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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC6445

Sampling Date: 05/26/23



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Total number of pages in report: 1481



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

Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC6445

**N6274223F0104 RH Fire Suppression System
Project No: 60697810**

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FC6445-1	05/26/23	10:05 CHMY	05/27/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2305W4
FC6445-2	05/26/23	11:00 AL	05/27/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2305W4
FC6445-3	05/26/23	11:45 MYCH	05/27/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2305W4
FC6445-4	05/26/23	12:20 AL	05/27/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2305W4
FC6445-5	05/26/23	11:40 AL	05/27/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2305W4
FC6445-6	05/26/23	15:38 AL	05/27/23	AQ	Ground Water	AF-RHMW17S-WGN01LF-2305W4
FC6445-7	05/26/23	16:05 AL	05/27/23	AQ	Equipment Blank	AF-RHMW17S-WQEB01-2305W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

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Client: AECOM, INC.

Job No: FC6445

Site: N6274223F0104 RH Fire Suppression System

Report Date: 6/13/2023 3:12:56 PM

On 05/27/2023, 6 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.7 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC6445 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: OP97143

Sample(s) FC6205-1MS, FC6205-1MSD were used as the QC samples indicated.

Matrix: AQ

Batch ID: OP97275

Sample(s) FC6649-1MS, FC6649-4DUP were used as the QC samples indicated.

Blank Spike Recovery(s) for 3:3 Fluorotelomer carboxylate are outside control limits.

Matrix Spike Recovery(s) for 3:3 Fluorotelomer carboxylate, PFMPA are outside control limits. Probable cause is due to matrix interference.

RPD(s) for Duplicate for 6:2 Fluorotelomer sulfonate are outside control limits for sample OP97275-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FC6445-4 have surrogates outside control limits.

FC6445-4: Dilution required (ID recovery standard failure).

FC6445-4 for 3:3 Fluorotelomer carboxylate: Associated BS recovery outside control limits.

FC6445-4 for MeFOSAA: Associated Low Level CCV outside of control limits high, sample was ND.

FC6445-4 for Perfluorodecanesulfonic acid: Associated Low Level CCV outside of control limits high, sample was ND.

FC6445-4 for PFEESA: Associated Low Level CCV outside of control limits high, sample was ND.

FC6445-4 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: FC6445
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/26/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC6445-1 AF-RHMW02-WGN01LF-2305W4

Perfluorohexanoic acid	0.95 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.86 J	3.7	1.9	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	5.0 J	19	7.4	ng/l	EPA DRAFT 1633

FC6445-2 AF-RHMW17-WGN01LF-2305W4

Perfluorobutanoic acid	3.0 J	14	3.6	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid	4.0 J	7.1	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.9 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.89 J	3.6	1.8	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	10 J	18	7.1	ng/l	EPA DRAFT 1633

FC6445-3 AF-RHMW03-WGN01LF-2305W4

Perfluoropentanoic acid	4.3 J	7.1	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	2.6 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	1.8 J	3.6	1.8	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	7.0 J	18	7.1	ng/l	EPA DRAFT 1633

FC6445-4 AF-RHMW17D-WGN01LF-2305W4

No hits reported in this sample.

FC6445-5 AF-RHMW17D-WQFB01-2305W4

No hits reported in this sample.

FC6445-6 AF-RHMW17S-WGN01LF-2305W4

Perfluorohexanoic acid	2.0 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	1.0 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	0.93 J	3.5	0.88	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.73 J	3.5	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	1.2 J	3.5	1.8	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	4.1 J	18	7.0	ng/l	EPA DRAFT 1633

FC6445-7 AF-RHMW17S-WQEB01-2305W4

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW02-WGN01LF-2305W4		
Lab Sample ID:	FC6445-1	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18713.D	1	06/02/23 00:18	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	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	0.95	3.7	1.9	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.86	3.7	1.9	0.46	ng/l	J
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	5.0	19	7.4	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCCTANE 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-2305W4		
Lab Sample ID:	FC6445-1	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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
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PERFLUOROOCCTANE 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	

PERFLUOROOCCTANE 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)	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	68%		20-150%
	13C5-PFPeA	89%		20-150%
	13C5-PFHxA	102%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	103%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	105%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	92%		20-150%
	13C2-PFTeDA	78%		20-150%
	13C3-PFBS	100%		20-150%
	13C3-PFHxS	102%		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

4.1
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Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2305W4		
Lab Sample ID:	FC6445-1	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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	96%		20-150%
	13C8-FOSA	88%		20-150%
	d3-MeFOSA	77%		20-150%
	d5-EtFOSA	79%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	94%		20-150%
	d7-MeFOSE	83%		20-150%
	d9-EtFOSE	86%		20-150%
	13C2-4:2FTS	100%		20-180%
	13C2-6:2FTS	89%		20-180%
	13C2-8:2FTS	91%		20-180%
	13C3-HFPO-DA	87%		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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW17-WGN01LF-2305W4		
Lab Sample ID:	FC6445-2	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18714.D	1	06/02/23 00:32	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.0	14	3.6	1.7	ng/l	J
2706-90-3	Perfluoropentanoic acid	4.0	7.1	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	1.9	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.89	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	10	18	7.1	3.1	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	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-RHMW17-WGN01LF-2305W4	
Lab Sample ID:	FC6445-2	Date Sampled: 05/26/23
Matrix:	AQ - Ground Water	Date Received: 05/27/23
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
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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13C4-PFBA	91%		20-150%
13C5-PFPeA	110%		20-150%
13C5-PFHxA	116%		20-150%
13C4-PFHpA	111%		20-150%
13C8-PFOA	115%		20-150%
13C9-PFNA	109%		20-150%
13C6-PFDA	108%		20-150%
13C7-PFUnDA	91%		20-150%
13C2-PFDoDA	71%		20-150%
13C2-PFTeDA	60%		20-150%
13C3-PFBS	114%		20-150%
13C3-PFHxS	111%		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

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2305W4		
Lab Sample ID:	FC6445-2	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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	107%		20-150%
	13C8-FOSA	99%		20-150%
	d3-MeFOSA	94%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	144%		20-150%
	d5-EtFOSAA	149%		20-150%
	d7-MeFOSE	93%		20-150%
	d9-EtFOSE	105%		20-150%
	13C2-4:2FTS	151%		20-180%
	13C2-6:2FTS	154%		20-180%
	13C2-8:2FTS	125%		20-180%
	13C3-HFPO-DA	105%		20-150%

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

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Report of Analysis

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Client Sample ID:	AF-RHMW03-WGN01LF-2305W4		
Lab Sample ID:	FC6445-3	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18715.D	1	06/02/23 00:47	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	14	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	4.3	7.1	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	2.6	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.8	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0	18	7.1	3.1	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	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-2305W4		
Lab Sample ID:	FC6445-3	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	93%		20-150%
	13C5-PFPeA	103%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	114%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	92%		20-150%
	13C2-PFDoDA	81%		20-150%
	13C2-PFTeDA	73%		20-150%
	13C3-PFBS	113%		20-150%
	13C3-PFHxS	106%		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-2305W4		Date Sampled:	05/26/23
Lab Sample ID:	FC6445-3		Date Received:	05/27/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	96%		20-150%
	13C8-FOSA	83%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	78%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	73%		20-150%
	d9-EtFOSE	80%		20-150%
	13C2-4:2FTS	106%		20-180%
	13C2-6:2FTS	98%		20-180%
	13C2-8:2FTS	100%		20-180%
	13C3-HFPO-DA	102%		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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW17D-WGN01LF-2305W4		
Lab Sample ID:	FC6445-4	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q19266.D	1	06/12/23 21:51	MV	06/09/23 11:30	OP97275	S6Q287
Run #2 ^a	6Q19267.D	1	06/12/23 22:05	MV	06/09/23 11:30	OP97275	S6Q287

	Initial Volume	Final Volume
Run #1	510 ml	5.0 ml
Run #2	60.0 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	33 U ^b	130	33	16	ng/l	
2706-90-3	Perfluoropentanoic acid	2.0 U	7.8	2.0	0.92	ng/l	
307-24-4	Perfluorohexanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
375-85-9	Perfluoroheptanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
335-67-1	Perfluorooctanoic acid	0.98 U	3.9	0.98	0.49	ng/l	
375-95-1	Perfluorononanoic acid	2.0 U	3.9	2.0	0.60	ng/l	
335-76-2	Perfluorodecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
307-55-1	Perfluorododecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.0 U	3.9	2.0	0.82	ng/l	
376-06-7	Perfluorotetradecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.9 U	4.9	3.9	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.0 U	3.9	2.0	0.69	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.0 U	3.9	2.0	0.53	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.0 U	3.9	2.0	0.56	ng/l	
335-77-3	Perfluorodecanesulfonic acid ^c	2.0 U	3.9	2.0	0.63	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.9 U	4.9	3.9	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.2	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.4	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.8 U	20	7.8	4.0	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	2.0 U	3.9	2.0	0.66	ng/l	
31506-32-8	MeFOSA	3.9 U	7.8	3.9	0.98	ng/l	
4151-50-2	EtFOSA	3.9 U	7.8	3.9	0.98	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-RHMW17D-WGN01LF-2305W4		Date Sampled:	05/26/23
Lab Sample ID:	FC6445-4	Date Received:	05/27/23	
Matrix:	AQ - Ground Water	Percent Solids:	n/a	
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA ^c	3.9 U	4.9	3.9	0.98	ng/l	
2991-50-6	EtFOSAA	3.9 U	4.9	3.9	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	20 U	39	20	4.3	ng/l	
1691-99-2	EtFOSE	20 U	39	20	7.3	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	2.0 U	3.9	2.0	0.98	ng/l	
919005-14-4	ADONA	3.9 U	7.8	3.9	1.8	ng/l	
377-73-1	PFMPA	2.0 U	7.8	2.0	0.98	ng/l	
863090-89-5	PFMBA	3.9 U	7.8	3.9	1.1	ng/l	
151772-58-6	NFDHA	3.9 U	7.8	3.9	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.9 U	7.8	3.9	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.9 U	7.8	3.9	1.7	ng/l	
113507-82-7	PFEESA ^c	2.0 U	7.8	2.0	0.76	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylat ^d	9.8 U	20	9.8	4.4	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	20 U	98	20	8.6	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	20 U	98	20	7.7	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	4% ^e	117%	20-150%
	13C5-PFPeA	29%	111%	20-150%
	13C5-PFHxA	99%	107%	20-150%
	13C4-PFHpA	107%	111%	20-150%
	13C8-PFOA	110%	125%	20-150%
	13C9-PFNA	119%	135%	20-150%
	13C6-PFDA	120%	107%	20-150%
	13C7-PFUnDA	107%	104%	20-150%
	13C2-PFDoDA	95%	98%	20-150%
	13C2-PFTeDA	82%	86%	20-150%
	13C3-PFBS	117%	120%	20-150%
	13C3-PFHxS	130%	118%	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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2305W4	
Lab Sample ID:	FC6445-4	Date Sampled: 05/26/23
Matrix:	AQ - Ground Water	Date Received: 05/27/23
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	108%	88%	20-150%
	13C8-FOSA	86%	77%	20-150%
	d3-MeFOSA	89%	78%	20-150%
	d5-EtFOSA	93%	76%	20-150%
	d3-MeFOSAA	115%	94%	20-150%
	d5-EtFOSAA	122%	88%	20-150%
	d7-MeFOSE	66%	66%	20-150%
	d9-EtFOSE	75%	68%	20-150%
	13C2-4:2FTS	158%	135%	20-180%
	13C2-6:2FTS	111%	133%	20-180%
	13C2-8:2FTS	121%	112%	20-180%
	13C3-HFPO-DA	91%	110%	20-150%

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

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Client Sample ID:	AF-RHMW17D-WQFB01-2305W4		
Lab Sample ID:	FC6445-5	Date Sampled:	05/26/23
Matrix:	AQ - Field Blank Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18717.D	1	06/02/23 01:15	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	Initial Volume	Final Volume
Run #1	520 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	1.9 U	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	3.8	0.96	0.48	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	1.9 U	3.8	1.9	0.58	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	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	
PERFLUOROOCCTANE 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-RHMW17D-WQFB01-2305W4	
Lab Sample ID:	FC6445-5	Date Sampled: 05/26/23
Matrix:	AQ - Field Blank Water	Date Received: 05/27/23
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
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	

PERFLUOROOCCTANE 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	3.8 U	7.7	3.8	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	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	1.9 U	7.7	1.9	0.75	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	19 U	96	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	96	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	104%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	114%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	117%		20-150%
	13C7-PFUnDA	113%		20-150%
	13C2-PFDoDA	104%		20-150%
	13C2-PFTeDA	92%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	105%		20-150%

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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2305W4		
Lab Sample ID:	FC6445-5	Date Sampled:	05/26/23
Matrix:	AQ - Field Blank Water	Date Received:	05/27/23
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	108%		20-150%
	13C8-FOSA	97%		20-150%
	d3-MeFOSA	101%		20-150%
	d5-EtFOSA	110%		20-150%
	d3-MeFOSAA	109%		20-150%
	d5-EtFOSAA	110%		20-150%
	d7-MeFOSE	104%		20-150%
	d9-EtFOSE	109%		20-150%
	13C2-4:2FTS	110%		20-180%
	13C2-6:2FTS	117%		20-180%
	13C2-8:2FTS	111%		20-180%
	13C3-HFPO-DA	106%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
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 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW17S-WGN01LF-2305W4		
Lab Sample ID:	FC6445-6	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18718.D	1	06/02/23 01:30	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	2.0	3.5	1.8	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.0	3.5	1.8	0.44	ng/l	J
335-67-1	Perfluorooctanoic acid	0.93	3.5	0.88	0.44	ng/l	J
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.73	3.5	1.8	0.44	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.2	3.5	1.8	0.47	ng/l	J
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.1	18	7.0	3.0	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	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-RHMW17S-WGN01LF-2305W4		
Lab Sample ID:	FC6445-6	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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13C4-PFBA	33%		20-150%
13C5-PFPeA	97%		20-150%
13C5-PFHxA	111%		20-150%
13C4-PFHpA	113%		20-150%
13C8-PFOA	113%		20-150%
13C9-PFNA	115%		20-150%
13C6-PFDA	107%		20-150%
13C7-PFUnDA	104%		20-150%
13C2-PFDoDA	92%		20-150%
13C2-PFTeDA	76%		20-150%
13C3-PFBS	102%		20-150%
13C3-PFHxS	97%		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

4.6
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2305W4		
Lab Sample ID:	FC6445-6	Date Sampled:	05/26/23
Matrix:	AQ - Ground Water	Date Received:	05/27/23
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	110%		20-150%
	13C8-FOSA	105%		20-150%
	d3-MeFOSA	95%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	108%		20-150%
	d7-MeFOSE	95%		20-150%
	d9-EtFOSE	100%		20-150%
	13C2-4:2FTS	115%		20-180%
	13C2-6:2FTS	102%		20-180%
	13C2-8:2FTS	92%		20-180%
	13C3-HFPO-DA	97%		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

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Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW17S-WQEB01-2305W4		
Lab Sample ID:	FC6445-7	Date Sampled:	05/26/23
Matrix:	AQ - Equipment Blank	Date Received:	05/27/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q18719.D	1	06/02/23 01:44	MV	05/31/23 13:00	OP97143	S6Q280
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	14	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.1	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	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-RHMW17S-WQEB01-2305W4	
Lab Sample ID:	FC6445-7	Date Sampled: 05/26/23
Matrix:	AQ - Equipment Blank	Date Received: 05/27/23
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
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	111%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	108%		20-150%
	13C4-PFHpA	112%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	113%		20-150%
	13C6-PFDA	115%		20-150%
	13C7-PFUnDA	108%		20-150%
	13C2-PFDoDA	104%		20-150%
	13C2-PFTeDA	100%		20-150%
	13C3-PFBS	106%		20-150%
	13C3-PFHxS	106%		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

4.7
4

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2305W4		Date Sampled:	05/26/23
Lab Sample ID:	FC6445-7		Date Received:	05/27/23
Matrix:	AQ - Equipment Blank		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	106%		20-150%
	13C8-FOSA	103%		20-150%
	d3-MeFOSA	95%		20-150%
	d5-EtFOSA	105%		20-150%
	d3-MeFOSAA	105%		20-150%
	d5-EtFOSAA	102%		20-150%
	d7-MeFOSE	104%		20-150%
	d9-EtFOSE	107%		20-150%
	13C2-4:2FTS	111%		20-180%
	13C2-6:2FTS	119%		20-180%
	13C2-8:2FTS	105%		20-180%
	13C3-HFPO-DA	110%		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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody

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

FC6445
SGS - ORLANDO JOB # :

COC #: 2305W4AFSG01
PAGE 1 OF 1

Client / Reporting Information			Project Information			Analytical Information										Matrix Codes									
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="text-align: center;"> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge CL - 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 Project Manager: Watson Lanii		Email: katie.abbott@aecom.com Email: watson.lanii@aecom.com	Project # 60697810																						
Phone #: 303-796-4624 / 808-954-4512			Fax #																						
Sampler(s) Name(s) (Printed) Sampler 1: <i>Christina</i> Sampler 2: <i>Matt</i>			Client Purchase Order #			<div style="text-align: center;"> </div>										LAB USE ONLY									
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX												TOTAL # OF BOTTLES	OTHER	NONE	HCl	HNO3	H2SO4	NaOH/NaAC	DI WATER	MICH
	AF-RHMW02-WGN01LF-2305W4	5-26-23	1005	<i>Christina</i>	GW												3	X							
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks																			
10 Day (Business)	Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY)																						
7 Day			<input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC)																						
5 Day			<input type="checkbox"/> REDT1 (EPA LEVEL 3)																						
3 Day RUSH			<input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4)																						
2 Day RUSH			<input checked="" type="checkbox"/> EDD'S																						
1 Day RUSH																									
Other																									
Rush T/A Data Available VIA Email or Lablink			EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW UNITED AWR 016-94607613																						
Sample Custody must be documented below each time samples change possession, including courier delivery.																									
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation													
<i>Christina AECOM</i>		5-26-23 13:30		<i>AME D. PELCOM</i>		5/26/23 1400		<i>AME ACPOLI AECOM</i>		5/26/23 1400		<i>[Signature]</i>		15:00											
Relinquished by/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation													
5				6				7				8													
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <i>2, 8, 10</i>																									
http://www.sgs.com/en/terms-and-conditions																									

PFAS_COCS_ALL.xls Rev 031318



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SGS North America Inc - Orlando
Chain of Custody

FC6995

COC #: 2305W4AFSG10

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

SGS - ORLANDO JOB # :

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Client / Reporting Information					Project Information								Analytical Information											Matrix Codes												
Company Name: AECOM					Project Name: N6274223F0104 RH Fire Suppression System																			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 Project Manager: Watson Tanji Phone #: 303-796-4624 / 808-954-4512			Email: katie.abbott@aecom.com Email: watson.tanji@aecom.com		Project # 60697810						Fax #																									
Sampler(s) Name(s) (Printed) Sampler 1: Anthony L					Client Purchase Order #								LAB USE ONLY																							
SGS Orlando Sample #	Field ID / Point of Collection					DATE			TIME		SAMPLED BY:		CONTAINER INFORMATION									PFAS EPA Draft 1633														
	AF-RHMW17-WGND1LF-2305W4					5/26/23			1100		AL		TOTAL # OF BOTTLES: 3		MATRIX: GW								OTHER: X													
Turnaround Time (Business days)					Data Deliverable Information					Comments / Remarks																										
10 Day (Business) 7 Day 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other					Approved By: / Date:					<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S					EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW UNITED AIR 016-94667613																					
Rush T/A Data Available VIA Email or Lablink					Sample Custody must be documented below each time samples change possession, including courier delivery.																															
Relinquished by Sampler/Affiliation 1 Anthony Lopez AECOM					Date Time: 5/26/23					Received By/Affiliation 2 Alex Edwards AECOM					Date Time: 5/26/23					Received By/Affiliation 3 Alex Edwards AECOM							Date Time: 5/26/23					Received By/Affiliation 4 [Signature] 5/26/23				
Relinquished by/Affiliation 5					Date Time:					Received By/Affiliation 6					Date Time:					Received By/Affiliation 7							Date Time:					Received By/Affiliation 8				
Lab Use Only: Cooler Temperature (s) Celsius (corrected):					http://www.sgs.com/en/terms-and-conditions																															

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FC6445: Chain of Custody

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Chain of Custody

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

Form containing Client/Reporting Information, Project Information, Analytical Information, Matrix Codes, and Chain of Custody tracking table with handwritten entries.



Chain of Custody

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

Client / Reporting Information			Project Information			Analytical Information										Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System													DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - 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 # 60697810													
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #													
Sampler(s) Name(s) (Printed) Sampler 1: Anthony L Sampler 2:			Client Purchase Order #			PFAS EPA Draft 1633										LAB USE ONLY
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	ROSE	PCB	NO3	NO2	PHOS	AMMONIUM	DI WATER	WICH	
4	AF-RHMMW17D-WGN01LF-2305W4	5/26/23	1220	AL	GW	3		X								X
5	AF-RHMMW17D-WQFB01-2305W4	5/26/23	1140	AL	GW	3		X								X
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks										
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other			<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S			EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW UNTESTED ALWB 016-94667613										
Rush T/A Data Available VIA Email or Lablink																
Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Date Time:		
1 Anthony Laycock AECOM		5/26/23		2 Alex Edmonds AECOM		5/26/23		3 Alex Edmonds AECOM		5/26/23		4 [Signature] AECOM		5/27/23		
5				6				7				8		158		
Lab Use Only : Cooler Temperature (s) Celsius (corrected):																
http://www.sgs.com/en/terms-and-conditions																

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SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-4900 FAX: 407-425-0707
www.sgs.com

FC6445

COC #: 2305W4AFSG12

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System				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 # 60697810															
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #															
Sampler(s) Name(s) (Printed) Sampler 1: Anthony L. Sampler 2:		Client Purchase Order #		PFAS EPA Draft 1633													
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NOISE	PCB	PAHs	PHOS	PERCH	INCH-ZINC	IN WATER	RECH	LAB USE ONLY	
6	AF-RHMM17S-WGN01LF-2305W4	5/26/23	1538	AL	GW	3		X								X	
7	AF-RHMM17S-WQEB01-2305W4	5/26/23	1605	AL	GW	3		X								X	
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks											
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW UNITED AIR 016-94667613									
Rush T/A Data Available VIA Email or Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by/Sampler/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:
1 Anthony Laycock AECOM	5/26/23	2 Alex Edwards AFEOM	5/26/23	3 Alex Edwards	5/26/23	4 [Signature]	5/26/23	5 [Signature]	5/26/23	6 [Signature]	5/26/23	7 [Signature]	5/26/23	8 [Signature]	5/26/23	9 [Signature]	5/26/23
Lab Use Only: Cooler Temperature (s) Celsius (corrected):		http://www.sgs.com/en/terms-and-conditions															

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FC6445: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC6445

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 5/27/2023 3:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-94667613

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.7);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Temp criteria achieved | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Cooler temp verification | IR Gun | |
| 5. Cooler media | Ice (Bag) | |

Sample Information

Y or N N/A

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

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

W or S N/A

- | | | | |
|------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Type Of TB Received | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|------------------------|--------------------------|--------------------------|-------------------------------------|

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: NATHANS

Date: 5/27/2023 3:00:00 PM

Reviewer: CD

Date: 5/31/2023

FC6445: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC6445
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/26/23

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

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

* Sample used for QC is not from job FC6445

5.2
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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-IBLK	6Q18677.D	1	06/01/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-IBLK	6Q18677.D	1	06/01/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
914637-49-35:3	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	104% 20-150%
	13C4-PFHpA	105% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	104% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	97% 20-150%
	13C2-PFDoDA	95% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	93% 20-150%
	13C3-PFHxS	96% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	100% 20-150%
	d5-EtFOSA	104% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	107% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	105% 20-150%
	13C2-4:2FTS	106% 20-180%
	13C2-6:2FTS	104% 20-180%
	13C2-8:2FTS	105% 20-180%
	13C3-HFPO-DA	102% 20-150%

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-IBLK	6Q18782.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-IBLK	6Q18782.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
914637-49-35:3	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	104% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	94% 20-150%
	13C6-PFDA	110% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	109% 20-150%
	13C2-PFTeDA	105% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	99% 20-150%
	d5-EtFOSA	102% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	107% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	104% 20-150%
	13C2-4:2FTS	120% 20-180%
	13C2-6:2FTS	115% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	103% 20-150%

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-IBLK	6Q19248.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-IBLK	6Q19248.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
914637-49-35:3	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	97% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	100% 20-150%
	13C6-PFDA	100% 20-150%
	13C7-PFUnDA	89% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	91% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	103% 20-150%
	d5-EtFOSA	107% 20-150%
	d3-MeFOSAA	99% 20-150%
	d5-EtFOSAA	109% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	95% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	122% 20-180%
	13C2-8:2FTS	118% 20-180%
	13C3-HFPO-DA	93% 20-150%

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18712.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18712.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
914637-49-35:3	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	99% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	105% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	94% 20-150%
	13C6-PFDA	103% 20-150%
	13C7-PFUnDA	101% 20-150%
	13C2-PFDoDA	107% 20-150%
	13C2-PFTeDA	108% 20-150%
	13C3-PFBS	98% 20-150%
	13C3-PFHxS	96% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	96% 20-150%
	d3-MeFOSA	96% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	102% 20-150%
	d5-EtFOSAA	104% 20-150%
	d7-MeFOSE	98% 20-150%
	d9-EtFOSE	98% 20-150%
	13C2-4:2FTS	106% 20-180%
	13C2-6:2FTS	101% 20-180%
	13C2-8:2FTS	106% 20-180%
	13C3-HFPO-DA	104% 20-150%

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-ICCB	6Q19262.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-ICCB	6Q19262.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
914637-49-35:3	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	98%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	96%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	101%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	96%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	108%	20-150%
	13C8-PFOS	104%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSA	96%	20-150%
	d5-EtFOSA	99%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	101%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	86%	20-150%
	13C2-4:2FTS	128%	20-180%
	13C2-6:2FTS	124%	20-180%
	13C2-8:2FTS	112%	20-180%
	13C3-HFPO-DA	96%	20-150%

6.1.5

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Method Blank Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-MB	6Q18703.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-MB	6Q18703.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

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	
914637-49-35:3	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	117% 20-150%
	13C5-PFPeA	121% 20-150%
	13C5-PFHxA	120% 20-150%
	13C4-PFHpA	126% 20-150%
	13C8-PFOA	123% 20-150%
	13C9-PFNA	110% 20-150%
	13C6-PFDA	116% 20-150%
	13C7-PFUnDA	121% 20-150%
	13C2-PFDoDA	118% 20-150%
	13C2-PFTeDA	117% 20-150%
	13C3-PFBS	116% 20-150%
	13C3-PFHxS	113% 20-150%
	13C8-PFOS	115% 20-150%
	13C8-FOSA	86% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	105% 20-150%
	d3-MeFOSAA	125% 20-150%
	d5-EtFOSAA	118% 20-150%
	d7-MeFOSE	83% 20-150%
	d9-EtFOSE	100% 20-150%
	13C2-4:2FTS	122% 20-180%
	13C2-6:2FTS	125% 20-180%
	13C2-8:2FTS	127% 20-180%
	13C3-HFPO-DA	123% 20-150%

Method Blank Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-MB	6Q19265.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-MB	6Q19265.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

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	
914637-49-35:3	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	105% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	98% 20-150%
	13C8-PFOA	103% 20-150%
	13C9-PFNA	116% 20-150%
	13C6-PFDA	107% 20-150%
	13C7-PFUnDA	101% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	86% 20-150%
	13C3-PFBS	97% 20-150%
	13C3-PFHxS	97% 20-150%
	13C8-PFOS	101% 20-150%
	13C8-FOSA	76% 20-150%
	d3-MeFOSA	72% 20-150%
	d5-EtFOSA	81% 20-150%
	d3-MeFOSAA	104% 20-150%
	d5-EtFOSAA	92% 20-150%
	d7-MeFOSE	58% 20-150%
	d9-EtFOSE	68% 20-150%
	13C2-4:2FTS	119% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	99% 20-180%
	13C3-HFPO-DA	95% 20-150%

6.1.7

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Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18700.D	1	06/01/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97143-BS, OP97143-LLBS, OP97143-MB, OP97143-MS, OP97143-MSD

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18700.D	1	06/01/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97143-BS, OP97143-LLBS, OP97143-MB, OP97143-MS, OP97143-MSD

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	
914637-49-35:3	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	99% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	92% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	102% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	97% 20-150%
	13C8-PFOS	103% 20-150%
	13C8-FOSA	103% 20-150%
	d3-MeFOSA	98% 20-150%
	d5-EtFOSA	102% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	110% 20-150%
	d7-MeFOSE	109% 20-150%
	d9-EtFOSE	105% 20-150%
	13C2-4:2FTS	113% 20-180%
	13C2-6:2FTS	116% 20-180%
	13C2-8:2FTS	108% 20-180%
	13C3-HFPO-DA	104% 20-150%

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18778.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q280-IBLK

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q280-ICCB	6Q18778.D	1	06/02/23	MV	n/a	n/a	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q280-IBLK

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	
914637-49-35:3	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	105% 20-150%
	13C5-PFHxA	104% 20-150%
	13C4-PFHpA	109% 20-150%
	13C8-PFOA	104% 20-150%
	13C9-PFNA	94% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	103% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	98% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	101% 20-150%
	d3-MeFOSAA	108% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	102% 20-150%
	d9-EtFOSE	97% 20-150%
	13C2-4:2FTS	113% 20-180%
	13C2-6:2FTS	117% 20-180%
	13C2-8:2FTS	111% 20-180%
	13C3-HFPO-DA	108% 20-150%

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-ICCB	6Q19273.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97275-DUP

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q287-ICCB	6Q19273.D	1	06/12/23	MV	n/a	n/a	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97275-DUP

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	
914637-49-35:3	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	96%	20-150%
	13C5-PFHxA	92%	20-150%
	13C4-PFHpA	100%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	101%	20-150%
	13C2-PFDoDA	98%	20-150%
	13C2-PFTeDA	88%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	97%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSA	91%	20-150%
	d5-EtFOSA	97%	20-150%
	d3-MeFOSAA	102%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	86%	20-150%
	d9-EtFOSE	82%	20-150%
	13C2-4:2FTS	113%	20-180%
	13C2-6:2FTS	123%	20-180%
	13C2-8:2FTS	108%	20-180%
	13C3-HFPO-DA	90%	20-150%

6.1.10

6

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-LLBS	6Q18702.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0329	110	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0168	112	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0086	115	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0078	104	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0081	108	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0085	113	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0081	108	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0080	107	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0079	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0075	100	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0081	108	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0071	107	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0079	112	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0077	112	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0072	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0073	105	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0075	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0072	99	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0071	98	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0308	110	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0314	110	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0324	113	40-150
754-91-6	PFOSA	0.0075	0.0085	113	40-150
31506-32-8	MeFOSA	0.015	0.0172	115	40-150
4151-50-2	EtFOSA	0.015	0.0146	97	40-150
2355-31-9	MeFOSAA	0.0075	0.0085	113	40-150
2991-50-6	EtFOSAA	0.0075	0.0082	109	40-150
24448-09-7	MeFOSE	0.0375	0.0393	105	40-150
1691-99-2	EtFOSE	0.0375	0.0389	104	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0169	113	40-150
919005-14-4	ADONA	0.0142	0.0160	113	40-150
377-73-1	PFMPA	0.015	0.0172	115	40-150
863090-89-5	PFMBA	0.015	0.0172	115	40-150
151772-58-6	NFDHA	0.015	0.0175	117	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0151	108	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0149	105	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-LLBS	6Q18702.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0147	110	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0387	103	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.197	105	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.201	107	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	107%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	111%	20-150%
	13C8-PFOA	106%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	118%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	113%	20-150%
	13C2-PFTeDA	109%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	104%	20-150%
	13C8-PFOS	114%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	94%	20-150%
	d5-EtFOSA	105%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	121%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	100%	20-150%
	13C2-4:2FTS	115%	20-180%
	13C2-6:2FTS	118%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-LLBS	6Q19264.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0264	88	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0129	86	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0068	91	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0060	80	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0083	111	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0061	81	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0059	79	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0071	95	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0063	84	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0063	84	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0062	83	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0053	80	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0062	88	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0056	82	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0060	84	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0060	86	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0059	82	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0057	79	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0056	77	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0242	86	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0263	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0235	82	40-150
754-91-6	PFOSA	0.0075	0.0063	84	40-150
31506-32-8	MeFOSA	0.015	0.0134	89	40-150
4151-50-2	EtFOSA	0.015	0.0131	87	40-150
2355-31-9	MeFOSAA	0.0075	0.0067	89	40-150
2991-50-6	EtFOSAA	0.0075	0.0065	87	40-150
24448-09-7	MeFOSE	0.0375	0.0329	88	40-150
1691-99-2	EtFOSE	0.0375	0.0315	84	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0120	80	40-150
919005-14-4	ADONA	0.0142	0.0119	84	40-150
377-73-1	PFMPA	0.015	0.0127	85	40-150
863090-89-5	PFMBA	0.015	0.0126	84	40-150
151772-58-6	NFDHA	0.015	0.0134	89	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0111	79	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0115	81	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-LLBS	6Q19264.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0131	98	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0246	66	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.171	91	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.170	91	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	115%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	114%	20-150%
	13C8-PFOA	122%	20-150%
	13C9-PFNA	116%	20-150%
	13C6-PFDA	130%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	115%	20-150%
	13C2-PFTeDA	106%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	120%	20-150%
	13C8-FOSA	92%	20-150%
	d3-MeFOSA	81%	20-150%
	d5-EtFOSA	87%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	117%	20-150%
	d7-MeFOSE	68%	20-150%
	d9-EtFOSE	78%	20-150%
	13C2-4:2FTS	131%	20-180%
	13C2-6:2FTS	125%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-BS	6Q18701.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.105	105	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0535	107	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0265	106	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0254	102	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0254	102	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0257	103	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0266	106	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0230	92	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0267	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0266	106	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0268	107	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0222	100	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0242	103	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0233	102	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0257	108	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0243	105	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0250	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0246	102	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0244	101	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.100	107	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.105	111	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.101	105	40-150
754-91-6	PFOSA	0.025	0.0253	101	40-150
31506-32-8	MeFOSA	0.05	0.0489	98	40-150
4151-50-2	EtFOSA	0.05	0.0479	96	40-150
2355-31-9	MeFOSAA	0.025	0.0255	102	40-150
2991-50-6	EtFOSAA	0.025	0.0247	99	40-150
24448-09-7	MeFOSE	0.125	0.126	101	40-150
1691-99-2	EtFOSE	0.125	0.123	98	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0514	103	40-150
919005-14-4	ADONA	0.0473	0.0527	112	40-150
377-73-1	PFMPA	0.05	0.0256	51	40-150
863090-89-5	PFMBA	0.05	0.0596	119	40-150
151772-58-6	NFDHA	0.05	0.0511	102	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0500	107	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0492	104	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-BS	6Q18701.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0479	108	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0669	54	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.614	98	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.659	105	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	24%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	114%	20-150%
	13C9-PFNA	115%	20-150%
	13C6-PFDA	112%	20-150%
	13C7-PFUnDA	120%	20-150%
	13C2-PFDoDA	107%	20-150%
	13C2-PFTeDA	104%	20-150%
	13C3-PFBS	114%	20-150%
	13C3-PFHxS	112%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	96%	20-150%
	d3-MeFOSA	98%	20-150%
	d5-EtFOSA	99%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	117%	20-150%
	d7-MeFOSE	85%	20-150%
	d9-EtFOSE	96%	20-150%
	13C2-4:2FTS	118%	20-180%
	13C2-6:2FTS	116%	20-180%
	13C2-8:2FTS	118%	20-180%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-BS	6Q19263.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0892	89	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0448	90	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0239	96	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0212	85	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0256	102	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0214	86	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0188	75	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0216	86	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0243	97	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0222	89	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0226	90	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0204	92	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0209	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0192	84	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0205	86	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0209	90	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0211	88	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0226	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0193	80	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0859	92	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0985	104	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0865	90	40-150
754-91-6	PFOSA	0.025	0.0216	86	40-150
31506-32-8	MeFOSA	0.05	0.0459	92	40-150
4151-50-2	EtFOSA	0.05	0.0462	92	40-150
2355-31-9	MeFOSAA	0.025	0.0241	96	40-150
2991-50-6	EtFOSAA	0.025	0.0218	87	40-150
24448-09-7	MeFOSE	0.125	0.108	86	40-150
1691-99-2	EtFOSE	0.125	0.103	82	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0418	84	40-150
919005-14-4	ADONA	0.0473	0.0411	87	40-150
377-73-1	PFMPA	0.05	0.0243	49	40-150
863090-89-5	PFMBA	0.05	0.0463	93	40-150
151772-58-6	NFDHA	0.05	0.0437	87	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0400	86	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0387	82	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-BS	6Q19263.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0450	101	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0476	38*	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.595	95	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.562	90	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	30%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	97%	20-150%
	13C9-PFNA	106%	20-150%
	13C6-PFDA	127%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	106%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	116%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	86%	20-150%
	d3-MeFOSA	82%	20-150%
	d5-EtFOSA	81%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	105%	20-150%
	d7-MeFOSE	64%	20-150%
	d9-EtFOSE	73%	20-150%
	13C2-4:2FTS	135%	20-180%
	13C2-6:2FTS	119%	20-180%
	13C2-8:2FTS	120%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-MS	6Q19269.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287
FC6649-1	6Q19268.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	FC6649-1 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0909	0.0740	81	40-150
2706-90-3	Perfluoropentanoic acid	0.0074 U		0.0455	0.0392	86	40-150
307-24-4	Perfluorohexanoic acid	0.0037 U		0.0227	0.0190	84	40-150
375-85-9	Perfluoroheptanoic acid	0.0037 U		0.0227	0.0195	86	40-150
335-67-1	Perfluorooctanoic acid	0.0037 U		0.0227	0.0212	93	40-150
375-95-1	Perfluorononanoic acid	0.0037 U		0.0227	0.0188	83	40-150
335-76-2	Perfluorodecanoic acid	0.0037 U		0.0227	0.0184	81	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037 U		0.0227	0.0215	95	40-150
307-55-1	Perfluorododecanoic acid	0.0037 U		0.0227	0.0198	87	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037 U		0.0227	0.0181	80	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037 U		0.0227	0.0200	88	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037 U		0.0202	0.0173	86	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		0.0214	0.0196	92	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037 U		0.0208	0.0188	91	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U		0.0217	0.0191	88	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U		0.0211	0.0191	91	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037 U		0.0219	0.0193	88	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037 U		0.0219	0.0167	76	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		0.022	0.0104	47	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U		0.0852	0.0702	82	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0038 J		0.0864	0.0856	95	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		0.0873	0.0697	80	40-150
754-91-6	PFOSA	0.0037 U		0.0227	0.0202	89	40-150
31506-32-8	MeFOSA	0.0074 U		0.0455	0.0391	86	40-150
4151-50-2	EtFOSA	0.0074 U		0.0455	0.0395	87	40-150
2355-31-9	MeFOSAA	0.0046 U		0.0227	0.0223	98	40-150
2991-50-6	EtFOSAA	0.0046 U		0.0227	0.0197	87	40-150
24448-09-7	MeFOSE	0.037 U		0.114	0.103	91	40-150
1691-99-2	EtFOSE	0.037 U		0.114	0.101	89	40-150
13252-13-6	HFPO-DA (GenX)	0.0037 U		0.0455	0.0367	81	40-150
919005-14-4	ADONA	0.0074 U		0.043	0.0446	104	40-150
377-73-1	PFMPA	0.0074 U		0.0455	0.0106	23*	40-150
863090-89-5	PFMBA	0.0074 U		0.0455	0.0645	142	40-150
151772-58-6	NFDHA	0.0074 U		0.0455	0.0342	75	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U		0.0425	0.0448	105	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U		0.043	0.0363	85	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-MS	6Q19269.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287
FC6649-1	6Q19268.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	FC6649-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0074 U	0.0405	0.0396	98	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.114	0.0230	20*	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.093 U	0.568	0.513	90	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.093 U	0.568	0.655	115	40-150

CAS No.	ID Standard Recoveries	MS	FC6649-1	Limits
	13C4-PFBA	4%* a	4%* a	20-150%
	13C5-PFPeA	26%	25%	20-150%
	13C5-PFHxA	98%	95%	20-150%
	13C4-PFHpA	107%	105%	20-150%
	13C8-PFOA	117%	115%	20-150%
	13C9-PFNA	105%	113%	20-150%
	13C6-PFDA	109%	107%	20-150%
	13C7-PFUnDA	97%	99%	20-150%
	13C2-PFDoDA	96%	102%	20-150%
	13C2-PFTeDA	70%	74%	20-150%
	13C3-PFBS	109%	105%	20-150%
	13C3-PFHxS	110%	109%	20-150%
	13C8-PFOS	100%	102%	20-150%
	13C8-FOSA	84%	91%	20-150%
	d3-MeFOSA	85%	87%	20-150%
	d5-EtFOSA	87%	98%	20-150%
	d3-MeFOSAA	114%	125%	20-150%
	d5-EtFOSAA	116%	126%	20-150%
	d7-MeFOSE	63%	69%	20-150%
	d9-EtFOSE	68%	73%	20-150%
	13C2-4:2FTS	149%	141%	20-180%
	13C2-6:2FTS	102%	97%	20-180%
	13C2-8:2FTS	114%	113%	20-180%
	13C3-HFPO-DA	90%	83%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-MS	6Q18706.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280
OP97143-MSD	6Q18707.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280
FC6205-1	6Q18705.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	FC6205-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0077	J	0.0943	0.114	113	0.0943	0.109	107	4	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0265		0.0472	0.0804	114	0.0472	0.0769	107	4	40-150/30
307-24-4	Perfluorohexanoic acid	0.0180		0.0236	0.0449	114	0.0236	0.0424	103	6	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0132		0.0236	0.0379	105	0.0236	0.0378	104	0	40-150/30
335-67-1	Perfluorooctanoic acid	0.0133		0.0236	0.0396	112	0.0236	0.0414	119	4	40-150/30
375-95-1	Perfluorononanoic acid	0.0034	J	0.0236	0.0298	112	0.0236	0.0302	114	1	40-150/30
335-76-2	Perfluorodecanoic acid	0.0039	U	0.0236	0.0292	124	0.0236	0.0254	108	14	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0039	U	0.0236	0.0279	118	0.0236	0.0264	112	6	40-150/30
307-55-1	Perfluorododecanoic acid	0.0039	U	0.0236	0.0263	112	0.0236	0.0237	100	10	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0039	U	0.0236	0.0260	110	0.0236	0.0225	95	14	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0039	U	0.0236	0.0300	127	0.0236	0.0267	113	12	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0019	J	0.0209	0.0241	106	0.0209	0.0230	101	5	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0034	J	0.0222	0.0278	110	0.0222	0.0262	103	6	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0350		0.0216	0.0575	104	0.0216	0.0574	104	0	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0012	J	0.0225	0.0286	122	0.0225	0.0249	105	14	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0551		0.0219	0.0866	144	0.0219	0.0813	120	6	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0039	U	0.0227	0.0255	112	0.0227	0.0221	97	14	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0039	U	0.0228	0.0253	111	0.0228	0.0221	97	14	40-150/30
79780-39-5	Perfluorododecanesulfonic aci	0.0049	U	0.0229	0.0250	109	0.0229	0.0228	100	9	40-150/30
757124-72-44:2	Fluorotelomer sulfonate	0.020	U	0.0884	0.103	116	0.0884	0.0948	107	8	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.020	U	0.0896	0.105	117	0.0896	0.100	112	5	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.020	U	0.0906	0.100	110	0.0906	0.0973	107	3	40-150/30
754-91-6	PFOSA	0.0033	J	0.0236	0.0339	130	0.0236	0.0295	111	14	40-150/30
31506-32-8	MeFOSA	0.0078	U	0.0472	0.0497	105	0.0472	0.0486	103	2	40-150/30
4151-50-2	EtFOSA	0.0078	U	0.0472	0.0456	97	0.0472	0.0448	95	2	40-150/30
2355-31-9	MeFOSAA	0.0049	U	0.0236	0.0276	117	0.0236	0.0268	114	3	40-150/30
2991-50-6	EtFOSAA	0.0049	U	0.0236	0.0259	110	0.0236	0.0285	121	10	40-150/30
24448-09-7	MeFOSE	0.039	U	0.118	0.128	109	0.118	0.118	100	8	40-150/30
1691-99-2	EtFOSE	0.039	U	0.118	0.122	103	0.118	0.119	101	2	40-150/30
13252-13-6	HFPO-DA (GenX)	0.0039	U	0.0472	0.0549	116	0.0472	0.0479	102	14	40-150/30
919005-14-4	ADONA	0.0078	U	0.0446	0.0511	115	0.0446	0.0471	106	8	40-150/30
377-73-1	PFMPA	0.0078	U	0.0472	0.0557	118	0.0472	0.0524	111	6	40-150/30
863090-89-5	PFMBA	0.0078	U	0.0472	0.0558	118	0.0472	0.0528	112	6	40-150/30
151772-58-6	NFDHA	0.0078	U	0.0472	0.0554	117	0.0472	0.0514	109	7	40-150/30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0078	U	0.0441	0.0482	109	0.0441	0.0427	97	12	40-150/30
763051-92-911	Cl-PF3OUdS (F-53B Minor)	0.0078	U	0.0446	0.0471	106	0.0446	0.0438	98	7	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97143-MS	6Q18706.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280
OP97143-MSD	6Q18707.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280
FC6205-1	6Q18705.D	1	06/01/23	MV	05/31/23	OP97143	S6Q280

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-1, FC6445-2, FC6445-3, FC6445-5, FC6445-6, FC6445-7

CAS No.	Compound	FC6205-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
113507-82-7	PFEESA	0.0078 U	0.042	0.0493	117	0.042	0.0464	111	6	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.020 U	0.118	0.114	97	0.118	0.105	89	8	40-150/30
914637-49-35:3	Fluorotelomer carboxylate	0.098 U	0.59	0.598	101	0.59	0.589	100	2	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.098 U	0.59	0.614	104	0.59	0.613	104	0	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC6205-1	Limits
	13C4-PFBA	103%	105%	106%	20-150%
	13C5-PFPeA	100%	105%	107%	20-150%
	13C5-PFHxA	100%	104%	111%	20-150%
	13C4-PFHpA	106%	106%	111%	20-150%
	13C8-PFOA	105%	103%	107%	20-150%
	13C9-PFNA	96%	99%	100%	20-150%
	13C6-PFDA	96%	98%	95%	20-150%
	13C7-PFU _n DA	96%	97%	101%	20-150%
	13C2-PFD _o DA	99%	101%	98%	20-150%
	13C2-PFTeDA	89%	89%	96%	20-150%
	13C3-PFBS	103%	106%	103%	20-150%
	13C3-PFHxS	98%	100%	105%	20-150%
	13C8-PFOS	90%	93%	108%	20-150%
	13C8-FOSA	66%	70%	66%	20-150%
	d3-MeFOSA	71%	72%	73%	20-150%
	d5-EtFOSA	74%	80%	81%	20-150%
	d3-MeFOSAA	100%	93%	108%	20-150%
	d5-EtFOSAA	100%	91%	106%	20-150%
	d7-MeFOSE	66%	72%	67%	20-150%
	d9-EtFOSE	76%	82%	79%	20-150%
	13C2-4:2FTS	101%	112%	115%	20-180%
	13C2-6:2FTS	106%	107%	112%	20-180%
	13C2-8:2FTS	104%	108%	107%	20-180%
	13C3-HFPO-DA	101%	108%	105%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-DUP	6Q19275.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287
FC6649-4	6Q19274.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	FC6649-4 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	ND			nc	30
2706-90-3	Perfluoropentanoic acid	0.0075 U	ND			nc	30
307-24-4	Perfluorohexanoic acid	0.0038 U	ND			nc	30
375-85-9	Perfluoroheptanoic acid	0.0038 U	ND			nc	30
335-67-1	Perfluorooctanoic acid	0.0038 U	ND			nc	30
375-95-1	Perfluorononanoic acid	0.0038 U	ND			nc	30
335-76-2	Perfluorodecanoic acid	0.0038 U	ND			nc	30
2058-94-8	Perfluoroundecanoic acid	0.0038 U	ND			nc	30
307-55-1	Perfluorododecanoic acid	0.0038 U	ND			nc	30
72629-94-8	Perfluorotridecanoic acid	0.0038 U	ND			nc	30
376-06-7	Perfluorotetradecanoic acid	0.0038 U	ND			nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	ND			nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0047 U	ND			nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	ND			nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	ND			nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0038 U	ND			nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	ND			nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	ND			nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0047 U	ND			nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	ND			nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0085 U	J	0.0055 U	J	43*	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	ND			nc	30
754-91-6	PFOSA	0.0038 U	ND			nc	30
31506-32-8	MeFOSA	0.0075 U	ND			nc	30
4151-50-2	EtFOSA	0.0075 U	ND			nc	30
2355-31-9	MeFOSAA	0.0047 U	ND			nc	30
2991-50-6	EtFOSAA	0.0047 U	ND			nc	30
24448-09-7	MeFOSE	0.038 U	ND			nc	30
1691-99-2	EtFOSE	0.038 U	ND			nc	30
13252-13-6	HFPO-DA (GenX)	0.0038 U	ND			nc	30
919005-14-4	ADONA	0.0075 U	ND			nc	30
377-73-1	PFMPA	0.0075 U	ND			nc	30
863090-89-5	PFMBA	0.0075 U	ND			nc	30
151772-58-6	NFDHA	0.0075 U	ND			nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0075 U	ND			nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0075 U	ND			nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97275-DUP	6Q19275.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287
FC6649-4	6Q19274.D	1	06/12/23	MV	06/09/23	OP97275	S6Q287

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6445-4

CAS No.	Compound	FC6649-4 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0075 U	ND			nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	ND			nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.094 U	ND			nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.094 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC6649-4	Limits
	13C4-PFBA	114%	107%	20-150%
	13C5-PFPeA	116%	113%	20-150%
	13C5-PFHxA	113%	117%	20-150%
	13C4-PFHpA	115%	110%	20-150%
	13C8-PFOA	110%	116%	20-150%
	13C9-PFNA	127%	107%	20-150%
	13C6-PFDA	123%	101%	20-150%
	13C7-PFUnDA	94%	95%	20-150%
	13C2-PFDoDA	94%	88%	20-150%
	13C2-PFTeDA	89%	84%	20-150%
	13C3-PFBS	119%	118%	20-150%
	13C3-PFHxS	109%	114%	20-150%
	13C8-PFOS	106%	105%	20-150%
	13C8-FOSA	94%	92%	20-150%
	d3-MeFOSA	86%	79%	20-150%
	d5-EtFOSA	97%	80%	20-150%
	d3-MeFOSAA	107%	102%	20-150%
	d5-EtFOSAA	110%	97%	20-150%
	d7-MeFOSE	71%	67%	20-150%
	d9-EtFOSE	84%	69%	20-150%
	13C2-4:2FTS	134%	135%	20-180%
	13C2-6:2FTS	130%	127%	20-180%
	13C2-8:2FTS	114%	109%	20-180%
	13C3-HFPO-DA	105%	102%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q280-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18699.D	Injection Time:	20:55
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	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	69806	2.81	54874	5.41	96024	7.01	49889	7.54	31992	8.01
Upper Limit ^d	152652	3.21	126422	5.81	203018	7.41	105066	7.94	71394	8.41
Lower Limit ^e	22898	2.41	18963	5.01	30453	6.61	15760	7.14	10709	7.61

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
S6Q280-ICCB	65847	2.81	54526	5.41	91415	7.01	49296	7.54	31859	8.01	1
OP97143-BS	56206	2.86	43786	5.42	71681	7.03	36822	7.54	25076	8.01	1
OP97143-LLBS	55221	2.85	44147	5.41	72863	7.03	38539	7.56	23997	8.03	1
OP97143-MB	55482	2.86	42600	5.42	71955	7.01	39306	7.54	24494	8.01	1
ZZZZZZ	57964	2.86	47888	5.41	78286	7.01	41132	7.54	26916	8.03	1
FC6205-1	58390	2.86	45730	5.42	75931	7.03	41976	7.54	26881	8.03	1
OP97143-MS	58425	2.86	47525	5.42	75618	7.03	41060	7.54	26362	8.01	1
OP97143-MSD	58313	2.86	46836	5.42	75282	7.03	39494	7.54	26758	8.03	1
ZZZZZZ	57824	2.86	45445	5.42	73173	7.03	40617	7.54	27557	8.03	1
ZZZZZZ	58492	2.86	46034	5.41	78120	7.03	40633	7.54	26277	8.01	1
ZZZZZZ	55506	2.86	43543	5.41	75209	7.01	38828	7.54	25416	8.03	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: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.6.1
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q280-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18699.D	Injection Time:	20:55
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	10194	7.12	16880	8.16
Upper Limit ^d	21854	7.52	36218	8.56
Lower Limit ^e	3278	6.72	5433	7.76

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q280-ICCB	9585	7.12	15455	8.16	1
OP97143-BS	7858	7.13	13277	8.18	1
OP97143-LLBS	7733	7.13	12317	8.18	1
OP97143-MB	8015	7.13	12889	8.18	1
ZZZZZZ	8530	7.13	13572	8.18	1
FC6205-1	8337	7.13	13137	8.18	1
OP97143-MS	8388	7.13	13925	8.18	1
OP97143-MSD	8335	7.13	14485	8.18	1
ZZZZZZ	7916	7.13	13281	8.18	1
ZZZZZZ	8668	7.13	13227	8.18	1
ZZZZZZ	7545	7.13	12045	8.16	1

IS 6 = 1802-PFHXS
 IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q280-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18711.D	Injection Time:	23:49
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	76326	2.81	63211	5.41	101509	7.03	52533	7.54	35697	8.03
Check Std ^c	71414	2.81	58324	5.41	95726	7.01	48901	7.54	32193	8.01
Upper Limit ^d	152652	3.21	126422	5.81	203018	7.41	105066	7.94	71394	8.41
Lower Limit ^e	22898	2.41	18963	5.01	30453	6.61	15760	7.14	10709	7.61

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
S6Q280-ICCB	67164	2.81	55214	5.41	91566	7.01	50256	7.54	30570	8.01	1
FC6445-1	47427	2.86	45535	5.41	77933	7.03	40835	7.54	25937	8.03	1
FC6445-2	54956	2.86	44269	5.42	72912	7.03	38711	7.54	26169	8.03	1
FC6445-3	54177	2.86	45019	5.42	71400	7.03	40155	7.54	25978	8.01	1
FC6445-5	57595	2.86	47220	5.42	75164	7.01	41217	7.54	25628	8.03	1
FC6445-6	51399	2.86	45435	5.41	74688	7.03	39697	7.54	26788	8.01	1
FC6445-7	55415	2.86	44525	5.42	71550	7.03	37311	7.54	24695	8.01	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: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.6.2
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q280-CC279	Injection Date:	06/01/23
Lab File ID:	6Q18711.D	Injection Time:	23:49
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	10927	7.13	18109	8.16
Check Std ^c	10425	7.12	16946	8.16
Upper Limit ^d	21854	7.52	36218	8.56
Lower Limit ^e	3278	6.72	5433	7.76

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q280-ICCB	10342	7.12	16697	8.16	1
FC6445-1	8041	7.13	13917	8.16	1
FC6445-2	7771	7.13	13112	8.18	1
FC6445-3	7982	7.13	13740	8.18	1
FC6445-5	8340	7.12	13352	8.16	1
FC6445-6	8394	7.13	13238	8.16	1
FC6445-7	8079	7.13	13008	8.16	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.6.2
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q287-CC287	Injection Date:	06/12/23
Lab File ID:	6Q19261.D	Injection Time:	20:42
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	56985	3.09	46125	5.79	78650	7.34	43214	7.88	28356	8.39
Check Std ^c	60775	3.09	48200	5.79	83698	7.35	45724	7.89	31467	8.39
Upper Limit ^d	113970	3.49	92250	6.19	157300	7.75	86428	8.29	56712	8.79
Lower Limit ^e	17096	2.69	13838	5.39	23595	6.95	12964	7.49	8507	7.99

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
S6Q287-ICCB	64089	3.09	50198	5.79	90846	7.35	46265	7.89	31314	8.39	1
S6Q287-ICCB	64089	3.09	50198	5.79	90846	7.35	46265	7.89	31314	8.39	1
OP97275-BS	59615	3.10	46772	5.79	81494	7.35	45973	7.89	26613	8.39	1
OP97275-LLBS	56789	3.10	45791	5.79	72380	7.35	44401	7.89	26372	8.39	1
OP97275-MB	57001	3.10	47645	5.79	76706	7.35	40607	7.89	28010	8.39	1
FC6445-4	58857	3.10	47232	5.79	78154	7.35	43105	7.89	27350	8.39	1
FC6445-4 ^f	58894	3.10	49747	5.79	73271	7.35	40681	7.89	28269	8.39	1
FC6649-1	60621	3.10	49547	5.79	78348	7.35	43631	7.88	29192	8.39	1
OP97275-MS	60540	3.10	46959	5.79	74385	7.35	46890	7.88	29907	8.39	1
ZZZZZZ	59358	3.10	49442	5.80	76564	7.35	43109	7.89	28079	8.39	1
ZZZZZZ	56674	3.10	46298	5.79	72995	7.35	44227	7.89	26049	8.39	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: S6Q287-ICCB 6Q19243.D 06/12/23 16:30. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
- (f) Dilution required (ID recovery standard failure).

6.6.3
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q287-CC287	Injection Date:	06/12/23
Lab File ID:	6Q19261.D	Injection Time:	20:42
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	8622	7.48	14418	8.56
Check Std ^c	8932	7.48	15582	8.56
Upper Limit ^d	17244	7.88	28836	8.96
Lower Limit ^e	2587	7.08	4325	8.16

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q287-ICCB	8900	7.48	15747	8.56	1
S6Q287-ICCB	8900	7.48	15747	8.56	1
OP97275-BS	7754	7.48	14343	8.56	1
OP97275-LLBS	8546	7.48	13632	8.56	1
OP97275-MB	8888	7.48	14645	8.56	1
FC6445-4	7640	7.48	15834	8.55	1
FC6445-4 ^f	8565	7.49	17699	8.58	1
FC6649-1	8863	7.48	15570	8.55	1
OP97275-MS	8151	7.48	16170	8.55	1
ZZZZZZ	8402	7.49	14384	8.58	1
ZZZZZZ	7989	7.48	14076	8.58	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q287-ICC287 6Q19243.D 06/12/23 16:30. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.
- (f) Dilution required (ID recovery standard failure).

6.6.3
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q287-CC287	Injection Date:	06/12/23
Lab File ID:	6Q19272.D	Injection Time:	23:15
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	56985	3.09	46125	5.79	78650	7.34	43214	7.88	28356	8.39
Check Std ^c	61662	3.09	50016	5.79	83204	7.35	46757	7.89	31042	8.39
Upper Limit ^d	113970	3.49	92250	6.19	157300	7.75	86428	8.29	56712	8.79
Lower Limit ^e	17096	2.69	13838	5.39	23595	6.95	12964	7.49	8507	7.99

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
S6Q287-ICCB	64953	3.09	53563	5.79	85286	7.35	50193	7.89	31424	8.39	1
FC6649-4	58568	3.10	46367	5.79	77542	7.35	42250	7.89	26672	8.39	1
OP97275-DUP	60101	3.10	48351	5.80	80015	7.35	43269	7.89	29208	8.39	1
ZZZZZZ	61800	3.10	48754	5.80	81859	7.35	48410	7.89	32446	8.40	1
ZZZZZZ	56464	3.10	45605	5.80	72120	7.35	40697	7.89	27764	8.39	1
ZZZZZZ	49189	3.10	44087	5.79	77344	7.34	38719	7.89	26988	8.39	1
ZZZZZZ	57651	3.10	44683	5.80	78578	7.35	41826	7.89	27161	8.39	1
ZZZZZZ	45502	3.09	51475	5.78	87318	7.35	50390	7.89	30634	8.39	1
ZZZZZZ	57602	3.10	47341	5.79	80713	7.35	44569	7.89	26517	8.39	1
ZZZZZZ	59083	3.10	48829	5.79	83833	7.35	41265	7.89	31033	8.39	1
ZZZZZZ	58699	3.10	48321	5.80	77974	7.35	43601	7.89	28360	8.39	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: S6Q287-ICCB 6Q19243.D 06/12/23 16:30. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.6.4
6

Injection Standard Area Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q287-CC287	Injection Date:	06/12/23
Lab File ID:	6Q19272.D	Injection Time:	23:15
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	8622	7.48	14418	8.56
Check Std ^c	9625	7.48	15470	8.56
Upper Limit ^d	17244	7.88	28836	8.96
Lower Limit ^e	2587	7.08	4325	8.16

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q287-ICCB	9356	7.48	16410	8.56	1
FC6649-4	8045	7.48	14653	8.58	1
OP97275-DUP	9141	7.49	14400	8.56	1
ZZZZZZ	8802	7.49	14595	8.58	1
ZZZZZZ	8240	7.49	13950	8.58	1
ZZZZZZ	8407	7.48	13470	8.56	1
ZZZZZZ	8482	7.48	14373	8.58	1
ZZZZZZ	8594	7.48	14310	8.58	1
ZZZZZZ	8612	7.48	13258	8.58	1
ZZZZZZ	8194	7.48	13740	8.58	1
ZZZZZZ	8784	7.49	14821	8.58	1

IS 6 = 1802-PFHXS
 IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q287-ICCB 6Q19243.D 06/12/23 16:30. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.6.4
6

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q279-RT	Injection Date:	05/31/23
Lab File ID:	6Q18583.D	Injection Time:	16:32
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.178	--	--
TDCA	6.762	1.416	1.000
TCDCA	6.601	1.577	1.000
TUDCA	5.735	2.443	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
S6Q279-IC279	6Q18585.D	05/31/23	17:01	00:29	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23	17:16	00:44	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23	17:30	00:58	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23	17:45	01:13	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23	17:59	01:27	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23	18:14	01:42	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23	18:28	01:56	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23	18:43	02:11	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23	18:57	02:25	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23	19:12	02:40	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23	19:26	02:54	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23	19:41	03:09	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23	19:55	03:23	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23	20:10	03:38	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23	20:24	03:52	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23	20:39	04:07	Blank Spike
OP97070-MB	6Q18601.D	05/31/23	20:53	04:21	Method Blank
FC6278-1	6Q18602.D	05/31/23	21:08	04:36	(used for QC only; not part of job FC6445)
OP97070-MS	6Q18603.D	05/31/23	21:22	04:50	Matrix Spike
ZZZZZZ	6Q18604.D	05/31/23	21:37	05:05	(unrelated sample)
FC6278-3	6Q18605.D	05/31/23	21:51	05:19	(used for QC only; not part of job FC6445)
OP97070-DUP	6Q18606.D	05/31/23	22:06	05:34	Duplicate
ZZZZZZ	6Q18607.D	05/31/23	22:20	05:48	(unrelated sample)
ZZZZZZ	6Q18608.D	05/31/23	22:35	06:03	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23	22:49	06:17	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23	23:04	06:32	Continuing Calibration Blank
ZZZZZZ	6Q18611.D	05/31/23	23:18	06:46	(unrelated sample)
OP97024-BS	6Q18612.D	05/31/23	23:32	07:00	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23	23:47	07:15	Blank Spike
OP97024-MB	6Q18614.D	06/01/23	00:01	07:29	Method Blank
FC6086-1	6Q18615.D	06/01/23	00:16	07:44	(used for QC only; not part of job FC6445)
OP97024-MS	6Q18616.D	06/01/23	00:30	07:58	Matrix Spike

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q279-RT	Injection Date:	05/31/23
Lab File ID:	6Q18583.D	Injection Time:	16:32
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP97024-MSD	6Q18617.D	06/01/23	00:45	08:13	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23	00:59	08:27	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23	01:14	08:42	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23	01:28	08:56	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23	01:43	09:11	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23	01:57	09:25	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23	02:12	09:40	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23	02:26	09:54	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23	02:41	10:09	(unrelated sample)
ZZZZZZ	6Q18626.D	06/01/23	02:55	10:23	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23	03:10	10:38	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23	03:24	10:52	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23	04:37	12:05	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23	04:51	12:19	Continuing Calibration Blank
S6Q279-CC279	6Q18641.D	06/01/23	06:20	13:48	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23	06:35	14:03	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23	06:49	14:17	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23	07:03	14:31	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23	07:18	14:46	Blank Spike
OP97092-MB	6Q18646.D	06/01/23	07:32	15:00	Method Blank
ZZZZZZ	6Q18647.D	06/01/23	07:47	15:15	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23	08:01	15:29	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23	08:30	15:58	(used for QC only; not part of job FC6445)
OP97092-DUP2	6Q18651.D	06/01/23	08:45	16:13	Duplicate
ZZZZZZ	6Q18652.D	06/01/23	08:59	16:27	(unrelated sample)
S6Q279-CC279	6Q18653.D	06/01/23	09:14	16:42	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23	09:28	16:56	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23	09:43	17:11	(used for QC only; not part of job FC6445)
OP97092-MS	6Q18656.D	06/01/23	09:57	17:25	Matrix Spike
FC6325-2	6Q18657.D	06/01/23	10:12	17:40	(used for QC only; not part of job FC6445)
OP97092-DUP1	6Q18658.D	06/01/23	10:26	17:54	Duplicate
ZZZZZZ	6Q18659.D	06/01/23	10:41	18:09	(unrelated sample)
ZZZZZZ	6Q18660.D	06/01/23	10:55	18:23	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23	11:10	18:38	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23	11:24	18:52	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23	11:39	19:07	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23	12:08	19:36	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23	12:22	19:50	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23	12:37	20:05	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23	12:51	20:19	(unrelated sample)

6.7.1

6

TDCA Retention Time Check

Job Number: FC6445
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-RT	Injection Date: 05/31/23
Lab File ID: 6Q18583.D	Injection Time: 16:32
Instrument ID: GCMS6Q	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q18669.D	06/01/23	13:06	20:34	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23	13:20	20:48	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank
S6Q279-ICCB	6Q18671.D	06/01/23	13:35	21:03	Continuing Calibration Blank

6.7.1
6

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q280-RT	Injection Date:	06/01/23
Lab File ID:	6Q18674.D	Injection Time:	14:52
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.166	--	--
TDCA	6.750	1.416	1.000
TCDCA	6.601	1.565	1.000
TUDCA	5.735	2.431	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
S6Q280-IBLK	6Q18677.D	06/01/23	15:35	00:43	Instrument Blank
S6Q280-IBLK	6Q18677.D	06/01/23	15:35	00:43	Instrument Blank
S6Q280-CC279	6Q18678.D	06/01/23	15:50	00:58	Continuing cal 4
S6Q280-CC279	6Q18679.D	06/01/23	16:05	01:13	Continuing cal 1.0LL
OP97125-BS	6Q18680.D	06/01/23	16:20	01:28	Blank Spike
OP97125-LLBS	6Q18681.D	06/01/23	16:34	01:42	Blank Spike
OP97125-MB	6Q18682.D	06/01/23	16:49	01:57	Method Blank
ZZZZZZ	6Q18683.D	06/01/23	17:03	02:11	(unrelated sample)
OP97124-BS	6Q18684.D	06/01/23	17:18	02:26	Blank Spike
OP97124-LLBS	6Q18685.D	06/01/23	17:32	02:40	Blank Spike
OP97124-MB	6Q18686.D	06/01/23	17:47	02:55	Method Blank
FC6360-1	6Q18687.D	06/01/23	18:01	03:09	(used for QC only; not part of job FC6445)
ZZZZZZ	6Q18689.D	06/01/23	18:30	03:38	(unrelated sample)
S6Q280-CC279	6Q18690.D	06/01/23	18:45	03:53	Continuing cal 4
S6Q280-ICCB	6Q18691.D	06/01/23	18:59	04:07	Continuing Calibration Blank
ZZZZZZ	6Q18694.D	06/01/23	19:42	04:50	(unrelated sample)
ZZZZZZ	6Q18695.D	06/01/23	19:57	05:05	(unrelated sample)
ZZZZZZ	6Q18696.D	06/01/23	20:11	05:19	(unrelated sample)
S6Q280-CC279	6Q18699.D	06/01/23	20:55	06:03	Continuing cal 4
S6Q280-ICCB	6Q18700.D	06/01/23	21:09	06:17	Continuing Calibration Blank
OP97143-BS	6Q18701.D	06/01/23	21:24	06:32	Blank Spike
OP97143-LLBS	6Q18702.D	06/01/23	21:38	06:46	Blank Spike
OP97143-MB	6Q18703.D	06/01/23	21:53	07:01	Method Blank
ZZZZZZ	6Q18704.D	06/01/23	22:07	07:15	(unrelated sample)
FC6205-1	6Q18705.D	06/01/23	22:22	07:30	(used for QC only; not part of job FC6445)
OP97143-MS	6Q18706.D	06/01/23	22:36	07:44	Matrix Spike
OP97143-MSD	6Q18707.D	06/01/23	22:51	07:59	Matrix Spike Duplicate
ZZZZZZ	6Q18708.D	06/01/23	23:05	08:13	(unrelated sample)
ZZZZZZ	6Q18709.D	06/01/23	23:20	08:28	(unrelated sample)
ZZZZZZ	6Q18710.D	06/01/23	23:34	08:42	(unrelated sample)
S6Q280-CC279	6Q18711.D	06/01/23	23:49	08:57	Continuing cal 4
S6Q280-ICCB	6Q18712.D	06/02/23	00:03	09:11	Continuing Calibration Blank
FC6445-1	6Q18713.D	06/02/23	00:18	09:26	AF-RHMW02-WGN01LF-2305W4
FC6445-2	6Q18714.D	06/02/23	00:32	09:40	AF-RHMW17-WGN01LF-2305W4

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q280-RT	Injection Date:	06/01/23
Lab File ID:	6Q18674.D	Injection Time:	14:52
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC6445-3	6Q18715.D	06/02/23	00:47	09:55	AF-RHMW03-WGN01LF-2305W4
FC6445-5	6Q18717.D	06/02/23	01:15	10:23	AF-RHMW17D-WQFB01-2305W4
FC6445-6	6Q18718.D	06/02/23	01:30	10:38	AF-RHMW17S-WGN01LF-2305W4
FC6445-7	6Q18719.D	06/02/23	01:44	10:52	AF-RHMW17S-WQEB01-2305W4
S6Q280-CC279	6Q18720.D	06/02/23	01:59	11:07	Continuing cal 4
S6Q280-CC279	6Q18721.D	06/02/23	02:13	11:21	Continuing cal 1.0LL
S6Q280-ICCB	6Q18722.D	06/02/23	02:28	11:36	Continuing Calibration Blank
S6Q280-ICCB	6Q18722.D	06/02/23	02:28	11:36	Continuing Calibration Blank
OP97025-BS	6Q18723.D	06/02/23	02:42	11:50	Blank Spike
OP97025-LLBS	6Q18724.D	06/02/23	02:57	12:05	Blank Spike
OP97025-MB	6Q18725.D	06/02/23	03:11	12:19	Method Blank
FC6086-20	6Q18726.D	06/02/23	03:26	12:34	(used for QC only; not part of job FC6445)
OP97025-MS	6Q18727.D	06/02/23	03:40	12:48	Matrix Spike
OP97025-MSD	6Q18728.D	06/02/23	03:55	13:03	Matrix Spike Duplicate
ZZZZZZ	6Q18729.D	06/02/23	04:09	13:17	(unrelated sample)
ZZZZZZ	6Q18730.D	06/02/23	04:24	13:32	(unrelated sample)
ZZZZZZ	6Q18731.D	06/02/23	04:38	13:46	(unrelated sample)
ZZZZZZ	6Q18732.D	06/02/23	04:53	14:01	(unrelated sample)
S6Q280-CC279	6Q18733.D	06/02/23	05:07	14:15	Continuing cal 4
S6Q280-ICCB	6Q18734.D	06/02/23	05:22	14:30	Continuing Calibration Blank
S6Q280-ICCB	6Q18734.D	06/02/23	05:22	14:30	Continuing Calibration Blank
ZZZZZZ	6Q18735.D	06/02/23	05:36	14:44	(unrelated sample)
ZZZZZZ	6Q18736.D	06/02/23	05:51	14:59	(unrelated sample)
ZZZZZZ	6Q18737.D	06/02/23	06:05	15:13	(unrelated sample)
ZZZZZZ	6Q18738.D	06/02/23	06:20	15:28	(unrelated sample)
ZZZZZZ	6Q18739.D	06/02/23	06:34	15:42	(unrelated sample)
ZZZZZZ	6Q18740.D	06/02/23	06:48	15:56	(unrelated sample)
ZZZZZZ	6Q18741.D	06/02/23	07:03	16:11	(unrelated sample)
ZZZZZZ	6Q18742.D	06/02/23	07:17	16:25	(unrelated sample)
ZZZZZZ	6Q18743.D	06/02/23	07:32	16:40	(unrelated sample)
ZZZZZZ	6Q18744.D	06/02/23	07:46	16:54	(unrelated sample)
S6Q280-CC279	6Q18745.D	06/02/23	08:01	17:09	Continuing cal 4
S6Q280-ICCB	6Q18746.D	06/02/23	08:15	17:23	Continuing Calibration Blank
S6Q280-ICCB	6Q18746.D	06/02/23	08:15	17:23	Continuing Calibration Blank
ZZZZZZ	6Q18747.D	06/02/23	08:30	17:38	(unrelated sample)
ZZZZZZ	6Q18748.D	06/02/23	08:44	17:52	(unrelated sample)
ZZZZZZ	6Q18749.D	06/02/23	08:59	18:07	(unrelated sample)
ZZZZZZ	6Q18750.D	06/02/23	09:13	18:21	(unrelated sample)
OP97144-BS	6Q18751.D	06/02/23	09:28	18:36	Blank Spike
OP97144-LLBS	6Q18752.D	06/02/23	09:42	18:50	Blank Spike
OP97144-MB	6Q18753.D	06/02/23	09:57	19:05	Method Blank
ZZZZZZ	6Q18754.D	06/02/23	10:11	19:19	(unrelated sample)
FC6216-2	6Q18755.D	06/02/23	10:26	19:34	(used for QC only; not part of job FC6445)
OP97144-MS	6Q18756.D	06/02/23	10:40	19:48	Matrix Spike

6.7.2

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TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q280-RT	Injection Date:	06/01/23
Lab File ID:	6Q18674.D	Injection Time:	14:52
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q280-CC279	6Q18757.D	06/02/23	10:55	20:03	Continuing cal 4
S6Q280-ICCB	6Q18758.D	06/02/23	11:09	20:17	Continuing Calibration Blank
S6Q280-ICCB	6Q18758.D	06/02/23	11:09	20:17	Continuing Calibration Blank
FC6216-3	6Q18759.D	06/02/23	11:24	20:32	(used for QC only; not part of job FC6445)
OP97144-DUP	6Q18760.D	06/02/23	11:38	20:46	Duplicate
ZZZZZZ	6Q18761.D	06/02/23	11:53	21:01	(unrelated sample)
ZZZZZZ	6Q18762.D	06/02/23	12:07	21:15	(unrelated sample)
ZZZZZZ	6Q18763.D	06/02/23	12:22	21:30	(unrelated sample)
ZZZZZZ	6Q18765.D	06/02/23	12:50	21:58	(unrelated sample)
ZZZZZZ	6Q18766.D	06/02/23	13:05	22:13	(unrelated sample)
ZZZZZZ	6Q18767.D	06/02/23	13:19	22:27	(unrelated sample)
ZZZZZZ	6Q18768.D	06/02/23	13:34	22:42	(unrelated sample)
S6Q280-CC279	6Q18769.D	06/02/23	13:48	22:56	Continuing cal 4
S6Q280-ICCB	6Q18770.D	06/02/23	14:03	23:11	Continuing Calibration Blank
ZZZZZZ	6Q18771.D	06/02/23	14:17	23:25	(unrelated sample)
ZZZZZZ	6Q18772.D	06/02/23	14:32	23:40	(unrelated sample)
ZZZZZZ	6Q18773.D	06/02/23	14:46	23:54	(unrelated sample)
ZZZZZZ	6Q18774.D	06/02/23	15:01	24:09	(unrelated sample)
ZZZZZZ	6Q18775.D	06/02/23	15:15	24:23	(unrelated sample)
ZZZZZZ	6Q18776.D	06/02/23	15:30	24:38	(unrelated sample)
S6Q280-CC279	6Q18777.D	06/02/23	15:44	24:52	Continuing cal 4
S6Q280-ICCB	6Q18778.D	06/02/23	15:59	25:07	Continuing Calibration Blank

6.7.2

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TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q280-RT	Injection Date:	06/02/23
Lab File ID:	6Q18779.D	Injection Time:	16:13
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.166	--	--
TDCA	6.762	1.404	1.000
TCDCA	6.613	1.553	1.000
TUDCA	5.748	2.418	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
S6Q280-IBLK	6Q18782.D	06/02/23	16:57	00:44	Instrument Blank
S6Q280-IBLK	6Q18782.D	06/02/23	16:57	00:44	Instrument Blank
S6Q280-CC279	6Q18783.D	06/02/23	17:11	00:58	Continuing cal 1.0LL
OP97146-BS	6Q18784.D	06/02/23	17:26	01:13	Blank Spike
OP97146-LLBS	6Q18785.D	06/02/23	17:40	01:27	Blank Spike
OP97146-MB	6Q18786.D	06/02/23	17:55	01:42	Method Blank
ZZZZZZ	6Q18787.D	06/02/23	18:09	01:56	(unrelated sample)
ZZZZZZ	6Q18788.D	06/02/23	18:24	02:11	(unrelated sample)
ZZZZZZ	6Q18789.D	06/02/23	18:38	02:25	(unrelated sample)
ZZZZZZ	6Q18790.D	06/02/23	18:53	02:40	(unrelated sample)
FC6212-5	6Q18791.D	06/02/23	19:07	02:54	(used for QC only; not part of job FC6445)
OP97146-MS	6Q18792.D	06/02/23	19:22	03:09	Matrix Spike
S6Q280-CC279	6Q18793.D	06/02/23	19:36	03:23	Continuing cal 4
S6Q280-ICCB	6Q18794.D	06/02/23	19:51	03:38	Continuing Calibration Blank
FC6212-6	6Q18795.D	06/02/23	20:05	03:52	(used for QC only; not part of job FC6445)
OP97146-DUP	6Q18796.D	06/02/23	20:20	04:07	Duplicate
ZZZZZZ	6Q18797.D	06/02/23	20:34	04:21	(unrelated sample)
ZZZZZZ	6Q18798.D	06/02/23	20:48	04:35	(unrelated sample)
ZZZZZZ	6Q18799.D	06/02/23	21:03	04:50	(unrelated sample)
ZZZZZZ	6Q18800.D	06/02/23	21:17	05:04	(unrelated sample)
ZZZZZZ	6Q18801.D	06/02/23	21:32	05:19	(unrelated sample)
S6Q280-ECC279	6Q18802.D	06/02/23	21:46	05:33	Ending cal 4
S6Q280-ICCB	6Q18803.D	06/02/23	22:01	05:48	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q287-RT	Injection Date:	06/12/23
Lab File ID:	6Q19237.D	Injection Time:	15:06
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.564	--	--
TDCA	7.025	1.539	1.000
TCDCA	6.863	1.701	1.000
TUDCA	6.048	2.516	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
S6Q287-IC287	6Q19239.D	06/12/23	15:34	00:28	Mass Calibration Verification
S6Q287-IC287	6Q19240.D	06/12/23	15:48	00:42	Initial cal 1
S6Q287-IC287	6Q19241.D	06/12/23	16:02	00:56	Initial cal 2
S6Q287-IC287	6Q19242.D	06/12/23	16:16	01:10	Initial cal 3
S6Q287-ICC287	6Q19243.D	06/12/23	16:30	01:24	Initial cal 4
S6Q287-IC287	6Q19244.D	06/12/23	16:44	01:38	Initial cal 5
S6Q287-IC287	6Q19245.D	06/12/23	16:58	01:52	Initial cal 6
S6Q287-IC287	6Q19246.D	06/12/23	17:12	02:06	Initial cal 7
S6Q287-IC287	6Q19247.D	06/12/23	17:26	02:20	Initial cal 8
S6Q287-IBLK	6Q19248.D	06/12/23	17:40	02:34	Instrument Blank
S6Q287-IBLK	6Q19248.D	06/12/23	17:40	02:34	Instrument Blank
S6Q287-ICV287	6Q19249.D	06/12/23	17:54	02:48	Initial cal verification 4
S6Q287-ICV287	6Q19250.D	06/12/23	18:08	03:02	Initial cal verification 20
S6Q287-CC287	6Q19251.D	06/12/23	18:22	03:16	Continuing cal 4
S6Q287-CC287	6Q19252.D	06/12/23	18:36	03:30	Continuing cal 1.0LL
ZZZZZZ	6Q19253.D	06/12/23	18:50	03:44	(unrelated sample)
FC6342-11	6Q19254.D	06/12/23	19:04	03:58	(used for QC only; not part of job FC6445)
OP97215-DUP	6Q19255.D	06/12/23	19:18	04:12	Duplicate
ZZZZZZ	6Q19256.D	06/12/23	19:32	04:26	(unrelated sample)
JD66240-1	6Q19257.D	06/12/23	19:46	04:40	(used for QC only; not part of job FC6445)
ZZZZZZ	6Q19258.D	06/12/23	20:00	04:54	(unrelated sample)
FC6342-10	6Q19259.D	06/12/23	20:14	05:08	(used for QC only; not part of job FC6445)
OP97215-MS	6Q19260.D	06/12/23	20:28	05:22	Matrix Spike
S6Q287-CC287	6Q19261.D	06/12/23	20:42	05:36	Continuing cal 4
S6Q287-ICCB	6Q19262.D	06/12/23	20:56	05:50	Continuing Calibration Blank
S6Q287-ICCB	6Q19262.D	06/12/23	20:56	05:50	Continuing Calibration Blank
OP97275-BS	6Q19263.D	06/12/23	21:10	06:04	Blank Spike
OP97275-LLBS	6Q19264.D	06/12/23	21:24	06:18	Blank Spike
OP97275-MB	6Q19265.D	06/12/23	21:37	06:31	Method Blank
FC6445-4	6Q19266.D	06/12/23	21:51	06:45	AF-RHMW17D-WGN01LF-2305W4
FC6445-4	6Q19267.D	06/12/23	22:05	06:59	AF-RHMW17D-WGN01LF-2305W4
FC6649-1	6Q19268.D	06/12/23	22:19	07:13	(used for QC only; not part of job FC6445)
OP97275-MS	6Q19269.D	06/12/23	22:33	07:27	Matrix Spike
ZZZZZZ	6Q19270.D	06/12/23	22:47	07:41	(unrelated sample)

TDCA Retention Time Check

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q287-RT	Injection Date:	06/12/23
Lab File ID:	6Q19237.D	Injection Time:	15:06
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q19271.D	06/12/23	23:01	07:55	(unrelated sample)
S6Q287-CC287	6Q19272.D	06/12/23	23:15	08:09	Continuing cal 4
S6Q287-ICCB	6Q19273.D	06/12/23	23:29	08:23	Continuing Calibration Blank
FC6649-4	6Q19274.D	06/12/23	23:43	08:37	(used for QC only; not part of job FC6445)
OP97275-DUP	6Q19275.D	06/12/23	23:57	08:51	Duplicate
ZZZZZZ	6Q19276.D	06/13/23	00:11	09:05	(unrelated sample)
ZZZZZZ	6Q19277.D	06/13/23	00:25	09:19	(unrelated sample)
ZZZZZZ	6Q19278.D	06/13/23	00:39	09:33	(unrelated sample)
ZZZZZZ	6Q19279.D	06/13/23	00:53	09:47	(unrelated sample)
ZZZZZZ	6Q19280.D	06/13/23	01:07	10:01	(unrelated sample)
ZZZZZZ	6Q19281.D	06/13/23	01:21	10:15	(unrelated sample)
ZZZZZZ	6Q19282.D	06/13/23	01:35	10:29	(unrelated sample)
ZZZZZZ	6Q19283.D	06/13/23	01:49	10:43	(unrelated sample)
S6Q287-CC287	6Q19284.D	06/13/23	02:03	10:57	Continuing cal 4
S6Q287-ICCB	6Q19285.D	06/13/23	02:17	11:11	Continuing Calibration Blank
ZZZZZZ	6Q19286.D	06/13/23	02:31	11:25	(unrelated sample)
ZZZZZZ	6Q19287.D	06/13/23	02:45	11:39	(unrelated sample)
S6Q287-ECC287	6Q19288.D	06/13/23	02:59	11:53	Ending cal 4
S6Q287-ICCB	6Q19289.D	06/13/23	03:13	12:07	Continuing Calibration Blank

6.7.4
6

Ion Ratio Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q280	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios (Set 1)		PFHxA	PFHpA	PFOA	PFBS	PFOS
		PFBA	PFPeA					
S6Q279-ICC279	6Q18589.D	0	0	5.1	16.4	17.1	37.9	49.8
FC6445-1	6Q18713.D			7.5	12.6			
FC6445-2	6Q18714.D	0	0	5.7	14.7			
FC6445-3	6Q18715.D		0	3.2	16.4			
FC6445-5	6Q18717.D							
FC6445-6	6Q18718.D			6.7	15.2	28.1	36.2	49.8
FC6445-7	6Q18719.D							

6.8.1
6

Ion Ratio Summary

Job Number: FC6445
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q280	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios (Set 2) 6:2FTS
S6Q279-ICC279	6Q18589.D	33
FC6445-1	6Q18713.D	37.7
FC6445-2	6Q18714.D	33.2
FC6445-3	6Q18715.D	34.2
FC6445-5	6Q18717.D	
FC6445-6	6Q18718.D	29.7
FC6445-7	6Q18719.D	

6.8.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC6445-1	6Q18713.D	68	89	102	107	103	98	105	97
FC6445-2	6Q18714.D	91	110	116	111	115	109	108	91
FC6445-3	6Q18715.D	93	103	107	114	114	100	106	92
FC6445-4	6Q19266.D	4* a	29	99	107	110	119	120	107
FC6445-4	6Q19267.D	117	111	107	111	125	135	107	104
FC6445-5	6Q18717.D	109	107	104	108	114	105	117	113
FC6445-6	6Q18718.D	33	97	111	113	113	115	107	104
FC6445-7	6Q18719.D	111	109	108	112	110	113	115	108
OP97143-BS	6Q18701.D	24	103	114	116	114	115	112	120
OP97143-LLBS	6Q18702.D	107	106	106	111	106	102	118	114
OP97143-MB	6Q18703.D	117	121	120	126	123	110	116	121
OP97143-MS	6Q18706.D	103	100	100	106	105	96	96	96
OP97143-MSD	6Q18707.D	105	105	104	106	103	99	98	97
OP97275-BS	6Q19263.D	30	102	99	108	97	106	127	112
OP97275-DUP	6Q19275.D	114	116	113	115	110	127	123	94
OP97275-LLBS	6Q19264.D	115	113	107	114	122	116	130	114
OP97275-MB	6Q19265.D	105	101	99	98	103	116	107	101
OP97275-MS	6Q19269.D	4* a	26	98	107	117	105	109	97
S6Q280-IBLK	6Q18677.D	100	101	104	105	100	104	102	97
S6Q280-IBLK	6Q18782.D	100	103	104	101	97	94	110	107
S6Q280-ICCB	6Q18712.D	101	99	102	105	100	94	103	101
S6Q287-IBLK	6Q19248.D	100	97	99	100	97	100	100	89
S6Q287-ICCB	6Q19262.D	100	103	98	104	96	109	101	100
S6Q280-ICCB	6Q18700.D	100	99	101	102	102	92	99	102
S6Q280-ICCB	6Q18778.D	100	105	104	109	104	94	97	103
S6Q287-ICCB	6Q19273.D	100	96	92	100	100	96	100	101

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.

6.9.1
6

Isotope Dilution Standard Recovery Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC6445-1	6Q18713.D	92	78	100	102	96	88	77	79
FC6445-2	6Q18714.D	71	60	114	111	107	99	94	95
FC6445-3	6Q18715.D	81	73	113	106	96	83	76	78
FC6445-4	6Q19266.D	95	82	117	130	108	86	89	93
FC6445-4	6Q19267.D	98	86	120	118	88	77	78	76
FC6445-5	6Q18717.D	104	92	109	105	108	97	101	110
FC6445-6	6Q18718.D	92	76	102	97	110	105	95	95
FC6445-7	6Q18719.D	104	100	106	106	106	103	95	105
OP97143-BS	6Q18701.D	107	104	114	112	106	96	98	99
OP97143-LLBS	6Q18702.D	113	109	108	104	114	99	94	105
OP97143-MB	6Q18703.D	118	117	116	113	115	86	94	105
OP97143-MS	6Q18706.D	99	89	103	98	90	66	71	74
OP97143-MSD	6Q18707.D	101	89	106	100	93	70	72	80
OP97275-BS	6Q19263.D	106	98	116	117	108	86	82	81
OP97275-DUP	6Q19275.D	94	89	119	109	106	94	86	97
OP97275-LLBS	6Q19264.D	115	106	113	109	120	92	81	87
OP97275-MB	6Q19265.D	99	86	97	97	101	76	72	81
OP97275-MS	6Q19269.D	96	70	109	110	100	84	85	87
S6Q280-IBLK	6Q18677.D	95	100	93	96	98	100	100	104
S6Q280-IBLK	6Q18782.D	109	105	103	105	96	101	99	102
S6Q280-ICCB	6Q18712.D	107	108	98	96	97	96	96	99
S6Q287-IBLK	6Q19248.D	93	91	103	101	102	101	103	107
S6Q287-ICCB	6Q19262.D	96	96	109	108	104	100	96	99
S6Q280-ICCB	6Q18700.D	101	99	103	97	103	103	98	102
S6Q280-ICCB	6Q18778.D	99	102	99	98	102	101	95	101
S6Q287-ICCB	6Q19273.D	98	88	101	102	97	100	91	97

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%

6.9.1
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Isotope Dilution Standard Recovery Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20	S21	S22	S23	S24
FC6445-1	6Q18713.D	97	94	83	86	100	89	91	87
FC6445-2	6Q18714.D	144	149	93	105	151	154	125	105
FC6445-3	6Q18715.D	97	90	73	80	106	98	100	102
FC6445-4	6Q19266.D	115	122	66	75	158	111	121	91
FC6445-4	6Q19267.D	94	88	66	68	135	133	112	110
FC6445-5	6Q18717.D	109	110	104	109	110	117	111	106
FC6445-6	6Q18718.D	113	108	95	100	115	102	92	97
FC6445-7	6Q18719.D	105	102	104	107	111	119	105	110
OP97143-BS	6Q18701.D	114	117	85	96	118	116	118	116
OP97143-LLBS	6Q18702.D	118	121	90	100	115	118	114	108
OP97143-MB	6Q18703.D	125	118	83	100	122	125	127	123
OP97143-MS	6Q18706.D	100	100	66	76	101	106	104	101
OP97143-MSD	6Q18707.D	93	91	72	82	112	107	108	108
OP97275-BS	6Q19263.D	109	105	64	73	135	119	120	108
OP97275-DUP	6Q19275.D	107	110	71	84	134	130	114	105
OP97275-LLBS	6Q19264.D	114	117	68	78	131	125	114	116
OP97275-MB	6Q19265.D	104	92	58	68	119	119	99	95
OP97275-MS	6Q19269.D	114	116	63	68	149	102	114	90
S6Q280-IBLK	6Q18677.D	107	107	103	105	106	104	105	102
S6Q280-IBLK	6Q18782.D	103	107	103	104	120	115	114	103
S6Q280-ICCB	6Q18712.D	102	104	98	98	106	101	106	104
S6Q287-IBLK	6Q19248.D	99	109	100	95	121	122	118	93
S6Q287-ICCB	6Q19262.D	105	101	100	86	128	124	112	96
S6Q280-ICCB	6Q18700.D	107	110	109	105	113	116	108	104
S6Q280-ICCB	6Q18778.D	108	111	102	97	113	117	111	108
S6Q287-ICCB	6Q19273.D	102	94	86	82	113	123	108	90

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%

6.9.1

6

Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods											
Method File	1633_053123_S6Q279_quantmethod.xml											
Batch Name	D:\MassHunter\Data\053123_1633_S6Q279\QuantResults\S6Q279_batch.bin											
Last Calib Update	6/1/2023 10:30:25 AM											
Level Name	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
1	D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d	Avg RF	0.3753	0.3334	0.3219	0.3137	0.3170	0.3291	0.3376	0.3206	0.3311	5.928
2	D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d	Avg RF	0.7081	0.6363	0.6350	0.6089	0.6049	0.6302	0.6425	0.6190	0.6356	5.068
3	D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d	Avg RF	0.0863	0.0769	0.0759	0.0726	0.0726	0.0764	0.0777	0.0764	0.0769	5.562
4	D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d	Avg RF	1.2962	1.2068	1.1733	1.1429	1.1467	1.1930	1.1954	1.1530	1.2009	6.870
5	D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d	Avg RF	0.9475	0.8203	0.8090	0.7809	0.7790	0.8137	0.8106	0.7773	0.8173	6.776
6	D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d	Avg RF	0.1255	0.1045	0.1003	0.0957	0.0984	0.0992	0.0981	0.0958	0.1022	9.605
7	D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d	Avg RF	0.9569	0.8366	0.7860	0.8138	0.8001	0.8241	0.8423	0.8553	0.8394	6.266
8	D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d	Avg RF	1.1788	1.0306	1.0200	1.0337	1.0745	1.0758	1.0553	1.0552	1.0655	4.699
		Avg RF	0.1801	0.1551	0.1462	0.1433	0.1409	0.1457	0.1500	0.1465	0.1510	8.295
		Avg RF	0.1170	0.1068	0.0947	0.1010	0.1022	0.1020	0.1045	0.0991	0.1034	6.340
		Avg RF	1.2923	1.0943	1.0924	1.0209	1.0772	1.0930	1.0798	1.1005	1.1063	7.165
		Avg RF	1.1279	1.0893	1.0165	1.0390	1.0020	1.0999	1.0964	1.0686	1.0674	4.148
		Avg RF	1.0714	0.8740	0.8546	0.7861	0.8477	0.8845	0.8665	0.9012	0.8857	9.309
		Avg RF	1.7245	1.4816	1.2708	1.4351	1.3572	1.4333	1.4380	1.4541	1.4493	8.948
		Avg RF	0.9140	0.8348	0.7848	0.7448	0.8124	0.8179	0.8375	0.7519	0.8122	6.658

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Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9985	0.8696	0.8524	0.8384	0.8018	0.8576	0.8750	0.7732	0.8583	7.747
T PFTIDA	Avg RF	1.0429	0.8646	0.8388	0.8777	0.8411	0.8620	0.8561	0.7527	0.8670	9.326
I M2-PFTeDA	Avg RF	1.4406	1.1849	1.2263	1.2265	1.1335	1.2310	1.2517	1.1424	1.2296	7.768
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	1.0086	0.8973	0.8409	0.8318	0.8197	0.8415	0.8613	0.8220	0.8654	7.284
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.9711	0.8510	0.8226	0.8216	0.7977	0.8209	0.8641	0.8552	0.8505	6.288
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.3123	1.1962	1.0851	1.0839	1.0466	1.1083	1.1071	1.0743	1.1267	7.703
T PFPeS	Avg RF	1.2945	1.1639	1.1673	1.1064	1.0631	1.1201	1.0969	1.0341	1.1308	7.093
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.4789	1.2675	1.1993	1.0852	1.1390	1.0672	1.2016	1.1506	1.1987	10.892
T PFHpS	Avg RF	1.3623	1.1070	1.1656	1.0866	1.1021	1.0525	1.1549	1.1102	1.1427	8.378
T PFOS	Avg RF	1.2813	0.9838	1.0179	0.9325	0.9544	0.8893	1.0303	0.9381	1.0034	12.102
T PFNS	Avg RF	0.7640	0.6739	0.6370	0.5956	0.6037	0.5499	0.5985	0.5772	0.6250	10.786
T PFDS	Avg RF	0.3275	0.2854	0.2940	0.2532	0.2608	0.2471	0.2840	0.2696	0.2777	9.364
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	8.0870	6.9217	7.4430	7.2990	6.9249	7.3091	7.4912	6.6284	7.2630	6.158
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	5.7336	5.0095	4.7009	4.8193	4.8783	5.1016	4.9196	4.1446	4.9134	8.983
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.4484	2.6471	3.0533	2.7503	2.4593	2.7779	2.8341	2.2782	2.7811	12.877
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	1.0257	1.0983	1.0637	1.0126	0.9408	0.9902	1.0671	1.0266	1.0281	4.794
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.9559	0.8428	0.8608	0.8520	0.7887	0.8050	0.8606	0.8148	0.8476	6.060
T HFO-DA	Avg RF	15.27	13.21	13.51	13.30	12.89	12.60	13.06	12.41	13.28	6.642
T ADONA	Avg RF	6.5990	5.6552	6.0195	6.1012	5.7387	5.6701	5.8761	5.6375	5.9122	5.538
T 9Cl-PF3ONS	Avg RF	4.1075	3.7206	3.8988	3.8689	3.5814	3.7069	3.6084	3.5242	3.7521	5.197
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.7783	0.5873	0.6203	0.6043	0.6320	0.6471	0.6662	0.6107	0.6433	9.316
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	1.1693	0.9542	0.9662	0.9575	0.8976	1.0115	1.0020	0.9899	0.9935	7.989
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	1.2705	1.1375	1.1135	1.0713	1.0794	1.0696	1.1120	1.0687	1.1153	6.068
T EFOSE	Avg RF					ISTD					

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Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA		1.2909	1.2385	1.1332	1.1413	1.0935	1.1354	1.1466	1.1429	1.1653	5.386
T EFOSA						ISTD					
I M3-MeFOSA		1.0470	0.9671	0.9071	0.8783	0.9155	0.8916	0.9095	0.8388	0.9193	6.855
T MeFOSA						ISTD					
I 13C4-PFOS		0.8100	0.8287	0.7710	0.7163	0.8928	0.8880	0.7954	0.7540	0.8070	7.677
S d3-MeFOSAA	Linear										
S 13C8-PFOS	Linear	0.7359	0.8012	0.7842	0.7648	0.8042	0.9118	0.7903	0.8150	0.8009	6.405
S d5-EFOSAA	Linear	0.7143	0.7249	0.7594	0.6844	0.7348	0.7588	0.7165	0.7772	0.7338	4.113
S 13C8-FOSA	Linear	1.8329	1.9012	1.9605	1.7592	1.9169	2.0451	1.9313	1.8988	1.9057	4.437
S d7-MeFOSE	Linear	0.5998	0.6443	0.6491	0.5895	0.6575	0.6626	0.6213	0.5990	0.6279	4.638
S d3-MeFOSA	Linear	0.7296	0.7511	0.7727	0.7224	0.7553	0.8328	0.7819	0.8328	0.7723	5.464
S d9-EFOSE	Linear	0.8200	0.8092	0.8446	0.7733	0.8314	0.8997	0.8109	0.7807	0.8212	4.826
S d5-EFOSA	Linear	0.7336	0.7115	0.7362	0.6797	0.7540	0.7718	0.7326	0.7305	0.7312	3.741
I 13C3-PFBA		1.1914	1.1940	1.1862	1.2012	1.1945	1.1898	1.1853	1.1841	1.1908	0.482
S 13C4-PFBA	Linear					ISTD					
I 1802-PFHxS		0.1829	0.1808	0.1759	0.1672	0.1717	0.1586	0.1574	0.1396	0.1668	8.653
S 13C2-4:2FTS	Linear										
S 13C3-PFBS	Linear	2.2616	2.2535	2.2849	2.2131	2.2673	2.1694	2.2469	2.0037	2.2126	4.148
S 13C2-6:2FTS	Linear	0.2556	0.2670	0.2617	0.2435	0.2479	0.2221	0.2326	0.2067	0.2421	8.503
S 13C3-PFHxS	Linear	1.4111	1.4364	1.3855	1.3833	1.4199	1.3438	1.4474	1.3457	1.3966	2.785
S 13C2-8:2FTS	Linear	0.2513	0.2680	0.2412	0.2507	0.2682	0.2307	0.2325	0.2222	0.2456	6.935
I 13C4-PFOA		0.9443	0.9211	0.9529	0.9481	0.9538	0.9088	0.9525	0.9109	0.9365	2.088
S 13C8-PFOA	Linear										
I 13C2-PFDA		0.7319	0.7442	0.7405	0.7276	0.7348	0.7057	0.7585	0.7167	0.7325	2.233
S 13C6-PFDA	Linear										
S 13C7-PFUnDA	Linear	0.9494	0.9427	0.8792	0.9983	0.9496	0.8972	0.9576	0.9015	0.9344	4.175
S 13C2-PFDODA	Linear	0.8602	0.8799	0.8272	0.8746	0.8934	0.8360	0.8722	0.9015	0.8681	2.990
S 13C2-PFTeDA	Linear	0.4778	0.4652	0.4524	0.4759	0.4967	0.4534	0.4810	0.4765	0.4724	3.139
I 13C5-PFNA		0.8117	0.8501	0.8290	0.7576	0.8634	0.7797	0.8420	0.8565	0.8238	4.626
S 13C9-PFNA	Linear										
I 13C2-PFHxA		0.4878	0.4887	0.4942	0.4761	0.4912	0.4846	0.4891	0.4784	0.4863	1.284
S 13C5-PPeA	Linear										
S 13C5-PFHxA	Linear	1.0756	1.0822	1.0877	1.0424	1.0526	1.0638	1.0560	1.0063	1.0583	2.464
S 13C3-HPOD-A	Linear	0.1681	0.1651	0.1611	0.1558	0.1643	0.1660	0.1674	0.1664	0.1643	2.455
S 13C4-PFHpA	Linear	0.9719	0.9961	0.9930	0.9741	0.9714	0.9757	0.9993	0.9469	0.9786	1.760

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

Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PFBA	Linear	$y = 1.190803 * x$	
S 13C5-PFPeA	Linear	$y = 0.486251 * x$	
S 13C2-4:2FTS	Linear	$y = 0.166755 * x$	
S 13C3-PFBS	Linear	$y = 2.212557 * x$	
S 13C5-PFHxA	Linear	$y = 1.058308 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.164282 * x$	
S 13C4-PFHpA	Linear	$y = 0.978557 * x$	
S 13C8-PFOA	Linear	$y = 0.242136 * x$	
S 13C3-PFHxS	Linear	$y = 0.936537 * x$	
S 13C9-PFNA	Linear	$y = 1.396640 * x$	
S 13C2-8:2FTS	Linear	$y = 0.823767 * x$	
S 13C6-PEDA	Linear	$y = 0.245600 * x$	
S d3-MeFOSAA	Linear	$y = 0.732501 * x$	
S 13C8-PFOS	Linear	$y = 0.807010 * x$	
S d5-EFOSAA	Linear	$y = 0.800922 * x$	
S 13C7-PFUInDA	Linear	$y = 0.733798 * x$	
S 13C2-PFDODA	Linear	$y = 0.934423 * x$	
S 13C8-FOSA	Linear	$y = 0.868119 * x$	
S 13C2-PFTeDA	Linear	$y = 1.905749 * x$	
S d7-MeFOSE	Linear	$y = 0.472355 * x$	
S d3-MeFOSA	Linear	$y = 0.627877 * x$	
S d9-EFOSE	Linear	$y = 0.772326 * x$	
S d5-EFOSA	Linear	$y = 0.821228 * x$	
S d5-EFOSA	Linear	$y = 0.731236 * x$	

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

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18595
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.244	4.9	104.9
13C2-6:2FTS	5.000	5.043	0.9	100.9
13C2-8:2FTS	5.000	4.830	-3.4	96.6
13C2-PFDoDA	1.250	1.242	-0.6	99.4
13C2-PFTeDA	1.250	1.207	-3.4	96.6
13C3-PFBS	2.500	2.497	-0.1	99.9
13C3-PFHxS	2.500	2.402	-3.9	96.1
13C4-PFBA	10.000	10.030	0.3	100.3
13C4-PFHpA	2.500	2.556	2.2	102.2
13C5-PFHxA	2.500	2.564	2.6	102.6
13C5-PFPeA	5.000	5.005	0.1	100.1
13C6-PFDA	1.250	1.208	-3.4	96.6
13C7-PFUnDA	1.250	1.319	5.5	105.5
13C8-FOSA	2.500	2.530	1.2	101.2
13C8-PFOA	2.500	2.436	-2.6	97.4
13C8-PFOS	2.500	2.359	-5.7	94.3
13C9-PFNA	1.250	1.216	-2.7	97.3
4:2FTS	9.375	9.353	-0.2	99.8
6:2FTS	9.500	10.523	10.8	110.8
8:2FTS	9.600	10.500	9.4	109.4
d3-MeFOSAA	5.000	4.955	-0.9	99.1
EtFOSAA	2.500	2.553	2.1	102.1
FOSA	2.500	2.593	3.7	103.7
MeFOSAA	2.500	2.732	9.3	109.3
PFBA	10.000	10.538	5.4	105.4
PFBS	2.218	2.208	-0.4	99.6
PFDA	2.500	2.624	5.0	105.0
PFDoDA	2.500	2.513	0.5	100.5
PFDS	2.413	2.631	9.1	109.1
PFHpA	2.500	2.606	4.2	104.2
PFHpS	2.383	2.489	4.5	104.5
PFHxA	2.500	2.609	4.3	104.3
PFHxS	2.285	2.439	6.7	106.7
PFNA	2.500	2.682	7.3	107.3
PFNS	2.405	2.489	3.5	103.5
PFOA	2.500	2.460	-1.6	98.4
PFOS	2.320	2.528	8.9	108.9

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

PFPeA	5.000	5.240	4.8	104.8
PFPeS	2.353	2.646	12.4	112.4
PFTeDA	2.500	2.623	4.9	104.9
PFTTrDA	2.500	2.480	-0.8	99.2
PFUnDA	2.500	2.447	-2.1	97.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.990	5.6	105.6
13C3-HFPO-DA	10.000	10.055	0.6	100.6
9C1-PF3ONS	4.675	5.075	8.5	108.5
ADONA	4.725	4.958	4.9	104.9
HFPO-DA	5.000	5.043	0.9	100.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	13.044	4.5	104.5
5:3FTCA	62.400	65.313	4.7	104.7
7:3FTCA	62.400	63.718	2.1	102.1
d3-MeFOSA	2.500	2.313	-7.5	92.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.247	4.9	104.9
EtFOSE	12.500	13.586	8.7	108.7
MeFOSA	5.000	5.552	11.0	111.0
MeFOSE	12.500	14.017	12.1	112.1
PFDoDS	2.425	2.625	8.3	108.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.241	4.8	104.8
d7-MeFOSE	25.000	23.341	-6.6	93.4
d9-EtFOSE	25.000	23.664	-5.3	94.7
d5-EtFOSA	2.500	2.431	-2.8	97.2
NFDHA	5.000	5.179	3.6	103.6
PFMBA	5.000	5.221	4.4	104.4
PFMPA	5.000	5.272	5.4	105.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.483	0.7	100.7

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18596
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.060	1.2	101.2
13C2-6:2FTS	5.000	4.998	0.0	100.0
13C2-8:2FTS	5.000	5.235	4.7	104.7
13C2-PFDoDA	1.250	1.343	7.4	107.4
13C2-PFTeDA	1.250	1.348	7.8	107.8
13C3-PFBS	2.500	2.461	-1.5	98.5
13C3-PFHxS	2.500	2.393	-4.3	95.7
13C4-PFBA	10.000	10.011	0.1	100.1
13C4-PFHpA	2.500	2.610	4.4	104.4
13C5-PFHxA	2.500	2.632	5.3	105.3
13C5-PFPeA	5.000	5.264	5.3	105.3
13C6-PFDA	1.250	1.243	-0.6	99.4
13C7-PFUnDA	1.250	1.231	-1.5	98.5
13C8-FOSA	2.500	2.434	-2.7	97.3
13C8-PFOA	2.500	2.524	0.9	100.9
13C8-PFOS	2.500	2.449	-2.0	98.0
13C9-PFNA	1.250	1.238	-1.0	99.0
4:2FTS	20.000	19.446	-2.8	97.2
6:2FTS	20.000	20.311	1.6	101.6
8:2FTS	20.000	18.119	-9.4	90.6
d3-MeFOSAA	5.000	4.725	-5.5	94.5
EtFOSAA	20.000	21.165	5.8	105.8
FOSA	20.000	17.735	-11.3	88.7
MeFOSAA	20.000	20.900	4.5	104.5
PFBA	20.000	19.012	-4.9	95.1
PFBS	20.000	19.907	-0.5	99.5
PFDA	20.000	20.127	0.6	100.6
PFDoDA	20.000	17.291	-13.5	86.5
PFDS	20.000	18.650	-6.8	93.2
PFHpA	20.000	19.314	-3.4	96.6
PFHpS	20.000	19.127	-4.4	95.6
PFHxA	20.000	18.145	-9.3	90.7
PFHxS	20.000	20.599	3.0	103.0
PFNA	20.000	20.844	4.2	104.2
PFNS	20.000	19.768	-1.2	98.8
PFOA	20.000	19.191	-4.0	96.0
PFOS	20.000	16.710	-16.5	83.5

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

PFPeA	20.000	19.672	-1.6	98.4
PFPeS	20.000	19.453	-2.7	97.3
PFTeDA	20.000	18.975	-5.1	94.9
PFTrDA	20.000	15.949	-20.3	79.7
PFUnDA	20.000	18.688	-6.6	93.4
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--		
11C1-PF3OUdS	20.000	19.529	-2.4	97.6
13C3-HFPO-DA	10.000	10.672	6.7	106.7
9C1-PF3ONS	20.000	20.061	0.3	100.3
ADONA	20.000	17.293	-13.5	86.5
HFPO-DA	20.000	18.531	-7.3	92.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.811	-5.9	94.1
5:3FTCA	20.000	19.622	-1.9	98.1
7:3FTCA	20.000	18.808	-6.0	94.0
d3-MeFOSA	2.500	2.344	-6.3	93.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	17.622	-11.9	88.1
EtFOSE	100.000	99.231	-0.8	99.2
MeFOSA	20.000	19.231	-3.8	96.2
MeFOSE	100.000	97.876	-2.1	97.9
PFDoDS	20.000	17.693	-11.5	88.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.588	-8.2	91.8
d7-MeFOSE	25.000	24.607	-1.6	98.4
d9-EtFOSE	25.000	24.277	-2.9	97.1
d5-EtFOSA	2.500	2.494	-0.2	99.8
NFDHA	20.000	18.999	-5.0	95.0
PFMBA	20.000	19.590	-2.1	97.9
PFMPA	20.000	19.542	-2.3	97.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	16.821	-15.9	84.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18679.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18679
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.318	6.4	106.4
13C2-6:2FTS	5.000	5.360	7.2	107.2
13C2-8:2FTS	5.000	5.094	1.9	101.9
13C2-PFDoDA	1.250	1.309	4.7	104.7
13C2-PFTeDA	1.250	1.293	3.4	103.4
13C3-PFBS	2.500	2.394	-4.2	95.8
13C3-PFHxS	2.500	2.512	0.5	100.5
13C4-PFBA	10.000	10.061	0.6	100.6
13C4-PFHpA	2.500	2.576	3.0	103.0
13C5-PFHxA	2.500	2.488	-0.5	99.5
13C5-PFPeA	5.000	4.942	-1.2	98.8
13C6-PFDA	1.250	1.297	3.7	103.7
13C7-PFUnDA	1.250	1.350	8.0	108.0
13C8-FOSA	2.500	2.351	-5.9	94.1
13C8-PFOA	2.500	2.636	5.4	105.4
13C8-PFOS	2.500	2.413	-3.5	96.5
13C9-PFNA	1.250	1.213	-3.0	97.0
4:2FTS	0.750	0.898	19.8	119.8
6:2FTS	0.760	0.915	20.4	120.4
8:2FTS	0.768	0.972	26.6	126.6
d3-MeFOSAA	5.000	5.059	1.2	101.2
EtFOSAA	0.200	0.257	28.6	128.6
FOSA	0.200	0.235	17.4	117.4
MeFOSAA	0.200	0.253	26.3	126.3
PFBA	0.800	0.907	13.3	113.3
PFBS	0.177	0.220	24.1	124.1
PFDA	0.200	0.230	14.9	114.9
PFDoDA	0.200	0.234	17.2	117.2
PFDS	0.193	0.216	11.9	111.9
PFHpA	0.200	0.230	14.8	114.8
PFHpS	0.191	0.209	9.7	109.7
PFHxA	0.200	0.231	15.4	115.4
PFHxS	0.183	0.229	25.1	125.1
PFNA	0.200	0.241	20.4	120.4
PFNS	0.192	0.237	23.3	123.3
PFOA	0.200	0.234	17.2	117.2
PFOS	0.186	0.192	3.2	103.2

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18679.D

PFPeA	0.400	0.483	20.6	120.6
PFPeS	0.188	0.199	5.6	105.6
PFTeDA	0.200	0.247	23.5	123.5
PFTTrDA	0.200	0.225	12.6	112.6
PFUnDA	0.200	0.218	9.2	109.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.439	16.1	116.1
13C3-HFPO-DA	10.000	10.075	0.8	100.8
9C1-PF3ONS	0.367	0.459	25.0	125.0
ADONA	0.378	0.430	13.7	113.7
HFPO-DA	0.400	0.466	16.4	116.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.167	16.9	116.9
5:3FTCA	4.992	6.053	21.3	121.3
7:3FTCA	4.992	6.328	26.8	126.8
d3-MeFOSA	2.500	2.372	-5.1	94.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.443	10.7	110.7
EtFOSE	1.000	1.153	15.3	115.3
MeFOSA	0.400	0.454	13.6	113.6
MeFOSE	1.000	1.124	12.4	112.4
PFDoDS	0.194	0.215	10.7	110.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.951	-1.0	99.0
d7-MeFOSE	25.000	24.962	-0.2	99.8
d9-EtFOSE	25.000	24.229	-3.1	96.9
d5-EtFOSA	2.500	2.482	-0.7	99.3
NFDHA	0.400	0.474	18.5	118.5
PFMBA	0.400	0.461	15.1	115.1
PFMPA	0.400	0.461	15.4	115.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.386	8.4	108.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18690.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18690
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.302	6.0	106.0
13C2-6:2FTS	5.000	5.323	6.5	106.5
13C2-8:2FTS	5.000	5.980	19.6	119.6
13C2-PFDoDA	1.250	1.389	11.1	111.1
13C2-PFTeDA	1.250	1.445	15.6	115.6
13C3-PFBS	2.500	2.466	-1.4	98.6
13C3-PFHxS	2.500	2.432	-2.7	97.3
13C4-PFBA	10.000	9.986	-0.1	99.9
13C4-PFHpA	2.500	2.595	3.8	103.8
13C5-PFHxA	2.500	2.541	1.6	101.6
13C5-PFPeA	5.000	5.121	2.4	102.4
13C6-PFDA	1.250	1.241	-0.7	99.3
13C7-PFUnDA	1.250	1.323	5.9	105.9
13C8-FOSA	2.500	3.265	# 30.6	130.6
13C8-PFOA	2.500	2.497	-0.1	99.9
13C8-PFOS	2.500	2.626	5.0	105.0
13C9-PFNA	1.250	1.290	3.2	103.2
4:2FTS	9.375	8.732	-6.9	93.1
6:2FTS	9.500	9.705	2.2	102.2
8:2FTS	9.600	9.064	-5.6	94.4
d3-MeFOSAA	5.000	6.358	27.2	127.2
EtFOSAA	2.500	2.539	1.6	101.6
FOSA	2.500	2.321	-7.1	92.9
MeFOSAA	2.500	2.438	-2.5	97.5
PFBA	10.000	9.704	-3.0	97.0
PFBS	2.218	2.013	-9.2	90.8
PFDA	2.500	2.397	-4.1	95.9
PFDoDA	2.500	2.525	1.0	101.0
PFDS	2.413	2.112	-12.5	87.5
PFHpA	2.500	2.408	-3.7	96.3
PFHpS	2.383	2.084	-12.6	87.4
PFHxA	2.500	2.300	-8.0	92.0
PFHxS	2.285	2.137	-6.5	93.5
PFNA	2.500	2.332	-6.7	93.3
PFNS	2.405	2.136	-11.2	88.8
PFOA	2.500	2.336	-6.6	93.4
PFOS	2.320	2.229	-3.9	96.1

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18690.D

PFPeA	5.000	4.828	-3.4	96.6
PFPeS	2.353	2.227	-5.4	94.6
PFTeDA	2.500	2.377	-4.9	95.1
PFTTrDA	2.500	2.886	15.4	115.4
PFUnDA	2.500	2.415	-3.4	96.6
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--		
11C1-PF3OUdS	4.725	4.755	0.6	100.6
13C3-HFPO-DA	10.000	10.223	2.2	102.2
9C1-PF3ONS	4.675	4.773	2.1	102.1
ADONA	4.725	4.608	-2.5	97.5
HFPO-DA	5.000	4.770	-4.6	95.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.049	-3.4	96.6
5:3FTCA	62.400	58.806	-5.8	94.2
7:3FTCA	62.400	65.377	4.8	104.8
d3-MeFOSA	2.500	2.539	1.6	101.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.755	-4.9	95.1
EtFOSE	12.500	12.129	-3.0	97.0
MeFOSA	5.000	4.873	-2.5	97.5
MeFOSE	12.500	12.177	-2.6	97.4
PFDoDS	2.425	2.086	-14.0	86.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	7.155	# 43.1	143.1
d7-MeFOSE	25.000	40.017	# 60.1	160.1
d9-EtFOSE	25.000	36.735	# 46.9	146.9
d5-EtFOSA	2.500	2.532	1.3	101.3
NFDHA	5.000	4.865	-2.7	97.3
PFMBA	5.000	4.864	-2.7	97.3
PFMPA	5.000	4.854	-2.9	97.1
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.173	-6.2	93.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18699.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18699
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.379	7.6	107.6
13C2-6:2FTS	5.000	5.145	2.9	102.9
13C2-8:2FTS	5.000	5.496	9.9	109.9
13C2-PFDoDA	1.250	1.284	2.7	102.7
13C2-PFTeDA	1.250	1.298	3.9	103.9
13C3-PFBS	2.500	2.619	4.7	104.7
13C3-PFHxS	2.500	2.415	-3.4	96.6
13C4-PFBA	10.000	10.013	0.1	100.1
13C4-PFHpA	2.500	2.587	3.5	103.5
13C5-PFHxA	2.500	2.570	2.8	102.8
13C5-PFPeA	5.000	5.236	4.7	104.7
13C6-PFDA	1.250	1.207	-3.4	96.6
13C7-PFUnDA	1.250	1.370	9.6	109.6
13C8-FOSA	2.500	2.423	-3.1	96.9
13C8-PFOA	2.500	2.534	1.4	101.4
13C8-PFOS	2.500	2.365	-5.4	94.6
13C9-PFNA	1.250	1.218	-2.6	97.4
4:2FTS	9.375	8.760	-6.6	93.4
6:2FTS	9.500	9.424	-0.8	99.2
8:2FTS	9.600	8.601	-10.4	89.6
d3-MeFOSAA	5.000	4.919	-1.6	98.4
EtFOSAA	2.500	2.381	-4.7	95.3
FOSA	2.500	2.360	-5.6	94.4
MeFOSAA	2.500	2.576	3.0	103.0
PFBA	10.000	9.629	-3.7	96.3
PFBS	2.218	1.949	-12.1	87.9
PFDA	2.500	2.729	9.2	109.2
PFDoDA	2.500	2.389	-4.4	95.6
PFDS	2.413	2.296	-4.9	95.1
PFHpA	2.500	2.472	-1.1	98.9
PFHpS	2.383	2.350	-1.4	98.6
PFHxA	2.500	2.271	-9.2	90.8
PFHxS	2.285	2.260	-1.1	98.9
PFNA	2.500	2.503	0.1	100.1
PFNS	2.405	2.382	-0.9	99.1
PFOA	2.500	2.397	-4.1	95.9
PFOS	2.320	2.292	-1.2	98.8

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18699.D

PFPeA	5.000	4.839	-3.2	96.8
PFPeS	2.353	2.226	-5.4	94.6
PFTeDA	2.500	2.336	-6.6	93.4
PFTTrDA	2.500	2.470	-1.2	98.8
PFUnDA	2.500	2.226	-10.9	89.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.587	-2.9	97.1
13C3-HFPO-DA	10.000	10.603	6.0	106.0
9C1-PF3ONS	4.675	4.453	-4.7	95.3
ADONA	4.725	4.462	-5.6	94.4
HFPO-DA	5.000	4.692	-6.2	93.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.929	-4.4	95.6
5:3FTCA	62.400	59.046	-5.4	94.6
7:3FTCA	62.400	62.715	0.5	100.5
d3-MeFOSA	2.500	2.359	-5.6	94.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.750	-5.0	95.0
EtFOSE	12.500	11.460	-8.3	91.7
MeFOSA	5.000	5.055	1.1	101.1
MeFOSE	12.500	12.157	-2.7	97.3
PFDoDS	2.425	2.342	-3.4	96.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.068	1.4	101.4
d7-MeFOSE	25.000	24.936	-0.3	99.7
d9-EtFOSE	25.000	25.687	2.7	102.7
d5-EtFOSA	2.500	2.490	-0.4	99.6
NFDHA	5.000	4.899	-2.0	98.0
PFMBA	5.000	4.846	-3.1	96.9
PFMPA	5.000	4.862	-2.8	97.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.301	-3.4	96.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18711.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18711
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.371	7.4	107.4
13C2-6:2FTS	5.000	5.254	5.1	105.1
13C2-8:2FTS	5.000	5.290	5.8	105.8
13C2-PFDoDA	1.250	1.348	7.8	107.8
13C2-PFTeDA	1.250	1.264	1.1	101.1
13C3-PFBS	2.500	2.529	1.2	101.2
13C3-PFHxS	2.500	2.424	-3.0	97.0
13C4-PFBA	10.000	10.018	0.2	100.2
13C4-PFHpA	2.500	2.597	3.9	103.9
13C5-PFHxA	2.500	2.471	-1.2	98.8
13C5-PFPeA	5.000	5.037	0.7	100.7
13C6-PFDA	1.250	1.287	2.9	102.9
13C7-PFUnDA	1.250	1.348	7.9	107.9
13C8-FOSA	2.500	2.508	0.3	100.3
13C8-PFOA	2.500	2.565	2.6	102.6
13C8-PFOS	2.500	2.569	2.8	102.8
13C9-PFNA	1.250	1.313	5.1	105.1
4:2FTS	9.375	9.016	-3.8	96.2
6:2FTS	9.500	9.160	-3.6	96.4
8:2FTS	9.600	9.418	-1.9	98.1
d3-MeFOSAA	5.000	5.524	10.5	110.5
EtFOSAA	2.500	2.318	-7.3	92.7
FOSA	2.500	2.348	-6.1	93.9
MeFOSAA	2.500	2.312	-7.5	92.5
PFBA	10.000	9.647	-3.5	96.5
PFBS	2.218	2.013	-9.3	90.7
PFDA	2.500	2.550	2.0	102.0
PFDoDA	2.500	2.290	-8.4	91.6
PFDS	2.413	2.207	-8.6	91.4
PFHpA	2.500	2.279	-8.9	91.1
PFHpS	2.383	2.193	-8.0	92.0
PFHxA	2.500	2.364	-5.4	94.6
PFHxS	2.285	2.241	-1.9	98.1
PFNA	2.500	2.347	-6.1	93.9
PFNS	2.405	2.237	-7.0	93.0
PFOA	2.500	2.256	-9.7	90.3
PFOS	2.320	2.073	-10.6	89.4

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18711.D

PFPeA	5.000	4.775	-4.5	95.5
PFPeS	2.353	2.240	-4.8	95.2
PFTeDA	2.500	2.477	-0.9	99.1
PFTTrDA	2.500	2.267	-9.3	90.7
PFUnDA	2.500	2.355	-5.8	94.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.467	-5.5	94.5
13C3-HFPO-DA	10.000	10.147	1.5	101.5
9C1-PF3ONS	4.675	4.464	-4.5	95.5
ADONA	4.725	4.454	-5.7	94.3
HFPO-DA	5.000	4.818	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.033	-3.6	96.4
5:3FTCA	62.400	59.576	-4.5	95.5
7:3FTCA	62.400	62.507	0.2	100.2
d3-MeFOSA	2.500	2.380	-4.8	95.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.686	-6.3	93.7
EtFOSE	12.500	11.669	-6.7	93.3
MeFOSA	5.000	4.920	-1.6	98.4
MeFOSE	12.500	11.721	-6.2	93.8
PFDoDS	2.425	2.339	-3.6	96.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.508	10.2	110.2
d7-MeFOSE	25.000	25.728	2.9	102.9
d9-EtFOSE	25.000	25.609	2.4	102.4
d5-EtFOSA	2.500	2.432	-2.7	97.3
NFDHA	5.000	4.849	-3.0	97.0
PFMBA	5.000	4.961	-0.8	99.2
PFMPA	5.000	4.898	-2.0	98.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.240	-4.7	95.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18720.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18720
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.407	8.1	108.1
13C2-6:2FTS	5.000	5.384	7.7	107.7
13C2-8:2FTS	5.000	5.180	3.6	103.6
13C2-PFDoDA	1.250	1.250	0.0	100.0
13C2-PFTeDA	1.250	1.234	-1.3	98.7
13C3-PFBS	2.500	2.475	-1.0	99.0
13C3-PFHxS	2.500	2.454	-1.8	98.2
13C4-PFBA	10.000	10.031	0.3	100.3
13C4-PFHpA	2.500	2.517	0.7	100.7
13C5-PFHxA	2.500	2.440	-2.4	97.6
13C5-PFPeA	5.000	4.953	-0.9	99.1
13C6-PFDA	1.250	1.268	1.4	101.4
13C7-PFUnDA	1.250	1.281	2.5	102.5
13C8-FOSA	2.500	2.349	-6.0	94.0
13C8-PFOA	2.500	2.593	3.7	103.7
13C8-PFOS	2.500	2.266	-9.4	90.6
13C9-PFNA	1.250	1.301	4.1	104.1
4:2FTS	9.375	8.706	-7.1	92.9
6:2FTS	9.500	8.940	-5.9	94.1
8:2FTS	9.600	9.031	-5.9	94.1
d3-MeFOSAA	5.000	4.974	-0.5	99.5
EtFOSAA	2.500	2.439	-2.4	97.6
FOSA	2.500	2.283	-8.7	91.3
MeFOSAA	2.500	2.431	-2.8	97.2
PFBA	10.000	9.616	-3.8	96.2
PFBS	2.218	2.081	-6.2	93.8
PFDA	2.500	2.496	-0.2	99.8
PFDoDA	2.500	2.380	-4.8	95.2
PFDS	2.413	2.481	2.8	102.8
PFHpA	2.500	2.376	-5.0	95.0
PFHpS	2.383	2.306	-3.2	96.8
PFHxA	2.500	2.410	-3.6	96.4
PFHxS	2.285	2.110	-7.6	92.4
PFNA	2.500	2.380	-4.8	95.2
PFNS	2.405	2.394	-0.5	99.5
PFOA	2.500	2.459	-1.6	98.4
PFOS	2.320	2.388	2.9	102.9

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18720.D

PFPeA	5.000	4.876	-2.5	97.5
PFPeS	2.353	2.184	-7.2	92.8
PFTeDA	2.500	2.451	-2.0	98.0
PFTTrDA	2.500	2.471	-1.1	98.9
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--		
11C1-PF3OUdS	4.725	4.277	-9.5	90.5
13C3-HFPO-DA	10.000	10.378	3.8	103.8
9C1-PF3ONS	4.675	4.288	-8.3	91.7
ADONA	4.725	4.463	-5.5	94.5
HFPO-DA	5.000	4.565	-8.7	91.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.069	-3.3	96.7
5:3FTCA	62.400	59.306	-5.0	95.0
7:3FTCA	62.400	61.958	-0.7	99.3
d3-MeFOSA	2.500	2.192	-12.3	87.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.968	-0.6	99.4
EtFOSE	12.500	12.080	-3.4	96.6
MeFOSA	5.000	5.204	4.1	104.1
MeFOSE	12.500	11.920	-4.6	95.4
PFDODS	2.425	2.480	2.3	102.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.904	-1.9	98.1
d7-MeFOSE	25.000	24.027	-3.9	96.1
d9-EtFOSE	25.000	23.980	-4.1	95.9
d5-EtFOSA	2.500	2.335	-6.6	93.4
NFDHA	5.000	4.828	-3.4	96.6
PFMBA	5.000	4.894	-2.1	97.9
PFMPA	5.000	4.939	-1.2	98.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.405	-1.0	99.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18721.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18721
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.175	3.5	103.5
13C2-6:2FTS	5.000	5.373	7.5	107.5
13C2-8:2FTS	5.000	5.155	3.1	103.1
13C2-PFDoDA	1.250	1.290	3.2	103.2
13C2-PFTeDA	1.250	1.218	-2.6	97.4
13C3-PFBS	2.500	2.405	-3.8	96.2
13C3-PFHxS	2.500	2.507	0.3	100.3
13C4-PFBA	10.000	10.010	0.1	100.1
13C4-PFHpA	2.500	2.573	2.9	102.9
13C5-PFHxA	2.500	2.543	1.7	101.7
13C5-PFPeA	5.000	5.009	0.2	100.2
13C6-PFDA	1.250	1.248	-0.2	99.8
13C7-PFUnDA	1.250	1.226	-1.9	98.1
13C8-FOSA	2.500	2.521	0.9	100.9
13C8-PFOA	2.500	2.477	-0.9	99.1
13C8-PFOS	2.500	2.427	-2.9	97.1
13C9-PFNA	1.250	1.238	-1.0	99.0
4:2FTS	0.750	0.896	19.5	119.5
6:2FTS	0.760	0.884	16.3	116.3
8:2FTS	0.768	0.937	21.9	121.9
d3-MeFOSAA	5.000	5.278	5.6	105.6
EtFOSAA	0.200	0.234	17.0	117.0
FOSA	0.200	0.229	14.5	114.5
MeFOSAA	0.200	0.252	25.9	125.9
PFBA	0.800	0.920	15.0	115.0
PFBS	0.177	0.212	19.7	119.7
PFDA	0.200	0.235	17.3	117.3
PFDoDA	0.200	0.224	11.9	111.9
PFDS	0.193	0.221	14.5	114.5
PFHpA	0.200	0.232	16.2	116.2
PFHpS	0.191	0.220	15.1	115.1
PFHxA	0.200	0.219	9.5	109.5
PFHxS	0.183	0.217	18.3	118.3
PFNA	0.200	0.231	15.3	115.3
PFNS	0.192	0.233	21.6	121.6
PFOA	0.200	0.226	12.8	112.8
PFOS	0.186	0.208	11.9	111.9

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18721.D

PFPeA	0.400	0.481	20.4	120.4
PFPeS	0.188	0.217	15.6	115.6
PFTeDA	0.200	0.238	19.2	119.2
PFTTrDA	0.200	0.229	14.3	114.3
PFUnDA	0.200	0.248	23.9	123.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.482	27.5	127.5
13C3-HFPO-DA	10.000	9.673	-3.3	96.7
9C1-PF3ONS	0.367	0.473	28.8	128.8
ADONA	0.378	0.453	19.9	119.9
HFPO-DA	0.400	0.479	19.8	119.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.132	13.4	113.4
5:3FTCA	4.992	5.686	13.9	113.9
7:3FTCA	4.992	5.859	17.4	117.4
d3-MeFOSA	2.500	2.344	-6.2	93.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.468	16.9	116.9
EtFOSE	1.000	1.166	16.6	116.6
MeFOSA	0.400	0.508	27.0	127.0
MeFOSE	1.000	1.154	15.4	115.4
PFDoDS	0.194	0.243	25.1	125.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.133	2.7	102.7
d7-MeFOSE	25.000	24.347	-2.6	97.4
d9-EtFOSE	25.000	24.881	-0.5	99.5
d5-EtFOSA	2.500	2.444	-2.2	97.8
NFDHA	0.400	0.399	-0.4	99.6
PFMBA	0.400	0.467	16.6	116.6
PFMPA	0.400	0.458	14.5	114.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.400	12.3	112.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18733.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18733
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.433	8.7	108.7
13C2-6:2FTS	5.000	5.272	5.4	105.4
13C2-8:2FTS	5.000	5.254	5.1	105.1
13C2-PFDoDA	1.250	1.309	4.7	104.7
13C2-PFTeDA	1.250	1.301	4.1	104.1
13C3-PFBS	2.500	2.491	-0.4	99.6
13C3-PFHxS	2.500	2.423	-3.1	96.9
13C4-PFBA	10.000	9.952	-0.5	99.5
13C4-PFHpA	2.500	2.495	-0.2	99.8
13C5-PFHxA	2.500	2.503	0.1	100.1
13C5-PFPeA	5.000	5.092	1.8	101.8
13C6-PFDA	1.250	1.382	10.6	110.6
13C7-PFUnDA	1.250	1.288	3.1	103.1
13C8-FOSA	2.500	2.441	-2.4	97.6
13C8-PFOA	2.500	2.410	-3.6	96.4
13C8-PFOS	2.500	2.456	-1.8	98.2
13C9-PFNA	1.250	1.260	0.8	100.8
4:2FTS	9.375	8.992	-4.1	95.9
6:2FTS	9.500	9.635	1.4	101.4
8:2FTS	9.600	9.250	-3.6	96.4
d3-MeFOSAA	5.000	4.985	-0.3	99.7
EtFOSAA	2.500	2.527	1.1	101.1
FOSA	2.500	2.315	-7.4	92.6
MeFOSAA	2.500	2.487	-0.5	99.5
PFBA	10.000	9.649	-3.5	96.5
PFBS	2.218	2.061	-7.1	92.9
PFDA	2.500	2.155	-13.8	86.2
PFDoDA	2.500	2.258	-9.7	90.3
PFDS	2.413	2.243	-7.0	93.0
PFHpA	2.500	2.478	-0.9	99.1
PFHpS	2.383	2.166	-9.1	90.9
PFHxA	2.500	2.433	-2.7	97.3
PFHxS	2.285	2.150	-5.9	94.1
PFNA	2.500	2.220	-11.2	88.8
PFNS	2.405	2.141	-11.0	89.0
PFOA	2.500	2.453	-1.9	98.1
PFOS	2.320	2.271	-2.1	97.9

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18733.D

PFPeA	5.000	4.779	-4.4	95.6
PFPeS	2.353	2.223	-5.5	94.5
PFTeDA	2.500	2.379	-4.8	95.2
PFTTrDA	2.500	2.393	-4.3	95.7
PFUnDA	2.500	2.382	-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--		
11C1-PF3OUdS	4.725	4.769	0.9	100.9
13C3-HFPO-DA	10.000	10.059	0.6	100.6
9C1-PF3ONS	4.675	4.686	0.2	100.2
ADONA	4.725	4.533	-4.1	95.9
HFPO-DA	5.000	5.105	2.1	102.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.012	-3.7	96.3
5:3FTCA	62.400	59.060	-5.4	94.6
7:3FTCA	62.400	60.447	-3.1	96.9
d3-MeFOSA	2.500	2.292	-8.3	91.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.733	-5.3	94.7
EtFOSE	12.500	11.843	-5.3	94.7
MeFOSA	5.000	5.122	2.4	102.4
MeFOSE	12.500	11.693	-6.5	93.5
PFDODS	2.425	2.338	-3.6	96.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.831	-3.4	96.6
d7-MeFOSE	25.000	24.964	-0.1	99.9
d9-EtFOSE	25.000	24.520	-1.9	98.1
d5-EtFOSA	2.500	2.485	-0.6	99.4
NFDHA	5.000	4.804	-3.9	96.1
PFMBA	5.000	4.771	-4.6	95.4
PFMPA	5.000	4.844	-3.1	96.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.295	-3.5	96.5

CC Criteria: +/- 30%

6.10.10 6

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18777.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18777
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.565	11.3	111.3
13C2-6:2FTS	5.000	5.598	12.0	112.0
13C2-8:2FTS	5.000	5.697	13.9	113.9
13C2-PFDoDA	1.250	1.302	4.1	104.1
13C2-PFTeDA	1.250	1.289	3.1	103.1
13C3-PFBS	2.500	2.636	5.4	105.4
13C3-PFHxS	2.500	2.534	1.4	101.4
13C4-PFBA	10.000	9.956	-0.4	99.6
13C4-PFHpA	2.500	2.618	4.7	104.7
13C5-PFHxA	2.500	2.527	1.1	101.1
13C5-PFPeA	5.000	5.052	1.0	101.0
13C6-PFDA	1.250	1.364	9.1	109.1
13C7-PFUnDA	1.250	1.282	2.6	102.6
13C8-FOSA	2.500	2.421	-3.2	96.8
13C8-PFOA	2.500	2.419	-3.3	96.7
13C8-PFOS	2.500	2.357	-5.7	94.3
13C9-PFNA	1.250	1.292	3.4	103.4
4:2FTS	9.375	9.097	-3.0	97.0
6:2FTS	9.500	9.593	1.0	101.0
8:2FTS	9.600	9.085	-5.4	94.6
d3-MeFOSAA	5.000	5.291	5.8	105.8
EtFOSAA	2.500	2.297	-8.1	91.9
FOSA	2.500	2.363	-5.5	94.5
MeFOSAA	2.500	2.518	0.7	100.7
PFBA	10.000	9.624	-3.8	96.2
PFBS	2.218	2.048	-7.7	92.3
PFDA	2.500	2.268	-9.3	90.7
PFDoDA	2.500	2.309	-7.6	92.4
PFDS	2.413	2.366	-1.9	98.1
PFHpA	2.500	2.381	-4.7	95.3
PFHpS	2.383	2.299	-3.5	96.5
PFHxA	2.500	2.362	-5.5	94.5
PFHxS	2.285	2.224	-2.7	97.3
PFNA	2.500	2.389	-4.4	95.6
PFNS	2.405	2.255	-6.2	93.8
PFOA	2.500	2.387	-4.5	95.5
PFOS	2.320	2.219	-4.4	95.6

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18777.D

PFPeA	5.000	4.821	-3.6	96.4
PFPeS	2.353	2.359	0.2	100.2
PFTeDA	2.500	2.499	-0.1	99.9
PFTTrDA	2.500	2.360	-5.6	94.4
PFUnDA	2.500	2.398	-4.1	95.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.310	-8.8	91.2
13C3-HFPO-DA	10.000	10.807	8.1	108.1
9C1-PF3ONS	4.675	4.402	-5.8	94.2
ADONA	4.725	4.361	-7.7	92.3
HFPO-DA	5.000	4.561	-8.8	91.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.879	-4.8	95.2
5:3FTCA	62.400	58.128	-6.8	93.2
7:3FTCA	62.400	59.139	-5.2	94.8
d3-MeFOSA	2.500	2.326	-6.9	93.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.613	-7.7	92.3
EtFOSE	12.500	11.193	-10.5	89.5
MeFOSA	5.000	4.928	-1.4	98.6
MeFOSE	12.500	11.329	-9.4	90.6
PFDoDS	2.425	2.357	-2.8	97.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.351	7.0	107.0
d7-MeFOSE	25.000	24.841	-0.6	99.4
d9-EtFOSE	25.000	25.117	0.5	100.5
d5-EtFOSA	2.500	2.497	-0.1	99.9
NFDHA	5.000	4.903	-1.9	98.1
PFMBA	5.000	4.882	-2.4	97.6
PFMPA	5.000	4.880	-2.4	97.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.158	-6.6	93.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18783.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\060123_1633_S6Q280\s6q280.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18783
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.625	12.5	112.5
13C2-6:2FTS	5.000	5.614	12.3	112.3
13C2-8:2FTS	5.000	5.560	11.2	111.2
13C2-PFDoDA	1.250	1.301	4.1	104.1
13C2-PFTeDA	1.250	1.360	8.8	108.8
13C3-PFBS	2.500	2.443	-2.3	97.7
13C3-PFHxS	2.500	2.373	-5.1	94.9
13C4-PFBA	10.000	9.916	-0.8	99.2
13C4-PFHpA	2.500	2.707	8.3	108.3
13C5-PFHxA	2.500	2.653	6.1	106.1
13C5-PFPeA	5.000	5.130	2.6	102.6
13C6-PFDA	1.250	1.318	5.5	105.5
13C7-PFUnDA	1.250	1.361	8.9	108.9
13C8-FOSA	2.500	2.450	-2.0	98.0
13C8-PFOA	2.500	2.475	-1.0	99.0
13C8-PFOS	2.500	2.414	-3.5	96.5
13C9-PFNA	1.250	1.252	0.2	100.2
4:2FTS	0.750	0.848	13.1	113.1
6:2FTS	0.760	0.848	11.5	111.5
8:2FTS	0.768	0.897	16.8	116.8
d3-MeFOSAA	5.000	5.267	5.3	105.3
EtFOSAA	0.200	0.223	11.6	111.6
FOSA	0.200	0.224	12.0	112.0
MeFOSAA	0.200	0.236	17.9	117.9
PFBA	0.800	0.897	12.1	112.1
PFBS	0.177	0.185	4.4	104.4
PFDA	0.200	0.241	20.5	120.5
PFDoDA	0.200	0.251	25.5	125.5
PFDS	0.193	0.230	19.1	119.1
PFHpA	0.200	0.209	4.4	104.4
PFHpS	0.191	0.211	10.5	110.5
PFHxA	0.200	0.219	9.5	109.5
PFHxS	0.183	0.221	20.9	120.9
PFNA	0.200	0.226	13.2	113.2
PFNS	0.192	0.232	21.0	121.0
PFOA	0.200	0.232	16.1	116.1
PFOS	0.186	0.205	10.4	110.4

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q280-CC279
 Lab FileID: 6Q18783.D

PFPeA	0.400	0.477	19.3	119.3
PFPeS	0.188	0.221	17.6	117.6
PFTeDA	0.200	0.257	28.7	128.7
PFTTrDA	0.200	0.242	20.8	120.8
PFUnDA	0.200	0.239	19.5	119.5
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--		
11C1-PF3OUdS	0.378	0.461	22.0	122.0
13C3-HFPO-DA	10.000	10.089	0.9	100.9
9C1-PF3ONS	0.367	0.453	23.3	123.3
ADONA	0.378	0.452	19.6	119.6
HFPO-DA	0.400	0.456	13.9	113.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.179	18.1	118.1
5:3FTCA	4.992	5.861	17.4	117.4
7:3FTCA	4.992	5.913	18.5	118.5
d3-MeFOSA	2.500	2.300	-8.0	92.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.505	26.2	126.2
EtFOSE	1.000	1.179	17.9	117.9
MeFOSA	0.400	0.506	26.5	126.5
MeFOSE	1.000	1.181	18.1	118.1
PFDODS	0.194	0.221	13.8	113.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.220	4.4	104.4
d7-MeFOSE	25.000	24.352	-2.6	97.4
d9-EtFOSE	25.000	24.699	-1.2	98.8
d5-EtFOSA	2.500	2.441	-2.4	97.6
NFDHA	0.400	0.438	9.6	109.6
PFMBA	0.400	0.463	15.8	115.8
PFMPA	0.400	0.462	15.6	115.6
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	10.2	110.2

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICC287
 Lab FileID: 6Q19243.D

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
D:\MassHunter\Methods	1633_061223_S6Q287_quantmethod.xml	D:\MassHunter\Data\061223_1633_S6Q287	6/13/2023 10:11:35 AM	D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d	Avg RF	0.4590	0.4046	0.3848	0.3812	0.3816	0.3921	0.3949	0.3917	0.3987	6.405
D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d				D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d	Avg RF	0.9509	0.8227	0.7905	0.7836	0.7724	0.8155	0.8116	0.8135	0.8201	6.795
D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d				D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d	Avg RF	1.1141	1.0115	0.9956	0.9944	0.9935	0.9996	1.0094	1.0156	1.0066	6.737
D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d				D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d	Avg RF	1.7355	1.5292	1.4214	1.3898	1.3814	1.4490	1.4293	1.4352	1.4713	7.873
D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d					Avg RF	1.2304	1.0650	1.0216	0.9890	0.9850	1.0548	1.0376	1.0603	1.0555	7.302
Compound															
I M4-PFBA															
T PFBA															
I M5-PFPeA															
T PFMPA															
T 3:3FTCA															
T PFPeA															
T PFMBA															
I M5-PFHxA															
T NFDHA															
T PFHxA															
T PFEEA															
T 5:3FTCA															
T 7:3FTCA															
I M4-PFHpA															
T PFHpA															
I M8-PFOA															
T PFOA															
I M9-PFNA															
T PFNA															
I M6-PFDA															
T PFDA															
I M7-PFUnDA															
T PFUnDA															
I M2-PFDdA															

Generated at 10:12 AM on 6/13/2023

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Initial Calibration Summary

Job Number: FC6445
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICC287
 Lab FileID: 6Q19243.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.3026	1.1308	1.0072	0.9782	0.9674	0.9212	0.9734	0.9311	1.0265	12.558
T PFTfDA	Quadratic	1.3071	1.1393	1.0779	1.0648	0.9886	0.9962	0.9541	0.8448	1.0466	13.168
I M2-PFTeDA	Avg RF	1.7855	1.5964	1.4155	1.4618	1.4554	1.5360	1.3641	1.3420	1.4946	9.658
T PFTeDA	Avg RF	1.2407	1.1052	0.9675	0.9790	0.9739	1.0009	0.9922	0.9488	1.0260	9.637
I M8-FOSA	Avg RF	1.1895	1.1814	1.0524	1.0963	1.0352	1.0868	1.0481	1.0832	1.0966	5.359
T FOSA	Avg RF	1.6461	1.5434	1.3050	1.3136	1.2937	1.2930	1.3657	1.2978	1.3823	9.839
I M3-PFBS	Avg RF	1.9328	1.6004	1.4178	1.4131	1.4108	1.4047	1.4363	1.4112	1.5034	12.332
T PFBS	Avg RF	1.7484	1.5271	1.5079	1.3424	1.5151	1.4486	1.4273	1.5256	1.5053	7.776
I M3-PFHxS	Avg RF	1.7054	1.5902	1.4838	1.3254	1.3874	1.4472	1.3346	1.5085	1.4728	8.818
T PFHs	Avg RF	1.5128	1.4598	1.2519	1.2500	1.2830	1.2610	1.2347	1.3242	1.3222	8.003
I M8-PFOS	Avg RF	0.8436	0.8371	0.7132	0.7123	0.7177	0.7519	0.7198	0.7409	0.7546	7.260
T PFOS	Avg RF	0.4389	0.3979	0.3794	0.3403	0.3725	0.3734	0.3465	0.3557	0.3756	8.438
I M2-4:2FTS	Avg RF	9.1908	8.5368	8.4898	8.9447	8.2400	8.4278	8.3557	8.6637	4.241	
T 4:2FTS	Avg RF	7.2557	6.3372	6.2653	5.8572	5.7237	5.6834	5.9810	5.2251	6.0411	9.981
I M2-6:2FTS	Avg RF	3.7714	3.8969	3.5524	3.3156	3.2356	3.3268	2.9315	2.5736	3.3255	12.987
T 6:2FTS	Avg RF	1.4039	1.3539	1.2468	1.1347	1.1180	1.1390	1.2069	1.1228	1.2158	9.126
I M2-8:2FTS	Avg RF	1.4984	1.0715	1.1025	1.0851	0.9461	1.0793	1.0558	0.9410	1.0975	15.821
T 8:2FTS	Avg RF	21.88	17.57	17.65	16.33	14.98	16.34	16.10	14.48	16.92	13.530
I M3-MeFOSAA	Avg RF	9.5842	8.6208	7.8415	7.9940	6.8609	7.5779	7.5287	6.9744	7.8728	11.300
T MeFOSAA	Avg RF	5.4742	5.1069	5.1195	5.0130	4.0543	4.8342	4.3351	3.7701	4.7134	12.603
I M3-HFO-DA	Avg RF	1.0244	0.8056	0.8881	0.7409	0.7564	0.8068	0.7725	0.8472	0.8302	11.081
T HFO-DA	Avg RF	1.2717	1.0756	1.0960	1.0255	1.0814	1.0750	1.0339	1.0947	1.0942	6.971
I M7-MeFOSE	Avg RF	1.5082	1.3296	1.3771	1.2898	1.2505	1.2655	1.2575	1.2817	1.3200	6.584
T MeFOSE	Avg RF										

Generated at 10:12 AM on 6/13/2023

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Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICC287
 Lab FileID: 6Q19243.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA											
T EtFOSA	Avg RF	1.4942	1.3646	1.3843	1.3082	1.2310	1.3344	1.2820	1.3131	1.3390	5.878
I M3-MeFOSA											
T MeFOSA	Avg RF	1.2347	1.1516	1.1269	1.0768	1.1111	1.0780	0.9997	0.9882	1.0959	7.325
I 13C4-PFOS											
S d3-MeFOSAA	Linear	0.8814	0.9491	0.9565	1.0225	0.9946	0.9907	0.8779	0.8305	0.9379	7.204
S 13C8-PFOS	Linear	0.7257	0.7204	0.7237	0.7727	0.7516	0.7272	0.7428	0.6943	0.7323	3.202
S d5-EFOSAA	Linear	0.7393	0.8512	0.7545	0.8515	0.8359	0.7815	0.7851	0.7303	0.7912	6.250
S 13C8-FOSA	Linear	1.8040	1.8999	1.9569	1.8932	1.8707	1.8337	1.7784	1.7804	1.8522	3.447
S d7-MeFOSE	Linear	0.9807	1.0145	0.9242	0.9816	0.9232	0.9013	0.8615	0.7533	0.9175	9.021
S d3-MeFOSA	Linear	0.7684	0.8500	0.7995	0.8219	0.8366	0.8305	0.8763	0.8649	0.8310	4.214
S d9-EFOSE	Linear	1.1707	1.3120	1.2023	1.2217	1.2013	1.1598	0.9891	0.9116	1.1461	11.420
S d5-EFOSA	Linear	0.7604	0.8636	0.7879	0.8153	0.8472	0.7899	0.7981	0.7797	0.8053	4.331
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1812	1.1818	1.1803	1.1772	1.1630	1.1720	1.1614	1.1747	1.1740	0.682
I 1802-PFHxS											
S 13C2-4:2FTS	Linear	0.1841	0.1848	0.1640	0.1789	0.1541	0.1400	0.1227	0.1028	0.1539	19.584
S 13C3-PFBS	Linear	2.1967	2.1724	2.0304	2.2085	2.1873	1.9702	2.1407	1.9966	2.1128	4.621
S 13C2-6:2FTS	Linear	0.2539	0.2796	0.2412	0.2553	0.2576	0.2142	0.1841	0.1651	0.2314	17.223
S 13C3-PFHxS	Linear	1.2695	1.3466	1.2756	1.4239	1.3847	1.2840	1.3305	1.3044	1.3274	4.167
S 13C2-8:2FTS	Linear	0.2445	0.2478	0.2252	0.2529	0.2276	0.1958	0.2060	0.1736	0.2217	12.579
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8909	0.9112	0.9470	0.9689	0.9522	0.8836	0.9599	0.9483	0.9328	3.508
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.6324	0.6992	0.7199	0.7387	0.7517	0.6716	0.6846	0.6209	0.6899	6.846
S 13C7-PFUnDA	Linear	0.8946	1.0131	0.9728	1.0310	1.0314	0.9818	0.9906	0.8636	0.9724	6.372
S 13C2-PFDODA	Linear	0.7567	0.8170	0.8410	0.8366	0.9052	0.8700	0.8013	0.8554	0.8354	5.391
S 13C2-PFTeDA	Linear	0.4562	0.4826	0.5150	0.4937	0.5062	0.4685	0.4700	0.4883	0.4851	4.097
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.7141	0.7321	0.7951	0.7534	0.7264	0.8255	0.8013	0.7543	0.7628	5.255
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.4784	0.5178	0.4749	0.4916	0.4998	0.4815	0.4496	0.4707	0.4830	4.235
S 13C5-PFHxA	Linear	1.0732	1.1606	1.0096	1.0619	1.1068	1.1179	0.9983	1.1191	1.0809	5.208
S 13C3-HFOO-DA	Linear	0.1603	0.1764	0.1578	0.1642	0.1859	0.1718	0.1646	0.1899	0.1713	6.927
S 13C4-PFHpA	Linear	0.9703	1.0303	0.9983	0.9817	1.0537	0.9795	0.9840	1.0393	1.0046	3.165

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

Initial Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICC287
 Lab FileID: 6Q19243.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PFBA	Linear	$y = 1.173977 * x$	
S 13C5-PFPeA	Linear	$y = 0.483025 * x$	
S 13C2-4:2FTS	Linear	$y = 0.153940 * x$	
S 13C3-PFBS	Linear	$y = 2.112842 * x$	
S 13C5-PFHxA	Linear	$y = 1.080912 * x$	
S 13C3-HFO-DA	Linear	$y = 0.171344 * x$	17.7055
T HFO-DA	Quadratic	$y = -0.011728 * x^2 + 1.091190 * x$	13.0665
T PFEEA	Linear	$y = 1.232515 * x$	
S 13C4-PFHpA	Linear	$y = 1.004638 * x$	
S 13C2-6:2FTS	Linear	$y = 0.231354 * x$	
S 13C8-PFOA	Linear	$y = 0.932753 * x$	
S 13C3-PFHxS	Linear	$y = 1.327395 * x$	
S 13C9-PFNA	Linear	$y = 0.762780 * x$	
S 13C2-8:2FTS	Linear	$y = 0.221672 * x$	
S 13C6-PEDA	Linear	$y = 0.689882 * x$	
S d3-MeFOSAA	Linear	$y = 0.937883 * x$	
S 13C8-PFOS	Linear	$y = 0.732287 * x$	
S d5-EFOSAA	Linear	$y = 0.791173 * x$	
S 13C7-PFUnDA	Linear	$y = 0.972357 * x$	
S 13C2-PFDODA	Linear	$y = 0.835400 * x$	13.4936
T PFTfDA	Quadratic	$y = -0.003674 * x^2 + 1.028478 * x$	
S 13C8-FOSA	Linear	$y = 1.852154 * x$	
S 13C2-PFTeDA	Linear	$y = 0.485067 * x$	
S d7-MeFOSE	Linear	$y = 0.917537 * x$	
S d3-MeFOSA	Linear	$y = 0.831033 * x$	
S d9-EFOSE	Linear	$y = 1.146056 * x$	
S d5-EFOSA	Linear	$y = 0.805268 * x$	

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

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICV287
 Lab FileID: 6Q19249.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19249
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.115	2.3	102.3
13C2-6:2FTS	5.000	5.319	6.4	106.4
13C2-8:2FTS	5.000	4.832	-3.4	96.6
13C2-PFDoDA	1.250	1.300	4.0	104.0
13C2-PFTeDA	1.250	1.182	-5.4	94.6
13C3-PFBS	2.500	2.313	-7.5	92.5
13C3-PFHxS	2.500	2.334	-6.6	93.4
13C4-PFBA	10.000	10.010	0.1	100.1
13C4-PFHpA	2.500	2.605	4.2	104.2
13C5-PFHxA	2.500	2.385	-4.6	95.4
13C5-PFPeA	5.000	5.038	0.8	100.8
13C6-PFDA	1.250	1.340	7.2	107.2
13C7-PFUnDA	1.250	1.270	1.6	101.6
13C8-FOSA	2.500	2.671	6.9	106.9
13C8-PFOA	2.500	2.445	-2.2	97.8
13C8-PFOS	2.500	2.660	6.4	106.4
13C9-PFNA	1.250	1.345	7.6	107.6
4:2FTS	9.375	9.716	3.6	103.6
6:2FTS	9.500	8.749	-7.9	92.1
8:2FTS	9.600	10.343	7.7	107.7
d3-MeFOSAA	5.000	5.204	4.1	104.1
EtFOSAA	2.500	2.673	6.9	106.9
FOSA	2.500	2.345	-6.2	93.8
MeFOSAA	2.500	2.592	3.7	103.7
PFBA	10.000	9.995	0.0	100.0
PFBS	2.218	2.250	1.5	101.5
PFDA	2.500	2.383	-4.7	95.3
PFDoDA	2.500	2.529	1.2	101.2
PFDS	2.413	2.478	2.7	102.7
PFHpA	2.500	2.304	-7.8	92.2
PFHpS	2.383	2.314	-2.9	97.1
PFHxA	2.500	2.685	7.4	107.4
PFHxS	2.285	2.251	-1.5	98.5
PFNA	2.500	2.196	-12.2	87.8
PFNS	2.405	2.392	-0.5	99.5
PFOA	2.500	2.501	0.0	100.0
PFOS	2.320	2.176	-6.2	93.8

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICV287
 Lab FileID: 6Q19249.D

PFPeA	5.000	4.960	-0.8	99.2
PFPeS	2.353	2.387	1.4	101.4
PFTeDA	2.500	2.542	1.7	101.7
PFTTrDA	2.500	2.386	-4.6	95.4
PFUnDA	2.500	2.515	0.6	100.6
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--		
11C1-PF3OUdS	4.725	4.609	-2.5	97.5
13C3-HFPO-DA	10.000	10.104	1.0	101.0
9C1-PF3ONS	4.675	4.765	1.9	101.9
ADONA	4.725	4.579	-3.1	96.9
HFPO-DA	5.000	4.862	-2.8	97.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.098	-3.1	96.9
5:3FTCA	62.400	65.442	4.9	104.9
7:3FTCA	62.400	66.793	7.0	107.0
d3-MeFOSA	2.500	2.622	4.9	104.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.740	-5.2	94.8
EtFOSE	12.500	12.686	1.5	101.5
MeFOSA	5.000	4.927	-1.5	98.5
MeFOSE	12.500	12.192	-2.5	97.5
PFDoDS	2.425	2.478	2.2	102.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.298	6.0	106.0
d7-MeFOSE	25.000	25.262	1.0	101.0
d9-EtFOSE	25.000	22.972	-8.1	91.9
d5-EtFOSA	2.500	2.702	8.1	108.1
NFDHA	5.000	5.224	4.5	104.5
PFMBA	5.000	4.953	-0.9	99.1
PFMPA	5.000	4.928	-1.4	98.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	5.277	18.6	118.6

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICV287
 Lab FileID: 6Q19250.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19250
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.693	13.9	113.9
13C2-6:2FTS	5.000	5.724	14.5	114.5
13C2-8:2FTS	5.000	5.277	5.5	105.5
13C2-PFDoDA	1.250	1.300	4.0	104.0
13C2-PFTeDA	1.250	1.284	2.7	102.7
13C3-PFBS	2.500	2.738	9.5	109.5
13C3-PFHxS	2.500	2.663	6.5	106.5
13C4-PFBA	10.000	10.147	1.5	101.5
13C4-PFHpA	2.500	2.568	2.7	102.7
13C5-PFHxA	2.500	2.470	-1.2	98.8
13C5-PFPeA	5.000	5.159	3.2	103.2
13C6-PFDA	1.250	1.344	7.5	107.5
13C7-PFUnDA	1.250	1.348	7.8	107.8
13C8-FOSA	2.500	2.473	-1.1	98.9
13C8-PFOA	2.500	2.589	3.6	103.6
13C8-PFOS	2.500	2.548	1.9	101.9
13C9-PFNA	1.250	1.291	3.3	103.3
4:2FTS	20.000	15.955	-20.2	79.8
6:2FTS	20.000	15.212	-23.9	76.1
8:2FTS	20.000	16.170	-19.2	80.8
d3-MeFOSAA	5.000	5.037	0.7	100.7
EtFOSAA	20.000	14.310	-28.5	71.5
FOSA	20.000	15.764	-21.2	78.8
MeFOSAA	20.000	15.800	-21.0	79.0
PFBA	20.000	15.644	-21.8	78.2
PFBS	20.000	16.577	-17.1	82.9
PFDA	20.000	16.017	-19.9	80.1
PFDoDA	20.000	14.565	-27.2	72.8
PFDS	20.000	17.419	-12.9	87.1
PFHpA	20.000	15.331	-23.3	76.7
PFHpS	20.000	15.899	-20.5	79.5
PFHxA	20.000	16.131	-19.3	80.7
PFHxS	20.000	16.837	-15.8	84.2
PFNA	20.000	15.878	-20.6	79.4
PFNS	20.000	15.220	-23.9	76.1
PFOA	20.000	15.250	-23.7	76.3
PFOS	20.000	14.846	-25.8	74.2

Initial Calibration Verification

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-ICV287
 Lab FileID: 6Q19250.D

PFPeA	20.000	16.062	-19.7	80.3
PFPeS	20.000	16.792	-16.0	84.0
PFTeDA	20.000	15.373	-23.1	76.9
PFTrDA	20.000	14.674	-26.6	73.4
PFUnDA	20.000	14.770	-26.1	73.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	15.052	-24.7	75.3
13C3-HFPO-DA	10.000	10.293	2.9	102.9
9C1-PF3ONS	20.000	15.367	-23.2	76.8
ADONA	20.000	14.304	-28.5	71.5
HFPO-DA	20.000	14.253	-28.7	71.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	15.125	-24.4	75.6
5:3FTCA	20.000	16.887	-15.6	84.4
7:3FTCA	20.000	16.670	-16.7	83.3
d3-MeFOSA	2.500	2.277	-8.9	91.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	15.493	-22.5	77.5
EtFOSE	100.000	86.650	-13.3	86.7
MeFOSA	20.000	16.339	-18.3	81.7
MeFOSE	100.000	84.896	-15.1	84.9
PFDoDS	20.000	14.699	-26.5	73.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.431	8.6	108.6
d7-MeFOSE	25.000	21.049	-15.8	84.2
d9-EtFOSE	25.000	18.968	-24.1	75.9
d5-EtFOSA	2.500	2.418	-3.3	96.7
NFDHA	20.000	15.863	-20.7	79.3
PFMBA	20.000	15.730	-21.3	78.7
PFMPA	20.000	15.772	-21.1	78.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	14.961	-25.2	74.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19251.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19251
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.840	16.8	116.8
13C2-6:2FTS	5.000	5.782	15.6	115.6
13C2-8:2FTS	5.000	5.890	17.8	117.8
13C2-PFDoDA	1.250	1.251	0.1	100.1
13C2-PFTeDA	1.250	1.208	-3.4	96.6
13C3-PFBS	2.500	2.631	5.3	105.3
13C3-PFHxS	2.500	2.536	1.4	101.4
13C4-PFBA	10.000	10.022	0.2	100.2
13C4-PFHpA	2.500	2.453	-1.9	98.1
13C5-PFHxA	2.500	2.378	-4.9	95.1
13C5-PFPeA	5.000	4.920	-1.6	98.4
13C6-PFDA	1.250	1.222	-2.3	97.7
13C7-PFUnDA	1.250	1.324	5.9	105.9
13C8-FOSA	2.500	2.394	-4.2	95.8
13C8-PFOA	2.500	2.590	3.6	103.6
13C8-PFOS	2.500	2.204	-11.8	88.2
13C9-PFNA	1.250	1.342	7.3	107.3
4:2FTS	9.375	9.157	-2.3	97.7
6:2FTS	9.500	9.915	4.4	104.4
8:2FTS	9.600	8.506	-11.4	88.6
d3-MeFOSAA	5.000	4.516	-9.7	90.3
EtFOSAA	2.500	2.484	-0.6	99.4
FOSA	2.500	2.281	-8.8	91.2
MeFOSAA	2.500	2.564	2.6	102.6
PFBA	10.000	9.663	-3.4	96.6
PFBS	2.218	2.086	-5.9	94.1
PFDA	2.500	2.319	-7.2	92.8
PFDoDA	2.500	2.361	-5.6	94.4
PFDS	2.413	2.430	0.7	100.7
PFHpA	2.500	2.229	-10.8	89.2
PFHpS	2.383	2.528	6.1	106.1
PFHxA	2.500	2.434	-2.6	97.4
PFHxS	2.285	2.130	-6.8	93.2
PFNA	2.500	2.366	-5.3	94.7
PFNS	2.405	2.426	0.9	100.9
PFOA	2.500	2.404	-3.9	96.1
PFOS	2.320	2.235	-3.6	96.4

