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.72	6.84	0.02	110054	376.9 -> 84.8	25.7	12.9	38.8

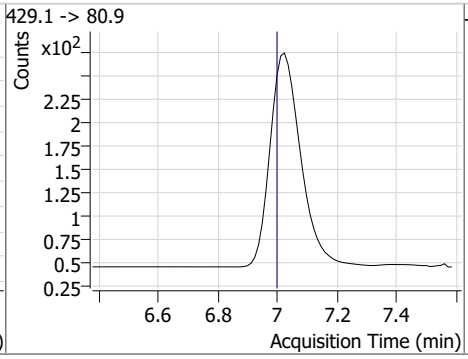


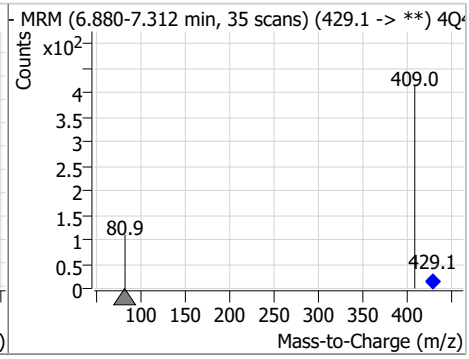




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.53	7.02	0.02	1634				

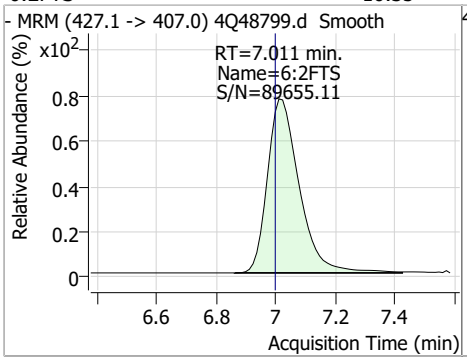


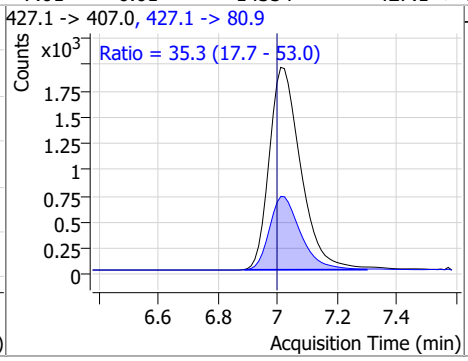


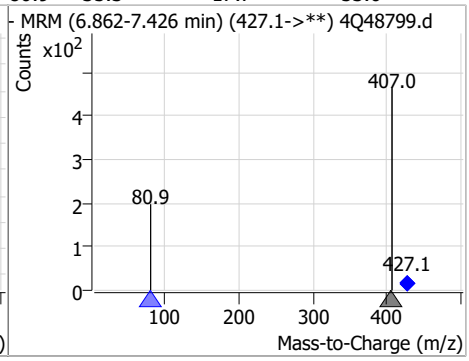


Perfluorinated Compounds by LC/MS/MS

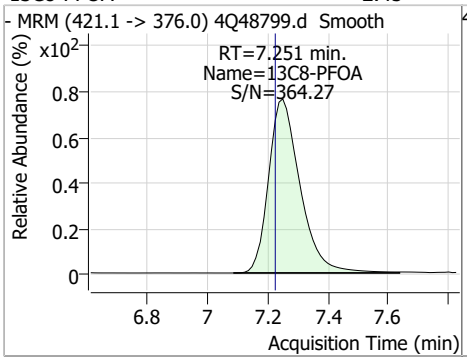
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.35	7.01	0.01	14354	427.1 -> 80.9	35.3	17.7	53.0

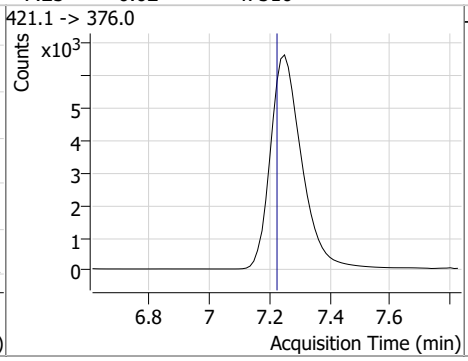


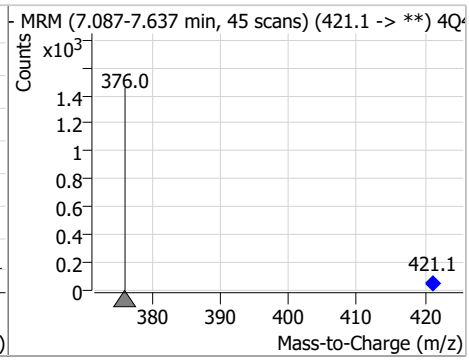




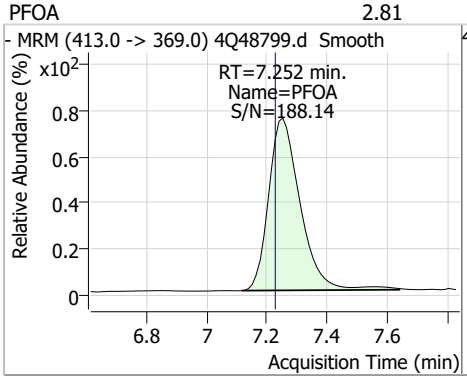
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	7.25	0.02	47516				

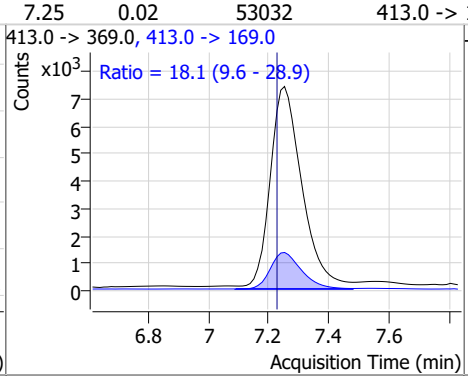


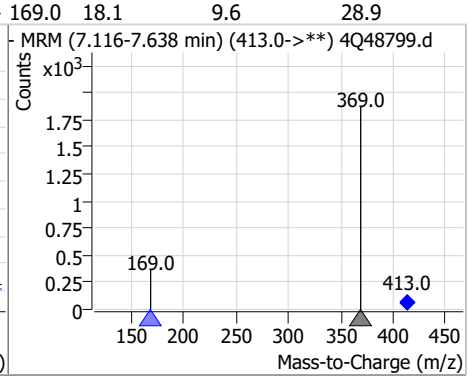




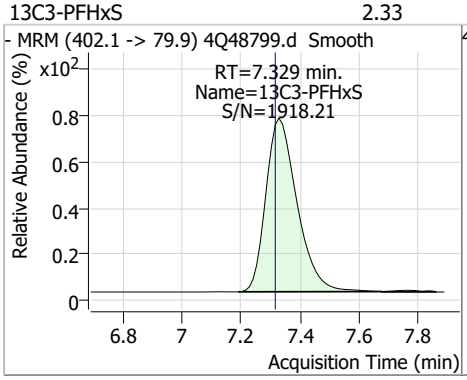
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.81	7.25	0.02	53032	413.0 -> 169.0	18.1	9.6	28.9

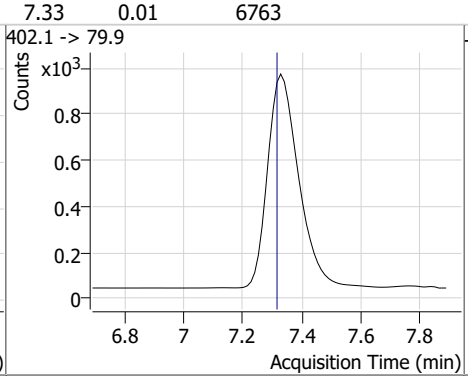


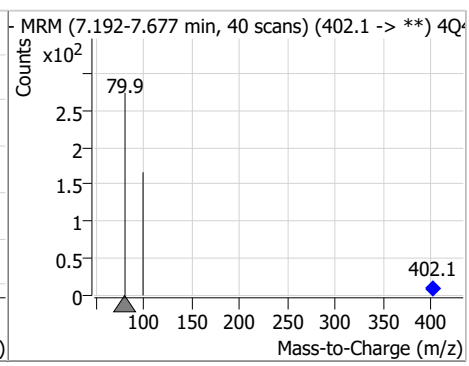




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.33	7.33	0.01	6763				

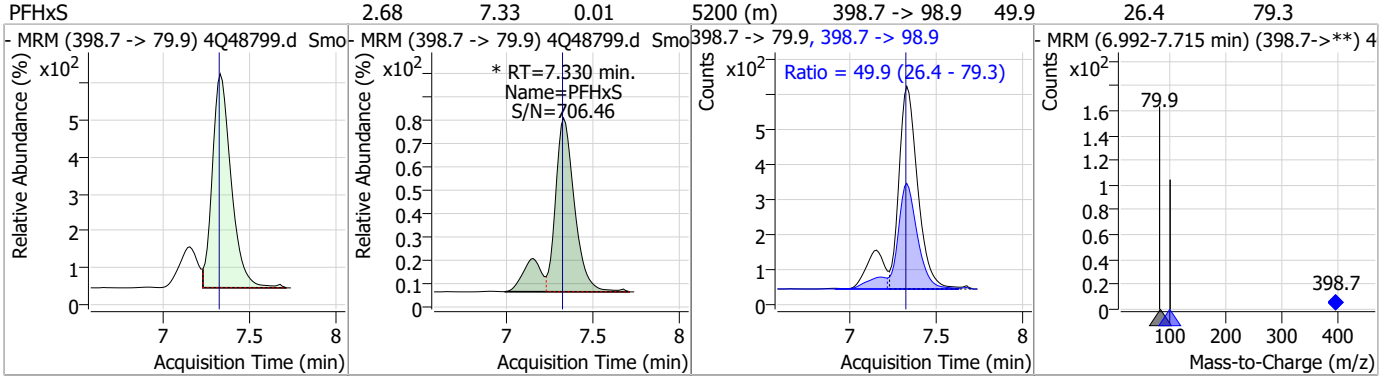




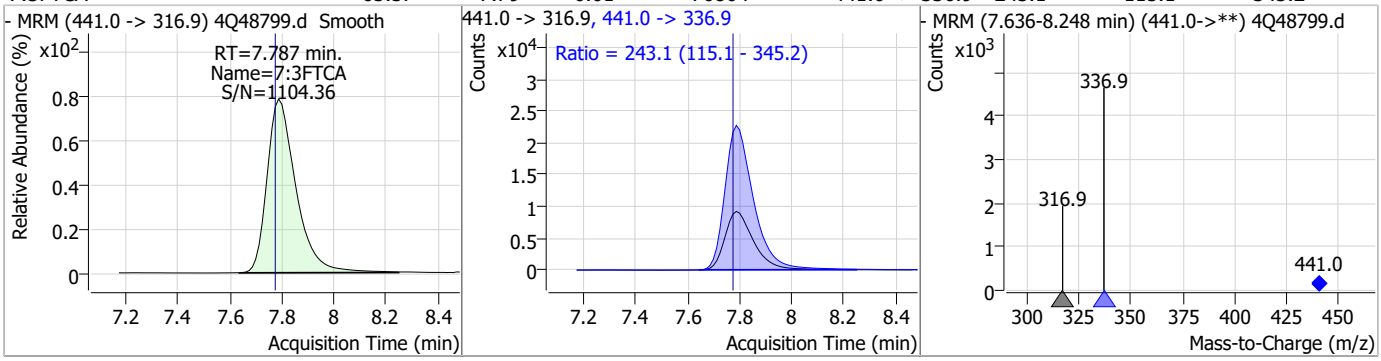


Perfluorinated Compounds by LC/MS/MS

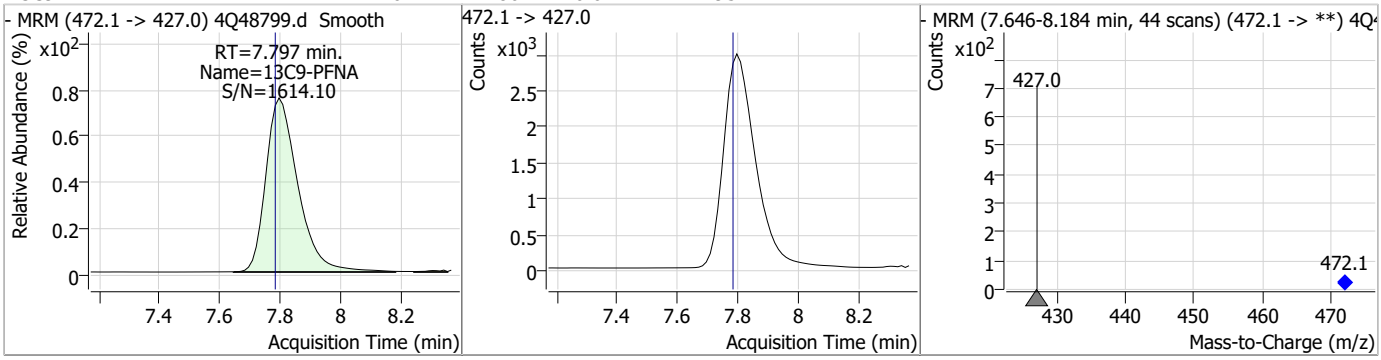
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.68	7.33	0.01	5200 (m)	398.7 -> 98.9	49.9	26.4	79.3



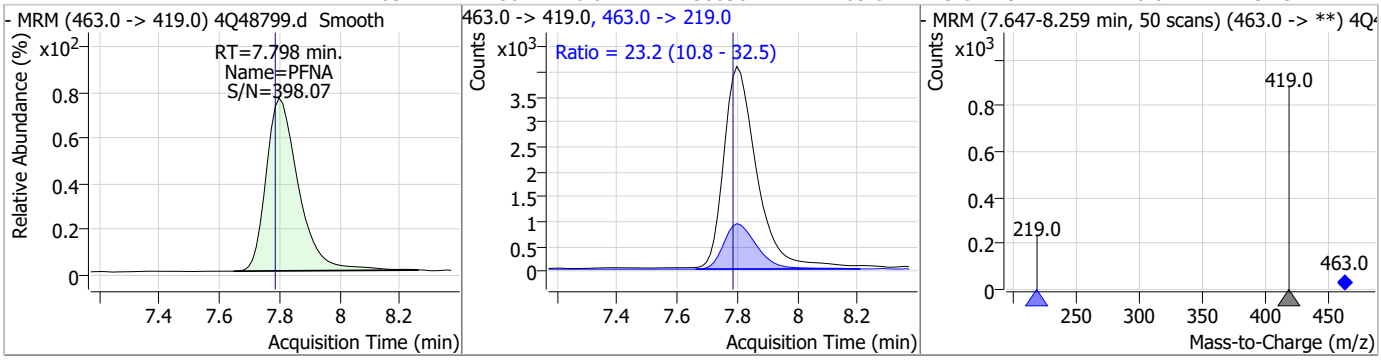
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	65.57	7.79	0.01	70804	441.0 -> 336.9	243.1	115.1	345.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.80	0.01	21952				

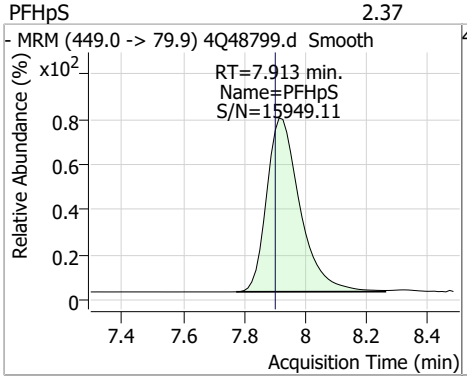


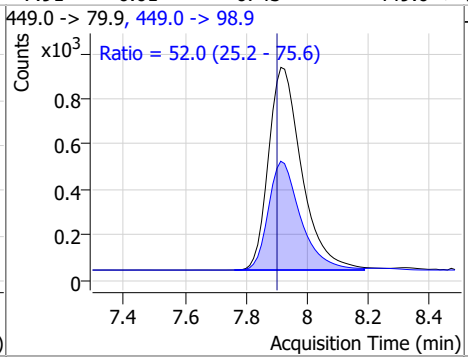
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.63	7.80	0.01	30090	463.0 -> 219.0	23.2	10.8	32.5

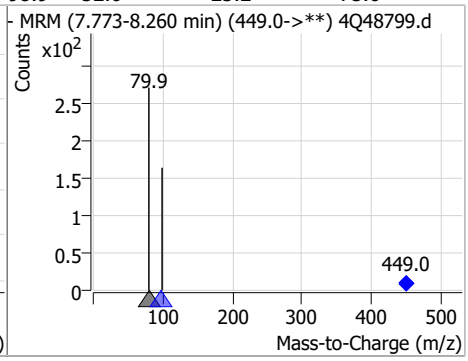


Perfluorinated Compounds by LC/MS/MS

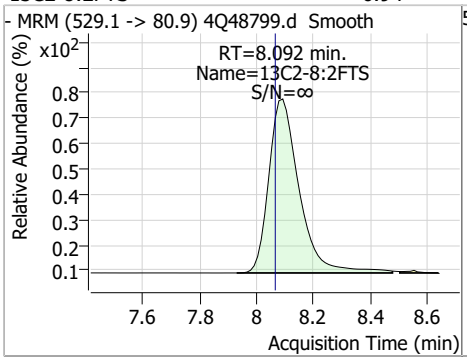
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.37	7.91	0.01	6743	449.0 -> 98.9	52.0	25.2	75.6

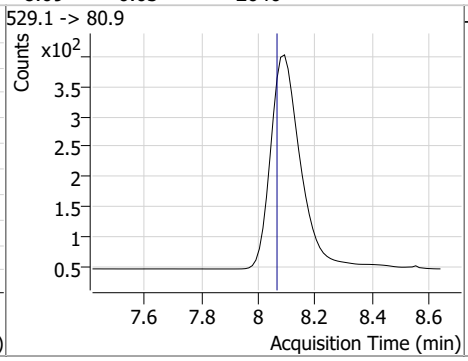


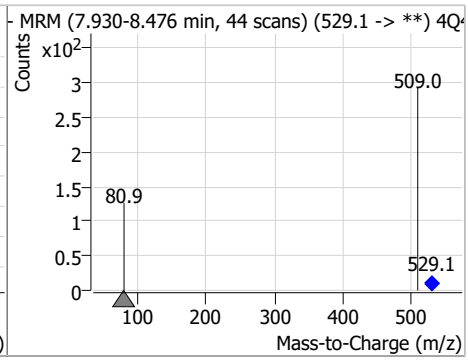




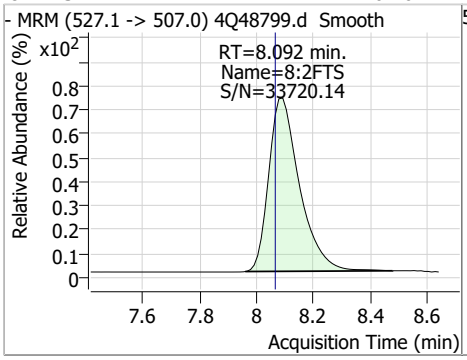
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.94	8.09	0.03	2640				

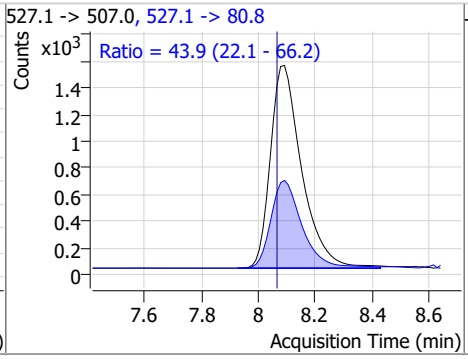


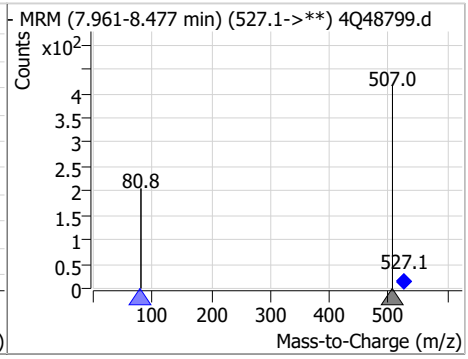




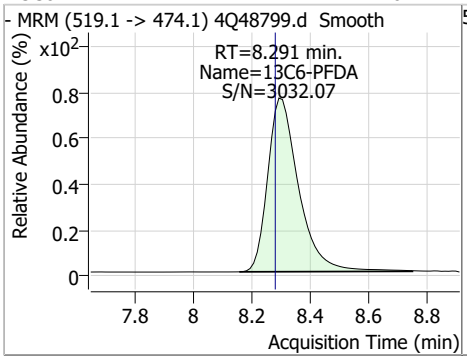
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.76	8.09	0.03	11407	527.1 -> 80.8	43.9	22.1	66.2

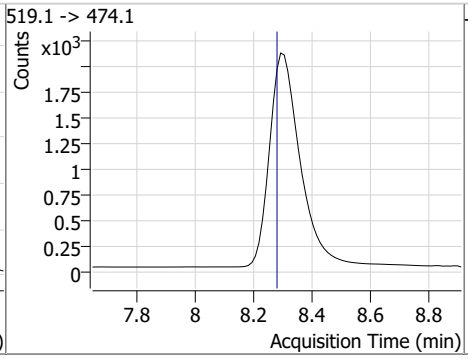


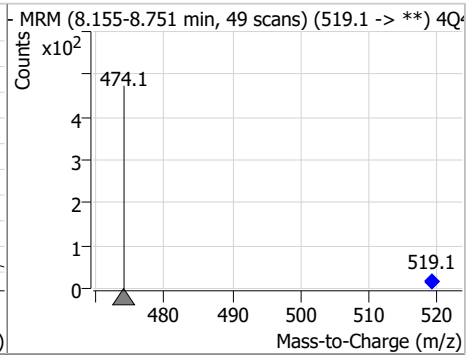




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.29	0.01	15374				

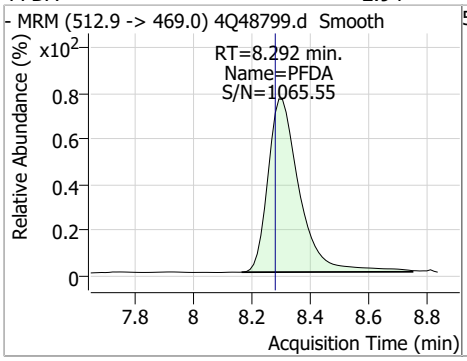


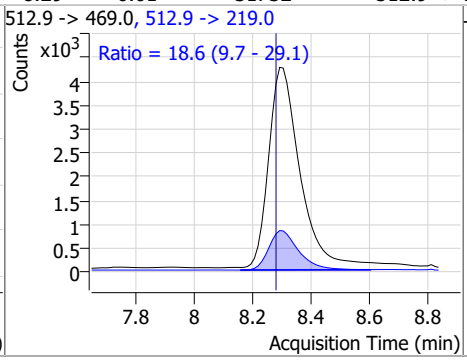


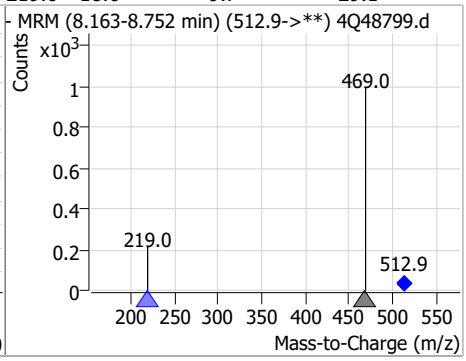


Perfluorinated Compounds by LC/MS/MS

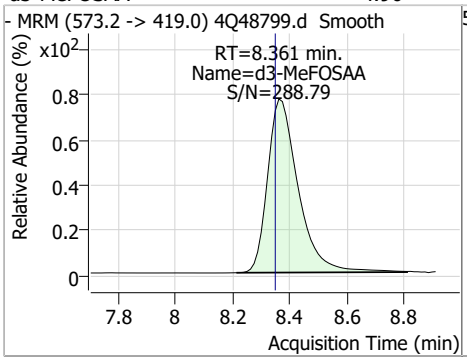
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.94	8.29	0.01	31732	512.9 -> 219.0	18.6	9.7	29.1

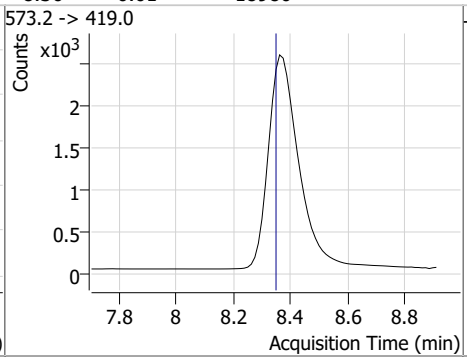


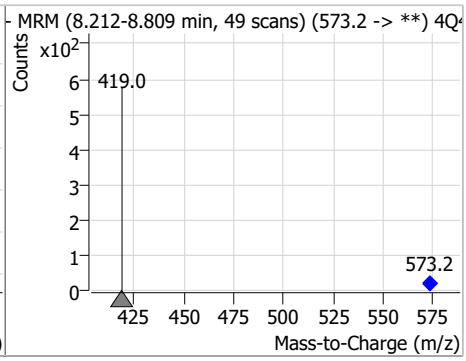




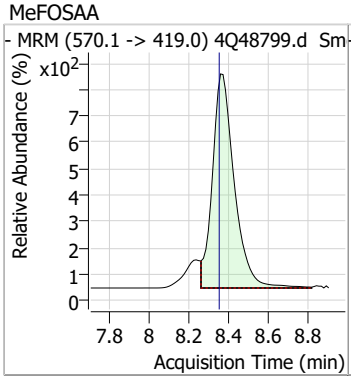
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.96	8.36	0.01	18980				

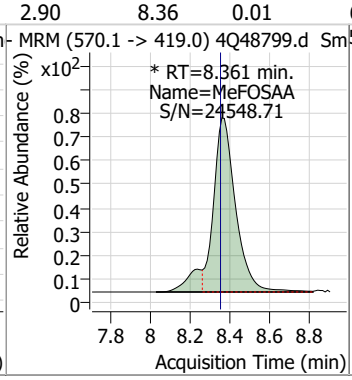


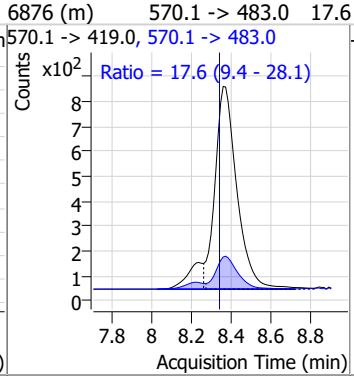


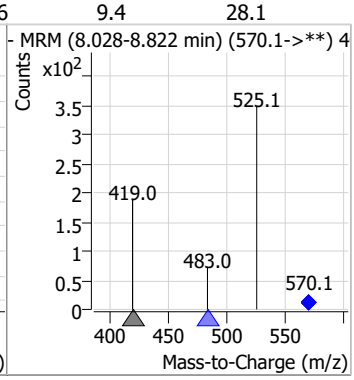


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.90	8.36	0.01	6876 (m)	570.1 -> 483.0	17.6	9.4	28.1

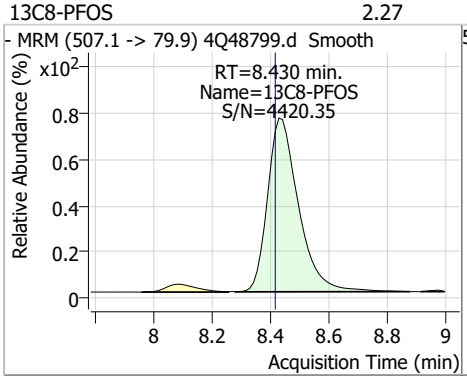


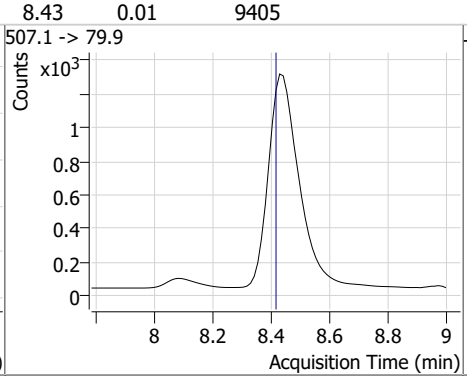


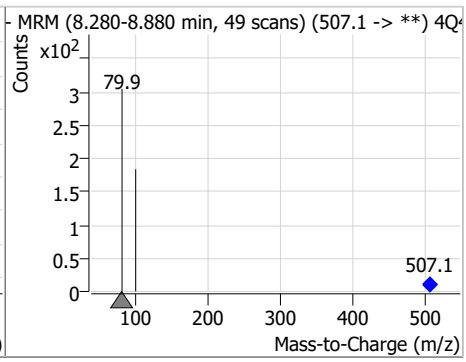




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.27	8.43	0.01	9405				

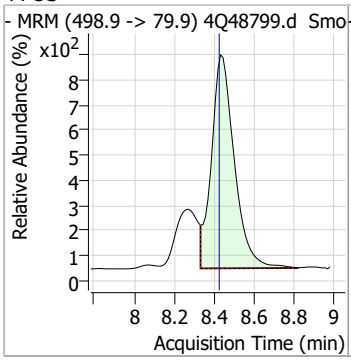


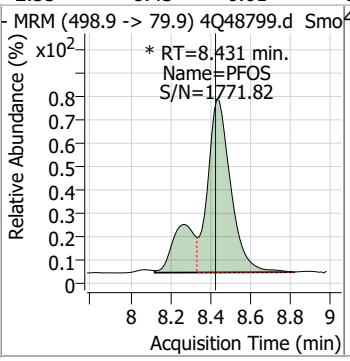


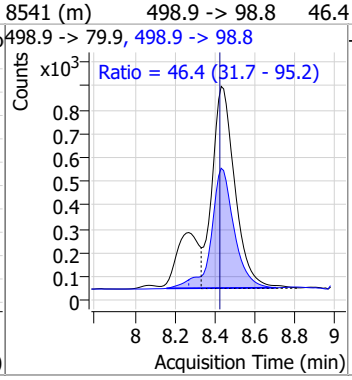


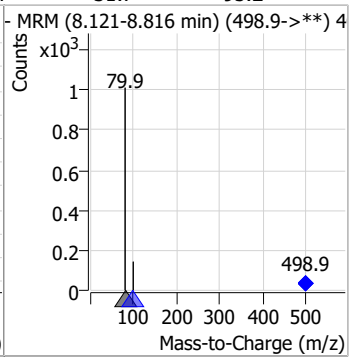
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.55	8.43	0.01	8541 (m)	498.9 -> 98.8	46.4	31.7	95.2

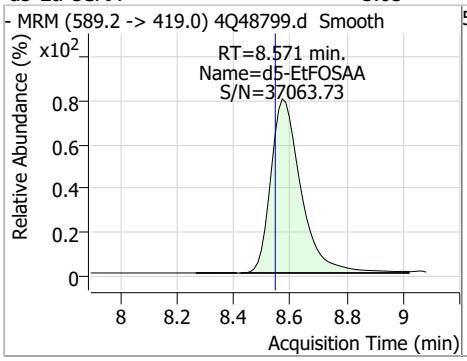


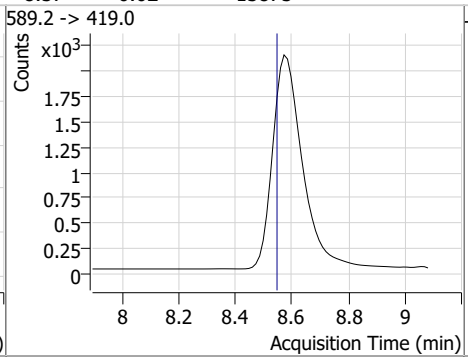


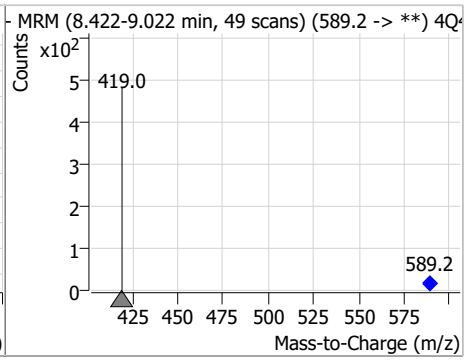




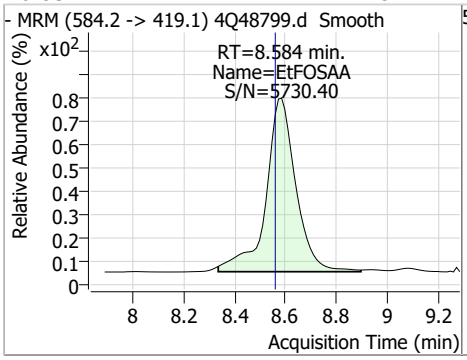
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.05	8.57	0.02	15875				

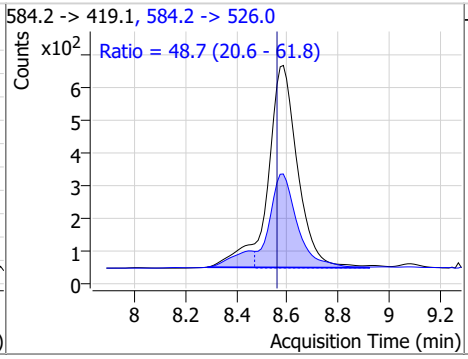


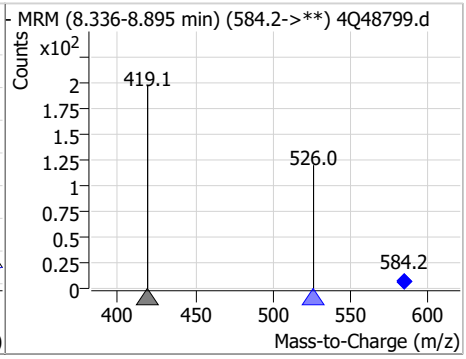




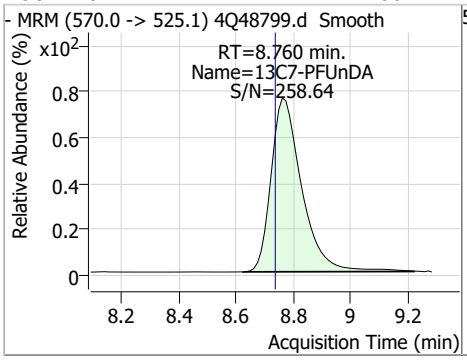
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.34	8.58	0.02	5078	584.2 -> 526.0	48.7	20.6	61.8

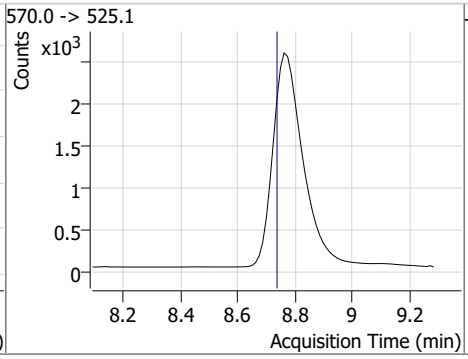


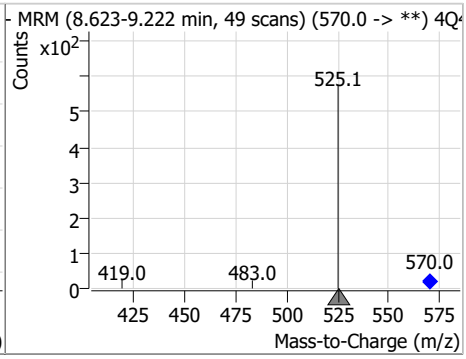




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.38	8.76	0.02	19048				

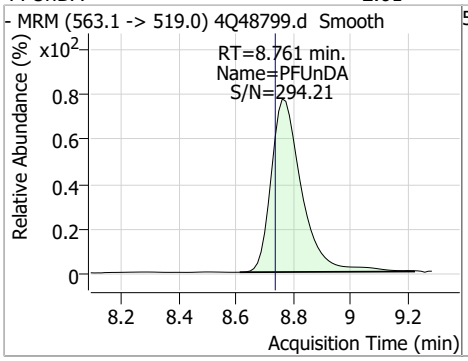


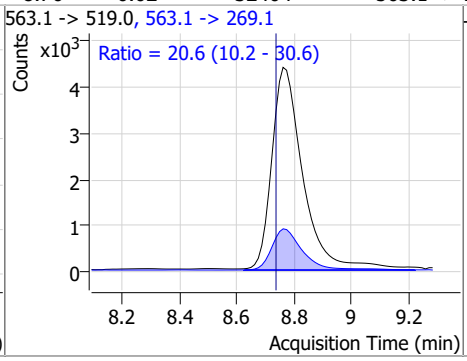


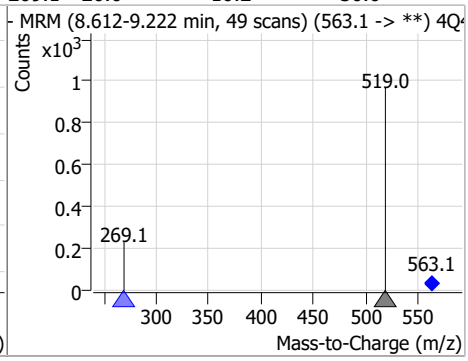


Perfluorinated Compounds by LC/MS/MS

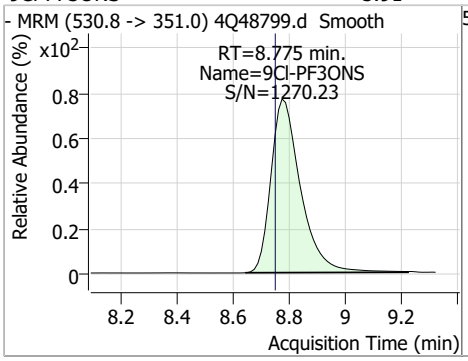
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.61	8.76	0.02	32404	563.1 -> 269.1	20.6	10.2	30.6

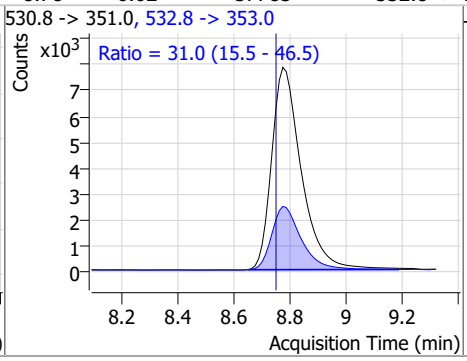


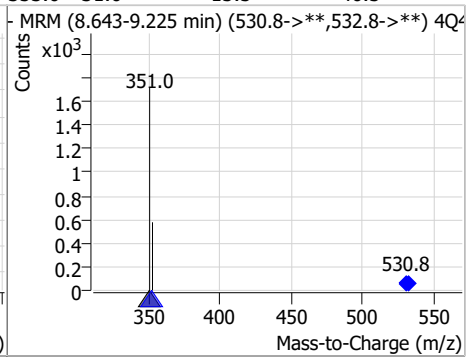




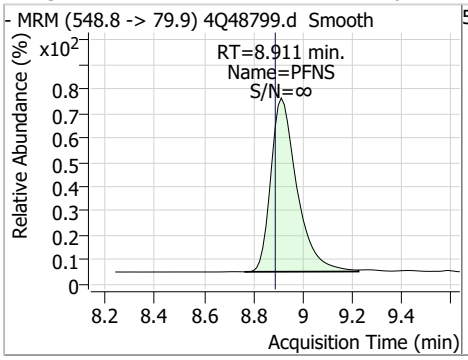
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.91	8.78	0.02	57785	532.8 -> 353.0	31.0	15.5	46.5

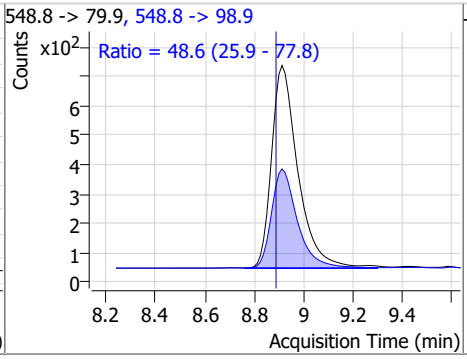


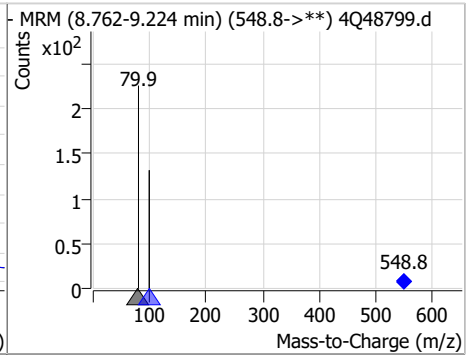




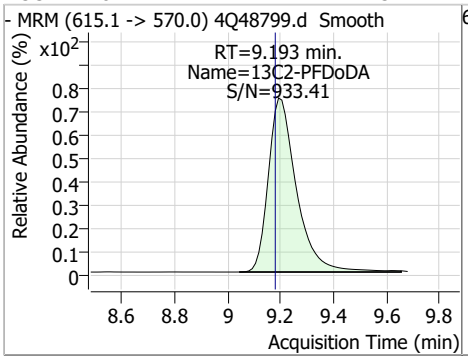
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.76	8.91	0.02	5075	548.8 -> 98.9	48.6	25.9	77.8

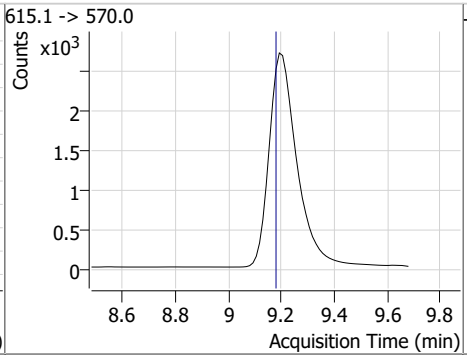


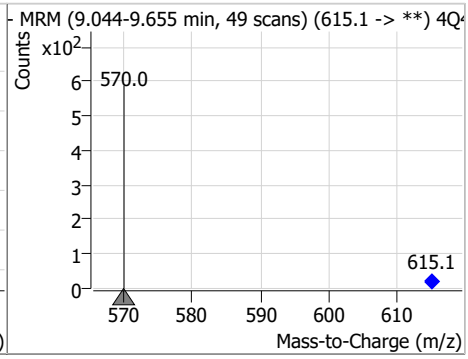




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	9.19	0.01	19824				

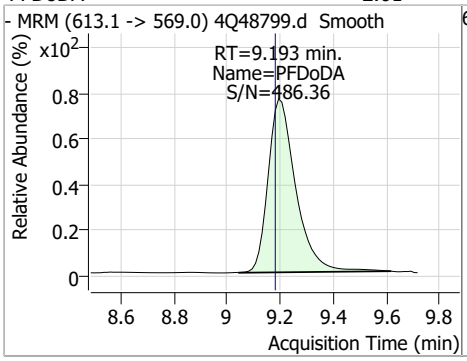


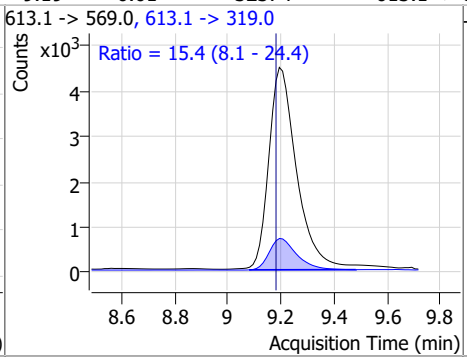


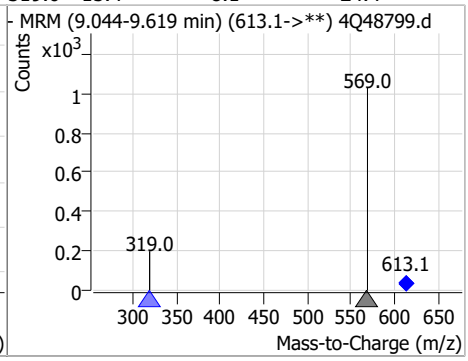


Perfluorinated Compounds by LC/MS/MS

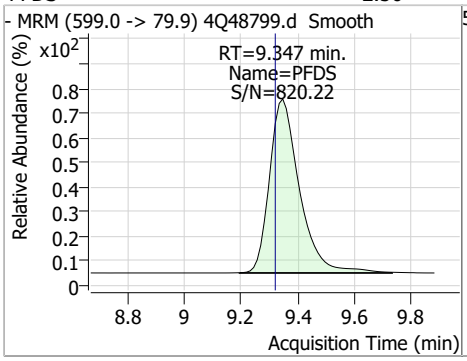
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.61	9.19	0.01	32374	613.1 -> 319.0	15.4	8.1	24.4

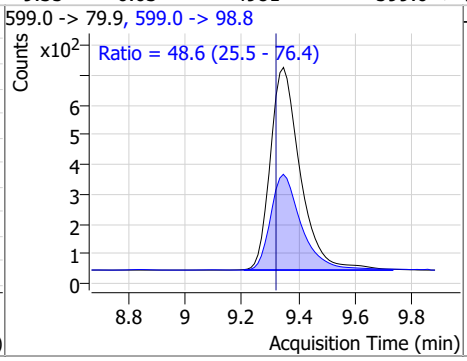


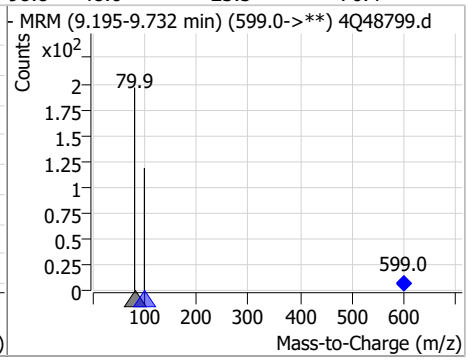




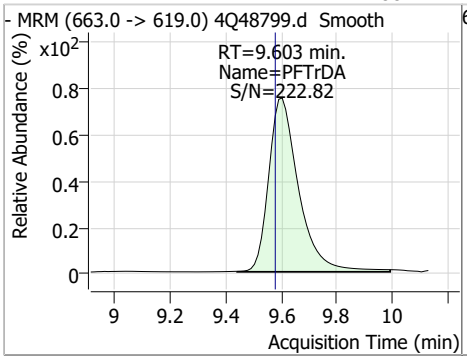
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.56	9.35	0.03	4981	599.0 -> 98.8	48.6	25.5	76.4

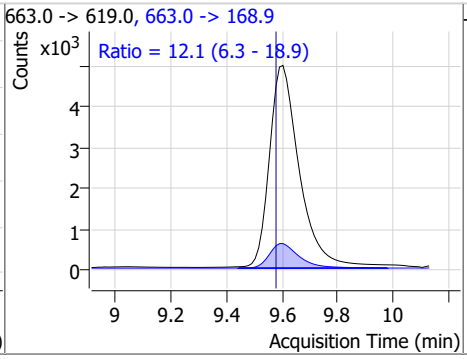


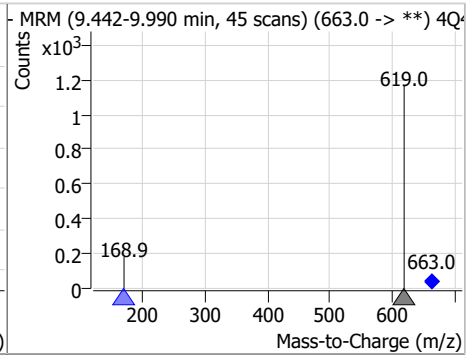




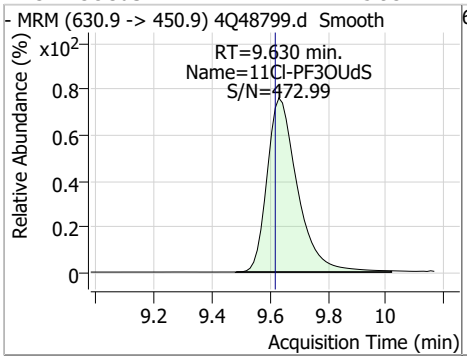
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.88	9.60	0.02	36920	663.0 -> 168.9	12.1	6.3	18.9

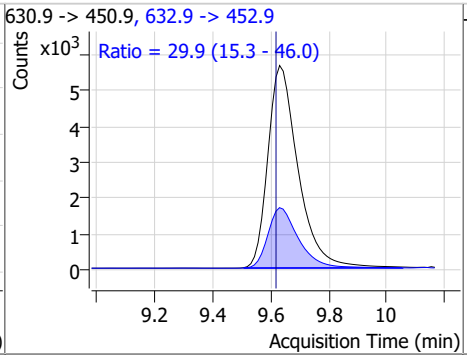


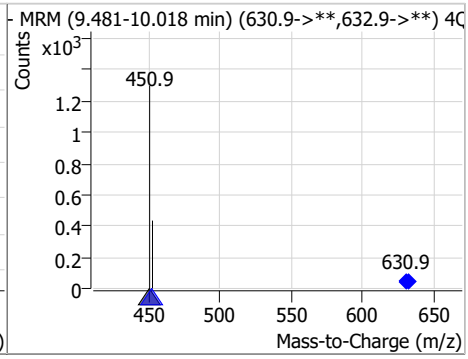




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.93	9.63	0.01	41246	632.9 -> 452.9	29.9	15.3	46.0

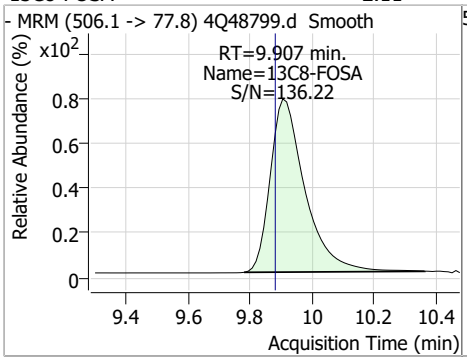


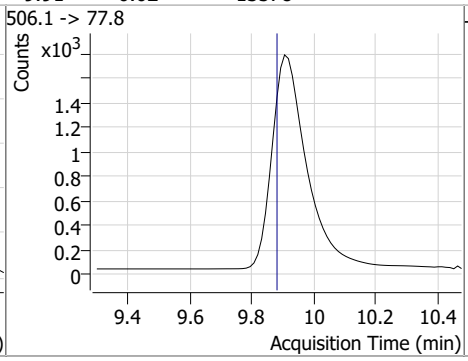


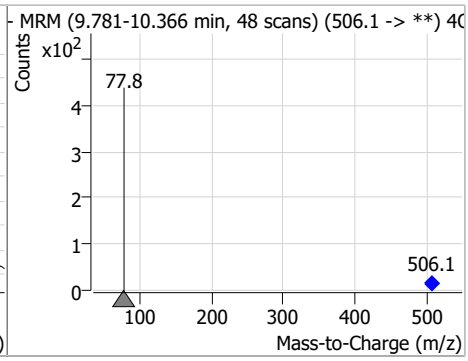


Perfluorinated Compounds by LC/MS/MS

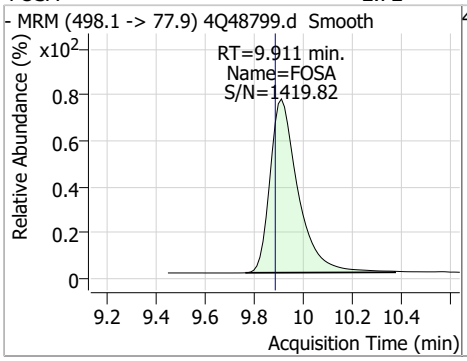
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.11	9.91	0.02	13578				

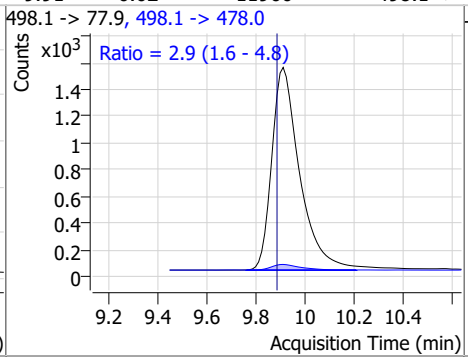


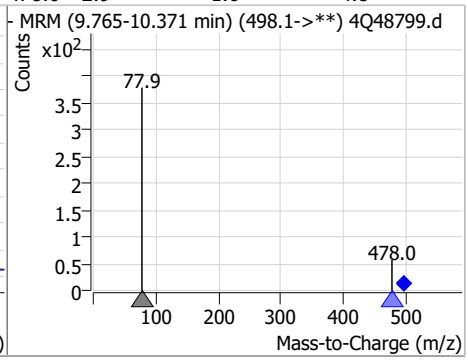




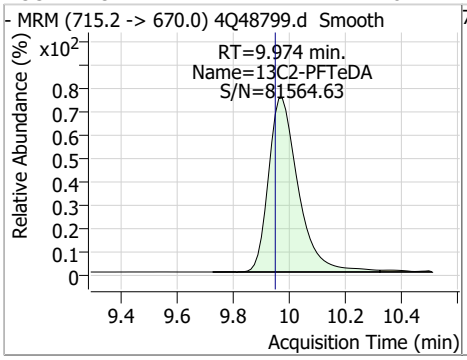
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.72	9.91	0.02	11966	498.1 -> 478.0	2.9	1.6	4.8

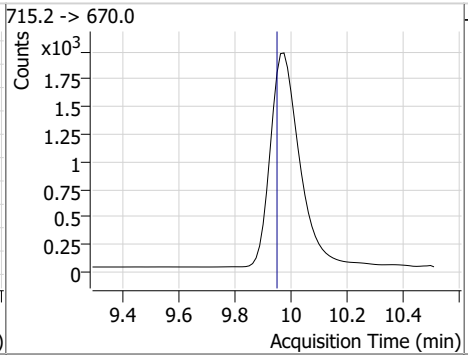


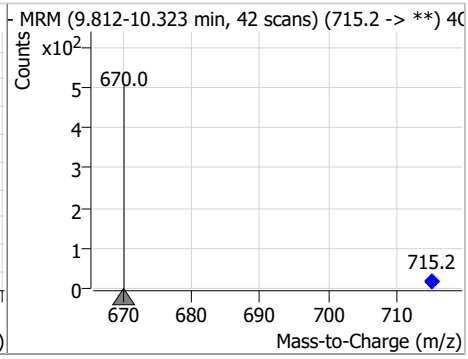




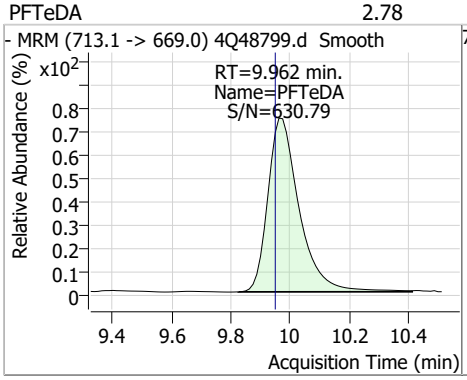
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.97	0.02	14344				

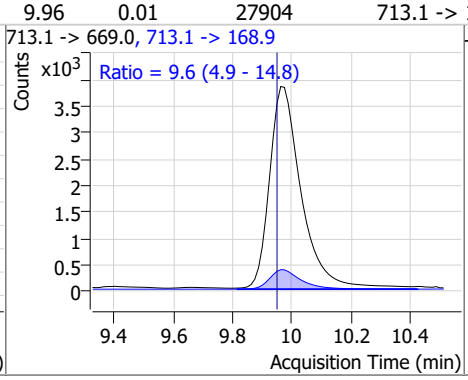


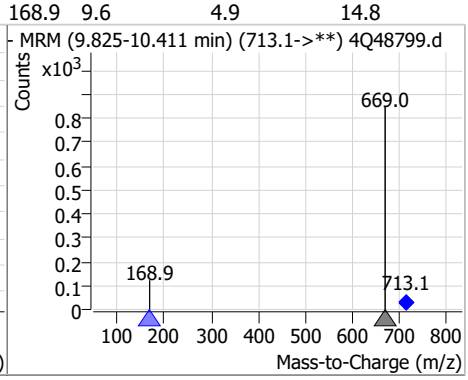




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.78	9.96	0.01	27904	713.1 -> 168.9	9.6	4.9	14.8

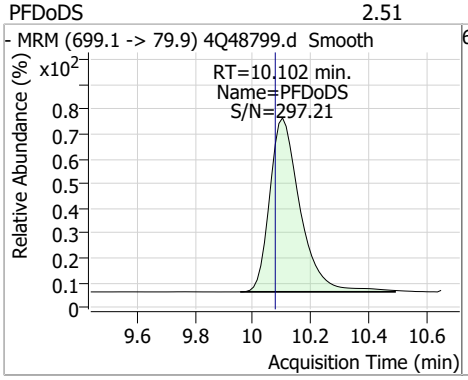


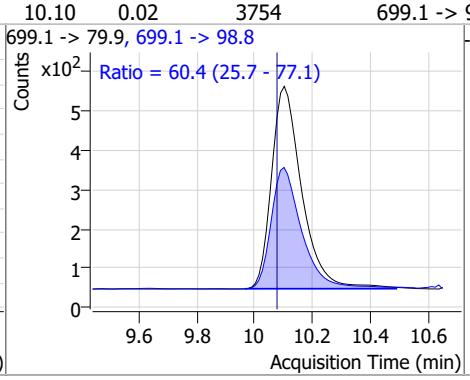


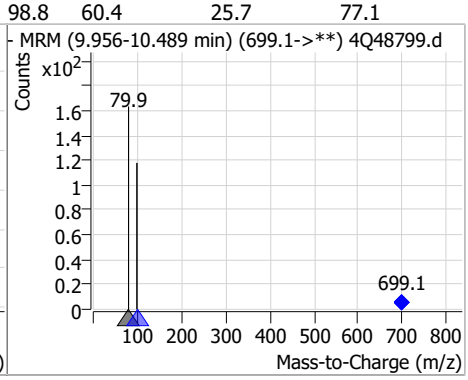


Perfluorinated Compounds by LC/MS/MS

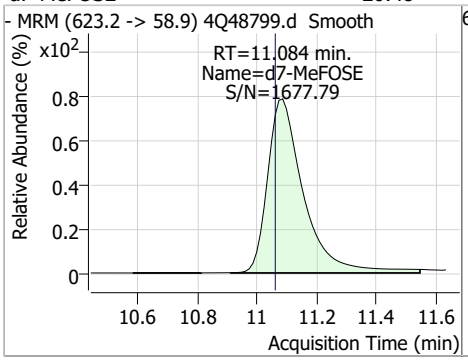
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.51	10.10	0.02	3754	699.1 -> 98.8	60.4	25.7	77.1

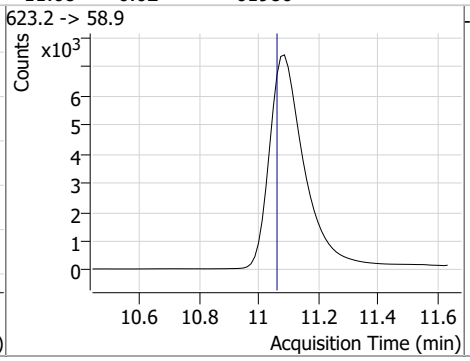


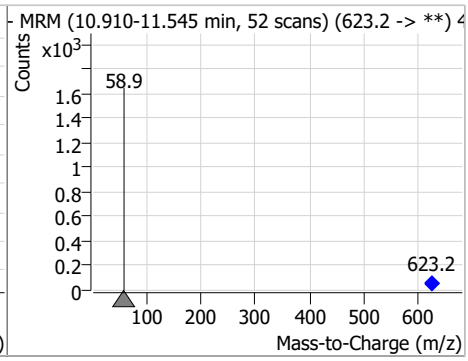




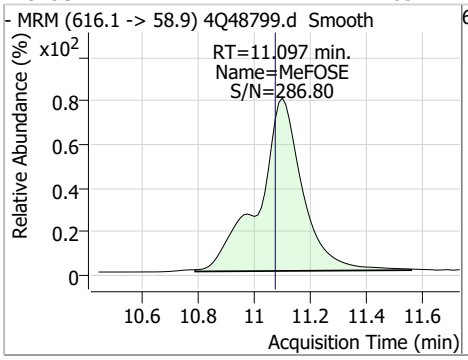
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.48	11.08	0.02	61986				

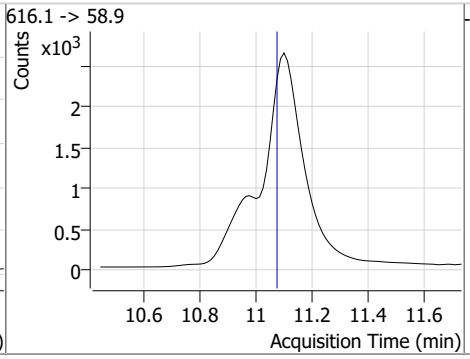


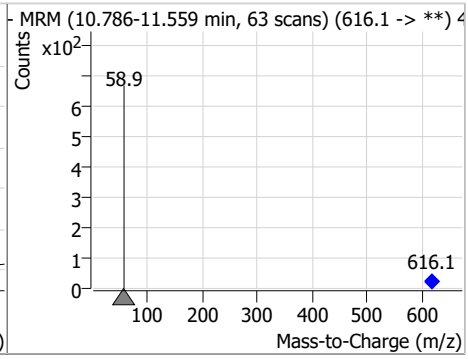




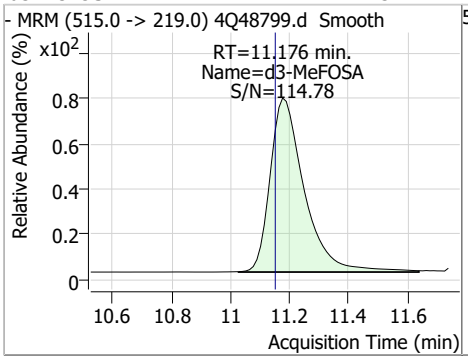
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.85	11.10	0.02	28493				

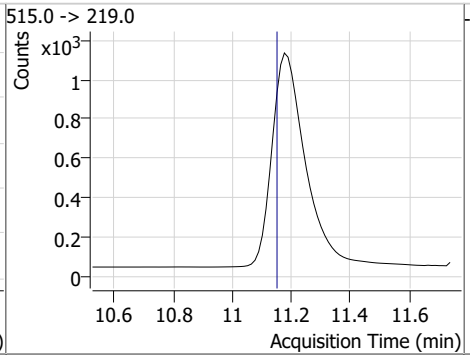


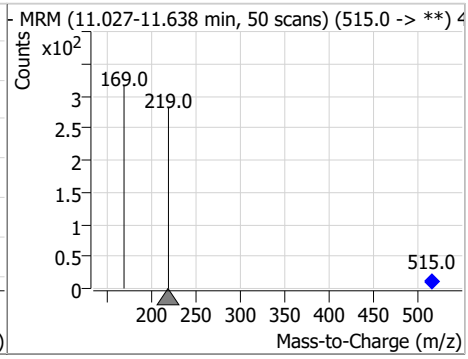




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.32	11.18	0.02	8774				

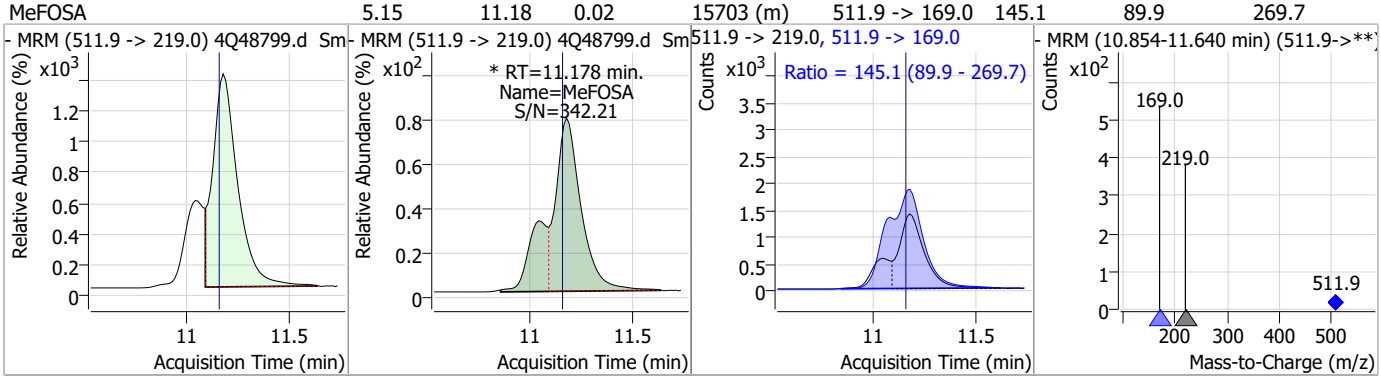




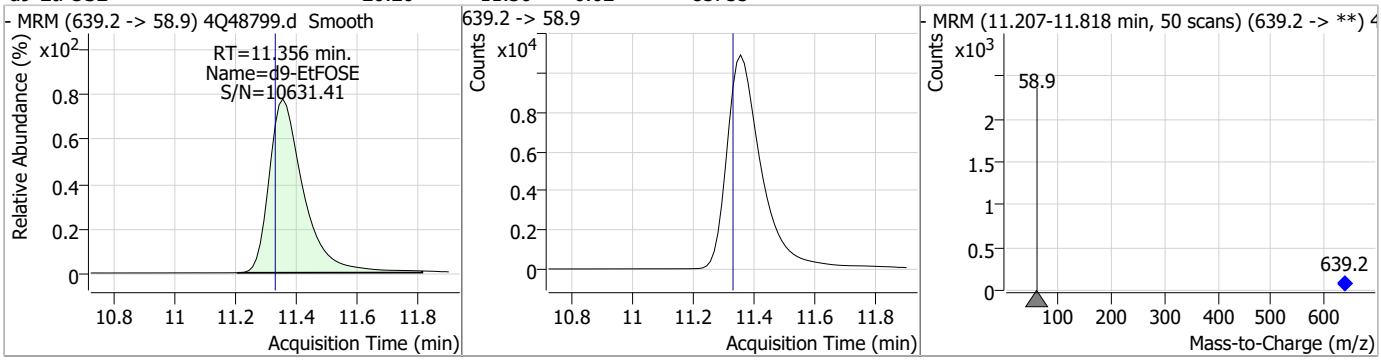


Perfluorinated Compounds by LC/MS/MS

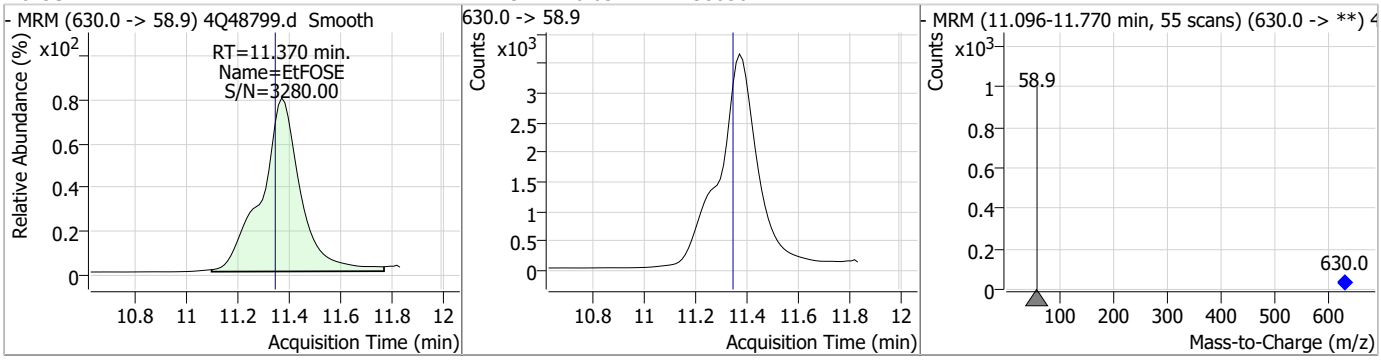
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.15	11.18	0.02	15703 (m)	511.9 -> 169.0	145.1	89.9	269.7



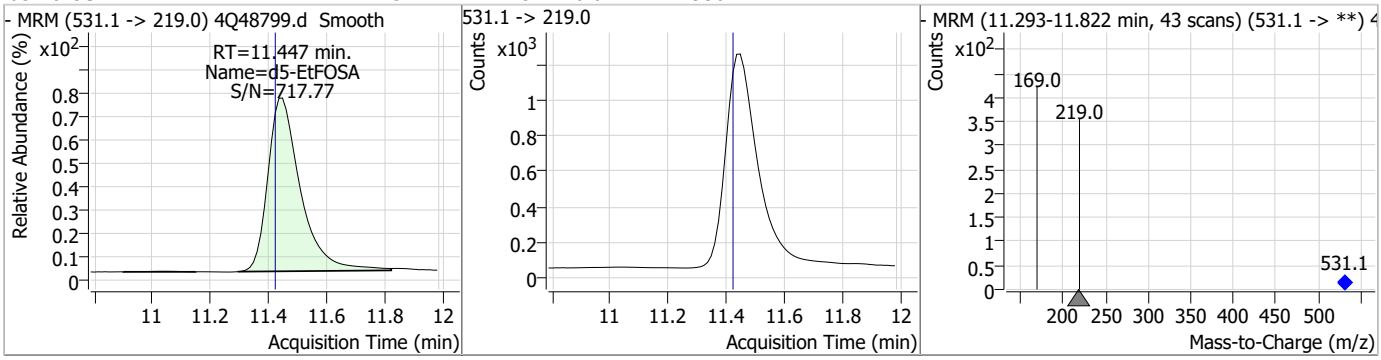
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.20	11.36	0.02	85755				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	14.41	11.37	0.03	38656				

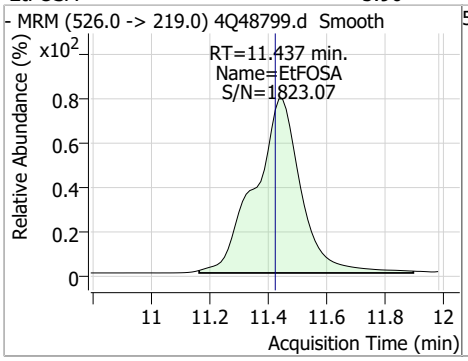


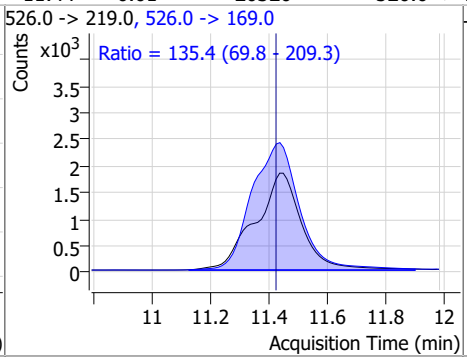
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.15	11.45	0.02	9364				

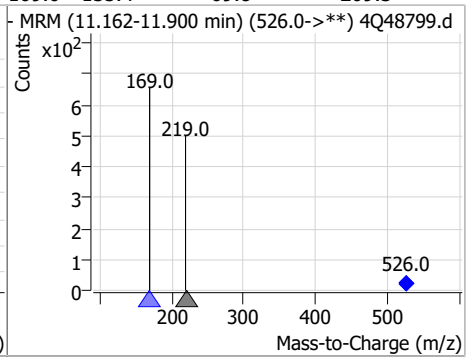


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.90	11.44	0.01	20320	526.0 -> 169.0	135.4	69.8	209.3







7.7.15

7

Manual Integration Approval Summary

Sample Number: S4Q713-ECC711
Lab FileID: 4Q48799.D
Injection Time: 08/09/23 23:58
Method: EPA DRAFT 1633
Analyst approved: 08/10/23 10:42 Anna Ludwig
Supervisor approved: 08/11/23 11:37 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.33	Split peak
MeFOSAA	2355-31-9		8.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak
MeFOSA	31506-32-8		11.18	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS Q6
MS Model	G6495B
MS Instrument Serial	SG1752D103
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	06 August 2023 10:23:29
File Path	D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.75E+0 [R] (Torr); 2.88E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	220
Gas Flow (l/min)	14
Nebulizer (psi)	20
Capillary (V)	3000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	11

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	112.92	-0.07	Pass	0.70	0.70	0.00	Pass	410645
302.00	301.96	-0.04	Pass	0.70	0.63	-0.07	Pass	1056836
601.98	601.95	-0.03	Pass	0.70	0.64	-0.06	Pass	2479790
1033.99	1033.88	-0.11	Pass	0.70	0.66	-0.04	Pass	1104775
1633.95	1633.75	-0.20	Pass	0.70	0.68	-0.02	Pass	895649
2233.91	2233.52	-0.39	Adjust	0.70	0.70	0.00	Pass	343505

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	0.70	0.68	-0.02	Pass	131624
112.99	112.97	-0.02	Pass	0.70	0.76	0.06	Pass	463827
302.00	301.96	-0.04	Pass	0.70	0.64	-0.06	Pass	1016500
601.98	601.97	-0.01	Pass	0.70	0.68	-0.02	Pass	1714090
1033.99	1033.93	-0.06	Pass	0.70	0.68	-0.02	Pass	646956
1633.95	1633.82	-0.13	Pass	0.70	0.66	-0.04	Pass	523442
2233.91	2233.76	-0.15	Pass	0.70	0.67	-0.03	Pass	220885

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	1.20	1.25	0.05	Pass	526651
302.00	301.97	-0.03	Pass	1.20	1.31	0.11	Pass	1476015
601.98	601.94	-0.04	Pass	1.20	1.41	0.21	Pass	3655387
1033.99	1033.84	-0.15	Pass	1.20	1.43	0.23	Pass	2162821
1633.95	1633.70	-0.25	Pass	1.20	1.39	0.19	Pass	1660551
2233.91	2233.61	-0.30	Pass	1.20	1.36	0.16	Pass	746530

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	1.20	1.04	-0.16	Pass	169691
112.99	112.95	-0.04	Pass	1.20	1.12	-0.08	Pass	659554
302.00	301.99	-0.01	Pass	1.20	0.98	-0.22	Pass	1559641
601.98	601.89	-0.09	Pass	1.20	1.29	0.09	Pass	3132530
1033.99	1033.87	-0.12	Pass	1.20	1.19	-0.01	Pass	1466226
1633.95	1633.78	-0.17	Pass	1.20	1.23	0.03	Pass	1354261
2233.91	2233.62	-0.29	Pass	1.20	1.17	-0.03	Pass	456831

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.90	-0.09	Pass	2.50	2.39	-0.11	Pass	584252
302.00	301.84	-0.16	Pass	2.50	2.53	0.03	Pass	1902576
601.98	601.85	-0.13	Pass	2.50	2.73	0.23	Pass	4770003
1033.99	1033.82	-0.17	Pass	2.50	2.68	0.18	Pass	3489595
1633.95	1633.66	-0.29	Pass	2.50	2.37	-0.13	Pass	3404279
2233.91	2233.52	-0.39	Pass	2.50	2.08	-0.42	Pass	2038991

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.92	-0.08	Pass	2.50	2.52	0.02	Pass	200561
112.99	112.93	-0.06	Pass	2.50	2.64	0.14	Pass	829699
302.00	302.00	0.00	Pass	2.50	2.59	0.09	Pass	1697303
601.98	601.90	-0.08	Pass	2.50	2.57	0.07	Pass	4291812
1033.99	1033.94	-0.05	Pass	2.50	2.65	0.15	Pass	2563886
1633.95	1633.66	-0.29	Pass	2.50	2.43	-0.07	Pass	2814597
2233.91	2233.72	-0.19	Pass	2.50	2.35	-0.15	Pass	1432053

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22640.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 1:37:43 PM
Sample Name : ic330-1
Vial : P1-A2
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	197766	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	63445	5.00	µg/L	0.000
M5-PFHxA	5.680	318.0 -> 273.0	67325	2.50	µg/L	0.012
M4-PFHpA	6.608	367.1 -> 322.0	68507	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	103376	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	47050	1.25	µg/L	0.000
M6-PFDA	8.263	519.1 -> 474.1	28615	1.25	µg/L	0.000
M7-PFUnDA	8.717	570.0 -> 525.1	36693	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	32881	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	18416	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	37262	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	25702	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15603	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14226	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3895	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5345	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5336	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	37657	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	43921	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	32766	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	138074	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	184001	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	15745	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	15356	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18445	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	83724	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	12184	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	114510	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38402	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	61782	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	66999	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3895	5.35	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5345	5.09	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5336	5.19	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-PFDoDA	9.148	615.1 -> 570.0	32881	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18416	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.610	302.1 -> 79.9	25702	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	7.355	402.1 -> 79.9	15603	2.33	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 = 93.2%		
13C4-PFBA	3.010	216.8 -> 171.9	197766	10.00 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C4-PFHpA	6.608	367.1 -> 322.0	68507	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C5-PFHxA	5.680	318.0 -> 273.0	67325	2.43 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C5-PFPeA	4.447	268.3 -> 223.0	63445	5.03 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C6-PFDA	8.263	519.1 -> 474.1	28615	1.32 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C7-PFUnDA	8.717	570.0 -> 525.1	36693	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C8-FOSA	9.662	506.1 -> 77.8	37262	2.68 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C8-PFOA	7.239	421.1 -> 376.0	103376	2.44 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C8-PFOS	8.414	507.1 -> 79.9	14226	2.63 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C9-PFNA	7.770	472.1 -> 427.0	47050	1.17 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.9%		
d3-MeFOSAA	8.297	573.2 -> 419.0	37657	5.64 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C3-HFPO-DA	6.045	286.9 -> 168.9	43921	10.13 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
d3-MeFOSA	10.763	515.0 -> 219.0	15356	2.69 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%		
d5-EtFOSAA	8.505	589.2 -> 419.0	32766	5.32 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
d7-MeFOSE	10.685	623.2 -> 58.9	138074	27.70 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
d9-EtFOSE	10.918	639.2 -> 58.9	184001	27.66 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
d5-EtFOSA	10.996	531.1 -> 219.0	15745	2.74 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%		
Target Compounds						QValue
4:2FTS	5.331	327.1 -> 307.0	4056	0.81 µg/L		99
		327.1 -> 80.9	1602			
6:2FTS	7.014	427.1 -> 407.0	3745	0.78 µg/L		92
		427.1 -> 80.9	1434			
8:2FTS	8.040	527.1 -> 507.0	2368	0.83 µg/L		97
		527.1 -> 80.8	910			
EtFOSAA	8.506	584.2 -> 419.1	973	0.24 µg/L	m	91
		584.2 -> 526.0	485			
FOSA	9.652	498.1 -> 77.9	2616	0.22 µg/L		97
		498.1 -> 478.0	107			
MeFOSAA	8.310	570.1 -> 419.0	1632	0.23 µg/L		98
		570.1 -> 483.0	316			
PFBA	3.006	212.8 -> 168.9	5437	0.88 µg/L		100
PFBS	5.611	298.7 -> 79.9	1529	0.18 µg/L		92
		298.7 -> 98.8	643			
PFDA	8.251	512.9 -> 469.0	7838	0.23 µg/L		99
		512.9 -> 219.0	1180			
PFDoDA	9.148	613.1 -> 569.0	4537	0.21 µg/L		98
		613.1 -> 319.0	723			
PFDS	9.299	599.0 -> 79.9	734	0.21 µg/L		89

Perfluorinated Compounds by LC/MS/MS

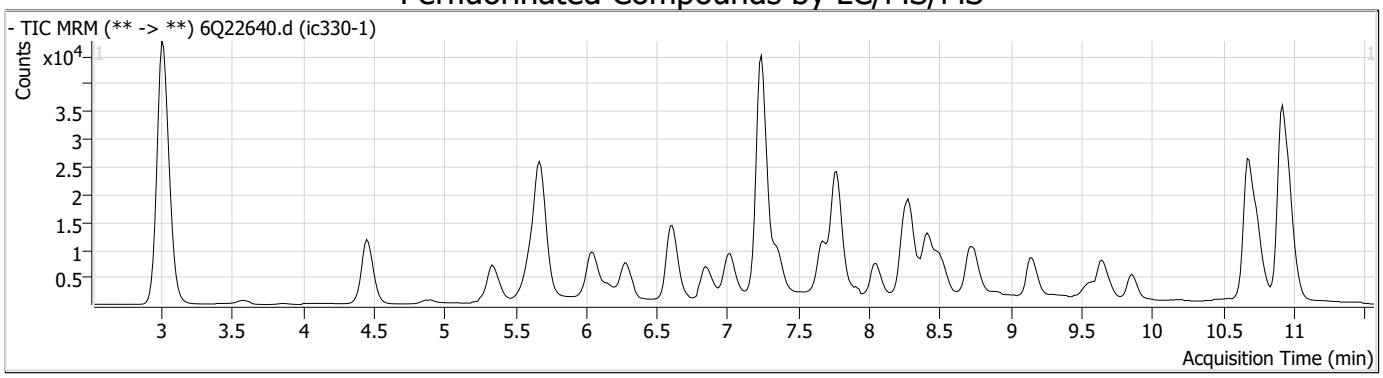
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	418				
PFHpA	6.609	363.1 -> 319.0	5823	0.22	µg/L		96
		363.1 -> 169.0	868				
PFHpS	7.922	449.0 -> 79.9	1354	0.21	µg/L		92
		449.0 -> 98.9	804				
PFHxA	5.670	313.0 -> 269.0	4382	0.22	µg/L		99
		313.0 -> 118.9	249				
PFHxS	7.356	398.7 -> 79.9	1575	0.23	µg/L	m	100
		398.7 -> 98.9	770				
PFNA	7.771	463.0 -> 419.0	7520	0.23	µg/L		99
		463.0 -> 219.0	1475				
PFNS	8.893	548.8 -> 79.9	1215	0.21	µg/L		96
		548.8 -> 98.9	684				
PFOA	7.240	413.0 -> 369.0	8846	0.21	µg/L		92
		413.0 -> 169.0	1727				
PFOS	8.415	498.9 -> 79.9	1176	0.19	µg/L	m	87
		498.9 -> 98.8	726				
PFPeA	4.449	263.0 -> 219.0	5957	0.43	µg/L		100
PFPeS	6.672	349.1 -> 79.9	1276	0.20	µg/L		98
		349.1 -> 98.9	595				
PFTeDA	9.852	713.1 -> 669.0	4090	0.23	µg/L		99
		713.1 -> 168.9	364				
PFTrDA	9.532	663.0 -> 619.0	4802	0.22	µg/L		98
		663.0 -> 168.9	507				
PFUnDA	8.717	563.1 -> 519.0	4465	0.21	µg/L		93
		563.1 -> 269.1	852				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	6183	0.39	µg/L		98
		632.9 -> 452.9	2053				
9Cl-PF3ONS	8.758	530.8 -> 351.0	9848	0.39	µg/L		75
		532.8 -> 353.0	4522				
ADONA	6.858	376.9 -> 250.9	21661	0.39	µg/L		98
		376.9 -> 84.8	5979				
HFPO-DA	6.046	284.9 -> 168.9	1732	0.46	µg/L		99
		284.9 -> 184.9	178				
3:3FTCA	3.859	241.0 -> 177.0	1037	1.06	µg/L		99
		241.0 -> 117.0	143				
5:3FTCA	6.285	341.0 -> 237.1	21160	5.22	µg/L		92
		341.0 -> 217.0	16342				
7:3FTCA	7.673	441.0 -> 316.9	16403	5.48	µg/L		90
		441.0 -> 336.9	34606				
EtFOSA	10.985	526.0 -> 219.0	2962	0.43	µg/L		97
		526.0 -> 169.0	3834				
EtFOSE	10.931	630.0 -> 58.9	7782	1.04	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	2473	0.43	µg/L		95
		511.9 -> 169.0	3422				
MeFOSE	10.697	616.1 -> 58.9	5328	1.03	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	308	0.19	µg/L		88
		699.1 -> 98.8	198				
NFDHA	5.551	295.0 -> 201.0	1109	0.44	µg/L		91
		295.0 -> 84.9	264				
PFMBA	4.869	279.0 -> 85.1	4267	0.43	µg/L		100
PFMPA	3.576	229.0 -> 84.9	3388	0.43	µg/L		100
PFEESA	6.163	314.8 -> 134.9	10044	0.38	µg/L		99
		314.8 -> 82.9	371				

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

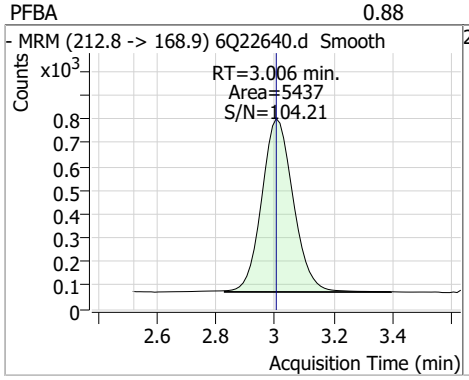
Perfluorinated Compounds by LC/MS/MS

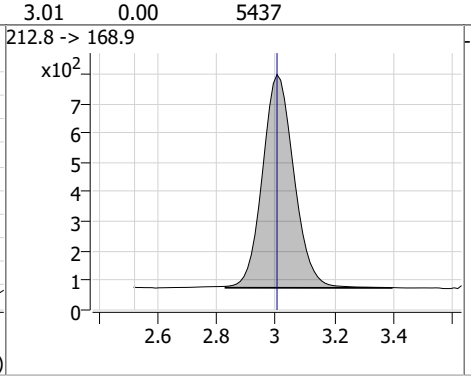
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

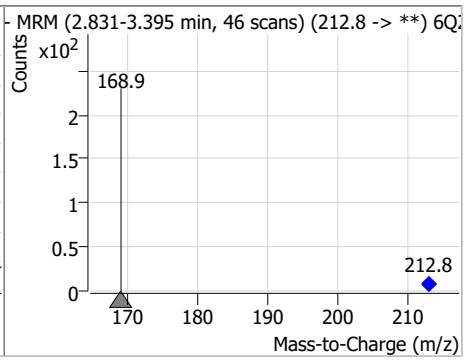
Perfluorinated Compounds by LC/MS/MS



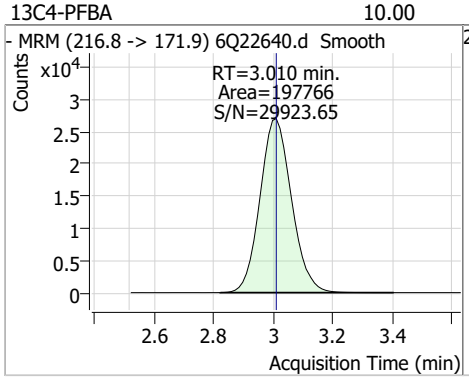
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.88	3.01	0.00	5437				

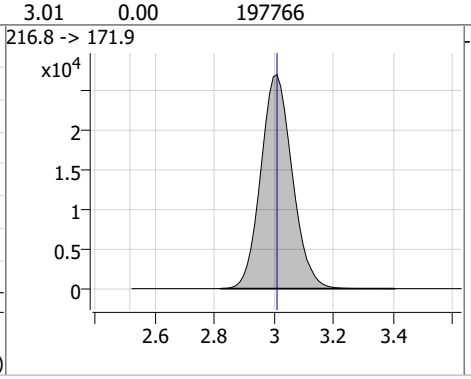


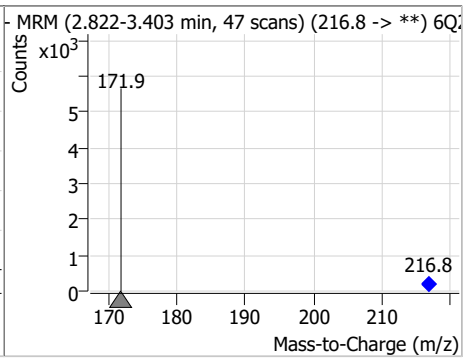




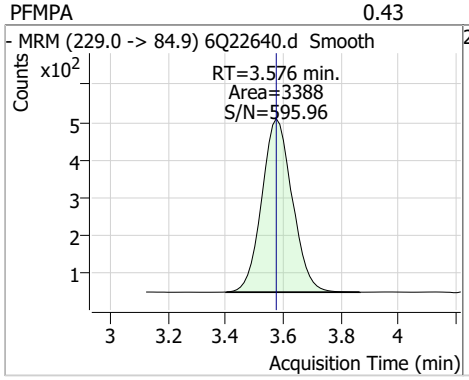
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.00	3.01	0.00	197766				

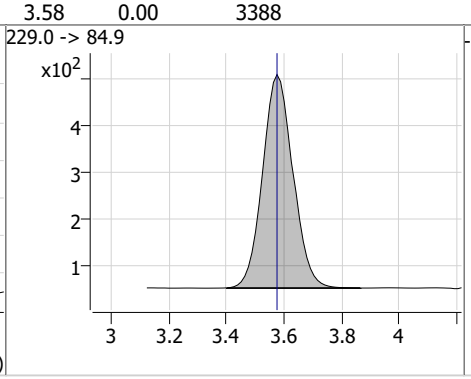


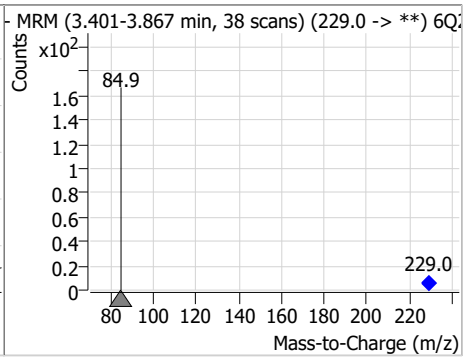




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.43	3.58	0.00	3388				

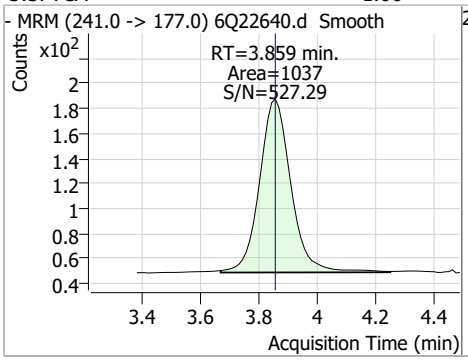


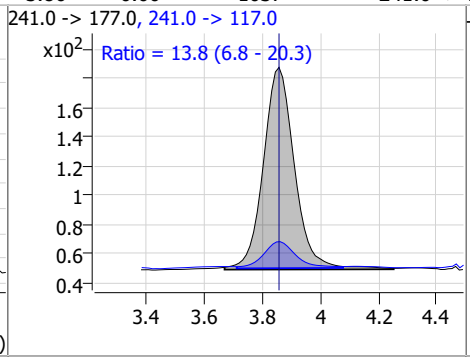


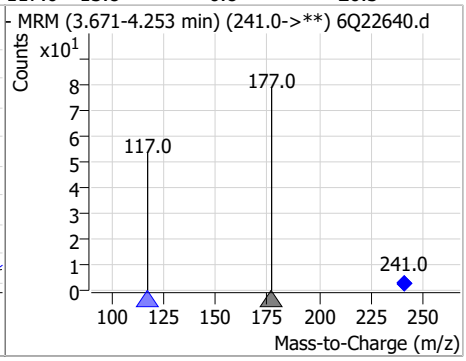


Perfluorinated Compounds by LC/MS/MS

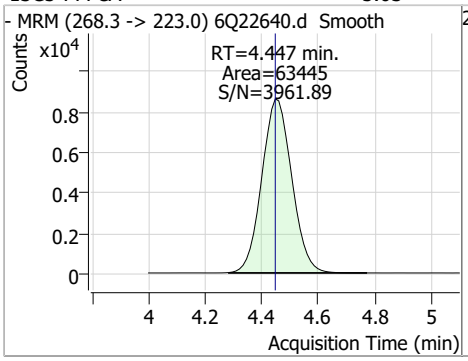
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.06	3.86	0.00	1037	241.0 -> 117.0	13.8	6.8	20.3

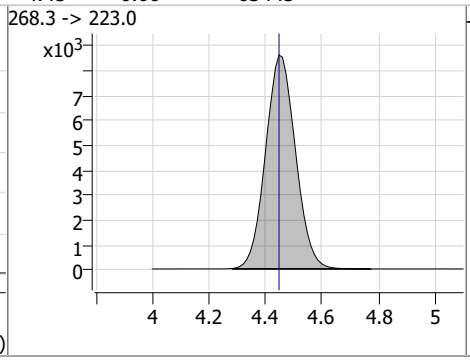


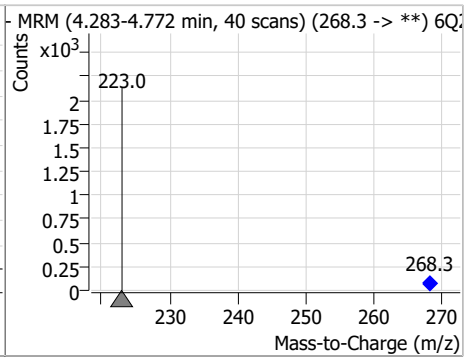




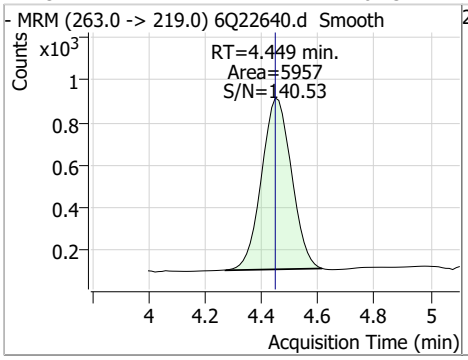
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.45	0.00	63445				

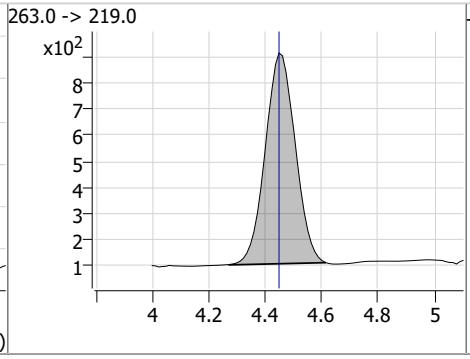


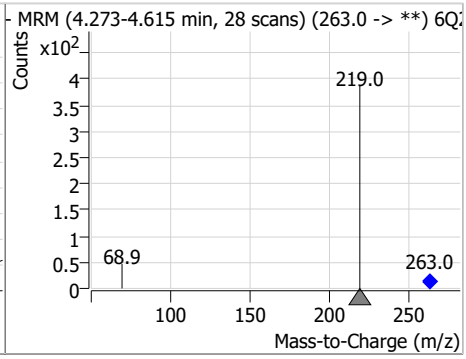




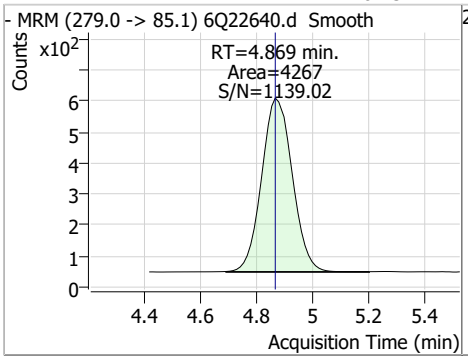
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.43	4.45	0.00	5957				

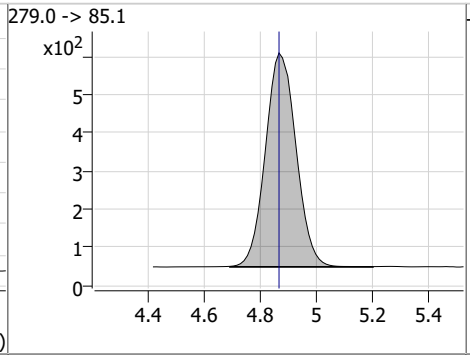


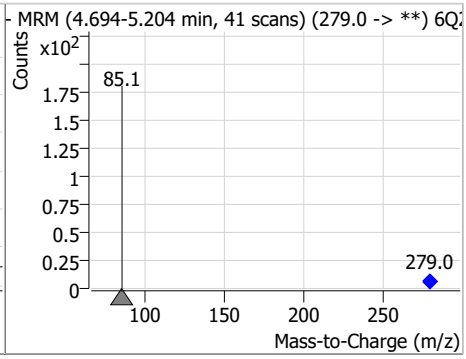




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.43	4.87	0.00	4267				

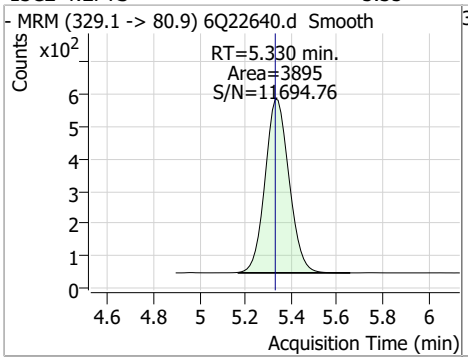


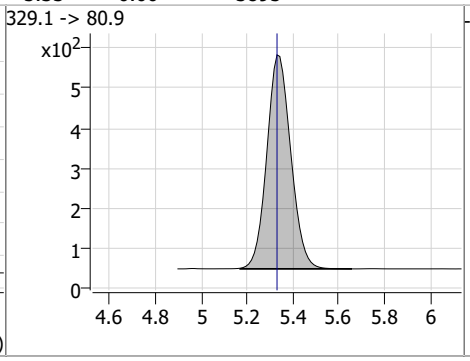


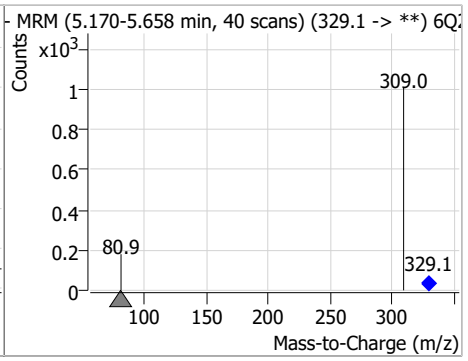


Perfluorinated Compounds by LC/MS/MS

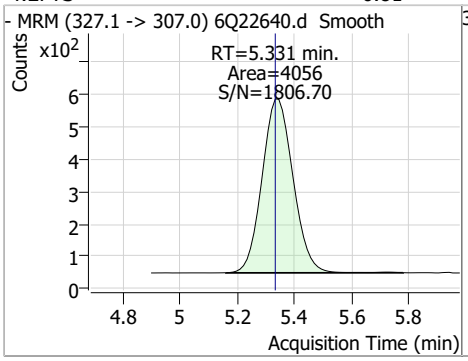
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.35	5.33	0.00	3895				

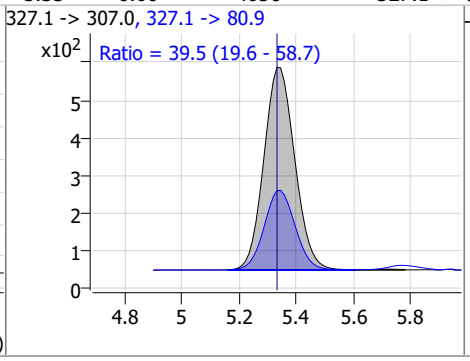


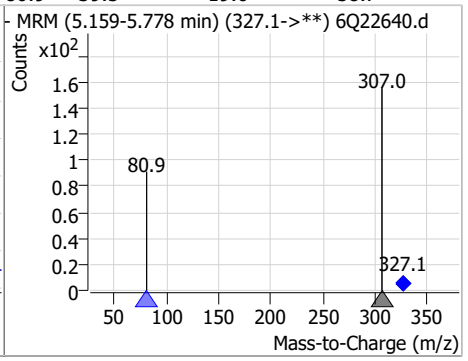




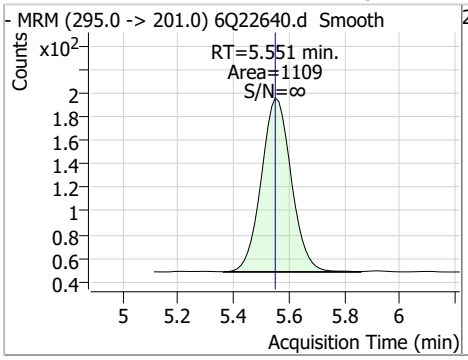
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.81	5.33	0.00	4056	327.1 -> 80.9	39.5	19.6	58.7

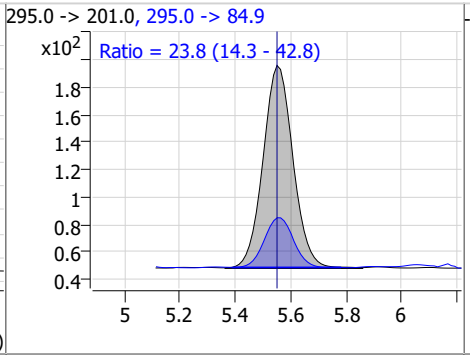


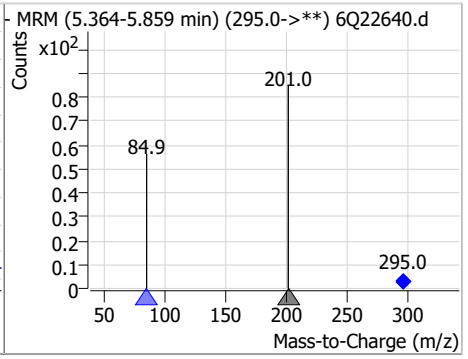




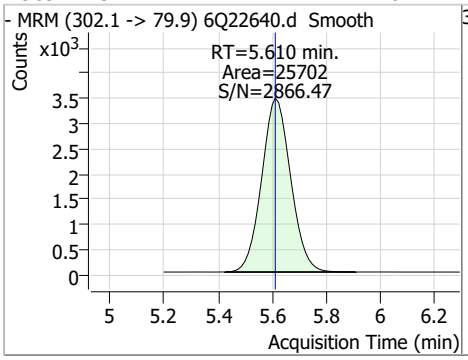
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.44	5.55	0.00	1109	295.0 -> 84.9	23.8	14.3	42.8

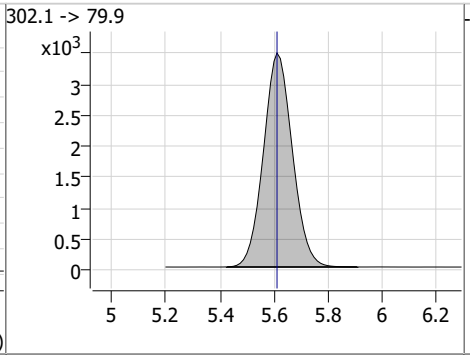


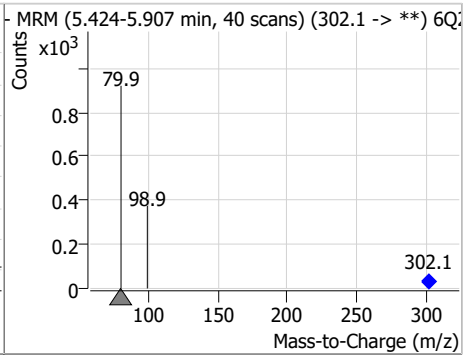




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.61	0.00	25702				

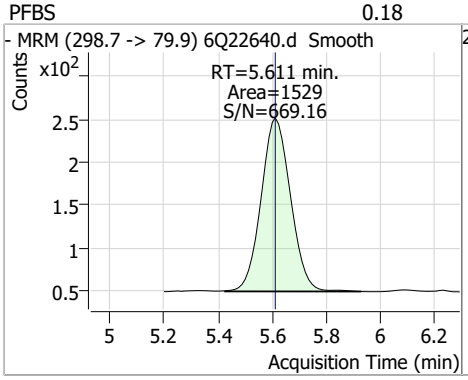


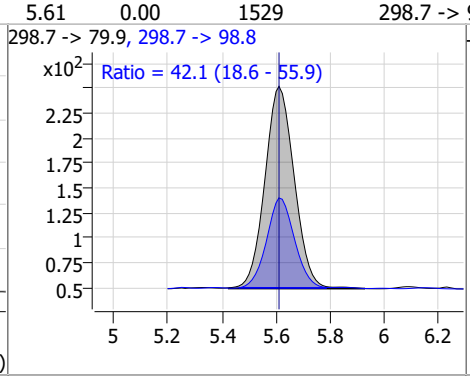


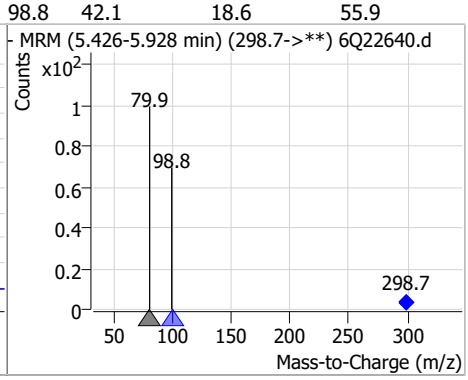


Perfluorinated Compounds by LC/MS/MS

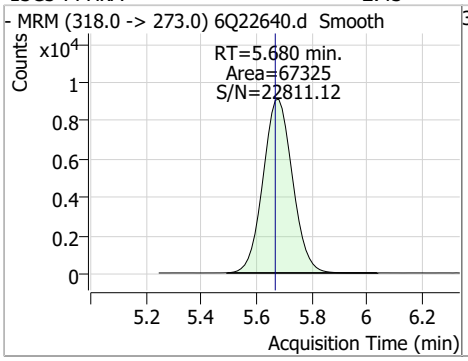
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.18	5.61	0.00	1529	298.7 -> 98.8	42.1	18.6	55.9

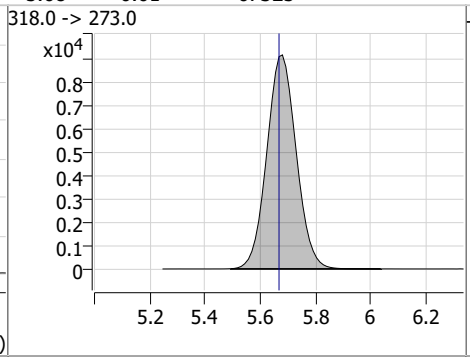


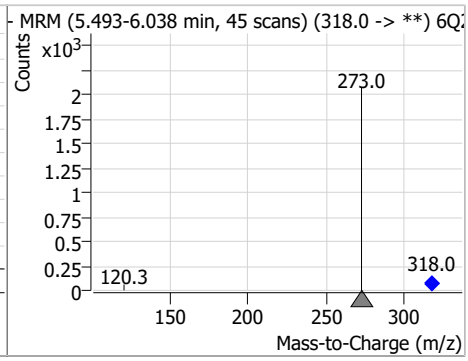




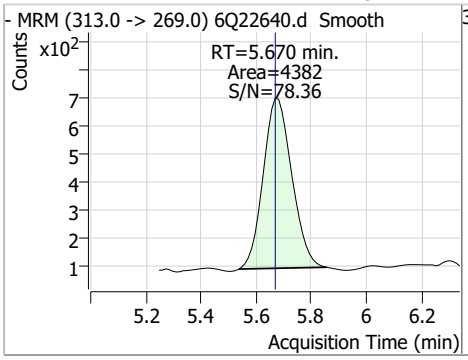
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	5.68	0.01	67325				

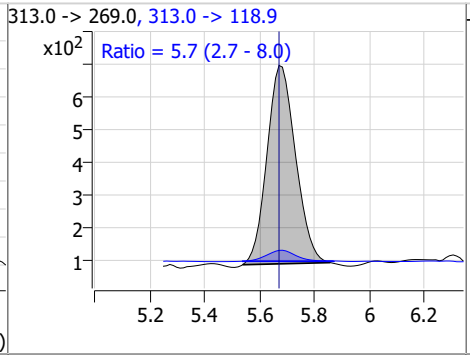


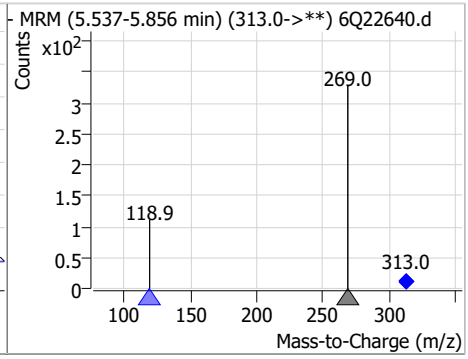




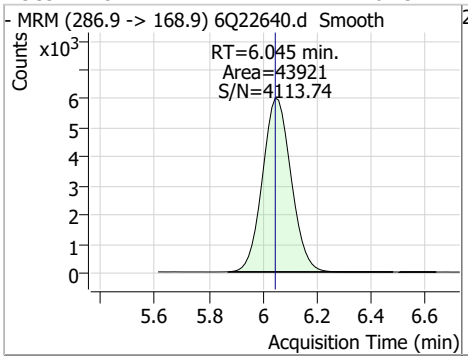
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.67	0.00	4382	313.0 -> 118.9	5.7	2.7	8.0

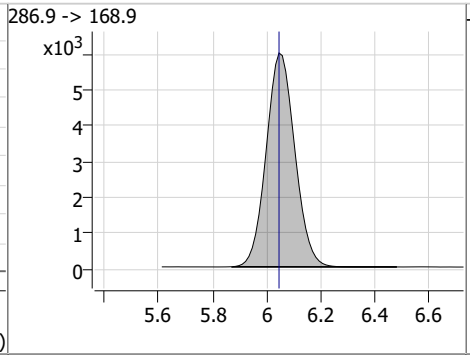


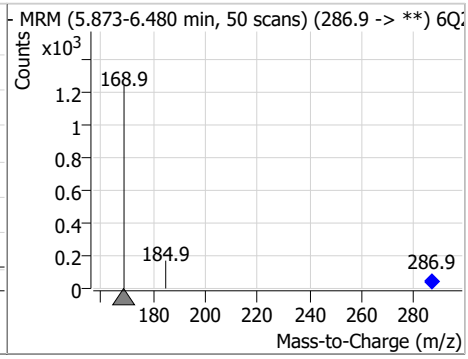




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	6.05	0.00	43921				

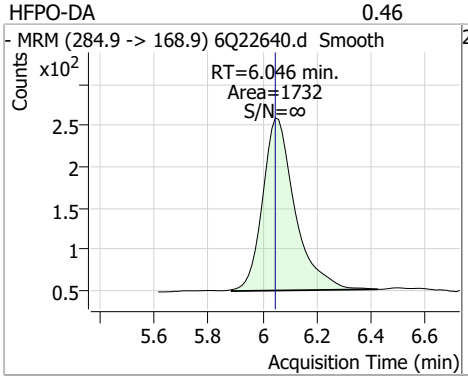


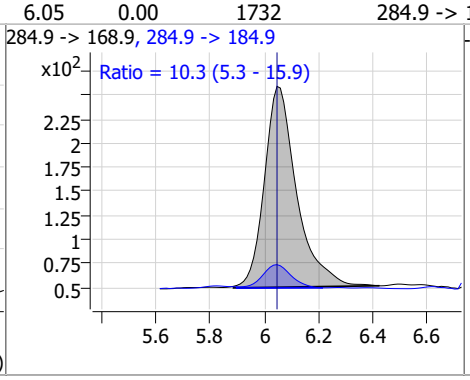


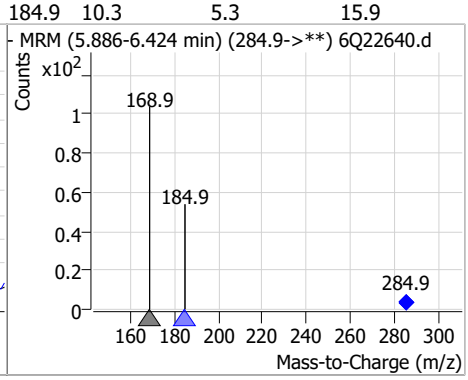


Perfluorinated Compounds by LC/MS/MS

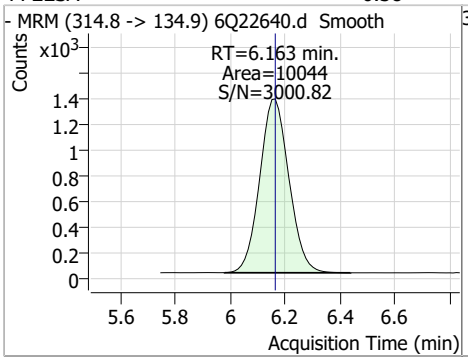
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.46	6.05	0.00	1732	284.9 -> 184.9	10.3	5.3	15.9

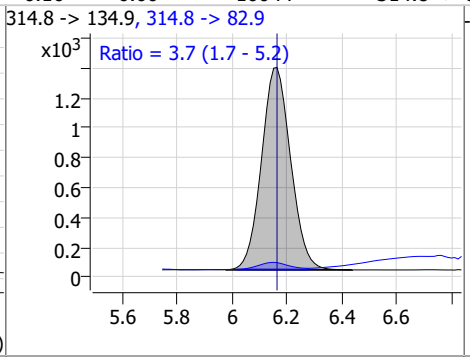


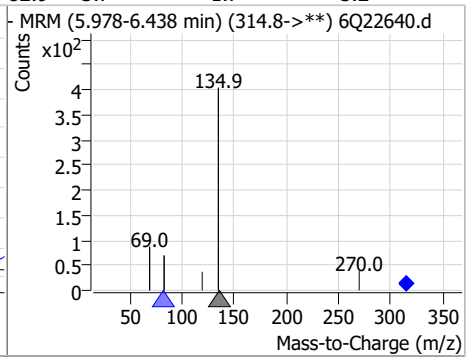




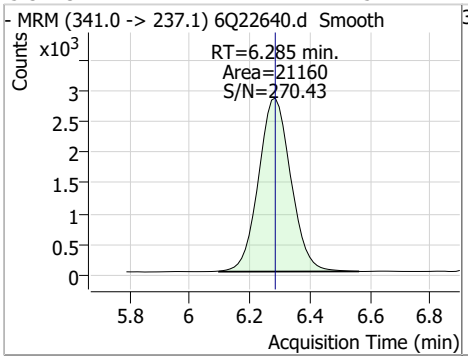
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.38	6.16	0.00	10044	314.8 -> 82.9	3.7	1.7	5.2

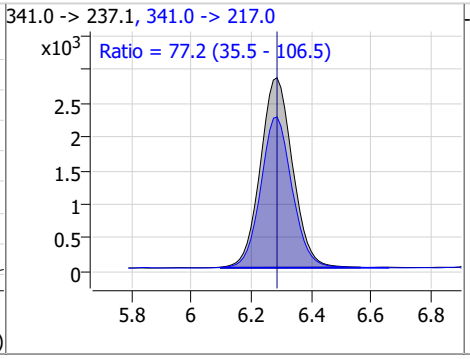


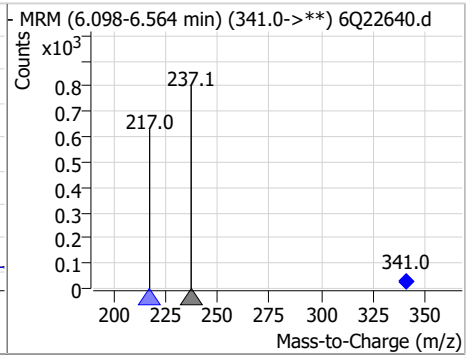




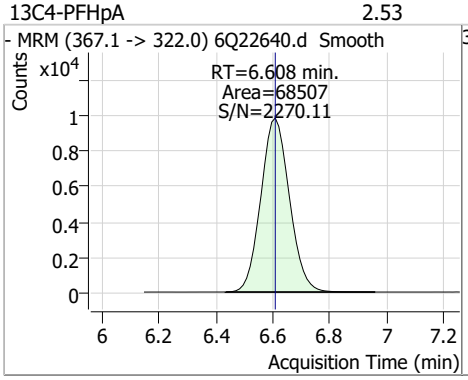
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.22	6.28	0.00	21160	341.0 -> 217.0	77.2	35.5	106.5

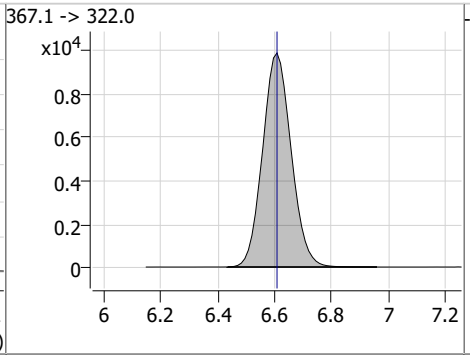


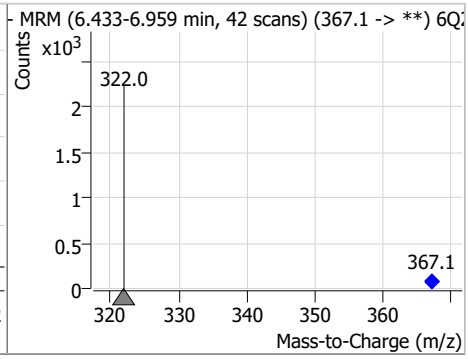




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.61	0.00	68507				

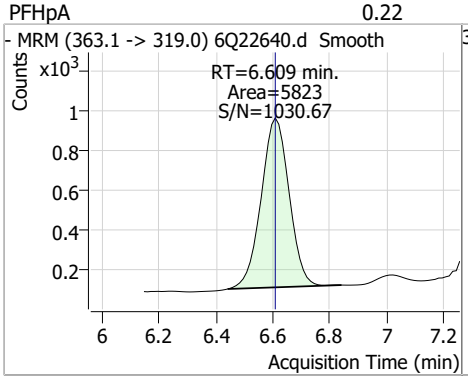


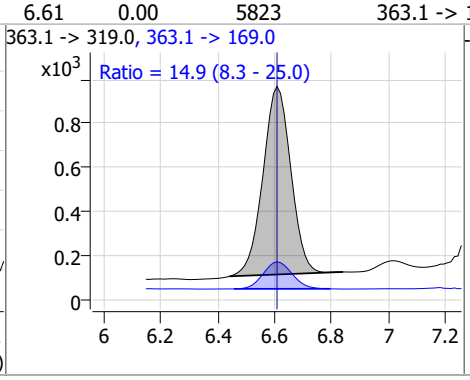


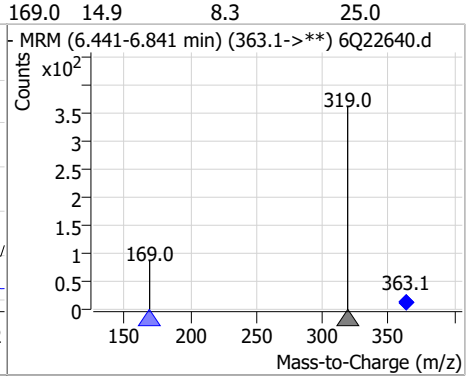


Perfluorinated Compounds by LC/MS/MS

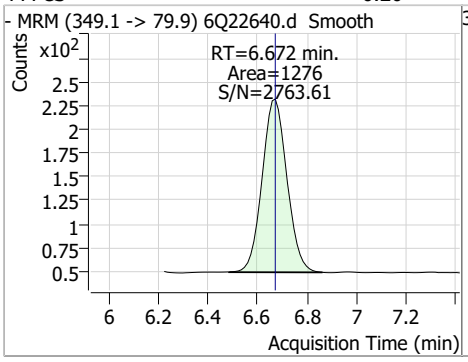
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.22	6.61	0.00	5823	363.1 -> 169.0	14.9	8.3	25.0

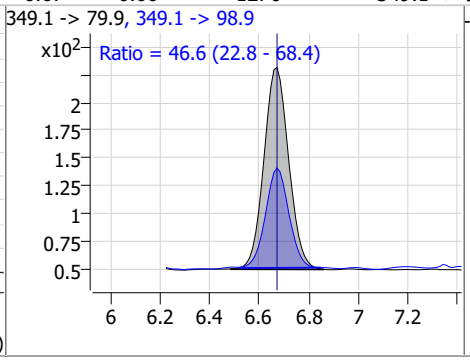


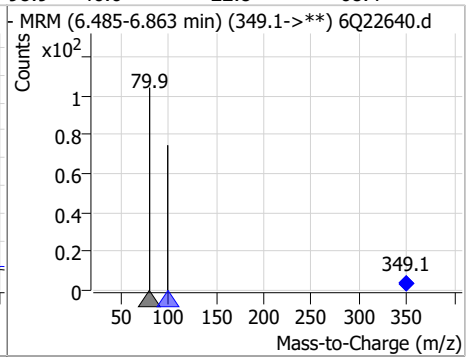




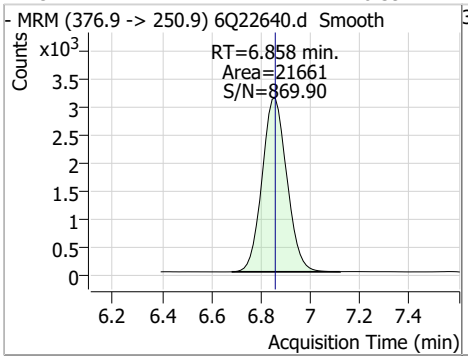
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.20	6.67	0.00	1276	349.1 -> 98.9	46.6	22.8	68.4

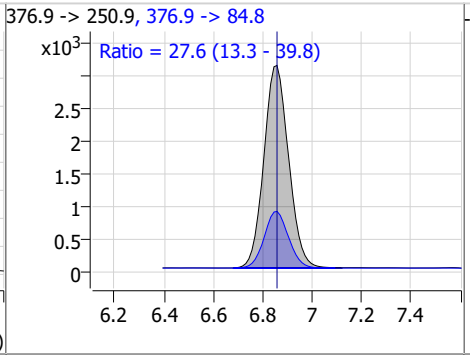


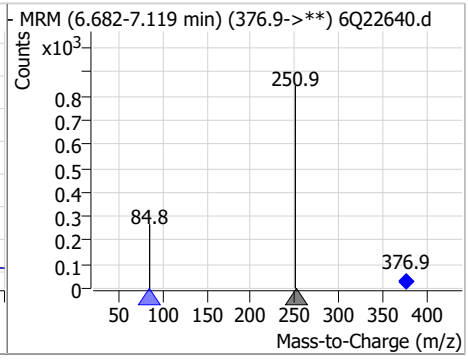




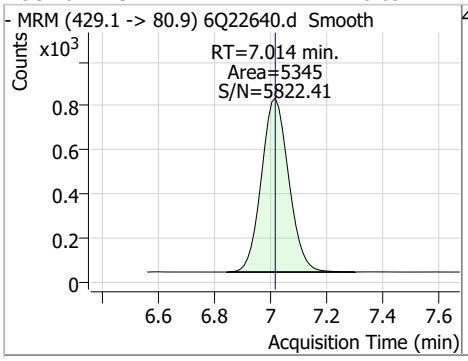
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.39	6.86	0.00	21661	376.9 -> 84.8	27.6	13.3	39.8

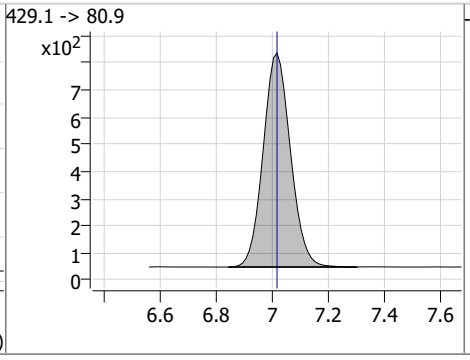


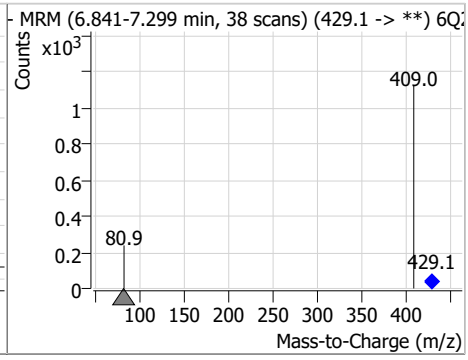




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.09	7.01	0.00	5345				

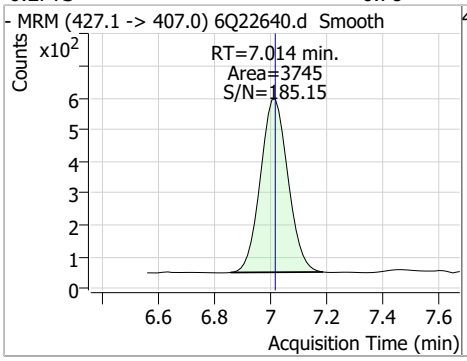


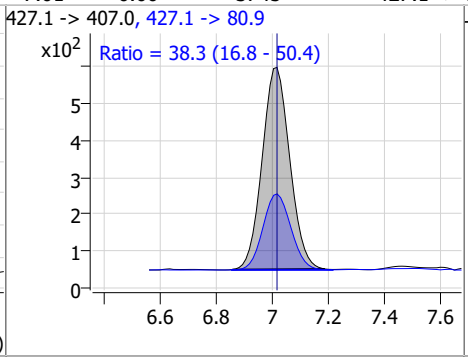


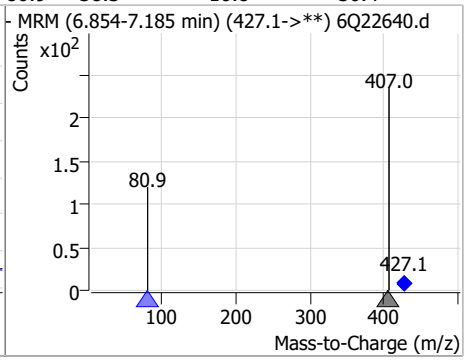


Perfluorinated Compounds by LC/MS/MS

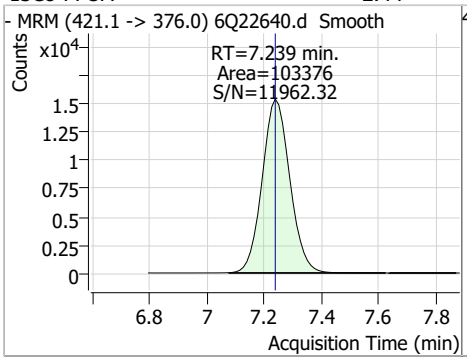
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.78	7.01	0.00	3745	427.1 -> 80.9	38.3	16.8	50.4

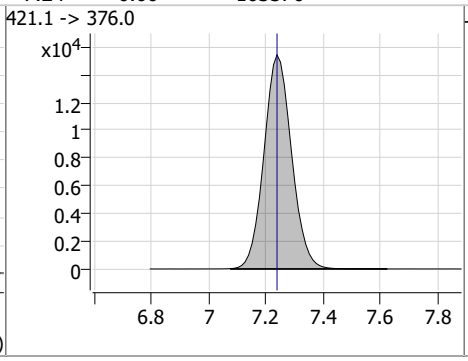


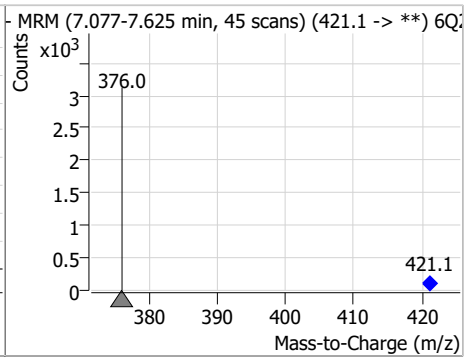




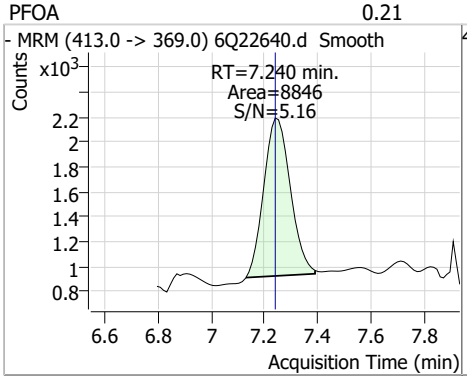
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	7.24	0.00	103376				

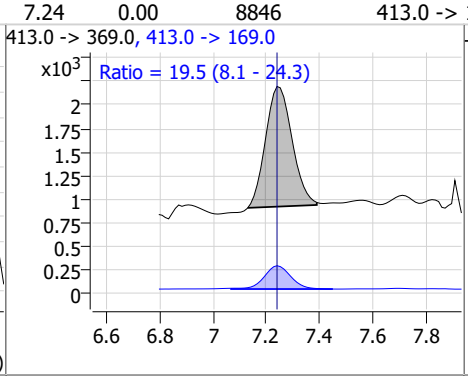


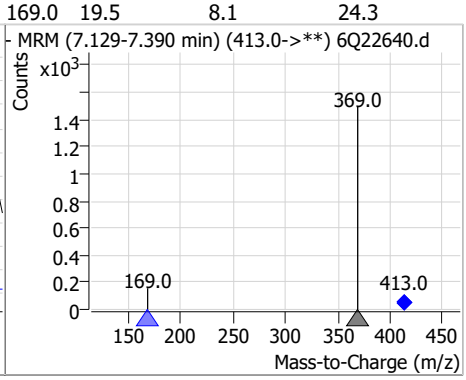




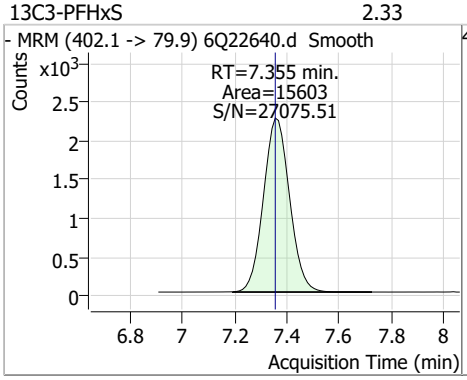
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.21	7.24	0.00	8846	413.0 -> 169.0	19.5	8.1	24.3

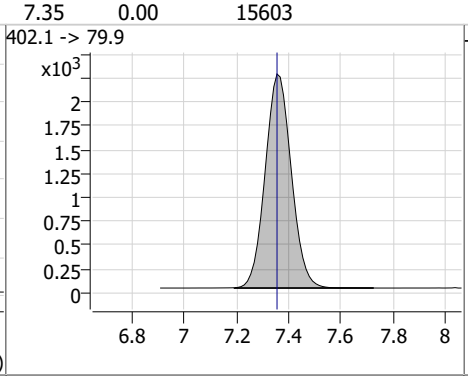


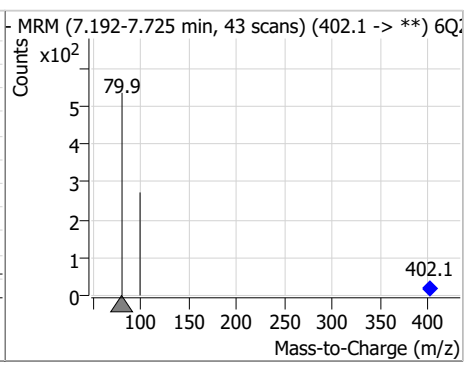




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.33	7.35	0.00	15603				

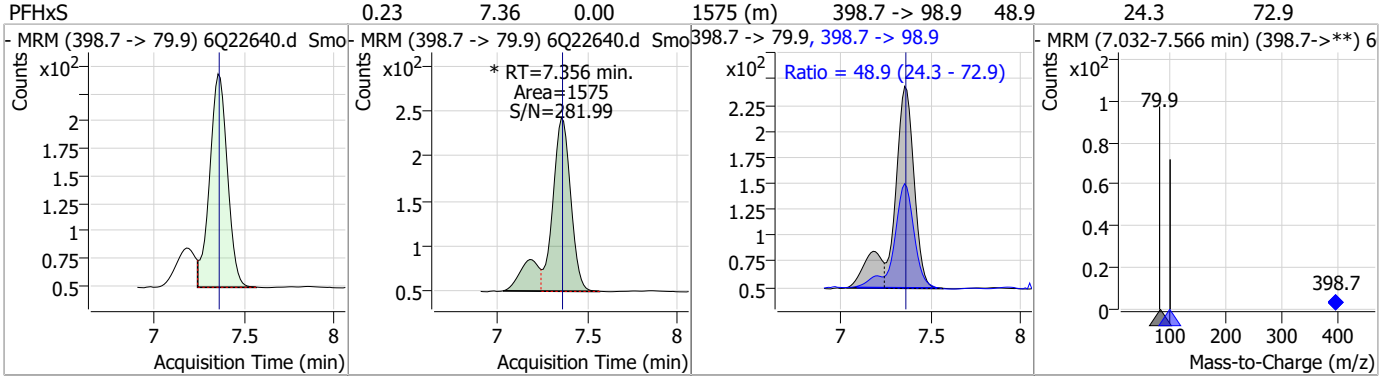




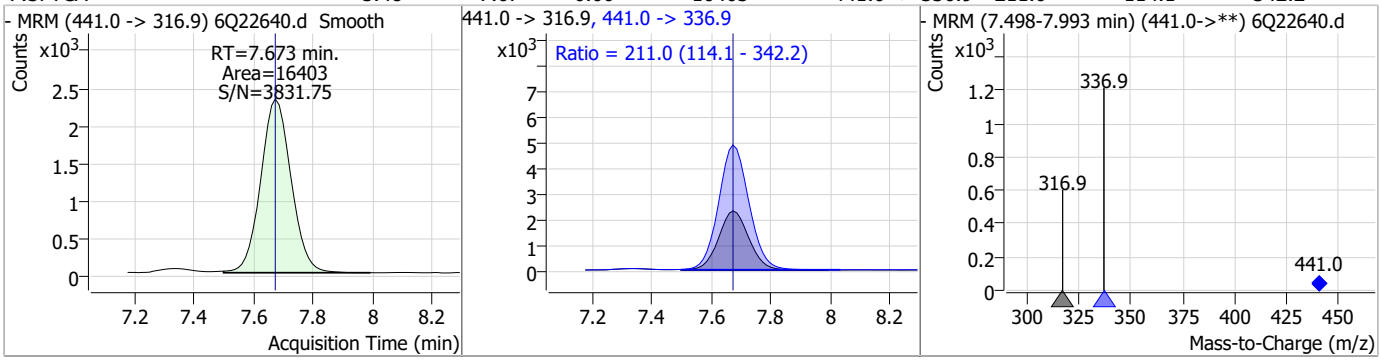


Perfluorinated Compounds by LC/MS/MS

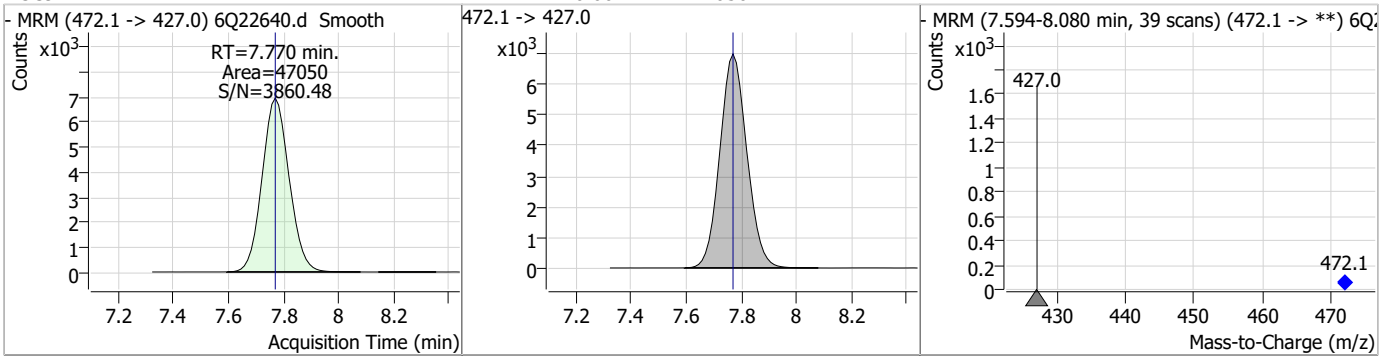
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.23	7.36	0.00	1575 (m)	398.7 -> 98.9	48.9	24.3	72.9



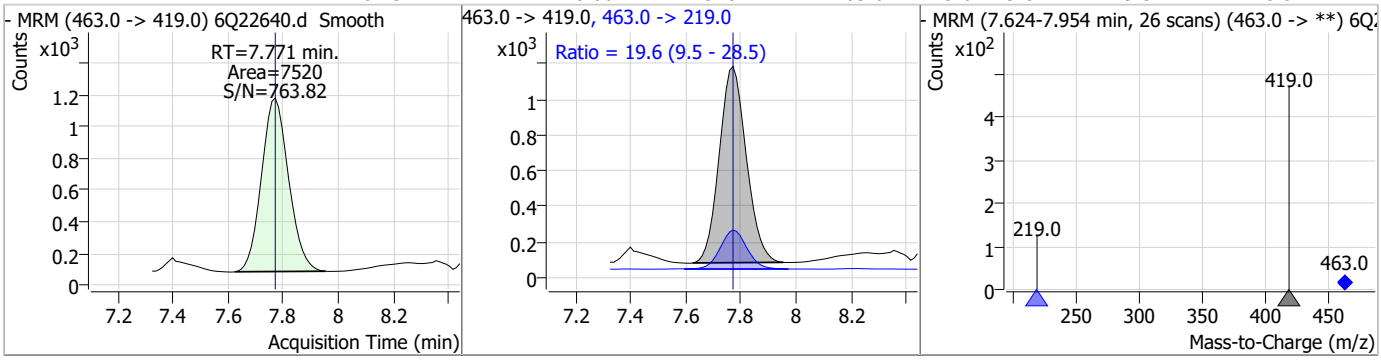
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	5.48	7.67	0.00	16403	441.0 -> 336.9	211.0	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.17	7.77	0.00	47050				

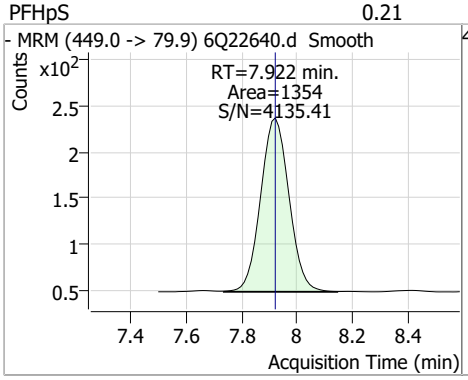


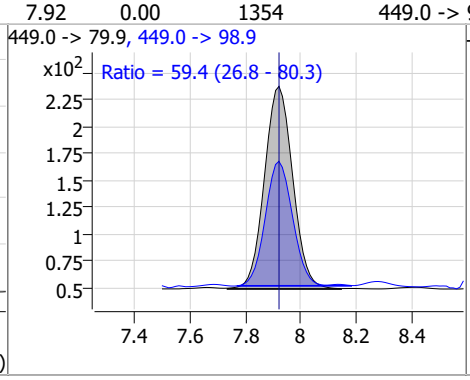
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.23	7.77	0.00	7520	463.0 -> 219.0	19.6	9.5	28.5

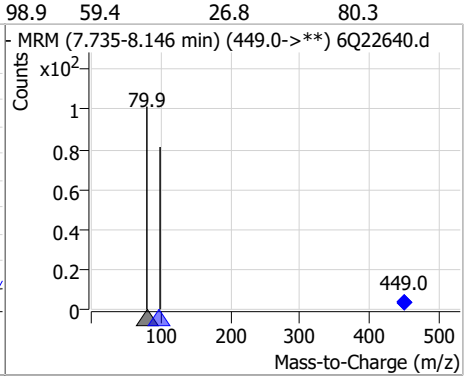


Perfluorinated Compounds by LC/MS/MS

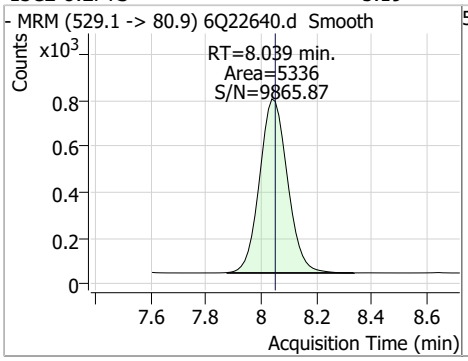
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.21	7.92	0.00	1354	449.0 -> 98.9	59.4	26.8	80.3

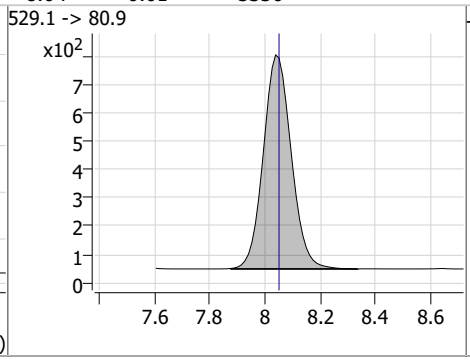


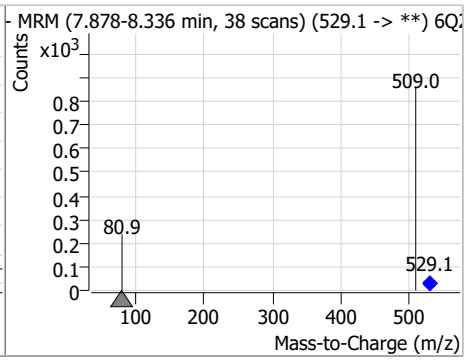




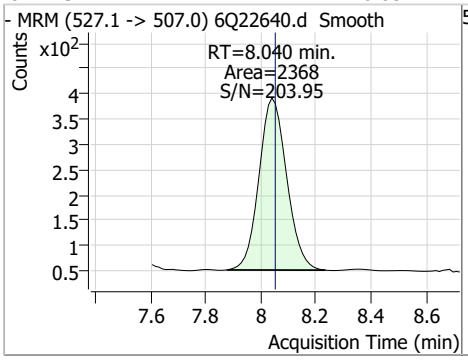
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.19	8.04	-0.01	5336				

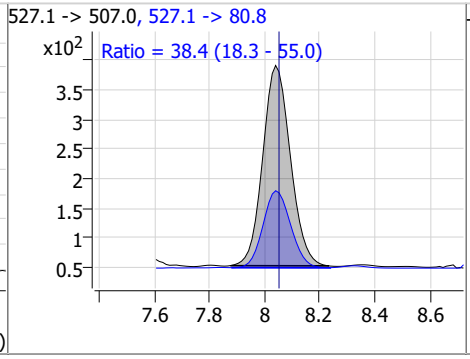


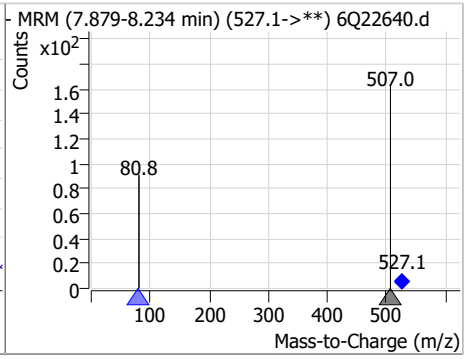




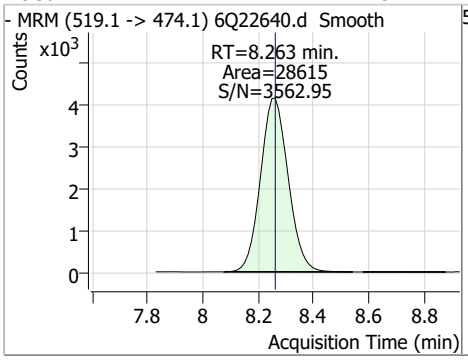
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.83	8.04	-0.01	2368	527.1 -> 80.8	38.4	18.3	55.0

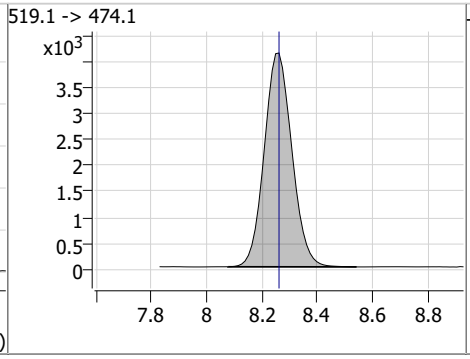


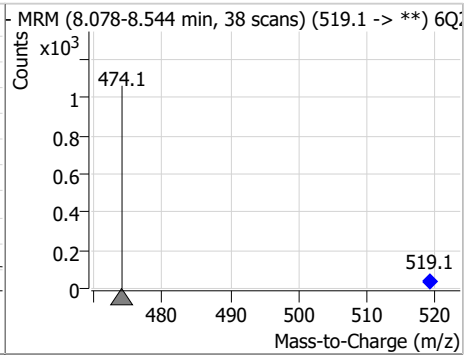




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	8.26	0.00	28615				

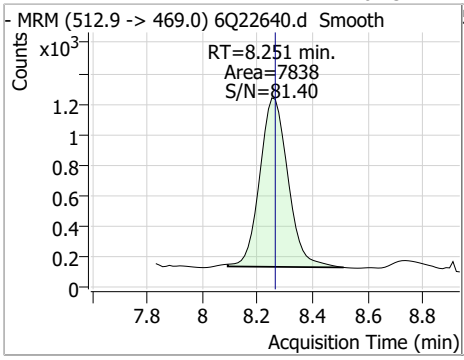


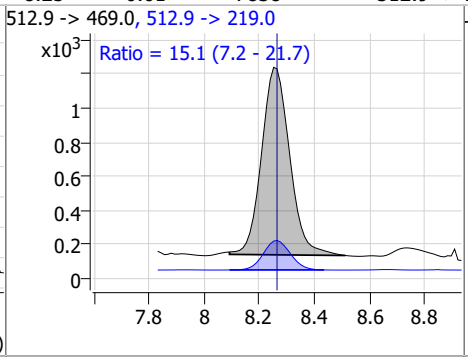


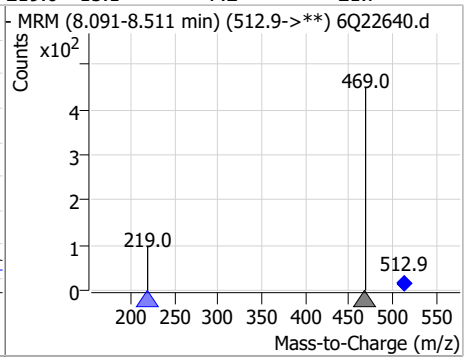


Perfluorinated Compounds by LC/MS/MS

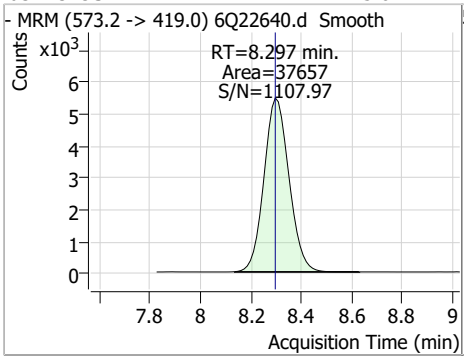
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.23	8.25	-0.01	7838	512.9 -> 219.0	15.1	7.2	21.7

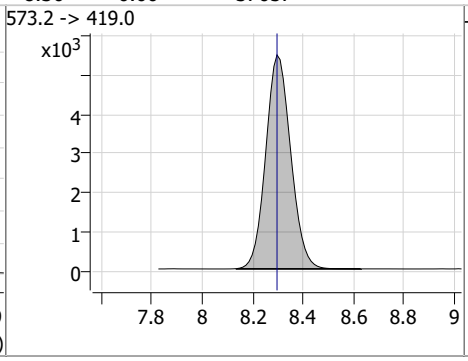


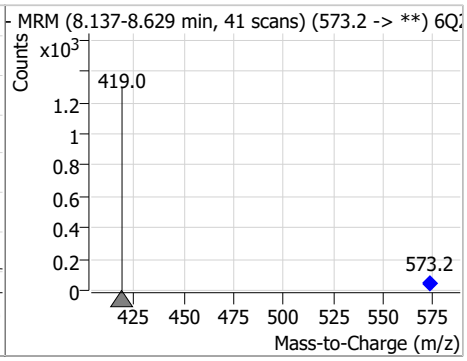




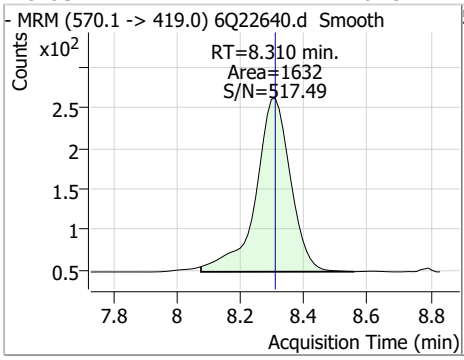
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.64	8.30	0.00	37657				

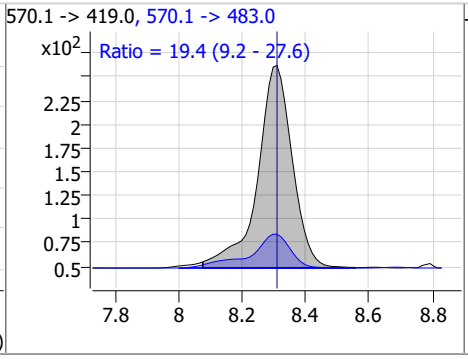


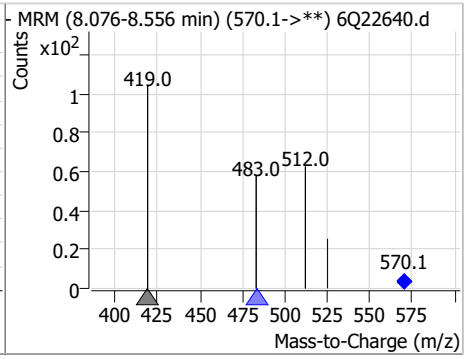




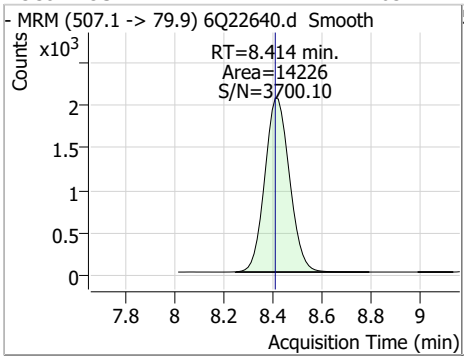
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.23	8.31	0.00	1632	570.1 -> 483.0	19.4	9.2	27.6

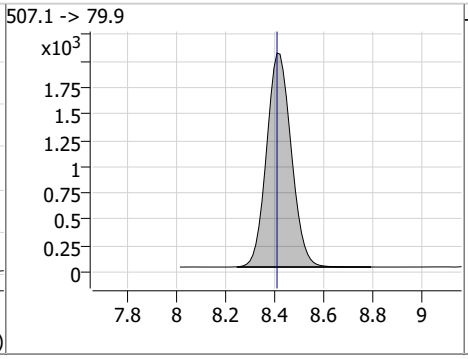


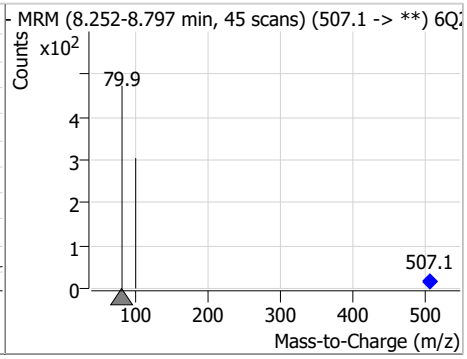




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.63	8.41	0.00	14226				

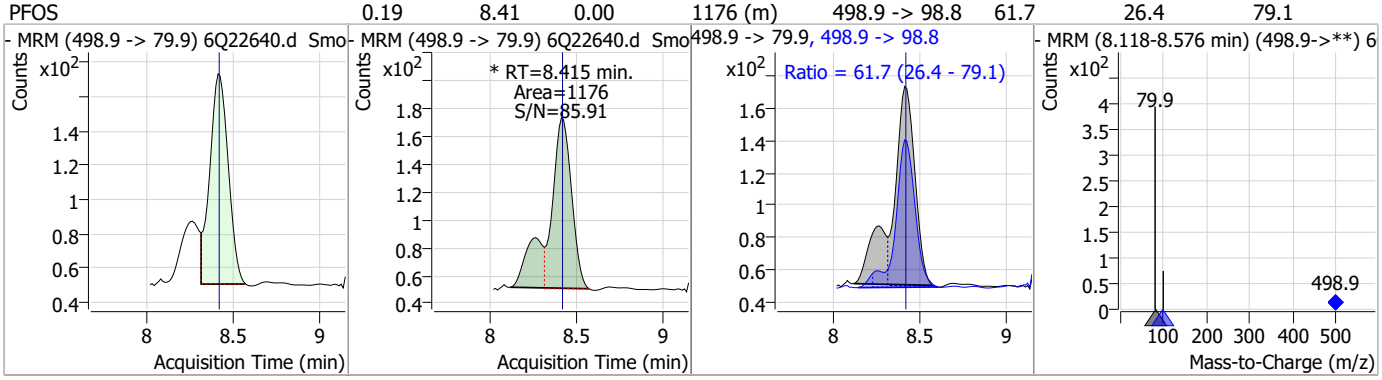




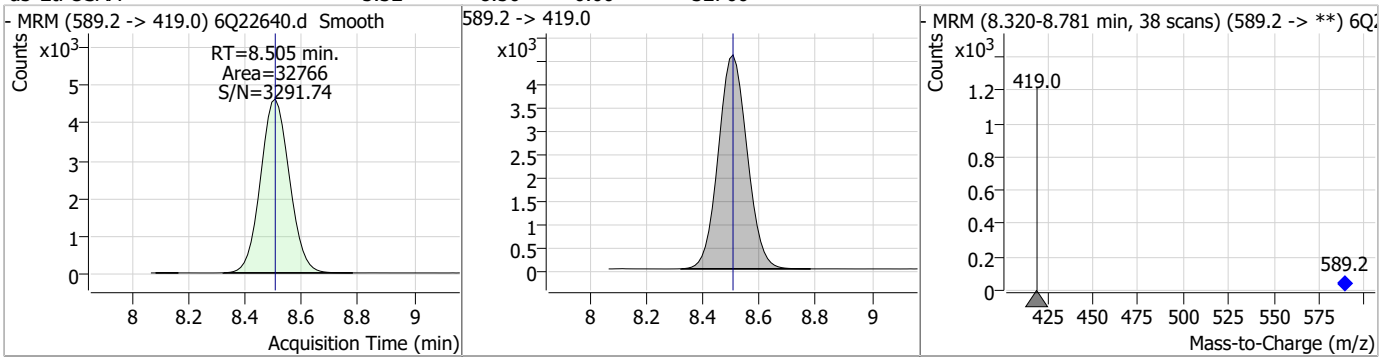


Perfluorinated Compounds by LC/MS/MS

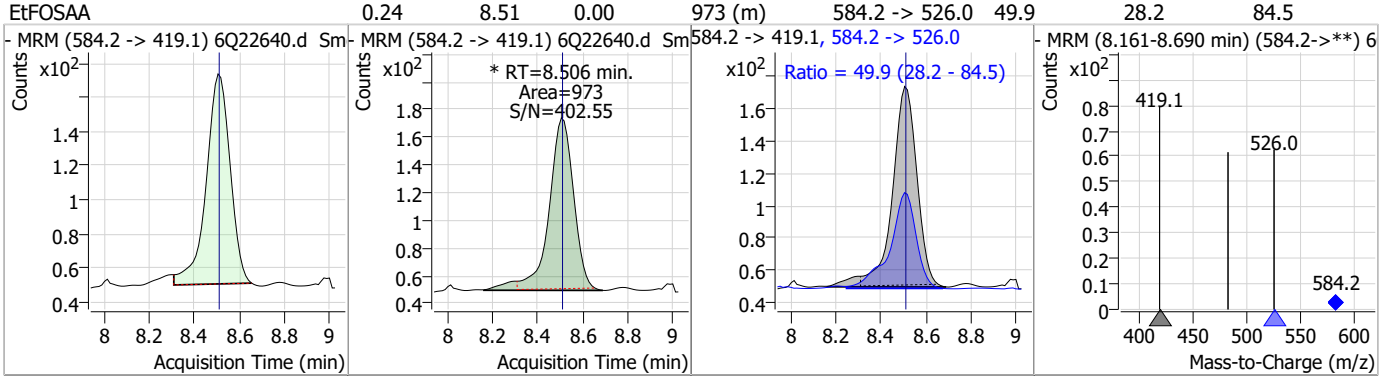
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.41	0.00	1176 (m)	498.9 -> 98.8	61.7	26.4	79.1



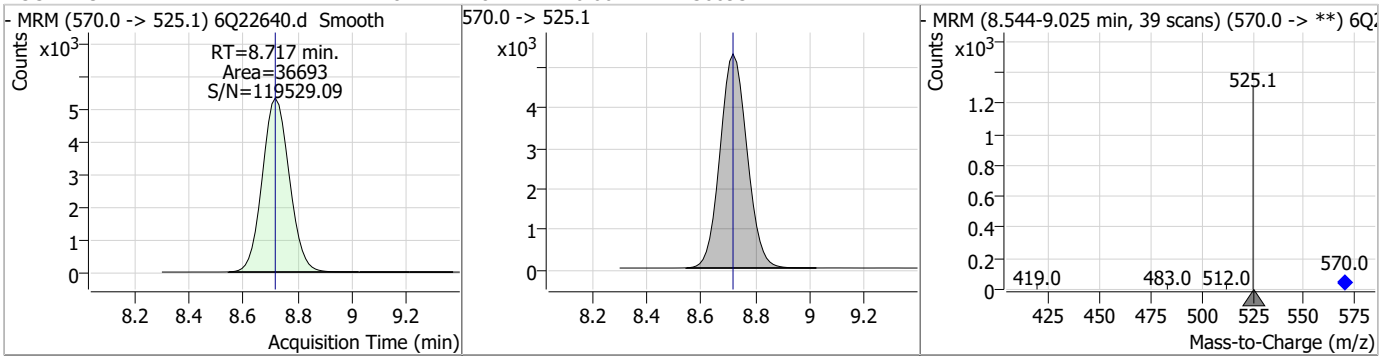
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.32	8.50	0.00	32766				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.24	8.51	0.00	973 (m)	584.2 -> 526.0	49.9	28.2	84.5

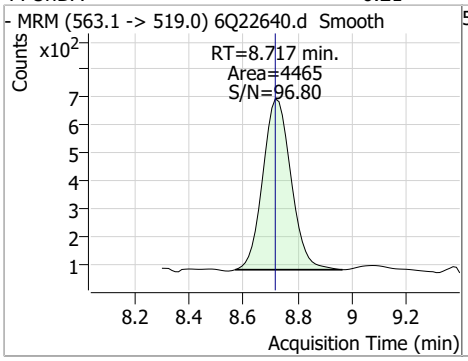


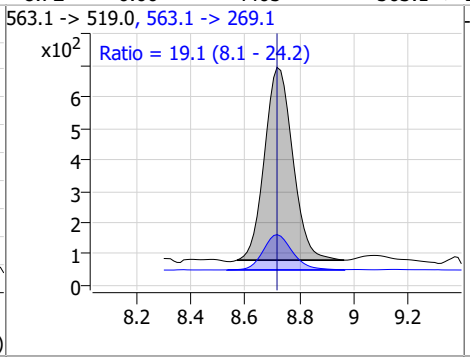
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.72	0.00	36693				

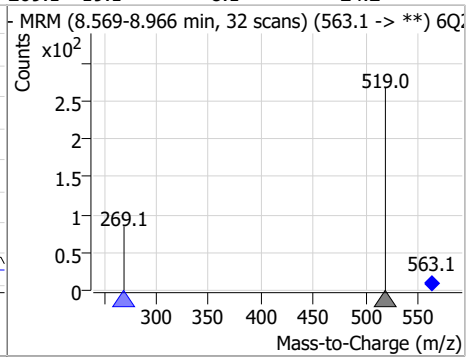


Perfluorinated Compounds by LC/MS/MS

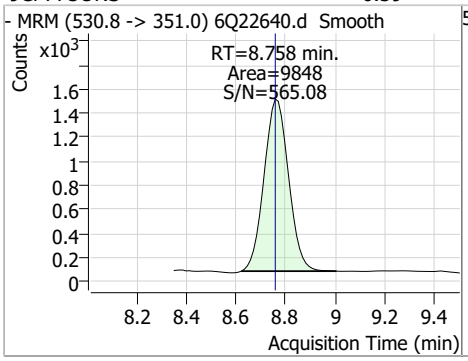
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.21	8.72	0.00	4465	563.1 -> 269.1	19.1	8.1	24.2

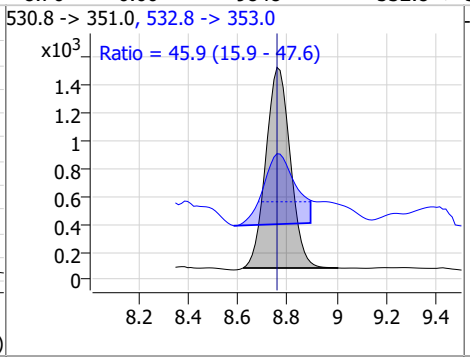


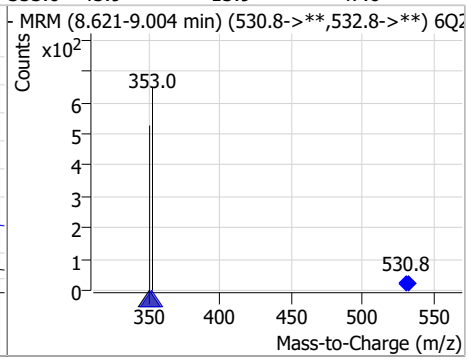




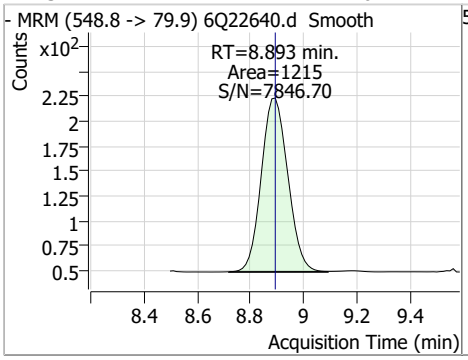
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.39	8.76	0.00	9848	532.8 -> 353.0	45.9	15.9	47.6

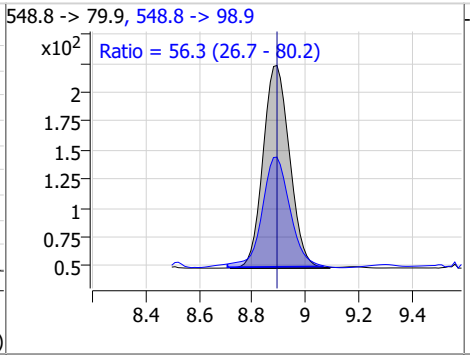


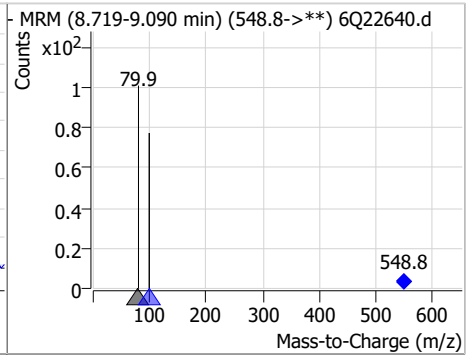




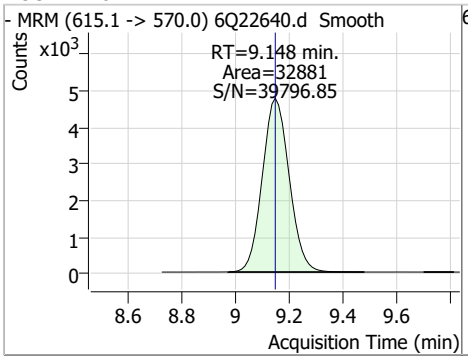
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.21	8.89	0.00	1215	548.8 -> 98.9	56.3	26.7	80.2

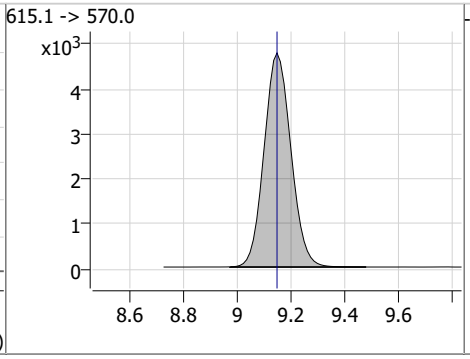


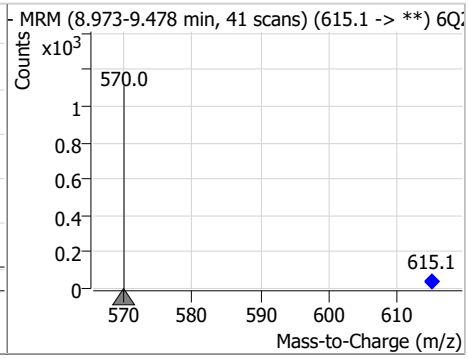




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.15	0.00	32881				

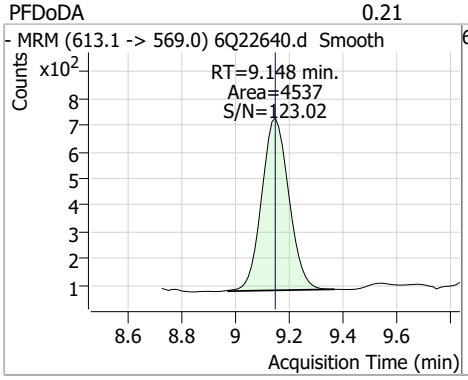


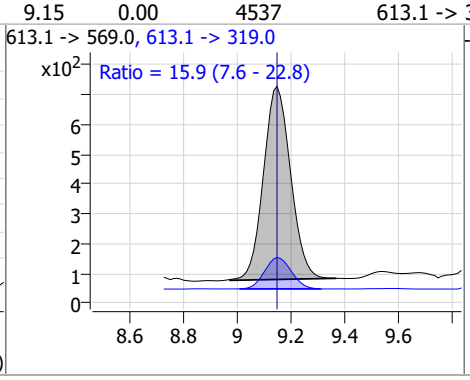


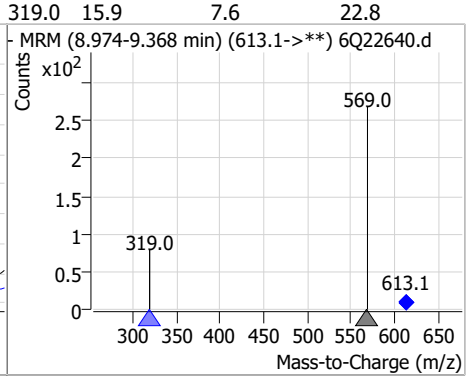


Perfluorinated Compounds by LC/MS/MS

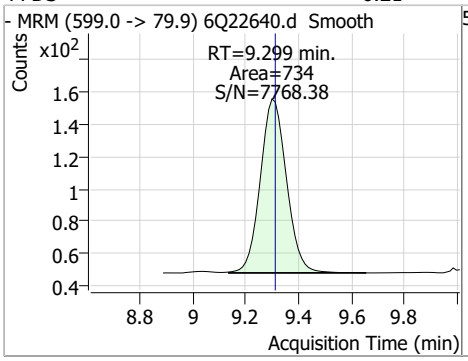
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.21	9.15	0.00	4537	613.1 -> 319.0	15.9	7.6	22.8

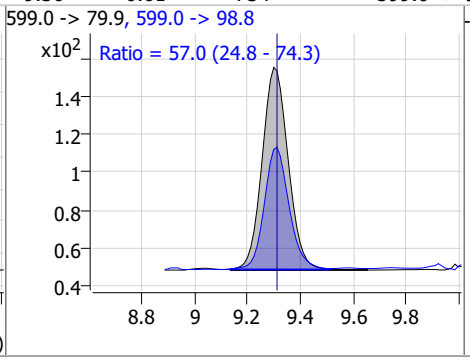


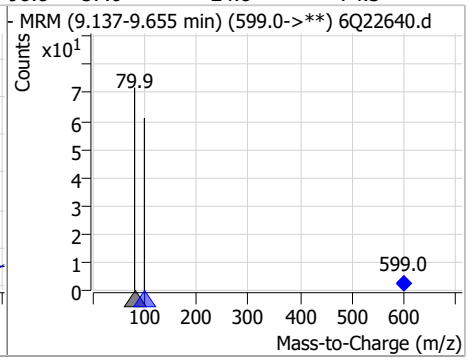




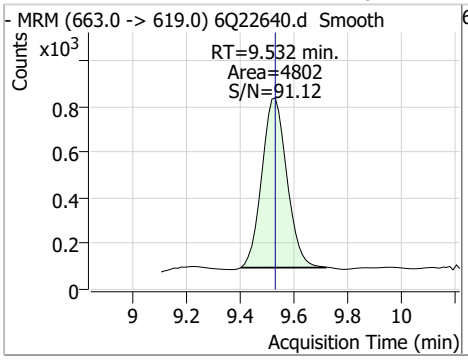
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.21	9.30	-0.01	734	599.0 -> 98.8	57.0	24.8	74.3

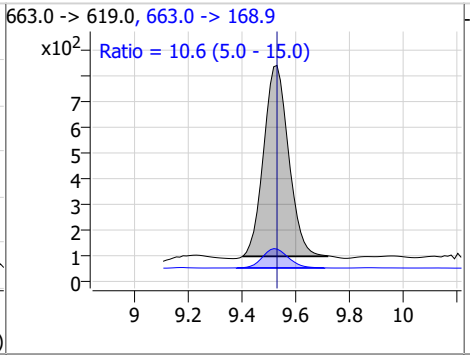


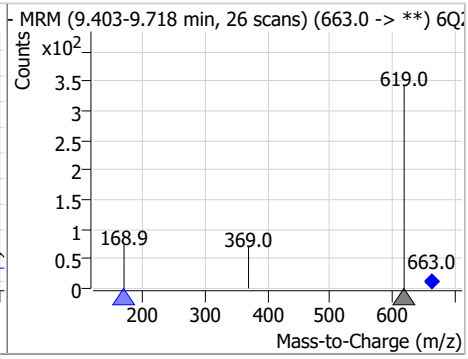




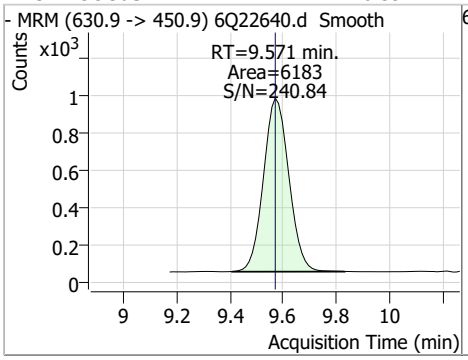
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.22	9.53	0.00	4802	663.0 -> 168.9	10.6	5.0	15.0

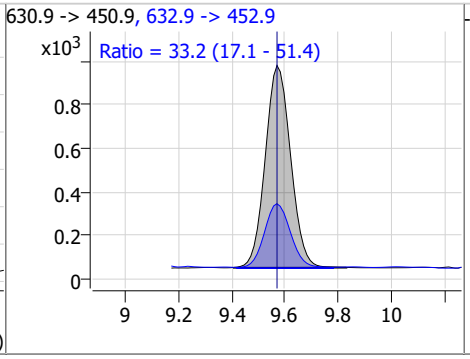


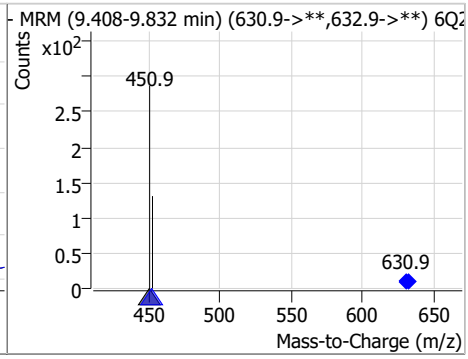




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.39	9.57	0.00	6183	632.9 -> 452.9	33.2	17.1	51.4

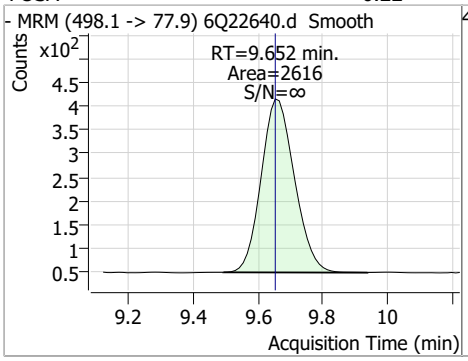


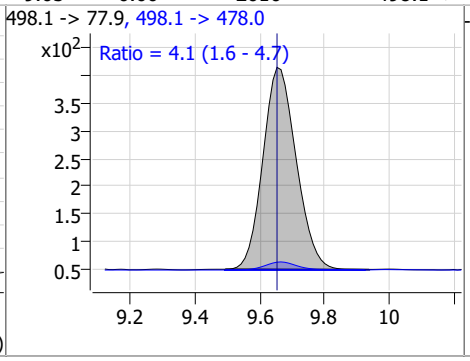


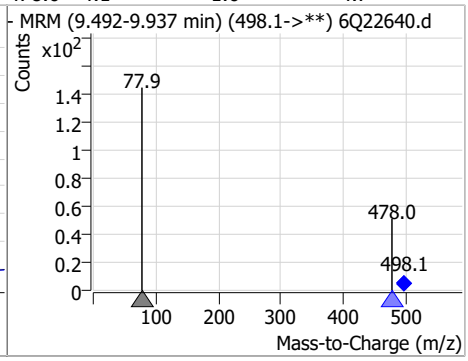


Perfluorinated Compounds by LC/MS/MS

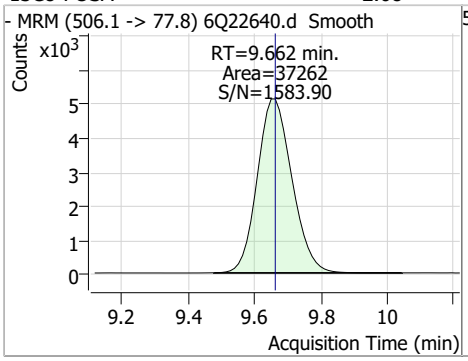
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.22	9.65	0.00	2616	498.1 -> 478.0	4.1	1.6	4.7

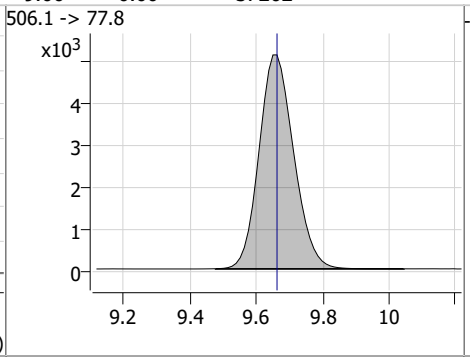


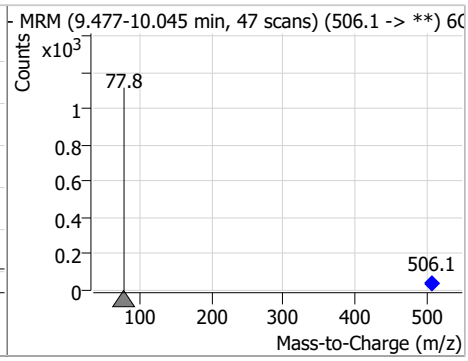




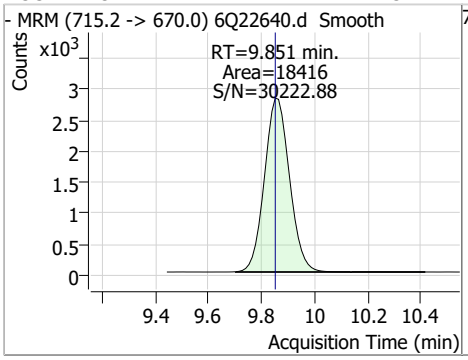
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.68	9.66	0.00	37262				

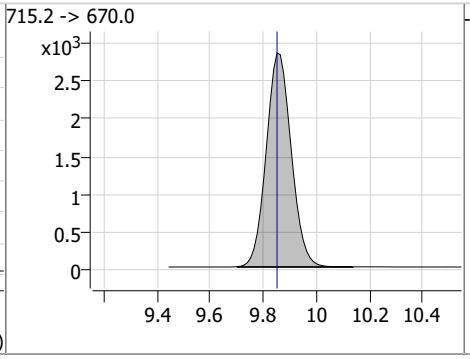


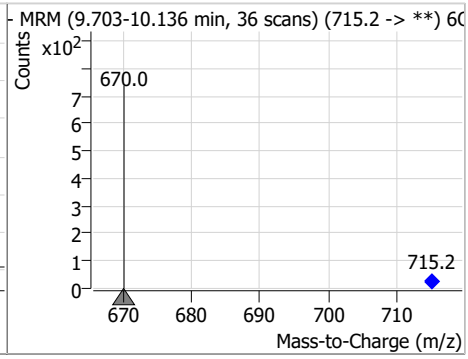




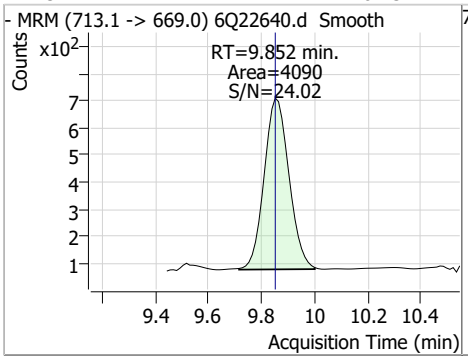
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.85	0.00	18416				

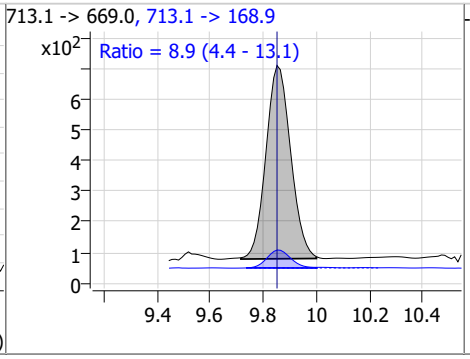


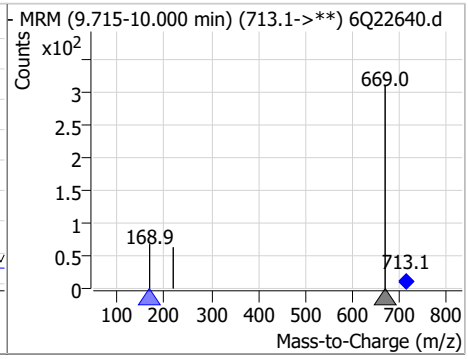




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.23	9.85	0.00	4090	713.1 -> 168.9	8.9	4.4	13.1

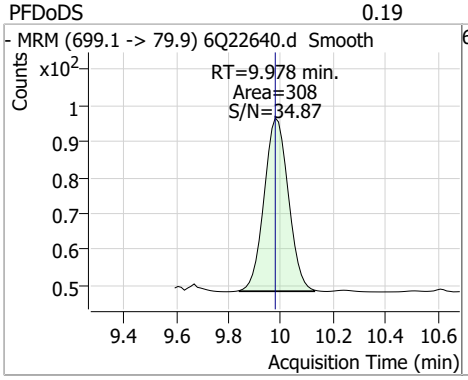


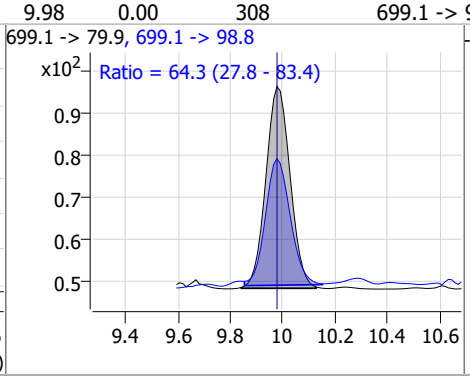


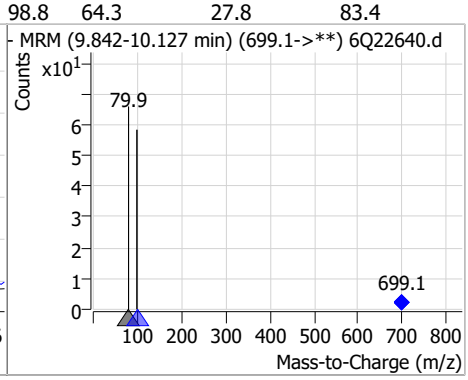


Perfluorinated Compounds by LC/MS/MS

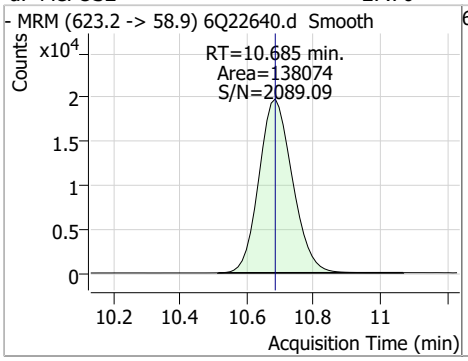
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.19	9.98	0.00	308	699.1 -> 98.8	64.3	27.8	83.4

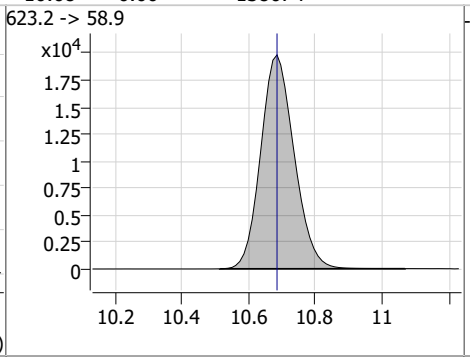


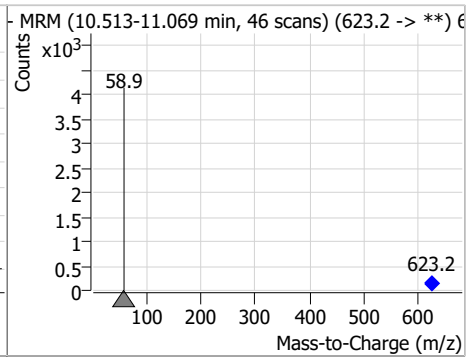




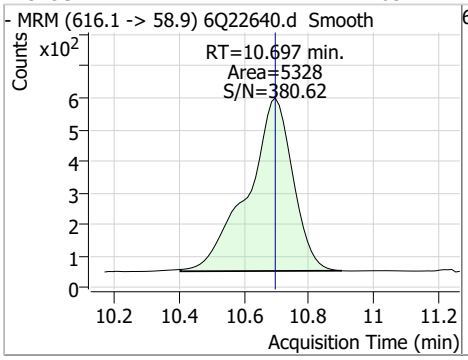
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.70	10.68	0.00	138074				

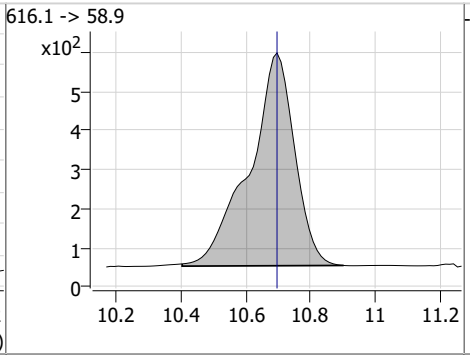


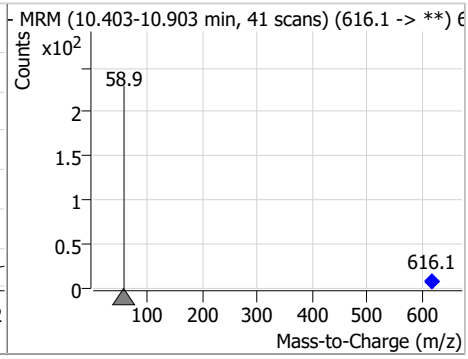




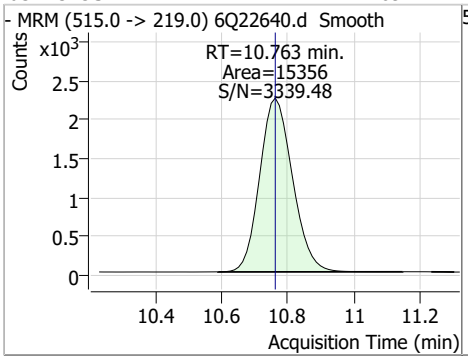
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.03	10.70	0.00	5328				

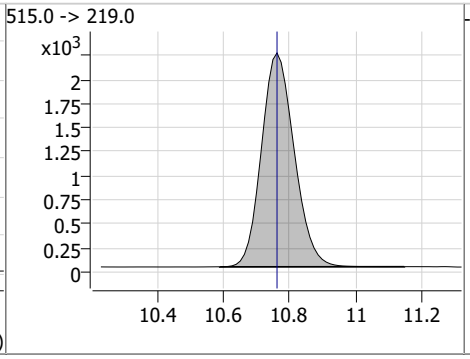


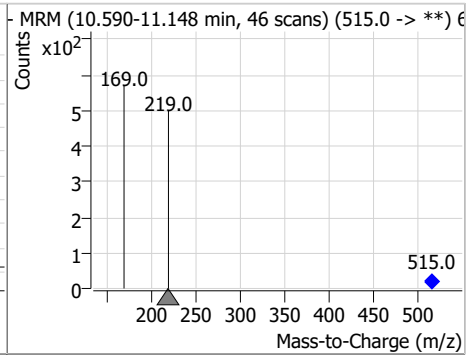




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.69	10.76	0.00	15356				

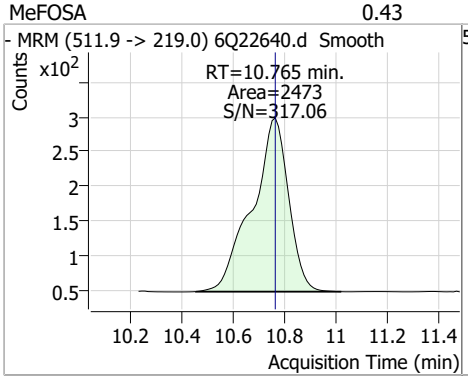


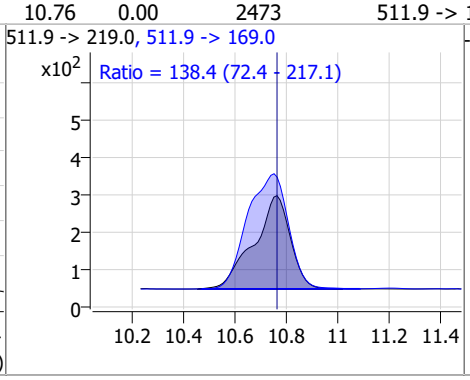


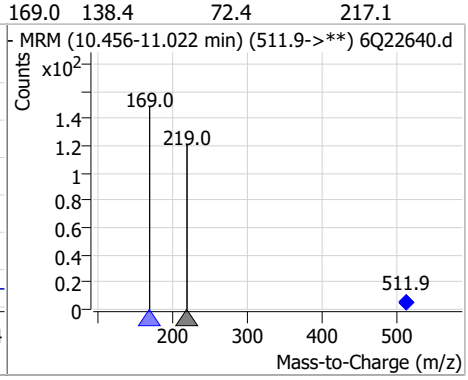


Perfluorinated Compounds by LC/MS/MS

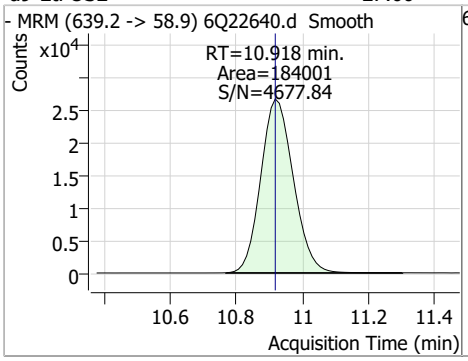
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.43	10.76	0.00	2473	511.9 -> 169.0	138.4	72.4	217.1

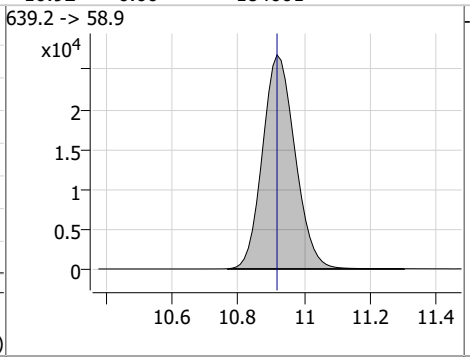


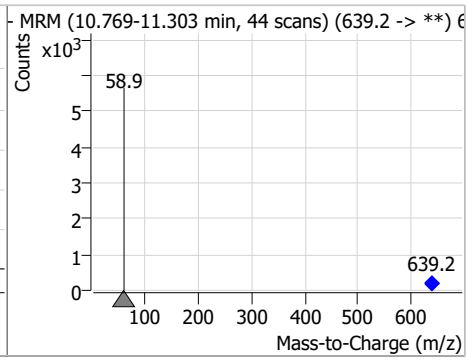




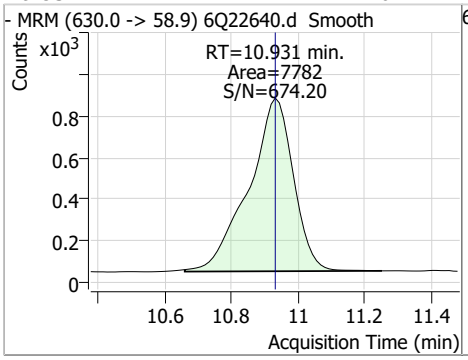
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.66	10.92	0.00	184001				

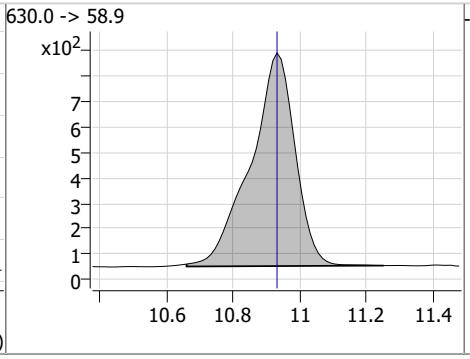


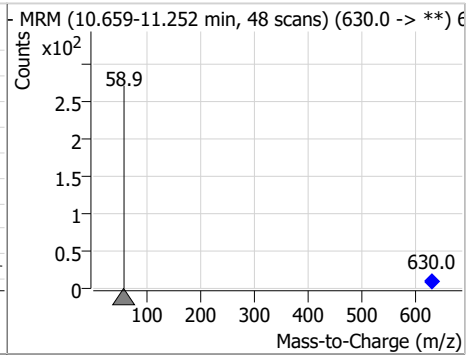




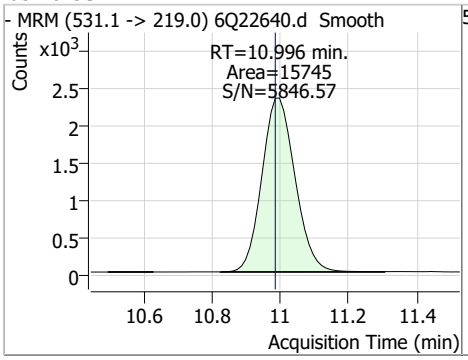
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.04	10.93	0.00	7782				

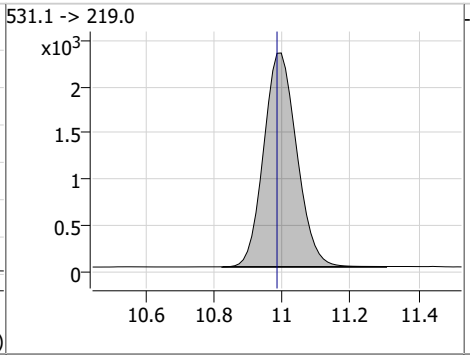


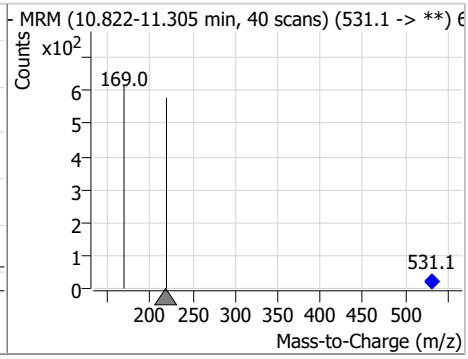




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.74	11.00	0.01	15745				

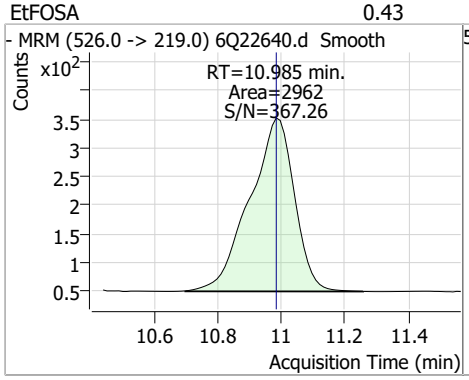


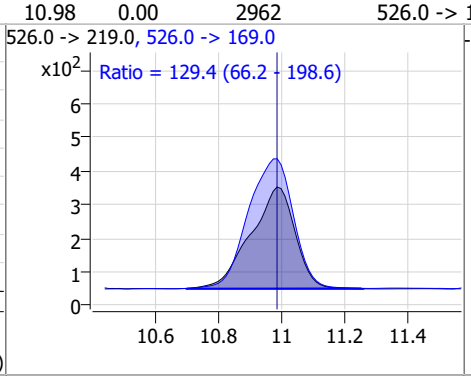


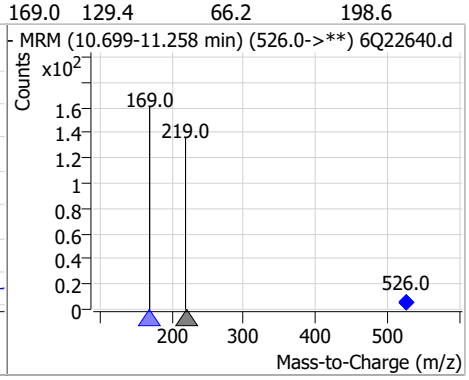


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.43	10.98	0.00	2962	526.0 -> 169.0	129.4	66.2	198.6







7.7.17

7

Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22640.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 13:37	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak
EtFOSAA	2991-50-6		8.51	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22641.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 1:52:03 PM
Sample Name : ic330-2
Vial : P1-A3
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	202589	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	64996	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	69493	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	69506	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	111078	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	50908	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	28442	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	39419	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	36234	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	19378	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	39201	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	26408	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	16369	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14463	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3687	5.00	µg/L	0.012
M2-6:2FTS	7.001	429.1 -> 80.9	5369	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	5062	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	36391	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	43313	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	35903	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	141565	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	182251	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15338	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15394	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	21278	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	86144	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	12509	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	115967	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	40996	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	64485	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	67841	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3687	4.93	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C2-6:2FTS	7.001	429.1 -> 80.9	5369	4.98	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5062	4.79	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-PFDoDA	9.148	615.1 -> 570.0	36234	1.31	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C2-PFTeDA	9.863	715.2 -> 670.0	19378	1.22	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C3-PFBS	5.610	302.1 -> 79.9	26408	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C3-PFHxS	7.355	402.1 -> 79.9	16369	2.38	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 = 95.2%	
13C4-PFBA	3.010	216.8 -> 171.9	202589	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.608	367.1 -> 322.0	69506	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFHxA	5.668	318.0 -> 273.0	69493	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFPeA	4.447	268.3 -> 223.0	64996	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.250	519.1 -> 474.1	28442	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C7-PFUnDA	8.717	570.0 -> 525.1	39419	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-FOSA	9.662	506.1 -> 77.8	39201	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.239	421.1 -> 376.0	111078	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-PFOS	8.414	507.1 -> 79.9	14463	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C9-PFNA	7.770	472.1 -> 427.0	50908	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.297	573.2 -> 419.0	36391	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	43313	9.87 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	15394	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.492	589.2 -> 419.0	35903	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	141565	24.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	182251	23.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	15338	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
Target Compounds					QValue
4:2FTS	5.331	327.1 -> 307.0	7901	1.66 µg/L	98
		327.1 -> 80.9	2999		
6:2FTS	7.002	427.1 -> 407.0	7968	1.66 µg/L	100
		427.1 -> 80.9	2687		
8:2FTS	8.040	527.1 -> 507.0	4867	1.80 µg/L	97
		527.1 -> 80.8	1883		
EtFOSAA	8.506	584.2 -> 419.1	1778	0.39 µg/L	86
		584.2 -> 526.0	815		
FOSA	9.652	498.1 -> 77.9	4959	0.40 µg/L	100
		498.1 -> 478.0	165		
MeFOSAA	8.298	570.1 -> 419.0	3078	0.44 µg/L	99
		570.1 -> 483.0	556		
PFBA	3.006	212.8 -> 168.9	10330	1.63 µg/L	100
PFBS	5.611	298.7 -> 79.9	3048	0.35 µg/L	100
		298.7 -> 98.8	1131		
PFDA	8.251	512.9 -> 469.0	13727	0.41 µg/L	97
		512.9 -> 219.0	2148		
PFDoDA	9.148	613.1 -> 569.0	9528	0.40 µg/L	98
		613.1 -> 319.0	1374		
PFDS	9.299	599.0 -> 79.9	1503	0.43 µg/L	97

Perfluorinated Compounds by LC/MS/MS

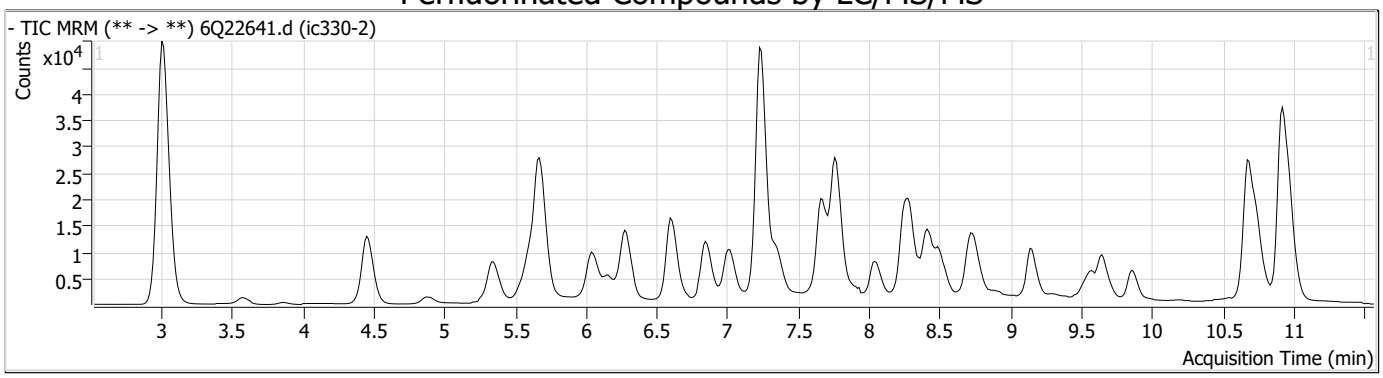
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	711				
PFHpA	6.609	363.1 -> 319.0	11397	0.42	µg/L		97
		363.1 -> 169.0	1749				
PFHpS	7.909	449.0 -> 79.9	2484	0.38	µg/L		100
		449.0 -> 98.9	1335				
PFHxA	5.670	313.0 -> 269.0	8248	0.41	µg/L		100
		313.0 -> 118.9	445				
PFHxS	7.356	398.7 -> 79.9	2881	0.40	µg/L	m	96
		398.7 -> 98.9	1329				
PFNA	7.771	463.0 -> 419.0	13490	0.39	µg/L		99
		463.0 -> 219.0	2606				
PFNS	8.893	548.8 -> 79.9	2279	0.38	µg/L		91
		548.8 -> 98.9	1368				
PFOA	7.240	413.0 -> 369.0	17496	0.39	µg/L		95
		413.0 -> 169.0	3244				
PFOS	8.427	498.9 -> 79.9	2414	0.39	µg/L	m	97
		498.9 -> 98.8	1219				
PFPeA	4.449	263.0 -> 219.0	11621	0.81	µg/L		100
PFPeS	6.660	349.1 -> 79.9	2480	0.37	µg/L		91
		349.1 -> 98.9	1276				
PFTeDA	9.864	713.1 -> 669.0	7674	0.41	µg/L		98
		713.1 -> 168.9	712				
PFTrDA	9.532	663.0 -> 619.0	9548	0.39	µg/L		98
		663.0 -> 168.9	1014				
PFUnDA	8.717	563.1 -> 519.0	8836	0.39	µg/L		99
		563.1 -> 269.1	1477				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	12506	0.81	µg/L		97
		632.9 -> 452.9	4046				
9Cl-PF3ONS	8.758	530.8 -> 351.0	19636	0.79	µg/L		91
		532.8 -> 353.0	7219				
ADONA	6.846	376.9 -> 250.9	43294	0.78	µg/L		97
		376.9 -> 84.8	12166				
HFPO-DA	6.046	284.9 -> 168.9	3440	0.93	µg/L		98
		284.9 -> 184.9	335				
3:3FTCA	3.859	241.0 -> 177.0	1999	2.00	µg/L		99
		241.0 -> 117.0	263				
5:3FTCA	6.272	341.0 -> 237.1	43636	10.44	µg/L		98
		341.0 -> 217.0	31717				
7:3FTCA	7.673	441.0 -> 316.9	32854	10.62	µg/L		90
		441.0 -> 336.9	69266				
EtFOSA	10.985	526.0 -> 219.0	5803	0.86	µg/L		99
		526.0 -> 169.0	7592				
EtFOSE	10.931	630.0 -> 58.9	14869	2.01	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	4766	0.84	µg/L		97
		511.9 -> 169.0	6747				
MeFOSE	10.697	616.1 -> 58.9	10204	1.93	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	642	0.40	µg/L		89
		699.1 -> 98.8	407				
NFDHA	5.551	295.0 -> 201.0	2330	0.90	µg/L		96
		295.0 -> 84.9	618				
PFMBA	4.869	279.0 -> 85.1	8212	0.81	µg/L		100
PFMPA	3.576	229.0 -> 84.9	6619	0.82	µg/L		100
PFEESA	6.163	314.8 -> 134.9	19530	0.72	µg/L		99
		314.8 -> 82.9	720				

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

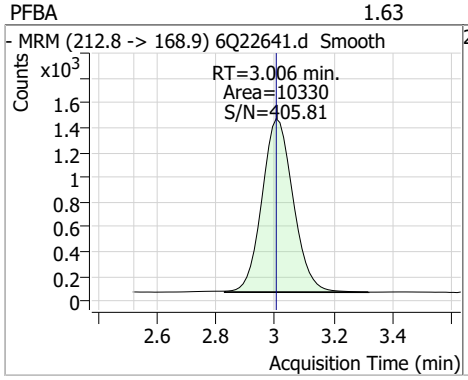
Perfluorinated Compounds by LC/MS/MS

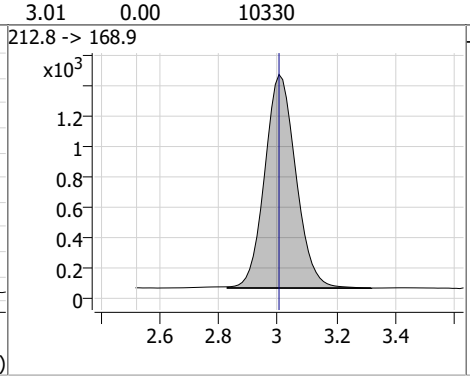
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

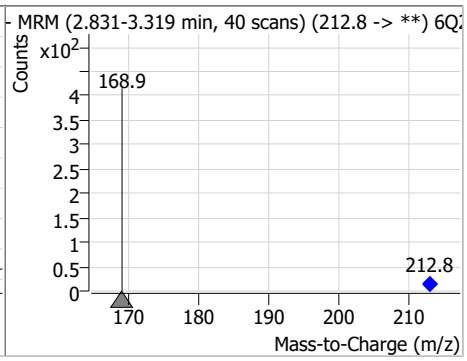
Perfluorinated Compounds by LC/MS/MS



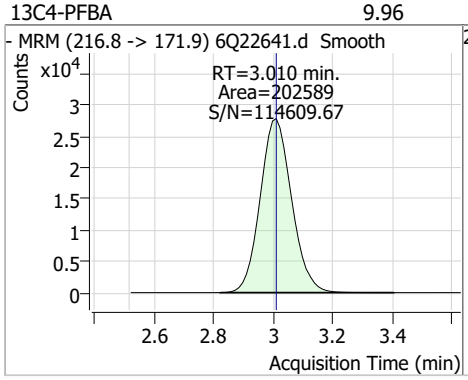
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.63	3.01	0.00	10330				

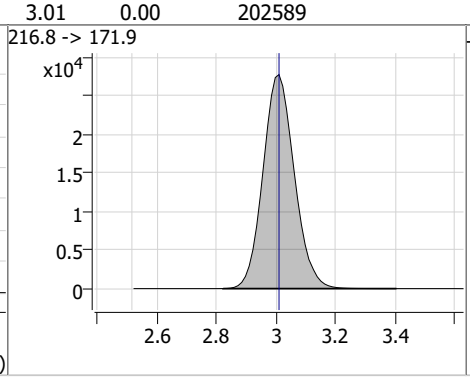


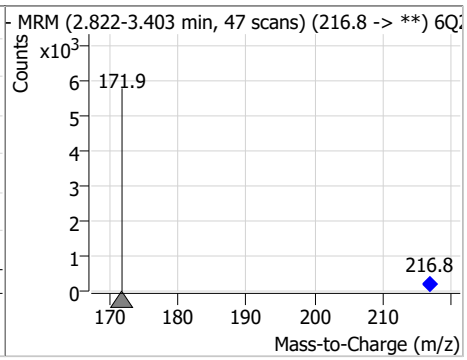




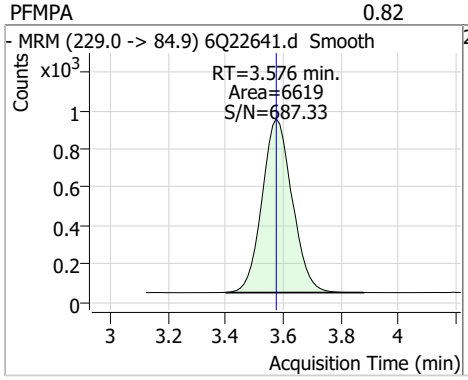
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.96	3.01	0.00	202589				

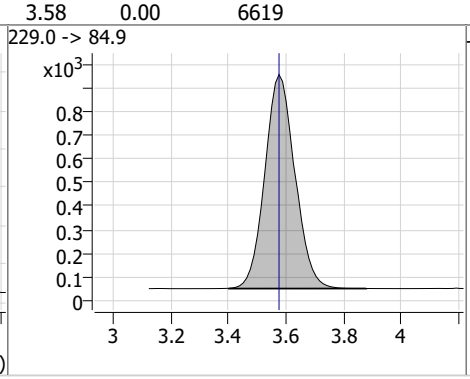


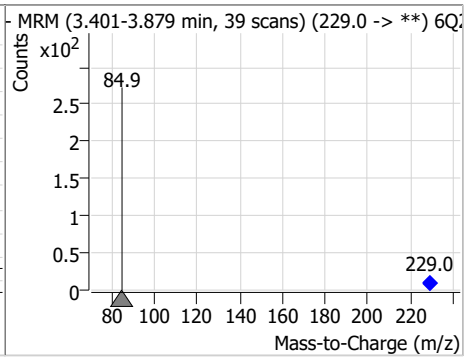




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.82	3.58	0.00	6619				

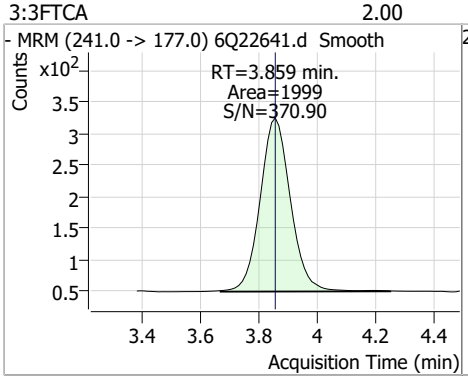


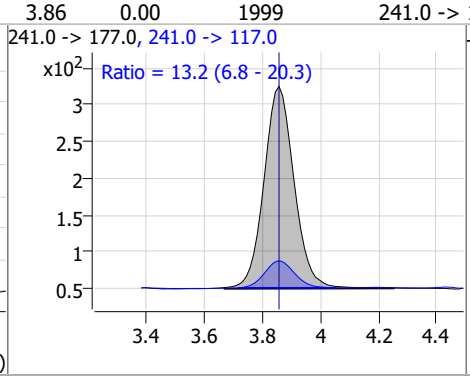


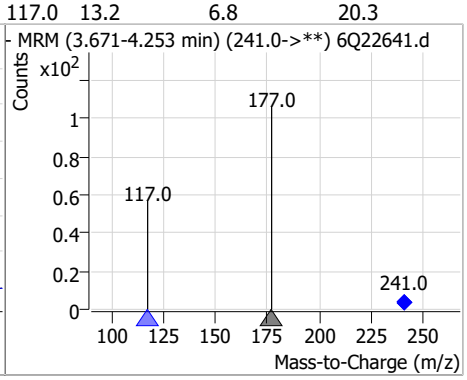


Perfluorinated Compounds by LC/MS/MS

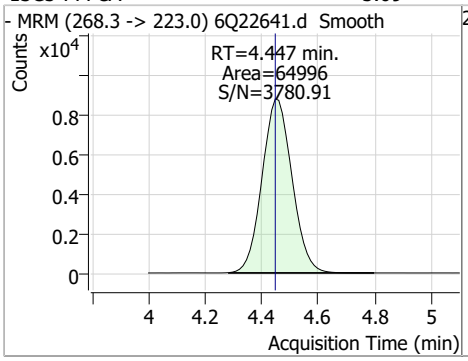
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.00	3.86	0.00	1999	241.0 -> 117.0	13.2	6.8	20.3

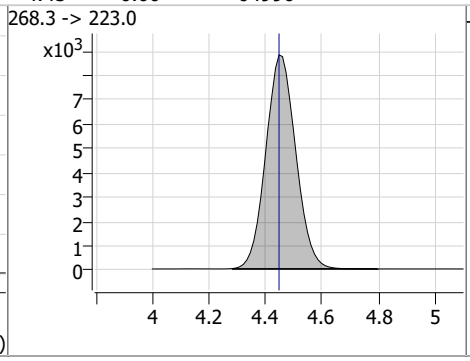


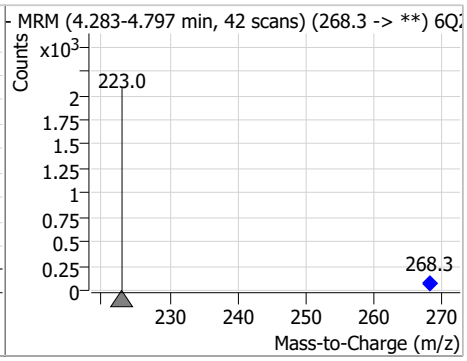




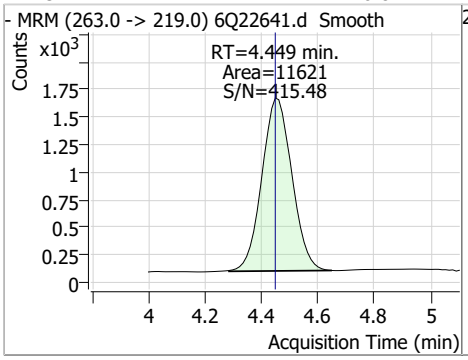
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.45	0.00	64996				

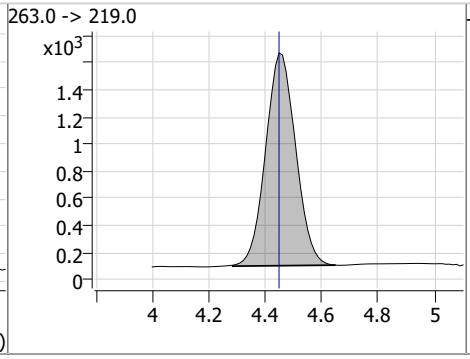


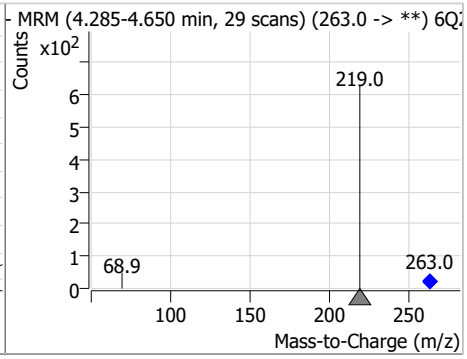




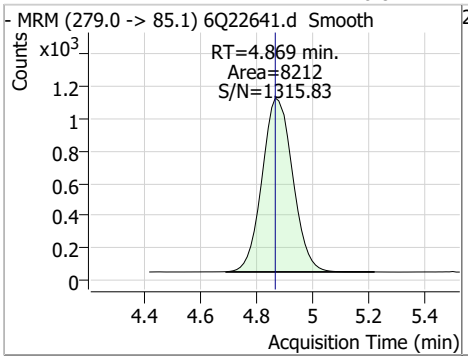
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.81	4.45	0.00	11621				

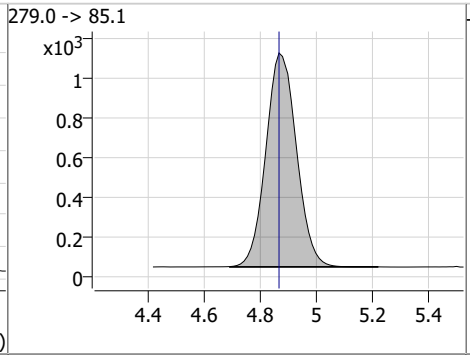


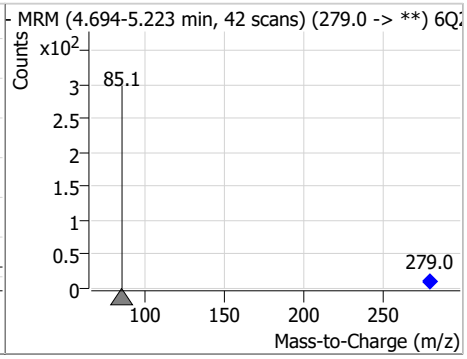




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.81	4.87	0.00	8212				

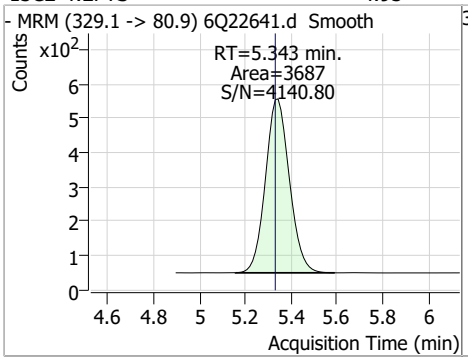


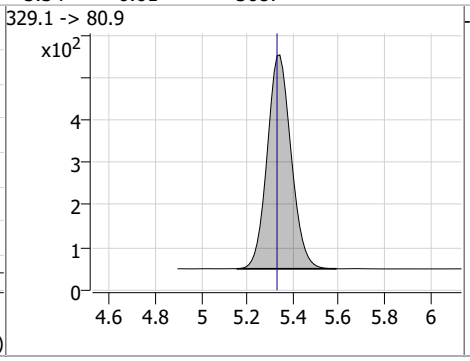


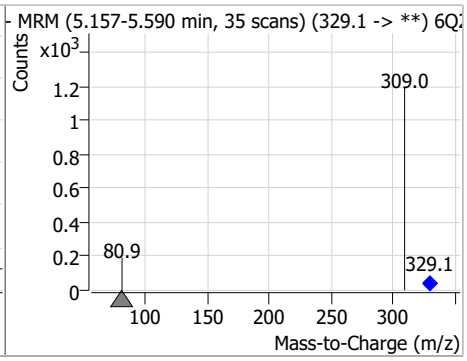


Perfluorinated Compounds by LC/MS/MS

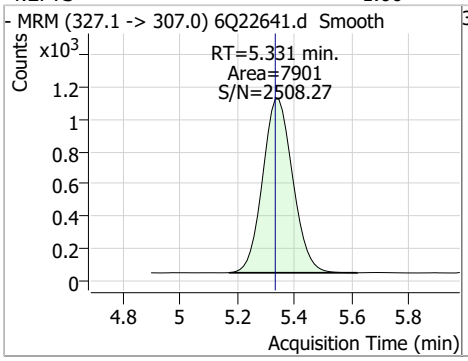
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.93	5.34	0.01	3687				

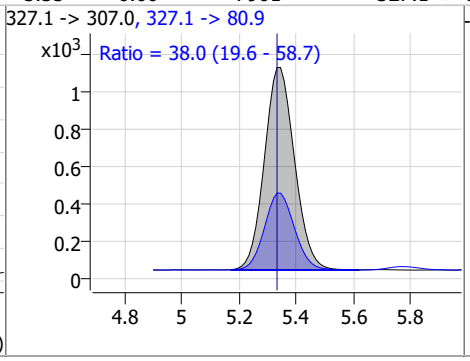


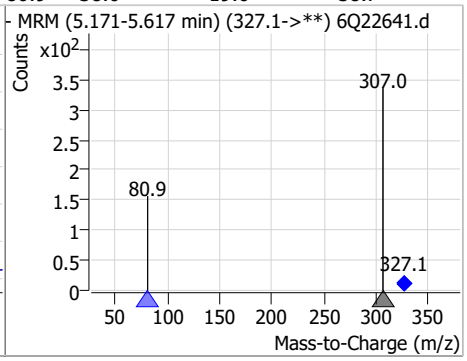




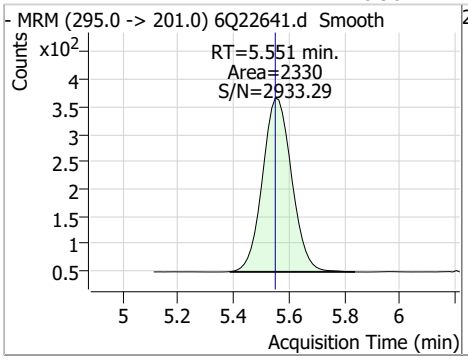
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.66	5.33	0.00	7901	327.1 -> 80.9	38.0	19.6	58.7

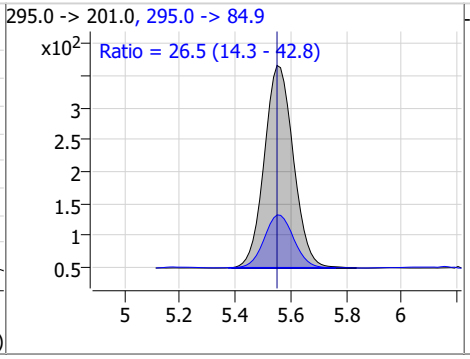


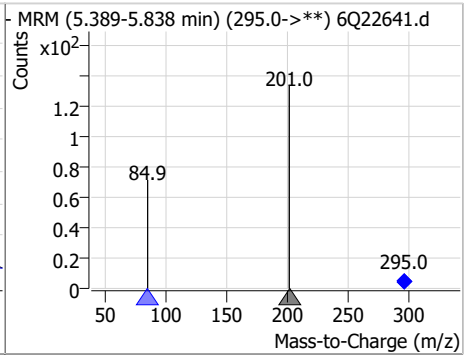




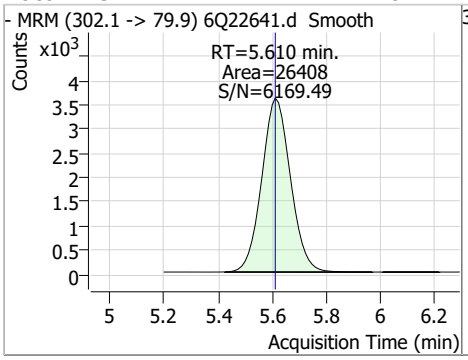
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.90	5.55	0.00	2330	295.0 -> 84.9	26.5	14.3	42.8

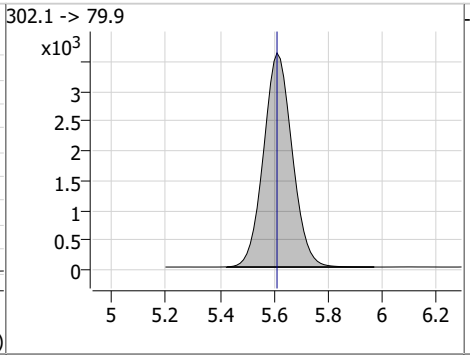


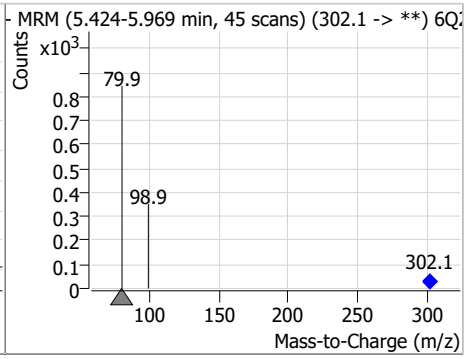




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.61	0.00	26408				

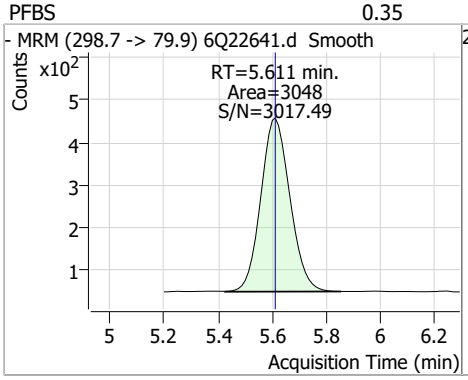


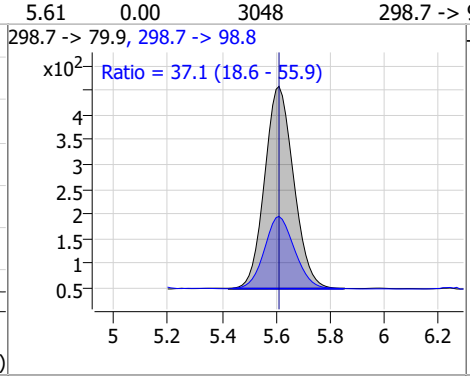


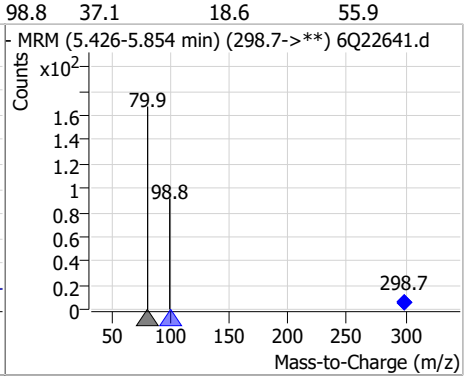


Perfluorinated Compounds by LC/MS/MS

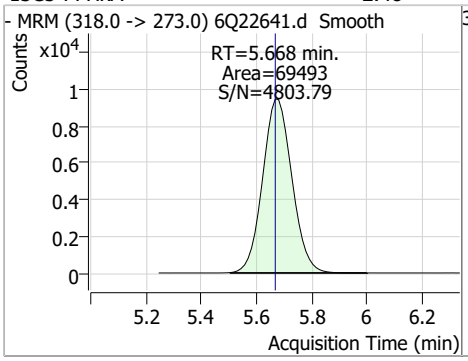
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.35	5.61	0.00	3048	298.7 -> 98.8	37.1	18.6	55.9

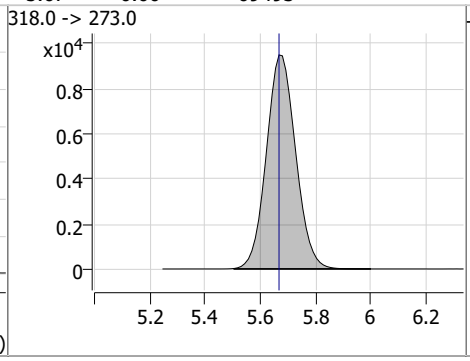


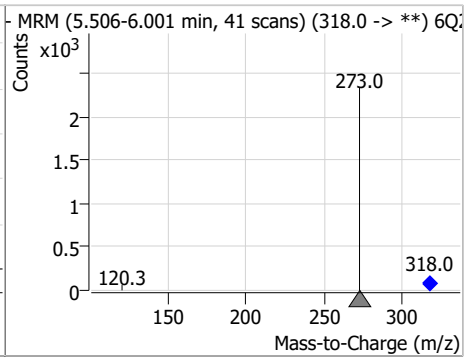




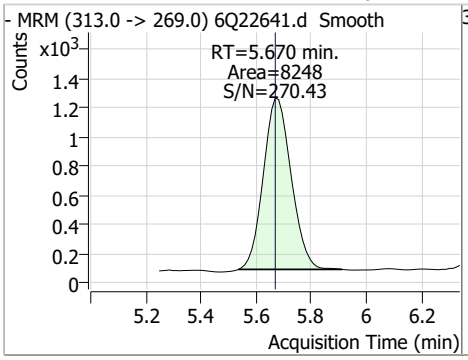
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.67	0.00	69493				

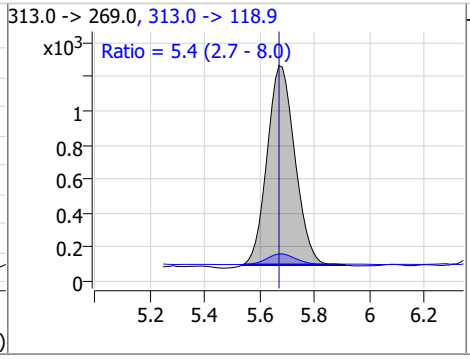


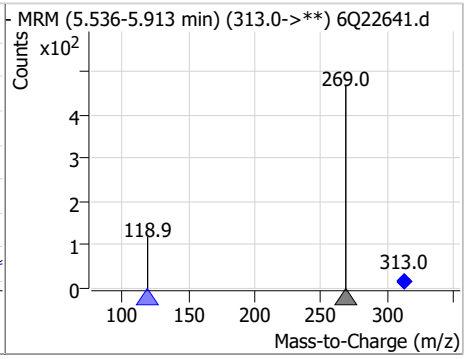




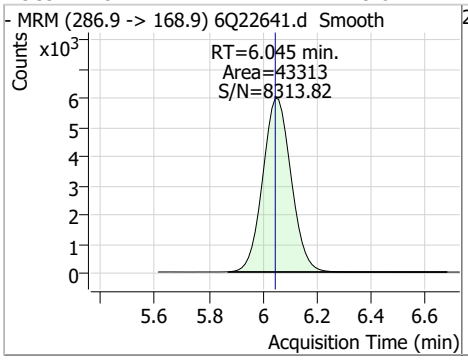
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.41	5.67	0.00	8248	313.0 -> 118.9	5.4	2.7	8.0

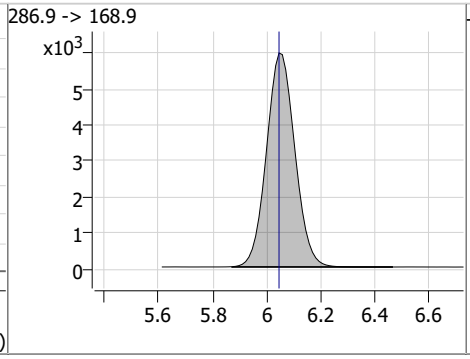


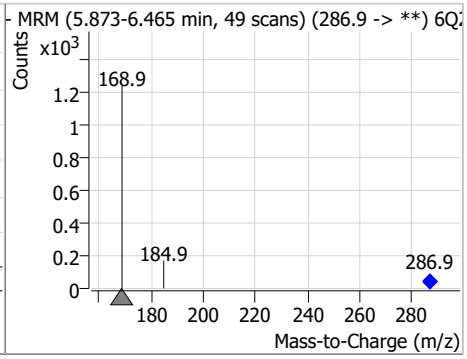




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.87	6.05	0.00	43313				

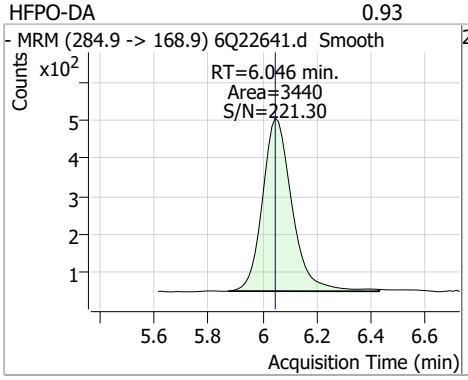


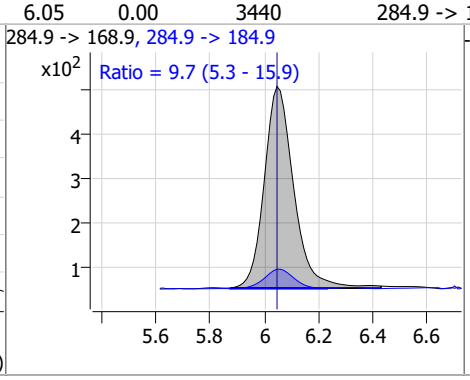


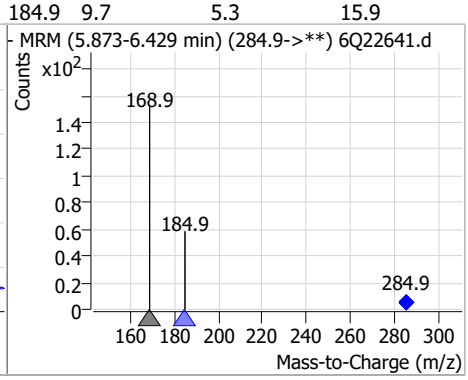


Perfluorinated Compounds by LC/MS/MS

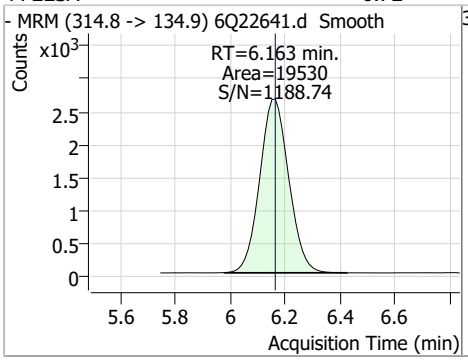
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.93	6.05	0.00	3440	284.9 -> 184.9	9.7	5.3	15.9

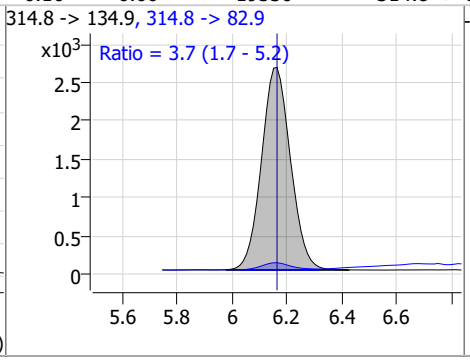


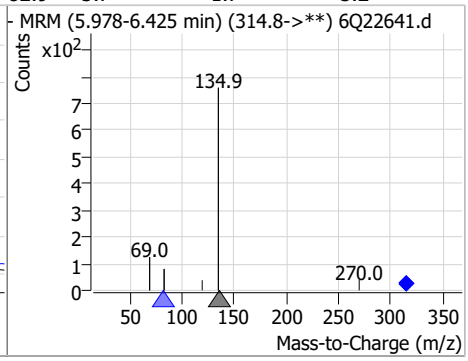




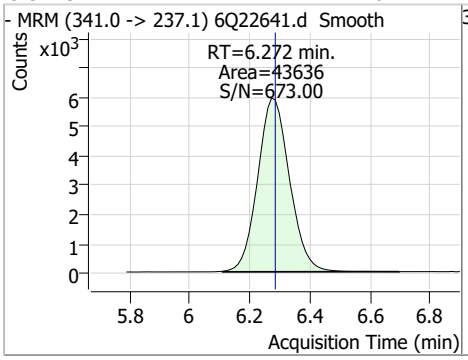
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.72	6.16	0.00	19530	314.8 -> 82.9	3.7	1.7	5.2

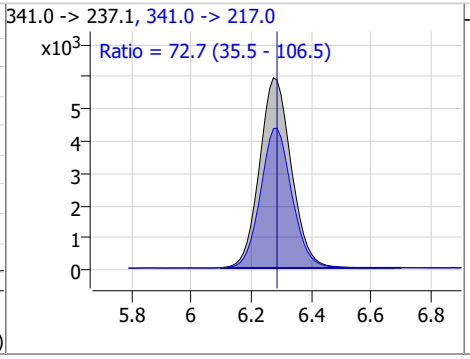


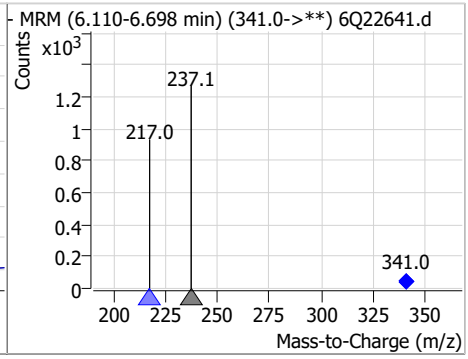




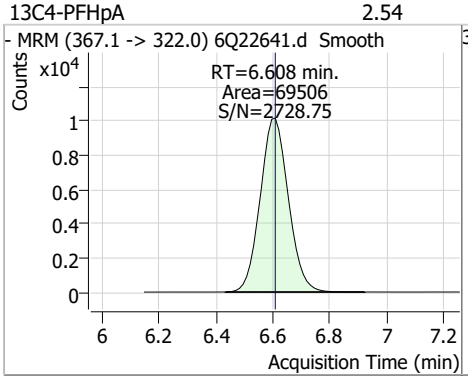
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	10.44	6.27	-0.01	43636	341.0 -> 217.0	72.7	35.5	106.5

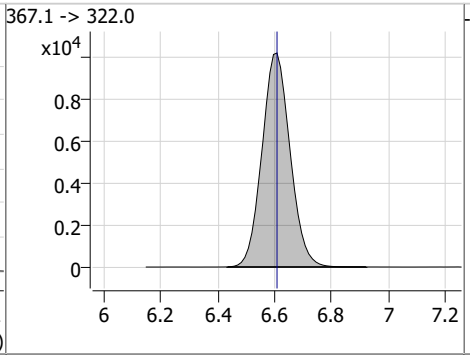


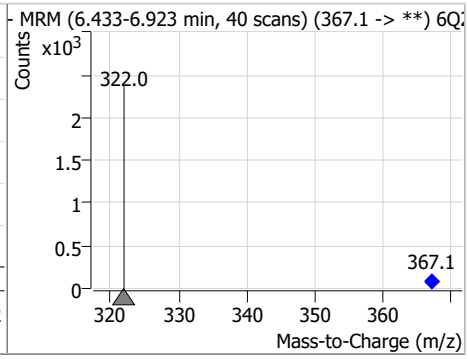




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.61	0.00	69506				

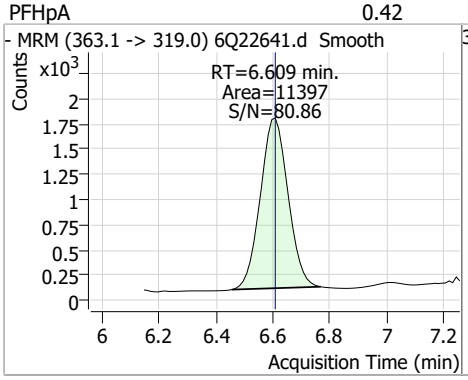


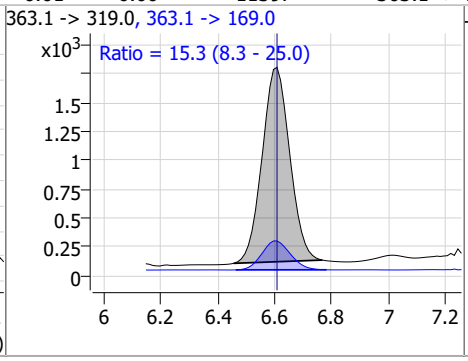


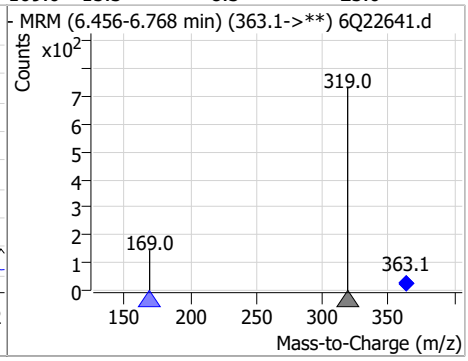


Perfluorinated Compounds by LC/MS/MS

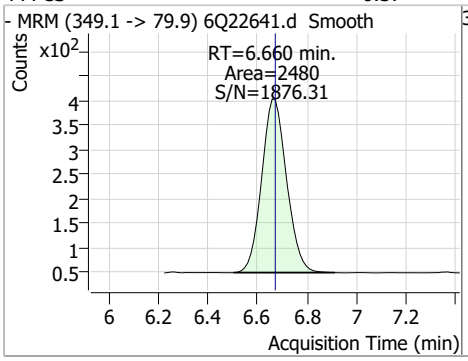
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.42	6.61	0.00	11397	363.1 -> 169.0	15.3	8.3	25.0

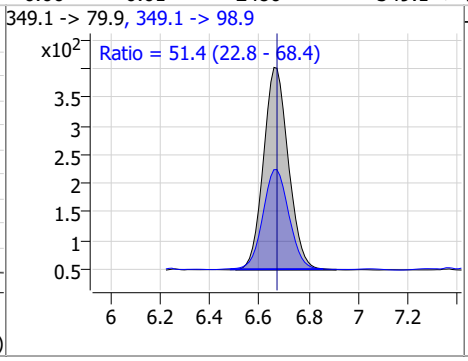


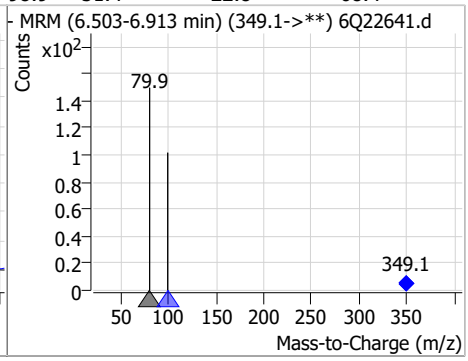




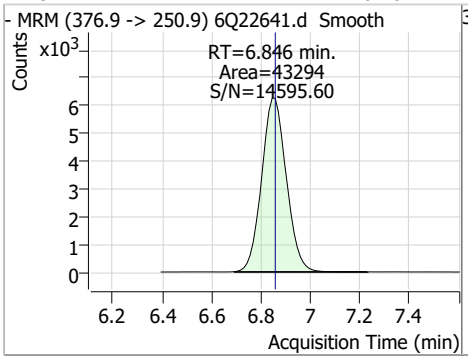
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.37	6.66	-0.01	2480	349.1 -> 98.9	51.4	22.8	68.4

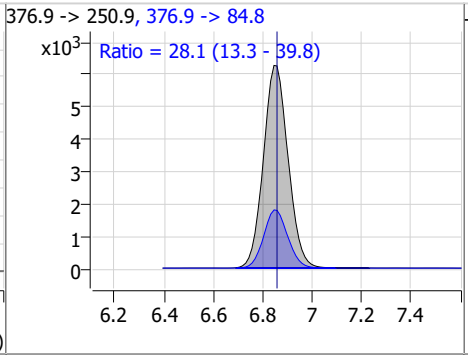


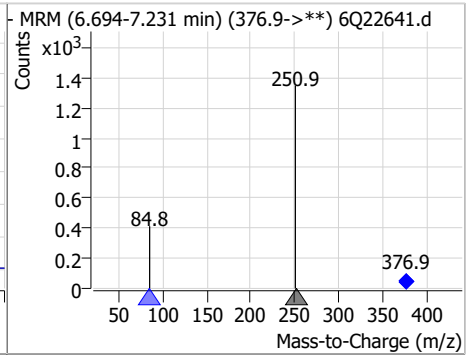




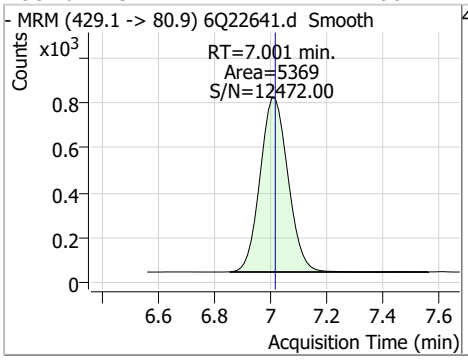
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.78	6.85	-0.01	43294	376.9 -> 84.8	28.1	13.3	39.8

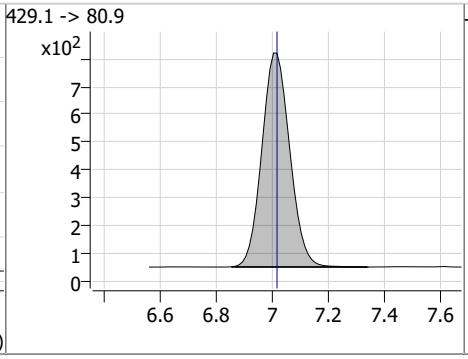


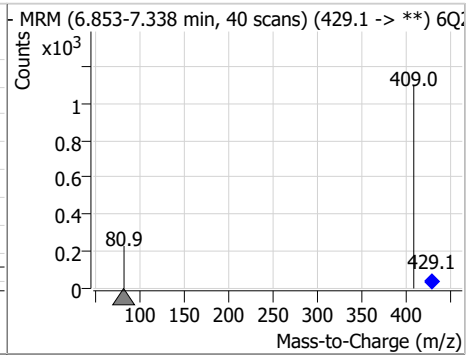




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.98	7.00	-0.01	5369				

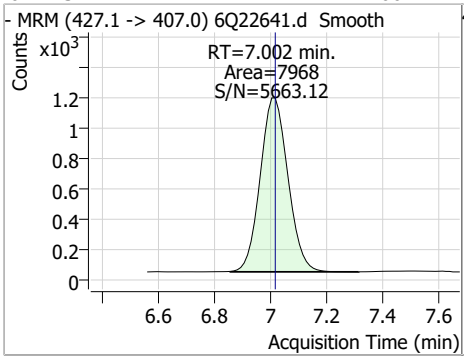


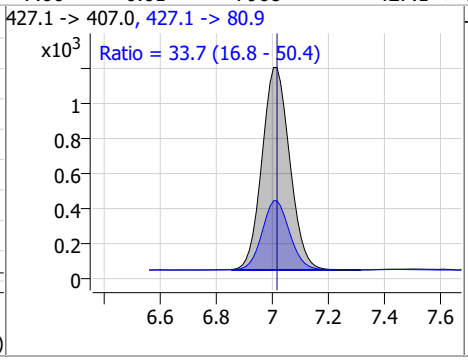


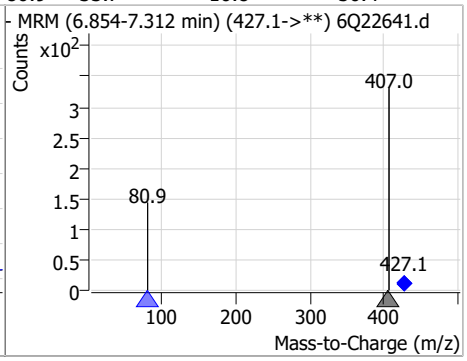


Perfluorinated Compounds by LC/MS/MS

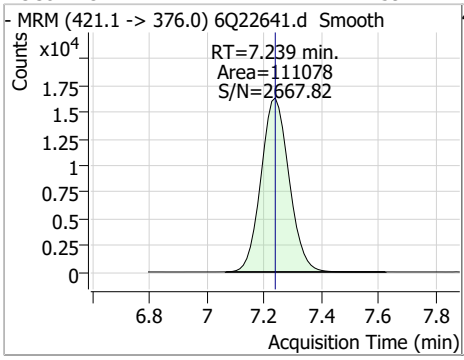
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.66	7.00	-0.01	7968	427.1 -> 80.9	33.7	16.8	50.4

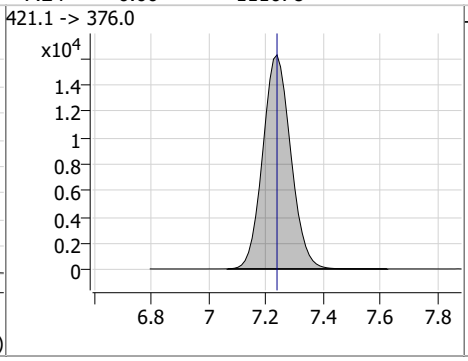


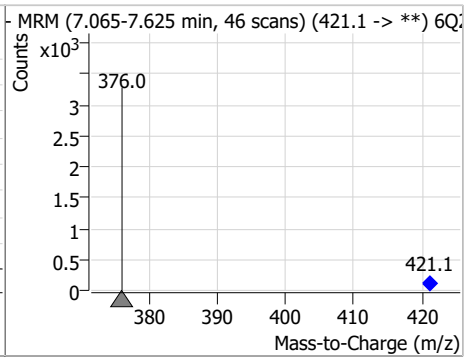




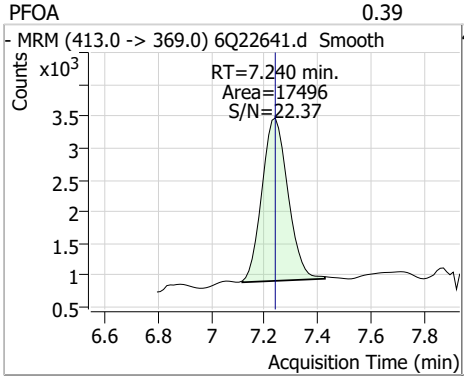
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.59	7.24	0.00	111078				

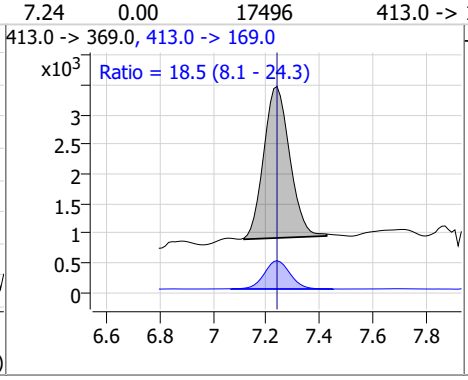


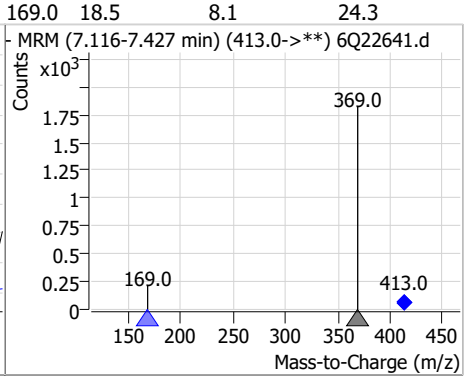




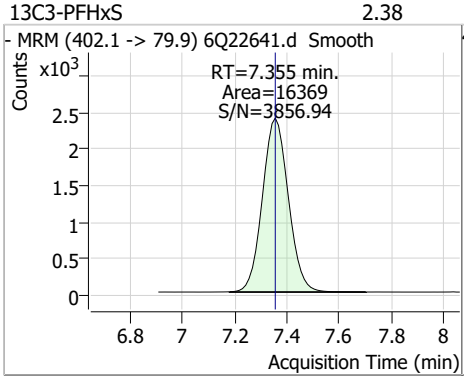
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.39	7.24	0.00	17496	413.0 -> 169.0	18.5	8.1	24.3

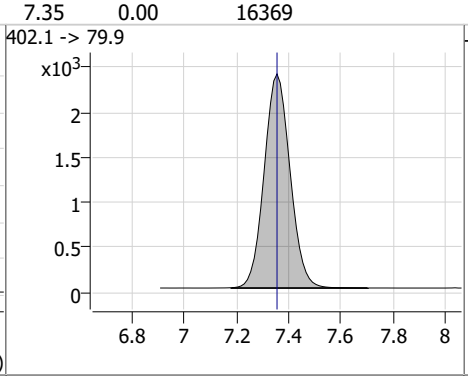


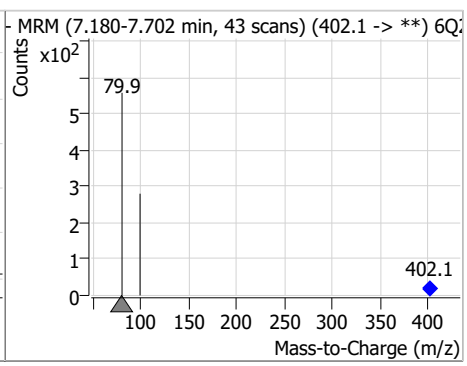




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.38	7.35	0.00	16369				

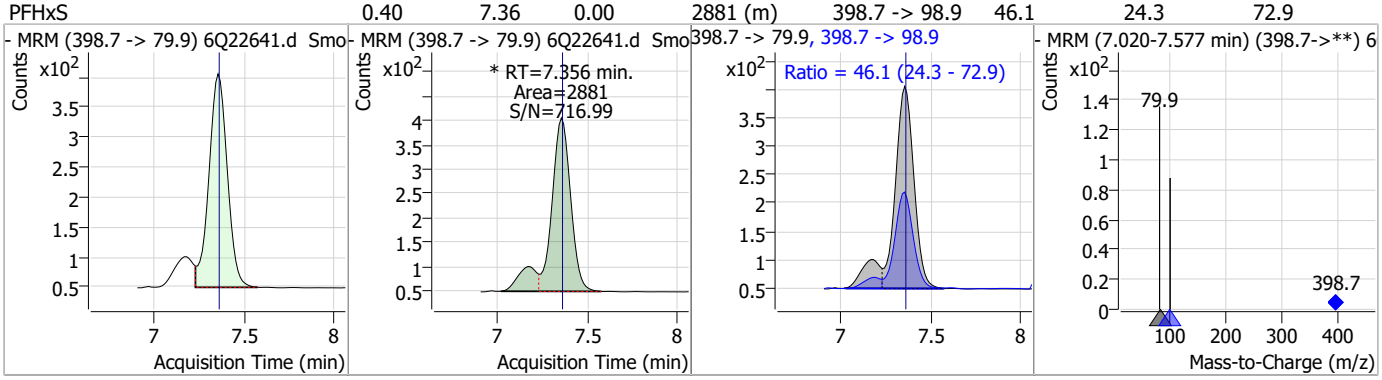




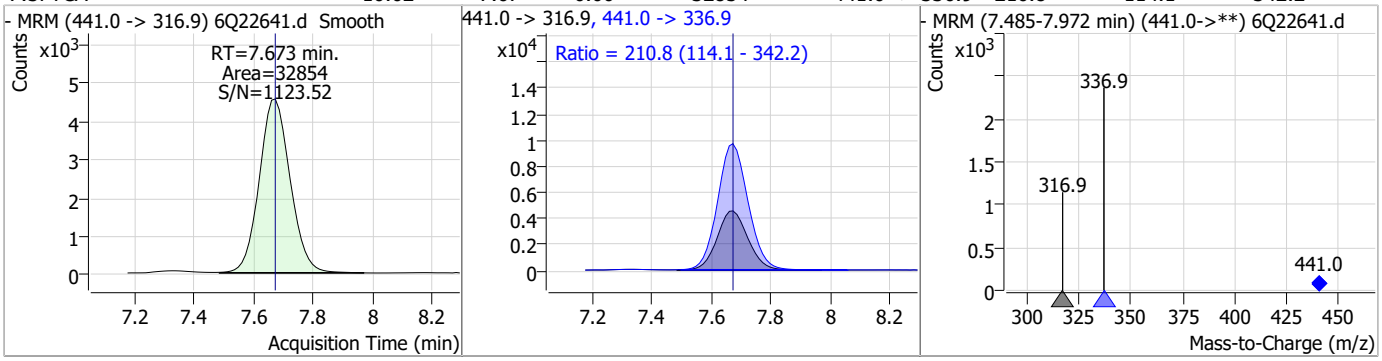


Perfluorinated Compounds by LC/MS/MS

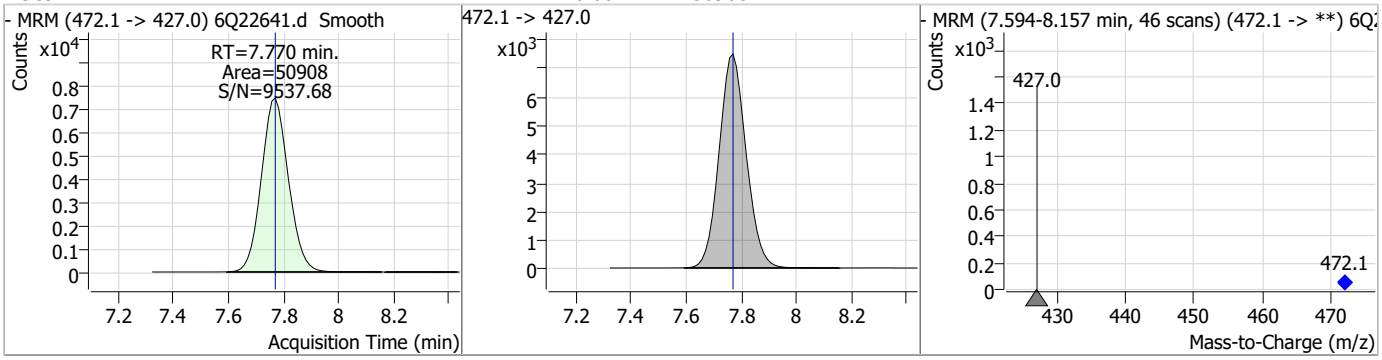
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.40	7.36	0.00	2881 (m)	398.7 -> 98.9	46.1	24.3	72.9



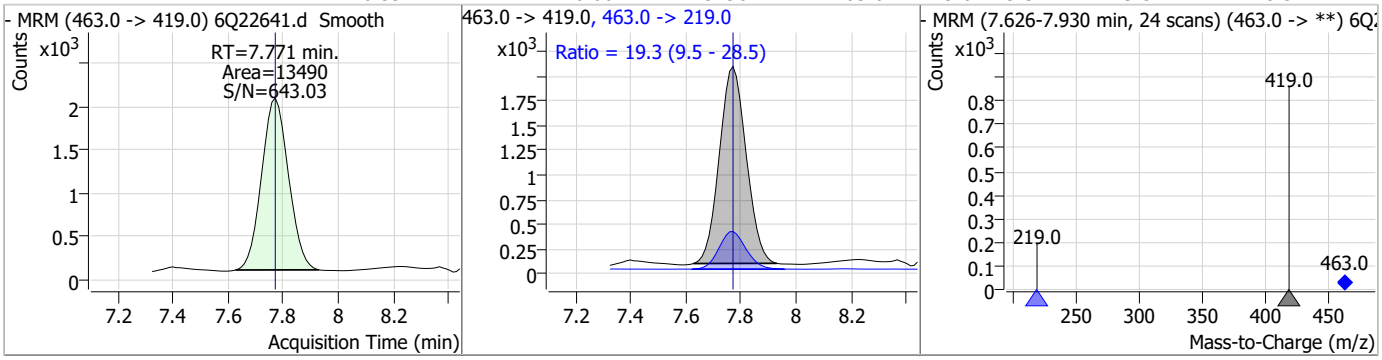
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	10.62	7.67	0.00	32854	441.0 -> 336.9	210.8	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	7.77	0.00	50908				

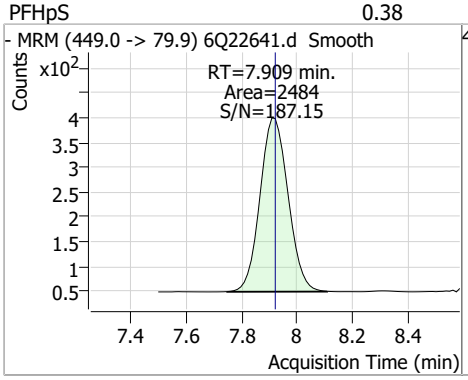


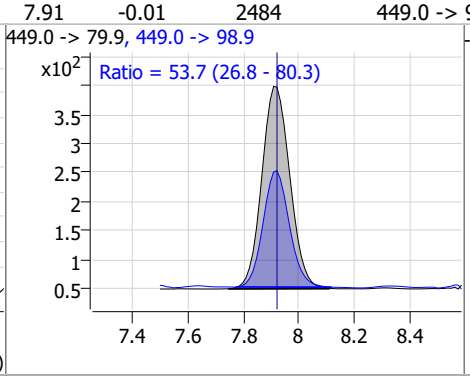
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.39	7.77	0.00	13490	463.0 -> 219.0	19.3	9.5	28.5

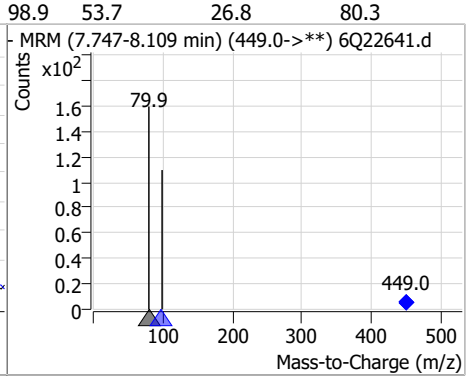


Perfluorinated Compounds by LC/MS/MS

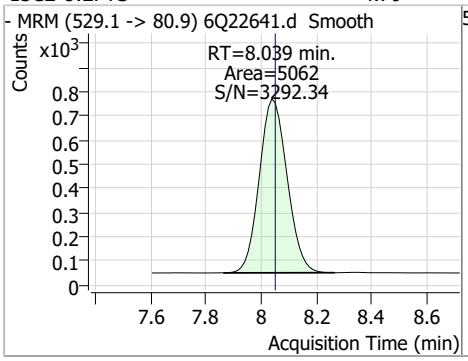
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.38	7.91	-0.01	2484	449.0 -> 98.9	53.7	26.8	80.3

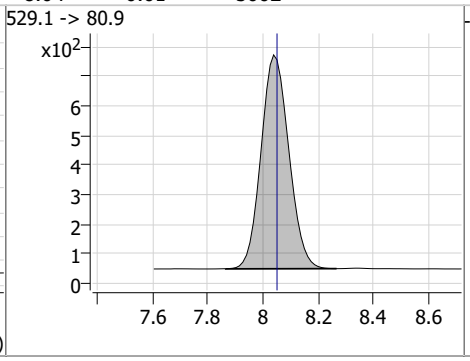


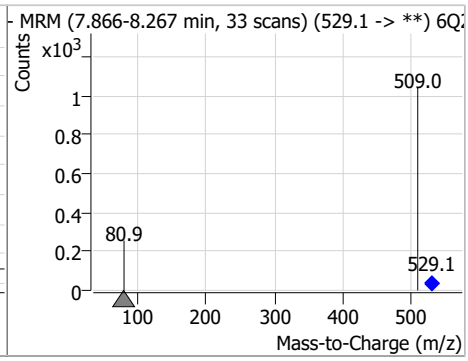




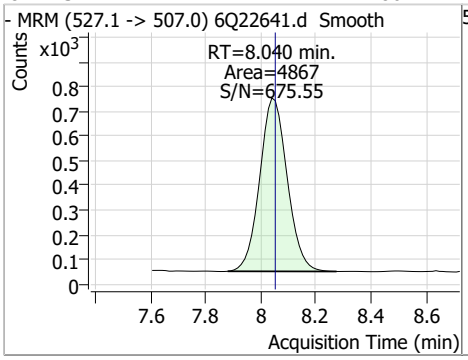
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.79	8.04	-0.01	5062				

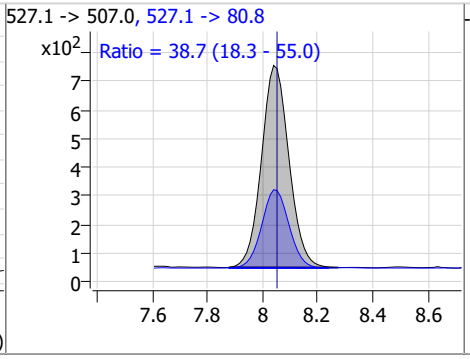


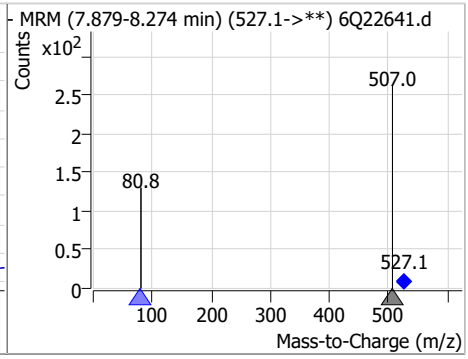




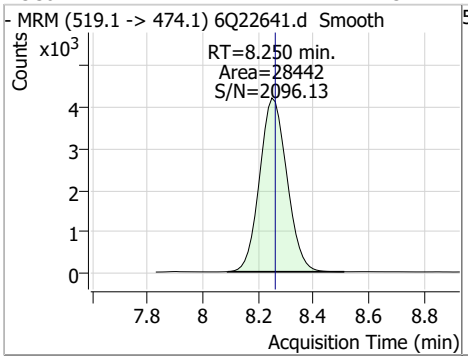
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.80	8.04	-0.01	4867	527.1 -> 80.8	38.7	18.3	55.0

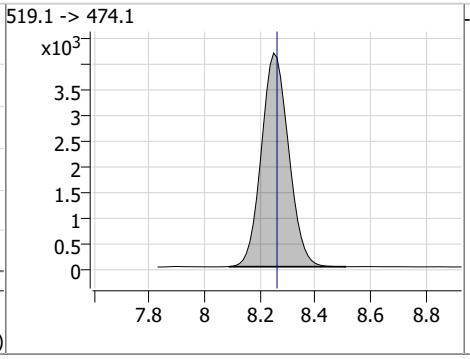


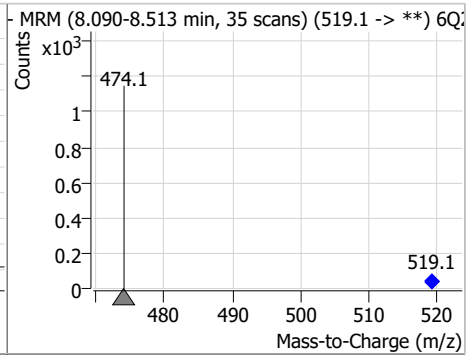




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.23	8.25	-0.01	28442				

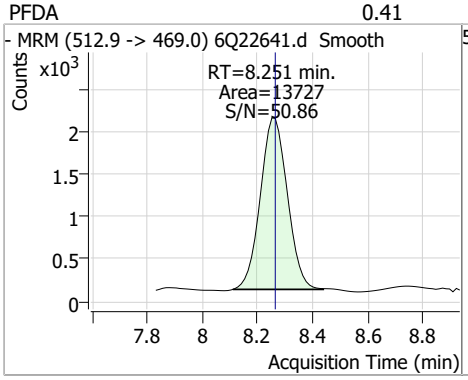


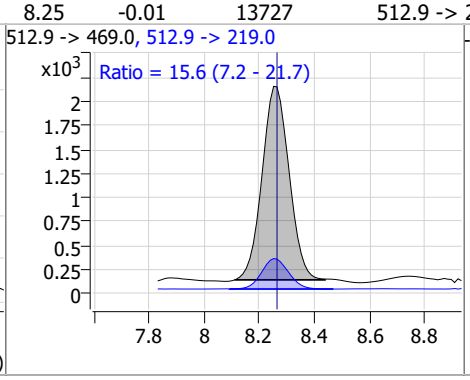


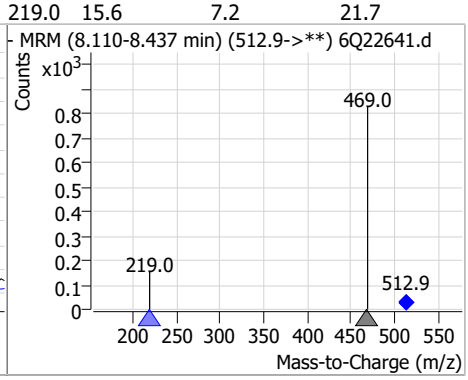


Perfluorinated Compounds by LC/MS/MS

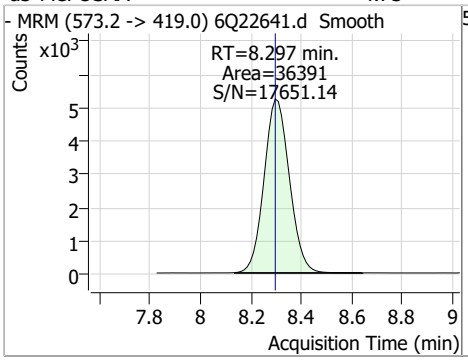
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.41	8.25	-0.01	13727	512.9 -> 219.0	15.6	7.2	21.7

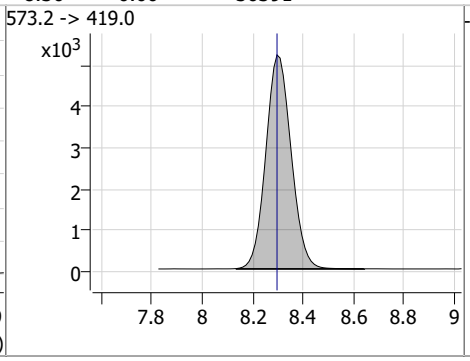


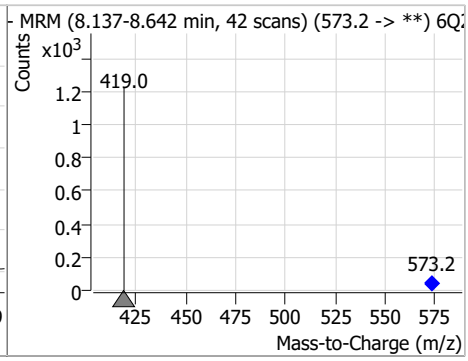




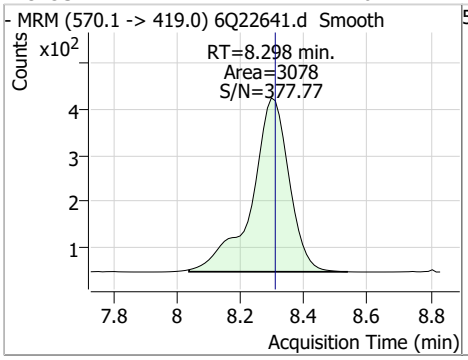
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.73	8.30	0.00	36391				

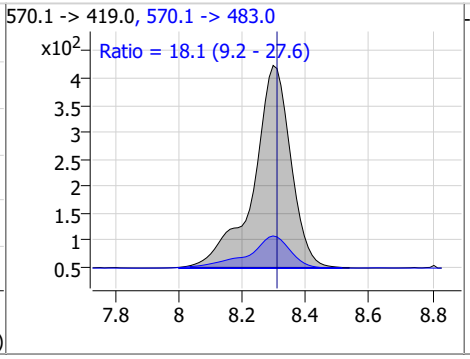


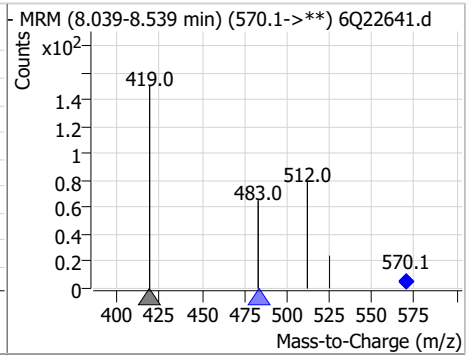




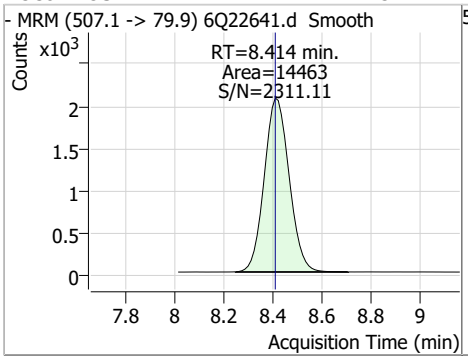
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.44	8.30	-0.01	3078	570.1 -> 483.0	18.1	9.2	27.6

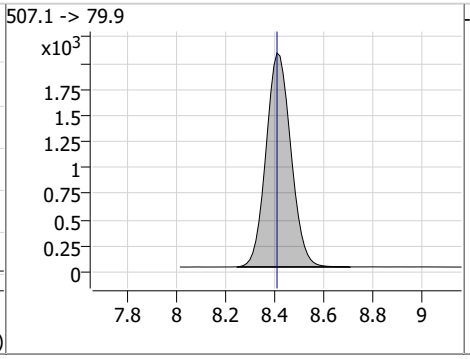


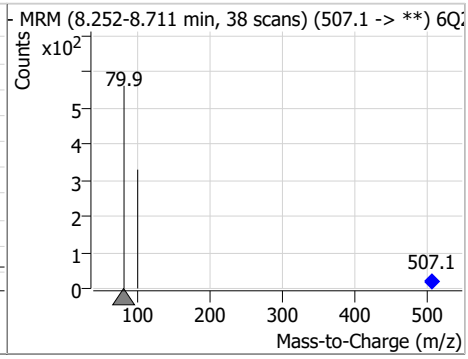




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.41	0.00	14463				

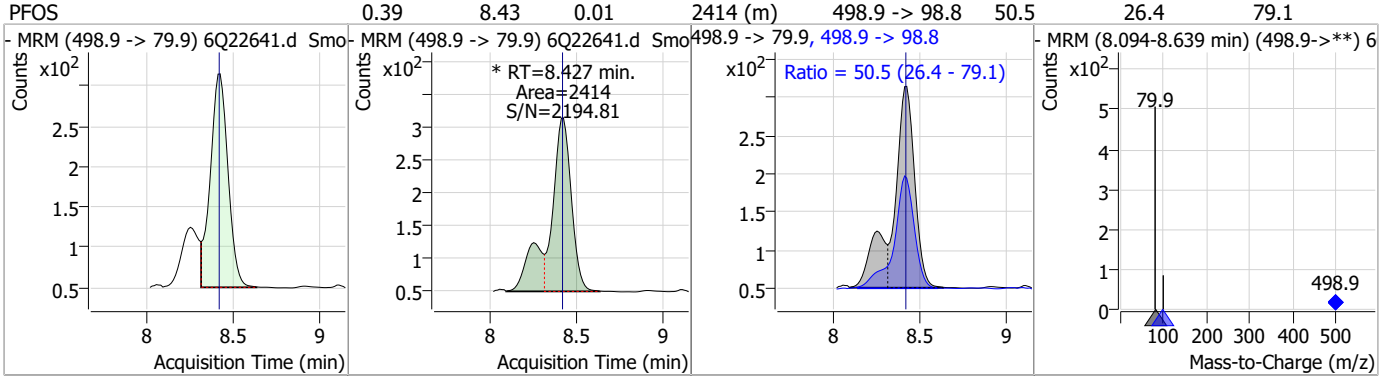




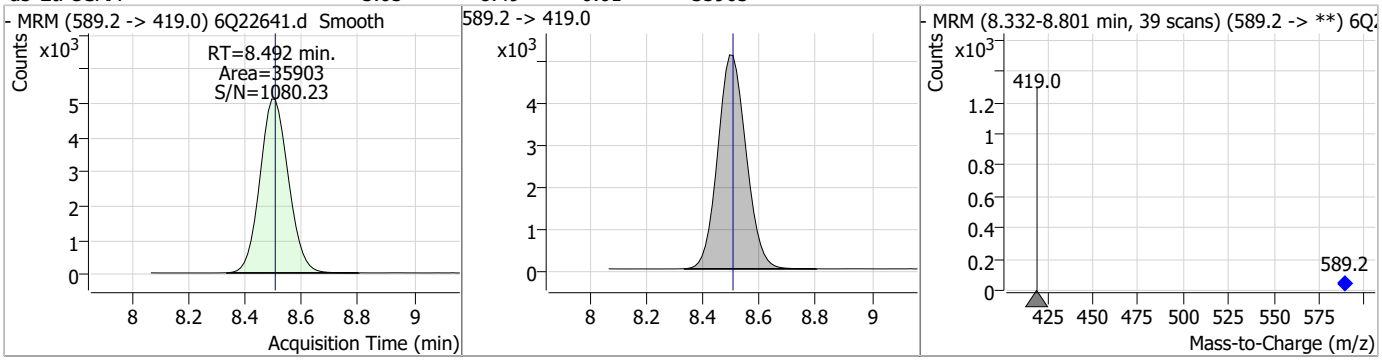


Perfluorinated Compounds by LC/MS/MS

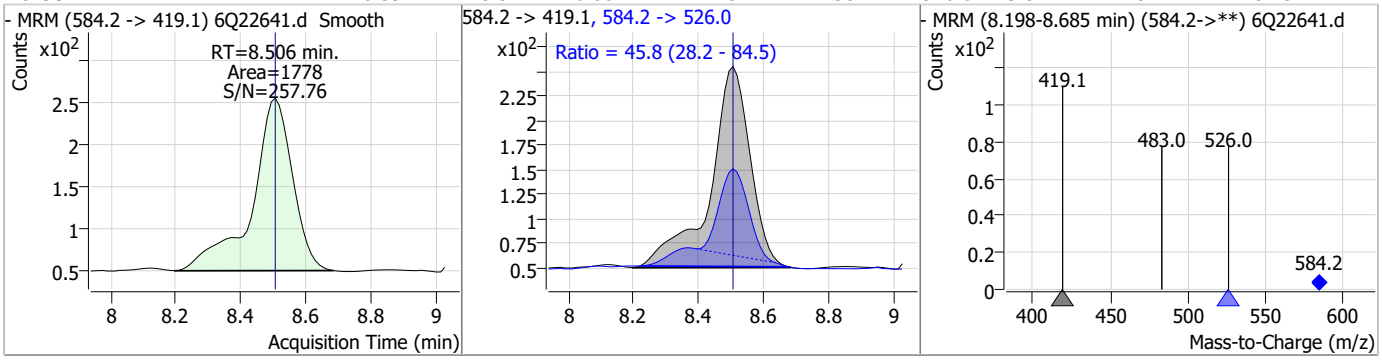
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.39	8.43	0.01	2414 (m)	498.9 -> 98.8	50.5	26.4	79.1