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19251.D

PFPeA	5.000	4.740	-5.2	94.8
PFPeS	2.353	2.336	-0.7	99.3
PFTeDA	2.500	2.417	-3.3	96.7
PFTTrDA	2.500	2.417	-3.3	96.7
PFUnDA	2.500	2.282	-8.7	91.3
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--		
11C1-PF3OUdS	4.725	4.659	-1.4	98.6
13C3-HFPO-DA	10.000	9.943	-0.6	99.4
9C1-PF3ONS	4.675	4.504	-3.7	96.3
ADONA	4.725	4.155	-12.1	87.9
HFPO-DA	5.000	4.456	-10.9	89.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.617	-6.9	93.1
5:3FTCA	62.400	62.903	0.8	100.8
7:3FTCA	62.400	61.077	-2.1	97.9
d3-MeFOSA	2.500	2.084	-16.6	83.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.653	-6.9	93.1
EtFOSE	12.500	11.311	-9.5	90.5
MeFOSA	5.000	5.120	2.4	102.4
MeFOSE	12.500	12.158	-2.7	97.3
PFDoDS	2.425	2.300	-5.2	94.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.479	-10.4	89.6
d7-MeFOSE	25.000	21.074	-15.7	84.3
d9-EtFOSE	25.000	20.721	-17.1	82.9
d5-EtFOSA	2.500	2.285	-8.6	91.4
NFDHA	5.000	4.814	-3.7	96.3
PFMBA	5.000	4.717	-5.7	94.3
PFMPA	5.000	4.747	-5.1	94.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.788	7.6	107.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19252.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19252
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.675	13.5	113.5
13C2-6:2FTS	5.000	6.172	23.4	123.4
13C2-8:2FTS	5.000	5.547	10.9	110.9
13C2-PFDoDA	1.250	1.374	9.9	109.9
13C2-PFTeDA	1.250	1.327	6.1	106.1
13C3-PFBS	2.500	2.379	-4.8	95.2
13C3-PFHxS	2.500	2.508	0.3	100.3
13C4-PFBA	10.000	10.027	0.3	100.3
13C4-PFHpA	2.500	2.588	3.5	103.5
13C5-PFHxA	2.500	2.538	1.5	101.5
13C5-PFPeA	5.000	5.271	5.4	105.4
13C6-PFDA	1.250	1.475	18.0	118.0
13C7-PFUnDA	1.250	1.383	10.6	110.6
13C8-FOSA	2.500	2.557	2.3	102.3
13C8-PFOA	2.500	2.606	4.3	104.3
13C8-PFOS	2.500	2.450	-2.0	98.0
13C9-PFNA	1.250	1.281	2.5	102.5
4:2FTS	0.750	0.928	23.7	123.7
6:2FTS	0.760	0.751	-1.1	98.9
8:2FTS	0.768	0.959	24.9	124.9
d3-MeFOSAA	5.000	4.953	-0.9	99.1
EtFOSAA	0.200	0.239	19.6	119.6
FOSA	0.200	0.234	17.1	117.1
MeFOSAA	0.200	0.278	# 39.0	139.0
PFBA	0.800	0.935	16.9	116.9
PFBS	0.177	0.216	22.2	122.2
PFDA	0.200	0.224	11.9	111.9
PFDoDA	0.200	0.247	23.3	123.3
PFDS	0.193	0.281	# 45.5	145.5
PFHpA	0.200	0.233	16.7	116.7
PFHpS	0.191	0.244	27.9	127.9
PFHxA	0.200	0.234	16.8	116.8
PFHxS	0.183	0.194	5.8	105.8
PFNA	0.200	0.220	10.2	110.2
PFNS	0.192	0.238	23.8	123.8
PFOA	0.200	0.244	21.9	121.9
PFOS	0.186	0.227	22.3	122.3

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19252.D

PFPeA	0.400	0.472	17.9	117.9
PFPeS	0.188	0.223	18.7	118.7
PFTeDA	0.200	0.245	22.3	122.3
PFTTrDA	0.200	0.250	24.8	124.8
PFUnDA	0.200	0.239	19.7	119.7
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--		
11C1-PF3OUdS	0.378	0.437	15.7	115.7
13C3-HFPO-DA	10.000	10.216	2.2	102.2
9C1-PF3ONS	0.367	0.445	21.1	121.1
ADONA	0.378	0.449	18.7	118.7
HFPO-DA	0.400	0.465	16.1	116.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	1.131	13.3	113.3
5:3FTCA	4.992	6.257	25.3	125.3
7:3FTCA	4.992	6.062	21.4	121.4
d3-MeFOSA	2.500	2.465	-1.4	98.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.420	5.0	105.0
EtFOSE	1.000	1.126	12.6	112.6
MeFOSA	0.400	0.481	20.2	120.2
MeFOSE	1.000	1.062	6.2	106.2
PFDODS	0.194	0.246	26.7	126.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.010	0.2	100.2
d7-MeFOSE	25.000	25.538	2.2	102.2
d9-EtFOSE	25.000	22.627	-9.5	90.5
d5-EtFOSA	2.500	2.616	4.6	104.6
NFDHA	0.400	0.459	14.8	114.8
PFMBA	0.400	0.470	17.5	117.5
PFMPA	0.400	0.460	15.0	115.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.485	# 36.3	136.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19261.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19261
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.459	9.2	109.2
13C2-6:2FTS	5.000	5.454	9.1	109.1
13C2-8:2FTS	5.000	4.863	-2.7	97.3
13C2-PFDoDA	1.250	1.149	-8.1	91.9
13C2-PFTeDA	1.250	1.058	-15.4	84.6
13C3-PFBS	2.500	2.502	0.1	100.1
13C3-PFHxS	2.500	2.407	-3.7	96.3
13C4-PFBA	10.000	10.049	0.5	100.5
13C4-PFHpA	2.500	2.626	5.0	105.0
13C5-PFHxA	2.500	2.372	-5.1	94.9
13C5-PFPeA	5.000	4.986	-0.3	99.7
13C6-PFDA	1.250	1.284	2.7	102.7
13C7-PFUnDA	1.250	1.174	-6.1	93.9
13C8-FOSA	2.500	2.299	-8.1	91.9
13C8-PFOA	2.500	2.339	-6.5	93.5
13C8-PFOS	2.500	2.375	-5.0	95.0
13C9-PFNA	1.250	1.226	-1.9	98.1
4:2FTS	9.375	9.422	0.5	100.5
6:2FTS	9.500	9.090	-4.3	95.7
8:2FTS	9.600	9.930	3.4	103.4
d3-MeFOSAA	5.000	5.026	0.5	100.5
EtFOSAA	2.500	2.476	-1.0	99.0
FOSA	2.500	2.365	-5.4	94.6
MeFOSAA	2.500	2.587	3.5	103.5
PFBA	10.000	9.616	-3.8	96.2
PFBS	2.218	2.115	-4.7	95.3
PFDA	2.500	2.121	-15.2	84.8
PFDoDA	2.500	2.394	-4.3	95.7
PFDS	2.413	2.402	-0.5	99.5
PFHpA	2.500	2.204	-11.8	88.2
PFHpS	2.383	2.142	-10.1	89.9
PFHxA	2.500	2.579	3.1	103.1
PFHxS	2.285	2.206	-3.5	96.5
PFNA	2.500	2.352	-5.9	94.1
PFNS	2.405	2.401	-0.2	99.8
PFOA	2.500	2.657	6.3	106.3
PFOS	2.320	2.114	-8.9	91.1

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19261.D

PFPeA	5.000	4.771	-4.6	95.4
PFPeS	2.353	2.282	-3.0	97.0
PFTeDA	2.500	2.520	0.8	100.8
PFTrDA	2.500	2.386	-4.6	95.4
PFUnDA	2.500	2.411	-3.5	96.5
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--		
11C1-PF3OUdS	4.725	4.519	-4.4	95.6
13C3-HFPO-DA	10.000	9.604	-4.0	96.0
9C1-PF3ONS	4.675	4.479	-4.2	95.8
ADONA	4.725	4.709	-0.3	99.7
HFPO-DA	5.000	4.905	-1.9	98.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.946	-4.3	95.7
5:3FTCA	62.400	66.281	6.2	106.2
7:3FTCA	62.400	59.833	-4.1	95.9
d3-MeFOSA	2.500	2.367	-5.3	94.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.807	-3.9	96.1
EtFOSE	12.500	12.316	-1.5	98.5
MeFOSA	5.000	4.706	-5.9	94.1
MeFOSE	12.500	11.779	-5.8	94.2
PFDoDS	2.425	2.306	-4.9	95.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.498	-10.0	90.0
d7-MeFOSE	25.000	21.868	-12.5	87.5
d9-EtFOSE	25.000	19.778	-20.9	79.1
d5-EtFOSA	2.500	2.329	-6.9	93.1
NFDHA	5.000	4.704	-5.9	94.1
PFMBA	5.000	4.875	-2.5	97.5
PFMPA	5.000	4.814	-3.7	96.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	5.052	13.5	113.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19272.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19272
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.758	-4.8	95.2
13C2-6:2FTS	5.000	5.045	0.9	100.9
13C2-8:2FTS	5.000	5.023	0.5	100.5
13C2-PFDoDA	1.250	1.214	-2.9	97.1
13C2-PFTeDA	1.250	1.136	-9.1	90.9
13C3-PFBS	2.500	2.291	-8.4	91.6
13C3-PFHxS	2.500	2.281	-8.8	91.2
13C4-PFBA	10.000	10.020	0.2	100.2
13C4-PFHpA	2.500	2.375	-5.0	95.0
13C5-PFHxA	2.500	2.457	-1.7	98.3
13C5-PFPeA	5.000	4.901	-2.0	98.0
13C6-PFDA	1.250	1.180	-5.6	94.4
13C7-PFUnDA	1.250	1.166	-6.7	93.3
13C8-FOSA	2.500	2.417	-3.3	96.7
13C8-PFOA	2.500	2.553	2.1	102.1
13C8-PFOS	2.500	2.488	-0.5	99.5
13C9-PFNA	1.250	1.308	4.7	104.7
4:2FTS	9.375	10.033	7.0	107.0
6:2FTS	9.500	8.914	-6.2	93.8
8:2FTS	9.600	9.093	-5.3	94.7
d3-MeFOSAA	5.000	4.980	-0.4	99.6
EtFOSAA	2.500	2.405	-3.8	96.2
FOSA	2.500	2.403	-3.9	96.1
MeFOSAA	2.500	2.501	0.0	100.0
PFBA	10.000	9.637	-3.6	96.4
PFBS	2.218	2.064	-7.0	93.0
PFDA	2.500	2.384	-4.6	95.4
PFDoDA	2.500	2.339	-6.5	93.5
PFDS	2.413	2.324	-3.7	96.3
PFHpA	2.500	2.326	-7.0	93.0
PFHpS	2.383	2.191	-8.1	91.9
PFHxA	2.500	2.358	-5.7	94.3
PFHxS	2.285	2.078	-9.0	91.0
PFNA	2.500	2.210	-11.6	88.4
PFNS	2.405	2.303	-4.3	95.7
PFOA	2.500	2.416	-3.4	96.6
PFOS	2.320	2.086	-10.1	89.9

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19272.D

PFPeA	5.000	4.765	-4.7	95.3
PFPeS	2.353	2.312	-1.7	98.3
PFTeDA	2.500	2.407	-3.7	96.3
PFTTrDA	2.500	2.368	-5.3	94.7
PFUnDA	2.500	2.655	6.2	106.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.623	-2.2	97.8
13C3-HFPO-DA	10.000	9.735	-2.7	97.3
9C1-PF3ONS	4.675	4.352	-6.9	93.1
ADONA	4.725	4.541	-3.9	96.1
HFPO-DA	5.000	4.341	-13.2	86.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.623	-6.9	93.1
5:3FTCA	62.400	59.558	-4.6	95.4
7:3FTCA	62.400	58.160	-6.8	93.2
d3-MeFOSA	2.500	2.314	-7.4	92.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.764	-4.7	95.3
EtFOSE	12.500	12.259	-1.9	98.1
MeFOSA	5.000	4.940	-1.2	98.8
MeFOSE	12.500	12.065	-3.5	96.5
PFDODS	2.425	2.258	-6.9	93.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.938	-1.2	98.8
d7-MeFOSE	25.000	21.846	-12.6	87.4
d9-EtFOSE	25.000	19.894	-20.4	79.6
d5-EtFOSA	2.500	2.353	-5.9	94.1
NFDHA	5.000	4.750	-5.0	95.0
PFMBA	5.000	4.719	-5.6	94.4
PFMPA	5.000	4.838	-3.2	96.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.491	0.9	100.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19284.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\061223_1633_S6Q287\s6q287.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\061223_1633_S6Q287\6Q19240.d
 2:D:\MassHunter\Data\061223_1633_S6Q287\6Q19241.d
 3:D:\MassHunter\Data\061223_1633_S6Q287\6Q19242.d
 4:D:\MassHunter\Data\061223_1633_S6Q287\6Q19243.d
 5:D:\MassHunter\Data\061223_1633_S6Q287\6Q19244.d
 6:D:\MassHunter\Data\061223_1633_S6Q287\6Q19245.d
 7:D:\MassHunter\Data\061223_1633_S6Q287\6Q19246.d
 8:D:\MassHunter\Data\061223_1633_S6Q287\6Q19247.d

Data File: 6Q19284
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.995	-0.1	99.9
13C2-6:2FTS	5.000	5.481	9.6	109.6
13C2-8:2FTS	5.000	4.609	-7.8	92.2
13C2-PFDoDA	1.250	1.245	-0.4	99.6
13C2-PFTeDA	1.250	1.209	-3.3	96.7
13C3-PFBS	2.500	2.552	2.1	102.1
13C3-PFHxS	2.500	2.327	-6.9	93.1
13C4-PFBA	10.000	9.935	-0.6	99.4
13C4-PFHpA	2.500	2.450	-2.0	98.0
13C5-PFHxA	2.500	2.723	8.9	108.9
13C5-PFPeA	5.000	5.105	2.1	102.1
13C6-PFDA	1.250	1.429	14.3	114.3
13C7-PFUnDA	1.250	1.310	4.8	104.8
13C8-FOSA	2.500	2.405	-3.8	96.2
13C8-PFOA	2.500	2.668	6.7	106.7
13C8-PFOS	2.500	2.436	-2.6	97.4
13C9-PFNA	1.250	1.272	1.8	101.8
4:2FTS	9.375	9.691	3.4	103.4
6:2FTS	9.500	8.780	-7.6	92.4
8:2FTS	9.600	10.633	10.8	110.8
d3-MeFOSAA	5.000	4.675	-6.5	93.5
EtFOSAA	2.500	2.527	1.1	101.1
FOSA	2.500	2.166	-13.4	86.6
MeFOSAA	2.500	2.758	10.3	110.3
PFBA	10.000	9.675	-3.3	96.7
PFBS	2.218	2.114	-4.7	95.3
PFDA	2.500	2.141	-14.3	85.7
PFDoDA	2.500	2.548	1.9	101.9
PFDS	2.413	2.429	0.7	100.7
PFHpA	2.500	2.500	0.0	100.0
PFHpS	2.383	2.190	-8.1	91.9
PFHxA	2.500	2.111	-15.6	84.4
PFHxS	2.285	2.226	-2.6	97.4
PFNA	2.500	2.425	-3.0	97.0
PFNS	2.405	2.169	-9.8	90.2
PFOA	2.500	2.303	-7.9	92.1
PFOS	2.320	2.117	-8.7	91.3

Continuing Calibration Summary

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q287-CC287
 Lab FileID: 6Q19284.D

PFPeA	5.000	4.706	-5.9	94.1
PFPeS	2.353	2.458	4.5	104.5
PFTeDA	2.500	2.618	4.7	104.7
PFTTrDA	2.500	2.511	0.4	100.4
PFUnDA	2.500	2.656	6.2	106.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.331	-8.3	91.7
13C3-HFPO-DA	10.000	10.069	0.7	100.7
9C1-PF3ONS	4.675	4.340	-7.2	92.8
ADONA	4.725	4.215	-10.8	89.2
HFPO-DA	5.000	4.819	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.535	-7.6	92.4
5:3FTCA	62.400	55.033	-11.8	88.2
7:3FTCA	62.400	53.786	-13.8	86.2
d3-MeFOSA	2.500	2.196	-12.1	87.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.598	-8.0	92.0
EtFOSE	12.500	11.172	-10.6	89.4
MeFOSA	5.000	5.076	1.5	101.5
MeFOSE	12.500	11.367	-9.1	90.9
PFDoDS	2.425	2.260	-6.8	93.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.836	-3.3	96.7
d7-MeFOSE	25.000	21.925	-12.3	87.7
d9-EtFOSE	25.000	20.345	-18.6	81.4
d5-EtFOSA	2.500	2.440	-2.4	97.6
NFDHA	5.000	4.115	-17.7	82.3
PFMBA	5.000	4.647	-7.1	92.9
PFMPA	5.000	4.715	-5.7	94.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.254	-4.4	95.6

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q279-RT	6Q18583.D	05/31/23 16:32	n/a	Retention Time Marker
S6Q279-RT	6Q18584.D	05/31/23 16:47	n/a	Retention Time Marker
S6Q279-IC279	6Q18585.D	05/31/23 17:01	n/a	Mass Calibration Verification
S6Q279-IC279	6Q18586.D	05/31/23 17:16	n/a	Initial cal 1
S6Q279-IC279	6Q18587.D	05/31/23 17:30	n/a	Initial cal 2
S6Q279-IC279	6Q18588.D	05/31/23 17:45	n/a	Initial cal 3
S6Q279-ICC279	6Q18589.D	05/31/23 17:59	n/a	Initial cal 4
S6Q279-IC279	6Q18590.D	05/31/23 18:14	n/a	Initial cal 5
S6Q279-IC279	6Q18591.D	05/31/23 18:28	n/a	Initial cal 6
S6Q279-IC279	6Q18592.D	05/31/23 18:43	n/a	Initial cal 7
S6Q279-IC279	6Q18593.D	05/31/23 18:57	n/a	Initial cal 8
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-IBLK	6Q18594.D	05/31/23 19:12	n/a	Instrument Blank
S6Q279-ICV279	6Q18595.D	05/31/23 19:26	n/a	Initial cal verification 4
S6Q279-ICV279	6Q18596.D	05/31/23 19:41	n/a	Initial cal verification 20
S6Q279-CC279	6Q18597.D	05/31/23 19:55	n/a	Continuing cal 4
S6Q279-CC279	6Q18598.D	05/31/23 20:10	n/a	Continuing cal 1.0LL
OP97070-BS	6Q18599.D	05/31/23 20:24	OP97070	Blank Spike
OP97070-LLBS	6Q18600.D	05/31/23 20:39	OP97070	Blank Spike
OP97070-MB	6Q18601.D	05/31/23 20:53	OP97070	Method Blank
FC6278-1	6Q18602.D	05/31/23 21:08	OP97070	(used for QC only; not part of job FC6445)
OP97070-MS	6Q18603.D	05/31/23 21:22	OP97070	Matrix Spike
ZZZZZZ	6Q18604.D	05/31/23 21:37	OP97070	(unrelated sample)
FC6278-3	6Q18605.D	05/31/23 21:51	OP97070	(used for QC only; not part of job FC6445)
OP97070-DUP	6Q18606.D	05/31/23 22:06	OP97070	Duplicate
ZZZZZZ	6Q18607.D	05/31/23 22:20	OP97070	(unrelated sample)
ZZZZZZ	6Q18608.D	05/31/23 22:35	OP97070	(unrelated sample)
S6Q279-CC279	6Q18609.D	05/31/23 22:49	n/a	Continuing cal 4
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18610.D	05/31/23 23:04	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18611.D	05/31/23 23:18	OP97070	(unrelated sample)
OP97024-BS	6Q18612.D	05/31/23 23:32	OP97024	Blank Spike
OP97024-LLBS	6Q18613.D	05/31/23 23:47	OP97024	Blank Spike
OP97024-MB	6Q18614.D	06/01/23 00:01	OP97024	Method Blank
FC6086-1	6Q18615.D	06/01/23 00:16	OP97024	(used for QC only; not part of job FC6445)
OP97024-MS	6Q18616.D	06/01/23 00:30	OP97024	Matrix Spike
OP97024-MSD	6Q18617.D	06/01/23 00:45	OP97024	Matrix Spike Duplicate
ZZZZZZ	6Q18618.D	06/01/23 00:59	OP97024	(unrelated sample)
ZZZZZZ	6Q18619.D	06/01/23 01:14	OP97024	(unrelated sample)
ZZZZZZ	6Q18620.D	06/01/23 01:28	OP97024	(unrelated sample)
S6Q279-CC279	6Q18621.D	06/01/23 01:43	n/a	Continuing cal 4
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18622.D	06/01/23 01:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18623.D	06/01/23 02:12	OP97024	(unrelated sample)
ZZZZZZ	6Q18624.D	06/01/23 02:26	OP97024	(unrelated sample)
ZZZZZZ	6Q18625.D	06/01/23 02:41	OP97024	(unrelated sample)

Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q18626.D	06/01/23 02:55	OP97024	(unrelated sample)
ZZZZZZ	6Q18627.D	06/01/23 03:10	OP97024	(unrelated sample)
ZZZZZZ	6Q18628.D	06/01/23 03:24	OP97024	(unrelated sample)
S6Q279-CC279	6Q18633.D	06/01/23 04:37	n/a	Continuing cal 4
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18634.D	06/01/23 04:51	n/a	Continuing Calibration Blank
S6Q279-CC279	6Q18641.D	06/01/23 06:20	n/a	Continuing cal 4
S6Q279-CC279	6Q18642.D	06/01/23 06:35	n/a	Continuing cal 1.0LL
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18643.D	06/01/23 06:49	n/a	Continuing Calibration Blank
OP97092-BS	6Q18644.D	06/01/23 07:03	OP97092	Blank Spike
OP97092-LLBS	6Q18645.D	06/01/23 07:18	OP97092	Blank Spike
OP97092-MB	6Q18646.D	06/01/23 07:32	OP97092	Method Blank
ZZZZZZ	6Q18647.D	06/01/23 07:47	OP97092	(unrelated sample)
ZZZZZZ	6Q18648.D	06/01/23 08:01	OP97092	(unrelated sample)
FC5963-8	6Q18650.D	06/01/23 08:30	OP97092	(used for QC only; not part of job FC6445)
OP97092-DUP2	6Q18651.D	06/01/23 08:45	OP97092	Duplicate
ZZZZZZ	6Q18652.D	06/01/23 08:59	OP97092	(unrelated sample)
S6Q279-CC279	6Q18653.D	06/01/23 09:14	n/a	Continuing cal 4
S6Q279-ICCB	6Q18654.D	06/01/23 09:28	n/a	Continuing Calibration Blank
FC6325-1	6Q18655.D	06/01/23 09:43	OP97092	(used for QC only; not part of job FC6445)
OP97092-MS	6Q18656.D	06/01/23 09:57	OP97092	Matrix Spike
FC6325-2	6Q18657.D	06/01/23 10:12	OP97092	(used for QC only; not part of job FC6445)
OP97092-DUP1	6Q18658.D	06/01/23 10:26	OP97092	Duplicate
ZZZZZZ	6Q18659.D	06/01/23 10:41	OP97092	(unrelated sample)
ZZZZZZ	6Q18660.D	06/01/23 10:55	OP97093	(unrelated sample)
ZZZZZZ	6Q18661.D	06/01/23 11:10	OP97093	(unrelated sample)
ZZZZZZ	6Q18662.D	06/01/23 11:24	OP97093	(unrelated sample)
ZZZZZZ	6Q18663.D	06/01/23 11:39	OP97070	(unrelated sample)
S6Q279-CC279	6Q18665.D	06/01/23 12:08	n/a	Continuing cal 4
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18666.D	06/01/23 12:22	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18667.D	06/01/23 12:37	OP97092	(unrelated sample)
ZZZZZZ	6Q18668.D	06/01/23 12:51	OP97092	(unrelated sample)
ZZZZZZ	6Q18669.D	06/01/23 13:06	OP96957	(unrelated sample)
S6Q279-ECC279	6Q18670.D	06/01/23 13:20	n/a	Ending cal 4
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank
S6Q279-ICCB	6Q18671.D	06/01/23 13:35	n/a	Continuing Calibration Blank

6.11.1
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Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q280	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q280-RT	6Q18674.D	06/01/23 14:52	n/a	Retention Time Marker
S6Q280-RT	6Q18675.D	06/01/23 15:06	n/a	Retention Time Marker
S6Q280-IBLK	6Q18677.D	06/01/23 15:35	n/a	Instrument Blank
S6Q280-IBLK	6Q18677.D	06/01/23 15:35	n/a	Instrument Blank
S6Q280-CC279	6Q18678.D	06/01/23 15:50	n/a	Continuing cal 4
S6Q280-CC279	6Q18679.D	06/01/23 16:05	n/a	Continuing cal 1.0LL
OP97125-BS	6Q18680.D	06/01/23 16:20	OP97125	Blank Spike
OP97125-LLBS	6Q18681.D	06/01/23 16:34	OP97125	Blank Spike
OP97125-MB	6Q18682.D	06/01/23 16:49	OP97125	Method Blank
ZZZZZZ	6Q18683.D	06/01/23 17:03	OP97125	(unrelated sample)
OP97124-BS	6Q18684.D	06/01/23 17:18	OP97124	Blank Spike
OP97124-LLBS	6Q18685.D	06/01/23 17:32	OP97124	Blank Spike
OP97124-MB	6Q18686.D	06/01/23 17:47	OP97124	Method Blank
FC6360-1	6Q18687.D	06/01/23 18:01	OP97124	(used for QC only; not part of job FC6445)
ZZZZZZ	6Q18689.D	06/01/23 18:30	OP97124	(unrelated sample)
S6Q280-CC279	6Q18690.D	06/01/23 18:45	n/a	Continuing cal 4
S6Q280-ICCB	6Q18691.D	06/01/23 18:59	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18694.D	06/01/23 19:42	OP97124	(unrelated sample)
ZZZZZZ	6Q18695.D	06/01/23 19:57	OP97124	(unrelated sample)
ZZZZZZ	6Q18696.D	06/01/23 20:11	OP97124	(unrelated sample)
S6Q280-CC279	6Q18699.D	06/01/23 20:55	n/a	Continuing cal 4
S6Q280-ICCB	6Q18700.D	06/01/23 21:09	n/a	Continuing Calibration Blank
OP97143-BS	6Q18701.D	06/01/23 21:24	OP97143	Blank Spike
OP97143-LLBS	6Q18702.D	06/01/23 21:38	OP97143	Blank Spike
OP97143-MB	6Q18703.D	06/01/23 21:53	OP97143	Method Blank
ZZZZZZ	6Q18704.D	06/01/23 22:07	OP97143	(unrelated sample)
FC6205-1	6Q18705.D	06/01/23 22:22	OP97143	(used for QC only; not part of job FC6445)
OP97143-MS	6Q18706.D	06/01/23 22:36	OP97143	Matrix Spike
OP97143-MSD	6Q18707.D	06/01/23 22:51	OP97143	Matrix Spike Duplicate
ZZZZZZ	6Q18708.D	06/01/23 23:05	OP97143	(unrelated sample)
ZZZZZZ	6Q18709.D	06/01/23 23:20	OP97143	(unrelated sample)
ZZZZZZ	6Q18710.D	06/01/23 23:34	OP97143	(unrelated sample)
S6Q280-CC279	6Q18711.D	06/01/23 23:49	n/a	Continuing cal 4
S6Q280-ICCB	6Q18712.D	06/02/23 00:03	n/a	Continuing Calibration Blank
FC6445-1	6Q18713.D	06/02/23 00:18	OP97143	AF-RHMW02-WGN01LF-2305W4
FC6445-2	6Q18714.D	06/02/23 00:32	OP97143	AF-RHMW17-WGN01LF-2305W4
FC6445-3	6Q18715.D	06/02/23 00:47	OP97143	AF-RHMW03-WGN01LF-2305W4
FC6445-5	6Q18717.D	06/02/23 01:15	OP97143	AF-RHMW17D-WQFB01-2305W4
FC6445-6	6Q18718.D	06/02/23 01:30	OP97143	AF-RHMW17S-WGN01LF-2305W4
FC6445-7	6Q18719.D	06/02/23 01:44	OP97143	AF-RHMW17S-WQEB01-2305W4
S6Q280-CC279	6Q18720.D	06/02/23 01:59	n/a	Continuing cal 4
S6Q280-CC279	6Q18721.D	06/02/23 02:13	n/a	Continuing cal 1.0LL
S6Q280-ICCB	6Q18722.D	06/02/23 02:28	n/a	Continuing Calibration Blank
S6Q280-ICCB	6Q18722.D	06/02/23 02:28	n/a	Continuing Calibration Blank
OP97025-BS	6Q18723.D	06/02/23 02:42	OP97025	Blank Spike
OP97025-LLBS	6Q18724.D	06/02/23 02:57	OP97025	Blank Spike

Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q280	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP97025-MB	6Q18725.D	06/02/23 03:11	OP97025	Method Blank
FC6086-20	6Q18726.D	06/02/23 03:26	OP97025	(used for QC only; not part of job FC6445)
OP97025-MS	6Q18727.D	06/02/23 03:40	OP97025	Matrix Spike
OP97025-MSD	6Q18728.D	06/02/23 03:55	OP97025	Matrix Spike Duplicate
ZZZZZZ	6Q18729.D	06/02/23 04:09	OP97025	(unrelated sample)
ZZZZZZ	6Q18730.D	06/02/23 04:24	OP97025	(unrelated sample)
ZZZZZZ	6Q18731.D	06/02/23 04:38	OP97025	(unrelated sample)
ZZZZZZ	6Q18732.D	06/02/23 04:53	OP97025	(unrelated sample)
S6Q280-CC279	6Q18733.D	06/02/23 05:07	n/a	Continuing cal 4
S6Q280-ICCB	6Q18734.D	06/02/23 05:22	n/a	Continuing Calibration Blank
S6Q280-ICCB	6Q18734.D	06/02/23 05:22	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18735.D	06/02/23 05:36	OP97025	(unrelated sample)
ZZZZZZ	6Q18736.D	06/02/23 05:51	OP97025	(unrelated sample)
ZZZZZZ	6Q18737.D	06/02/23 06:05	OP97025	(unrelated sample)
ZZZZZZ	6Q18738.D	06/02/23 06:20	OP97025	(unrelated sample)
ZZZZZZ	6Q18739.D	06/02/23 06:34	OP97025	(unrelated sample)
ZZZZZZ	6Q18740.D	06/02/23 06:48	OP97025	(unrelated sample)
ZZZZZZ	6Q18741.D	06/02/23 07:03	OP97025	(unrelated sample)
ZZZZZZ	6Q18742.D	06/02/23 07:17	OP97025	(unrelated sample)
ZZZZZZ	6Q18743.D	06/02/23 07:32	OP97025	(unrelated sample)
ZZZZZZ	6Q18744.D	06/02/23 07:46	OP97025	(unrelated sample)
S6Q280-CC279	6Q18745.D	06/02/23 08:01	n/a	Continuing cal 4
S6Q280-ICCB	6Q18746.D	06/02/23 08:15	n/a	Continuing Calibration Blank
S6Q280-ICCB	6Q18746.D	06/02/23 08:15	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18747.D	06/02/23 08:30	OP97025	(unrelated sample)
ZZZZZZ	6Q18748.D	06/02/23 08:44	OP97025	(unrelated sample)
ZZZZZZ	6Q18749.D	06/02/23 08:59	OP97025	(unrelated sample)
ZZZZZZ	6Q18750.D	06/02/23 09:13	OP97025	(unrelated sample)
OP97144-BS	6Q18751.D	06/02/23 09:28	OP97144	Blank Spike
OP97144-LLBS	6Q18752.D	06/02/23 09:42	OP97144	Blank Spike
OP97144-MB	6Q18753.D	06/02/23 09:57	OP97144	Method Blank
ZZZZZZ	6Q18754.D	06/02/23 10:11	OP97144	(unrelated sample)
FC6216-2	6Q18755.D	06/02/23 10:26	OP97144	(used for QC only; not part of job FC6445)
OP97144-MS	6Q18756.D	06/02/23 10:40	OP97144	Matrix Spike
S6Q280-CC279	6Q18757.D	06/02/23 10:55	n/a	Continuing cal 4
S6Q280-ICCB	6Q18758.D	06/02/23 11:09	n/a	Continuing Calibration Blank
S6Q280-ICCB	6Q18758.D	06/02/23 11:09	n/a	Continuing Calibration Blank
FC6216-3	6Q18759.D	06/02/23 11:24	OP97144	(used for QC only; not part of job FC6445)
OP97144-DUP	6Q18760.D	06/02/23 11:38	OP97144	Duplicate
ZZZZZZ	6Q18761.D	06/02/23 11:53	OP97144	(unrelated sample)
ZZZZZZ	6Q18762.D	06/02/23 12:07	OP97144	(unrelated sample)
ZZZZZZ	6Q18763.D	06/02/23 12:22	OP97144	(unrelated sample)
ZZZZZZ	6Q18765.D	06/02/23 12:50	OP97144	(unrelated sample)
ZZZZZZ	6Q18766.D	06/02/23 13:05	OP97144	(unrelated sample)
ZZZZZZ	6Q18767.D	06/02/23 13:19	OP97144	(unrelated sample)
ZZZZZZ	6Q18768.D	06/02/23 13:34	OP97144	(unrelated sample)

6.11.2

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Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q280	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q280-CC279	6Q18769.D	06/02/23 13:48	n/a	Continuing cal 4
S6Q280-ICCB	6Q18770.D	06/02/23 14:03	n/a	Continuing Calibration Blank
ZZZZZZ	6Q18771.D	06/02/23 14:17	OP97144	(unrelated sample)
ZZZZZZ	6Q18772.D	06/02/23 14:32	OP97144	(unrelated sample)
ZZZZZZ	6Q18773.D	06/02/23 14:46	OP97144	(unrelated sample)
ZZZZZZ	6Q18774.D	06/02/23 15:01	OP97144	(unrelated sample)
ZZZZZZ	6Q18775.D	06/02/23 15:15	OP97144	(unrelated sample)
ZZZZZZ	6Q18776.D	06/02/23 15:30	OP97144	(unrelated sample)
S6Q280-CC279	6Q18777.D	06/02/23 15:44	n/a	Continuing cal 4
S6Q280-ICCB	6Q18778.D	06/02/23 15:59	n/a	Continuing Calibration Blank
S6Q280-RT	6Q18779.D	06/02/23 16:13	n/a	Retention Time Marker
S6Q280-RT	6Q18780.D	06/02/23 16:28	n/a	Retention Time Marker
S6Q280-IBLK	6Q18782.D	06/02/23 16:57	n/a	Instrument Blank
S6Q280-IBLK	6Q18782.D	06/02/23 16:57	n/a	Instrument Blank
S6Q280-CC279	6Q18783.D	06/02/23 17:11	n/a	Continuing cal 1.0LL
OP97146-BS	6Q18784.D	06/02/23 17:26	OP97146	Blank Spike
OP97146-LLBS	6Q18785.D	06/02/23 17:40	OP97146	Blank Spike
OP97146-MB	6Q18786.D	06/02/23 17:55	OP97146	Method Blank
ZZZZZZ	6Q18787.D	06/02/23 18:09	OP97146	(unrelated sample)
ZZZZZZ	6Q18788.D	06/02/23 18:24	OP97146	(unrelated sample)
ZZZZZZ	6Q18789.D	06/02/23 18:38	OP97146	(unrelated sample)
ZZZZZZ	6Q18790.D	06/02/23 18:53	OP97146	(unrelated sample)
FC6212-5	6Q18791.D	06/02/23 19:07	OP97146	(used for QC only; not part of job FC6445)
OP97146-MS	6Q18792.D	06/02/23 19:22	OP97146	Matrix Spike
S6Q280-CC279	6Q18793.D	06/02/23 19:36	n/a	Continuing cal 4
S6Q280-ICCB	6Q18794.D	06/02/23 19:51	n/a	Continuing Calibration Blank
FC6212-6	6Q18795.D	06/02/23 20:05	OP97146	(used for QC only; not part of job FC6445)
OP97146-DUP	6Q18796.D	06/02/23 20:20	OP97146	Duplicate
ZZZZZZ	6Q18797.D	06/02/23 20:34	OP97146	(unrelated sample)
ZZZZZZ	6Q18798.D	06/02/23 20:48	OP97146	(unrelated sample)
ZZZZZZ	6Q18799.D	06/02/23 21:03	OP97146	(unrelated sample)
ZZZZZZ	6Q18800.D	06/02/23 21:17	OP97146	(unrelated sample)
ZZZZZZ	6Q18801.D	06/02/23 21:32	OP97146	(unrelated sample)
S6Q280-ECC279	6Q18802.D	06/02/23 21:46	n/a	Ending cal 4
S6Q280-ICCB	6Q18803.D	06/02/23 22:01	n/a	Continuing Calibration Blank

6.11.2
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Run Sequence Report

Job Number: FC6445
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q287	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q287-RT	6Q19237.D	06/12/23 15:06	n/a	Retention Time Marker
S6Q287-RT	6Q19238.D	06/12/23 15:20	n/a	Retention Time Marker
S6Q287-IC287	6Q19239.D	06/12/23 15:34	n/a	Mass Calibration Verification
S6Q287-IC287	6Q19240.D	06/12/23 15:48	n/a	Initial cal 1
S6Q287-IC287	6Q19241.D	06/12/23 16:02	n/a	Initial cal 2
S6Q287-IC287	6Q19242.D	06/12/23 16:16	n/a	Initial cal 3
S6Q287-ICC287	6Q19243.D	06/12/23 16:30	n/a	Initial cal 4
S6Q287-IC287	6Q19244.D	06/12/23 16:44	n/a	Initial cal 5
S6Q287-IC287	6Q19245.D	06/12/23 16:58	n/a	Initial cal 6
S6Q287-IC287	6Q19246.D	06/12/23 17:12	n/a	Initial cal 7
S6Q287-IC287	6Q19247.D	06/12/23 17:26	n/a	Initial cal 8
S6Q287-IBLK	6Q19248.D	06/12/23 17:40	n/a	Instrument Blank
S6Q287-IBLK	6Q19248.D	06/12/23 17:40	n/a	Instrument Blank
S6Q287-ICV287	6Q19249.D	06/12/23 17:54	n/a	Initial cal verification 4
S6Q287-ICV287	6Q19250.D	06/12/23 18:08	n/a	Initial cal verification 20
S6Q287-CC287	6Q19251.D	06/12/23 18:22	n/a	Continuing cal 4
S6Q287-CC287	6Q19252.D	06/12/23 18:36	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q19253.D	06/12/23 18:50	OP97120	(unrelated sample)
FC6342-11	6Q19254.D	06/12/23 19:04	OP97215	(used for QC only; not part of job FC6445)
OP97215-DUP	6Q19255.D	06/12/23 19:18	OP97215	Duplicate
ZZZZZZ	6Q19256.D	06/12/23 19:32	OP97160	(unrelated sample)
JD66240-1	6Q19257.D	06/12/23 19:46	OP97160	(used for QC only; not part of job FC6445)
ZZZZZZ	6Q19258.D	06/12/23 20:00	OP97160	(unrelated sample)
FC6342-10	6Q19259.D	06/12/23 20:14	OP97215	(used for QC only; not part of job FC6445)
OP97215-MS	6Q19260.D	06/12/23 20:28	OP97215	Matrix Spike
S6Q287-CC287	6Q19261.D	06/12/23 20:42	n/a	Continuing cal 4
S6Q287-ICCB	6Q19262.D	06/12/23 20:56	n/a	Continuing Calibration Blank
S6Q287-ICCB	6Q19262.D	06/12/23 20:56	n/a	Continuing Calibration Blank
OP97275-BS	6Q19263.D	06/12/23 21:10	OP97275	Blank Spike
OP97275-LLBS	6Q19264.D	06/12/23 21:24	OP97275	Blank Spike
OP97275-MB	6Q19265.D	06/12/23 21:37	OP97275	Method Blank
FC6445-4	6Q19266.D	06/12/23 21:51	OP97275	AF-RHMW17D-WGN01LF-2305W4
FC6445-4	6Q19267.D	06/12/23 22:05	OP97275	AF-RHMW17D-WGN01LF-2305W4
FC6649-1	6Q19268.D	06/12/23 22:19	OP97275	(used for QC only; not part of job FC6445)
OP97275-MS	6Q19269.D	06/12/23 22:33	OP97275	Matrix Spike
ZZZZZZ	6Q19270.D	06/12/23 22:47	OP97275	(unrelated sample)
ZZZZZZ	6Q19271.D	06/12/23 23:01	OP97275	(unrelated sample)
S6Q287-CC287	6Q19272.D	06/12/23 23:15	n/a	Continuing cal 4
S6Q287-ICCB	6Q19273.D	06/12/23 23:29	n/a	Continuing Calibration Blank
FC6649-4	6Q19274.D	06/12/23 23:43	OP97275	(used for QC only; not part of job FC6445)
OP97275-DUP	6Q19275.D	06/12/23 23:57	OP97275	Duplicate
ZZZZZZ	6Q19276.D	06/13/23 00:11	OP97275	(unrelated sample)
ZZZZZZ	6Q19277.D	06/13/23 00:25	OP97275	(unrelated sample)
ZZZZZZ	6Q19278.D	06/13/23 00:39	OP97275	(unrelated sample)
ZZZZZZ	6Q19279.D	06/13/23 00:53	OP97275	(unrelated sample)
ZZZZZZ	6Q19280.D	06/13/23 01:07	OP97275	(unrelated sample)

Run Sequence Report

Job Number: FC6445
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q287	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q19281.D	06/13/23 01:21	OP97275	(unrelated sample)
ZZZZZZ	6Q19282.D	06/13/23 01:35	OP97275	(unrelated sample)
ZZZZZZ	6Q19283.D	06/13/23 01:49	OP97275	(unrelated sample)
S6Q287-CC287	6Q19284.D	06/13/23 02:03	n/a	Continuing cal 4
S6Q287-ICCB	6Q19285.D	06/13/23 02:17	n/a	Continuing Calibration Blank
ZZZZZZ	6Q19286.D	06/13/23 02:31	OP97275	(unrelated sample)
ZZZZZZ	6Q19287.D	06/13/23 02:45	OP97275	(unrelated sample)
S6Q287-ECC287	6Q19288.D	06/13/23 02:59	n/a	Ending cal 4
S6Q287-ICCB	6Q19289.D	06/13/23 03:13	n/a	Continuing Calibration Blank

6.11.3

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MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18713.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 12:18:03 AM
 Sample Name : FC6445-1
 Vial : P3-D1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	76825	10.00 µg/L	0.037
M5-PFPeA	4.210	268.3 -> 223.0	39247	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	48960	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	47890	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	75062	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	32876	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20005	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	23601	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	20772	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	9511	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	23434	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	17752	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	11442	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	10743	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	2671	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	3464	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	3605	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	21753	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	25915	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	19189	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	72677	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	98311	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	8062	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8312	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	13917	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	47427	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8041	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	77933	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	25937	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	40835	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	45535	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	2671	4.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3464	4.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	3605	4.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	20772	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	9511	0.97 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.6%		
13C3-PFBS	5.322	302.1 -> 79.9	17752	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	11442	2.55 µg/L	0.000

7.1.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFBA	2.860	216.8 -> 171.9	76825	6.80 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	47890	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	48960	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	39247	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
13C6-PFDA	8.027	519.1 -> 474.1	20005	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	23601	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-FOSA	9.598	506.1 -> 77.8	23434	2.21 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C8-PFOA	7.026	421.1 -> 376.0	75062	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C8-PFOS	8.177	507.1 -> 79.9	10743	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C9-PFNA	7.545	472.1 -> 427.0	32876	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSAA	8.072	573.2 -> 419.0	21753	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	25915	8.66 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	8312	1.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	19189	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	72677	20.79 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	98311	21.50 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.0%	
d5-EtFOSA	10.972	531.1 -> 219.0	8062	1.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.2%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.801	427.1 -> 407.0 427.1 -> 80.9	1823 688	0.54 µg/L	95
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	3.032	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.	

7.1.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.358	599.0 -> 98.8				
		363.1 -> 319.0	1976	0.09	µg/L	90
PFHpS	-	363.1 -> 169.0	250			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.407	449.0 -> 98.9				
		313.0 -> 269.0	1685	0.10	µg/L	93
PFHxS	-	313.0 -> 118.9	126			
		398.7 -> 79.9	-	N.D.		
PFNA	8.056	398.7 -> 98.9				
		463.0 -> 419.0	0		µg/L	m
PFNS	-	463.0 -> 219.0	164			
		548.8 -> 79.9	-	N.D.		
PFOA	-	548.8 -> 98.9				
		413.0 -> 369.0	-	N.D.		
PFOS	-	413.0 -> 169.0				
		498.9 -> 79.9	-	N.D.		
PFPeA	4.351	498.9 -> 98.8				
		263.0 -> 219.0	0		µg/L	m
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	3.471	241.0 -> 177.0	0		µg/L	m
		241.0 -> 117.0	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.		
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMPA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				
PFEESA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		

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

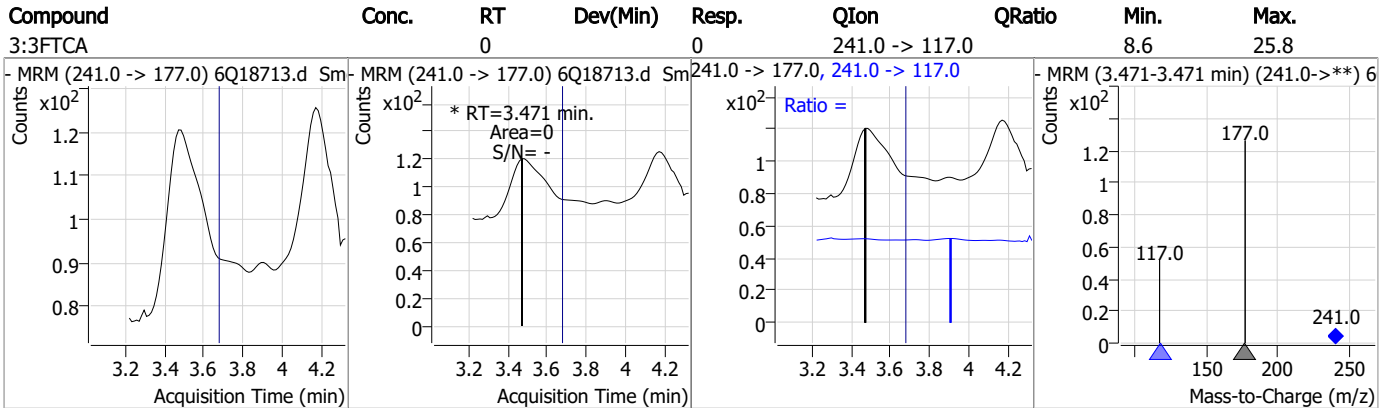
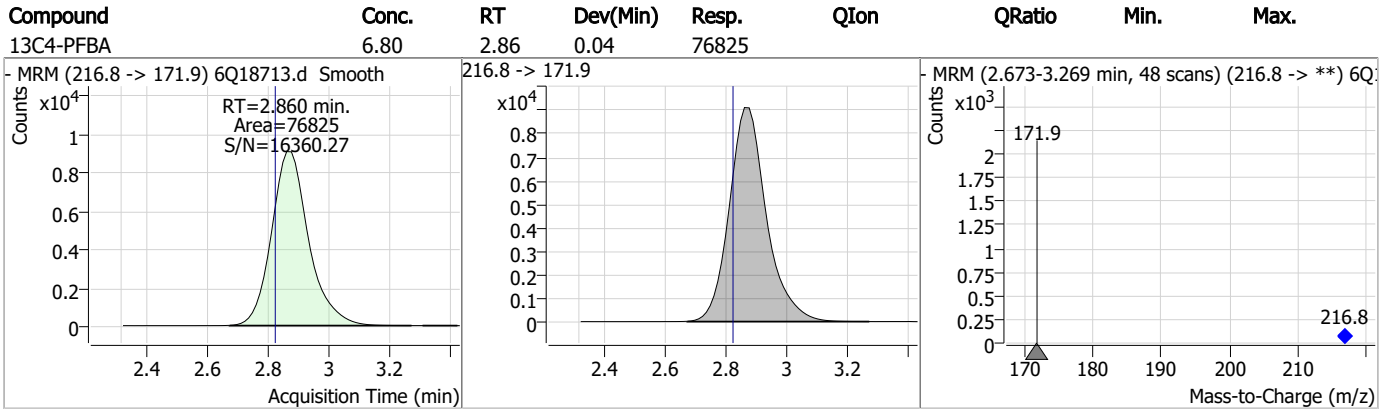
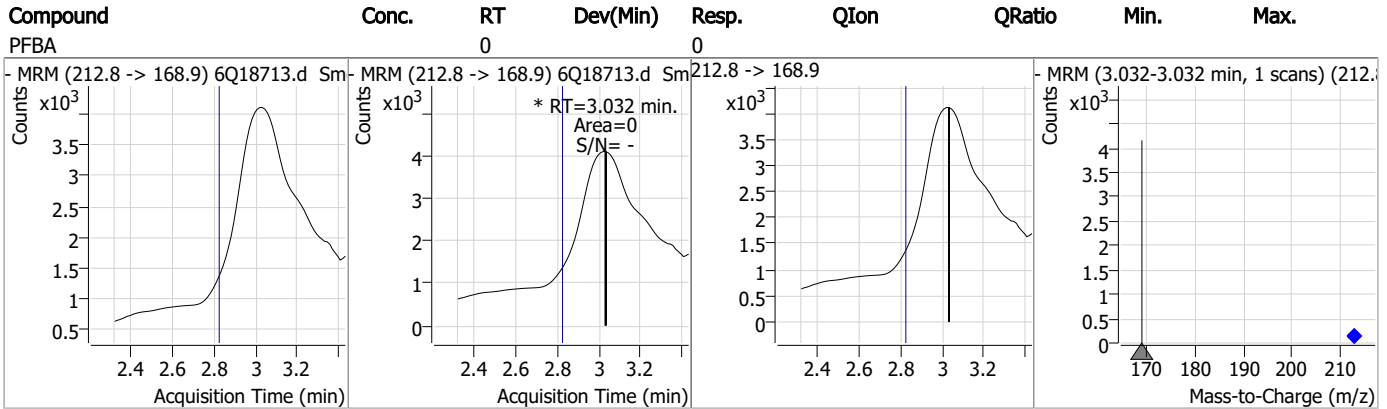
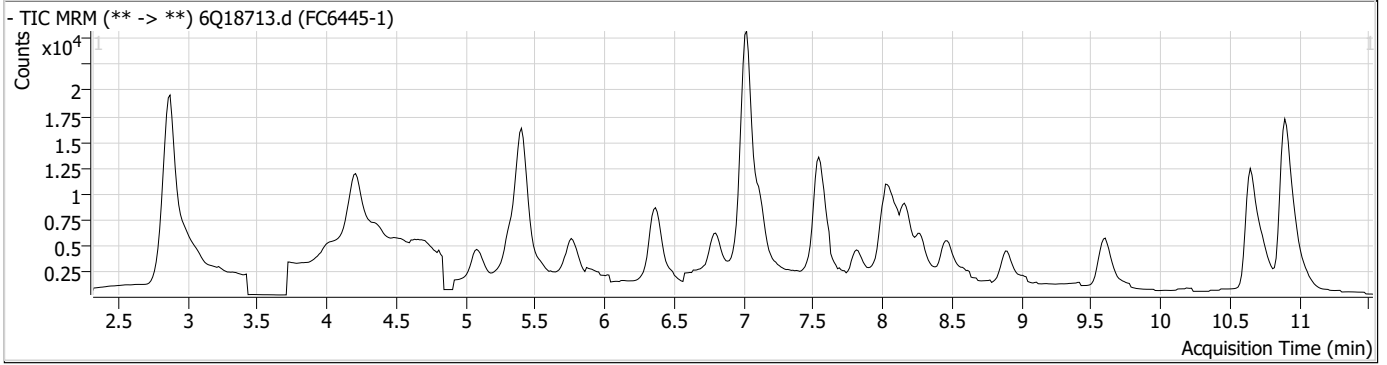
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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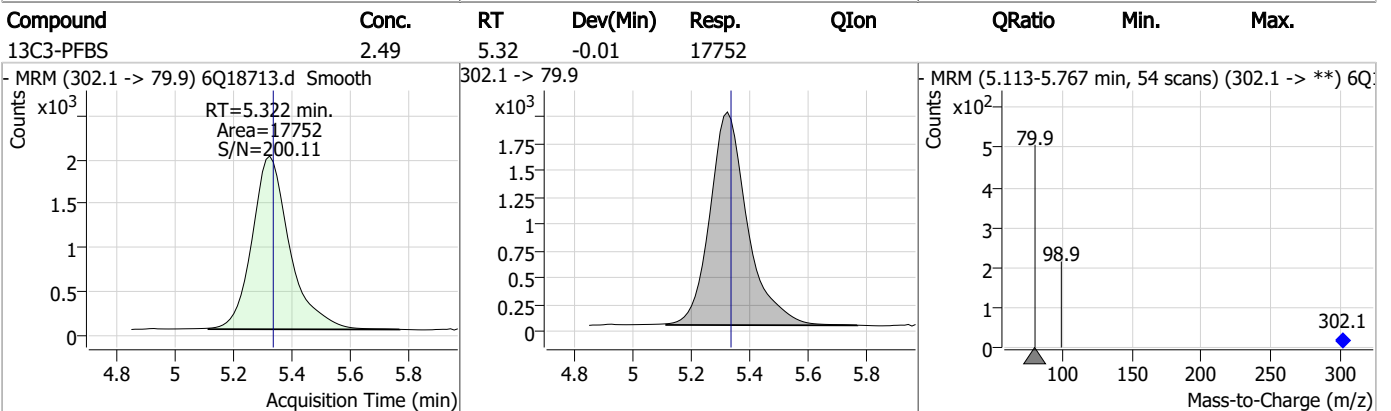
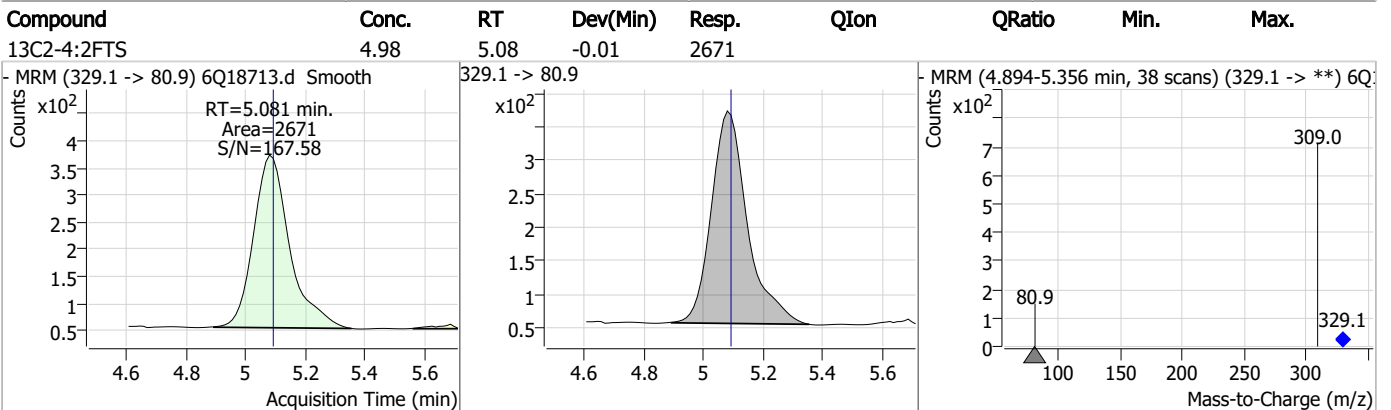
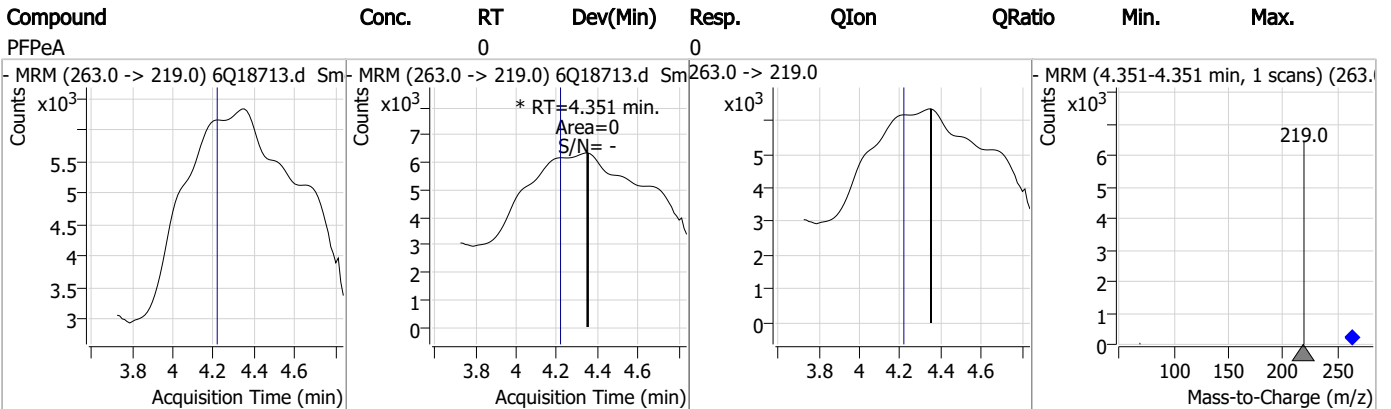
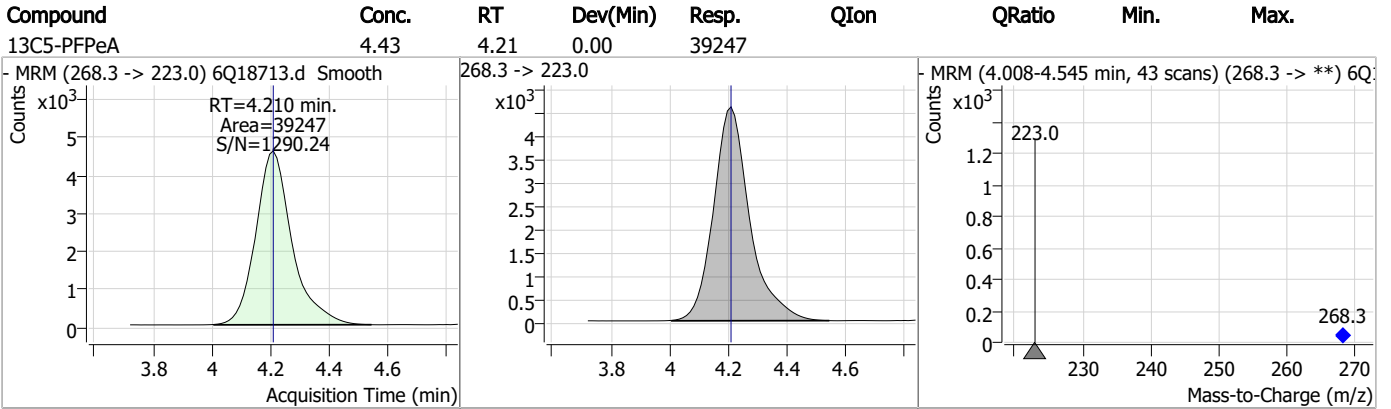
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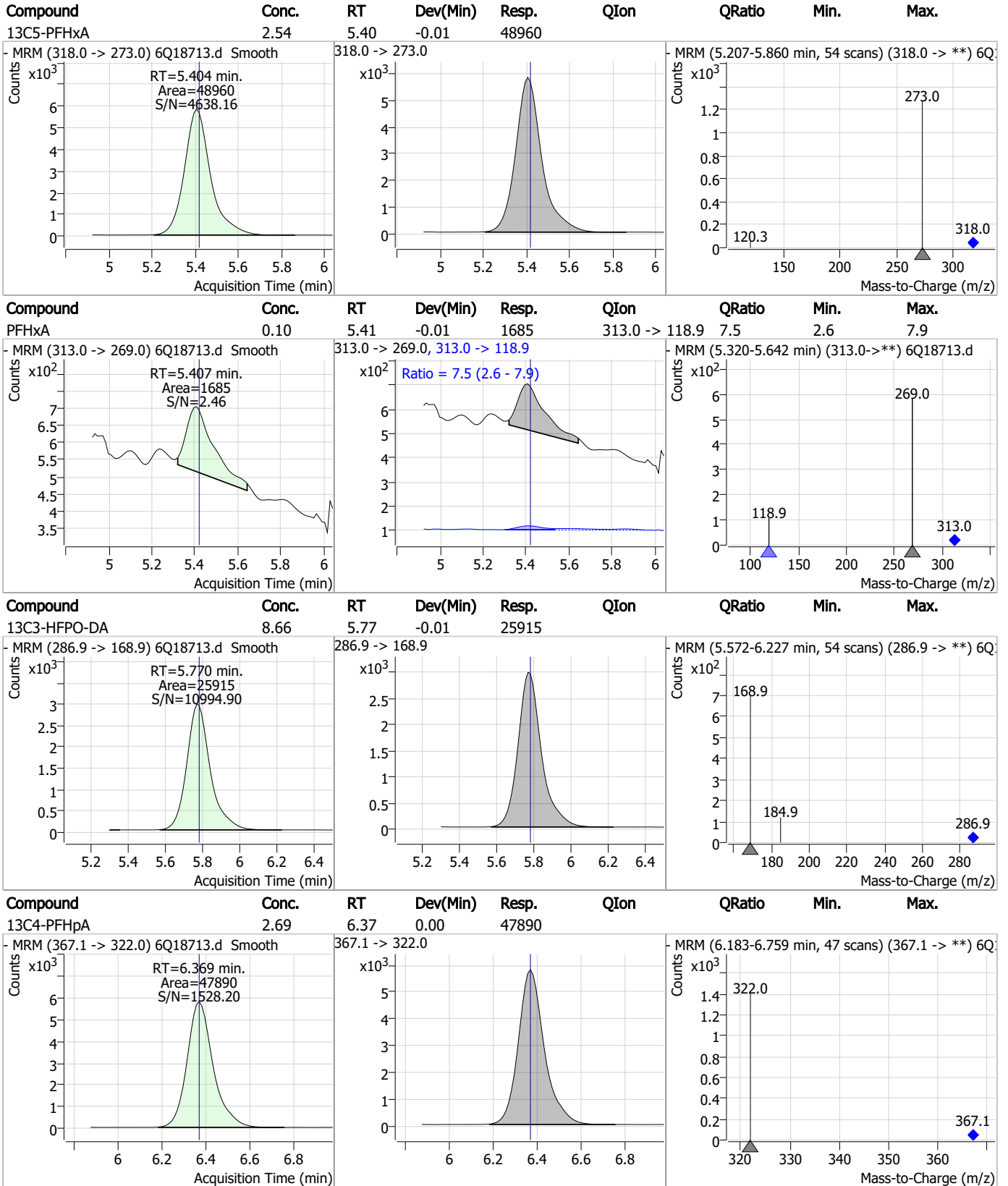
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



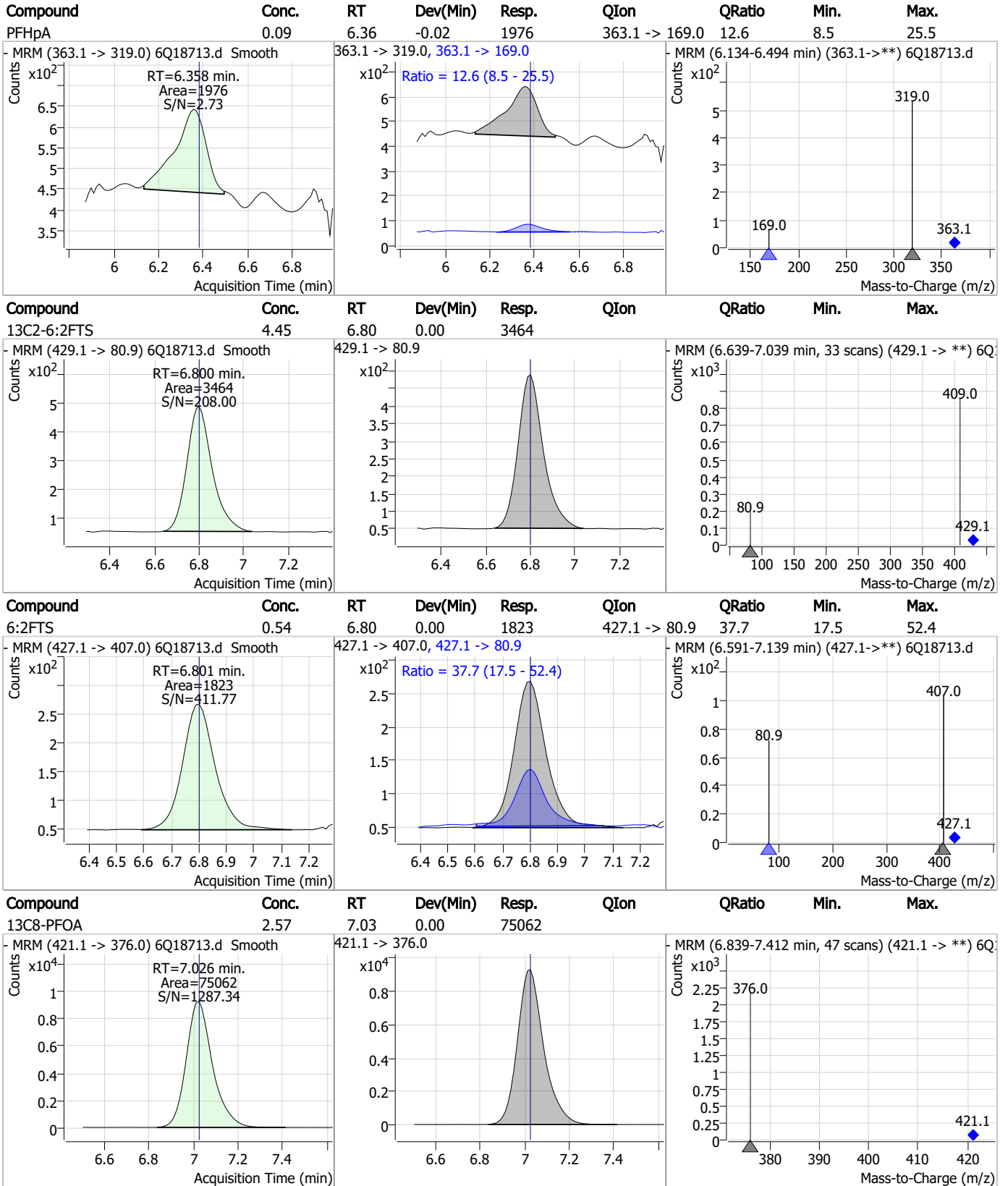
Perfluorinated Compounds by LC/MS/MS



7.1.1

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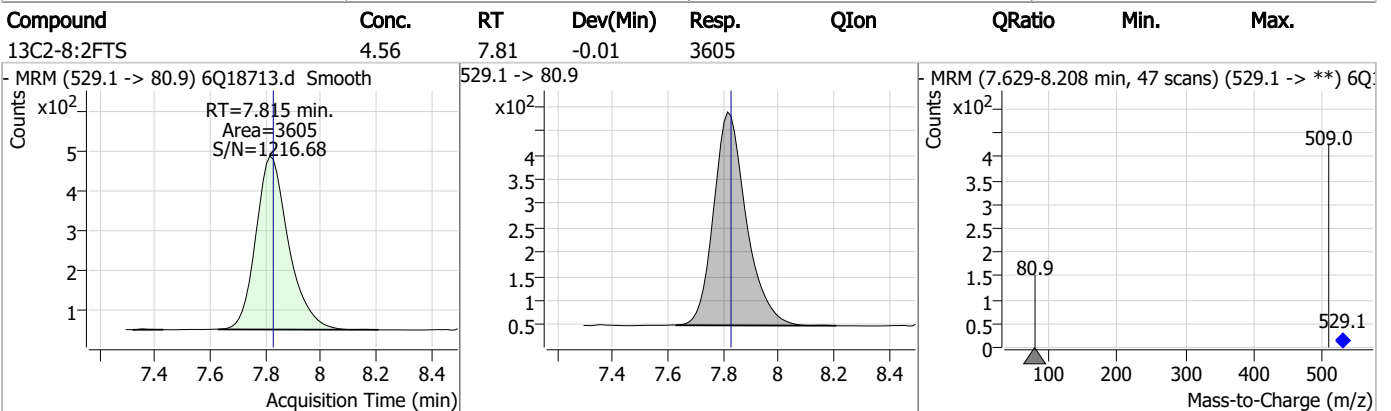
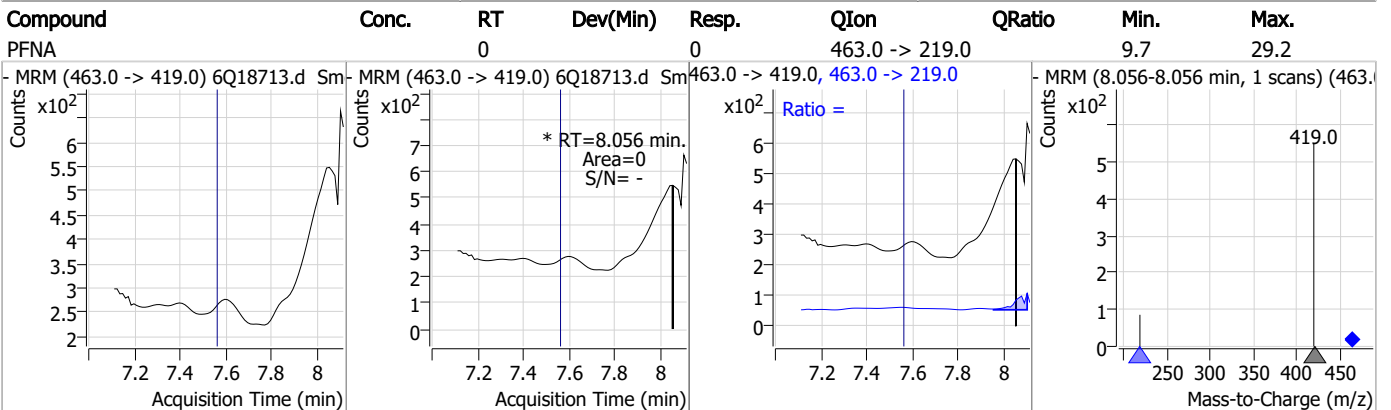
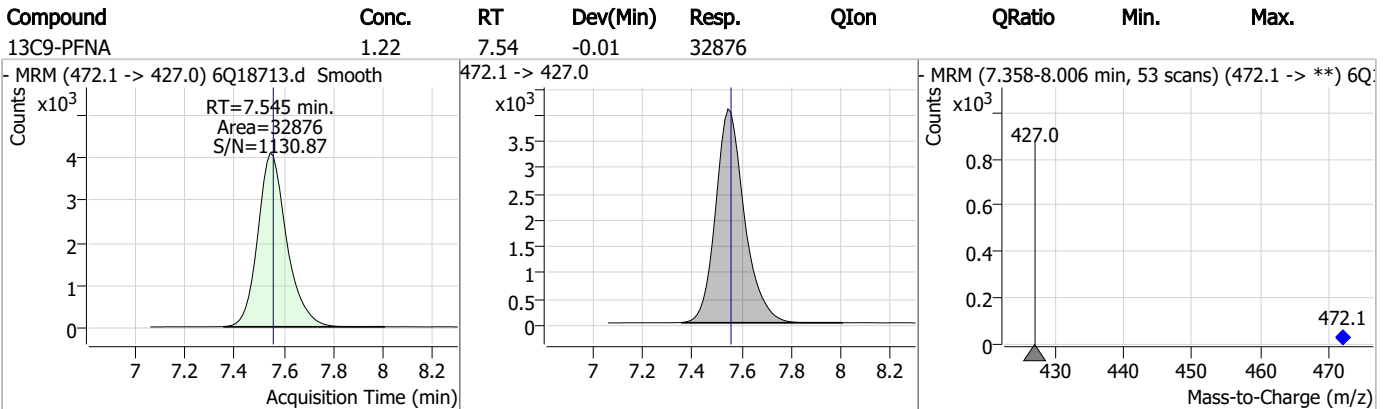
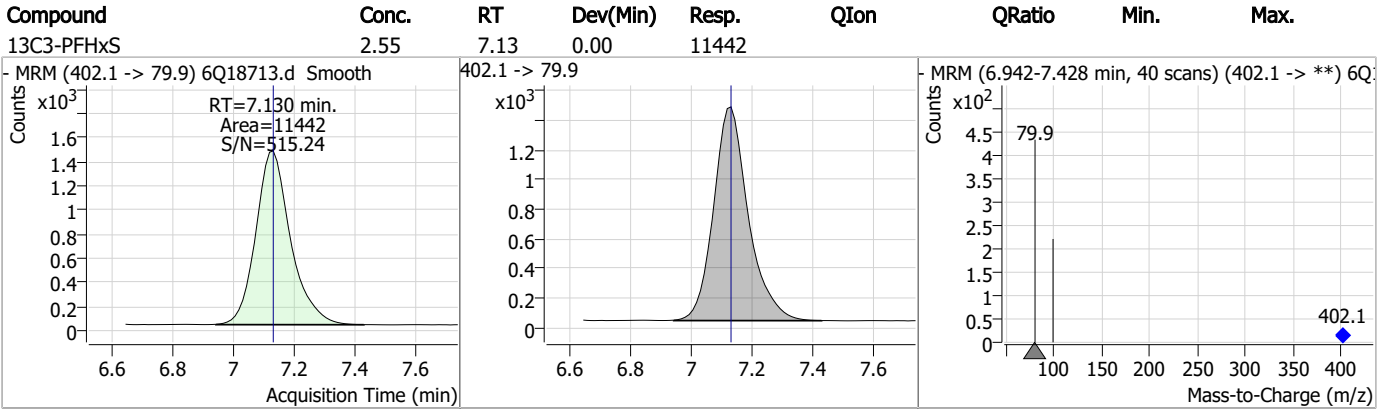
Perfluorinated Compounds by LC/MS/MS



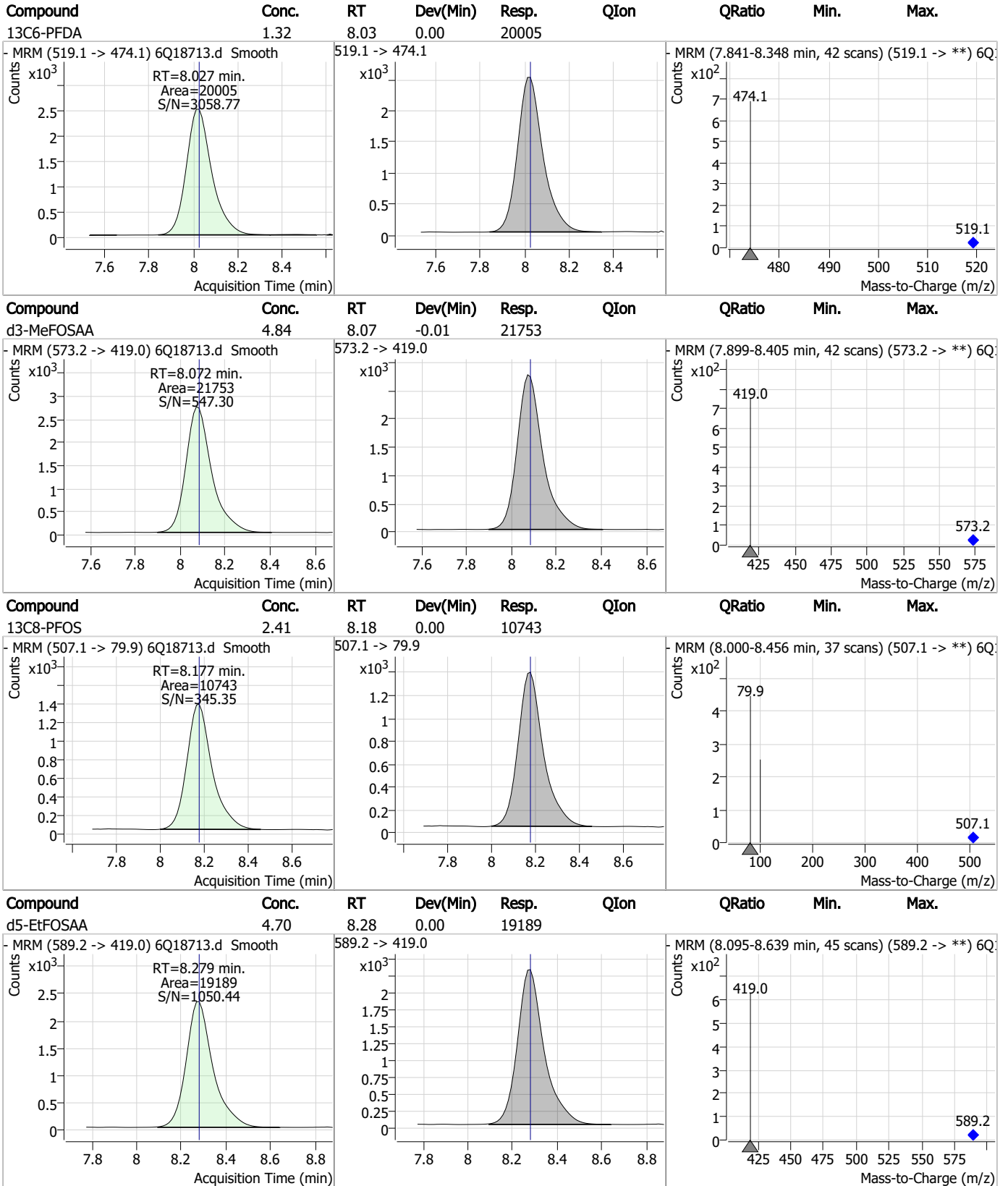
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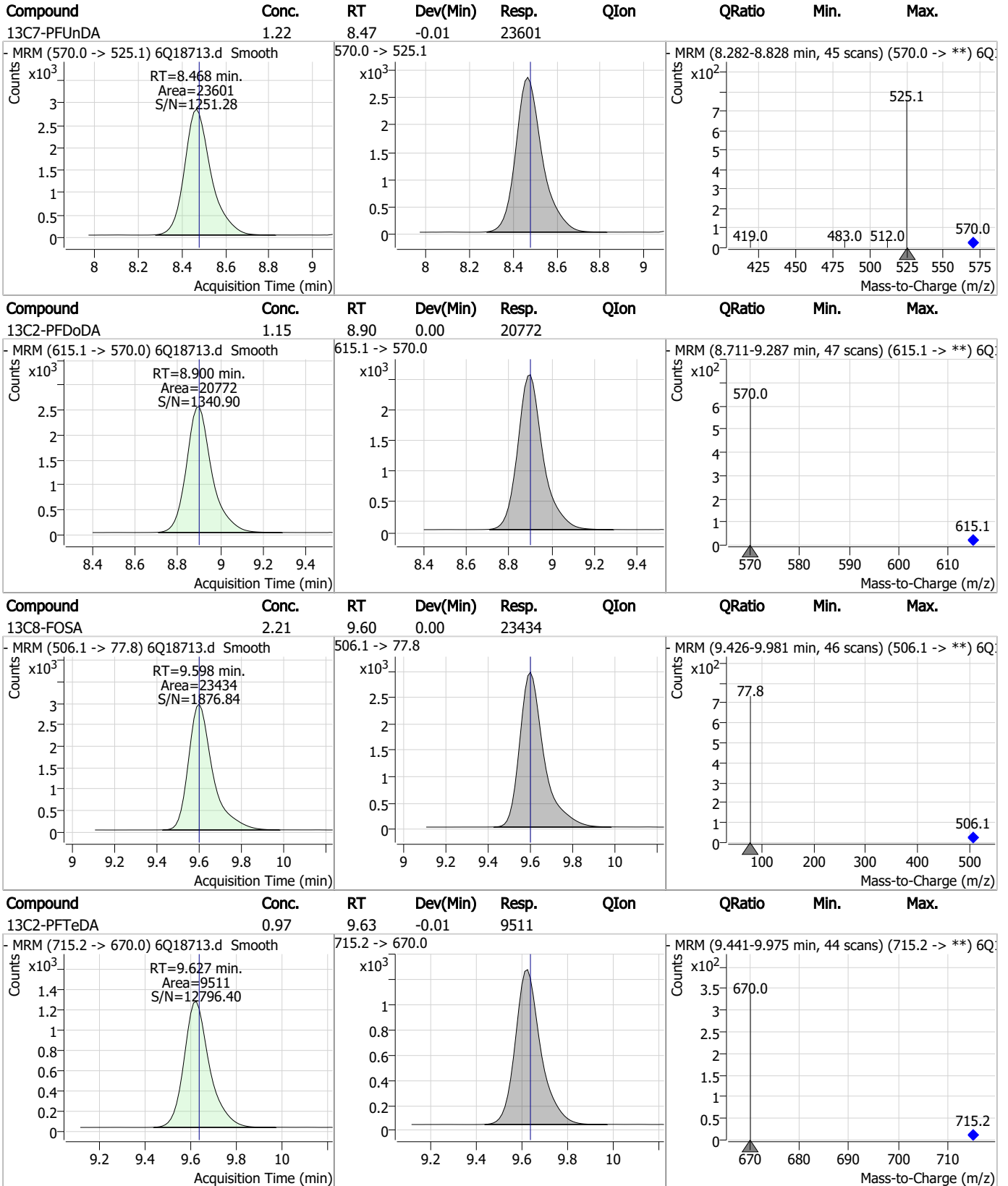
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

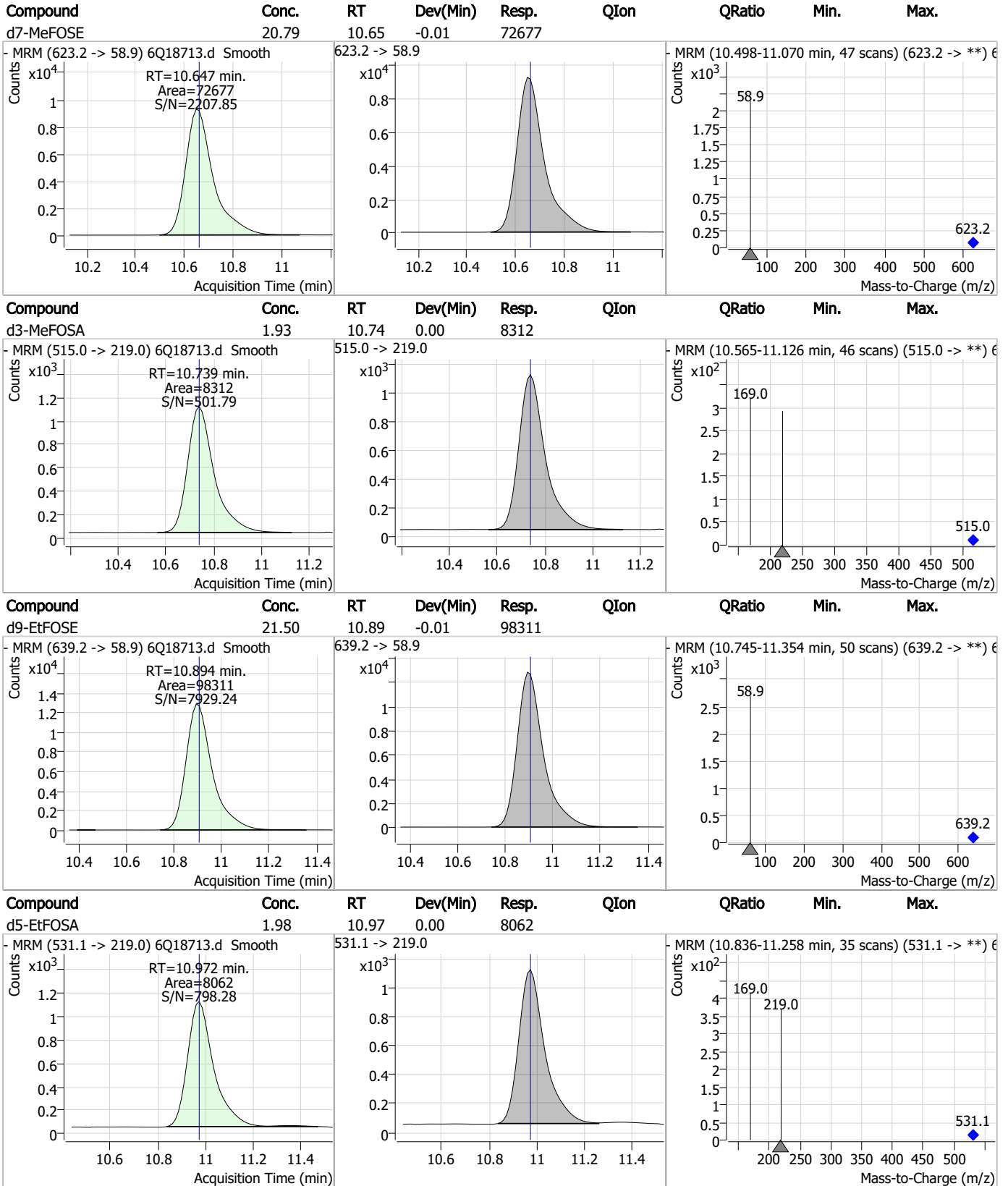


Perfluorinated Compounds by LC/MS/MS



7.1.1
7

Perfluorinated Compounds by LC/MS/MS



7.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18714.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 6/2/2023 12:32:31 AM
Sample Name : FC6445-2
Vial : P3-D2
DA Method File : 1633_053123_S6Q279.quantmethod.xml
Batch Name : s6q280.batch.bin
Sample Information : OP97143,S6Q280,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	119456	10.00 µg/L	0.053
M5-PFPeA	4.222	268.3 -> 223.0	47353	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	54359	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	47888	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	78191	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	34711	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20793	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	22364	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	16034	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	7396	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24781	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	19661	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12088	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11212	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3909	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5814	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4758	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30474	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	30640	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	28750	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	76318	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	112749	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9132	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9551	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13112	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	54956	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	7771	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	72912	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	26169	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	38711	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	44269	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3909	7.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 150.8%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5814	7.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 154.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4758	6.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	16034	0.88 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 70.6%		
13C2-PFTeDA	9.627	715.2 -> 670.0	7396	0.75 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 59.8%		
13C3-PFBS	5.334	302.1 -> 79.9	19661	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	12088	2.78 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C4-PFBA	2.876	216.8 -> 171.9	119456	9.13 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	47888	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C5-PFHxA	5.417	318.0 -> 273.0	54359	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.0%	
13C5-PFPeA	4.222	268.3 -> 223.0	47353	5.50 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C6-PFDA	8.027	519.1 -> 474.1	20793	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	22364	1.14 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C8-FOSA	9.598	506.1 -> 77.8	24781	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	7.026	421.1 -> 376.0	78191	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.5%	
13C8-PFOS	8.177	507.1 -> 79.9	11212	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C9-PFNA	7.545	472.1 -> 427.0	34711	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.9%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30474	7.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 144.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	30640	10.53 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	9551	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
d5-EtFOSAA	8.279	589.2 -> 419.0	28750	7.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 149.4%	
d7-MeFOSE	10.647	623.2 -> 58.9	76318	23.17 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	112749	26.18 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	9132	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.801	427.1 -> 407.0 427.1 -> 80.9	6380 2120	1.12 µg/L	97
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	2.882	212.8 -> 168.9	1343	0.34 µg/L	m 100
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDODA	8.823	613.1 -> 569.0 613.1 -> 319.0	0	µg/L	m 1
PFDS	-	599.0 -> 79.9	-	N.D.	

7.12

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8			
		363.1 -> 319.0	2112	0.10 µg/L	95
PFHpS	-	363.1 -> 169.0	310		
		449.0 -> 79.9	-	N.D.	
PFHxA	5.407	449.0 -> 98.9			
		313.0 -> 269.0	3913	0.21 µg/L	98
PFHxS	-	313.0 -> 118.9	225		
		398.7 -> 79.9	-	N.D.	
PFNA	-	398.7 -> 98.9			
		463.0 -> 419.0	-	N.D.	
PFNS	-	463.0 -> 219.0			
		548.8 -> 79.9	-	N.D.	
PFOA	-	548.8 -> 98.9			
		413.0 -> 369.0	-	N.D.	
PFOS	-	413.0 -> 169.0			
		498.9 -> 79.9	-	N.D.	
PFPeA	4.224	498.9 -> 98.8			
		263.0 -> 219.0	5116	0.45 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.	
		511.9 -> 219.0	-	N.D.	
MeFOSA	-	511.9 -> 169.0			
		616.1 -> 58.9	-	N.D.	
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9	-	N.D.	
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			
PFEESA	-				

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



7.1.2
7

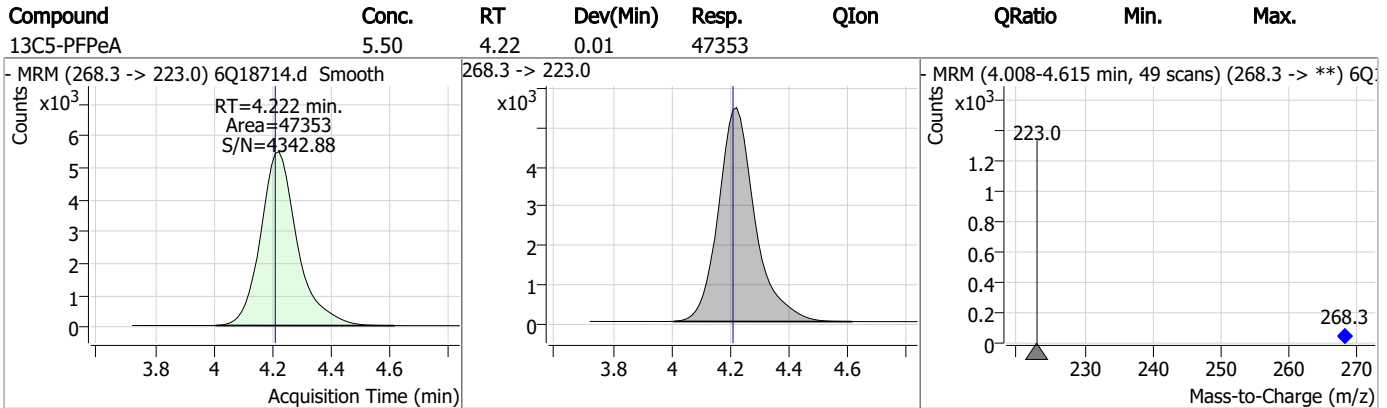
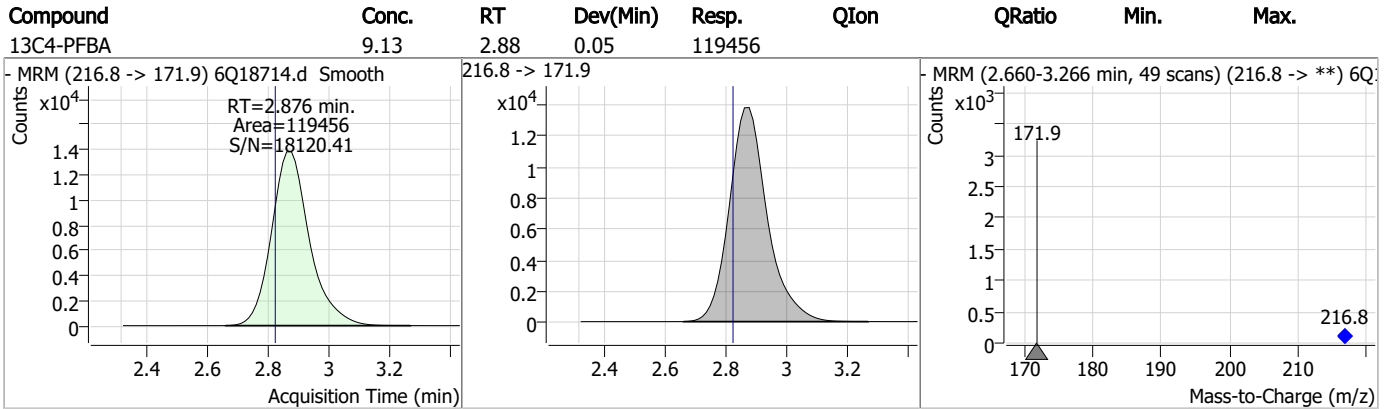
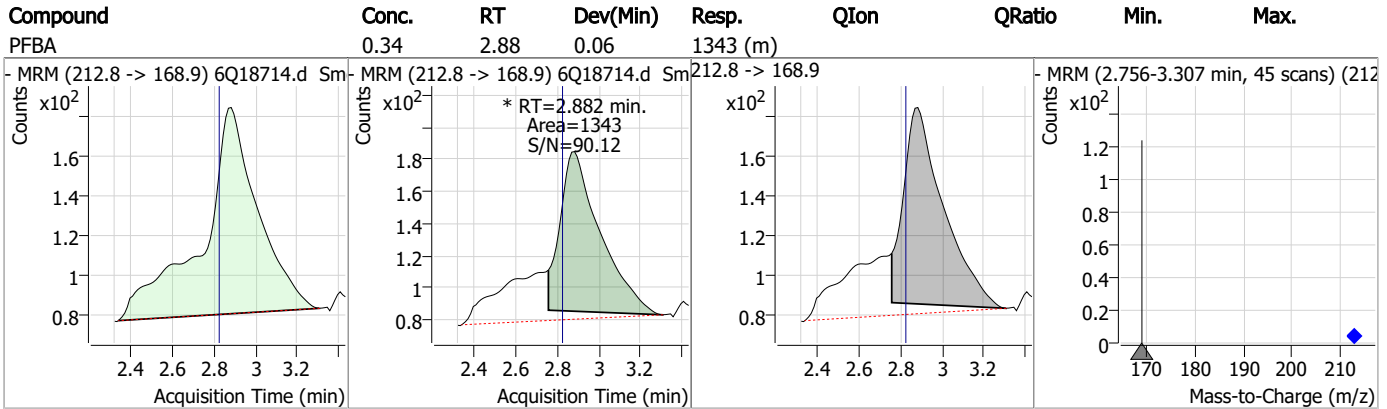
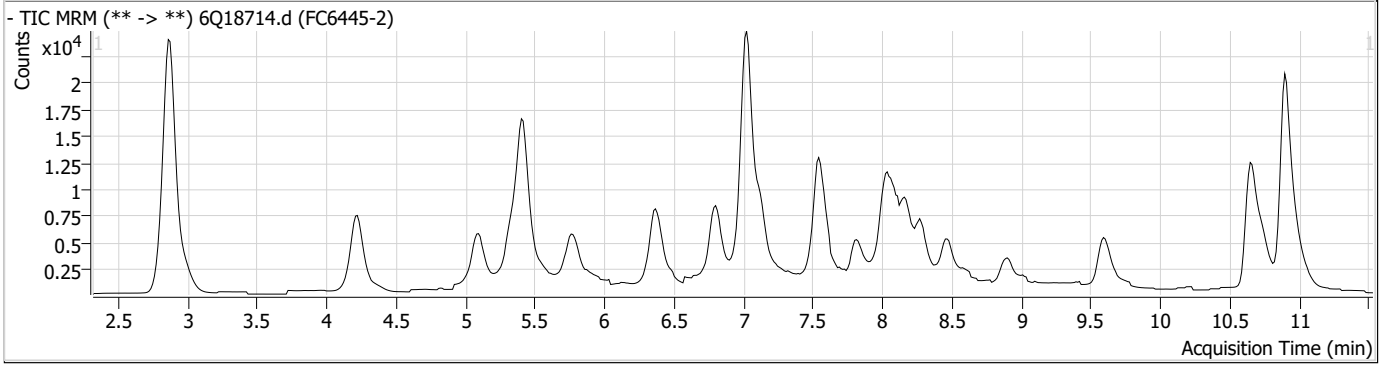
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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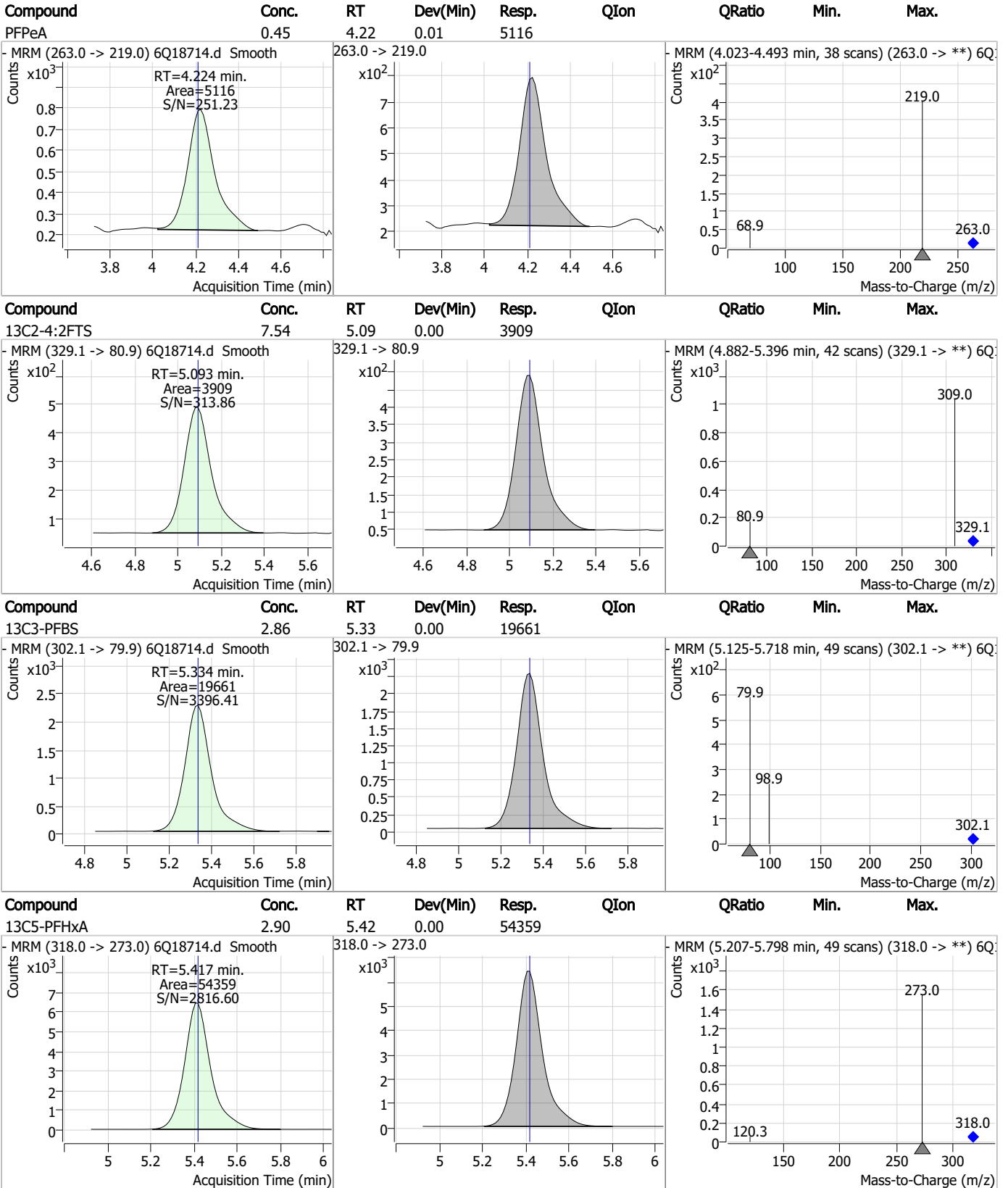
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Perfluorinated Compounds by LC/MS/MS



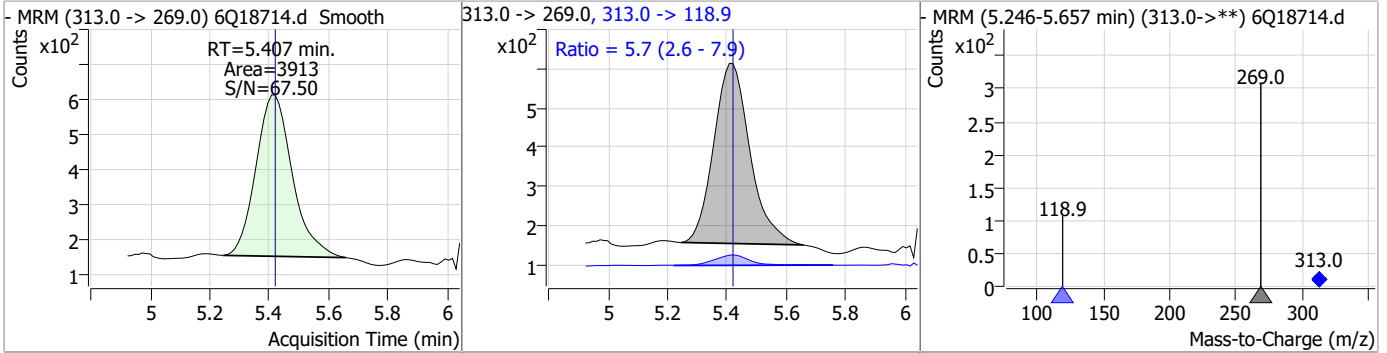
Perfluorinated Compounds by LC/MS/MS



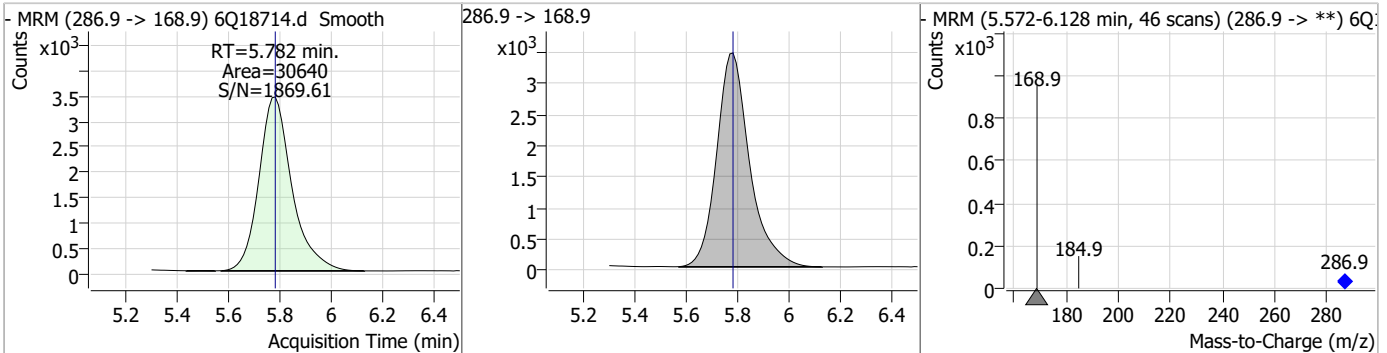
7.1.2
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Perfluorinated Compounds by LC/MS/MS

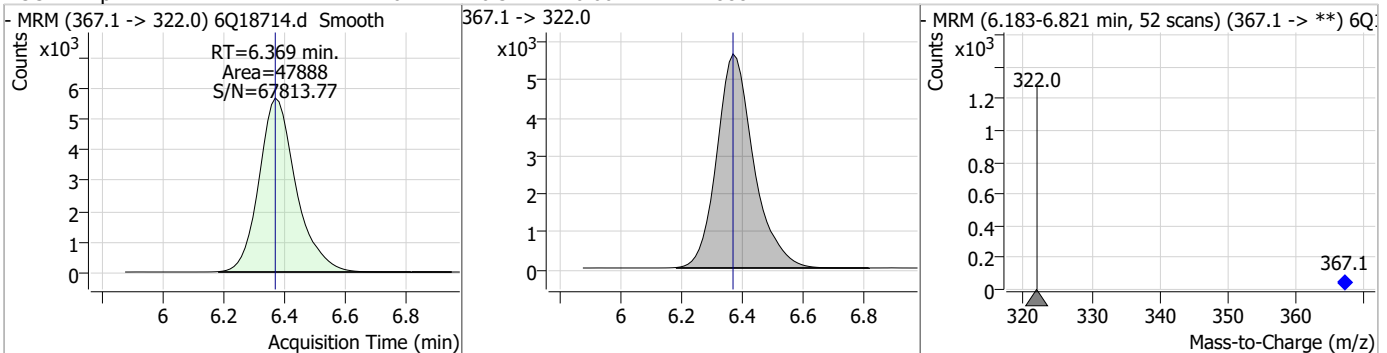
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.41	-0.01	3913	313.0 -> 118.9	5.7	2.6	7.9



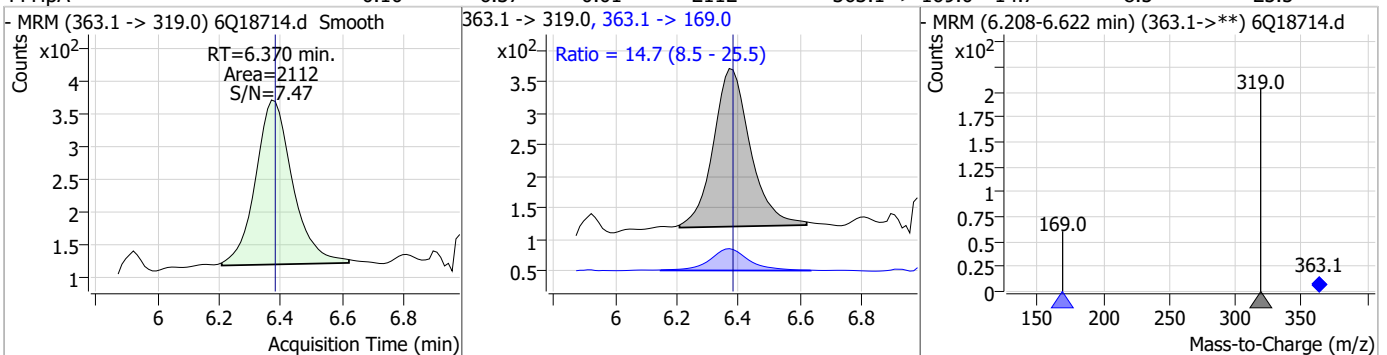
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.53	5.78	0.00	30640				



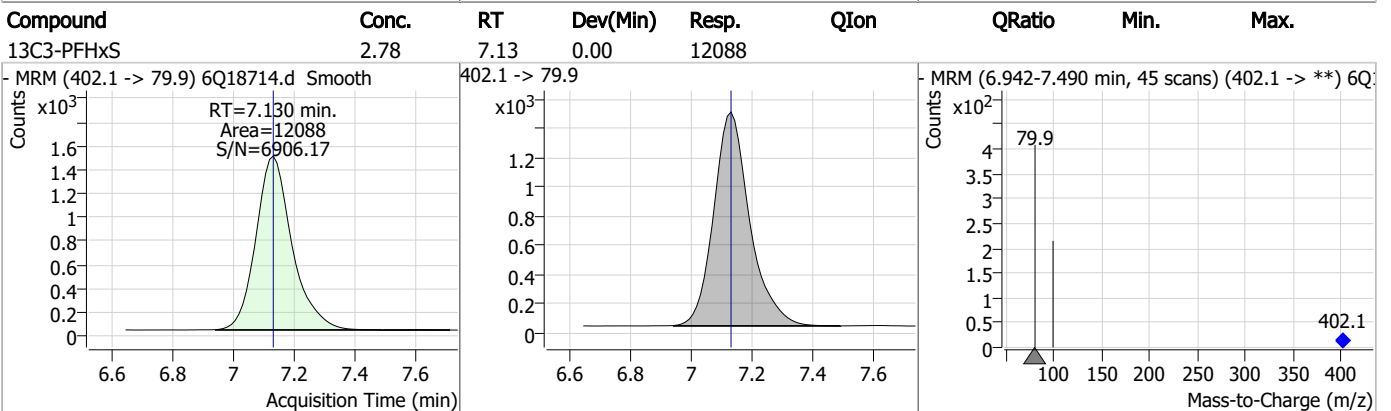
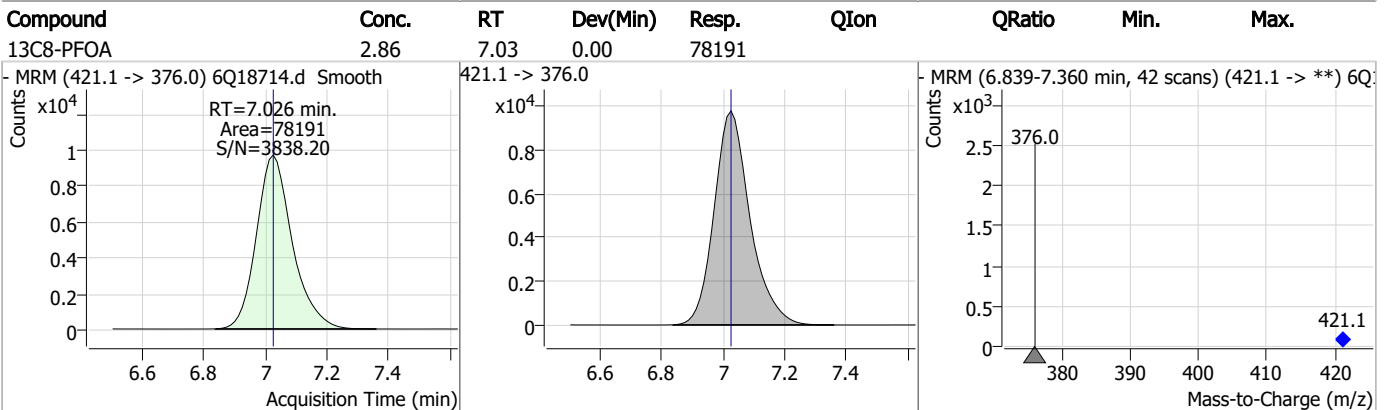
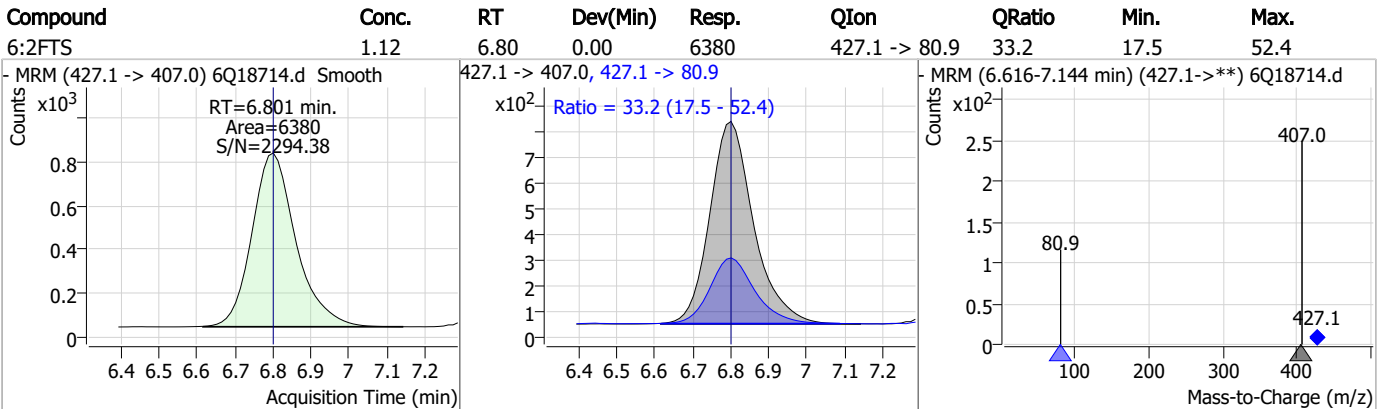
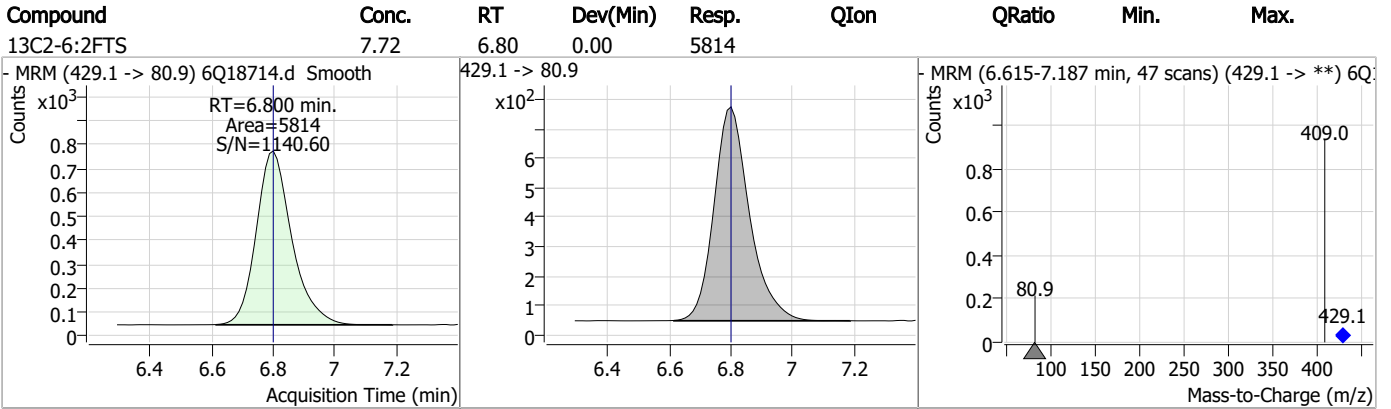
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.76	6.37	0.00	47888				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.10	6.37	-0.01	2112	363.1 -> 169.0	14.7	8.5	25.5



Perfluorinated Compounds by LC/MS/MS



7.1.2

7

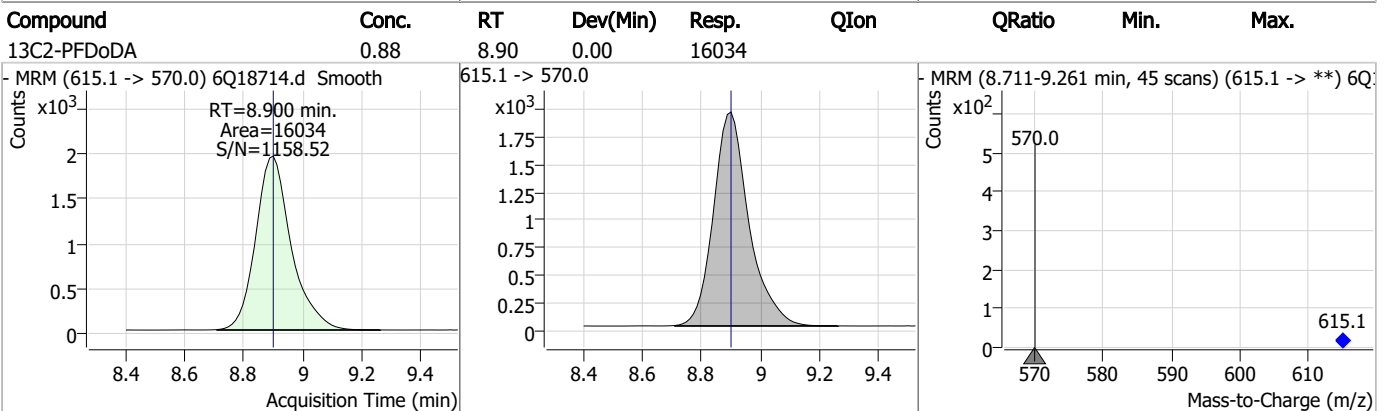
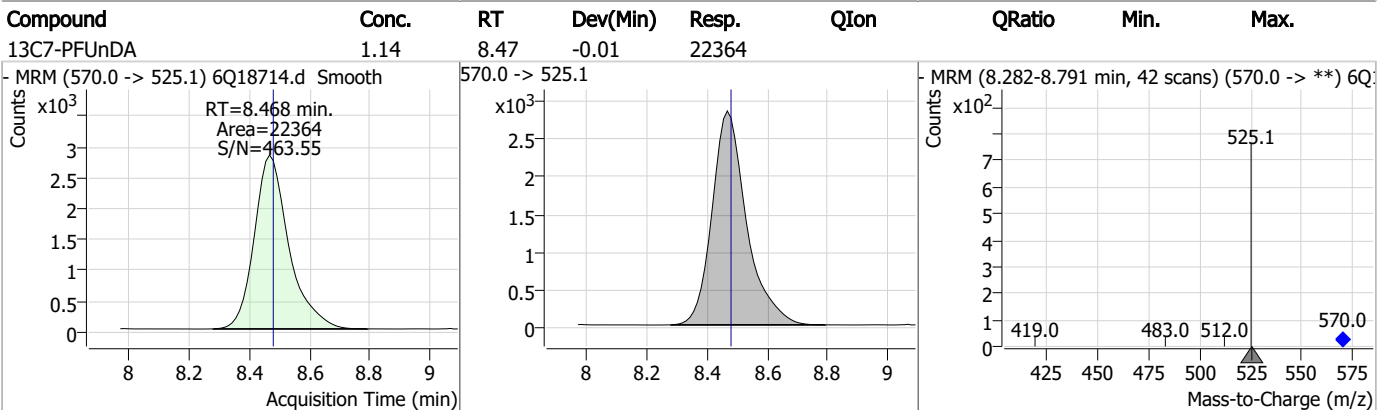
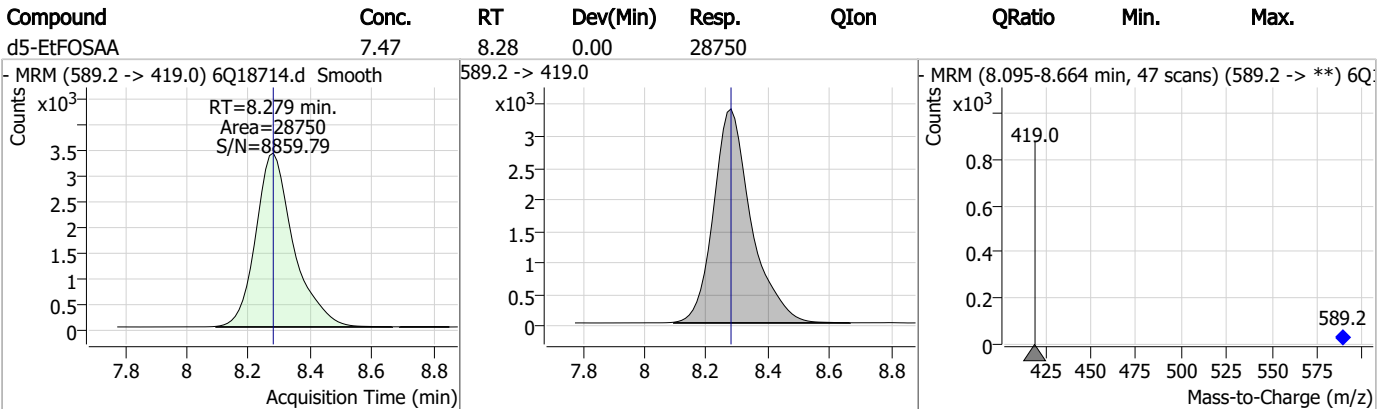
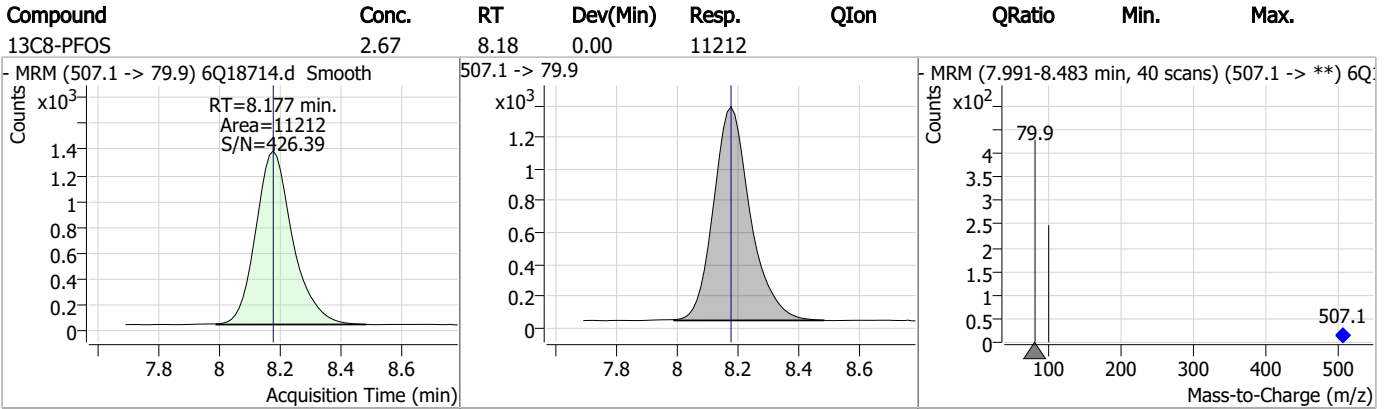
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.36	7.54	-0.01	34711				
13C2-8:2FTS	6.23	7.81	-0.01	4758				
13C6-PFDA	1.36	8.03	0.00	20793				
d3-MeFOSAA	7.20	8.08	0.00	30474				

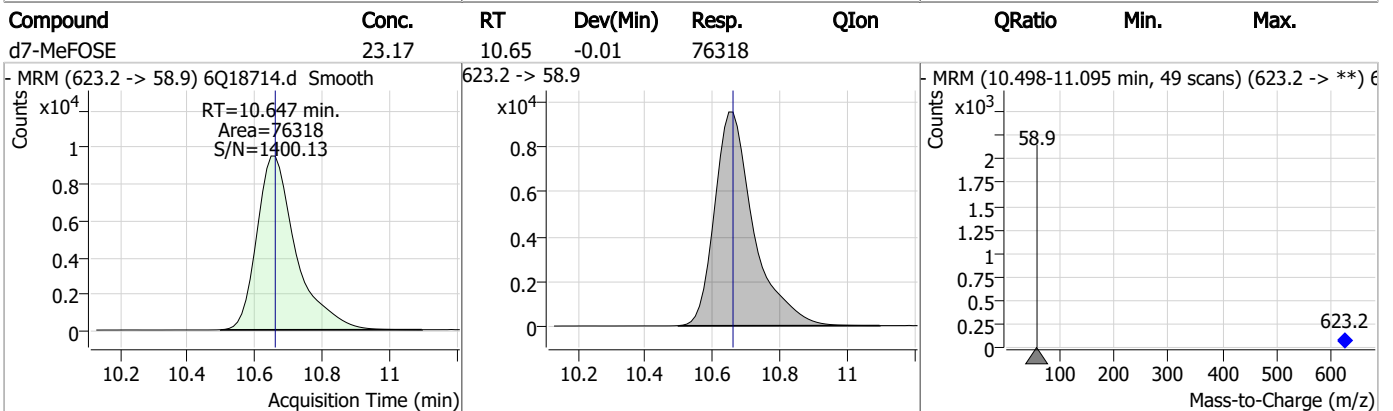
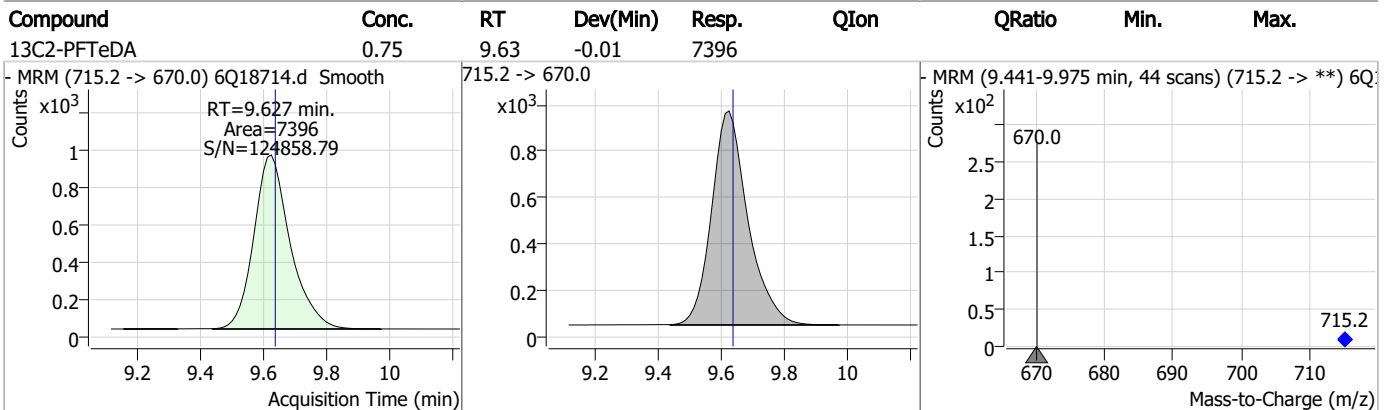
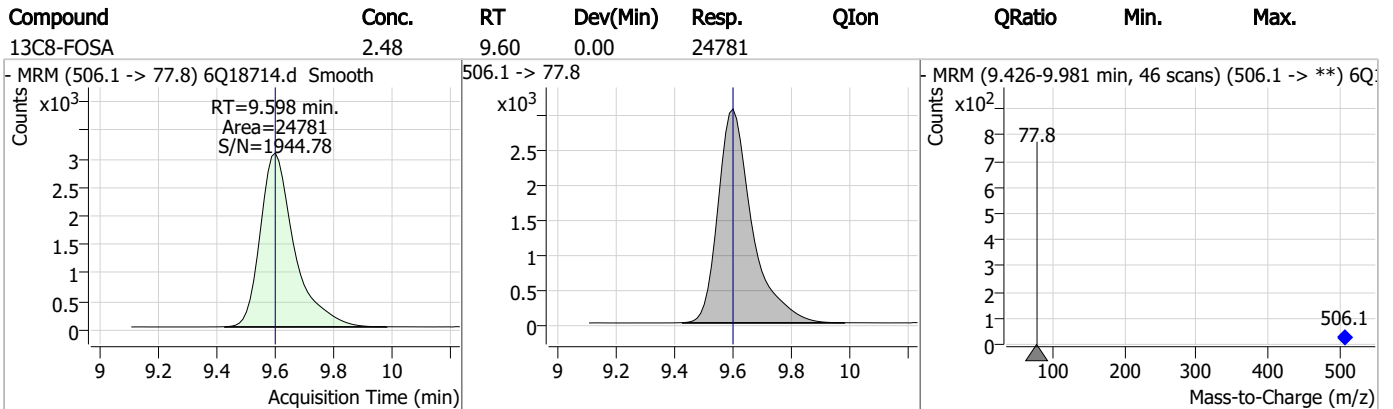
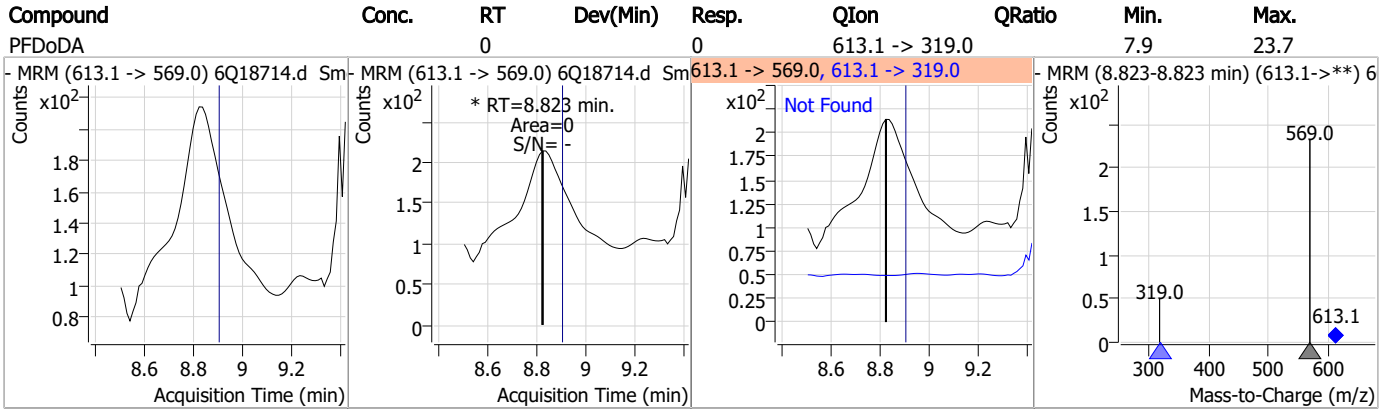
7.1.2

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Perfluorinated Compounds by LC/MS/MS



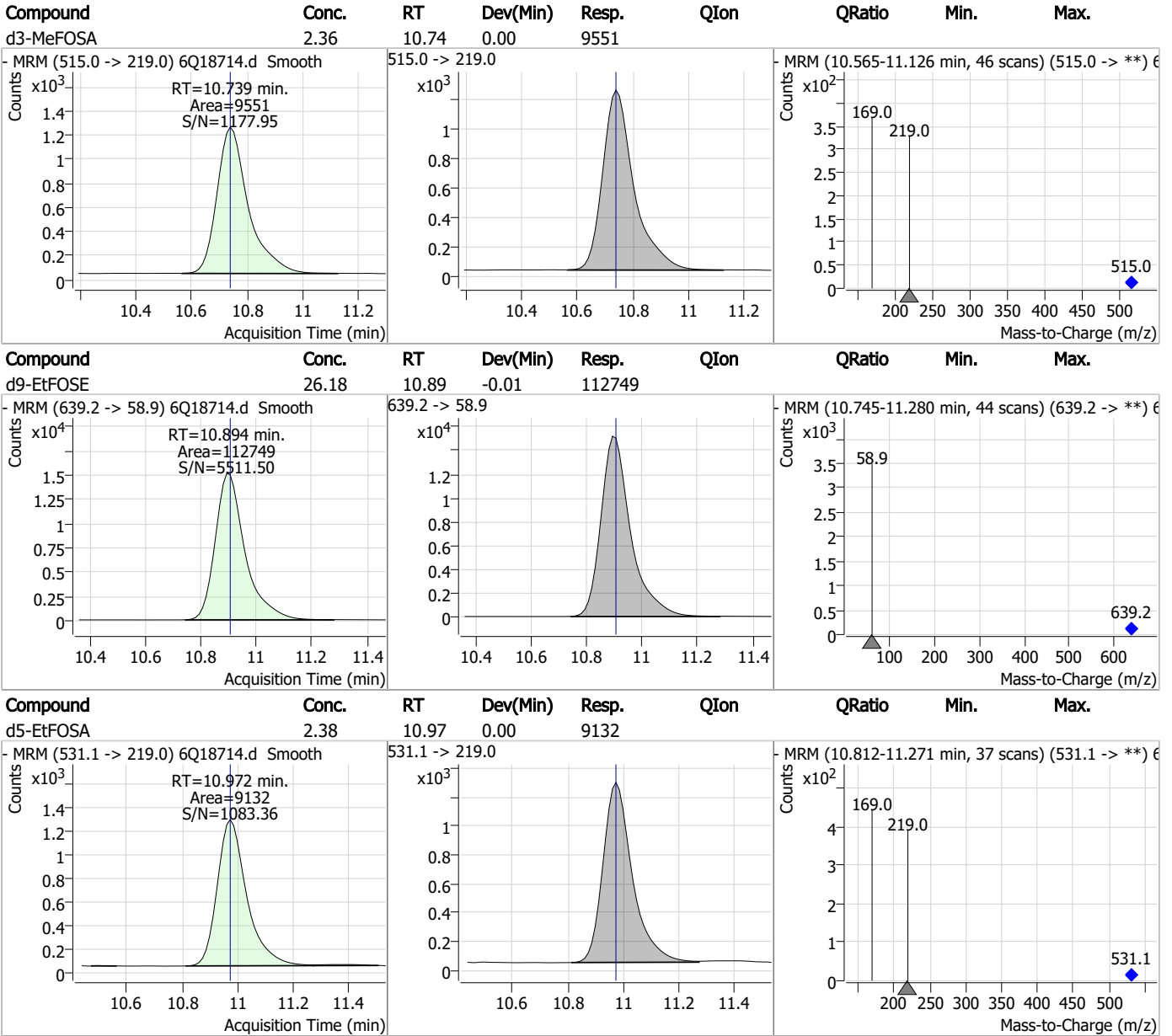
Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Manual Integration Approval Summary

Sample Number: FC6445-2 Method: EPA DRAFT 1633
Lab FileID: 6Q18714.D Analyst approved: 06/05/23 12:52 Martha Valls
Injection Time: 06/02/23 00:32 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanoic acid	375-22-4		2.88	Split peak

7.1.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/06/23 07:40

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18715.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 12:47:00 AM
 Sample Name : FC6445-3
 Vial : P3-D3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	120559	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	45283	5.00 µg/L	0.012
M5-PFHxA	5.404	318.0 -> 273.0	50967	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	50163	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	75898	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	33077	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20084	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	22345	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	18238	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	8993	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	21620	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	19931	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11779	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	10613	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2833	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	3782	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	3932	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	21588	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	30214	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	18131	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	63375	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	90598	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	7877	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8116	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13740	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	54177	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	7982	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	71400	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	25978	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	40155	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	45019	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2833	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	3782	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-8:2FTS	7.815	529.1 -> 80.9	3932	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	18238	1.01 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	8993	0.92 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 73.3%		
13C3-PFBS	5.334	302.1 -> 79.9	19931	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	11779	2.64 µg/L	0.000

7.1.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C4-PFBA	2.860	216.8 -> 171.9	120559	9.34 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C4-PFHpA	6.369	367.1 -> 322.0	50163	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C5-PFHxA	5.404	318.0 -> 273.0	50967	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C5-PFPeA	4.222	268.3 -> 223.0	45283	5.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C6-PFDA	8.027	519.1 -> 474.1	20084	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C7-PFUnDA	8.468	570.0 -> 525.1	22345	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C8-FOSA	9.598	506.1 -> 77.8	21620	2.06 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 82.6%		
13C8-PFOA	7.026	421.1 -> 376.0	75898	2.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C8-PFOS	8.177	507.1 -> 79.9	10613	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C9-PFNA	7.545	472.1 -> 427.0	33077	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
d3-MeFOSAA	8.084	573.2 -> 419.0	21588	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	30214	10.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
d3-MeFOSA	10.739	515.0 -> 219.0	8116	1.91 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 76.5%		
d5-EtFOSAA	8.279	589.2 -> 419.0	18131	4.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.9%		
d7-MeFOSE	10.660	623.2 -> 58.9	63375	18.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 73.5%		
d9-EtFOSE	10.894	639.2 -> 58.9	90598	20.07 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 80.3%		
d5-EtFOSA	10.972	531.1 -> 219.0	7877	1.96 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 78.4%		

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	6.801	427.1 -> 407.0	2908	0.78 µg/L	99
		427.1 -> 80.9	995		
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	5.002	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)
PFHpA	6.382	599.0 -> 98.8				
		363.1 -> 319.0	4478	0.20	µg/L	99
PFHpS	-	363.1 -> 169.0	734			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.407	449.0 -> 98.9				
		313.0 -> 269.0	4997	0.29	µg/L	m 94
PFHxS	-	313.0 -> 118.9	161			
		398.7 -> 79.9	-	N.D.		
PFNA	-	398.7 -> 98.9				
		463.0 -> 419.0	-	N.D.		
PFNS	-	463.0 -> 219.0				
		548.8 -> 79.9	-	N.D.		
PFOA	-	548.8 -> 98.9				
		413.0 -> 369.0	-	N.D.		
PFOS	-	413.0 -> 169.0				
		498.9 -> 79.9	-	N.D.		
PFPeA	4.212	498.9 -> 98.8				
		263.0 -> 219.0	5206	0.48	µg/L	m 100
PFPeS	6.537	349.1 -> 79.9	0		µg/L	m 1
		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.		
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.1.3
7



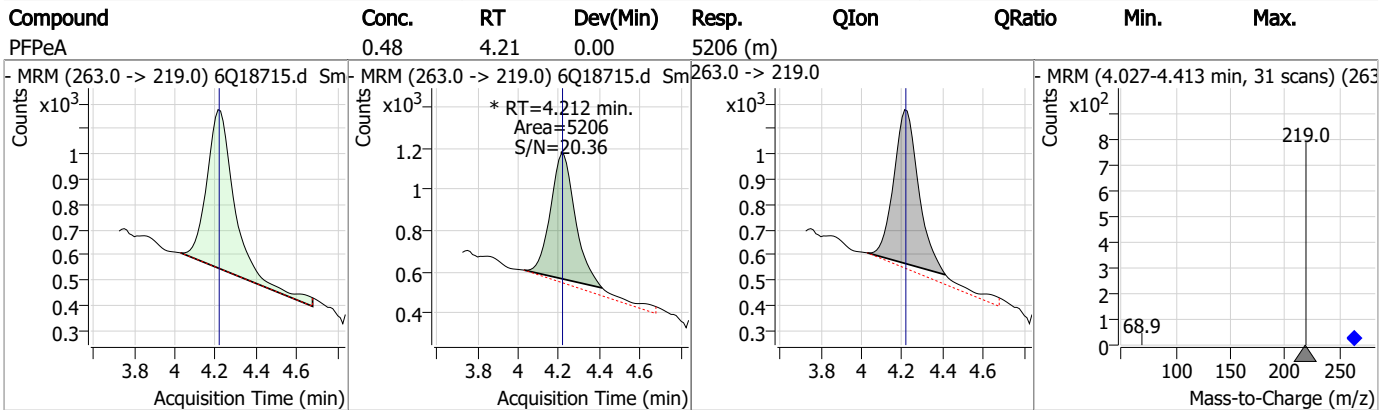
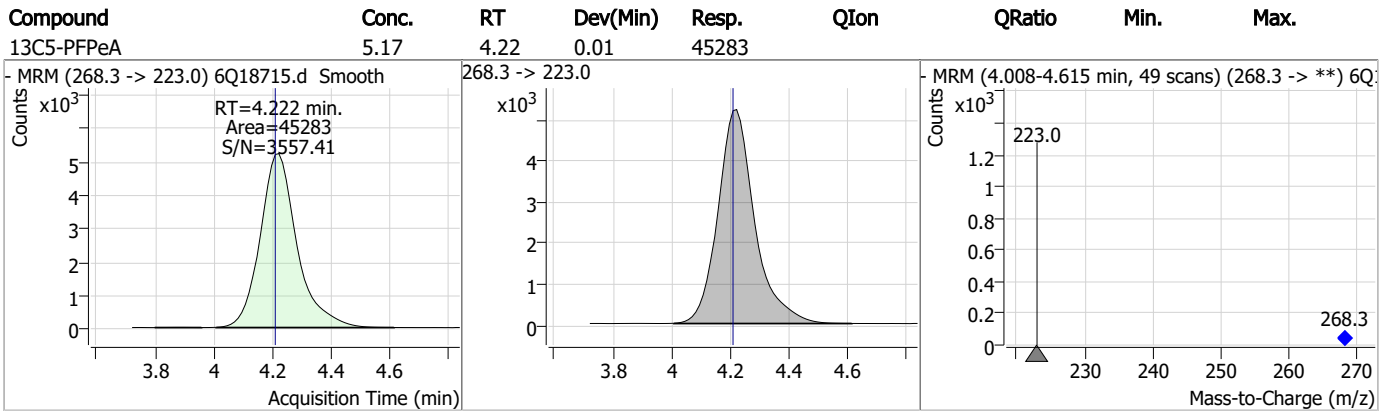
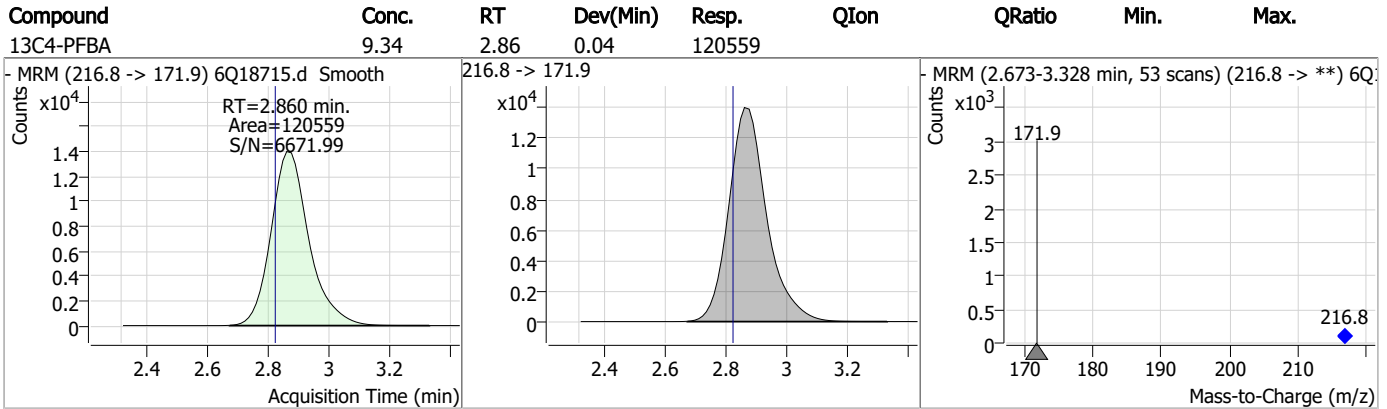
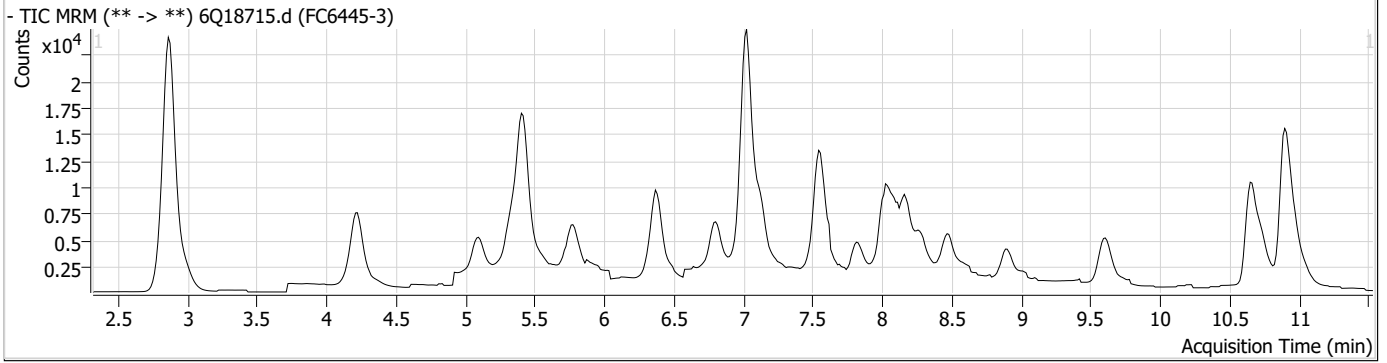
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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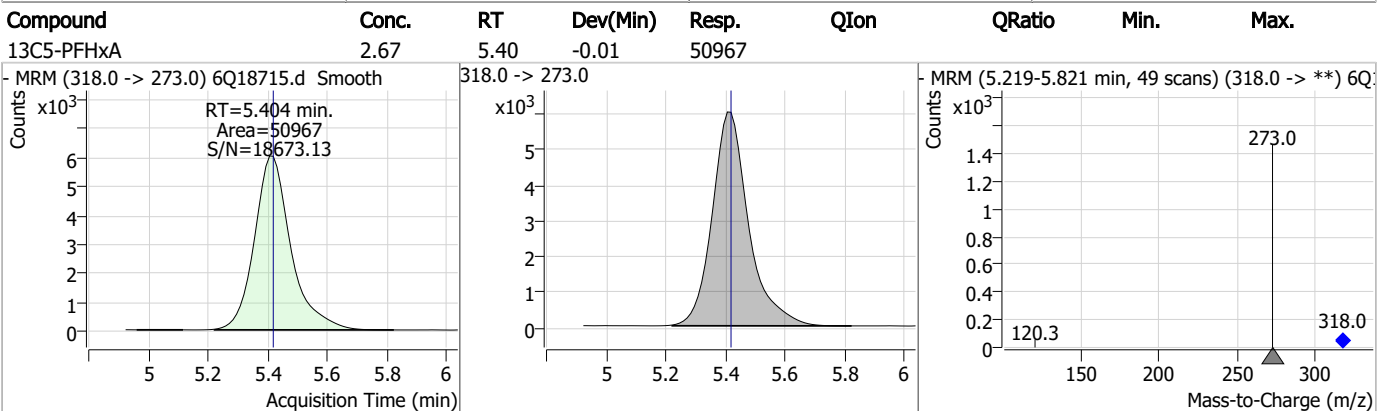
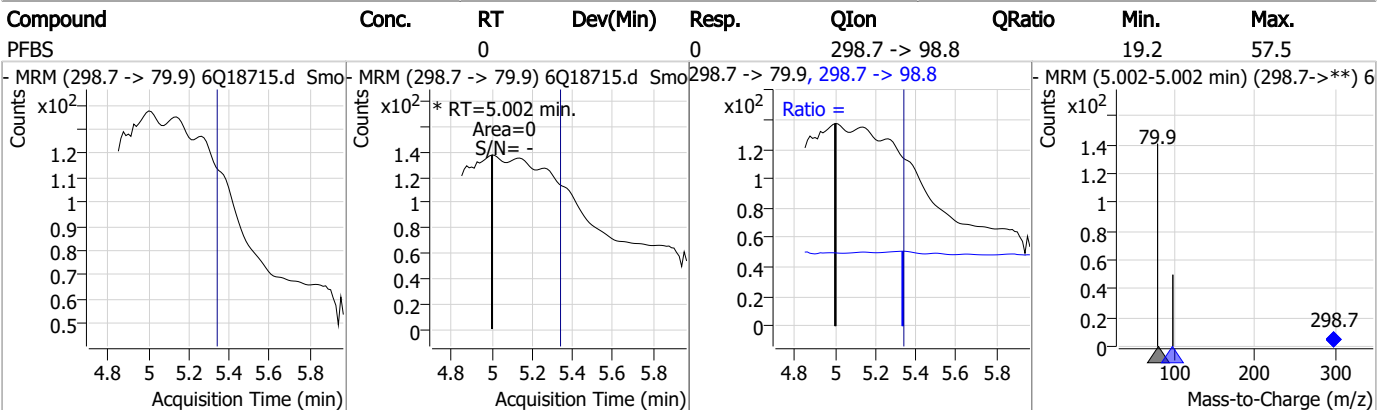
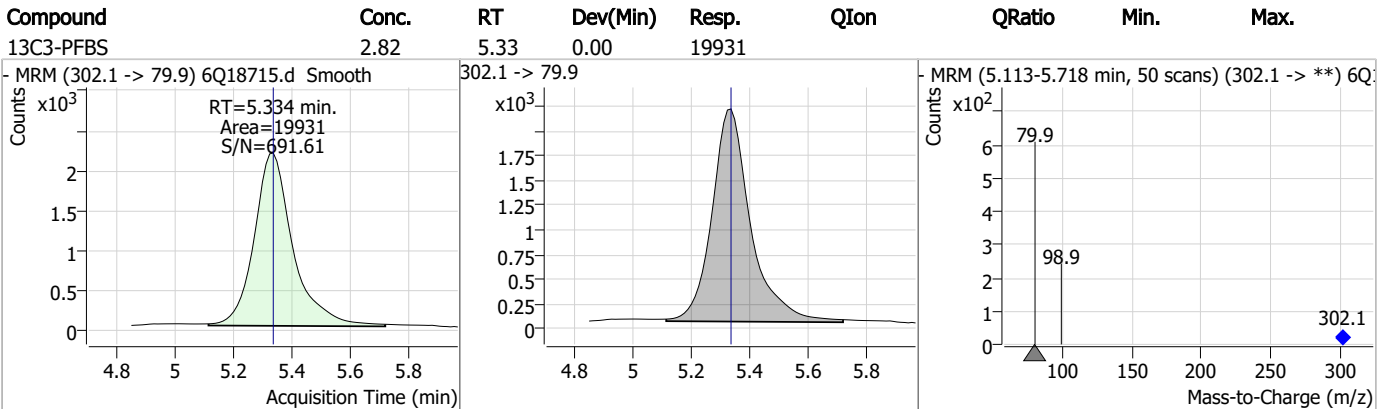
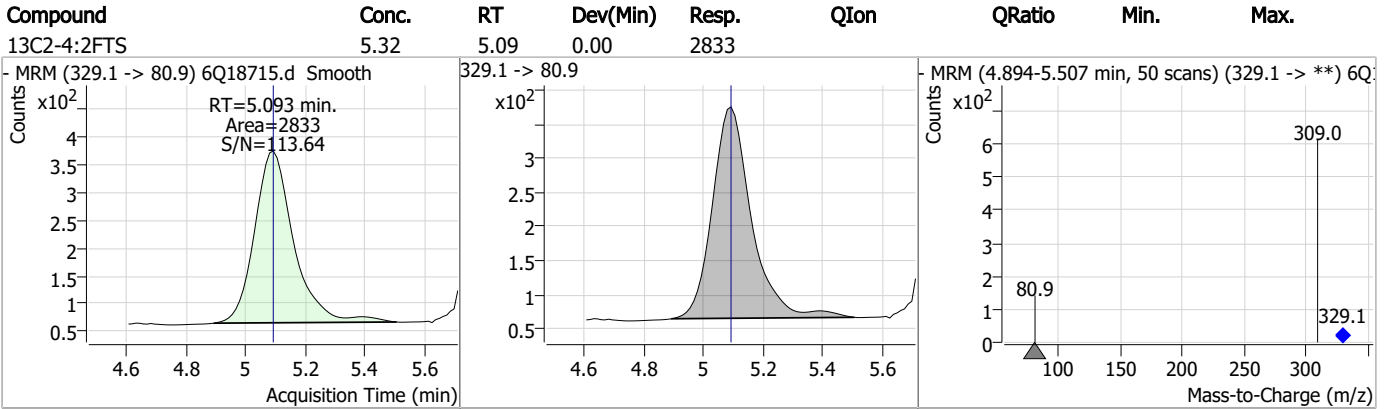
7.1.3
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Perfluorinated Compounds by LC/MS/MS



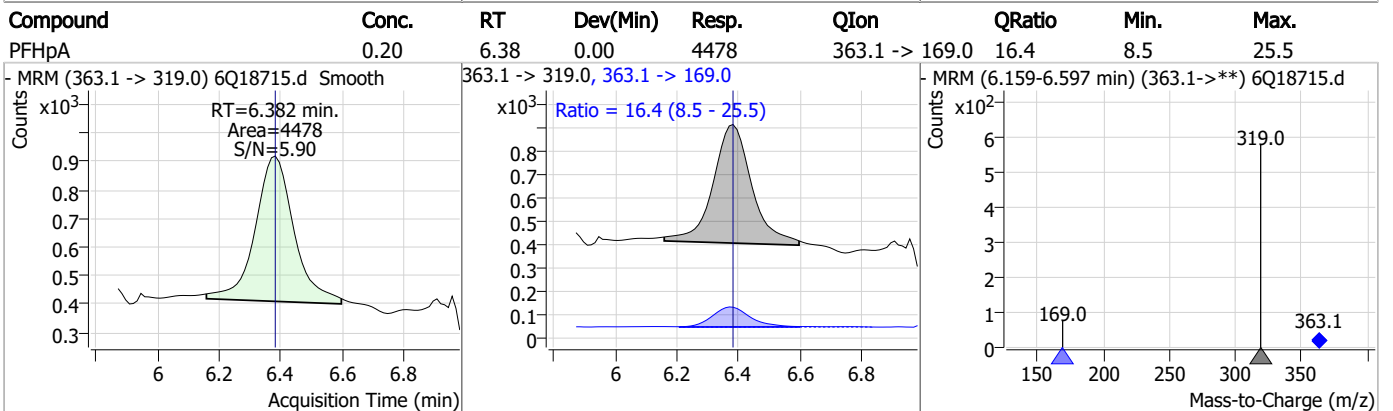
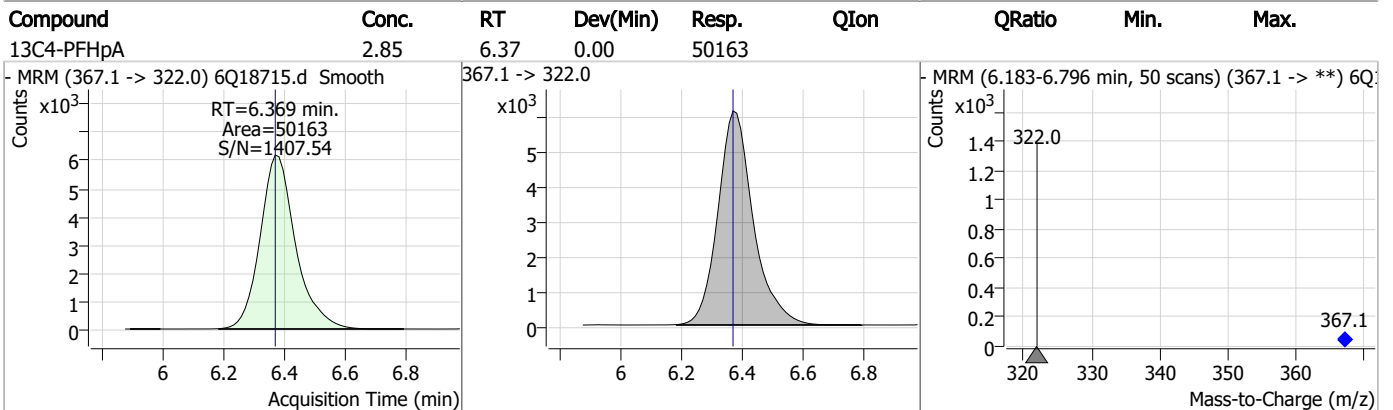
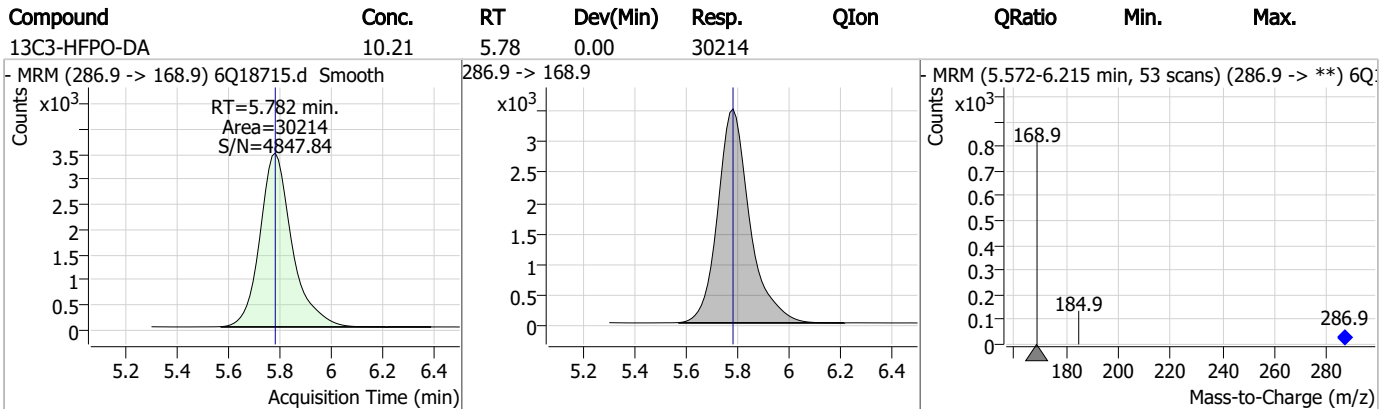
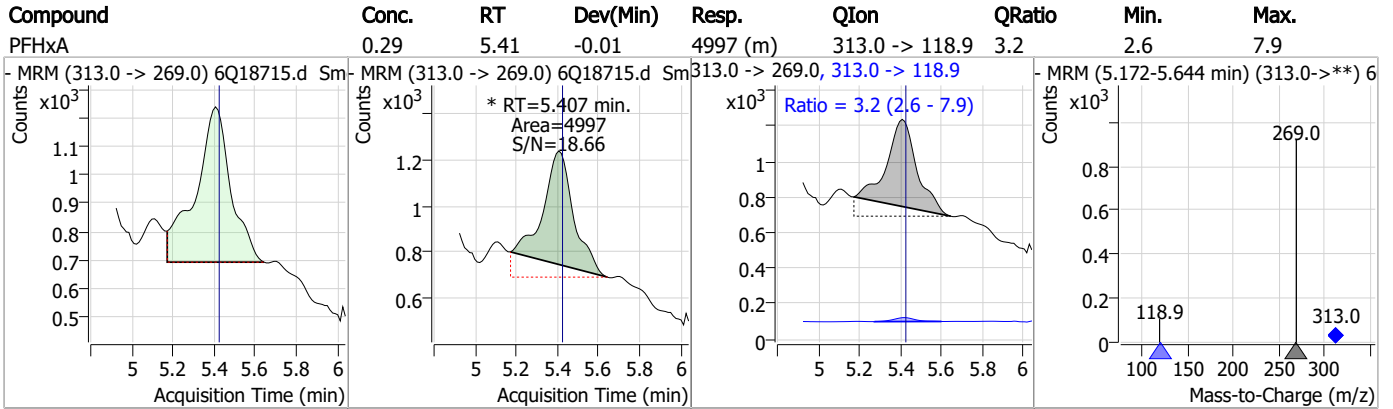
Perfluorinated Compounds by LC/MS/MS



7.1.3

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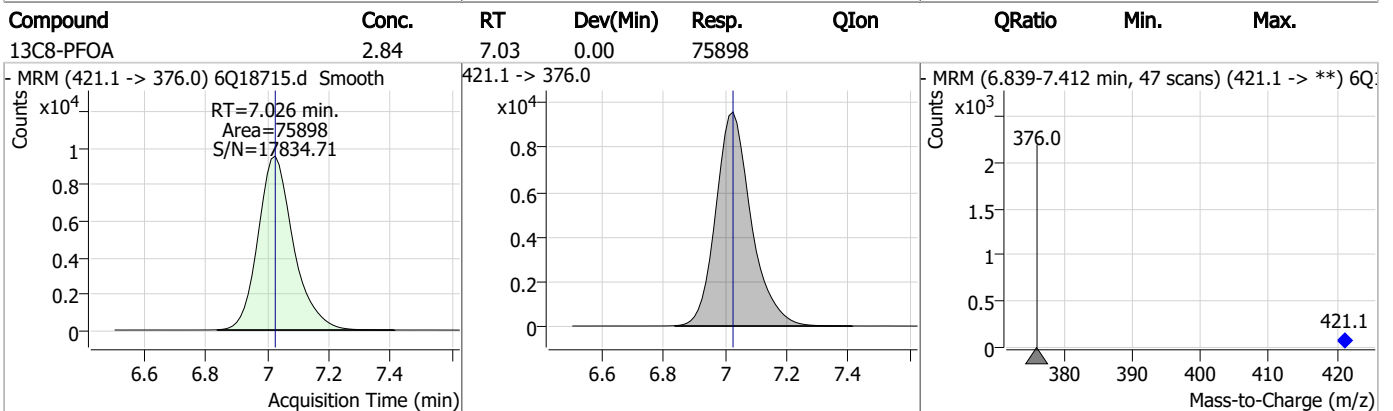
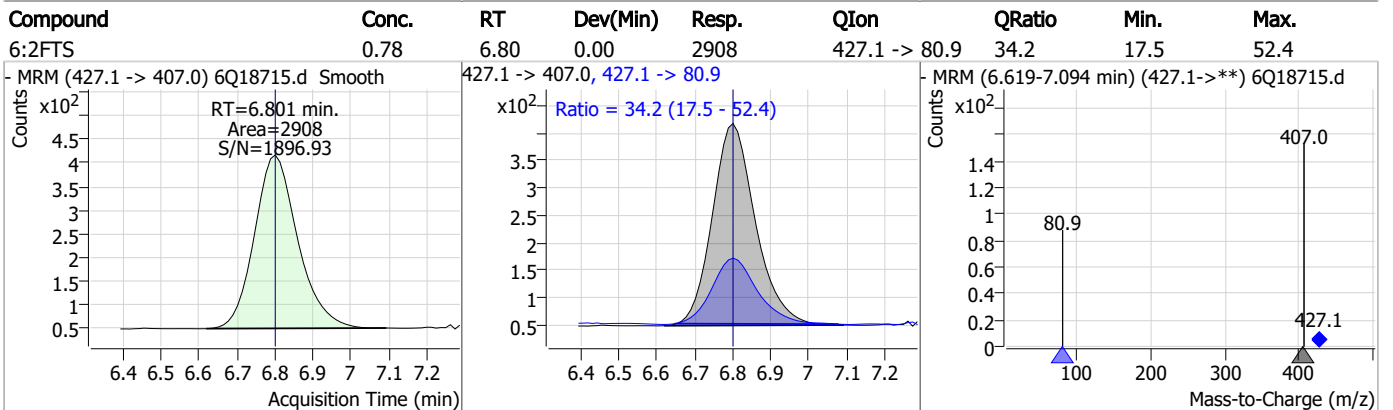
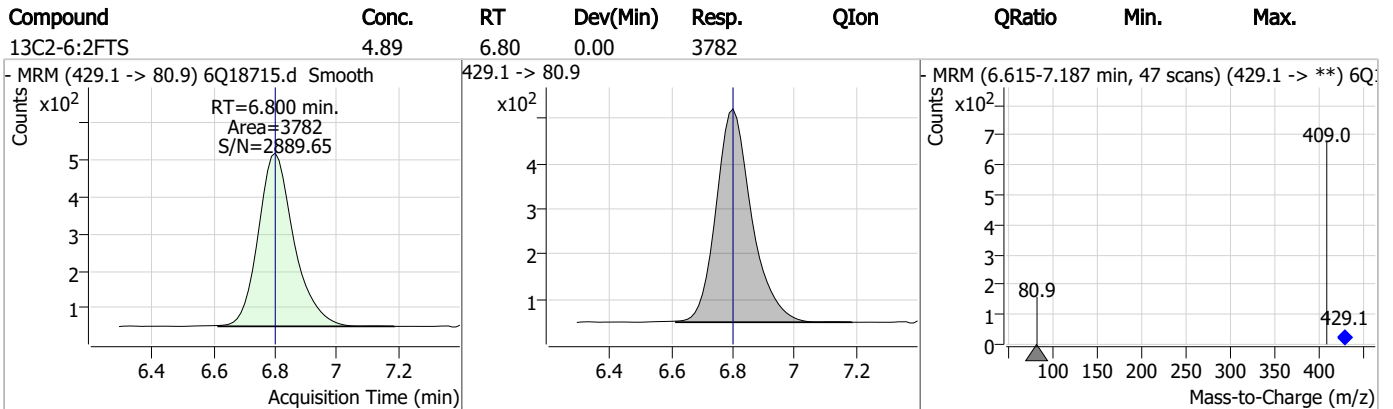
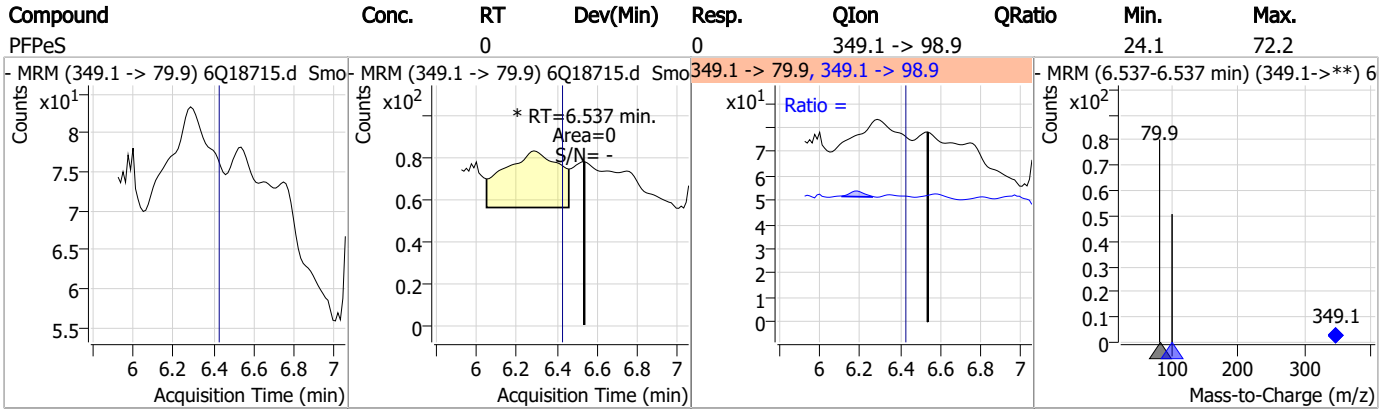
Perfluorinated Compounds by LC/MS/MS



7.1.3

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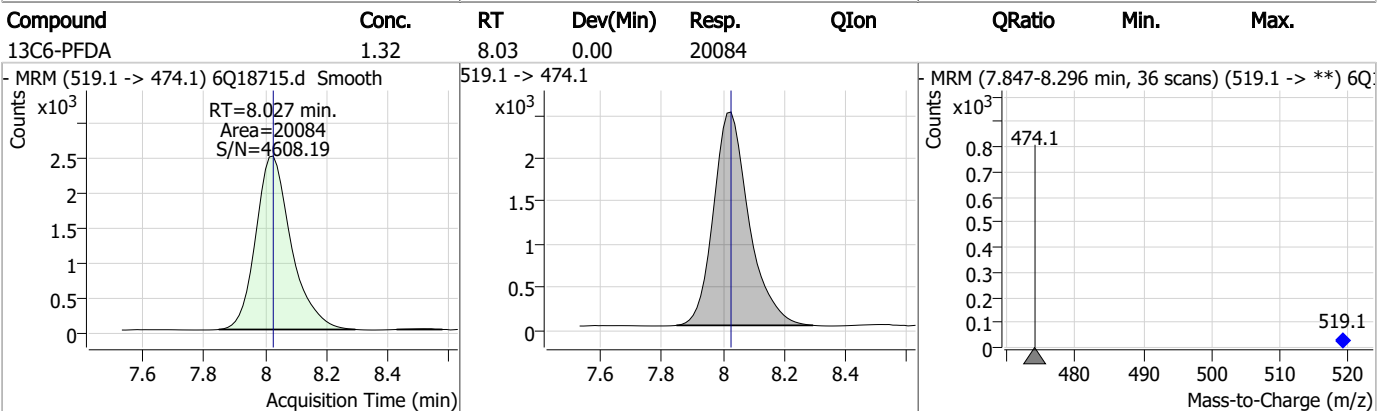
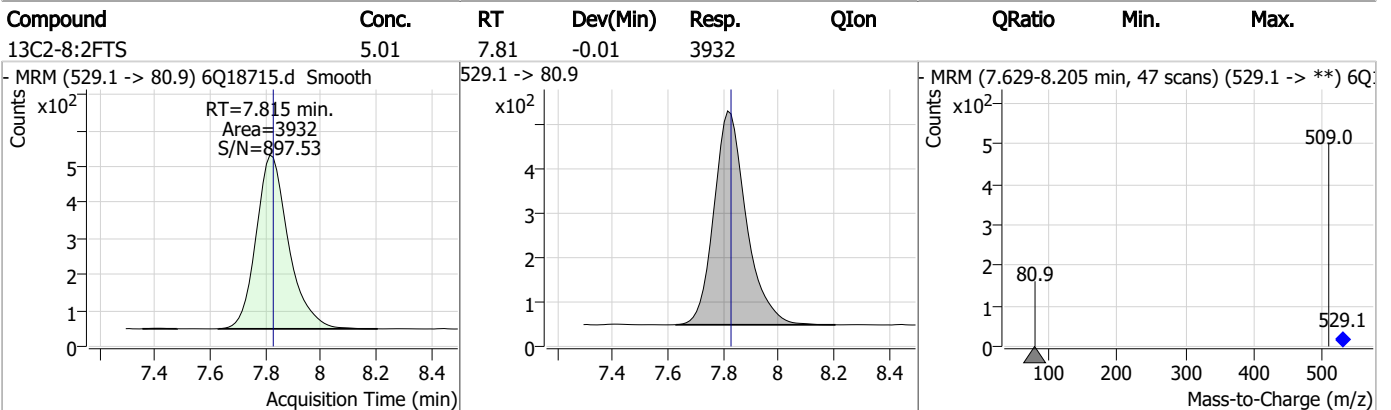
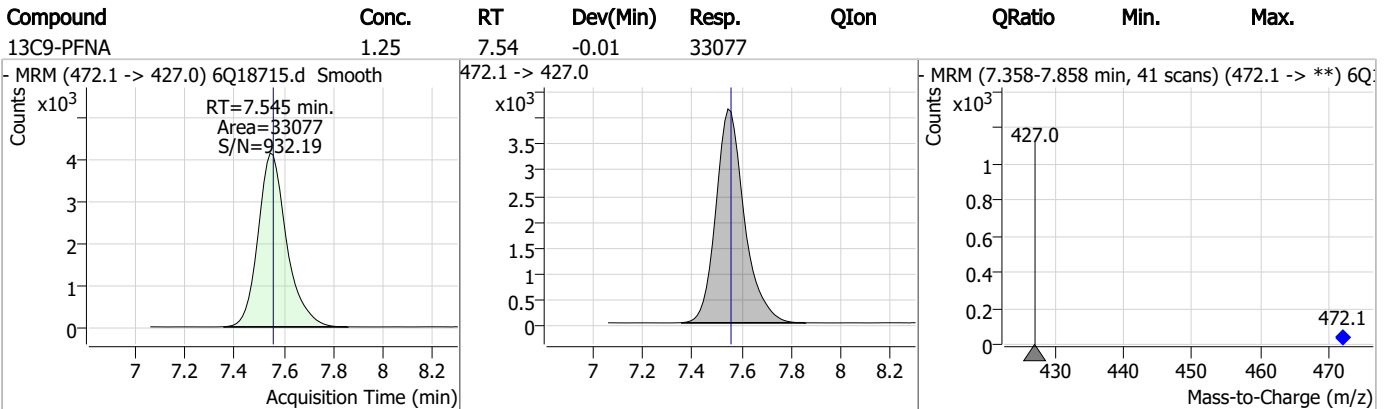
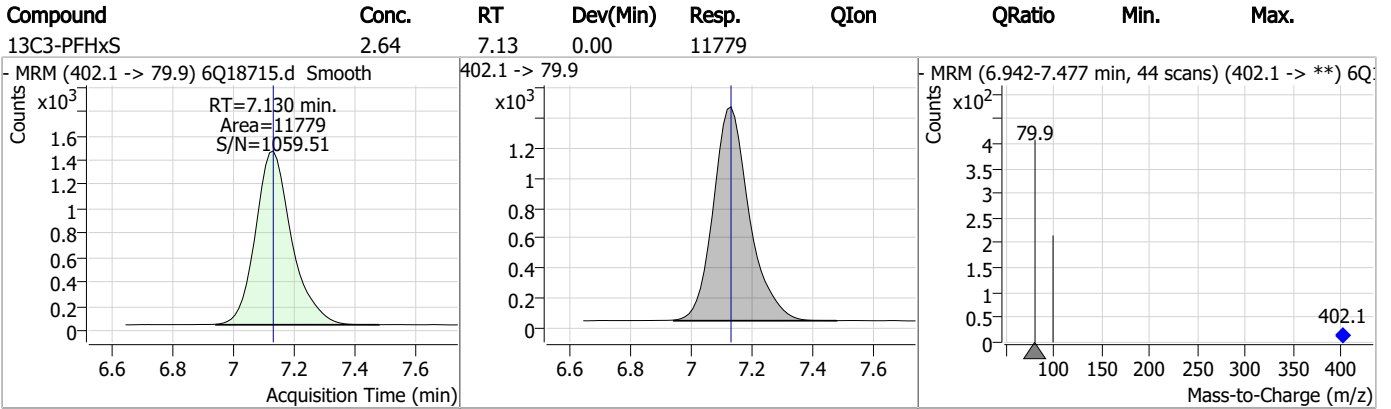
Perfluorinated Compounds by LC/MS/MS



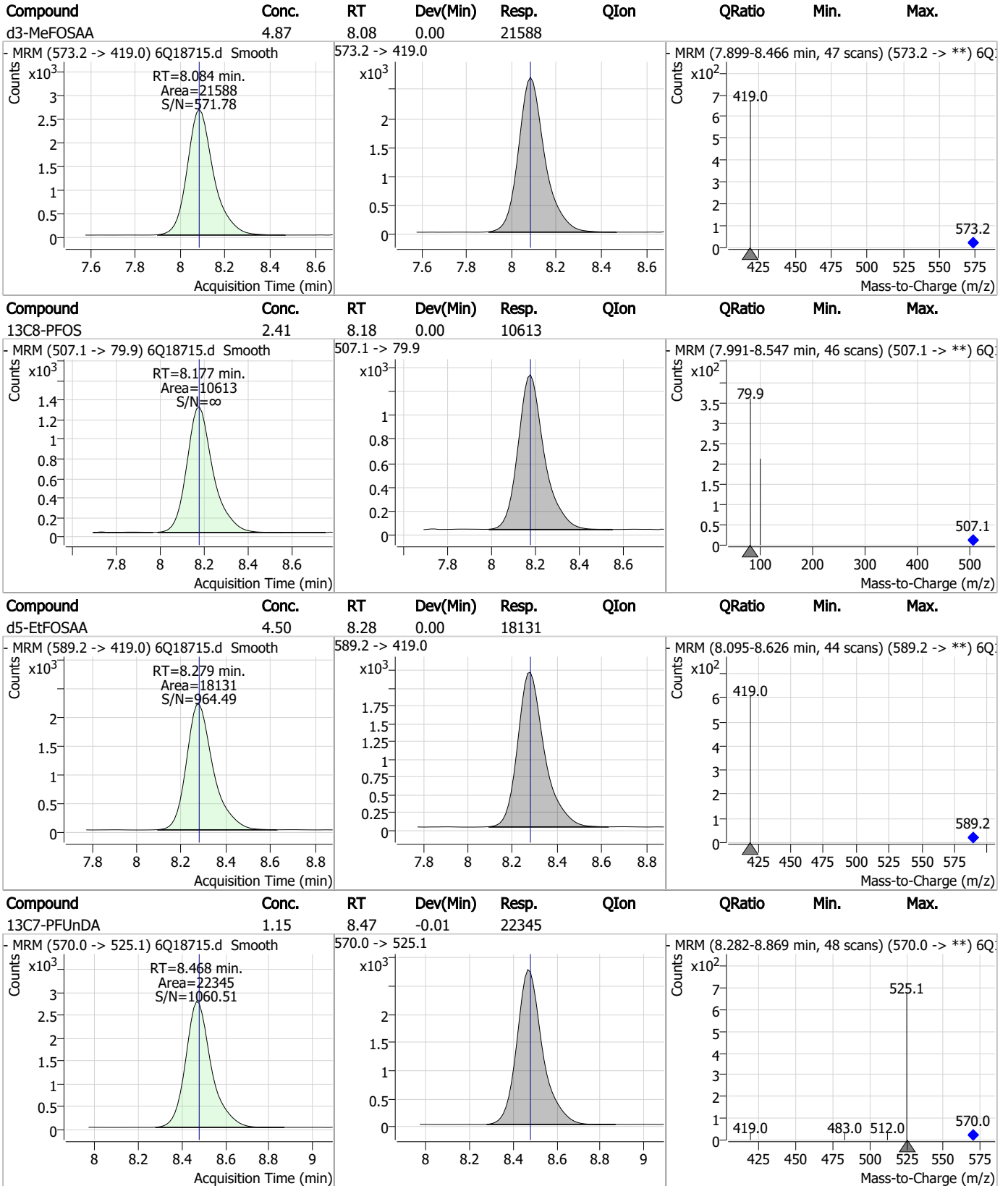
7.1.3

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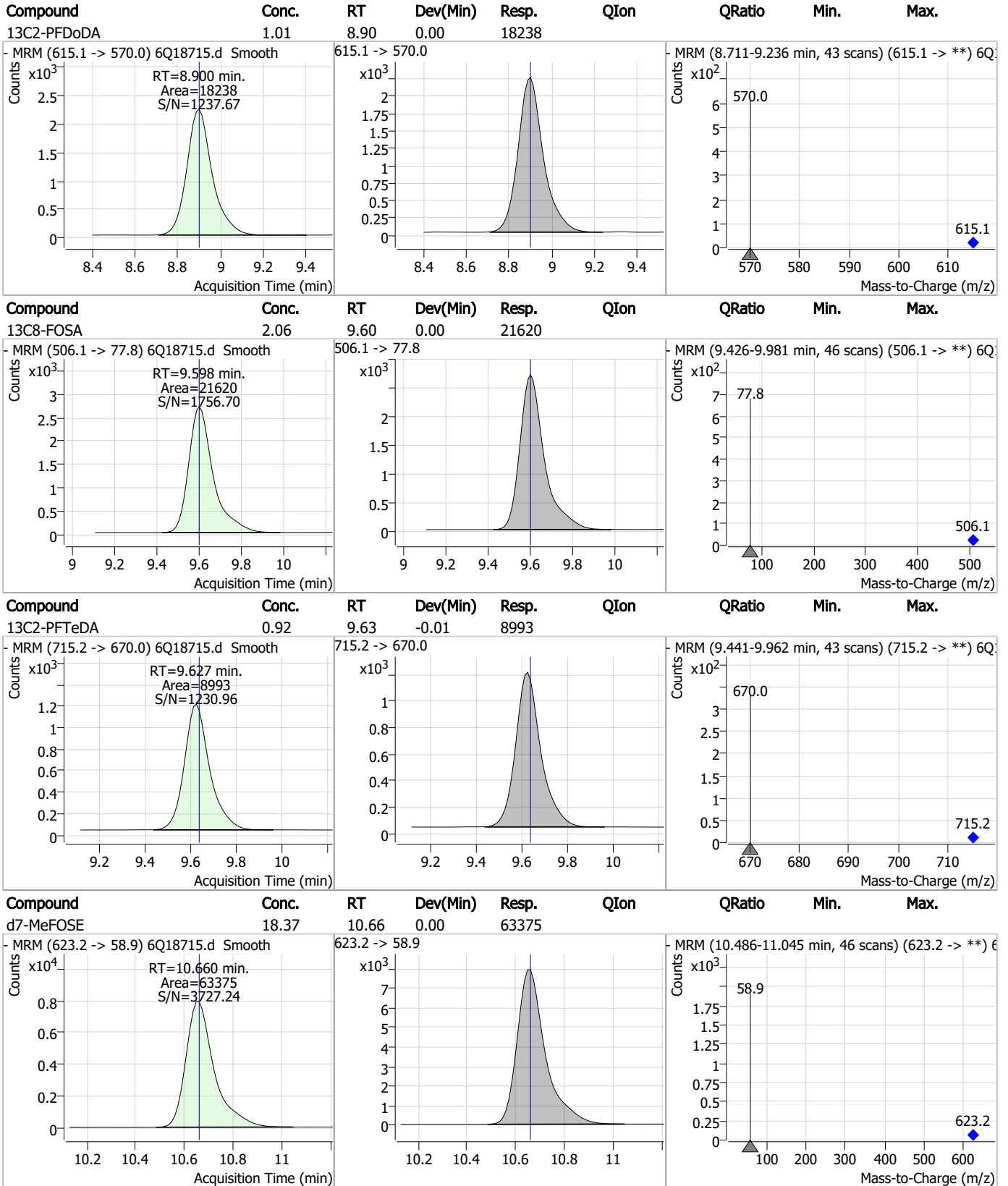
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



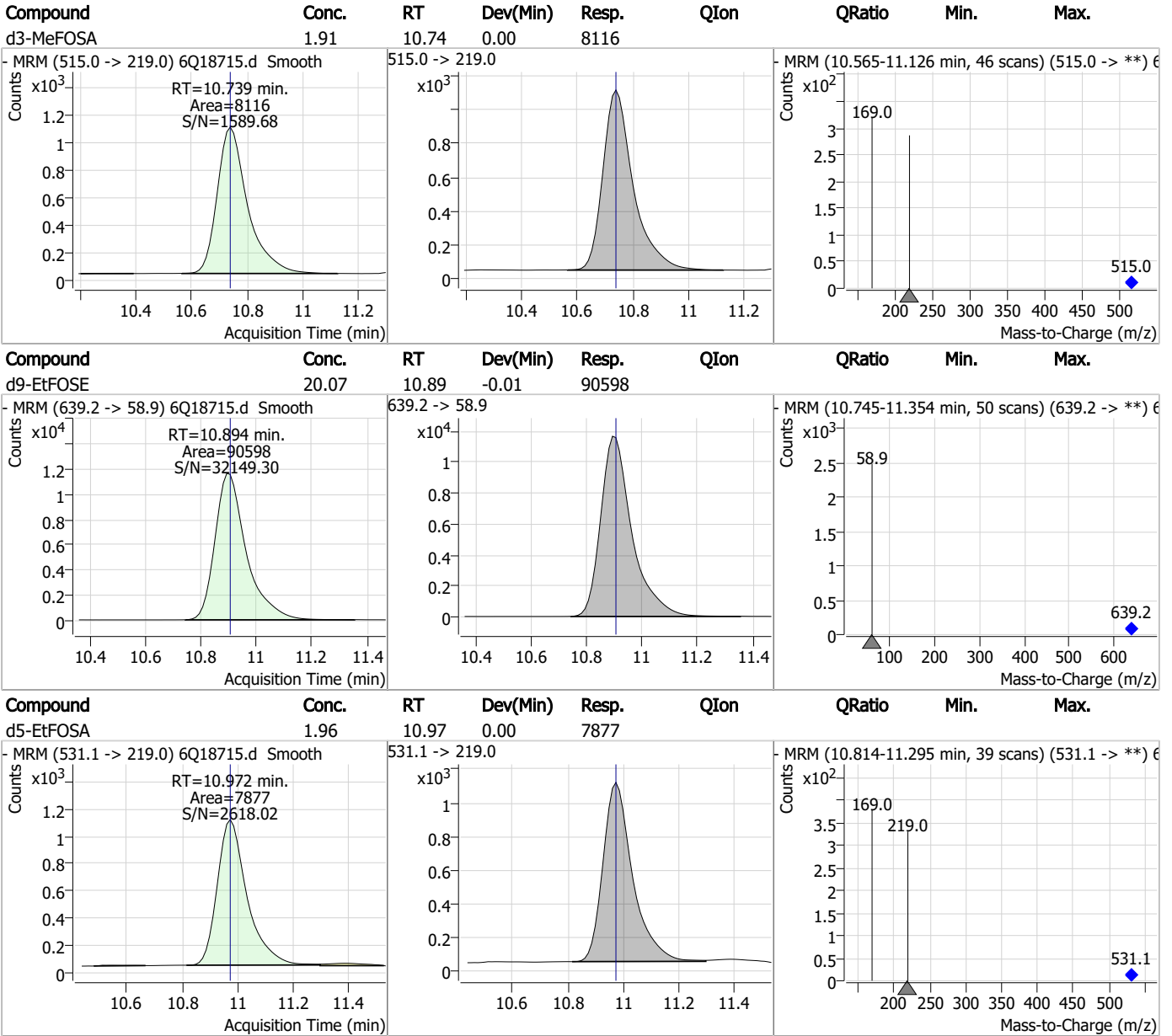
Perfluorinated Compounds by LC/MS/MS



7.1.3

7

Perfluorinated Compounds by LC/MS/MS



7.1.3

7

Manual Integration Approval Summary

Sample Number: FC6445-3 Method: EPA DRAFT 1633
Lab FileID: 6Q18715.D Analyst approved: 06/05/23 12:52 Martha Valls
Injection Time: 06/02/23 00:47 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.21	Poor instrument integration
Perfluorohexanoic acid	307-24-4		5.41	Split peak

7.1.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19266.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 9:51:58 PM
 Sample Name : FC6445-4
 Vial : P2-B4
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,510,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	5837	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	13051	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	50296	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	50724	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	79831	2.50 µg/L	0.012
M9-PFNA	7.882	472.1 -> 427.0	39205	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	22700	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28371	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	21810	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	10908	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	25140	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18910	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	13164	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	12538	2.50 µg/L	0.000
M2-4:2FTS	5.454	329.1 -> 80.9	3720	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	3938	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4113	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	34229	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	29569	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	30553	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	95260	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	136301	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11853	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11738	2.50 µg/L	0.000
13C4-PFOS	8.551	502.8 -> 79.9	15834	2.50 µg/L	-0.012
13C3-PFBA	3.101	216.0 -> 172.0	58857	5.00 µg/L	0.012
18O2-PFHxS	7.477	403.0 -> 83.9	7640	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	78154	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	27350	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	43105	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	47232	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3720	7.91 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 158.2%		
13C2-6:2FTS	7.113	429.1 -> 80.9	3938	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4113	6.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.4%		
13C2-PFDoDA	9.297	615.1 -> 570.0	21810	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-PFTeDA	10.012	715.2 -> 670.0	10908	1.03 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 82.2%		
13C3-PFBS	5.746	302.1 -> 79.9	18910	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	13164	3.25 µg/L	0.000

7.14
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 129.8%	
13C4-PFBA	3.097	216.8 -> 171.9	5837	0.42 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 4.2%	
13C4-PFHpA	6.707	367.1 -> 322.0	50724	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C5-PFHxA	5.792	318.0 -> 273.0	50296	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.560	268.3 -> 223.0	13051	1.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 28.6%	
13C6-PFDA	8.387	519.1 -> 474.1	22700	1.50 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.3%	
13C7-PFUnDA	8.866	570.0 -> 525.1	28371	1.33 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C8-FOSA	9.674	506.1 -> 77.8	25140	2.14 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.7%	
13C8-PFOA	7.352	421.1 -> 376.0	79831	2.74 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C8-PFOS	8.563	507.1 -> 79.9	12538	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C9-PFNA	7.882	472.1 -> 427.0	39205	1.49 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.2%	
d3-MeFOSAA	8.407	573.2 -> 419.0	34229	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	29569	9.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
d3-MeFOSA	10.775	515.0 -> 219.0	11738	2.23 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.2%	
d5-EtFOSAA	8.615	589.2 -> 419.0	30553	6.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.9%	
d7-MeFOSE	10.685	623.2 -> 58.9	95260	16.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 65.6%	
d9-EtFOSE	10.930	639.2 -> 58.9	136301	18.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.1%	
d5-EtFOSA	10.996	531.1 -> 219.0	11853	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	

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Target Compounds	RT	Transition	Response	Conc. Units	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	8.845	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	9.685	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0	0		
PFDS	9.424	599.0 -> 79.9	0	µg/L m	1



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	0			
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	8.529	449.0 -> 79.9	0	µg/L	m	1
		449.0 -> 98.9	0			
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	8.012	398.7 -> 79.9	0	µg/L	m	1
		398.7 -> 98.9	0			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	8.570	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9	0			
PFOA	7.464	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	8.192	498.9 -> 79.9	0	µg/L	m	1
		498.9 -> 98.8	0			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	9.579	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	8.360	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

7.14
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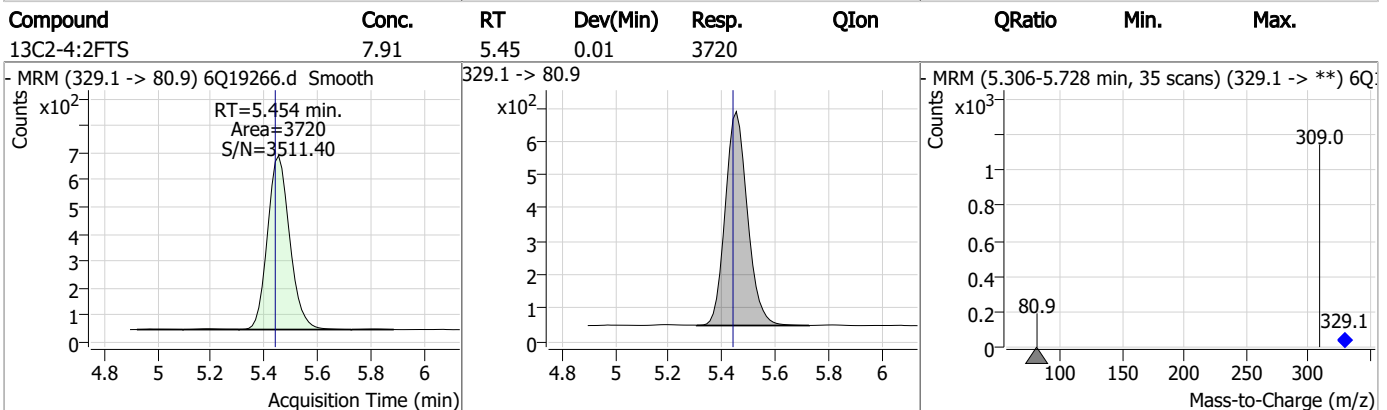
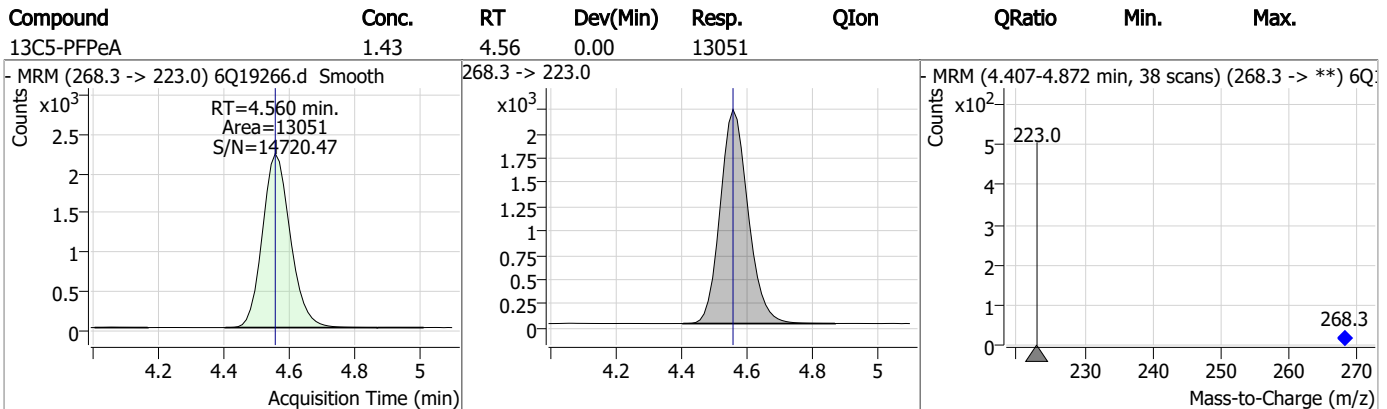
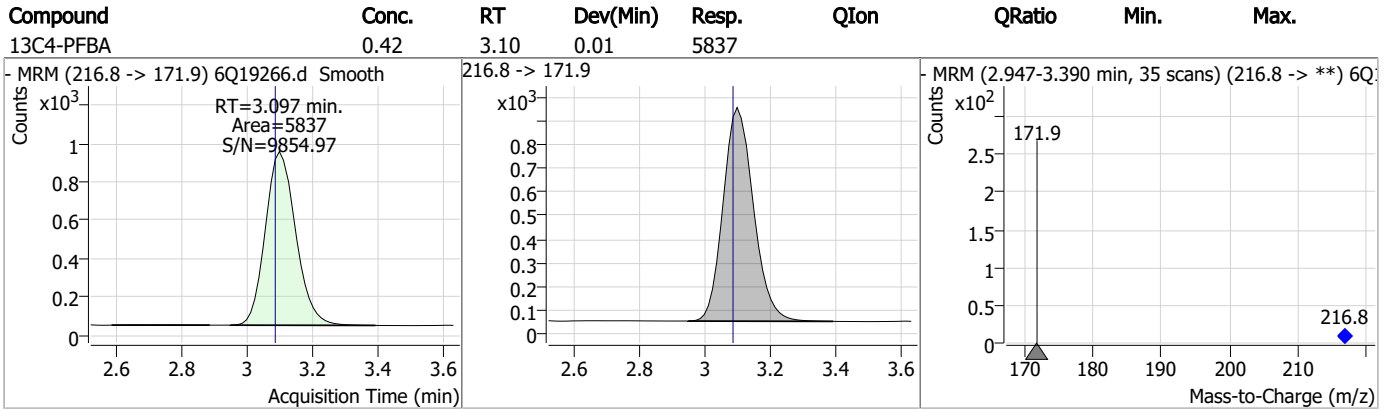
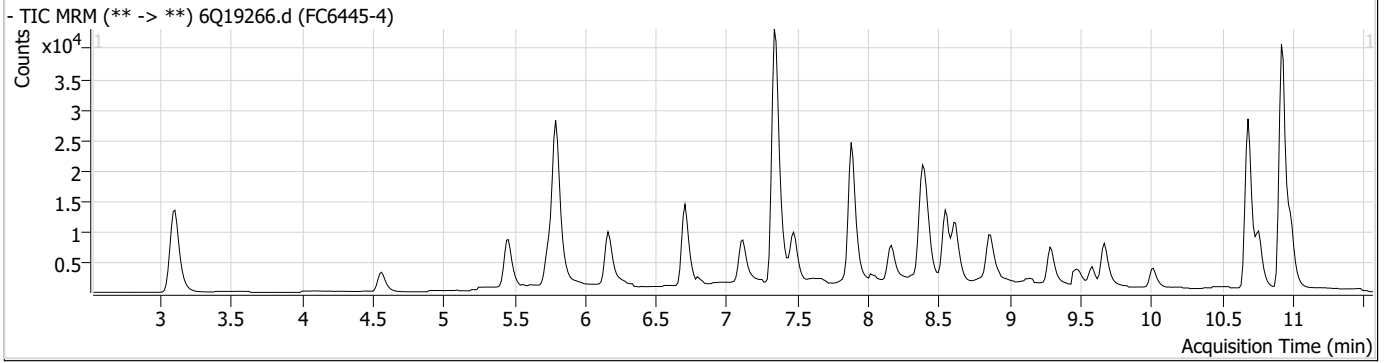
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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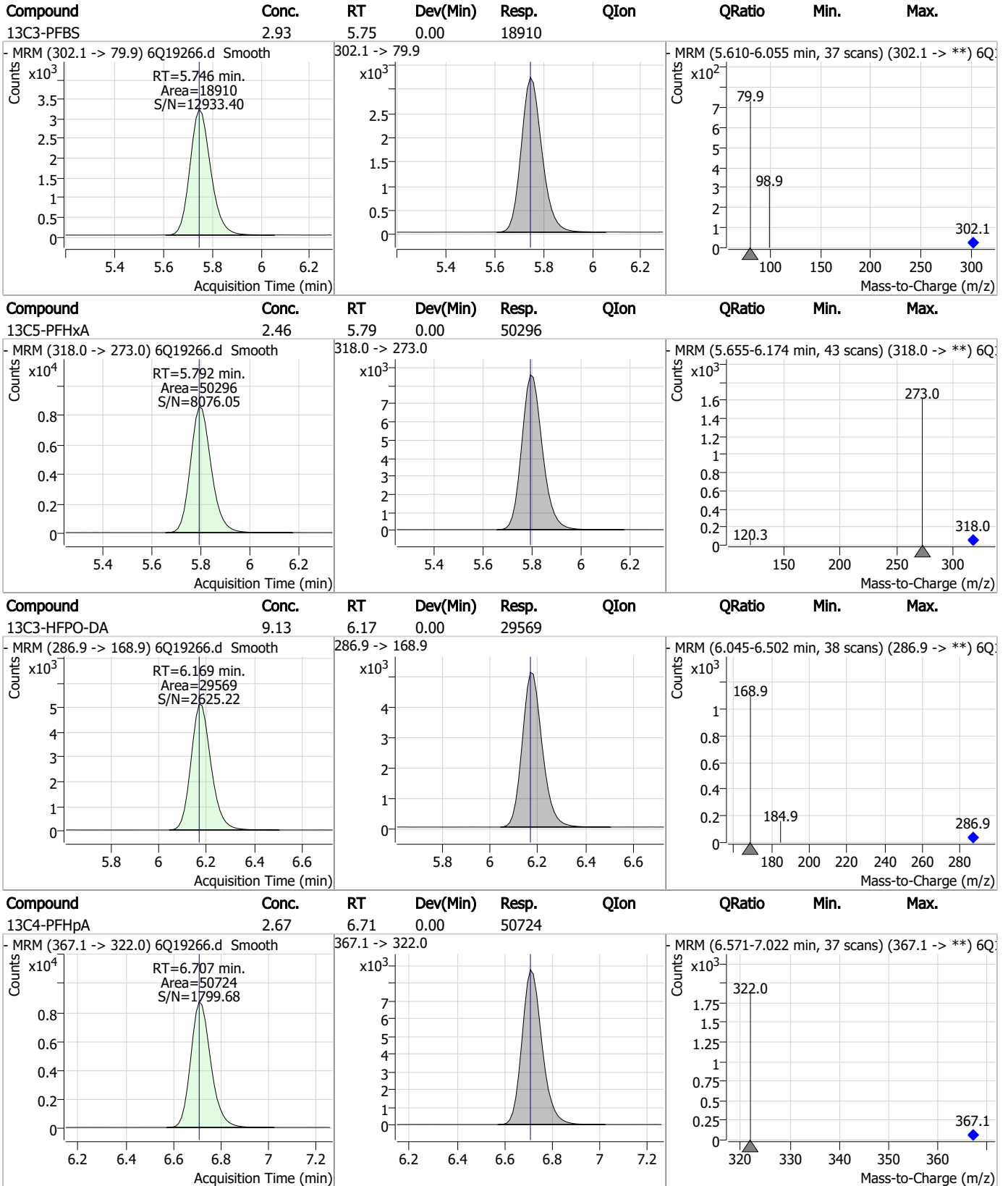
7.1.4
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Perfluorinated Compounds by LC/MS/MS



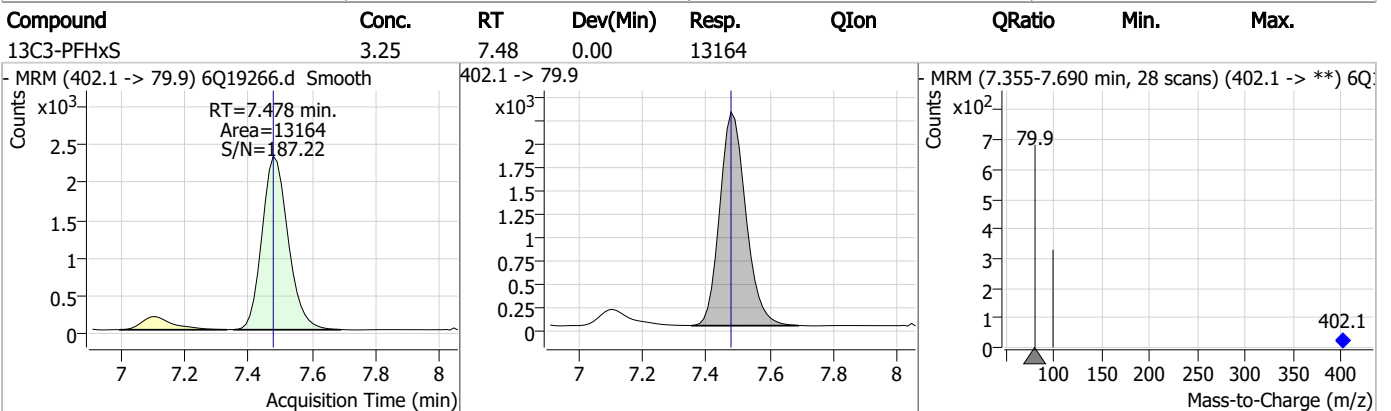
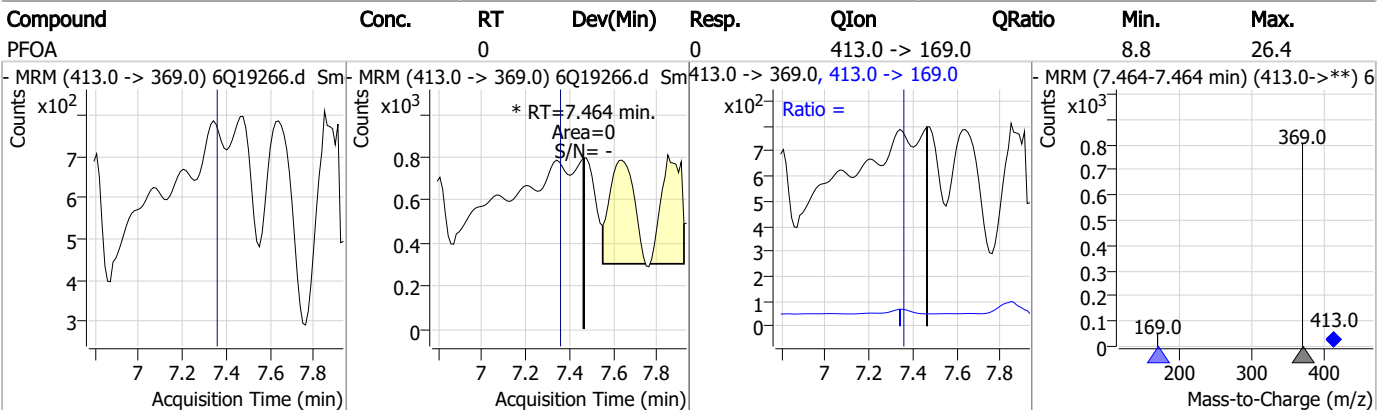
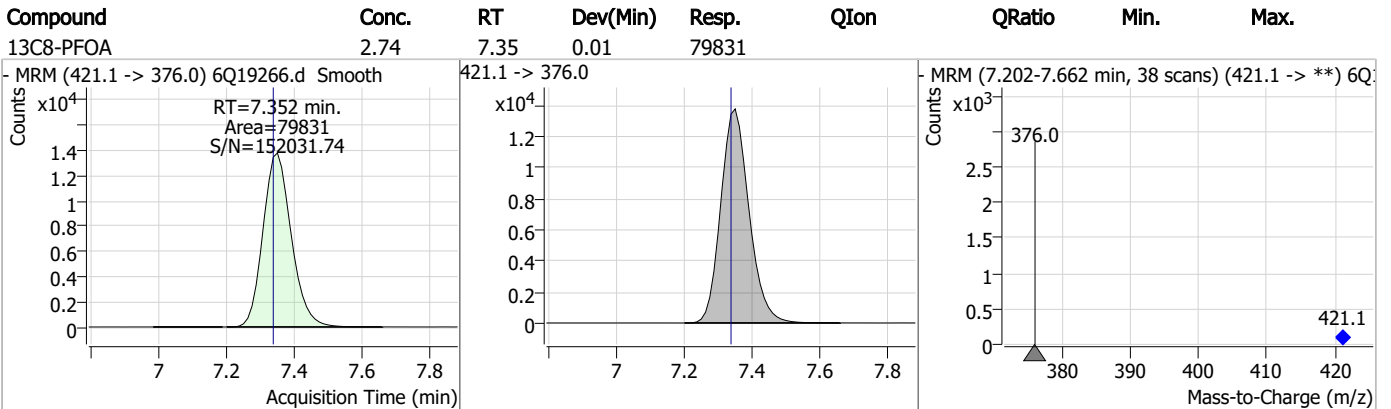
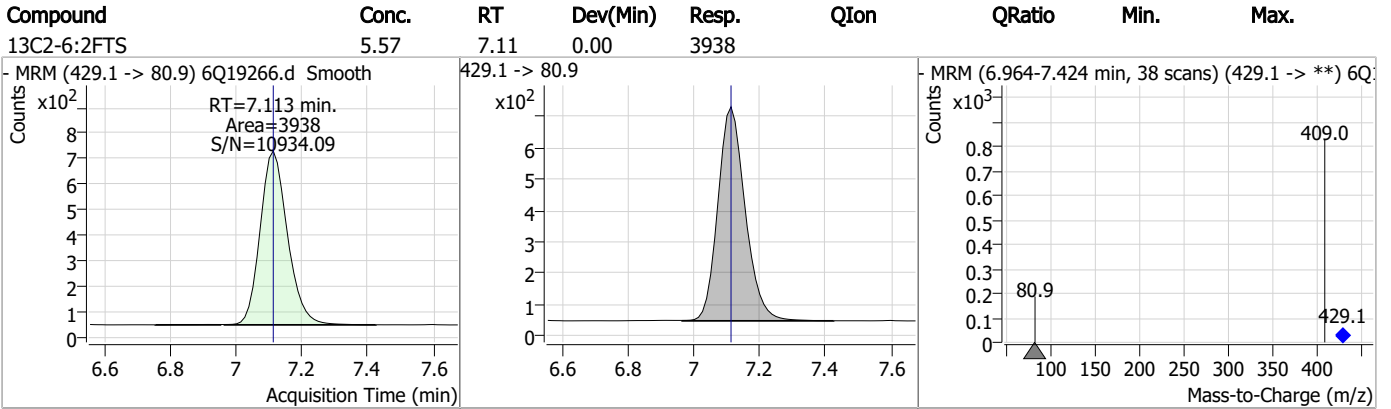
Perfluorinated Compounds by LC/MS/MS



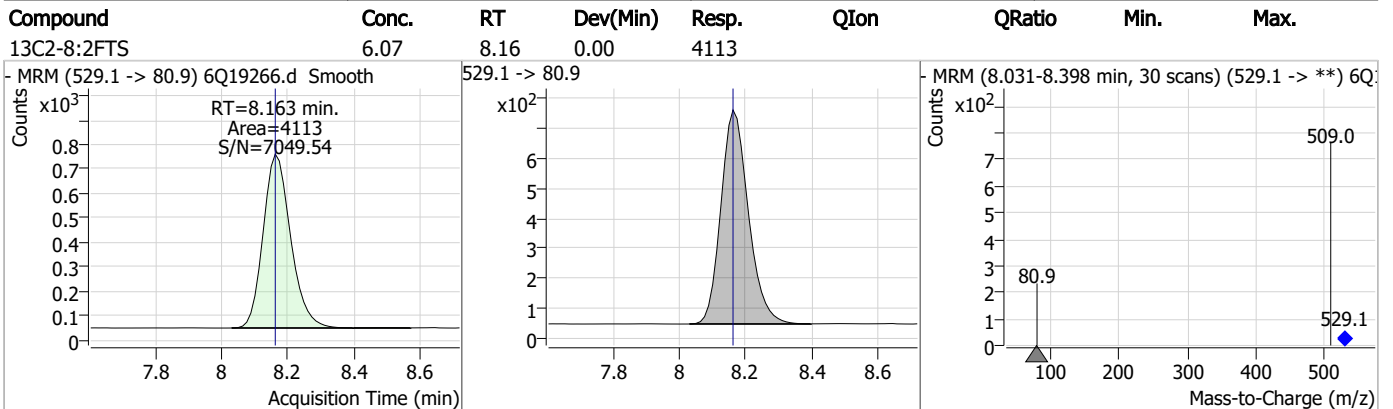
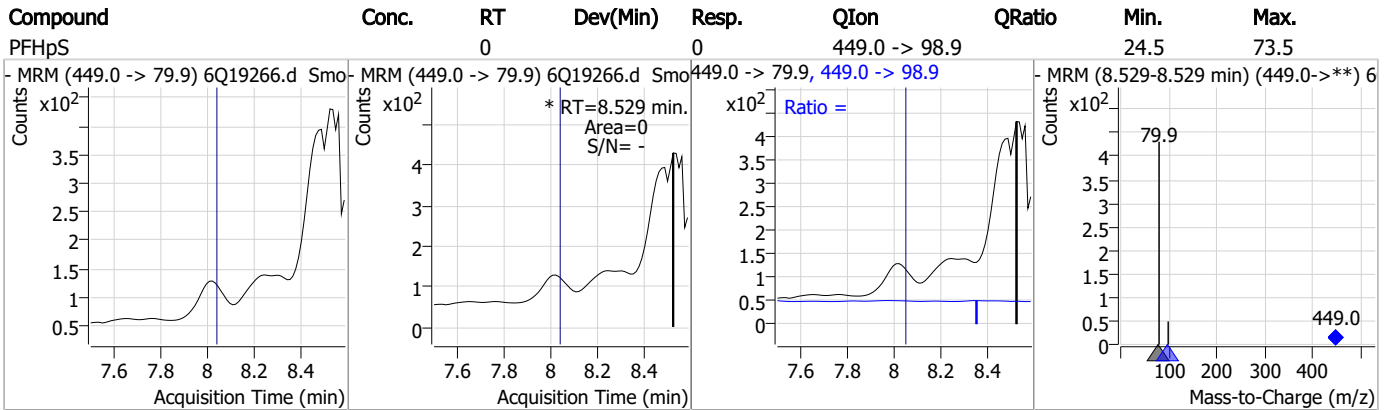
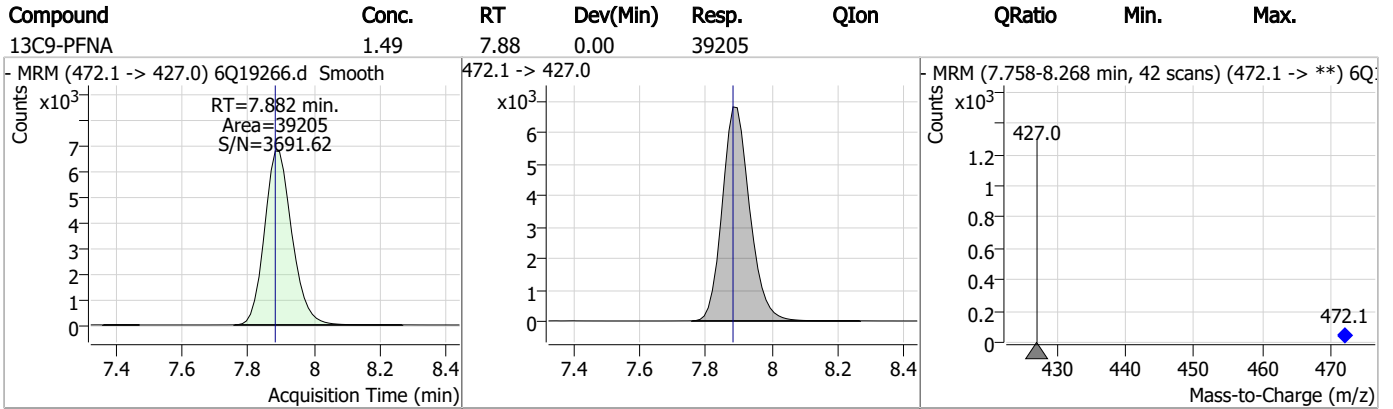
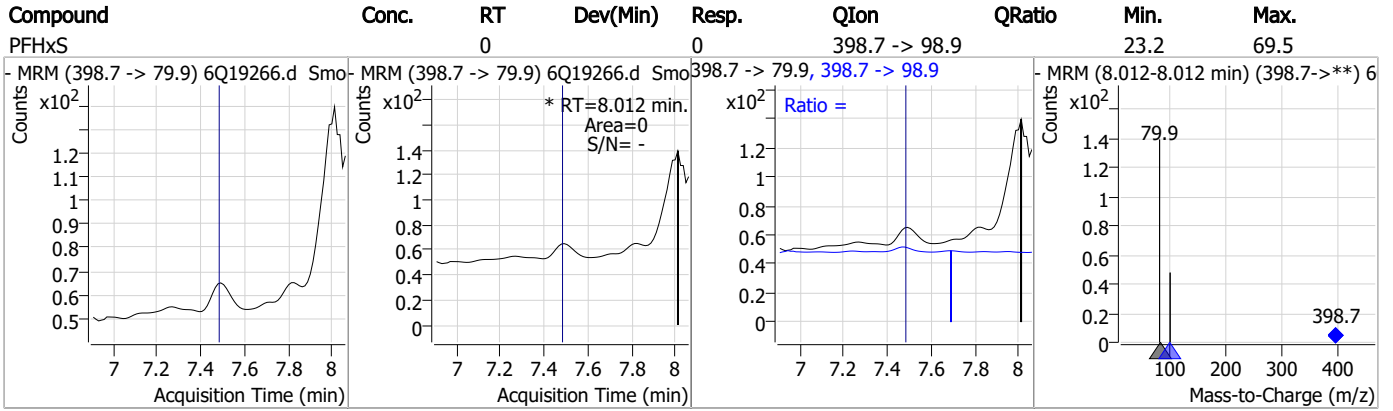
7.1.4

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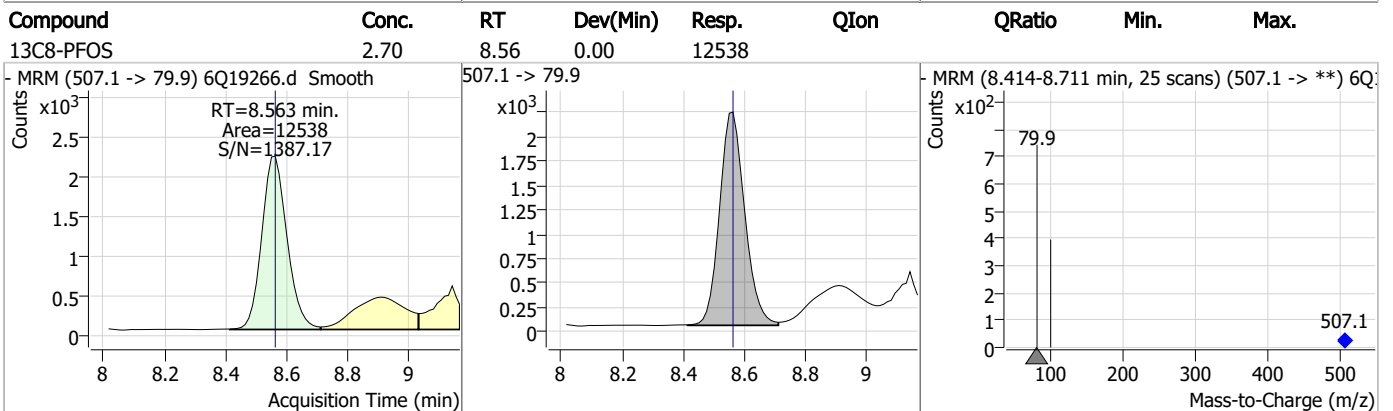
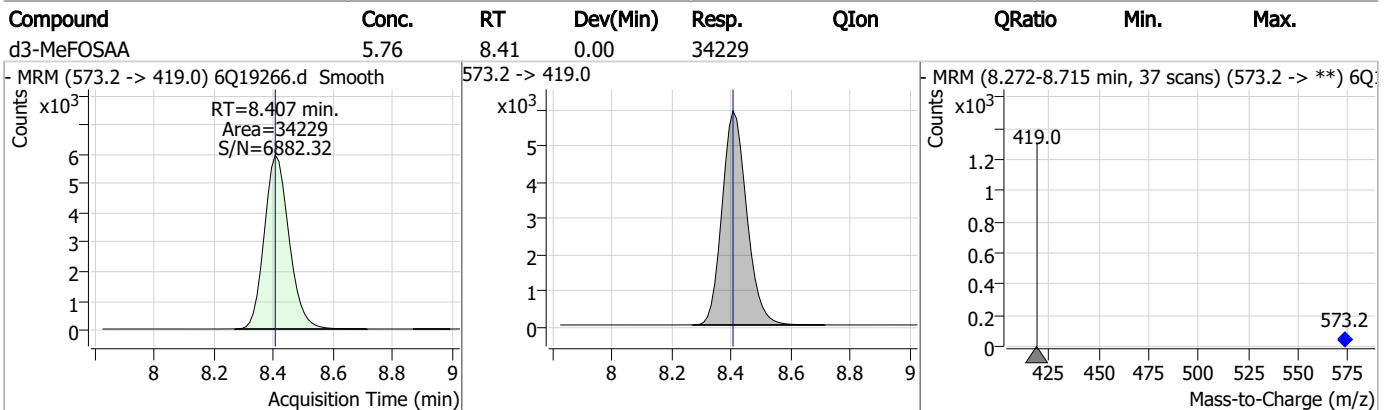
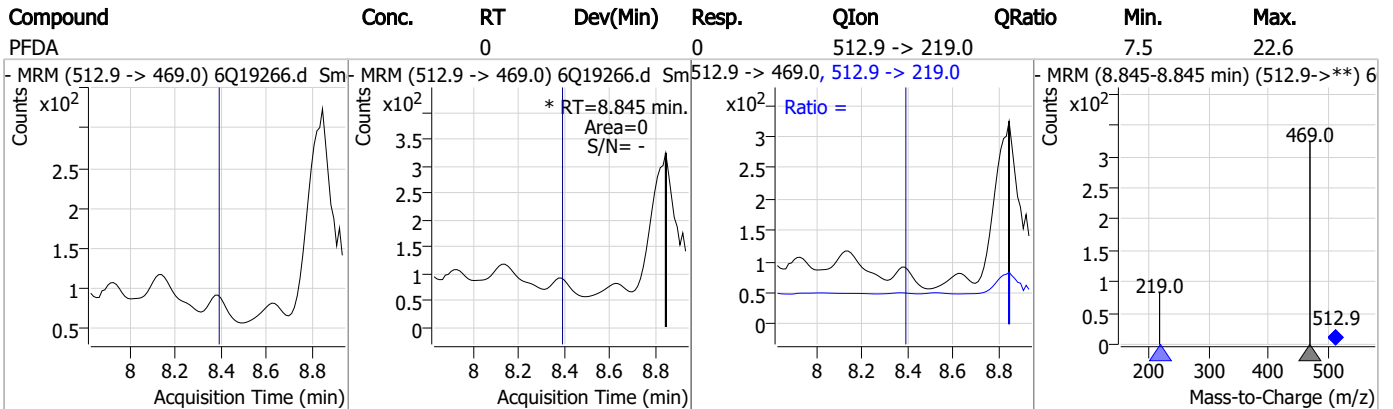
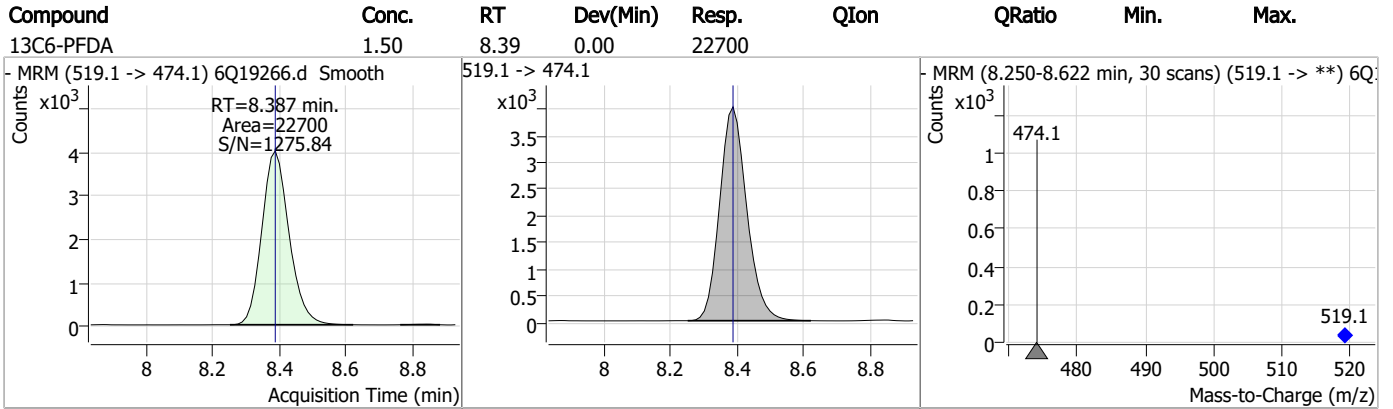
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



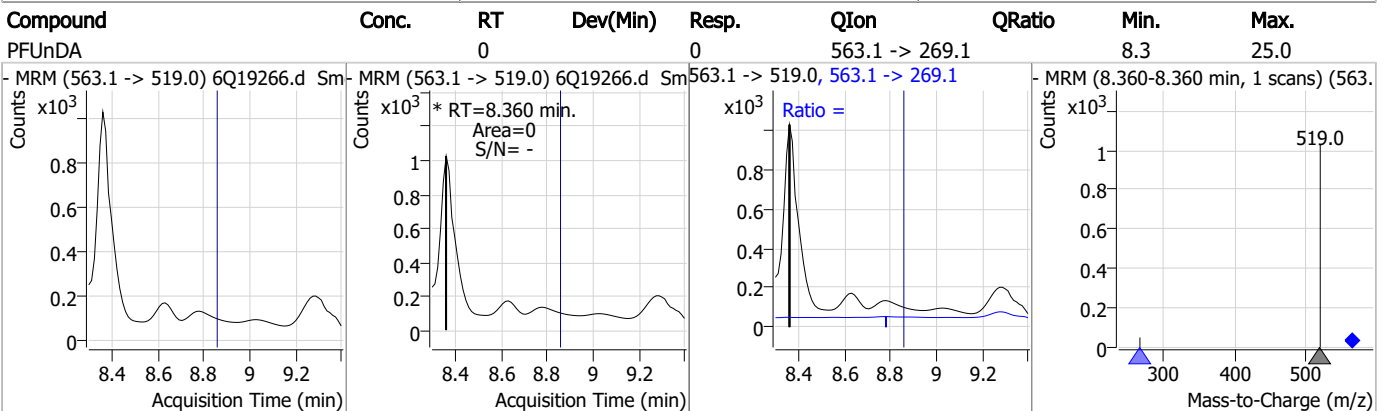
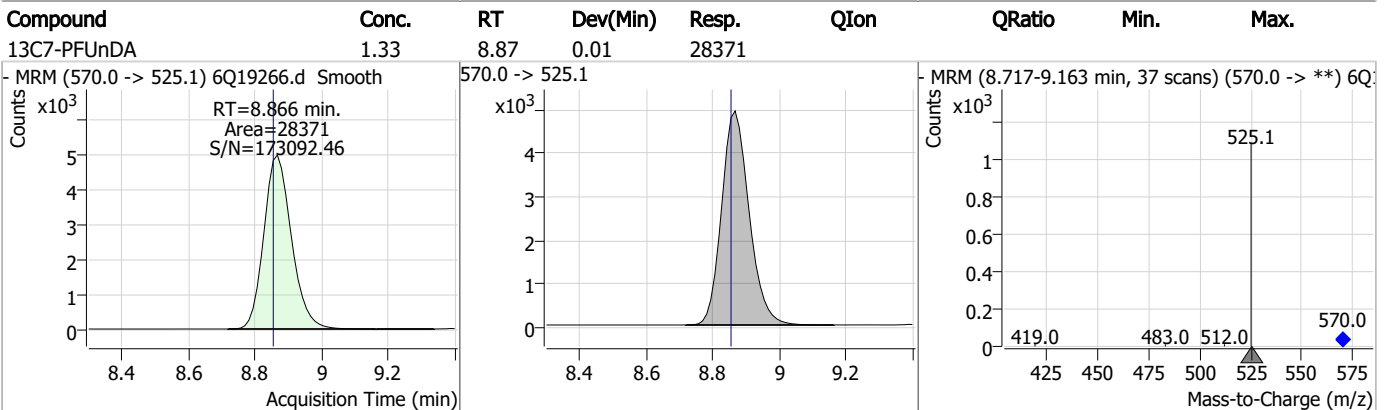
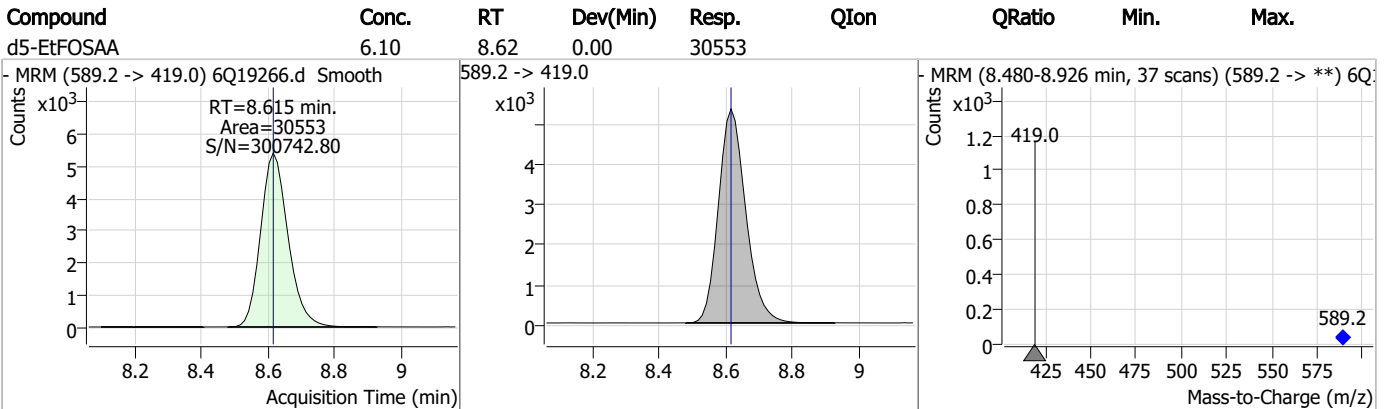
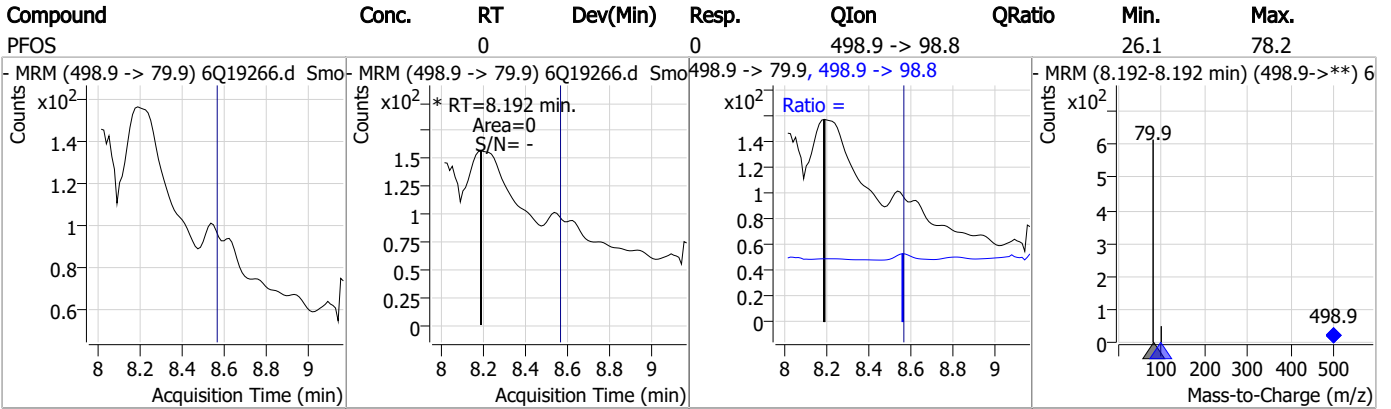
Perfluorinated Compounds by LC/MS/MS



7.1.4

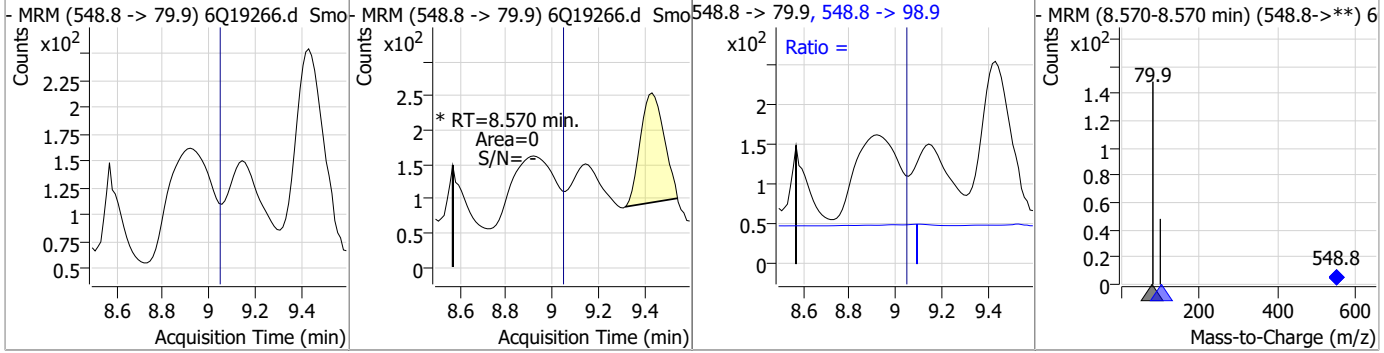
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Perfluorinated Compounds by LC/MS/MS

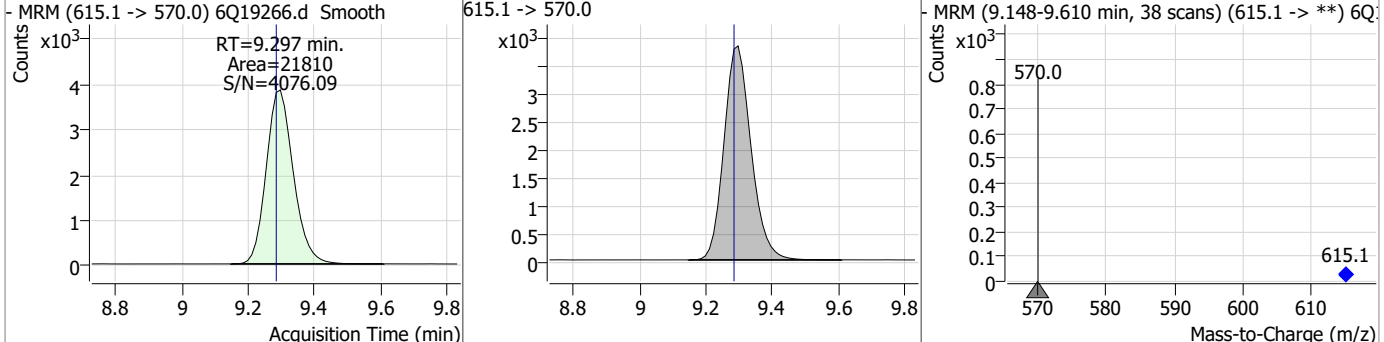


Perfluorinated Compounds by LC/MS/MS

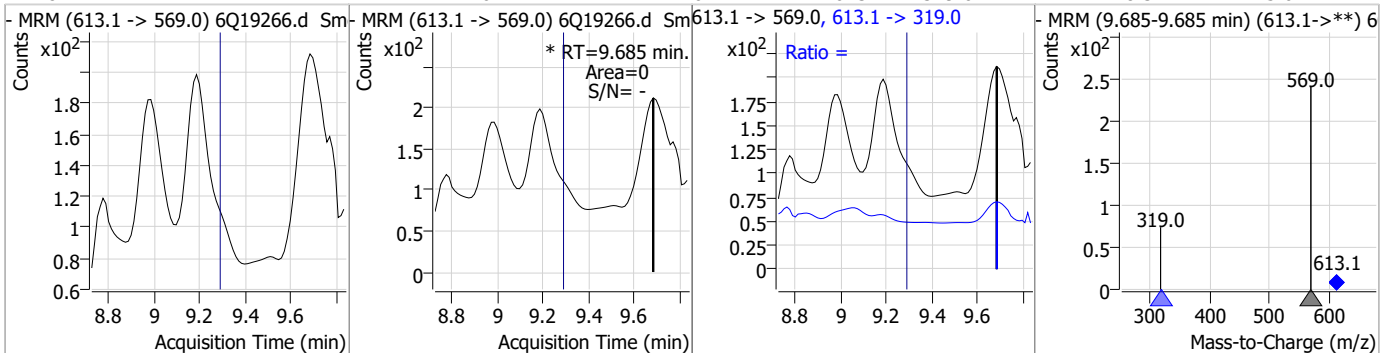
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0	0	0	0	548.8 -> 98.9		24.4	73.2



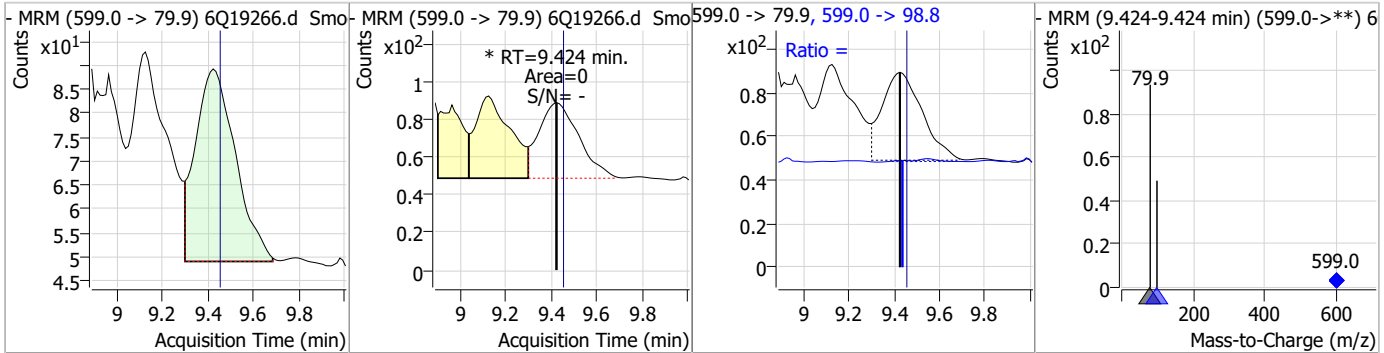
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	9.30	0.01	21810				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0	0	0	0	613.1 -> 319.0		8.3	25.0

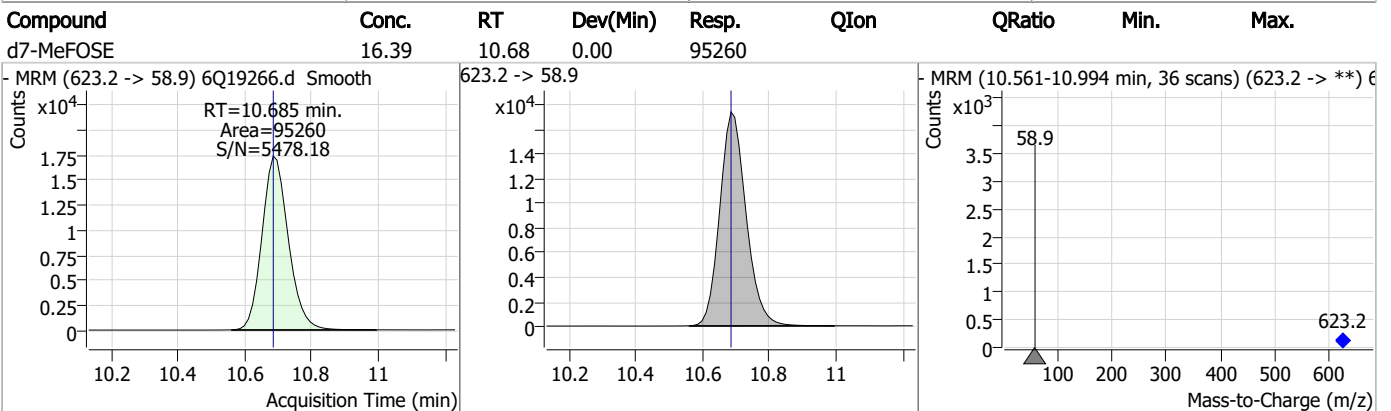
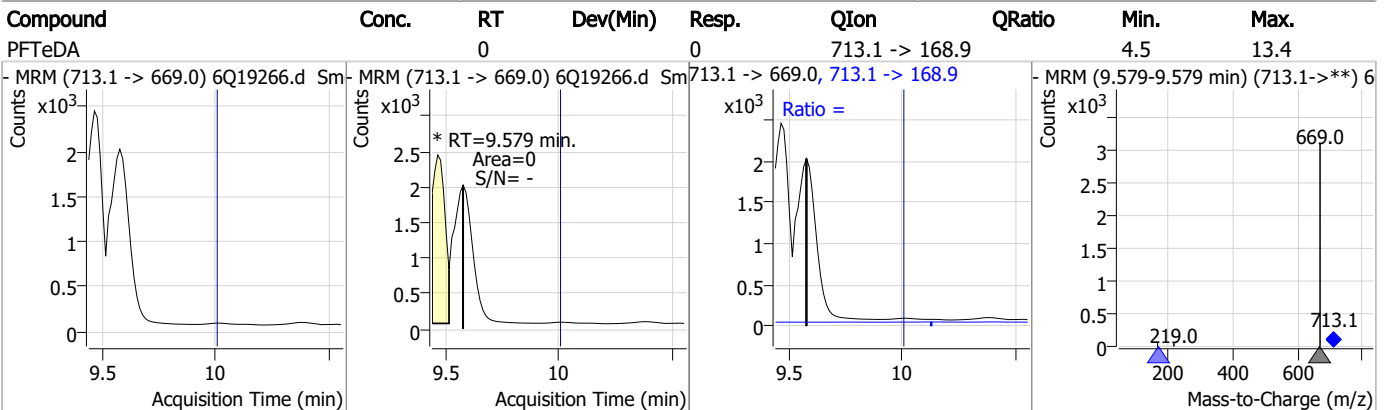
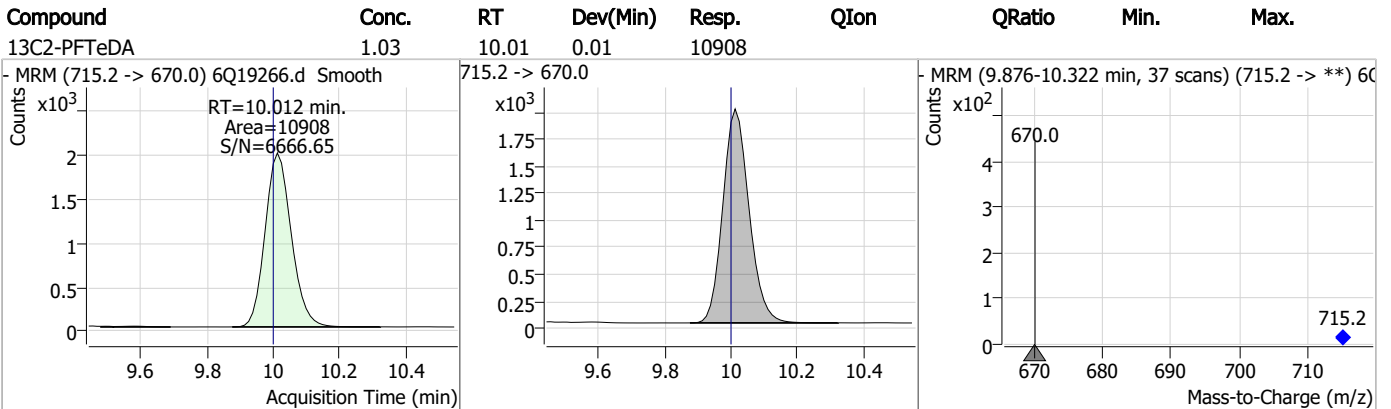
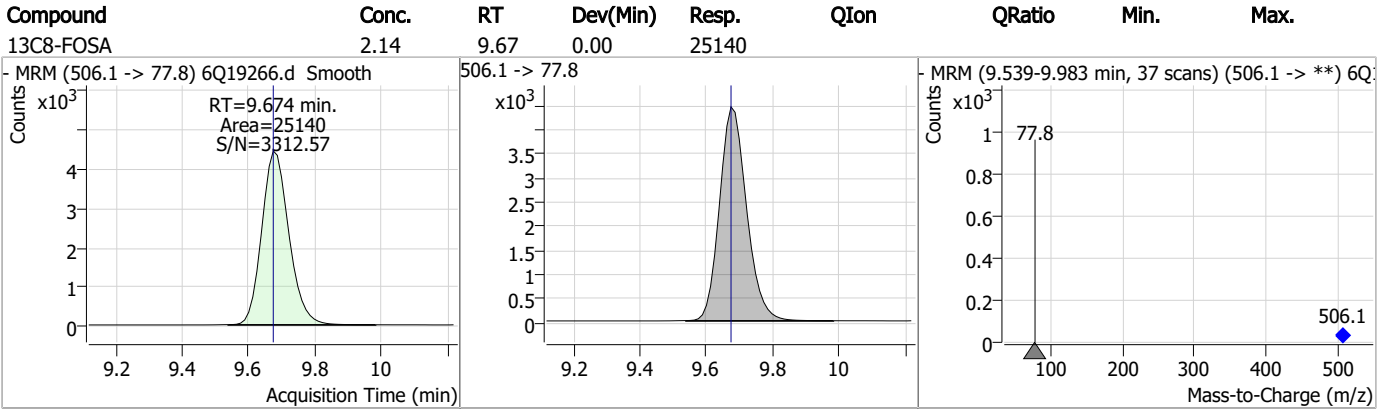


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0	0	0	0	599.0 -> 98.8		22.7	68.0

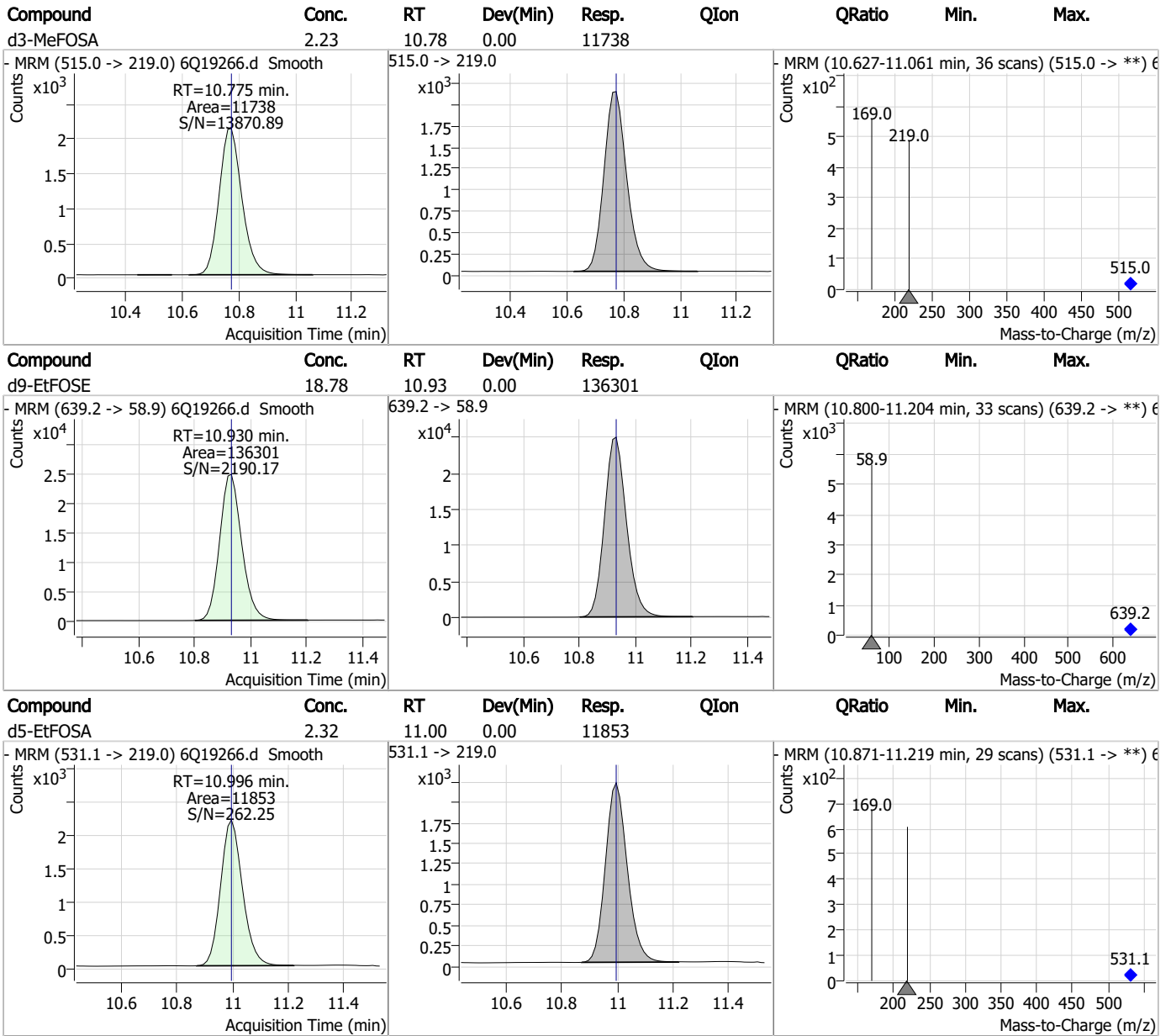


7.1.4
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.4

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19267.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 10:05:56 PM
 Sample Name : FC6445-4
 Vial : P2-B5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,60,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	162283	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	53504	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	57781	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	55689	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	85651	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	41956	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	20939	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28706	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	23223	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	11796	1.25 µg/L	0.012
M8-FOSA	9.687	506.1 -> 77.8	25082	2.50 µg/L	0.012
M3-PFBS	5.746	302.1 -> 79.9	21697	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	13427	2.50 µg/L	0.000
M8-PFOS	8.575	507.1 -> 79.9	11430	2.50 µg/L	0.012
M2-4:2FTS	5.454	329.1 -> 80.9	3547	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	5281	5.00 µg/L	0.000
M2-8:2FTS	8.175	529.1 -> 80.9	4259	5.00 µg/L	0.012
M3-MeFOSAA	8.420	573.2 -> 419.0	31291	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	37525	10.00 µg/L	0.000
M5-EtFOSAA	8.628	589.2 -> 419.0	24698	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	107037	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	137946	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	10836	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11526	2.50 µg/L	0.000
13C4-PFOS	8.576	502.8 -> 79.9	17699	2.50 µg/L	0.012
13C3-PFBA	3.101	216.0 -> 172.0	58894	5.00 µg/L	0.012
18O2-PFHxS	7.490	403.0 -> 83.9	8565	2.50 µg/L	0.012
13C4-PFOA	7.352	417.1 -> 372.0	73271	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	28269	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	40681	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	49747	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3547	6.73 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 134.5%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5281	6.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 133.2%		
13C2-8:2FTS	8.175	529.1 -> 80.9	4259	5.61 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-PFDoDA	9.297	615.1 -> 570.0	23223	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C2-PFTeDA	10.012	715.2 -> 670.0	11796	1.08 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.0%		
13C3-PFBS	5.746	302.1 -> 79.9	21697	3.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 119.9%		
13C3-PFHxS	7.478	402.1 -> 79.9	13427	2.95 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 = 118.1%	
13C4-PFBA	3.097	216.8 -> 171.9	162283	11.74 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C4-PFHpA	6.707	367.1 -> 322.0	55689	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C5-PFHxA	5.792	318.0 -> 273.0	57781	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C5-PFPeA	4.560	268.3 -> 223.0	53504	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C6-PFDA	8.387	519.1 -> 474.1	20939	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C7-PFUnDA	8.866	570.0 -> 525.1	28706	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C8-FOSA	9.687	506.1 -> 77.8	25082	1.91 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.5%	
13C8-PFOA	7.352	421.1 -> 376.0	85651	3.13 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 125.3%	
13C8-PFOS	8.575	507.1 -> 79.9	11430	2.20 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C9-PFNA	7.895	472.1 -> 427.0	41956	1.69 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 135.2%	
d3-MeFOSAA	8.420	573.2 -> 419.0	31291	4.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	37525	11.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
d3-MeFOSA	10.775	515.0 -> 219.0	11526	1.96 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.4%	
d5-EtFOSAA	8.628	589.2 -> 419.0	24698	4.41 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
d7-MeFOSE	10.685	623.2 -> 58.9	107037	16.48 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 65.9%	
d9-EtFOSE	10.930	639.2 -> 58.9	137946	17.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.0%	
d5-EtFOSA	10.996	531.1 -> 219.0	10836	1.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.0%	
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	9.677	498.1 -> 77.9 498.1 -> 478.0	626 22	0.06 µg/L	98
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	8.845	512.9 -> 469.0 512.9 -> 219.0	0 0	µg/L	m
PFDODA	9.697	613.1 -> 569.0 613.1 -> 319.0	0 0	µg/L	m
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	9.413	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9	0			
PFOA	7.861	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	8.552	498.9 -> 79.9	971	0.14 µg/L	#m	34
		498.9 -> 98.8	55			
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				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	8.569	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

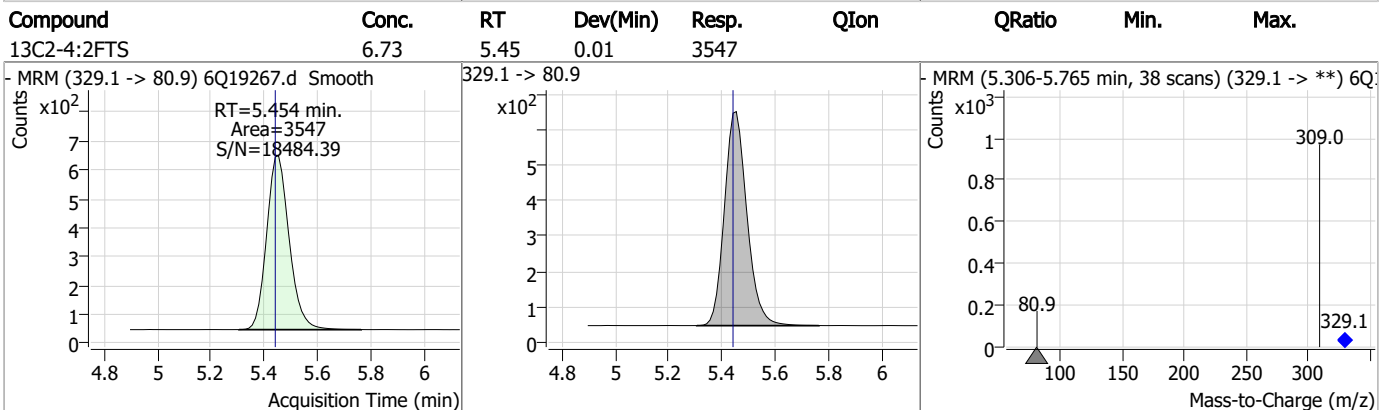
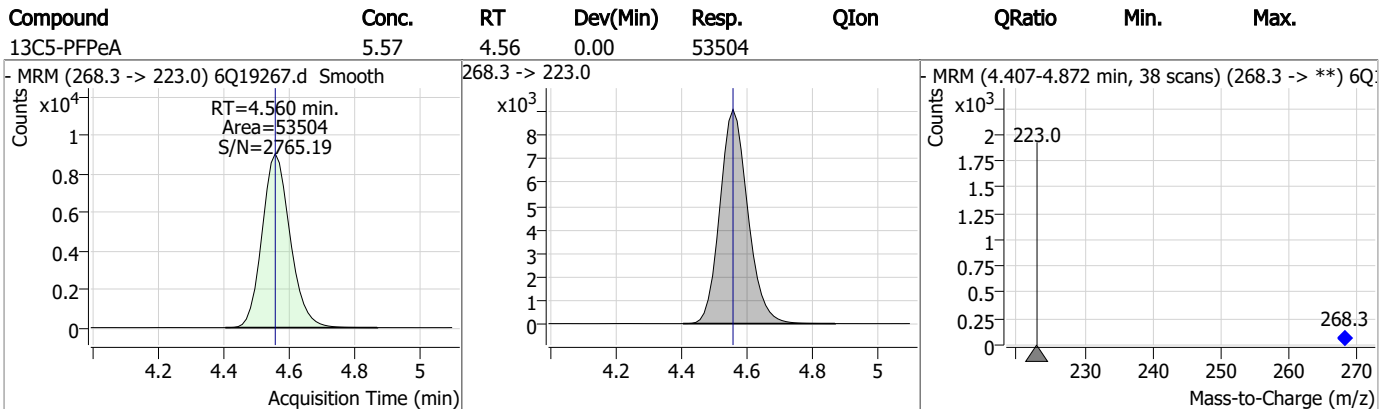
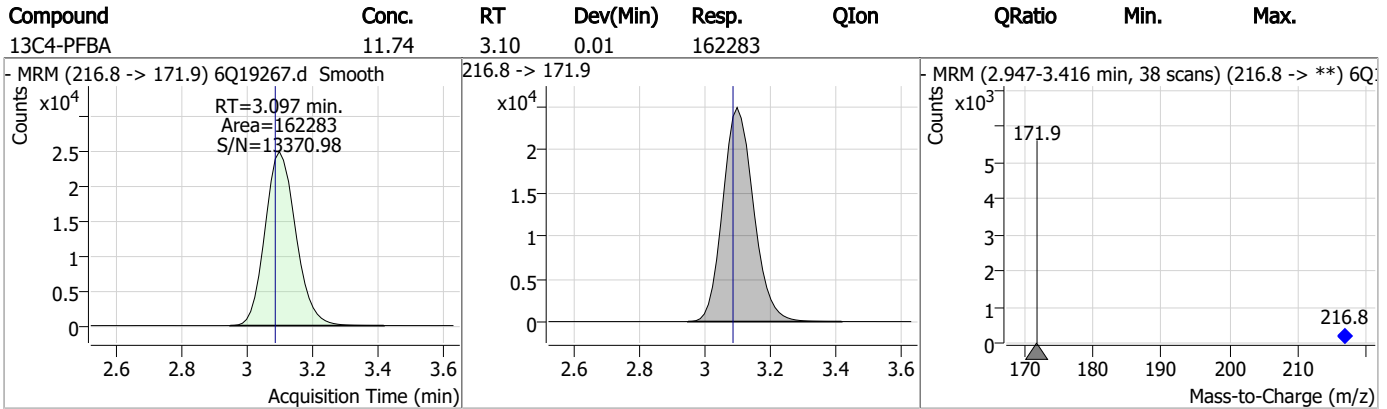
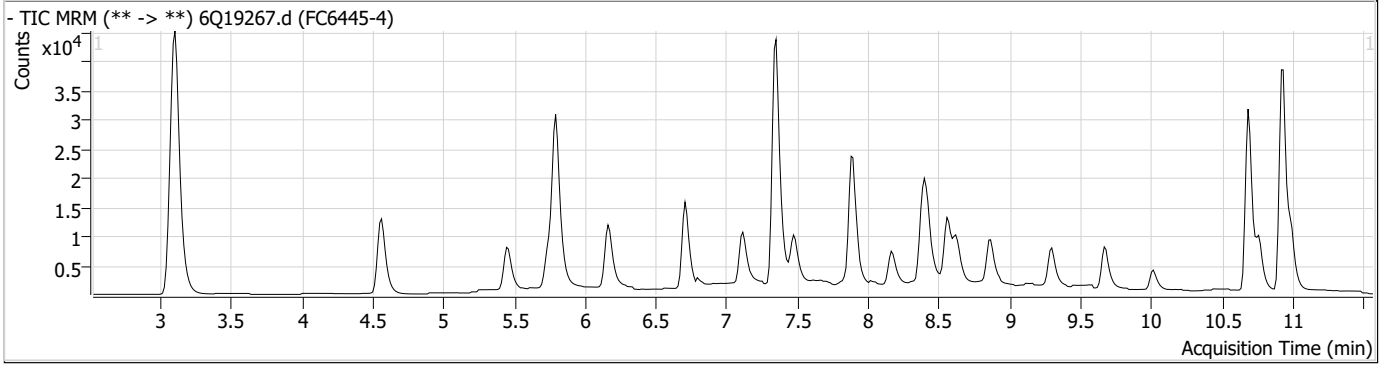
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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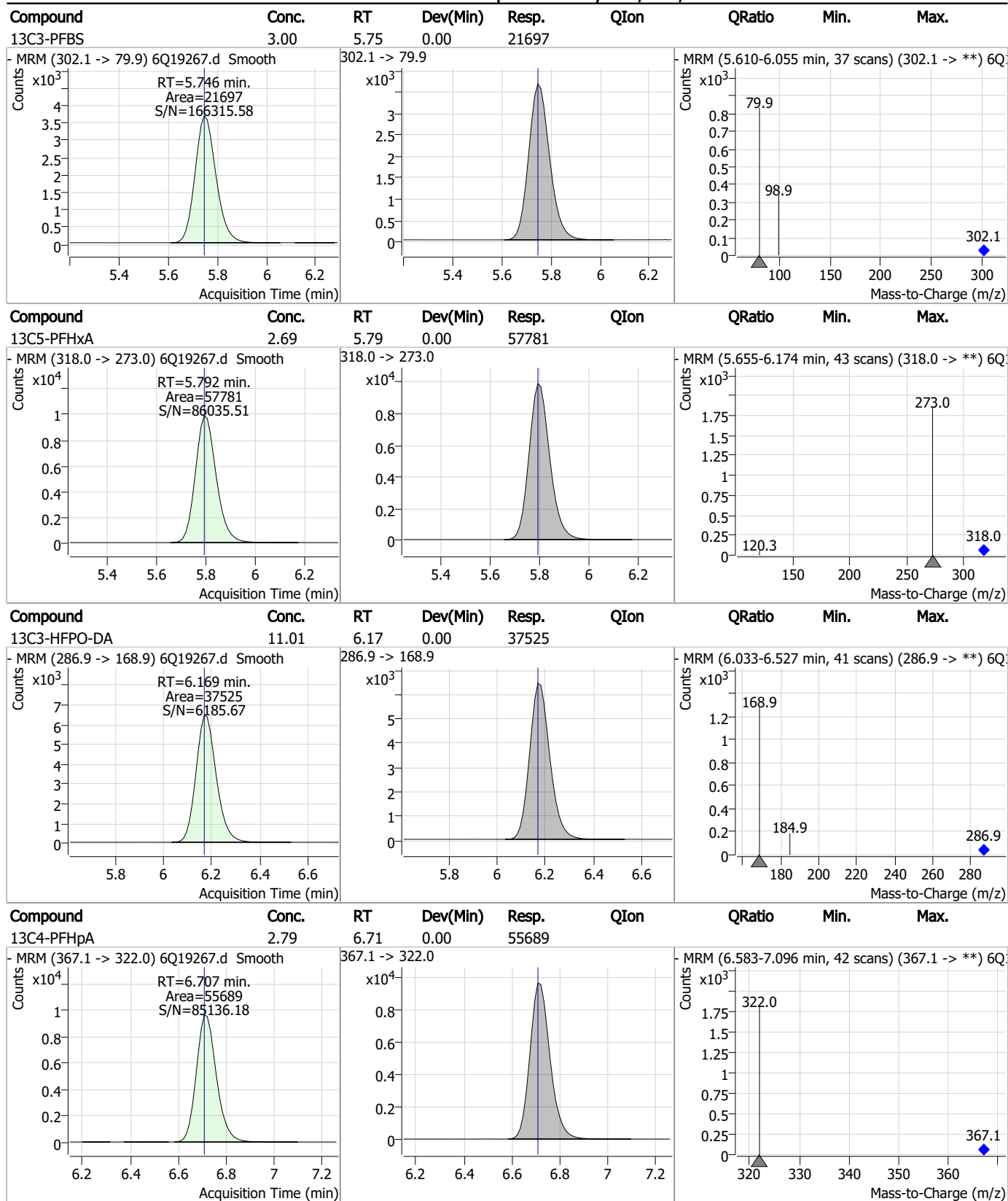
7.1.5
7



Perfluorinated Compounds by LC/MS/MS

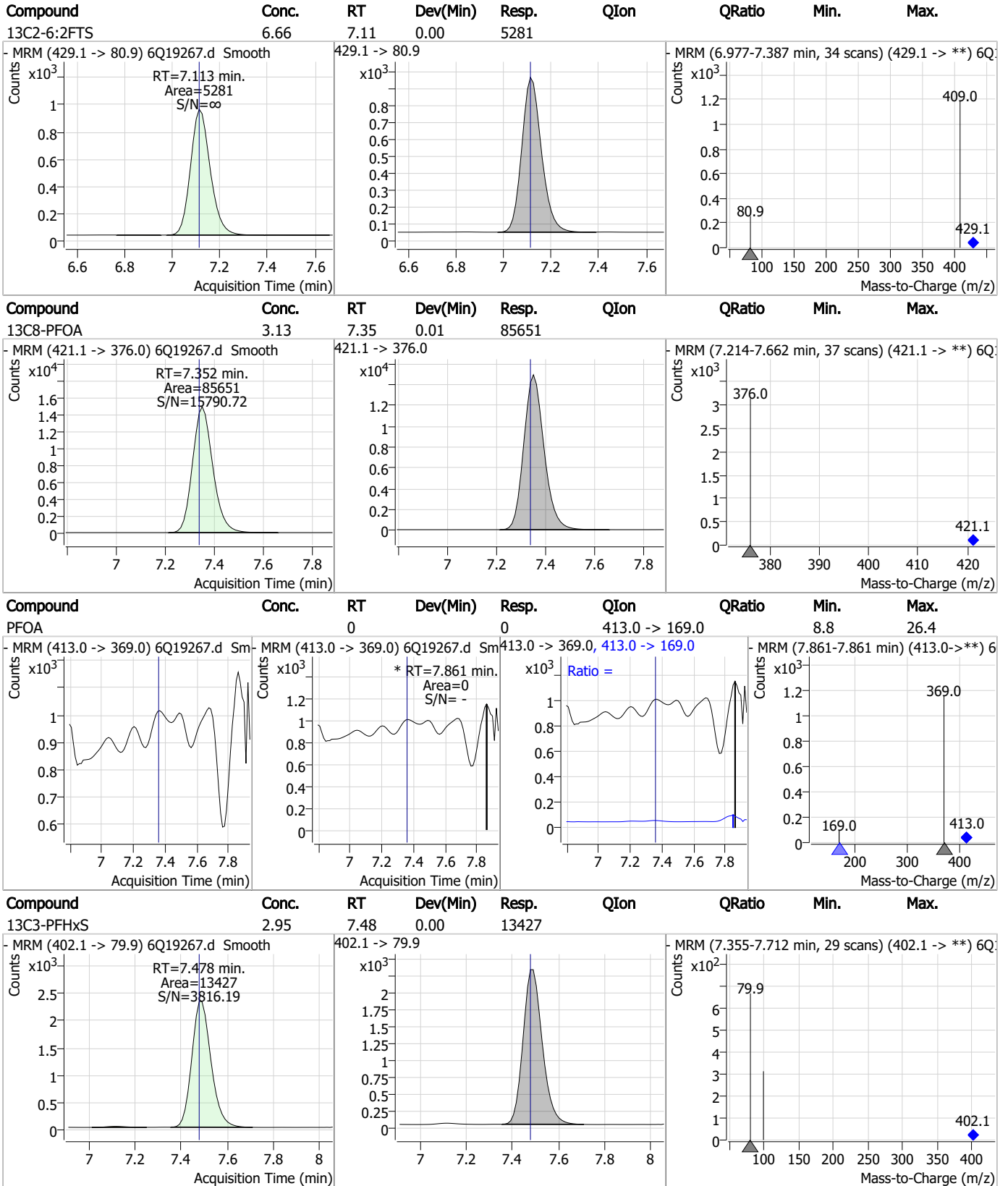


Perfluorinated Compounds by LC/MS/MS

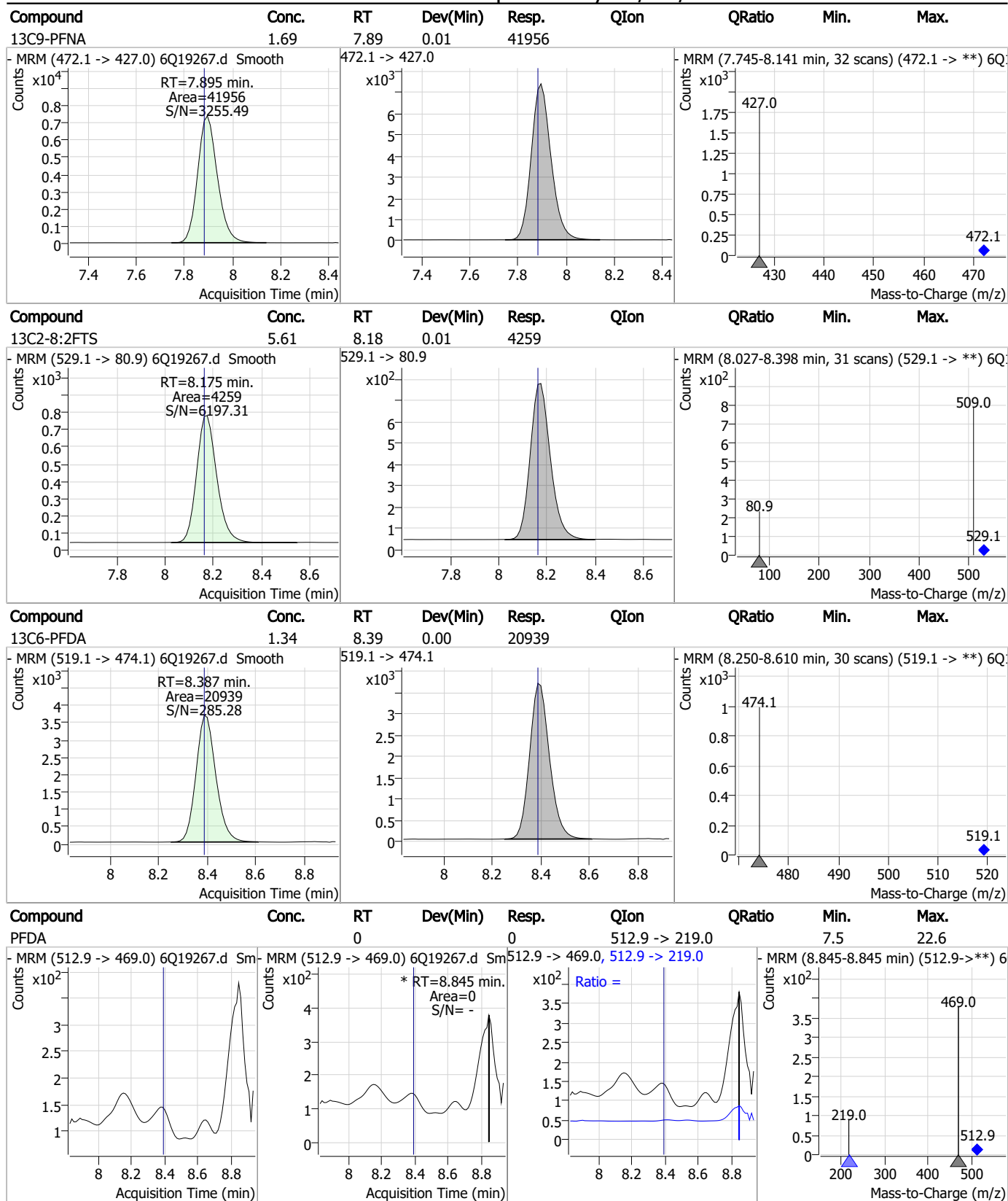


7.1.5
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Perfluorinated Compounds by LC/MS/MS

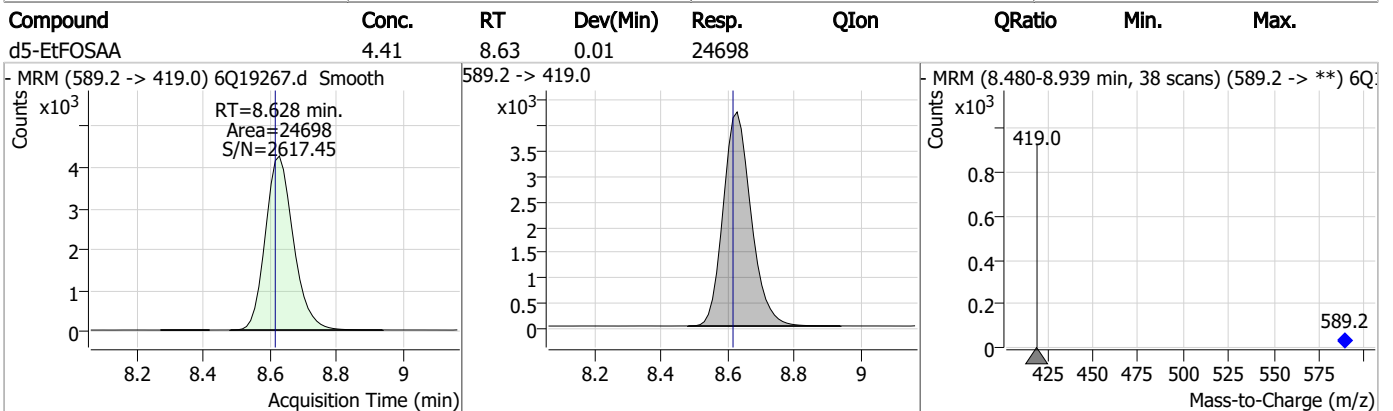
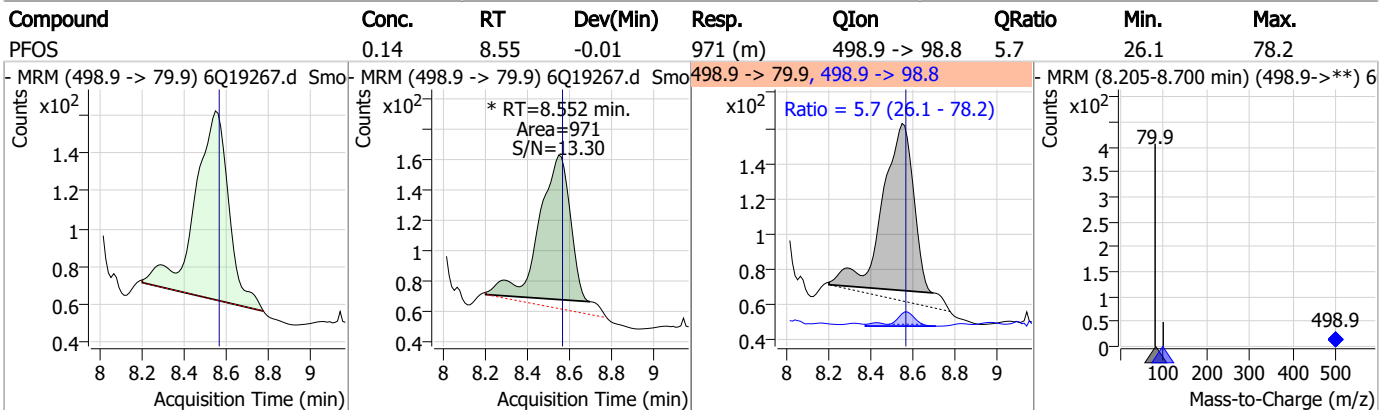
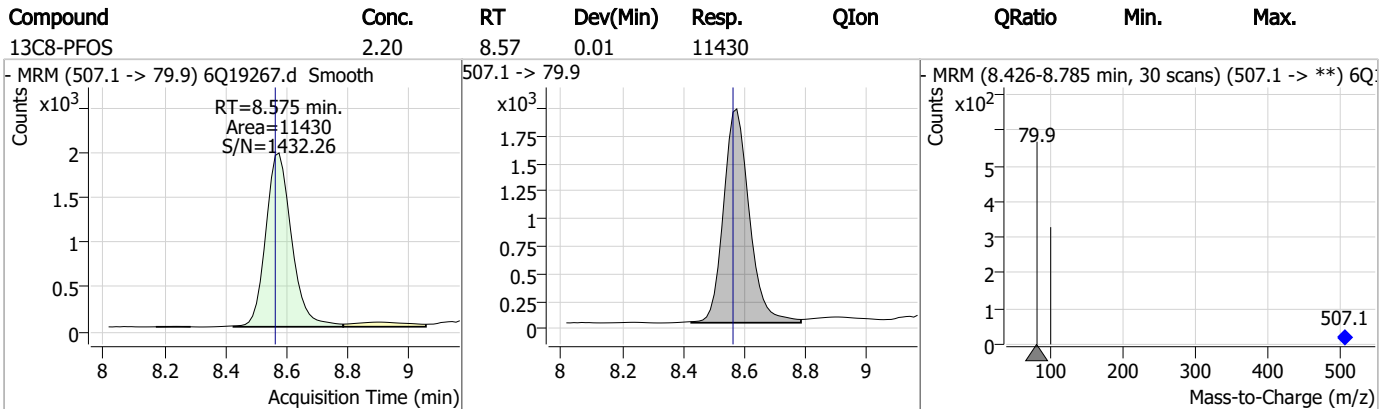
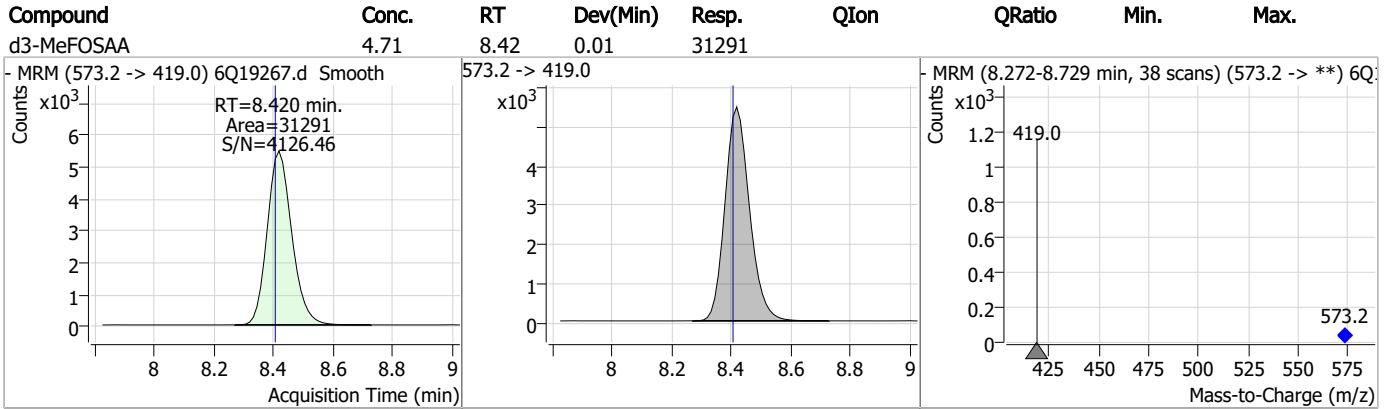


Perfluorinated Compounds by LC/MS/MS

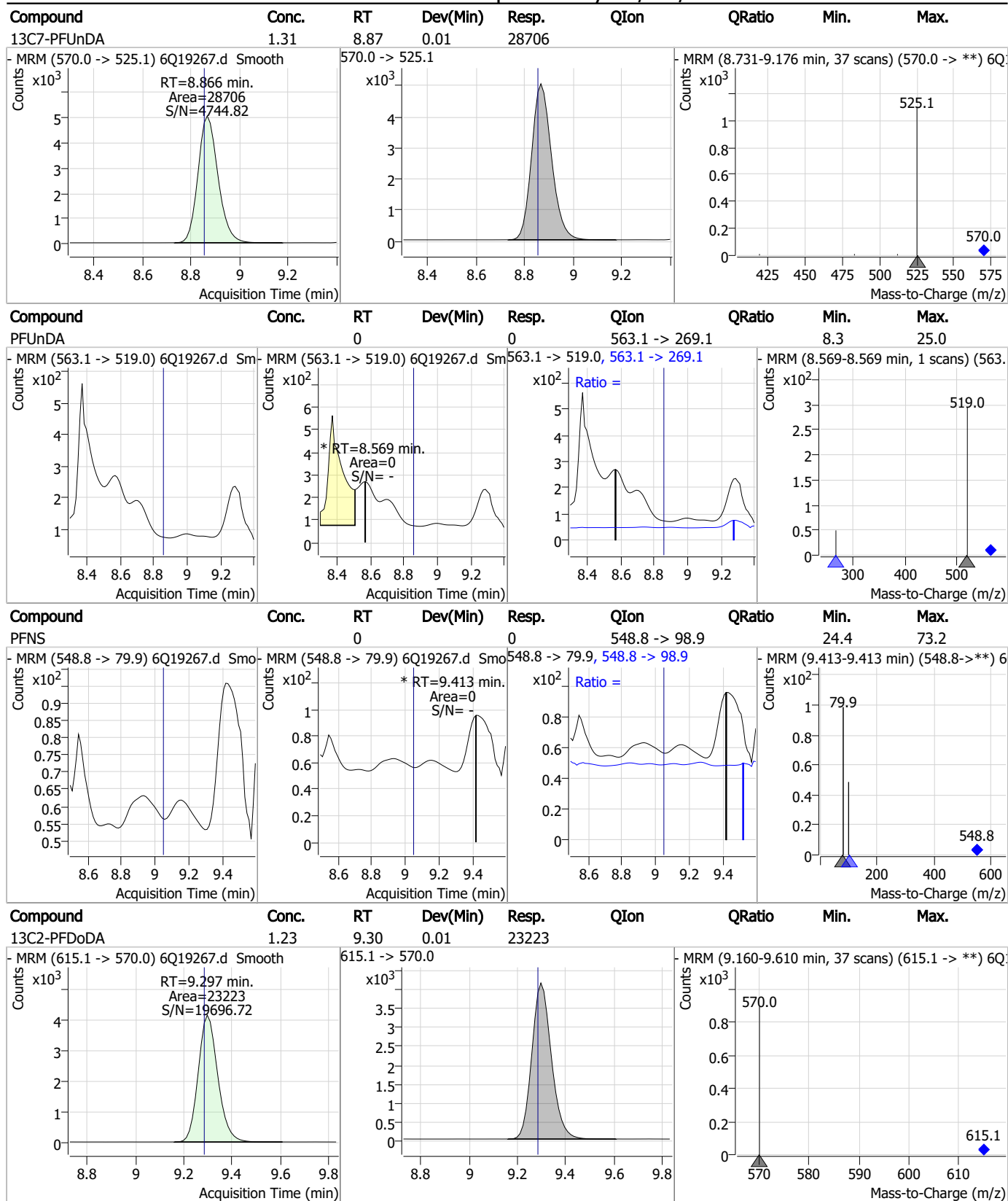


7.15
7

Perfluorinated Compounds by LC/MS/MS



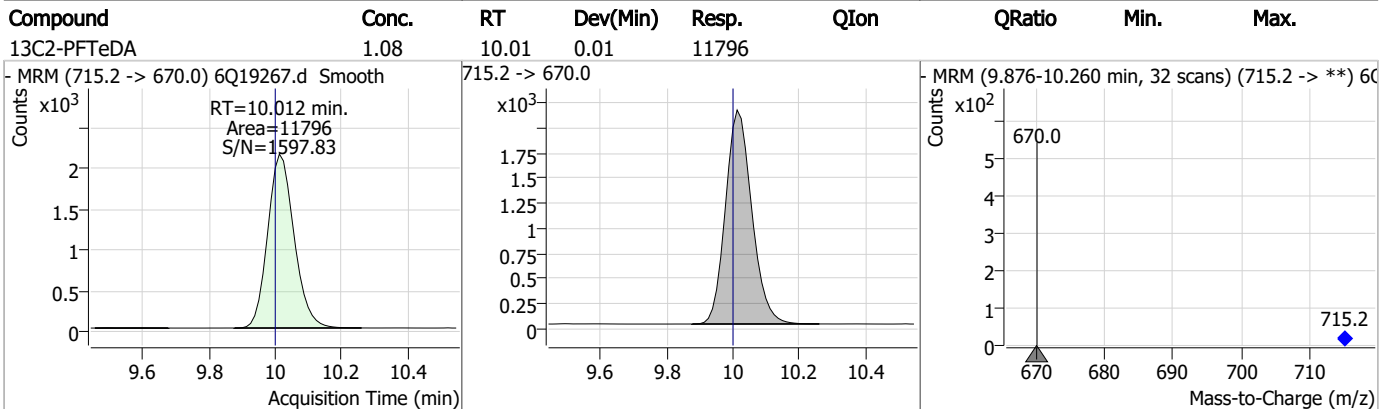
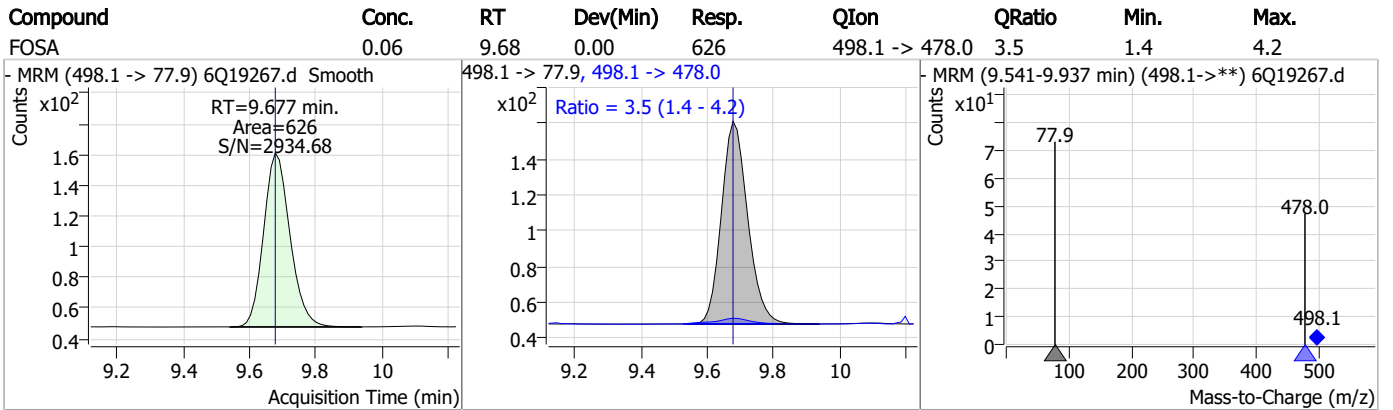
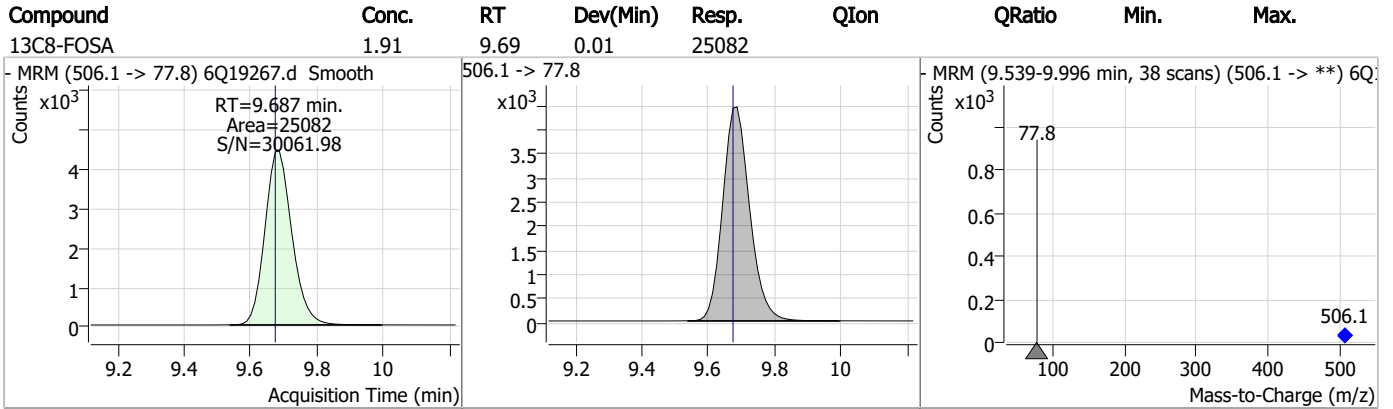
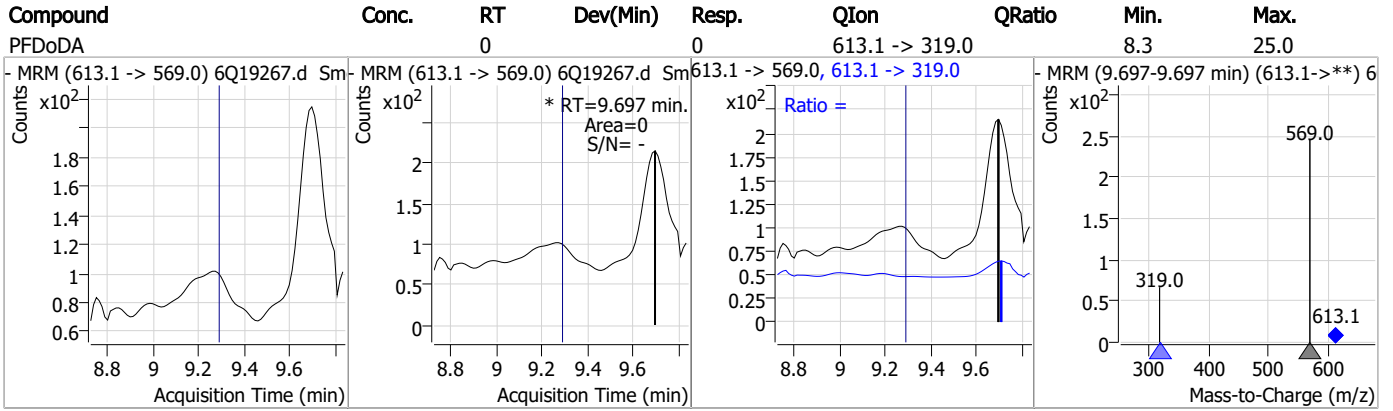
Perfluorinated Compounds by LC/MS/MS



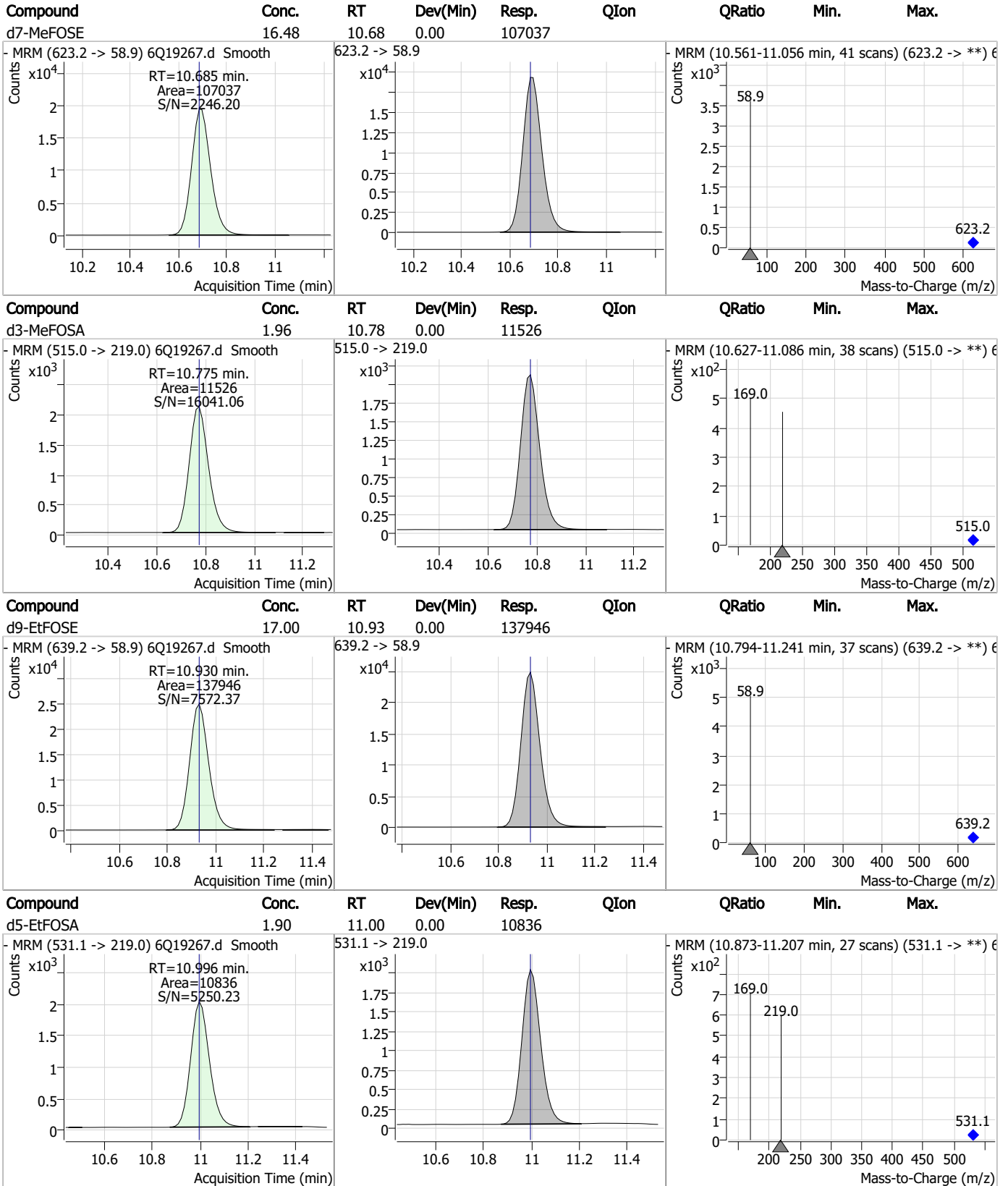
7.15
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: FC6445-4 Method: EPA DRAFT 1633
Lab FileID: 6Q19267.D Analyst approved: 06/13/23 11:28 Martha Valls
Injection Time: 06/12/23 22:05 Supervisor approved: 06/13/23 13:40 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.55	Split peak

7.1.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18717.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 1:15:56 AM
 Sample Name : FC6445-5
 Vial : P3-D5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,520,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	150106	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	49154	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	52185	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	49692	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	80112	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	35504	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	21913	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	26967	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23088	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11153	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24773	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20205	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	12260	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	11558	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3068	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4731	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4564	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	23417	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	32866	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21538	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	87201	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	119639	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	10738	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10466	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	13352	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	57595	5.00 µg/L	0.037
18O2-PFHxS	7.117	403.0 -> 83.9	8340	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	75164	2.50 µg/L	-0.013
13C2-PFDA	8.027	515.1 -> 470.1	25628	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	41217	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	47220	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3068	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4731	5.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4564	5.57 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23088	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11153	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C3-PFBS	5.334	302.1 -> 79.9	20205	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	12260	2.63 µg/L	-0.012

7.1.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C4-PFBA	2.860	216.8 -> 171.9	150106	10.94 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	49692	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C5-PFHxA	5.417	318.0 -> 273.0	52185	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFPeA	4.222	268.3 -> 223.0	49154	5.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C6-PFDA	8.014	519.1 -> 474.1	21913	1.46 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C7-PFUnDA	8.468	570.0 -> 525.1	26967	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C8-FOSA	9.598	506.1 -> 77.8	24773	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOA	7.013	421.1 -> 376.0	80112	2.85 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C8-PFOS	8.177	507.1 -> 79.9	11558	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C9-PFNA	7.545	472.1 -> 427.0	35504	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23417	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	32866	10.59 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	10466	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21538	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	87201	26.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	119639	27.28 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	10738	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.0%	

Target Compounds

Target Compounds	RT	Transition	Response	Conc. Units	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.	

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
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.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

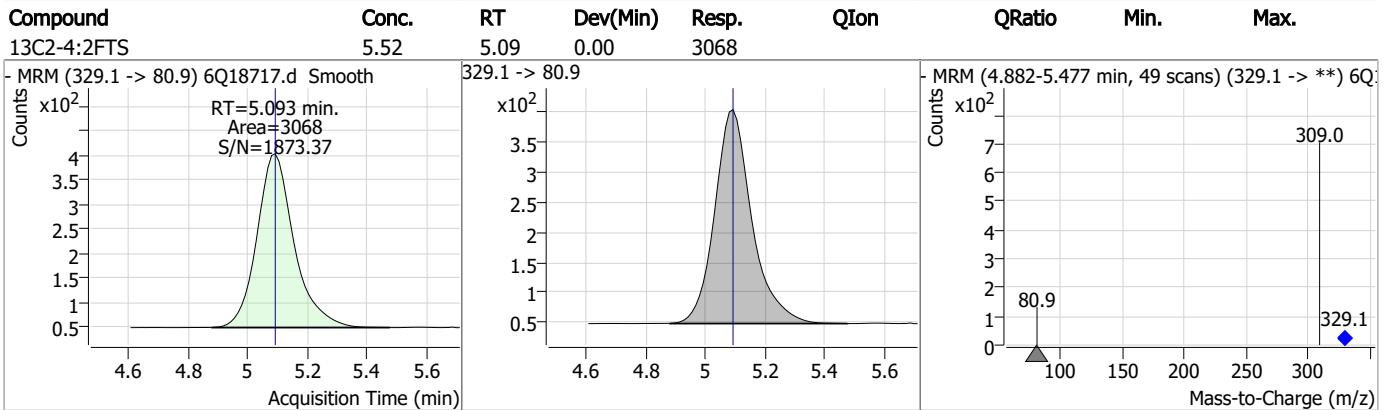
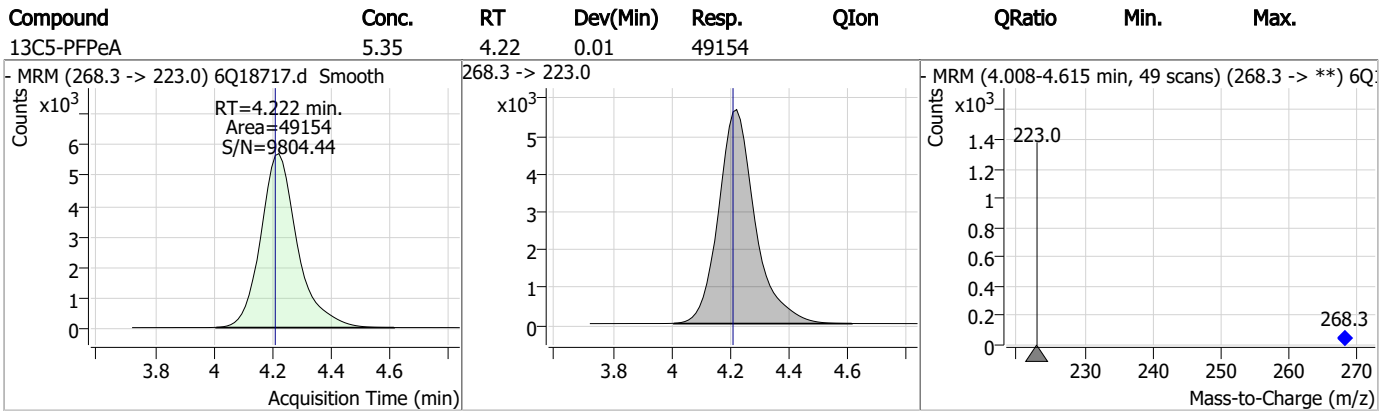
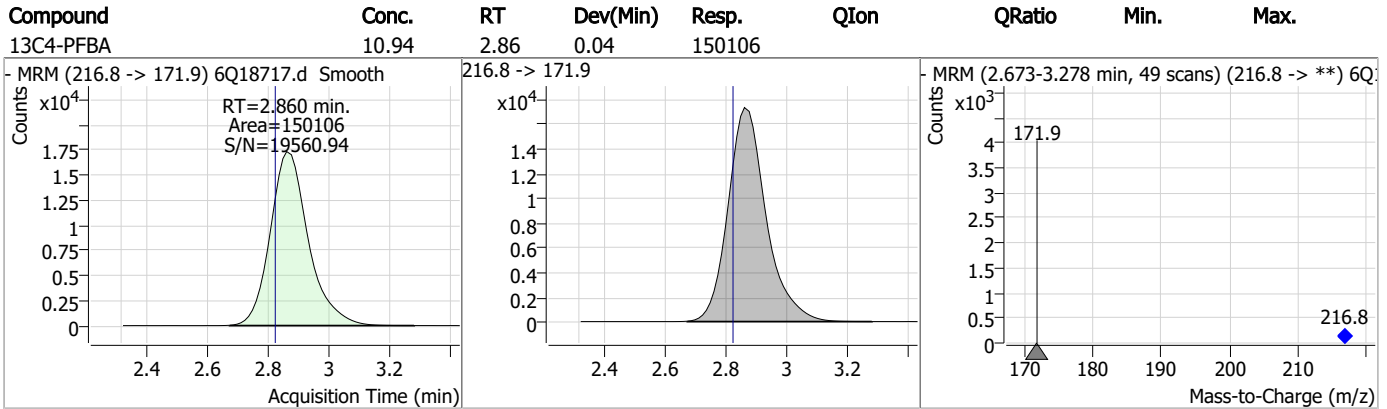
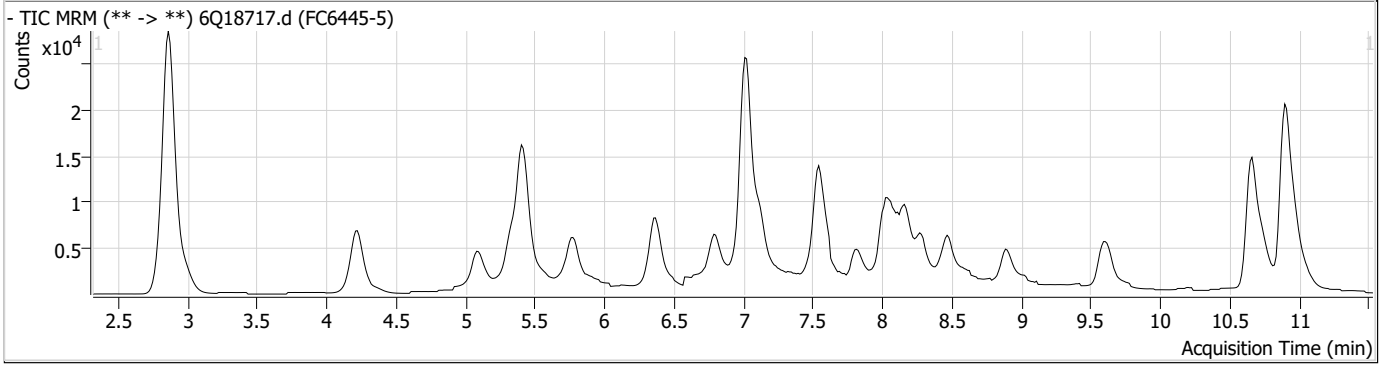
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.6
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.74	5.33	0.00	20205				
13C5-PFHxA	2.61	5.42	0.00	52185				
13C3-HFPO-DA	10.59	5.78	0.00	32866				
13C4-PFHpA	2.69	6.37	0.00	49692				

7.1.6

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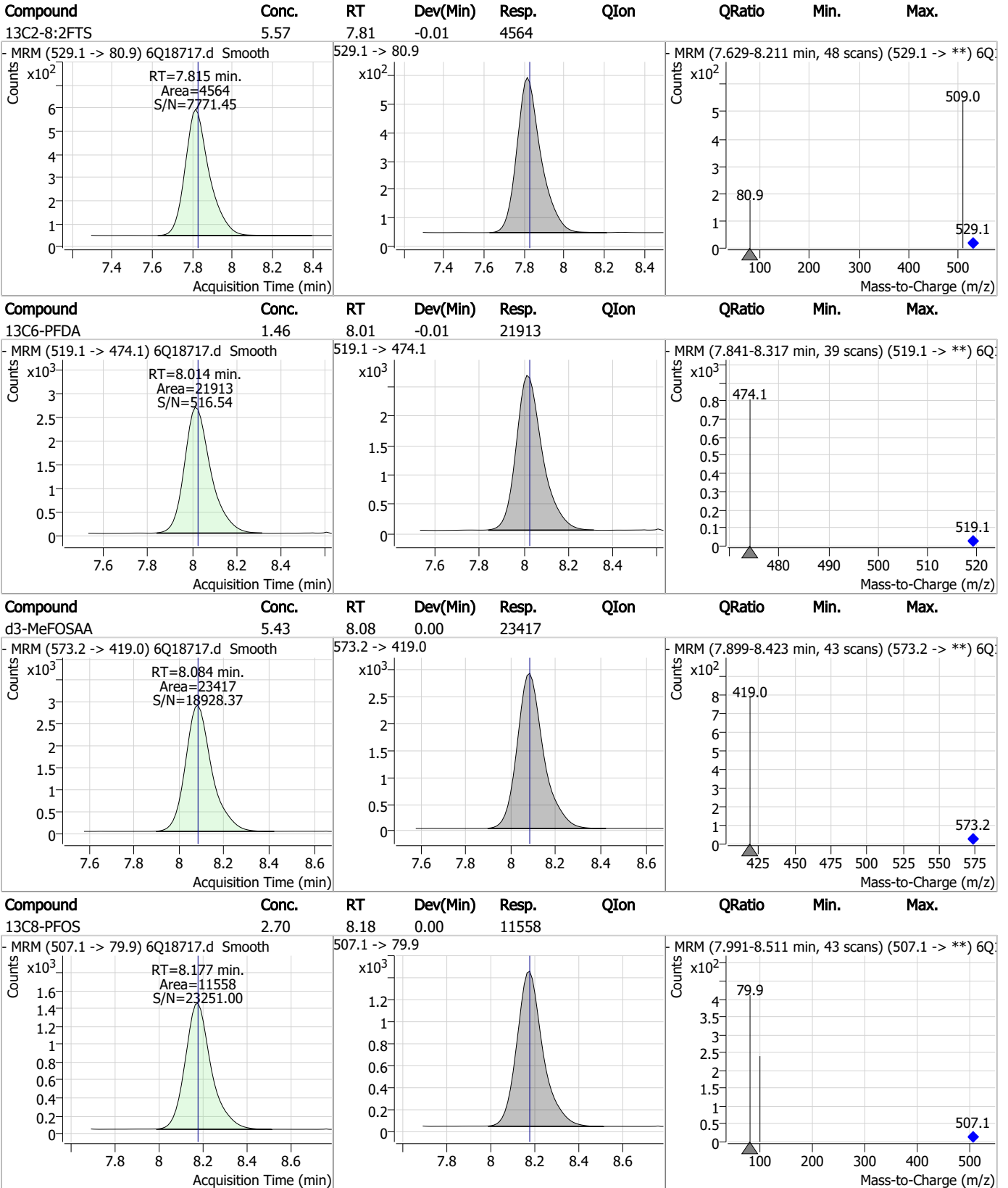
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.86	6.80	0.00	4731				
13C8-PFOA	2.85	7.01	-0.01	80112				
13C3-PFHxS	2.63	7.12	-0.01	12260				
13C9-PFNA	1.31	7.54	-0.01	35504				

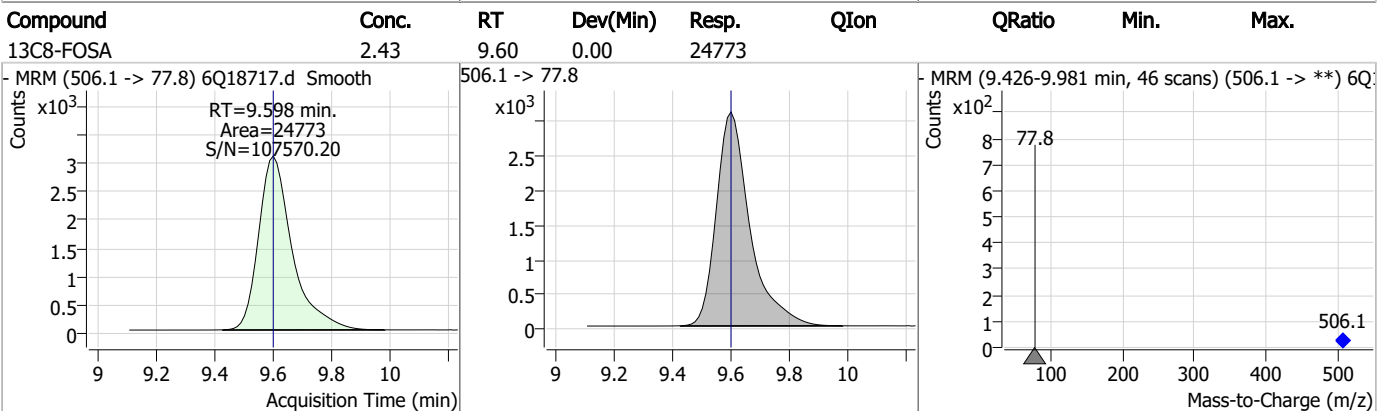
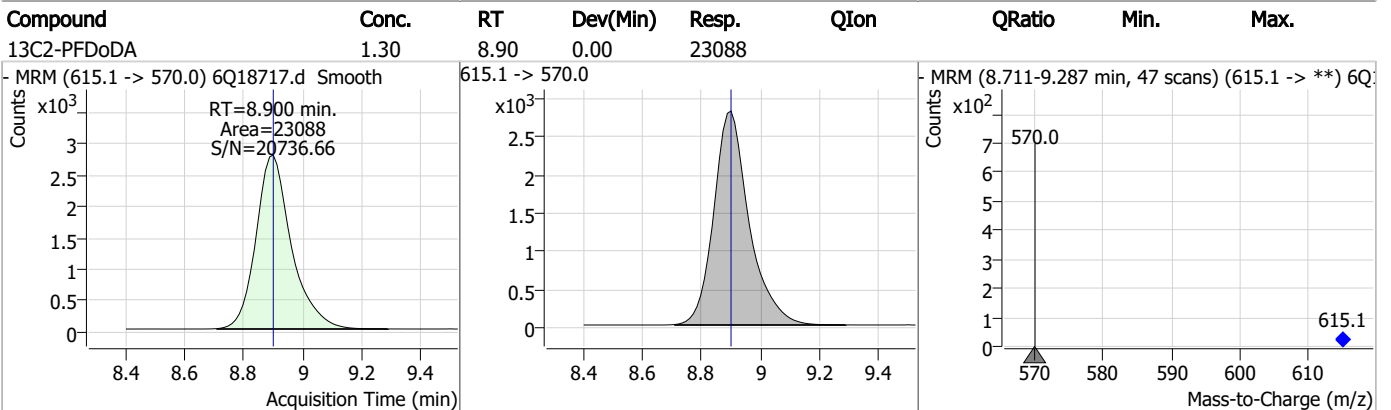
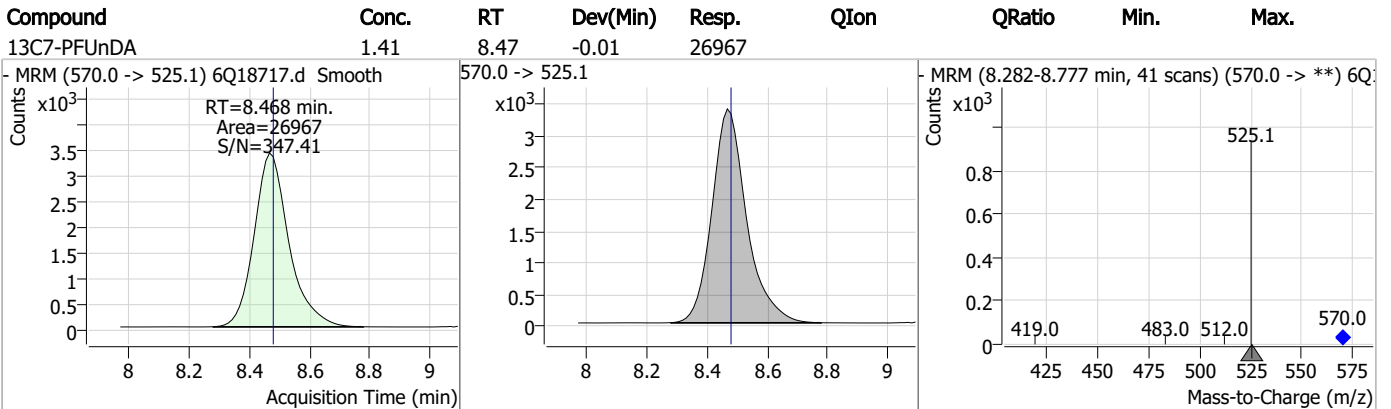
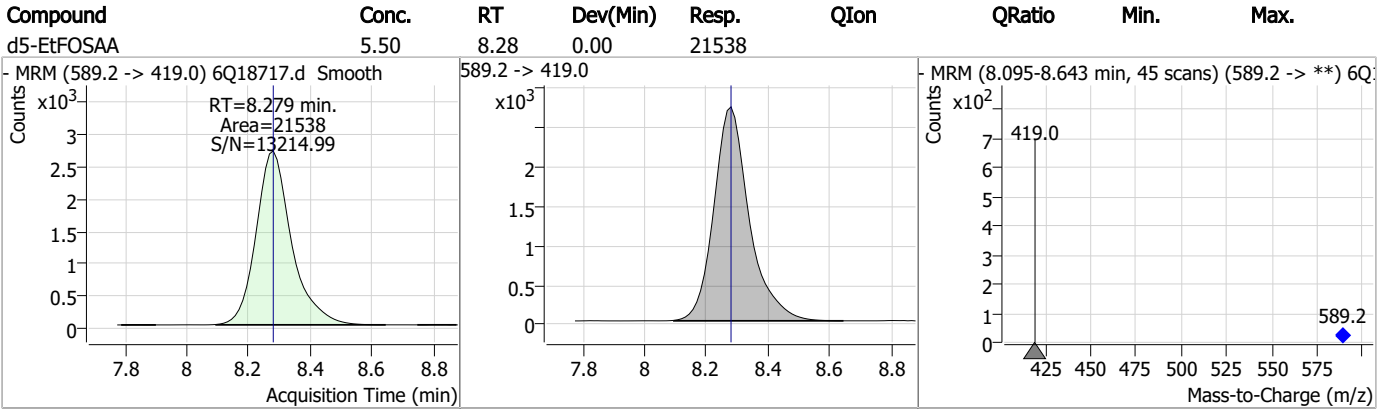
7.1.6

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

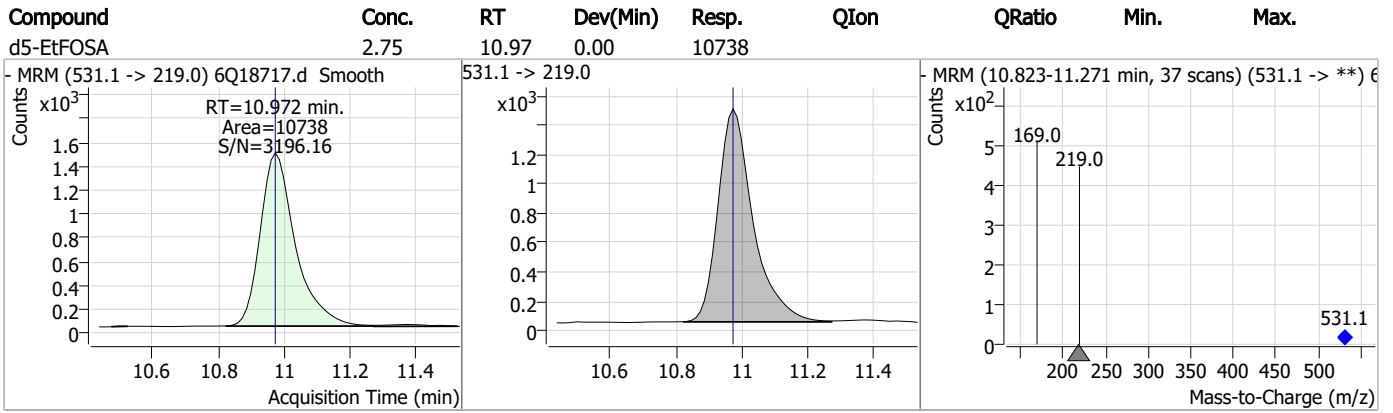
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.15	9.63	-0.01	11153				
- MRM (715.2 -> 670.0) 6Q18717.d Smooth			715.2 -> 670.0		- MRM (9.441-9.912 min, 39 scans) (715.2 -> **) 6Q18717.d Smooth			
d7-MeFOSE	26.00	10.66	0.00	87201				
- MRM (623.2 -> 58.9) 6Q18717.d Smooth			623.2 -> 58.9		- MRM (10.486-11.045 min, 46 scans) (623.2 -> **) 6Q18717.d Smooth			
d3-MeFOSA	2.54	10.74	0.00	10466				
- MRM (515.0 -> 219.0) 6Q18717.d Smooth			515.0 -> 219.0		- MRM (10.565-11.126 min, 46 scans) (515.0 -> **) 6Q18717.d Smooth			
d9-EtFOSE	27.28	10.89	-0.01	119639				
- MRM (639.2 -> 58.9) 6Q18717.d Smooth			639.2 -> 58.9		- MRM (10.745-11.354 min, 50 scans) (639.2 -> **) 6Q18717.d Smooth			

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Perfluorinated Compounds by LC/MS/MS



7.1.6

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Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/06/23 07:40

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18718.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 1:30:27 AM
 Sample Name : FC6445-6
 Vial : P3-D6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.876	216.8 -> 171.9	40690	10.00 µg/L	0.053
M5-PFPeA	4.210	268.3 -> 223.0	42758	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	53267	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	50158	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	79062	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	37445	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	20989	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	26056	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	21484	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	9643	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	26493	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	18978	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	11320	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	11667	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3211	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4164	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	3804	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	24152	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	28881	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	21068	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	78896	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	108304	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9169	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9752	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	13238	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	51399	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8394	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	74688	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	26788	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	39697	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	45435	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3211	5.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4164	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	3804	4.61 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C2-PFDoDA	8.887	615.1 -> 570.0	21484	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	9643	0.95 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 76.2%		
13C3-PFBS	5.322	302.1 -> 79.9	18978	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	11320	2.41 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C4-PFBA	2.876	216.8 -> 171.9	40690	3.32 µg/L	0.053
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 33.2%		
13C4-PFHpA	6.369	367.1 -> 322.0	50158	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C5-PFHxA	5.404	318.0 -> 273.0	53267	2.77 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C5-PFPeA	4.210	268.3 -> 223.0	42758	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C6-PFDA	8.014	519.1 -> 474.1	20989	1.34 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C7-PFUnDA	8.468	570.0 -> 525.1	26056	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C8-FOSA	9.598	506.1 -> 77.8	26493	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C8-PFOA	7.013	421.1 -> 376.0	79062	2.83 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C8-PFOS	8.165	507.1 -> 79.9	11667	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C9-PFNA	7.545	472.1 -> 427.0	37445	1.43 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.5%		
d3-MeFOSAA	8.072	573.2 -> 419.0	24152	5.65 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	28881	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.7%		
d3-MeFOSA	10.739	515.0 -> 219.0	9752	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
d5-EtFOSAA	8.267	589.2 -> 419.0	21068	5.42 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
d7-MeFOSE	10.660	623.2 -> 58.9	78896	23.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.9%		
d9-EtFOSE	10.894	639.2 -> 58.9	108304	24.91 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
d5-EtFOSA	10.972	531.1 -> 219.0	9169	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.801	427.1 -> 407.0 427.1 -> 80.9	1910 567	0.47 µg/L	91
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	2.982	212.8 -> 168.9	0	µg/L	m 1
PFBS	5.335	298.7 -> 79.9 298.7 -> 98.8	539 195	0.08 µg/L	97
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)
PFHpA	6.370	599.0 -> 98.8				
		363.1 -> 319.0	2641	0.12 µg/L	m	96
PFHpS	-	363.1 -> 169.0	401			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.407	449.0 -> 98.9				
		313.0 -> 269.0	4111	0.23 µg/L		96
PFHxS	-	313.0 -> 118.9	275			
		398.7 -> 79.9	-	N.D.		
PFNA	-	398.7 -> 98.9				
		463.0 -> 419.0	-	N.D.		
PFNS	-	463.0 -> 219.0				
		548.8 -> 79.9	-	N.D.		
PFOA	7.028	548.8 -> 98.9				
		413.0 -> 369.0	3575	0.11 µg/L		81
PFOS	8.166	413.0 -> 169.0	1006			
		498.9 -> 79.9	715	0.13 µg/L	m	97
PFPeA	4.666	498.9 -> 98.8	356			
		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	3.584	241.0 -> 177.0	0	µg/L	m	1
		241.0 -> 117.0	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.		
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

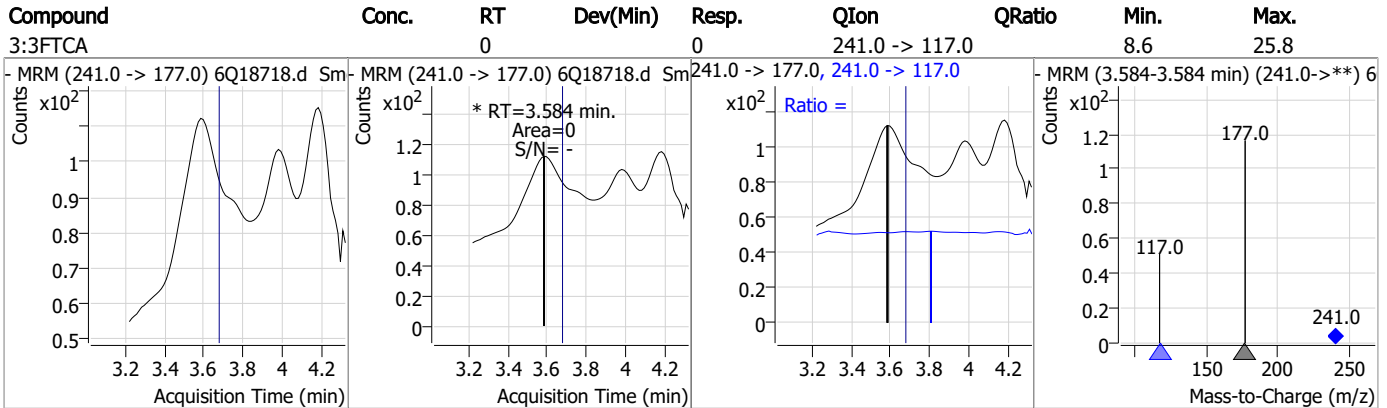
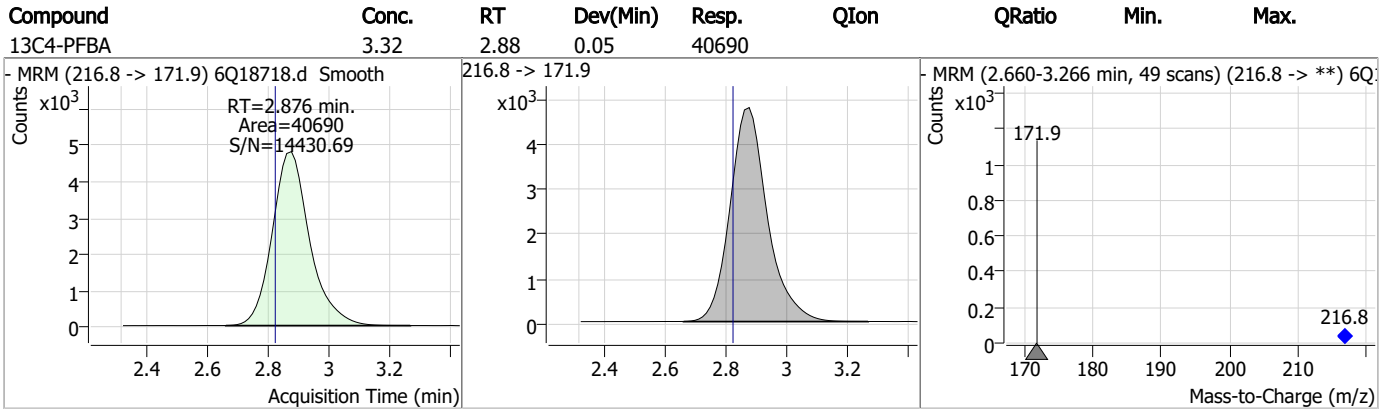
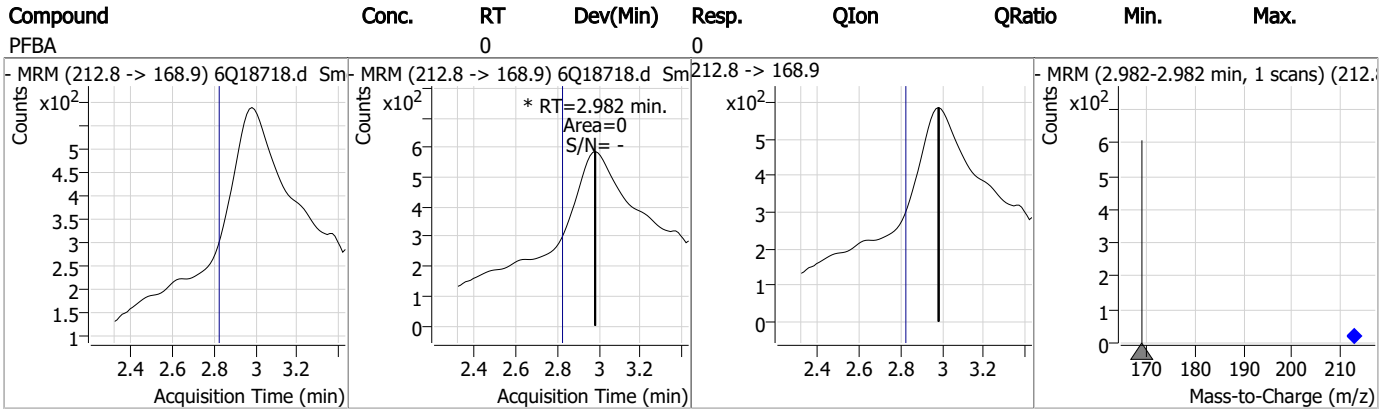
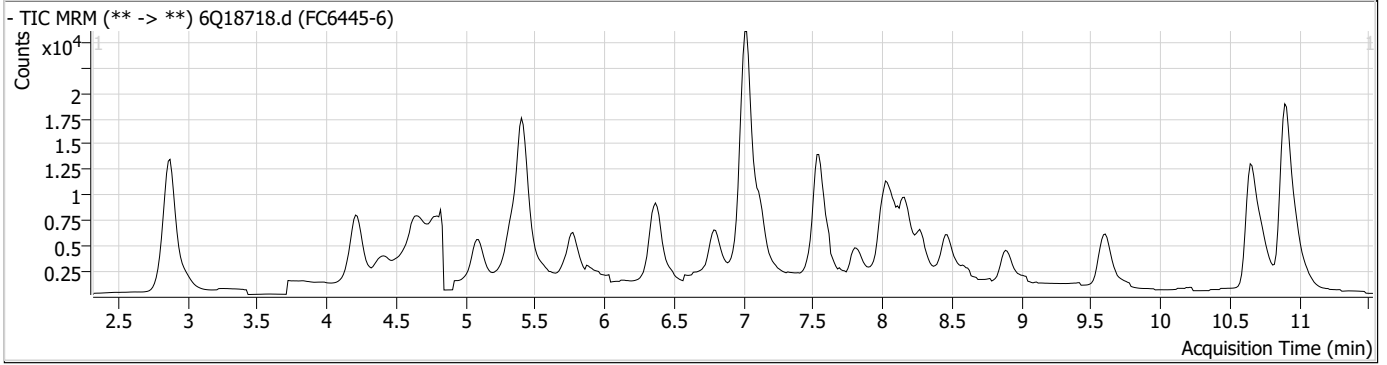
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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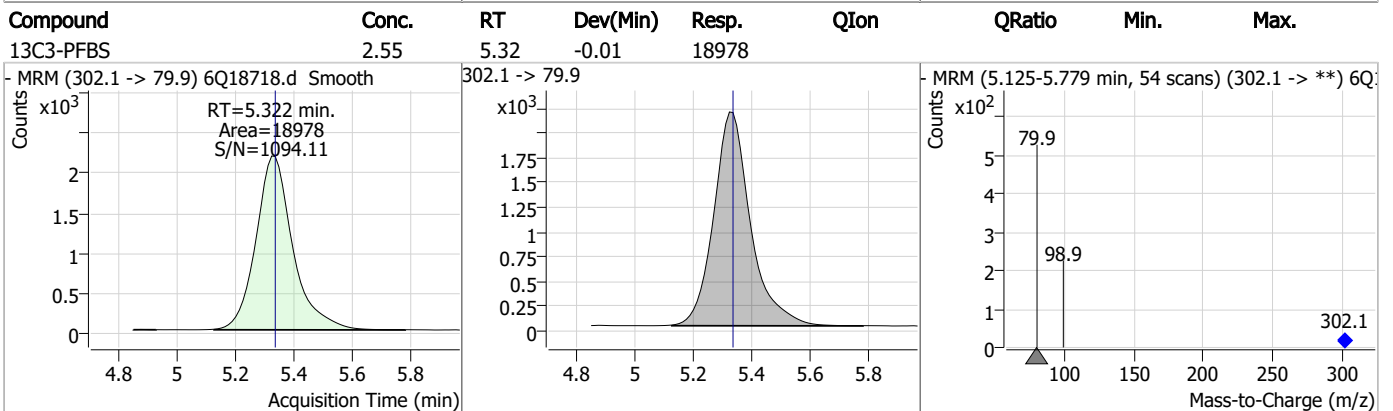
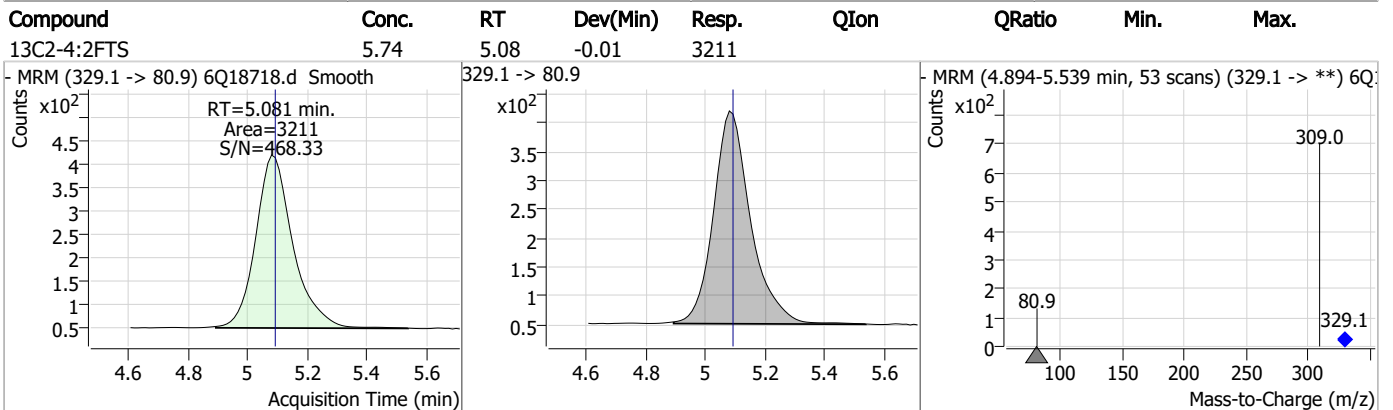
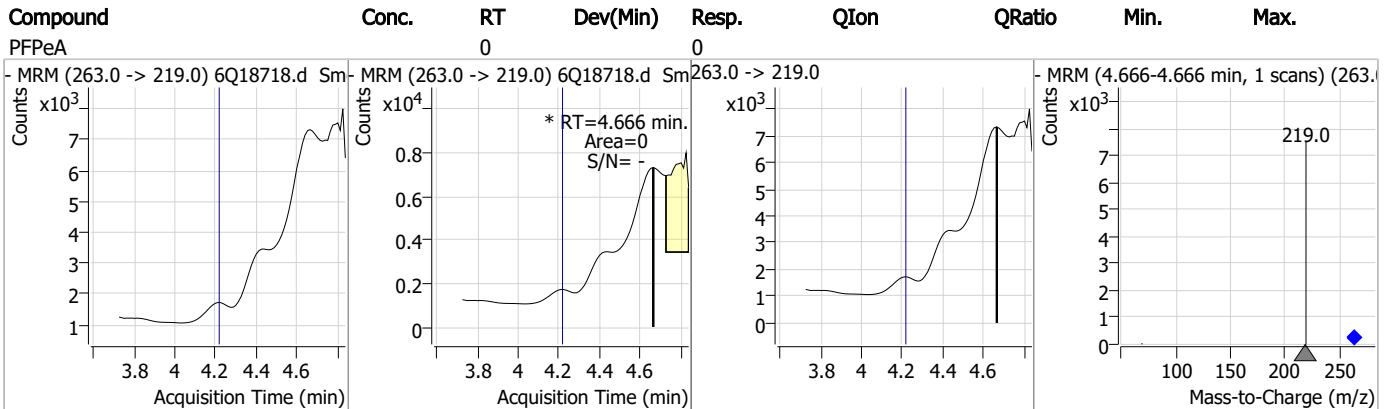
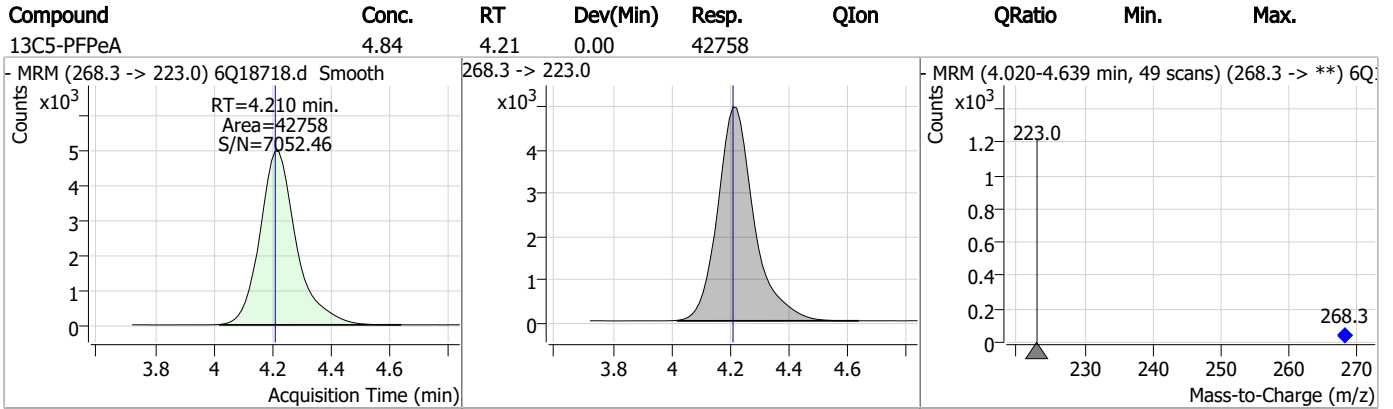
7.1.7
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Perfluorinated Compounds by LC/MS/MS