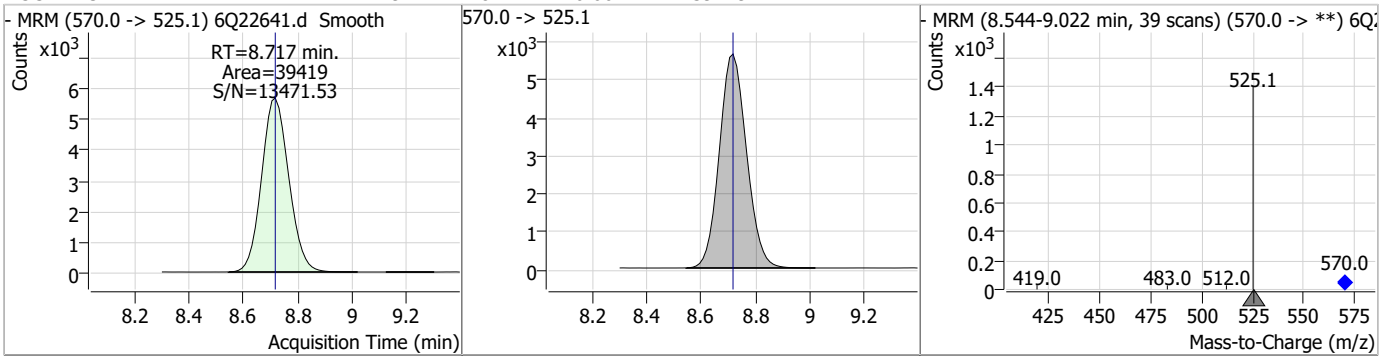
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.05	8.49	-0.01	35903				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.39	8.51	0.00	1778	584.2 -> 526.0	45.8	28.2	84.5

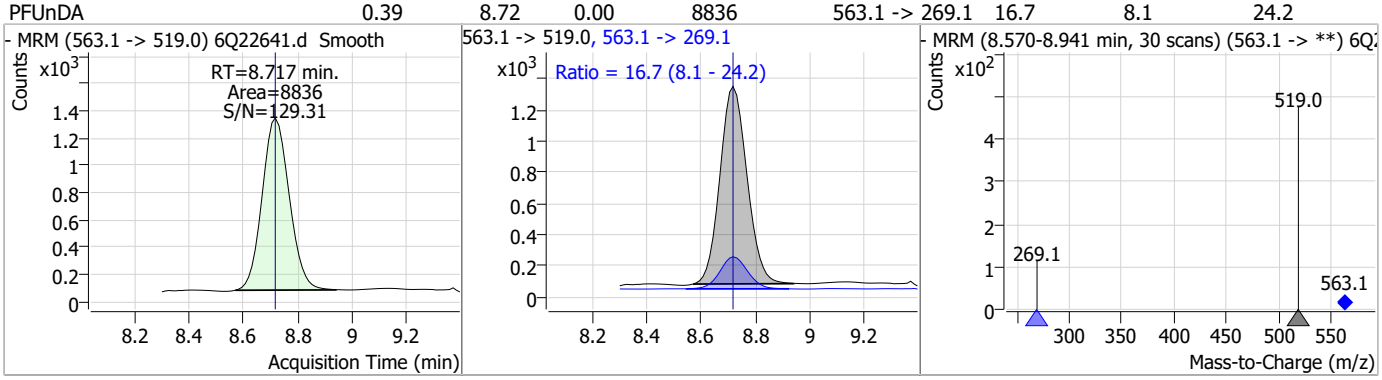


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.72	0.00	39419				

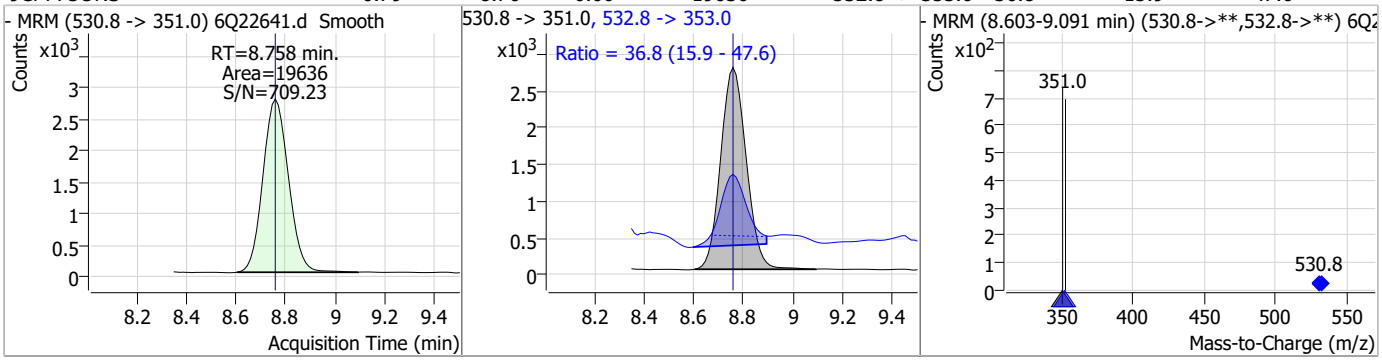


Perfluorinated Compounds by LC/MS/MS

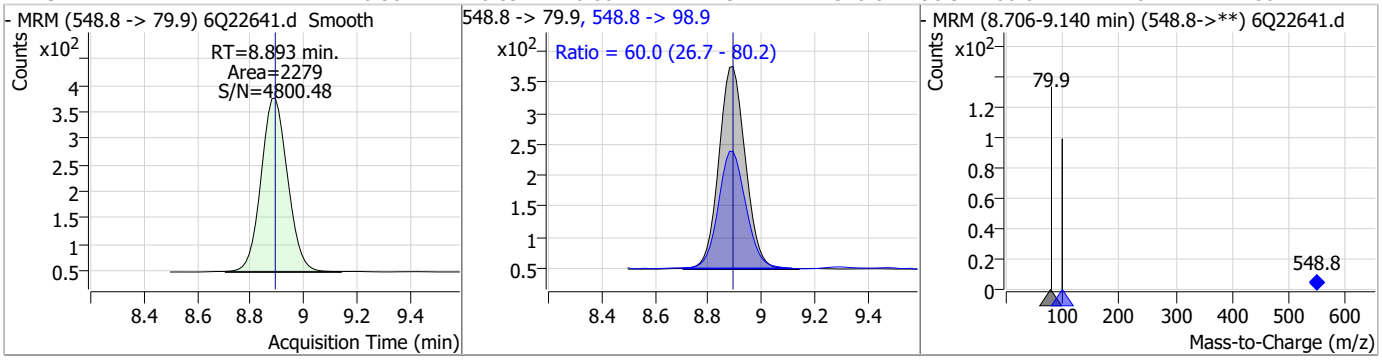
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.39	8.72	0.00	8836	563.1 -> 269.1	16.7	8.1	24.2



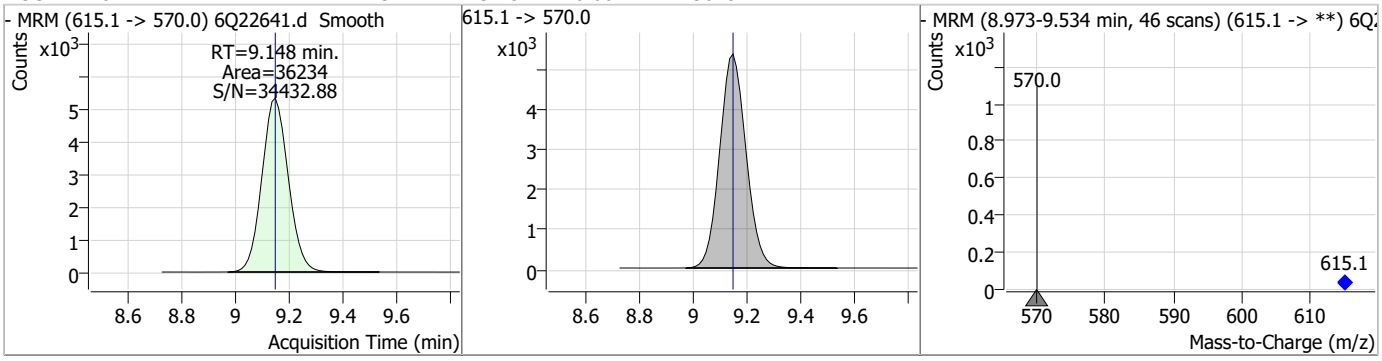
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.79	8.76	0.00	19636	532.8 -> 353.0	36.8	15.9	47.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.38	8.89	0.00	2279	548.8 -> 98.9	60.0	26.7	80.2

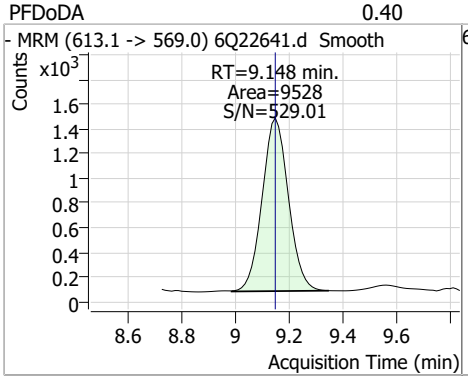


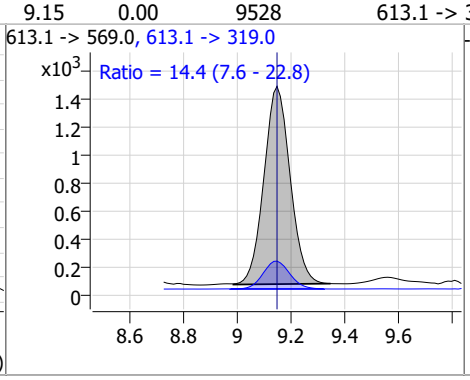
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	9.15	0.00	36234				

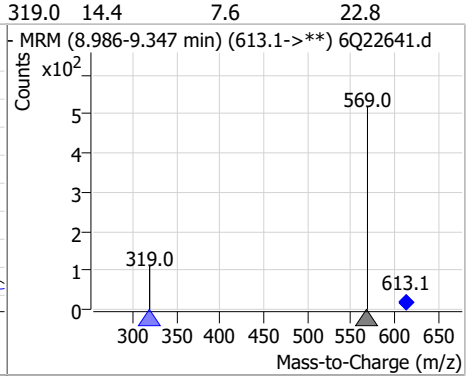


Perfluorinated Compounds by LC/MS/MS

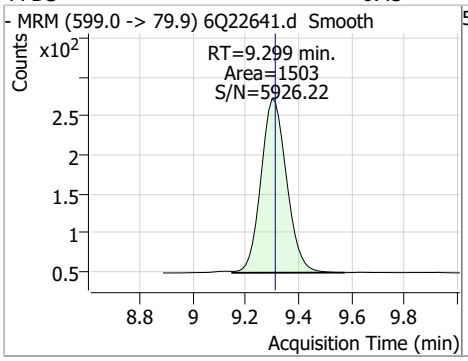
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.40	9.15	0.00	9528	613.1 -> 319.0	14.4	7.6	22.8

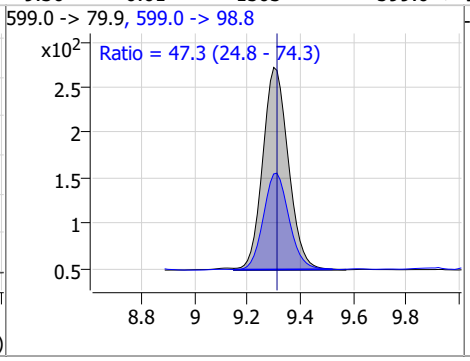


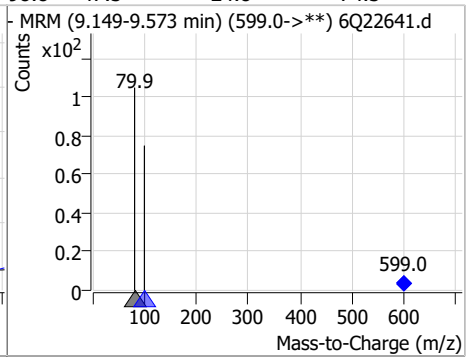




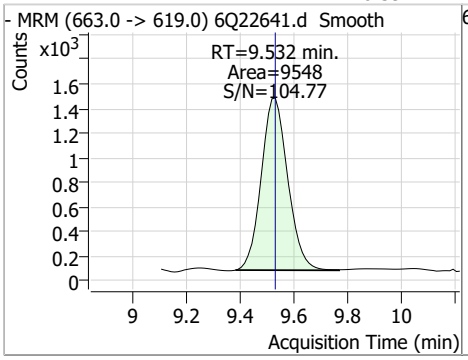
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.43	9.30	-0.01	1503	599.0 -> 98.8	47.3	24.8	74.3

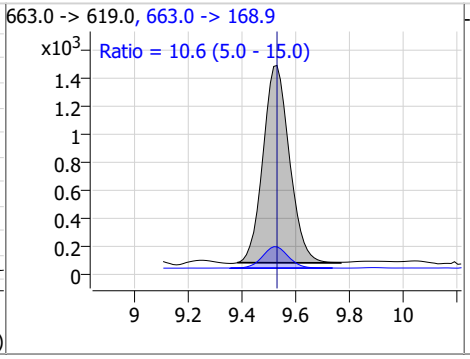


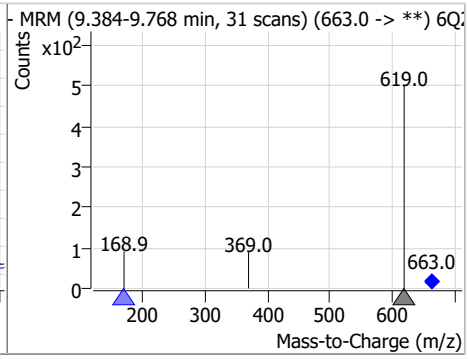




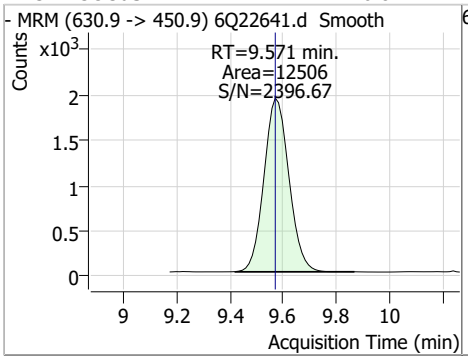
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.39	9.53	0.00	9548	663.0 -> 168.9	10.6	5.0	15.0

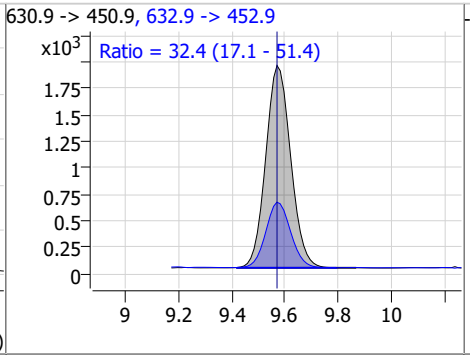


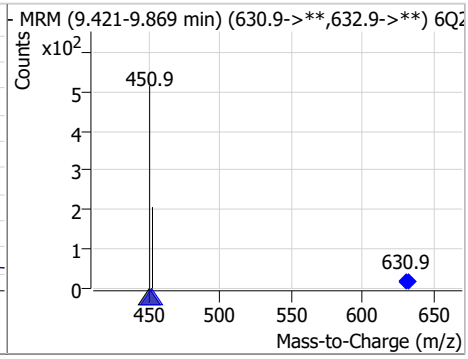




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.81	9.57	0.00	12506	632.9 -> 452.9	32.4	17.1	51.4

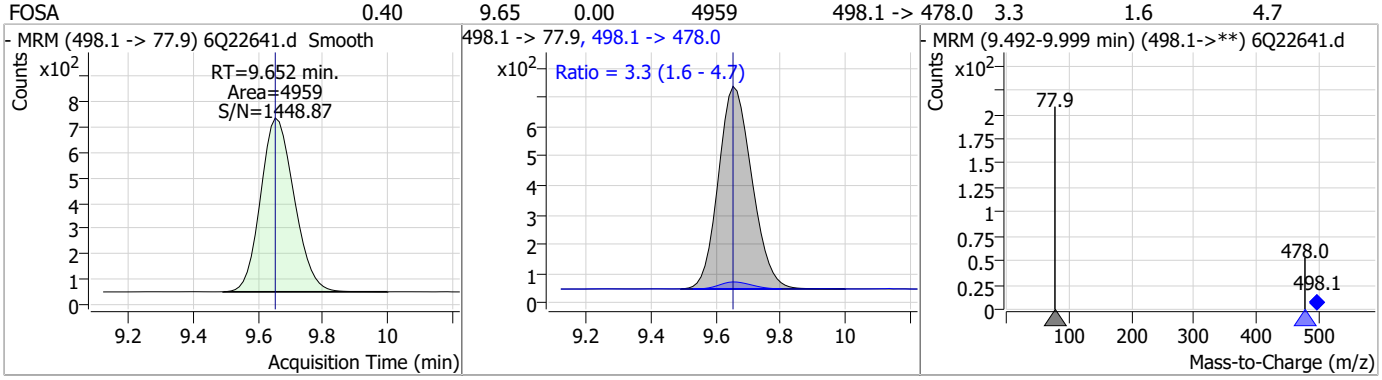




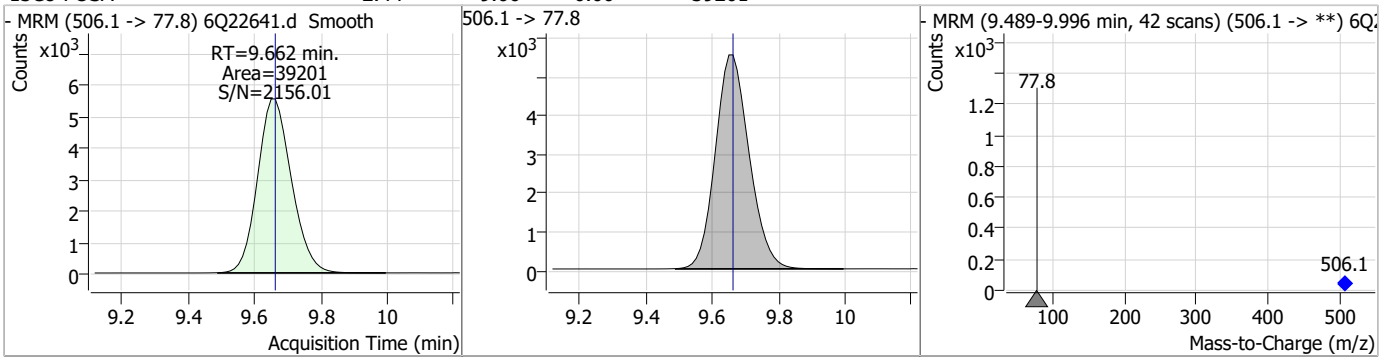


Perfluorinated Compounds by LC/MS/MS

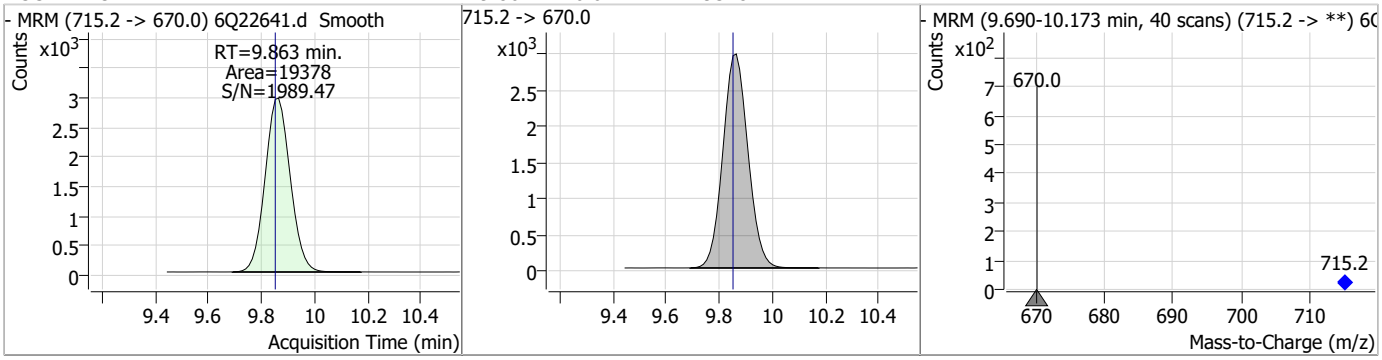
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.40	9.65	0.00	4959	498.1 -> 478.0	3.3	1.6	4.7



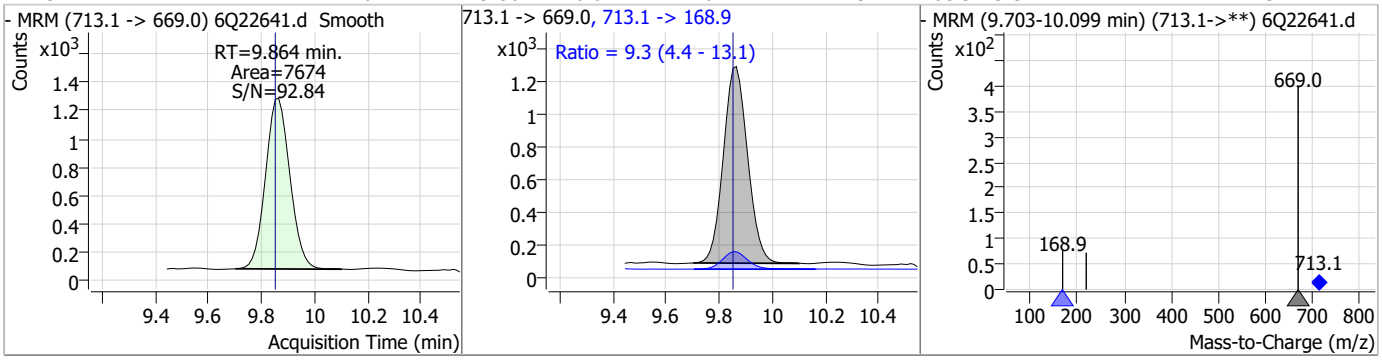
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	9.66	0.00	39201				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.86	0.01	19378				

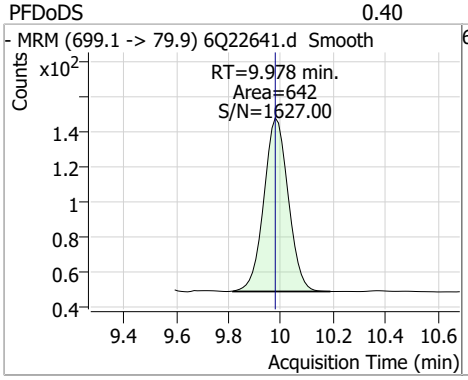


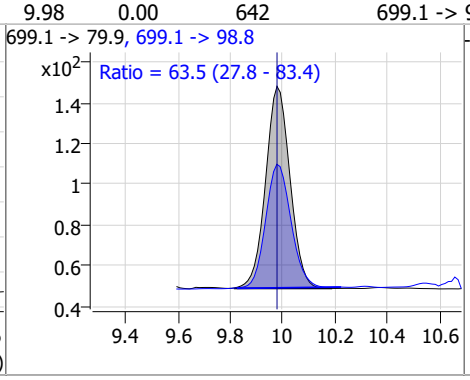
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.41	9.86	0.01	7674	713.1 -> 168.9	9.3	4.4	13.1

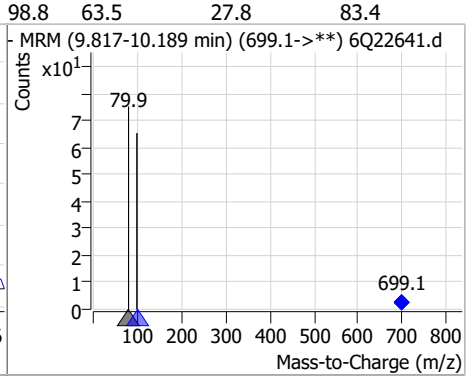


Perfluorinated Compounds by LC/MS/MS

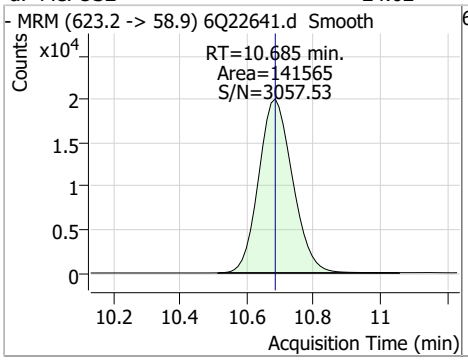
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.40	9.98	0.00	642	699.1 -> 98.8	63.5	27.8	83.4

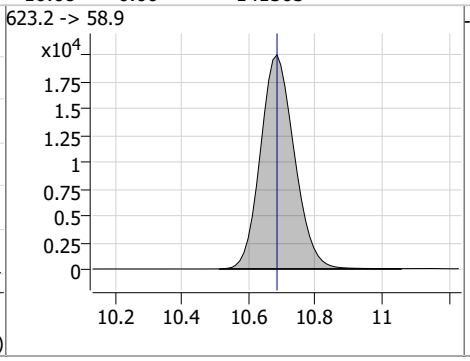


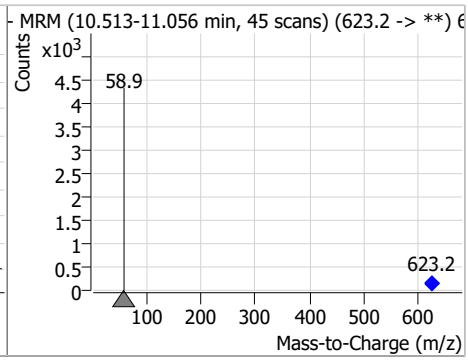




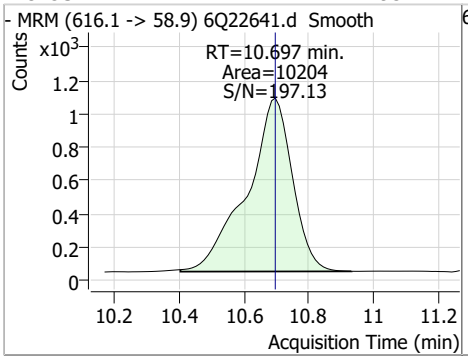
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.62	10.68	0.00	141565				

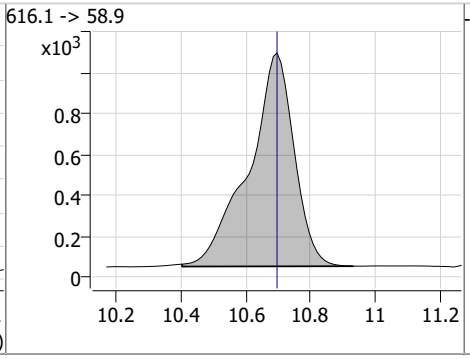


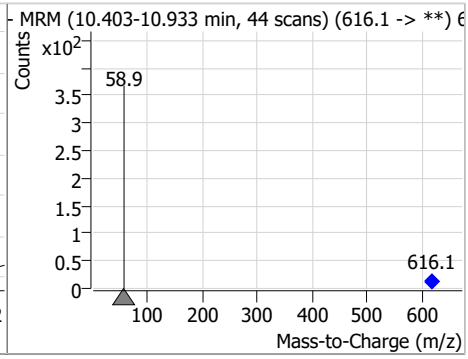




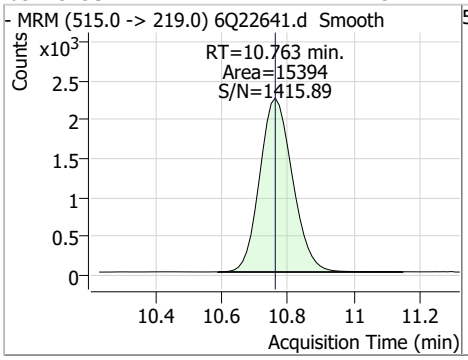
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.93	10.70	0.00	10204				

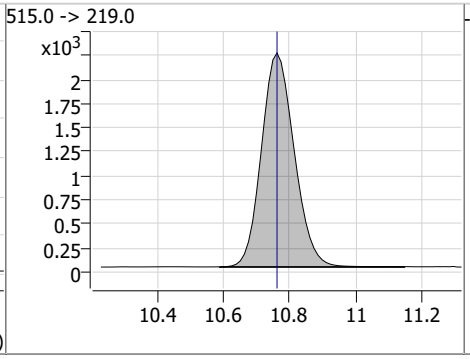


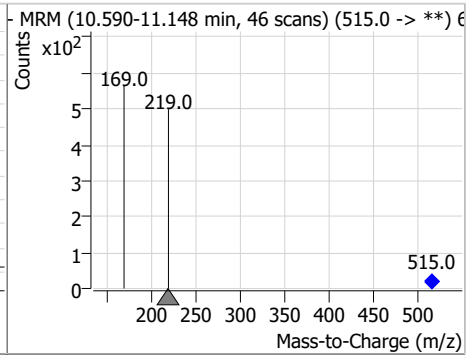




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.76	0.00	15394				

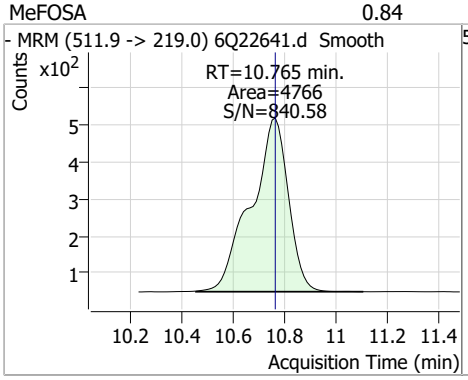


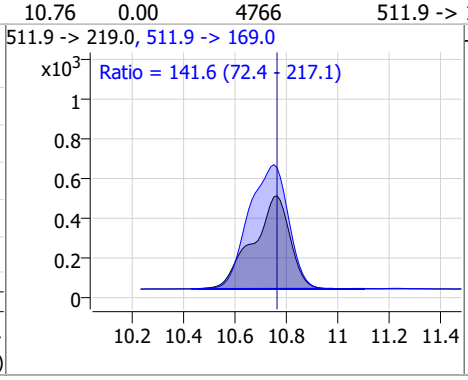


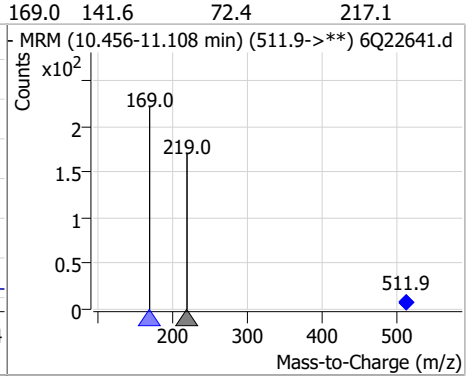


Perfluorinated Compounds by LC/MS/MS

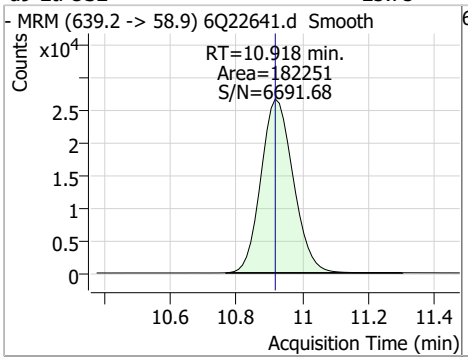
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.84	10.76	0.00	4766	511.9 -> 169.0	141.6	72.4	217.1

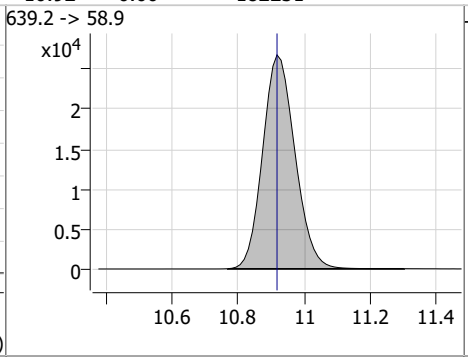


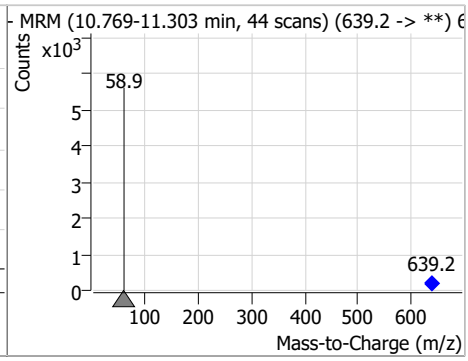




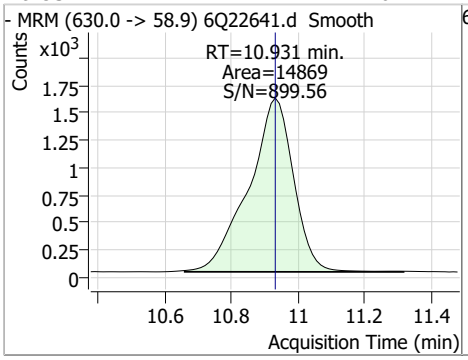
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.75	10.92	0.00	182251				

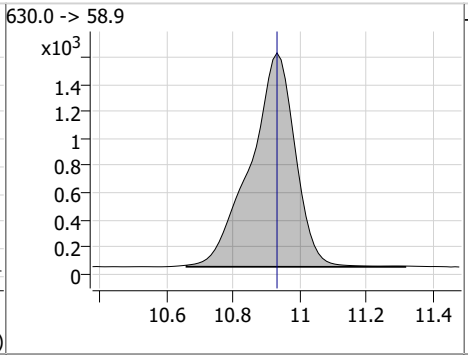


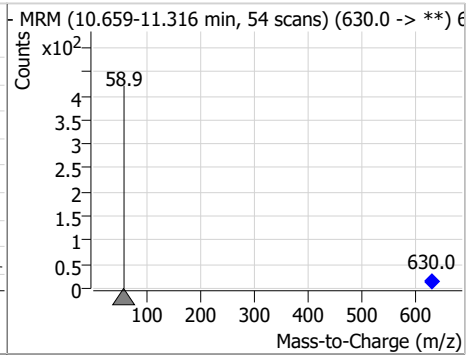




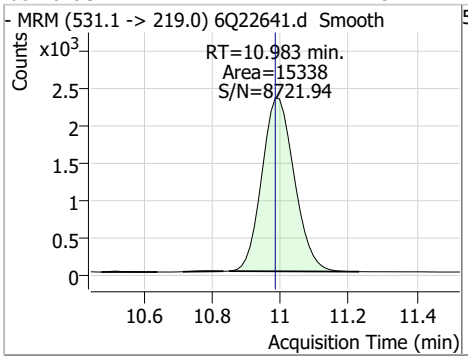
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	2.01	10.93	0.00	14869				

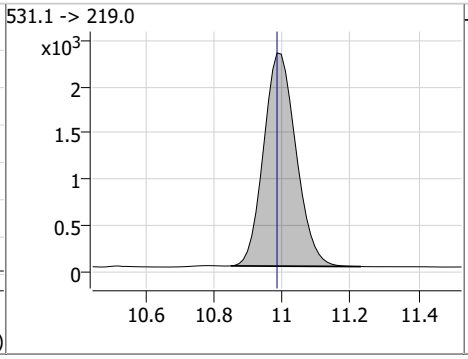


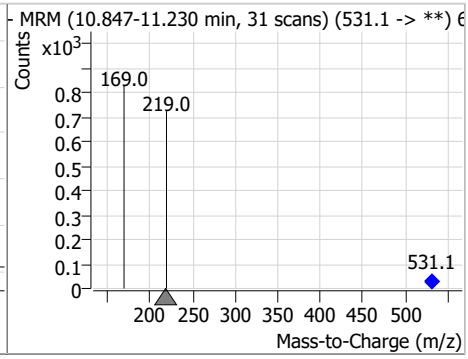




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	10.98	0.00	15338				

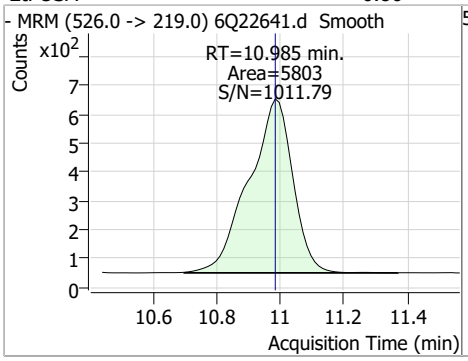


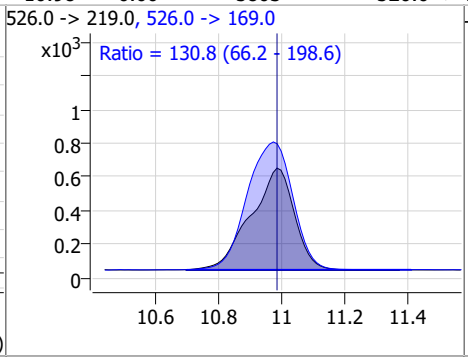


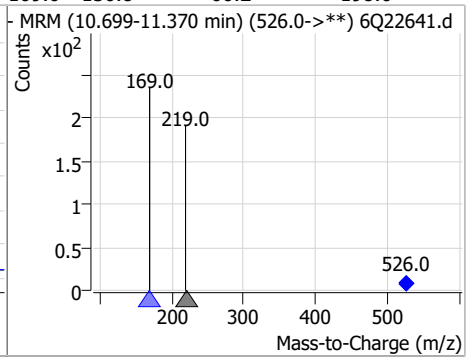


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.86	10.98	0.00	5803	526.0 -> 169.0	130.8	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22641.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 13:52	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22642.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 2:06:22 PM
Sample Name : ic330-3
Vial : P1-A4
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	201188	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	64286	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	73258	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	69122	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	108048	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	48049	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	27413	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	36550	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	32146	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	19794	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	37973	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	25506	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	16403	2.50	µg/L	0.000
M8-PFOS	8.426	507.1 -> 79.9	14452	2.50	µg/L	0.012
M2-4:2FTS	5.330	329.1 -> 80.9	3779	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5779	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5276	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	34793	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	44607	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	35387	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	134140	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	183002	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	16303	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	15502	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	20205	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	85303	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11519	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	113561	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	39861	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	61622	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	69799	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3779	5.49	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5779	5.82	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.3%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5276	5.42	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C2-PFDoDA	9.148	615.1 -> 570.0	32146	1.19	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C2-PFTeDA	9.863	715.2 -> 670.0	19794	1.28	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFBS	5.610	302.1 -> 79.9	25506	2.61	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C3-PFHxS	7.355	402.1 -> 79.9	16403	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	3.010	216.8 -> 171.9	201188	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.608	367.1 -> 322.0	69122	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFHxA	5.668	318.0 -> 273.0	73258	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	4.447	268.3 -> 223.0	64286	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C6-PFDA	8.250	519.1 -> 474.1	27413	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C7-PFUnDA	8.717	570.0 -> 525.1	36550	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C8-FOSA	9.662	506.1 -> 77.8	37973	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.239	421.1 -> 376.0	108048	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-PFOS	8.426	507.1 -> 79.9	14452	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	7.770	472.1 -> 427.0	48049	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%	
d3-MeFOSAA	8.297	573.2 -> 419.0	34793	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	44607	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	15502	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSAA	8.505	589.2 -> 419.0	35387	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d7-MeFOSE	10.685	623.2 -> 58.9	134140	24.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d9-EtFOSE	10.918	639.2 -> 58.9	183002	25.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
d5-EtFOSA	10.996	531.1 -> 219.0	16303	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	21578	4.41 µg/L	100
		327.1 -> 80.9	8398		
6:2FTS	7.014	427.1 -> 407.0	22524	4.36 µg/L	98
		427.1 -> 80.9	7294		
8:2FTS	8.040	527.1 -> 507.0	12573	4.45 µg/L	92
		527.1 -> 80.8	5183		
EtFOSAA	8.506	584.2 -> 419.1	5186	1.16 µg/L	90
		584.2 -> 526.0	2532		
FOSA	9.652	498.1 -> 77.9	13831	1.16 µg/L	99
		498.1 -> 478.0	409		
MeFOSAA	8.310	570.1 -> 419.0	7952	1.20 µg/L	91
		570.1 -> 483.0	1774		
PFBA	3.006	212.8 -> 168.9	29135	4.63 µg/L	100
PFBS	5.611	298.7 -> 79.9	8645	1.04 µg/L	98
		298.7 -> 98.8	3344		
PFDA	8.251	512.9 -> 469.0	38464	1.18 µg/L	99
		512.9 -> 219.0	5808		
PFDoDA	9.148	613.1 -> 569.0	26132	1.24 µg/L	99
		613.1 -> 319.0	3909		
PFDS	9.299	599.0 -> 79.9	3936	1.14 µg/L	94

Perfluorinated Compounds by LC/MS/MS

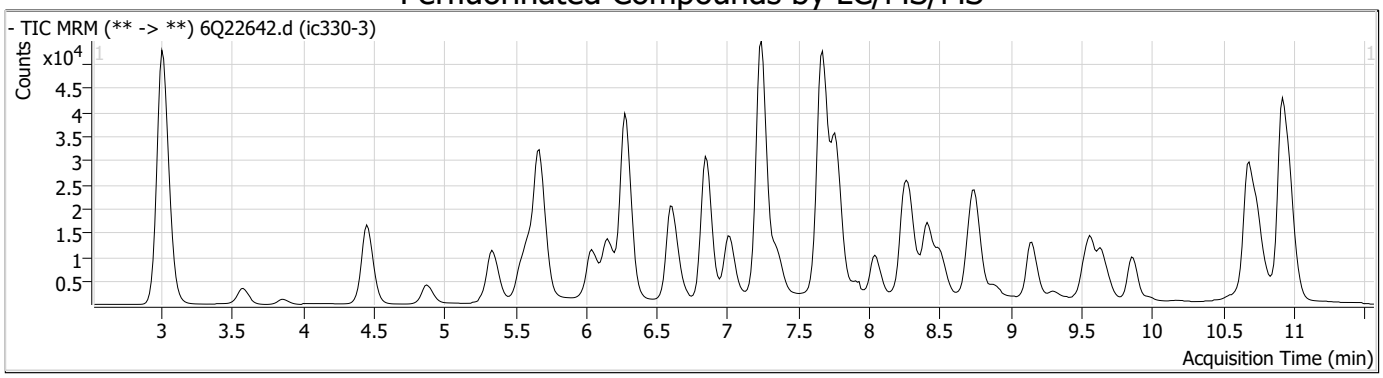
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2102				
PFHpA	6.609	363.1 -> 319.0	30916	1.13	µg/L		98
		363.1 -> 169.0	5383				
PFHpS	7.922	449.0 -> 79.9	7642	1.16	µg/L		98
		449.0 -> 98.9	3993				
PFHxA	5.670	313.0 -> 269.0	23474	1.10	µg/L		100
		313.0 -> 118.9	1281				
PFHxS	7.356	398.7 -> 79.9	7401	1.02	µg/L	m	96
		398.7 -> 98.9	3784				
PFNA	7.771	463.0 -> 419.0	38892	1.18	µg/L		99
		463.0 -> 219.0	7571				
PFNS	8.893	548.8 -> 79.9	7145	1.20	µg/L		96
		548.8 -> 98.9	3632				
PFOA	7.240	413.0 -> 369.0	52015	1.18	µg/L		98
		413.0 -> 169.0	8774				
PFOS	8.415	498.9 -> 79.9	7062	1.14	µg/L	m	91
		498.9 -> 98.8	3275				
PFPeA	4.449	263.0 -> 219.0	33633	2.37	µg/L		100
PFPeS	6.672	349.1 -> 79.9	7765	1.16	µg/L		99
		349.1 -> 98.9	3505				
PFTeDA	9.864	713.1 -> 669.0	22681	1.18	µg/L		99
		713.1 -> 168.9	1866				
PFTrDA	9.519	663.0 -> 619.0	27146	1.25	µg/L		97
		663.0 -> 168.9	3051				
PFUnDA	8.717	563.1 -> 519.0	26496	1.26	µg/L		99
		563.1 -> 269.1	4139				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	35167	2.21	µg/L		94
		632.9 -> 452.9	10909				
9Cl-PF3ONS	8.758	530.8 -> 351.0	55300	2.15	µg/L		91
		532.8 -> 353.0	20407				
ADONA	6.858	376.9 -> 250.9	125763	2.21	µg/L		99
		376.9 -> 84.8	33814				
HFPO-DA	6.046	284.9 -> 168.9	8759	2.31	µg/L		99
		284.9 -> 184.9	954				
3:3FTCA	3.859	241.0 -> 177.0	5700	5.73	µg/L		100
		241.0 -> 117.0	764				
5:3FTCA	6.272	341.0 -> 237.1	127378	28.90	µg/L		98
		341.0 -> 217.0	92341				
7:3FTCA	7.673	441.0 -> 316.9	93318	28.63	µg/L		92
		441.0 -> 336.9	200168				
EtFOSA	10.985	526.0 -> 219.0	15970	2.22	µg/L		98
		526.0 -> 169.0	21561				
EtFOSE	10.931	630.0 -> 58.9	42568	5.74	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	13332	2.32	µg/L		98
		511.9 -> 169.0	18898				
MeFOSE	10.697	616.1 -> 58.9	30513	6.08	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	1943	1.20	µg/L		100
		699.1 -> 98.8	1083				
NFDHA	5.551	295.0 -> 201.0	6341	2.33	µg/L		95
		295.0 -> 84.9	1649				
PFMBA	4.869	279.0 -> 85.1	23807	2.38	µg/L		100
PFMPA	3.576	229.0 -> 84.9	18827	2.35	µg/L		100
PFEESA	6.151	314.8 -> 134.9	61902	2.15	µg/L		100
		314.8 -> 82.9	2089				

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

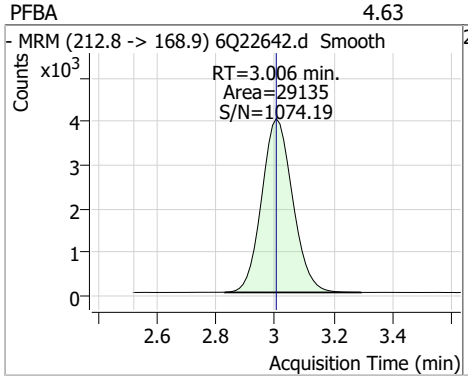
Perfluorinated Compounds by LC/MS/MS

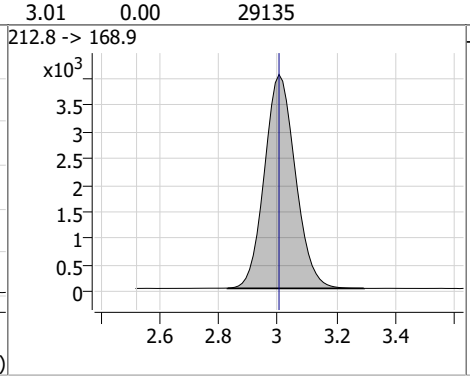
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

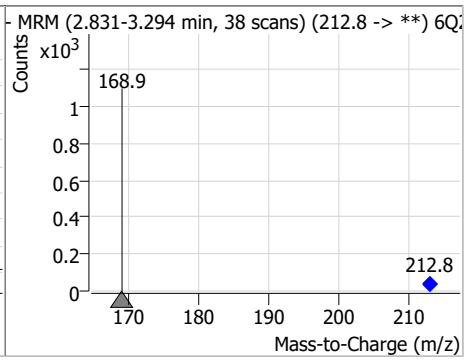
Perfluorinated Compounds by LC/MS/MS



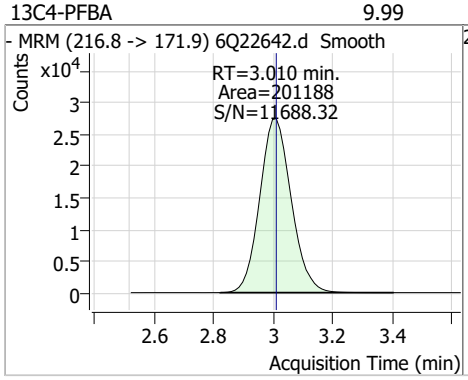
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.63	3.01	0.00	29135				

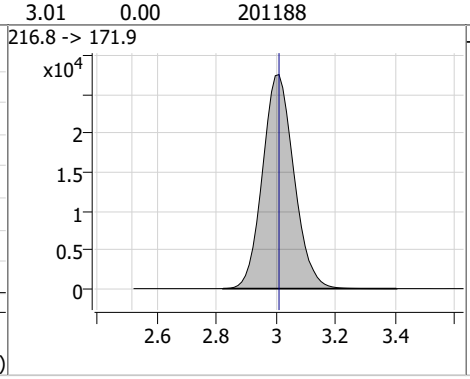


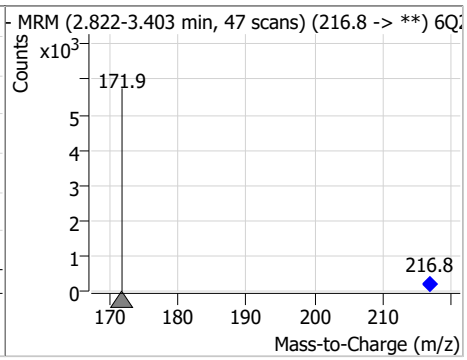




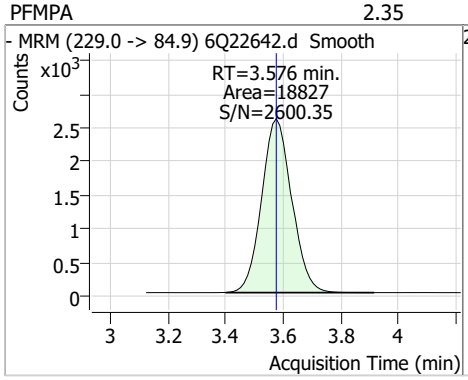
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.99	3.01	0.00	201188				

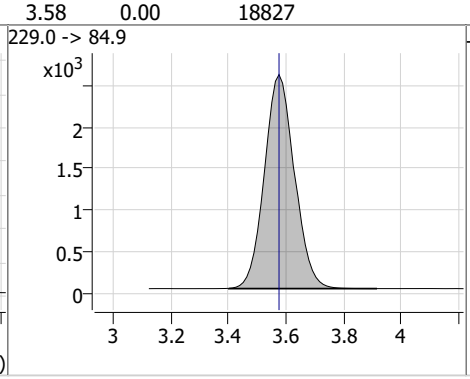


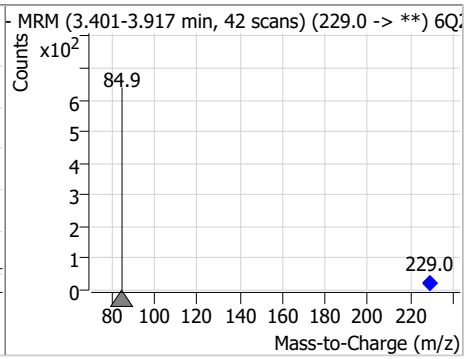




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	2.35	3.58	0.00	18827				

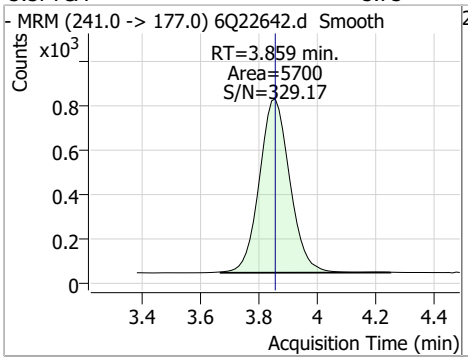


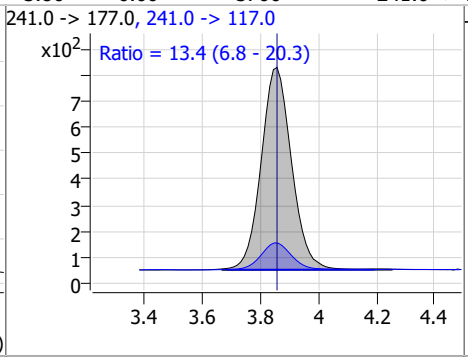


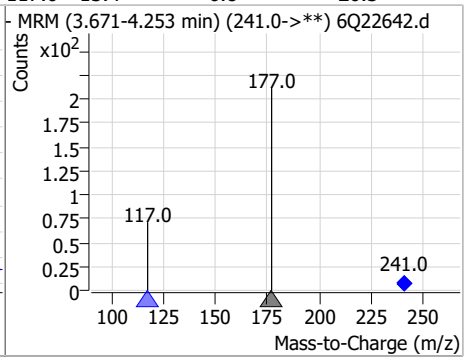


Perfluorinated Compounds by LC/MS/MS

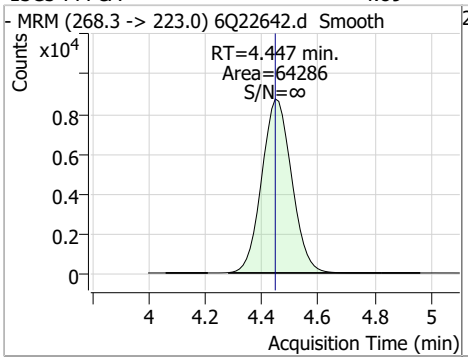
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	5.73	3.86	0.00	5700	241.0 -> 117.0	13.4	6.8	20.3

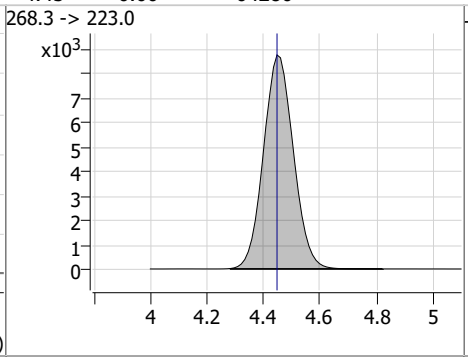


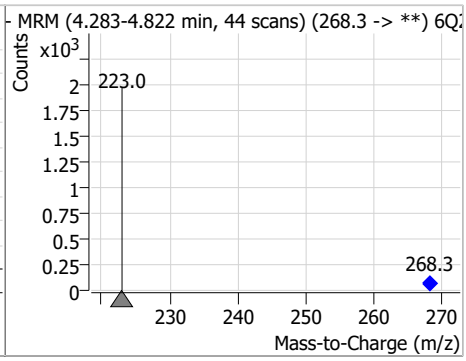




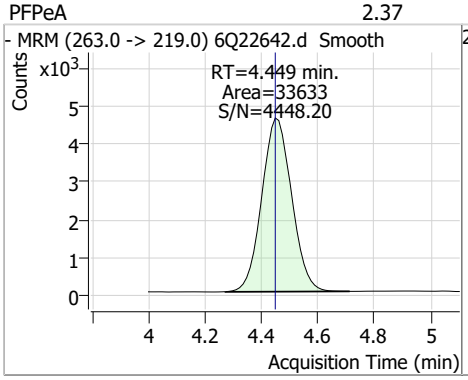
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.89	4.45	0.00	64286				

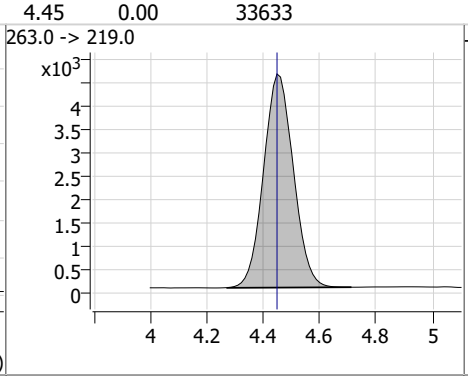


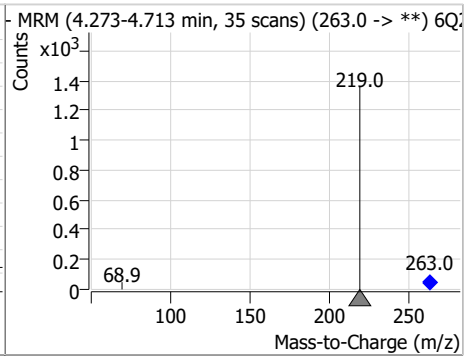




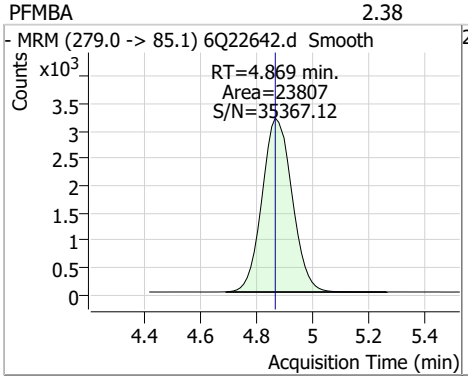
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.37	4.45	0.00	33633				

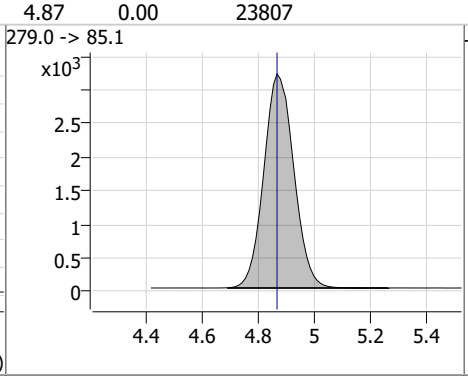


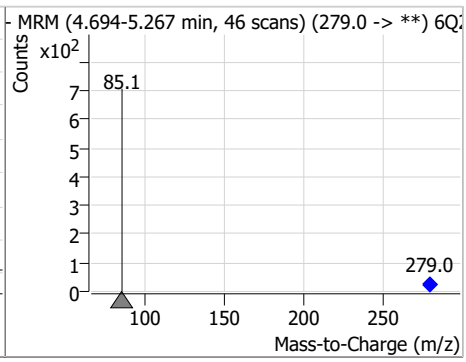




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.38	4.87	0.00	23807				

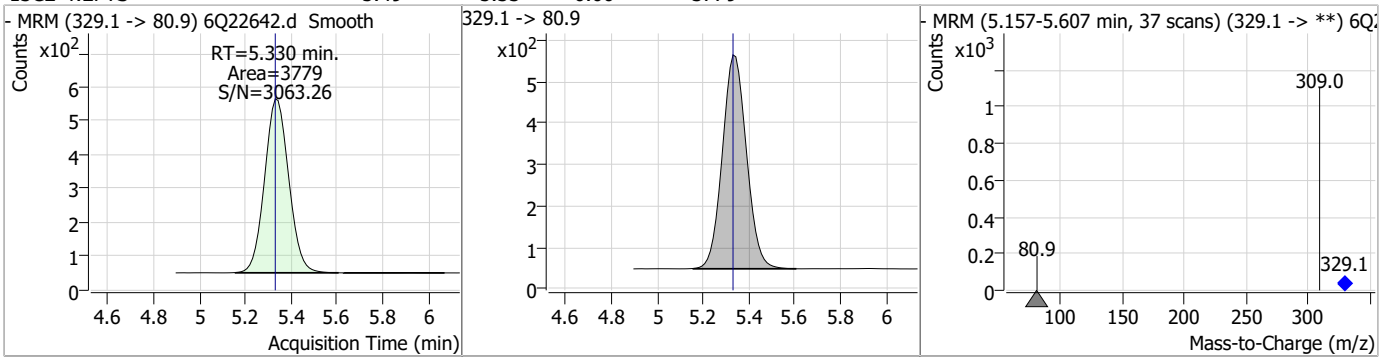




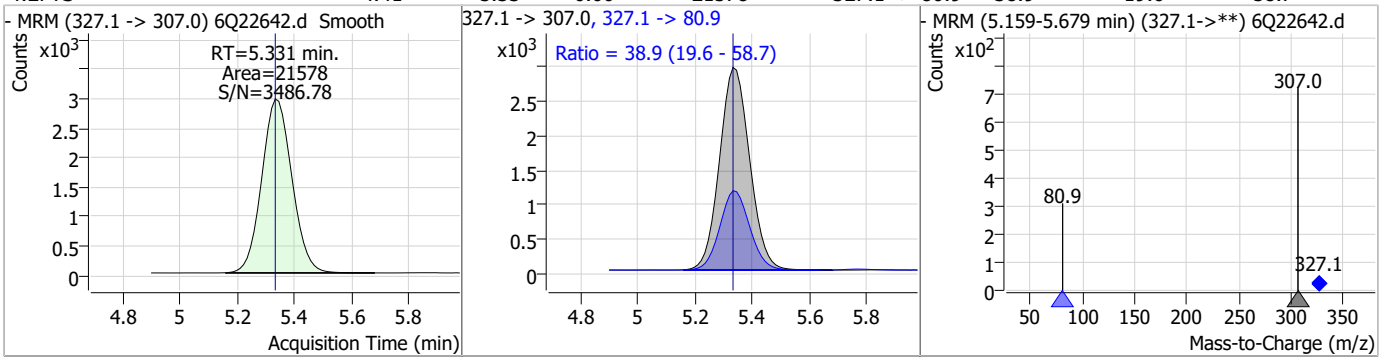


Perfluorinated Compounds by LC/MS/MS

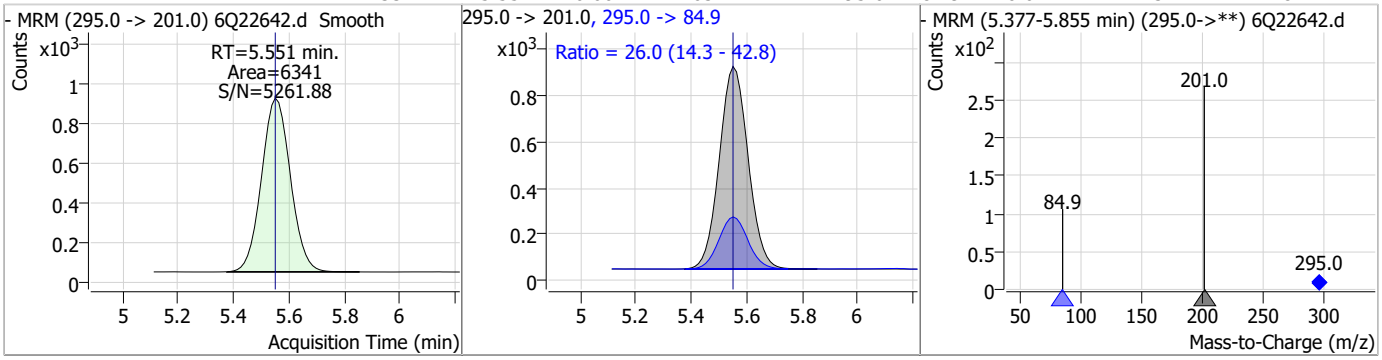
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.49	5.33	0.00	3779				



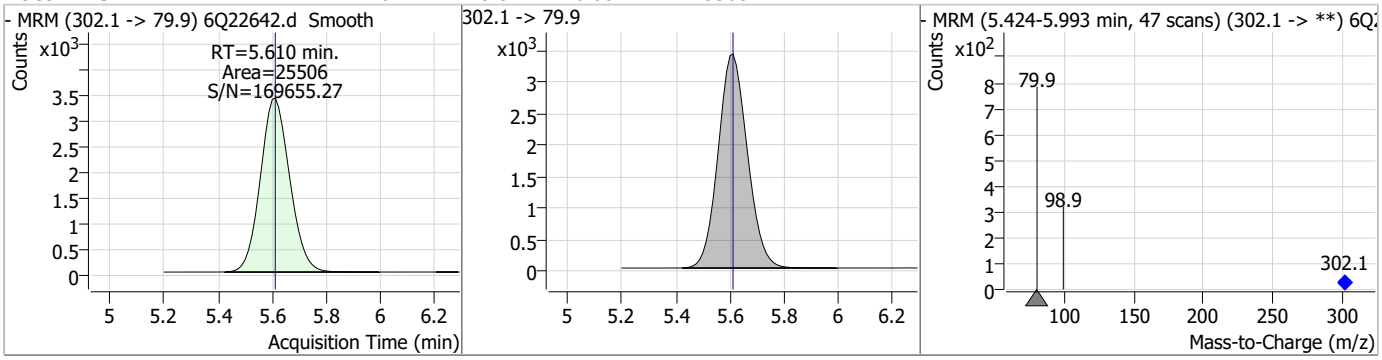
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.41	5.33	0.00	21578	327.1 -> 80.9	38.9	19.6	58.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	2.33	5.55	0.00	6341	295.0 -> 84.9	26.0	14.3	42.8

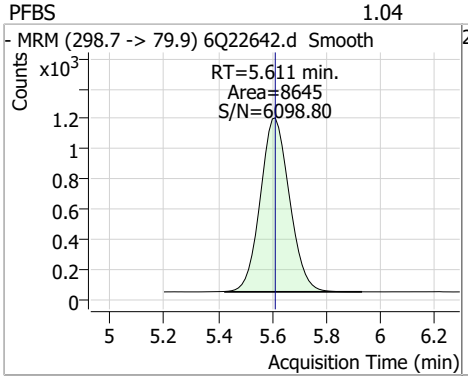


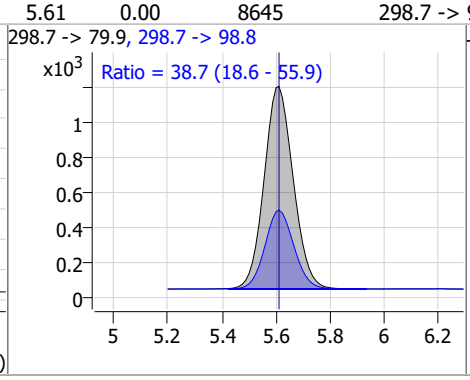
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	5.61	0.00	25506				

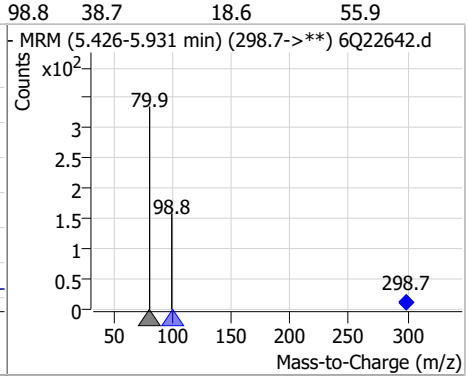


Perfluorinated Compounds by LC/MS/MS

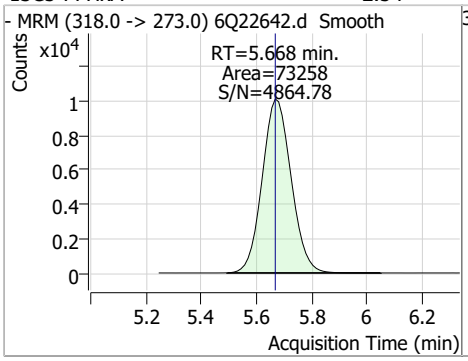
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.04	5.61	0.00	8645	298.7 -> 98.8	38.7	18.6	55.9

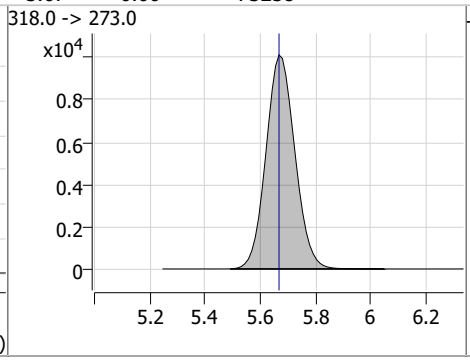


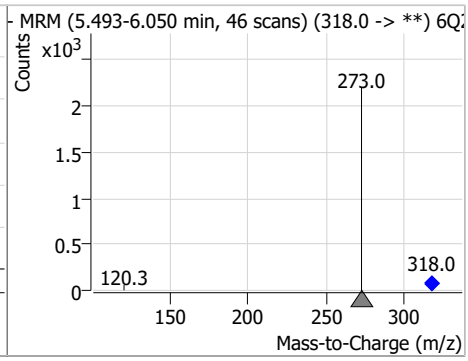




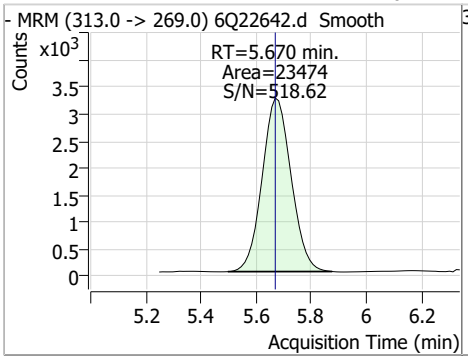
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.67	0.00	73258				

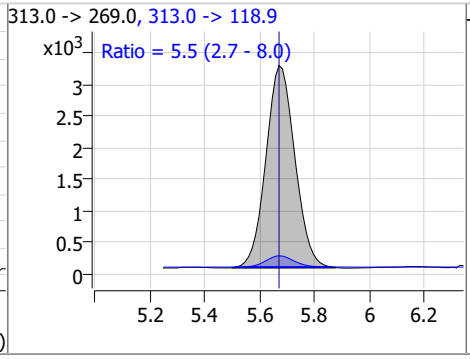


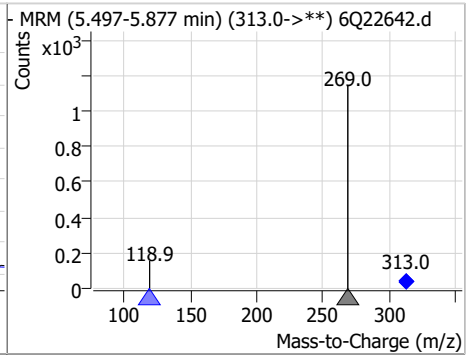




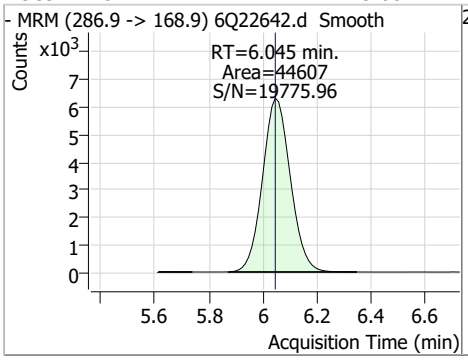
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.10	5.67	0.00	23474	313.0 -> 118.9	5.5	2.7	8.0

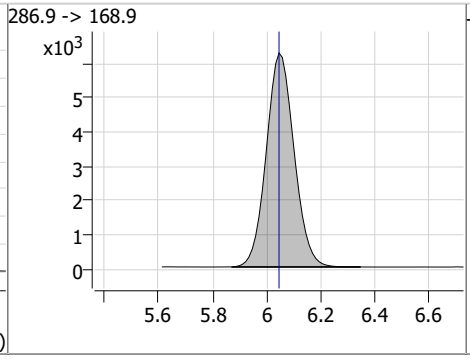


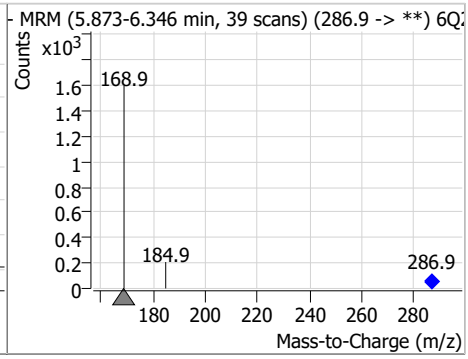




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.88	6.05	0.00	44607				

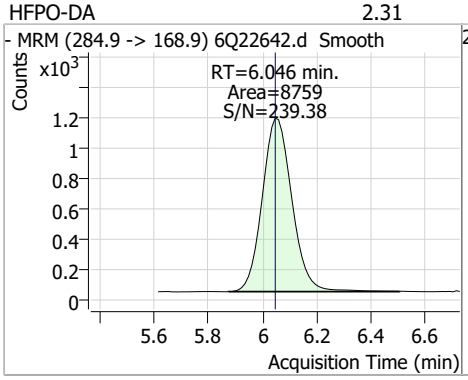


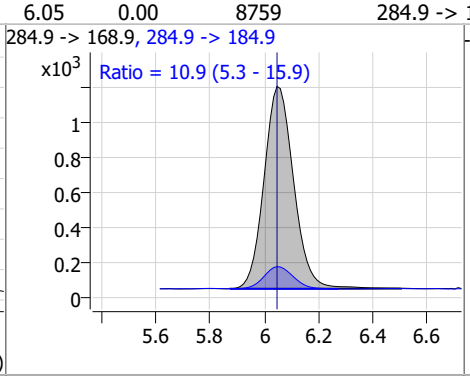


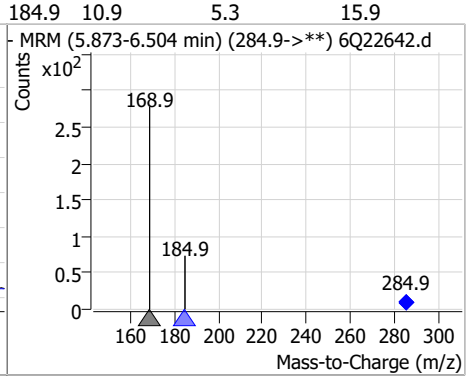


Perfluorinated Compounds by LC/MS/MS

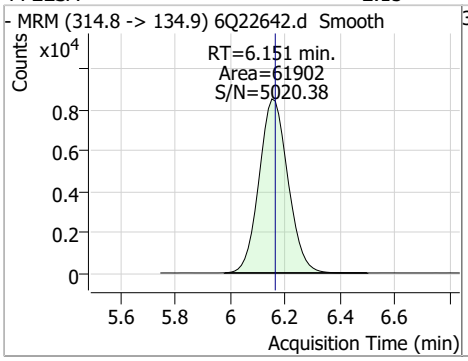
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.31	6.05	0.00	8759	284.9 -> 184.9	10.9	5.3	15.9

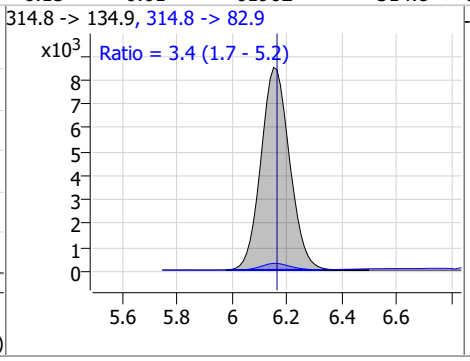


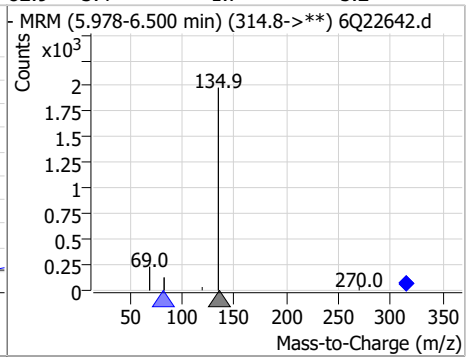




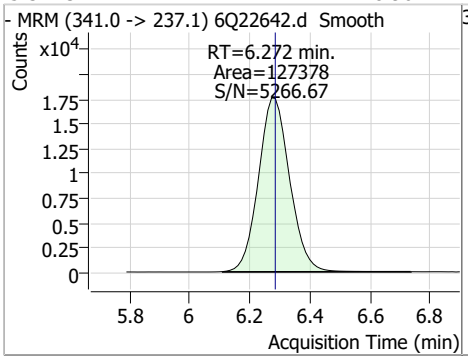
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.15	6.15	-0.01	61902	314.8 -> 82.9	3.4	1.7	5.2

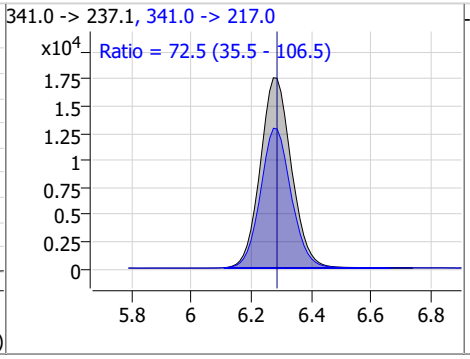


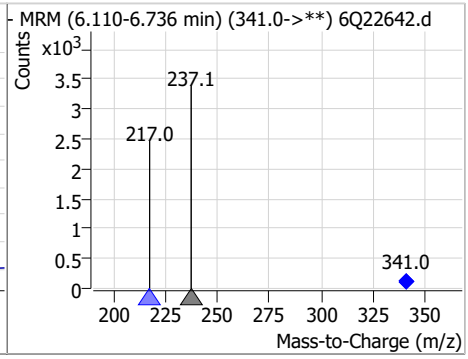




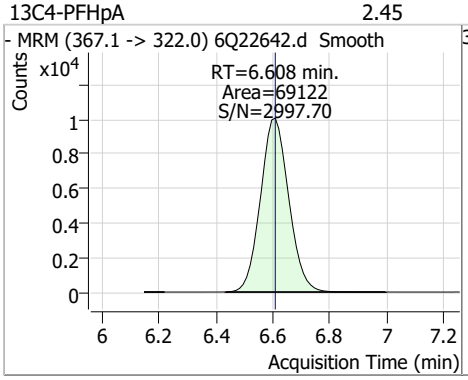
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	28.90	6.27	-0.01	127378	341.0 -> 217.0	72.5	35.5	106.5

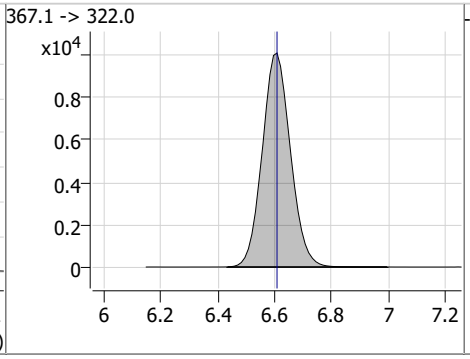


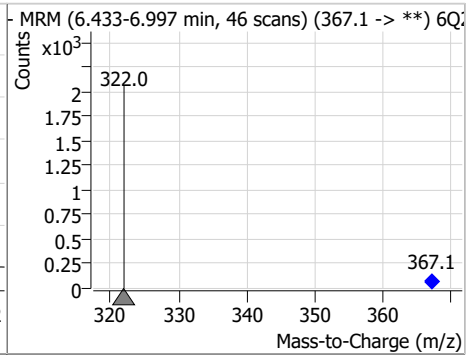




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.61	0.00	69122				

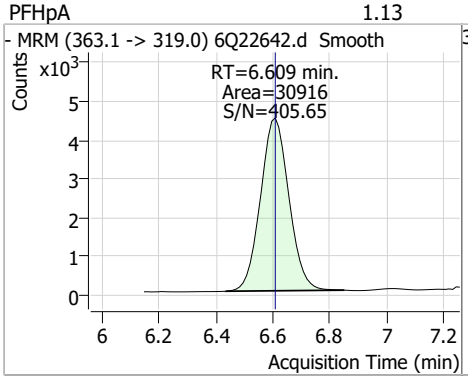


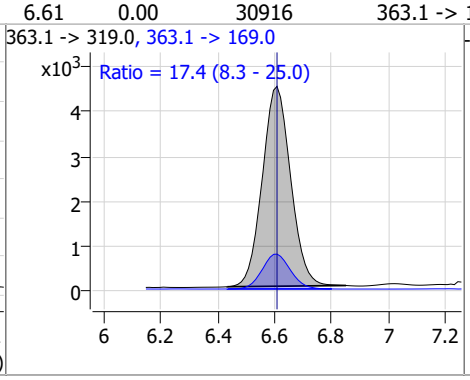


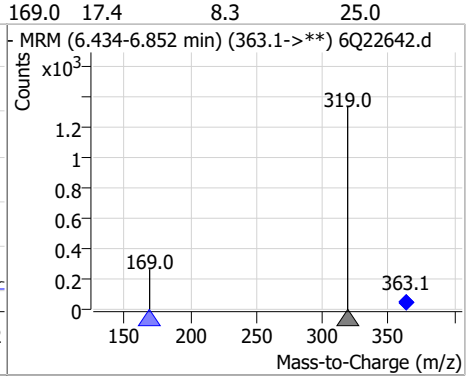


Perfluorinated Compounds by LC/MS/MS

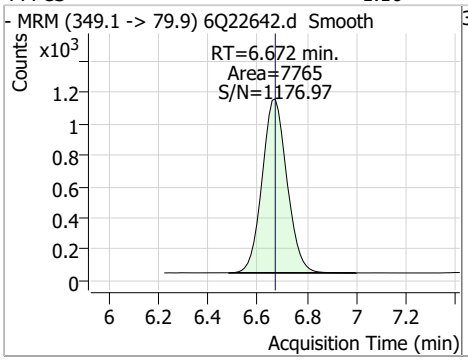
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.13	6.61	0.00	30916	363.1 -> 169.0	17.4	8.3	25.0

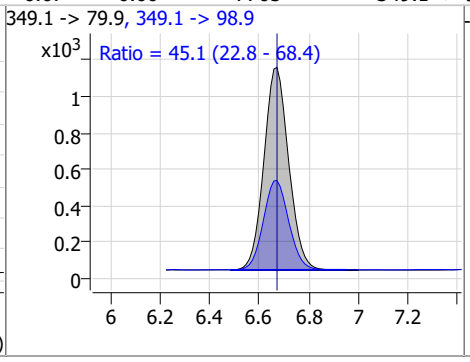


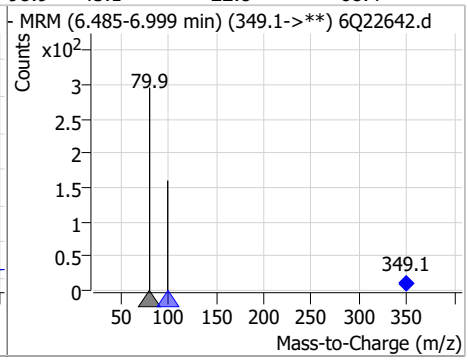




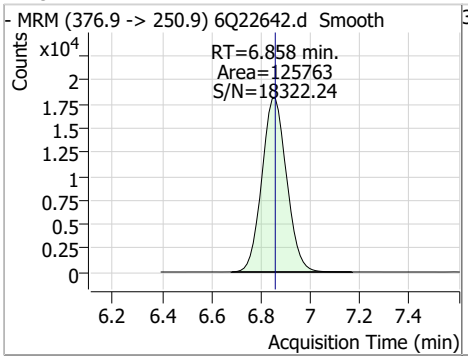
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.16	6.67	0.00	7765	349.1 -> 98.9	45.1	22.8	68.4

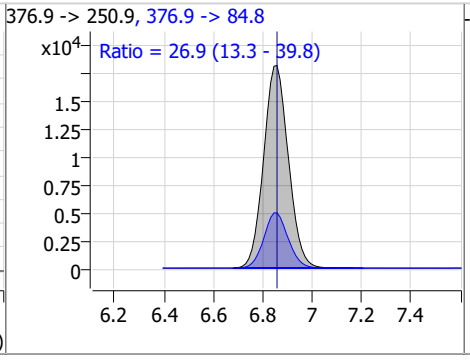


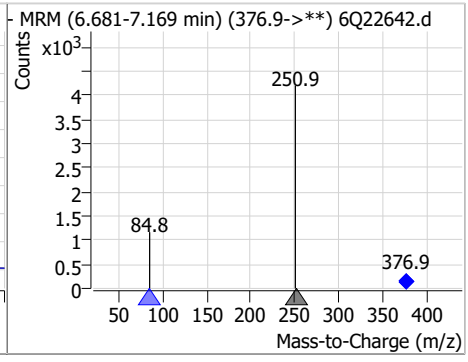




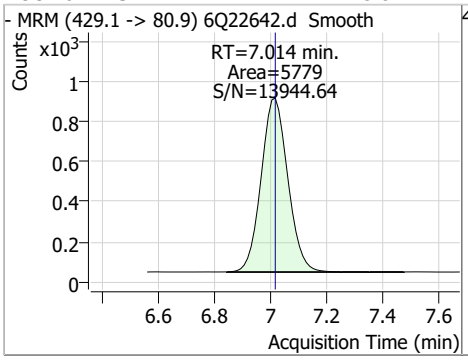
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	2.21	6.86	0.00	125763	376.9 -> 84.8	26.9	13.3	39.8

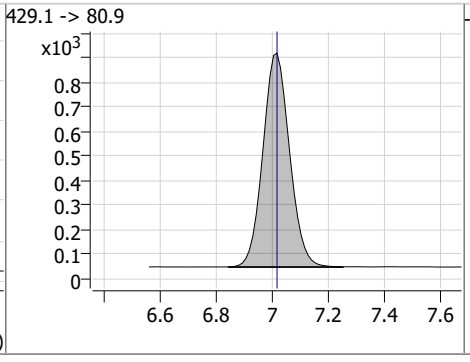


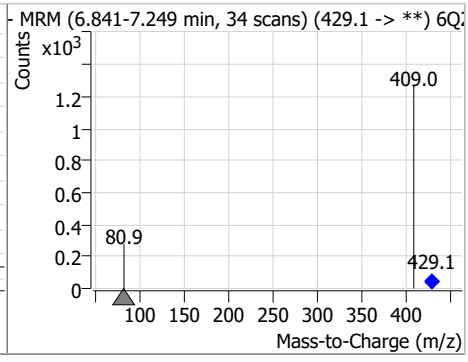




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.82	7.01	0.00	5779				

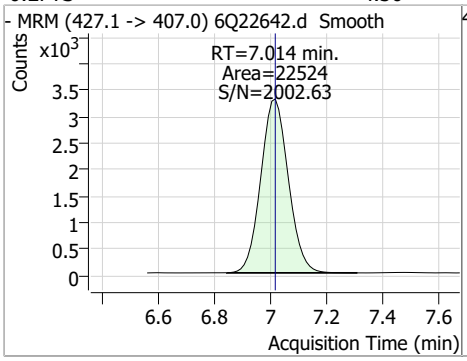


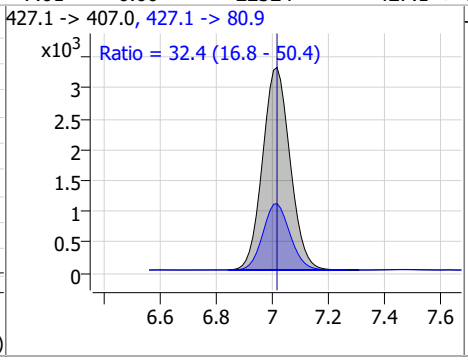


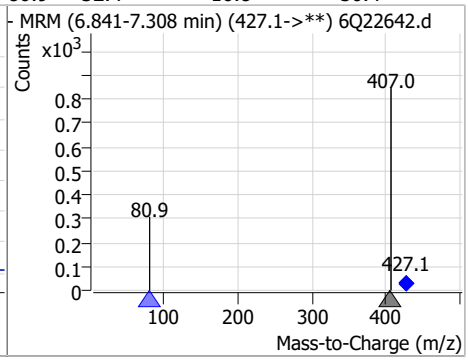


Perfluorinated Compounds by LC/MS/MS

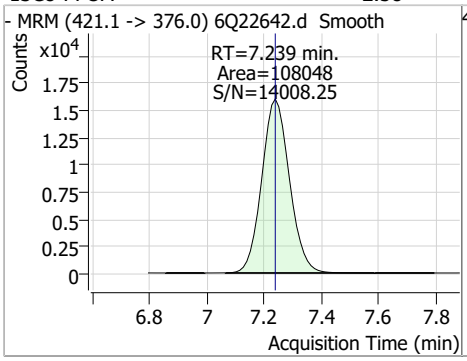
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.36	7.01	0.00	22524	427.1 -> 80.9	32.4	16.8	50.4

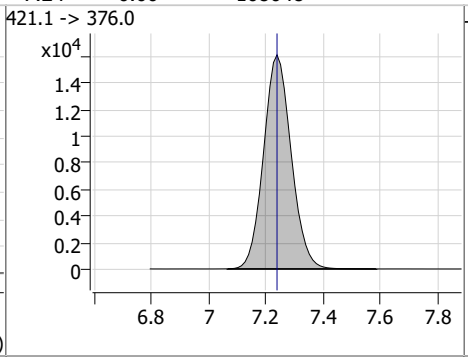


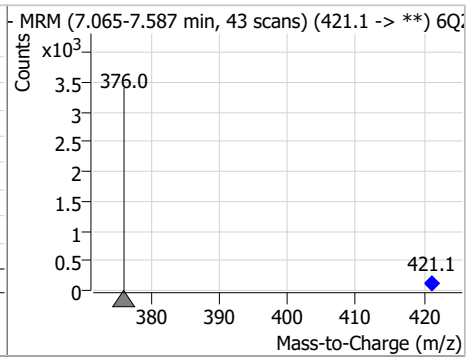




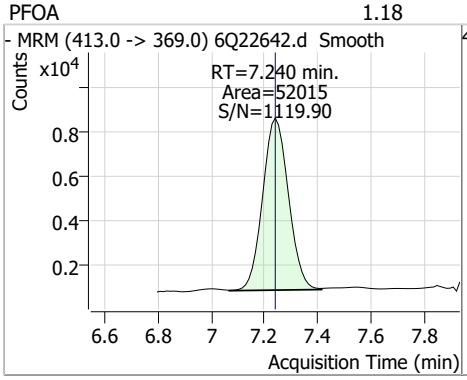
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.58	7.24	0.00	108048				

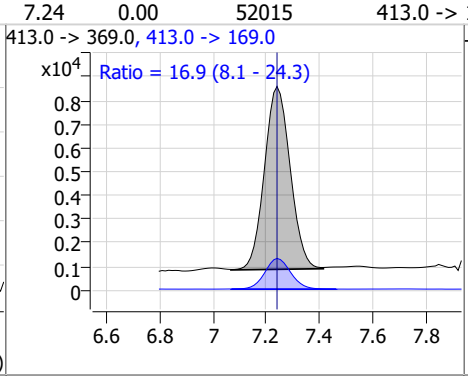


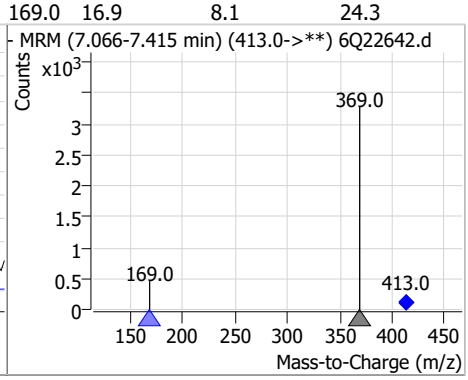




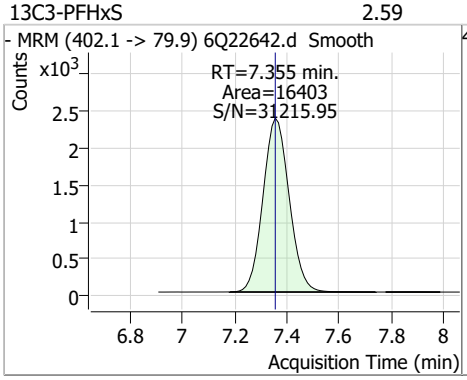
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.18	7.24	0.00	52015	413.0 -> 169.0	16.9	8.1	24.3

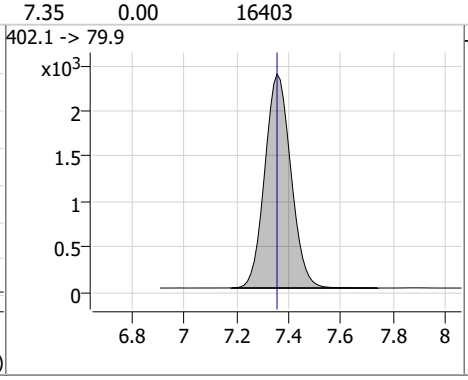


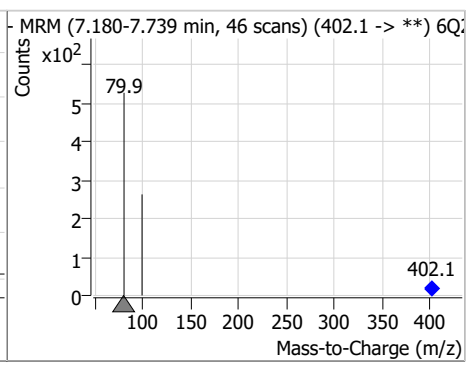




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.59	7.35	0.00	16403				

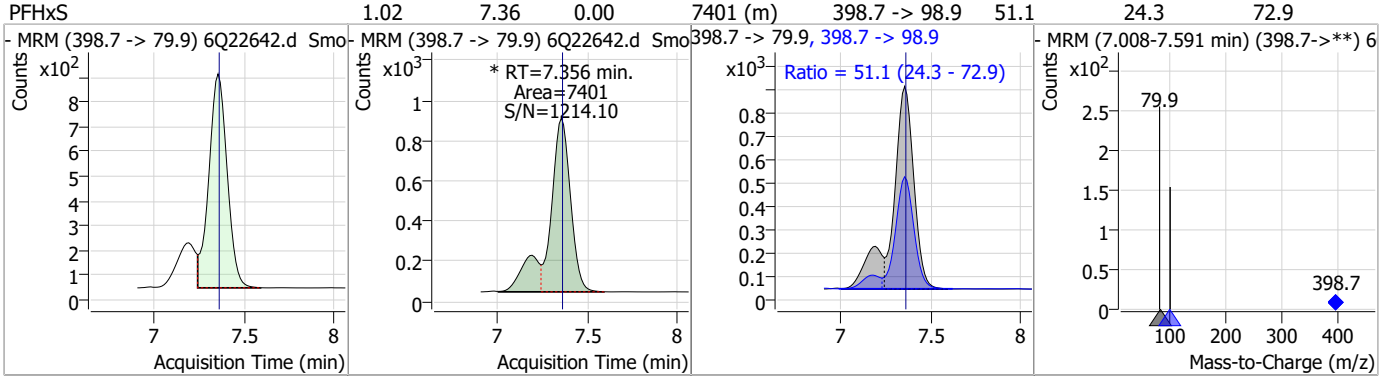




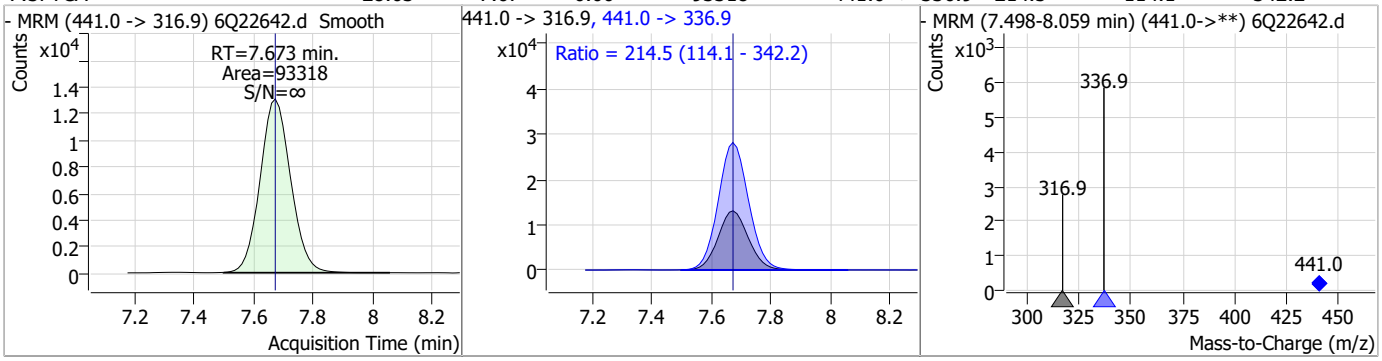


Perfluorinated Compounds by LC/MS/MS

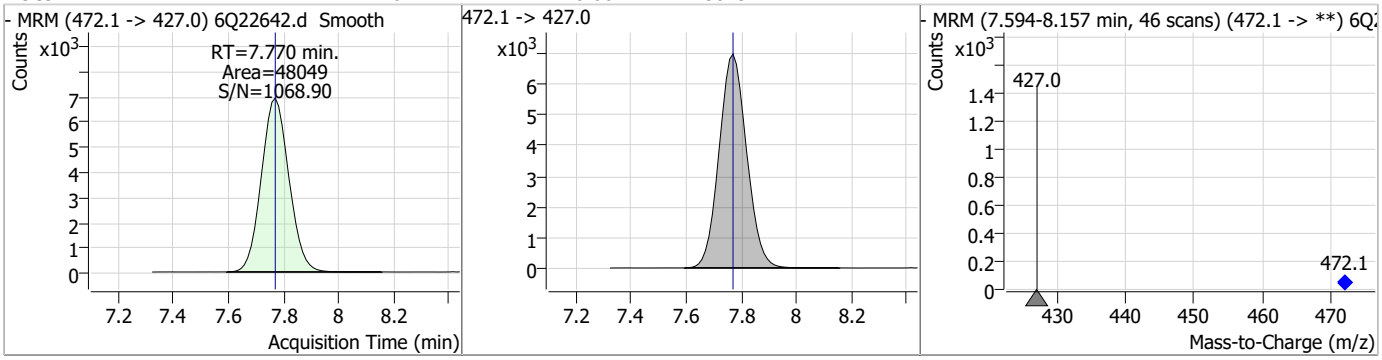
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.02	7.36	0.00	7401 (m)	398.7 -> 98.9	51.1	24.3	72.9



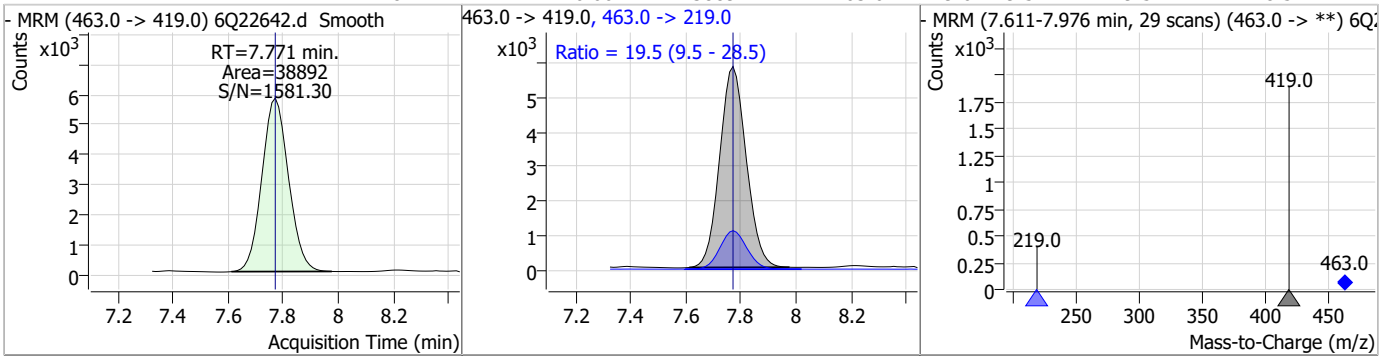
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	28.63	7.67	0.00	93318	441.0 -> 336.9	214.5	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.20	7.77	0.00	48049				

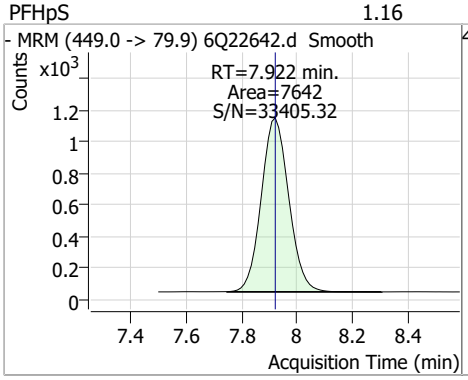


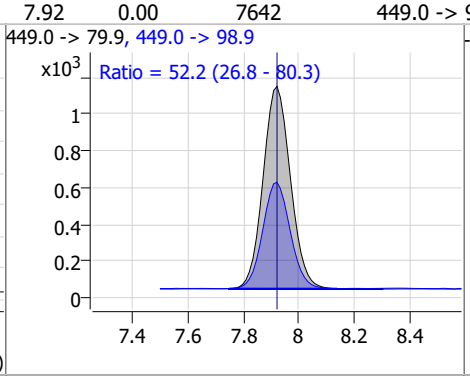
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.18	7.77	0.00	38892	463.0 -> 219.0	19.5	9.5	28.5

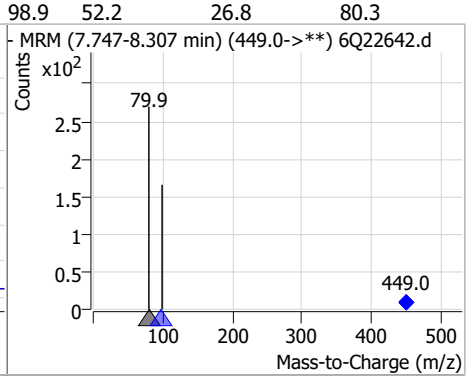


Perfluorinated Compounds by LC/MS/MS

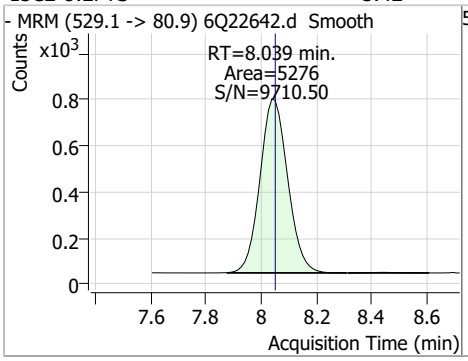
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.16	7.92	0.00	7642	449.0 -> 98.9	52.2	26.8	80.3

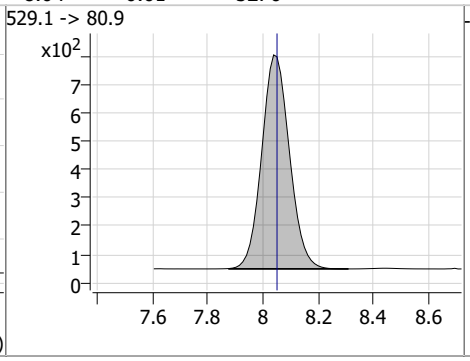


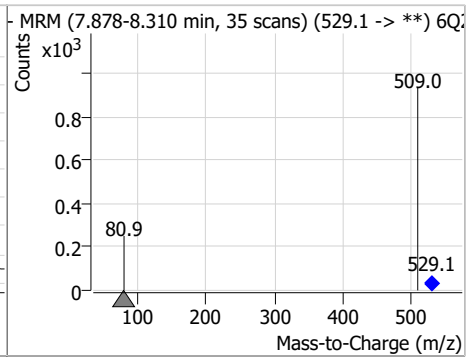




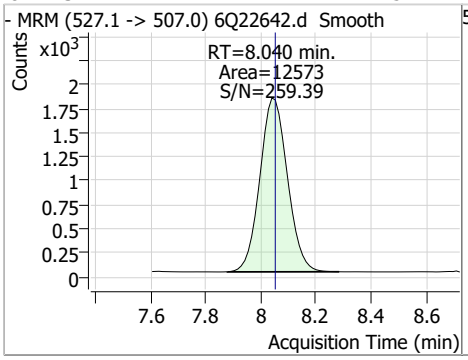
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.42	8.04	-0.01	5276				

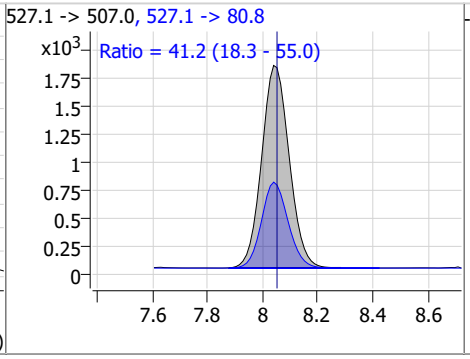


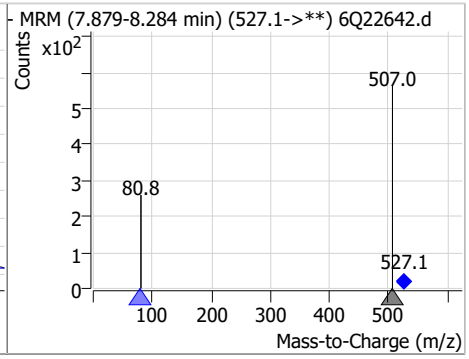




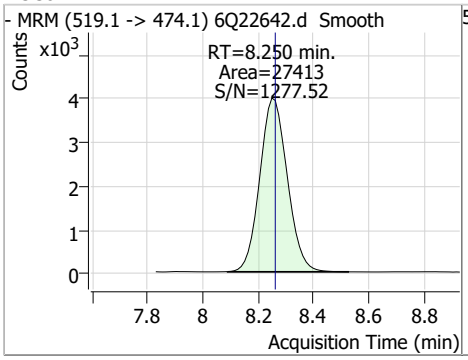
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.45	8.04	-0.01	12573	527.1 -> 80.8	41.2	18.3	55.0

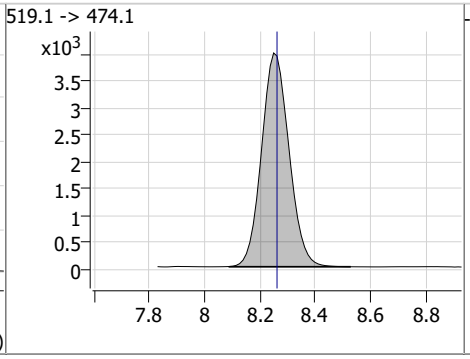


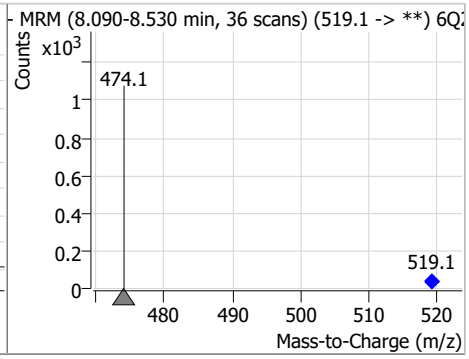




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.25	-0.01	27413				

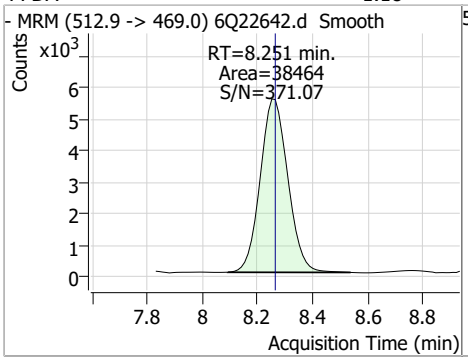


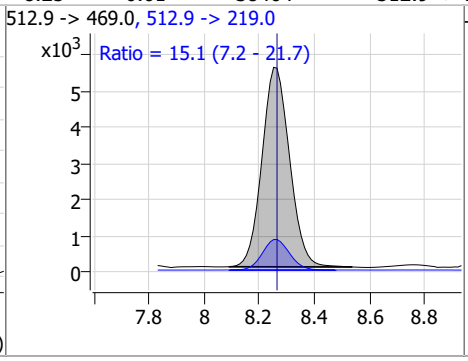


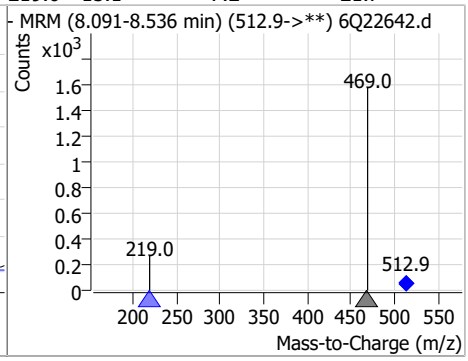


Perfluorinated Compounds by LC/MS/MS

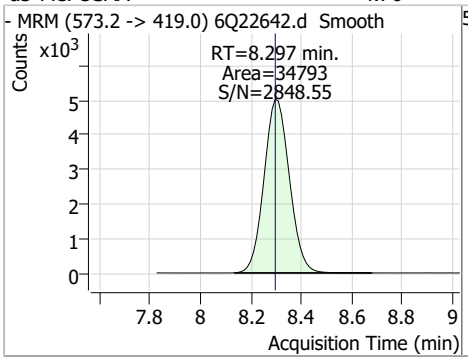
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.18	8.25	-0.01	38464	512.9 -> 219.0	15.1	7.2	21.7

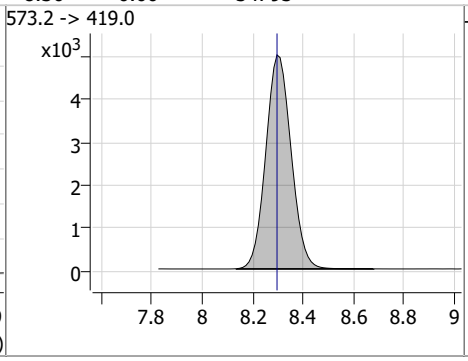


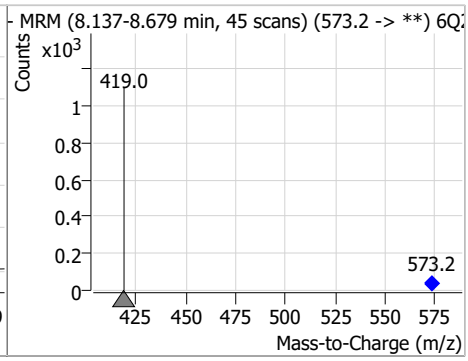




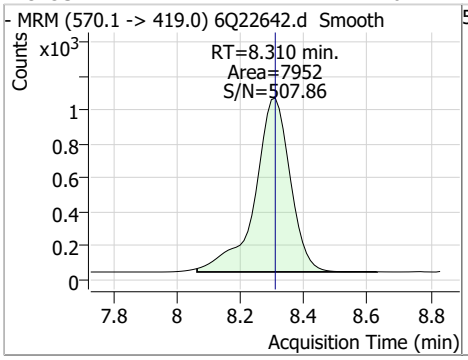
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.76	8.30	0.00	34793				

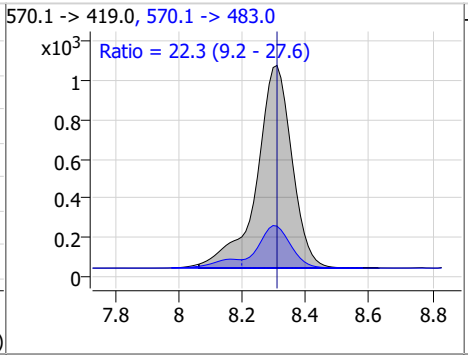


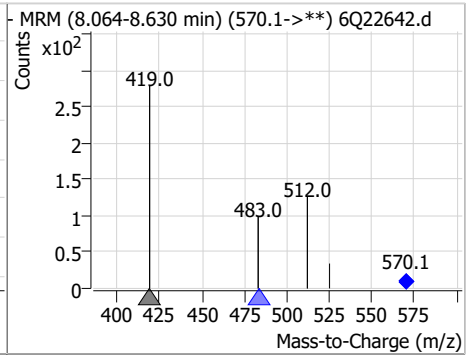




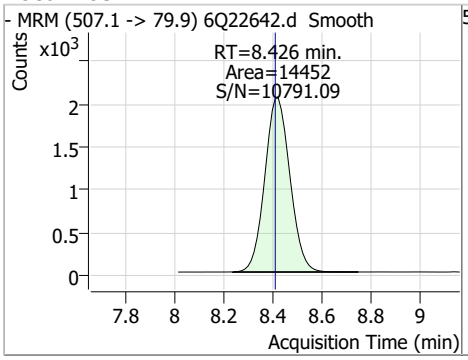
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.20	8.31	0.00	7952	570.1 -> 483.0	22.3	9.2	27.6

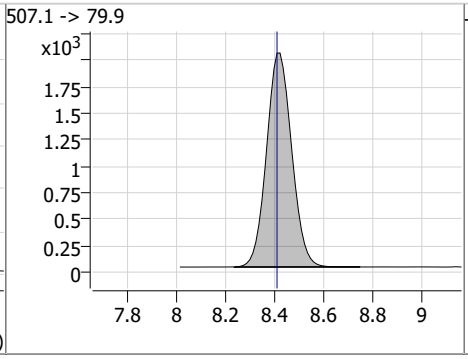


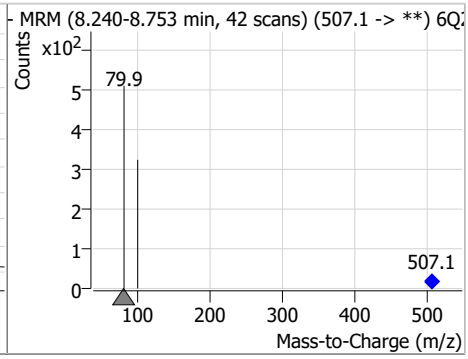




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.43	0.01	14452				

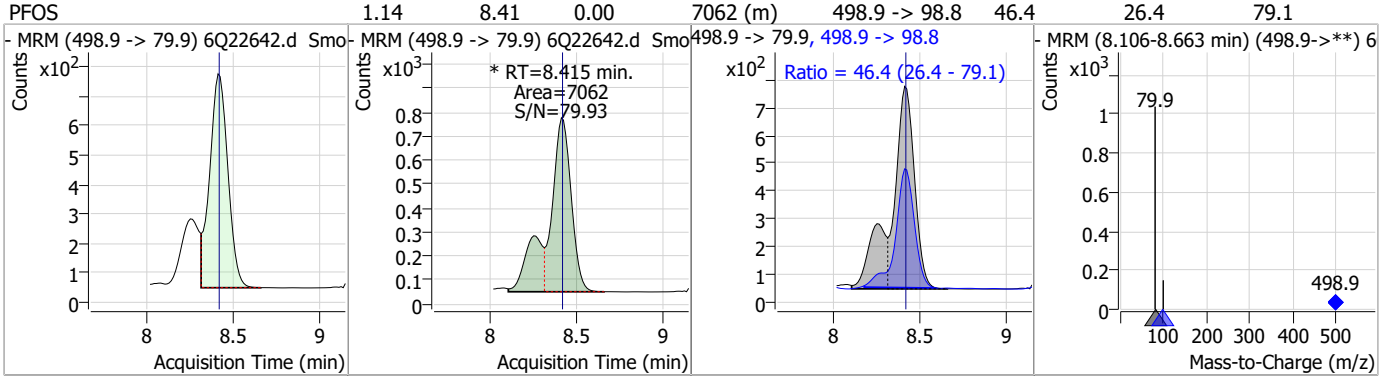




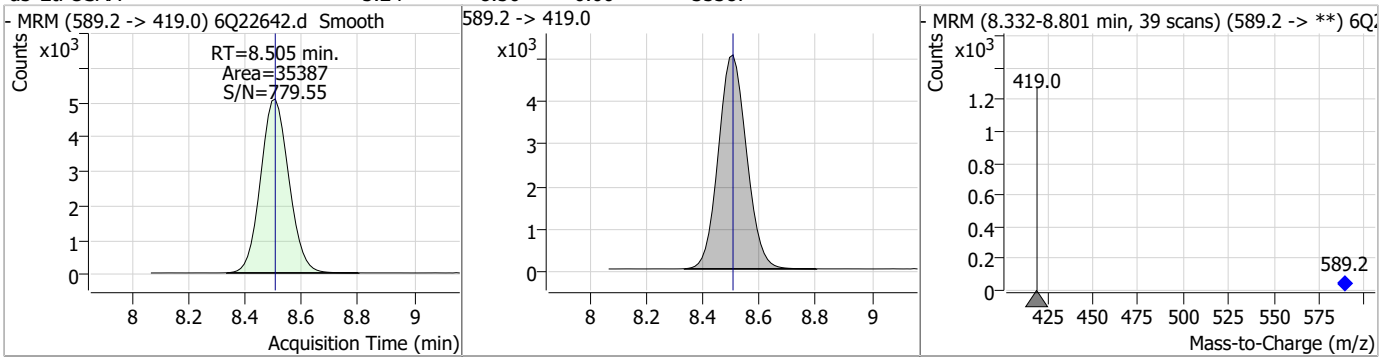


Perfluorinated Compounds by LC/MS/MS

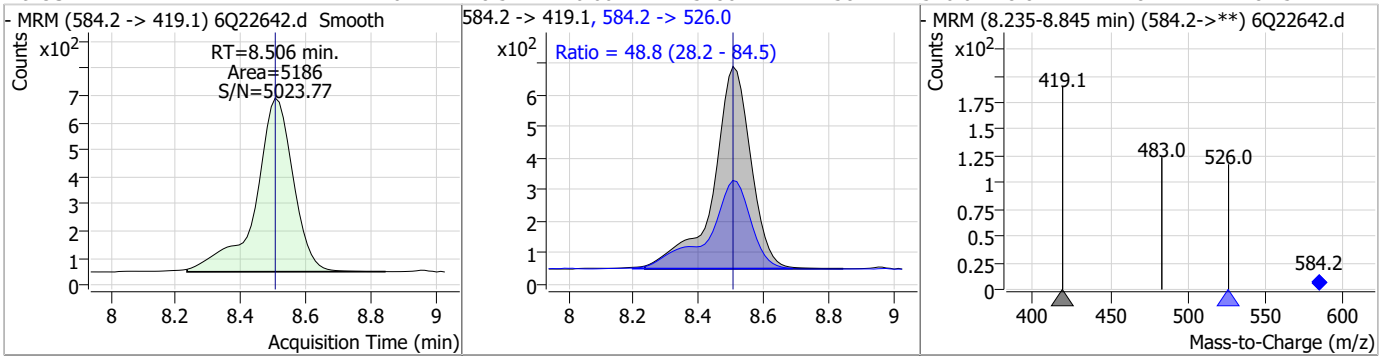
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.14	8.41	0.00	7062 (m)	498.9 -> 98.8	46.4	26.4	79.1



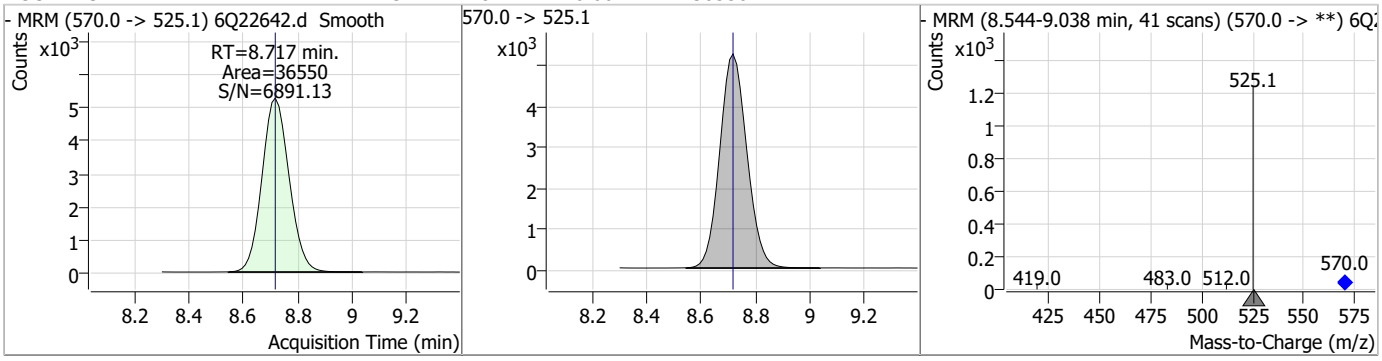
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.24	8.50	0.00	35387				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.16	8.51	0.00	5186	584.2 -> 526.0	48.8	28.2	84.5

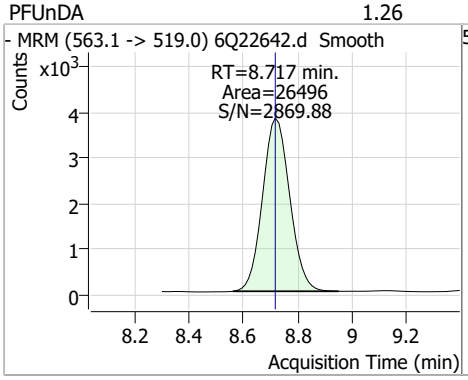


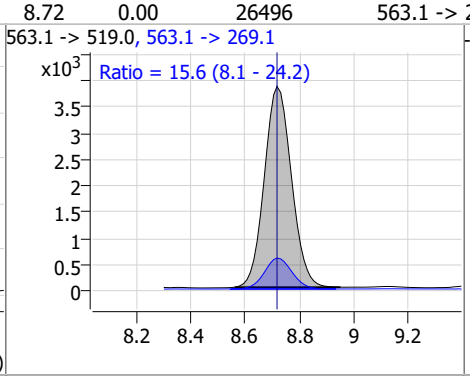
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.23	8.72	0.00	36550				

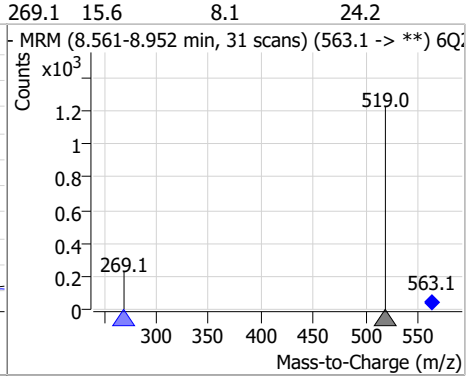


Perfluorinated Compounds by LC/MS/MS

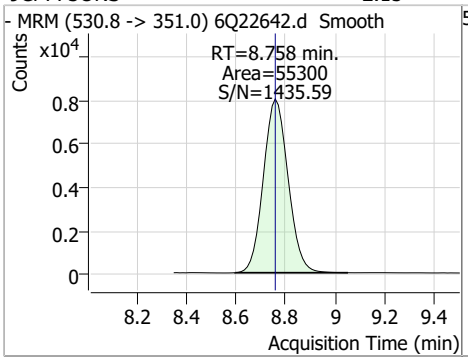
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.26	8.72	0.00	26496	563.1 -> 269.1	15.6	8.1	24.2

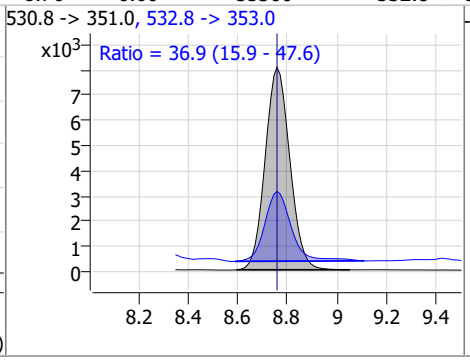


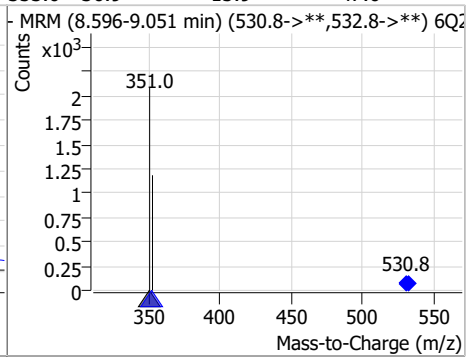




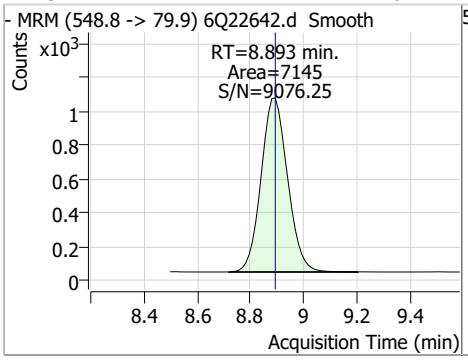
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	2.15	8.76	0.00	55300	532.8 -> 353.0	36.9	15.9	47.6

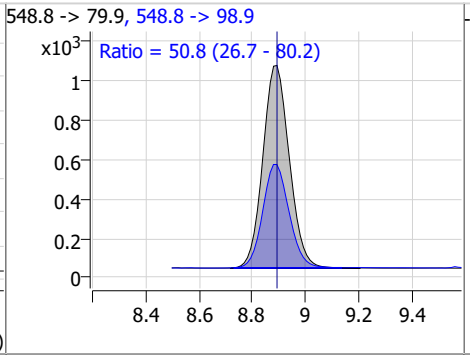


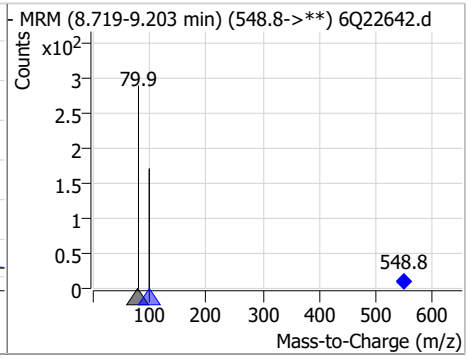




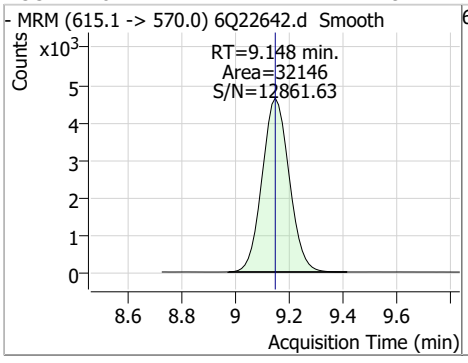
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.20	8.89	0.00	7145	548.8 -> 98.9	50.8	26.7	80.2

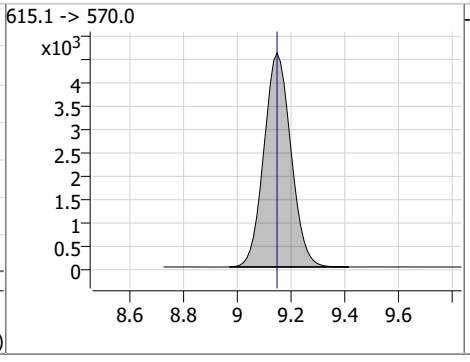


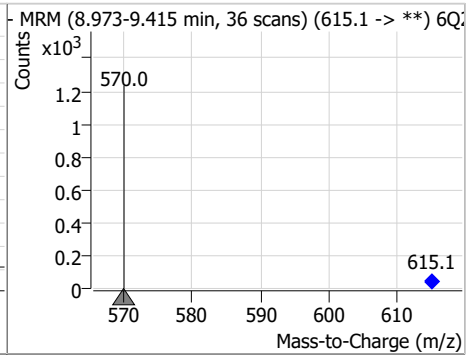




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	9.15	0.00	32146				

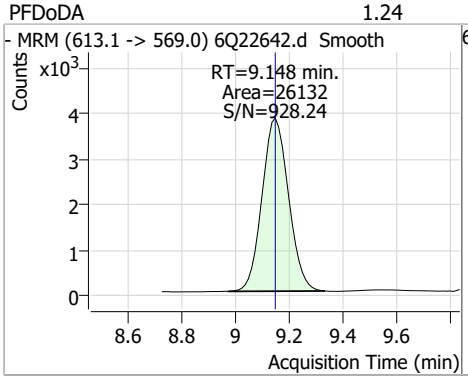


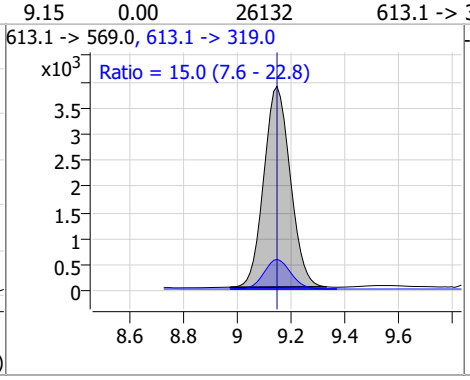


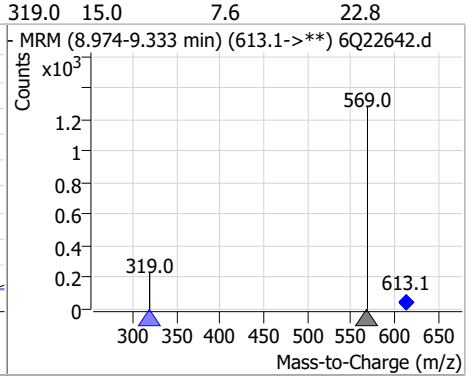


Perfluorinated Compounds by LC/MS/MS

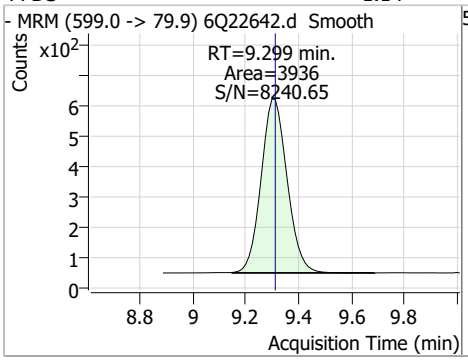
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.24	9.15	0.00	26132	613.1 -> 319.0	15.0	7.6	22.8

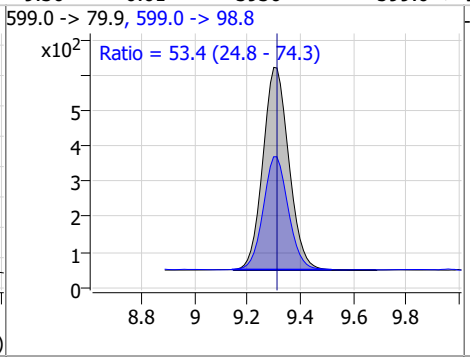


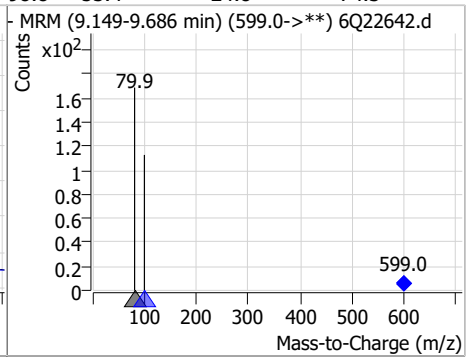




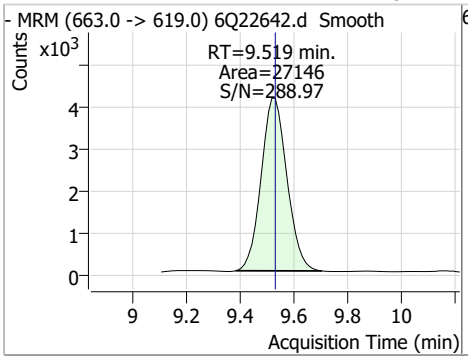
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.14	9.30	-0.01	3936	599.0 -> 98.8	53.4	24.8	74.3

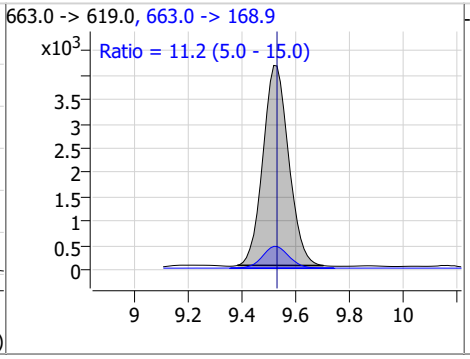


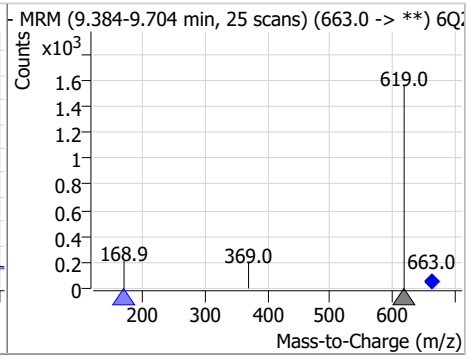




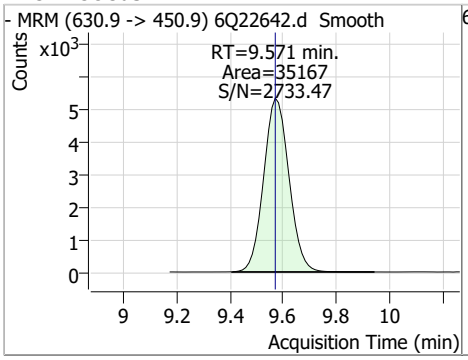
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.25	9.52	-0.01	27146	663.0 -> 168.9	11.2	5.0	15.0

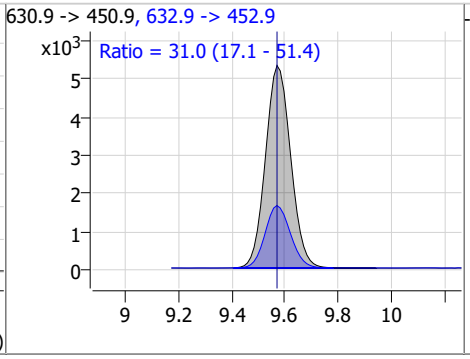


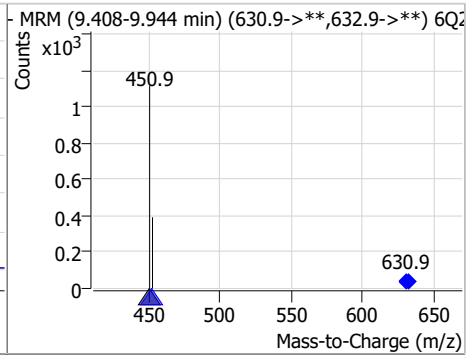




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.21	9.57	0.00	35167	632.9 -> 452.9	31.0	17.1	51.4

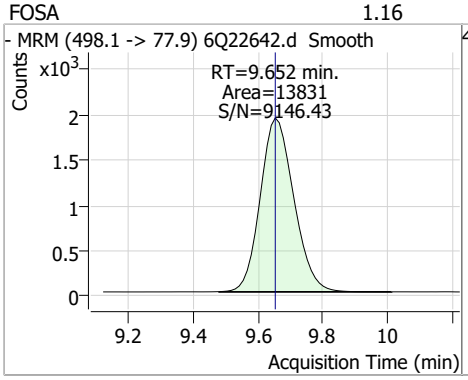


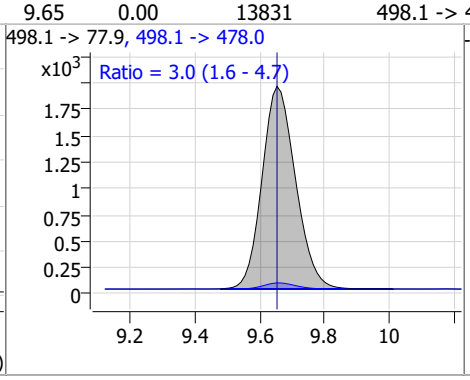


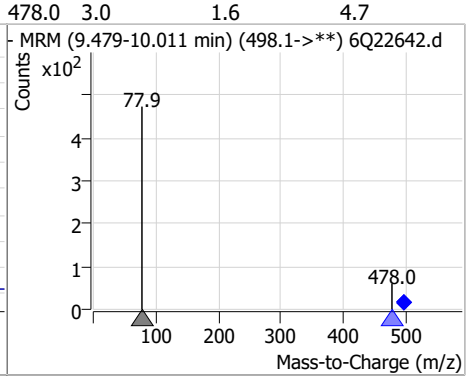


Perfluorinated Compounds by LC/MS/MS

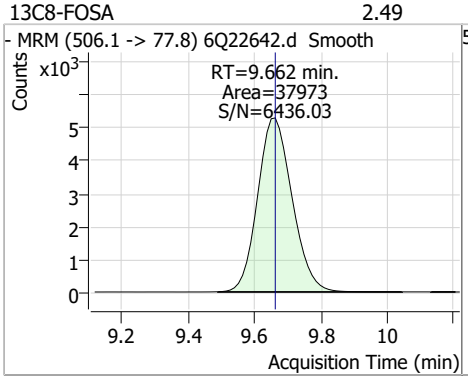
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.16	9.65	0.00	13831	498.1 -> 478.0	3.0	1.6	4.7

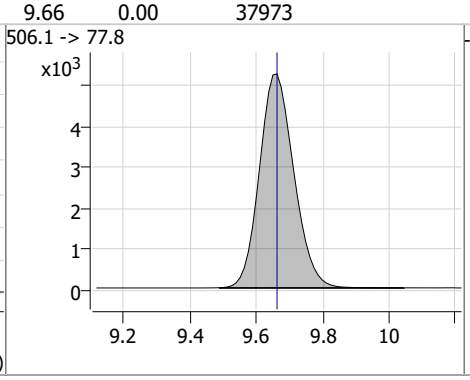


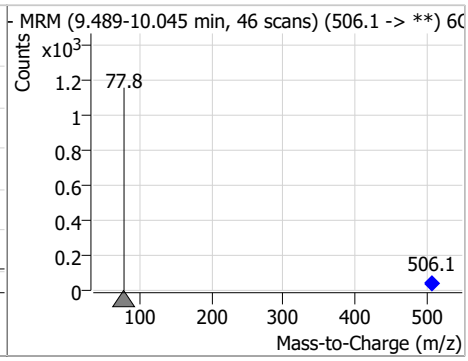




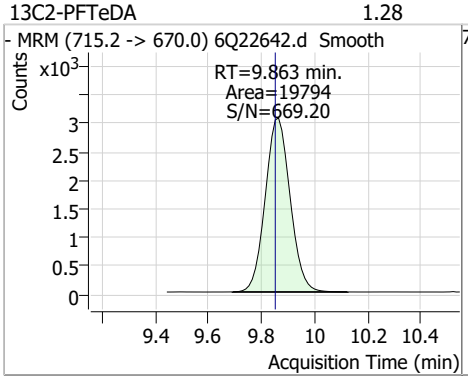
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.49	9.66	0.00	37973				

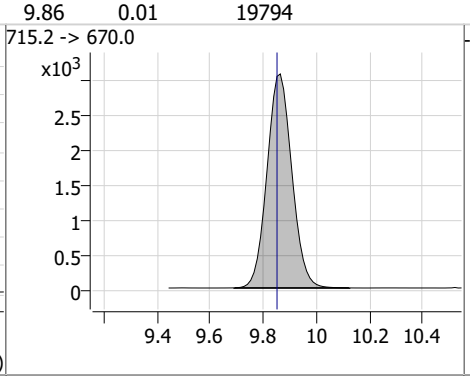


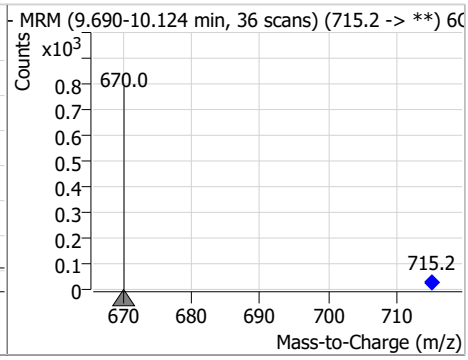




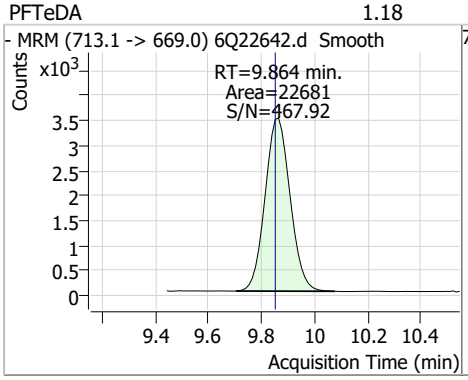
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	9.86	0.01	19794				

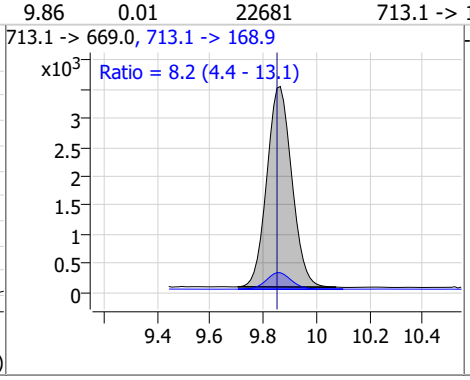


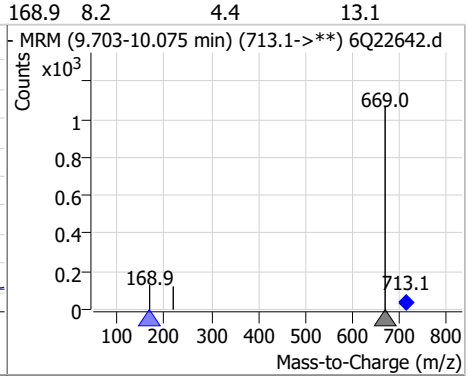




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.18	9.86	0.01	22681	713.1 -> 168.9	8.2	4.4	13.1

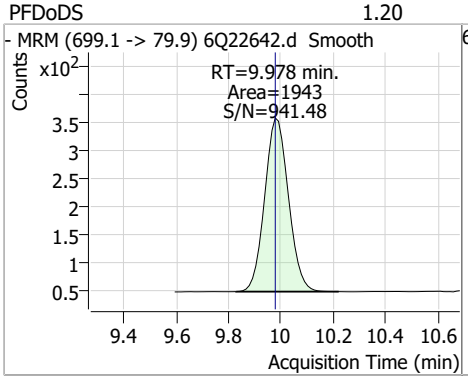


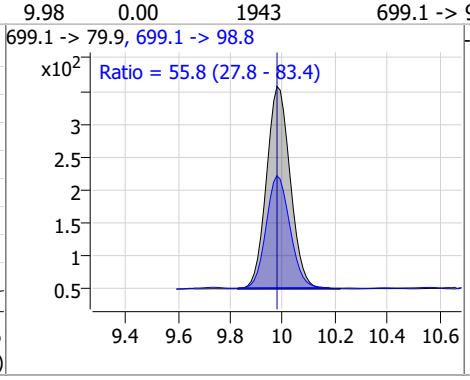


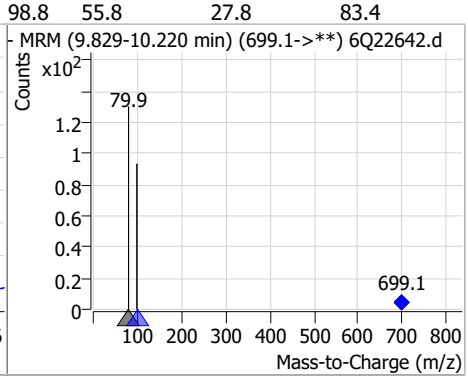


Perfluorinated Compounds by LC/MS/MS

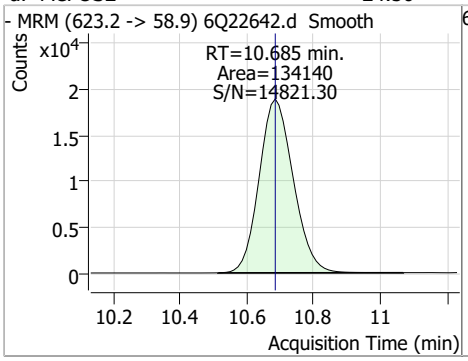
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	1.20	9.98	0.00	1943	699.1 -> 98.8	55.8	27.8	83.4

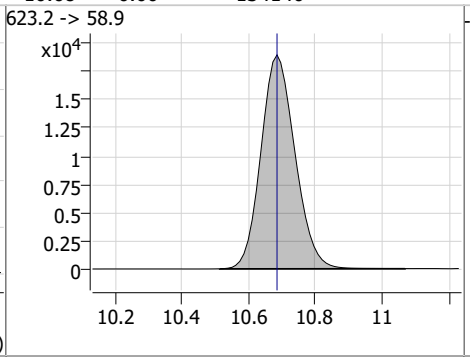


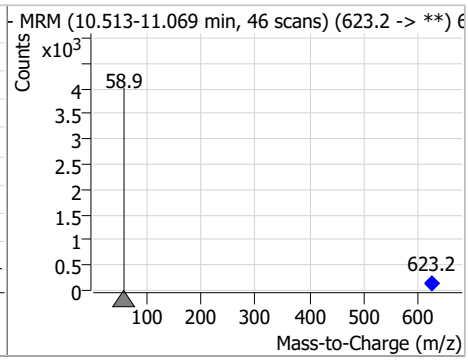




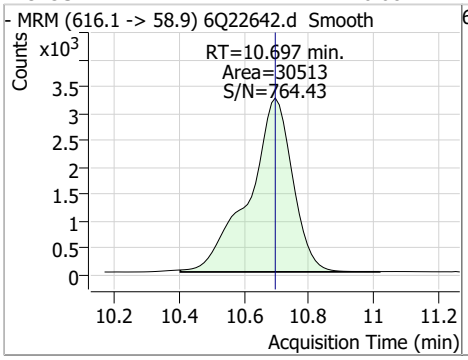
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.56	10.68	0.00	134140				

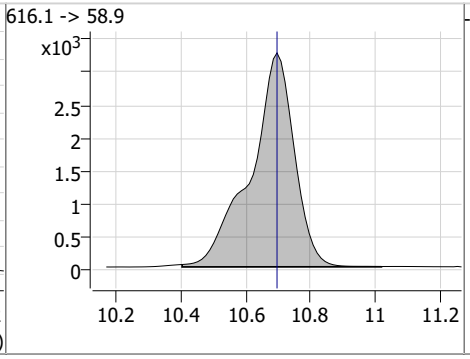


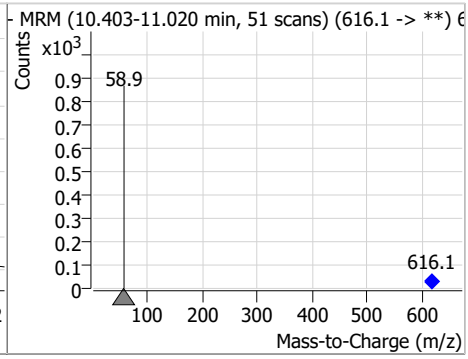




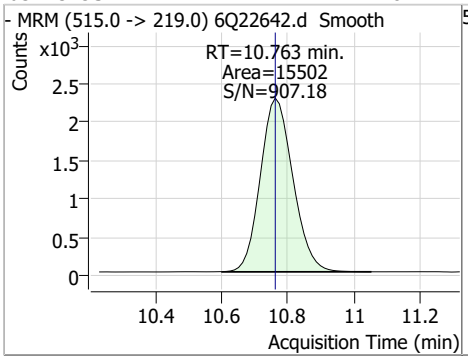
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	6.08	10.70	0.00	30513				

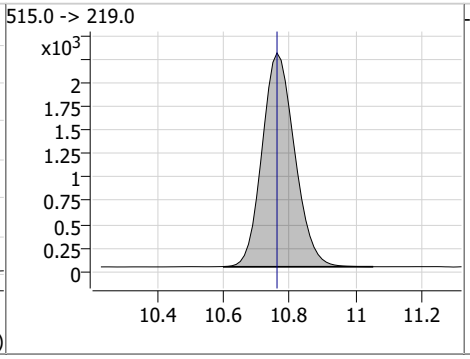


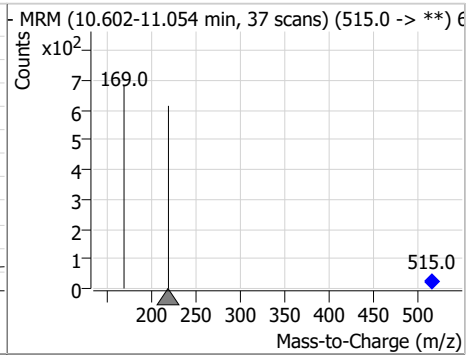




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.48	10.76	0.00	15502				

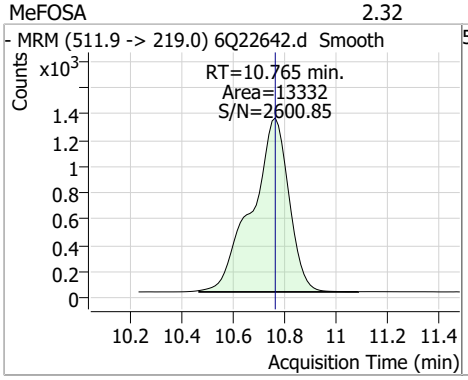


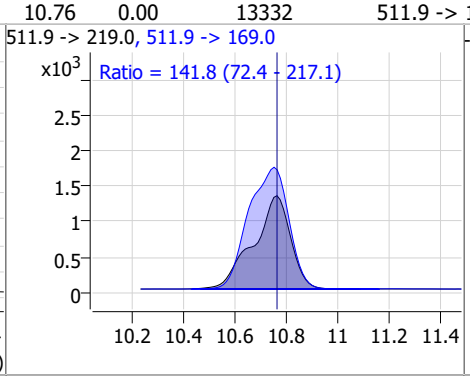


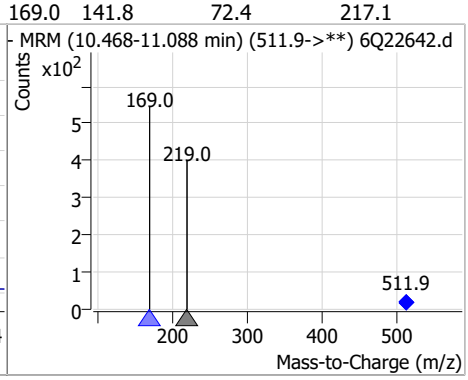


Perfluorinated Compounds by LC/MS/MS

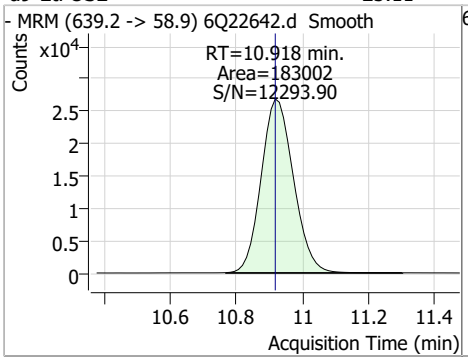
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.32	10.76	0.00	13332	511.9 -> 169.0	141.8	72.4	217.1

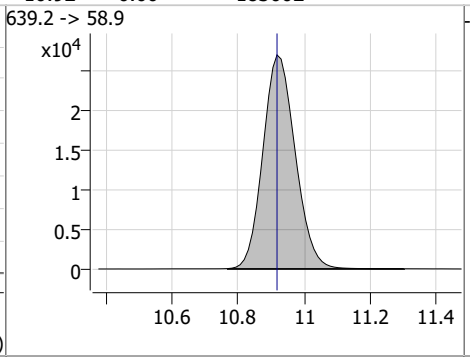


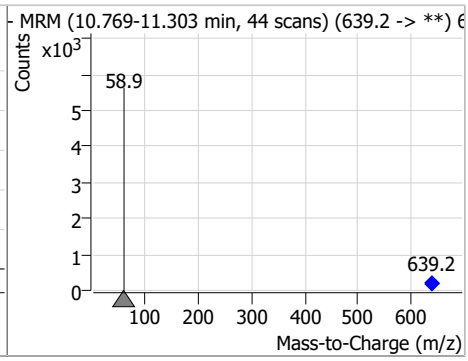




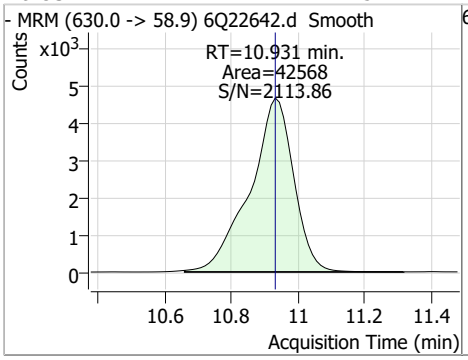
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.11	10.92	0.00	183002				

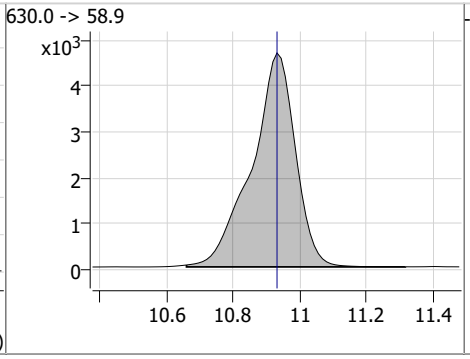


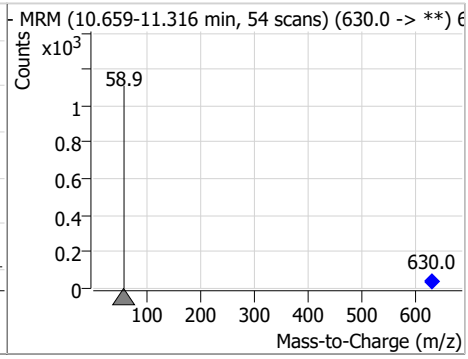




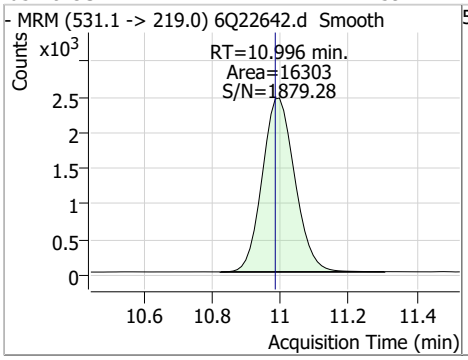
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	5.74	10.93	0.00	42568				

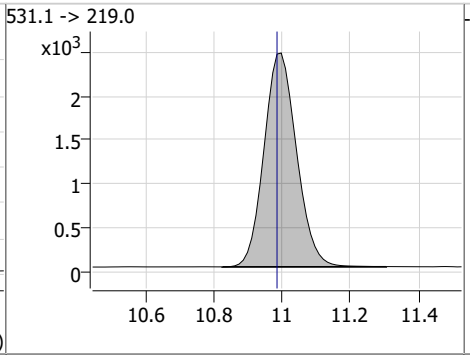


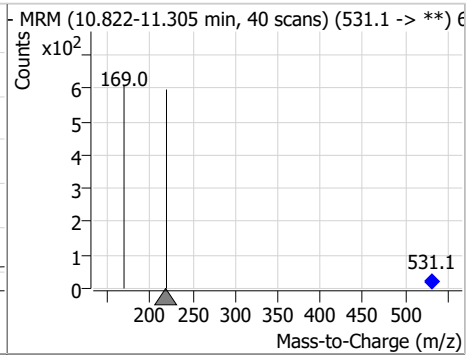




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.59	11.00	0.01	16303				

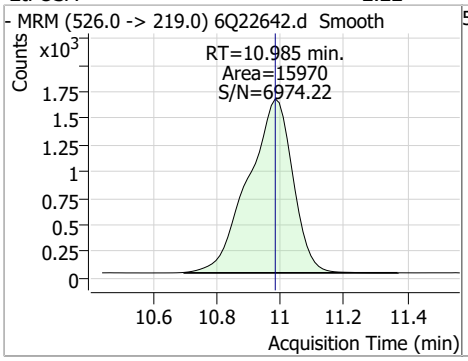


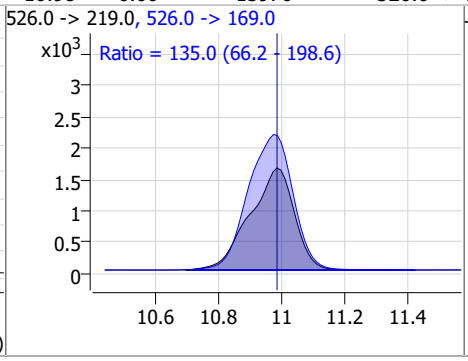


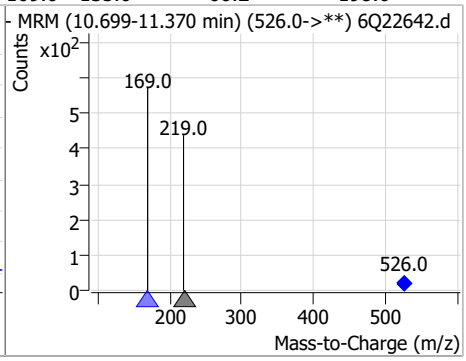


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.22	10.98	0.00	15970	526.0 -> 169.0	135.0	66.2	198.6







7.7.19

7

Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22642.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 14:06	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22643.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 2:20:43 PM
Sample Name : icc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	183595	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	59327	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	65847	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	62558	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	93279	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	48017	1.25	µg/L	0.000
M6-PFDA	8.263	519.1 -> 474.1	25309	1.25	µg/L	0.000
M7-PFUnDA	8.717	570.0 -> 525.1	34550	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	30643	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	18080	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	35185	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	22426	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15950	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	12981	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3455	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5045	5.00	µg/L	0.000
M2-8:2FTS	8.051	529.1 -> 80.9	4788	5.00	µg/L	0.000
M3-MeFOSAA	8.297	573.2 -> 419.0	34994	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	40135	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	30901	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	123545	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	173472	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14144	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13769	2.50	µg/L	0.000
13C4-PFOS	8.427	502.8 -> 79.9	18412	2.50	µg/L	0.000
13C3-PFBA	3.001	216.0 -> 172.0	77706	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	10305	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	105960	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38505	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	54511	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	62113	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3455	5.61	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5045	5.68	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C2-8:2FTS	8.051	529.1 -> 80.9	4788	5.50	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
13C2-PFDoDA	9.148	615.1 -> 570.0	30643	1.18	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18080	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFBS	5.610	302.1 -> 79.9	22426	2.56	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C3-PFHxS	7.355	402.1 -> 79.9	15950	2.82	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 = 112.6%	
13C4-PFBA	3.010	216.8 -> 171.9	183595	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.608	367.1 -> 322.0	62558	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.668	318.0 -> 273.0	65847	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFPeA	4.447	268.3 -> 223.0	59327	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	8.263	519.1 -> 474.1	25309	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C7-PFUnDA	8.717	570.0 -> 525.1	34550	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-FOSA	9.662	506.1 -> 77.8	35185	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.239	421.1 -> 376.0	93279	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOS	8.414	507.1 -> 79.9	12981	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C9-PFNA	7.770	472.1 -> 427.0	48017	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.6%	
d3-MeFOSAA	8.297	573.2 -> 419.0	34994	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	40135	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	13769	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
d5-EtFOSAA	8.505	589.2 -> 419.0	30901	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d7-MeFOSE	10.685	623.2 -> 58.9	123545	24.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d9-EtFOSE	10.918	639.2 -> 58.9	173472	26.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
d5-EtFOSA	10.983	531.1 -> 219.0	14144	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
Target Compounds					QValue
4:2FTS	5.331	327.1 -> 307.0	41650	9.32 µg/L	100
		327.1 -> 80.9	16287		
6:2FTS	7.014	427.1 -> 407.0	43505	9.64 µg/L	100
		427.1 -> 80.9	14617		
8:2FTS	8.052	527.1 -> 507.0	26201	10.22 µg/L	100
		527.1 -> 80.8	9611		
EtFOSAA	8.506	584.2 -> 419.1	9564	2.46 µg/L	100
		584.2 -> 526.0	5385		
FOSA	9.652	498.1 -> 77.9	27767	2.51 µg/L	100
		498.1 -> 478.0	877		
MeFOSAA	8.310	570.1 -> 419.0	15926	2.38 µg/L	100
		570.1 -> 483.0	2932		
PFBA	3.006	212.8 -> 168.9	58021	10.11 µg/L	100
PFBS	5.611	298.7 -> 79.9	17846	2.44 µg/L	100
		298.7 -> 98.8	6650		
PFDA	8.263	512.9 -> 469.0	76813	2.56 µg/L	100
		512.9 -> 219.0	11115		
PFDoDA	9.148	613.1 -> 569.0	49177	2.45 µg/L	100
		613.1 -> 319.0	7491		
PFDS	9.312	599.0 -> 79.9	7743	2.49 µg/L	100

Perfluorinated Compounds by LC/MS/MS

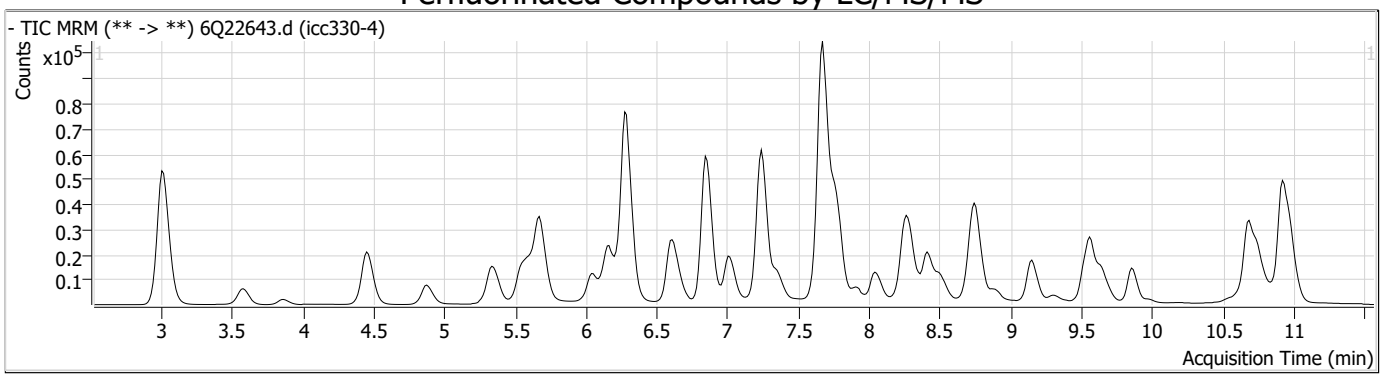
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3837				
PFHpA	6.609	363.1 -> 319.0	61498	2.49	µg/L		100
		363.1 -> 169.0	10249				
PFHpS	7.922	449.0 -> 79.9	14450	2.44	µg/L		100
		449.0 -> 98.9	7737				
PFHxA	5.670	313.0 -> 269.0	48703	2.53	µg/L		100
		313.0 -> 118.9	2582				
PFHxS	7.356	398.7 -> 79.9	14929	2.12	µg/L	m	100
		398.7 -> 98.9	7255				
PFNA	7.771	463.0 -> 419.0	75559	2.29	µg/L		100
		463.0 -> 219.0	14359				
PFNS	8.893	548.8 -> 79.9	13608	2.54	µg/L		100
		548.8 -> 98.9	7273				
PFOA	7.240	413.0 -> 369.0	100926	2.65	µg/L		100
		413.0 -> 169.0	16329				
PFOS	8.415	498.9 -> 79.9	13418	2.40	µg/L	m	100
		498.9 -> 98.8	7079				
PFPeA	4.449	263.0 -> 219.0	66196	5.07	µg/L		100
PFPeS	6.672	349.1 -> 79.9	14783	2.26	µg/L		100
		349.1 -> 98.9	6738				
PFTeDA	9.852	713.1 -> 669.0	42681	2.43	µg/L		100
		713.1 -> 168.9	3734				
PFTrDA	9.532	663.0 -> 619.0	56341	2.72	µg/L		100
		663.0 -> 168.9	5645				
PFUnDA	8.717	563.1 -> 519.0	49488	2.49	µg/L		100
		563.1 -> 269.1	7989				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	66048	4.61	µg/L		100
		632.9 -> 452.9	22642				
9Cl-PF3ONS	8.758	530.8 -> 351.0	112999	4.88	µg/L		100
		532.8 -> 353.0	35877				
ADONA	6.858	376.9 -> 250.9	246818	4.83	µg/L		100
		376.9 -> 84.8	65497				
HFPO-DA	6.046	284.9 -> 168.9	17245	5.05	µg/L		100
		284.9 -> 184.9	1831				
3:3FTCA	3.859	241.0 -> 177.0	11050	12.18	µg/L		100
		241.0 -> 117.0	1495				
5:3FTCA	6.285	341.0 -> 237.1	250631	63.27	µg/L		100
		341.0 -> 217.0	177983				
7:3FTCA	7.673	441.0 -> 316.9	178331	60.86	µg/L		100
		441.0 -> 336.9	406814				
EtFOSA	10.985	526.0 -> 219.0	31341	5.03	µg/L		100
		526.0 -> 169.0	41495				
EtFOSE	10.931	630.0 -> 58.9	85194	12.12	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	26196	5.13	µg/L		100
		511.9 -> 169.0	37911				
MeFOSE	10.697	616.1 -> 58.9	57192	12.38	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3648	2.51	µg/L		100
		699.1 -> 98.8	2029				
NFDHA	5.551	295.0 -> 201.0	11682	4.77	µg/L		100
		295.0 -> 84.9	3331				
PFMBA	4.869	279.0 -> 85.1	46551	5.04	µg/L		100
PFMPA	3.576	229.0 -> 84.9	37211	5.03	µg/L		100
PFEESA	6.163	314.8 -> 134.9	111400	4.31	µg/L		100
		314.8 -> 82.9	3882				

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

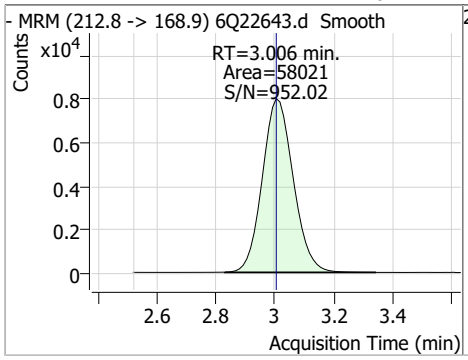
Perfluorinated Compounds by LC/MS/MS

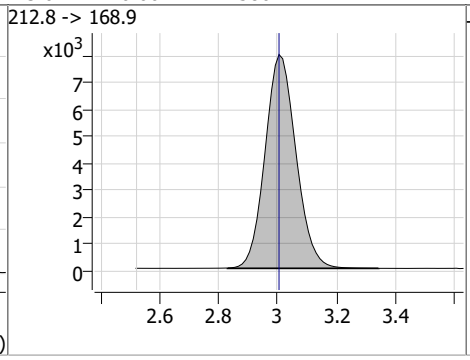
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

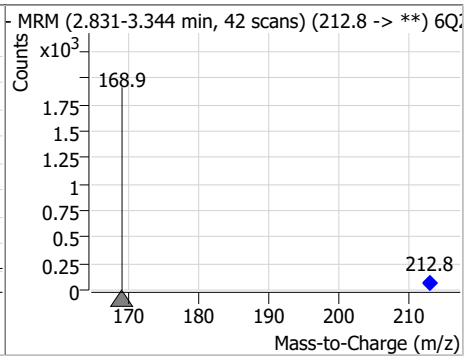
Perfluorinated Compounds by LC/MS/MS



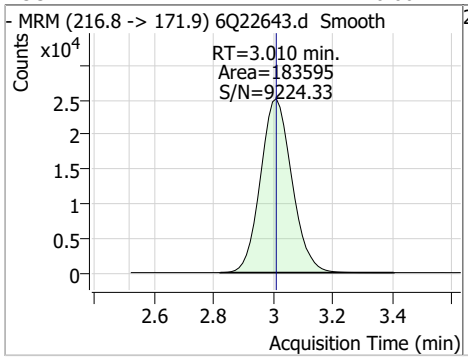
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.11	3.01	0.00	58021				

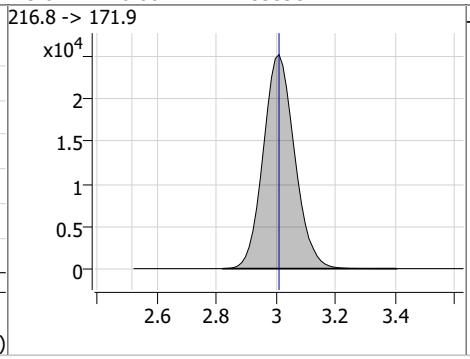


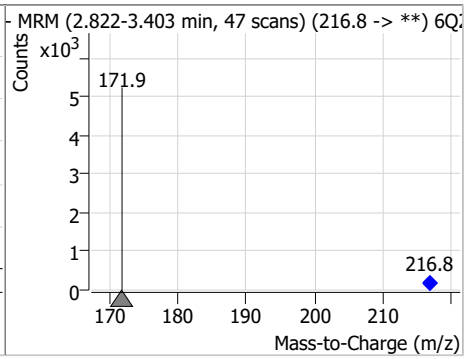




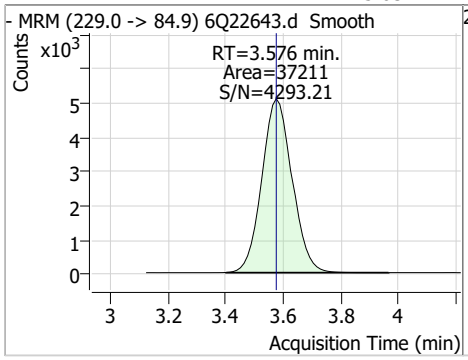
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.00	3.01	0.00	183595				

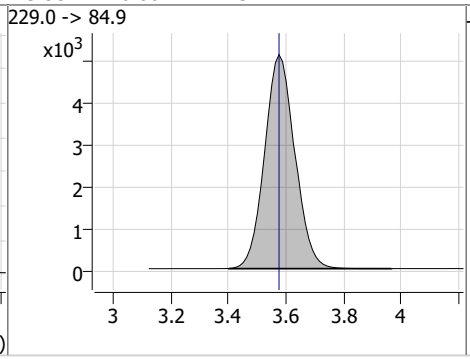


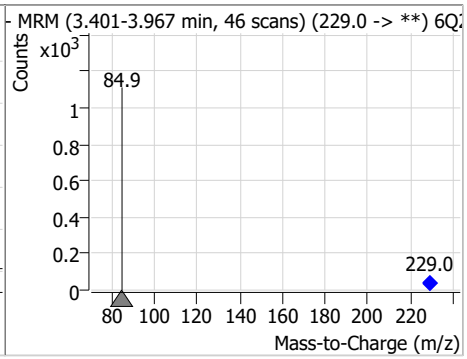




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.03	3.58	0.00	37211				

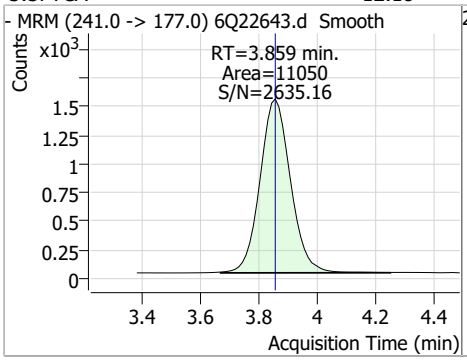


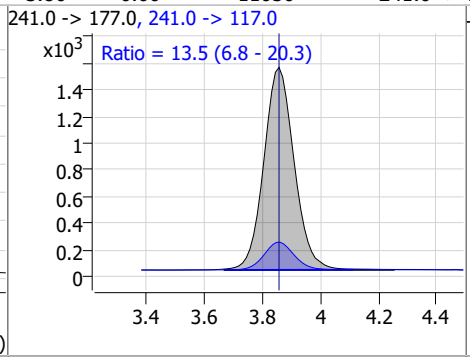


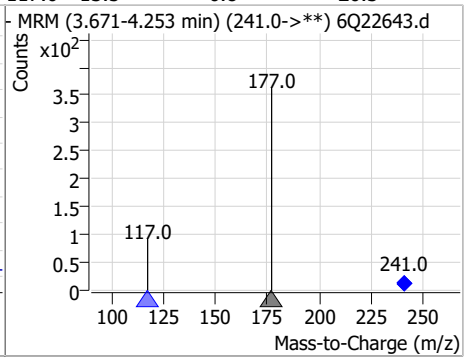


Perfluorinated Compounds by LC/MS/MS

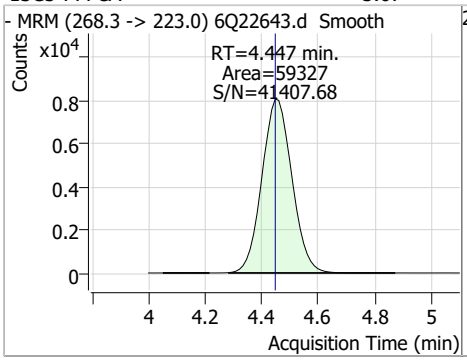
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.18	3.86	0.00	11050	241.0 -> 117.0	13.5	6.8	20.3

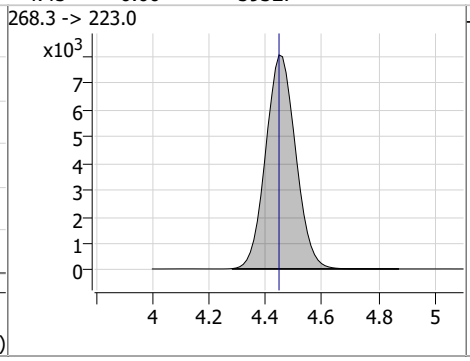


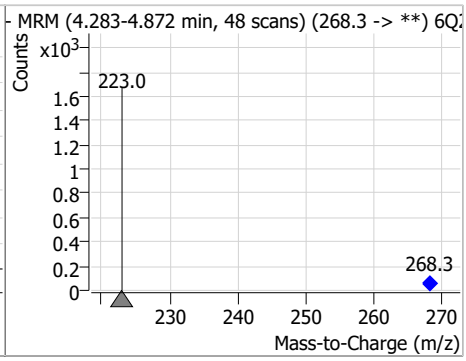




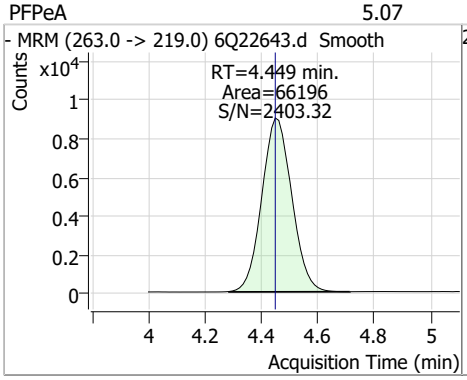
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.07	4.45	0.00	59327				

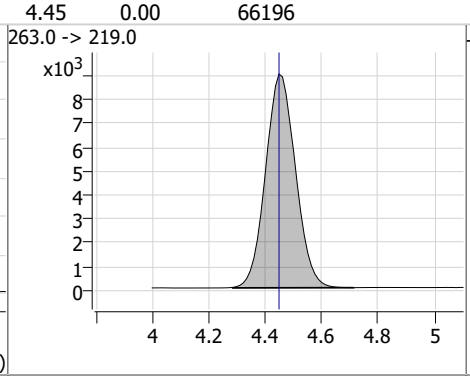


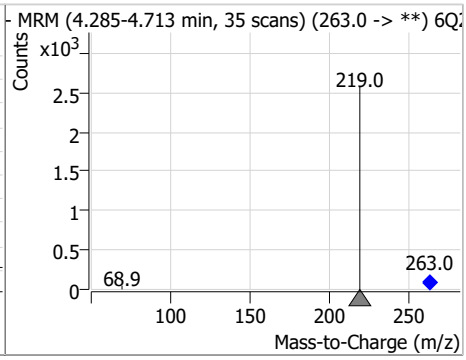




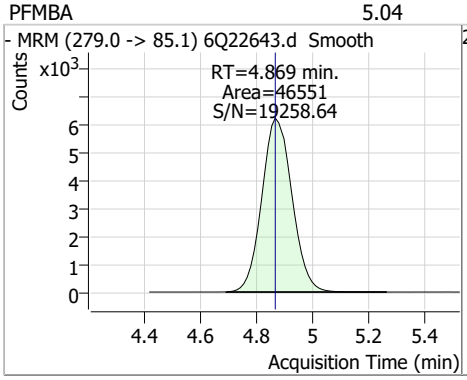
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.07	4.45	0.00	66196				

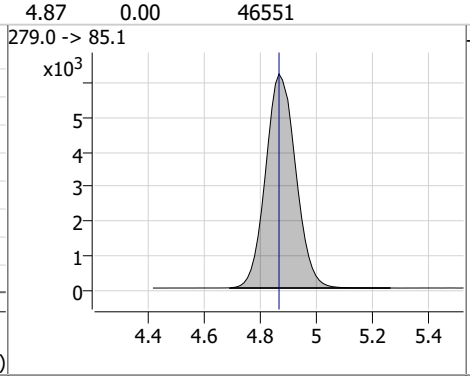


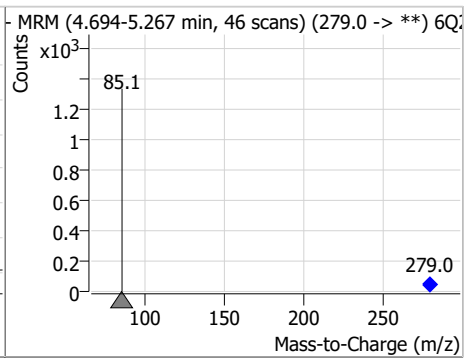




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.04	4.87	0.00	46551				

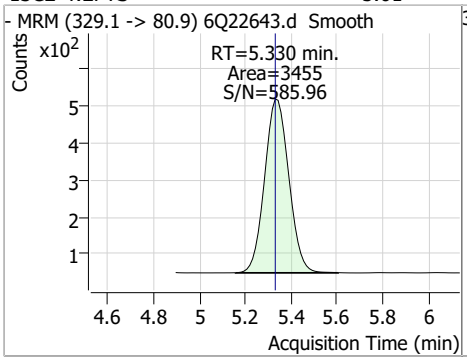


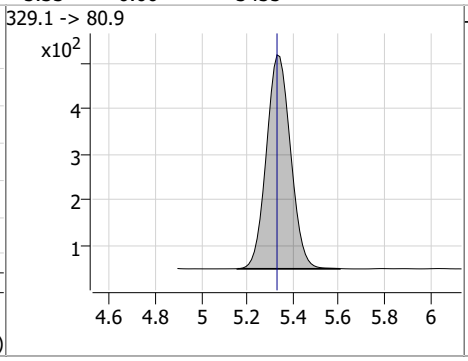


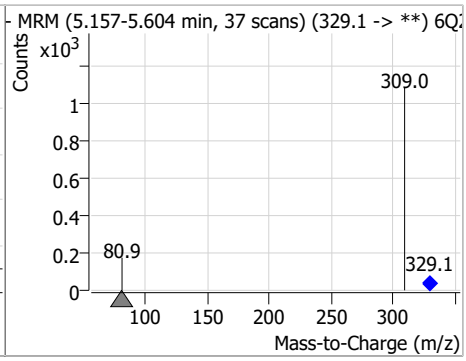


Perfluorinated Compounds by LC/MS/MS

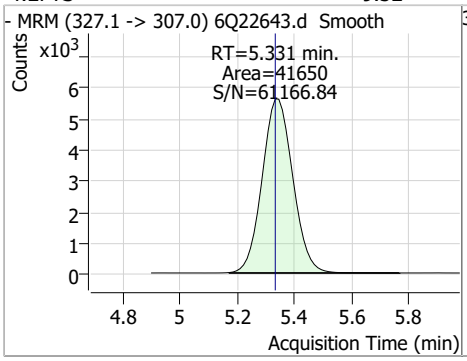
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.61	5.33	0.00	3455				

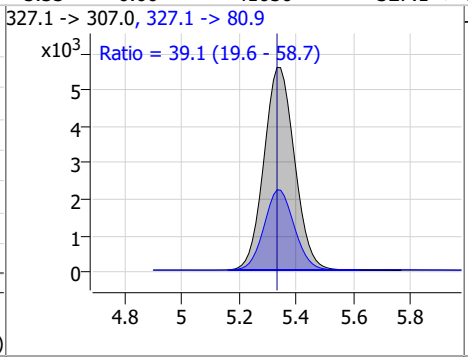


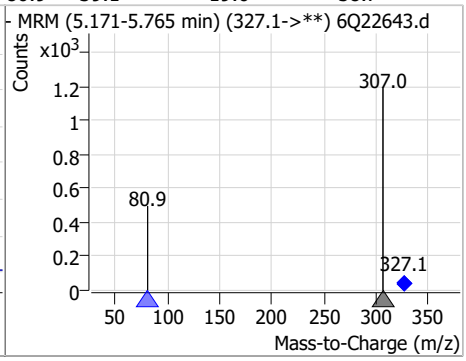




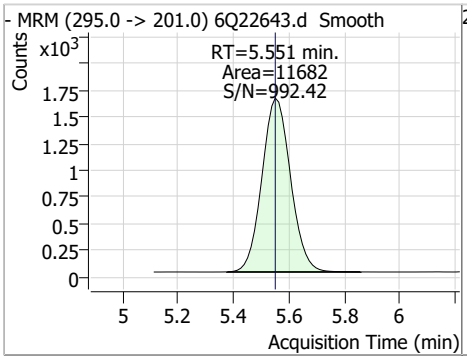
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.32	5.33	0.00	41650	327.1 -> 80.9	39.1	19.6	58.7

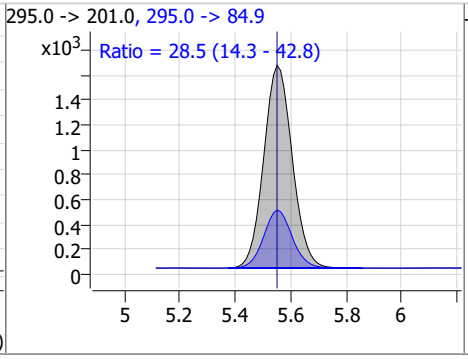


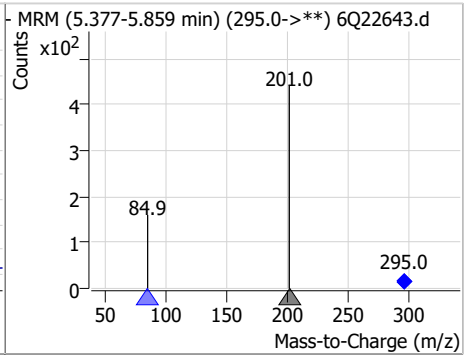




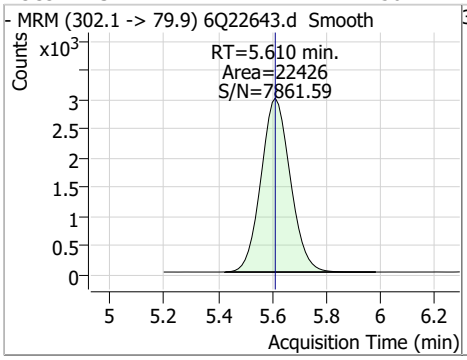
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.77	5.55	0.00	11682	295.0 -> 84.9	28.5	14.3	42.8

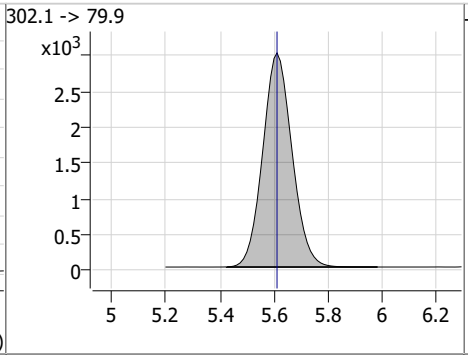


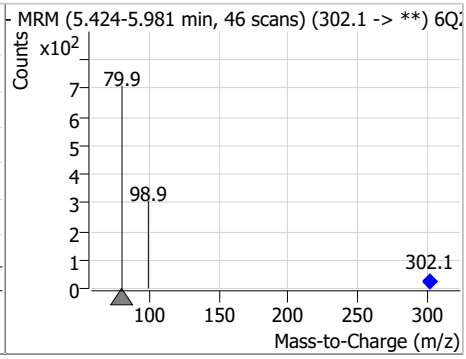




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.56	5.61	0.00	22426				

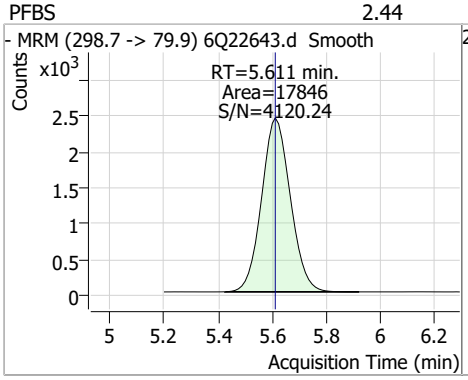


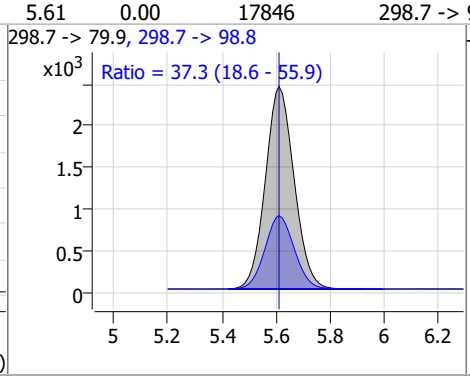


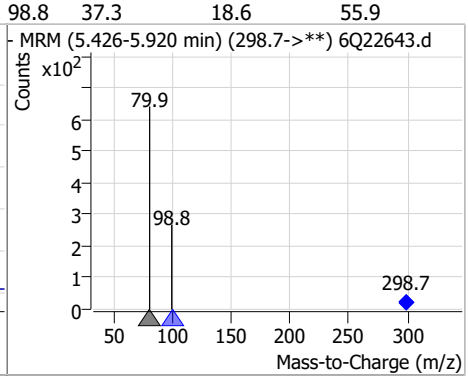


Perfluorinated Compounds by LC/MS/MS

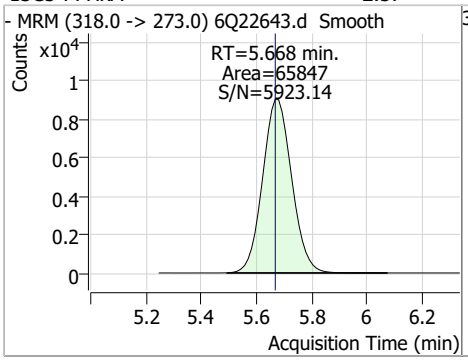
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.44	5.61	0.00	17846	298.7 -> 98.8	37.3	18.6	55.9

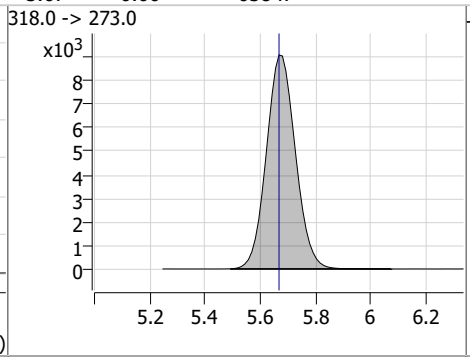


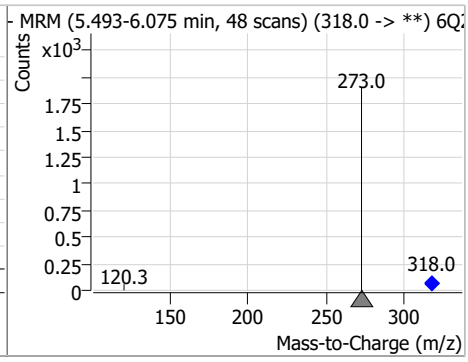




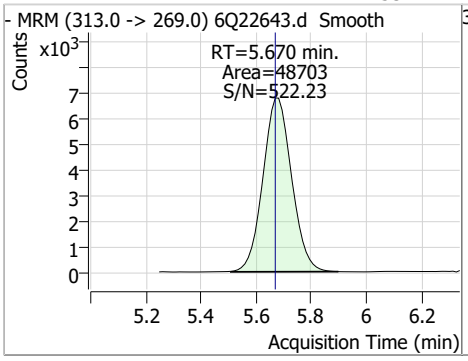
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.67	0.00	65847				

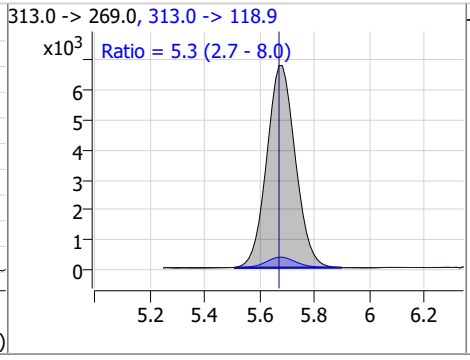


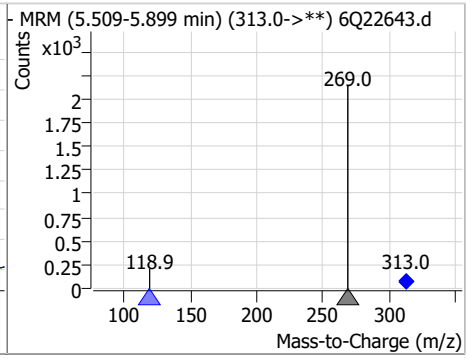




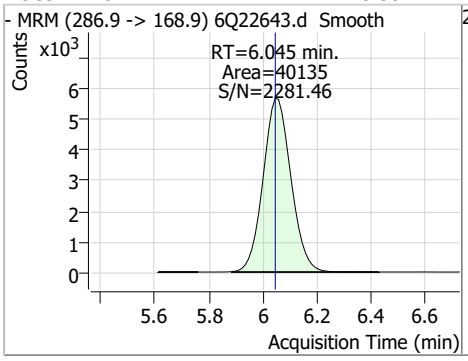
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.53	5.67	0.00	48703	313.0 -> 118.9	5.3	2.7	8.0

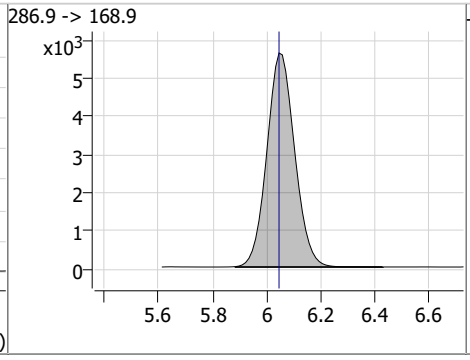


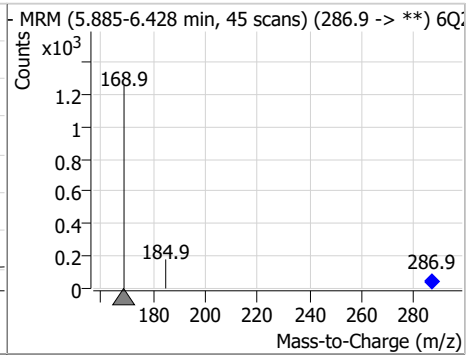




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.99	6.05	0.00	40135				

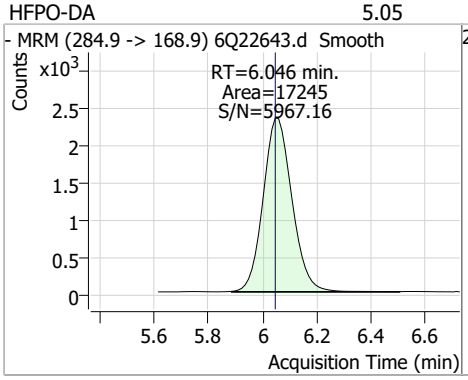


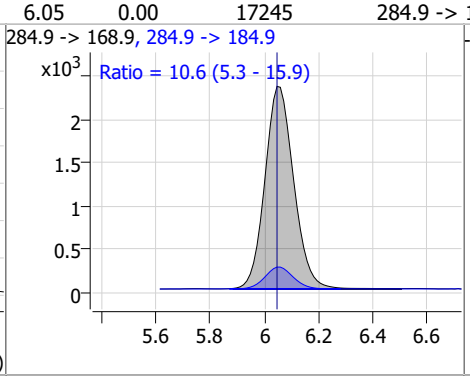


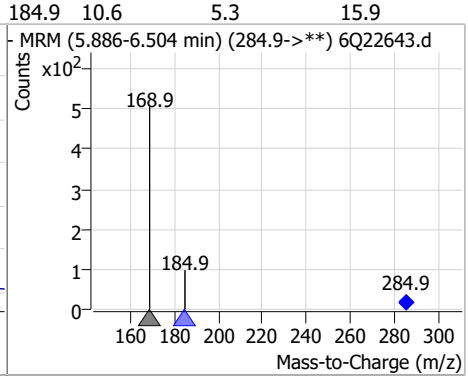


Perfluorinated Compounds by LC/MS/MS

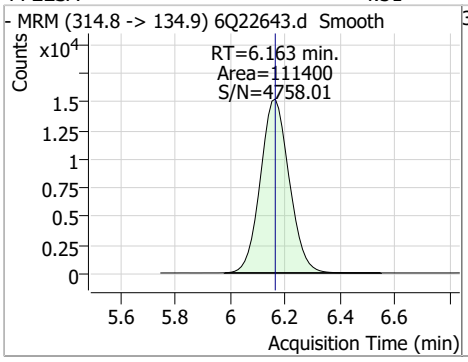
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.05	6.05	0.00	17245	284.9 -> 184.9	10.6	5.3	15.9

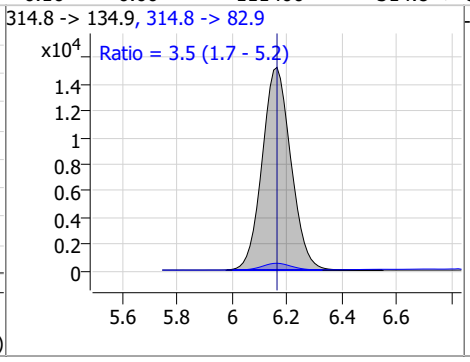


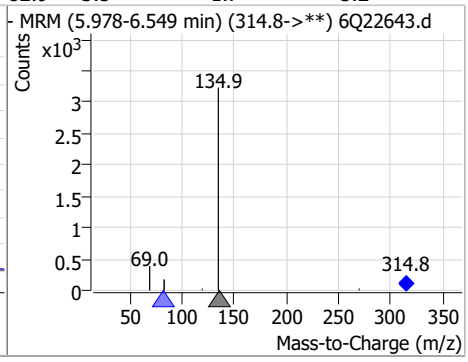




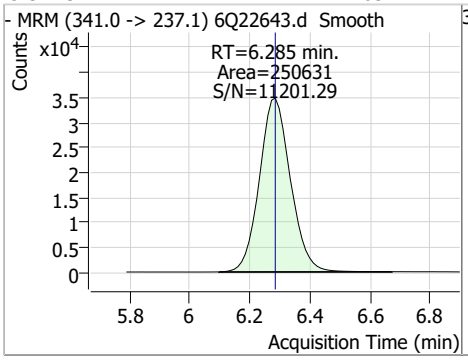
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.31	6.16	0.00	111400	314.8 -> 82.9	3.5	1.7	5.2

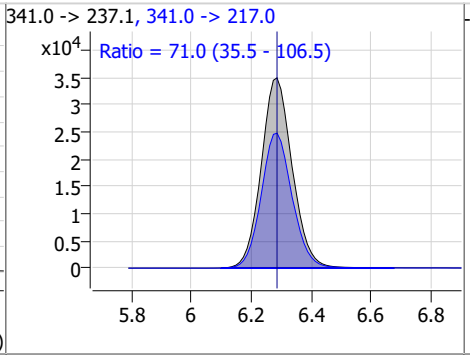


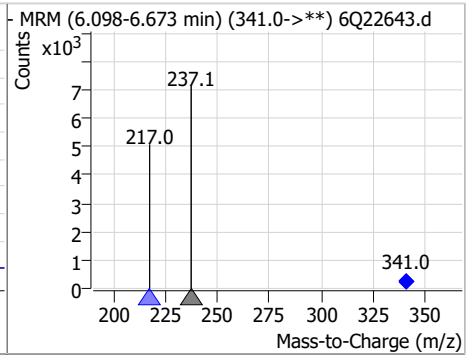




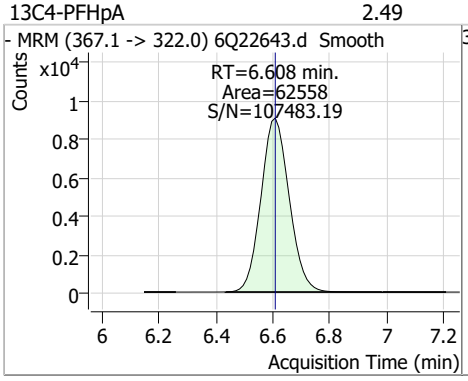
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.27	6.28	0.00	250631	341.0 -> 217.0	71.0	35.5	106.5

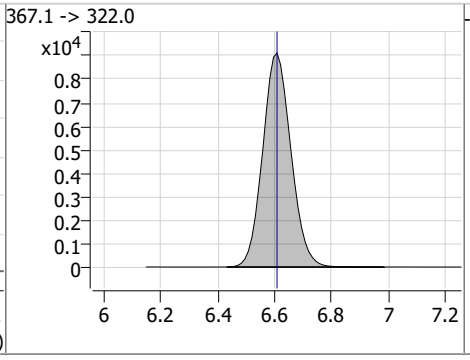


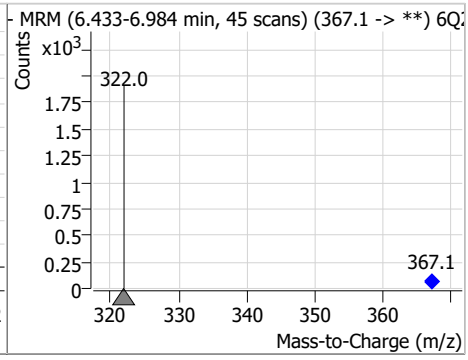




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.61	0.00	62558				

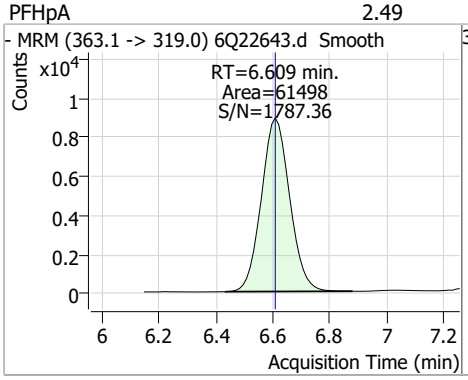


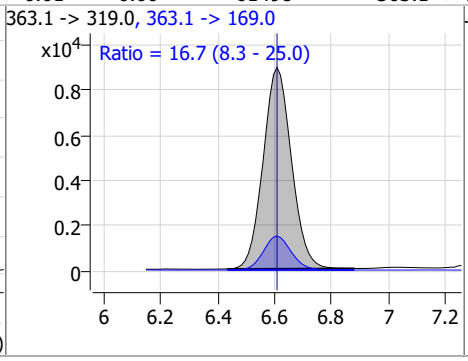


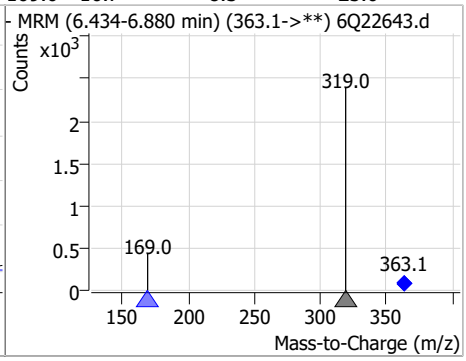


Perfluorinated Compounds by LC/MS/MS

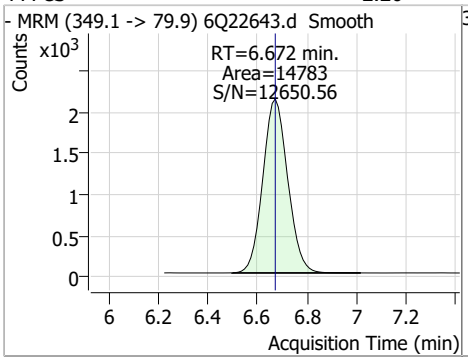
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.49	6.61	0.00	61498	363.1 -> 169.0	16.7	8.3	25.0

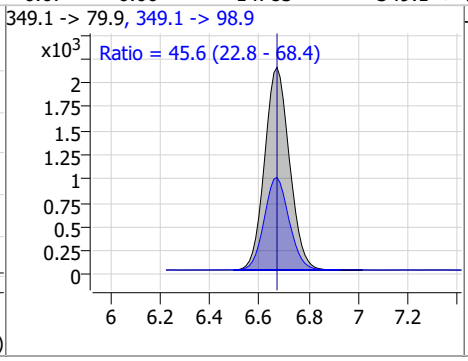


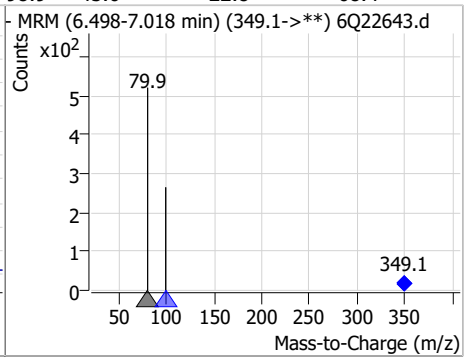




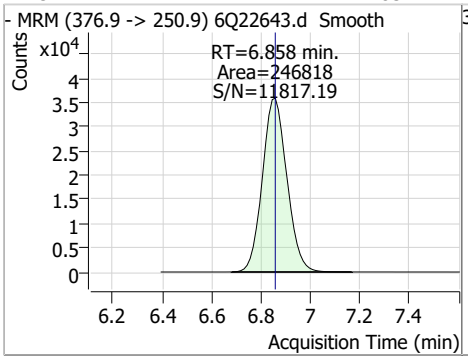
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.26	6.67	0.00	14783	349.1 -> 98.9	45.6	22.8	68.4

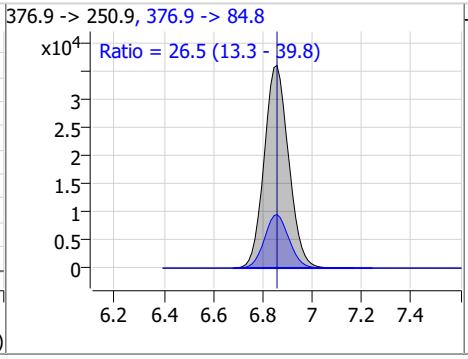


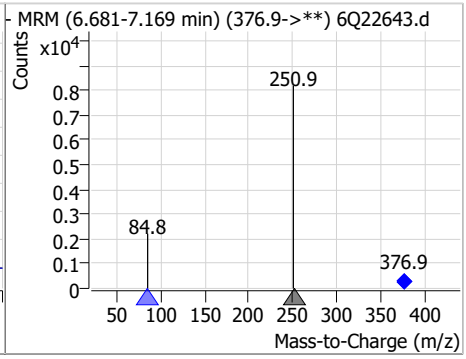




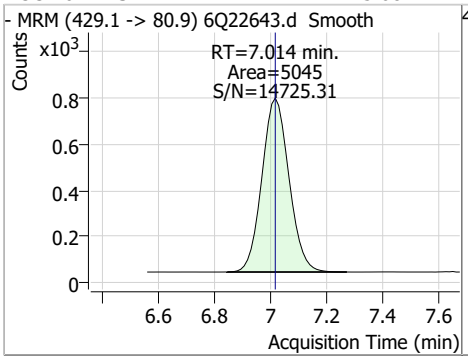
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.83	6.86	0.00	246818	376.9 -> 84.8	26.5	13.3	39.8

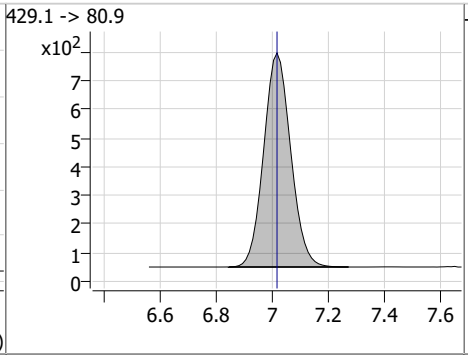


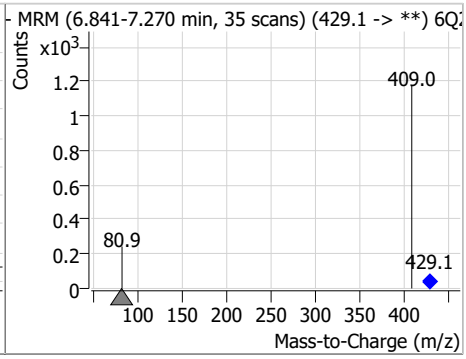




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.68	7.01	0.00	5045				

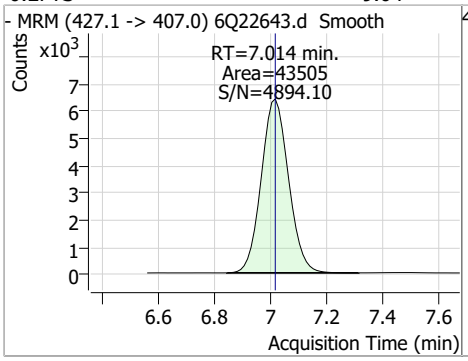


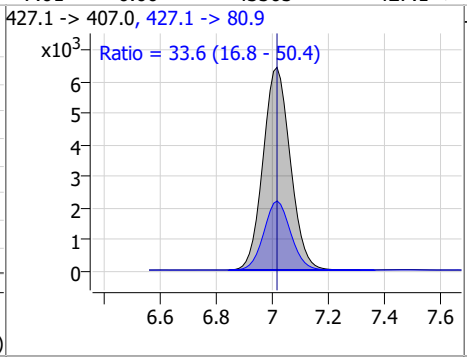


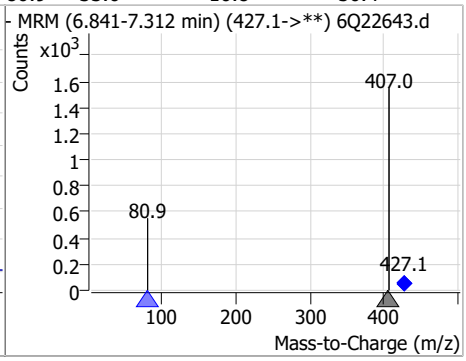


Perfluorinated Compounds by LC/MS/MS

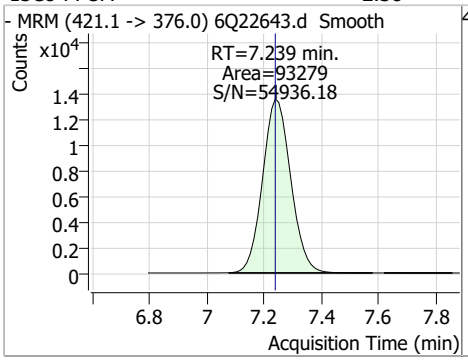
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.64	7.01	0.00	43505	427.1 -> 80.9	33.6	16.8	50.4

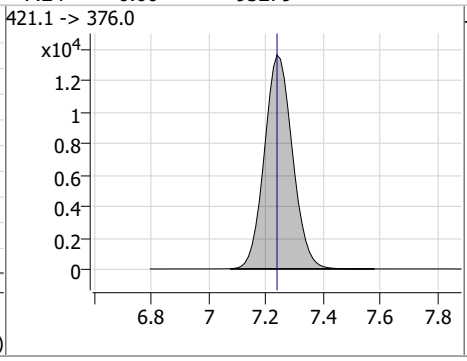


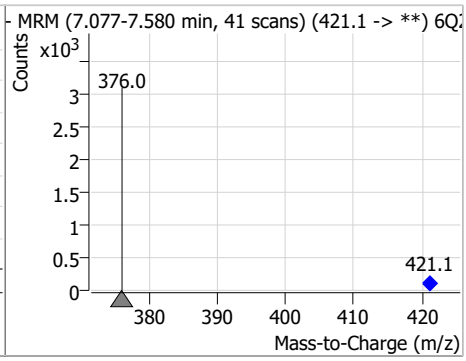




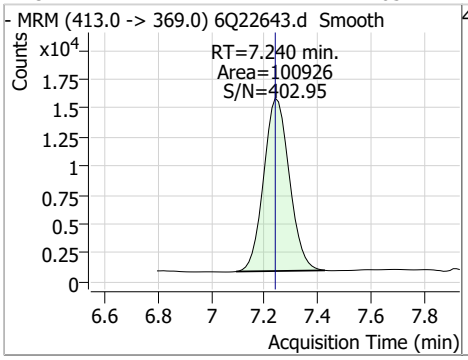
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.38	7.24	0.00	93279				

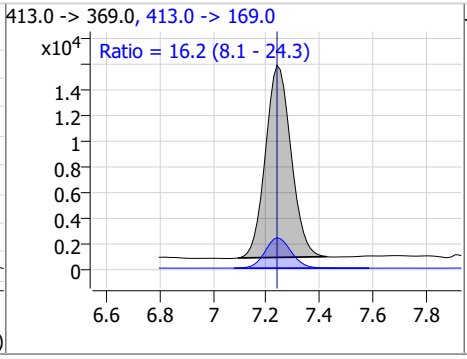


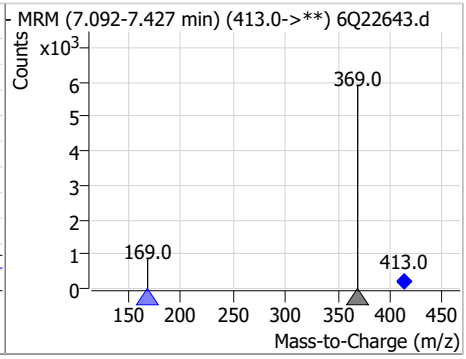




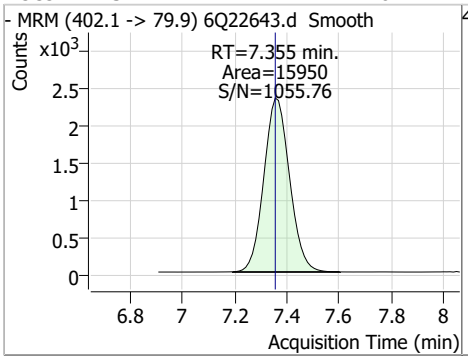
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.65	7.24	0.00	100926	413.0 -> 169.0	16.2	8.1	24.3

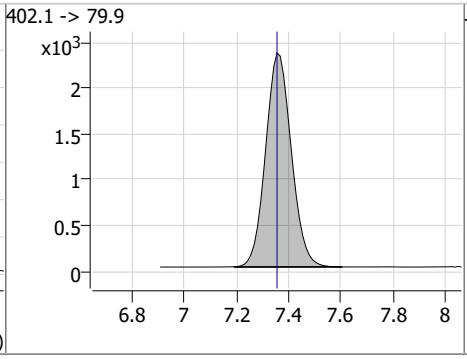


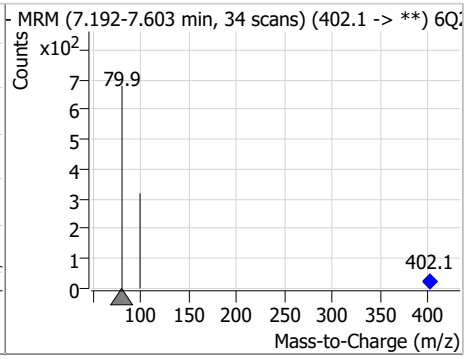




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.82	7.35	0.00	15950				

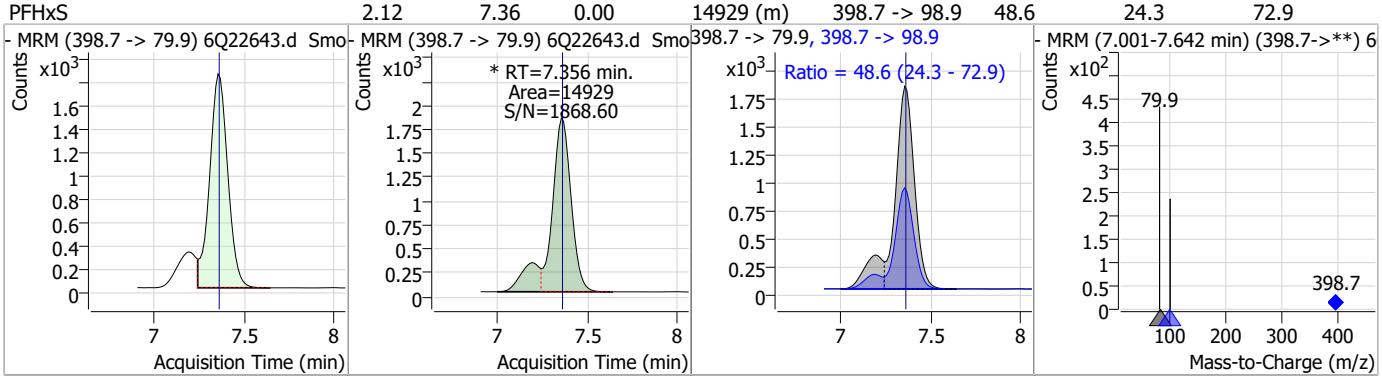




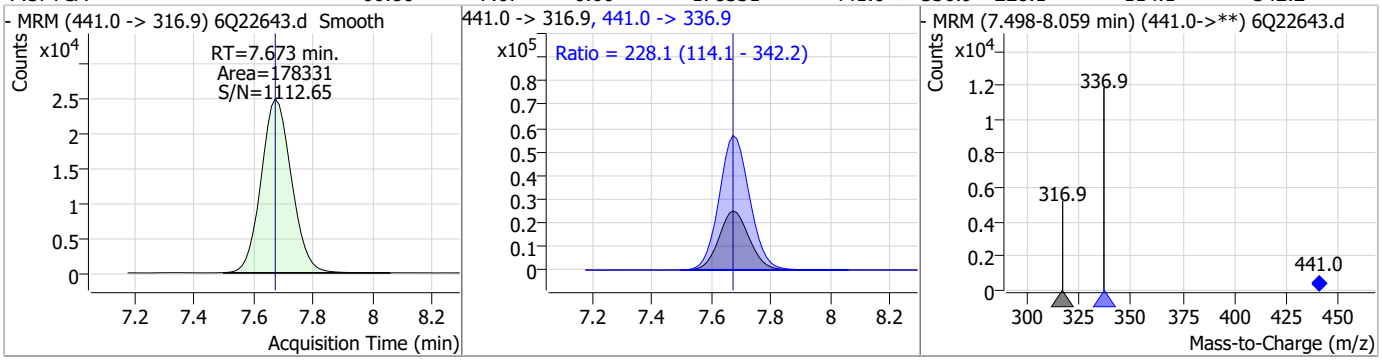


Perfluorinated Compounds by LC/MS/MS

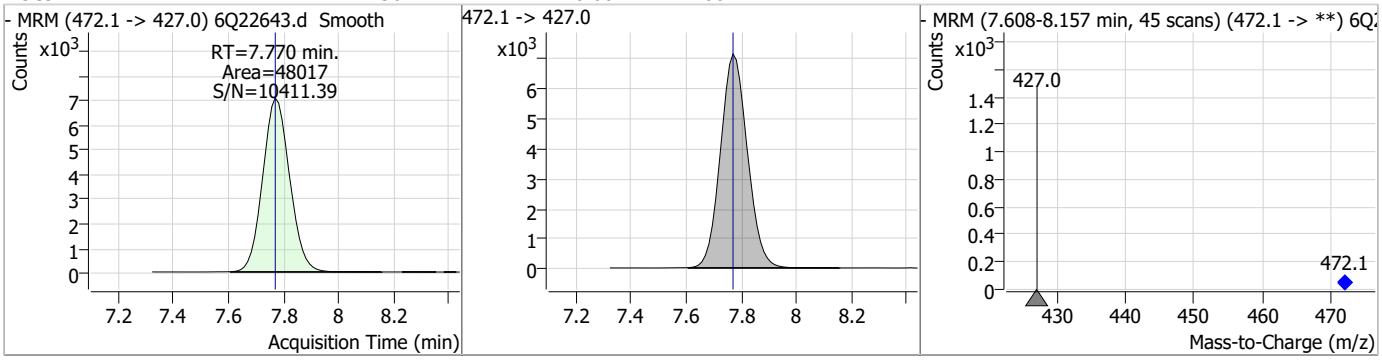
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.12	7.36	0.00	14929 (m)	398.7 -> 98.9	48.6	24.3	72.9



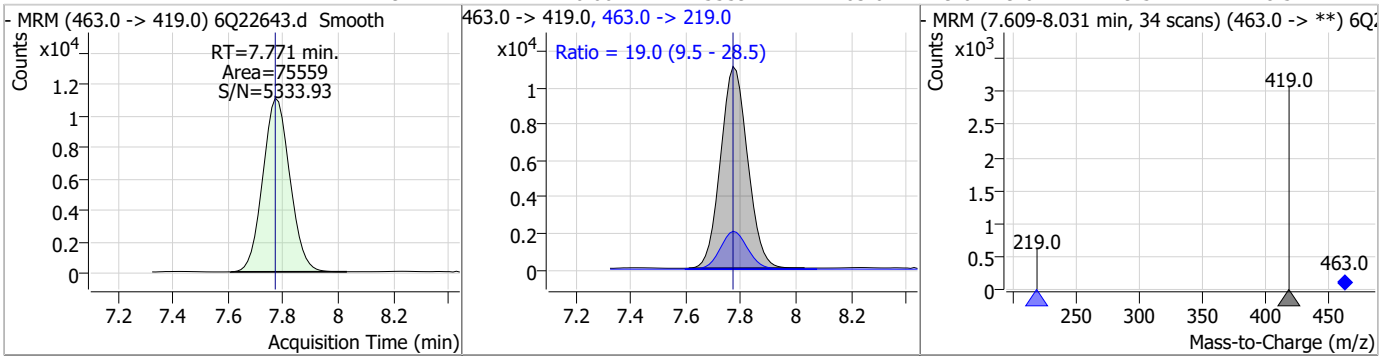
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.86	7.67	0.00	178331	441.0 -> 336.9	228.1	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.36	7.77	0.00	48017				

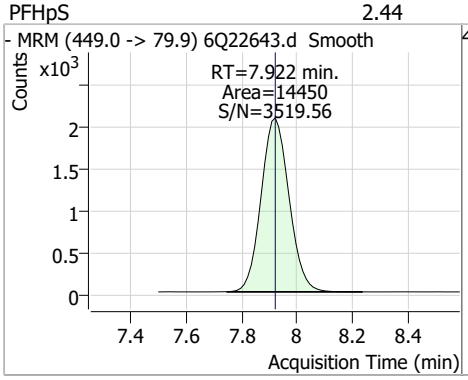


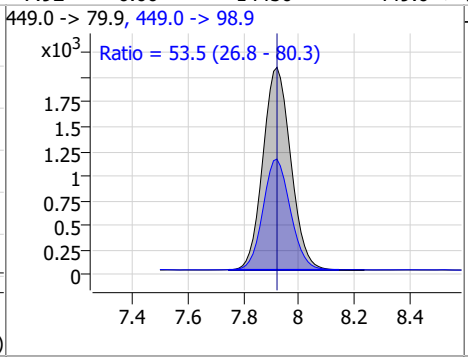
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.29	7.77	0.00	75559	463.0 -> 219.0	19.0	9.5	28.5

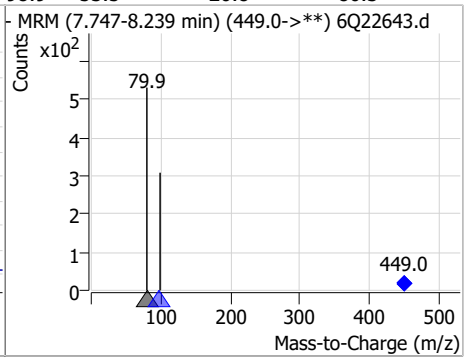


Perfluorinated Compounds by LC/MS/MS

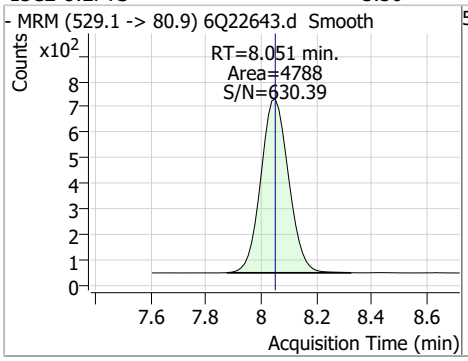
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.44	7.92	0.00	14450	449.0 -> 98.9	53.5	26.8	80.3

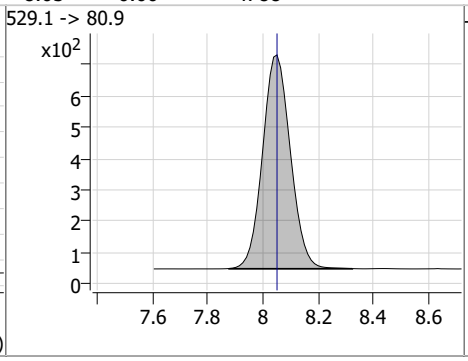


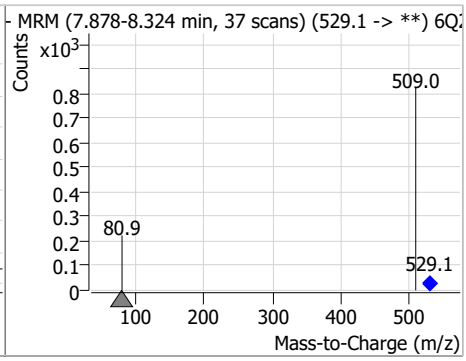




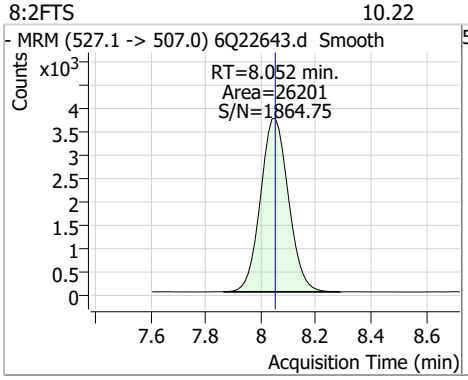
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.50	8.05	0.00	4788				

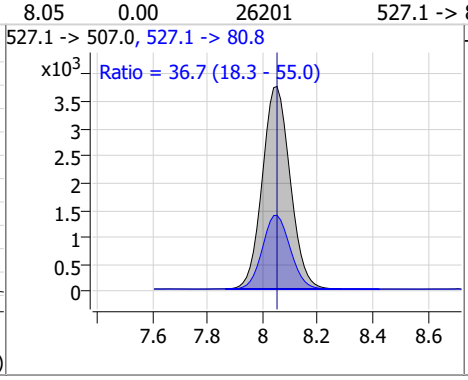


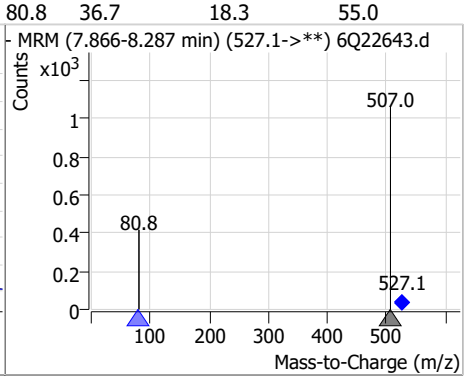




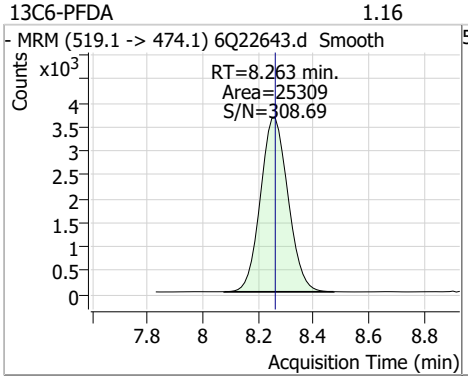
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.22	8.05	0.00	26201	527.1 -> 80.8	36.7	18.3	55.0

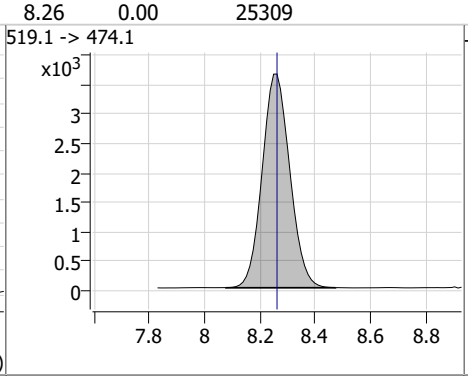


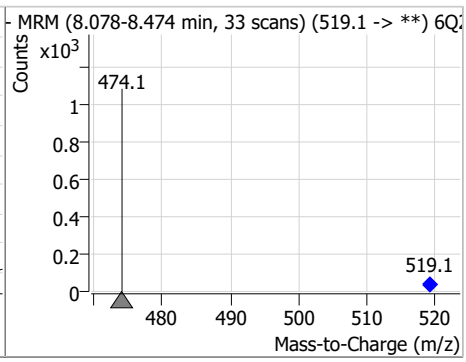




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.16	8.26	0.00	25309				

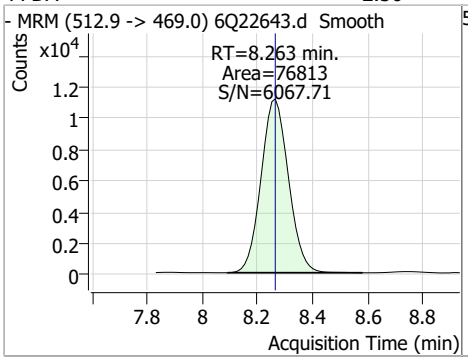


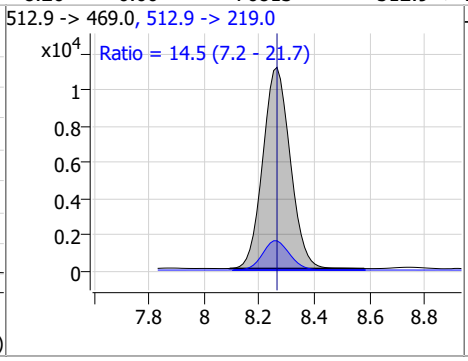


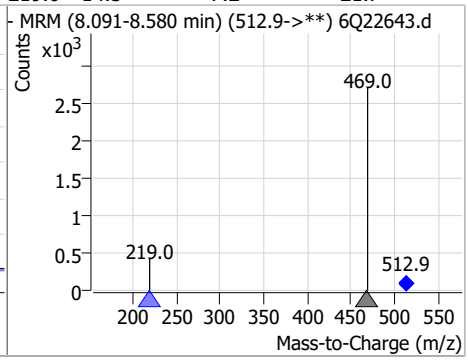


Perfluorinated Compounds by LC/MS/MS

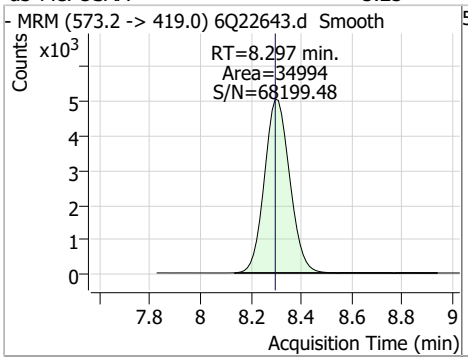
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.56	8.26	0.00	76813	512.9 -> 219.0	14.5	7.2	21.7

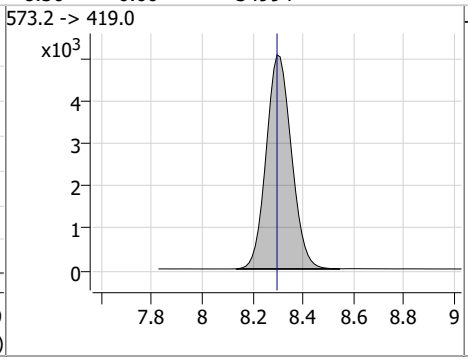


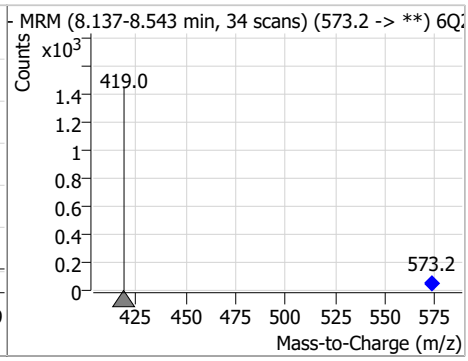




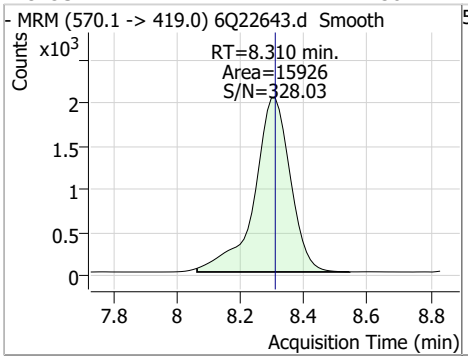
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.25	8.30	0.00	34994				

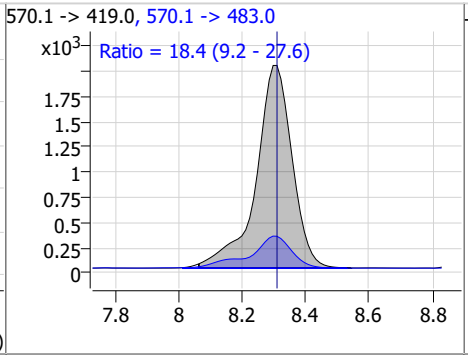


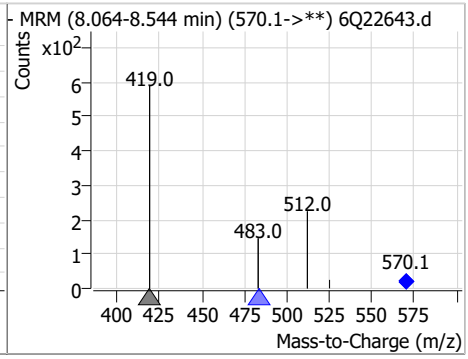




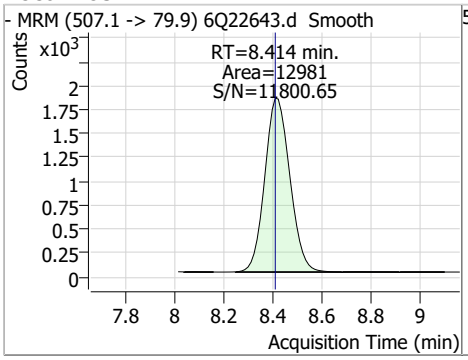
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.38	8.31	0.00	15926	570.1 -> 483.0	18.4	9.2	27.6

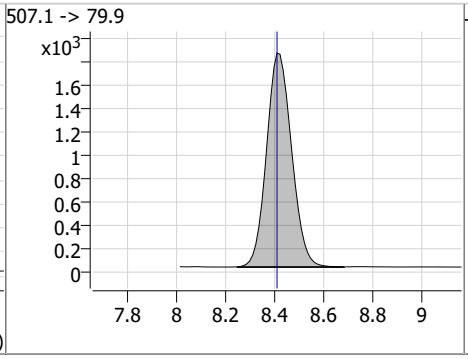


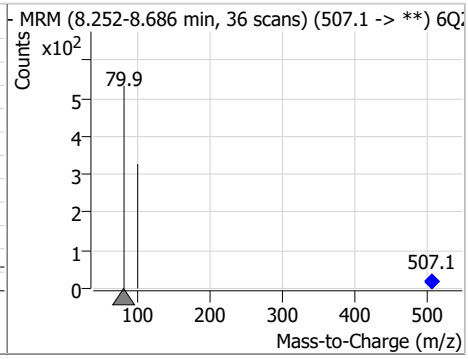




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.41	8.41	0.00	12981				

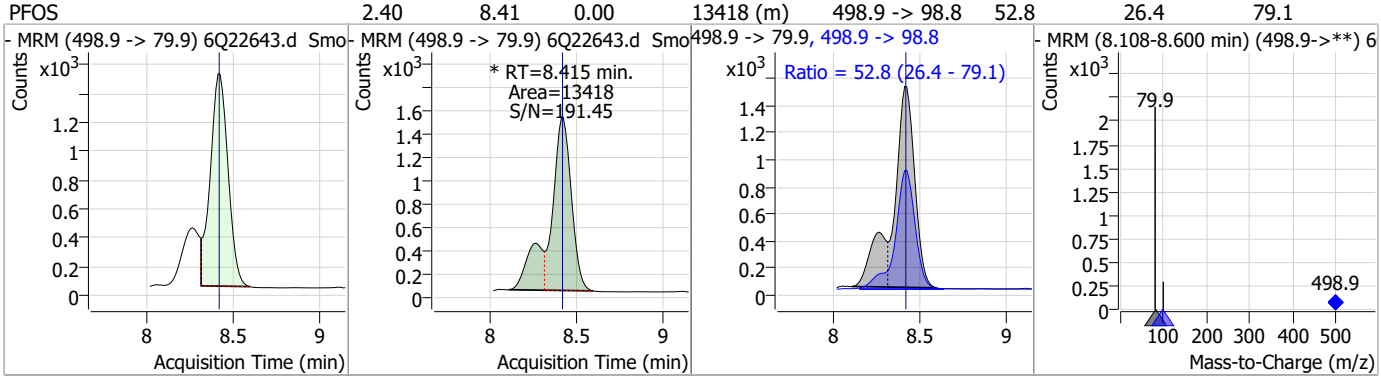




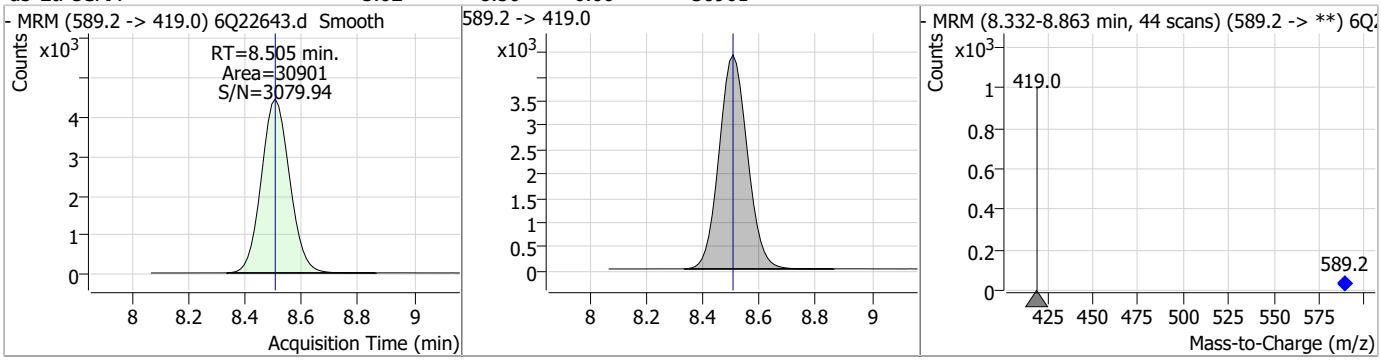


Perfluorinated Compounds by LC/MS/MS

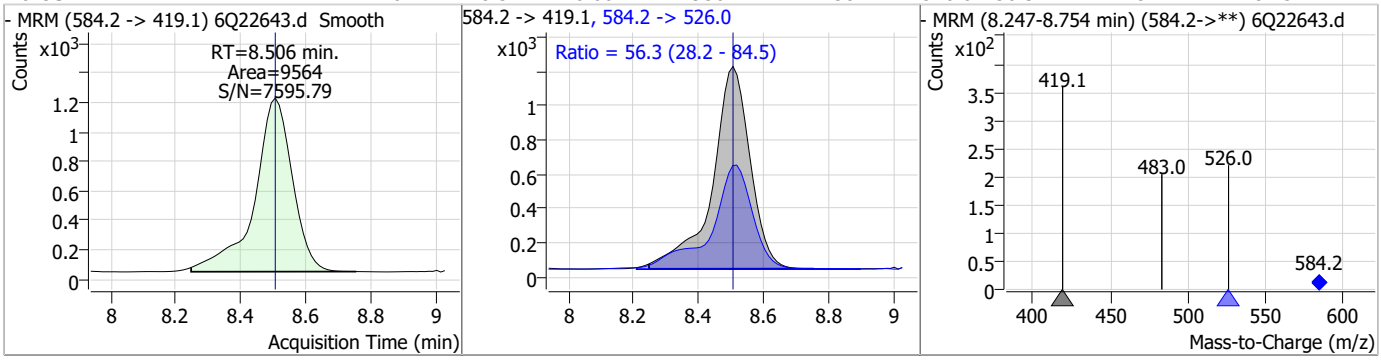
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.40	8.41	0.00	13418 (m)	498.9 -> 98.8	52.8	26.4	79.1



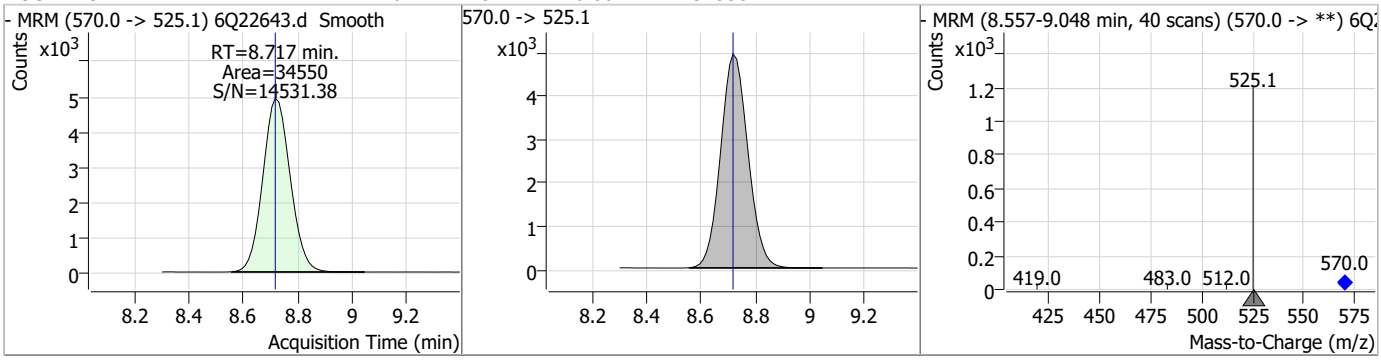
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.02	8.50	0.00	30901				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.46	8.51	0.00	9564	584.2 -> 526.0	56.3	28.2	84.5

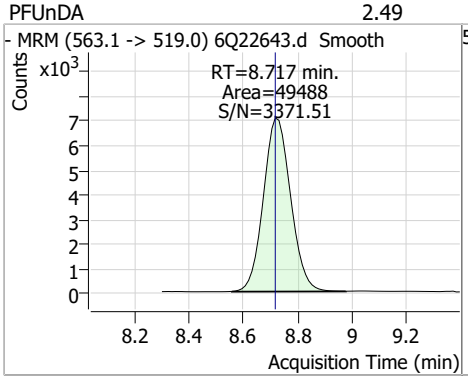


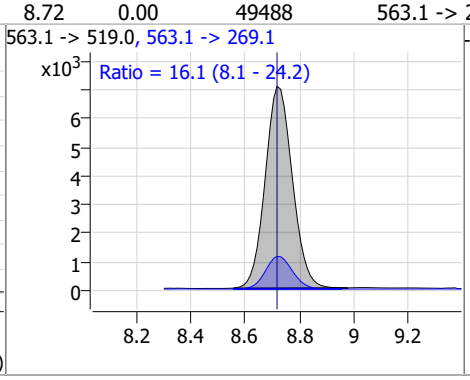
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.20	8.72	0.00	34550				

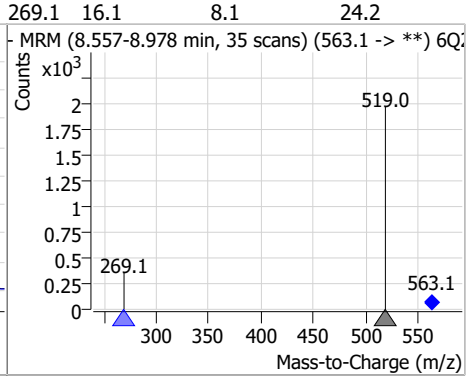


Perfluorinated Compounds by LC/MS/MS

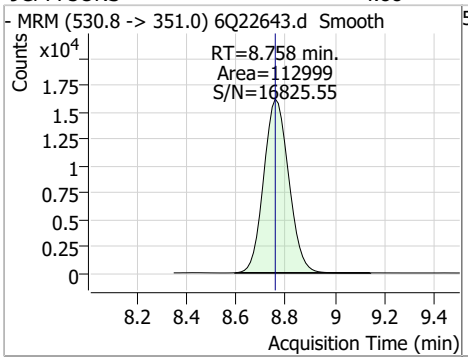
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.49	8.72	0.00	49488	563.1 -> 269.1	16.1	8.1	24.2

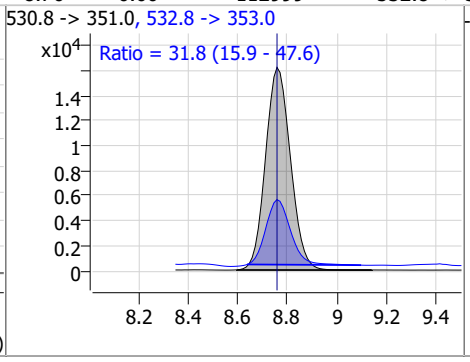


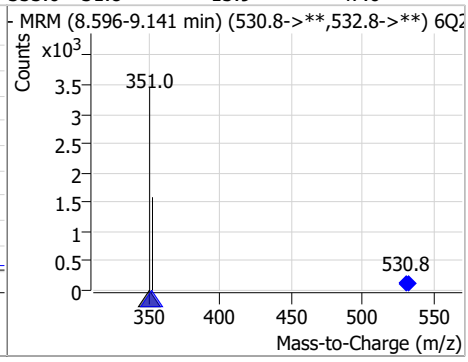




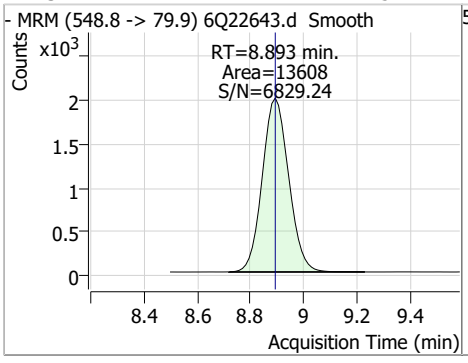
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.88	8.76	0.00	112999	532.8 -> 353.0	31.8	15.9	47.6

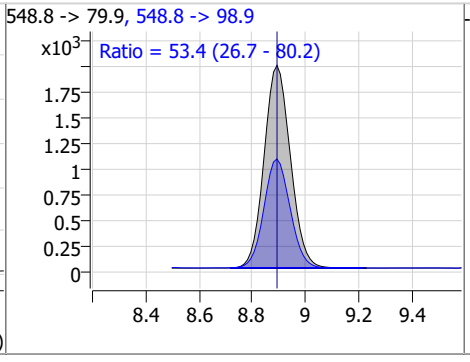


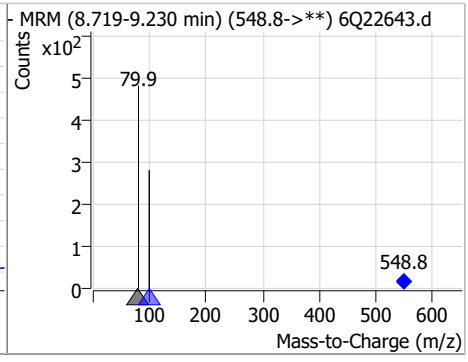




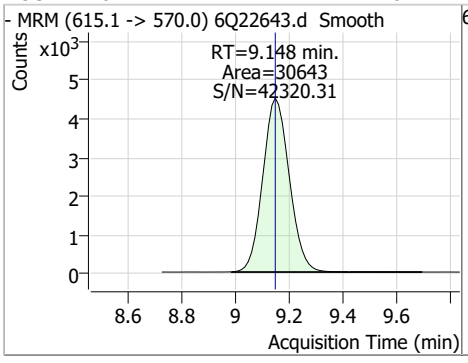
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.54	8.89	0.00	13608	548.8 -> 98.9	53.4	26.7	80.2

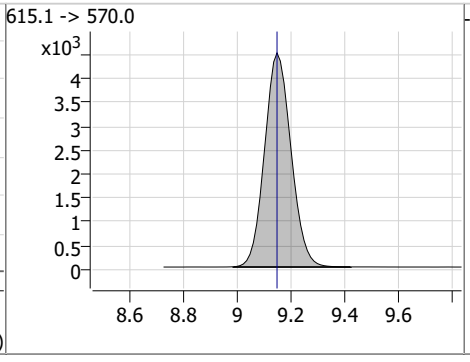


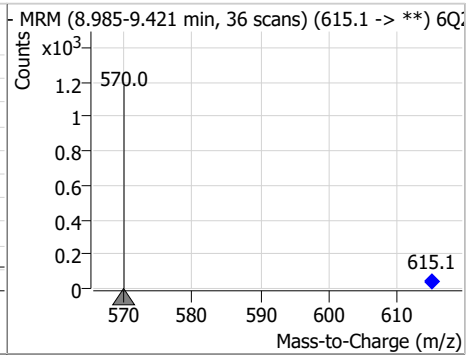




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	9.15	0.00	30643				

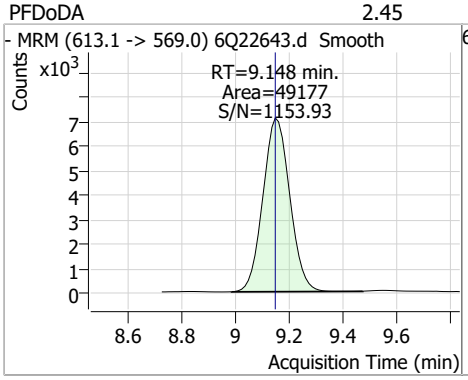


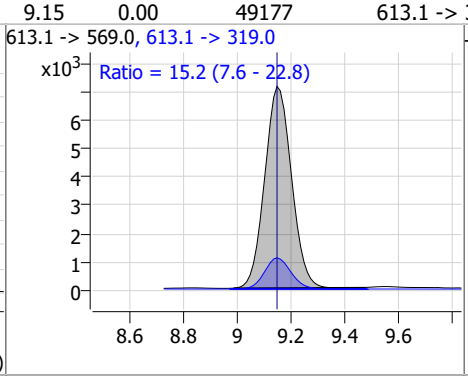


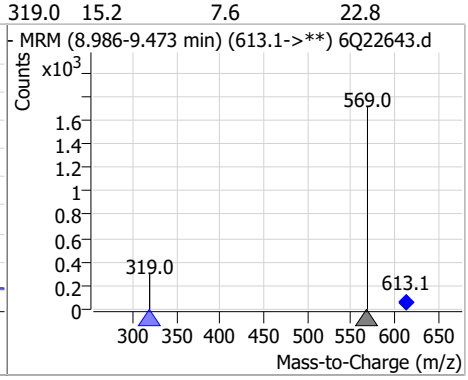


Perfluorinated Compounds by LC/MS/MS

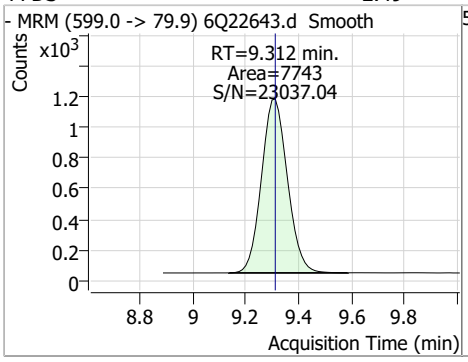
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.45	9.15	0.00	49177	613.1 -> 319.0	15.2	7.6	22.8

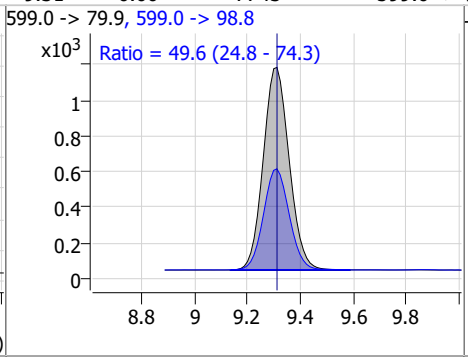


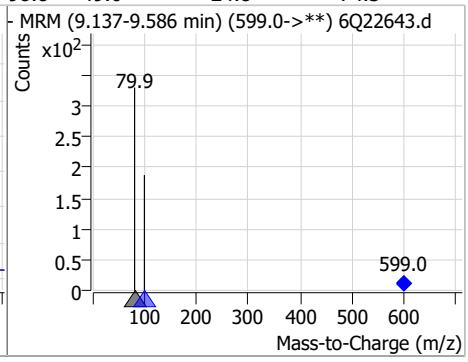




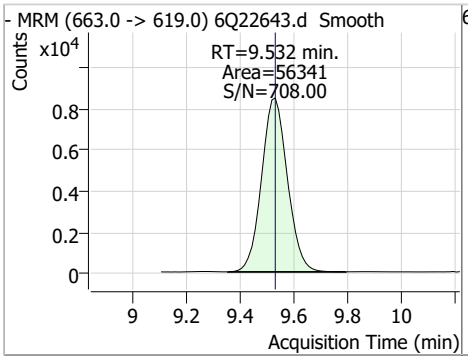
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.49	9.31	0.00	7743	599.0 -> 98.8	49.6	24.8	74.3

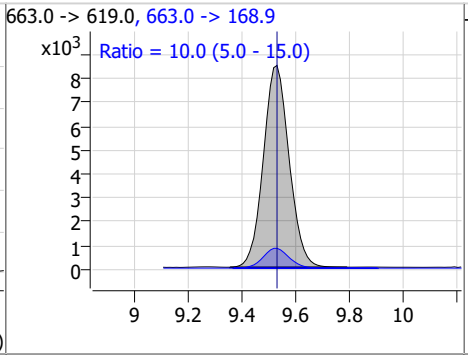


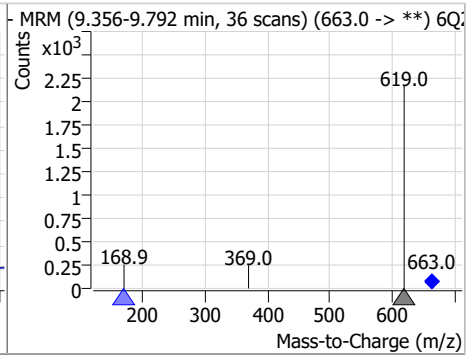




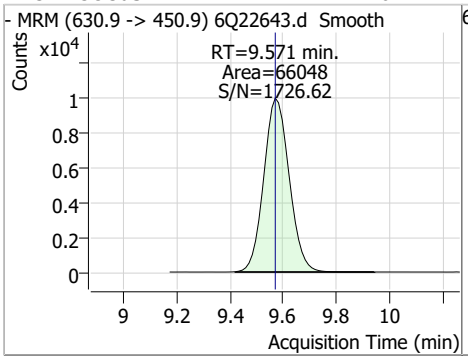
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.72	9.53	0.00	56341	663.0 -> 168.9	10.0	5.0	15.0

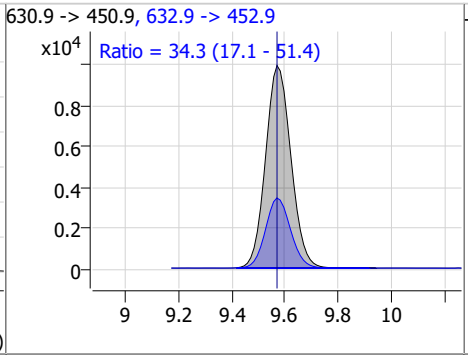


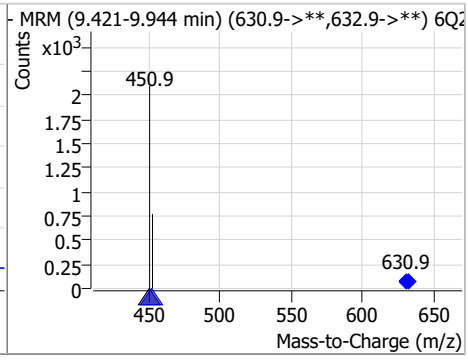




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.61	9.57	0.00	66048	632.9 -> 452.9	34.3	17.1	51.4

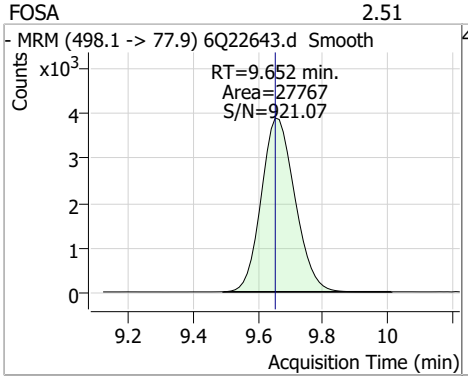


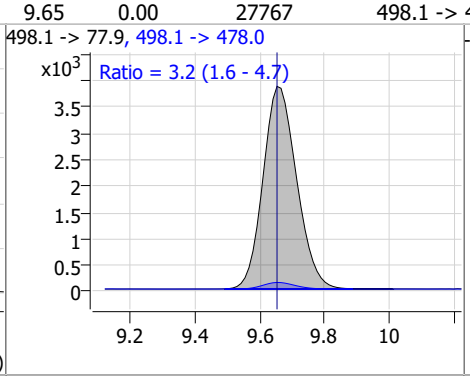


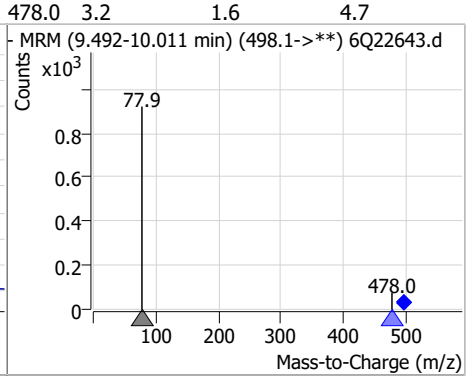


Perfluorinated Compounds by LC/MS/MS

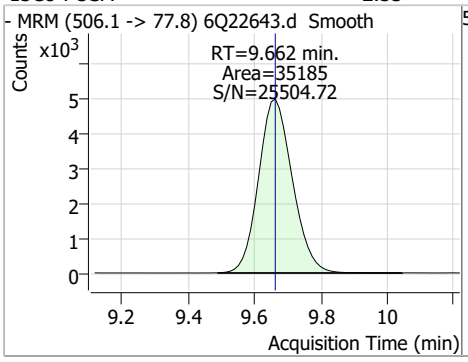
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.51	9.65	0.00	27767	498.1 -> 478.0	3.2	1.6	4.7

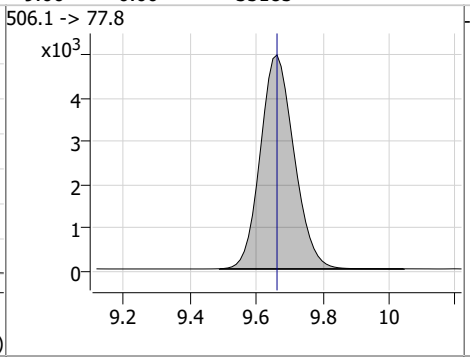


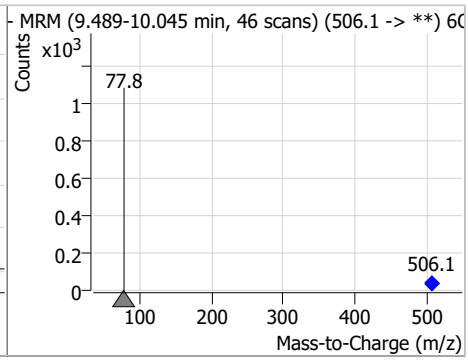




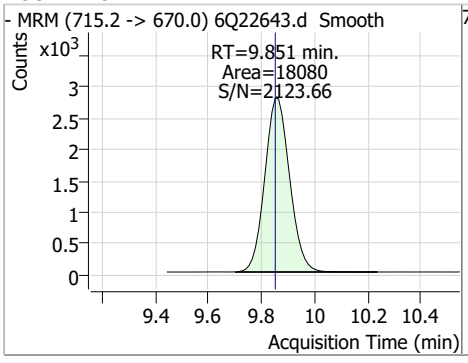
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.66	0.00	35185				

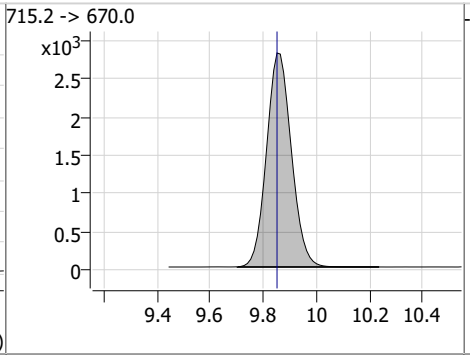


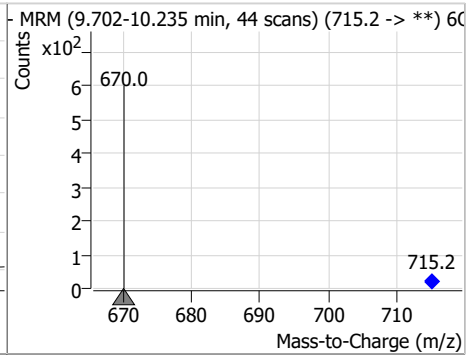




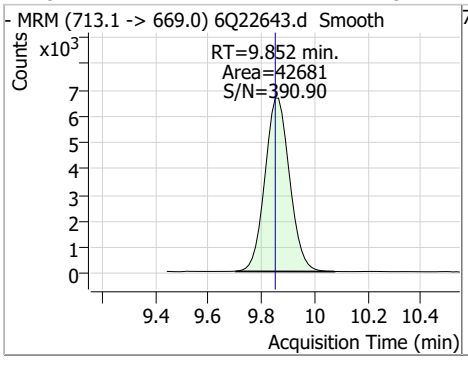
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.85	0.00	18080				

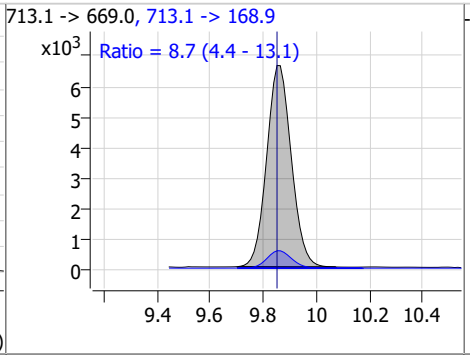


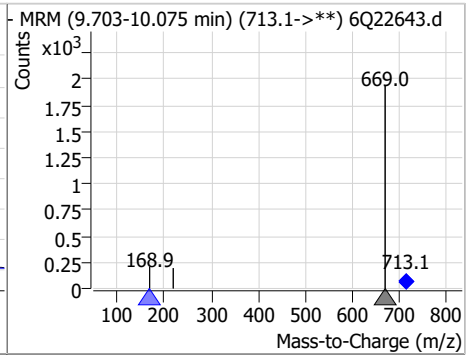




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.43	9.85	0.00	42681	713.1 -> 168.9	8.7	4.4	13.1

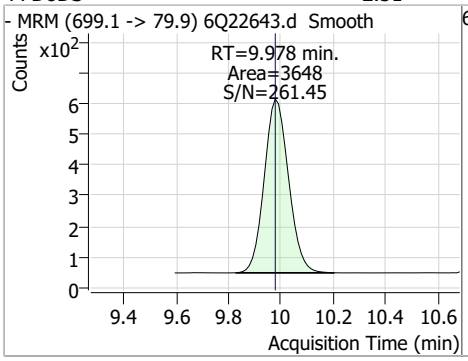


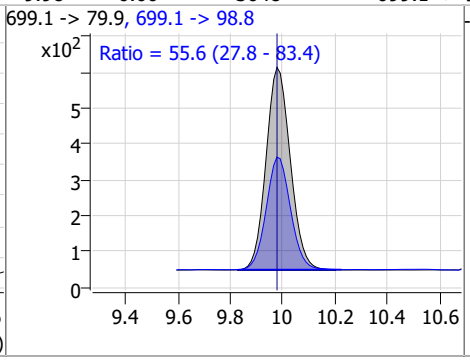


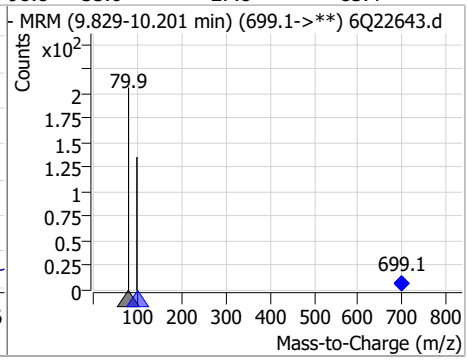


Perfluorinated Compounds by LC/MS/MS

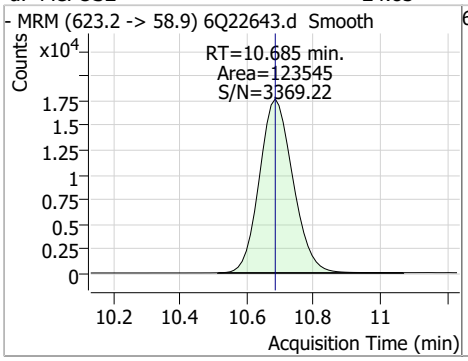
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.51	9.98	0.00	3648	699.1 -> 98.8	55.6	27.8	83.4

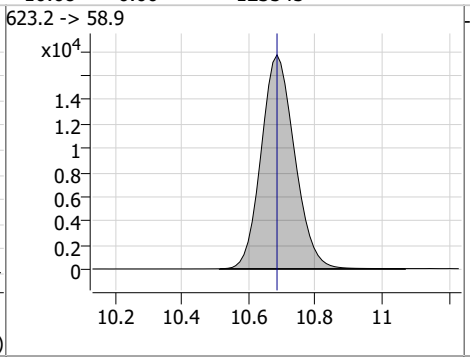


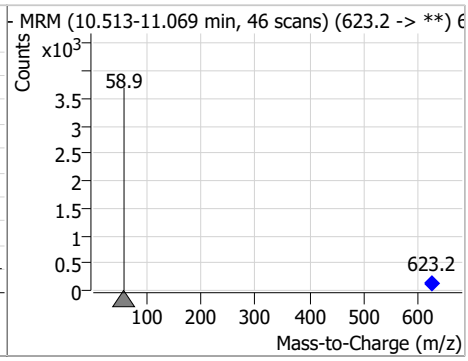




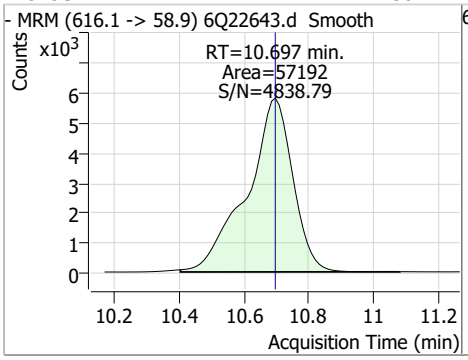
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.83	10.68	0.00	123545				

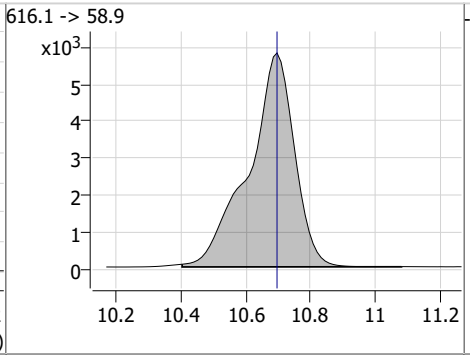


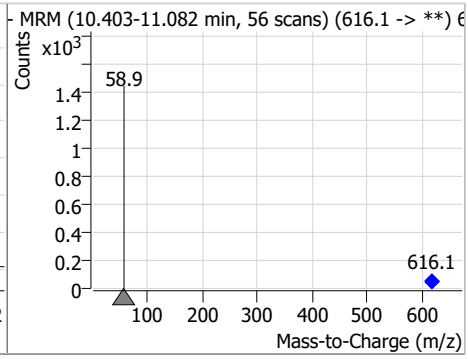




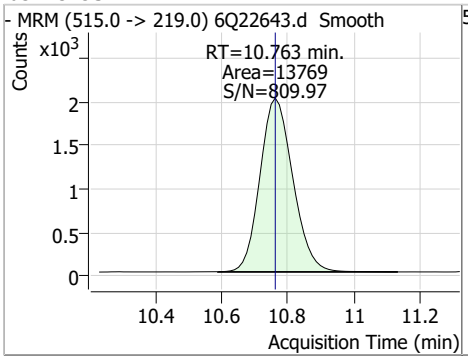
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.38	10.70	0.00	57192				

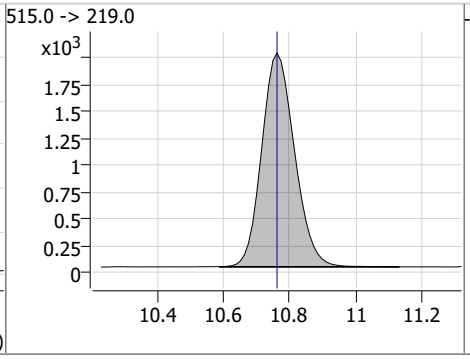


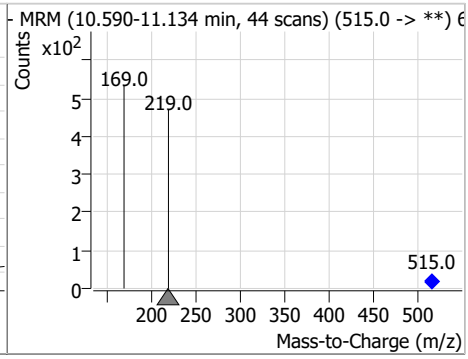




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	10.76	0.00	13769				

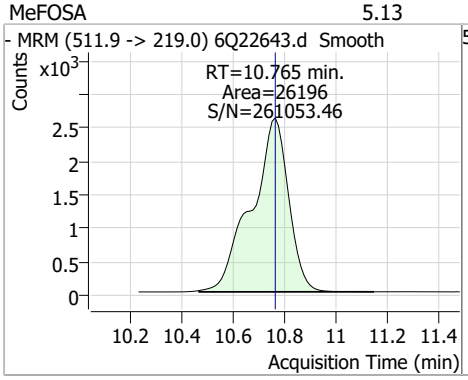


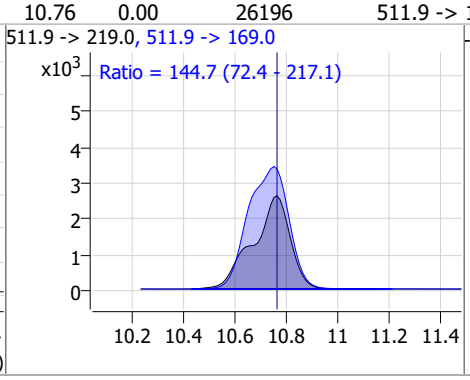


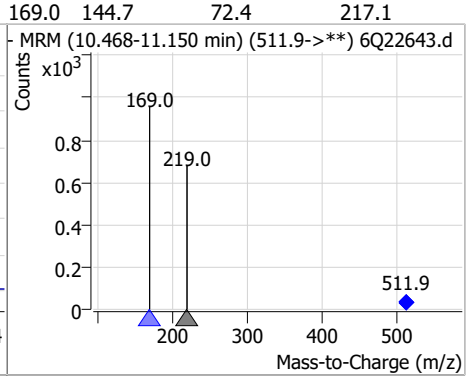


Perfluorinated Compounds by LC/MS/MS

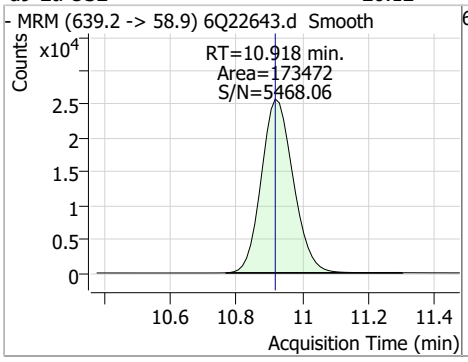
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.13	10.76	0.00	26196	511.9 -> 169.0	144.7	72.4	217.1

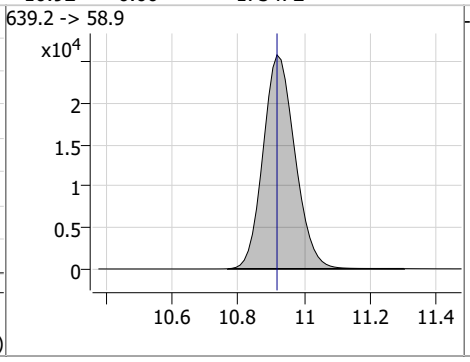


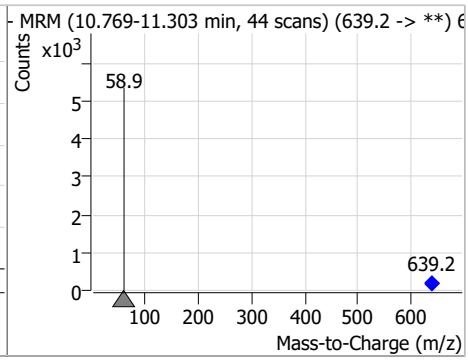




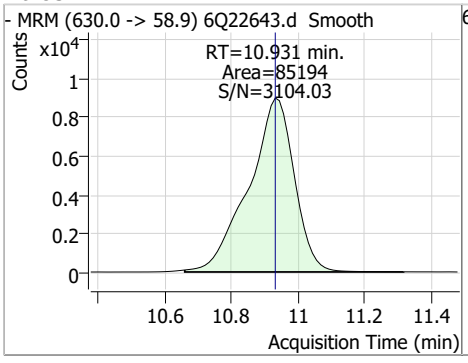
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.12	10.92	0.00	173472				