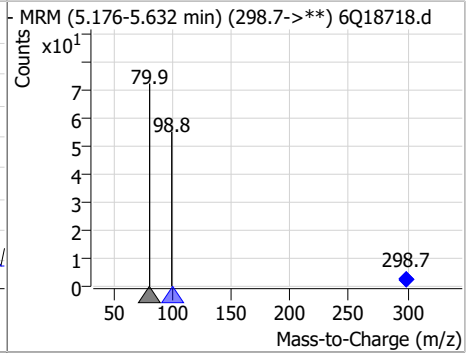
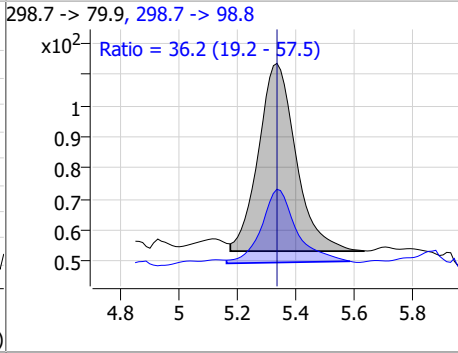
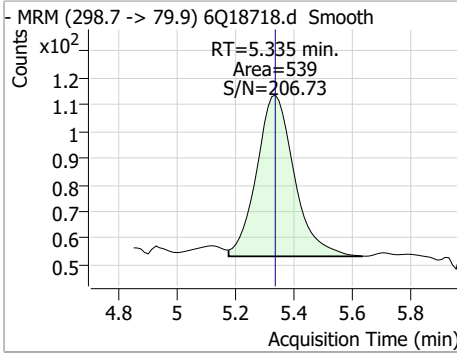


Perfluorinated Compounds by LC/MS/MS

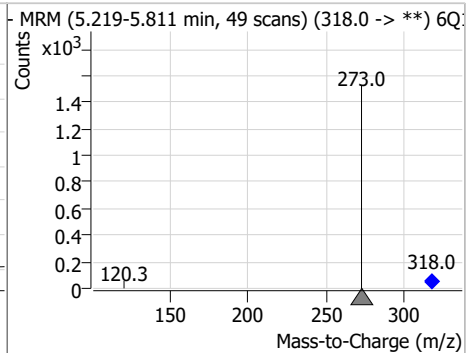
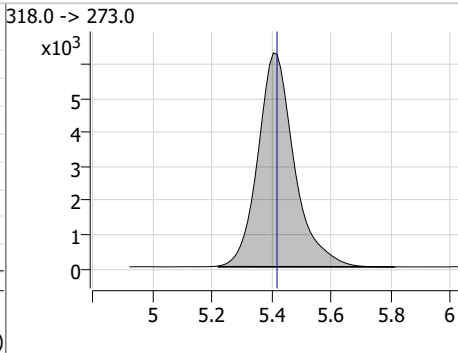
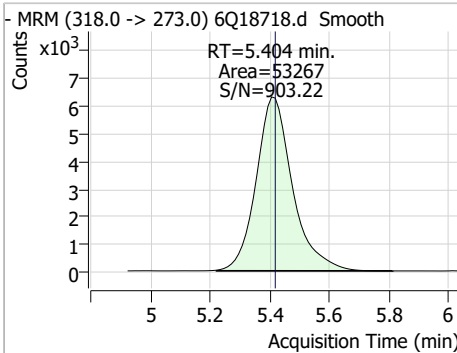


Perfluorinated Compounds by LC/MS/MS

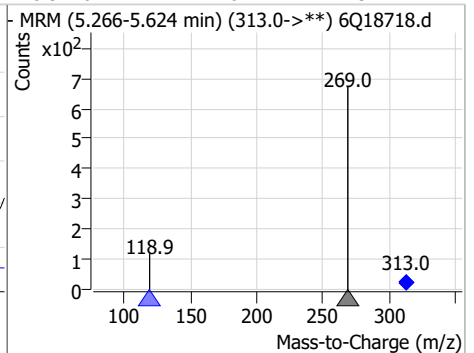
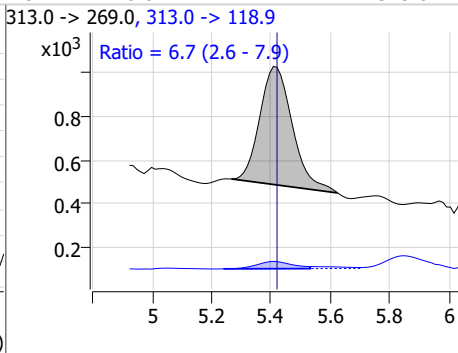
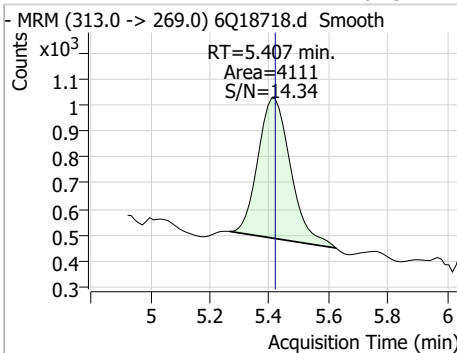
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.08	5.34	0.00	539	298.7 -> 98.8	36.2	19.2	57.5



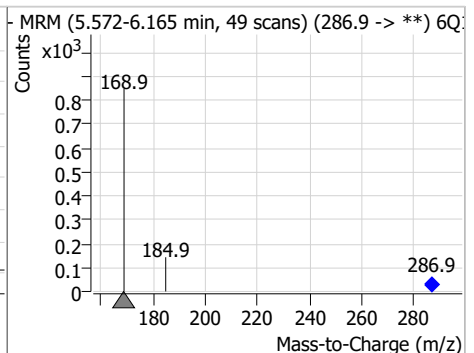
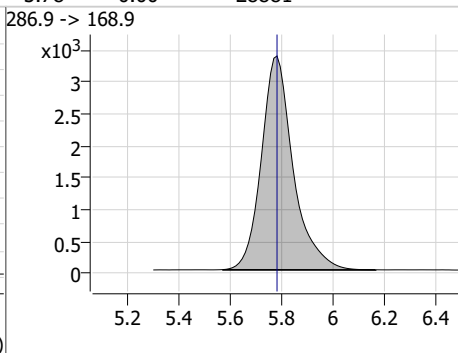
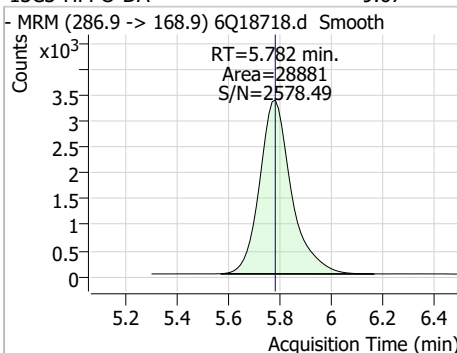
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.77	5.40	-0.01	53267				



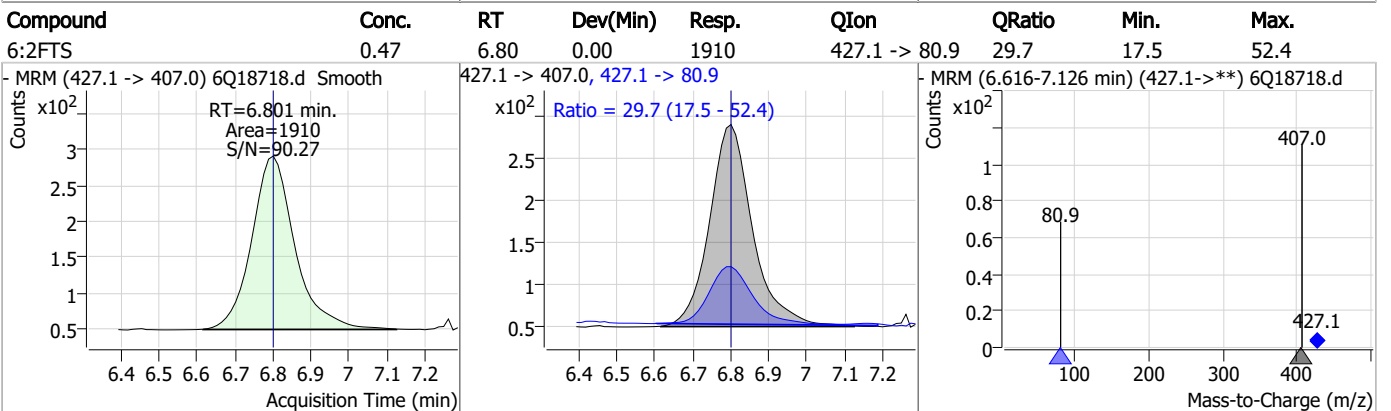
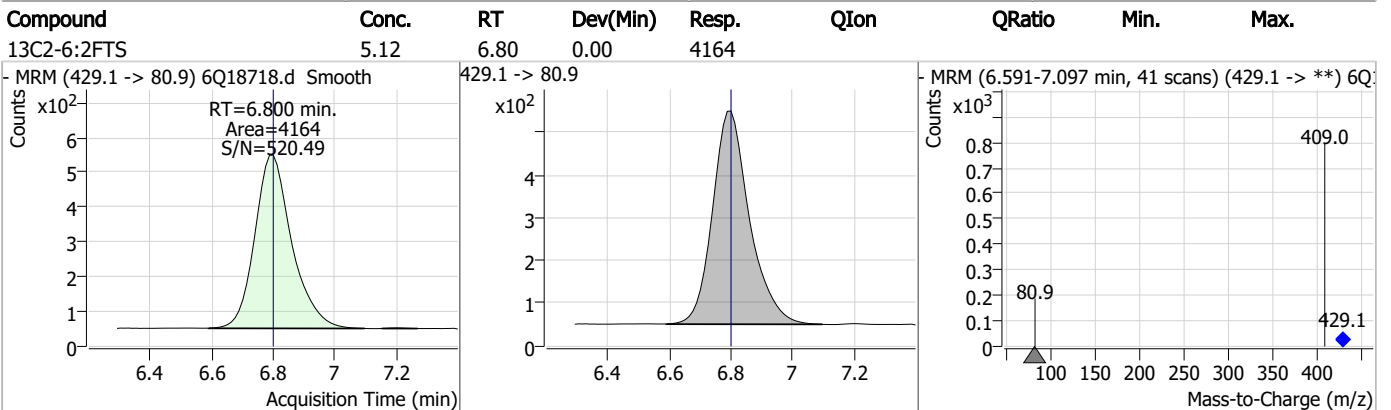
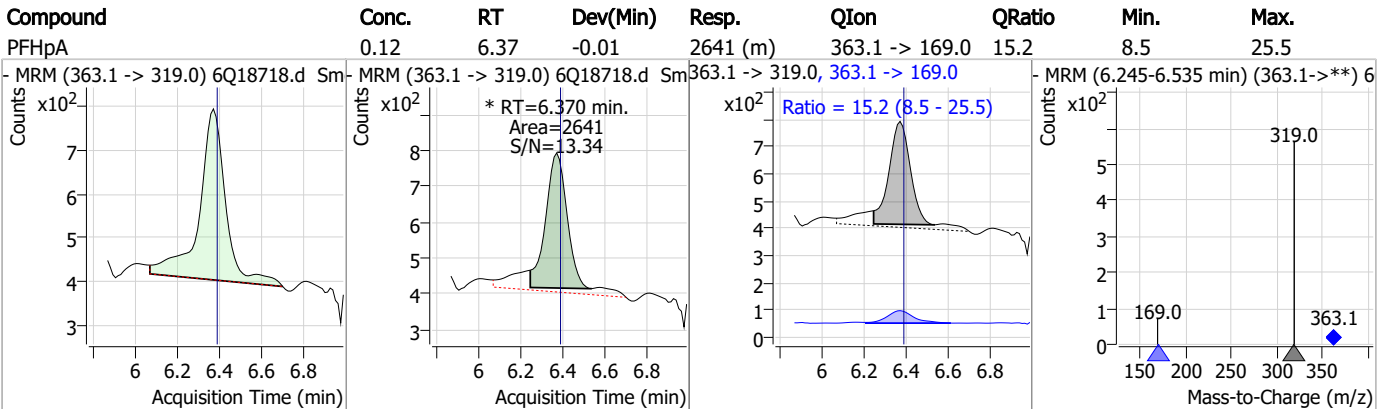
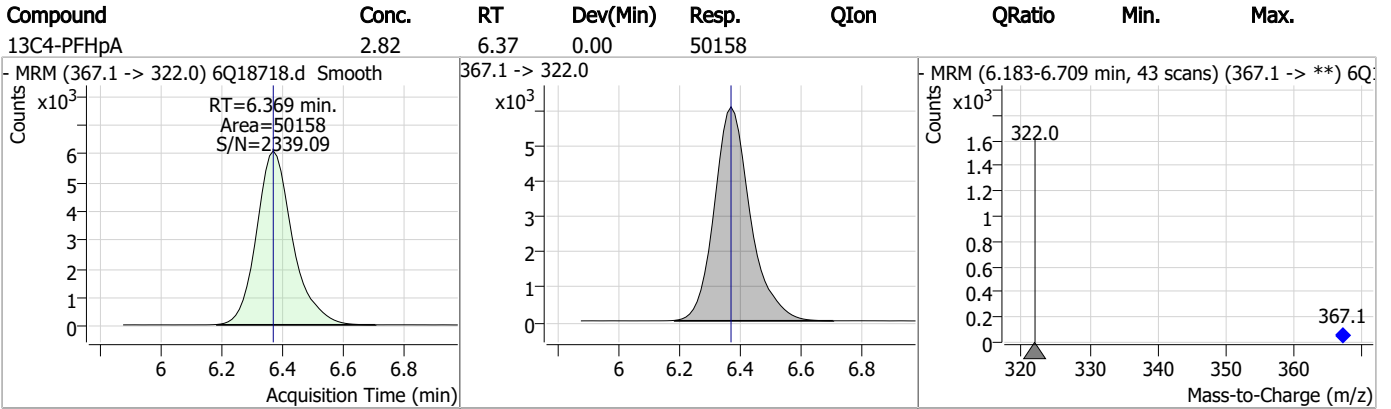
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.23	5.41	-0.01	4111	313.0 -> 118.9	6.7	2.6	7.9



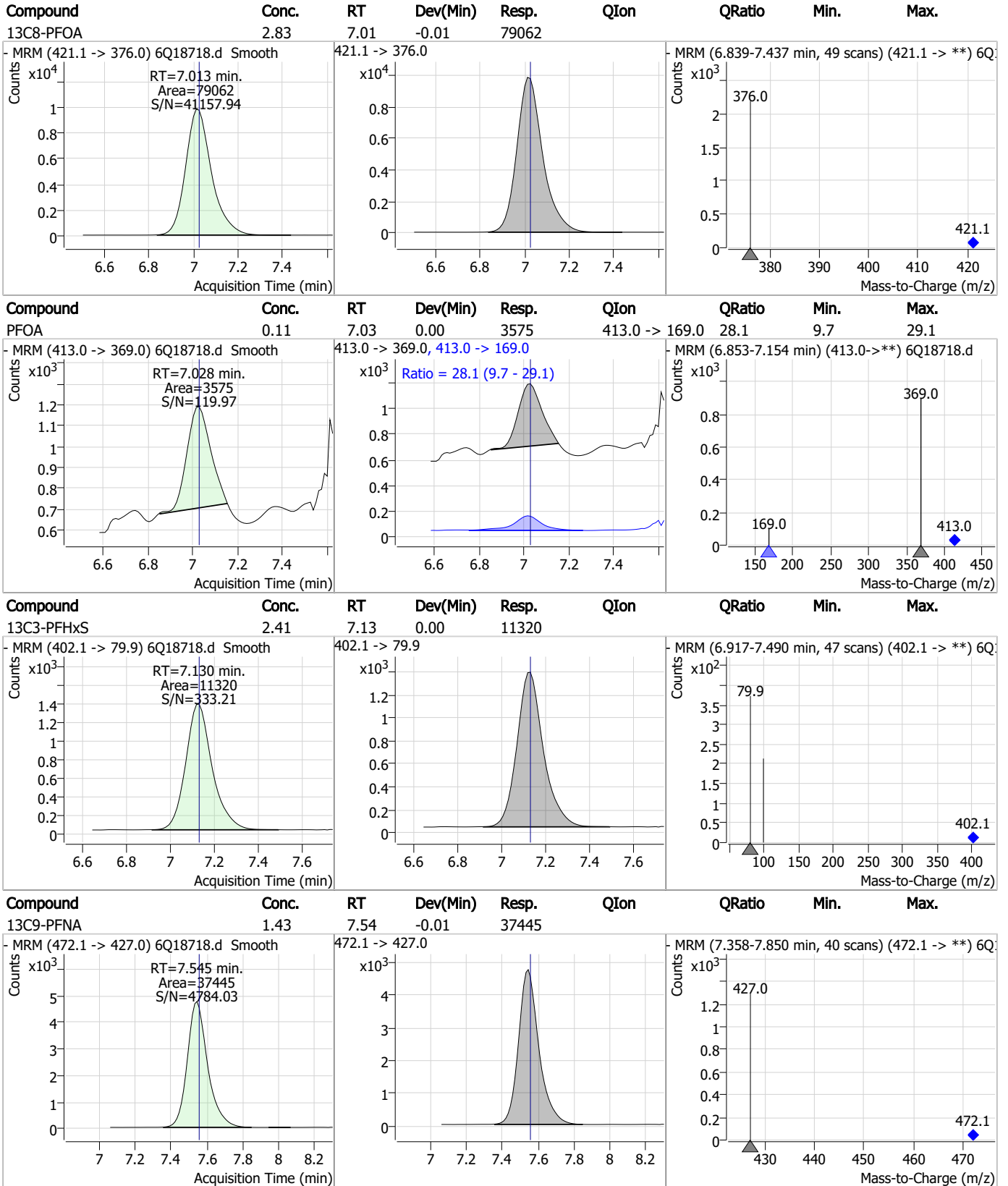
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.67	5.78	0.00	28881				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

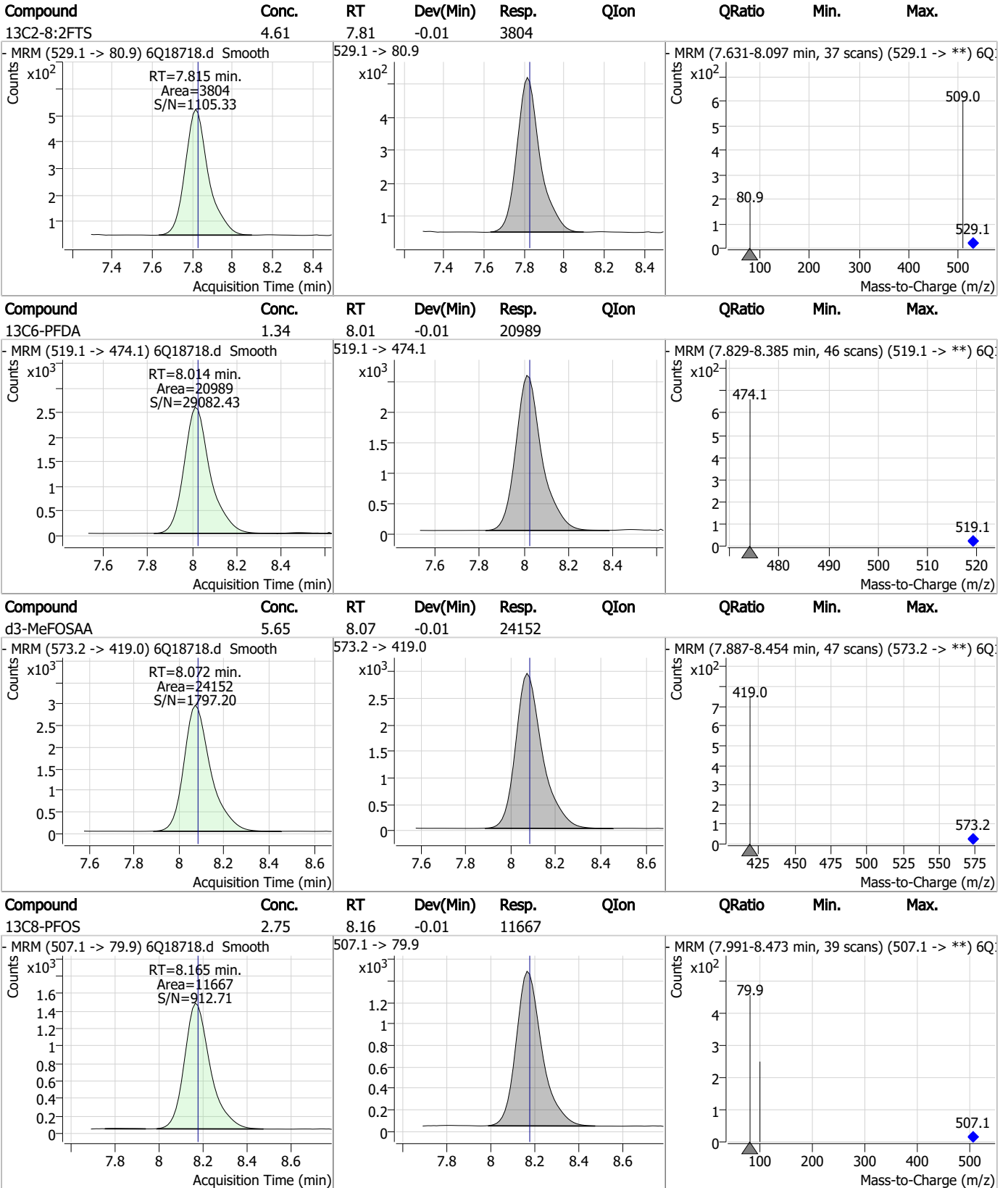


7.1.7

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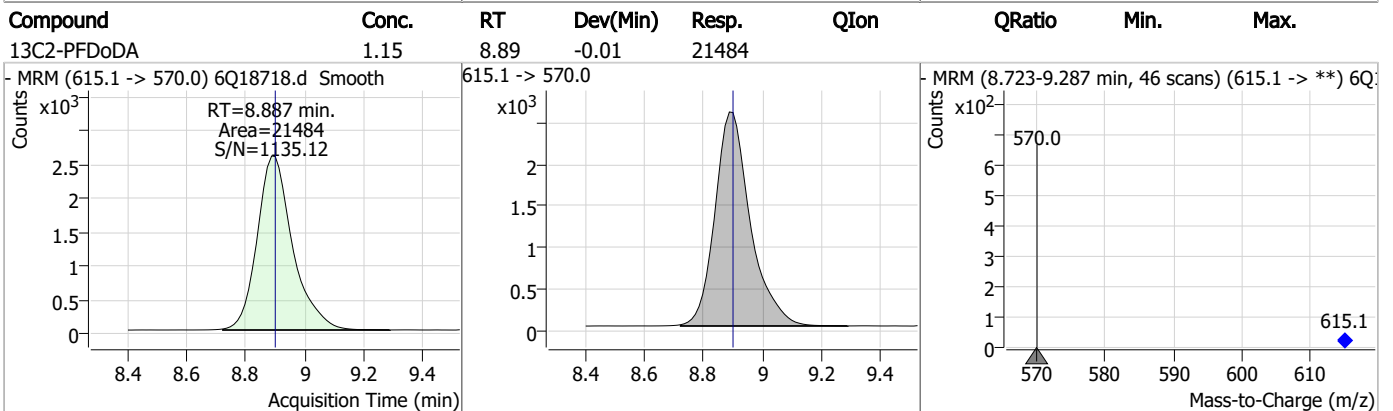
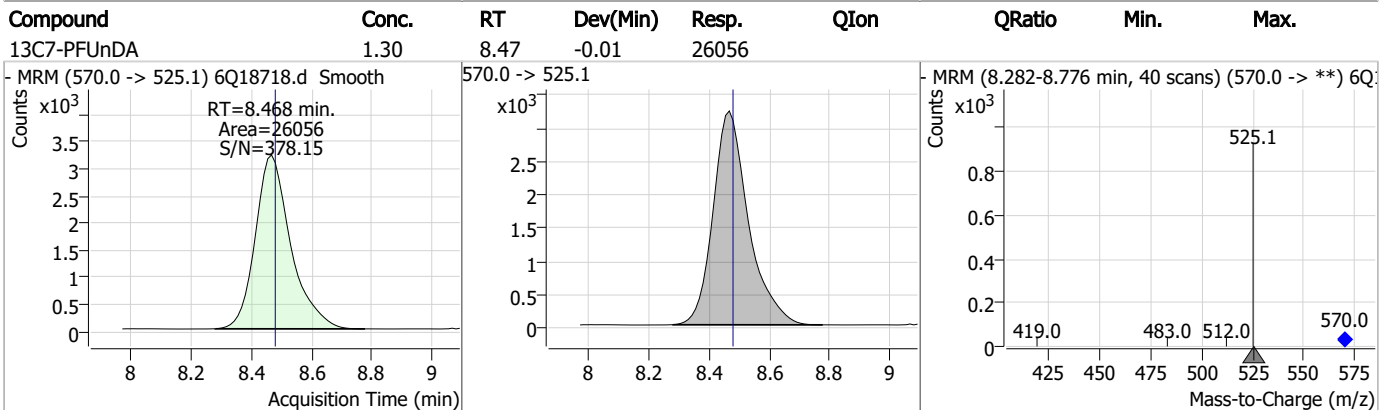
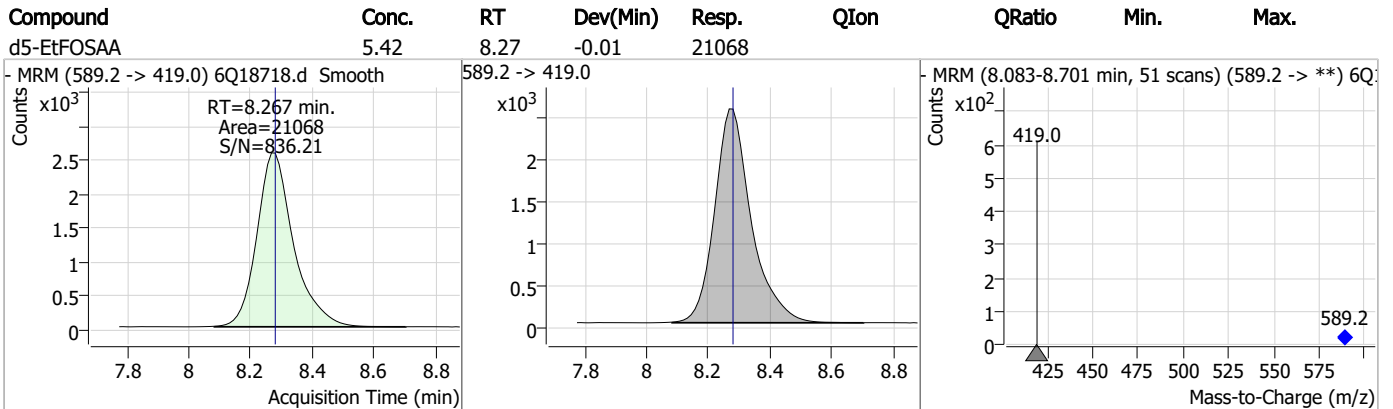
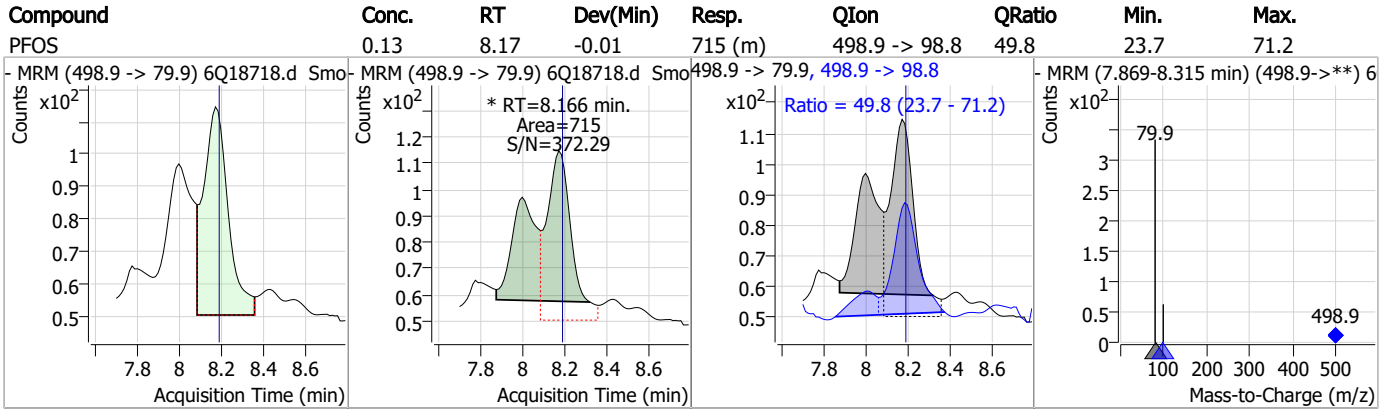


Perfluorinated Compounds by LC/MS/MS

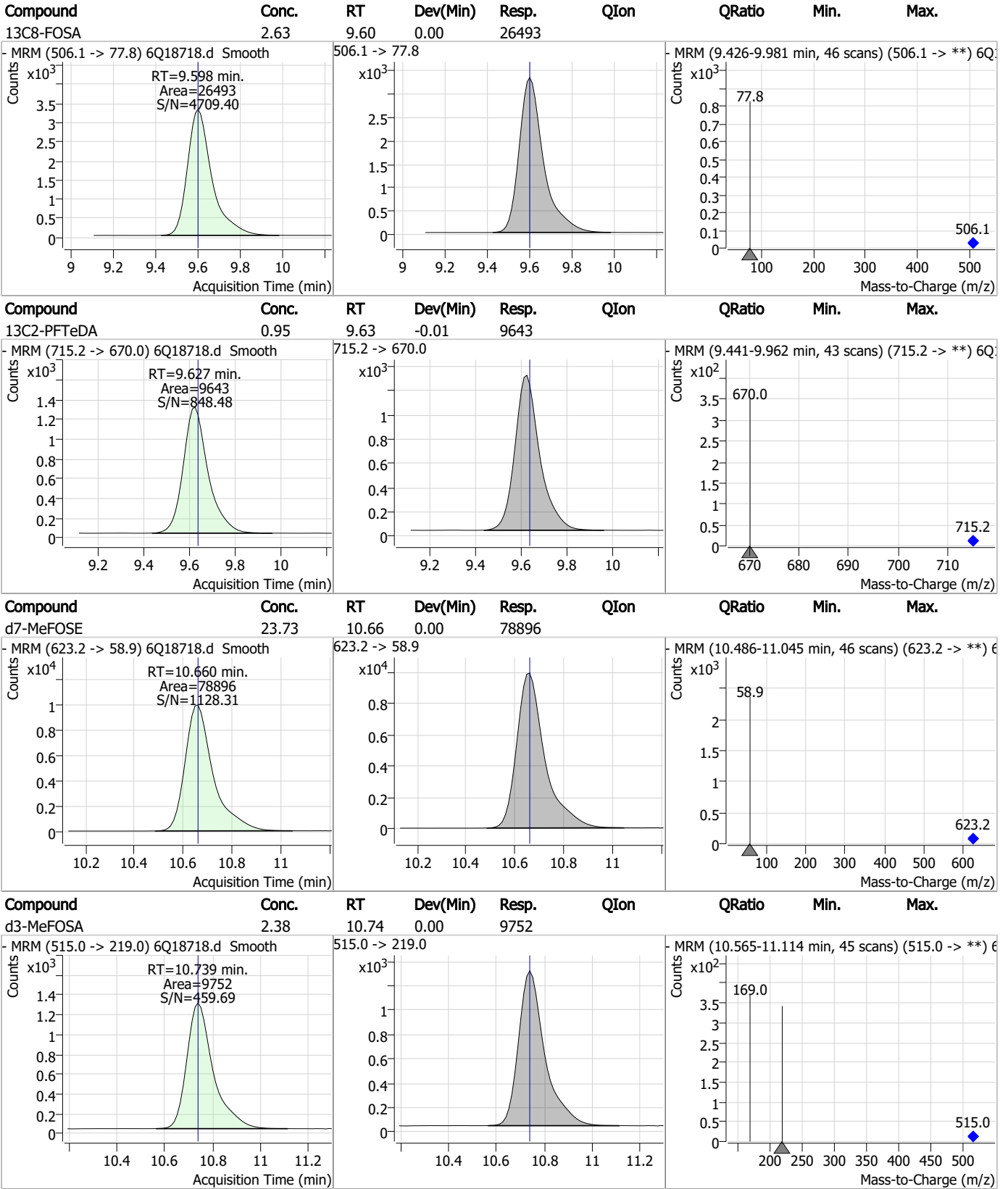


7.1.7
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

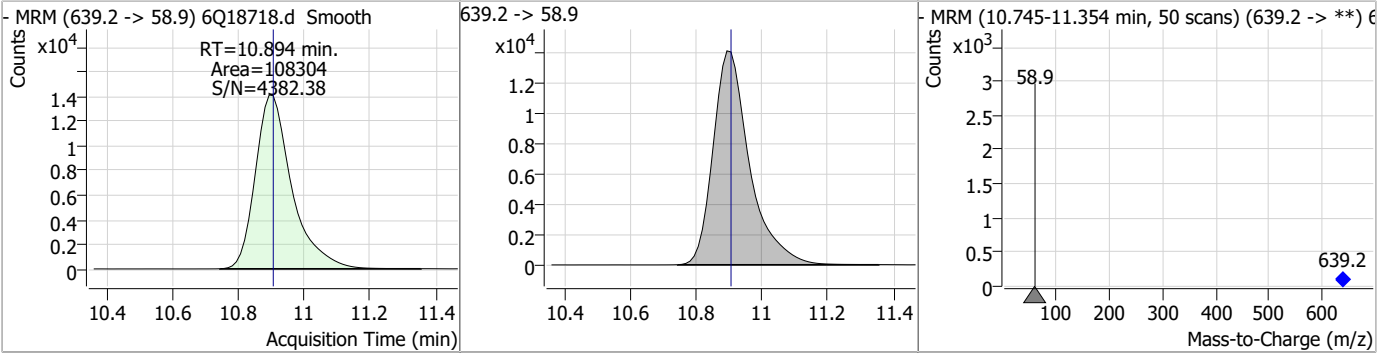


7.1.7

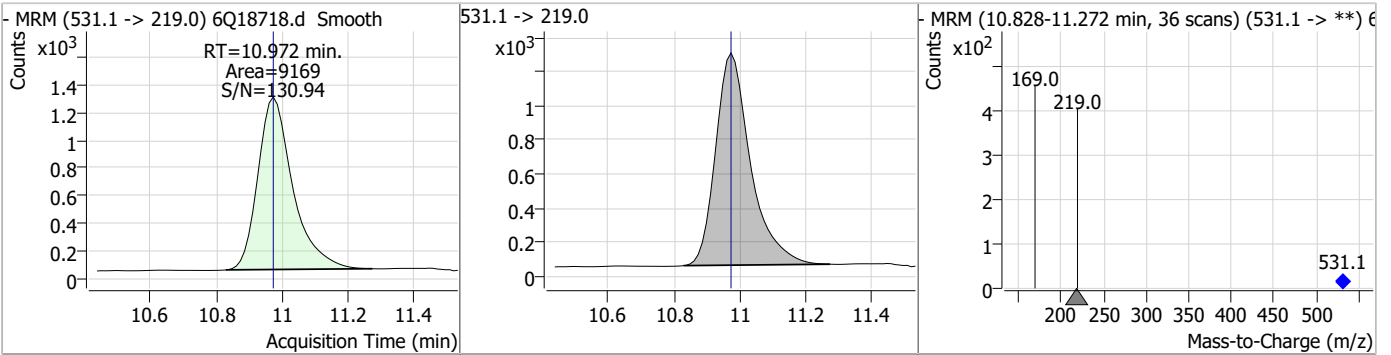
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.91	10.89	-0.01	108304				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.37	10.97	0.00	9169				



7.1.7
7



Manual Integration Approval Summary

Sample Number: FC6445-6 Method: EPA DRAFT 1633
Lab FileID: 6Q18718.D Analyst approved: 06/05/23 12:52 Martha Valls
Injection Time: 06/02/23 01:30 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.37	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.1.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18719.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 1:44:56 AM
 Sample Name : FC6445-7
 Vial : P3-D7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	146718	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	47283	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	50874	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	48643	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	73404	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	34626	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	20713	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	24875	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	22299	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	11716	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	25435	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	18902	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11932	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11068	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2991	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4637	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4183	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	21996	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	32072	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	19504	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	84776	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	114734	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	10019	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9584	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	13008	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	55415	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8079	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	71550	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	24695	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	37311	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	44525	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2991	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4637	5.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4183	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-PFDoDA	8.887	615.1 -> 570.0	22299	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11716	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFBS	5.334	302.1 -> 79.9	18902	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	11932	2.64 µg/L	0.000

7.18
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C4-PFBA	2.860	216.8 -> 171.9	146718	11.12 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C4-PFHpA	6.369	367.1 -> 322.0	48643	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C5-PFHxA	5.417	318.0 -> 273.0	50874	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C5-PFPeA	4.222	268.3 -> 223.0	47283	5.46 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C6-PFDA	8.014	519.1 -> 474.1	20713	1.43 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	24875	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C8-FOSA	9.598	506.1 -> 77.8	25435	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOA	7.026	421.1 -> 376.0	73404	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C8-PFOS	8.177	507.1 -> 79.9	11068	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C9-PFNA	7.545	472.1 -> 427.0	34626	1.41 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.7%	
d3-MeFOSAA	8.072	573.2 -> 419.0	21996	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	32072	10.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	9584	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
d5-EtFOSAA	8.267	589.2 -> 419.0	19504	5.11 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	84776	25.95 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	114734	26.85 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	10019	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	

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7

Target Compounds	RT	Transition	Response	Conc. Units	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)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	4.339	498.9 -> 98.8	0	µg/L	m	1
		263.0 -> 219.0				
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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

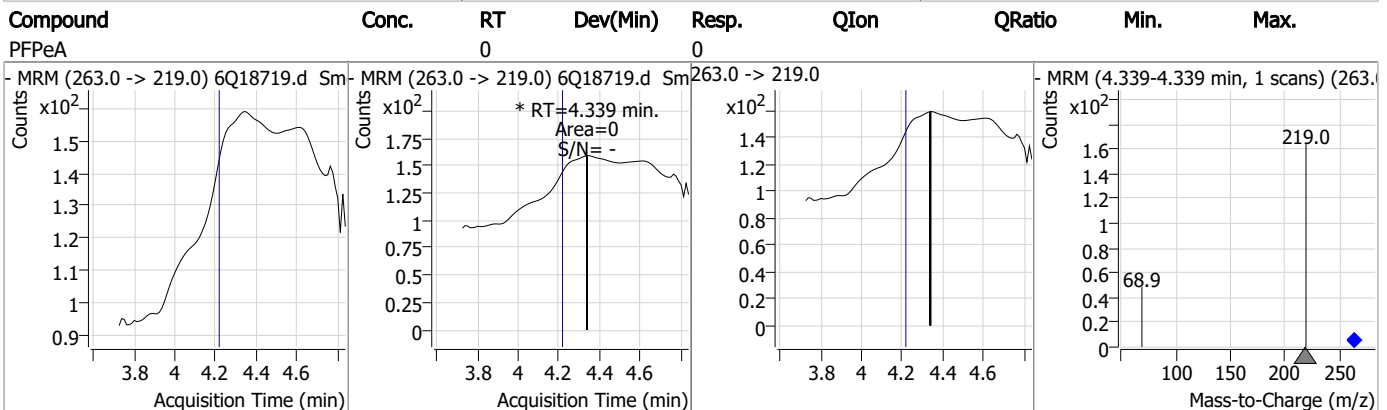
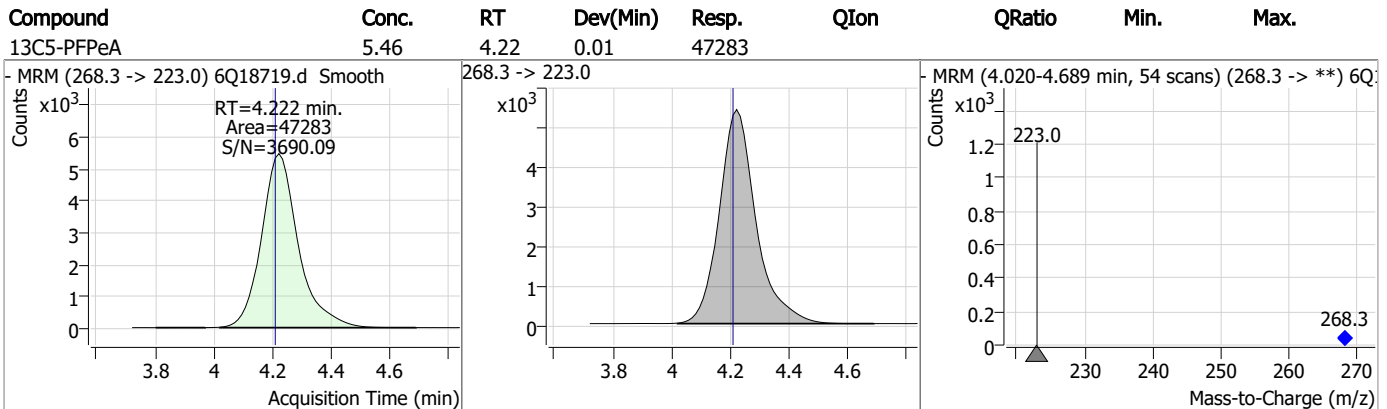
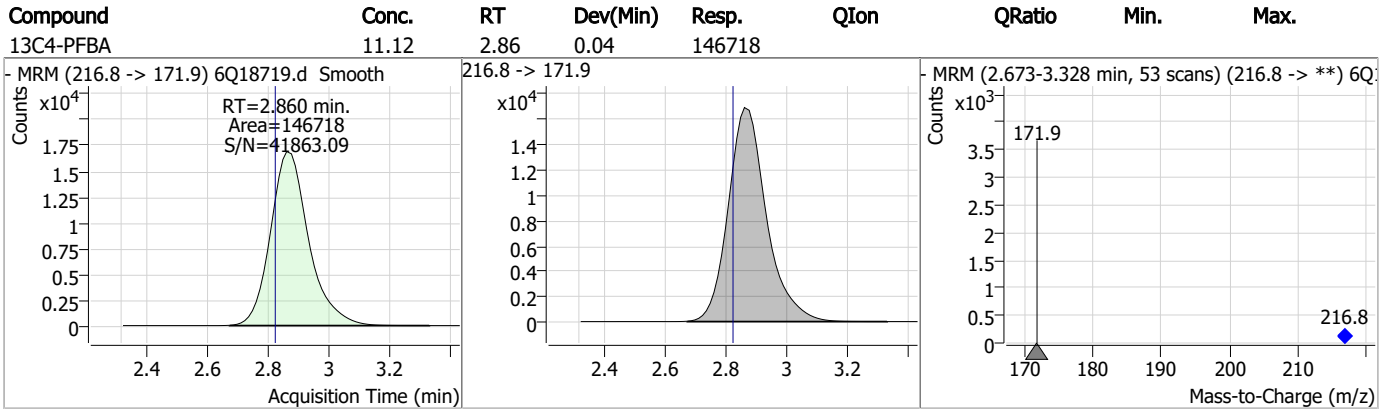
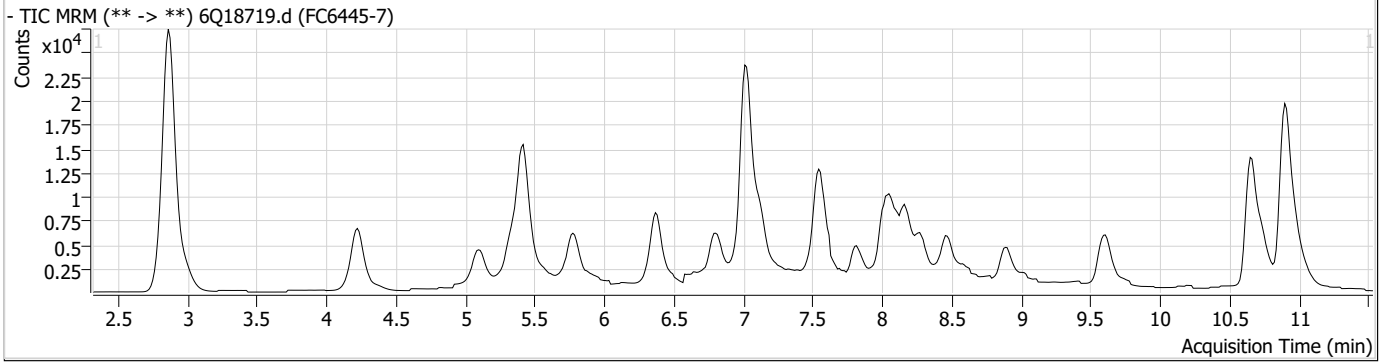
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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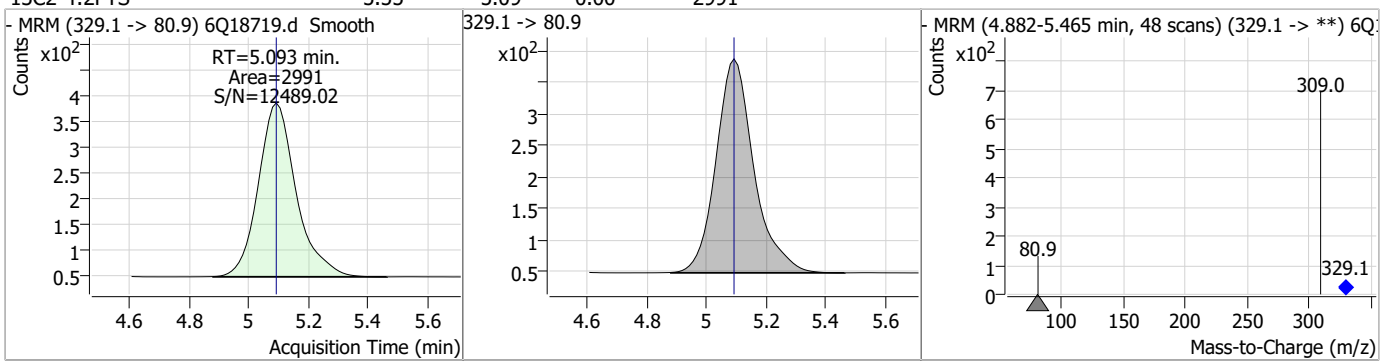
7.1.8
7

Perfluorinated Compounds by LC/MS/MS

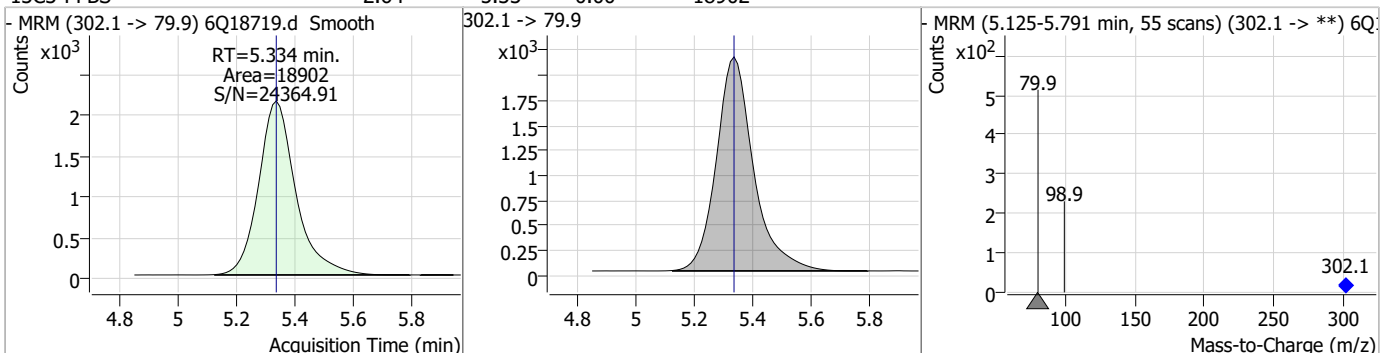


Perfluorinated Compounds by LC/MS/MS

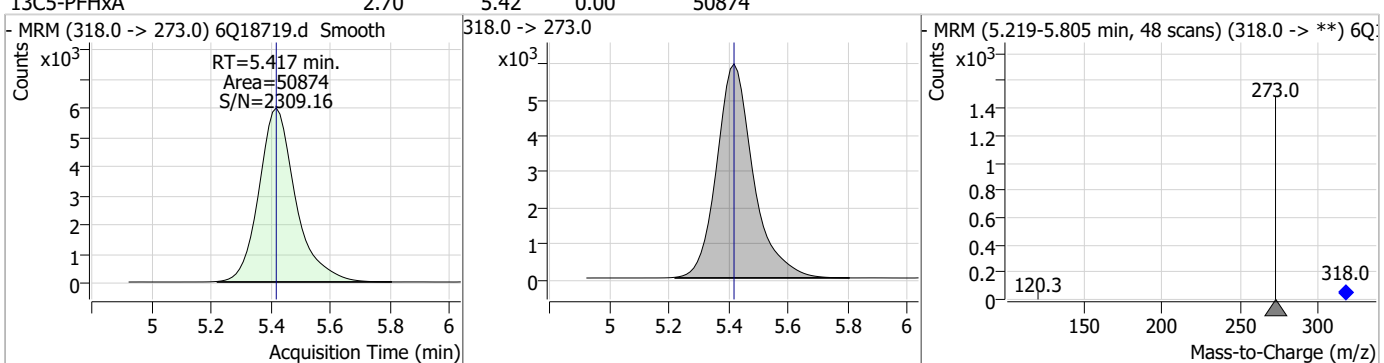
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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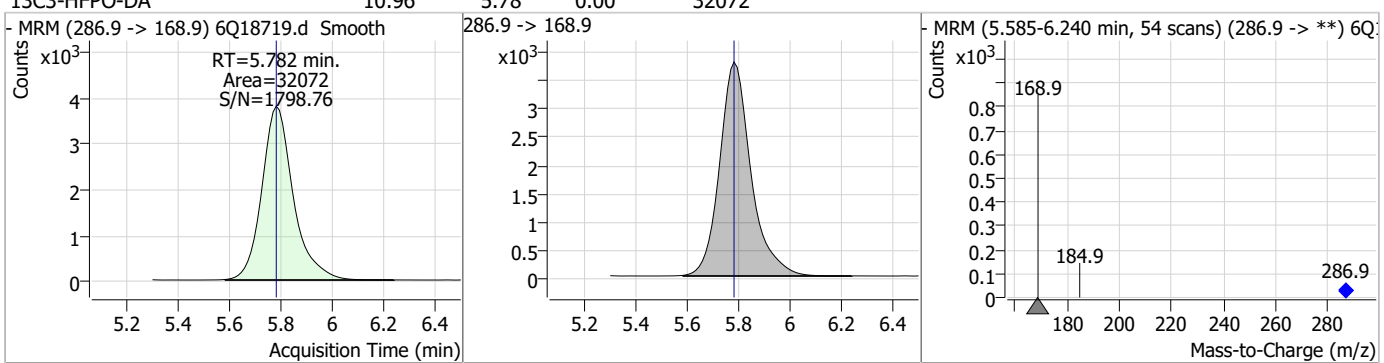
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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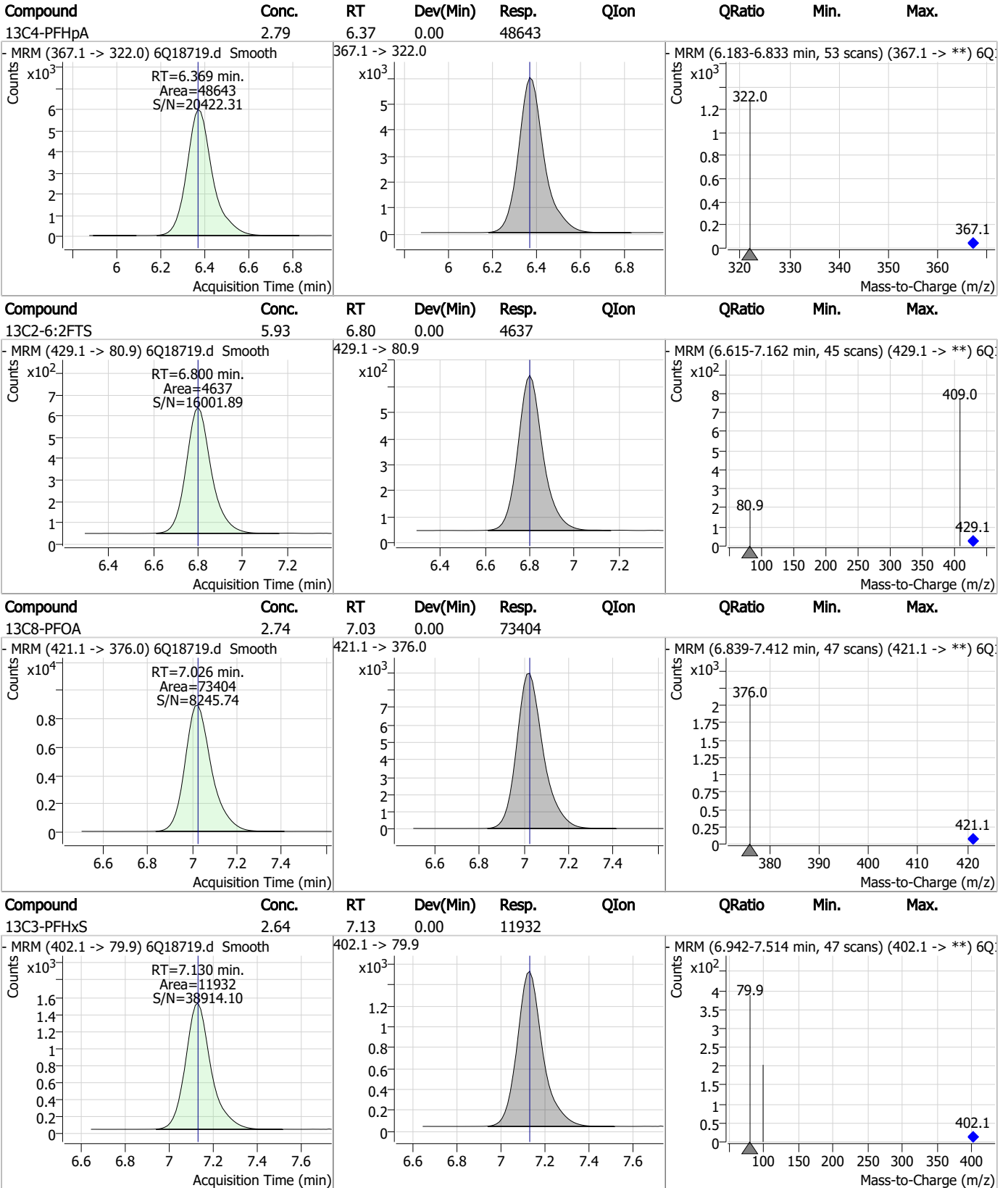


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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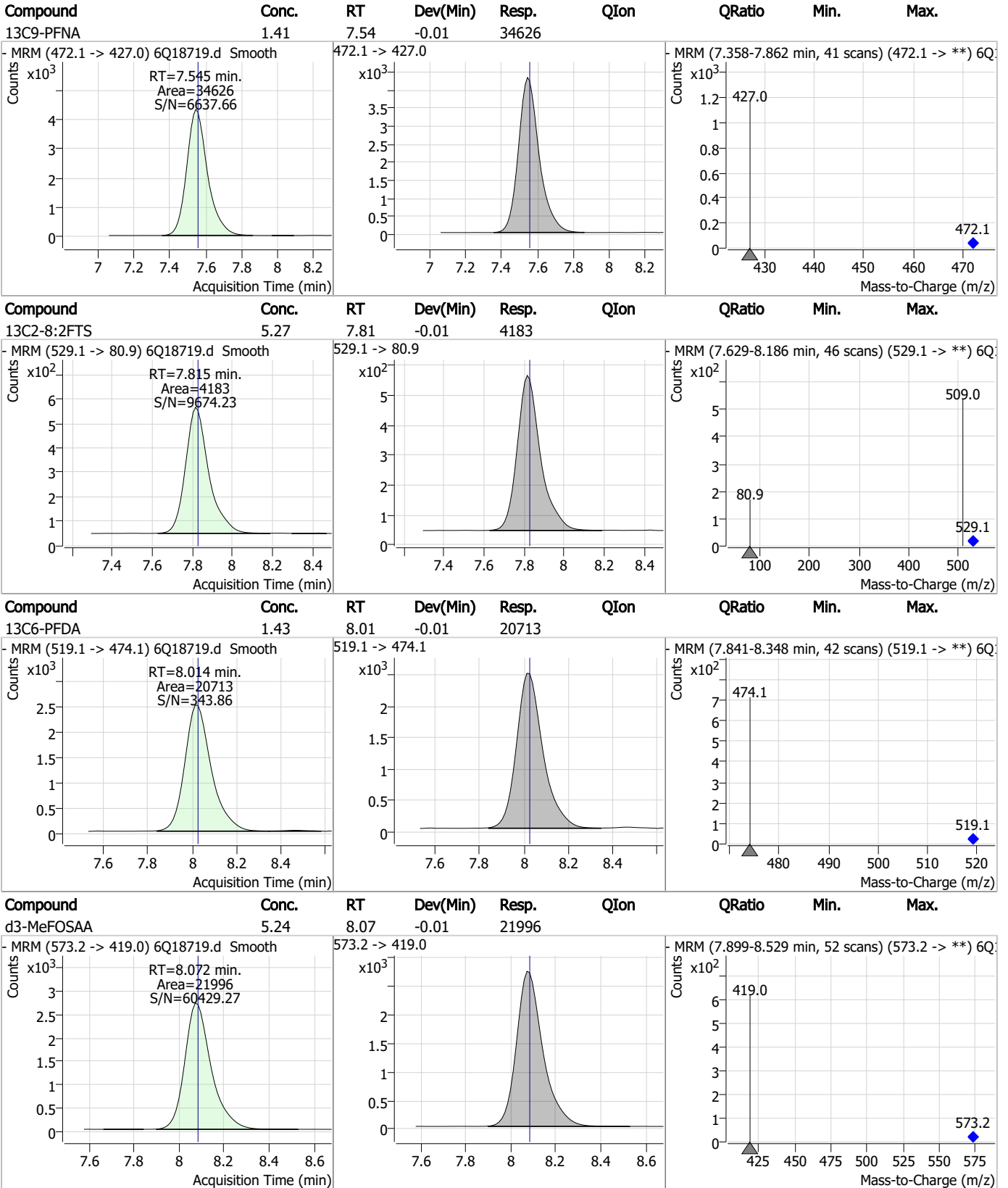


7.1.8

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

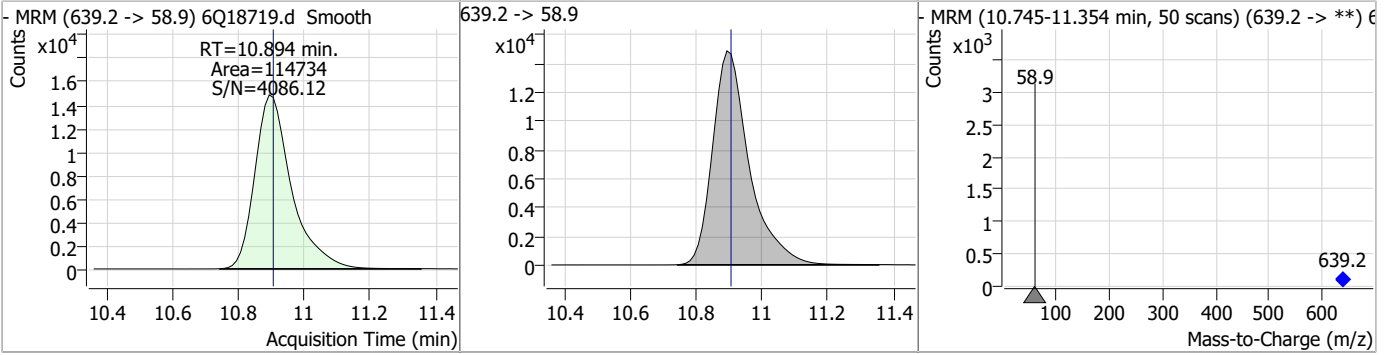
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.66	8.18	0.00	11068				
d5-EtFOSAA	5.11	8.27	-0.01	19504				
13C7-PFUnDA	1.35	8.47	-0.01	24875				
13C2-PFDoDA	1.30	8.89	-0.01	22299				

Perfluorinated Compounds by LC/MS/MS

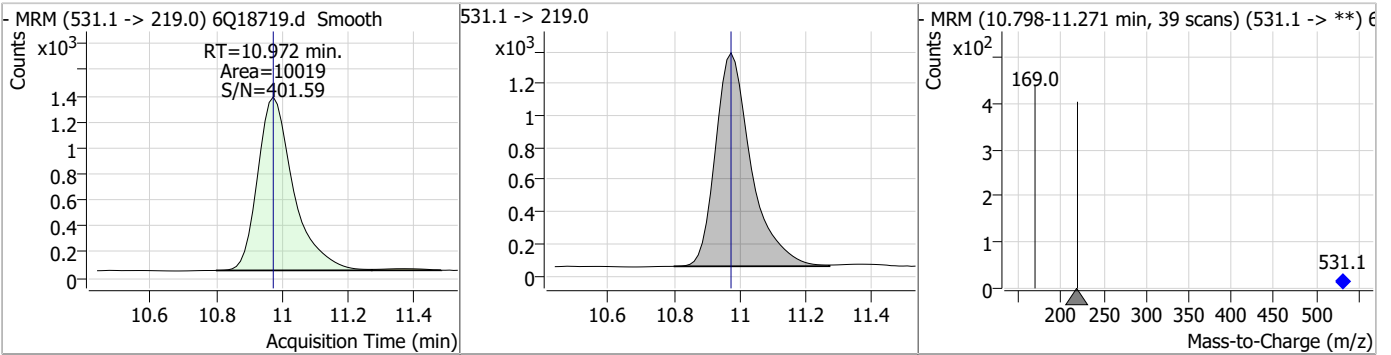
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.57	9.60	0.00	25435				
13C2-PFTeDA	1.26	9.63	-0.01	11716				
d7-MeFOSE	25.95	10.65	-0.01	84776				
d3-MeFOSA	2.38	10.74	0.00	9584				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.85	10.89	-0.01	114734				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.63	10.97	0.00	10019				



7.1.8

7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18703.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:53:14 PM
 Sample Name : op97143-mb
 Vial : P3-C2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	154791	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	50043	5.00 µg/L	0.012
M5-PFHxA	5.404	318.0 -> 273.0	54169	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	52610	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	83066	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	35464	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	20857	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	27604	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25195	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	13591	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	21099	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	20540	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	12623	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	11903	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3255	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	4837	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	4996	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	26106	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34369	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22263	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	67270	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	105410	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9915	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	9370	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	12889	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	55482	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8015	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	71955	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	24494	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	39306	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	42600	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3255	6.09 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.8%		
13C2-6:2FTS	6.788	429.1 -> 80.9	4837	6.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4996	6.35 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.9%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25195	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	13591	1.47 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 117.5%		
13C3-PFBS	5.322	302.1 -> 79.9	20540	2.90 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.8%		
13C3-PFHxS	7.118	402.1 -> 79.9	12623	2.82 µg/L	-0.012

7.2.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C4-PFBA	2.860	216.8 -> 171.9	154791	11.71 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	52610	3.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 126.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	54169	3.00 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.2%	
13C5-PFPeA	4.222	268.3 -> 223.0	50043	6.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.8%	
13C6-PFDA	8.014	519.1 -> 474.1	20857	1.45 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27604	1.51 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.6%	
13C8-FOSA	9.598	506.1 -> 77.8	21099	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.9%	
13C8-PFOA	7.026	421.1 -> 376.0	83066	3.08 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.3%	
13C8-PFOS	8.177	507.1 -> 79.9	11903	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.3%	
13C9-PFNA	7.545	472.1 -> 427.0	35464	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	26106	6.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 125.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34369	12.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	9370	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22263	5.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	67270	20.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
d9-EtFOSE	10.894	639.2 -> 58.9	105410	24.90 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	9915	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	

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.	

7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
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.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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



7.2.1
7

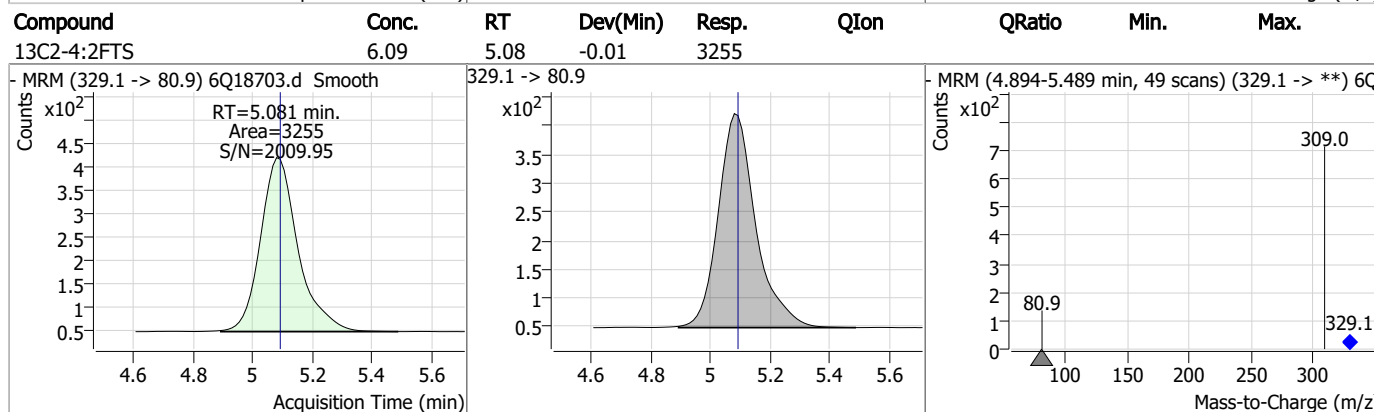
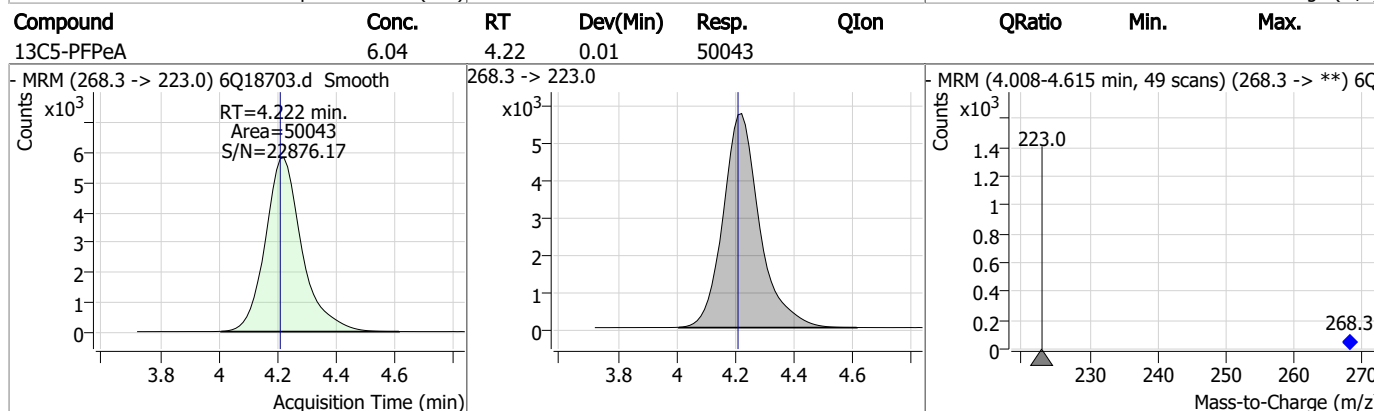
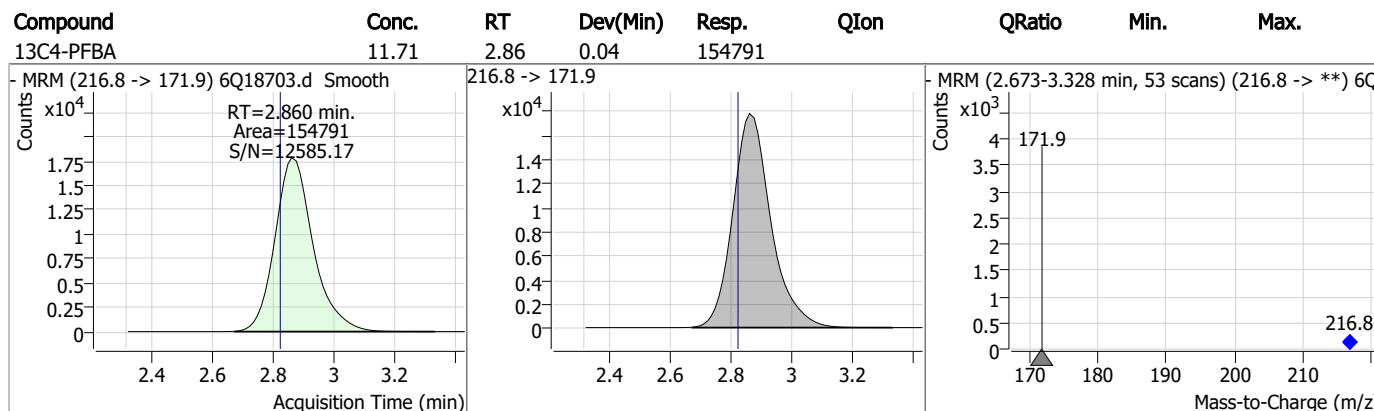
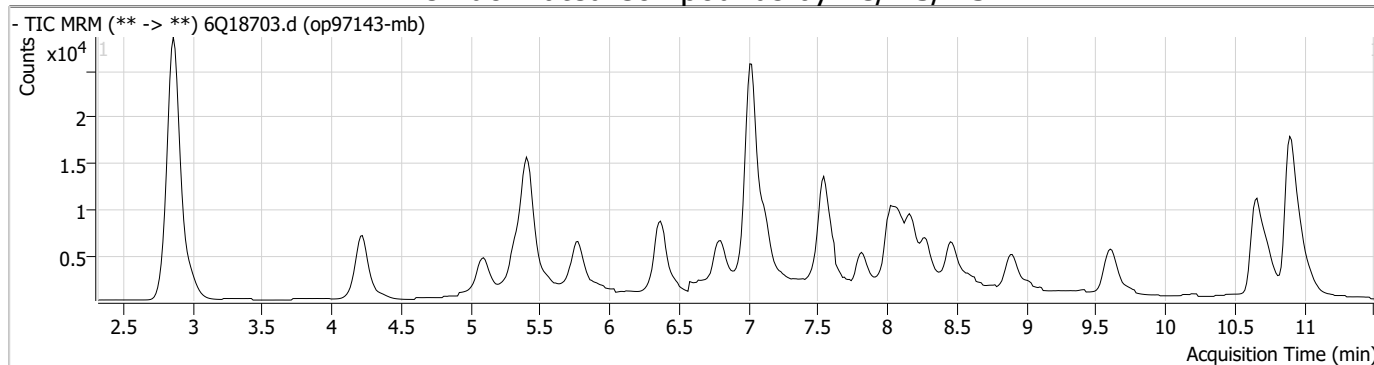
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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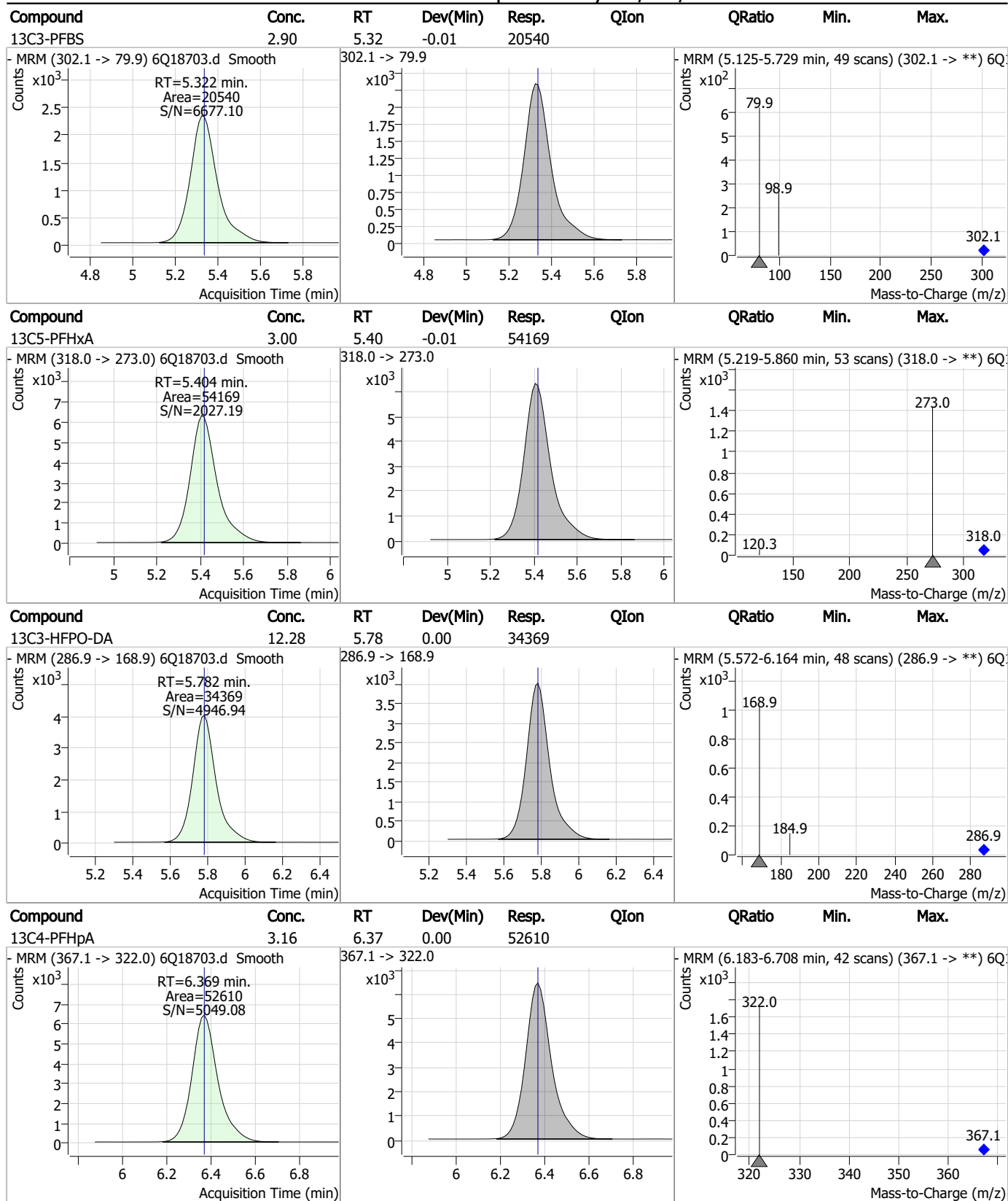
7.2.1

7

Perfluorinated Compounds by LC/MS/MS



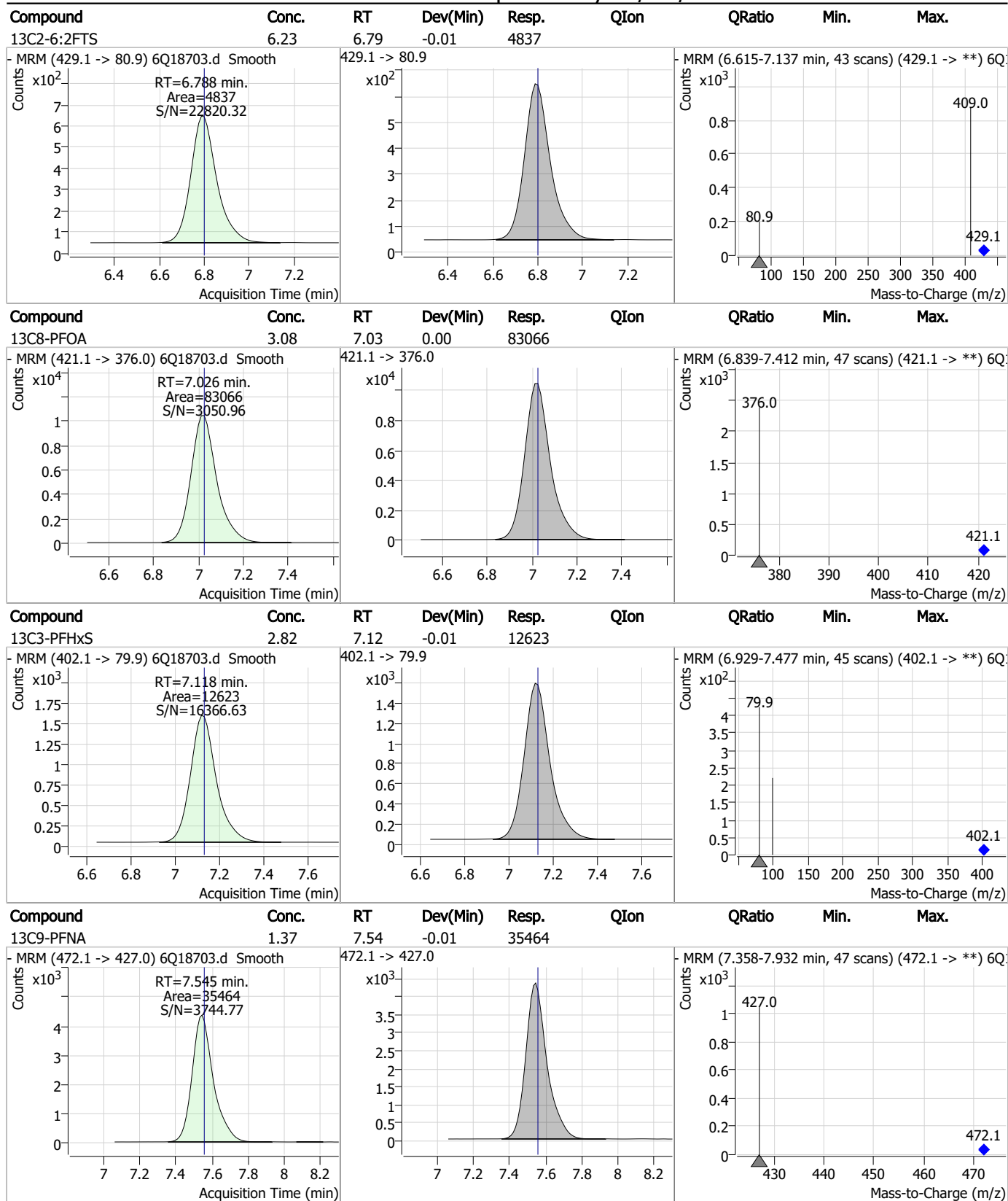
Perfluorinated Compounds by LC/MS/MS



7.2.1
7

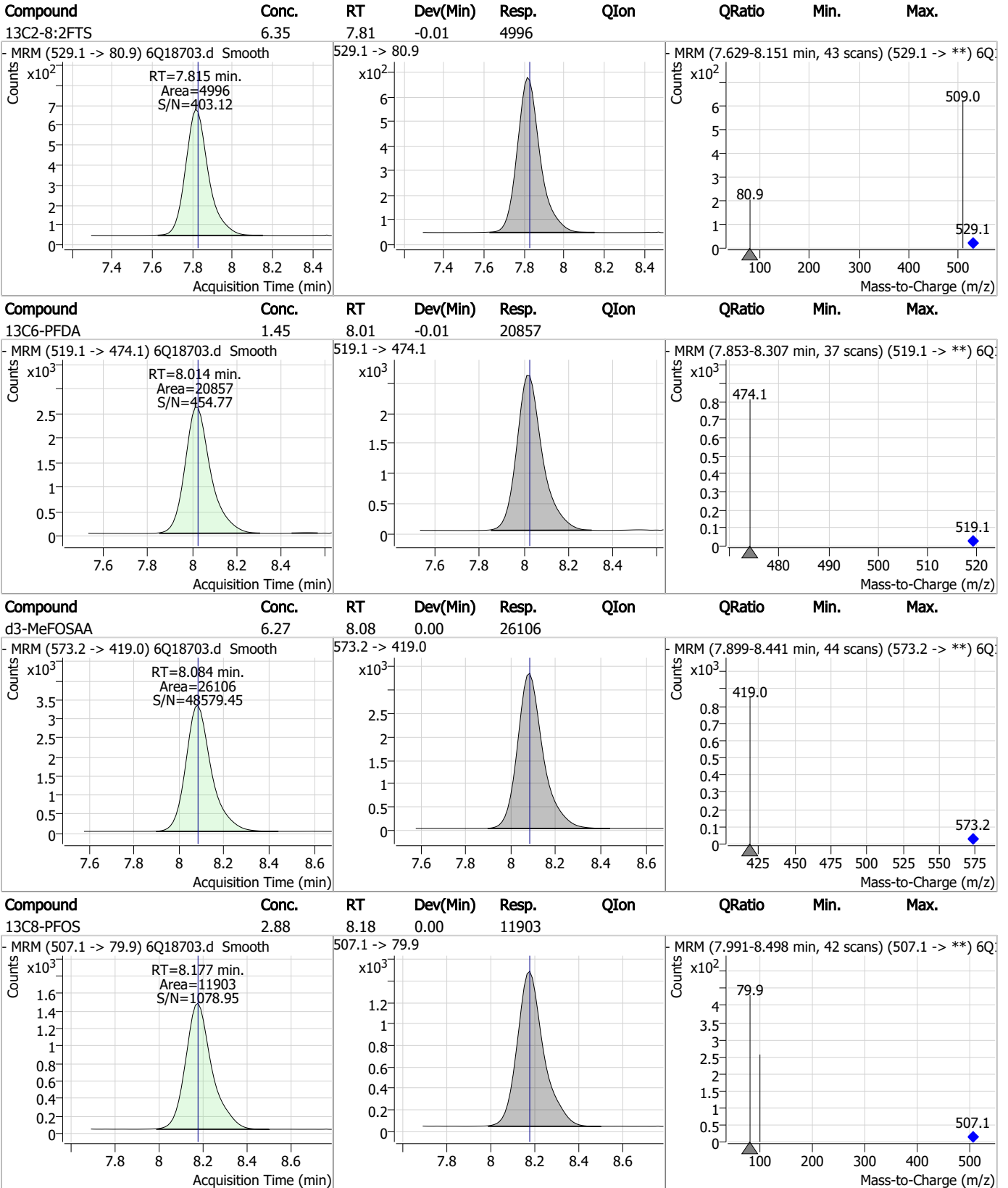


Perfluorinated Compounds by LC/MS/MS



7.2.1

Perfluorinated Compounds by LC/MS/MS

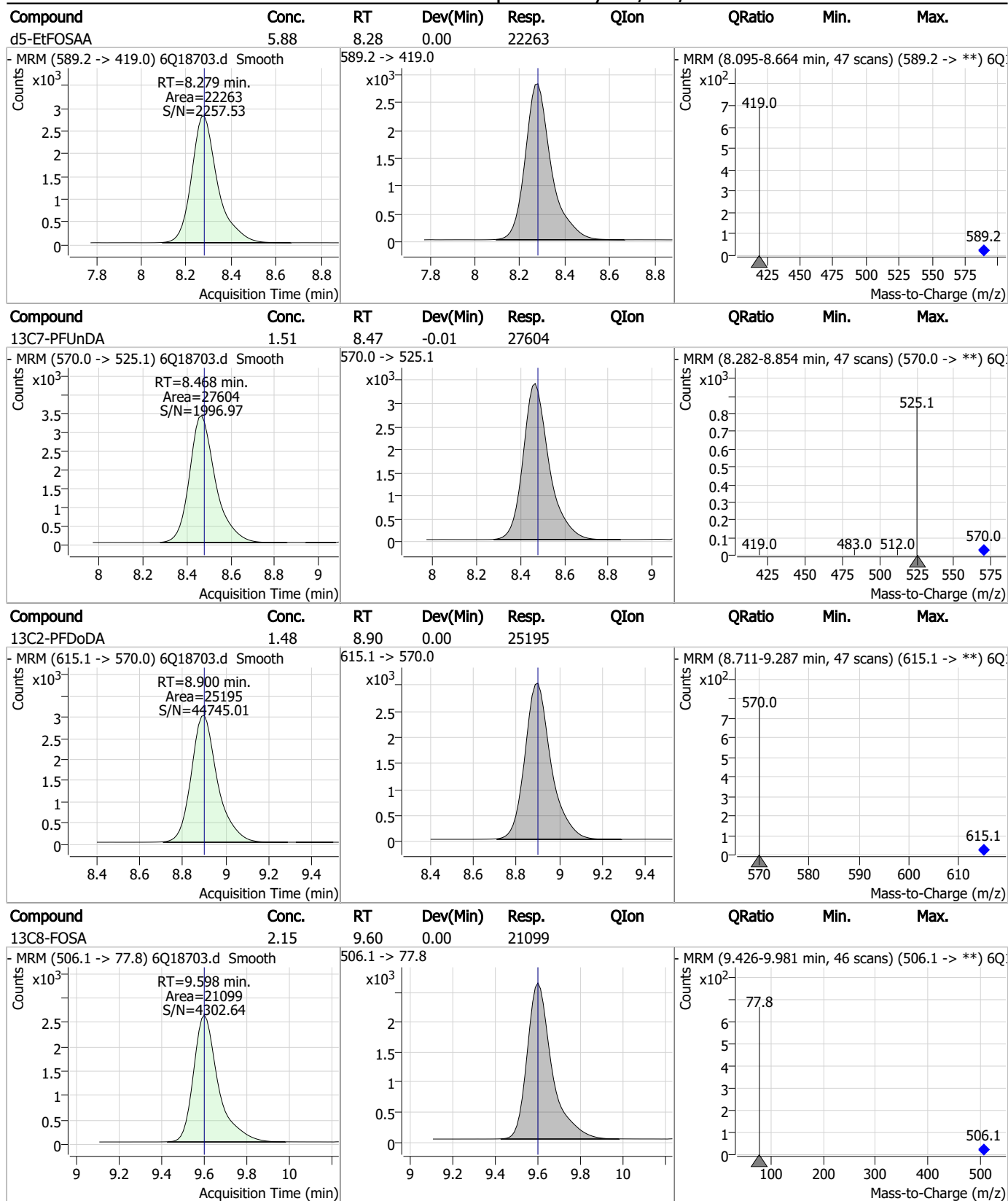


7.2.1

7



Perfluorinated Compounds by LC/MS/MS



7.2.1
7

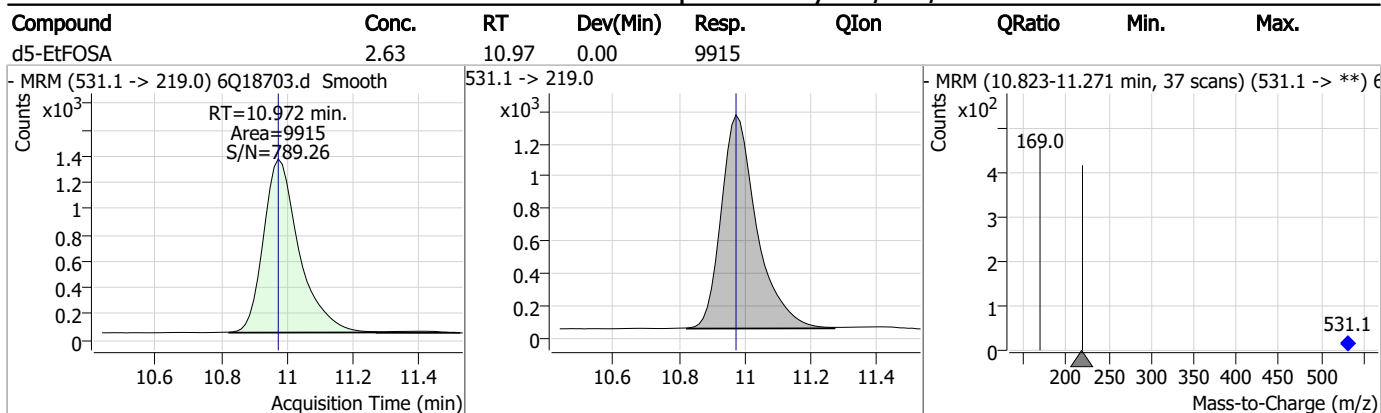


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.47	9.63	-0.01	13591				
d7-MeFOSE	20.78	10.66	0.00	67270				
d3-MeFOSA	2.35	10.74	0.00	9370				
d9-EtFOSE	24.90	10.89	-0.01	105410				

7.2.1
7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19265.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 9:37:59 PM
 Sample Name : op97275-mb
 Vial : P2-B3
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	141084	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	46295	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	51160	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	46726	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	73643	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	35825	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	20607	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	27404	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	23249	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	11688	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	20581	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18173	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11471	2.50 µg/L	0.000
M8-PFOS	8.575	507.1 -> 79.9	10849	2.50 µg/L	0.012
M2-4:2FTS	5.454	329.1 -> 80.9	3249	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4903	5.00 µg/L	0.000
M2-8:2FTS	8.175	529.1 -> 80.9	3905	5.00 µg/L	0.012
M3-MeFOSAA	8.420	573.2 -> 419.0	28443	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	31001	10.00 µg/L	0.000
M5-EtFOSAA	8.628	589.2 -> 419.0	21430	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	78190	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	114946	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	9586	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	8821	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14645	2.50 µg/L	0.000
13C3-PFBA	3.101	216.0 -> 172.0	57001	5.00 µg/L	0.012
18O2-PFHxS	7.477	403.0 -> 83.9	8888	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	76706	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	28010	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	40607	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	47645	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3249	5.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.7%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4903	5.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.2%		
13C2-8:2FTS	8.175	529.1 -> 80.9	3905	4.95 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-PFDoDA	9.297	615.1 -> 570.0	23249	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	10.012	715.2 -> 670.0	11688	1.08 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.0%		
13C3-PFBS	5.746	302.1 -> 79.9	18173	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C3-PFHxS	7.478	402.1 -> 79.9	11471	2.43 µg/L	0.000

7.22
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C4-PFBA	3.097	216.8 -> 171.9	141084	10.54 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C4-PFHpA	6.707	367.1 -> 322.0	46726	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFHxA	5.792	318.0 -> 273.0	51160	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFPeA	4.560	268.3 -> 223.0	46295	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.387	519.1 -> 474.1	20607	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C7-PFUnDA	8.866	570.0 -> 525.1	27404	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-FOSA	9.674	506.1 -> 77.8	20581	1.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.9%	
13C8-PFOA	7.352	421.1 -> 376.0	73643	2.57 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-PFOS	8.575	507.1 -> 79.9	10849	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C9-PFNA	7.895	472.1 -> 427.0	35825	1.45 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.7%	
d3-MeFOSAA	8.420	573.2 -> 419.0	28443	5.18 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31001	9.49 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d3-MeFOSA	10.775	515.0 -> 219.0	8821	1.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.5%	
d5-EtFOSAA	8.628	589.2 -> 419.0	21430	4.62 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.5%	
d7-MeFOSE	10.685	623.2 -> 58.9	78190	14.55 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 58.2%	
d9-EtFOSE	10.930	639.2 -> 58.9	114946	17.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.5%	
d5-EtFOSA	10.996	531.1 -> 219.0	9586	2.03 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.3%	

7.22
7

Target Compounds	RT	Transition	Response	Conc. Units	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	9.697	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0	0		
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.787	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.2
7

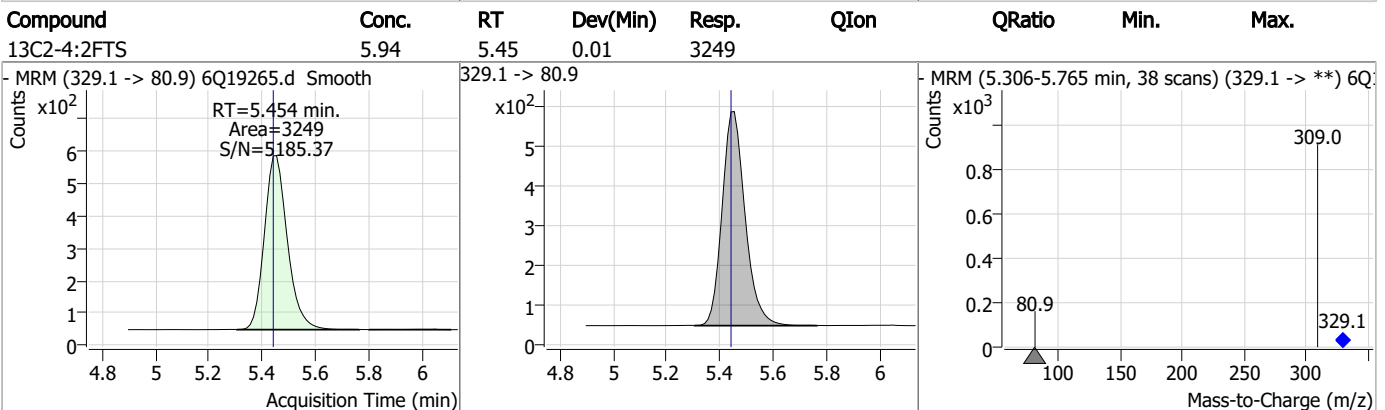
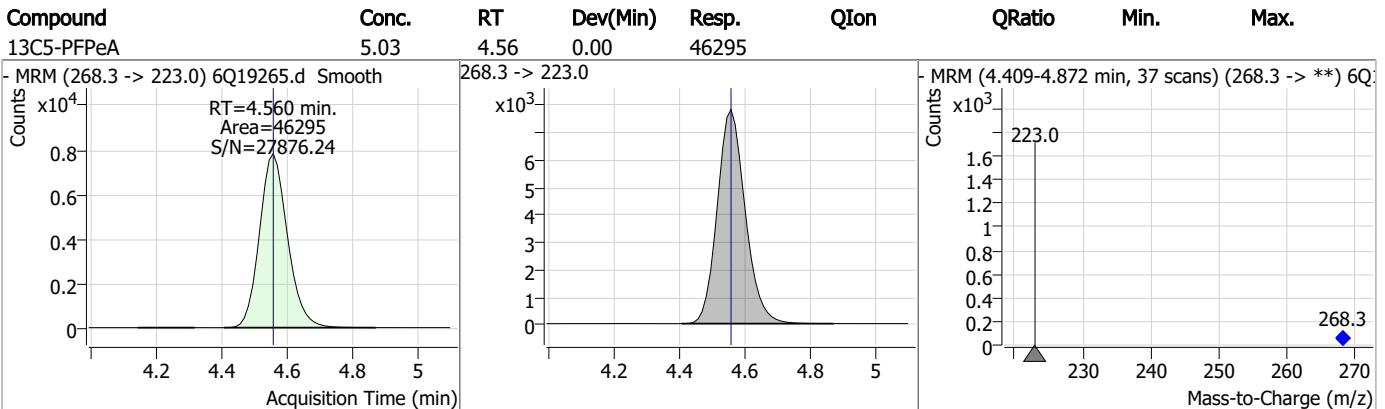
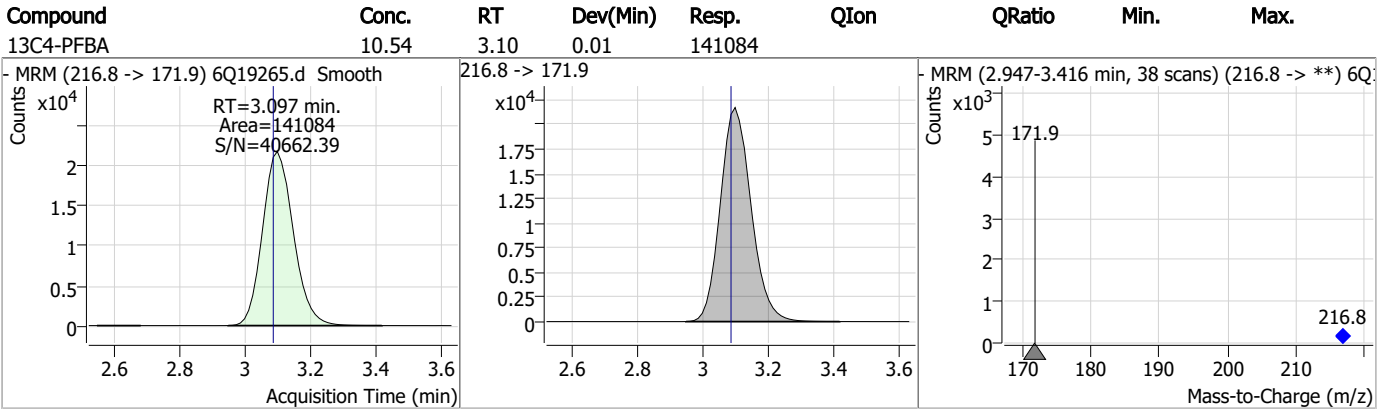
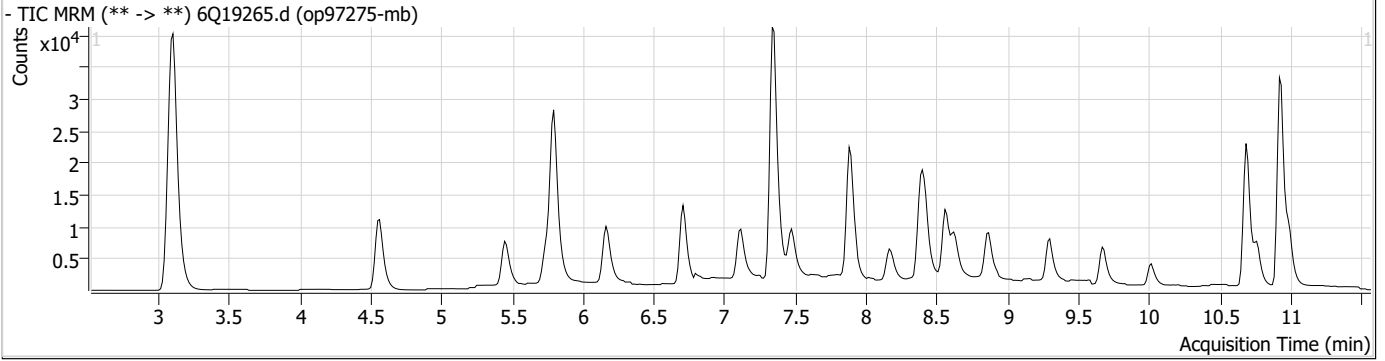
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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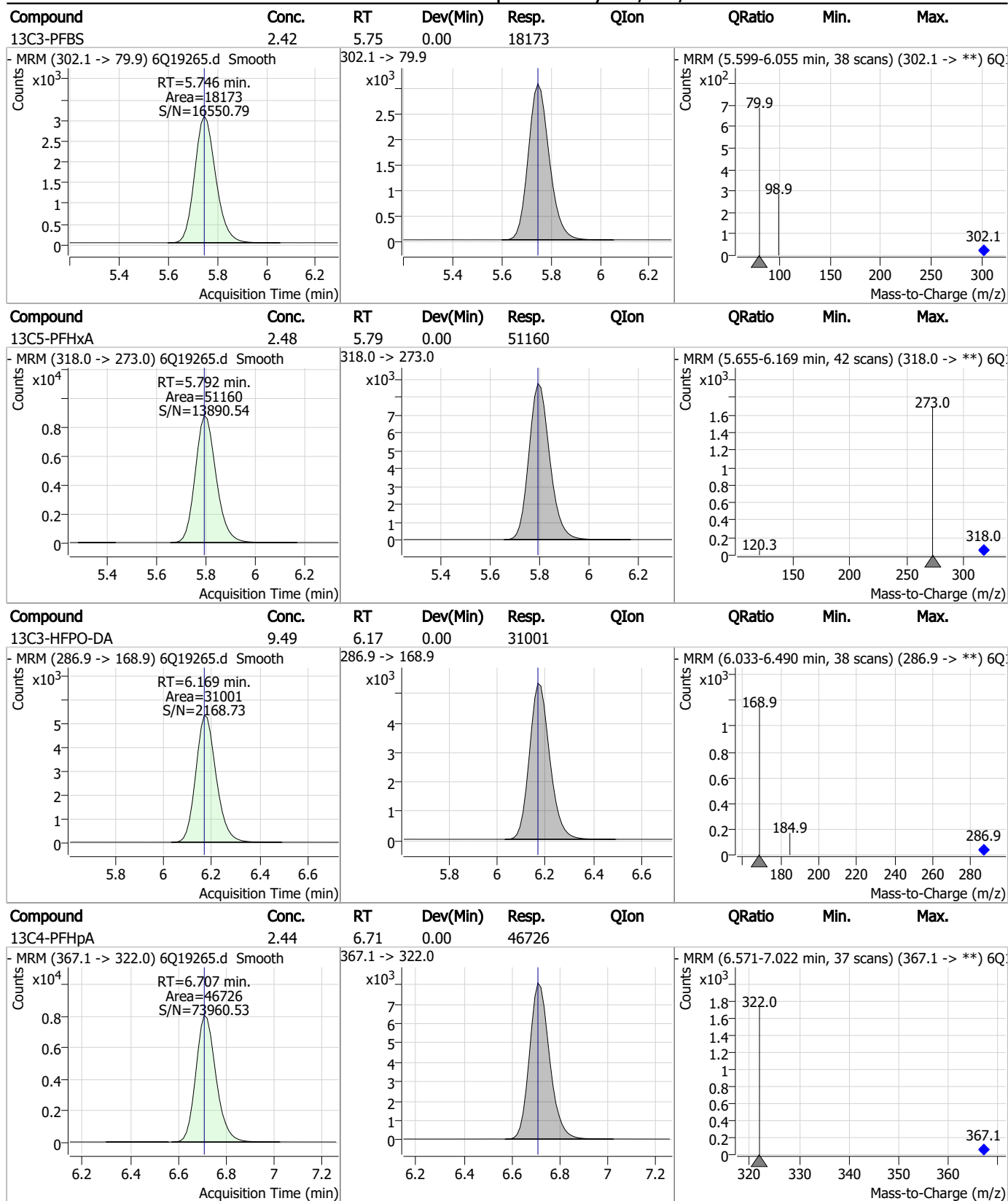
7.2.2

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Perfluorinated Compounds by LC/MS/MS

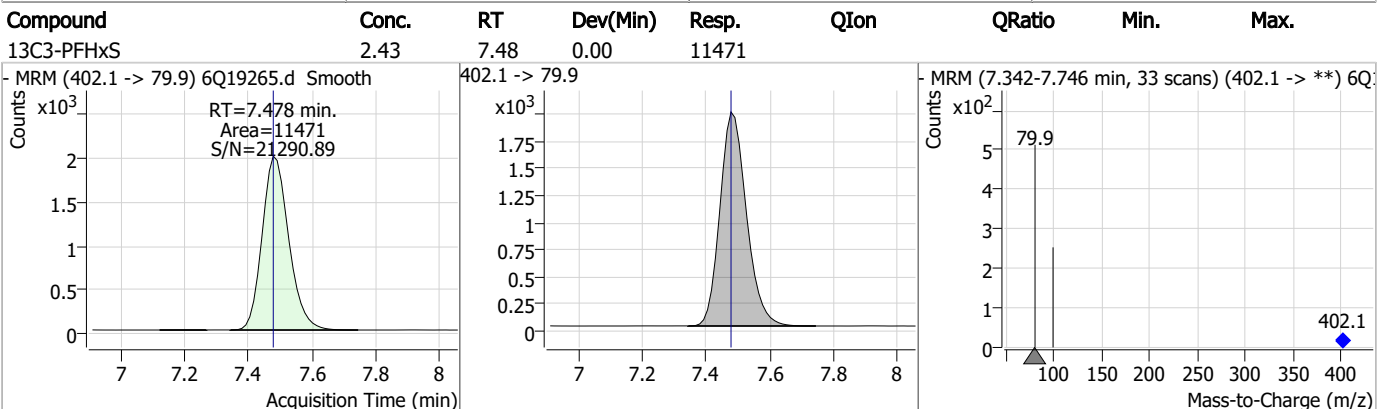
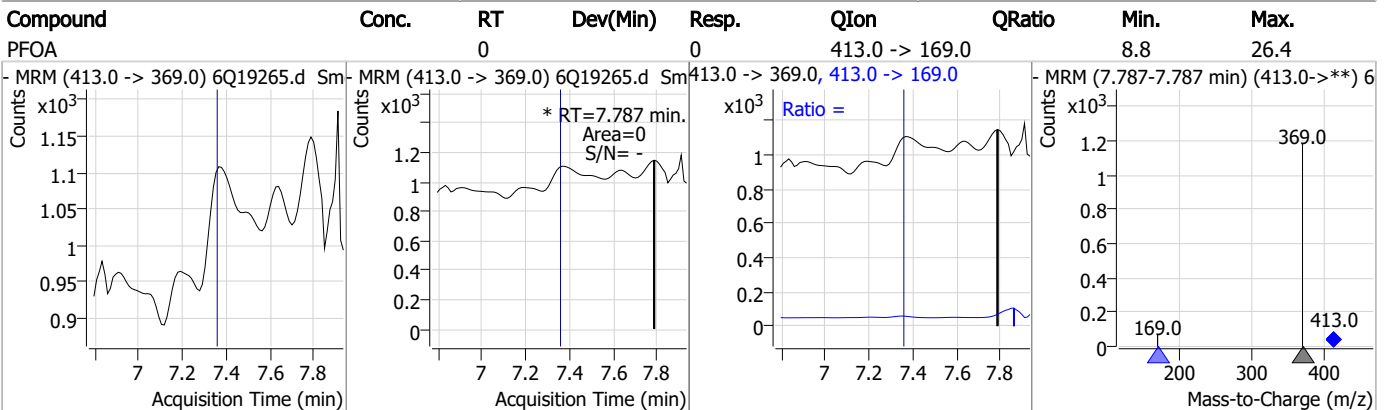
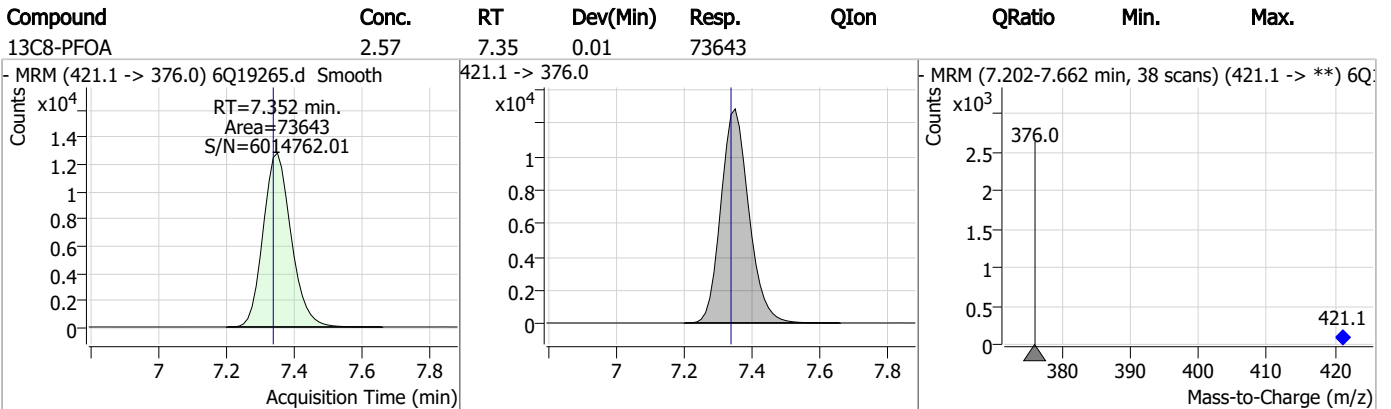
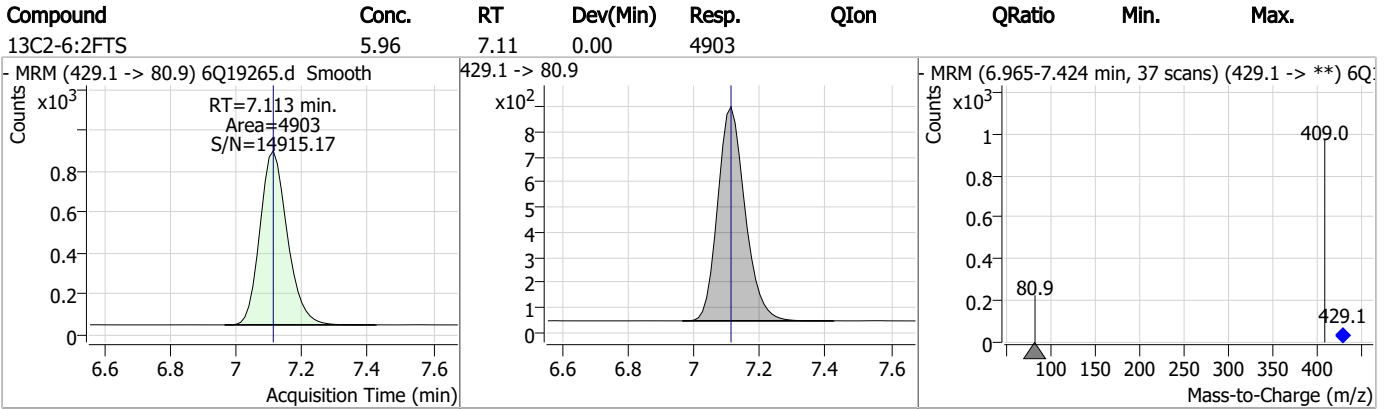


Perfluorinated Compounds by LC/MS/MS

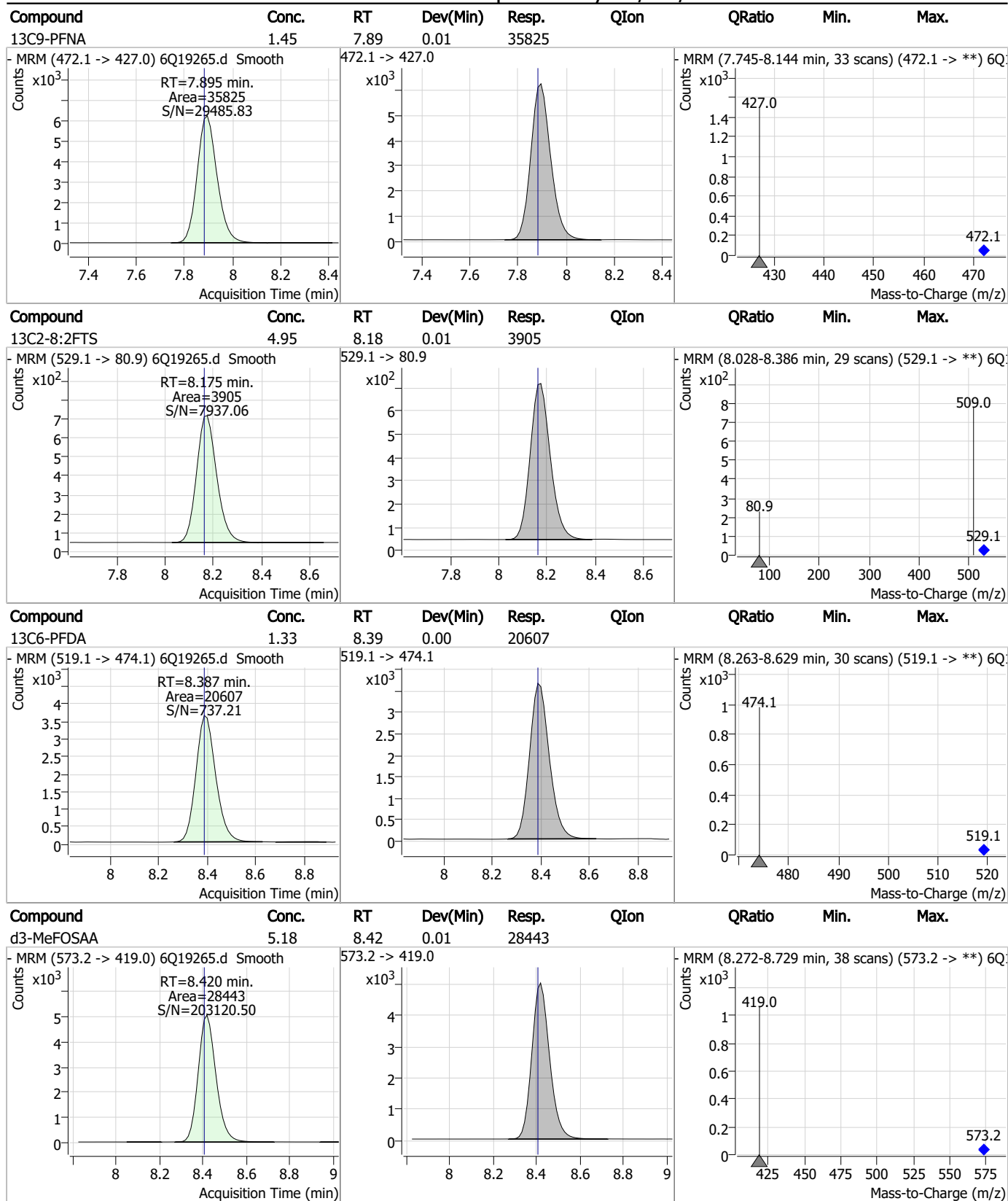


7.2.2
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Perfluorinated Compounds by LC/MS/MS

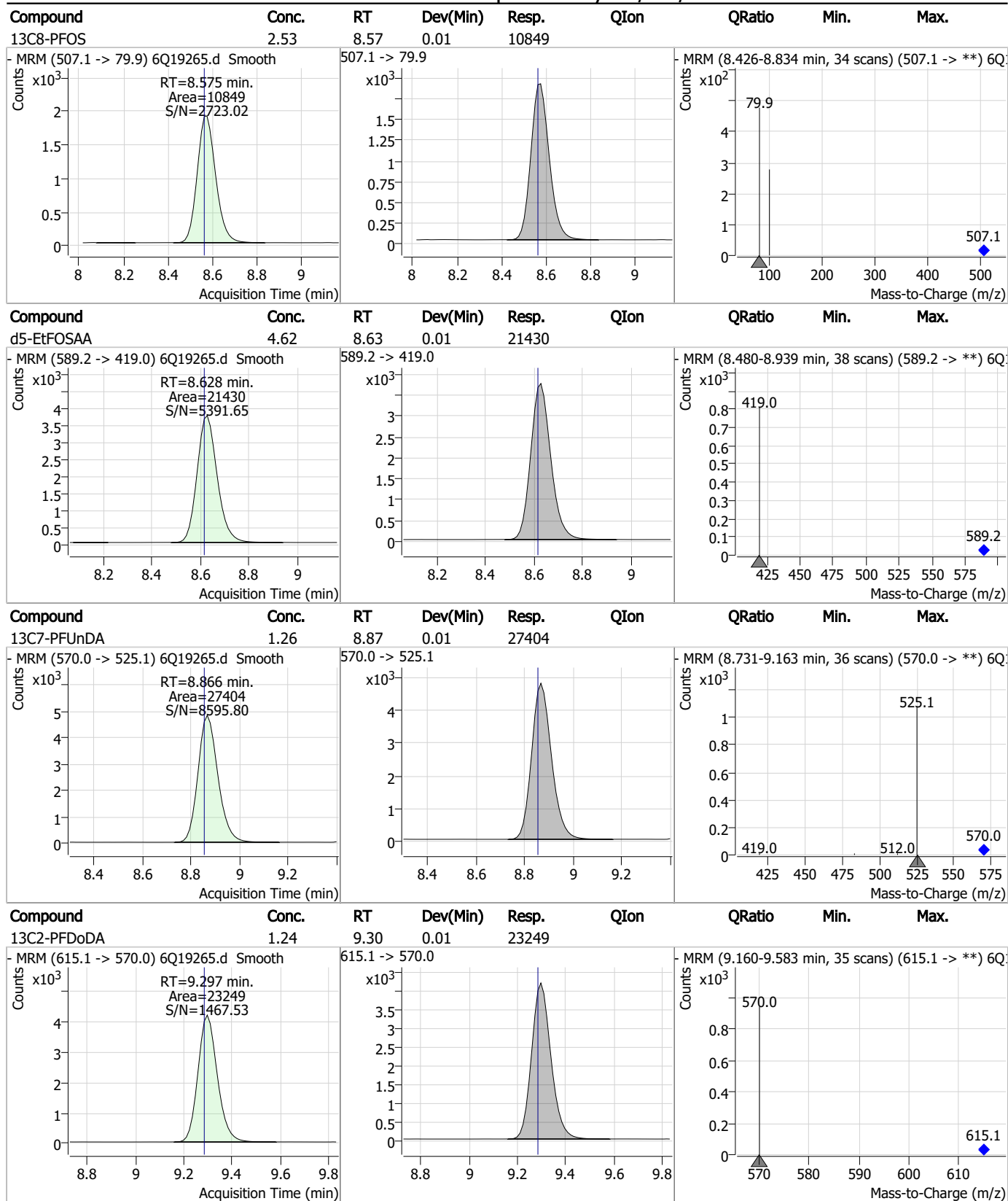


Perfluorinated Compounds by LC/MS/MS



7.2.2
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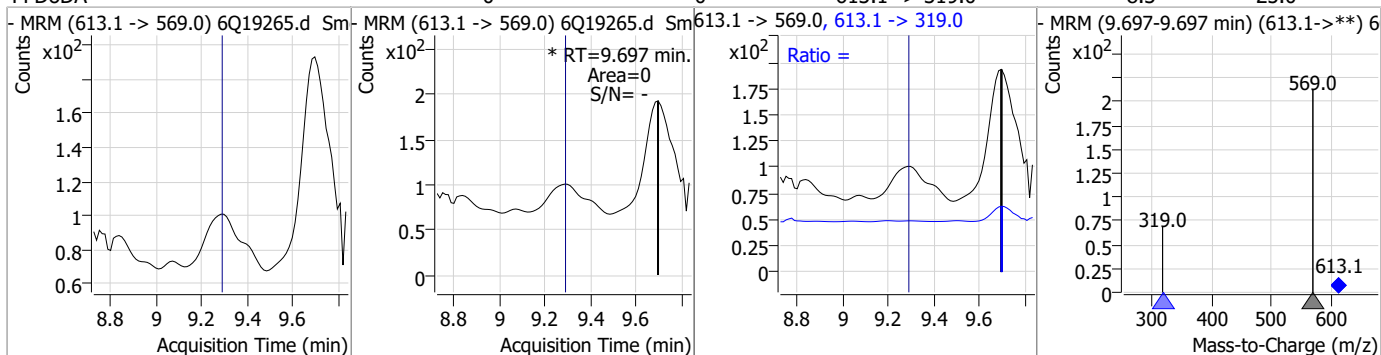
Perfluorinated Compounds by LC/MS/MS



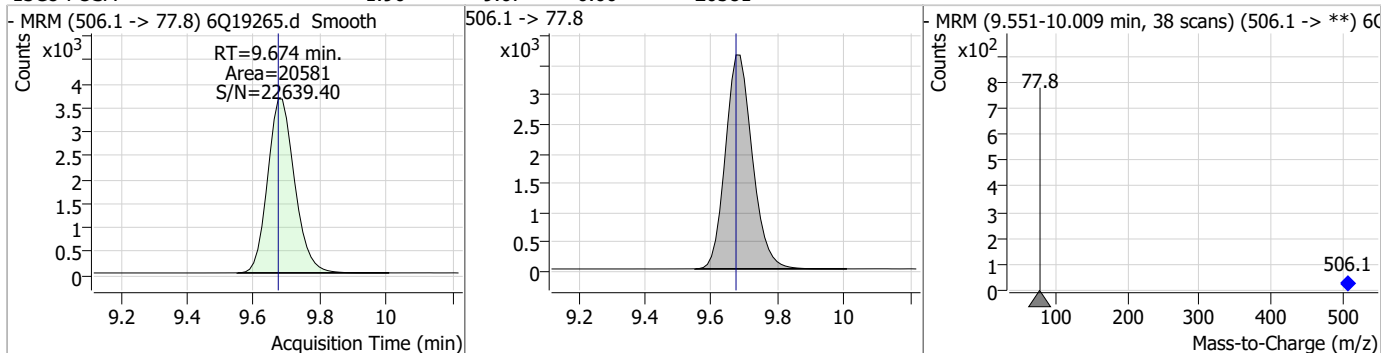
7.2.2
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Perfluorinated Compounds by LC/MS/MS

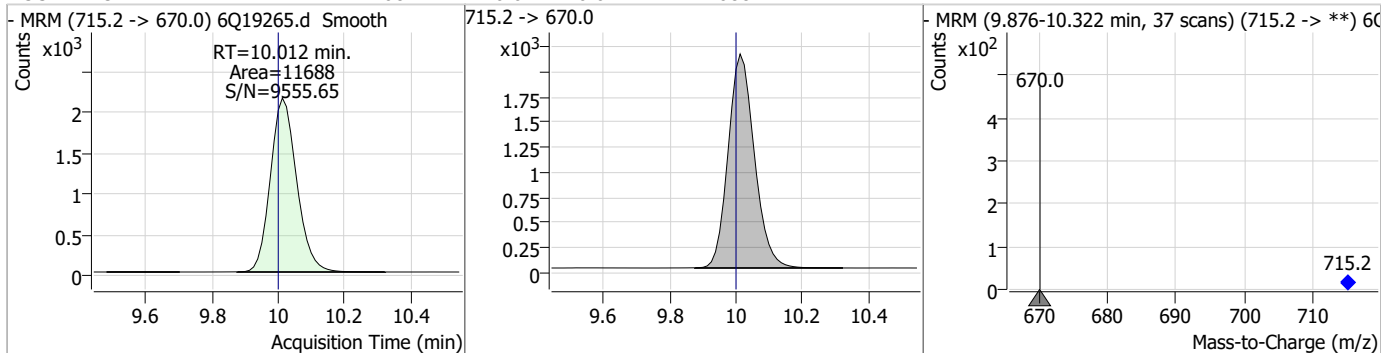
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	0	0		0	613.1 -> 319.0		8.3	25.0



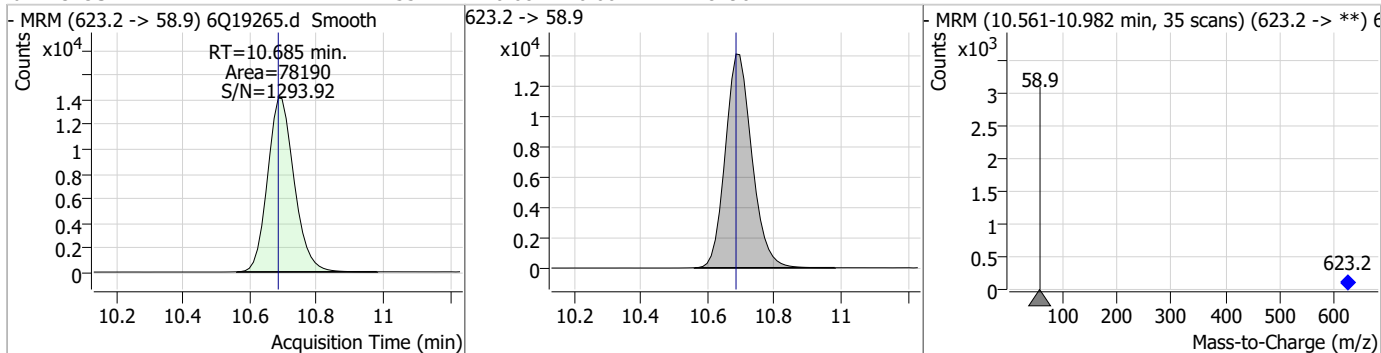
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.90	9.67	0.00	20581				



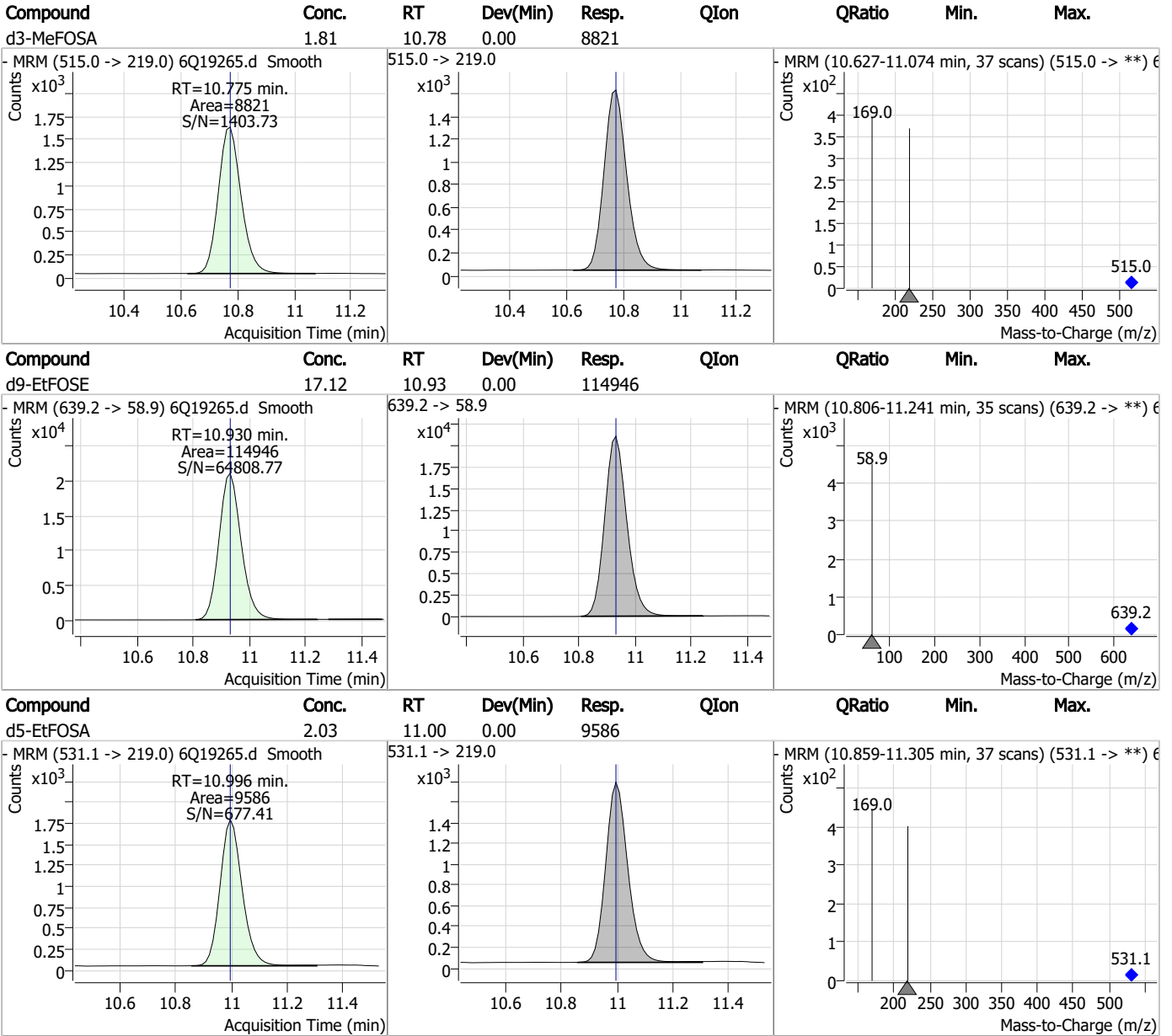
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.08	10.01	0.01	11688				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	14.55	10.68	0.00	78190				



Perfluorinated Compounds by LC/MS/MS



7.2.2

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18677.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 3:35:45 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	150154	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	50502	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	56600	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	52711	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	83803	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37614	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22897	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27757	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	25339	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14440	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	27832	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	19195	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	12393	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	11379	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3295	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	4655	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	4768	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25220	5.00 µg/L	0.000
M3-HFPO-DA	5.770	286.9 -> 168.9	34612	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	22835	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	93969	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	125526	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11085	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11215	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	14553	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	63102	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	9281	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	89664	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	30684	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	43738	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	51522	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3295	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-6:2FTS	6.788	429.1 -> 80.9	4655	5.18 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4768	5.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	25339	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14440	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFBS	5.322	302.1 -> 79.9	19195	2.34 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	12393	2.39 µg/L	-0.012

7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C4-PFBA	2.810	216.8 -> 171.9	150154	9.99 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	52711	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	56600	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	50502	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.027	519.1 -> 474.1	22897	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27757	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C8-FOSA	9.598	506.1 -> 77.8	27832	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOA	7.026	421.1 -> 376.0	83803	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.165	507.1 -> 79.9	11379	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C9-PFNA	7.545	472.1 -> 427.0	37614	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25220	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	34612	10.22 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	11215	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22835	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	93969	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	125526	26.26 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d5-EtFOSA	10.972	531.1 -> 219.0	11085	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	

Target Compounds	RT	Transition	Response	Conc. Units	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.	

7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
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.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

7.2.3
7

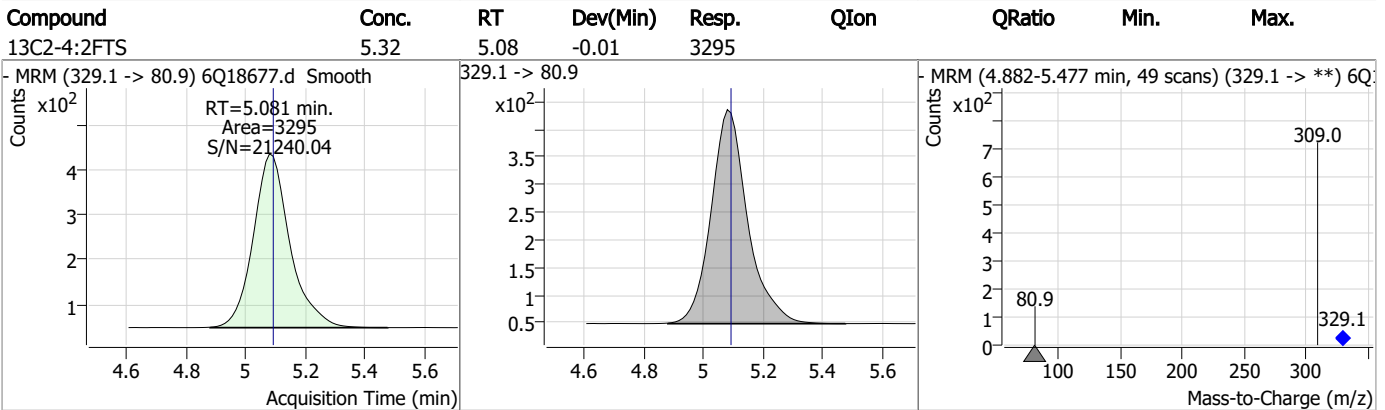
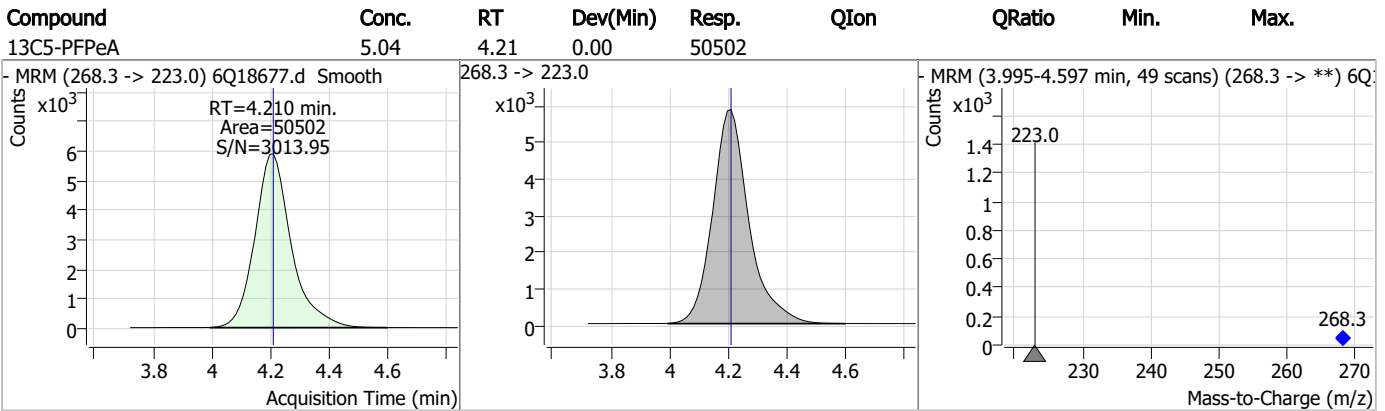
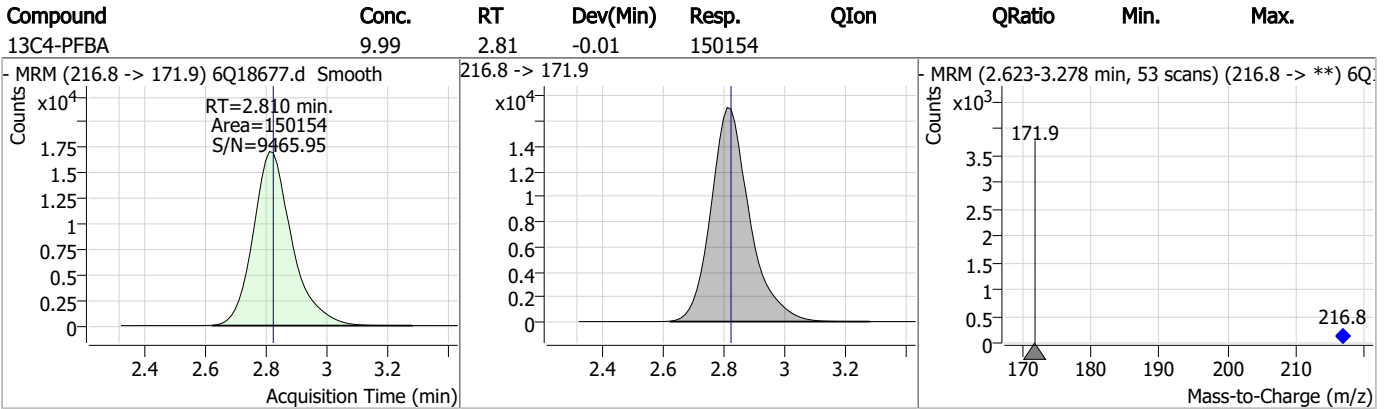
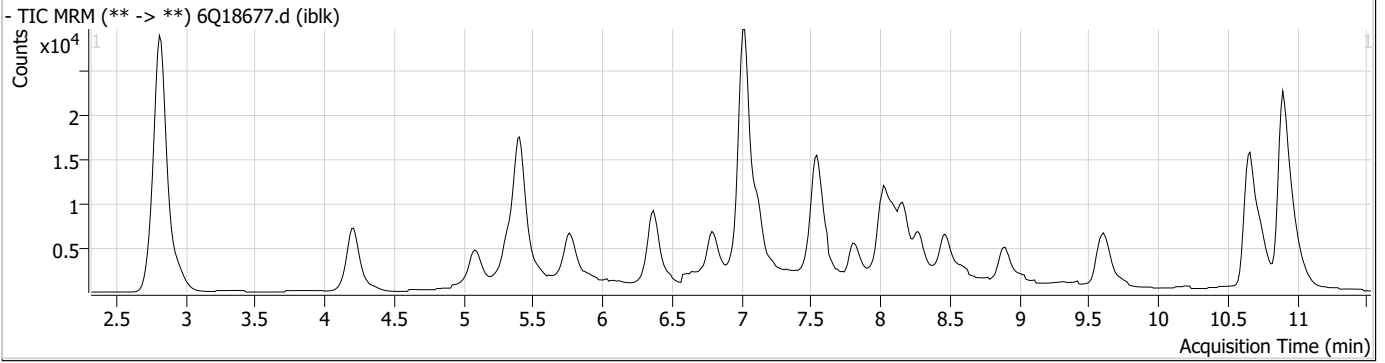
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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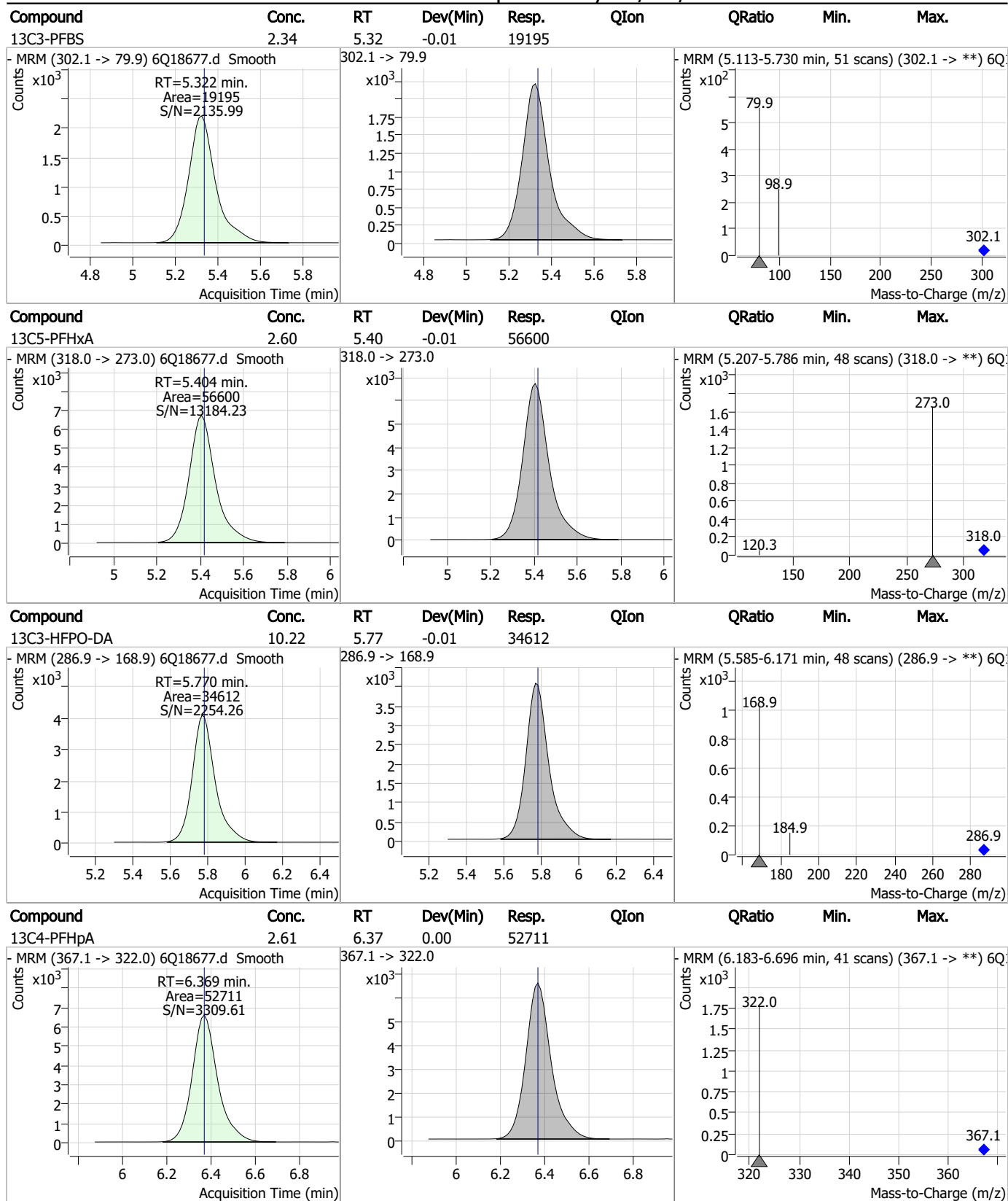
7.2.3

7

Perfluorinated Compounds by LC/MS/MS



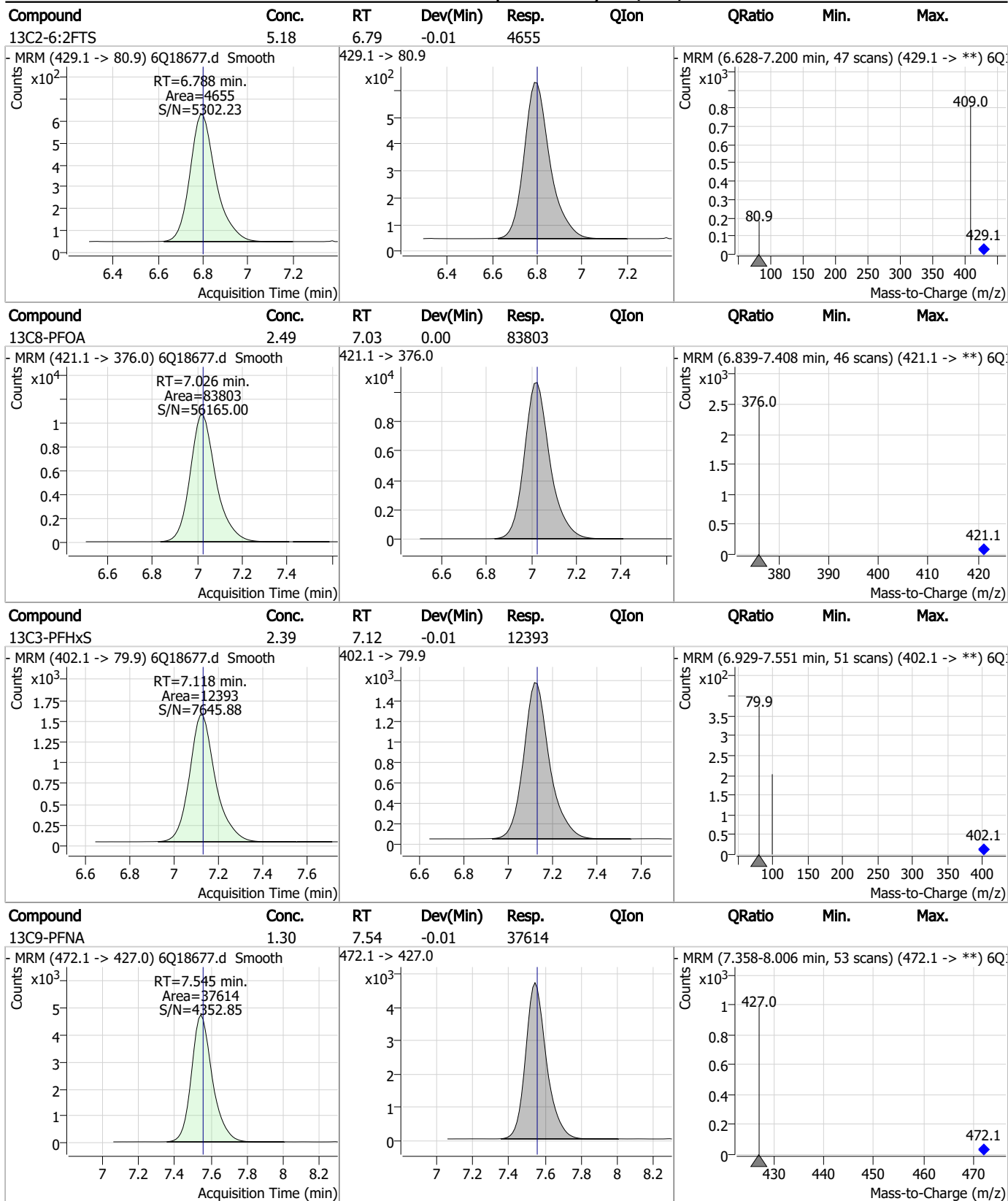
Perfluorinated Compounds by LC/MS/MS



7.2.3
7



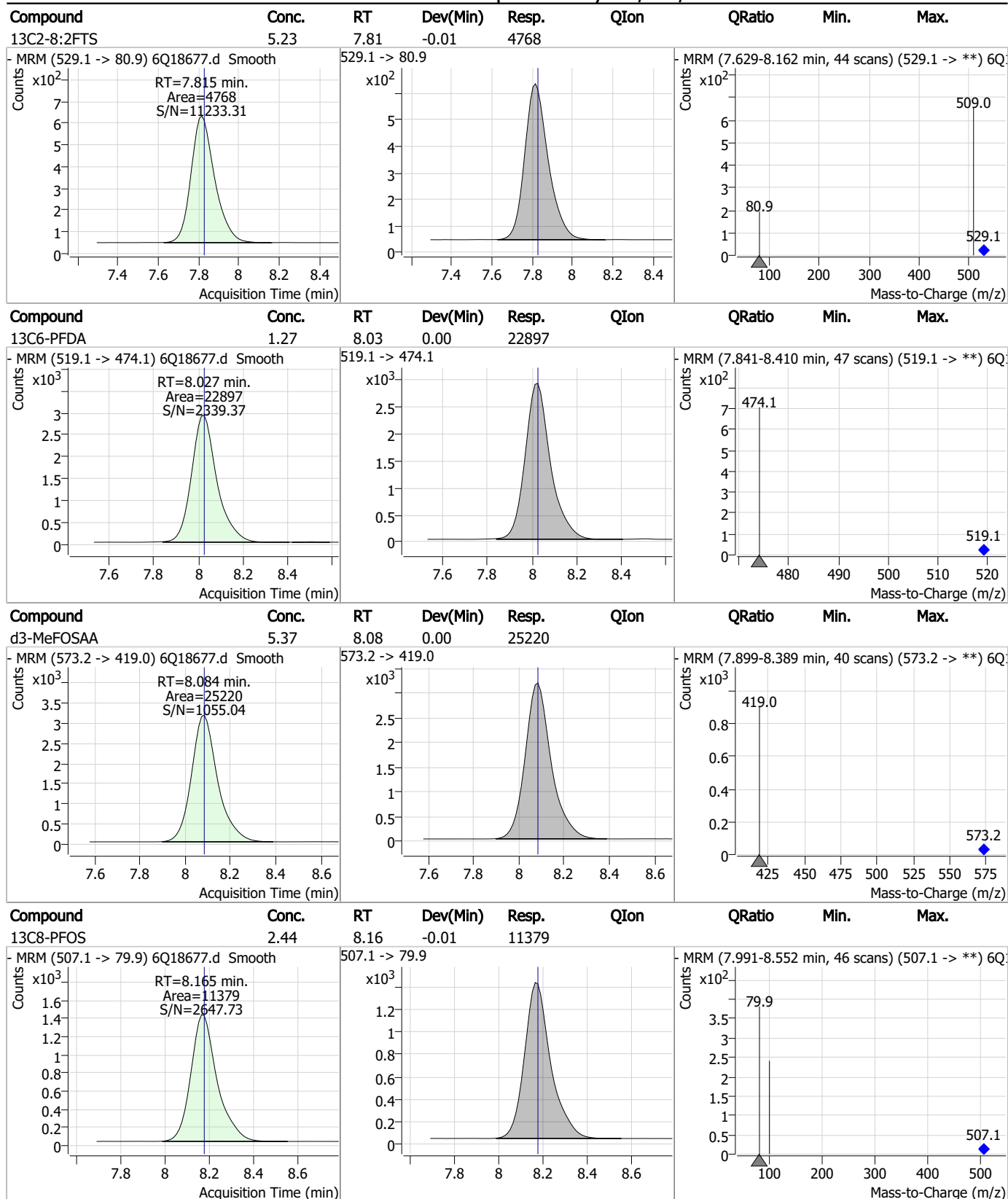
Perfluorinated Compounds by LC/MS/MS



7.2.3
7

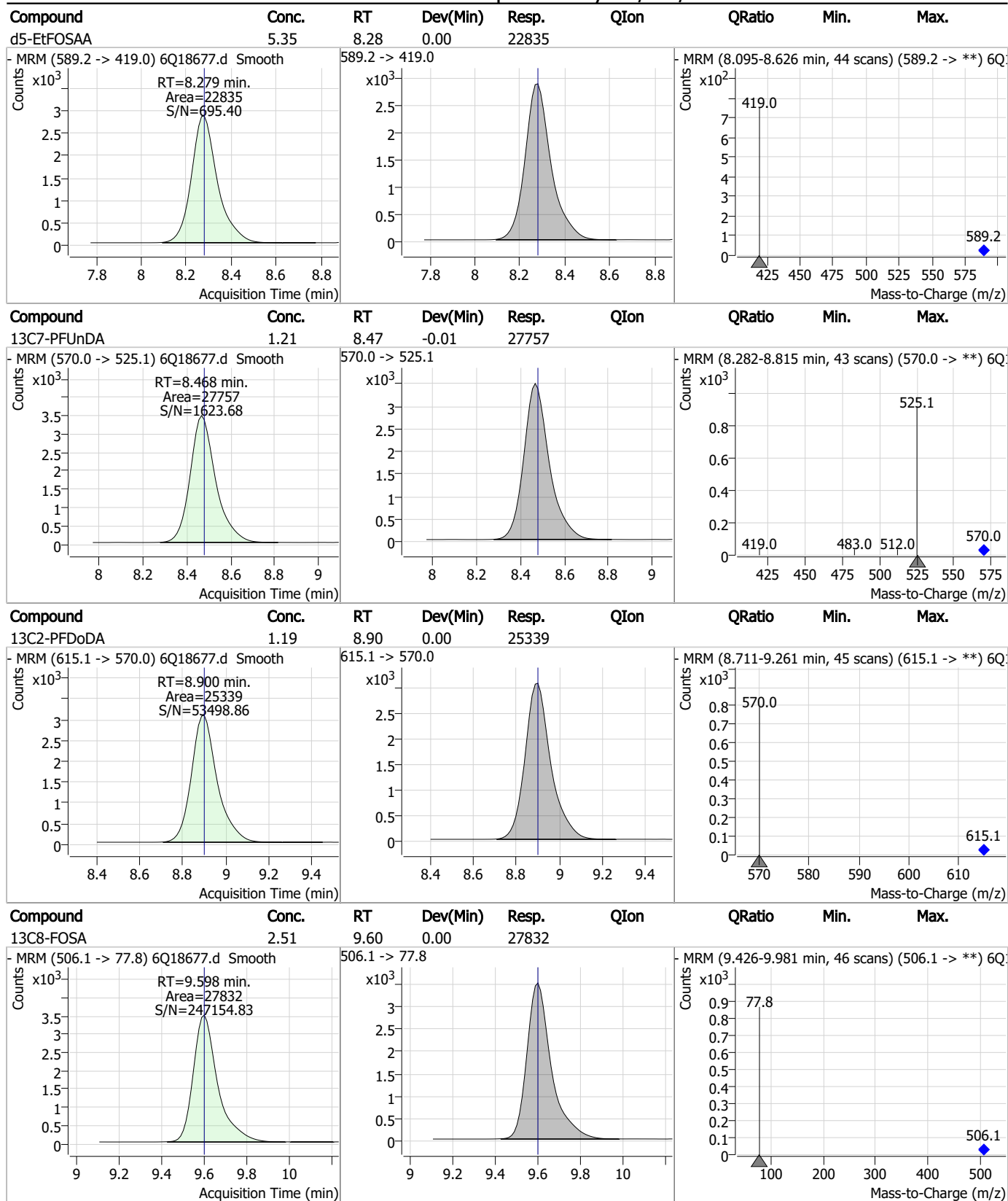


Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS



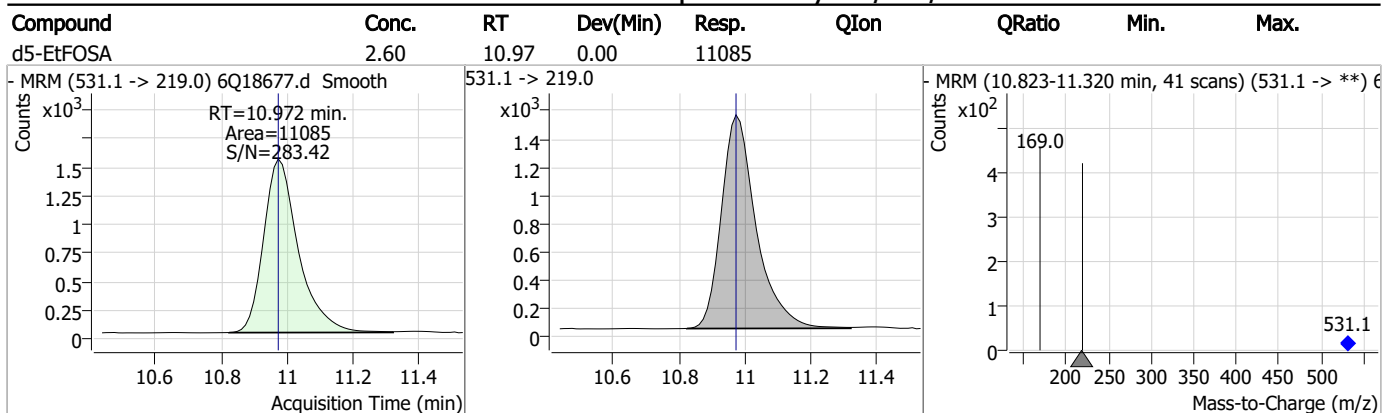
7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.63	-0.01	14440				
d7-MeFOSE	25.71	10.66	0.00	93969				
d3-MeFOSA	2.49	10.74	0.00	11215				
d9-EtFOSE	26.26	10.89	-0.01	125526				

7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18712.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 12:03:34 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	161279	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	53343	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	59595	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	56545	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	85546	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	38831	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23148	1.25 µg/L	-0.013
M7-PFUnDA	8.455	570.0 -> 525.1	28965	1.25 µg/L	-0.025
M2-PFDoDA	8.887	615.1 -> 570.0	28348	1.25 µg/L	-0.012
M2-PFTeDA	9.615	715.2 -> 670.0	15612	1.25 µg/L	-0.025
M8-FOSA	9.586	506.1 -> 77.8	30484	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	22313	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	13857	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12939	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3664	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5076	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5376	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27416	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	37901	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	25426	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	102969	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	134874	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12127	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12336	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16697	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	67164	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10342	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	91566	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	30570	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	50256	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	55214	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3664	5.31 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5076	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5376	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-PFDoDA	8.887	615.1 -> 570.0	28348	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-PFTeDA	9.615	715.2 -> 670.0	15612	1.35 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C3-PFBS	5.322	302.1 -> 79.9	22313	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	13857	2.40 µg/L	-0.012

7.24
7

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	2.822	216.8 -> 171.9	161279	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.369	367.1 -> 322.0	56545	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	59595	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFPeA	4.210	268.3 -> 223.0	53343	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C6-PFDA	8.014	519.1 -> 474.1	23148	1.29 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C7-PFUnDA	8.455	570.0 -> 525.1	28965	1.27 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C8-FOSA	9.586	506.1 -> 77.8	30484	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C8-PFOA	7.013	421.1 -> 376.0	85546	2.49 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.165	507.1 -> 79.9	12939	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C9-PFNA	7.545	472.1 -> 427.0	38831	1.17 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27416	5.09 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	37901	10.45 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	12336	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25426	5.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d7-MeFOSE	10.647	623.2 -> 58.9	102969	24.55 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	134874	24.59 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	12127	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	

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.	



7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
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.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

7.2.4
7

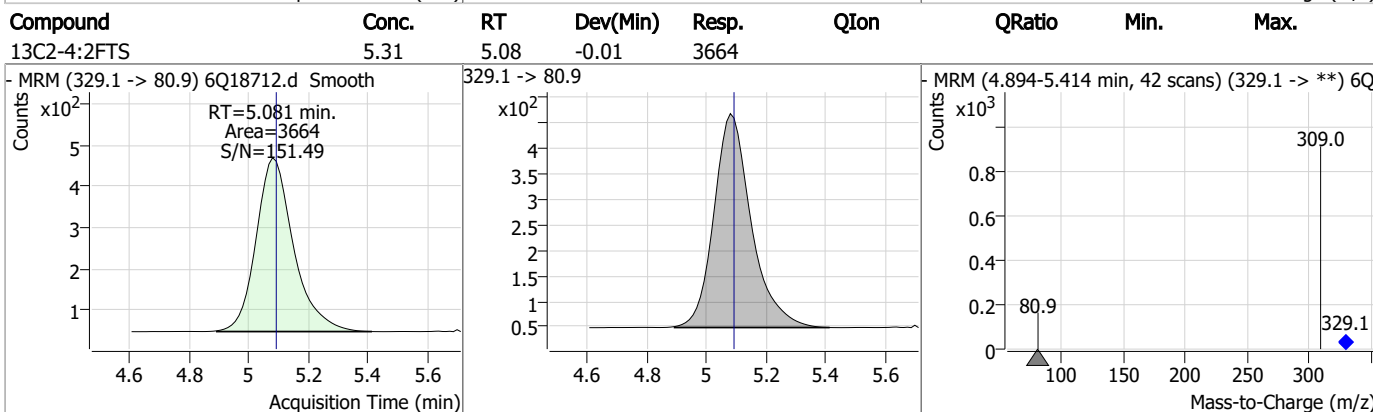
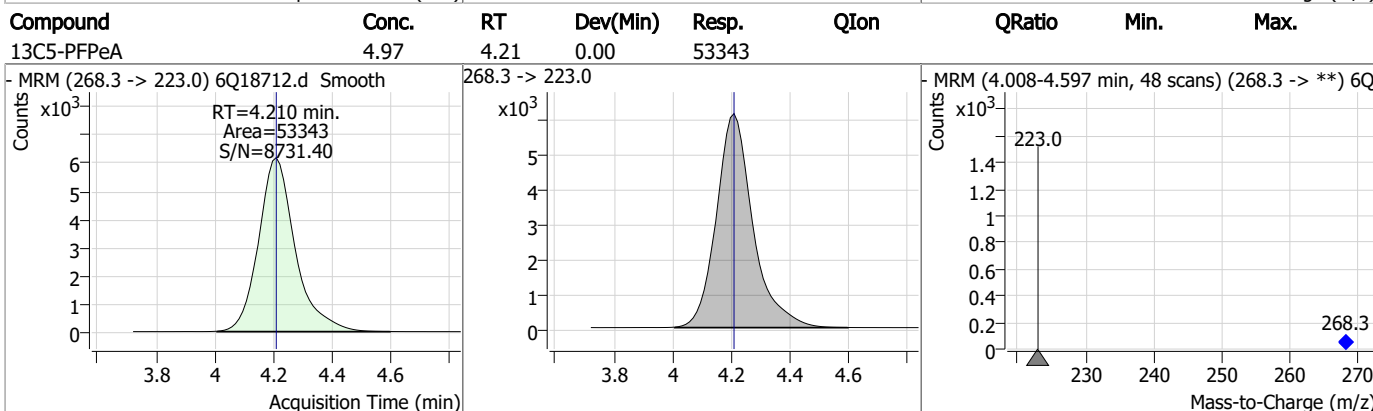
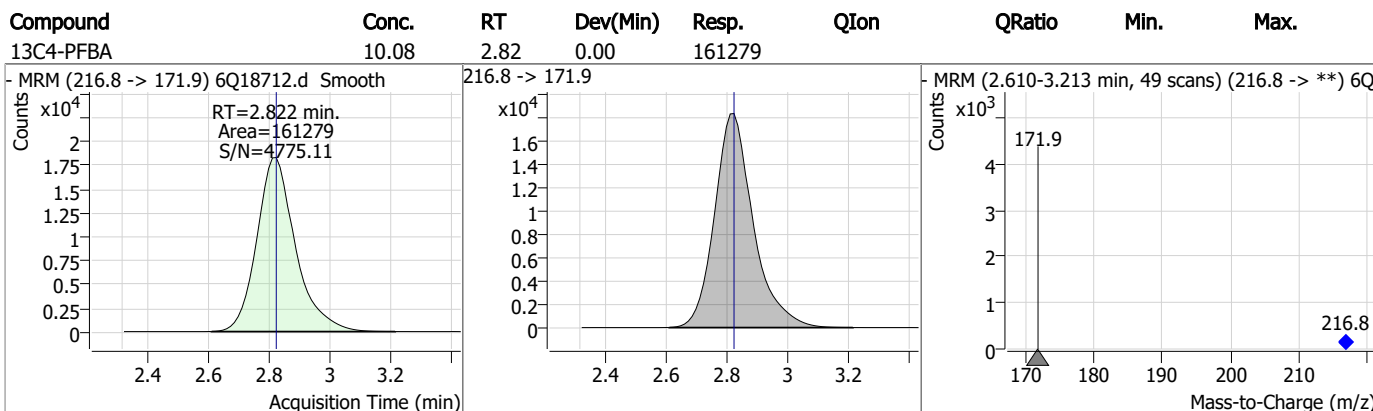
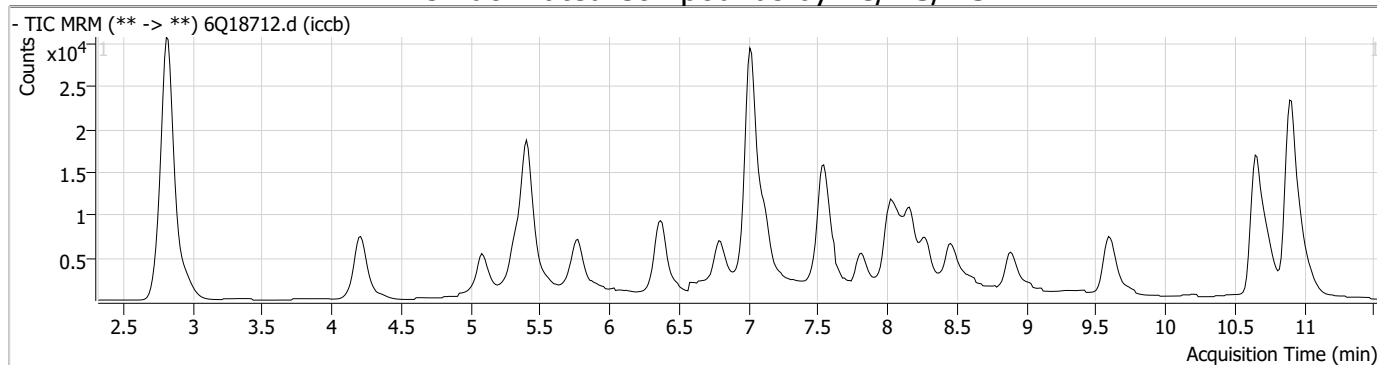
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.4

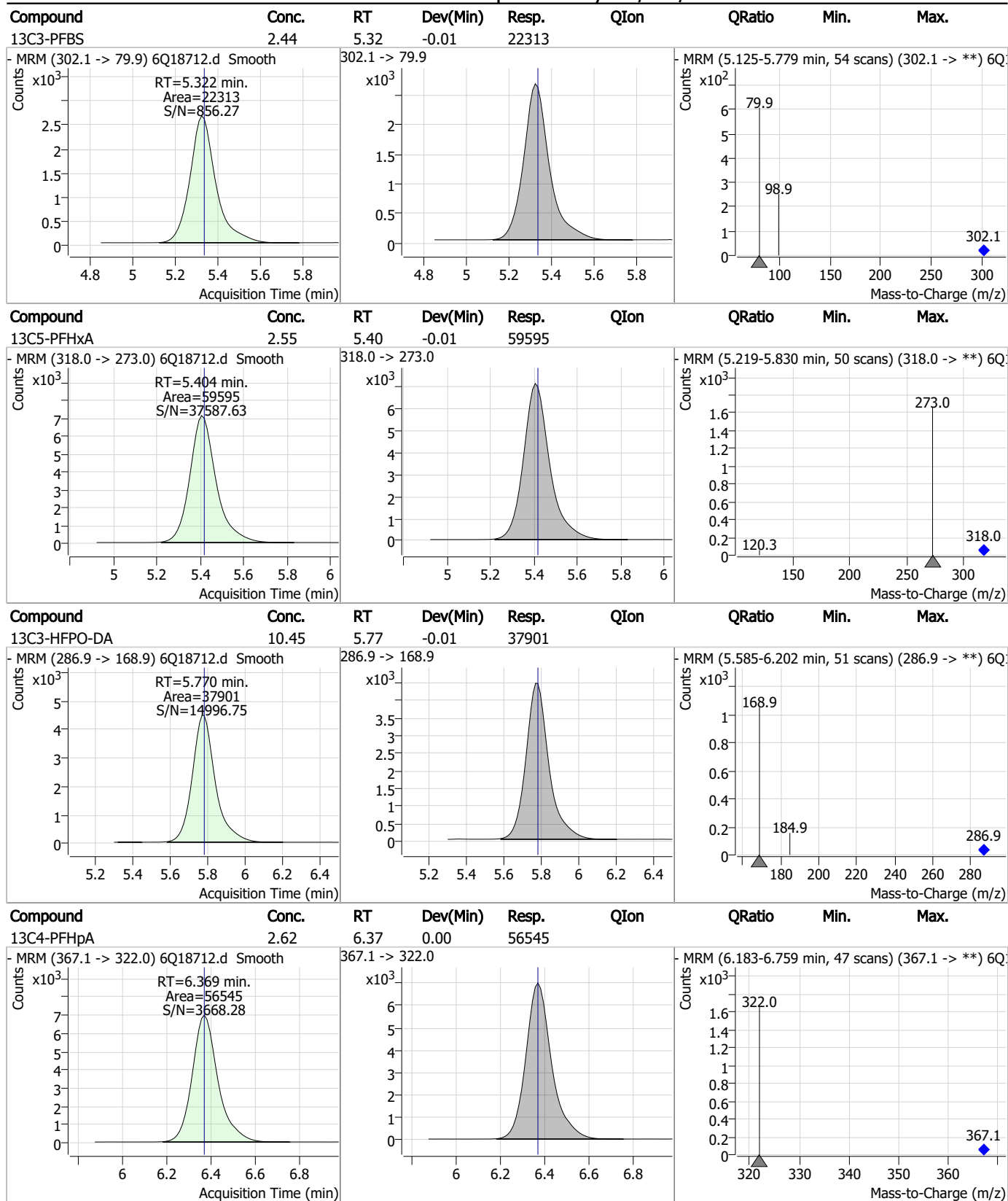
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Perfluorinated Compounds by LC/MS/MS



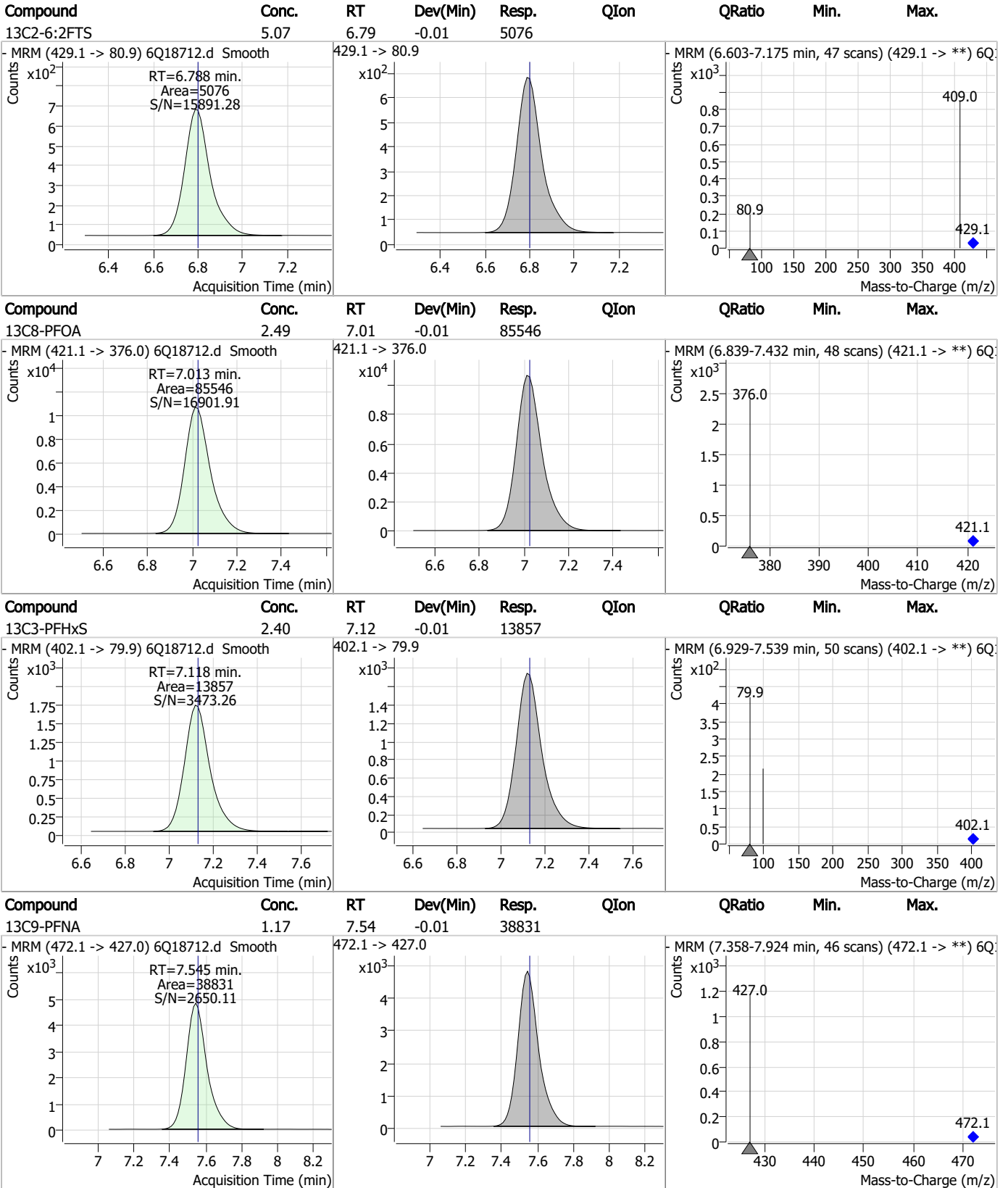
7.2.4
7

Perfluorinated Compounds by LC/MS/MS



7.2.4
7

Perfluorinated Compounds by LC/MS/MS

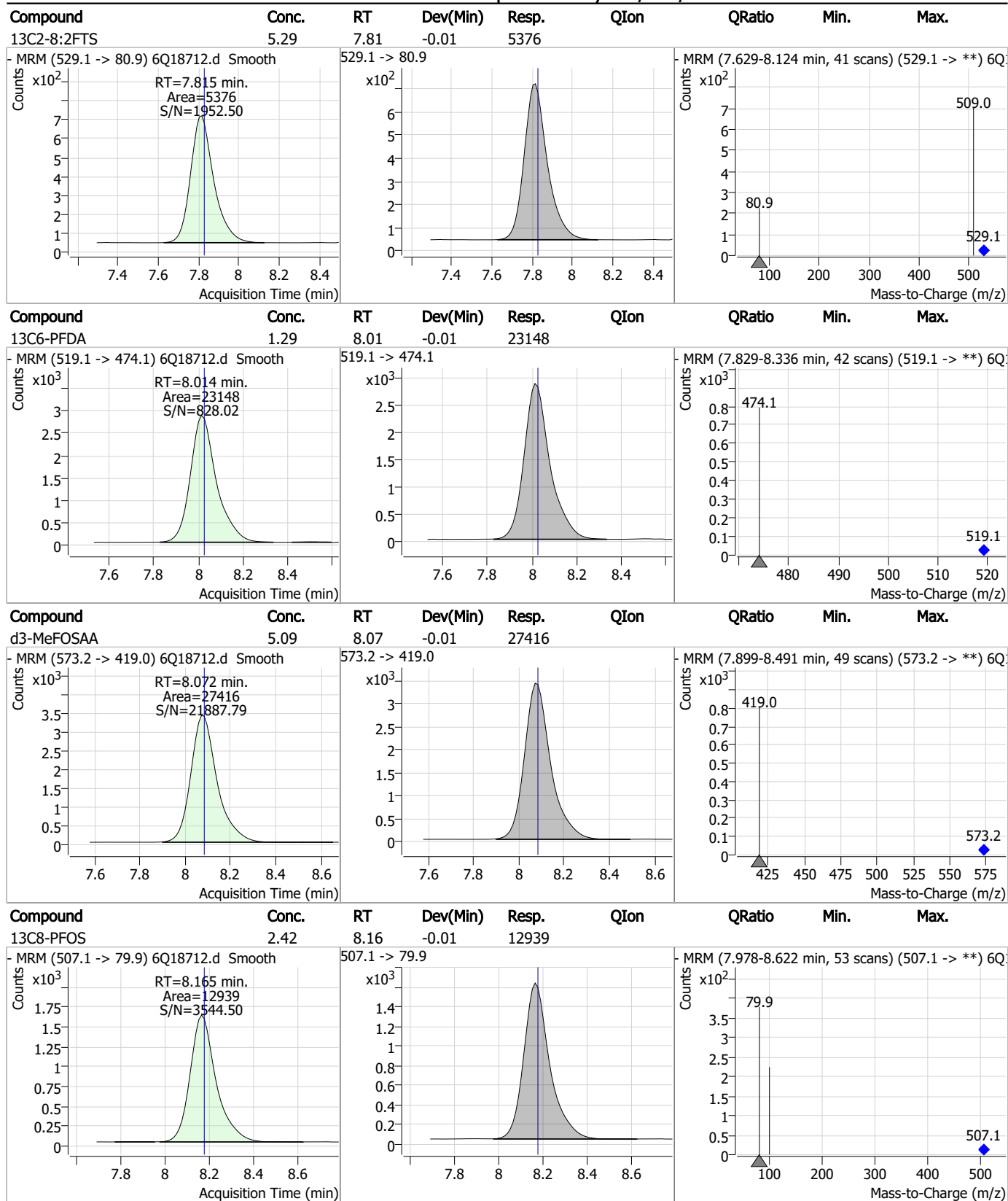


7.2.4

7

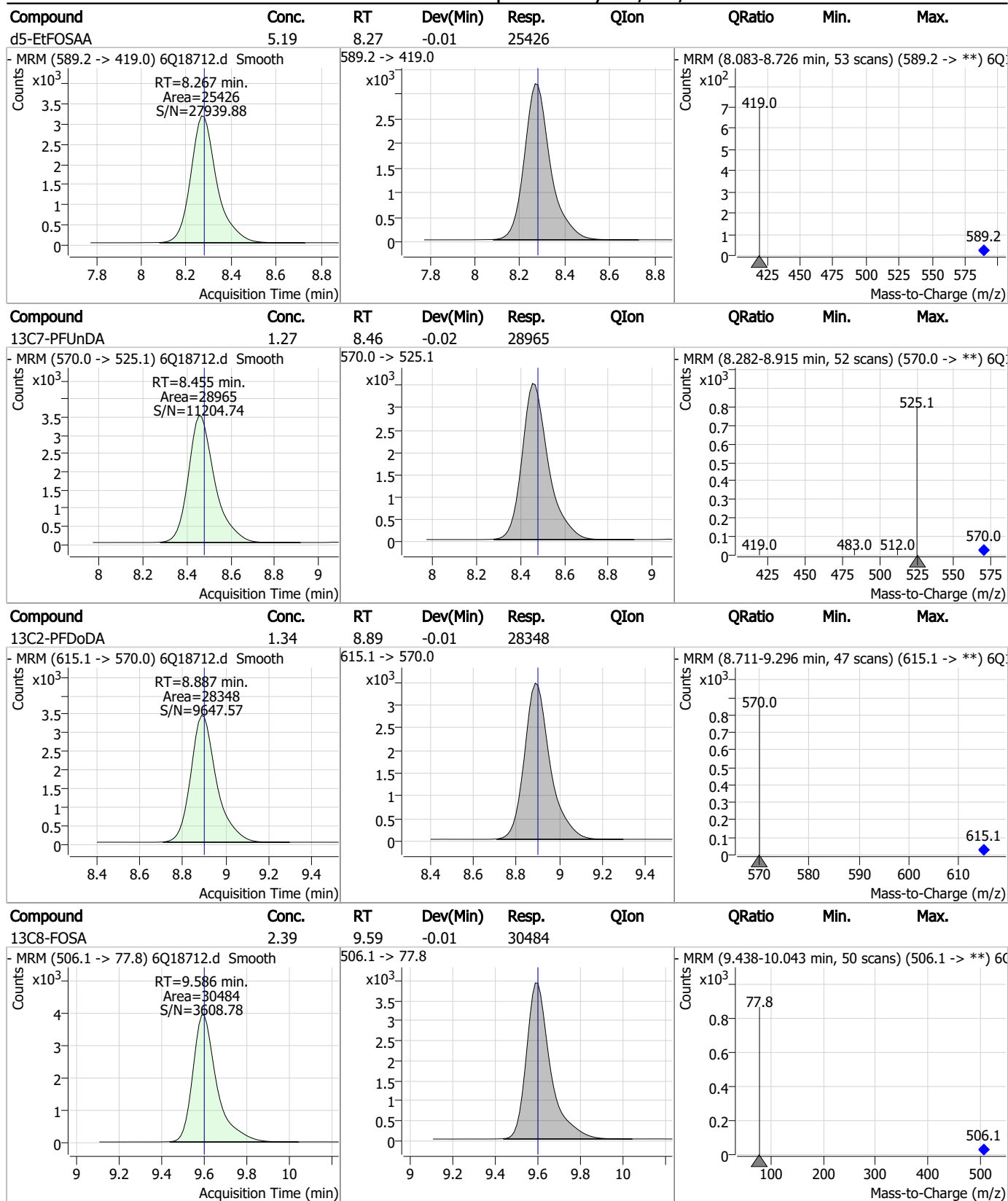


Perfluorinated Compounds by LC/MS/MS



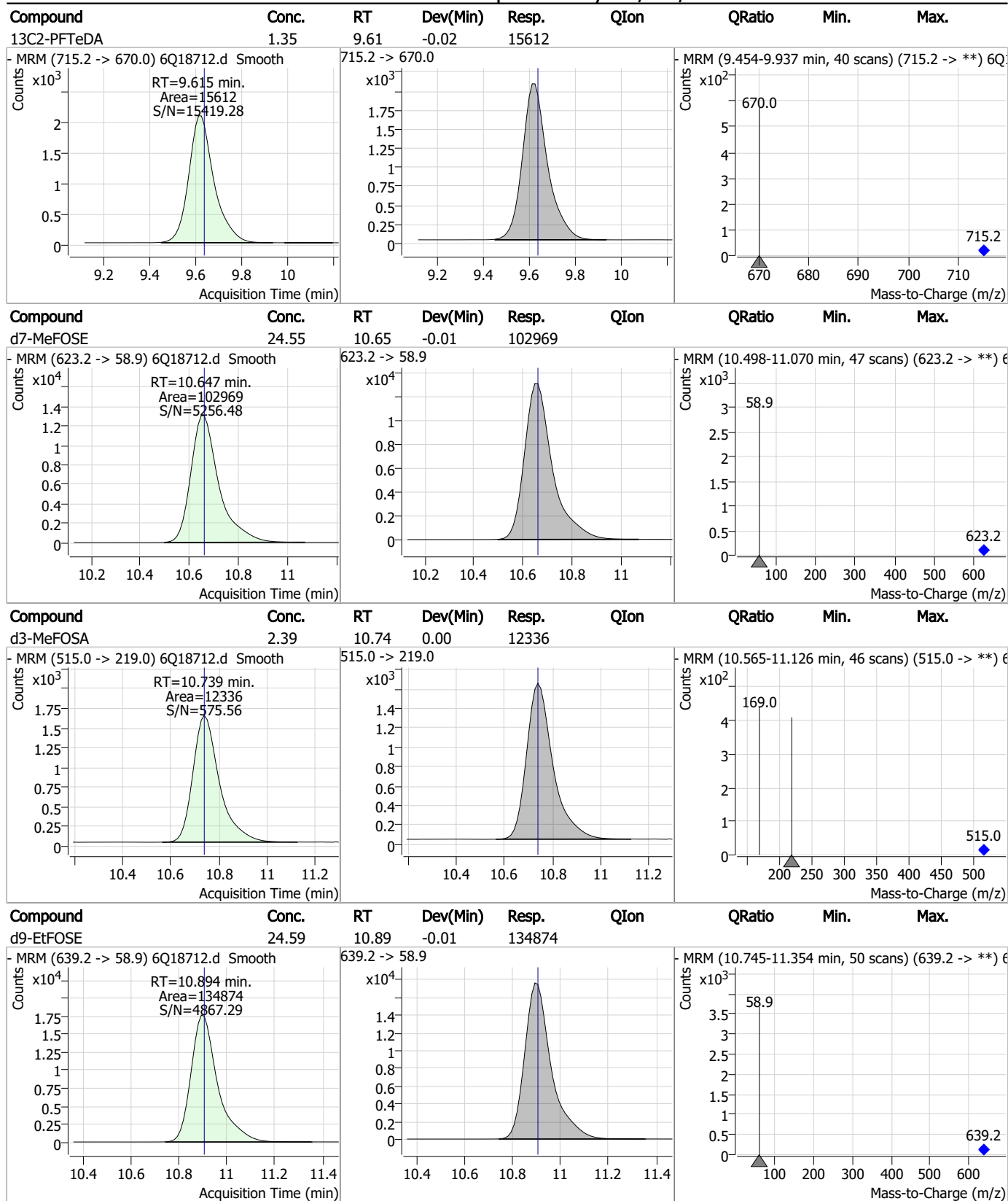
7.2.4
7

Perfluorinated Compounds by LC/MS/MS



7.2.4
7

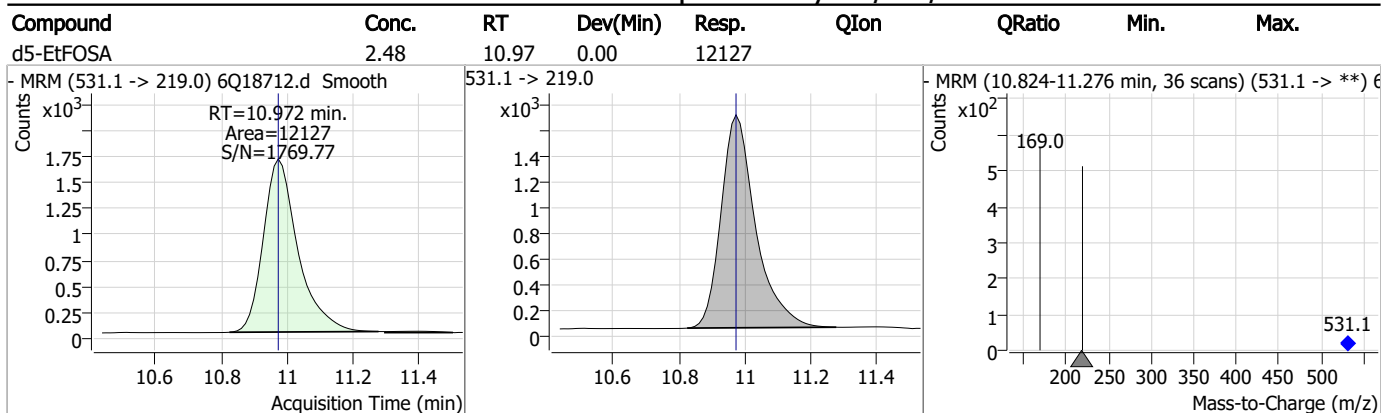
Perfluorinated Compounds by LC/MS/MS



7.2.4
7



Perfluorinated Compounds by LC/MS/MS



7.24
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18782.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 4:57:16 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	165793	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	55654	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61393	2.50 µg/L	-0.012
M4-PFHpA	6.357	367.1 -> 322.0	55200	2.50 µg/L	-0.012
M8-PFOA	7.013	421.1 -> 376.0	86536	2.50 µg/L	-0.013
M9-PFNA	7.532	472.1 -> 427.0	39669	1.25 µg/L	-0.025
M6-PFDA	8.014	519.1 -> 474.1	24495	1.25 µg/L	-0.013
M7-PFUnDA	8.455	570.0 -> 525.1	30524	1.25 µg/L	-0.025
M2-PFDoDA	8.887	615.1 -> 570.0	28954	1.25 µg/L	-0.012
M2-PFTeDA	9.615	715.2 -> 670.0	15047	1.25 µg/L	-0.025
M8-FOSA	9.598	506.1 -> 77.8	31628	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22476	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14520	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12611	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3967	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5499	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5537	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27204	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	37887	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	25614	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	105453	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	139677	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12167	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12481	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16373	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	69431	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	9897	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	94974	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	30475	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	51430	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	55713	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3967	6.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.2%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5499	5.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5537	5.70 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	28954	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C2-PFTeDA	9.615	715.2 -> 670.0	15047	1.31 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C3-PFBS	5.322	302.1 -> 79.9	22476	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFHxS	7.118	402.1 -> 79.9	14520	2.63 µg/L	-0.012

7.2.5

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C4-PFBA	2.810	216.8 -> 171.9	165793	10.03 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.357	367.1 -> 322.0	55200	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	61393	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	55654	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.014	519.1 -> 474.1	24495	1.37 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C7-PFUnDA	8.455	570.0 -> 525.1	30524	1.34 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C8-FOSA	9.598	506.1 -> 77.8	31628	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C8-PFOA	7.013	421.1 -> 376.0	86536	2.43 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.165	507.1 -> 79.9	12611	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C9-PFNA	7.532	472.1 -> 427.0	39669	1.17 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27204	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	37887	10.35 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	12481	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25614	5.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	105453	25.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	139677	25.97 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	12167	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	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)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
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.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

7.2.5
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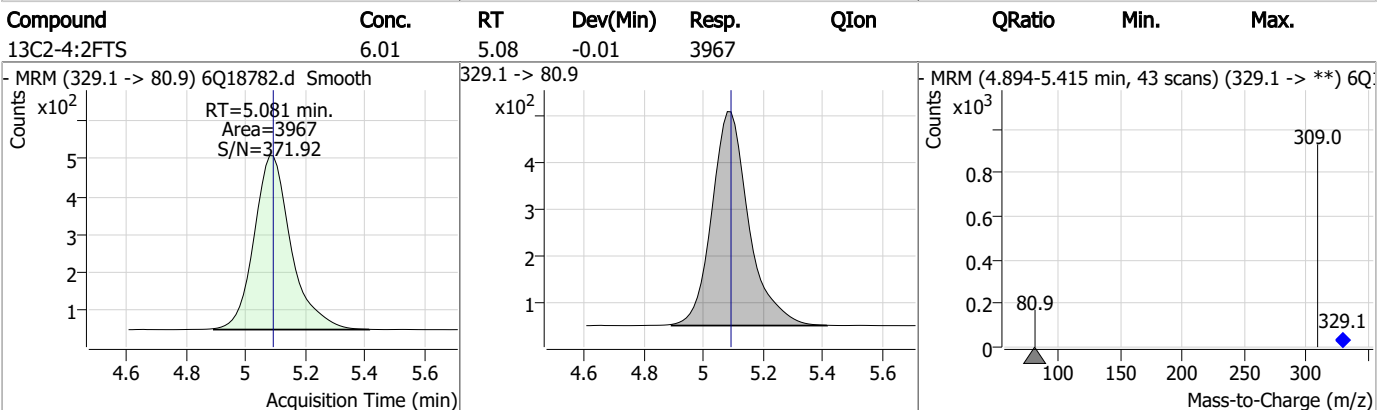
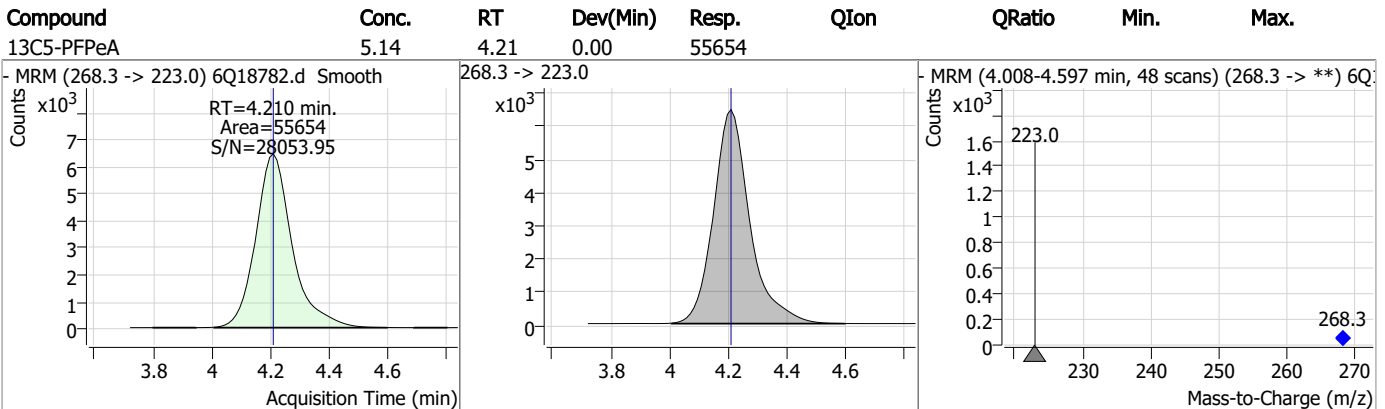
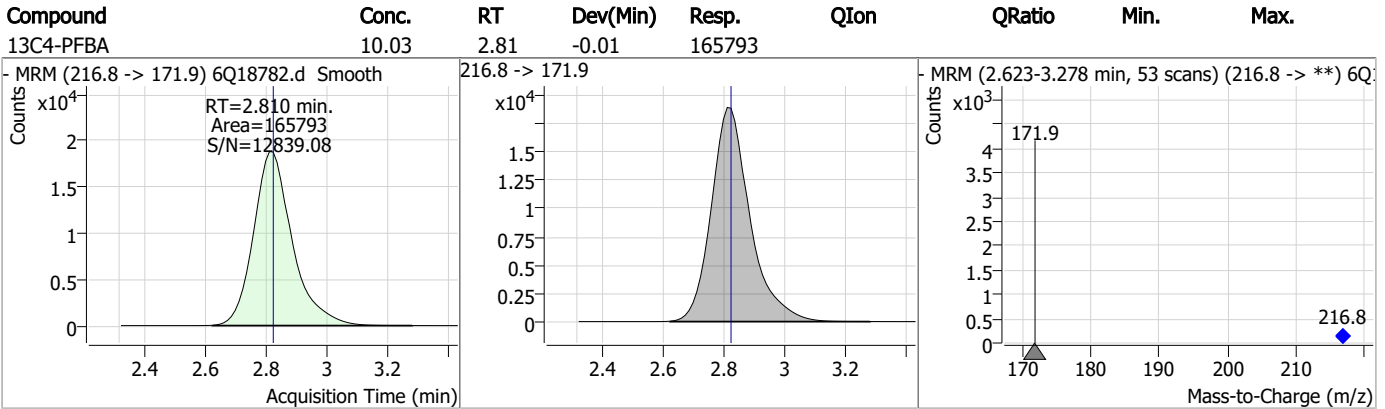
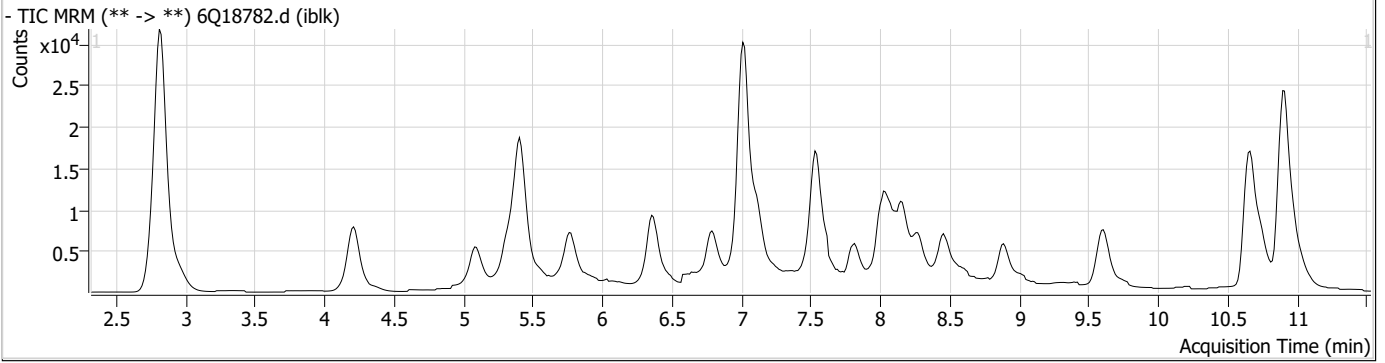
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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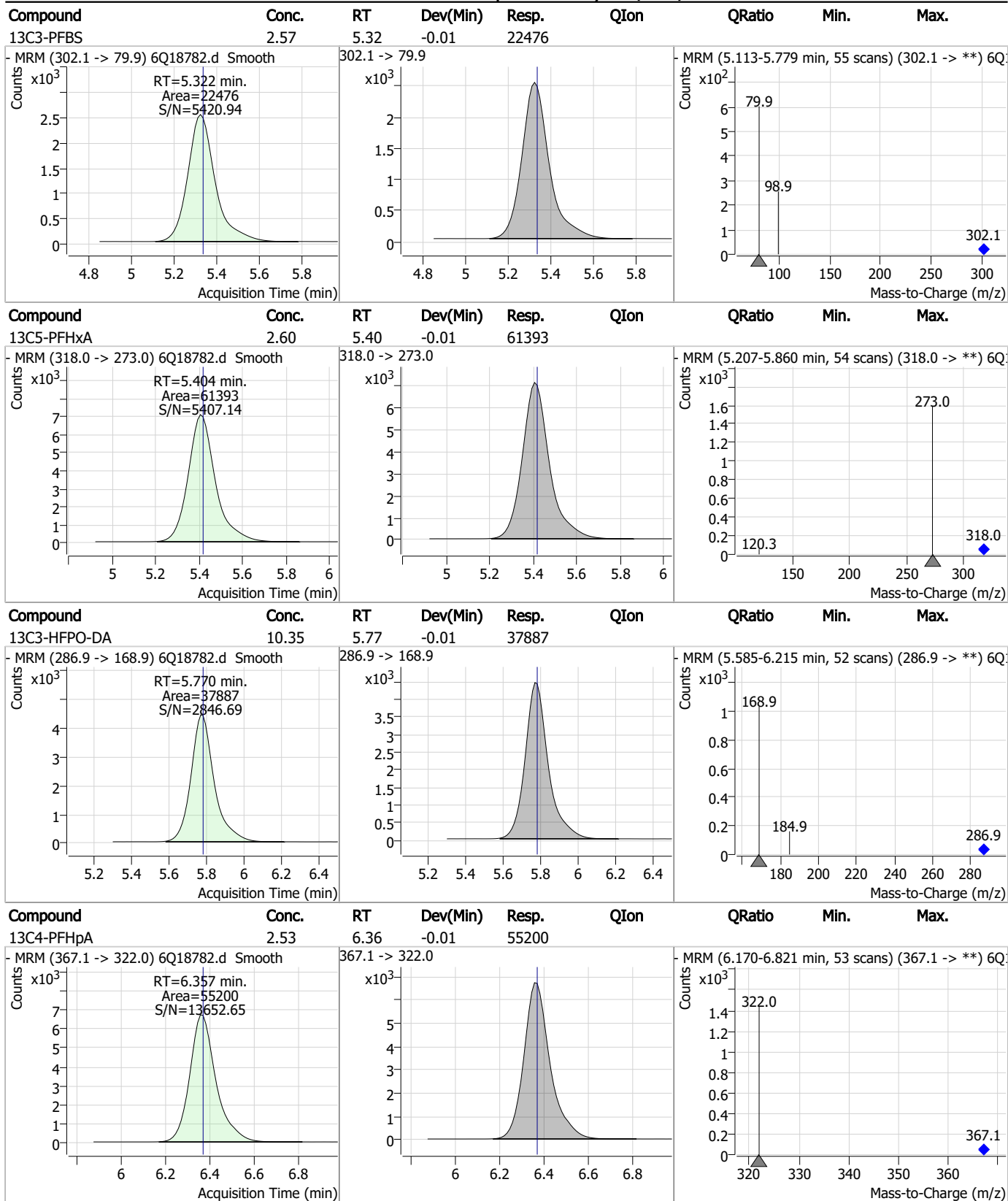
7.2.5

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



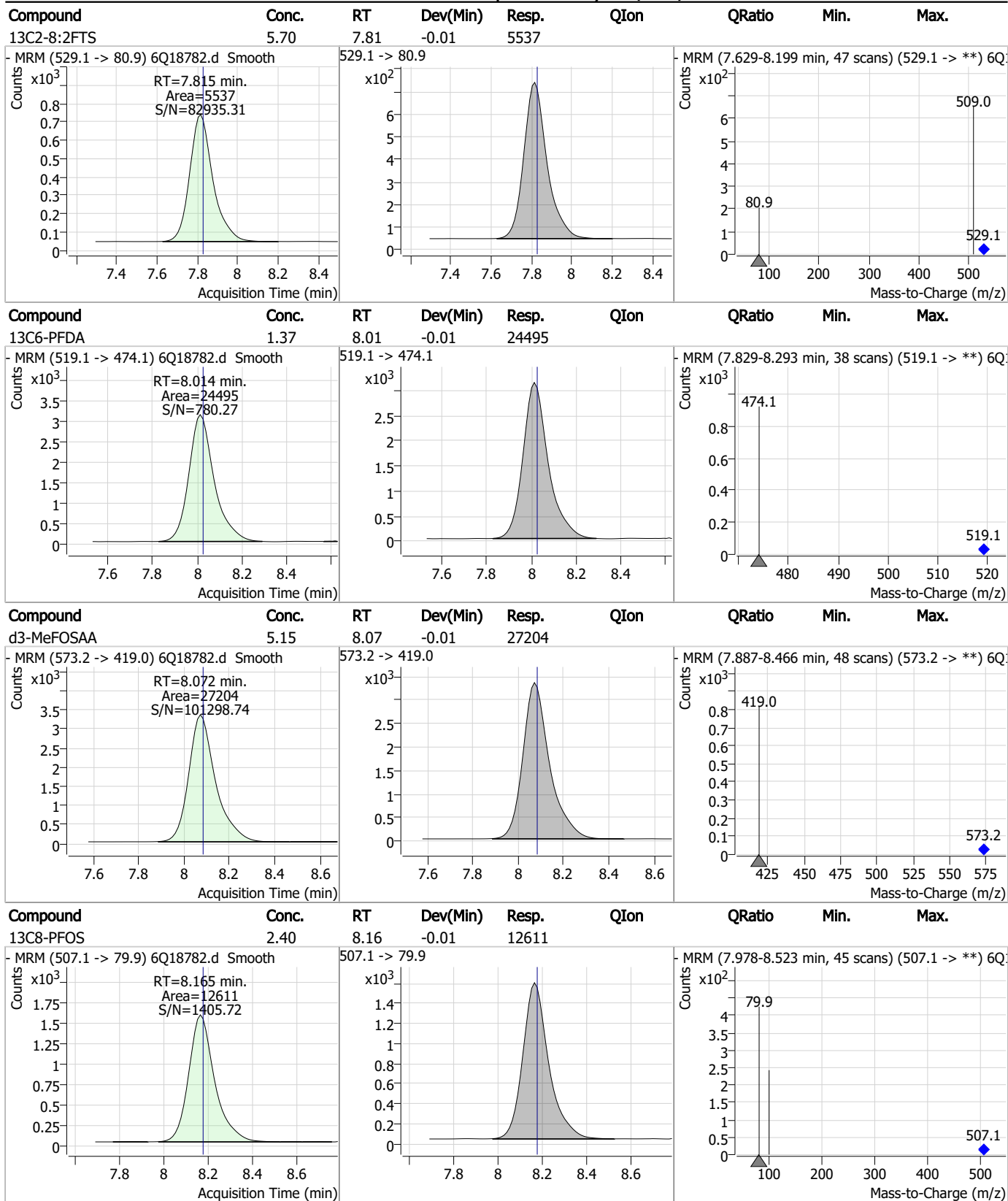
7.25
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.74	6.79	-0.01	5499				
13C8-PFOA	2.43	7.01	-0.01	86536				
13C3-PFHxS	2.63	7.12	-0.01	14520				
13C9-PFNA	1.17	7.53	-0.02	39669				

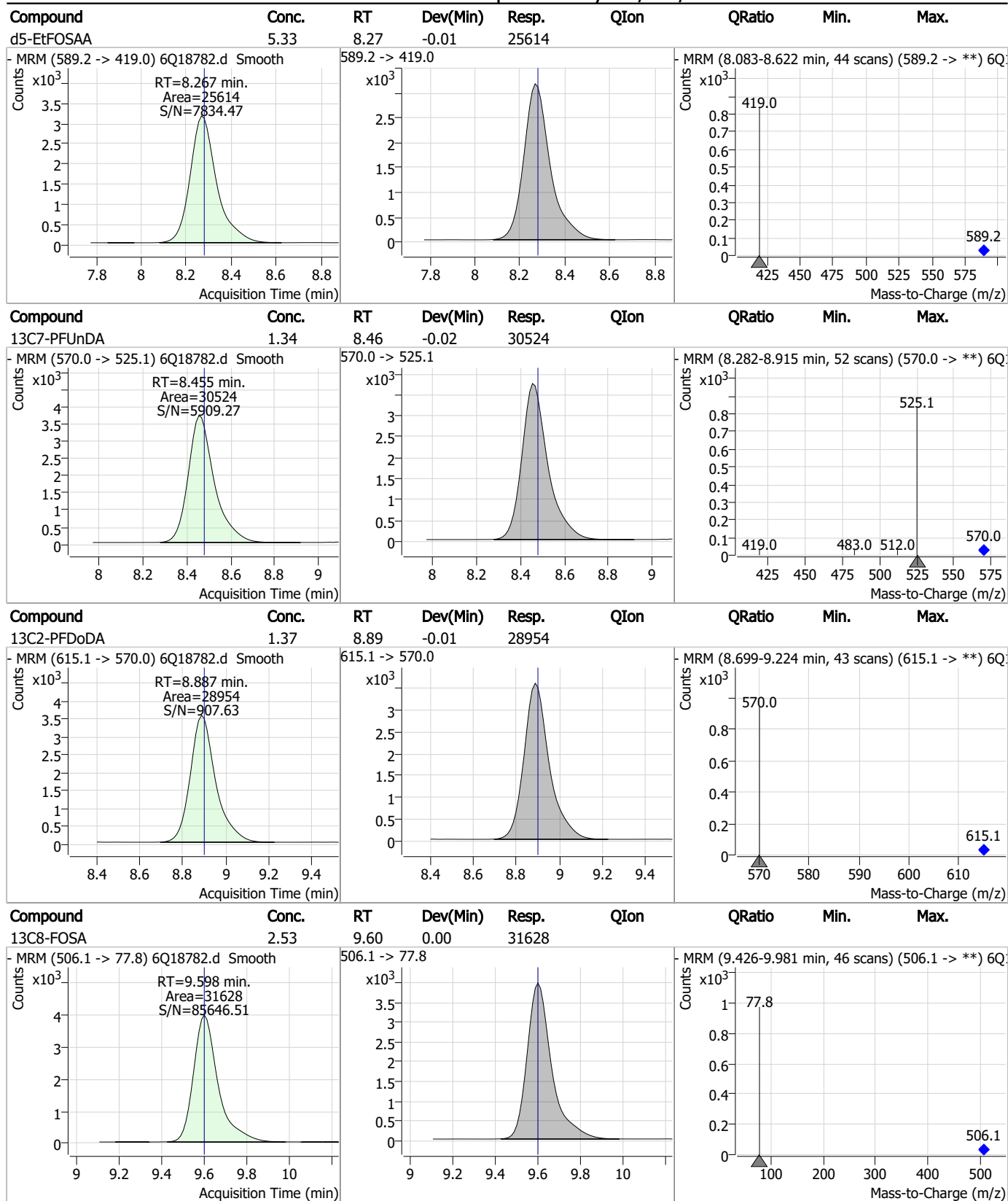
7.25
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Perfluorinated Compounds by LC/MS/MS



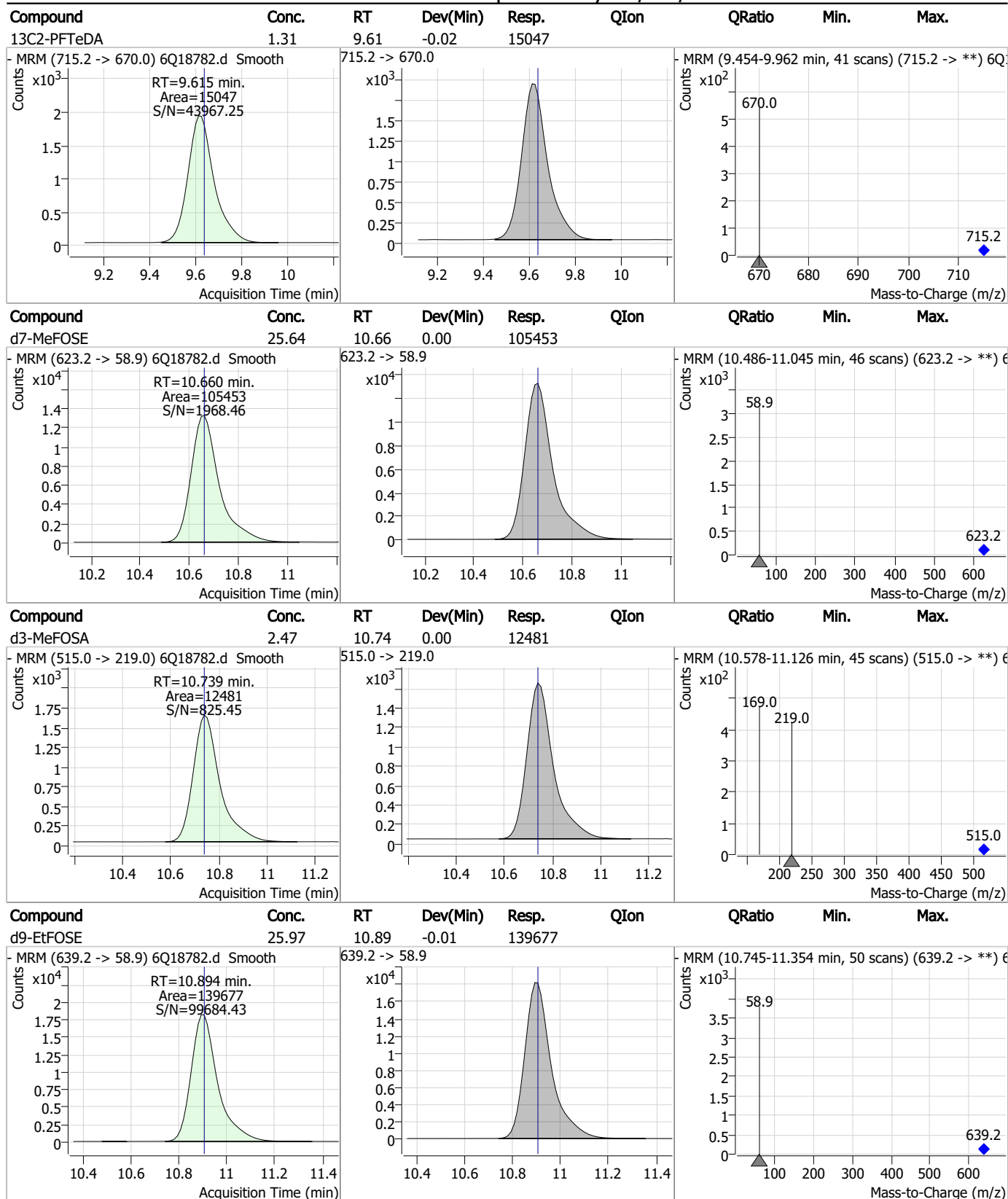
7.25
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Perfluorinated Compounds by LC/MS/MS



7.25
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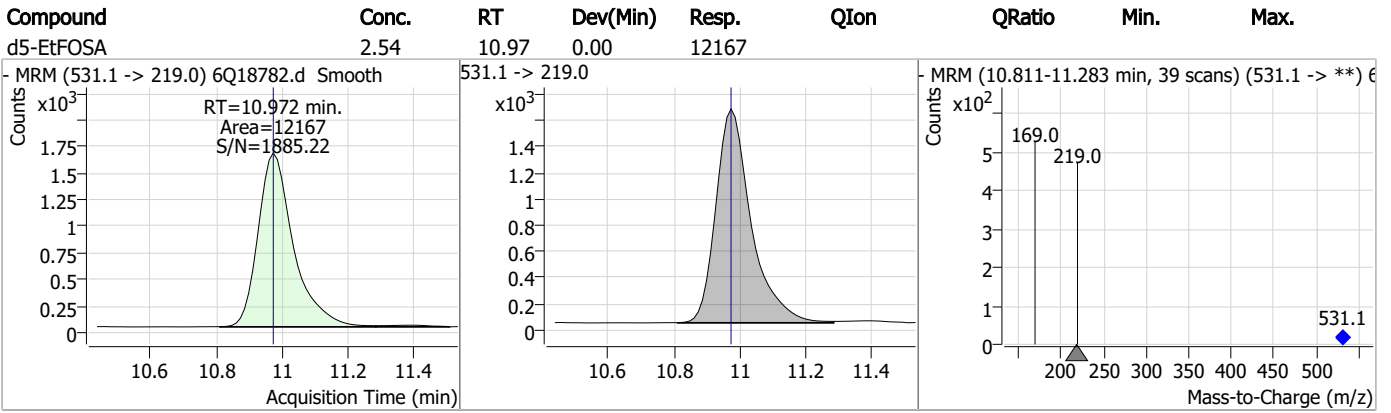
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19248.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 5:40:24 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	146414	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	48099	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	55118	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	51829	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	76391	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	36444	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	21610	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	27250	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24417	1.25 µg/L	0.000
M2-PFTeDA	10.000	715.2 -> 670.0	13876	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	27654	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	19382	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11979	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11014	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3330	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	5037	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4667	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	27361	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	32687	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	25519	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	135931	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	160183	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12738	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	12665	2.50 µg/L	-0.012
13C4-PFOS	8.563	502.8 -> 79.9	14764	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	62565	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8933	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	84320	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	31366	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	47928	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	51476	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3330	6.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.1%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5037	6.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.9%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4667	5.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24417	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFTeDA	10.000	715.2 -> 670.0	13876	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.2%		
13C3-PFBS	5.746	302.1 -> 79.9	19382	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C3-PFHxS	7.478	402.1 -> 79.9	11979	2.53 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFBA	3.085	216.8 -> 171.9	146414	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.707	367.1 -> 322.0	51829	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFHxA	5.792	318.0 -> 273.0	55118	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFPeA	4.548	268.3 -> 223.0	48099	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C6-PFDA	8.387	519.1 -> 474.1	21610	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.853	570.0 -> 525.1	27250	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.3%	
13C8-FOSA	9.674	506.1 -> 77.8	27654	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C8-PFOA	7.339	421.1 -> 376.0	76391	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-PFOS	8.563	507.1 -> 79.9	11014	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C9-PFNA	7.882	472.1 -> 427.0	36444	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSAA	8.407	573.2 -> 419.0	27361	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	32687	9.27 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	12665	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
d5-EtFOSAA	8.615	589.2 -> 419.0	25519	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
d7-MeFOSE	10.685	623.2 -> 58.9	135931	25.09 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
d9-EtFOSE	10.930	639.2 -> 58.9	160183	23.67 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSA	10.996	531.1 -> 219.0	12738	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	

7.2.6
7

Target Compounds	RT	Transition	Response	Conc. Units	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	8.845	512.9 -> 469.0 512.9 -> 219.0	0 0	µg/L m	1
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)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.849	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
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	9.276	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.6
7

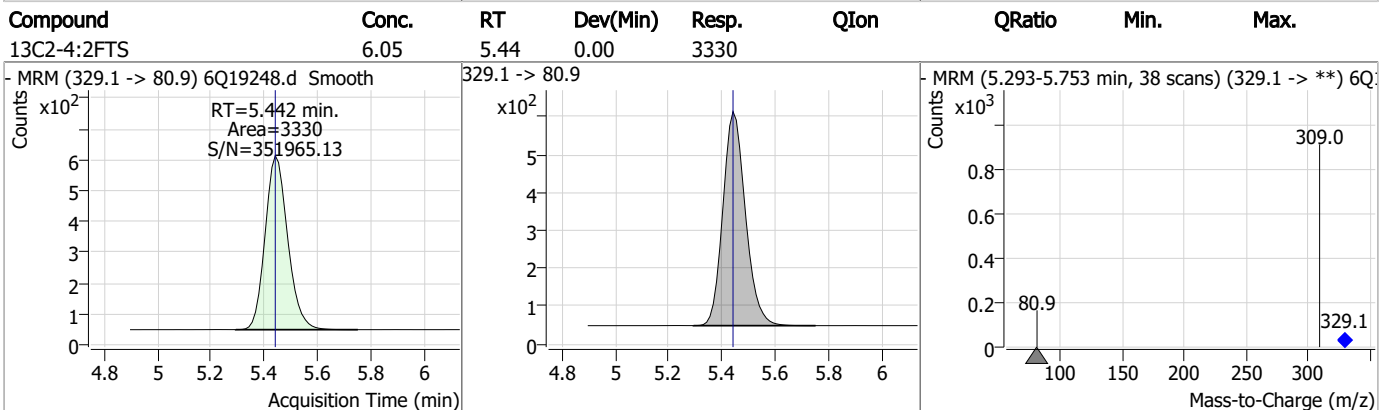
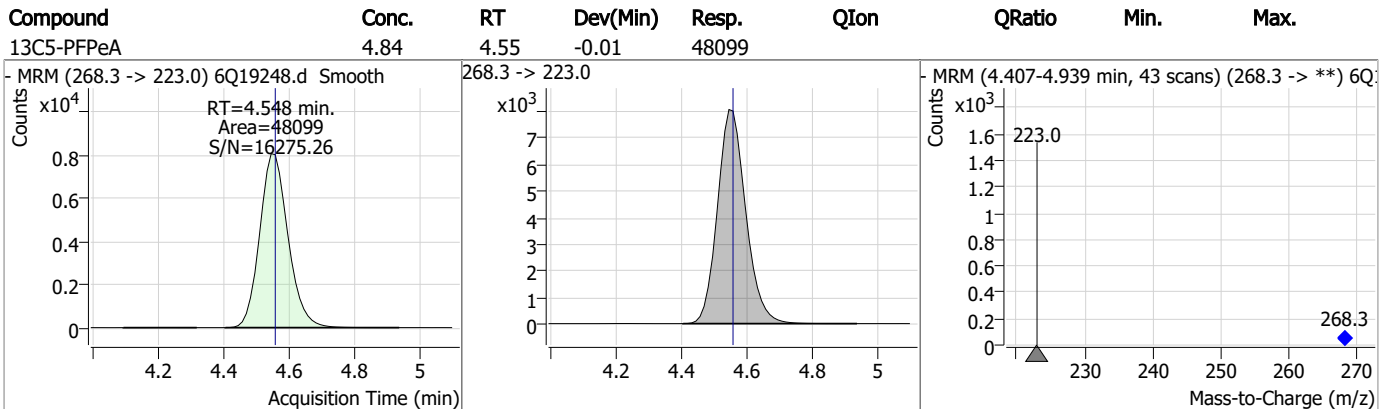
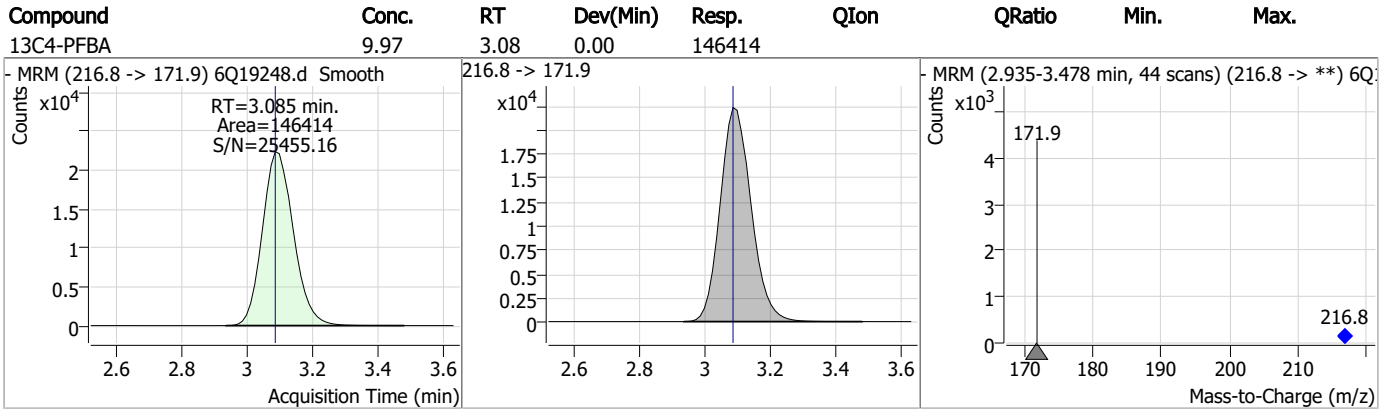
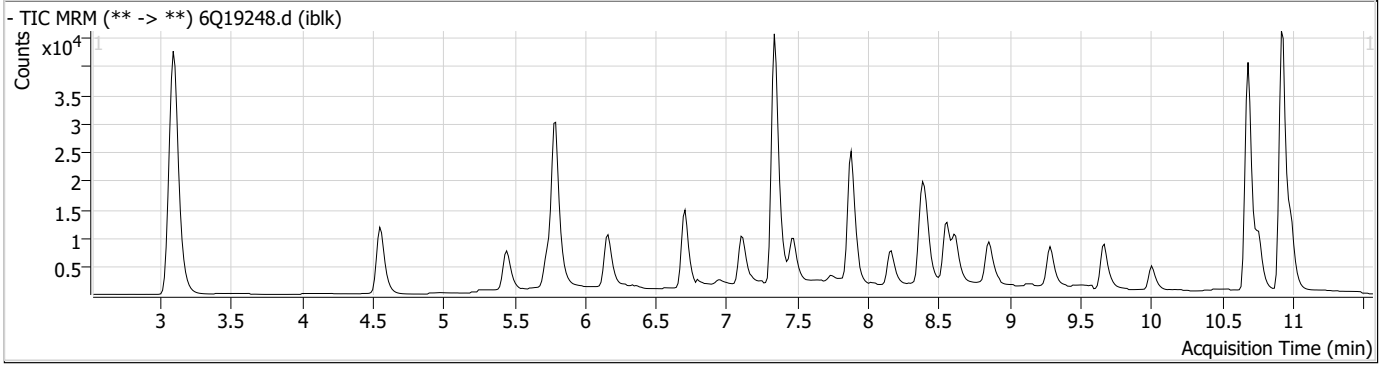
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.6

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Perfluorinated Compounds by LC/MS/MS

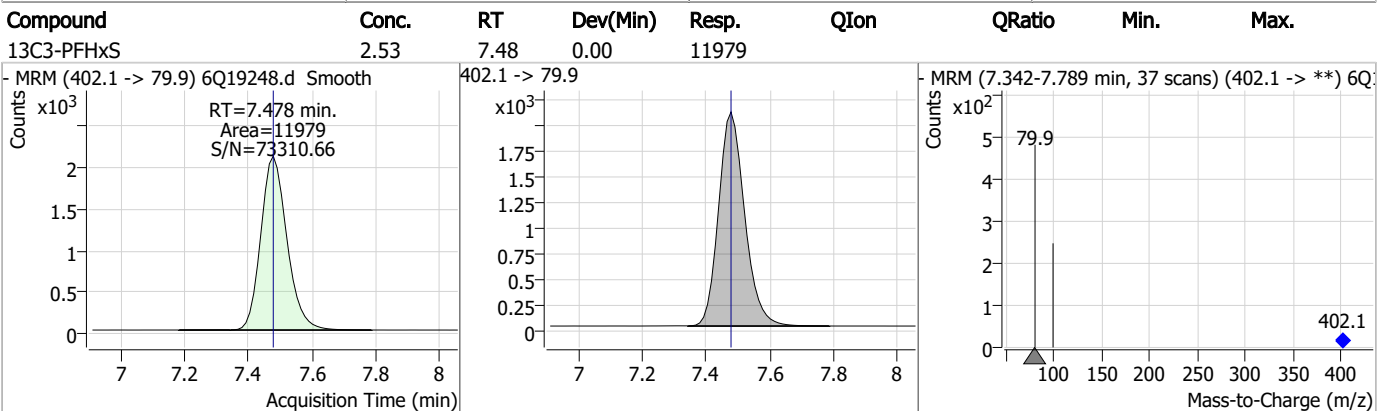
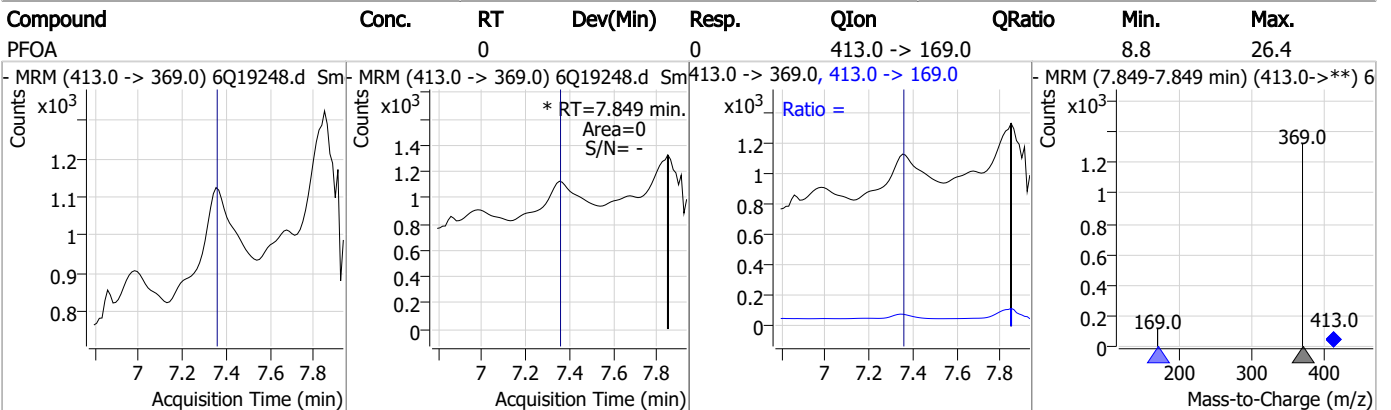
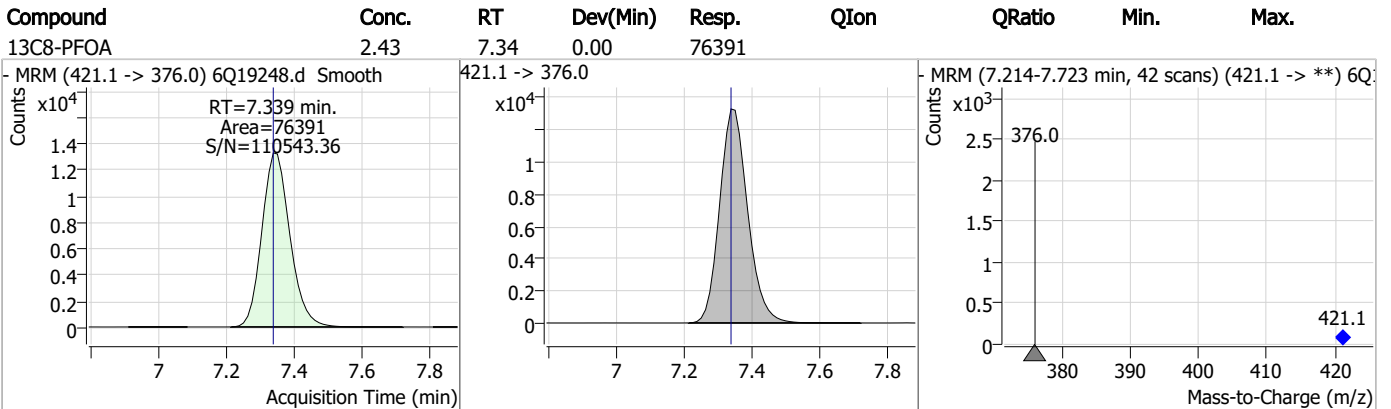
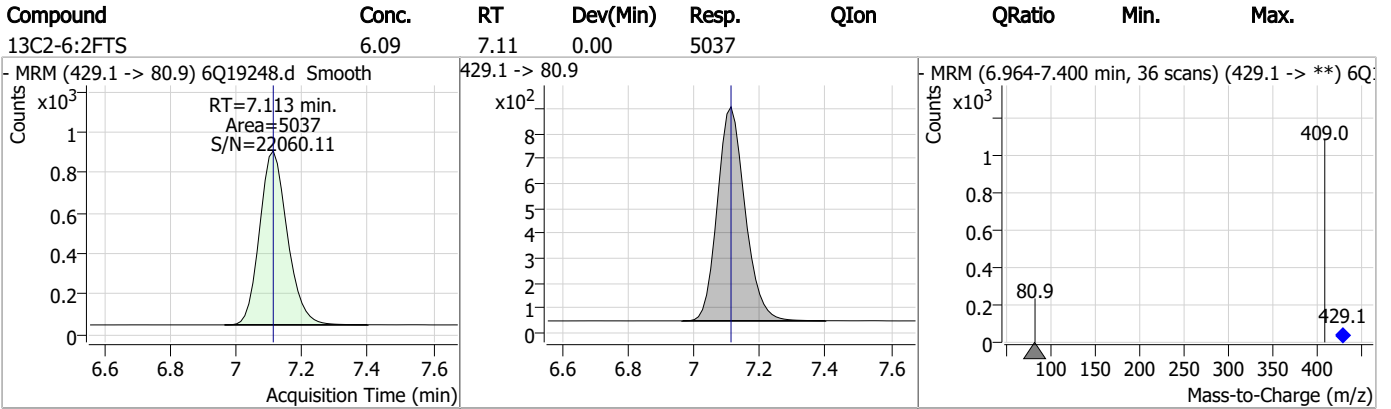


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.57	5.75	0.00	19382				
13C5-PFHxA	2.48	5.79	0.00	55118				
13C3-HFPO-DA	9.27	6.17	0.00	32687				
13C4-PFHpA	2.51	6.71	0.00	51829				

7.2.6
7

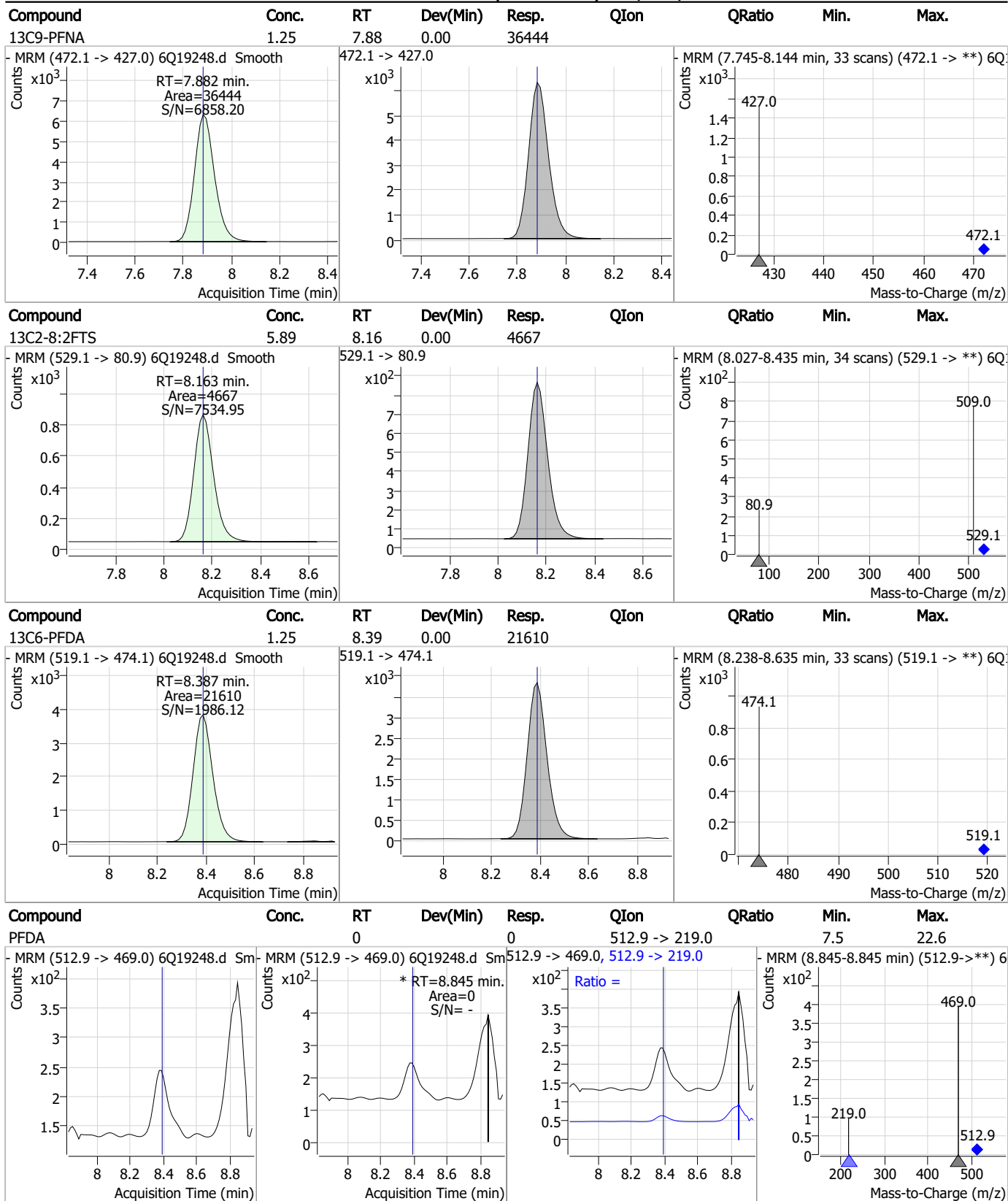
Perfluorinated Compounds by LC/MS/MS



7.2.6

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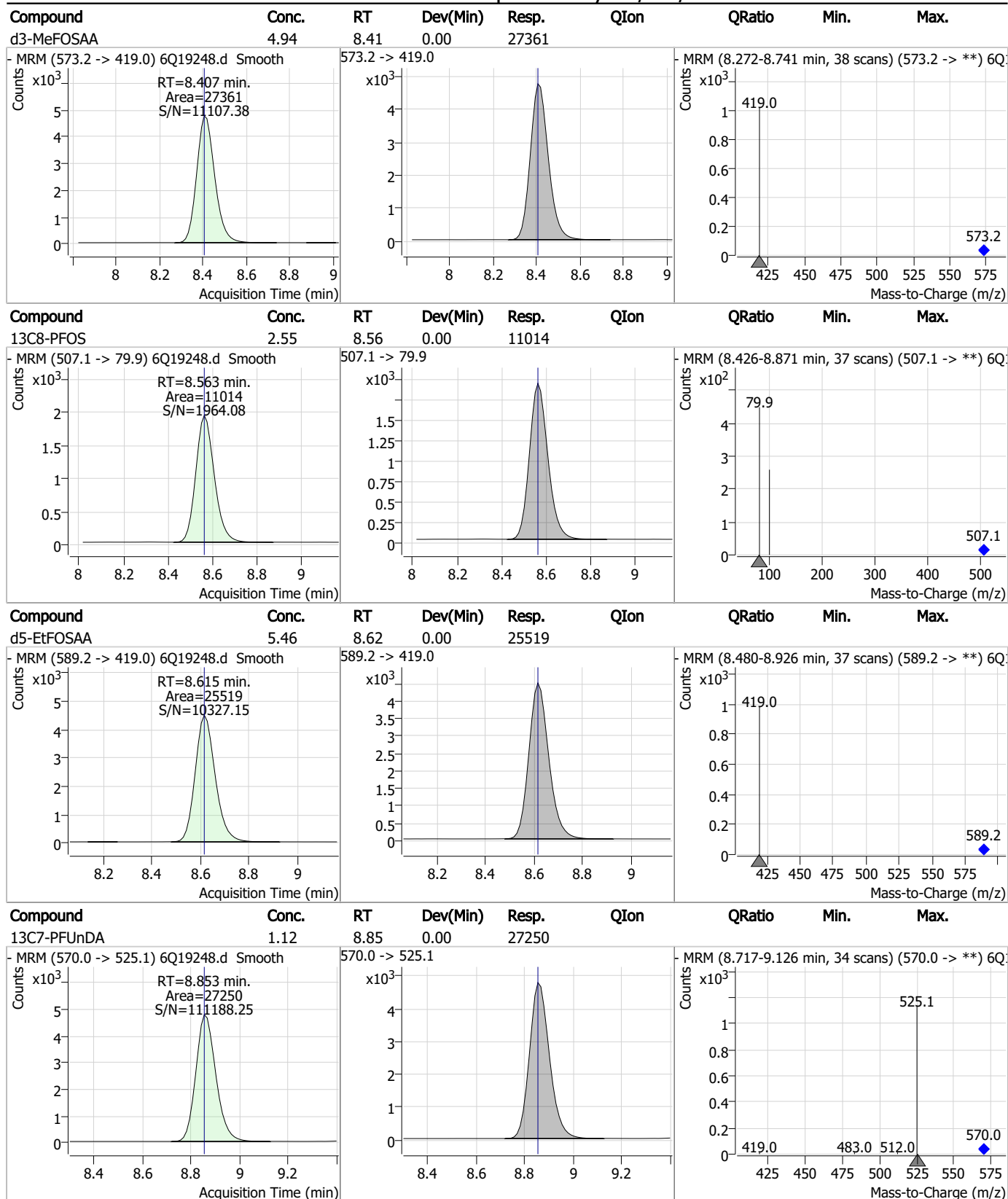
Perfluorinated Compounds by LC/MS/MS



7.2.6

7

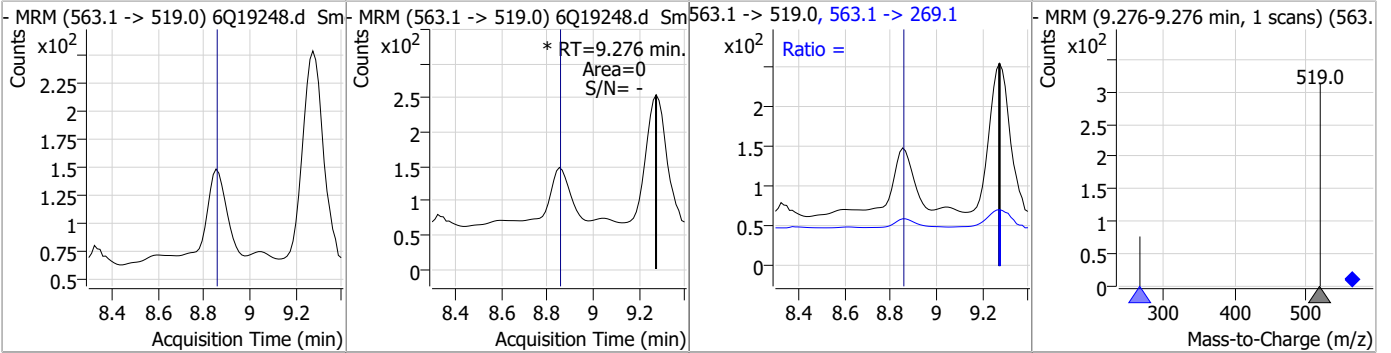
Perfluorinated Compounds by LC/MS/MS



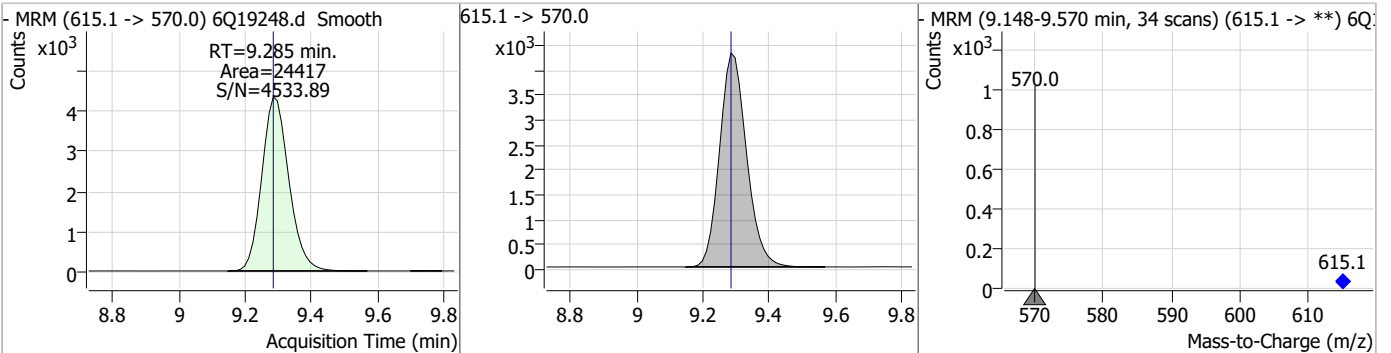
7.2.6
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Perfluorinated Compounds by LC/MS/MS

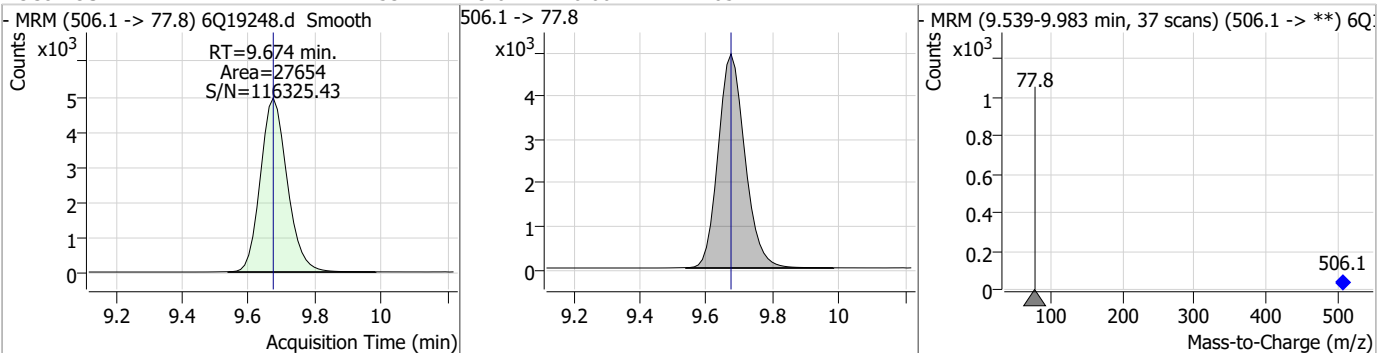
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0	0		0	563.1 -> 269.1		8.3	25.0



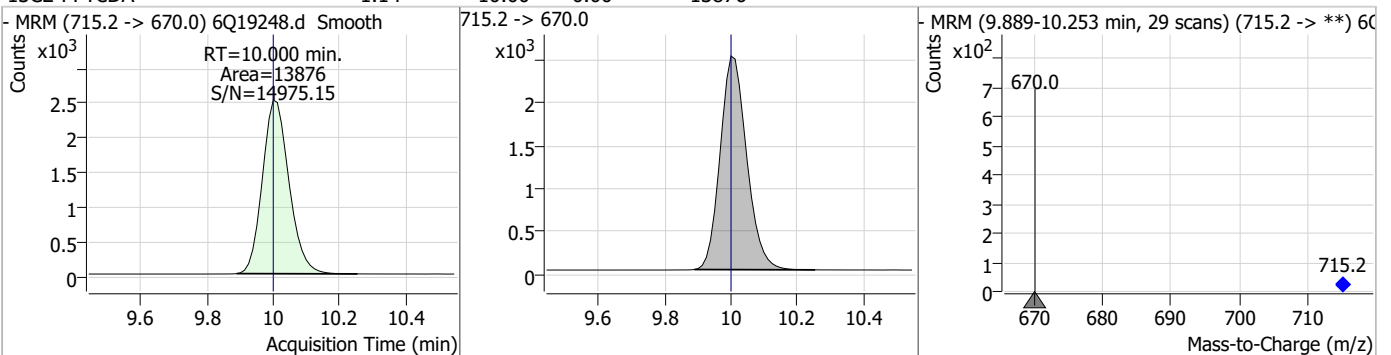
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.16	9.28	0.00	24417				



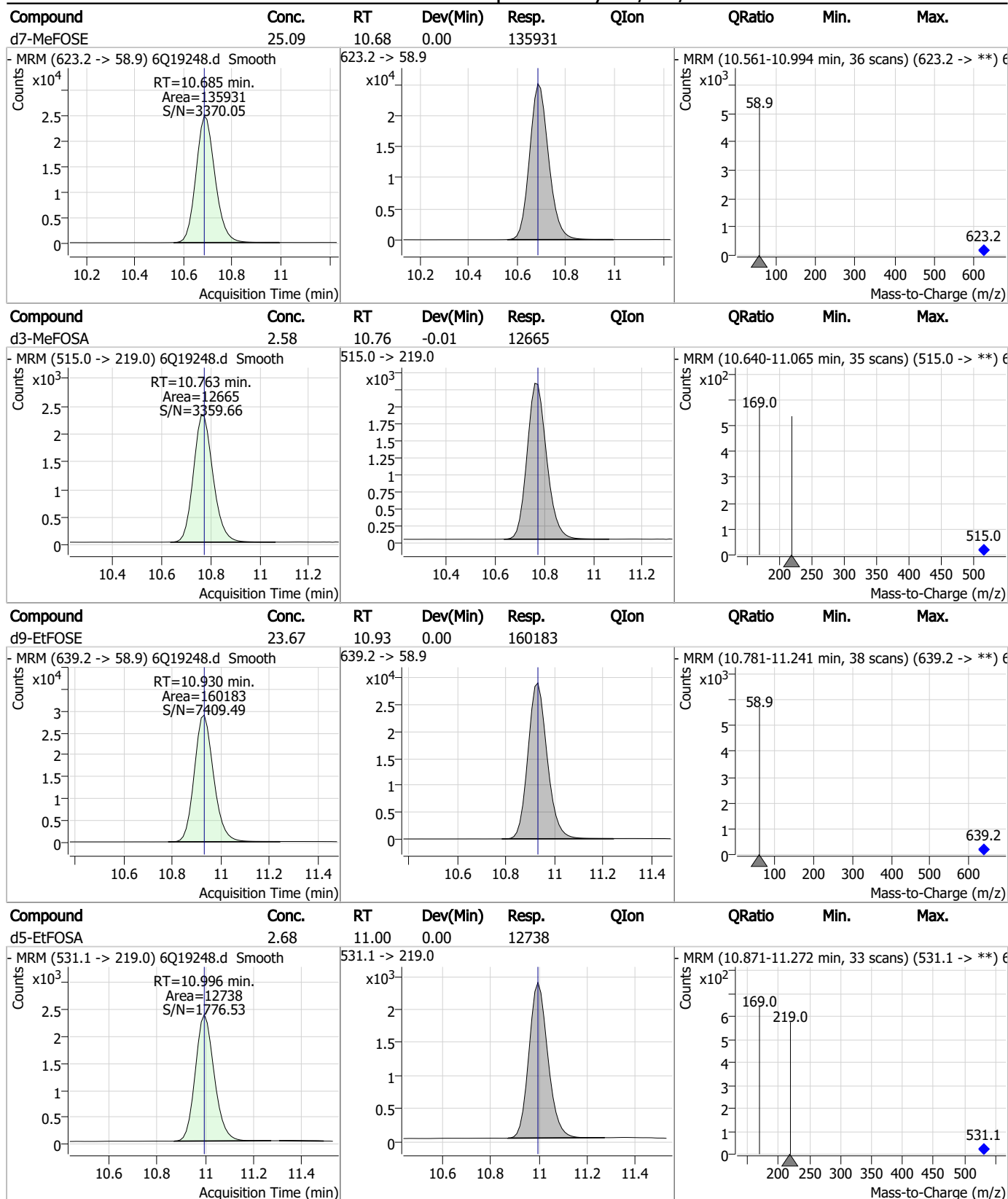
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.67	0.00	27654				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	10.00	0.00	13876				



Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19262.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 8:56:04 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	151177	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	49841	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	52954	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	52394	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	80957	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	38597	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	21842	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	30408	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	25090	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	14631	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	29167	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	20410	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	12800	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	12029	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3513	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	5091	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4413	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	31039	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	33106	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	25249	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	144785	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	155458	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12491	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12535	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	15747	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	64089	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8900	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	90846	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	31314	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	46265	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	50198	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3513	6.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.2%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5091	6.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.6%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4413	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C2-PFDoDA	9.297	615.1 -> 570.0	25090	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFTeDA	10.012	715.2 -> 670.0	14631	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C3-PFBS	5.746	302.1 -> 79.9	20410	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	12800	2.71 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C4-PFBA	3.085	216.8 -> 171.9	151177	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.707	367.1 -> 322.0	52394	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFHxA	5.792	318.0 -> 273.0	52954	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFPeA	4.560	268.3 -> 223.0	49841	5.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C6-PFDA	8.387	519.1 -> 474.1	21842	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C7-PFUnDA	8.866	570.0 -> 525.1	30408	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-FOSA	9.674	506.1 -> 77.8	29167	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOA	7.352	421.1 -> 376.0	80957	2.39 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C8-PFOS	8.563	507.1 -> 79.9	12029	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C9-PFNA	7.895	472.1 -> 427.0	38597	1.37 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.4%	
d3-MeFOSAA	8.420	573.2 -> 419.0	31039	5.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	33106	9.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d3-MeFOSA	10.775	515.0 -> 219.0	12535	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	8.615	589.2 -> 419.0	25249	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d7-MeFOSE	10.685	623.2 -> 58.9	144785	25.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d9-EtFOSE	10.930	639.2 -> 58.9	155458	21.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.1%	
d5-EtFOSA	10.996	531.1 -> 219.0	12491	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	

Target Compounds	RT	Transition	Response	Conc. Units	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	8.845	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	9.685	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0	0		
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.849	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
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	9.288	563.1 -> 519.0	0	µg/L	m	1
		563.1 -> 269.1				
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.27
7

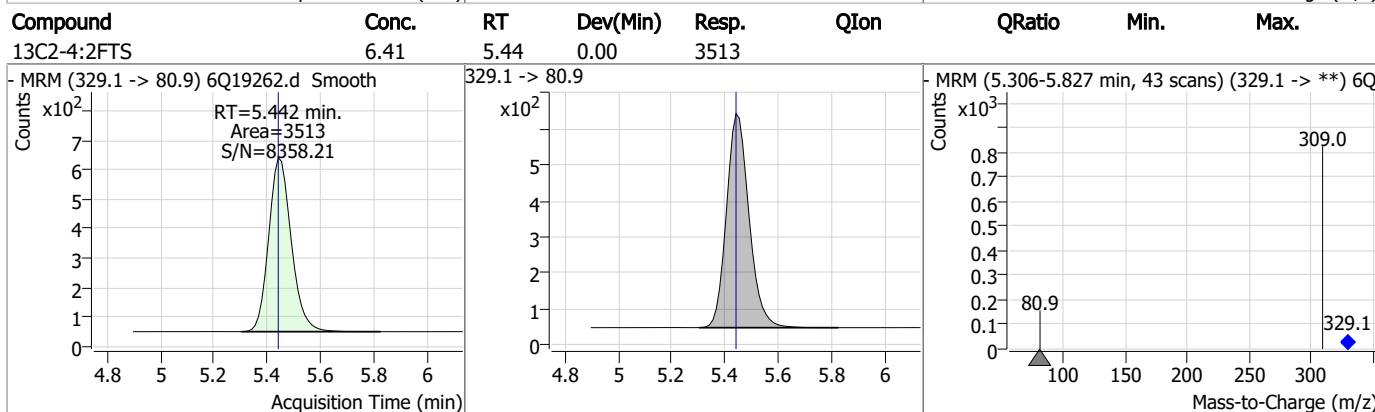
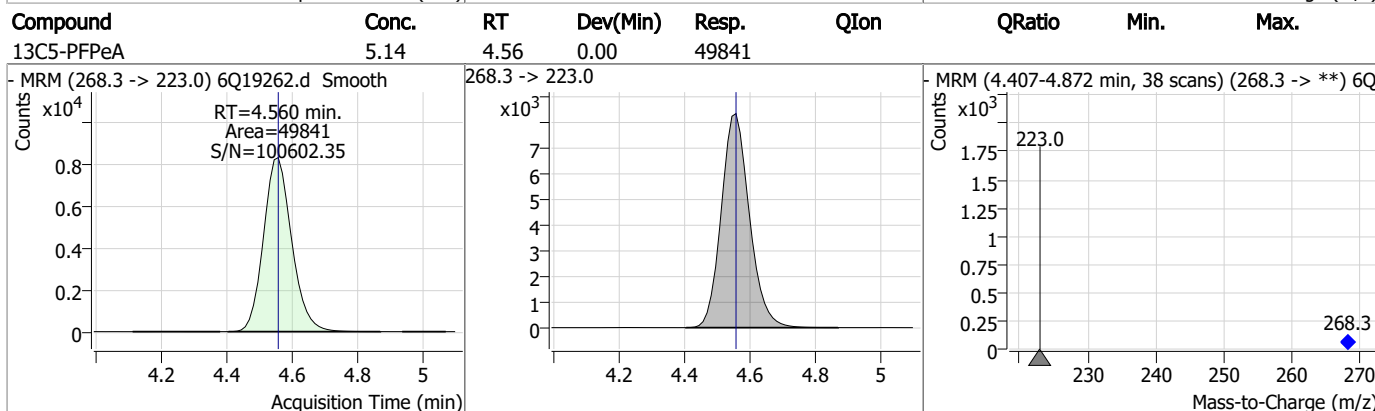
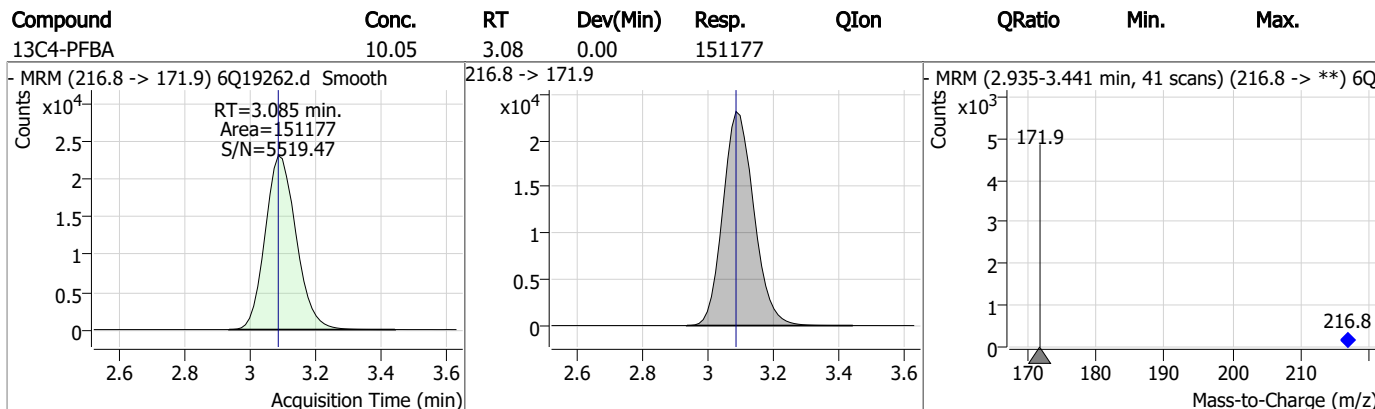
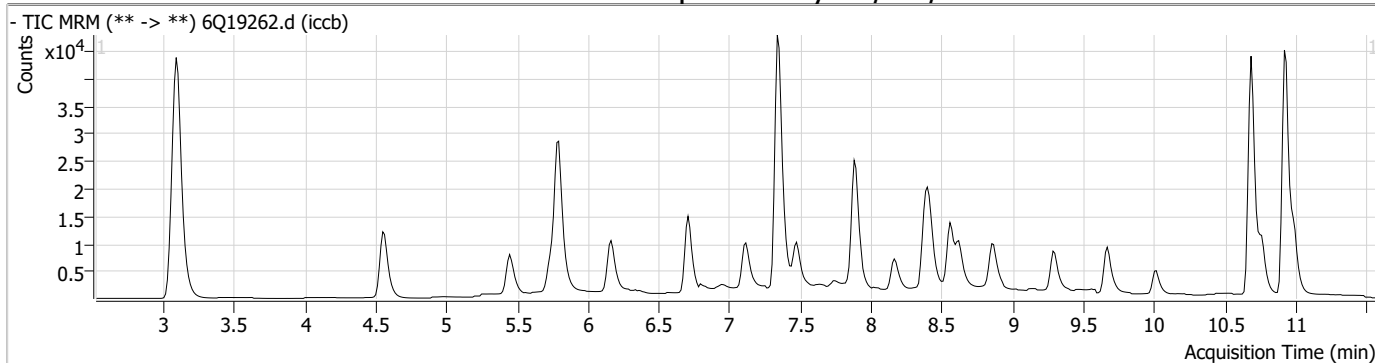
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.7

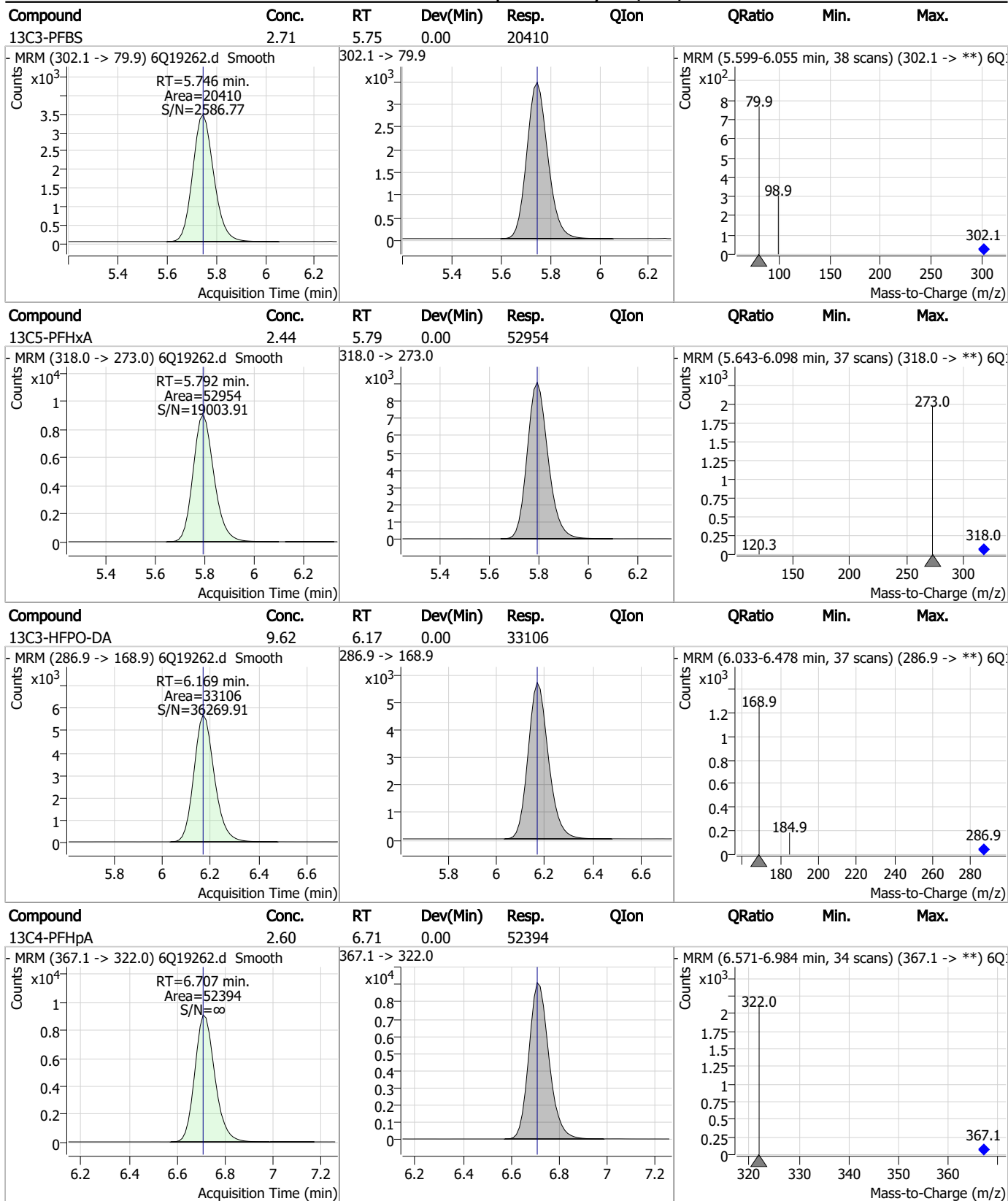
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Perfluorinated Compounds by LC/MS/MS



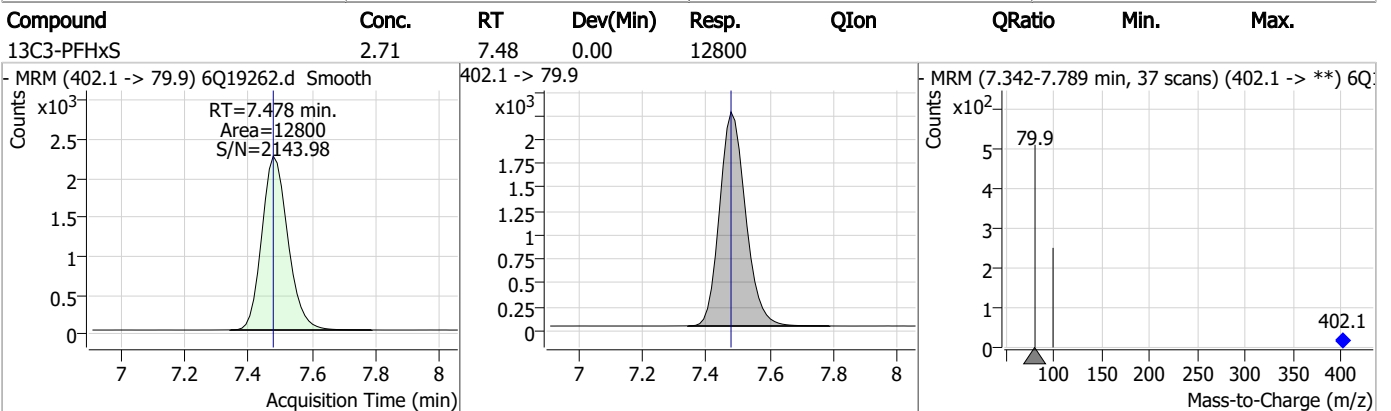
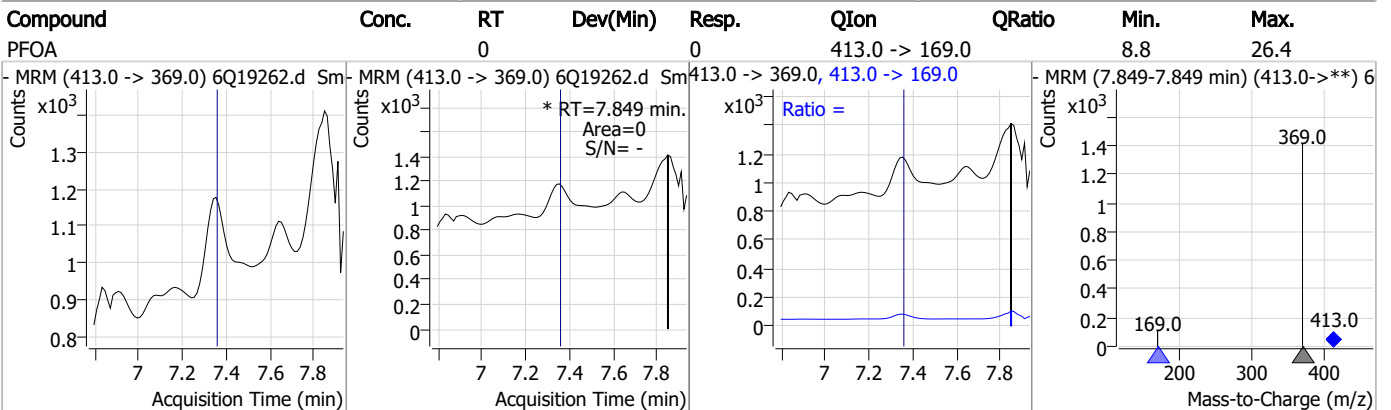
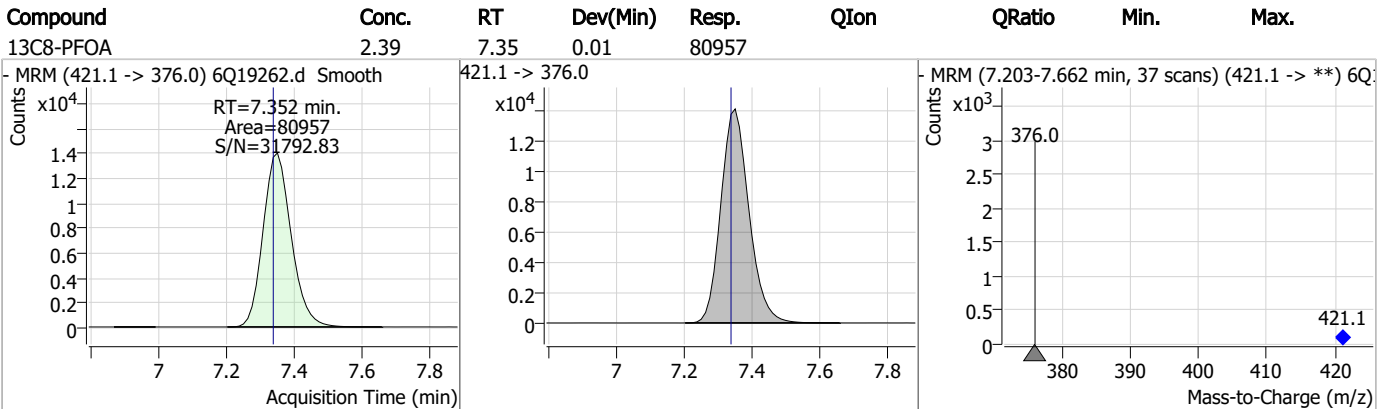
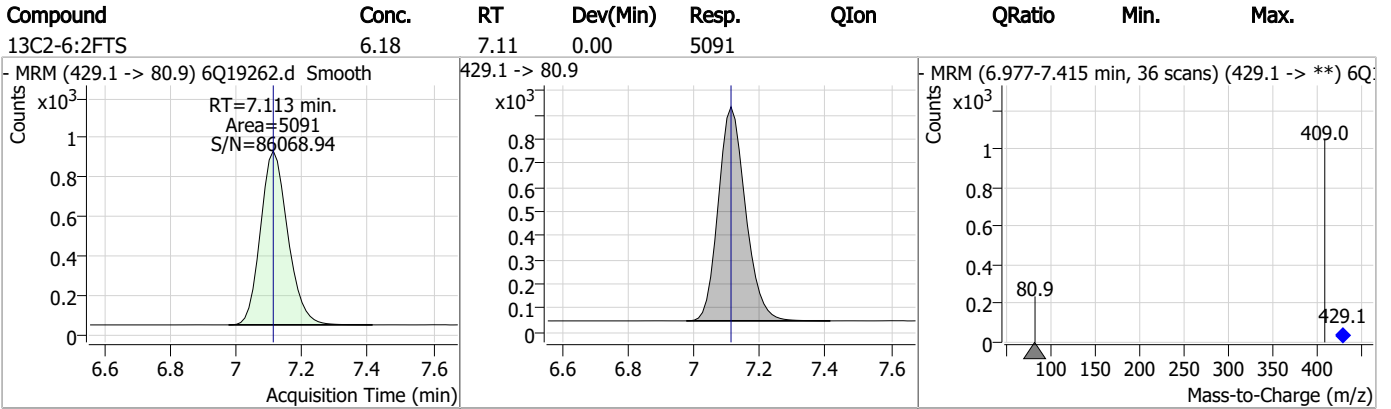
7.2.7
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Perfluorinated Compounds by LC/MS/MS

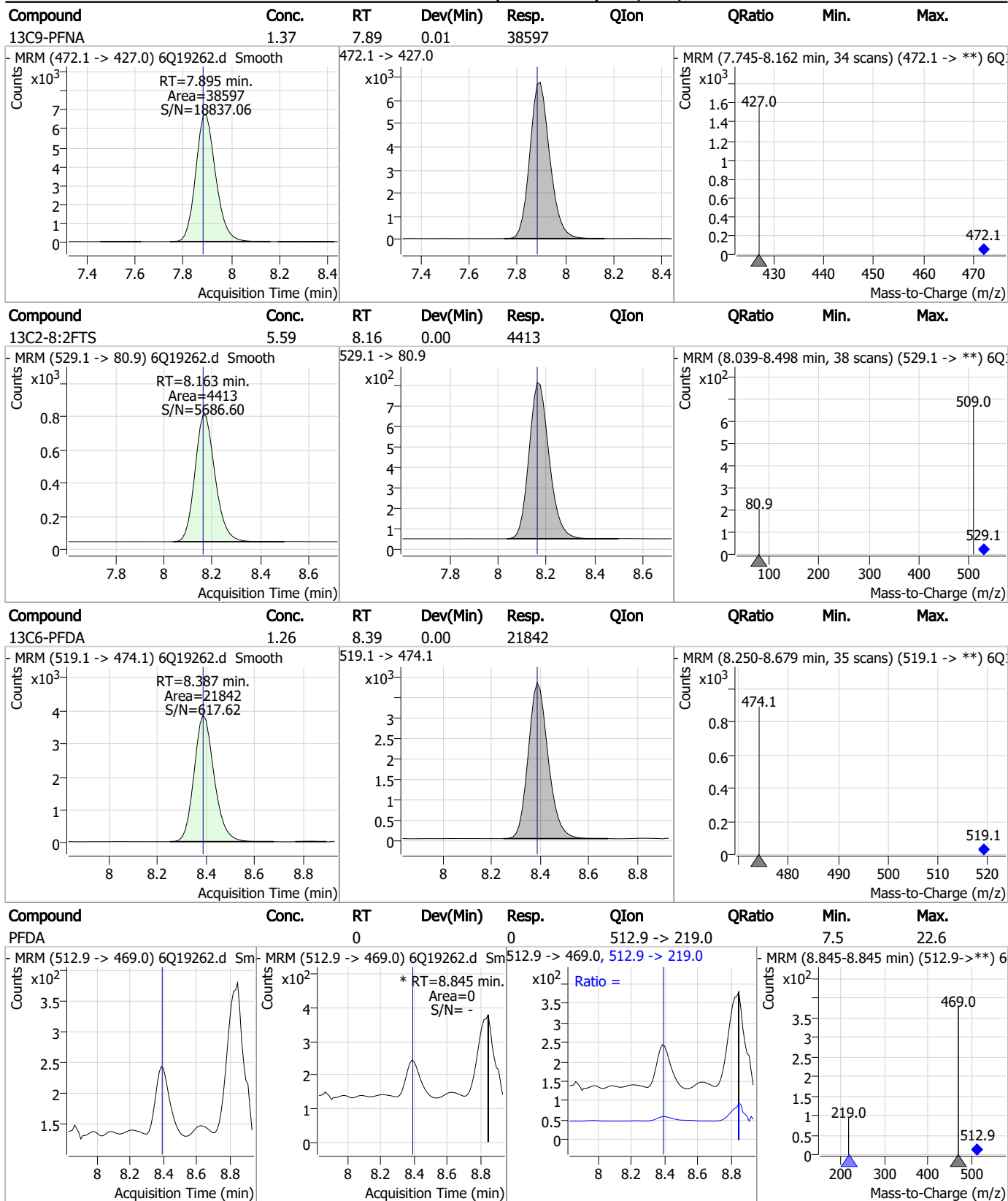


7.27
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Perfluorinated Compounds by LC/MS/MS

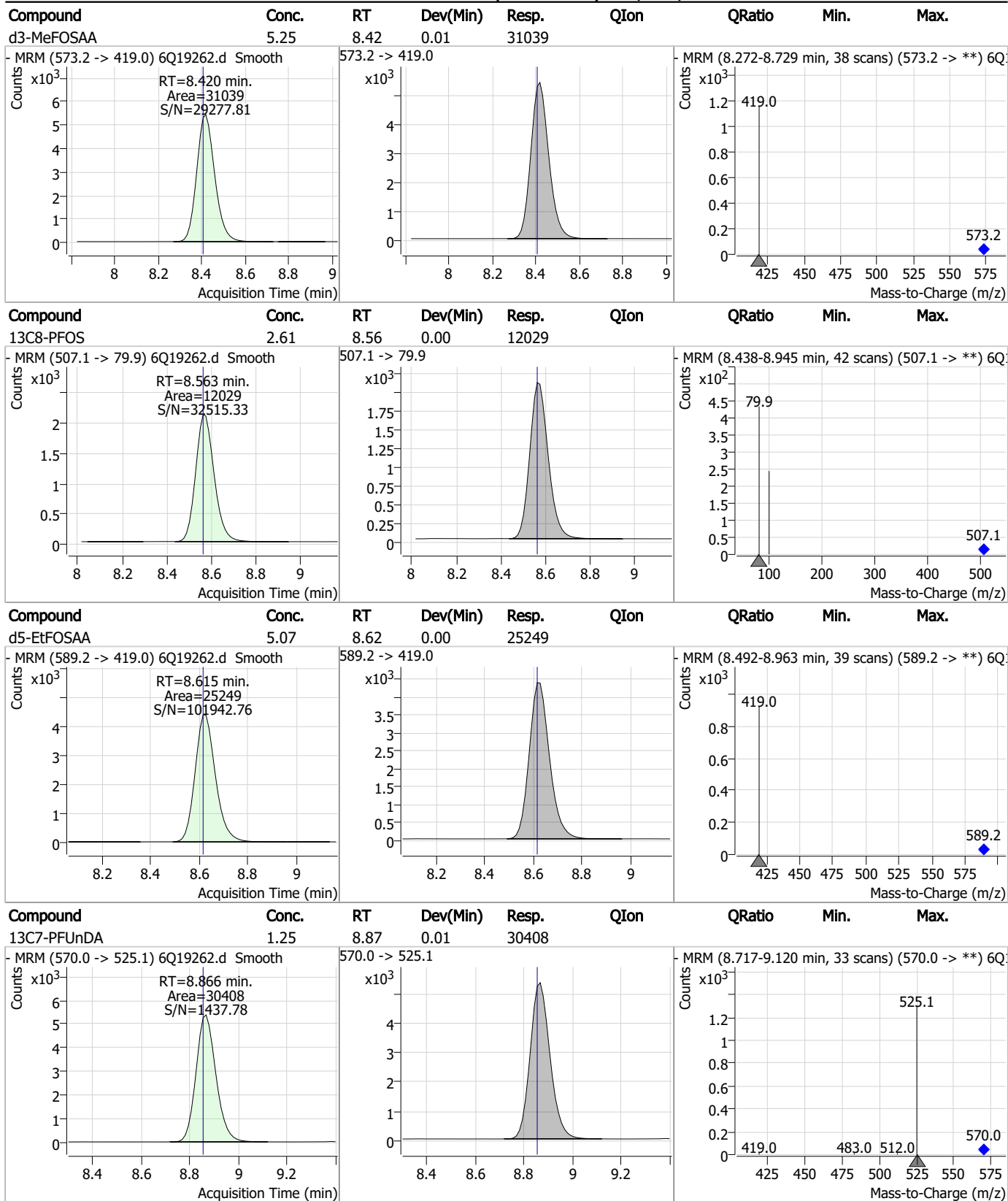


Perfluorinated Compounds by LC/MS/MS



7.27

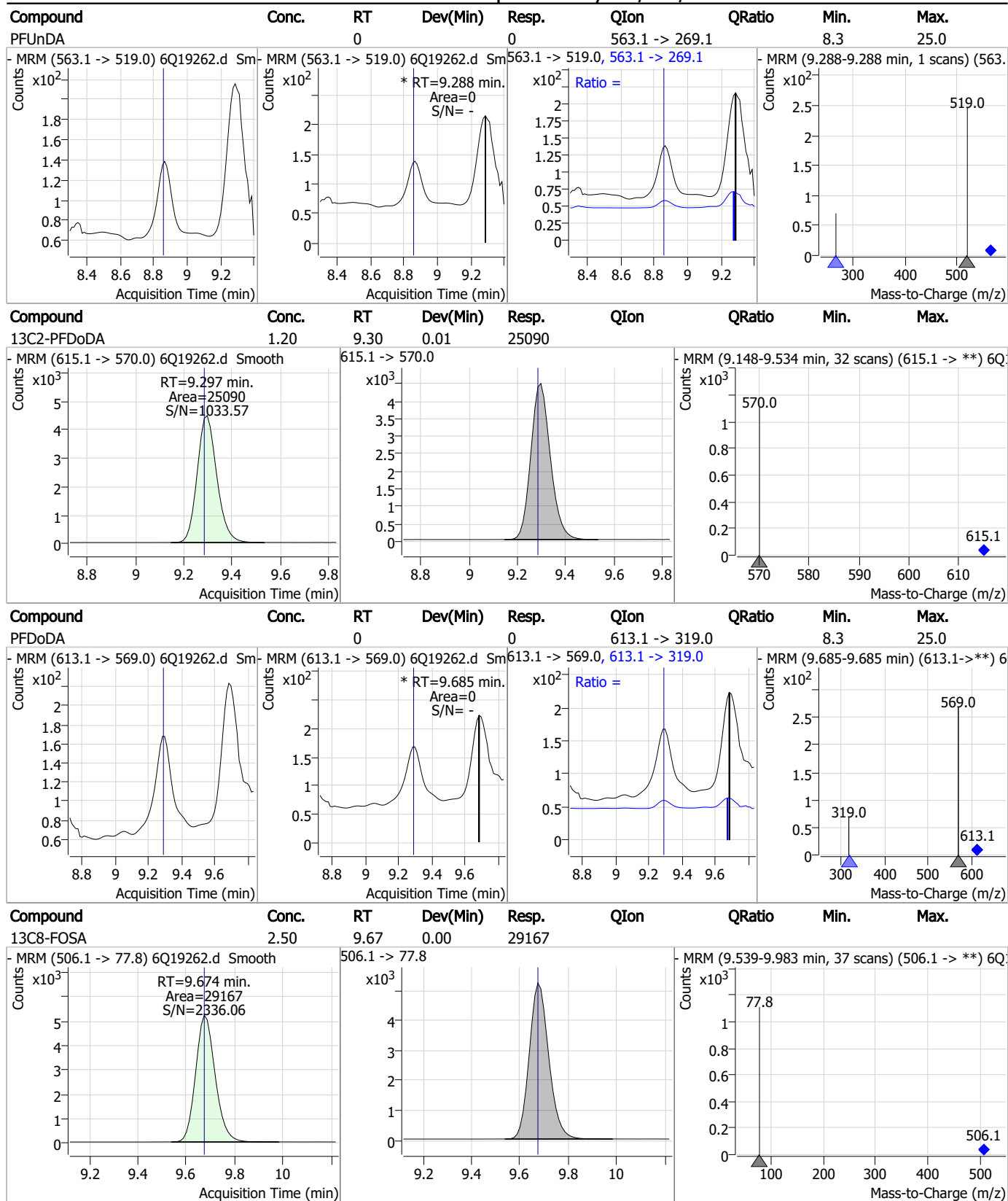
Perfluorinated Compounds by LC/MS/MS



7.27
7



Perfluorinated Compounds by LC/MS/MS



7.27
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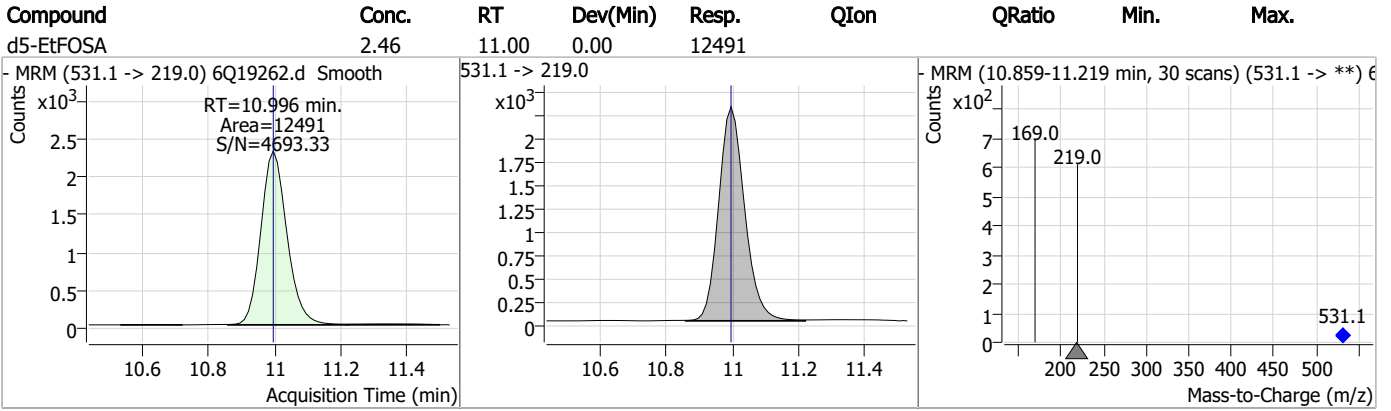
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	10.01	0.01	14631				
d7-MeFOSE	25.05	10.68	0.00	144785				
d3-MeFOSA	2.39	10.78	0.00	12535				
d9-EtFOSE	21.54	10.93	0.00	155458				

7.2.7
7



Perfluorinated Compounds by LC/MS/MS



7.2.7
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18700.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:09:49 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	157527	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	52321	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	58454	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	54515	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	87606	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	37342	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23090	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	30368	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	27959	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	14861	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	30246	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	21836	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	13048	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12774	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3625	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5365	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5080	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	26611	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	37153	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25044	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	105344	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	133355	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11573	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11709	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	15455	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	65847	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	9585	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	91415	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	31859	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	49296	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	54526	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3625	5.67 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5365	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5080	5.39 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	27959	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14861	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFBS	5.322	302.1 -> 79.9	21836	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C3-PFHxS	7.118	402.1 -> 79.9	13048	2.44 µg/L	-0.012

7.2.8
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C4-PFBA	2.822	216.8 -> 171.9	157527	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	54515	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	58454	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	52321	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C6-PFDA	8.014	519.1 -> 474.1	23090	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30368	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C8-FOSA	9.598	506.1 -> 77.8	30246	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOA	7.013	421.1 -> 376.0	87606	2.56 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-PFOS	8.165	507.1 -> 79.9	12774	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C9-PFNA	7.545	472.1 -> 427.0	37342	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	26611	5.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	37153	10.37 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	11709	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25044	5.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	105344	27.14 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	133355	26.27 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	11573	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	

Target Compounds

QValue

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



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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

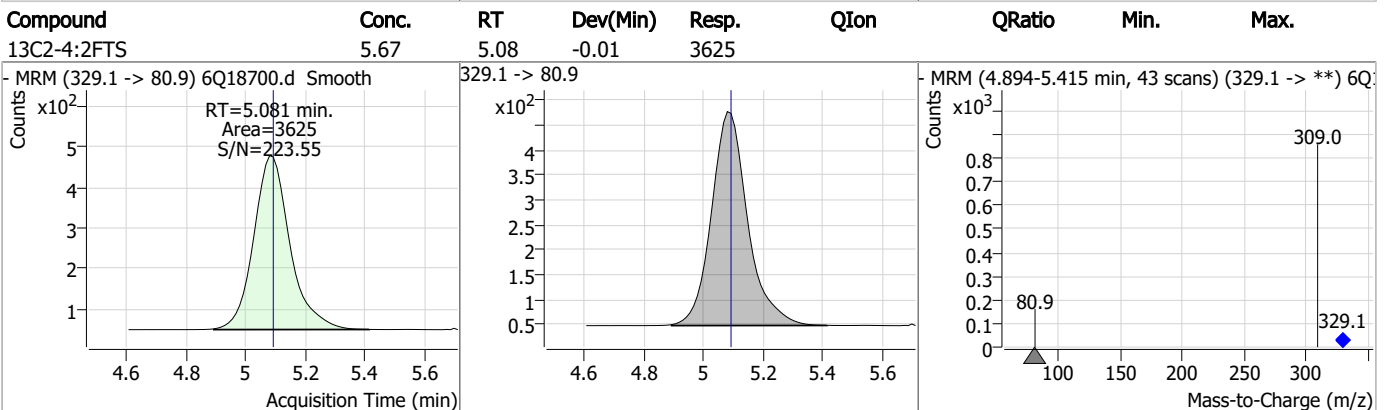
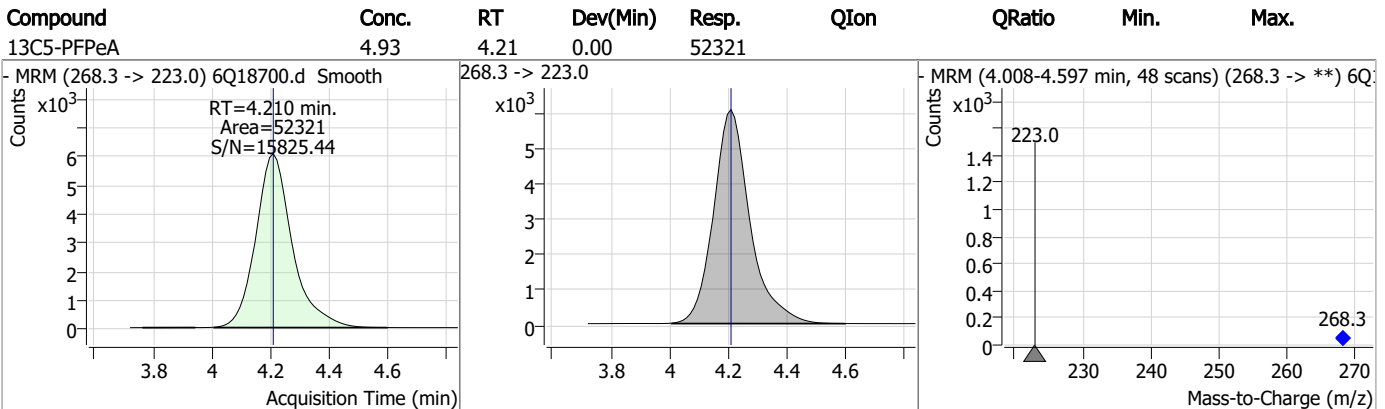
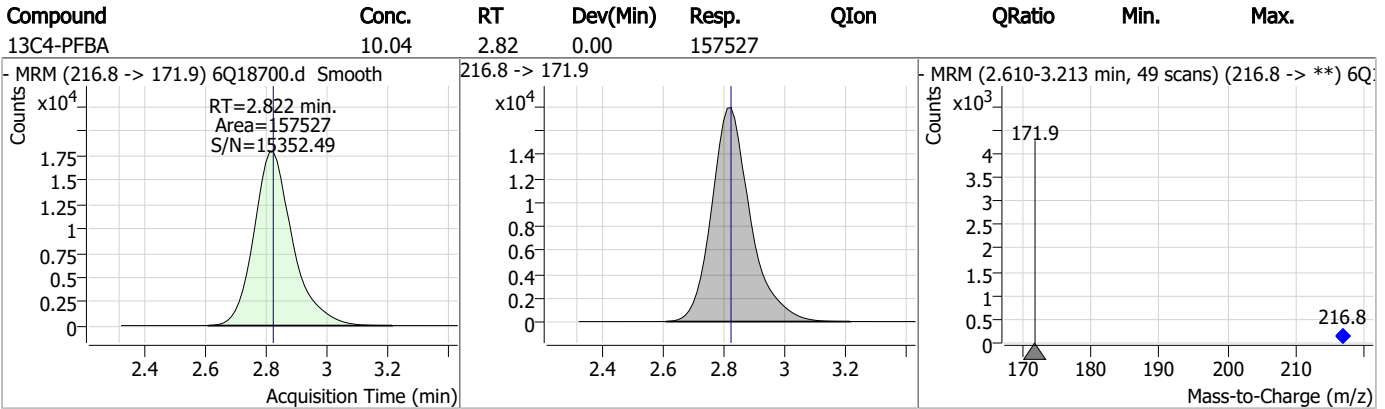
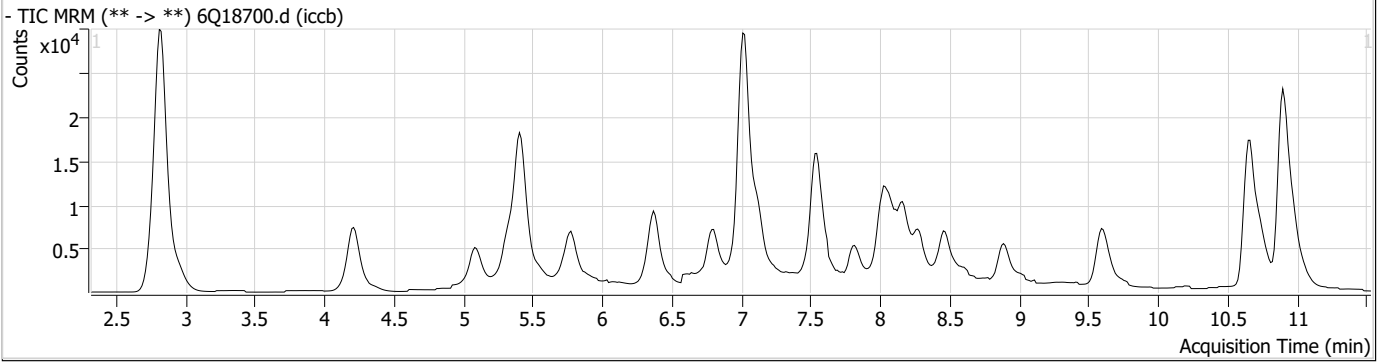
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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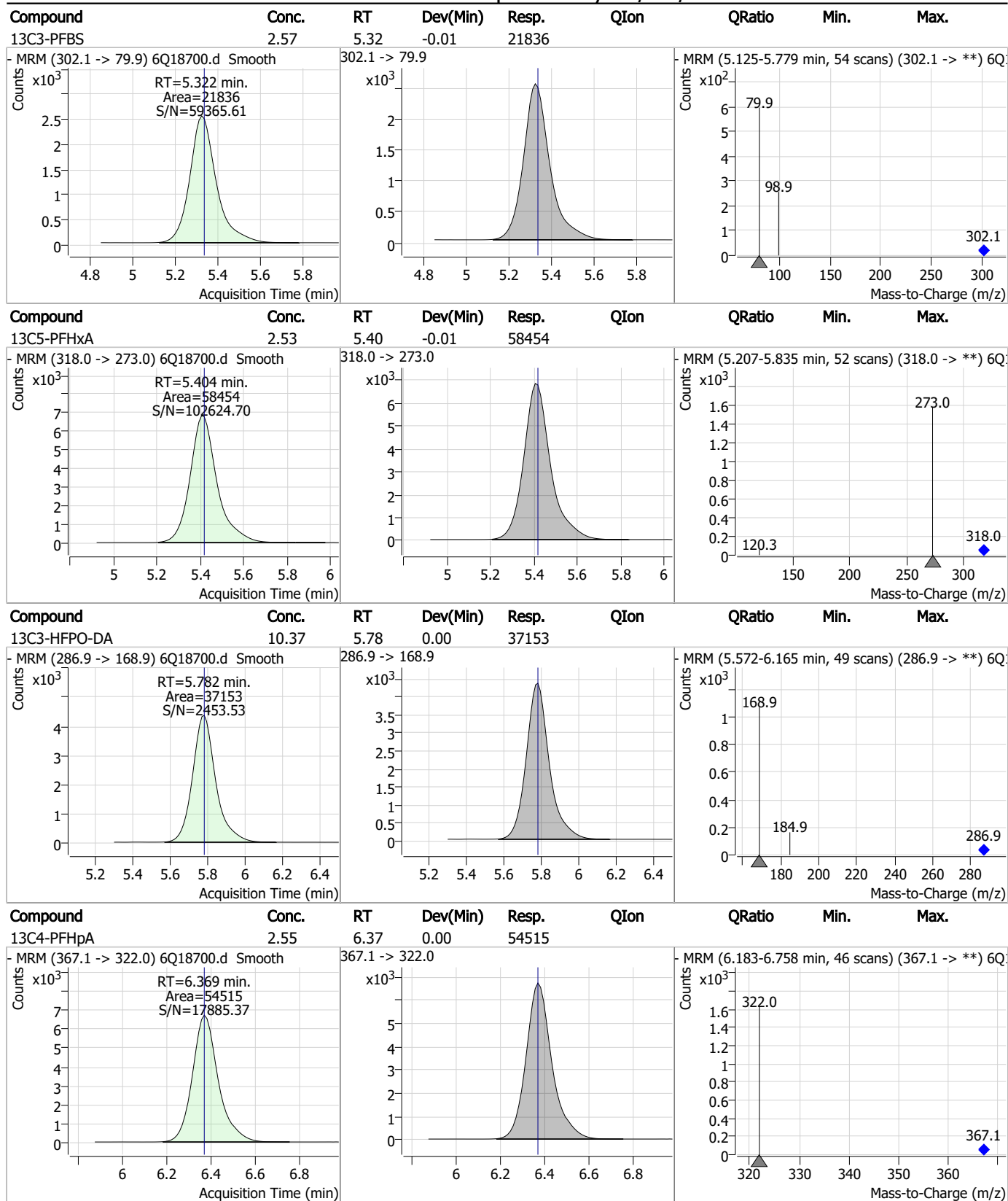
7.2.8

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Perfluorinated Compounds by LC/MS/MS

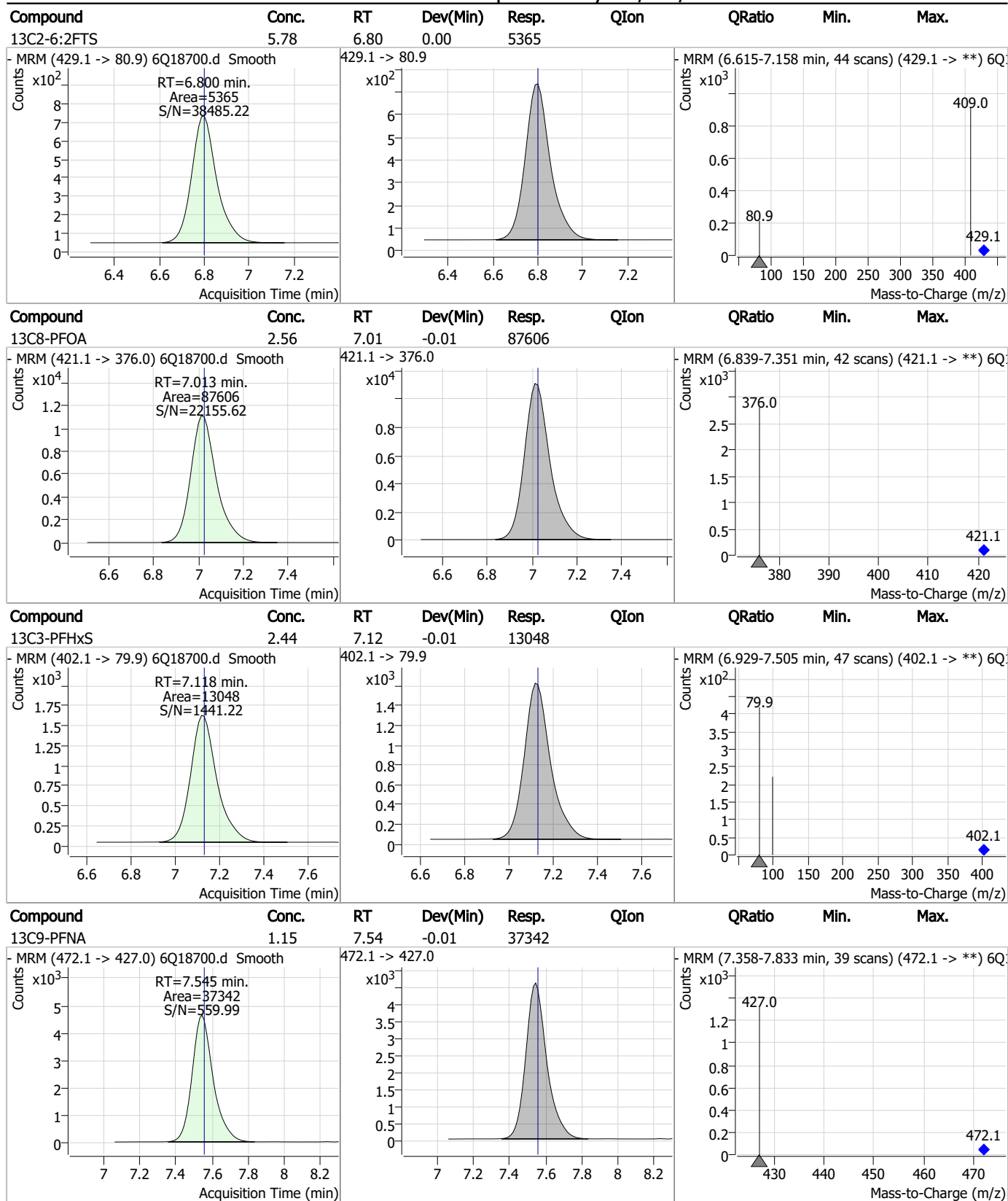


Perfluorinated Compounds by LC/MS/MS



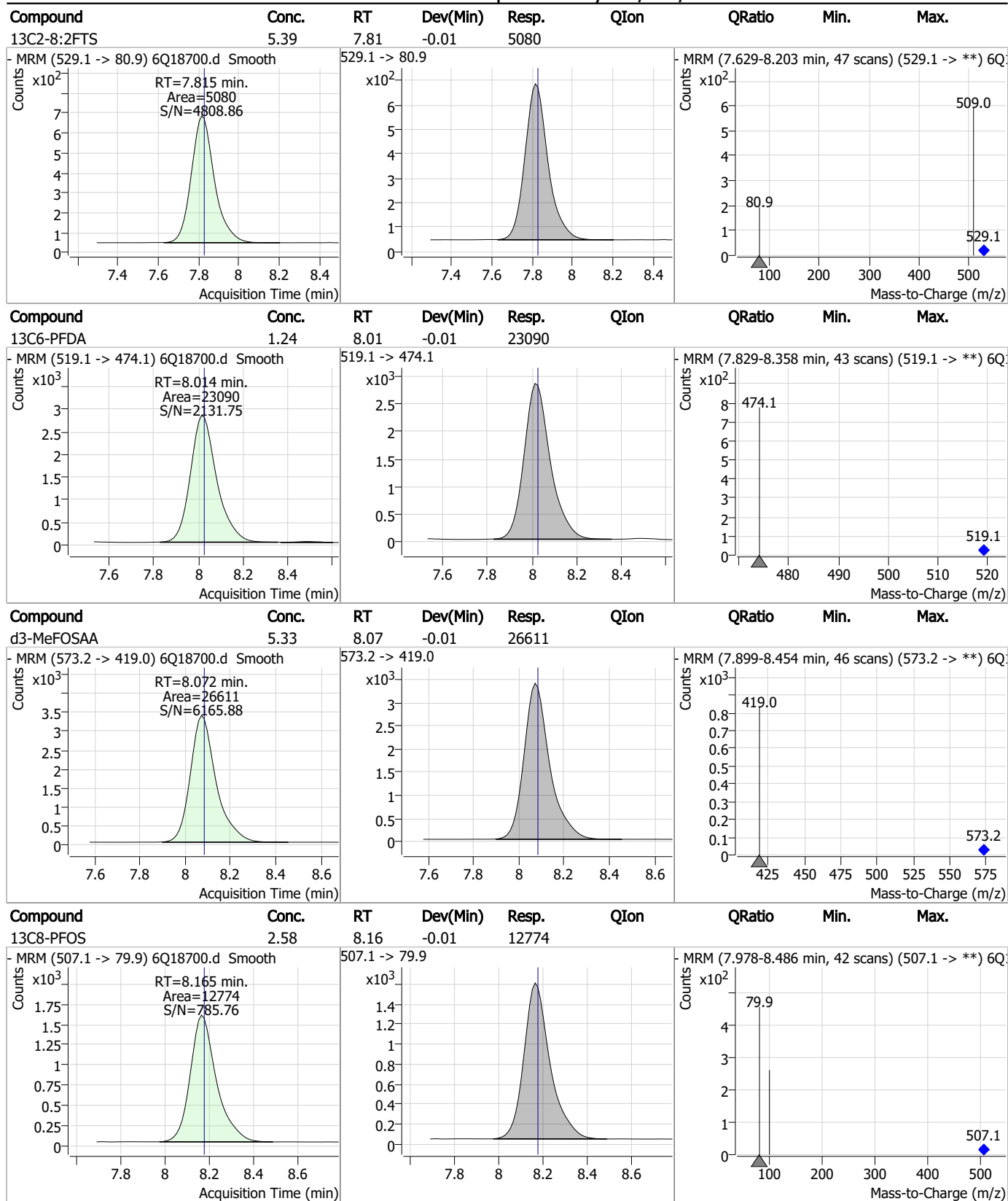
7.28
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Perfluorinated Compounds by LC/MS/MS



7.2.8

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.52	8.27	-0.01	25044				
13C7-PFUnDA	1.28	8.47	-0.01	30368				
13C2-PFDoDA	1.26	8.89	-0.01	27959				
13C8-FOSA	2.57	9.60	0.00	30246				

7.2.8

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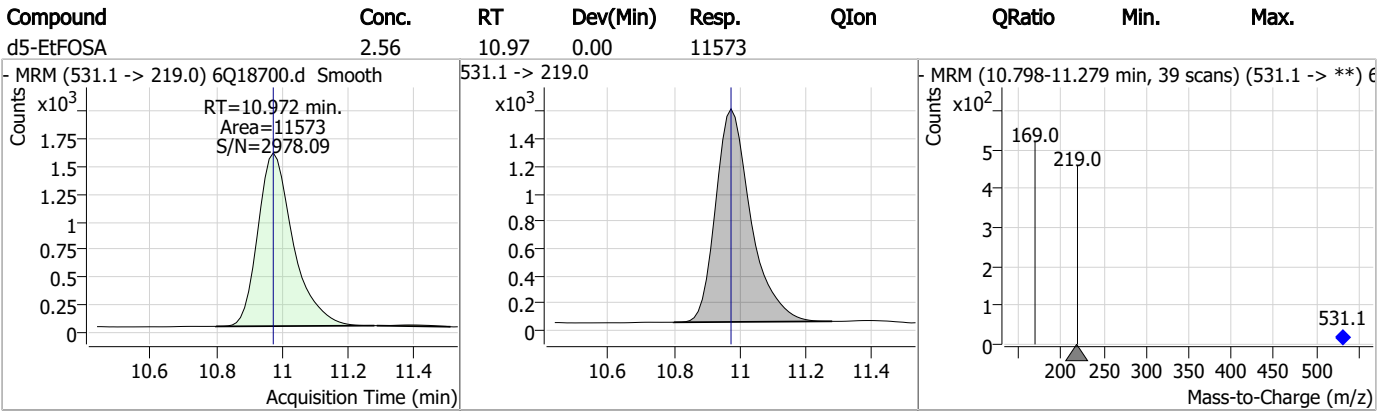
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.63	-0.01	14861				
d7-MeFOSE	27.14	10.66	0.00	105344				
d3-MeFOSA	2.45	10.74	0.00	11709				
d9-EtFOSE	26.27	10.89	-0.01	133355				

7.28
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Perfluorinated Compounds by LC/MS/MS



7.2.8
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18778.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 3:59:21 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	169295	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	56667	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	60616	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	58995	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	92564	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	40085	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23530	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	31919	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	28636	1.25 µg/L	-0.012
M2-PFTeDA	9.615	715.2 -> 670.0	15983	1.25 µg/L	-0.025
M8-FOSA	9.598	506.1 -> 77.8	32352	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22659	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14156	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13801	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3897	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5845	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5634	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	29449	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	39286	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	27472	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	107715	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	134713	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12475	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12399	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16872	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	71340	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10353	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	95356	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	33274	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	51988	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	55242	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3897	5.64 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5845	5.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5634	5.54 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-PFDoDA	8.887	615.1 -> 570.0	28636	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-PFTeDA	9.615	715.2 -> 670.0	15983	1.27 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-PFBS	5.322	302.1 -> 79.9	22659	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFHxS	7.118	402.1 -> 79.9	14156	2.45 µg/L	-0.012

7.2.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C4-PFBA	2.822	216.8 -> 171.9	169295	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	58995	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C5-PFHxA	5.404	318.0 -> 273.0	60616	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	56667	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C6-PFDA	8.014	519.1 -> 474.1	23530	1.21 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31919	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-FOSA	9.598	506.1 -> 77.8	32352	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.013	421.1 -> 376.0	92564	2.59 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-PFOS	8.165	507.1 -> 79.9	13801	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C9-PFNA	7.545	472.1 -> 427.0	40085	1.17 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
d3-MeFOSAA	8.072	573.2 -> 419.0	29449	5.41 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	39286	10.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	12399	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSAA	8.267	589.2 -> 419.0	27472	5.55 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	107715	25.42 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	134713	24.31 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	12475	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	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.	