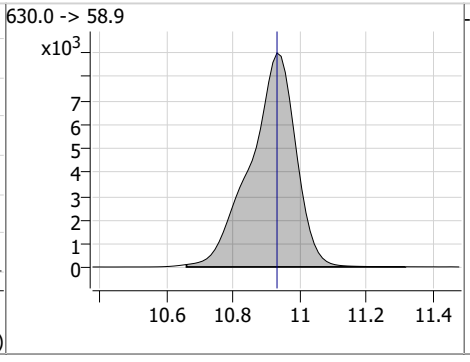


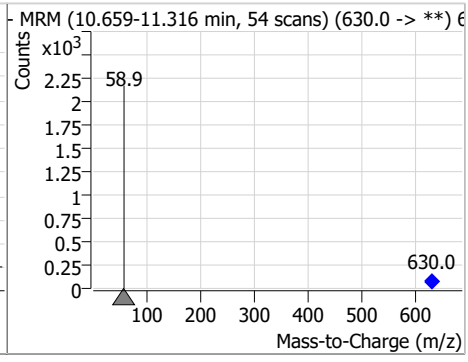




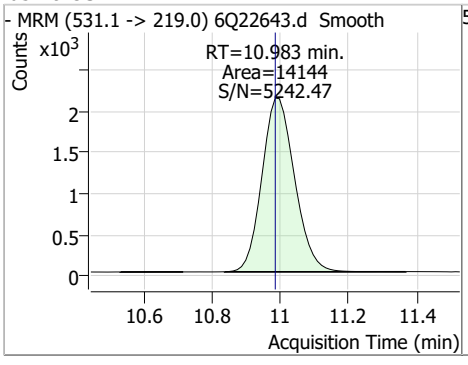
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.12	10.93	0.00	85194				

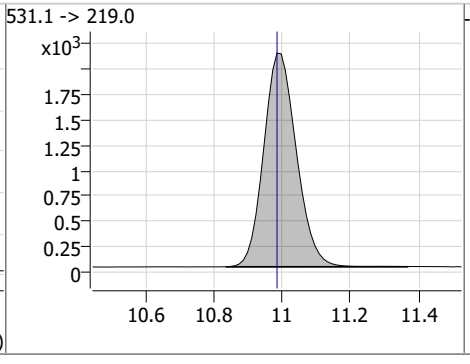


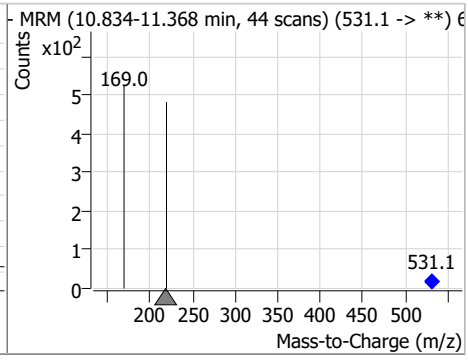




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	10.98	0.00	14144				

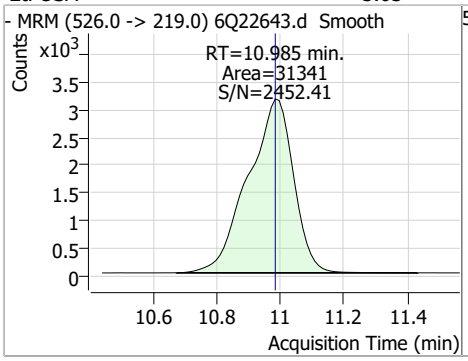


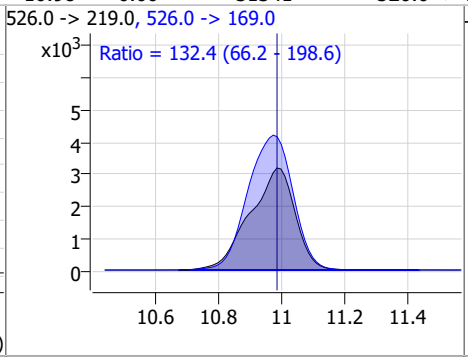


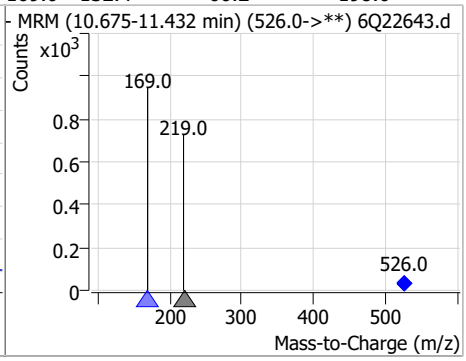


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.03	10.98	0.00	31341	526.0 -> 169.0	132.4	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-ICC330
Lab FileID: 6Q22643.D
Injection Time: 08/10/23 14:20
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22644.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 2:35:04 PM
Sample Name : ic330-5
Vial : P1-A6
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	194396	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	62972	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	69114	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	67028	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	102466	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	48023	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	27361	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	36587	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	31194	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	18674	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	35991	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	24926	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15828	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	15348	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3555	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4994	5.00	µg/L	0.000
M2-8:2FTS	8.051	529.1 -> 80.9	5063	5.00	µg/L	0.000
M3-MeFOSAA	8.297	573.2 -> 419.0	36056	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42913	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	33868	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	132093	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	173613	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	15212	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14706	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19949	2.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	82572	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	11372	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	110574	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38232	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	58647	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	65072	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3555	5.23	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4994	5.09	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-8:2FTS	8.051	529.1 -> 80.9	5063	5.27	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C2-PFDoDA	9.148	615.1 -> 570.0	31194	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18674	1.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFBS	5.610	302.1 -> 79.9	24926	2.58	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C3-PFHxS	7.355	402.1 -> 79.9	15828	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 = 101.3%		
13C4-PFBA	3.010	216.8 -> 171.9	194396	9.97 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	6.608	367.1 -> 322.0	67028	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C5-PFHxA	5.668	318.0 -> 273.0	69114	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	4.447	268.3 -> 223.0	62972	5.14 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C6-PFDA	8.250	519.1 -> 474.1	27361	1.27 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C7-PFUnDA	8.717	570.0 -> 525.1	36587	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	9.662	506.1 -> 77.8	35991	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C8-PFOA	7.239	421.1 -> 376.0	102466	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-PFOS	8.414	507.1 -> 79.9	15348	2.63 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C9-PFNA	7.770	472.1 -> 427.0	48023	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%		
d3-MeFOSAA	8.297	573.2 -> 419.0	36056	4.99 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C3-HFPO-DA	6.045	286.9 -> 168.9	42913	10.19 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d3-MeFOSA	10.763	515.0 -> 219.0	14706	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%		
d5-EtFOSAA	8.505	589.2 -> 419.0	33868	5.08 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d7-MeFOSE	10.685	623.2 -> 58.9	132093	24.50 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
d9-EtFOSE	10.918	639.2 -> 58.9	173613	24.13 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
d5-EtFOSA	10.996	531.1 -> 219.0	15212	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%		
Target Compounds						**QValue**
4:2FTS	5.343	327.1 -> 307.0	83004	18.05 µg/L		100
		327.1 -> 80.9	32468			
6:2FTS	7.014	427.1 -> 407.0	84367	18.89 µg/L		100
		427.1 -> 80.9	28458			
8:2FTS	8.040	527.1 -> 507.0	48923	18.06 µg/L		96
		527.1 -> 80.8	19095			
EtFOSAA	8.506	584.2 -> 419.1	18889	4.43 µg/L	m	96
		584.2 -> 526.0	10074			
FOSA	9.652	498.1 -> 77.9	54125	4.79 µg/L		100
		498.1 -> 478.0	1765			
MeFOSAA	8.298	570.1 -> 419.0	32181	4.67 µg/L		99
		570.1 -> 483.0	6088			
PFBA	3.006	212.8 -> 168.9	115805	19.07 µg/L		100
PFBS	5.611	298.7 -> 79.9	33719	4.14 µg/L		97
		298.7 -> 98.8	13266			
PFDA	8.263	512.9 -> 469.0	151873	4.68 µg/L		99
		512.9 -> 219.0	22681			
PFDoDA	9.148	613.1 -> 569.0	103157	5.05 µg/L		100
		613.1 -> 319.0	15582			
PFDS	9.312	599.0 -> 79.9	15237	4.14 µg/L		98

Perfluorinated Compounds by LC/MS/MS

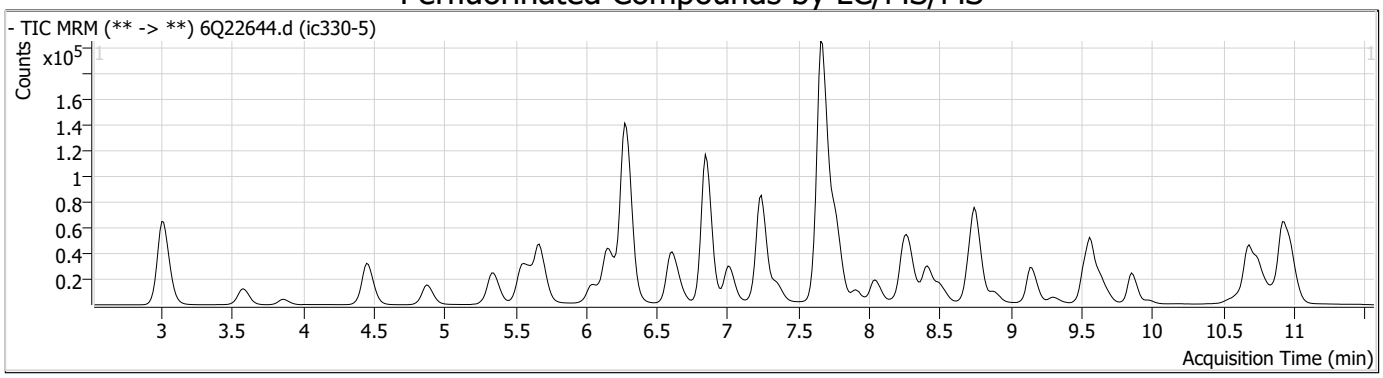
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	7784				
PFHpA	6.609	363.1 -> 319.0	125406	4.74	µg/L		98
		363.1 -> 169.0	20042				
PFHpS	7.922	449.0 -> 79.9	29526	4.21	µg/L		98
		449.0 -> 98.9	15362				
PFHxA	5.682	313.0 -> 269.0	96422	4.77	µg/L		100
		313.0 -> 118.9	4985				
PFHxS	7.356	398.7 -> 79.9	29802	4.27	µg/L	m	100
		398.7 -> 98.9	14552				
PFNA	7.771	463.0 -> 419.0	160358	4.86	µg/L		98
		463.0 -> 219.0	28828				
PFNS	8.893	548.8 -> 79.9	27327	4.32	µg/L		96
		548.8 -> 98.9	13791				
PFOA	7.240	413.0 -> 369.0	197924	4.73	µg/L		100
		413.0 -> 169.0	31957				
PFOS	8.415	498.9 -> 79.9	28411	4.31	µg/L	m	92
		498.9 -> 98.8	13471				
PFPeA	4.449	263.0 -> 219.0	130893	9.44	µg/L		100
PFPeS	6.660	349.1 -> 79.9	30722	4.74	µg/L		96
		349.1 -> 98.9	13173				
PFTeDA	9.852	713.1 -> 669.0	86067	4.75	µg/L		99
		713.1 -> 168.9	7260				
PFTrDA	9.519	663.0 -> 619.0	105223	4.99	µg/L		97
		663.0 -> 168.9	11595				
PFUnDA	8.717	563.1 -> 519.0	100420	4.77	µg/L		98
		563.1 -> 269.1	17074				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	141471	9.24	µg/L		92
		632.9 -> 452.9	41901				
9Cl-PF3ONS	8.758	530.8 -> 351.0	231892	9.37	µg/L		96
		532.8 -> 353.0	68629				
ADONA	6.858	376.9 -> 250.9	488769	8.94	µg/L		98
		376.9 -> 84.8	133292				
HFPO-DA	6.046	284.9 -> 168.9	32532	8.91	µg/L		98
		284.9 -> 184.9	3702				
3:3FTCA	3.859	241.0 -> 177.0	22255	23.17	µg/L		100
		241.0 -> 117.0	2963				
5:3FTCA	6.285	341.0 -> 237.1	484743	116.58	µg/L		99
		341.0 -> 217.0	347076				
7:3FTCA	7.673	441.0 -> 316.9	360887	117.35	µg/L		100
		441.0 -> 336.9	821369				
EtFOSA	10.985	526.0 -> 219.0	63250	9.44	µg/L		99
		526.0 -> 169.0	83206				
EtFOSE	10.931	630.0 -> 58.9	172259	24.49	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	53617	9.84	µg/L		97
		511.9 -> 169.0	75301				
MeFOSE	10.697	616.1 -> 58.9	118758	24.05	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	7603	4.43	µg/L		99
		699.1 -> 98.8	4183				
NFDHA	5.551	295.0 -> 201.0	24010	9.34	µg/L		97
		295.0 -> 84.9	6437				
PFMBA	4.869	279.0 -> 85.1	93524	9.53	µg/L		100
PFMPA	3.576	229.0 -> 84.9	74374	9.47	µg/L		100
PFEESA	6.163	314.8 -> 134.9	224336	8.26	µg/L		100
		314.8 -> 82.9	7844				

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

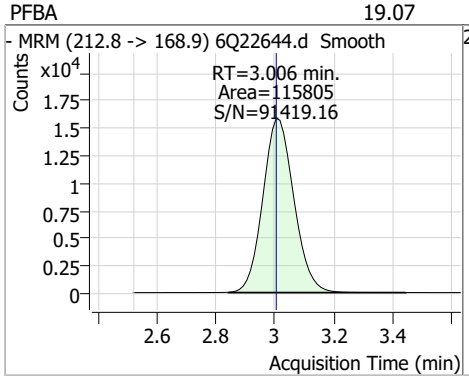
Perfluorinated Compounds by LC/MS/MS

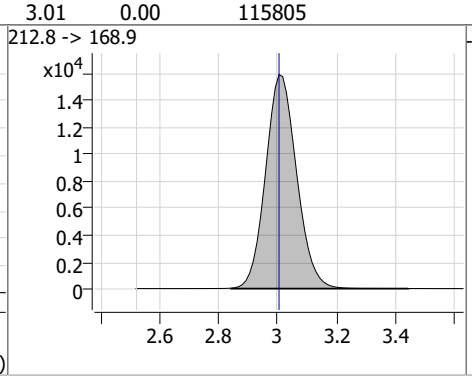
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

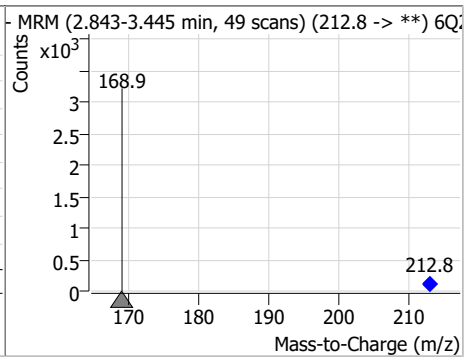
Perfluorinated Compounds by LC/MS/MS



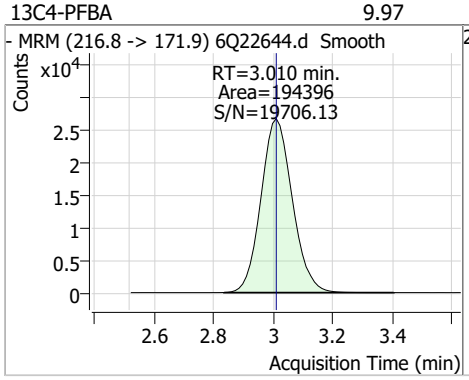
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.07	3.01	0.00	115805				

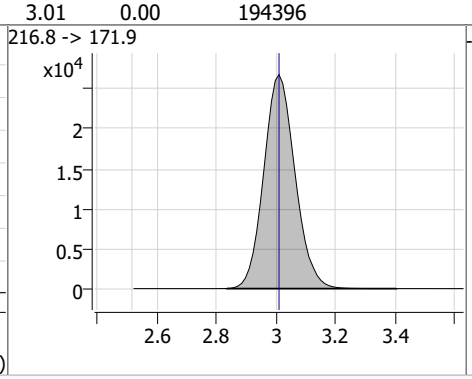


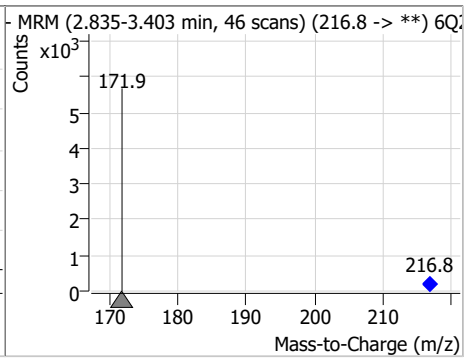




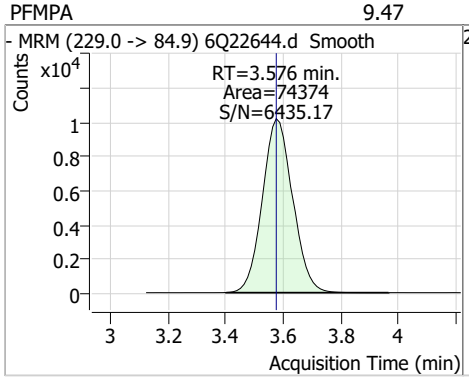
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.97	3.01	0.00	194396				

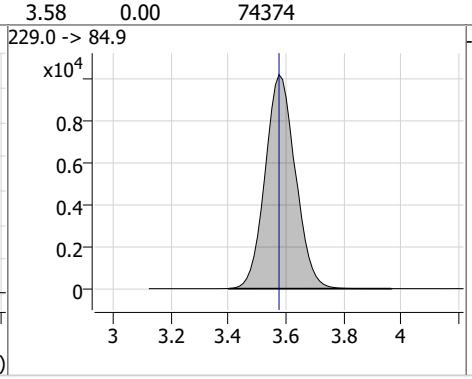


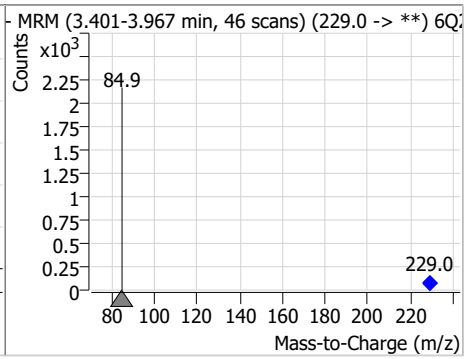




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	9.47	3.58	0.00	74374				

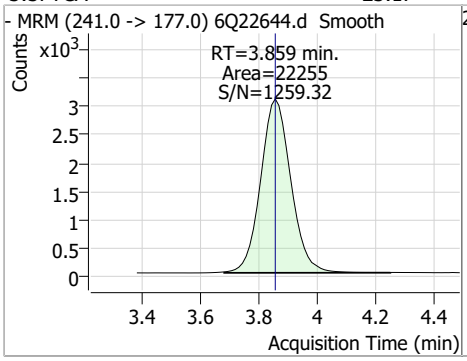


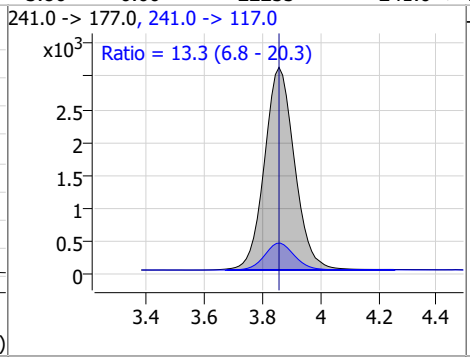


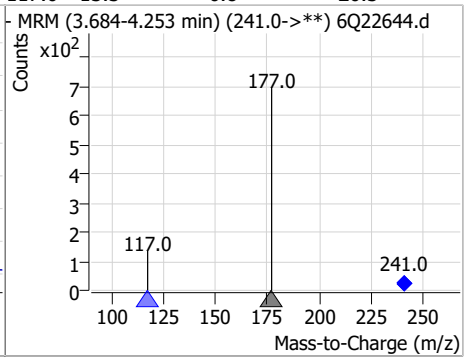


Perfluorinated Compounds by LC/MS/MS

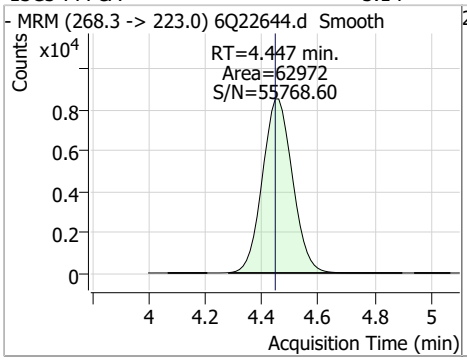
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	23.17	3.86	0.00	22255	241.0 -> 117.0	13.3	6.8	20.3

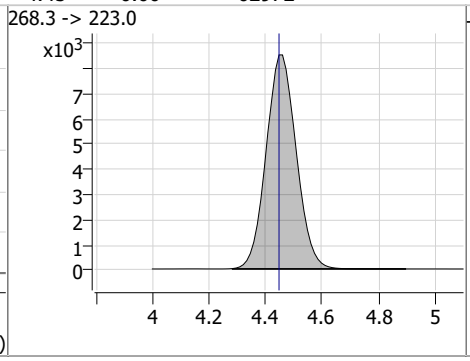


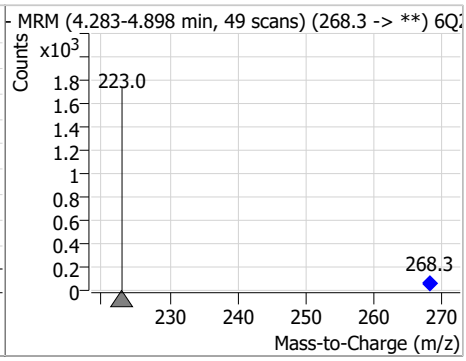




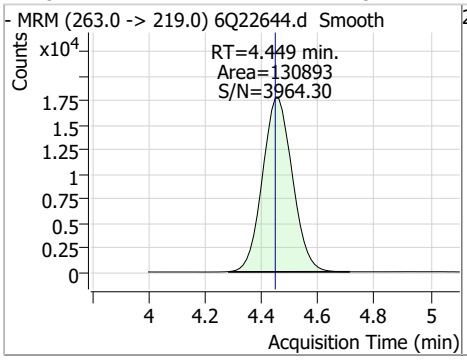
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.14	4.45	0.00	62972				

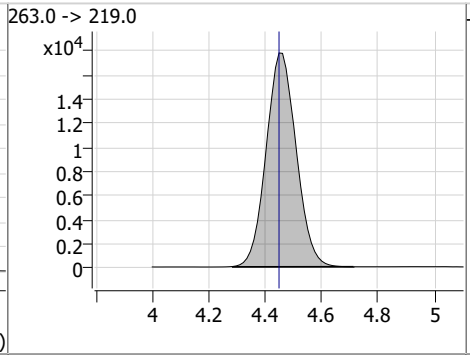


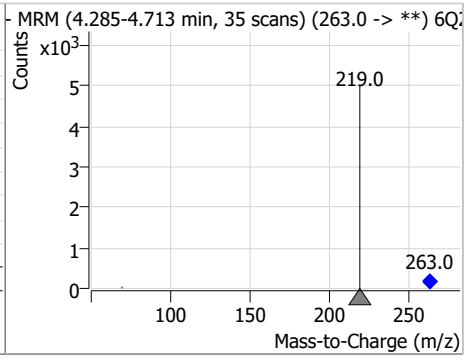




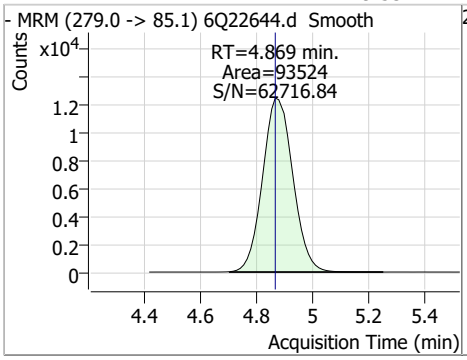
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.44	4.45	0.00	130893				

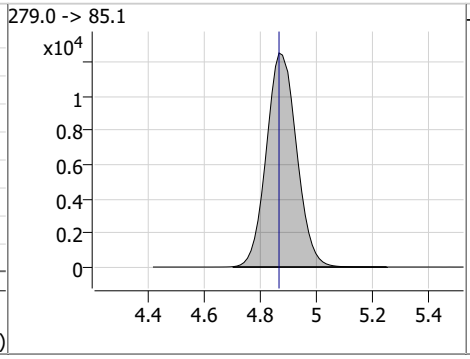


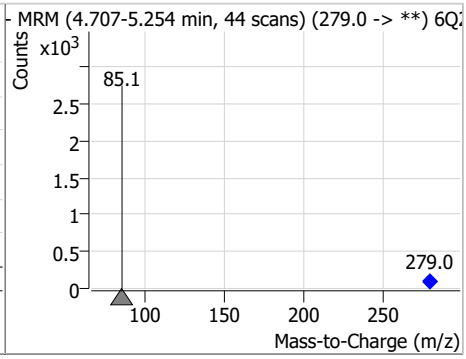




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	9.53	4.87	0.00	93524				

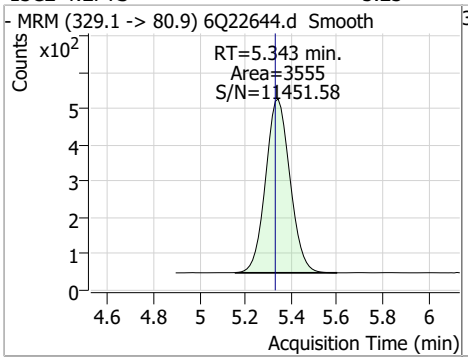


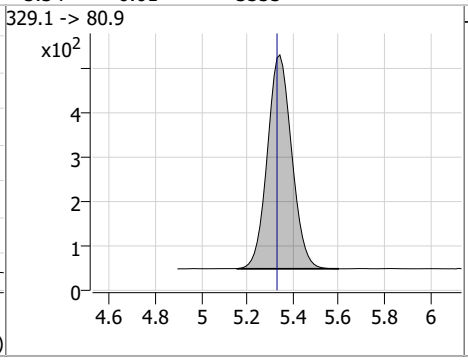


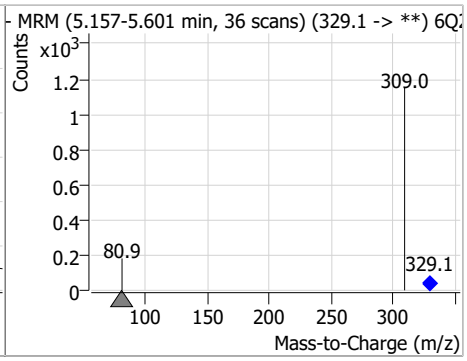


Perfluorinated Compounds by LC/MS/MS

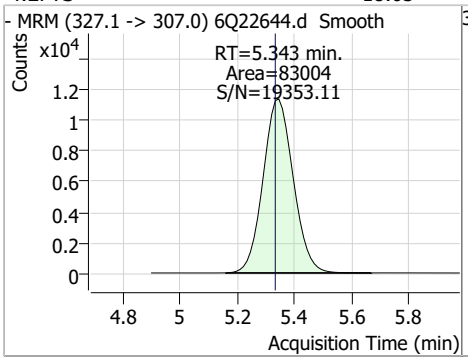
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.23	5.34	0.01	3555				

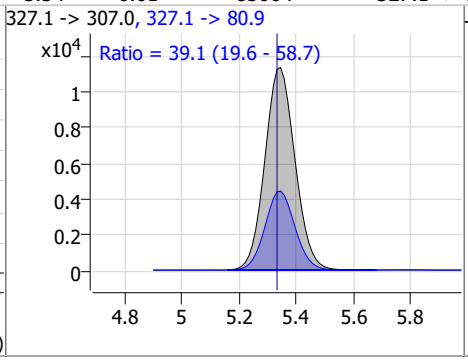


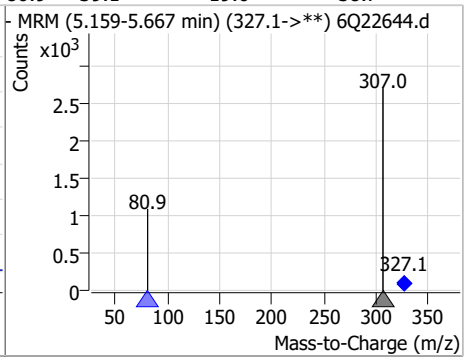




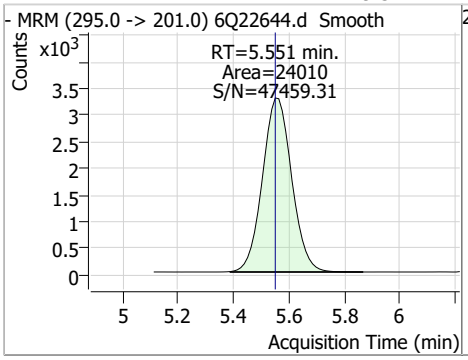
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.05	5.34	0.01	83004	327.1 -> 80.9	39.1	19.6	58.7

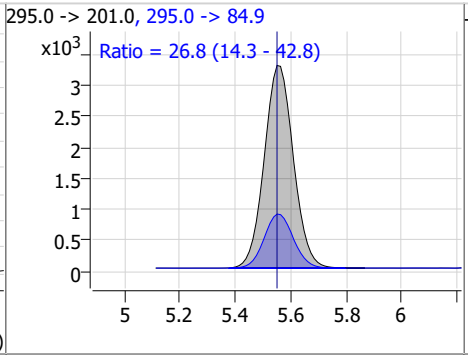


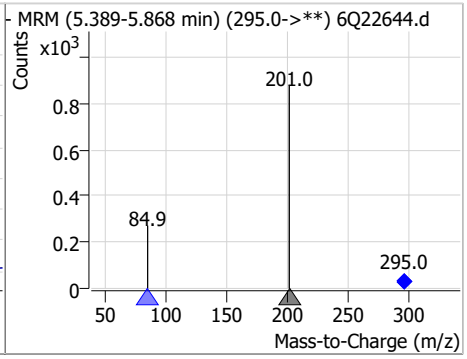




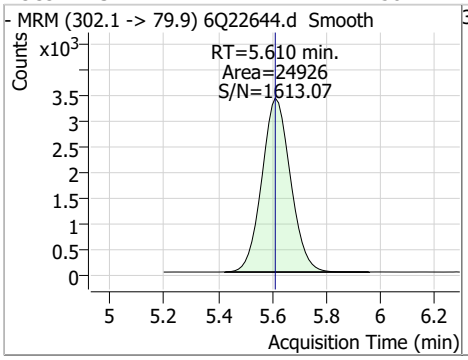
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	9.34	5.55	0.00	24010	295.0 -> 84.9	26.8	14.3	42.8

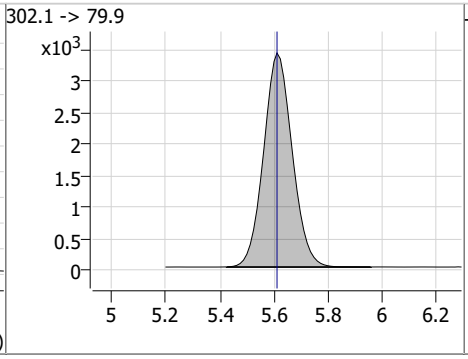


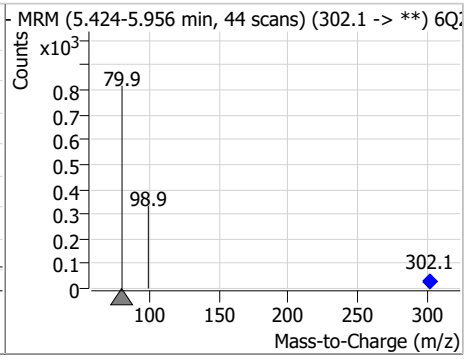




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.58	5.61	0.00	24926				

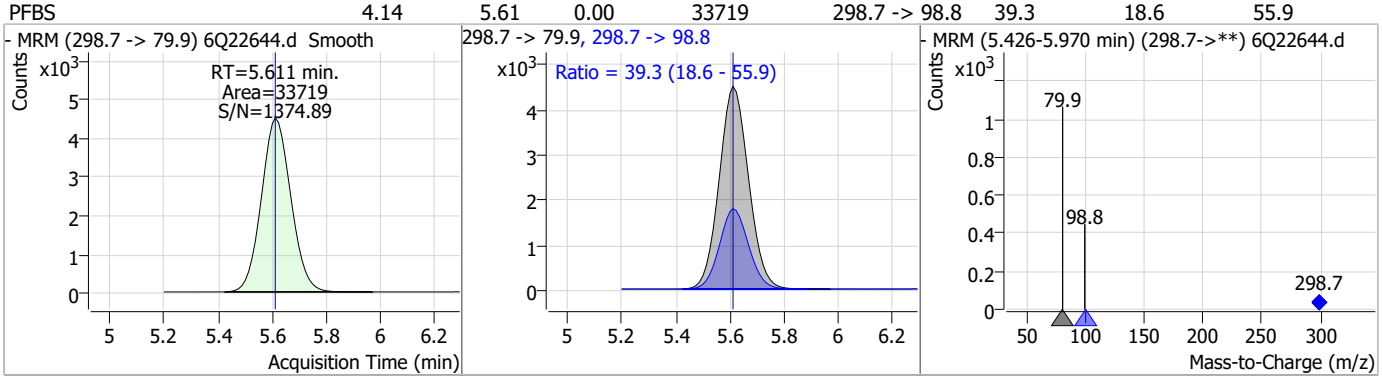




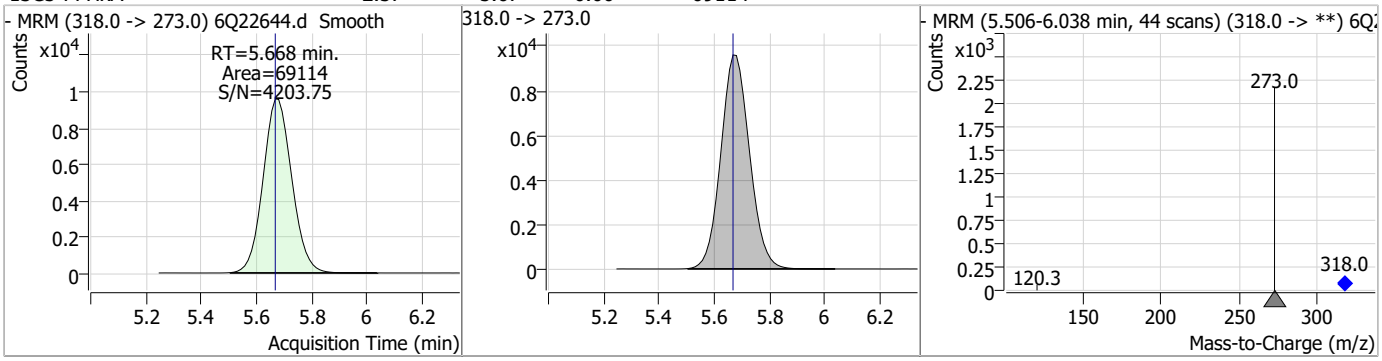


Perfluorinated Compounds by LC/MS/MS

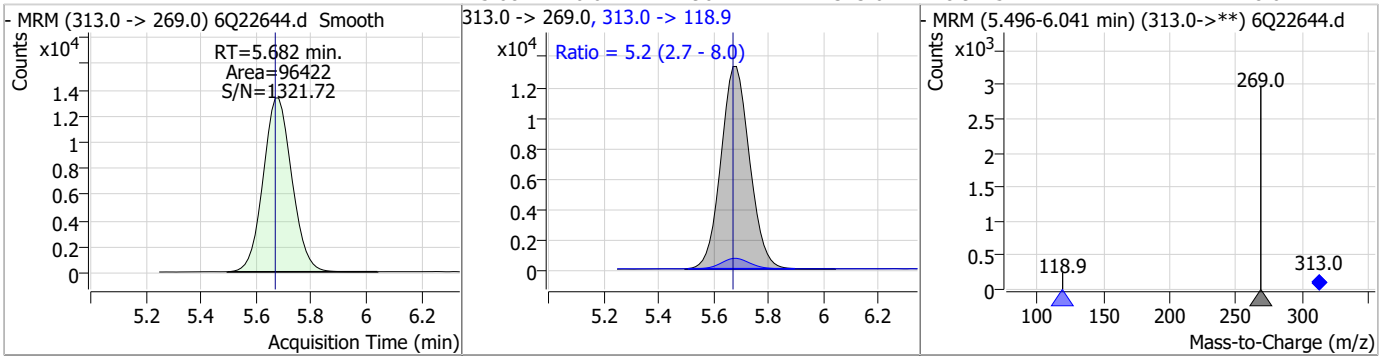
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.14	5.61	0.00	33719	298.7 -> 98.8	39.3	18.6	55.9



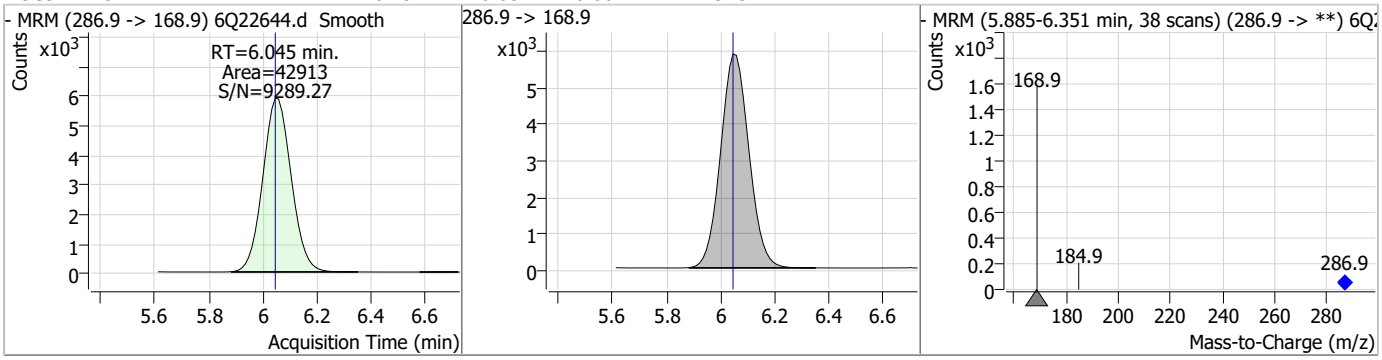
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.67	0.00	69114				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.77	5.68	0.01	96422	313.0 -> 118.9	5.2	2.7	8.0

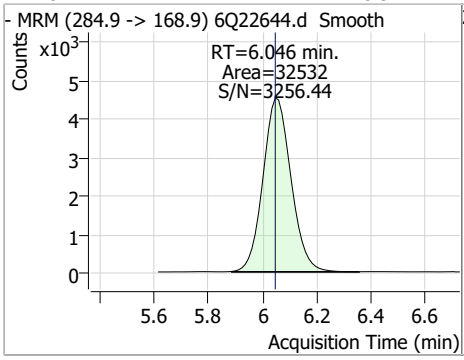


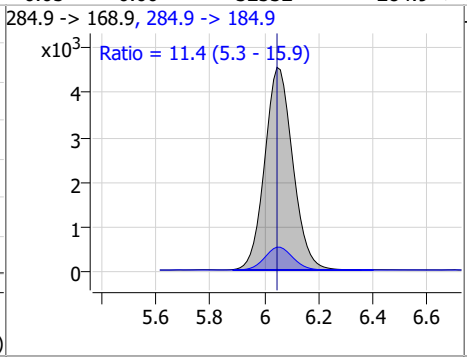
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.19	6.05	0.00	42913				

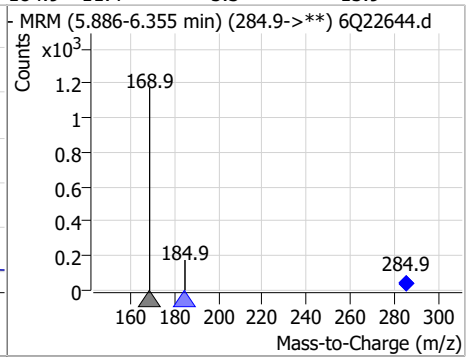


Perfluorinated Compounds by LC/MS/MS

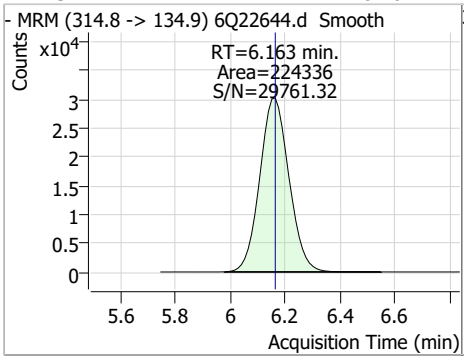
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	8.91	6.05	0.00	32532	284.9 -> 184.9	11.4	5.3	15.9

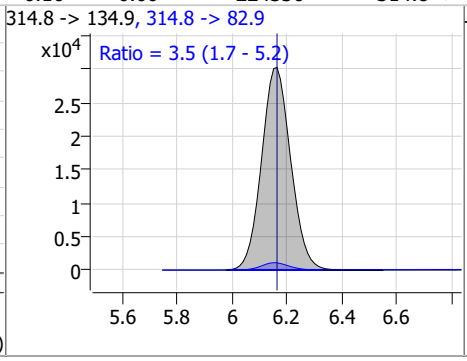


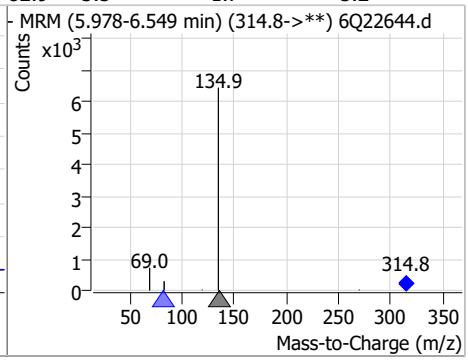




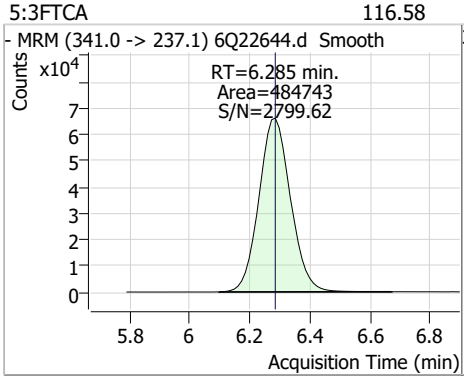
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	8.26	6.16	0.00	224336	314.8 -> 82.9	3.5	1.7	5.2

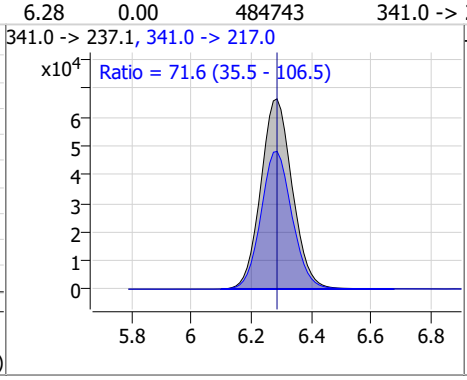


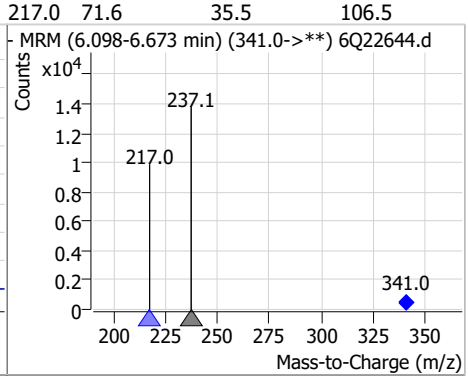




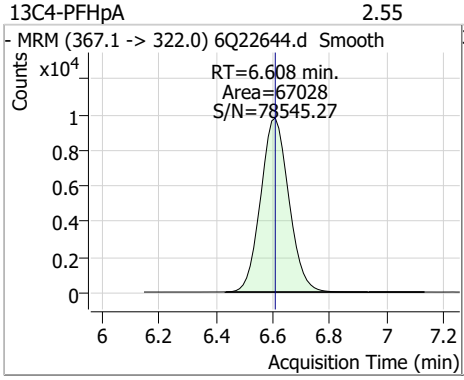
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	116.58	6.28	0.00	484743	341.0 -> 217.0	71.6	35.5	106.5

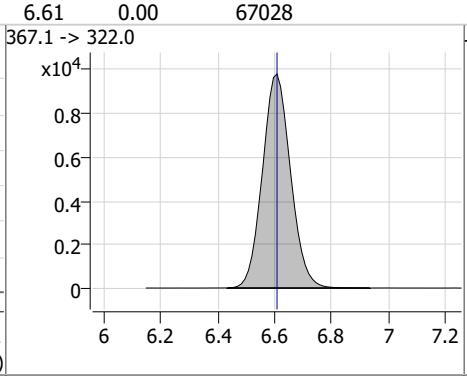


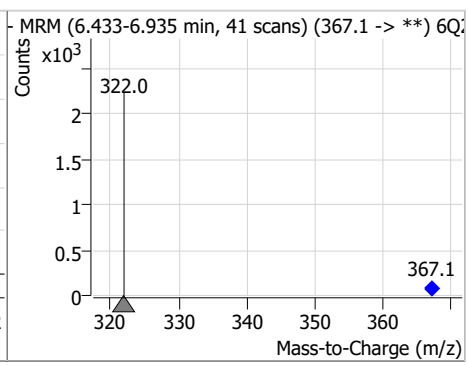




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.61	0.00	67028				

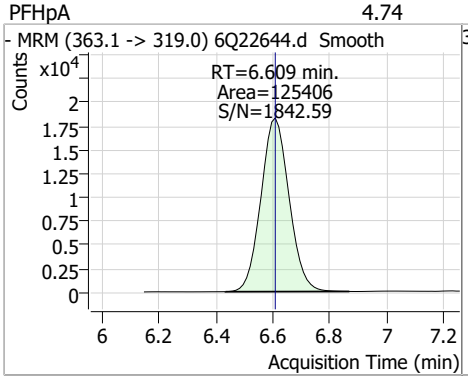


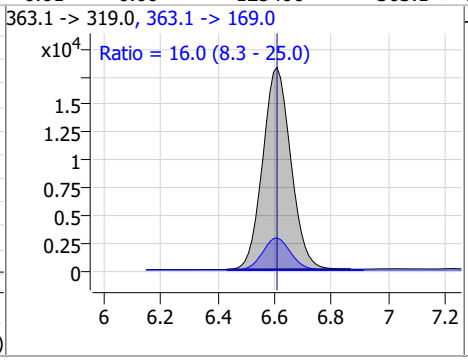


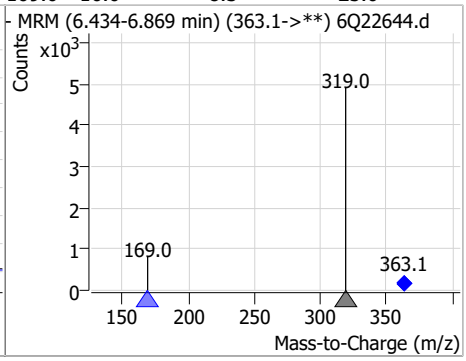


Perfluorinated Compounds by LC/MS/MS

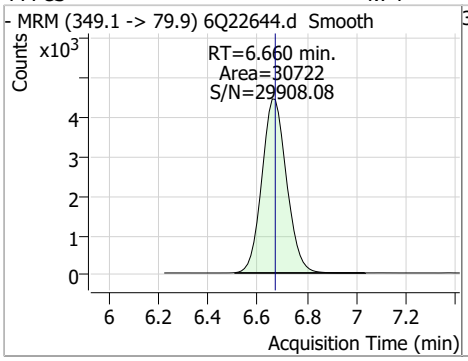
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.74	6.61	0.00	125406	363.1 -> 169.0	16.0	8.3	25.0

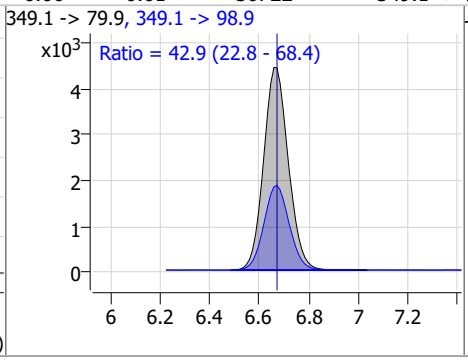


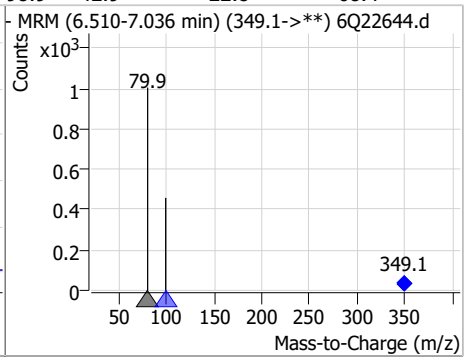




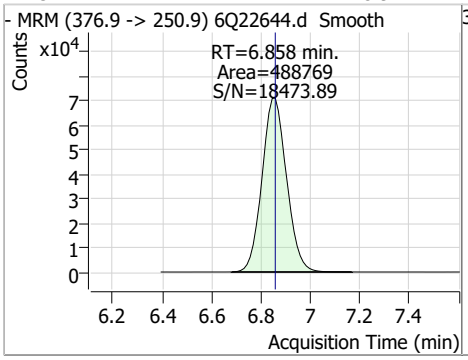
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.74	6.66	-0.01	30722	349.1 -> 98.9	42.9	22.8	68.4

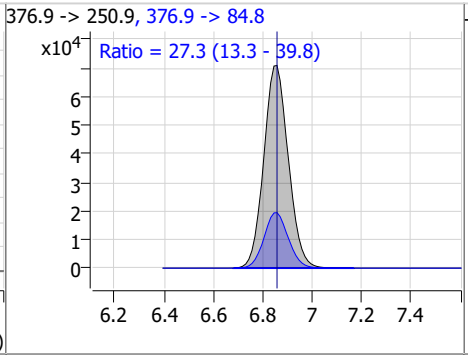


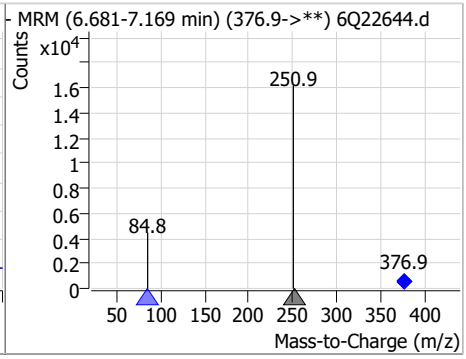




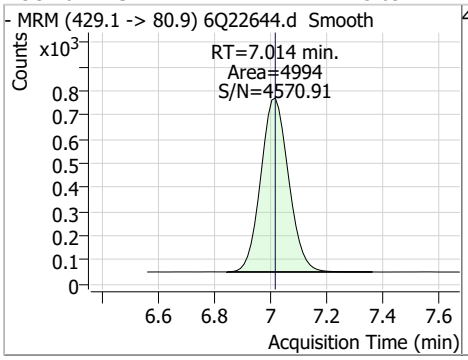
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.94	6.86	0.00	488769	376.9 -> 84.8	27.3	13.3	39.8

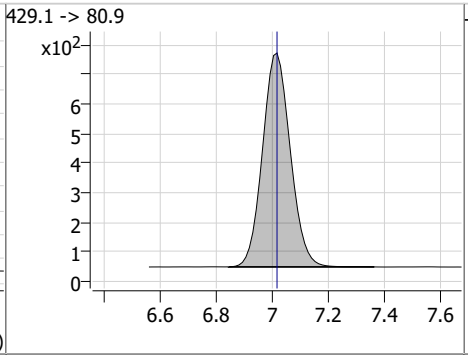


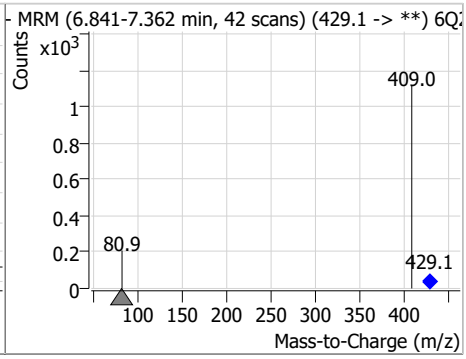




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.09	7.01	0.00	4994				

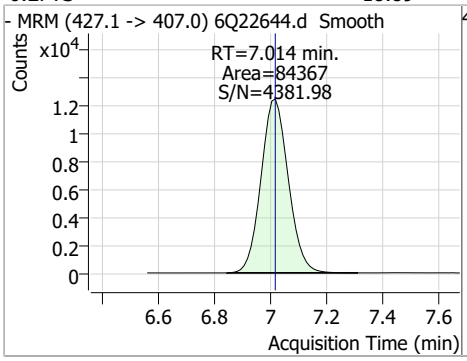


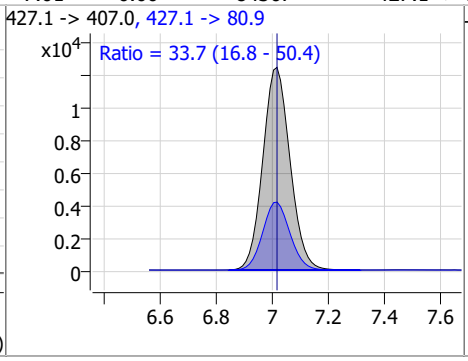


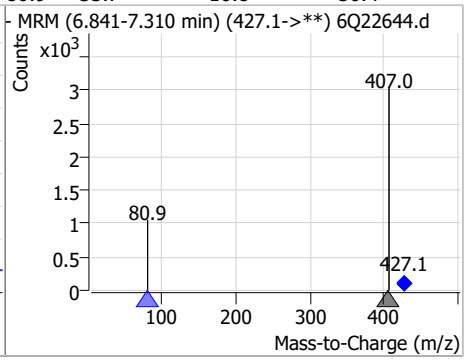


Perfluorinated Compounds by LC/MS/MS

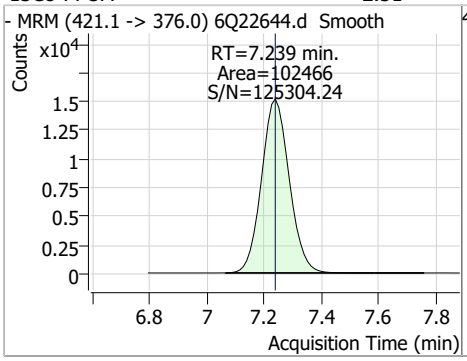
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.89	7.01	0.00	84367	427.1 -> 80.9	33.7	16.8	50.4

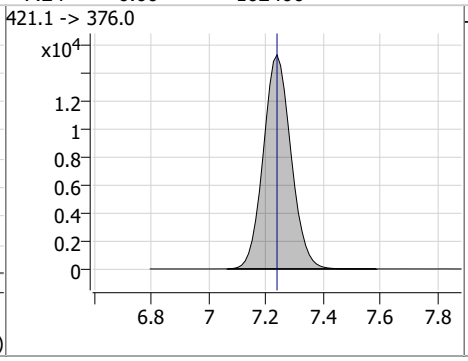


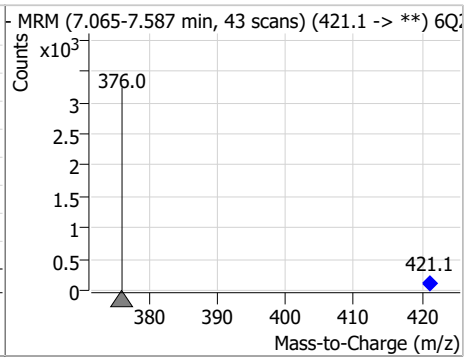




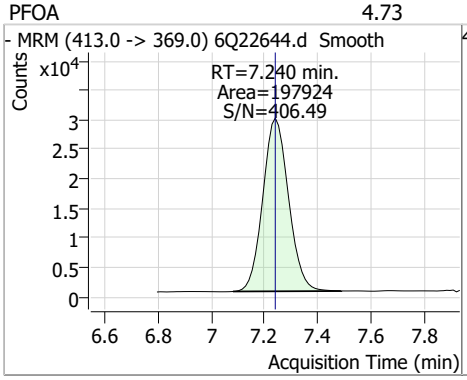
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.51	7.24	0.00	102466				

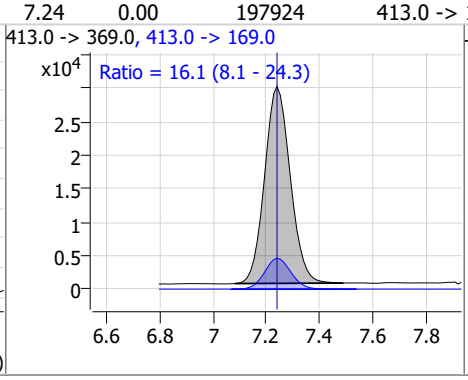


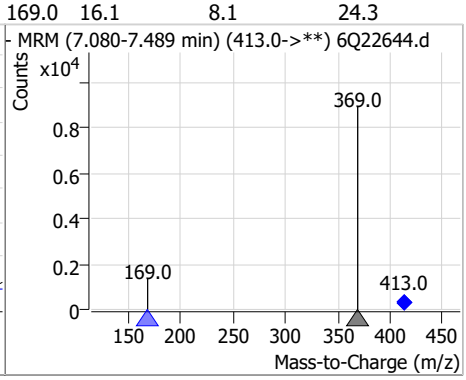




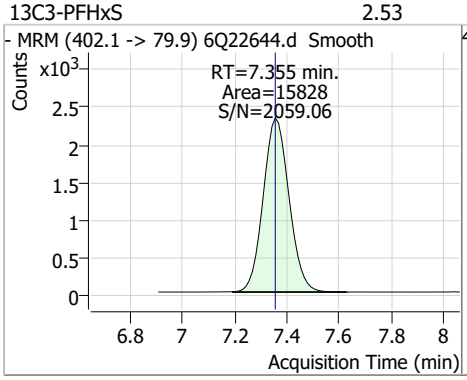
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.73	7.24	0.00	197924	413.0 -> 169.0	16.1	8.1	24.3

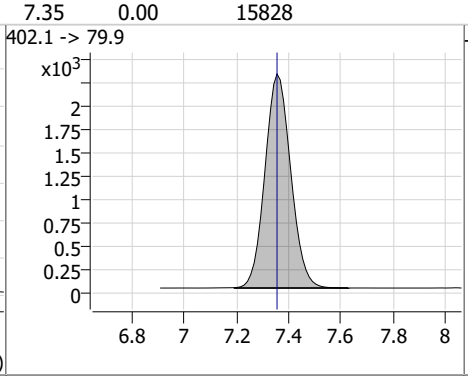


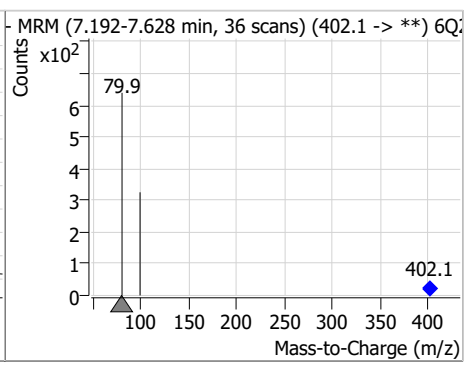




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.53	7.35	0.00	15828				

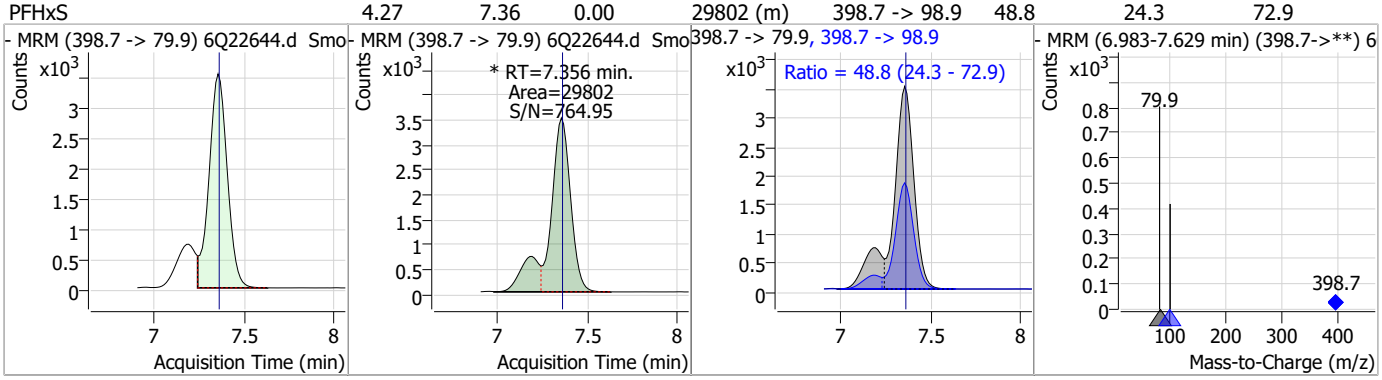




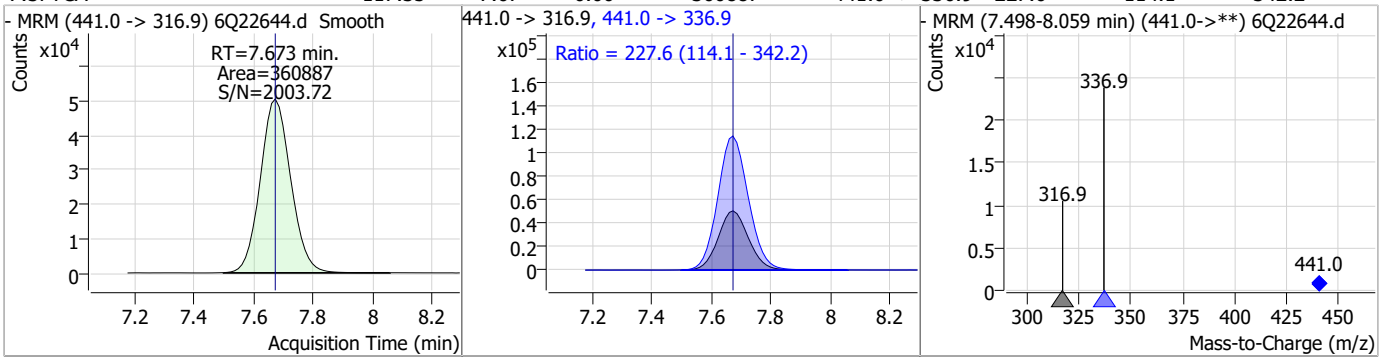


Perfluorinated Compounds by LC/MS/MS

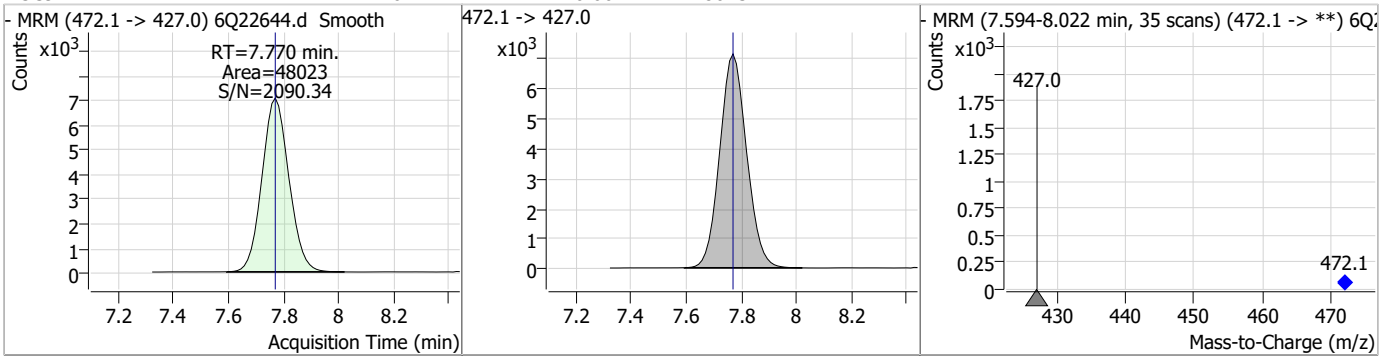
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.27	7.36	0.00	29802 (m)	398.7 -> 98.9	48.8	24.3	72.9



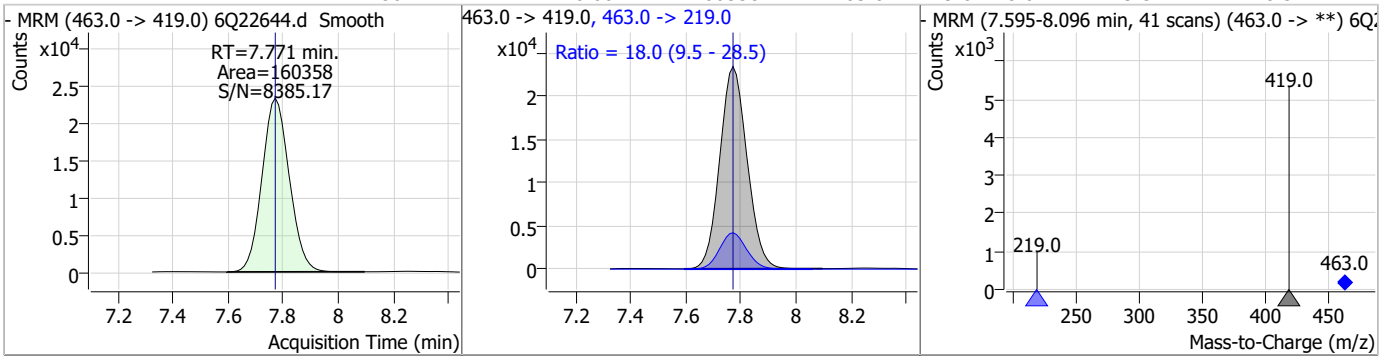
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	117.35	7.67	0.00	360887	441.0 -> 336.9	227.6	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.77	0.00	48023				

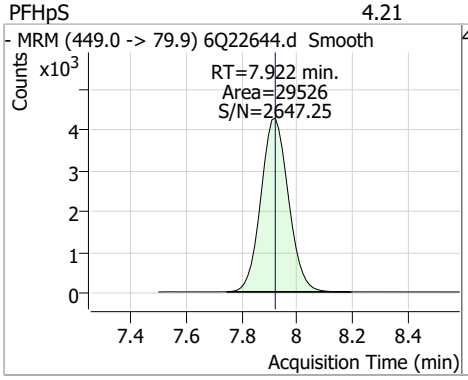


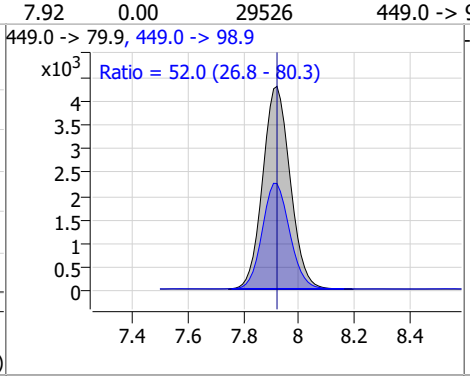
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.86	7.77	0.00	160358	463.0 -> 219.0	18.0	9.5	28.5

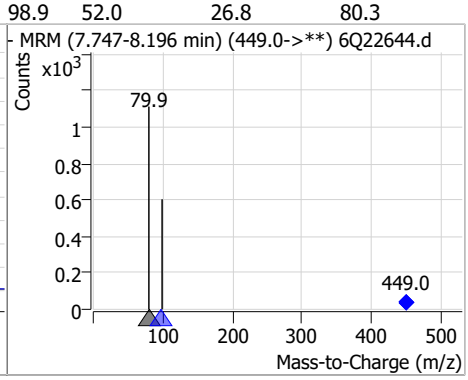


Perfluorinated Compounds by LC/MS/MS

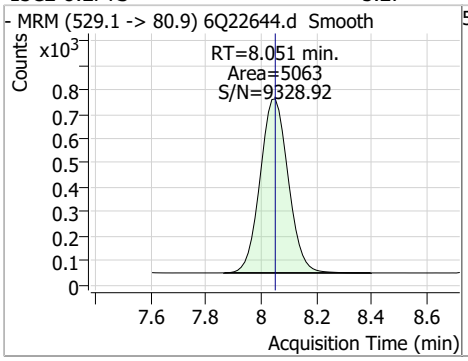
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.21	7.92	0.00	29526	449.0 -> 98.9	52.0	26.8	80.3

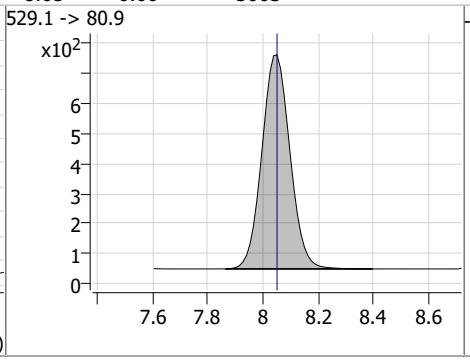


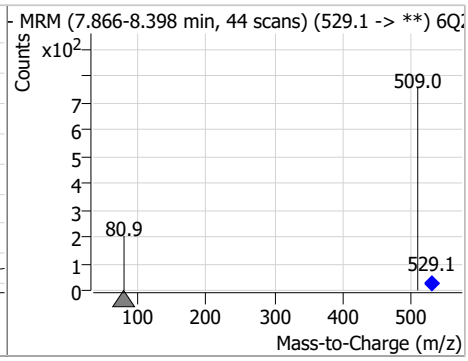




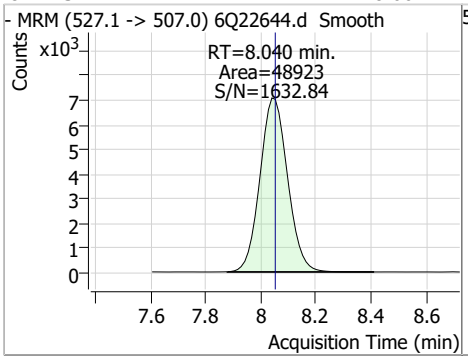
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.27	8.05	0.00	5063				

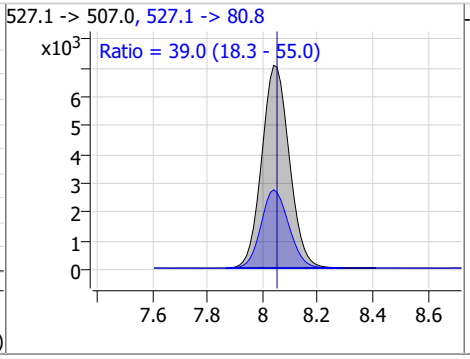


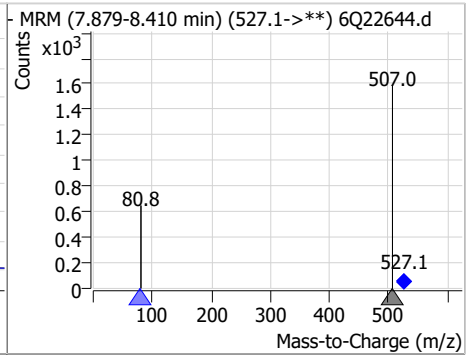




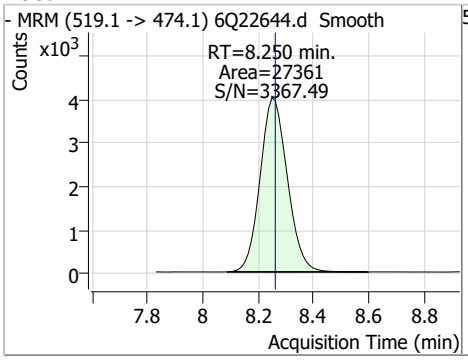
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.06	8.04	-0.01	48923	527.1 -> 80.8	39.0	18.3	55.0

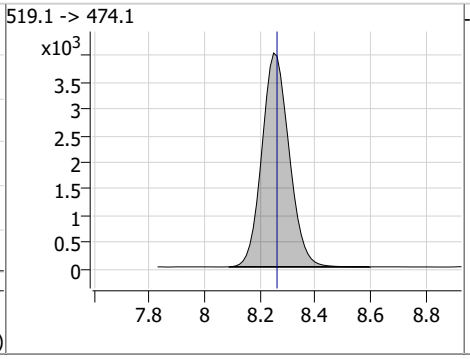


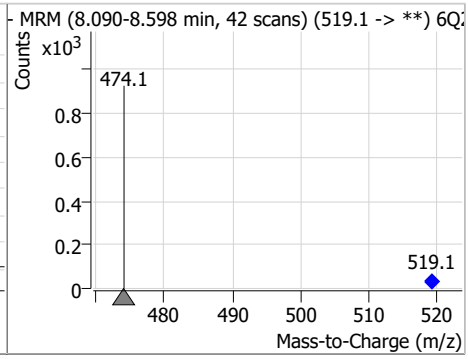




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.25	-0.01	27361				

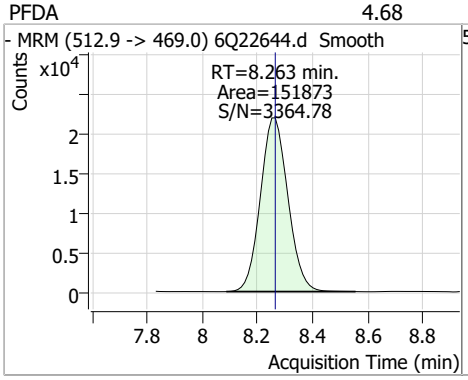


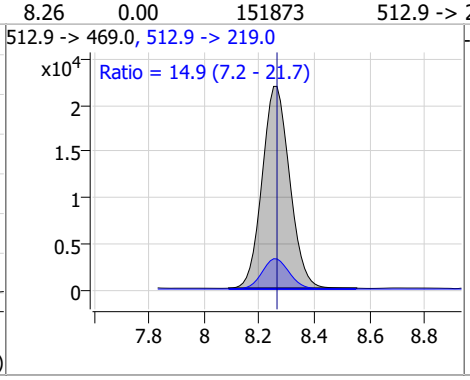


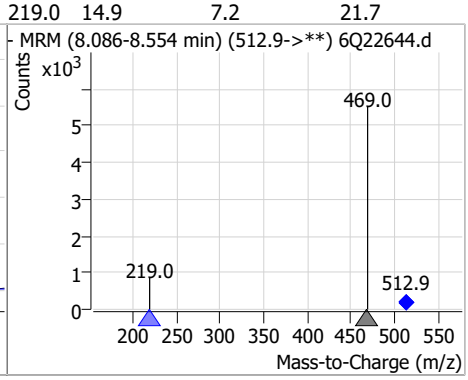


Perfluorinated Compounds by LC/MS/MS

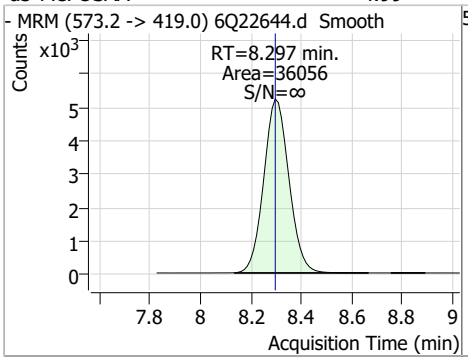
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.68	8.26	0.00	151873	512.9 -> 219.0	14.9	7.2	21.7

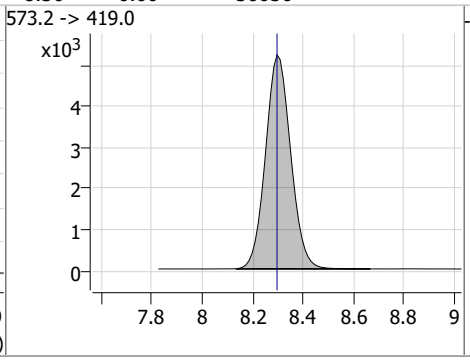


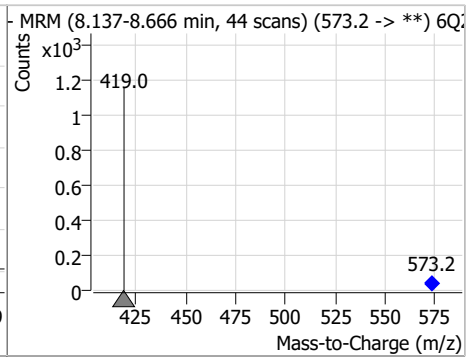




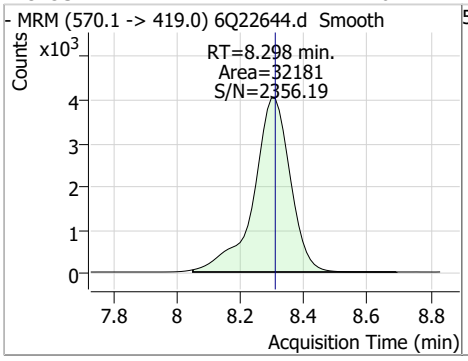
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.99	8.30	0.00	36056				

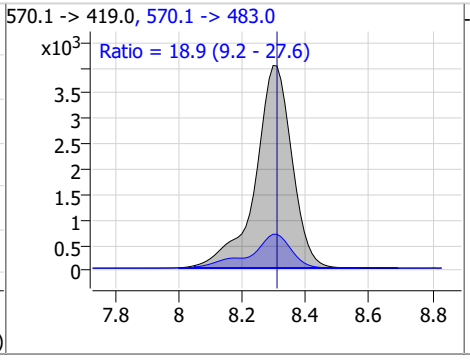


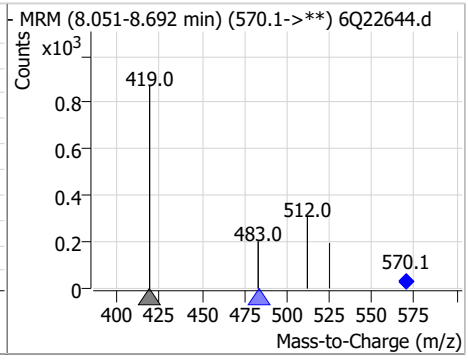




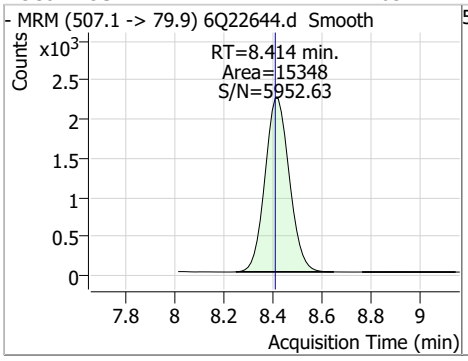
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.67	8.30	-0.01	32181	570.1 -> 483.0	18.9	9.2	27.6

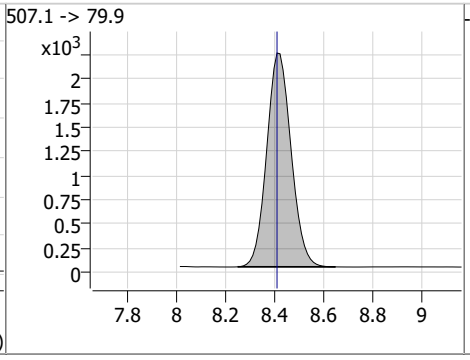


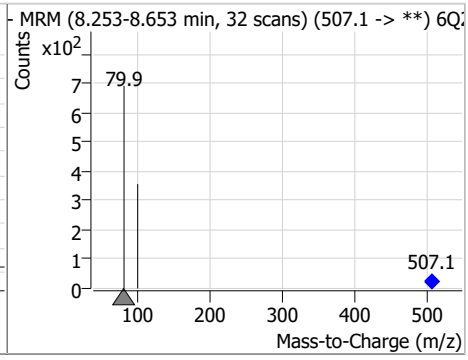




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.63	8.41	0.00	15348				

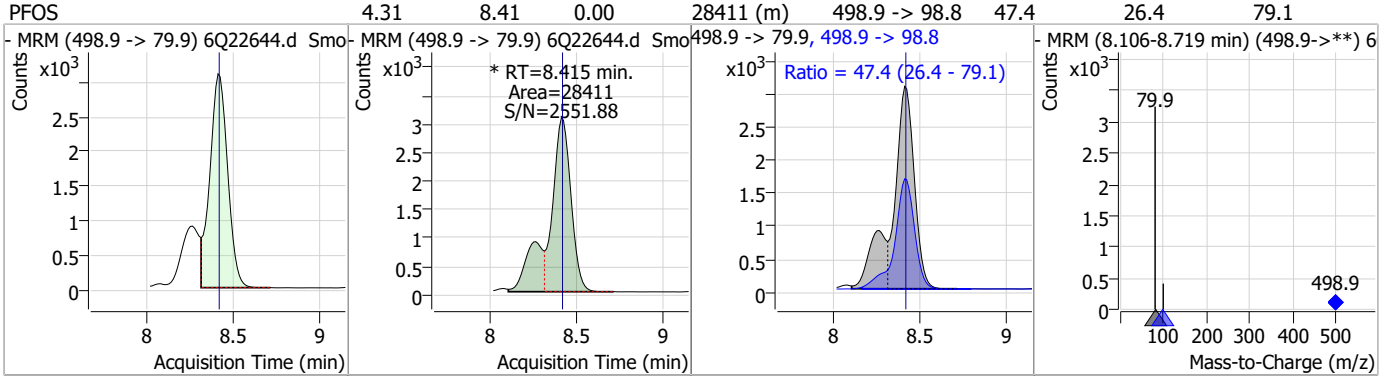




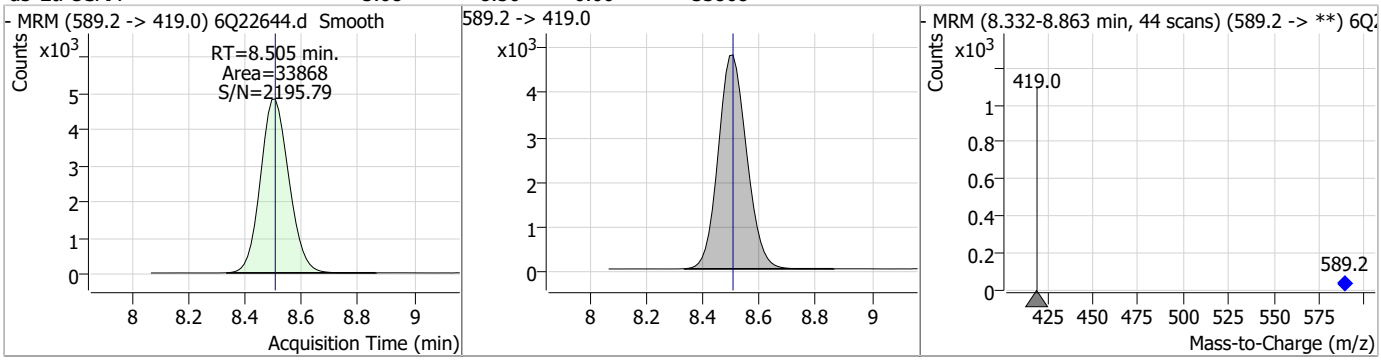


Perfluorinated Compounds by LC/MS/MS

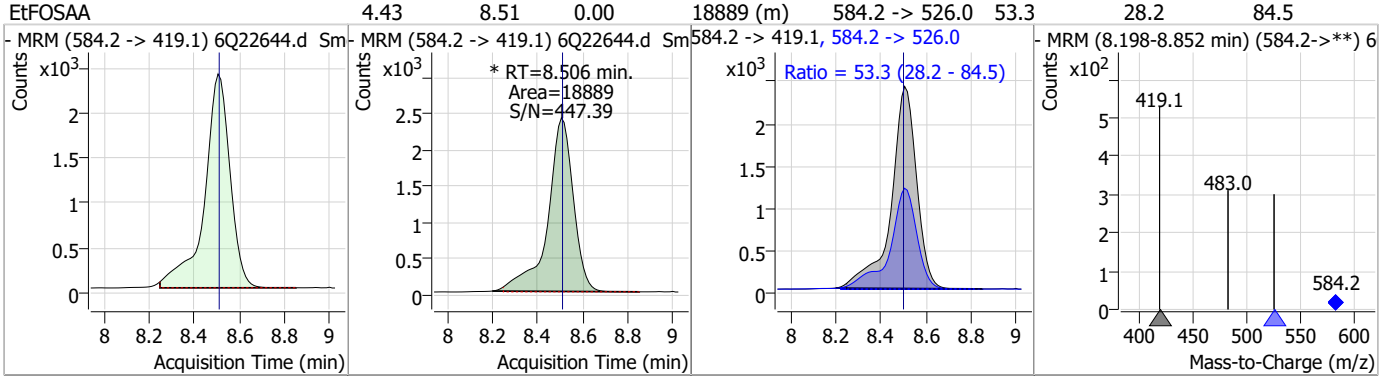
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.31	8.41	0.00	28411 (m)	498.9 -> 98.8	47.4	26.4	79.1



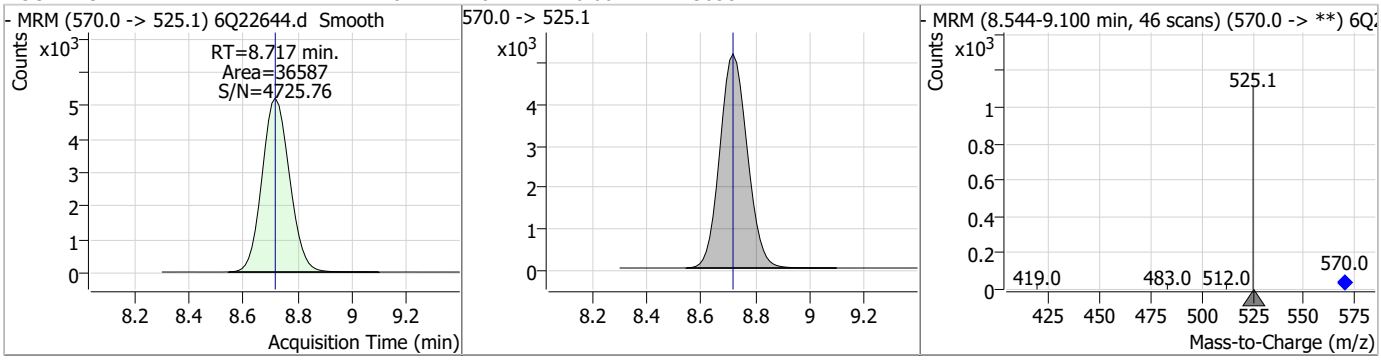
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.08	8.50	0.00	33868				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.43	8.51	0.00	18889 (m)	584.2 -> 526.0	53.3	28.2	84.5

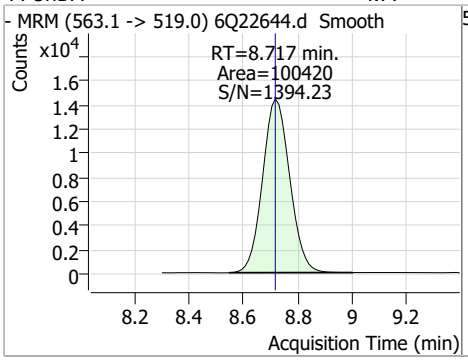


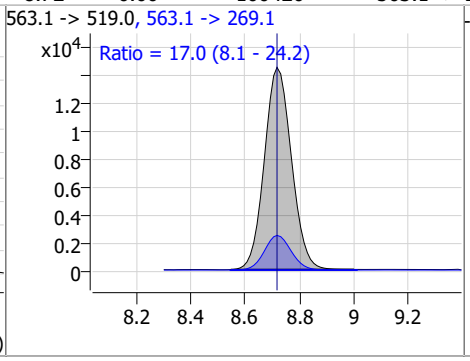
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.72	0.00	36587				

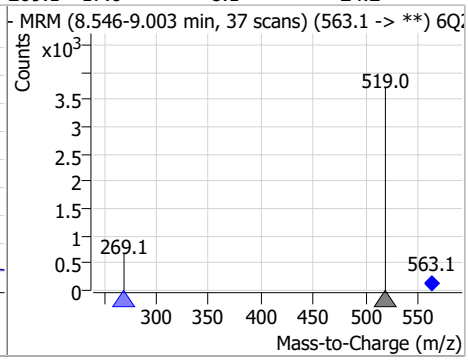


Perfluorinated Compounds by LC/MS/MS

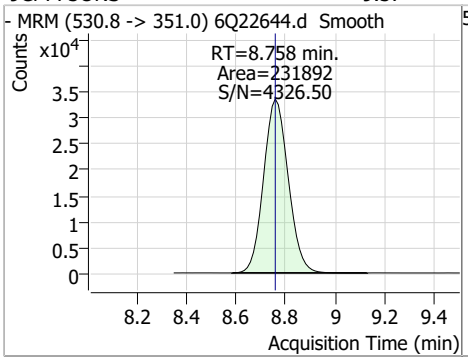
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.77	8.72	0.00	100420	563.1 -> 269.1	17.0	8.1	24.2

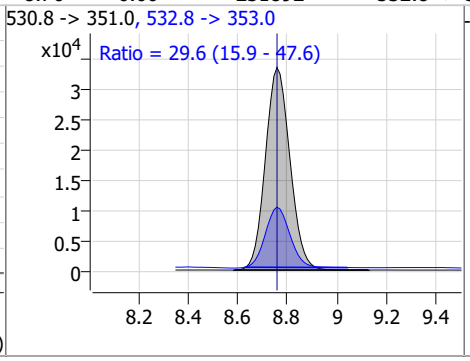


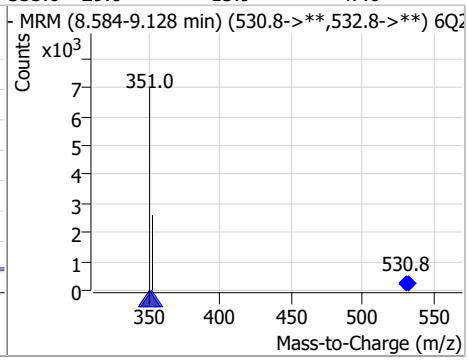




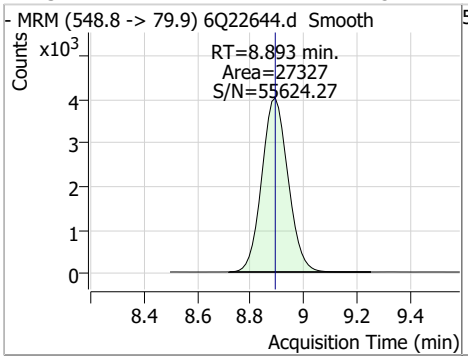
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.37	8.76	0.00	231892	532.8 -> 353.0	29.6	15.9	47.6

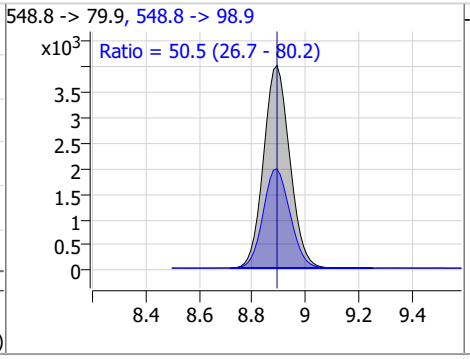


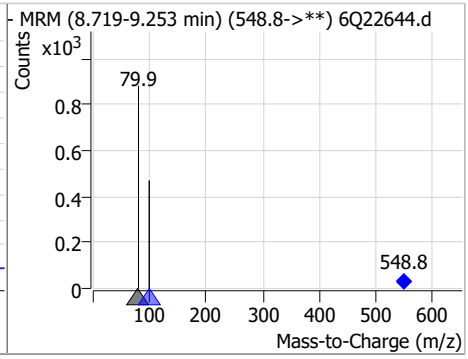




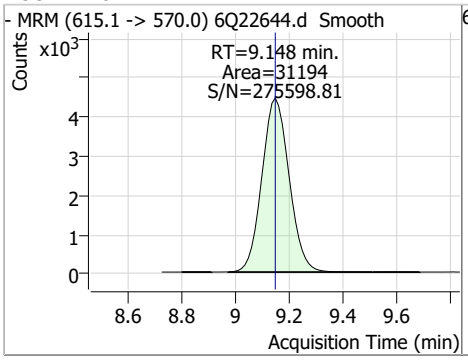
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.32	8.89	0.00	27327	548.8 -> 98.9	50.5	26.7	80.2

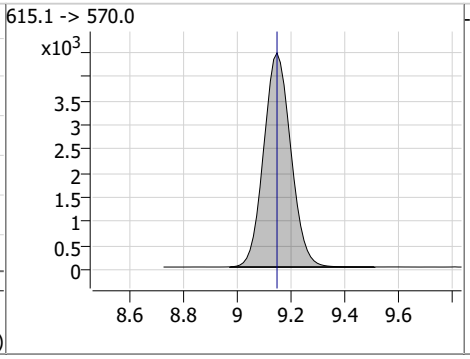


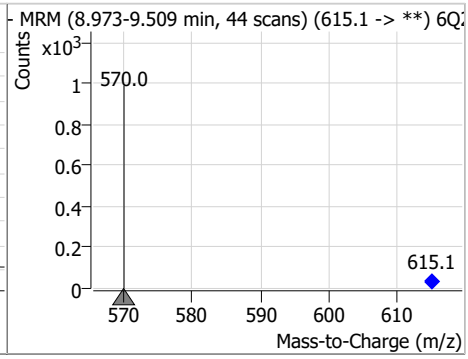




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	9.15	0.00	31194				

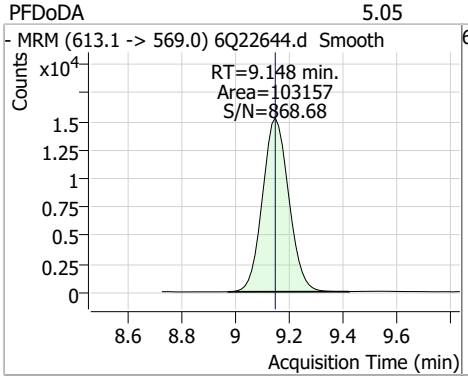


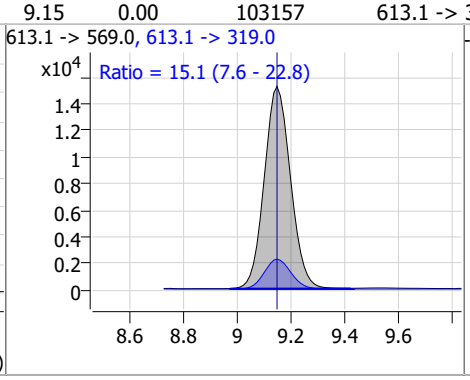


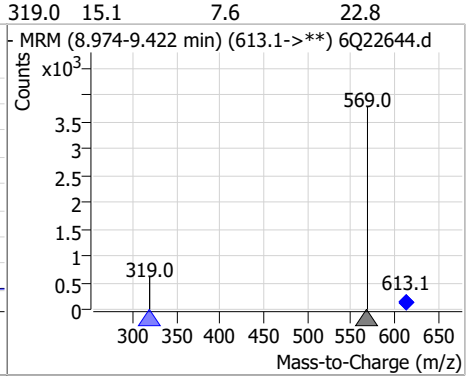


Perfluorinated Compounds by LC/MS/MS

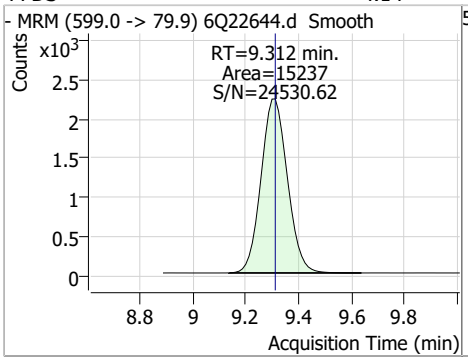
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.05	9.15	0.00	103157	613.1 -> 319.0	15.1	7.6	22.8

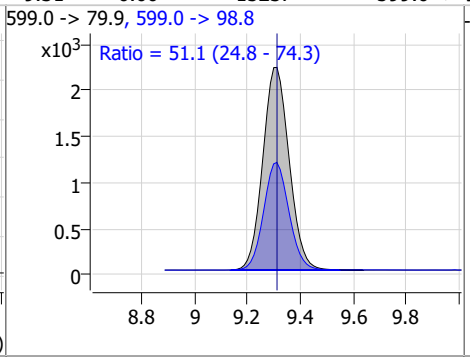


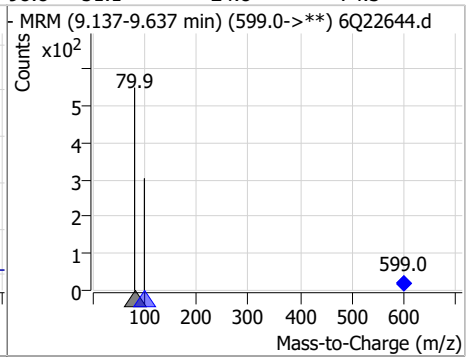




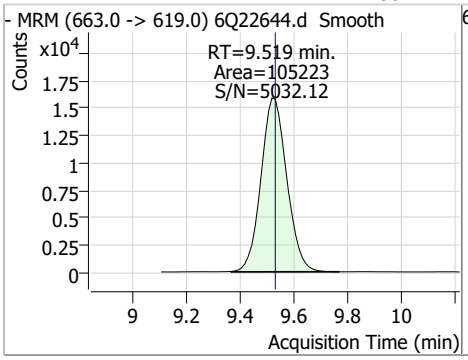
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.14	9.31	0.00	15237	599.0 -> 98.8	51.1	24.8	74.3

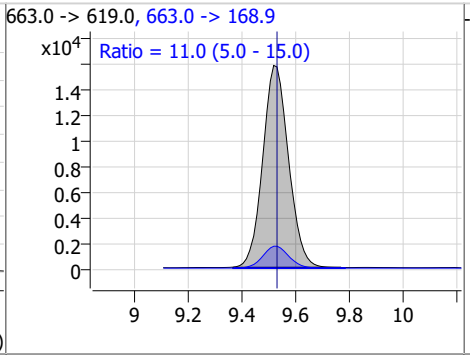


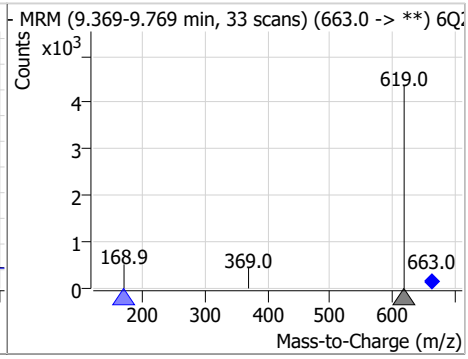




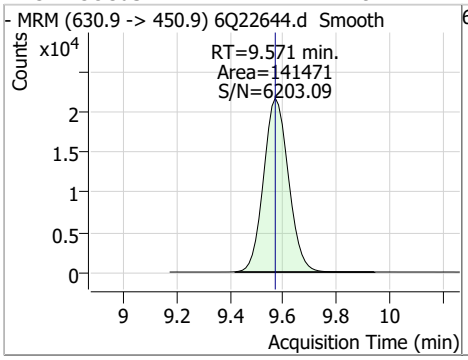
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.99	9.52	-0.01	105223	663.0 -> 168.9	11.0	5.0	15.0

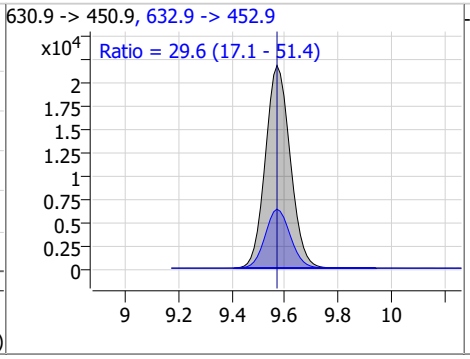


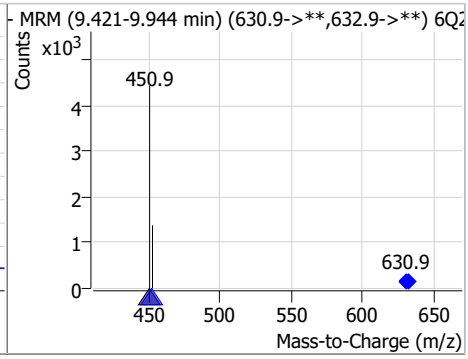




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.24	9.57	0.00	141471	632.9 -> 452.9	29.6	17.1	51.4

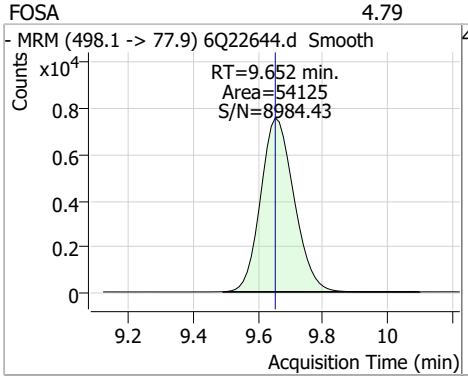


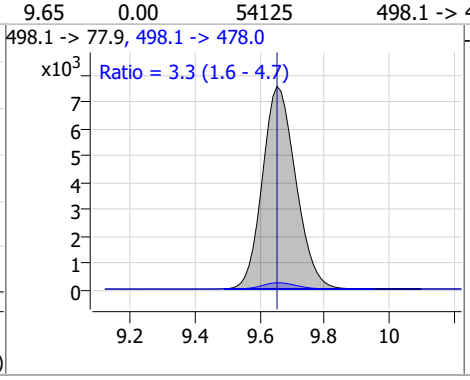


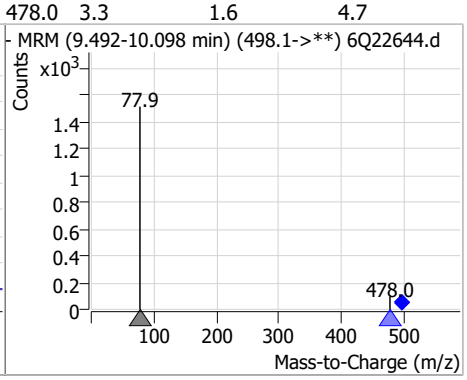


Perfluorinated Compounds by LC/MS/MS

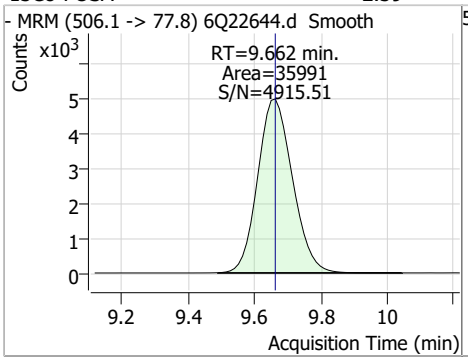
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.79	9.65	0.00	54125	498.1 -> 478.0	3.3	1.6	4.7

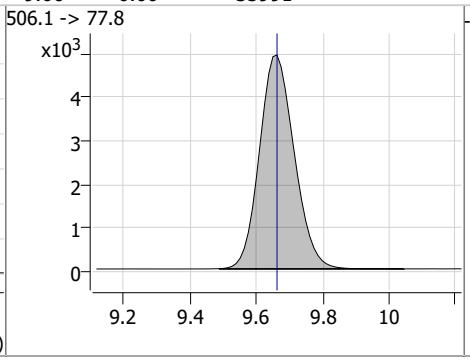


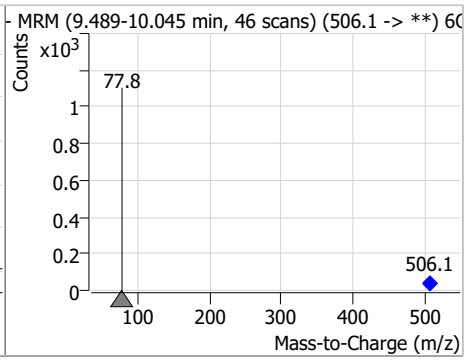




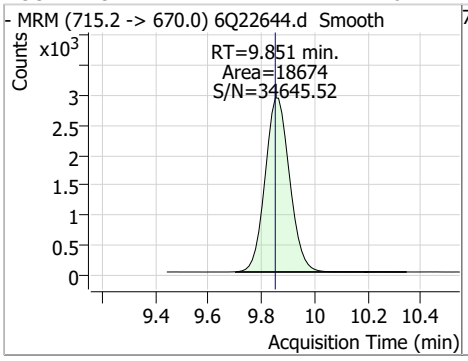
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.39	9.66	0.00	35991				

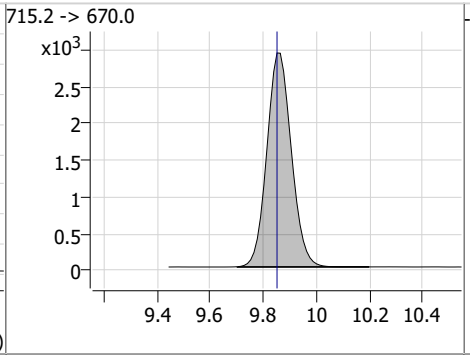


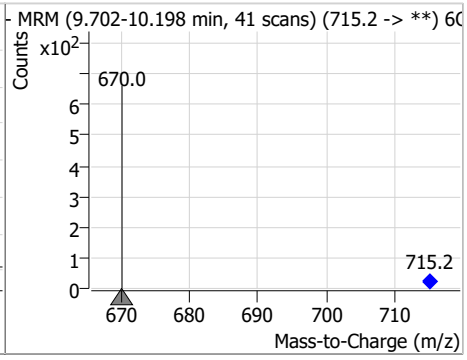




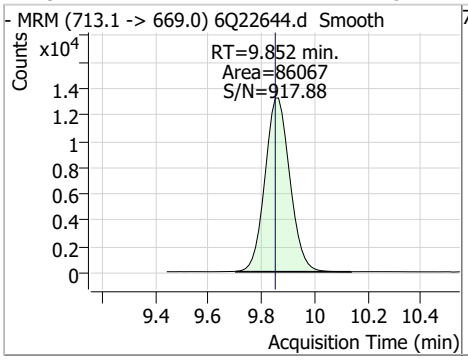
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.85	0.00	18674				

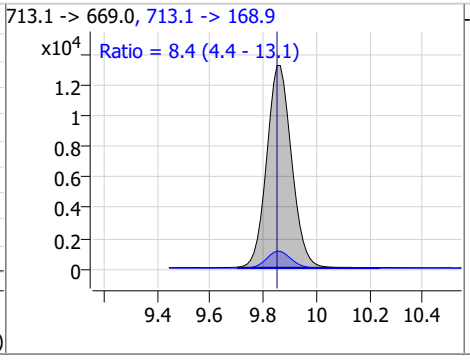


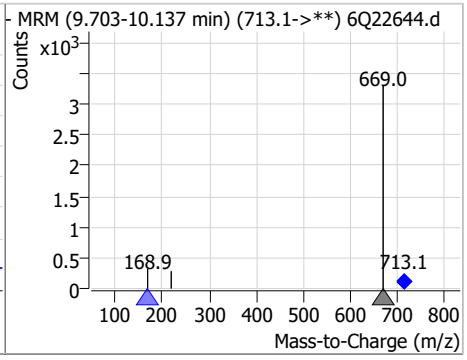




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.75	9.85	0.00	86067	713.1 -> 168.9	8.4	4.4	13.1

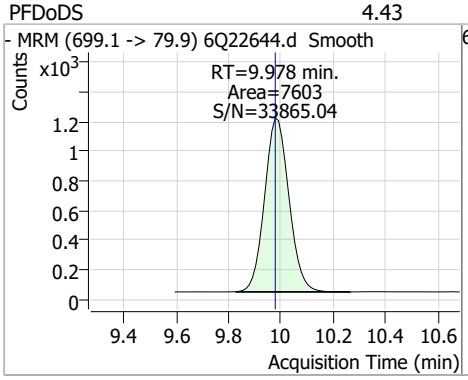


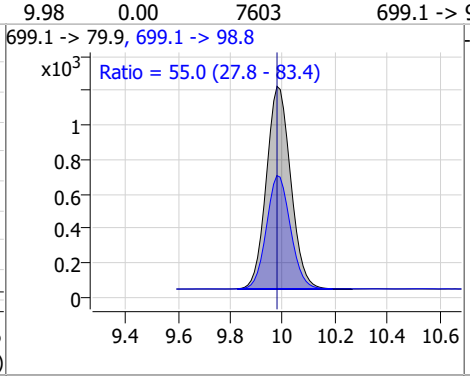


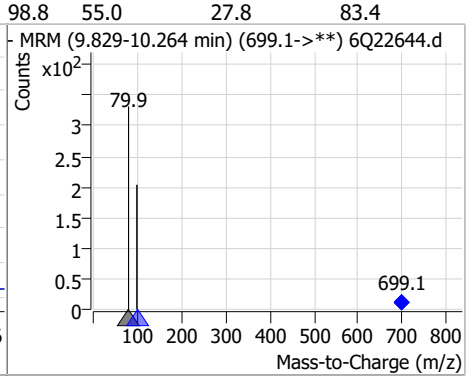


Perfluorinated Compounds by LC/MS/MS

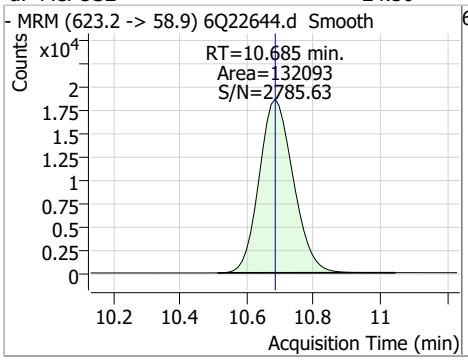
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	4.43	9.98	0.00	7603	699.1 -> 98.8	55.0	27.8	83.4

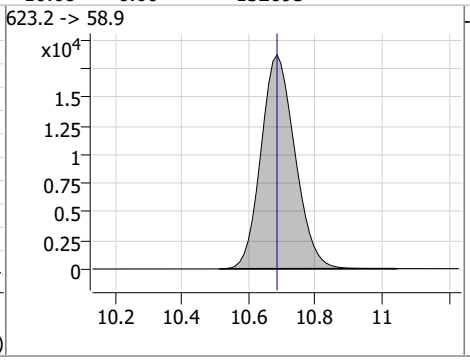


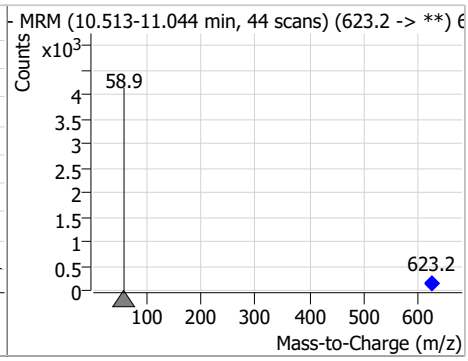




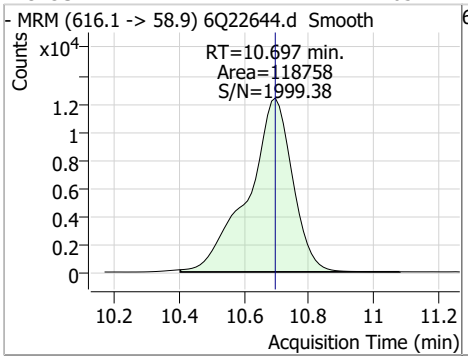
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.50	10.68	0.00	132093				

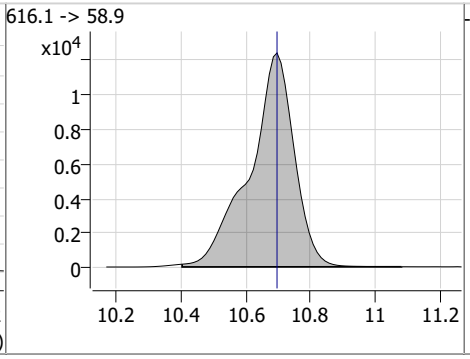


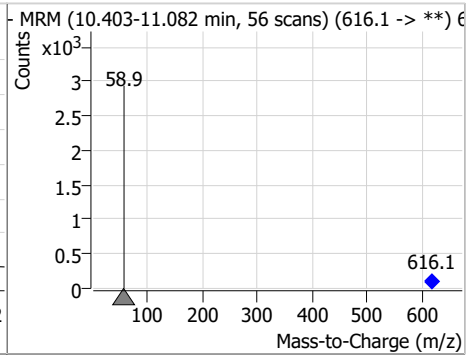




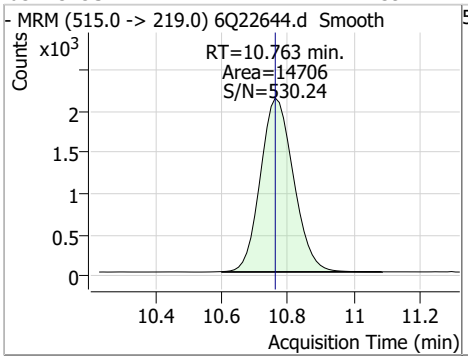
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.05	10.70	0.00	118758				

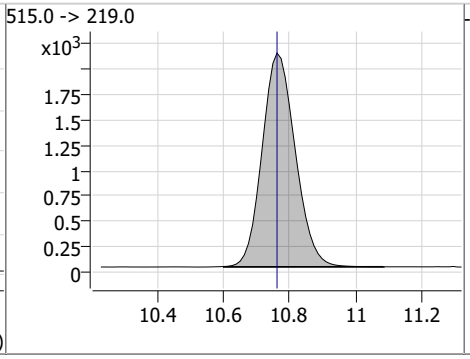


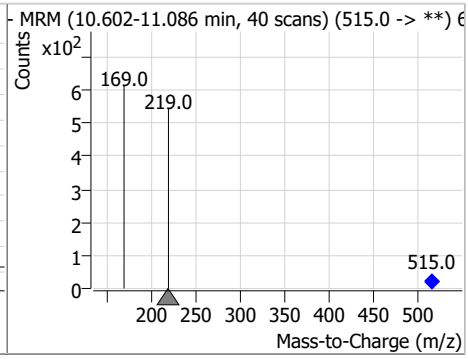




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	10.76	0.00	14706				

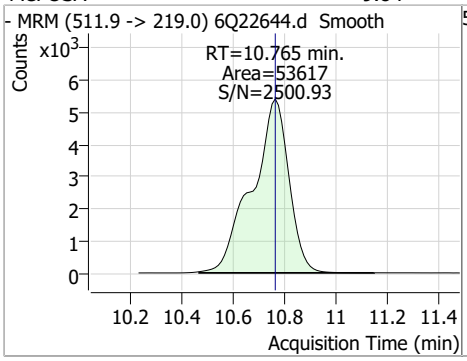


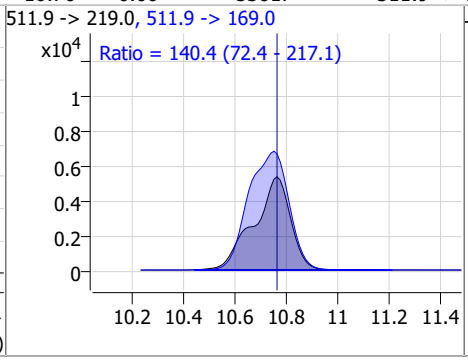


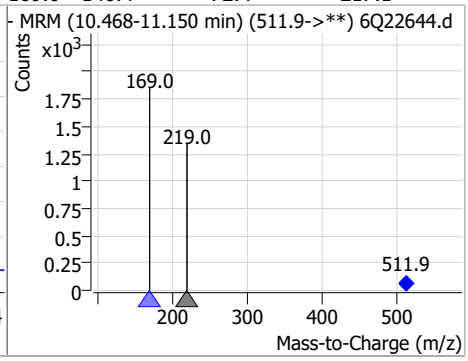


Perfluorinated Compounds by LC/MS/MS

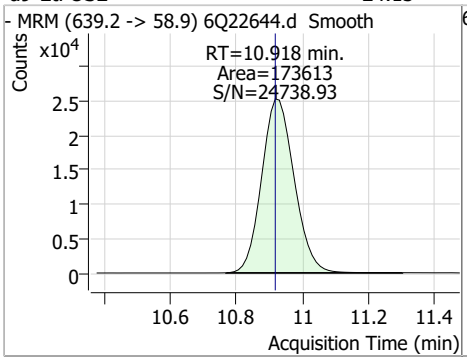
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.84	10.76	0.00	53617	511.9 -> 169.0	140.4	72.4	217.1

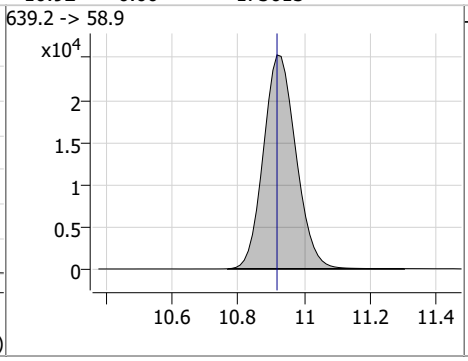


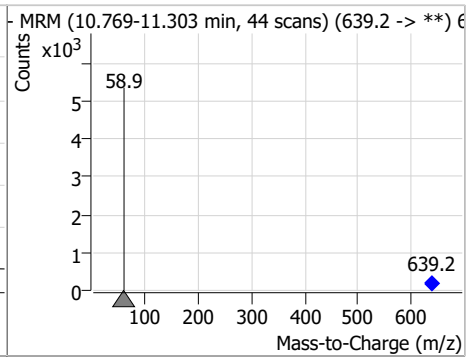




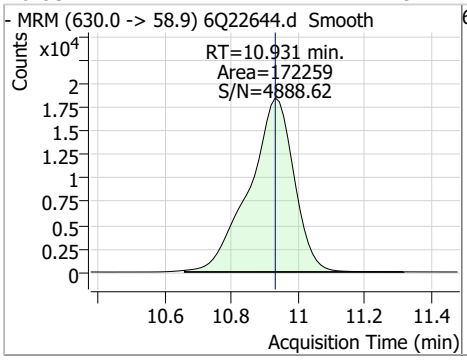
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.13	10.92	0.00	173613				

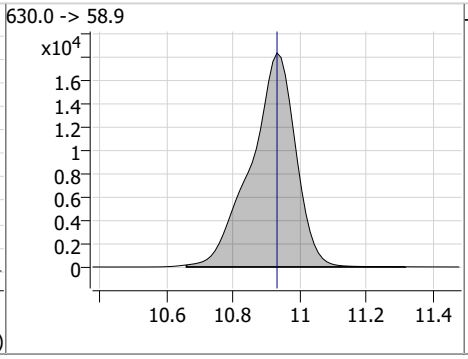


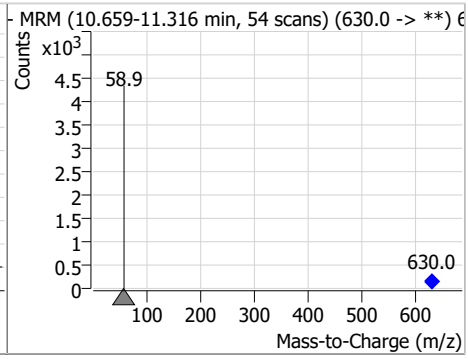




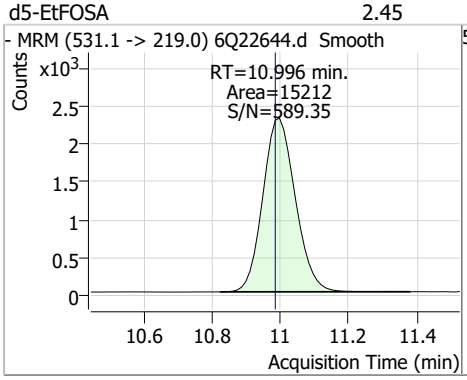
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.49	10.93	0.00	172259				

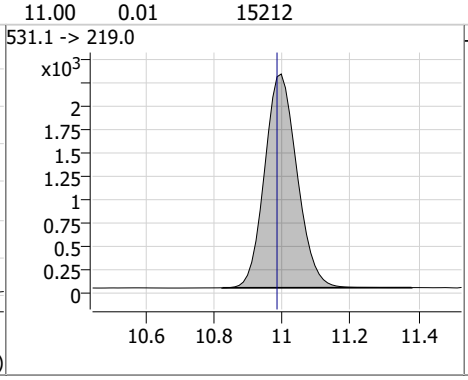


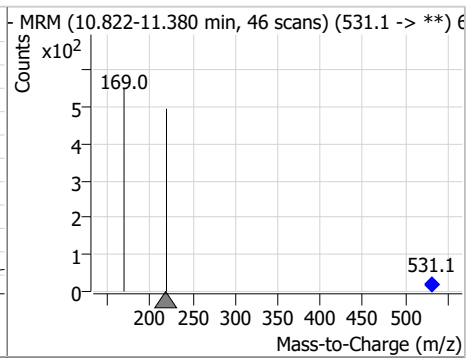




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	11.00	0.01	15212				

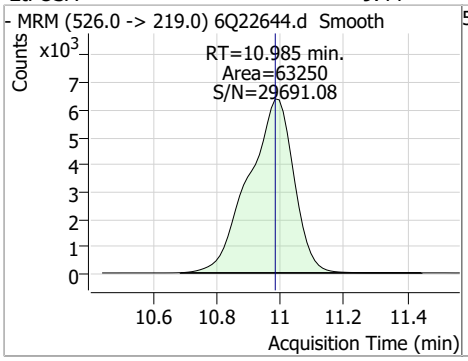


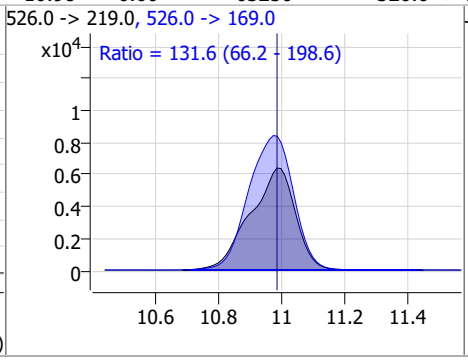


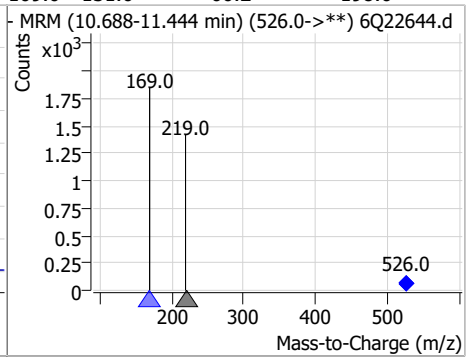


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	9.44	10.98	0.00	63250	526.0 -> 169.0	131.6	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-IC330
Lab FileID: 6Q22644.D
Injection Time: 08/10/23 14:35
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak
EtFOSAA	2991-50-6		8.51	Split peak

6Q22645.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22645.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 2:49:29 PM
Sample Name : ic330-6
Vial : P1-A7
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	177290	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	56938	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	62842	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	59438	2.50	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	96525	2.50	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	44580	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	26583	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	32349	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	29425	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	16847	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	33280	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	22462	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	14914	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14215	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3063	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4425	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	4494	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	32618	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	37860	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	30701	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	119894	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	164036	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14084	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13863	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18380	2.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	74337	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	11049	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	103527	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	33611	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	54534	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	60782	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3063	4.64	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4425	4.64	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4494	4.82	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-PFDoDA	9.148	615.1 -> 570.0	29425	1.30	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-PFTeDA	9.863	715.2 -> 670.0	16847	1.29	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-PFBS	5.610	302.1 -> 79.9	22462	2.39	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C3-PFHxS	7.355	402.1 -> 79.9	14914	2.46	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 = 98.2%	
13C4-PFBA	3.010	216.8 -> 171.9	177290	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA	6.596	367.1 -> 322.0	59438	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.668	318.0 -> 273.0	62842	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.447	268.3 -> 223.0	56938	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C6-PFDA	8.250	519.1 -> 474.1	26583	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C7-PFUnDA	8.717	570.0 -> 525.1	32349	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-FOSA	9.662	506.1 -> 77.8	33280	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	7.239	421.1 -> 376.0	96525	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOS	8.414	507.1 -> 79.9	14215	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C9-PFNA	7.758	472.1 -> 427.0	44580	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSAA	8.297	573.2 -> 419.0	32618	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	37860	9.63 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSA	10.763	515.0 -> 219.0	13863	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSAA	8.492	589.2 -> 419.0	30701	5.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	119894	24.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	164036	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	14084	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
Target Compounds					**QValue**
4:2FTS	5.343	327.1 -> 307.0	201446	50.85 µg/L	97
		327.1 -> 80.9	74555		
6:2FTS	7.002	427.1 -> 407.0	200837	50.75 µg/L	96
		427.1 -> 80.9	63148		
8:2FTS	8.040	527.1 -> 507.0	113214	47.08 µg/L	95
		527.1 -> 80.8	45096		
EtFOSAA	8.506	584.2 -> 419.1	50107	12.95 µg/L	93
		584.2 -> 526.0	25769		
FOSA	9.652	498.1 -> 77.9	140873	13.49 µg/L	100
		498.1 -> 478.0	4547		
MeFOSAA	8.298	570.1 -> 419.0	81147	13.01 µg/L	98
		570.1 -> 483.0	15507		
PFBA	3.006	212.8 -> 168.9	291232	52.57 µg/L	100
PFBS	5.611	298.7 -> 79.9	87015	11.86 µg/L	98
		298.7 -> 98.8	33319		
PFDA	8.251	512.9 -> 469.0	373782	11.87 µg/L	98
		512.9 -> 219.0	57582		
PFDoDA	9.148	613.1 -> 569.0	269484	13.98 µg/L	97
		613.1 -> 319.0	37188		
PFDS	9.299	599.0 -> 79.9	40075	11.75 µg/L	100

Perfluorinated Compounds by LC/MS/MS

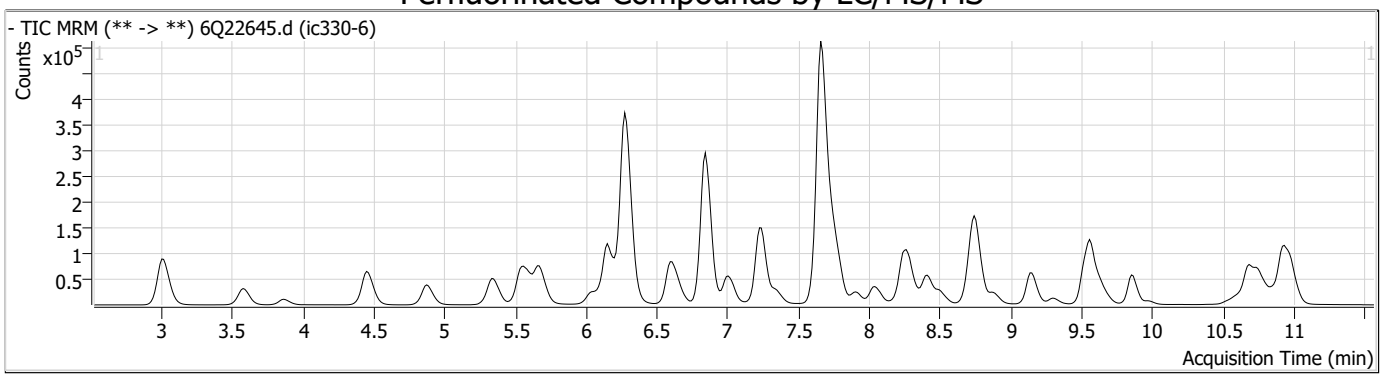
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	19953				
PFHpA	6.596	363.1 -> 319.0	326079	13.91	µg/L		97
		363.1 -> 169.0	50458				
PFHpS	7.909	449.0 -> 79.9	76513	11.78	µg/L		95
		449.0 -> 98.9	38241				
PFHxA	5.670	313.0 -> 269.0	241874	13.16	µg/L		100
		313.0 -> 118.9	12858				
PFHxS	7.356	398.7 -> 79.9	75800	11.52	µg/L	m	98
		398.7 -> 98.9	35822				
PFNA	7.771	463.0 -> 419.0	388305	12.67	µg/L		99
		463.0 -> 219.0	71330				
PFNS	8.880	548.8 -> 79.9	68671	11.71	µg/L		99
		548.8 -> 98.9	37215				
PFOA	7.240	413.0 -> 369.0	524702	13.30	µg/L		99
		413.0 -> 169.0	83034				
PFOS	8.415	498.9 -> 79.9	69264	11.34	µg/L	m	99
		498.9 -> 98.8	35992				
PFPeA	4.449	263.0 -> 219.0	334271	26.65	µg/L		100
PFPeS	6.660	349.1 -> 79.9	73077	11.97	µg/L		97
		349.1 -> 98.9	34785				
PFTeDA	9.864	713.1 -> 669.0	229223	14.01	µg/L		99
		713.1 -> 168.9	18816				
PFTrDA	9.519	663.0 -> 619.0	267039	13.42	µg/L		98
		663.0 -> 168.9	28586				
PFUnDA	8.717	563.1 -> 519.0	244187	13.11	µg/L		97
		563.1 -> 269.1	42669				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	352570	26.09	µg/L		94
		632.9 -> 452.9	109249				
9Cl-PF3ONS	8.758	530.8 -> 351.0	570038	26.10	µg/L		98
		532.8 -> 353.0	174748				
ADONA	6.846	376.9 -> 250.9	1268977	26.32	µg/L		99
		376.9 -> 84.8	329033				
HFPO-DA	6.046	284.9 -> 168.9	84306	26.17	µg/L		98
		284.9 -> 184.9	9445				
3:3FTCA	3.859	241.0 -> 177.0	56100	64.05	µg/L		100
		241.0 -> 117.0	7514				
5:3FTCA	6.272	341.0 -> 237.1	1265529	334.73	µg/L		99
		341.0 -> 217.0	882875				
7:3FTCA	7.673	441.0 -> 316.9	923833	330.37	µg/L		95
		441.0 -> 336.9	2025759				
EtFOSA	10.985	526.0 -> 219.0	161466	26.03	µg/L		99
		526.0 -> 169.0	216113				
EtFOSE	10.931	630.0 -> 58.9	438656	65.99	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	136374	26.54	µg/L		96
		511.9 -> 169.0	191361				
MeFOSE	10.697	616.1 -> 58.9	302359	67.46	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	19219	12.10	µg/L		96
		699.1 -> 98.8	10120				
NFDHA	5.551	295.0 -> 201.0	60442	25.85	µg/L		96
		295.0 -> 84.9	16054				
PFMBA	4.869	279.0 -> 85.1	235275	26.52	µg/L		100
PFMPA	3.576	229.0 -> 84.9	188934	26.61	µg/L		100
PFEESA	6.151	314.8 -> 134.9	585925	23.73	µg/L		100
		314.8 -> 82.9	19742				

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

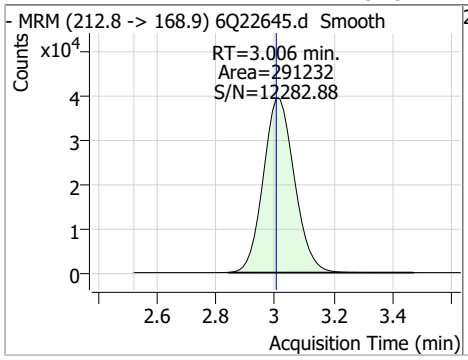
Perfluorinated Compounds by LC/MS/MS

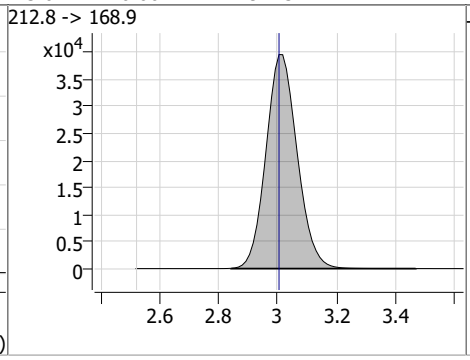
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

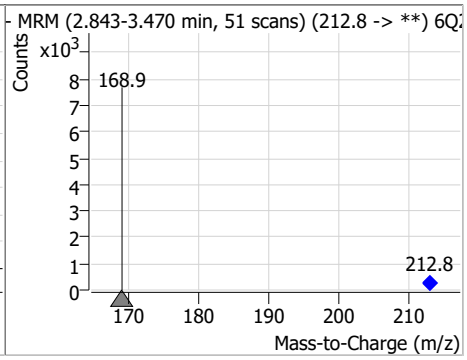
Perfluorinated Compounds by LC/MS/MS



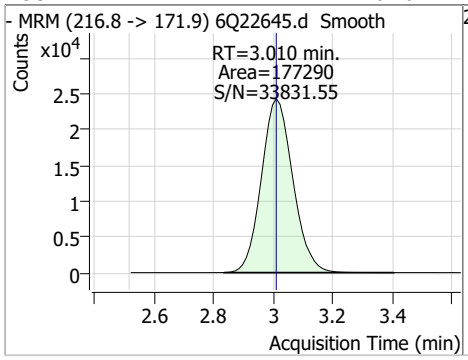
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	52.57	3.01	0.00	291232				

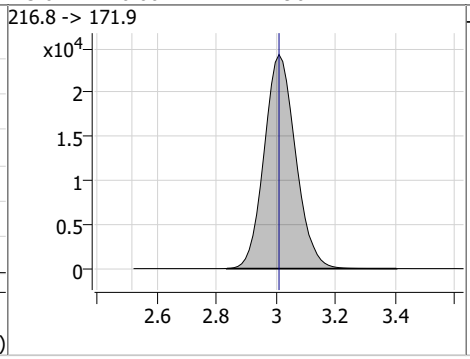


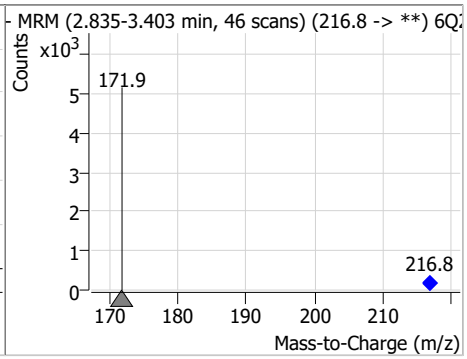




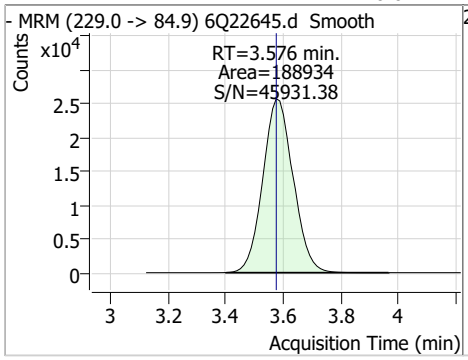
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.10	3.01	0.00	177290				

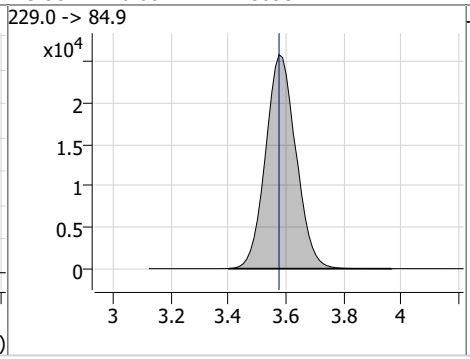


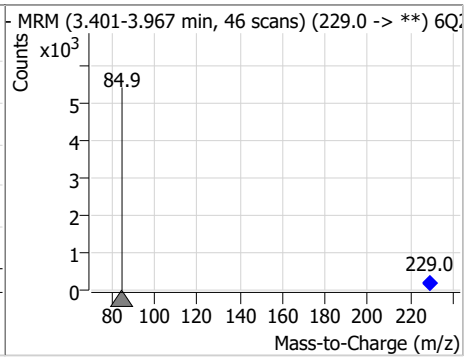




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	26.61	3.58	0.00	188934				

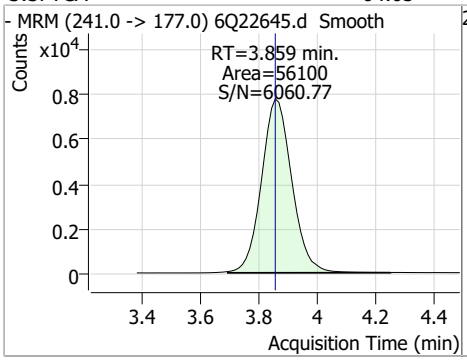


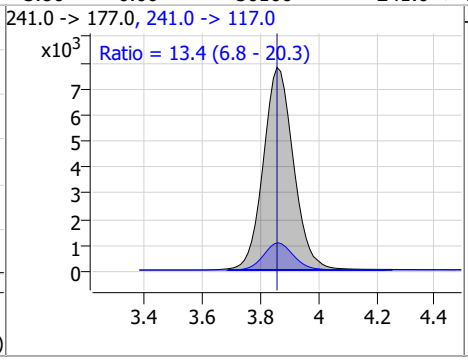


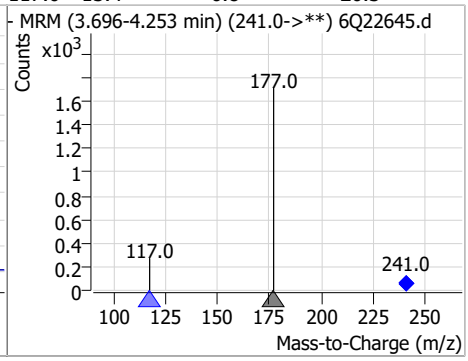


Perfluorinated Compounds by LC/MS/MS

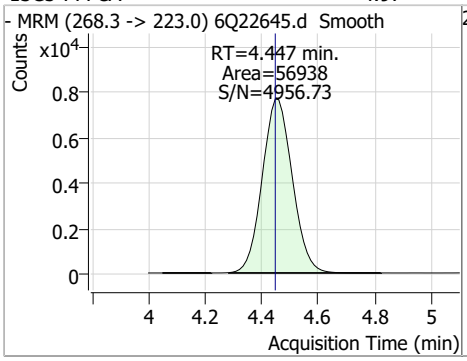
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.05	3.86	0.00	56100	241.0 -> 117.0	13.4	6.8	20.3

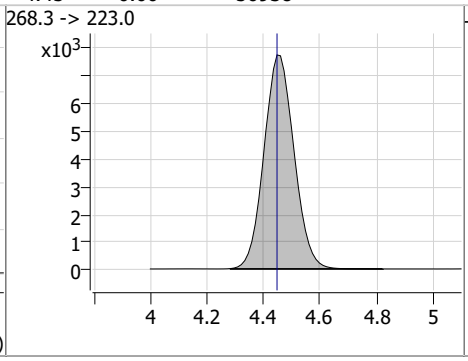


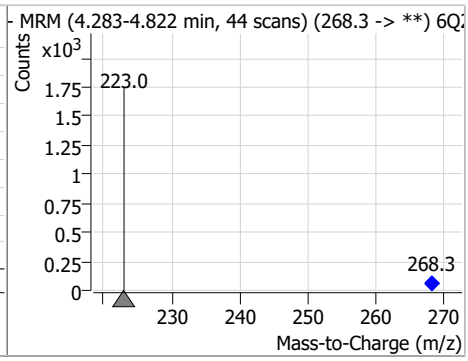




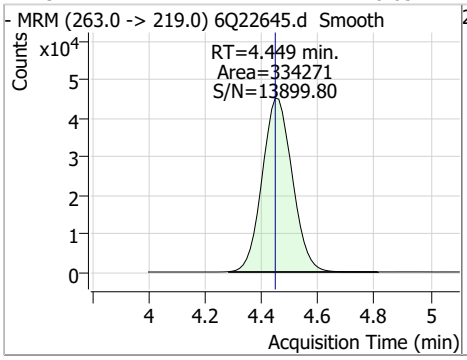
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.97	4.45	0.00	56938				

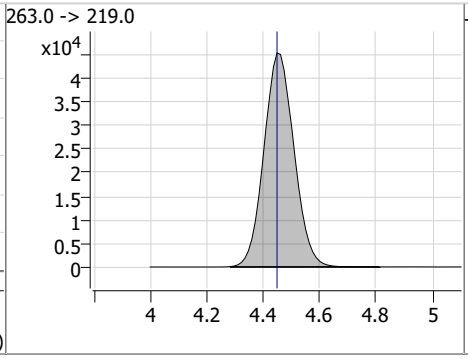


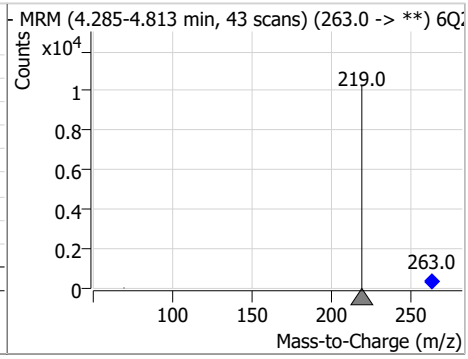




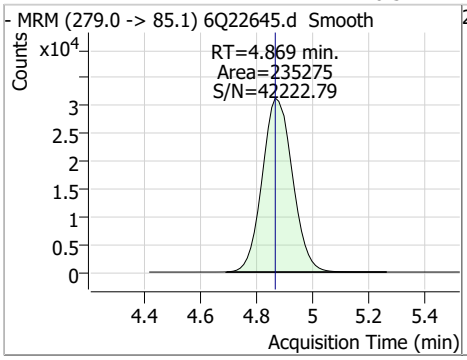
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.65	4.45	0.00	334271				

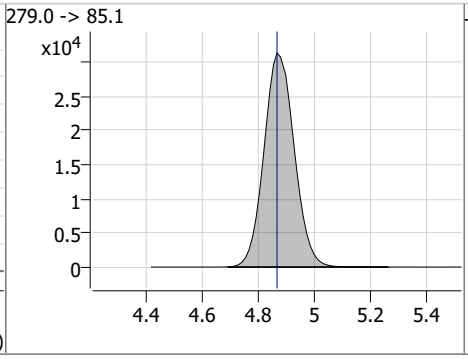


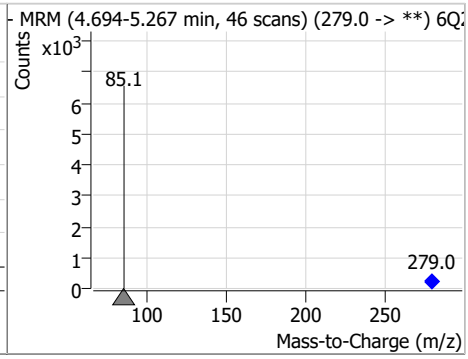




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	26.52	4.87	0.00	235275				

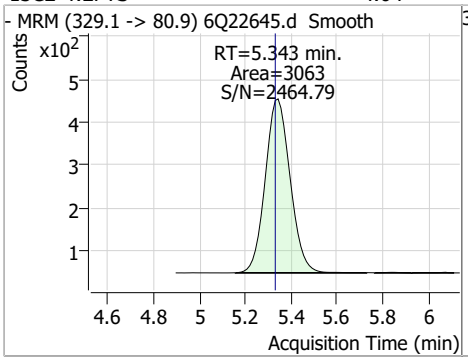


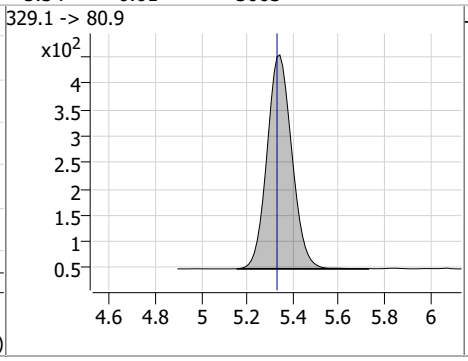


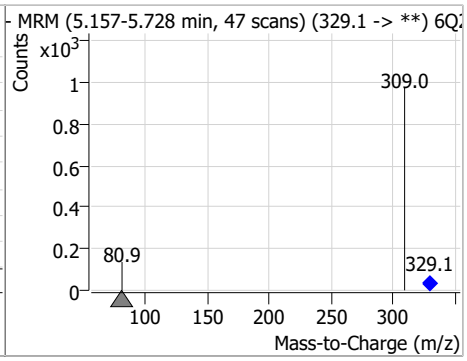


Perfluorinated Compounds by LC/MS/MS

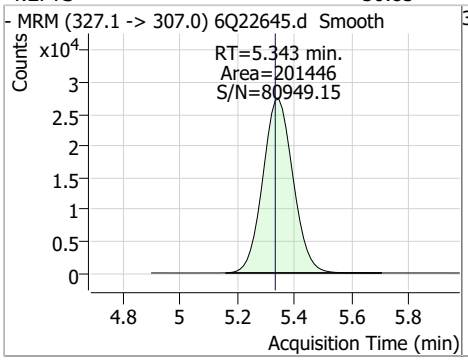
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.64	5.34	0.01	3063				

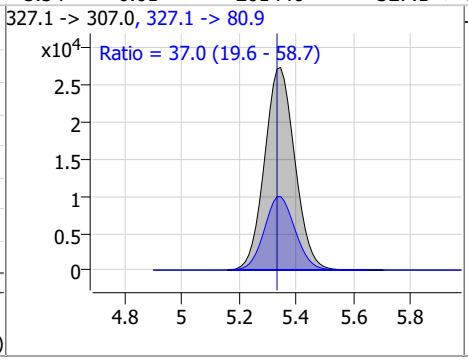


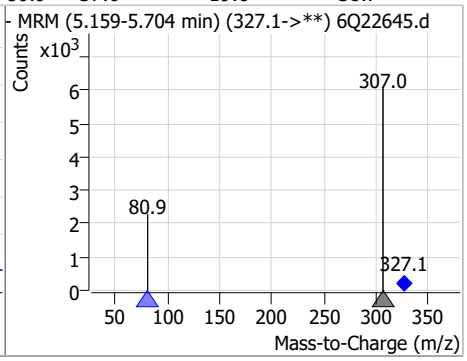




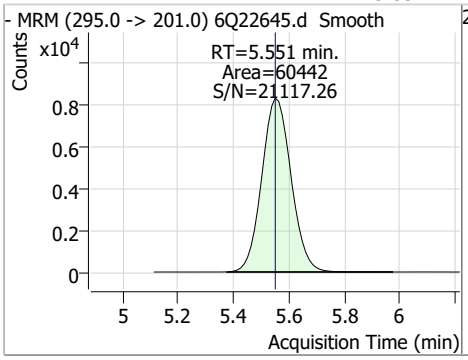
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	50.85	5.34	0.01	201446	327.1 -> 80.9	37.0	19.6	58.7

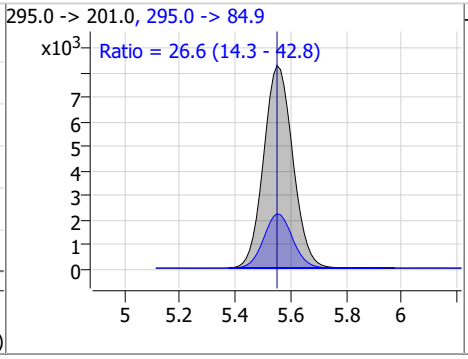


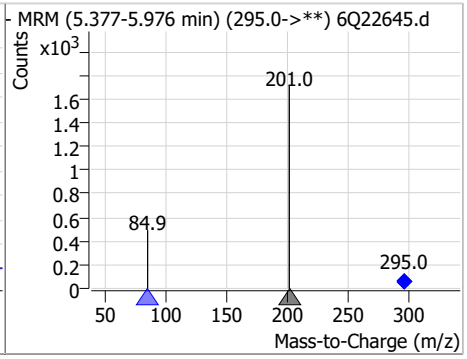




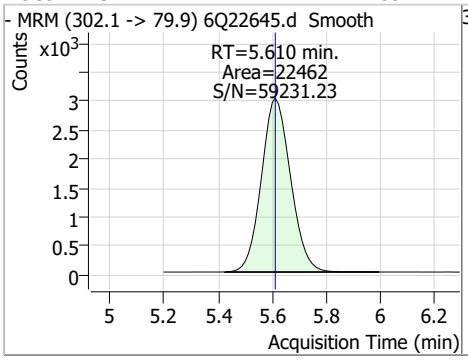
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	25.85	5.55	0.00	60442	295.0 -> 84.9	26.6	14.3	42.8

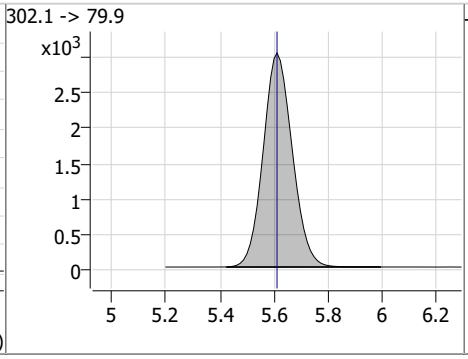


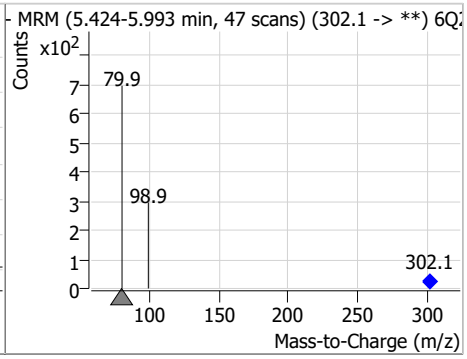




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	5.61	0.00	22462				

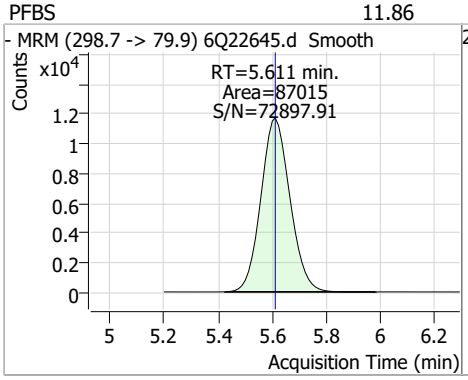


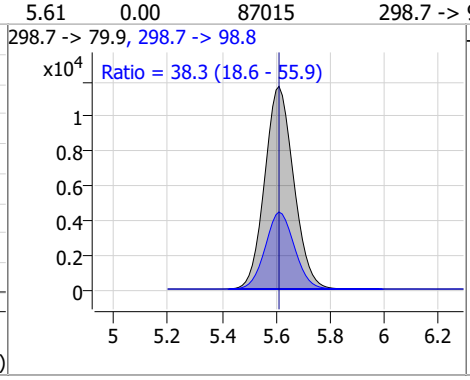


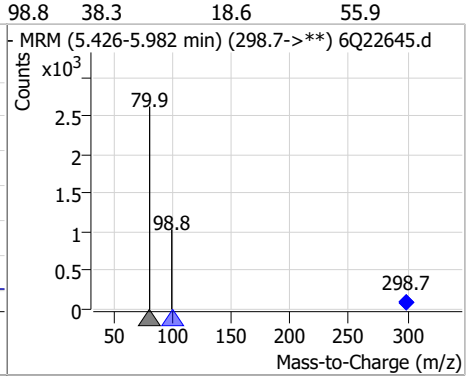


Perfluorinated Compounds by LC/MS/MS

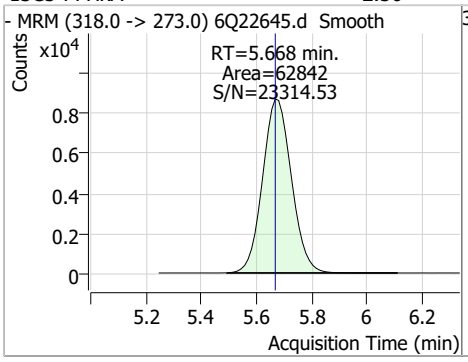
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.86	5.61	0.00	87015	298.7 -> 98.8	38.3	18.6	55.9

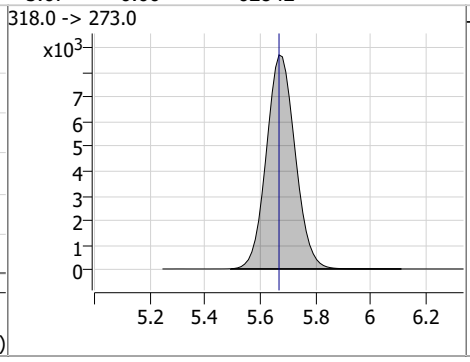


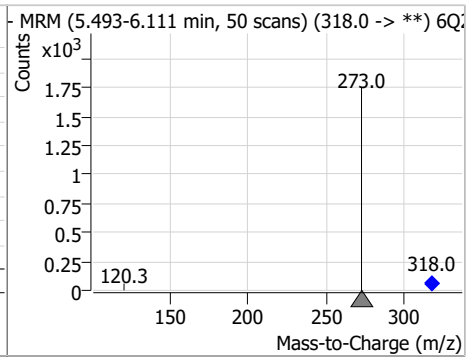




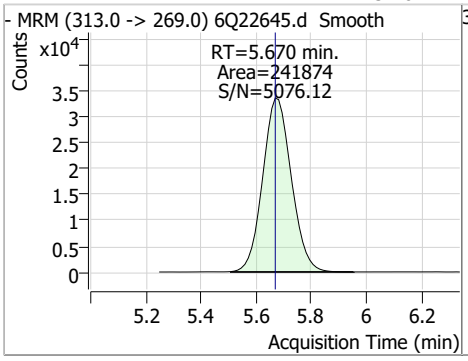
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.67	0.00	62842				

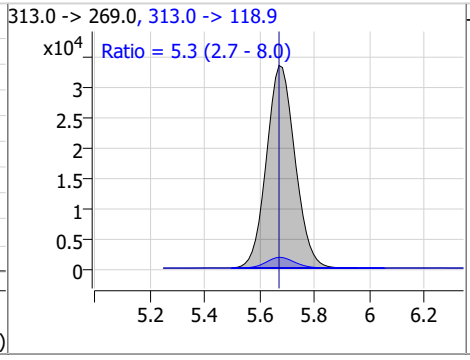


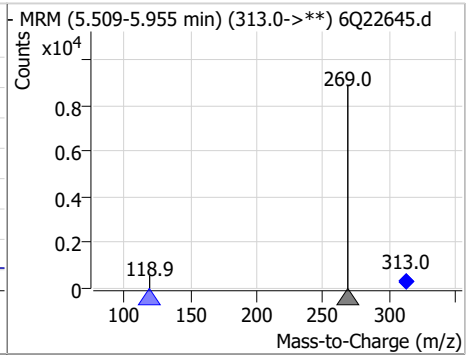




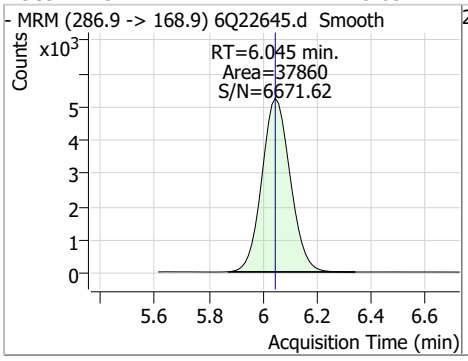
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.16	5.67	0.00	241874	313.0 -> 118.9	5.3	2.7	8.0

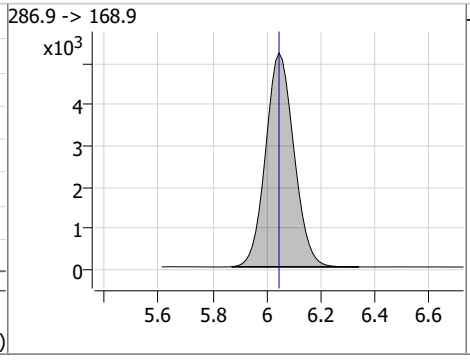


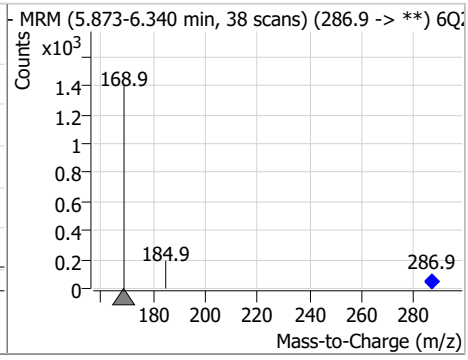




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.63	6.05	0.00	37860				

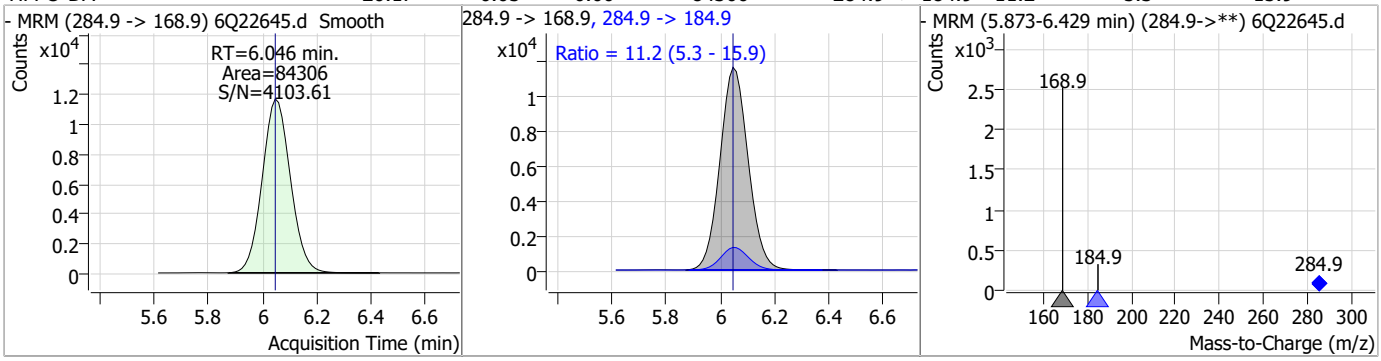




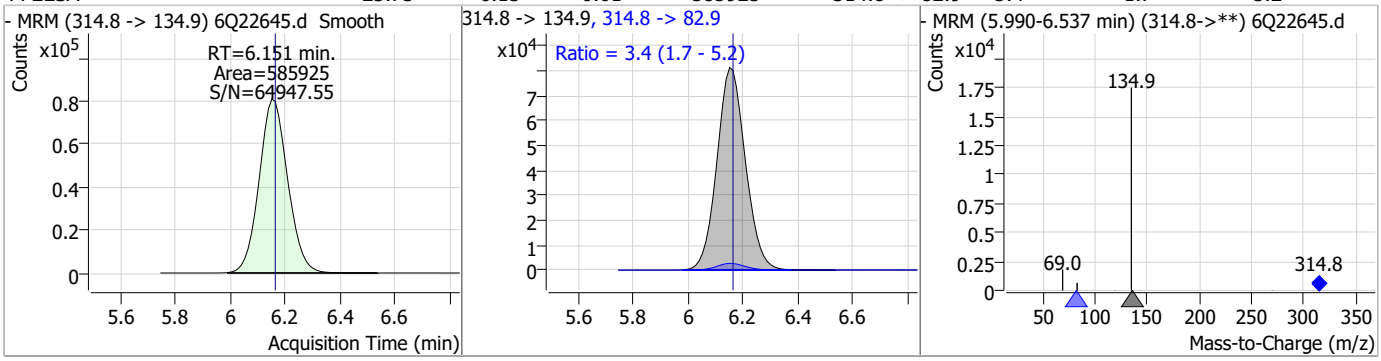


Perfluorinated Compounds by LC/MS/MS

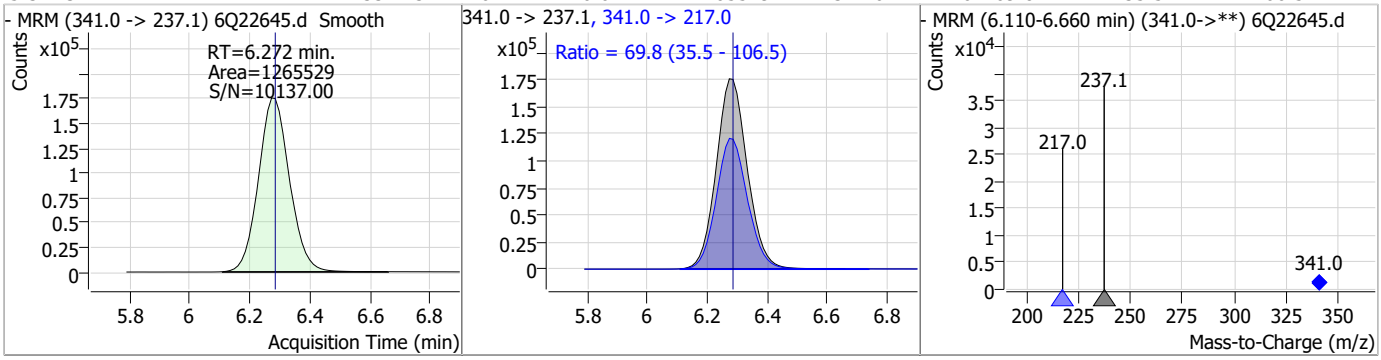
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	26.17	6.05	0.00	84306	284.9 -> 184.9	11.2	5.3	15.9



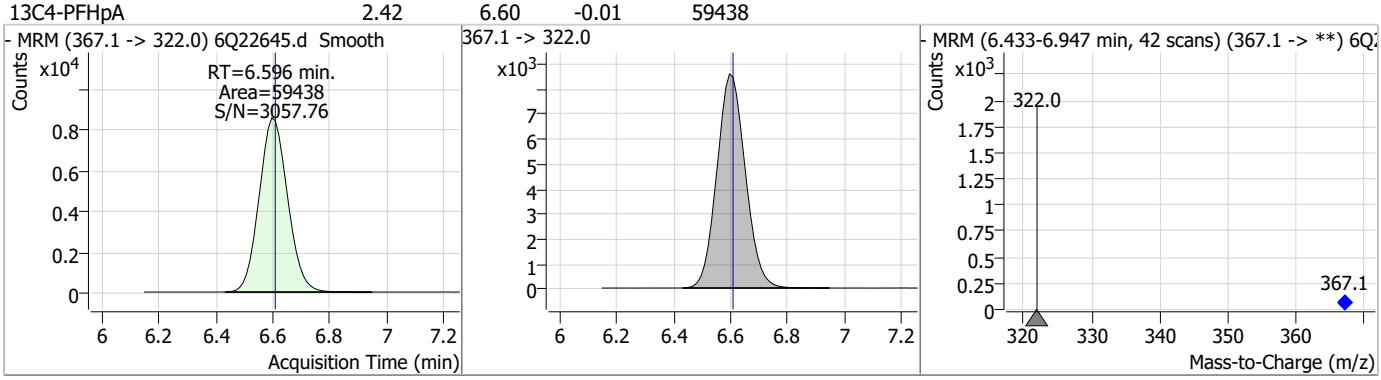
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	23.73	6.15	-0.01	585925	314.8 -> 82.9	3.4	1.7	5.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	334.73	6.27	-0.01	1265529	341.0 -> 217.0	69.8	35.5	106.5

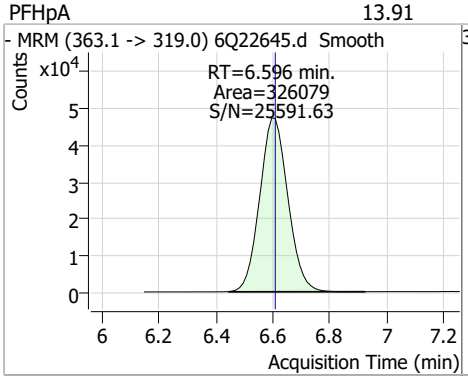


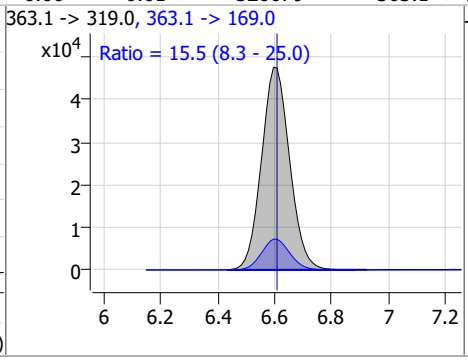
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.60	-0.01	59438				

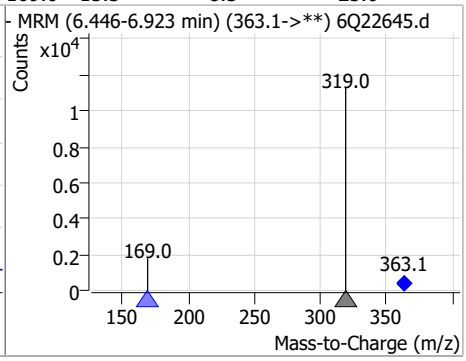


Perfluorinated Compounds by LC/MS/MS

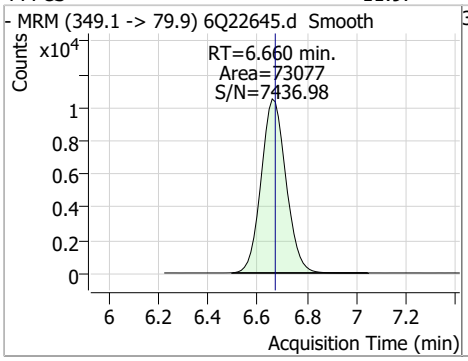
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.91	6.60	-0.01	326079	363.1 -> 169.0	15.5	8.3	25.0

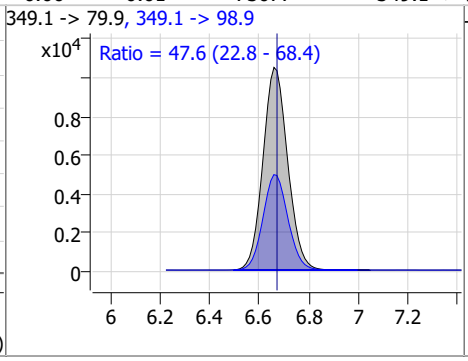


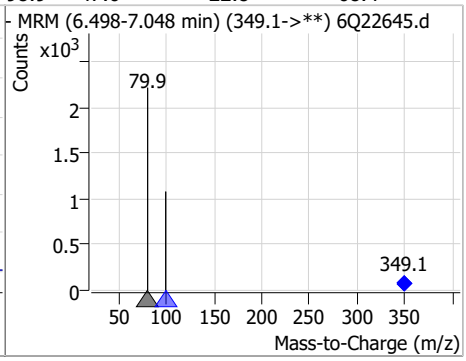




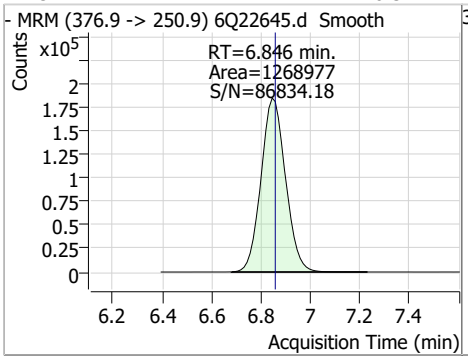
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	11.97	6.66	-0.01	73077	349.1 -> 98.9	47.6	22.8	68.4

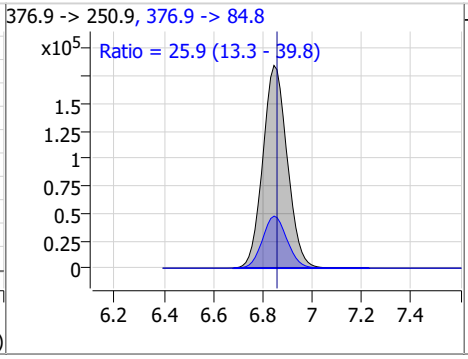


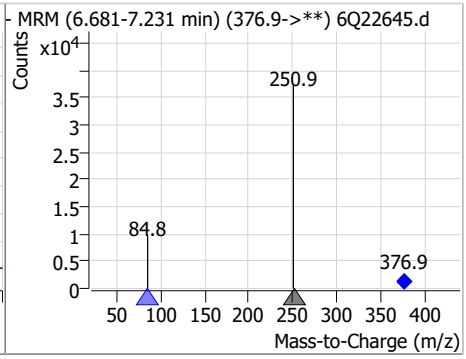




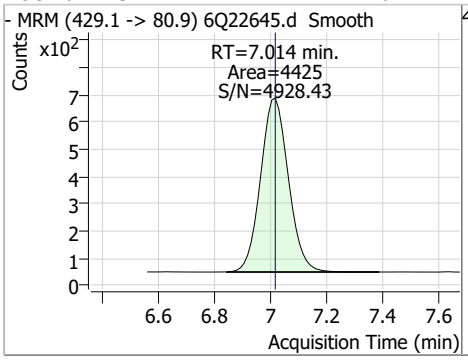
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	26.32	6.85	-0.01	1268977	376.9 -> 84.8	25.9	13.3	39.8

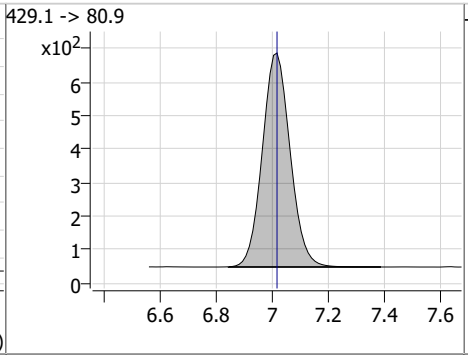


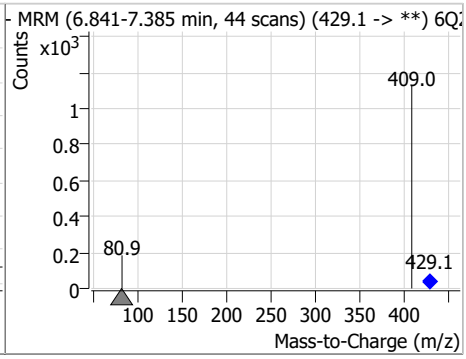




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.64	7.01	0.00	4425				

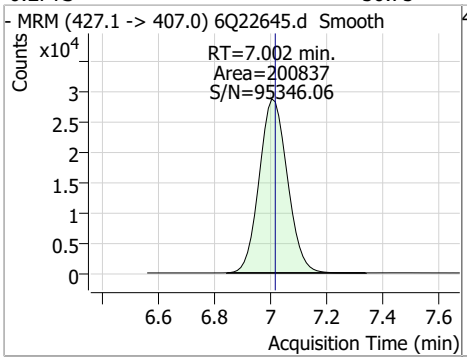


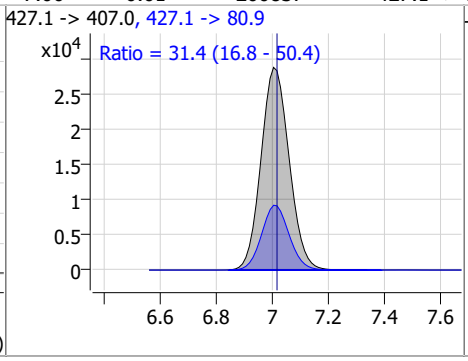


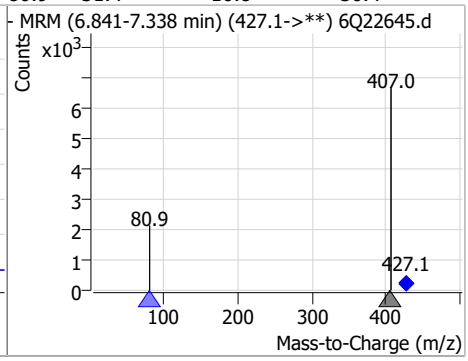


Perfluorinated Compounds by LC/MS/MS

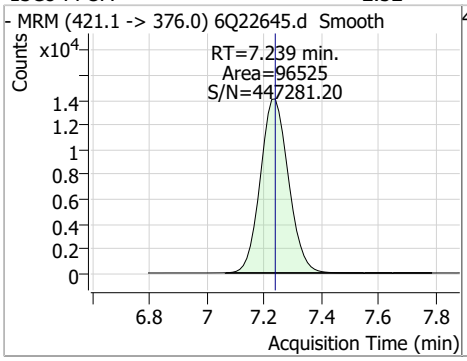
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	50.75	7.00	-0.01	200837	427.1 -> 80.9	31.4	16.8	50.4

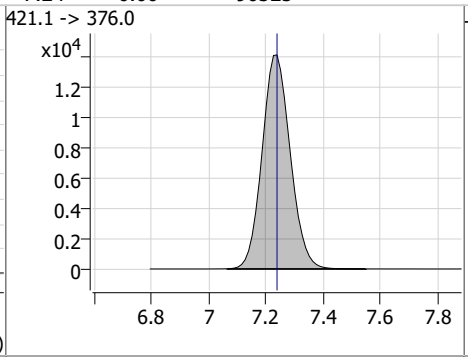


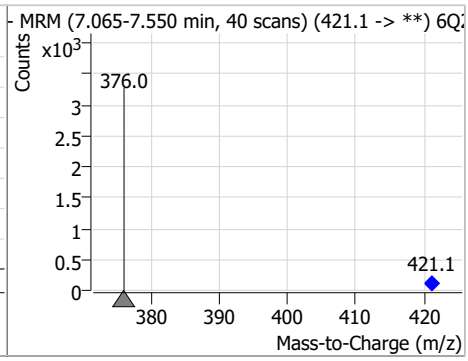




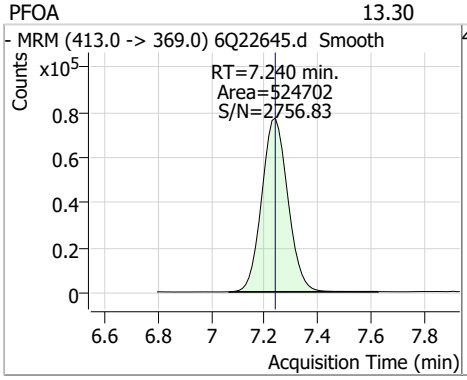
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.24	0.00	96525				

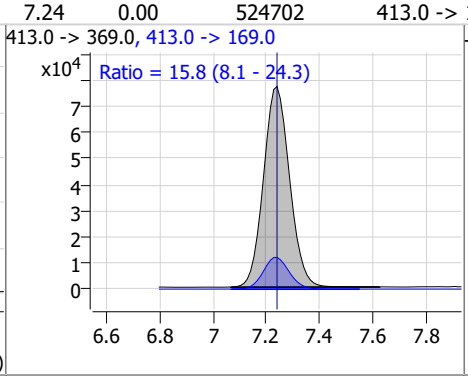


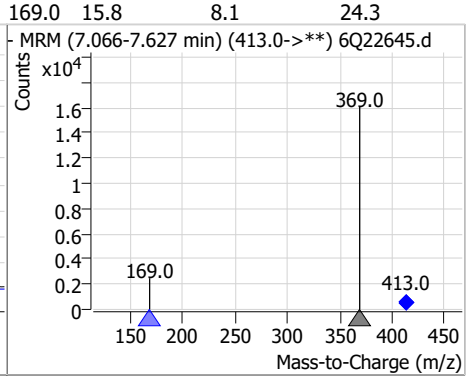




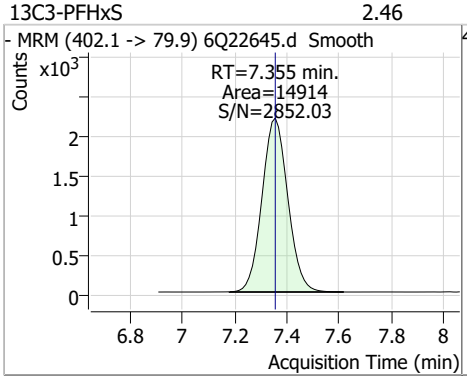
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	13.30	7.24	0.00	524702	413.0 -> 169.0	15.8	8.1	24.3

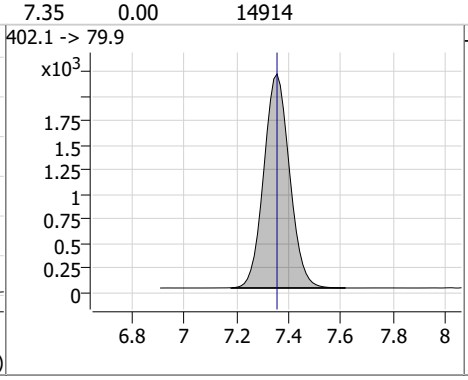


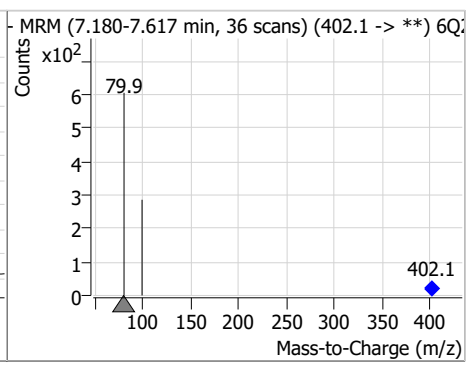




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.46	7.35	0.00	14914				

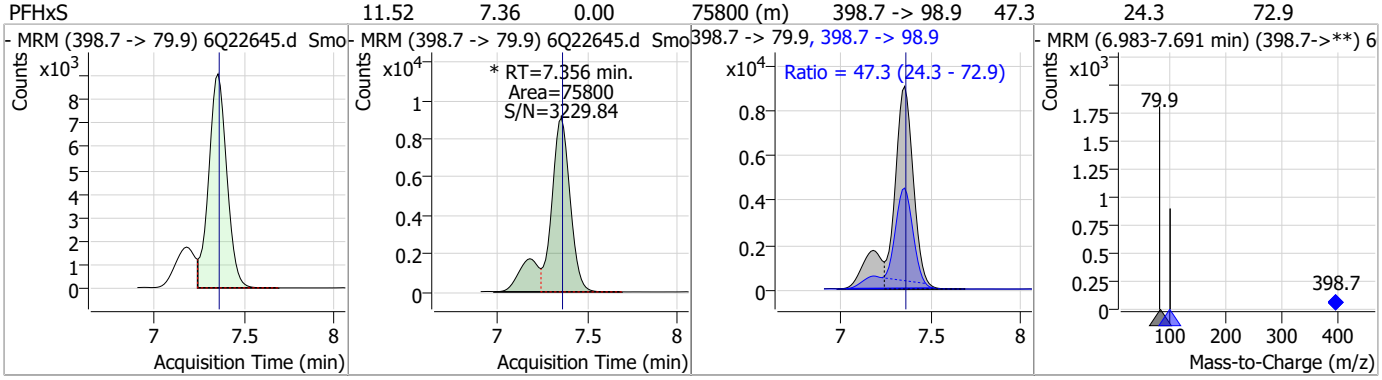




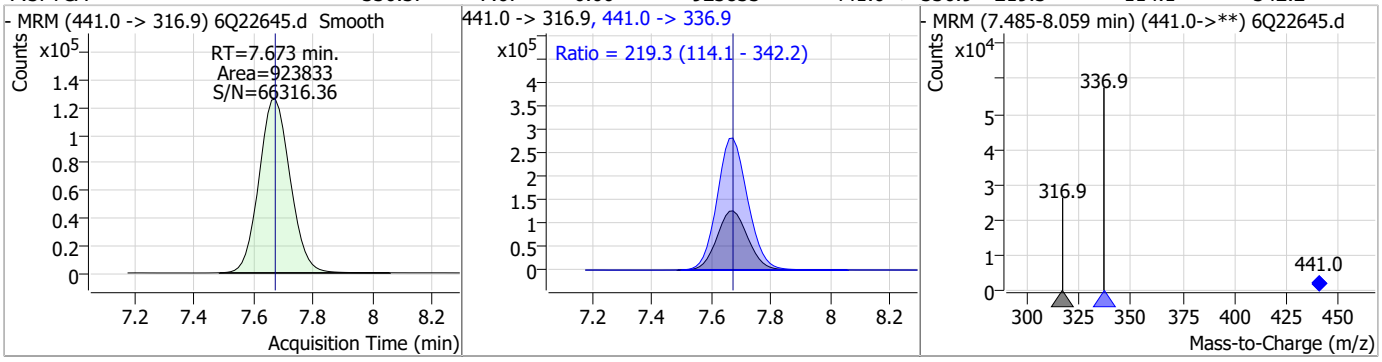


Perfluorinated Compounds by LC/MS/MS

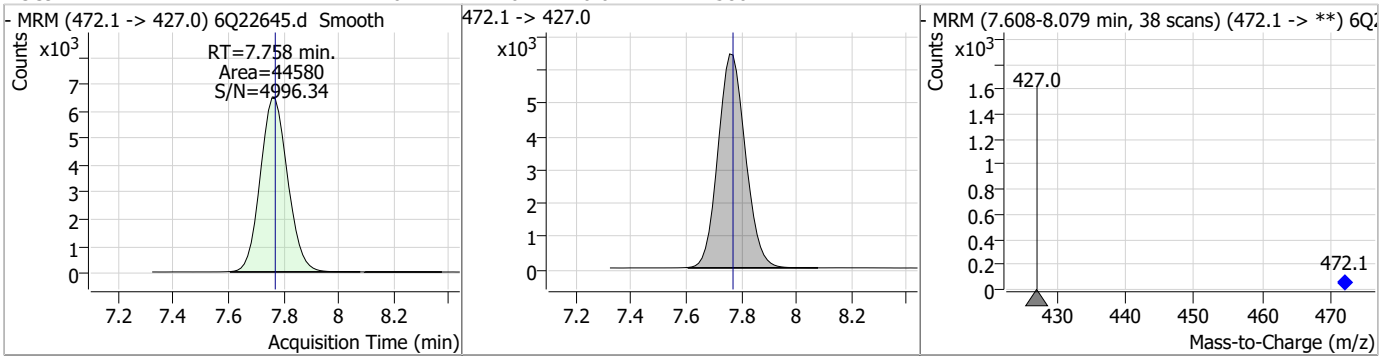
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.52	7.36	0.00	75800 (m)	398.7 -> 98.9	47.3	24.3	72.9



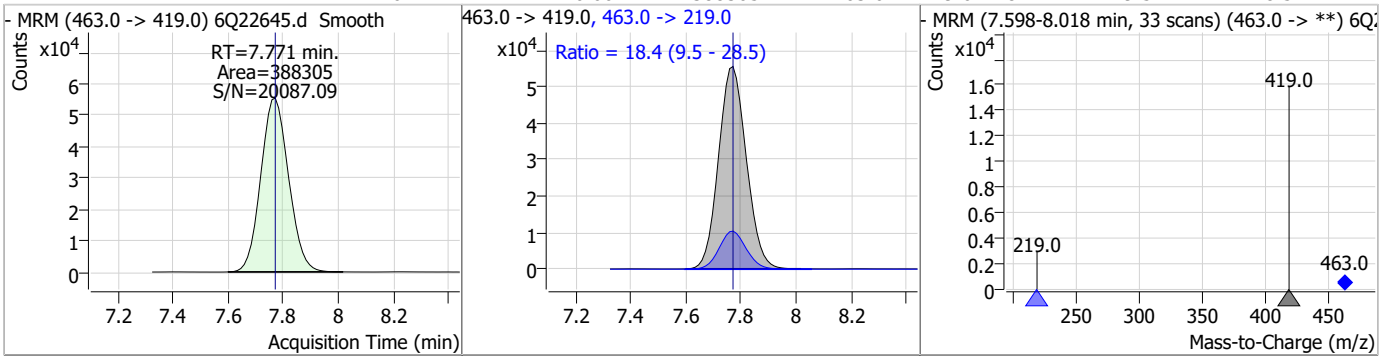
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	330.37	7.67	0.00	923833	441.0 -> 336.9	219.3	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.76	-0.01	44580				

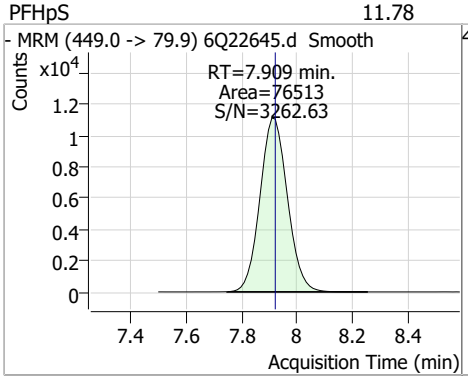


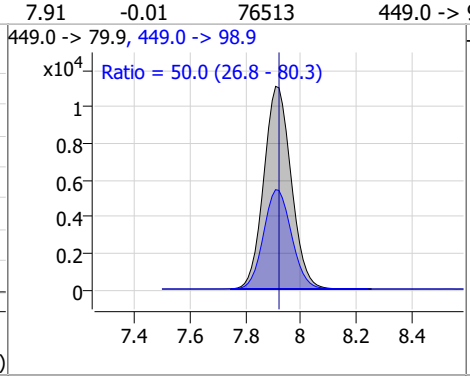
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	12.67	7.77	0.00	388305	463.0 -> 219.0	18.4	9.5	28.5

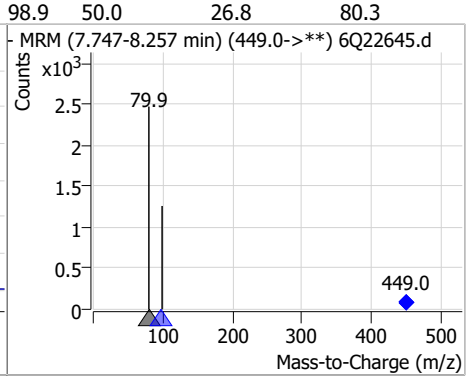


Perfluorinated Compounds by LC/MS/MS

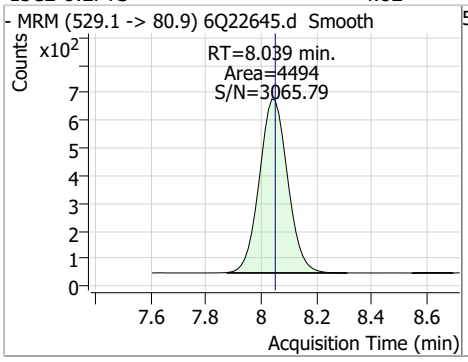
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.78	7.91	-0.01	76513	449.0 -> 98.9	50.0	26.8	80.3

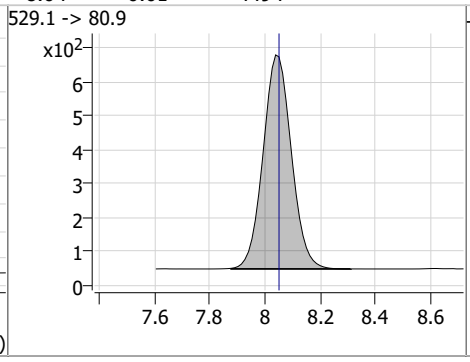


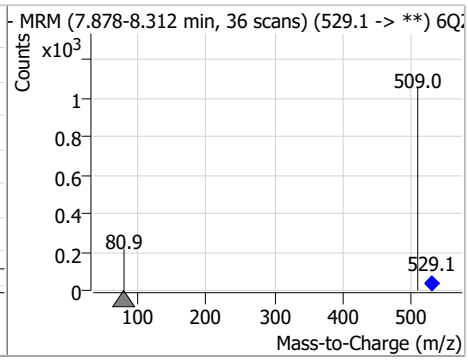




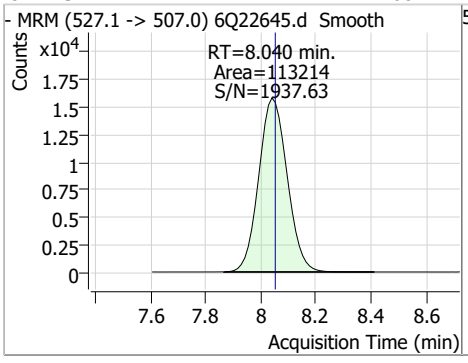
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.82	8.04	-0.01	4494				

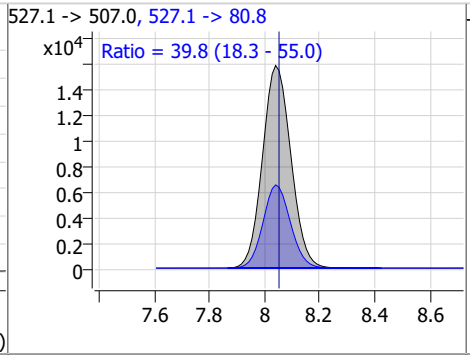


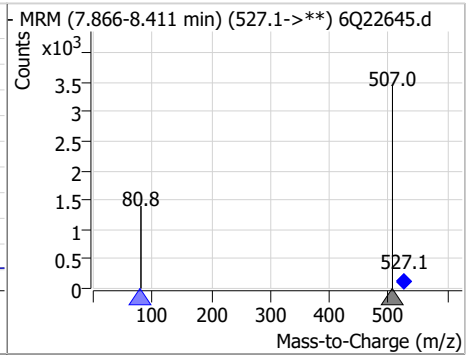




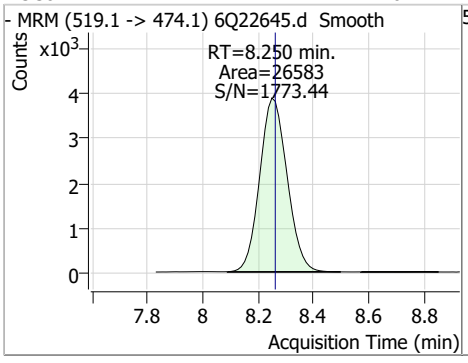
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	47.08	8.04	-0.01	113214	527.1 -> 80.8	39.8	18.3	55.0

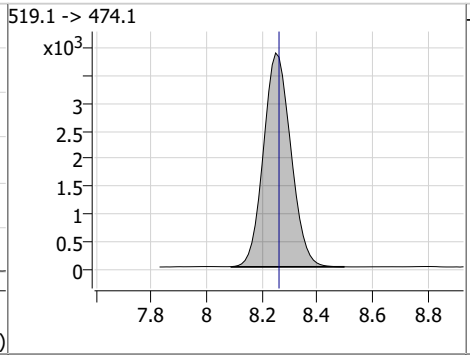


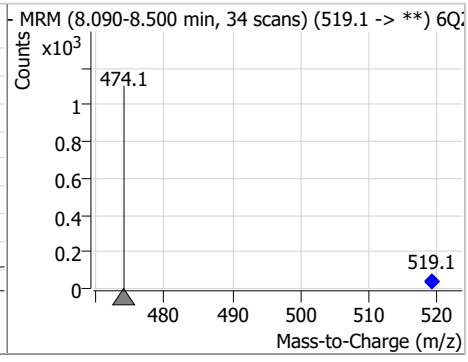




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.40	8.25	-0.01	26583				

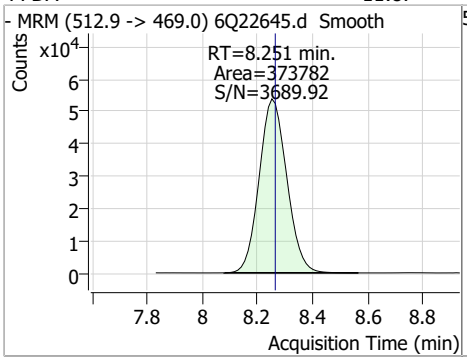


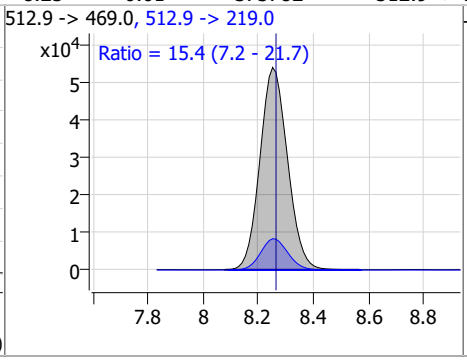


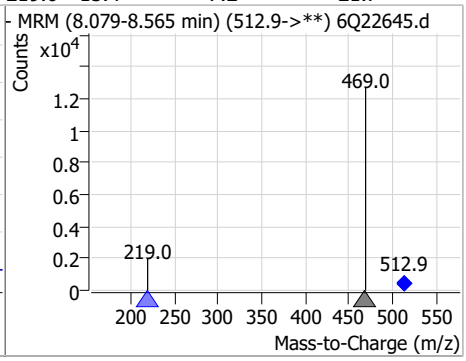


Perfluorinated Compounds by LC/MS/MS

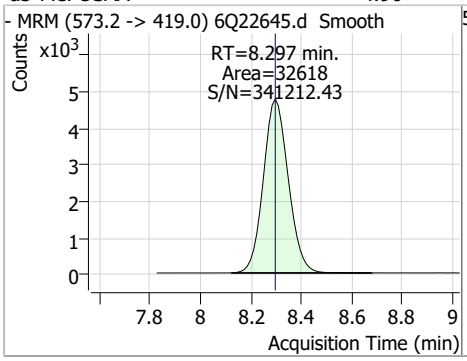
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	11.87	8.25	-0.01	373782	512.9 -> 219.0	15.4	7.2	21.7

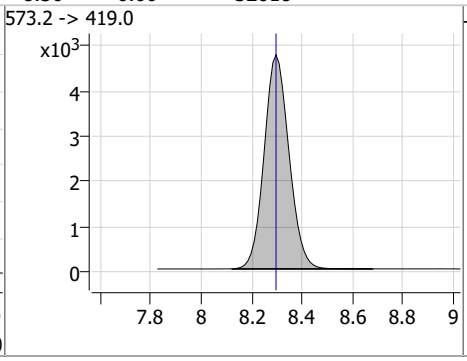


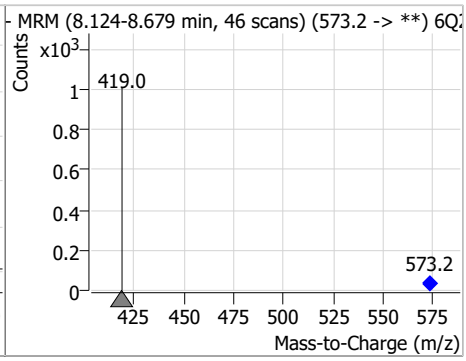




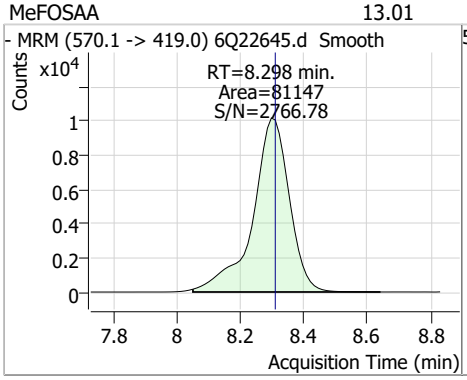
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.90	8.30	0.00	32618				

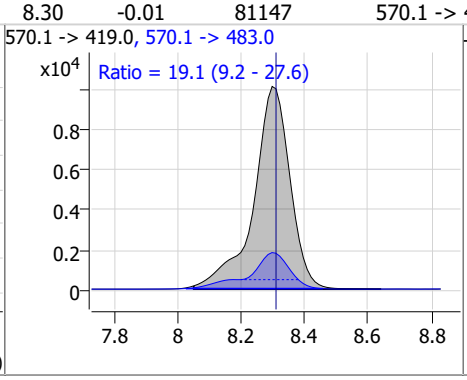


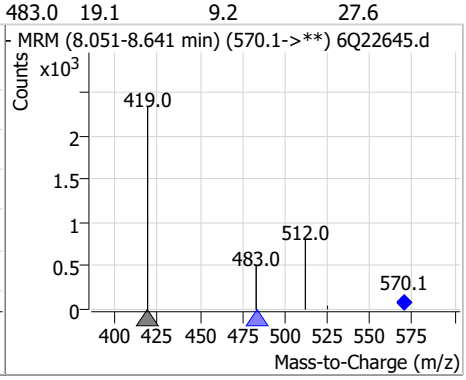




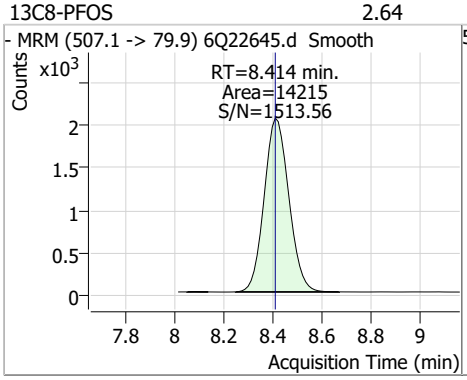
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	13.01	8.30	-0.01	81147	570.1 -> 483.0	19.1	9.2	27.6

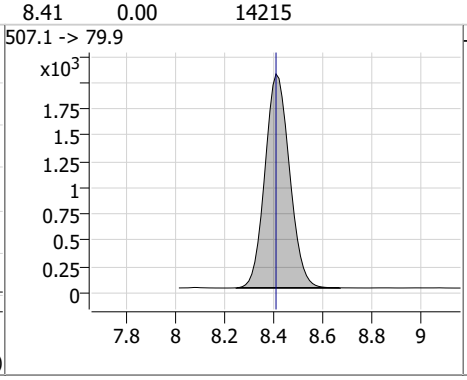


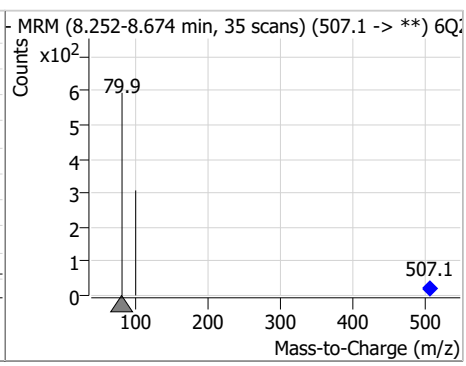




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.64	8.41	0.00	14215				

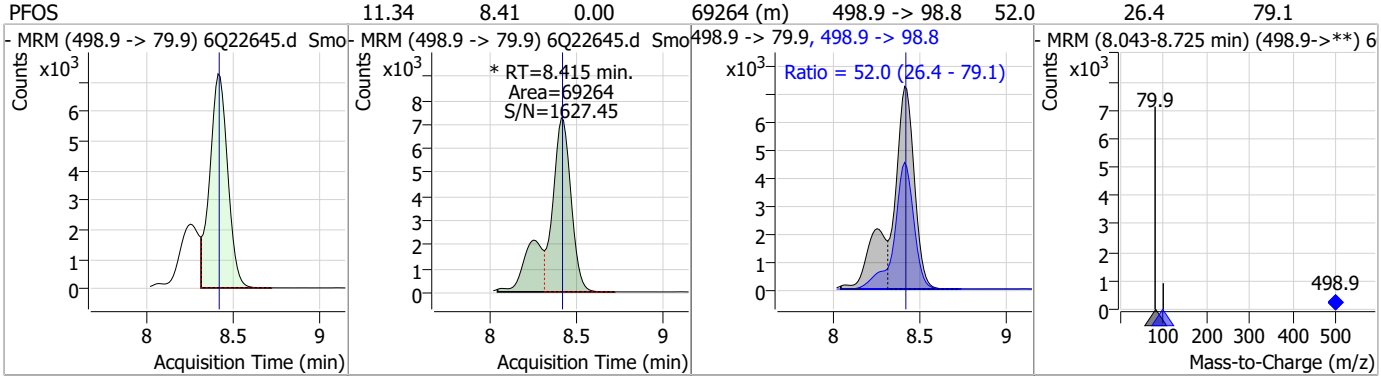




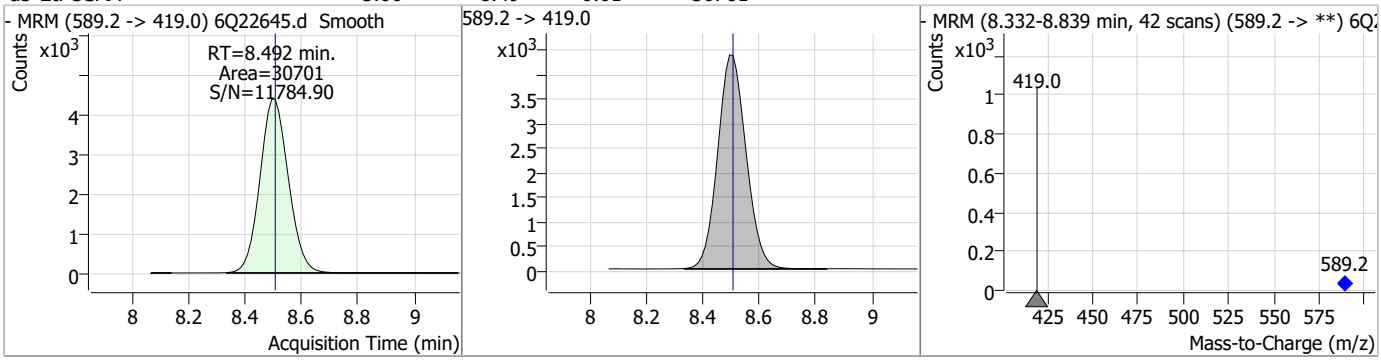


Perfluorinated Compounds by LC/MS/MS

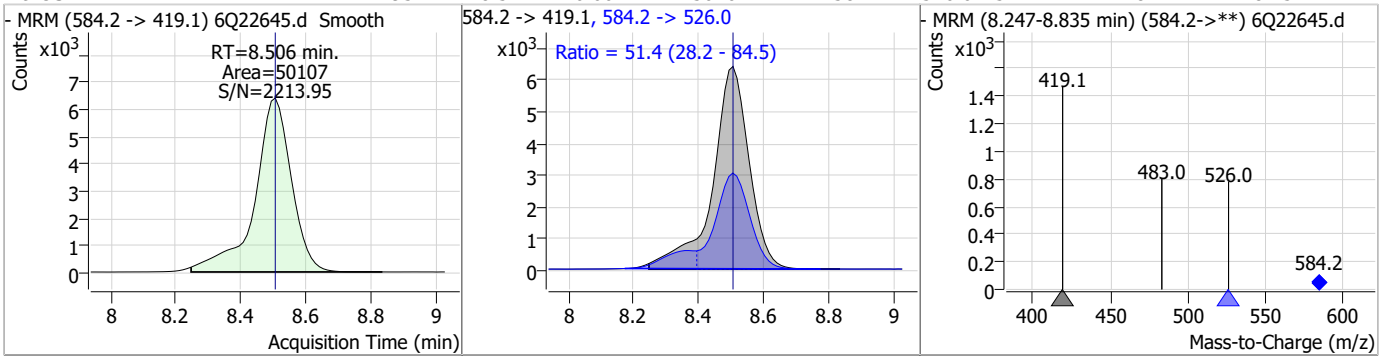
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.34	8.41	0.00	69264 (m)	498.9 -> 98.8	52.0	26.4	79.1



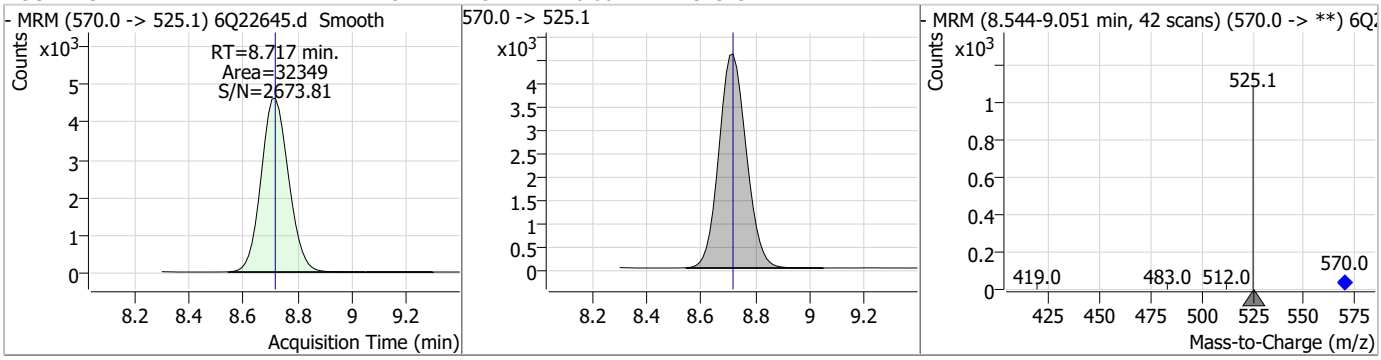
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.00	8.49	-0.01	30701				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.95	8.51	0.00	50107	584.2 -> 526.0	51.4	28.2	84.5

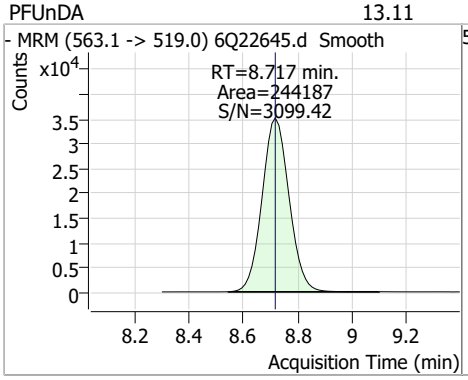


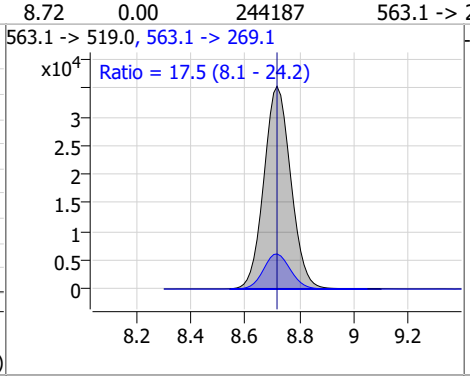
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.72	0.00	32349				

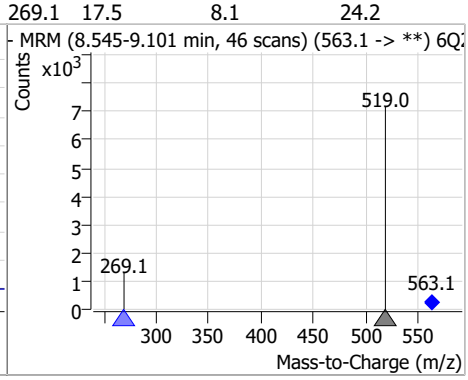


Perfluorinated Compounds by LC/MS/MS

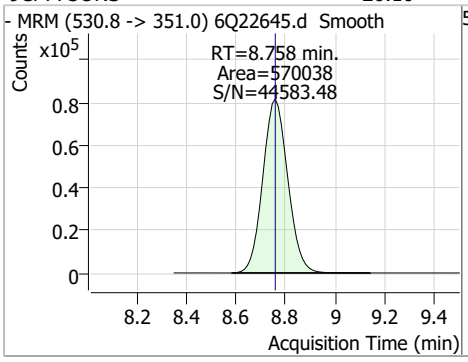
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.11	8.72	0.00	244187	563.1 -> 269.1	17.5	8.1	24.2

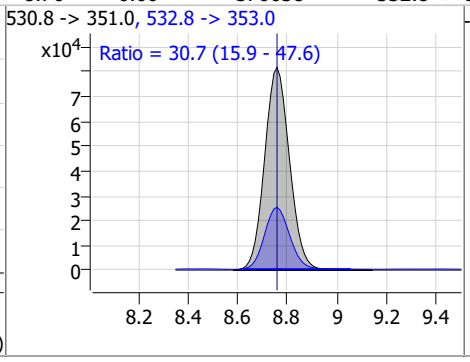


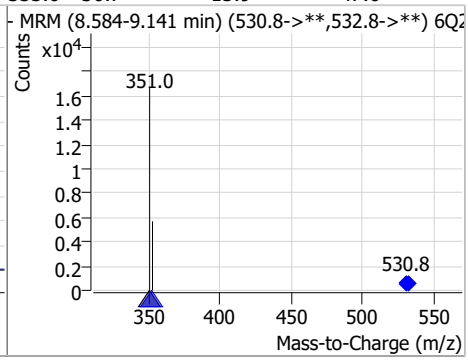




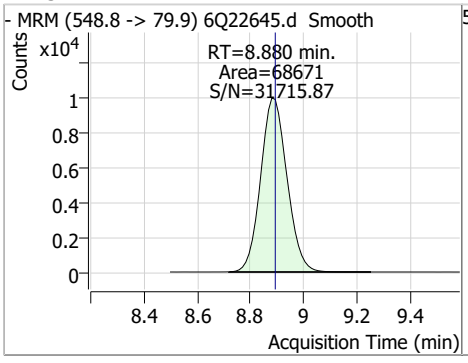
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	26.10	8.76	0.00	570038	532.8 -> 353.0	30.7	15.9	47.6

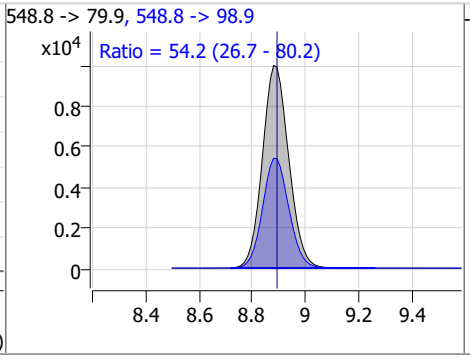


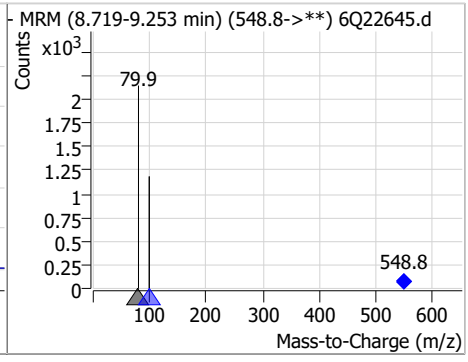




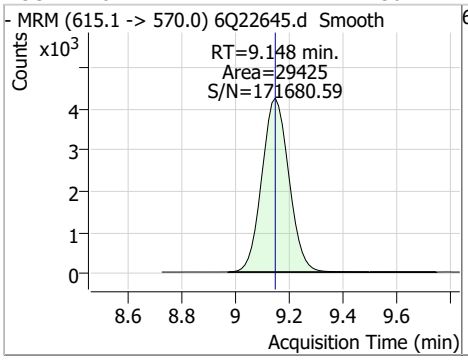
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	11.71	8.88	-0.01	68671	548.8 -> 98.9	54.2	26.7	80.2

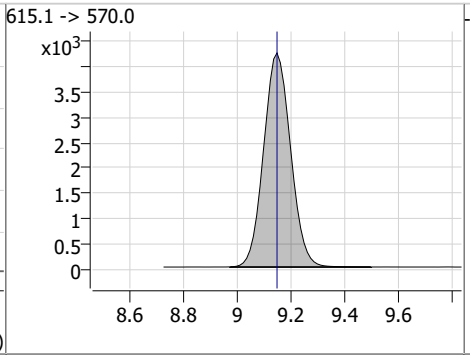


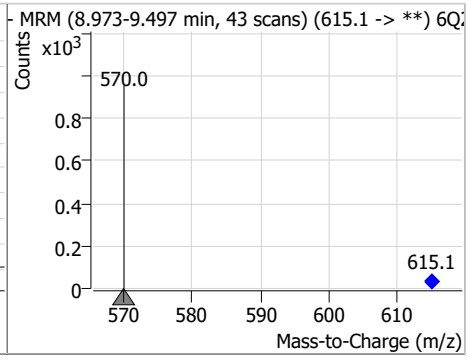




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.30	9.15	0.00	29425				

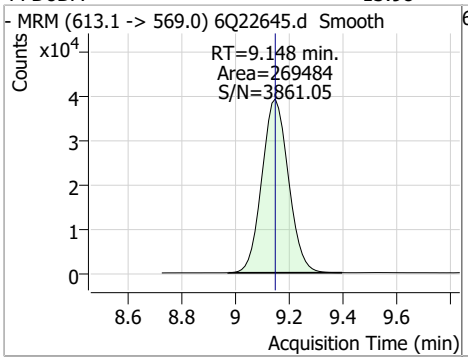


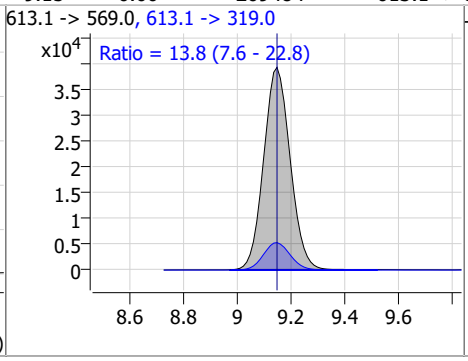


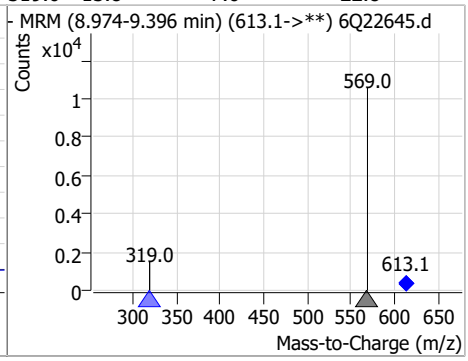


Perfluorinated Compounds by LC/MS/MS

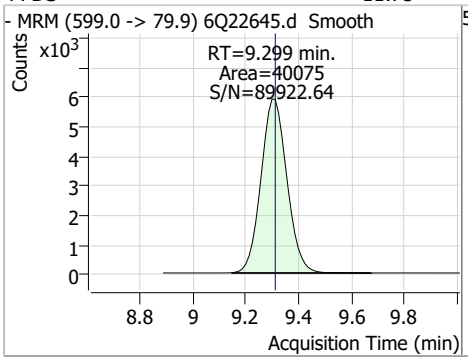
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	13.98	9.15	0.00	269484	613.1 -> 319.0	13.8	7.6	22.8

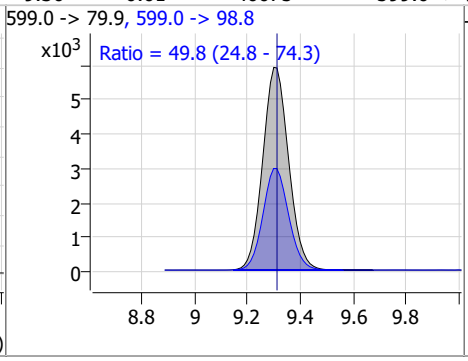


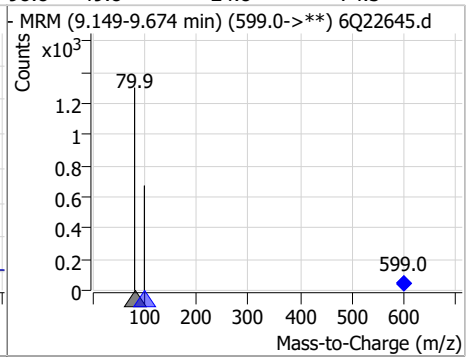




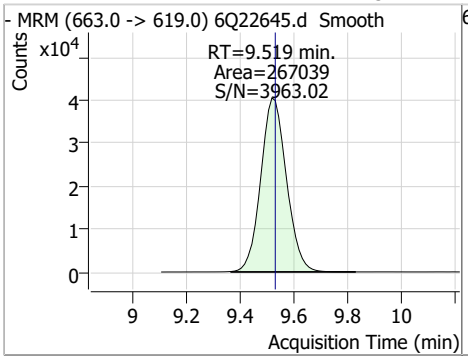
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	11.75	9.30	-0.01	40075	599.0 -> 98.8	49.8	24.8	74.3

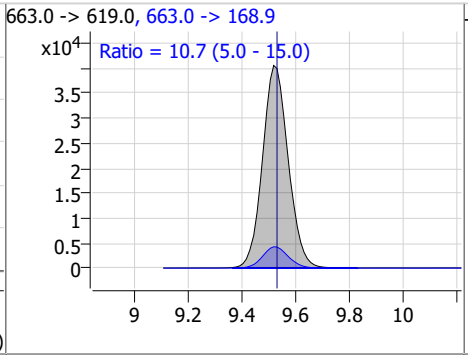


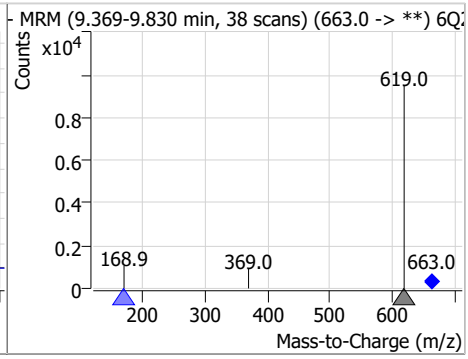




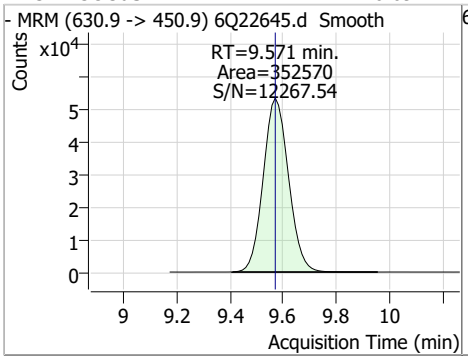
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.42	9.52	-0.01	267039	663.0 -> 168.9	10.7	5.0	15.0

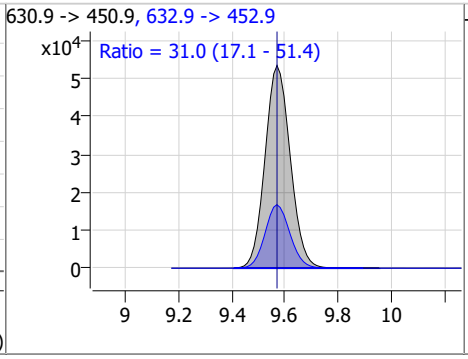


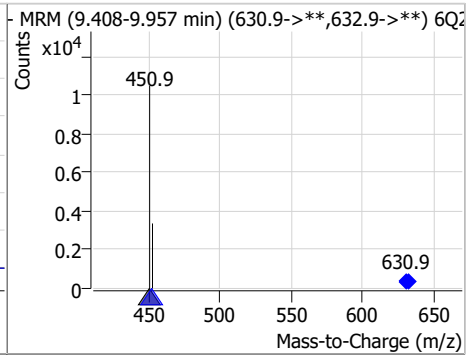




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	26.09	9.57	0.00	352570	632.9 -> 452.9	31.0	17.1	51.4

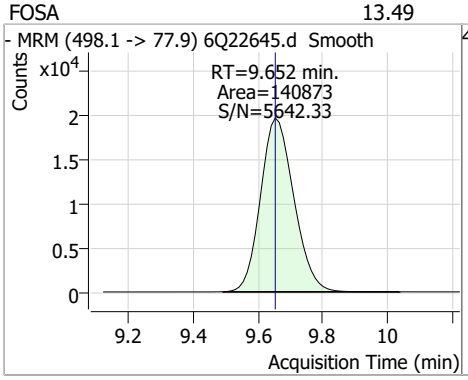


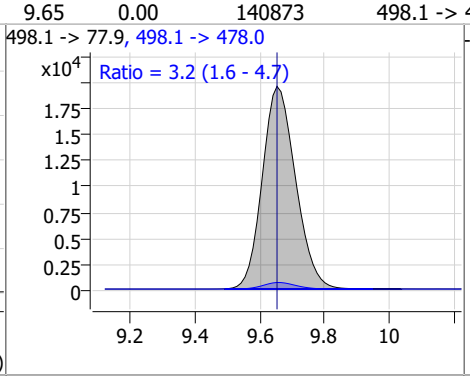


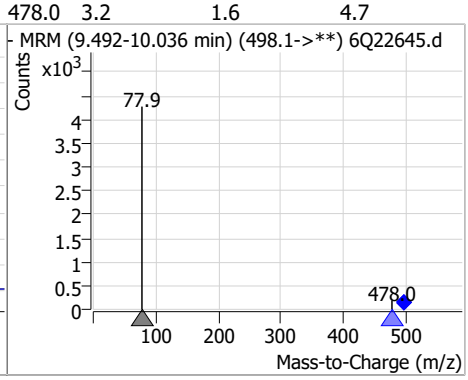


Perfluorinated Compounds by LC/MS/MS

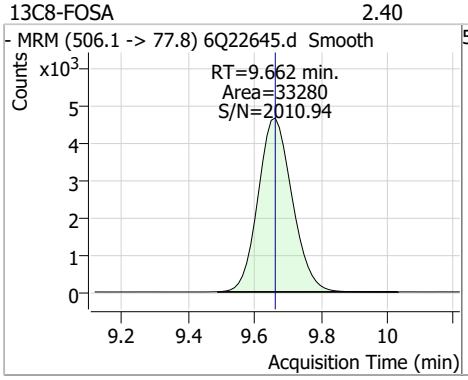
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	13.49	9.65	0.00	140873	498.1 -> 478.0	3.2	1.6	4.7

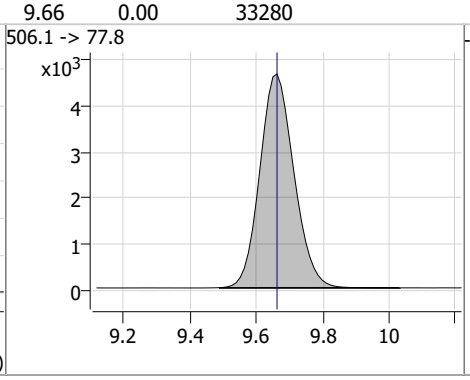


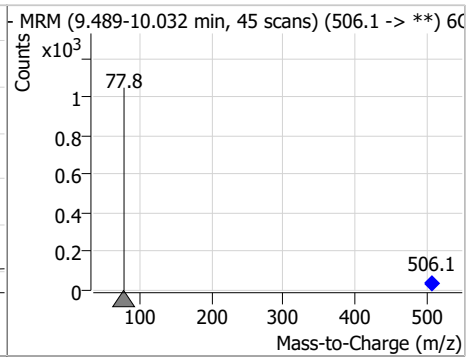




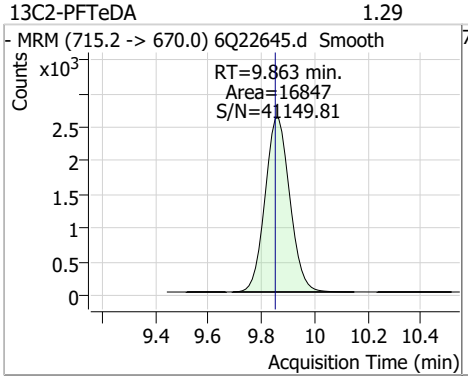
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	9.66	0.00	33280				

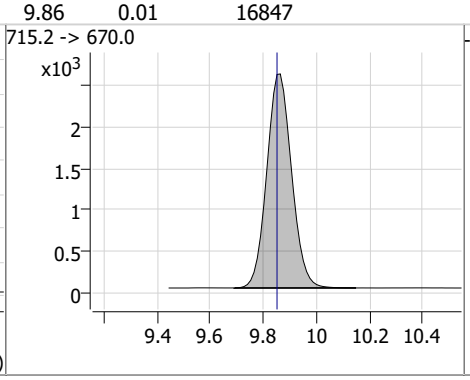


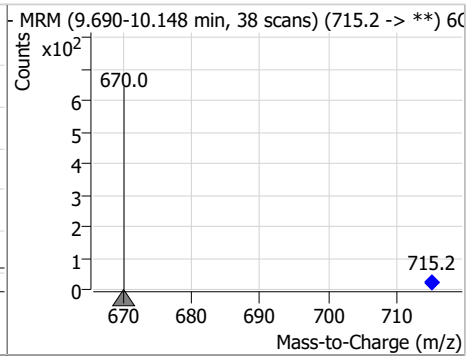




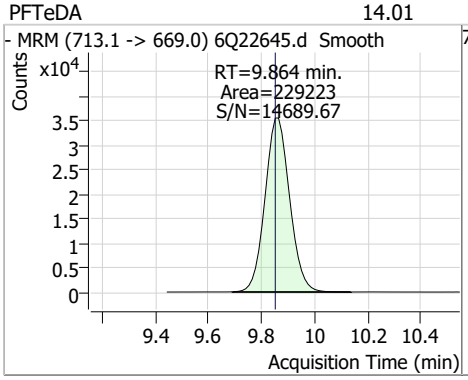
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.29	9.86	0.01	16847				

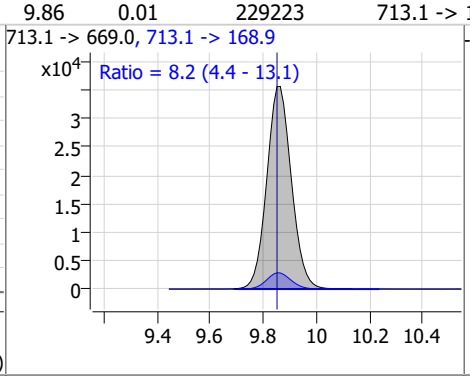


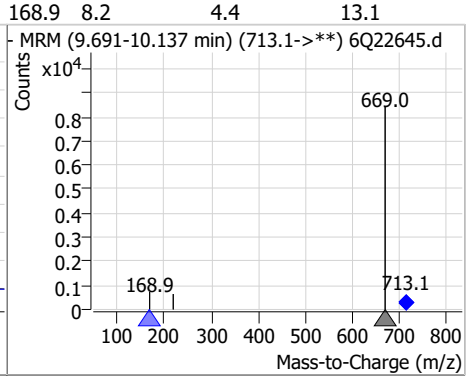




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	14.01	9.86	0.01	229223	713.1 -> 168.9	8.2	4.4	13.1

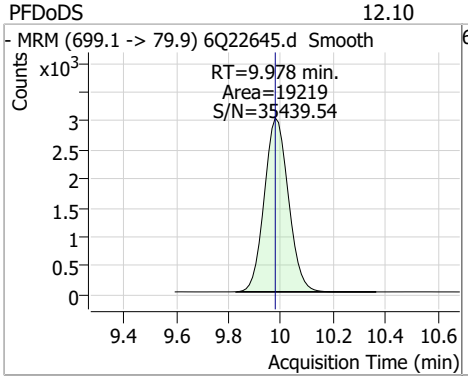


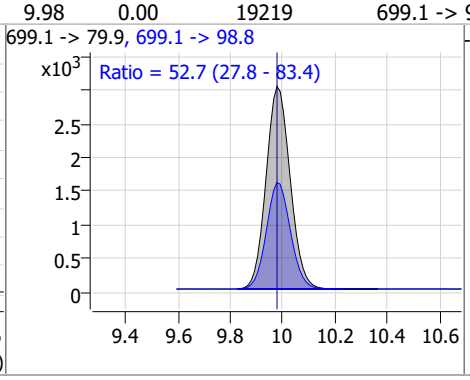


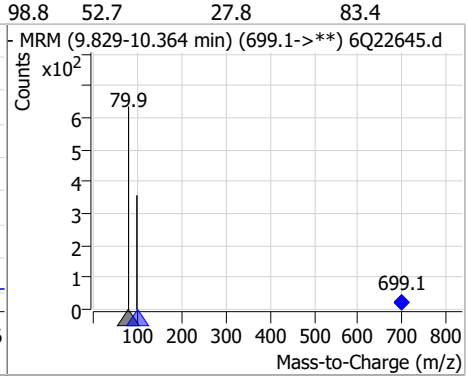


Perfluorinated Compounds by LC/MS/MS

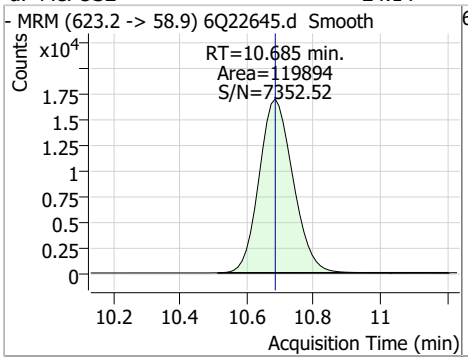
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	12.10	9.98	0.00	19219	699.1 -> 98.8	52.7	27.8	83.4

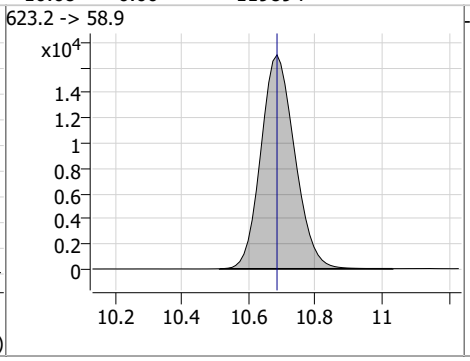


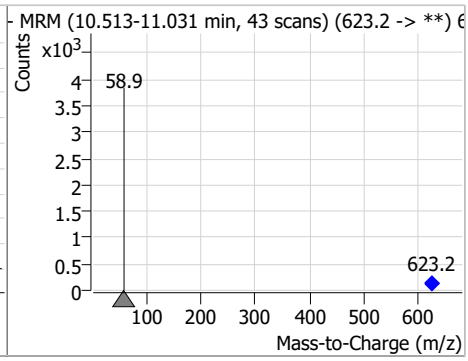




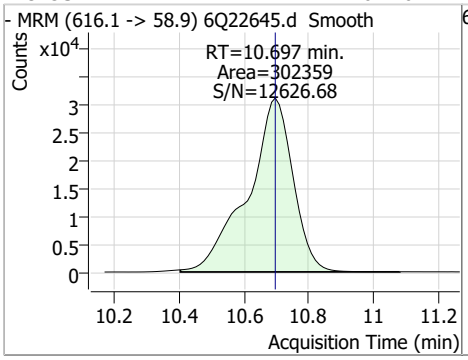
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.14	10.68	0.00	119894				

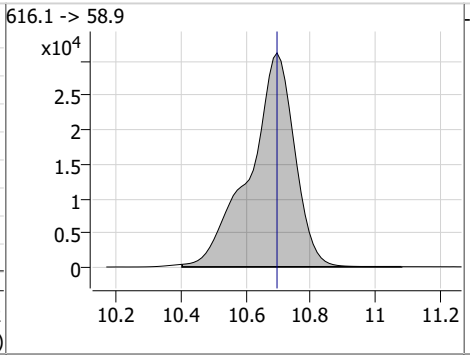


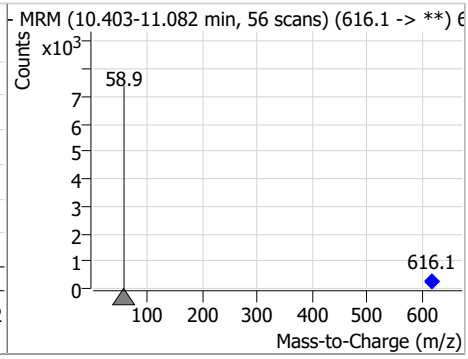




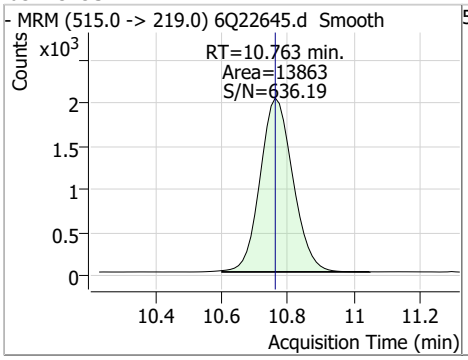
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	67.46	10.70	0.00	302359				

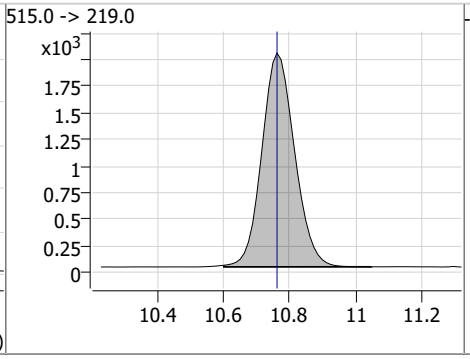


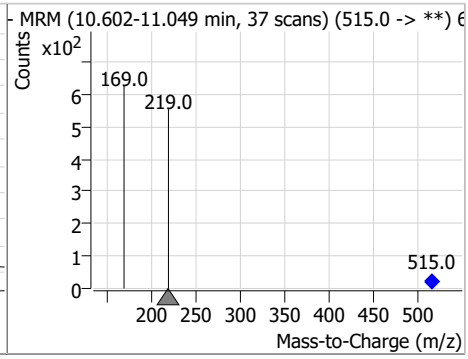




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	10.76	0.00	13863				

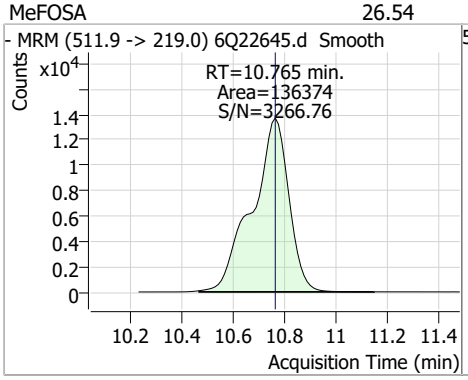


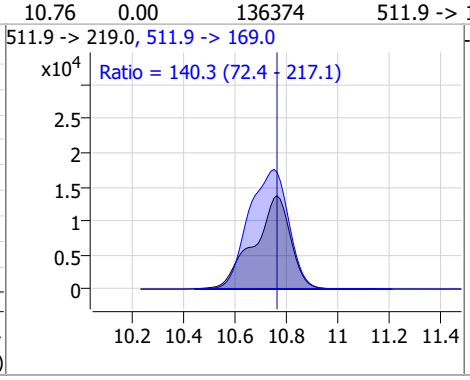


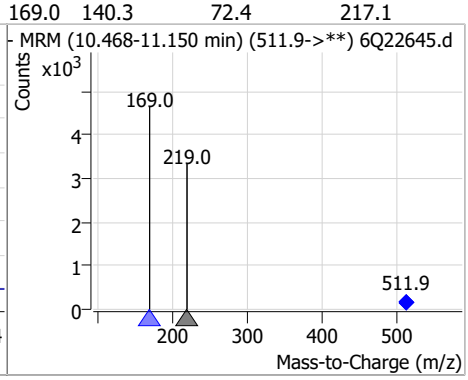


Perfluorinated Compounds by LC/MS/MS

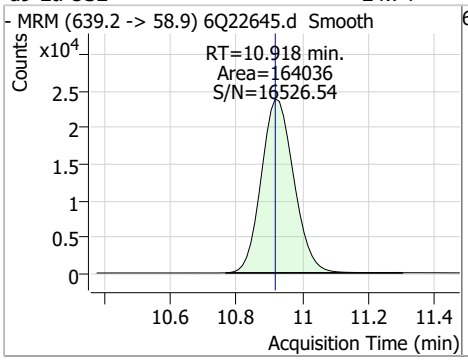
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	26.54	10.76	0.00	136374	511.9 -> 169.0	140.3	72.4	217.1

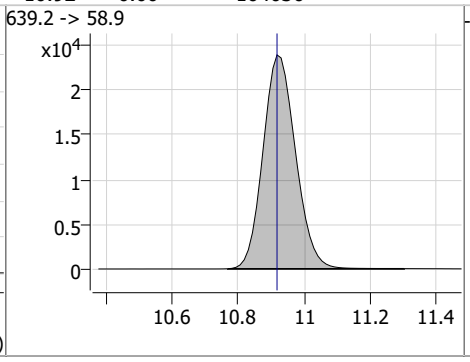


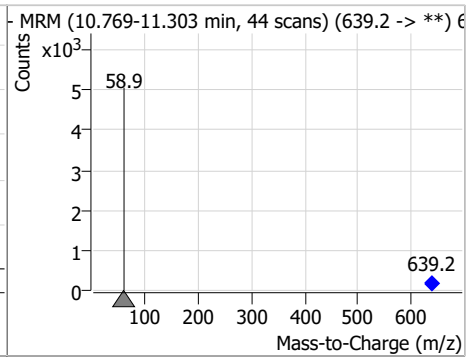




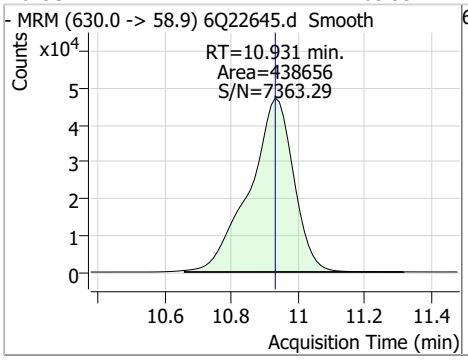
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.74	10.92	0.00	164036				

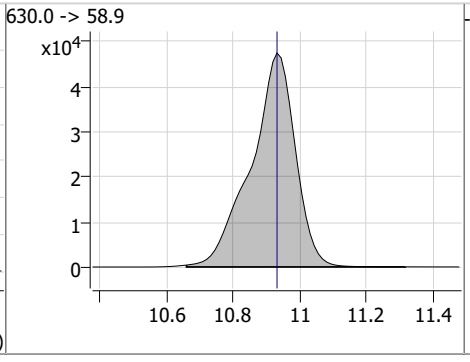


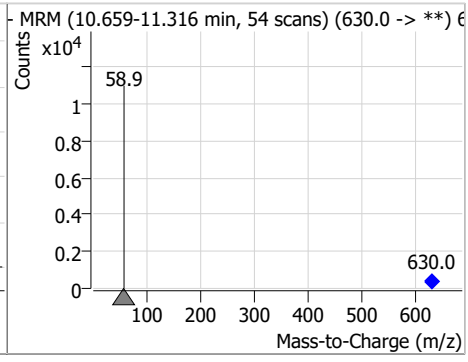




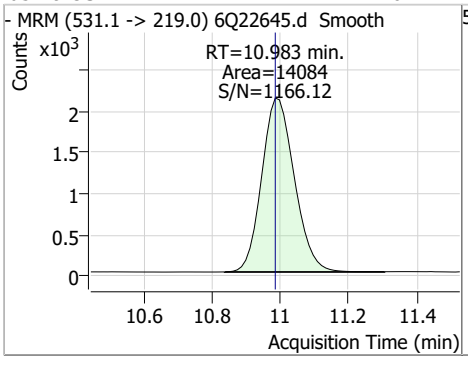
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	65.99	10.93	0.00	438656				

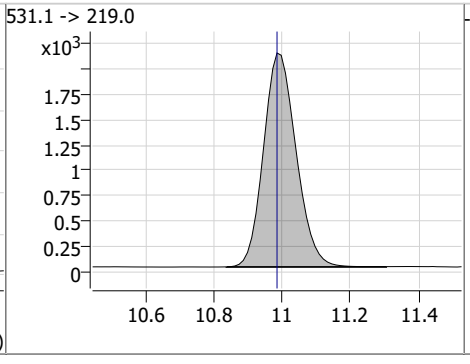


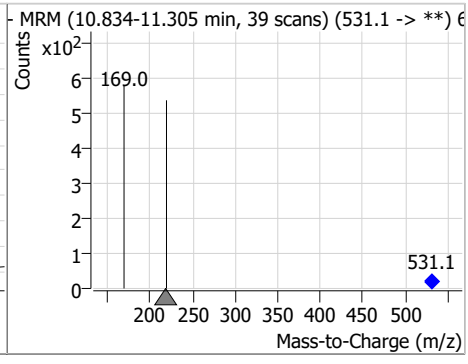




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.46	10.98	0.00	14084				

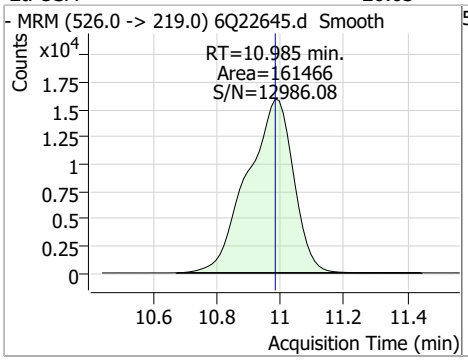


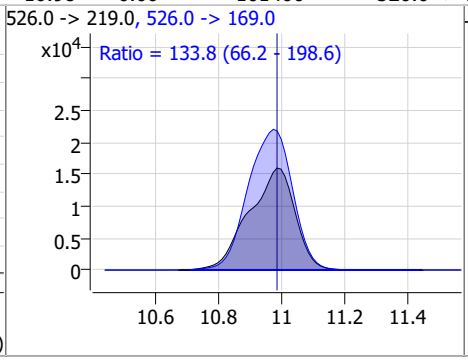


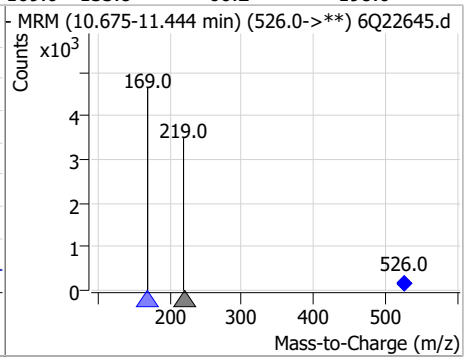


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	26.03	10.98	0.00	161466	526.0 -> 169.0	133.8	66.2	198.6







7.7.22

7

Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22645.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 14:49	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22646.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 3:03:50 PM
Sample Name : ic330-7
Vial : P1-A8
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	175172	10.00	µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	58183	5.00	µg/L	0.012
M5-PFHxA	5.668	318.0 -> 273.0	62206	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	64147	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	95391	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	43260	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	25833	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	33631	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	30424	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	17636	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	34267	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	22726	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	14569	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13299	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	2939	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4221	5.00	µg/L	0.000
M2-8:2FTS	8.051	529.1 -> 80.9	4443	5.00	µg/L	0.000
M3-MeFOSAA	8.297	573.2 -> 419.0	32532	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	40645	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	29130	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	120500	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	162203	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	13833	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	14049	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	17450	2.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	73543	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	10786	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	104700	2.50	µg/L	0.000
13C2-PFDA	8.263	515.1 -> 470.1	34973	1.25	µg/L	0.012
13C5-PFNA	7.770	468.0 -> 423.0	51444	1.25	µg/L	0.000
13C2-PFHxA	5.681	315.1 -> 270.0	62000	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	2939	4.56	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4221	4.54	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C2-8:2FTS	8.051	529.1 -> 80.9	4443	4.88	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-PFDoDA	9.148	615.1 -> 570.0	30424	1.29	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C2-PFTeDA	9.863	715.2 -> 670.0	17636	1.30	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C3-PFBS	5.610	302.1 -> 79.9	22726	2.48	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C3-PFHxS	7.355	402.1 -> 79.9	14569	2.46	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 = 98.3%		
13C4-PFBA	3.010	216.8 -> 171.9	175172	10.08 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFHpA	6.608	367.1 -> 322.0	64147	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	5.668	318.0 -> 273.0	62206	2.43 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C5-PFPeA	4.459	268.3 -> 223.0	58183	4.98 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C6-PFDA	8.250	519.1 -> 474.1	25833	1.31 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C7-PFUnDA	8.717	570.0 -> 525.1	33631	1.29 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-FOSA	9.662	506.1 -> 77.8	34267	2.60 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C8-PFOA	7.239	421.1 -> 376.0	95391	2.47 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C8-PFOS	8.414	507.1 -> 79.9	13299	2.60 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C9-PFNA	7.770	472.1 -> 427.0	43260	1.30 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%		
d3-MeFOSAA	8.297	573.2 -> 419.0	32532	5.15 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-HFPO-DA	6.045	286.9 -> 168.9	40645	10.13 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
d3-MeFOSA	10.763	515.0 -> 219.0	14049	2.61 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%		
d5-EtFOSAA	8.505	589.2 -> 419.0	29130	5.00 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d7-MeFOSE	10.685	623.2 -> 58.9	120500	25.55 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
d9-EtFOSE	10.918	639.2 -> 58.9	162203	25.77 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
d5-EtFOSA	10.983	531.1 -> 219.0	13833	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%		
Target Compounds						QValue
4:2FTS	5.343	327.1 -> 307.0	362128	95.23 µg/L		98
		327.1 -> 80.9	137499			
6:2FTS	7.014	427.1 -> 407.0	364578	96.55 µg/L		99
		427.1 -> 80.9	119999			
8:2FTS	8.040	527.1 -> 507.0	216825	91.20 µg/L		97
		527.1 -> 80.8	76073			
EtFOSAA	8.506	584.2 -> 419.1	92637	25.23 µg/L	m	99
		584.2 -> 526.0	53146			
FOSA	9.652	498.1 -> 77.9	258763	24.06 µg/L		99
		498.1 -> 478.0	8732			
MeFOSAA	8.310	570.1 -> 419.0	150142	24.14 µg/L		98
		570.1 -> 483.0	28900			
PFBA	3.018	212.8 -> 168.9	549299	100.36 µg/L		100
PFBS	5.611	298.7 -> 79.9	167277	22.53 µg/L		99
		298.7 -> 98.8	62954			
PFDA	8.251	512.9 -> 469.0	731473	23.90 µg/L		98
		512.9 -> 219.0	112559			
PFDoDA	9.148	613.1 -> 569.0	480671	24.11 µg/L		100
		613.1 -> 319.0	72625			
PFDS	9.312	599.0 -> 79.9	74953	23.49 µg/L		98

Perfluorinated Compounds by LC/MS/MS

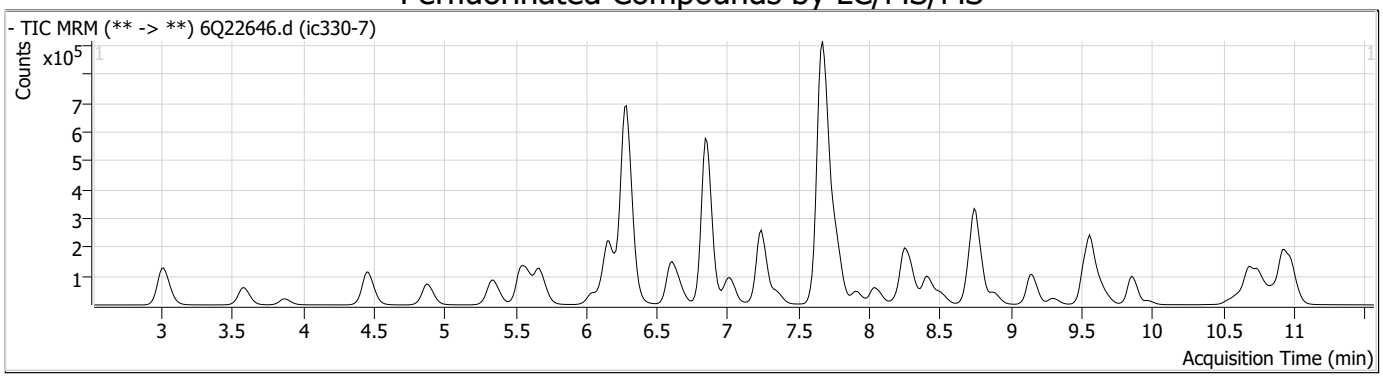
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	38145				
PFHpA	6.609	363.1 -> 319.0	618991	24.47	µg/L		98
		363.1 -> 169.0	97592				
PFHpS	7.922	449.0 -> 79.9	152095	25.04	µg/L		94
		449.0 -> 98.9	74965				
PFHxA	5.682	313.0 -> 269.0	476474	26.19	µg/L		99
		313.0 -> 118.9	24012				
PFHxS	7.356	398.7 -> 79.9	142421	22.15	µg/L	m	98
		398.7 -> 98.9	71605				
PFNA	7.771	463.0 -> 419.0	783689	26.36	µg/L		97
		463.0 -> 219.0	137695				
PFNS	8.893	548.8 -> 79.9	133331	24.31	µg/L		96
		548.8 -> 98.9	67723				
PFOA	7.240	413.0 -> 369.0	987710	25.33	µg/L		97
		413.0 -> 169.0	173870				
PFOS	8.415	498.9 -> 79.9	135179	23.65	µg/L	m	97
		498.9 -> 98.8	68917				
PFPeA	4.461	263.0 -> 219.0	641496	50.05	µg/L		100
PFPeS	6.672	349.1 -> 79.9	146179	24.51	µg/L		100
		349.1 -> 98.9	66356				
PFTeDA	9.864	713.1 -> 669.0	423044	24.70	µg/L		100
		713.1 -> 168.9	36065				
PFTrDA	9.519	663.0 -> 619.0	493389	23.98	µg/L		98
		663.0 -> 168.9	53823				
PFUnDA	8.717	563.1 -> 519.0	492661	25.43	µg/L		99
		563.1 -> 269.1	77568				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	689027	47.50	µg/L		92
		632.9 -> 452.9	204797				
9Cl-PF3ONS	8.758	530.8 -> 351.0	1068652	45.57	µg/L		98
		532.8 -> 353.0	354367				
ADONA	6.858	376.9 -> 250.9	2479597	47.90	µg/L		99
		376.9 -> 84.8	643408				
HFPO-DA	6.046	284.9 -> 168.9	161222	46.61	µg/L		99
		284.9 -> 184.9	17666				
3:3FTCA	3.871	241.0 -> 177.0	110569	127.76	µg/L		99
		241.0 -> 117.0	14645				
5:3FTCA	6.285	341.0 -> 237.1	2435422	650.75	µg/L		97
		341.0 -> 217.0	1667774				
7:3FTCA	7.673	441.0 -> 316.9	1737520	627.71	µg/L		95
		441.0 -> 336.9	3814998				
EtFOSA	10.985	526.0 -> 219.0	318024	52.20	µg/L		97
		526.0 -> 169.0	411423				
EtFOSE	10.931	630.0 -> 58.9	846817	128.84	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	263245	50.55	µg/L		95
		511.9 -> 169.0	366100				
MeFOSE	10.697	616.1 -> 58.9	594305	131.92	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	38349	25.81	µg/L		94
		699.1 -> 98.8	19720				
NFDHA	5.551	295.0 -> 201.0	117131	50.62	µg/L		93
		295.0 -> 84.9	28959				
PFMBA	4.882	279.0 -> 85.1	450835	49.73	µg/L		100
PFMPA	3.576	229.0 -> 84.9	364224	50.20	µg/L		100
PFEESA	6.163	314.8 -> 134.9	1151986	47.13	µg/L		99
		314.8 -> 82.9	37211				

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

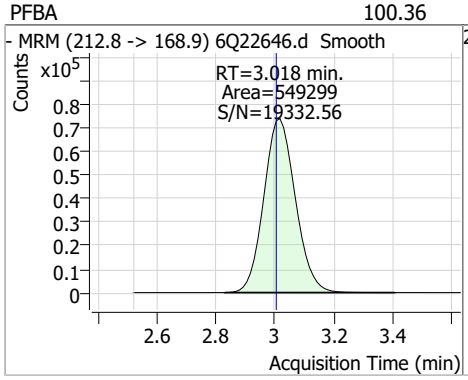
Perfluorinated Compounds by LC/MS/MS

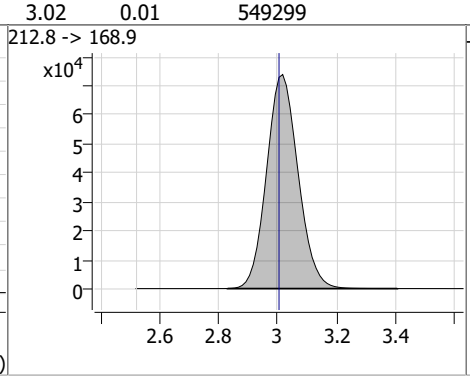
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

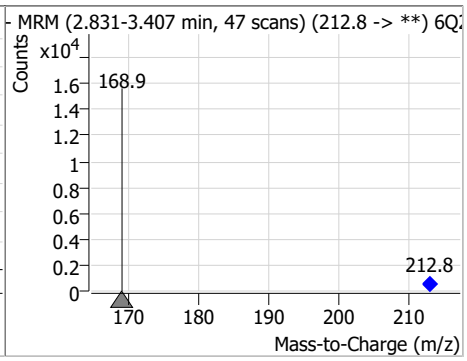
Perfluorinated Compounds by LC/MS/MS



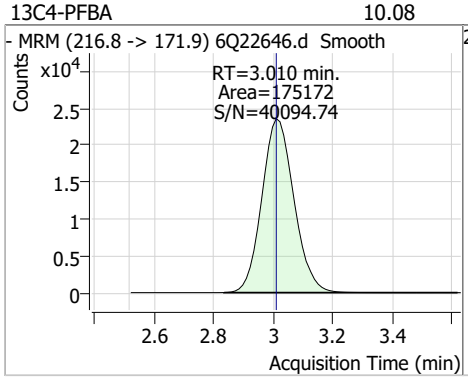
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.36	3.02	0.01	549299				

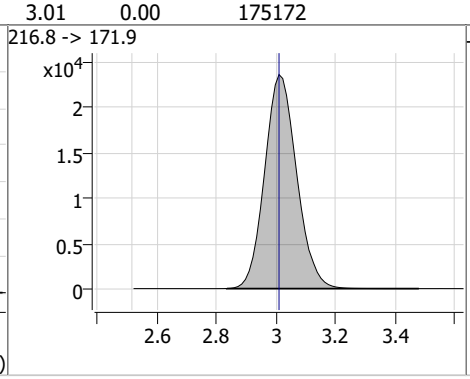


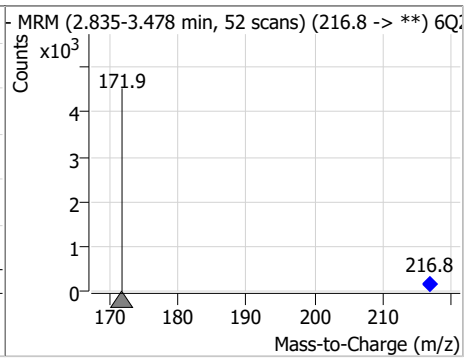




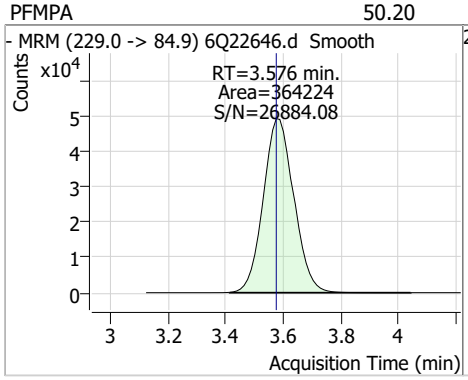
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.08	3.01	0.00	175172				

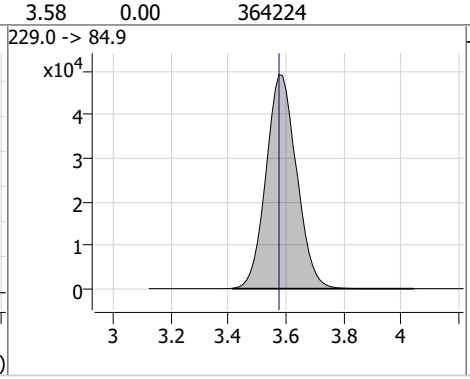


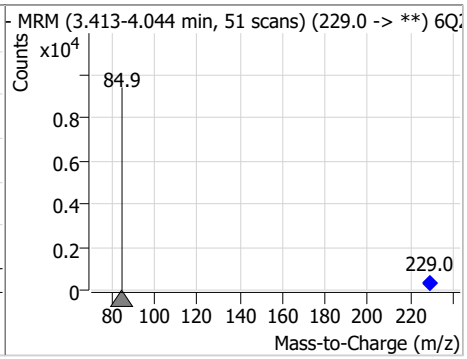




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	50.20	3.58	0.00	364224				

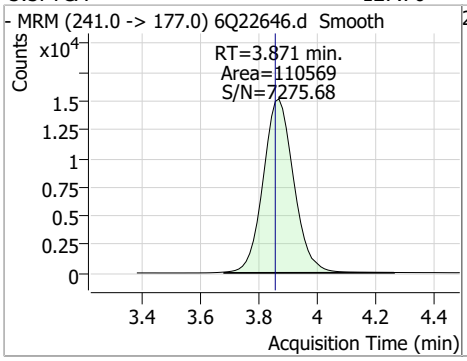


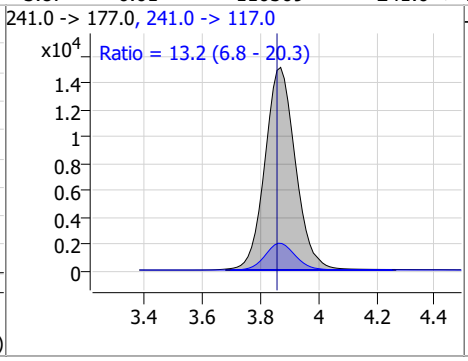


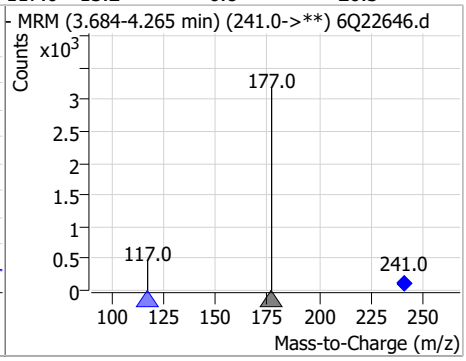


Perfluorinated Compounds by LC/MS/MS

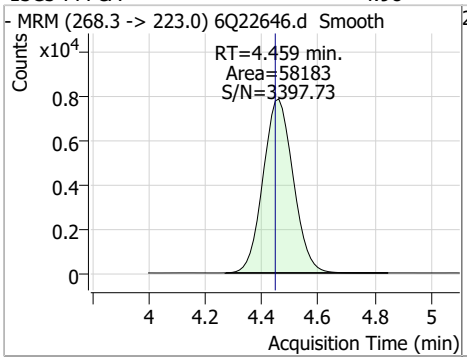
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	127.76	3.87	0.01	110569	241.0 -> 117.0	13.2	6.8	20.3

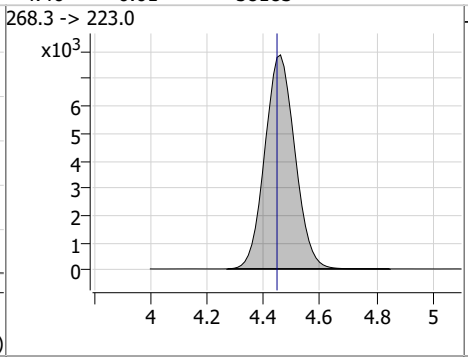


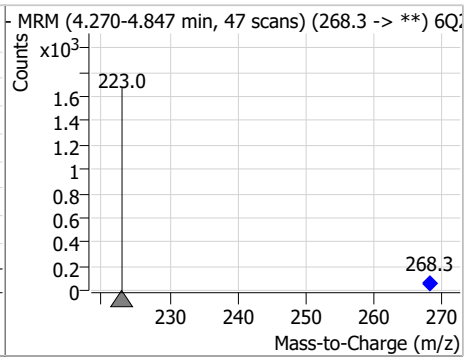




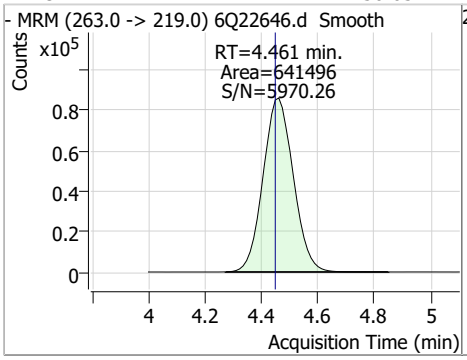
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.98	4.46	0.01	58183				

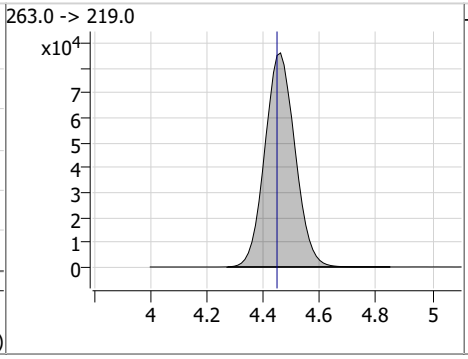


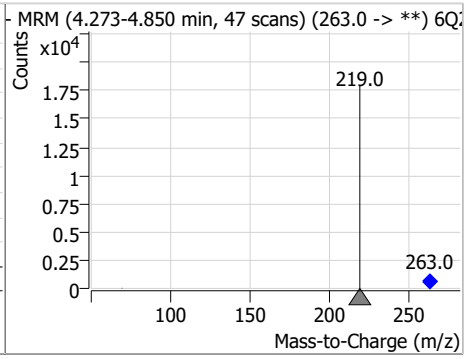




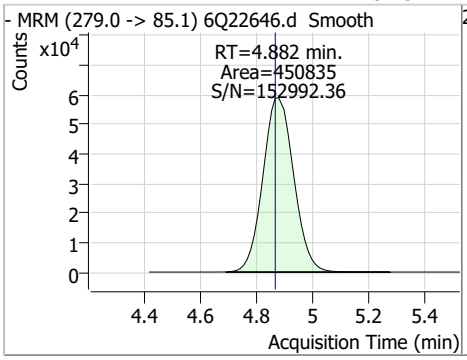
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.05	4.46	0.01	641496				

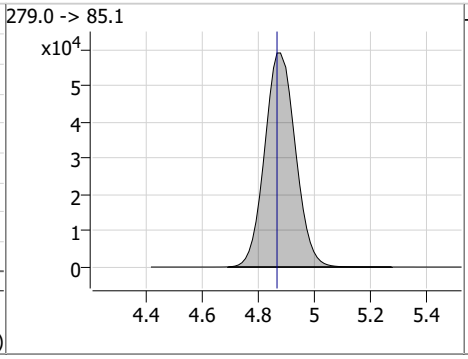


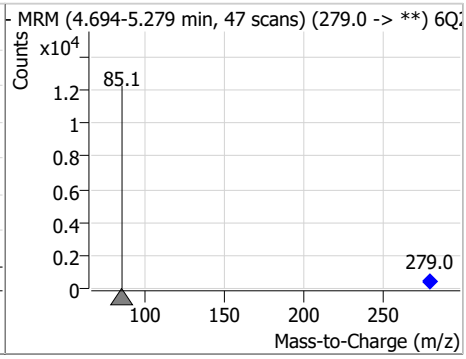




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	49.73	4.88	0.01	450835				

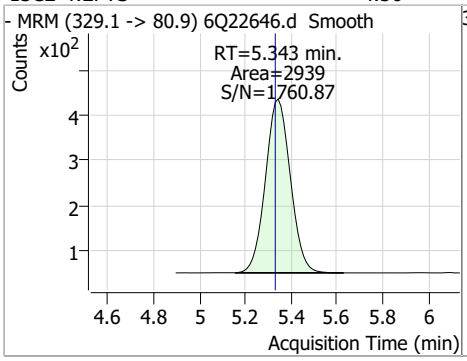


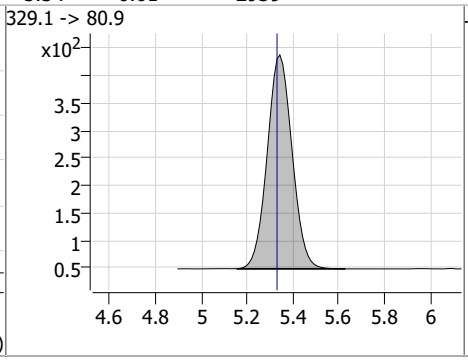


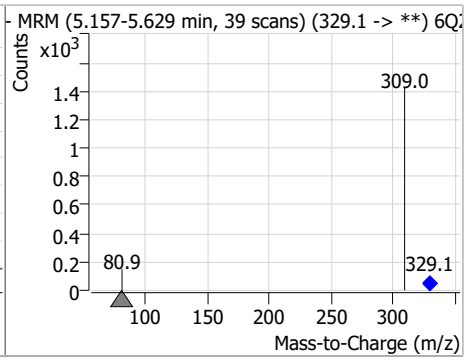


Perfluorinated Compounds by LC/MS/MS

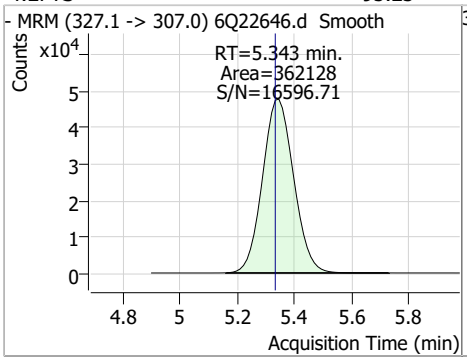
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.56	5.34	0.01	2939				

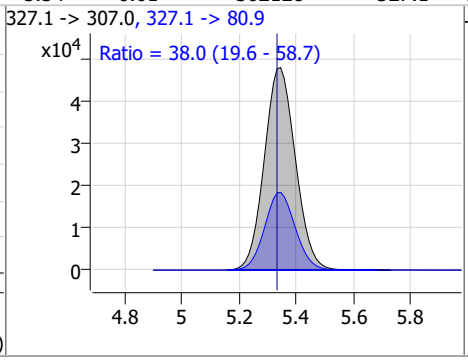


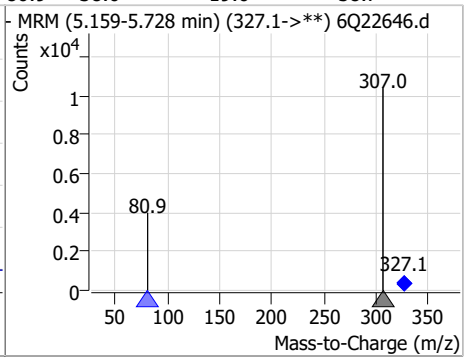




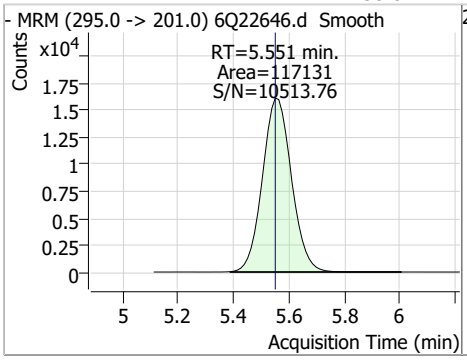
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	95.23	5.34	0.01	362128	327.1 -> 80.9	38.0	19.6	58.7

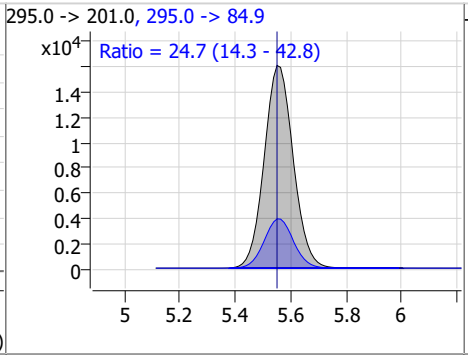


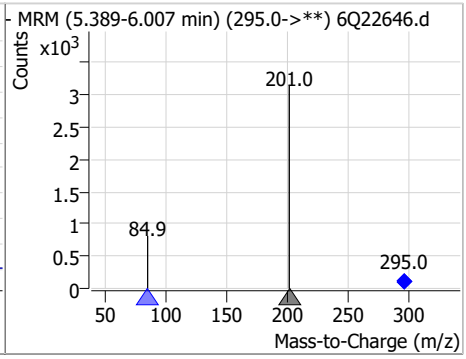




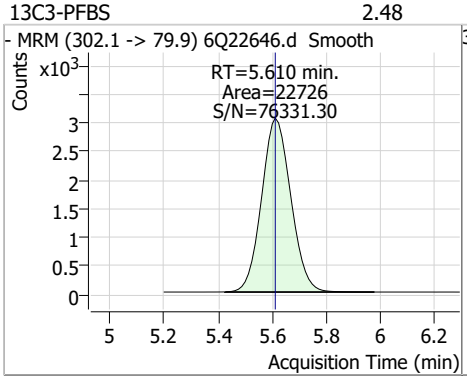
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	50.62	5.55	0.00	117131	295.0 -> 84.9	24.7	14.3	42.8

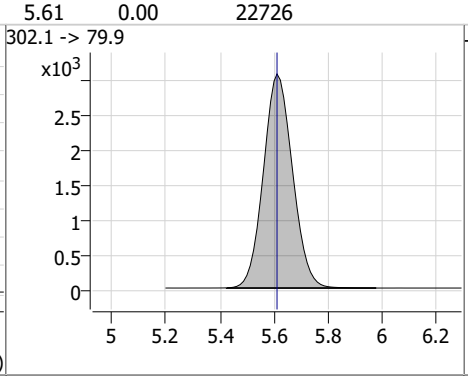


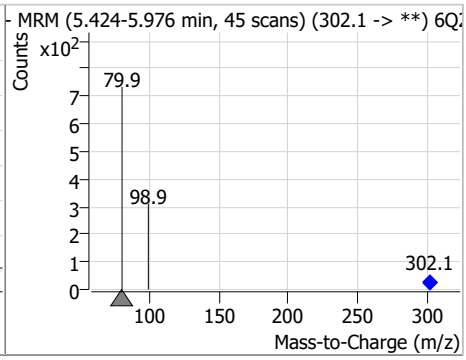




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.48	5.61	0.00	22726				

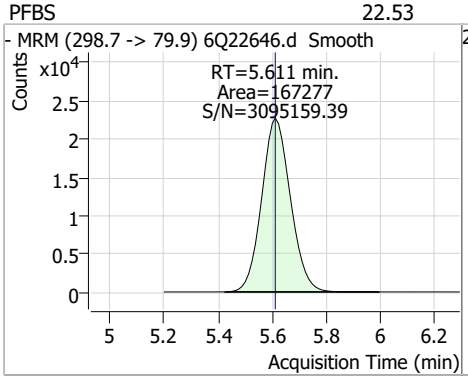


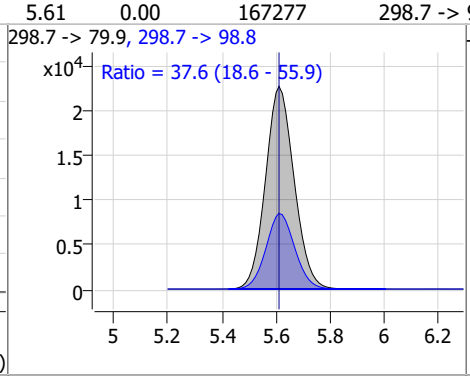


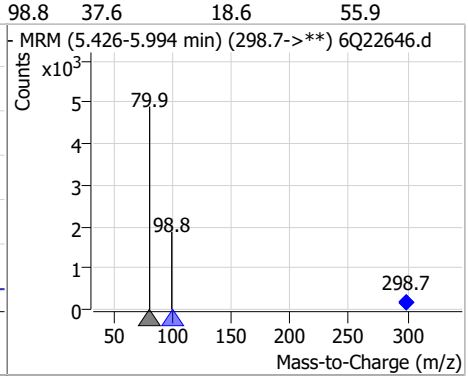


Perfluorinated Compounds by LC/MS/MS

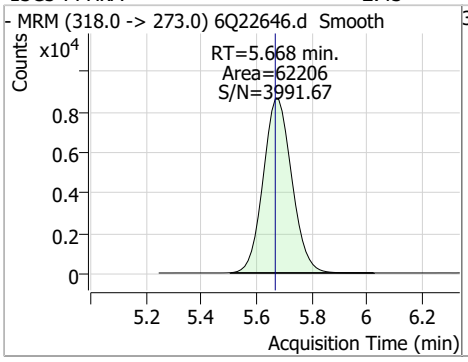
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.53	5.61	0.00	167277	298.7 -> 98.8	37.6	18.6	55.9