7.2.9

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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			
PFTTrDA	-	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

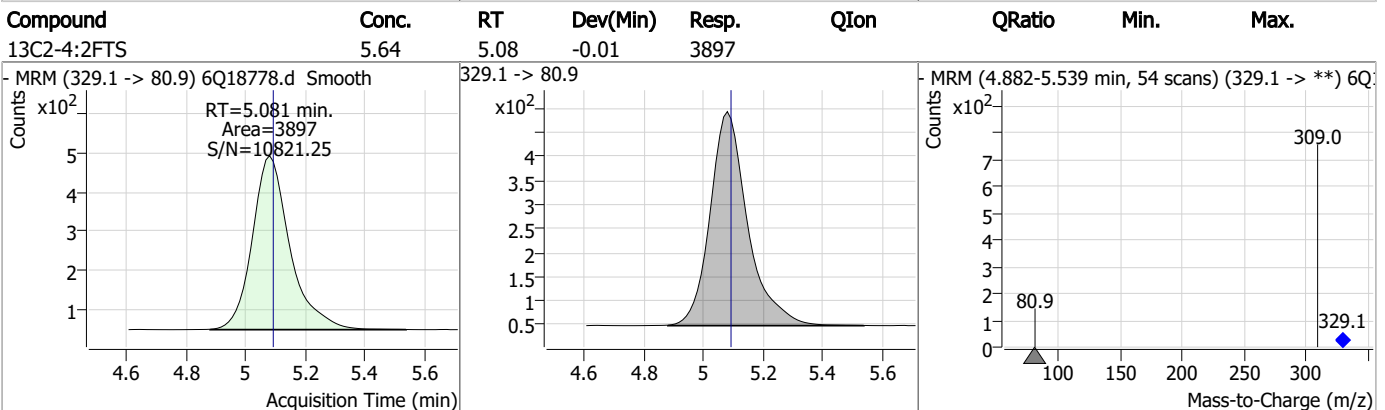
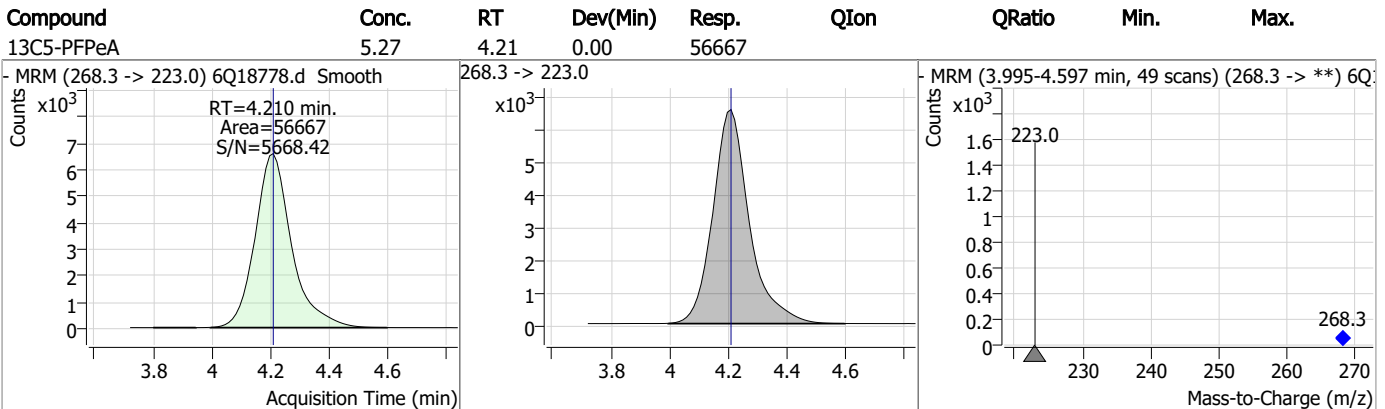
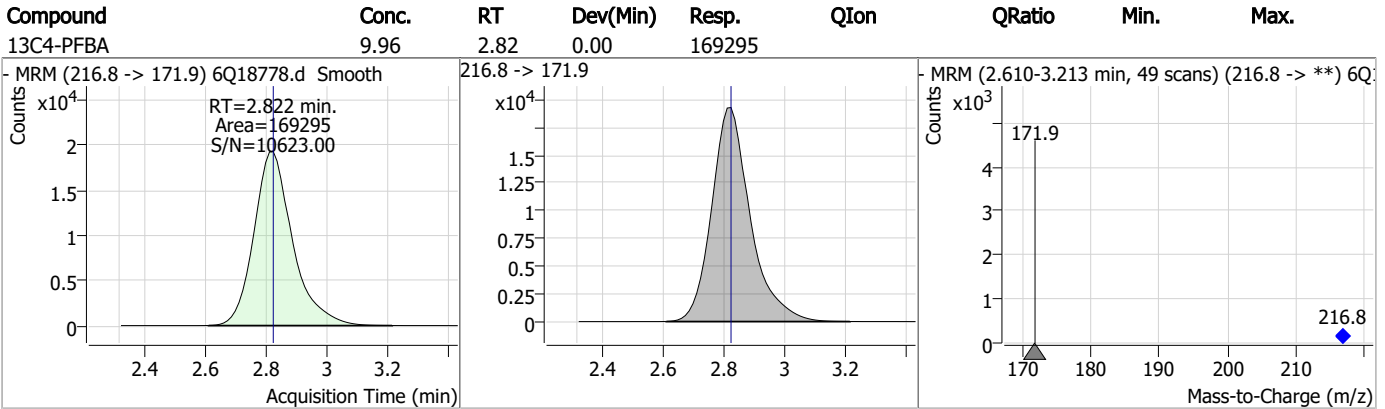
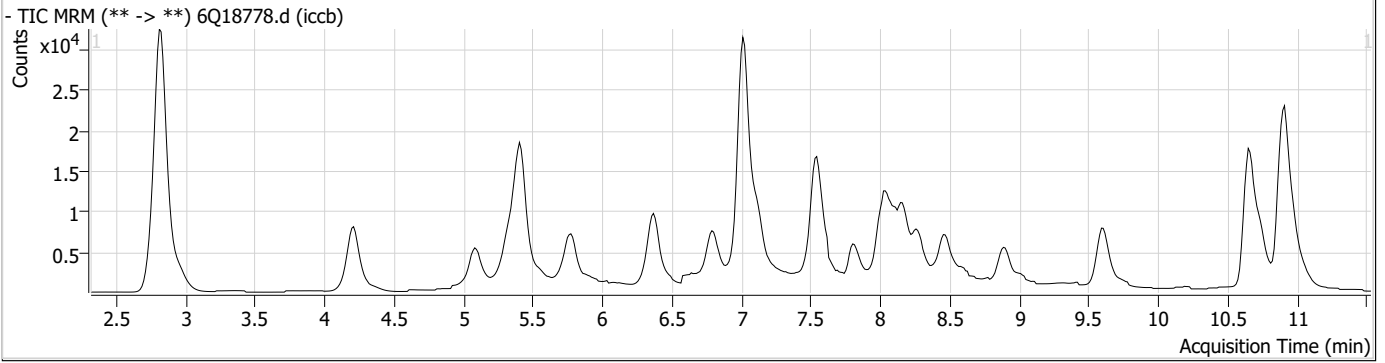
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.2.9

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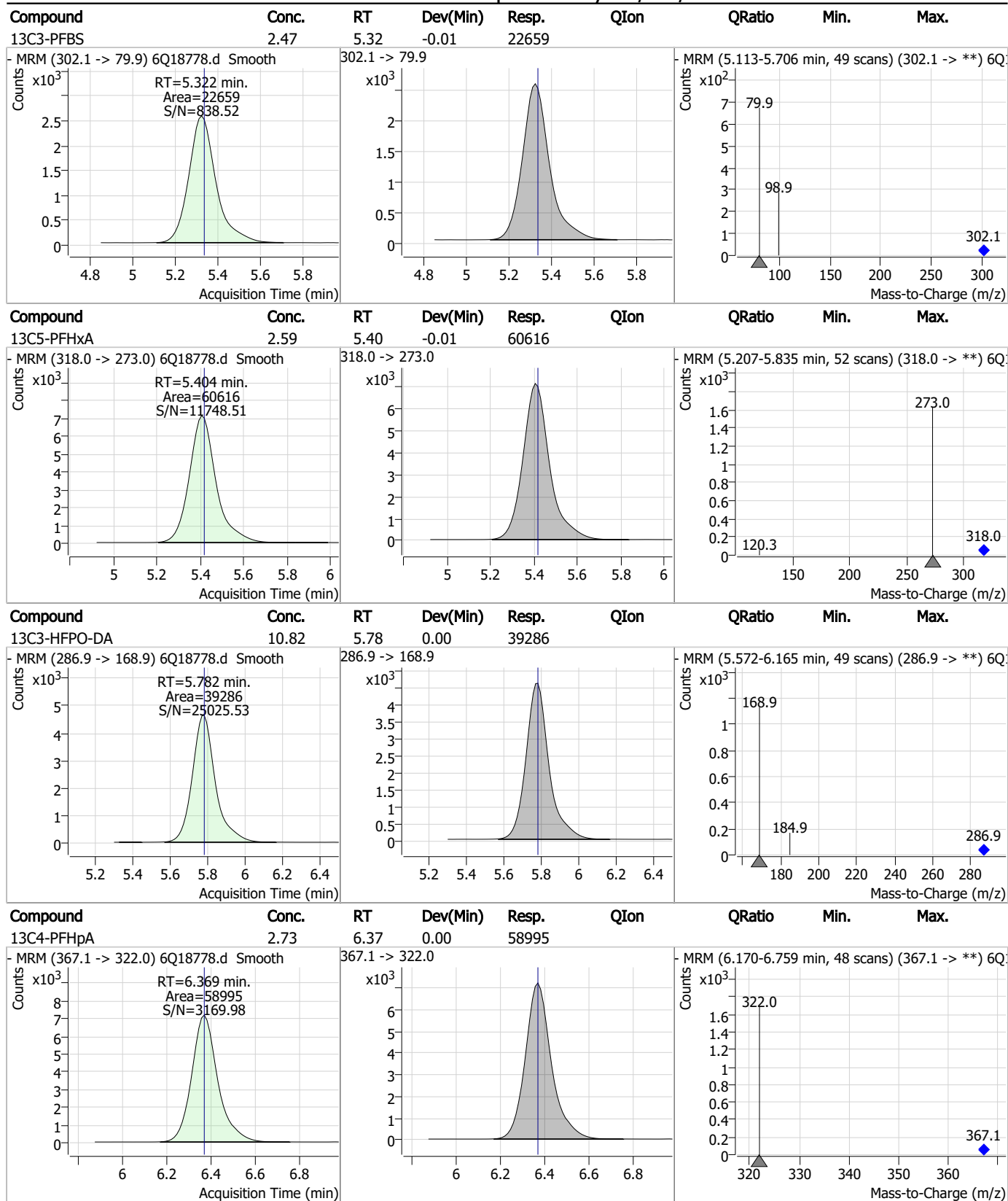
Perfluorinated Compounds by LC/MS/MS



7.2.9

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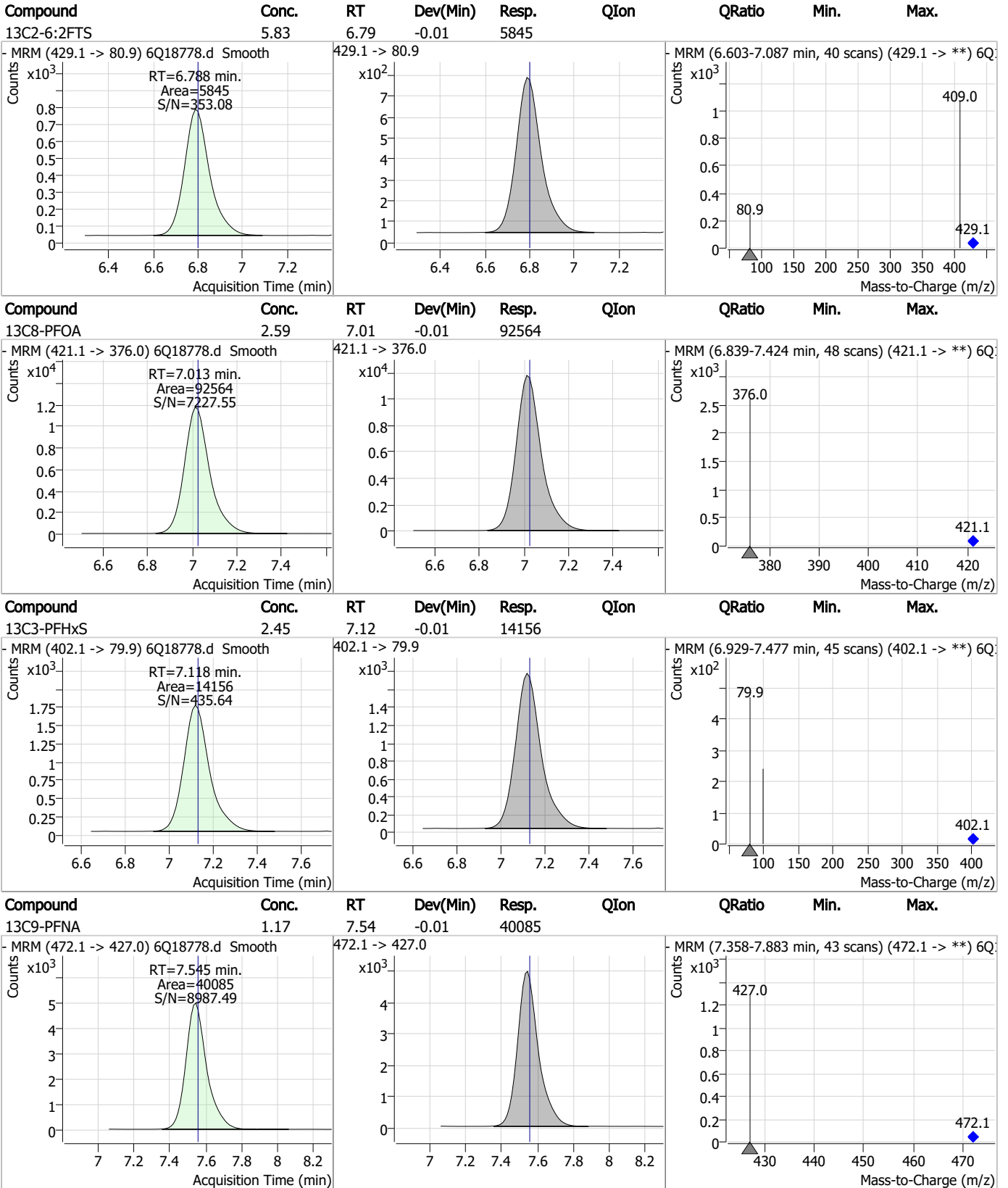
Perfluorinated Compounds by LC/MS/MS



7.2.9

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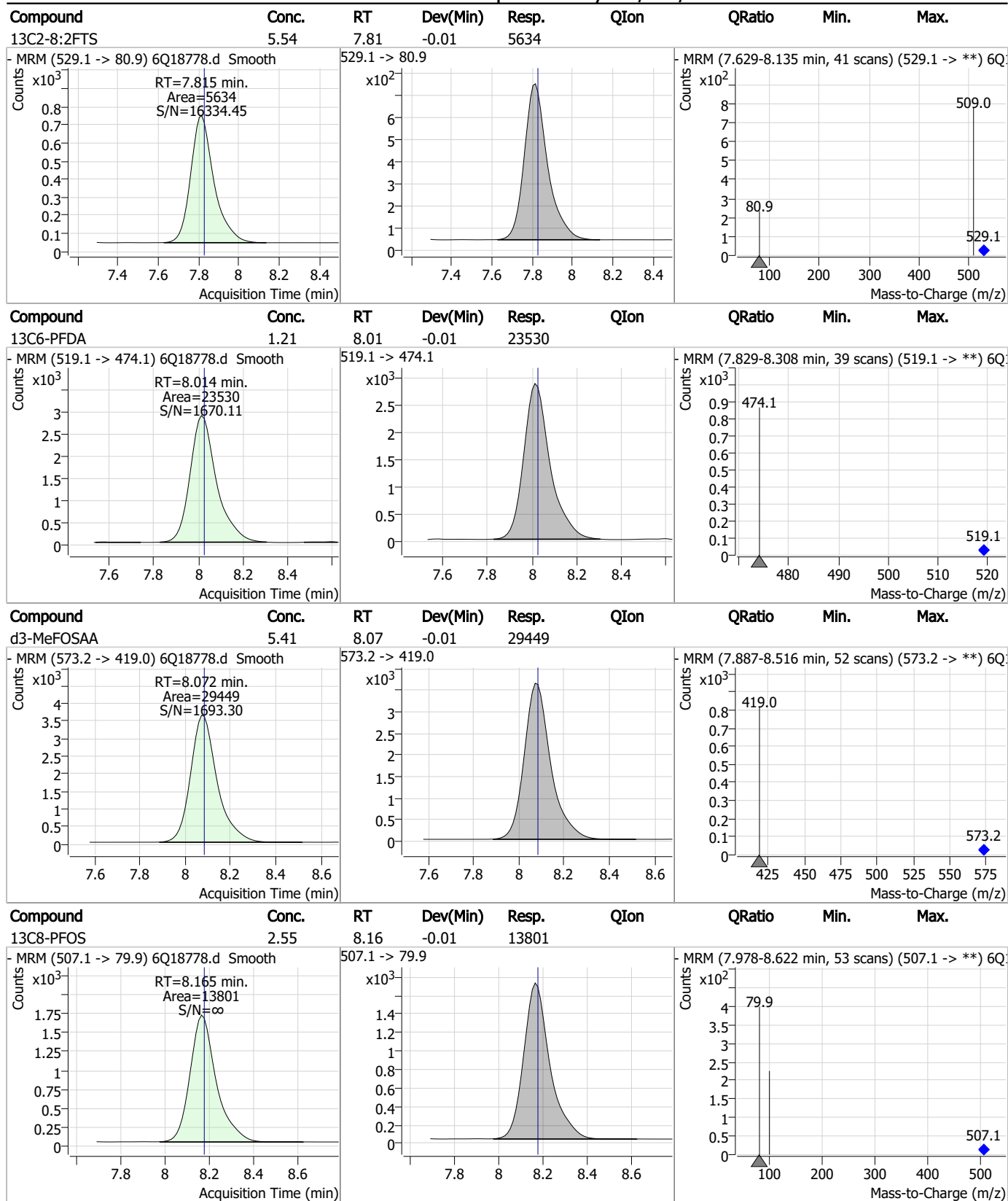
Perfluorinated Compounds by LC/MS/MS



7.29

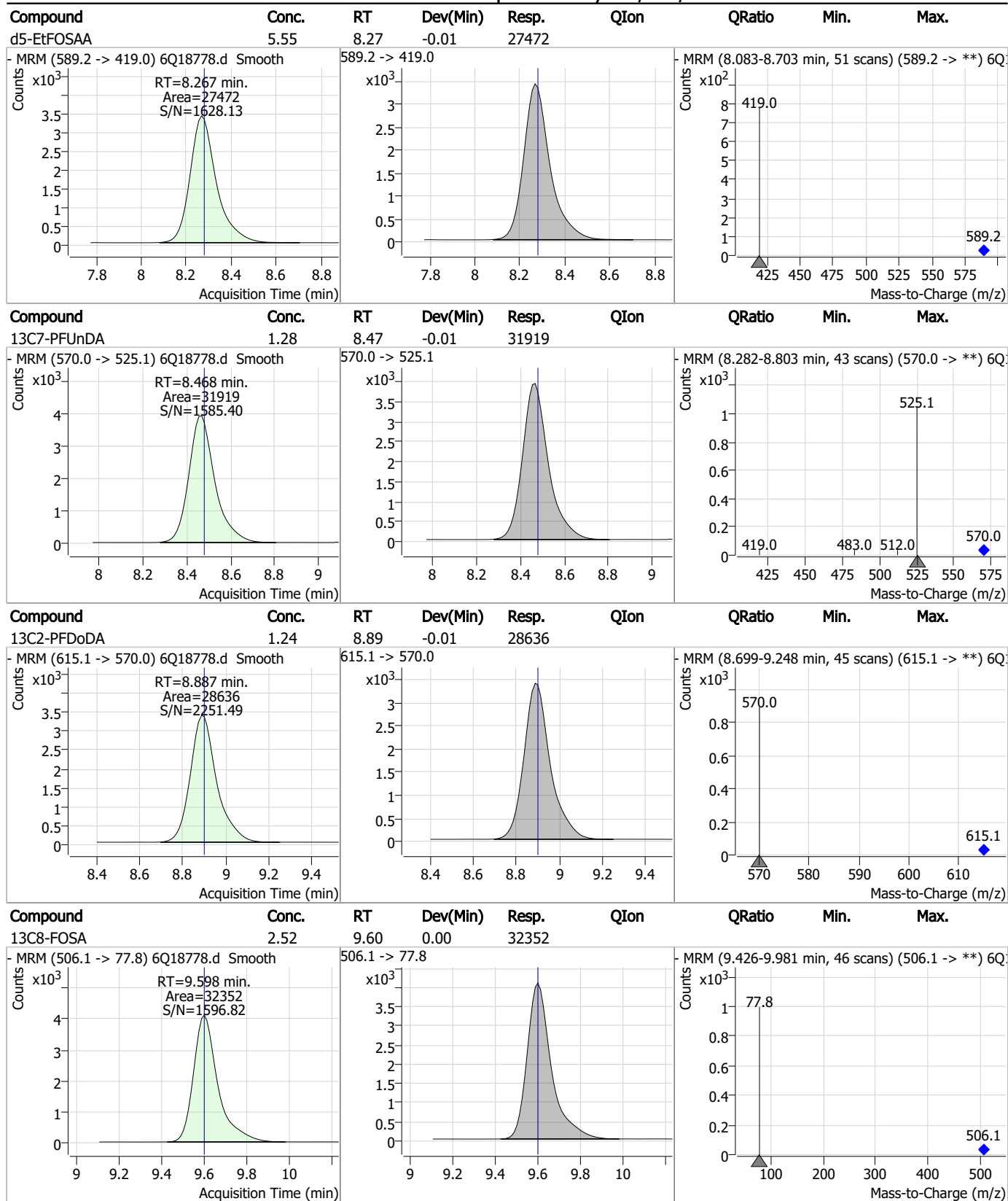
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Perfluorinated Compounds by LC/MS/MS



7.29
7

Perfluorinated Compounds by LC/MS/MS



7.2.9
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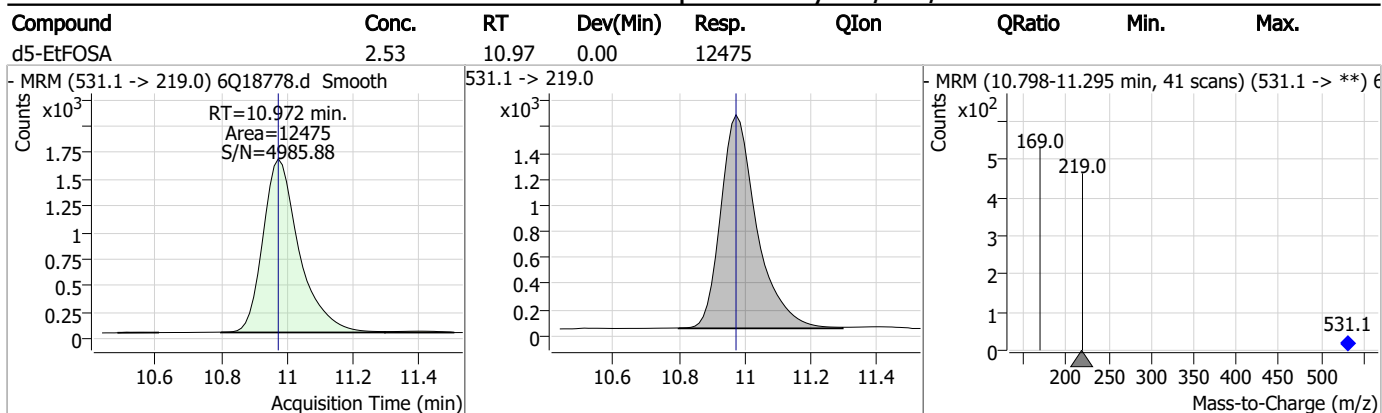
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.61	-0.02	15983				
d7-MeFOSE	25.42	10.65	-0.01	107715				
d3-MeFOSA	2.38	10.74	0.00	12399				
d9-EtFOSE	24.31	10.89	-0.01	134713				

7.2.9

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Perfluorinated Compounds by LC/MS/MS



7.2.9

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19273.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 11:29:51 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	152282	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	49696	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	53251	2.50 µg/L	0.000
M4-PFHpA	6.719	367.1 -> 322.0	53875	2.50 µg/L	0.012
M8-PFOA	7.352	421.1 -> 376.0	79709	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	36737	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	21611	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	30854	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	25603	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	13488	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	30471	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	20057	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	12690	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11621	2.50 µg/L	0.000
M2-4:2FTS	5.454	329.1 -> 80.9	3244	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	5344	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4476	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	31334	5.00 µg/L	0.012
M3-HFPO-DA	6.181	286.9 -> 168.9	33214	10.00 µg/L	0.012
M5-EtFOSAA	8.628	589.2 -> 419.0	24411	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	129154	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	153505	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12766	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12365	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	16410	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	64953	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	9356	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	85286	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	31424	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	50193	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	53563	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3244	5.63 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5344	6.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.4%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4476	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-PFDoDA	9.297	615.1 -> 570.0	25603	1.22 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13488	1.11 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.5%		
13C3-PFBS	5.746	302.1 -> 79.9	20057	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	12690	2.55 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C4-PFBA	3.085	216.8 -> 171.9	152282	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.719	367.1 -> 322.0	53875	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFHxA	5.792	318.0 -> 273.0	53251	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C5-PFPeA	4.560	268.3 -> 223.0	49696	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C6-PFDA	8.387	519.1 -> 474.1	21611	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C7-PFUnDA	8.866	570.0 -> 525.1	30854	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-FOSA	9.674	506.1 -> 77.8	30471	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-PFOA	7.352	421.1 -> 376.0	79709	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-PFOS	8.563	507.1 -> 79.9	11621	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C9-PFNA	7.895	472.1 -> 427.0	36737	1.20 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSAA	8.420	573.2 -> 419.0	31334	5.09 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C3-HFPO-DA	6.181	286.9 -> 168.9	33214	9.05 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.5%	
d3-MeFOSA	10.775	515.0 -> 219.0	12365	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
d5-EtFOSAA	8.628	589.2 -> 419.0	24411	4.70 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	129154	21.44 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.8%	
d9-EtFOSE	10.930	639.2 -> 58.9	153505	20.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
d5-EtFOSA	10.996	531.1 -> 219.0	12766	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	

7.2.10
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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)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
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	9.288	563.1 -> 519.0	0		µg/L	m
		563.1 -> 269.1	0			
11CI-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9CI-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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.10
7

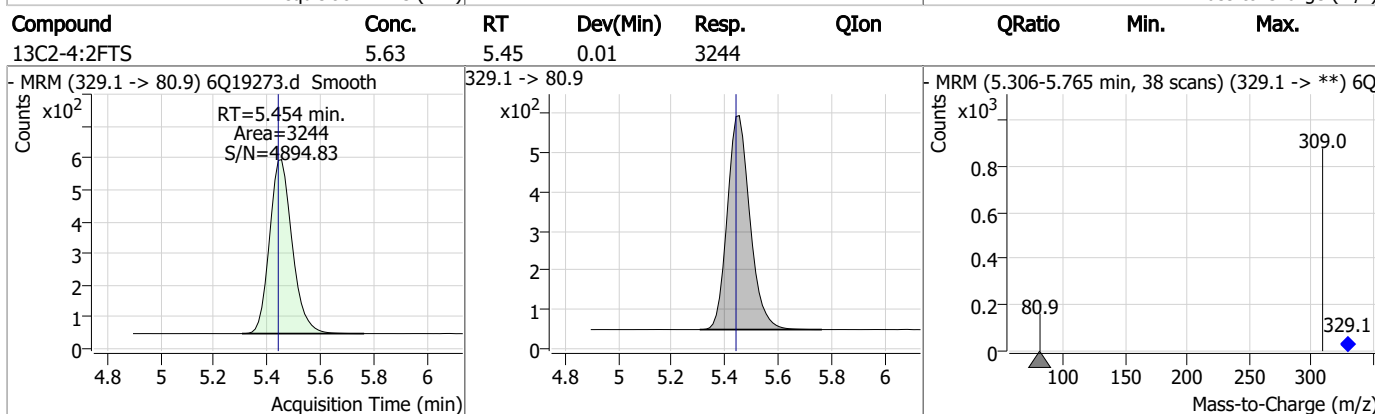
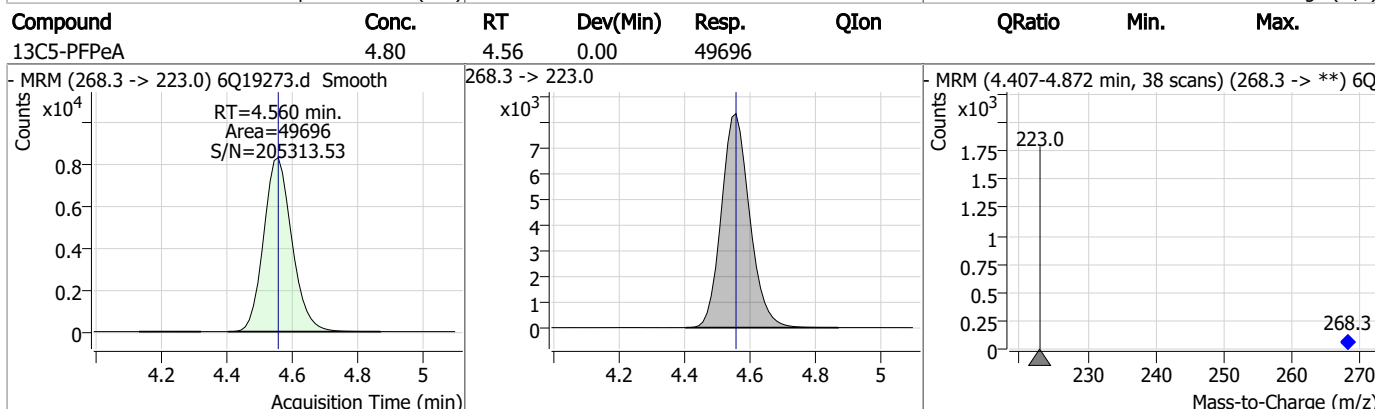
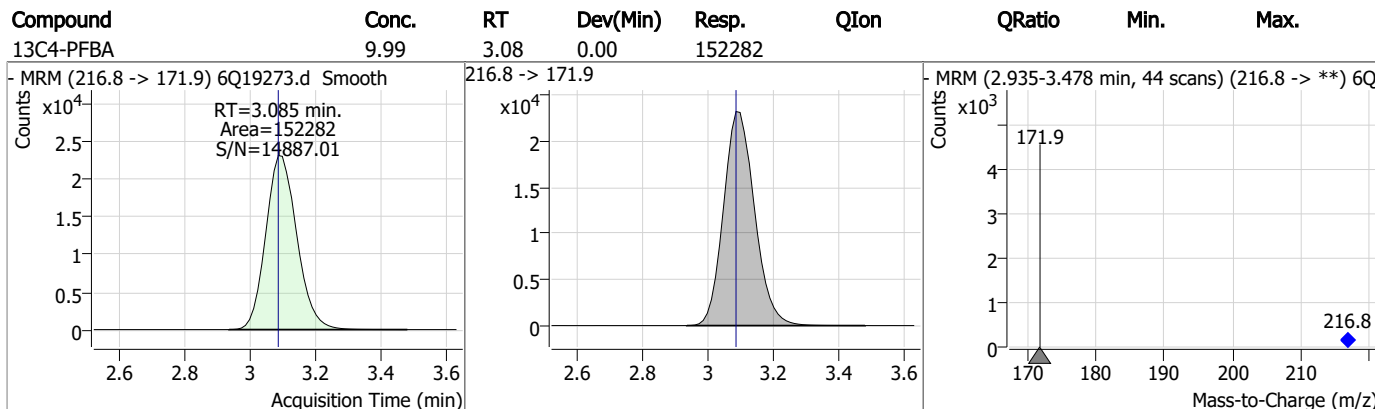
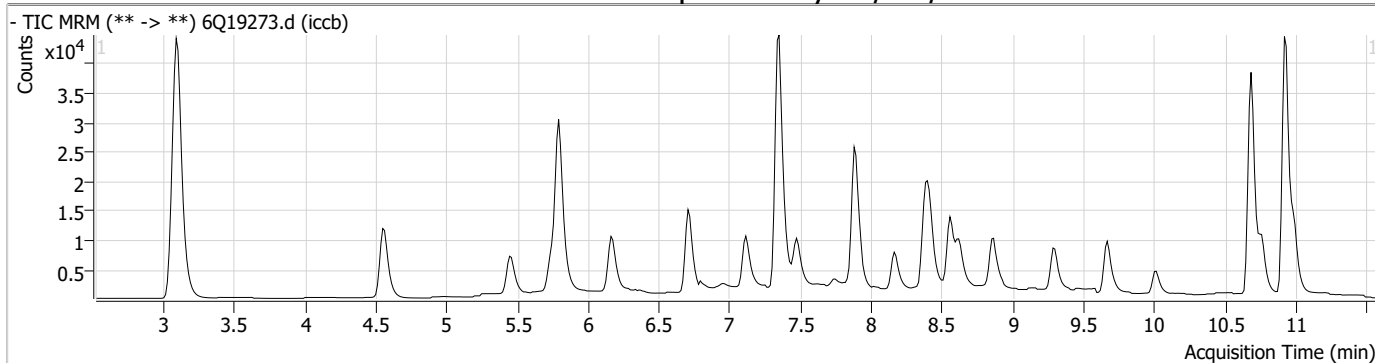
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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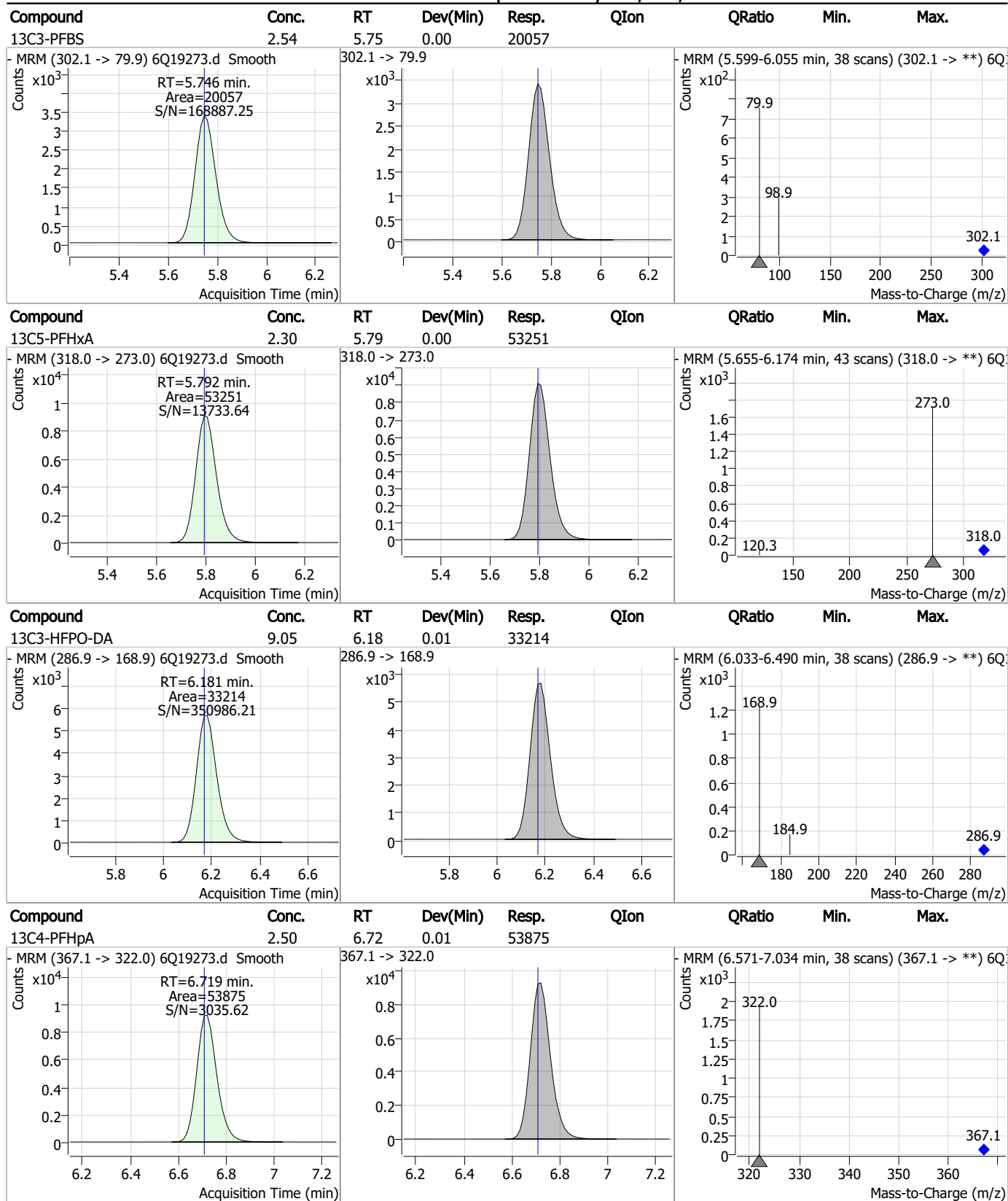
7.2.10

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Perfluorinated Compounds by LC/MS/MS



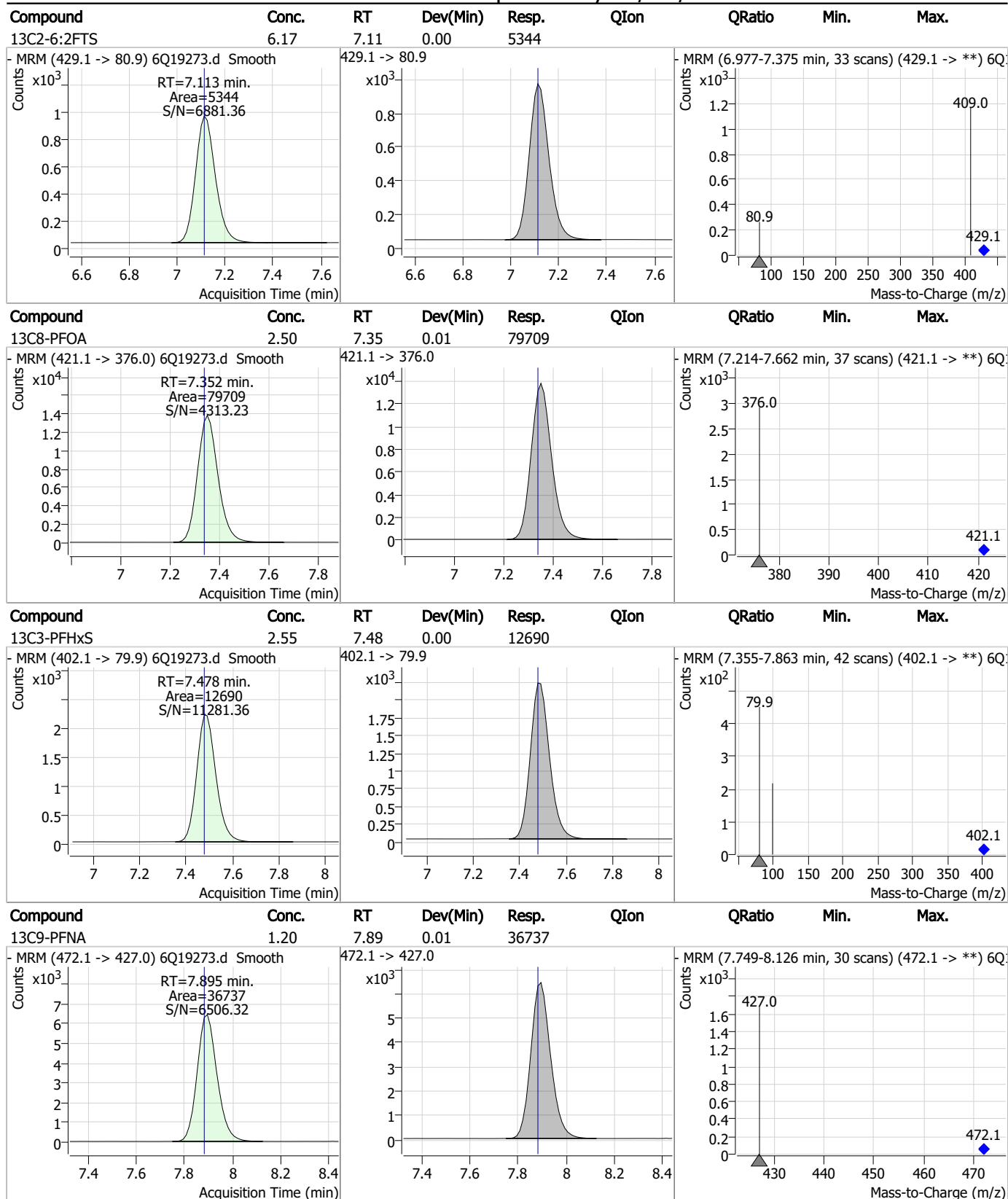
Perfluorinated Compounds by LC/MS/MS



7.2.10

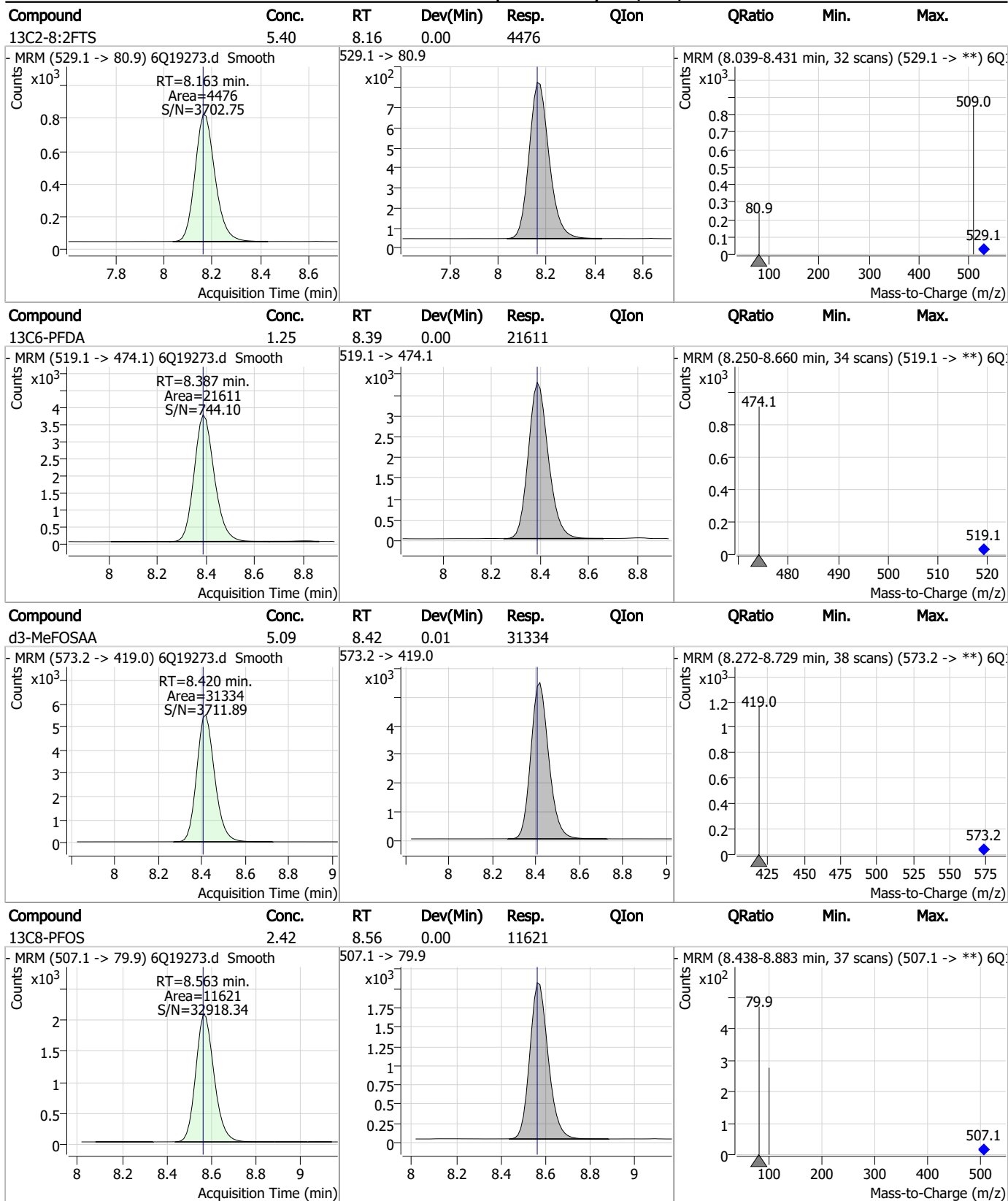
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Perfluorinated Compounds by LC/MS/MS



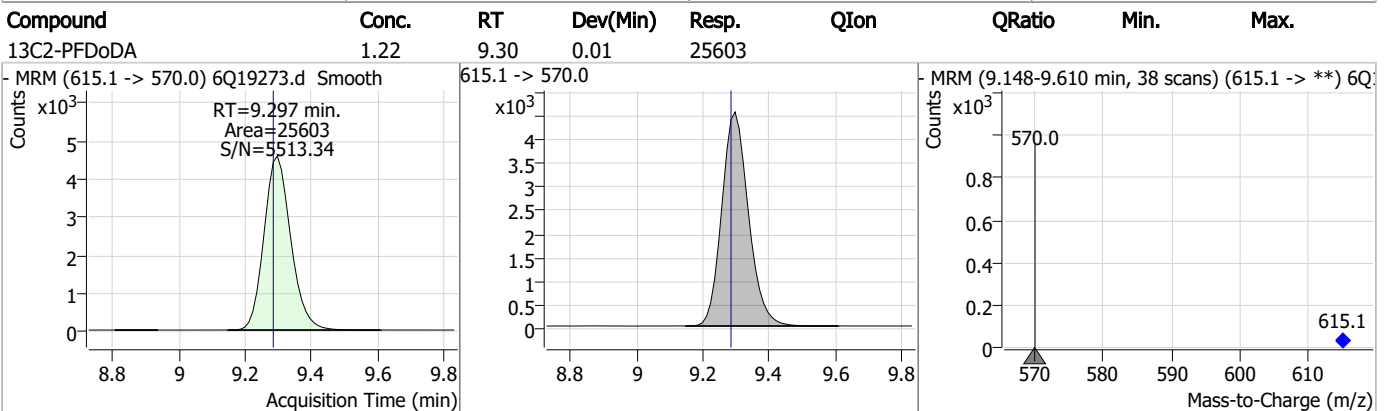
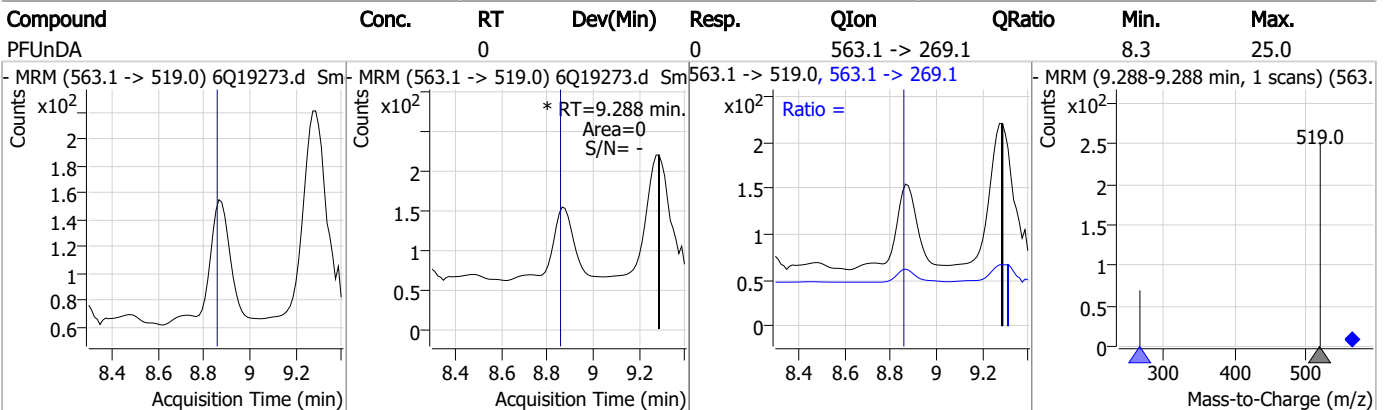
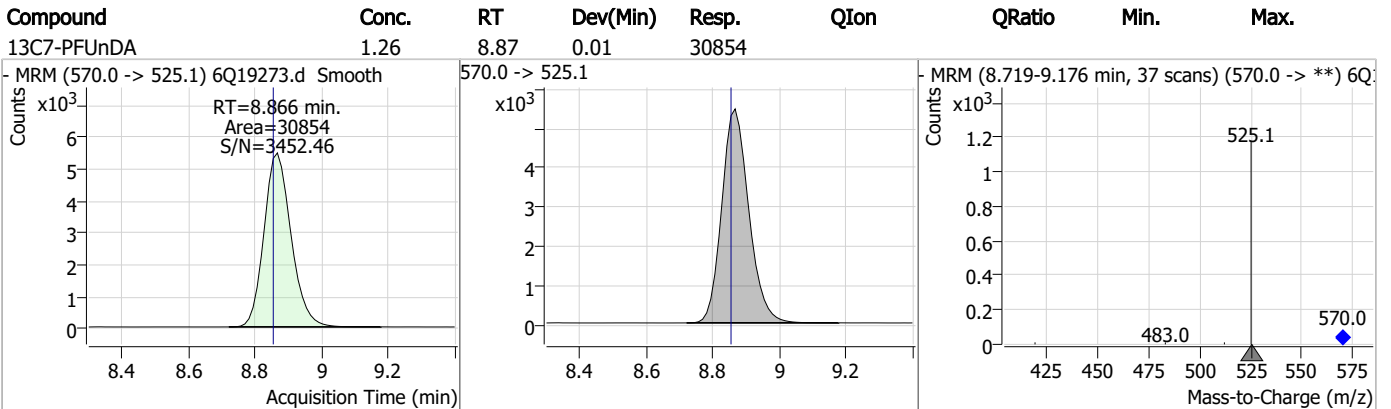
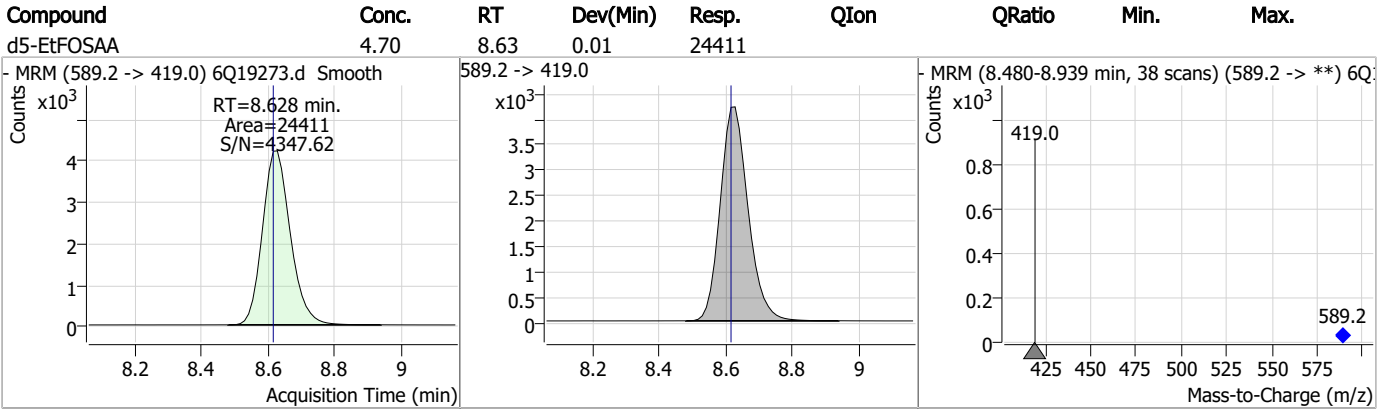
7.2.10
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Perfluorinated Compounds by LC/MS/MS



7.2.10 7

Perfluorinated Compounds by LC/MS/MS



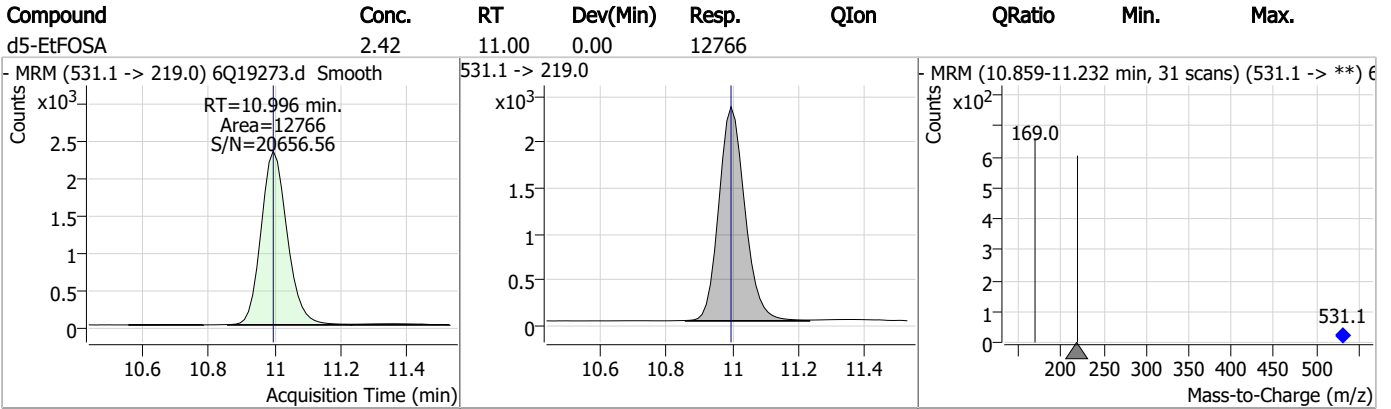
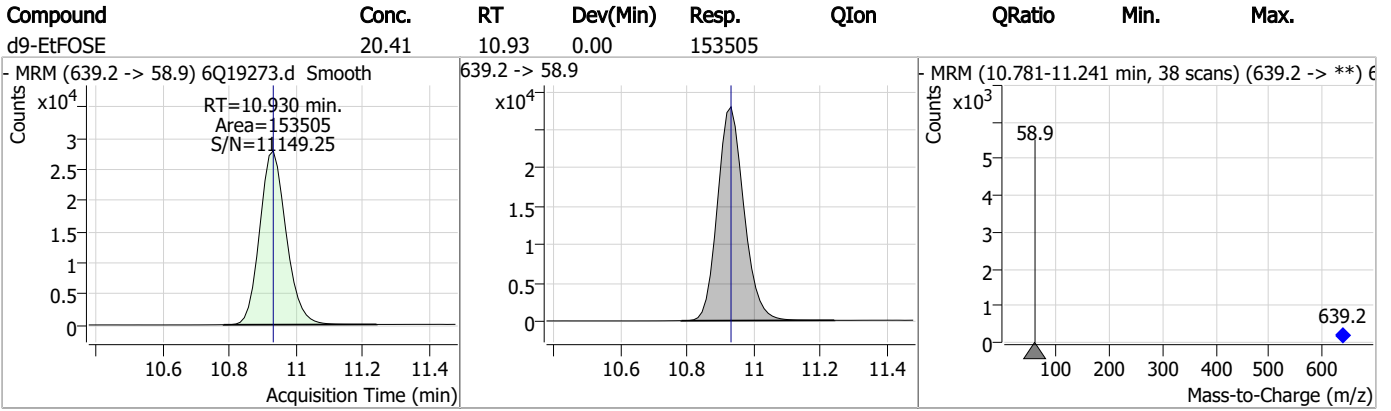
7.2.10
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	9.67	0.00	30471				
- MRM (506.1 -> 77.8) 6Q19273.d Smooth Counts x10 ³ RT=9.674 min. Area=30471 S/N=3847.98 Acquisition Time (min)			506.1 -> 77.8 Counts x10 ³ Acquisition Time (min)			- MRM (9.539-9.983 min, 37 scans) (506.1 -> **) 6Q19273.d Smooth Counts x10 ³ 77.8 506.1 Mass-to-Charge (m/z)		
13C2-PFTeDA	1.11	10.01	0.01	13488				
- MRM (715.2 -> 670.0) 6Q19273.d Smooth Counts x10 ³ RT=10.012 min. Area=13488 S/N=23757.13 Acquisition Time (min)			715.2 -> 670.0 Counts x10 ³ Acquisition Time (min)			- MRM (9.876-10.290 min, 34 scans) (715.2 -> **) 6Q19273.d Smooth Counts x10 ² 670.0 715.2 Mass-to-Charge (m/z)		
d7-MeFOSE	21.44	10.68	0.00	129154				
- MRM (623.2 -> 58.9) 6Q19273.d Smooth Counts x10 ⁴ RT=10.685 min. Area=129154 S/N=1355.05 Acquisition Time (min)			623.2 -> 58.9 Counts x10 ⁴ Acquisition Time (min)			- MRM (10.561-10.907 min, 29 scans) (623.2 -> **) 6Q19273.d Smooth Counts x10 ³ 58.9 623.2 Mass-to-Charge (m/z)		
d3-MeFOSA	2.27	10.78	0.00	12365				
- MRM (515.0 -> 219.0) 6Q19273.d Smooth Counts x10 ³ RT=10.775 min. Area=12365 S/N=∞ Acquisition Time (min)			515.0 -> 219.0 Counts x10 ³ Acquisition Time (min)			- MRM (10.627-11.086 min, 38 scans) (515.0 -> **) 6Q19273.d Smooth Counts x10 ² 169.0 515.0 Mass-to-Charge (m/z)		

7.2.10 7

Perfluorinated Compounds by LC/MS/MS



7.2.10
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18701.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:24:17 PM
 Sample Name : op97143-bs
 Vial : P3-B9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	32358	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	43707	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	52653	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	49627	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	76410	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	34989	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20551	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	28112	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23299	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12302	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	24269	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	19853	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	12263	2.50 µg/L	-0.012
M8-PFOS	8.177	507.1 -> 79.9	11226	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3104	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4422	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4554	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	24474	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	33311	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22793	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	70921	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	104940	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9576	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	10009	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13277	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	56206	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	7858	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	71681	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	25076	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	36822	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	43786	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3104	5.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4422	5.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4554	5.90 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23299	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12302	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFBS	5.334	302.1 -> 79.9	19853	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	12263	2.79 µg/L	-0.012

7.3.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C4-PFBA	2.860	216.8 -> 171.9	32358	2.42 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 24.2%	
13C4-PFHpA	6.369	367.1 -> 322.0	49627	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	52653	2.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.6%	
13C5-PFPeA	4.222	268.3 -> 223.0	43707	5.13 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C6-PFDA	8.027	519.1 -> 474.1	20551	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	28112	1.50 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.0%	
13C8-FOSA	9.598	506.1 -> 77.8	24269	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C8-PFOA	7.026	421.1 -> 376.0	76410	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C8-PFOS	8.177	507.1 -> 79.9	11226	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C9-PFNA	7.545	472.1 -> 427.0	34989	1.44 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	24474	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	33311	11.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	10009	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22793	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	70921	21.27 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.1%	
d9-EtFOSE	10.894	639.2 -> 58.9	104940	24.06 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	9576	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	45150	10.02 µg/L	98
		327.1 -> 80.9	16251		
6:2FTS	6.789	427.1 -> 407.0	45698	10.52 µg/L	97
		427.1 -> 80.9	15152		
8:2FTS	7.816	527.1 -> 507.0	25569	10.09 µg/L	98
		527.1 -> 80.8	9628		
EtFOSAA	8.280	584.2 -> 419.1	7231	2.47 µg/L	98
		584.2 -> 526.0	4036		
FOSA	9.589	498.1 -> 77.9	21278	2.53 µg/L	99
		498.1 -> 478.0	692		
MeFOSAA	8.085	570.1 -> 419.0	12828	2.55 µg/L	91
		570.1 -> 483.0	2560		
PFBA	2.868	212.8 -> 168.9	11251	10.50 µg/L	100
PFBS	5.335	298.7 -> 79.9	14969	2.22 µg/L	97
		298.7 -> 98.8	5462		
PFDA	8.027	512.9 -> 469.0	63420	2.66 µg/L	98
		512.9 -> 219.0	9433		
PFDODA	8.900	613.1 -> 569.0	42706	2.67 µg/L	98
		613.1 -> 319.0	6343		
PFDS	9.052	599.0 -> 79.9	6900	2.46 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3398			
PFHpA	6.370	363.1 -> 319.0	55677	2.54	µg/L	99
		363.1 -> 169.0	9150			
PFHpS	7.685	449.0 -> 79.9	13845	2.57	µg/L	95
		449.0 -> 98.9	6812			
PFHxA	5.420	313.0 -> 269.0	46779	2.65	µg/L	100
		313.0 -> 118.9	2369			
PFHxS	7.119	398.7 -> 79.9	12940	2.33	µg/L	m 97
		398.7 -> 98.9	6354			
PFNA	7.545	463.0 -> 419.0	63625	2.57	µg/L	98
		463.0 -> 219.0	12911			
PFNS	8.631	548.8 -> 79.9	11247	2.50	µg/L	97
		548.8 -> 98.9	6038			
PFOA	7.028	413.0 -> 369.0	82963	2.54	µg/L	97
		413.0 -> 169.0	15008			
PFOS	8.178	498.9 -> 79.9	12480	2.43	µg/L	m 97
		498.9 -> 98.8	6175			
PFPeA	4.224	263.0 -> 219.0	56123	5.35	µg/L	100
PFPeS	6.422	349.1 -> 79.9	13353	2.42	µg/L	95
		349.1 -> 98.9	6004			
PFTeDA	9.628	713.1 -> 669.0	32412	2.68	µg/L	100
		713.1 -> 168.9	2703			
PFTrDA	9.284	663.0 -> 619.0	42977	2.66	µg/L	96
		663.0 -> 168.9	4738			
PFUnDA	8.468	563.1 -> 519.0	42061	2.30	µg/L	94
		563.1 -> 269.1	7175			
11CI-PF3OUdS	9.323	630.9 -> 450.9	61506	4.92	µg/L	97
		632.9 -> 452.9	18670			
9CI-PF3ONS	8.495	530.8 -> 351.0	98558	5.00	µg/L	96
		532.8 -> 353.0	30553			
ADONA	6.632	376.9 -> 250.9	233142	5.27	µg/L	95
		376.9 -> 84.8	56320			
HFPO-DA	5.783	284.9 -> 168.9	14525	5.14	µg/L	98
		284.9 -> 184.9	1880			
3:3FTCA	3.709	241.0 -> 177.0	4492	6.69	µg/L	92
		241.0 -> 117.0	610			
5:3FTCA	6.086	341.0 -> 237.1	195264	61.40	µg/L	93
		341.0 -> 217.0	150750			
7:3FTCA	7.510	441.0 -> 316.9	143488	65.88	µg/L	92
		441.0 -> 336.9	312755			
EtFOSA	10.974	526.0 -> 219.0	21383	4.79	µg/L	95
		526.0 -> 169.0	30048			
EtFOSE	10.907	630.0 -> 58.9	57497	12.28	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	18003	4.89	µg/L	93
		511.9 -> 169.0	26578			
MeFOSE	10.673	616.1 -> 58.9	35584	12.63	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3042	2.44	µg/L	97
		699.1 -> 98.8	1624			
NFDHA	5.299	295.0 -> 201.0	10999	5.11	µg/L	88
		295.0 -> 84.9	3067			
PFMBA	4.638	279.0 -> 85.1	42567	5.96	µg/L	100
PFMPA	3.388	229.0 -> 84.9	14221	2.56	µg/L	100
PFEESA	5.875	314.8 -> 134.9	107587	4.79	µg/L	99
		314.8 -> 82.9	3656			

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

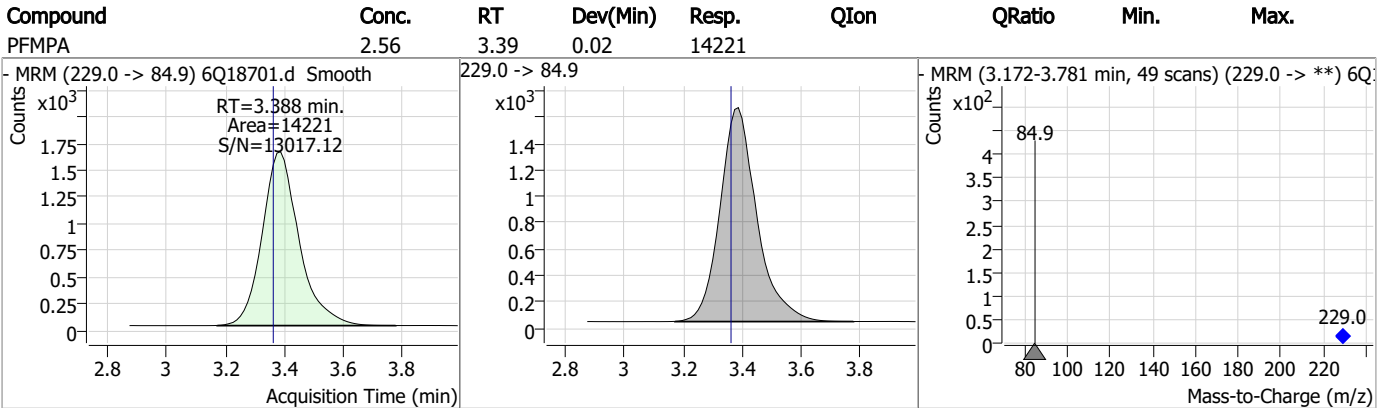
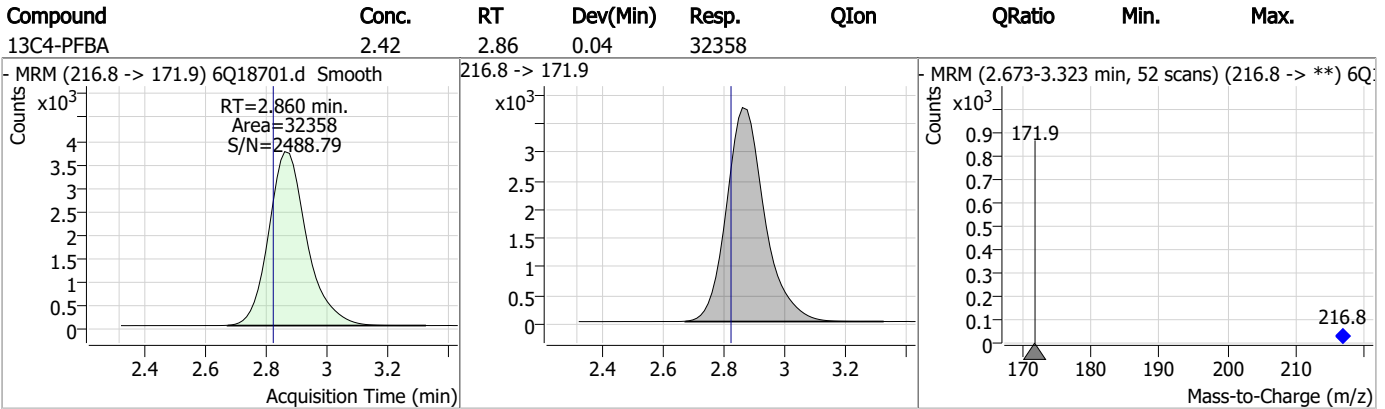
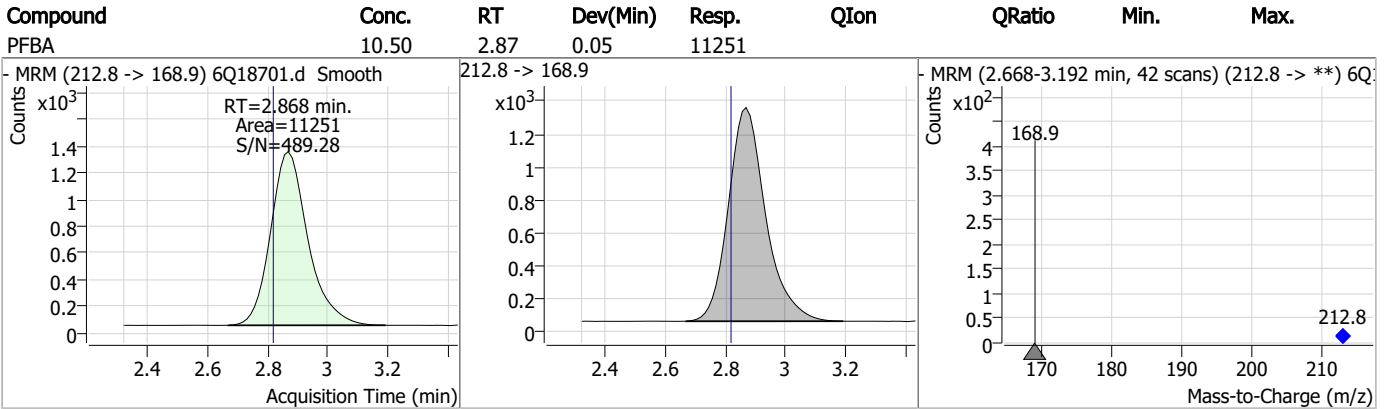
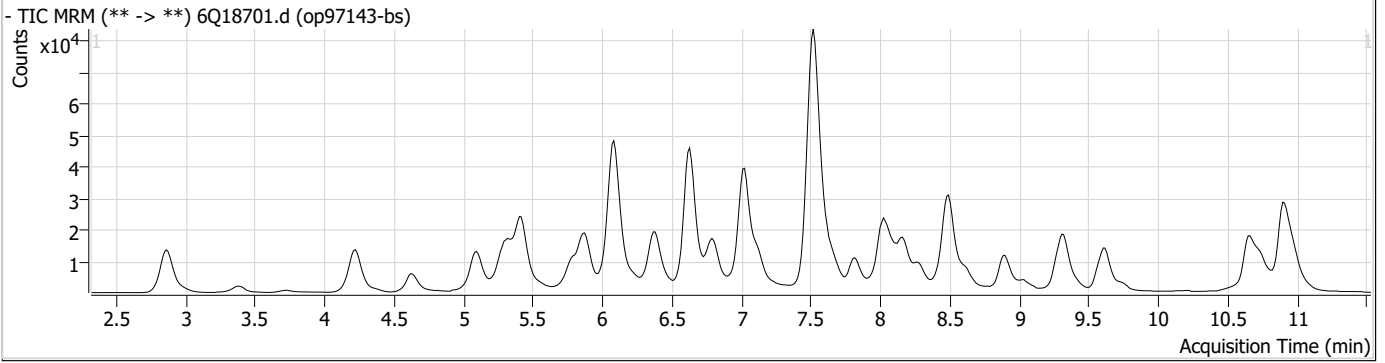
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.1

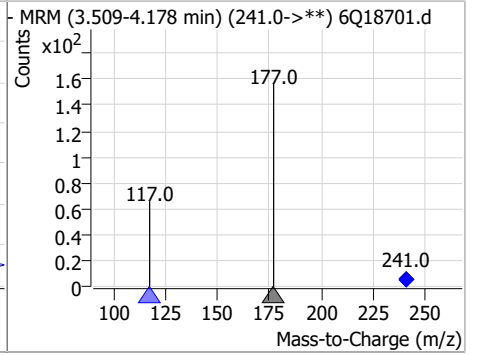
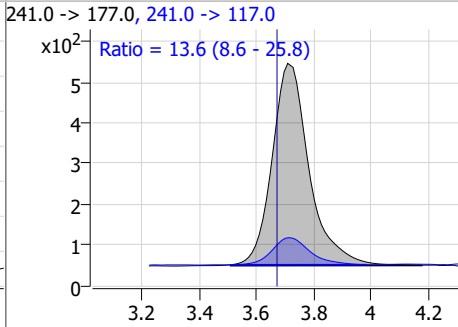
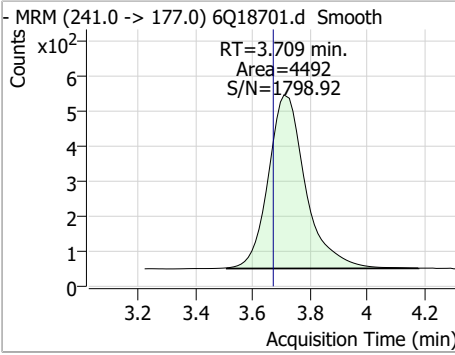
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Perfluorinated Compounds by LC/MS/MS

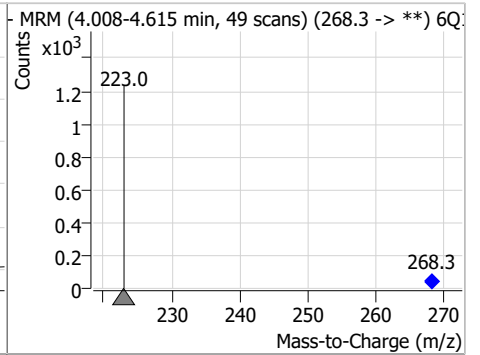
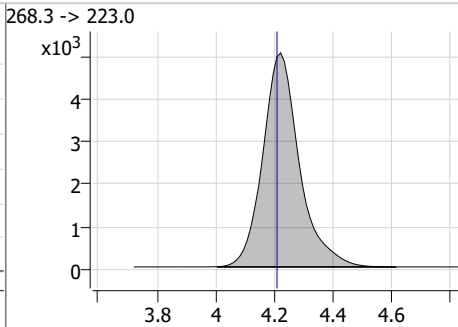
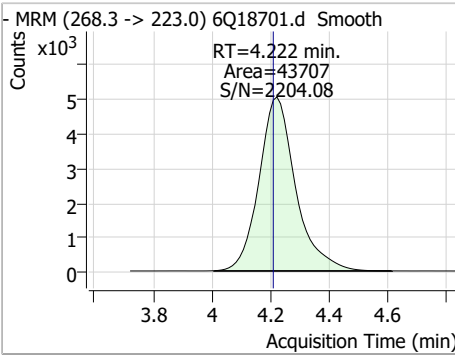


Perfluorinated Compounds by LC/MS/MS

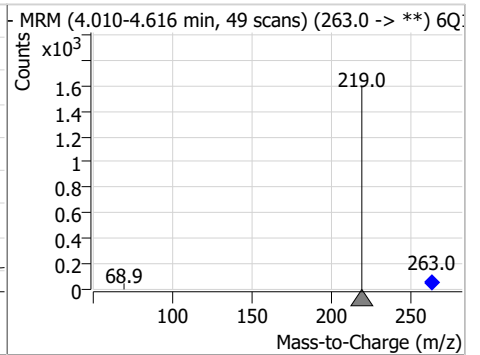
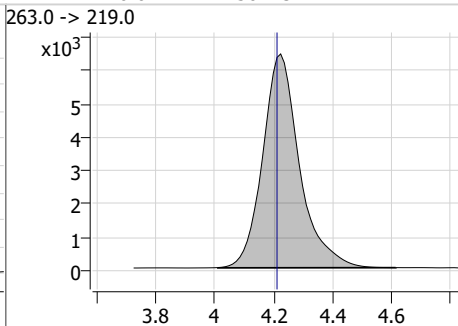
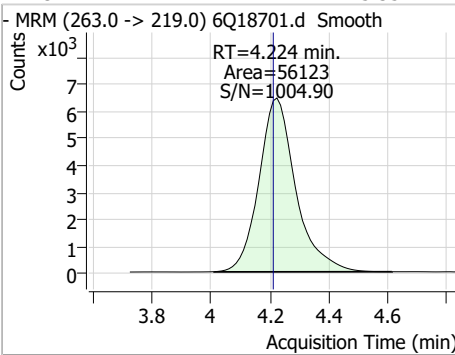
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	6.69	3.71	0.04	4492	241.0 -> 117.0	13.6	8.6	25.8



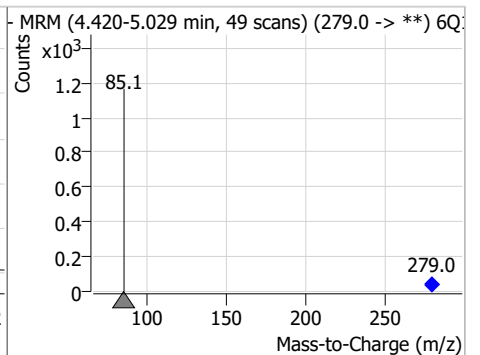
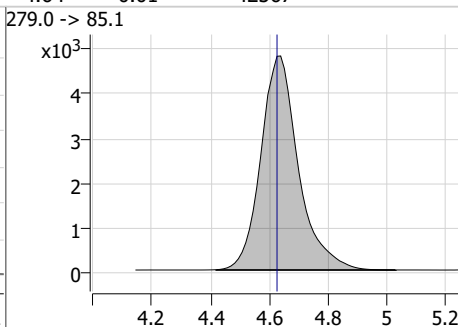
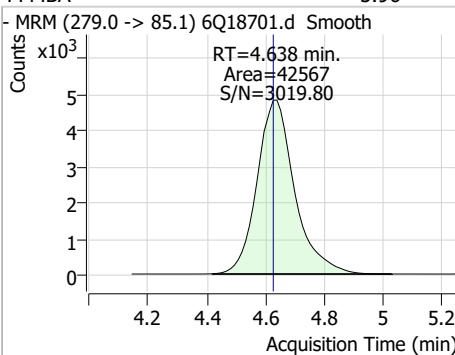
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.13	4.22	0.01	43707				



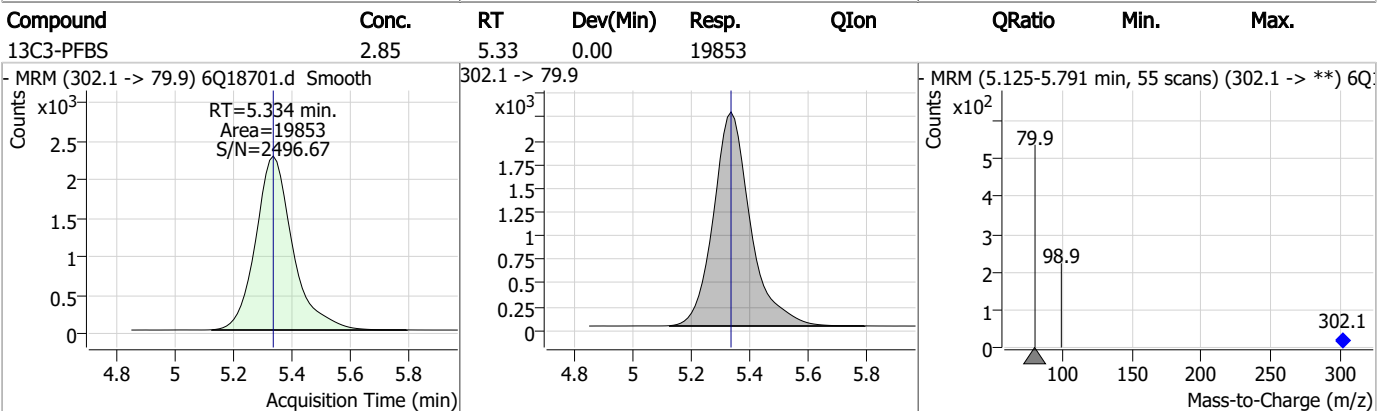
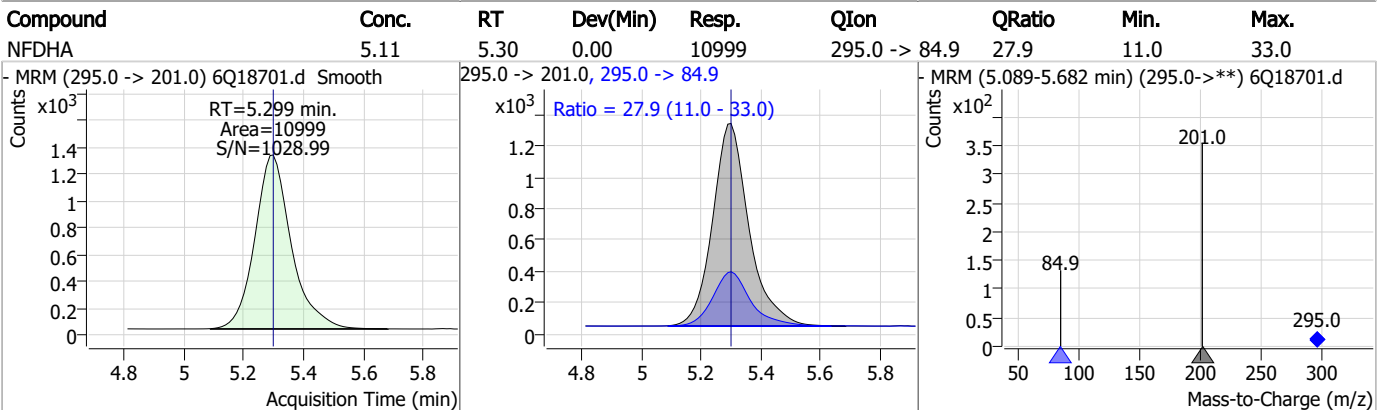
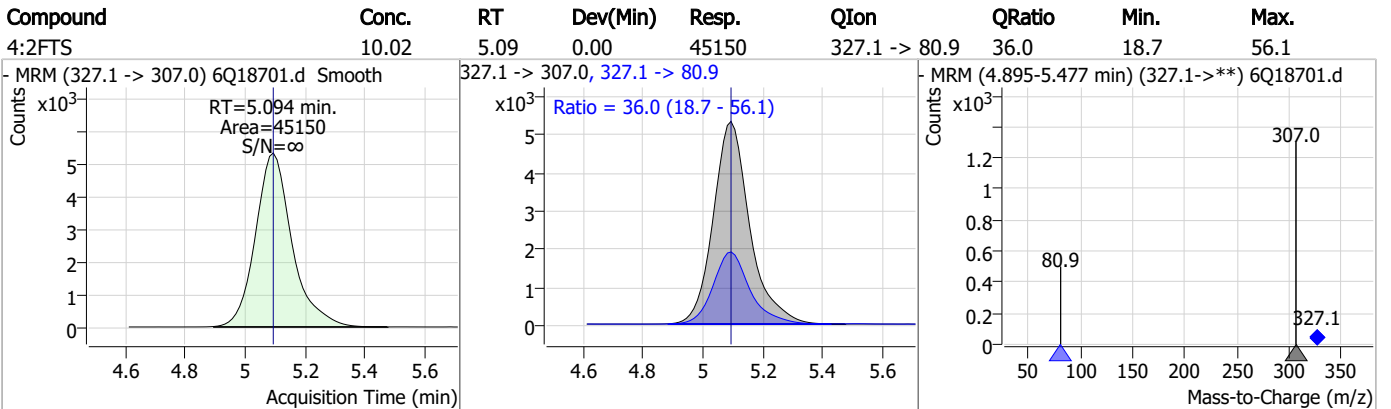
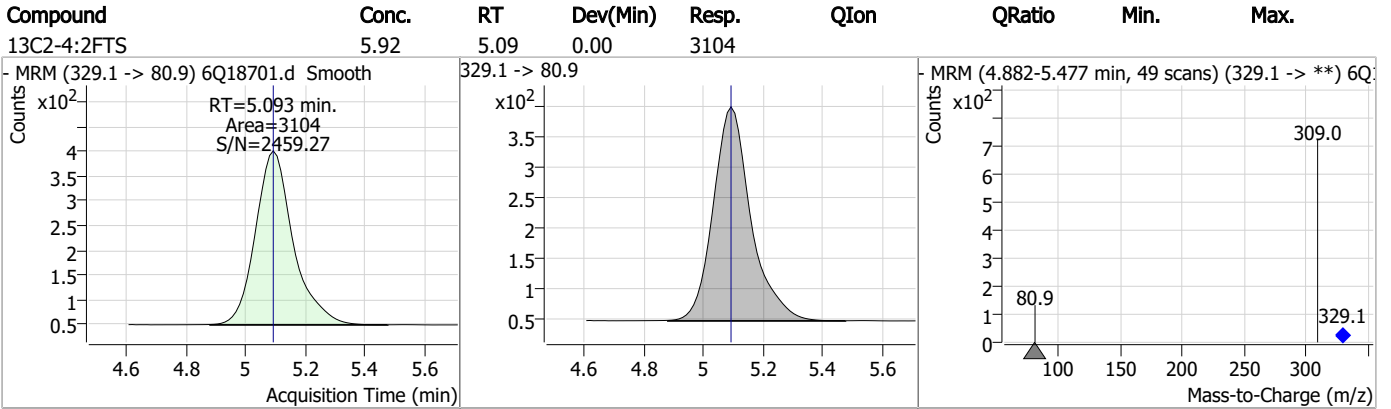
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.35	4.22	0.01	56123				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.96	4.64	0.01	42567				

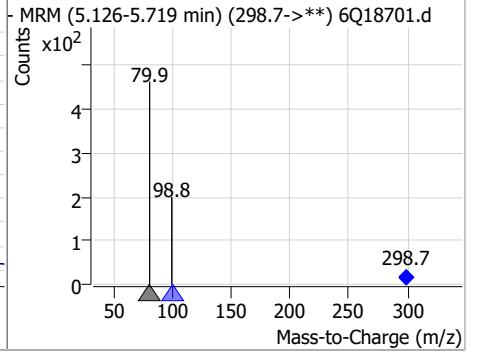
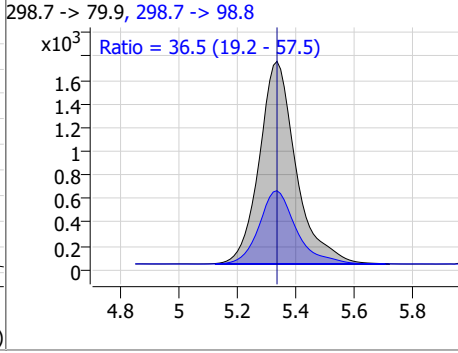
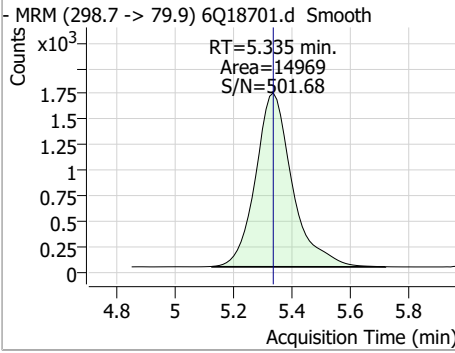


Perfluorinated Compounds by LC/MS/MS

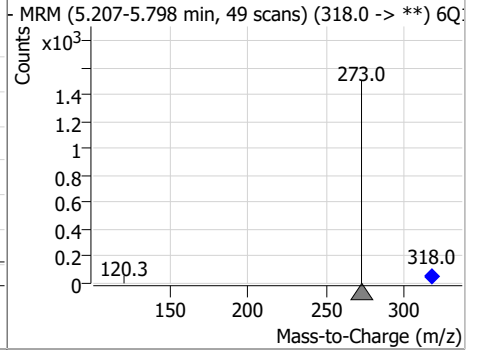
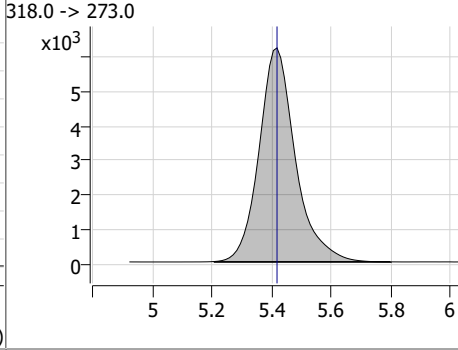
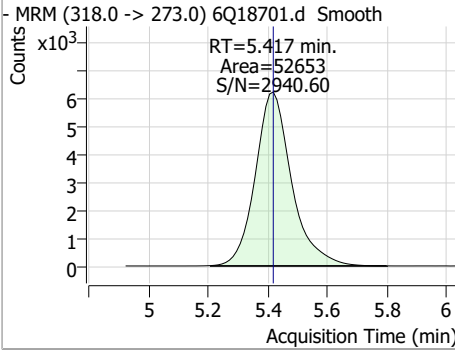


Perfluorinated Compounds by LC/MS/MS

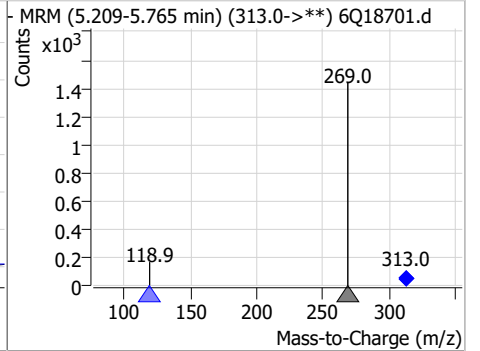
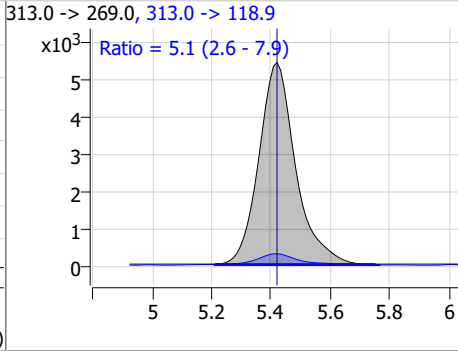
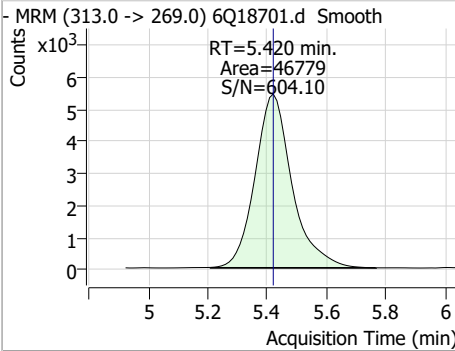
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.22	5.34	0.00	14969	298.7 -> 98.8	36.5	19.2	57.5



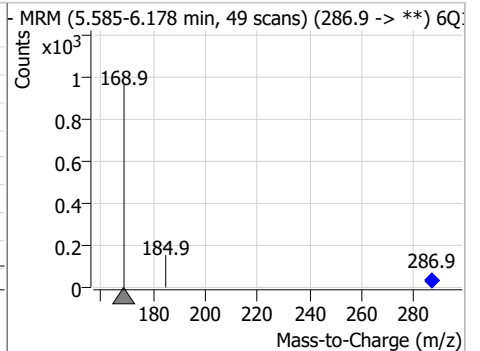
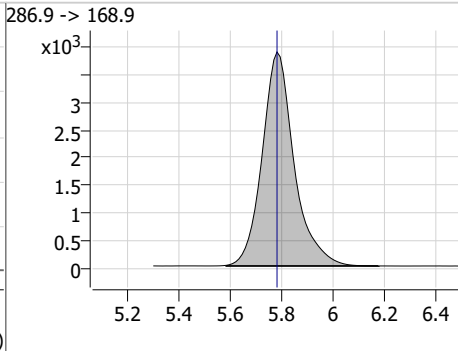
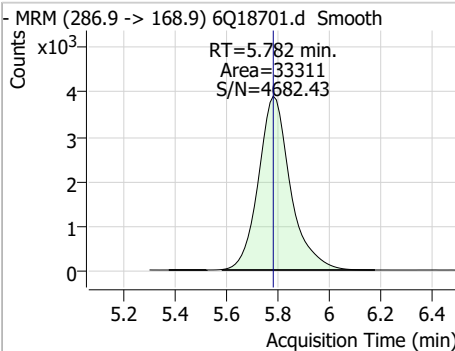
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.84	5.42	0.00	52653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.65	5.42	0.00	46779	313.0 -> 118.9	5.1	2.6	7.9

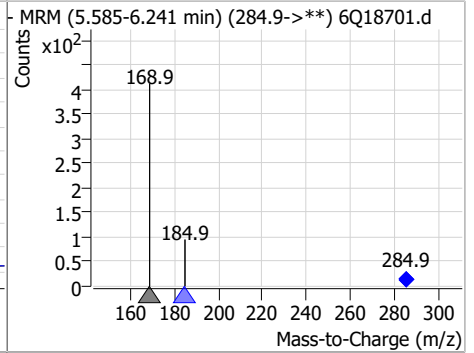
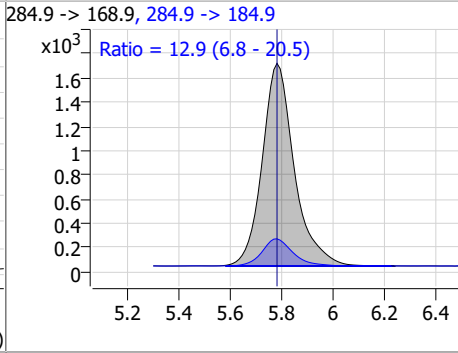
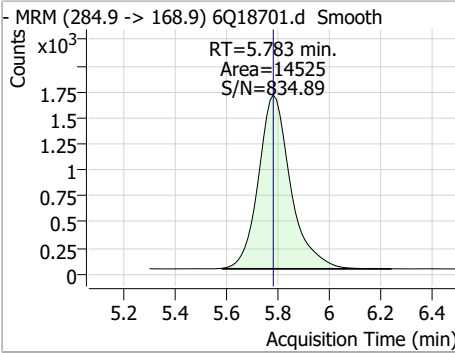


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.58	5.78	0.00	33311				

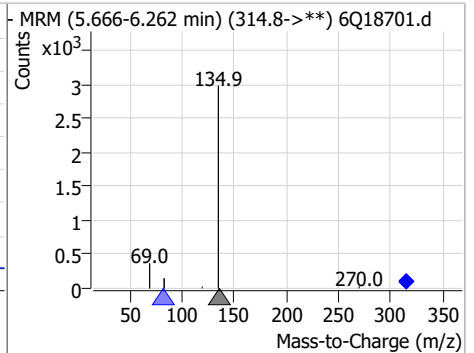
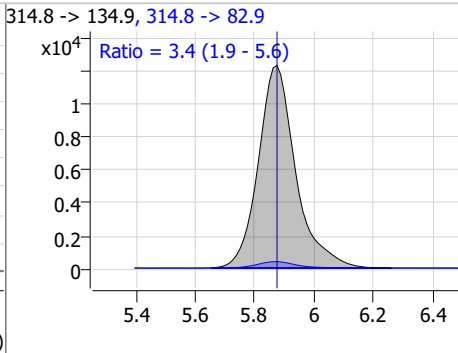
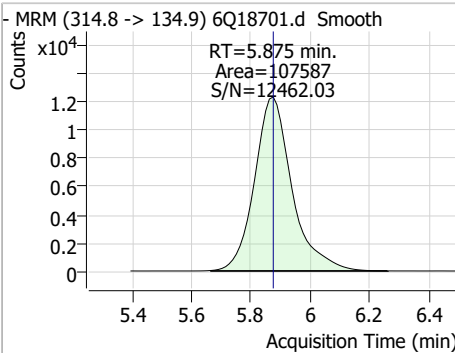


Perfluorinated Compounds by LC/MS/MS

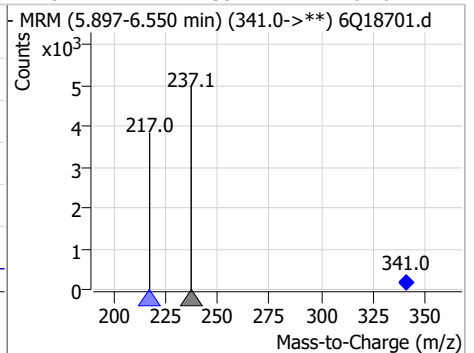
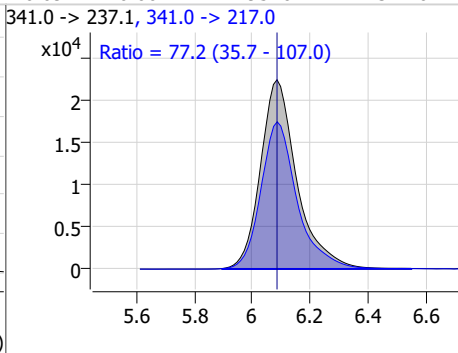
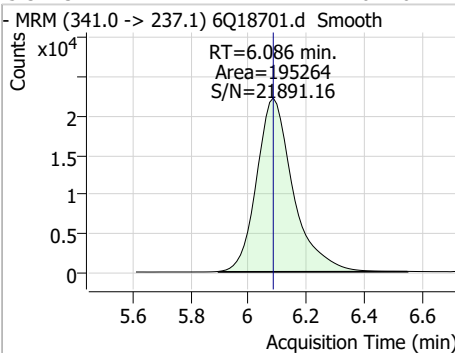
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.14	5.78	0.00	14525	284.9 -> 184.9	12.9	6.8	20.5



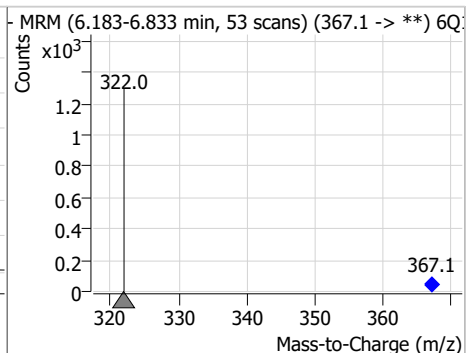
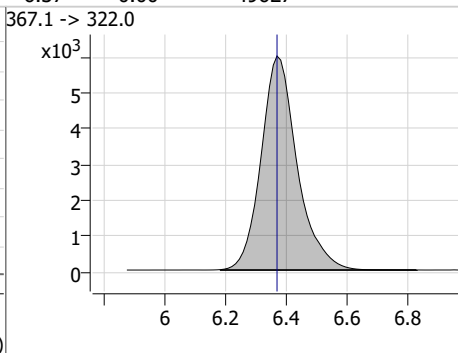
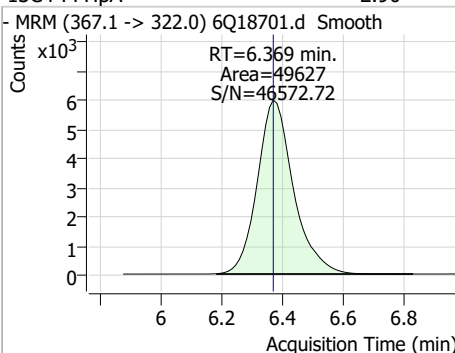
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.79	5.88	0.00	107587	314.8 -> 82.9	3.4	1.9	5.6



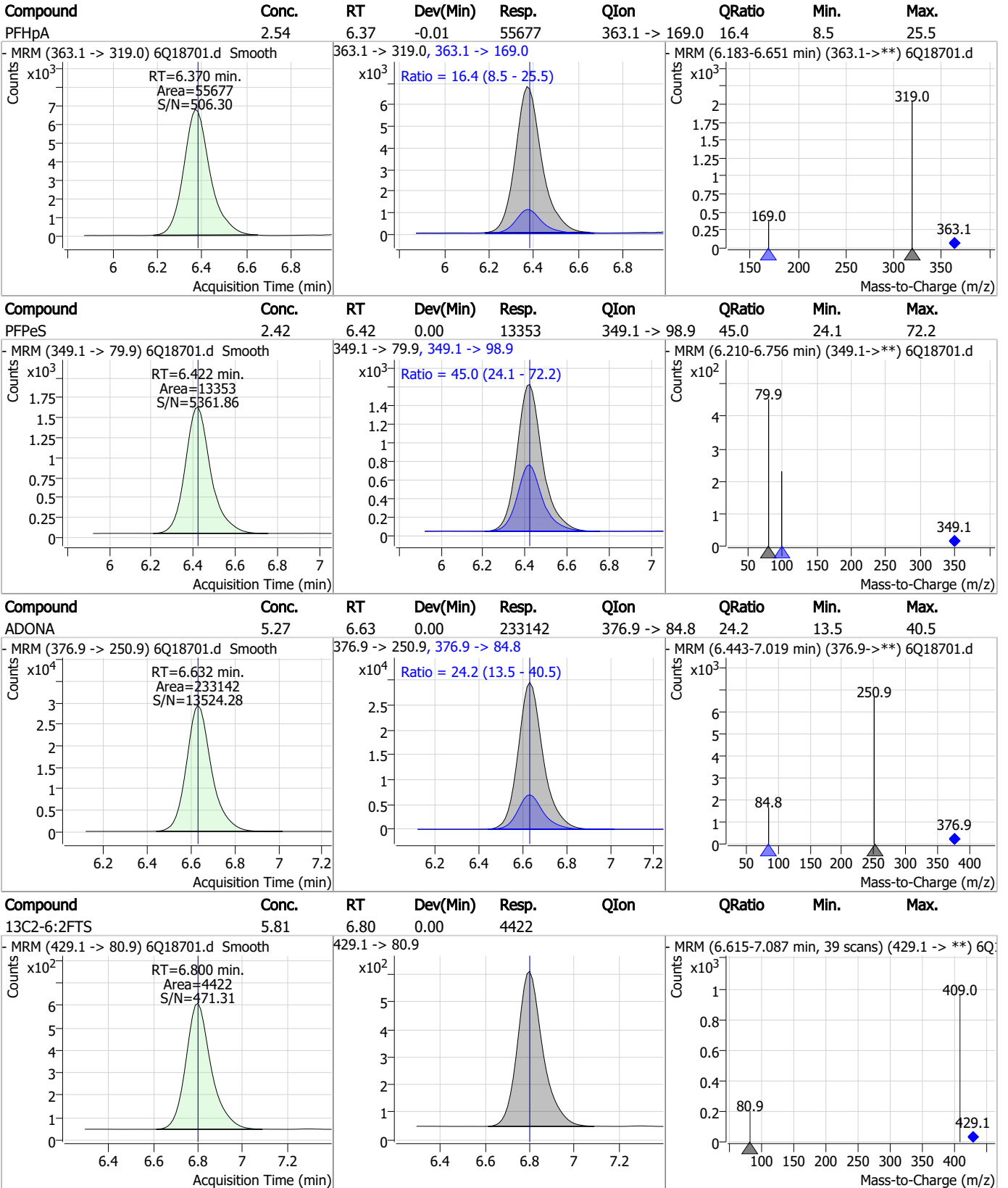
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.40	6.09	0.00	195264	341.0 -> 217.0	77.2	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.90	6.37	0.00	49627	367.1 -> 322.0			



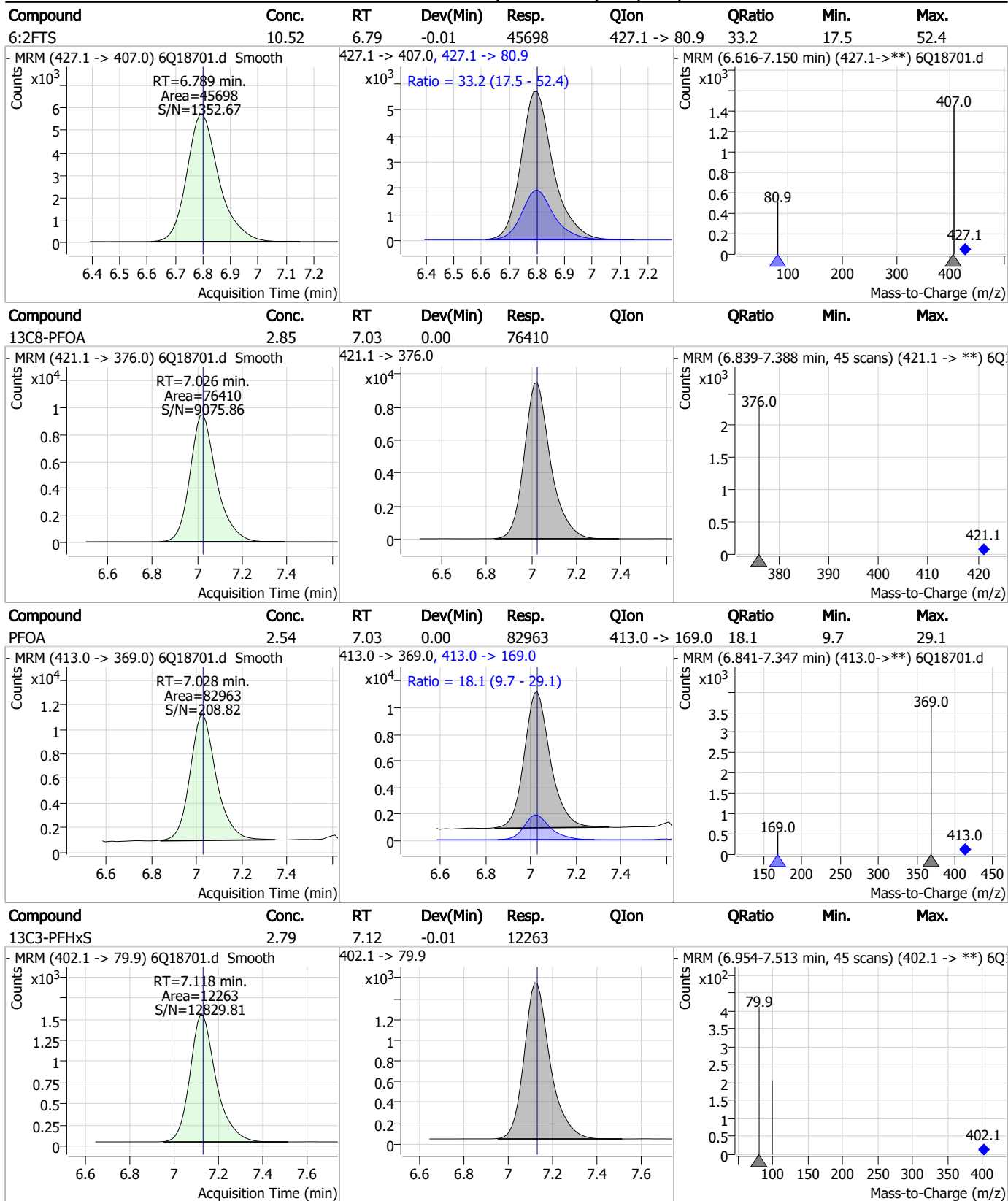
Perfluorinated Compounds by LC/MS/MS



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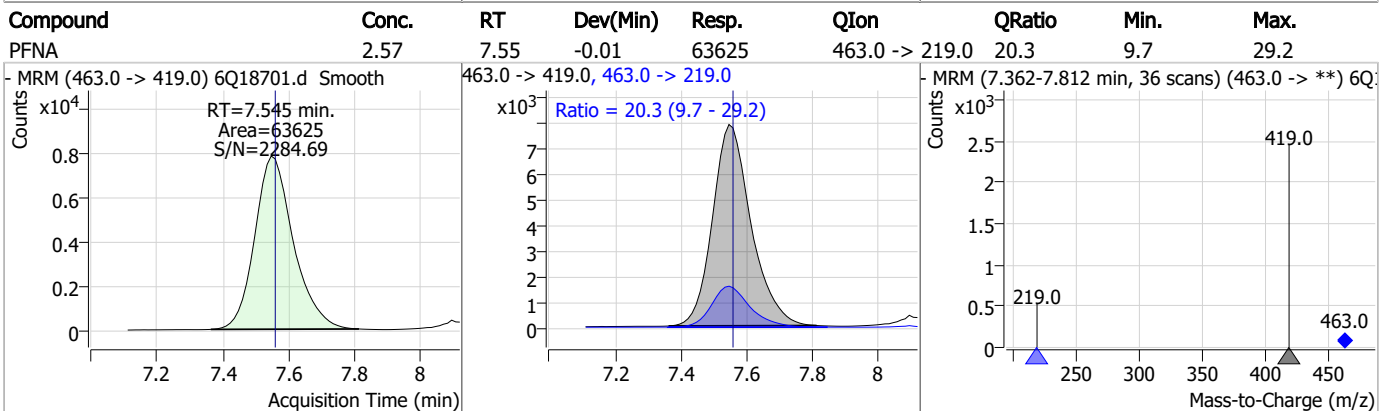
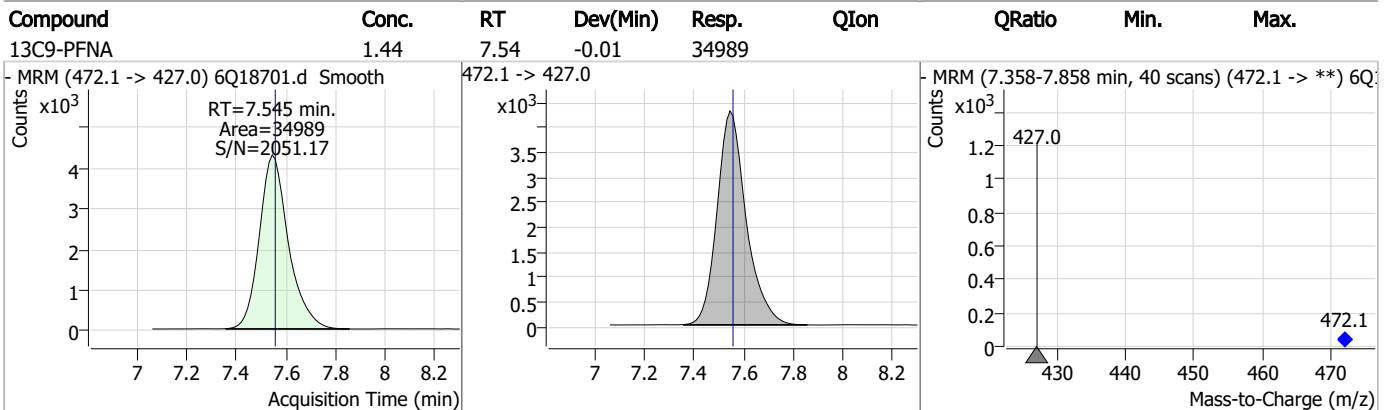
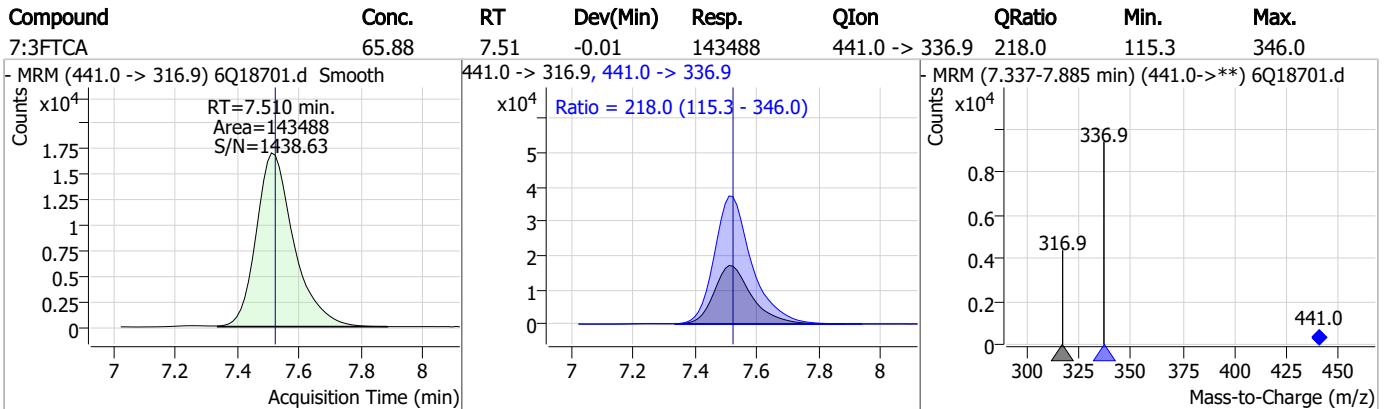
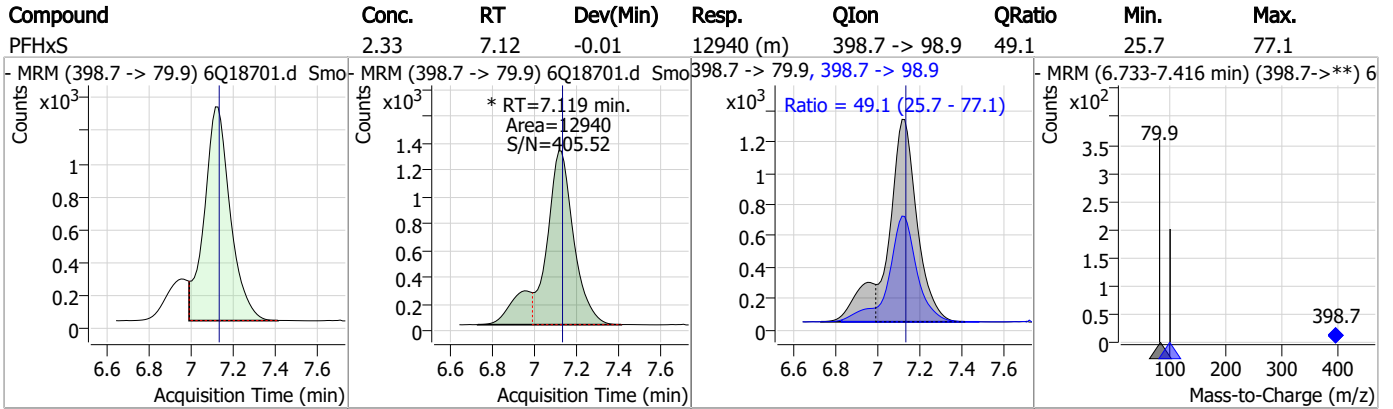
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Perfluorinated Compounds by LC/MS/MS

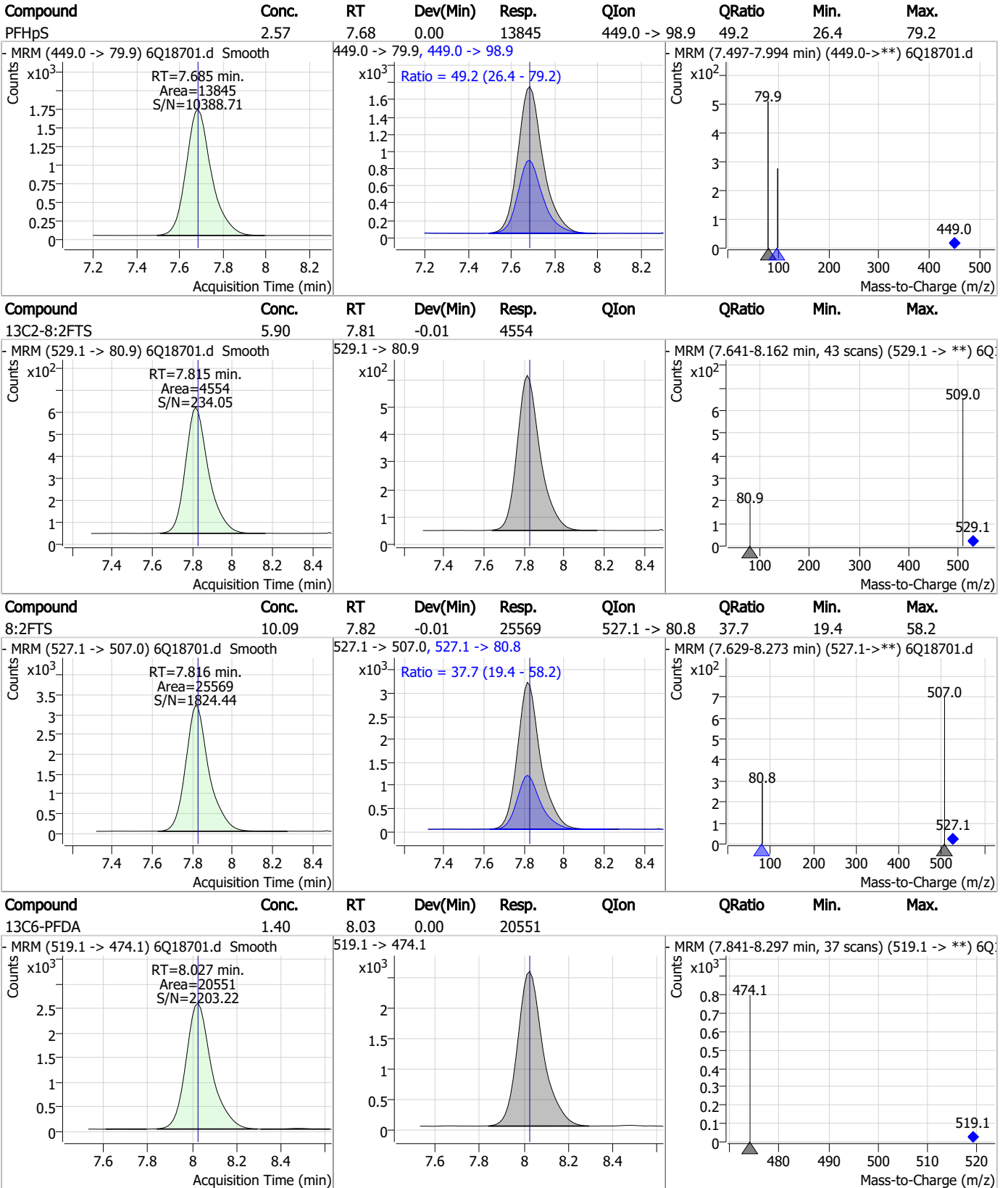


7.3.1
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Perfluorinated Compounds by LC/MS/MS

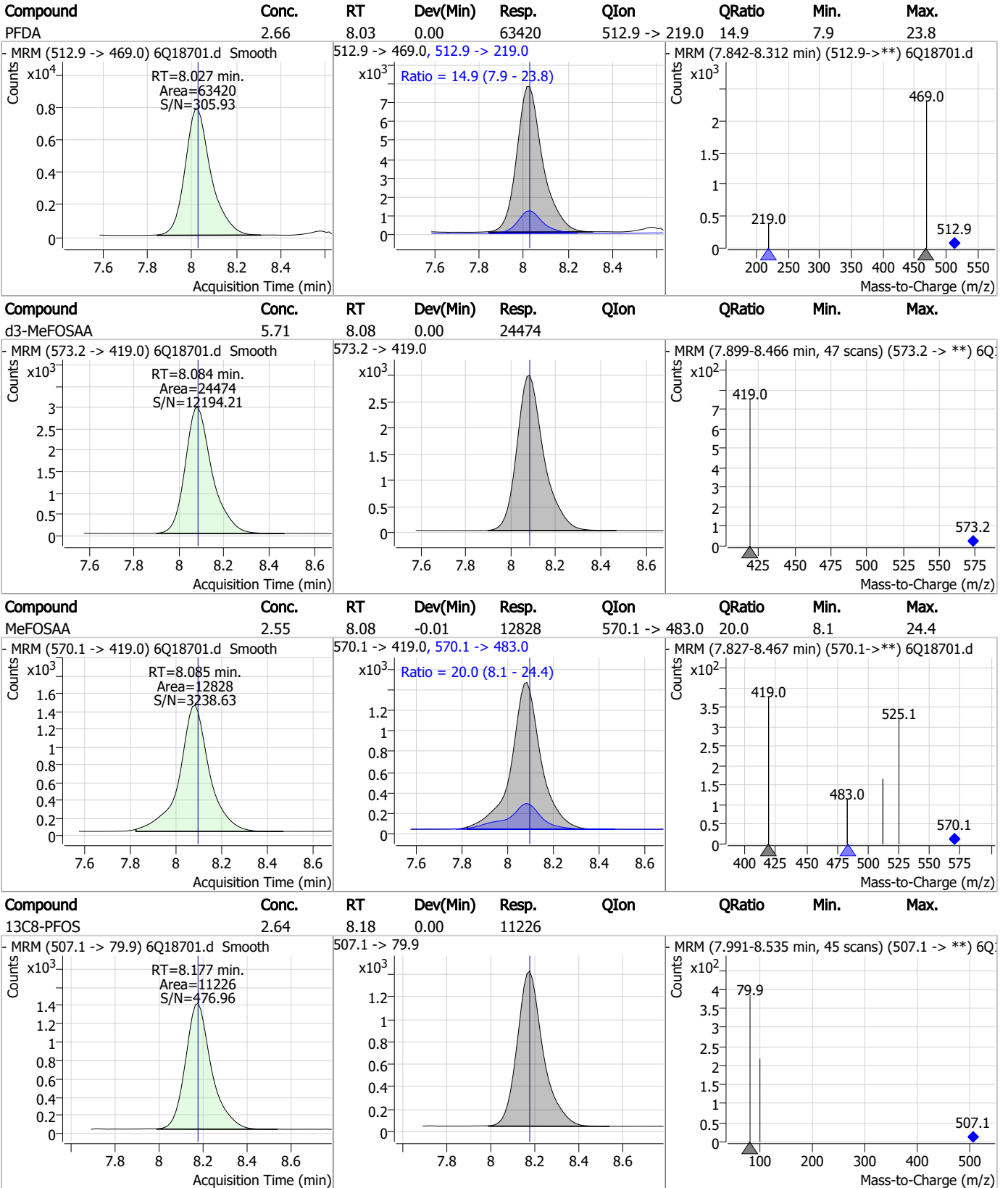


Perfluorinated Compounds by LC/MS/MS



7.3.1
7

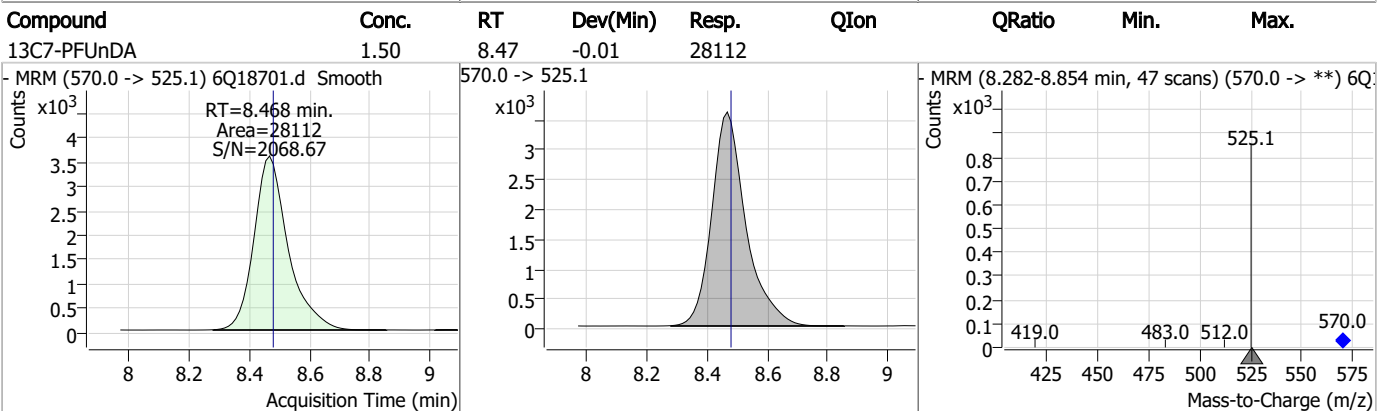
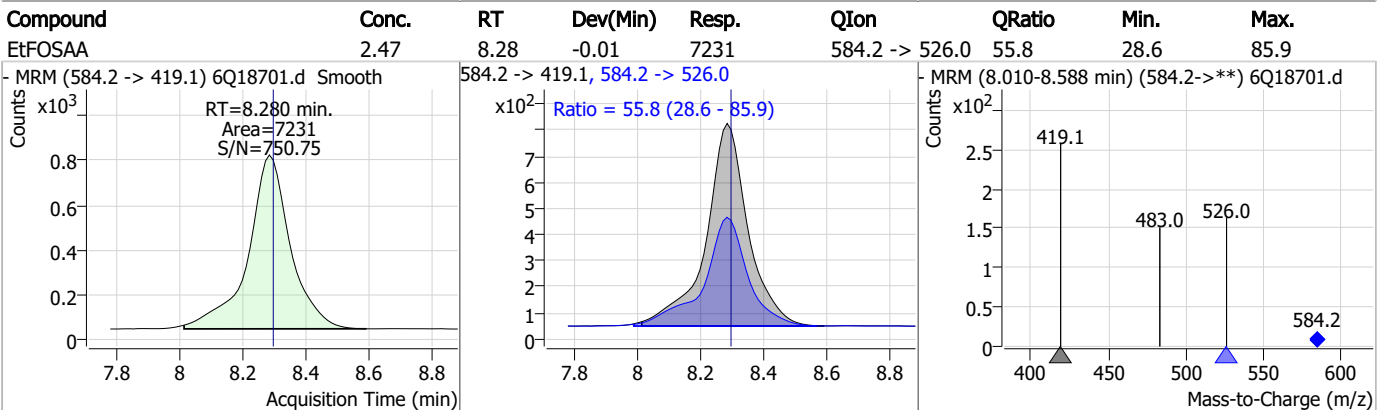
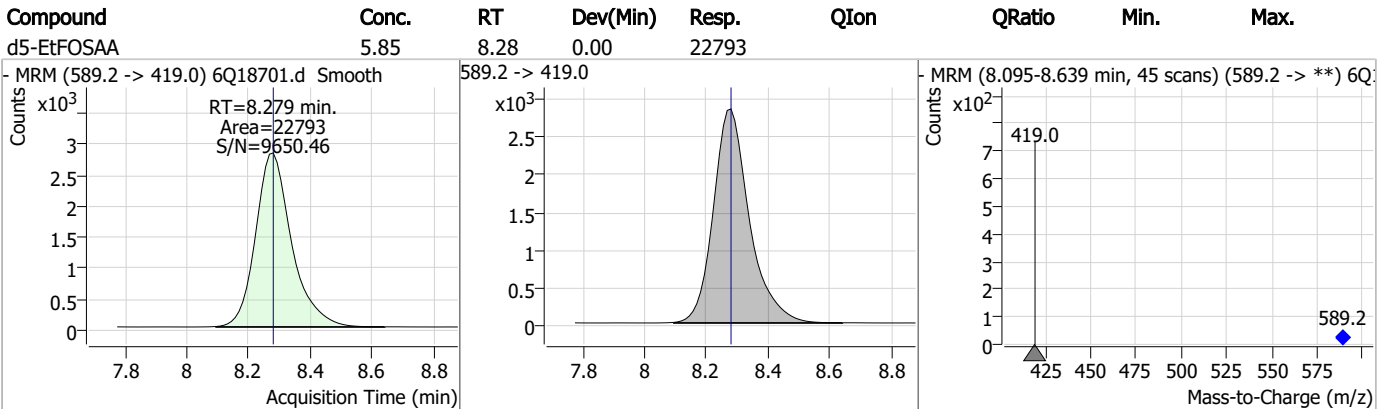
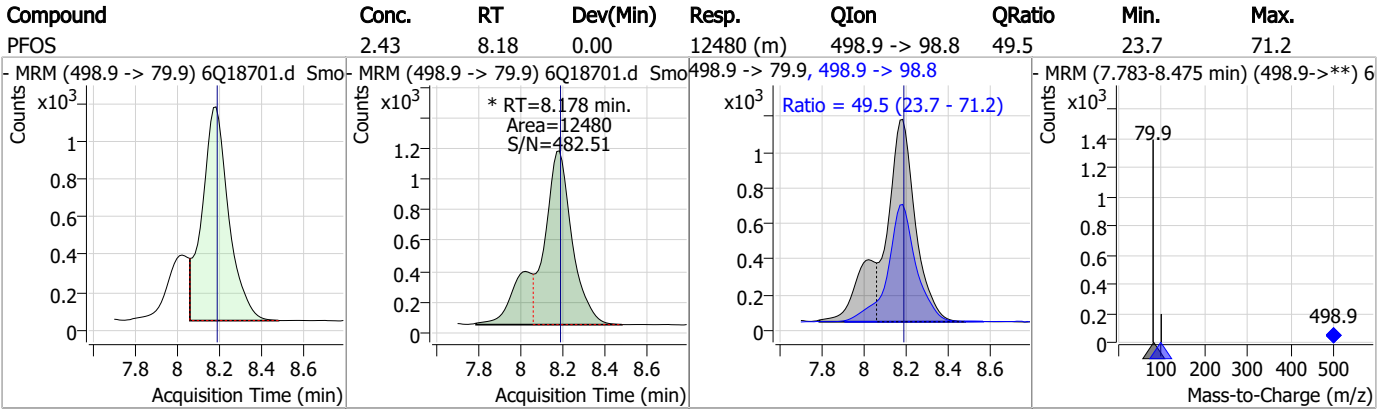
Perfluorinated Compounds by LC/MS/MS



7.3.1

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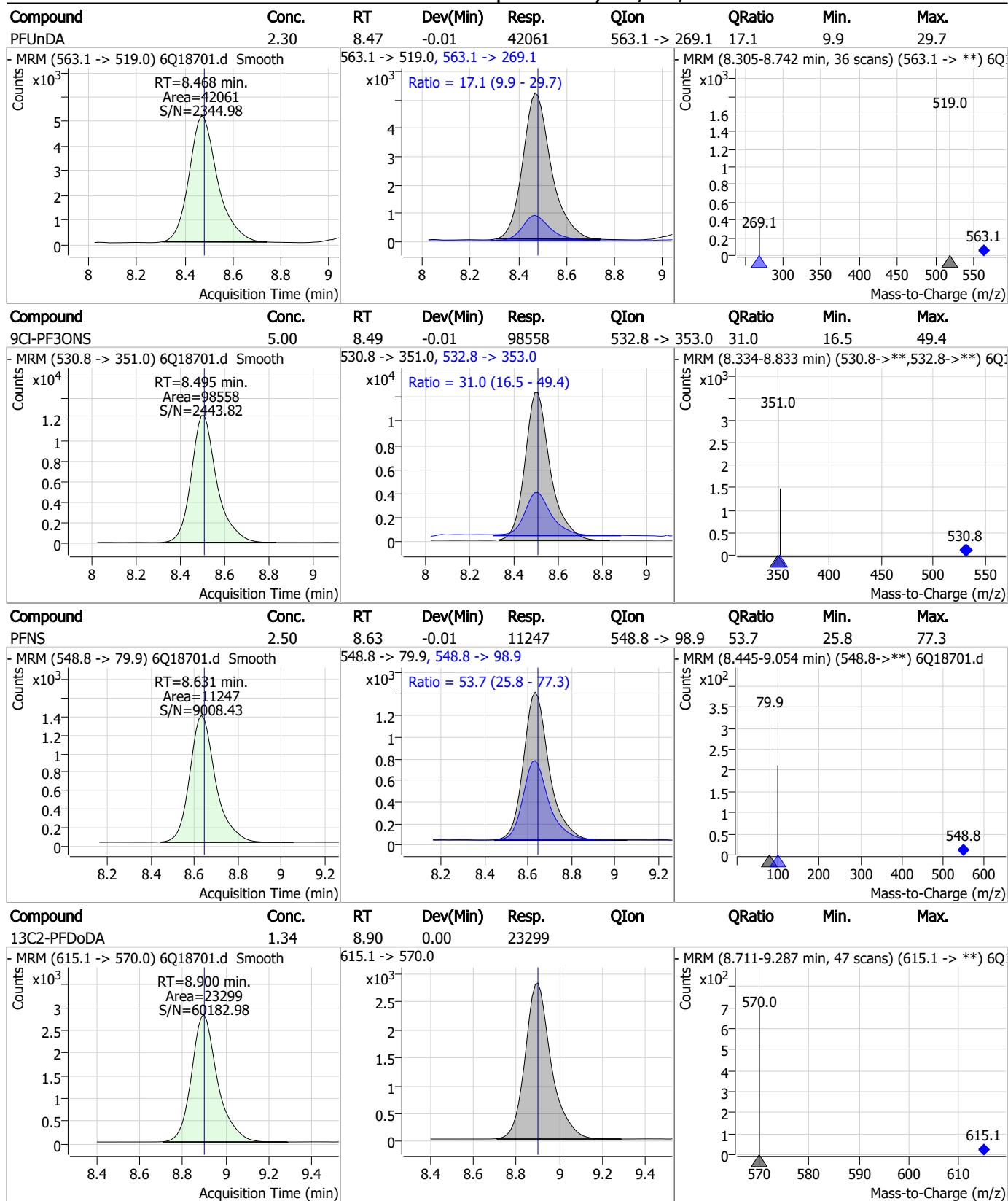
Perfluorinated Compounds by LC/MS/MS



7.3.1

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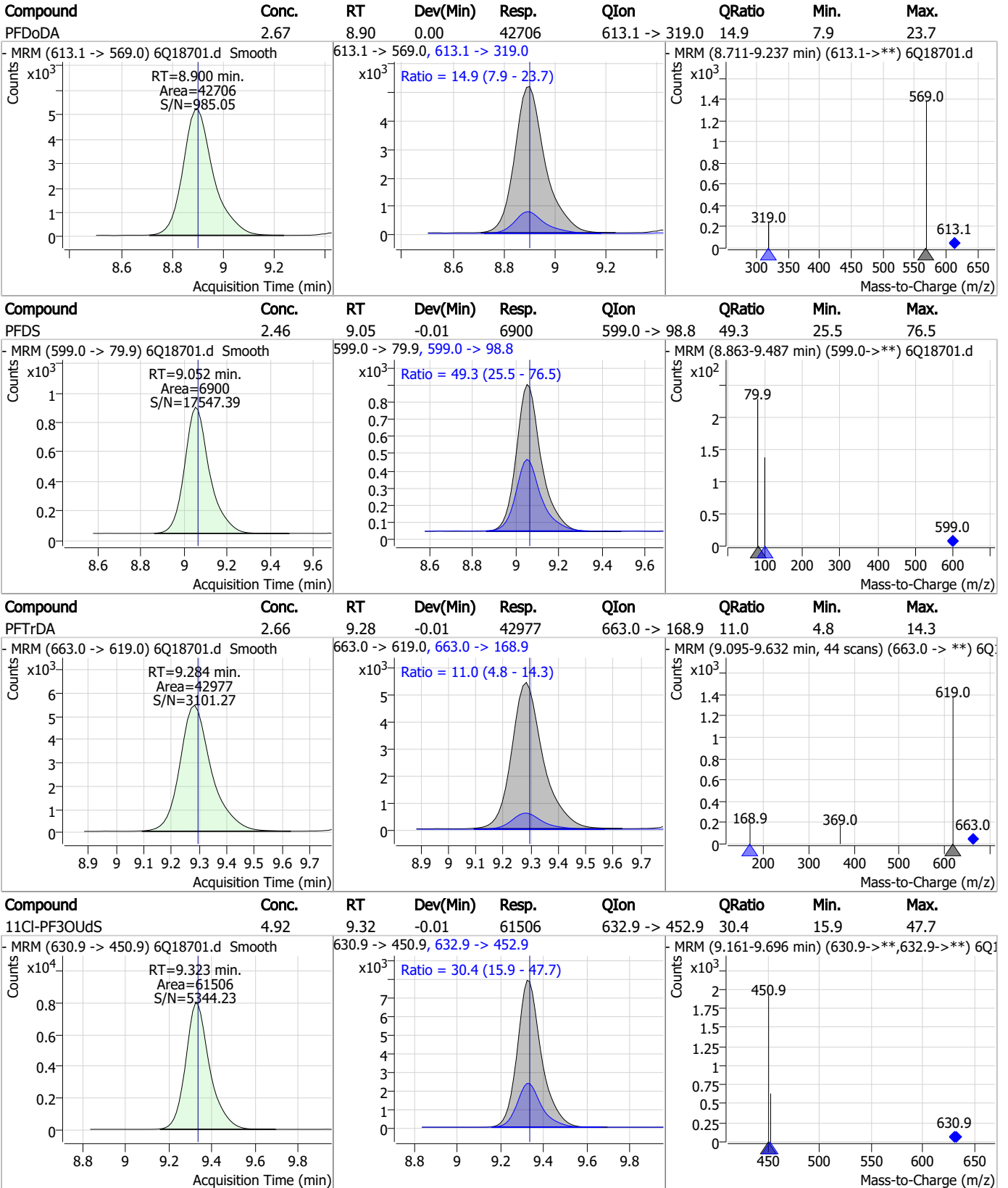
Perfluorinated Compounds by LC/MS/MS



7.3.1

7

Perfluorinated Compounds by LC/MS/MS

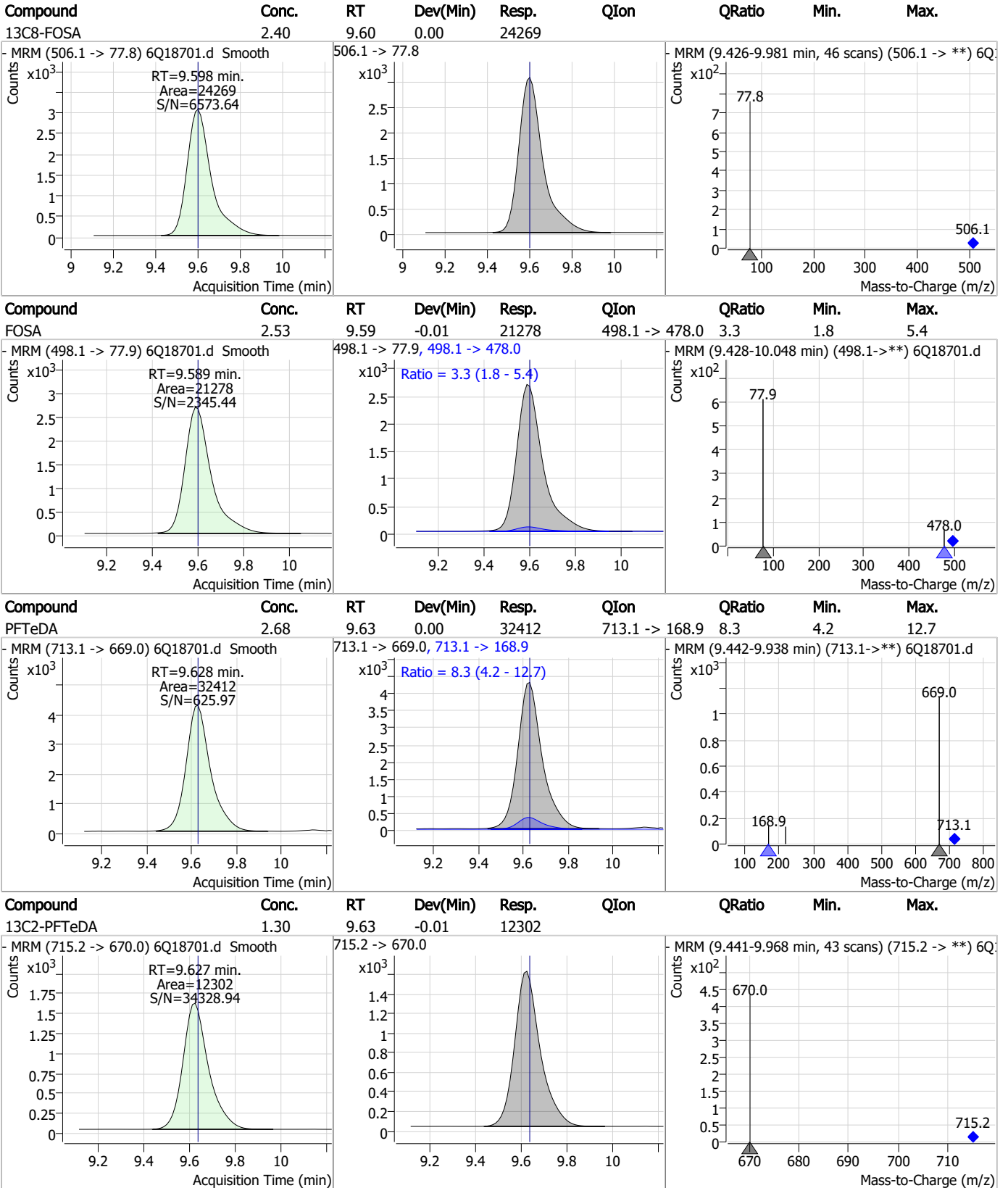


7.3.1

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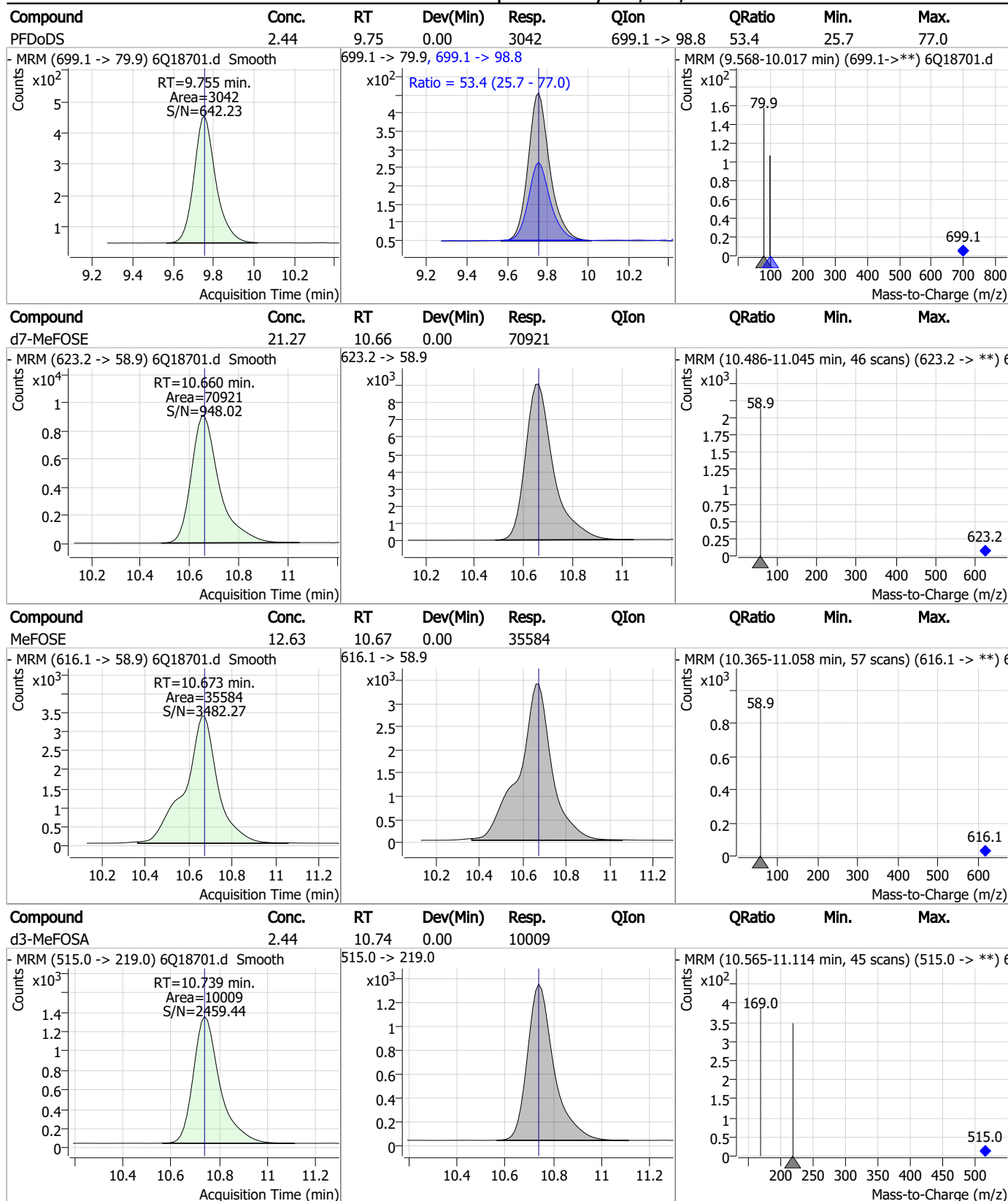
Perfluorinated Compounds by LC/MS/MS



7.3.1

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Perfluorinated Compounds by LC/MS/MS

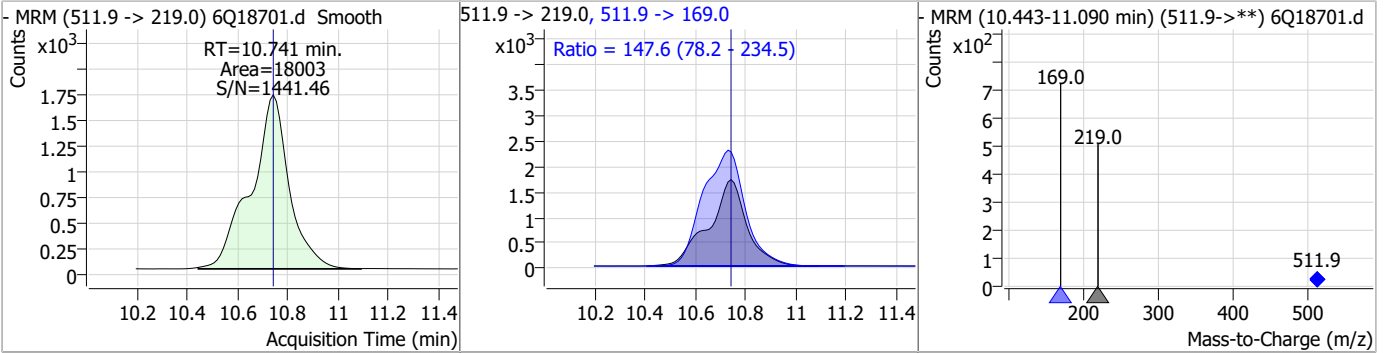


7.3.1
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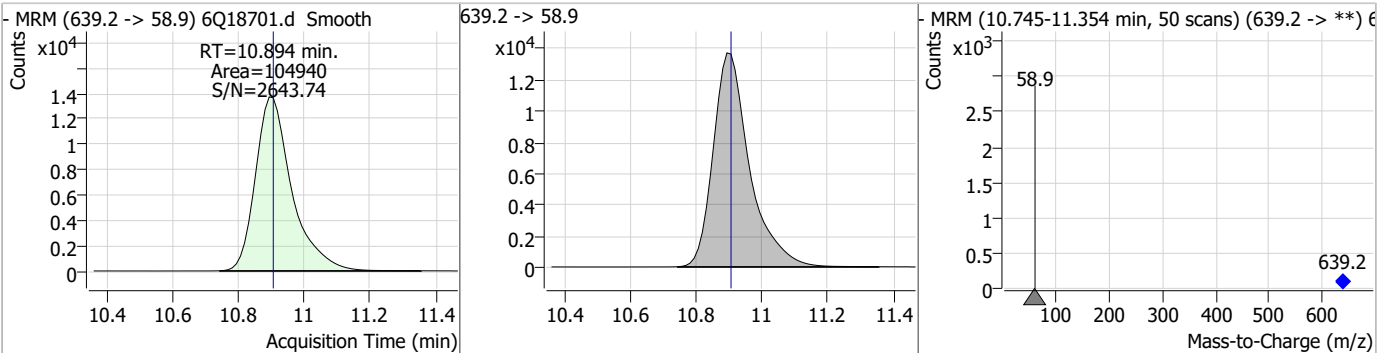


Perfluorinated Compounds by LC/MS/MS

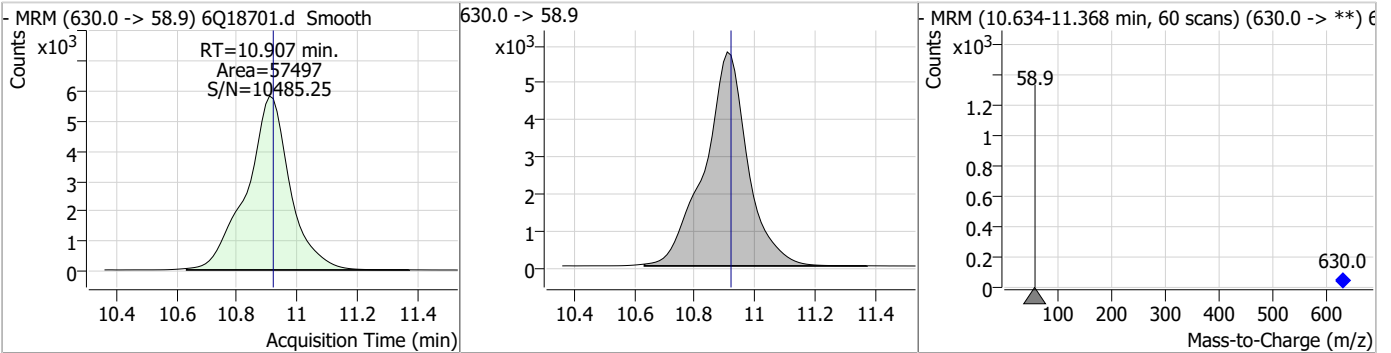
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.89	10.74	0.00	18003	511.9 -> 169.0	147.6	78.2	234.5



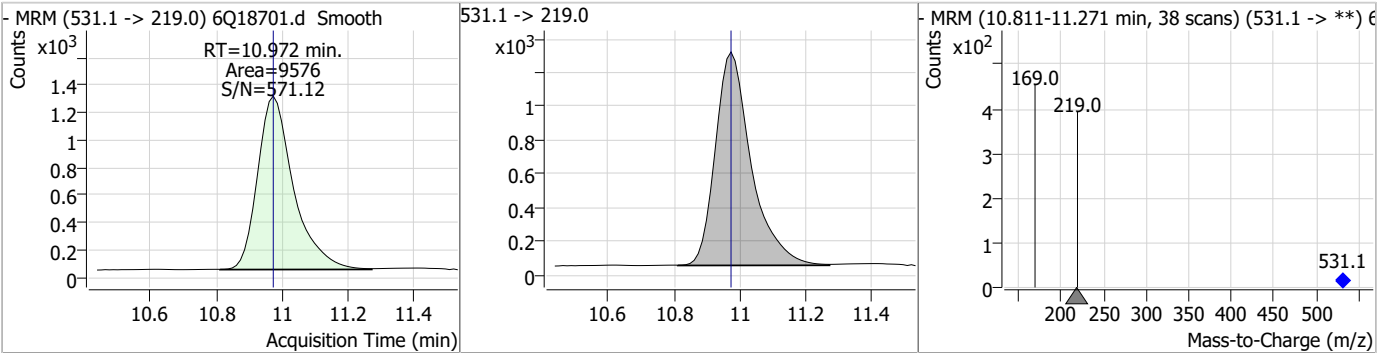
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.06	10.89	-0.01	104940				



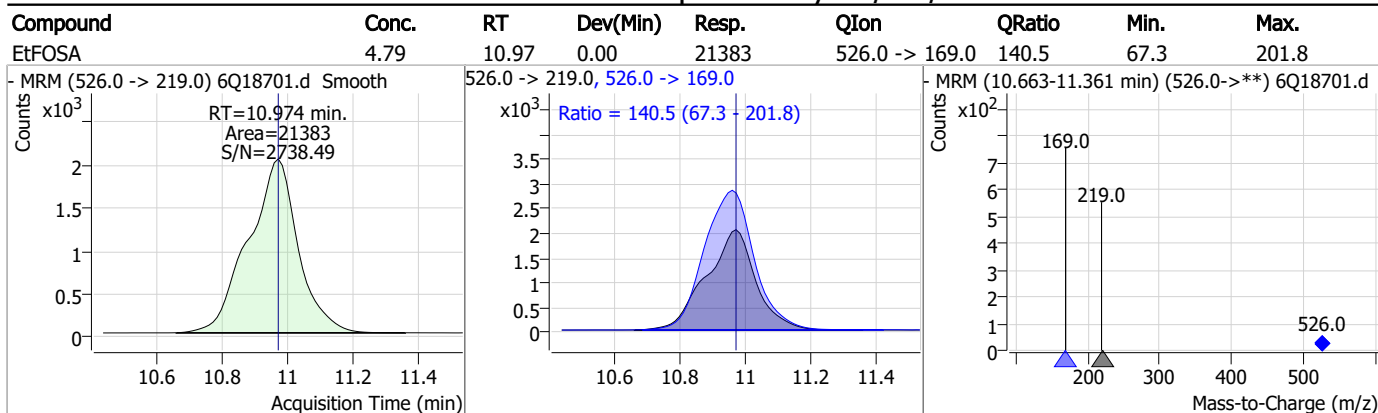
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.28	10.91	-0.01	57497				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	10.97	0.00	9576				



Perfluorinated Compounds by LC/MS/MS



7.3.1
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Manual Integration Approval Summary

Sample Number: OP97143-BS Method: EPA DRAFT 1633
Lab FileID: 6Q18701.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 21:24 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.3.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18702.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:38:45 PM
 Sample Name : op97143-llbs:3
 Vial : P3-C1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	141208	10.00 µg/L	0.037
M5-PFPeA	4.210	268.3 -> 223.0	45579	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	49588	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	47957	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	72152	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	32399	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	20657	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	25484	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23495	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	12300	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	23259	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	18561	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11261	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11287	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2958	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4416	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4313	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	23373	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	31322	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21946	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	69943	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	100849	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	9471	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8905	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	12317	2.50 µg/L	-0.012
13C3-PFBA	2.852	216.0 -> 172.0	55221	5.00 µg/L	0.025
18O2-PFHxS	7.129	403.0 -> 83.9	7733	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	72863	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	23997	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	38539	1.25 µg/L	0.000
13C2-PFHxA	5.405	315.1 -> 270.0	44147	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2958	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4416	5.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.9%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4313	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23495	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	12300	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C3-PFBS	5.334	302.1 -> 79.9	18561	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C3-PFHxS	7.130	402.1 -> 79.9	11261	2.61 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFBA	2.860	216.8 -> 171.9	141208	10.74 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	47957	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C5-PFHxA	5.404	318.0 -> 273.0	49588	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	45579	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C6-PFDA	8.027	519.1 -> 474.1	20657	1.47 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	25484	1.42 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.6%	
13C8-FOSA	9.598	506.1 -> 77.8	23259	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOA	7.026	421.1 -> 376.0	72152	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C8-PFOS	8.177	507.1 -> 79.9	11287	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.4%	
13C9-PFNA	7.545	472.1 -> 427.0	32399	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	23373	5.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	31322	10.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	8905	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.6%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21946	6.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	69943	22.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	100849	24.92 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	9471	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	13222	3.08 µg/L	99
		327.1 -> 80.9	5019		
6:2FTS	6.801	427.1 -> 407.0	13640	3.14 µg/L	98
		427.1 -> 80.9	4927		
8:2FTS	7.816	527.1 -> 507.0	7781	3.24 µg/L	94
		527.1 -> 80.8	3281		
EtFOSAA	8.280	584.2 -> 419.1	2311	0.82 µg/L	96
		584.2 -> 526.0	1249		
FOSA	9.589	498.1 -> 77.9	6830	0.85 µg/L	99
		498.1 -> 478.0	213		
MeFOSAA	8.085	570.1 -> 419.0	4075	0.85 µg/L	97
		570.1 -> 483.0	707		
PFBA	2.856	212.8 -> 168.9	15399	3.29 µg/L	100
PFBS	5.335	298.7 -> 79.9	4477	0.71 µg/L	97
		298.7 -> 98.8	1805		
PFDA	8.027	512.9 -> 469.0	19447	0.81 µg/L	100
		512.9 -> 219.0	3074		
PFDODA	8.900	613.1 -> 569.0	12754	0.79 µg/L	100
		613.1 -> 319.0	2018		
PFDS	9.052	599.0 -> 79.9	2041	0.72 µg/L	96

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	983	0.78 µg/L	100
		363.1 -> 319.0	16586		
PFHpS	7.685	363.1 -> 169.0	2813	0.72 µg/L	99
		449.0 -> 79.9	3872		
PFHxA	5.420	449.0 -> 98.9	2069	0.86 µg/L	99
		313.0 -> 269.0	14390		
PFHxS	7.131	313.0 -> 118.9	787	0.77 µg/L	91
		398.7 -> 79.9	3920		
PFNA	7.545	398.7 -> 98.9	1776	0.85 µg/L	99
		463.0 -> 419.0	19467		
PFNS	8.631	463.0 -> 219.0	3923	0.75 µg/L	95
		548.8 -> 79.9	3414		
PFOA	7.028	548.8 -> 98.9	1648	0.81 µg/L	98
		413.0 -> 369.0	25004		
PFOS	8.178	413.0 -> 169.0	4591	0.73 µg/L	93
		498.9 -> 79.9	3767		
PFPeA	4.224	498.9 -> 98.8	1979	1.68 µg/L	100
		263.0 -> 219.0	18353		
PFPeS	6.422	349.1 -> 79.9	4019	0.79 µg/L	96
		349.1 -> 98.9	1837		
PFTeDA	9.628	713.1 -> 669.0	9787	0.81 µg/L	99
		713.1 -> 168.9	852		
PFTrDA	9.284	663.0 -> 619.0	12240	0.75 µg/L	94
		663.0 -> 168.9	1415		
PFUnDA	8.468	563.1 -> 519.0	13216	0.80 µg/L	93
		563.1 -> 269.1	2180		
11CI-PF3OUdS	9.323	630.9 -> 450.9	17530	1.49 µg/L	97
		632.9 -> 452.9	5243		
9CI-PF3ONS	8.508	530.8 -> 351.0	27961	1.51 µg/L	98
		532.8 -> 353.0	8853		
ADONA	6.632	376.9 -> 250.9	66588	1.60 µg/L	99
		376.9 -> 84.8	17507		
HFPO-DA	5.783	284.9 -> 168.9	4486	1.69 µg/L	94
		284.9 -> 184.9	506		
3:3FTCA	3.696	241.0 -> 177.0	2711	3.87 µg/L	97
		241.0 -> 117.0	428		
5:3FTCA	6.086	341.0 -> 237.1	59005	19.70 µg/L	92
		341.0 -> 217.0	46070		
7:3FTCA	7.523	441.0 -> 316.9	41201	20.09 µg/L	98
		441.0 -> 336.9	93900		
EtFOSA	10.974	526.0 -> 219.0	6437	1.46 µg/L	98
		526.0 -> 169.0	8535		
EtFOSE	10.920	630.0 -> 58.9	17499	3.89 µg/L	100
		511.9 -> 219.0	5617		
MeFOSA	10.741	511.9 -> 169.0	7655	1.72 µg/L	85
		616.1 -> 58.9	10922		
MeFOSE	10.673	699.1 -> 79.9	887	3.93 µg/L	100
		699.1 -> 98.8	503		
PFDoDS	9.755	295.0 -> 201.0	3553	0.71 µg/L	92
		295.0 -> 84.9	868		
NFDHA	5.288	279.0 -> 85.1	12790	1.75 µg/L	95
		229.0 -> 84.9	9950		
PFMBA	4.626	314.8 -> 134.9	30999	1.72 µg/L	100
		314.8 -> 82.9	1098		
PFMPA	3.376			1.47 µg/L	100
PFEESA	5.875				100

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

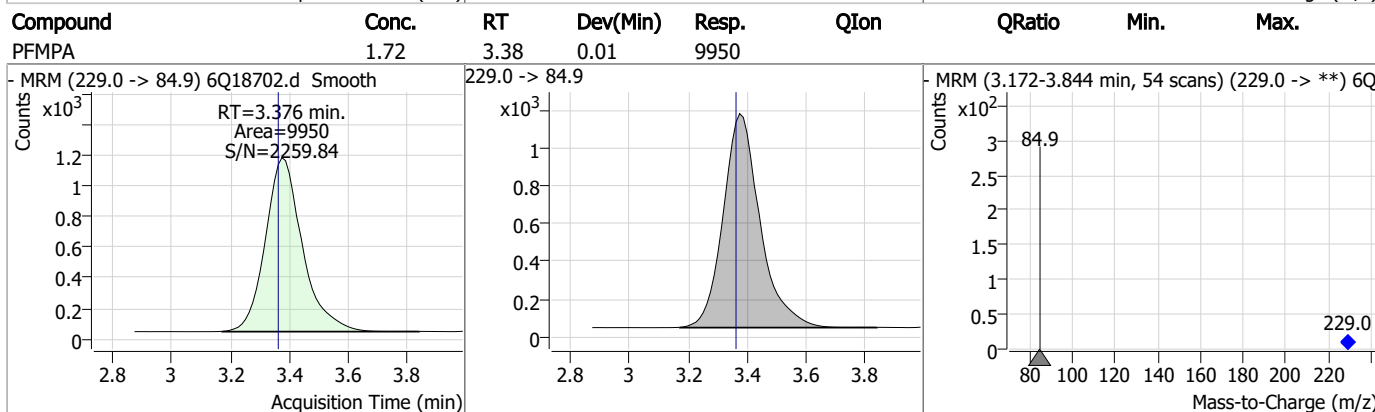
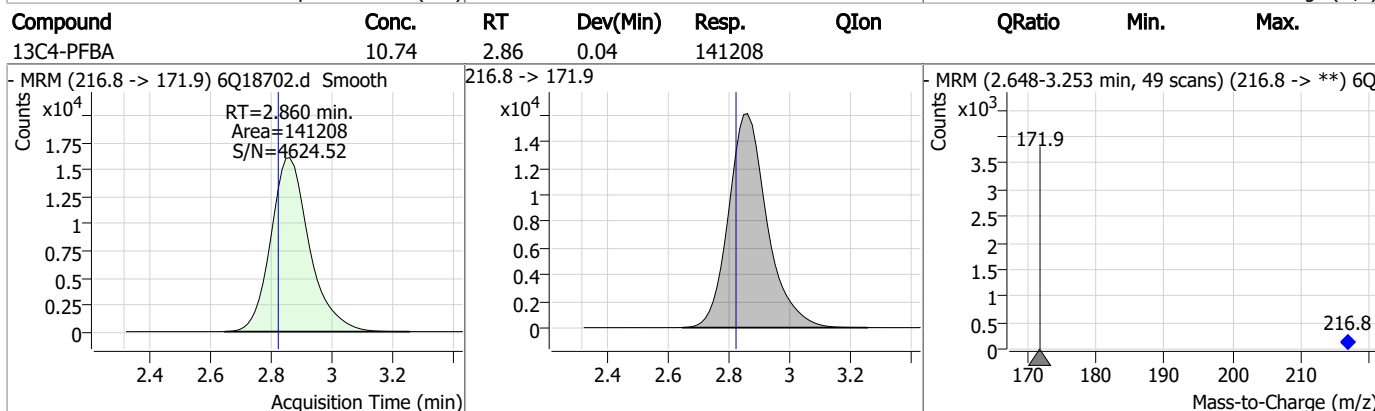
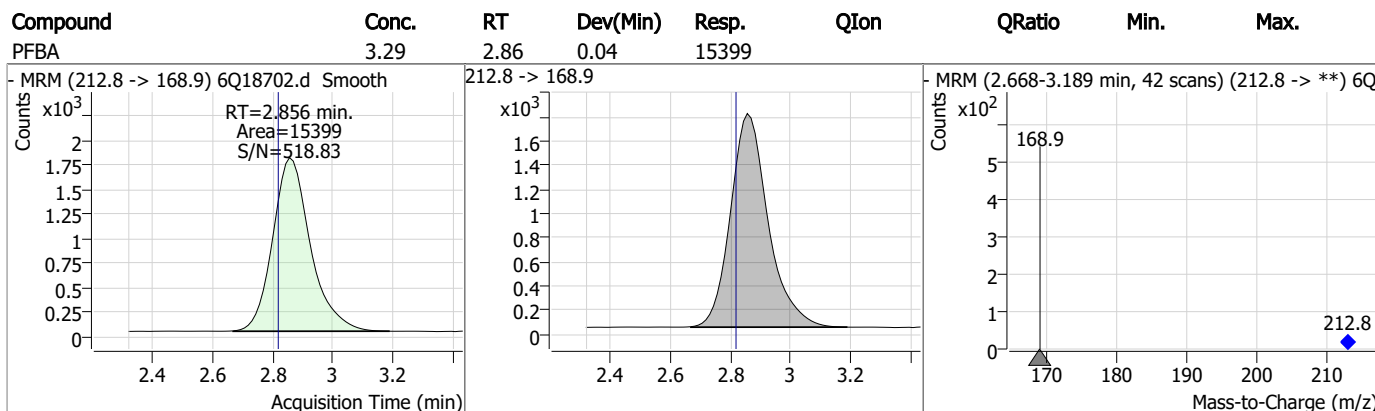
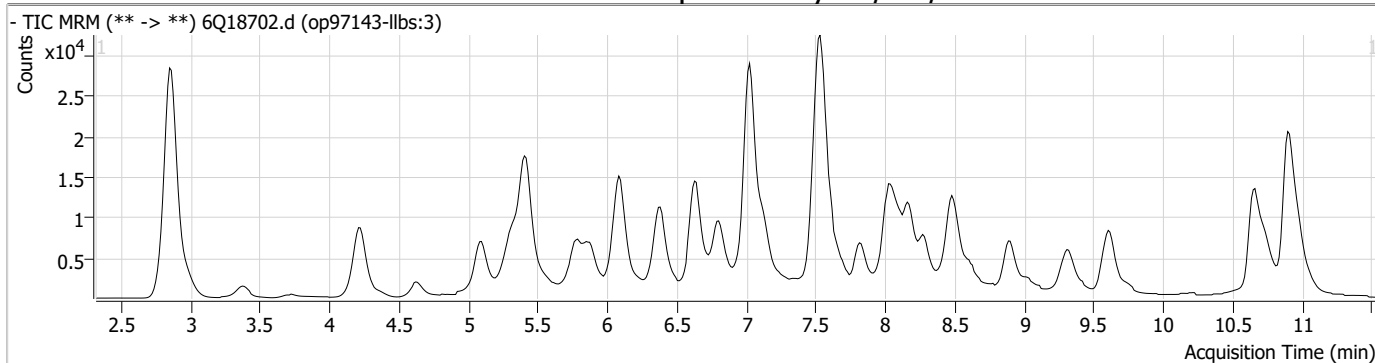
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.2

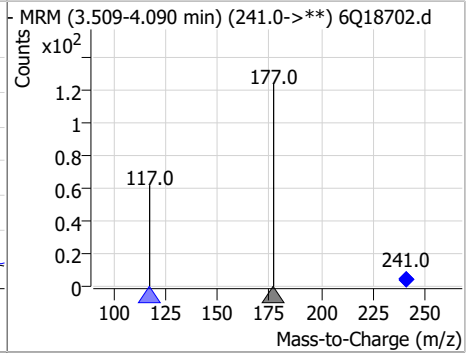
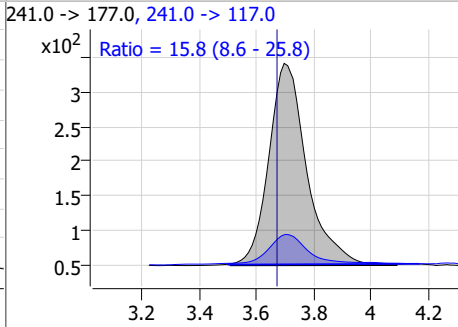
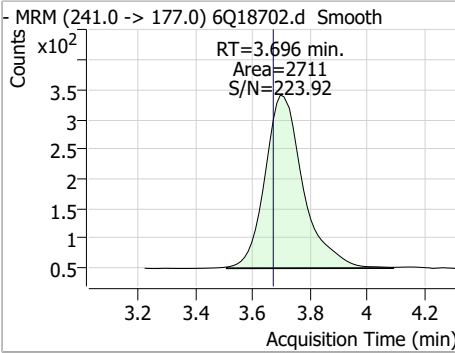
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Perfluorinated Compounds by LC/MS/MS

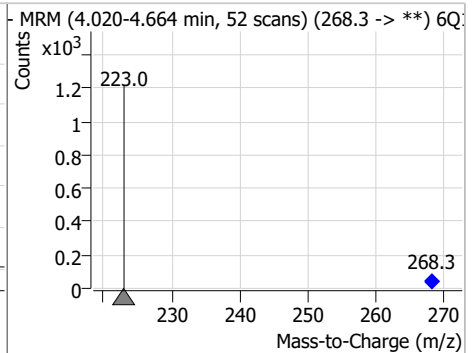
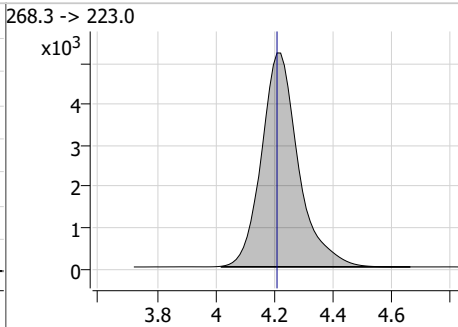
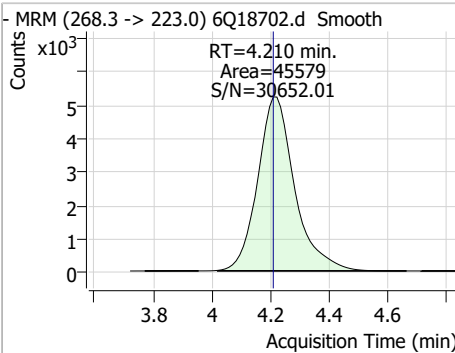


Perfluorinated Compounds by LC/MS/MS

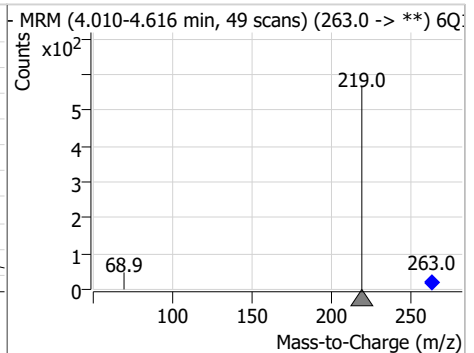
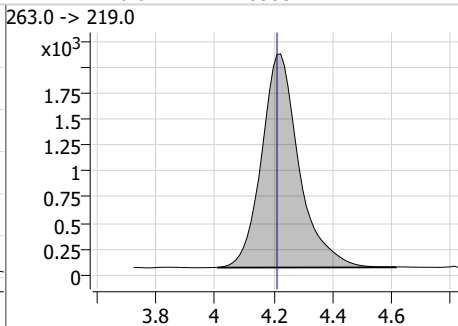
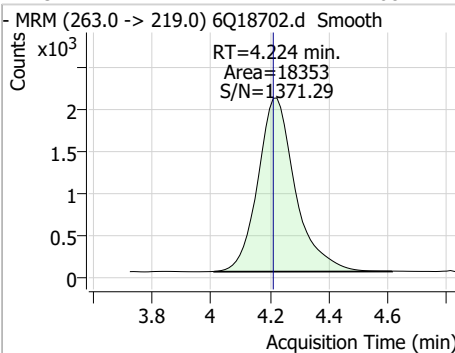
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	3.87	3.70	0.02	2711	241.0 -> 117.0	15.8	8.6	25.8



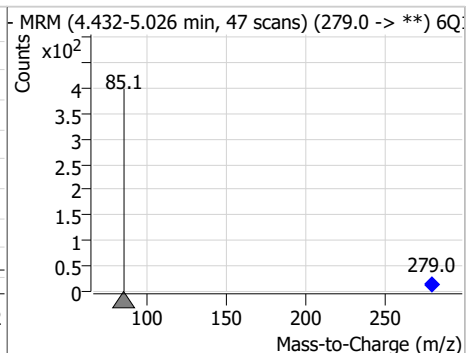
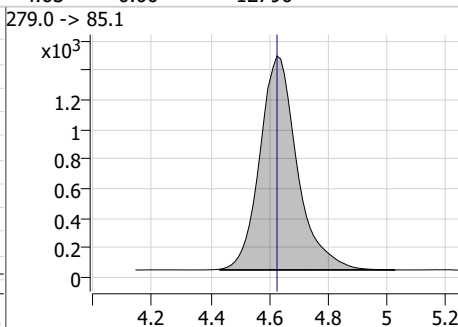
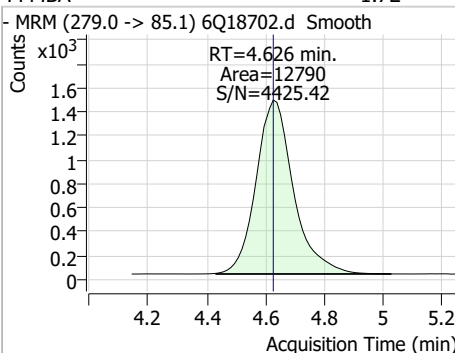
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.31	4.21	0.00	45579				



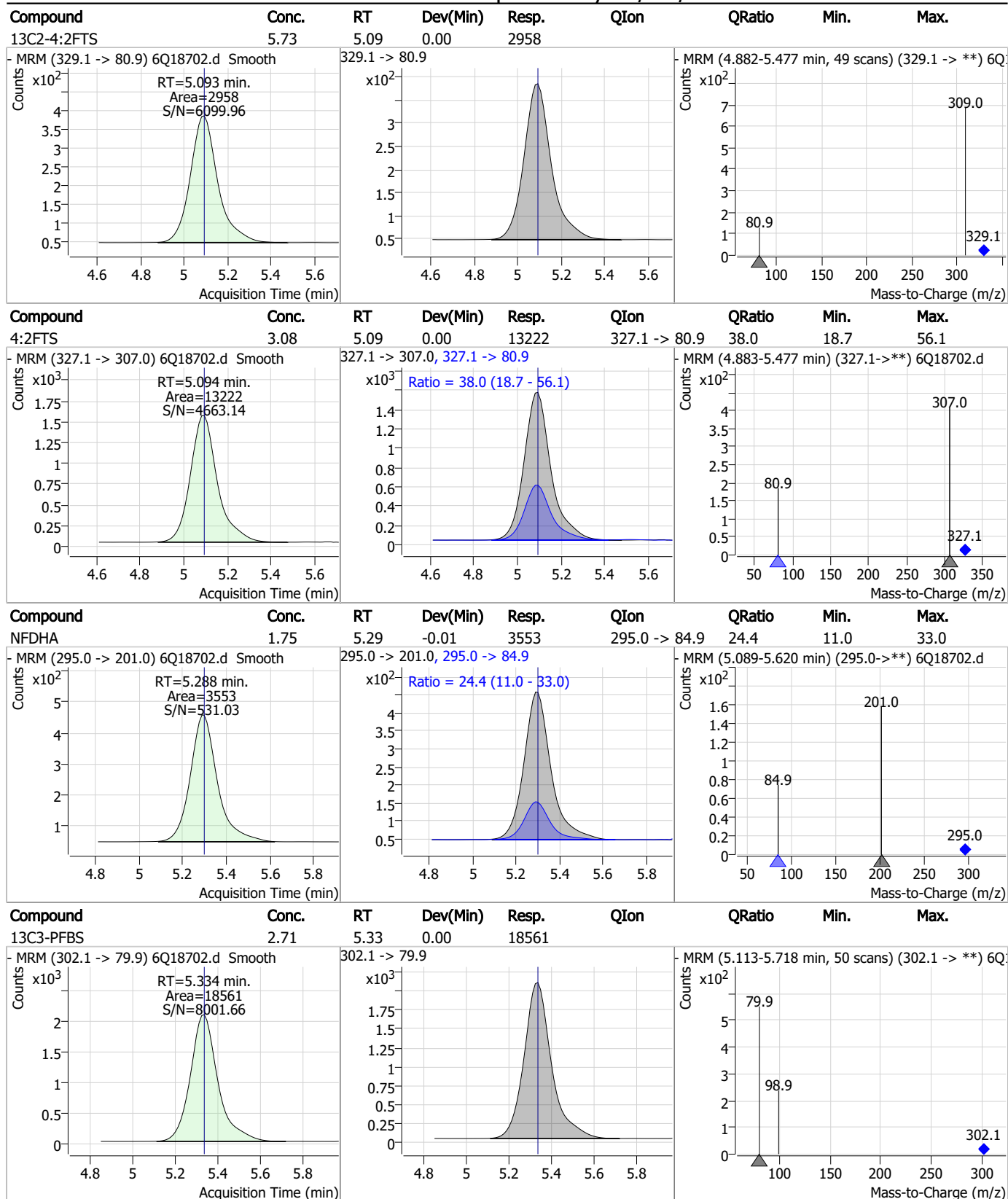
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.68	4.22	0.01	18353				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.72	4.63	0.00	12790				



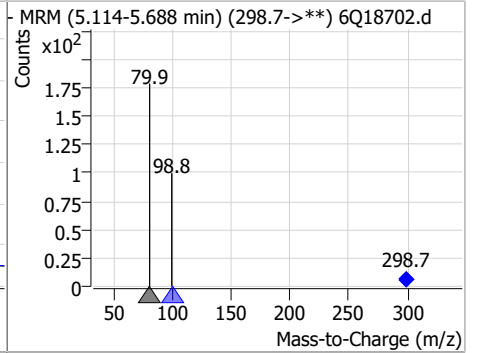
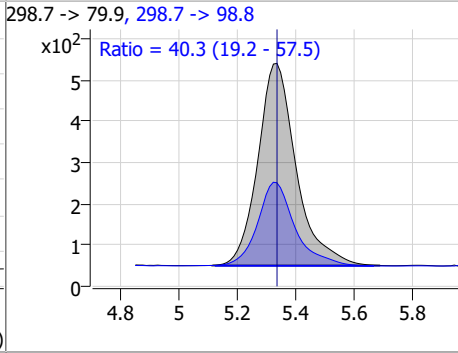
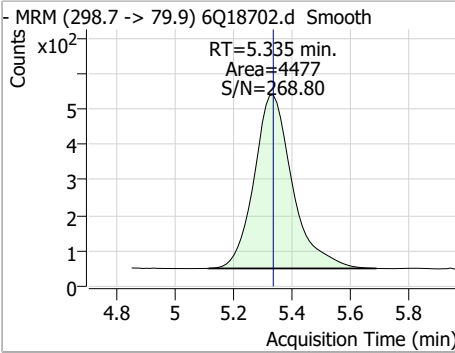
Perfluorinated Compounds by LC/MS/MS



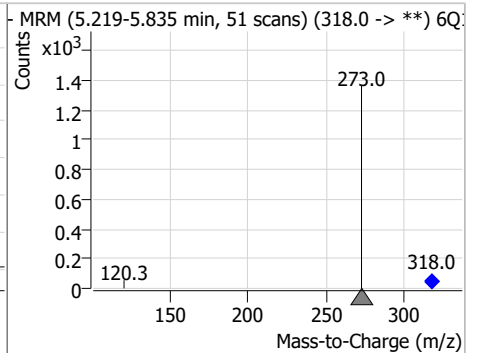
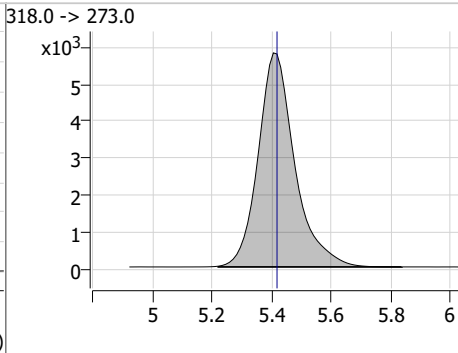
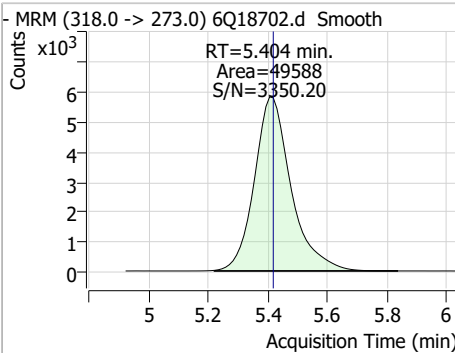
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

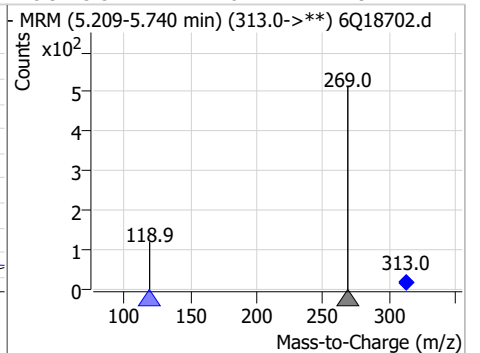
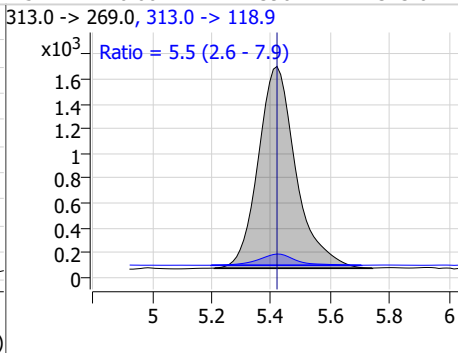
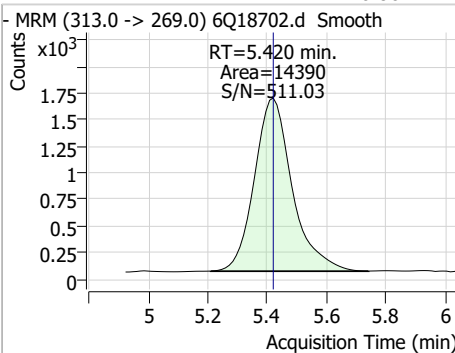
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.71	5.34	0.00	4477	298.7 -> 98.8	40.3	19.2	57.5



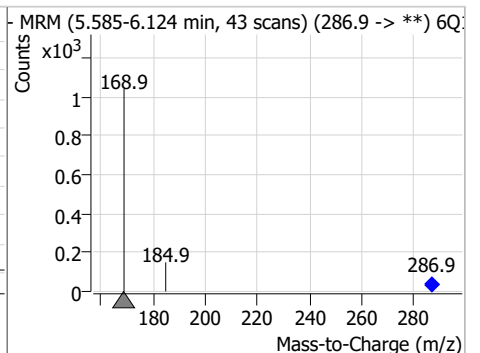
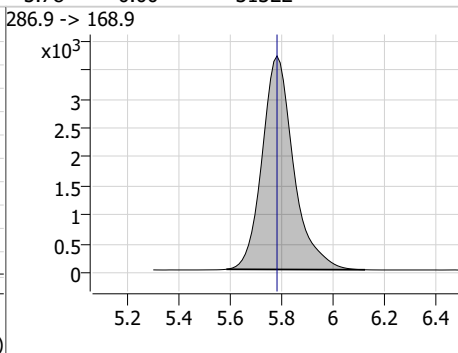
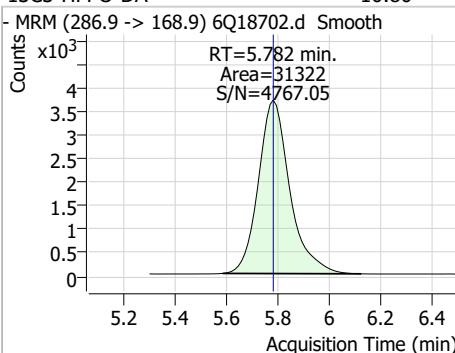
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.65	5.40	-0.01	49588				



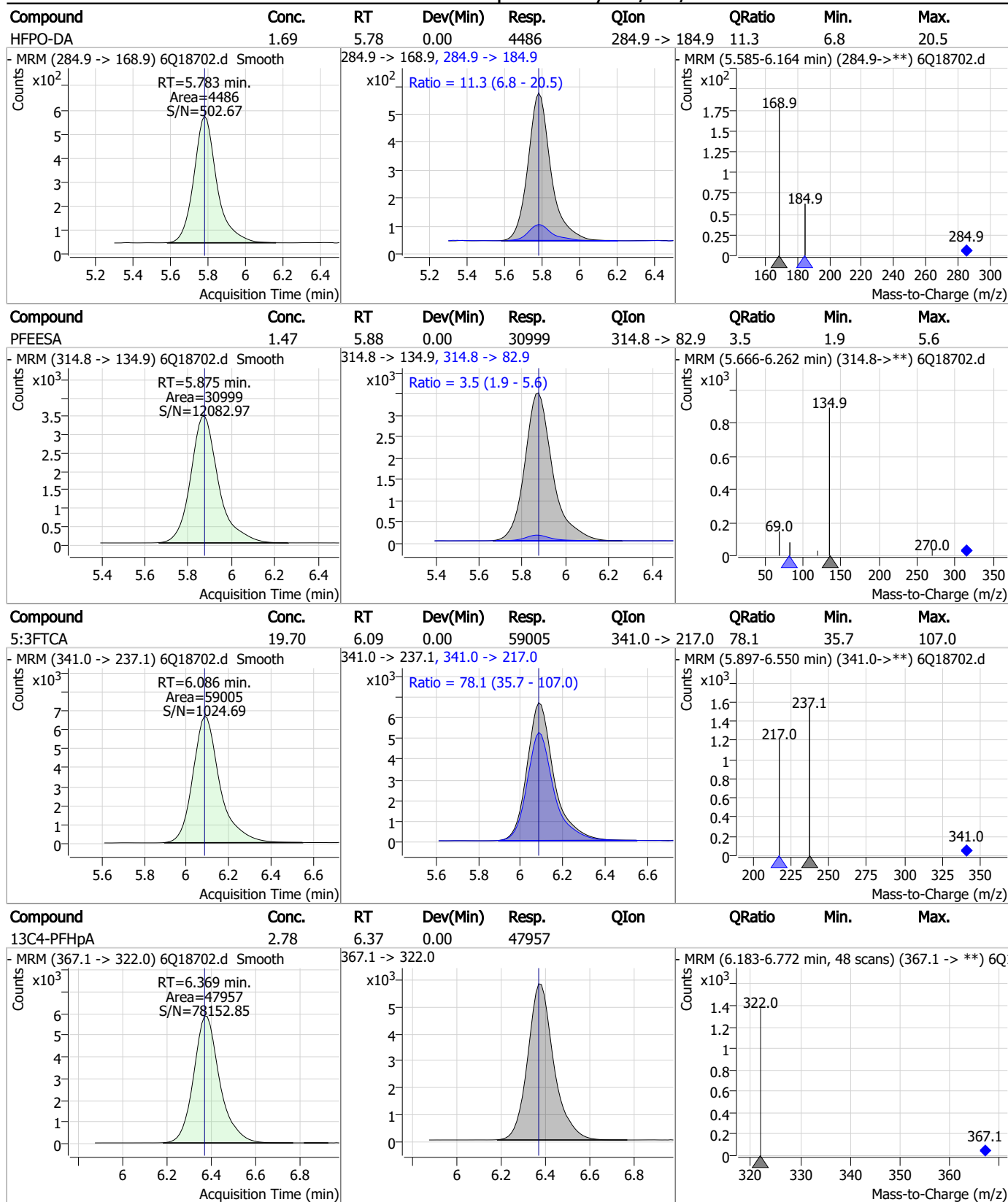
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.86	5.42	0.00	14390	313.0 -> 118.9	5.5	2.6	7.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.80	5.78	0.00	31322				

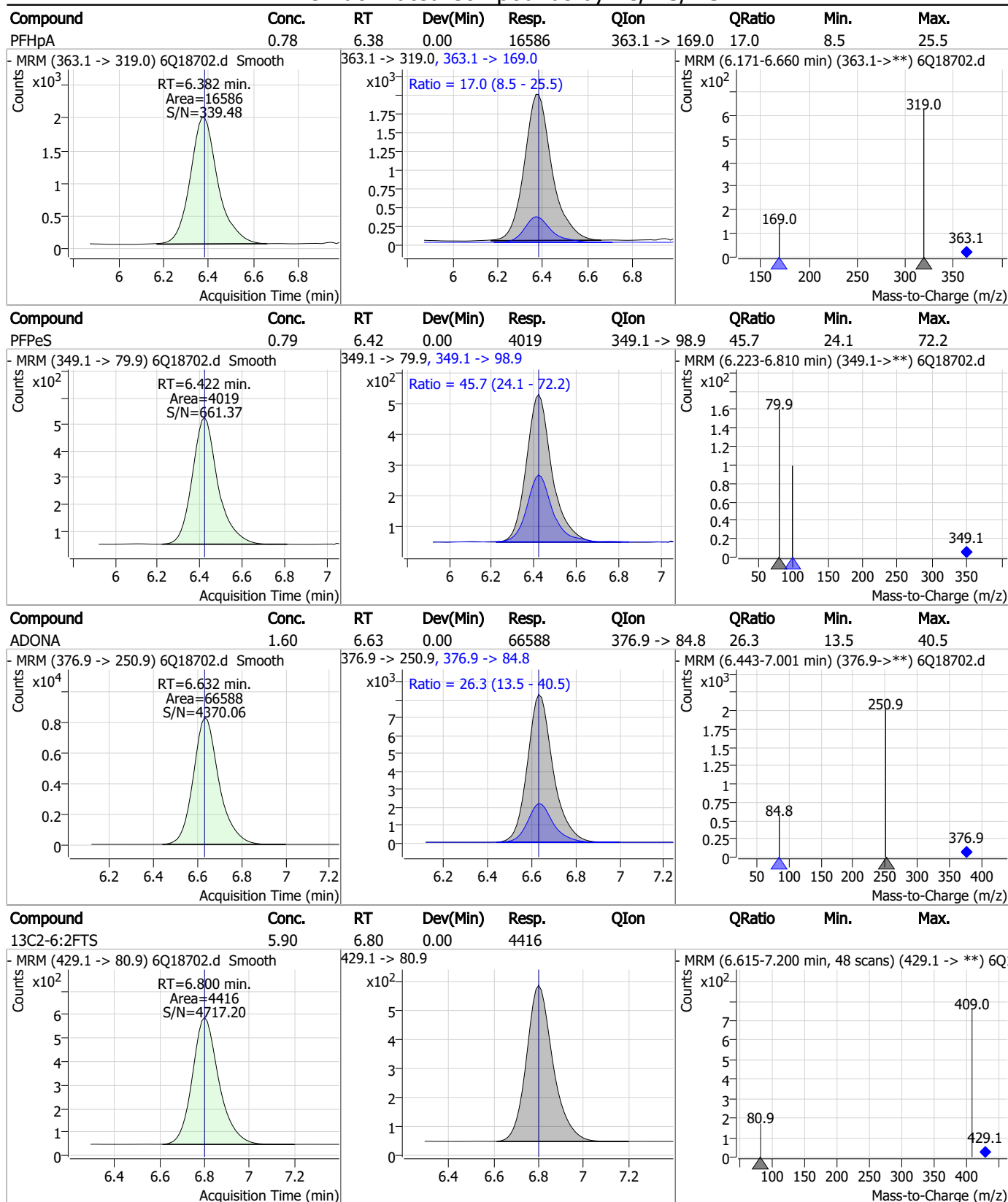


Perfluorinated Compounds by LC/MS/MS



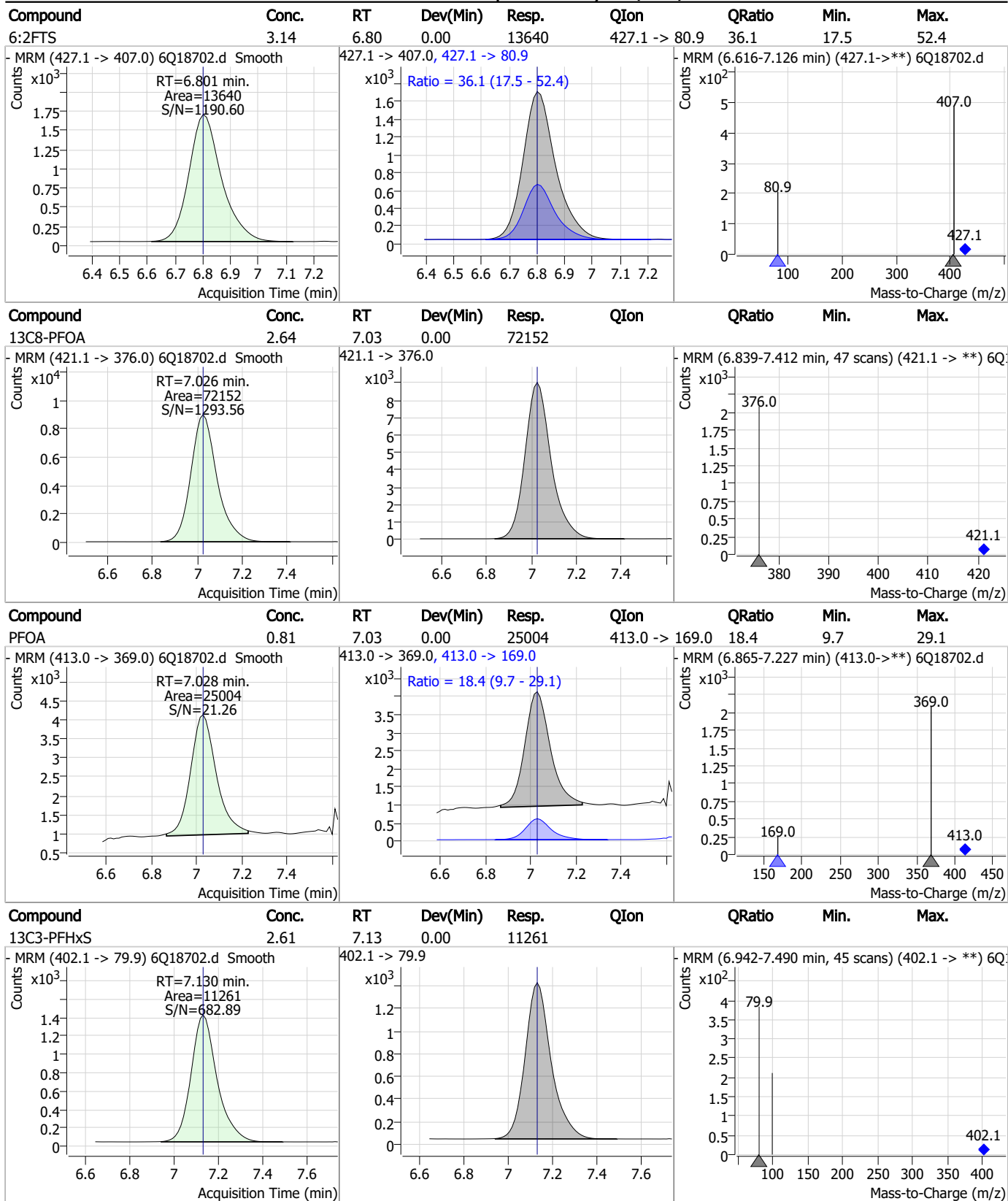
7.3.2
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Perfluorinated Compounds by LC/MS/MS



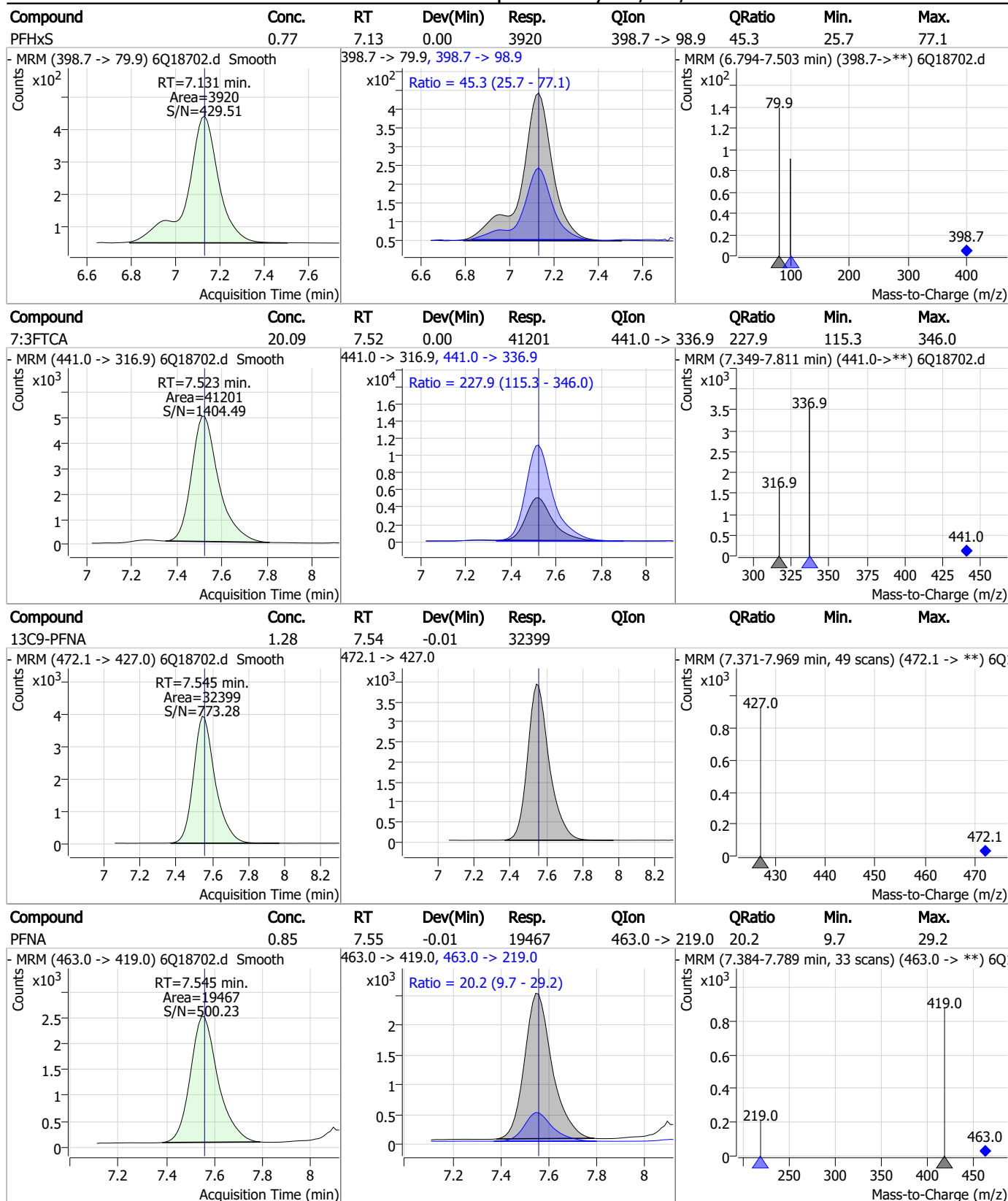
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



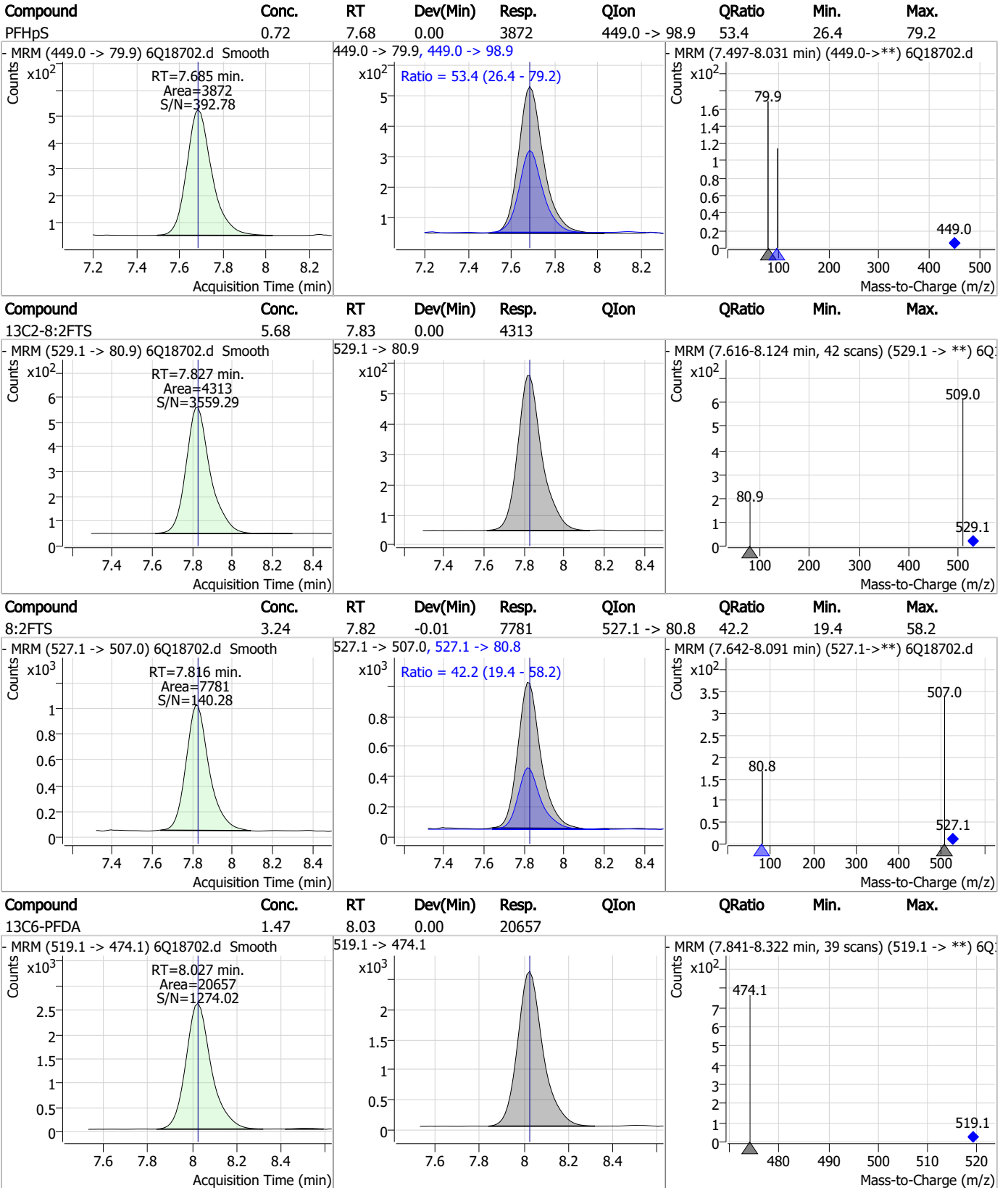
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



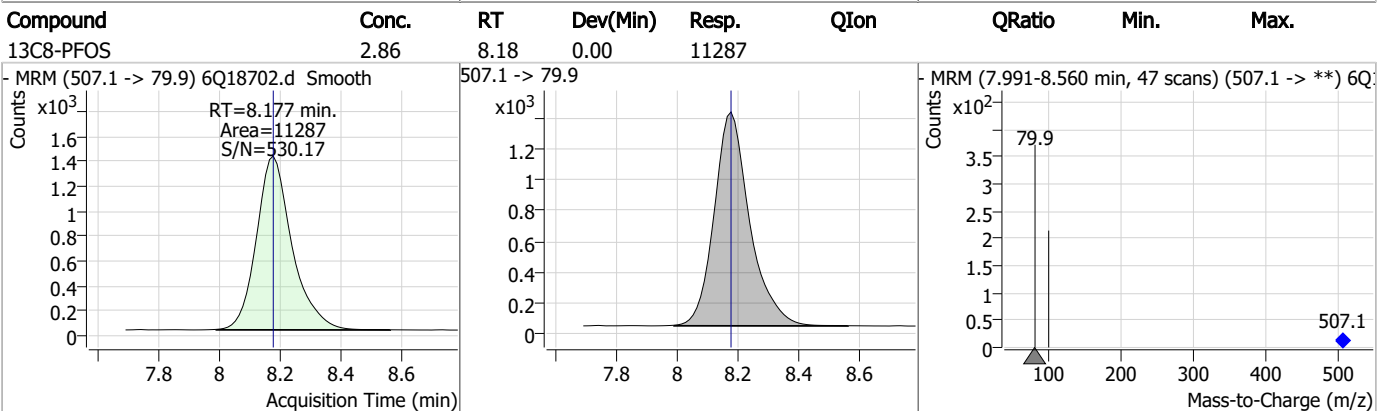
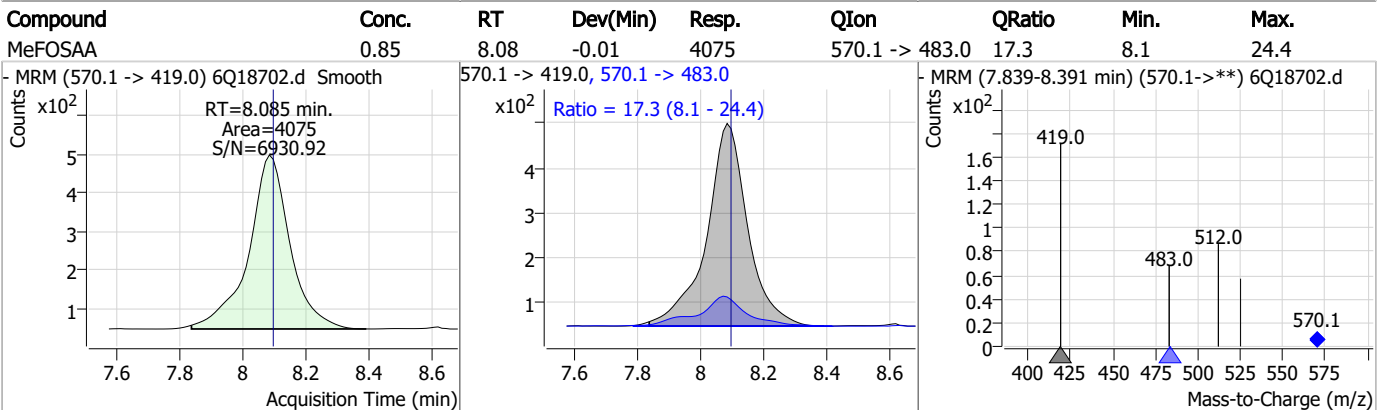
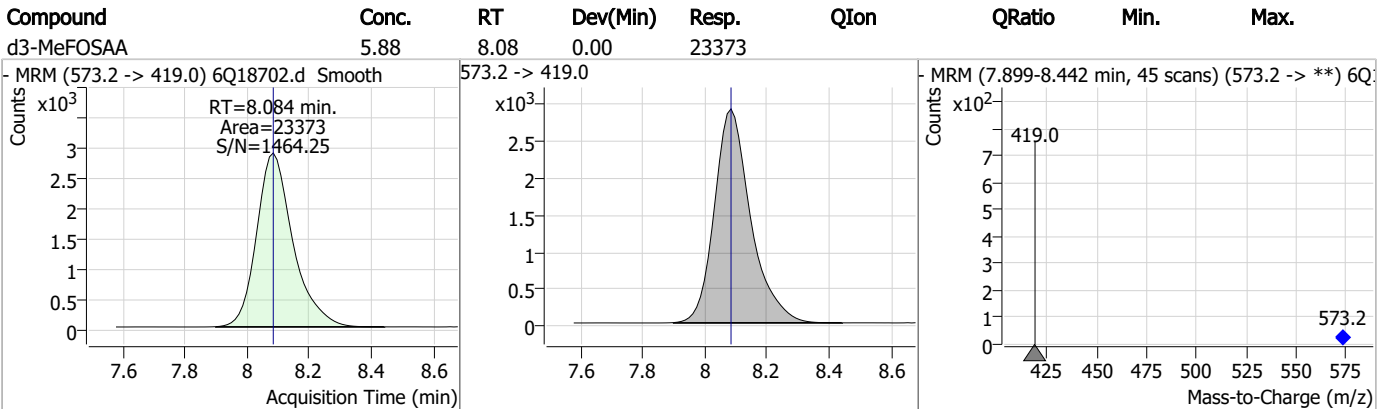
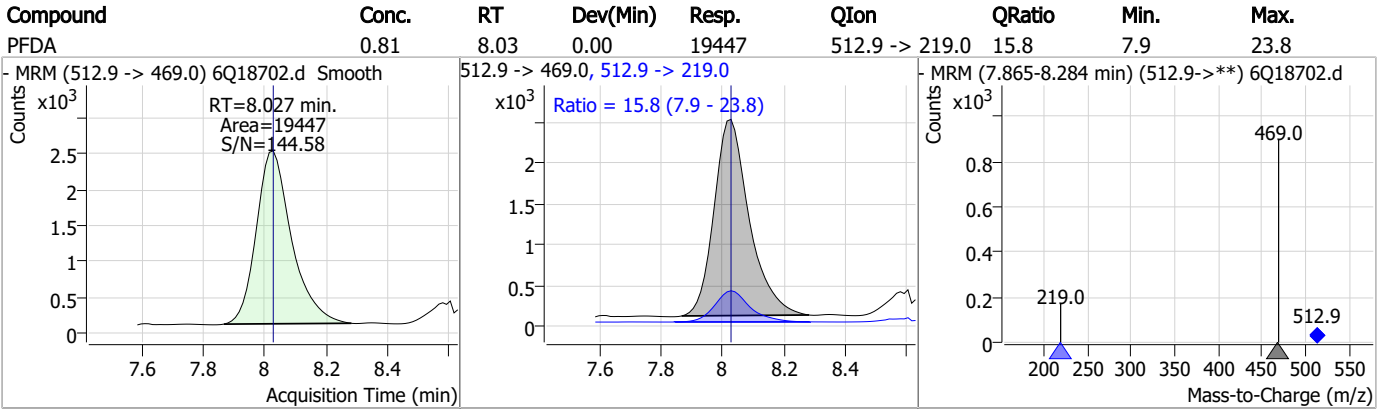
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS



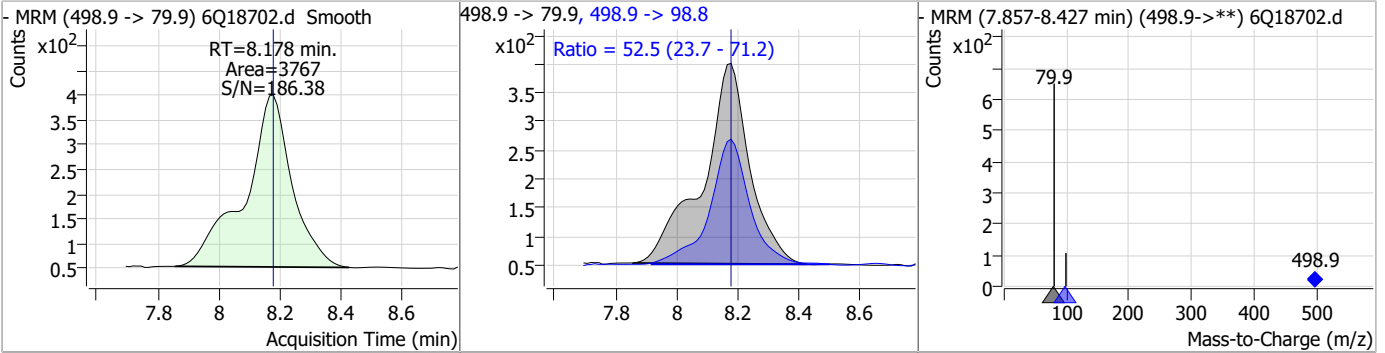
7.3.2

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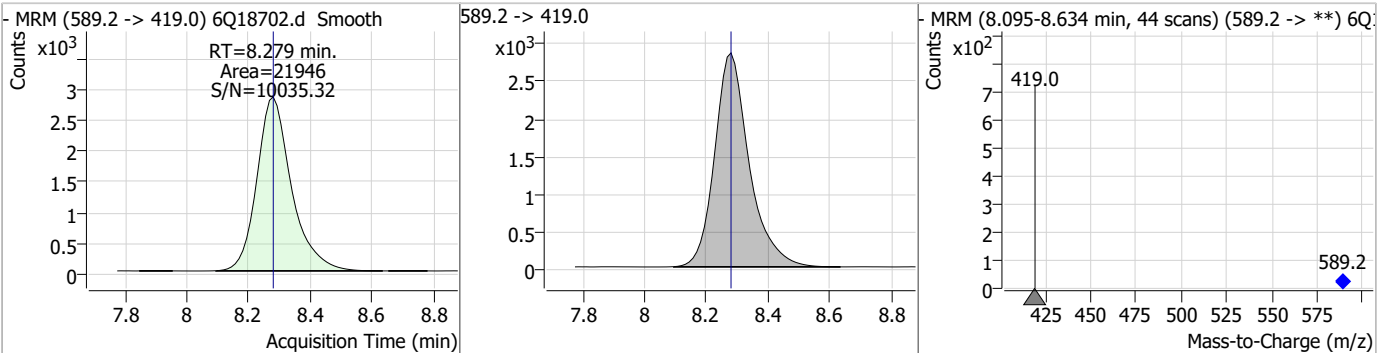


Perfluorinated Compounds by LC/MS/MS

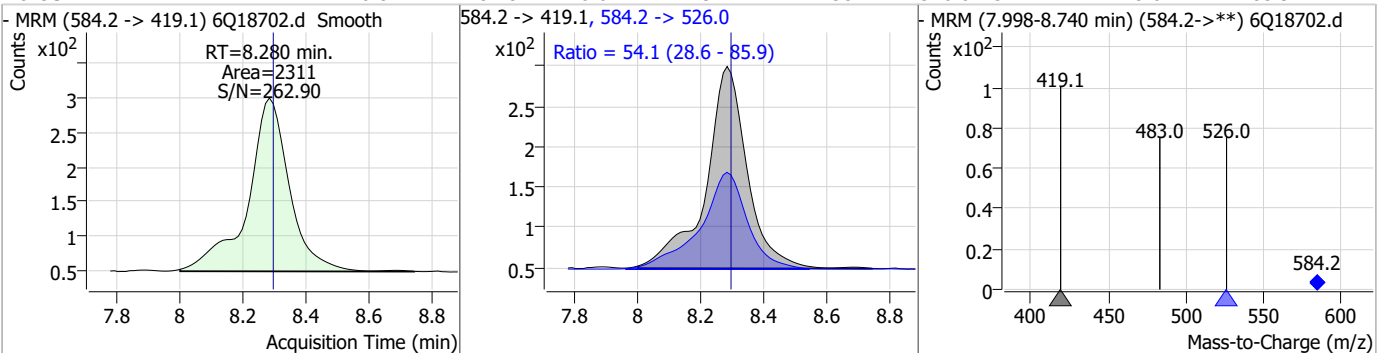
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.73	8.18	0.00	3767	498.9 -> 98.8	52.5	23.7	71.2



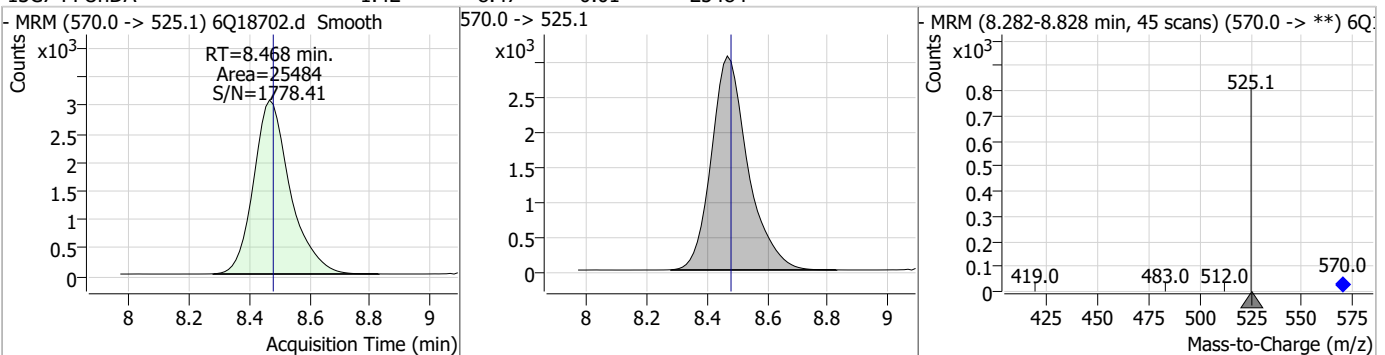
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.07	8.28	0.00	21946				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.82	8.28	-0.01	2311	584.2 -> 526.0	54.1	28.6	85.9

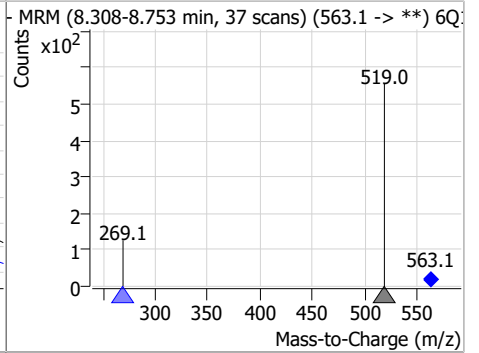
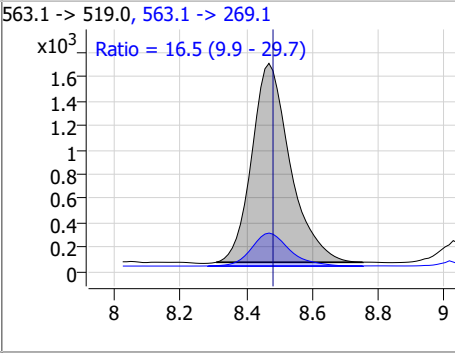
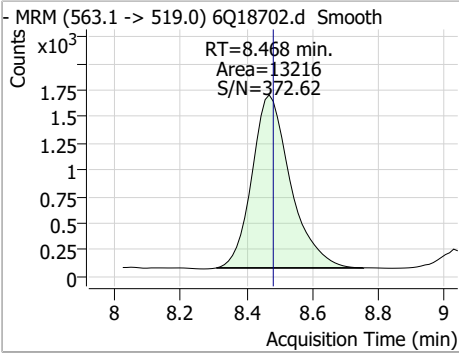


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.42	8.47	-0.01	25484				

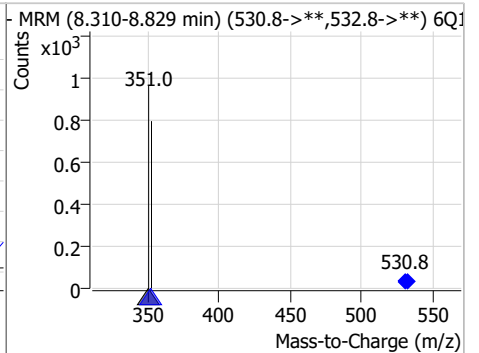
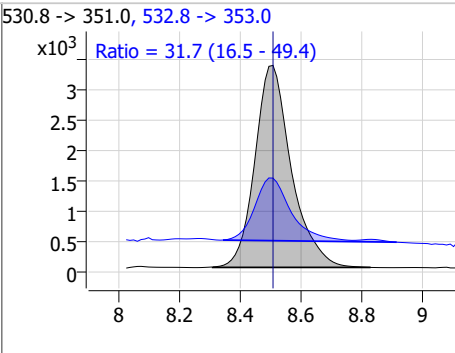
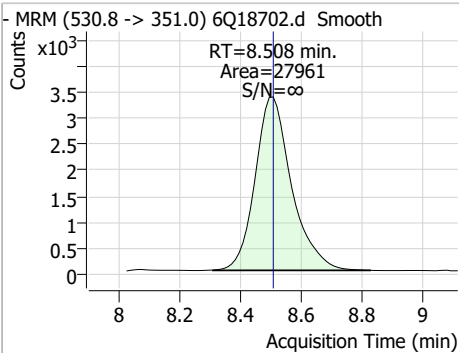


Perfluorinated Compounds by LC/MS/MS

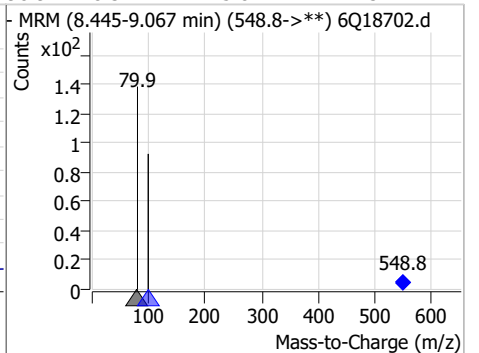
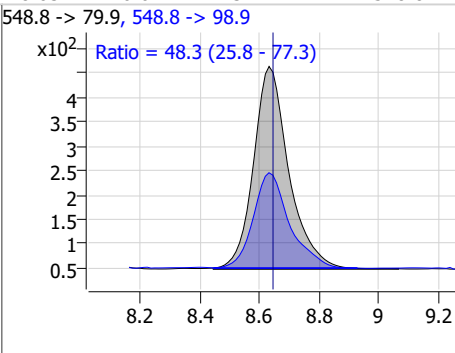
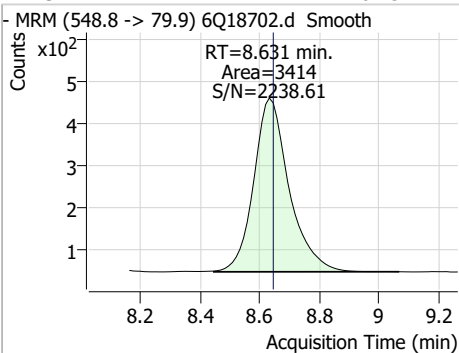
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.80	8.47	-0.01	13216	563.1 -> 269.1	16.5	9.9	29.7



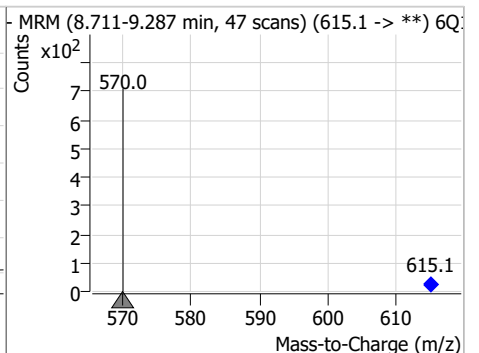
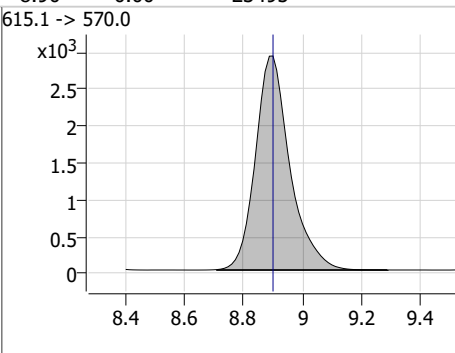
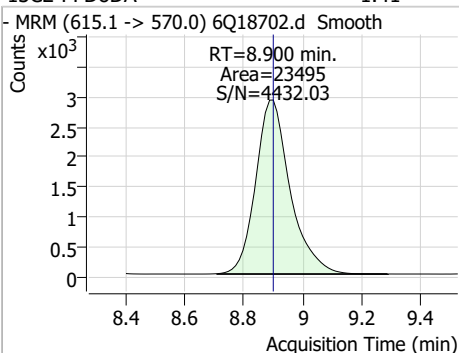
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	1.51	8.51	0.00	27961	532.8 -> 353.0	31.7	16.5	49.4



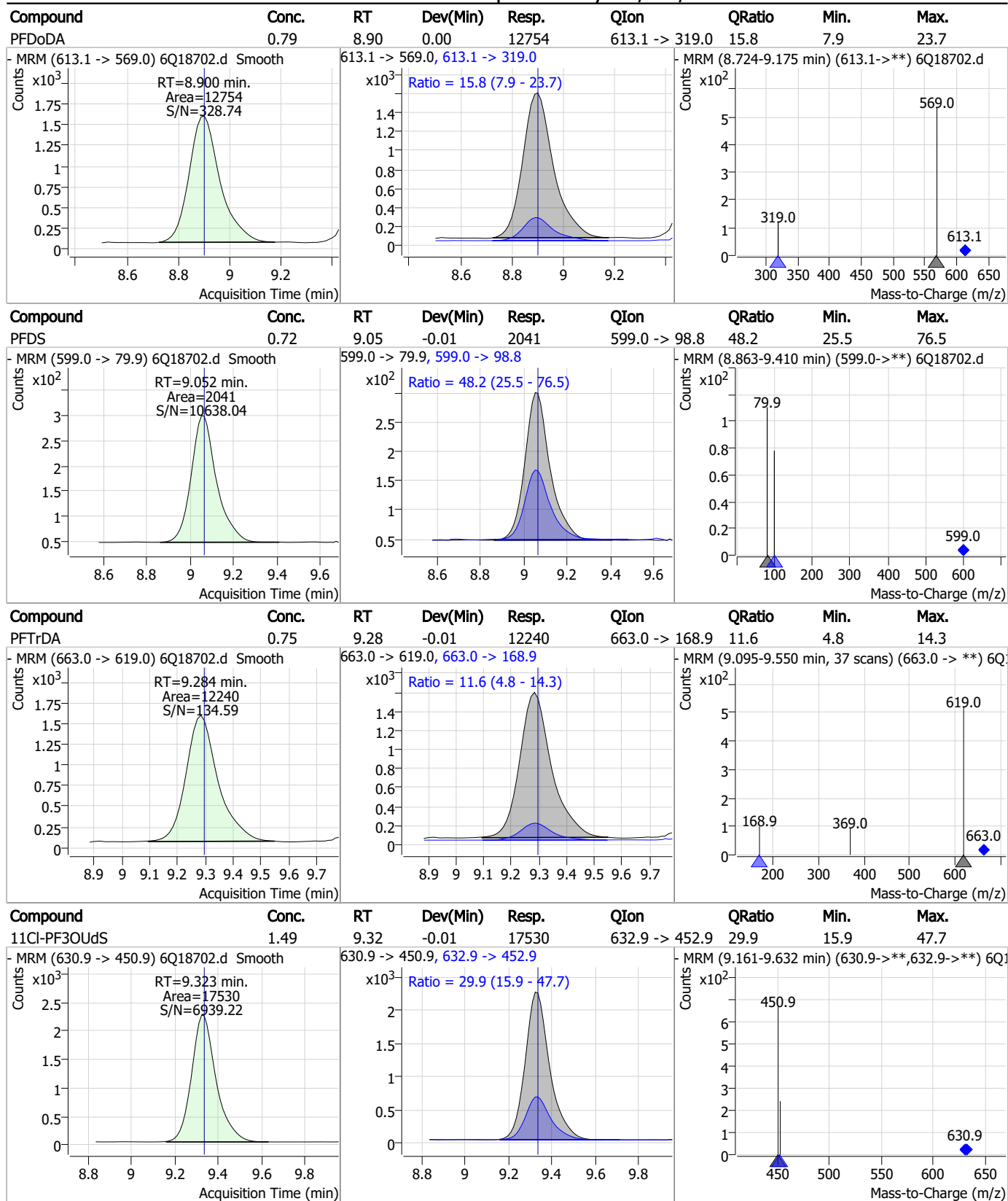
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.75	8.63	-0.01	3414	548.8 -> 98.9	48.3	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.41	8.90	0.00	23495	615.1 -> 570.0			

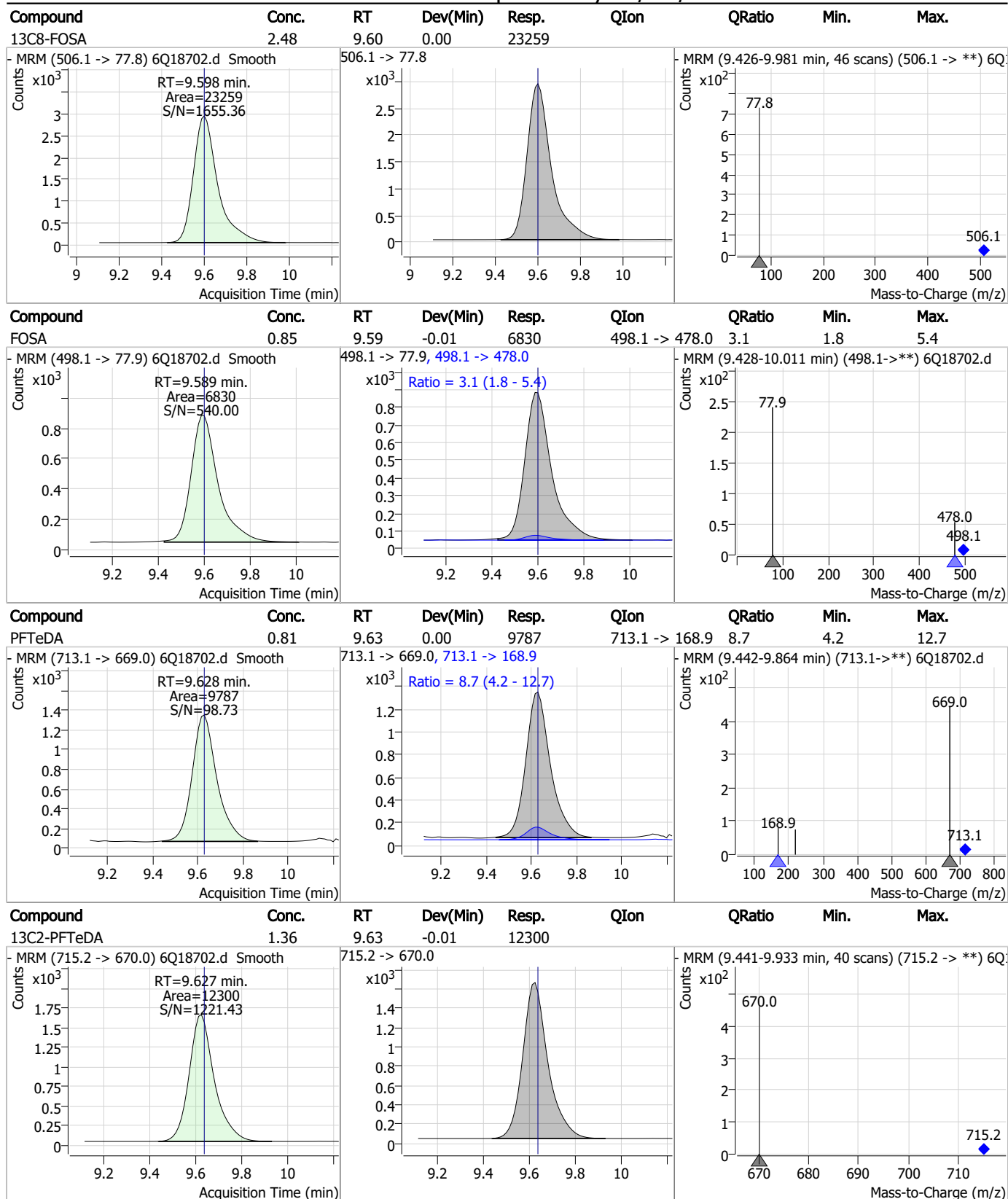


Perfluorinated Compounds by LC/MS/MS



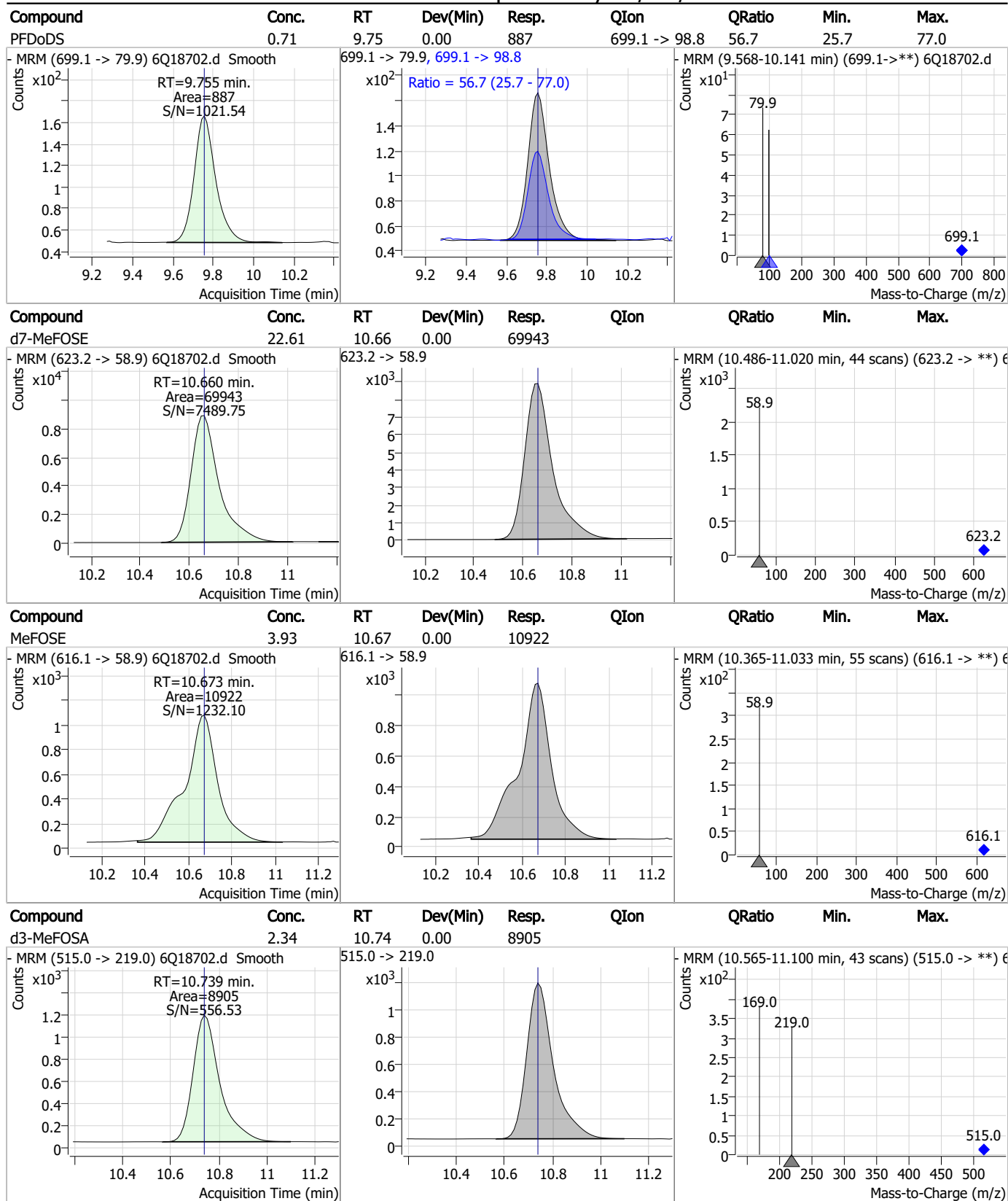
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

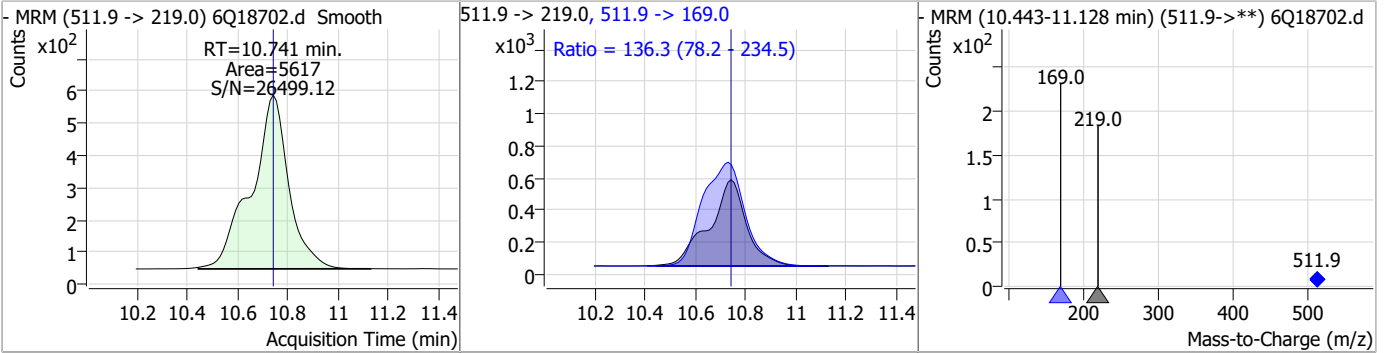
Perfluorinated Compounds by LC/MS/MS



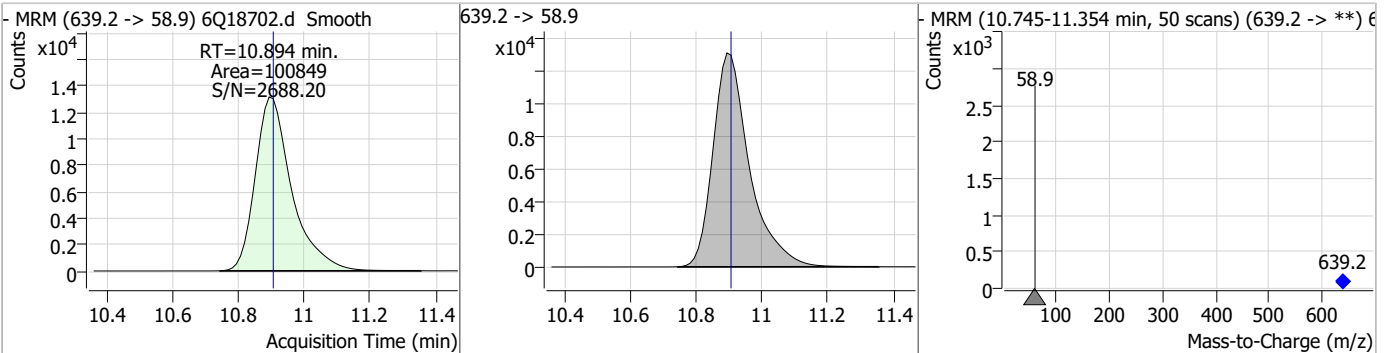
7.3.2
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Perfluorinated Compounds by LC/MS/MS

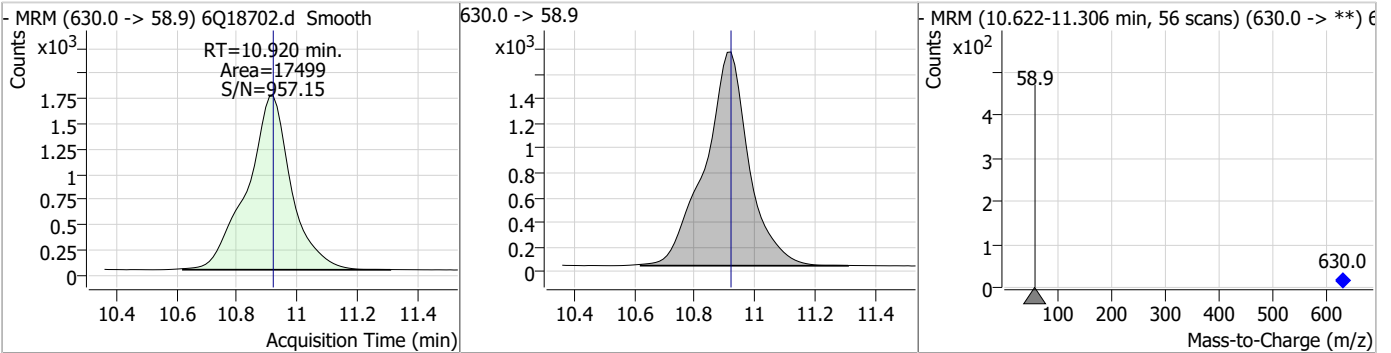
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.72	10.74	0.00	5617	511.9 -> 169.0	136.3	78.2	234.5



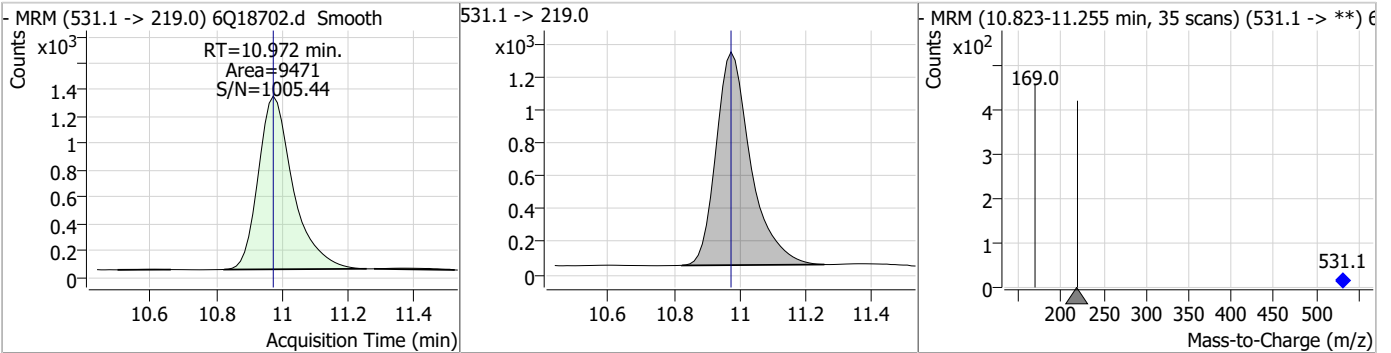
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.92	10.89	-0.01	100849				



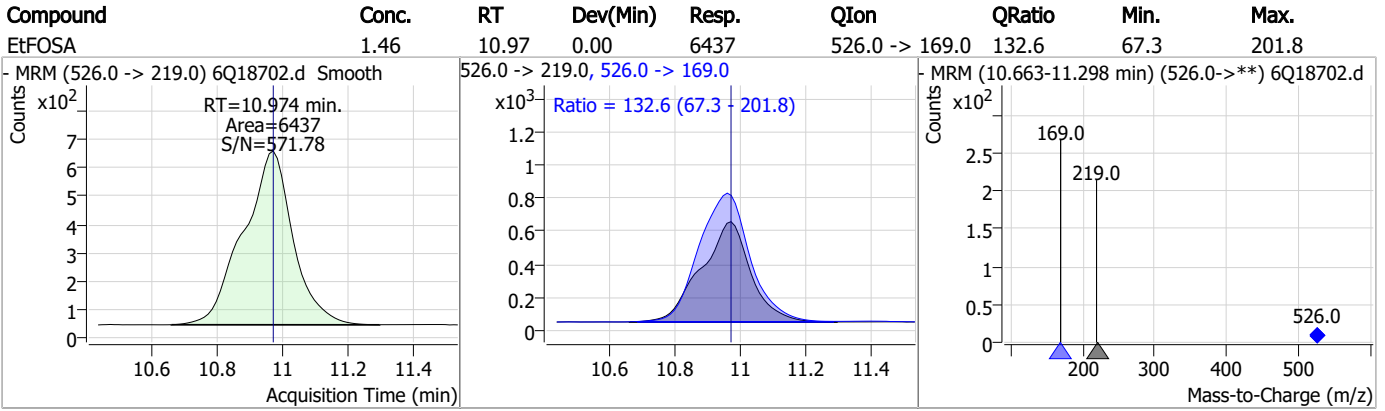
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	3.89	10.92	0.00	17499				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.63	10.97	0.00	9471				



Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19263.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 9:10:02 PM
 Sample Name : op97275-bs
 Vial : P2-B1
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	41867	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	46136	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	49927	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	50552	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	73385	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	37150	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	23337	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	29018	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	23673	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	12683	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	22926	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	19018	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	12015	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11320	2.50 µg/L	0.000
M2-4:2FTS	5.454	329.1 -> 80.9	3220	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4270	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4138	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	29396	5.00 µg/L	0.012
M3-HFPO-DA	6.181	286.9 -> 168.9	34593	10.00 µg/L	0.012
M5-EtFOSAA	8.615	589.2 -> 419.0	23799	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	84049	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	120271	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	9398	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	9771	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14343	2.50 µg/L	0.000
13C3-PFBA	3.101	216.0 -> 172.0	59615	5.00 µg/L	0.012
18O2-PFHxS	7.477	403.0 -> 83.9	7754	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	81494	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	26613	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	45973	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	46772	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3220	6.75 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 134.9%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4270	5.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.0%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4138	6.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.4%		
13C2-PFDoDA	9.297	615.1 -> 570.0	23673	1.33 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-PFTeDA	10.012	715.2 -> 670.0	12683	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFBS	5.746	302.1 -> 79.9	19018	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	12015	2.92 µg/L	0.000

7.3.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C4-PFBA	3.097	216.8 -> 171.9	41867	2.99 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 29.9%		
13C4-PFHpA	6.707	367.1 -> 322.0	50552	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C5-PFHxA	5.792	318.0 -> 273.0	49927	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C5-PFPeA	4.560	268.3 -> 223.0	46136	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C6-PFDA	8.387	519.1 -> 474.1	23337	1.59 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 127.1%		
13C7-PFUnDA	8.866	570.0 -> 525.1	29018	1.40 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.1%		
13C8-FOSA	9.674	506.1 -> 77.8	22926	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.3%		
13C8-PFOA	7.352	421.1 -> 376.0	73385	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C8-PFOS	8.563	507.1 -> 79.9	11320	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C9-PFNA	7.895	472.1 -> 427.0	37150	1.32 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.9%		
d3-MeFOSAA	8.420	573.2 -> 419.0	29396	5.46 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C3-HFPO-DA	6.181	286.9 -> 168.9	34593	10.79 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
d3-MeFOSA	10.775	515.0 -> 219.0	9771	2.05 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 82.0%		
d5-EtFOSAA	8.615	589.2 -> 419.0	23799	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	84049	15.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 63.9%		
d9-EtFOSE	10.930	639.2 -> 58.9	120271	18.29 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 73.2%		
d5-EtFOSA	10.996	531.1 -> 219.0	9398	2.03 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 81.4%		
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	47958	8.59 µg/L	100
		327.1 -> 80.9	17916		
6:2FTS	7.113	427.1 -> 407.0	50810	9.85 µg/L	91
		427.1 -> 80.9	15735		
8:2FTS	8.164	527.1 -> 507.0	23816	8.65 µg/L	98
		527.1 -> 80.8	9675		
EtFOSAA	8.629	584.2 -> 419.1	8620	2.18 µg/L	m 96
		584.2 -> 526.0	4546		
FOSA	9.677	498.1 -> 77.9	20317	2.16 µg/L	98
		498.1 -> 478.0	727		
MeFOSAA	8.421	570.1 -> 419.0	17219	2.41 µg/L	m 98
		570.1 -> 483.0	3217		
PFBA	3.093	212.8 -> 168.9	14887	8.92 µg/L	100
PFBS	5.747	298.7 -> 79.9	17037	2.04 µg/L	93
		298.7 -> 98.8	6586		
PFDA	8.388	512.9 -> 469.0	65618	1.88 µg/L	97
		512.9 -> 219.0	10638		
PFDoDA	9.298	613.1 -> 569.0	47282	2.43 µg/L	95
		613.1 -> 319.0	6966		
PFDS	9.462	599.0 -> 79.9	7706	2.26 µg/L	99

7.3.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.720	599.0 -> 98.8	3420	2.12	µg/L	99
		363.1 -> 319.0	57414			
PFHpS	8.059	363.1 -> 169.0	9343	2.05	µg/L	97
		449.0 -> 79.9	13943			
PFHxA	5.795	449.0 -> 98.9	7160	2.39	µg/L	100
		313.0 -> 269.0	47859			
PFHxS	7.479	313.0 -> 118.9	2544	1.92	µg/L	91
		398.7 -> 79.9	13855			
PFNA	7.896	398.7 -> 98.9	7225	2.14	µg/L	99
		463.0 -> 419.0	72937			
PFNS	9.041	463.0 -> 219.0	13109	2.11	µg/L	98
		548.8 -> 79.9	12649			
PFOA	7.353	548.8 -> 98.9	6319	2.56	µg/L	97
		413.0 -> 369.0	96523			
PFOS	8.564	413.0 -> 169.0	15566	2.09	µg/L	92
		498.9 -> 79.9	13917			
PFPeA	4.563	498.9 -> 98.8	6489	4.48	µg/L	100
		263.0 -> 219.0	60758			
PFPeS	6.798	349.1 -> 79.9	13898	2.09	µg/L	97
		349.1 -> 98.9	6109			
PFTeDA	10.013	713.1 -> 669.0	34339	2.26	µg/L	100
		713.1 -> 168.9	3116			
PFTrDA	9.669	663.0 -> 619.0	42962	2.22	µg/L	98
		663.0 -> 168.9	4682			
PFUnDA	8.866	563.1 -> 519.0	45949	2.16	µg/L	97
		563.1 -> 269.1	8170			
11Cl-PF3OUdS	9.721	630.9 -> 450.9	63024	3.87	µg/L	94
		632.9 -> 452.9	20946			
9Cl-PF3ONS	8.918	530.8 -> 351.0	108959	4.00	µg/L	100
		532.8 -> 353.0	32543			
ADONA	6.959	376.9 -> 250.9	240266	4.11	µg/L	97
		376.9 -> 84.8	63281			
HFPO-DA	6.182	284.9 -> 168.9	15719	4.18	µg/L	98
		284.9 -> 184.9	1848			
3:3FTCA	3.971	241.0 -> 177.0	4420	4.76	µg/L	99
		241.0 -> 117.0	601			
5:3FTCA	6.374	341.0 -> 237.1	230685	59.47	µg/L	96
		341.0 -> 217.0	163623			
7:3FTCA	7.748	441.0 -> 316.9	156102	56.23	µg/L	97
		441.0 -> 336.9	368434			
EtFOSA	10.997	526.0 -> 219.0	23268	4.62	µg/L	96
		526.0 -> 169.0	30812			
EtFOSE	10.943	630.0 -> 58.9	65229	10.27	µg/L	100
		511.9 -> 219.0	19643			
MeFOSA	10.777	511.9 -> 169.0	26283	4.59	µg/L	96
		616.1 -> 58.9	39850			
MeFOSE	10.709	699.1 -> 79.9	3283	10.83	µg/L	100
		699.1 -> 98.8	1856			
PFDoDS	10.139	295.0 -> 201.0	11063	1.93	µg/L	98
		295.0 -> 84.9	2879			
NFDHA	5.673	279.0 -> 85.1	45105	4.37	µg/L	95
		229.0 -> 84.9	18411			
PFMBA	4.988	314.8 -> 134.9	110779	4.50	µg/L	99
		314.8 -> 82.9	3976			

7.3.3
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= Qualifier out of range, m = manually integrated, + = Area summed



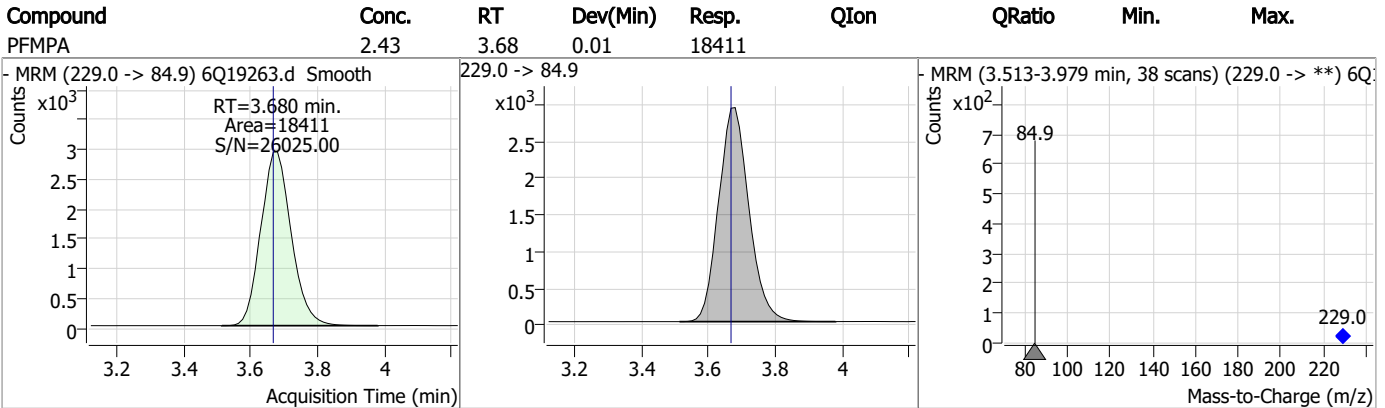
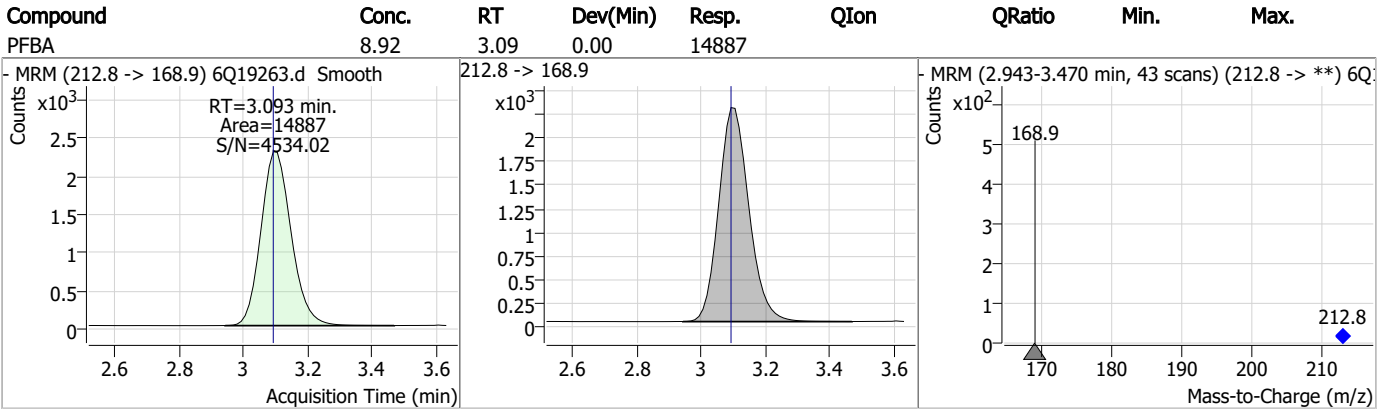
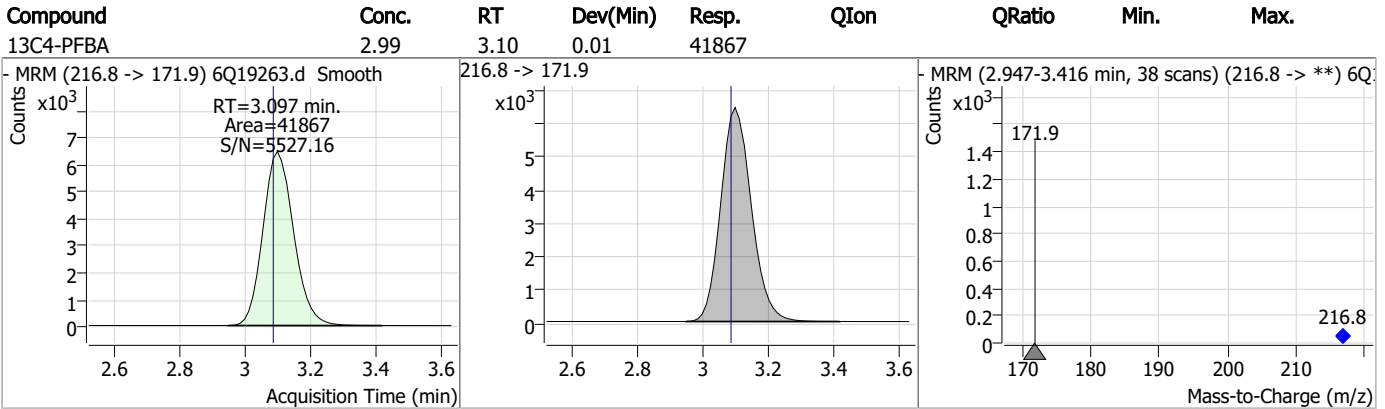
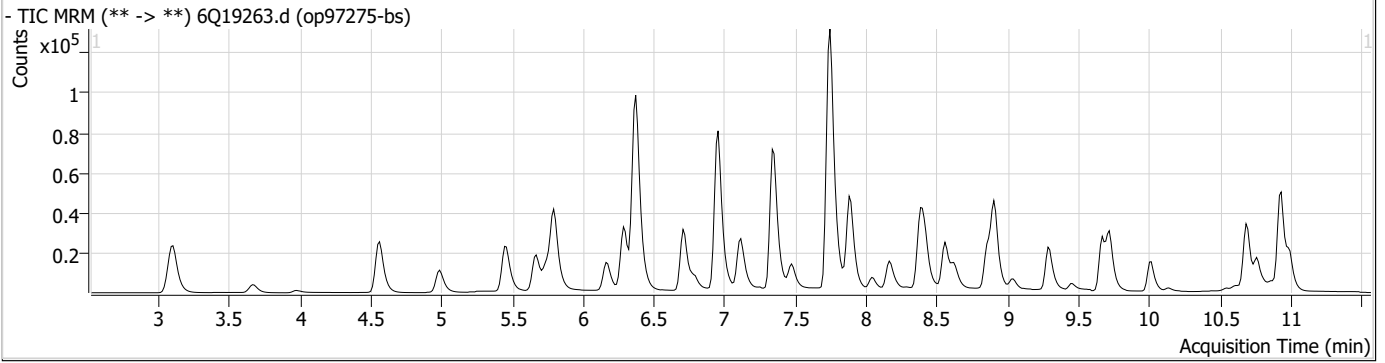
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.3

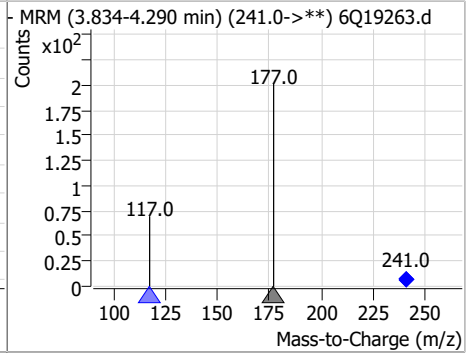
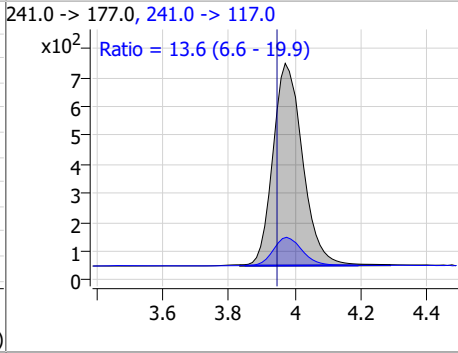
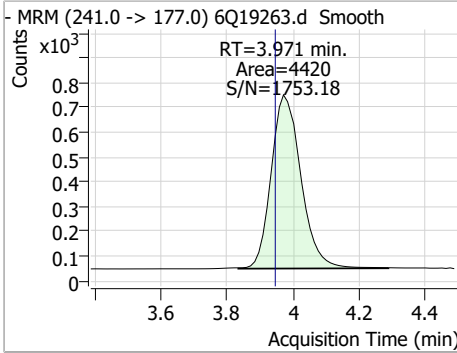
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Perfluorinated Compounds by LC/MS/MS

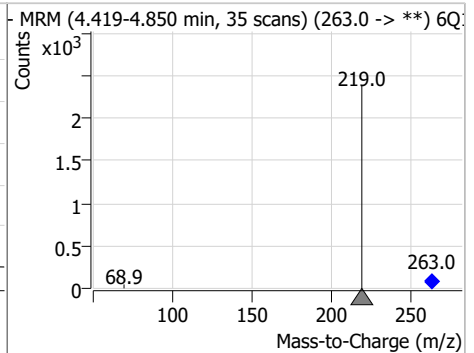
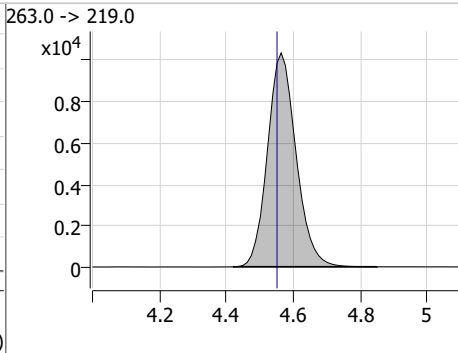
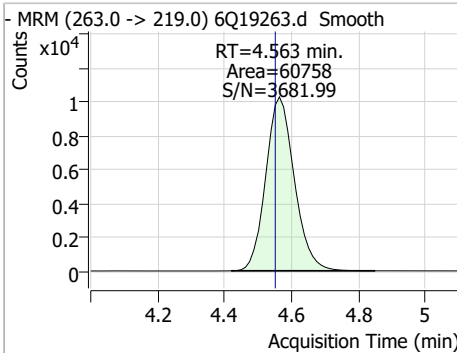


Perfluorinated Compounds by LC/MS/MS

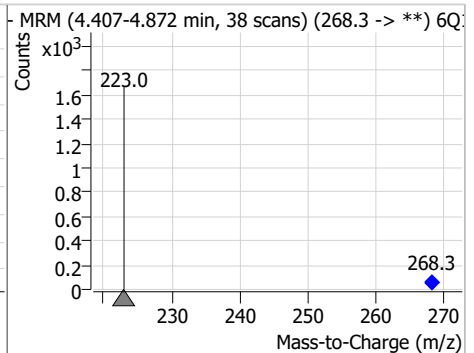
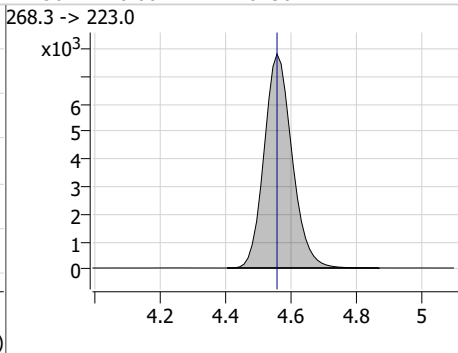
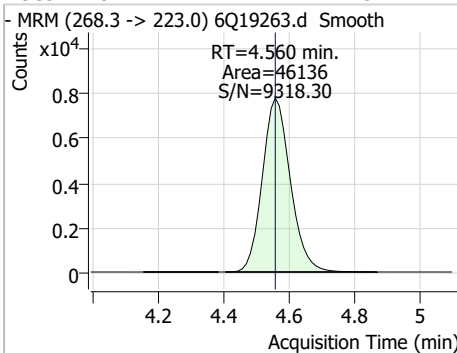
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	4.76	3.97	0.02	4420	241.0 -> 117.0	13.6	6.6	19.9



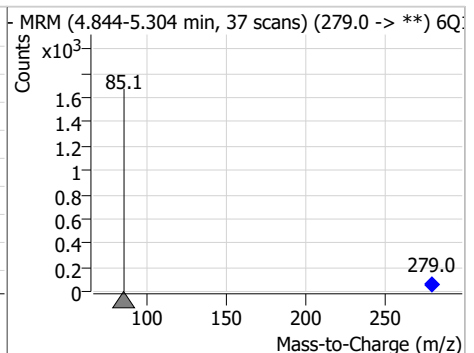
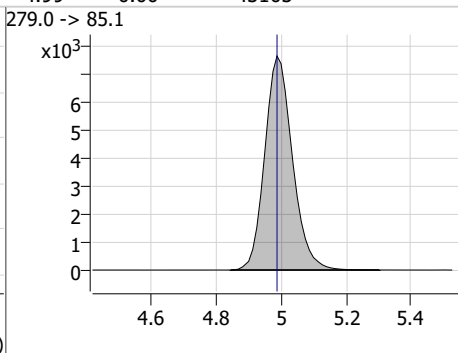
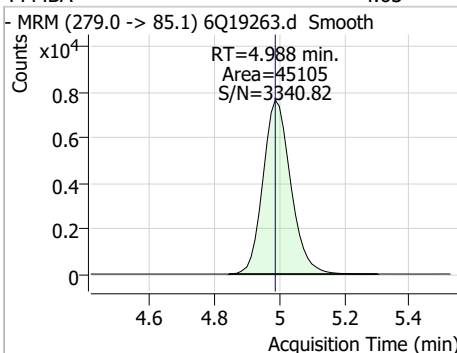
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.48	4.56	0.01	60758				



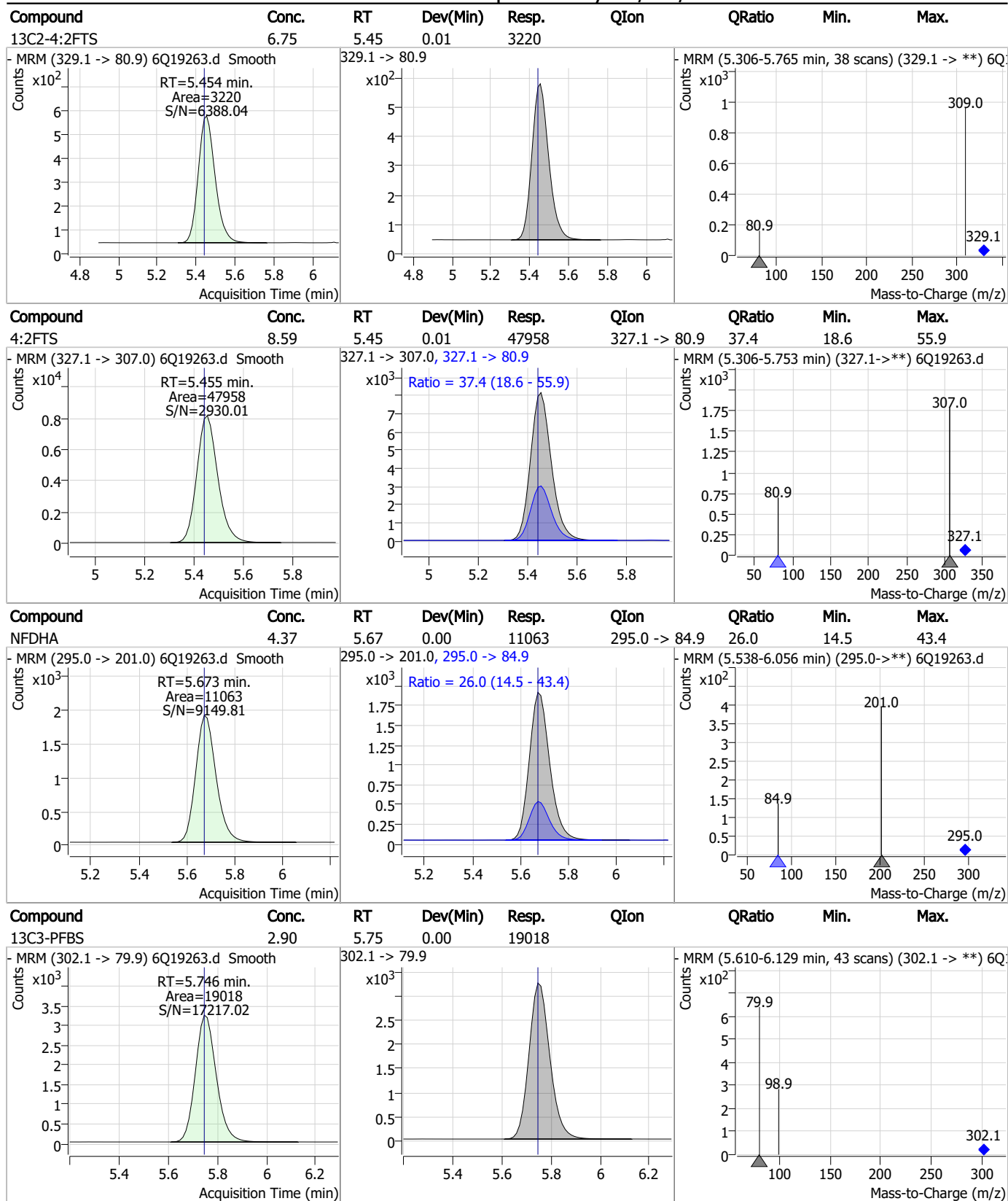
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.11	4.56	0.00	46136				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.63	4.99	0.00	45105				

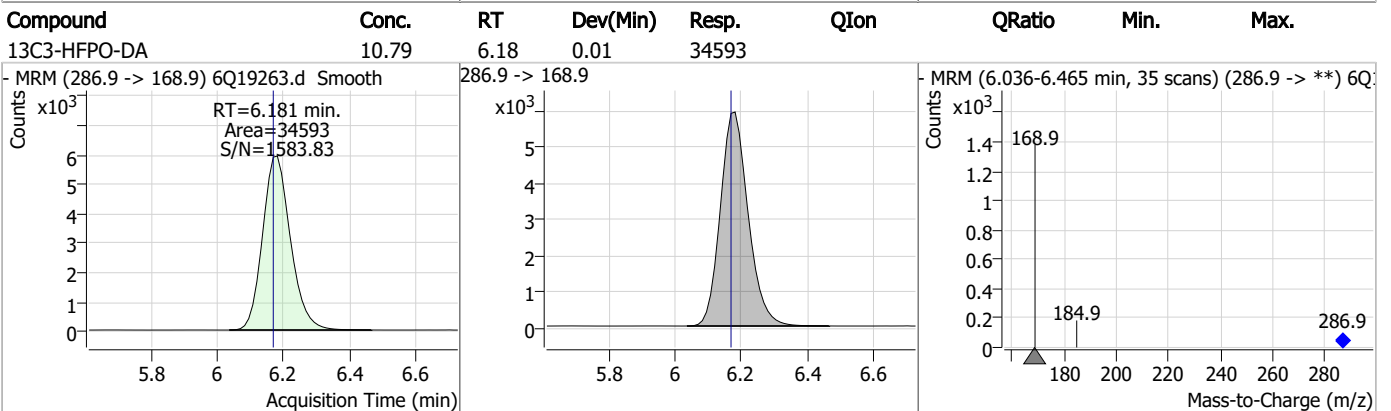
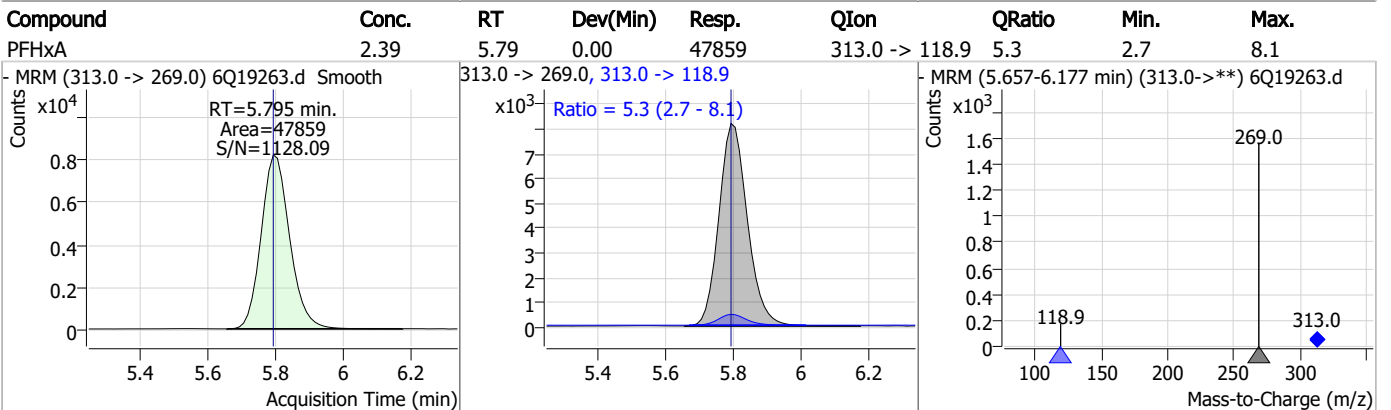
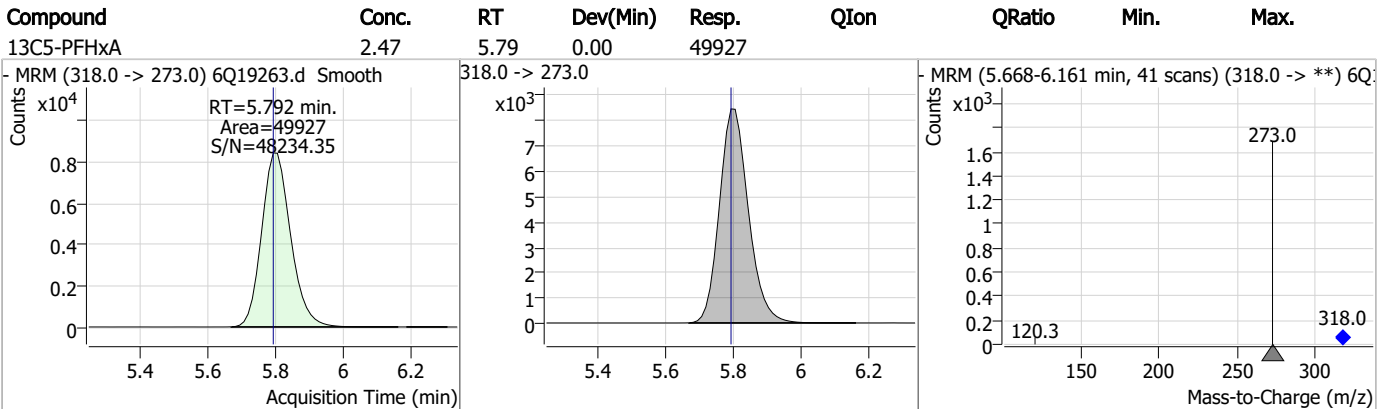
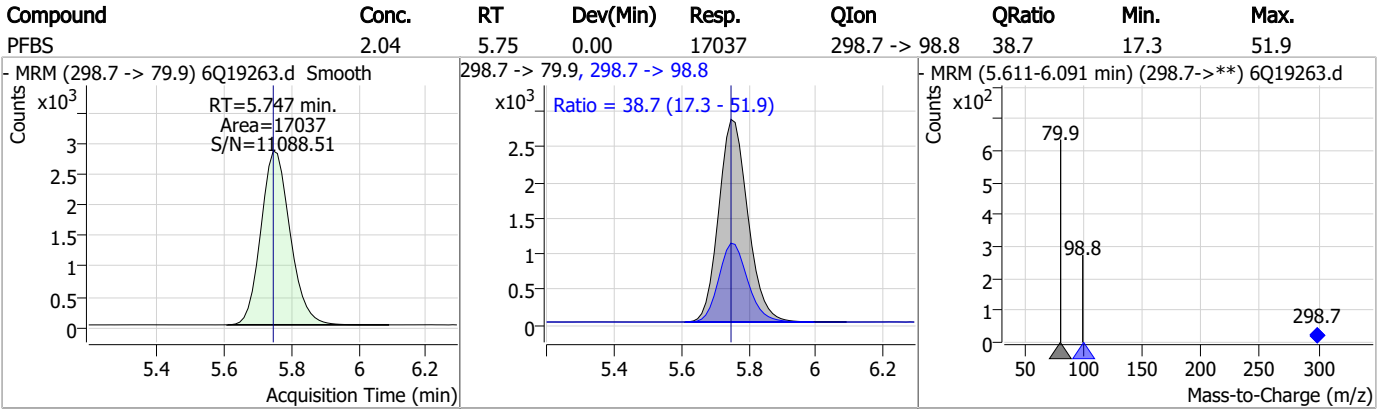


Perfluorinated Compounds by LC/MS/MS



7.3.3
7

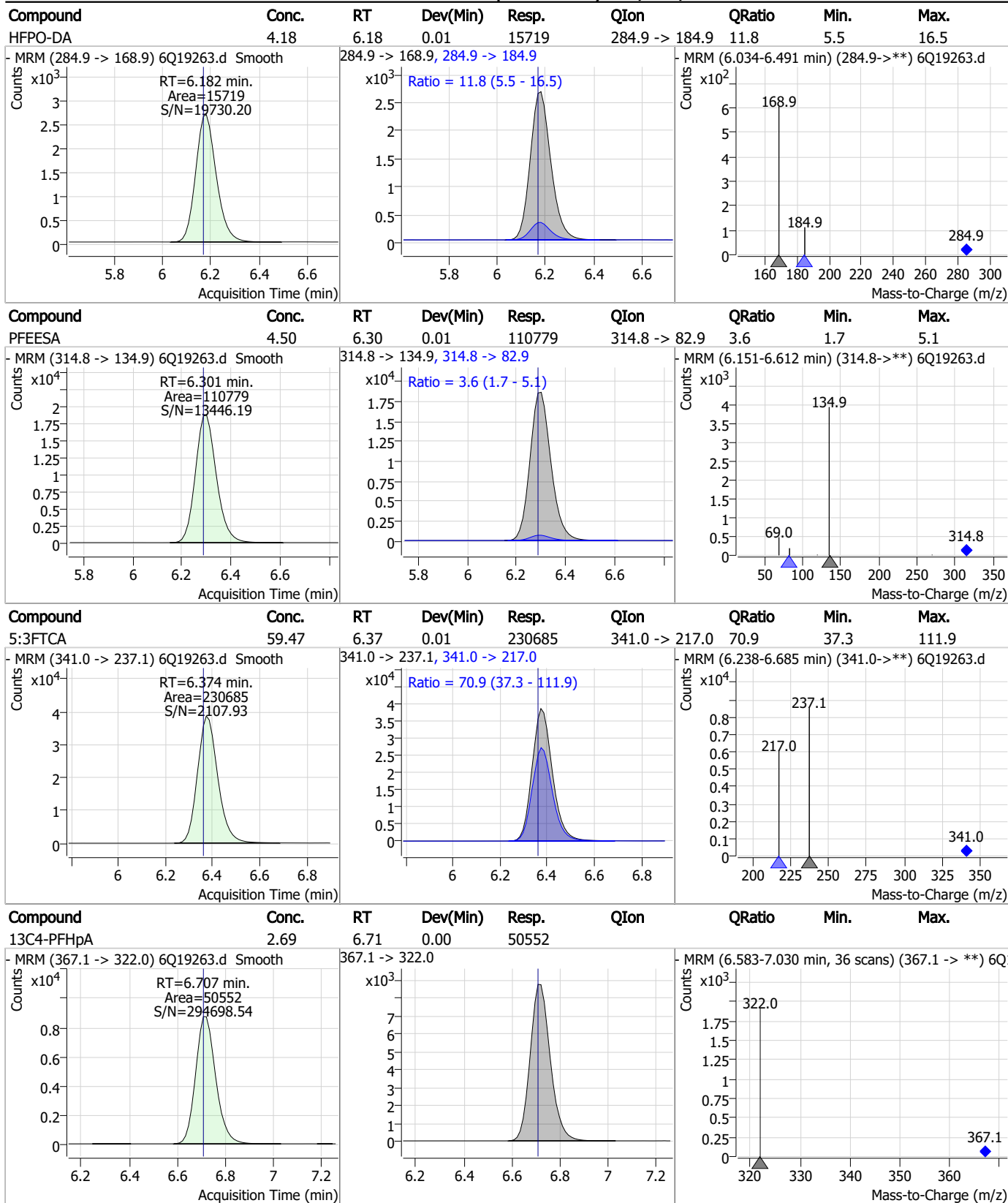
Perfluorinated Compounds by LC/MS/MS



7.3.3

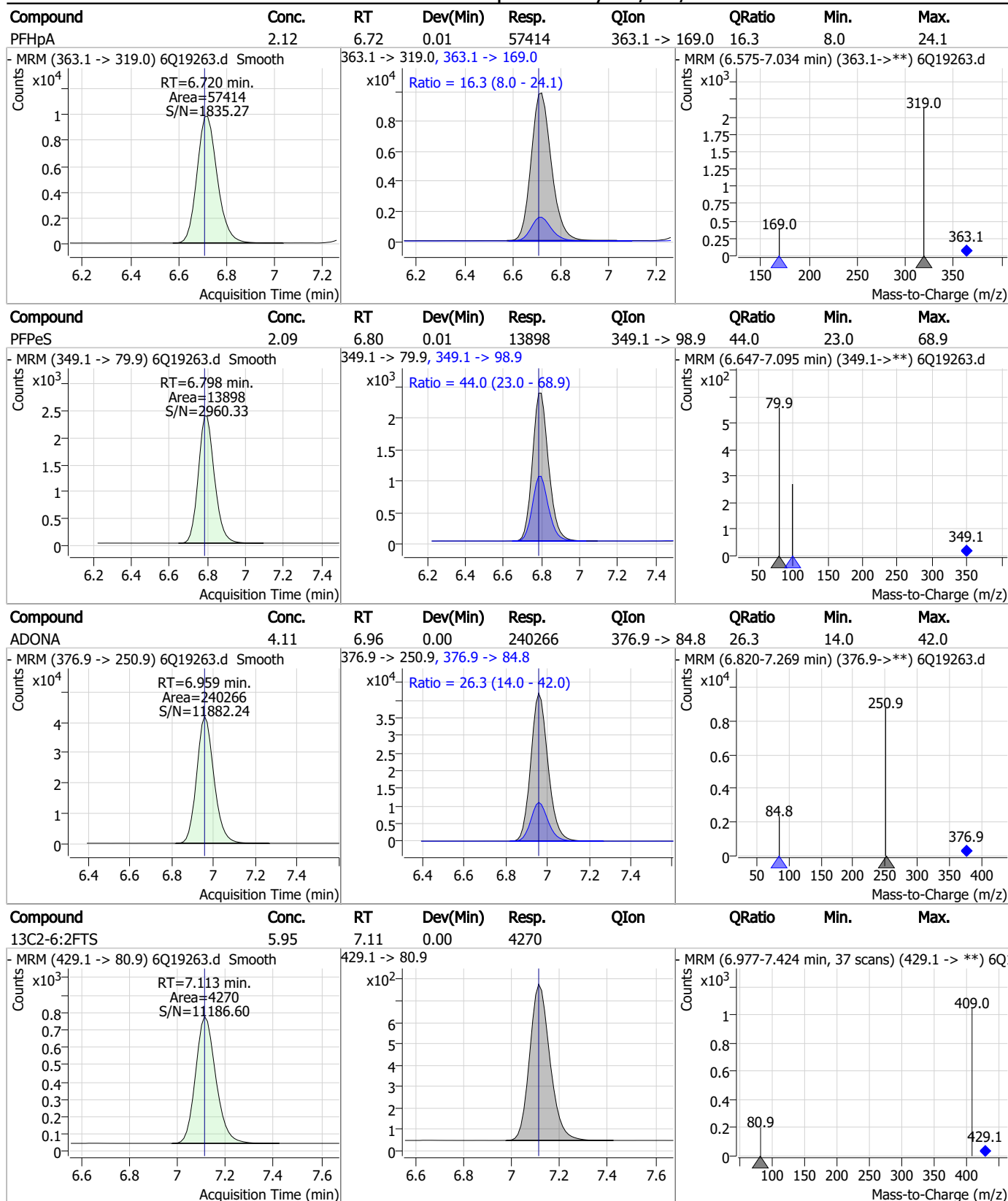
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Perfluorinated Compounds by LC/MS/MS



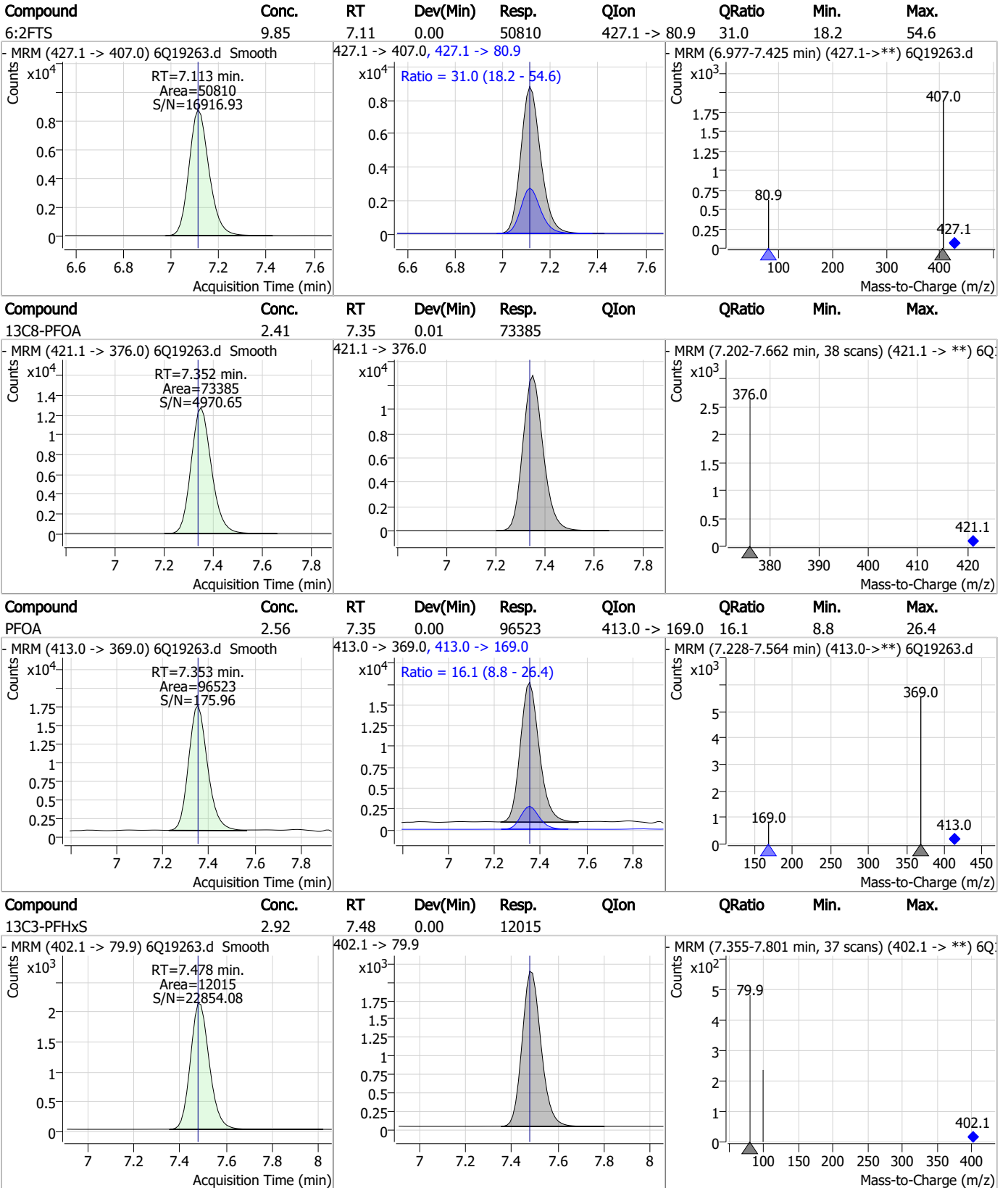
7.3.3
7

Perfluorinated Compounds by LC/MS/MS



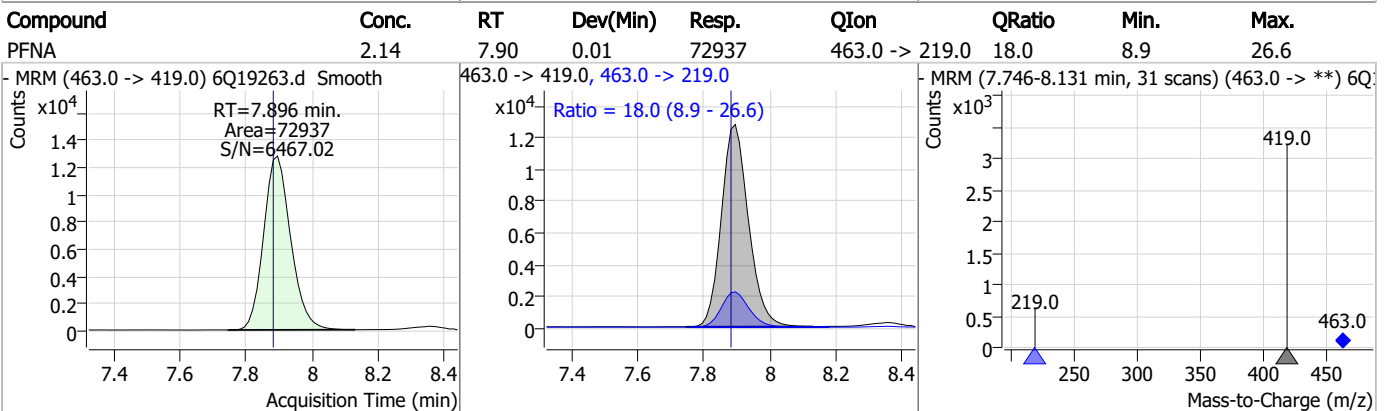
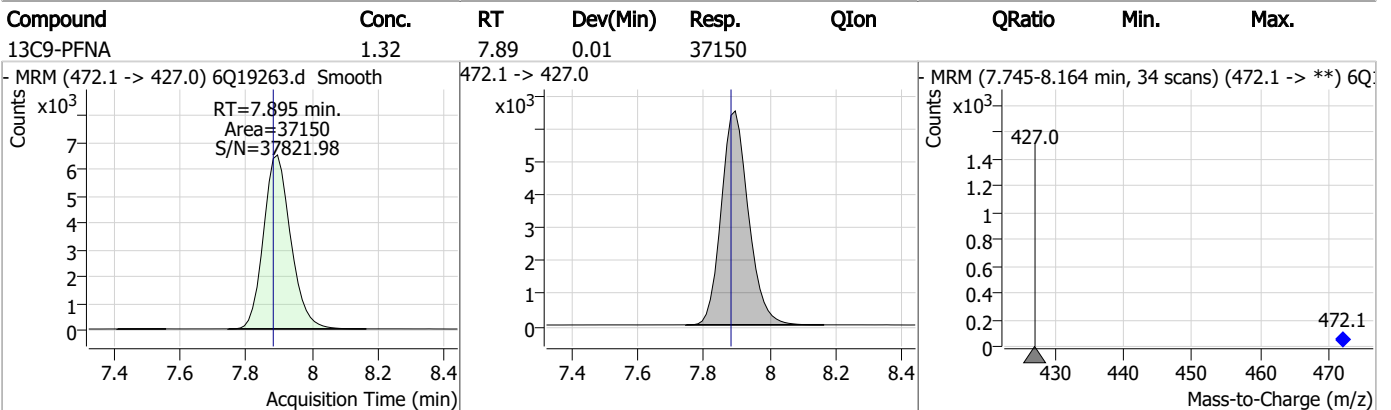
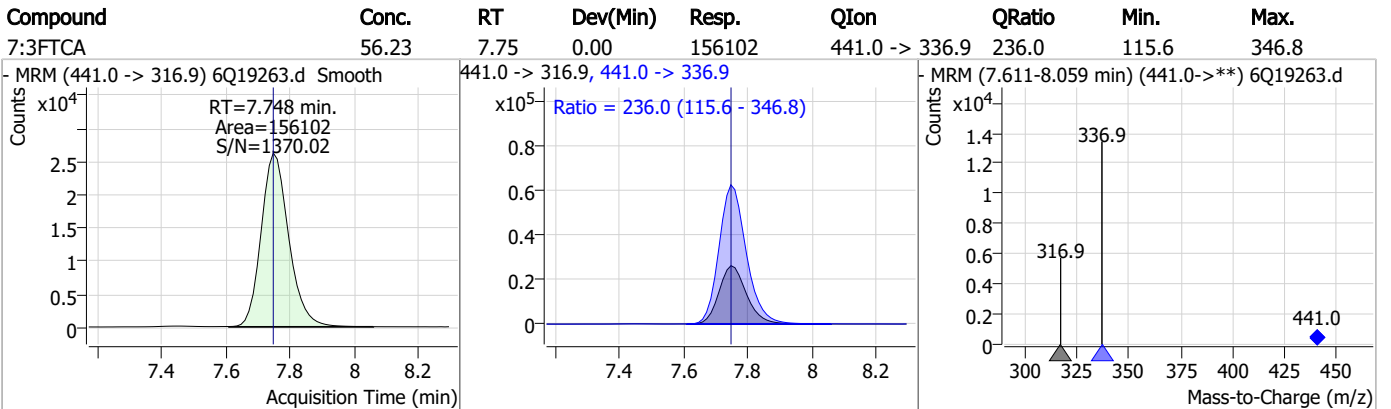
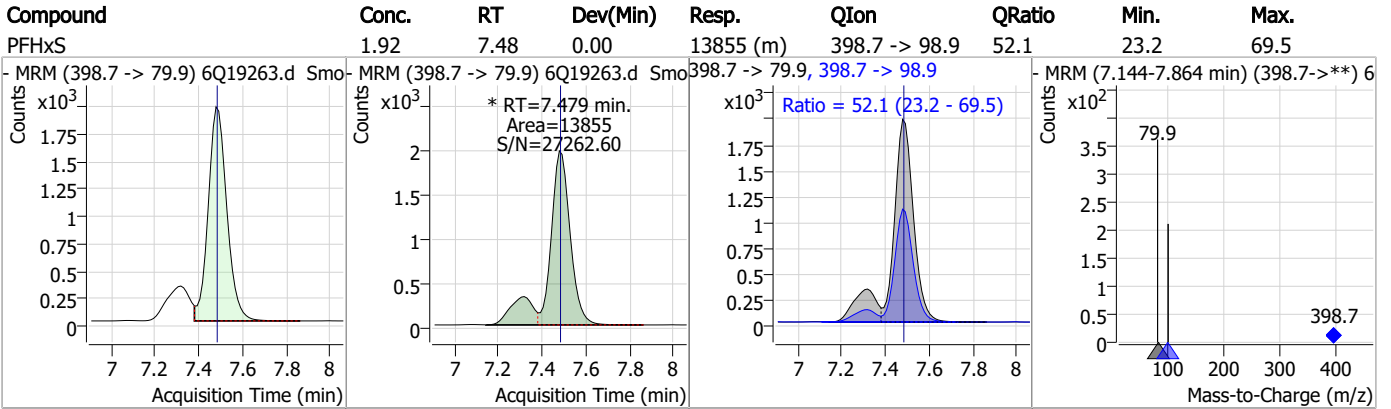
7.3.3
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Perfluorinated Compounds by LC/MS/MS

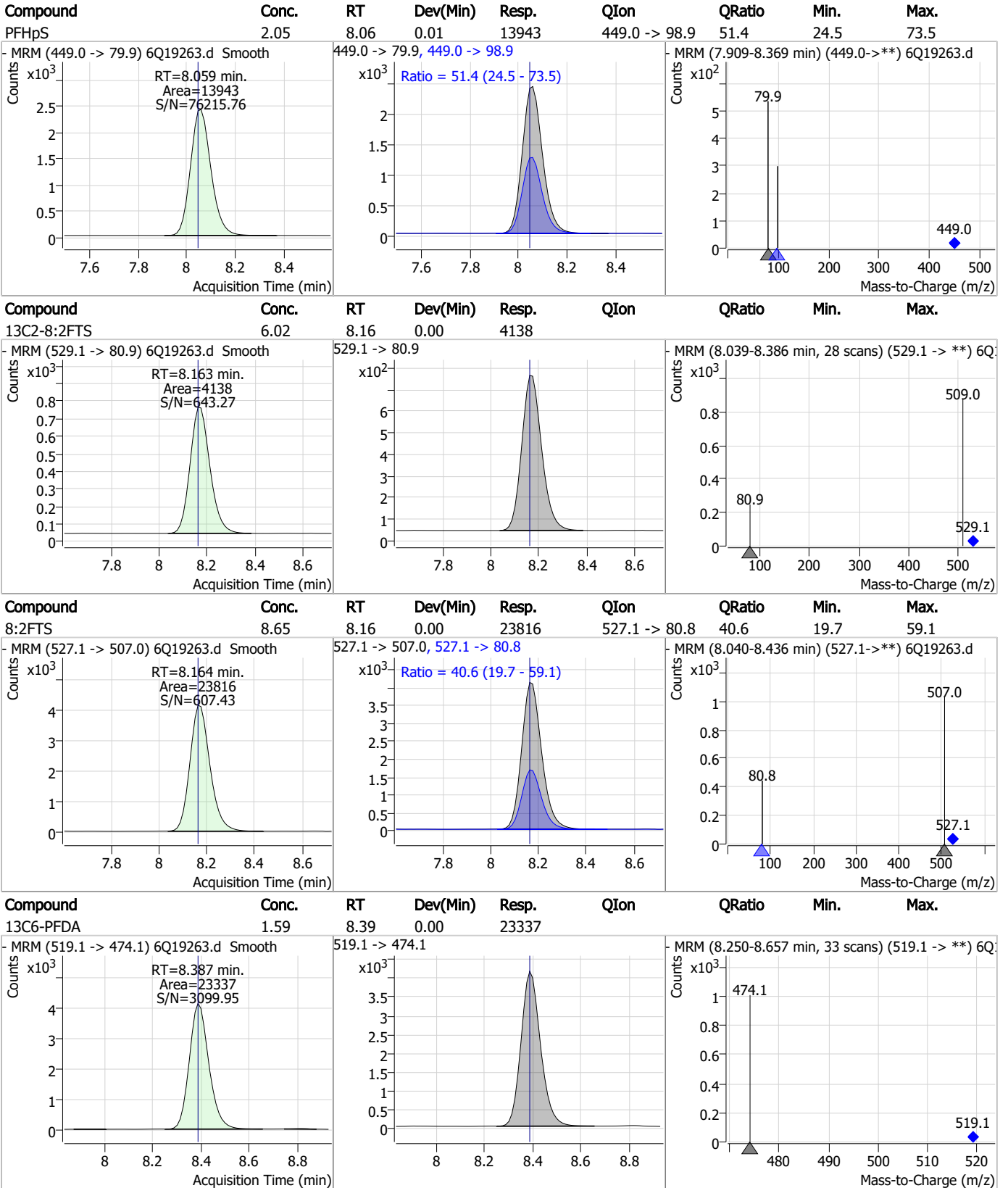


7.3.3
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

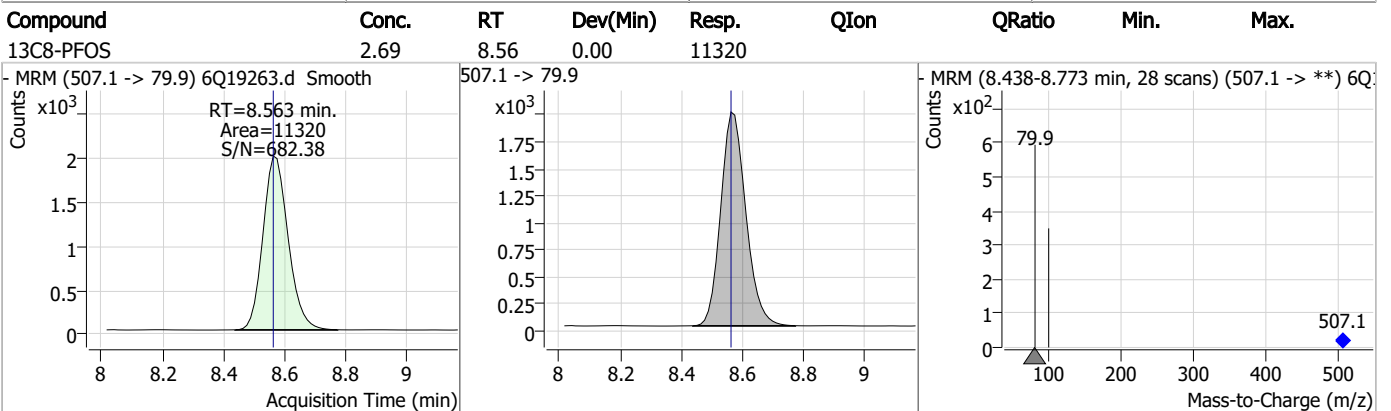
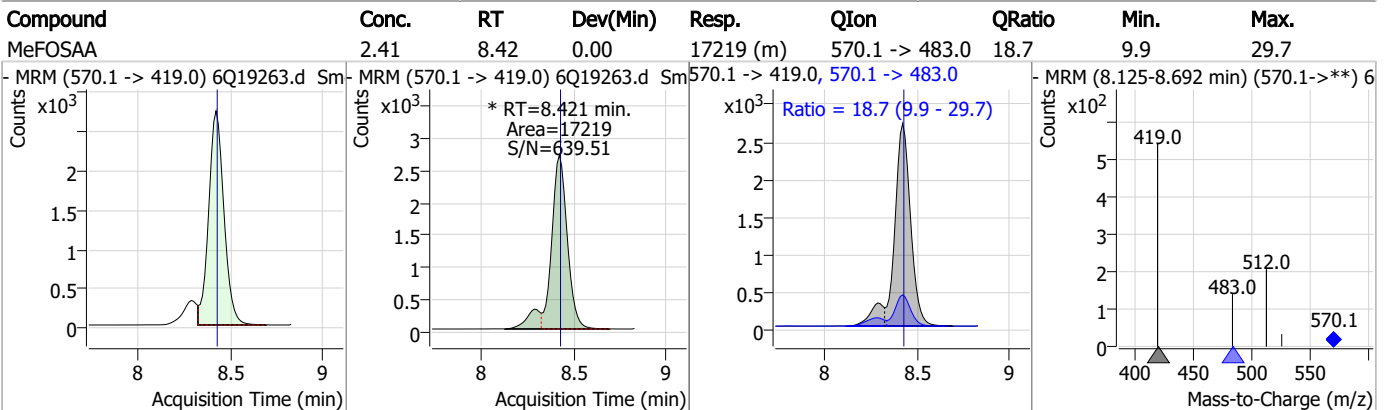
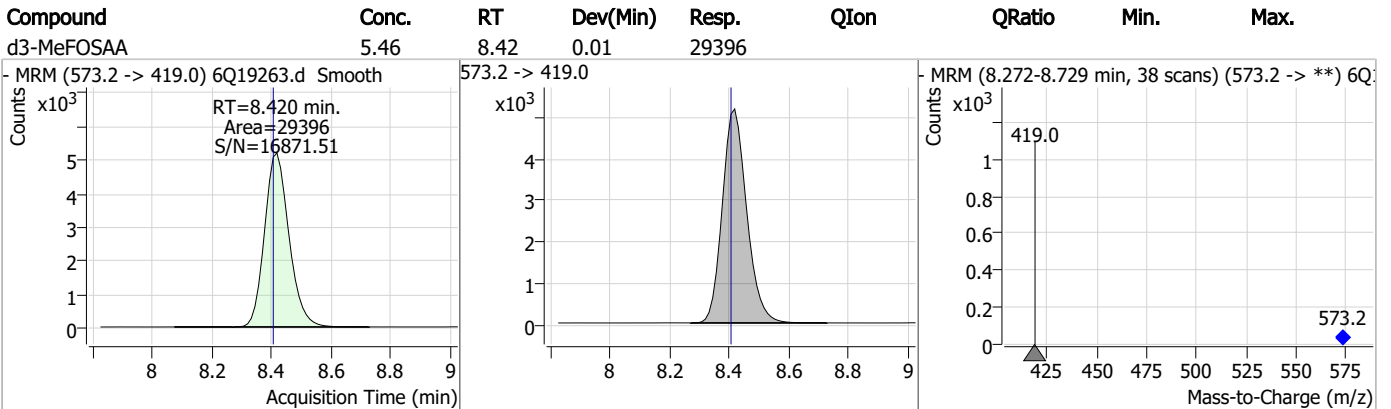
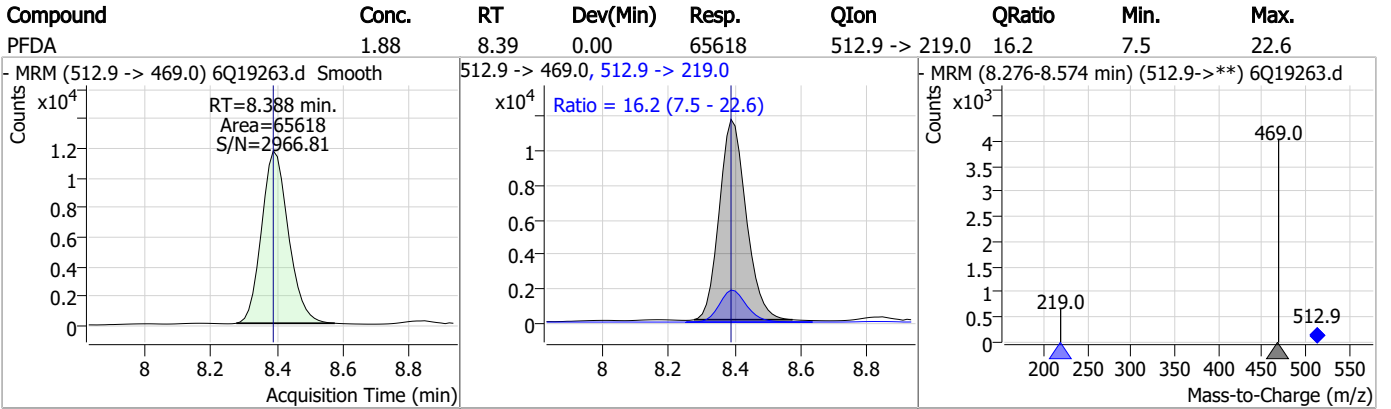


7.3.3

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Perfluorinated Compounds by LC/MS/MS



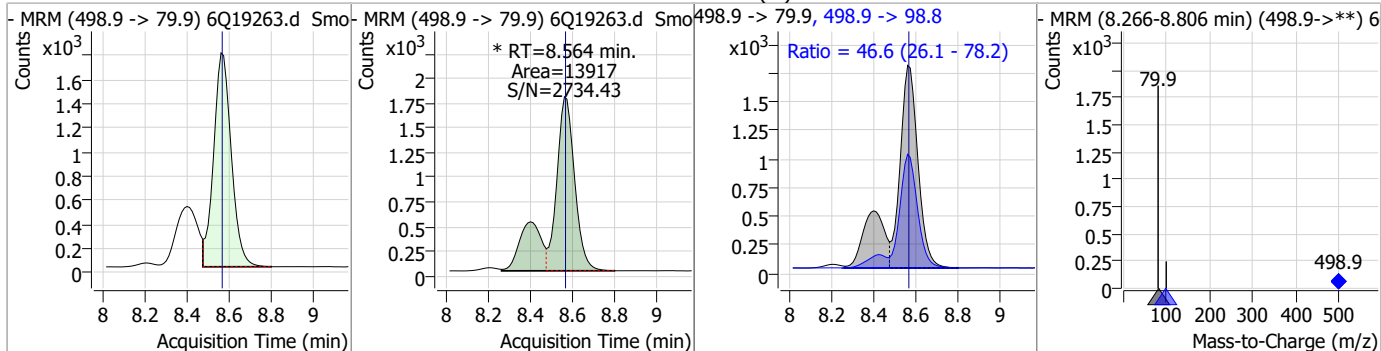
7.3.3

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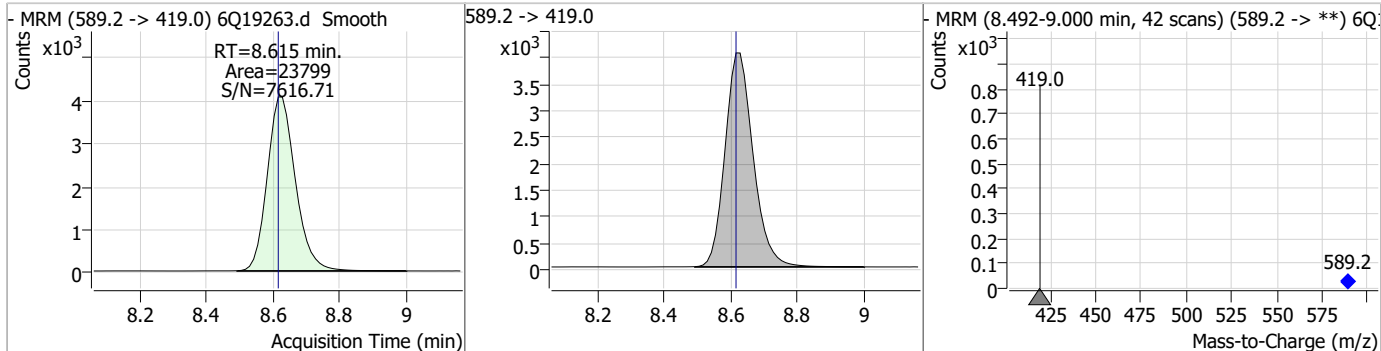


Perfluorinated Compounds by LC/MS/MS

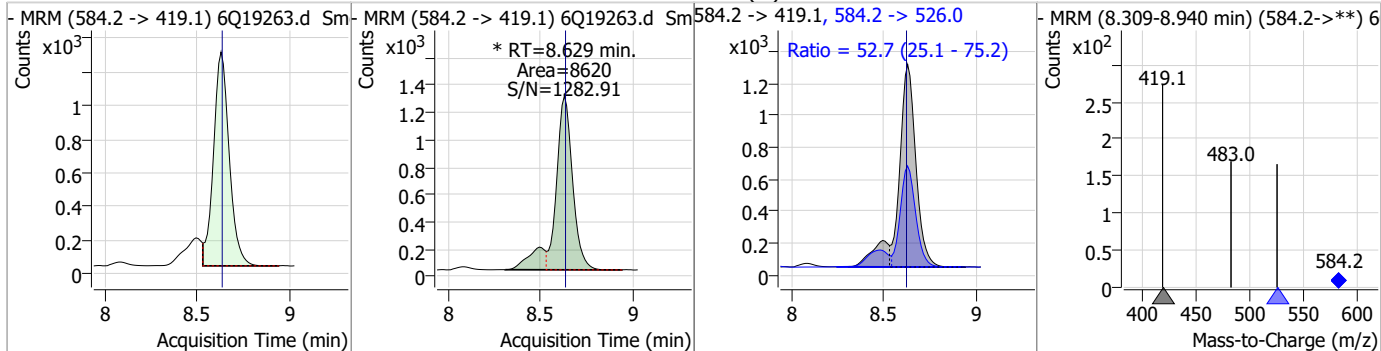
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.09	8.56	0.00	13917 (m)	498.9 -> 98.8	46.6	26.1	78.2



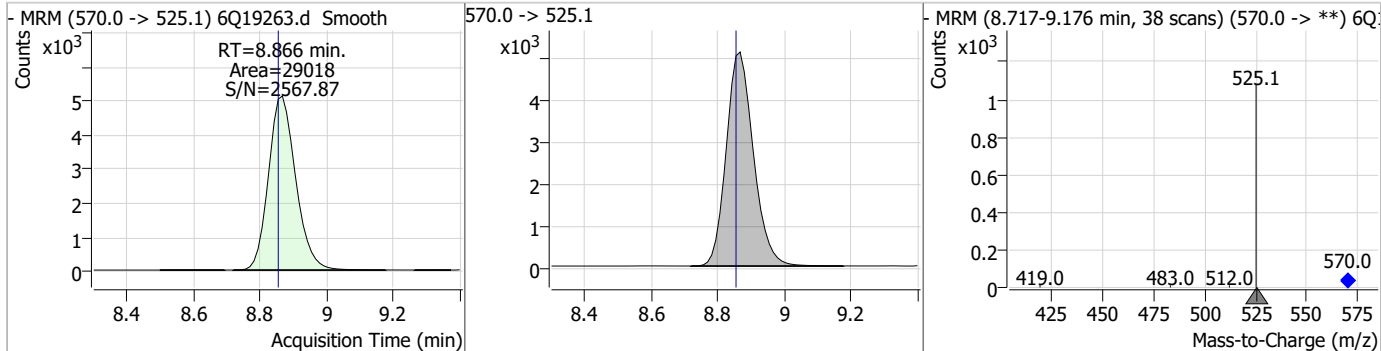
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.24	8.62	0.00	23799				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.18	8.63	0.00	8620 (m)	584.2 -> 526.0	52.7	25.1	75.2

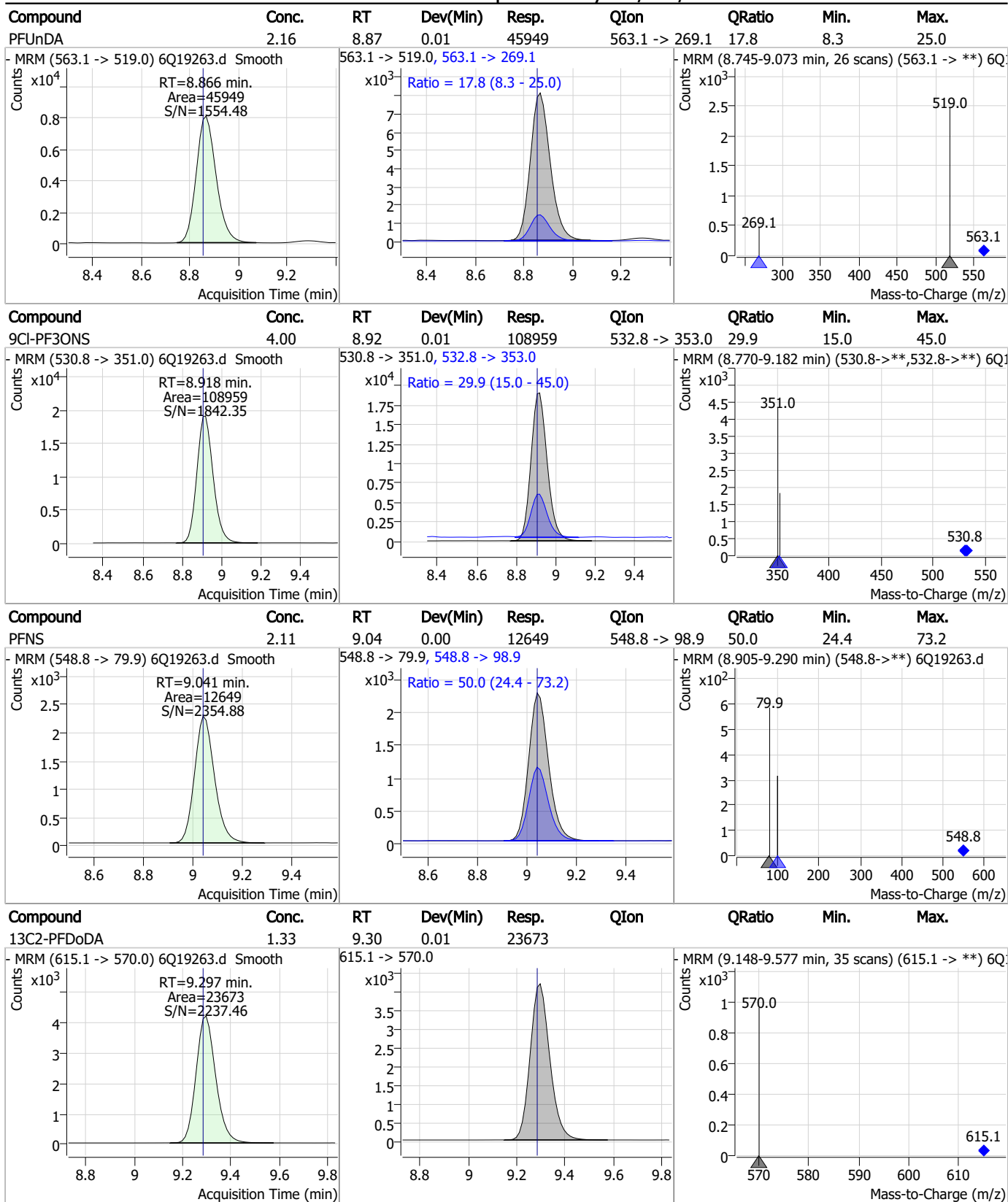


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.40	8.87	0.01	29018				



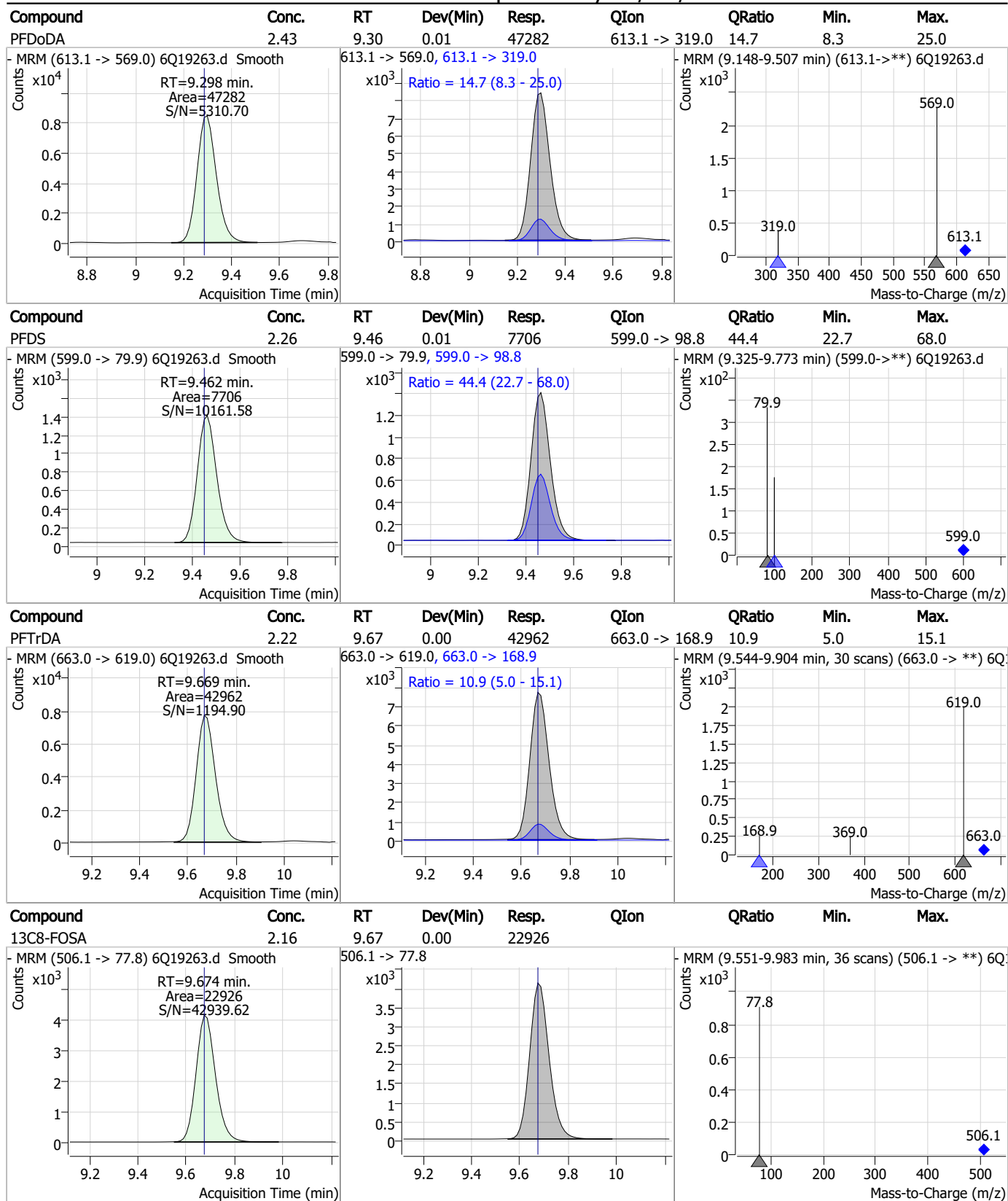
7.3.3
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Perfluorinated Compounds by LC/MS/MS



7.3.3
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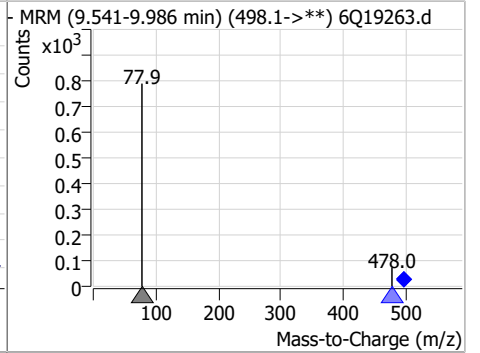
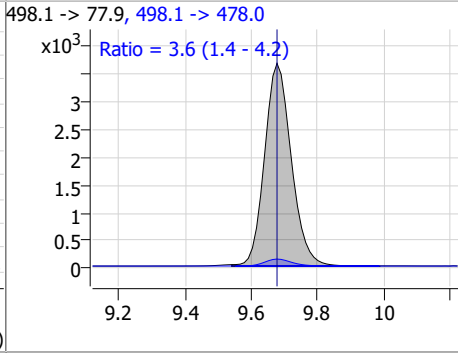
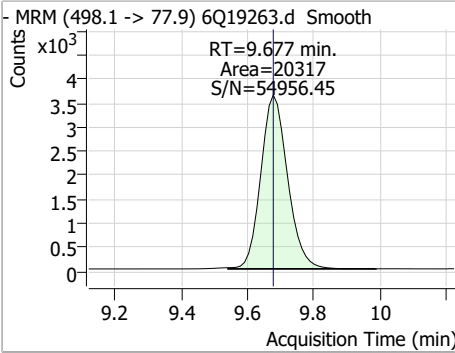
Perfluorinated Compounds by LC/MS/MS



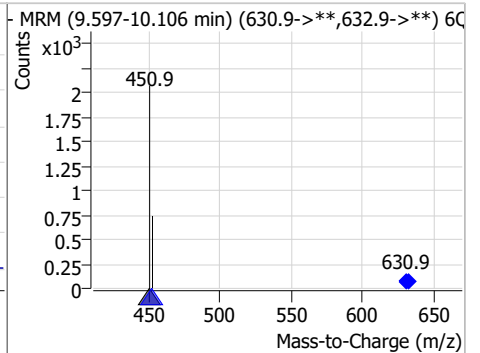
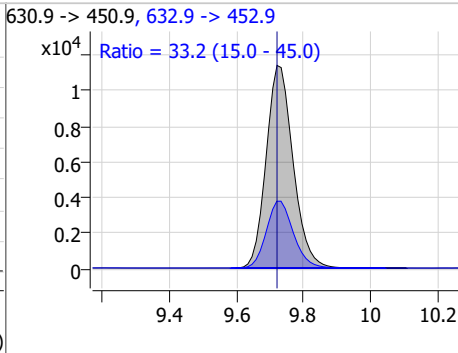
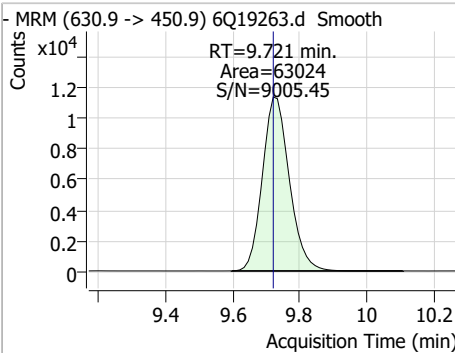
7.3.3
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Perfluorinated Compounds by LC/MS/MS

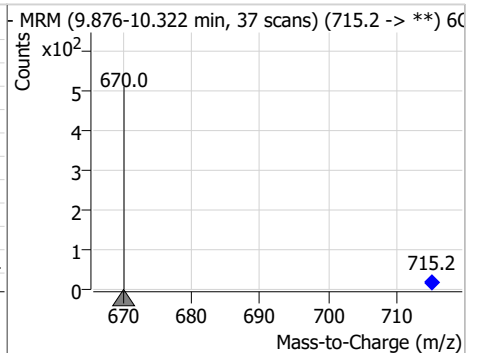
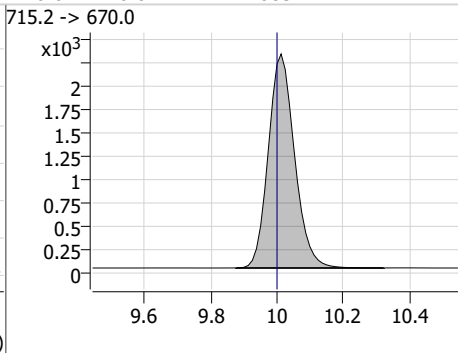
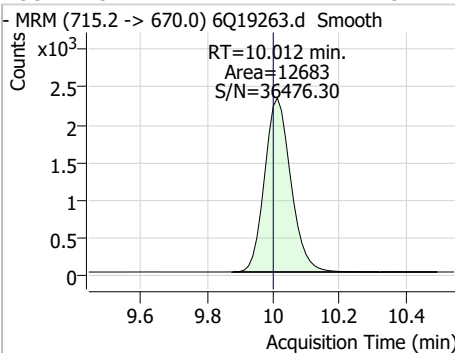
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.16	9.68	0.00	20317	498.1 -> 478.0	3.6	1.4	4.2



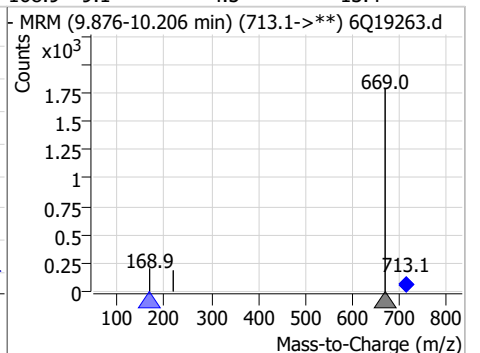
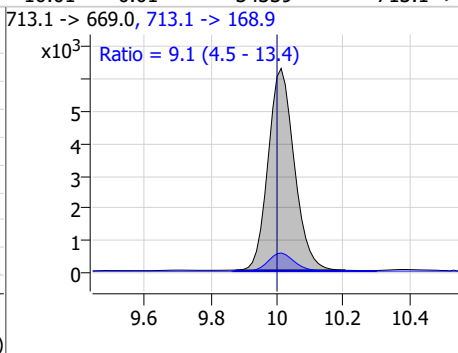
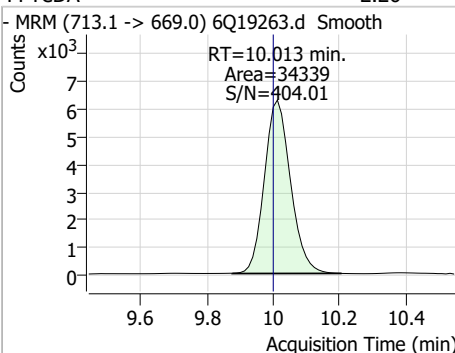
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	3.87	9.72	0.00	63024	630.9 -> 452.9	33.2	15.0	45.0



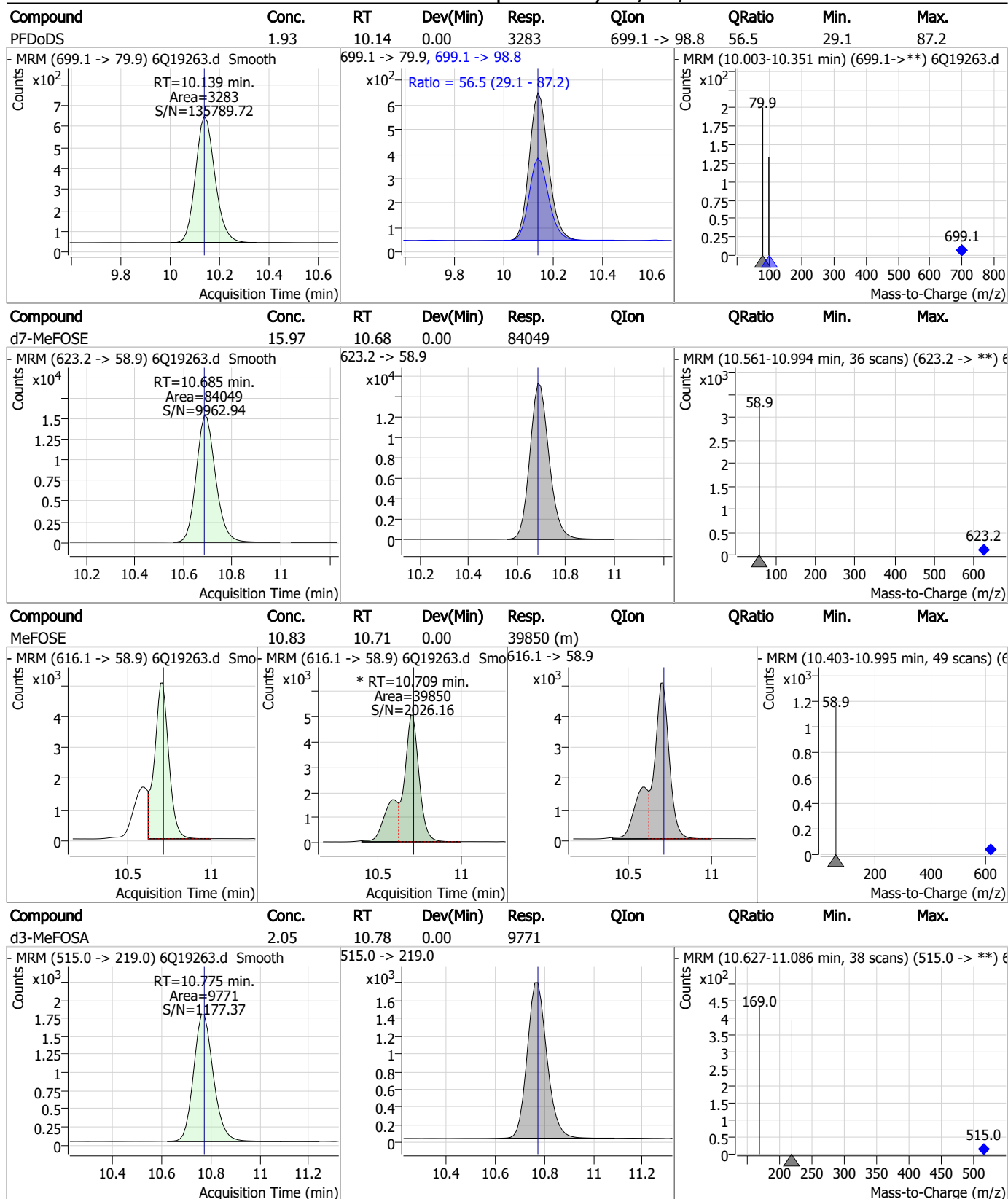
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	10.01	0.01	12683	715.2 -> 670.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.26	10.01	0.01	34339	713.1 -> 168.9	9.1	4.5	13.4



Perfluorinated Compounds by LC/MS/MS

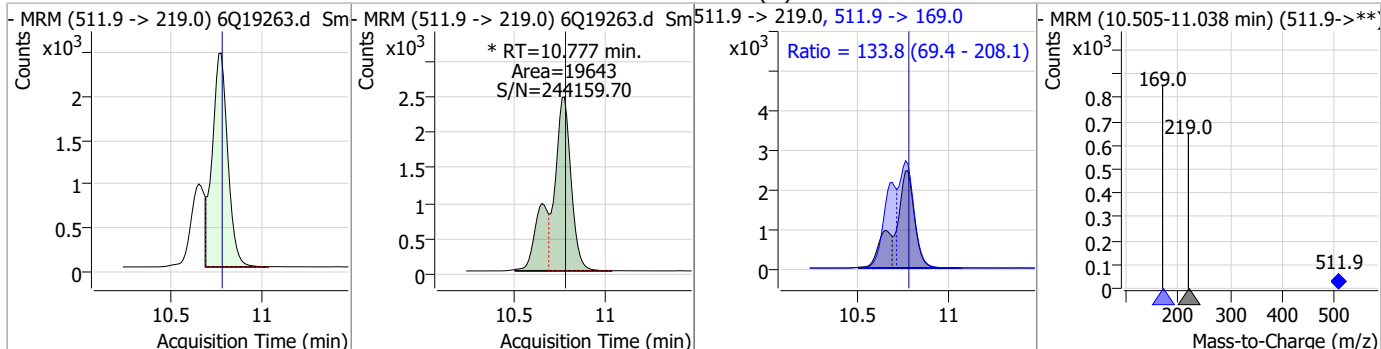


7.3.3
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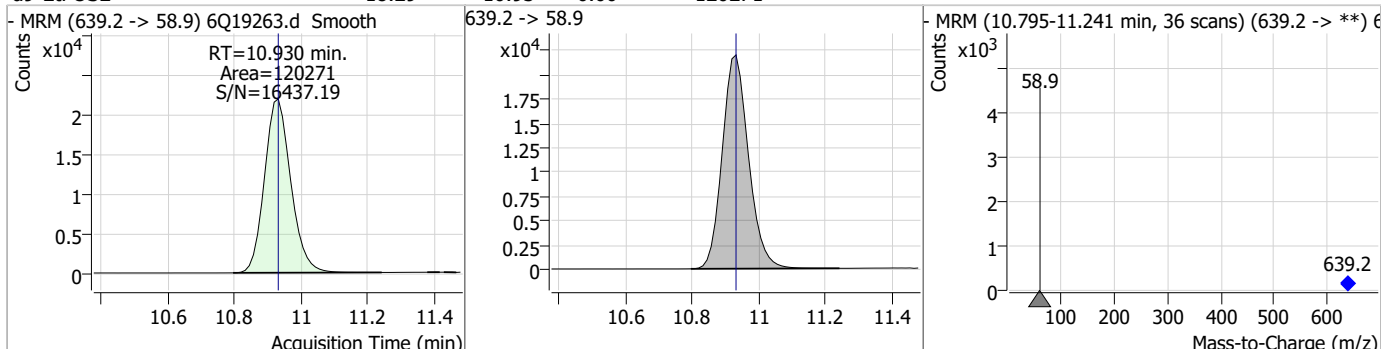


Perfluorinated Compounds by LC/MS/MS

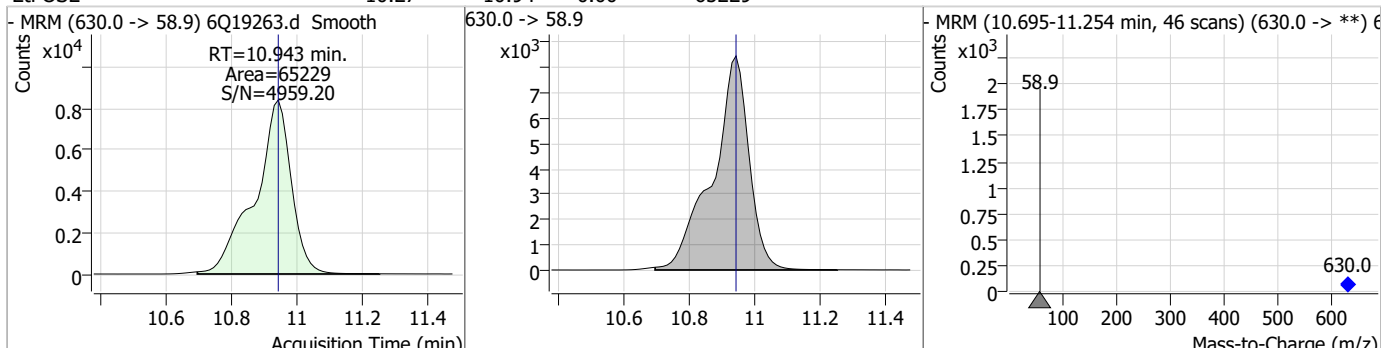
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSEA	4.59	10.78	0.00	19643 (m)	511.9 -> 169.0	133.8	69.4	208.1



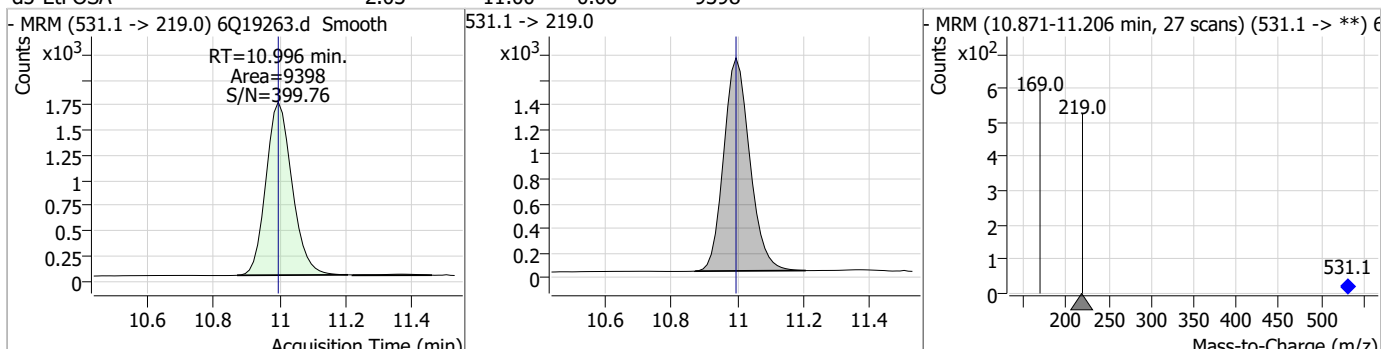
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	18.29	10.93	0.00	120271				



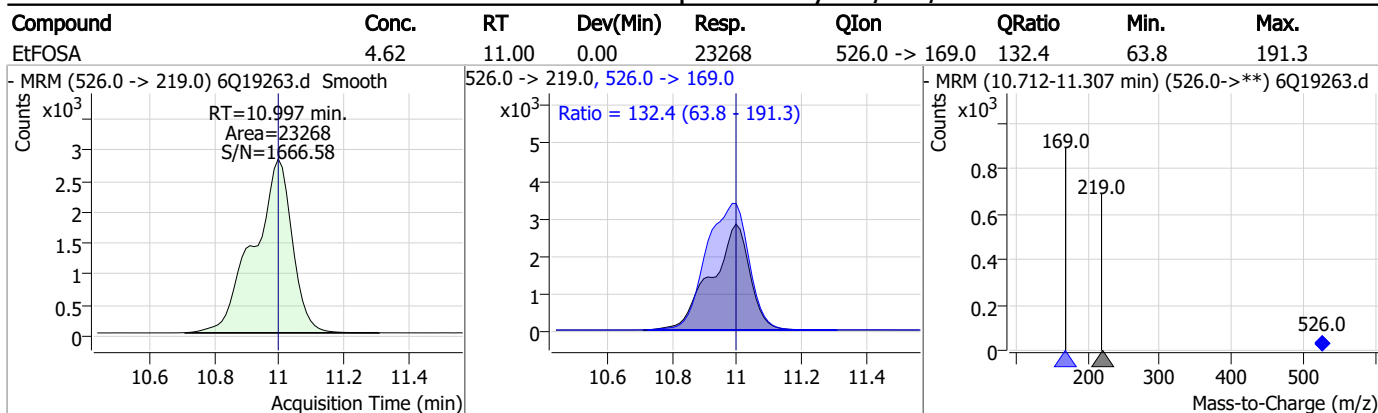
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	10.27	10.94	0.00	65229				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSEA	2.03	11.00	0.00	9398				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: OP97275-BS Method: EPA DRAFT 1633
Lab FileID: 6Q19263.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 21:10 Supervisor approved: 06/13/23 13:39 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19264.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 9:24:00 PM
 Sample Name : op97275-llbs:3
 Vial : P2-B2
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	153583	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	50083	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	53134	2.50 µg/L	0.000
M4-PFHpA	6.719	367.1 -> 322.0	52443	2.50 µg/L	0.012
M8-PFOA	7.352	421.1 -> 376.0	82612	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	39303	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	23578	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	29155	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	25269	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	13560	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	23248	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	20421	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	12402	2.50 µg/L	0.000
M8-PFOS	8.575	507.1 -> 79.9	12003	2.50 µg/L	0.012
M2-4:2FTS	5.454	329.1 -> 80.9	3456	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4947	5.00 µg/L	0.000
M2-8:2FTS	8.175	529.1 -> 80.9	4307	5.00 µg/L	0.012
M3-MeFOSAA	8.420	573.2 -> 419.0	29237	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	36379	10.00 µg/L	0.000
M5-EtFOSAA	8.628	589.2 -> 419.0	25177	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	85650	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	121182	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	9506	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	9172	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	13632	2.50 µg/L	0.000
13C3-PFBA	3.101	216.0 -> 172.0	56789	5.00 µg/L	0.012
18O2-PFHxS	7.477	403.0 -> 83.9	8546	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	72380	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	26372	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	44401	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	45791	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3456	6.57 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 131.4%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4947	6.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.1%		
13C2-8:2FTS	8.175	529.1 -> 80.9	4307	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-PFDoDA	9.297	615.1 -> 570.0	25269	1.43 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13560	1.32 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C3-PFBS	5.746	302.1 -> 79.9	20421	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	12402	2.73 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C4-PFBA	3.097	216.8 -> 171.9	153583	11.52 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C4-PFHpA	6.719	367.1 -> 322.0	52443	2.85 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C5-PFHxA	5.792	318.0 -> 273.0	53134	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C5-PFPeA	4.560	268.3 -> 223.0	50083	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.2%	
13C6-PFDA	8.387	519.1 -> 474.1	23578	1.62 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 129.6%	
13C7-PFUnDA	8.866	570.0 -> 525.1	29155	1.42 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C8-FOSA	9.674	506.1 -> 77.8	23248	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%	
13C8-PFOA	7.352	421.1 -> 376.0	82612	3.06 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.4%	
13C8-PFOS	8.575	507.1 -> 79.9	12003	3.01 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.2%	
13C9-PFNA	7.895	472.1 -> 427.0	39303	1.45 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.0%	
d3-MeFOSAA	8.420	573.2 -> 419.0	29237	5.72 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	36379	11.59 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.9%	
d3-MeFOSA	10.775	515.0 -> 219.0	9172	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.0%	
d5-EtFOSAA	8.628	589.2 -> 419.0	25177	5.84 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.7%	
d7-MeFOSE	10.685	623.2 -> 58.9	85650	17.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.5%	
d9-EtFOSE	10.930	639.2 -> 58.9	121182	19.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 77.6%	
d5-EtFOSA	10.996	531.1 -> 219.0	9506	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.6%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	14470	2.42 µg/L	99
		327.1 -> 80.9	5509		
6:2FTS	7.113	427.1 -> 407.0	15699	2.63 µg/L	90
		427.1 -> 80.9	4799		
8:2FTS	8.176	527.1 -> 507.0	6729	2.35 µg/L	92
		527.1 -> 80.8	2993		
EtFOSAA	8.629	584.2 -> 419.1	2733	0.65 µg/L	m 98
		584.2 -> 526.0	1325		
FOSA	9.677	498.1 -> 77.9	6022	0.63 µg/L	97
		498.1 -> 478.0	228		
MeFOSAA	8.421	570.1 -> 419.0	4791	0.67 µg/L	m 97
		570.1 -> 483.0	1020		
PFBA	3.093	212.8 -> 168.9	16165	2.64 µg/L	100
PFBS	5.747	298.7 -> 79.9	4743	0.53 µg/L	89
		298.7 -> 98.8	1935		
PFDA	8.388	512.9 -> 469.0	20933	0.59 µg/L	98
		512.9 -> 219.0	2987		
PFDODA	9.298	613.1 -> 569.0	13038	0.63 µg/L	99
		613.1 -> 319.0	2243		
PFDS	9.462	599.0 -> 79.9	2060	0.57 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1006			
PFHpA	6.720	363.1 -> 319.0	16785	0.60	µg/L	99
		363.1 -> 169.0	2771			
PFHpS	8.059	449.0 -> 79.9	4358	0.60	µg/L	96
		449.0 -> 98.9	2261			
PFHxA	5.795	313.0 -> 269.0	14562	0.68	µg/L	99
		313.0 -> 118.9	754			
PFHxS	7.479	398.7 -> 79.9	4151	0.56	µg/L	m 91
		398.7 -> 98.9	2160			
PFNA	7.896	463.0 -> 419.0	22036	0.61	µg/L	97
		463.0 -> 219.0	4159			
PFNS	9.041	548.8 -> 79.9	3770	0.59	µg/L	100
		548.8 -> 98.9	1839			
PFOA	7.353	413.0 -> 369.0	35157	0.83	µg/L	90
		413.0 -> 169.0	4618			
PFOS	8.564	498.9 -> 79.9	4237	0.60	µg/L	m 98
		498.9 -> 98.8	2142			
PFPeA	4.563	263.0 -> 219.0	18969	1.29	µg/L	100
PFPeS	6.785	349.1 -> 79.9	4265	0.62	µg/L	98
		349.1 -> 98.9	1907			
PFTeDA	10.013	713.1 -> 669.0	10131	0.62	µg/L	98
		713.1 -> 168.9	845			
PFTrDA	9.681	663.0 -> 619.0	13084	0.63	µg/L	97
		663.0 -> 168.9	1471			
PFUnDA	8.866	563.1 -> 519.0	15111	0.71	µg/L	95
		563.1 -> 269.1	2167			
11CI-PF3OUdS	9.733	630.9 -> 450.9	19637	1.15	µg/L	97
		632.9 -> 452.9	5583			
9CI-PF3ONS	8.918	530.8 -> 351.0	31696	1.11	µg/L	99
		532.8 -> 353.0	9746			
ADONA	6.959	376.9 -> 250.9	73432	1.19	µg/L	96
		376.9 -> 84.8	19160			
HFPO-DA	6.169	284.9 -> 168.9	4777	1.20	µg/L	98
		284.9 -> 184.9	557			
3:3FTCA	3.971	241.0 -> 177.0	2480	2.46	µg/L	98
		241.0 -> 117.0	353			
5:3FTCA	6.374	341.0 -> 237.1	70741	17.14	µg/L	92
		341.0 -> 217.0	48043			
7:3FTCA	7.748	441.0 -> 316.9	50366	17.05	µg/L	94
		441.0 -> 336.9	111749			
EtFOSA	10.997	526.0 -> 219.0	6659	1.31	µg/L	96
		526.0 -> 169.0	8794			
EtFOSE	10.943	630.0 -> 58.9	20138	3.15	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	5391	1.34	µg/L	m 99
		511.9 -> 169.0	7411			
MeFOSE	10.709	616.1 -> 58.9	12326	3.29	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	1006	0.56	µg/L	92
		699.1 -> 98.8	522			
NFDHA	5.673	295.0 -> 201.0	3611	1.34	µg/L	94
		295.0 -> 84.9	924			
PFMBA	4.988	279.0 -> 85.1	13319	1.26	µg/L	100
PFMPA	3.667	229.0 -> 84.9	10468	1.27	µg/L	100
PFEESA	6.288	314.8 -> 134.9	34207	1.31	µg/L	99
		314.8 -> 82.9	1273			