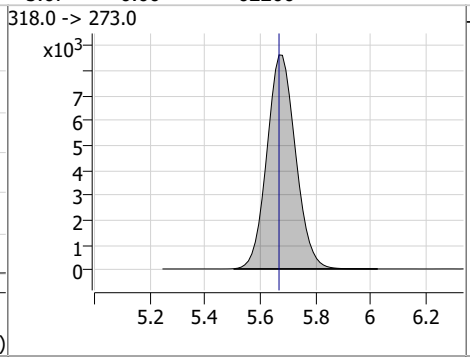


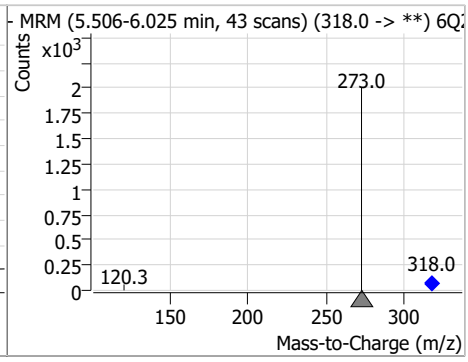




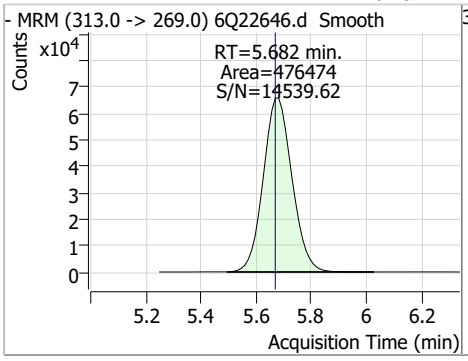
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	5.67	0.00	62206				

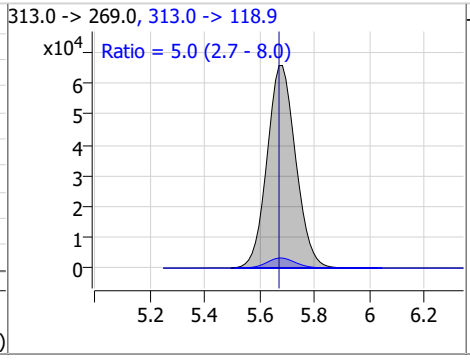


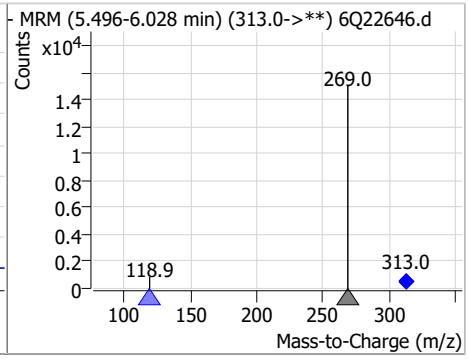




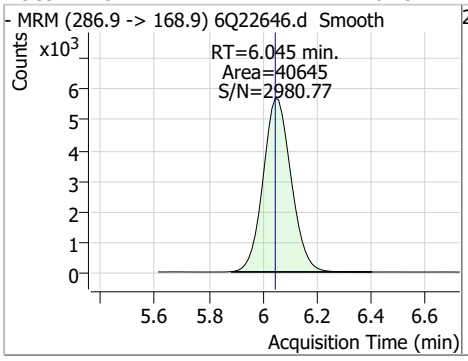
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	26.19	5.68	0.01	476474	313.0 -> 118.9	5.0	2.7	8.0

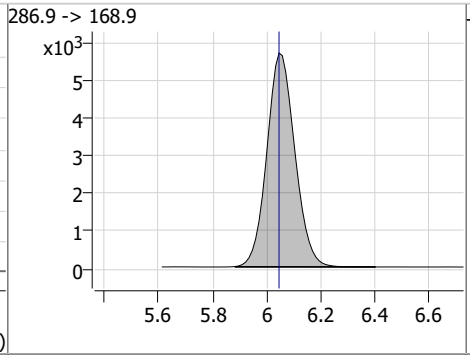


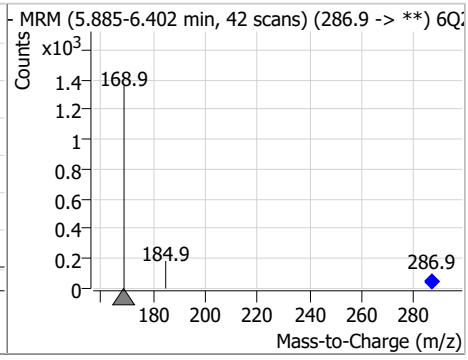




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	6.05	0.00	40645				

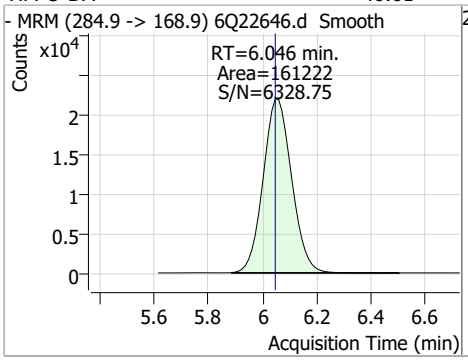


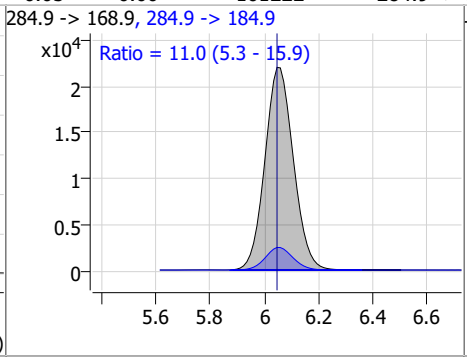


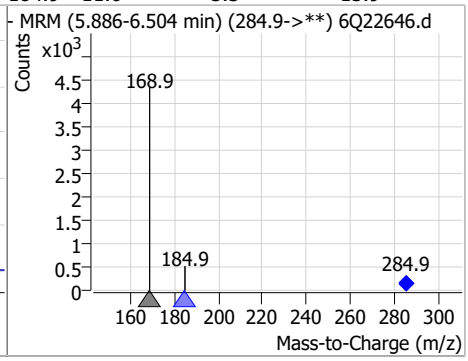


Perfluorinated Compounds by LC/MS/MS

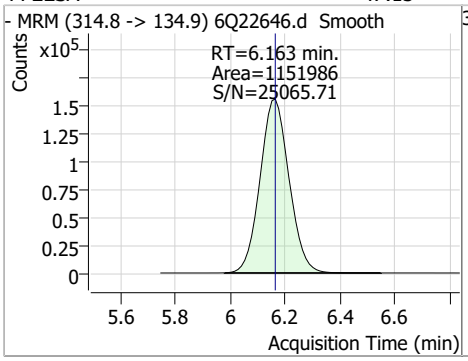
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	46.61	6.05	0.00	161222	284.9 -> 184.9	11.0	5.3	15.9

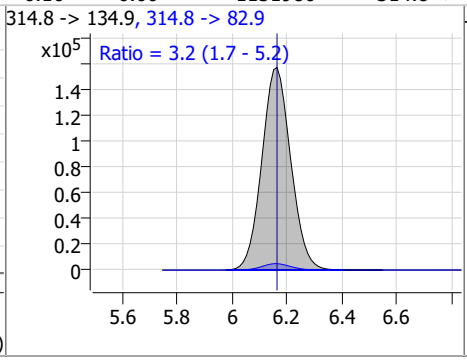


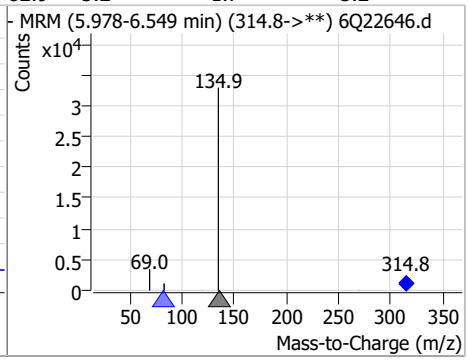




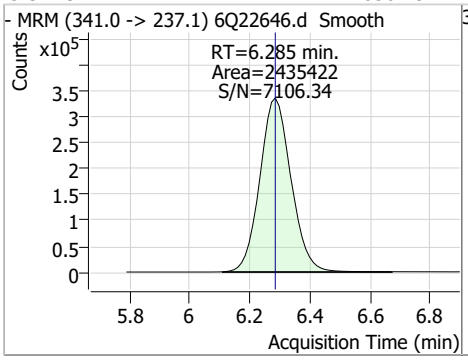
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	47.13	6.16	0.00	1151986	314.8 -> 82.9	3.2	1.7	5.2

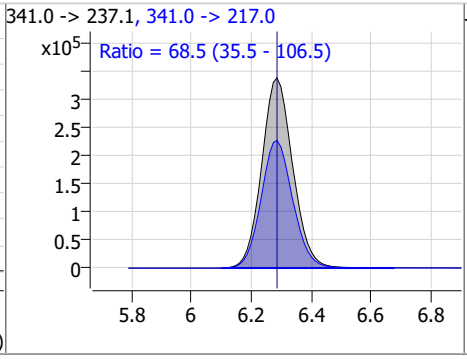


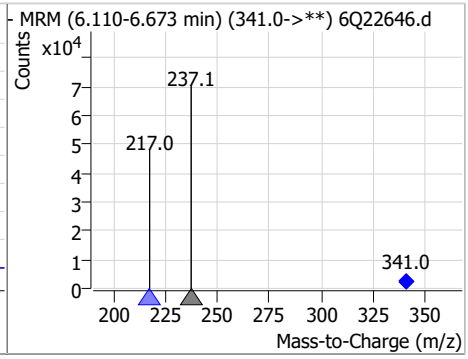




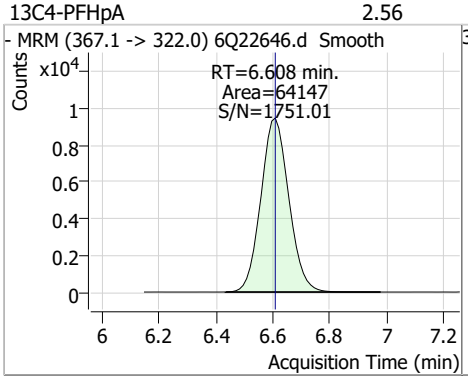
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	650.75	6.28	0.00	2435422	341.0 -> 217.0	68.5	35.5	106.5

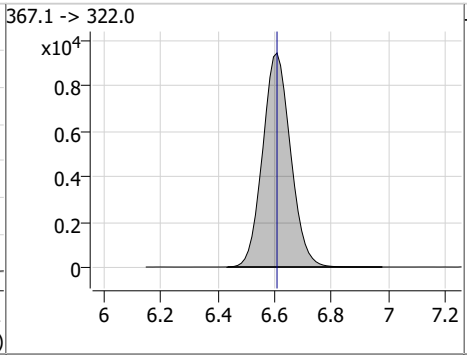


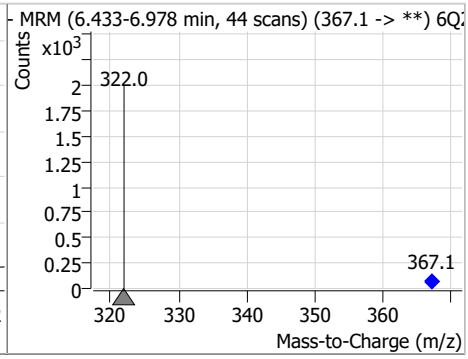




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.61	0.00	64147				

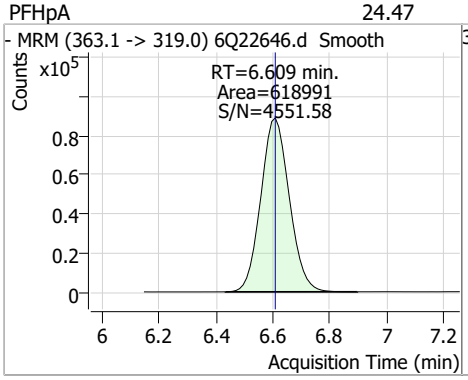


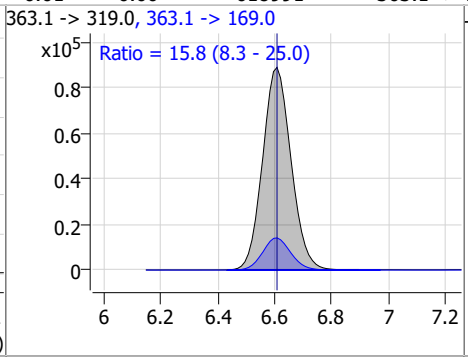


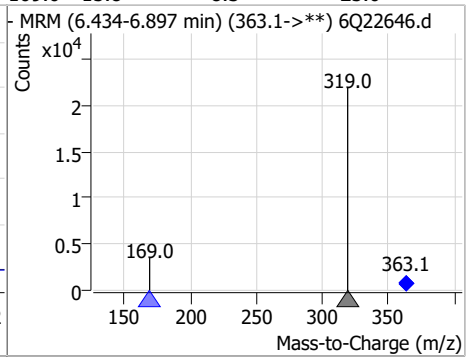


Perfluorinated Compounds by LC/MS/MS

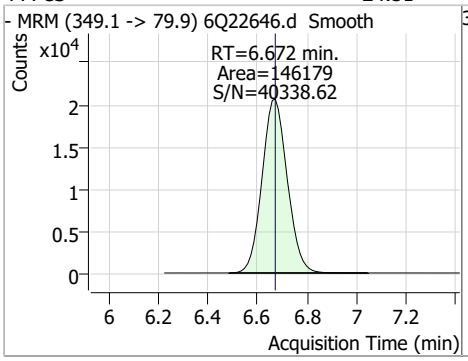
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	24.47	6.61	0.00	618991	363.1 -> 169.0	15.8	8.3	25.0

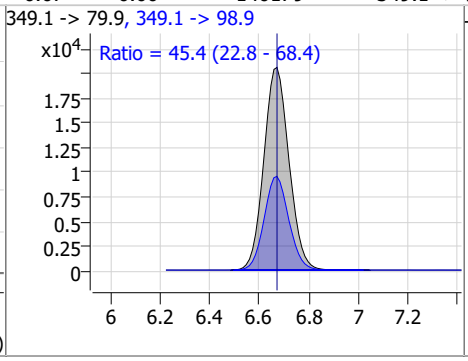


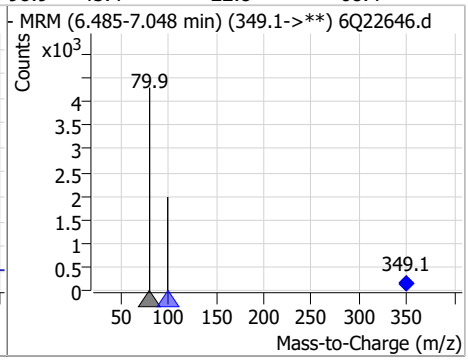




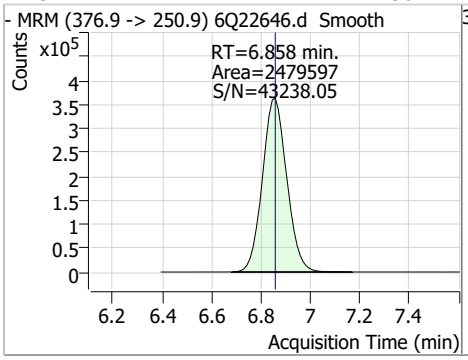
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	24.51	6.67	0.00	146179	349.1 -> 98.9	45.4	22.8	68.4

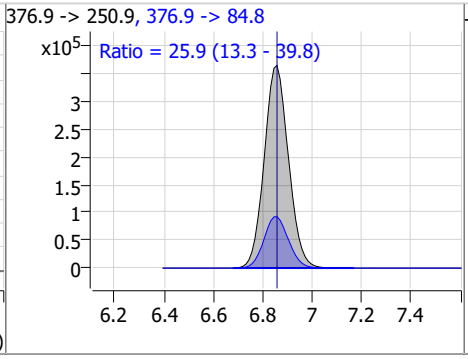


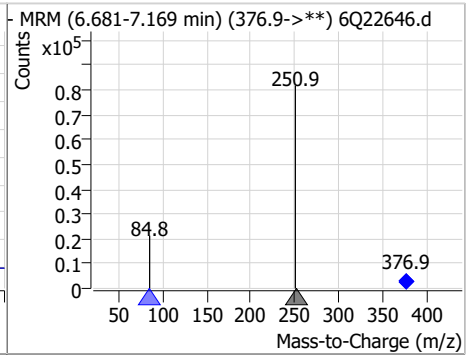




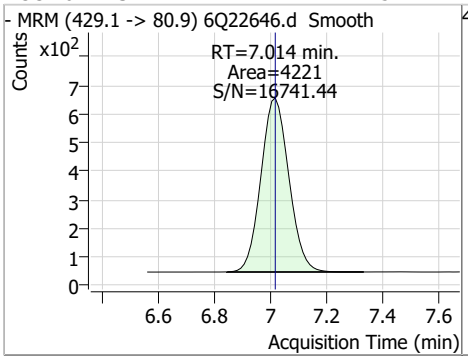
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	47.90	6.86	0.00	2479597	376.9 -> 84.8	25.9	13.3	39.8

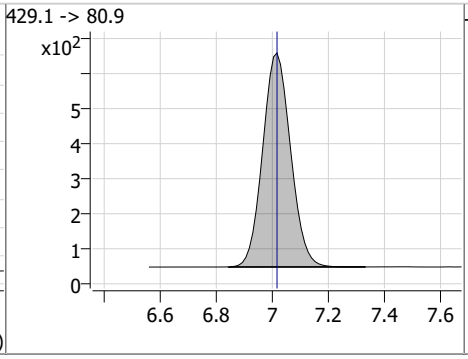


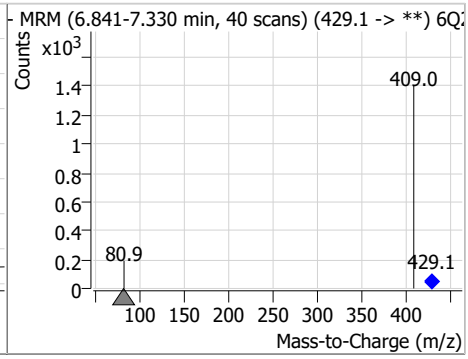




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.54	7.01	0.00	4221				

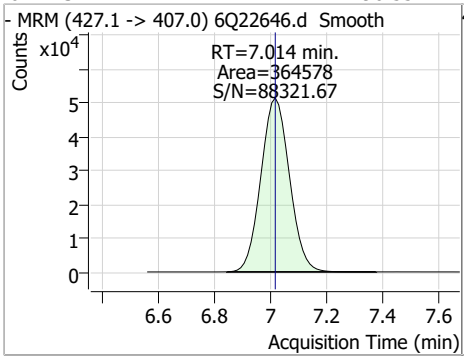


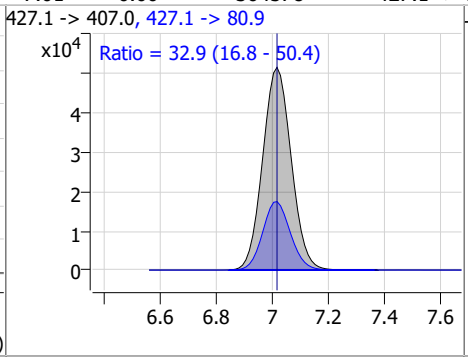


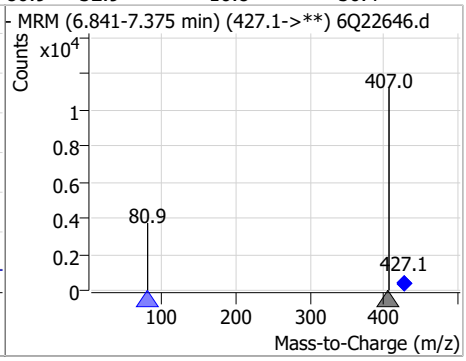


Perfluorinated Compounds by LC/MS/MS

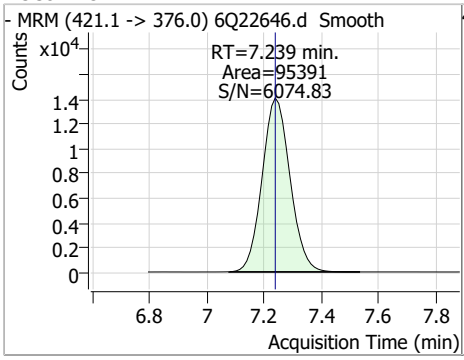
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	96.55	7.01	0.00	364578	427.1 -> 80.9	32.9	16.8	50.4

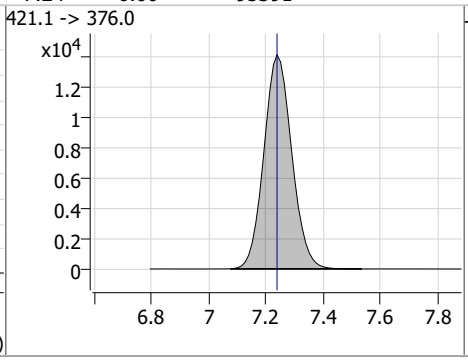


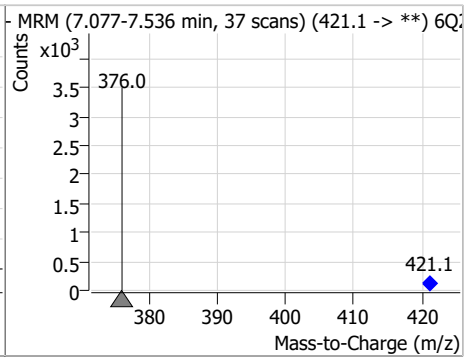




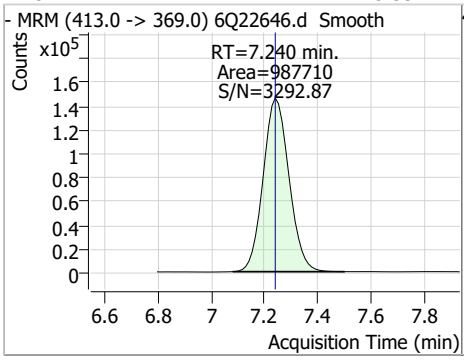
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	7.24	0.00	95391				

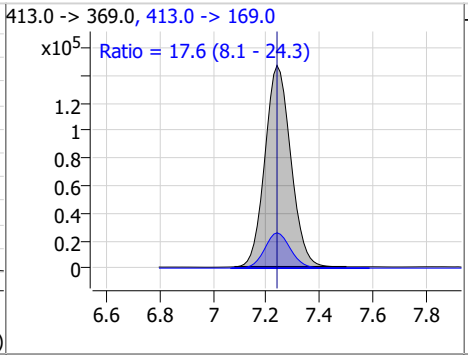


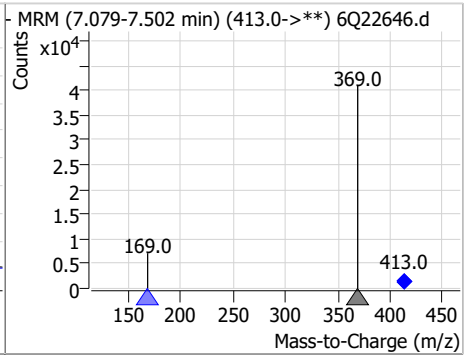




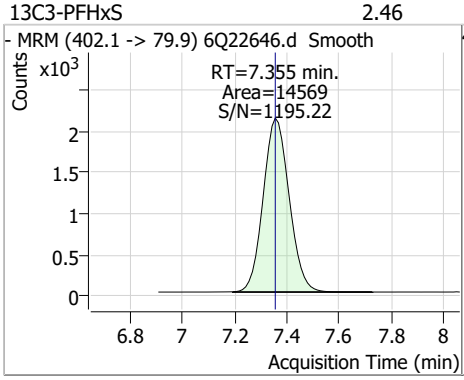
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	25.33	7.24	0.00	987710	413.0 -> 169.0	17.6	8.1	24.3

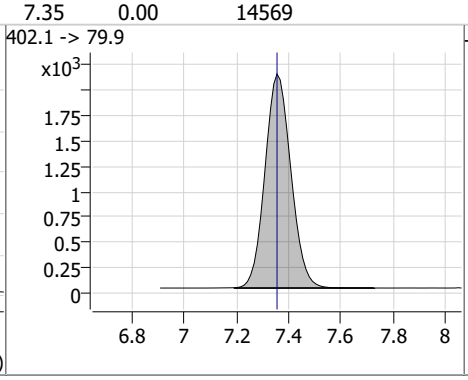


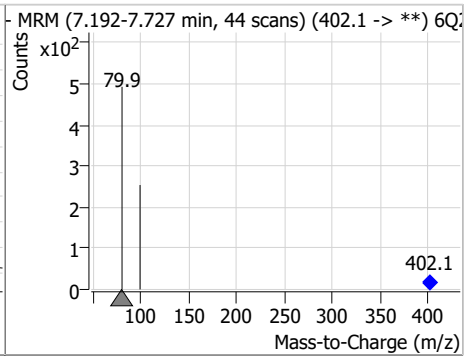




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.46	7.35	0.00	14569				

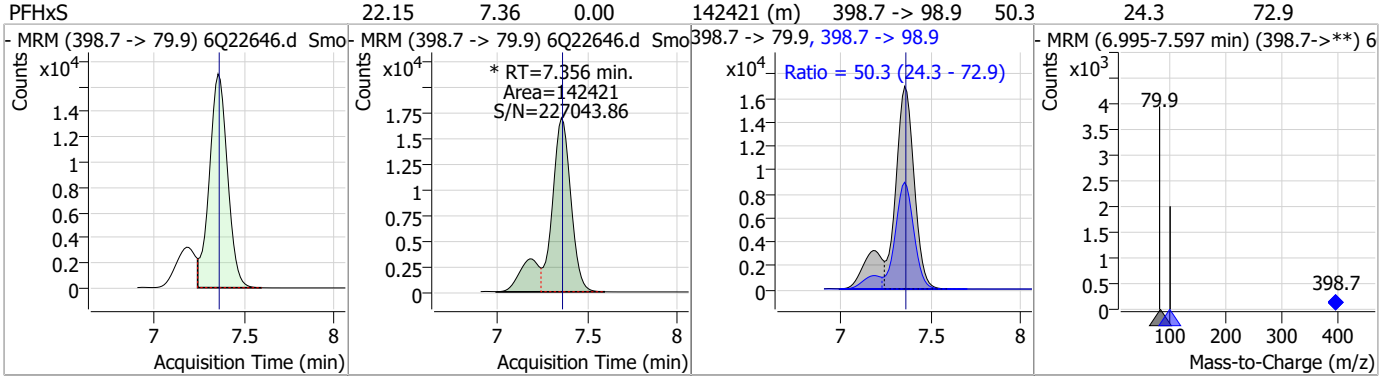




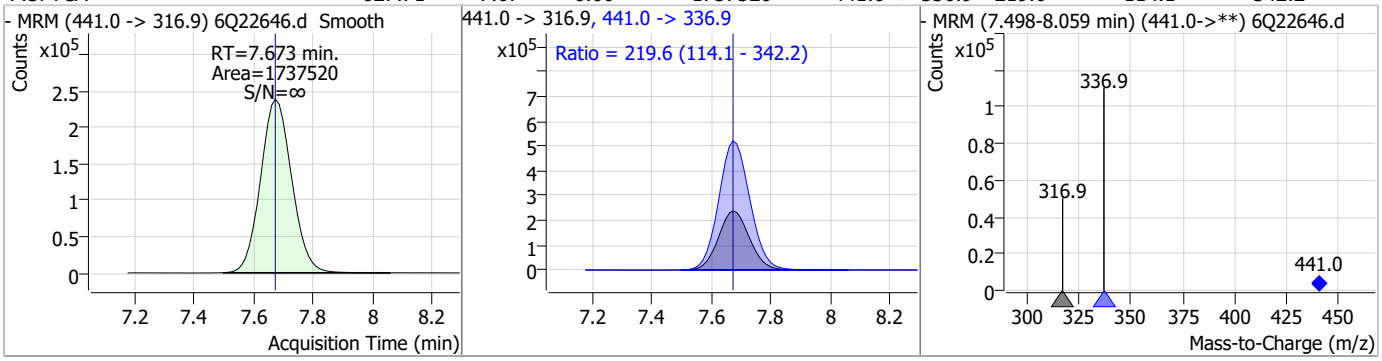


Perfluorinated Compounds by LC/MS/MS

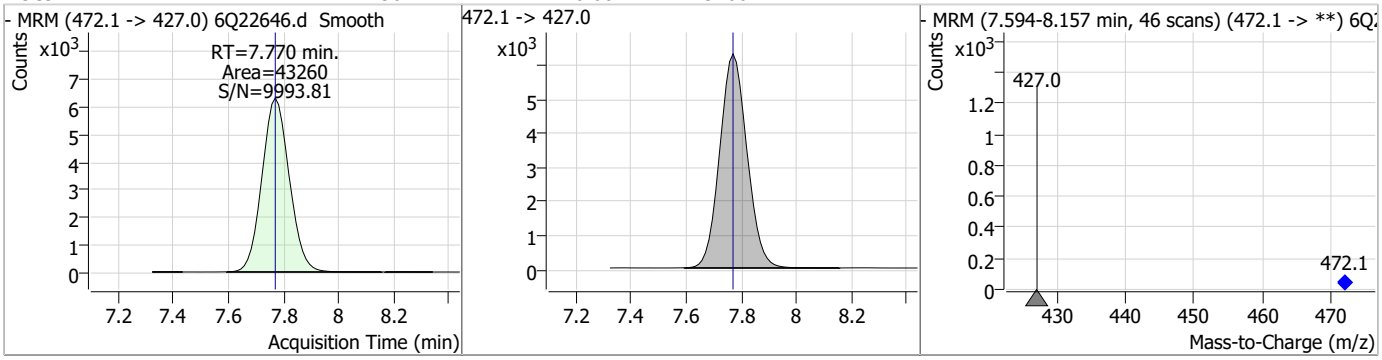
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.15	7.36	0.00	142421 (m)	398.7 -> 98.9	50.3	24.3	72.9



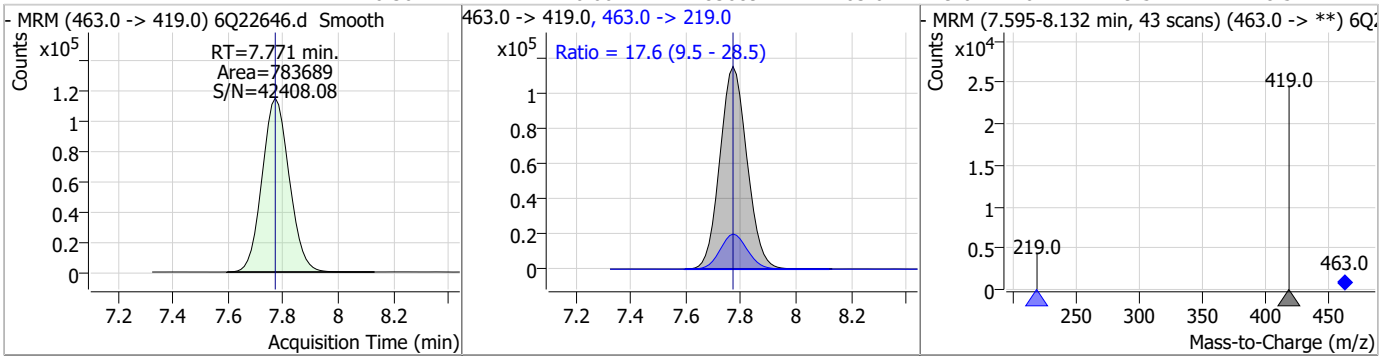
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	627.71	7.67	0.00	1737520	441.0 -> 336.9	219.6	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.77	0.00	43260				

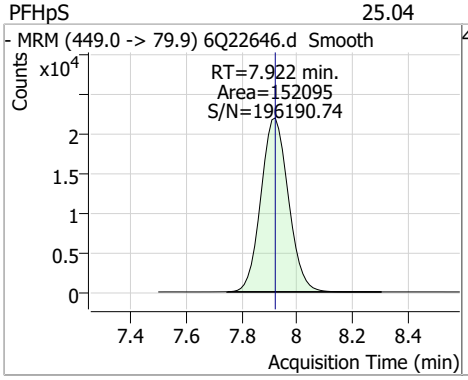


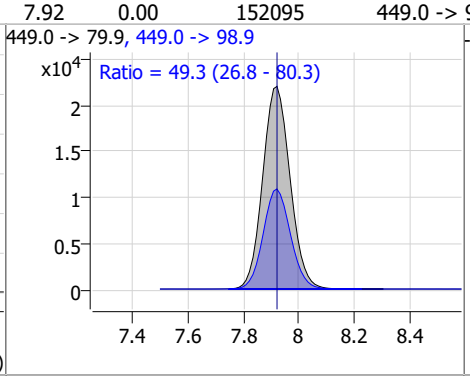
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	26.36	7.77	0.00	783689	463.0 -> 219.0	17.6	9.5	28.5

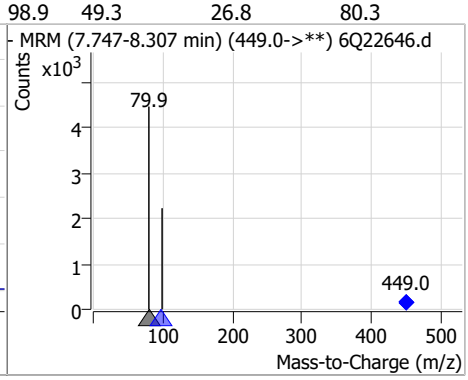


Perfluorinated Compounds by LC/MS/MS

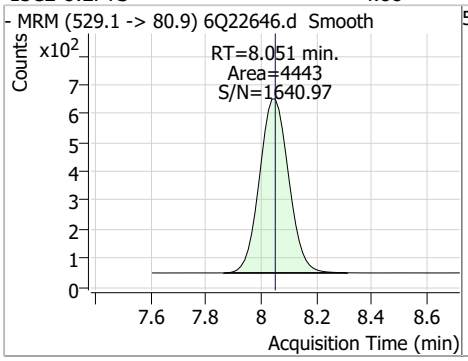
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	25.04	7.92	0.00	152095	449.0 -> 98.9	49.3	26.8	80.3

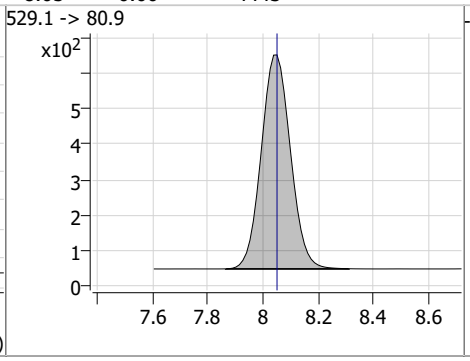


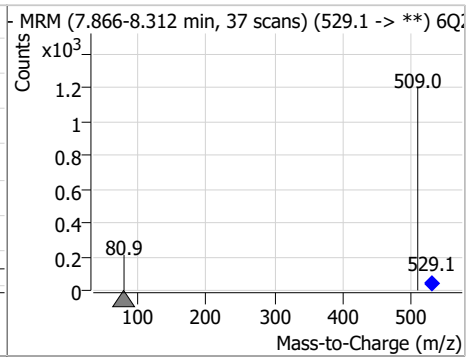




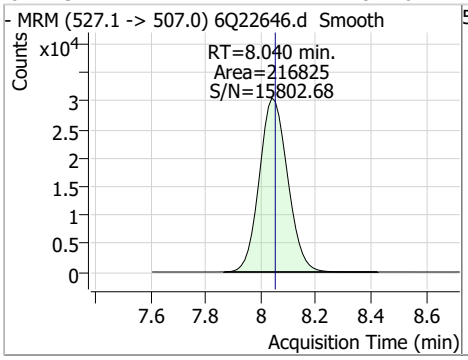
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.88	8.05	0.00	4443				

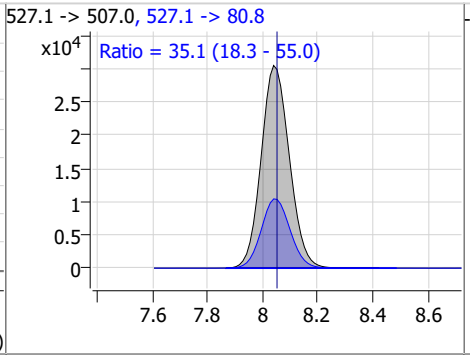


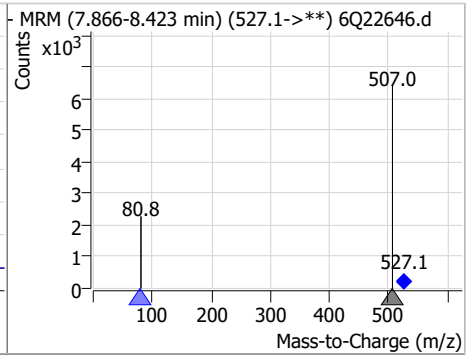




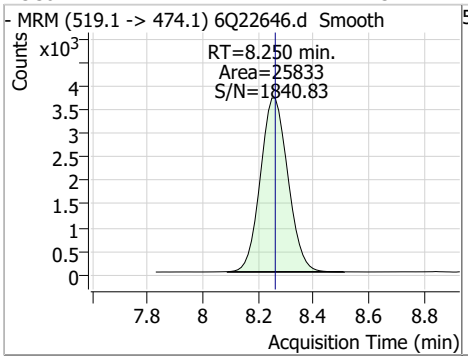
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	91.20	8.04	-0.01	216825	527.1 -> 80.8	35.1	18.3	55.0

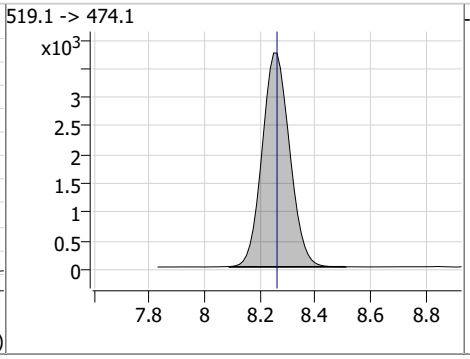


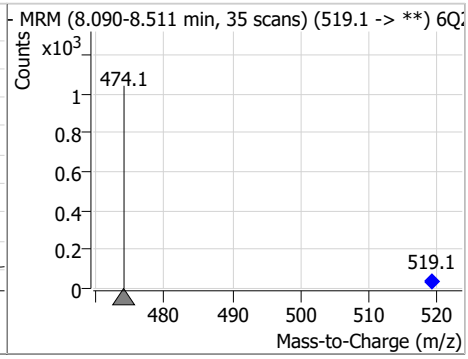




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.25	-0.01	25833				

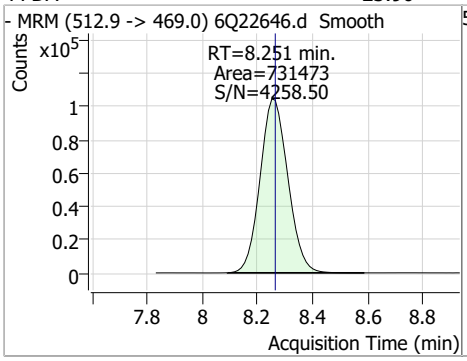


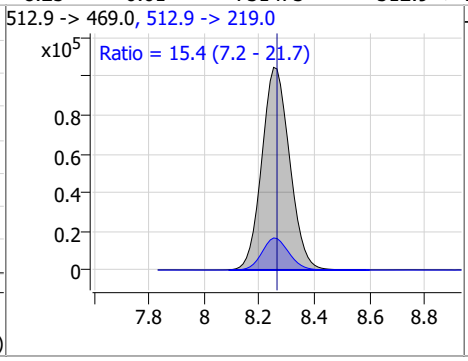


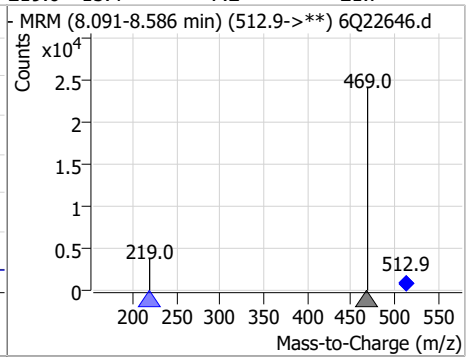


Perfluorinated Compounds by LC/MS/MS

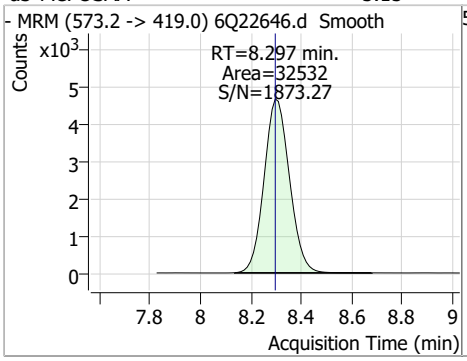
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	23.90	8.25	-0.01	731473	512.9 -> 219.0	15.4	7.2	21.7

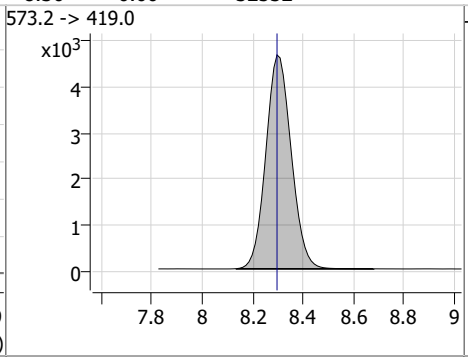


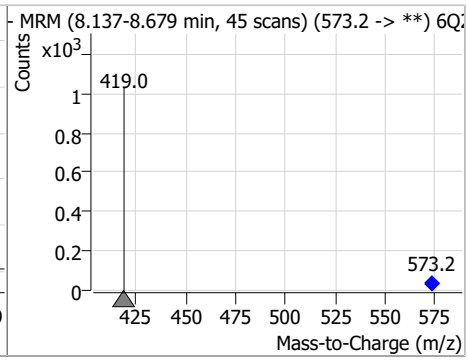




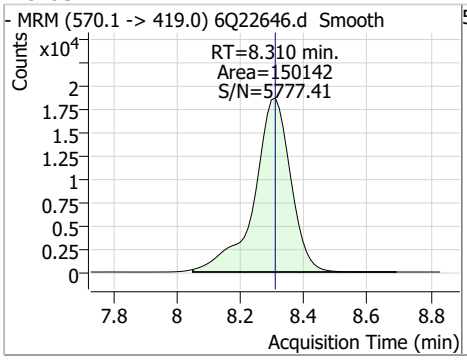
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.15	8.30	0.00	32532				

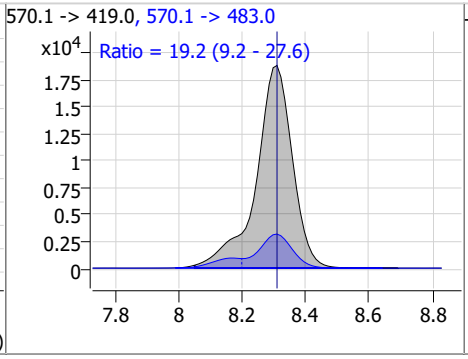


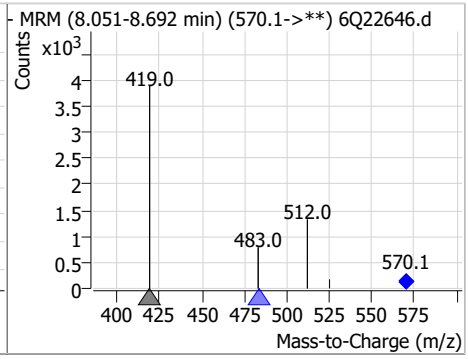




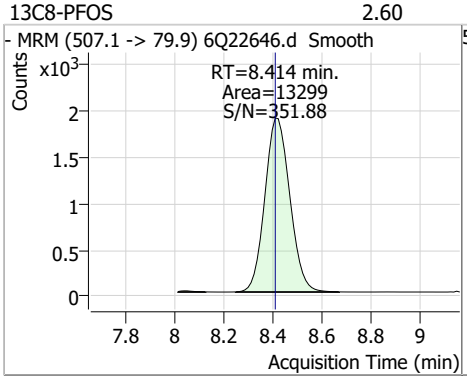
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.14	8.31	0.00	150142	570.1 -> 483.0	19.2	9.2	27.6

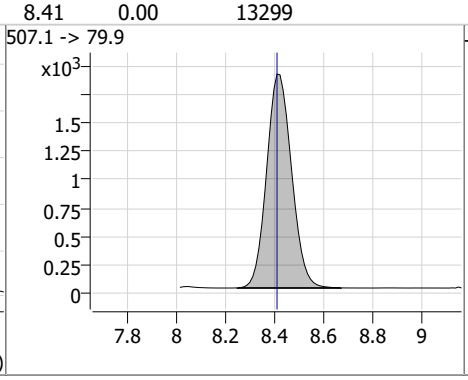


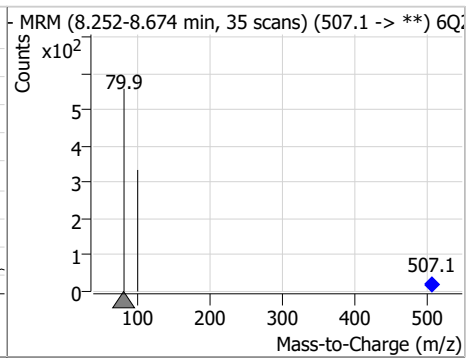




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.60	8.41	0.00	13299				

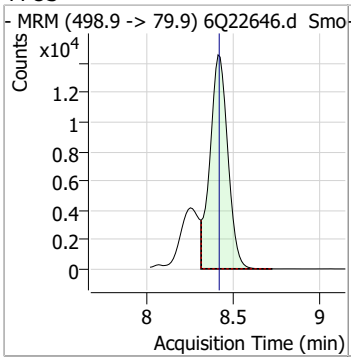


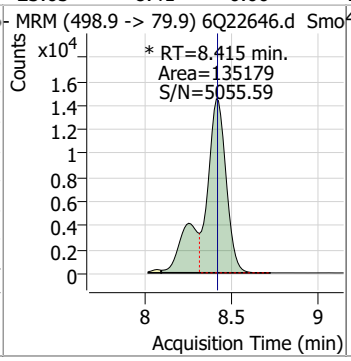


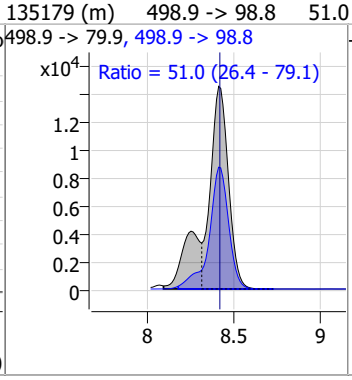


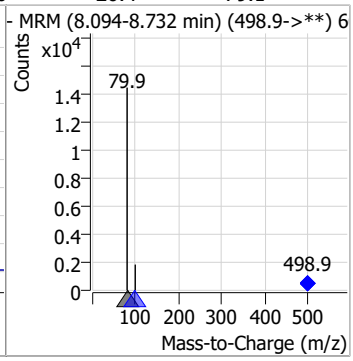
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.65	8.41	0.00	135179 (m)	498.9 -> 98.8	51.0	26.4	79.1

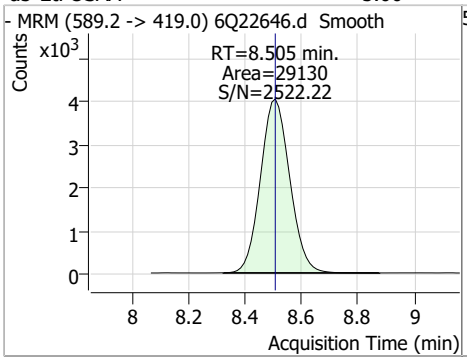


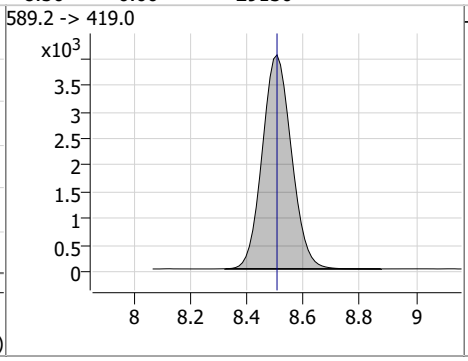


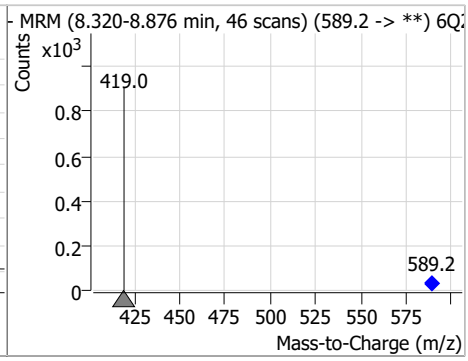




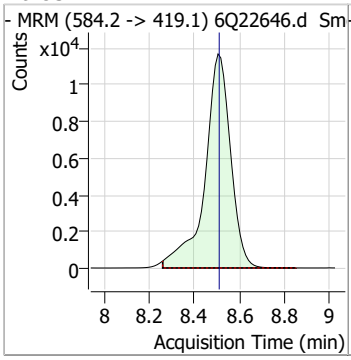
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.00	8.50	0.00	29130				

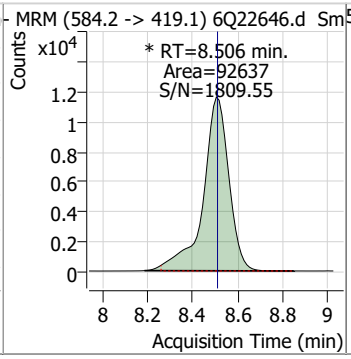


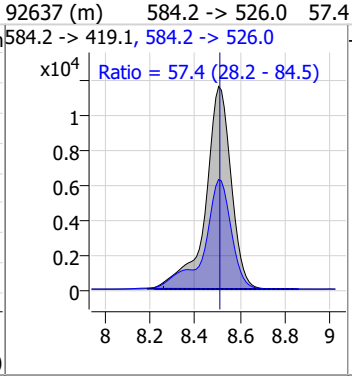


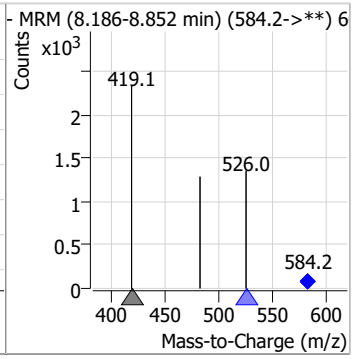


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	25.23	8.51	0.00	92637 (m)	584.2 -> 526.0	57.4	28.2	84.5

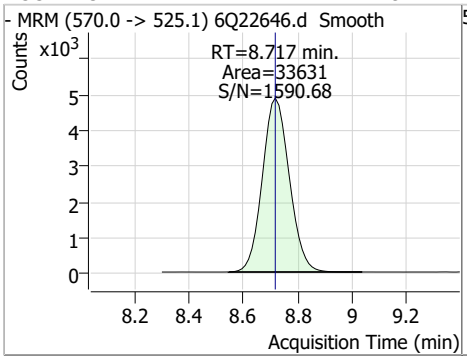


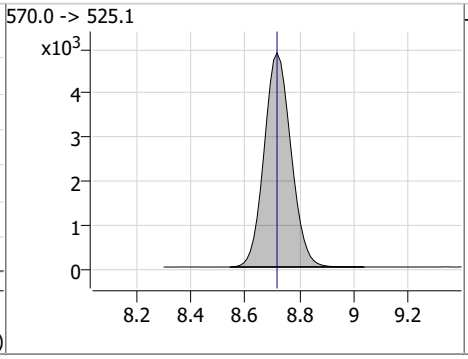


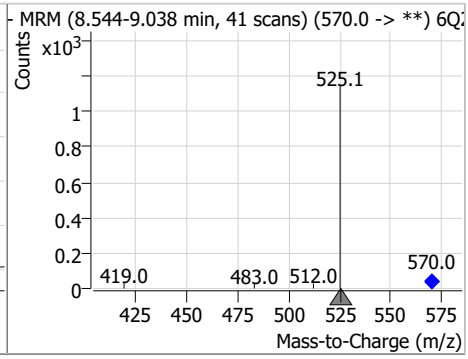




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.72	0.00	33631				

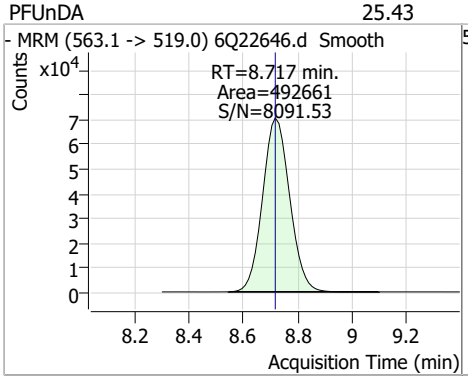


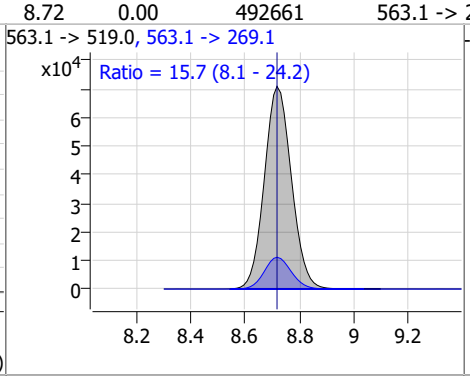


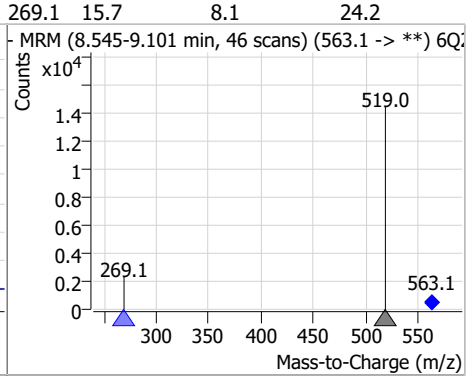


Perfluorinated Compounds by LC/MS/MS

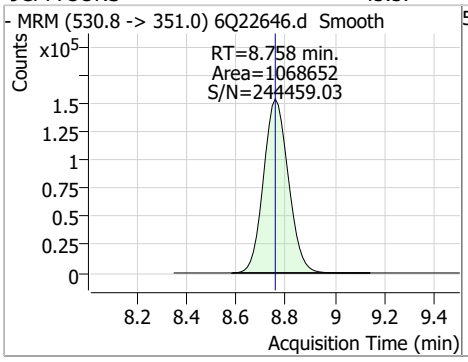
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	25.43	8.72	0.00	492661	563.1 -> 269.1	15.7	8.1	24.2

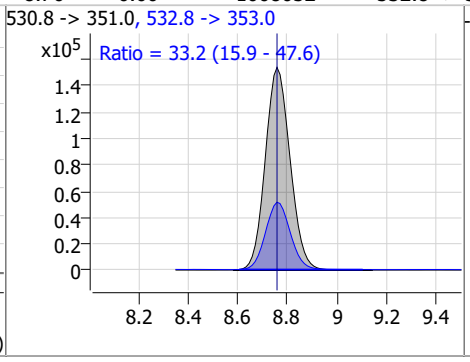


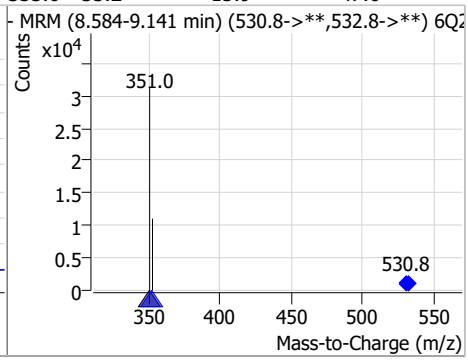




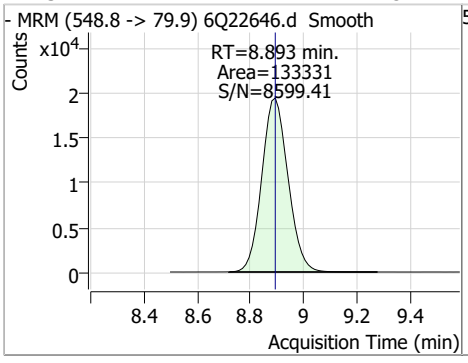
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	45.57	8.76	0.00	1068652	532.8 -> 353.0	33.2	15.9	47.6

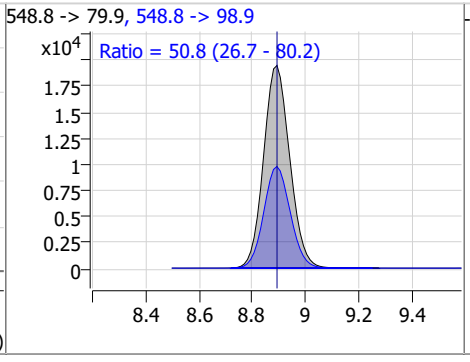


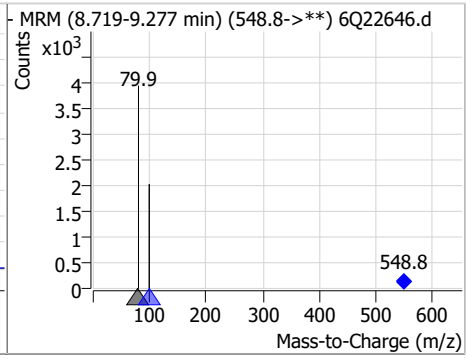




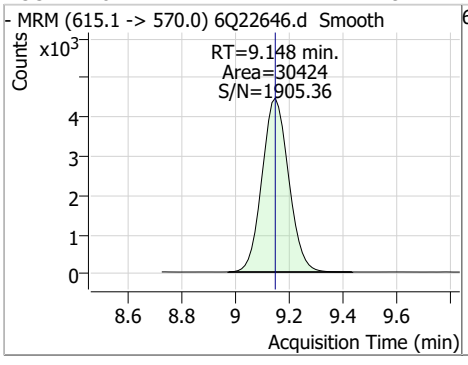
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.31	8.89	0.00	133331	548.8 -> 98.9	50.8	26.7	80.2

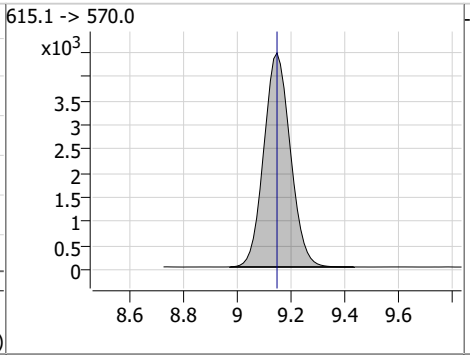


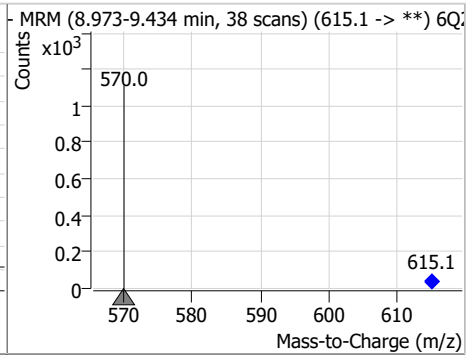




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	9.15	0.00	30424				

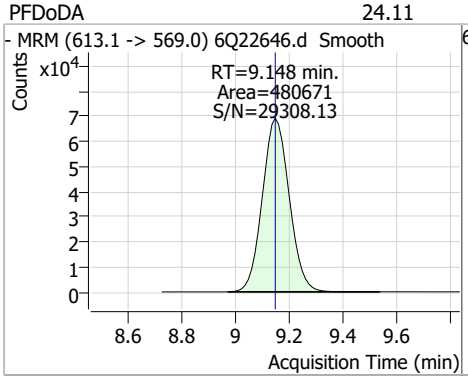


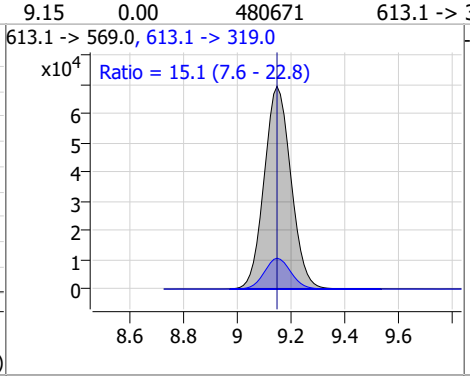


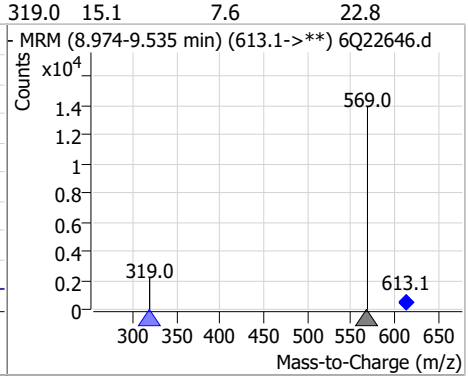


Perfluorinated Compounds by LC/MS/MS

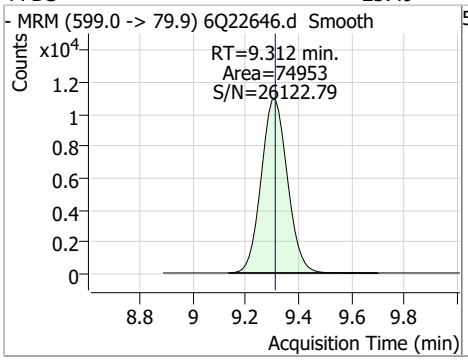
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	24.11	9.15	0.00	480671	613.1 -> 319.0	15.1	7.6	22.8

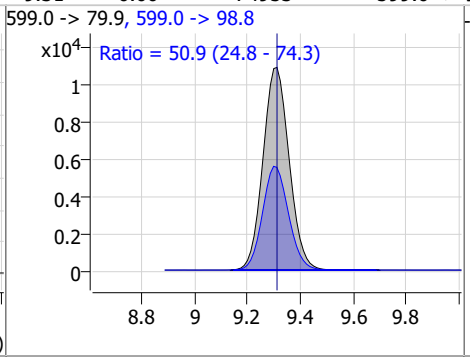


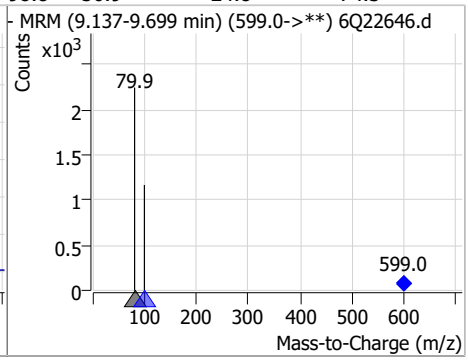




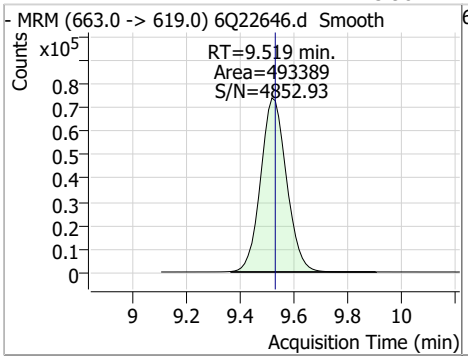
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	23.49	9.31	0.00	74953	599.0 -> 98.8	50.9	24.8	74.3

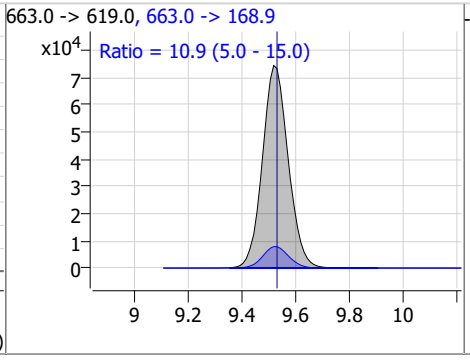


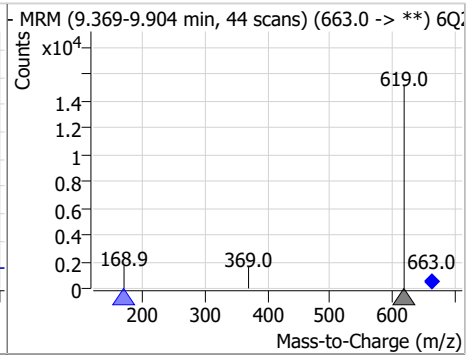




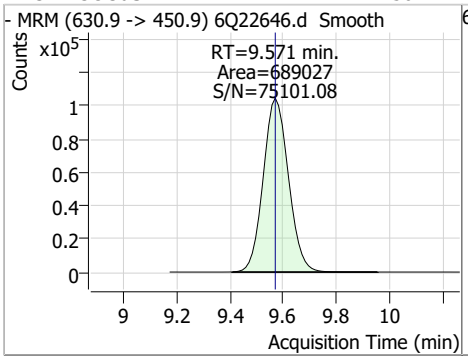
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.98	9.52	-0.01	493389	663.0 -> 168.9	10.9	5.0	15.0

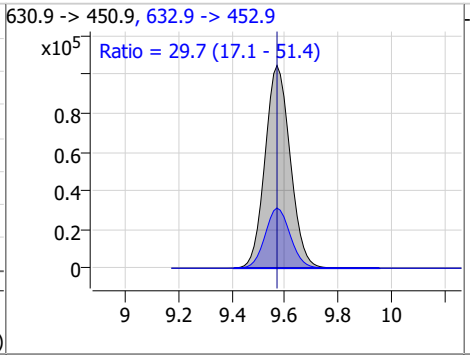


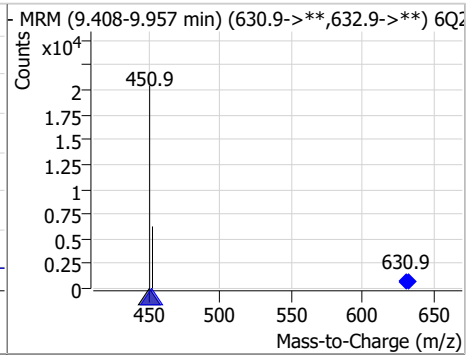




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	47.50	9.57	0.00	689027	632.9 -> 452.9	29.7	17.1	51.4

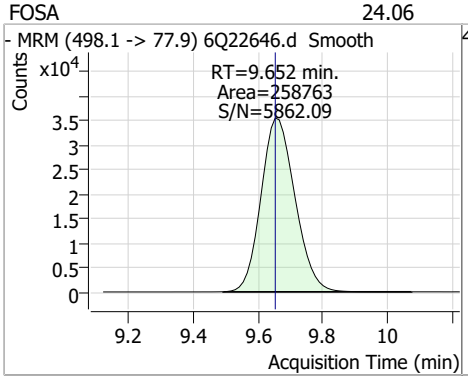


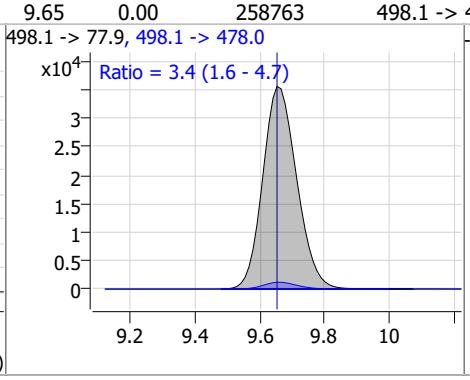


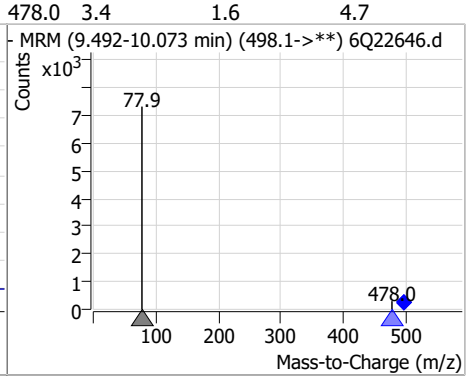


Perfluorinated Compounds by LC/MS/MS

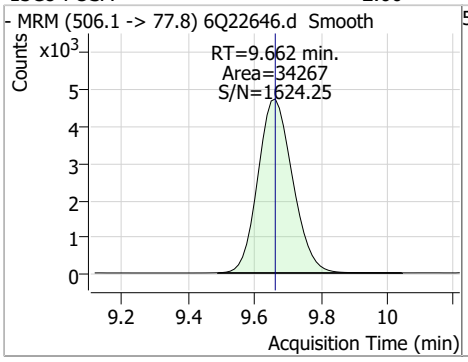
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	24.06	9.65	0.00	258763	498.1 -> 478.0	3.4	1.6	4.7

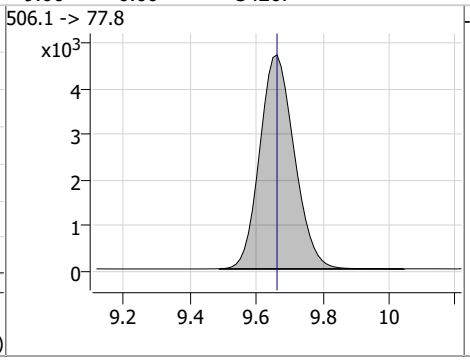


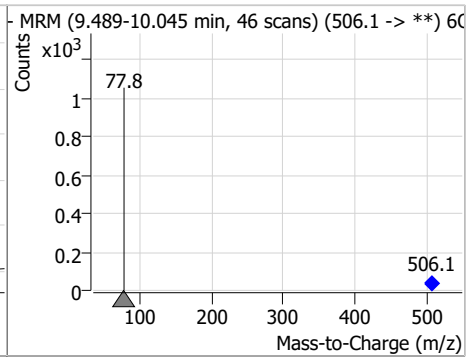




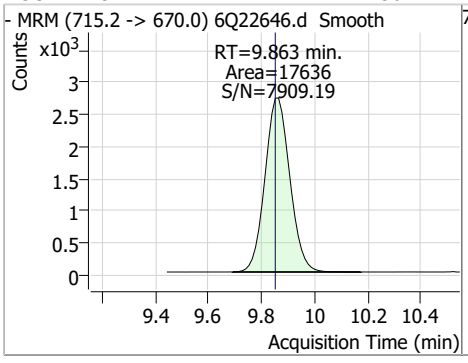
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.60	9.66	0.00	34267				

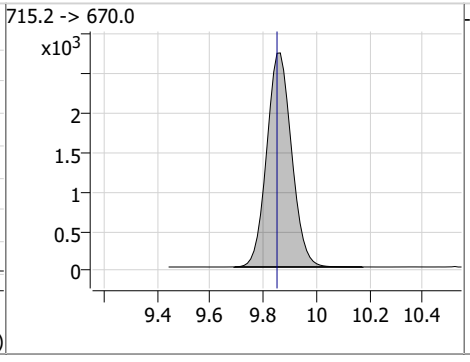


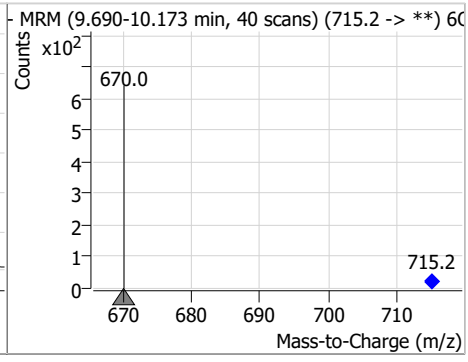




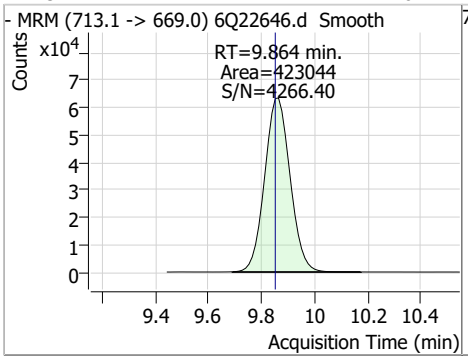
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	9.86	0.01	17636				

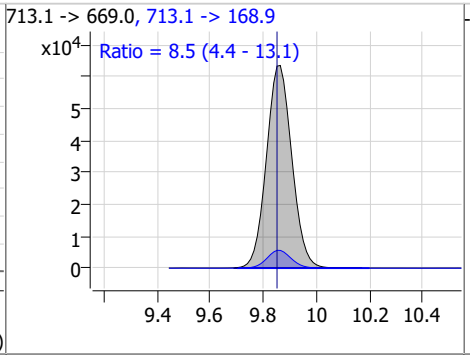


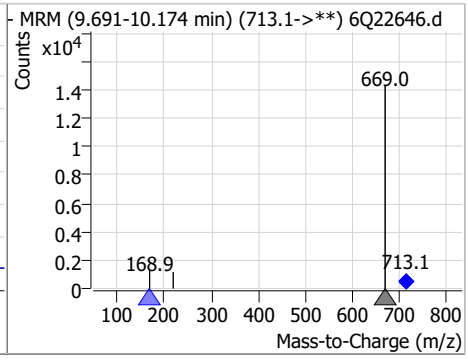




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	24.70	9.86	0.01	423044	713.1 -> 168.9	8.5	4.4	13.1

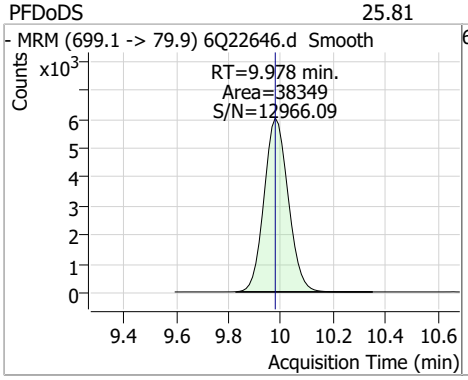


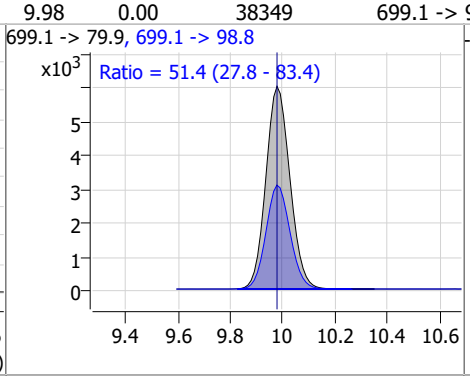


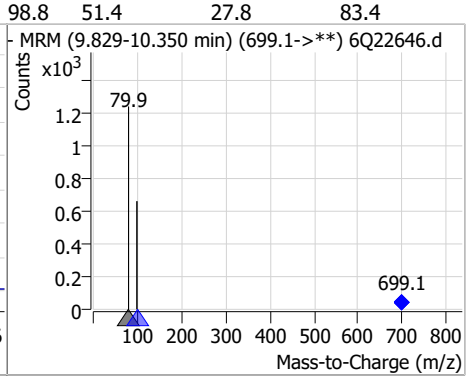


Perfluorinated Compounds by LC/MS/MS

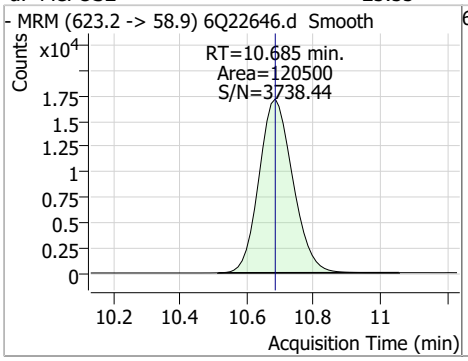
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	25.81	9.98	0.00	38349	699.1 -> 98.8	51.4	27.8	83.4

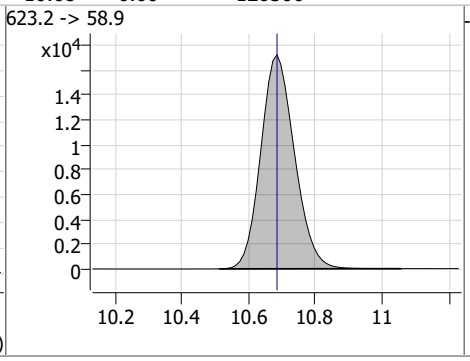


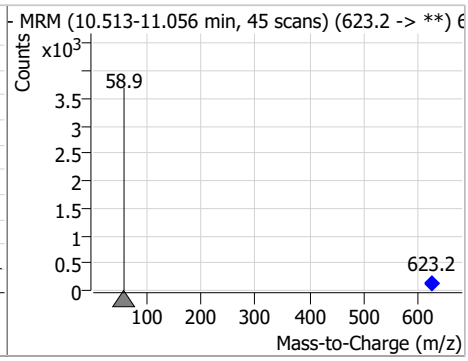




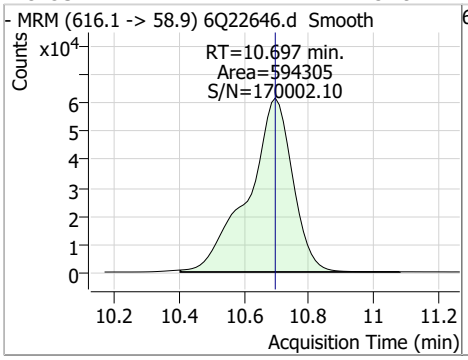
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.55	10.68	0.00	120500				

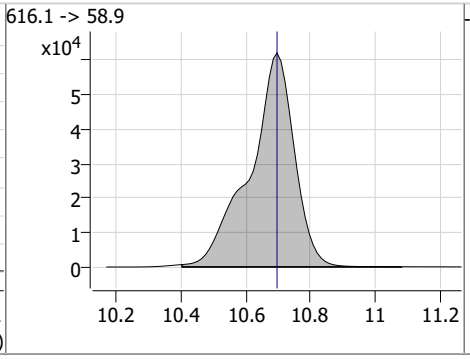


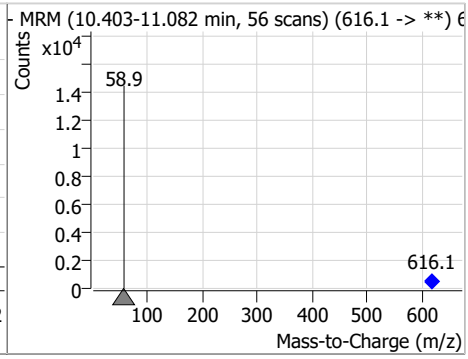




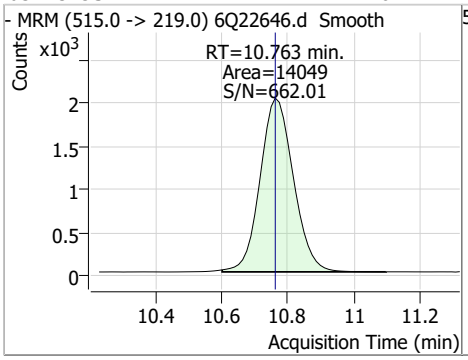
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	131.92	10.70	0.00	594305				

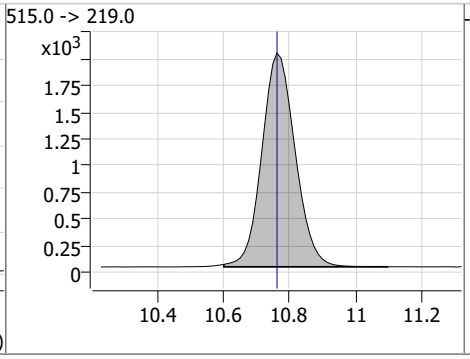


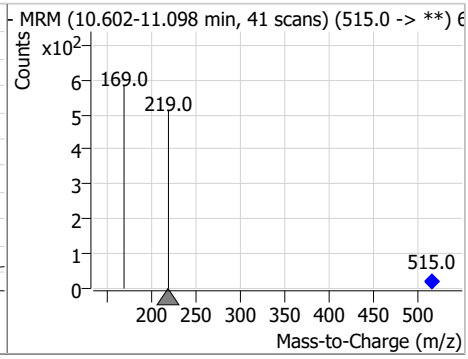




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.61	10.76	0.00	14049				

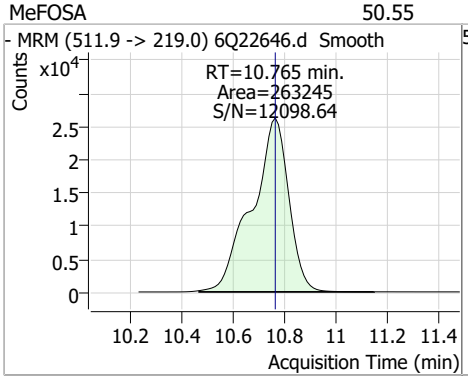


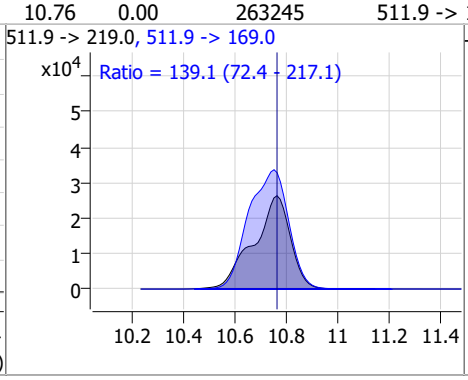


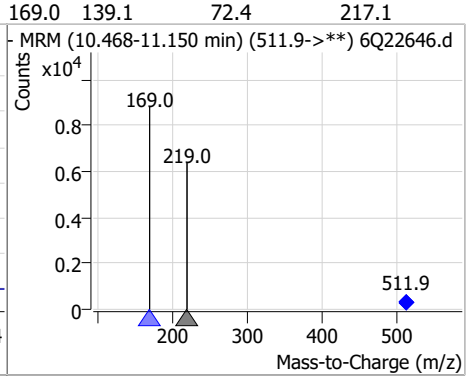


Perfluorinated Compounds by LC/MS/MS

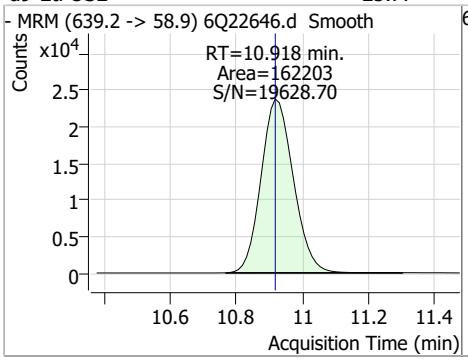
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	50.55	10.76	0.00	263245	511.9 -> 169.0	139.1	72.4	217.1

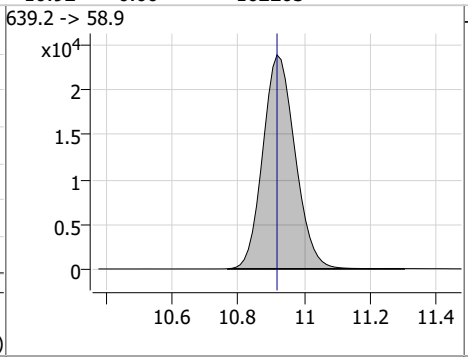


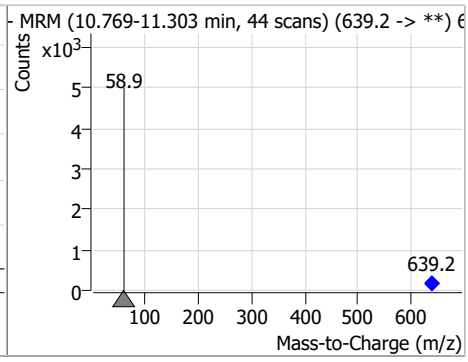




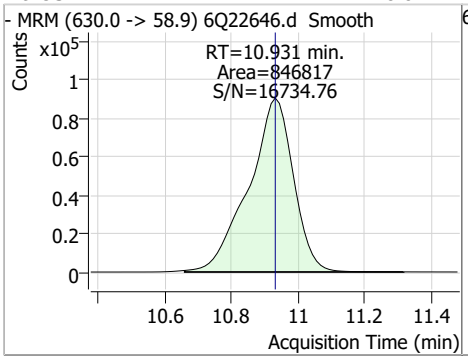
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.77	10.92	0.00	162203				

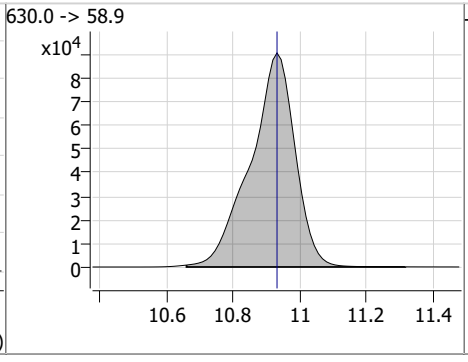


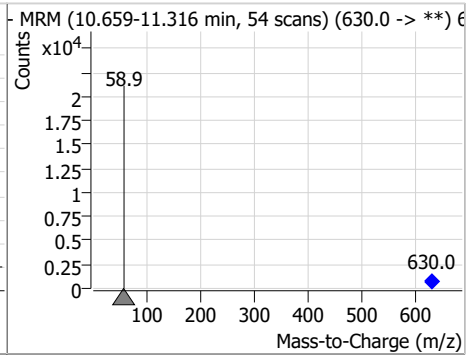




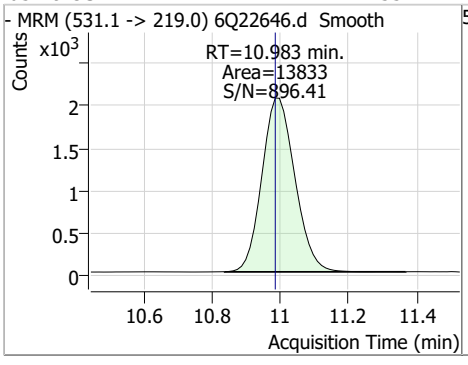
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	128.84	10.93	0.00	846817				

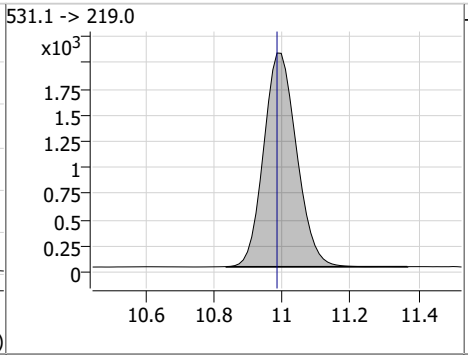


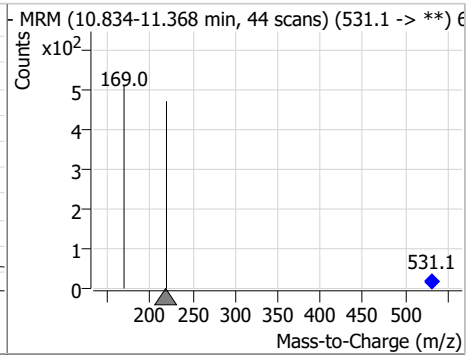




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	10.98	0.00	13833				

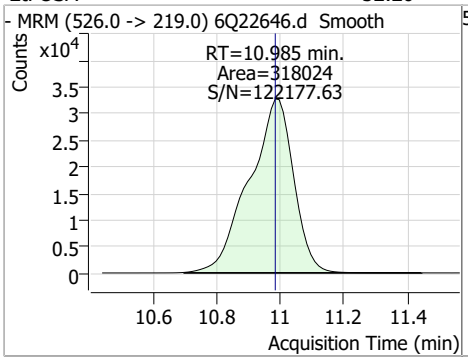


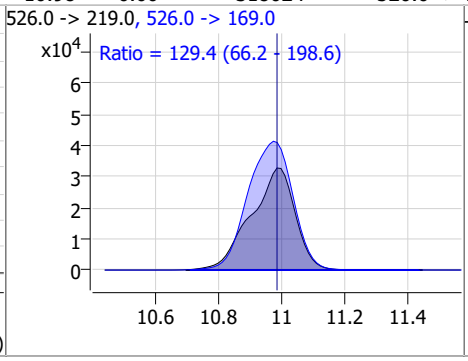


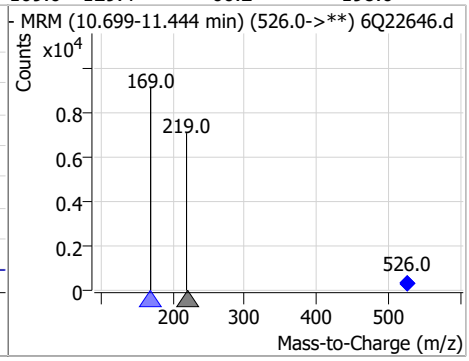


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	52.20	10.98	0.00	318024	526.0 -> 169.0	129.4	66.2	198.6







7.7.23

7

Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22646.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 15:03	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak
EtFOSAA	2991-50-6		8.51	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22647.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 3:18:11 PM
Sample Name : ic330-8
Vial : P1-A9
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.035	216.8 -> 171.9	169778	10.00	µg/L	0.025
M5-PFPeA	4.459	268.3 -> 223.0	58524	5.00	µg/L	0.012
M5-PFHxA	5.680	318.0 -> 273.0	65485	2.50	µg/L	0.012
M4-PFHpA	6.608	367.1 -> 322.0	63592	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	95973	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	44777	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	23927	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	33197	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	33030	1.25	µg/L	0.000
M2-PFTeDA	9.863	715.2 -> 670.0	18358	1.25	µg/L	0.012
M8-FOSA	9.662	506.1 -> 77.8	36016	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	22998	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15136	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13133	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	2822	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4065	5.00	µg/L	0.000
M2-8:2FTS	8.051	529.1 -> 80.9	3938	5.00	µg/L	0.000
M3-MeFOSAA	8.309	573.2 -> 419.0	31928	5.00	µg/L	0.012
M3-HFPO-DA	6.057	286.9 -> 168.9	42461	10.00	µg/L	0.012
M5-EtFOSAA	8.505	589.2 -> 419.0	27629	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	125835	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	158202	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14577	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15679	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19308	2.50	µg/L	-0.012
13C3-PFBA	3.026	216.0 -> 172.0	72566	5.00	µg/L	0.025
18O2-PFHxS	7.354	403.0 -> 83.9	11304	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	104017	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38741	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	56158	1.25	µg/L	0.000
13C2-PFHxA	5.681	315.1 -> 270.0	64371	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	2822	4.18	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.6%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4065	4.17	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.4%		
13C2-8:2FTS	8.051	529.1 -> 80.9	3938	4.13	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
13C2-PFDoDA	9.148	615.1 -> 570.0	33030	1.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C2-PFTeDA	9.863	715.2 -> 670.0	18358	1.22	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFBS	5.610	302.1 -> 79.9	22998	2.40	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFHxS	7.355	402.1 -> 79.9	15136	2.44	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 = 97.4%	
13C4-PFBA	3.035	216.8 -> 171.9	169778	9.91 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.608	367.1 -> 322.0	63592	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFHxA	5.680	318.0 -> 273.0	65485	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.459	268.3 -> 223.0	58524	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C6-PFDA	8.250	519.1 -> 474.1	23927	1.09 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.5%	
13C7-PFUnDA	8.717	570.0 -> 525.1	33197	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.8%	
13C8-FOSA	9.662	506.1 -> 77.8	36016	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C8-PFOA	7.239	421.1 -> 376.0	95973	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOS	8.414	507.1 -> 79.9	13133	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C9-PFNA	7.770	472.1 -> 427.0	44777	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSAA	8.309	573.2 -> 419.0	31928	4.57 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C3-HFPO-DA	6.057	286.9 -> 168.9	42461	10.19 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	15679	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
d5-EtFOSAA	8.505	589.2 -> 419.0	27629	4.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.7%	
d7-MeFOSE	10.685	623.2 -> 58.9	125835	24.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	158202	22.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
d5-EtFOSA	10.983	531.1 -> 219.0	14577	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
Target Compounds					**QValue**
4:2FTS	5.343	327.1 -> 307.0	704809	193.04 µg/L	100
		327.1 -> 80.9	277559		
6:2FTS	7.014	427.1 -> 407.0	748568	205.88 µg/L	97
		427.1 -> 80.9	236682		
8:2FTS	8.040	527.1 -> 507.0	448437	212.78 µg/L	98
		527.1 -> 80.8	159991		
EtFOSAA	8.506	584.2 -> 419.1	216832	62.28 µg/L	98
		584.2 -> 526.0	119617		
FOSA	9.665	498.1 -> 77.9	663760	58.72 µg/L	99
		498.1 -> 478.0	20040		
MeFOSAA	8.310	570.1 -> 419.0	348103	57.02 µg/L	95
		570.1 -> 483.0	71604		
PFBA	3.031	212.8 -> 168.9	1237734	233.33 µg/L	100
PFBS	5.623	298.7 -> 79.9	385128	51.25 µg/L	99
		298.7 -> 98.8	146910		
PFDA	8.264	512.9 -> 469.0	1792716	63.23 µg/L	99
		512.9 -> 219.0	254213		
PFDoDA	9.148	613.1 -> 569.0	1189404	54.96 µg/L	99
		613.1 -> 319.0	175957		
PFDS	9.312	599.0 -> 79.9	187859	59.61 µg/L	98

Perfluorinated Compounds by LC/MS/MS

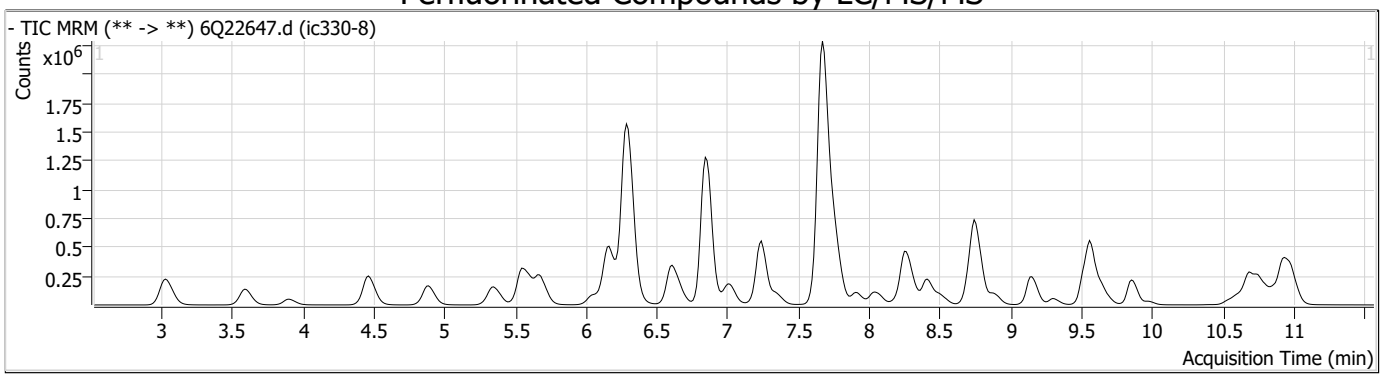
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	90610				
PFHpA	6.609	363.1 -> 319.0	1470125	58.62	µg/L		99
		363.1 -> 169.0	237104				
PFHpS	7.922	449.0 -> 79.9	358644	59.79	µg/L		96
		449.0 -> 98.9	181661				
PFHxA	5.682	313.0 -> 269.0	1114902	58.20	µg/L		100
		313.0 -> 118.9	59825				
PFHxS	7.356	398.7 -> 79.9	352936	52.85	µg/L	m	100
		398.7 -> 98.9	170697				
PFNA	7.771	463.0 -> 419.0	1875698	60.95	µg/L		98
		463.0 -> 219.0	343371				
PFNS	8.893	548.8 -> 79.9	323849	59.78	µg/L		96
		548.8 -> 98.9	164391				
PFOA	7.240	413.0 -> 369.0	2368474	60.38	µg/L		98
		413.0 -> 169.0	400078				
PFOS	8.415	498.9 -> 79.9	320379	56.75	µg/L	m	96
		498.9 -> 98.8	160896				
PFPeA	4.461	263.0 -> 219.0	1524836	118.28	µg/L		100
PFPeS	6.672	349.1 -> 79.9	342793	55.32	µg/L		98
		349.1 -> 98.9	161826				
PFTeDA	9.852	713.1 -> 669.0	961976	53.95	µg/L		100
		713.1 -> 168.9	83435				
PFTrDA	9.519	663.0 -> 619.0	1156092	51.76	µg/L		99
		663.0 -> 168.9	119895				
PFUnDA	8.717	563.1 -> 519.0	1135693	59.39	µg/L		99
		563.1 -> 269.1	189358				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	1589748	104.91	µg/L		94
		632.9 -> 452.9	492451				
9Cl-PF3ONS	8.758	530.8 -> 351.0	2444841	99.81	µg/L		97
		532.8 -> 353.0	819569				
ADONA	6.858	376.9 -> 250.9	5779546	106.87	µg/L		99
		376.9 -> 84.8	1557435				
HFPO-DA	6.058	284.9 -> 168.9	393580	108.93	µg/L		99
		284.9 -> 184.9	43918				
3:3FTCA	3.896	241.0 -> 177.0	278321	331.82	µg/L		99
		241.0 -> 117.0	37012				
5:3FTCA	6.298	341.0 -> 237.1	5601639	1421.81	µg/L		95
		341.0 -> 217.0	4220906				
7:3FTCA	7.673	441.0 -> 316.9	4246529	1457.31	µg/L		98
		441.0 -> 336.9	9521024				
EtFOSA	10.985	526.0 -> 219.0	748999	116.66	µg/L		99
		526.0 -> 169.0	998939				
EtFOSE	10.931	630.0 -> 58.9	1994540	311.13	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	623456	107.29	µg/L		95
		511.9 -> 169.0	866716				
MeFOSE	10.697	616.1 -> 58.9	1386658	294.76	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	86341	58.84	µg/L		98
		699.1 -> 98.8	46617				
NFDHA	5.564	295.0 -> 201.0	274311	112.60	µg/L		94
		295.0 -> 84.9	69807				
PFMBA	4.882	279.0 -> 85.1	1072164	117.58	µg/L		100
PFMPA	3.588	229.0 -> 84.9	864141	118.41	µg/L		100
PFEESA	6.163	314.8 -> 134.9	2693866	104.69	µg/L		100
		314.8 -> 82.9	90446				

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

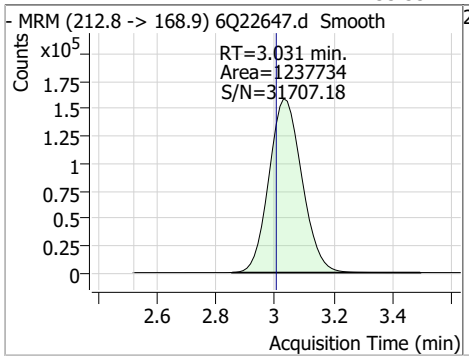
Perfluorinated Compounds by LC/MS/MS

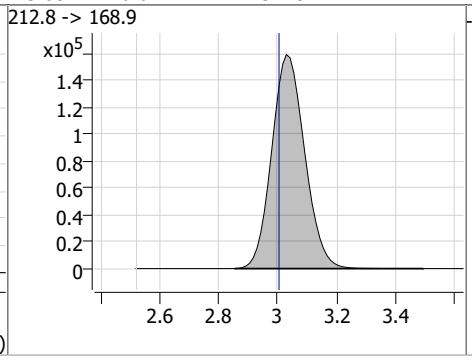
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

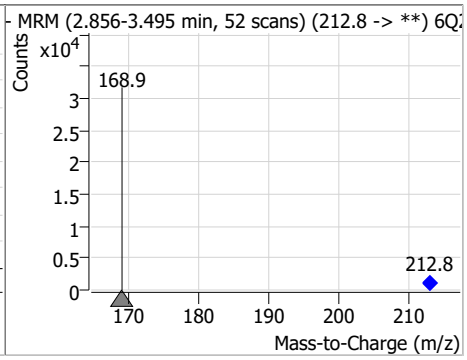
Perfluorinated Compounds by LC/MS/MS



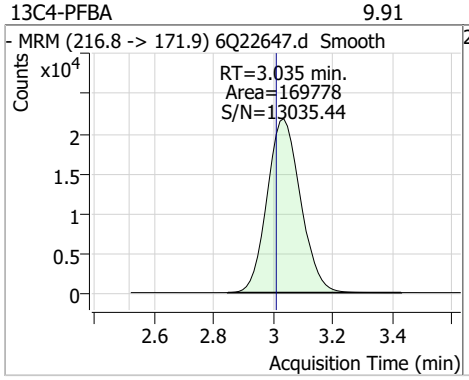
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	233.33	3.03	0.02	1237734				

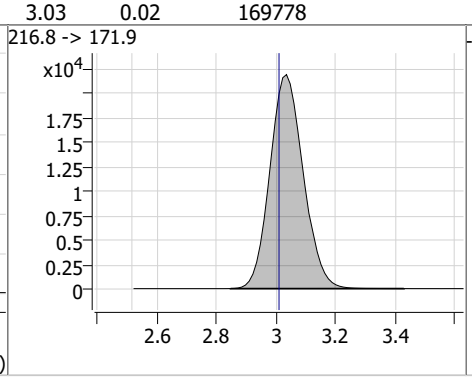


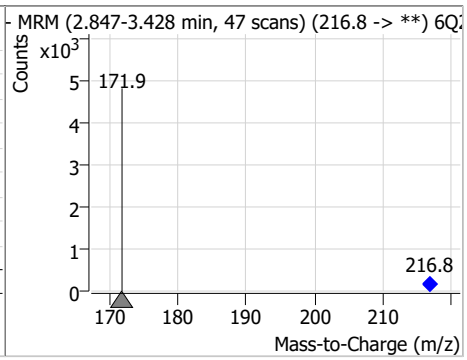




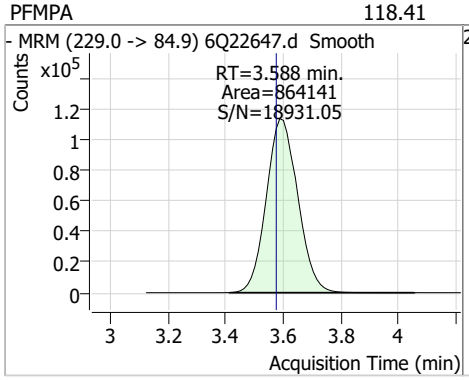
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.91	3.03	0.02	169778				

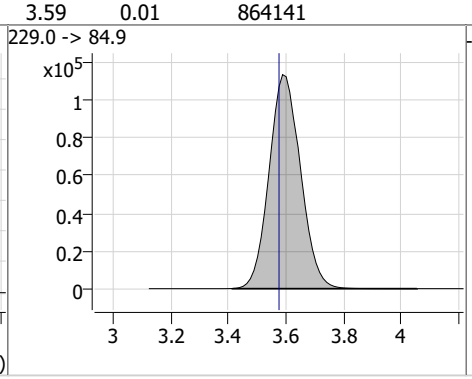


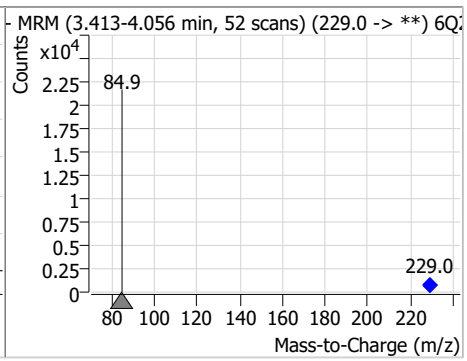




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	118.41	3.59	0.01	864141				

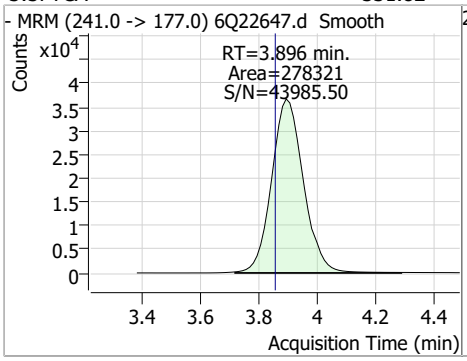


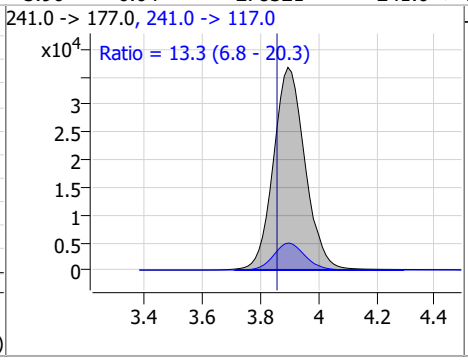


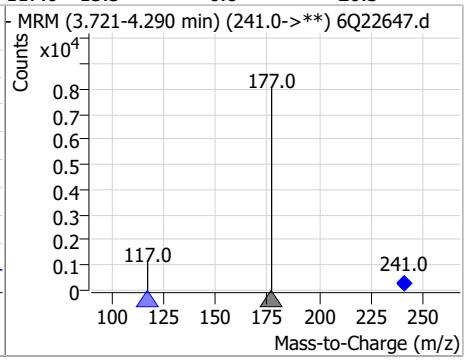


Perfluorinated Compounds by LC/MS/MS

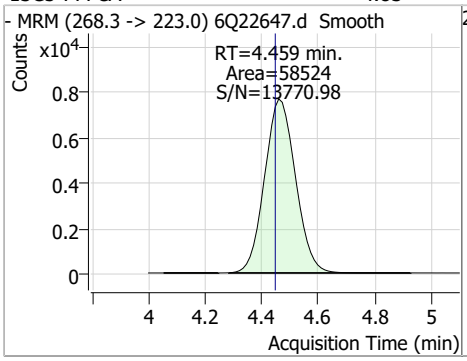
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	331.82	3.90	0.04	278321	241.0 -> 117.0	13.3	6.8	20.3

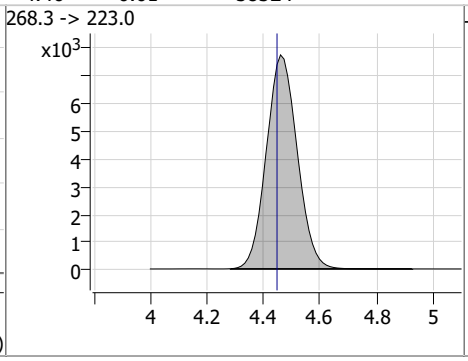


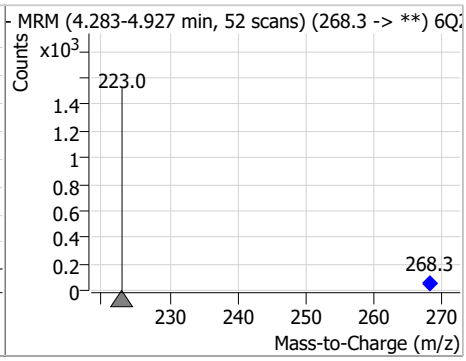




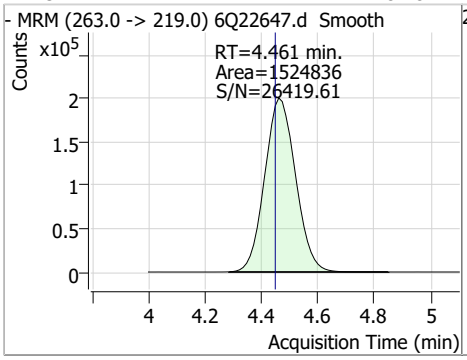
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.83	4.46	0.01	58524				

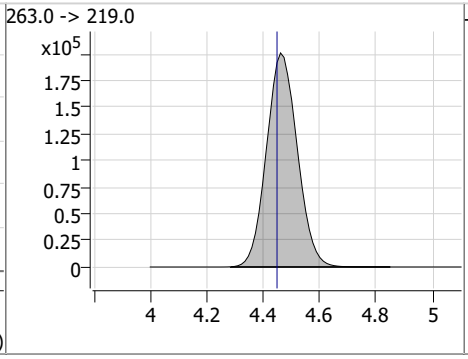


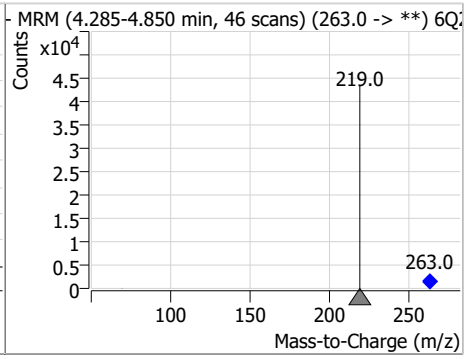




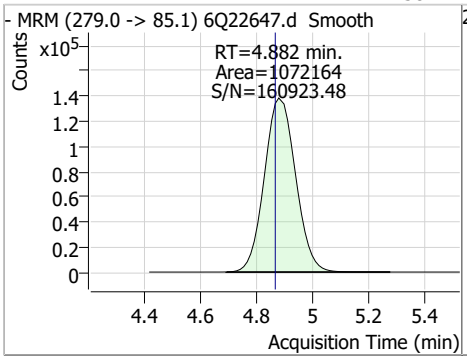
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	118.28	4.46	0.01	1524836				

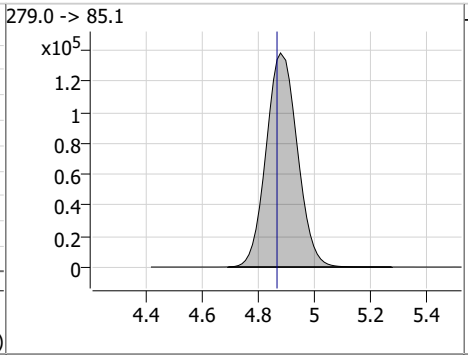


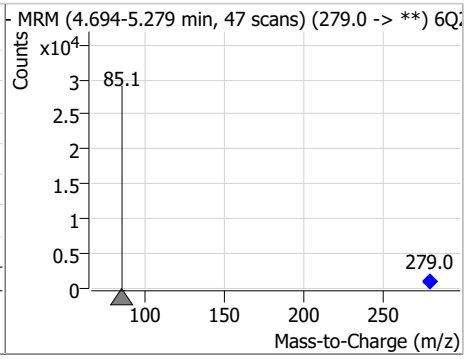




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	117.58	4.88	0.01	1072164				

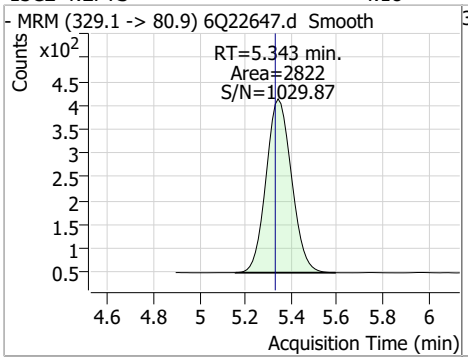


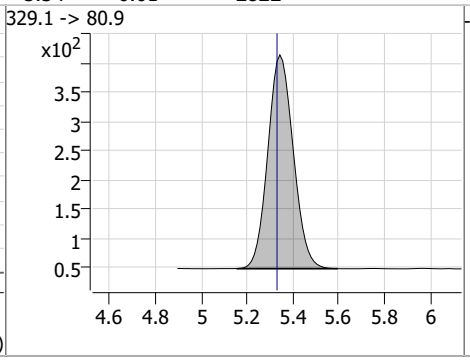


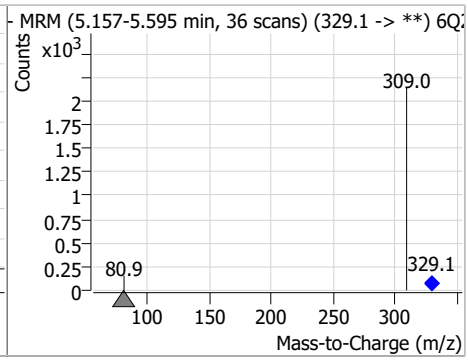


Perfluorinated Compounds by LC/MS/MS

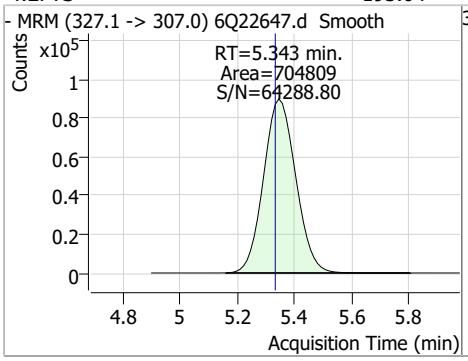
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.18	5.34	0.01	2822				

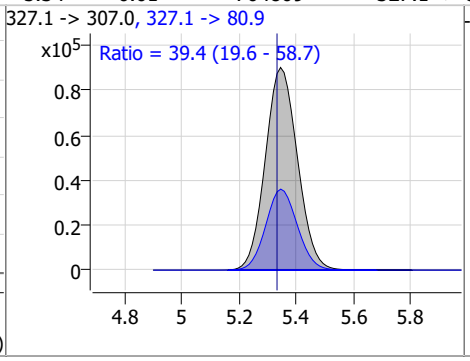


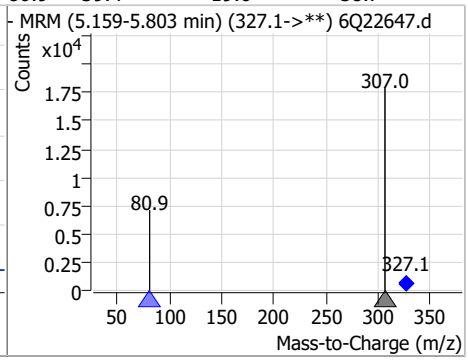




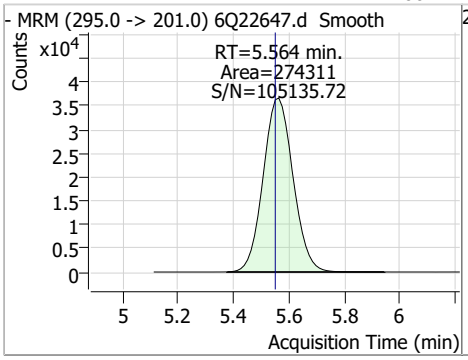
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	193.04	5.34	0.01	704809	327.1 -> 80.9	39.4	19.6	58.7

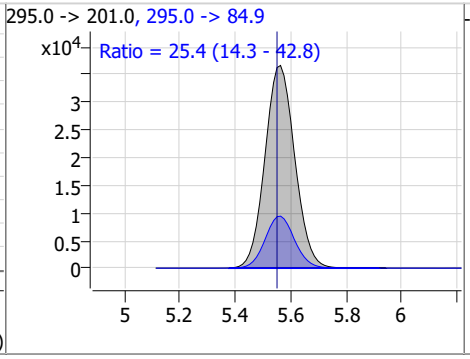


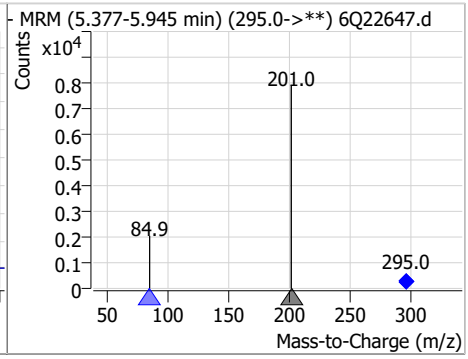




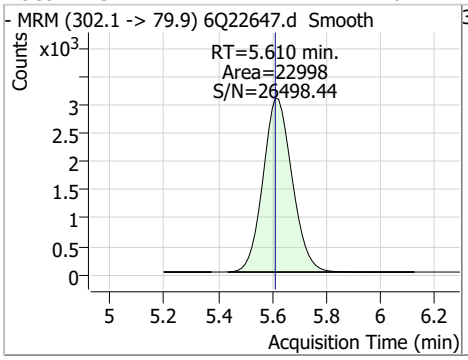
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	112.60	5.56	0.01	274311	295.0 -> 84.9	25.4	14.3	42.8

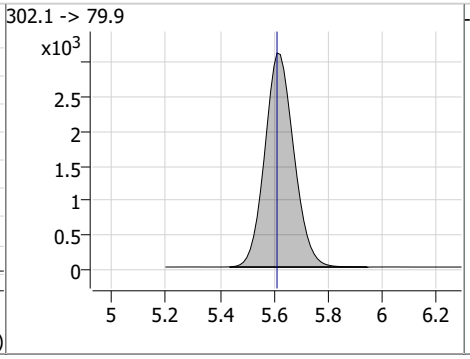


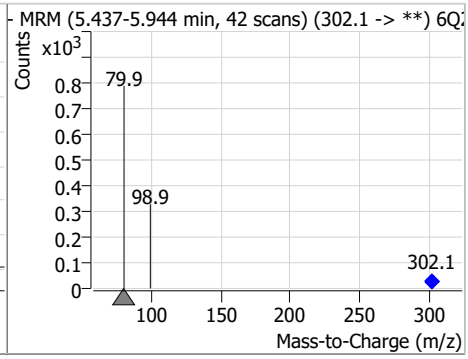




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.40	5.61	0.00	22998				

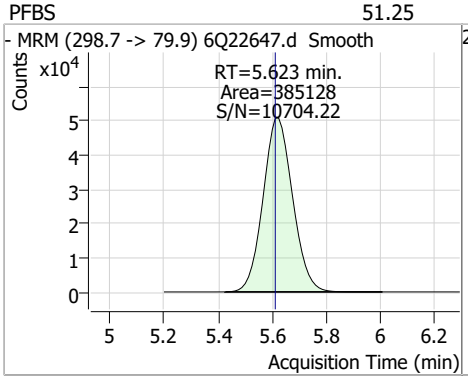


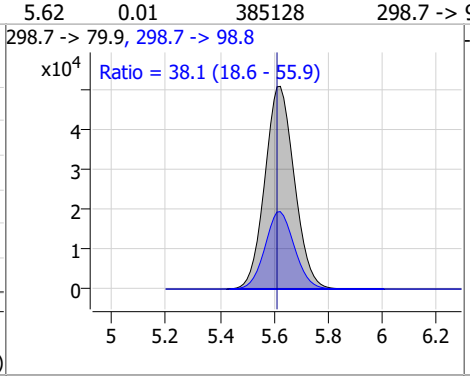


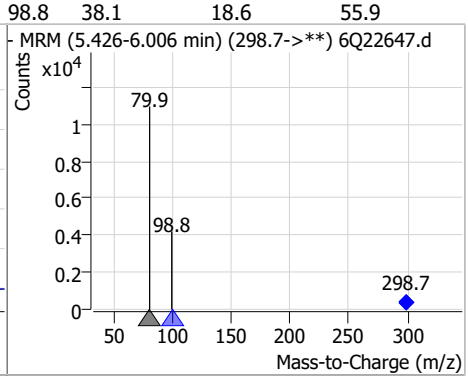


Perfluorinated Compounds by LC/MS/MS

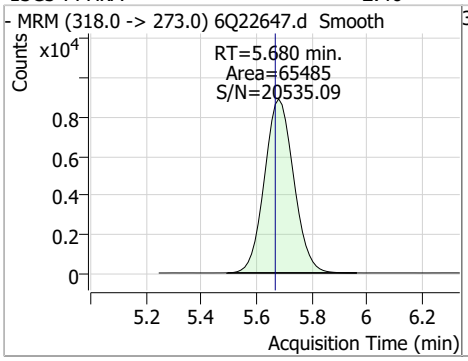
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	51.25	5.62	0.01	385128	298.7 -> 98.8	38.1	18.6	55.9

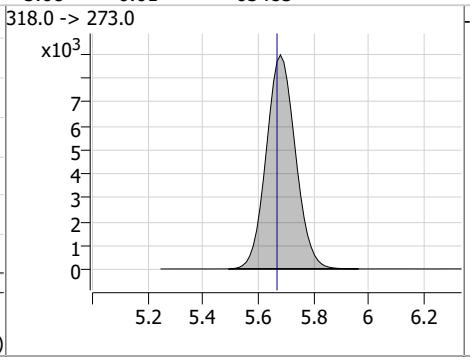


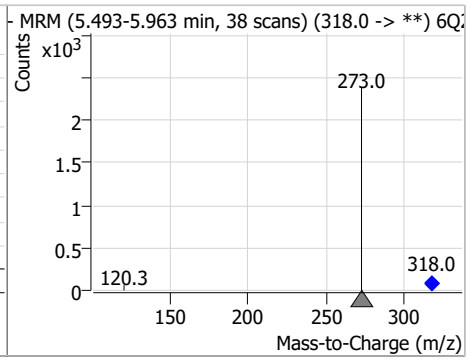




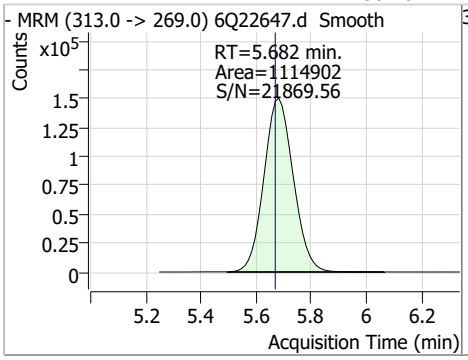
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.68	0.01	65485				

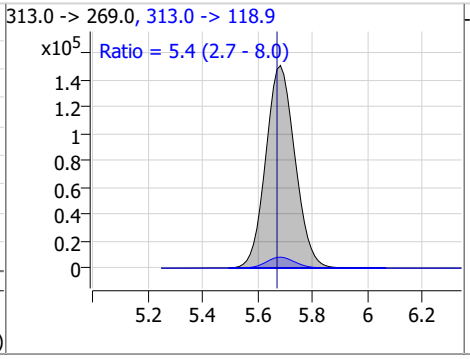


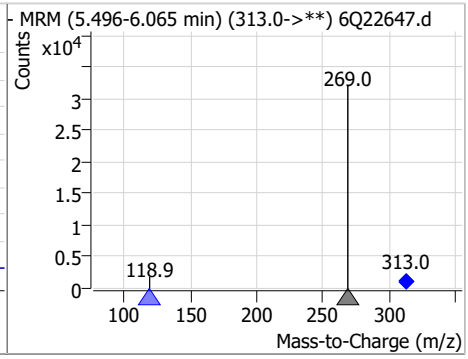




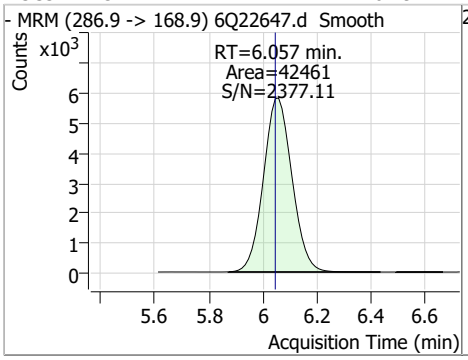
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	58.20	5.68	0.01	1114902	313.0 -> 118.9	5.4	2.7	8.0

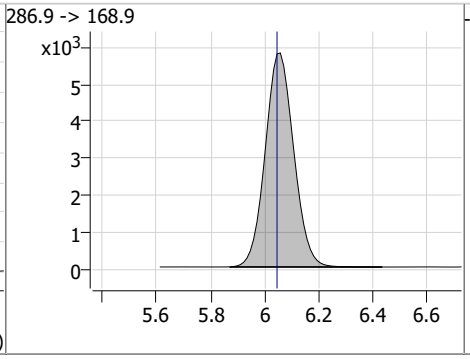


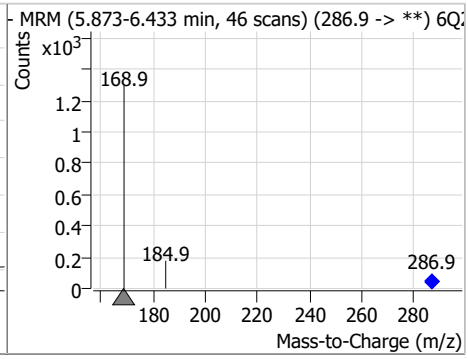




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.19	6.06	0.01	42461				

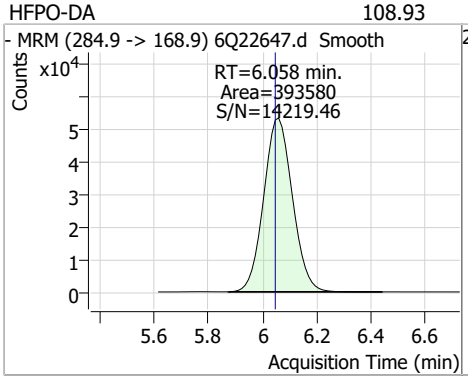


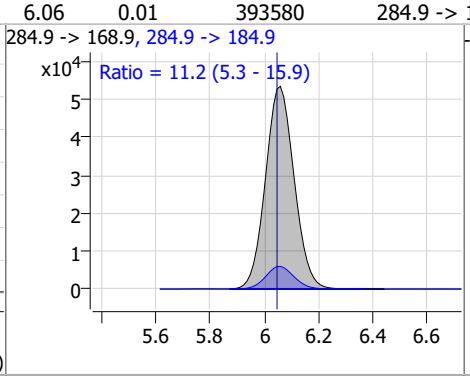


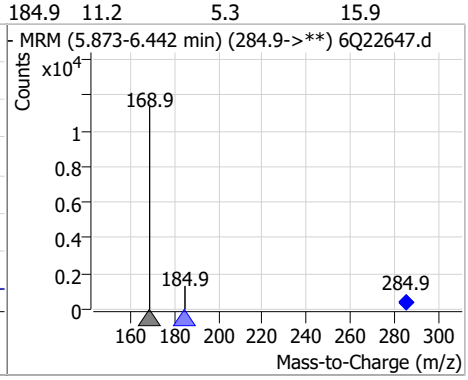


Perfluorinated Compounds by LC/MS/MS

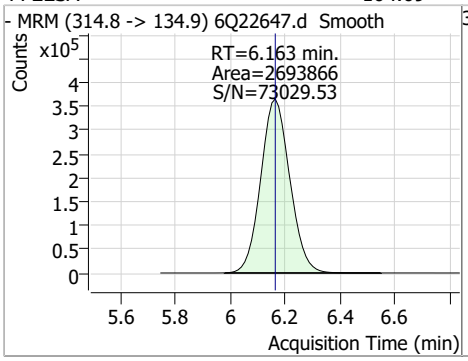
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	108.93	6.06	0.01	393580	284.9 -> 184.9	11.2	5.3	15.9

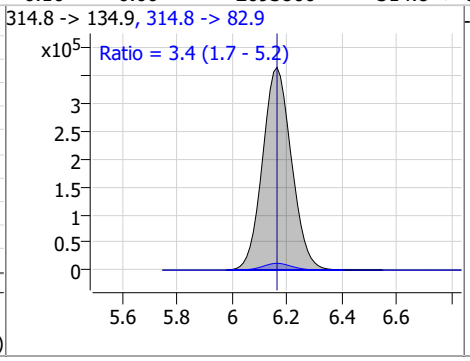


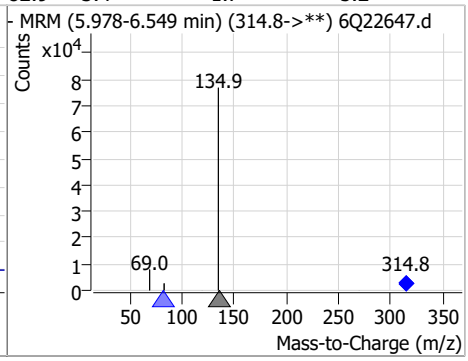




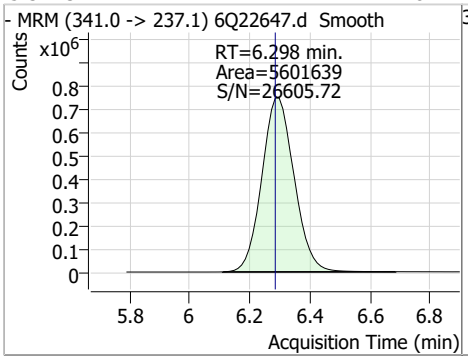
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	104.69	6.16	0.00	2693866	314.8 -> 82.9	3.4	1.7	5.2

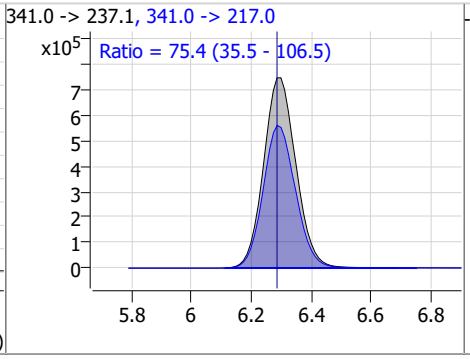


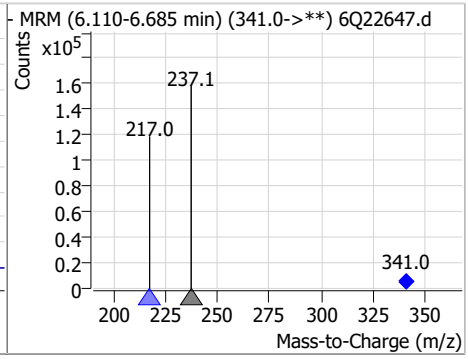




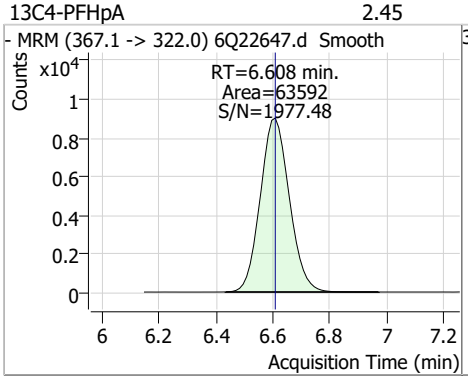
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1421.81	6.30	0.01	5601639	341.0 -> 217.0	75.4	35.5	106.5

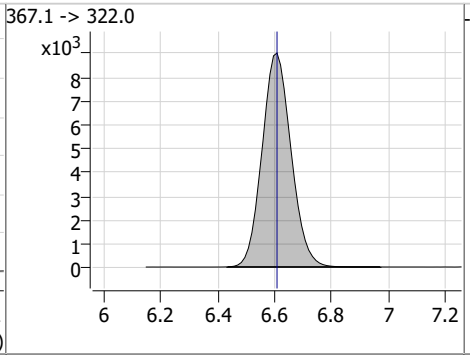


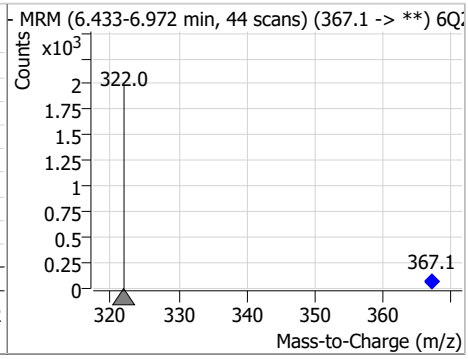




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.61	0.00	63592				

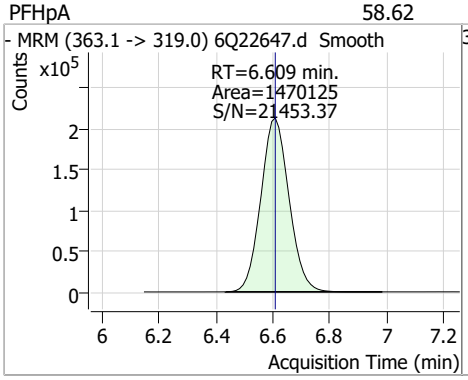


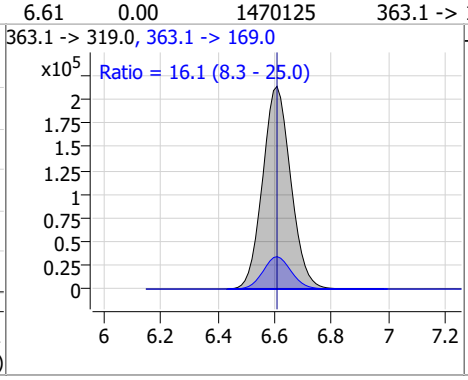


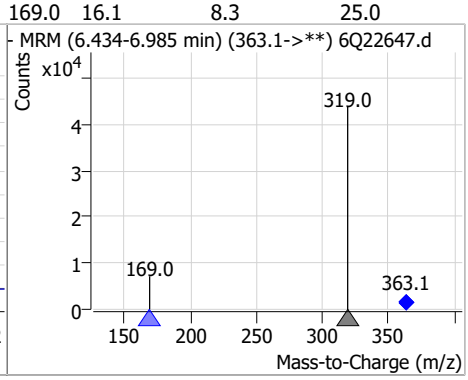


Perfluorinated Compounds by LC/MS/MS

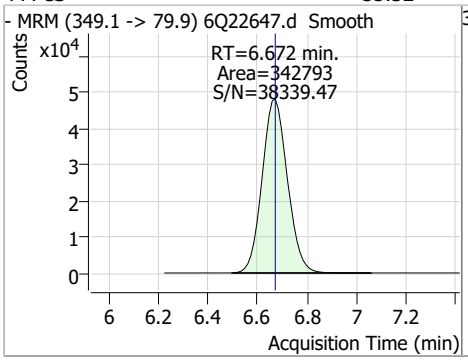
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	58.62	6.61	0.00	1470125	363.1 -> 169.0	16.1	8.3	25.0

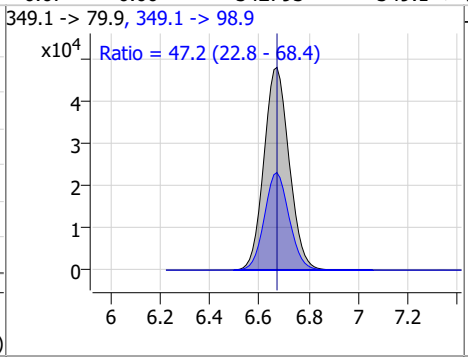


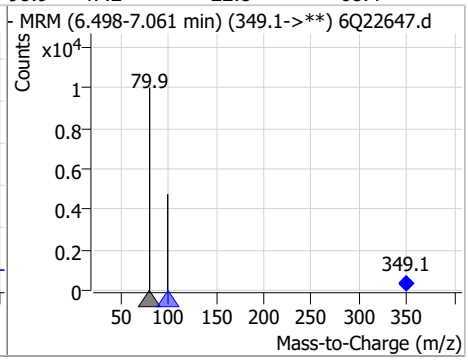




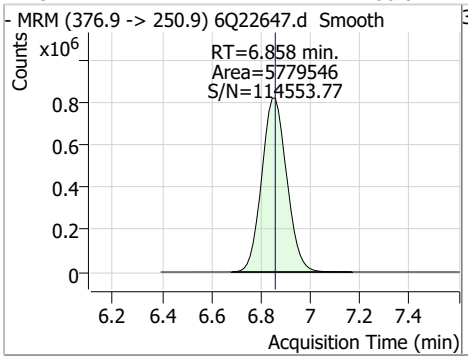
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	55.32	6.67	0.00	342793	349.1 -> 98.9	47.2	22.8	68.4

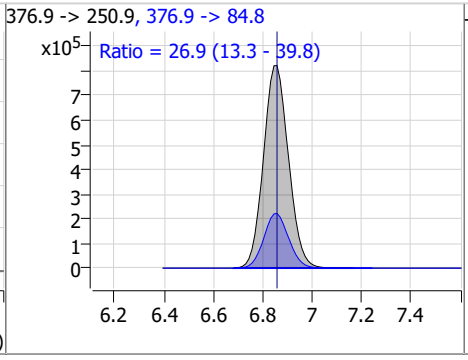


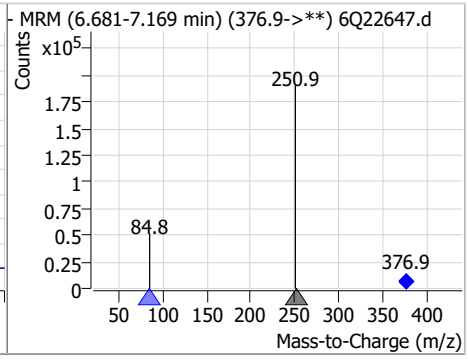




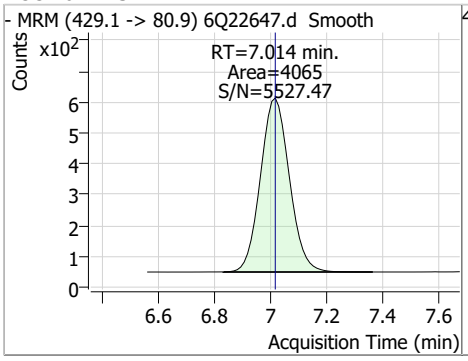
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	106.87	6.86	0.00	5779546	376.9 -> 84.8	26.9	13.3	39.8

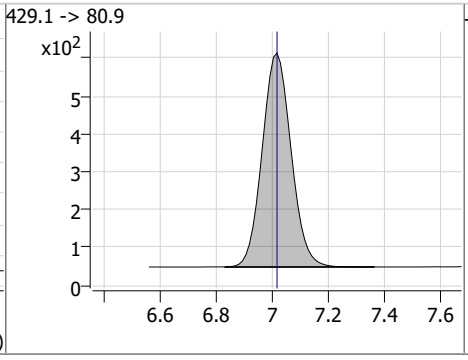


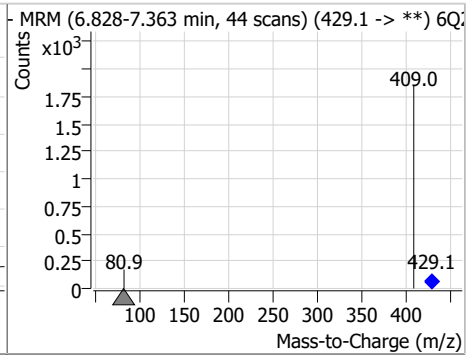




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.17	7.01	0.00	4065				

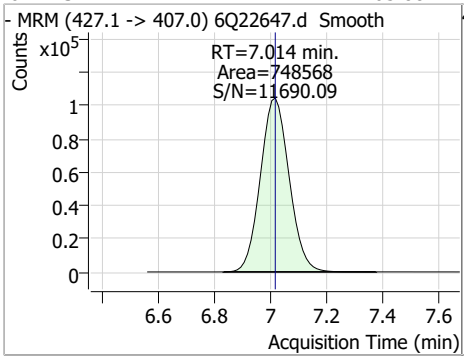


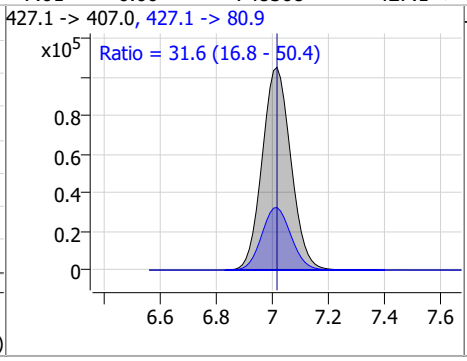


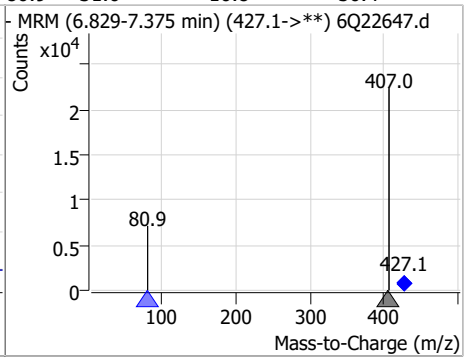


Perfluorinated Compounds by LC/MS/MS

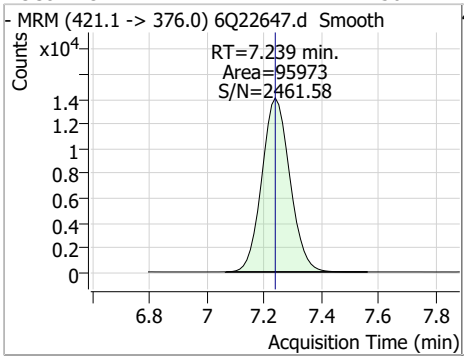
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	205.88	7.01	0.00	748568	427.1 -> 80.9	31.6	16.8	50.4

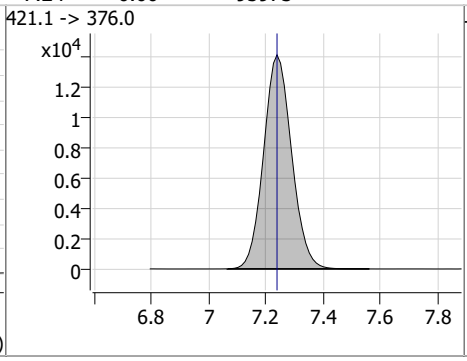


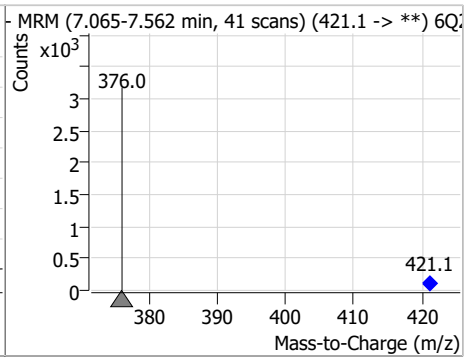




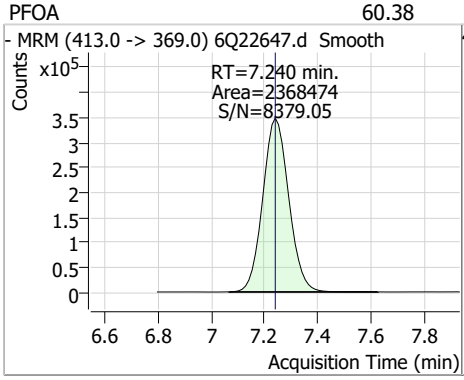
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.50	7.24	0.00	95973				

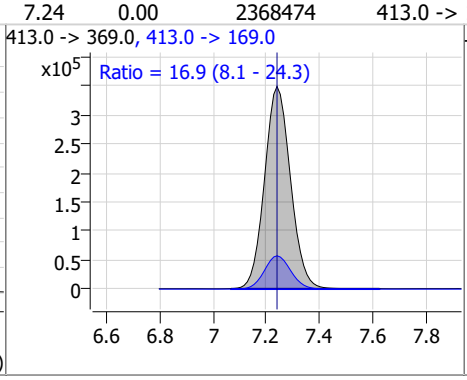


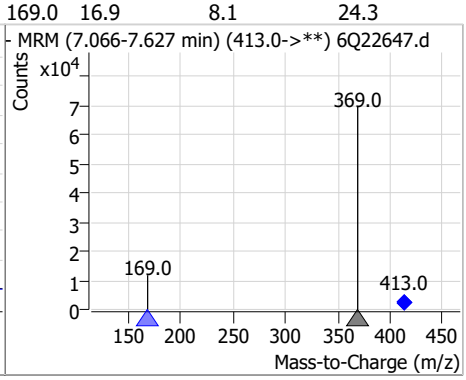




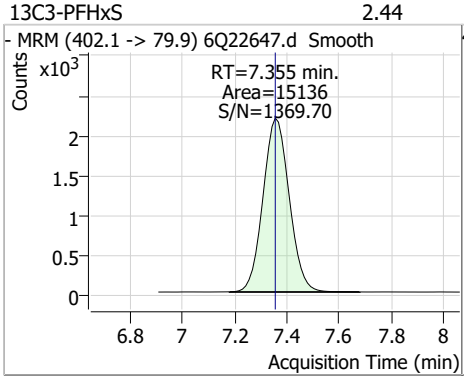
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	60.38	7.24	0.00	2368474	413.0 -> 169.0	16.9	8.1	24.3

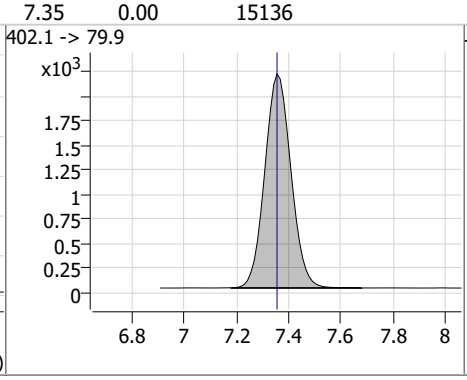


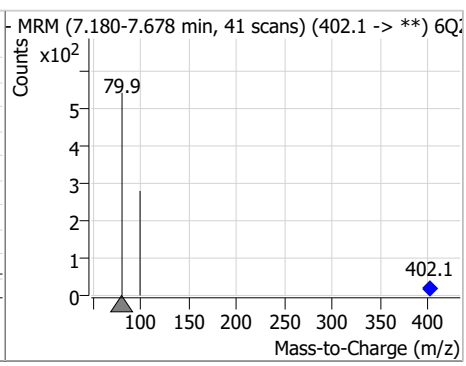




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.44	7.35	0.00	15136				

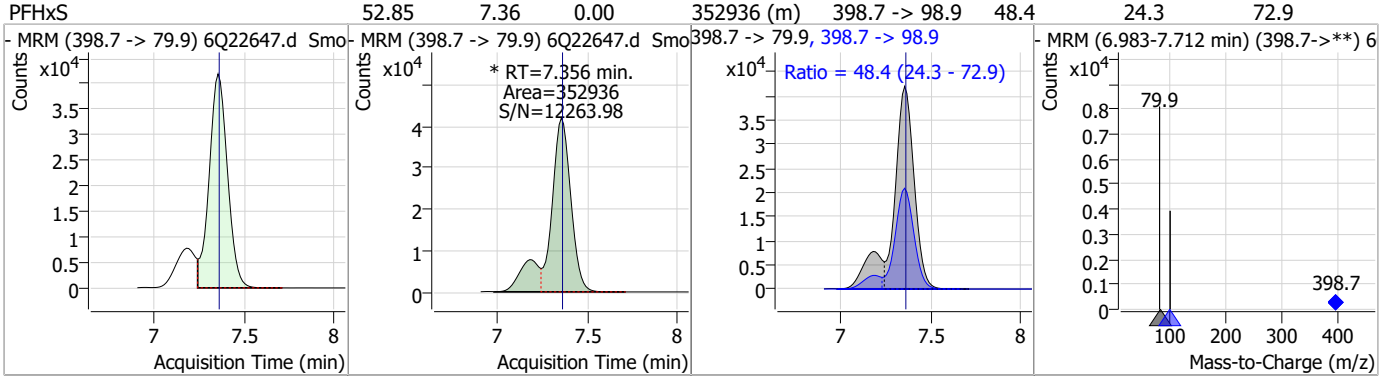




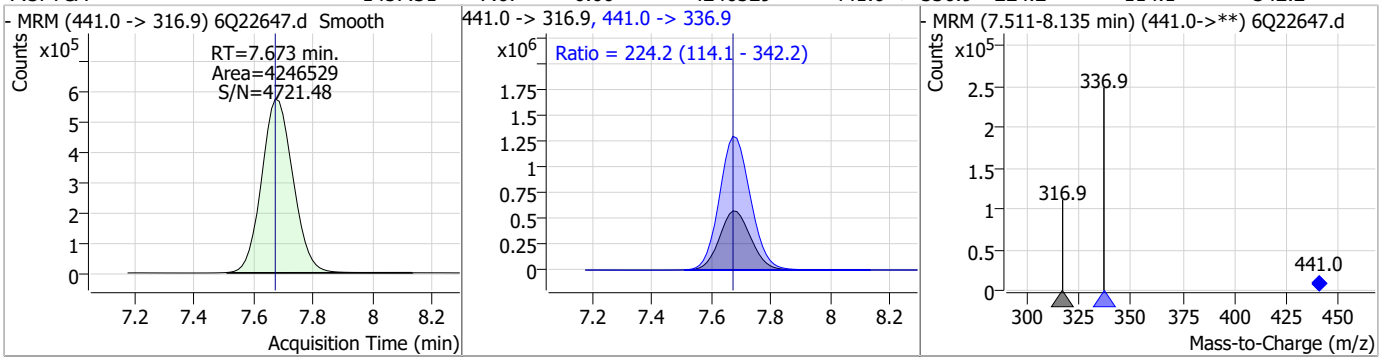


Perfluorinated Compounds by LC/MS/MS

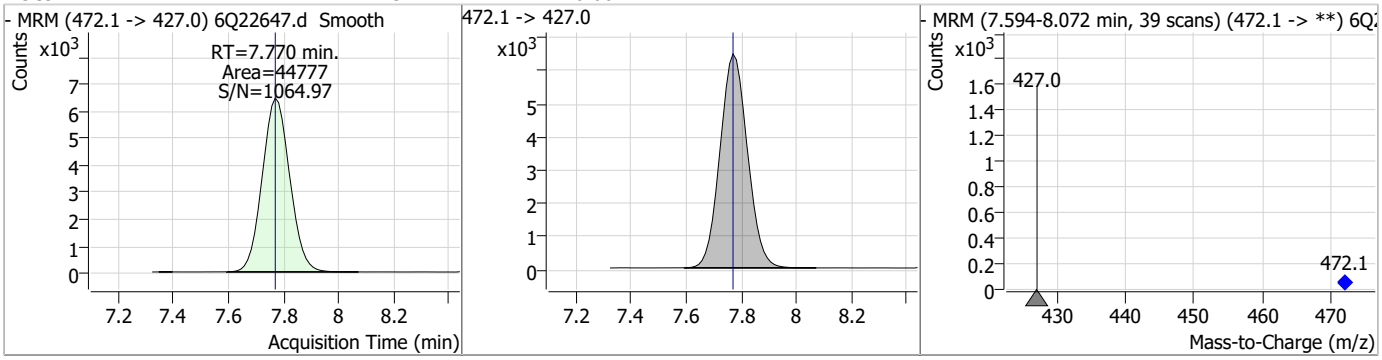
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	52.85	7.36	0.00	352936 (m)	398.7 -> 98.9	48.4	24.3	72.9



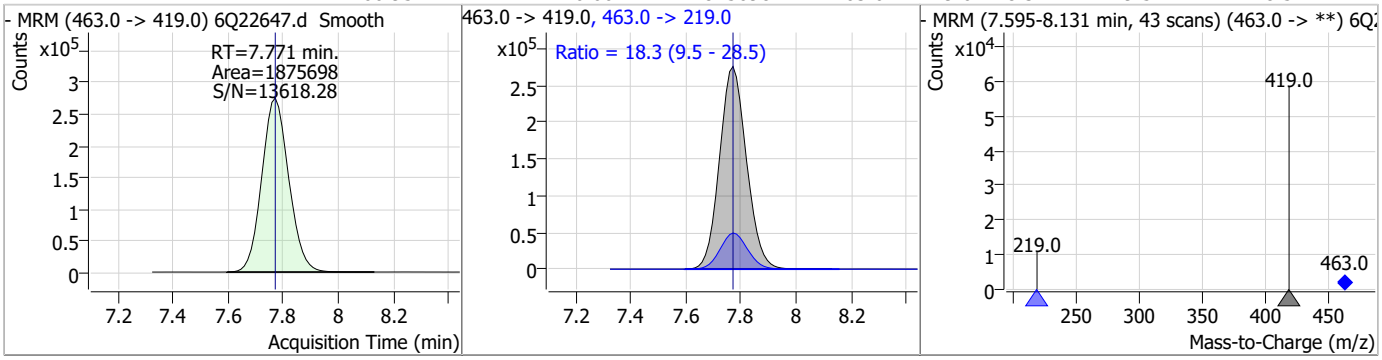
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1457.31	7.67	0.00	4246529	441.0 -> 336.9	224.2	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.77	0.00	44777				

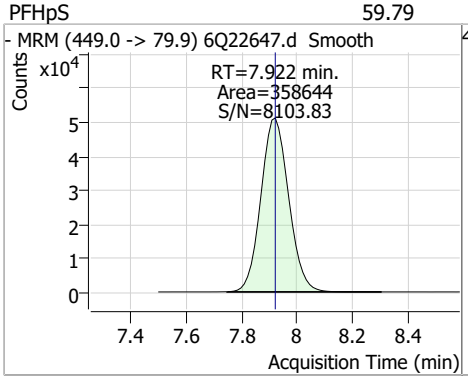


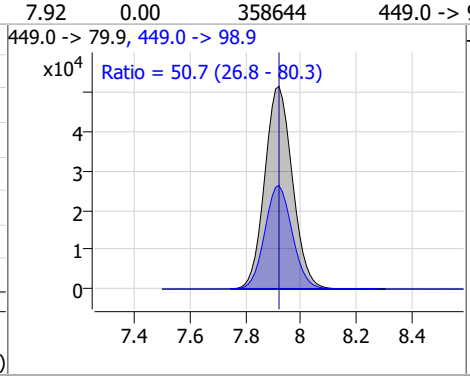
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	60.95	7.77	0.00	1875698	463.0 -> 219.0	18.3	9.5	28.5

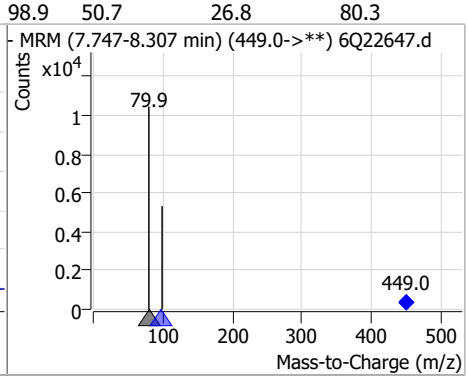


Perfluorinated Compounds by LC/MS/MS

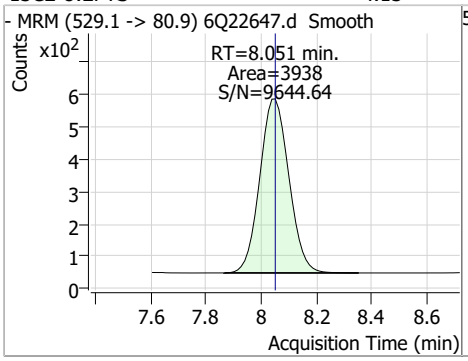
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	59.79	7.92	0.00	358644	449.0 -> 98.9	50.7	26.8	80.3

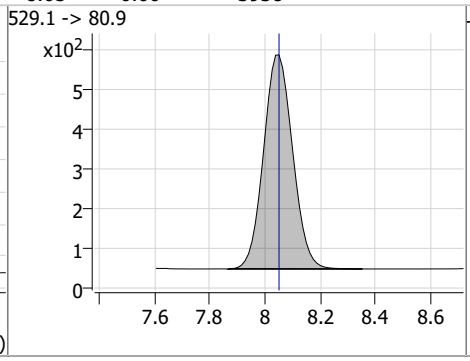


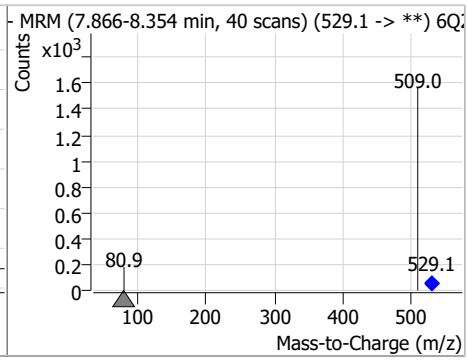




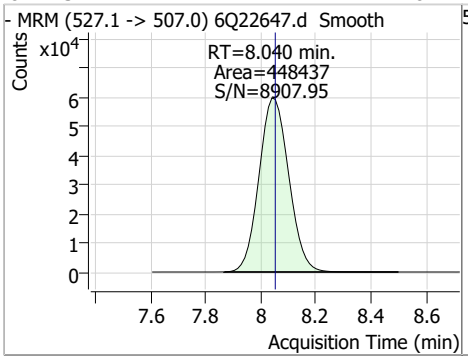
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.13	8.05	0.00	3938				

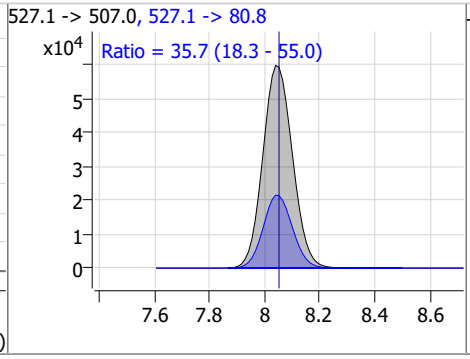


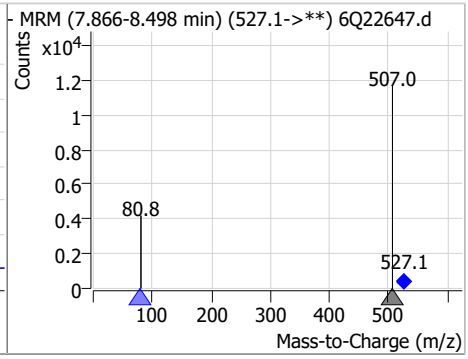




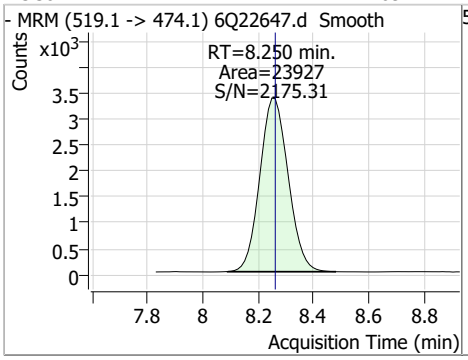
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	212.78	8.04	-0.01	448437	527.1 -> 80.8	35.7	18.3	55.0

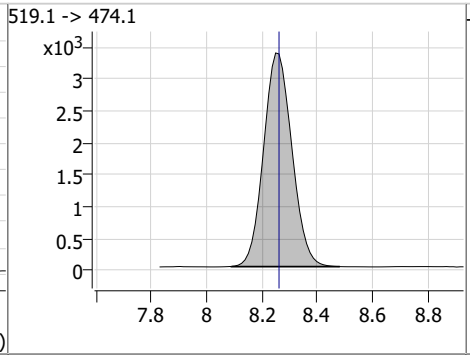


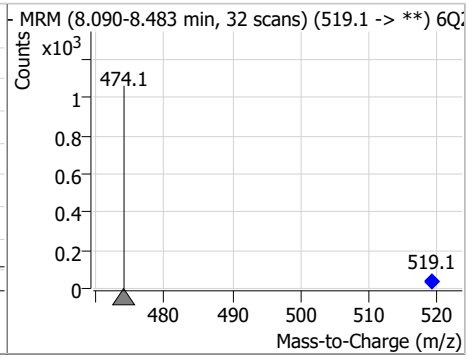




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.09	8.25	-0.01	23927				

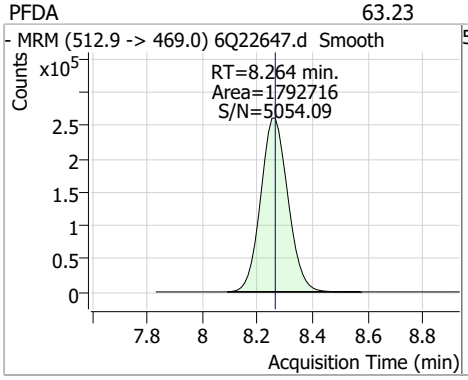


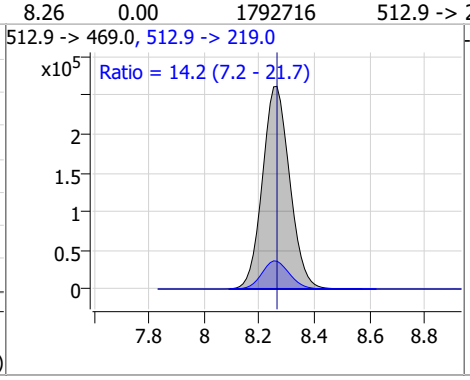


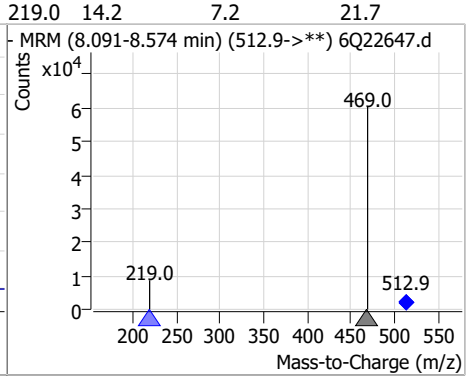


Perfluorinated Compounds by LC/MS/MS

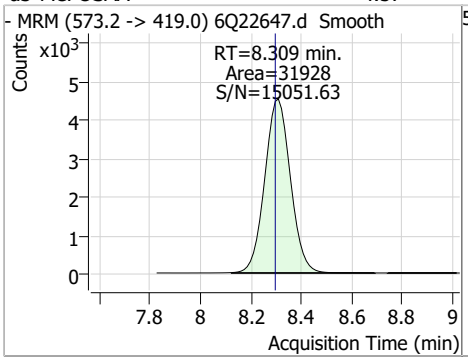
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	63.23	8.26	0.00	1792716	512.9 -> 219.0	14.2	7.2	21.7

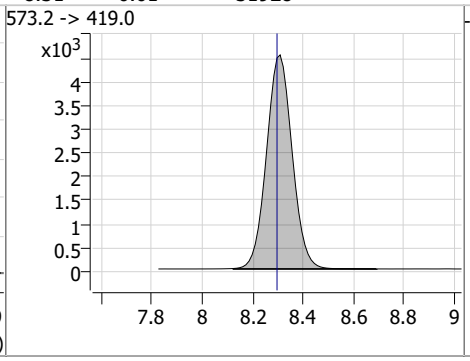


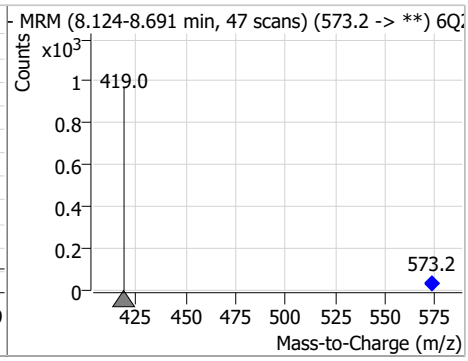




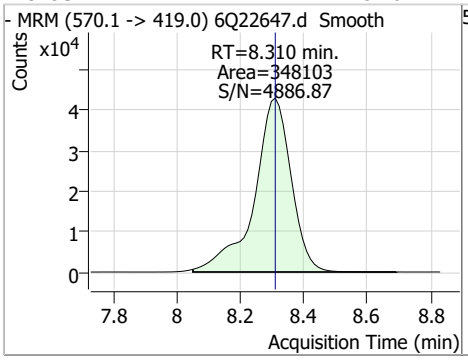
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.57	8.31	0.01	31928				

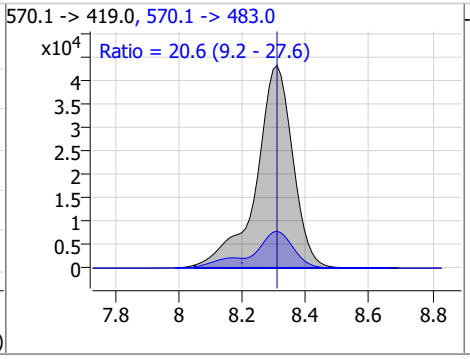


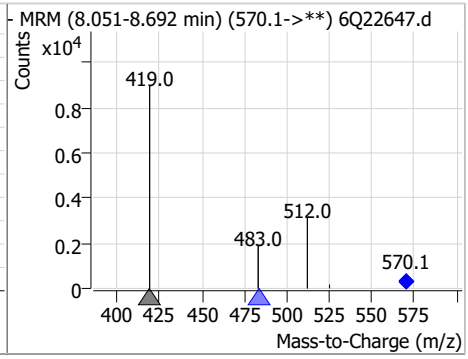




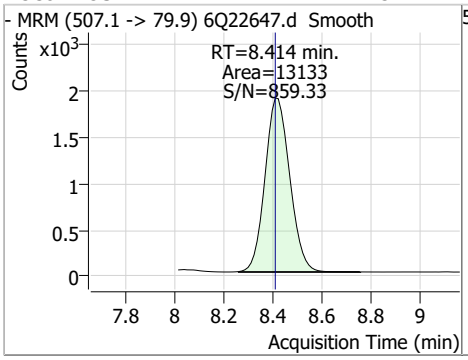
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	57.02	8.31	0.00	348103	570.1 -> 483.0	20.6	9.2	27.6

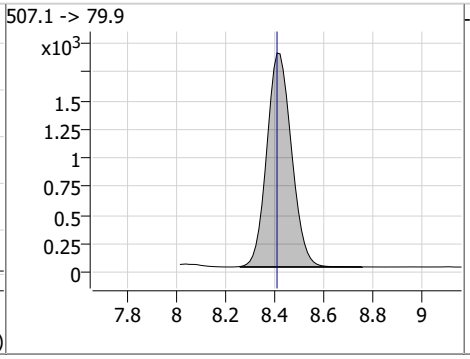


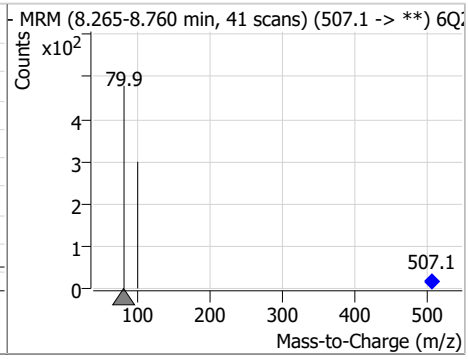




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.41	0.00	13133				

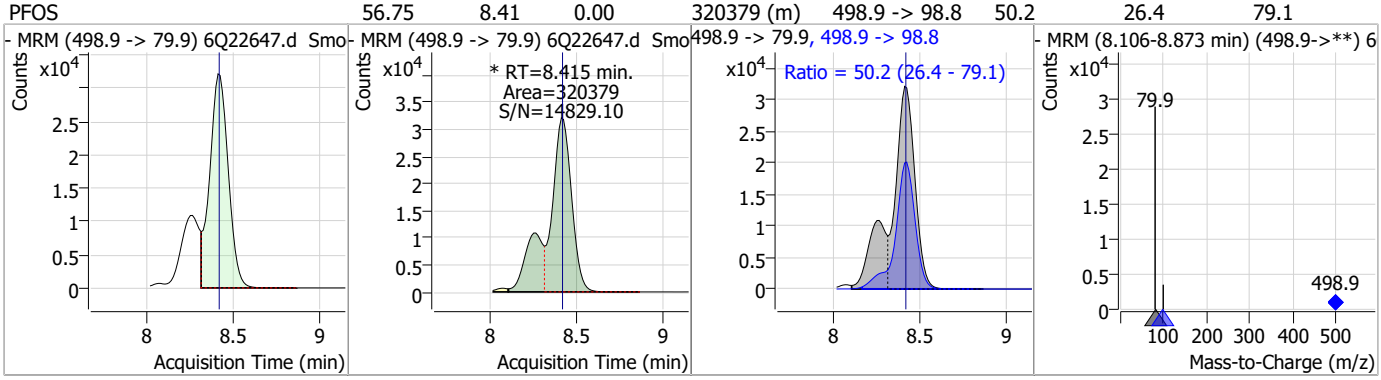




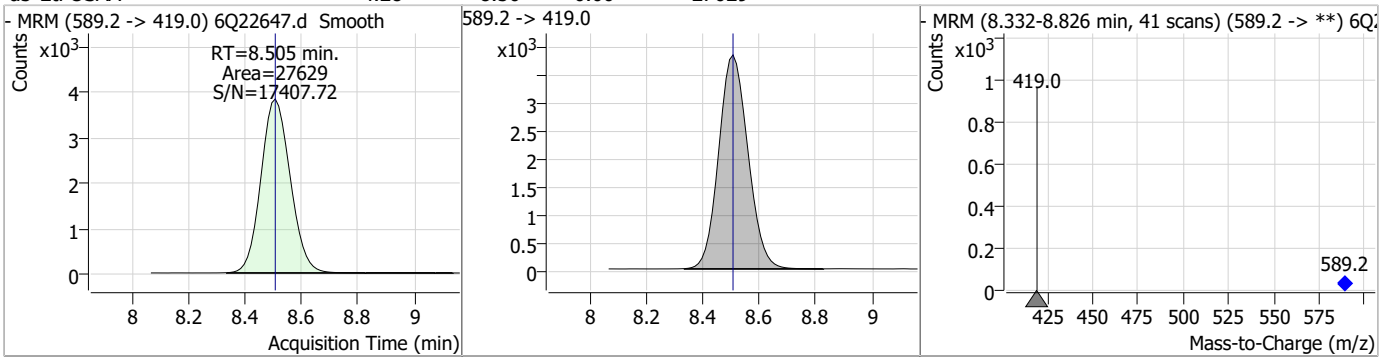


Perfluorinated Compounds by LC/MS/MS

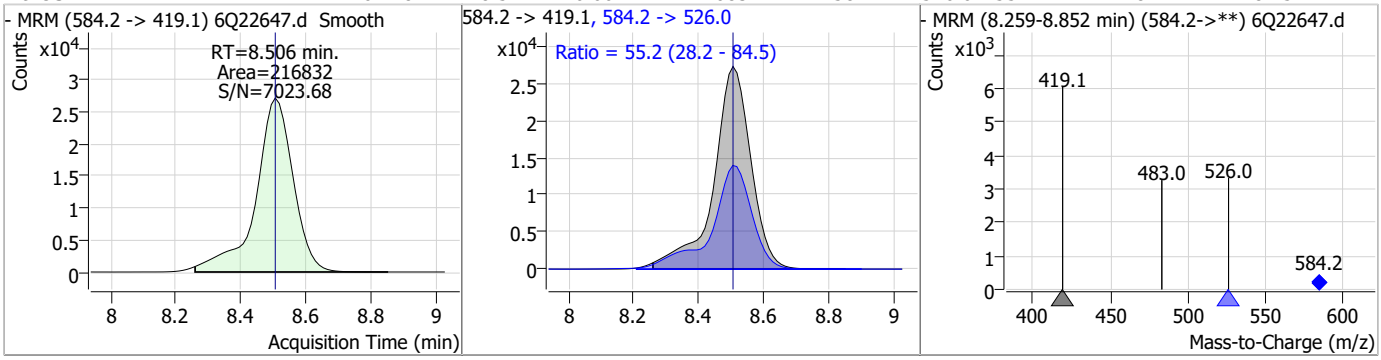
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	56.75	8.41	0.00	320379 (m)	498.9 -> 98.8	50.2	26.4	79.1



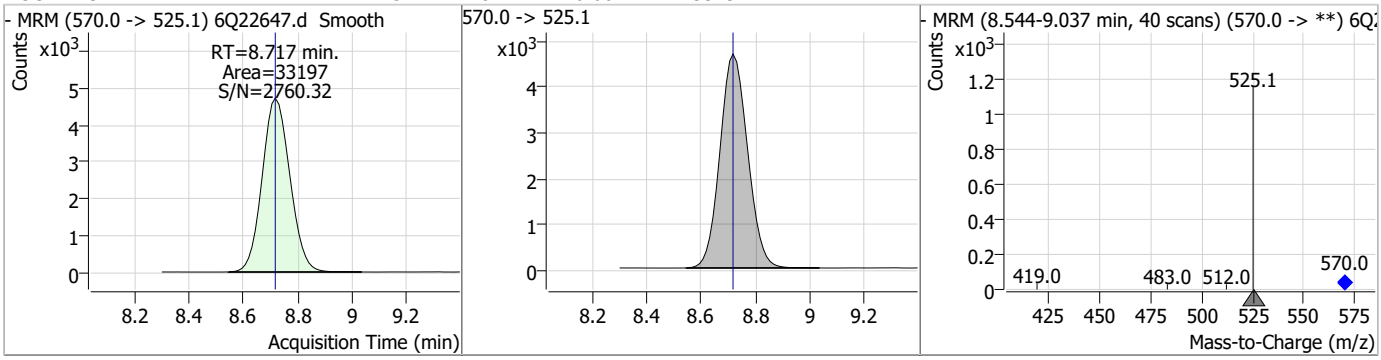
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.28	8.50	0.00	27629				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	62.28	8.51	0.00	216832	584.2 -> 526.0	55.2	28.2	84.5

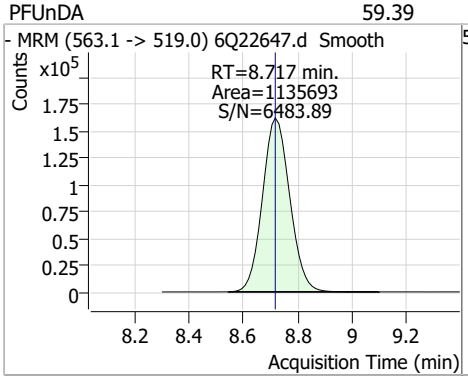


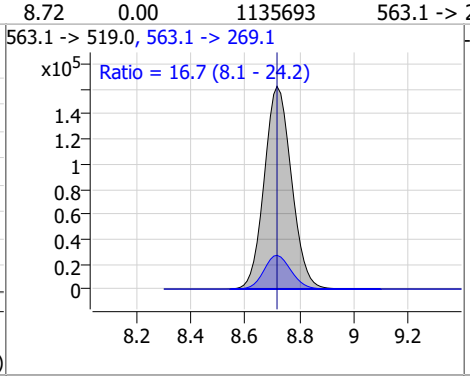
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.15	8.72	0.00	33197				

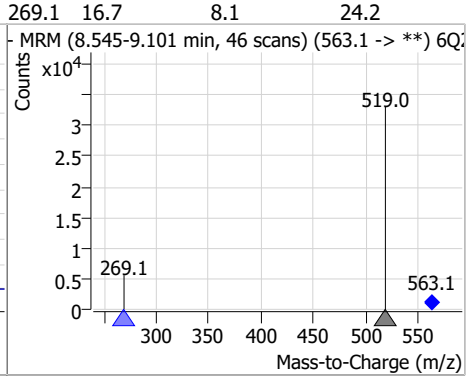


Perfluorinated Compounds by LC/MS/MS

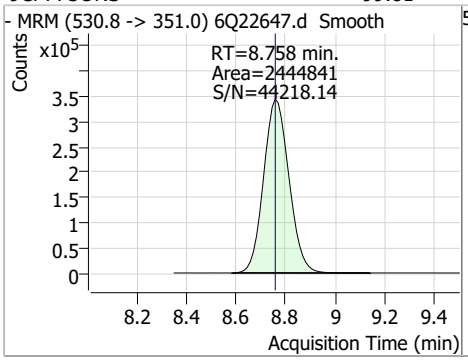
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	59.39	8.72	0.00	1135693	563.1 -> 269.1	16.7	8.1	24.2

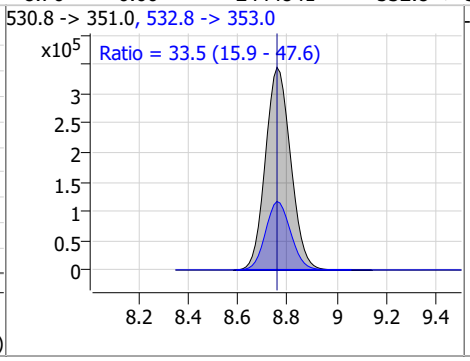


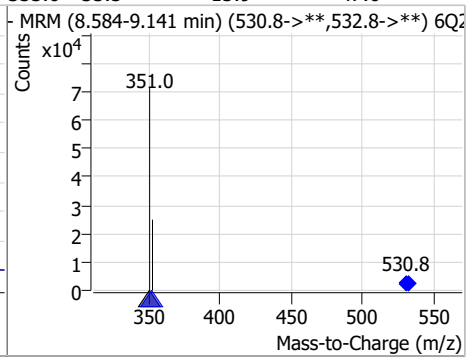




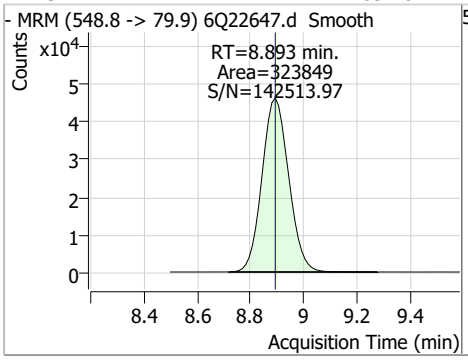
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	99.81	8.76	0.00	2444841	532.8 -> 353.0	33.5	15.9	47.6

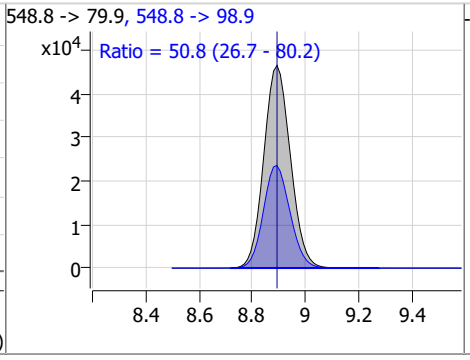


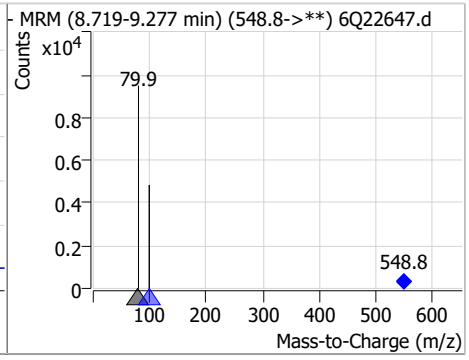




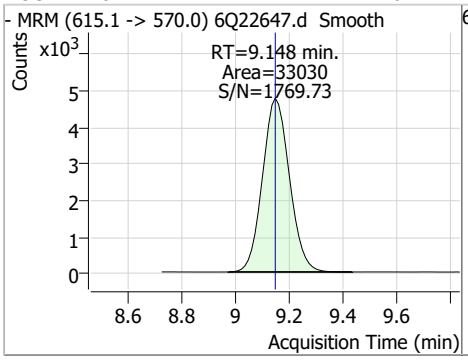
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	59.78	8.89	0.00	323849	548.8 -> 98.9	50.8	26.7	80.2

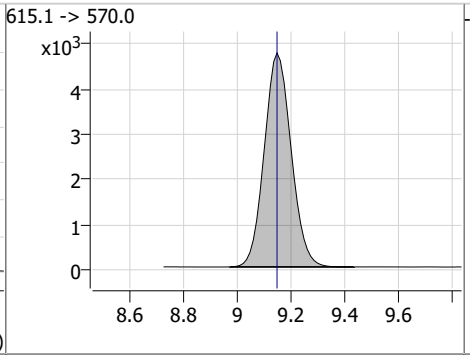


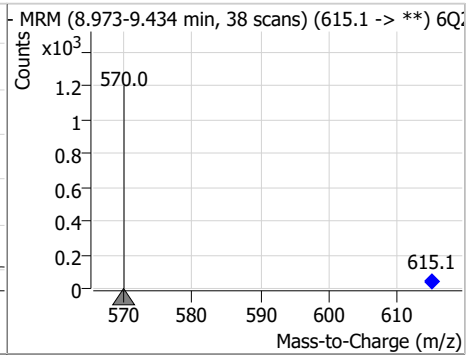




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	9.15	0.00	33030				

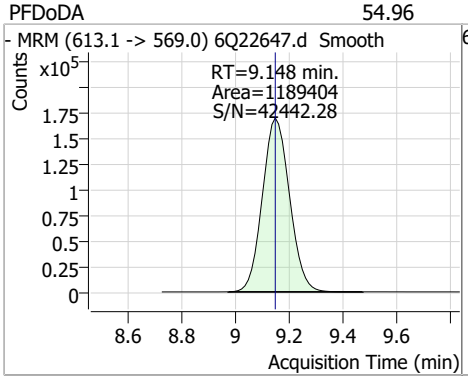


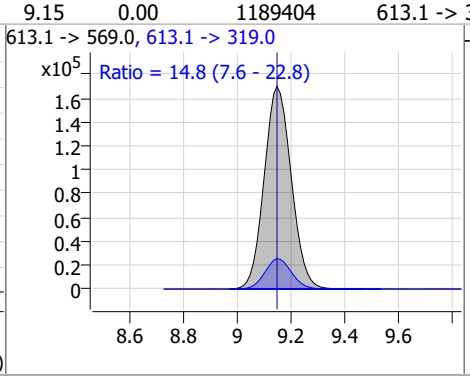


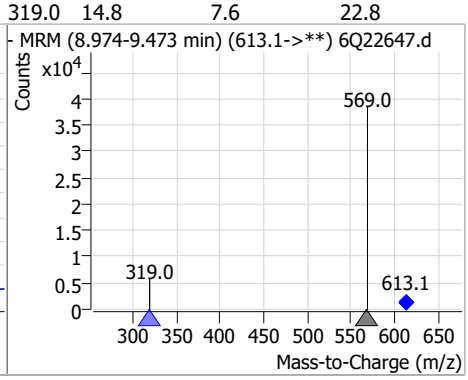


Perfluorinated Compounds by LC/MS/MS

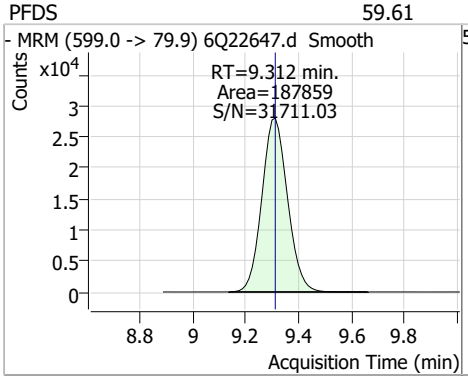
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	54.96	9.15	0.00	1189404	613.1 -> 319.0	14.8	7.6	22.8

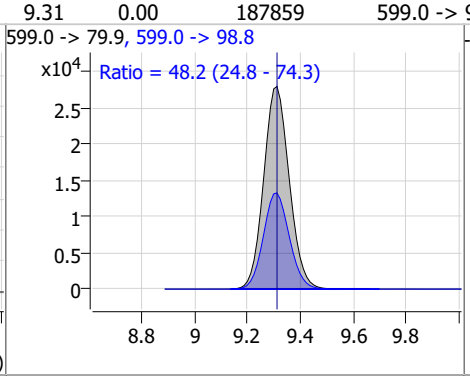


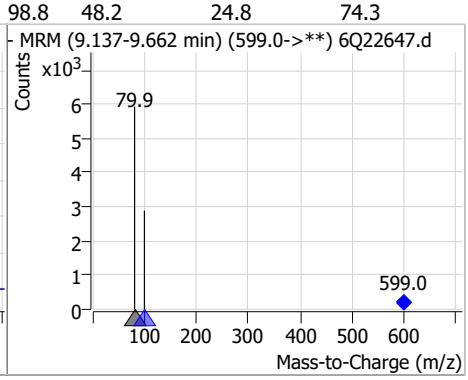




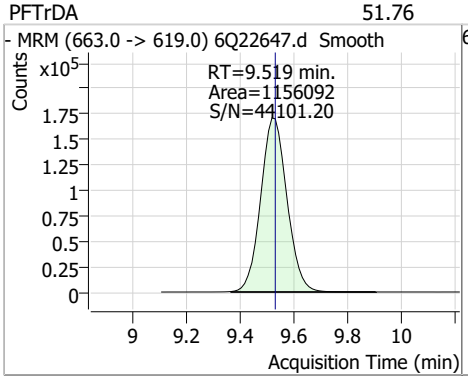
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	59.61	9.31	0.00	187859	599.0 -> 98.8	48.2	24.8	74.3

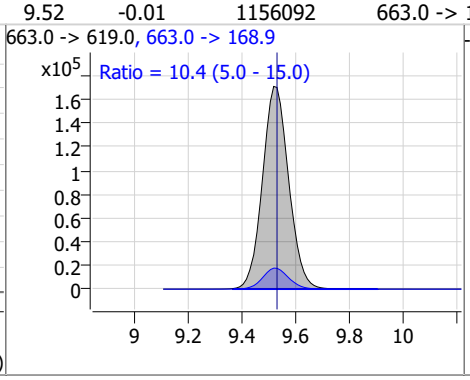


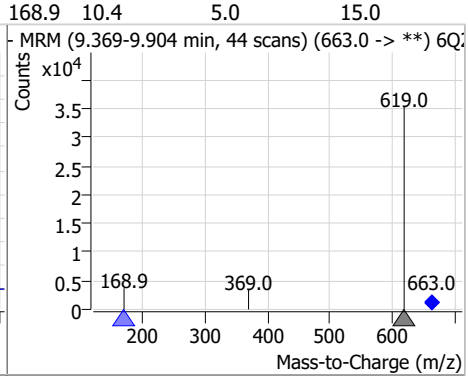




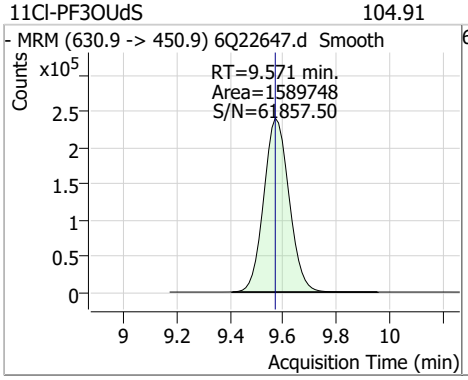
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	51.76	9.52	-0.01	1156092	663.0 -> 168.9	10.4	5.0	15.0

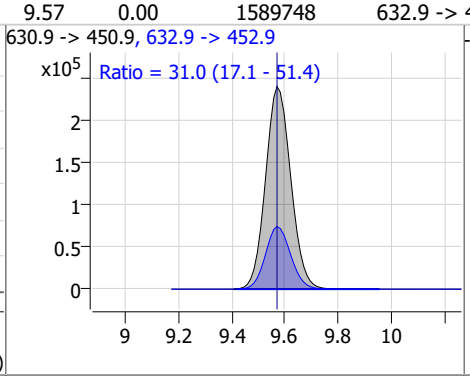


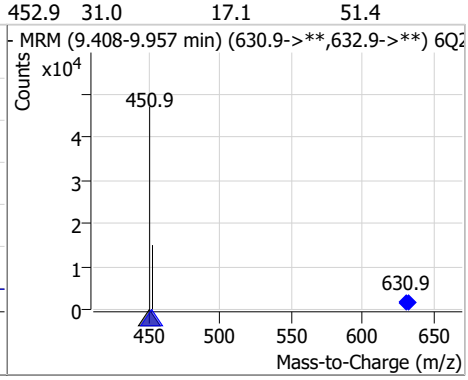




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	104.91	9.57	0.00	1589748	632.9 -> 452.9	31.0	17.1	51.4

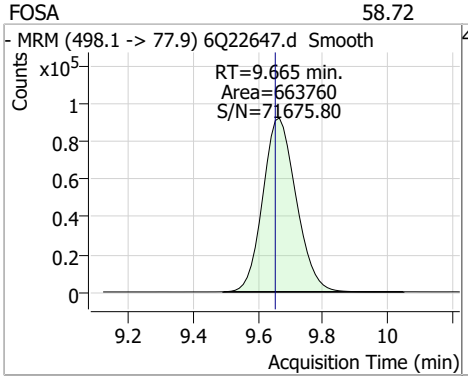


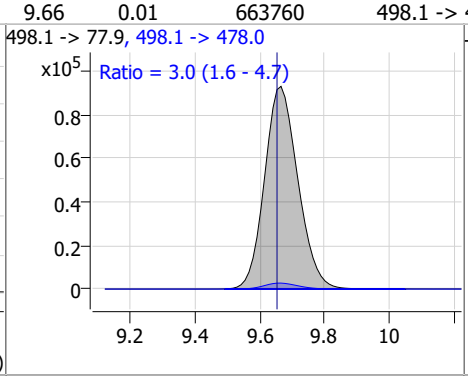


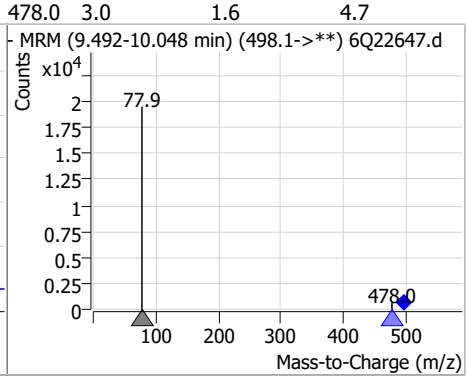


Perfluorinated Compounds by LC/MS/MS

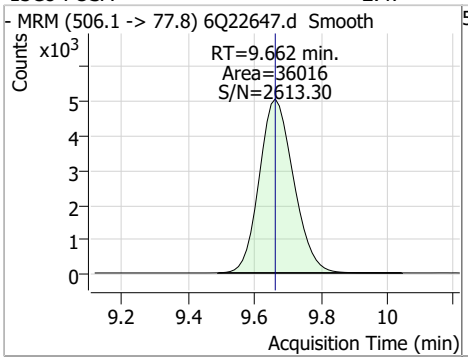
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	58.72	9.66	0.01	663760	498.1 -> 478.0	3.0	1.6	4.7

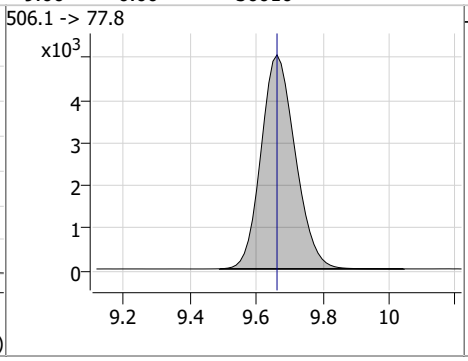


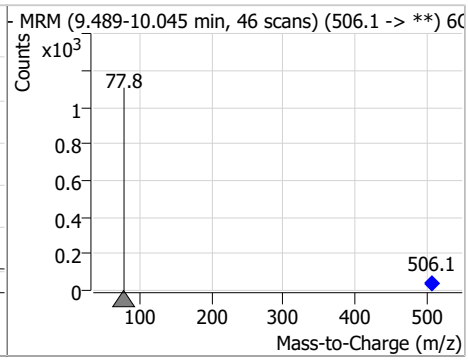




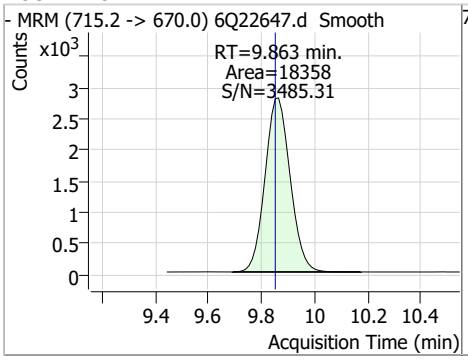
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.47	9.66	0.00	36016				

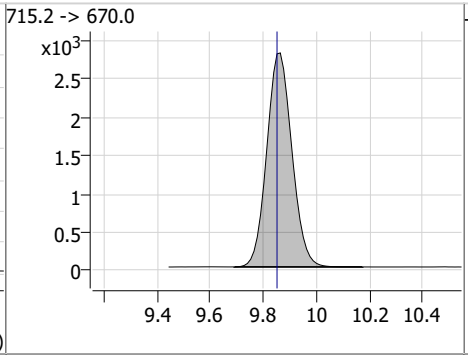


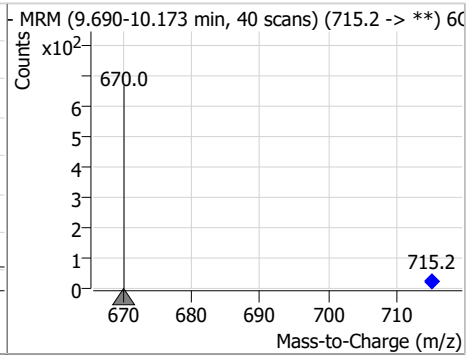




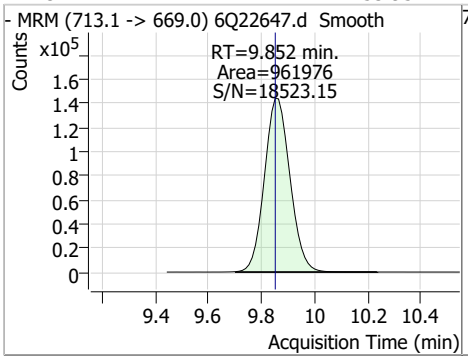
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.86	0.01	18358				

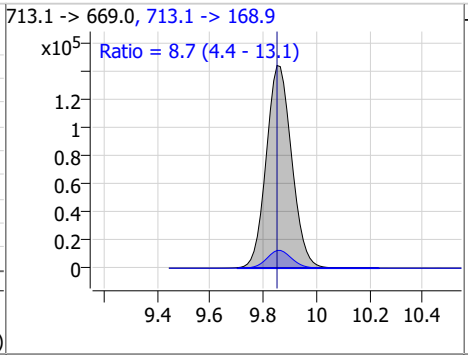


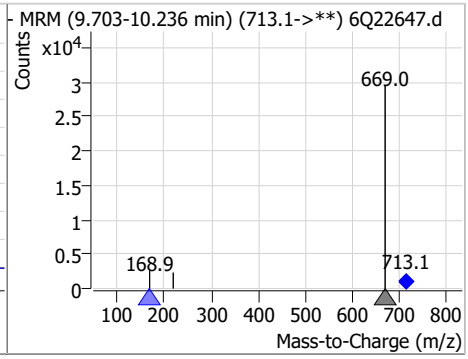




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	53.95	9.85	0.00	961976	713.1 -> 168.9	8.7	4.4	13.1

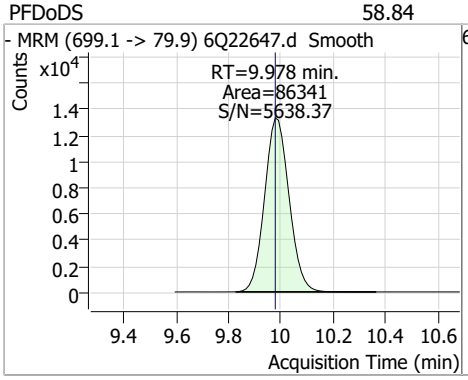


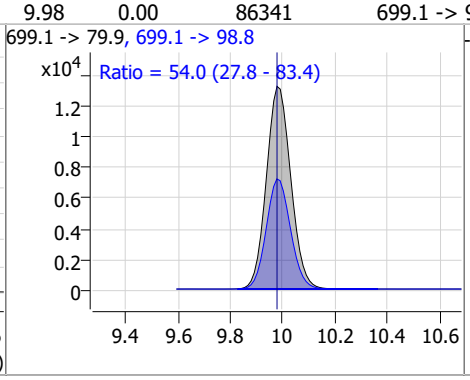


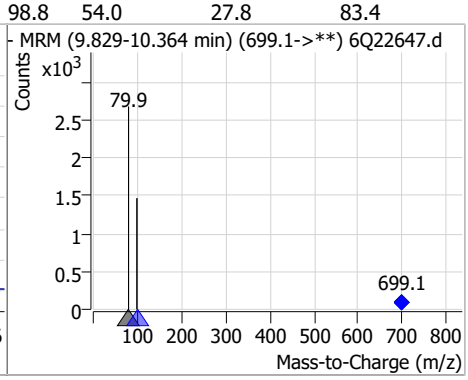


Perfluorinated Compounds by LC/MS/MS

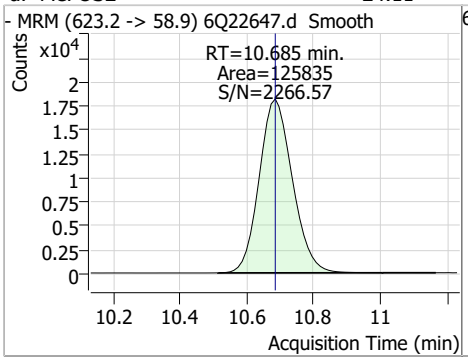
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	58.84	9.98	0.00	86341	699.1 -> 98.8	54.0	27.8	83.4

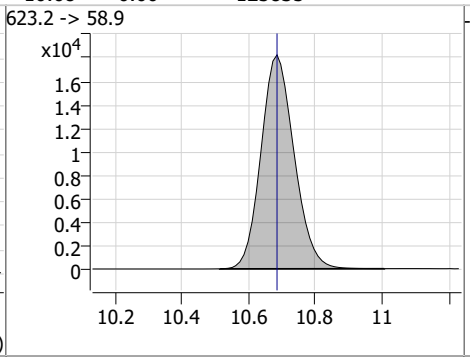


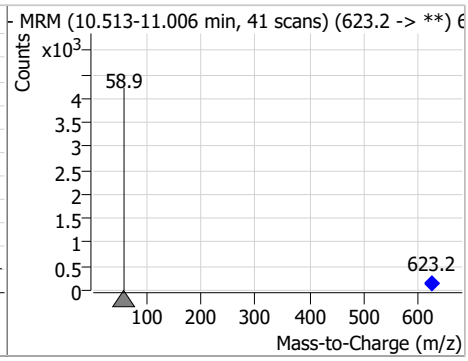




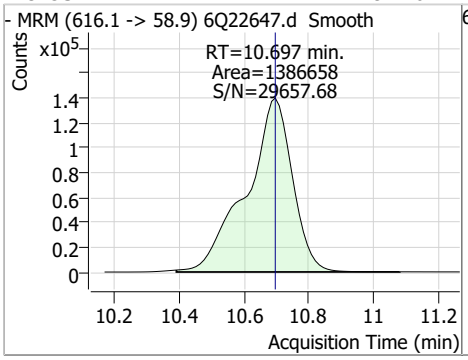
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.11	10.68	0.00	125835				

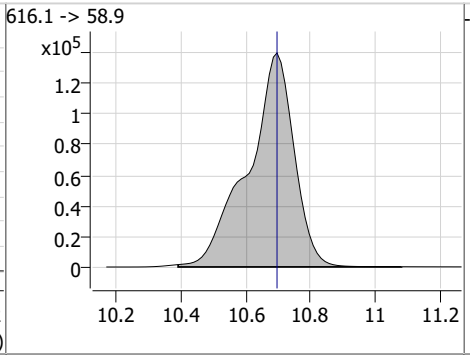


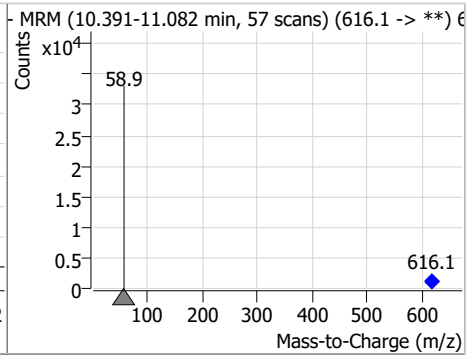




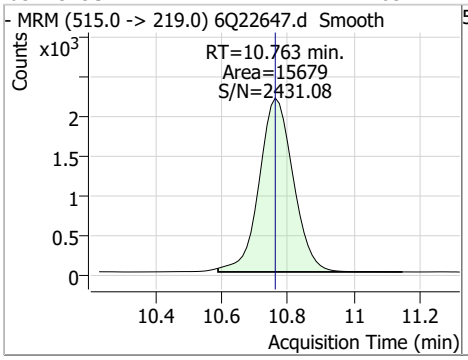
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	294.76	10.70	0.00	1386658				

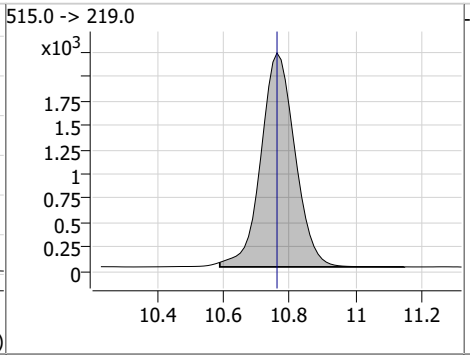


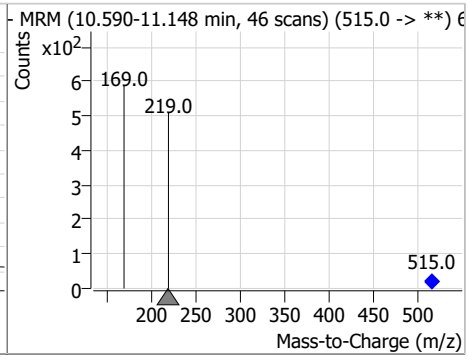




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.63	10.76	0.00	15679				

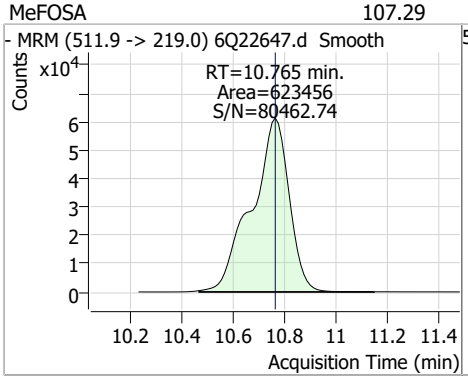


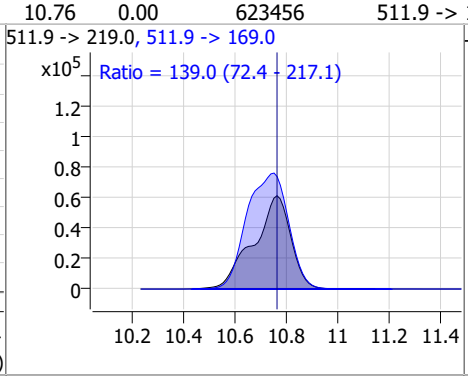


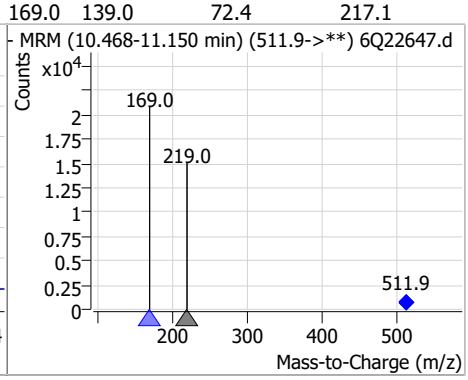


Perfluorinated Compounds by LC/MS/MS

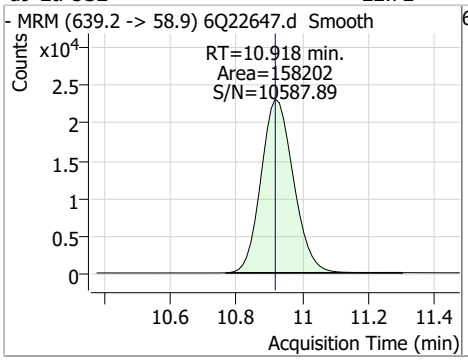
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	107.29	10.76	0.00	623456	511.9 -> 169.0	139.0	72.4	217.1

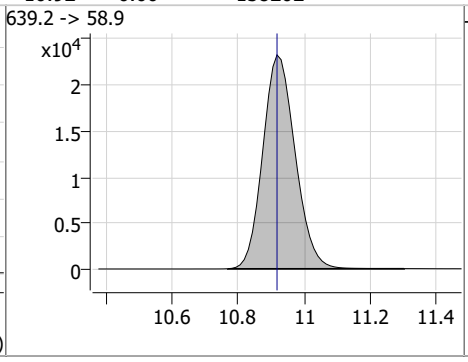


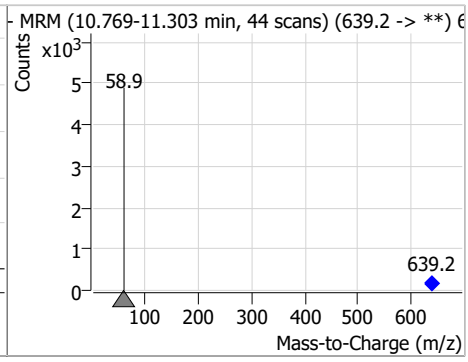




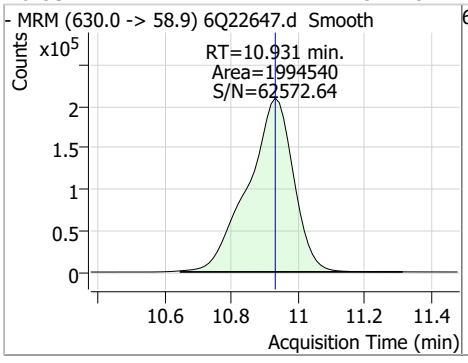
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.72	10.92	0.00	158202				

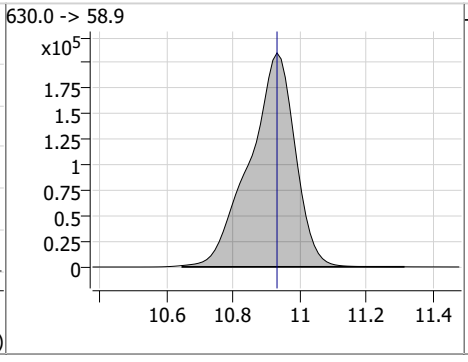


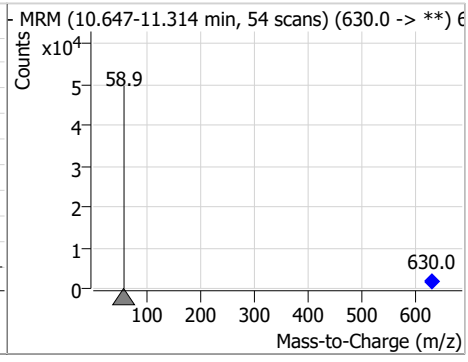




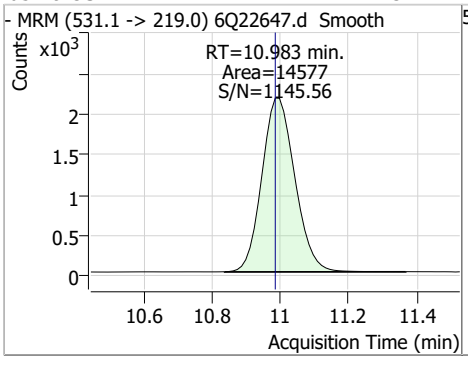
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	311.13	10.93	0.00	1994540				

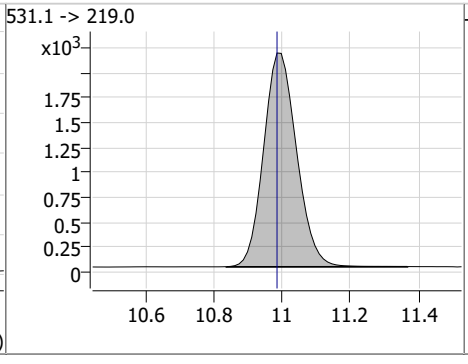


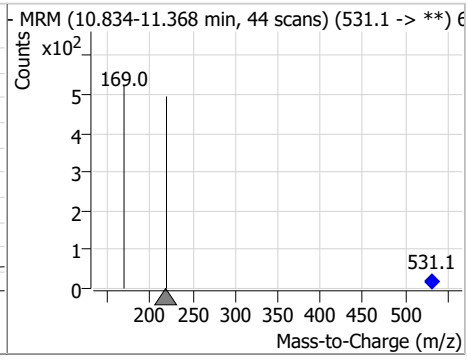




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.43	10.98	0.00	14577				

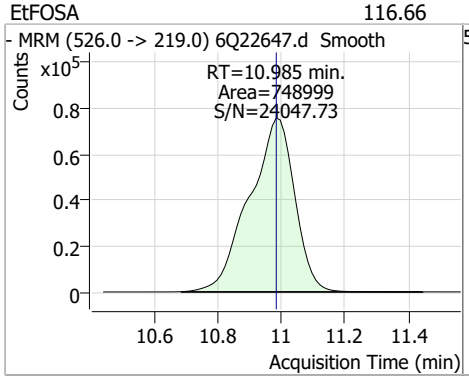


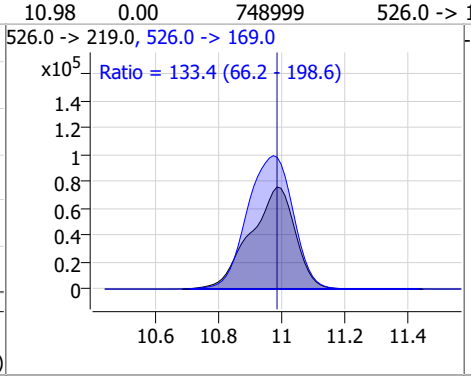


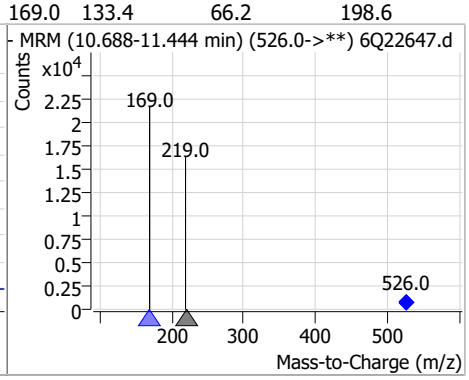


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	116.66	10.98	0.00	748999	526.0 -> 169.0	133.4	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-IC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22647.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 15:18	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22649.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 3:46:51 PM
Sample Name : icv330-4
Vial : P1-B1
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	199178	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	63057	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	68581	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	68127	2.50	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	105497	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	51994	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	27590	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	37575	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	31790	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	19241	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	37406	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	23543	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	14968	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14971	2.50	µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3714	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	5285	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5648	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	36080	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42767	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	32685	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	139250	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	180761	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15493	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15471	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	20135	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	83588	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11428	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	111502	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	39934	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	60628	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	67559	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3714	5.44	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5285	5.36	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5648	5.85	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.1%		
13C2-PFDoDA	9.148	615.1 -> 570.0	31790	1.18	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFTeDA	9.851	715.2 -> 670.0	19241	1.24	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFBS	5.610	302.1 -> 79.9	23543	2.43	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C3-PFHxS	7.355	402.1 -> 79.9	14968	2.38	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 = 95.3%	
13C4-PFBA	3.010	216.8 -> 171.9	199178	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.596	367.1 -> 322.0	68127	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C5-PFHxA	5.668	318.0 -> 273.0	68581	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFPeA	4.447	268.3 -> 223.0	63057	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.250	519.1 -> 474.1	27590	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C7-PFUnDA	8.717	570.0 -> 525.1	37575	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-FOSA	9.650	506.1 -> 77.8	37406	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C8-PFOA	7.239	421.1 -> 376.0	105497	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOS	8.414	507.1 -> 79.9	14971	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C9-PFNA	7.770	472.1 -> 427.0	51994	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.8%	
d3-MeFOSAA	8.297	573.2 -> 419.0	36080	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	42767	9.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	15471	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSAA	8.492	589.2 -> 419.0	32685	4.86 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d7-MeFOSE	10.685	623.2 -> 58.9	139250	25.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d9-EtFOSE	10.918	639.2 -> 58.9	180761	24.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d5-EtFOSA	10.983	531.1 -> 219.0	15493	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	43637	9.08 µg/L	99
		327.1 -> 80.9	16751		
6:2FTS	7.014	427.1 -> 407.0	43108	9.12 µg/L	100
		427.1 -> 80.9	14402		
8:2FTS	8.040	527.1 -> 507.0	26345	8.72 µg/L	99
		527.1 -> 80.8	9854		
EtFOSAA	8.506	584.2 -> 419.1	9808	2.38 µg/L	99
		584.2 -> 526.0	5578		
FOSA	9.652	498.1 -> 77.9	27653	2.36 µg/L	99
		498.1 -> 478.0	812		
MeFOSAA	8.298	570.1 -> 419.0	16440	2.38 µg/L	95
		570.1 -> 483.0	3420		
PFBA	3.006	212.8 -> 168.9	57789	9.29 µg/L	100
PFBS	5.611	298.7 -> 79.9	18064	2.35 µg/L	99
		298.7 -> 98.8	6628		
PFDA	8.251	512.9 -> 469.0	78887	2.41 µg/L	98
		512.9 -> 219.0	10866		
PFDoDA	9.148	613.1 -> 569.0	50726	2.44 µg/L	100
		613.1 -> 319.0	7756		
PFDS	9.299	599.0 -> 79.9	7643	2.13 µg/L	100

Perfluorinated Compounds by LC/MS/MS

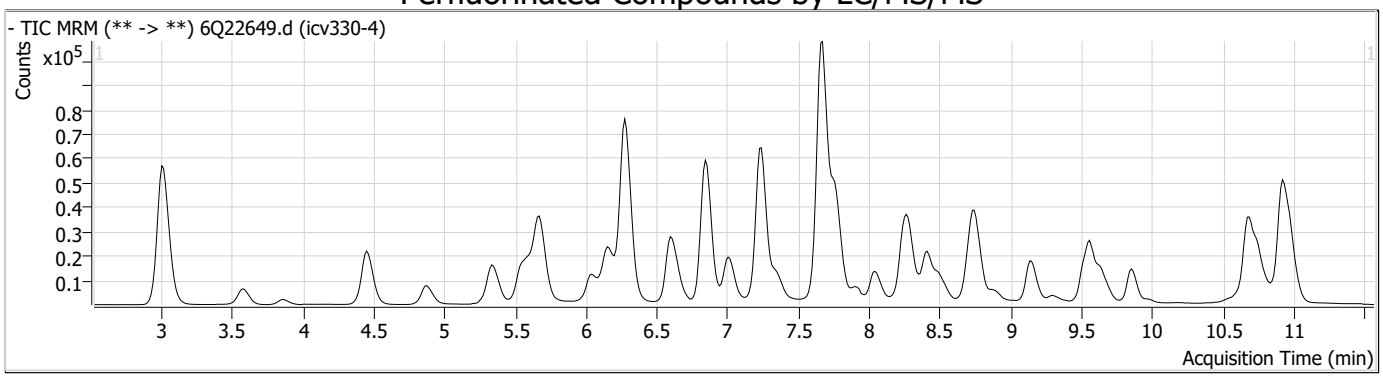
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3790				
PFHpA	6.596	363.1 -> 319.0	64100	2.39	µg/L		98
		363.1 -> 169.0	10252				
PFHpS	7.909	449.0 -> 79.9	15793	2.31	µg/L		94
		449.0 -> 98.9	7774				
PFHxA	5.670	313.0 -> 269.0	49565	2.47	µg/L		100
		313.0 -> 118.9	2587				
PFHxS	7.356	398.7 -> 79.9	14623	2.21	µg/L	m	97
		398.7 -> 98.9	7389				
PFNA	7.771	463.0 -> 419.0	80043	2.24	µg/L		98
		463.0 -> 219.0	14590				
PFNS	8.880	548.8 -> 79.9	13220	2.14	µg/L		97
		548.8 -> 98.9	7344				
PFOA	7.240	413.0 -> 369.0	99483	2.31	µg/L		96
		413.0 -> 169.0	17699				
PFOS	8.415	498.9 -> 79.9	13492	2.10	µg/L	m	100
		498.9 -> 98.8	7126				
PFPeA	4.449	263.0 -> 219.0	66758	4.81	µg/L		100
PFPeS	6.660	349.1 -> 79.9	14772	2.41	µg/L		94
		349.1 -> 98.9	7317				
PFTeDA	9.852	713.1 -> 669.0	42922	2.30	µg/L		100
		713.1 -> 168.9	3676				
PFTrDA	9.519	663.0 -> 619.0	55210	2.57	µg/L		99
		663.0 -> 168.9	5728				
PFUnDA	8.717	563.1 -> 519.0	51117	2.36	µg/L		99
		563.1 -> 269.1	8348				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	67012	4.39	µg/L		98
		632.9 -> 452.9	22030				
9Cl-PF3ONS	8.758	530.8 -> 351.0	106705	4.32	µg/L		96
		532.8 -> 353.0	36249				
ADONA	6.846	376.9 -> 250.9	247721	4.55	µg/L		98
		376.9 -> 84.8	68513				
HFPO-DA	6.046	284.9 -> 168.9	16326	4.49	µg/L		99
		284.9 -> 184.9	1686				
3:3FTCA	3.859	241.0 -> 177.0	11083	11.26	µg/L		100
		241.0 -> 117.0	1480				
5:3FTCA	6.272	341.0 -> 237.1	250415	60.69	µg/L		100
		341.0 -> 217.0	178486				
7:3FTCA	7.673	441.0 -> 316.9	188969	61.92	µg/L		95
		441.0 -> 336.9	414386				
EtFOSA	10.985	526.0 -> 219.0	32047	4.70	µg/L		97
		526.0 -> 169.0	43639				
EtFOSE	10.931	630.0 -> 58.9	86405	11.80	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	26709	4.66	µg/L		100
		511.9 -> 169.0	38602				
MeFOSE	10.697	616.1 -> 58.9	57117	10.97	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3861	2.31	µg/L		97
		699.1 -> 98.8	2057				
NFDHA	5.551	295.0 -> 201.0	12263	4.81	µg/L		95
		295.0 -> 84.9	3195				
PFMBA	4.869	279.0 -> 85.1	46699	4.75	µg/L		100
PFMPA	3.576	229.0 -> 84.9	37523	4.77	µg/L		100
PFEESA	6.151	314.8 -> 134.9	115385	4.28	µg/L		100
		314.8 -> 82.9	3933				

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

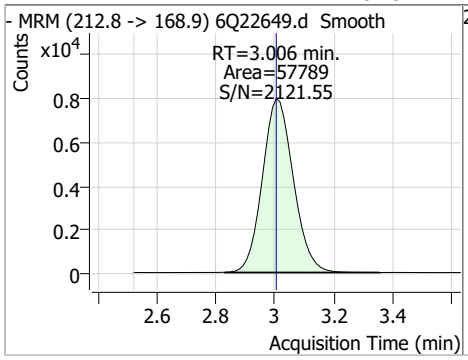
Perfluorinated Compounds by LC/MS/MS

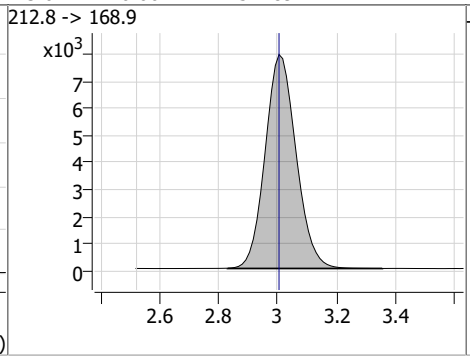
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

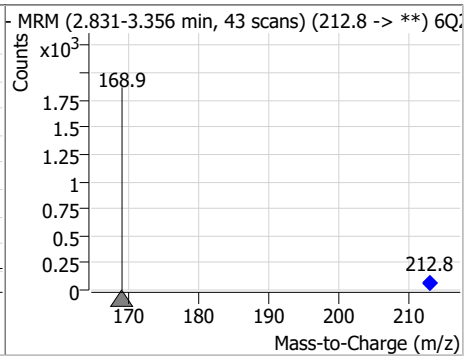
Perfluorinated Compounds by LC/MS/MS



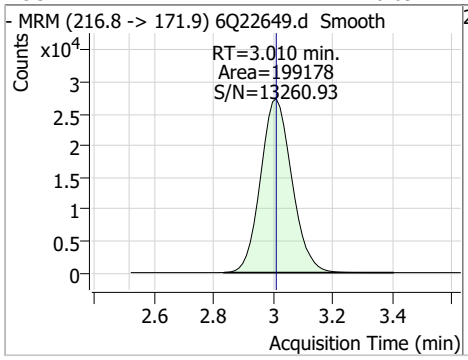
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.29	3.01	0.00	57789				

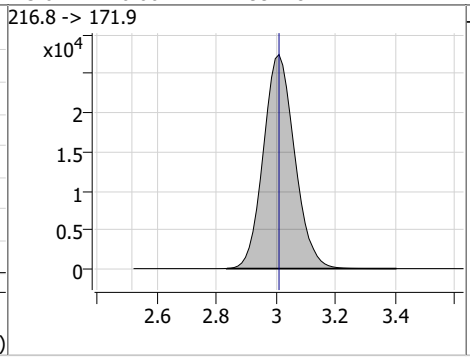


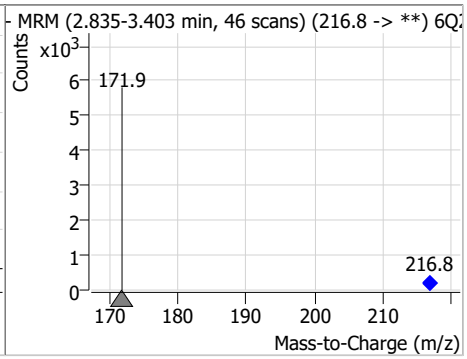




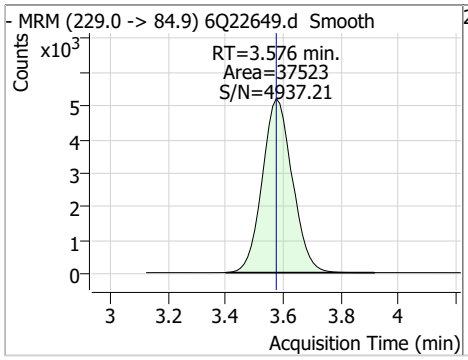
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.09	3.01	0.00	199178				

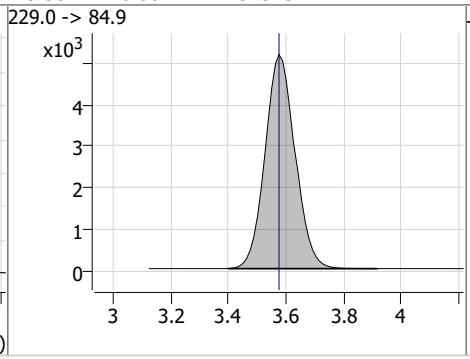


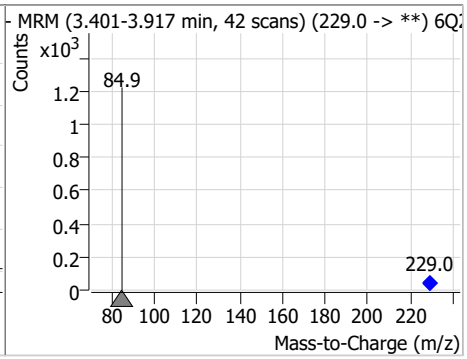




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.77	3.58	0.00	37523				

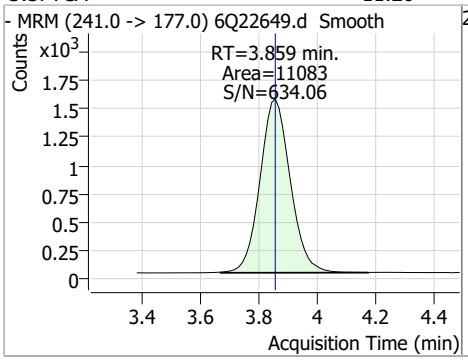


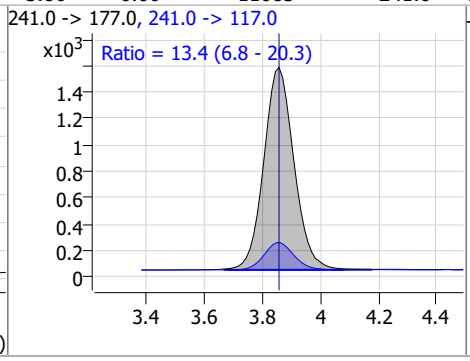


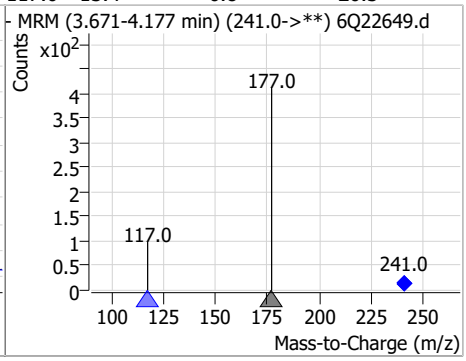


Perfluorinated Compounds by LC/MS/MS

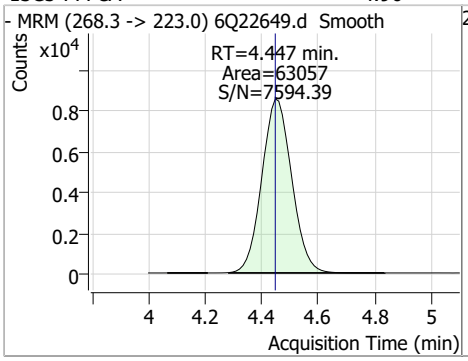
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.26	3.86	0.00	11083	241.0 -> 117.0	13.4	6.8	20.3

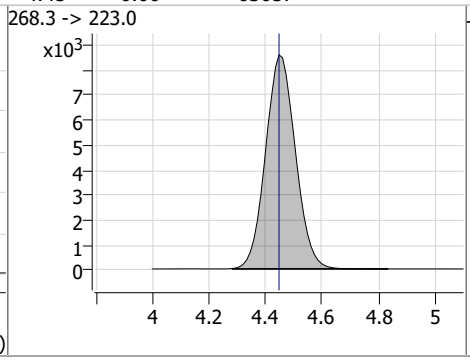


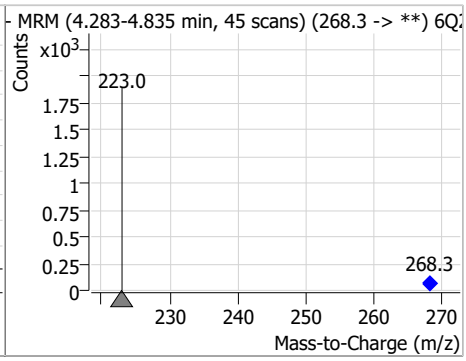




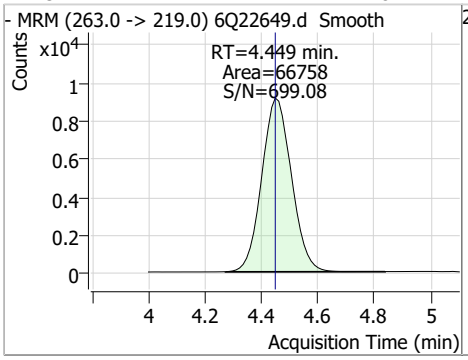
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.96	4.45	0.00	63057				

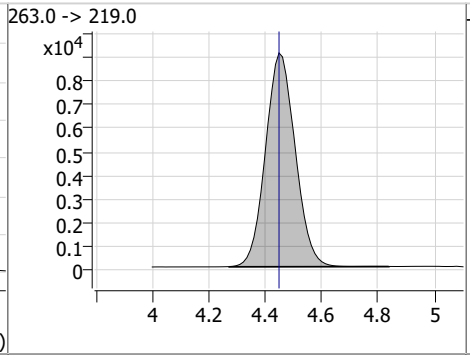


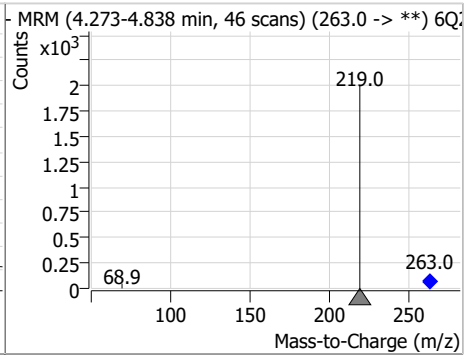




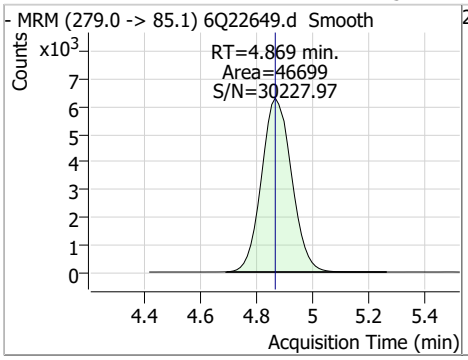
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.81	4.45	0.00	66758				

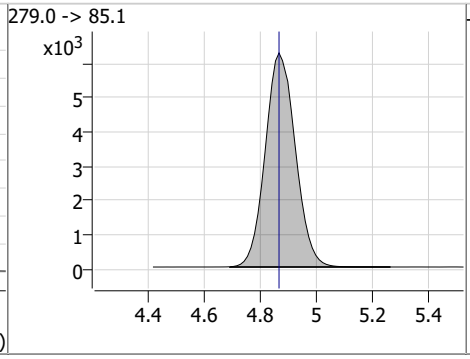


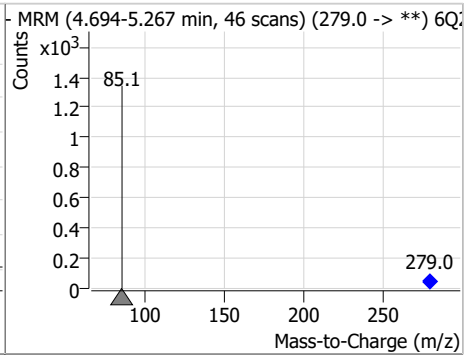




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.75	4.87	0.00	46699				

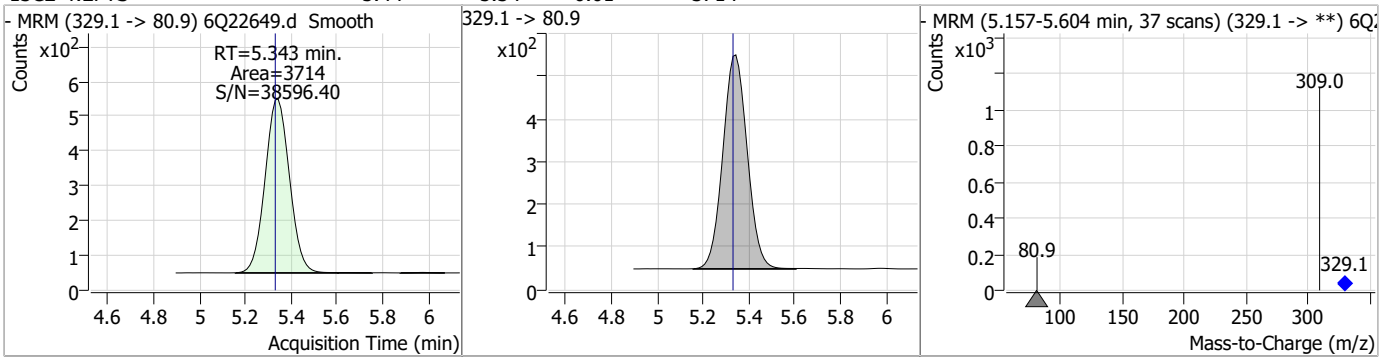




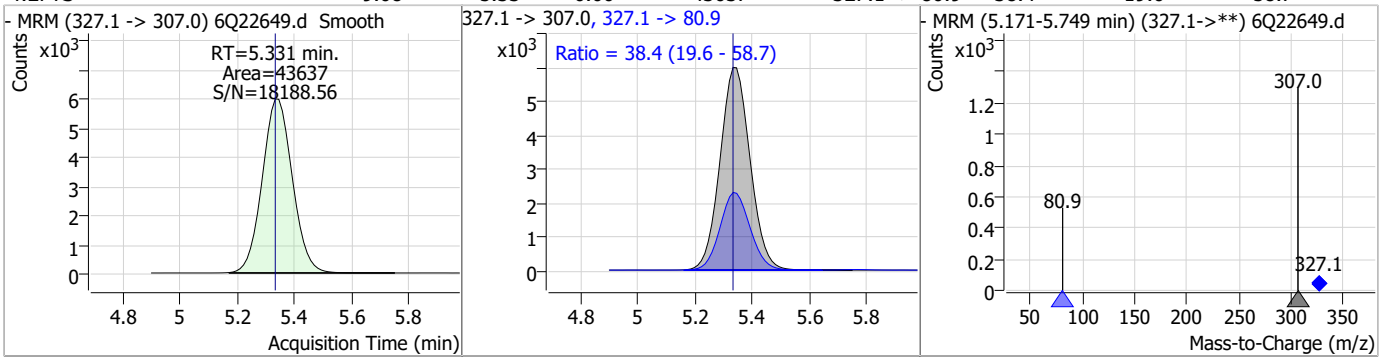


Perfluorinated Compounds by LC/MS/MS

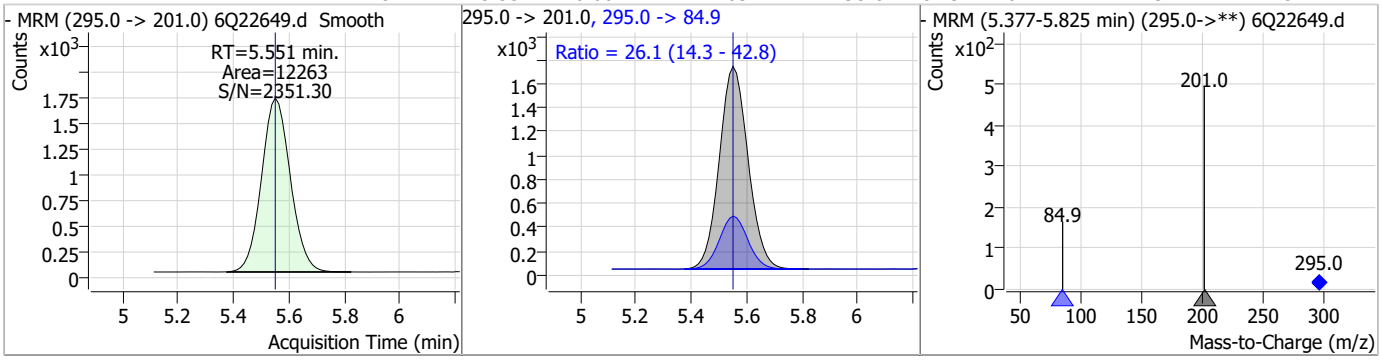
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.44	5.34	0.01	3714				



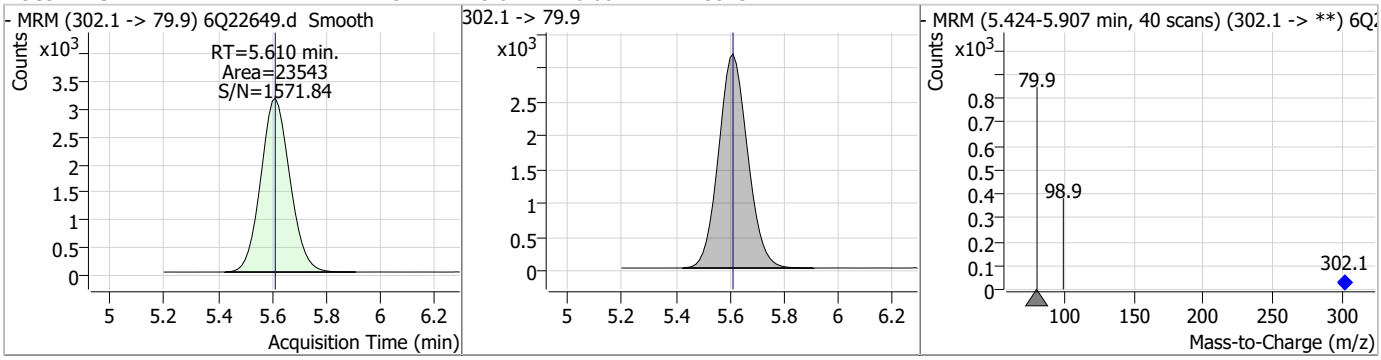
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.08	5.33	0.00	43637	327.1 -> 80.9	38.4	19.6	58.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.81	5.55	0.00	12263	295.0 -> 84.9	26.1	14.3	42.8

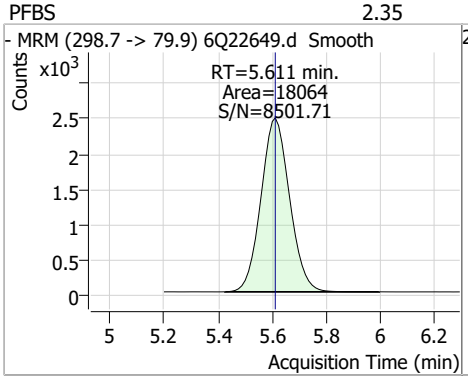


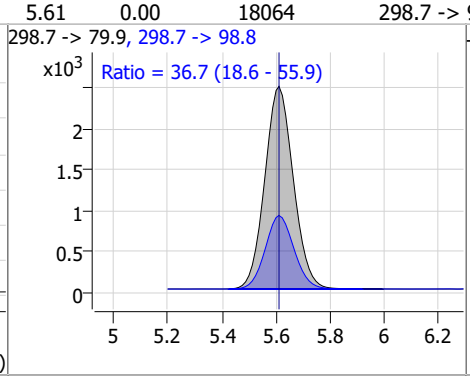
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.43	5.61	0.00	23543				

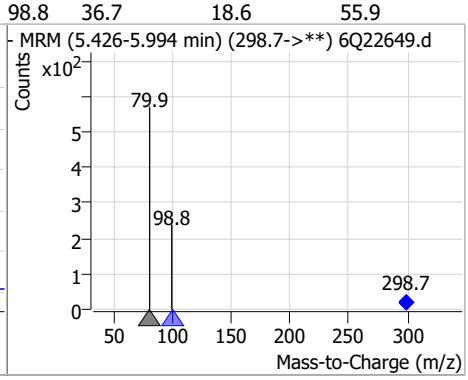


Perfluorinated Compounds by LC/MS/MS

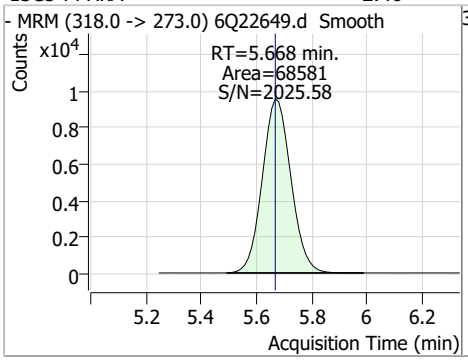
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.35	5.61	0.00	18064	298.7 -> 98.8	36.7	18.6	55.9

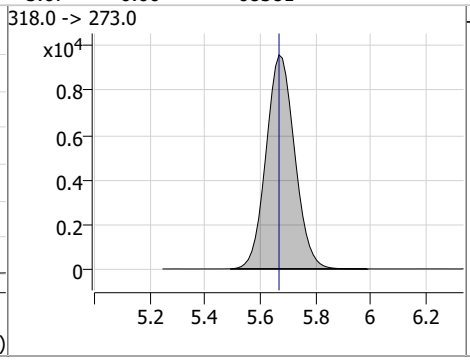


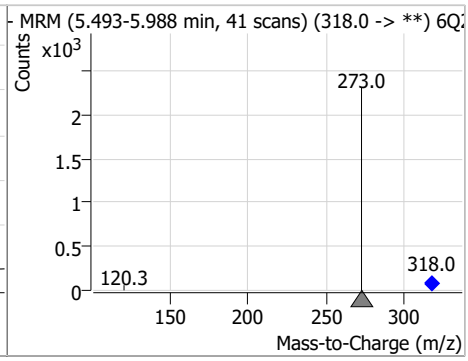




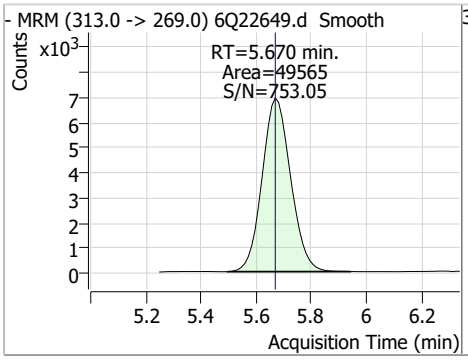
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.67	0.00	68581				

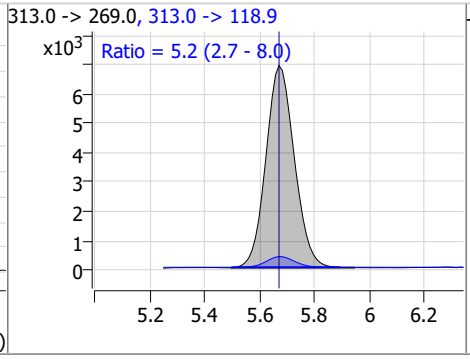


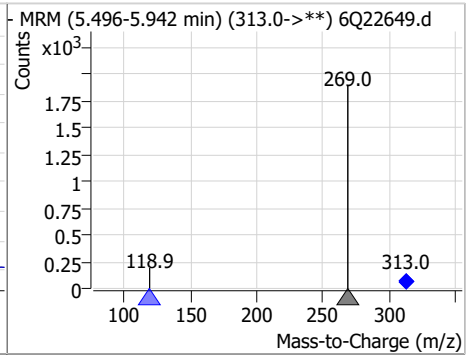




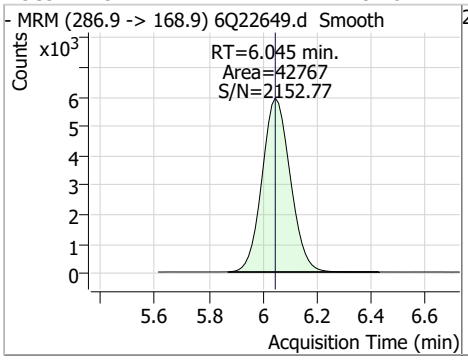
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.47	5.67	0.00	49565	313.0 -> 118.9	5.2	2.7	8.0

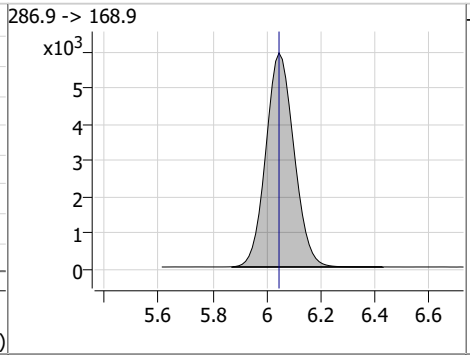


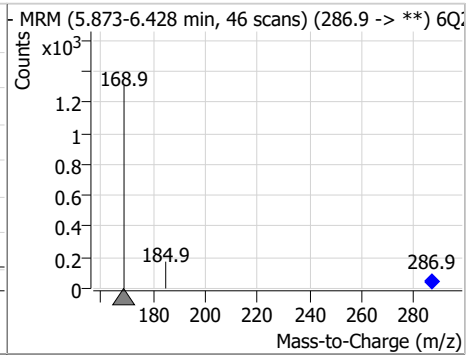




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.78	6.05	0.00	42767				

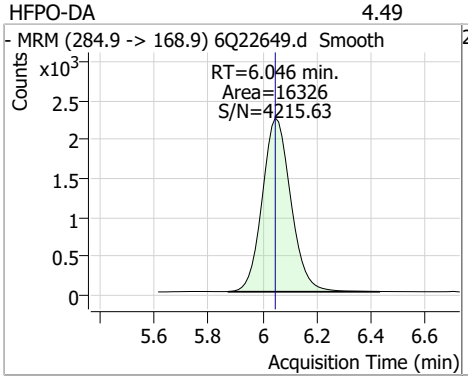


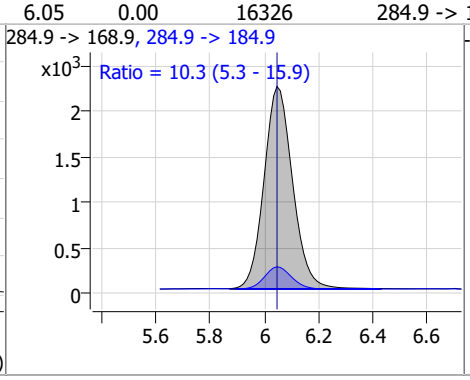


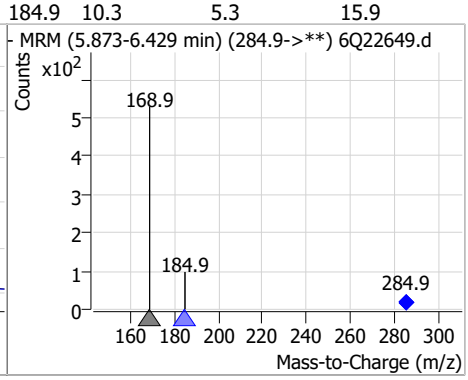


Perfluorinated Compounds by LC/MS/MS

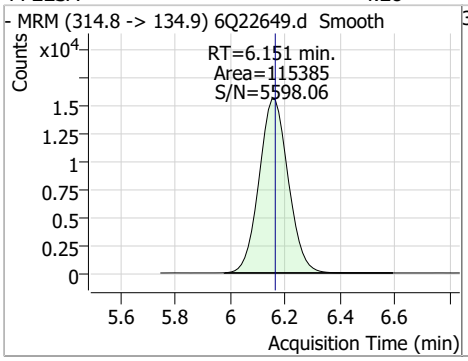
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.49	6.05	0.00	16326	284.9 -> 184.9	10.3	5.3	15.9

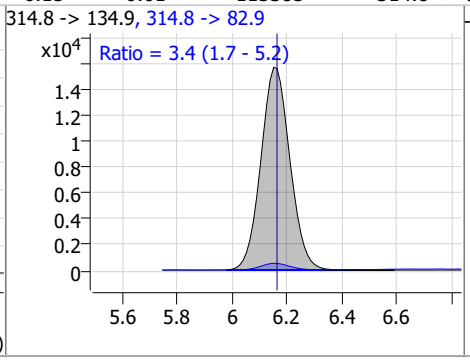


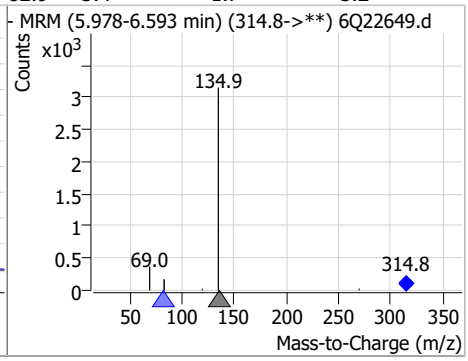




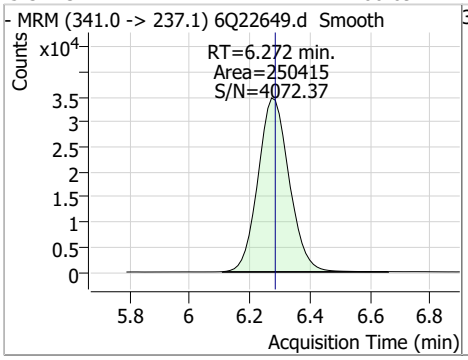
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.28	6.15	-0.01	115385	314.8 -> 82.9	3.4	1.7	5.2

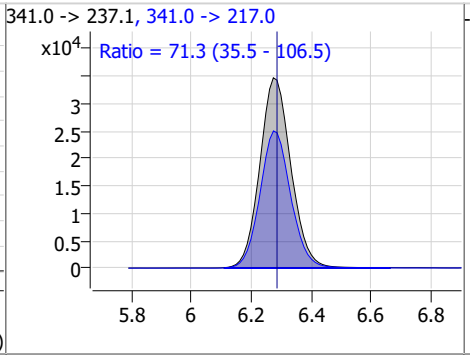


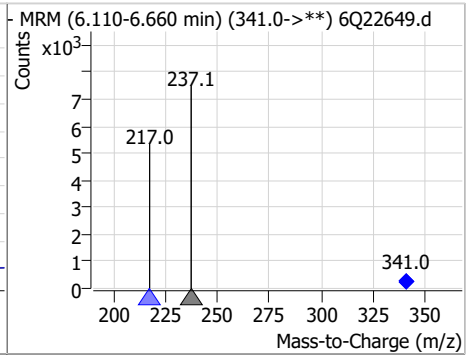




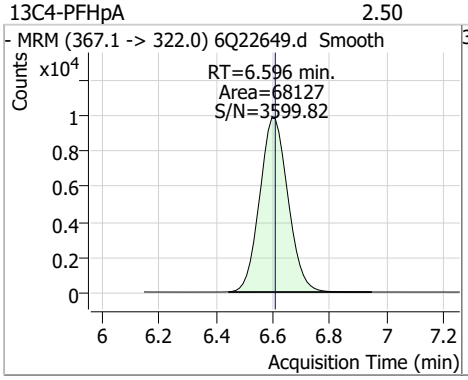
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.69	6.27	-0.01	250415	341.0 -> 217.0	71.3	35.5	106.5

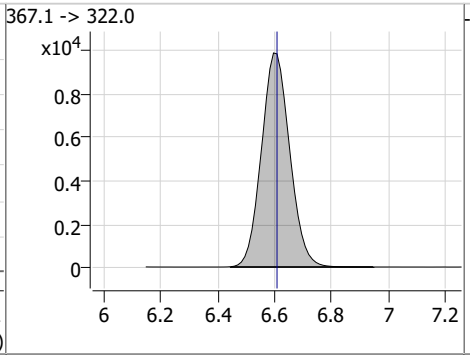


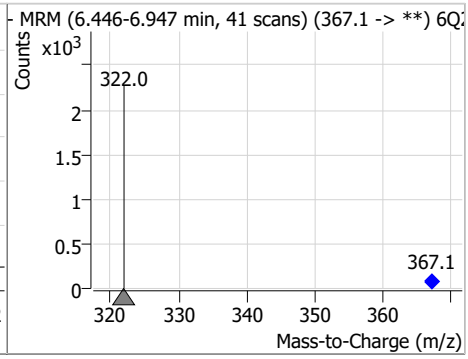




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.60	-0.01	68127				

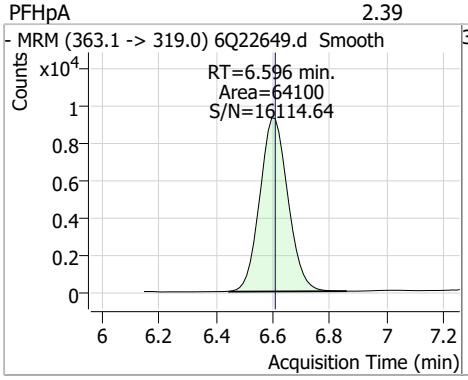


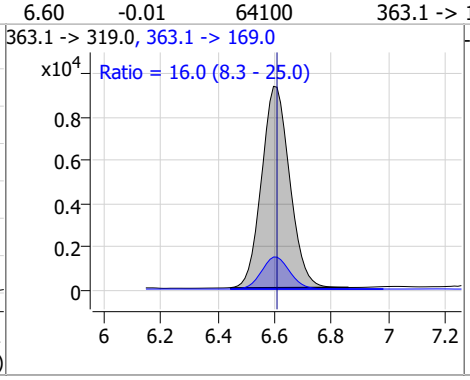


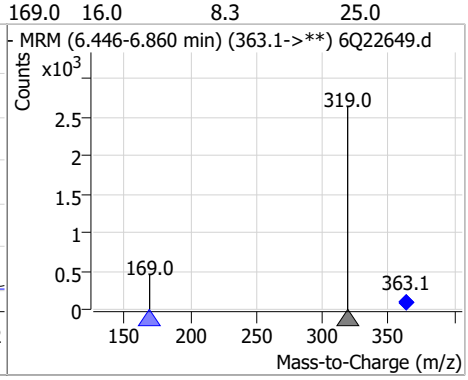


Perfluorinated Compounds by LC/MS/MS

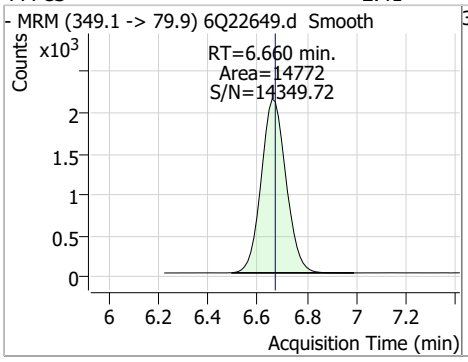
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.39	6.60	-0.01	64100	363.1 -> 169.0	16.0	8.3	25.0

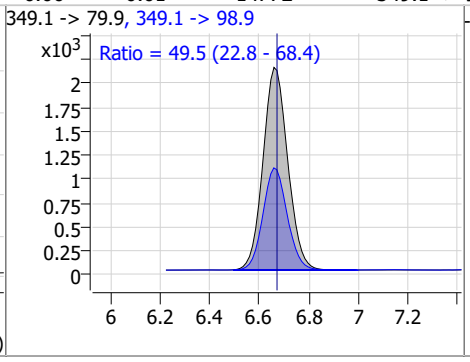


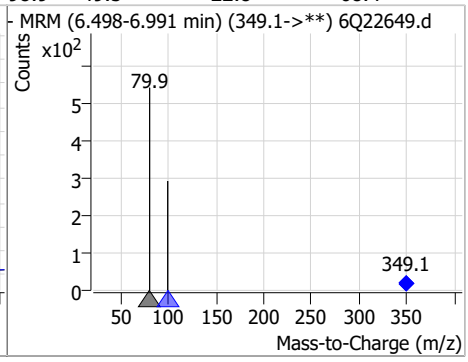




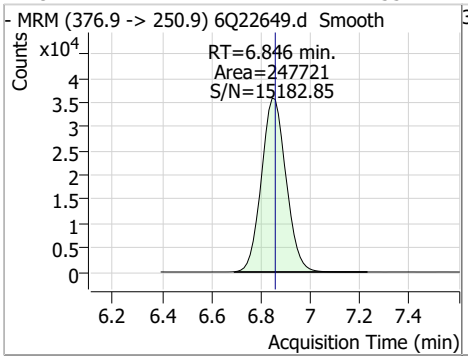
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.41	6.66	-0.01	14772	349.1 -> 98.9	49.5	22.8	68.4

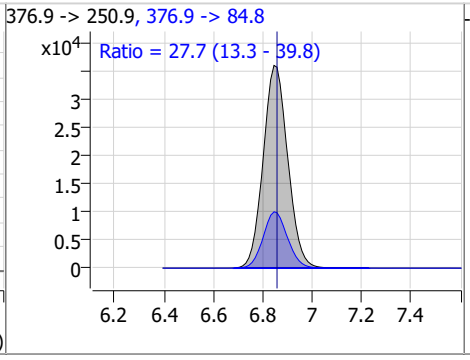


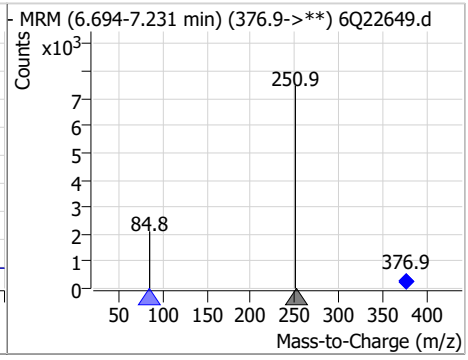




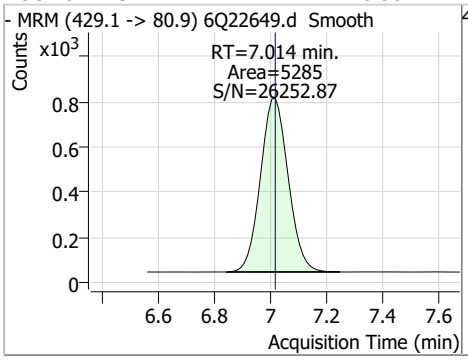
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.55	6.85	-0.01	247721	376.9 -> 84.8	27.7	13.3	39.8

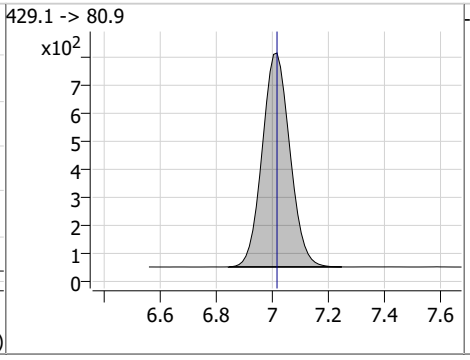


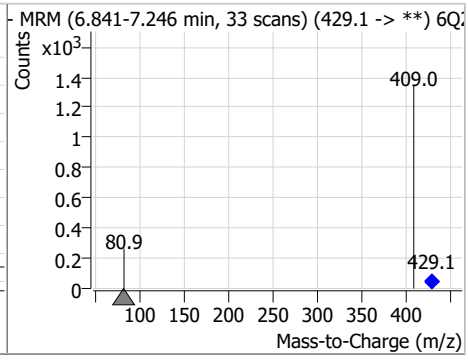




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.36	7.01	0.00	5285				

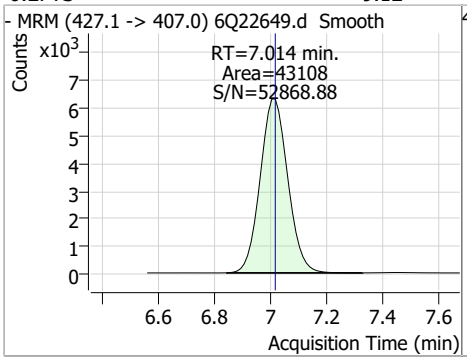


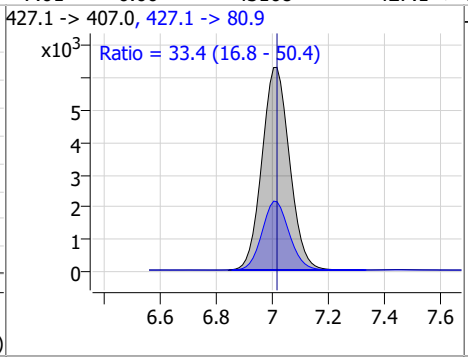


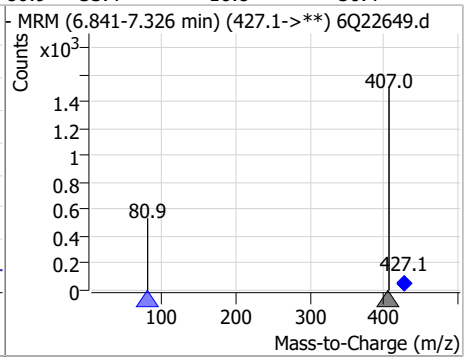


Perfluorinated Compounds by LC/MS/MS

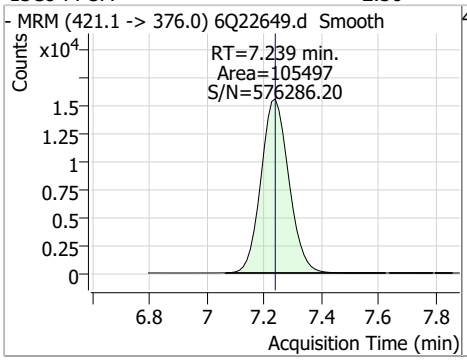
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.12	7.01	0.00	43108	427.1 -> 80.9	33.4	16.8	50.4

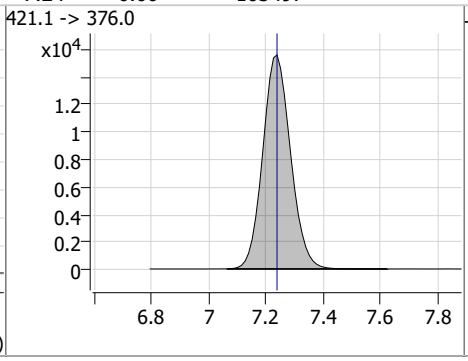


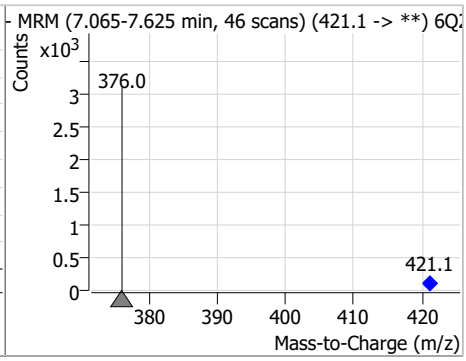




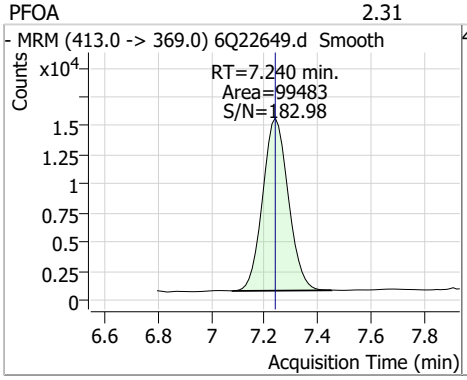
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.56	7.24	0.00	105497				

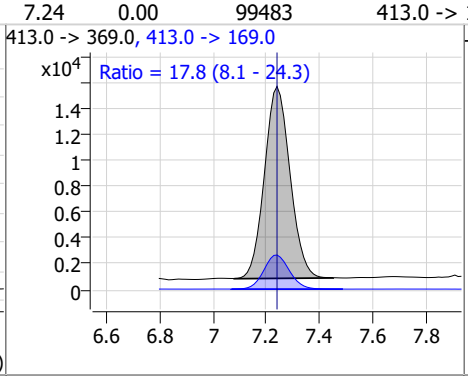


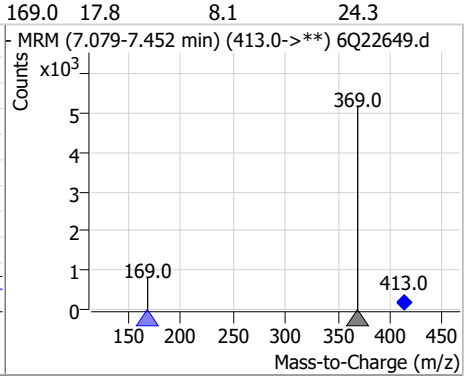




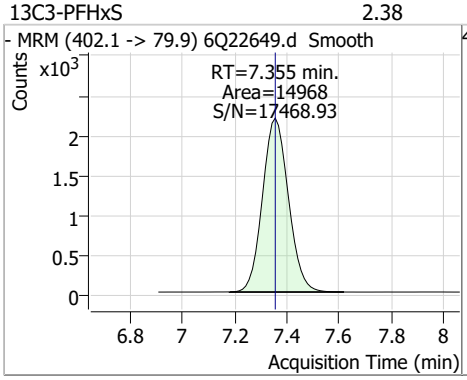
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.31	7.24	0.00	99483	413.0 -> 169.0	17.8	8.1	24.3

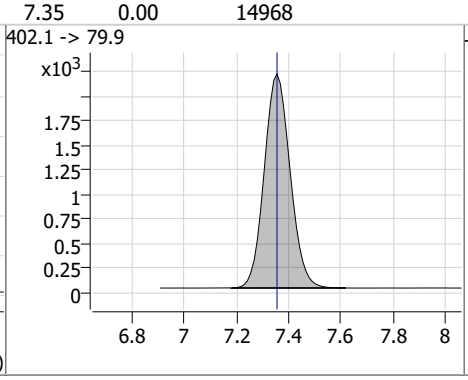


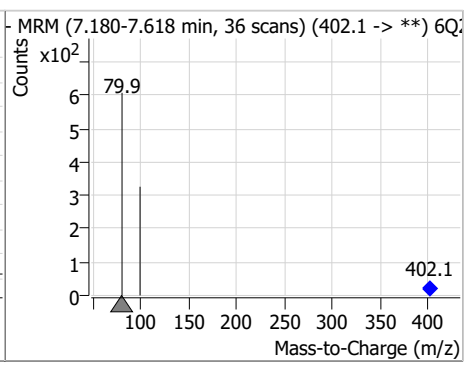




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.38	7.35	0.00	14968				

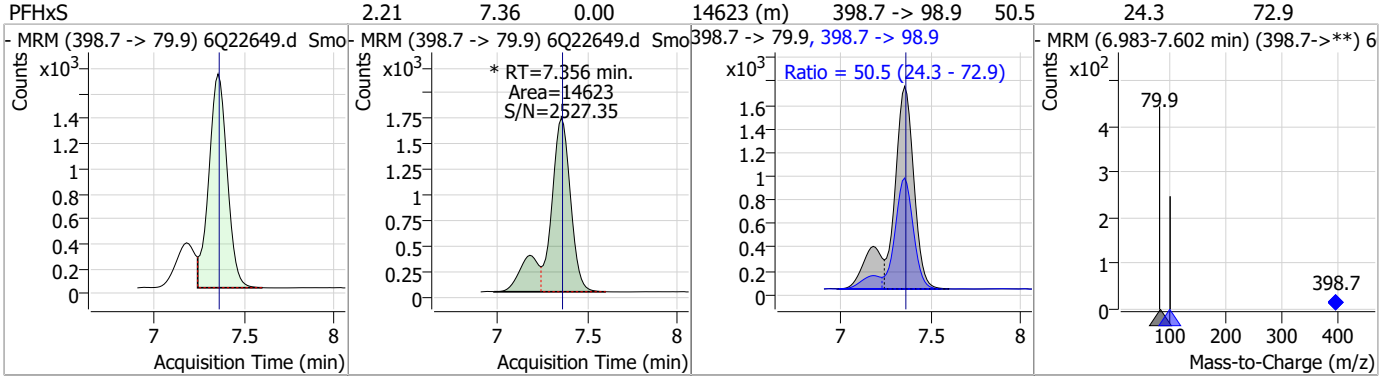




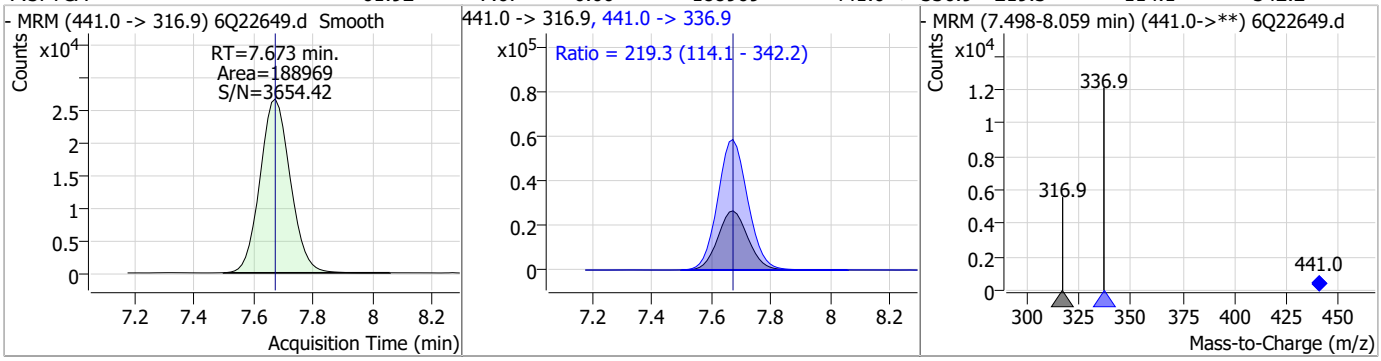


Perfluorinated Compounds by LC/MS/MS

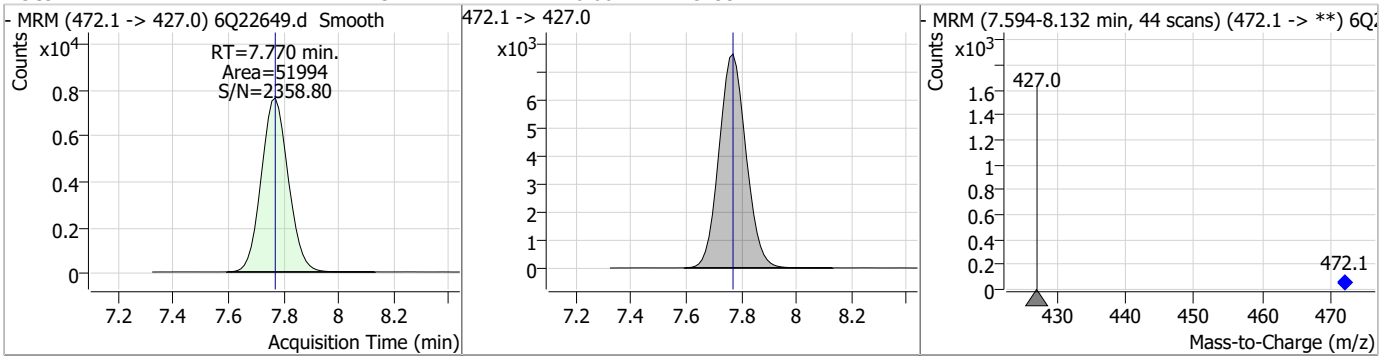
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.21	7.36	0.00	14623 (m)	398.7 -> 98.9	50.5	24.3	72.9



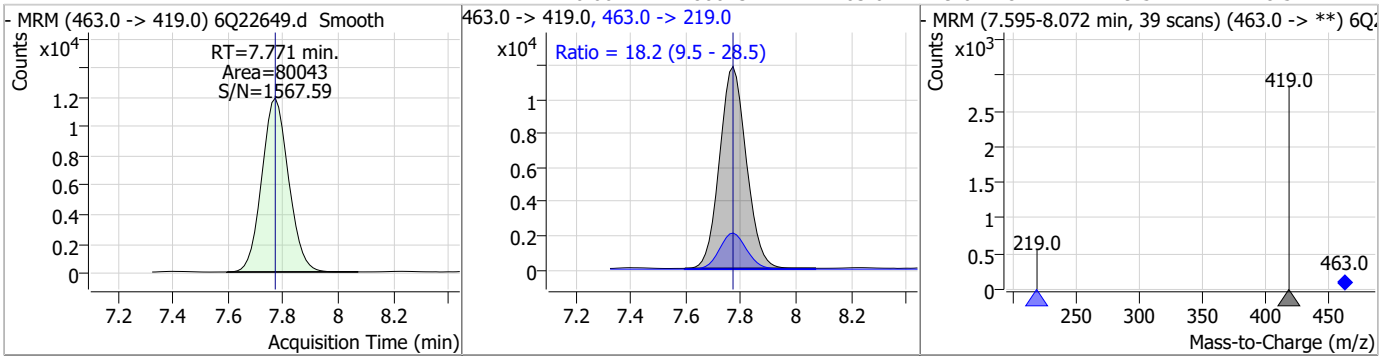
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.92	7.67	0.00	188969	441.0 -> 336.9	219.3	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	7.77	0.00	51994				

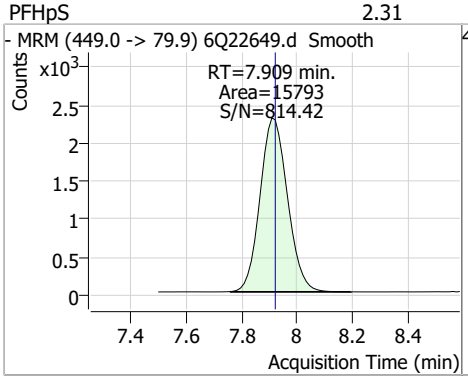


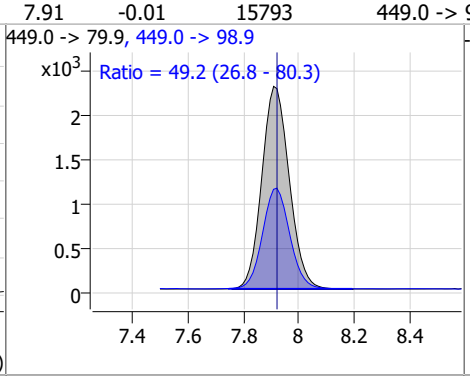
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.24	7.77	0.00	80043	463.0 -> 219.0	18.2	9.5	28.5

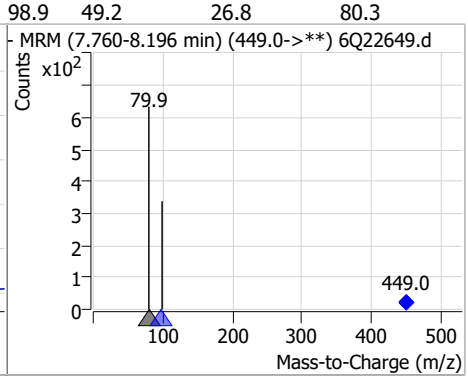


Perfluorinated Compounds by LC/MS/MS

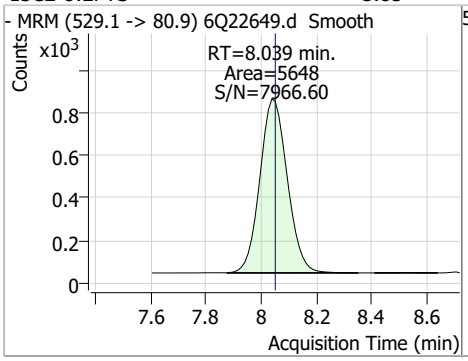
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.31	7.91	-0.01	15793	449.0 -> 98.9	49.2	26.8	80.3

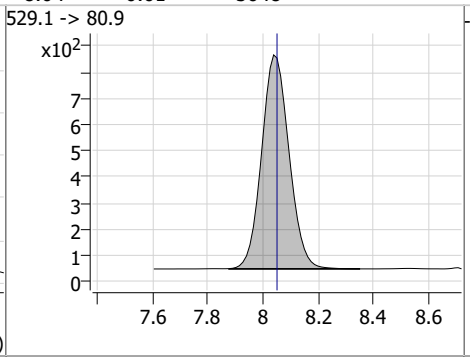


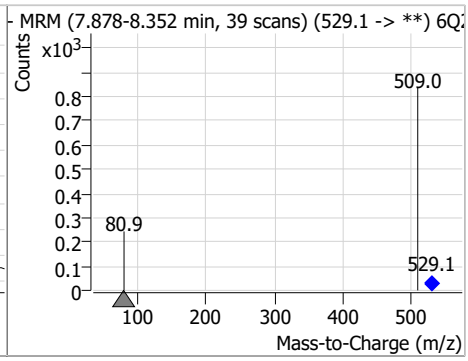




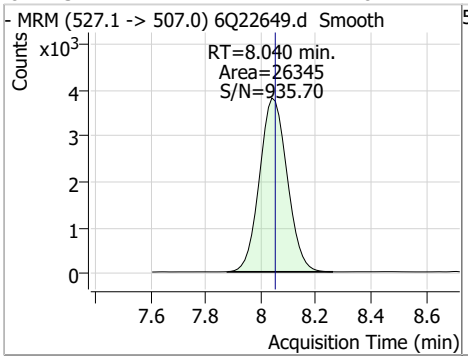
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.85	8.04	-0.01	5648				

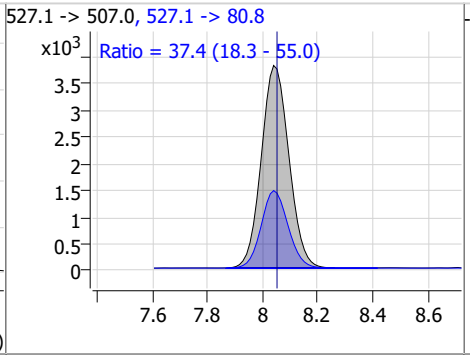


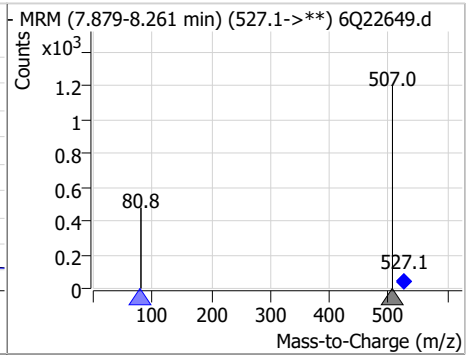




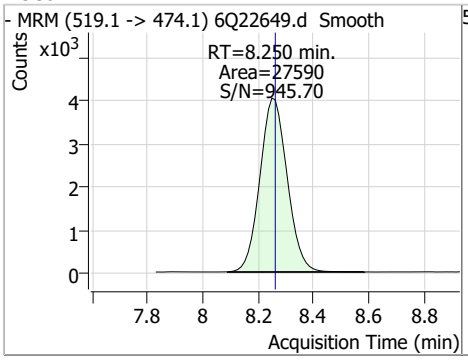
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	8.72	8.04	-0.01	26345	527.1 -> 80.8	37.4	18.3	55.0

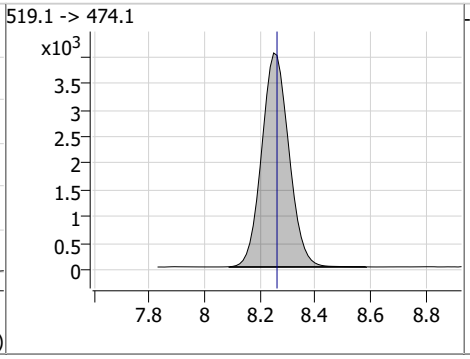


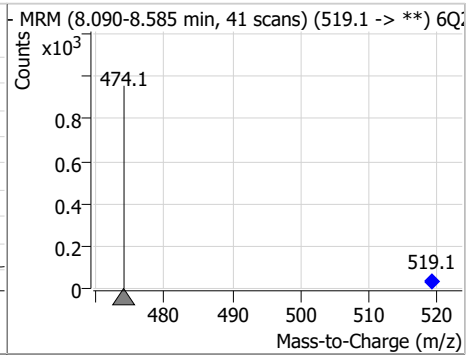




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.25	-0.01	27590				

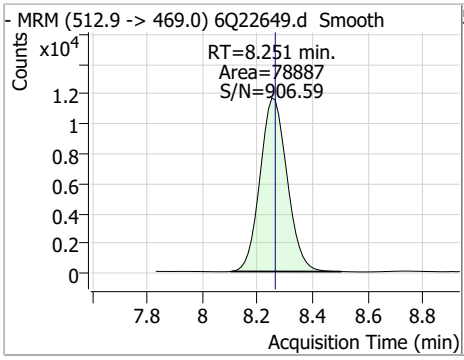


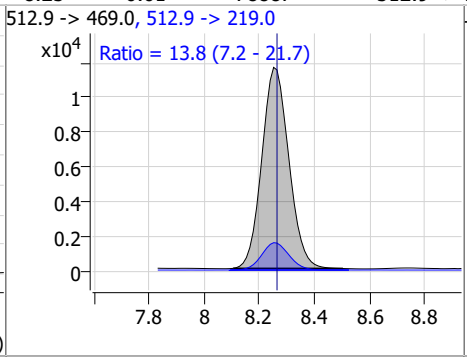


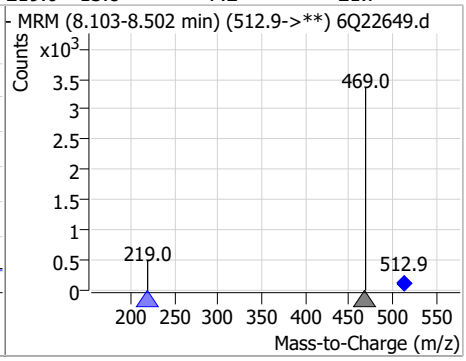


Perfluorinated Compounds by LC/MS/MS

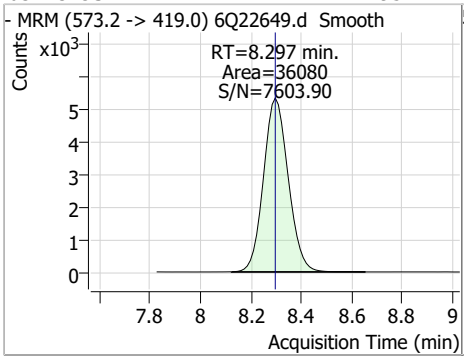
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.41	8.25	-0.01	78887	512.9 -> 219.0	13.8	7.2	21.7

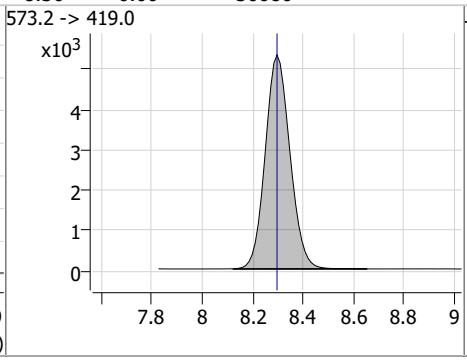


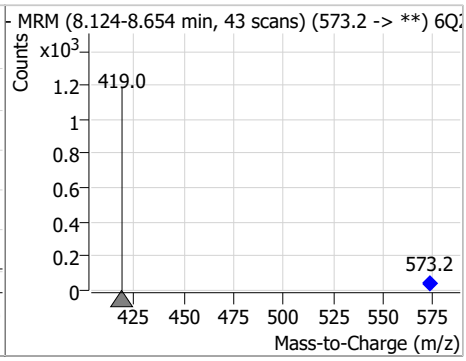




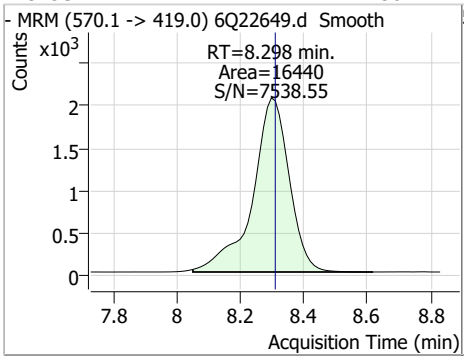
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.95	8.30	0.00	36080				

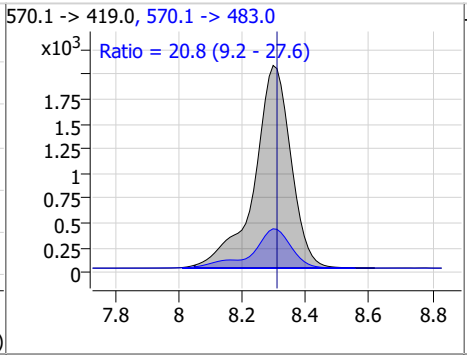


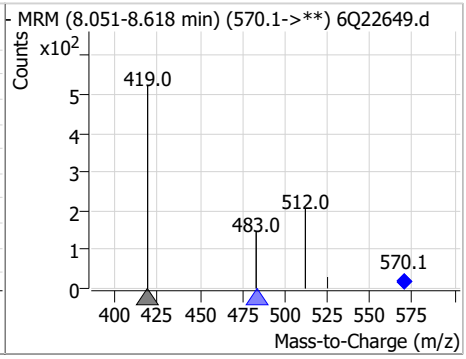




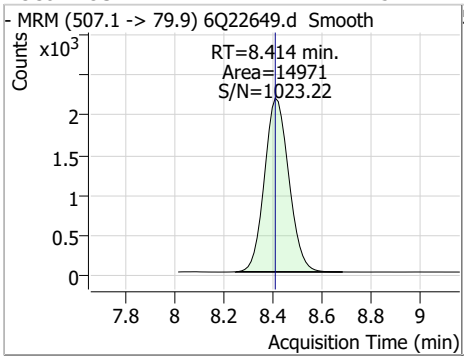
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.38	8.30	-0.01	16440	570.1 -> 483.0	20.8	9.2	27.6

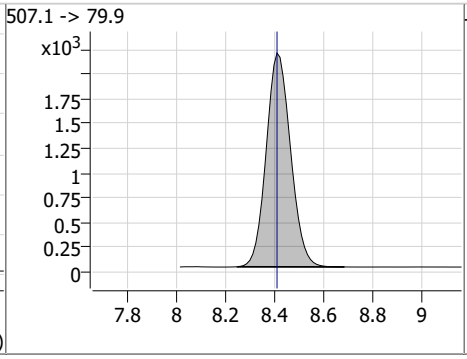


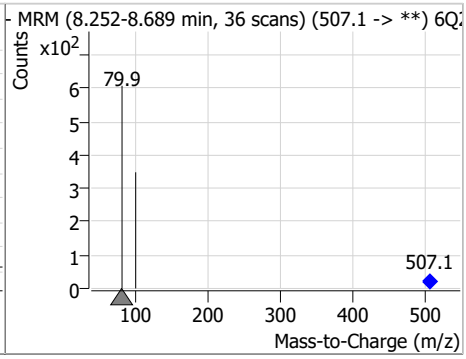




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.54	8.41	0.00	14971				

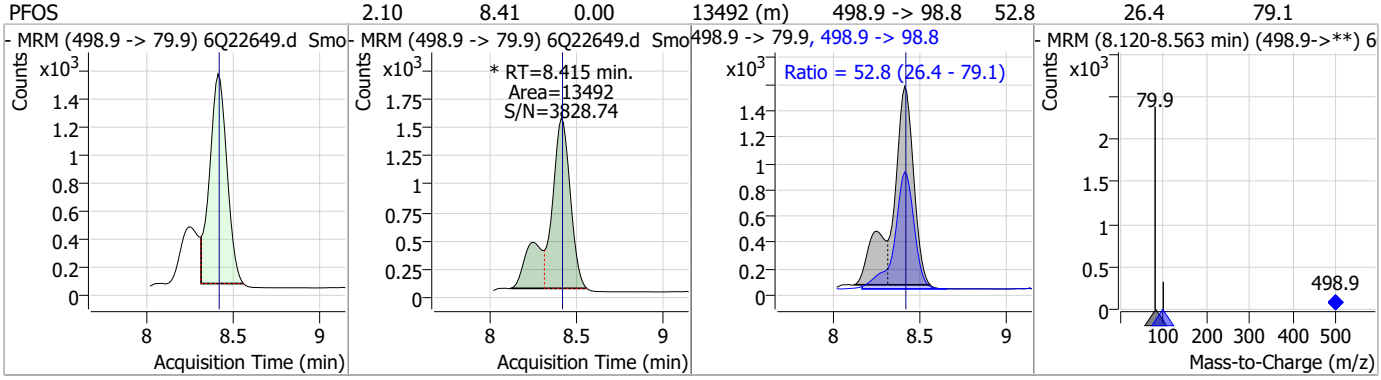




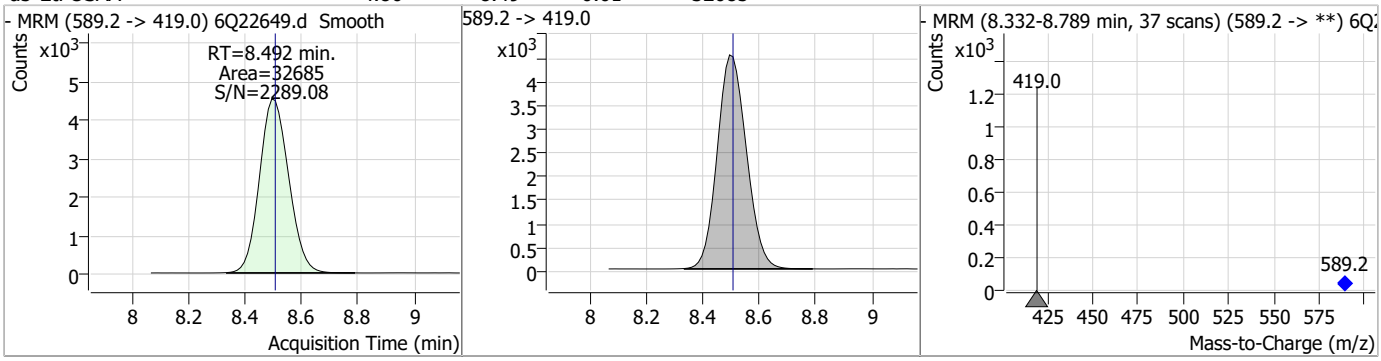


Perfluorinated Compounds by LC/MS/MS

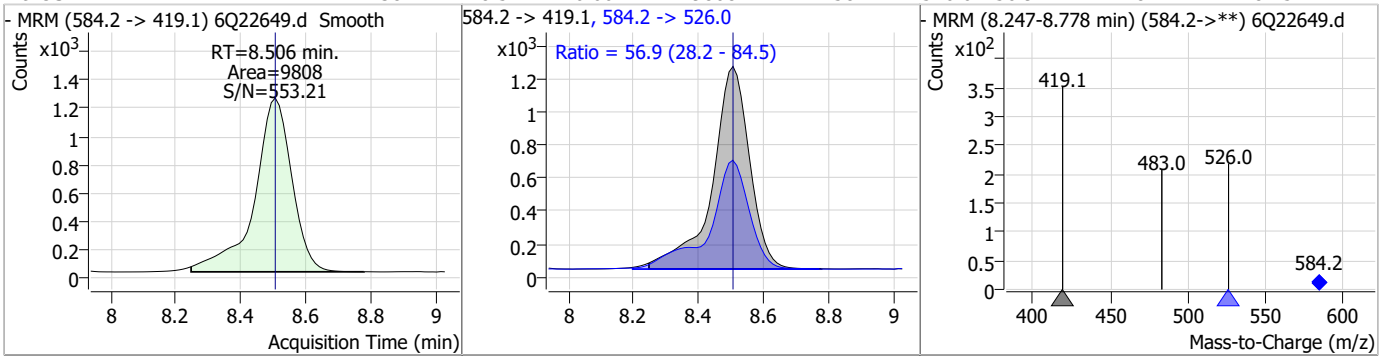
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.10	8.41	0.00	13492 (m)	498.9 -> 98.8	52.8	26.4	79.1



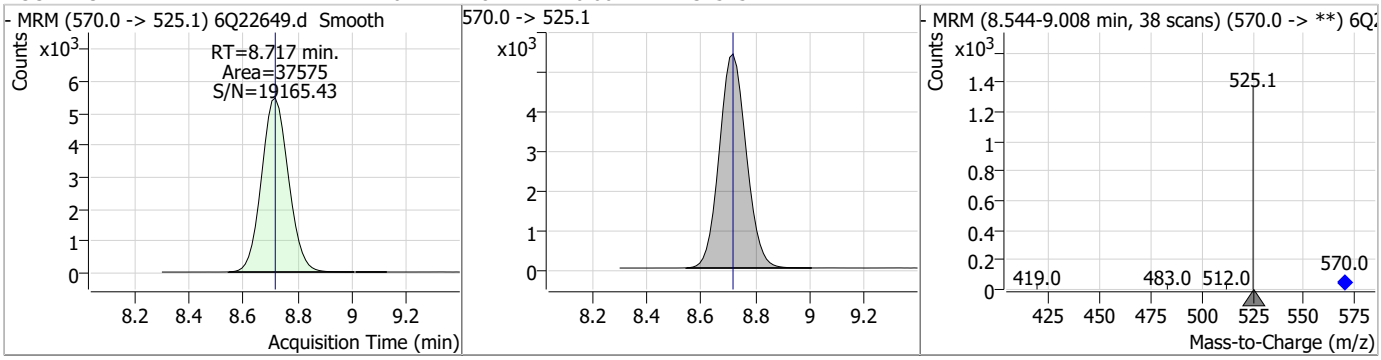
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.86	8.49	-0.01	32685				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.38	8.51	0.00	9808	584.2 -> 526.0	56.9	28.2	84.5

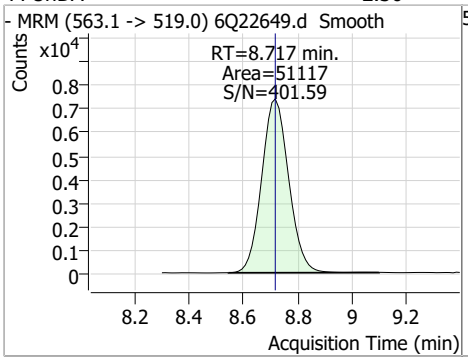


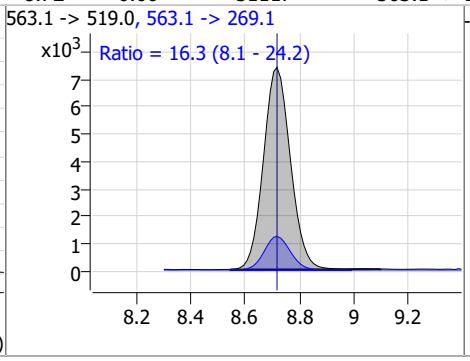
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.72	0.00	37575				

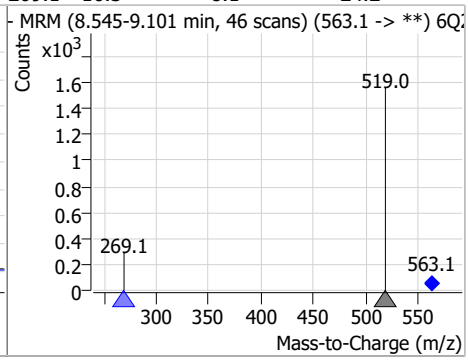


Perfluorinated Compounds by LC/MS/MS

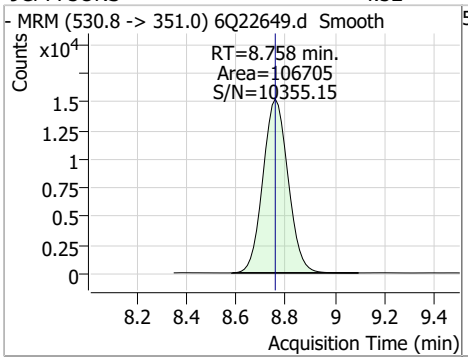
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.36	8.72	0.00	51117	563.1 -> 269.1	16.3	8.1	24.2

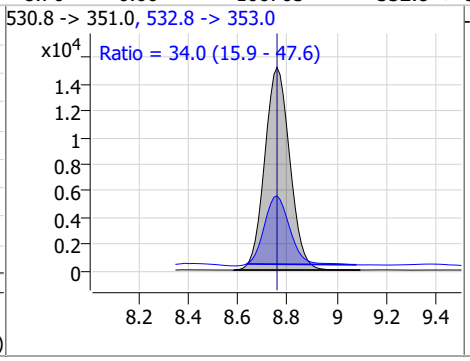


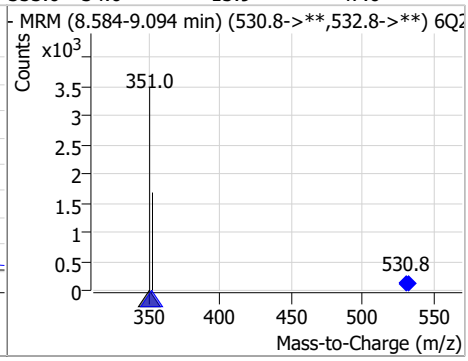




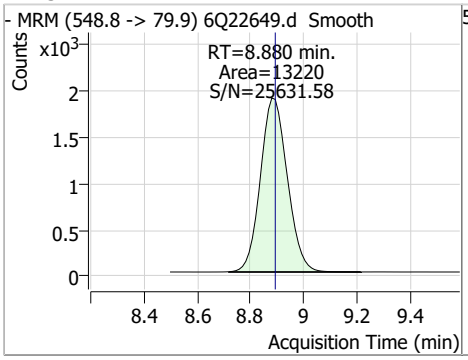
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.32	8.76	0.00	106705	532.8 -> 353.0	34.0	15.9	47.6

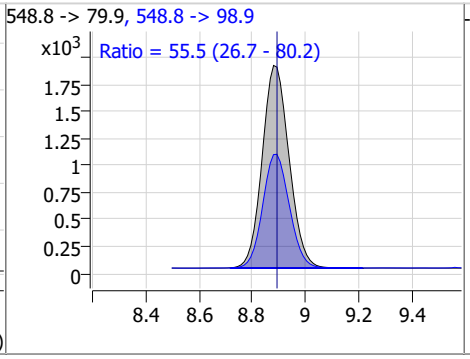


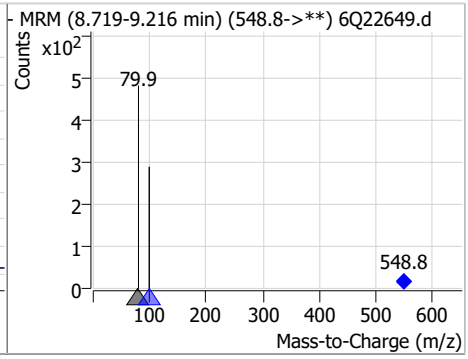




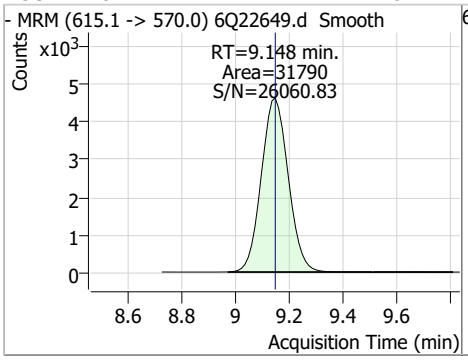
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.14	8.88	-0.01	13220	548.8 -> 98.9	55.5	26.7	80.2

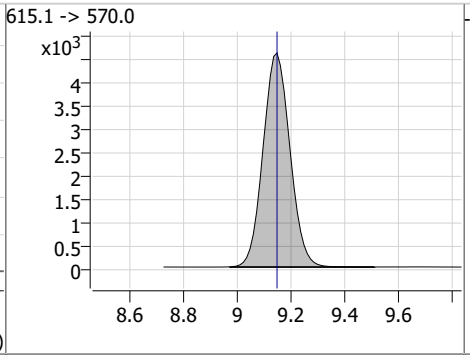


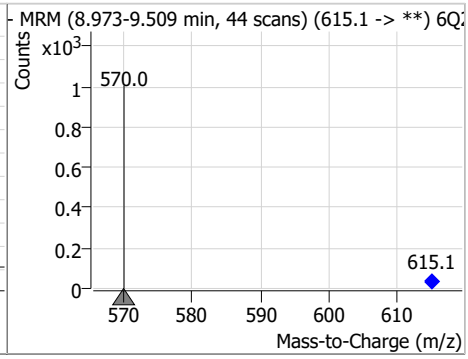




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	9.15	0.00	31790				

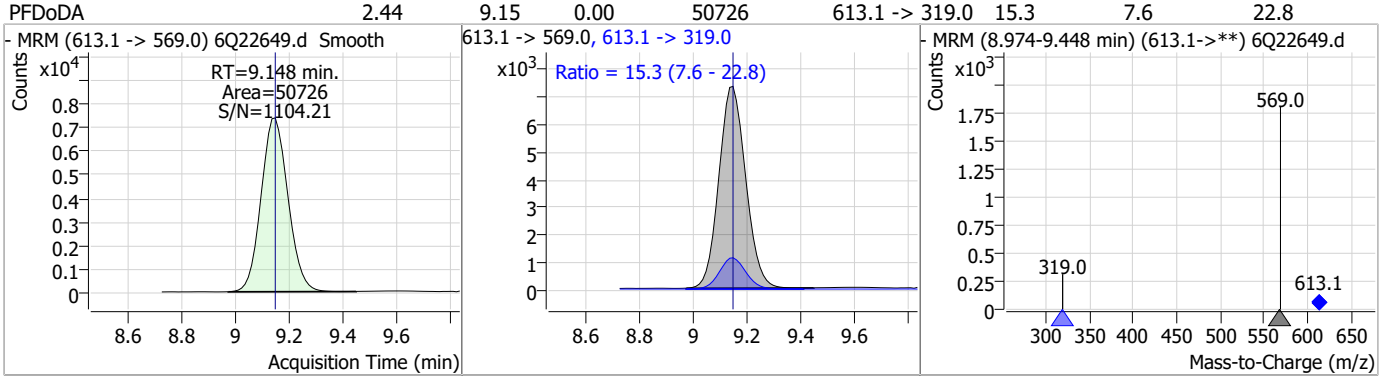




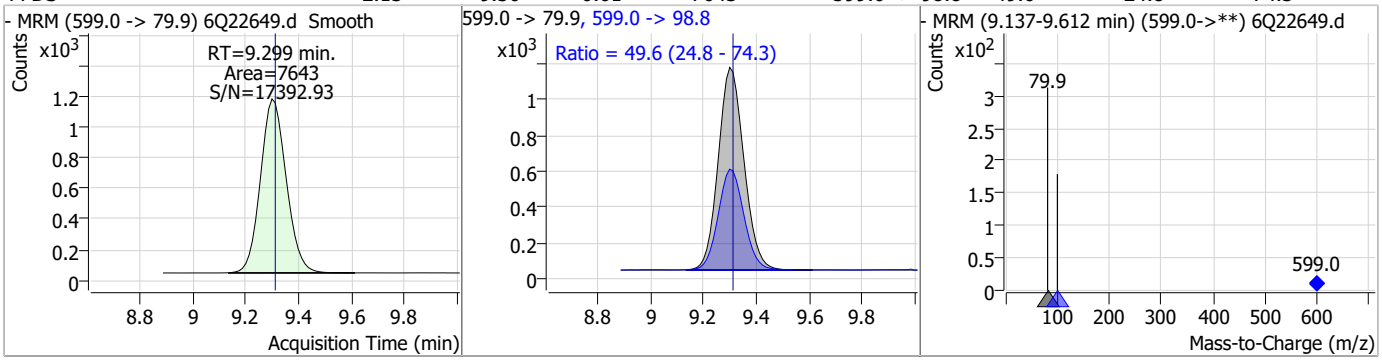


Perfluorinated Compounds by LC/MS/MS

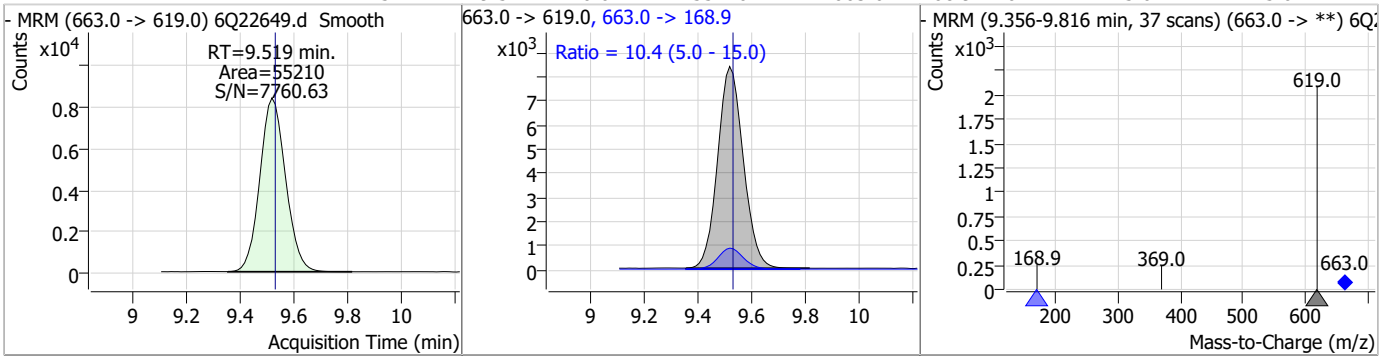
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.44	9.15	0.00	50726	613.1 -> 319.0	15.3	7.6	22.8



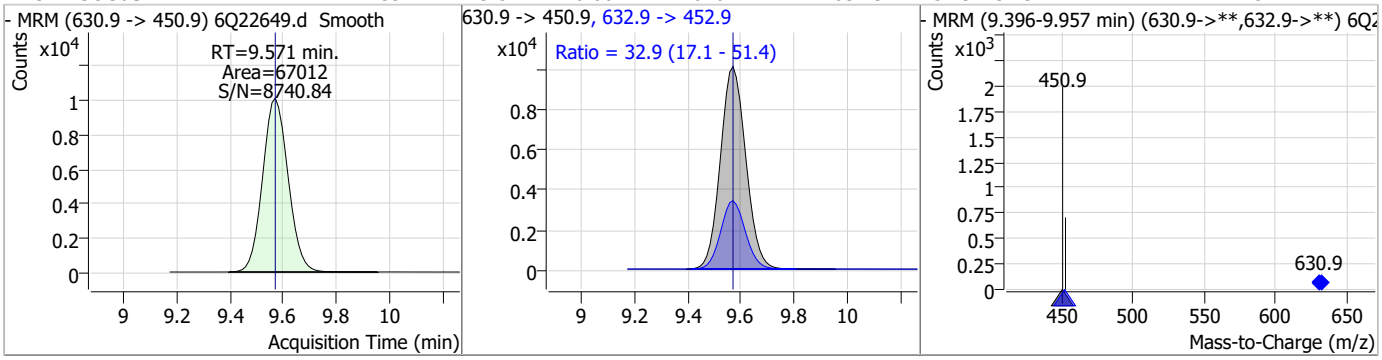
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.13	9.30	-0.01	7643	599.0 -> 98.8	49.6	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.57	9.52	-0.01	55210	663.0 -> 168.9	10.4	5.0	15.0

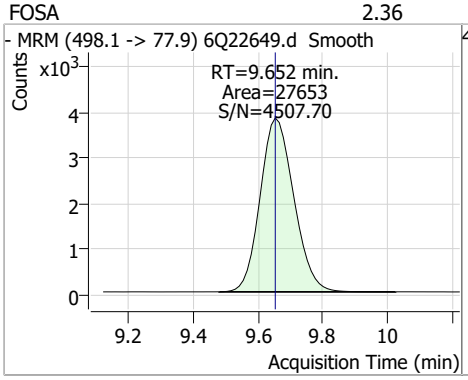


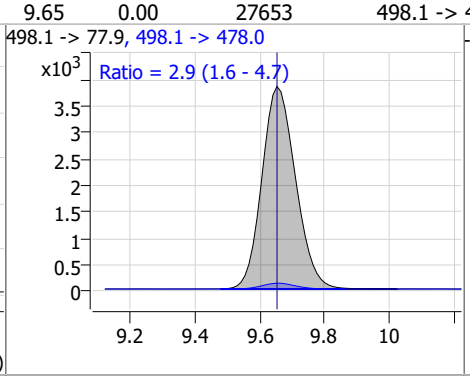
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.39	9.57	0.00	67012	632.9 -> 452.9	32.9	17.1	51.4

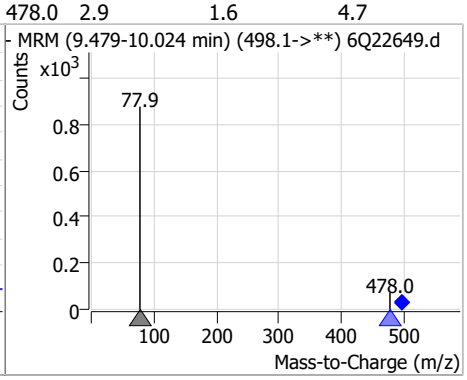


Perfluorinated Compounds by LC/MS/MS

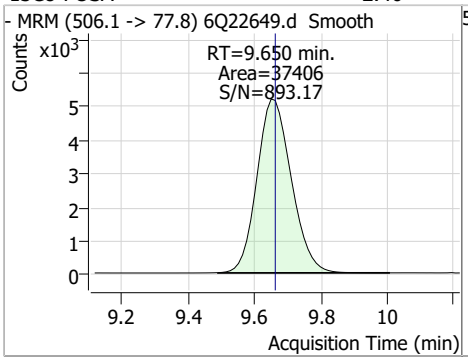
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.36	9.65	0.00	27653	498.1 -> 478.0	2.9	1.6	4.7

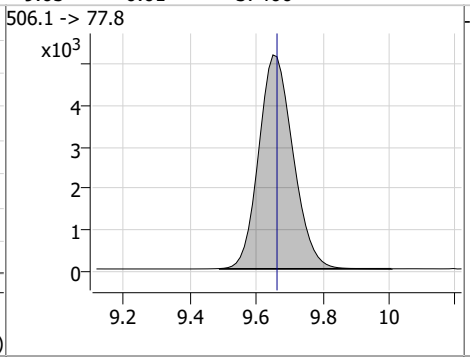


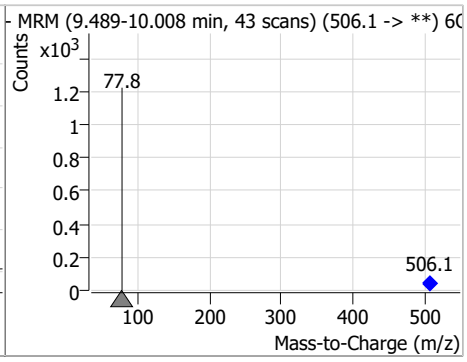




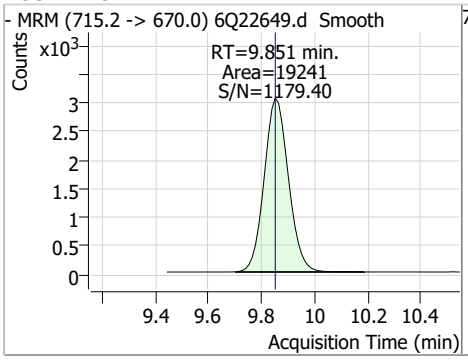
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.46	9.65	-0.01	37406				

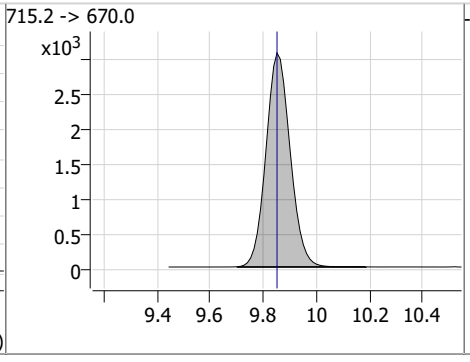


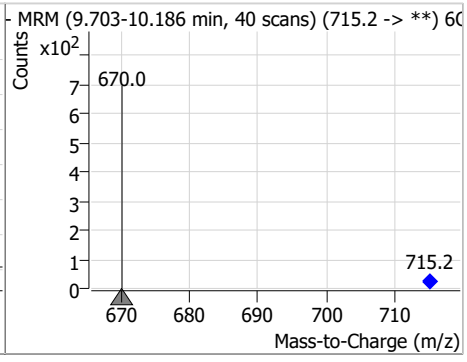




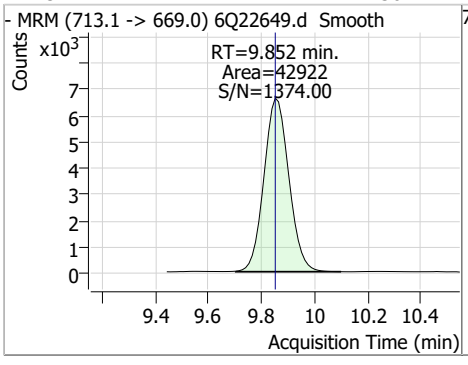
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.85	0.00	19241				

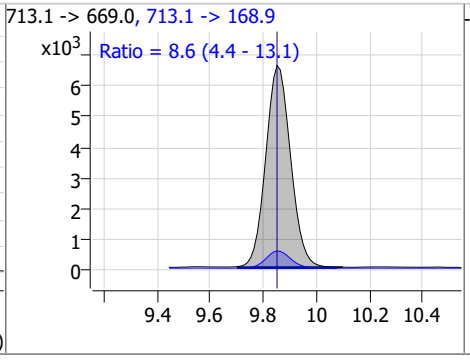


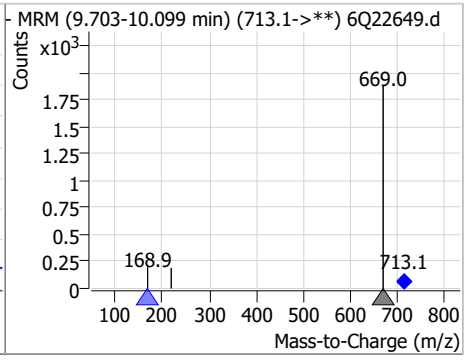




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.30	9.85	0.00	42922	713.1 -> 168.9	8.6	4.4	13.1

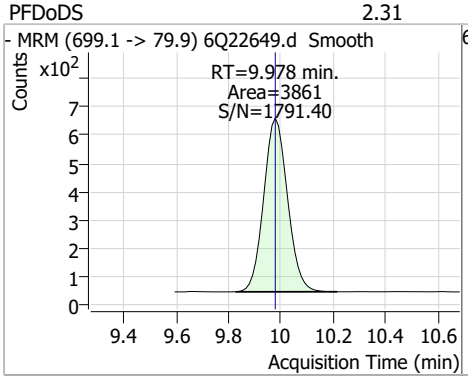


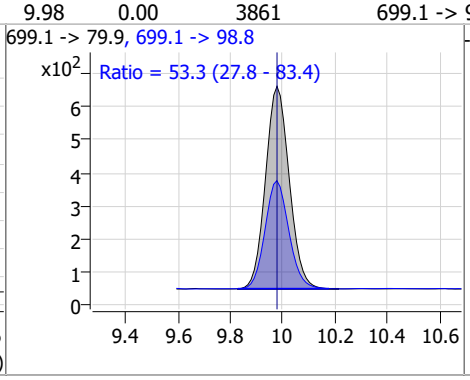


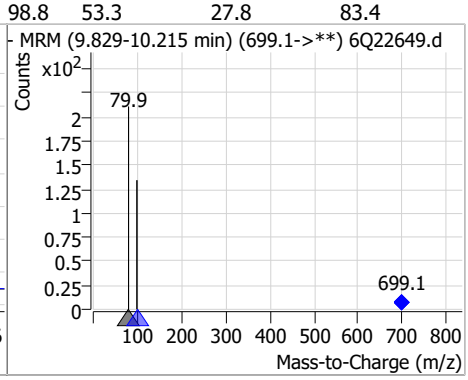


Perfluorinated Compounds by LC/MS/MS

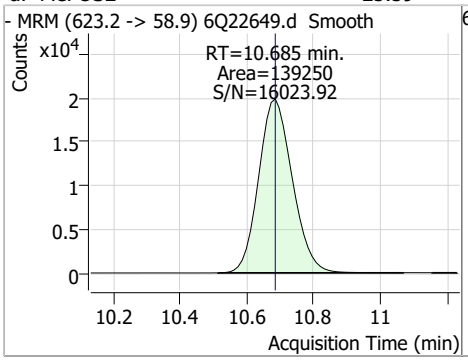
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.31	9.98	0.00	3861	699.1 -> 98.8	53.3	27.8	83.4

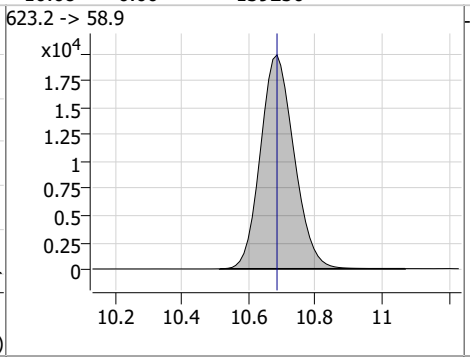


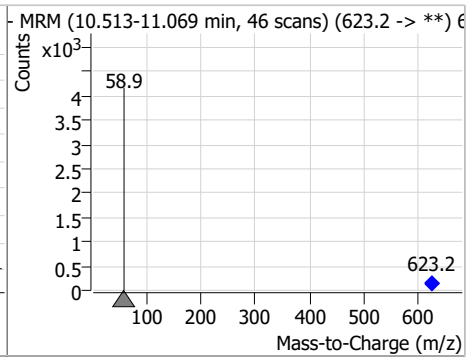




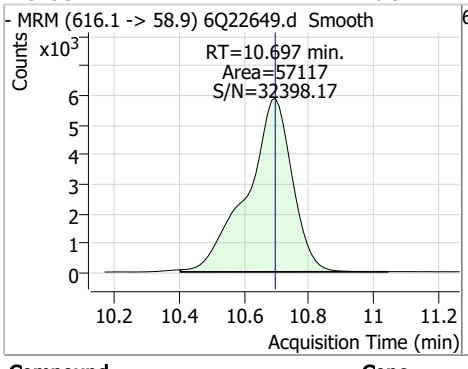
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.59	10.68	0.00	139250				

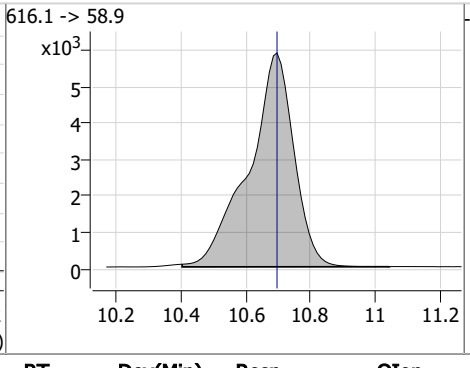


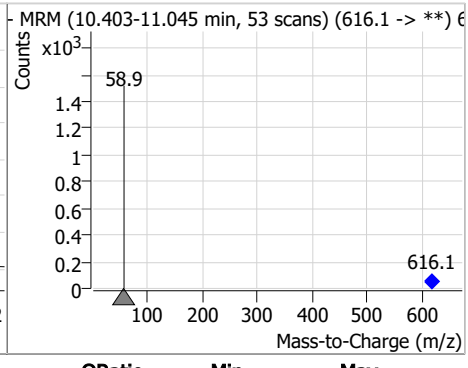




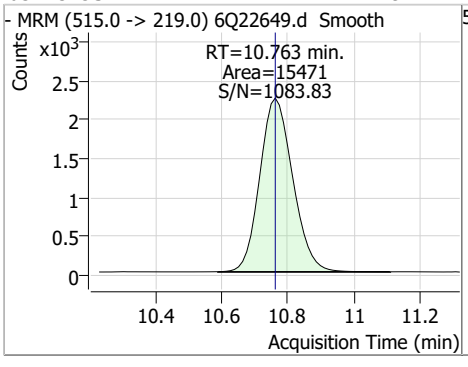
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	10.97	10.70	0.00	57117				

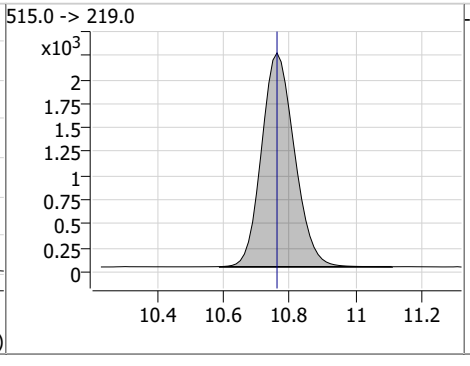


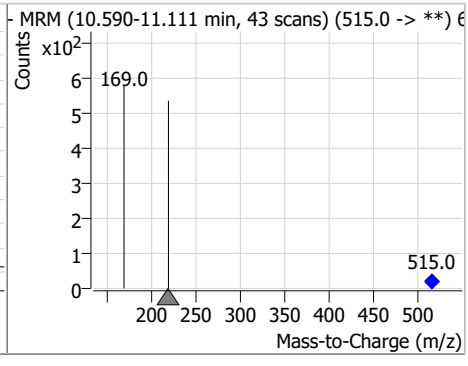




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.49	10.76	0.00	15471				

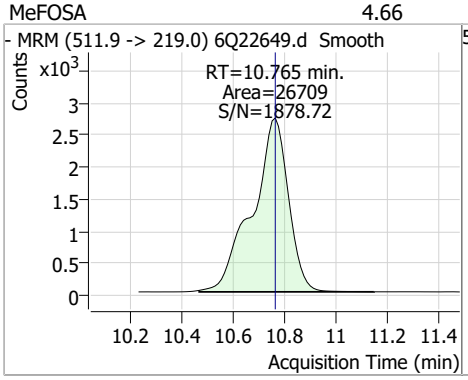


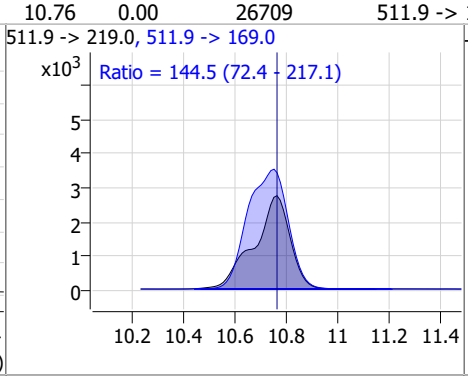


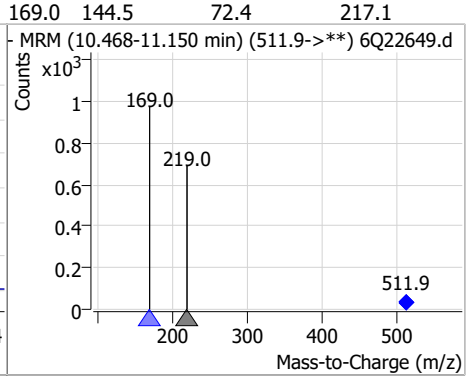


Perfluorinated Compounds by LC/MS/MS

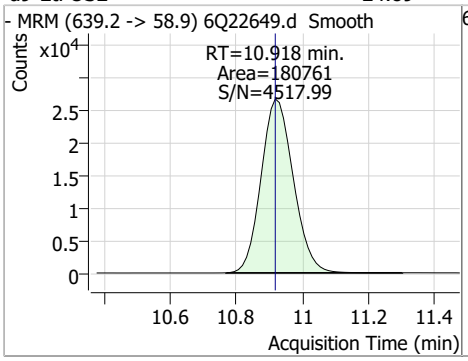
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.66	10.76	0.00	26709	511.9 -> 169.0	144.5	72.4	217.1

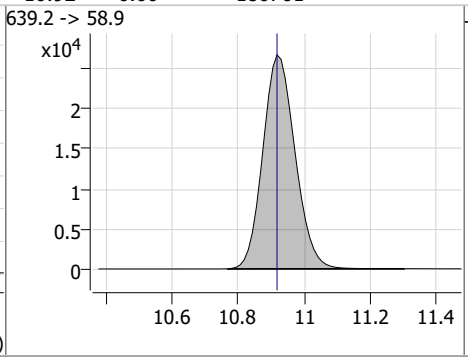


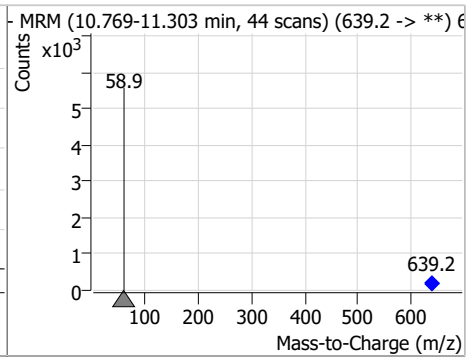




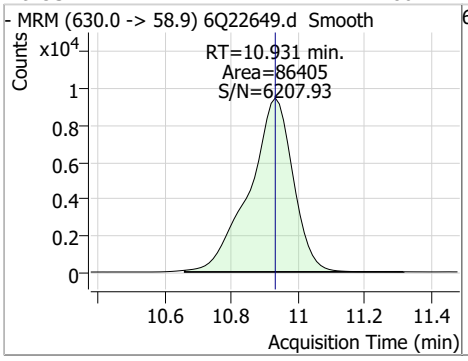
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.89	10.92	0.00	180761				

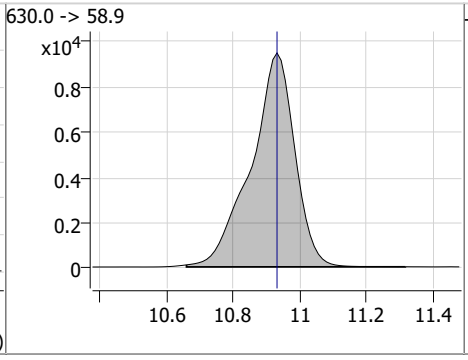


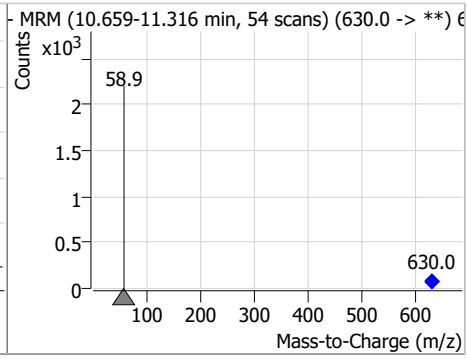




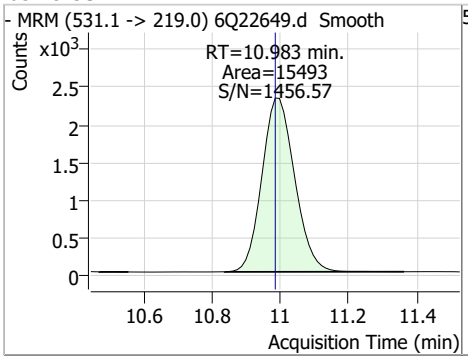
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.80	10.93	0.00	86405				

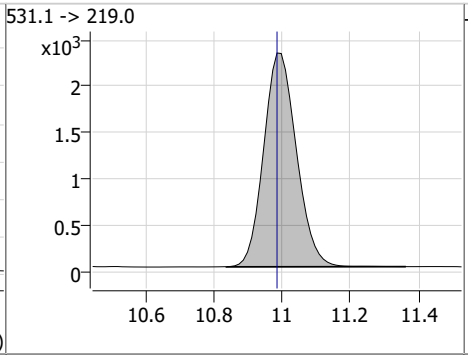


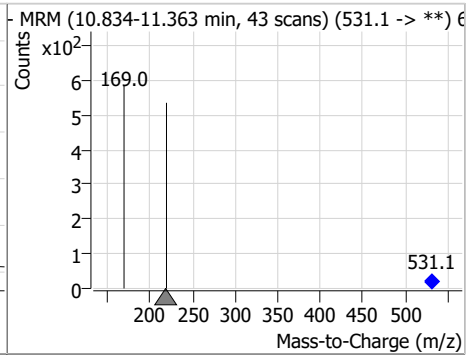




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	10.98	0.00	15493				

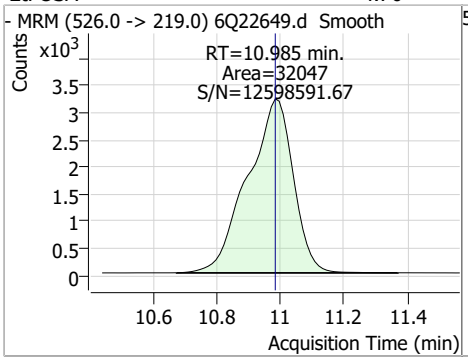


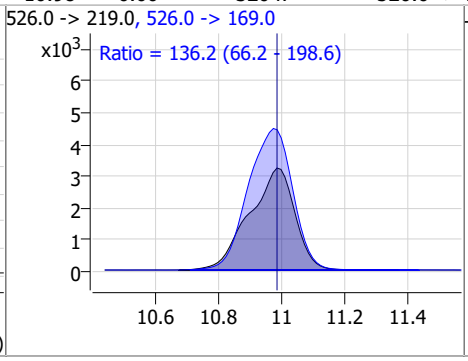


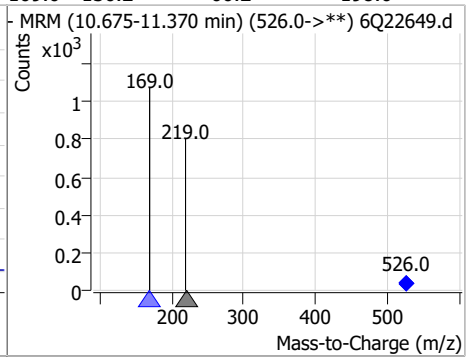


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.70	10.98	0.00	32047	526.0 -> 169.0	136.2	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-ICV330
Lab FileID: 6Q22649.D
Injection Time: 08/10/23 15:46
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22650.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 4:01:11 PM
Sample Name : icv330-20
Vial : P1-B2
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.022	216.8 -> 171.9	190273	10.00	µg/L	0.012
M5-PFPeA	4.459	268.3 -> 223.0	59332	5.00	µg/L	0.012
M5-PFHxA	5.680	318.0 -> 273.0	64987	2.50	µg/L	0.012
M4-PFHpA	6.608	367.1 -> 322.0	62854	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	96954	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	45872	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	25814	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	33460	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	30353	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	17639	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	34497	2.50	µg/L	0.000
M3-PFBS	5.622	302.1 -> 79.9	22218	2.50	µg/L	0.012
M3-PFHxS	7.355	402.1 -> 79.9	15606	2.50	µg/L	0.000
M8-PFOS	8.426	507.1 -> 79.9	14300	2.50	µg/L	0.012
M2-4:2FTS	5.343	329.1 -> 80.9	3410	5.00	µg/L	0.012
M2-6:2FTS	7.014	429.1 -> 80.9	4782	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5049	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	33272	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	39172	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	29553	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	122856	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	162802	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14861	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13730	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18159	2.50	µg/L	-0.012
13C3-PFBA	3.026	216.0 -> 172.0	79864	5.00	µg/L	0.025
18O2-PFHxS	7.354	403.0 -> 83.9	10669	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	106408	2.50	µg/L	0.000
13C2-PFDA	8.263	515.1 -> 470.1	36788	1.25	µg/L	0.012
13C5-PFNA	7.770	468.0 -> 423.0	55872	1.25	µg/L	0.000
13C2-PFHxA	5.681	315.1 -> 270.0	61643	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.343	329.1 -> 80.9	3410	5.35	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4782	5.20	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5049	5.60	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C2-PFDoDA	9.148	615.1 -> 570.0	30353	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFTeDA	9.851	715.2 -> 670.0	17639	1.23	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.622	302.1 -> 79.9	22218	2.45	µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFHxS	7.355	402.1 -> 79.9	15606	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 = 106.5%	
13C4-PFBA	3.022	216.8 -> 171.9	190273	10.09 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.608	367.1 -> 322.0	62854	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFHxA	5.680	318.0 -> 273.0	64987	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	59332	5.11 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	8.250	519.1 -> 474.1	25814	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C7-PFUnDA	8.717	570.0 -> 525.1	33460	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-FOSA	9.662	506.1 -> 77.8	34497	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOA	7.239	421.1 -> 376.0	96954	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOS	8.426	507.1 -> 79.9	14300	2.69 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C9-PFNA	7.770	472.1 -> 427.0	45872	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSAA	8.297	573.2 -> 419.0	33272	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	39172	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d3-MeFOSA	10.763	515.0 -> 219.0	13730	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSAA	8.505	589.2 -> 419.0	29553	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d7-MeFOSE	10.685	623.2 -> 58.9	122856	25.03 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d9-EtFOSE	10.918	639.2 -> 58.9	162802	24.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d5-EtFOSA	10.983	531.1 -> 219.0	14861	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	89005	20.17 µg/L	99
		327.1 -> 80.9	34055		
6:2FTS	7.014	427.1 -> 407.0	89908	21.02 µg/L	98
		427.1 -> 80.9	29301		
8:2FTS	8.040	527.1 -> 507.0	50873	18.83 µg/L	98
		527.1 -> 80.8	18181		
EtFOSAA	8.506	584.2 -> 419.1	71559	19.21 µg/L	95
		584.2 -> 526.0	37836		
FOSA	9.665	498.1 -> 77.9	206516	19.08 µg/L	99
		498.1 -> 478.0	6121		
MeFOSAA	8.310	570.1 -> 419.0	118923	18.69 µg/L	98
		570.1 -> 483.0	22851		
PFBA	3.031	212.8 -> 168.9	109165	18.36 µg/L	100
PFBS	5.611	298.7 -> 79.9	155154	21.37 µg/L	99
		298.7 -> 98.8	57145		
PFDA	8.251	512.9 -> 469.0	588991	19.26 µg/L	99
		512.9 -> 219.0	83967		
PFDoDA	9.148	613.1 -> 569.0	338131	17.00 µg/L	99
		613.1 -> 319.0	49587		
PFDS	9.299	599.0 -> 79.9	64193	18.71 µg/L	98

Perfluorinated Compounds by LC/MS/MS

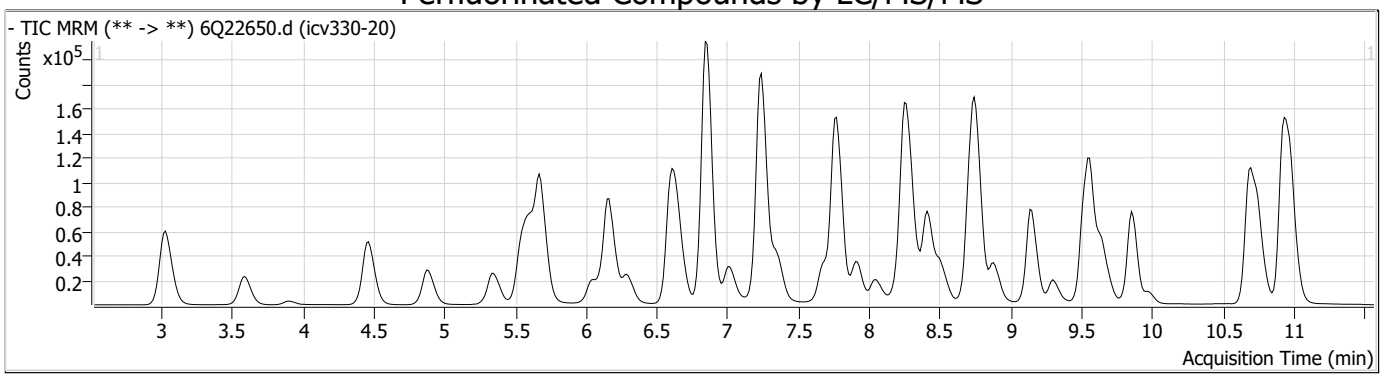
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	31006				
PFHpA	6.609	363.1 -> 319.0	454737	18.35	µg/L		99
		363.1 -> 169.0	77802				
PFHpS	7.922	449.0 -> 79.9	115336	17.66	µg/L		99
		449.0 -> 98.9	60818				
PFHxA	5.682	313.0 -> 269.0	373003	19.62	µg/L		100
		313.0 -> 118.9	19550				
PFHxS	7.356	398.7 -> 79.9	123829	17.98	µg/L	m	99
		398.7 -> 98.9	61026				
PFNA	7.771	463.0 -> 419.0	620877	19.69	µg/L		98
		463.0 -> 219.0	113536				
PFNS	8.893	548.8 -> 79.9	107942	18.30	µg/L		95
		548.8 -> 98.9	53524				
PFOA	7.240	413.0 -> 369.0	696261	17.57	µg/L		96
		413.0 -> 169.0	124162				
PFOS	8.415	498.9 -> 79.9	105341	17.14	µg/L	m	96
		498.9 -> 98.8	52308				
PFPeA	4.461	263.0 -> 219.0	259188	19.83	µg/L		100
PFPeS	6.672	349.1 -> 79.9	124003	19.41	µg/L		95
		349.1 -> 98.9	52563				
PFTeDA	9.852	713.1 -> 669.0	314814	18.38	µg/L		99
		713.1 -> 168.9	28437				
PFTrDA	9.519	663.0 -> 619.0	336340	16.39	µg/L		98
		663.0 -> 168.9	36451				
PFUnDA	8.717	563.1 -> 519.0	367415	19.06	µg/L		97
		563.1 -> 269.1	63388				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	274803	19.66	µg/L		97
		632.9 -> 452.9	89965				
9Cl-PF3ONS	8.758	530.8 -> 351.0	482824	21.37	µg/L		98
		532.8 -> 353.0	148874				
ADONA	6.858	376.9 -> 250.9	939568	18.83	µg/L		98
		376.9 -> 84.8	240419				
HFPO-DA	6.058	284.9 -> 168.9	61181	18.35	µg/L		99
		284.9 -> 184.9	6810				
3:3FTCA	3.896	241.0 -> 177.0	17030	18.12	µg/L		100
		241.0 -> 117.0	2300				
5:3FTCA	6.298	341.0 -> 237.1	76681	19.61	µg/L		95
		341.0 -> 217.0	51325				
7:3FTCA	7.673	441.0 -> 316.9	53824	18.61	µg/L		92
		441.0 -> 336.9	115625				
EtFOSA	10.997	526.0 -> 219.0	107777	16.47	µg/L		81
		526.0 -> 169.0	118326				
EtFOSE	10.931	630.0 -> 58.9	654054	99.14	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	89536	17.60	µg/L		77
		511.9 -> 169.0	104090				
MeFOSE	10.697	616.1 -> 58.9	489972	106.68	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	27153	16.99	µg/L		98
		699.1 -> 98.8	14761				
NFDHA	5.564	295.0 -> 201.0	46275	19.14	µg/L		95
		295.0 -> 84.9	12075				
PFMBA	4.882	279.0 -> 85.1	177042	19.15	µg/L		100
PFMPA	3.588	229.0 -> 84.9	142723	19.29	µg/L		100
PFEESA	6.163	314.8 -> 134.9	447879	17.54	µg/L		99
		314.8 -> 82.9	14812				

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

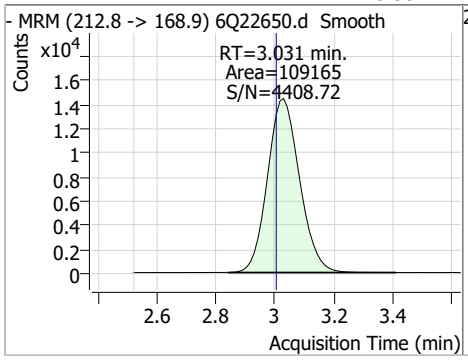
Perfluorinated Compounds by LC/MS/MS

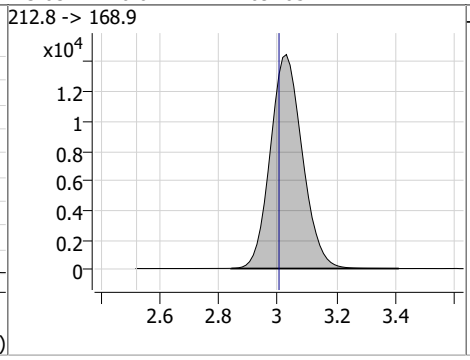
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

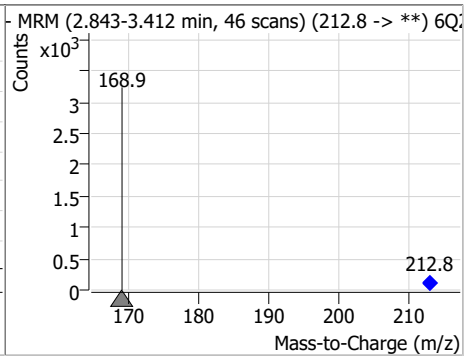
Perfluorinated Compounds by LC/MS/MS



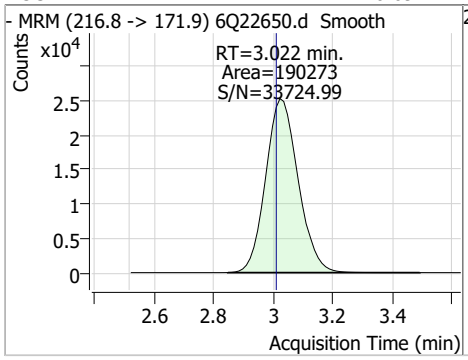
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.36	3.03	0.02	109165				

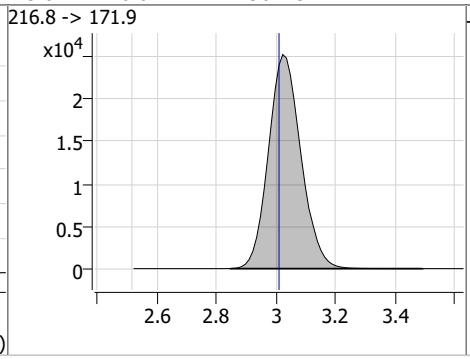


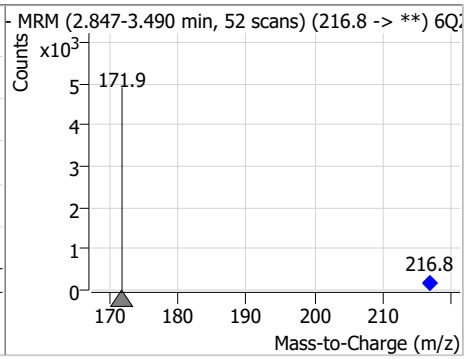




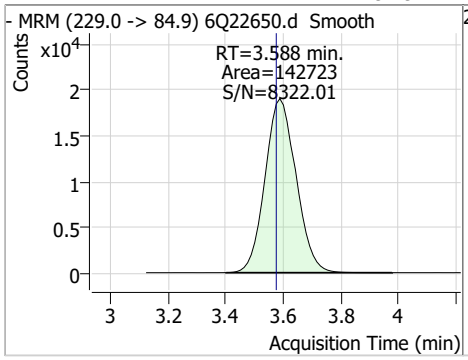
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.09	3.02	0.01	190273				

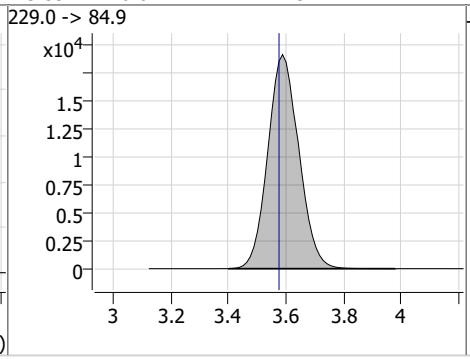


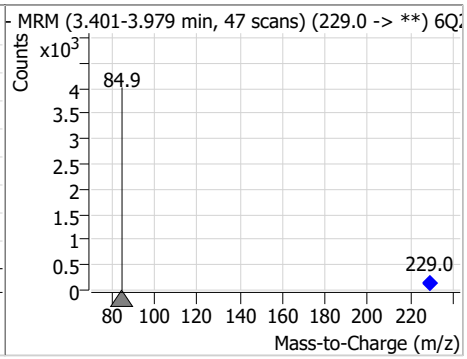




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	19.29	3.59	0.01	142723				

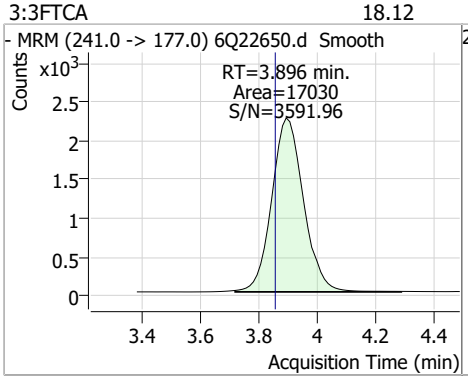


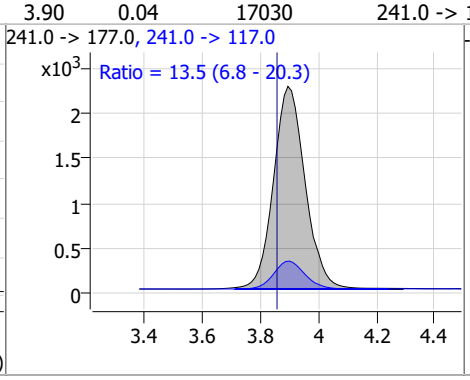


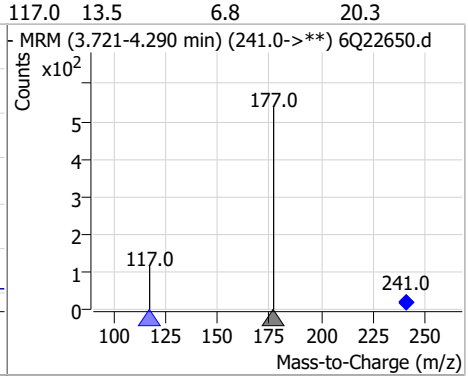


Perfluorinated Compounds by LC/MS/MS

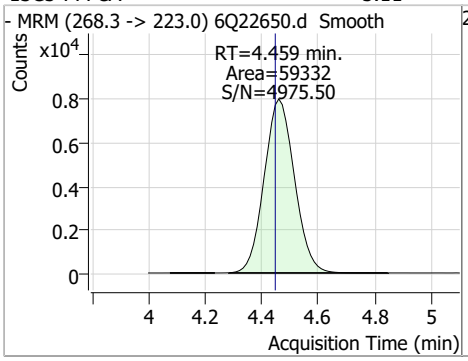
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	18.12	3.90	0.04	17030	241.0 -> 117.0	13.5	6.8	20.3

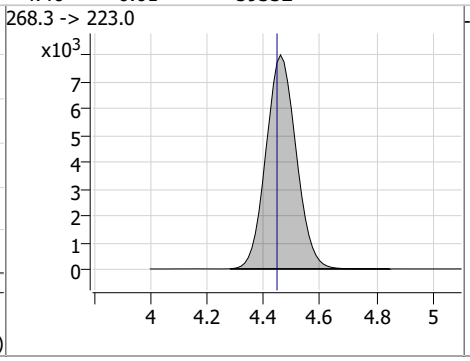


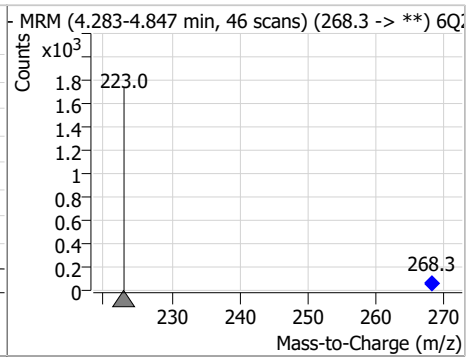




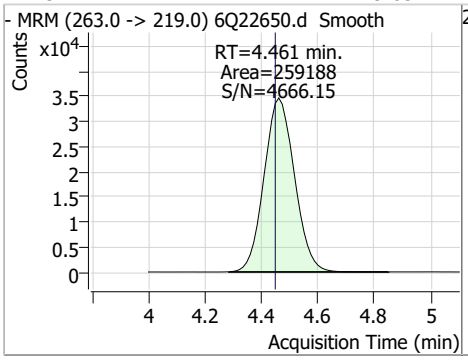
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.11	4.46	0.01	59332				

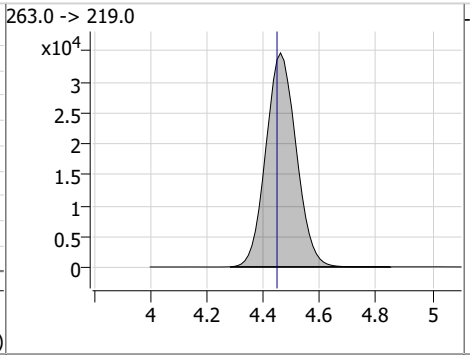


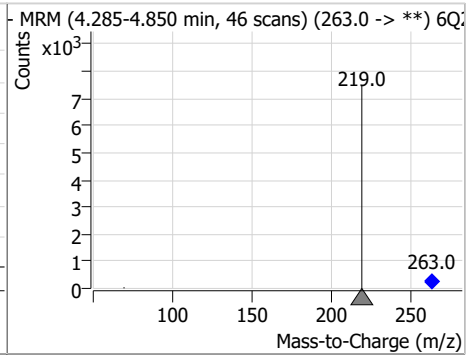




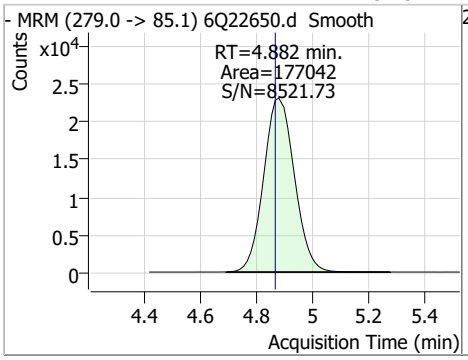
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.83	4.46	0.01	259188				

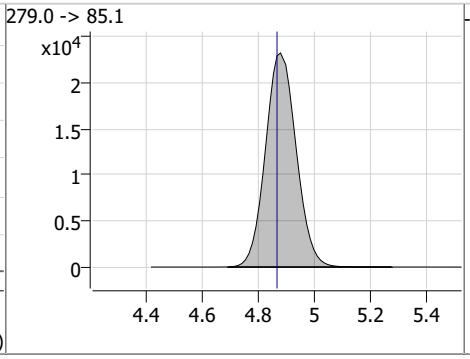


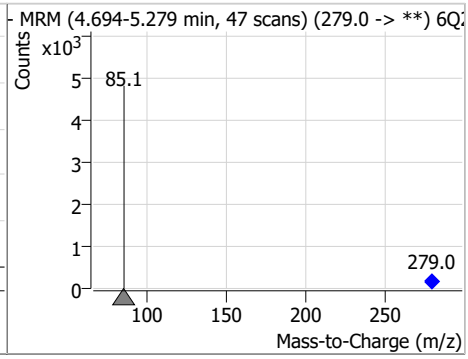




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.15	4.88	0.01	177042				

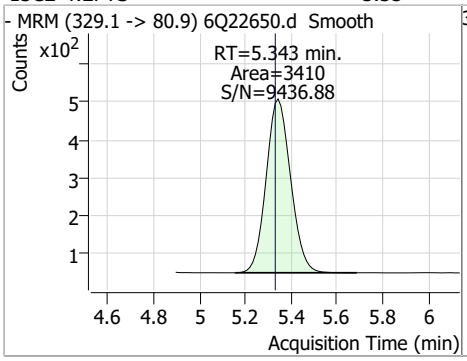


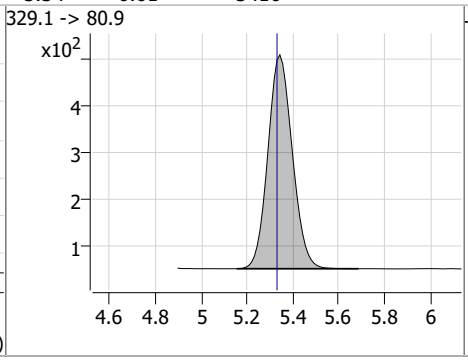


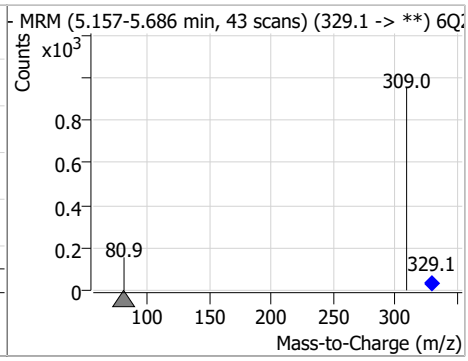


Perfluorinated Compounds by LC/MS/MS

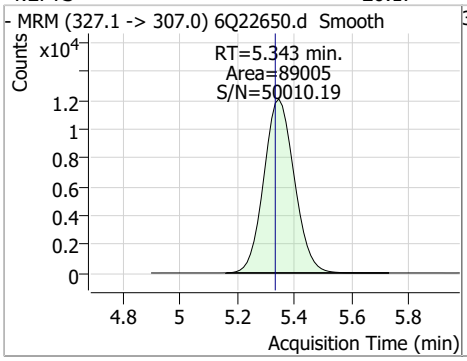
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.35	5.34	0.01	3410				

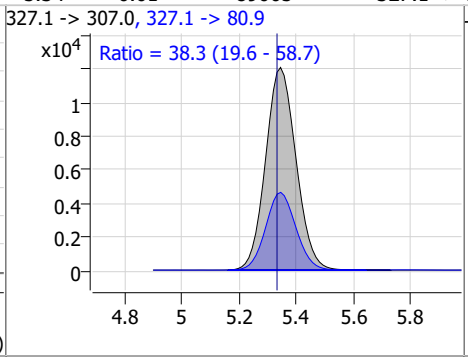


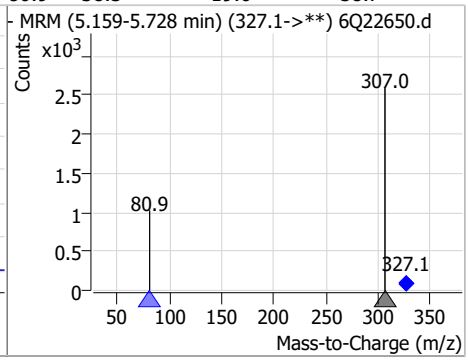




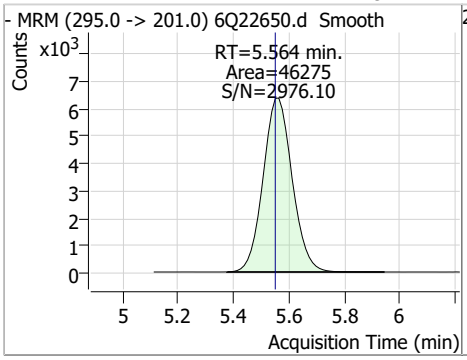
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.17	5.34	0.01	89005	327.1 -> 80.9	38.3	19.6	58.7

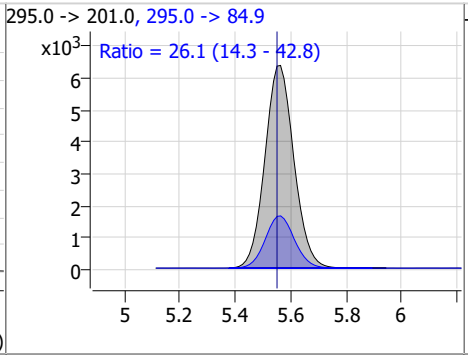


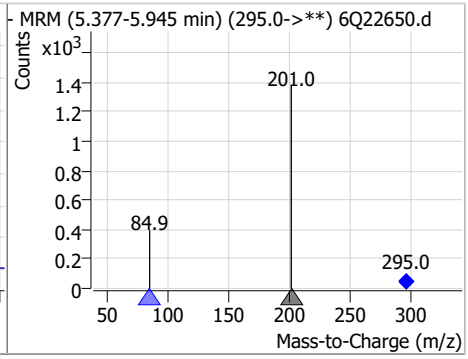




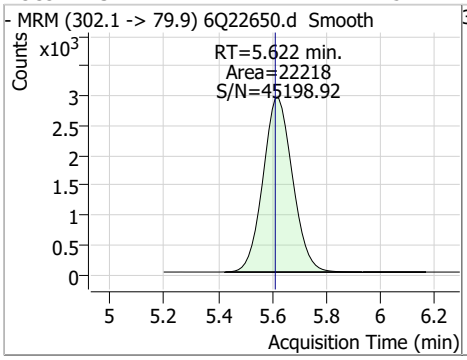
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	19.14	5.56	0.01	46275	295.0 -> 84.9	26.1	14.3	42.8

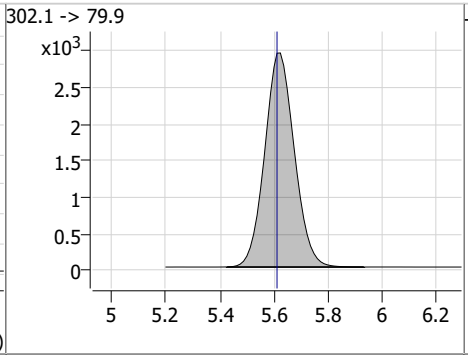


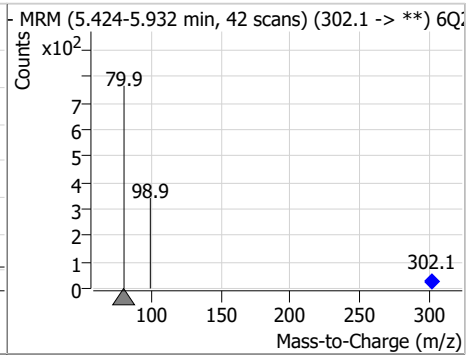




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.45	5.62	0.01	22218				

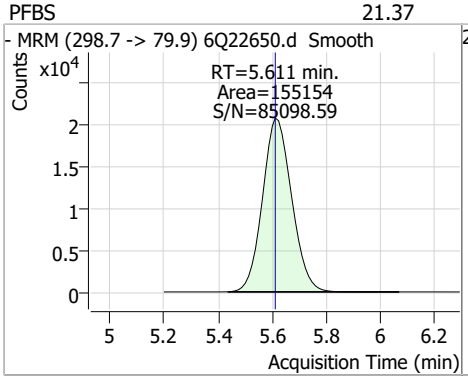


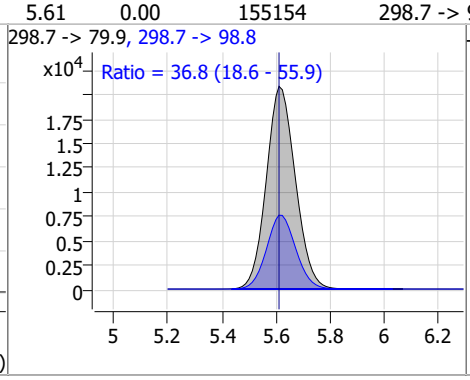


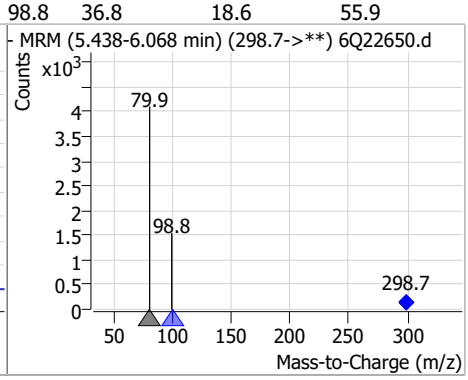


Perfluorinated Compounds by LC/MS/MS

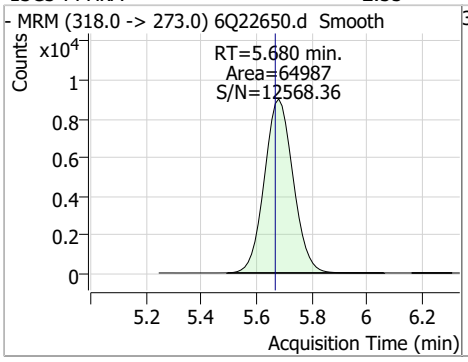
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.37	5.61	0.00	155154	298.7 -> 98.8	36.8	18.6	55.9

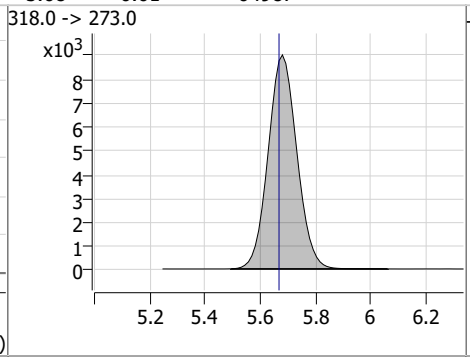


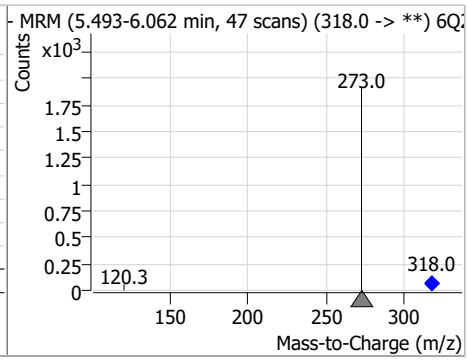




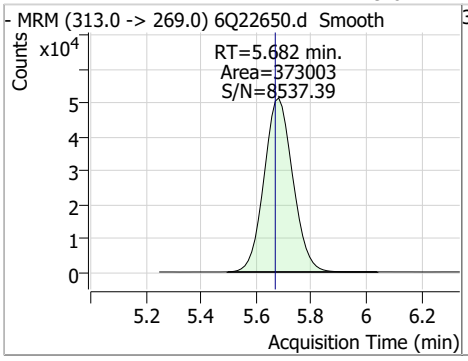
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.55	5.68	0.01	64987				

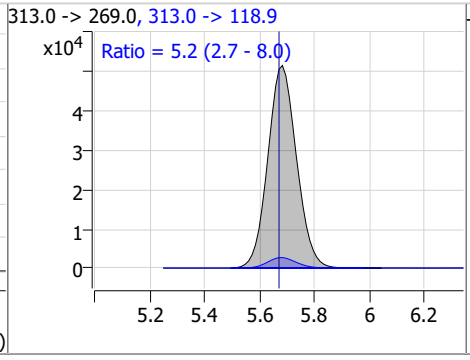


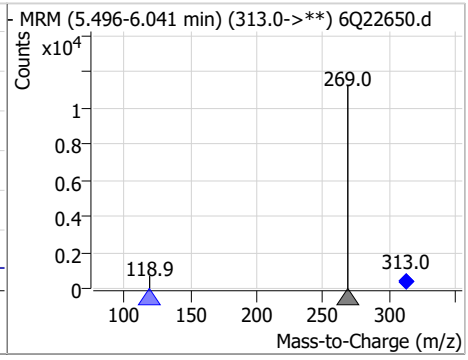




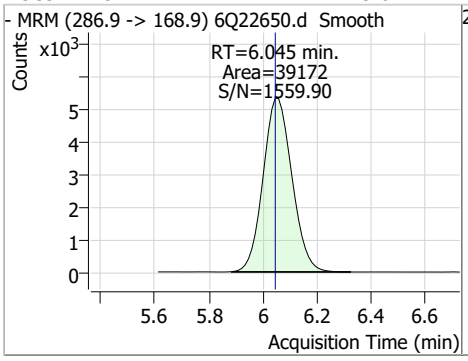
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.62	5.68	0.01	373003	313.0 -> 118.9	5.2	2.7	8.0

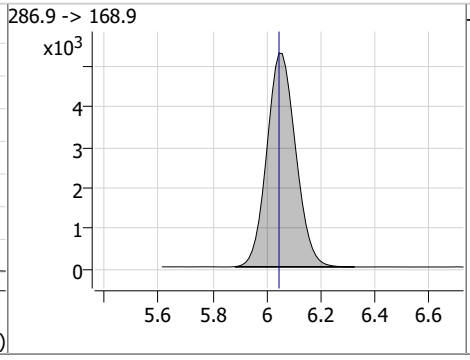


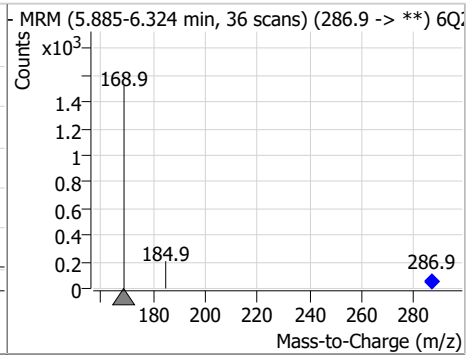




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.82	6.05	0.00	39172				

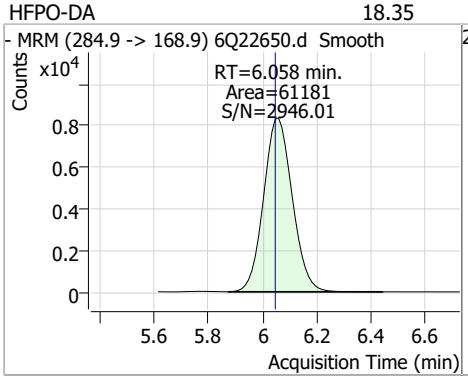


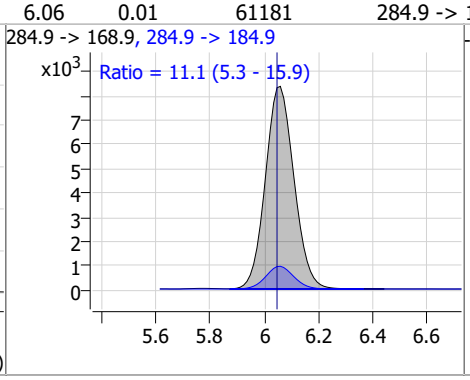


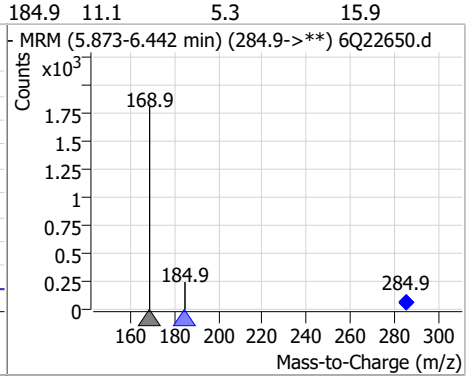


Perfluorinated Compounds by LC/MS/MS

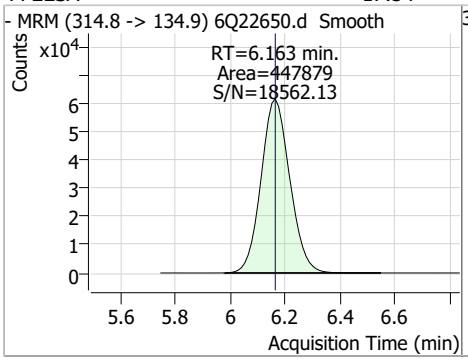
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.35	6.06	0.01	61181	284.9 -> 184.9	11.1	5.3	15.9

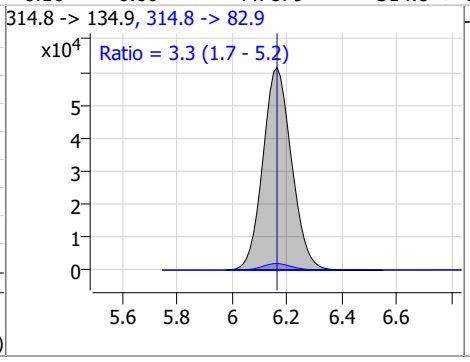


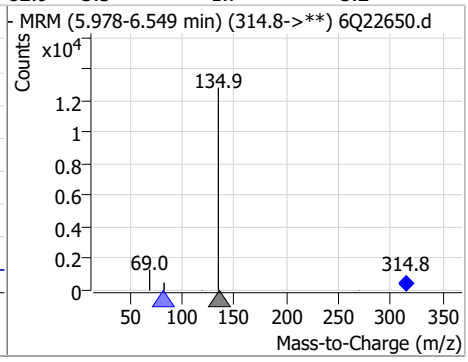




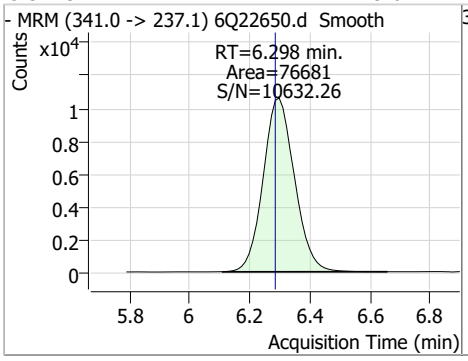
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	17.54	6.16	0.00	447879	314.8 -> 82.9	3.3	1.7	5.2

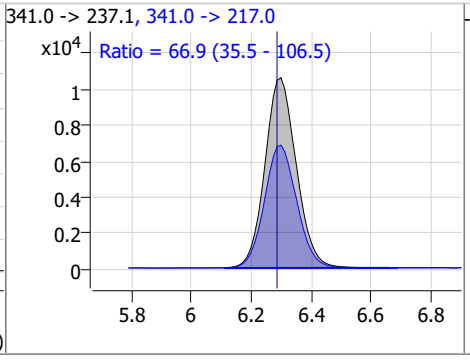


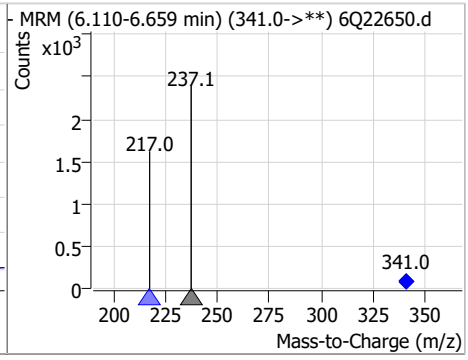




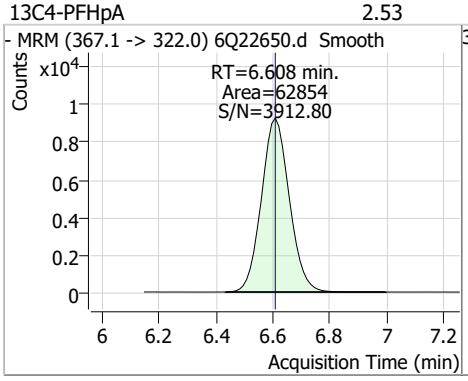
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.61	6.30	0.01	76681	341.0 -> 217.0	66.9	35.5	106.5

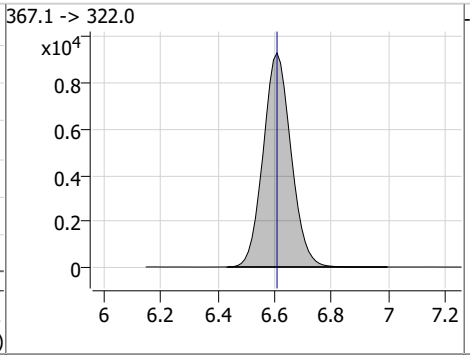


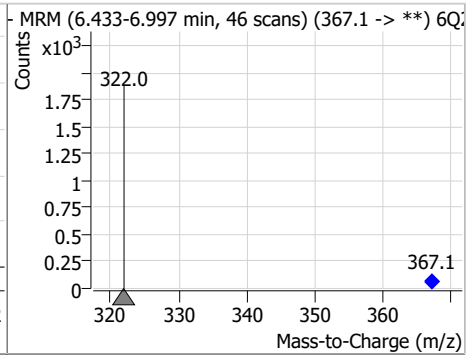




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.61	0.00	62854				

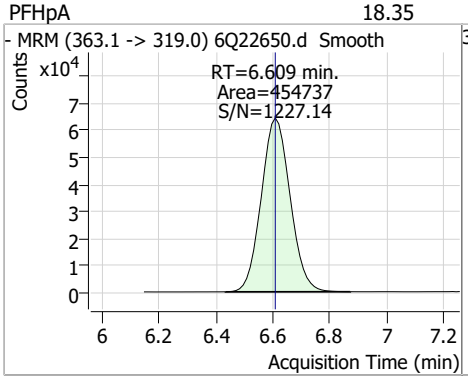


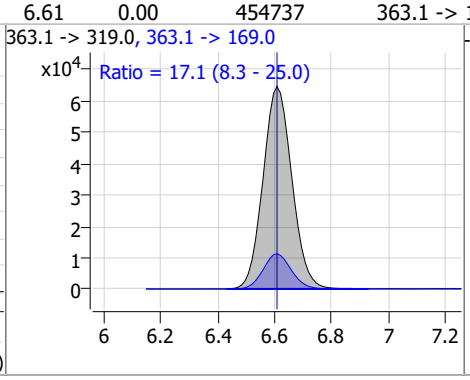


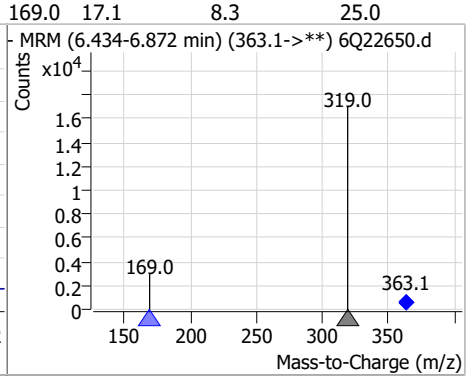


Perfluorinated Compounds by LC/MS/MS

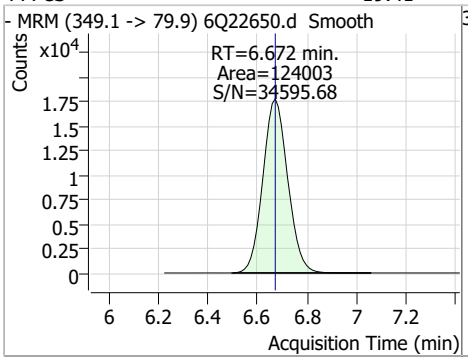
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.35	6.61	0.00	454737	363.1 -> 169.0	17.1	8.3	25.0

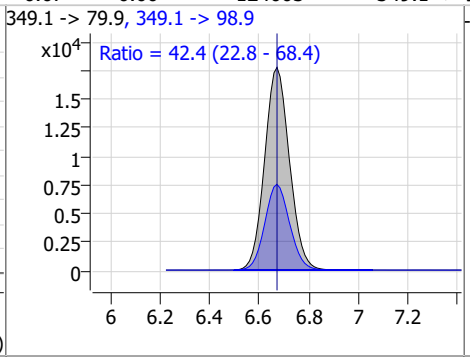


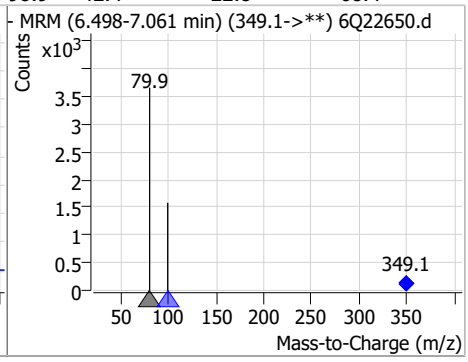




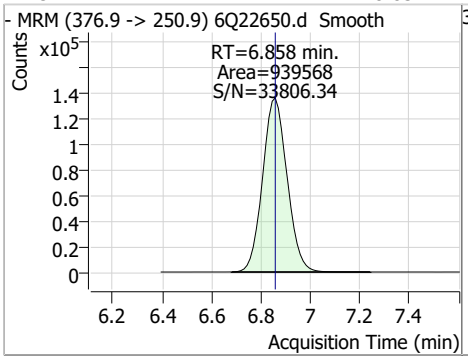
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.41	6.67	0.00	124003	349.1 -> 98.9	42.4	22.8	68.4

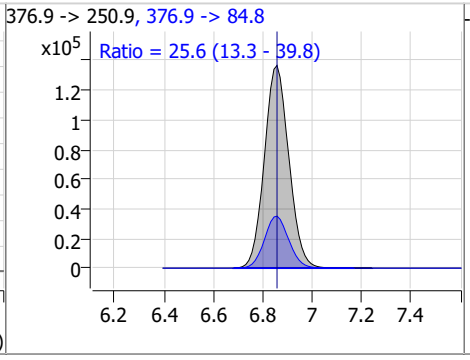


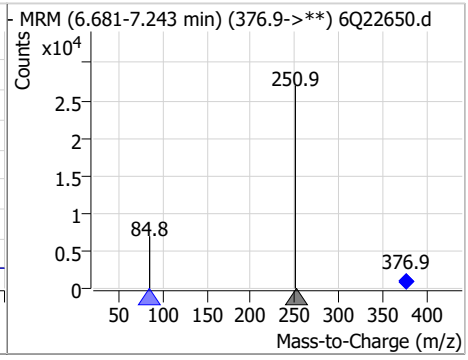




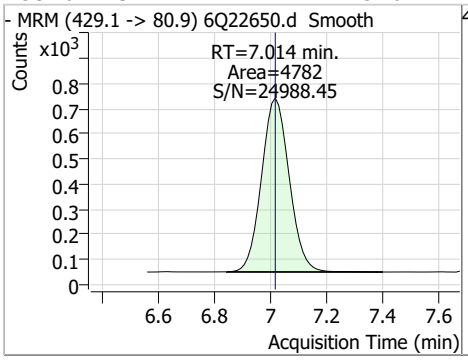
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.83	6.86	0.00	939568	376.9 -> 84.8	25.6	13.3	39.8

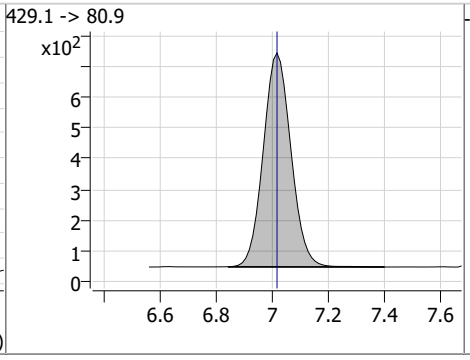


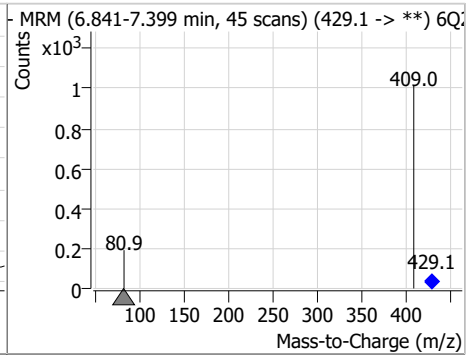




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.20	7.01	0.00	4782				

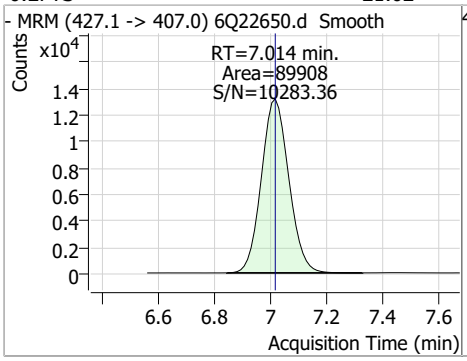


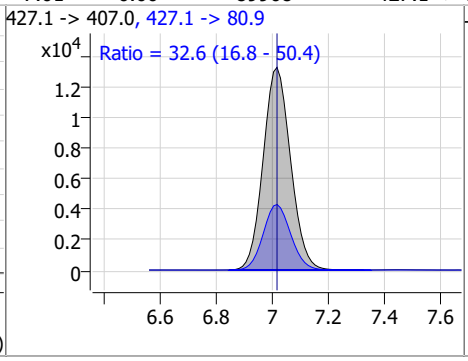


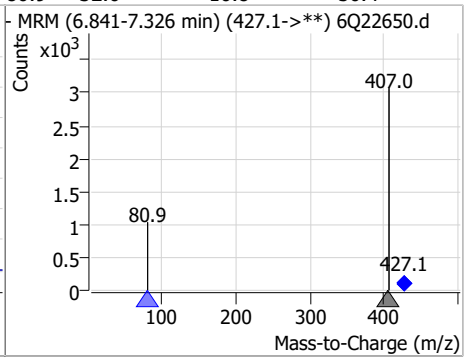


Perfluorinated Compounds by LC/MS/MS

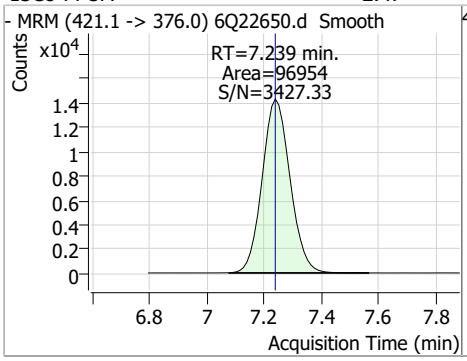
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.02	7.01	0.00	89908	427.1 -> 80.9	32.6	16.8	50.4

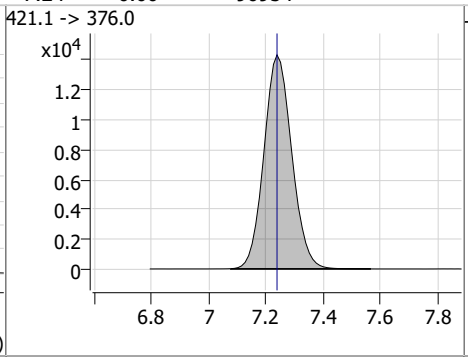


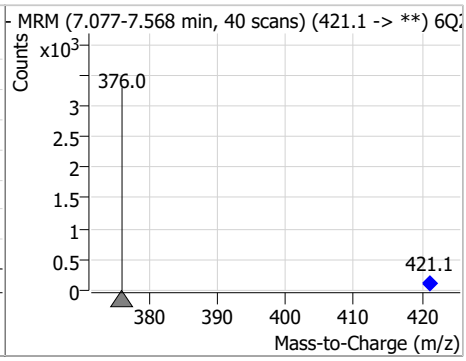




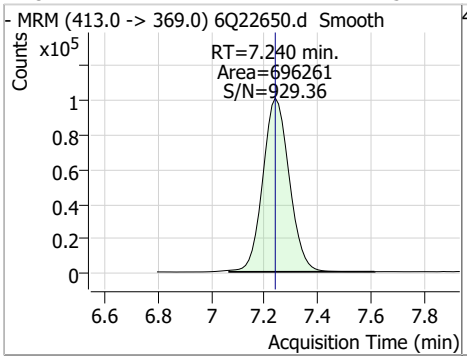
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	7.24	0.00	96954				

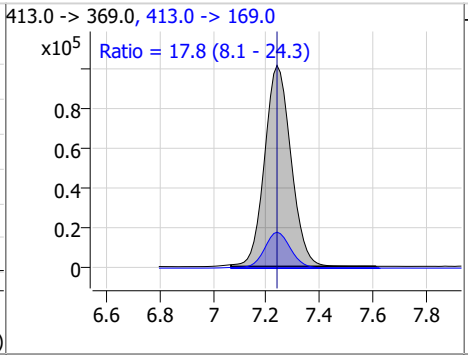


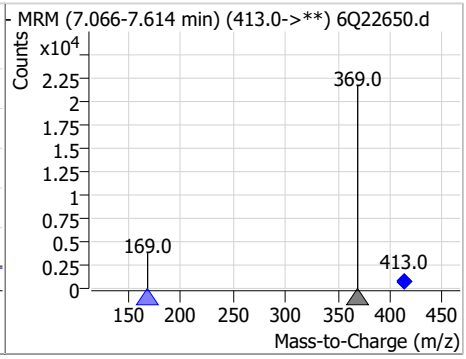




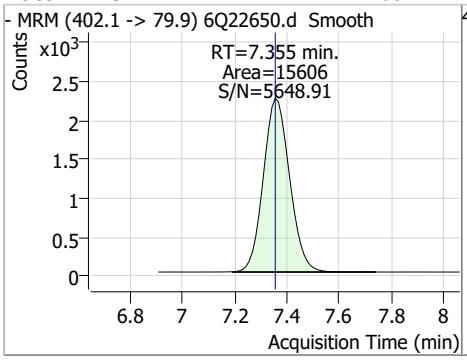
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.57	7.24	0.00	696261	413.0 -> 169.0	17.8	8.1	24.3

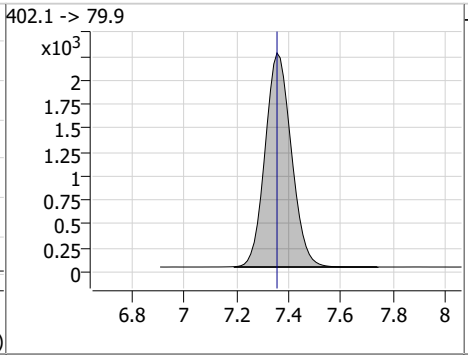


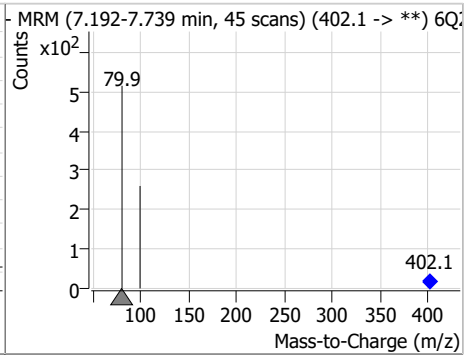




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.66	7.35	0.00	15606				

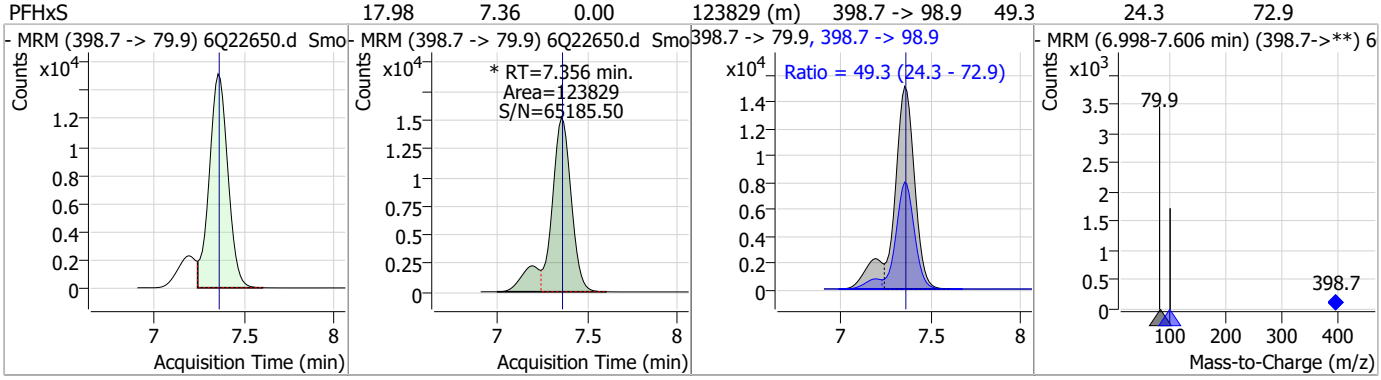




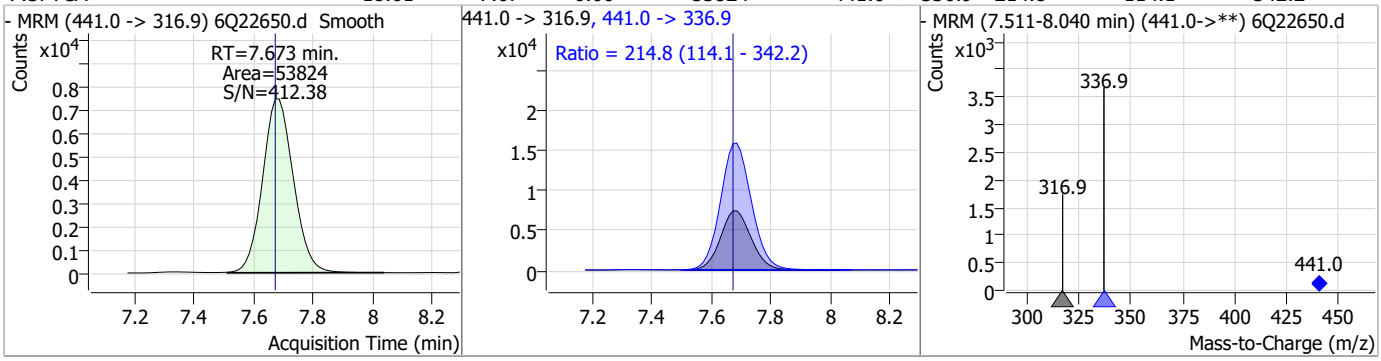


Perfluorinated Compounds by LC/MS/MS

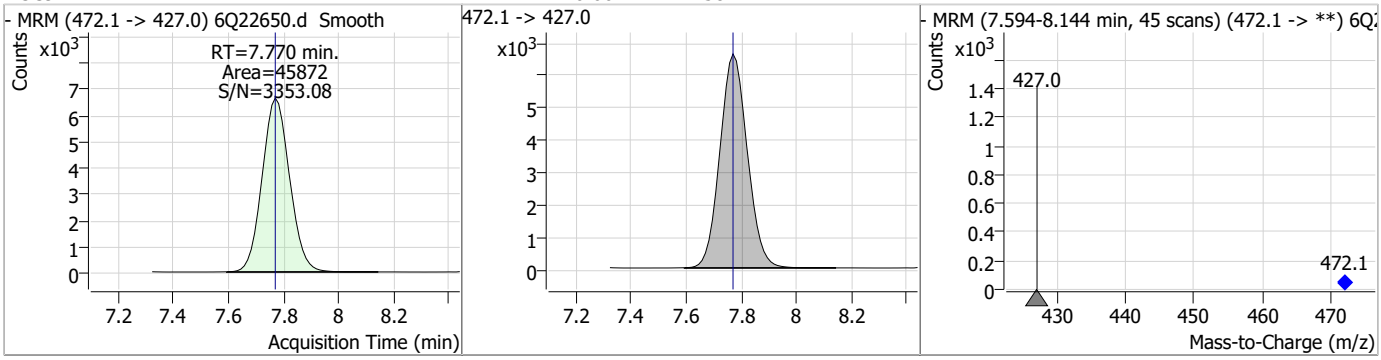
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.98	7.36	0.00	123829 (m)	398.7 -> 98.9	49.3	24.3	72.9



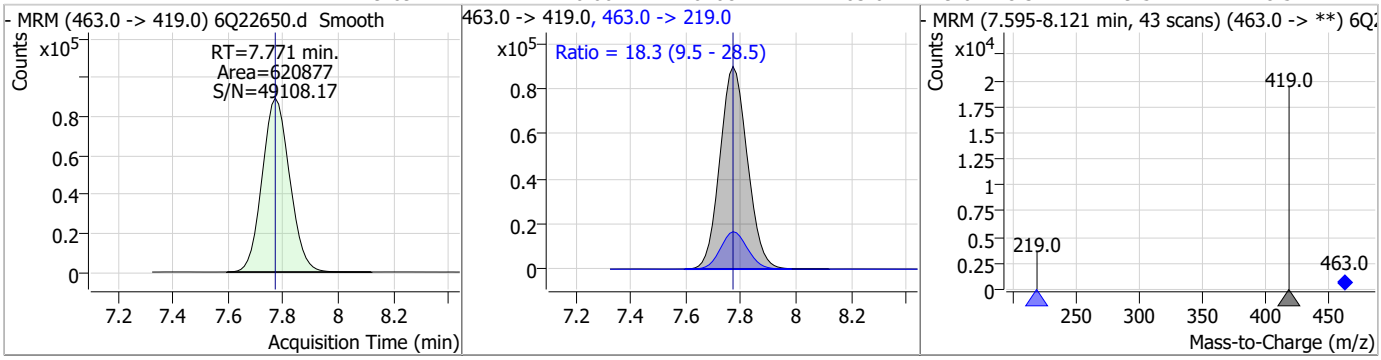
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	18.61	7.67	0.00	53824	441.0 -> 336.9	214.8	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.77	0.00	45872				

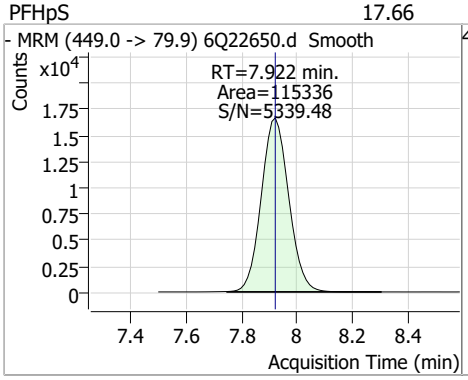


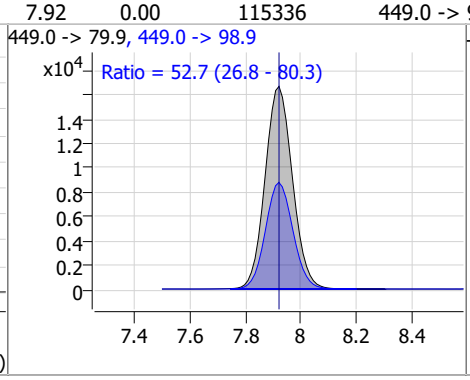
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.69	7.77	0.00	620877	463.0 -> 219.0	18.3	9.5	28.5

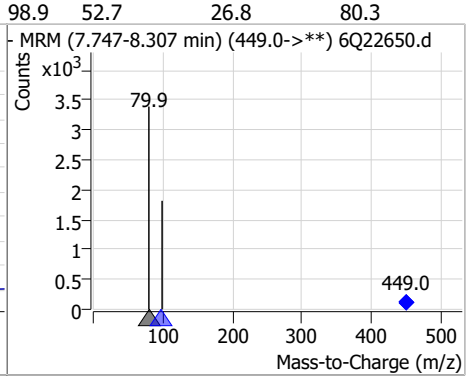


Perfluorinated Compounds by LC/MS/MS

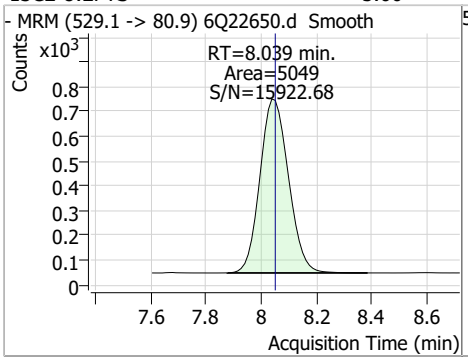
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.66	7.92	0.00	115336	449.0 -> 98.9	52.7	26.8	80.3

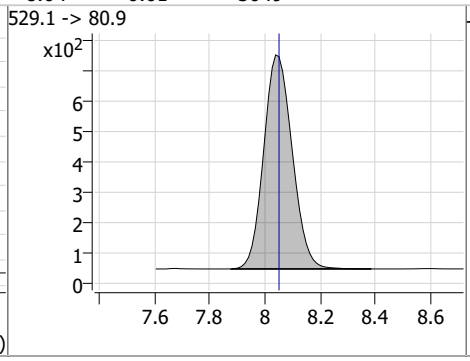


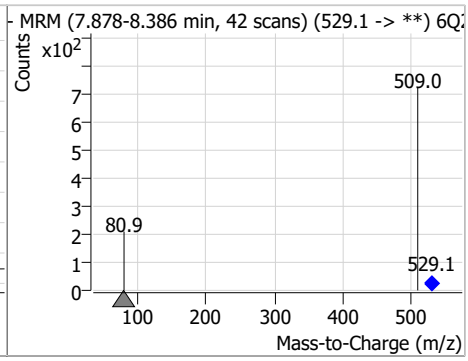




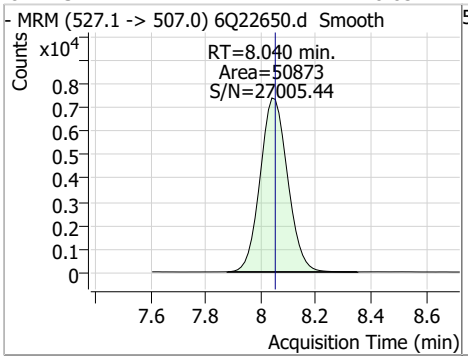
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.60	8.04	-0.01	5049				

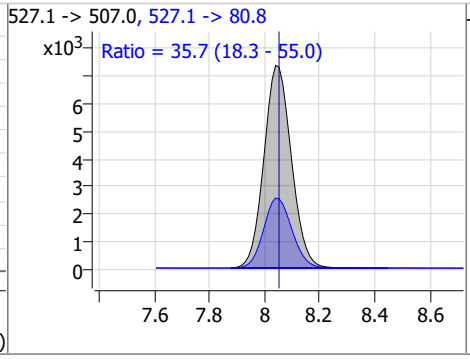


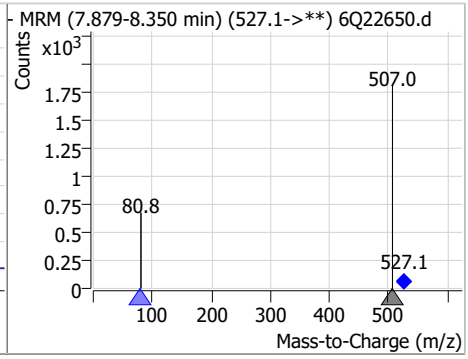




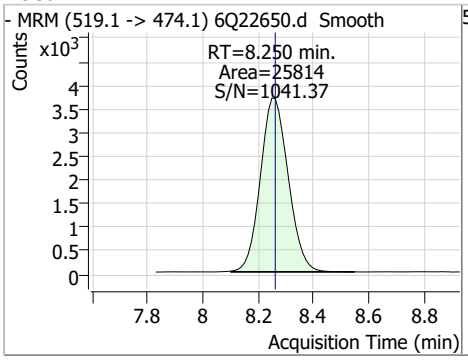
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.83	8.04	-0.01	50873	527.1 -> 80.8	35.7	18.3	55.0

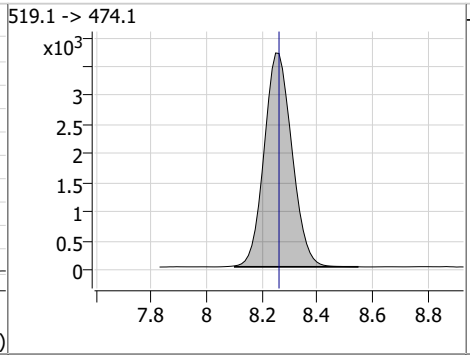


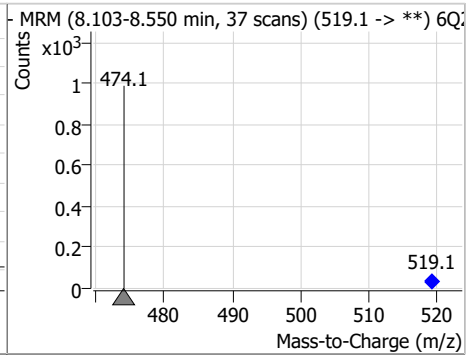




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.24	8.25	-0.01	25814				

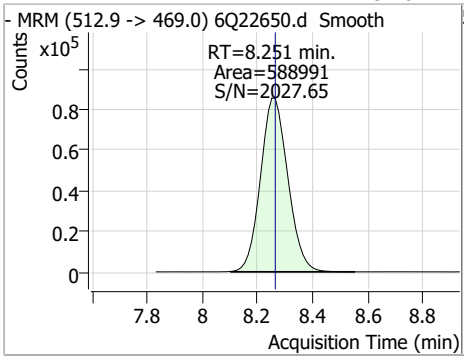


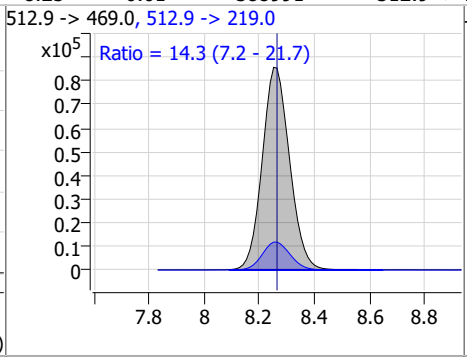


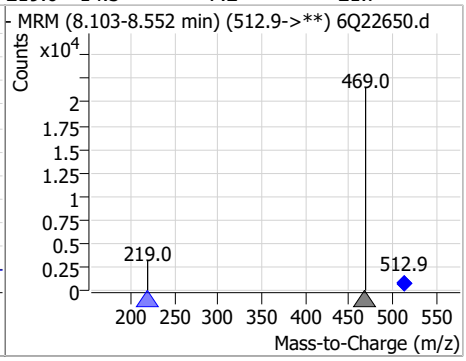


Perfluorinated Compounds by LC/MS/MS

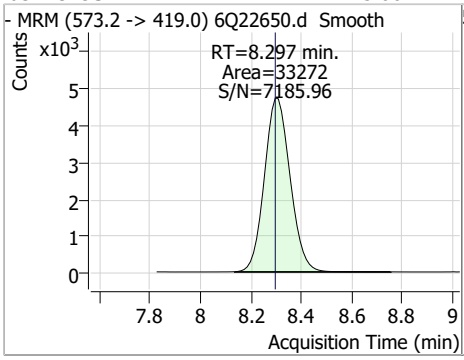
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.26	8.25	-0.01	588991	512.9 -> 219.0	14.3	7.2	21.7

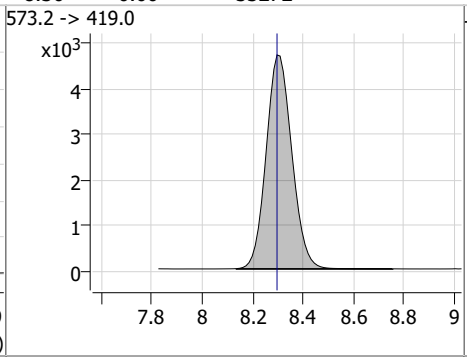


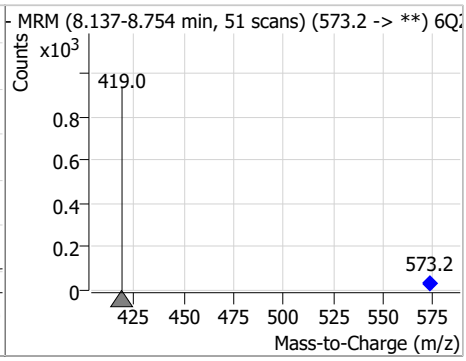




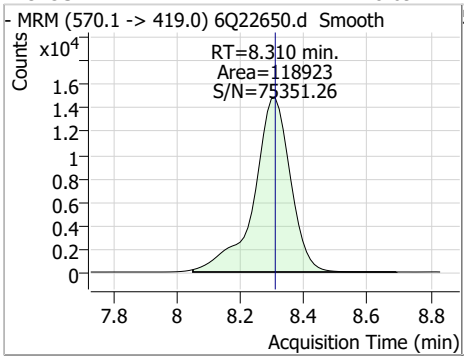
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.06	8.30	0.00	33272				

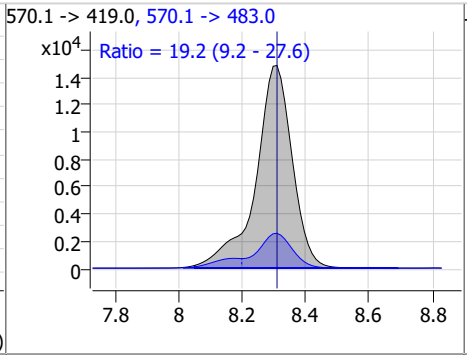


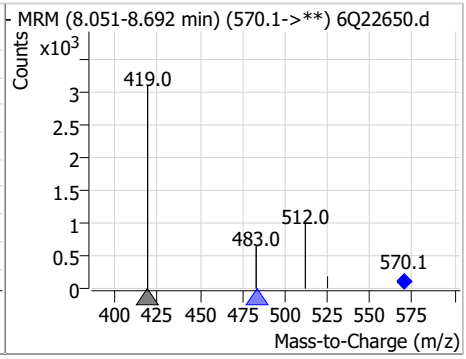




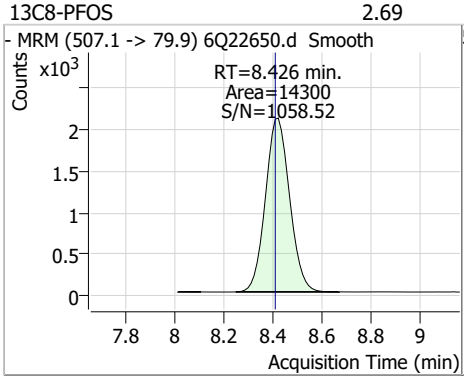
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.69	8.31	0.00	118923	570.1 -> 483.0	19.2	9.2	27.6

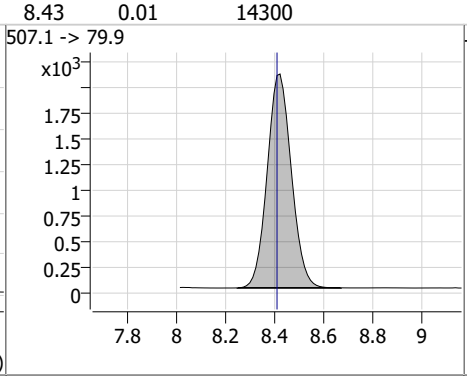


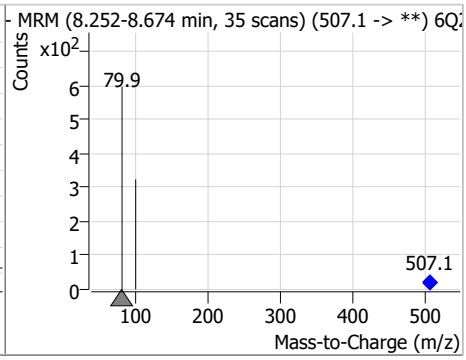




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.69	8.43	0.01	14300				

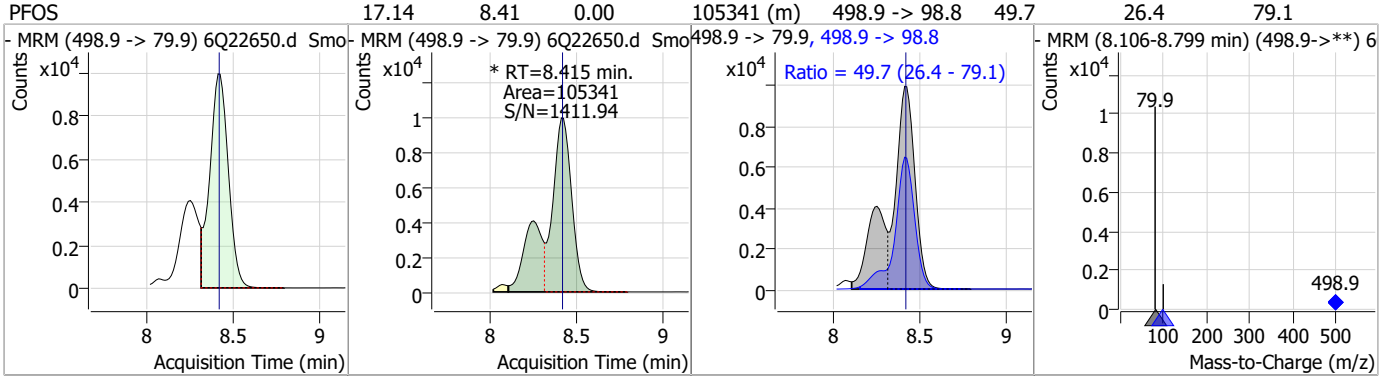




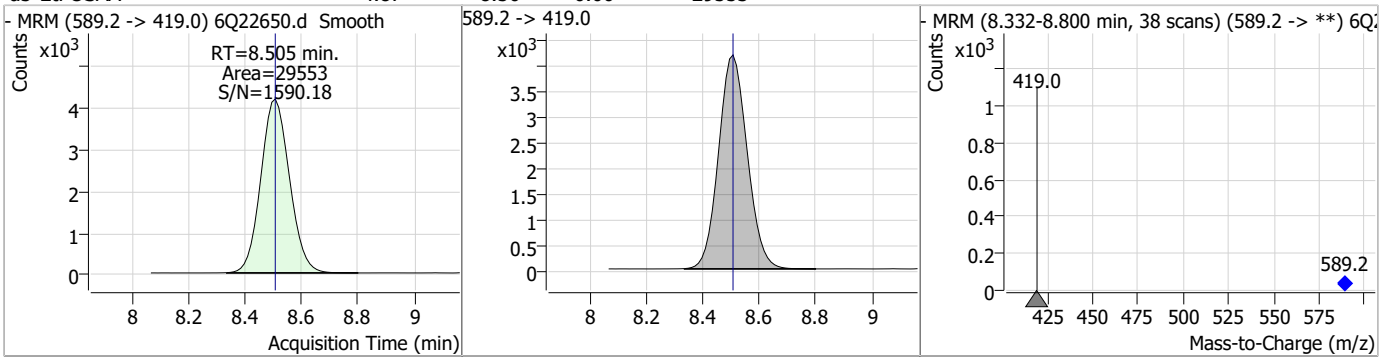


Perfluorinated Compounds by LC/MS/MS

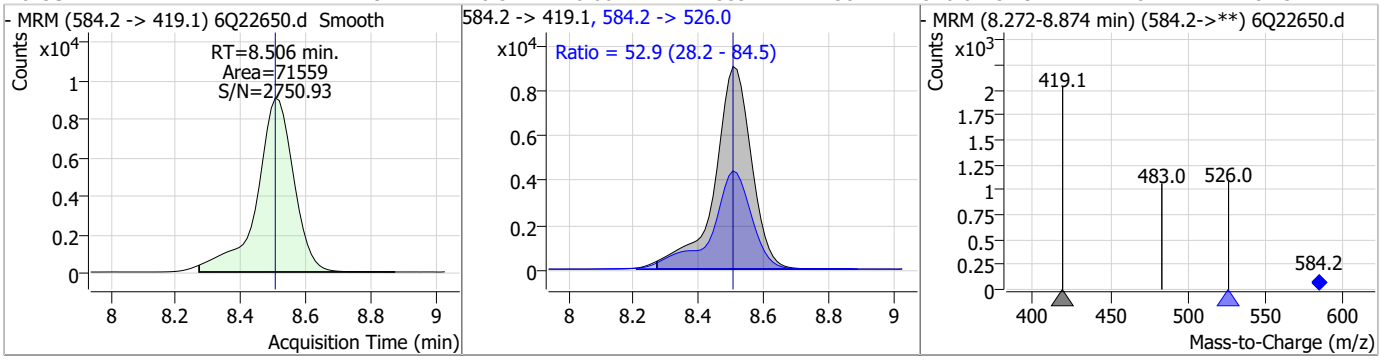
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.14	8.41	0.00	105341 (m)	498.9 -> 98.8	49.7	26.4	79.1



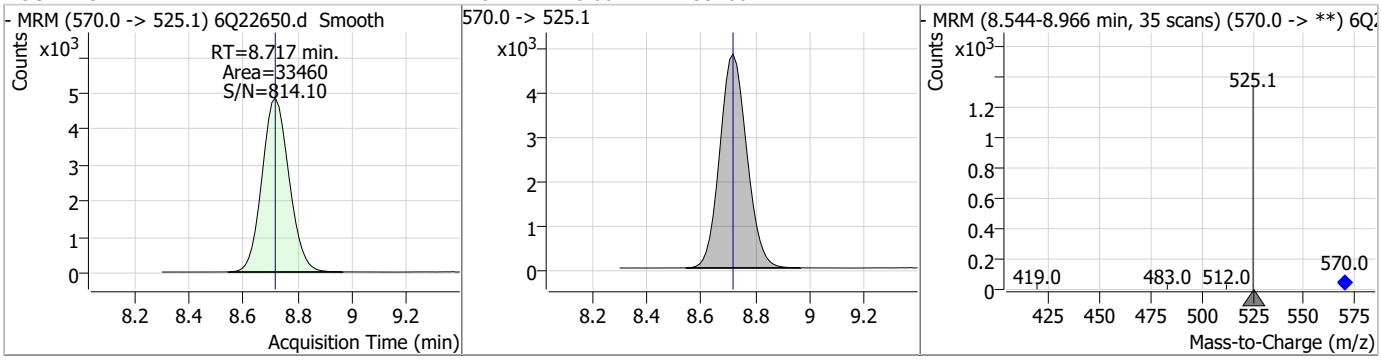
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.87	8.50	0.00	29553				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.21	8.51	0.00	71559	584.2 -> 526.0	52.9	28.2	84.5

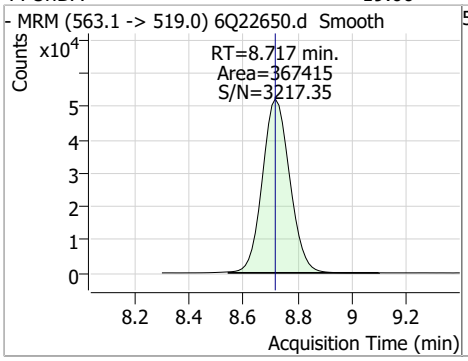


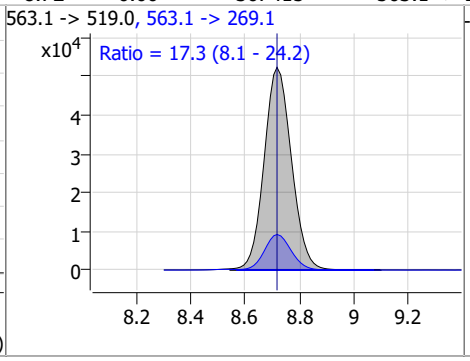
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.72	0.00	33460				

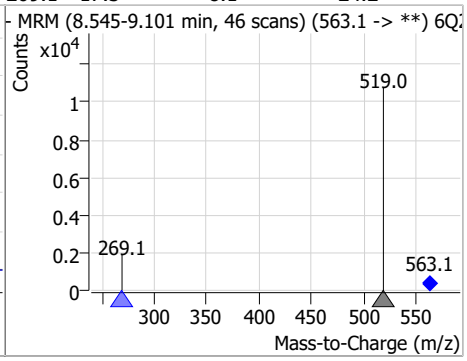


Perfluorinated Compounds by LC/MS/MS

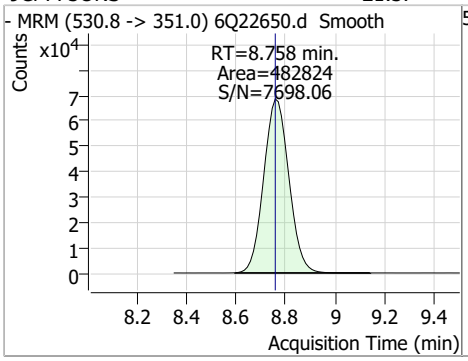
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.06	8.72	0.00	367415	563.1 -> 269.1	17.3	8.1	24.2

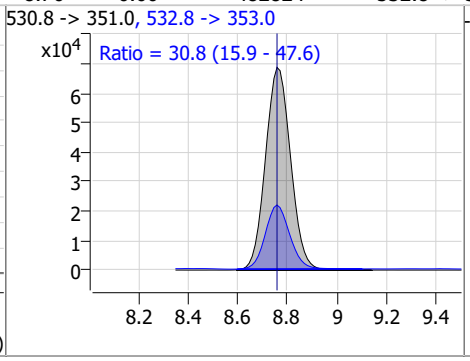


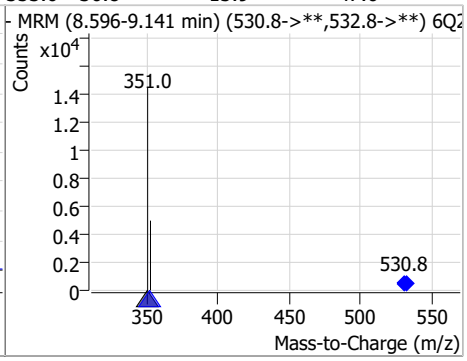




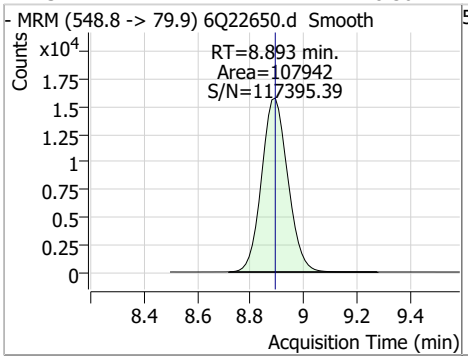
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.37	8.76	0.00	482824	532.8 -> 353.0	30.8	15.9	47.6

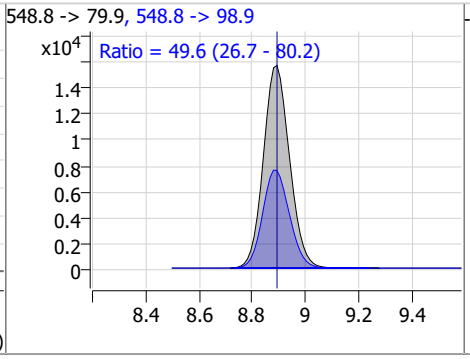


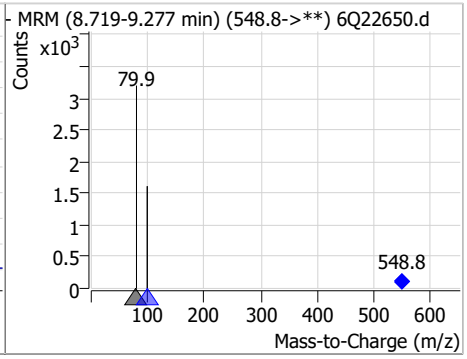




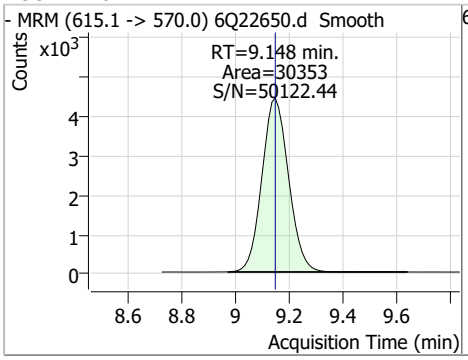
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.30	8.89	0.00	107942	548.8 -> 98.9	49.6	26.7	80.2

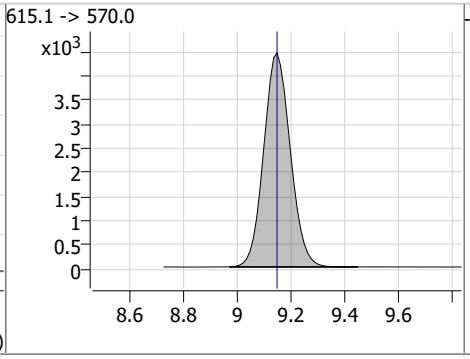


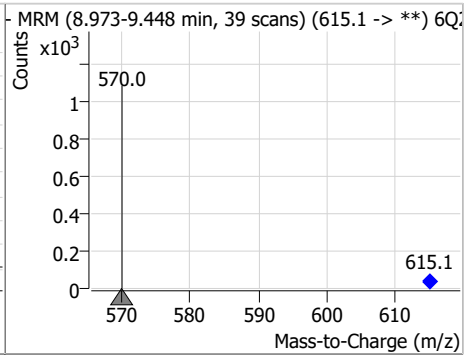




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.15	0.00	30353				

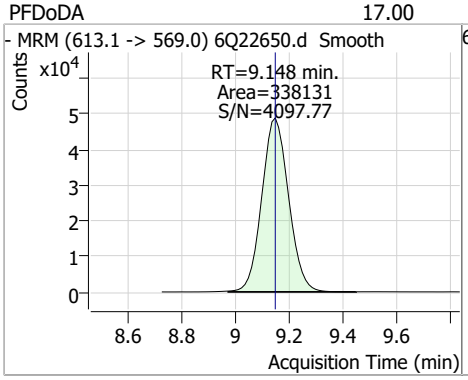


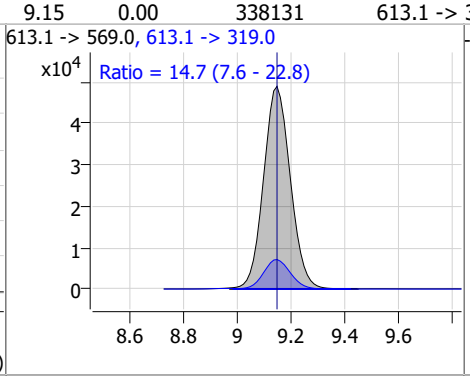


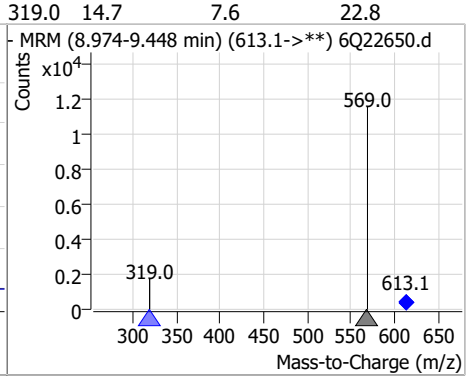


Perfluorinated Compounds by LC/MS/MS

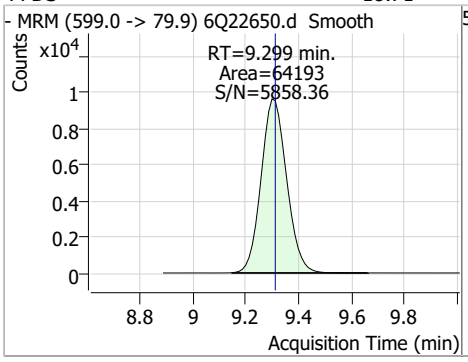
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.00	9.15	0.00	338131	613.1 -> 319.0	14.7	7.6	22.8

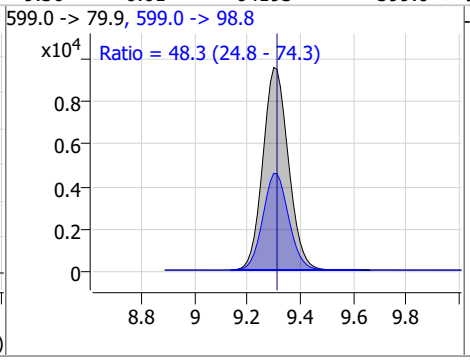


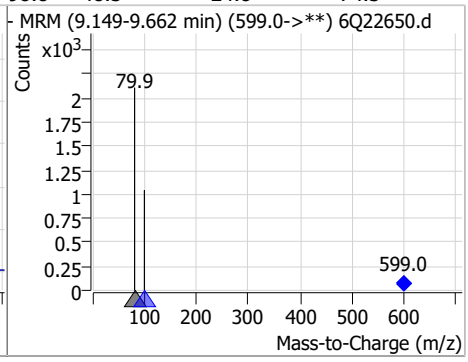




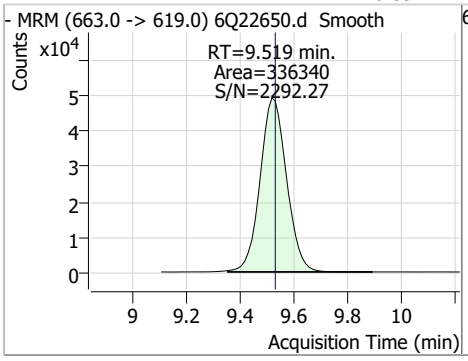
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.71	9.30	-0.01	64193	599.0 -> 98.8	48.3	24.8	74.3

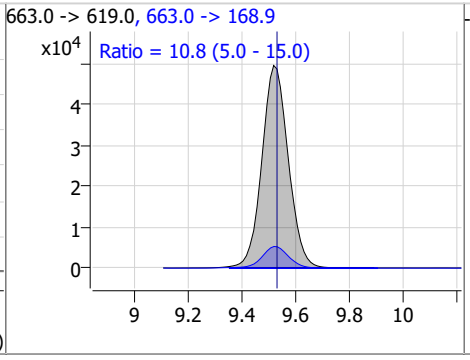


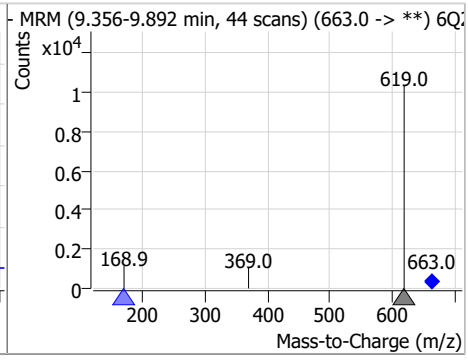




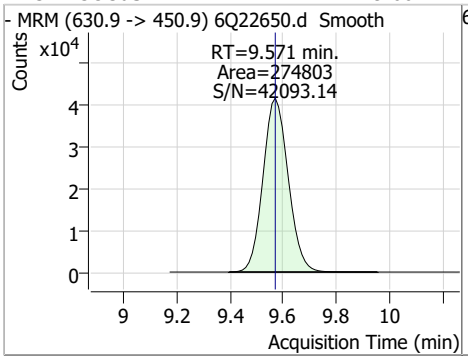
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	16.39	9.52	-0.01	336340	663.0 -> 168.9	10.8	5.0	15.0

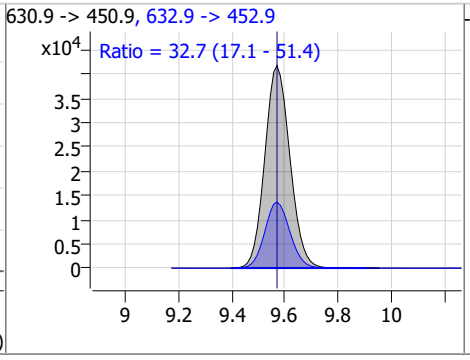


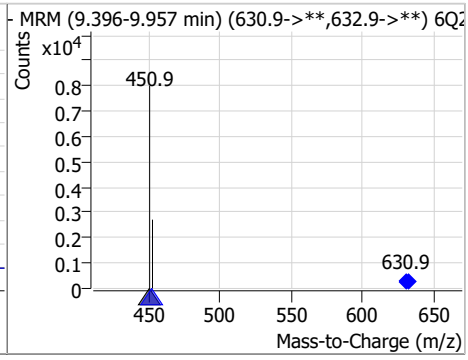




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.66	9.57	0.00	274803	632.9 -> 452.9	32.7	17.1	51.4

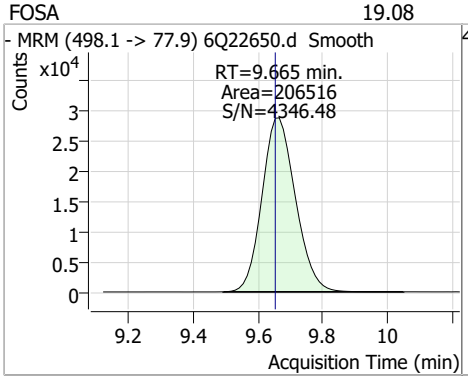


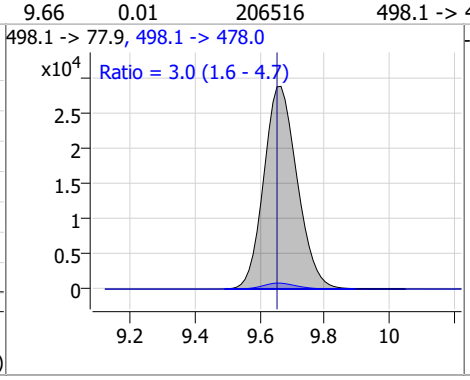


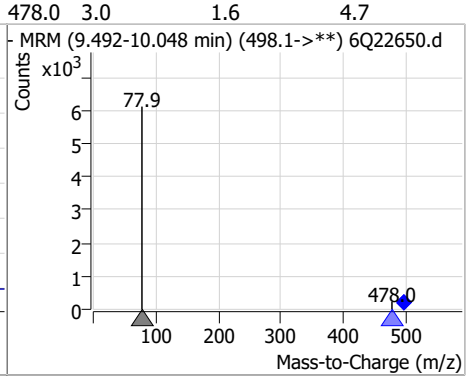


Perfluorinated Compounds by LC/MS/MS

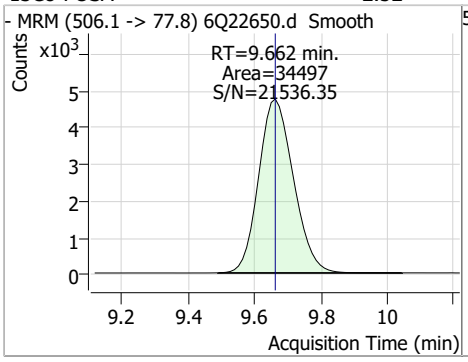
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.08	9.66	0.01	206516	498.1 -> 478.0	3.0	1.6	4.7

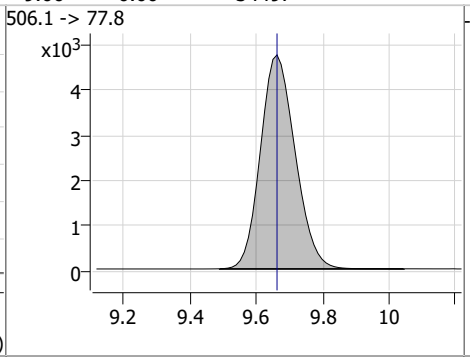


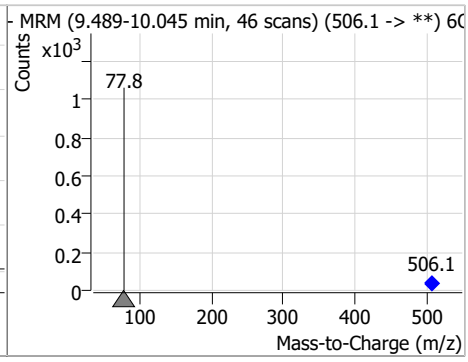




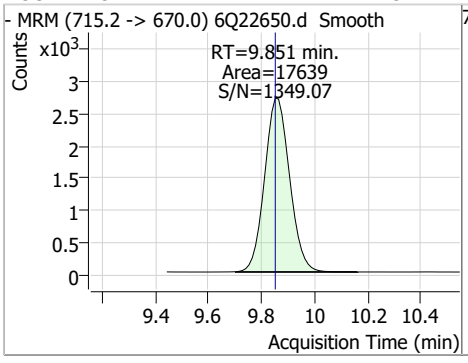
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.52	9.66	0.00	34497				

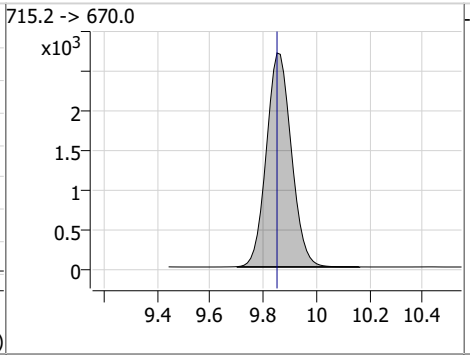


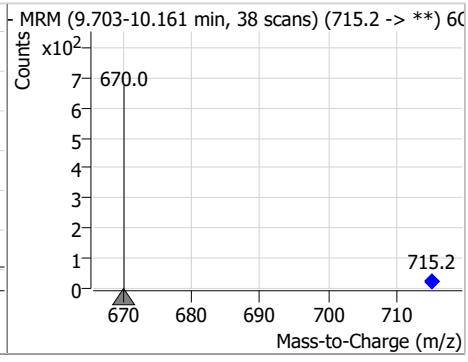




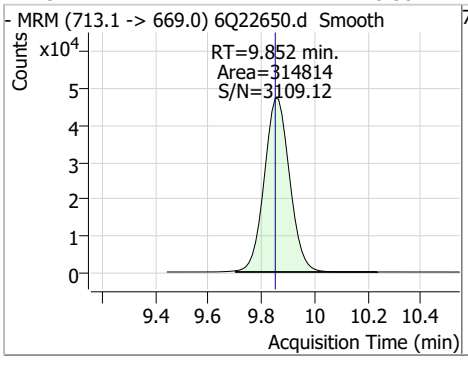
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.85	0.00	17639				

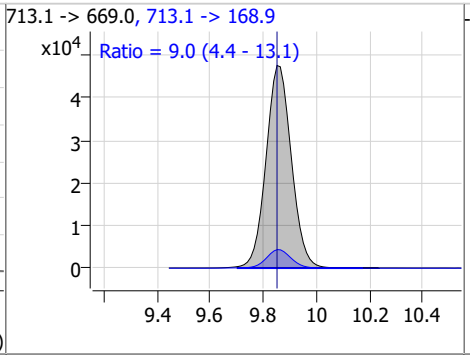


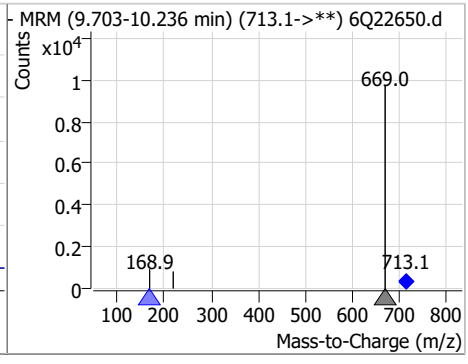




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.38	9.85	0.00	314814	713.1 -> 168.9	9.0	4.4	13.1

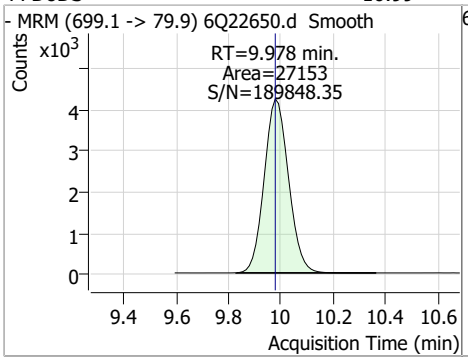


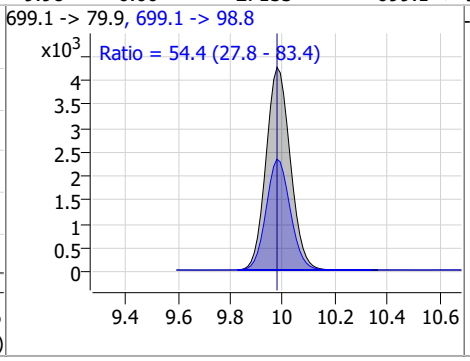


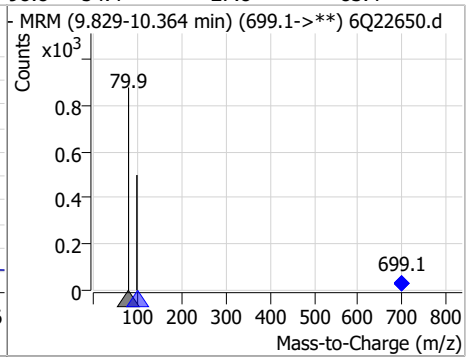


Perfluorinated Compounds by LC/MS/MS

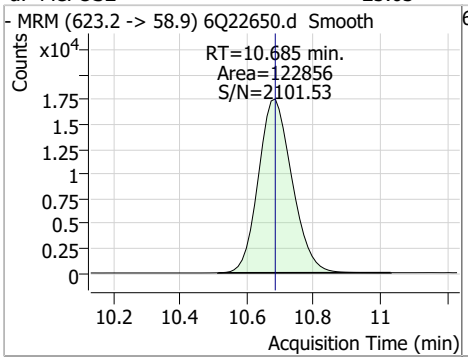
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	16.99	9.98	0.00	27153	699.1 -> 98.8	54.4	27.8	83.4

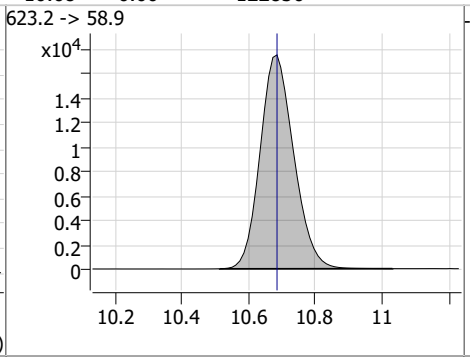


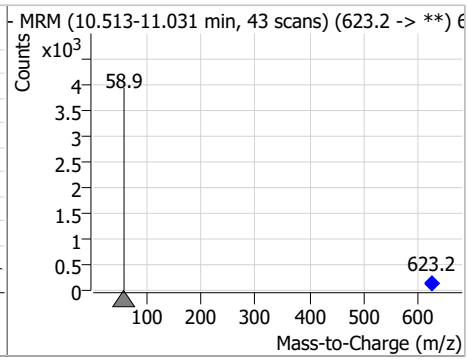




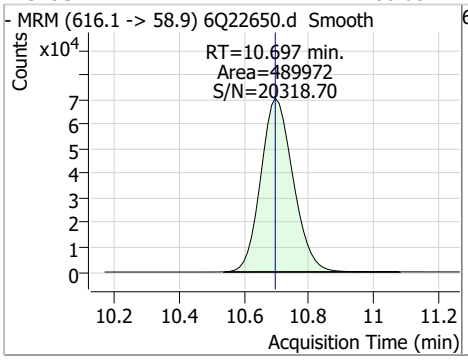
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.03	10.68	0.00	122856				

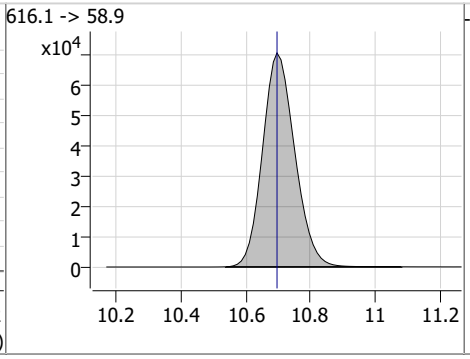


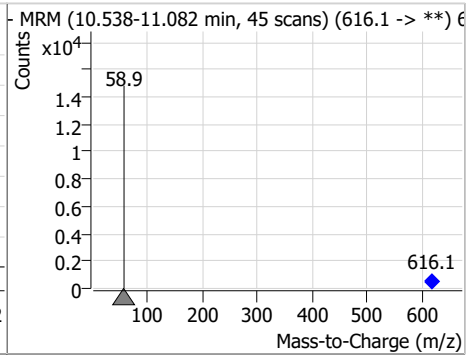




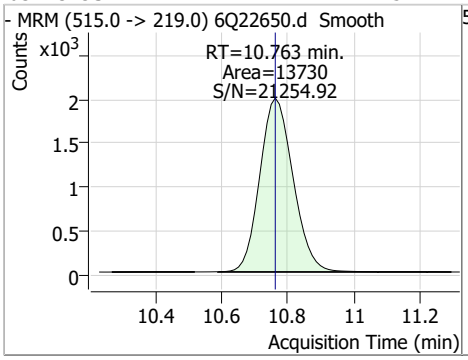
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	106.68	10.70	0.00	489972				

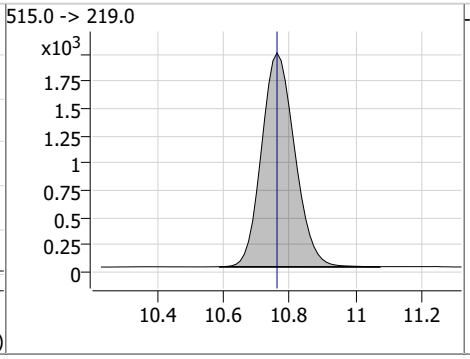


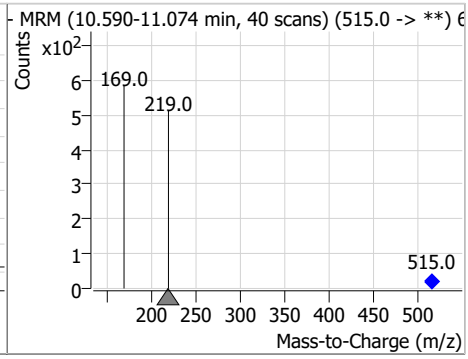




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.45	10.76	0.00	13730				

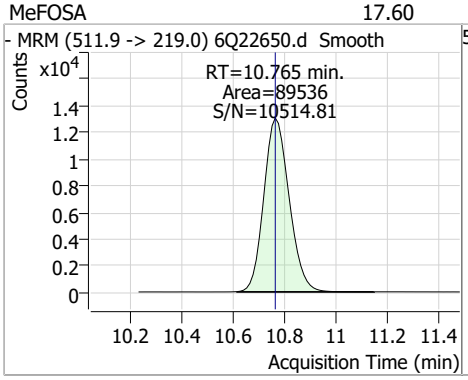


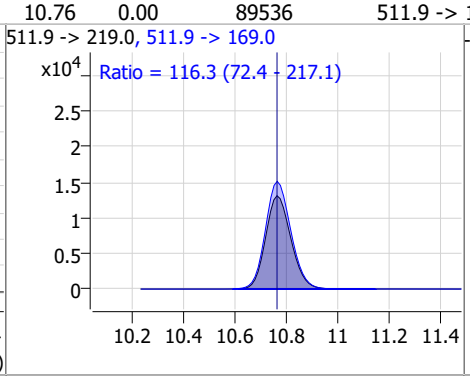


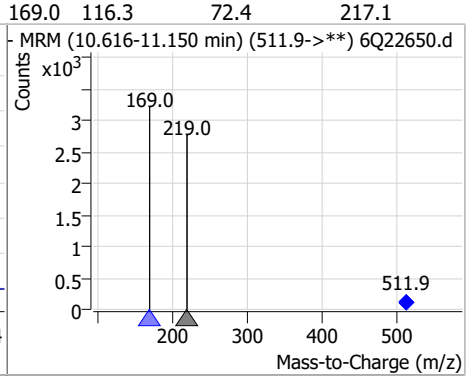


Perfluorinated Compounds by LC/MS/MS

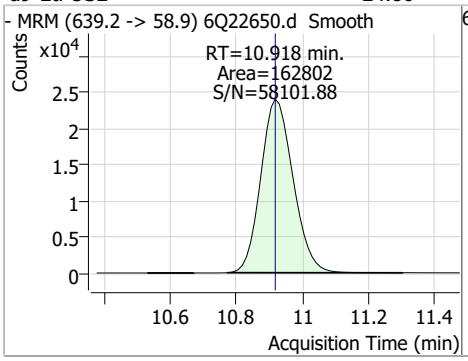
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.60	10.76	0.00	89536	511.9 -> 169.0	116.3	72.4	217.1

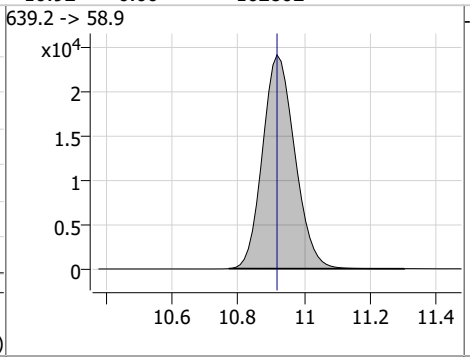


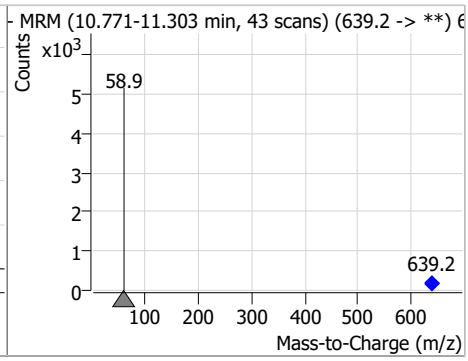




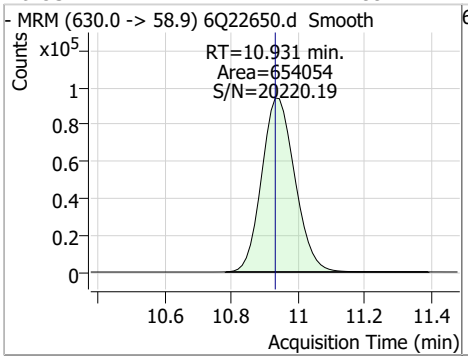
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.86	10.92	0.00	162802				

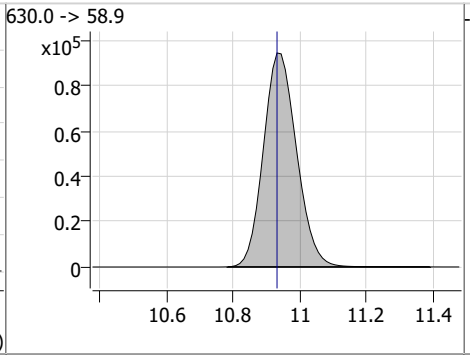


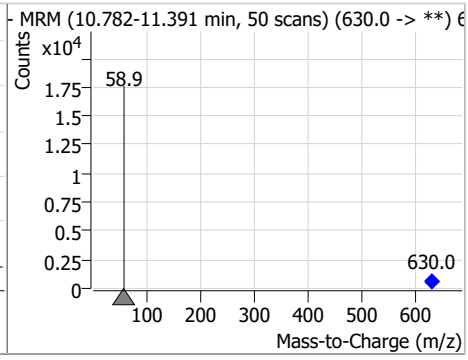




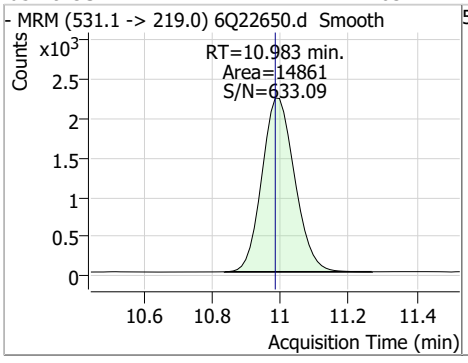
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	99.14	10.93	0.00	654054				

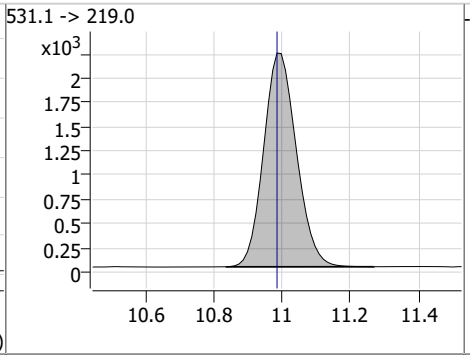


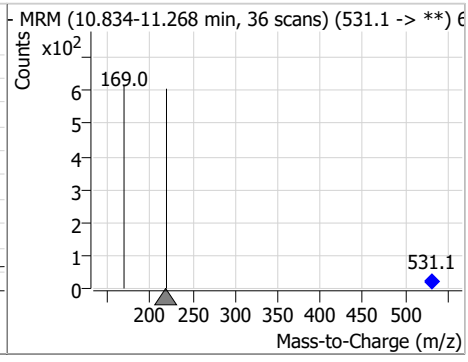




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.63	10.98	0.00	14861				

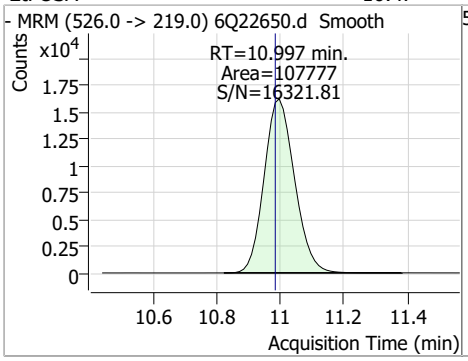


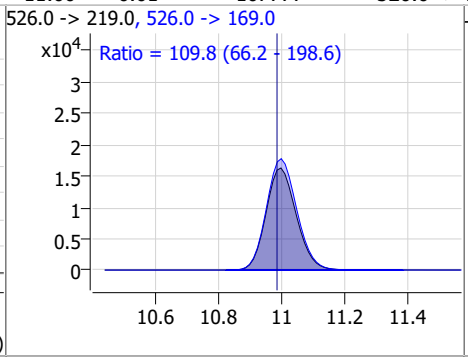


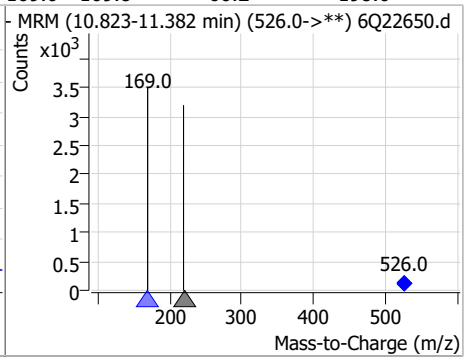


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	16.47	11.00	0.01	107777	526.0 -> 169.0	109.8	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-ICV330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22650.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 16:01	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22651.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 4:15:30 PM
Sample Name : cc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	180880	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	57933	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	64124	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	60183	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	95701	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	42953	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	26916	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	33094	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	29786	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	16932	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	34381	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	22815	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15459	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13394	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3311	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5199	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	4818	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	33184	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	37867	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	30655	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	123395	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	161407	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14271	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13401	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	17799	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	76246	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11033	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	101939	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	34633	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	57085	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	59323	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3311	5.02	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5199	5.46	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4818	5.17	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C2-PFDoDA	9.148	615.1 -> 570.0	29786	1.27	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-PFTeDA	9.851	715.2 -> 670.0	16932	1.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFBS	5.610	302.1 -> 79.9	22815	2.44	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C3-PFHxS	7.355	402.1 -> 79.9	15459	2.55	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 = 102.0%	
13C4-PFBA	3.010	216.8 -> 171.9	180880	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.608	367.1 -> 322.0	60183	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFHxA	5.668	318.0 -> 273.0	64124	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C5-PFPeA	4.447	268.3 -> 223.0	57933	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C6-PFDA	8.250	519.1 -> 474.1	26916	1.38 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C7-PFUnDA	8.717	570.0 -> 525.1	33094	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-FOSA	9.650	506.1 -> 77.8	34381	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOA	7.239	421.1 -> 376.0	95701	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.414	507.1 -> 79.9	13394	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C9-PFNA	7.770	472.1 -> 427.0	42953	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.8%	
d3-MeFOSAA	8.297	573.2 -> 419.0	33184	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	37867	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d3-MeFOSA	10.763	515.0 -> 219.0	13401	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSAA	8.505	589.2 -> 419.0	30655	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d7-MeFOSE	10.685	623.2 -> 58.9	123395	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.918	639.2 -> 58.9	161407	25.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d5-EtFOSA	10.983	531.1 -> 219.0	14271	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	42140	9.84 µg/L	96
		327.1 -> 80.9	15530		
6:2FTS	7.014	427.1 -> 407.0	43816	9.42 µg/L	96
		427.1 -> 80.9	13645		
8:2FTS	8.040	527.1 -> 507.0	26329	10.21 µg/L	96
		527.1 -> 80.8	10334		
EtFOSAA	8.506	584.2 -> 419.1	9873	2.56 µg/L	94
		584.2 -> 526.0	5102		
FOSA	9.652	498.1 -> 77.9	26760	2.48 µg/L	100
		498.1 -> 478.0	849		
MeFOSAA	8.298	570.1 -> 419.0	15917	2.51 µg/L	98
		570.1 -> 483.0	3060		
PFBA	3.006	212.8 -> 168.9	56621	10.02 µg/L	100
PFBS	5.611	298.7 -> 79.9	16843	2.26 µg/L	99
		298.7 -> 98.8	6360		
PFDA	8.251	512.9 -> 469.0	75619	2.37 µg/L	99
		512.9 -> 219.0	11360		
PFDoDA	9.148	613.1 -> 569.0	48919	2.51 µg/L	99
		613.1 -> 319.0	7568		
PFDS	9.299	599.0 -> 79.9	7863	2.45 µg/L	99

Perfluorinated Compounds by LC/MS/MS

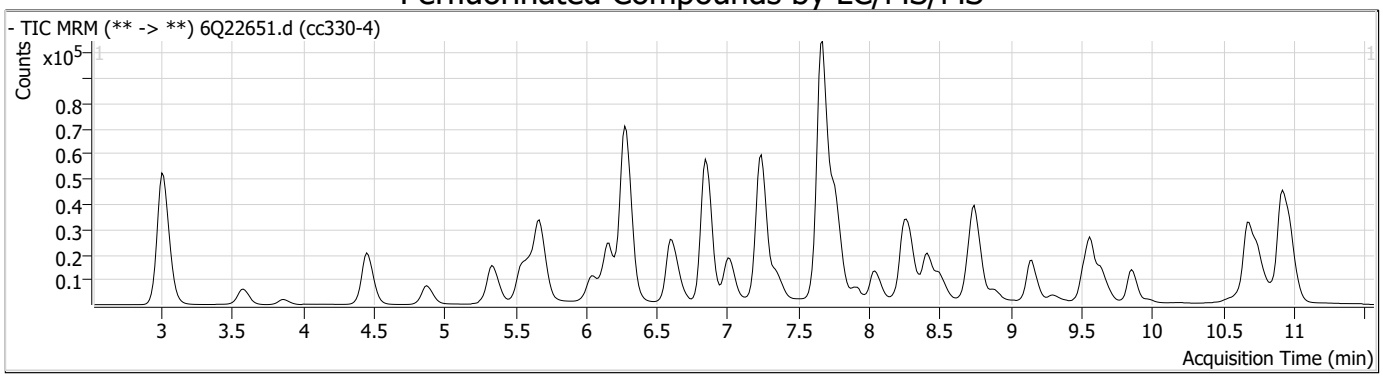
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3845				
PFHpA	6.609	363.1 -> 319.0	63186	2.66	µg/L		100
		363.1 -> 169.0	10520				
PFHpS	7.909	449.0 -> 79.9	15319	2.50	µg/L		90
		449.0 -> 98.9	7063				
PFHxA	5.670	313.0 -> 269.0	46948	2.50	µg/L		100
		313.0 -> 118.9	2462				
PFHxS	7.356	398.7 -> 79.9	14248	2.09	µg/L	m	99
		398.7 -> 98.9	7019				
PFNA	7.771	463.0 -> 419.0	73320	2.48	µg/L		100
		463.0 -> 219.0	13940				
PFNS	8.893	548.8 -> 79.9	13252	2.40	µg/L		97
		548.8 -> 98.9	6806				
PFOA	7.240	413.0 -> 369.0	97596	2.50	µg/L		97
		413.0 -> 169.0	16966				
PFOS	8.415	498.9 -> 79.9	14047	2.44	µg/L	m	97
		498.9 -> 98.8	7090				
PFPeA	4.449	263.0 -> 219.0	64419	5.05	µg/L		100
PFPeS	6.660	349.1 -> 79.9	14699	2.32	µg/L		100
		349.1 -> 98.9	6668				
PFTeDA	9.852	713.1 -> 669.0	41877	2.55	µg/L		100
		713.1 -> 168.9	3577				
PFTrDA	9.519	663.0 -> 619.0	52941	2.63	µg/L		98
		663.0 -> 168.9	5692				
PFUnDA	8.717	563.1 -> 519.0	49541	2.60	µg/L		99
		563.1 -> 269.1	8113				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	68256	5.05	µg/L		95
		632.9 -> 452.9	21357				
9Cl-PF3ONS	8.758	530.8 -> 351.0	110089	5.04	µg/L		99
		532.8 -> 353.0	34098				
ADONA	6.858	376.9 -> 250.9	248925	5.16	µg/L		100
		376.9 -> 84.8	65745				
HFPO-DA	6.046	284.9 -> 168.9	16209	5.03	µg/L		99
		284.9 -> 184.9	1671				
3:3FTCA	3.859	241.0 -> 177.0	10842	12.13	µg/L		100
		241.0 -> 117.0	1448				
5:3FTCA	6.272	341.0 -> 237.1	238743	61.88	µg/L		98
		341.0 -> 217.0	174345				
7:3FTCA	7.673	441.0 -> 316.9	183819	64.42	µg/L		94
		441.0 -> 336.9	402020				
EtFOSA	10.985	526.0 -> 219.0	31907	5.08	µg/L		98
		526.0 -> 169.0	41404				
EtFOSE	10.931	630.0 -> 58.9	83913	12.83	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	25658	5.17	µg/L		99
		511.9 -> 169.0	36805				
MeFOSE	10.697	616.1 -> 58.9	55140	11.95	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3690	2.47	µg/L		97
		699.1 -> 98.8	1967				
NFDHA	5.551	295.0 -> 201.0	12134	5.09	µg/L		97
		295.0 -> 84.9	3276				
PFMBA	4.869	279.0 -> 85.1	45312	5.02	µg/L		100
PFMPA	3.576	229.0 -> 84.9	36251	5.02	µg/L		100
PFEESA	6.163	314.8 -> 134.9	114463	4.54	µg/L		99
		314.8 -> 82.9	3661				

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

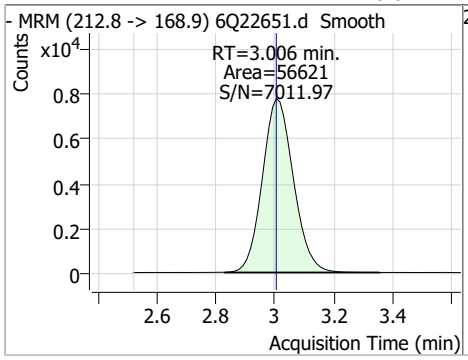
Perfluorinated Compounds by LC/MS/MS

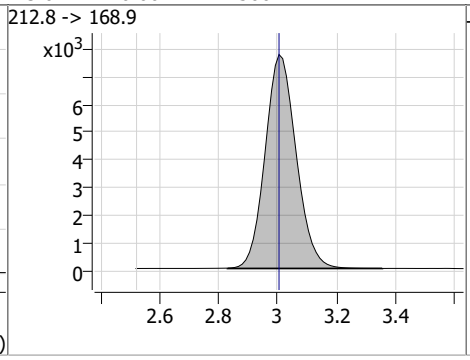
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

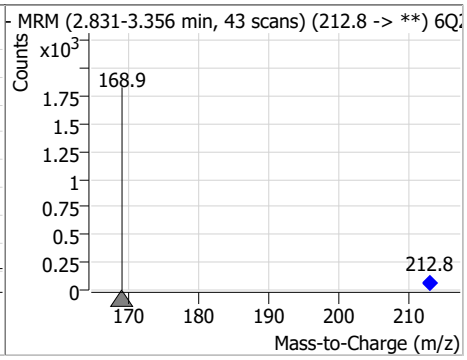
Perfluorinated Compounds by LC/MS/MS



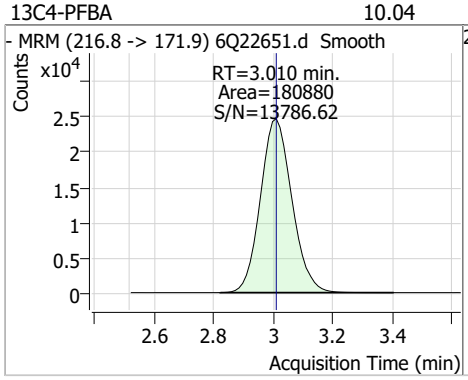
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.02	3.01	0.00	56621				

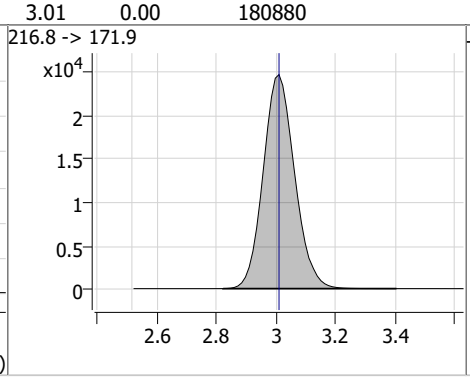


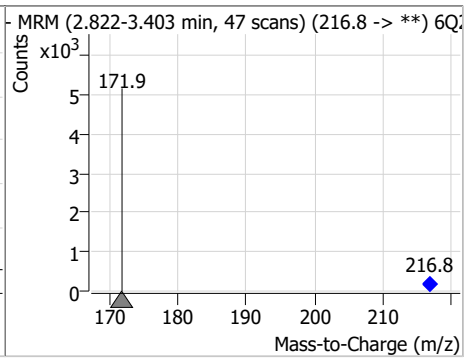




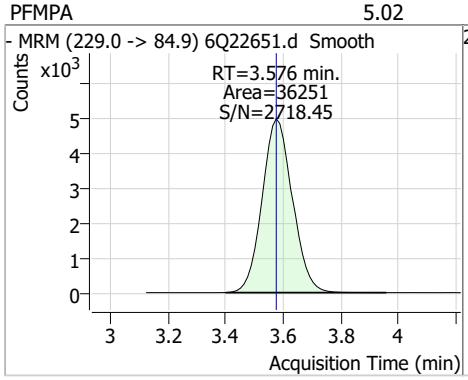
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.04	3.01	0.00	180880				

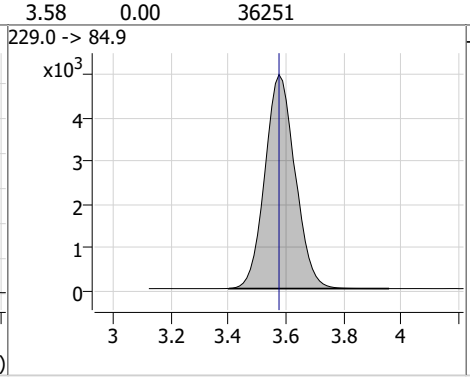


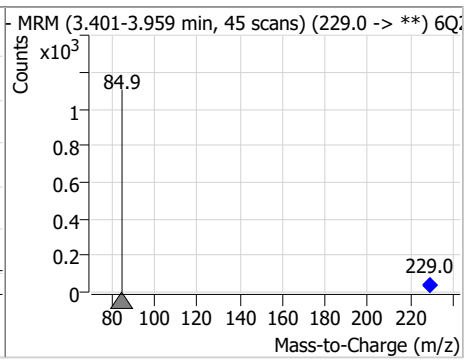




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.02	3.58	0.00	36251				

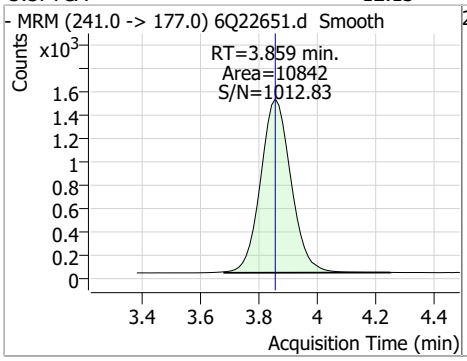


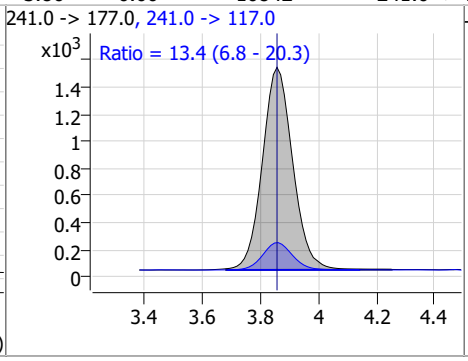


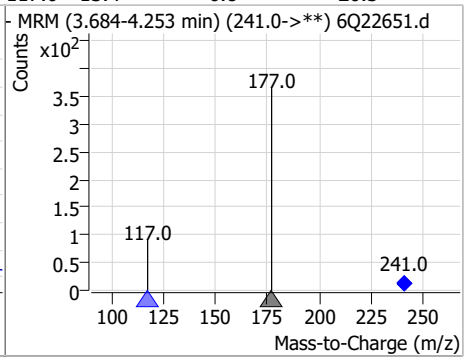


Perfluorinated Compounds by LC/MS/MS

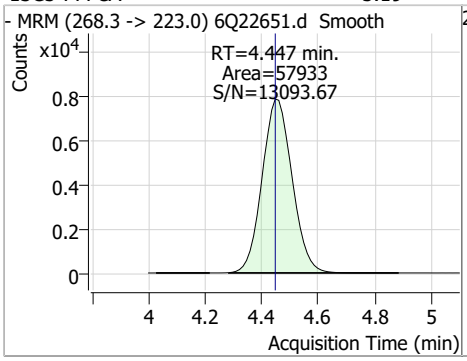
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.13	3.86	0.00	10842	241.0 -> 117.0	13.4	6.8	20.3

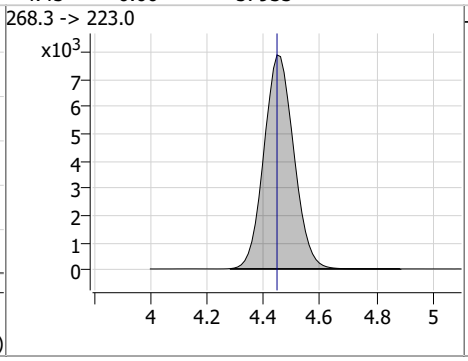


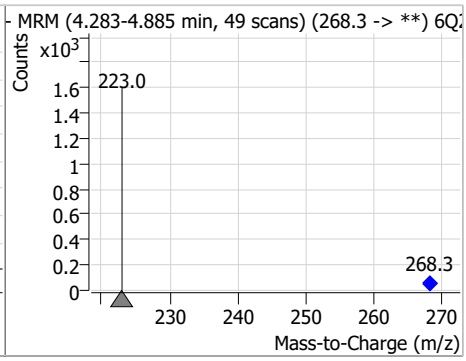




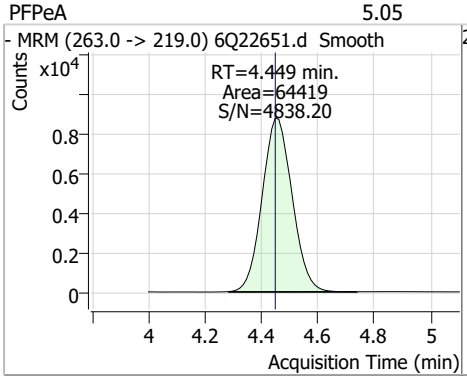
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.19	4.45	0.00	57933				

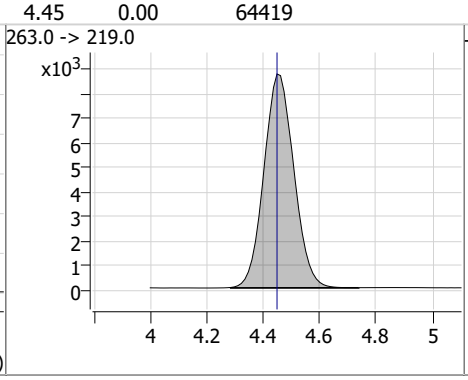


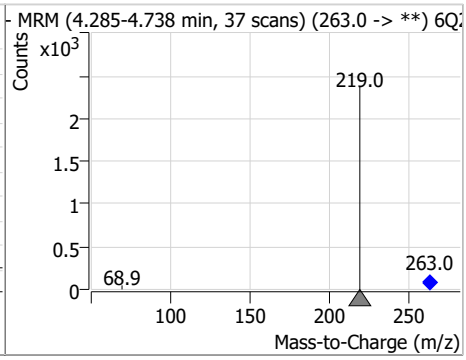




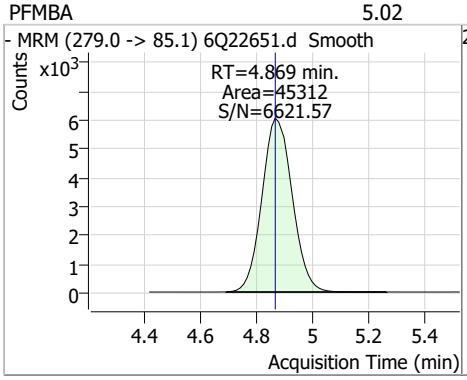
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.05	4.45	0.00	64419				

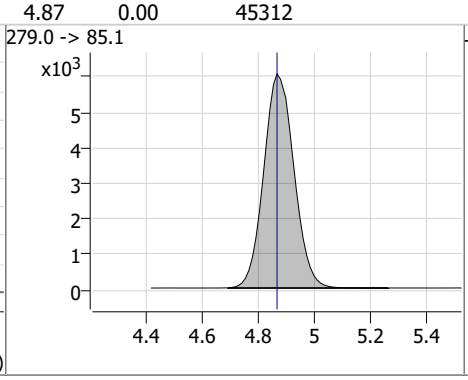


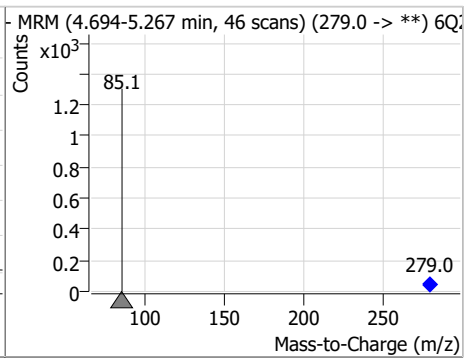




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.02	4.87	0.00	45312				

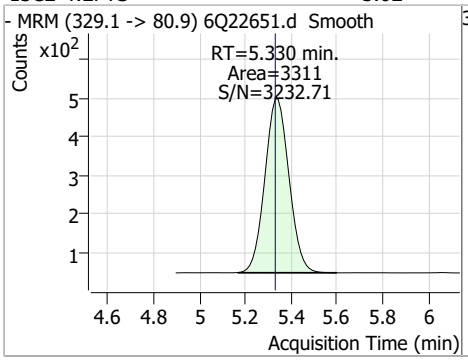


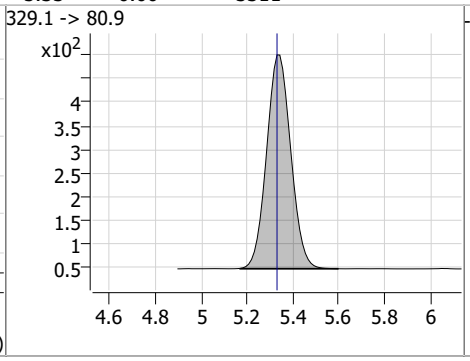


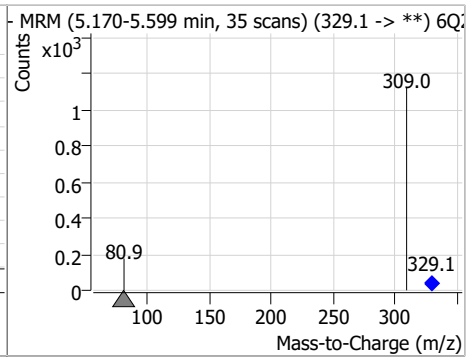


Perfluorinated Compounds by LC/MS/MS

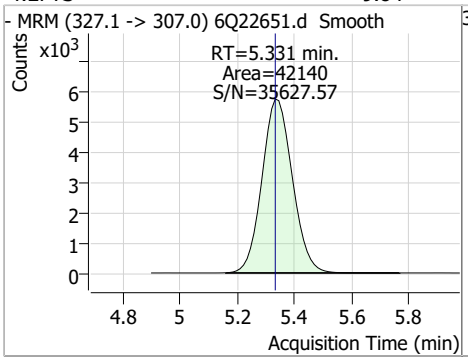
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.02	5.33	0.00	3311				

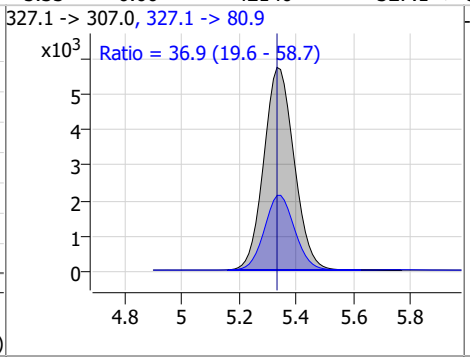


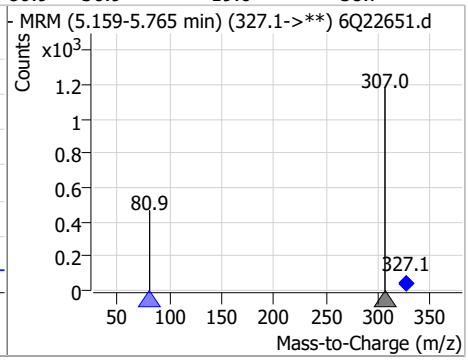




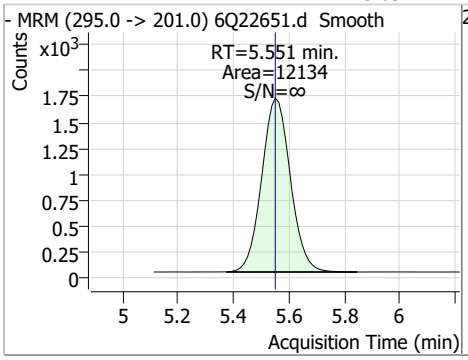
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.84	5.33	0.00	42140	327.1 -> 80.9	36.9	19.6	58.7

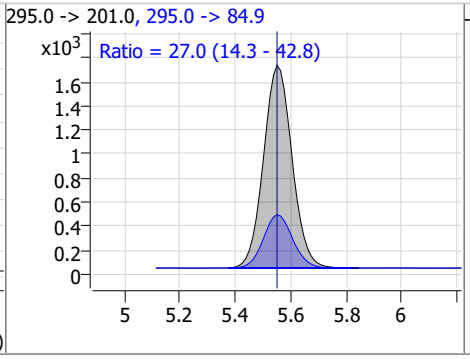


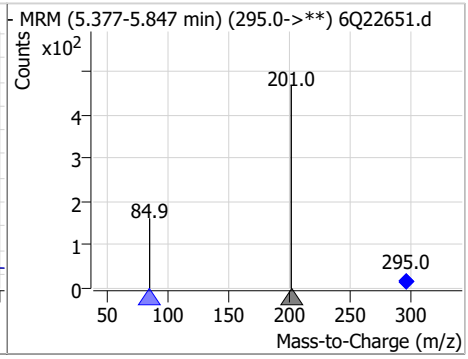




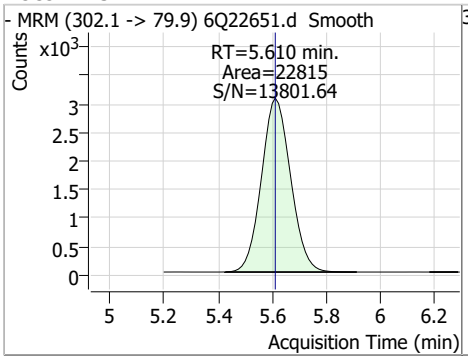
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.09	5.55	0.00	12134	295.0 -> 84.9	27.0	14.3	42.8

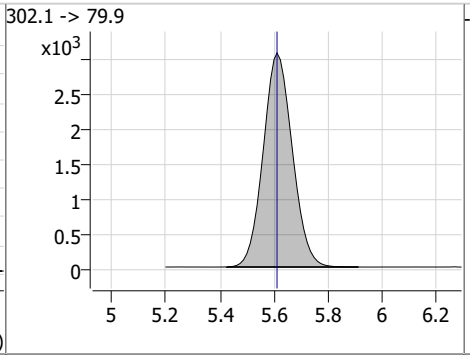


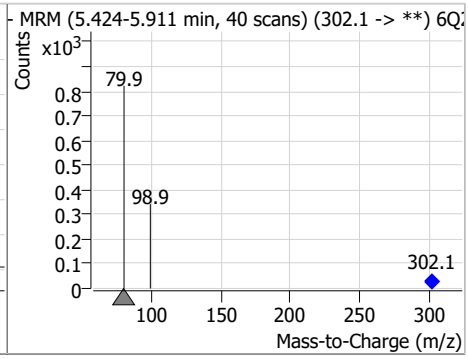




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.44	5.61	0.00	22815				

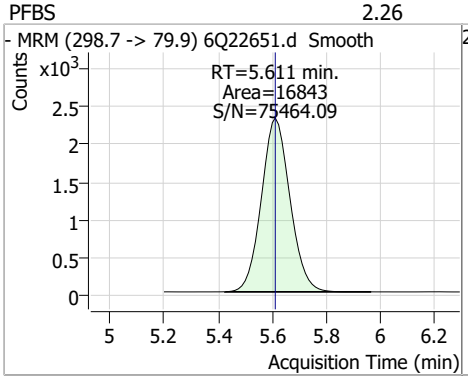


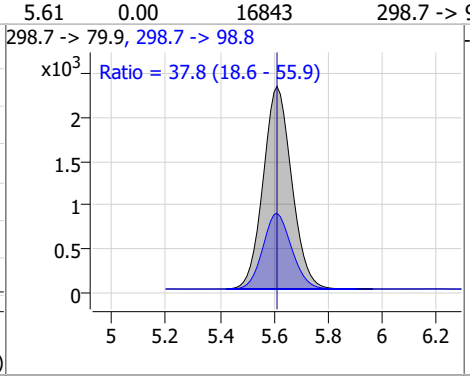


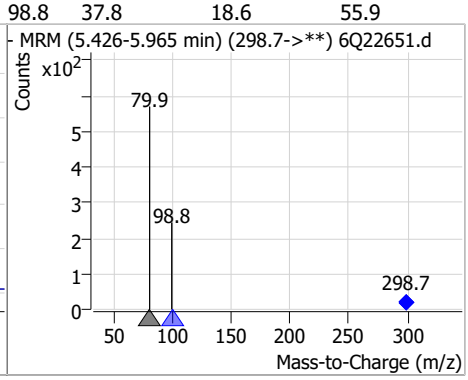


Perfluorinated Compounds by LC/MS/MS

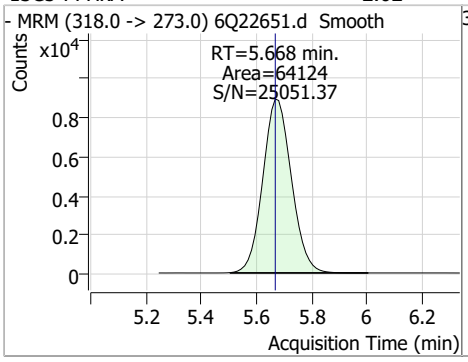
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.26	5.61	0.00	16843	298.7 -> 98.8	37.8	18.6	55.9

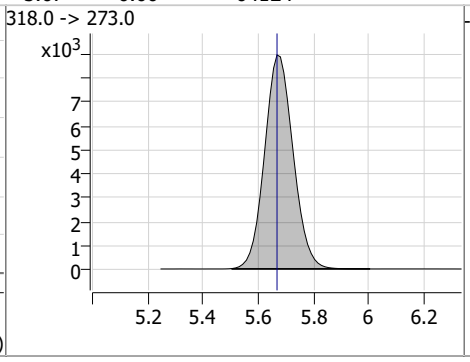


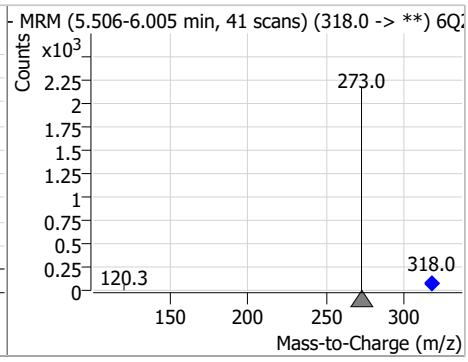




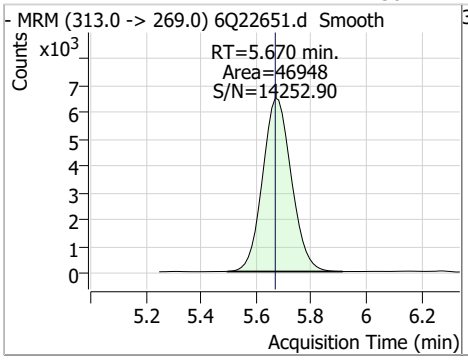
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.62	5.67	0.00	64124				

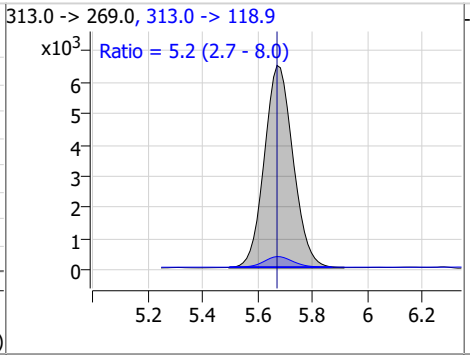


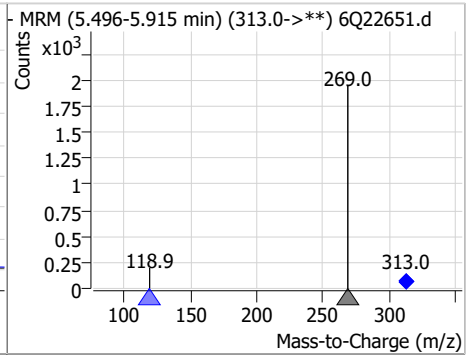




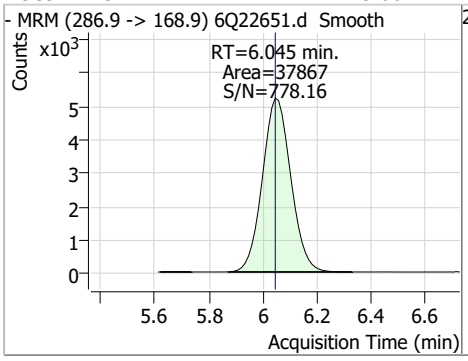
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.50	5.67	0.00	46948	313.0 -> 118.9	5.2	2.7	8.0

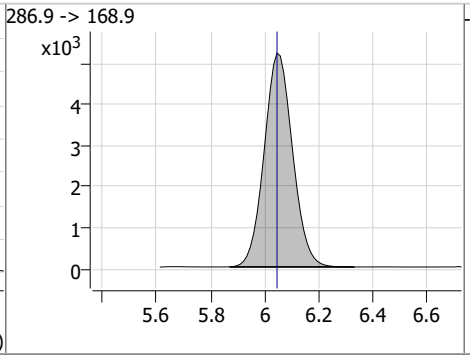


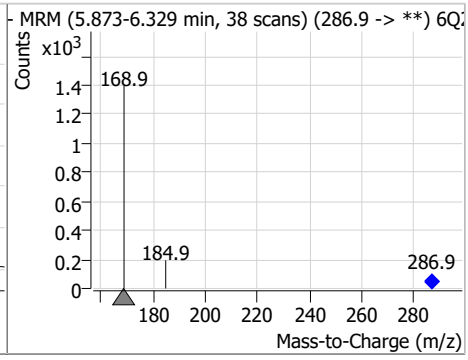




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.86	6.05	0.00	37867				

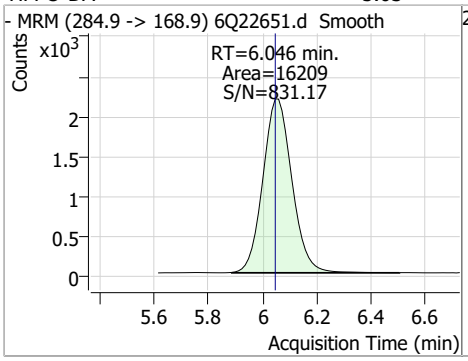


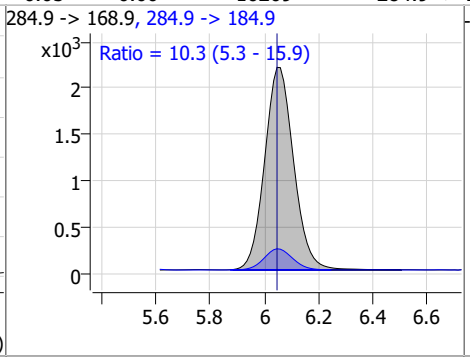


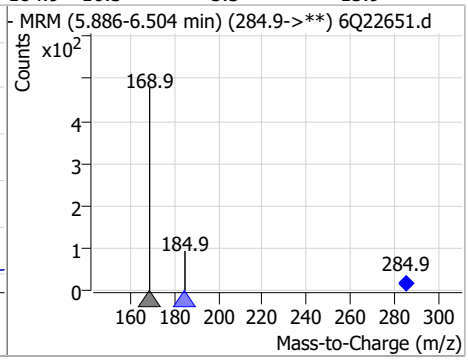


Perfluorinated Compounds by LC/MS/MS

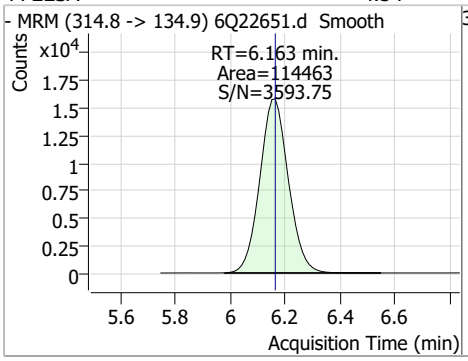
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.03	6.05	0.00	16209	284.9 -> 184.9	10.3	5.3	15.9

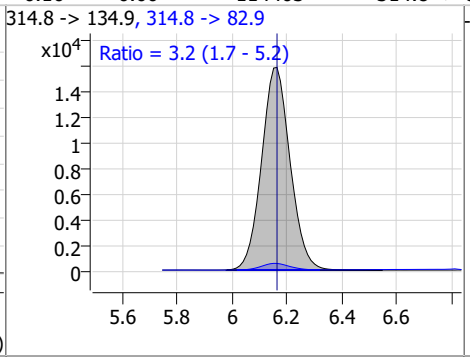


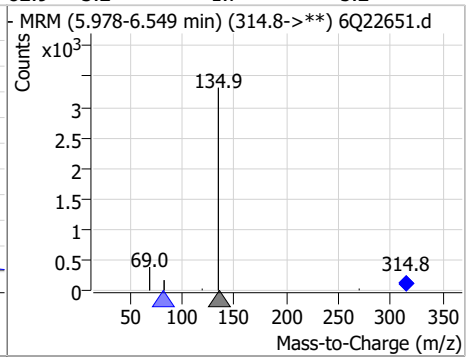




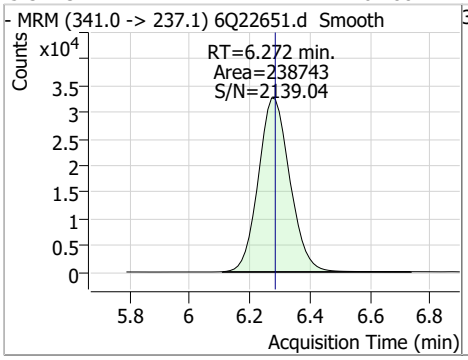
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.54	6.16	0.00	114463	314.8 -> 82.9	3.2	1.7	5.2

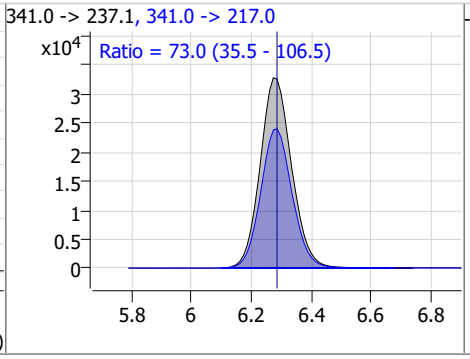


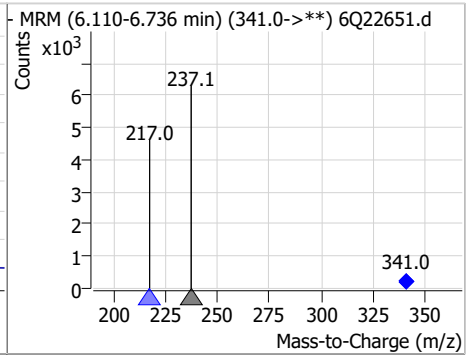




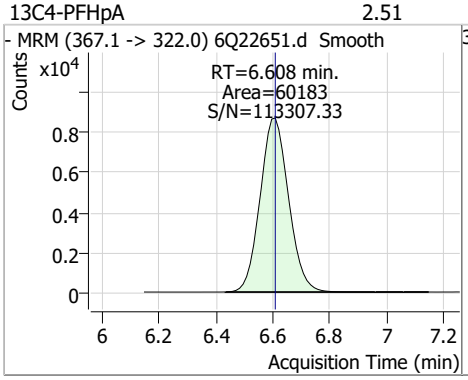
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.88	6.27	-0.01	238743	341.0 -> 217.0	73.0	35.5	106.5

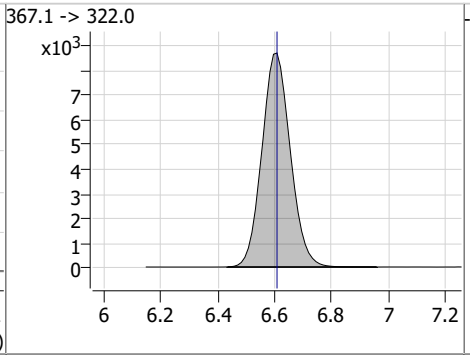


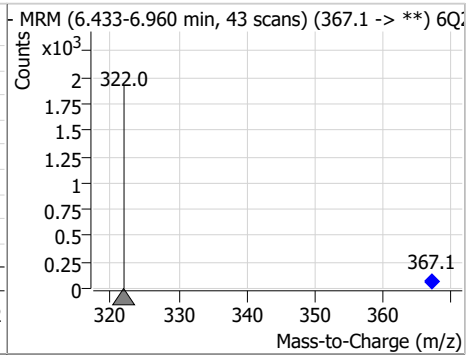




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	6.61	0.00	60183				

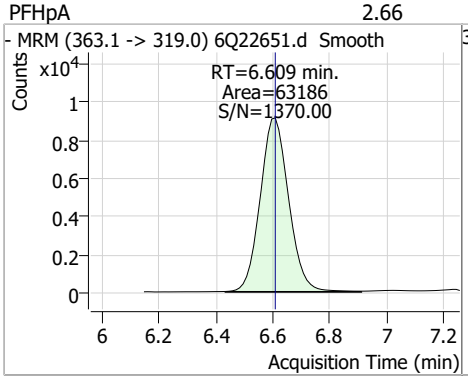


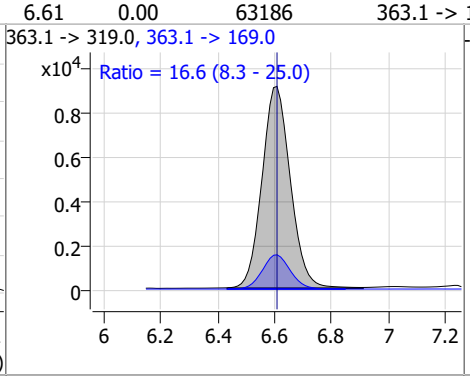


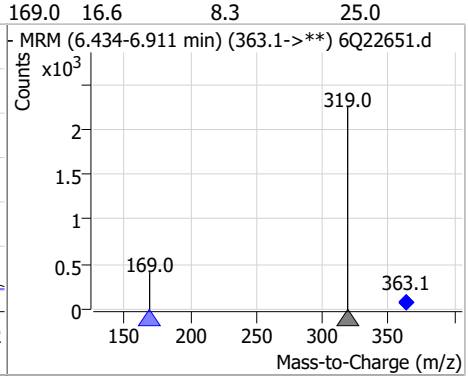


Perfluorinated Compounds by LC/MS/MS

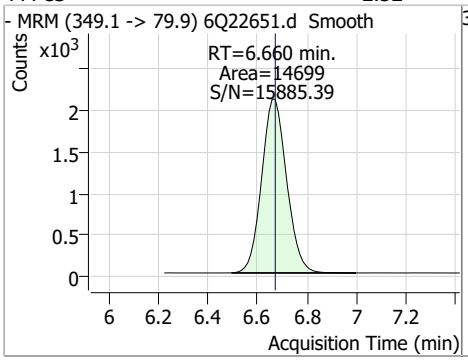
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.66	6.61	0.00	63186	363.1 -> 169.0	16.6	8.3	25.0

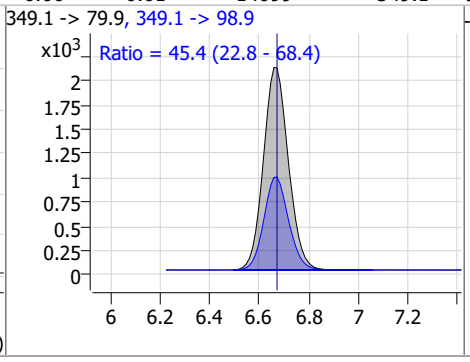


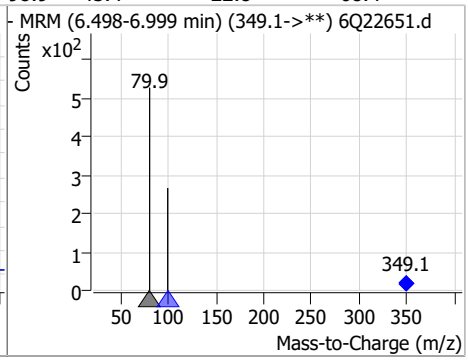




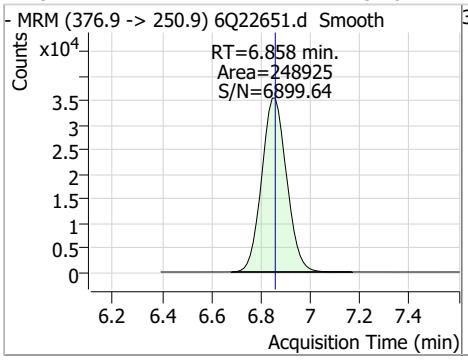
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.32	6.66	-0.01	14699	349.1 -> 98.9	45.4	22.8	68.4

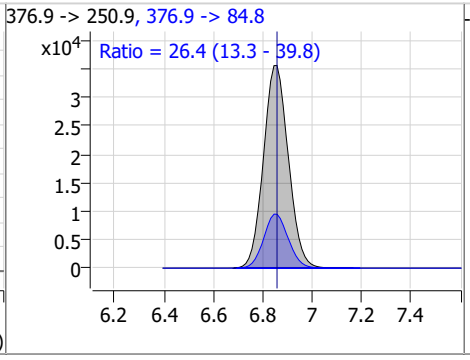


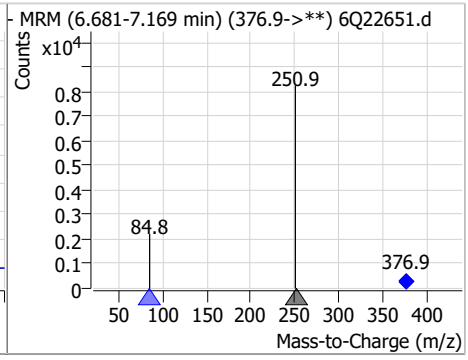




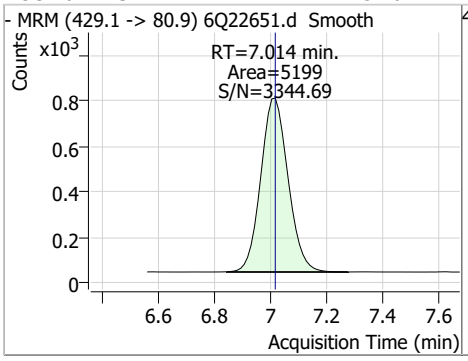
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.16	6.86	0.00	248925	376.9 -> 84.8	26.4	13.3	39.8

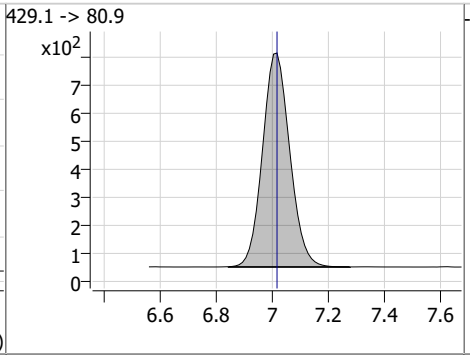


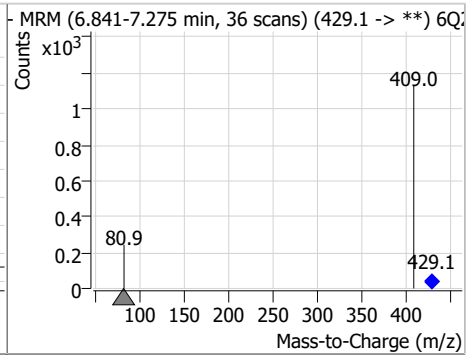




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.46	7.01	0.00	5199				

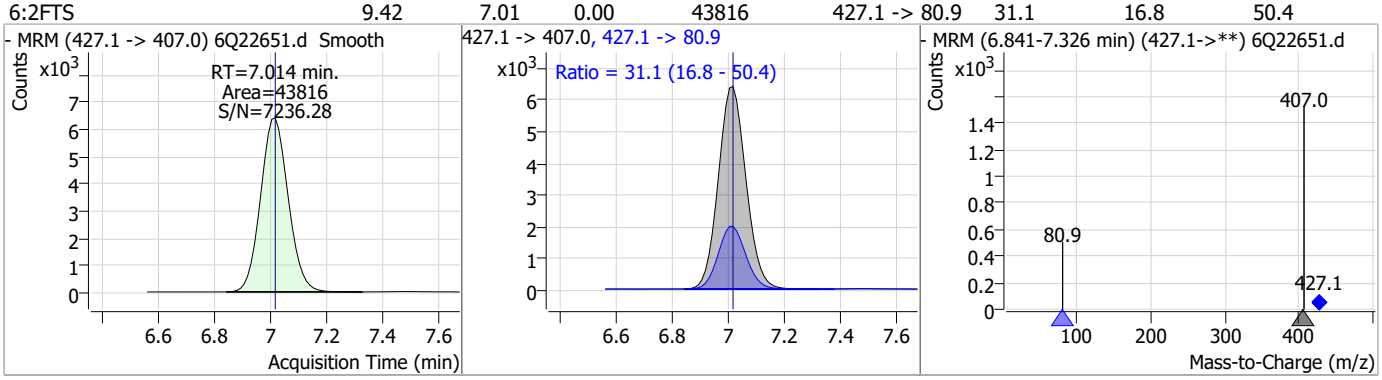




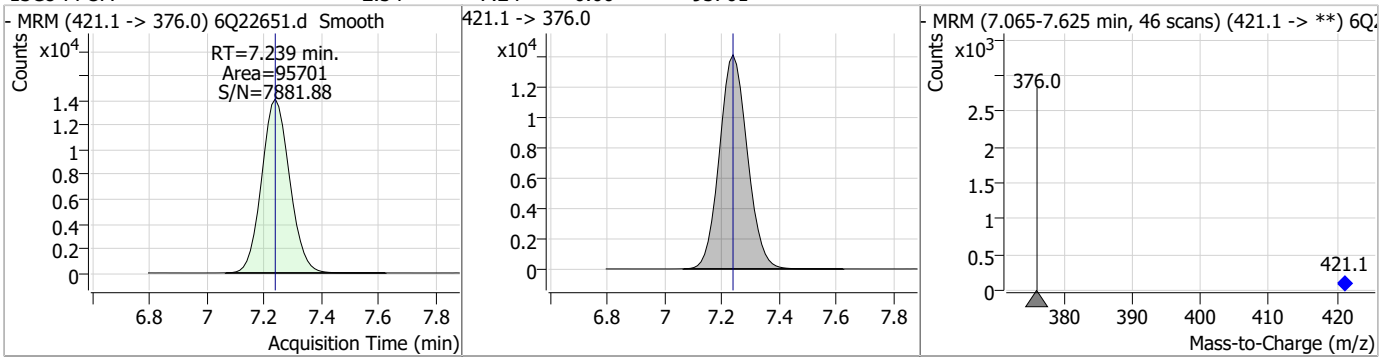


Perfluorinated Compounds by LC/MS/MS

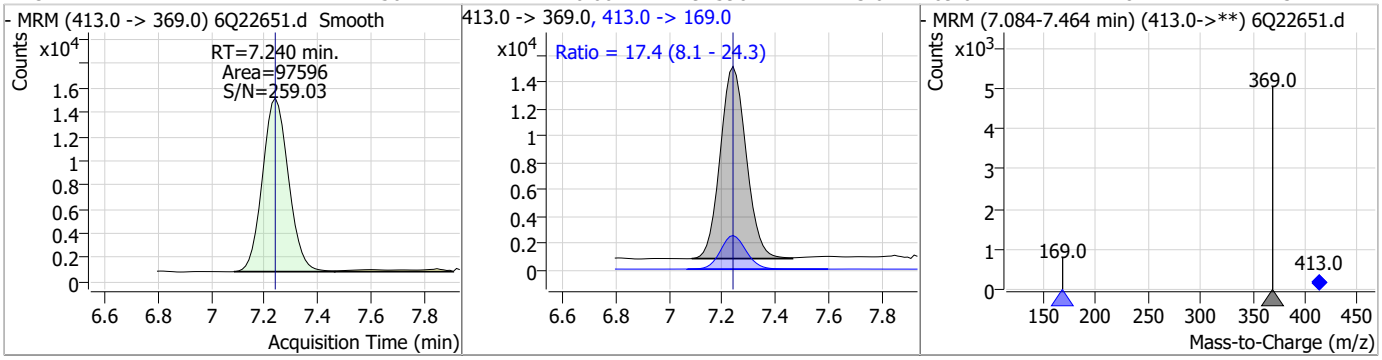
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.42	7.01	0.00	43816	427.1 -> 80.9	31.1	16.8	50.4



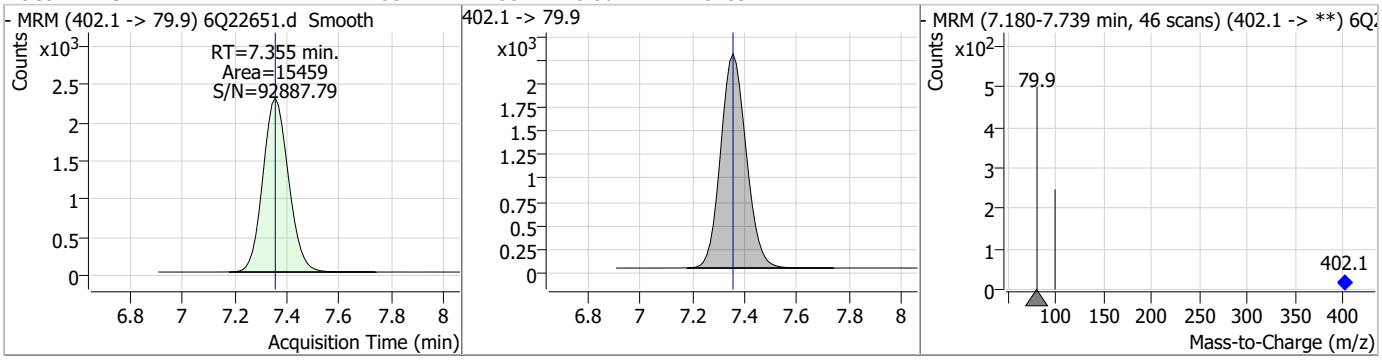
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.54	7.24	0.00	95701				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.50	7.24	0.00	97596	413.0 -> 169.0	17.4	8.1	24.3

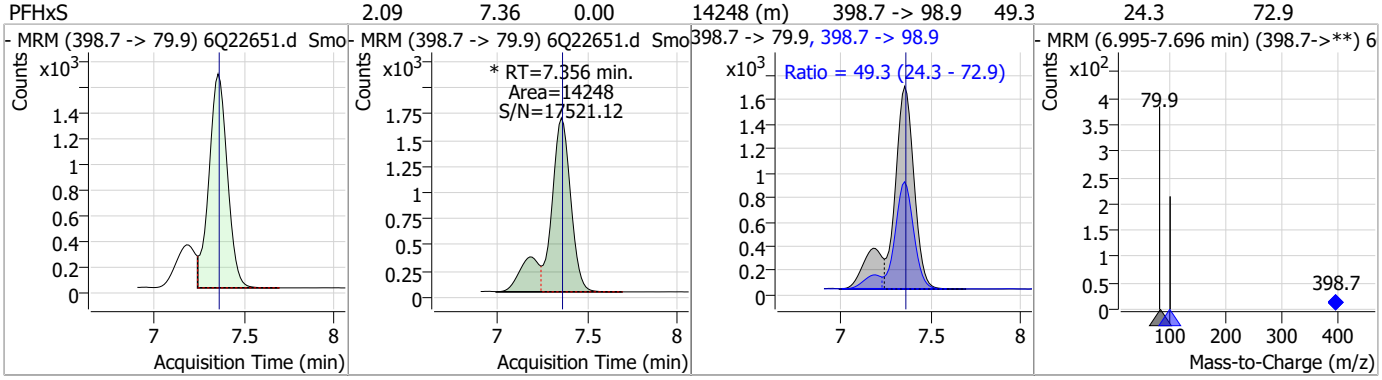


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.55	7.35	0.00	15459				

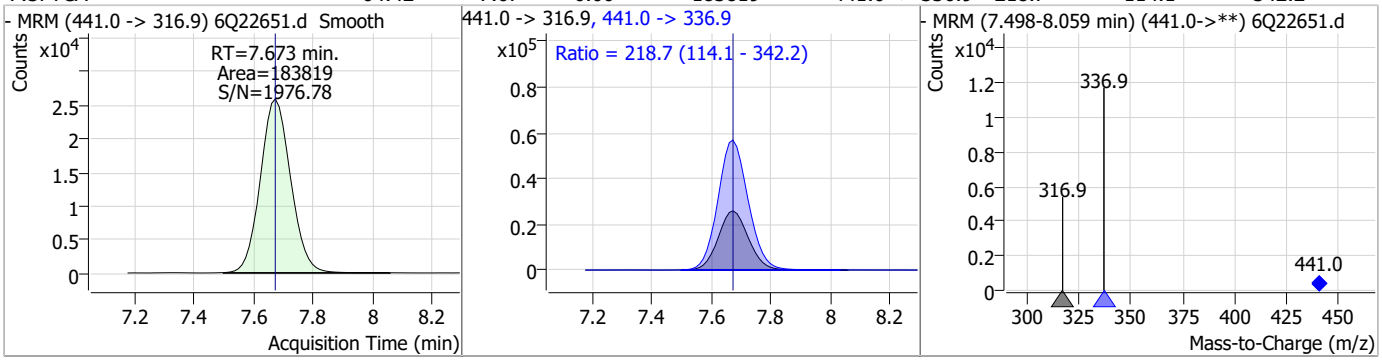


Perfluorinated Compounds by LC/MS/MS

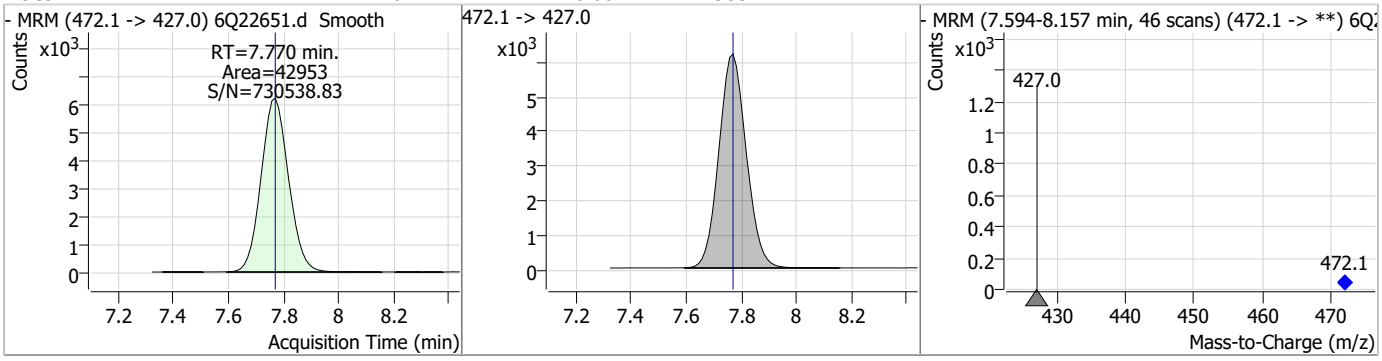
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.09	7.36	0.00	14248 (m)	398.7 -> 98.9	49.3	24.3	72.9



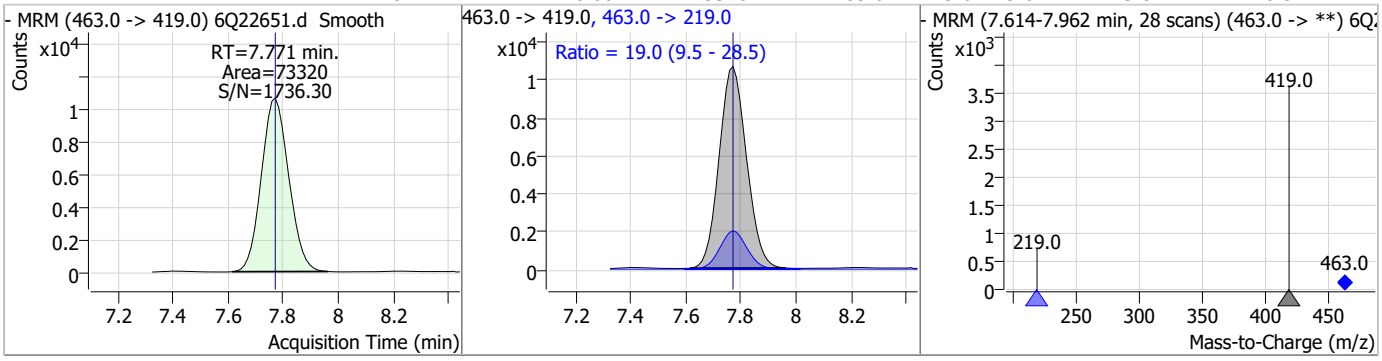
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.42	7.67	0.00	183819	441.0 -> 336.9	218.7	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.77	0.00	42953				

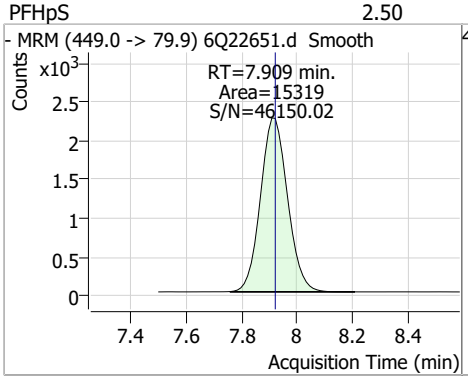


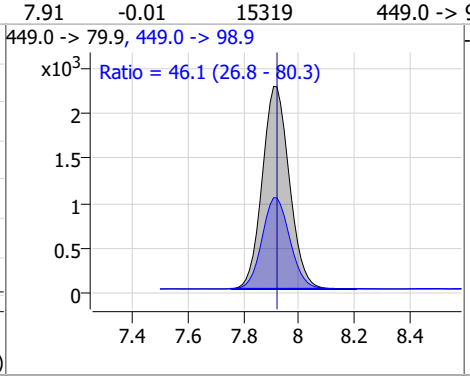
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.48	7.77	0.00	73320	463.0 -> 219.0	19.0	9.5	28.5

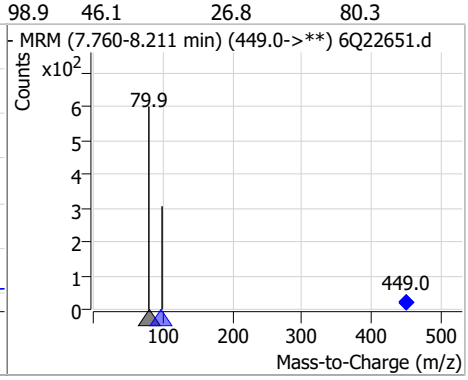


Perfluorinated Compounds by LC/MS/MS

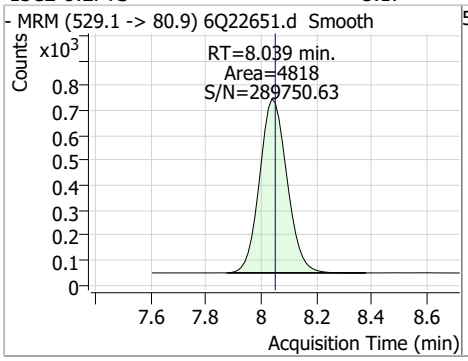
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.50	7.91	-0.01	15319	449.0 -> 98.9	46.1	26.8	80.3

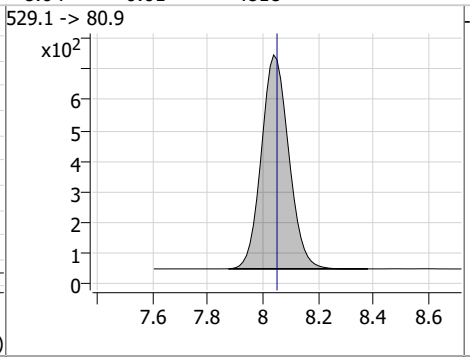


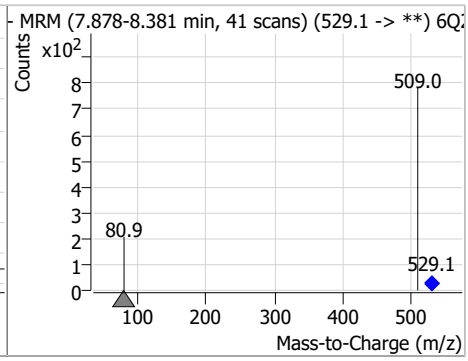




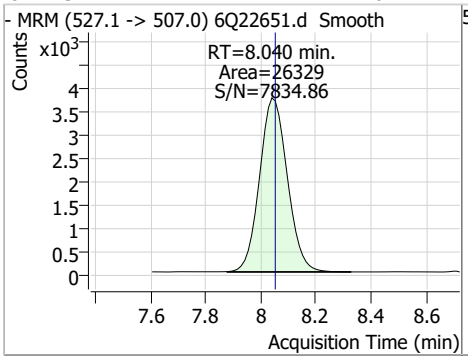
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.17	8.04	-0.01	4818				

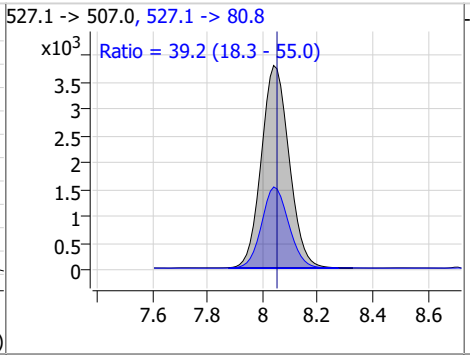


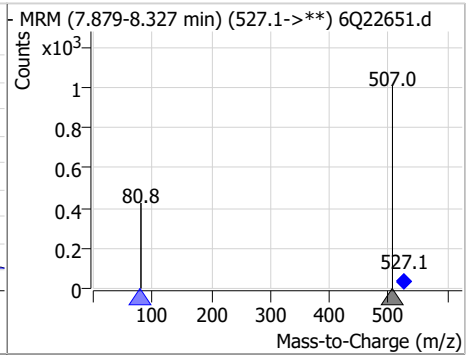




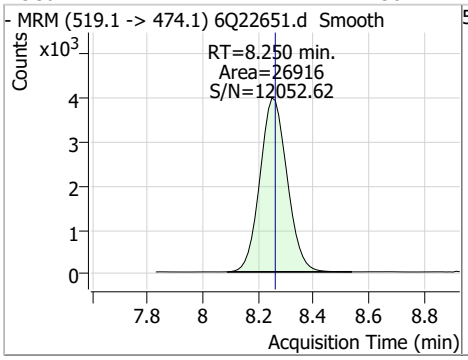
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.21	8.04	-0.01	26329	527.1 -> 80.8	39.2	18.3	55.0

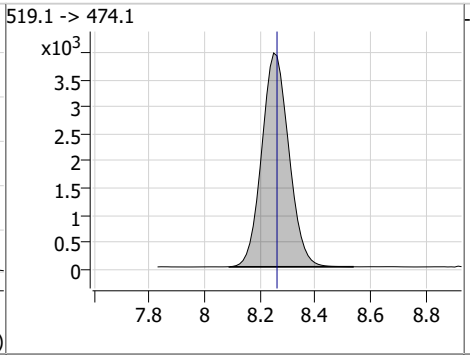


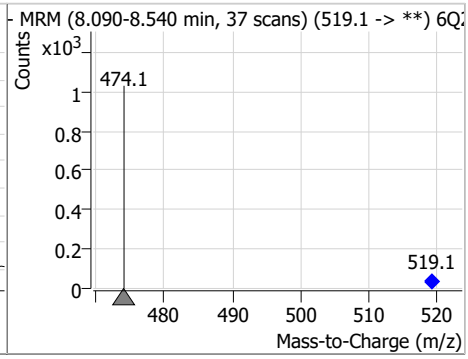




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.38	8.25	-0.01	26916				

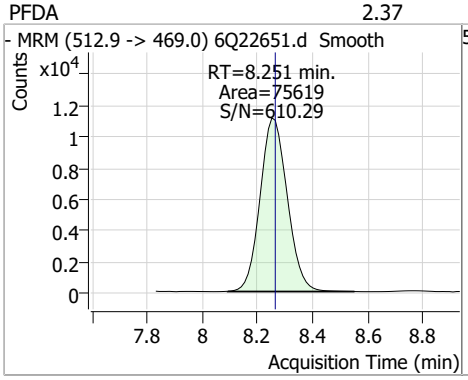


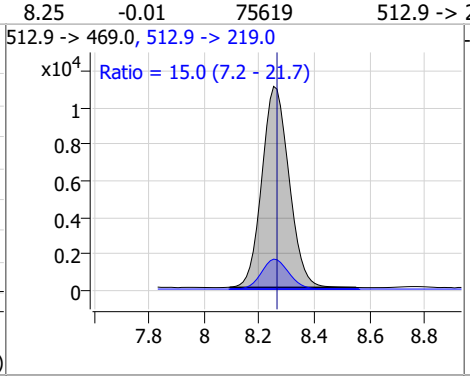


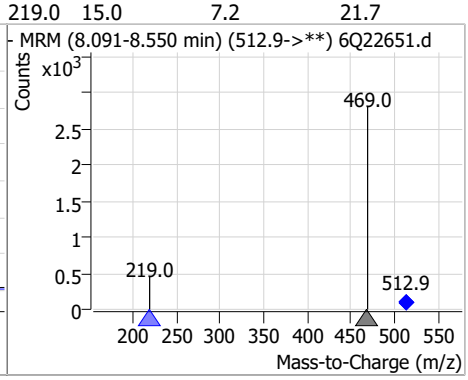


Perfluorinated Compounds by LC/MS/MS

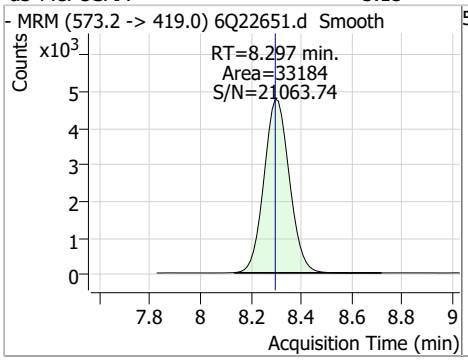
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.37	8.25	-0.01	75619	512.9 -> 219.0	15.0	7.2	21.7

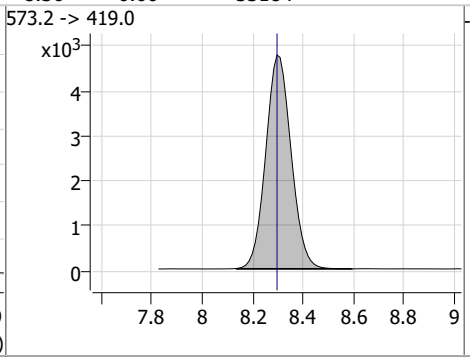


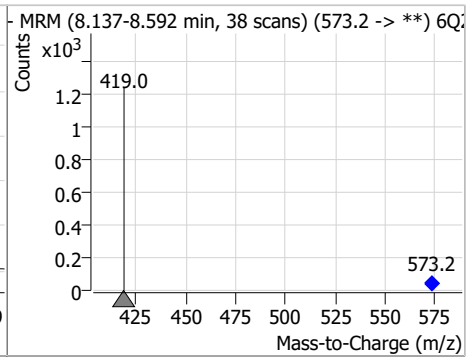




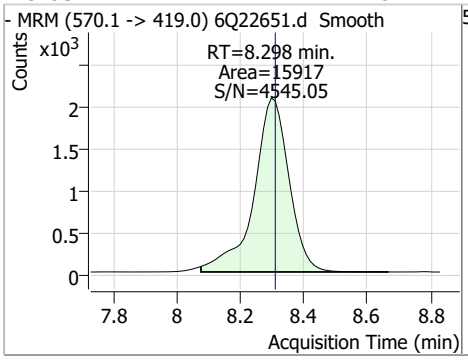
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.15	8.30	0.00	33184				

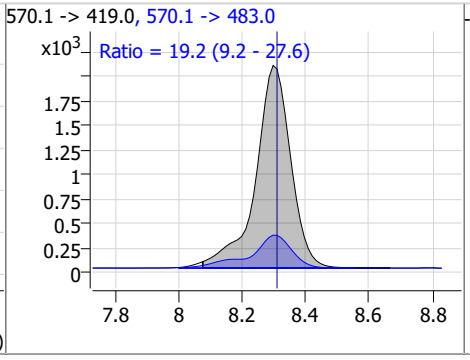


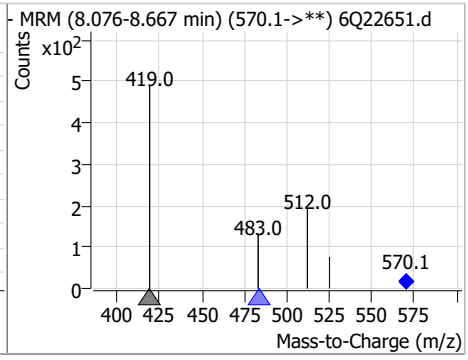




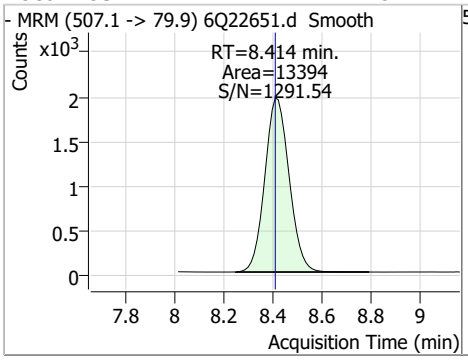
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.51	8.30	-0.01	15917	570.1 -> 483.0	19.2	9.2	27.6

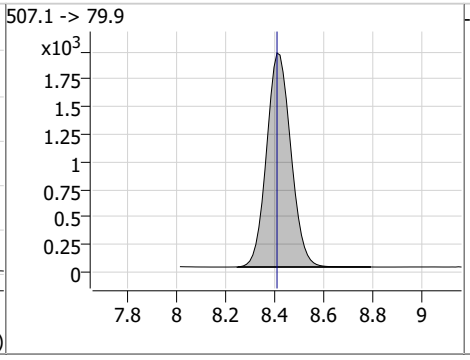


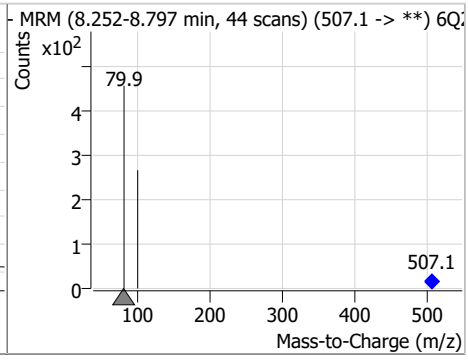




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.57	8.41	0.00	13394				

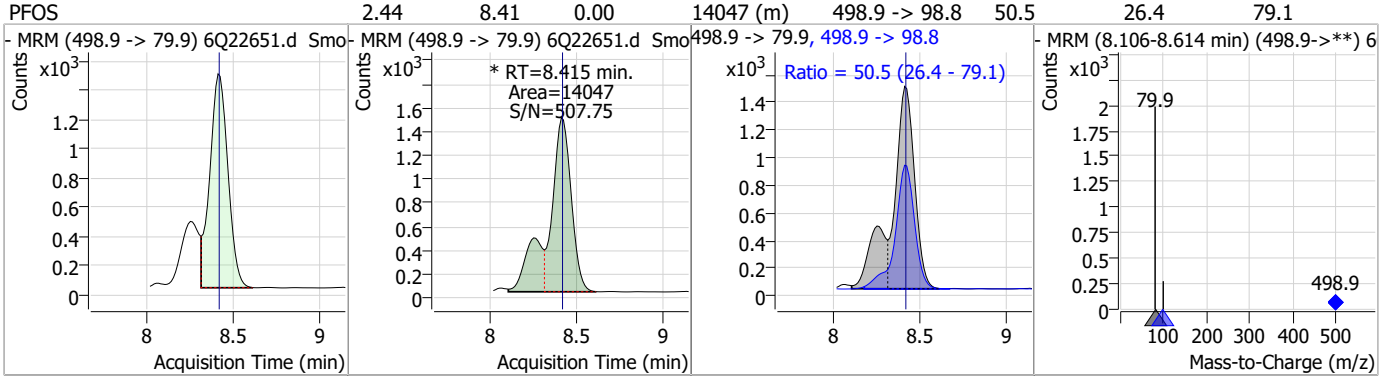




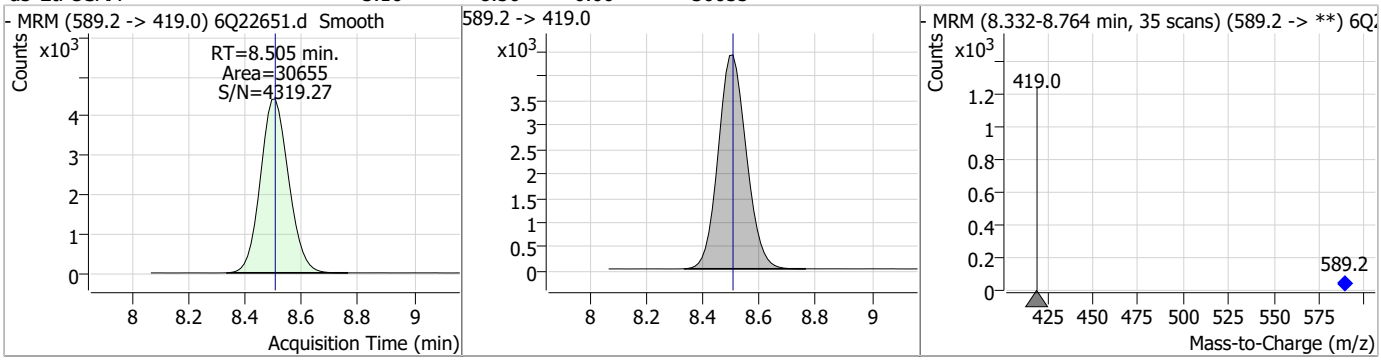


Perfluorinated Compounds by LC/MS/MS

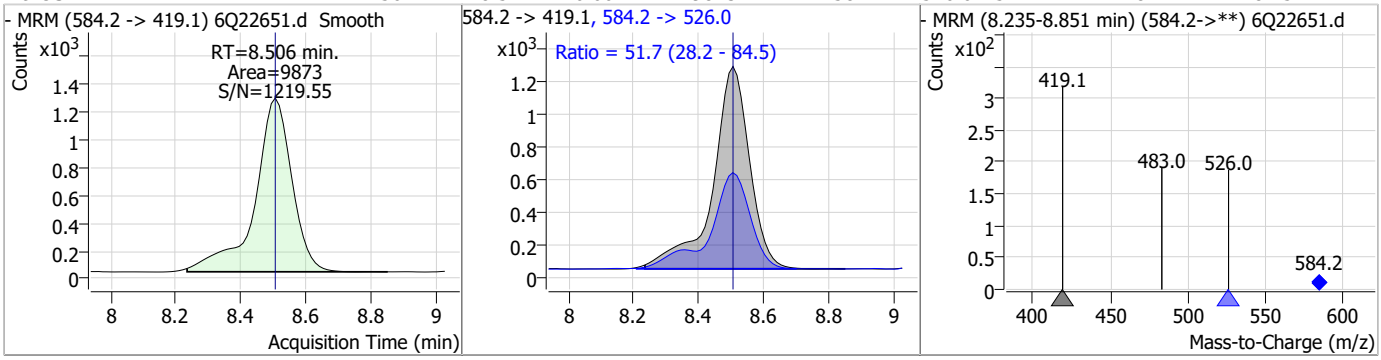
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.44	8.41	0.00	14047 (m)	498.9 -> 98.8	50.5	26.4	79.1



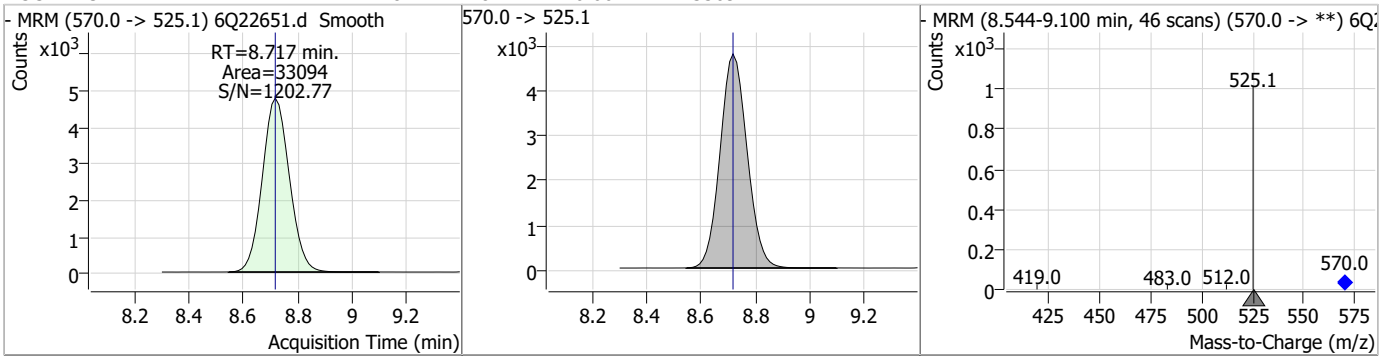
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.16	8.50	0.00	30655				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.56	8.51	0.00	9873	584.2 -> 526.0	51.7	28.2	84.5

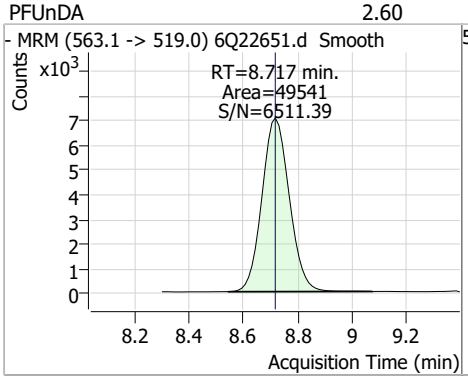


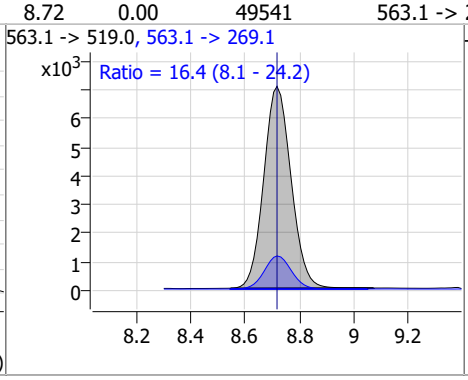
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.72	0.00	33094				

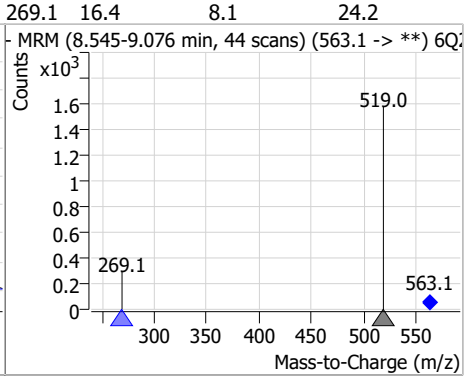


Perfluorinated Compounds by LC/MS/MS

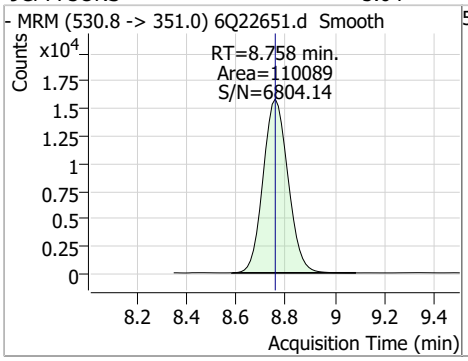
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.60	8.72	0.00	49541	563.1 -> 269.1	16.4	8.1	24.2

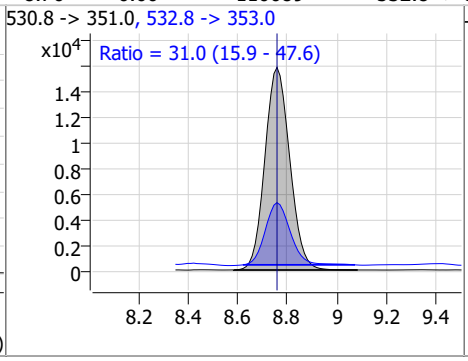


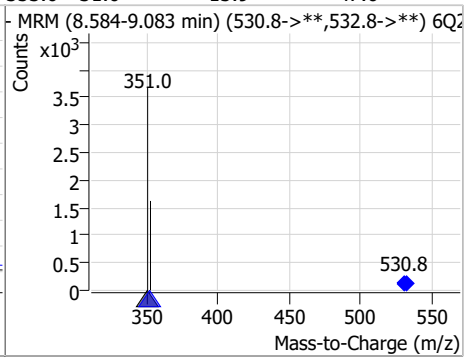




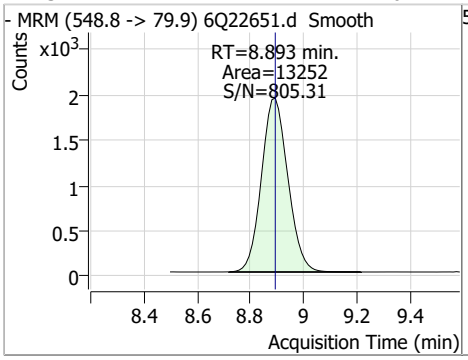
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.04	8.76	0.00	110089	532.8 -> 353.0	31.0	15.9	47.6

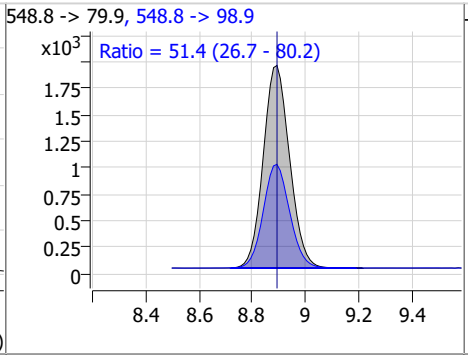


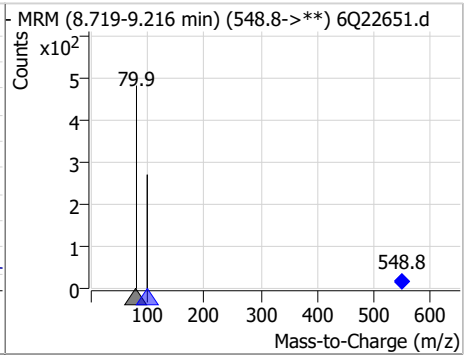




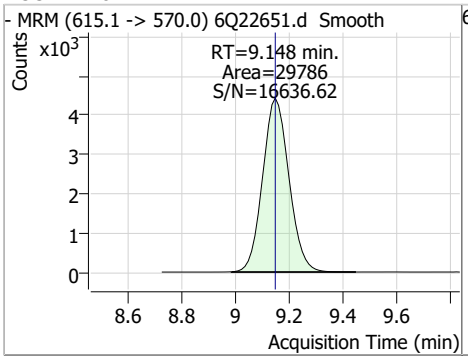
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.40	8.89	0.00	13252	548.8 -> 98.9	51.4	26.7	80.2

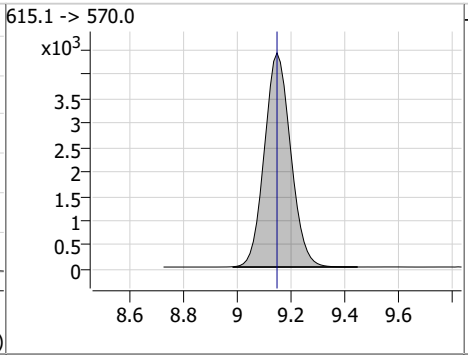


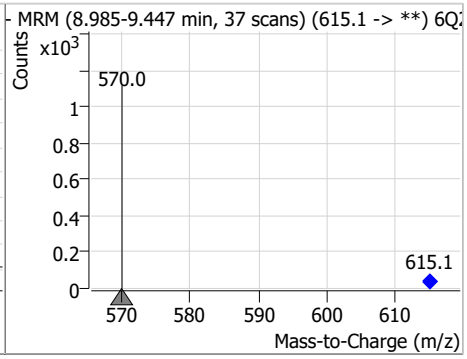




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	9.15	0.00	29786				

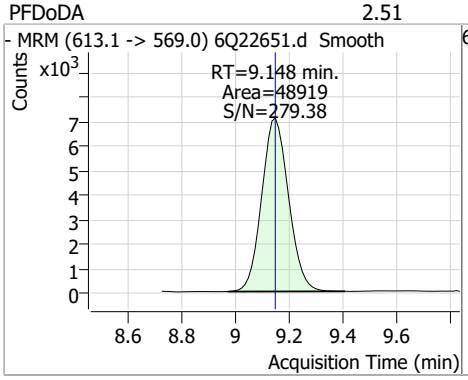


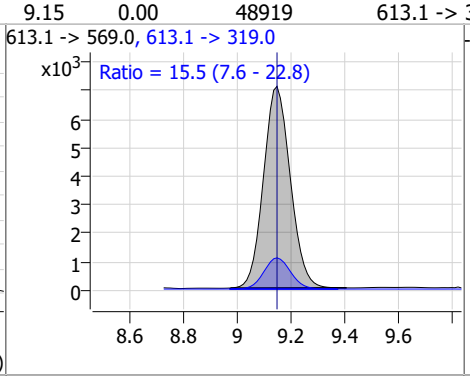


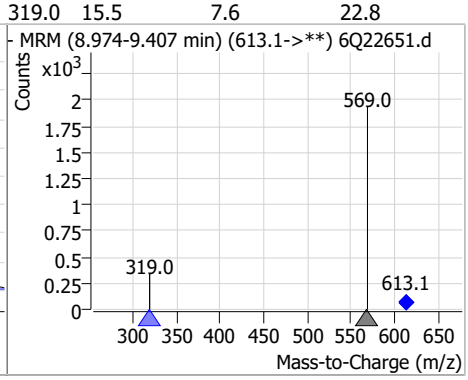


Perfluorinated Compounds by LC/MS/MS

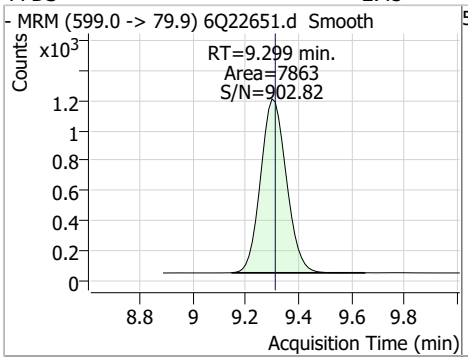
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.51	9.15	0.00	48919	613.1 -> 319.0	15.5	7.6	22.8

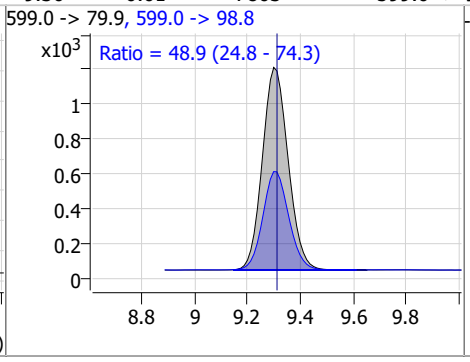


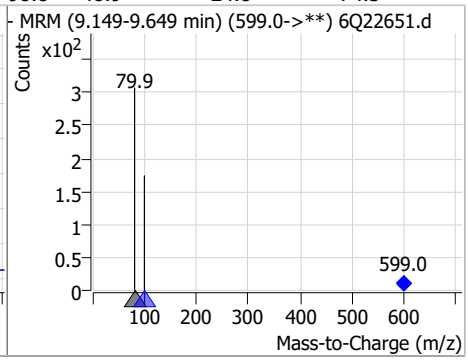




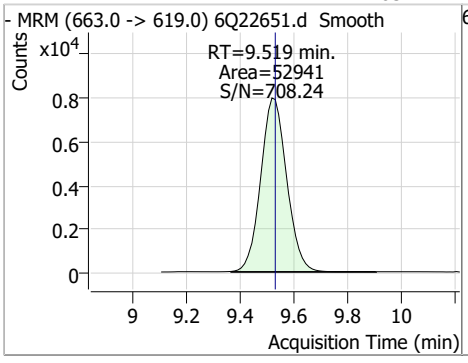
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.45	9.30	-0.01	7863	599.0 -> 98.8	48.9	24.8	74.3

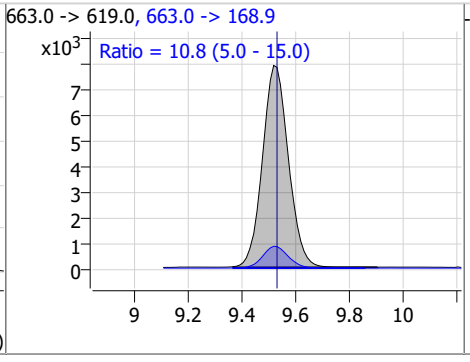


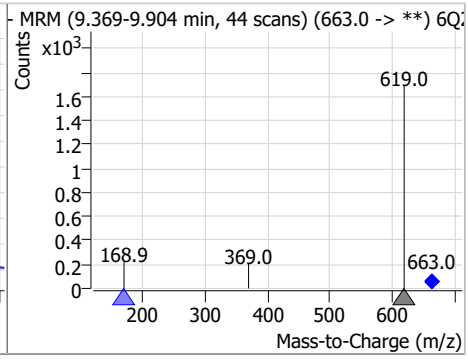




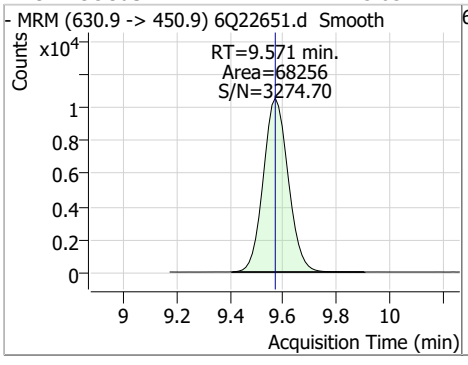
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.63	9.52	-0.01	52941	663.0 -> 168.9	10.8	5.0	15.0

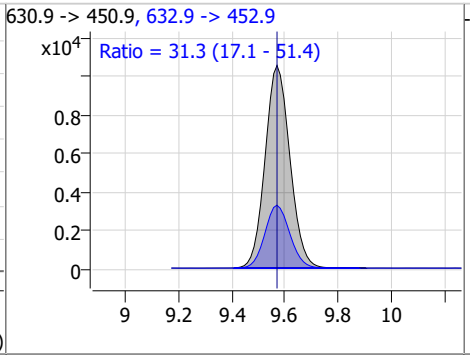


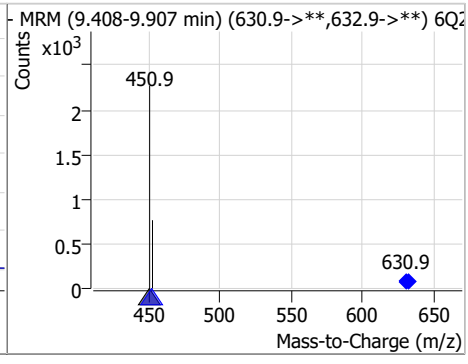




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.05	9.57	0.00	68256	632.9 -> 452.9	31.3	17.1	51.4

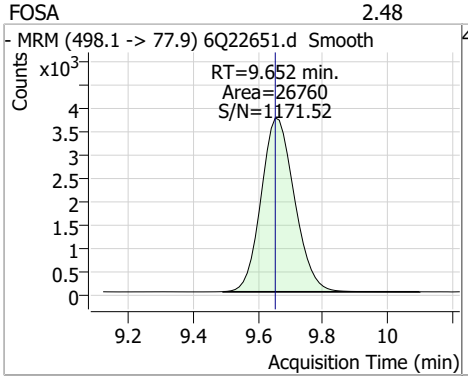


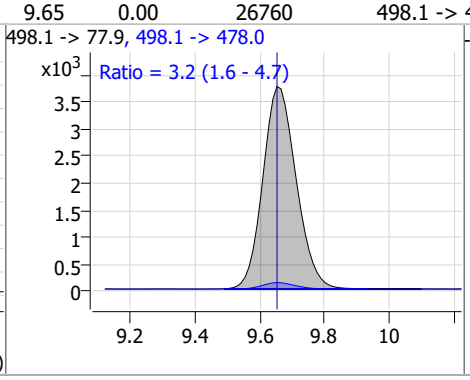


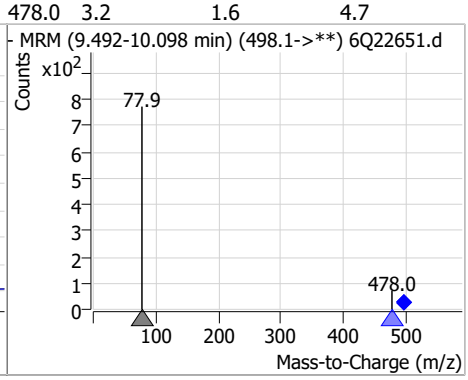


Perfluorinated Compounds by LC/MS/MS

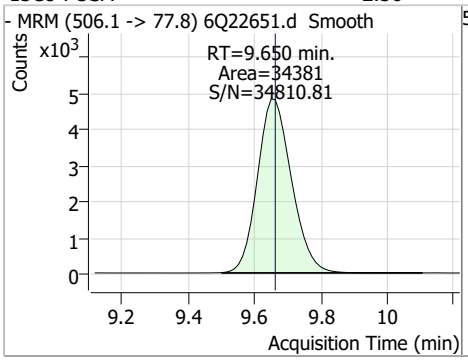
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.48	9.65	0.00	26760	498.1 -> 478.0	3.2	1.6	4.7

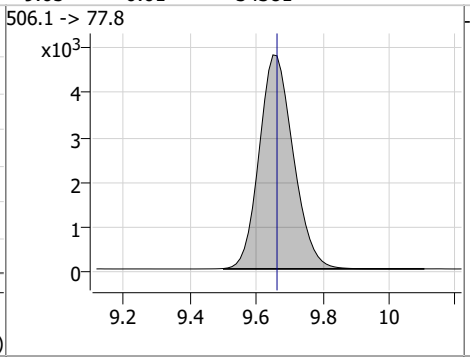


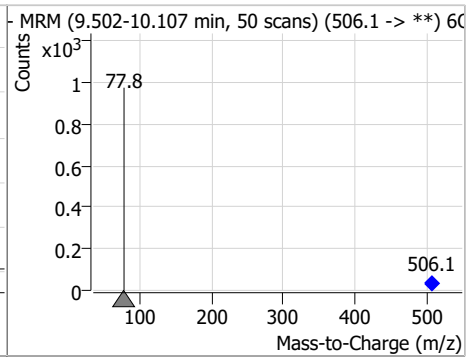




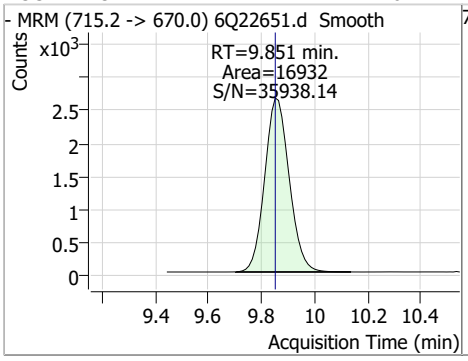
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	9.65	-0.01	34381				

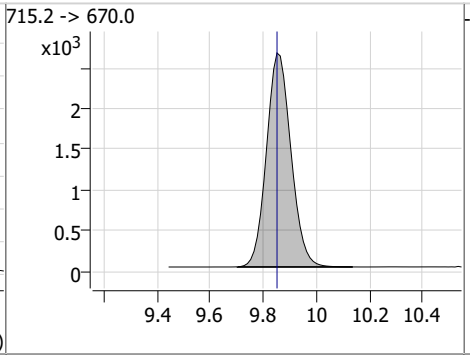


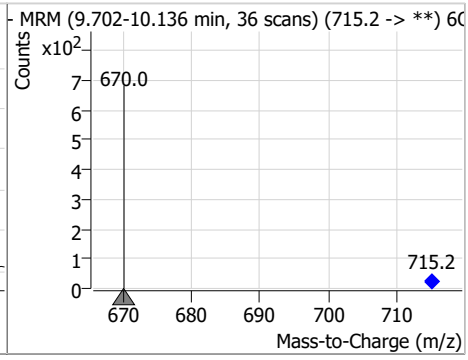




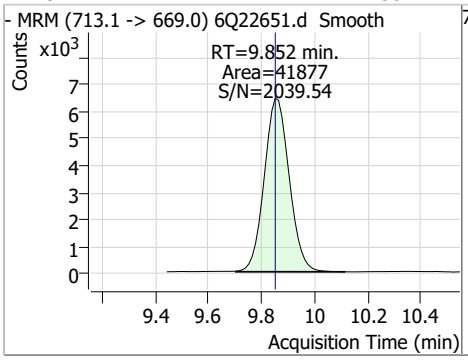
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.85	0.00	16932				

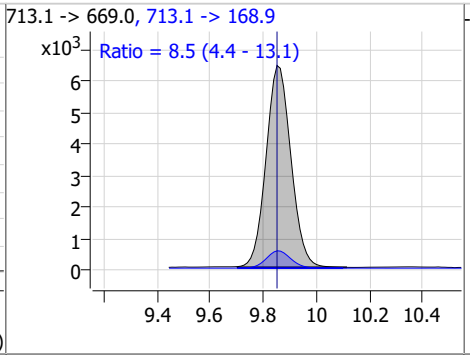


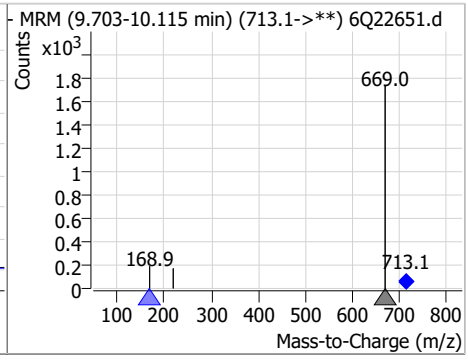




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.55	9.85	0.00	41877	713.1 -> 168.9	8.5	4.4	13.1

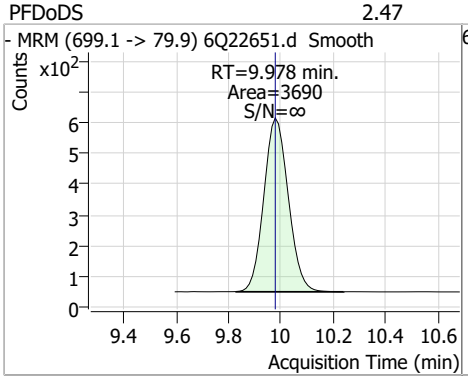


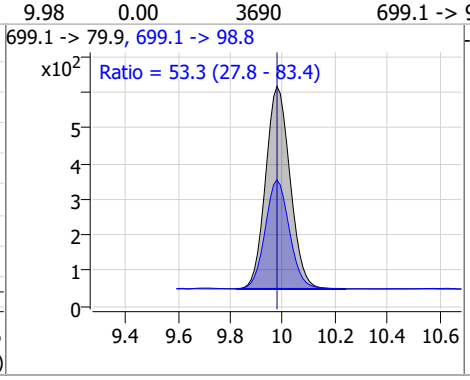


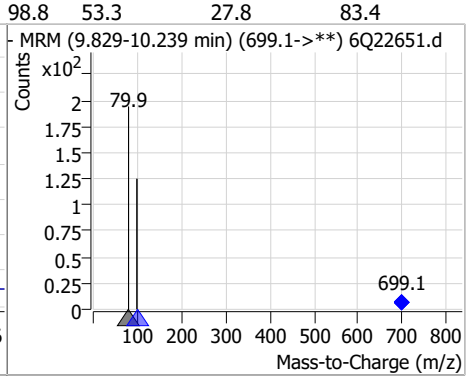


Perfluorinated Compounds by LC/MS/MS

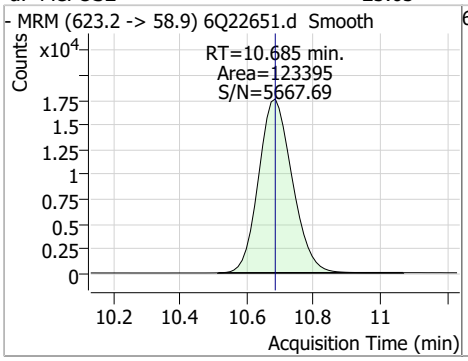
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.47	9.98	0.00	3690	699.1 -> 98.8	53.3	27.8	83.4

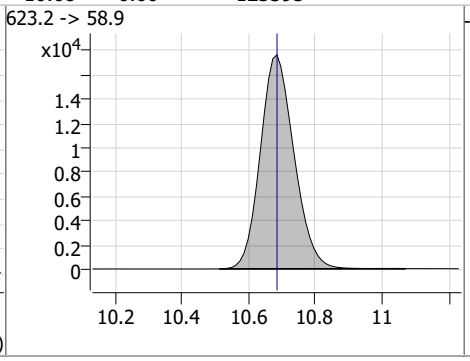


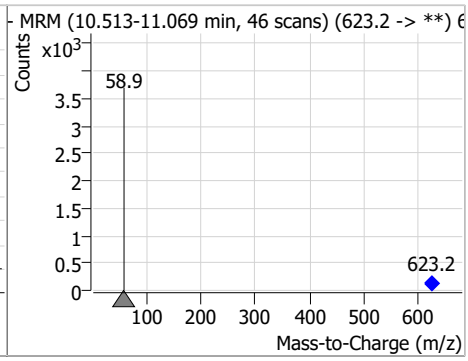




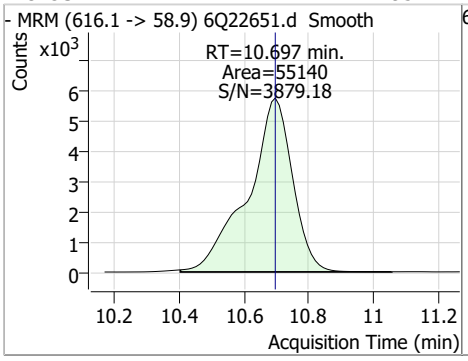
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.65	10.68	0.00	123395				

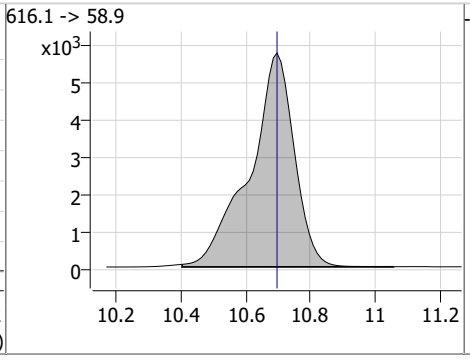


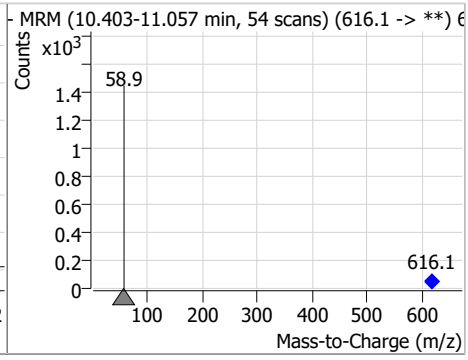




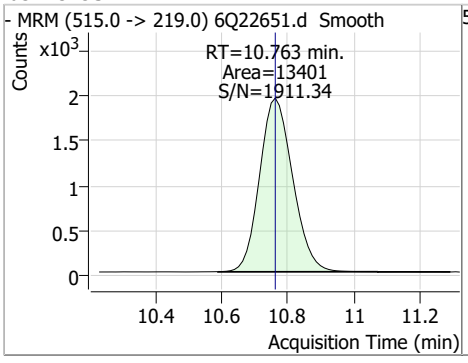
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.95	10.70	0.00	55140				

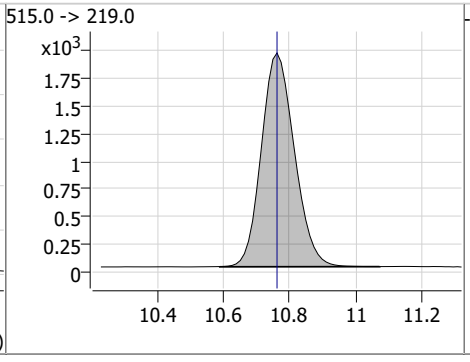


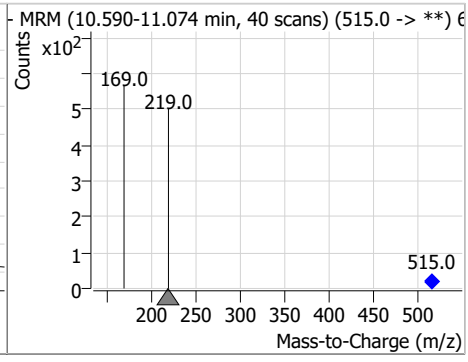




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	10.76	0.00	13401				

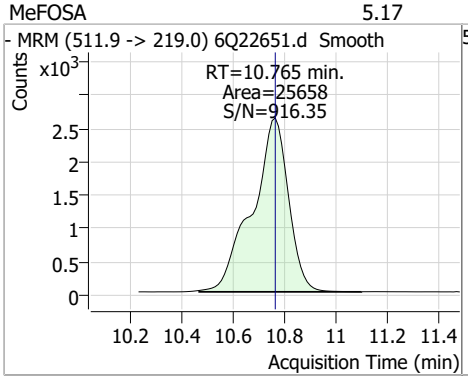


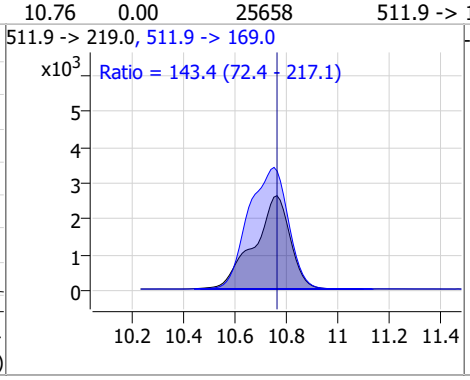


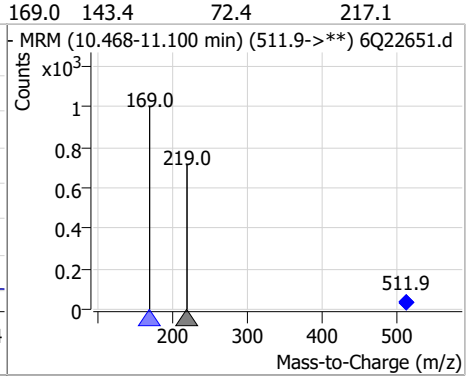


Perfluorinated Compounds by LC/MS/MS

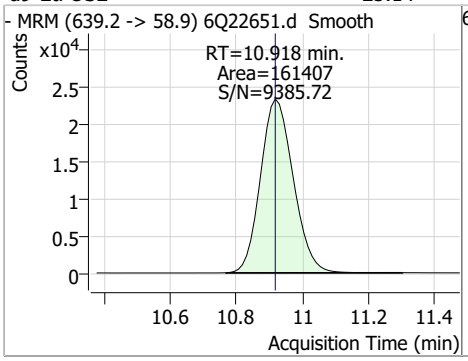
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.17	10.76	0.00	25658	511.9 -> 169.0	143.4	72.4	217.1

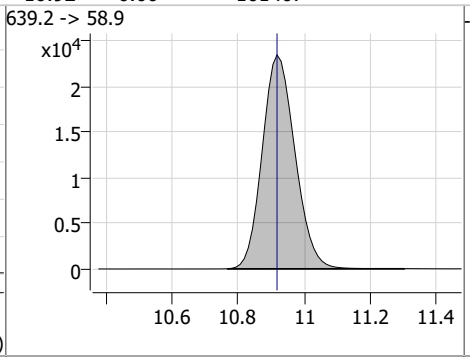


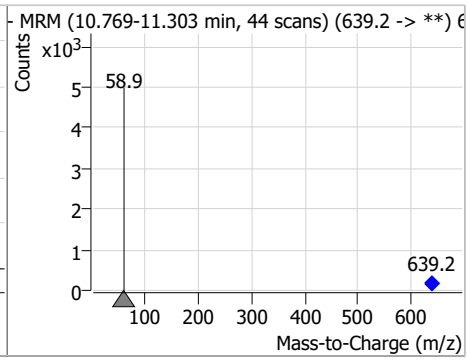




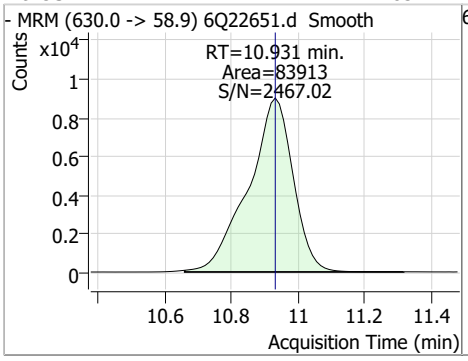
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.14	10.92	0.00	161407				

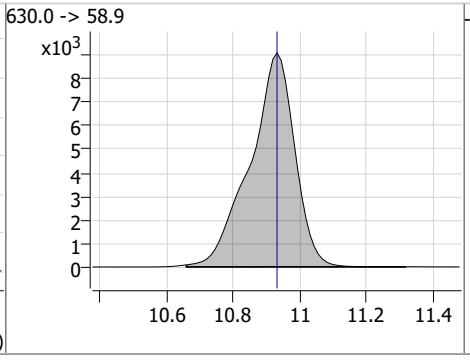


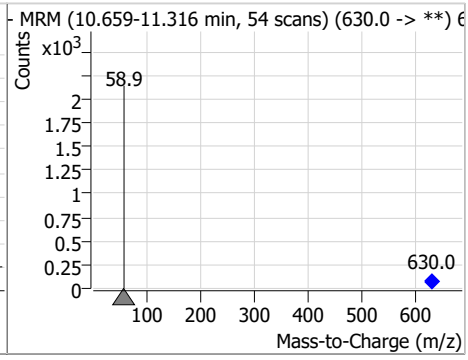




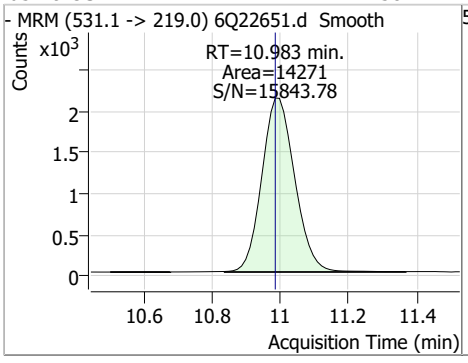
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.83	10.93	0.00	83913				

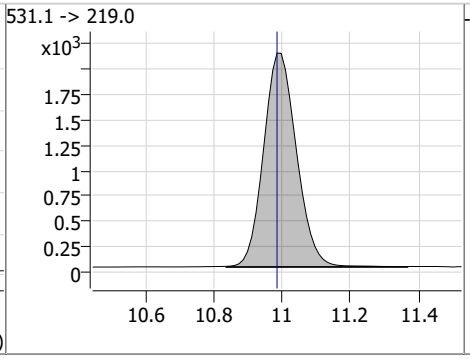


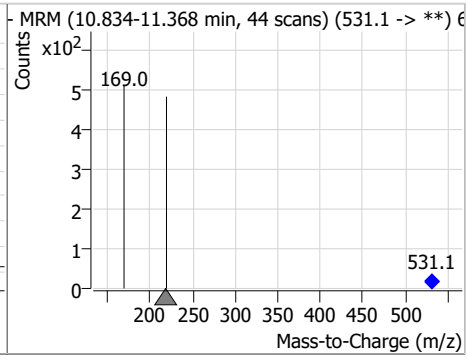




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSE	2.58	10.98	0.00	14271				

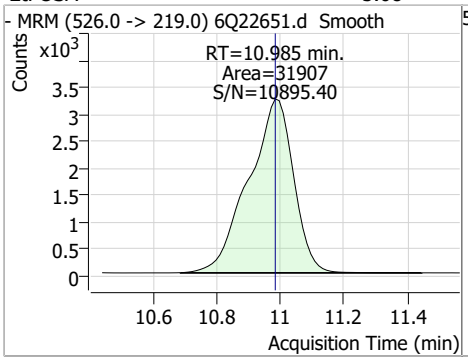


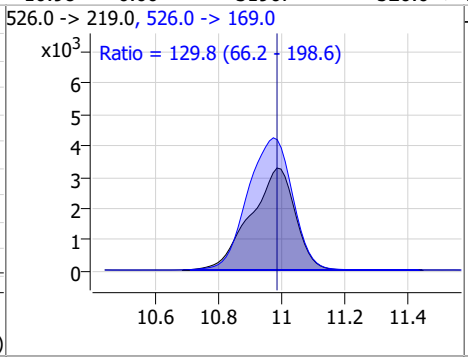


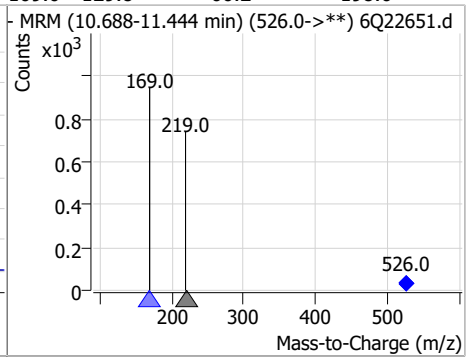


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.08	10.98	0.00	31907	526.0 -> 169.0	129.8	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-CC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22651.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 16:15	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22652.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 4:29:50 PM
Sample Name : cc330-1.0LL
Vial : P1-A2
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	201161	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	63849	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	68764	2.50	µg/L	0.000
M4-PFHpA	6.608	367.1 -> 322.0	67097	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	108084	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	49689	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	29019	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	35969	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	36116	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	18325	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	36352	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	24022	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	16337	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14888	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3763	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	5512	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	5436	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	37882	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42399	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	32579	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	138373	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	179302	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	16009	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15180	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	20184	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	83908	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	12207	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	115584	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	38706	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	59742	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	66910	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3763	5.16	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-6:2FTS	7.014	429.1 -> 80.9	5512	5.24	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5436	5.27	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C2-PFDoDA	9.148	615.1 -> 570.0	36116	1.38	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18325	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFBS	5.610	302.1 -> 79.9	24022	2.32	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C3-PFHxS	7.355	402.1 -> 79.9	16337	2.44	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 = 97.4%	
13C4-PFBA	3.010	216.8 -> 171.9	201161	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C4-PFHpA	6.608	367.1 -> 322.0	67097	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.668	318.0 -> 273.0	68764	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	4.447	268.3 -> 223.0	63849	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C6-PFDA	8.250	519.1 -> 474.1	29019	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C7-PFUnDA	8.717	570.0 -> 525.1	35969	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C8-FOSA	9.662	506.1 -> 77.8	36352	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOA	7.239	421.1 -> 376.0	108084	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOS	8.414	507.1 -> 79.9	14888	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C9-PFNA	7.770	472.1 -> 427.0	49689	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSAA	8.297	573.2 -> 419.0	37882	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	42399	9.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	15180	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
d5-EtFOSAA	8.505	589.2 -> 419.0	32579	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	138373	25.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	179302	24.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSA	10.983	531.1 -> 219.0	16009	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	4133	0.85 µg/L	99
		327.1 -> 80.9	1594		
6:2FTS	7.002	427.1 -> 407.0	4156	0.84 µg/L	98
		427.1 -> 80.9	1445		
8:2FTS	8.040	527.1 -> 507.0	2469	0.85 µg/L	97
		527.1 -> 80.8	869		
EtFOSAA	8.506	584.2 -> 419.1	963	0.23 µg/L	87
		584.2 -> 526.0	450		
FOSA	9.652	498.1 -> 77.9	2406	0.21 µg/L	99
		498.1 -> 478.0	69		
MeFOSAA	8.310	570.1 -> 419.0	1500	0.21 µg/L	93
		570.1 -> 483.0	321		
PFBA	3.006	212.8 -> 168.9	5418	0.86 µg/L	100
PFBS	5.611	298.7 -> 79.9	1569	0.20 µg/L	99
		298.7 -> 98.8	598		
PFDA	8.251	512.9 -> 469.0	6617	0.19 µg/L	89
		512.9 -> 219.0	1253		
PFDoDA	9.148	613.1 -> 569.0	4940	0.21 µg/L	100
		613.1 -> 319.0	748		
PFDS	9.299	599.0 -> 79.9	727	0.20 µg/L	100

Perfluorinated Compounds by LC/MS/MS

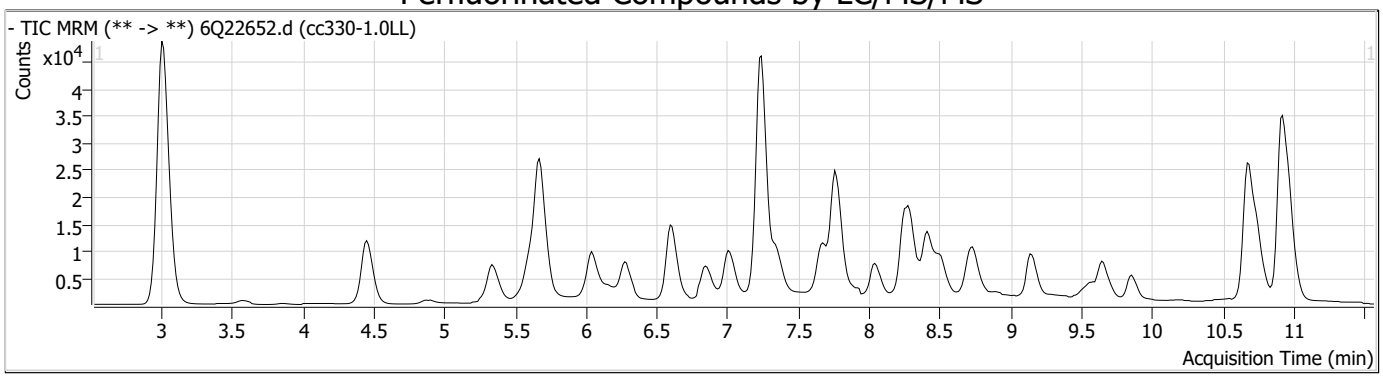
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	362				
PFHpA	6.609	363.1 -> 319.0	5719	0.22	µg/L		100
		363.1 -> 169.0	958				
PFHpS	7.909	449.0 -> 79.9	1427	0.21	µg/L		90
		449.0 -> 98.9	665				
PFHxA	5.670	313.0 -> 269.0	4269	0.21	µg/L		99
		313.0 -> 118.9	244				
PFHxS	7.356	398.7 -> 79.9	1333	0.18	µg/L	m	92
		398.7 -> 98.9	572				
PFNA	7.771	463.0 -> 419.0	7715	0.23	µg/L		95
		463.0 -> 219.0	1309				
PFNS	8.893	548.8 -> 79.9	1209	0.20	µg/L		93
		548.8 -> 98.9	587				
PFOA	7.240	413.0 -> 369.0	9382	0.21	µg/L		99
		413.0 -> 169.0	1551				
PFOS	8.415	498.9 -> 79.9	1290	0.20	µg/L	m	95
		498.9 -> 98.8	634				
PFPeA	4.449	263.0 -> 219.0	6260	0.45	µg/L		100
PFPeS	6.660	349.1 -> 79.9	1375	0.21	µg/L		91
		349.1 -> 98.9	704				
PFTeDA	9.852	713.1 -> 669.0	4009	0.23	µg/L		98
		713.1 -> 168.9	315				
PFTrDA	9.519	663.0 -> 619.0	4515	0.18	µg/L		89
		663.0 -> 168.9	635				
PFUnDA	8.717	563.1 -> 519.0	4714	0.23	µg/L		88
		563.1 -> 269.1	997				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	6719	0.44	µg/L		92
		632.9 -> 452.9	1981				
9Cl-PF3ONS	8.758	530.8 -> 351.0	9546	0.39	µg/L		84
		532.8 -> 353.0	2169				
ADONA	6.858	376.9 -> 250.9	22889	0.42	µg/L		98
		376.9 -> 84.8	6281				
HFPO-DA	6.046	284.9 -> 168.9	1570	0.44	µg/L		95
		284.9 -> 184.9	137				
3:3FTCA	3.859	241.0 -> 177.0	1023	1.03	µg/L		97
		241.0 -> 117.0	151				
5:3FTCA	6.272	341.0 -> 237.1	22503	5.44	µg/L		100
		341.0 -> 217.0	16029				
7:3FTCA	7.673	441.0 -> 316.9	16181	5.29	µg/L		98
		441.0 -> 336.9	36351				
EtFOSA	10.985	526.0 -> 219.0	2940	0.42	µg/L		98
		526.0 -> 169.0	3830				
EtFOSE	10.931	630.0 -> 58.9	7788	1.07	µg/L		100
MeFOSA	10.752	511.9 -> 219.0	2421	0.43	µg/L		98
		511.9 -> 169.0	3429				
MeFOSE	10.697	616.1 -> 58.9	5221	1.01	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	384	0.23	µg/L		96
		699.1 -> 98.8	225				
NFDHA	5.564	295.0 -> 201.0	1157	0.45	µg/L		98
		295.0 -> 84.9	317				
PFMBA	4.869	279.0 -> 85.1	4312	0.43	µg/L		100
PFMPA	3.576	229.0 -> 84.9	3375	0.42	µg/L		100
PFEESA	6.163	314.8 -> 134.9	10166	0.38	µg/L		100
		314.8 -> 82.9	358				

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

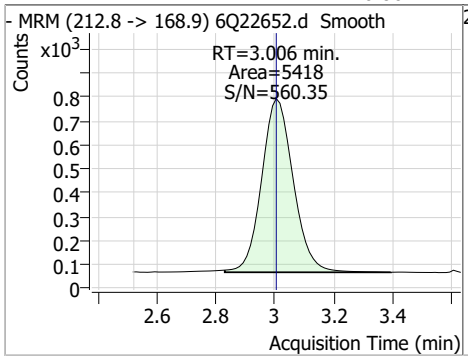
Perfluorinated Compounds by LC/MS/MS

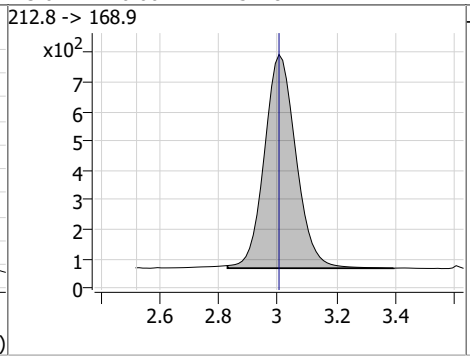
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

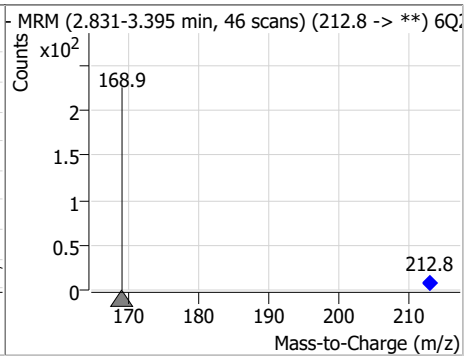
Perfluorinated Compounds by LC/MS/MS



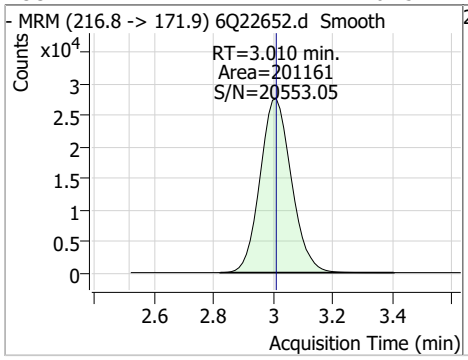
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.86	3.01	0.00	5418				

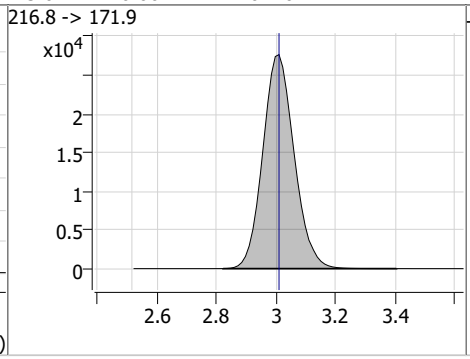


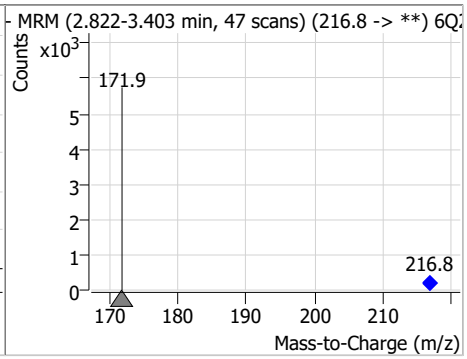




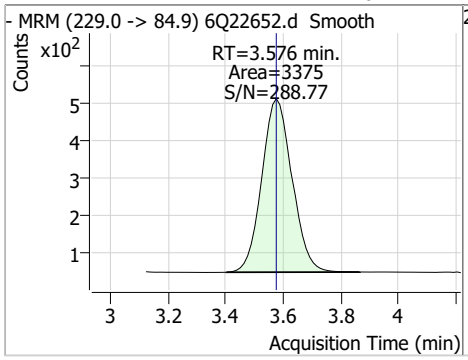
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.15	3.01	0.00	201161				

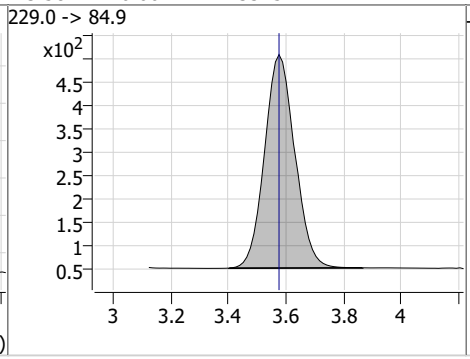


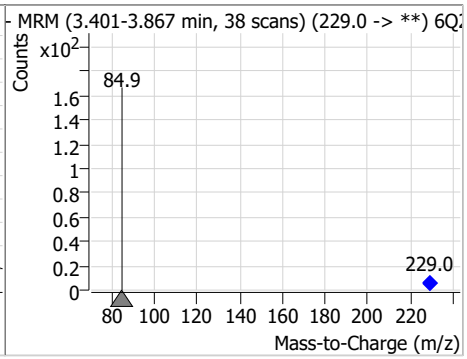




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.42	3.58	0.00	3375				

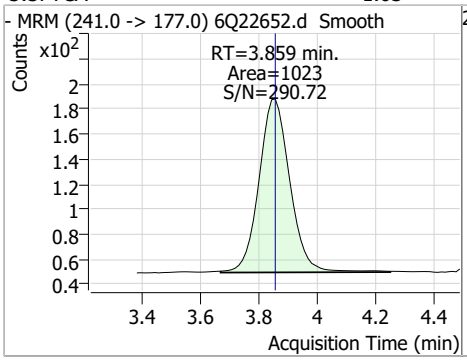


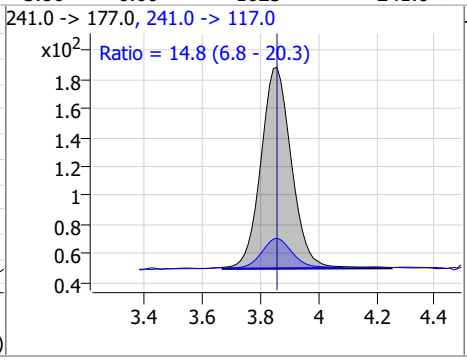


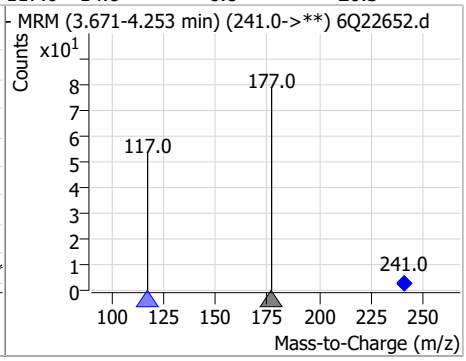


Perfluorinated Compounds by LC/MS/MS

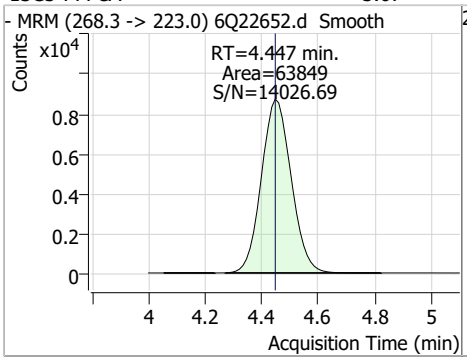
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.03	3.86	0.00	1023	241.0 -> 117.0	14.8	6.8	20.3

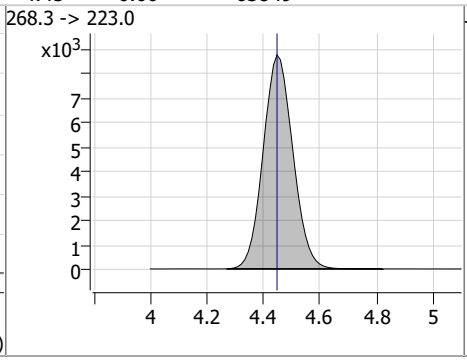


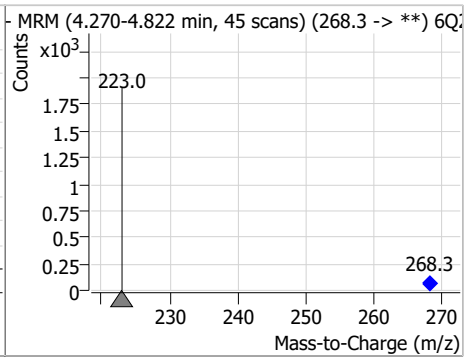




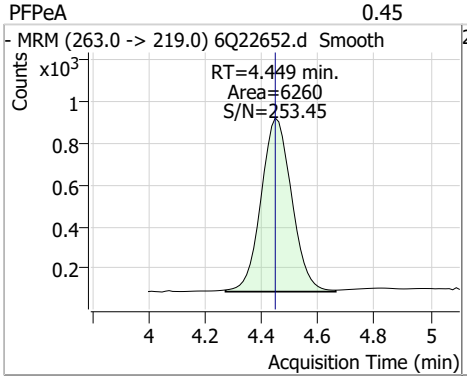
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.07	4.45	0.00	63849				

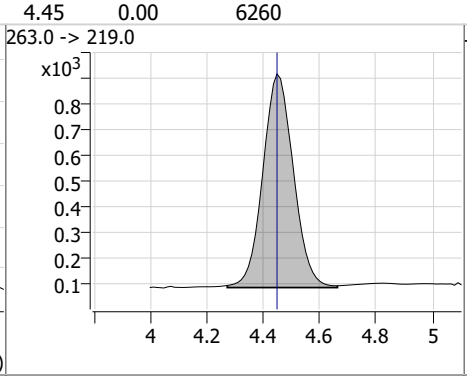


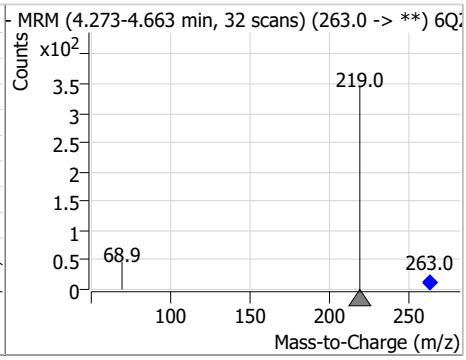




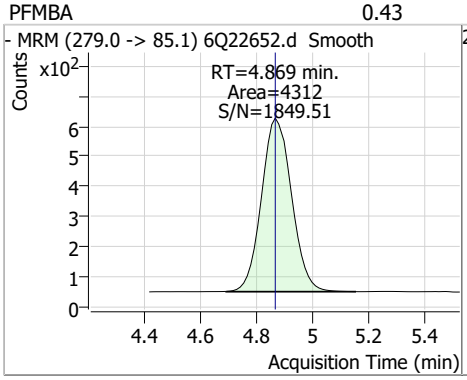
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.45	4.45	0.00	6260				

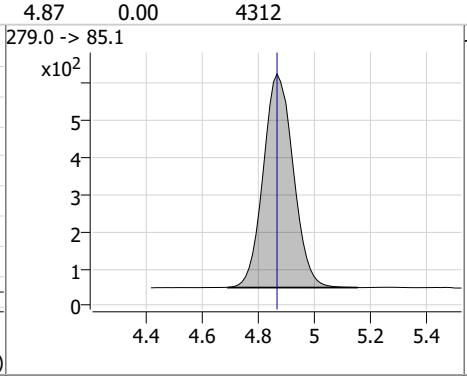


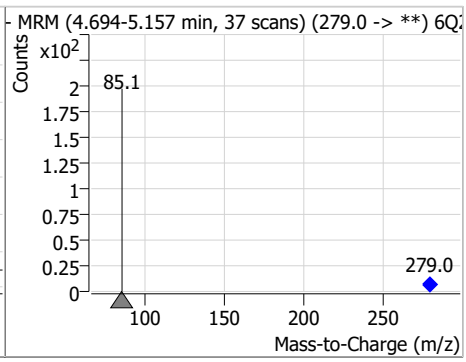




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.43	4.87	0.00	4312				

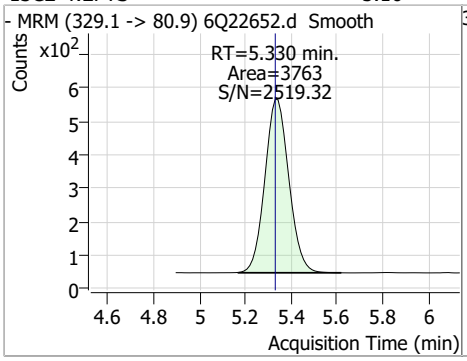


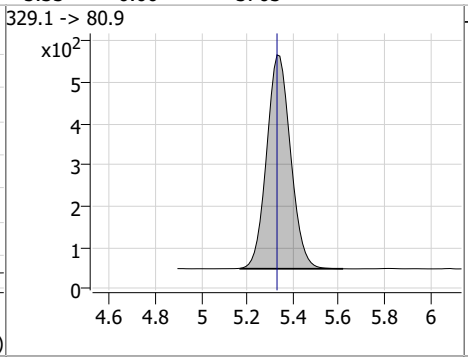


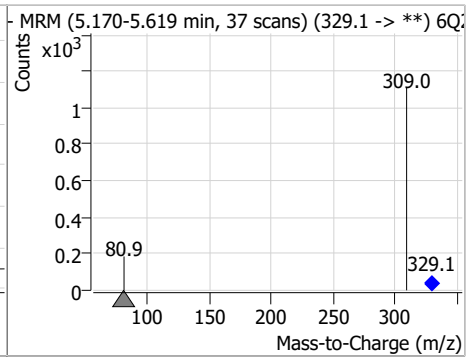


Perfluorinated Compounds by LC/MS/MS

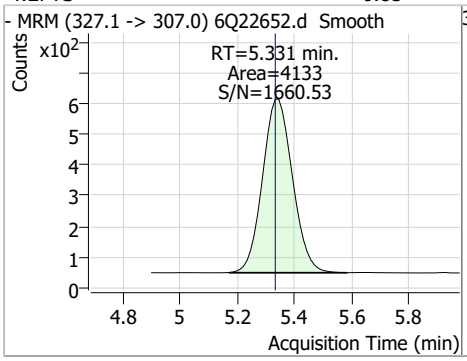
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.16	5.33	0.00	3763				

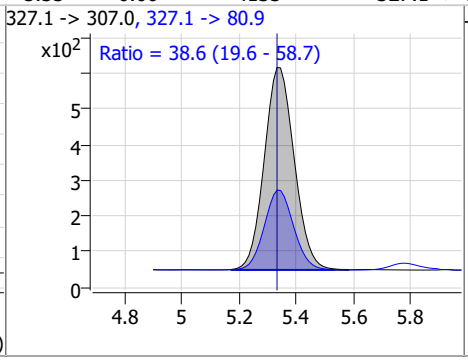


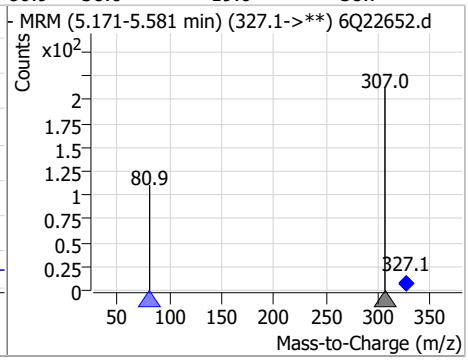




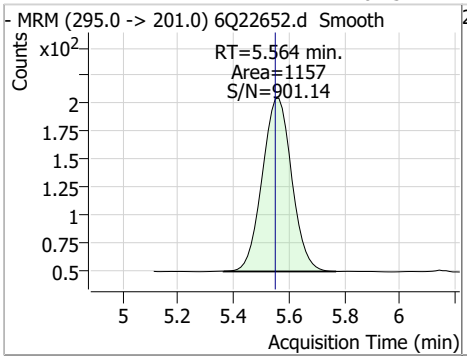
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.85	5.33	0.00	4133	327.1 -> 80.9	38.6	19.6	58.7

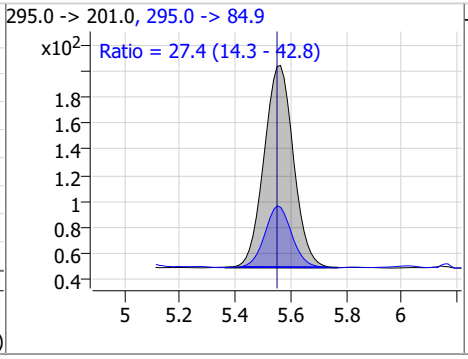


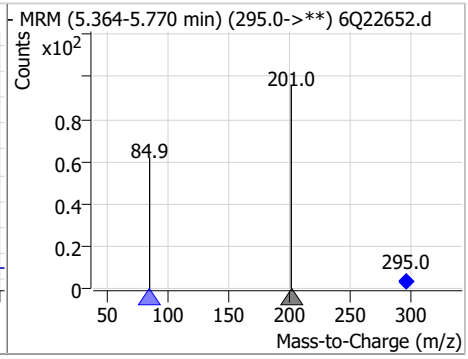




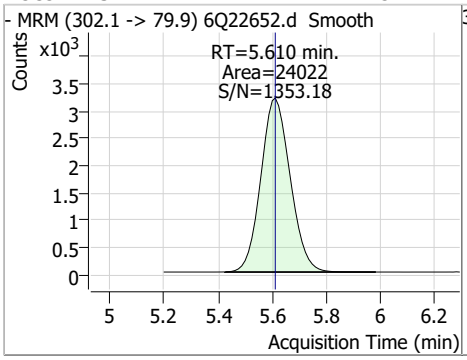
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.45	5.56	0.01	1157	295.0 -> 84.9	27.4	14.3	42.8

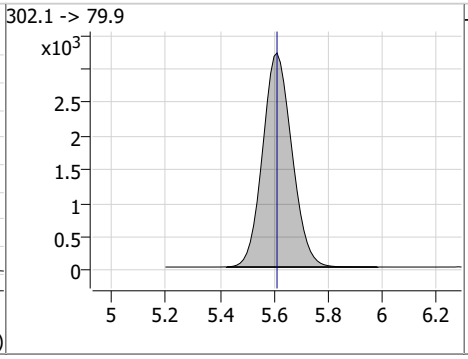


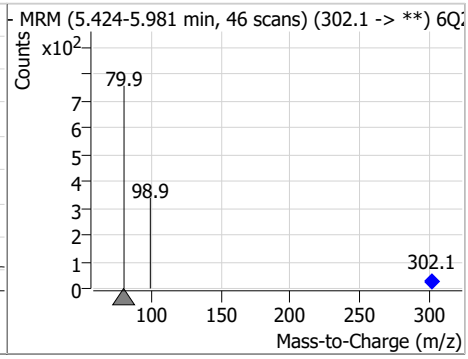




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.32	5.61	0.00	24022				

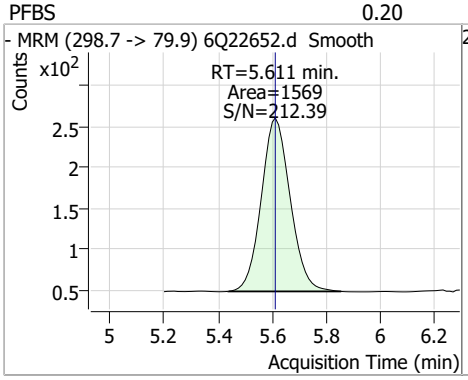


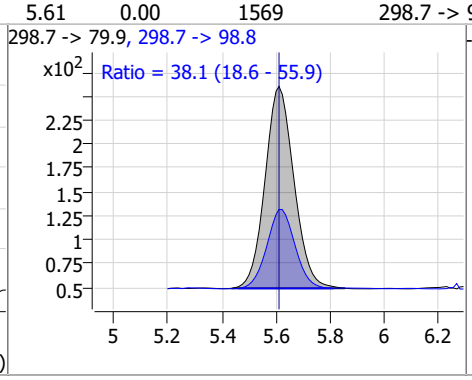


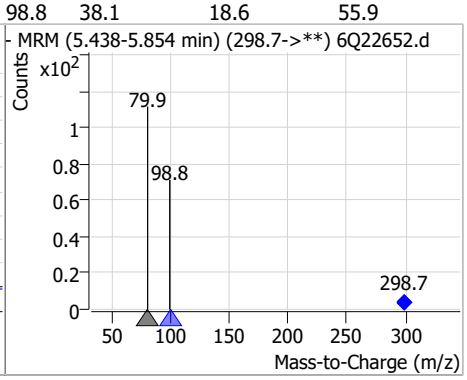


Perfluorinated Compounds by LC/MS/MS

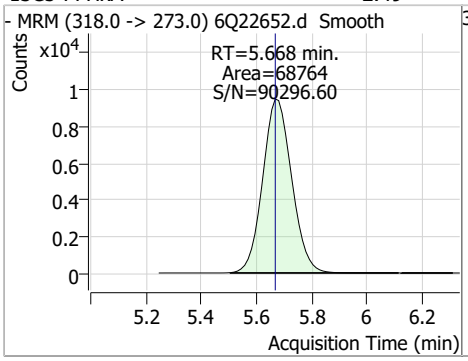
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.20	5.61	0.00	1569	298.7 -> 98.8	38.1	18.6	55.9

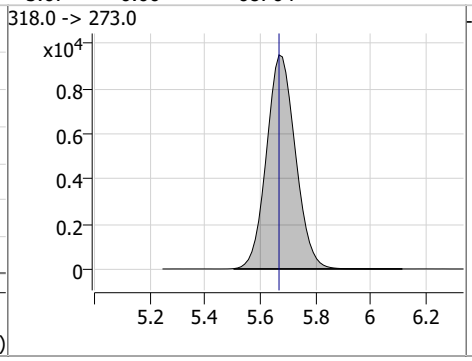


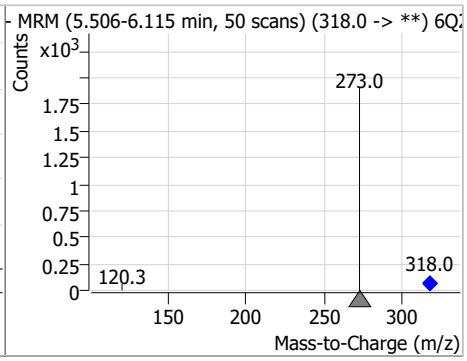




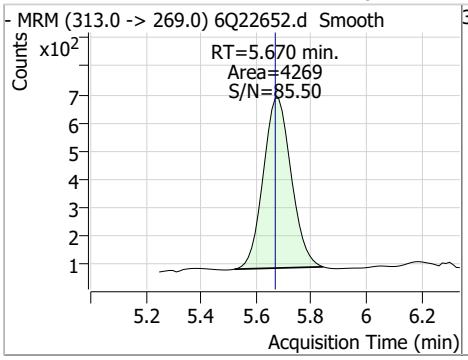
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.67	0.00	68764				

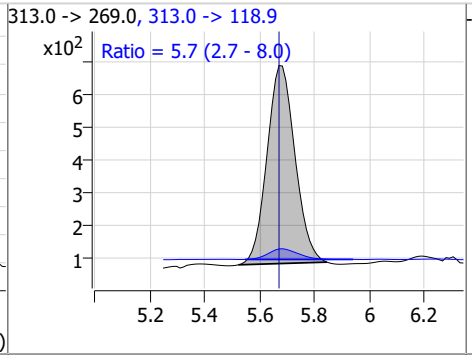


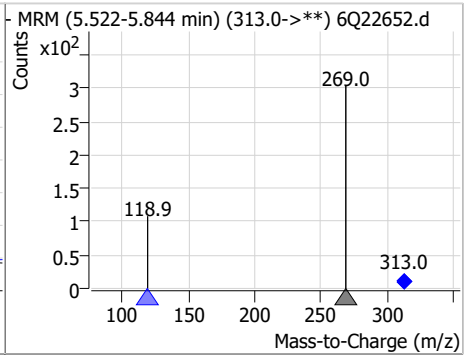




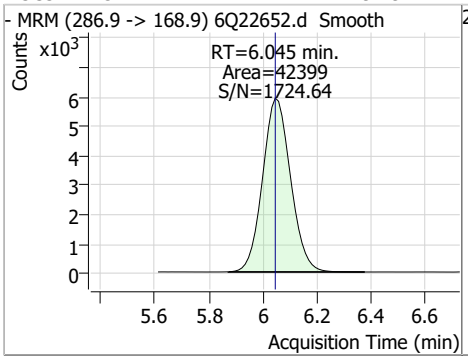
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.67	0.00	4269	313.0 -> 118.9	5.7	2.7	8.0

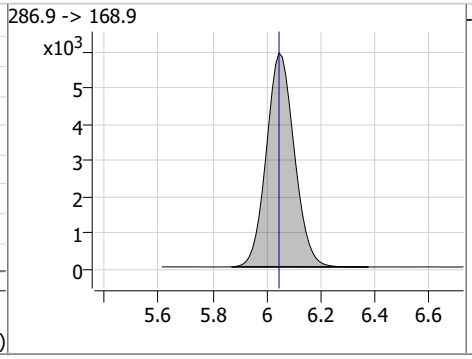


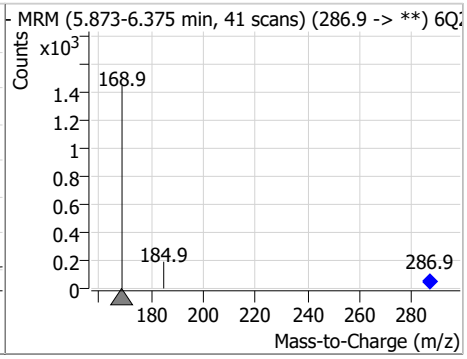




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.79	6.05	0.00	42399				

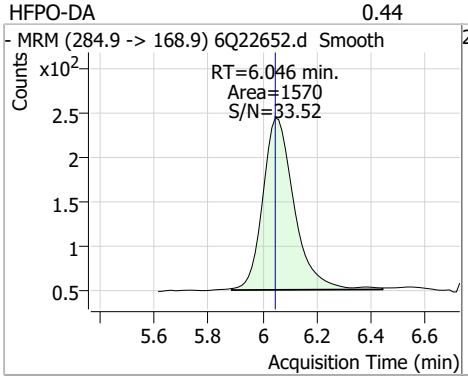


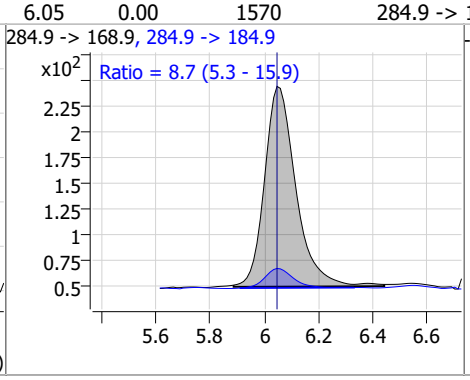


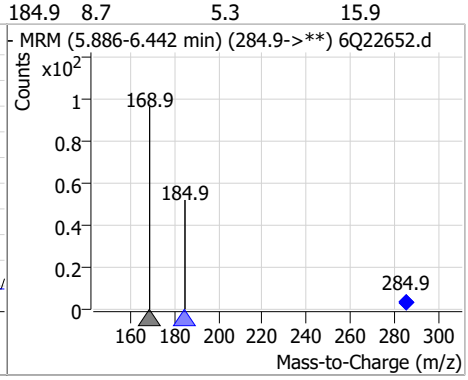


Perfluorinated Compounds by LC/MS/MS

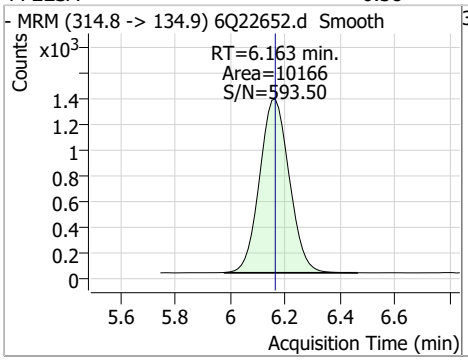
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.44	6.05	0.00	1570	284.9 -> 184.9	8.7	5.3	15.9

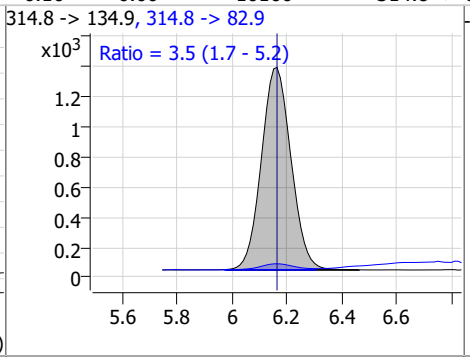


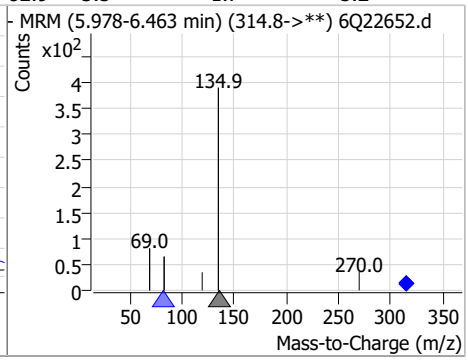




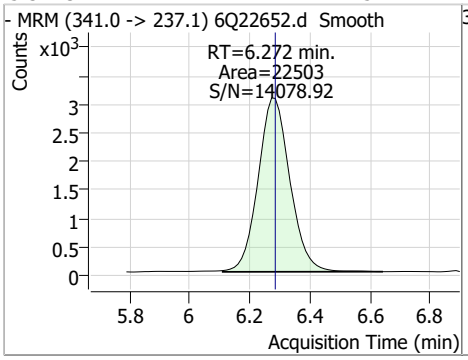
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.38	6.16	0.00	10166	314.8 -> 82.9	3.5	1.7	5.2

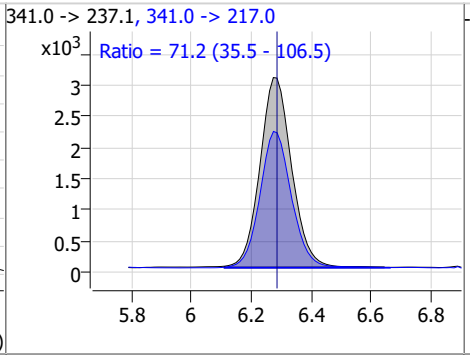


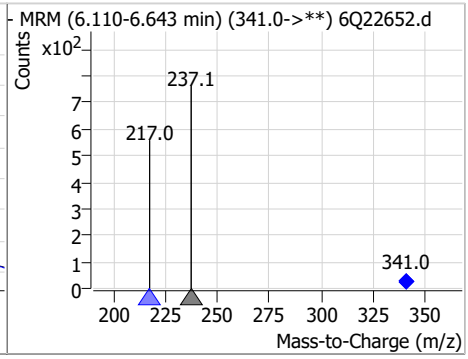




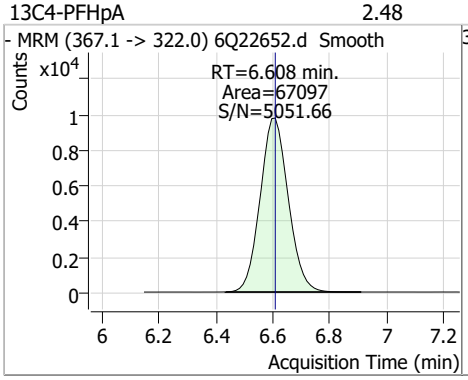
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.44	6.27	-0.01	22503	341.0 -> 217.0	71.2	35.5	106.5

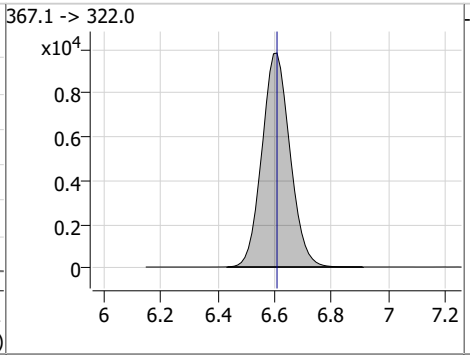


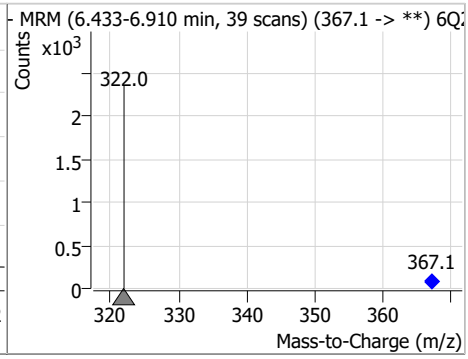




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.61	0.00	67097				

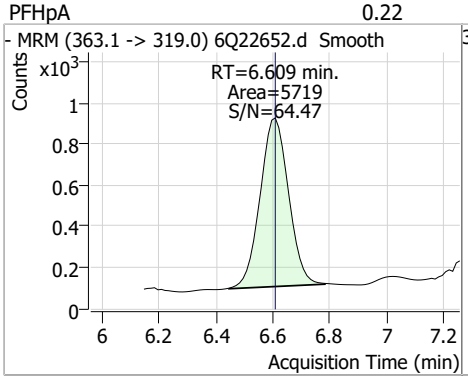


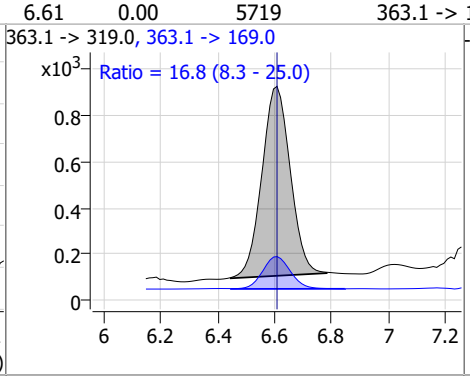


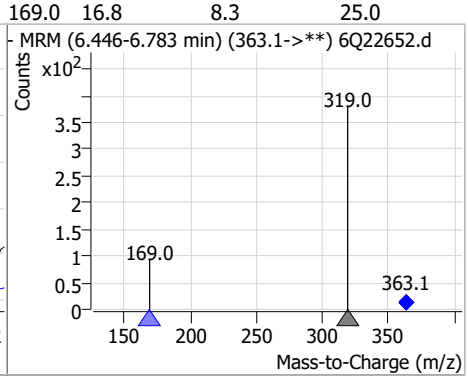


Perfluorinated Compounds by LC/MS/MS

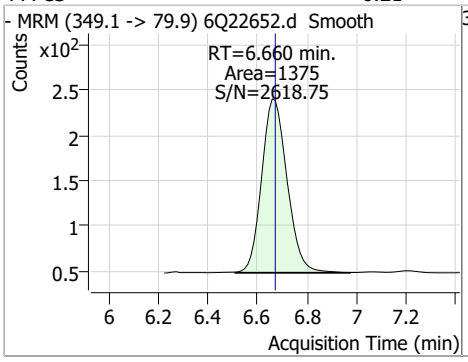
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.22	6.61	0.00	5719	363.1 -> 169.0	16.8	8.3	25.0

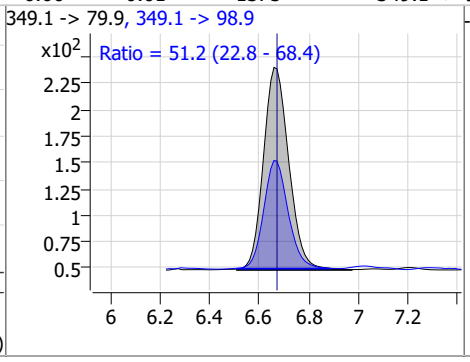


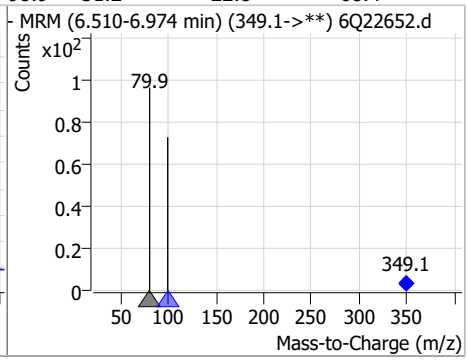




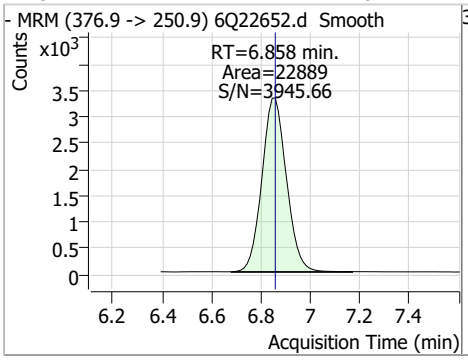
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.21	6.66	-0.01	1375	349.1 -> 98.9	51.2	22.8	68.4

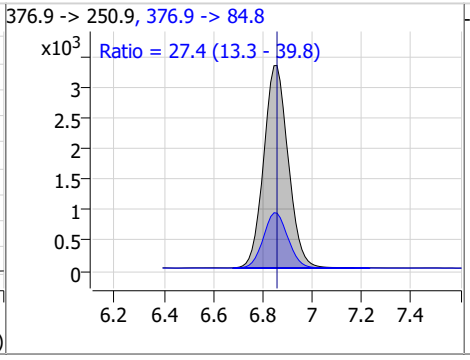


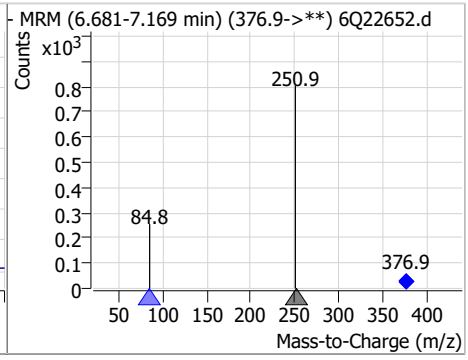




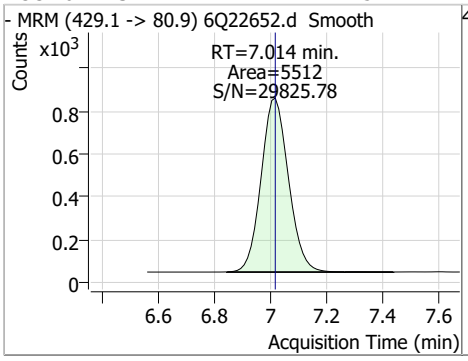
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.42	6.86	0.00	22889	376.9 -> 84.8	27.4	13.3	39.8

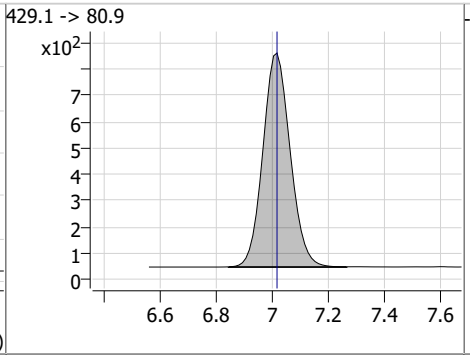


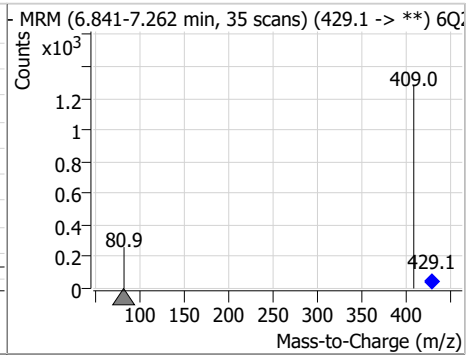




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.24	7.01	0.00	5512				

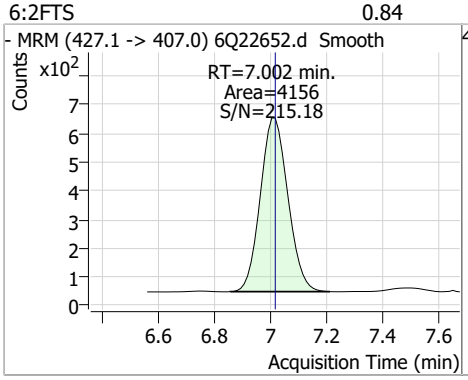


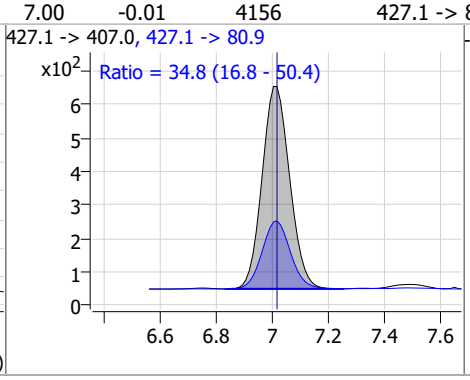


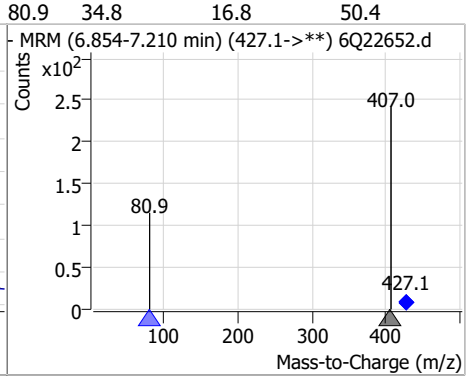


Perfluorinated Compounds by LC/MS/MS

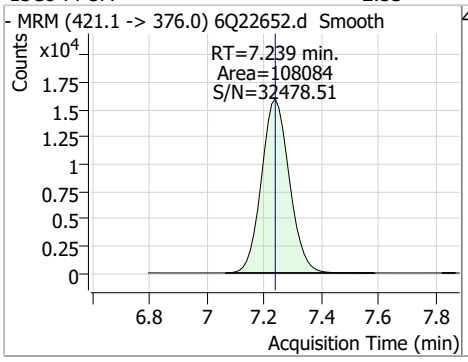
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.84	7.00	-0.01	4156	427.1 -> 80.9	34.8	16.8	50.4

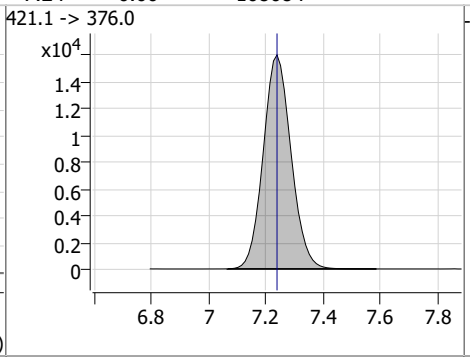


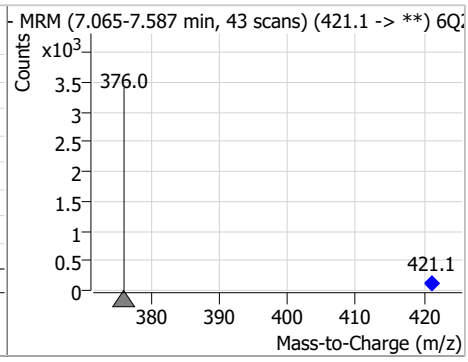




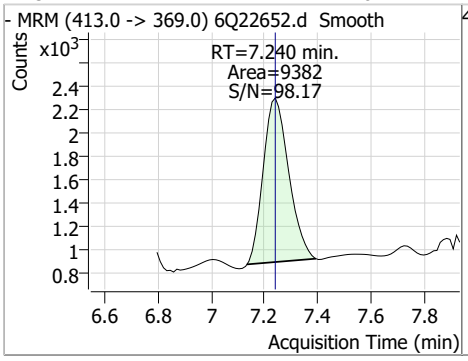
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	7.24	0.00	108084				

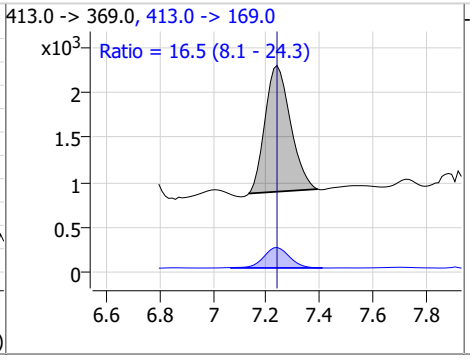


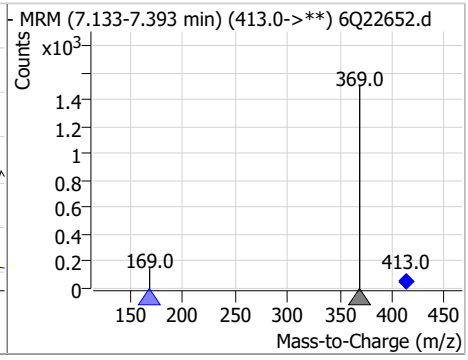




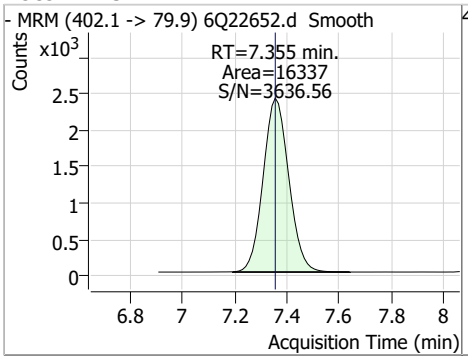
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.21	7.24	0.00	9382	413.0 -> 169.0	16.5	8.1	24.3

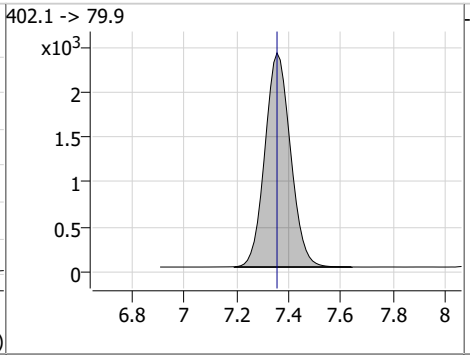


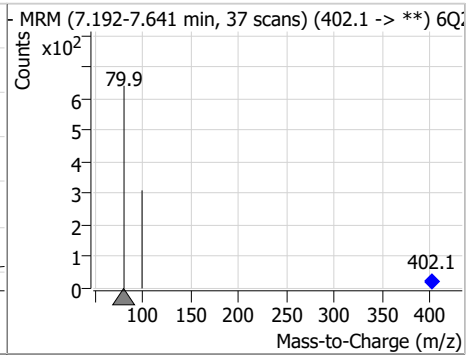




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.44	7.35	0.00	16337				

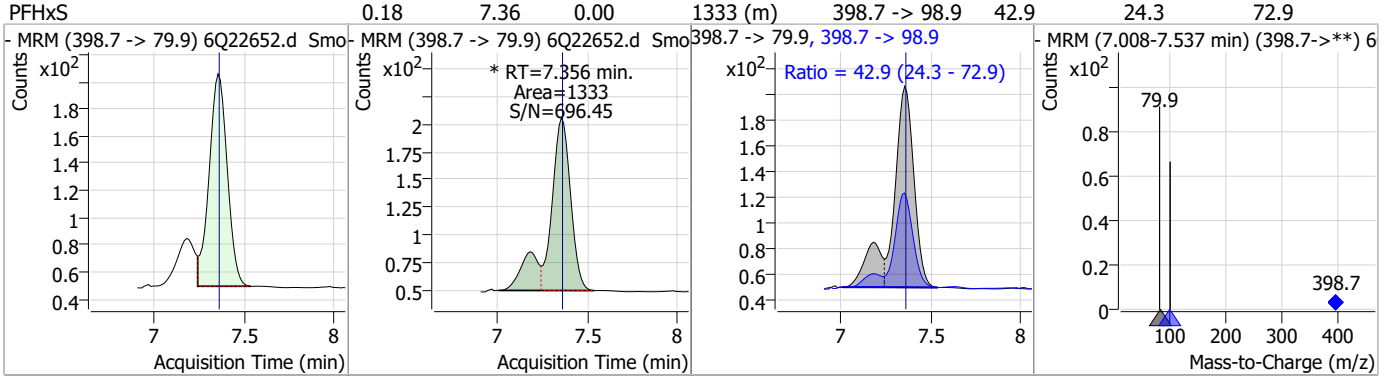




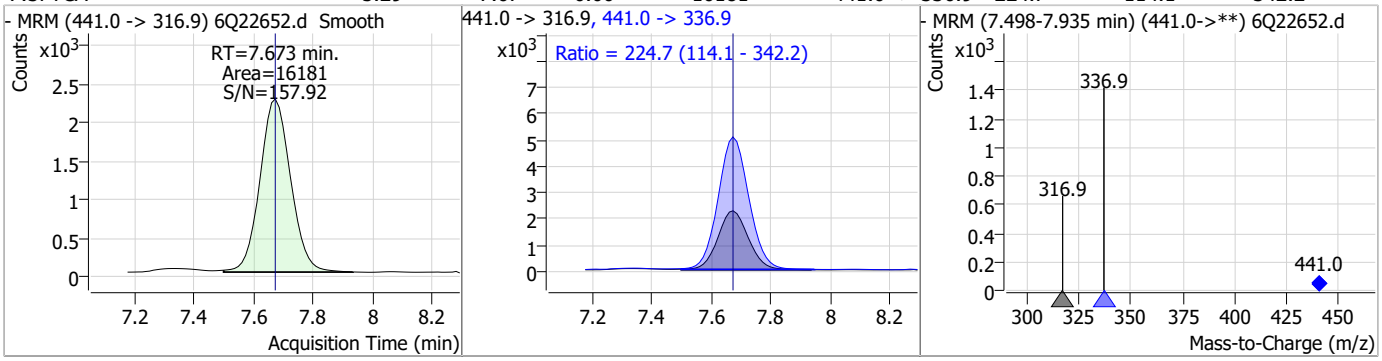


Perfluorinated Compounds by LC/MS/MS

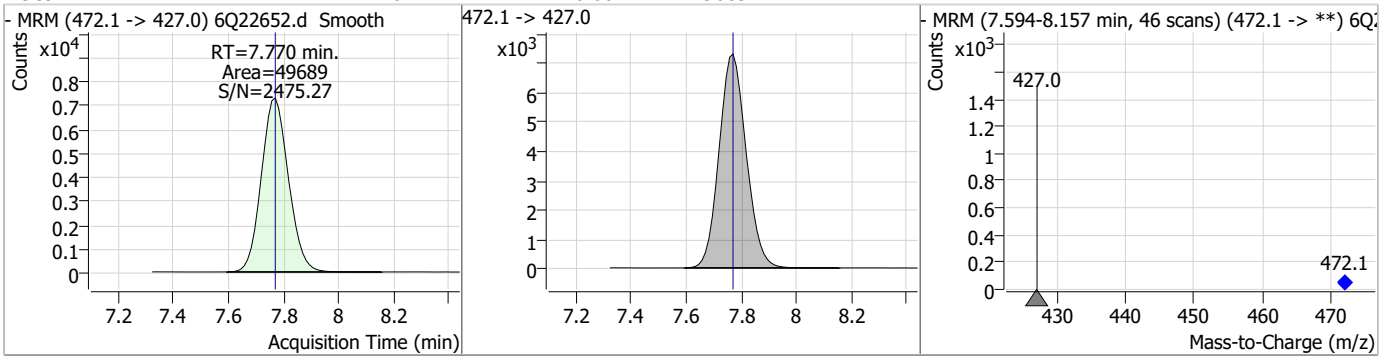
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.18	7.36	0.00	1333 (m)	398.7 -> 98.9	42.9	24.3	72.9



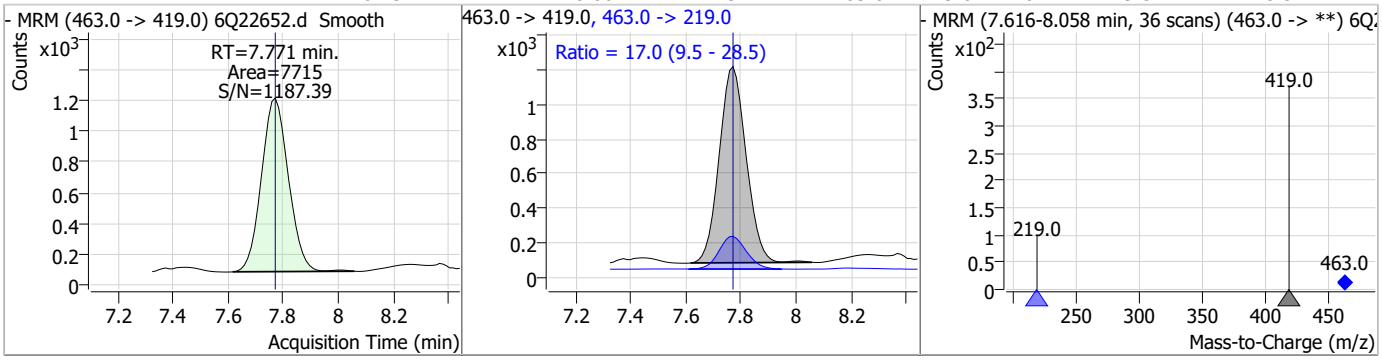
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	5.29	7.67	0.00	16181	441.0 -> 336.9	224.7	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.77	0.00	49689				

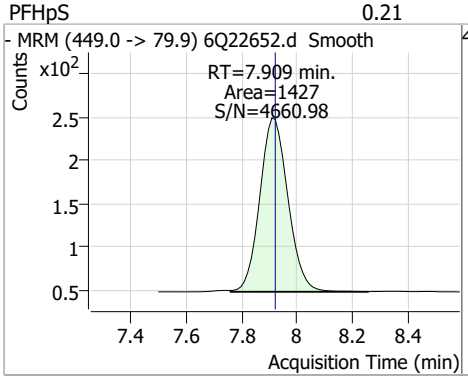


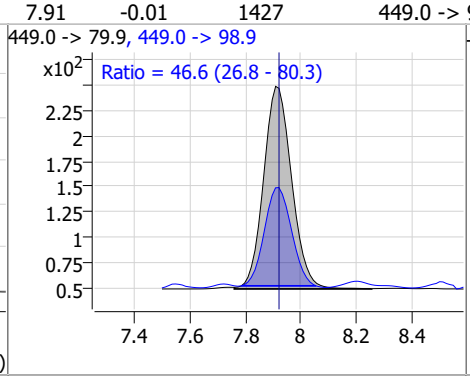
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.23	7.77	0.00	7715	463.0 -> 219.0	17.0	9.5	28.5

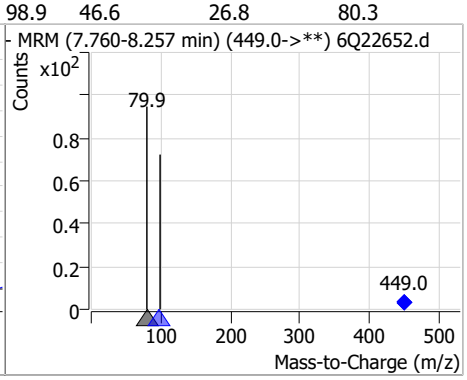


Perfluorinated Compounds by LC/MS/MS

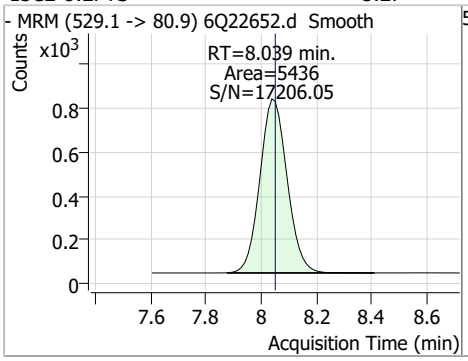
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.21	7.91	-0.01	1427	449.0 -> 98.9	46.6	26.8	80.3

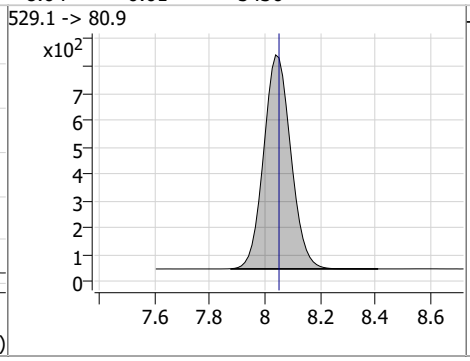


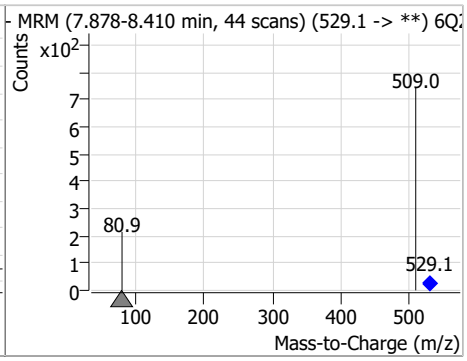




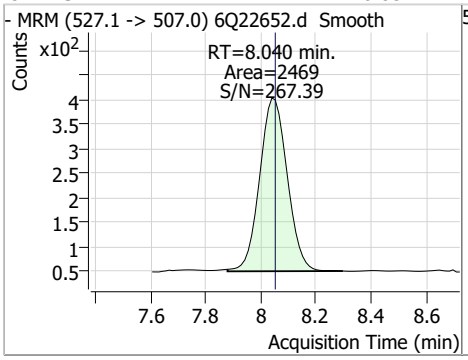
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.27	8.04	-0.01	5436				

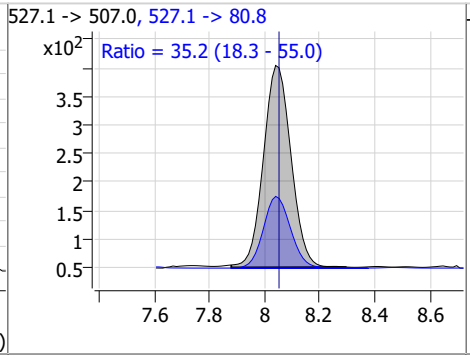


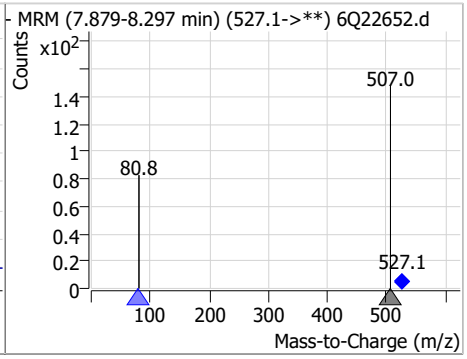




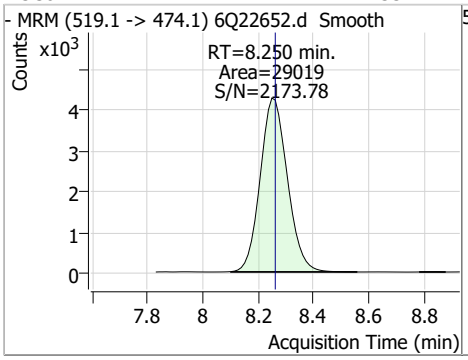
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.85	8.04	-0.01	2469	527.1 -> 80.8	35.2	18.3	55.0

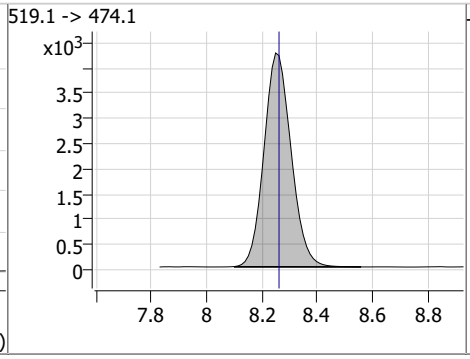


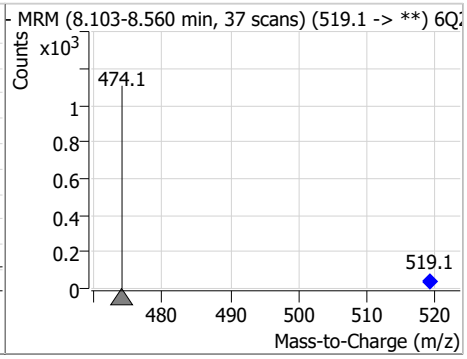




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.33	8.25	-0.01	29019				

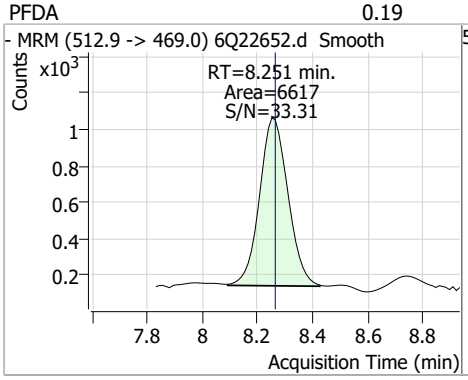


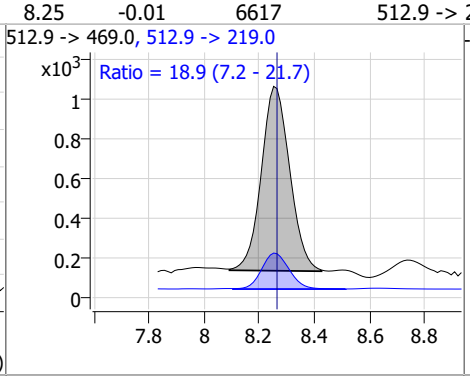


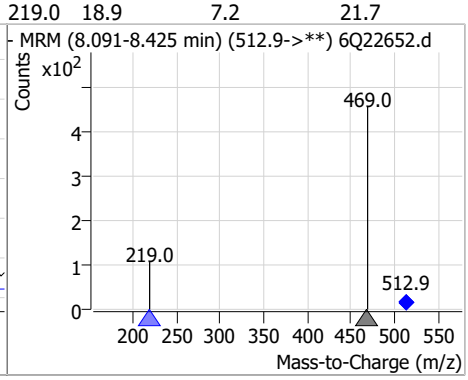


Perfluorinated Compounds by LC/MS/MS

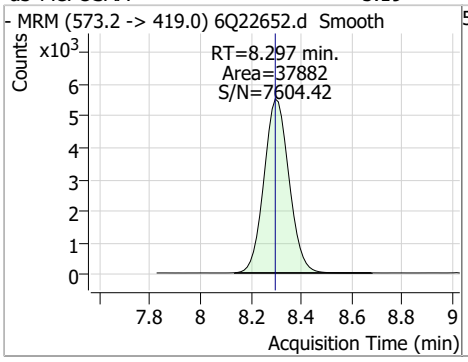
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.19	8.25	-0.01	6617	512.9 -> 219.0	18.9	7.2	21.7

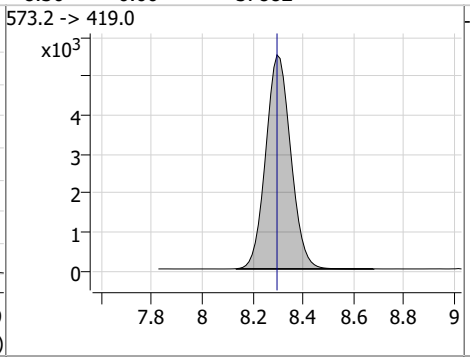


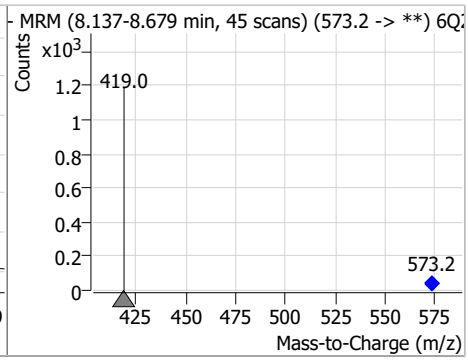




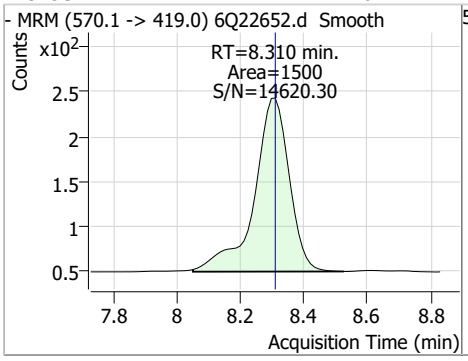
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.19	8.30	0.00	37882				

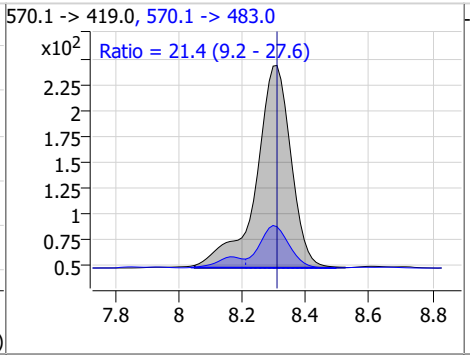


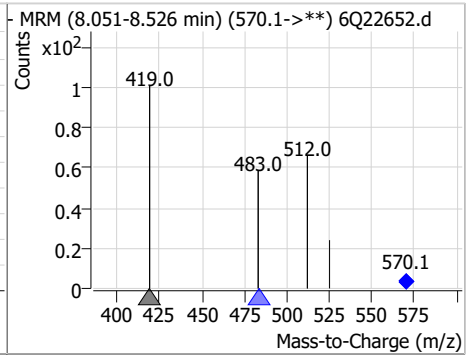




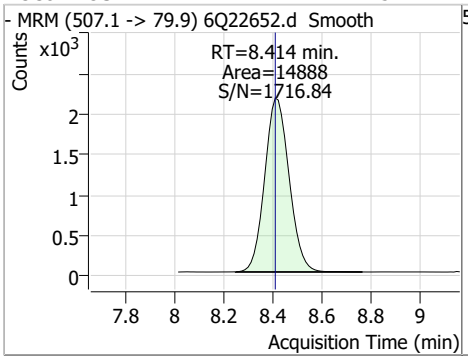
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.21	8.31	0.00	1500	570.1 -> 483.0	21.4	9.2	27.6

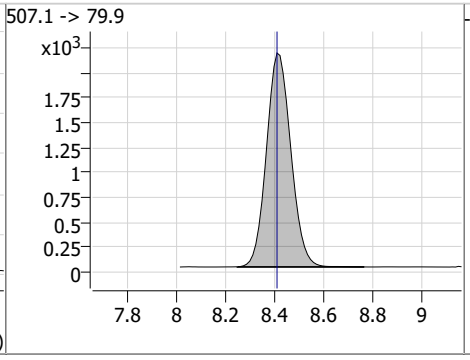


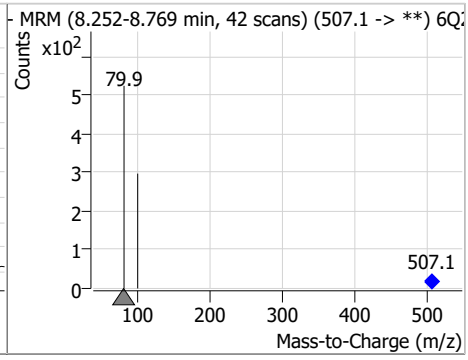




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.52	8.41	0.00	14888				

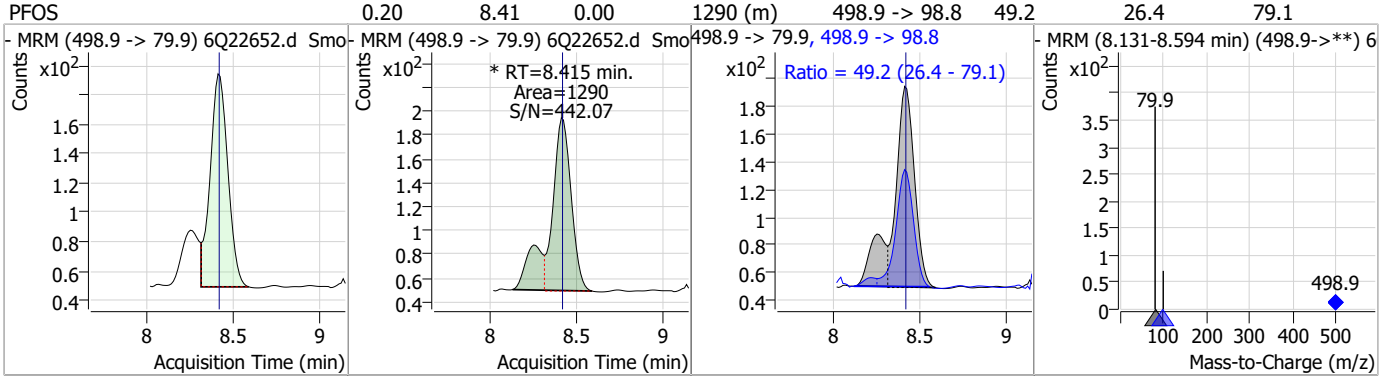




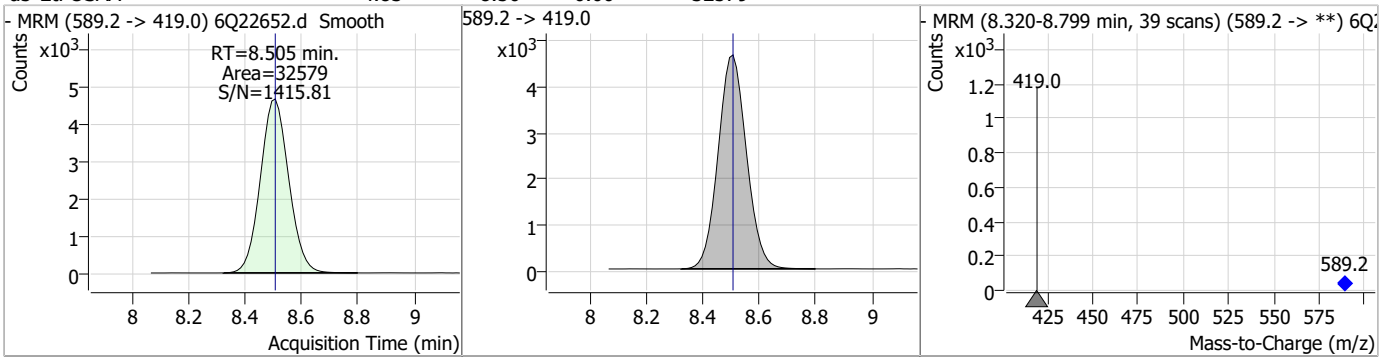


Perfluorinated Compounds by LC/MS/MS

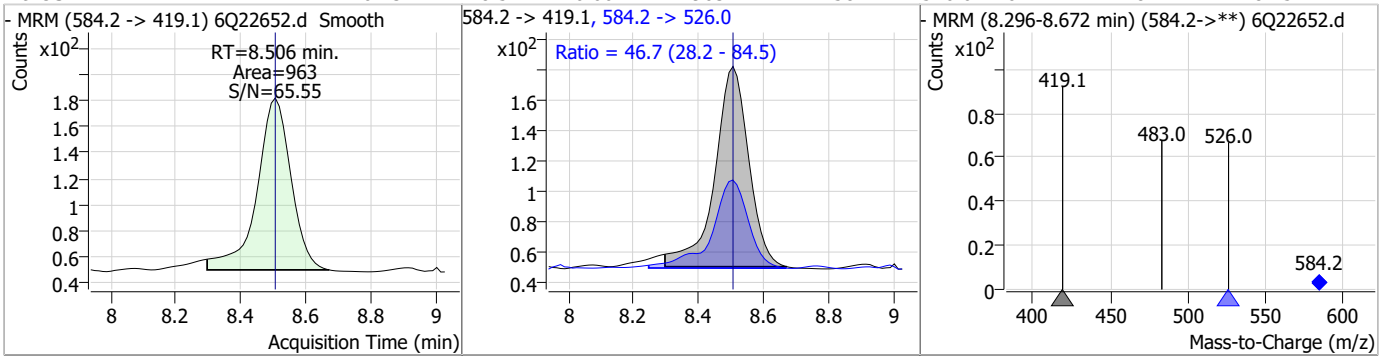
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.20	8.41	0.00	1290 (m)	498.9 -> 98.8	49.2	26.4	79.1



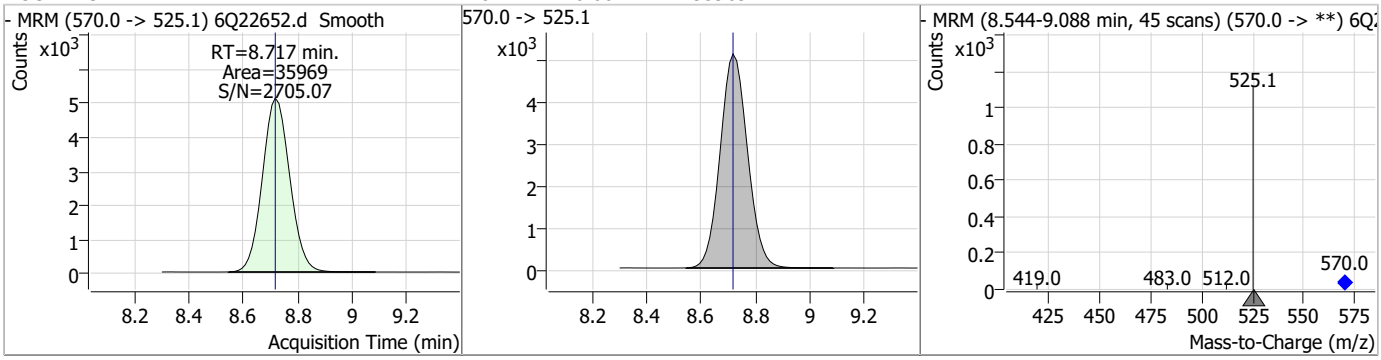
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.83	8.50	0.00	32579				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.23	8.51	0.00	963	584.2 -> 526.0	46.7	28.2	84.5

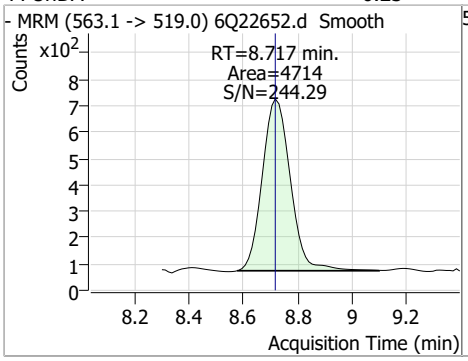


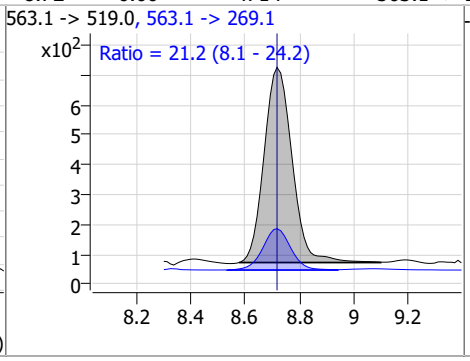
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.72	0.00	35969				

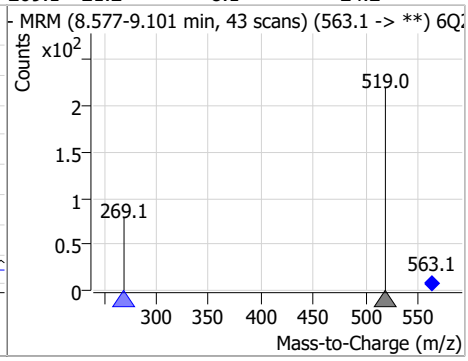


Perfluorinated Compounds by LC/MS/MS

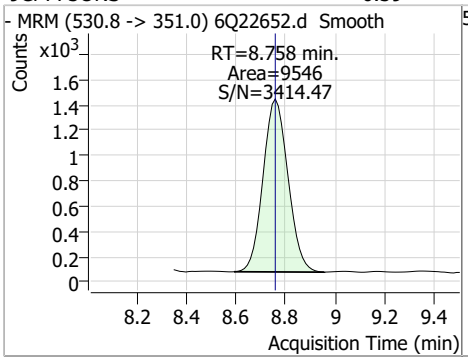
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.23	8.72	0.00	4714	563.1 -> 269.1	21.2	8.1	24.2

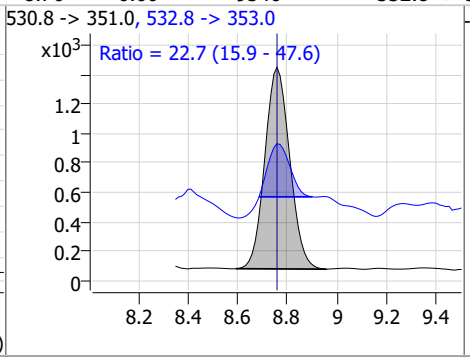


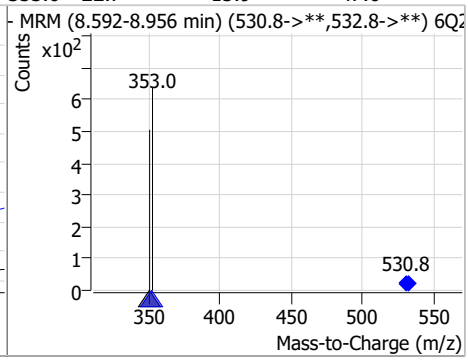




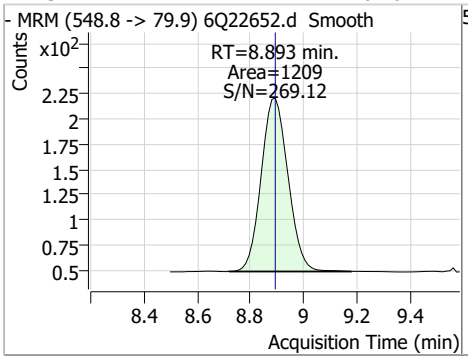
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.39	8.76	0.00	9546	532.8 -> 353.0	22.7	15.9	47.6

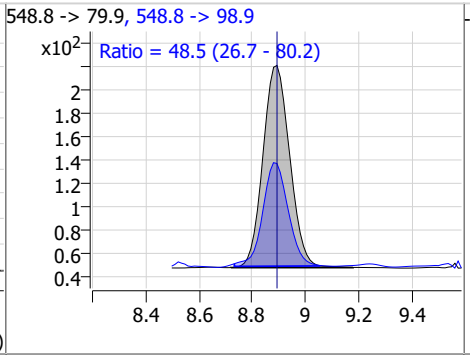


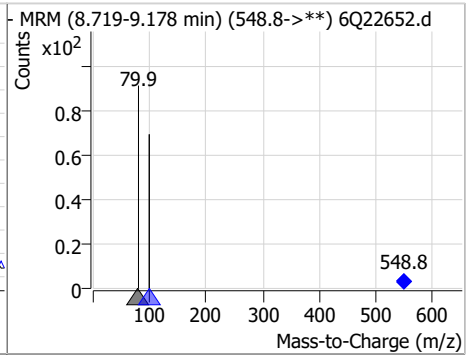




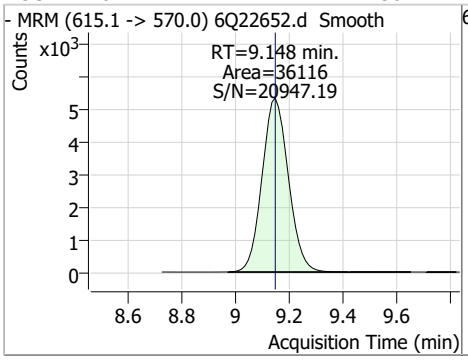
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.20	8.89	0.00	1209	548.8 -> 98.9	48.5	26.7	80.2

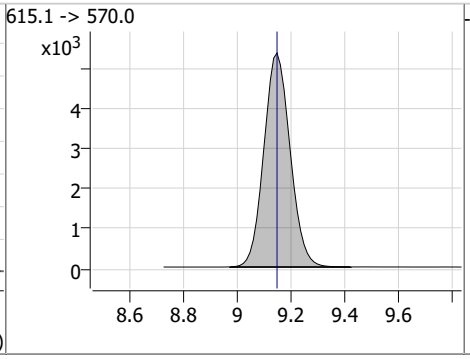


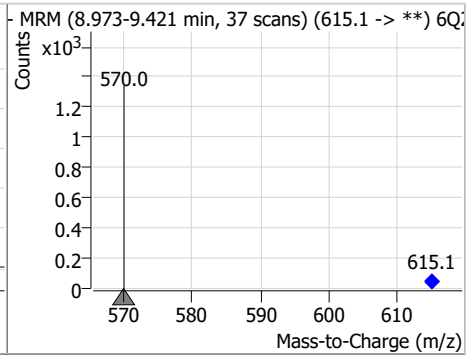




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.38	9.15	0.00	36116				

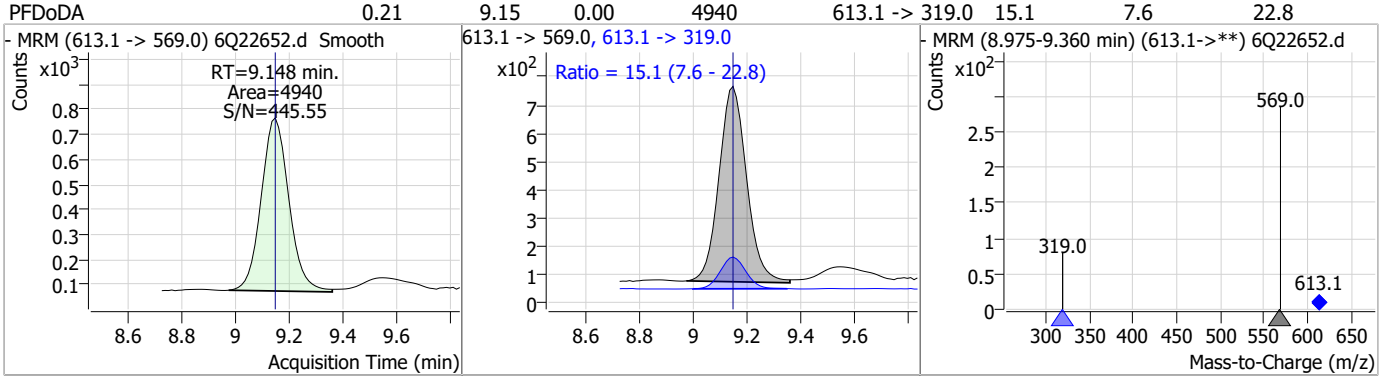




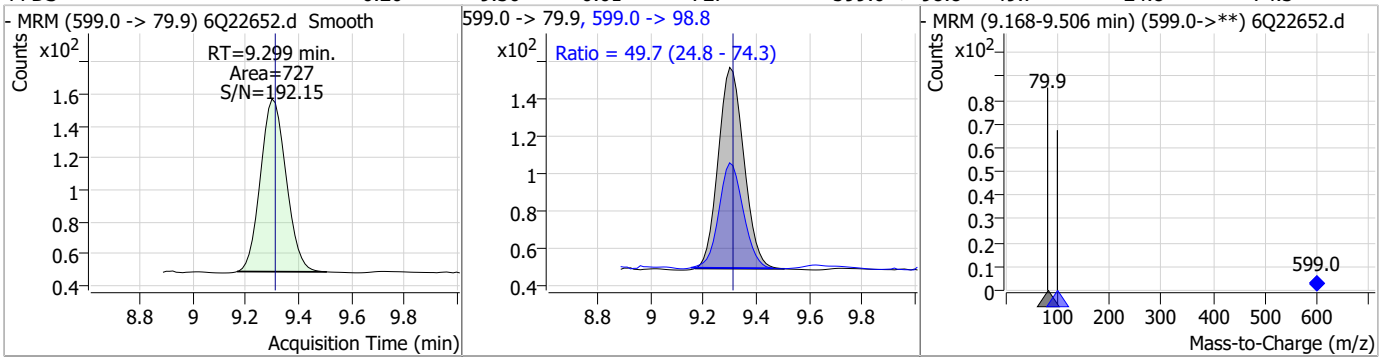


Perfluorinated Compounds by LC/MS/MS

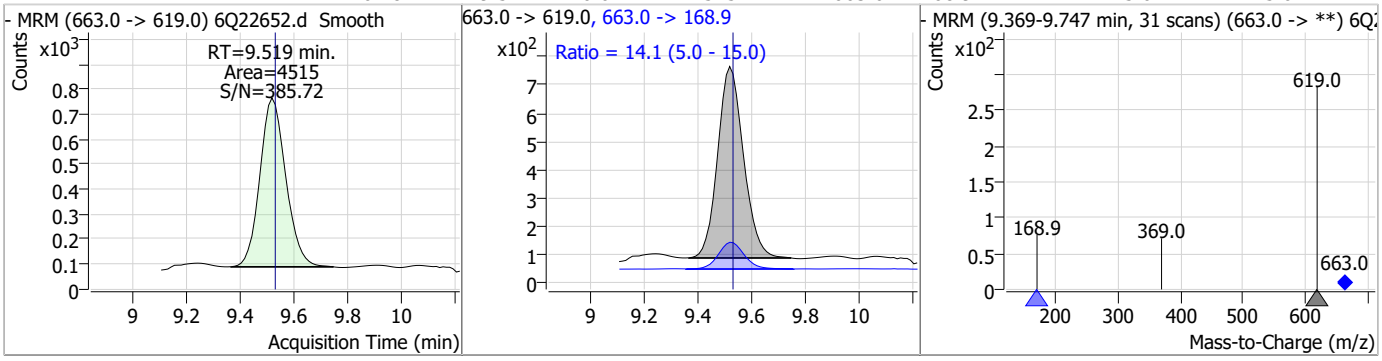
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.21	9.15	0.00	4940	613.1 -> 319.0	15.1	7.6	22.8



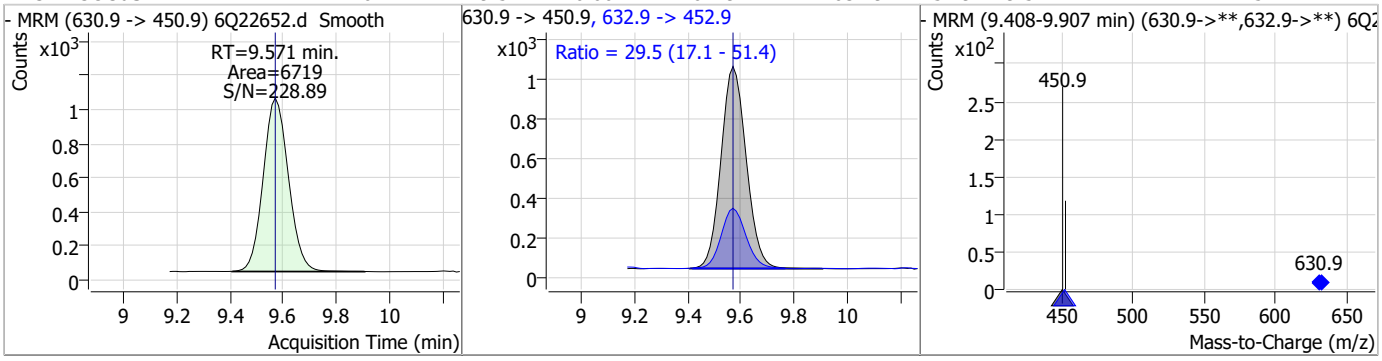
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.20	9.30	-0.01	727	599.0 -> 98.8	49.7	24.8	74.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.18	9.52	-0.01	4515	663.0 -> 168.9	14.1	5.0	15.0

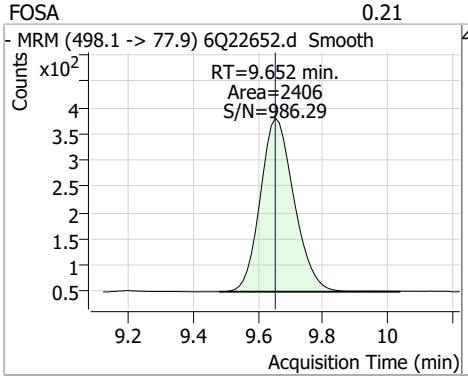


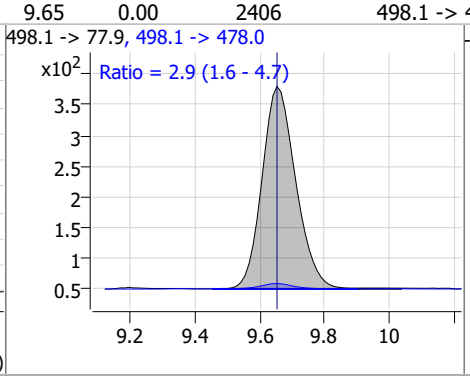
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.44	9.57	0.00	6719	632.9 -> 452.9	29.5	17.1	51.4

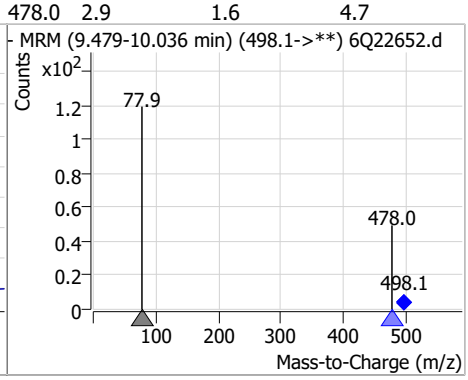


Perfluorinated Compounds by LC/MS/MS

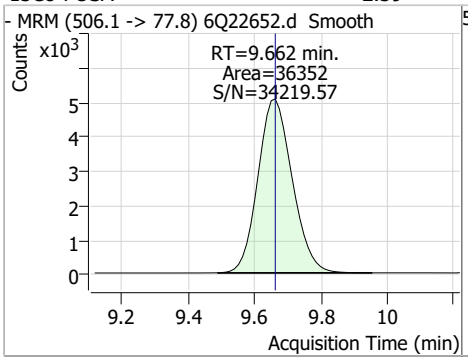
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.21	9.65	0.00	2406	498.1 -> 478.0	2.9	1.6	4.7

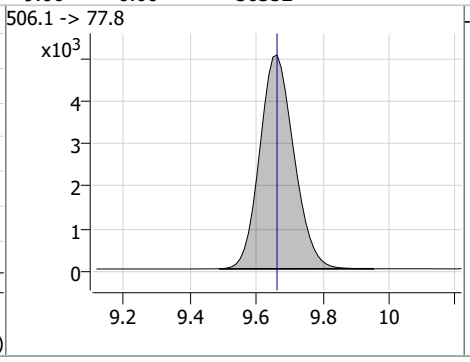


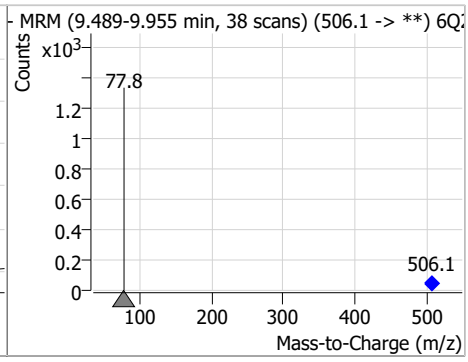




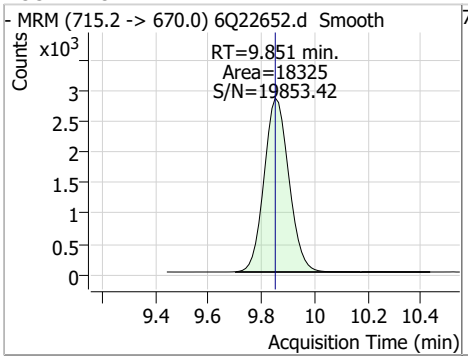
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.39	9.66	0.00	36352				

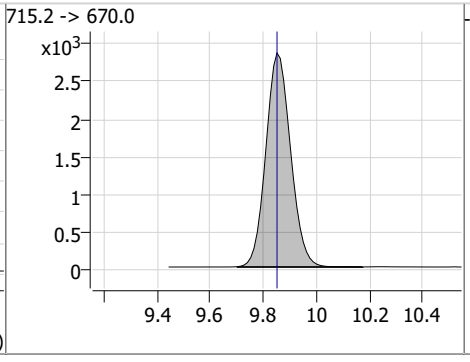


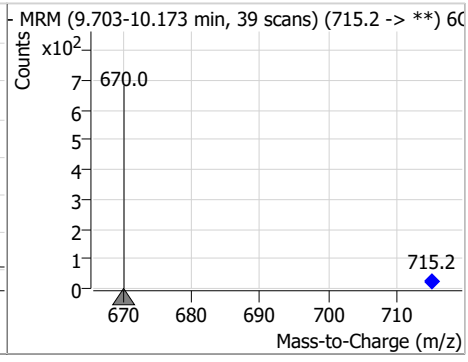




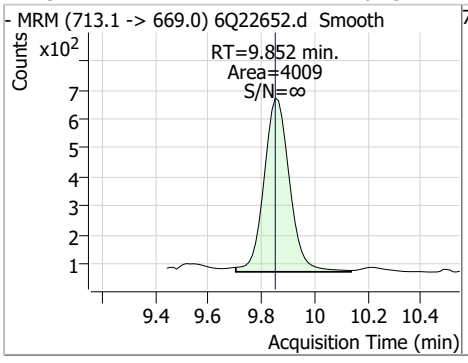
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.85	0.00	18325				

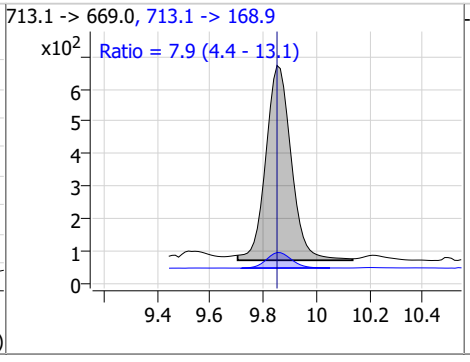


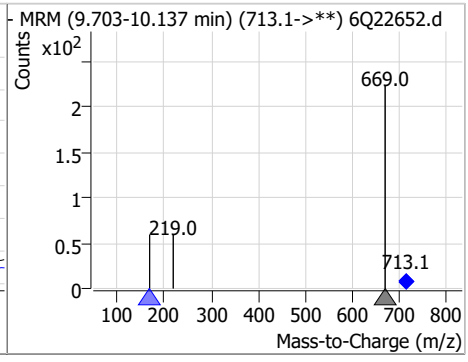




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.23	9.85	0.00	4009	713.1 -> 168.9	7.9	4.4	13.1

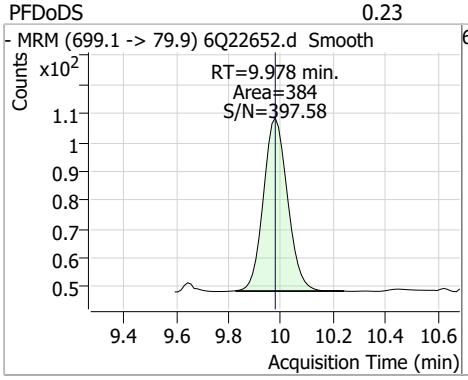


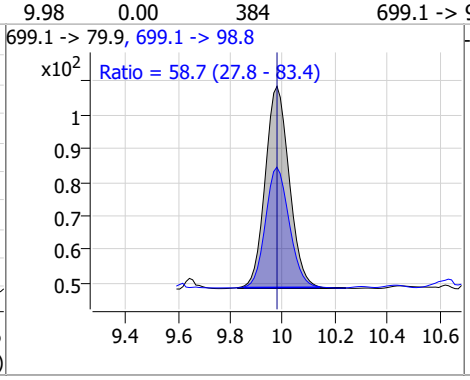


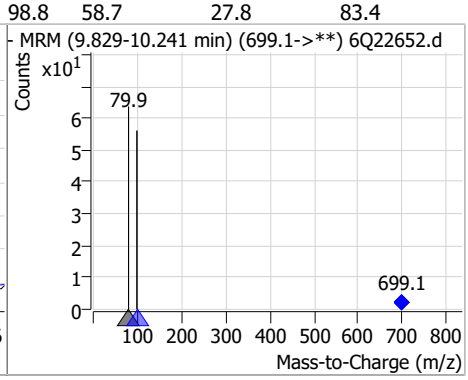


Perfluorinated Compounds by LC/MS/MS

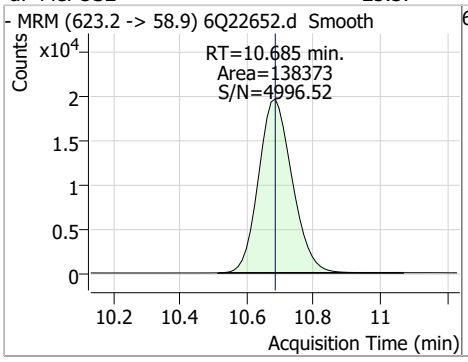
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.23	9.98	0.00	384	699.1 -> 98.8	58.7	27.8	83.4

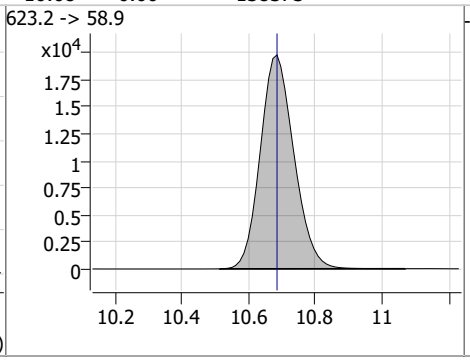


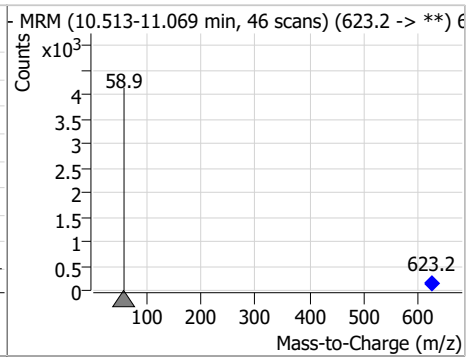




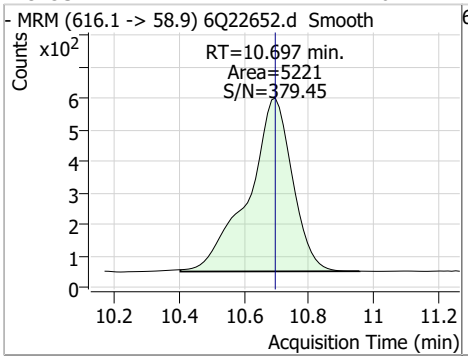
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.37	10.68	0.00	138373				

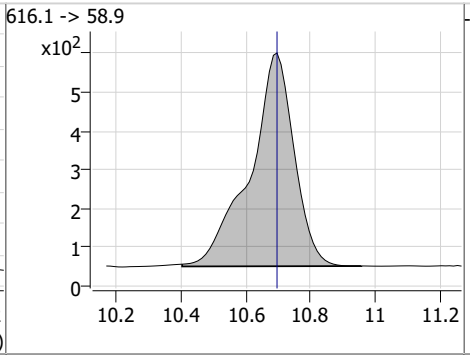


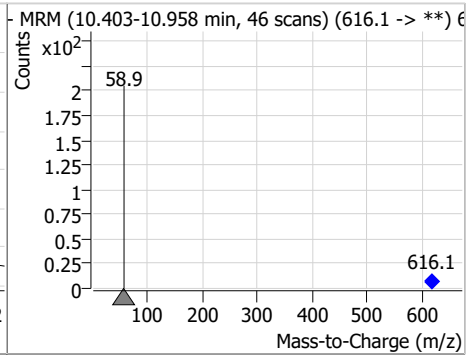




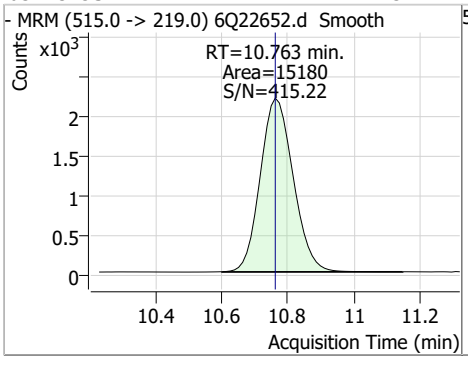
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.01	10.70	0.00	5221				

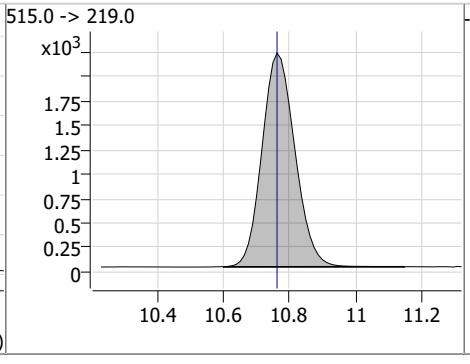


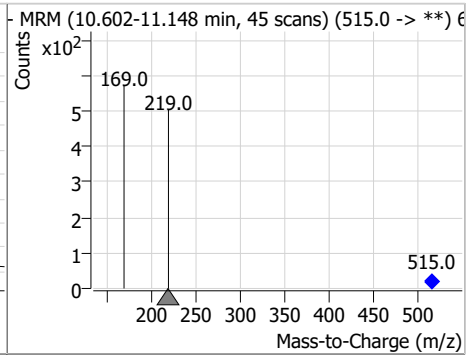




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.76	0.00	15180				

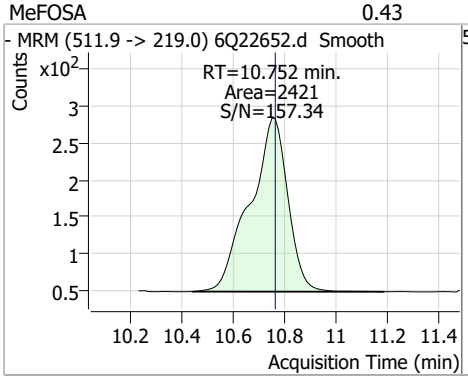


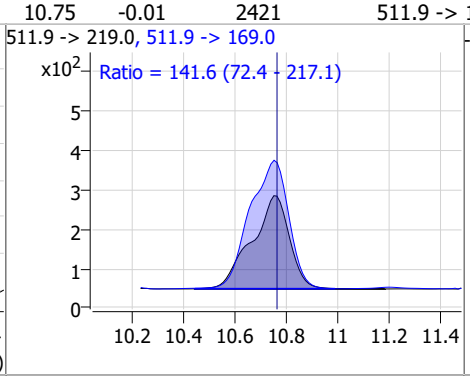


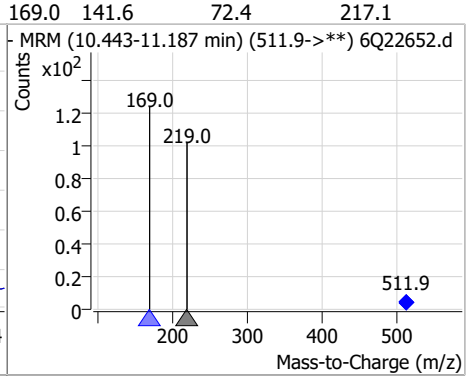


Perfluorinated Compounds by LC/MS/MS

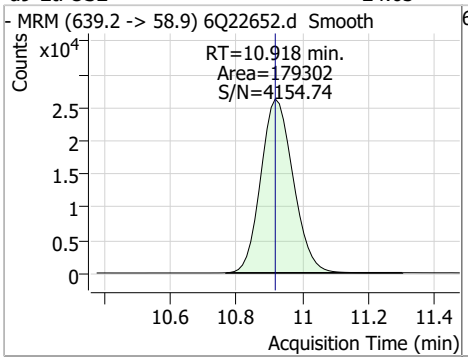
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.43	10.75	-0.01	2421	511.9 -> 169.0	141.6	72.4	217.1

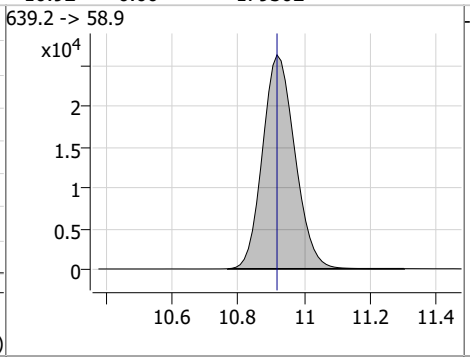


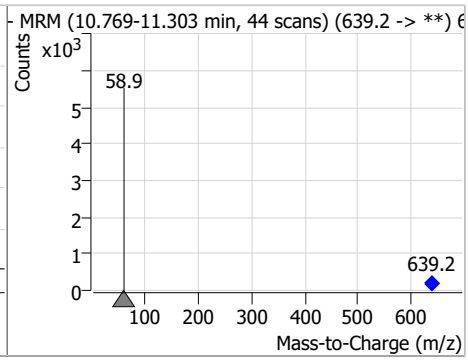




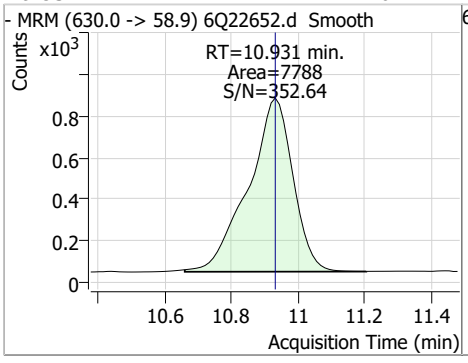
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.63	10.92	0.00	179302				

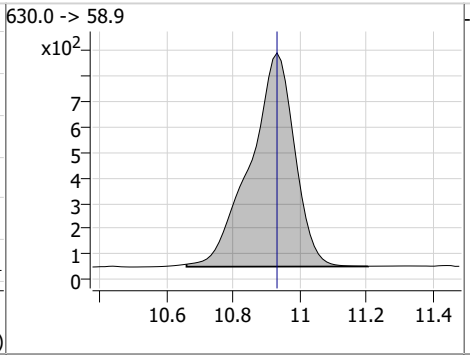


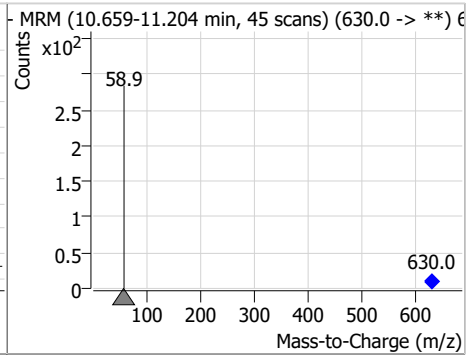




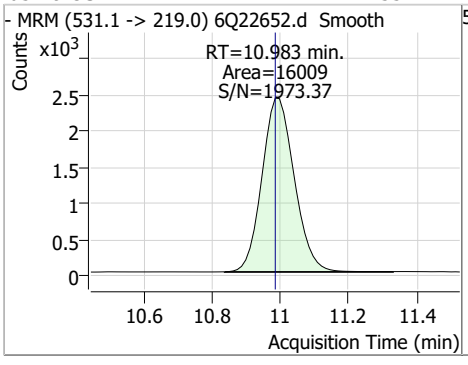
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.07	10.93	0.00	7788				

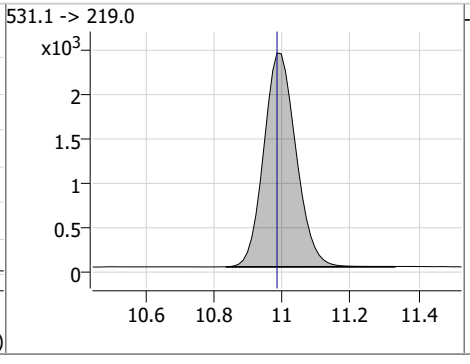


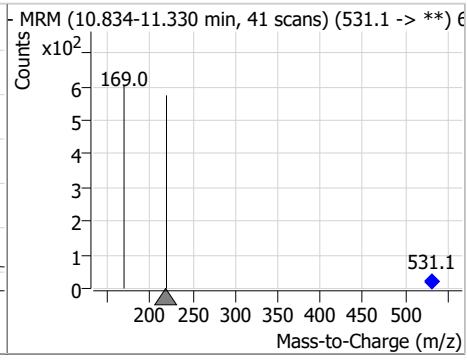




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.55	10.98	0.00	16009				

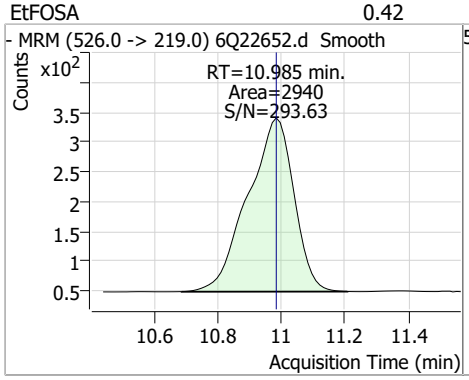


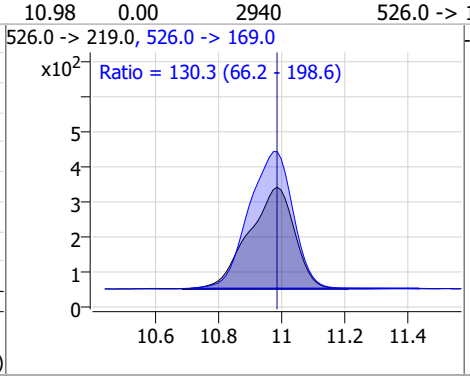


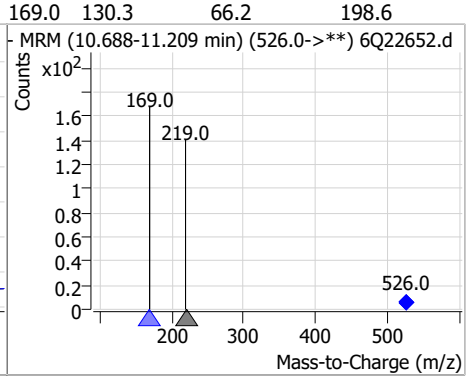


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.42	10.98	0.00	2940	526.0 -> 169.0	130.3	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-CC330
Lab FileID: 6Q22652.D
Injection Time: 08/10/23 16:29
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22662.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 6:53:16 PM
Sample Name : cc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	185911	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	59584	5.00	µg/L	0.000
M5-PFHxA	5.680	318.0 -> 273.0	62697	2.50	µg/L	0.012
M4-PFHpA	6.608	367.1 -> 322.0	65001	2.50	µg/L	0.000
M8-PFOA	7.239	421.1 -> 376.0	98670	2.50	µg/L	0.000
M9-PFNA	7.770	472.1 -> 427.0	45647	1.25	µg/L	0.000
M6-PFDA	8.250	519.1 -> 474.1	26019	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	33873	1.25	µg/L	0.000
M2-PFDoDA	9.148	615.1 -> 570.0	31094	1.25	µg/L	0.000
M2-PFTeDA	9.851	715.2 -> 670.0	17702	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	35772	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	23572	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	14730	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13868	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3280	5.00	µg/L	0.000
M2-6:2FTS	7.014	429.1 -> 80.9	4931	5.00	µg/L	0.000
M2-8:2FTS	8.039	529.1 -> 80.9	4689	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	33661	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	38734	10.00	µg/L	0.000
M5-EtFOSAA	8.505	589.2 -> 419.0	30181	5.00	µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	125564	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	161961	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	14537	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14198	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18938	2.50	µg/L	-0.012
13C3-PFBA	3.014	216.0 -> 172.0	78225	5.00	µg/L	0.012
18O2-PFHxS	7.354	403.0 -> 83.9	10897	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	105604	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	37795	1.25	µg/L	0.000
13C5-PFNA	7.770	468.0 -> 423.0	58237	1.25	µg/L	0.000
13C2-PFHxA	5.669	315.1 -> 270.0	61049	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3280	5.04	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C2-6:2FTS	7.014	429.1 -> 80.9	4931	5.25	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4689	5.10	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFDoDA	9.148	615.1 -> 570.0	31094	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C2-PFTeDA	9.851	715.2 -> 670.0	17702	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C3-PFBS	5.610	302.1 -> 79.9	23572	2.55	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFHxS	7.355	402.1 -> 79.9	14730	2.46	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 = 98.4%	
13C4-PFBA	3.010	216.8 -> 171.9	185911	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.608	367.1 -> 322.0	65001	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C5-PFHxA	5.680	318.0 -> 273.0	62697	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.447	268.3 -> 223.0	59584	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C6-PFDA	8.250	519.1 -> 474.1	26019	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C7-PFUnDA	8.717	570.0 -> 525.1	33873	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-FOSA	9.650	506.1 -> 77.8	35772	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C8-PFOA	7.239	421.1 -> 376.0	98670	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.414	507.1 -> 79.9	13868	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.770	472.1 -> 427.0	45647	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSAA	8.297	573.2 -> 419.0	33661	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	38734	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	14198	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSAA	8.505	589.2 -> 419.0	30181	4.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d7-MeFOSE	10.685	623.2 -> 58.9	125564	24.53 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d9-EtFOSE	10.918	639.2 -> 58.9	161961	23.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d5-EtFOSA	10.996	531.1 -> 219.0	14537	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
Target Compounds					**QValue**
4:2FTS	5.343	327.1 -> 307.0	40065	9.44 µg/L	100
		327.1 -> 80.9	15625		
6:2FTS	7.002	427.1 -> 407.0	41698	9.45 µg/L	93
		427.1 -> 80.9	12324		
8:2FTS	8.040	527.1 -> 507.0	24718	9.85 µg/L	96
		527.1 -> 80.8	8555		
EtFOSAA	8.506	584.2 -> 419.1	9041	2.38 µg/L	98
		584.2 -> 526.0	5231		
FOSA	9.652	498.1 -> 77.9	26857	2.39 µg/L	100
		498.1 -> 478.0	883		
MeFOSAA	8.298	570.1 -> 419.0	15861	2.46 µg/L	97
		570.1 -> 483.0	3132		
PFBA	3.006	212.8 -> 168.9	58248	10.03 µg/L	100
PFBS	5.611	298.7 -> 79.9	16712	2.17 µg/L	95
		298.7 -> 98.8	6747		
PFDA	8.251	512.9 -> 469.0	80659	2.62 µg/L	97
		512.9 -> 219.0	10621		
PFDoDA	9.136	613.1 -> 569.0	51446	2.53 µg/L	99
		613.1 -> 319.0	7586		
PFDS	9.299	599.0 -> 79.9	7740	2.33 µg/L	100

Perfluorinated Compounds by LC/MS/MS

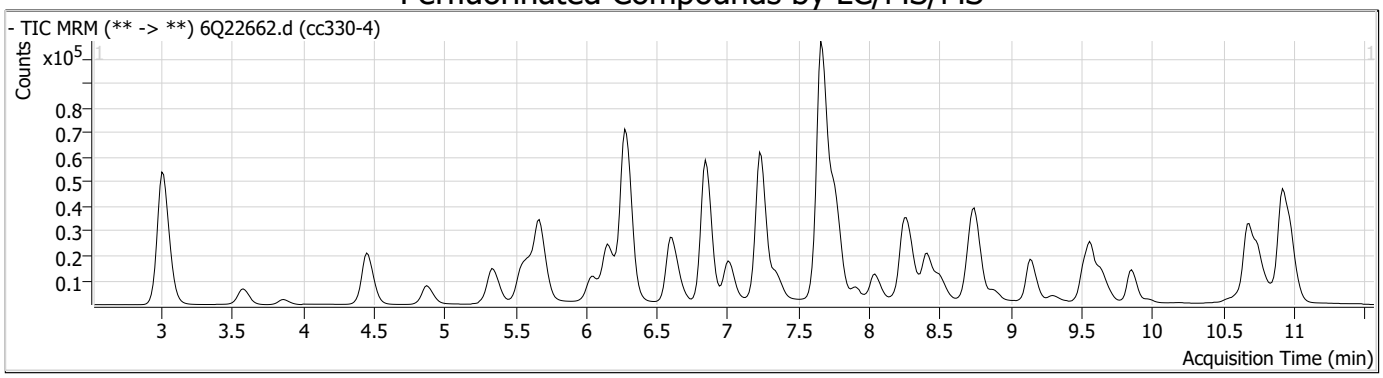
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3849				
PFHpA	6.609	363.1 -> 319.0	65823	2.57	µg/L		96
		363.1 -> 169.0	9957				
PFHpS	7.909	449.0 -> 79.9	15194	2.40	µg/L		98
		449.0 -> 98.9	7873				
PFHxA	5.670	313.0 -> 269.0	48969	2.67	µg/L		99
		313.0 -> 118.9	2478				
PFHxS	7.356	398.7 -> 79.9	15231	2.34	µg/L	m	99
		398.7 -> 98.9	7293				
PFNA	7.771	463.0 -> 419.0	77690	2.48	µg/L		100
		463.0 -> 219.0	14879				
PFNS	8.880	548.8 -> 79.9	13133	2.30	µg/L		100
		548.8 -> 98.9	7052				
PFOA	7.240	413.0 -> 369.0	94932	2.35	µg/L		96
		413.0 -> 169.0	17157				
PFOS	8.415	498.9 -> 79.9	14178	2.38	µg/L	m	94
		498.9 -> 98.8	6845				
PFPeA	4.449	263.0 -> 219.0	65848	5.02	µg/L		100
PFPeS	6.672	349.1 -> 79.9	14758	2.45	µg/L		98
		349.1 -> 98.9	6952				
PFTeDA	9.852	713.1 -> 669.0	42247	2.46	µg/L		99
		713.1 -> 168.9	3515				
PFTrDA	9.519	663.0 -> 619.0	52358	2.49	µg/L		98
		663.0 -> 168.9	5570				
PFUnDA	8.717	563.1 -> 519.0	51097	2.62	µg/L		98
		563.1 -> 269.1	8649				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	67312	4.87	µg/L		97
		632.9 -> 452.9	22003				
9Cl-PF3ONS	8.758	530.8 -> 351.0	111784	5.00	µg/L		97
		532.8 -> 353.0	37217				
ADONA	6.846	376.9 -> 250.9	246835	5.00	µg/L		99
		376.9 -> 84.8	66169				
HFPO-DA	6.058	284.9 -> 168.9	15984	4.85	µg/L		97
		284.9 -> 184.9	1883				
3:3FTCA	3.859	241.0 -> 177.0	11053	12.03	µg/L		99
		241.0 -> 117.0	1518				
5:3FTCA	6.285	341.0 -> 237.1	240958	63.88	µg/L		98
		341.0 -> 217.0	175387				
7:3FTCA	7.673	441.0 -> 316.9	185627	66.54	µg/L		99
		441.0 -> 336.9	418846				
EtFOSA	10.985	526.0 -> 219.0	32388	5.06	µg/L		100
		526.0 -> 169.0	42813				
EtFOSE	10.931	630.0 -> 58.9	84650	12.90	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	26655	5.07	µg/L		95
		511.9 -> 169.0	36799				
MeFOSE	10.697	616.1 -> 58.9	54718	11.66	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3862	2.49	µg/L		100
		699.1 -> 98.8	2143				
NFDHA	5.551	295.0 -> 201.0	12207	5.23	µg/L		97
		295.0 -> 84.9	3307				
PFMBA	4.869	279.0 -> 85.1	46095	4.97	µg/L		100
PFMPA	3.576	229.0 -> 84.9	37407	5.03	µg/L		100
PFEESA	6.163	314.8 -> 134.9	118267	4.80	µg/L		99
		314.8 -> 82.9	3832				

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

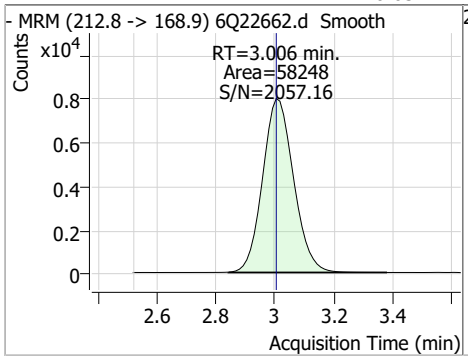
Perfluorinated Compounds by LC/MS/MS

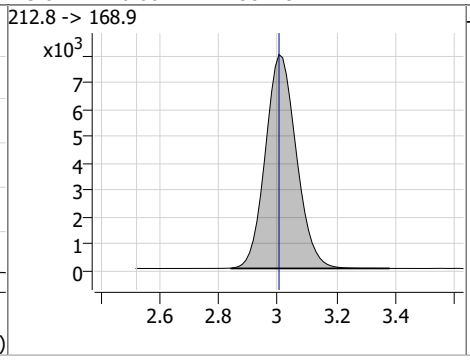
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

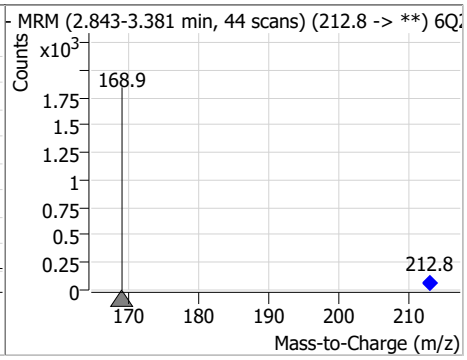
Perfluorinated Compounds by LC/MS/MS



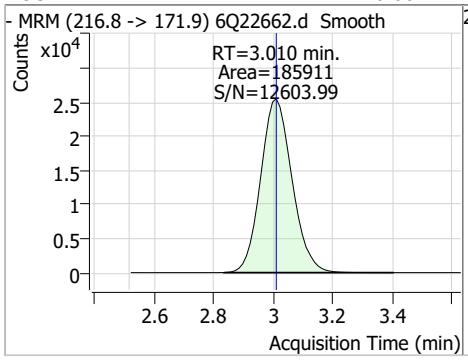
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.03	3.01	0.00	58248				

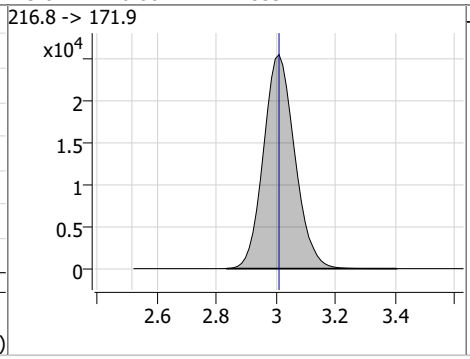


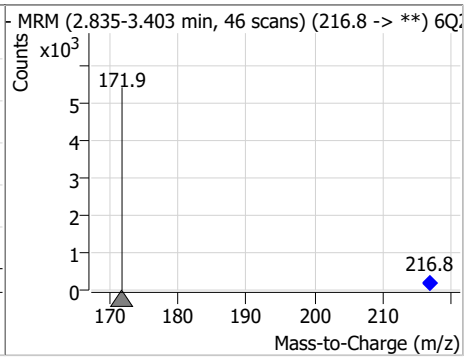




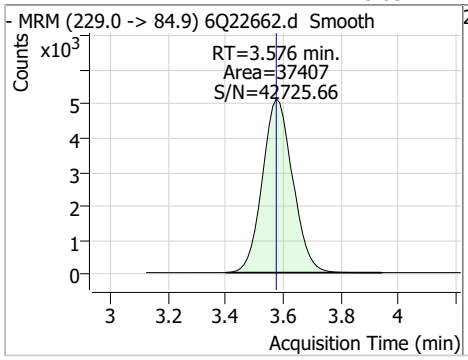
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.06	3.01	0.00	185911				

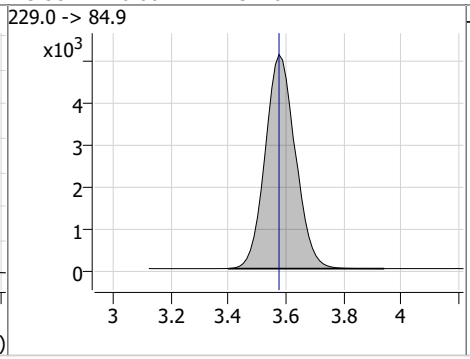


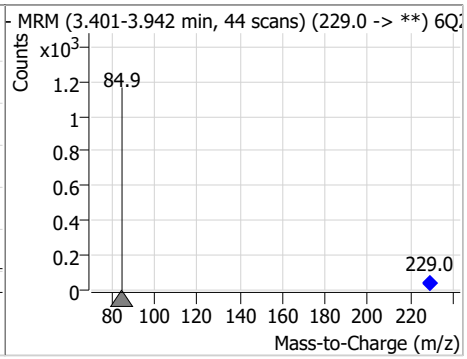




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.03	3.58	0.00	37407				

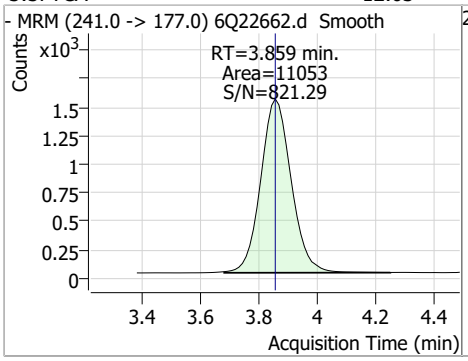


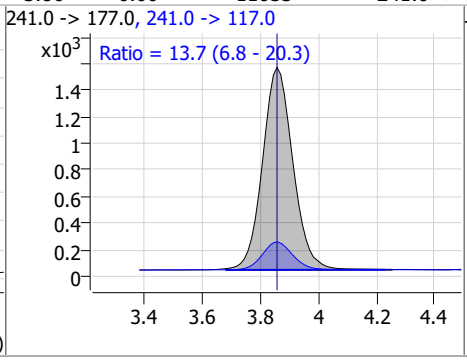


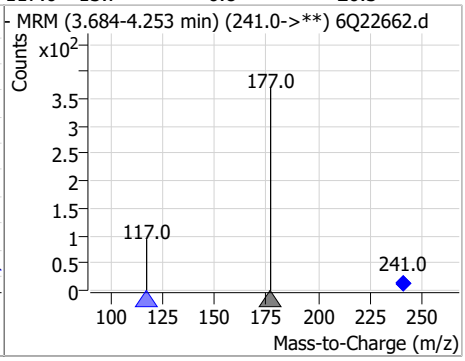


Perfluorinated Compounds by LC/MS/MS

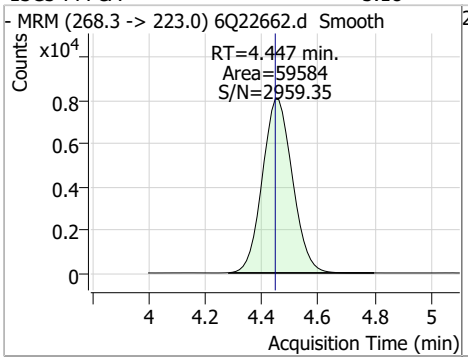
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.03	3.86	0.00	11053	241.0 -> 117.0	13.7	6.8	20.3

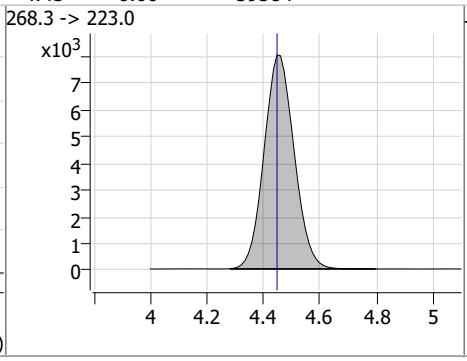


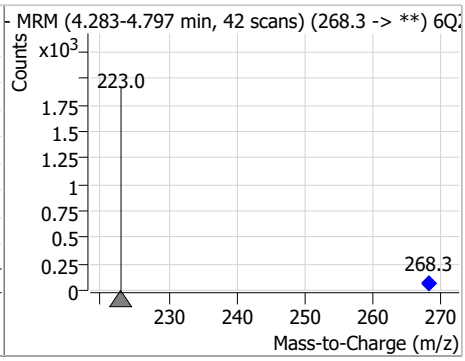




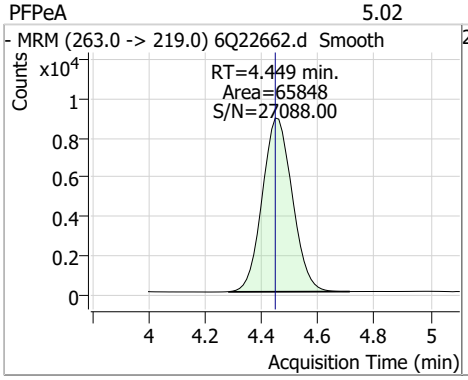
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.18	4.45	0.00	59584				

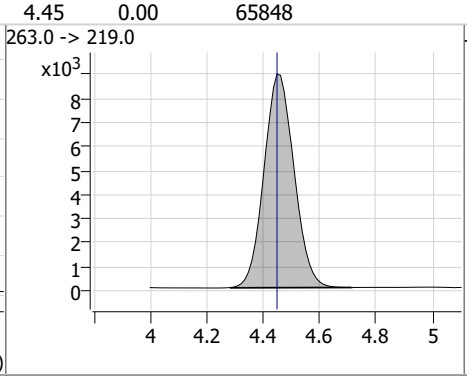


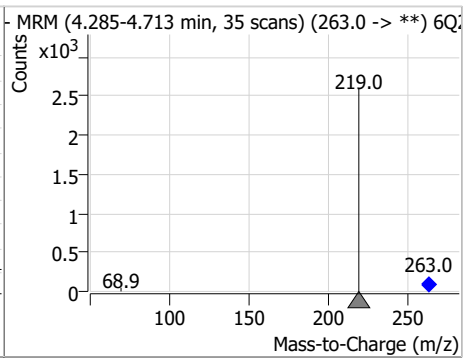




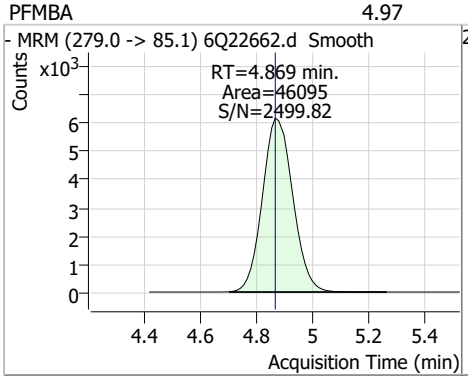
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.02	4.45	0.00	65848				

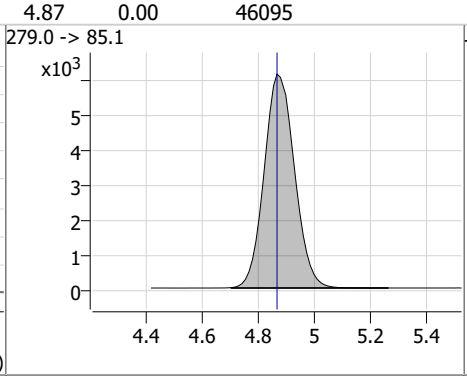


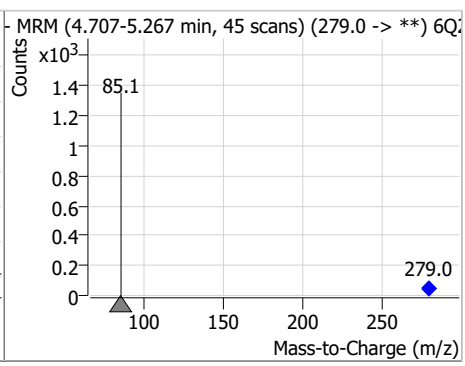




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.97	4.87	0.00	46095				

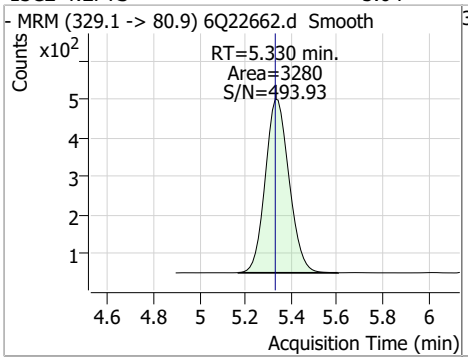


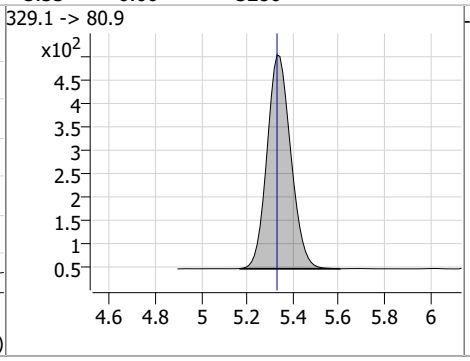


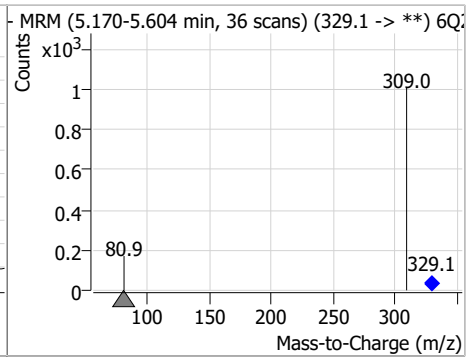


Perfluorinated Compounds by LC/MS/MS

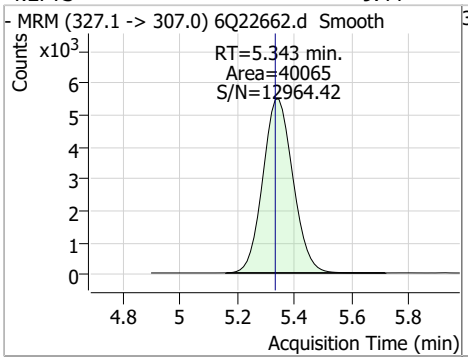
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.04	5.33	0.00	3280				

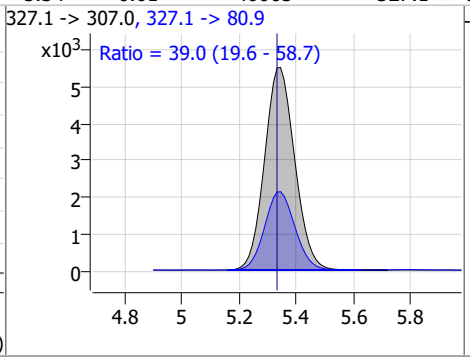


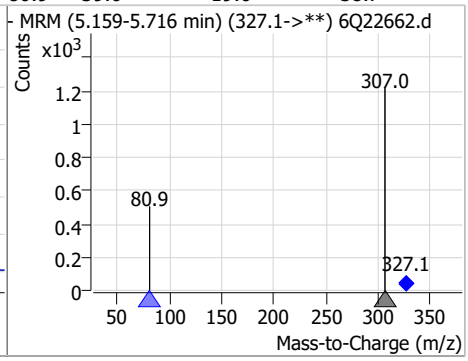




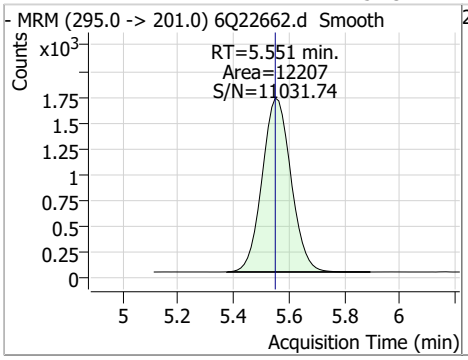
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.44	5.34	0.01	40065	327.1 -> 80.9	39.0	19.6	58.7

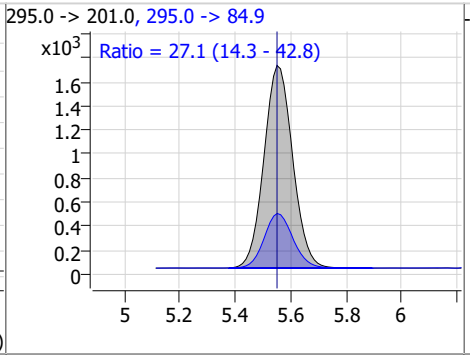


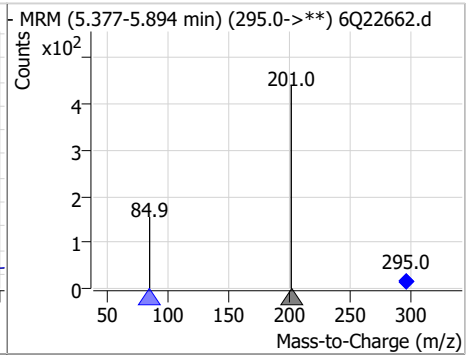




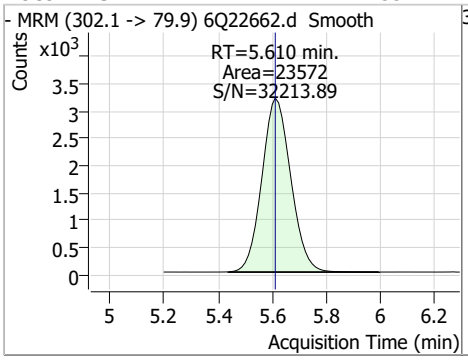
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.23	5.55	0.00	12207	295.0 -> 84.9	27.1	14.3	42.8

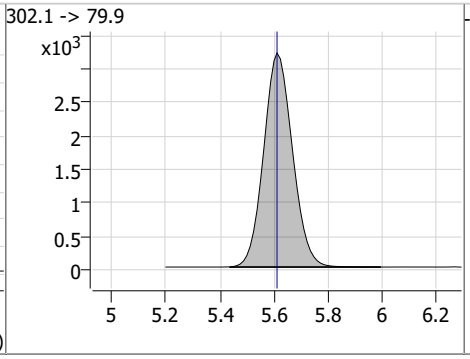


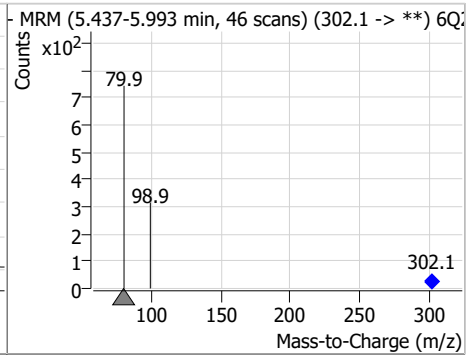




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.55	5.61	0.00	23572				

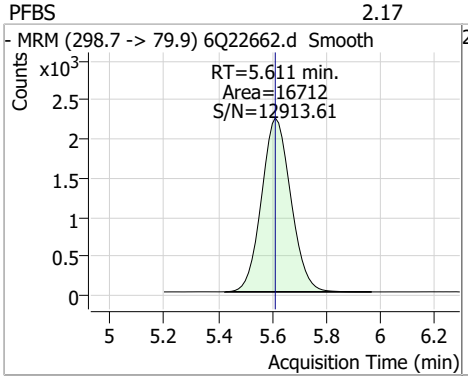


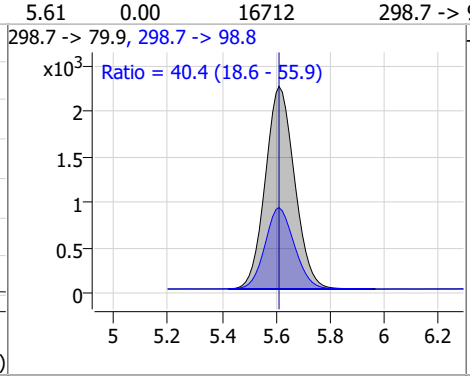


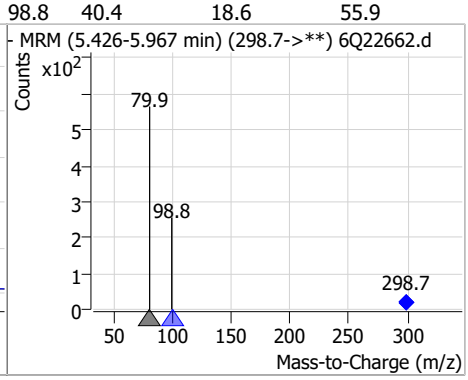


Perfluorinated Compounds by LC/MS/MS

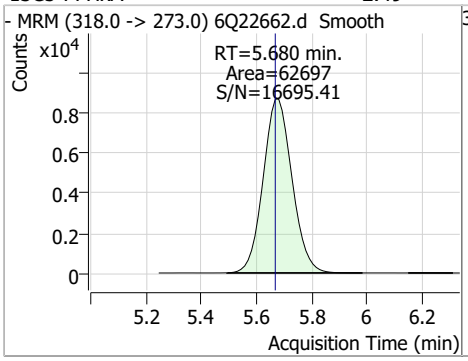
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.17	5.61	0.00	16712	298.7 -> 98.8	40.4	18.6	55.9

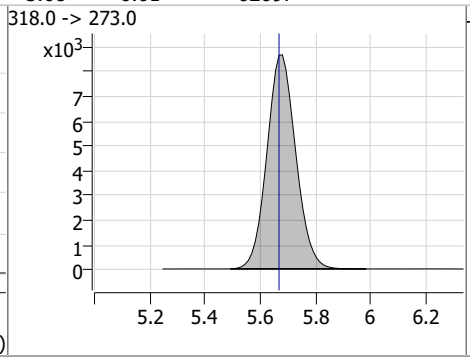


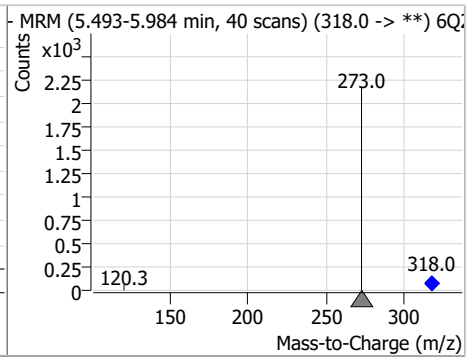




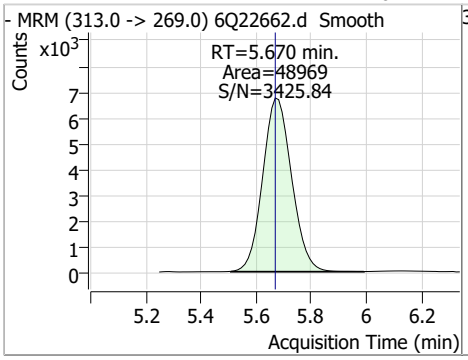
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.68	0.01	62697				

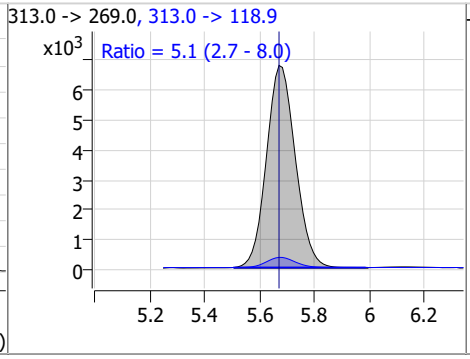


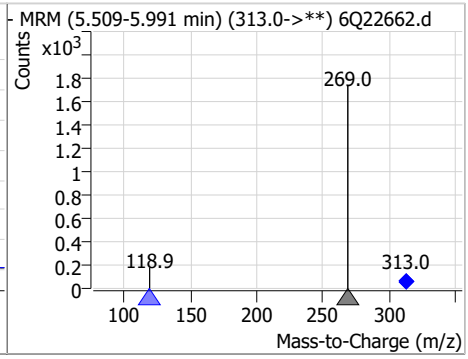




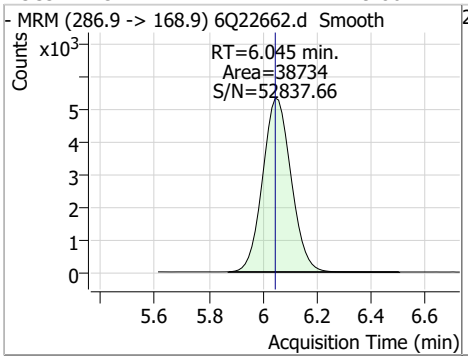
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.67	5.67	0.00	48969	313.0 -> 118.9	5.1	2.7	8.0

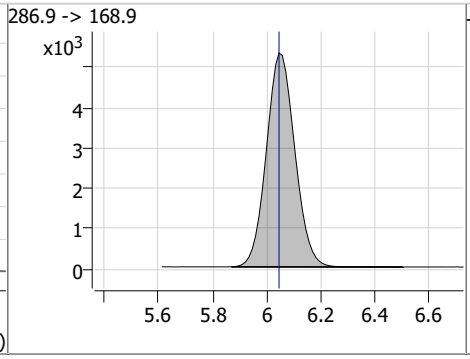


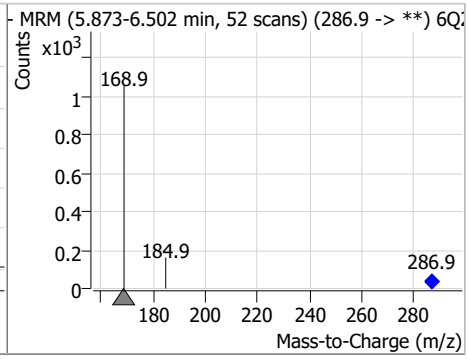




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.80	6.05	0.00	38734				

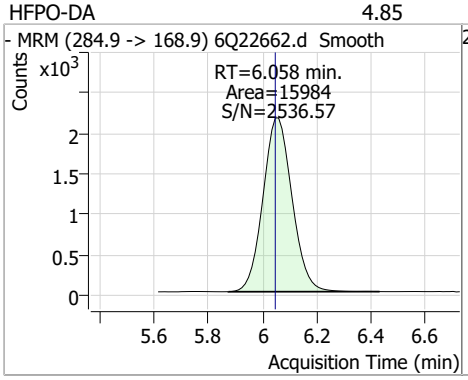


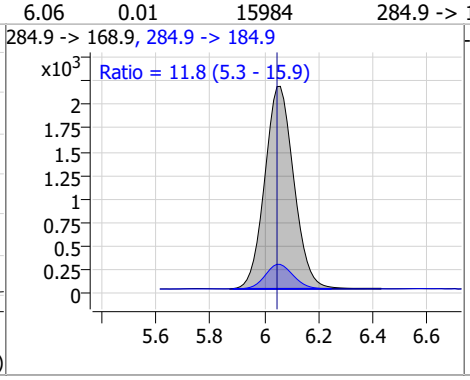


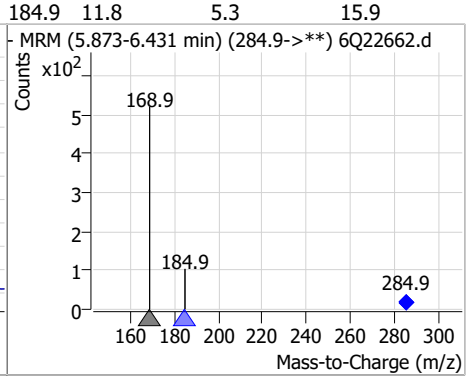


Perfluorinated Compounds by LC/MS/MS

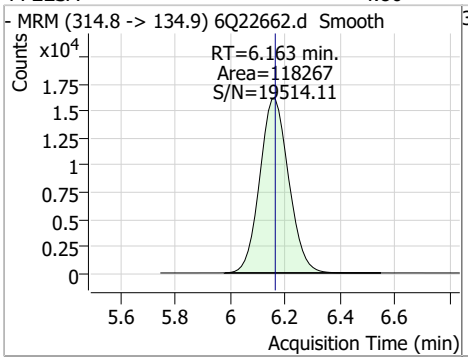
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.85	6.06	0.01	15984	284.9 -> 184.9	11.8	5.3	15.9

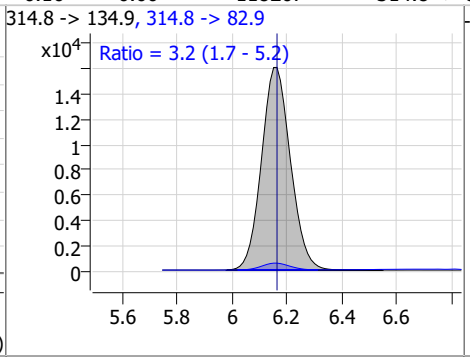


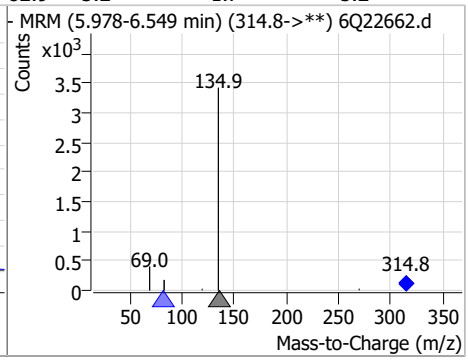




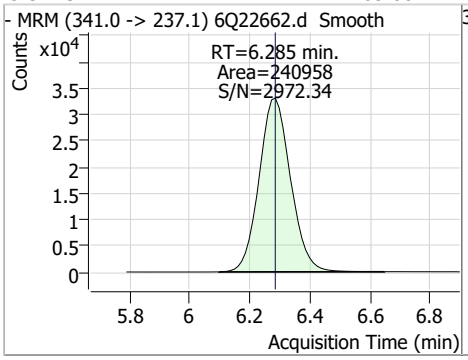
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.80	6.16	0.00	118267	314.8 -> 82.9	3.2	1.7	5.2

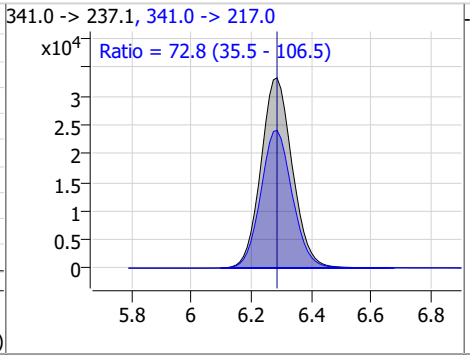


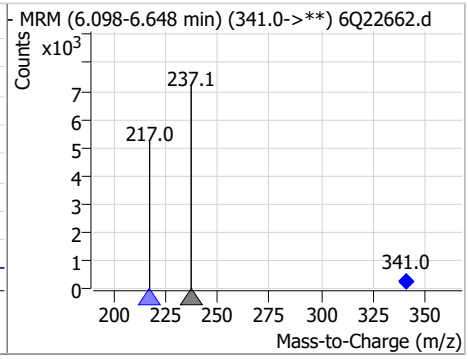




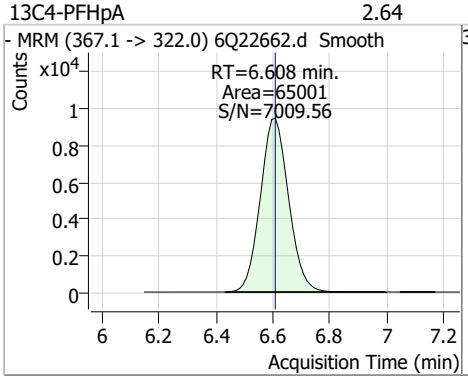
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.88	6.28	0.00	240958	341.0 -> 217.0	72.8	35.5	106.5

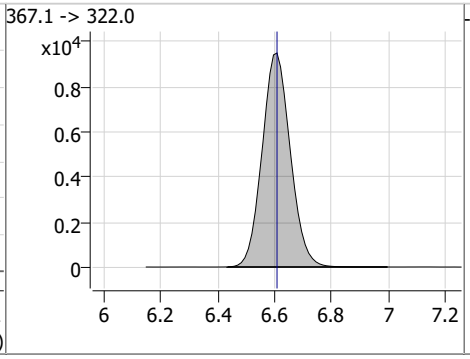


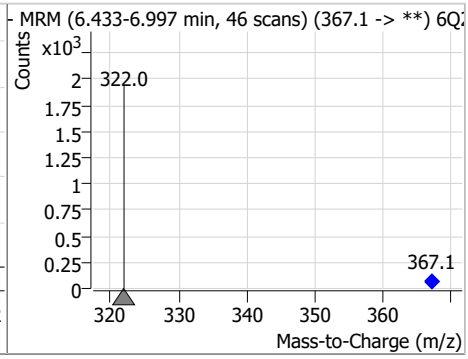




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.64	6.61	0.00	65001				

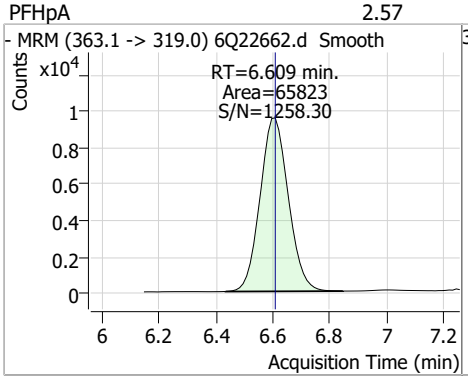


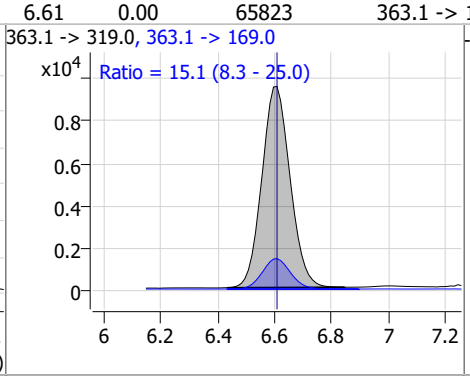


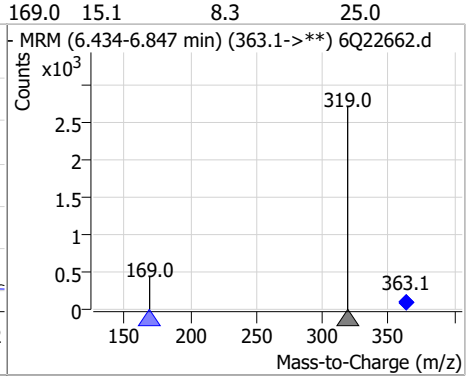


Perfluorinated Compounds by LC/MS/MS

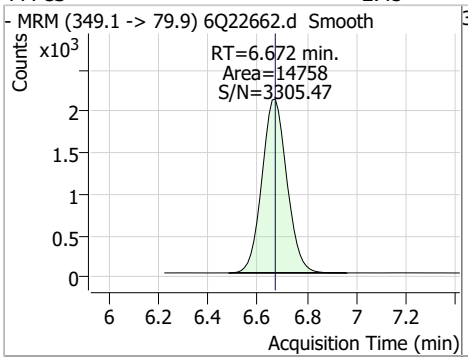
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.57	6.61	0.00	65823	363.1 -> 169.0	15.1	8.3	25.0

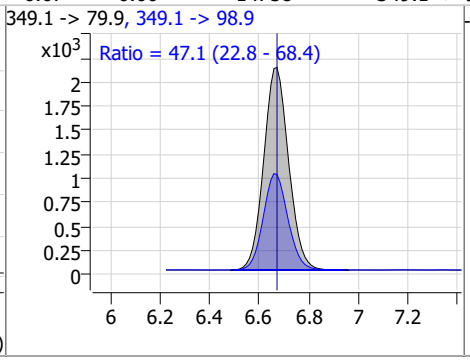


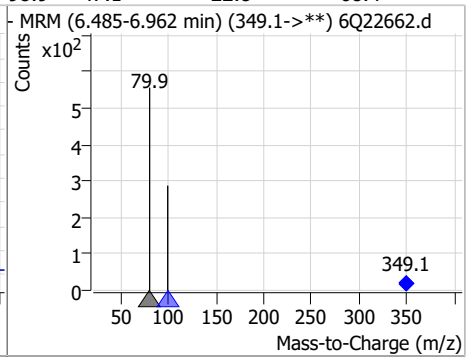




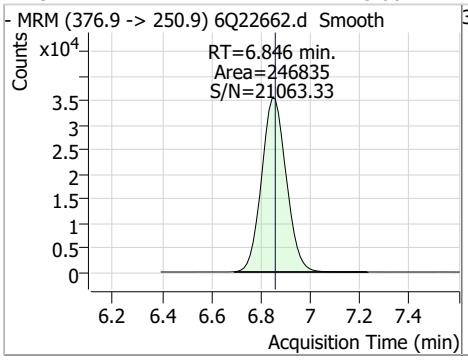
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.45	6.67	0.00	14758	349.1 -> 98.9	47.1	22.8	68.4

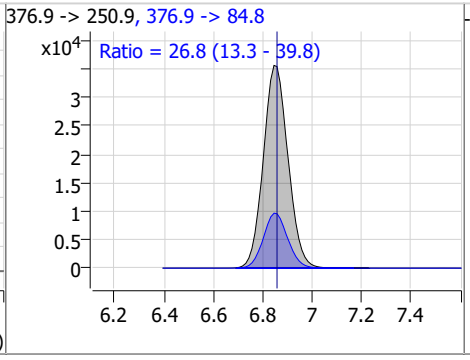


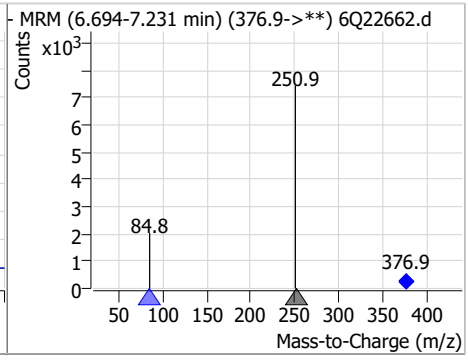




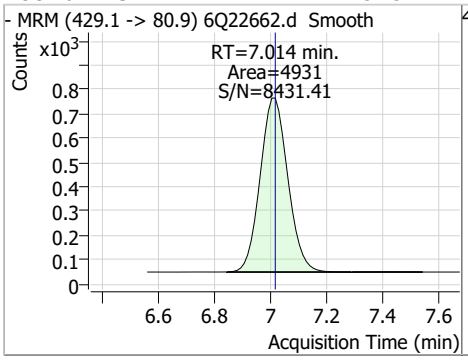
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.00	6.85	-0.01	246835	376.9 -> 84.8	26.8	13.3	39.8

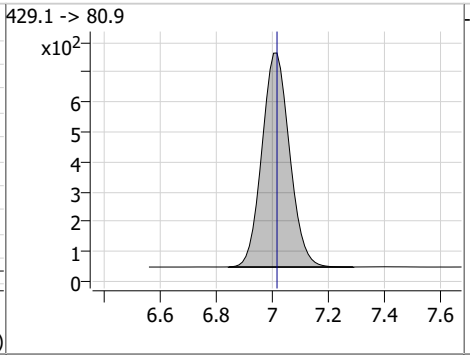


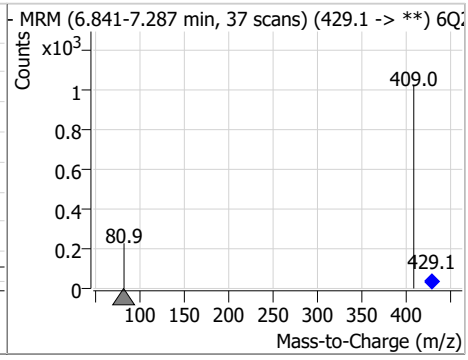




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.25	7.01	0.00	4931				

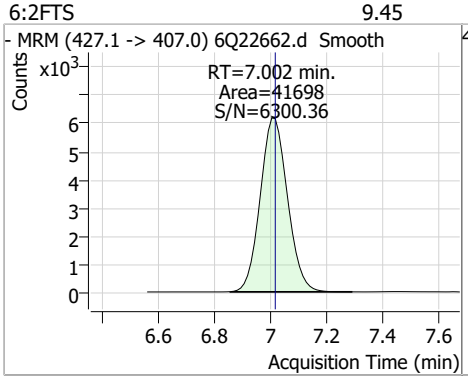


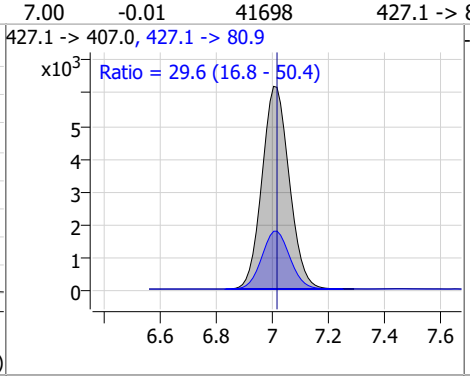


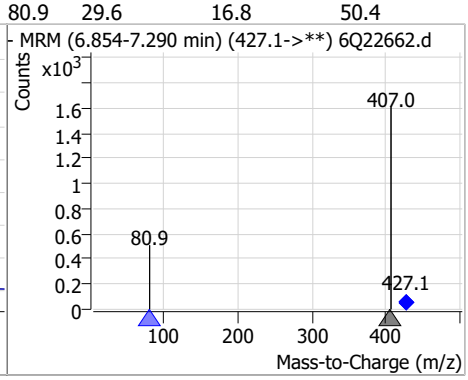


Perfluorinated Compounds by LC/MS/MS

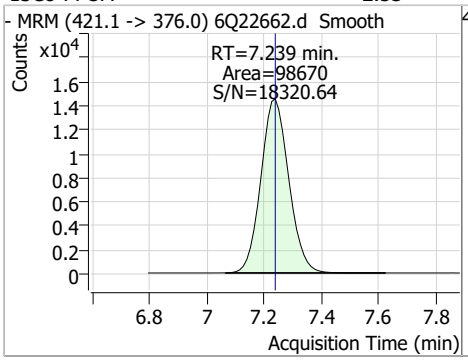
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.45	7.00	-0.01	41698	427.1 -> 80.9	29.6	16.8	50.4

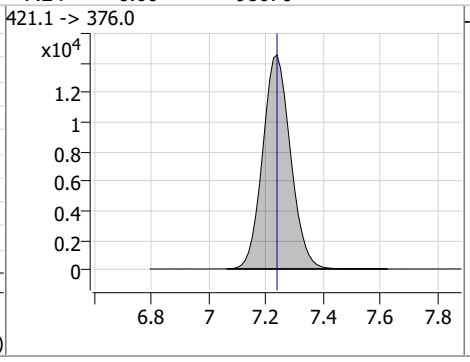


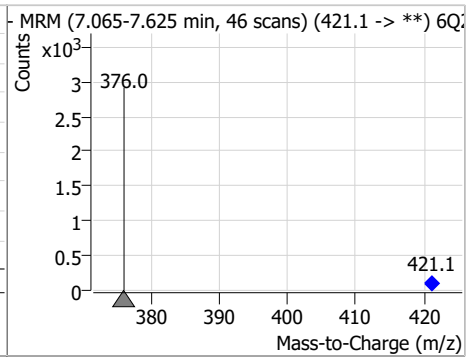




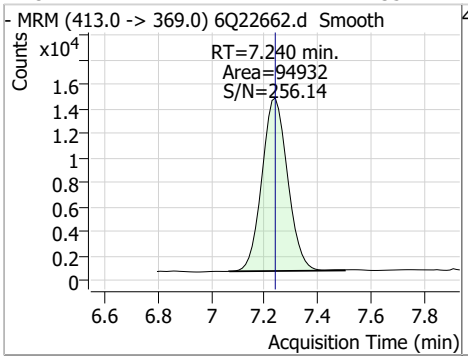
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	7.24	0.00	98670				

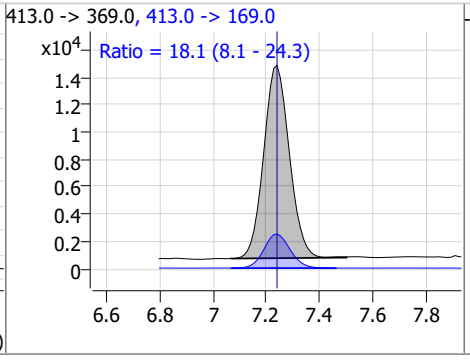


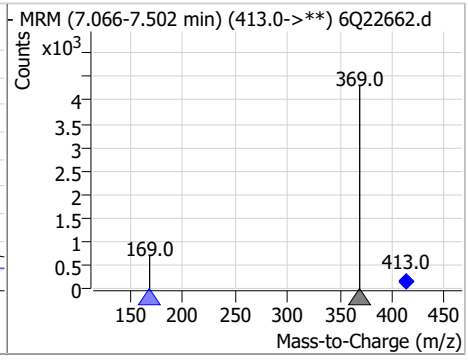




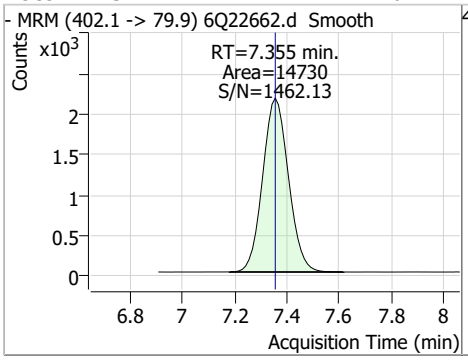
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.35	7.24	0.00	94932	413.0 -> 169.0	18.1	8.1	24.3

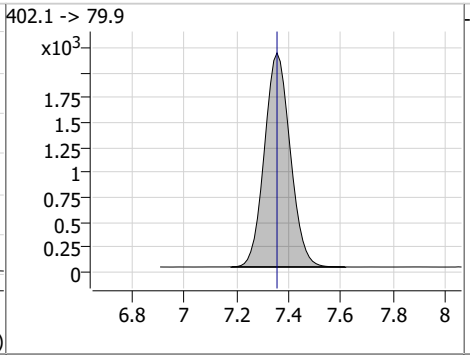


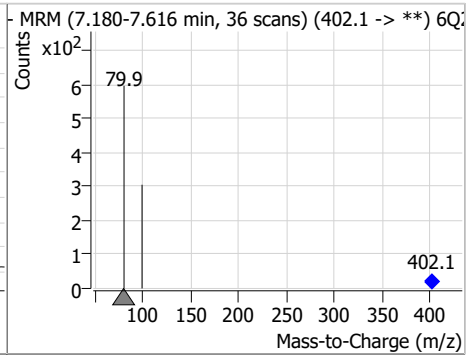




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.46	7.35	0.00	14730				

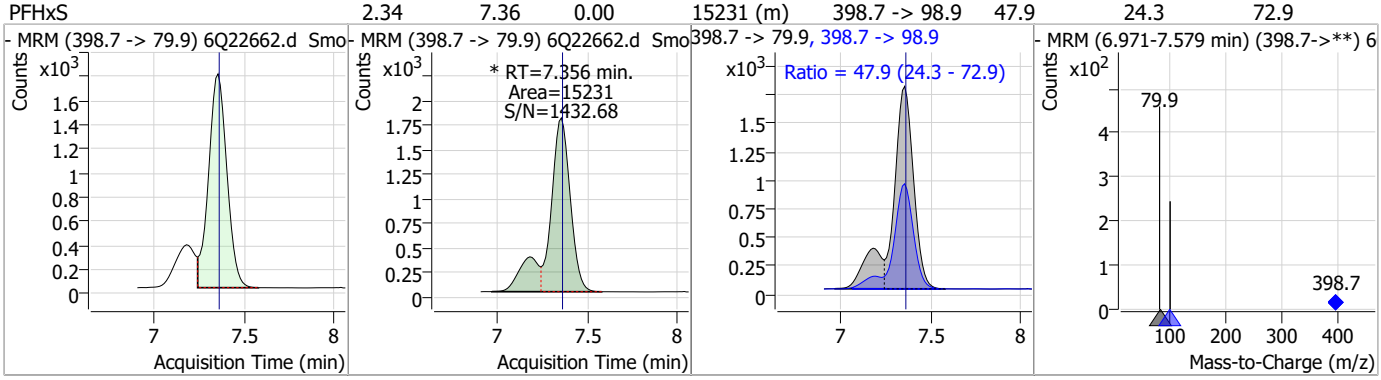




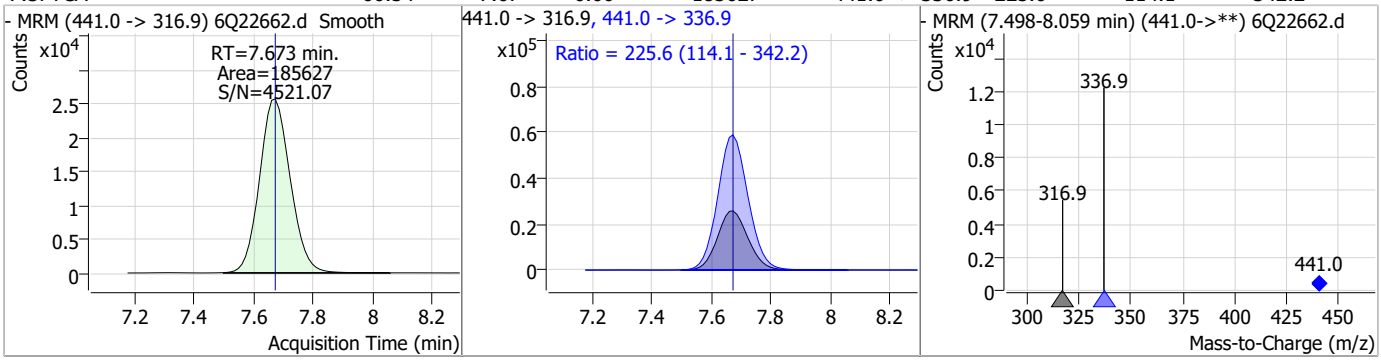


Perfluorinated Compounds by LC/MS/MS

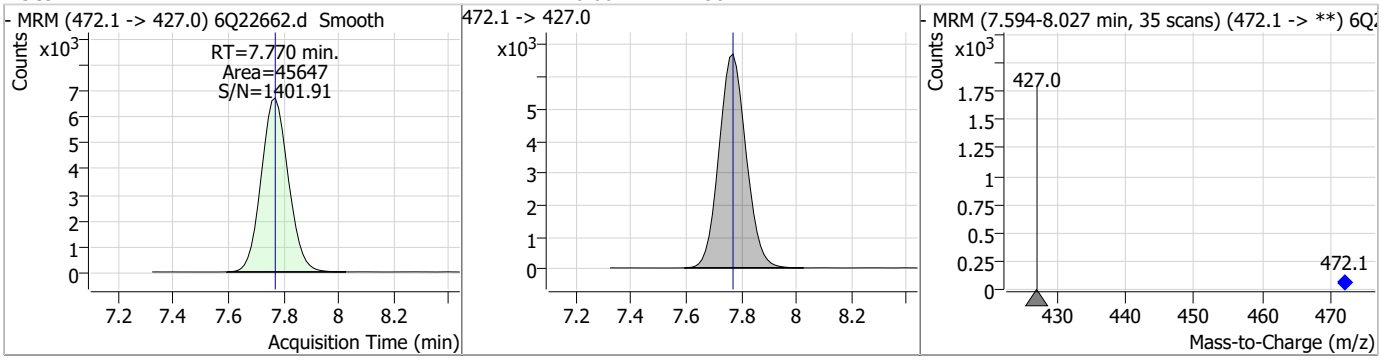
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.34	7.36	0.00	15231 (m)	398.7 -> 98.9	47.9	24.3	72.9



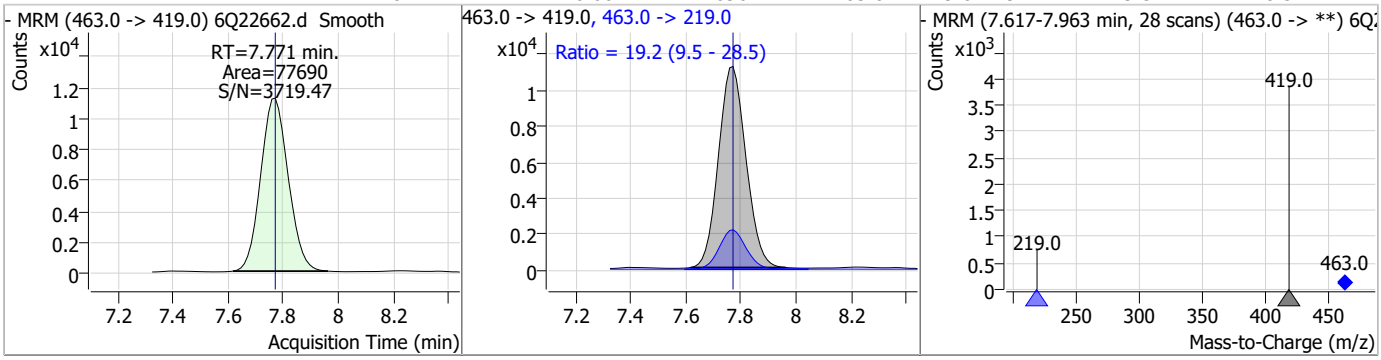
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	66.54	7.67	0.00	185627	441.0 -> 336.9	225.6	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.21	7.77	0.00	45647				

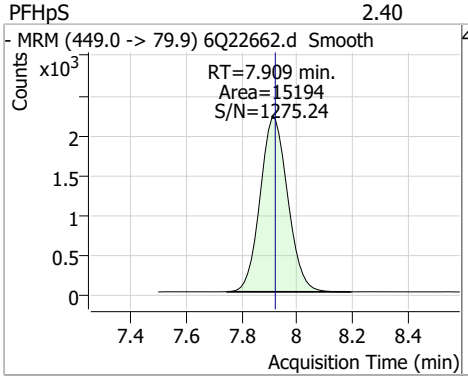


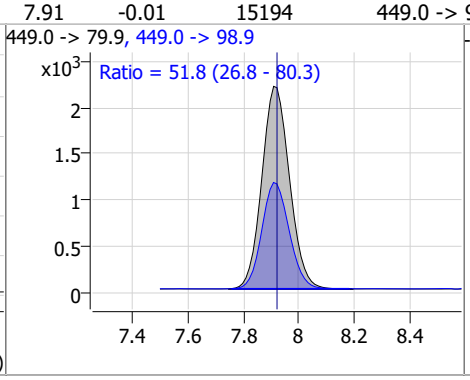
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.48	7.77	0.00	77690	463.0 -> 219.0	19.2	9.5	28.5

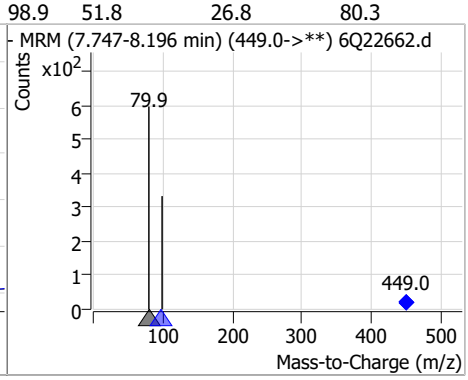


Perfluorinated Compounds by LC/MS/MS

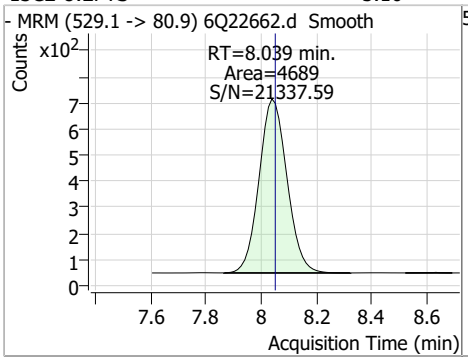
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.40	7.91	-0.01	15194	449.0 -> 98.9	51.8	26.8	80.3

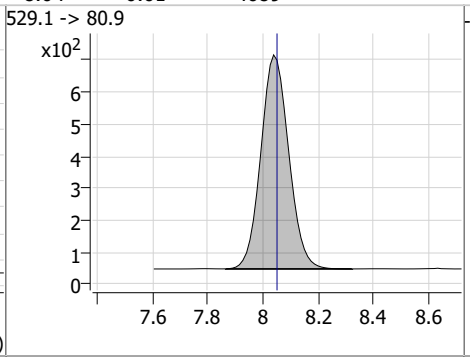


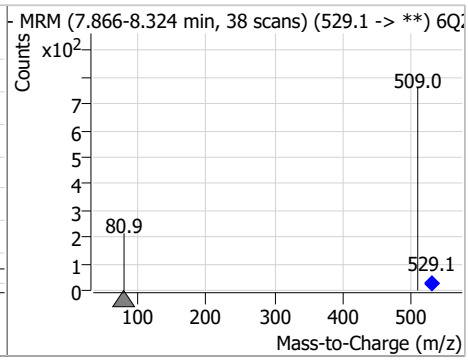




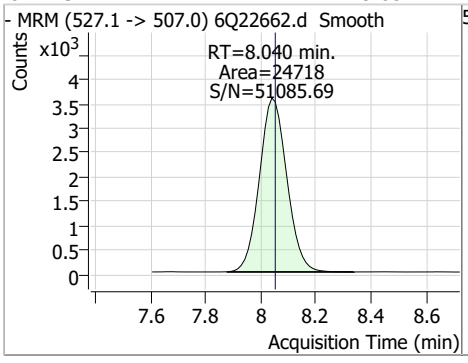
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.10	8.04	-0.01	4689				

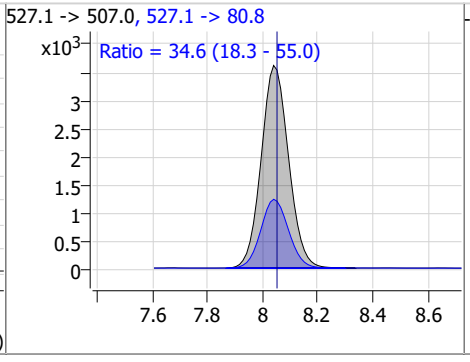


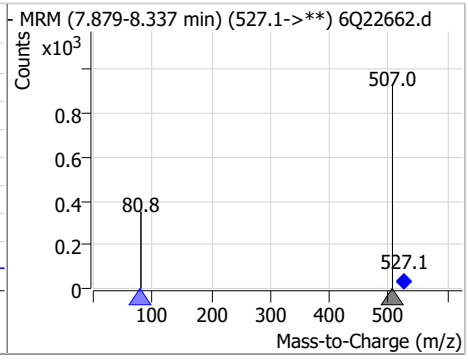




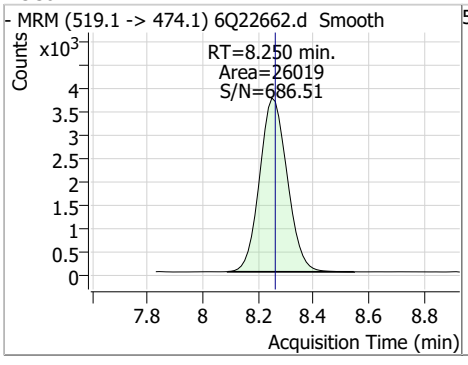
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.85	8.04	-0.01	24718	527.1 -> 80.8	34.6	18.3	55.0

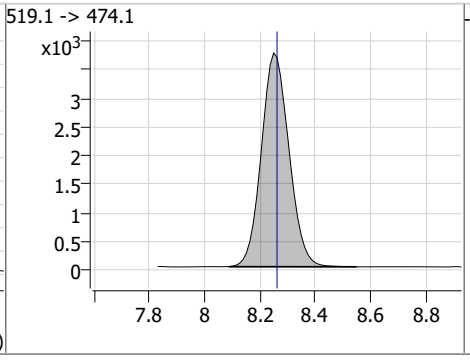


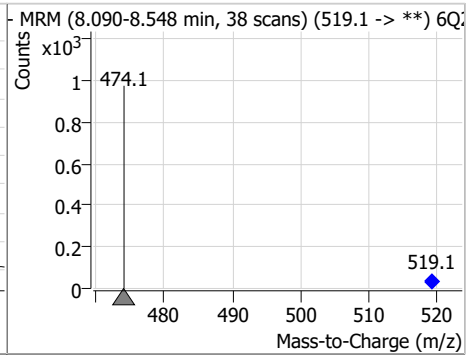




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.25	-0.01	26019				

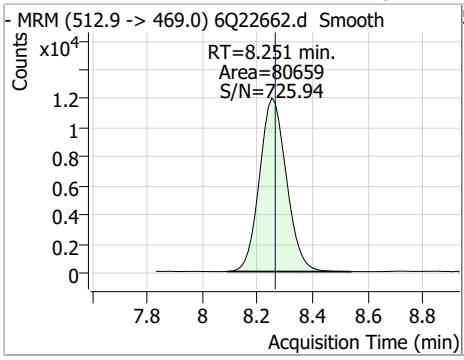


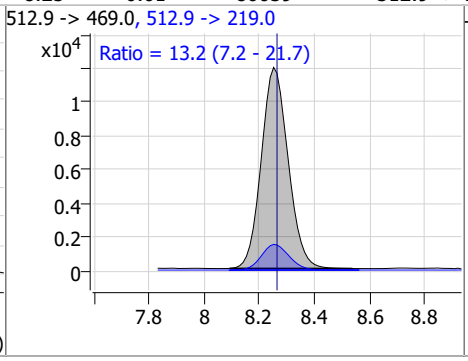


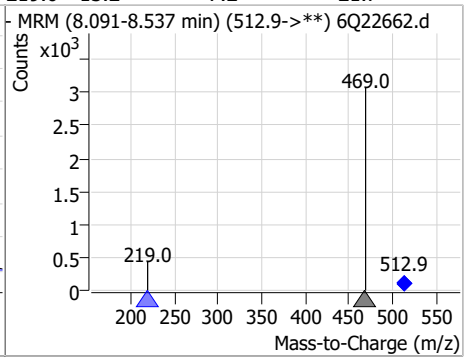


Perfluorinated Compounds by LC/MS/MS

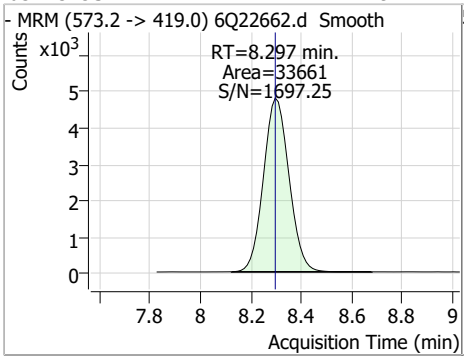
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.62	8.25	-0.01	80659	512.9 -> 219.0	13.2	7.2	21.7

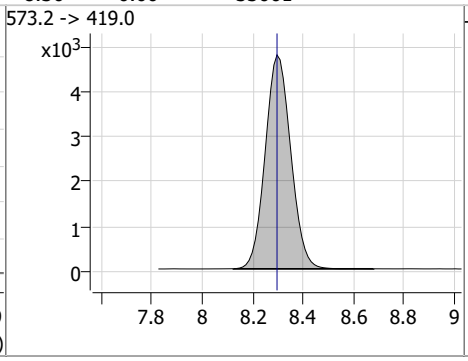


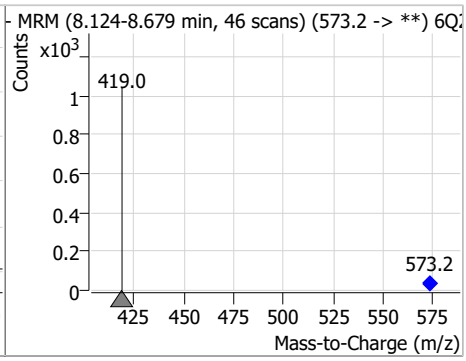




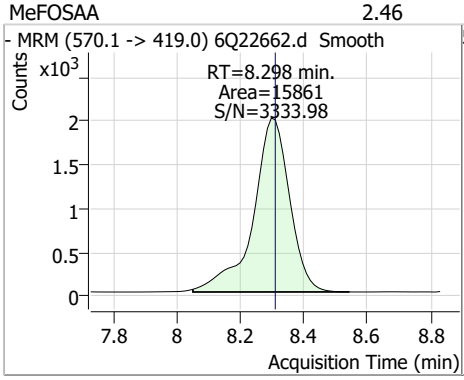
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.91	8.30	0.00	33661				

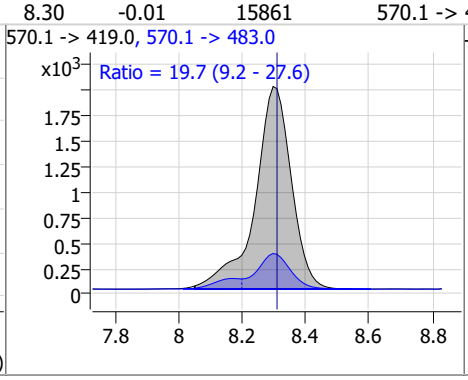


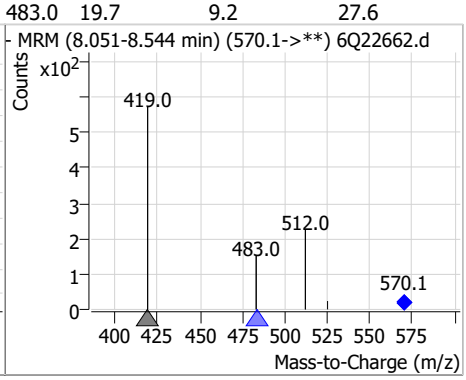




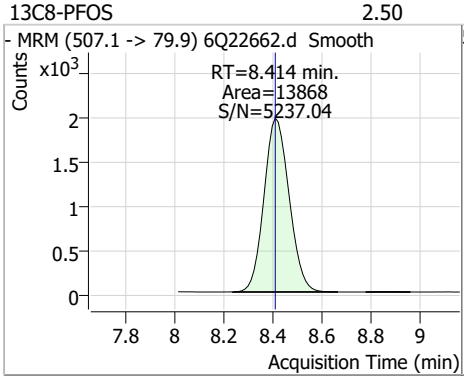
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.46	8.30	-0.01	15861	570.1 -> 483.0	19.7	9.2	27.6

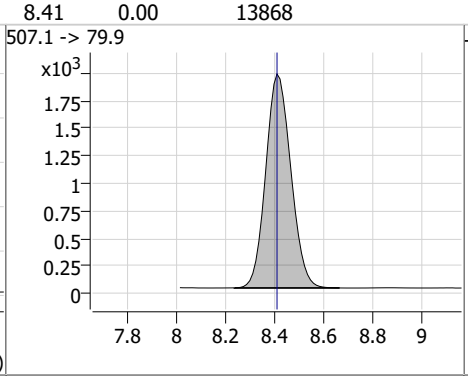


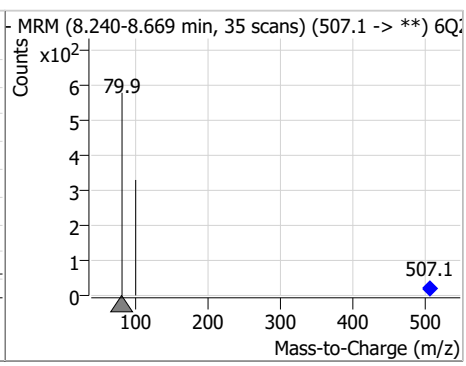




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.50	8.41	0.00	13868				

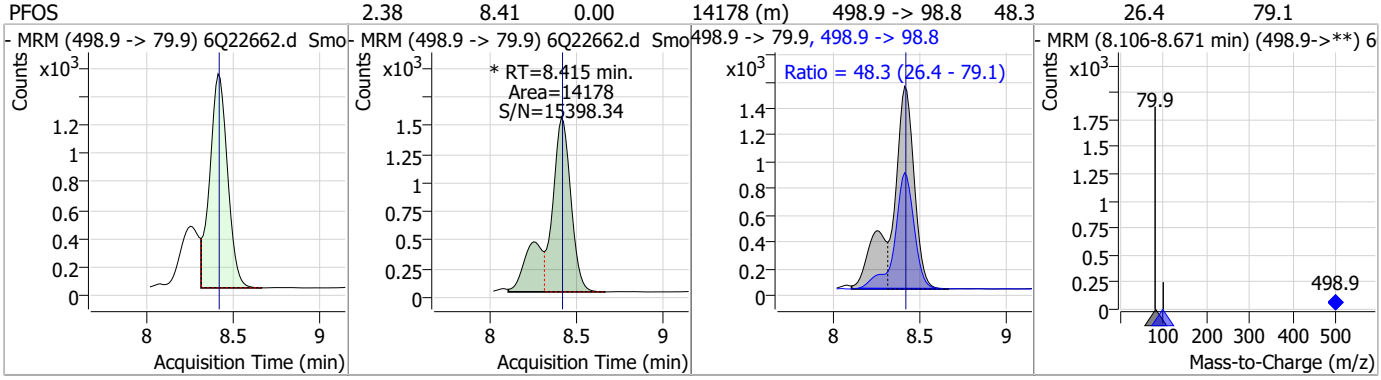




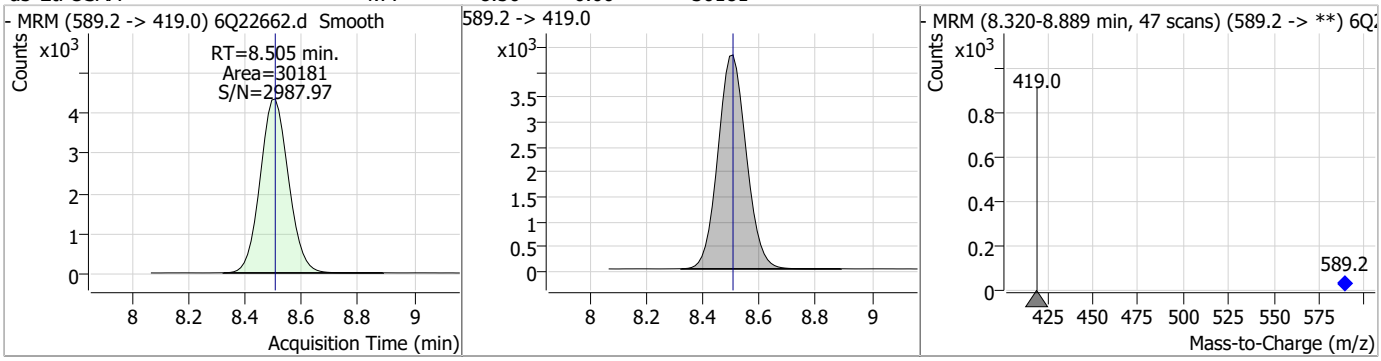


Perfluorinated Compounds by LC/MS/MS

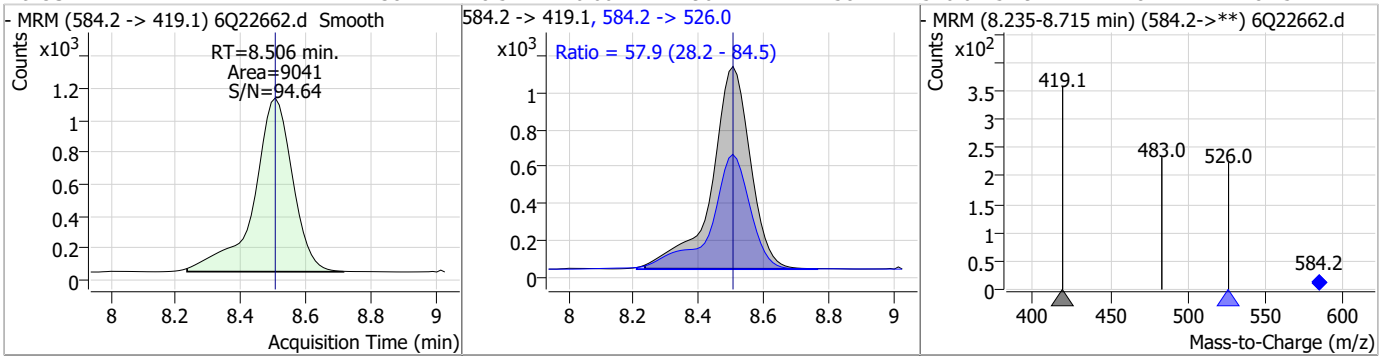
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.38	8.41	0.00	14178 (m)	498.9 -> 98.8	48.3	26.4	79.1



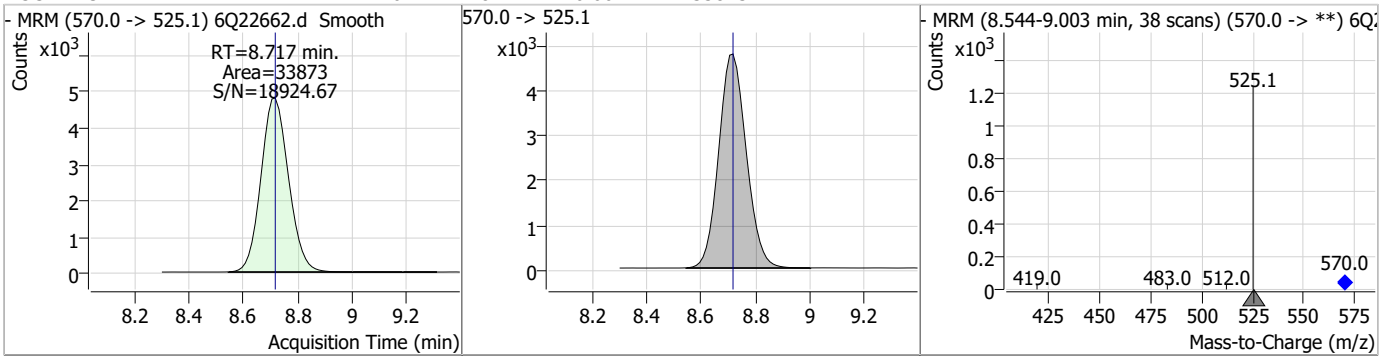
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.77	8.50	0.00	30181				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.38	8.51	0.00	9041	584.2 -> 526.0	57.9	28.2	84.5

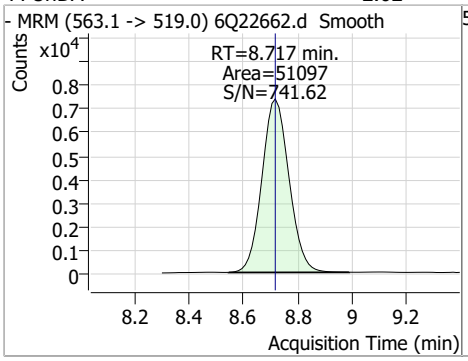


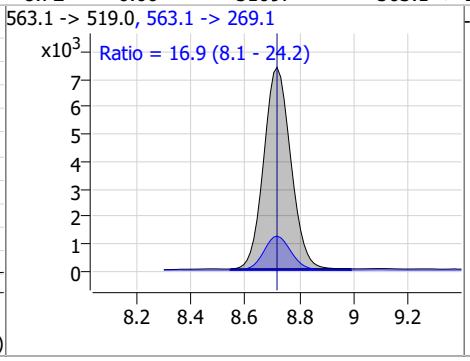
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.20	8.72	0.00	33873				

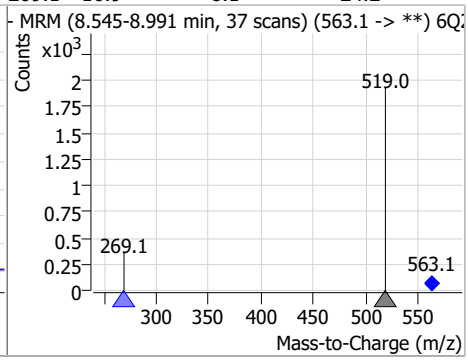


Perfluorinated Compounds by LC/MS/MS

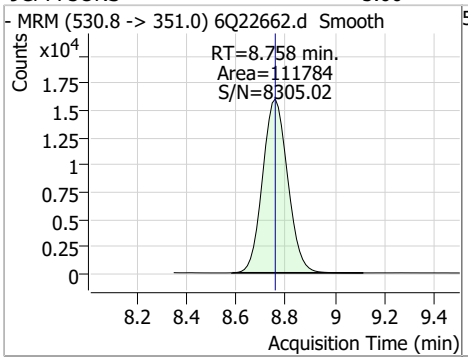
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.62	8.72	0.00	51097	563.1 -> 269.1	16.9	8.1	24.2

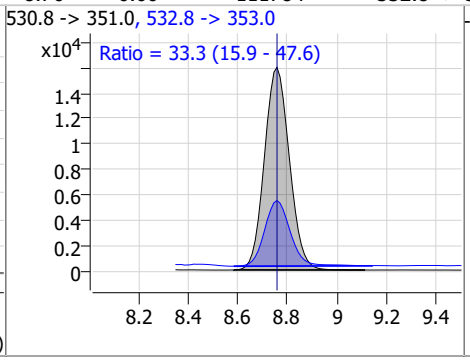


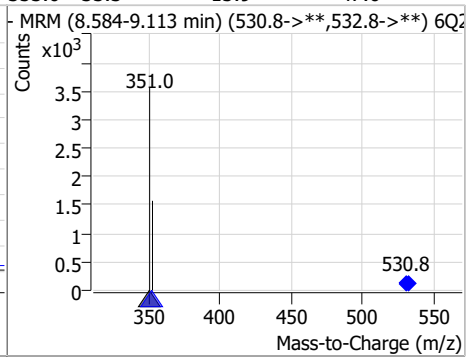




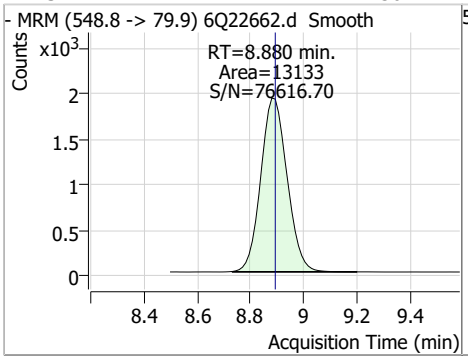
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.00	8.76	0.00	111784	532.8 -> 353.0	33.3	15.9	47.6

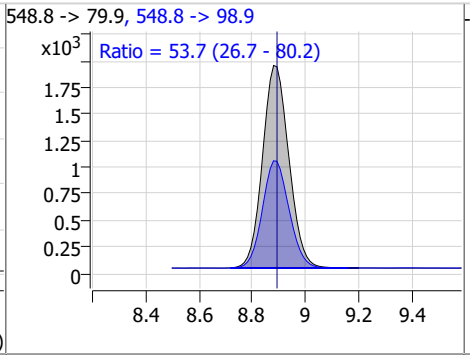


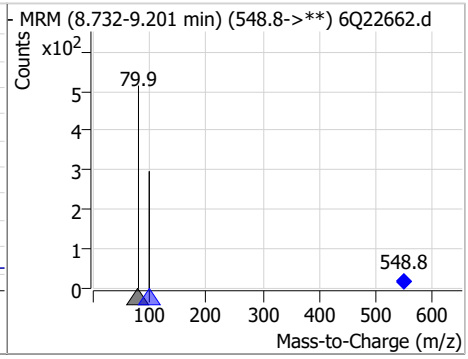




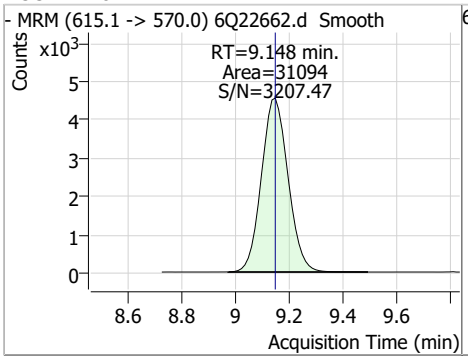
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.30	8.88	-0.01	13133	548.8 -> 98.9	53.7	26.7	80.2

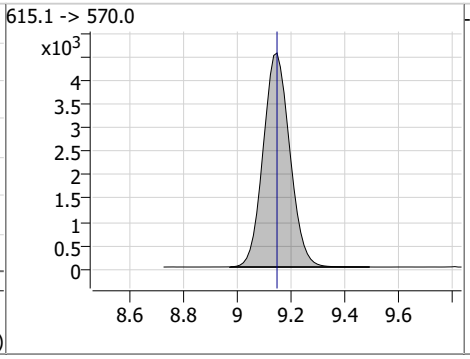


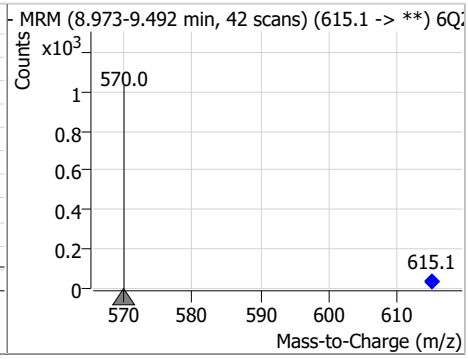




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.15	0.00	31094				

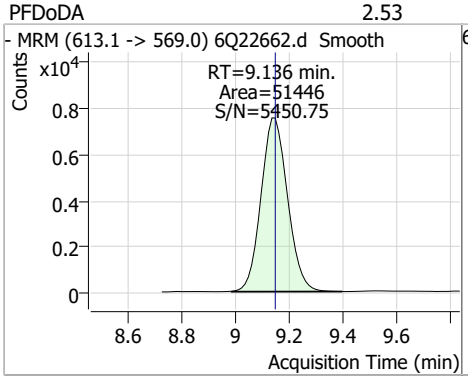


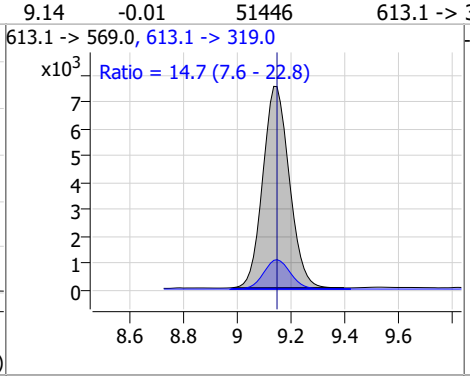


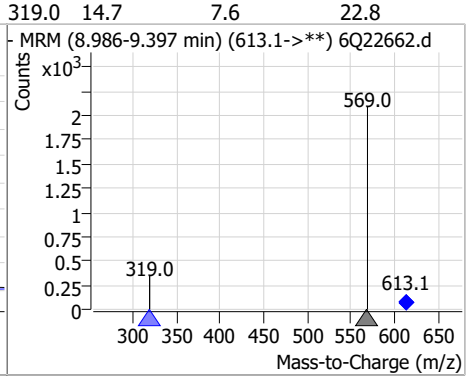


Perfluorinated Compounds by LC/MS/MS

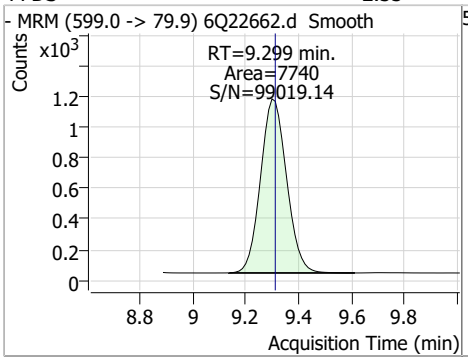
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.53	9.14	-0.01	51446	613.1 -> 319.0	14.7	7.6	22.8

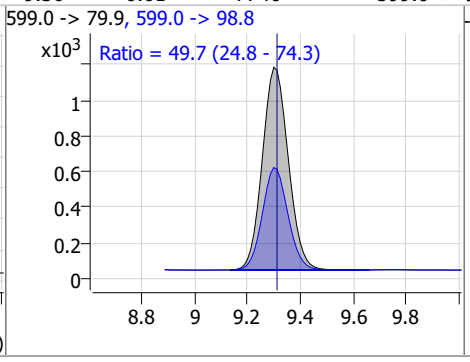


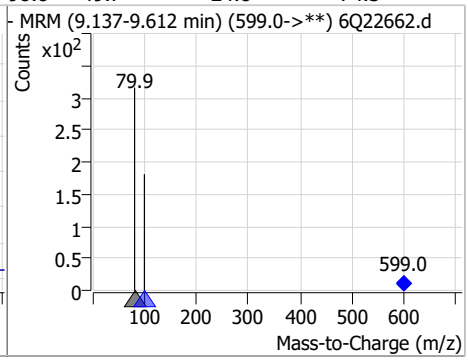




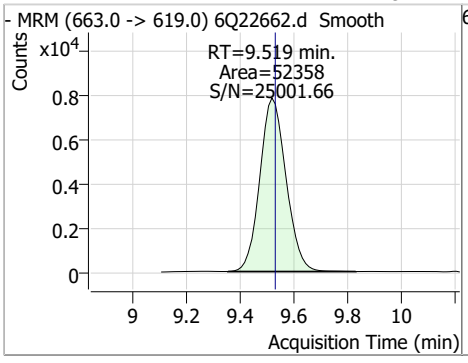
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.33	9.30	-0.01	7740	599.0 -> 98.8	49.7	24.8	74.3

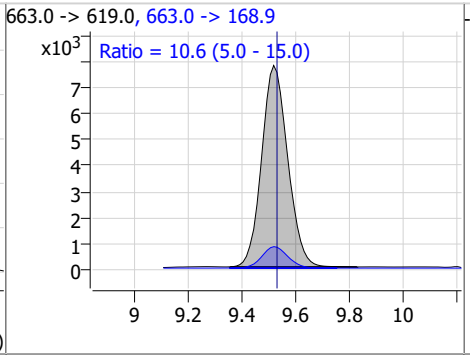


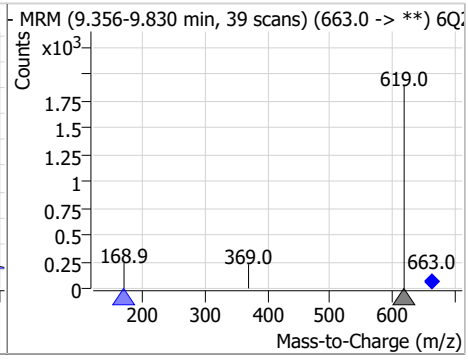




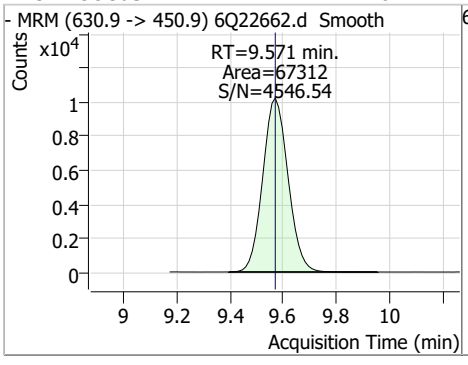
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.49	9.52	-0.01	52358	663.0 -> 168.9	10.6	5.0	15.0

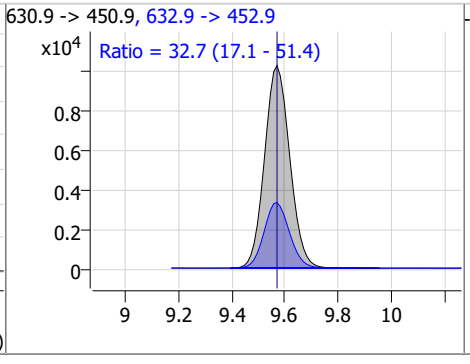


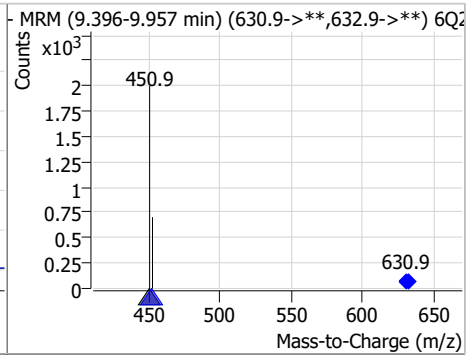




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.87	9.57	0.00	67312	632.9 -> 452.9	32.7	17.1	51.4

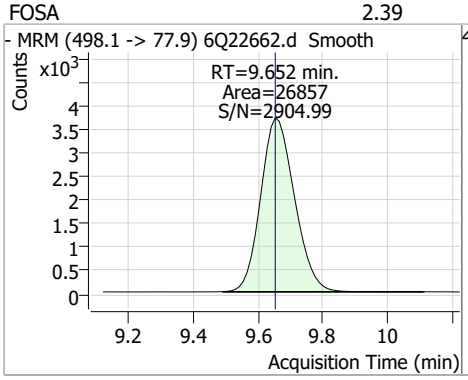


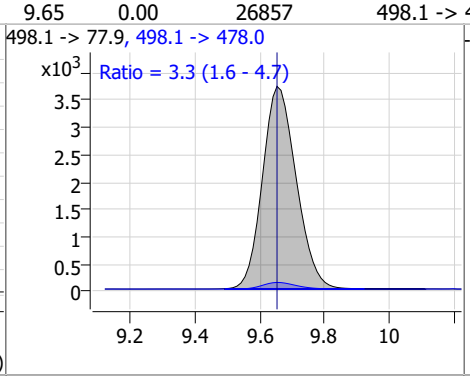


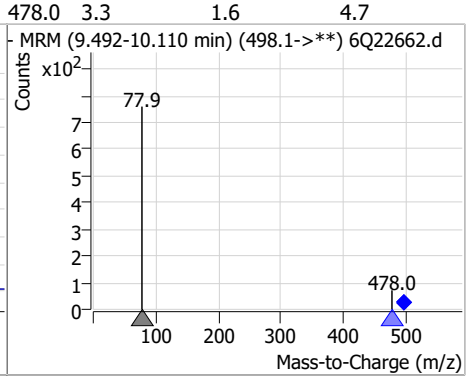


Perfluorinated Compounds by LC/MS/MS

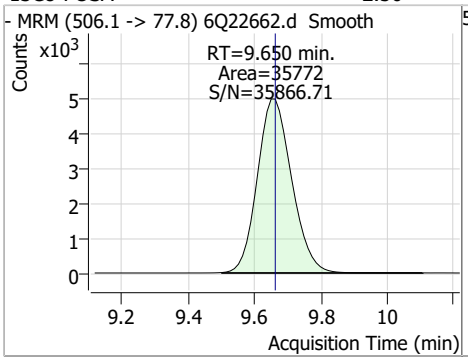
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.39	9.65	0.00	26857	498.1 -> 478.0	3.3	1.6	4.7

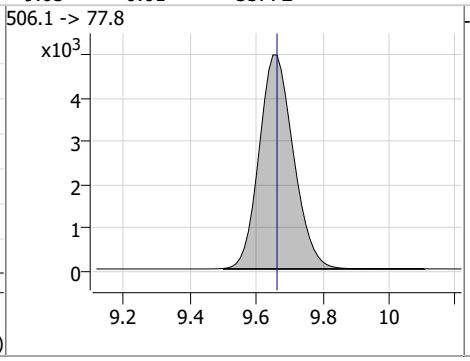


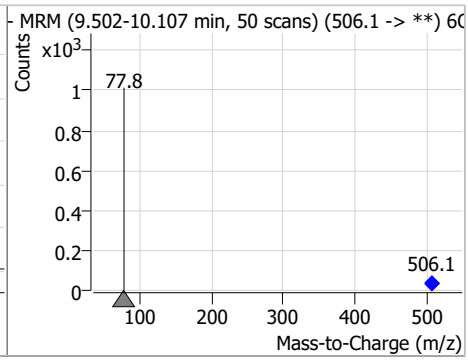




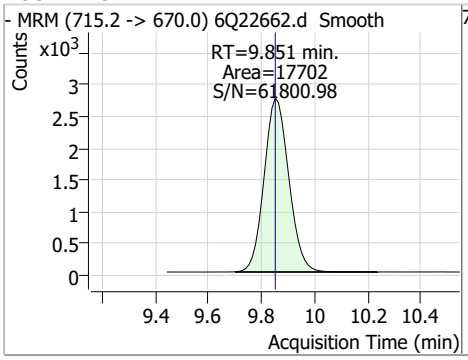
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.50	9.65	-0.01	35772				

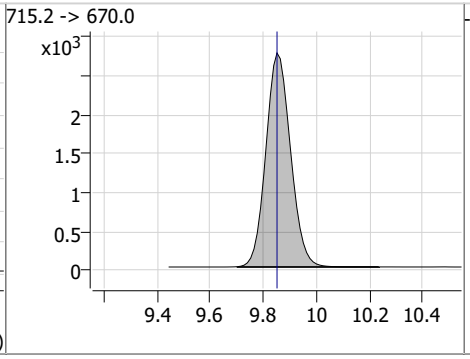


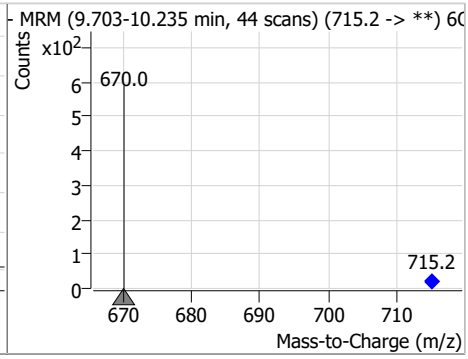




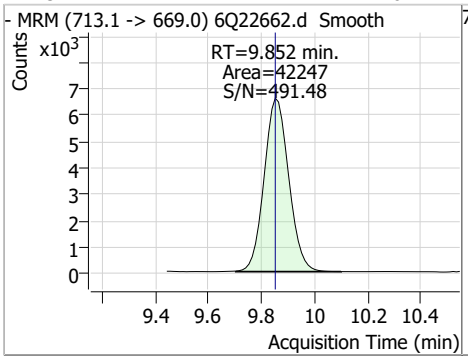
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.85	0.00	17702				

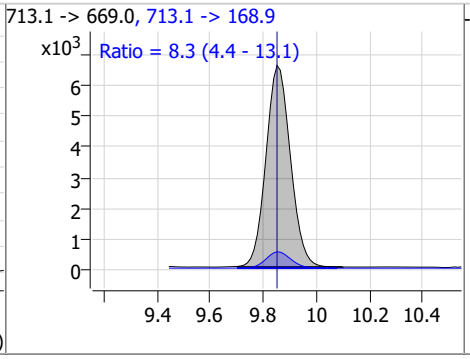


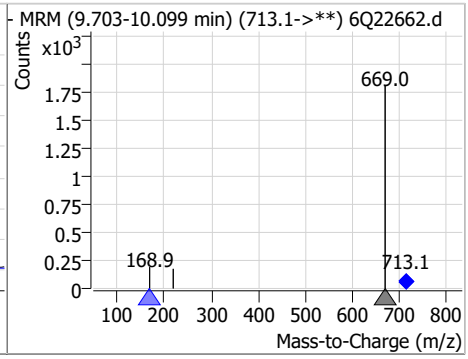




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.46	9.85	0.00	42247	713.1 -> 168.9	8.3	4.4	13.1

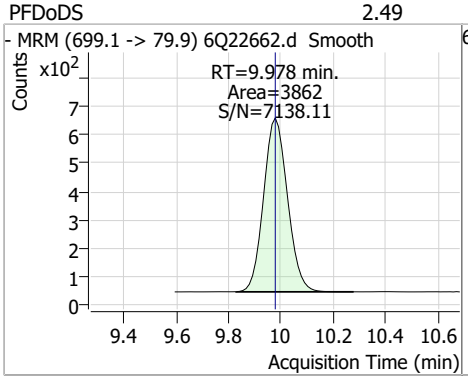


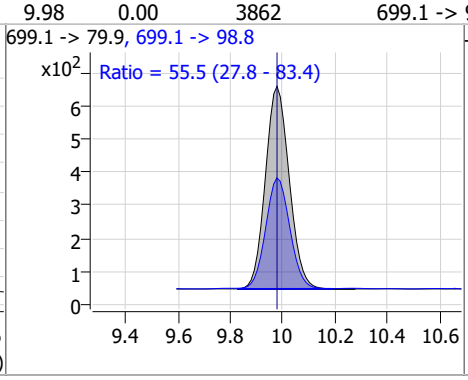


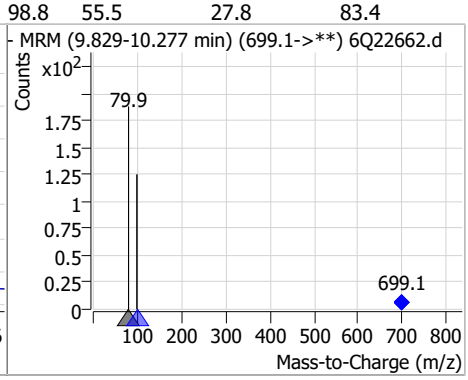


Perfluorinated Compounds by LC/MS/MS

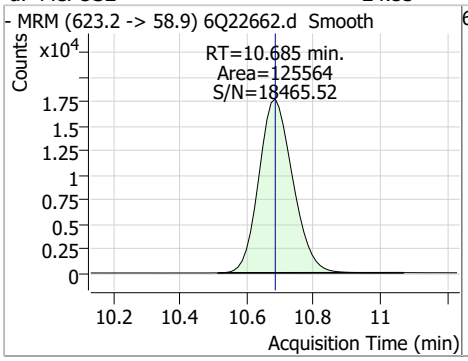
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.49	9.98	0.00	3862	699.1 -> 98.8	55.5	27.8	83.4

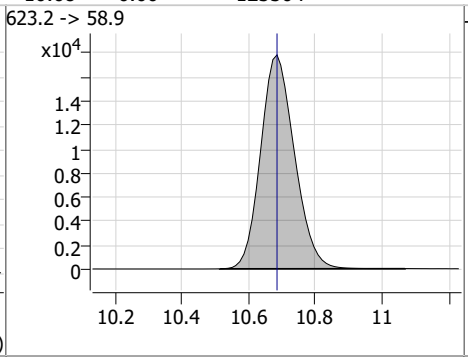


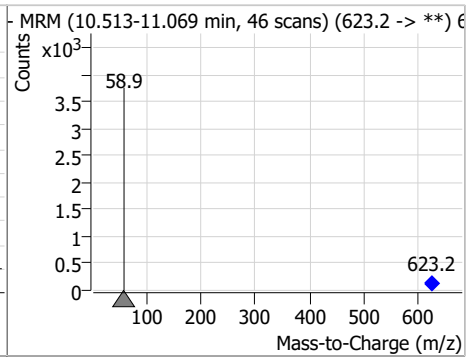




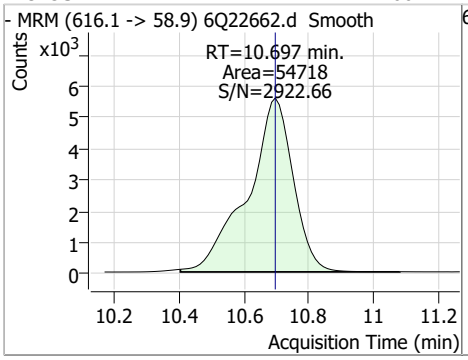
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.53	10.68	0.00	125564				

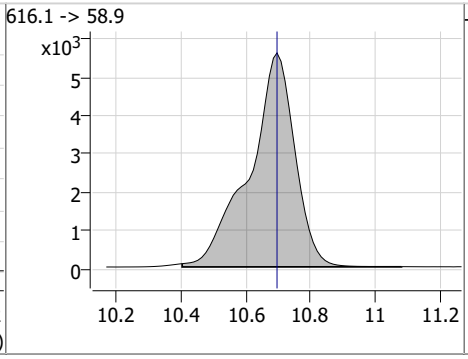


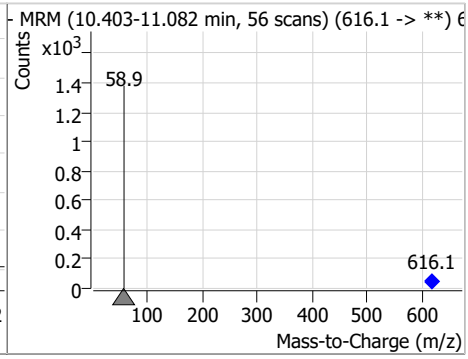




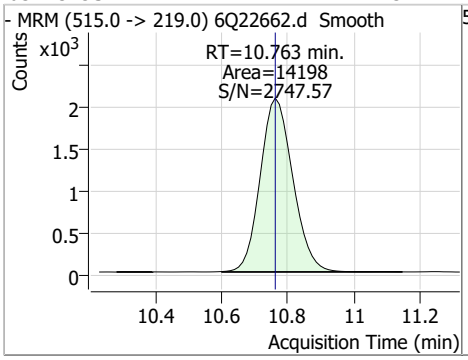
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.66	10.70	0.00	54718				

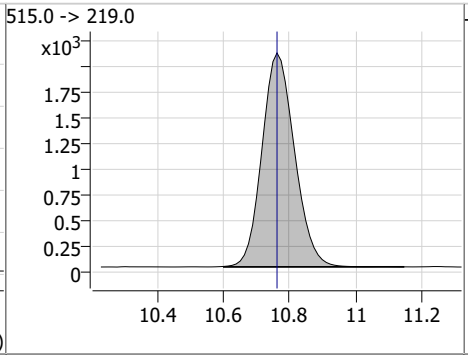


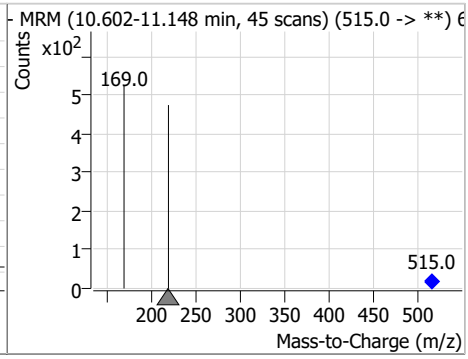




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.76	0.00	14198				

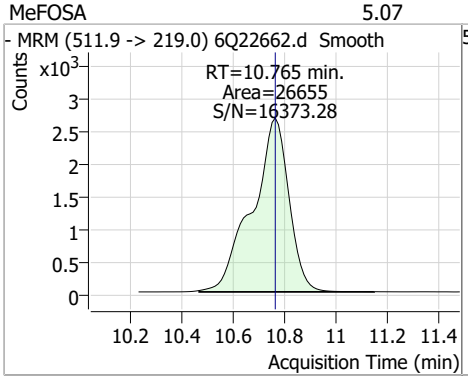


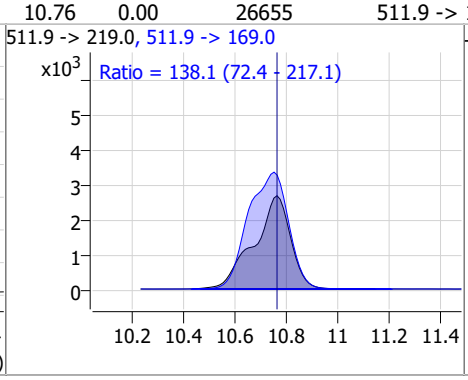


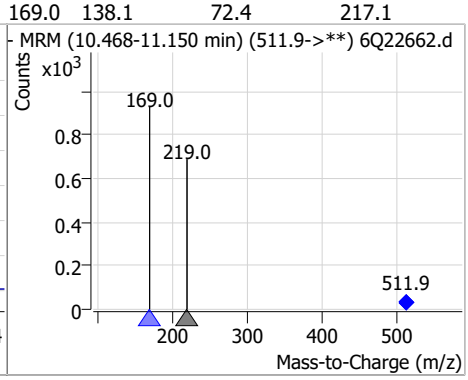


Perfluorinated Compounds by LC/MS/MS

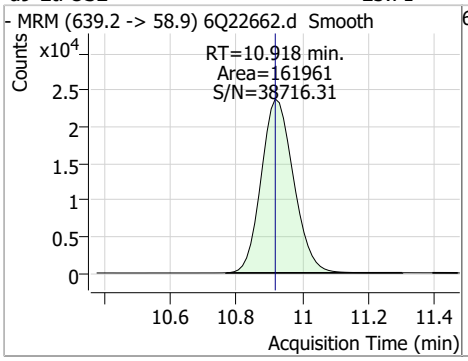
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.07	10.76	0.00	26655	511.9 -> 169.0	138.1	72.4	217.1

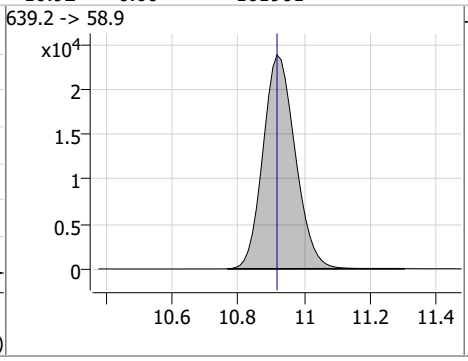


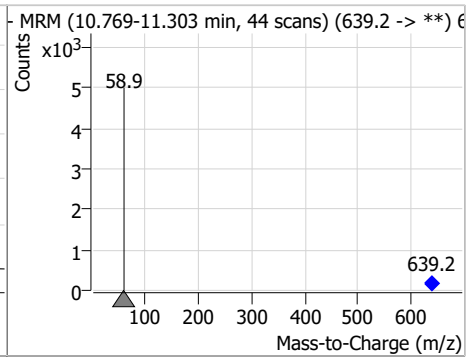




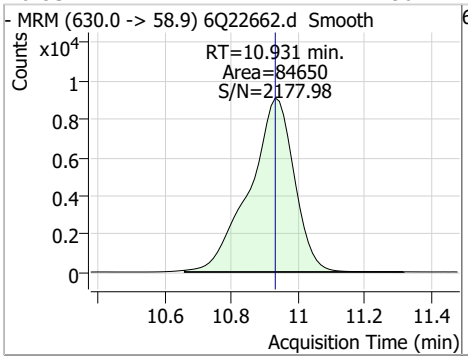
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.71	10.92	0.00	161961				

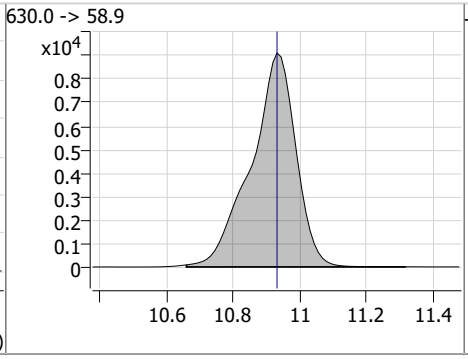


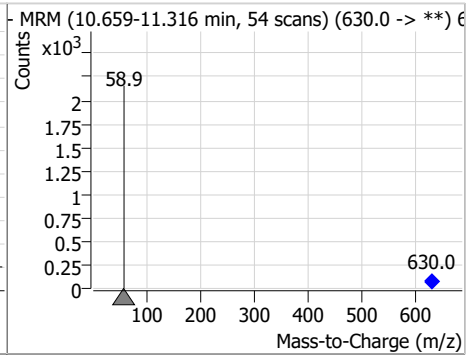




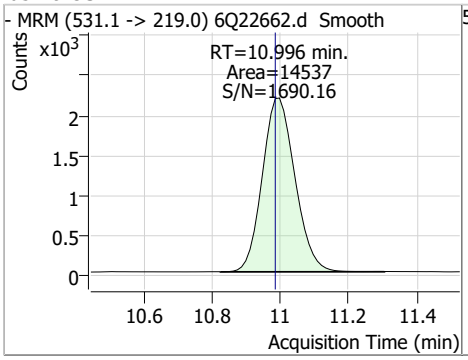
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.90	10.93	0.00	84650				

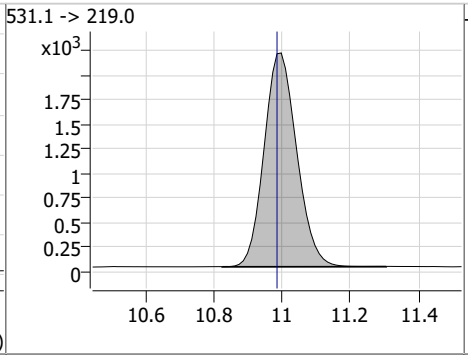


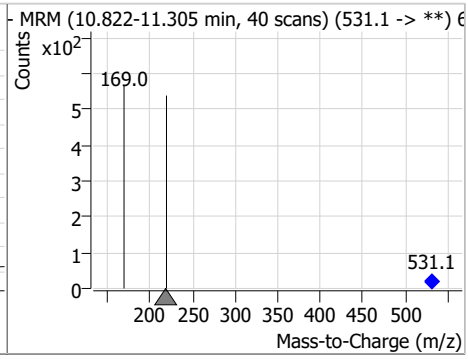




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	11.00	0.01	14537				

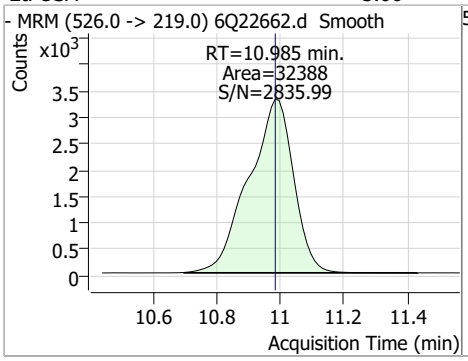


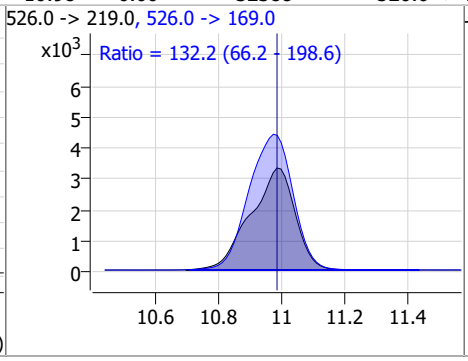


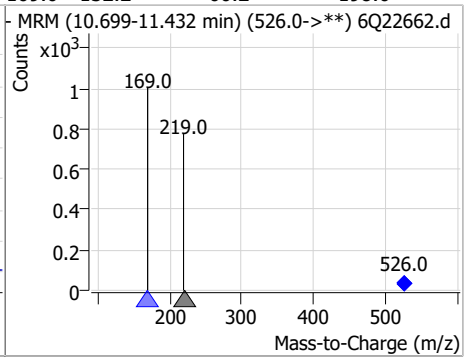


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.06	10.98	0.00	32388	526.0 -> 169.0	132.2	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-CC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22662.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/10/23 18:53	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22674.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/10/2023 9:45:21 PM
Sample Name : cc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	183206	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	58900	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	63498	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	61503	2.50	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	99297	2.50	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	45269	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	25613	1.25	µg/L	-0.012
M7-PFUnDA	8.717	570.0 -> 525.1	35946	1.25	µg/L	0.000
M2-PFDoDA	9.135	615.1 -> 570.0	30558	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	16958	1.25	µg/L	0.000
M8-FOSA	9.662	506.1 -> 77.8	33649	2.50	µg/L	0.000
M3-PFBS	5.610	302.1 -> 79.9	23438	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	14763	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13864	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3656	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	4903	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	4836	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	33248	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	40204	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	31254	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	123173	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	165765	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	14216	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	13744	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	17674	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	77746	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11203	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	101210	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	37081	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	53623	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	61482	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3656	5.46	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C2-6:2FTS	7.001	429.1 -> 80.9	4903	5.07	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-8:2FTS	8.039	529.1 -> 80.9	4836	5.11	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C2-PFDoDA	9.135	615.1 -> 570.0	30558	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-PFTeDA	9.851	715.2 -> 670.0	16958	1.18	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C3-PFBS	5.610	302.1 -> 79.9	23438	2.46	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFHxS	7.355	402.1 -> 79.9	14763	2.40	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 = 95.9%	
13C4-PFBA	3.010	216.8 -> 171.9	183206	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.596	367.1 -> 322.0	61503	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFHxA	5.668	318.0 -> 273.0	63498	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.447	268.3 -> 223.0	58900	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.250	519.1 -> 474.1	25613	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C7-PFUnDA	8.717	570.0 -> 525.1	35946	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-FOSA	9.662	506.1 -> 77.8	33649	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	7.239	421.1 -> 376.0	99297	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-PFOS	8.414	507.1 -> 79.9	13864	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C9-PFNA	7.758	472.1 -> 427.0	45269	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
d3-MeFOSAA	8.297	573.2 -> 419.0	33248	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	40204	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.763	515.0 -> 219.0	13744	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSAA	8.492	589.2 -> 419.0	31254	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d7-MeFOSE	10.685	623.2 -> 58.9	123173	25.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d9-EtFOSE	10.918	639.2 -> 58.9	165765	26.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d5-EtFOSA	10.996	531.1 -> 219.0	14216	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	42413	8.97 µg/L	100
		327.1 -> 80.9	16646		
6:2FTS	7.002	427.1 -> 407.0	46930	10.70 µg/L	94
		427.1 -> 80.9	14271		
8:2FTS	8.040	527.1 -> 507.0	24614	9.51 µg/L	94
		527.1 -> 80.8	9858		
EtFOSAA	8.506	584.2 -> 419.1	9940	2.52 µg/L	90
		584.2 -> 526.0	4836		
FOSA	9.652	498.1 -> 77.9	26747	2.53 µg/L	99
		498.1 -> 478.0	947		
MeFOSAA	8.298	570.1 -> 419.0	15733	2.48 µg/L	100
		570.1 -> 483.0	2866		
PFBA	3.006	212.8 -> 168.9	57820	10.10 µg/L	100
PFBS	5.611	298.7 -> 79.9	16343	2.13 µg/L	94
		298.7 -> 98.8	6713		
PFDA	8.251	512.9 -> 469.0	75816	2.50 µg/L	99
		512.9 -> 219.0	11289		
PFDoDA	9.148	613.1 -> 569.0	48564	2.43 µg/L	98
		613.1 -> 319.0	7747		
PFDS	9.299	599.0 -> 79.9	7786	2.34 µg/L	98

Perfluorinated Compounds by LC/MS/MS

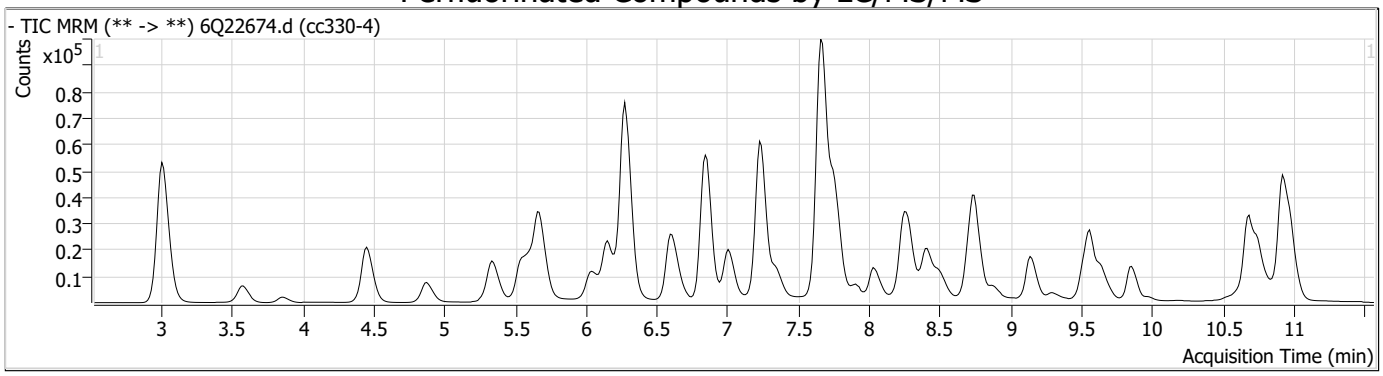
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	3736				
PFHpA	6.609	363.1 -> 319.0	62052	2.56	µg/L		99
		363.1 -> 169.0	10049				
PFHpS	7.909	449.0 -> 79.9	14235	2.25	µg/L		97
		449.0 -> 98.9	7885				
PFHxA	5.670	313.0 -> 269.0	49922	2.69	µg/L		99
		313.0 -> 118.9	2458				
PFHxS	7.356	398.7 -> 79.9	14472	2.22	µg/L	m	95
		398.7 -> 98.9	7510				
PFNA	7.758	463.0 -> 419.0	76888	2.47	µg/L		99
		463.0 -> 219.0	14282				
PFNS	8.880	548.8 -> 79.9	13739	2.40	µg/L		98
		548.8 -> 98.9	7174				
PFOA	7.240	413.0 -> 369.0	98715	2.43	µg/L		97
		413.0 -> 169.0	17134				
PFOS	8.415	498.9 -> 79.9	13931	2.34	µg/L	m	100
		498.9 -> 98.8	7351				
PFPeA	4.449	263.0 -> 219.0	66056	5.09	µg/L		100
PFPeS	6.660	349.1 -> 79.9	14790	2.45	µg/L		98
		349.1 -> 98.9	6948				
PFTeDA	9.852	713.1 -> 669.0	42372	2.57	µg/L		99
		713.1 -> 168.9	3548				
PFTrDA	9.519	663.0 -> 619.0	52346	2.53	µg/L		97
		663.0 -> 168.9	5753				
PFUnDA	8.717	563.1 -> 519.0	48493	2.34	µg/L		98
		563.1 -> 269.1	8290				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	72021	5.02	µg/L		91
		632.9 -> 452.9	21116				
9Cl-PF3ONS	8.758	530.8 -> 351.0	115082	4.96	µg/L		99
		532.8 -> 353.0	35902				
ADONA	6.846	376.9 -> 250.9	237348	4.64	µg/L		97
		376.9 -> 84.8	66594				
HFPO-DA	6.046	284.9 -> 168.9	16918	4.95	µg/L		99
		284.9 -> 184.9	1752				
3:3FTCA	3.859	241.0 -> 177.0	11049	12.21	µg/L		99
		241.0 -> 117.0	1468				
5:3FTCA	6.272	341.0 -> 237.1	253353	66.32	µg/L		99
		341.0 -> 217.0	177434				
7:3FTCA	7.673	441.0 -> 316.9	182165	64.47	µg/L		92
		441.0 -> 336.9	390252				
EtFOSA	10.985	526.0 -> 219.0	32122	5.13	µg/L		96
		526.0 -> 169.0	41199				
EtFOSE	10.931	630.0 -> 58.9	86240	12.84	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	26540	5.21	µg/L		93
		511.9 -> 169.0	36132				
MeFOSE	10.697	616.1 -> 58.9	56519	12.27	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3719	2.40	µg/L		98
		699.1 -> 98.8	2021				
NFDHA	5.551	295.0 -> 201.0	12246	5.18	µg/L		95
		295.0 -> 84.9	3147				
PFMBA	4.869	279.0 -> 85.1	45991	5.01	µg/L		100
PFMPA	3.576	229.0 -> 84.9	37104	5.05	µg/L		100
PFEESA	6.151	314.8 -> 134.9	112116	4.49	µg/L		100
		314.8 -> 82.9	3878				

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

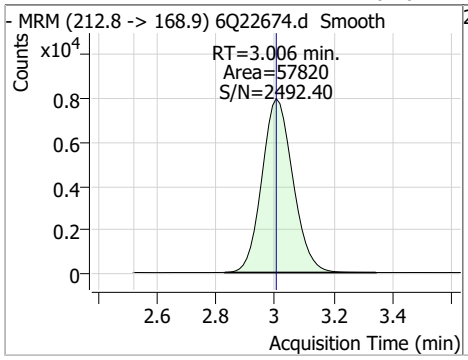
Perfluorinated Compounds by LC/MS/MS

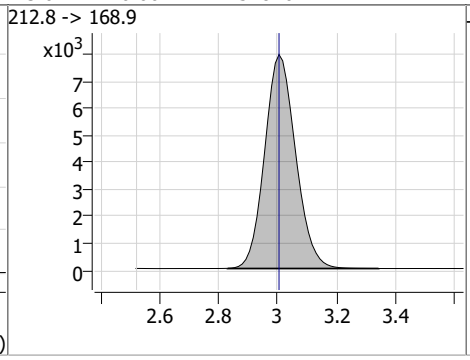
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

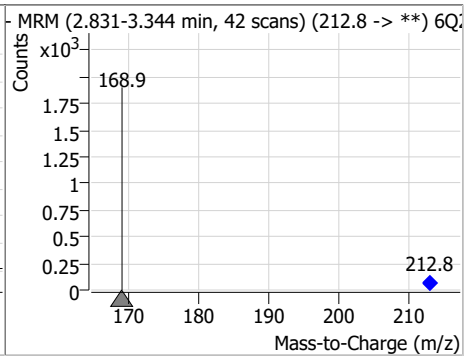
Perfluorinated Compounds by LC/MS/MS



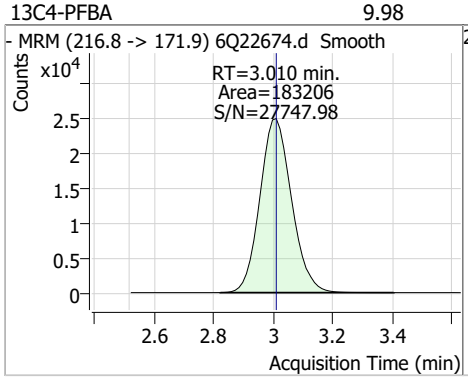
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.10	3.01	0.00	57820				

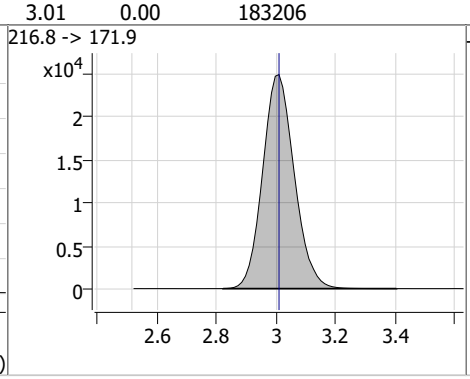


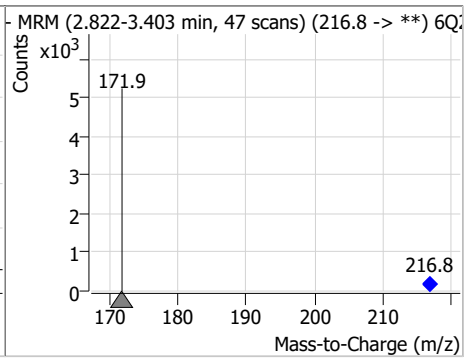




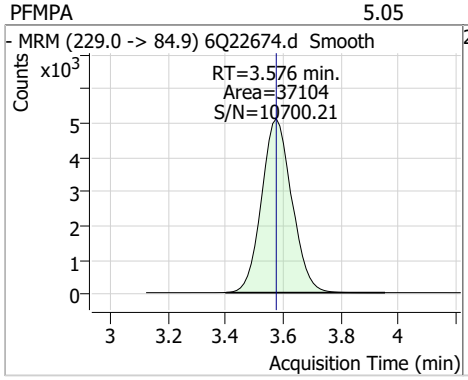
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.98	3.01	0.00	183206				

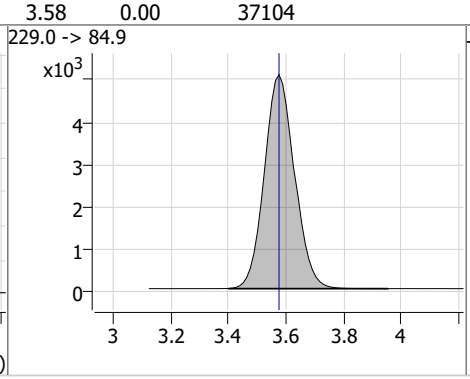


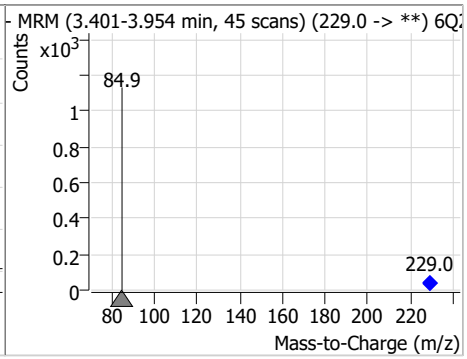




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.05	3.58	0.00	37104				

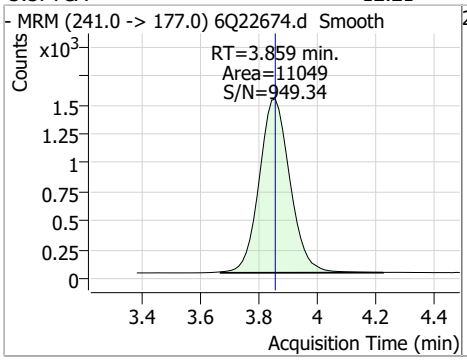


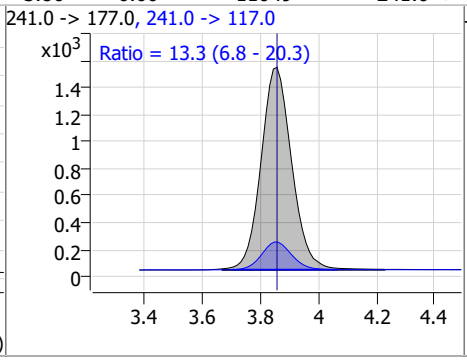


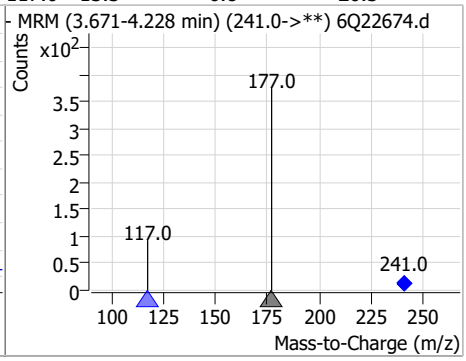


Perfluorinated Compounds by LC/MS/MS

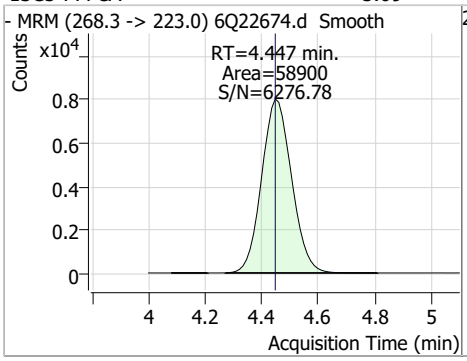
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.21	3.86	0.00	11049	241.0 -> 117.0	13.3	6.8	20.3

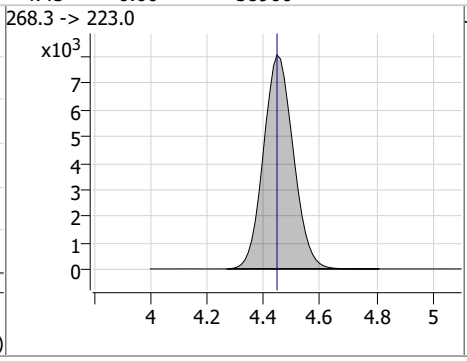


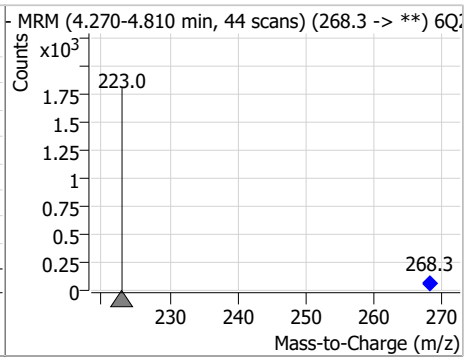




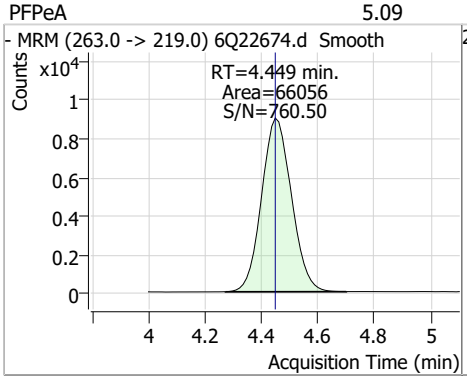
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.45	0.00	58900				

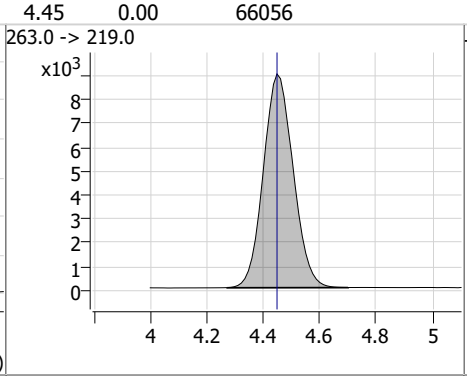


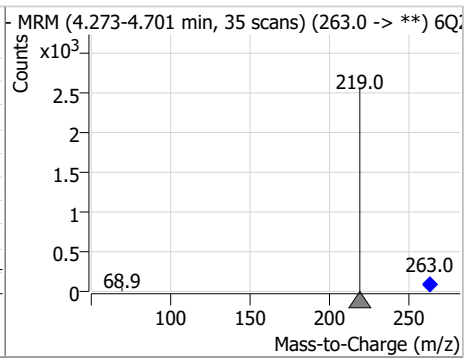




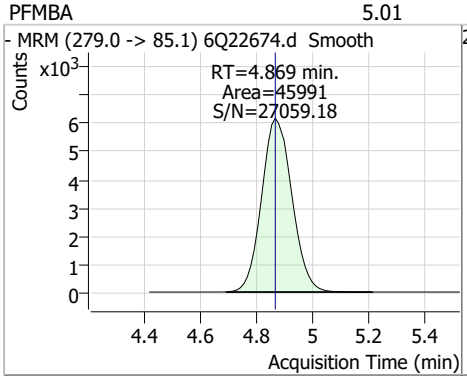
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.09	4.45	0.00	66056				

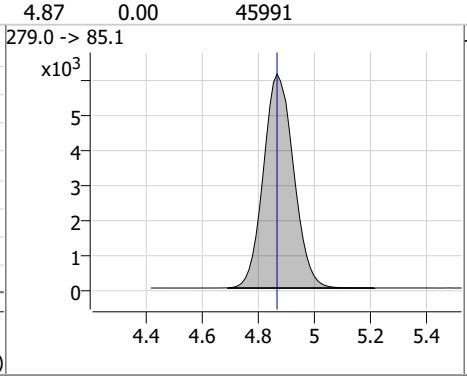


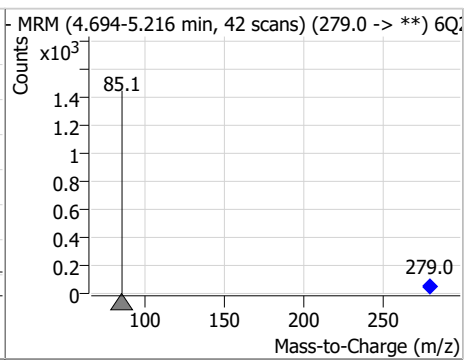




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.01	4.87	0.00	45991				

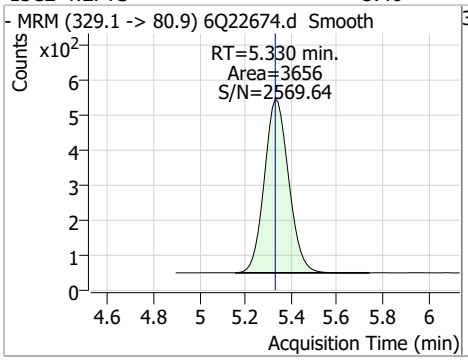


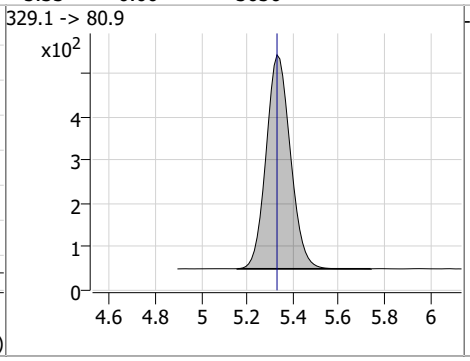


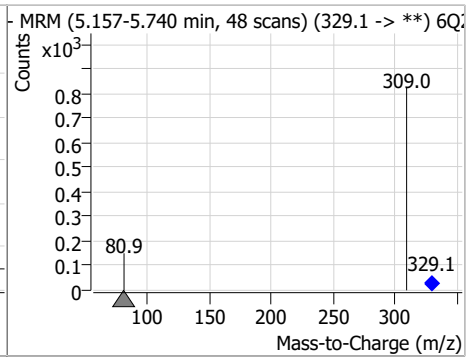


Perfluorinated Compounds by LC/MS/MS

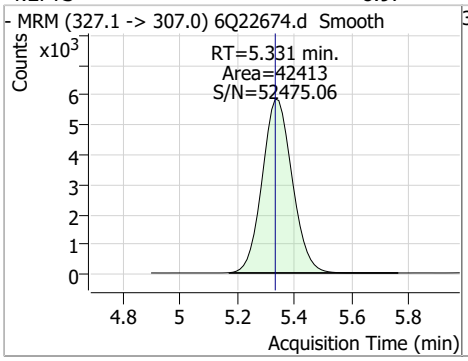
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.46	5.33	0.00	3656				

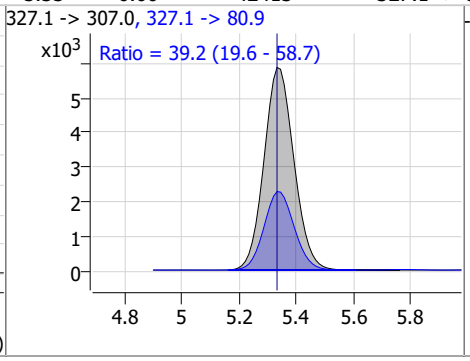


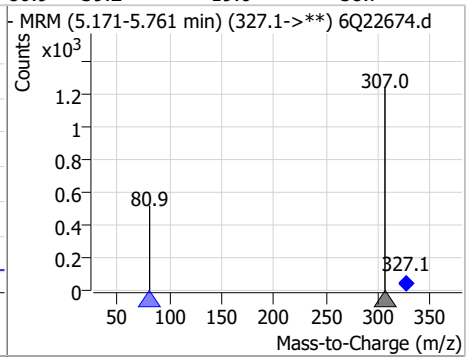




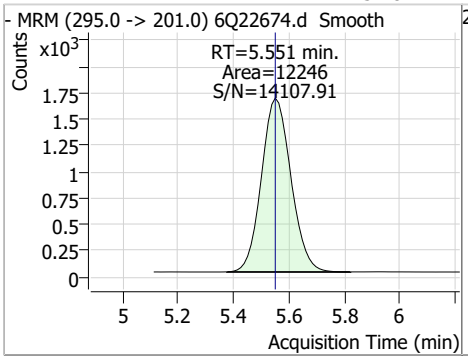
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.97	5.33	0.00	42413	327.1 -> 80.9	39.2	19.6	58.7

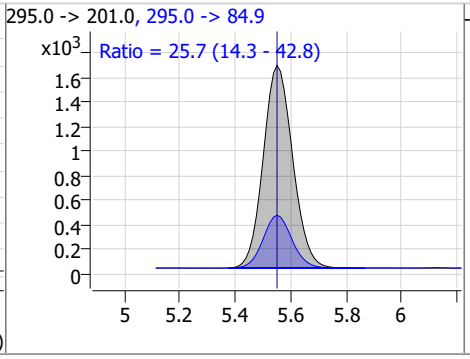


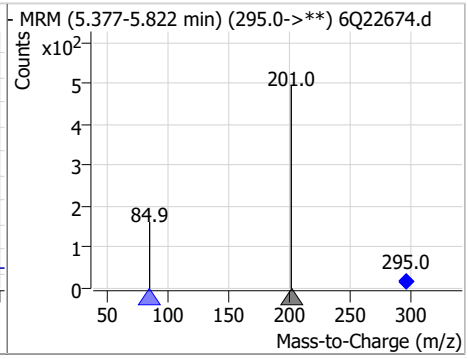




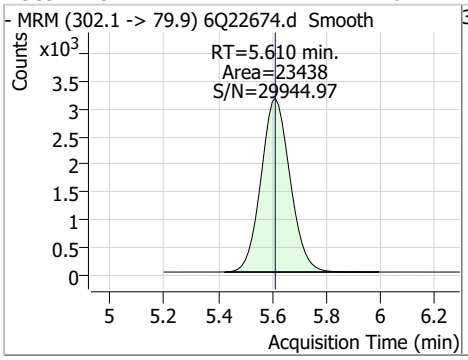
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.18	5.55	0.00	12246	295.0 -> 84.9	25.7	14.3	42.8

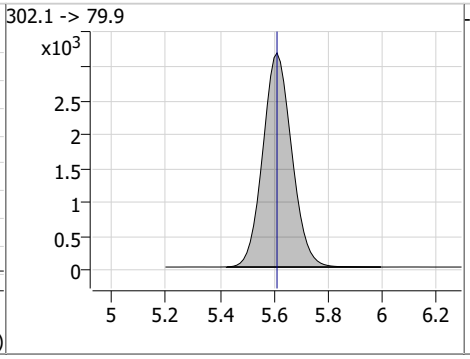


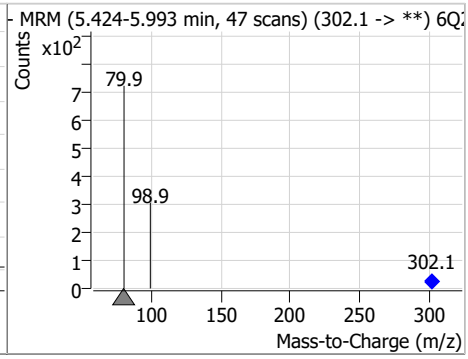




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.46	5.61	0.00	23438				

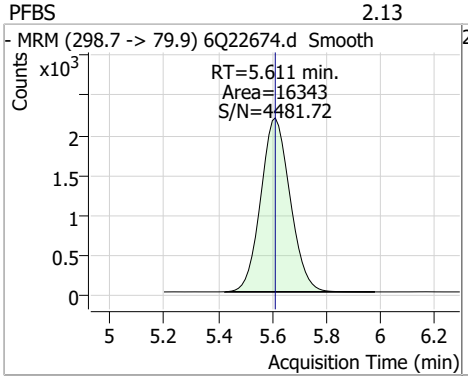


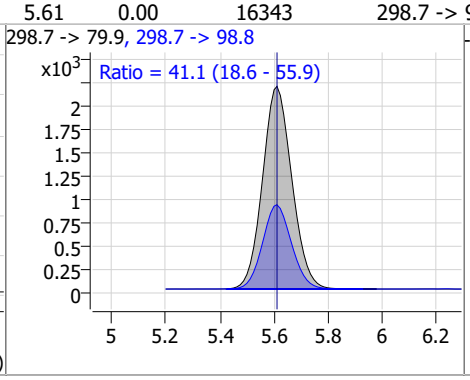


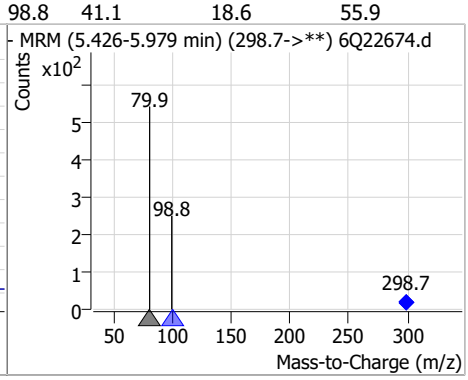


Perfluorinated Compounds by LC/MS/MS

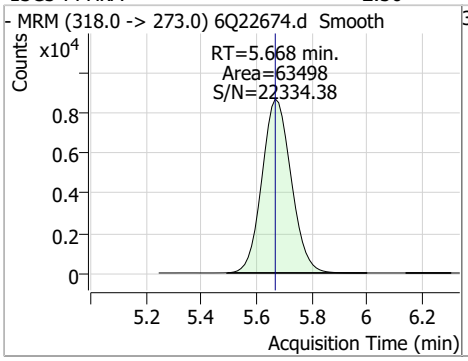
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.13	5.61	0.00	16343	298.7 -> 98.8	41.1	18.6	55.9

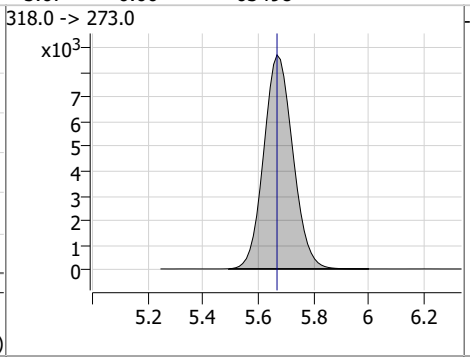


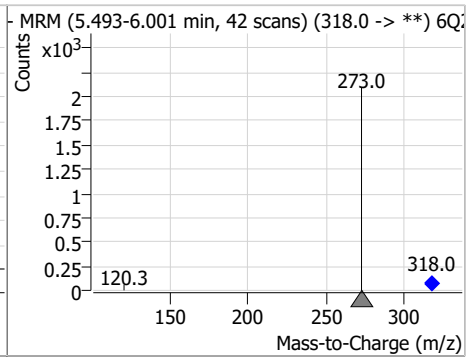




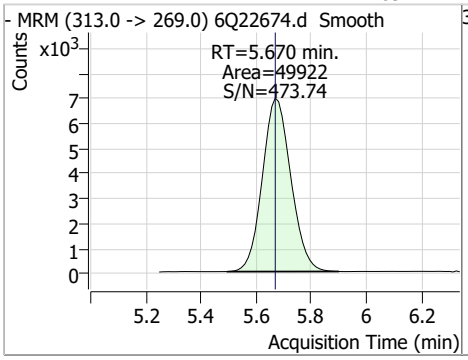
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.67	0.00	63498				

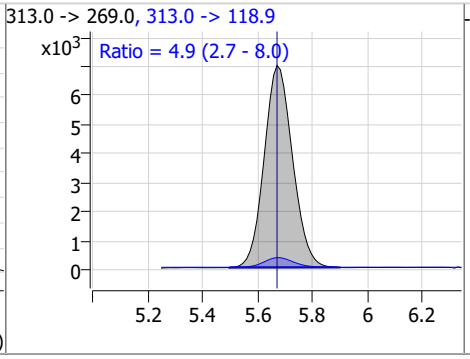


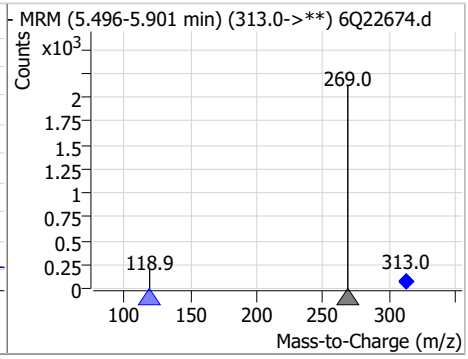




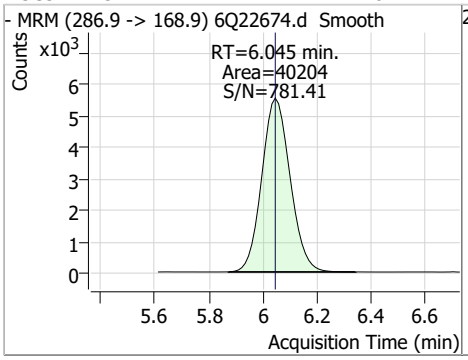
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.69	5.67	0.00	49922	313.0 -> 118.9	4.9	2.7	8.0

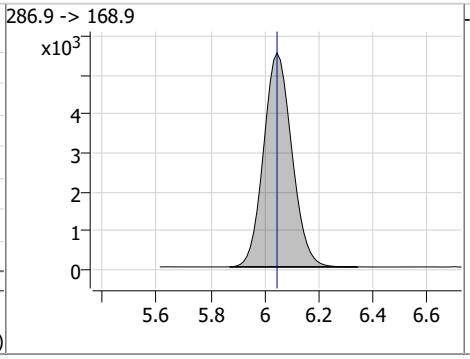


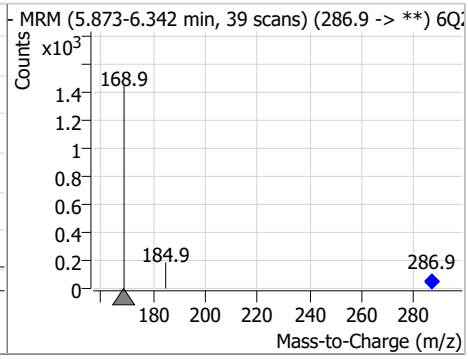




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.11	6.05	0.00	40204				

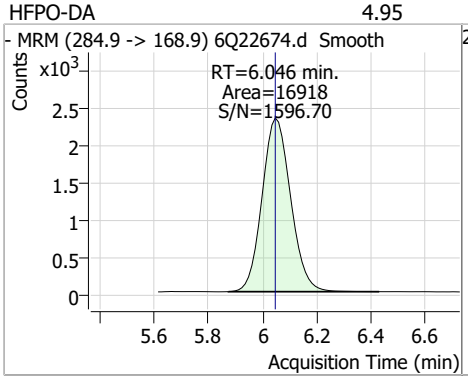


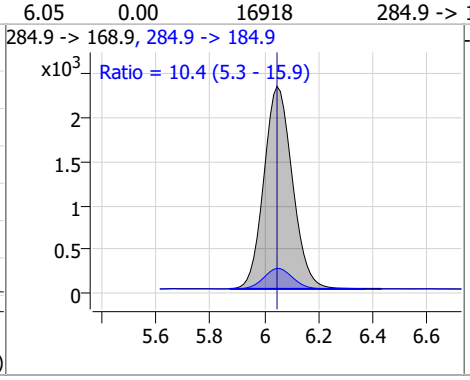


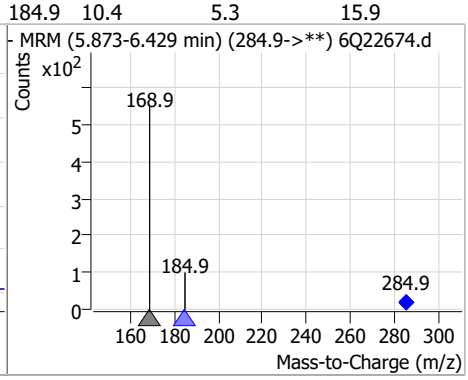


Perfluorinated Compounds by LC/MS/MS

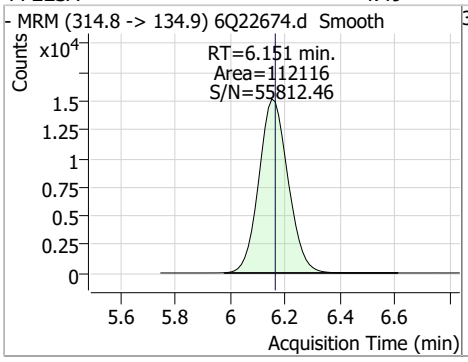
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.95	6.05	0.00	16918	284.9 -> 184.9	10.4	5.3	15.9

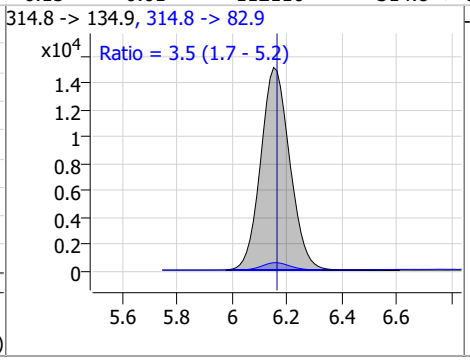


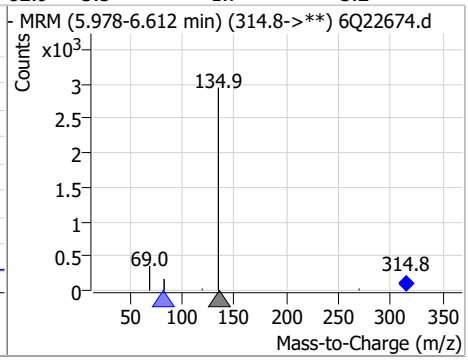




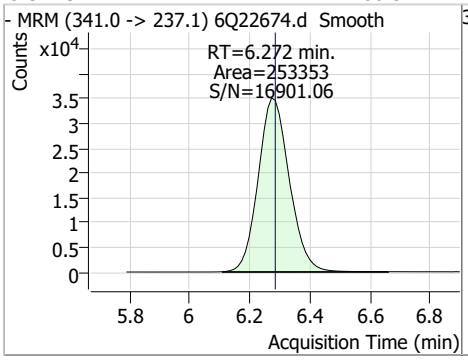
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.49	6.15	-0.01	112116	314.8 -> 82.9	3.5	1.7	5.2

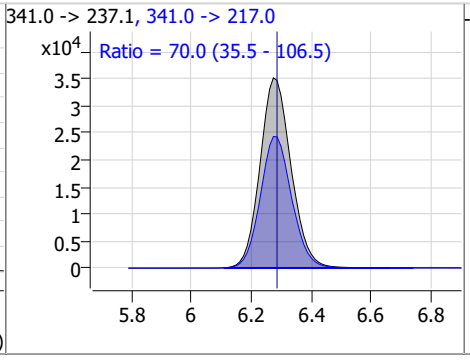


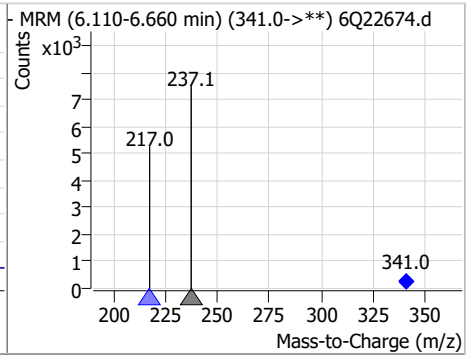




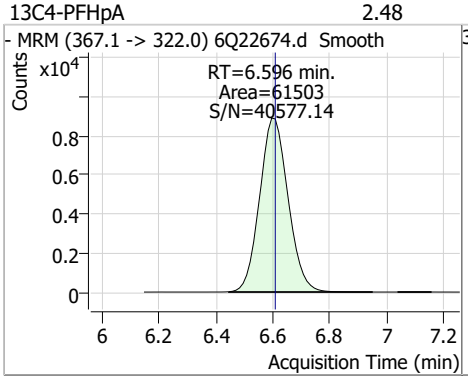
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	66.32	6.27	-0.01	253353	341.0 -> 217.0	70.0	35.5	106.5

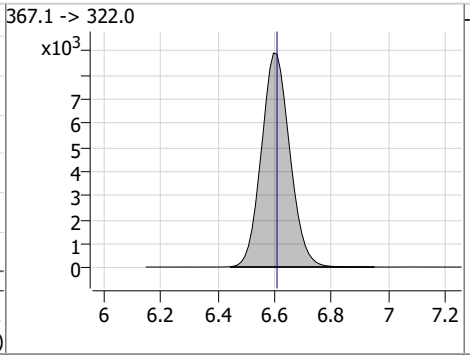


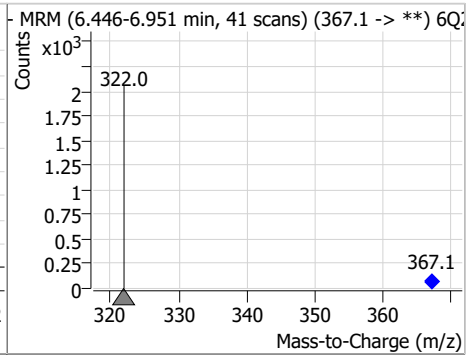




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.60	-0.01	61503				

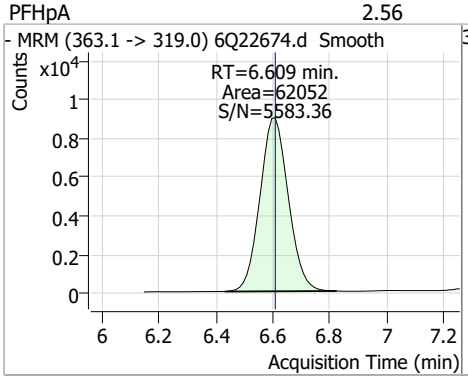


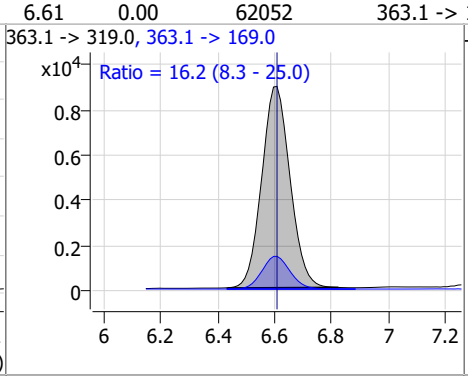


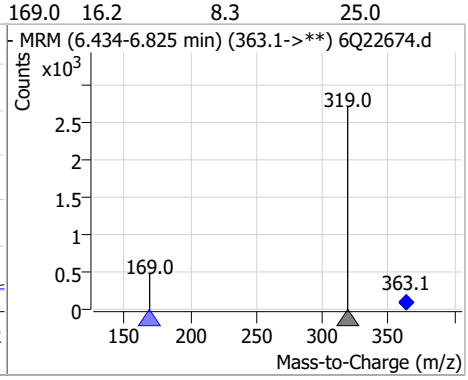


Perfluorinated Compounds by LC/MS/MS

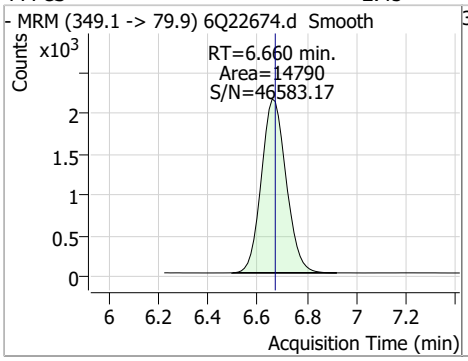
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.56	6.61	0.00	62052	363.1 -> 169.0	16.2	8.3	25.0

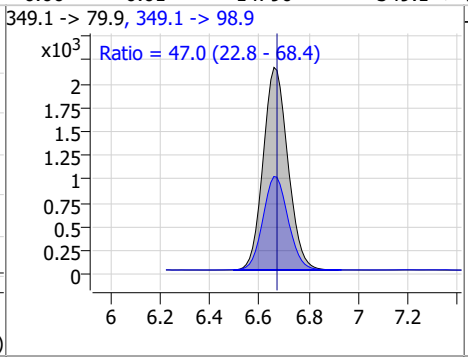


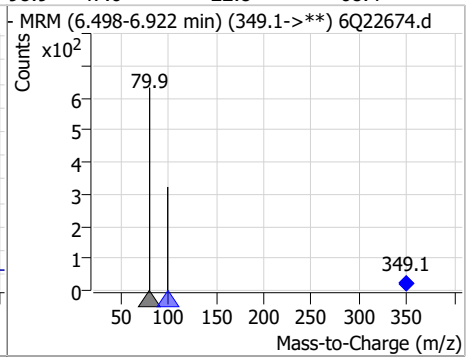




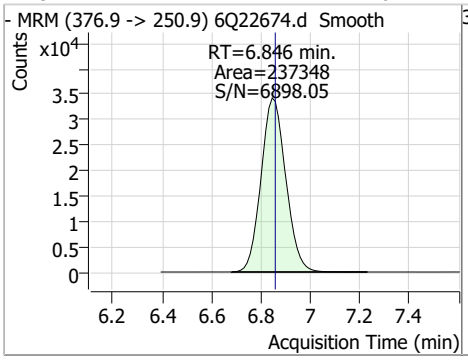
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.45	6.66	-0.01	14790	349.1 -> 98.9	47.0	22.8	68.4

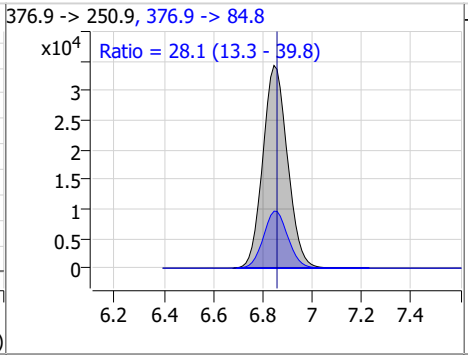


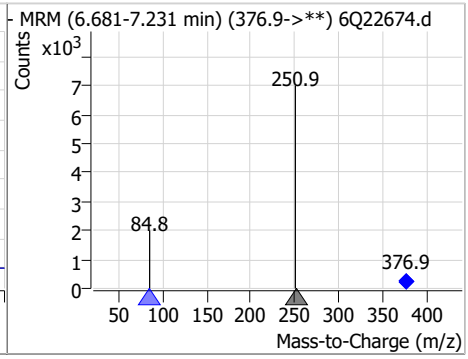




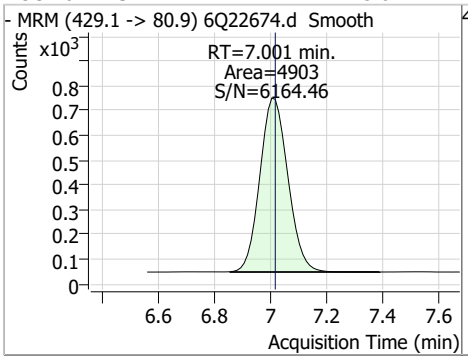
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.64	6.85	-0.01	237348	376.9 -> 84.8	28.1	13.3	39.8

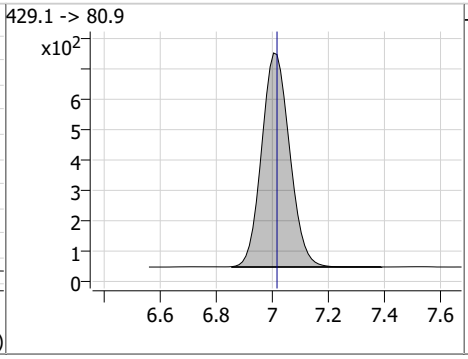


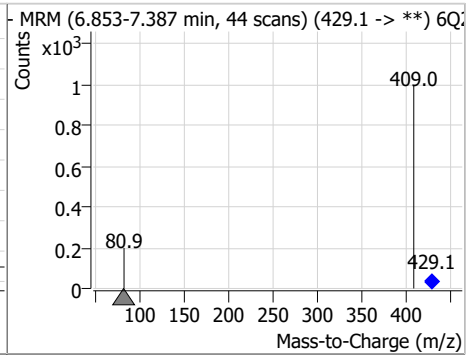




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.07	7.00	-0.01	4903				

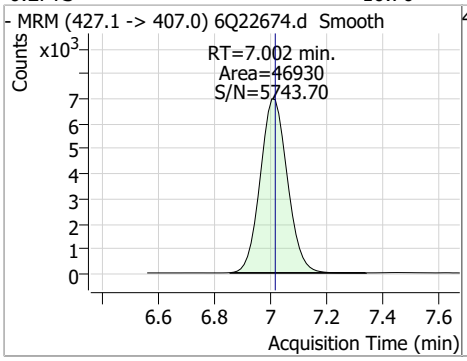


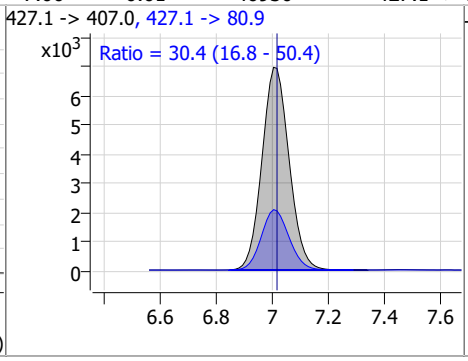


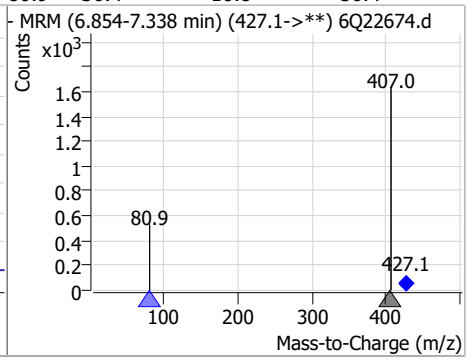


Perfluorinated Compounds by LC/MS/MS

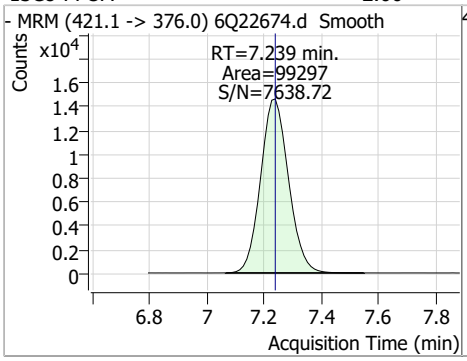
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.70	7.00	-0.01	46930	427.1 -> 80.9	30.4	16.8	50.4

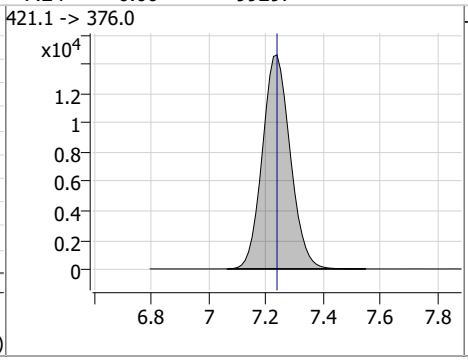


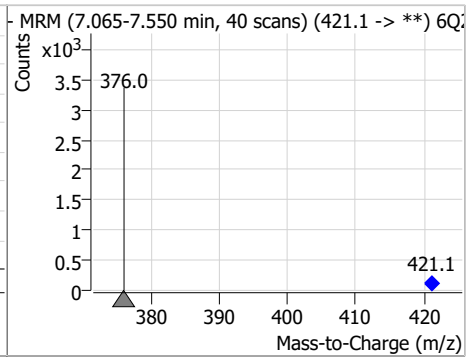




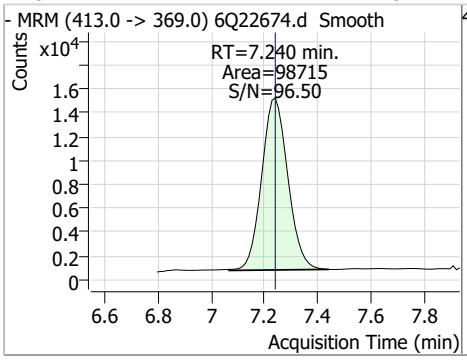
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.66	7.24	0.00	99297				

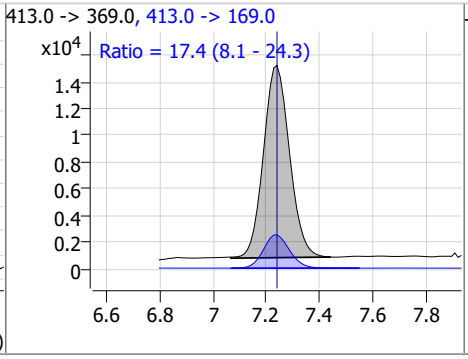


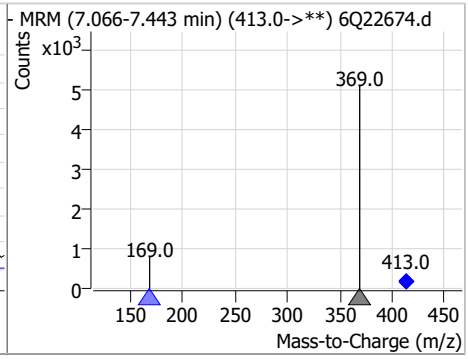




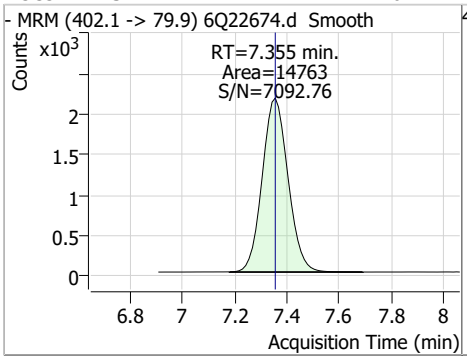
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.43	7.24	0.00	98715	413.0 -> 169.0	17.4	8.1	24.3

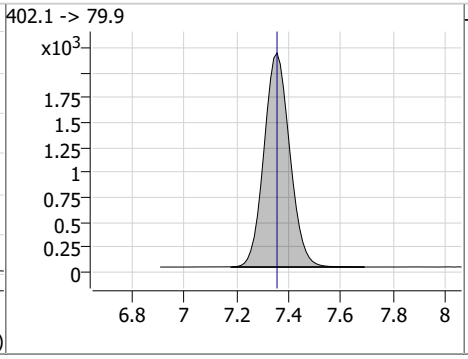


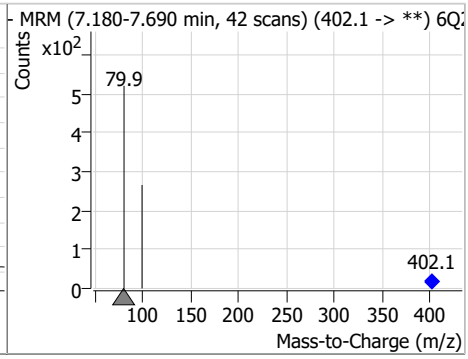




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.40	7.35	0.00	14763				

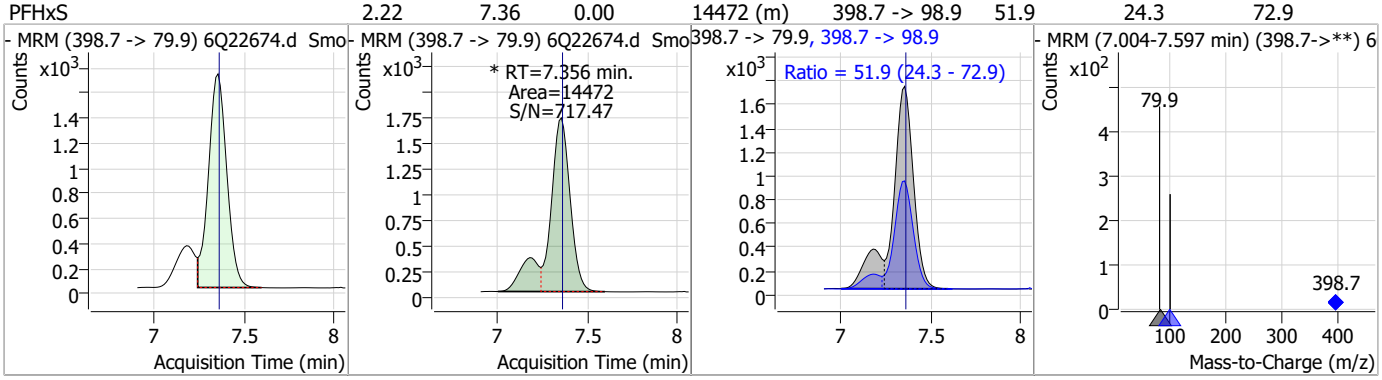




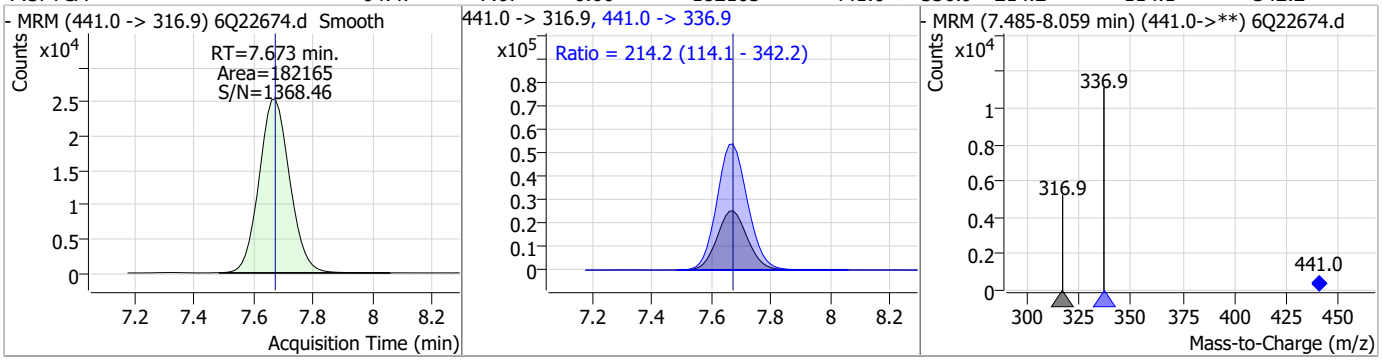


Perfluorinated Compounds by LC/MS/MS

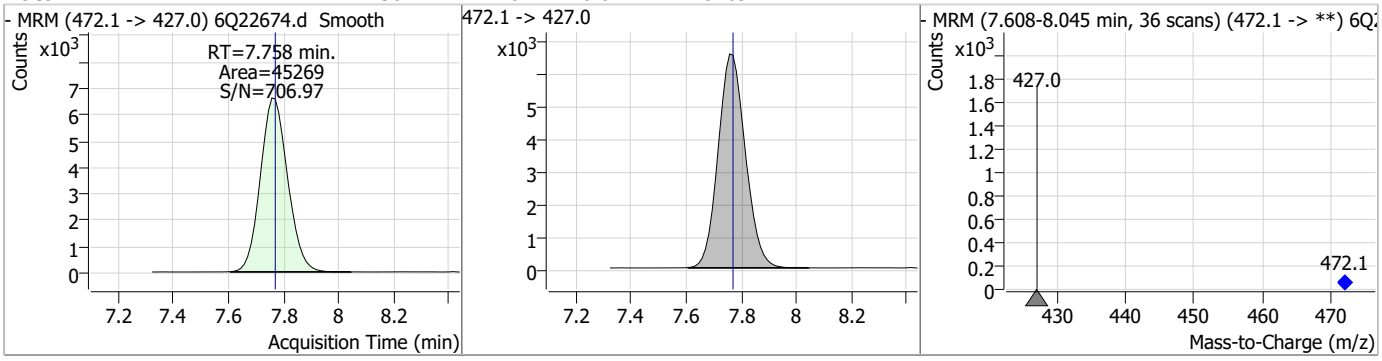
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.22	7.36	0.00	14472 (m)	398.7 -> 98.9	51.9	24.3	72.9



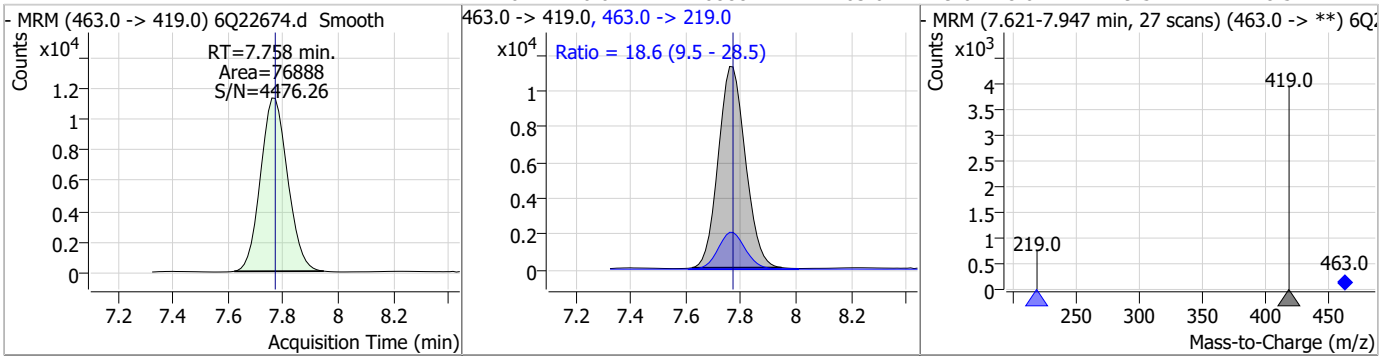
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.47	7.67	0.00	182165	441.0 -> 336.9	214.2	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.76	-0.01	45269				

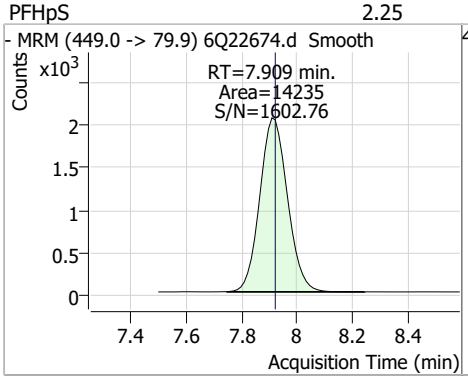


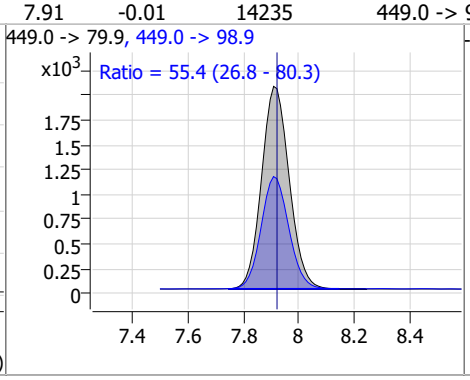
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.47	7.76	-0.01	76888	463.0 -> 219.0	18.6	9.5	28.5

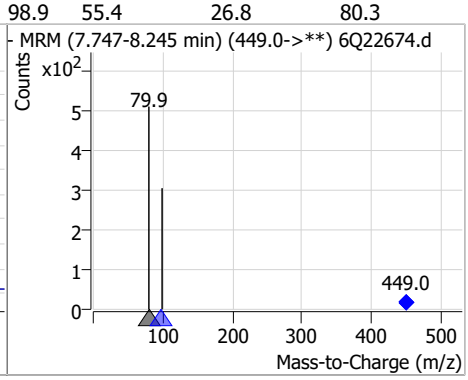


Perfluorinated Compounds by LC/MS/MS

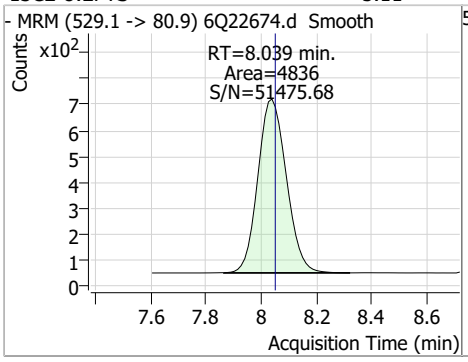
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.25	7.91	-0.01	14235	449.0 -> 98.9	55.4	26.8	80.3

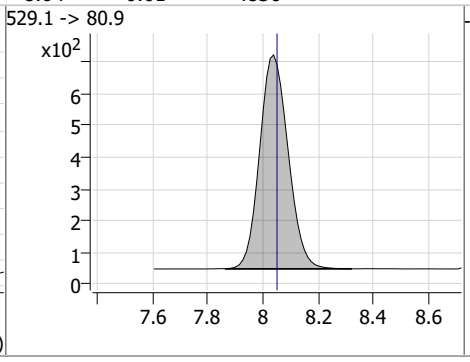


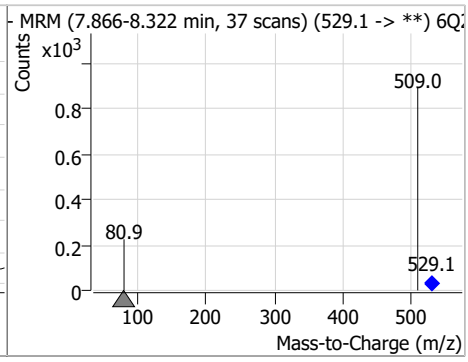




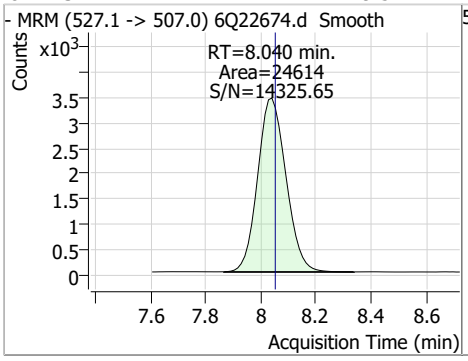
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.11	8.04	-0.01	4836				

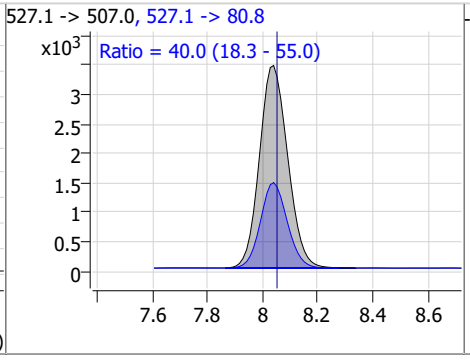


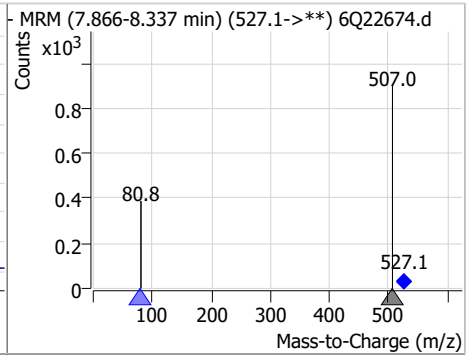




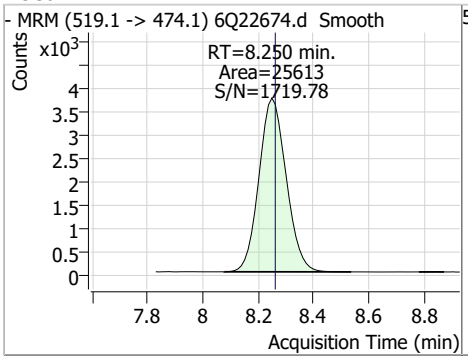
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.51	8.04	-0.01	24614	527.1 -> 80.8	40.0	18.3	55.0

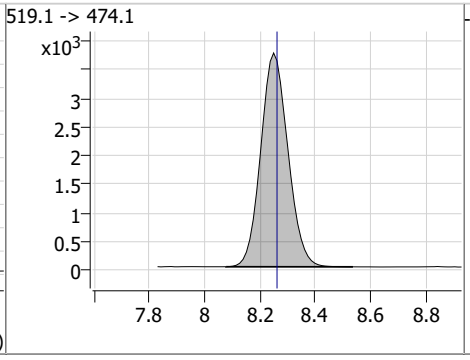


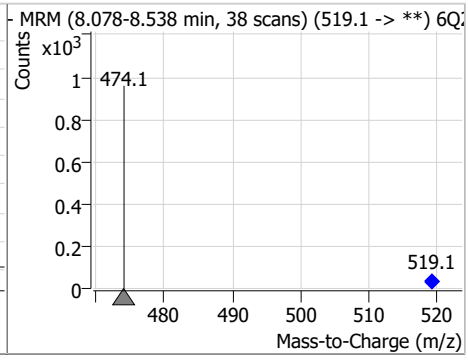




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.22	8.25	-0.01	25613				

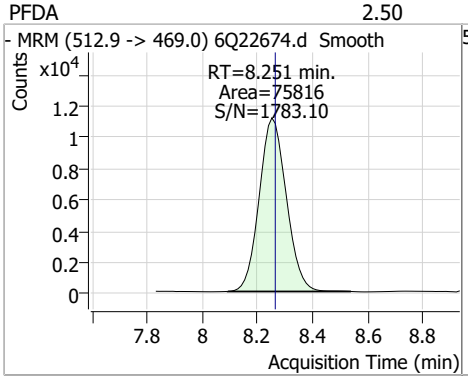


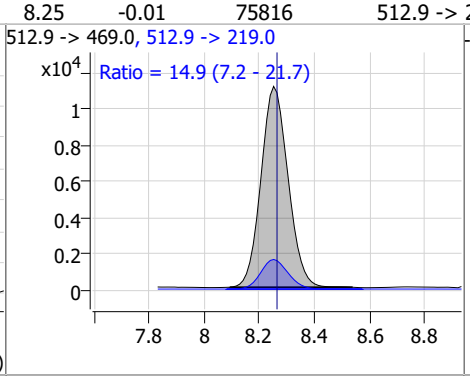


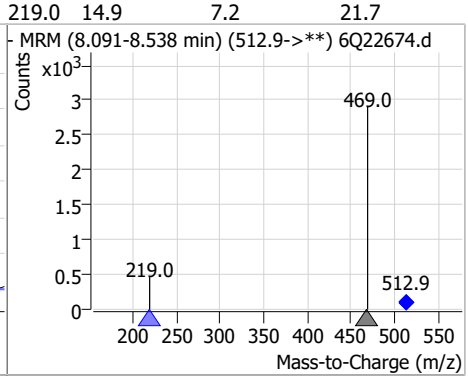


Perfluorinated Compounds by LC/MS/MS

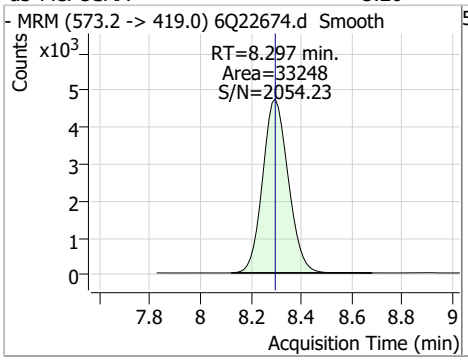
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.50	8.25	-0.01	75816	512.9 -> 219.0	14.9	7.2	21.7

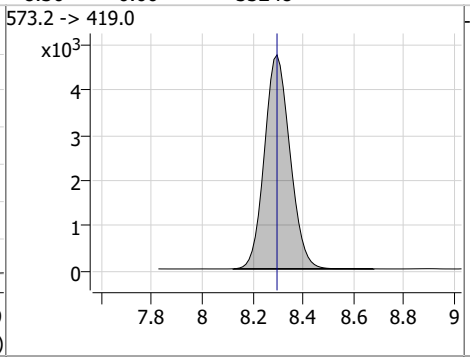


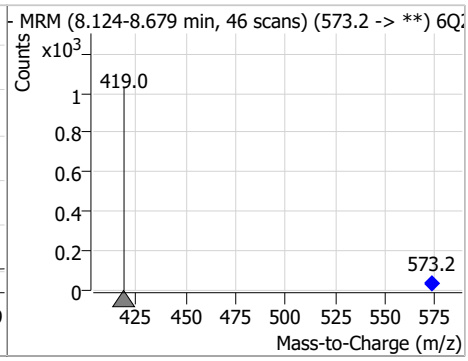




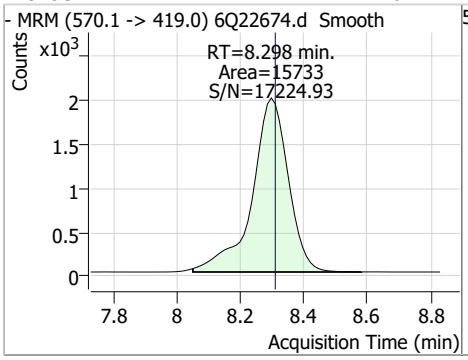
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.20	8.30	0.00	33248				

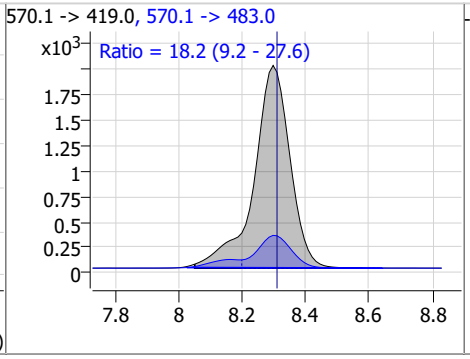


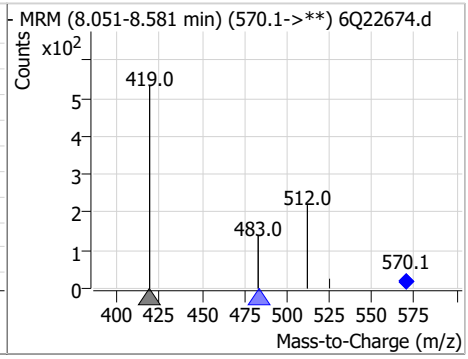




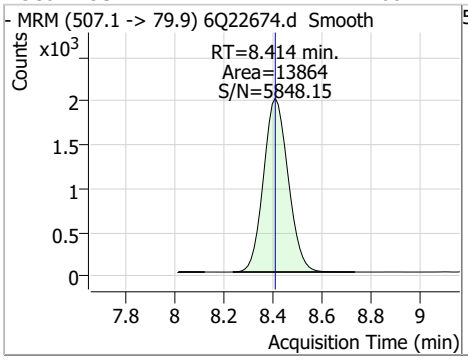
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.48	8.30	-0.01	15733	570.1 -> 483.0	18.2	9.2	27.6

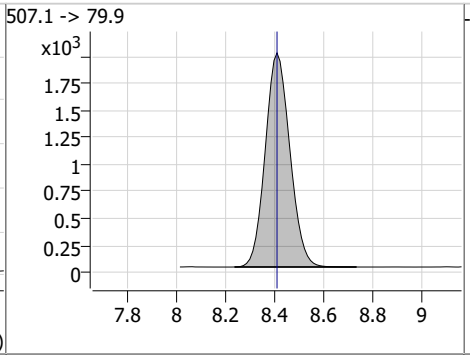


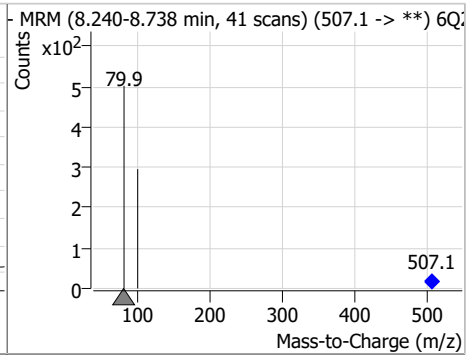




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.68	8.41	0.00	13864				

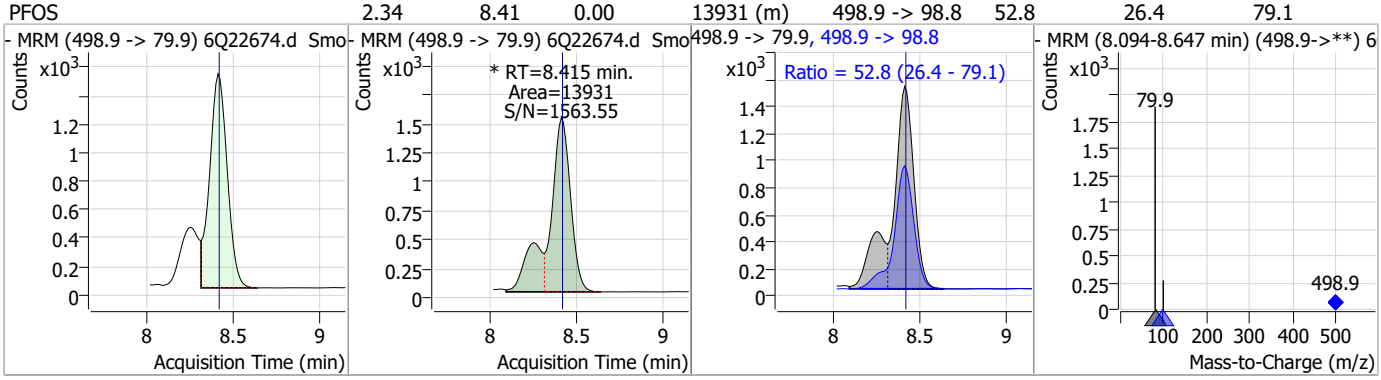




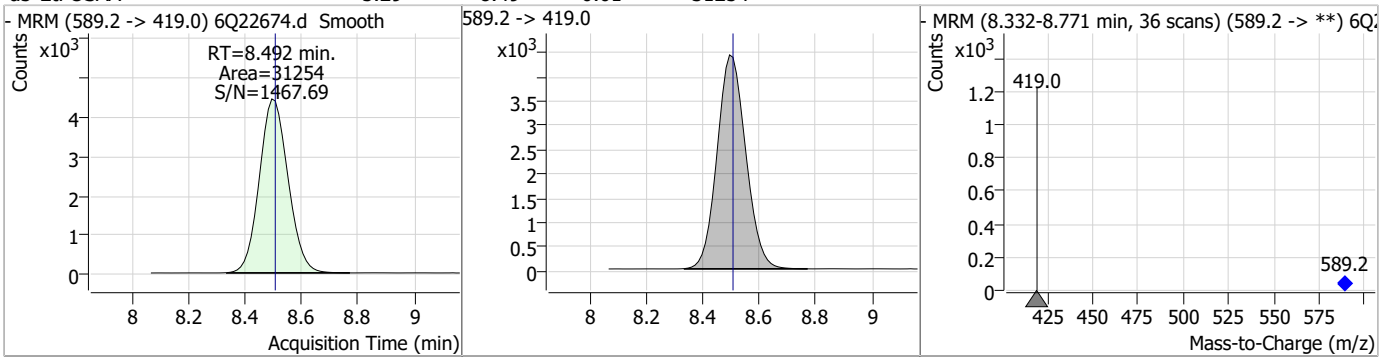


Perfluorinated Compounds by LC/MS/MS

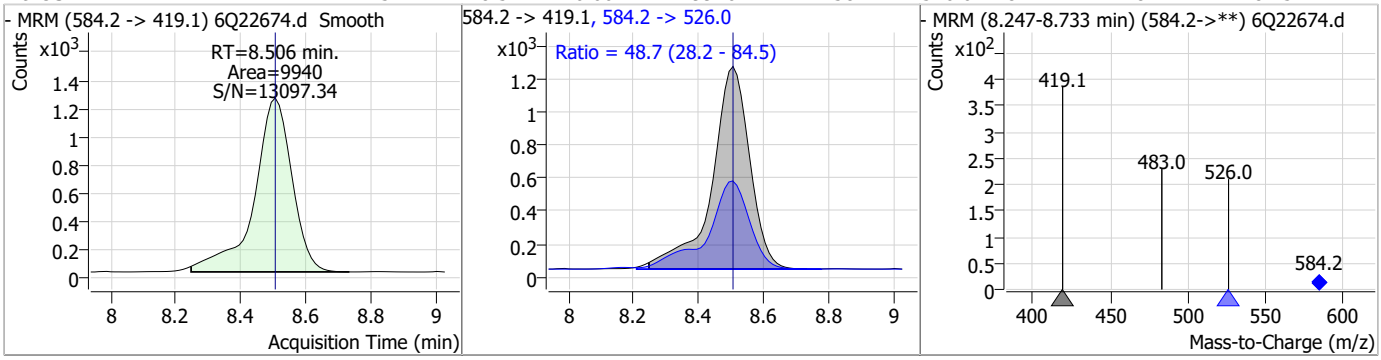
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.34	8.41	0.00	13931 (m)	498.9 -> 98.8	52.8	26.4	79.1



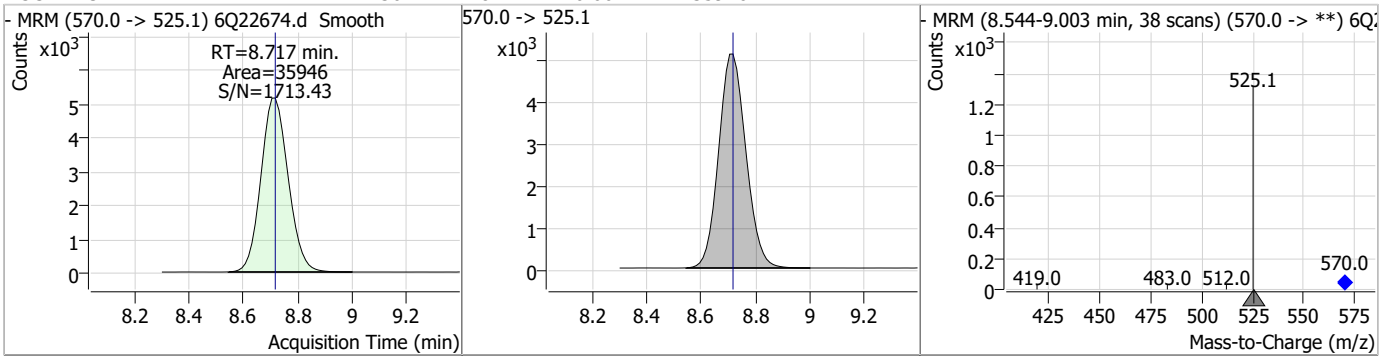
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.29	8.49	-0.01	31254				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.52	8.51	0.00	9940	584.2 -> 526.0	48.7	28.2	84.5

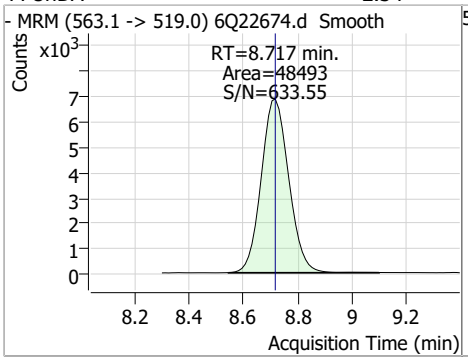


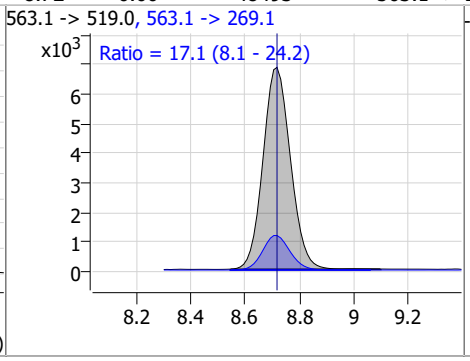
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.72	0.00	35946				

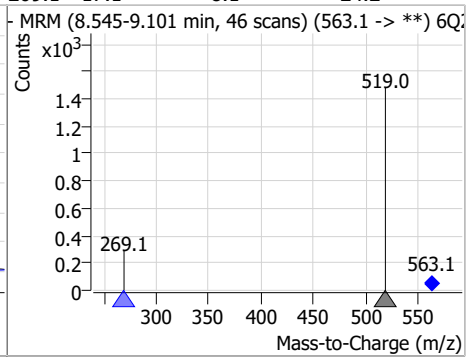


Perfluorinated Compounds by LC/MS/MS

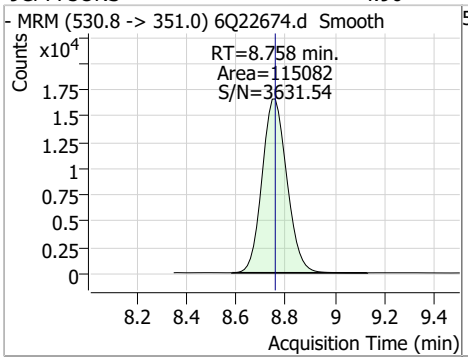
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.34	8.72	0.00	48493	563.1 -> 269.1	17.1	8.1	24.2

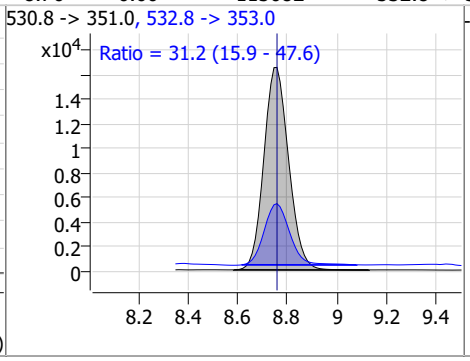


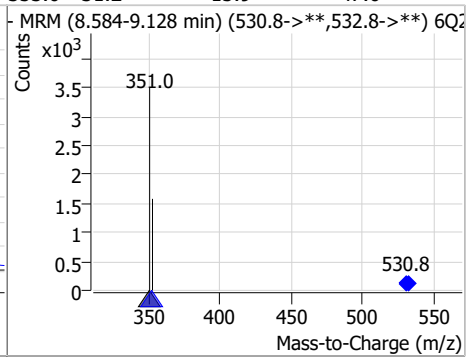




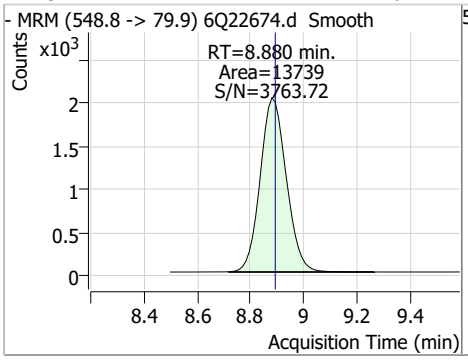
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.96	8.76	0.00	115082	532.8 -> 353.0	31.2	15.9	47.6

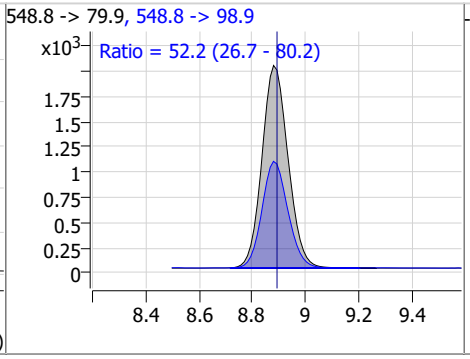


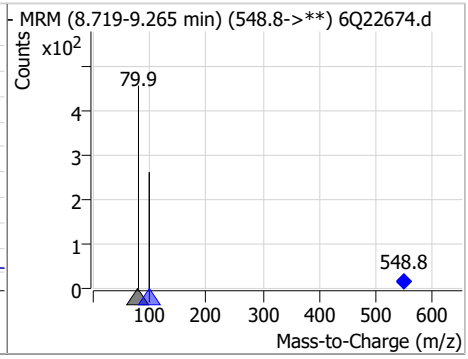




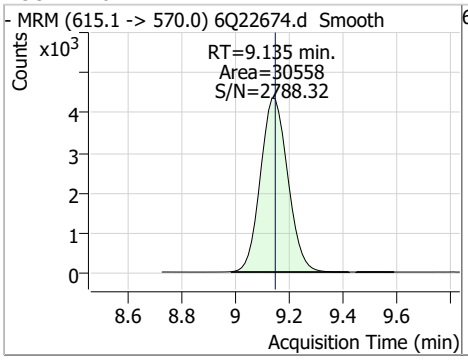
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.40	8.88	-0.01	13739	548.8 -> 98.9	52.2	26.7	80.2

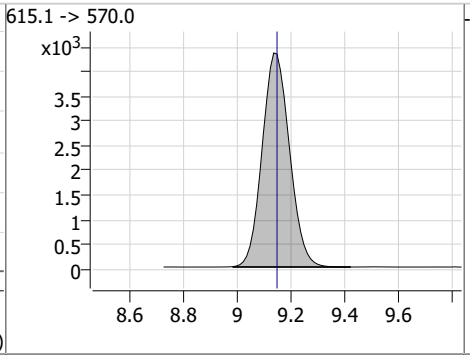


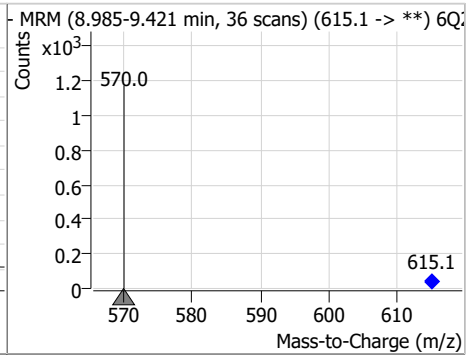




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.14	-0.01	30558				

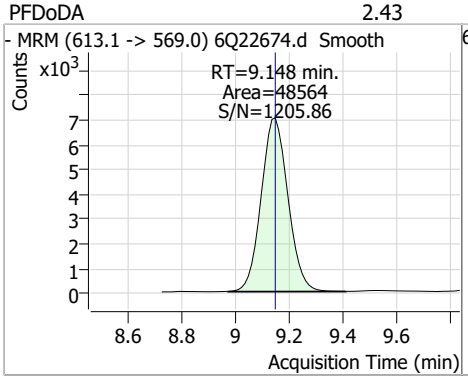


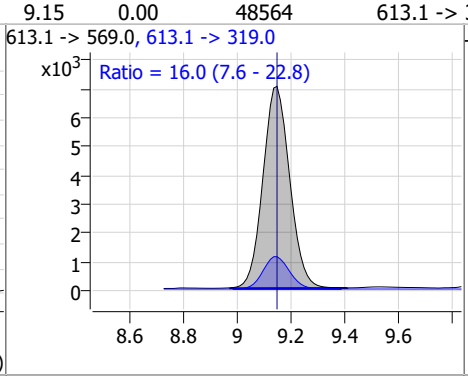


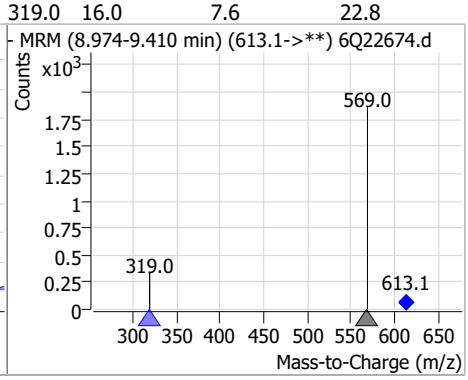


Perfluorinated Compounds by LC/MS/MS

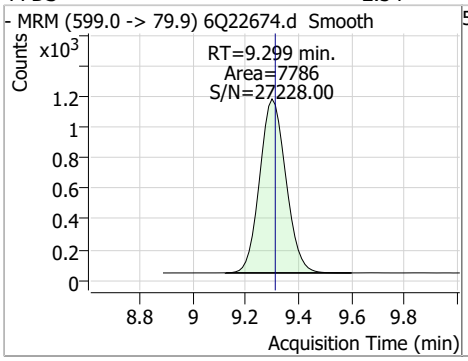
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.43	9.15	0.00	48564	613.1 -> 319.0	16.0	7.6	22.8

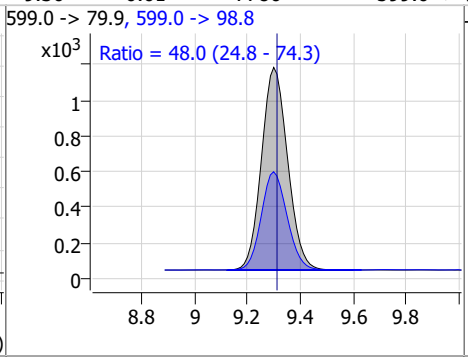


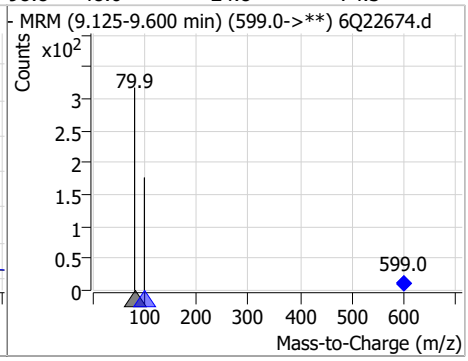




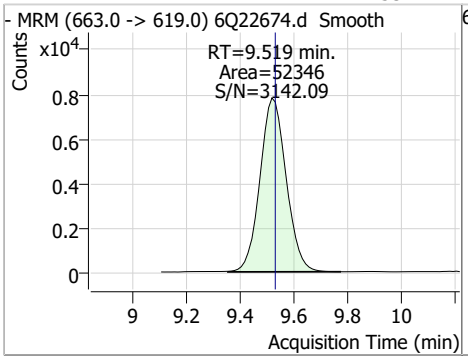
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.34	9.30	-0.01	7786	599.0 -> 98.8	48.0	24.8	74.3

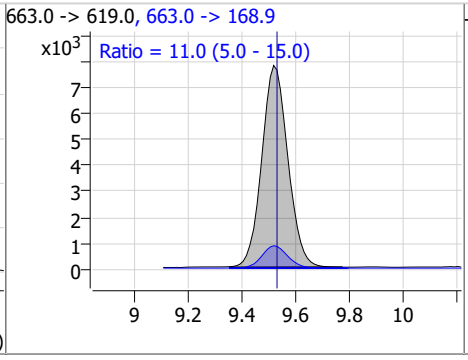


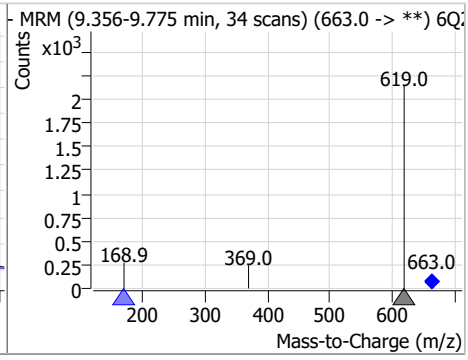




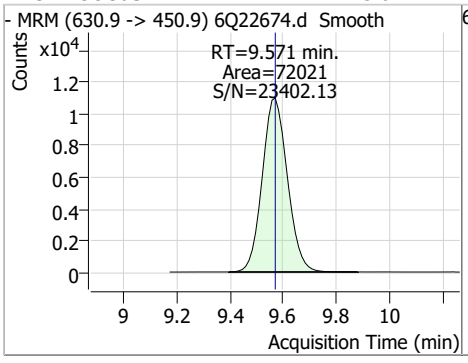
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.53	9.52	-0.01	52346	663.0 -> 168.9	11.0	5.0	15.0

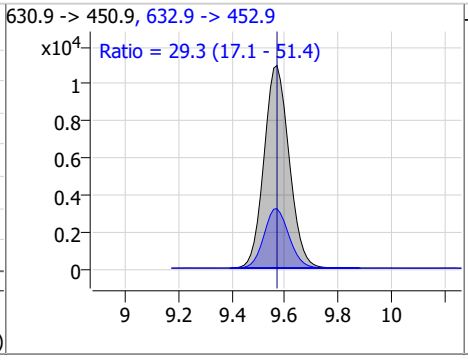


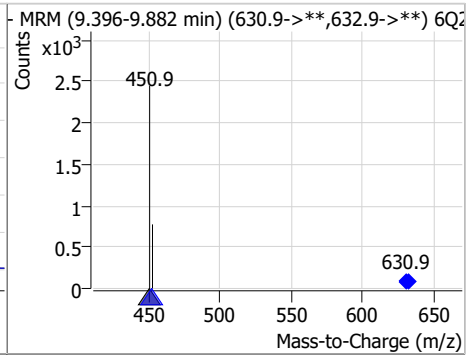




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.02	9.57	0.00	72021	632.9 -> 452.9	29.3	17.1	51.4

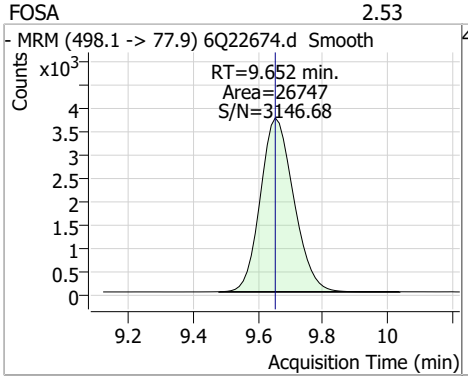


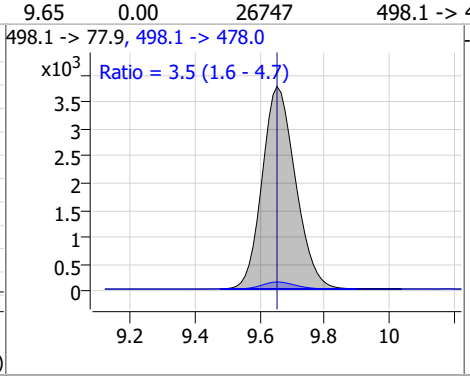


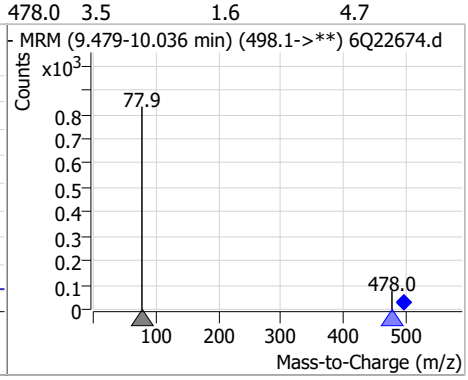


Perfluorinated Compounds by LC/MS/MS

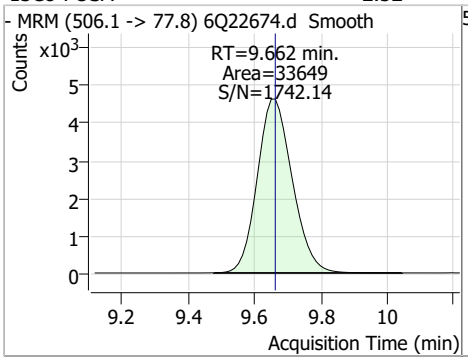
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.53	9.65	0.00	26747	498.1 -> 478.0	3.5	1.6	4.7

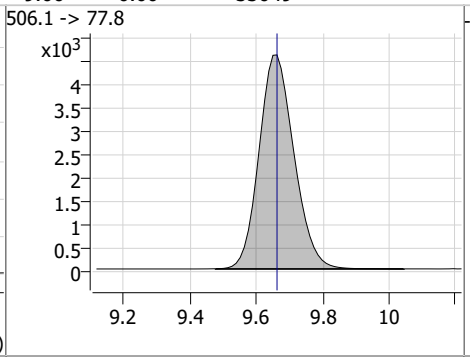


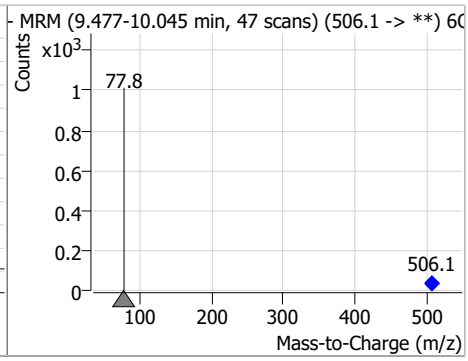




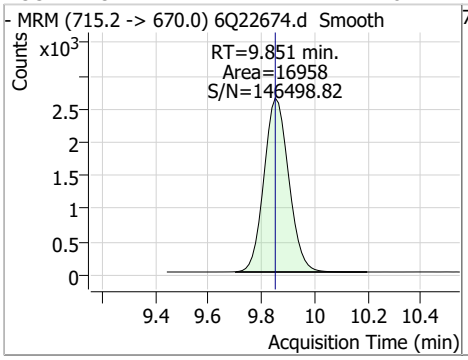
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.52	9.66	0.00	33649				

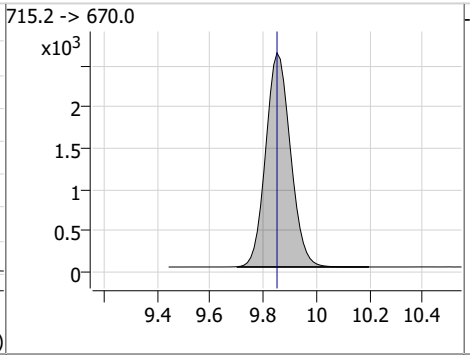


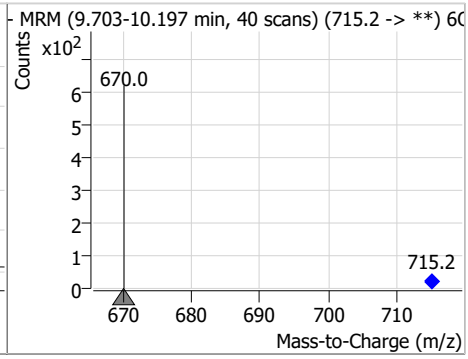




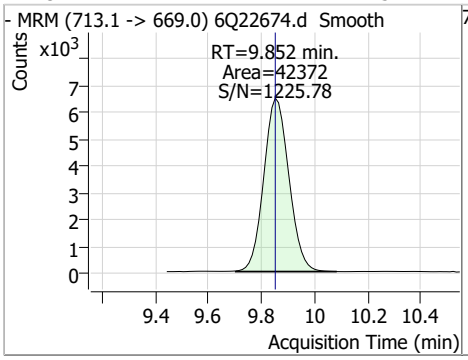
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.85	0.00	16958				

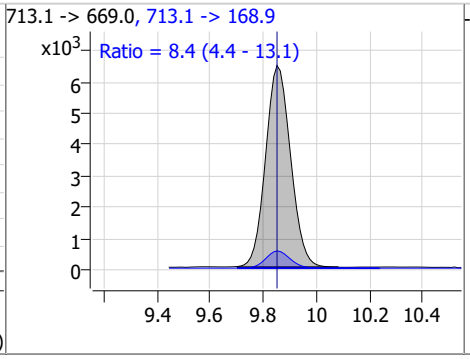


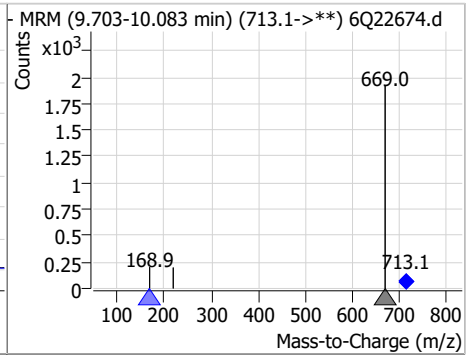




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.57	9.85	0.00	42372	713.1 -> 168.9	8.4	4.4	13.1

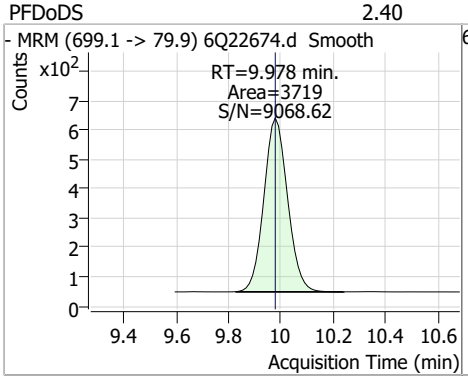


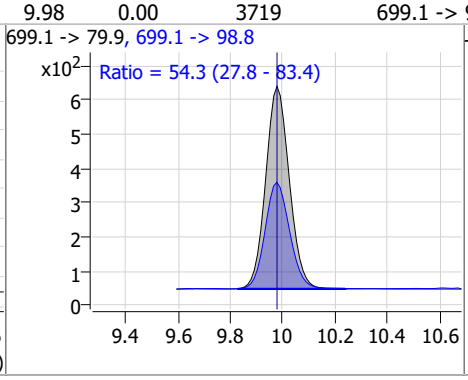


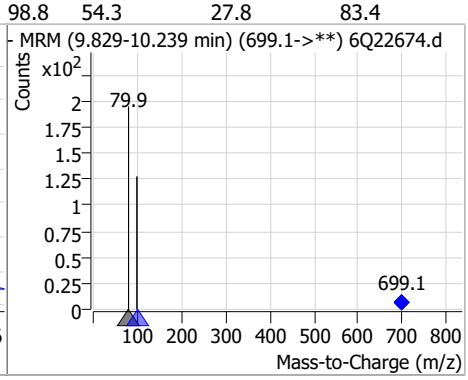


Perfluorinated Compounds by LC/MS/MS

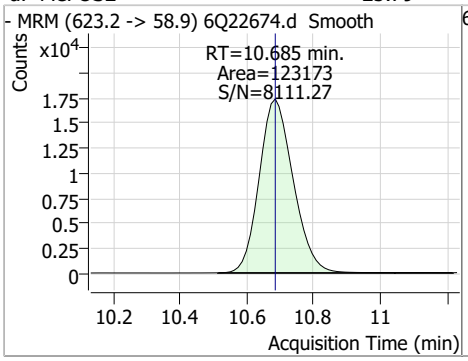
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.40	9.98	0.00	3719	699.1 -> 98.8	54.3	27.8	83.4

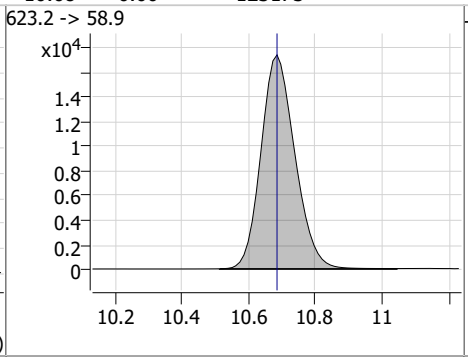


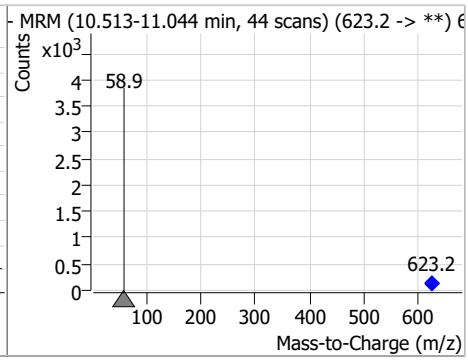




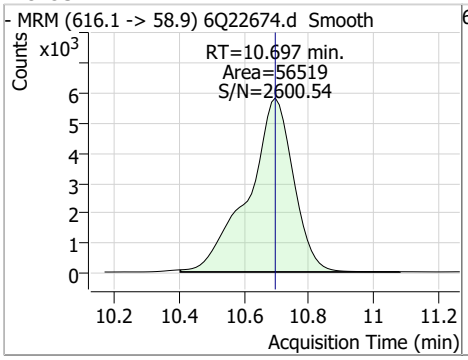
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.79	10.68	0.00	123173				

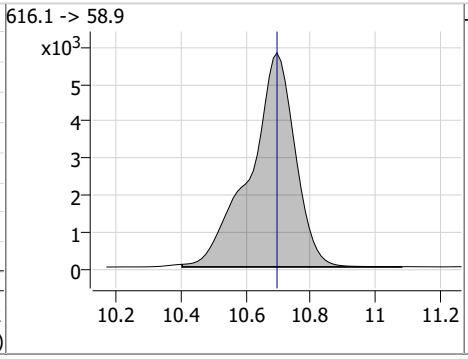


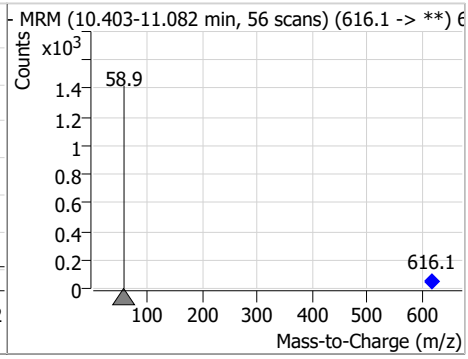




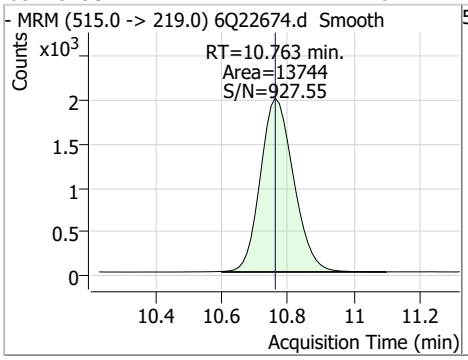
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.27	10.70	0.00	56519				

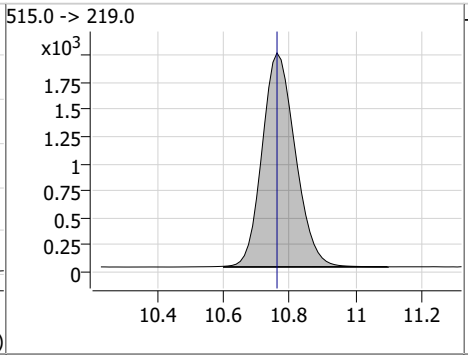


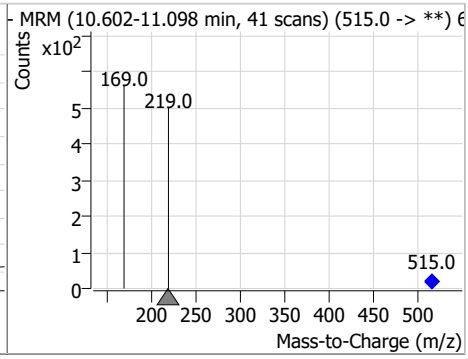




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.52	10.76	0.00	13744				

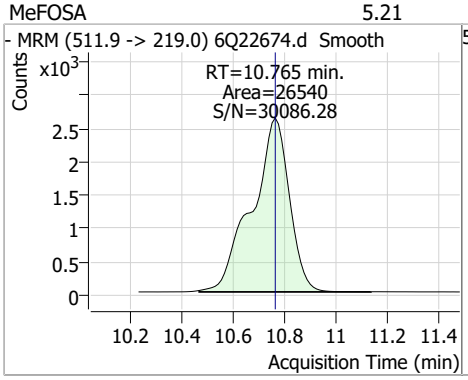


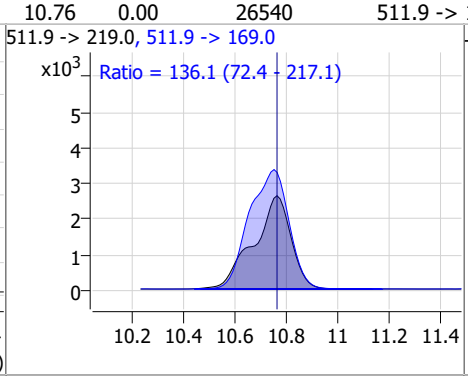


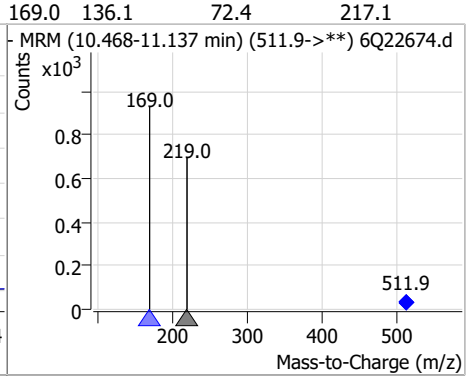


Perfluorinated Compounds by LC/MS/MS

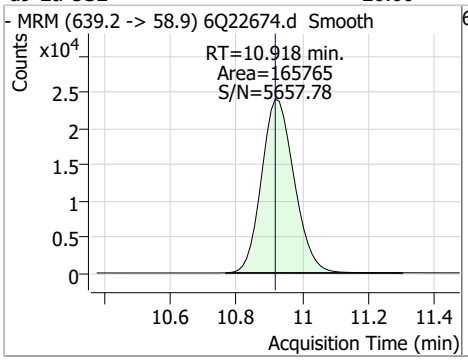
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.21	10.76	0.00	26540	511.9 -> 169.0	136.1	72.4	217.1

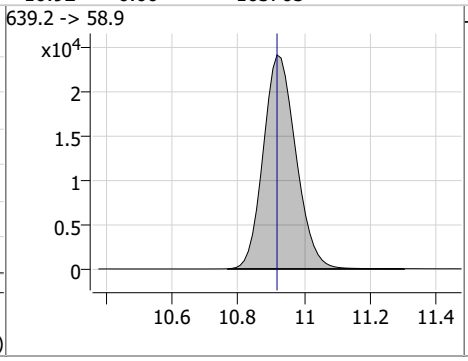


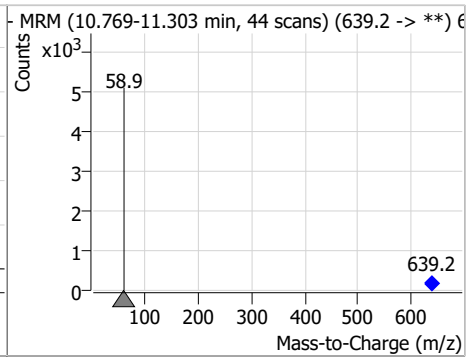




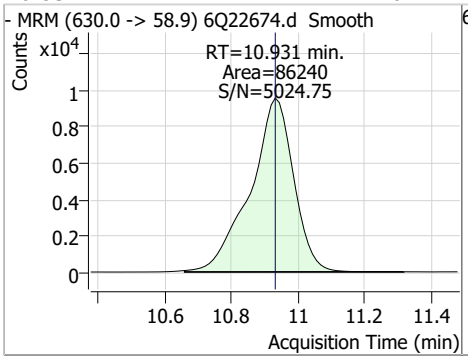
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.00	10.92	0.00	165765				

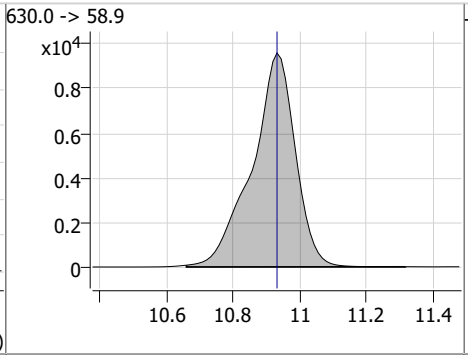


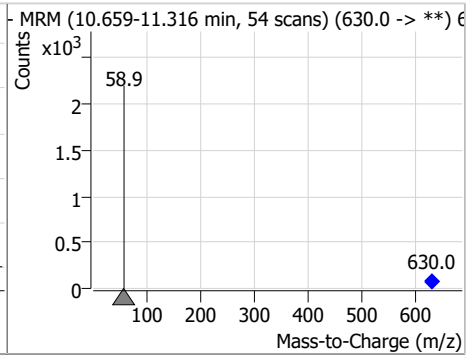




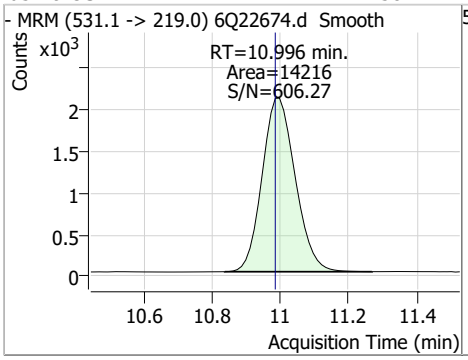
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.84	10.93	0.00	86240				

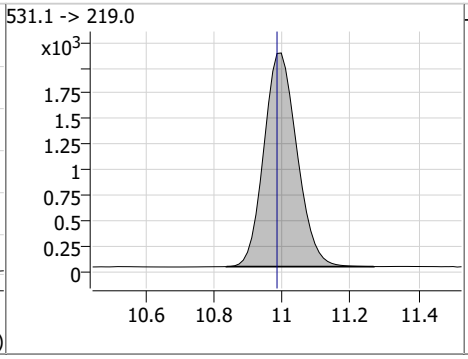


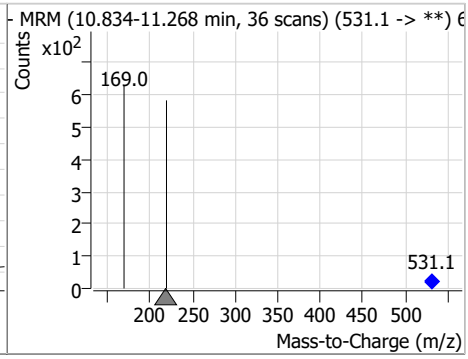




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	11.00	0.01	14216				

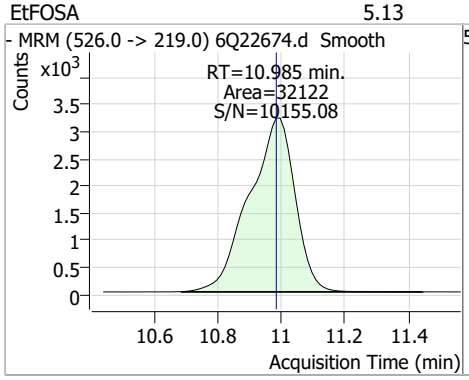


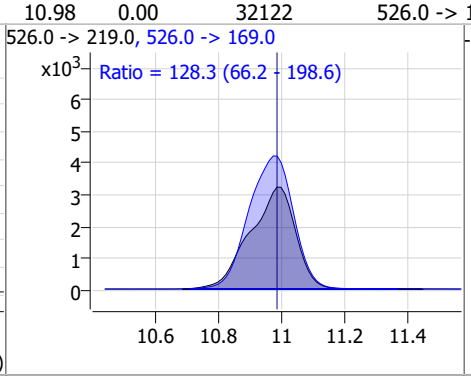


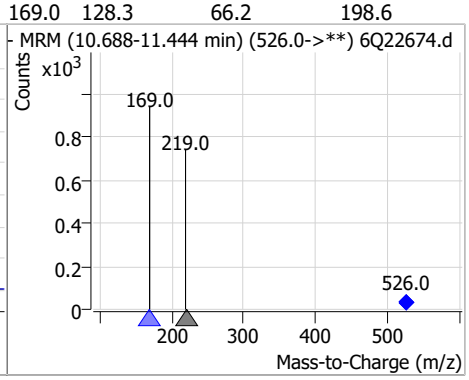


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.13	10.98	0.00	32122	526.0 -> 169.0	128.3	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-CC330
Lab FileID: 6Q22674.D
Injection Time: 08/10/23 21:45
Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22732.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 11:36:50 AM
Sample Name : cc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	3.010	216.8 -> 171.9	191983	10.00	µg/L	0.000
M5-PFPeA	4.447	268.3 -> 223.0	62363	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	67368	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	63477	2.50	µg/L	-0.012
M8-PFOA	7.239	421.1 -> 376.0	97093	2.50	µg/L	0.000
M9-PFNA	7.758	472.1 -> 427.0	45421	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	26386	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	34997	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	30876	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	17538	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	34805	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	23763	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15579	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	13849	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3162	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	4566	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	3924	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	35673	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	42356	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	30287	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	125057	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	172416	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14874	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	14010	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18513	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	81103	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11877	2.50	µg/L	0.000
13C4-PFOA	7.239	417.1 -> 372.0	108418	2.50	µg/L	0.000
13C2-PFDA	8.251	515.1 -> 470.1	37408	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	58406	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	63630	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3162	4.46	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-6:2FTS	7.001	429.1 -> 80.9	4566	4.46	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C2-8:2FTS	8.039	529.1 -> 80.9	3924	3.91	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 78.3%		
13C2-PFDoDA	9.135	615.1 -> 570.0	30876	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFTeDA	9.851	715.2 -> 670.0	17538	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C3-PFBS	5.610	302.1 -> 79.9	23763	2.36	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C3-PFHxS	7.355	402.1 -> 79.9	15579	2.39	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 = 95.5%	
13C4-PFBA	3.010	216.8 -> 171.9	191983	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.596	367.1 -> 322.0	63477	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFHxA	5.668	318.0 -> 273.0	67368	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	4.447	268.3 -> 223.0	62363	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C6-PFDA	8.250	519.1 -> 474.1	26386	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.705	570.0 -> 525.1	34997	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-FOSA	9.650	506.1 -> 77.8	34805	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.239	421.1 -> 376.0	97093	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.414	507.1 -> 79.9	13849	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C9-PFNA	7.758	472.1 -> 427.0	45421	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
d3-MeFOSAA	8.297	573.2 -> 419.0	35673	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	42356	10.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	14010	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
d5-EtFOSAA	8.492	589.2 -> 419.0	30287	4.90 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d7-MeFOSE	10.685	623.2 -> 58.9	125057	24.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	172416	25.82 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d5-EtFOSA	10.983	531.1 -> 219.0	14874	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	39920	9.76 µg/L	100
		327.1 -> 80.9	15696		
6:2FTS	7.002	427.1 -> 407.0	40028	9.80 µg/L	99
		427.1 -> 80.9	13139		
8:2FTS	8.040	527.1 -> 507.0	21986	10.47 µg/L	93
		527.1 -> 80.8	8996		
EtFOSAA	8.493	584.2 -> 419.1	10493	2.75 µg/L	92
		584.2 -> 526.0	5275		
FOSA	9.652	498.1 -> 77.9	27965	2.56 µg/L	100
		498.1 -> 478.0	923		
MeFOSAA	8.298	570.1 -> 419.0	16715	2.45 µg/L	99
		570.1 -> 483.0	3118		
PFBA	3.006	212.8 -> 168.9	59663	9.95 µg/L	100
PFBS	5.611	298.7 -> 79.9	17640	2.27 µg/L	96
		298.7 -> 98.8	7011		
PFDA	8.251	512.9 -> 469.0	79403	2.54 µg/L	100
		512.9 -> 219.0	11627		
PFDoDA	9.136	613.1 -> 569.0	50089	2.48 µg/L	98
		613.1 -> 319.0	7942		
PFDS	9.299	599.0 -> 79.9	8140	2.45 µg/L	99

Perfluorinated Compounds by LC/MS/MS

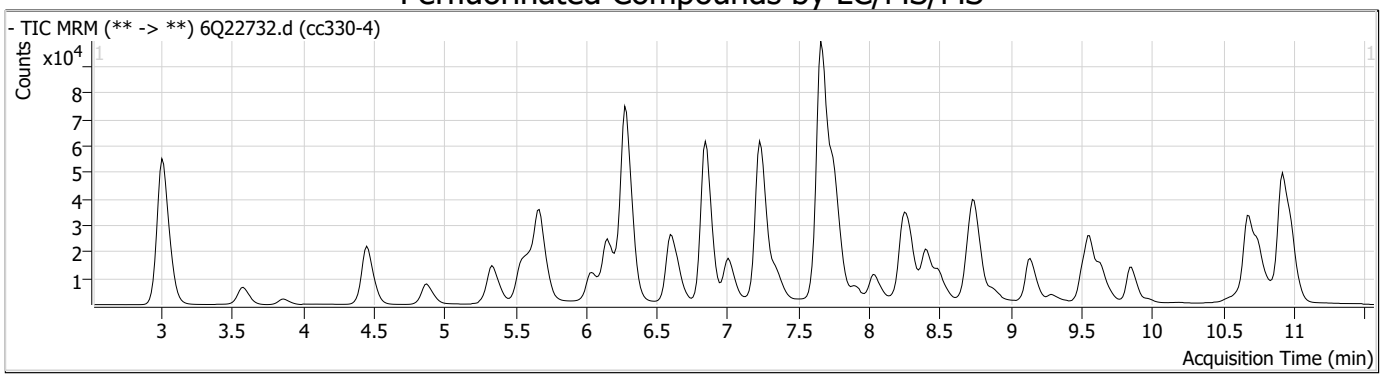
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	4095				
PFHpA	6.609	363.1 -> 319.0	64717	2.59	µg/L		98
		363.1 -> 169.0	10216				
PFHpS	7.909	449.0 -> 79.9	15578	2.46	µg/L		97
		449.0 -> 98.9	8016				
PFHxA	5.670	313.0 -> 269.0	49911	2.53	µg/L		100
		313.0 -> 118.9	2662				
PFHxS	7.356	398.7 -> 79.9	15474	2.25	µg/L	m	97
		398.7 -> 98.9	7801				
PFNA	7.758	463.0 -> 419.0	77738	2.49	µg/L		98
		463.0 -> 219.0	15333				
PFNS	8.880	548.8 -> 79.9	13974	2.45	µg/L		97
		548.8 -> 98.9	7165				
PFOA	7.240	413.0 -> 369.0	106779	2.69	µg/L		99
		413.0 -> 169.0	17689				
PFOS	8.415	498.9 -> 79.9	14245	2.39	µg/L	m	98
		498.9 -> 98.8	7290				
PFPeA	4.449	263.0 -> 219.0	68728	5.00	µg/L		100
PFPeS	6.672	349.1 -> 79.9	15457	2.42	µg/L		99
		349.1 -> 98.9	6987				
PFTeDA	9.852	713.1 -> 669.0	44468	2.61	µg/L		99
		713.1 -> 168.9	3670				
PFTrDA	9.519	663.0 -> 619.0	52895	2.53	µg/L		98
		663.0 -> 168.9	5667				
PFUnDA	8.705	563.1 -> 519.0	52267	2.59	µg/L		99
		563.1 -> 269.1	8295				
11Cl-PF3OUdS	9.571	630.9 -> 450.9	71326	4.72	µg/L		95
		632.9 -> 452.9	22423				
9Cl-PF3ONS	8.758	530.8 -> 351.0	119162	4.88	µg/L		94
		532.8 -> 353.0	34096				
ADONA	6.846	376.9 -> 250.9	260045	4.82	µg/L		100
		376.9 -> 84.8	69182				
HFPO-DA	6.046	284.9 -> 168.9	16908	4.69	µg/L		99
		284.9 -> 184.9	1834				
3:3FTCA	3.859	241.0 -> 177.0	11372	11.99	µg/L		100
		241.0 -> 117.0	1515				
5:3FTCA	6.285	341.0 -> 237.1	251242	61.99	µg/L		99
		341.0 -> 217.0	179916				
7:3FTCA	7.673	441.0 -> 316.9	185966	62.04	µg/L		91
		441.0 -> 336.9	396079				
EtFOSA	10.985	526.0 -> 219.0	32575	4.97	µg/L		95
		526.0 -> 169.0	44890				
EtFOSE	10.931	630.0 -> 58.9	87028	12.46	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	26996	5.20	µg/L		100
		511.9 -> 169.0	38997				
MeFOSE	10.697	616.1 -> 58.9	58898	12.60	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3791	2.45	µg/L		97
		699.1 -> 98.8	2201				
NFDHA	5.551	295.0 -> 201.0	12582	5.02	µg/L		99
		295.0 -> 84.9	3511				
PFMBA	4.869	279.0 -> 85.1	47454	4.88	µg/L		100
PFMPA	3.576	229.0 -> 84.9	38620	4.97	µg/L		100
PFEESA	6.151	314.8 -> 134.9	120061	4.54	µg/L		100
		314.8 -> 82.9	4006				

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

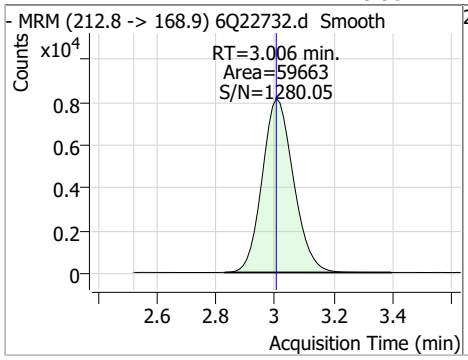
Perfluorinated Compounds by LC/MS/MS

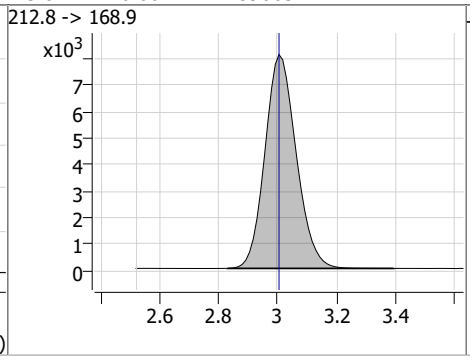
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

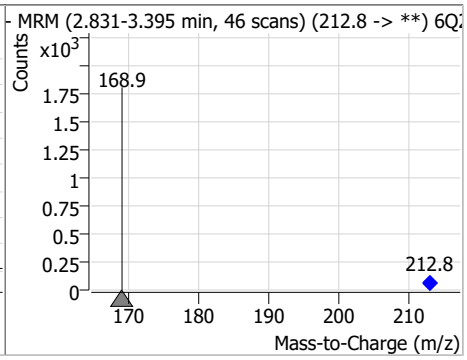
Perfluorinated Compounds by LC/MS/MS



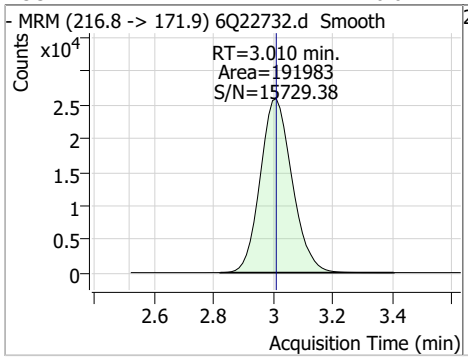
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.95	3.01	0.00	59663				

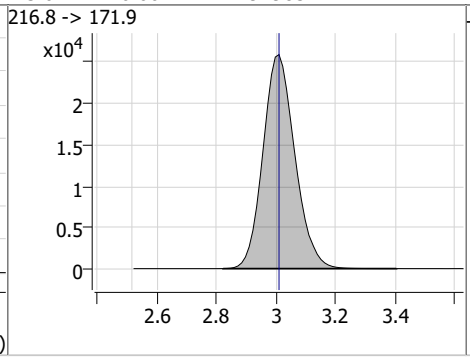


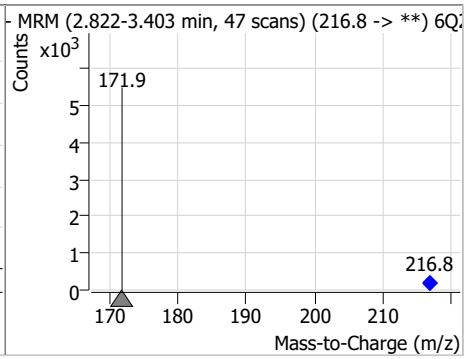




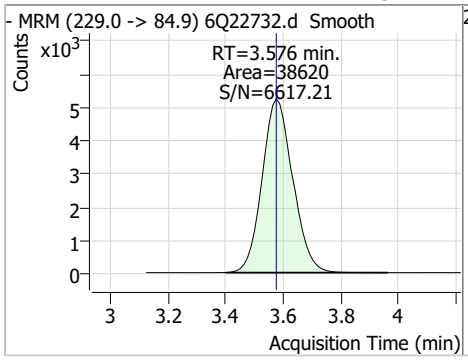
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.02	3.01	0.00	191983				

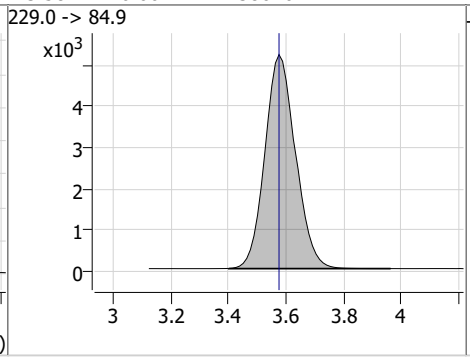


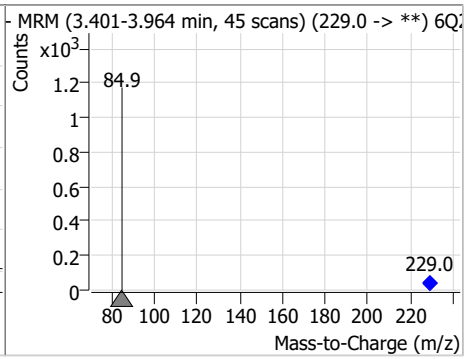




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.97	3.58	0.00	38620				

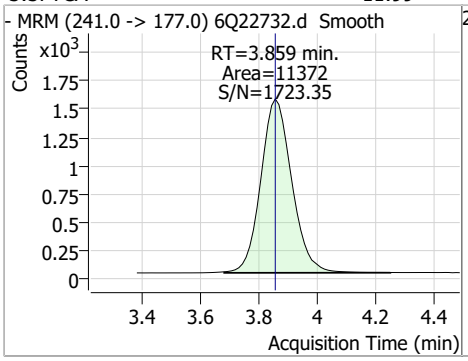


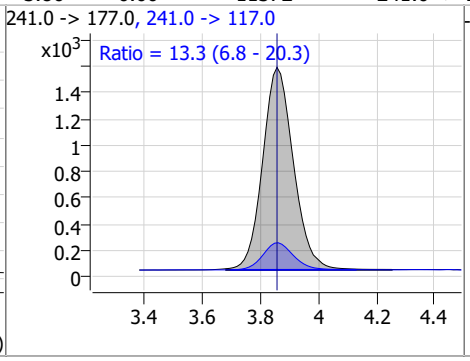


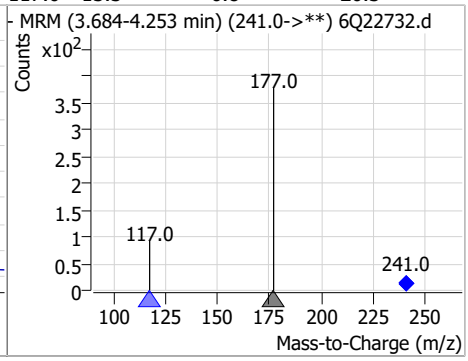


Perfluorinated Compounds by LC/MS/MS

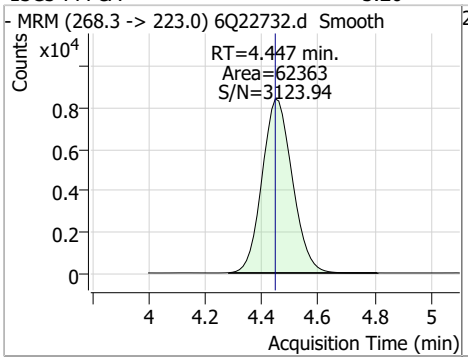
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.99	3.86	0.00	11372	241.0 -> 117.0	13.3	6.8	20.3

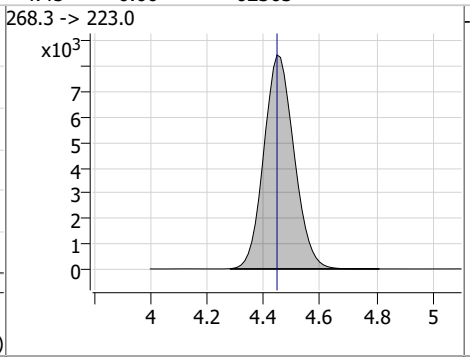


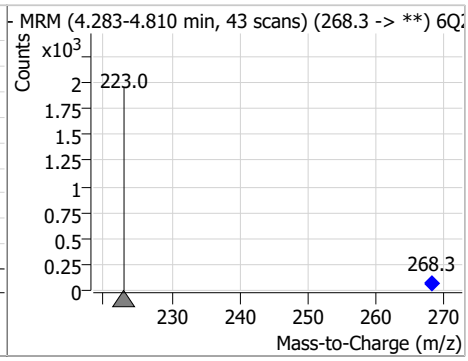




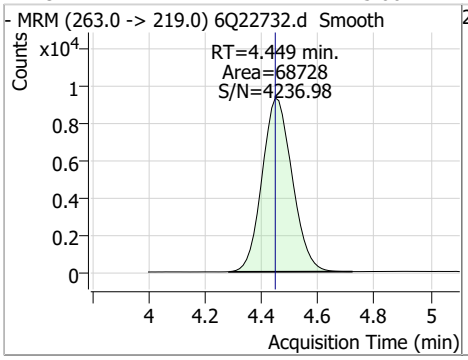
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.20	4.45	0.00	62363				

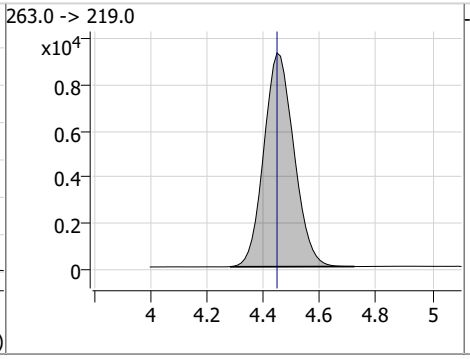


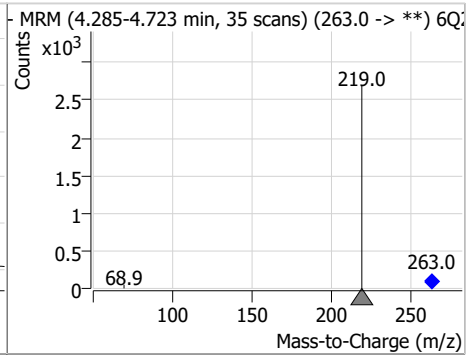




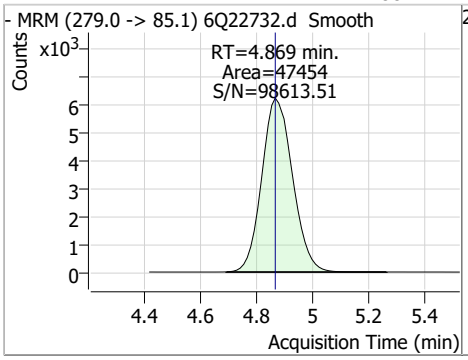
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.00	4.45	0.00	68728				

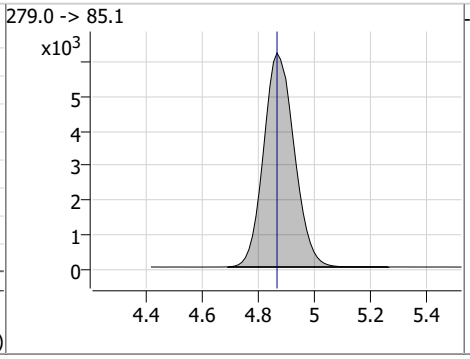


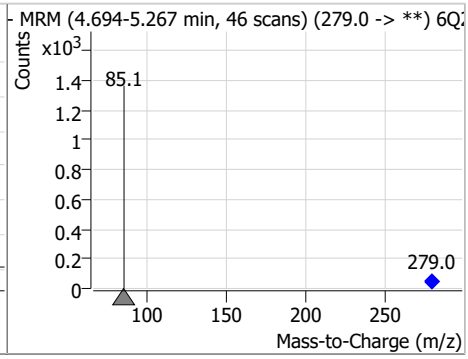




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.88	4.87	0.00	47454				

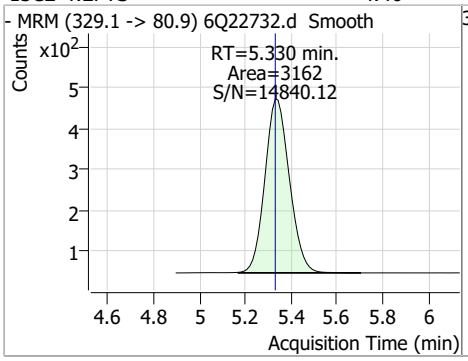


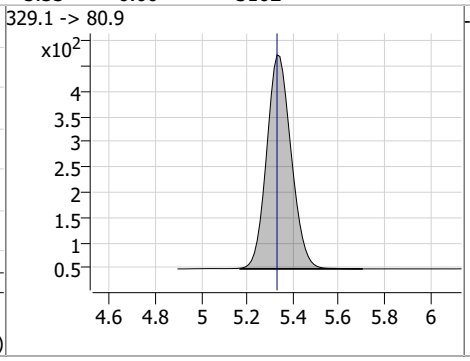


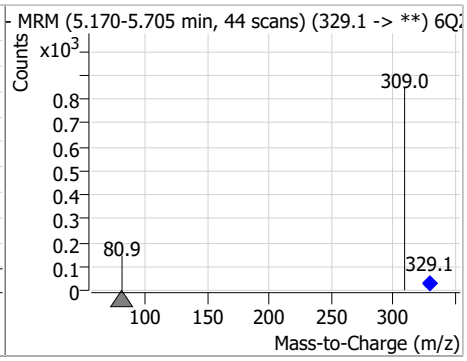


Perfluorinated Compounds by LC/MS/MS

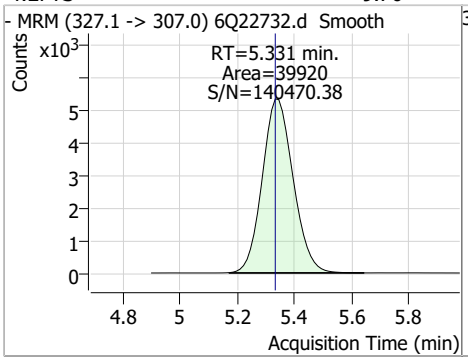
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.46	5.33	0.00	3162				

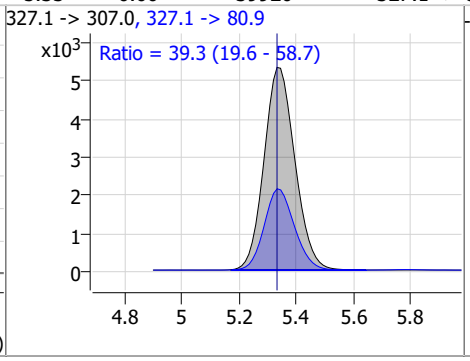


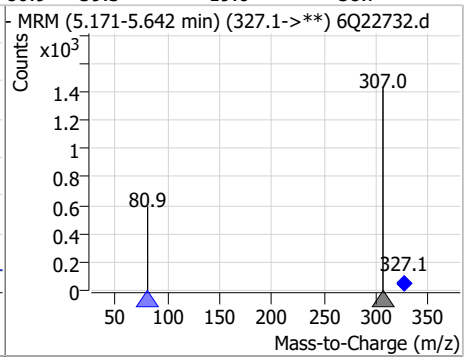




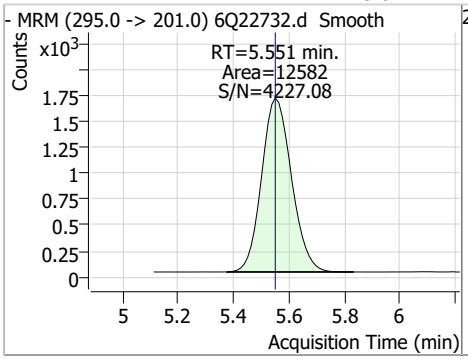
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.76	5.33	0.00	39920	327.1 -> 80.9	39.3	19.6	58.7

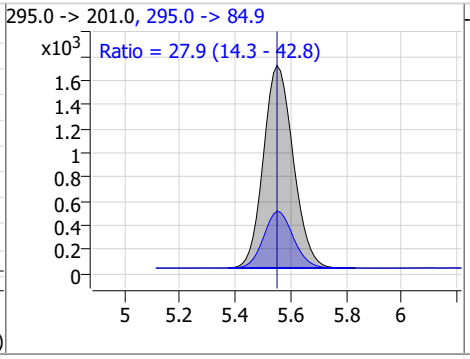


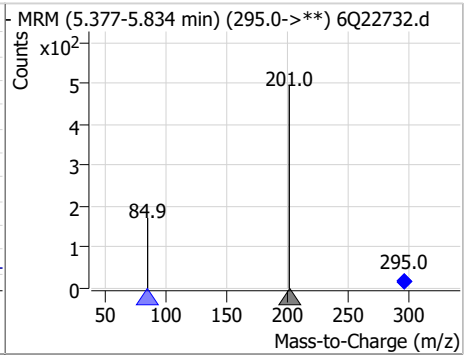




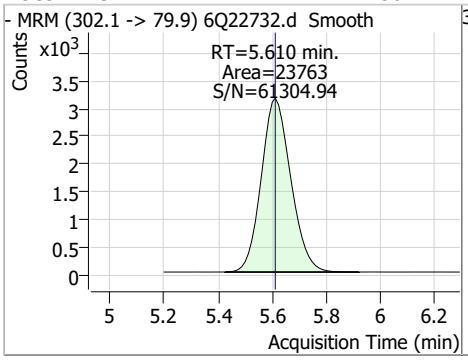
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.02	5.55	0.00	12582	295.0 -> 84.9	27.9	14.3	42.8

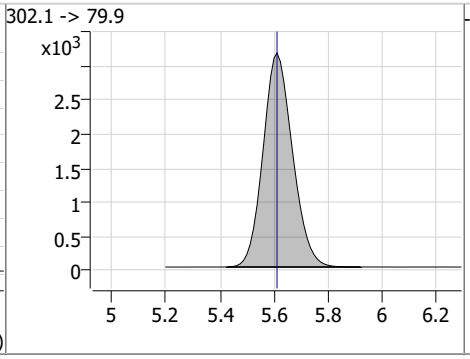


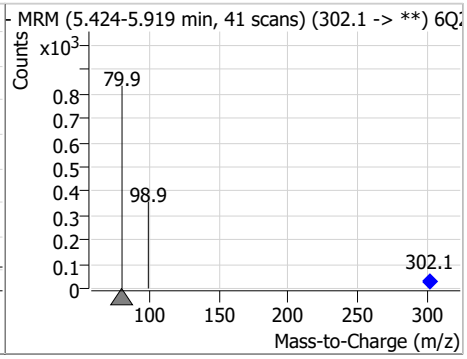




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.36	5.61	0.00	23763				

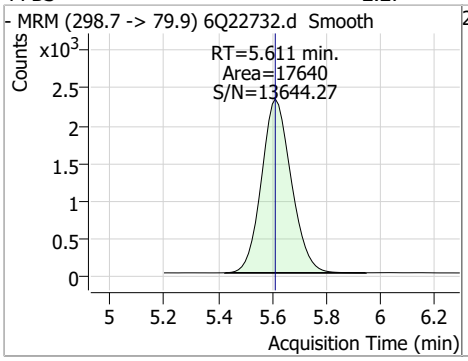


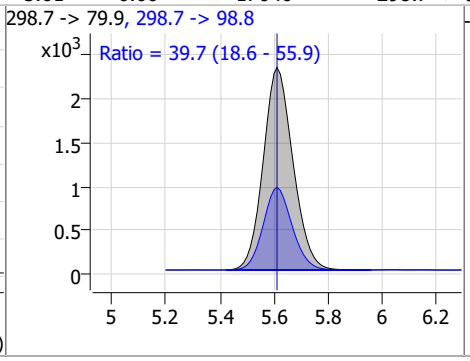


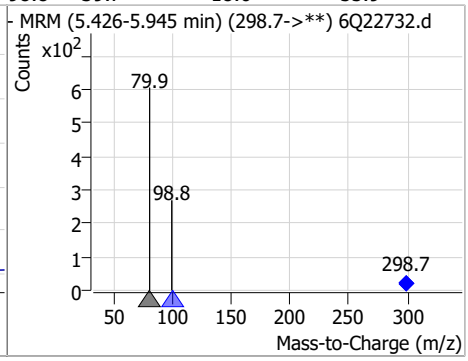


Perfluorinated Compounds by LC/MS/MS

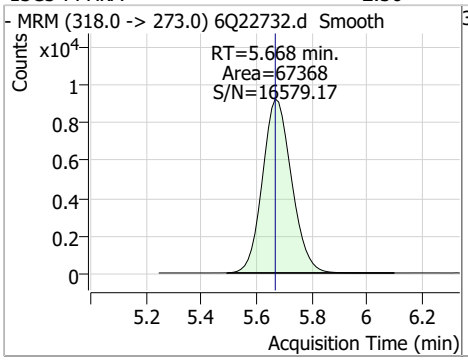
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.27	5.61	0.00	17640	298.7 -> 98.8	39.7	18.6	55.9

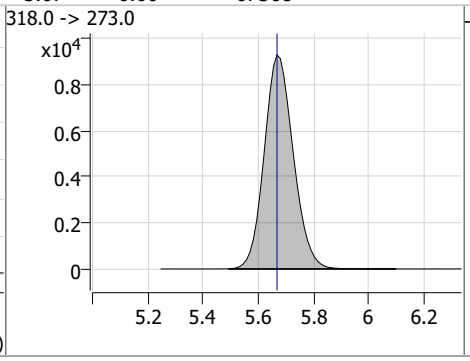


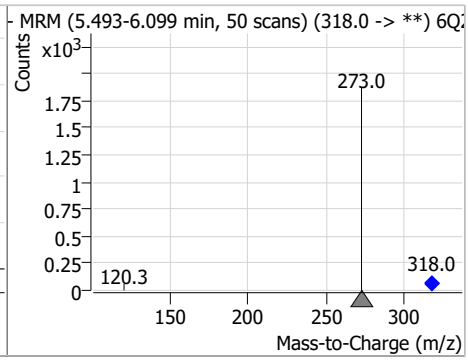




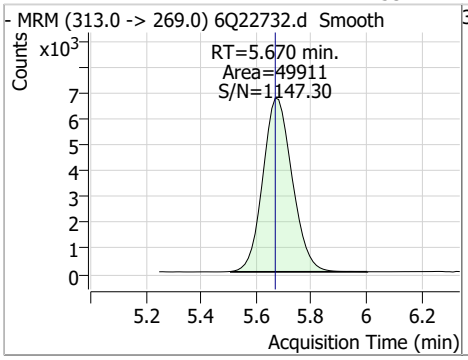
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.67	0.00	67368				

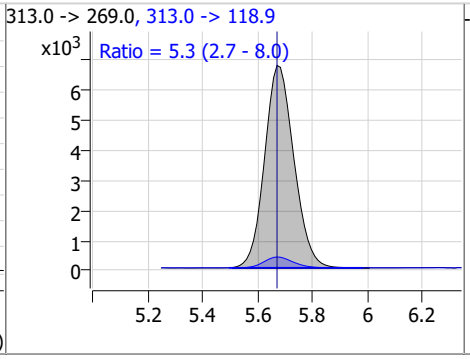


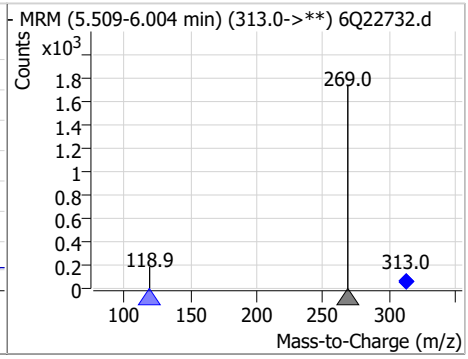




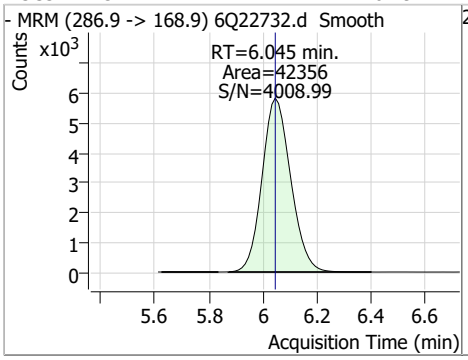
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.53	5.67	0.00	49911	313.0 -> 118.9	5.3	2.7	8.0

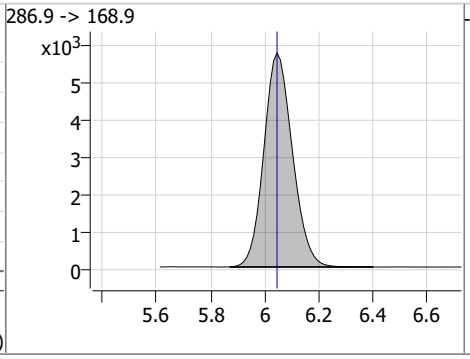


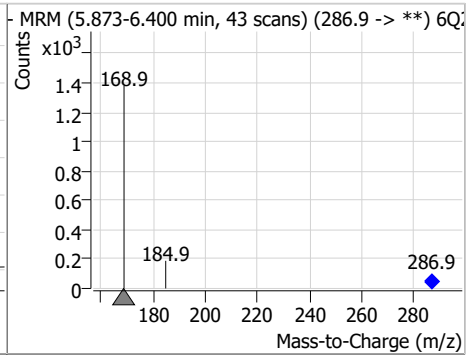




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.29	6.05	0.00	42356				

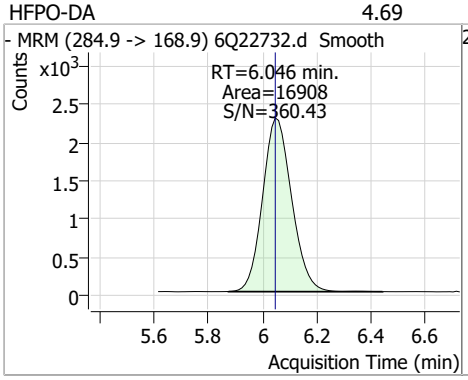


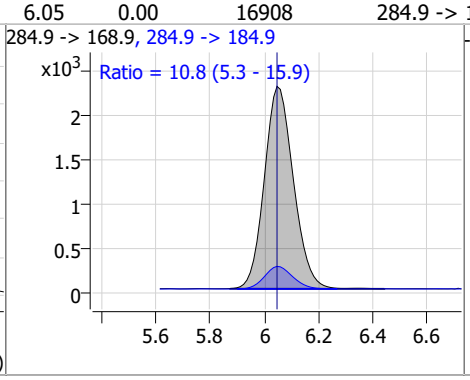


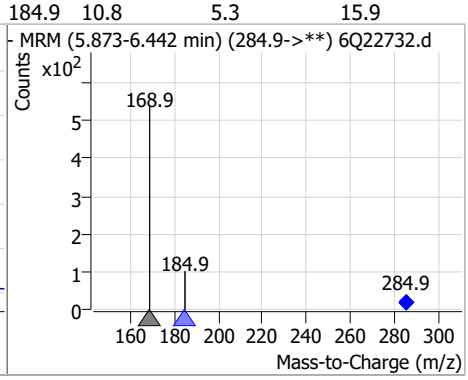


Perfluorinated Compounds by LC/MS/MS

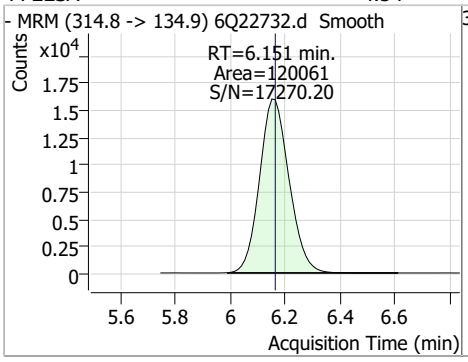
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.69	6.05	0.00	16908	284.9 -> 184.9	10.8	5.3	15.9

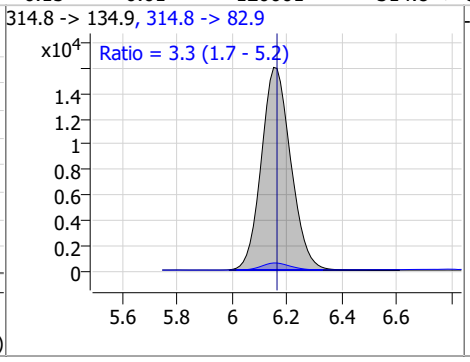


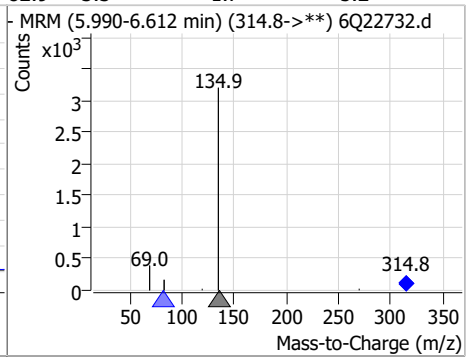




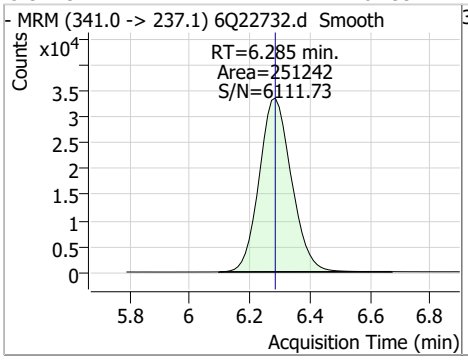
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.54	6.15	-0.01	120061	314.8 -> 82.9	3.3	1.7	5.2

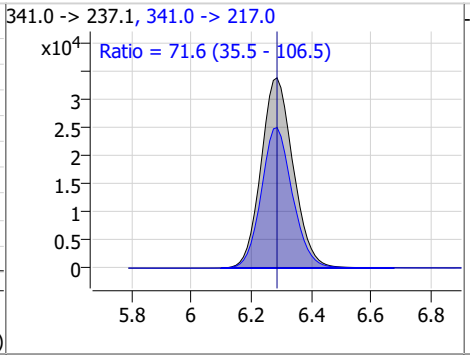


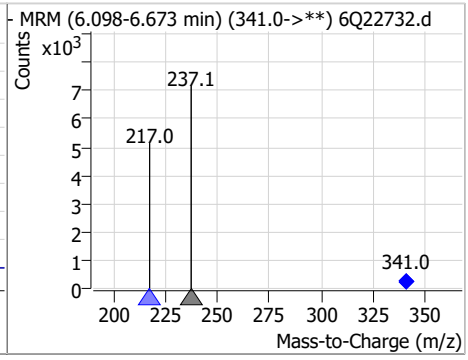




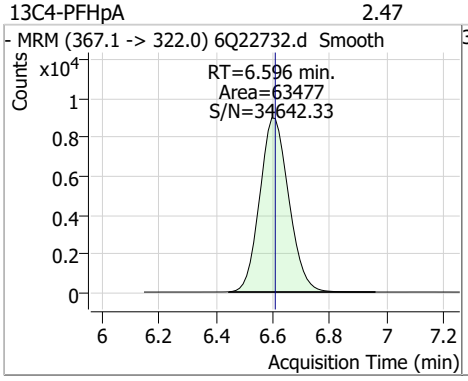
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.99	6.28	0.00	251242	341.0 -> 217.0	71.6	35.5	106.5

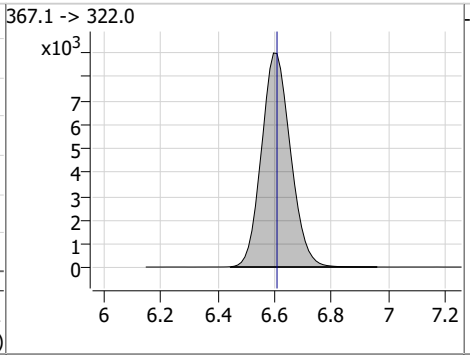


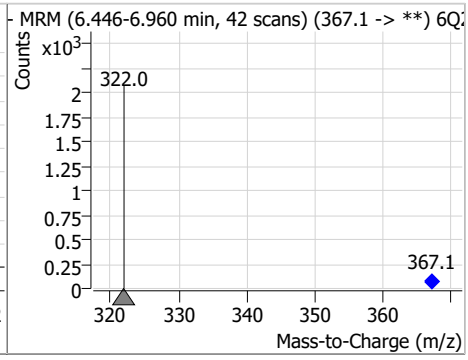




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.47	6.60	-0.01	63477				

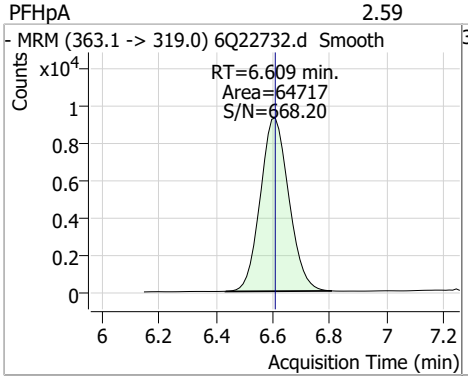


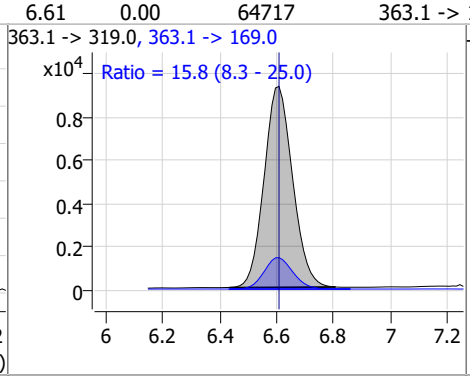


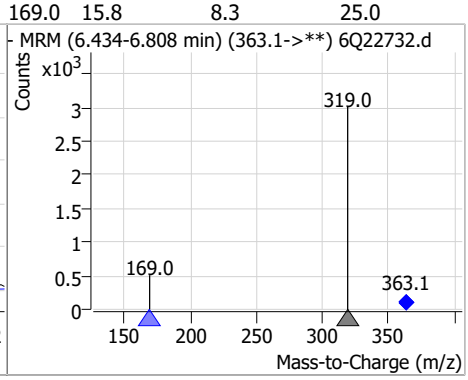


Perfluorinated Compounds by LC/MS/MS

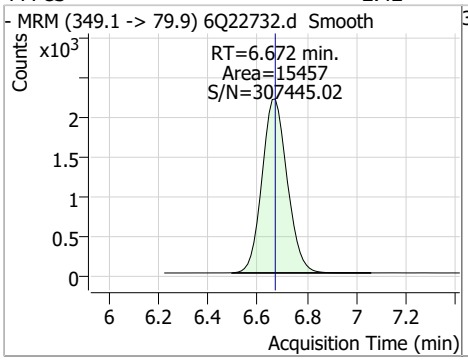
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.59	6.61	0.00	64717	363.1 -> 169.0	15.8	8.3	25.0

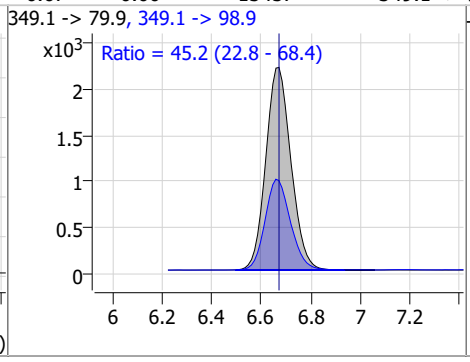


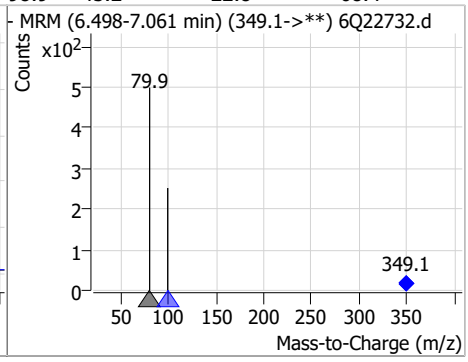




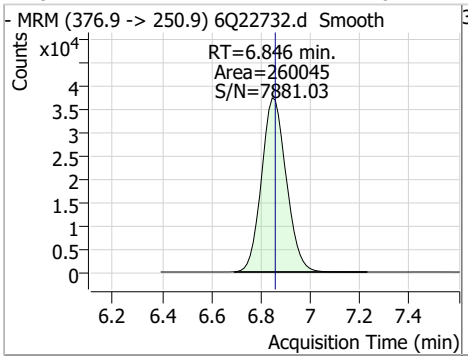
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.42	6.67	0.00	15457	349.1 -> 98.9	45.2	22.8	68.4

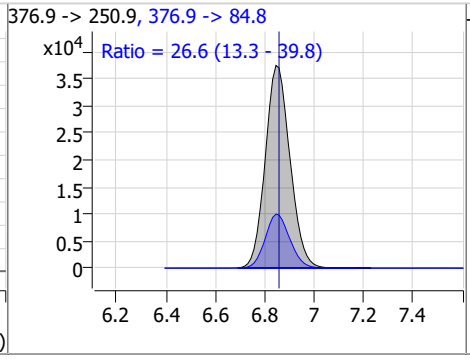


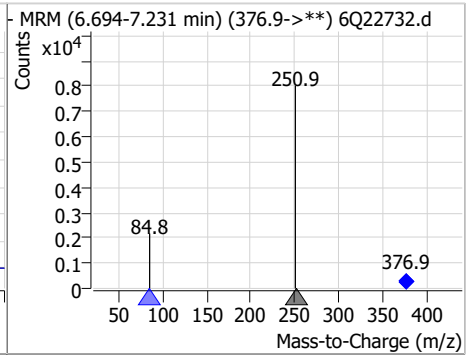




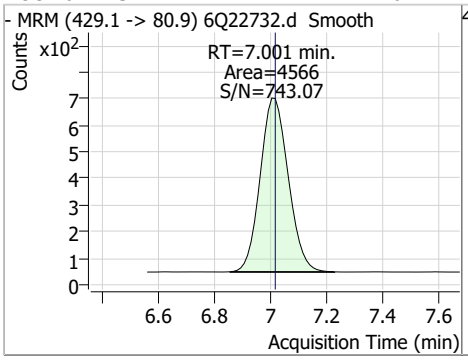
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.82	6.85	-0.01	260045	376.9 -> 84.8	26.6	13.3	39.8

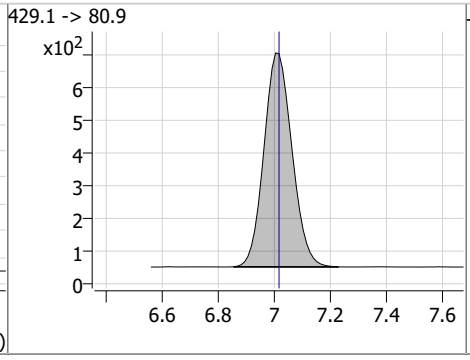


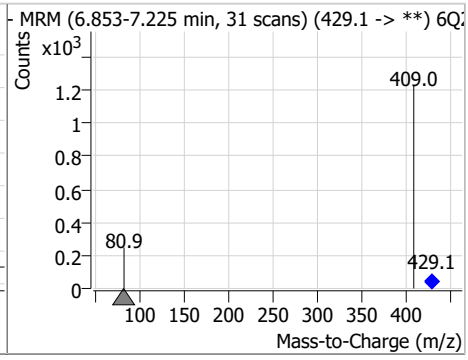




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.46	7.00	-0.01	4566				

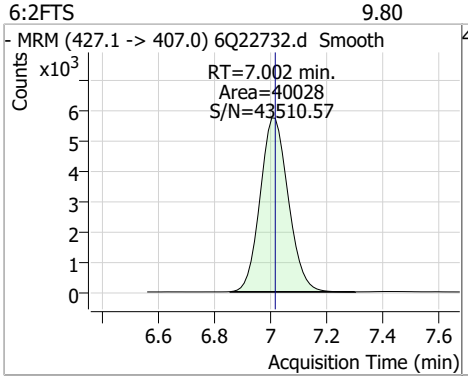


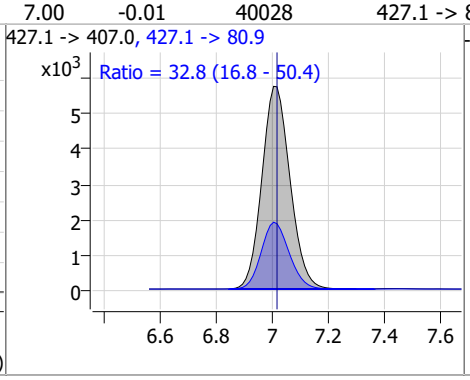


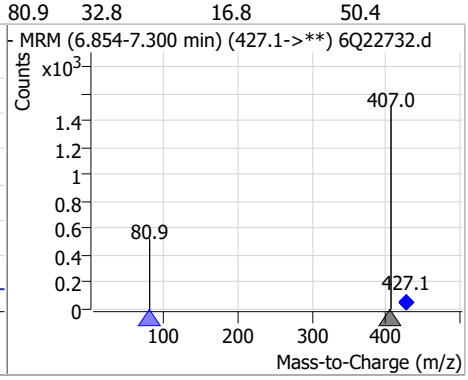


Perfluorinated Compounds by LC/MS/MS

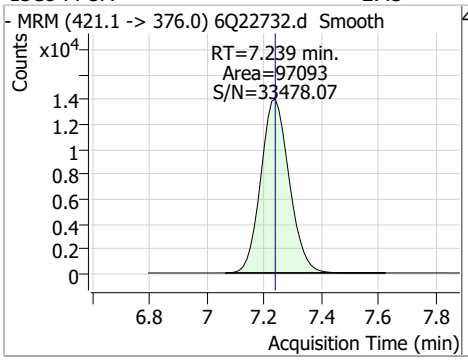
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.80	7.00	-0.01	40028	427.1 -> 80.9	32.8	16.8	50.4

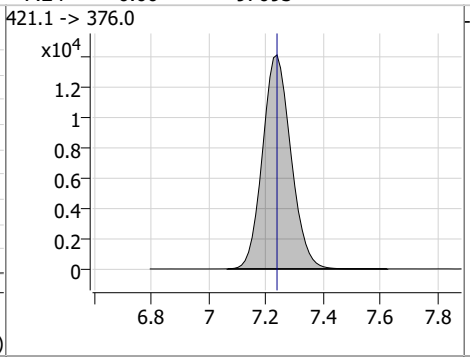


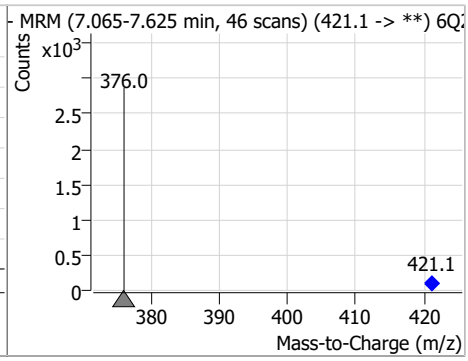




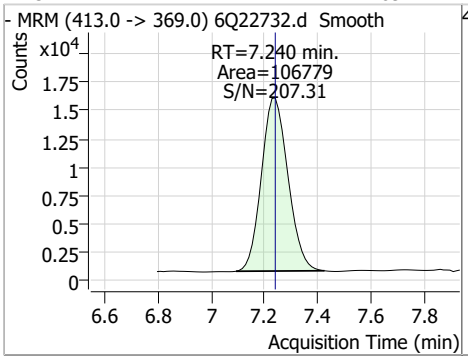
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.43	7.24	0.00	97093				

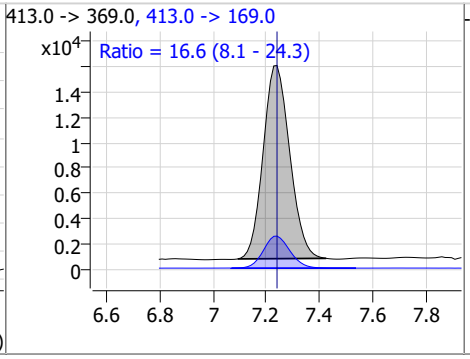


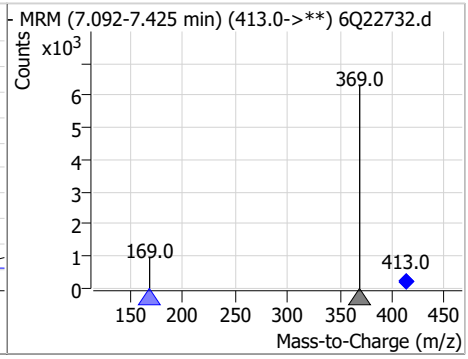




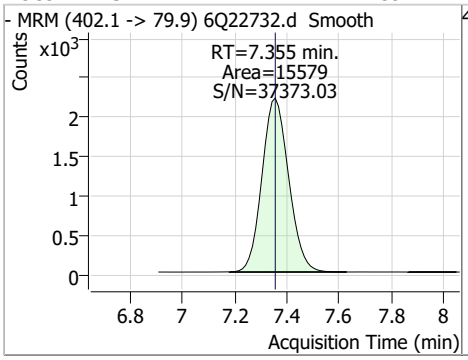
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.69	7.24	0.00	106779	413.0 -> 169.0	16.6	8.1	24.3

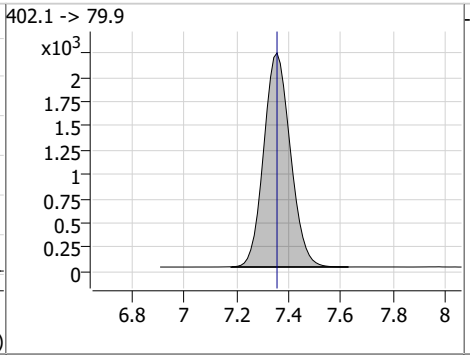


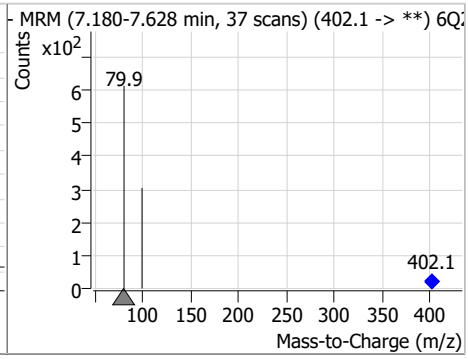




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.39	7.35	0.00	15579				

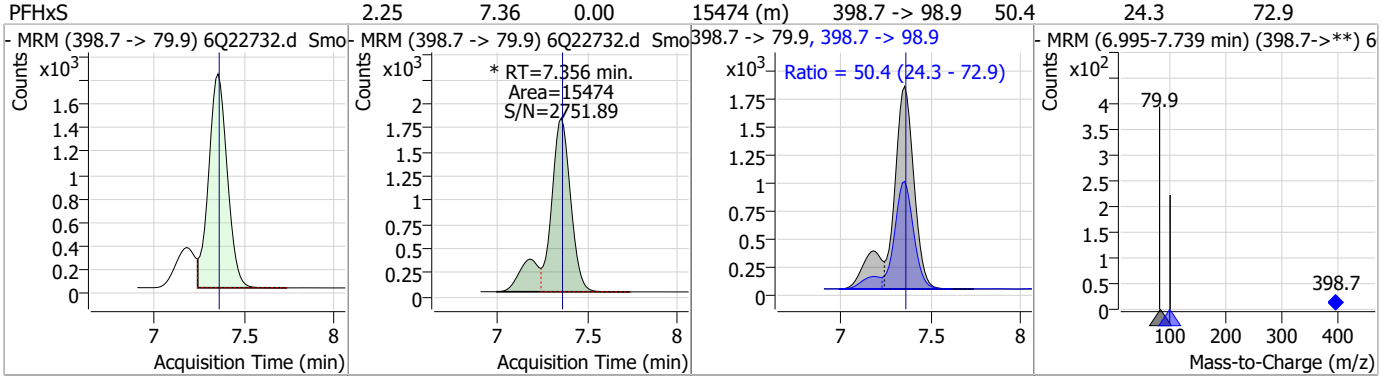




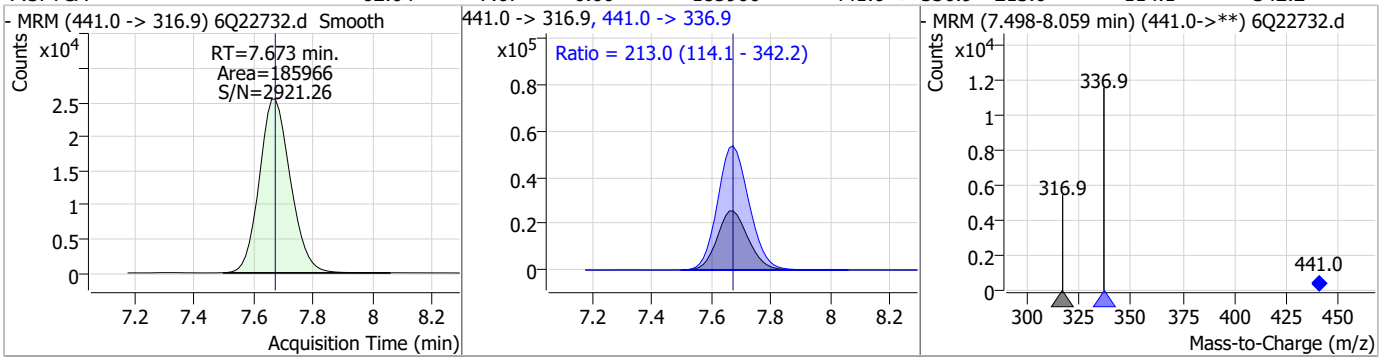


Perfluorinated Compounds by LC/MS/MS

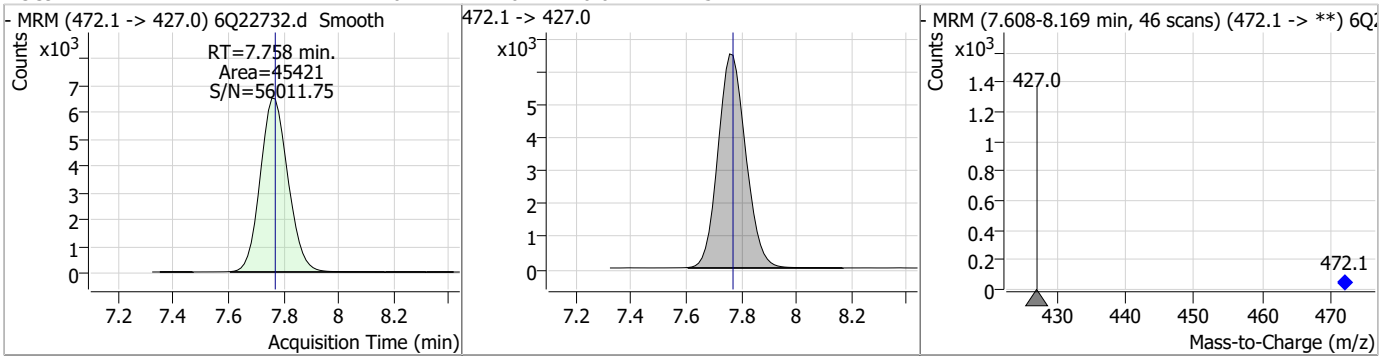
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.25	7.36	0.00	15474 (m)	398.7 -> 98.9	50.4	24.3	72.9



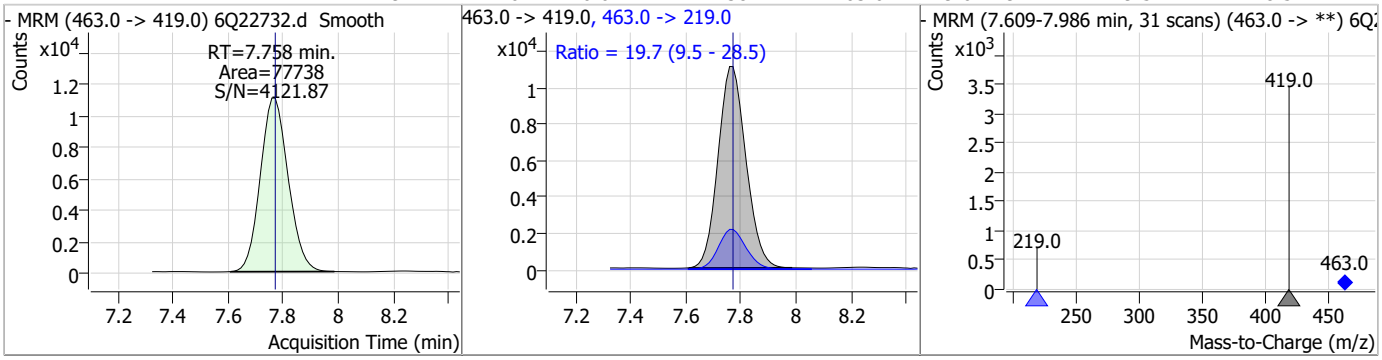
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	62.04	7.67	0.00	185966	441.0 -> 336.9	213.0	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.20	7.76	-0.01	45421				

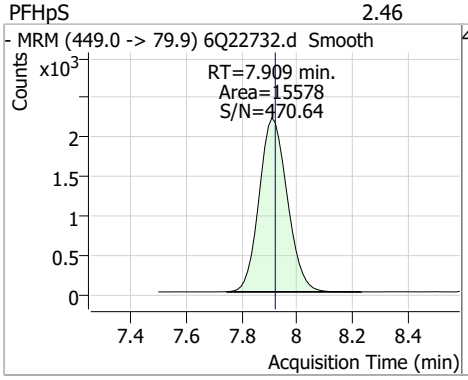


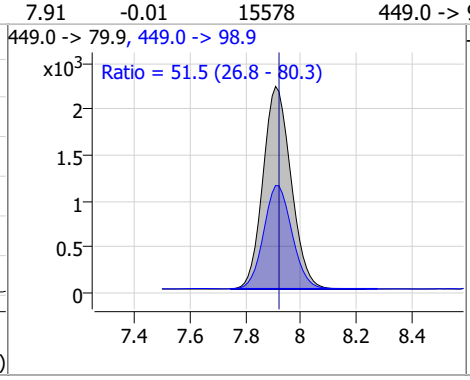
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.49	7.76	-0.01	77738	463.0 -> 219.0	19.7	9.5	28.5

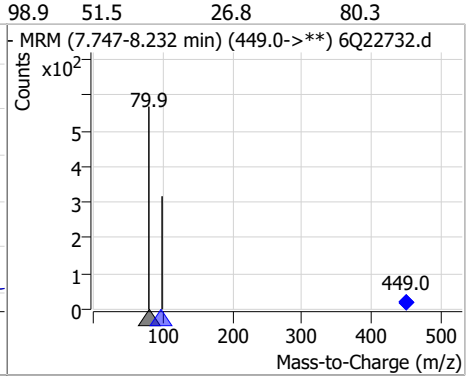


Perfluorinated Compounds by LC/MS/MS

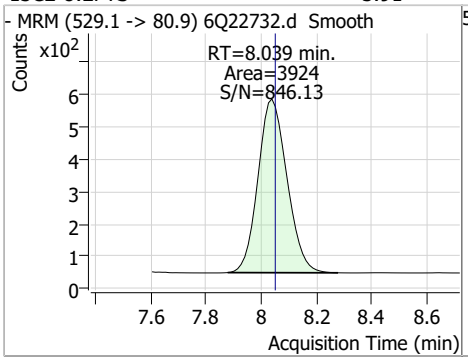
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.46	7.91	-0.01	15578	449.0 -> 98.9	51.5	26.8	80.3

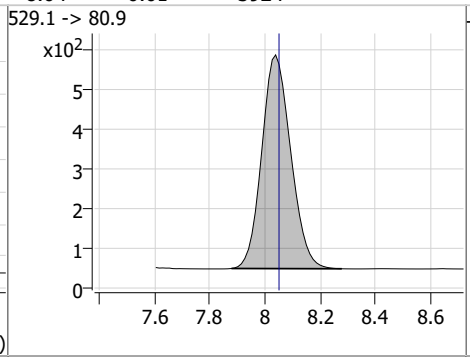


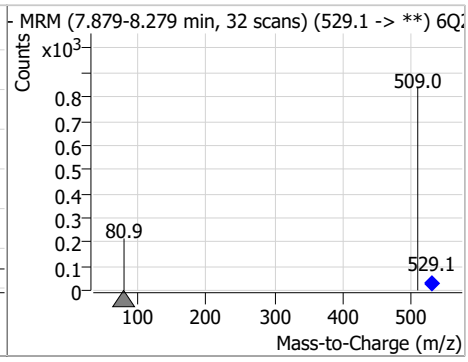




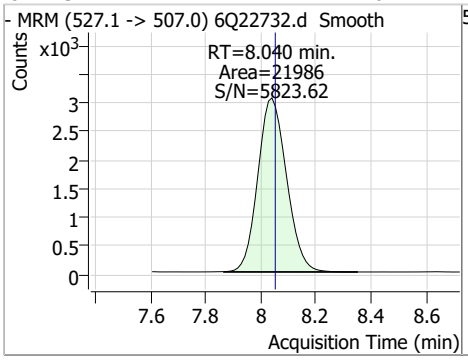
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.91	8.04	-0.01	3924				

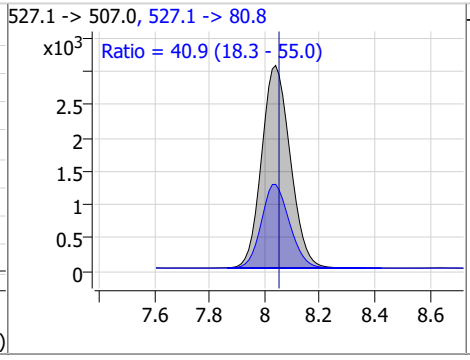


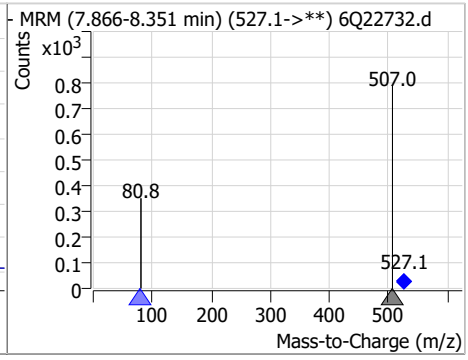




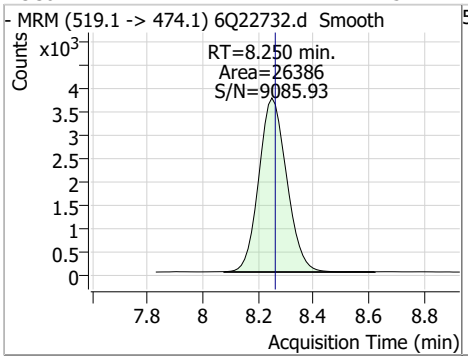
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.47	8.04	-0.01	21986	527.1 -> 80.8	40.9	18.3	55.0

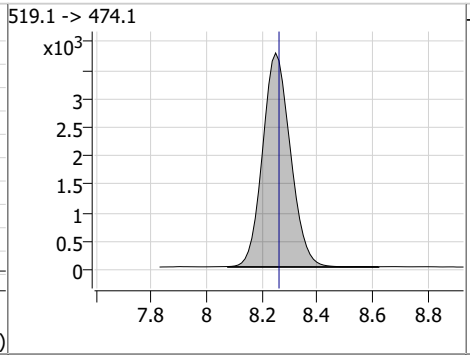


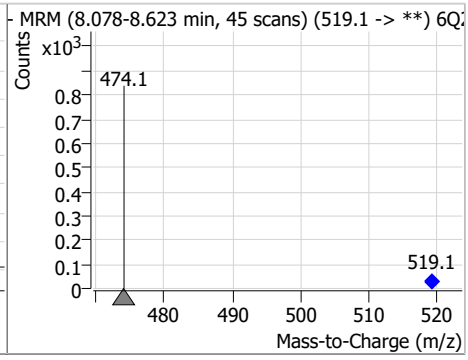




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.25	-0.01	26386				

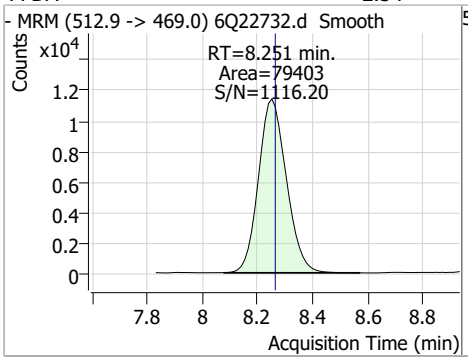


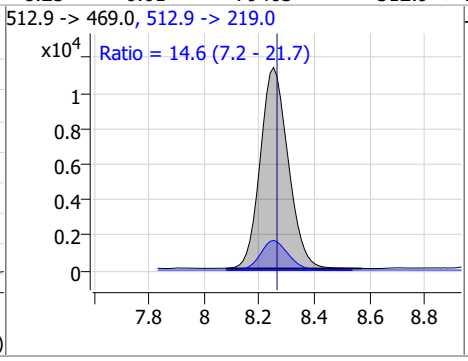


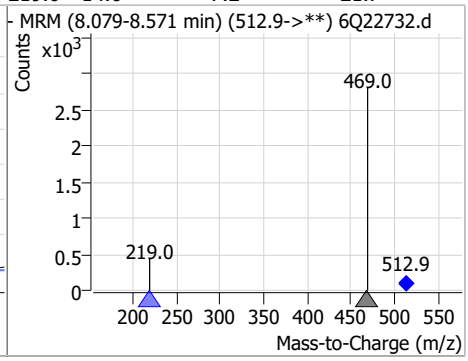


Perfluorinated Compounds by LC/MS/MS

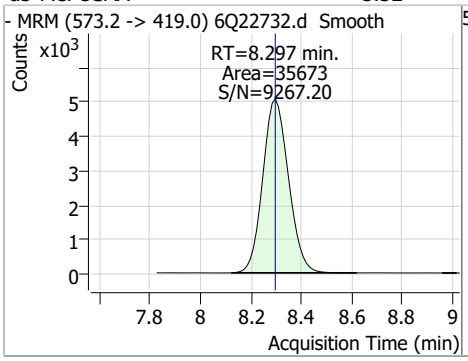
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.54	8.25	-0.01	79403	512.9 -> 219.0	14.6	7.2	21.7

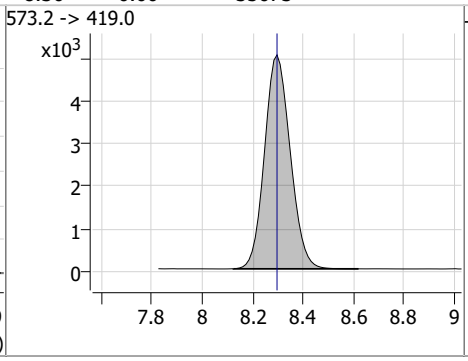


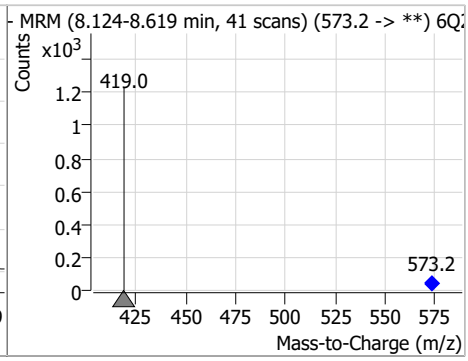




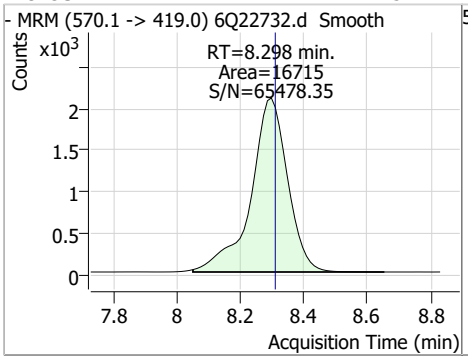
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.32	8.30	0.00	35673				

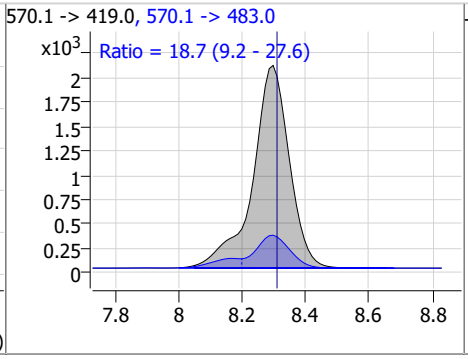


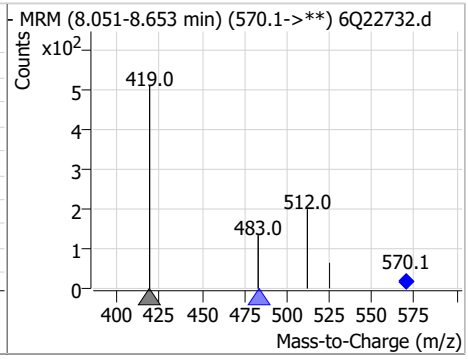




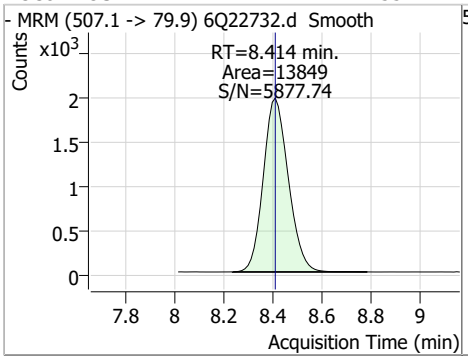
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.45	8.30	-0.01	16715	570.1 -> 483.0	18.7	9.2	27.6

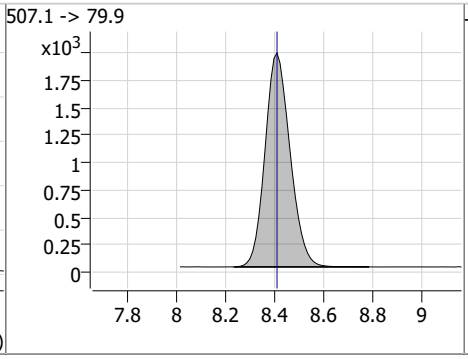


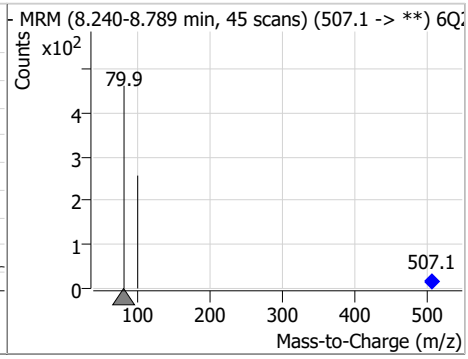




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.41	0.00	13849				

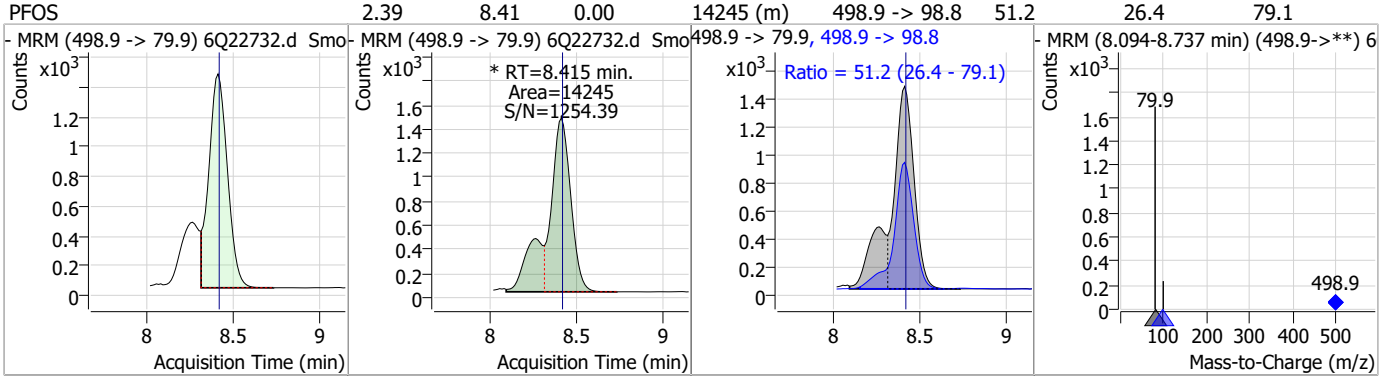




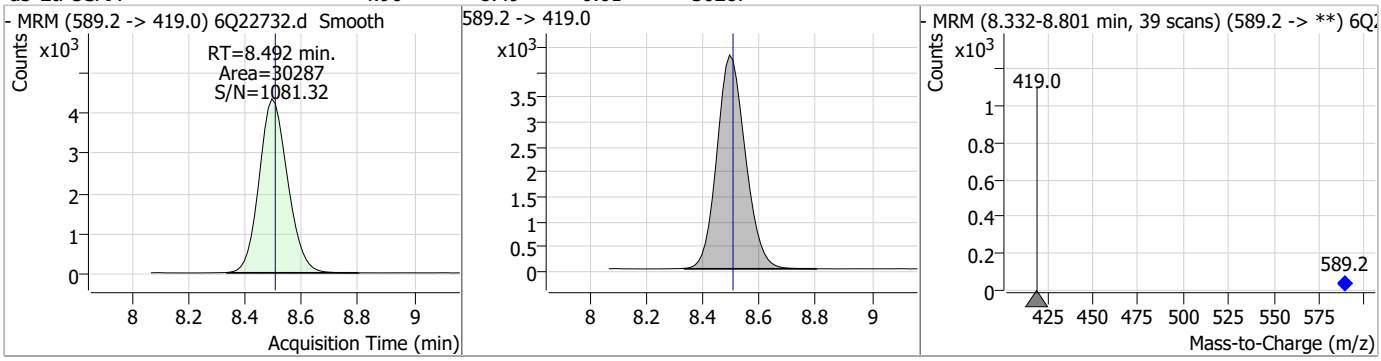


Perfluorinated Compounds by LC/MS/MS

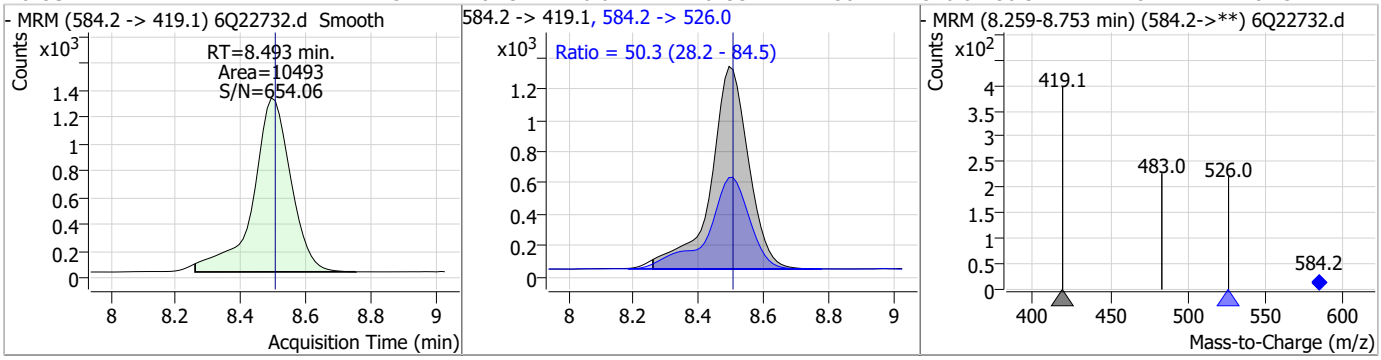
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.39	8.41	0.00	14245 (m)	498.9 -> 98.8	51.2	26.4	79.1



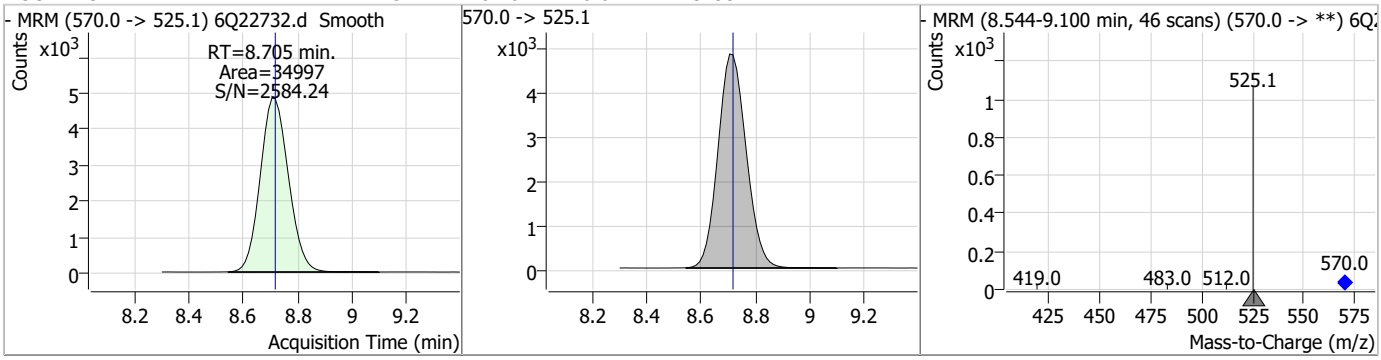
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.90	8.49	-0.01	30287				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.75	8.49	-0.01	10493	584.2 -> 526.0	50.3	28.2	84.5

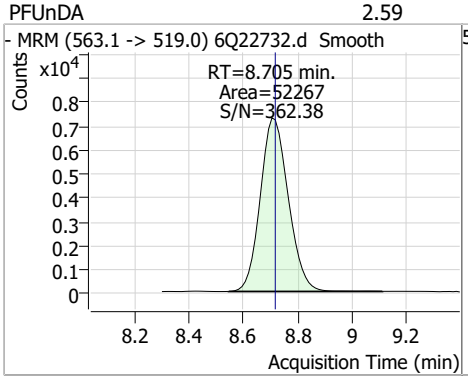


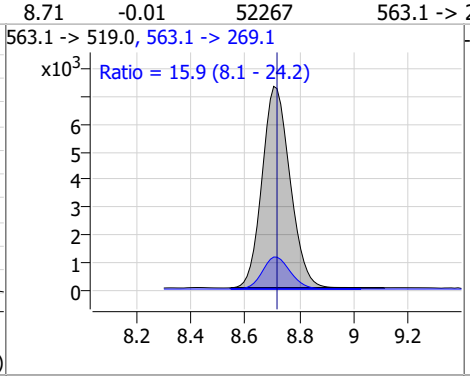
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.70	-0.01	34997				

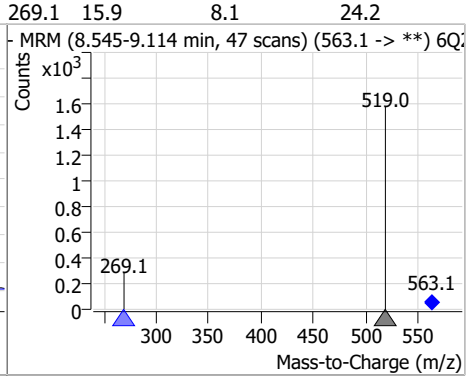


Perfluorinated Compounds by LC/MS/MS

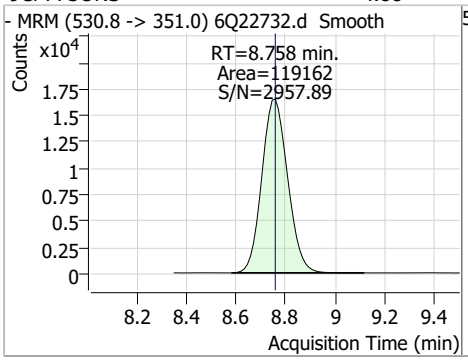
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.59	8.71	-0.01	52267	563.1 -> 269.1	15.9	8.1	24.2

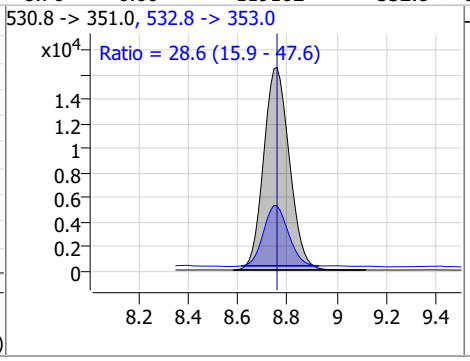


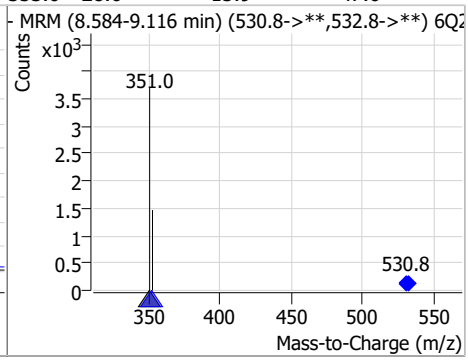




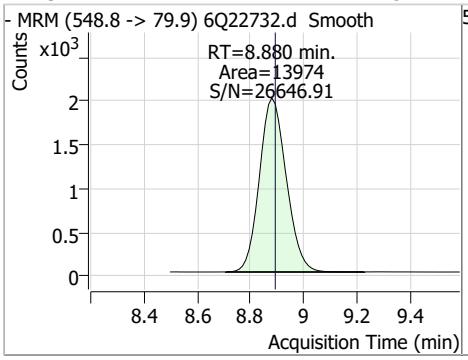
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.88	8.76	0.00	119162	532.8 -> 353.0	28.6	15.9	47.6

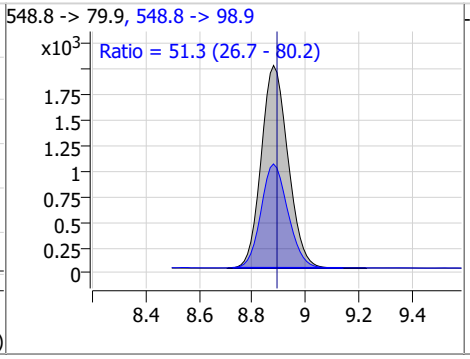


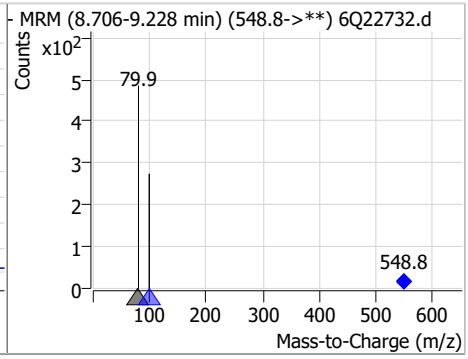




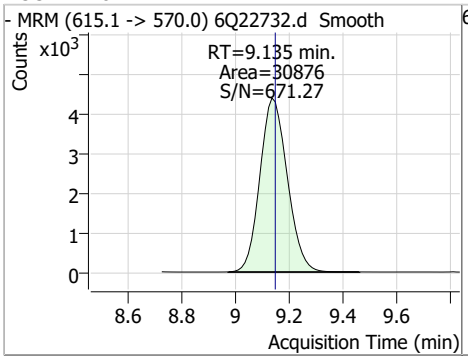
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.45	8.88	-0.01	13974	548.8 -> 98.9	51.3	26.7	80.2

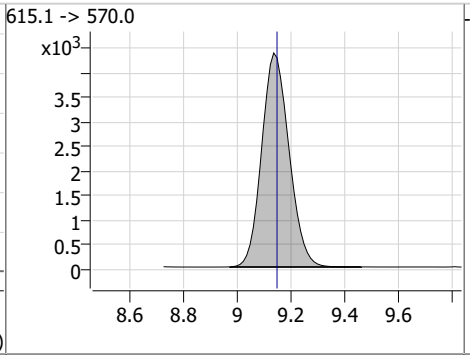


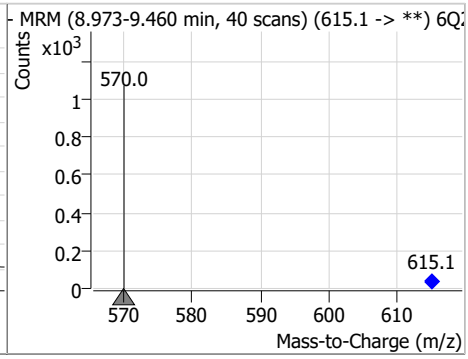




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	9.14	-0.01	30876				

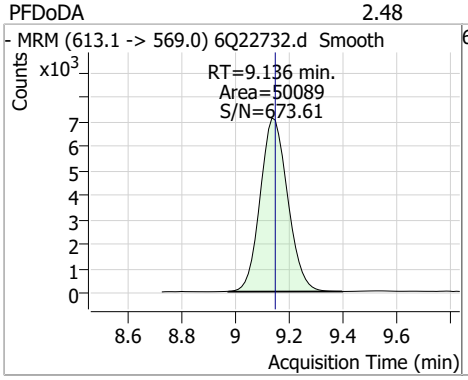


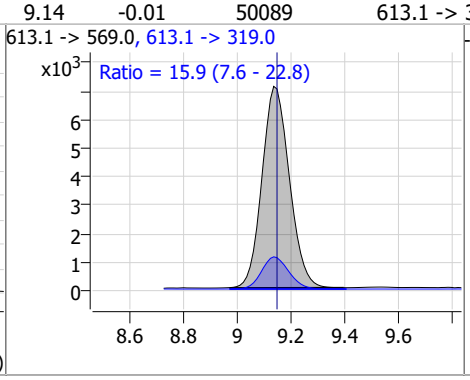


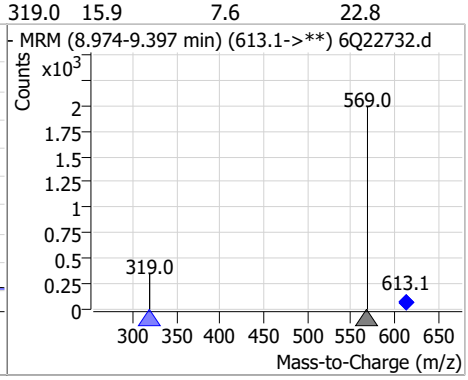


Perfluorinated Compounds by LC/MS/MS

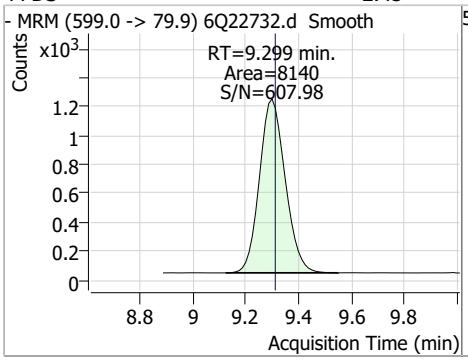
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.48	9.14	-0.01	50089	613.1 -> 319.0	15.9	7.6	22.8

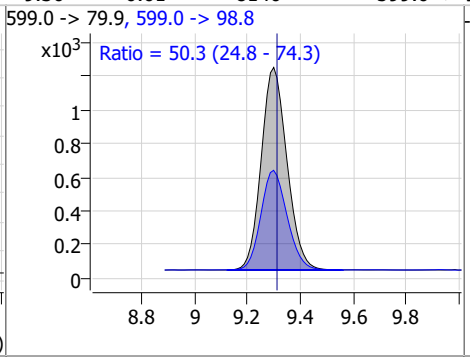


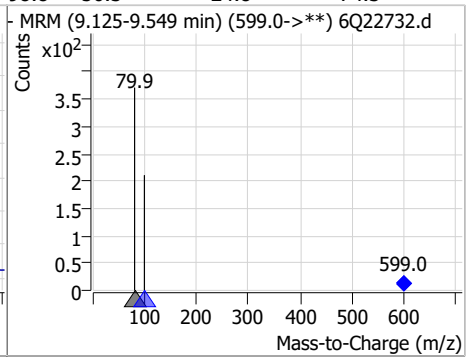




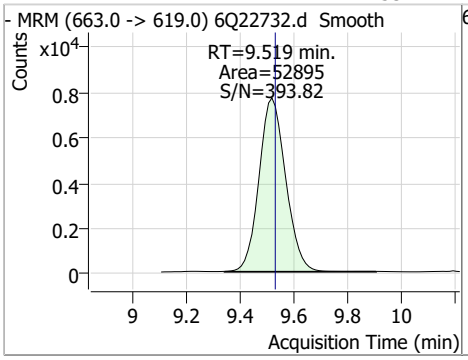
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.45	9.30	-0.01	8140	599.0 -> 98.8	50.3	24.8	74.3

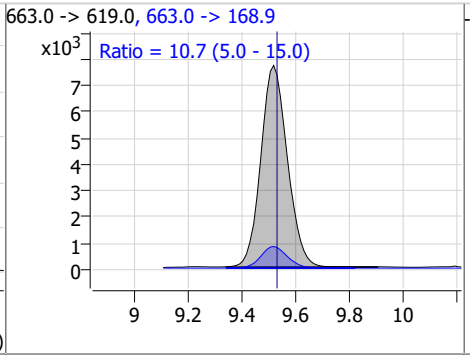


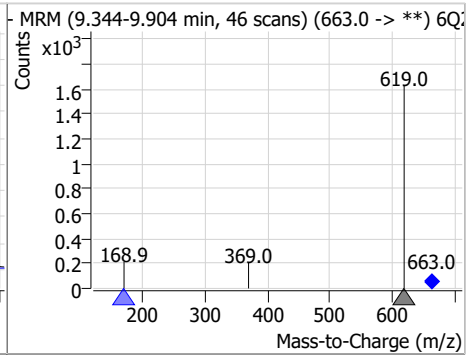




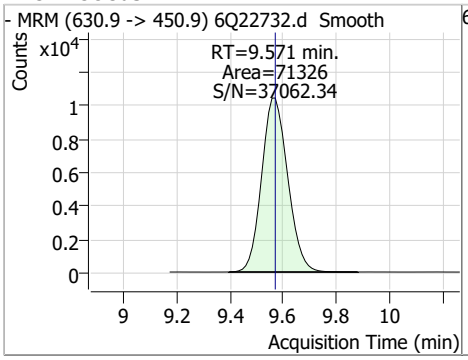
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.53	9.52	-0.01	52895	663.0 -> 168.9	10.7	5.0	15.0

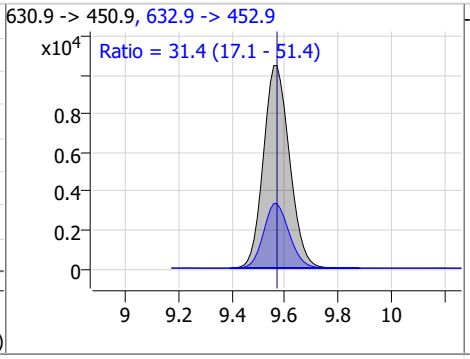


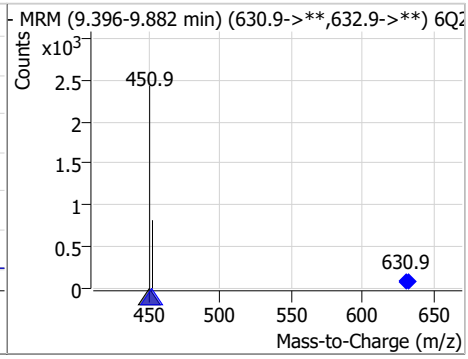




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.72	9.57	0.00	71326	632.9 -> 452.9	31.4	17.1	51.4

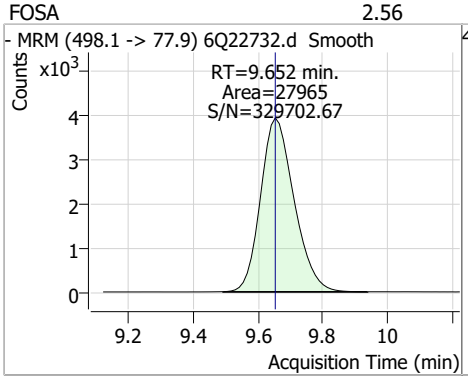


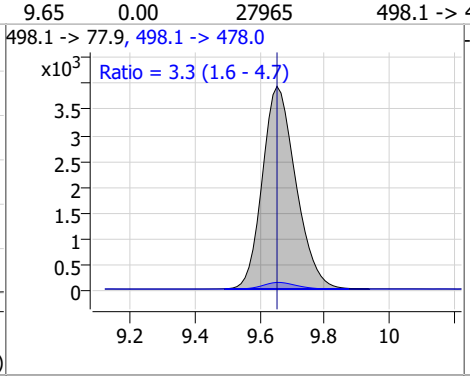


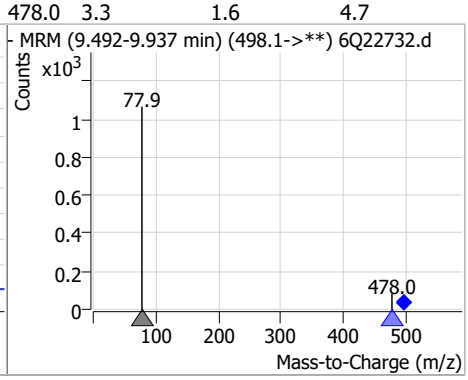


Perfluorinated Compounds by LC/MS/MS

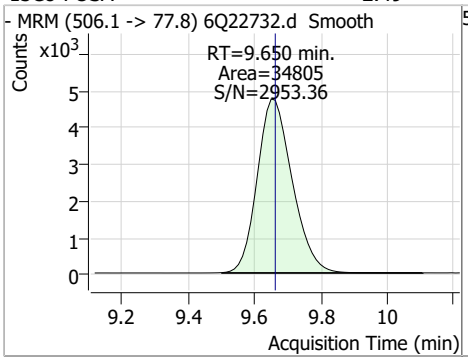
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.56	9.65	0.00	27965	498.1 -> 478.0	3.3	1.6	4.7

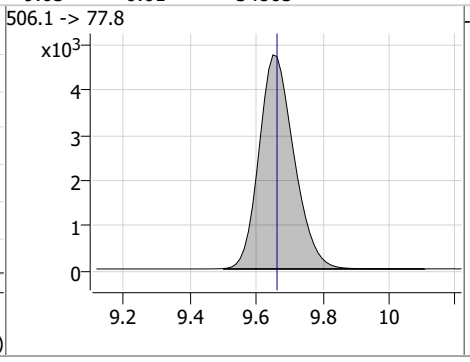


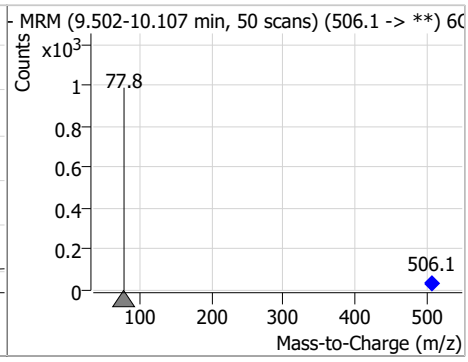




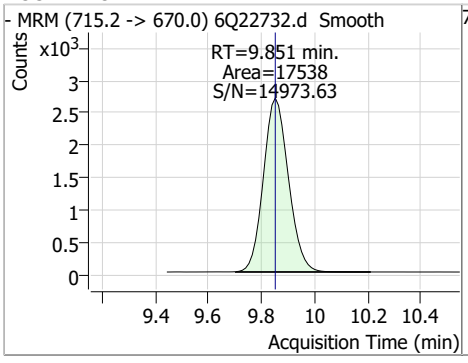
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.49	9.65	-0.01	34805				

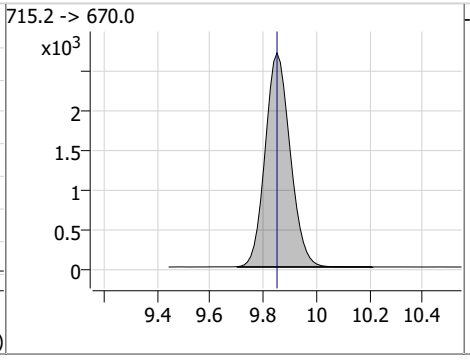


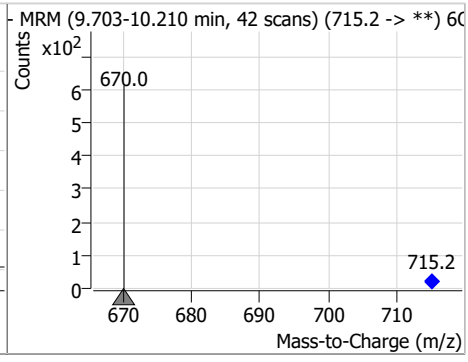




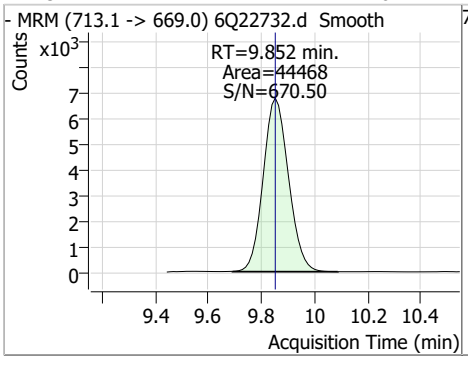
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.85	0.00	17538				

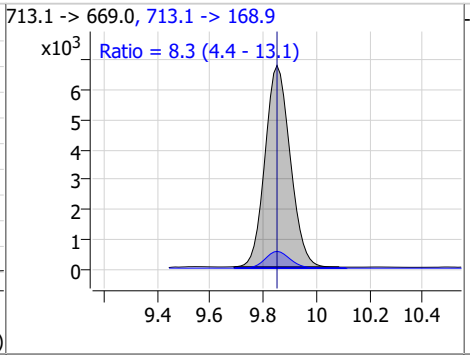


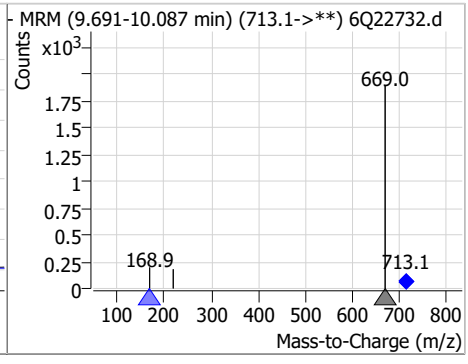




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.61	9.85	0.00	44468	713.1 -> 168.9	8.3	4.4	13.1

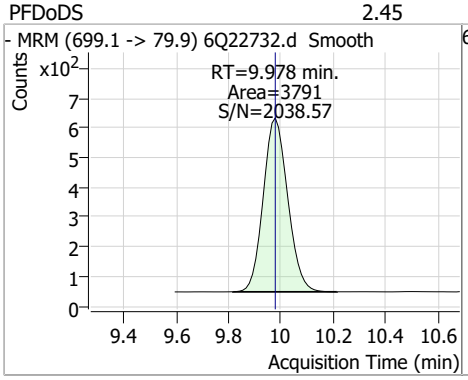


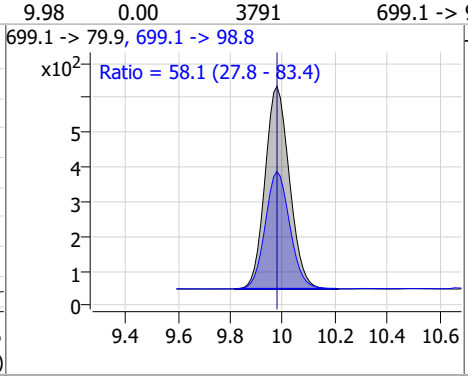


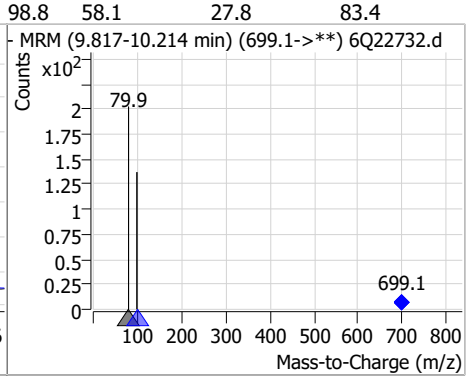


Perfluorinated Compounds by LC/MS/MS

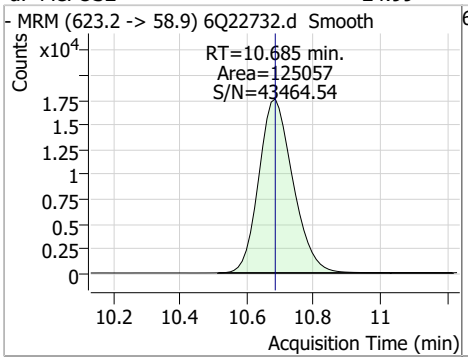
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.45	9.98	0.00	3791	699.1 -> 98.8	58.1	27.8	83.4

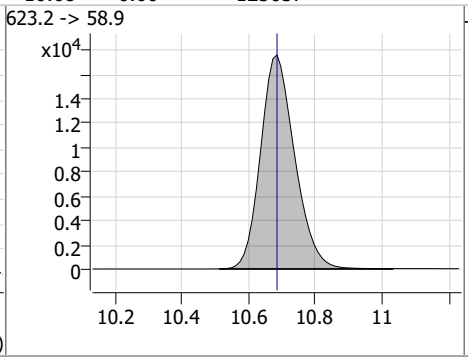


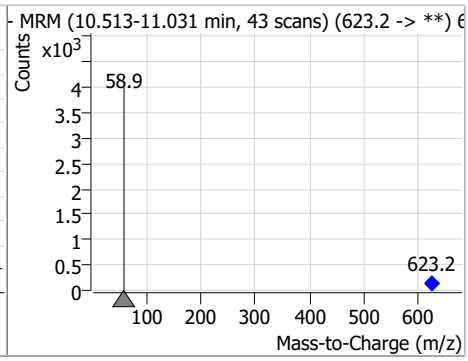




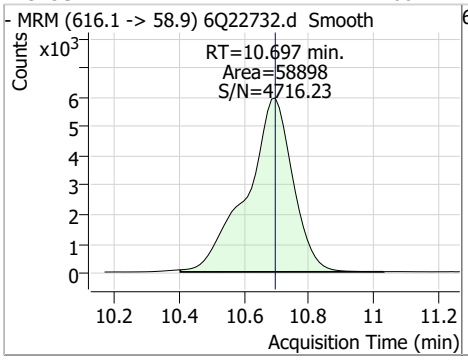
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.99	10.68	0.00	125057				

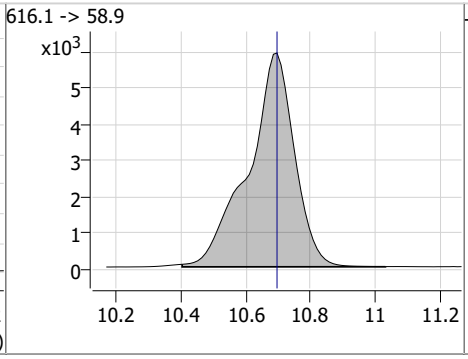


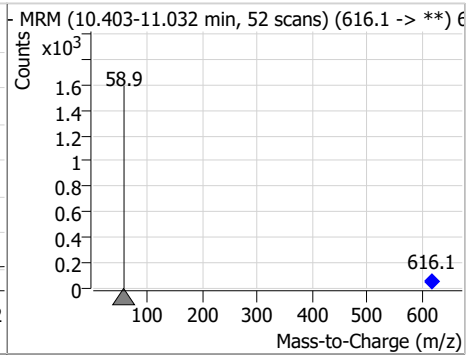




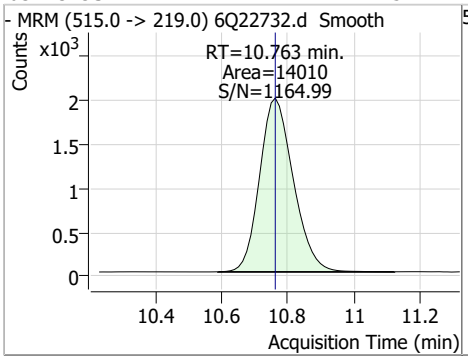
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.60	10.70	0.00	58898				

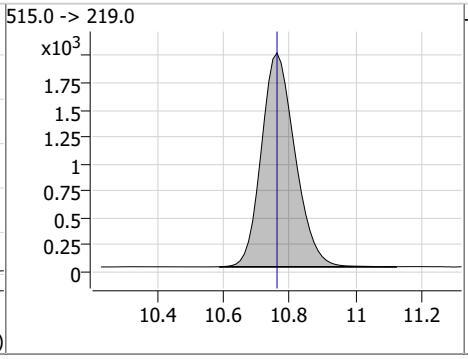


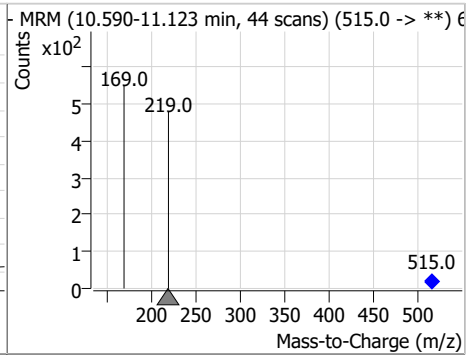




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.45	10.76	0.00	14010				

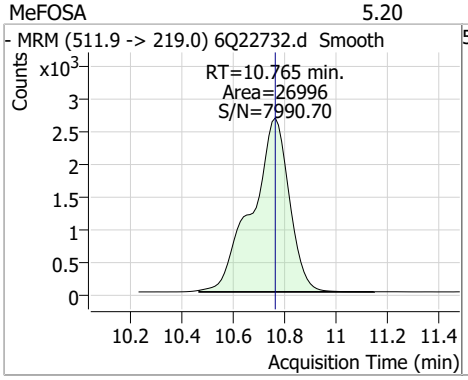


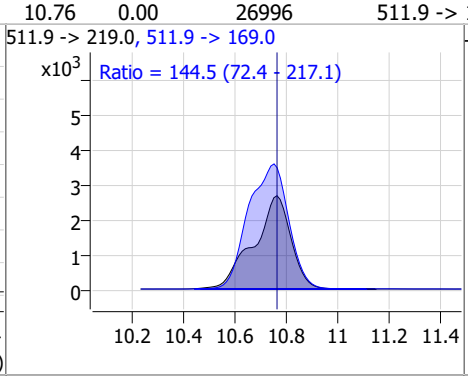


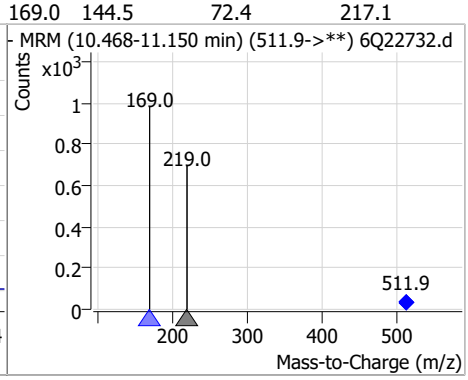


Perfluorinated Compounds by LC/MS/MS

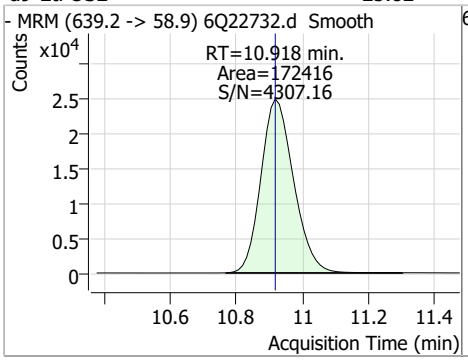
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.20	10.76	0.00	26996	511.9 -> 169.0	144.5	72.4	217.1

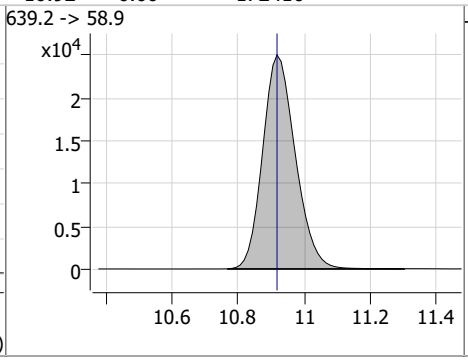


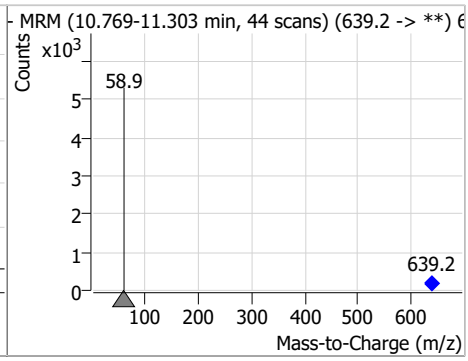




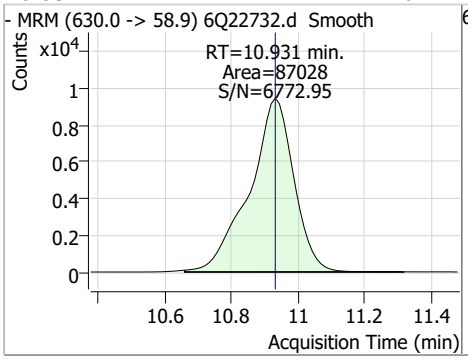
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.82	10.92	0.00	172416				

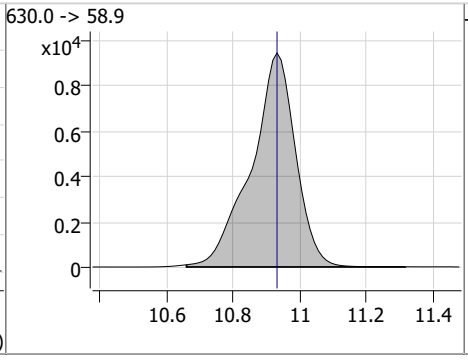


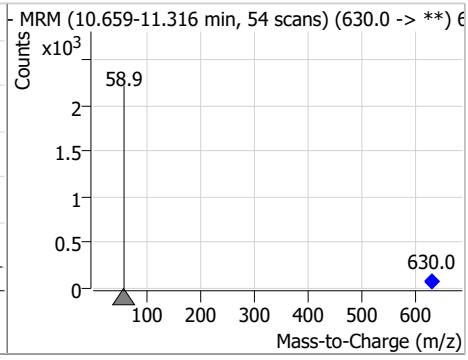




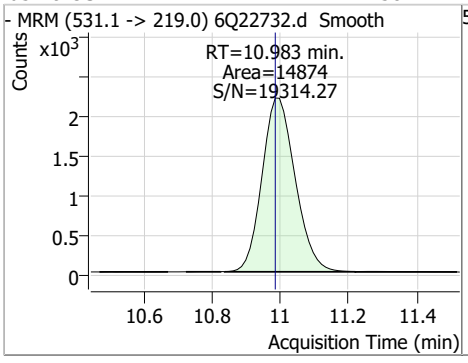
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.46	10.93	0.00	87028				

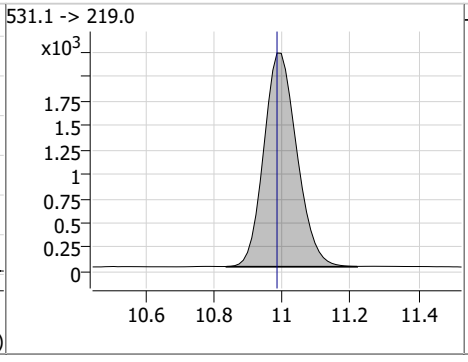


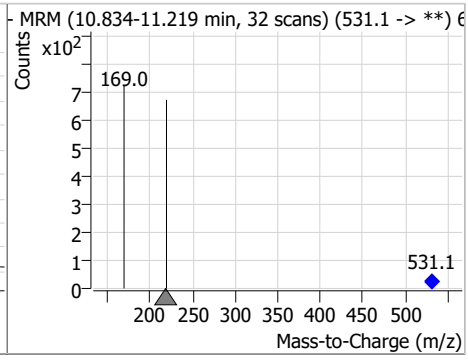




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.98	0.00	14874				

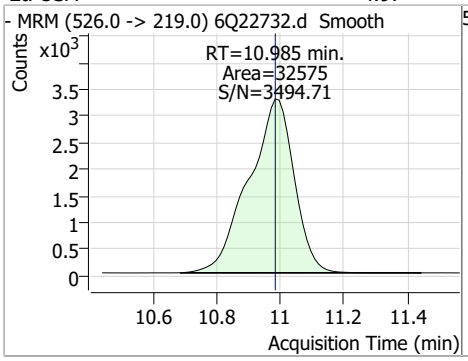


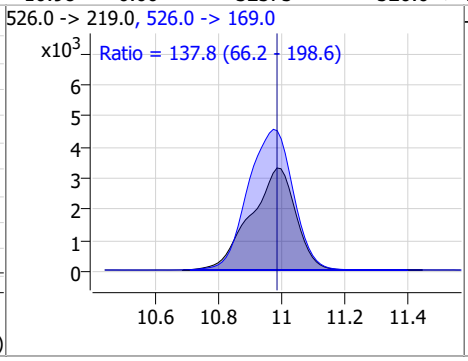


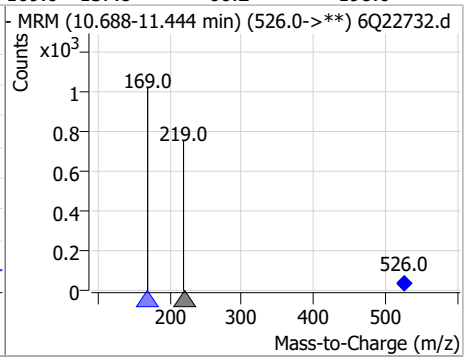


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.97	10.98	0.00	32575	526.0 -> 169.0	137.8	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-CC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22732.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/11/23 11:36	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22738.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 1:02:51 PM
Sample Name : cc330-4
Vial : P1-A5
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.997	216.8 -> 171.9	188365	10.00	µg/L	-0.012
M5-PFPeA	4.447	268.3 -> 223.0	60259	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	63376	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	64603	2.50	µg/L	-0.012
M8-PFOA	7.226	421.1 -> 376.0	98693	2.50	µg/L	-0.012
M9-PFNA	7.758	472.1 -> 427.0	47168	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	27296	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	34872	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	31898	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	17558	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	35194	2.50	µg/L	-0.012
M3-PFBS	5.610	302.1 -> 79.9	23668	2.50	µg/L	0.000
M3-PFHxS	7.355	402.1 -> 79.9	15267	2.50	µg/L	0.000
M8-PFOS	8.414	507.1 -> 79.9	14390	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3558	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	5059	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	5160	5.00	µg/L	-0.012
M3-MeFOSAA	8.297	573.2 -> 419.0	33925	5.00	µg/L	0.000
M3-HFPO-DA	6.045	286.9 -> 168.9	40049	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	32870	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	124000	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	172369	25.00	µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	14642	2.50	µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14056	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	18212	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	79253	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	11081	2.50	µg/L	0.000
13C4-PFOA	7.227	417.1 -> 372.0	109003	2.50	µg/L	-0.012
13C2-PFDA	8.251	515.1 -> 470.1	37010	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	57645	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	62439	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3558	5.37	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C2-6:2FTS	7.001	429.1 -> 80.9	5059	5.29	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5160	5.52	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C2-PFDoDA	9.135	615.1 -> 570.0	31898	1.28	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C2-PFTeDA	9.851	715.2 -> 670.0	17558	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C3-PFBS	5.610	302.1 -> 79.9	23668	2.52	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFHxS	7.355	402.1 -> 79.9	15267	2.51	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 = 100.3%	
13C4-PFBA	2.997	216.8 -> 171.9	188365	10.06 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.596	367.1 -> 322.0	64603	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFHxA	5.668	318.0 -> 273.0	63376	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFPeA	4.447	268.3 -> 223.0	60259	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C6-PFDA	8.250	519.1 -> 474.1	27296	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C7-PFUnDA	8.705	570.0 -> 525.1	34872	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.650	506.1 -> 77.8	35194	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOA	7.226	421.1 -> 376.0	98693	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-PFOS	8.414	507.1 -> 79.9	14390	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C9-PFNA	7.758	472.1 -> 427.0	47168	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSAA	8.297	573.2 -> 419.0	33925	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	40049	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	10.763	515.0 -> 219.0	14056	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
d5-EtFOSAA	8.492	589.2 -> 419.0	32870	5.40 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
d7-MeFOSE	10.685	623.2 -> 58.9	124000	25.19 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
d9-EtFOSE	10.918	639.2 -> 58.9	172369	26.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d5-EtFOSA	10.996	531.1 -> 219.0	14642	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
Target Compounds					**QValue**
4:2FTS	5.331	327.1 -> 307.0	41753	9.07 µg/L	96
		327.1 -> 80.9	17267		
6:2FTS	7.002	427.1 -> 407.0	43527	9.62 µg/L	98
		427.1 -> 80.9	15064		
8:2FTS	8.040	527.1 -> 507.0	26512	9.60 µg/L	96
		527.1 -> 80.8	10387		
EtFOSAA	8.506	584.2 -> 419.1	10054	2.43 µg/L	93
		584.2 -> 526.0	5110		
FOSA	9.652	498.1 -> 77.9	28134	2.55 µg/L	99
		498.1 -> 478.0	810		
MeFOSAA	8.298	570.1 -> 419.0	17307	2.67 µg/L	98
		570.1 -> 483.0	3309		
PFBA	3.006	212.8 -> 168.9	59039	10.03 µg/L	100
PFBS	5.611	298.7 -> 79.9	17492	2.26 µg/L	96
		298.7 -> 98.8	6954		
PFDA	8.251	512.9 -> 469.0	76822	2.38 µg/L	99
		512.9 -> 219.0	11321		
PFDoDA	9.136	613.1 -> 569.0	49294	2.36 µg/L	98
		613.1 -> 319.0	7910		
PFDS	9.299	599.0 -> 79.9	7850	2.27 µg/L	98

Perfluorinated Compounds by LC/MS/MS

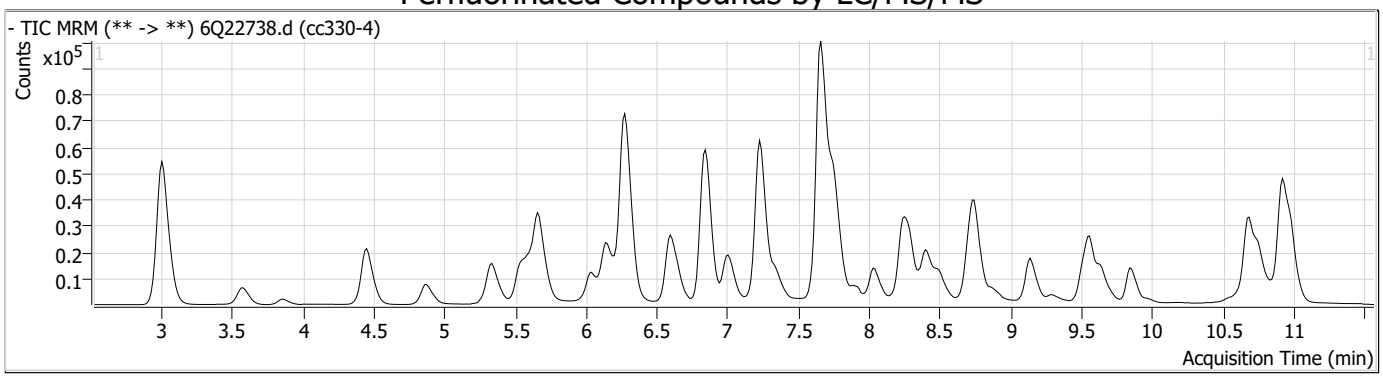
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	4006				
PFHpA	6.596	363.1 -> 319.0	62376	2.45	µg/L		100
		363.1 -> 169.0	10510				
PFHpS	7.909	449.0 -> 79.9	16296	2.48	µg/L		92
		449.0 -> 98.9	7846				
PFHxA	5.670	313.0 -> 269.0	47561	2.57	µg/L		100
		313.0 -> 118.9	2507				
PFHxS	7.356	398.7 -> 79.9	15447	2.29	µg/L	m	100
		398.7 -> 98.9	7547				
PFNA	7.758	463.0 -> 419.0	78899	2.43	µg/L		100
		463.0 -> 219.0	14938				
PFNS	8.880	548.8 -> 79.9	13652	2.30	µg/L		98
		548.8 -> 98.9	7064				
PFOA	7.240	413.0 -> 369.0	99473	2.47	µg/L		97
		413.0 -> 169.0	17371				
PFOS	8.415	498.9 -> 79.9	14391	2.33	µg/L	m	96
		498.9 -> 98.8	7211				
PFPeA	4.449	263.0 -> 219.0	67965	5.12	µg/L		100
PFPeS	6.660	349.1 -> 79.9	14916	2.39	µg/L		100
		349.1 -> 98.9	6786				
PFTeDA	9.852	713.1 -> 669.0	43472	2.55	µg/L		99
		713.1 -> 168.9	3577				
PFTrDA	9.519	663.0 -> 619.0	52962	2.46	µg/L		97
		663.0 -> 168.9	5976				
PFUnDA	8.705	563.1 -> 519.0	52032	2.59	µg/L		97
		563.1 -> 269.1	8975				
11Cl-PF3OUdS	9.558	630.9 -> 450.9	69938	4.89	µg/L		96
		632.9 -> 452.9	22316				
9Cl-PF3ONS	8.745	530.8 -> 351.0	114612	4.96	µg/L		100
		532.8 -> 353.0	36182				
ADONA	6.846	376.9 -> 250.9	254957	5.00	µg/L		99
		376.9 -> 84.8	68487				
HFPO-DA	6.046	284.9 -> 168.9	17384	5.10	µg/L		100
		284.9 -> 184.9	1834				
3:3FTCA	3.859	241.0 -> 177.0	10985	11.80	µg/L		99
		241.0 -> 117.0	1461				
5:3FTCA	6.272	341.0 -> 237.1	248130	65.08	µg/L		99
		341.0 -> 217.0	177676				
7:3FTCA	7.660	441.0 -> 316.9	181601	64.40	µg/L		95
		441.0 -> 336.9	398593				
EtFOSA	10.985	526.0 -> 219.0	33187	5.15	µg/L		99
		526.0 -> 169.0	43572				
EtFOSE	10.931	630.0 -> 58.9	84186	12.05	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	27826	5.34	µg/L		92
		511.9 -> 169.0	37577				
MeFOSE	10.697	616.1 -> 58.9	56741	12.24	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	3998	2.49	µg/L		98
		699.1 -> 98.8	2160				
NFDHA	5.551	295.0 -> 201.0	12530	5.31	µg/L		95
		295.0 -> 84.9	3219				
PFMBA	4.869	279.0 -> 85.1	47185	5.03	µg/L		100
PFMPA	3.576	229.0 -> 84.9	38231	5.09	µg/L		100
PFEESA	6.151	314.8 -> 134.9	115858	4.65	µg/L		100
		314.8 -> 82.9	4049				

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

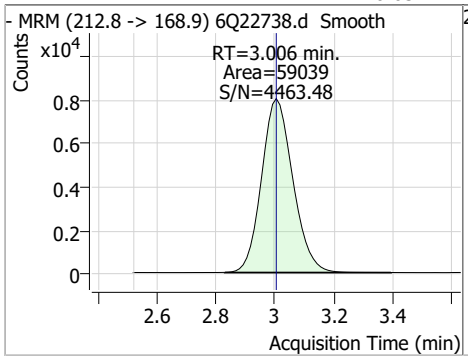
Perfluorinated Compounds by LC/MS/MS

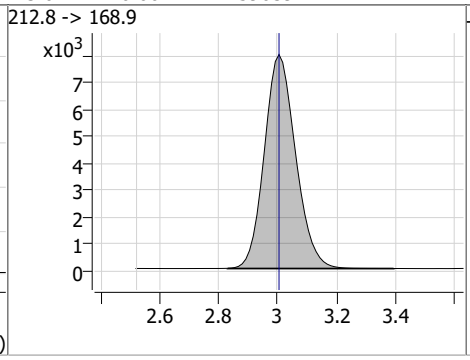
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

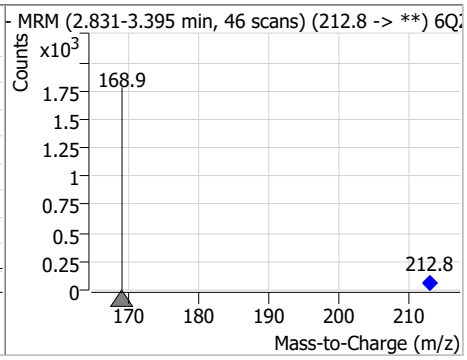
Perfluorinated Compounds by LC/MS/MS



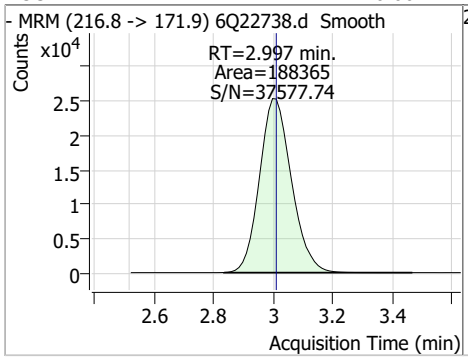
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.03	3.01	0.00	59039				

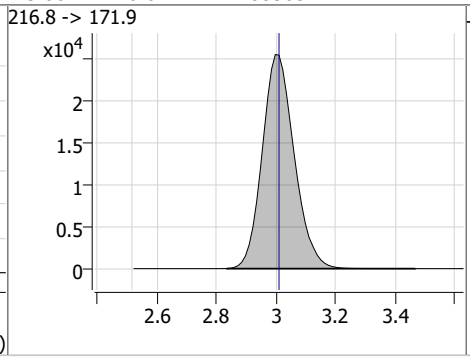


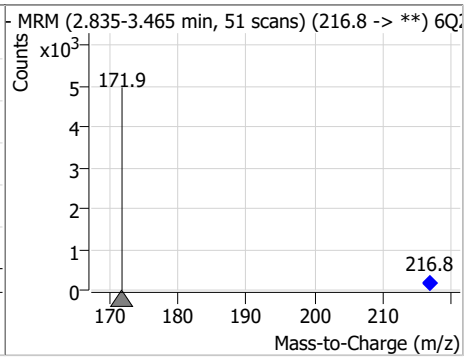




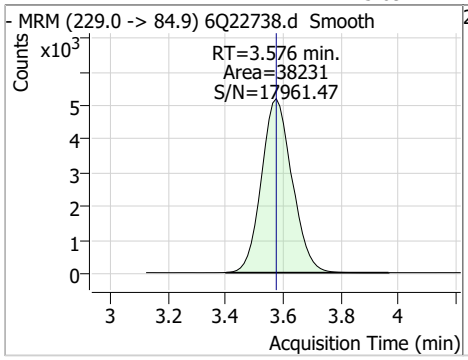
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.06	3.00	-0.01	188365				

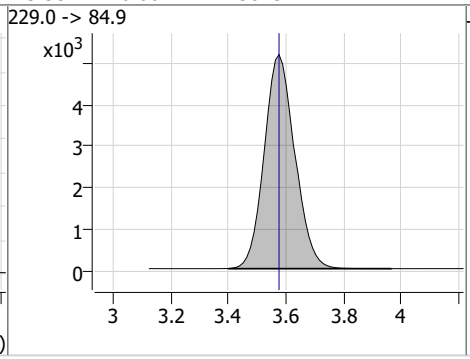


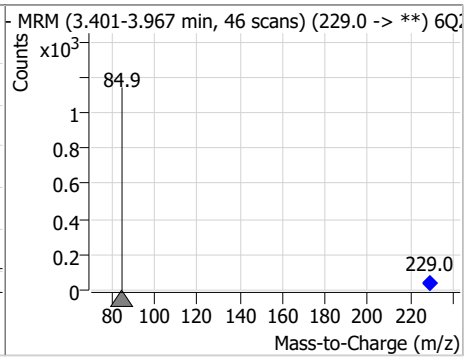




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.09	3.58	0.00	38231				

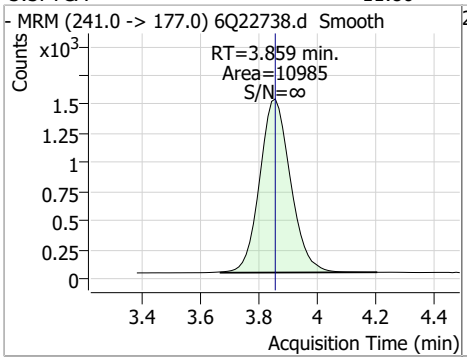


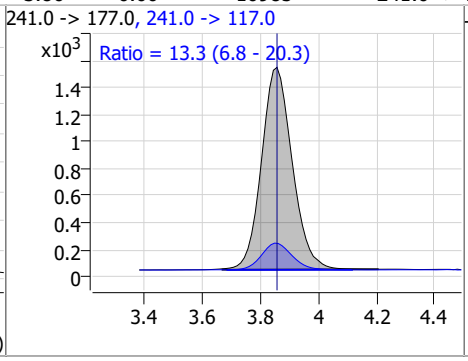


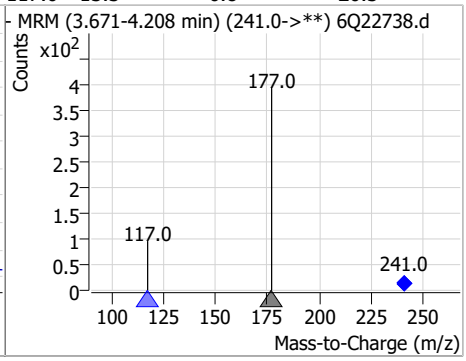


Perfluorinated Compounds by LC/MS/MS

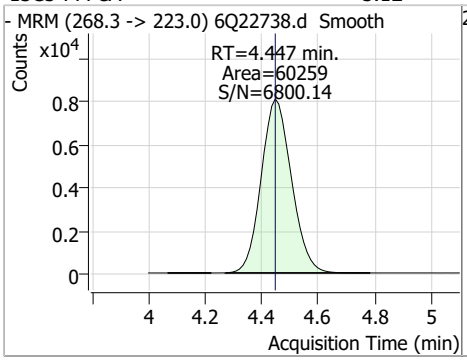
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.80	3.86	0.00	10985	241.0 -> 117.0	13.3	6.8	20.3

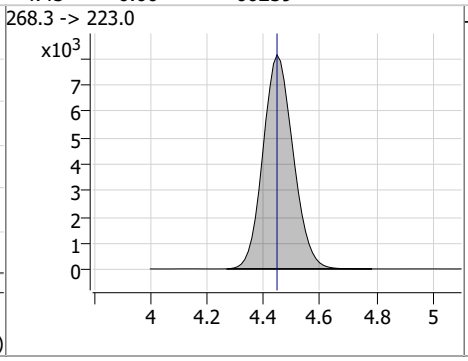


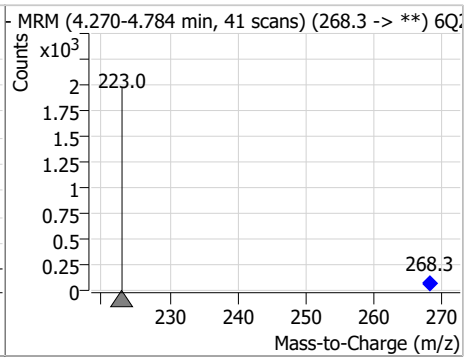




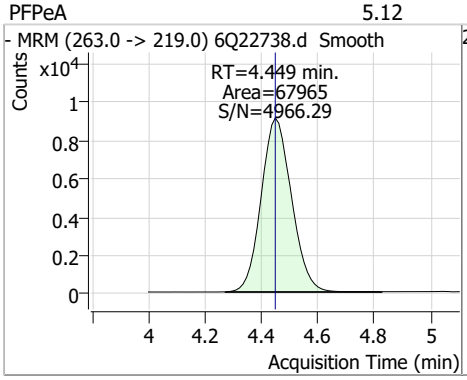
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.12	4.45	0.00	60259				

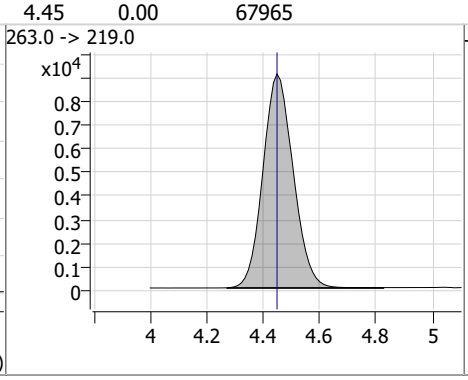


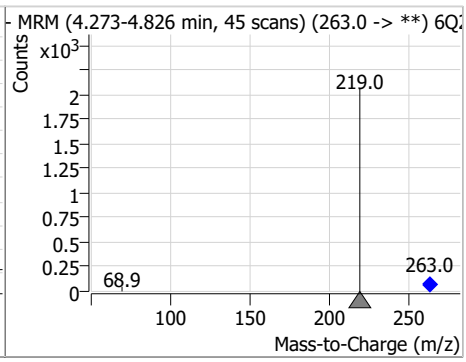




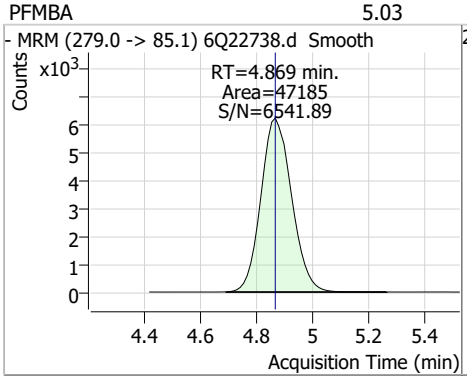
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.12	4.45	0.00	67965				

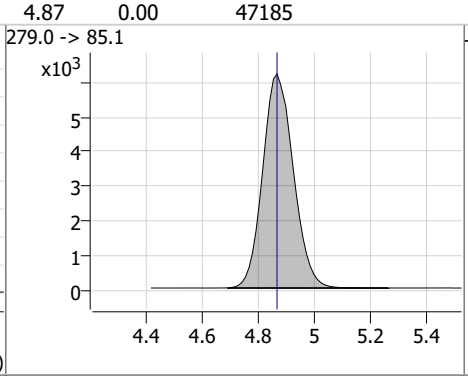


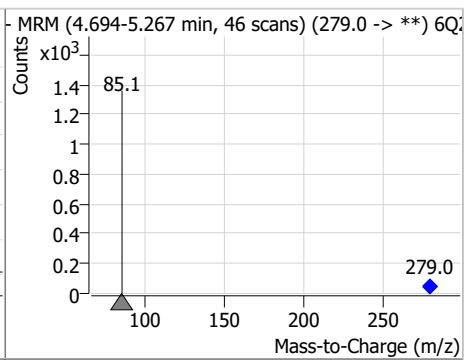




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.03	4.87	0.00	47185				

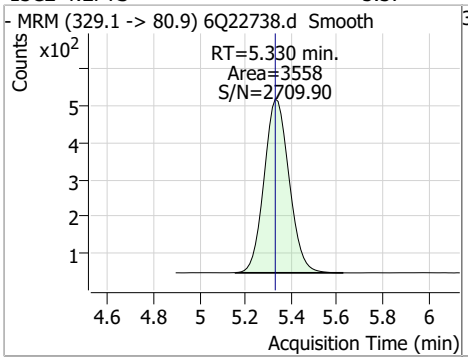


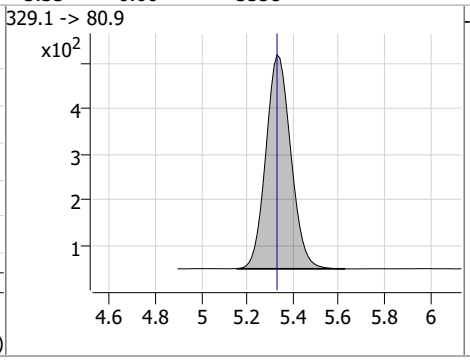


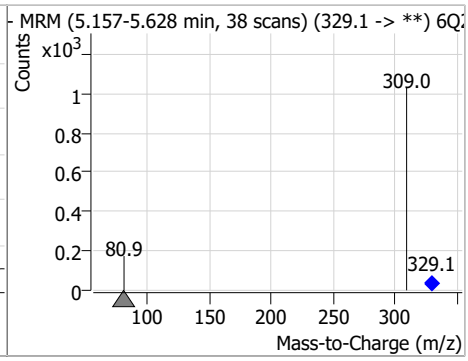


Perfluorinated Compounds by LC/MS/MS

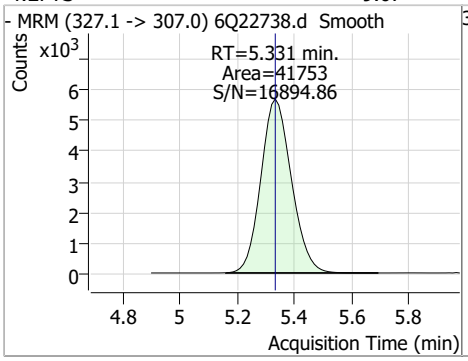
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.37	5.33	0.00	3558				

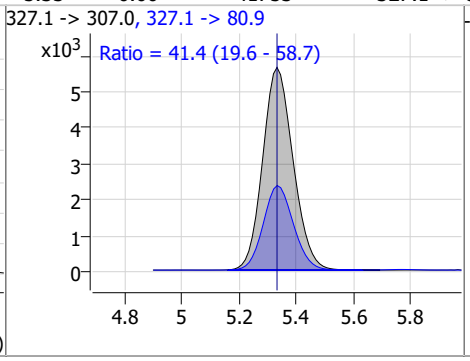


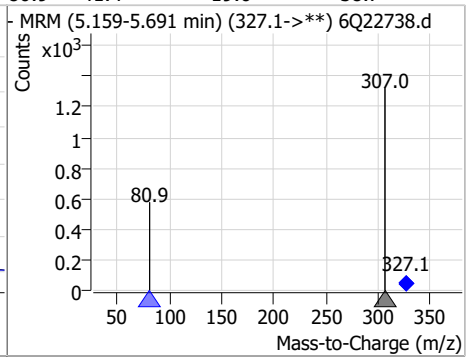




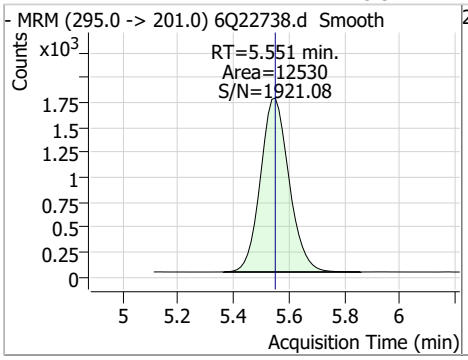
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.07	5.33	0.00	41753	327.1 -> 80.9	41.4	19.6	58.7

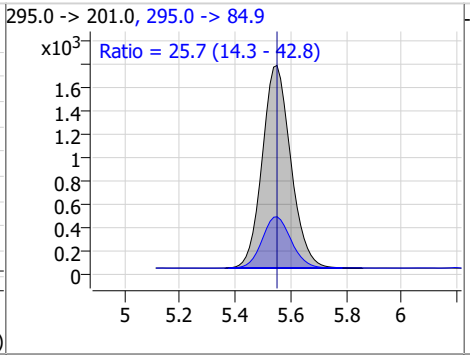


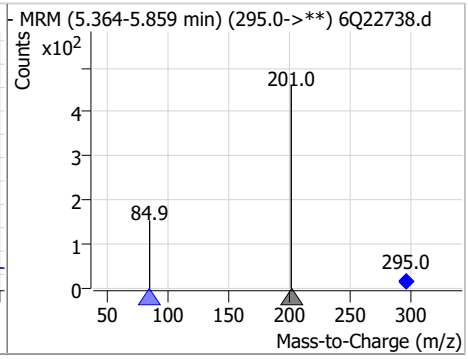




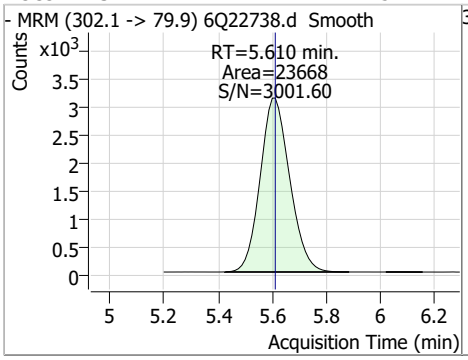
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.31	5.55	0.00	12530	295.0 -> 84.9	25.7	14.3	42.8

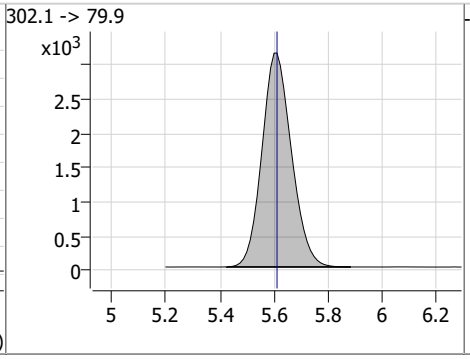


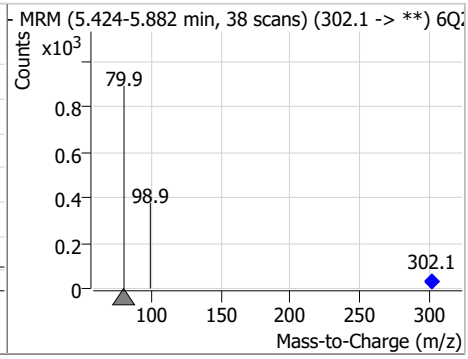




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.52	5.61	0.00	23668				

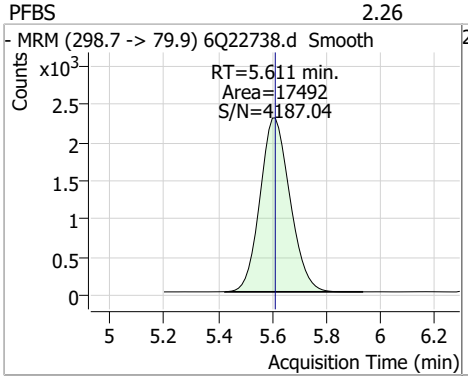


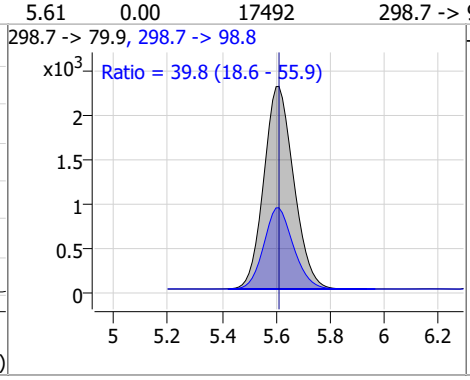


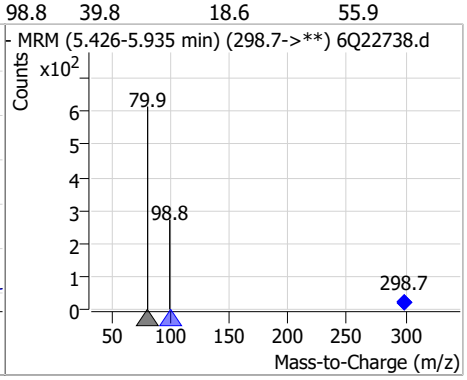


Perfluorinated Compounds by LC/MS/MS

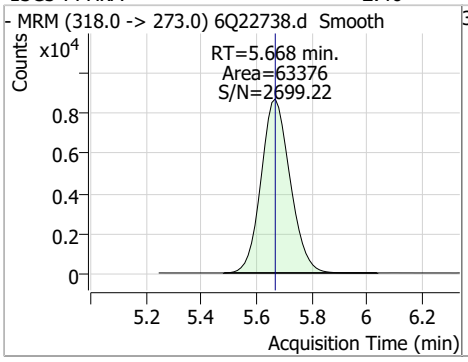
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.26	5.61	0.00	17492	298.7 -> 98.8	39.8	18.6	55.9

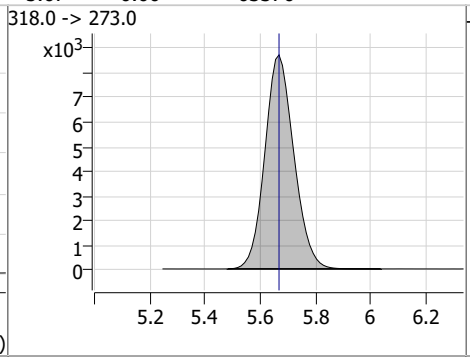


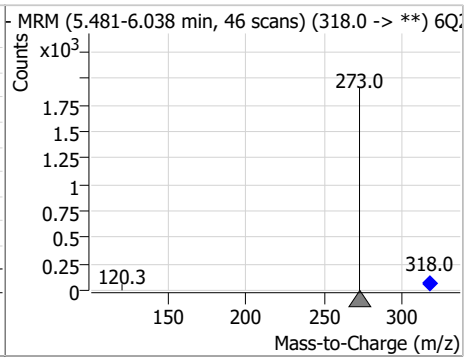




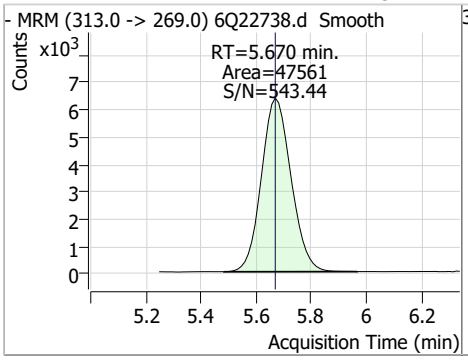
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.67	0.00	63376				

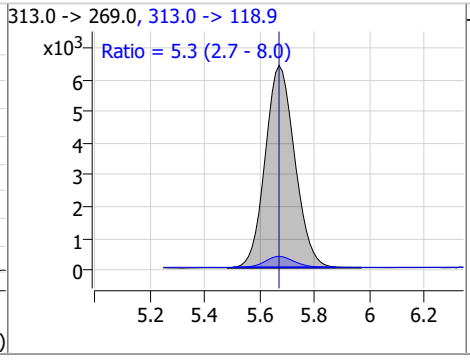


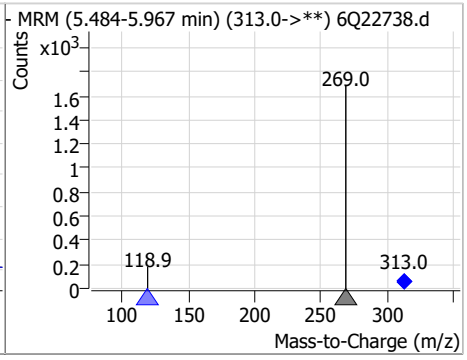




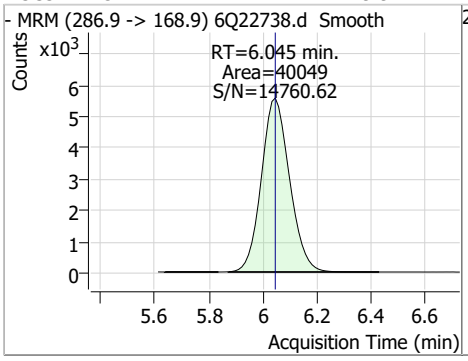
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.57	5.67	0.00	47561	313.0 -> 118.9	5.3	2.7	8.0

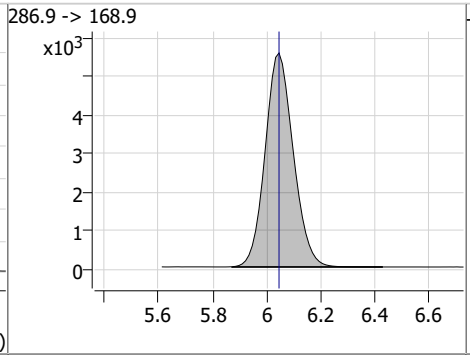


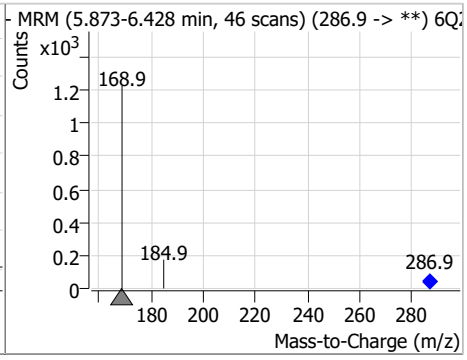




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.91	6.05	0.00	40049				

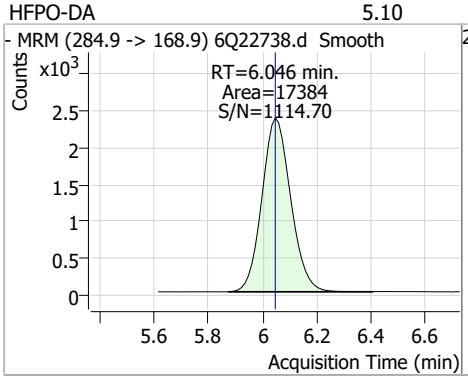


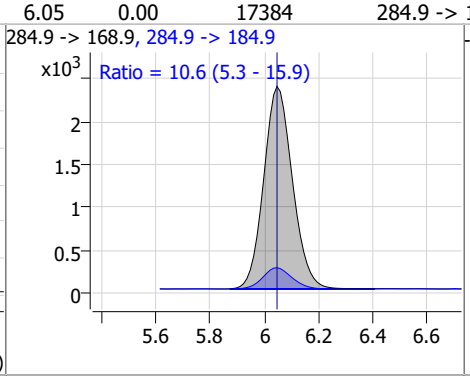


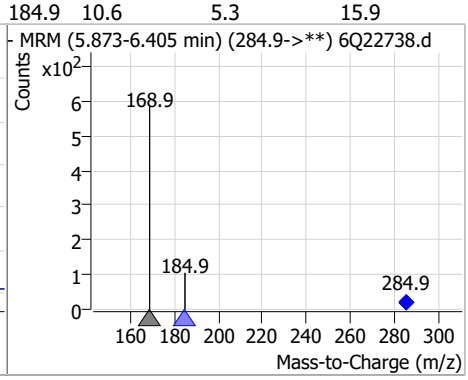


Perfluorinated Compounds by LC/MS/MS

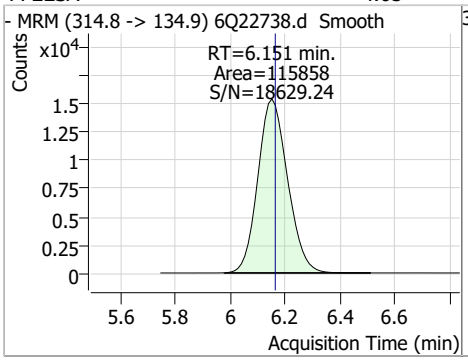
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.10	6.05	0.00	17384	284.9 -> 184.9	10.6	5.3	15.9

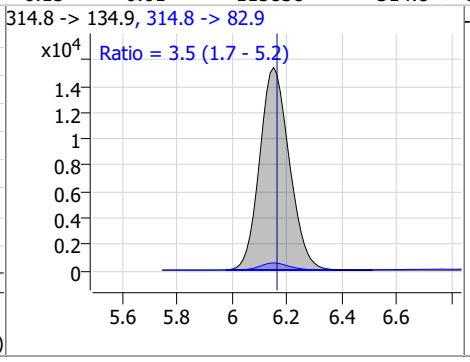


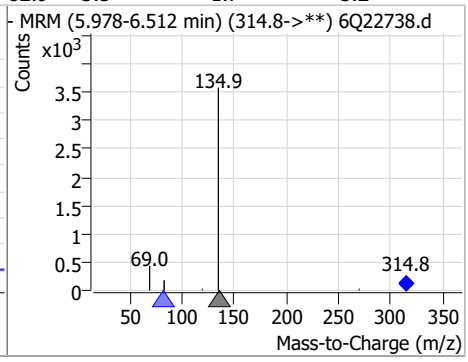




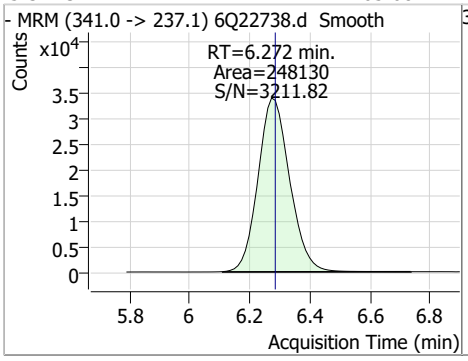
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.65	6.15	-0.01	115858	314.8 -> 82.9	3.5	1.7	5.2

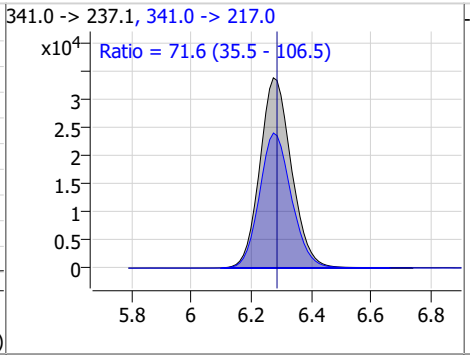


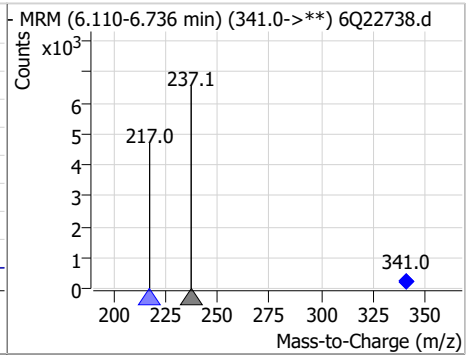




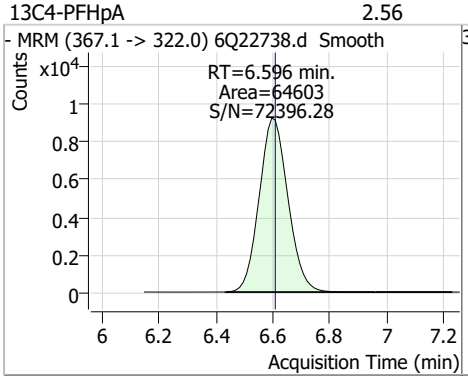
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.08	6.27	-0.01	248130	341.0 -> 217.0	71.6	35.5	106.5

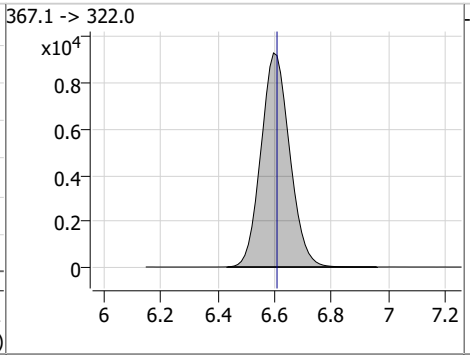


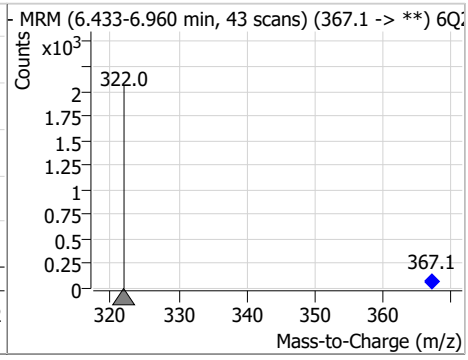




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.60	-0.01	64603				

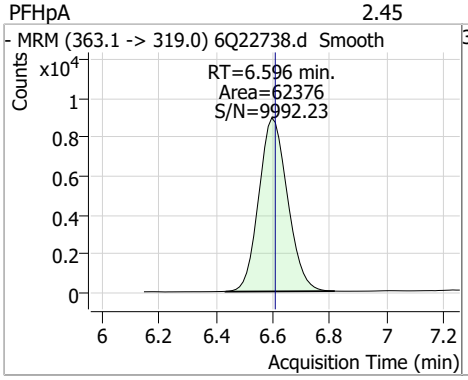


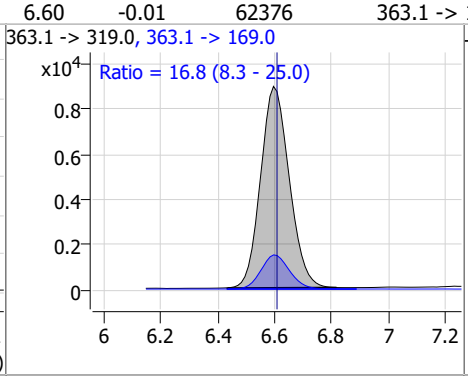


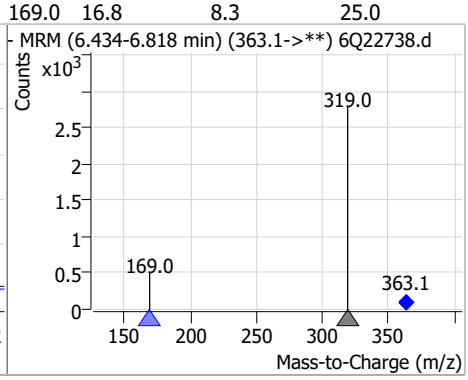


Perfluorinated Compounds by LC/MS/MS

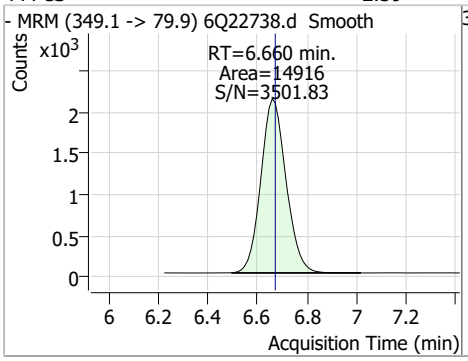
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.45	6.60	-0.01	62376	363.1 -> 169.0	16.8	8.3	25.0

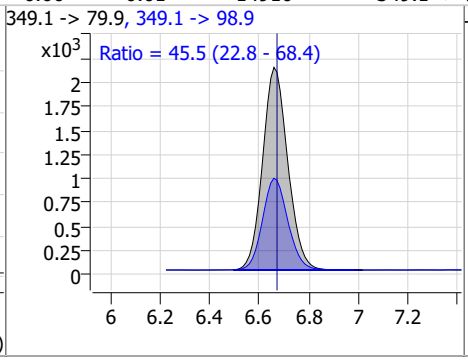


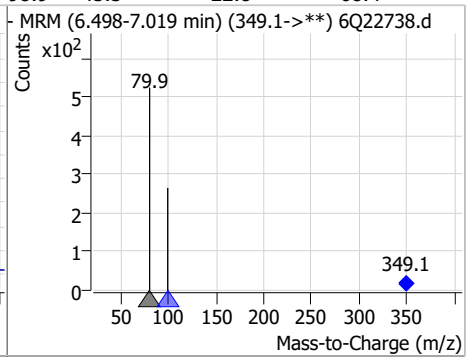




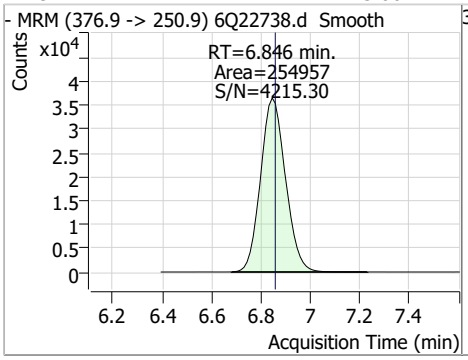
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.39	6.66	-0.01	14916	349.1 -> 98.9	45.5	22.8	68.4

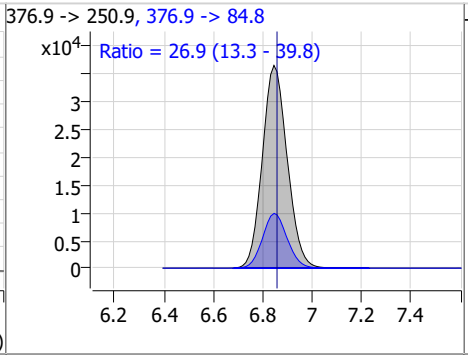


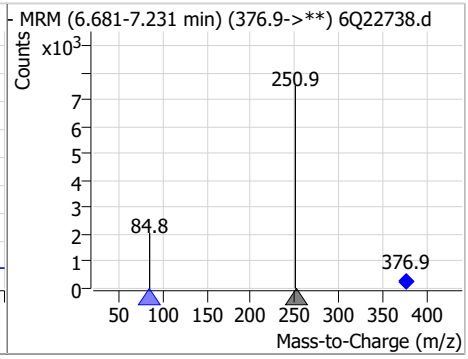




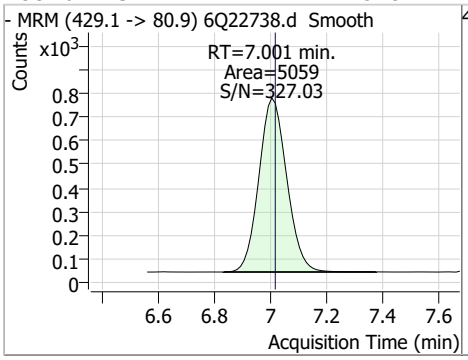
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.00	6.85	-0.01	254957	376.9 -> 84.8	26.9	13.3	39.8

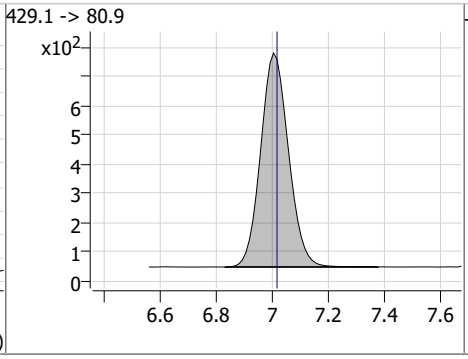


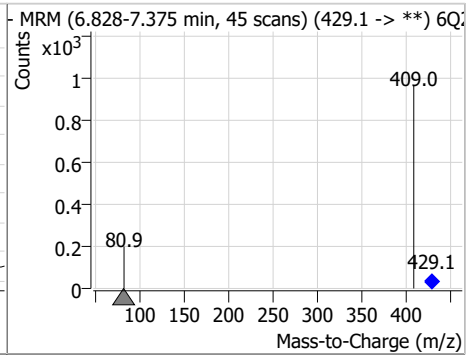




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.29	7.00	-0.01	5059				

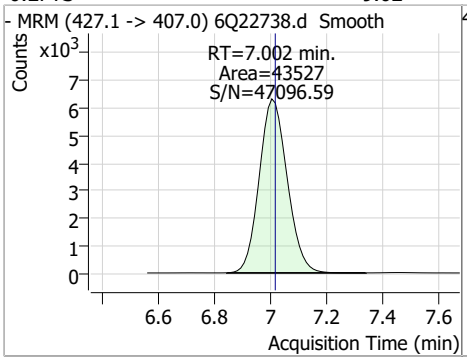


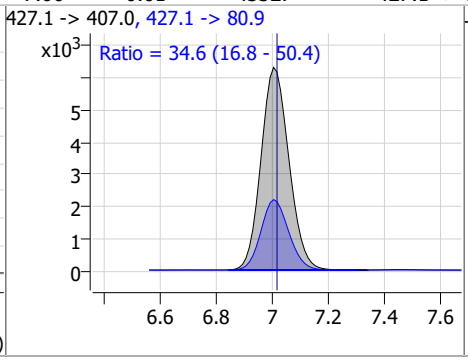


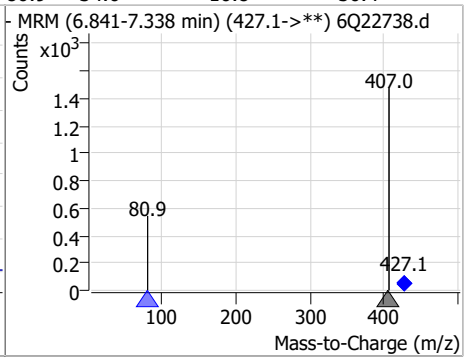


Perfluorinated Compounds by LC/MS/MS

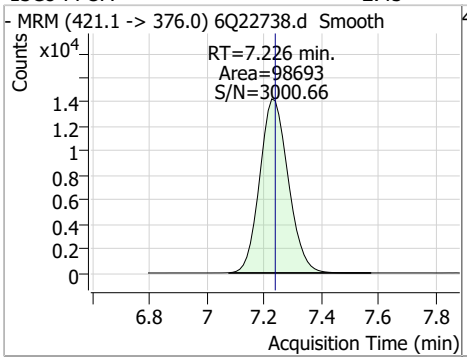
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.62	7.00	-0.01	43527	427.1 -> 80.9	34.6	16.8	50.4

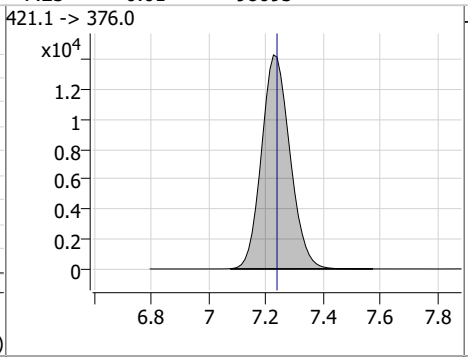


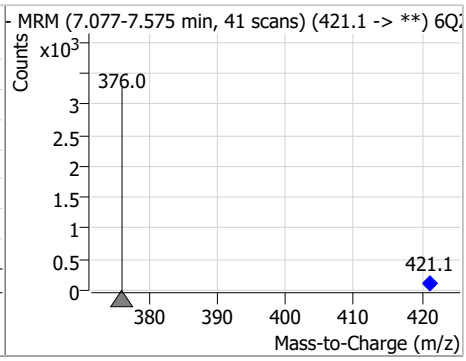




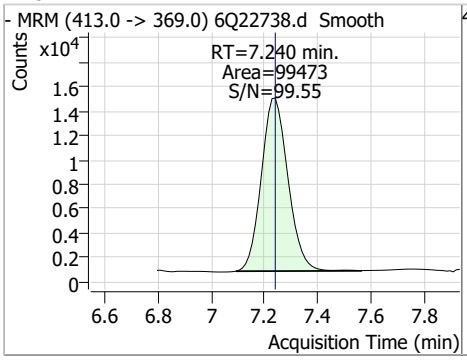
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	7.23	-0.01	98693				

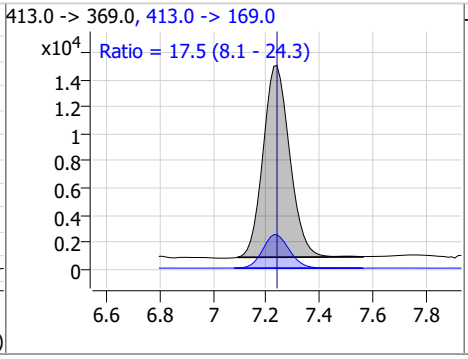


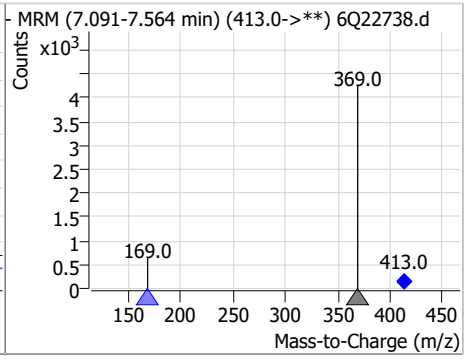




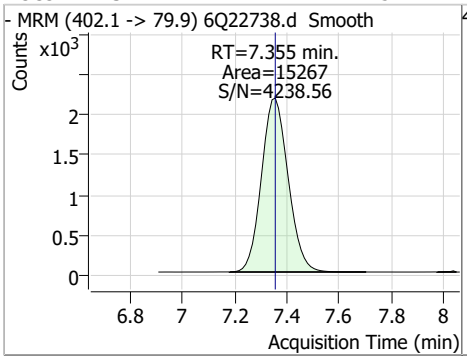
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.47	7.24	0.00	99473	413.0 -> 169.0	17.5	8.1	24.3

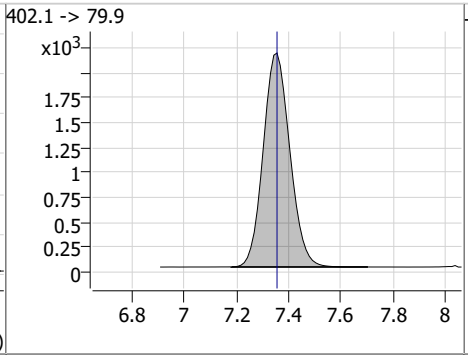


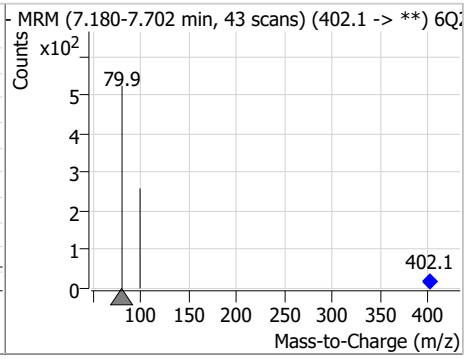




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.35	0.00	15267				

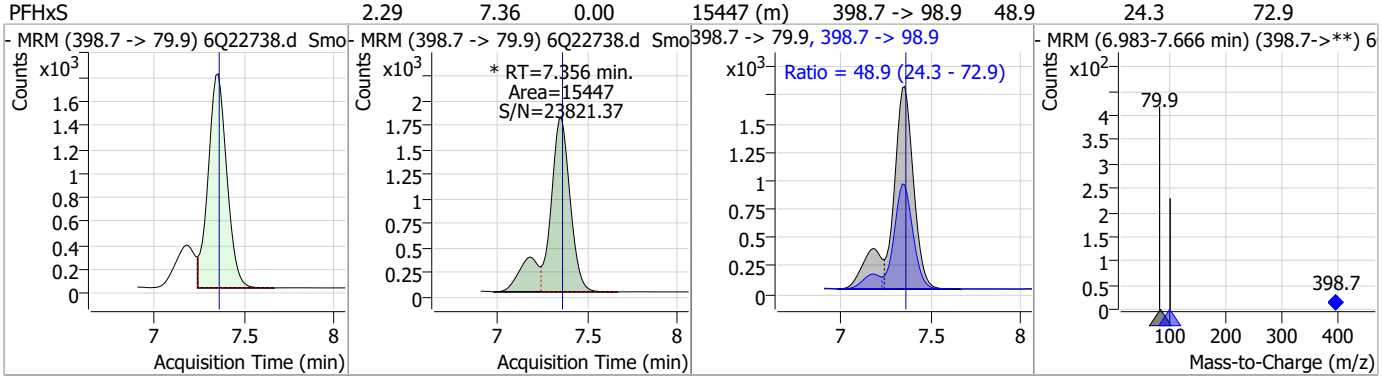




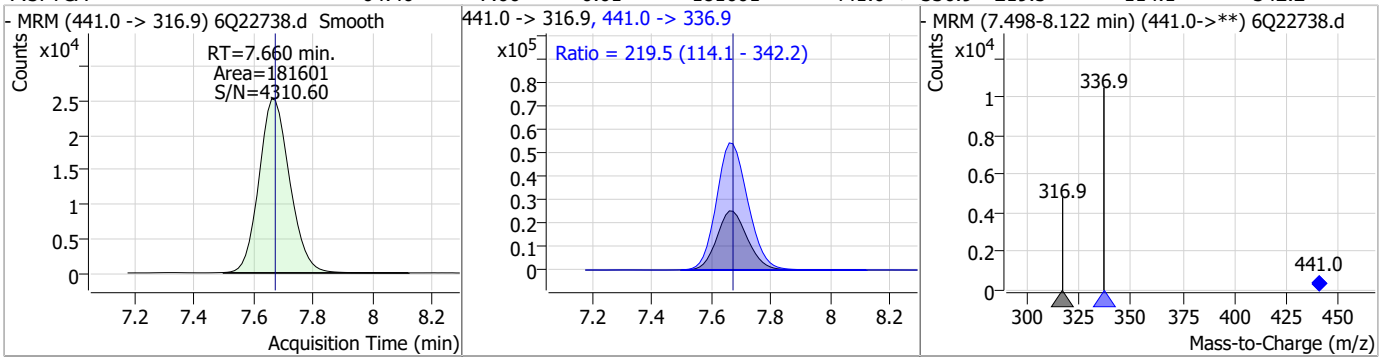


Perfluorinated Compounds by LC/MS/MS

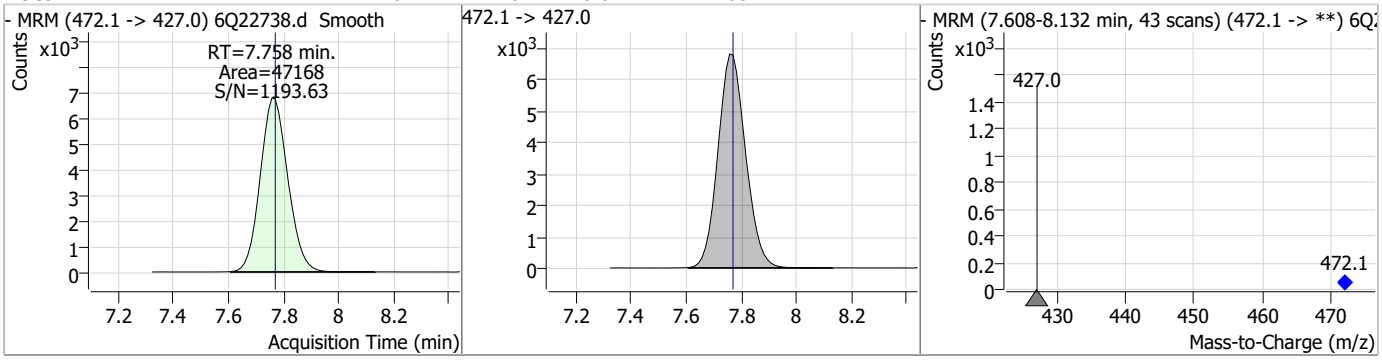
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.29	7.36	0.00	15447 (m)	398.7 -> 98.9	48.9	24.3	72.9



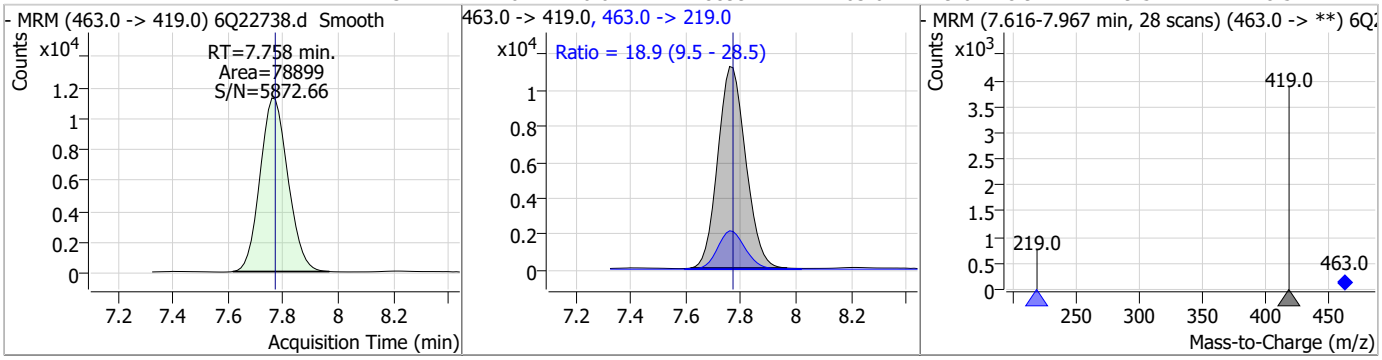
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.40	7.66	-0.01	181601	441.0 -> 336.9	219.5	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.76	-0.01	47168				

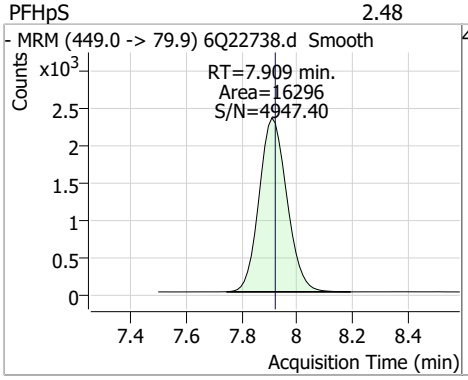


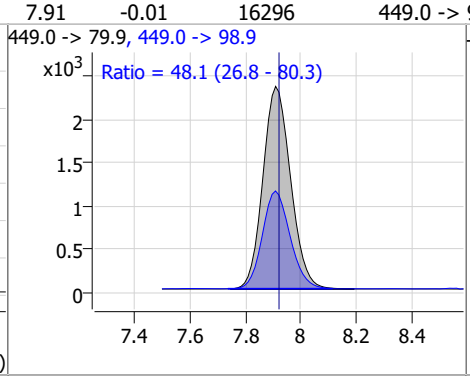
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.43	7.76	-0.01	78899	463.0 -> 219.0	18.9	9.5	28.5

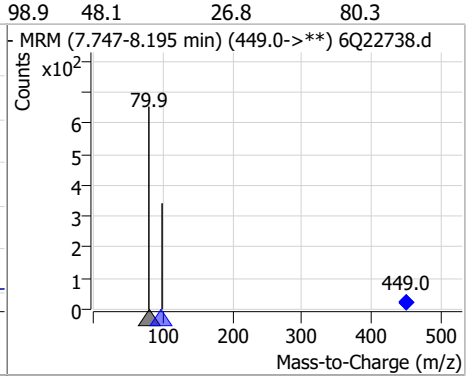


Perfluorinated Compounds by LC/MS/MS

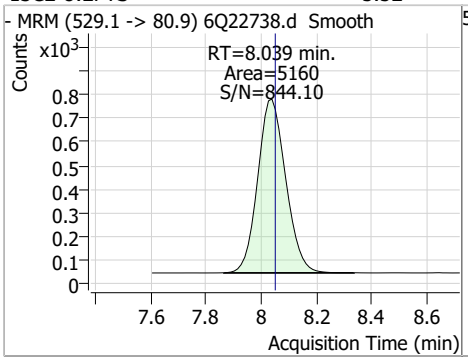
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.48	7.91	-0.01	16296	449.0 -> 98.9	48.1	26.8	80.3

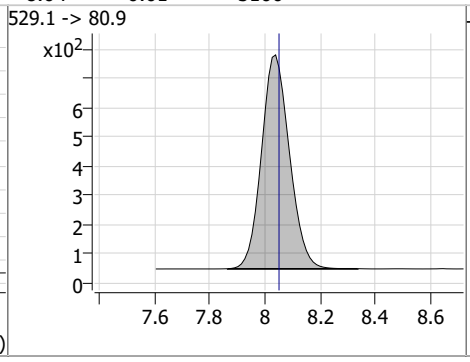


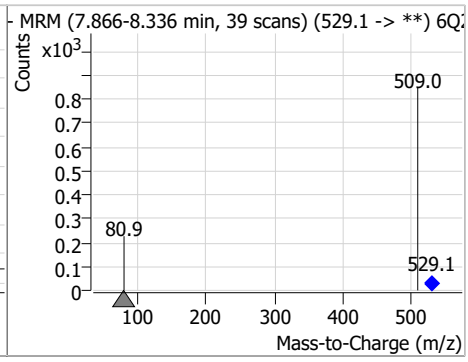




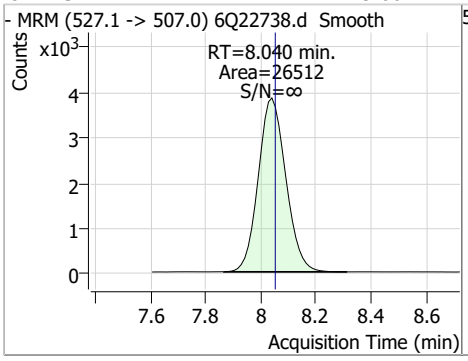
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.52	8.04	-0.01	5160				

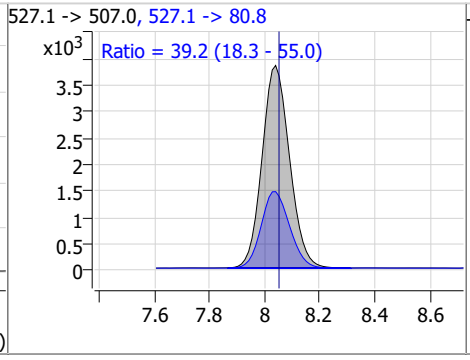


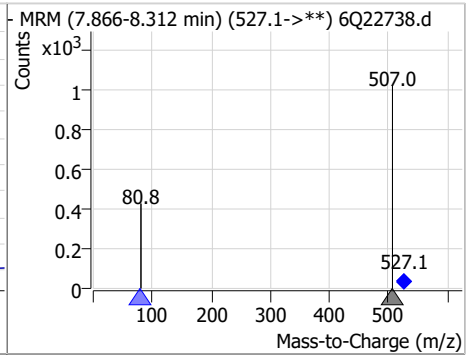




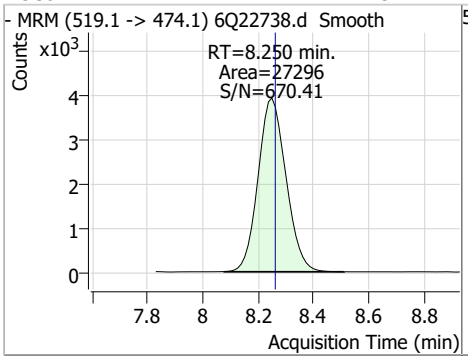
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.60	8.04	-0.01	26512	527.1 -> 80.8	39.2	18.3	55.0

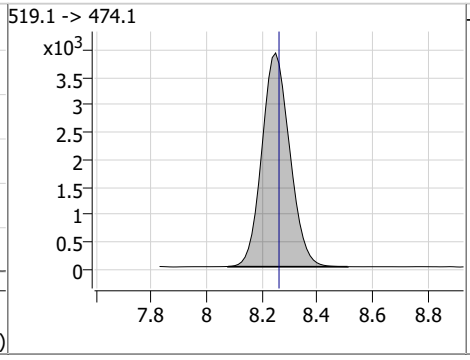


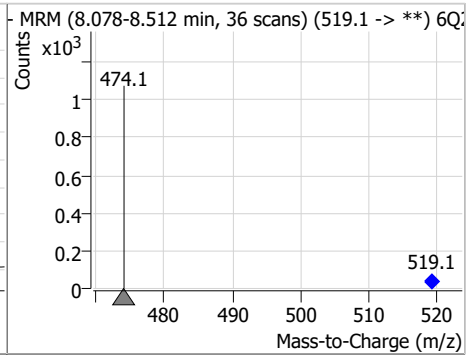




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.25	-0.01	27296				

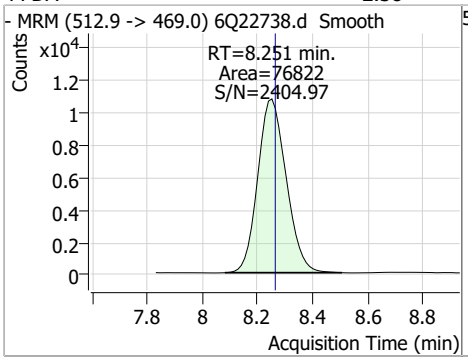


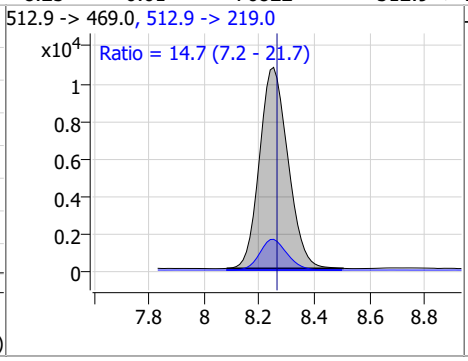


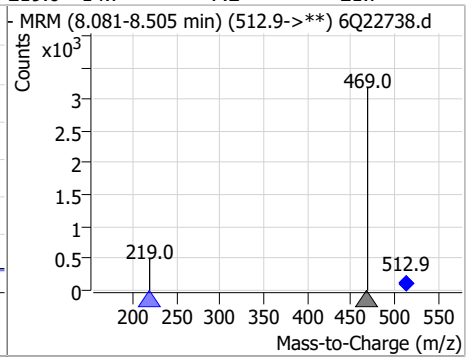


Perfluorinated Compounds by LC/MS/MS

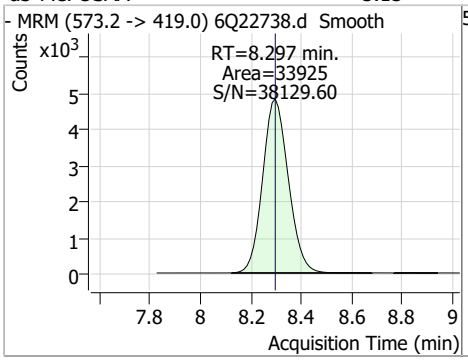
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.38	8.25	-0.01	76822	512.9 -> 219.0	14.7	7.2	21.7

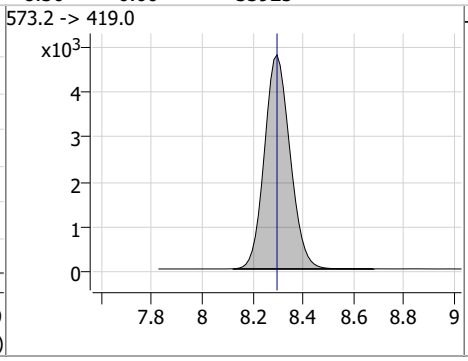


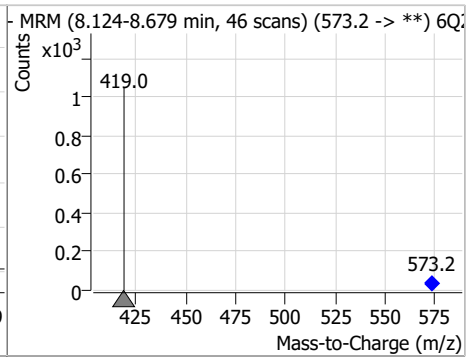




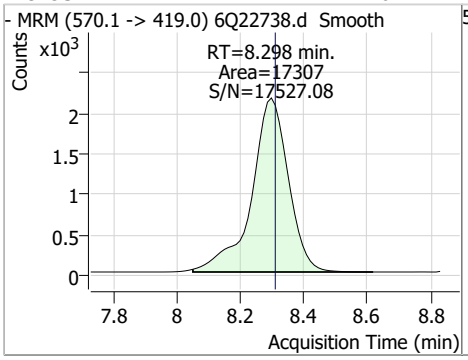
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.15	8.30	0.00	33925				

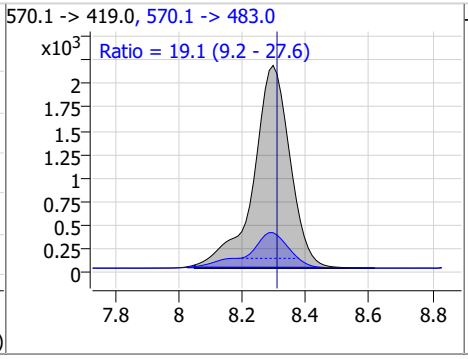


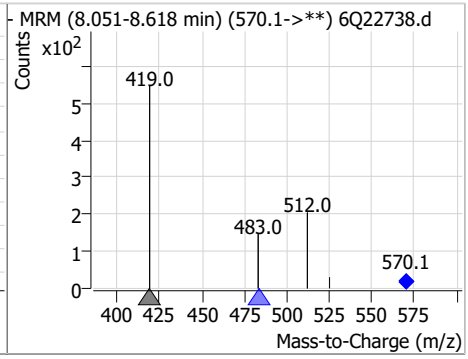




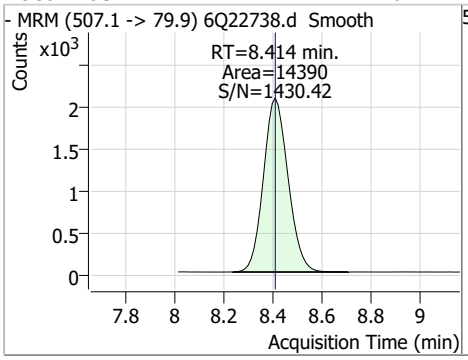
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.67	8.30	-0.01	17307	570.1 -> 483.0	19.1	9.2	27.6

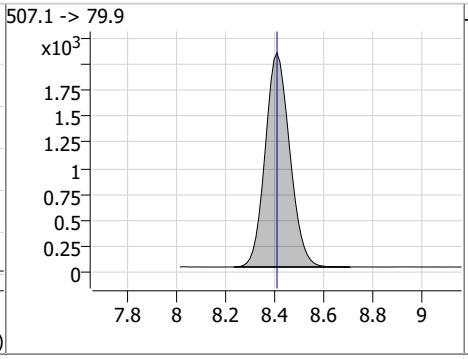


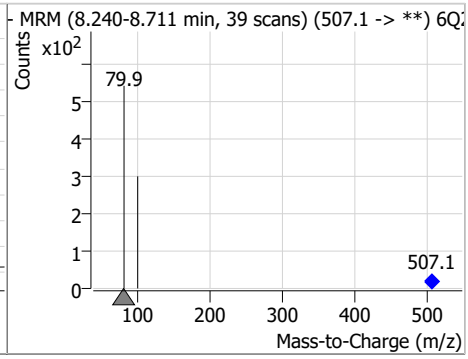




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.70	8.41	0.00	14390				

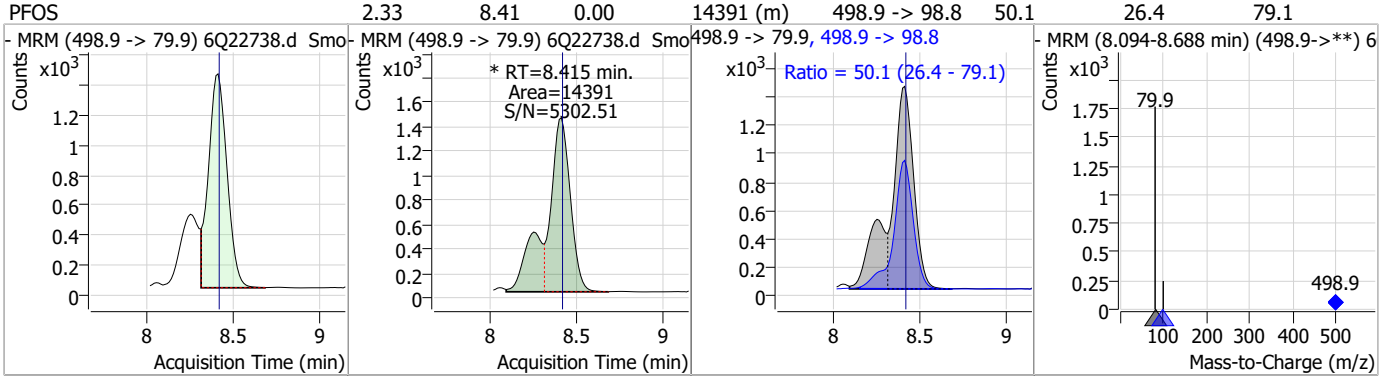




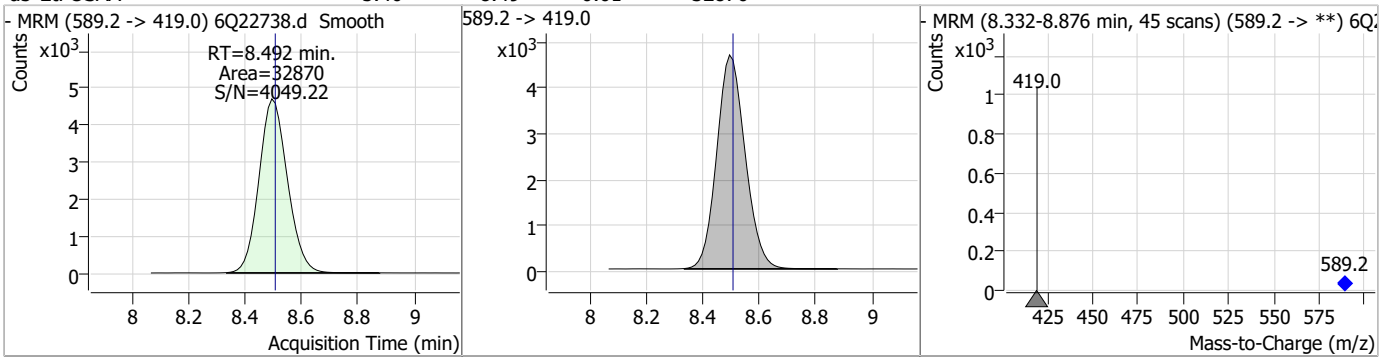


Perfluorinated Compounds by LC/MS/MS

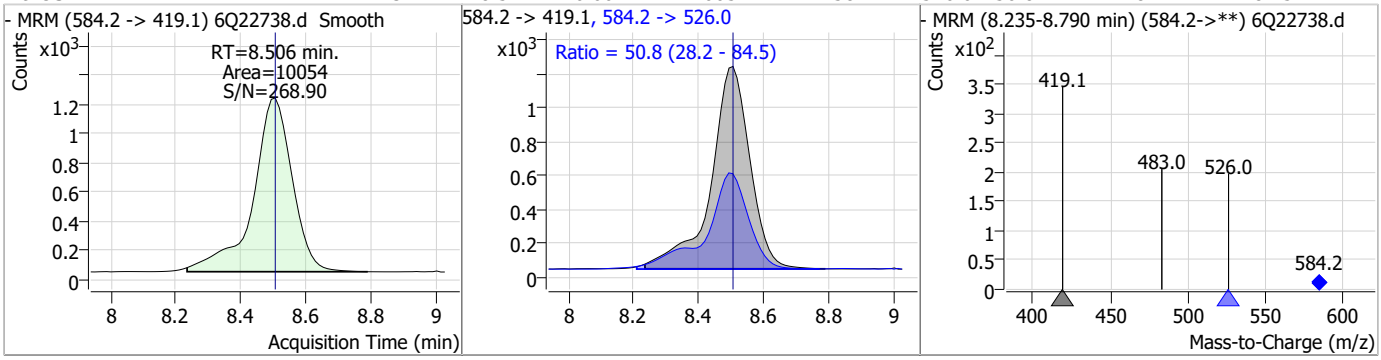
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.33	8.41	0.00	14391 (m)	498.9 -> 98.8	50.1	26.4	79.1



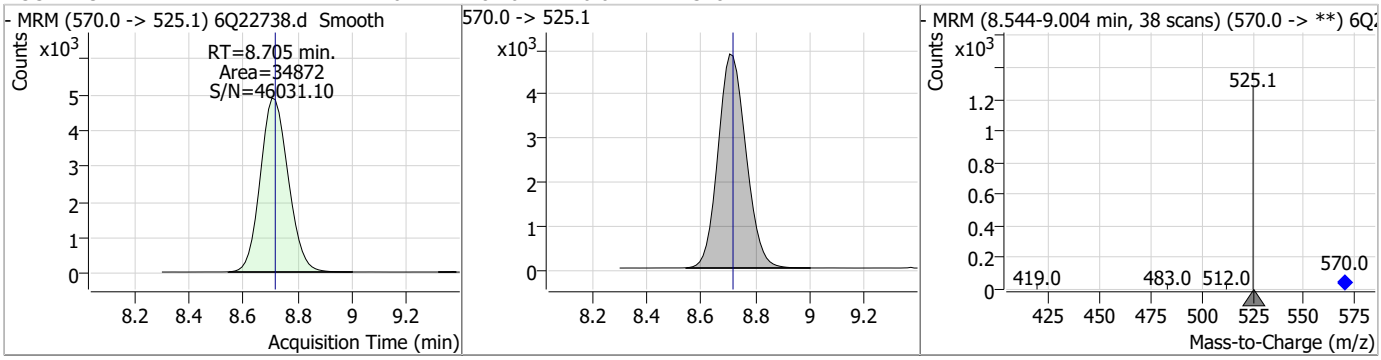
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.40	8.49	-0.01	32870				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.43	8.51	0.00	10054	584.2 -> 526.0	50.8	28.2	84.5

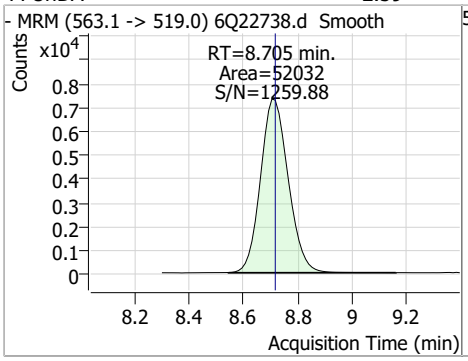


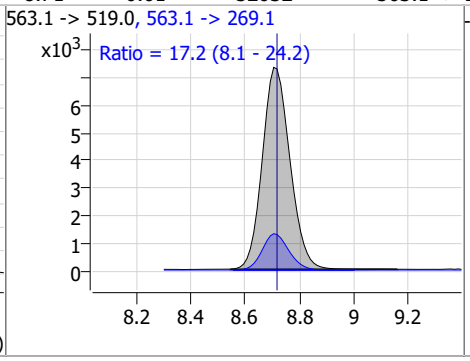
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.70	-0.01	34872				

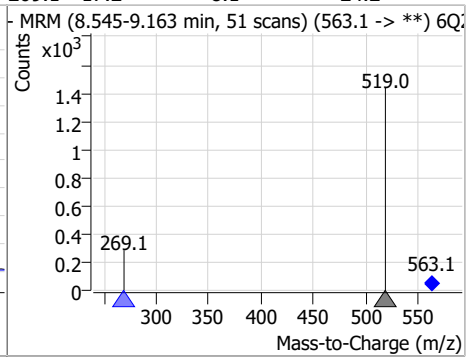


Perfluorinated Compounds by LC/MS/MS

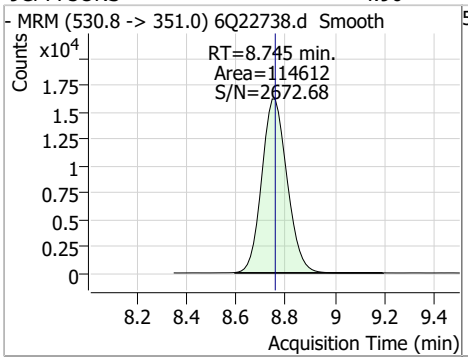
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.59	8.71	-0.01	52032	563.1 -> 269.1	17.2	8.1	24.2

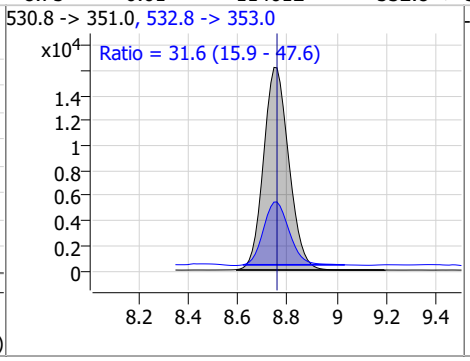


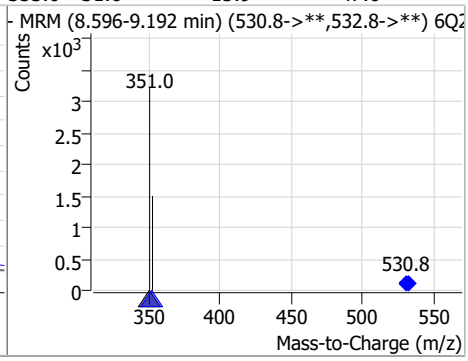




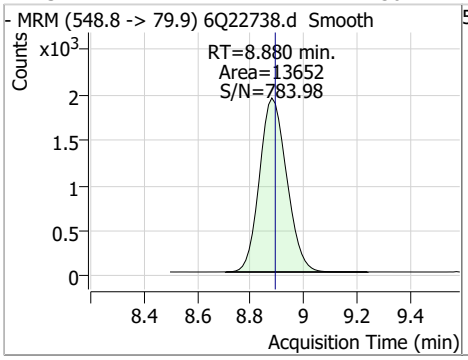
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.96	8.75	-0.01	114612	532.8 -> 353.0	31.6	15.9	47.6

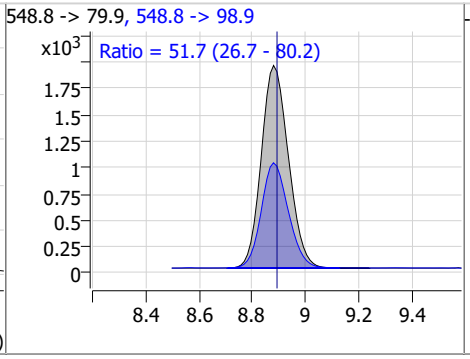


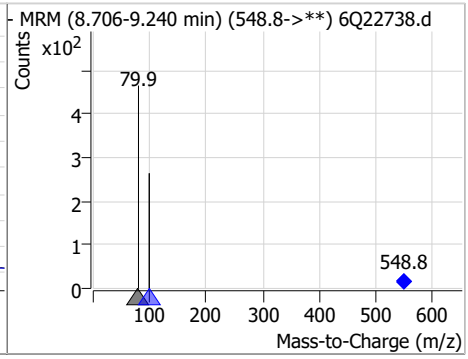




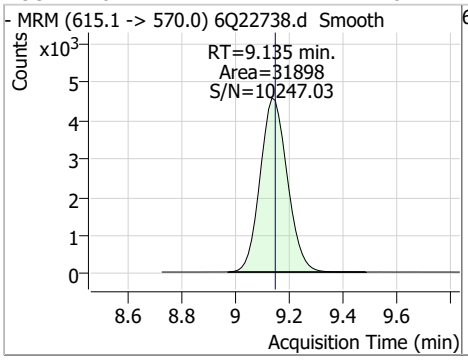
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.30	8.88	-0.01	13652	548.8 -> 98.9	51.7	26.7	80.2

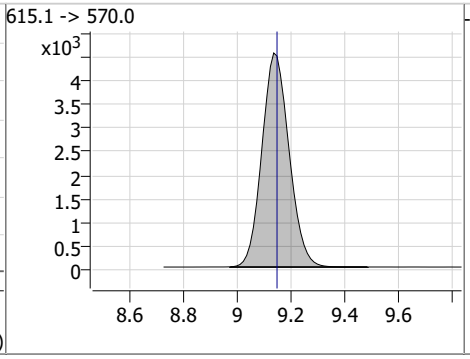


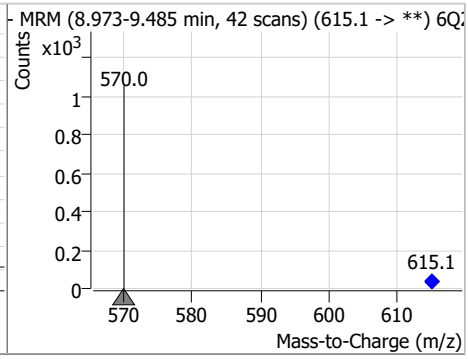




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	9.14	-0.01	31898				

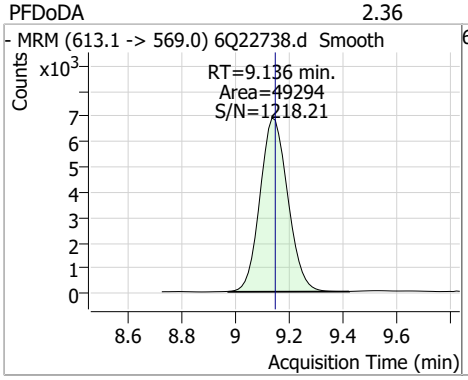


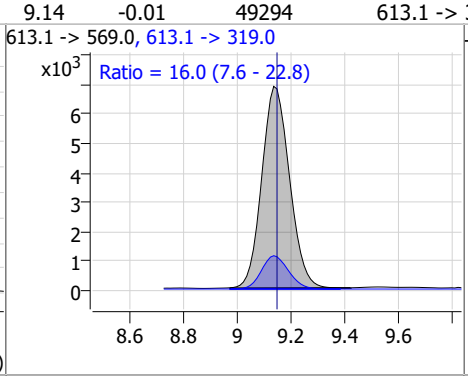


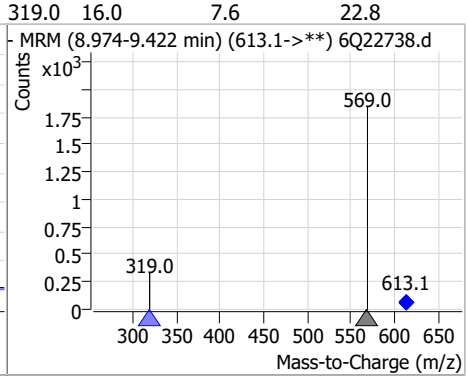


Perfluorinated Compounds by LC/MS/MS

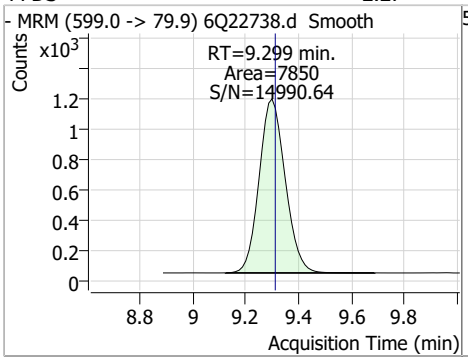
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.36	9.14	-0.01	49294	613.1 -> 319.0	16.0	7.6	22.8

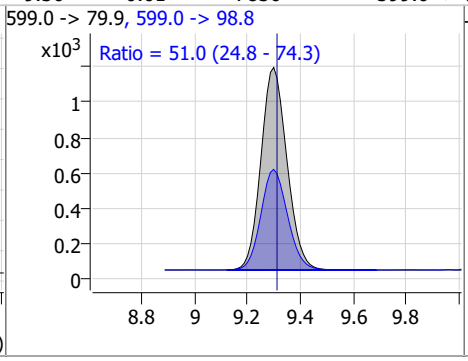


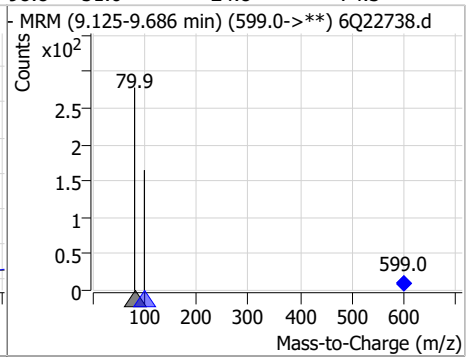




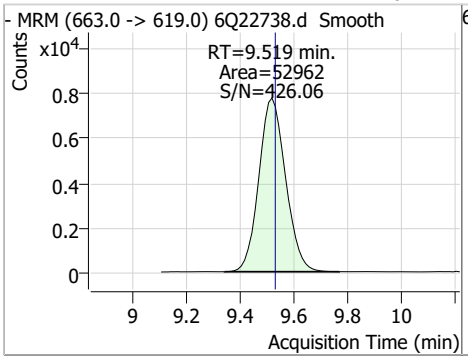
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.27	9.30	-0.01	7850	599.0 -> 98.8	51.0	24.8	74.3

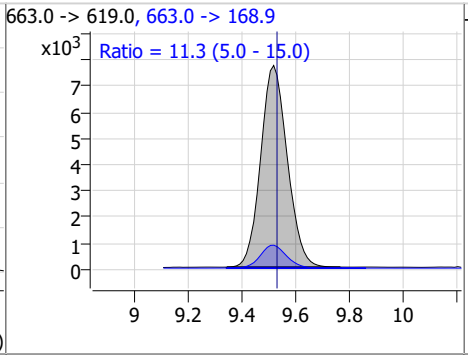


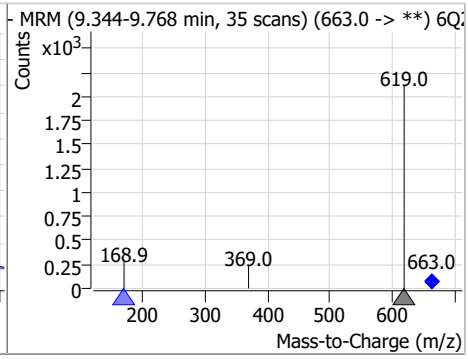




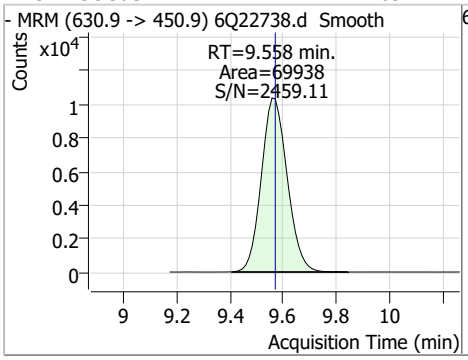
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.46	9.52	-0.01	52962	663.0 -> 168.9	11.3	5.0	15.0

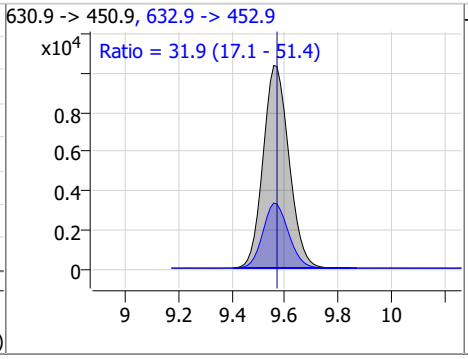


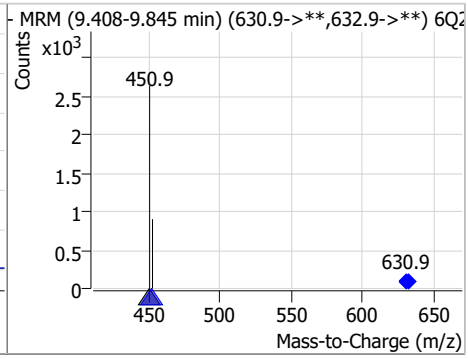




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.89	9.56	-0.01	69938	632.9 -> 452.9	31.9	17.1	51.4

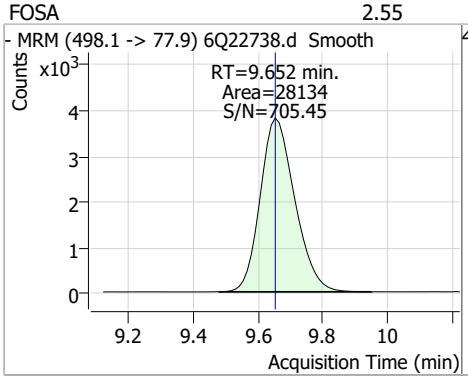


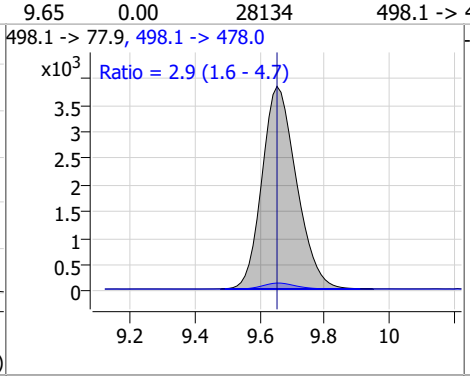


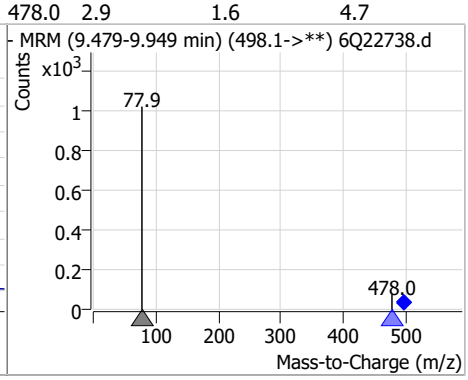


Perfluorinated Compounds by LC/MS/MS

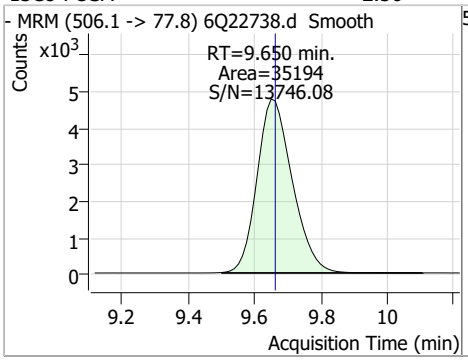
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.55	9.65	0.00	28134	498.1 -> 478.0	2.9	1.6	4.7

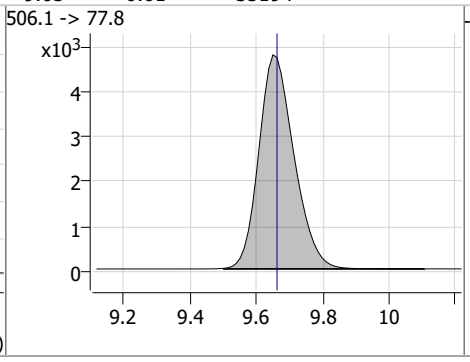


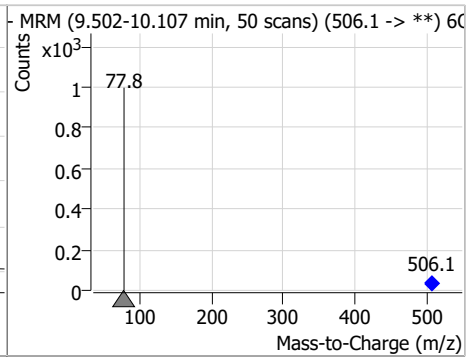




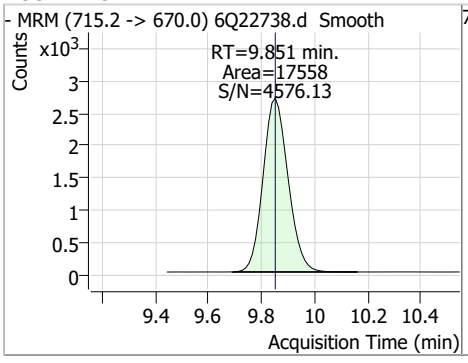
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	9.65	-0.01	35194				

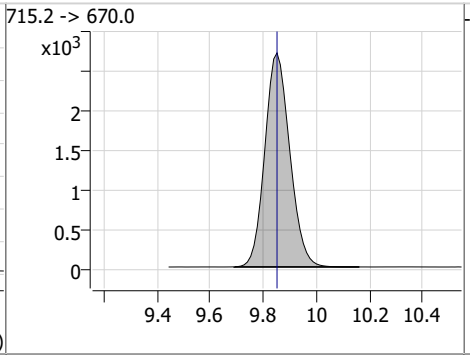


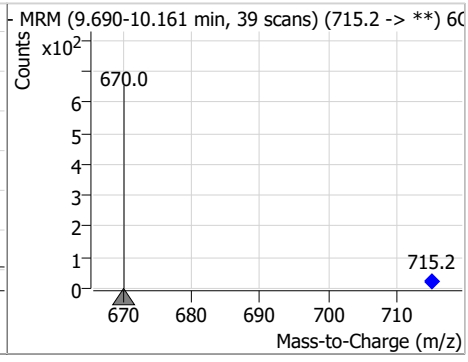




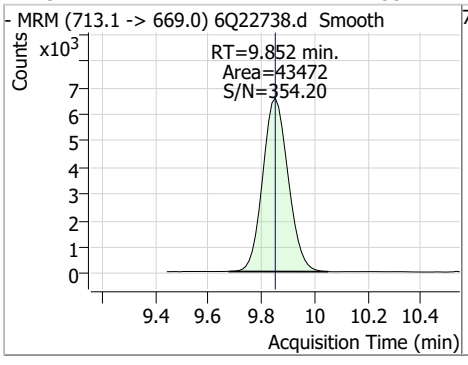
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.85	0.00	17558				

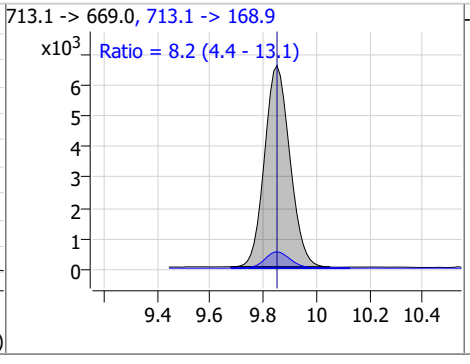


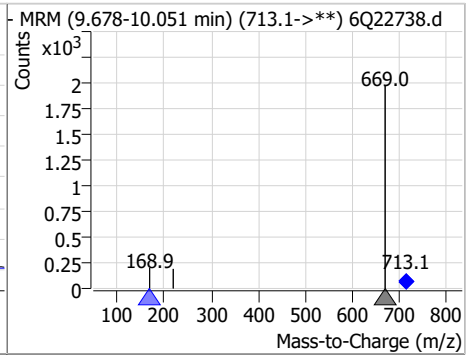




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.55	9.85	0.00	43472	713.1 -> 168.9	8.2	4.4	13.1

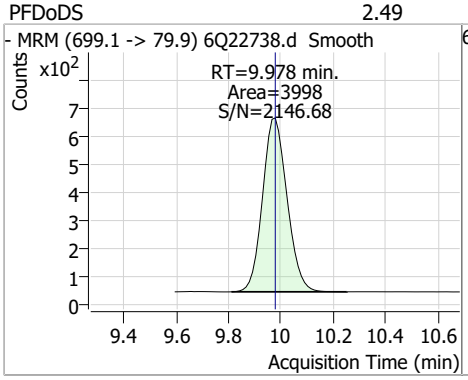


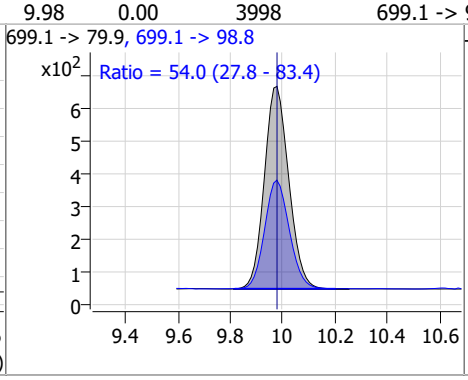


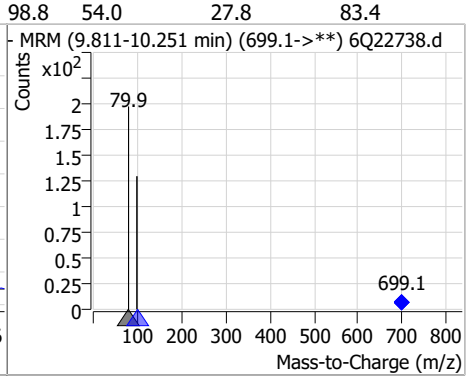


Perfluorinated Compounds by LC/MS/MS

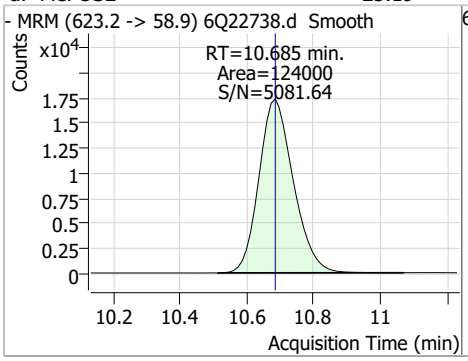
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.49	9.98	0.00	3998	699.1 -> 98.8	54.0	27.8	83.4

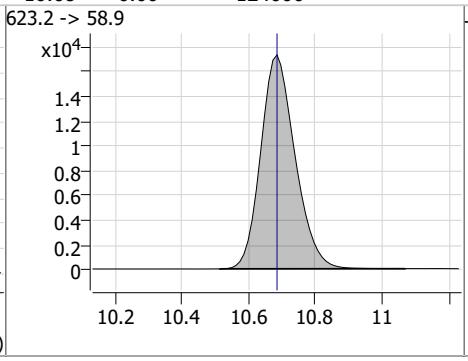


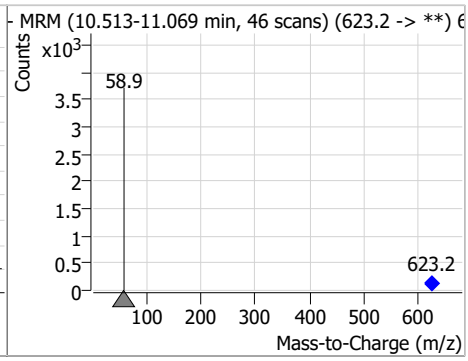




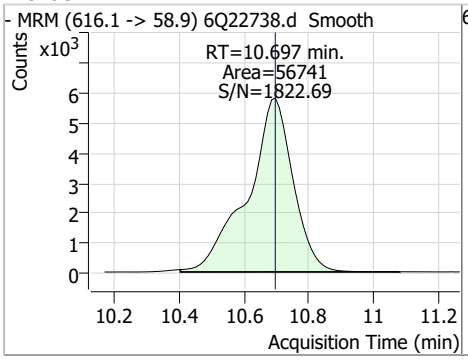
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.19	10.68	0.00	124000				

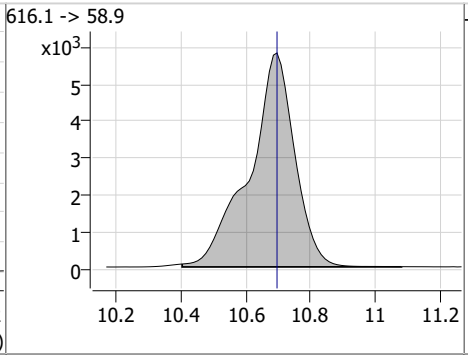


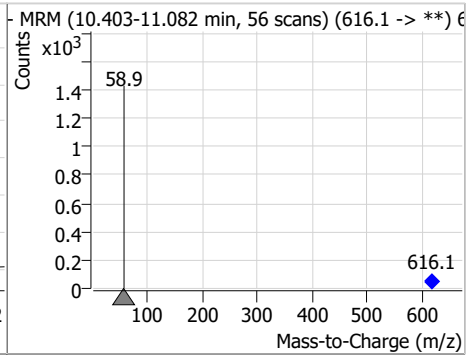




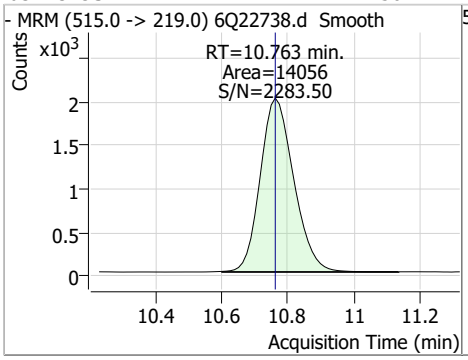
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.24	10.70	0.00	56741				

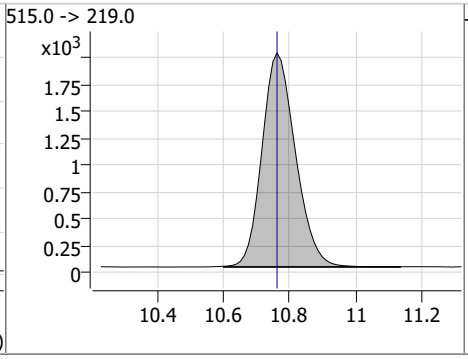


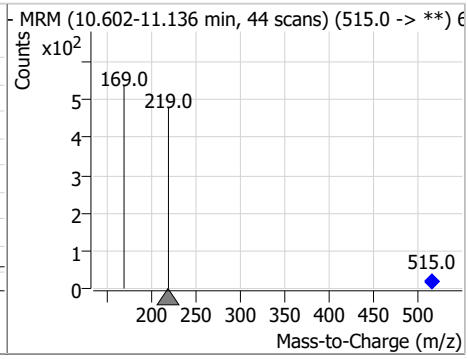




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	10.76	0.00	14056				

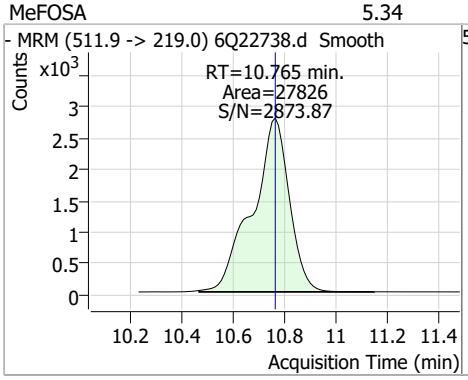


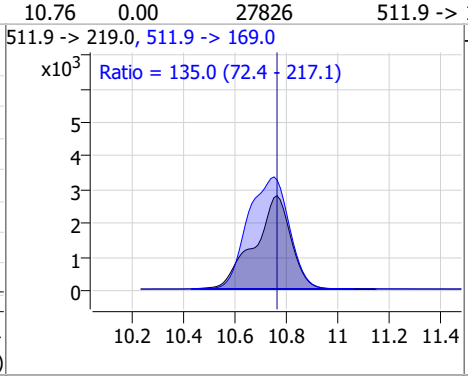


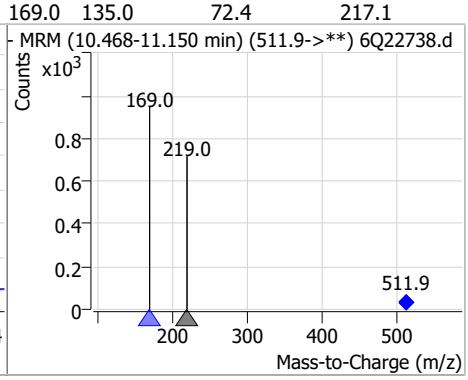


Perfluorinated Compounds by LC/MS/MS

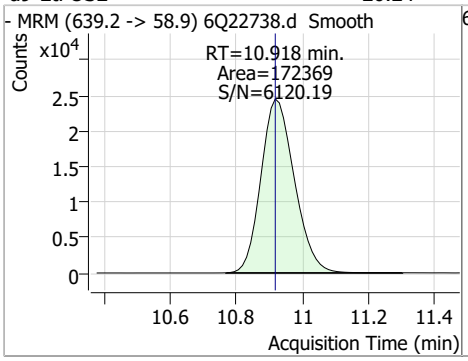
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.34	10.76	0.00	27826	511.9 -> 169.0	135.0	72.4	217.1

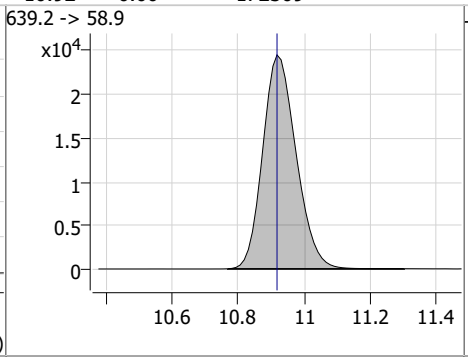


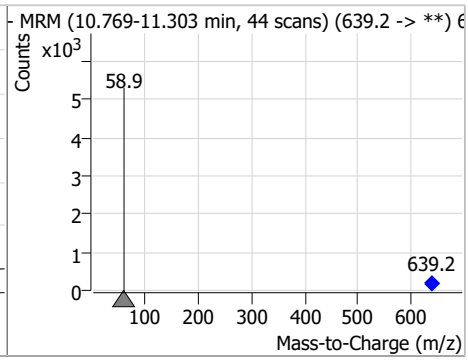




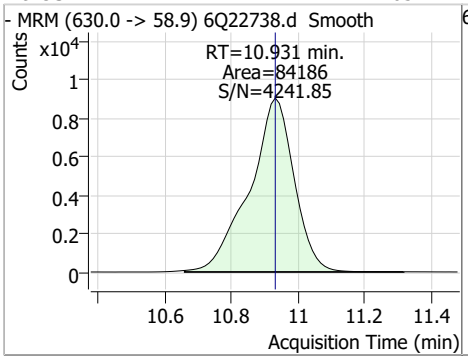
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.24	10.92	0.00	172369				

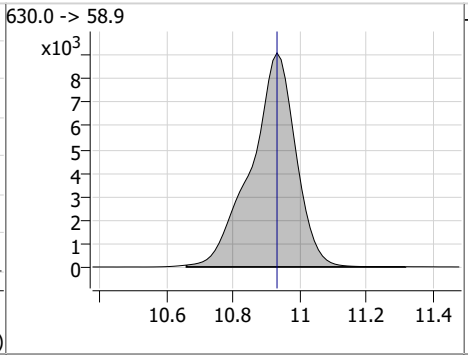


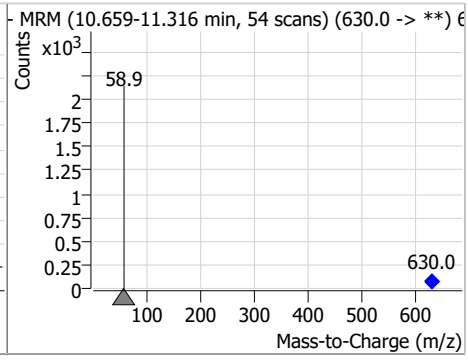




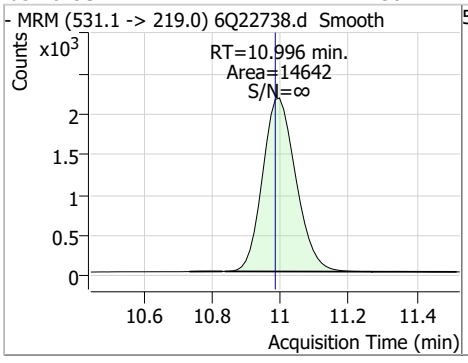
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.05	10.93	0.00	84186				

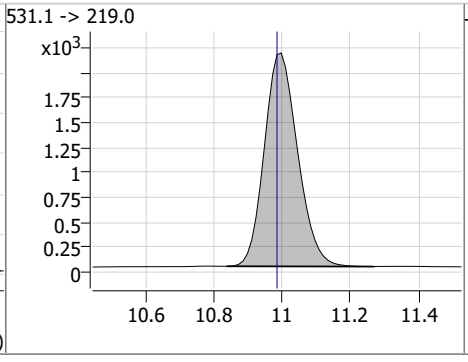


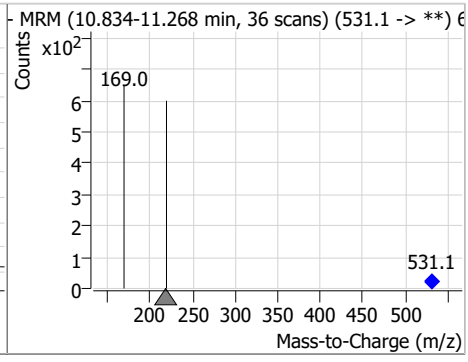




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	11.00	0.01	14642				

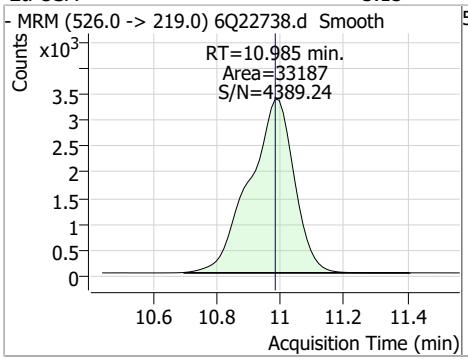


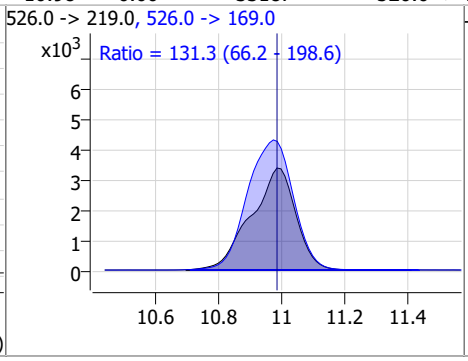


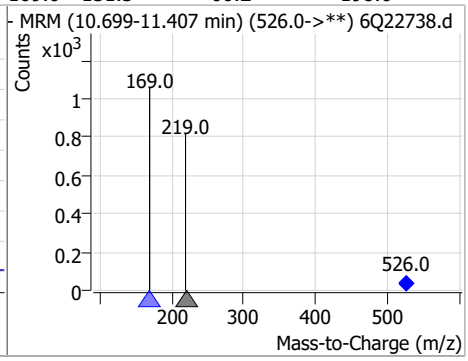


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.15	10.98	0.00	33187	526.0 -> 169.0	131.3	66.2	198.6







Manual Integration Approval Summary

Sample Number:	S6Q330-CC330	**Method:**	EPA DRAFT 1633
Lab FileID:	6Q22738.D	**Analyst approved:**	08/13/23 12:53 Martha Valls
Injection Time:	08/11/23 13:02	**Supervisor approved:**	08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 08/14/23 14:53

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q22739.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 8/11/2023 1:17:11 PM
Sample Name : cc330-1.0LL
Vial : P1-A2
DA Method File : 1633_081023_S6Q330.quantmethod.xml
Batch Name : s6q330.batch.bin
Sample Information : OP98201,S6Q330,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.997	216.8 -> 171.9	199782	10.00	µg/L	-0.012
M5-PFPeA	4.447	268.3 -> 223.0	63818	5.00	µg/L	0.000
M5-PFHxA	5.668	318.0 -> 273.0	69301	2.50	µg/L	0.000
M4-PFHpA	6.596	367.1 -> 322.0	66944	2.50	µg/L	-0.012
M8-PFOA	7.226	421.1 -> 376.0	104540	2.50	µg/L	-0.012
M9-PFNA	7.758	472.1 -> 427.0	50722	1.25	µg/L	-0.012
M6-PFDA	8.250	519.1 -> 474.1	27682	1.25	µg/L	-0.012
M7-PFUnDA	8.705	570.0 -> 525.1	36167	1.25	µg/L	-0.012
M2-PFDoDA	9.135	615.1 -> 570.0	33489	1.25	µg/L	-0.012
M2-PFTeDA	9.851	715.2 -> 670.0	18334	1.25	µg/L	0.000
M8-FOSA	9.650	506.1 -> 77.8	36965	2.50	µg/L	-0.012
M3-PFBS	5.599	302.1 -> 79.9	25488	2.50	µg/L	-0.011
M3-PFHxS	7.342	402.1 -> 79.9	15993	2.50	µg/L	-0.012
M8-PFOS	8.414	507.1 -> 79.9	14250	2.50	µg/L	0.000
M2-4:2FTS	5.330	329.1 -> 80.9	3808	5.00	µg/L	0.000
M2-6:2FTS	7.001	429.1 -> 80.9	5607	5.00	µg/L	-0.012
M2-8:2FTS	8.039	529.1 -> 80.9	5686	5.00	µg/L	-0.012
M3-MeFOSAA	8.284	573.2 -> 419.0	38646	5.00	µg/L	-0.012
M3-HFPO-DA	6.045	286.9 -> 168.9	43409	10.00	µg/L	0.000
M5-EtFOSAA	8.492	589.2 -> 419.0	32234	5.00	µg/L	-0.012
M7-MeFOSE	10.685	623.2 -> 58.9	134024	25.00	µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	187032	25.00	µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15959	2.50	µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15057	2.50	µg/L	0.000
13C4-PFOS	8.414	502.8 -> 79.9	19934	2.50	µg/L	-0.012
13C3-PFBA	3.001	216.0 -> 172.0	85149	5.00	µg/L	0.000
18O2-PFHxS	7.354	403.0 -> 83.9	12551	2.50	µg/L	0.000
13C4-PFOA	7.227	417.1 -> 372.0	113996	2.50	µg/L	-0.012
13C2-PFDA	8.251	515.1 -> 470.1	39781	1.25	µg/L	0.000
13C5-PFNA	7.758	468.0 -> 423.0	62026	1.25	µg/L	-0.012
13C2-PFHxA	5.669	315.1 -> 270.0	66428	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.330	329.1 -> 80.9	3808	5.08	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-6:2FTS	7.001	429.1 -> 80.9	5607	5.18	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-8:2FTS	8.039	529.1 -> 80.9	5686	5.37	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C2-PFDoDA	9.135	615.1 -> 570.0	33489	1.25	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C2-PFTeDA	9.851	715.2 -> 670.0	18334	1.19	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C3-PFBS	5.599	302.1 -> 79.9	25488	2.39	µg/L	-0.011
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFHxS	7.342	402.1 -> 79.9	15993	2.32	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 = 92.7%	
13C4-PFBA	2.997	216.8 -> 171.9	199782	9.93 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.596	367.1 -> 322.0	66944	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.668	318.0 -> 273.0	69301	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.447	268.3 -> 223.0	63818	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C6-PFDA	8.250	519.1 -> 474.1	27682	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C7-PFUnDA	8.705	570.0 -> 525.1	36167	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-FOSA	9.650	506.1 -> 77.8	36965	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOA	7.226	421.1 -> 376.0	104540	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-PFOS	8.414	507.1 -> 79.9	14250	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C9-PFNA	7.758	472.1 -> 427.0	50722	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSAA	8.284	573.2 -> 419.0	38646	5.36 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C3-HFPO-DA	6.045	286.9 -> 168.9	43409	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	15057	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.492	589.2 -> 419.0	32234	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d7-MeFOSE	10.685	623.2 -> 58.9	134024	24.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	187032	26.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
d5-EtFOSA	10.983	531.1 -> 219.0	15959	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
Target Compounds					QValue
4:2FTS	5.331	327.1 -> 307.0	4035	0.82 µg/L	97
		327.1 -> 80.9	1512		
6:2FTS	7.002	427.1 -> 407.0	4156	0.83 µg/L	99
		427.1 -> 80.9	1373		
8:2FTS	8.040	527.1 -> 507.0	2269	0.75 µg/L	94
		527.1 -> 80.8	917		
EtFOSAA	8.493	584.2 -> 419.1	944	0.23 µg/L	98
		584.2 -> 526.0	516		
FOSA	9.652	498.1 -> 77.9	2638	0.23 µg/L	97
		498.1 -> 478.0	60		
MeFOSAA	8.285	570.1 -> 419.0	1499	0.20 µg/L	89
		570.1 -> 483.0	348		
PFBA	3.006	212.8 -> 168.9	5347	0.86 µg/L	100
PFBS	5.600	298.7 -> 79.9	1642	0.20 µg/L	100
		298.7 -> 98.8	608		
PFDA	8.251	512.9 -> 469.0	7519	0.23 µg/L	99
		512.9 -> 219.0	1063		
PFDoDA	9.136	613.1 -> 569.0	5029	0.23 µg/L	100
		613.1 -> 319.0	763		
PFDS	9.299	599.0 -> 79.9	737	0.22 µg/L	88

Perfluorinated Compounds by LC/MS/MS

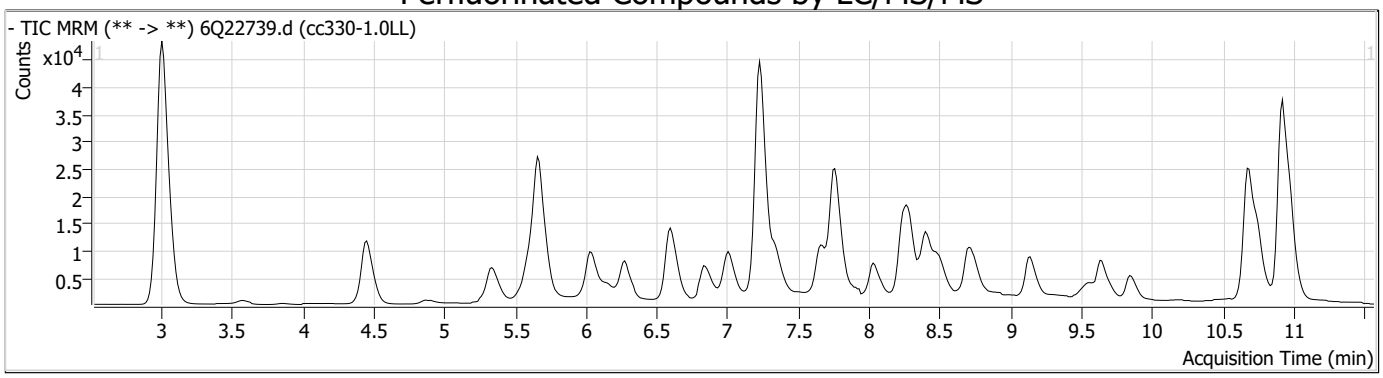
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	426				
PFHpA	6.596	363.1 -> 319.0	5707	0.22	µg/L		99
		363.1 -> 169.0	982				
PFHpS	7.909	449.0 -> 79.9	1485	0.23	µg/L		85
		449.0 -> 98.9	639				
PFHxA	5.670	313.0 -> 269.0	4401	0.22	µg/L		99
		313.0 -> 118.9	247				
PFHxS	7.356	398.7 -> 79.9	1359	0.19	µg/L	m	94
		398.7 -> 98.9	713				
PFNA	7.758	463.0 -> 419.0	7481	0.21	µg/L		99
		463.0 -> 219.0	1391				
PFNS	8.880	548.8 -> 79.9	1229	0.21	µg/L		98
		548.8 -> 98.9	673				
PFOA	7.228	413.0 -> 369.0	8107	0.19	µg/L		89
		413.0 -> 169.0	1690				
PFOS	8.403	498.9 -> 79.9	1468	0.24	µg/L	m	90
		498.9 -> 98.8	670				
PFPeA	4.449	263.0 -> 219.0	6003	0.43	µg/L		100
PFPeS	6.660	349.1 -> 79.9	1338	0.20	µg/L		91
		349.1 -> 98.9	687				
PFTeDA	9.852	713.1 -> 669.0	4023	0.23	µg/L		100
		713.1 -> 168.9	344				
PFTrDA	9.519	663.0 -> 619.0	4872	0.22	µg/L		92
		663.0 -> 168.9	632				
PFUnDA	8.705	563.1 -> 519.0	4774	0.23	µg/L		96
		563.1 -> 269.1	856				
11Cl-PF3OUdS	9.558	630.9 -> 450.9	6272	0.40	µg/L		98
		632.9 -> 452.9	2229				
9Cl-PF3ONS	8.745	530.8 -> 351.0	10396	0.42	µg/L		87
		532.8 -> 353.0	2540				
ADONA	6.846	376.9 -> 250.9	23364	0.42	µg/L		98
		376.9 -> 84.8	5891				
HFPO-DA	6.046	284.9 -> 168.9	1688	0.46	µg/L		97
		284.9 -> 184.9	200				
3:3FTCA	3.859	241.0 -> 177.0	1058	1.07	µg/L		99
		241.0 -> 117.0	137				
5:3FTCA	6.272	341.0 -> 237.1	21746	5.22	µg/L		92
		341.0 -> 217.0	16801				
7:3FTCA	7.660	441.0 -> 316.9	15978	5.18	µg/L		95
		441.0 -> 336.9	35219				
EtFOSA	10.985	526.0 -> 219.0	3006	0.43	µg/L		100
		526.0 -> 169.0	3992				
EtFOSE	10.931	630.0 -> 58.9	7543	1.00	µg/L		100
MeFOSA	10.765	511.9 -> 219.0	2452	0.44	µg/L		98
		511.9 -> 169.0	3609				
MeFOSE	10.697	616.1 -> 58.9	5186	1.03	µg/L		100
PFDoDS	9.978	699.1 -> 79.9	307	0.19	µg/L		81
		699.1 -> 98.8	213				
NFDHA	5.551	295.0 -> 201.0	1200	0.47	µg/L		92
		295.0 -> 84.9	293				
PFMBA	4.869	279.0 -> 85.1	4246	0.43	µg/L		100
PFMPA	3.576	229.0 -> 84.9	3387	0.43	µg/L		100
PFEESA	6.151	314.8 -> 134.9	10672	0.39	µg/L		99
		314.8 -> 82.9	335				

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

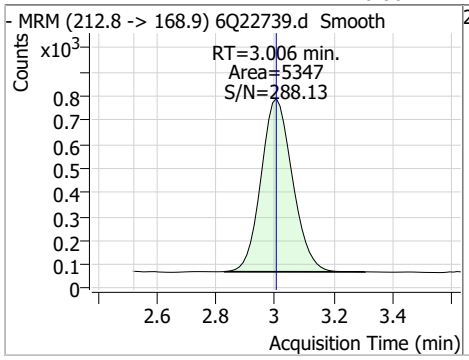
Perfluorinated Compounds by LC/MS/MS

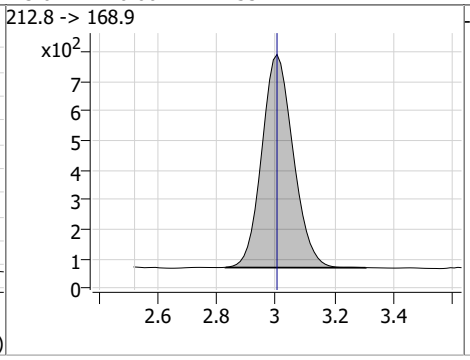
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

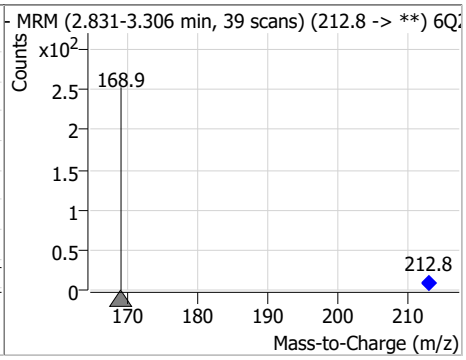
Perfluorinated Compounds by LC/MS/MS



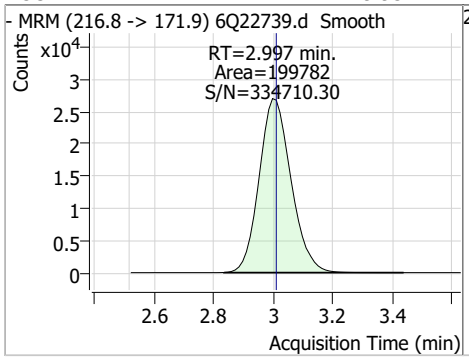
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.86	3.01	0.00	5347				

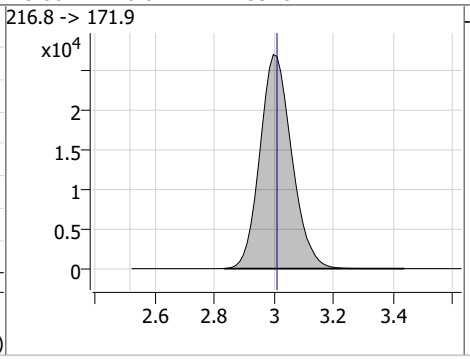


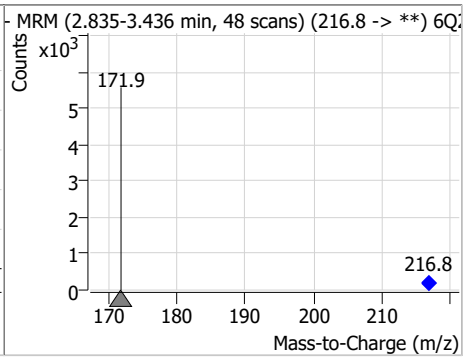




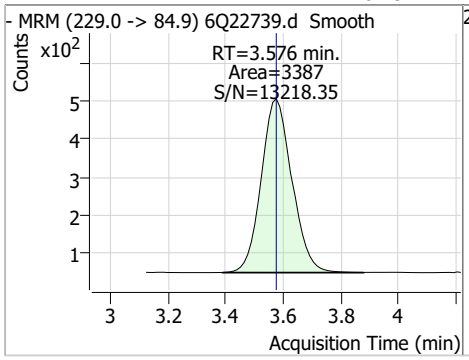
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.93	3.00	-0.01	199782				

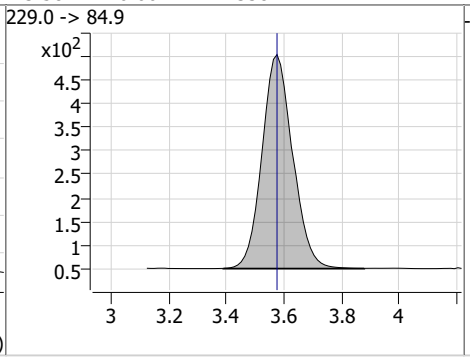


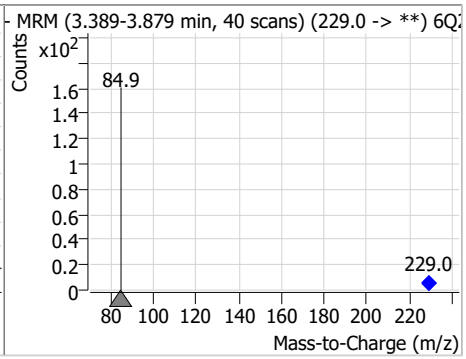




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.43	3.58	0.00	3387				

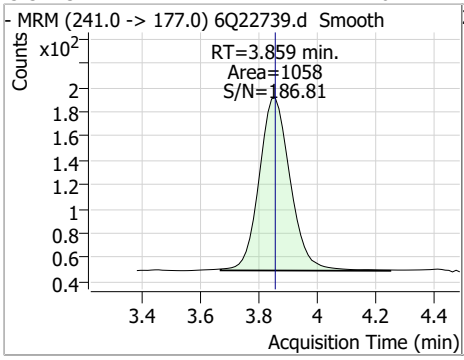


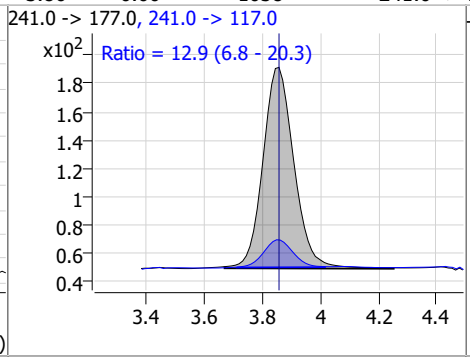


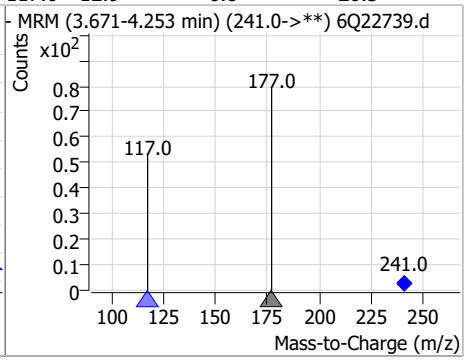


Perfluorinated Compounds by LC/MS/MS

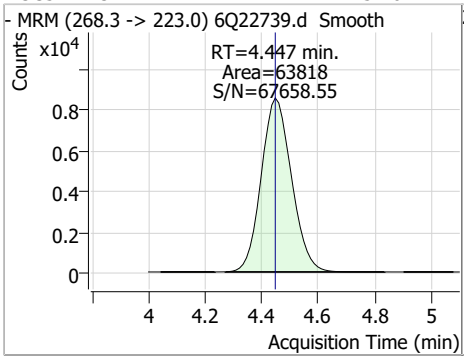
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.07	3.86	0.00	1058	241.0 -> 117.0	12.9	6.8	20.3

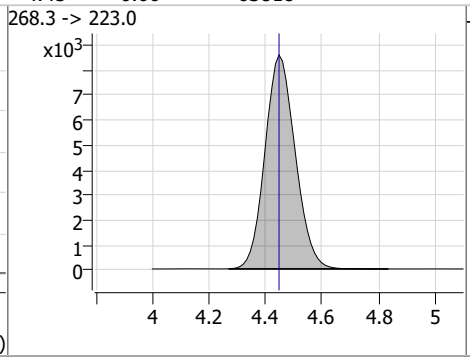


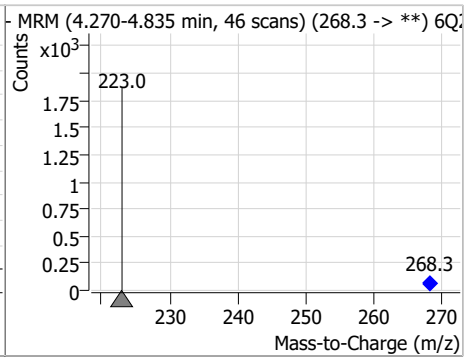




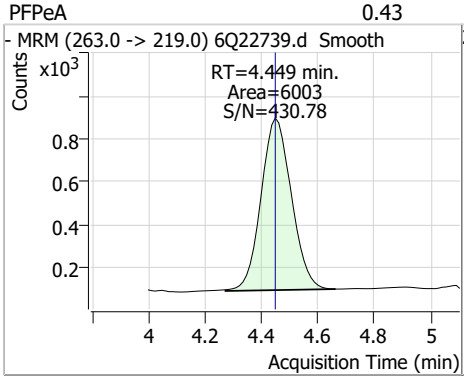
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.45	0.00	63818				

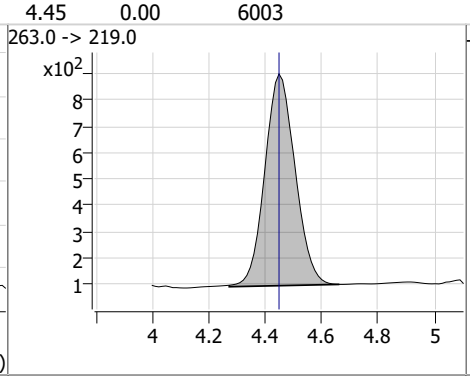


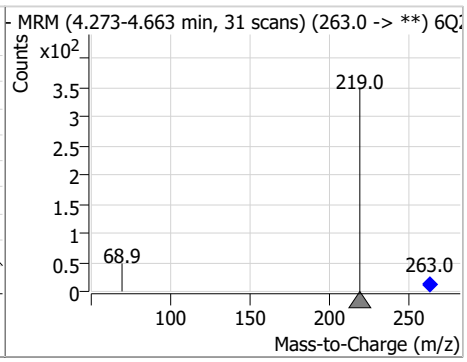




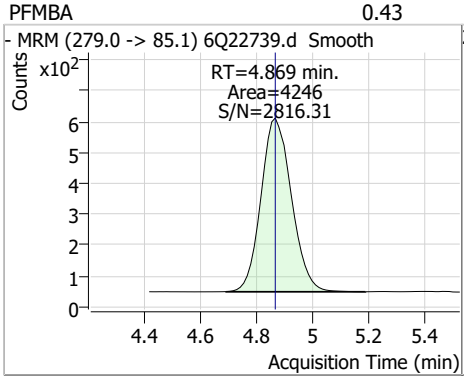
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.43	4.45	0.00	6003				

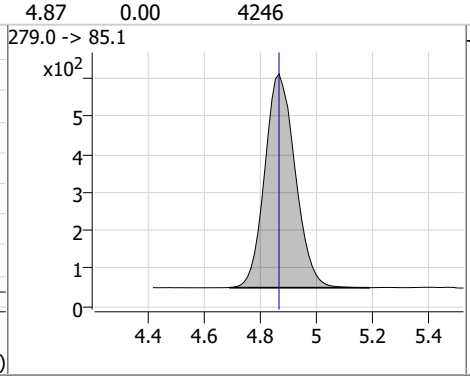


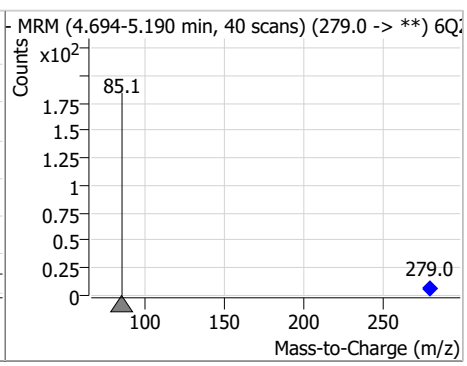




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.43	4.87	0.00	4246				

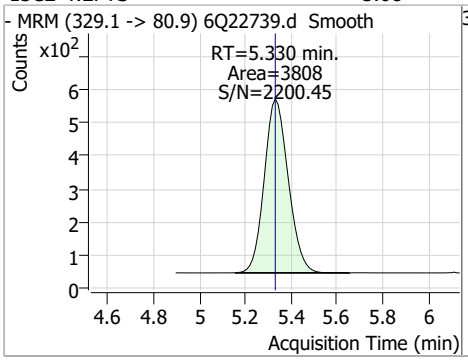


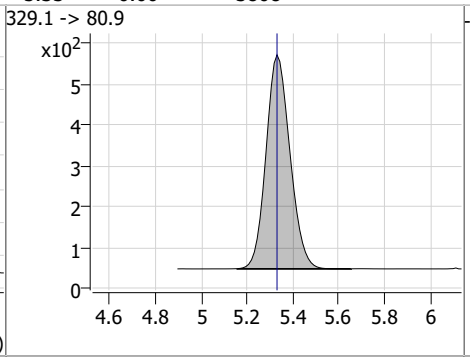


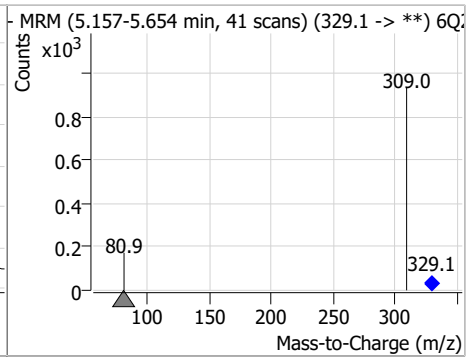


Perfluorinated Compounds by LC/MS/MS

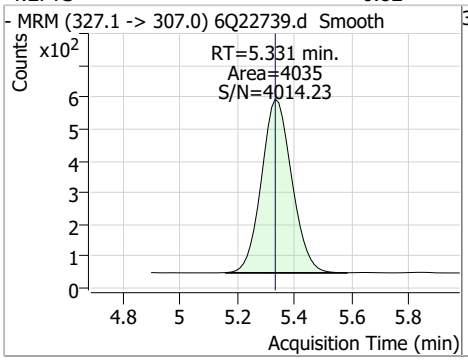
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.08	5.33	0.00	3808				

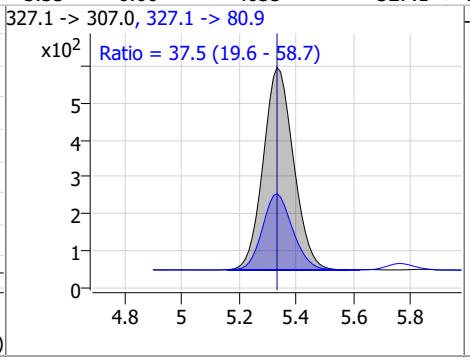


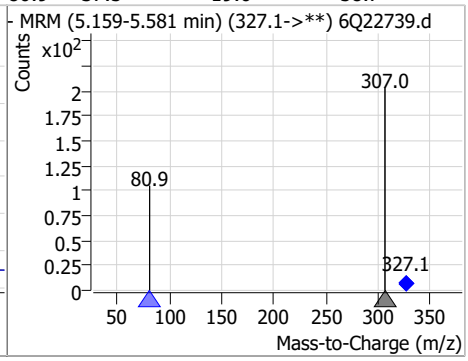




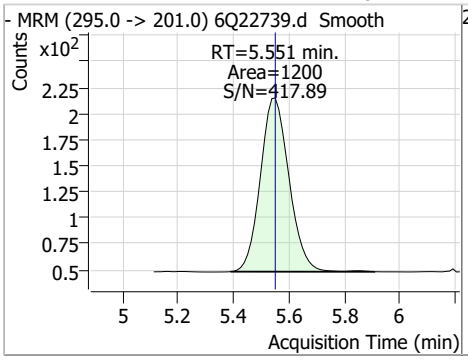
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.82	5.33	0.00	4035	327.1 -> 80.9	37.5	19.6	58.7

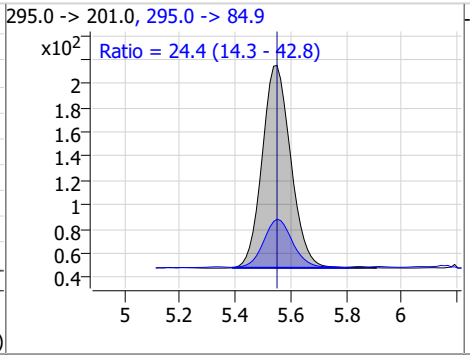


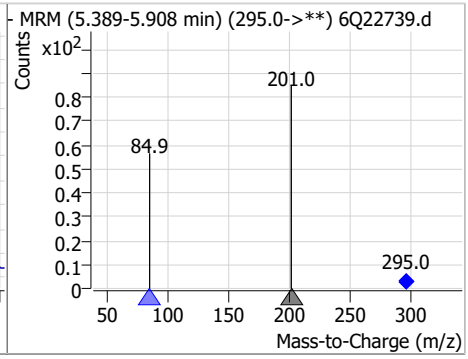




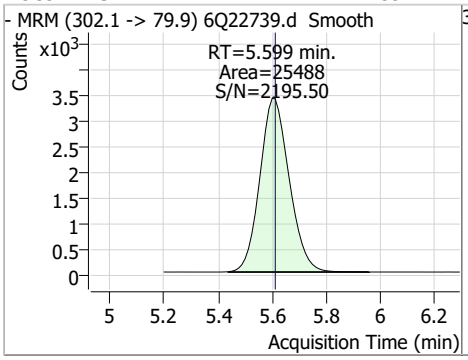
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.47	5.55	0.00	1200	295.0 -> 84.9	24.4	14.3	42.8

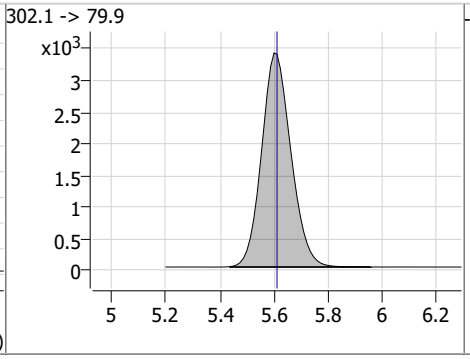


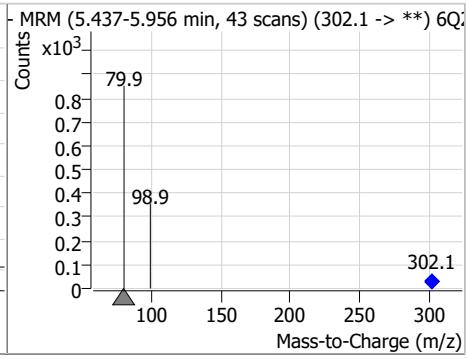




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	5.60	-0.01	25488				

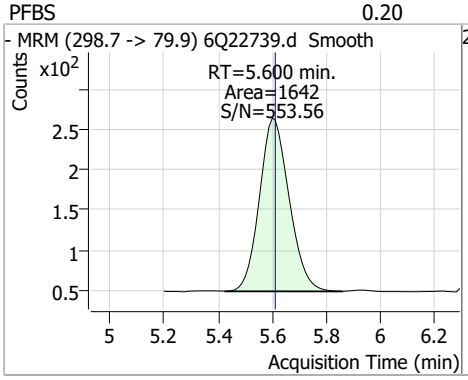


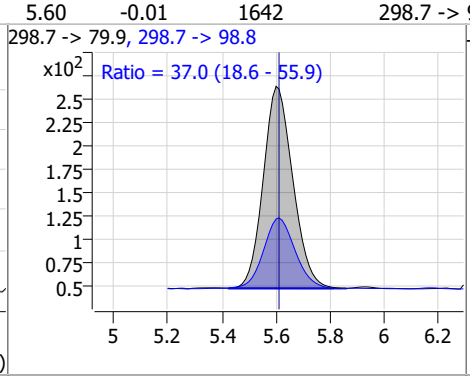


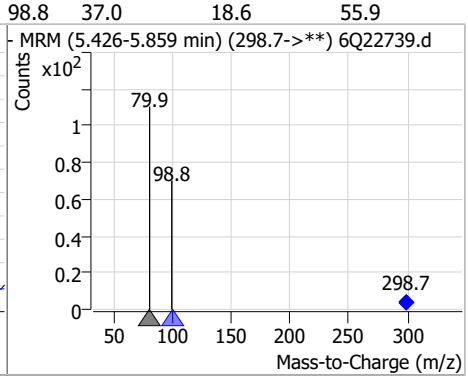


Perfluorinated Compounds by LC/MS/MS

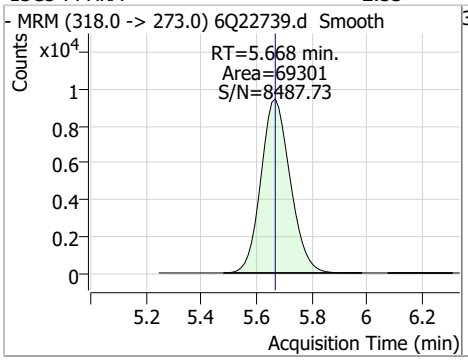
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.20	5.60	-0.01	1642	298.7 -> 98.8	37.0	18.6	55.9

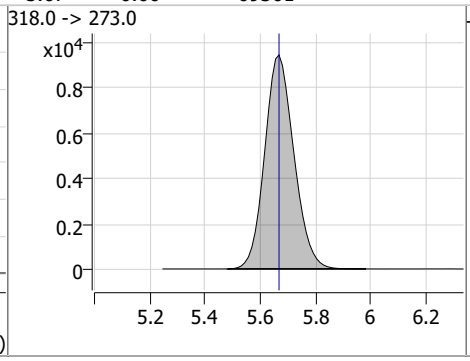


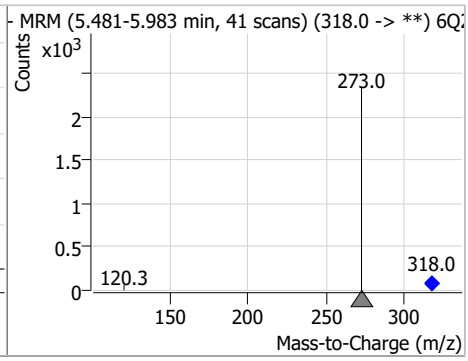




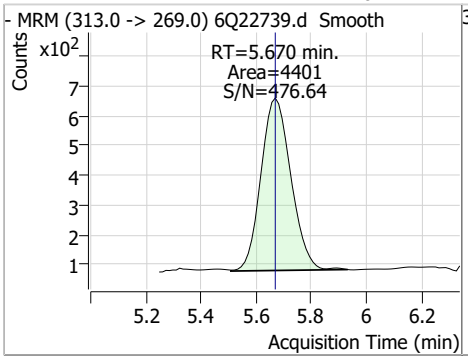
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.67	0.00	69301				

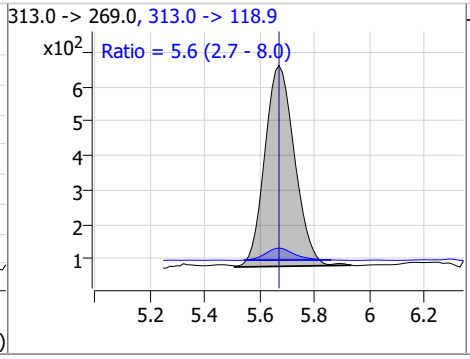


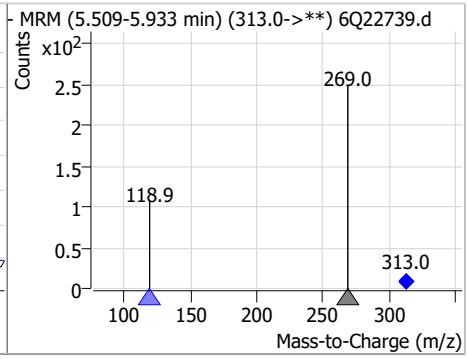




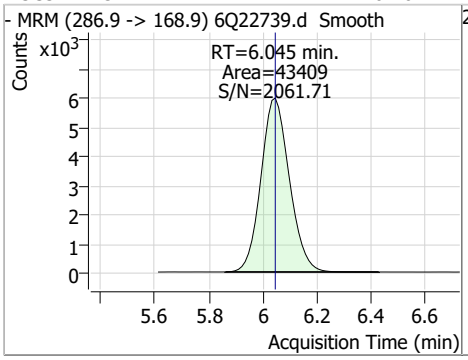
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.67	0.00	4401	313.0 -> 118.9	5.6	2.7	8.0

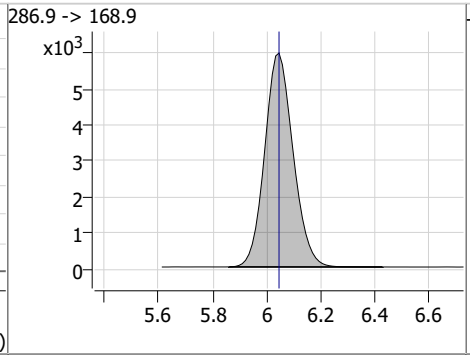


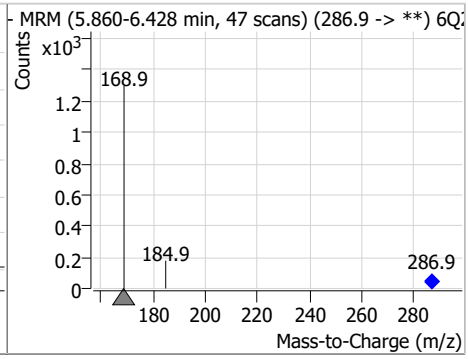




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.10	6.05	0.00	43409				

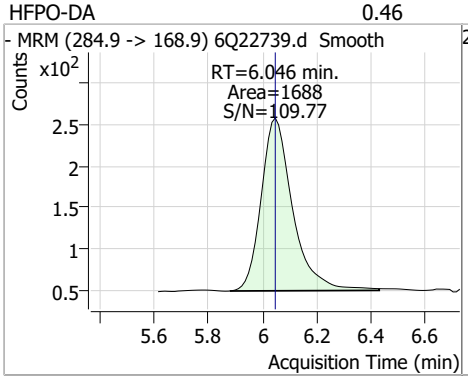


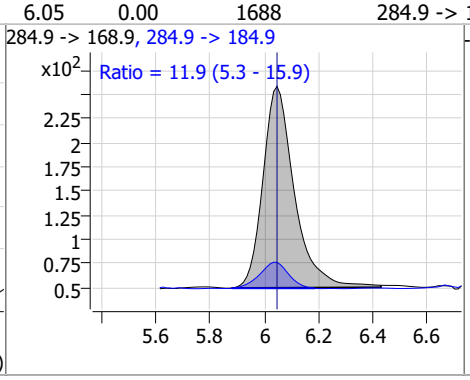


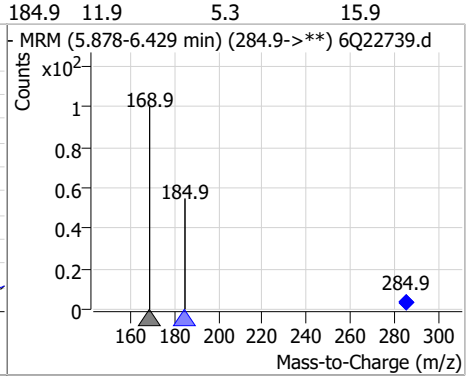


Perfluorinated Compounds by LC/MS/MS

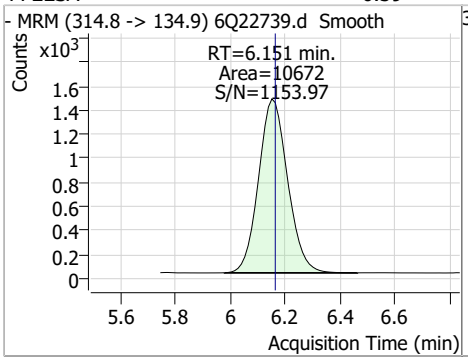
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.46	6.05	0.00	1688	284.9 -> 184.9	11.9	5.3	15.9

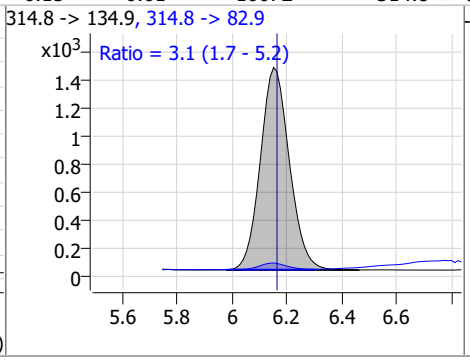


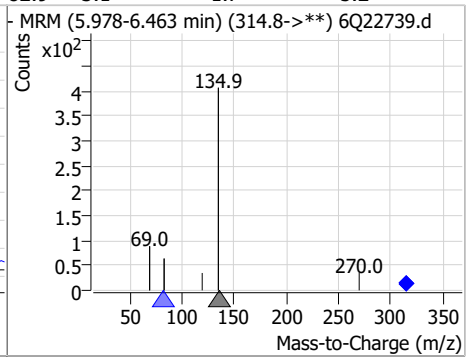




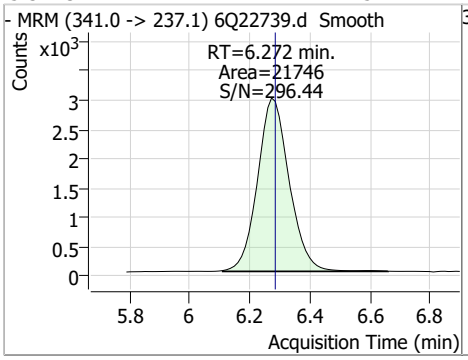
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.39	6.15	-0.01	10672	314.8 -> 82.9	3.1	1.7	5.2

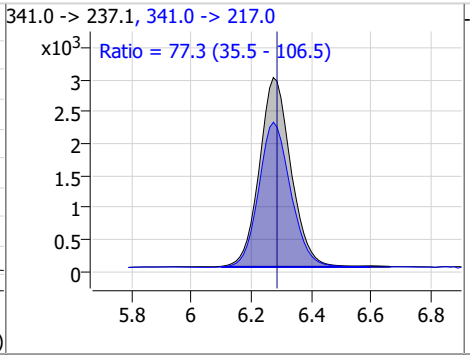


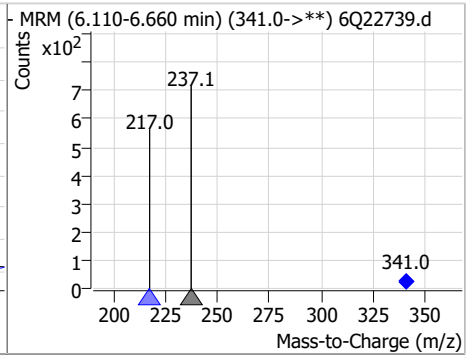




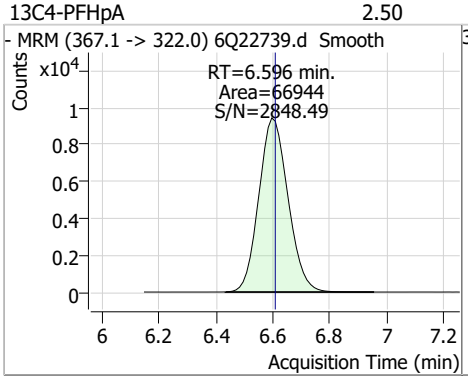
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.22	6.27	-0.01	21746	341.0 -> 217.0	77.3	35.5	106.5

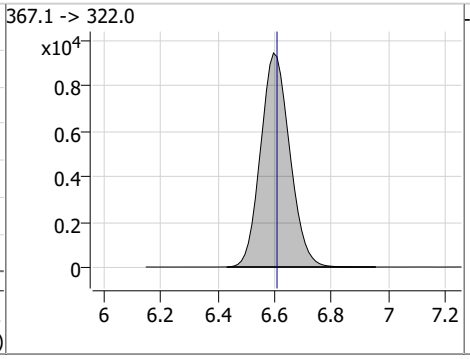


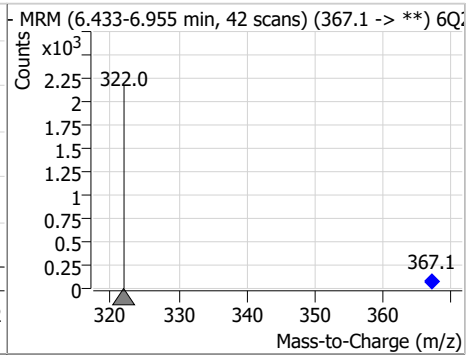




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.60	-0.01	66944				

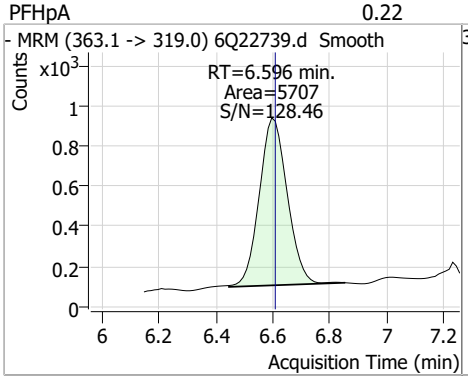


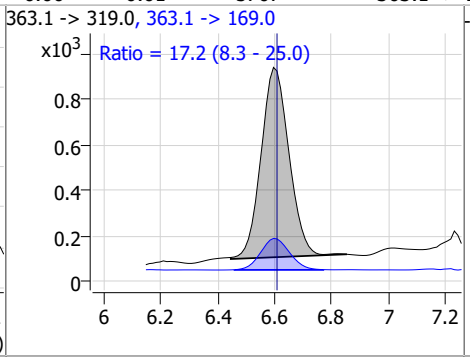


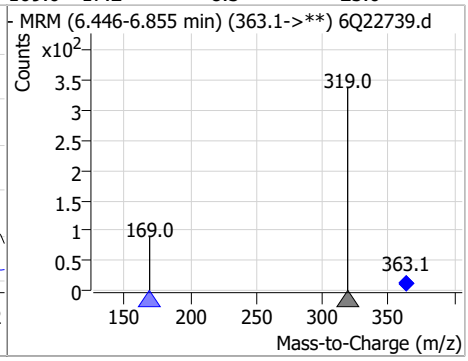


Perfluorinated Compounds by LC/MS/MS

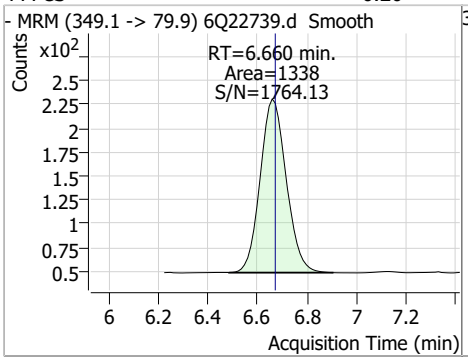
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.22	6.60	-0.01	5707	363.1 -> 169.0	17.2	8.3	25.0

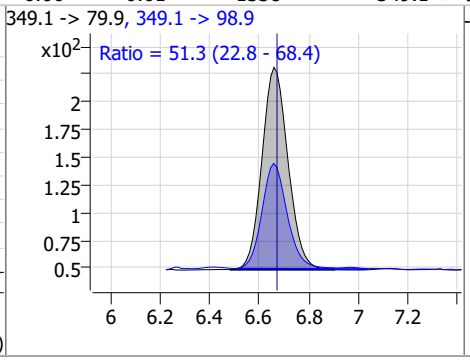


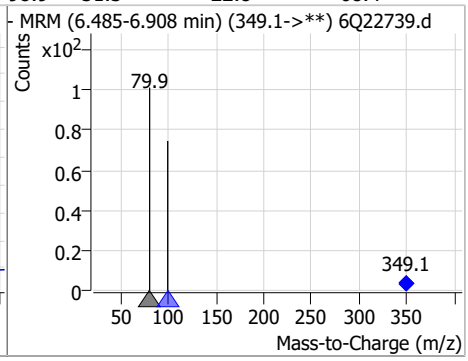




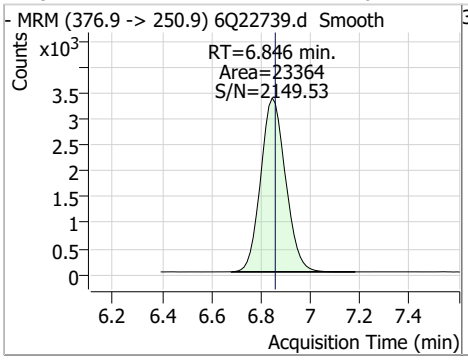
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.20	6.66	-0.01	1338	349.1 -> 98.9	51.3	22.8	68.4

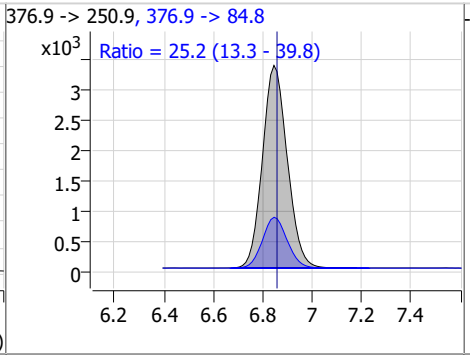


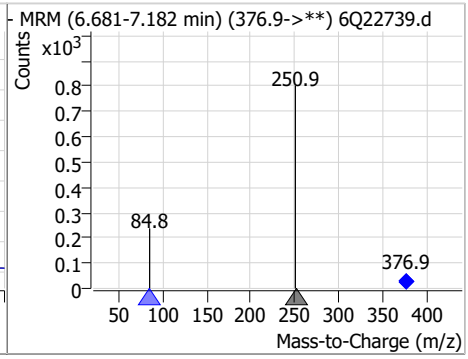




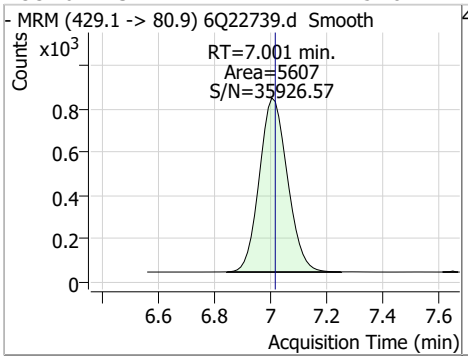
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.42	6.85	-0.01	23364	376.9 -> 84.8	25.2	13.3	39.8

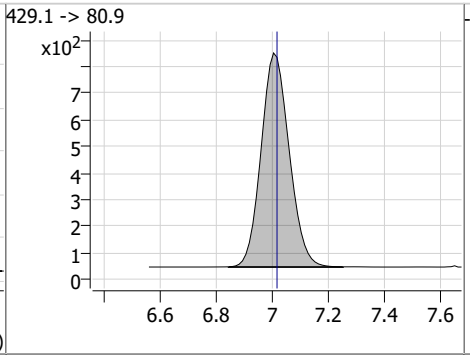


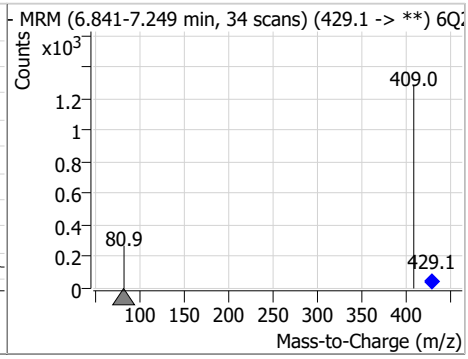




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.18	7.00	-0.01	5607				

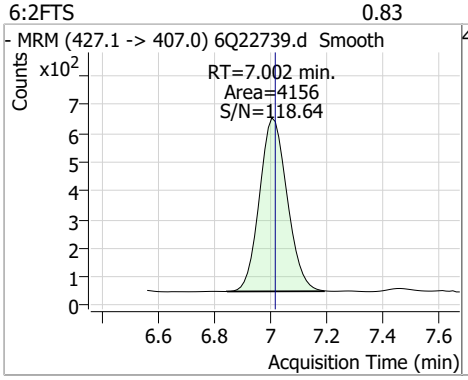


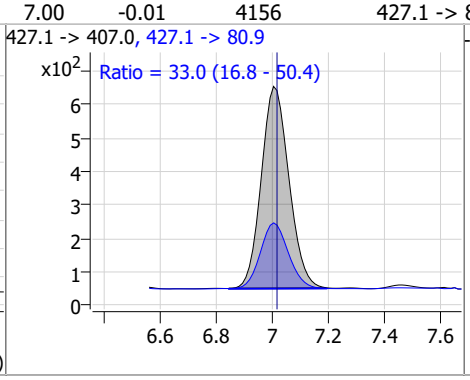


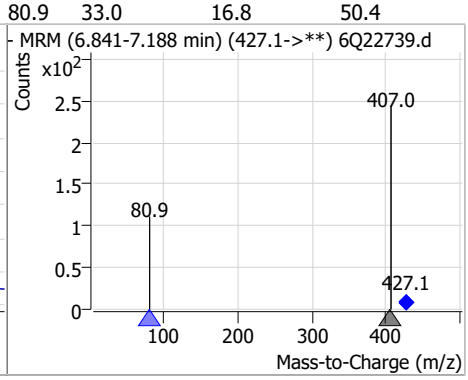


Perfluorinated Compounds by LC/MS/MS

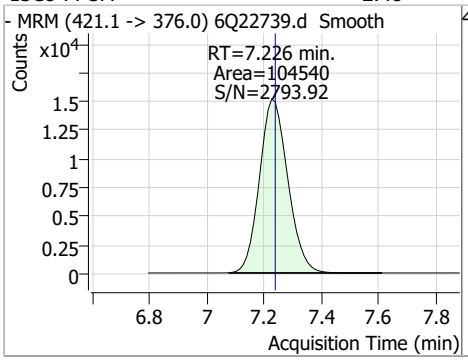
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.83	7.00	-0.01	4156	427.1 -> 80.9	33.0	16.8	50.4

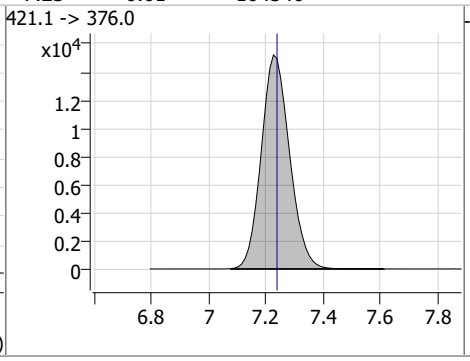


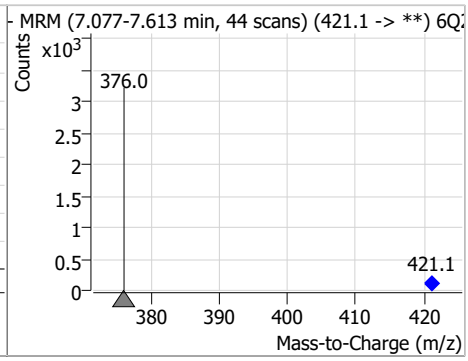




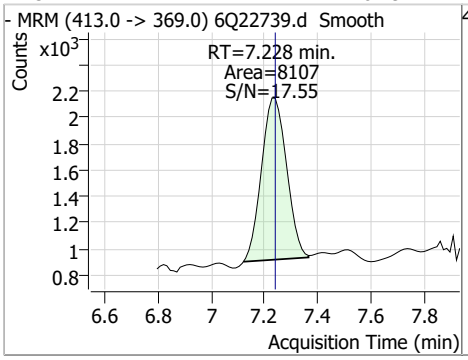
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	7.23	-0.01	104540				

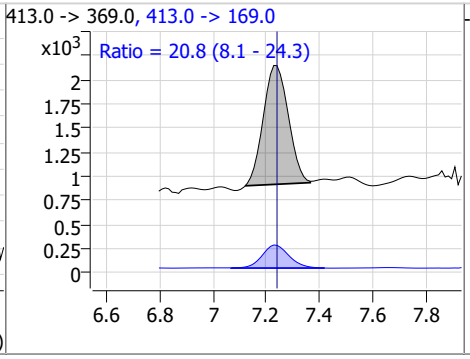


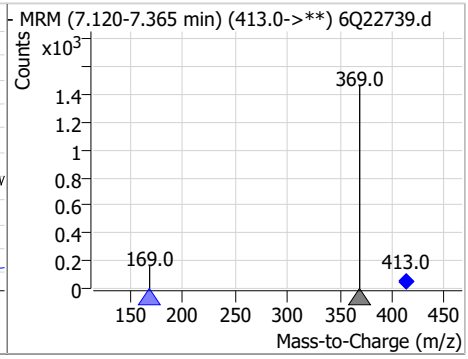




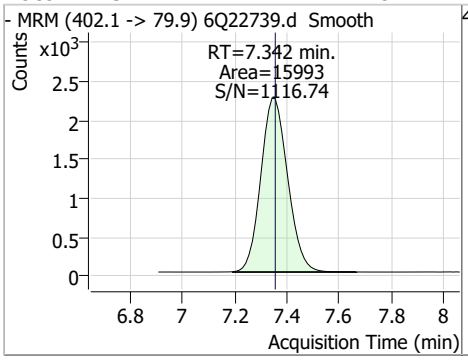
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.19	7.23	-0.01	8107	413.0 -> 169.0	20.8	8.1	24.3

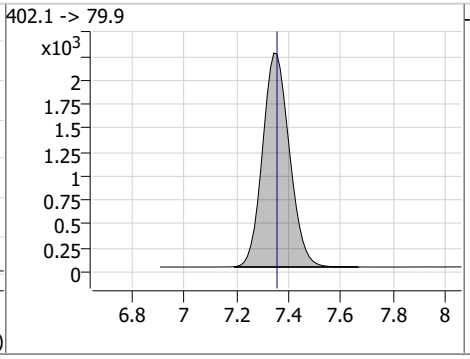


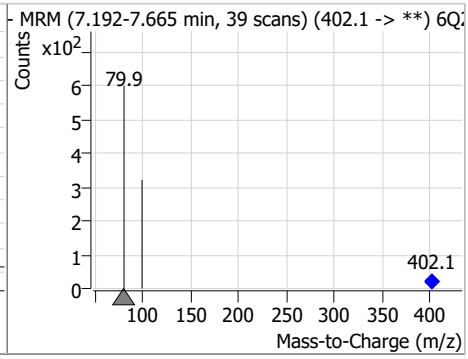




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.32	7.34	-0.01	15993				

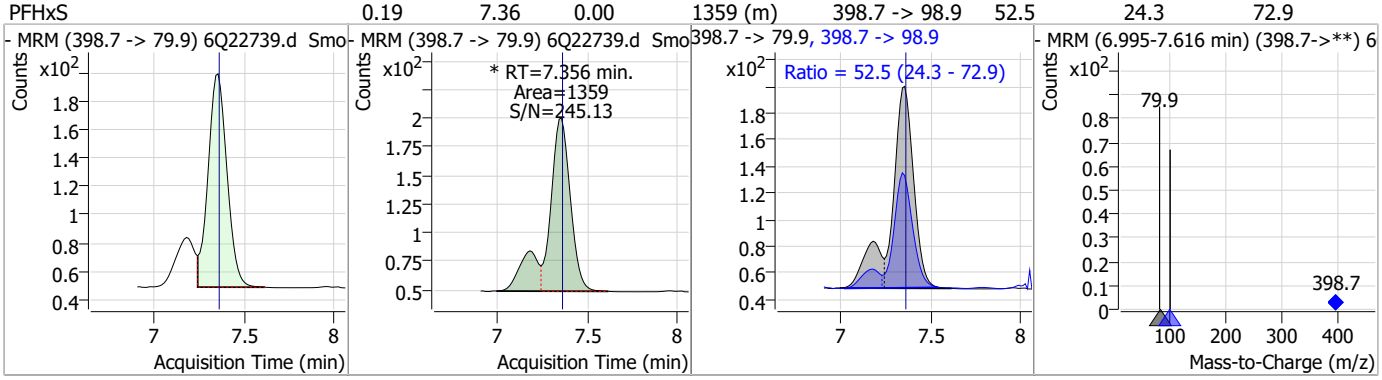




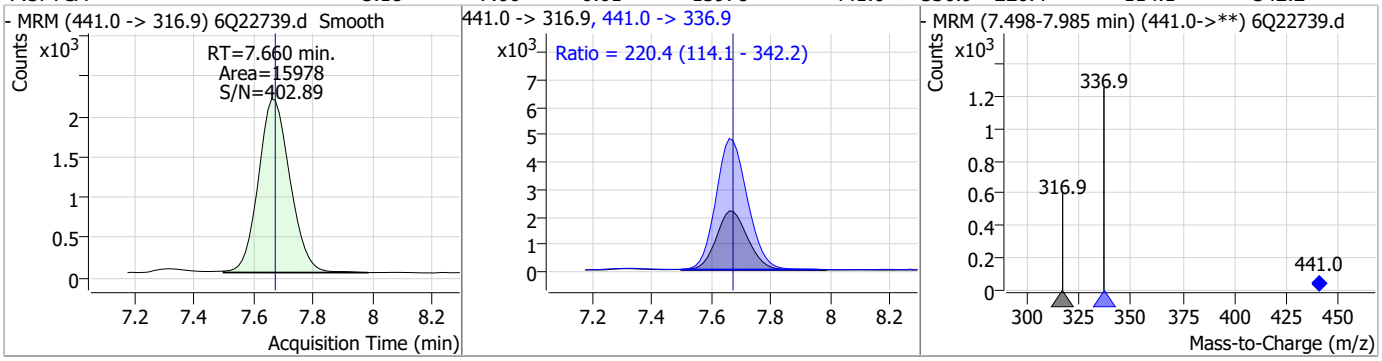


Perfluorinated Compounds by LC/MS/MS

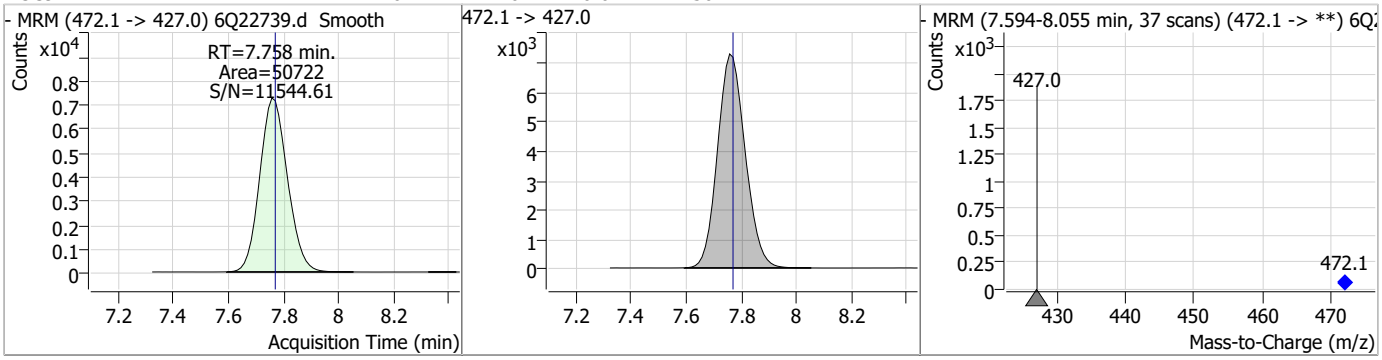
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.19	7.36	0.00	1359 (m)	398.7 -> 98.9	52.5	24.3	72.9



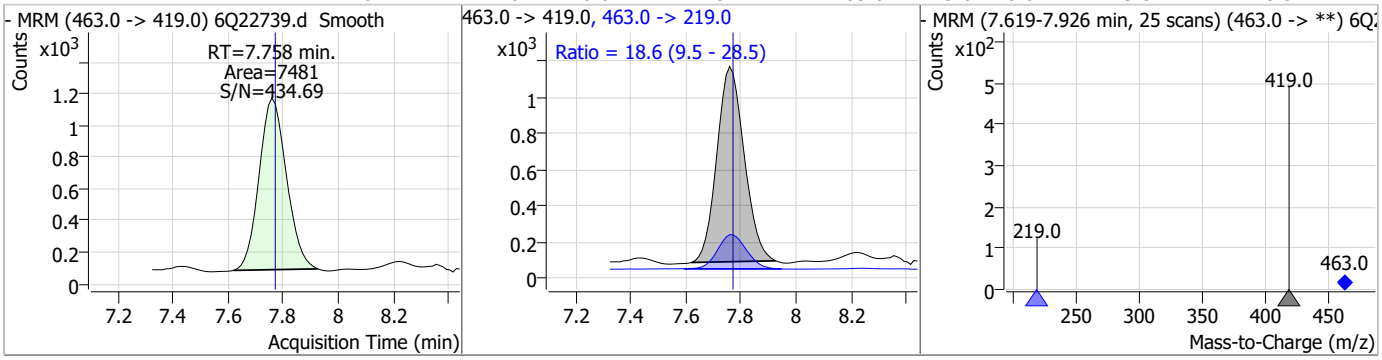
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	5.18	7.66	-0.01	15978	441.0 -> 336.9	220.4	114.1	342.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.76	-0.01	50722				

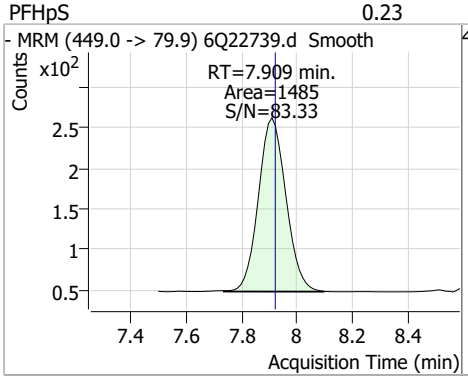


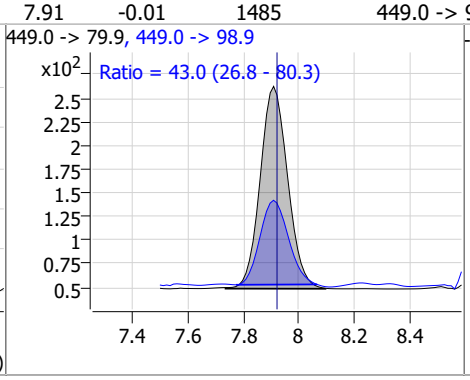
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.21	7.76	-0.01	7481	463.0 -> 219.0	18.6	9.5	28.5

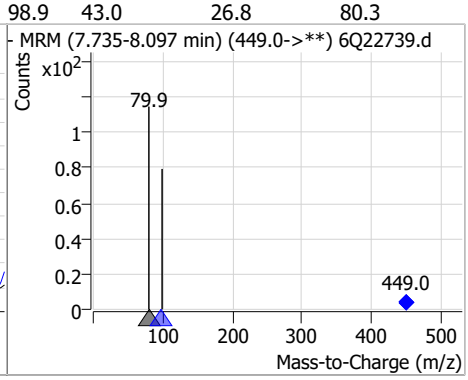


Perfluorinated Compounds by LC/MS/MS

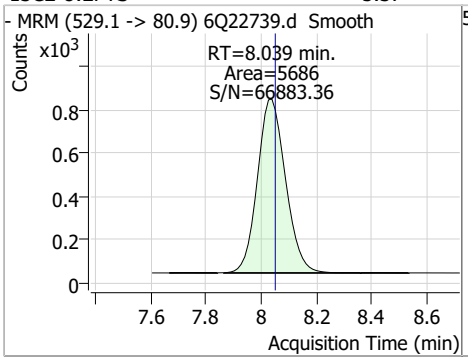
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.23	7.91	-0.01	1485	449.0 -> 98.9	43.0	26.8	80.3

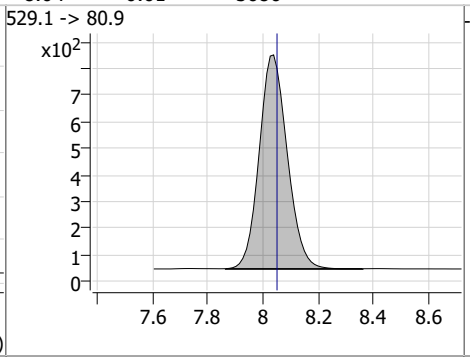


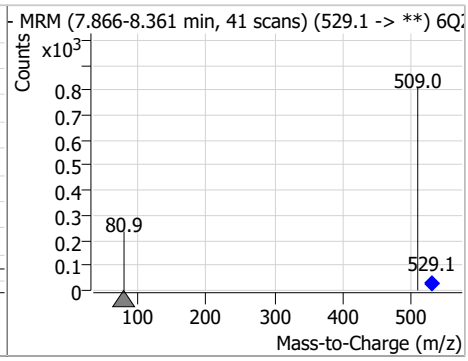




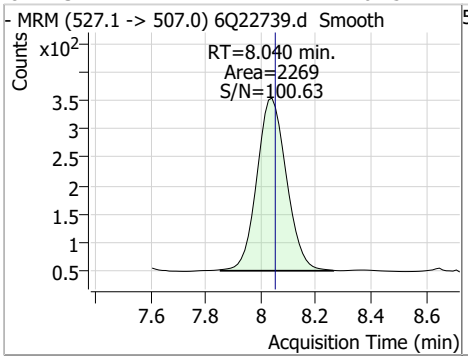
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.37	8.04	-0.01	5686				

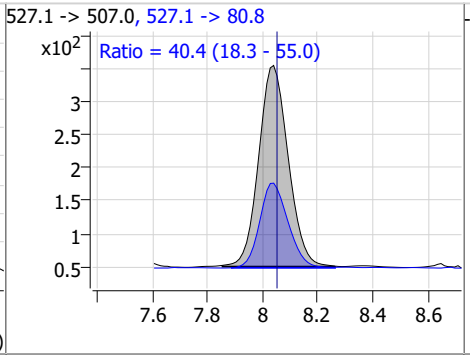


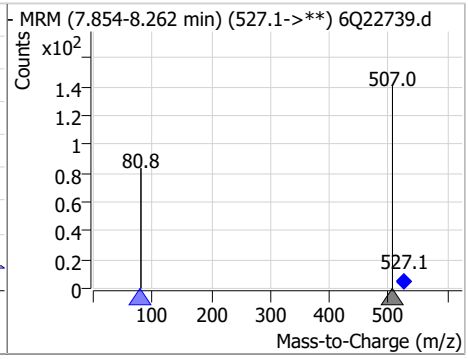




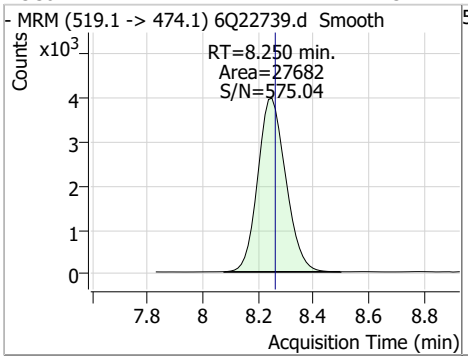
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.75	8.04	-0.01	2269	527.1 -> 80.8	40.4	18.3	55.0

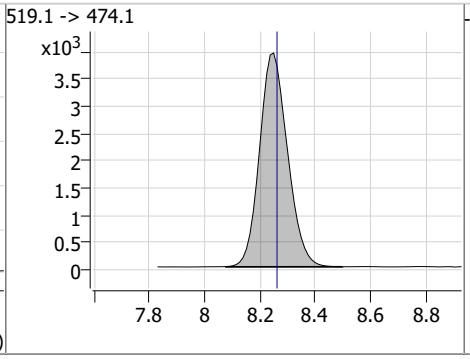


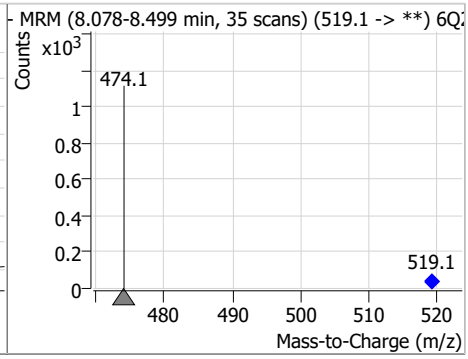




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.23	8.25	-0.01	27682				

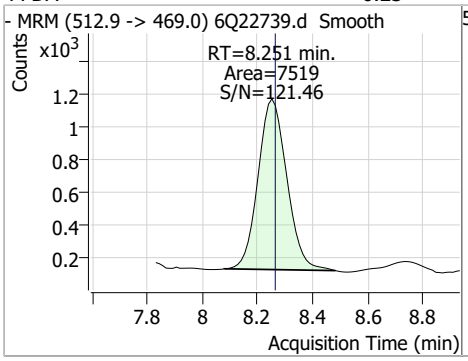


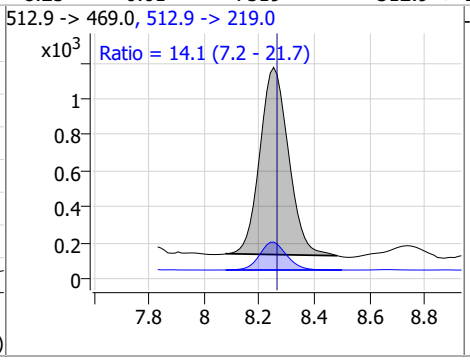


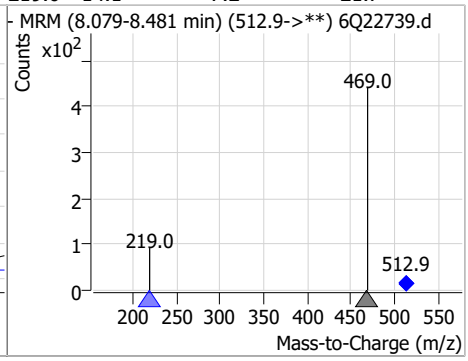


Perfluorinated Compounds by LC/MS/MS

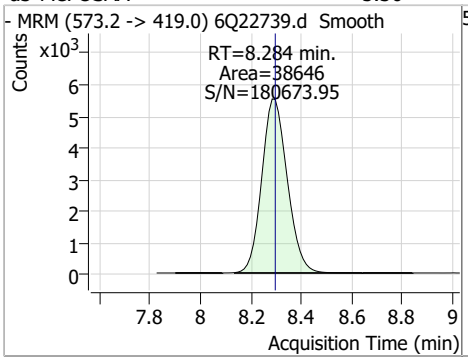
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.23	8.25	-0.01	7519	512.9 -> 219.0	14.1	7.2	21.7

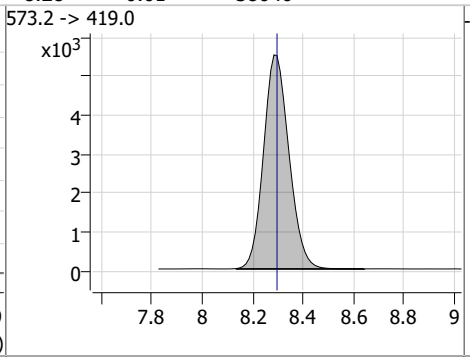


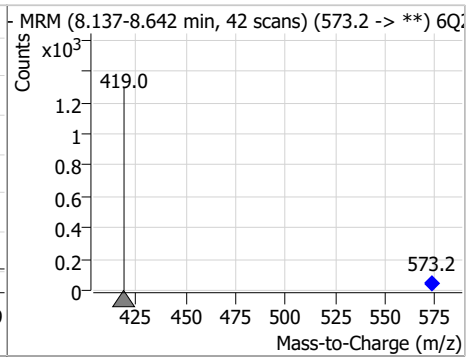




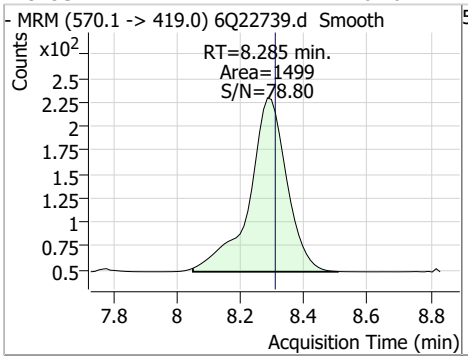
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.36	8.28	-0.01	38646				

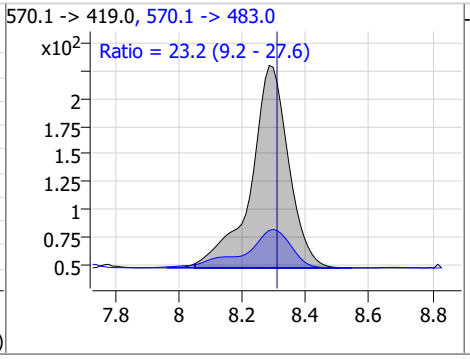


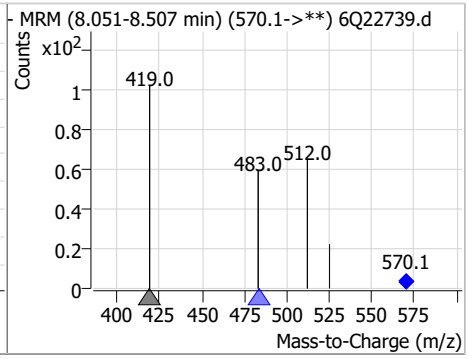




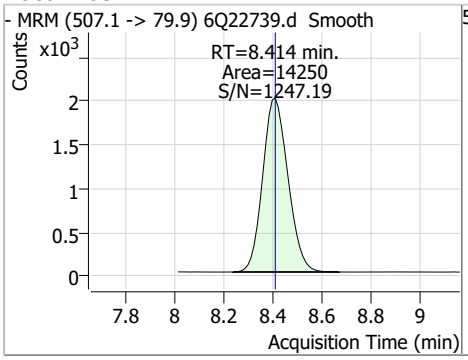
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.29	-0.02	1499	570.1 -> 483.0	23.2	9.2	27.6

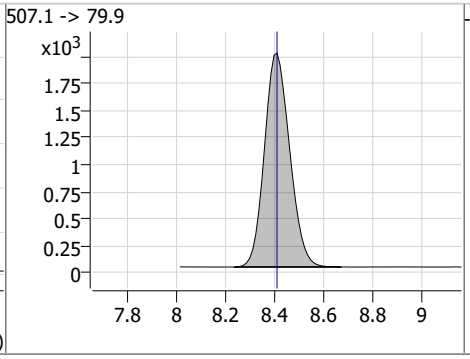


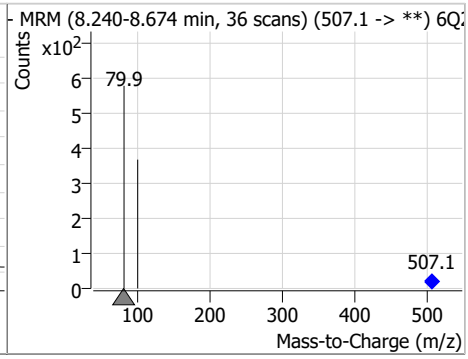




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.41	0.00	14250				

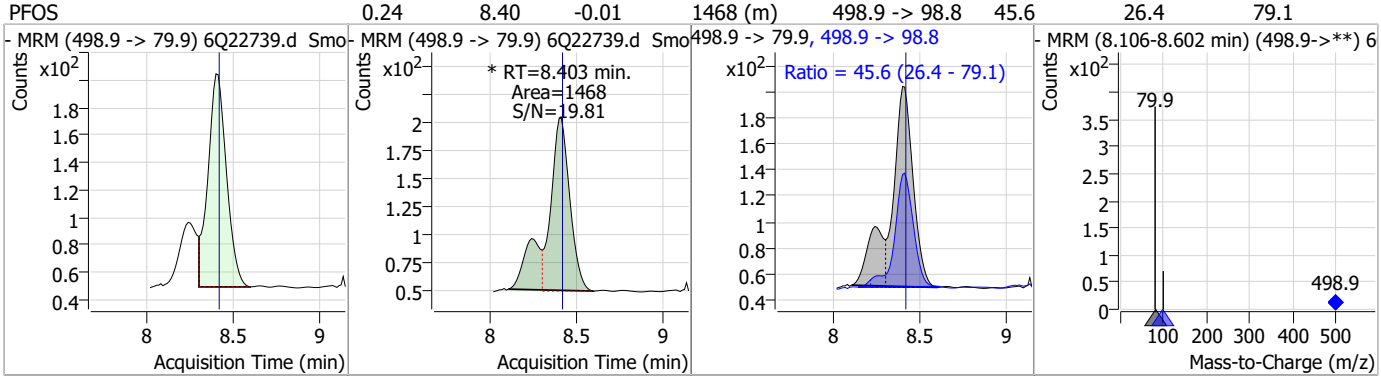




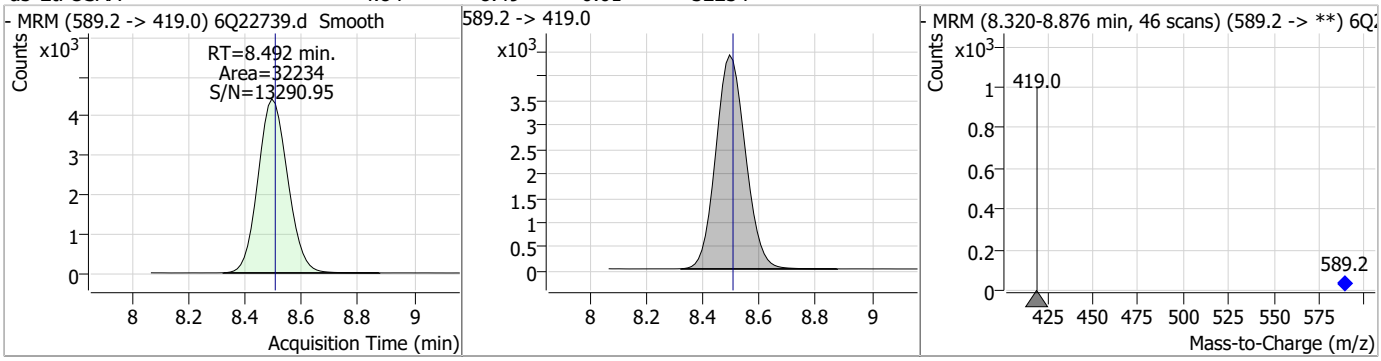


Perfluorinated Compounds by LC/MS/MS

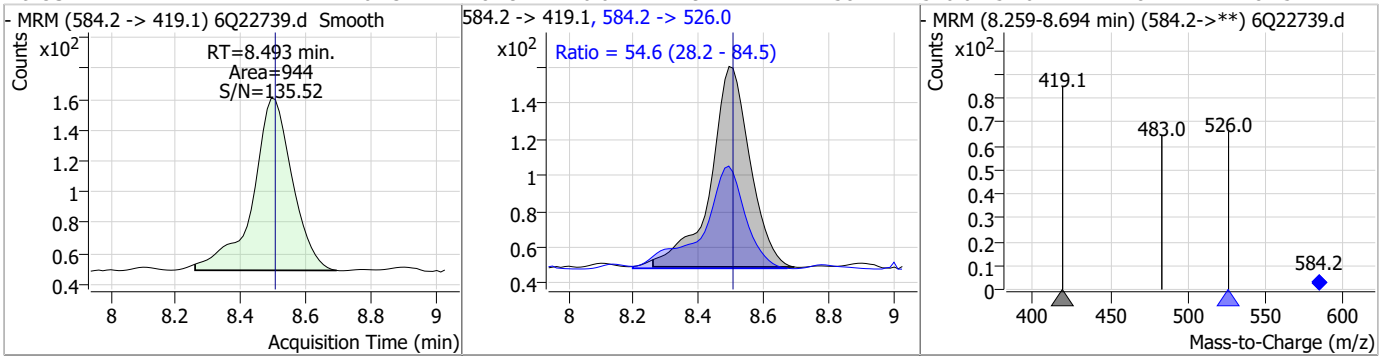
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.24	8.40	-0.01	1468 (m)	498.9 -> 98.8	45.6	26.4	79.1



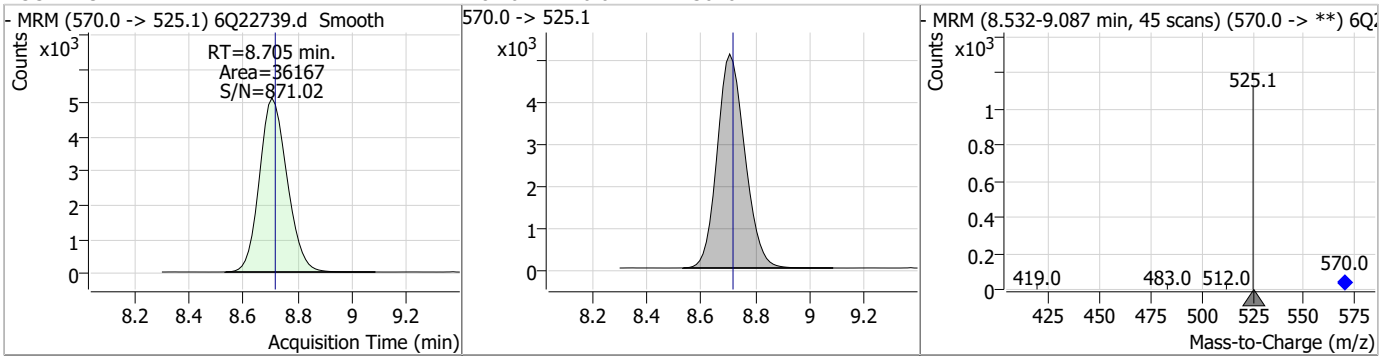
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.84	8.49	-0.01	32234				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.23	8.49	-0.01	944	584.2 -> 526.0	54.6	28.2	84.5

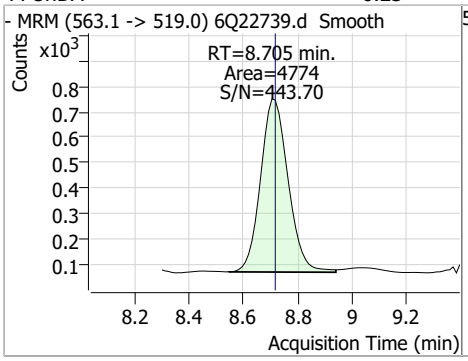


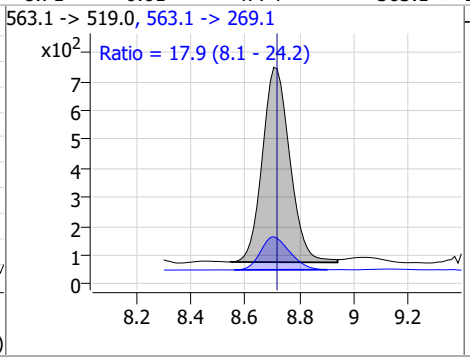
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.70	-0.01	36167				

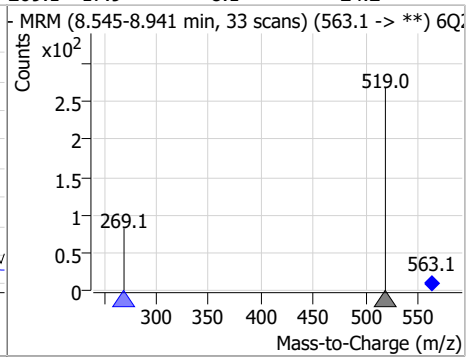


Perfluorinated Compounds by LC/MS/MS

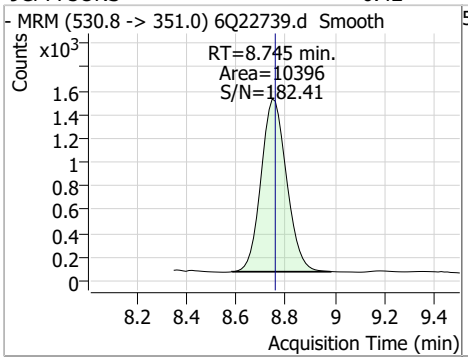
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.23	8.71	-0.01	4774	563.1 -> 269.1	17.9	8.1	24.2

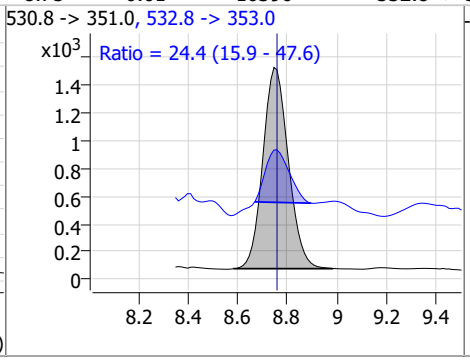


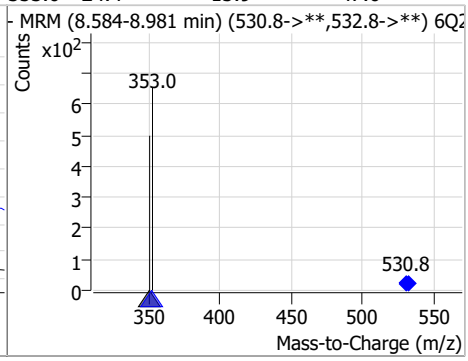




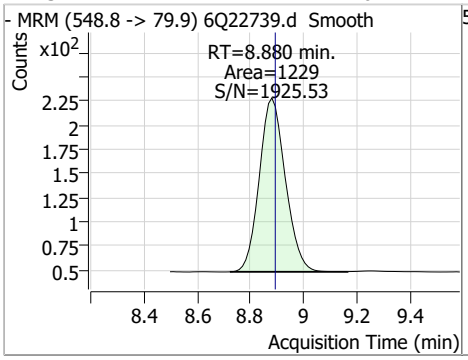
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.42	8.75	-0.01	10396	532.8 -> 353.0	24.4	15.9	47.6

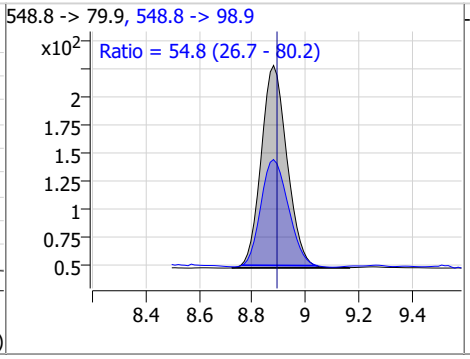


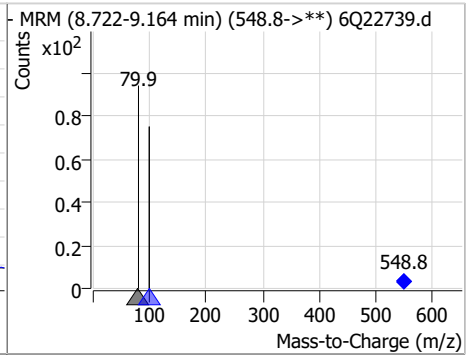




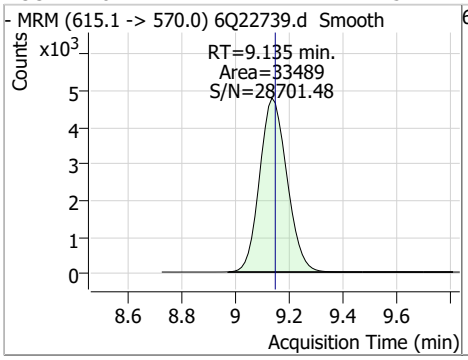
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.21	8.88	-0.01	1229	548.8 -> 98.9	54.8	26.7	80.2

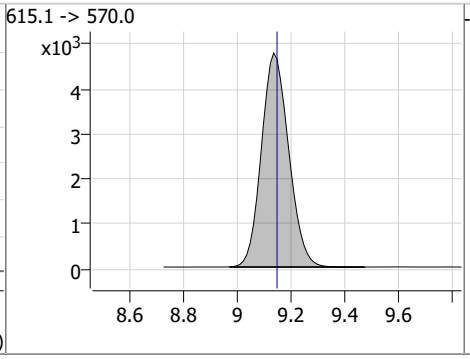


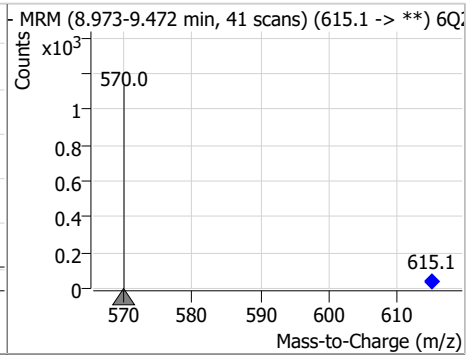




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	9.14	-0.01	33489				

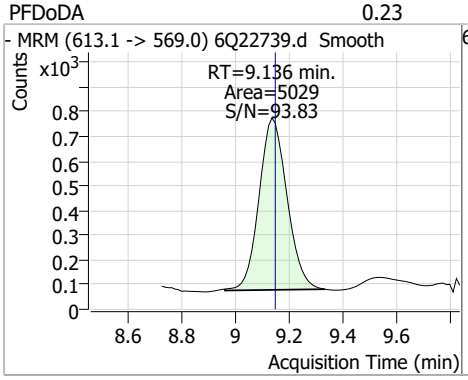


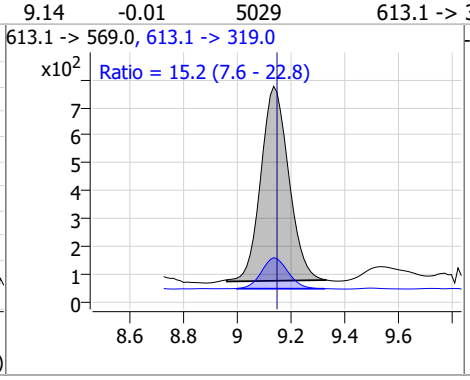


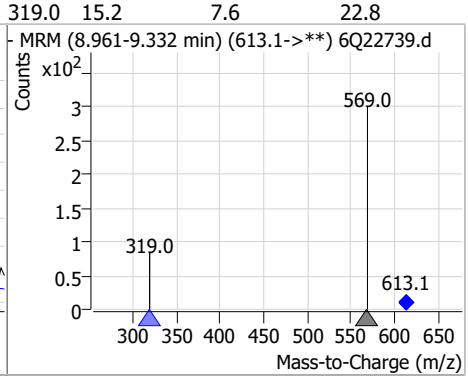


Perfluorinated Compounds by LC/MS/MS

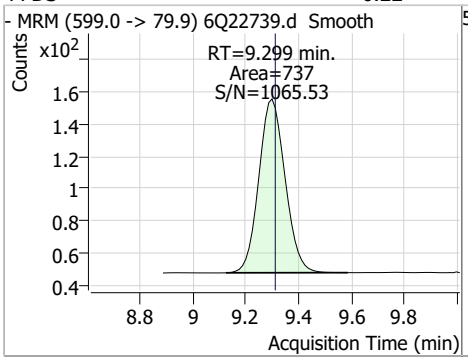
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.23	9.14	-0.01	5029	613.1 -> 319.0	15.2	7.6	22.8

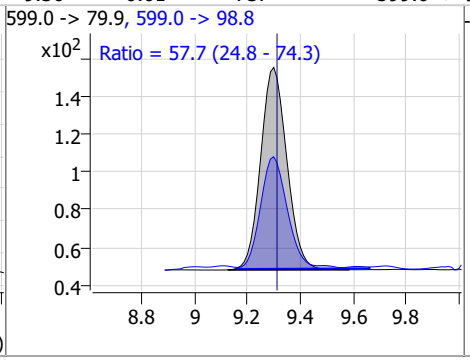


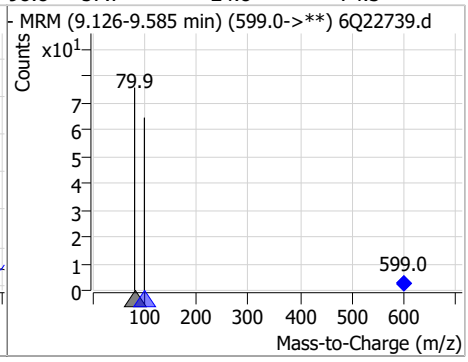




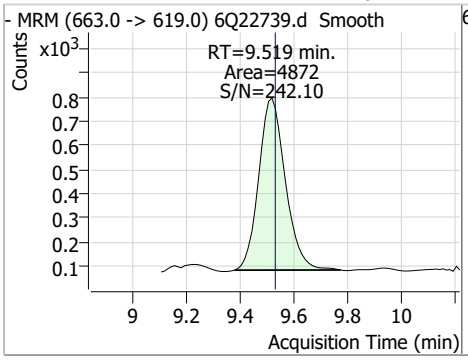
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.22	9.30	-0.01	737	599.0 -> 98.8	57.7	24.8	74.3

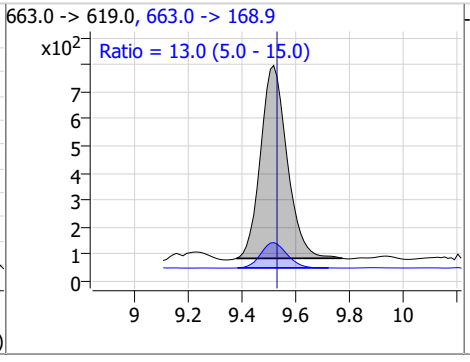


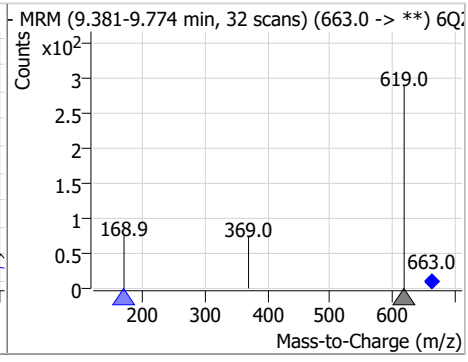




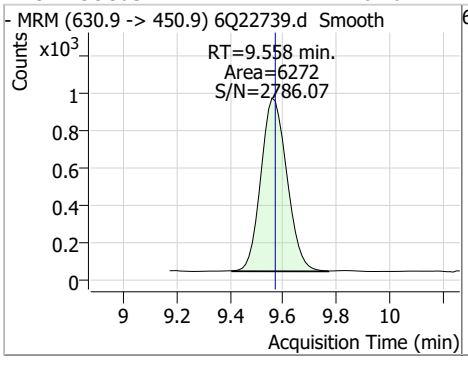
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.22	9.52	-0.01	4872	663.0 -> 168.9	13.0	5.0	15.0

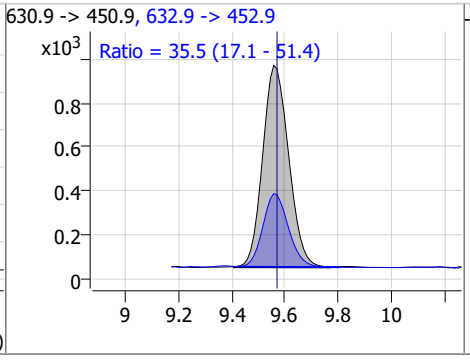


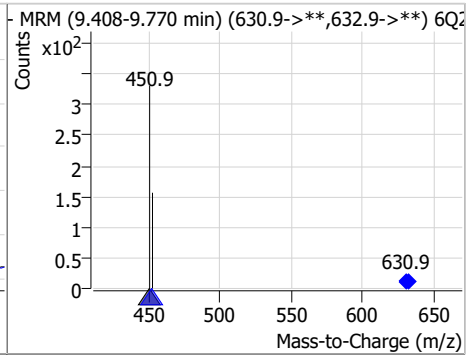




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.40	9.56	-0.01	6272	632.9 -> 452.9	35.5	17.1	51.4

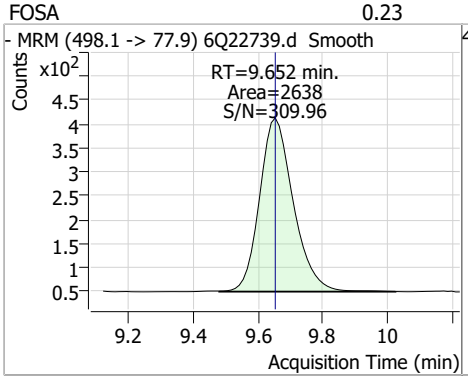


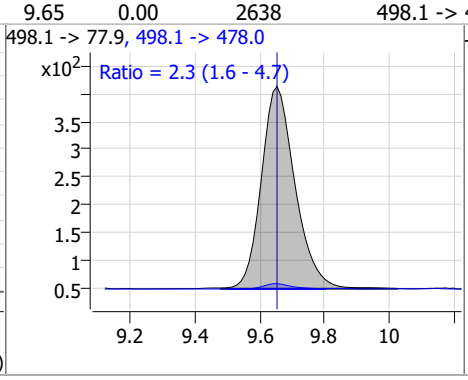


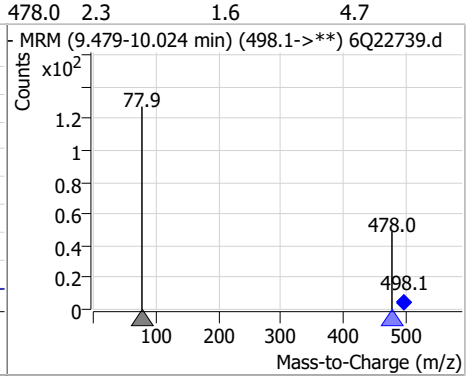


Perfluorinated Compounds by LC/MS/MS

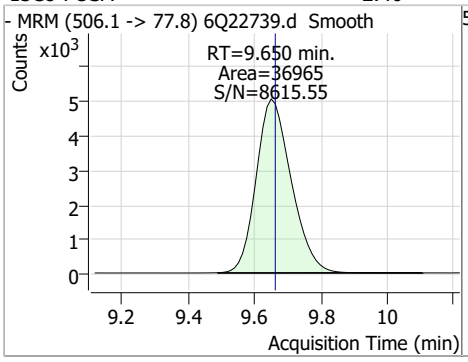
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.23	9.65	0.00	2638	498.1 -> 478.0	2.3	1.6	4.7

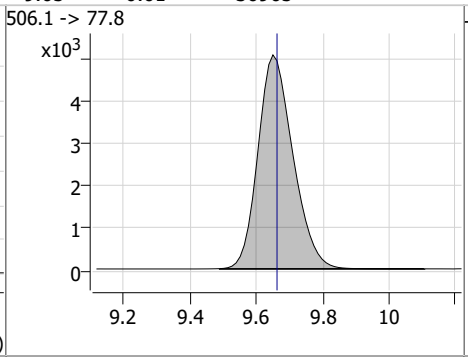


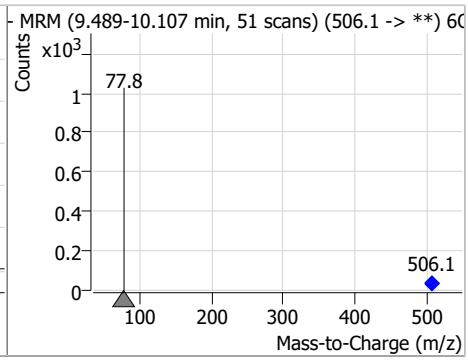




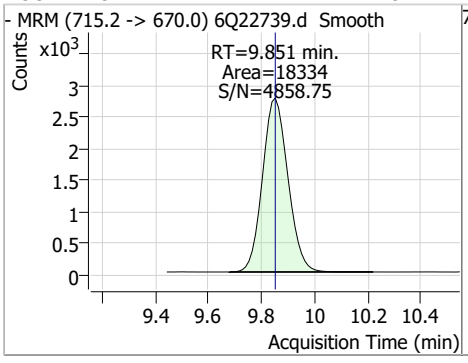
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.46	9.65	-0.01	36965				

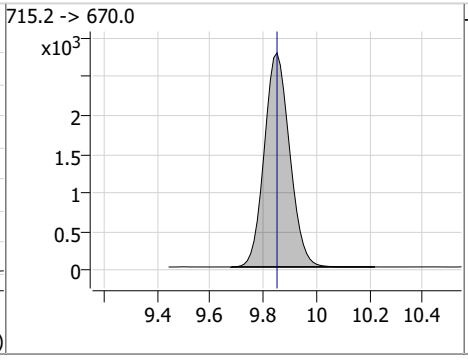


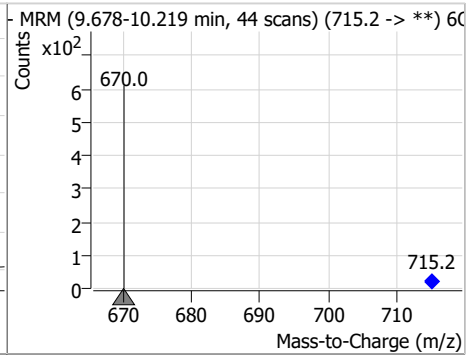




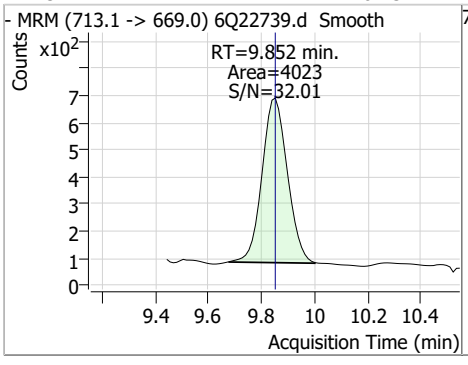
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.19	9.85	0.00	18334				

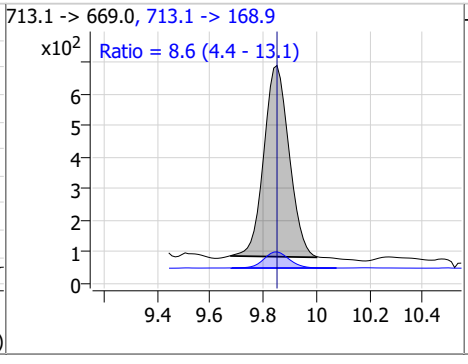


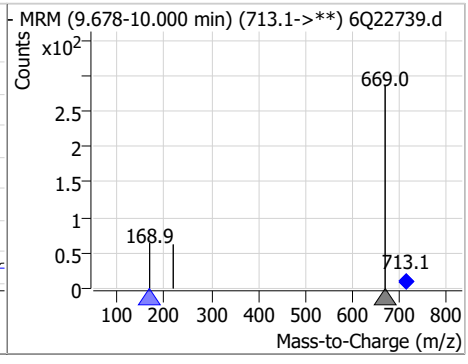




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.23	9.85	0.00	4023	713.1 -> 168.9	8.6	4.4	13.1

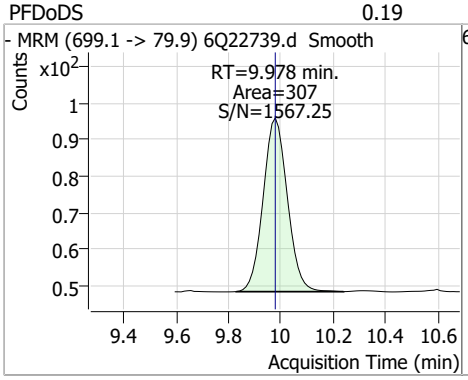


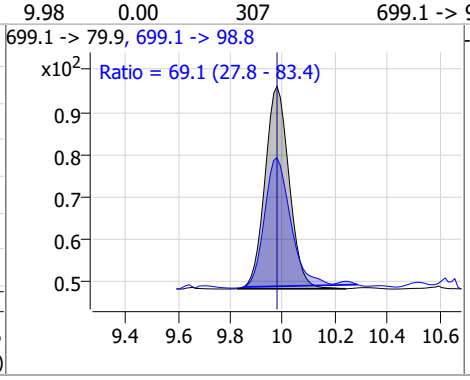


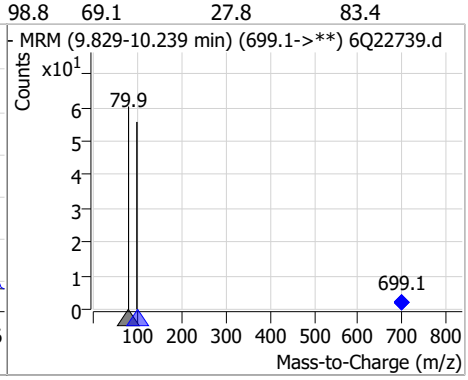


Perfluorinated Compounds by LC/MS/MS

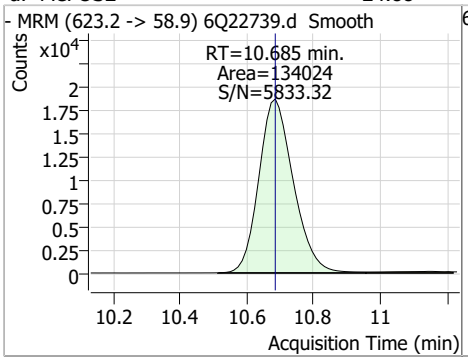
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.19	9.98	0.00	307	699.1 -> 98.8	69.1	27.8	83.4

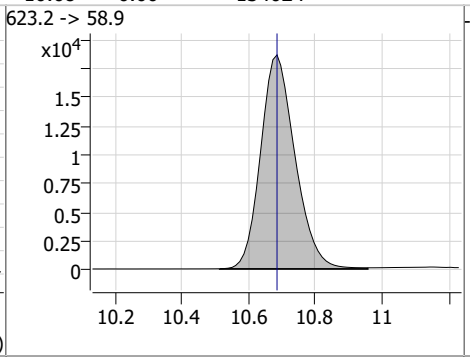


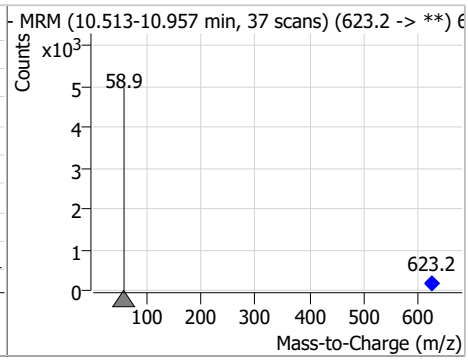




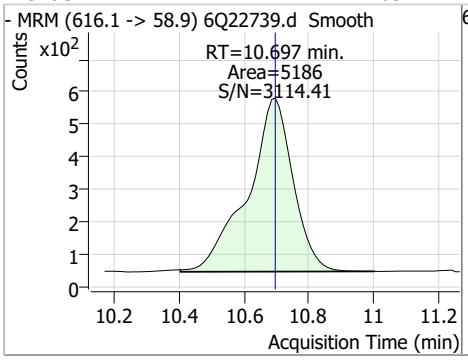
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.88	10.68	0.00	134024				

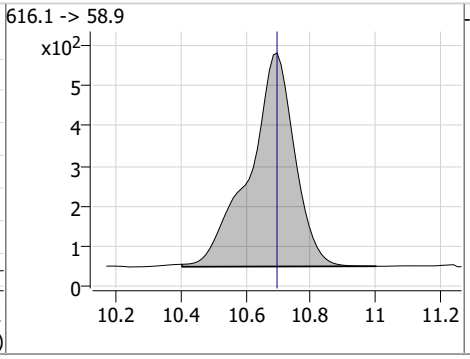


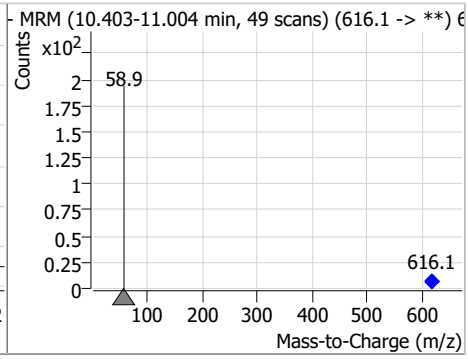




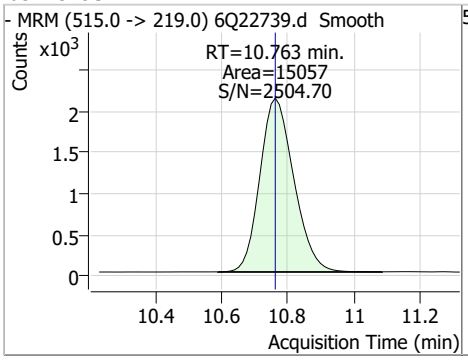
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.03	10.70	0.00	5186				

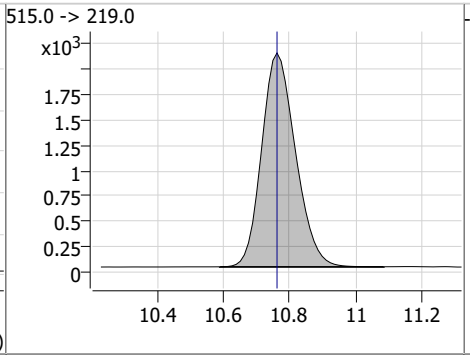


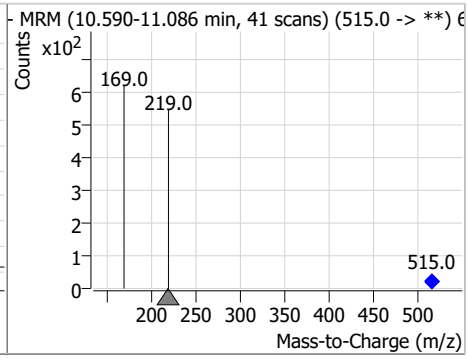




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.44	10.76	0.00	15057				

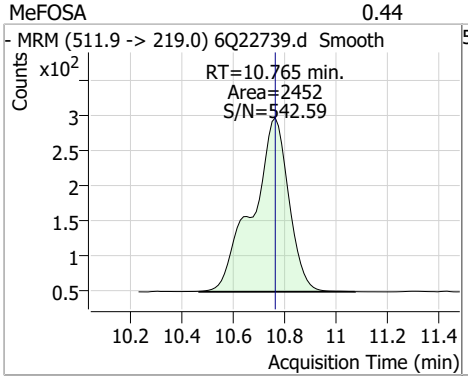


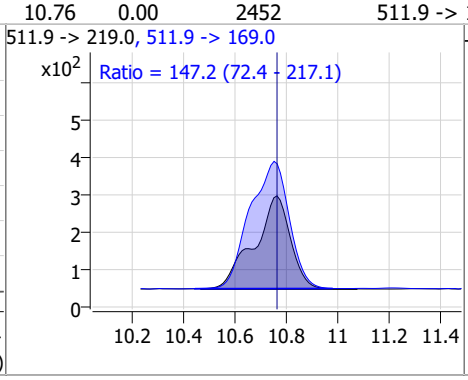


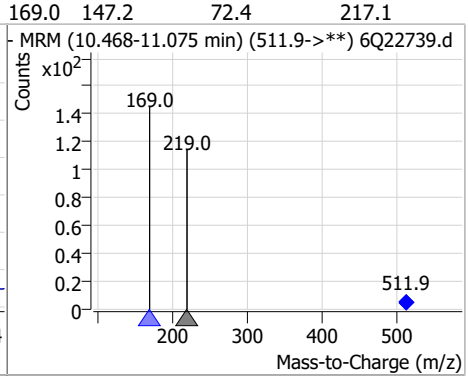


Perfluorinated Compounds by LC/MS/MS

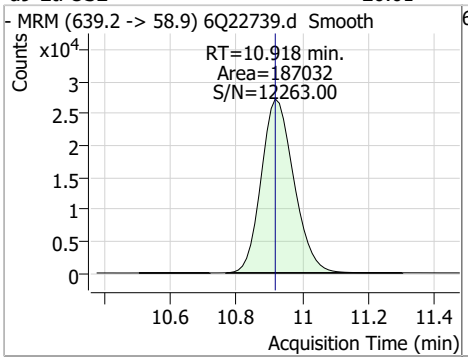
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.44	10.76	0.00	2452	511.9 -> 169.0	147.2	72.4	217.1

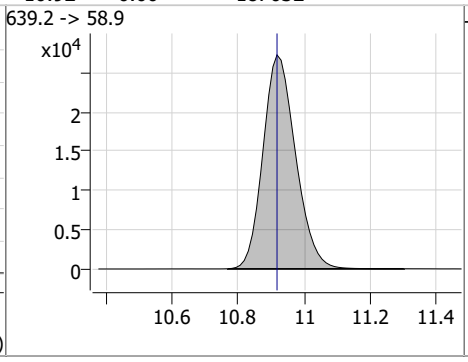


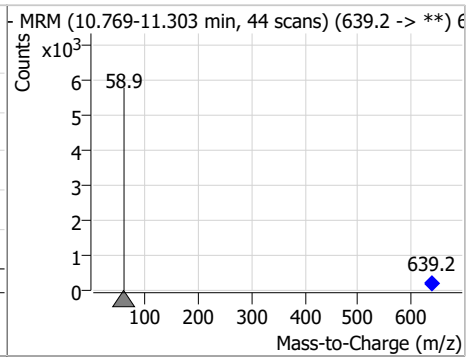




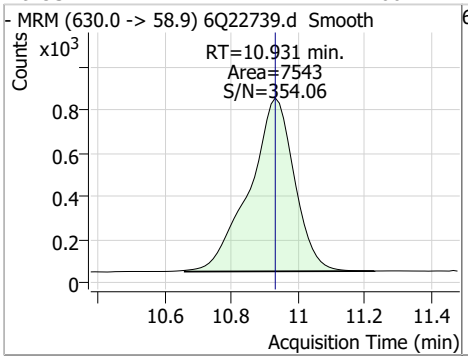
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.01	10.92	0.00	187032				

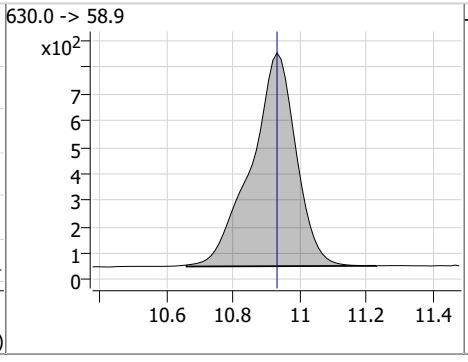


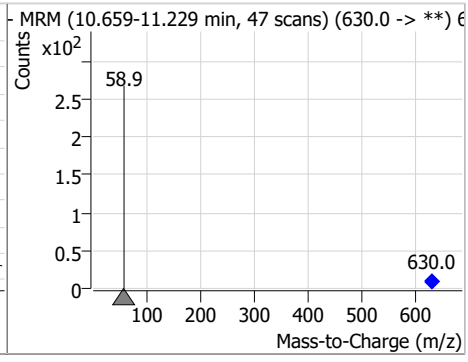




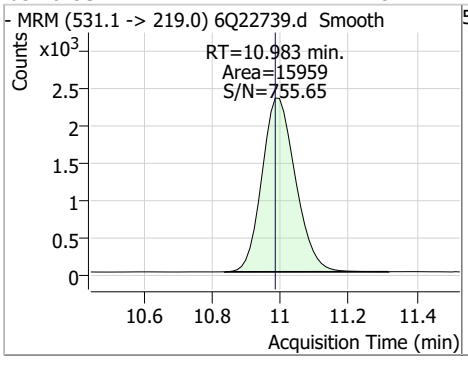
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.00	10.93	0.00	7543				

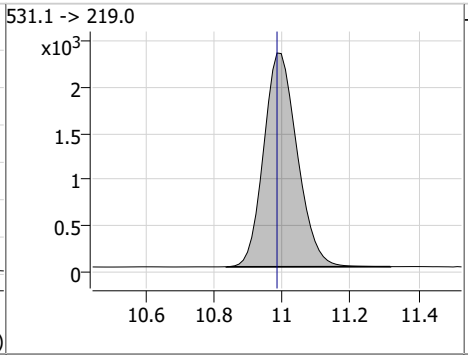


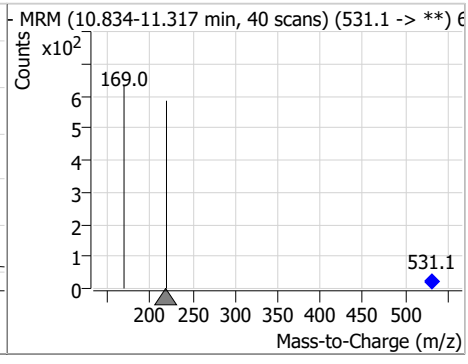




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.57	10.98	0.00	15959				

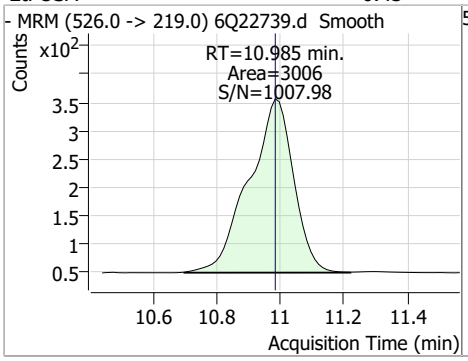


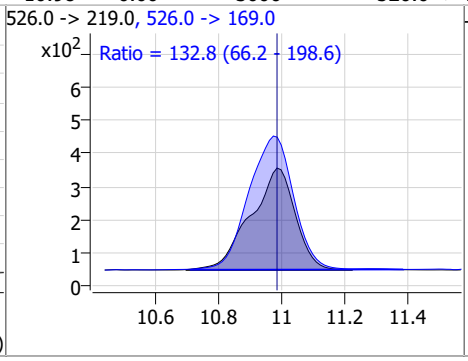


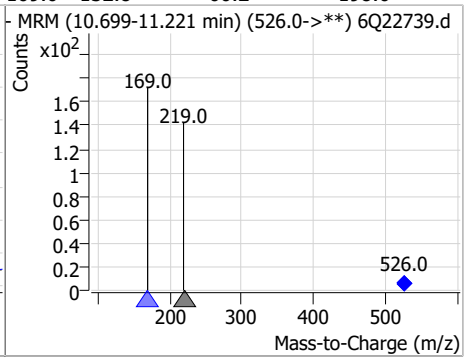


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.43	10.98	0.00	3006	526.0 -> 169.0	132.8	66.2	198.6







Manual Integration Approval Summary

Sample Number: S6Q330-CC330
Lab FileID: 6Q22739.D
Injection Time: 08/11/23 13:17

Method: EPA DRAFT 1633
Analyst approved: 08/13/23 12:53 Martha Valls
Supervisor approved: 08/14/23 14:53 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.36	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.40	Split peak

SGS ORLANDO

DATE:	08/07/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

LCMS4-4Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_080723_S4Q711
CAL DATE:	08/07/23
ANALYST:	AL
RUN BATCH:	S4Q711

ELUENT A LOT #:	224863 w5%ACN 220228 2mMAMAC: 11387
ELUENT B LOT #:	ACN 220228
IC/CC STD LOT #:	LCMS 2146
ICV STD LOT #:	LCMS 2124D/2125A
ISTD/ID STD LOT #:	11850/11851

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q48579.d	P1-A6	update rt	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	ok
2	4Q48580.d	P1-B9	CCB	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
3	4Q48581.d	P1-B9	CCB	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
4	4Q48582.d	P1-B1	RT TDCA	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	pass
5	4Q48583.d	P1-B2	RT br/In	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	pass
6	4Q48584.d	P1-A1	ic711-0	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	check tune file
7	4Q48585.d	P1-A2	ic711-1	1633full_4Q.m	Calibration	1.6/500	OP97964,S4Q711,500,,,5.0,1,water	pass
8	4Q48586.d	P1-A3	ic711-2	1633full_4Q.m	Calibration	3.2/500	OP97964,S4Q711,500,,,5.0,1,water	pass
9	4Q48587.d	P1-A4	ic711-3	1633full_4Q.m	Calibration	10/500	OP97964,S4Q711,500,,,5.0,1,water	pass
10	4Q48588.d	P1-A5	icc711-4	1633full_4Q.m	Calibration	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
11	4Q48589.d	P1-A6	ic711-5	1633full_4Q.m	Calibration	40/500	OP97964,S4Q711,500,,,5.0,1,water	pass
12	4Q48590.d	P1-A7	ic711-6	1633full_4Q.m	Calibration	100/500	OP97964,S4Q711,500,,,5.0,1,water	pass
13	4Q48591.d	P1-A8	ic711-7	1633full_4Q.m	Calibration	200/500	OP97964,S4Q711,500,,,5.0,1,water	pass
14	4Q48592.d	P1-A9	ic711-8	1633full_4Q.m	Calibration	1x	OP97964,S4Q711,500,,,5.0,1,water	pass
15	4Q48593.d	P1-A1	iblk	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
16	4Q48594.d	P1-B3	icv711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
17	4Q48595.d	P1-B4	icv711-20	1633full_4Q.m	QC	100/500	OP97964,S4Q711,500,,,5.0,1,water	pass
18	4Q48596.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
19	4Q48597.d	P1-A2	cc711-1.0LL	1633full_4Q.m	QC	1.6/500	OP97964,S4Q711,500,,,5.0,1,water	pass
20	4Q48598.d	P2-C5	fc7446-13	1633full_4Q.m	Sample	250/500	OP98117,S4Q711,510,,,5.0,2,water	✓
21	4Q48599.d	P2-C6	op98225-bs	1633full_4Q.m	Sample		OP98225,S4Q711,500,,,5.0,1,water	✓
22	4Q48600.d	P2-C7	op98225-llbs:2	1633full_4Q.m	Sample		OP98225,S4Q711,500,,,5.0,1,water	hxa and 8:2 high - ok
23	4Q48601.d	P2-C8	op98225-mb	1633full_4Q.m	Sample		OP98225,S4Q711,500,,,5.0,1,water	✓
24	4Q48602.d	P2-C9	fc7360-3	1633full_4Q.m	Sample		OP98225,S4Q711,60,,,5.0,1,water	✓
25	4Q48603.d	P2-D1	fc7401-1	1633full_4Q.m	Sample		OP98225,S4Q711,60,,,5.0,1,water	✓
26	4Q48604.d	P2-D2	fc7401-2	1633full_4Q.m	Sample		OP98225,S4Q711,60,,,5.0,1,water	✓
27	4Q48605.d	P2-F7	fc7925-1	1633full_4Q.m	Sample	250/500	OP98161,S4Q711,1.01,,,5.0,2,soil	✓
28	4Q48606.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
29	4Q48607.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
30	4Q48608.d	P1-B7	fc7644-6	1633full_4Q.m	Sample		OP98118,S4Q711,560,,,5.0,1,water	✓
31	4Q48609.d	P2-F8	fc7644-6	1633full_4Q.m	Sample	50/500	OP98118,S4Q711,560,,,5.0,10,water	✓
32	4Q48610.d	P2-A5	fc7615-2	1633full_4Q.m	Sample		OP98119,S4Q711,450,,,5.0,1,water	rr 10x high eis
33	4Q48611.d	P2-A6	fc7615-3	1633full_4Q.m	Sample		OP98119,S4Q711,475,,,5.0,1,water	rr 10x high eis
34	4Q48612.d	P2-A7	fc7615-8	1633full_4Q.m	Sample		OP98119,S4Q711,565,,,5.0,1,water	✓
35	4Q48613.d	P2-A8	fc7868-1	1633full_4Q.m	Sample		OP98161,S4Q711,5.04,,,5.0,1,soil	✓

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SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q48614.d	P2-A9	op98161-ms	1633full_4Q.m	Sample		OP98161,S4Q711,4.99,,,5.0,1,soil	✓
37	4Q48615.d	P2-B1	op98161-msd	1633full_4Q.m	Sample		OP98161,S4Q711,4.97,,,5.0,1,soil	✓
38	4Q48616.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
39	4Q48617.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
40	4Q48618.d	P2-B2	fc7868-2	1633full_4Q.m	Sample		OP98161,S4Q711,5.02,,,5.0,1,soil	✓
41	4Q48619.d	P2-F9	fc7868-2	1633full_4Q.m	Sample	100/500	OP98161,S4Q711,5.02,,,5.0,5,soil	✓
42	4Q48620.d	P2-B3	fc7868-3	1633full_4Q.m	Sample		OP98161,S4Q711,4.99,,,5.0,1,soil	✓
43	4Q48621.d	P3-A1	fc7868-3	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,4.99,,,5.0,10,soil	✓
44	4Q48622.d	P2-B4	fc7868-4	1633full_4Q.m	Sample		OP98161,S4Q711,5.00,,,5.0,1,soil	✓
45	4Q48623.d	P3-A2	fc7868-4	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,5.00,,,5.0,10,soil	✓
46	4Q48624.d	P2-B5	fc7868-5	1633full_4Q.m	Sample		OP98161,S4Q711,5.02,,,5.0,1,soil	✓
47	4Q48625.d	P3-A3	fc7868-5	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,5.02,,,5.0,10,soil	✓
48	4Q48626.d	P2-B6	fc7951-1	1633full_4Q.m	Sample		OP98161,S4Q711,4.96,,,5.0,1,soil	✓
49	4Q48627.d	P3-A4	fc7951-1	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,4.96,,,5.0,10,soil	✓
50	4Q48628.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
51	4Q48629.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
52	4Q48630.d	P2-B7	fc7951-2	1633full_4Q.m	Sample		OP98161,S4Q711,5.01,,,5.0,1,soil	✓
53	4Q48631.d	P3-A5	fc7951-2	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,5.01,,,5.0,10,soil	✓
54	4Q48632.d	P2-B8	fc7951-3	1633full_4Q.m	Sample		OP98161,S4Q711,5.02,,,5.0,1,soil	✓
55	4Q48633.d	P3-A6	fc7951-3	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,5.02,,,5.0,10,soil	✓
56	4Q48634.d	P2-B9	fc7951-4	1633full_4Q.m	Sample		OP98161,S4Q711,5.05,,,5.0,1,soil	✓
57	4Q48635.d	P3-A7	fc7951-4	1633full_4Q.m	Sample	50/500	OP98161,S4Q711,5.05,,,5.0,10,soil	✓
58	4Q48636.d	P3-A8	fc7482-1	1633full_4Q.m	Sample	250/500	OP98118,S4Q711,490,,,5.0,2,water	✓
59	4Q48637.d	P3-A9	fc7482-1	1633full_4Q.m	Sample	50/500	OP98118,S4Q711,490,,,5.0,10,water	✓
60	4Q48638.d	P3-B1	fc7482-3	1633full_4Q.m	Sample	100/500	OP98118,S4Q711,470,,,5.0,5,water	✓
61	4Q48639.d	P3-B2	op98118-ms	1633full_4Q.m	Sample	100/500	OP98118,S4Q711,500,,,5.0,5,water	✓
62	4Q48640.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
63	4Q48641.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
64	4Q48642.d	P3-B3	fc7644-1	1633full_4Q.m	Sample	50/500	OP98118,S4Q711,240,,,5.0,10,water	redo
65	4Q48643.d	P3-B4	fc7644-2	1633full_4Q.m	Sample	50/500	OP98118,S4Q711,60,,,5.0,10,water	✓
66	4Q48644.d	P3-B5	fc7599-1	1633full_4Q.m	Sample	100/500	OP98118,S4Q711,560,,,5.0,5,water	✓
67	4Q48645.d	P3-B6	op98118-dup	1633full_4Q.m	Sample	100/500	OP98118,S4Q711,560,,,5.0,5,water	✓
68	4Q48646.d	P3-B7	fc7530-1	1633full_4Q.m	Sample	100/500	OP98119,S4Q711,545,,,5.0,5,water	✓
69	4Q48647.d	P1-F5	fc7530-2	1633full_4Q.m	Sample		OP98119,S4Q711,545,,,5.0,1,water	✓
70	4Q48648.d	P3-B8	fc7615-1	1633full_4Q.m	Sample	50/500	OP98119,S4Q711,470,,,5.0,10,water	✓
71	4Q48649.d	P3-B9	op98119-ms	1633full_4Q.m	Sample	50/500	OP98119,S4Q711,480,,,5.0,10,water	✓
72	4Q48650.d	P3-C1	op98119-msd	1633full_4Q.m	Sample	50/500	OP98119,S4Q711,465,,,5.0,10,water	✓
73	4Q48651.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
74	4Q48652.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
75	4Q48653.d	P3-D1	test6	1633full_4Q.m	Sample		OP98156,S4Q711,500,,,5.0,1,water	ok
76	4Q48654.d	P3-C2	fc7642-3	1633full_4Q.m	Sample		OP98156,S4Q711,465,,,5.0,1,water	rr 10x high eis
77	4Q48655.d	P3-C3	fc7642-3	1633full_4Q.m	Sample	100/500	OP98156,S4Q711,465,,,5.0,5,water	rr 10x high eis
78	4Q48656.d	P3-C4	fc7629-1	1633full_4Q.m	Sample	100/500	OP98124,S4Q711,530,,,5.0,5,water	✓

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79	4Q48657.d	P2-D1	fc7401-1	1633full_4Q.m	Sample		OP98225,S4Q711,60,,,5.0,1,water	✓
80	4Q48658.d	P3-D2	fc7401-1	1633full_4Q.m	Sample	50/500	OP98225,S4Q711,60,,,5.0,10,water	✓
81	4Q48659.d	P3-C5	new std test	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	ok
82	4Q48660.d	P3-C6	old std test	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	ok
83	4Q48661.d	P3-D3	fc7401-2	1633full_4Q.m	Sample	50/500	OP98225,S4Q711,60,,,5.0,10,water	✓
84	4Q48662.d	P3-D4	fc7360-3	1633full_4Q.m	Sample	50/500	OP98225,S4Q711,60,,,5.0,10,water	✓
85	4Q48663.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
86	4Q48664.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd
87	4Q48665.d	P3-C7	fc7615-2	1633full_4Q.m	Sample	50/500	OP98119,S4Q711,450,,,5.0,10,water	✓
88	4Q48666.d	P3-C8	fc7615-3	1633full_4Q.m	Sample	50/500	OP98119,S4Q711,475,,,5.0,10,water	✓
89	4Q48667.d	P1-A5	ecc711-4	1633full_4Q.m	QC	20/500	OP97964,S4Q711,500,,,5.0,1,water	pass
90	4Q48668.d	P1-A1	iccb	1633full_4Q.m	Sample		OP97964,S4Q711,500,,,5.0,1,water	nd

SGS ORLANDO

DATE:	08/09/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

LCMS4-4Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_080723_S4Q711
CAL DATE:	08/07/23
ANALYST:	AL
RUN BATCH:	S4Q713

ELUENT A LOT #:	224863 w5%ACN 220228 2mMAMAC: 11387
ELUENT B LOT #:	ACN 220228
IC/CC STD LOT #:	LCMS 2124D
ICV STD LOT #:	LCMS 2124D/2125A
ISTD/ID STD LOT #:	11850/11851

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q48758.d	P1-B9	CCB	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
2	4Q48759.d	P1-B9	CCB	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
3	4Q48760.d	P1-B1	RT TDCA	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	pass
4	4Q48761.d	P1-B2	RT br/In	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	pass
5	4Q48762.d	P1-A9	high std	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	pass
6	4Q48763.d	P1-A1	iblk	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
7	4Q48764.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	pass
8	4Q48765.d	P1-A2	cc711-1.0LL	1633full_4Q.m	QC	1.6/500	OP98180,S4Q713,500,,,5.0,1,water	pass
9	4Q48766.d	P4-B8	op98160-bs	1633full_4Q.m	Sample		OP98160,S4Q713,5.00,,,5.0,1,soil	✓
10	4Q48767.d	P4-B9	op98160-llbs:2	1633full_4Q.m	Sample		OP98160,S4Q713,5.00,,,5.0,1,soil	✓
11	4Q48768.d	P4-C1	op98160-mb	1633full_4Q.m	Sample		OP98160,S4Q713,5.00,,,5.0,1,soil	✓
12	4Q48769.d	P4-C2	jd69377-1A	1633full_4Q.m	Sample		OP98160,S4Q713,4.95,,,5.0,1,soil	✓
13	4Q48770.d	P4-C3	fc8220-4	1633full_4Q.m	Sample		OP98160,S4Q713,5.04,,,5.0,1,soil	✓
14	4Q48771.d	P4-C4	fc8220-5	1633full_4Q.m	Sample		OP98160,S4Q713,4.99,,,5.0,1,soil	✓
15	4Q48772.d	P4-C5	fc8220-6	1633full_4Q.m	Sample		OP98160,S4Q713,4.98,,,5.0,1,soil	✓
16	4Q48773.d	P4-C6	op98160-ms	1633full_4Q.m	Sample		OP98160,S4Q713,5.02,,,5.0,1,soil	✓
17	4Q48774.d	P4-C7	op98160-msd	1633full_4Q.m	Sample		OP98160,S4Q713,4.95,,,5.0,1,soil	✓
18	4Q48775.d	P4-C8	fc8220-16	1633full_4Q.m	Sample		OP98160,S4Q713,5.02,,,5.0,1,soil	✓
19	4Q48776.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	8:2 high
20	4Q48777.d	P1-A1	iccb	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
21	4Q48778.d	P4-C9	fc7642-3	1633full_4Q.m	Sample	50/500	OP98156,S4Q713,465,,,5.0,10,water	redo
22	4Q48779.d	P4-D1	op98297-bs	1633full_4Q.m	Sample		OP98297,S4Q713,500,,,5.0,1,water	✓
23	4Q48780.d	P4-D2	op98297-llbs:3	1633full_4Q.m	Sample		OP98297,S4Q713,500,,,5.0,1,water	✓
24	4Q48781.d	P4-D3	op98297-mb	1633full_4Q.m	Sample		OP98297,S4Q713,500,,,5.0,1,water	✓
25	4Q48782.d	P4-D4	fc7908-17	1633full_4Q.m	Sample		OP98297,S4Q713,470,,,5.0,1,water	✓
26	4Q48783.d	P4-D5	fc8392-1	1633full_4Q.m	Sample		OP98297,S4Q713,570,,,5.0,1,water	✓
27	4Q48784.d	P4-D6	fc8440-1	1633full_4Q.m	Sample		OP98297,S4Q713,530,,,5.0,1,water	✓
28	4Q48785.d	P4-D7	fc8439-1	1633full_4Q.m	Sample		OP98297,S4Q713,530,,,5.0,1,water	✓
29	4Q48786.d	P4-D8	fc8439-2	1633full_4Q.m	Sample		OP98297,S4Q713,500,,,5.0,1,water	rr 5x high eis
30	4Q48787.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	9cl high
31	4Q48788.d	P1-A1	iccb	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
32	4Q48789.d	P4-D9	fc8439-3	1633full_4Q.m	Sample		OP98297,S4Q713,540,,,5.0,1,water	✓
33	4Q48790.d	P4-E1	op98297-ms	1633full_4Q.m	Sample		OP98297,S4Q713,550,,,5.0,1,water	✓
34	4Q48791.d	P4-E2	fc8439-4	1633full_4Q.m	Sample		OP98297,S4Q713,540,,,5.0,1,water	rr 10x high eis
35	4Q48792.d	P4-E3	op98297-dup	1633full_4Q.m	Sample		OP98297,S4Q713,540,,,5.0,1,water	rr 10x high eis

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SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q48793.d	P4-E4	fc8439-5	1633full_4Q.m	Sample		OP98297,S4Q713,540,,,5.0,1,water	rr 10x high eis
37	4Q48794.d	P4-E5	fc8439-6	1633full_4Q.m	Sample		OP98297,S4Q713,520,,,5.0,1,water	rr 10x high eis
38	4Q48795.d	P4-E6	op98277-bs	1633full_4Q.m	Sample		OP98277,S4Q713,500,,,5.0,1,water	✓
39	4Q48796.d	P4-E7	op98277-llbs:2	1633full_4Q.m	Sample		OP98277,S4Q713,500,,,5.0,1,water	✓
40	4Q48797.d	P4-E8	op98277-mb	1633full_4Q.m	Sample		OP98277,S4Q713,500,,,5.0,1,water	✓
41	4Q48798.d	P4-E9	jd69300-1A	1633full_4Q.m	Sample		OP98277,S4Q713,35,,,5.0,1,water	✓
42	4Q48799.d	P1-A5	ecc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	pass
43	4Q48800.d	P1-A1	iccb	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	nd
44	4Q48801.d	P4-F1	fc8066-1	1633full_4Q.m	Sample		OP98277,S4Q713,545,,,5.0,1,water	no bracketing ccv - rr
45	4Q48802.d	P4-F2	fc8066-2	1633full_4Q.m	Sample		OP98277,S4Q713,485,,,5.0,1,water	no bracketing ccv - rr
46	4Q48803.d	P4-F3	fc8066-3	1633full_4Q.m	Sample		OP98277,S4Q713,475,,,5.0,1,water	no bracketing ccv - rr
47	4Q48804.d	P4-F4	fc8066-4	1633full_4Q.m	Sample		OP98277,S4Q713,550,,,5.0,1,water	no bracketing ccv - rr
48	4Q48805.d	P4-F5	fc8066-5	1633full_4Q.m	Sample		OP98277,S4Q713,525,,,5.0,1,water	no bracketing ccv - rr
49	4Q48806.d	P4-F6	op98277-ms	1633full_4Q.m	Sample		OP98277,S4Q713,525,,,5.0,1,water	no bracketing ccv - rr
50	4Q48807.d	P4-F7	op98277-msd	1633full_4Q.m	Sample		OP98277,S4Q713,510,,,5.0,1,water	no bracketing ccv - rr
51	4Q48808.d	P4-F8	fc8066-6	1633full_4Q.m	Sample		OP98277,S4Q713,540,,,5.0,1,water	no bracketing ccv - rr
52	4Q48809.d	P4-F9	fc8066-7	1633full_4Q.m	Sample		OP98277,S4Q713,510,,,5.0,1,water	no bracketing ccv - rr
53	4Q48810.d	P5-A1	fc8066-8	1633full_4Q.m	Sample		OP98277,S4Q713,520,,,5.0,1,water	instrument errored
54	4Q48811.d	P1-A5	cc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	instrument errored
55	4Q48812.d	P1-A1	iccb	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	instrument errored
56	4Q48813.d	P5-A2	fc8066-9	1633full_4Q.m	Sample		OP98277,S4Q713,465,,,5.0,1,water	instrument errored
57	4Q48814.d	P5-A3	fc8066-10	1633full_4Q.m	Sample		OP98277,S4Q713,515,,,5.0,1,water	instrument errored
58	4Q48815.d	P5-A4	fc8066-11	1633full_4Q.m	Sample		OP98277,S4Q713,525,,,5.0,1,water	instrument errored
59	4Q48816.d	P5-A5	fc8066-12	1633full_4Q.m	Sample		OP98277,S4Q713,545,,,5.0,1,water	instrument errored
60	4Q48817.d	P5-A6	fc8066-13	1633full_4Q.m	Sample		OP98277,S4Q713,530,,,5.0,1,water	instrument errored
61	4Q48818.d	P1-A5	ecc711-4	1633full_4Q.m	QC	20/500	OP98180,S4Q713,500,,,5.0,1,water	instrument errored
62	4Q48819.d	P1-A1	iccb	1633full_4Q.m	Sample		OP98180,S4Q713,500,,,5.0,1,water	instrument errored

SGS ORLANDO

DATE:	08/10/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_081023_S6Q330
CAL DATE:	08/10/23
ANALYST:	M.Valls
RUN BATCH:	S6Q330

ELUENT A LOT #:	ACN 220213
ELUENT B LOT #:	HPLC WATER LOT: 230470 W/5% Methanol 224279 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2143-B
ICV STD LOT #:	LCMS 2143B/2145
ISTD/ID STD LOT #:	11851/11850

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q22634.d	P1-B9	CCB	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
2	6Q22635.d	P1-B9	CCB	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
3	6Q22636.d	P1-B9	CCB	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
4	6Q22637.d	P1-B3	RT TDCA	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
5	6Q22638.d	P1-B4	RT BR-LN	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
6	6Q22639.d	P1-A1	ic330-0	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
7	6Q22640.d	P1-A2	ic330-1	1633full.m	Calibration	1.6/500	OP98201,S6Q330,500,,,5.0,1,water	✓
8	6Q22641.d	P1-A3	ic330-2	1633full.m	Calibration	3.2/500	OP98201,S6Q330,500,,,5.0,1,water	✓
9	6Q22642.d	P1-A4	ic330-3	1633full.m	Calibration	10/500	OP98201,S6Q330,500,,,5.0,1,water	✓
10	6Q22643.d	P1-A5	ic330-4	1633full.m	Calibration	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
11	6Q22644.d	P1-A6	ic330-5	1633full.m	Calibration	40/500	OP98201,S6Q330,500,,,5.0,1,water	✓
12	6Q22645.d	P1-A7	ic330-6	1633full.m	Calibration	100/500	OP98201,S6Q330,500,,,5.0,1,water	✓
13	6Q22646.d	P1-A8	ic330-7	1633full.m	Calibration	200/500	OP98201,S6Q330,500,,,5.0,1,water	✓
14	6Q22647.d	P1-A9	ic330-8	1633full.m	Calibration	1x	OP98201,S6Q330,500,,,5.0,1,water	✓
15	6Q22648.d	P1-A1	IBLK	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
16	6Q22649.d	P1-B1	icv330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
17	6Q22650.d	P1-B2	icv330-20	1633full.m	QC	100/500	OP98201,S6Q330,500,,,5.0,1,water	✓
18	6Q22651.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
19	6Q22652.d	P1-A2	cc330-1.0LL	1633full.m	QC	1.6/500	OP98201,S6Q330,500,,,5.0,1,water	✓
20	6Q22653.d	P4-A1	op98337-bs:6	1633full.m	Sample		OP98337,S6Q330,500,,,5.0,1,water	✓
21	6Q22654.d	P4-A2	op98337-bsd:6	1633full.m	Sample		OP98337,S6Q330,500,,,5.0,1,water	✓
22	6Q22655.d	P4-A3	op98337-llbs:7	1633full.m	Sample		OP98337,S6Q330,500,,,5.0,1,water	✓
23	6Q22656.d	P4-A4	op98337-mb	1633full.m	Sample		OP98337,S6Q330,500,,,5.0,1,water	✓
24	6Q22657.d	P4-A5	JD69487-14T	1633full.m	Sample		OP98337,S6Q330,540,,,5.0,1,water	✓
25	6Q22658.d	P4-A6	JD69487-14T	1633full.m	Sample		OP98337,S6Q330,60,,,5.0,1,water	Low volume not use.
26	6Q22659.d	P3-F8	FC7955-5	1633full.m	Sample		OP98248,S6Q330,490,,,5.0,1,water	✓
27	6Q22660.d	P1-F8	FC7955-5	1633full.m	Sample	100/500	OP98248,S6Q330,490,,,5.0,5,water	✓
28	6Q22661.d	P1-F9	FC7642-3	1633full.m	Sample	50/500	OP98156,S6Q330,465,,,5.0,10,water	
29	6Q22662.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
30	6Q22663.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
31	6Q22664.d	P1-E1	FC7802-8	1633full.m	Sample	250/500	OP98181,S6Q330,530,,,5.0,2,water	✓
32	6Q22665.d	P1-E2	FC7802-9	1633full.m	Sample	250/500	OP98181,S6Q330,525,,,5.0,2,water	✓
33	6Q22666.d	P4-A7	FC8439-2	1633full.m	Sample	100/500	OP98297,S6Q330,500,,,5.0,5,water	✓
34	6Q22667.d	P4-A8	FC8439-4	1633full.m	Sample	50/500	OP98297,S6Q330,540,,,5.0,10,water	✓
35	6Q22668.d	P4-A9	OP98297-DUP	1633full.m	Sample	50/500	OP98297,S6Q330,540,,,5.0,10,water	✓

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36	6Q22669.d	P4-B1	FC8439-5	1633full.m	Sample	50/500	OP98297,S6Q330,540,,,5.0,10,water	✓
37	6Q22670.d	P4-B2	FC8439-6	1633full.m	Sample	50/500	OP98297,S6Q330,520,,,5.0,10,water	Redo, surr high in 1x
38	6Q22671.d	P4-B3	FC7717-4	1633full.m	Sample	250/500	OP98159,S6Q330,530,,,5.0,2,water	✓
39	6Q22672.d	P4-B4	FC7717-5	1633full.m	Sample	250/500	OP98159,S6Q330,540,,,5.0,2,water	✓
40	6Q22673.d	P4-B5	FC7717-10	1633full.m	Sample	100/500	OP98159,S6Q330,535,,,5.0,5,water	✓
41	6Q22674.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
42	6Q22675.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
43	6Q22676.d	P4-B6	FC7717-11	1633full.m	Sample	100/500	OP98159,S6Q330,530,,,5.0,5,water	✓
44	6Q22677.d	P4-B7	FC7717-12	1633full.m	Sample	100/500	OP98159,S6Q330,530,,,5.0,5,water	✓
45	6Q22678.d	P4-B8	FC7717-13	1633full.m	Sample	100/500	OP98159,S6Q330,535,,,5.0,5,water	✓
46	6Q22679.d	P4-B9	FC7717-16	1633full.m	Sample	100/500	OP98159,S6Q330,540,,,5.0,5,water	✓
47	6Q22680.d	P4-C1	FC7717-17	1633full.m	Sample	250/500	OP98159,S6Q330,530,,,5.0,2,water	✓
48	6Q22681.d	P4-C2	FC7717-18	1633full.m	Sample	250/500	OP98159,S6Q330,535,,,5.0,2,water	✓
49	6Q22682.d	P4-C3	FC7675-9	1633full.m	Sample	250/500	OP98138,S6Q330,530,,,5.0,2,water	✓
50	6Q22683.d	P4-C4	FC7674-13	1633full.m	Sample	250/500	OP98155,S6Q330,515,,,5.0,2,water	✓
51	6Q22684.d	P4-C5	FC7674-17	1633full.m	Sample	250/500	OP98155,S6Q330,515,,,5.0,2,water	✓
52	6Q22685.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
53	6Q22686.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
54	6Q22687.d	P4-C6	op98277-bs	1633full.m	Sample		OP98277,S6Q330,500,,,5.0,1,water	✓
55	6Q22688.d	P4-C7	op98277-llbs:3	1633full.m	Sample		OP98277,S6Q330,500,,,5.0,1,water	✓
56	6Q22689.d	P4-C8	op98277-mb	1633full.m	Sample		OP98277,S6Q330,500,,,5.0,1,water	HxA > 1/2 RL
57	6Q22690.d	P4-C9	JD69300-1A	1633full.m	Sample		OP98277,S6Q330,535,,,5.0,1,water	✓
58	6Q22691.d	P4-D1	FC8066-1	1633full.m	Sample		OP98277,S6Q330,545,,,5.0,1,water	✓
59	6Q22692.d	P4-D2	FC8066-2	1633full.m	Sample		OP98277,S6Q330,485,,,5.0,1,water	✓
60	6Q22693.d	P4-D3	FC8066-3	1633full.m	Sample		OP98277,S6Q330,475,,,5.0,1,water	✓
61	6Q22694.d	P4-D5	FC8066-5	1633full.m	Sample		OP98277,S6Q330,525,,,5.0,1,water	✓
62	6Q22695.d	P4-D6	op98277-ms	1633full.m	Sample		OP98277,S6Q330,525,,,5.0,1,water	✓
63	6Q22696.d	P4-D7	op98277-msd	1633full.m	Sample		OP98277,S6Q330,510,,,5.0,1,water	✓
64	6Q22697.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
65	6Q22698.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
66	6Q22699.d	P4-D4	FC8066-4	1633full.m	Sample		OP98277,S6Q330,550,,,5.0,1,water	✓
67	6Q22700.d	P4-D8	FC8066-6	1633full.m	Sample		OP98277,S6Q330,540,,,5.0,1,water	✓
68	6Q22701.d	P4-D9	FC8066-7	1633full.m	Sample		OP98277,S6Q330,510,,,5.0,1,water	✓
69	6Q22702.d	P4-E1	FC8066-8	1633full.m	Sample		OP98277,S6Q330,520,,,5.0,1,water	✓
70	6Q22703.d	P4-E2	FC8066-9	1633full.m	Sample		OP98277,S6Q330,465,,,5.0,1,water	✓
71	6Q22704.d	P4-E3	FC8066-10	1633full.m	Sample		OP98277,S6Q330,515,,,5.0,1,water	✓
72	6Q22705.d	P4-E4	FC8066-11	1633full.m	Sample		OP98277,S6Q330,525,,,5.0,1,water	✓
73	6Q22706.d	P4-E5	FC8066-12	1633full.m	Sample		OP98277,S6Q330,545,,,5.0,1,water	✓
74	6Q22707.d	P4-E6	FC8066-13	1633full.m	Sample		OP98277,S6Q330,530,,,5.0,1,water	✓
75	6Q22708.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
76	6Q22709.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
77	6Q22710.d	P4-E7	op98222-bs	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓
78	6Q22711.d	P4-E8	op98222-llbs:3	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓

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79	6Q22712.d	P4-E9	op98222-mb	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓
80	6Q22713.d	P4-F1	FC7807-1	1633full.m	Sample		OP98222,S6Q330,450,,,5.0,1,water	✓
81	6Q22714.d	P4-F2	FC7822-1	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓
82	6Q22715.d	P4-F3	op98222-ms	1633full.m	Sample		OP98222,S6Q330,490,,,5.0,1,water	✓
83	6Q22716.d	P4-F4	FC7822-2	1633full.m	Sample		OP98222,S6Q330,490,,,5.0,1,water	✓
84	6Q22717.d	P4-F5	op98222-dup	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓
85	6Q22718.d	P4-F6	FC7822-3	1633full.m	Sample		OP98222,S6Q330,515,,,5.0,1,water	✓
86	6Q22719.d	P4-F7	FC7822-4	1633full.m	Sample		OP98222,S6Q330,495,,,5.0,1,water	✓
87	6Q22720.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
88	6Q22721.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
89	6Q22722.d	P4-F8	FC7822-5	1633full.m	Sample		OP98222,S6Q330,495,,,5.0,1,water	✓
90	6Q22723.d	P4-F9	FC7822-6	1633full.m	Sample		OP98222,S6Q330,500,,,5.0,1,water	✓
91	6Q22724.d	P5-A1	FC7822-7	1633full.m	Sample		OP98222,S6Q330,515,,,5.0,1,water	rr5x pfba low
92	6Q22725.d	P5-A2	FC7823-1	1633full.m	Sample		OP98222,S6Q330,520,,,5.0,1,water	✓
93	6Q22726.d	P5-A3	FC7823-2	1633full.m	Sample		OP98222,S6Q330,450,,,5.0,1,water	✓
94	6Q22727.d	P5-A4	FC7823-3	1633full.m	Sample		OP98222,S6Q330,475,,,5.0,1,water	✓
95	6Q22728.d	P5-A5	FC7823-4	1633full.m	Sample		OP98222,S6Q330,475,,,5.0,1,water	✓
96	6Q22729.d	P5-A6	FC7823-5	1633full.m	Sample		OP98222,S6Q330,525,,,5.0,1,water	✓
97	6Q22730.d	P5-A7	FC7823-6	1633full.m	Sample		OP98222,S6Q330,520,,,5.0,1,water	✓
98	6Q22731.d	P5-A8	FC7823-7	1633full.m	Sample		OP98222,S6Q330,505,,,5.0,1,water	✓
99	6Q22732.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
100	6Q22733.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
101	6Q22734.d	P1-B3	RT TDCA	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
102	6Q22735.d	P1-B4	RT BR-LN	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
103	6Q22736.d	P1-A9	High Std	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
104	6Q22737.d	P1-A1	IBLK	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
105	6Q22738.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
106	6Q22739.d	P1-A2	cc330-1.0LL	1633full.m	QC	1.6/500	OP98201,S6Q330,500,,,5.0,1,water	✓
107	6Q22740.d	P5-A9	FC7823-8	1633full.m	Sample		OP98222,S6Q330,510,,,5.0,1,water	✓
108	6Q22741.d	P5-B1	op98223-bs	1633full.m	Sample		OP98223,S6Q330,500,,,5.0,1,water	✓
109	6Q22742.d	P5-B2	op98223-llbs:2	1633full.m	Sample		OP98223,S6Q330,500,,,5.0,1,water	✓
110	6Q22743.d	P5-B3	op98223-mb	1633full.m	Sample		OP98223,S6Q330,500,,,5.0,1,water	✓
111	6Q22744.d	P5-B4	FC7824-1	1633full.m	Sample		OP98223,S6Q330,475,,,5.0,1,water	✓
112	6Q22745.d	P5-B5	FC7824-2	1633full.m	Sample		OP98223,S6Q330,505,,,5.0,1,water	✓
113	6Q22746.d	P5-B6	FC7824-3	1633full.m	Sample		OP98223,S6Q330,520,,,5.0,1,water	✓
114	6Q22747.d	P5-B7	FC7824-4	1633full.m	Sample		OP98223,S6Q330,505,,,5.0,1,water	✓
115	6Q22748.d	P5-B8	FC7824-5	1633full.m	Sample		OP98223,S6Q330,495,,,5.0,1,water	✓
116	6Q22749.d	P5-B9	FC7824-6	1633full.m	Sample		OP98223,S6Q330,500,,,5.0,1,water	✓
117	6Q22750.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
118	6Q22751.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
119	6Q22752.d	P5-C1	FC7824-7	1633full.m	Sample		OP98223,S6Q330,490,,,5.0,1,water	✓
120	6Q22753.d	P5-C2	FC7824-8	1633full.m	Sample		OP98223,S6Q330,515,,,5.0,1,water	✓
121	6Q22754.d	P5-C3	op98223-ms	1633full.m	Sample		OP98223,S6Q330,525,,,5.0,1,water	✓

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122	6Q22755.d	P5-C4	FC7824-9	1633full.m	Sample		OP98223,S6Q330,495,,,5.0,1,water	✓
123	6Q22756.d	P5-C5	op98223-dup	1633full.m	Sample		OP98223,S6Q330,485,,,5.0,1,water	✓
124	6Q22757.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
125	6Q22758.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
126	6Q22759.d	P5-C6	op98278-bs	1633full.m	Sample		OP98278,S6Q330,500,,,5.0,1,water	✓
127	6Q22760.d	P5-C7	op98278-llbs:3	1633full.m	Sample		OP98278,S6Q330,500,,,5.0,1,water	✓
128	6Q22761.d	P5-C8	op98278-mb	1633full.m	Sample		OP98278,S6Q330,500,,,5.0,1,water	✓
129	6Q22762.d	P5-C9	FC7901-1	1633full.m	Sample		OP98278,S6Q330,510,,,5.0,1,water	✓
130	6Q22763.d	P5-D1	FC7901-2	1633full.m	Sample		OP98278,S6Q330,525,,,5.0,1,water	✓
131	6Q22764.d	P5-D2	FC7901-3	1633full.m	Sample		OP98278,S6Q330,510,,,5.0,1,water	✓
132	6Q22765.d	P5-D3	FC7901-4	1633full.m	Sample		OP98278,S6Q330,510,,,5.0,1,water	✓
133	6Q22766.d	P5-D5	FC7901-6	1633full.m	Sample		OP98278,S6Q330,525,,,5.0,1,water	✓
134	6Q22767.d	P5-D6	op98278-ms	1633full.m	Sample		OP98278,S6Q330,535,,,5.0,1,water	✓
135	6Q22768.d	P5-D7	op98278-msd	1633full.m	Sample		OP98278,S6Q330,515,,,5.0,1,water	✓
136	6Q22769.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
137	6Q22770.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
138	6Q22771.d	P5-D4	FC7901-5	1633full.m	Sample		OP98278,S6Q330,520,,,5.0,1,water	✓
139	6Q22772.d	P5-D8	FC7901-7	1633full.m	Sample		OP98278,S6Q330,505,,,5.0,1,water	✓
140	6Q22773.d	P5-D9	FC7901-8	1633full.m	Sample		OP98278,S6Q330,525,,,5.0,1,water	✓
141	6Q22774.d	P5-E1	FC7901-9	1633full.m	Sample		OP98278,S6Q330,525,,,5.0,1,water	✓
142	6Q22775.d	P1-A5	cc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
143	6Q22776.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,5.0,1,water	✓
144	6Q22777.d	P5-E2	op98280-bs	1633full.m	Sample		OP98280,S6Q330,500,,,5.0,1,water	✓
145	6Q22778.d	P5-E3	op98280-llbs:3	1633full.m	Sample		OP98280,S6Q330,500,,,5.0,1,water	✓
146	6Q22779.d	P5-E4	op98280-mb	1633full.m	Sample		OP98280,S6Q330,500,,,5.0,1,water	✓
147	6Q22780.d	P5-E5	FC7902-1	1633full.m	Sample		OP98280,S6Q330,530,,,5.0,1,water	✓
148	6Q22781.d	P5-E6	FC7902-2	1633full.m	Sample		OP98280,S6Q330,520,,,5.0,1,water	✓
149	6Q22782.d	P5-E7	op98280-ms	1633full.m	Sample		OP98280,S6Q330,525,,,5.0,1,water	✓
150	6Q22783.d	P5-E8	op98280-msd	1633full.m	Sample		OP98280,S6Q330,515,,,5.0,1,water	✓
151	6Q22784.d	P5-E9	FC7902-3	1633full.m	Sample		OP98280,S6Q330,520,,,5.0,1,water	✓
152	6Q22785.d	P5-F1	FC7902-4	1633full.m	Sample		OP98280,S6Q330,525,,,5.0,1,water	✓
153	6Q22786.d	P1-A5	ecc330-4	1633full.m	QC	20/500	OP98201,S6Q330,500,,,5.0,1,water	✓
154	6Q22787.d	P1-A1	iccb	1633full.m	Sample		OP98201,S6Q330,500,,,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 2122 A-E	1633 spike Cal std.	11771 11799A	PFAC MxH	wellington	4/19/28	4-27-24 5-~~12~~15-24 mw	1-4 ppm	250uL	4ml	62.5 125 250ppb	1633 mix	5/15/23	10/28/23	MW
↓	↓	LCMS 2097A	Br-LN Et+Me	sgs labs	N/A	10/28/23	2 ppm 5 ppm	250uL	↓	125 312.5 ppb	(2688ml)	↓	↓	↓
↓	↓	11772 11801A	PFAC MxF	wellington	3/24/26	4-27-24 5-~~12~~15-24	2 ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11774 11802A	PFAC MxG	↓	12-01-27 12-01-27	4-27-24 5-~~18~~15-24	2 ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11738 11803A	PFAC MxJ	↓	9/14/26 3-28-28	4-27-24 5-~~12~~15-24	4-20 ppm	312uL	↓	312/1160 ppb	↓	↓	↓	↓
LCMS 2123A-B	PFC Spike	11750	PFOA-DOD (28comps)	Absolute	03/13/28	05/16/24	1.0ppm	2mL	5mL	95% MeOH 5% H2O	400ppb	05/16/23	11/16/23	NG
↓	↓	11432	N-Me-FOSA-M	Wellington Labs	02/28/27	03/13/24	50ppm	40uL	↓	↓	↓	↓	↓	NG
↓	↓	11513	FBSA-I	↓	11/10/26	04/18/24	↓	↓	↓	↓	↓	↓	↓	NG
↓	↓	11514	FHxSA-I	↓	12/29/26	04/18/24	↓	↓	↓	↓	↓	↓	↓	NG
↓	↓	11332	PFECHS	↓	03/28/27	04/18/24	↓	↓	↓	↓	↓	↓	↓	NG
LCMS ~~2123~~ 2124	1633 spike Cal std.	11799B	PFAC MxH	wellington	4/19/28	5/22/~~23~~24 mw	1-4 ppm	250uL	4ml	62.5 125 250ppb	1633 mix	5/22/23	10/28/23	MW
↓	↓	LCMS 2097A ~~11801B~~ mw	Br-LN Et+Me	sgs labs	N/A	10/28/23	2ppm 5ppm	↓	↓	125 312.5 ppb	(2688ml)	↓	↓	↓
↓	↓	11801B	PFAC MxF	wellington	3/24/26	5/22/~~23~~24 mw	2 ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11802B	PFAC MxG	↓	12/1/27	5/22/24	2ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11803B	PFAC MxJ	↓	3/28/28	5/22/24	4-20 ppm	312uL	↓	312/1160 ppb	↓	↓	↓	↓
						N/A MW Continue next page 5/22/23								

Margin notes: beside LCMS 2123A-B: * [illegible] & [illegible] on [illegible]; beside LCMS 2124: A-D

* based on date opened as specified in each SGS - Orlando SOP.

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Organic Standards Preparation Log

* tested & passed on S3Q1027

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 2095A-J	(10ppb) PFC ID Surr	A-J 11669	MPFAC-24ES	Wellington Labs	01/18/28	03/28/24	1.0ppm	2.4mL	~50mL	0.5ppm	95% MeOH 5% H2O	03/28/23	09/28/23	NG
↓	↓	11585	M2HFPO-DA	↓	11/08/25	01/26/24	50ppm	48uL	↓	↓	↓	↓	↓	NG
↓	↓	11431	d-N-MeFOSAA	↓	05/06/27	03/13/24	50ppm	48uL	↓	↓	↓	↓	↓	NG
LCMS 2096A-B	1633 spike Cal std.	11672	PFAC-MxH	Wellington	8/8/27	3/23/24	1-4 ppm	250uL	4ml	62.5 125 250ppb	1633 mix	3/30/23	9/30/23	MW
↓	↓	11686	PFAC-MxI	↓	2/27/28	3/30/24	1-10 ppm	250uL	↓	62.5 625ppb	↓	↓	↓	↓
↓	↓	11674A 11674B	PFAC-MxF	↓	1/11/25	3/23/24 3/30/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11660 11675	PFAC-MxG	↓	12/1/27	3/6/24 3/30/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11642B	PFAC-MxJ	↓	9/14/26	3/23/24	4-20 ppm	312uL	↓	312/1160 ppb	↓	↓	↓	↓
LCMS 2097A-B	BR-LN metet for 1633	11497	br-N MeFOSA	wellington	08/23/27	10/28/23	50ppm	200uL	5mL	2ppm ~~5ppm~~	1633 mix	4/6/23	10/28/23	MW
↓	↓	11498	br-N EtFOSA	↓	10/07/27	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11495	br-N MeFOSE	↓	10/07/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N EtFOSE	↓	10/7/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
						N/A MW								

* based on date opened as specified in each SGS - Orlando SOP.

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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 2125A-B	Full List 40 Spike (Cal std)	11750	PFOA 28Comp.	Absolute	3/13/28	5/16/24	1.0ppm	400uL	4.0mL	100ppb	95%MeOH 5%H2O (2,400mL)	5/22/23	8/23/23	MW
↓	↓	LCMS 2067	40 List Add on #1	SGS std.	—	8/23/23	1.0ppm	400uL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2117	40 List Add on #2	↓	—	11/8/23	1.0ppm	400uL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2101	FOSE std.	↓	—	~~7/24/23~~ 9/19/23 MW	5.0ppm	~~800uL~~ 400uL MW	↓	500ppb	↓	↓	↓	↓
LCMS 2126A-J	PFC ID Surr (10 ppb)	11804 A-J	MPFAC-24ES	Wellington Labs	01/18/28	05/23/24	1.0ppm	~~2.4mL~~ 1.2mL	~2.5mL	0.5ppm	95%MeOH 5%H2O	05/23/23	11/23/23	NG
↓	↓	11635A	M3HFPO-DA	↓	11/08/25	04/24/24	50ppm	~~48uL~~ 24uL	↓	↓	↓	↓	↓	NG
↓	↓	11431	d-N-MeFOSAA	↓	03/06/27	03/13/24	50ppm	~~48uL~~ 24uL	↓	↓	↓	↓	↓	NG
LCMS 2127A-E	1633 spike Cal std.	11799B 11807	PFAC MxH	Wellington	4/19/28	5/22/24 5/24/24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 mix (2688mL)	5/24/23	10/28/23	MW
↓	↓	LCMS 2097AB	Br-LN Et-Me	SGS Labs	N/A	10/28/23	2ppm 5ppm	↓	↓	125 312.5ppb	↓	↓	↓	↓
↓	↓	11801B 11808	PFAC MxF	Wellington	3/24/26	5/22/24 5/24/24	2ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11802B 11809	PFAC MxG	↓	12/1/27	5/22/24 5/24/24	2ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11803B 11810	PFAC MxJ	↓	3/28/28	5/22/24 5/24/24	4-20 ppm	312uL	↓	312 1160ppb	↓	↓	↓	↓
LCMS 2128A-J	PFC ID Surr (10 PPB)	F-J 11819	MPFAC-24ES	Wellington Labs	01/18/28	06/01/24	1.0ppm	1.2mL	~2.5mL	0.5ppm	95%MeOH 5%H2O	06/01/23	12/01/23	NG
↓	↓	11635A	M3HFPO-DA	↓	11/08/25	04/24/24	50ppm	24uL	↓	↓	↓	↓	↓	NG
↓	↓	11584	d-N-MeFOSAA	↓	11/11/27	06/01/24	50ppm	24uL	↓	↓	↓	↓	↓	NG
						NG 06/01/23								

Margin note: * opened & used on QS47

* based on date opened as specified in each SGS - Orlando SOP.

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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 2067	40 List std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50ppm	80mL	4.0mL	1ppm	95% meOH 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	L-PFDoS		7/9/26	10/18/23							8/23/23	
		10829	N-MeFosA		8/3/26	8/23/23								
		10837	N-EtFosA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFODA		5/7/26	10/18/23								
		11116B	3:3FTCA PFPrPA		2/3/27	2/8/24								
		10685A	5:3FTCA PFPePA		11/4/25	8/23/23								
		11116A	7:3FTCA PFHpPA		11/12/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/13/25	10/18/23								
		10763B	PFMBA PF5OHxA		3/31/25	10/18/23								
		10764	PFMPA PF4OPeA		3/31/25	2/8/24								
		10765B	NFHDA 3,6-OPFHpA		3/31/25	10/18/23								
					NG 02/10/23									

*** 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 2115	List 40 Surr Add-on #1 & isotope mix	11523	d7-N-Metose	Wellington	1/27/27	5/9/24	50ppm	200NL	2mL	(1/5) 5ppm	95% MeOH + 5% H2O	5/9/23	8/23/23 Stmw	MV
↓	↓	11460	d9-N Etfose	↓	1/27/27	12/6/23	↓	200NL	↓	5ppm	↓	↓	↓	↓
↓	↓	11115	M2-PFHxDA	↓	11/23/28	8/23/23	↓	40NL	↓	1ppm	↓	↓	↓	↓
↓	↓	10836	D-N-Etfosa	↓	12/30/25	8/23/23	↓	40NL	↓	1ppm	↓	↓	↓	↓
LCMS 2116	Full List (40) Spike (cal std)	11653	PFOA DOD 28 Comp.	Absolute	11/9/27	4/18/24	1.0ppm	400NL	4.0mL	100ppb	95% MeOH 5% H2O	5/9/23	8/23/23	MV
↓	↓	LCMS 2067	40 List Add on #1	Sgs std.	—	8/23/23	1.0ppm	400NL	↓	↓	(2,400ml)	↓	↓	↓
↓	↓	LCMS 2117	40 List Add on #2	↓	—	~~5/mw~~ 11/8/23	1.0ppm	400NL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2054	Fose Std.	↓	—	7/24/23	5.0ppm	400NL	↓	500ppb	↓	↓	↓	↓
LCMS 2117	40 List Add on #2	11250	FBSA-1	Wellington	11/10/26	11/8/23	50ppm	80NL	4.0mL	1ppm	95% MeOH 5% H2O	5/9/23	11/8/23	MV
↓	↓	11249	FHxSA-1	↓	2/29/26	11/3/23	50ppm	80NL	↓	↓	↓	↓	↓	↓
↓	↓	11140B	L-PFPrS	↓	7/12/26	5/9/24	50ppm	80NL	↓	↓	↓	↓	↓	↓
LCMS 2118A	PFC ID Surr (10ppb)	11775A	MPFAC 24ES	Wellington	1/18/28	5/10/24	1.0ppm	2.4mL	5.0mL	0.5ppm	95% MeOH 5% H2O	5/10/23	11/10/23	MV
↓	↓	1635A	M3HPO-DA	↓	11/8/25	4/24/24	50ppm	48NL	↓	↓	↓	↓	↓	↓
↓	↓	11431	d-n metosa-m	↓	5/6/27	3/13/24	50ppm	48NL	↓	↓	↓	↓	↓	↓
					DG 05/12/23									

*** 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 2098A-C	1633 spike Cal std.	11672A 11672B	PFAC MxH	Wellington	8/8/27	3/23/24 4/6/24	1-4 ppm	250NL	4mL	62.5 125 250ppb	1633 mix	4/6/23	10/6/23	MW
↓	↓	LCMS 2097	Br-In Et, Me	Sgs labs	N/A	10/28/23	2ppm 5ppm	250NL	↓	125ppb 312.5ppb	↓	↓	↓	↓
↓	↓	116746	PFAC MxF	Wellington	1/11/25	3/30/24	2ppm	250NL ~~500NL~~ MW	↓	MW ~~350ppb~~ 125ppb	↓	↓	↓	↓
↓	↓	11675	PFAC MxG	↓	12/1/27	3/30/24	2ppm	250NL	↓	125ppb	↓	↓	↓	↓
↓	↓	11642B	PFAC MxJ	↓	9/14/26	3/23/24	4-20 ppm	312NL	↓	312/1160 ppb	↓	↓	↓	↓
LCMS 2099	537.1 DW Std. (Internal)	11070	M3PF-PEA	Wellington Labs	07/22/25	04/06/24	50ppm	80uL	4mL	1.0ppm	96% MeOH 4% H2O	04/06/23	08/15/23	NG
↓	↓	104356A	M262 FTS	↓	11/05/25	04/06/24	↓	80uL	↓	1.0ppm	↓	↓	↓	NG
↓	↓	10512B	d3-N-MeFOSAA	↓	10/22/25	08/15/23	↓	160uL	↓	2.0ppm	↓	↓	↓	NG
↓	↓	10498A	MPFOS	↓	11/02/25	03/22/24	↓	80uL	↓	1.0ppm	↓	↓	↓	NG
↓	↓	11069	M2PFOA	↓	12/07/26	03/22/24	↓	80uL	↓	1.0ppm	↓	↓	↓	NG
LCMS 2100	Full List (40) List 40 spike (Cal std.)	11626	PFOA Doc 28 Comp.	Absolute	~~11/9/27~~ MW 4/11/24	4/11/24	1.0ppm	400NL	4.0mL	100ppb	95% MeOH 5% H2O (2,4CO3)1	4/11/23	7/24/23	MW
↓	↓	LCMS 2067	40 List ADD ON #1	Sgs std.	—	8/23/23	1.0ppm	400NL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2076	40 List ADD ON #2	↓	—	5/12/23	1.0ppm	400NL	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2054	Fose std.	↓	—	7/24/23	5.0ppm	400NL	↓	500ppb	↓	↓	↓	↓
LCMS 2101	Fose std.	11336	N-et Fose	Wellington	5/13/27	9/19/23	50ppm	200NL	2.0mL	5ppm	95% MeOH 5% H2O	4/11/23	9/19/23	MW
↓	↓	11338	N-me fose	↓	5/13/27	9/19/23	50ppm	200NL	↓	↓	↓	↓		↓

* based on date opened as specified in each SGS - Orlando SOP.

(1,000)

10685A

WELLINGTON LABORATORIES

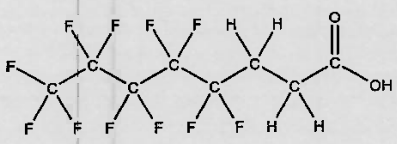
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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:

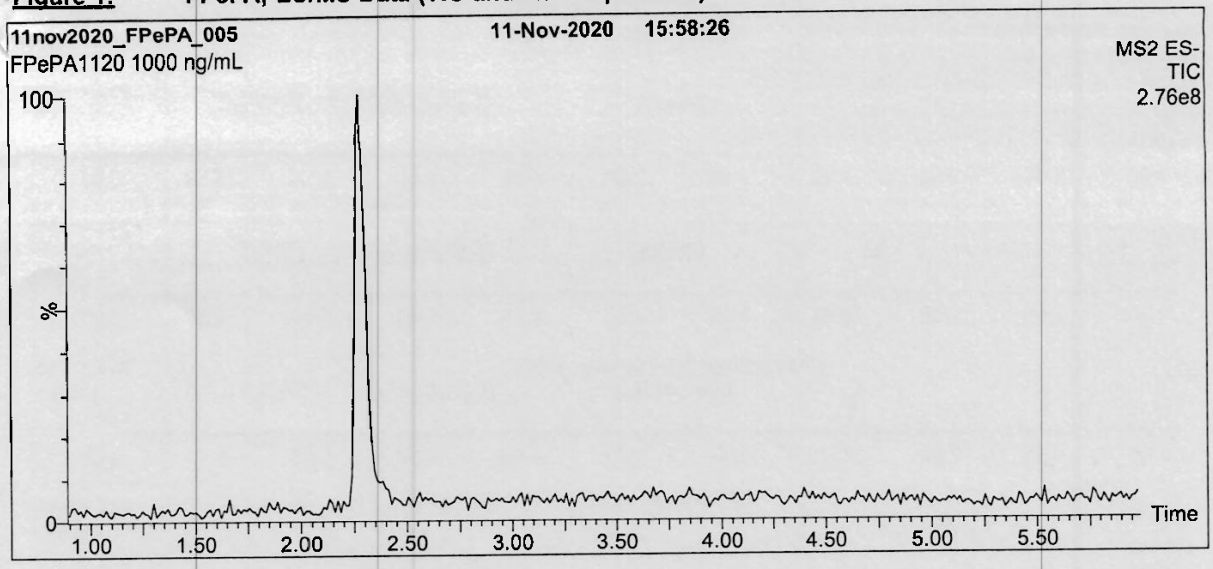
- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

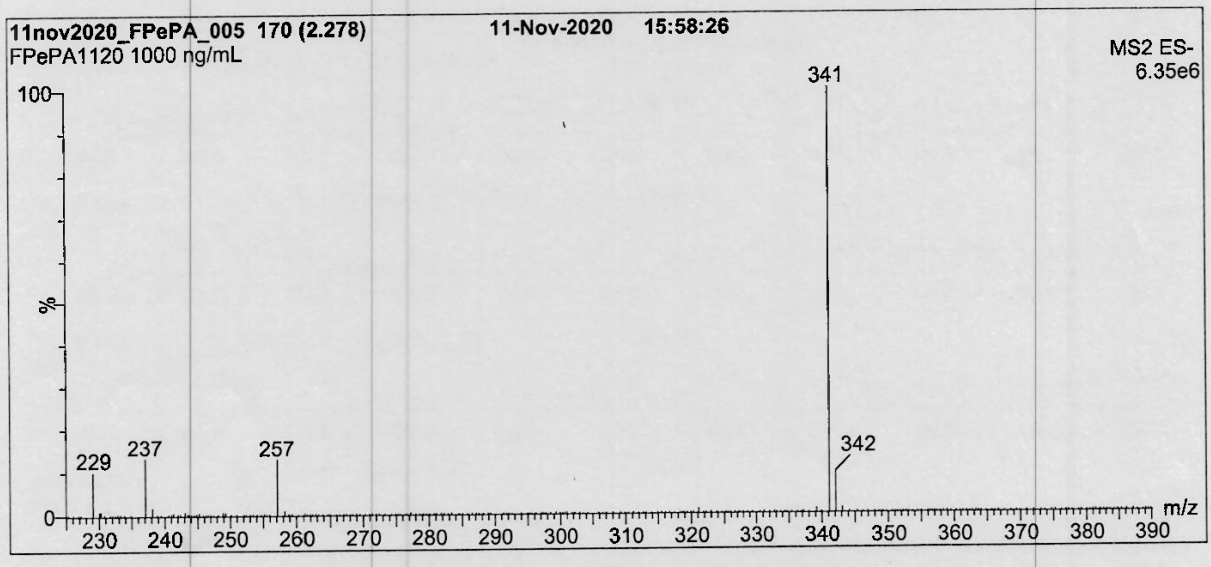
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

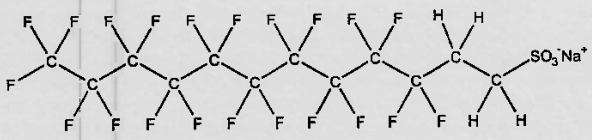
10726 A

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
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) 48.3 ± 2.4 µg/mL (10:2FTS acid) 48.2 ± 2.4 µg/mL (10:2FTS anion)	**SOLVENT(S):**	Methanol
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: B.G. Chittim, General Manager
Date: 03/05/2021 (mm/dd/yyyy)

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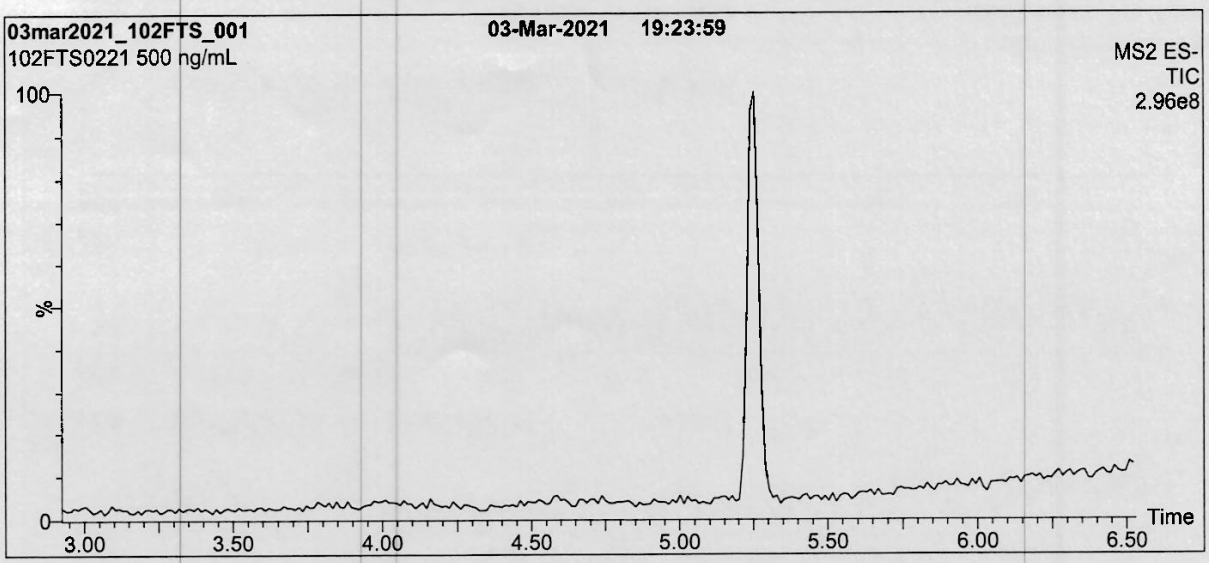
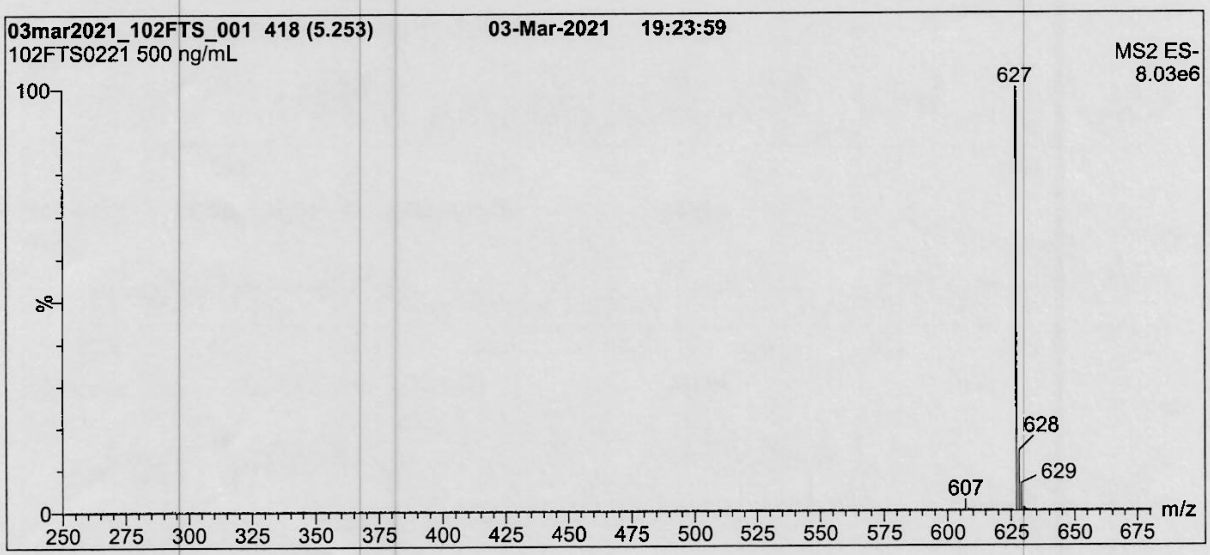
Figure 1: **10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

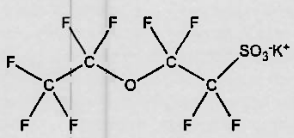
10762 A-B

WELLINGTON LABORATORIES

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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10763 A-B

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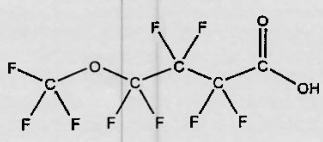
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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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10764 A-B

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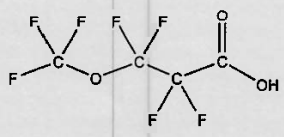
DOCUMENTATION

rec'd WGH 8/20/21

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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10765 A-13

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DOCUMENTATION

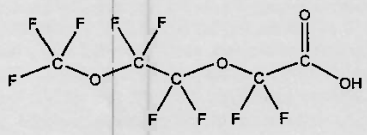
recd WFH 8/20/21

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: B.G. Chittim, General Manager **Date:** 05/27/2020 (mm/dd/yyyy)

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10829

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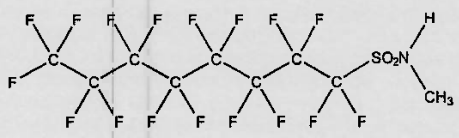
DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0721M
COMPOUND:	N-methylperfluoro-1-octanesulfonamide		
STRUCTURE:		**CAS #:**	31506-32-8



rec'd WFM 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.

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Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
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DOCUMENTATION

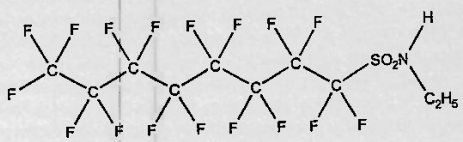
10837

PRODUCT CODE: N-EtFOSA-M
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.

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Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
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10

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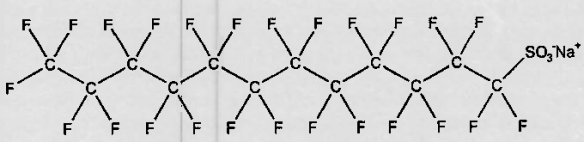
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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).

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Certified By: _____ **Date:** 07/16/2021 (mm/dd/yyyy)
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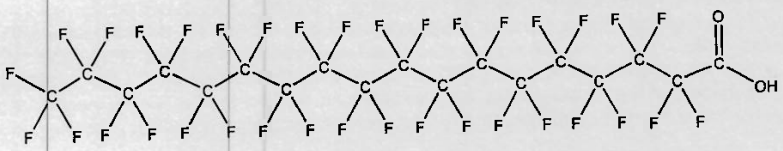
10847 NG 01/18/23

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid

LOT NUMBER: PFODA0821

CAS #: 16517-11-6

STRUCTURE:



MOLECULAR FORMULA: $C_{18}HF_{35}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 914.14
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.

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Certified By: B.G. Chittim, General Manager **Date:** 09/28/2021 (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

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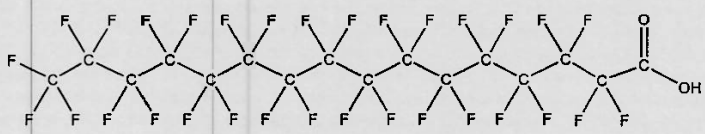
DOCUMENTATION

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: _____ **Date:** 05/25/2021 (mm/dd/yyyy)
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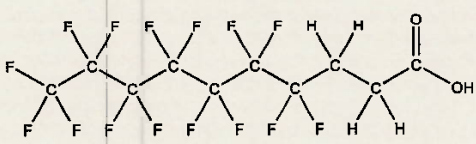
DOCUMENTATION

PRODUCT CODE:	FHpPA	**LOT NUMBER:**	FHpPA1020
COMPOUND:	3-Perfluoroheptyl propanoic acid		
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 (mm/dd/yyyy)
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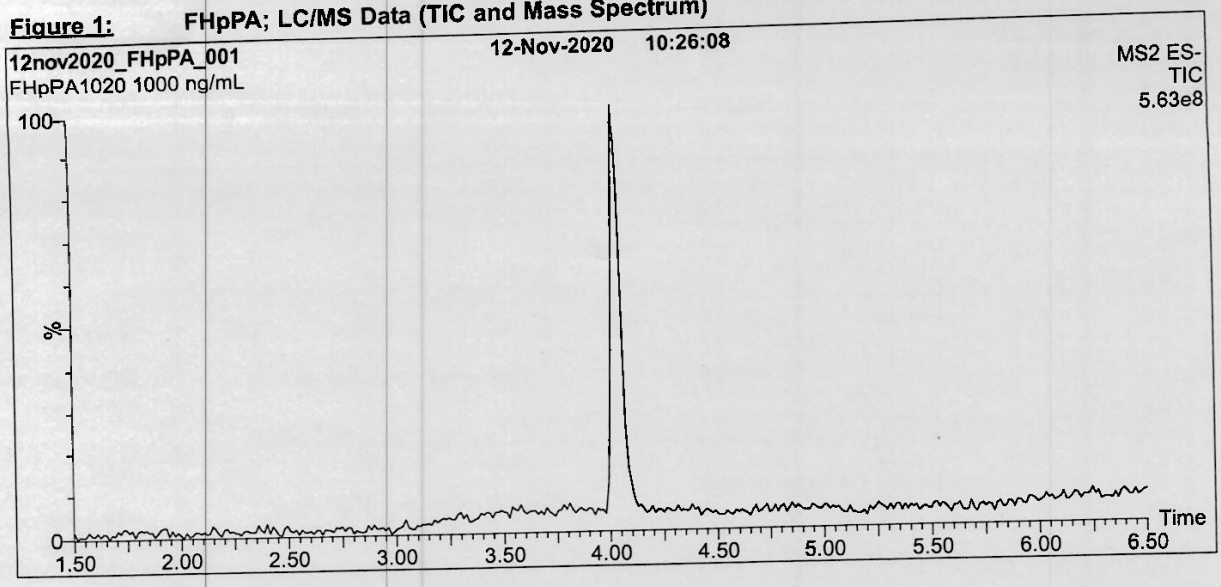
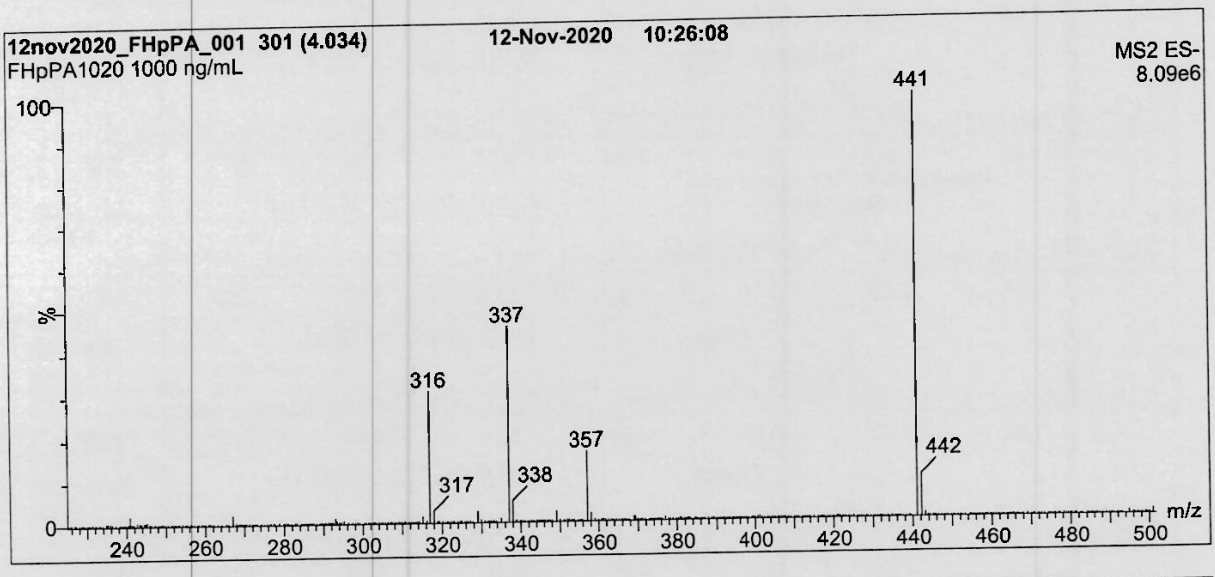
Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPrPA(3:3FTCA) 11116 B

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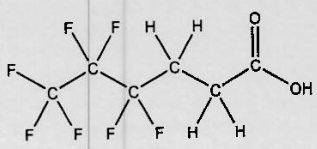
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

CAS #: 356-02-5

STRUCTURE:



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)	02/03/2022		
EXPIRY DATE: (mm/dd/yyyy)	02/03/2027		
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.
- 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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Certified By: B.G. Chittim, General Manager **Date:** 02/04/2022 (mm/dd/yyyy)

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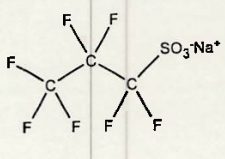
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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.

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Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

7.9.1
7

11852 11249 7/1/22 KA

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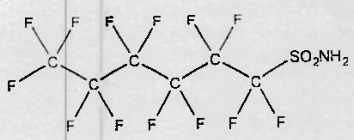
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA1221I

CAS #: 41997-13-1

STRUCTURE:



MOLECULAR FORMULA:	$C_6H_2F_{13}NO_2S$	**MOLECULAR WEIGHT:**	399.13
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/29/2026		
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:** 01/10/2022 (mm/dd/yyyy)
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11250 KA 8/11/22

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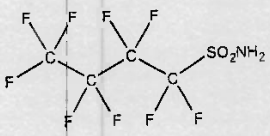
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FBSA-I
COMPOUND: Perfluoro-1-butanesulfonamide

LOT NUMBER: FBSA11211

CAS #: 30334-69-1

STRUCTURE:



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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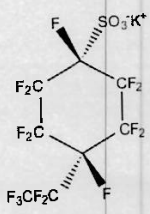
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFECHS
LOT NUMBER: PFECHS0222

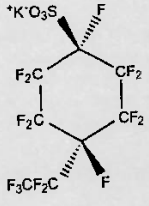
COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

CAS #: 335-24-0

STRUCTURE:



cis-isomer



trans-isomer

MOLECULAR FORMULA:	$C_8F_{15}SO_3K$
MOLECULAR WEIGHT:	500.22
CONCENTRATION:	50.0 ± 2.5 µg/mL (K salt) 46.2 ± 2.3 µg/mL (PFECHS acid) 46.1 ± 2.3 µg/mL (PFECHS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	03/28/2022
EXPIRY DATE: (mm/dd/yyyy)	03/28/2027
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*).

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Certified By: B.G. Chittim, General Manager **Date:** 03/30/2022 (mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

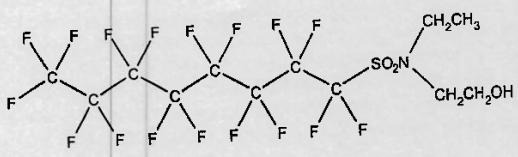
PRODUCT CODE: N-EtFOSE-M

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.

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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

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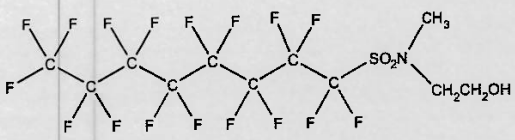
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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.

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Certified By: B.G. Chittim, General Manager **Date:** 06/14/2022 (mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

7.9.1

7

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol
Isomeric Mix

PRODUCT CODE:	br-NMeFOSE
LOT NUMBER:	brNMeFOSE0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/02/2022
LAST TESTED: (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS)
	10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSE

2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix

PRODUCT CODE:	br-NEtFOSE
LOT NUMBER:	brNEtFOSE1022
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/12/2022
LAST TESTED: (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS)
	10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide
Isomeric Mix

PRODUCT CODE:	br-NMeFOSA
LOT NUMBER:	brNMeFOSA0822
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/18/2022
LAST TESTED: (mm/dd/yyyy)	08/23/2022
EXPIRY DATE: (mm/dd/yyyy)	08/23/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide
Isomeric Mix

PRODUCT CODE:	br-NEtFOSA
LOT NUMBER:	brNEtFOSA0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/23/2022
LAST TESTED: (mm/dd/yyyy)	10/07/2022
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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Absolute Standards, Inc.
800-368-1131
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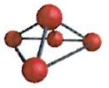

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

11750
PREP'd: 04/17/23

CERTIFIED WEIGHT REPORT

Part Number:	64029A				
Lot Number:	031323	**Solvent(s):**	**Lot#**		
Description:	PFDA - DOD	Methanol (1 mM KOH)	102722	(98%)	
	28 components	2-Propanol	32500	(2%)	
Expiration Date:	031328				
Recommended Storage:	Freezer (0 °C)				
Nominal Concentration (µg/mL):	1.0				
NIST Test ID#:	6UTB	5E-05	Balance Uncertainty		
Volume(s) shown below were combined and diluted to (mL):		100.0	0.021	Flask Uncertainty	

Formulated By:	Prashant Chauhan	031323 DATE
Reviewed By:	Pedro L. Rentas	031323 DATE

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	110422	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	011723	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	110922	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	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7.	Perfluorodecanoic acid (PFDA)	99195	110922	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	110922	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	FOSA0322I	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	brNMeFOSAA0422	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	091522	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	030923	0.02	2.00	0.017	50.0	1.00	0.02	355-46-4 (L)	N/A	N/A
18.	Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHpS0822	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	030923	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	LPFNS1122	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	LPFDS1122	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	031023	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	82FTS0822	0.021	2.10	0.017	47.8	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-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0522	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	9ClPF3ONS1022	0.021	2.14	0.017	46.8	1.00	0.05	756426-58-1	N/A	N/A
28.	Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0922	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	030923	0.02	2.00	0.017	44.0	0.88	0.02	355-46-4 (L)	N/A	N/A
	Perfluorohexanesulfonic acid (branched isomer)*	99198	030923	0.02	2.00	0.017	6.0	0.12	0.0020	355-46-4 (L)	N/A	N/A
	Heptadecafluorooctanesulfonic acid (linear)*	99201	030923	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	030923	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	030923	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	030923	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	brNMeFOSAA0422	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	brNMeFOSAA0422	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	brNMeFOSAA0422	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	brNMeFOSAA0422	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," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

7.9.1

11799 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0423
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	04/06/2023
LAST TESTED: (mm/dd/yyyy)	04/19/2023
EXPIRY DATE: (mm/dd/yyyy)	04/19/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 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. 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 N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
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 (ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4000	1
Perfluoro-n-pentanoic acid	PFPeA	2000	2
Perfluoro-n-hexanoic acid	PFHxA	1000	5
Perfluoro-n-heptanoic acid	PFHpA	1000	7
Perfluoro-n-octanoic acid	PFOA	1000	11
Perfluoro-n-nonanoic acid	PFNA	1000	14
Perfluoro-n-decanoic acid	PFDA	1000	18
Perfluoro-n-undecanoic acid	PFUdA	1000	23
Perfluoro-n-dodecanoic acid	PFDoA	1000	26
Perfluoro-n-tridecanoic acid	PFTrDA	1000	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000	29
Perfluoro-1-octanesulfonamide	FOSA	1000	24
N-Methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	760	20
	N-MeFOSAA: ∑ branched isomers	240	17
N-Ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	775	22
	N-EtFOSAA: ∑ branched isomers	225	21

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	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:** 05/11/2023 (mm/dd/yyyy)
B.G. Chittim, General Manager

11801A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0323
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	03/23/2023
LAST TESTED: (mm/dd/yyyy)	03/24/2023
EXPIRY DATE: (mm/dd/yyyy)	03/24/2026
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 hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). 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
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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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

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:** 03/29/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

PFACMXF0323 (3 of 5)
rev0

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11802 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG1122
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	11/30/2022
LAST TESTED: (mm/dd/yyyy)	12/01/2022
EXPIRY DATE: (mm/dd/yyyy)	12/01/2027
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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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:** 12/09/2022
B.G. Chittim, General Manager (mm/dd/yyyy)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXG1122 (3 of 5)
rev0

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

7.9.1
7

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

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:** 04/12/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

11850 A-5
rec'd: 06/01/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES1022
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	10/28/2022
LAST TESTED: (mm/dd/yyyy)	11/23/2022
EXPIRY DATE: (mm/dd/yyyy)	11/23/2025
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	18
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	22
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	17
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	23
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:** 11/24/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

11851 A-J
rec'd: 06/01/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-IS
LOT NUMBER:	MPFACHIFIS1122
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	11/28/2022
LAST TESTED: (mm/dd/yyyy)	11/29/2022
EXPIRY DATE: (mm/dd/yyyy)	11/29/2027
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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Table A: **MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-(2,3,4-$^{13}C_3$)butanoic acid	M3PFBA	1000	1
Perfluoro-n-(1,2-$^{13}C_2$)hexanoic acid	MPFHxA	500	2
Perfluoro-n-(1,2,3,4-$^{13}C_4$)octanoic acid	MPFOA	500	4
Perfluoro-n-(1,2,3,4,5-$^{13}C_5$)nonanoic acid	MPFNA	250	5
Perfluoro-n-(1,2-$^{13}C_2$)decanoic acid	MPFDA	250	7

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane($^{18}O_2$)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4-$^{13}C_4$)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: B.G. Chittim, General Manager **Date:** 12/05/2022 (mm/dd/yyyy)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFIS1122 (3 of 5)
rev0

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 08/08/23 10:50 [mm/dd/yy 24:00]

Date/Time Finished: 08/089/23 1620 [mm/dd/yy 24:00]

① incorrect date 08/09/23 AL

Method: EPA 1633 Draft (QSM)

Balance ID: _____

Batch#: OP98297 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 98297 MB		500	7	N/A	25		5 6	A4	
OP 98297 BS		500	7	N/A		200	5		
OP 98297 LLBS		500	7	N/A		60			
FC 7908-17	-	470	7						
FC8392-1	1	570							
FC8440-1	2	530							
FC8439-1	2	530							
2	2	500							
3	2	540							
4	2	540							
5	2	540							
6	2	520	7	N/A	25		5 6 5 6	A4	
OP FC8439-3MS	3	550	7	N/A	25	200	5	A4	
OP MSD									
OP FC8439-4DUP	3	540	7	N/A	25		5	A4	

GH 08/08/23

GH 08/08/23

Comments:

EIS (SURR) ID: 11934J-L Conc: 250-5000ng/mL Exp. Date: 07/30/24 Inj. By: GH Ver. By: CM

SPIKE 1 ID: LCMS21516 Conc: VARIED Exp. Date: 12/28/23 Inj. By: GH Ver. By: CM

SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____

NIS (ISTD) ID: 11935J-L Conc: 250-1000 ng/ml Exp. Date: 08/03/24 Inj. By: AL Ver. By: LR

TurboVap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

N-Evap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot#: 232031

Water Lot#: DI H2O

Acetic Acid#: 194003

0.1M Formic: PF525

1% NH4OH MeOH: PF529

0.3M Formic Acid: PF511

3% NH4OH Sol: _____

5% Formic Acid: _____

SPE Lot#: 6748887-01

Syringe filter Lot #: _____

pH paper Lot#: 205423

Carbon Lot#: 99687

Relinquished By: Gabriella Hackett Date: 08/08/23

Accepted By: _____ Date: 08/09/23

1633 AQ extraction 042222 xls NF