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



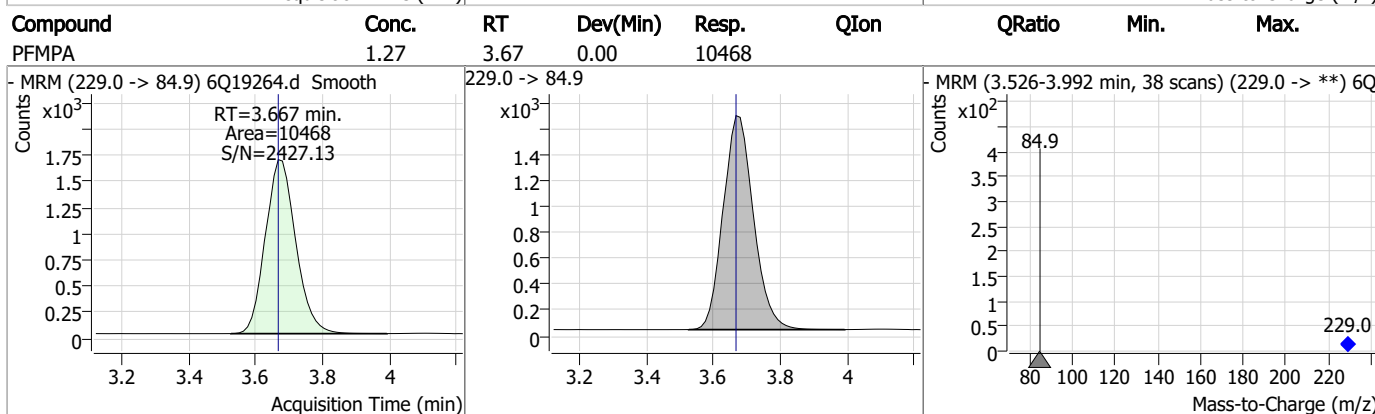
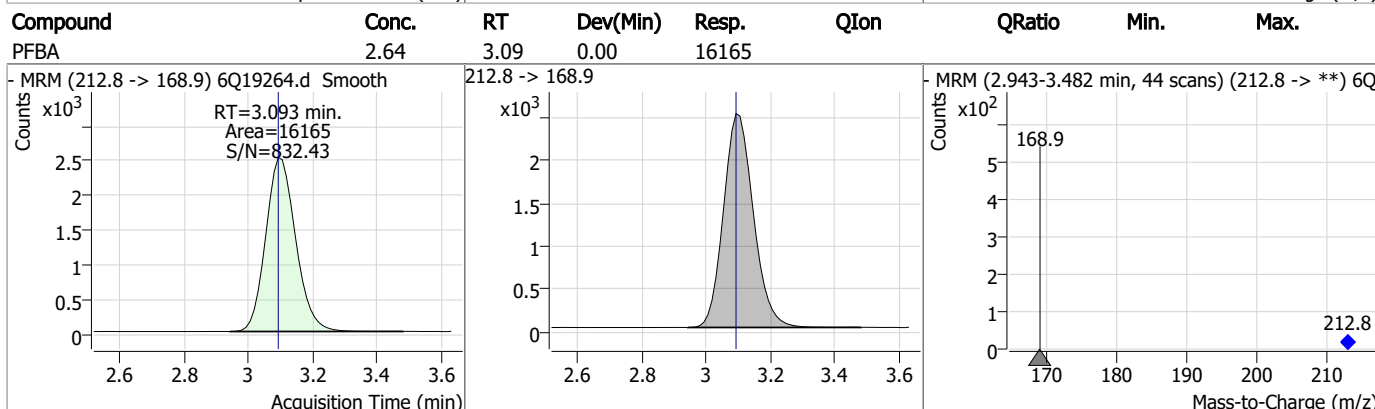
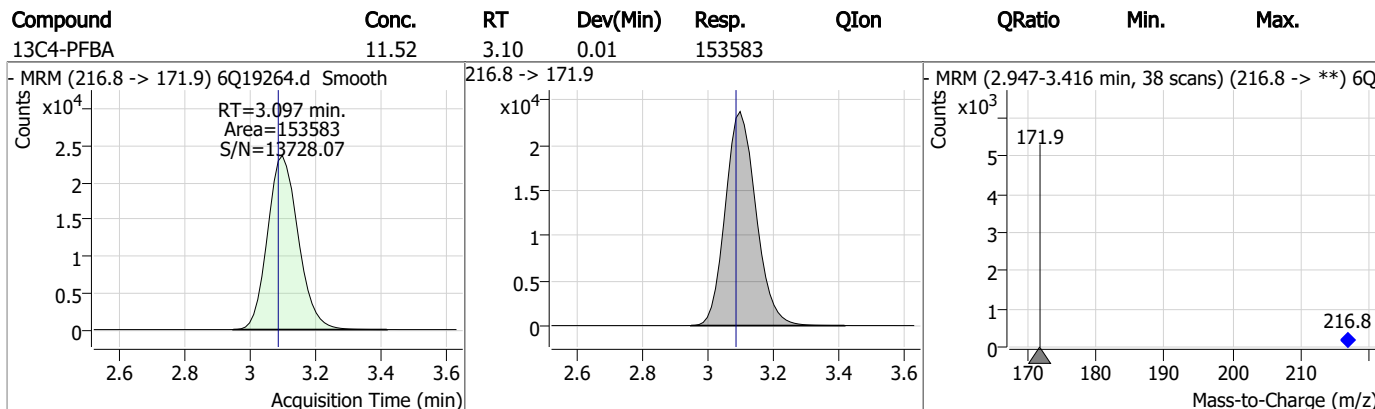
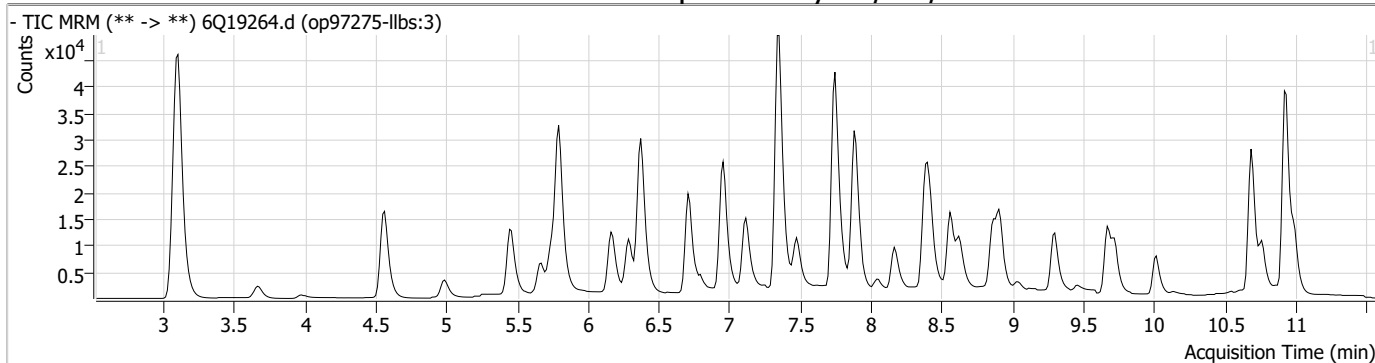
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.3.4

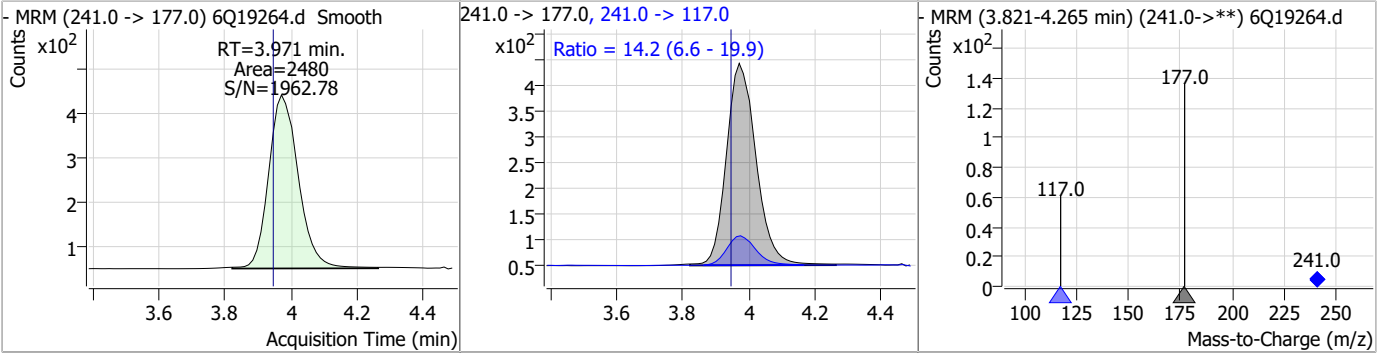
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Perfluorinated Compounds by LC/MS/MS

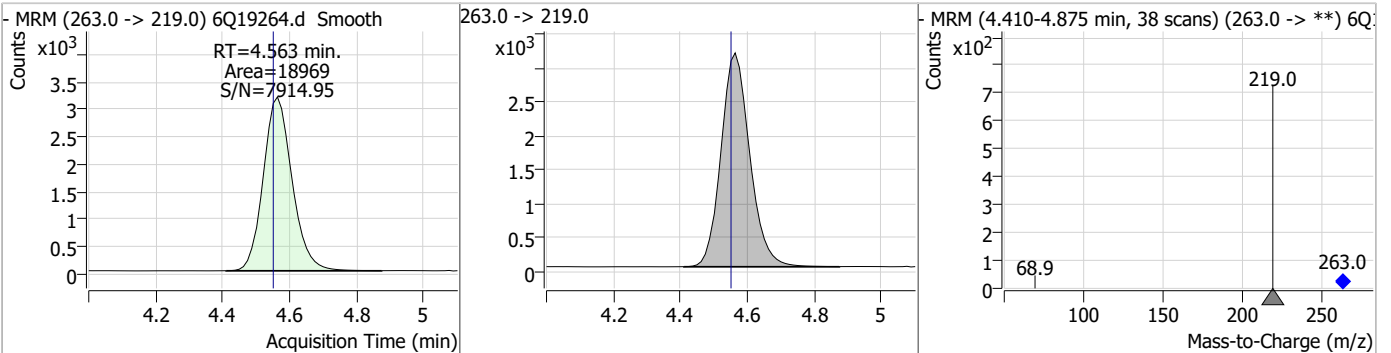


Perfluorinated Compounds by LC/MS/MS

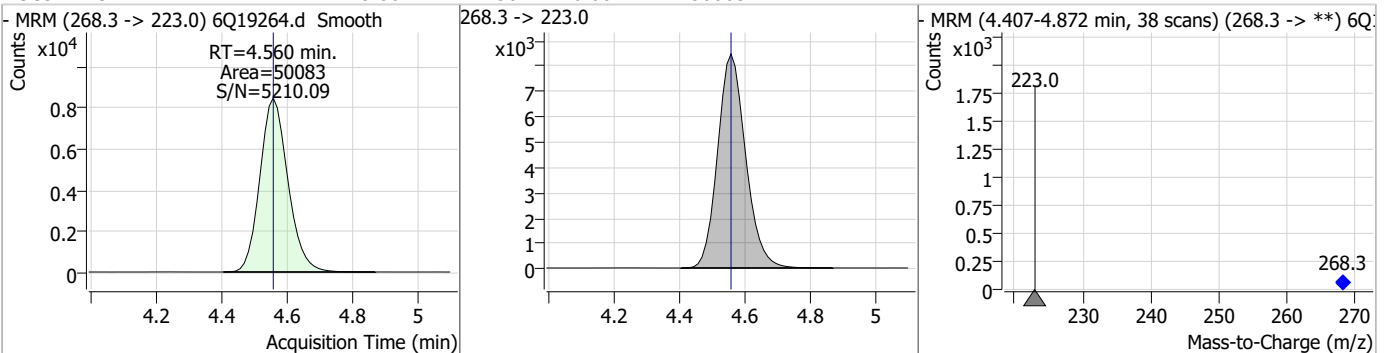
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.46	3.97	0.02	2480	241.0 -> 117.0	14.2	6.6	19.9



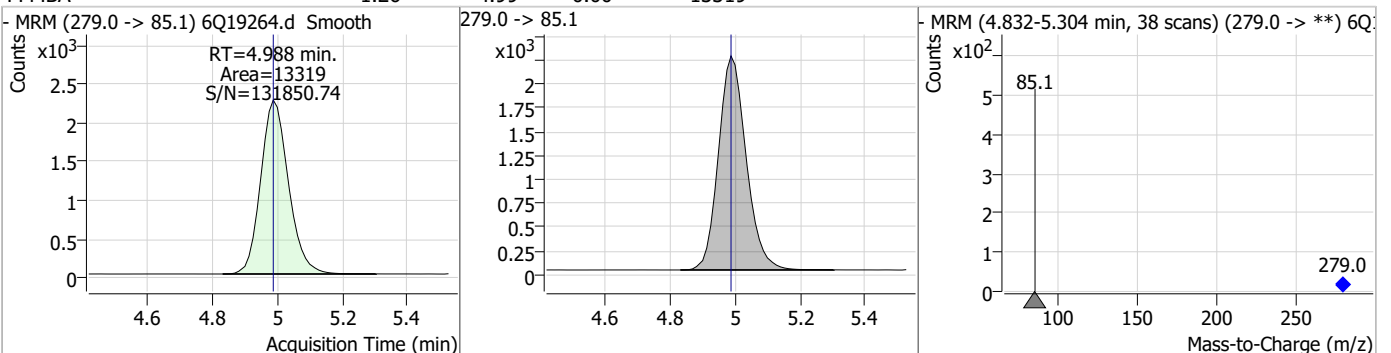
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.29	4.56	0.01	18969				



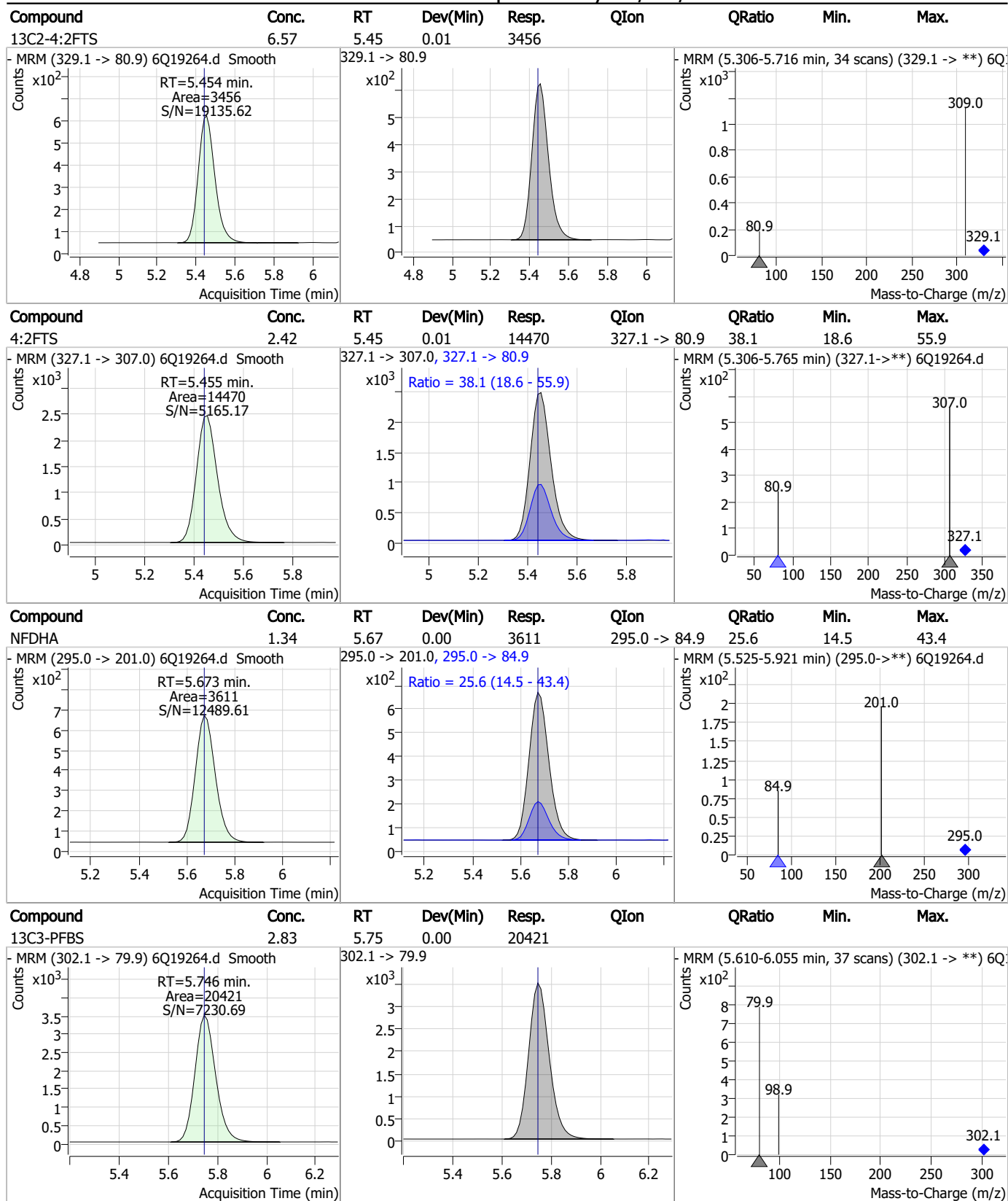
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.66	4.56	0.00	50083				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.26	4.99	0.00	13319				

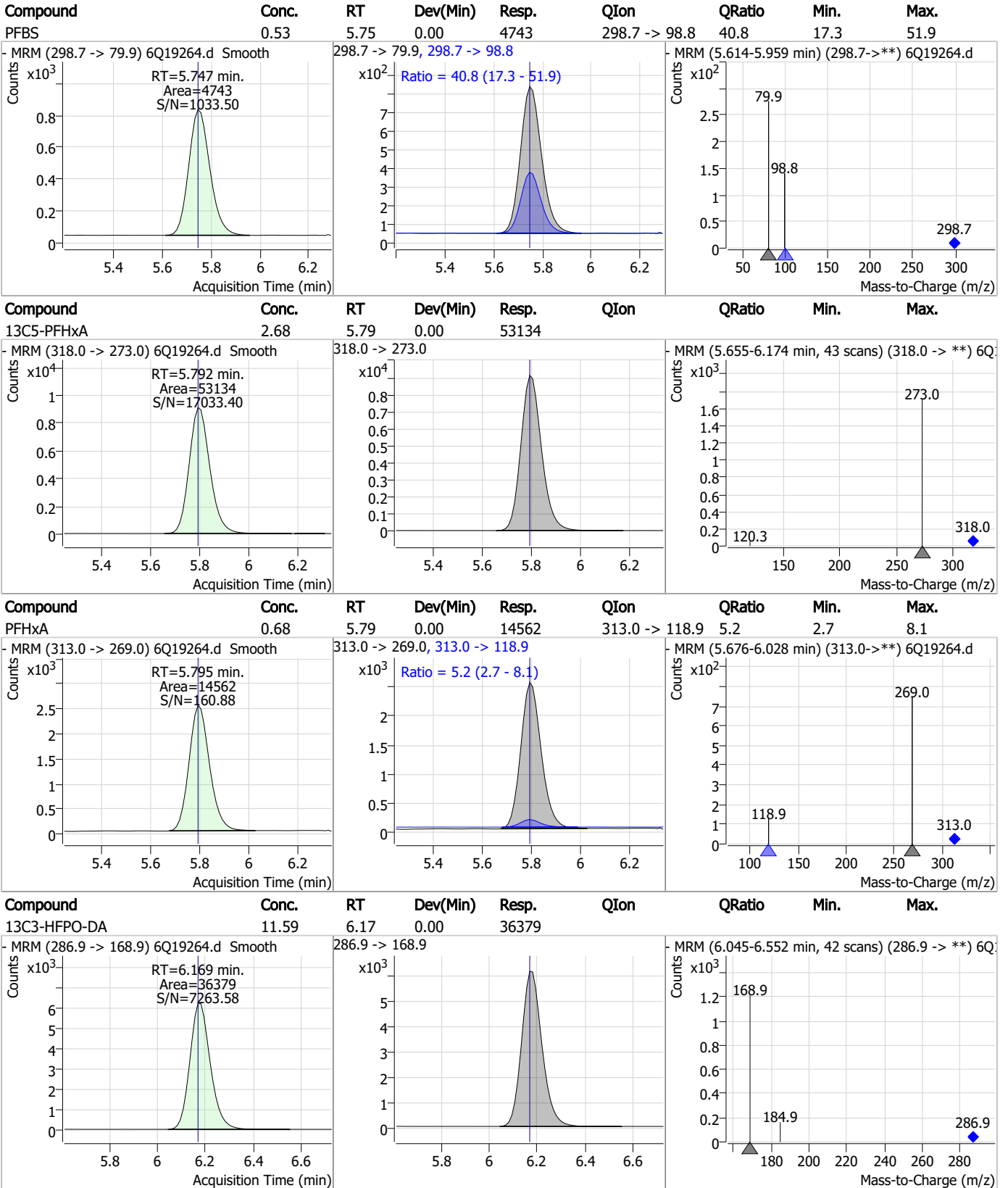


Perfluorinated Compounds by LC/MS/MS



7.3.4
7

Perfluorinated Compounds by LC/MS/MS



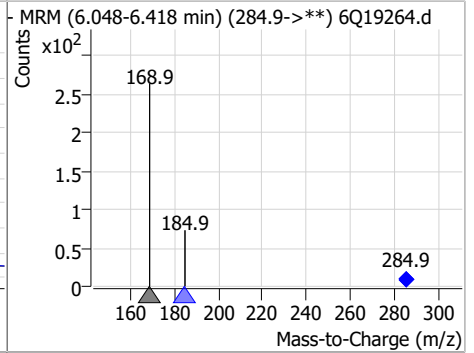
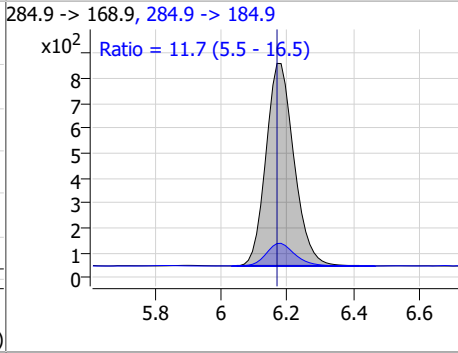
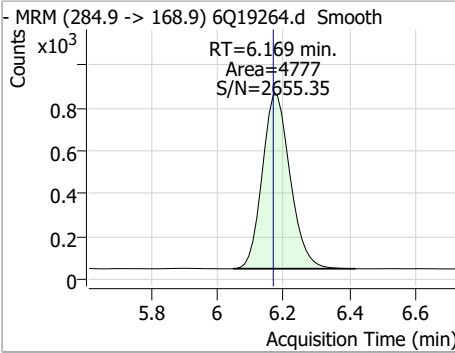
7.3.4

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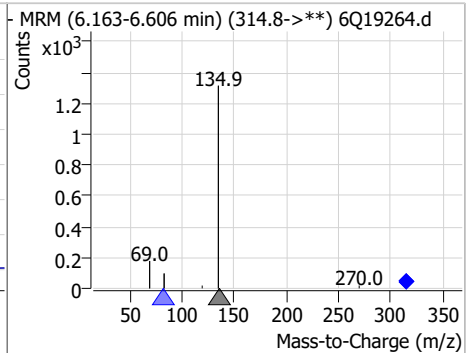
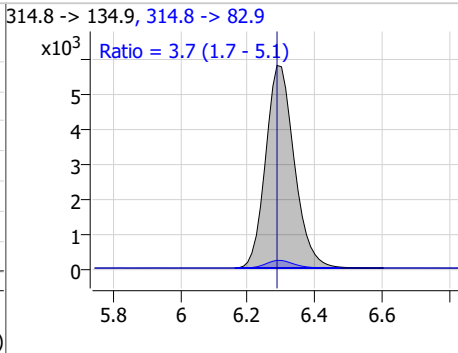
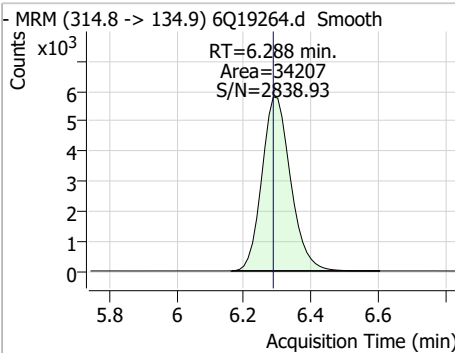


Perfluorinated Compounds by LC/MS/MS

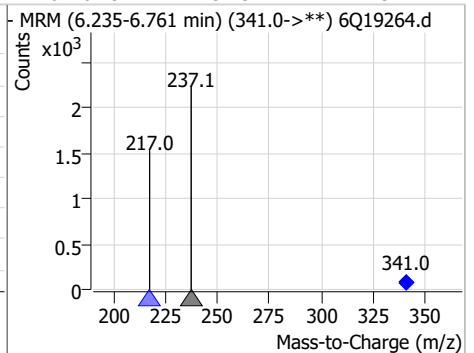
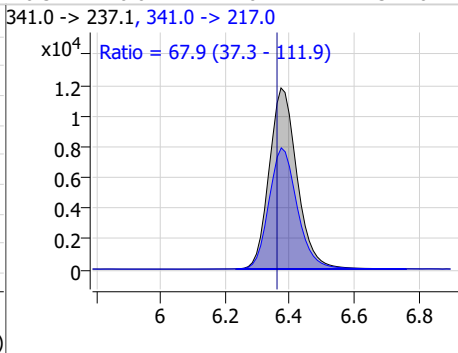
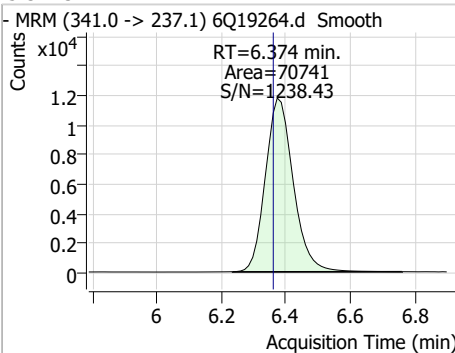
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.20	6.17	0.00	4777	284.9 -> 184.9	11.7	5.5	16.5



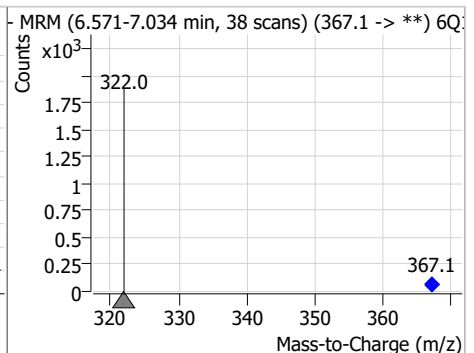
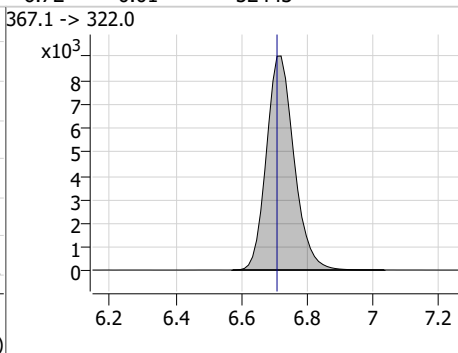
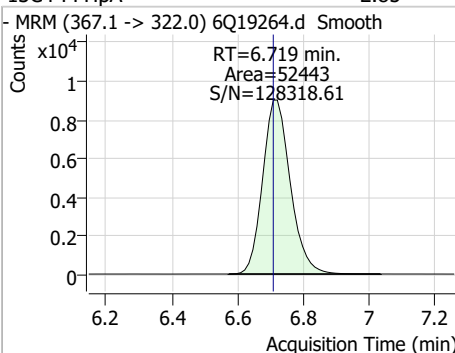
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.31	6.29	0.00	34207	314.8 -> 82.9	3.7	1.7	5.1



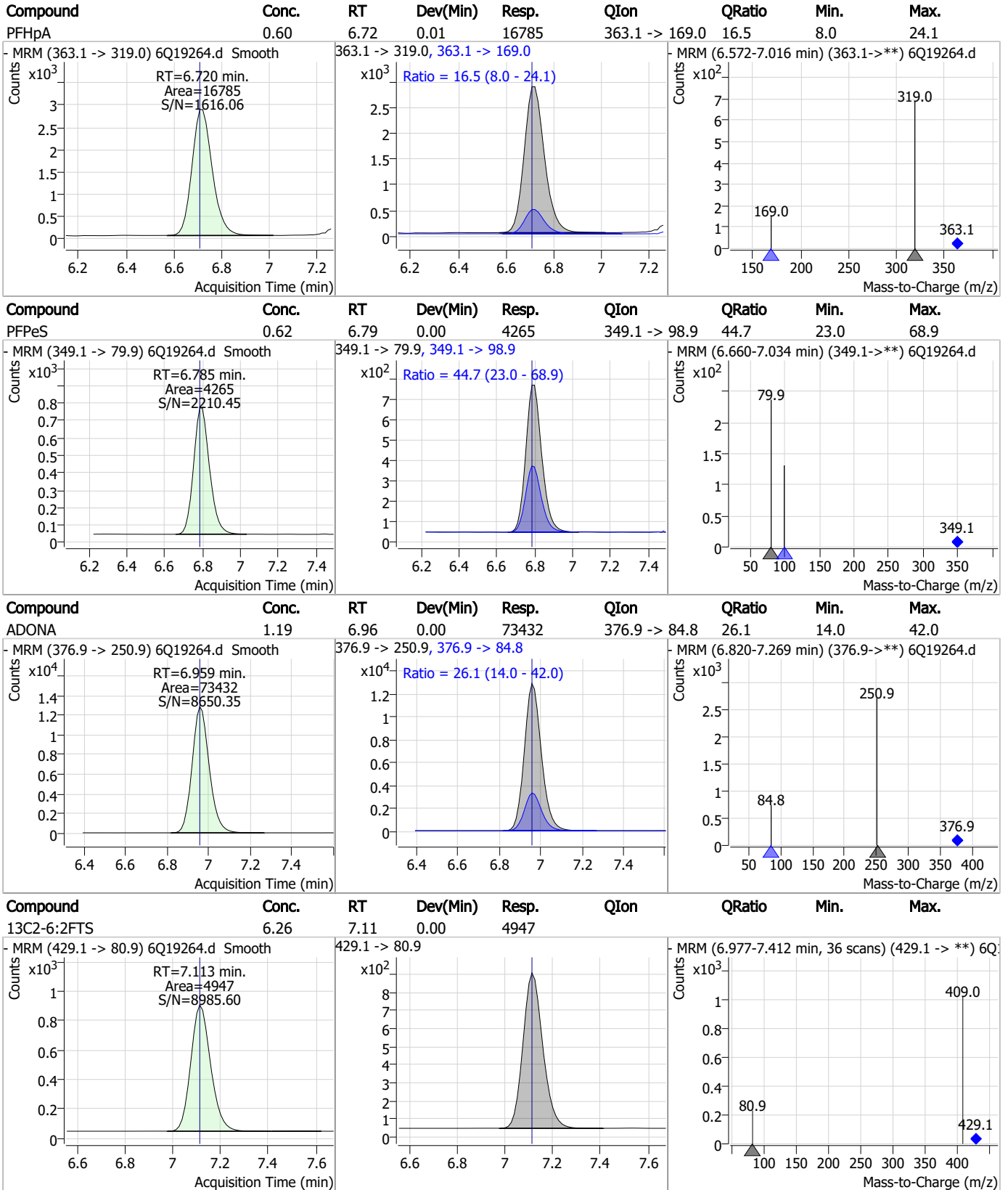
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	17.14	6.37	0.01	70741	341.0 -> 217.0	67.9	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.85	6.72	0.01	52443	367.1 -> 322.0			



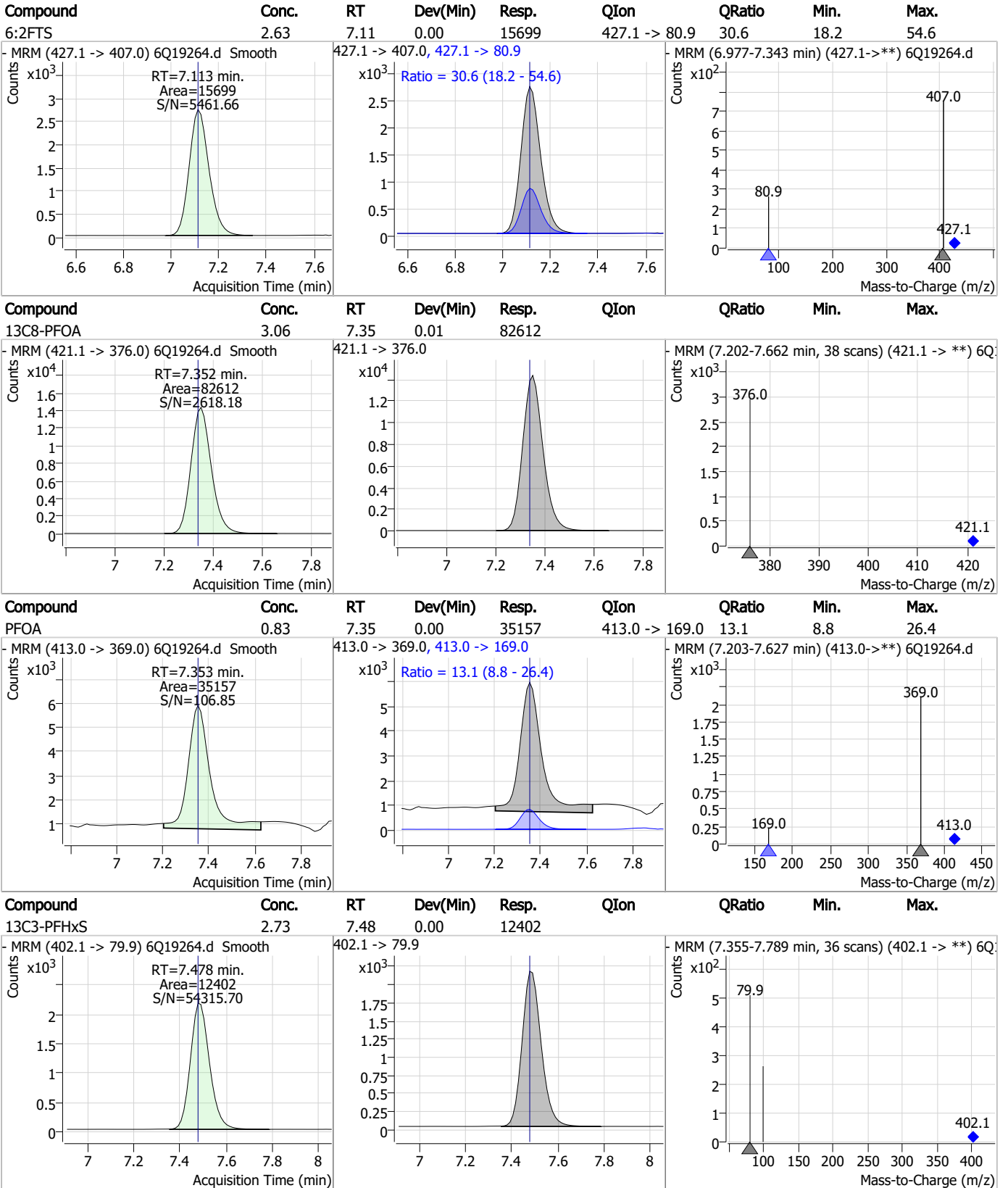
Perfluorinated Compounds by LC/MS/MS



7.3.4

7

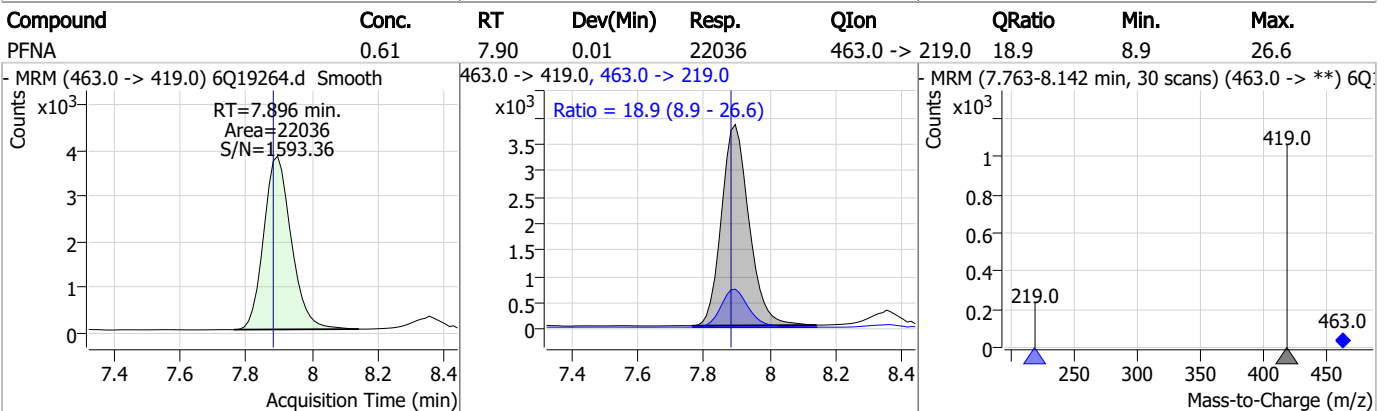
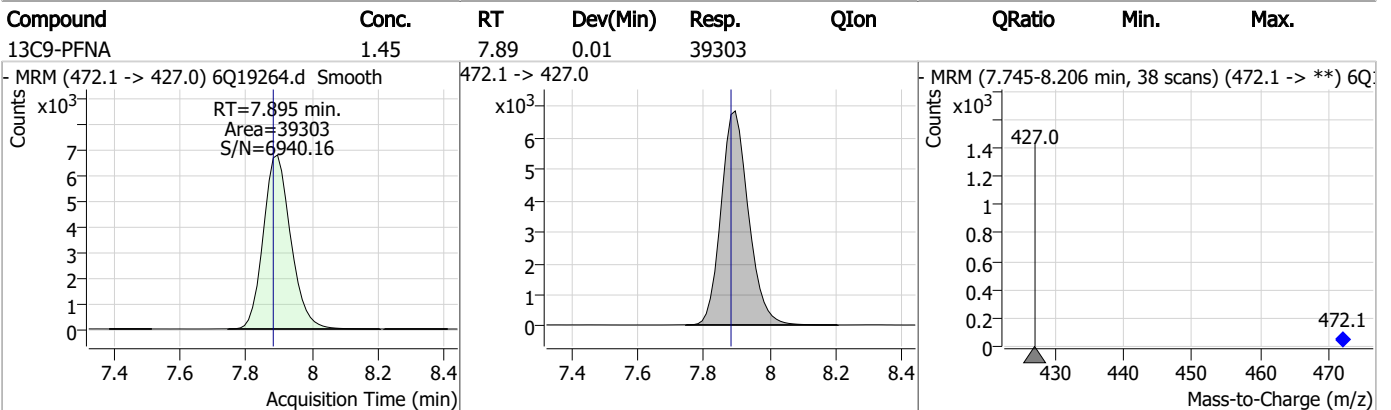
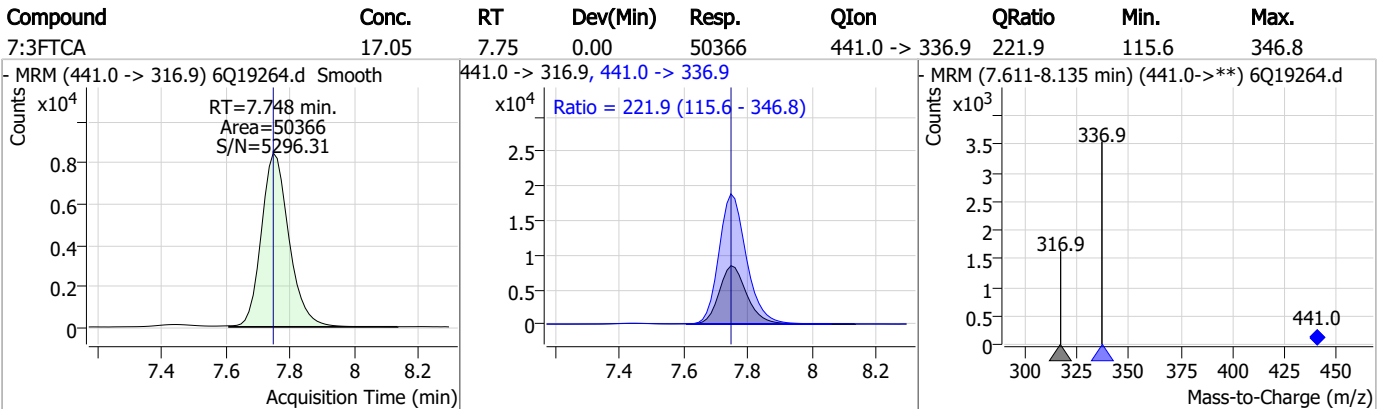
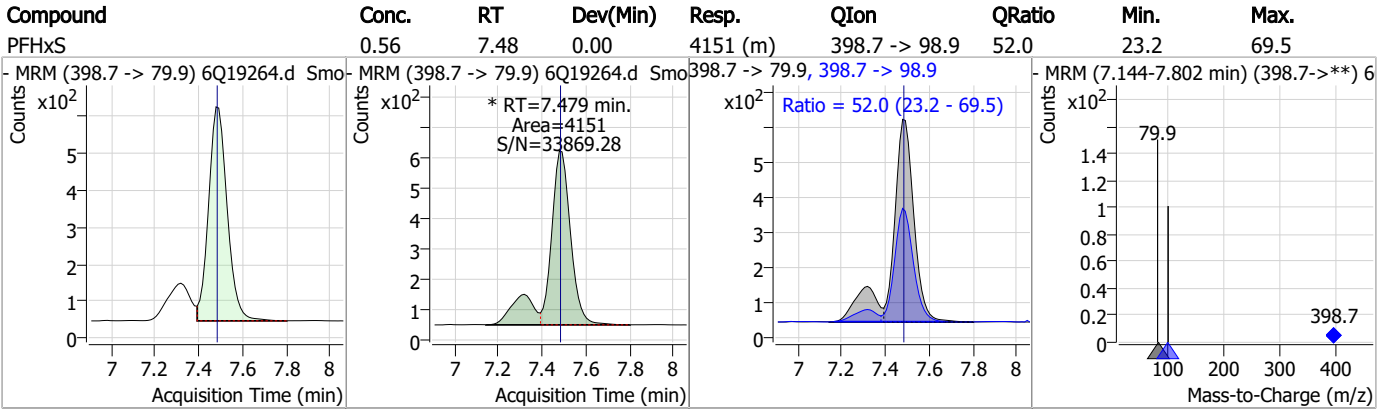
Perfluorinated Compounds by LC/MS/MS



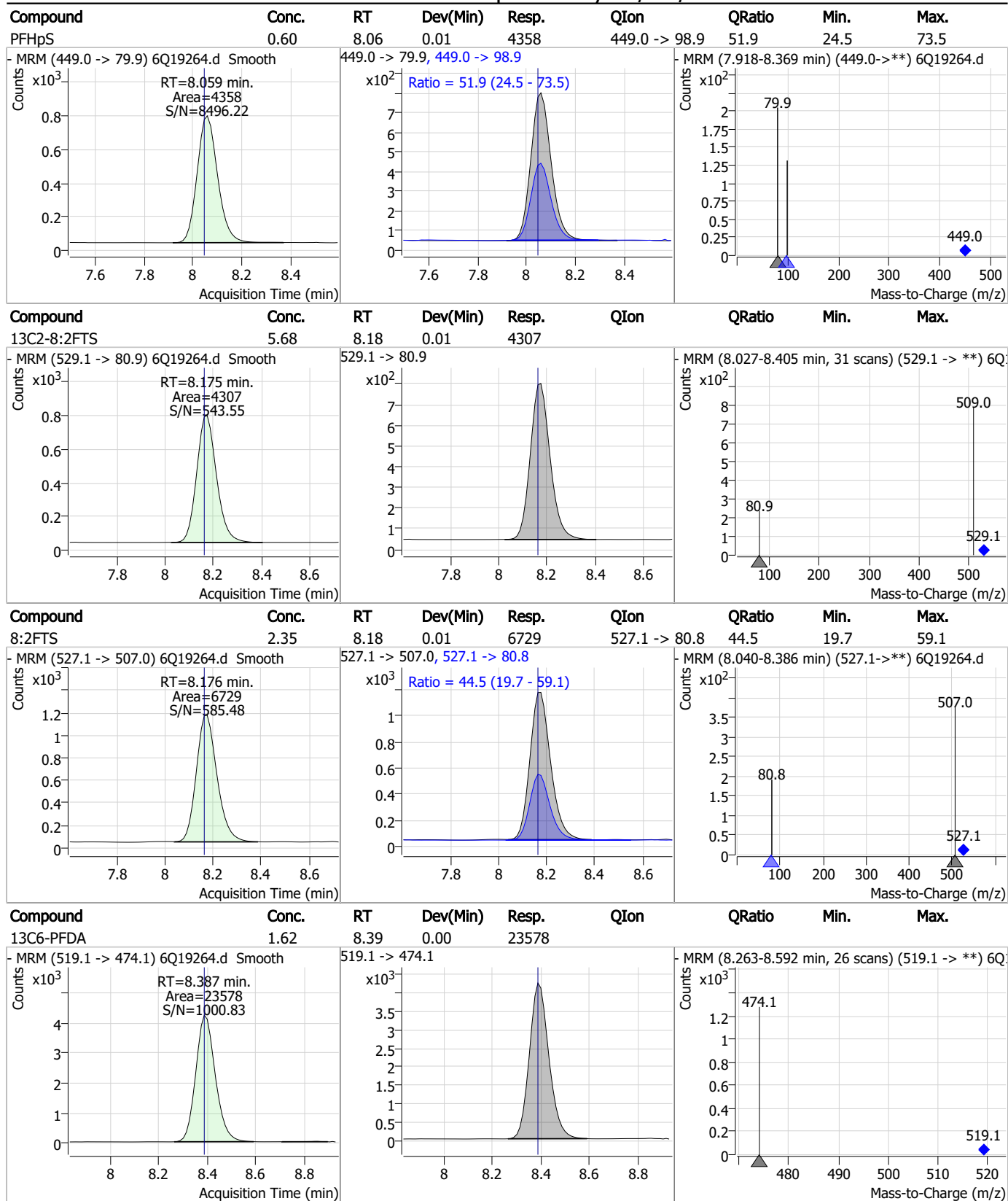
7.3.4

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Perfluorinated Compounds by LC/MS/MS



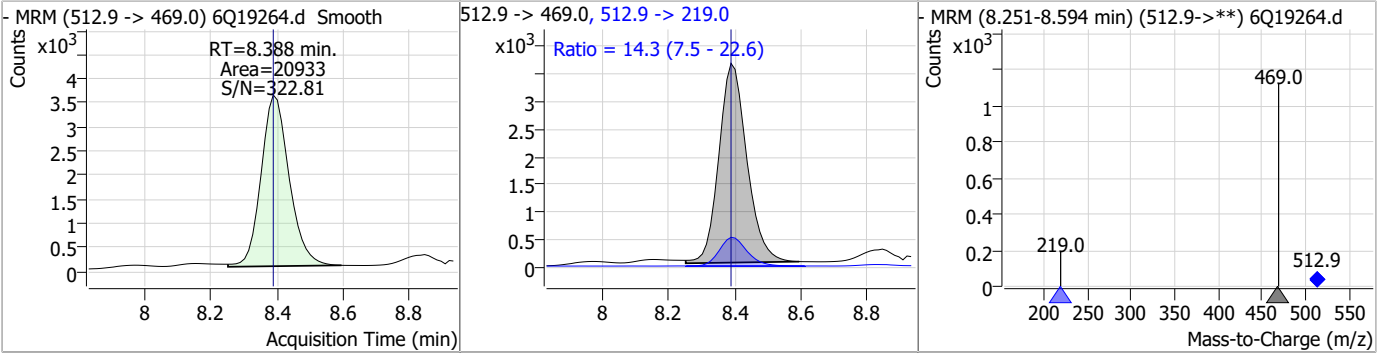
Perfluorinated Compounds by LC/MS/MS



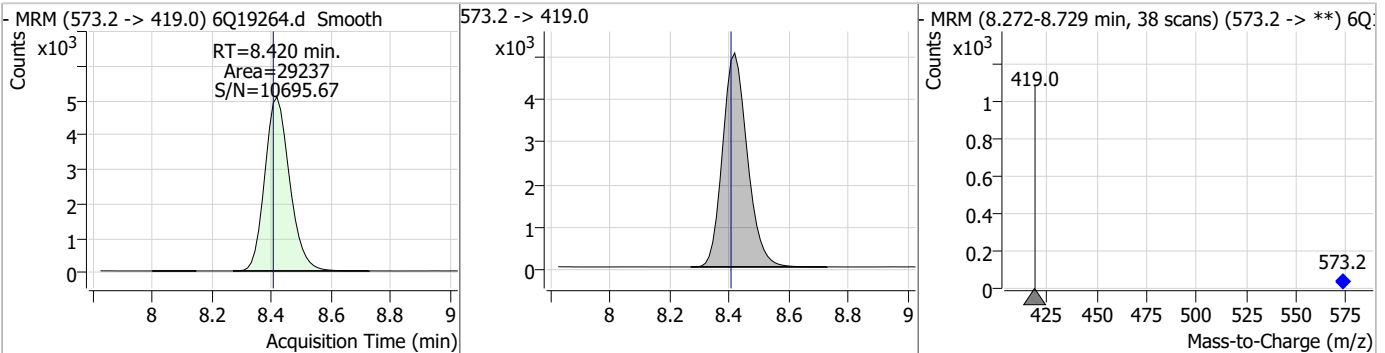
7.3.4
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Perfluorinated Compounds by LC/MS/MS

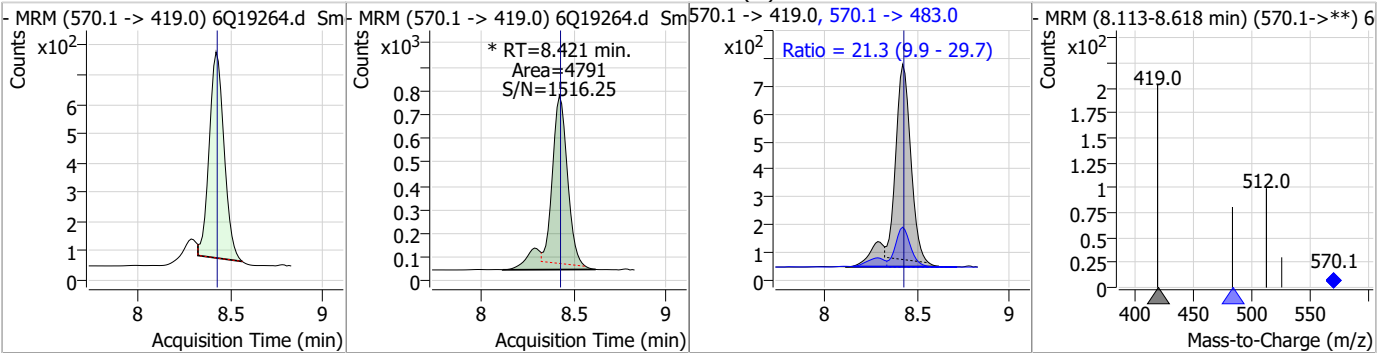
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.59	8.39	0.00	20933	512.9 -> 219.0	14.3	7.5	22.6



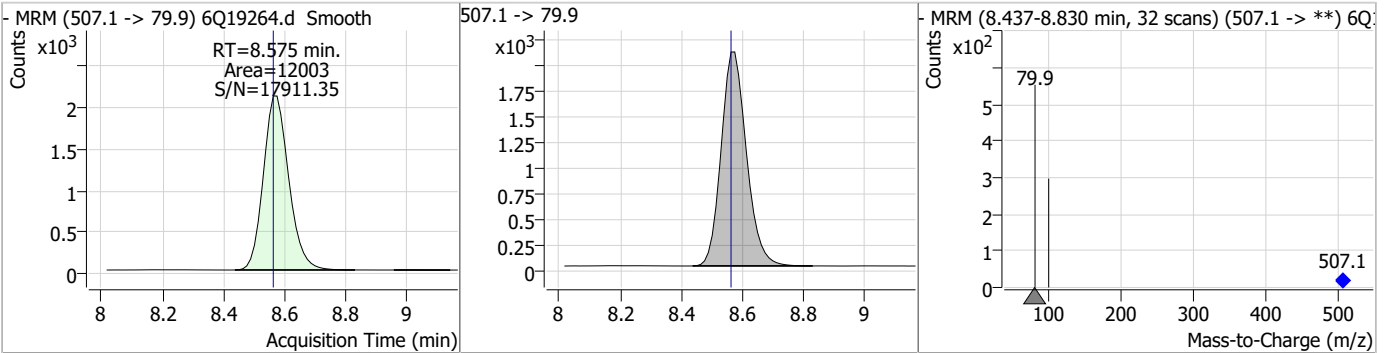
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.72	8.42	0.01	29237				



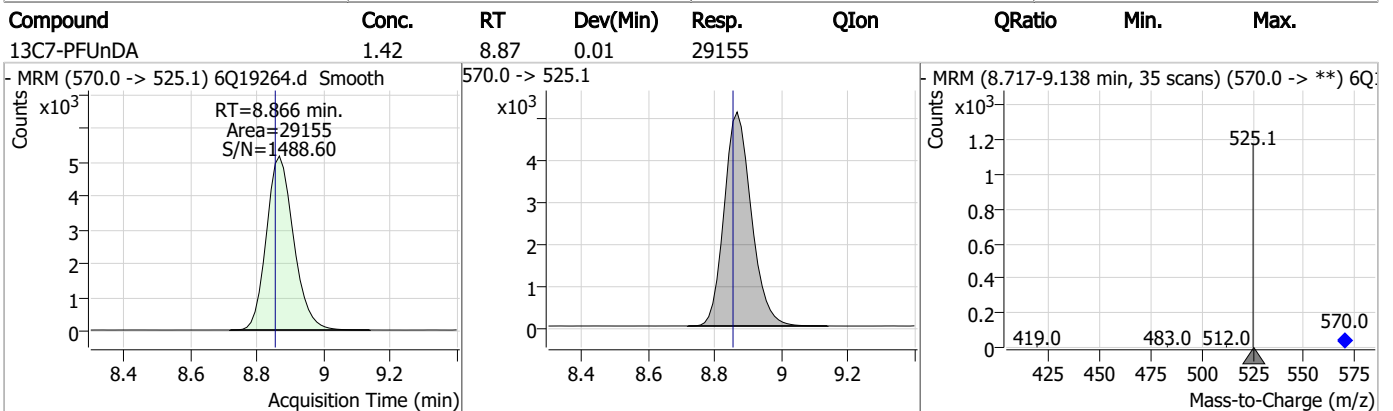
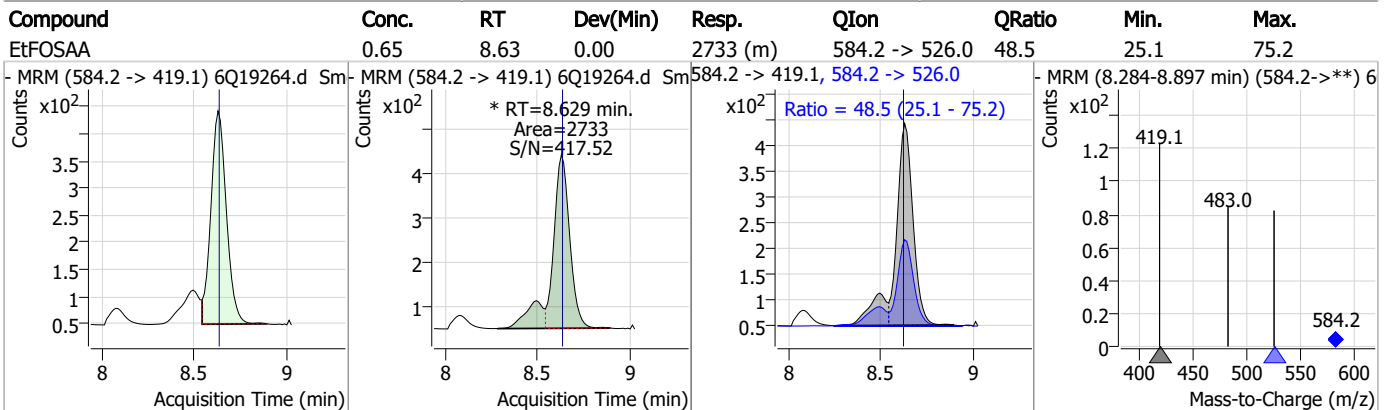
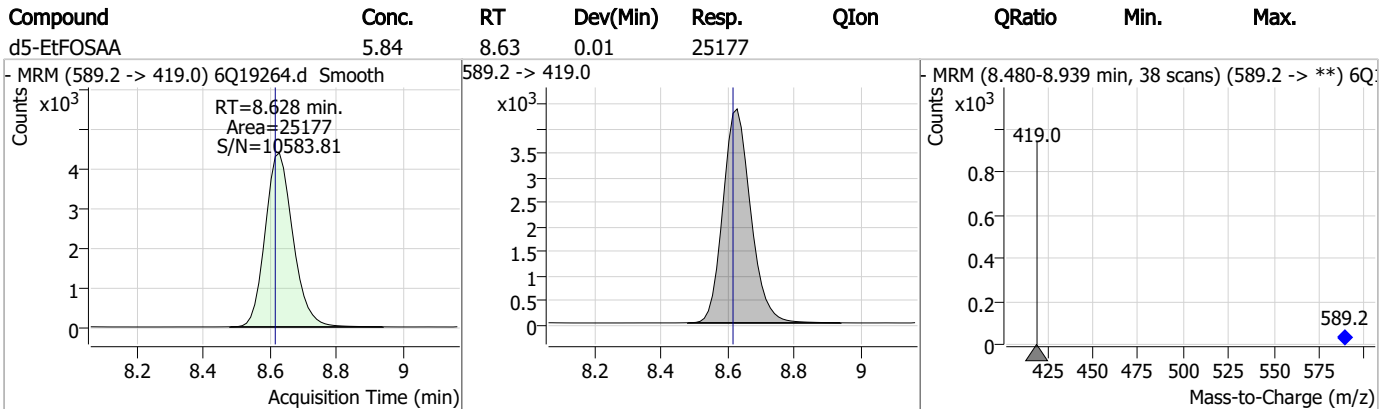
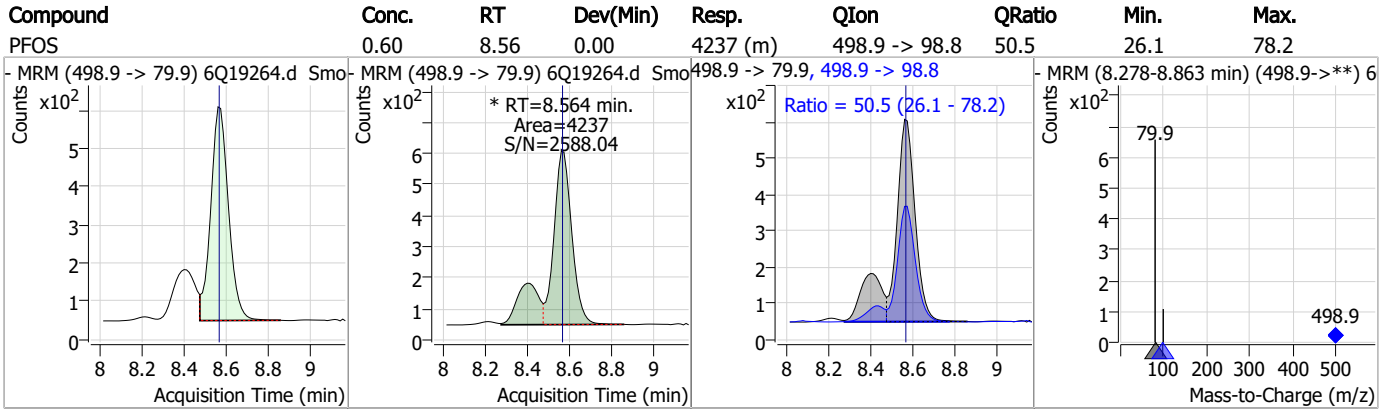
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.67	8.42	0.00	4791 (m)	570.1 -> 483.0	21.3	9.9	29.7



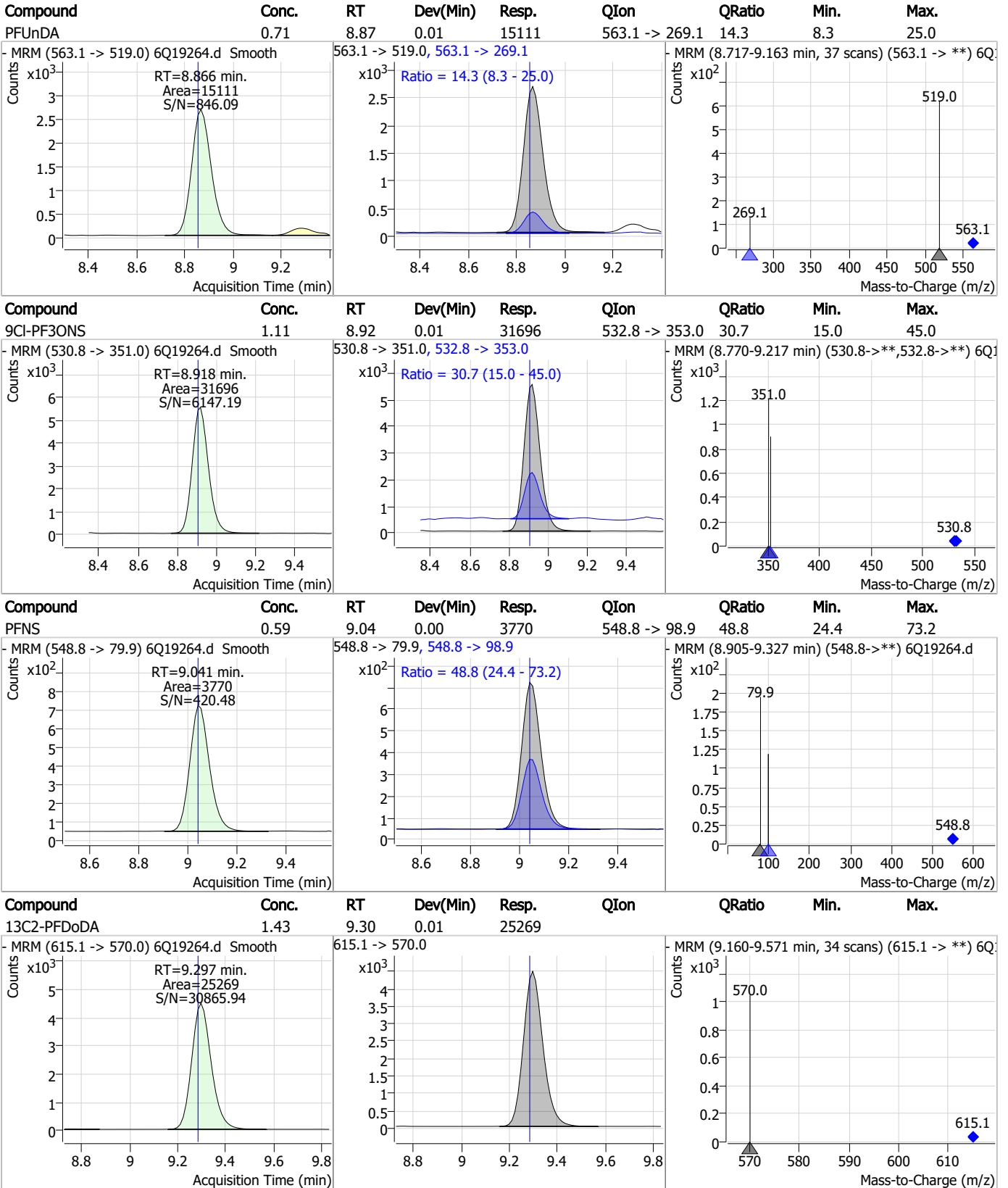
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.01	8.57	0.01	12003				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.3.4

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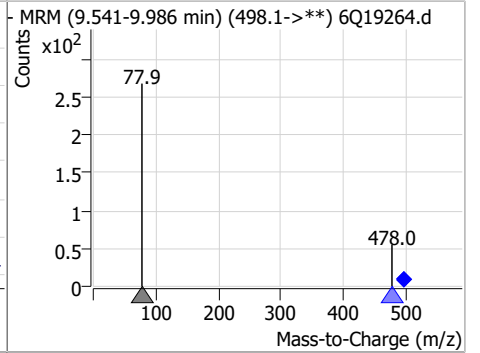
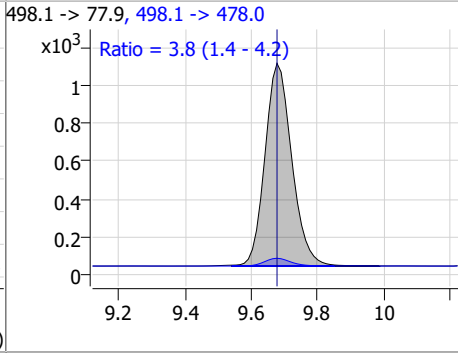
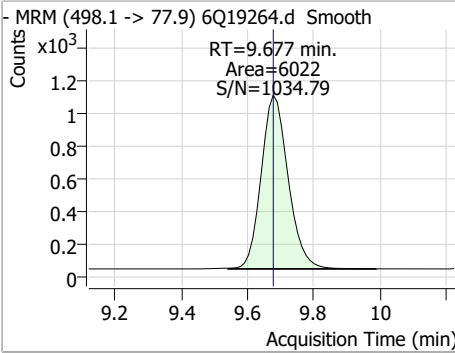
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	0.63	9.30	0.01	13038	613.1 -> 319.0	17.2	8.3	25.0
PFD5	0.57	9.46	0.01	2060	599.0 -> 98.8	48.8	22.7	68.0
PFTrDA	0.63	9.68	0.01	13084	663.0 -> 168.9	11.2	5.0	15.1
13C8-FOSA	2.30	9.67	0.00	23248	506.1 -> 77.8			

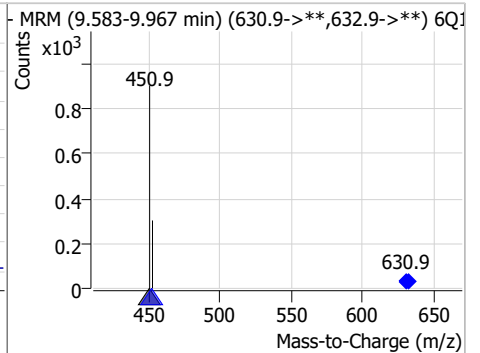
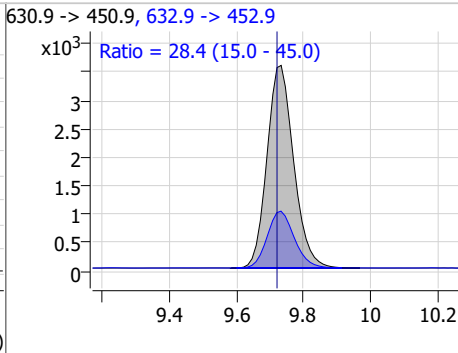
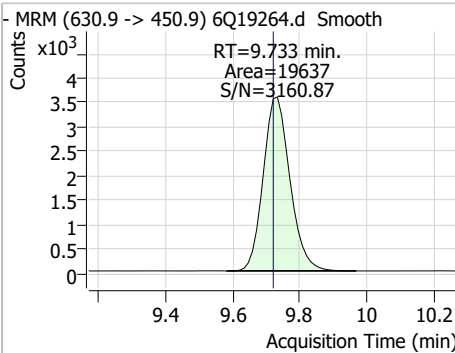
7.3.4
7

Perfluorinated Compounds by LC/MS/MS

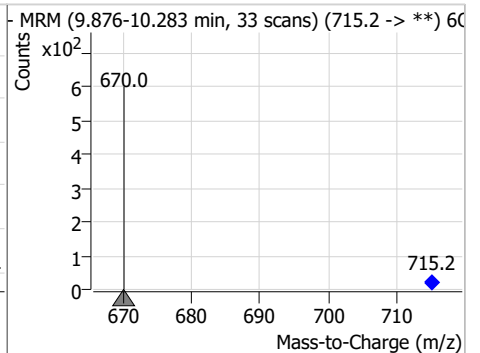
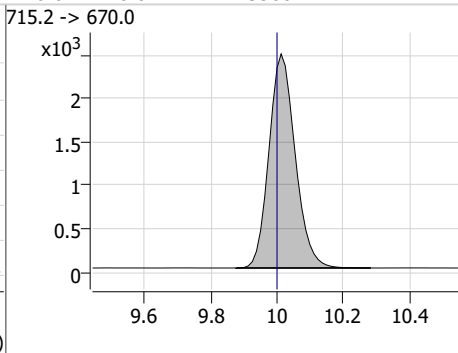
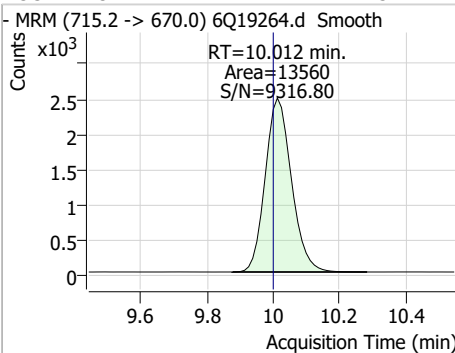
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.63	9.68	0.00	6022	498.1 -> 478.0	3.8	1.4	4.2



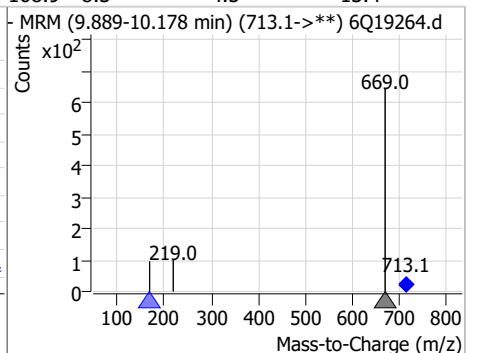
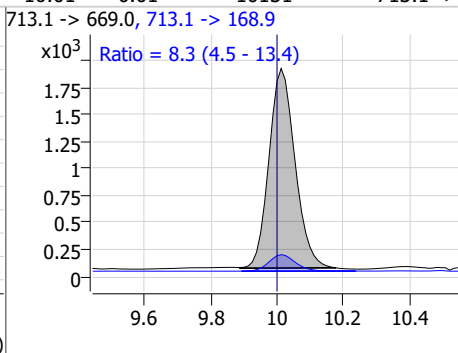
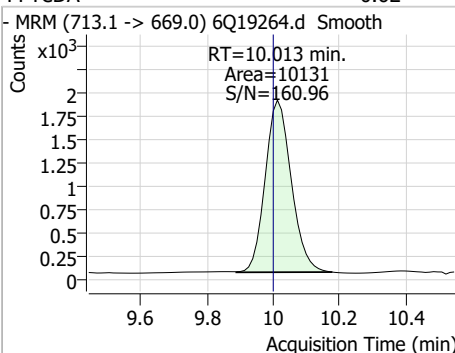
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	1.15	9.73	0.01	19637	632.9 -> 452.9	28.4	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	10.01	0.01	13560	715.2 -> 670.0			

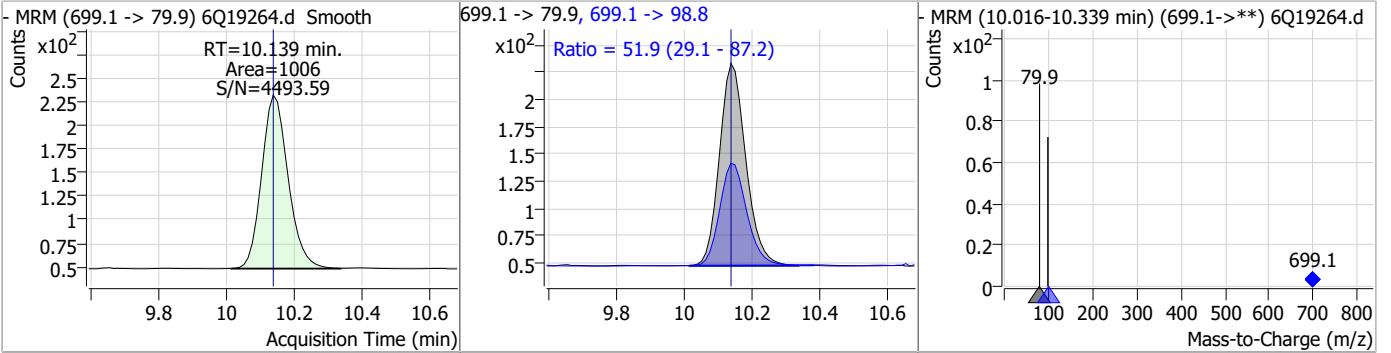


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.62	10.01	0.01	10131	713.1 -> 168.9	8.3	4.5	13.4

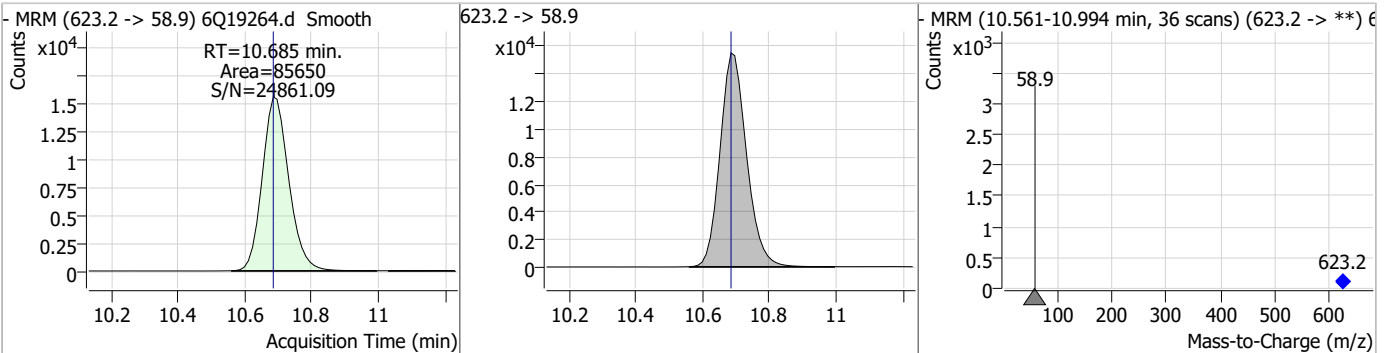


Perfluorinated Compounds by LC/MS/MS

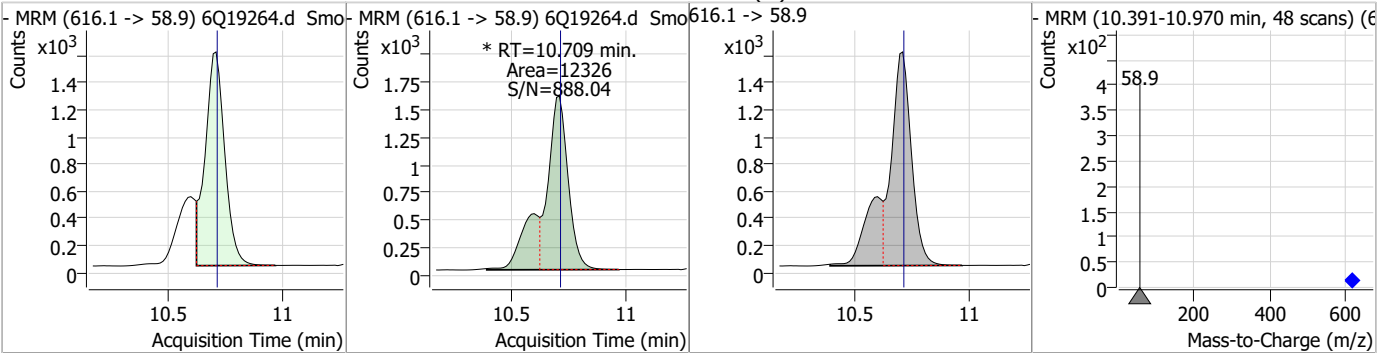
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.56	10.14	0.00	1006	699.1 -> 98.8	51.9	29.1	87.2



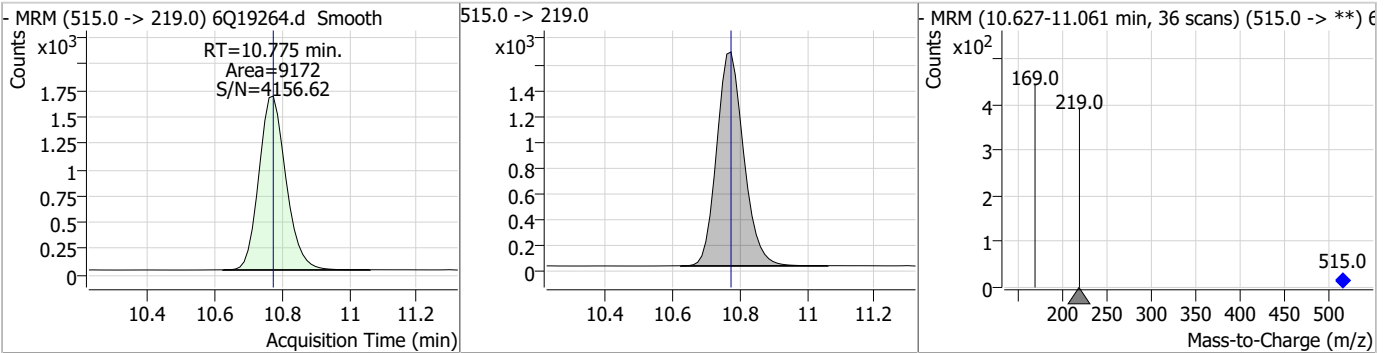
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	17.12	10.68	0.00	85650				



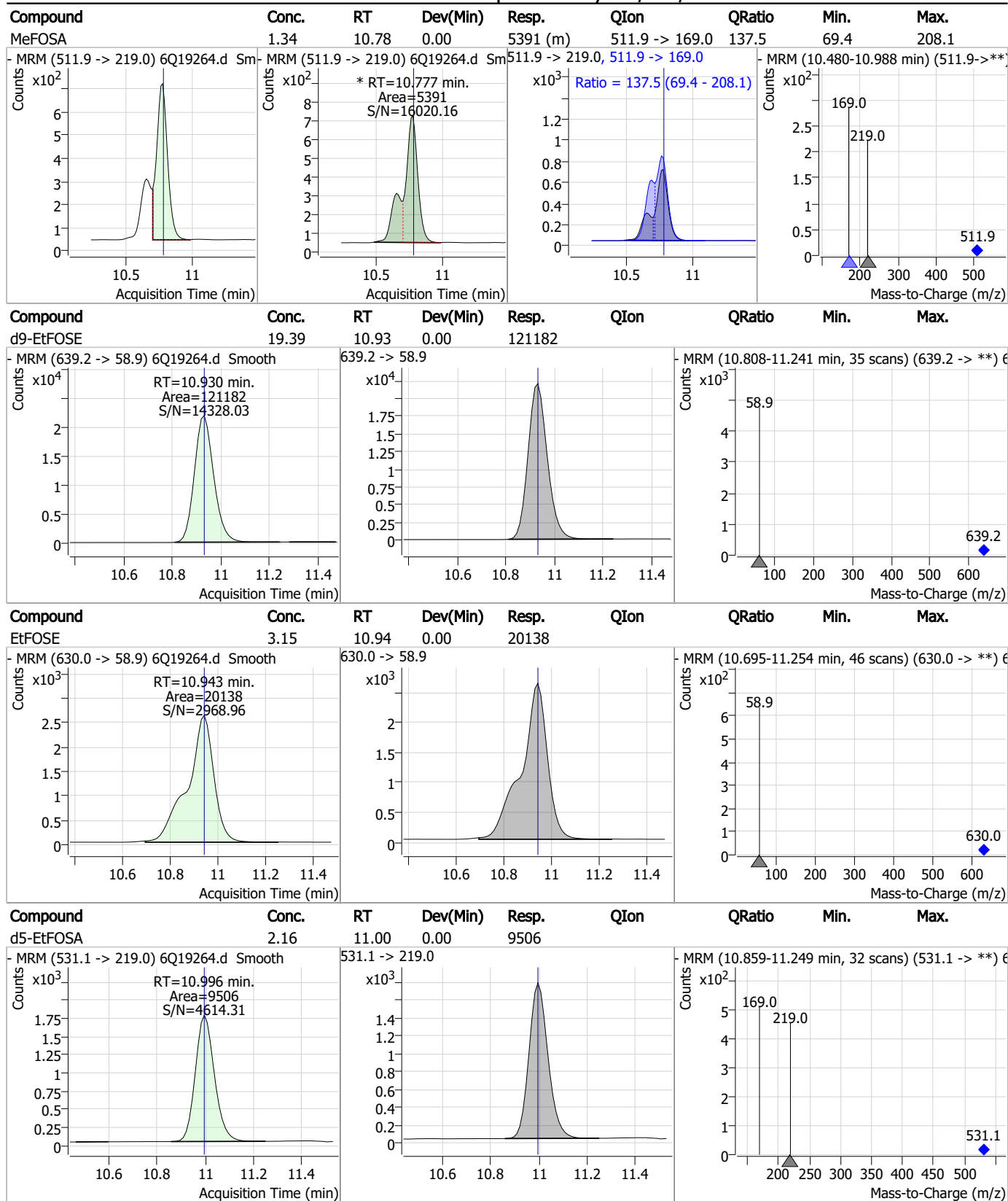
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	3.29	10.71	0.00	12326 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.02	10.78	0.00	9172				

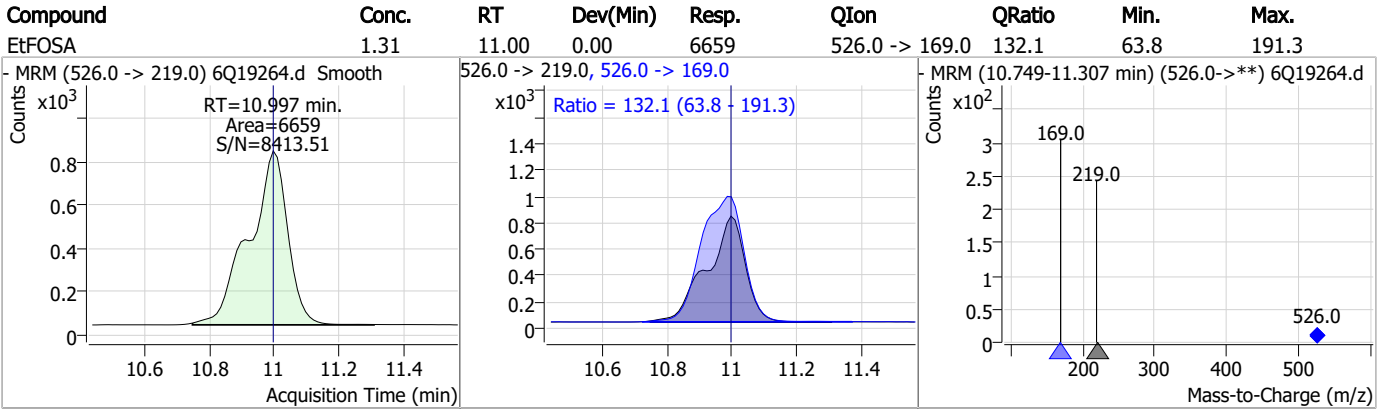


Perfluorinated Compounds by LC/MS/MS



7.3.4
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Perfluorinated Compounds by LC/MS/MS



7.3.4

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Manual Integration Approval Summary

Sample Number: OP97275-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q19264.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 21:24 Supervisor approved: 06/13/23 13:39 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

7.3.4.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18706.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:36:40 PM
 Sample Name : op97143-ms
 Vial : P3-C5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	142650	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	46429	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	50223	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	49280	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	74622	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	32566	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	18553	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	23652	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	22751	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11133	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	17449	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	19152	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11484	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	10058	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	2831	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4318	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4283	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	22581	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	31450	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	20485	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	57273	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	87295	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	7578	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	7603	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	13925	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	58425	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8388	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	75618	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	26362	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	41060	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	47525	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2831	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4318	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4283	5.20 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C2-PFDoDA	8.900	615.1 -> 570.0	22751	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11133	1.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.4%		
13C3-PFBS	5.334	302.1 -> 79.9	19152	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	11484	2.45 µg/L	0.000

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C4-PFBA	2.860	216.8 -> 171.9	142650	10.25 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	49280	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFHxA	5.417	318.0 -> 273.0	50223	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C5-PFPeA	4.222	268.3 -> 223.0	46429	5.02 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.027	519.1 -> 474.1	18553	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C7-PFUnDA	8.468	570.0 -> 525.1	23652	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-FOSA	9.598	506.1 -> 77.8	17449	1.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.8%	
13C8-PFOA	7.026	421.1 -> 376.0	74622	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.165	507.1 -> 79.9	10058	2.25 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.2%	
13C9-PFNA	7.545	472.1 -> 427.0	32566	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSAA	8.072	573.2 -> 419.0	22581	5.02 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	31450	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	7603	1.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 70.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	20485	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	57273	16.38 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 65.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	87295	19.08 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 76.3%	
d5-EtFOSA	10.972	531.1 -> 219.0	7578	1.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.4%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	45101	10.97 µg/L	98
		327.1 -> 80.9	17384		
6:2FTS	6.801	427.1 -> 407.0	47399	11.17 µg/L	97
		427.1 -> 80.9	15648		
8:2FTS	7.816	527.1 -> 507.0	25373	10.65 µg/L	93
		527.1 -> 80.8	10863		
EtFOSAA	8.280	584.2 -> 419.1	7239	2.75 µg/L	99
		584.2 -> 526.0	4070		
FOSA	9.589	498.1 -> 77.9	21710	3.59 µg/L	99
		498.1 -> 478.0	685		
MeFOSAA	8.085	570.1 -> 419.0	13603	2.93 µg/L	94
		570.1 -> 483.0	2531		
PFBA	2.868	212.8 -> 168.9	57256	12.12 µg/L	100
PFBS	5.335	298.7 -> 79.9	16633	2.55 µg/L	99
		298.7 -> 98.8	6499		
PFDA	8.027	512.9 -> 469.0	66620	3.10 µg/L	96
		512.9 -> 219.0	9604		
PFDoDA	8.900	613.1 -> 569.0	43600	2.79 µg/L	98
		613.1 -> 319.0	6488		
PFDS	9.052	599.0 -> 79.9	6735	2.68 µg/L	97

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3296	4.02 µg/L	100
		363.1 -> 319.0	87682		
PFHpS	7.685	363.1 -> 169.0	14912	3.03 µg/L	94
		449.0 -> 79.9	14625		
PFHxA	5.420	449.0 -> 98.9	7128	4.76 µg/L	100
		313.0 -> 269.0	80250		
PFHxS	7.131	313.0 -> 118.9	4174	6.10 µg/L	94
		398.7 -> 79.9	31658		
PFNA	7.545	398.7 -> 98.9	15042	3.16 µg/L	100
		463.0 -> 419.0	72962		
PFNS	8.631	463.0 -> 219.0	14154	2.70 µg/L	99
		548.8 -> 79.9	10917		
PFOA	7.028	548.8 -> 98.9	5691	4.20 µg/L	95
		413.0 -> 369.0	133779		
PFOS	8.166	413.0 -> 169.0	23060	9.18 µg/L	98
		498.9 -> 79.9	42203		
PFPeA	4.224	498.9 -> 98.8	20718	8.53 µg/L	100
		263.0 -> 219.0	95097		
PFPeS	6.422	349.1 -> 79.9	15264	2.95 µg/L	98
		349.1 -> 98.9	7090		
PFTeDA	9.628	713.1 -> 669.0	34878	3.18 µg/L	99
		713.1 -> 168.9	2753		
PFTrDA	9.284	663.0 -> 619.0	43430	2.75 µg/L	96
		663.0 -> 168.9	4832		
PFUnDA	8.468	563.1 -> 519.0	45502	2.96 µg/L	90
		563.1 -> 269.1	7030		
11CI-PF3OUdS	9.323	630.9 -> 450.9	58936	4.99 µg/L	99
		632.9 -> 452.9	19054		
9CI-PF3ONS	8.495	530.8 -> 351.0	94970	5.11 µg/L	97
		532.8 -> 353.0	29701		
ADONA	6.632	376.9 -> 250.9	226359	5.42 µg/L	100
		376.9 -> 84.8	60811		
HFPO-DA	5.783	284.9 -> 168.9	15504	5.82 µg/L	96
		284.9 -> 184.9	1850		
3:3FTCA	3.709	241.0 -> 177.0	8611	12.06 µg/L	91
		241.0 -> 117.0	1128		
5:3FTCA	6.086	341.0 -> 237.1	192415	63.43 µg/L	94
		341.0 -> 217.0	147412		
7:3FTCA	7.523	441.0 -> 316.9	135191	65.07 µg/L	99
		441.0 -> 336.9	313999		
EtFOSA	10.974	526.0 -> 219.0	17074	4.83 µg/L	99
		526.0 -> 169.0	23146		
EtFOSE	10.907	630.0 -> 58.9	50276	12.91 µg/L	100
		511.9 -> 219.0	14738		
MeFOSA	10.741	511.9 -> 169.0	20654	5.27 µg/L	88
		616.1 -> 58.9	30875		
MeFOSE	10.673	699.1 -> 79.9	2959	13.56 µg/L	100
		699.1 -> 98.8	1793		
PFDoDS	9.755	295.0 -> 201.0	12068	2.65 µg/L	87
		295.0 -> 84.9	3168		
NFDHA	5.299	279.0 -> 85.1	44866	5.88 µg/L	91
		229.0 -> 84.9	34837		
PFMBA	4.638	314.8 -> 134.9	111773	5.91 µg/L	100
		314.8 -> 82.9	3870		
PFMPA	3.388			5.90 µg/L	100
PFEESA	5.875			5.22 µg/L	99

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

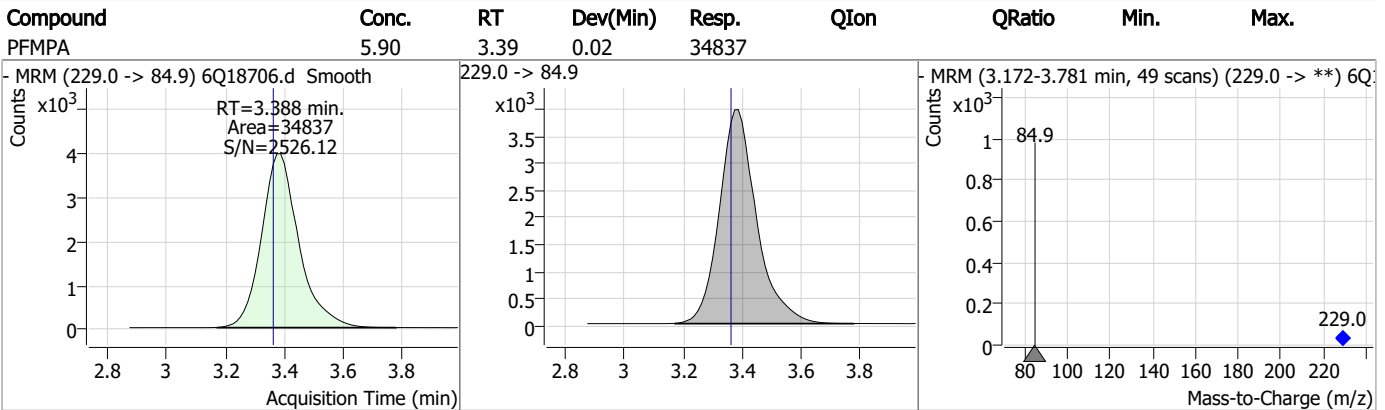
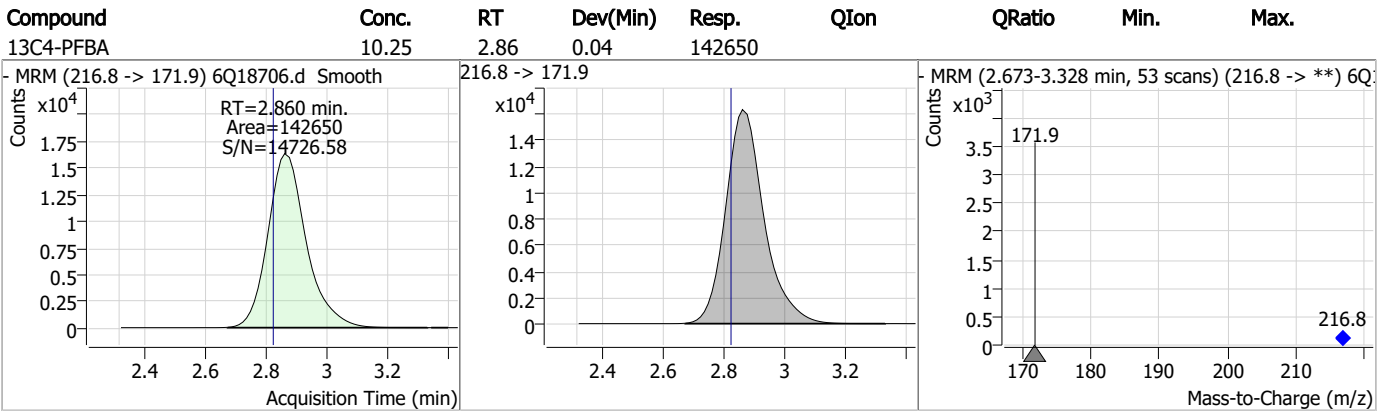
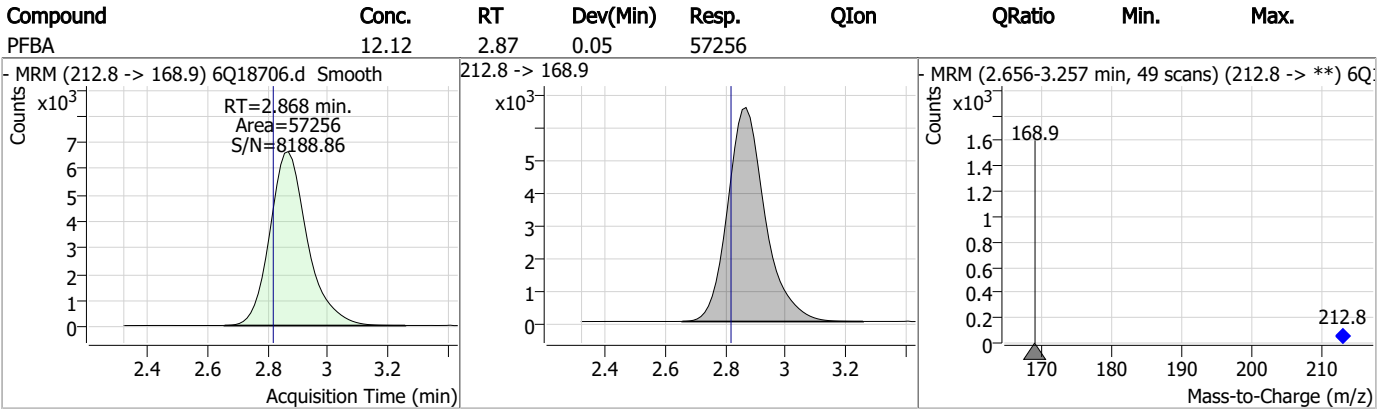
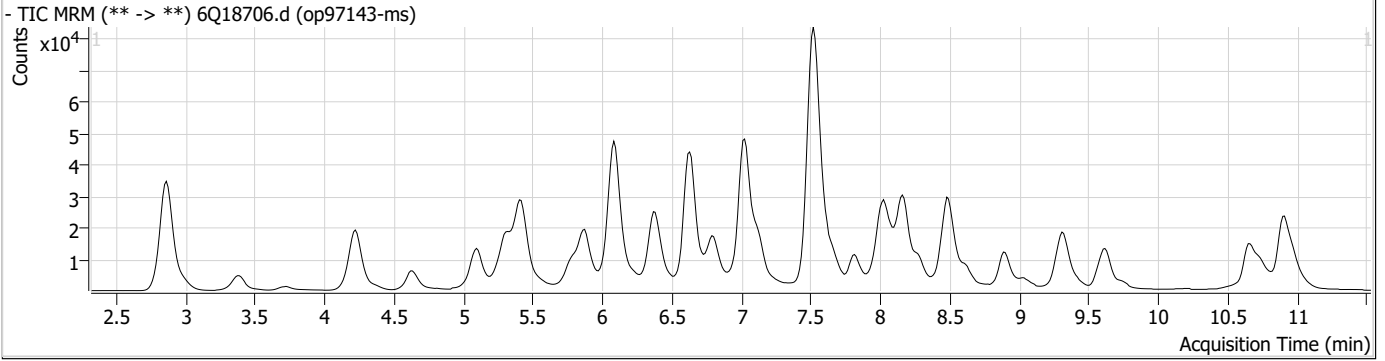
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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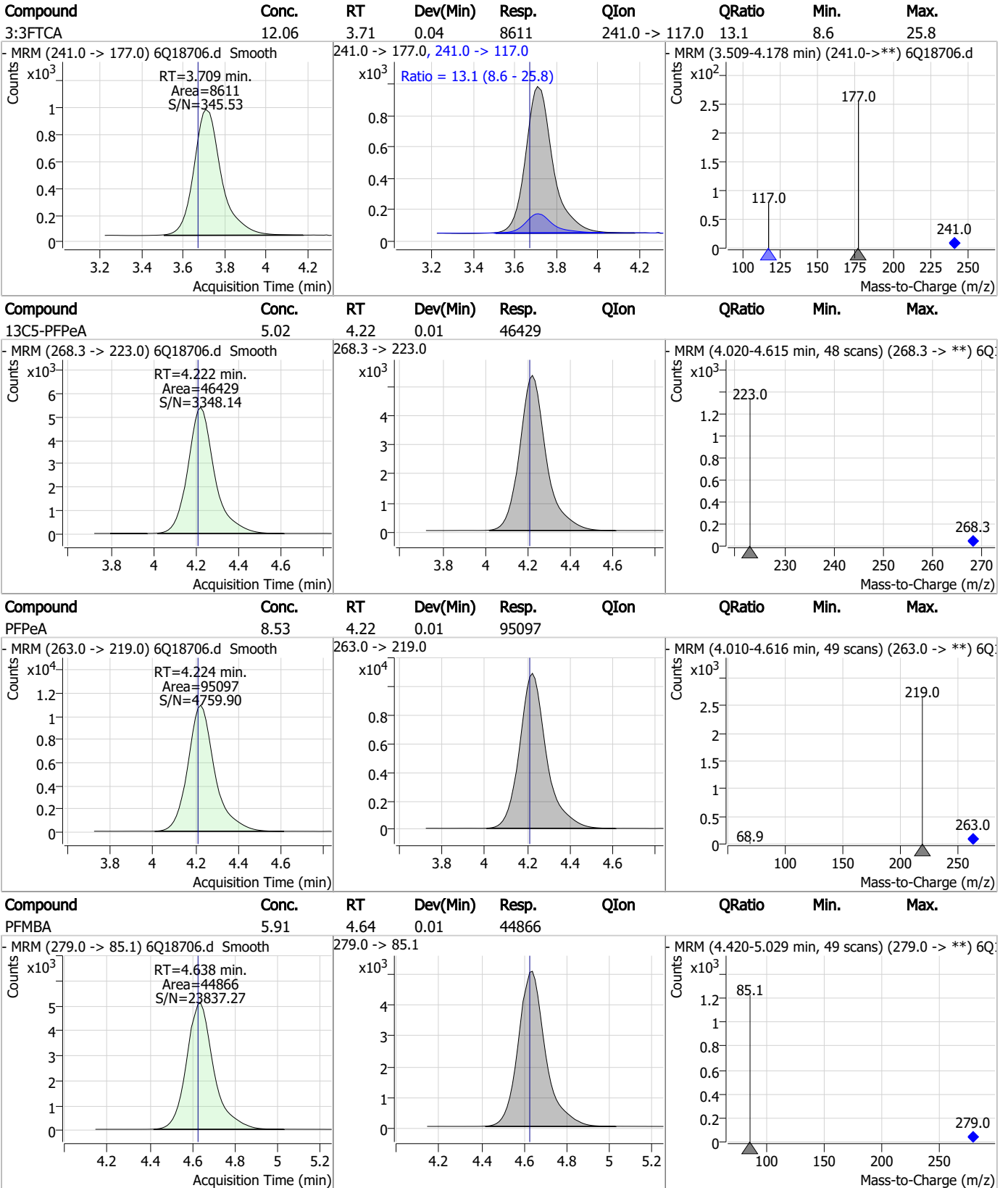
7.4.1

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Perfluorinated Compounds by LC/MS/MS



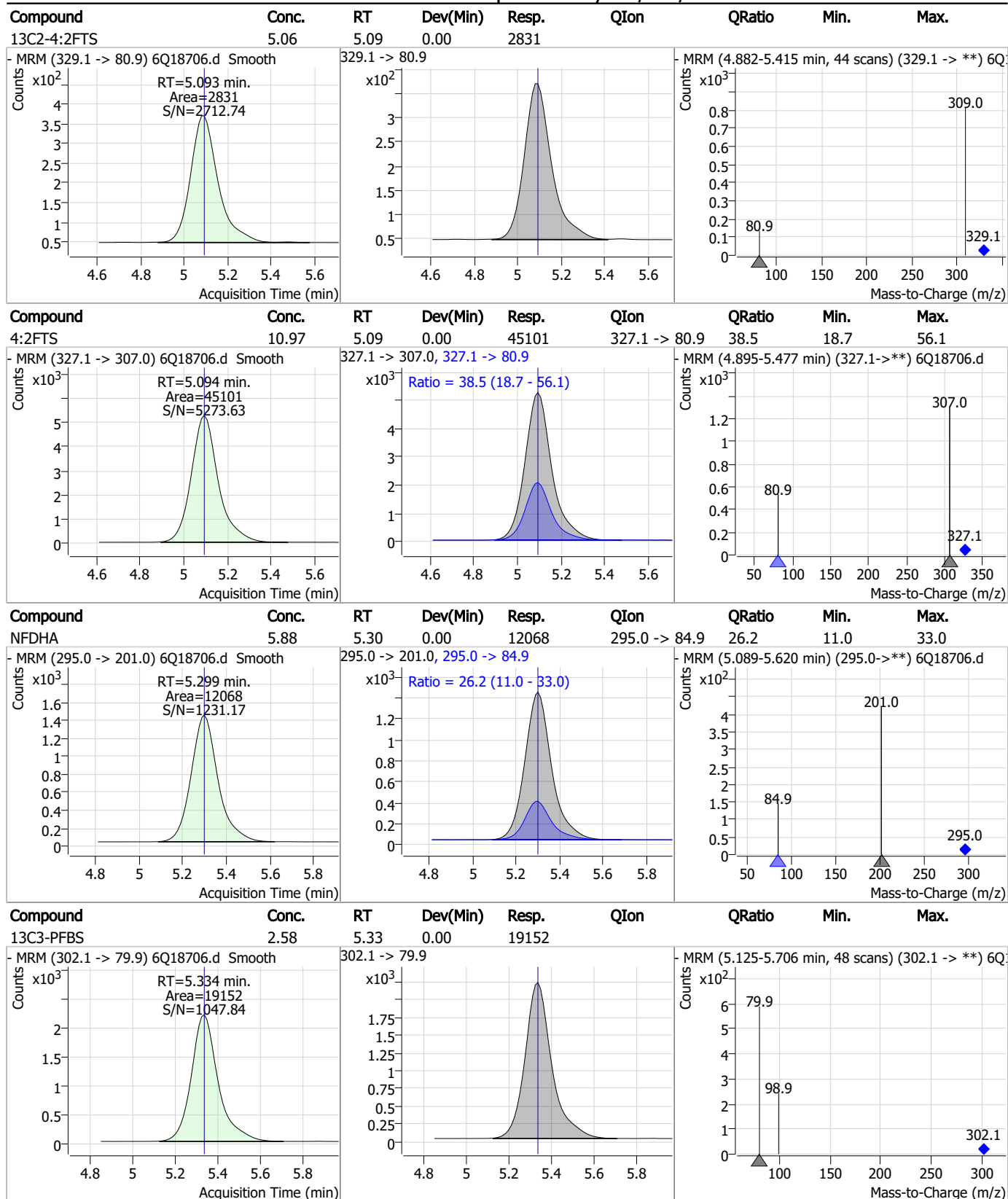
Perfluorinated Compounds by LC/MS/MS



7.4.1

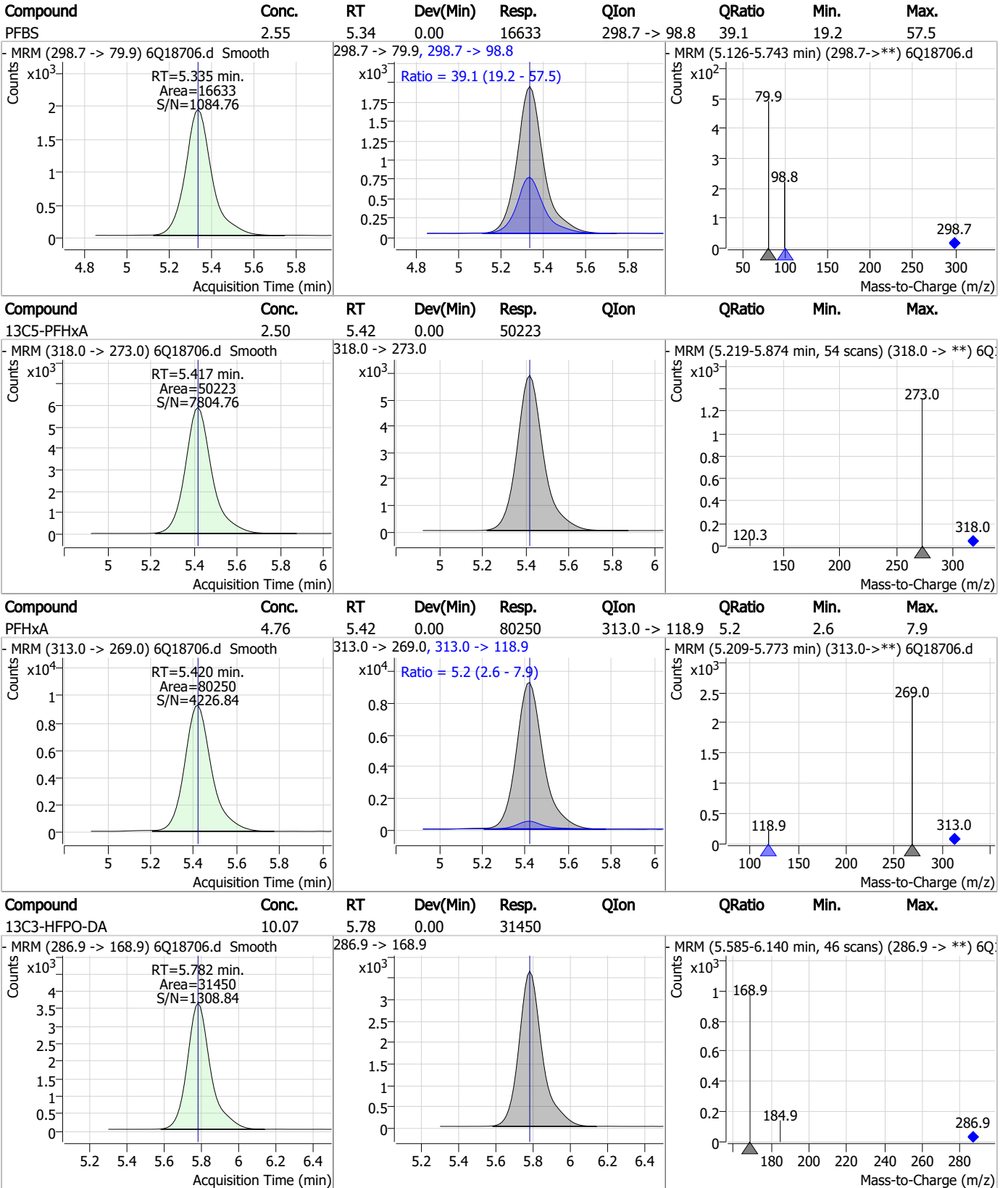
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Perfluorinated Compounds by LC/MS/MS



7.4.1
7

Perfluorinated Compounds by LC/MS/MS

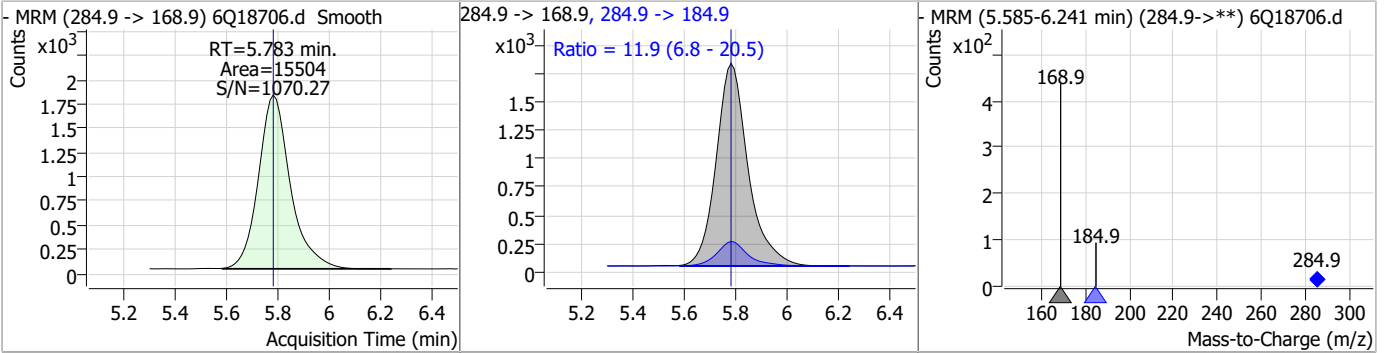


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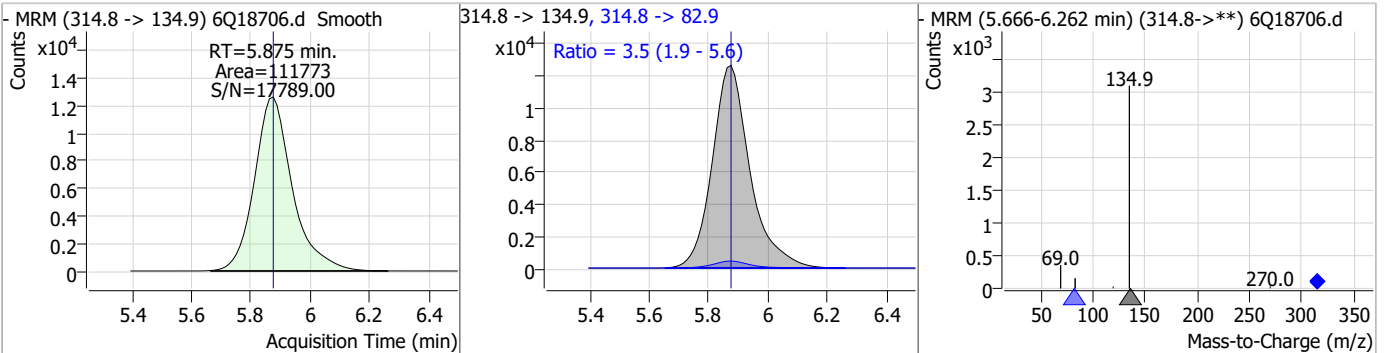
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Perfluorinated Compounds by LC/MS/MS

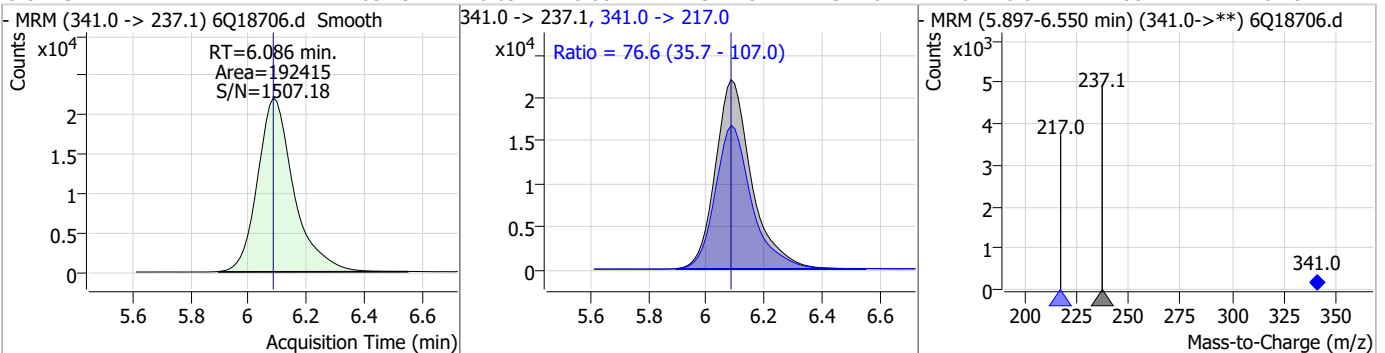
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.82	5.78	0.00	15504	284.9 -> 184.9	11.9	6.8	20.5



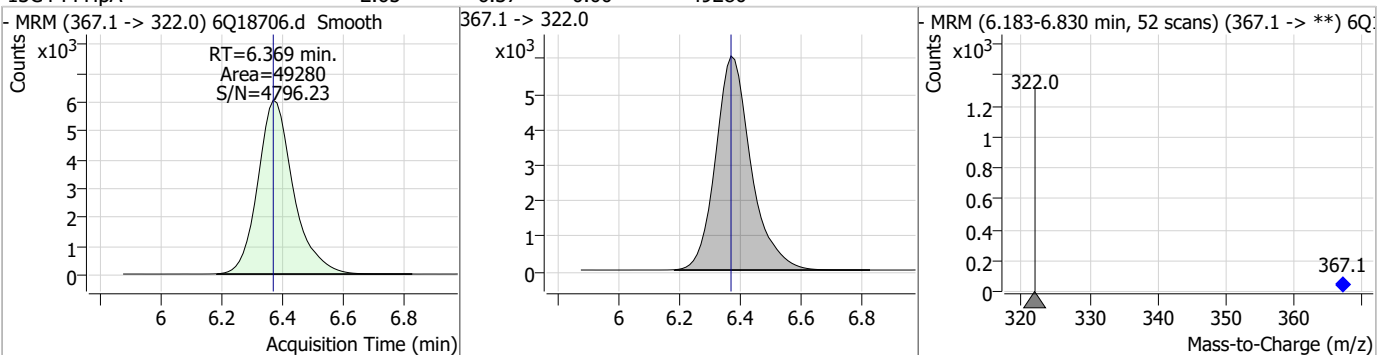
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.22	5.88	0.00	111773	314.8 -> 82.9	3.5	1.9	5.6



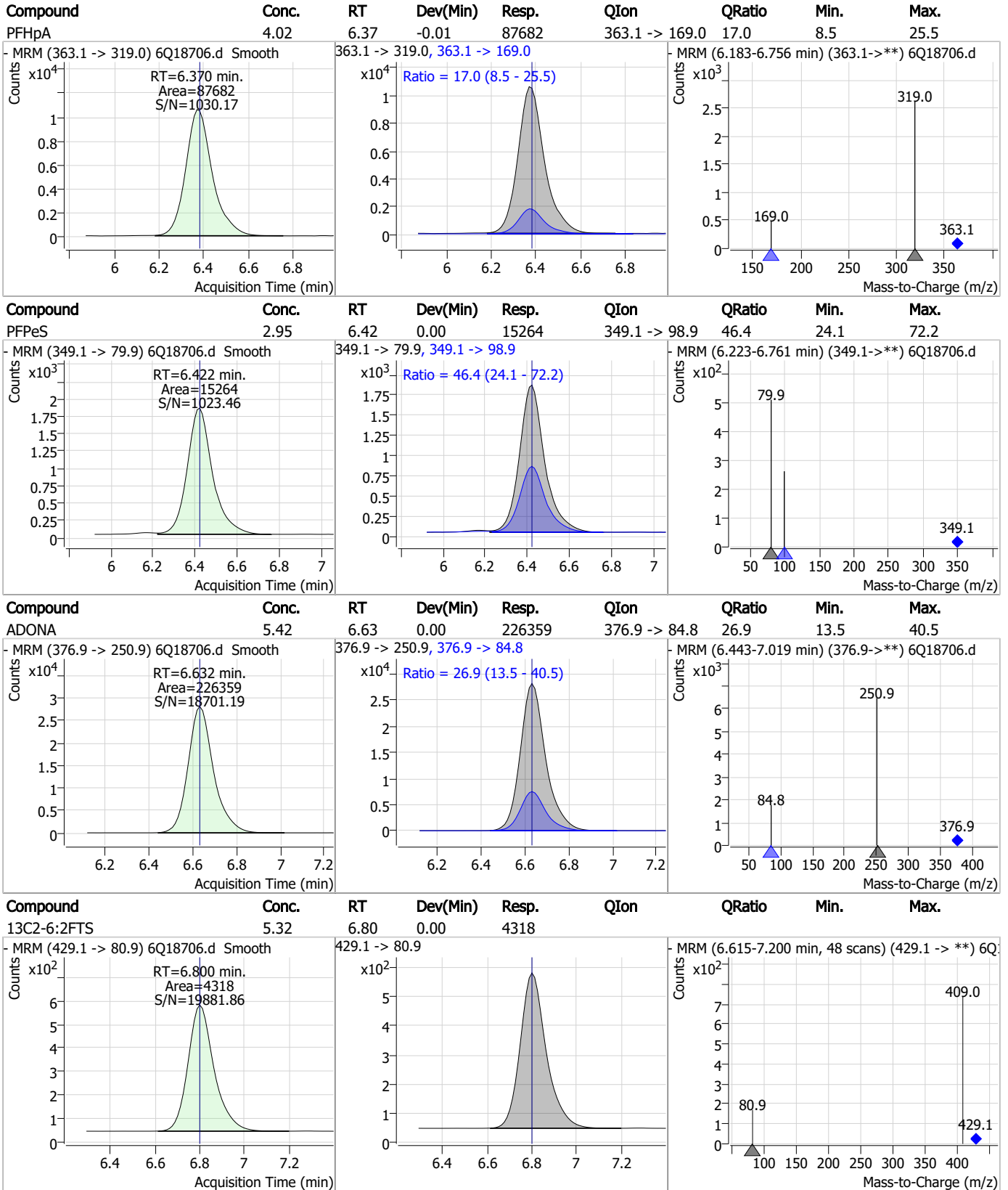
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.43	6.09	0.00	192415	341.0 -> 217.0	76.6	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.65	6.37	0.00	49280	367.1 -> 322.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

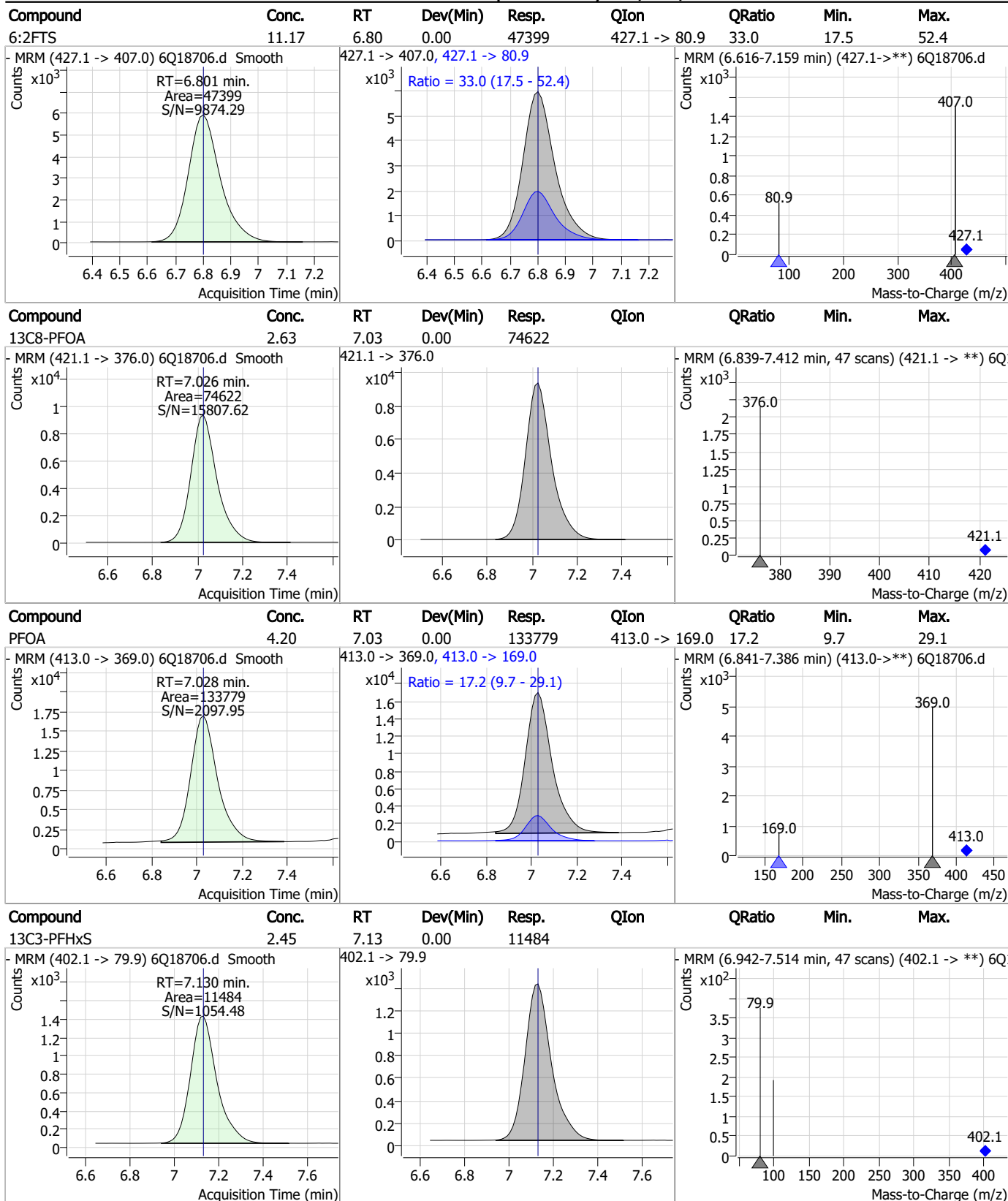


7.4.1

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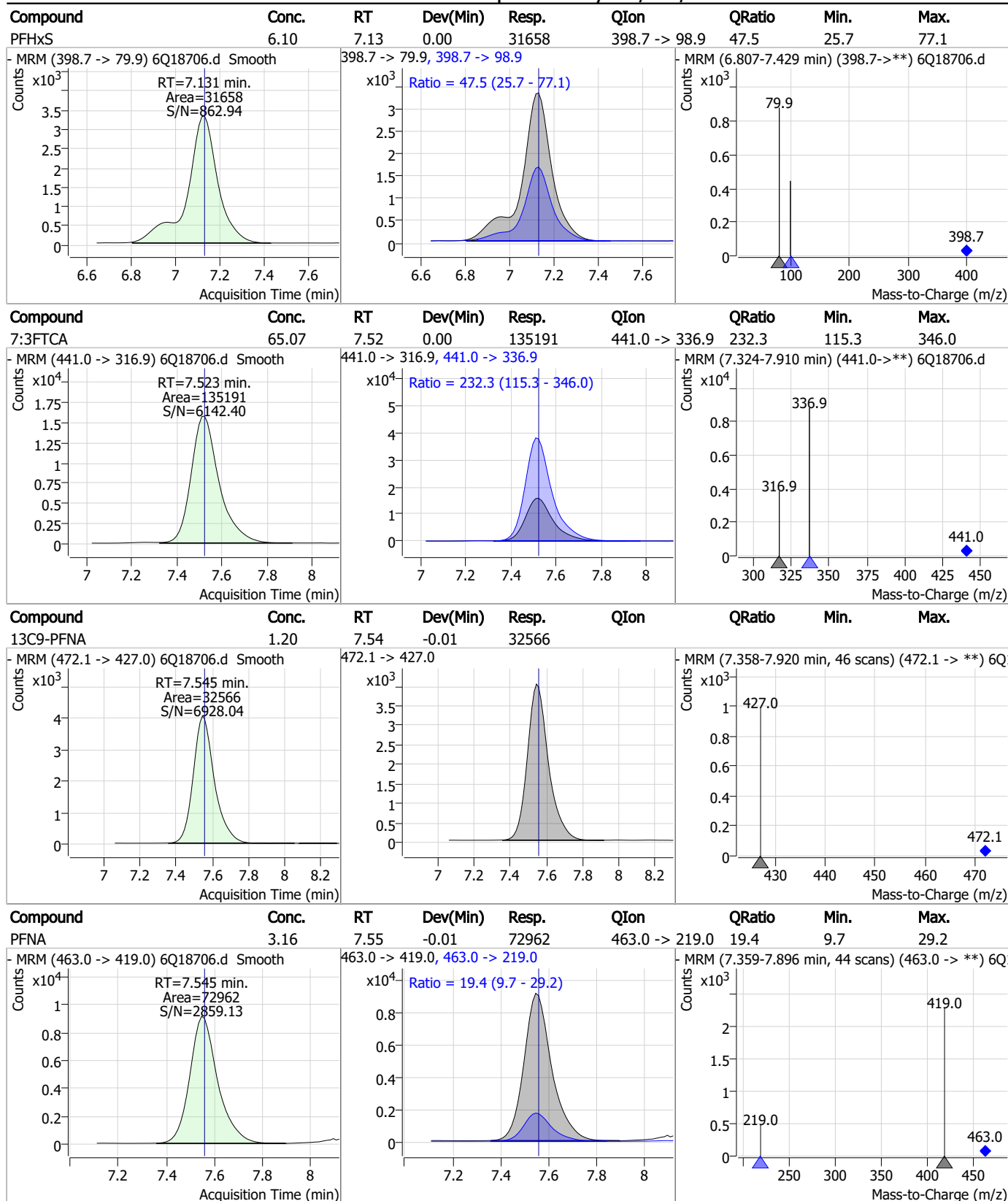


Perfluorinated Compounds by LC/MS/MS



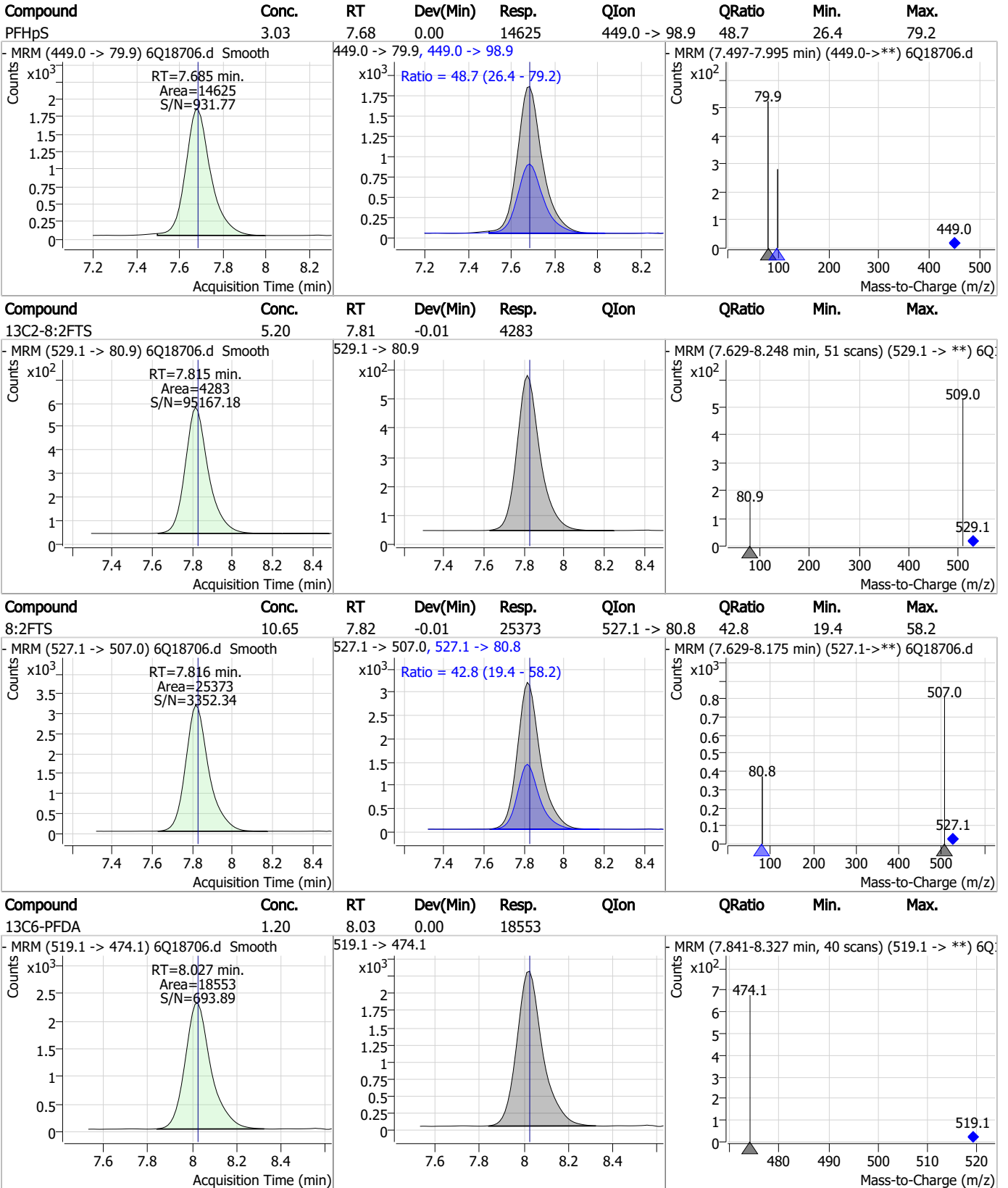
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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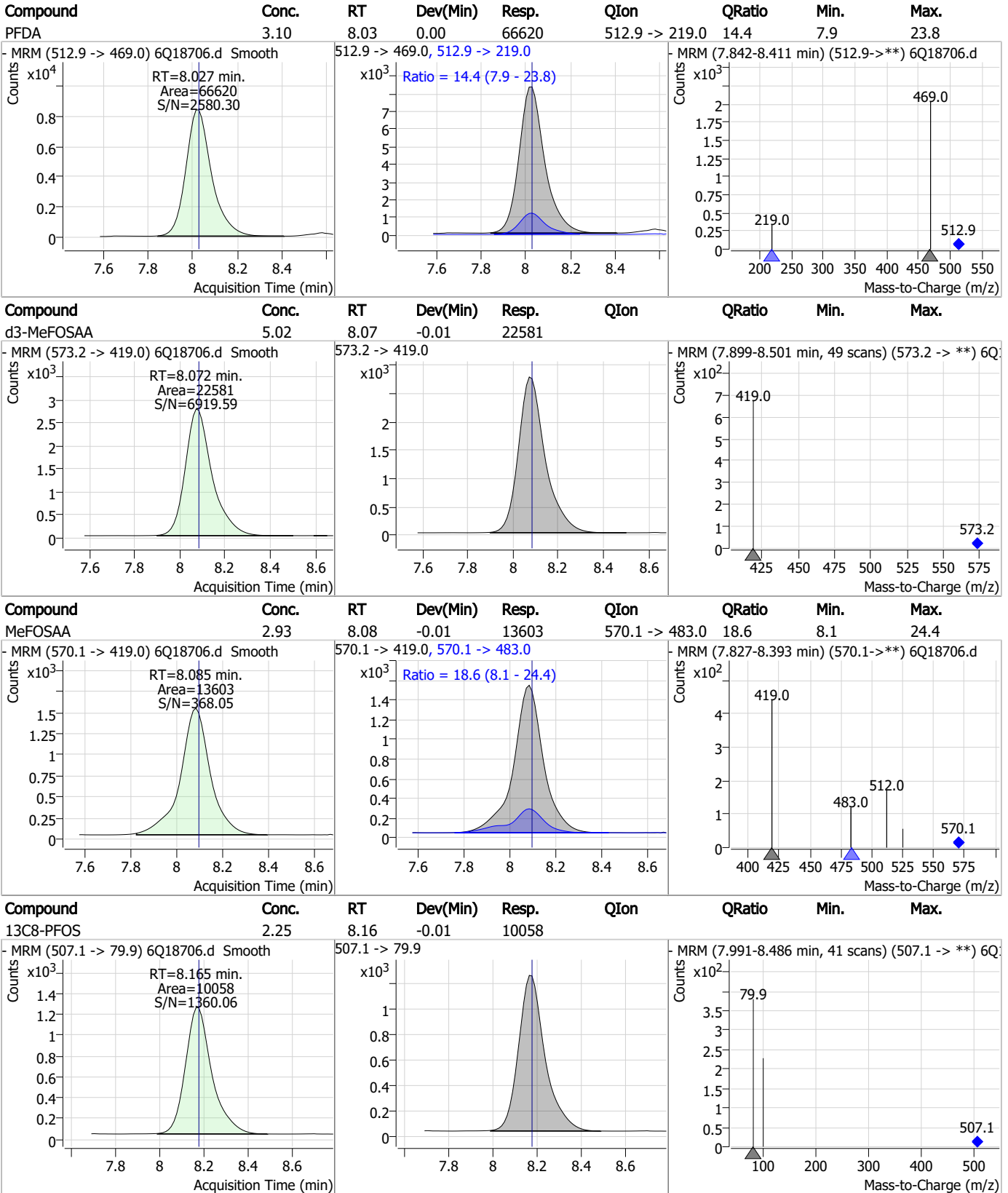
Perfluorinated Compounds by LC/MS/MS



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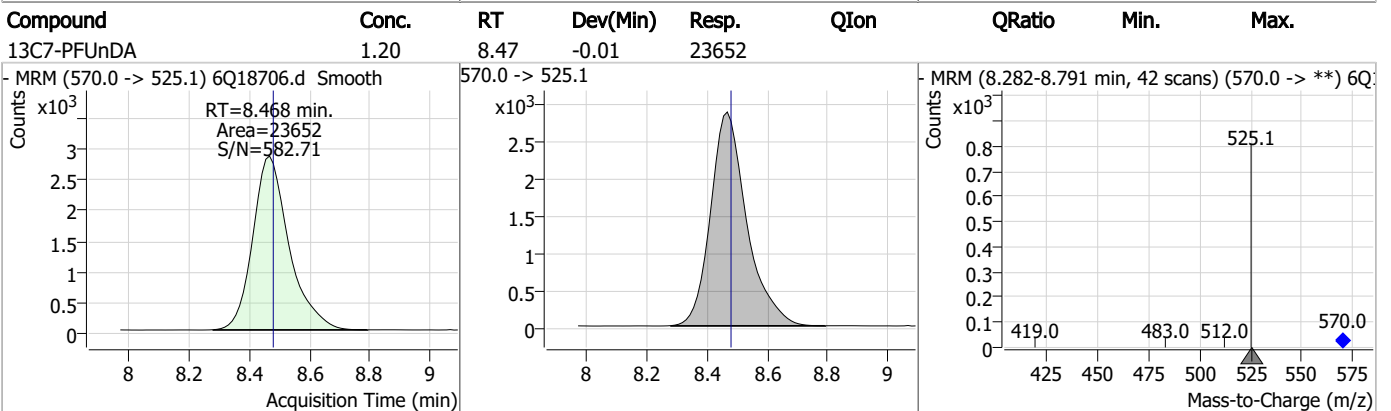
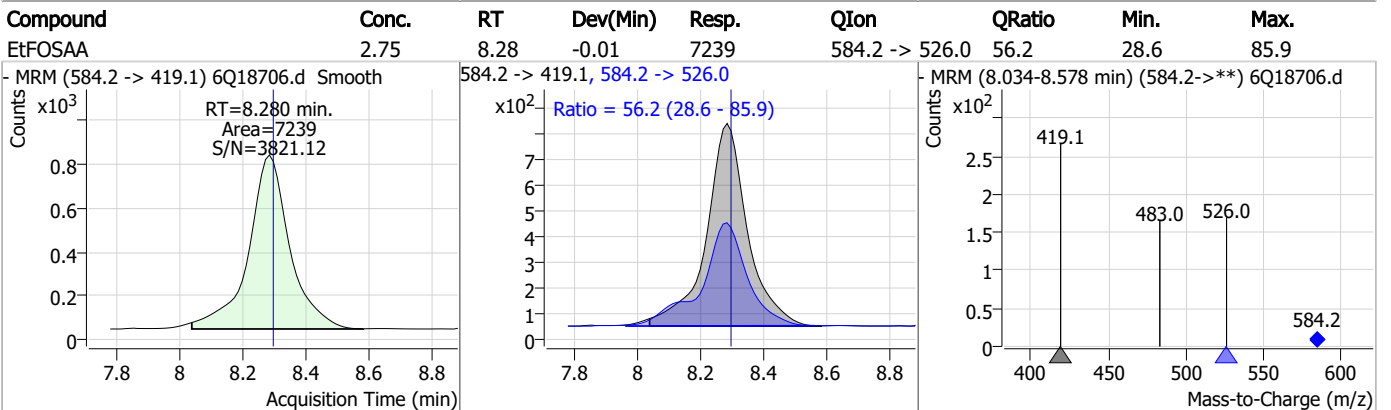
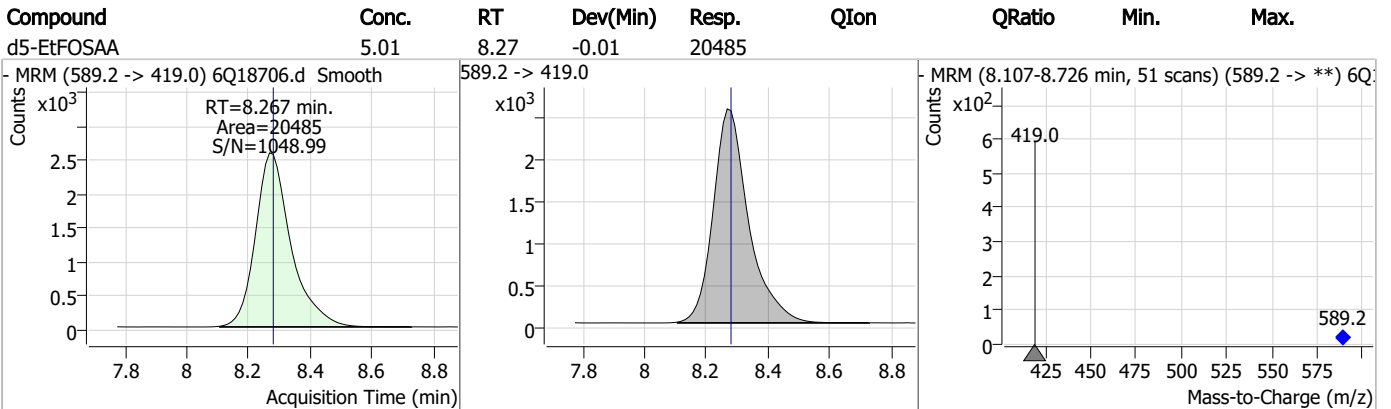
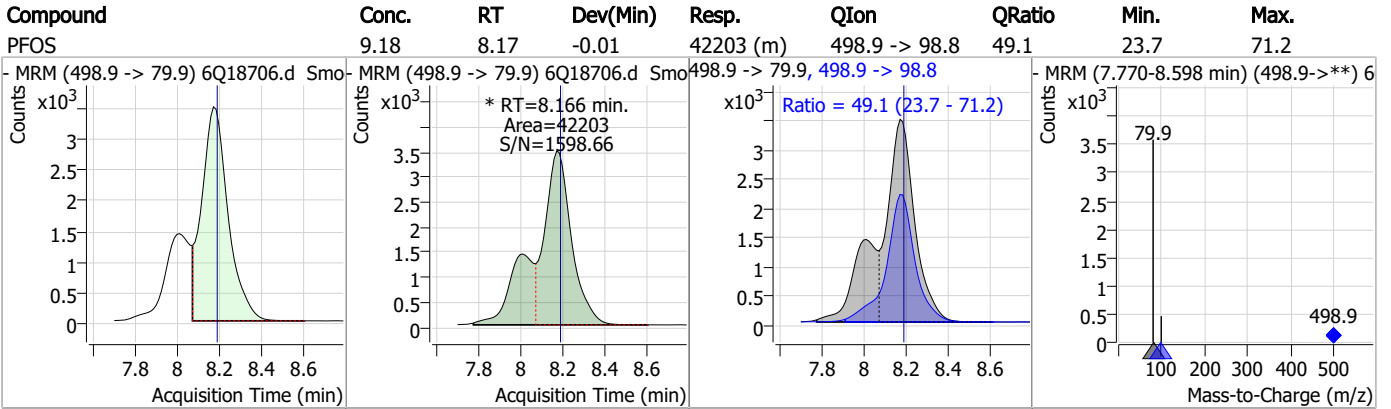
Perfluorinated Compounds by LC/MS/MS



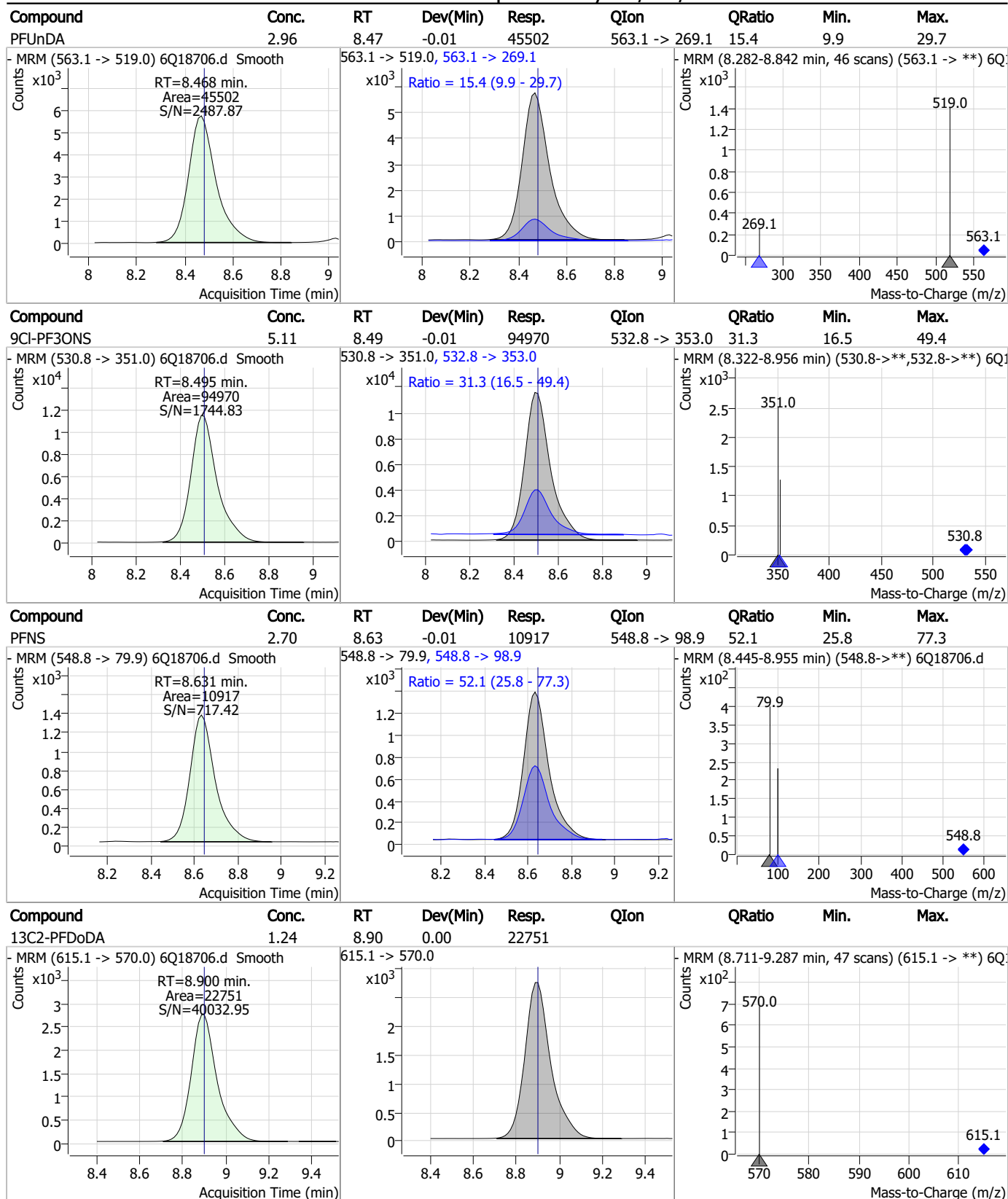
7.4.1

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Perfluorinated Compounds by LC/MS/MS



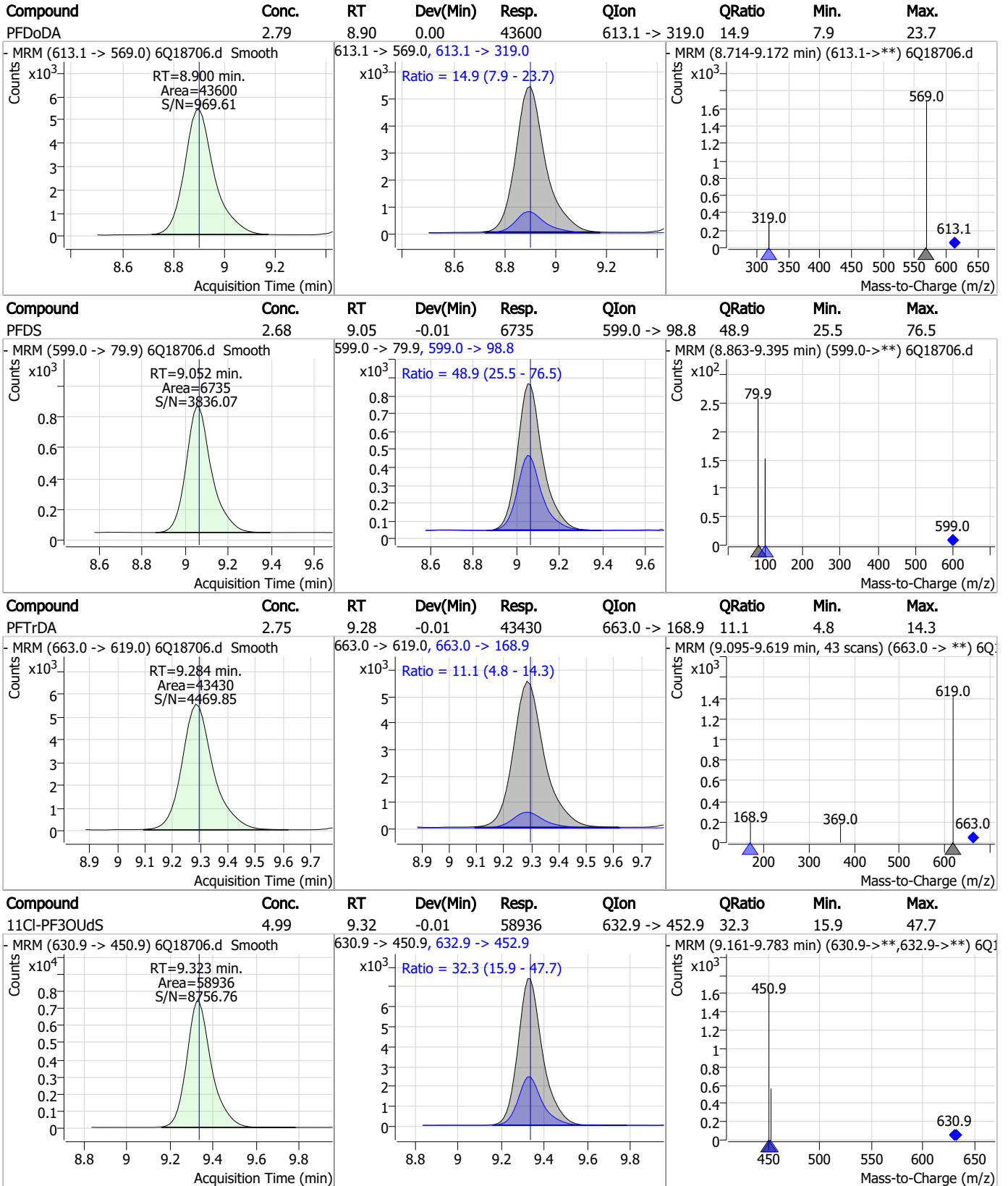
Perfluorinated Compounds by LC/MS/MS



7.4.1

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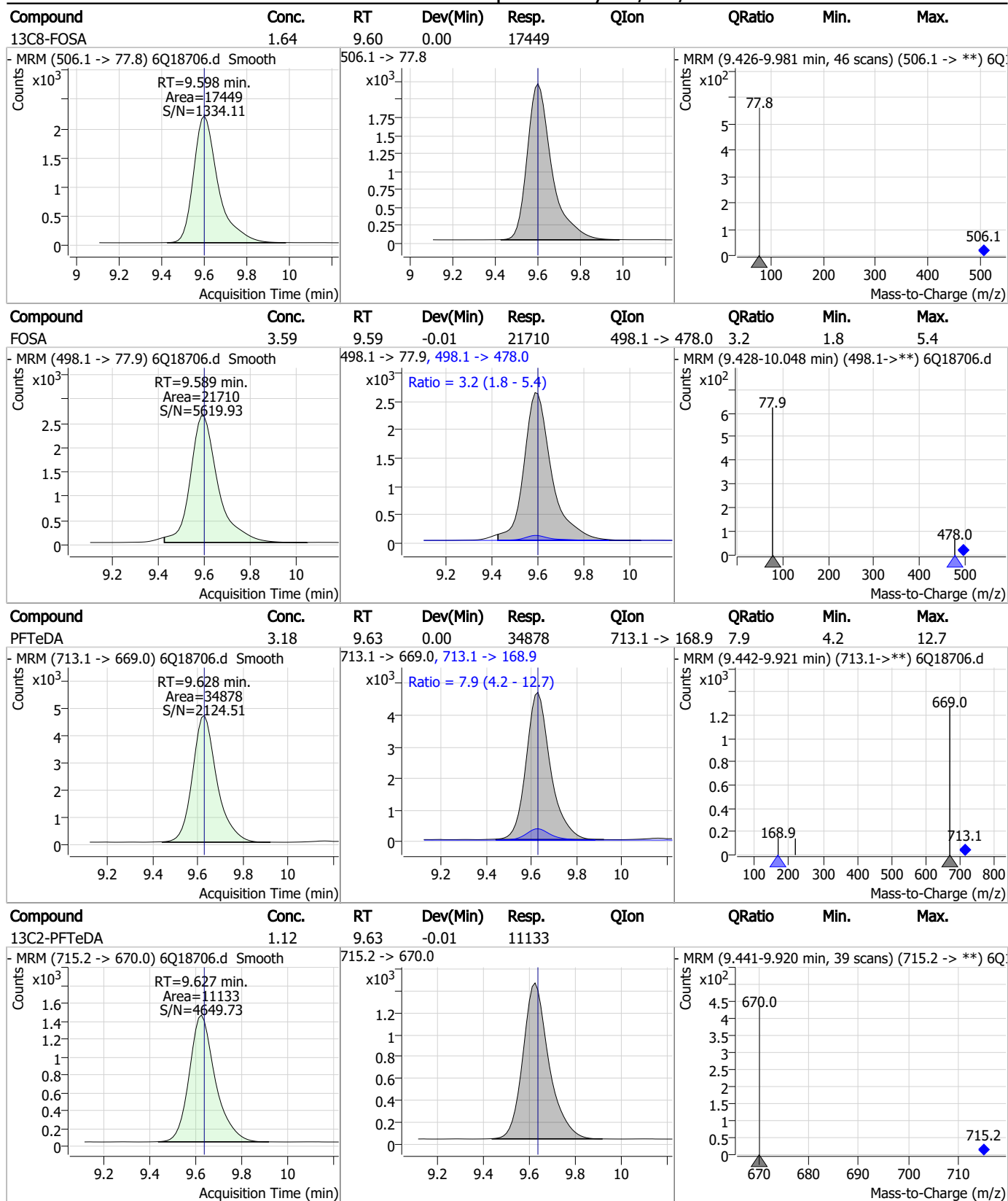
Perfluorinated Compounds by LC/MS/MS



7.4.1

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Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

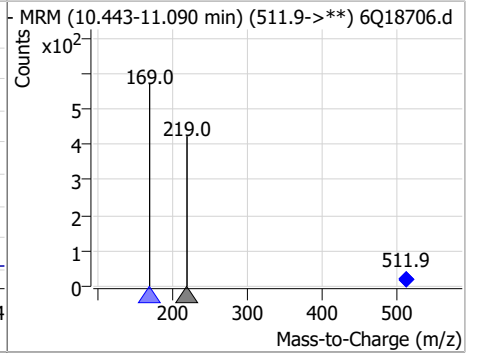
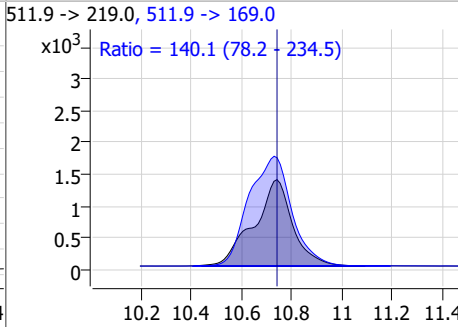
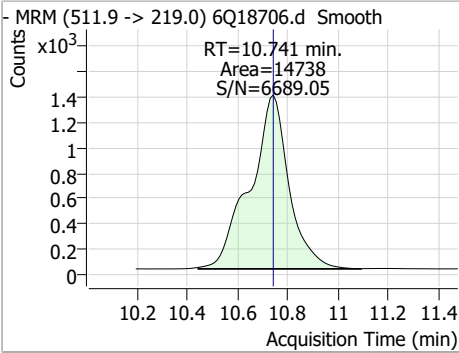
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.65	9.75	0.00	2959	699.1 -> 98.8	60.6	25.7	77.0
d7-MeFOSE	16.38	10.65	-0.01	57273				
MeFOSE	13.56	10.67	0.00	30875				
d3-MeFOSA	1.77	10.74	0.00	7603				

7.4.1
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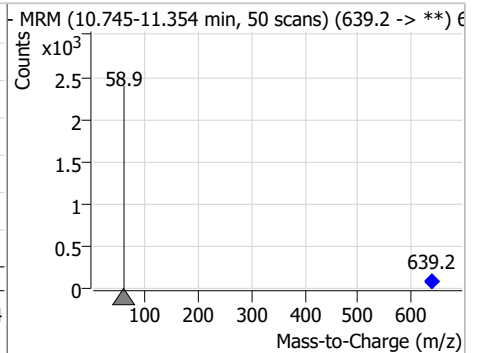
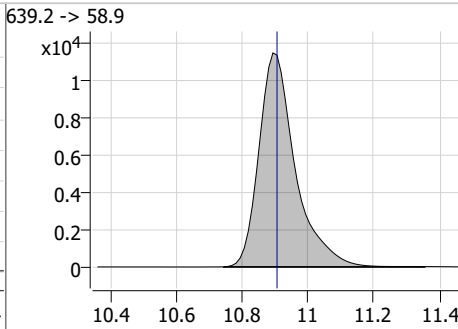
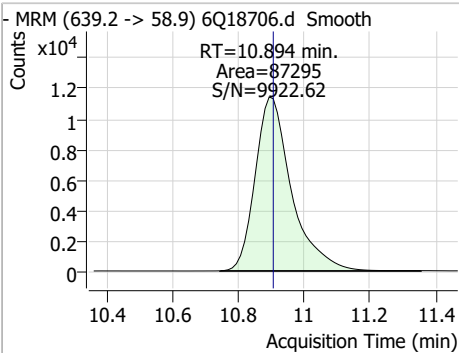


Perfluorinated Compounds by LC/MS/MS

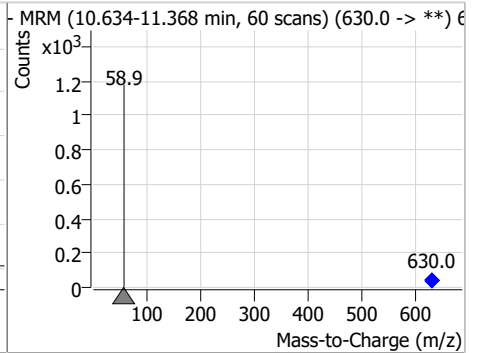
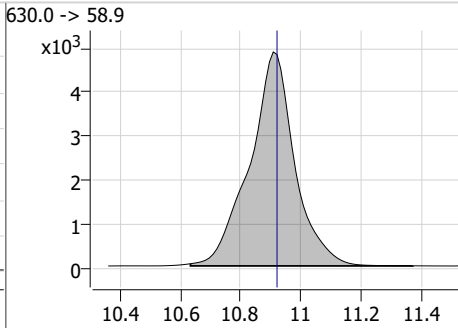
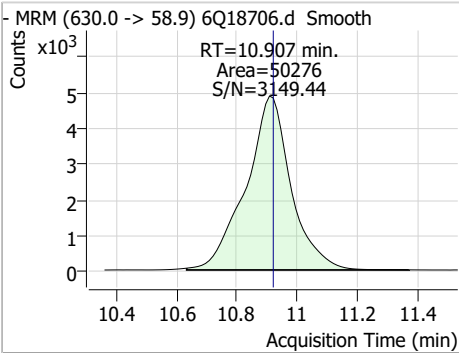
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.27	10.74	0.00	14738	511.9 -> 169.0	140.1	78.2	234.5



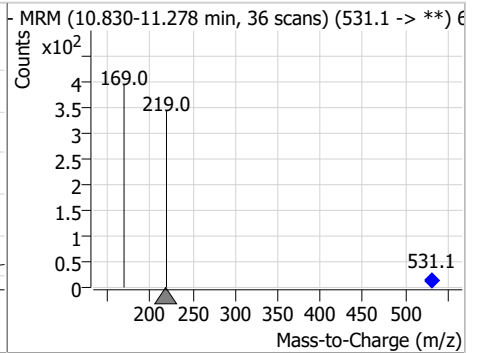
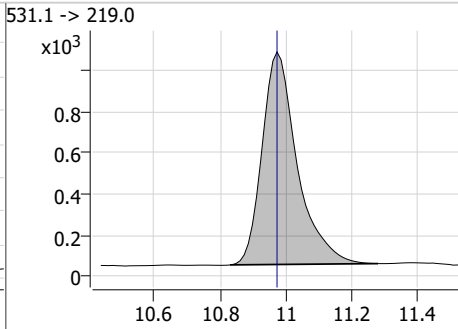
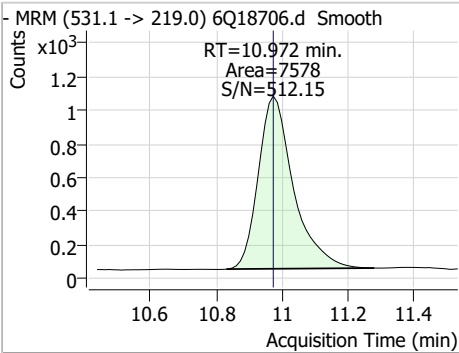
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	19.08	10.89	-0.01	87295				



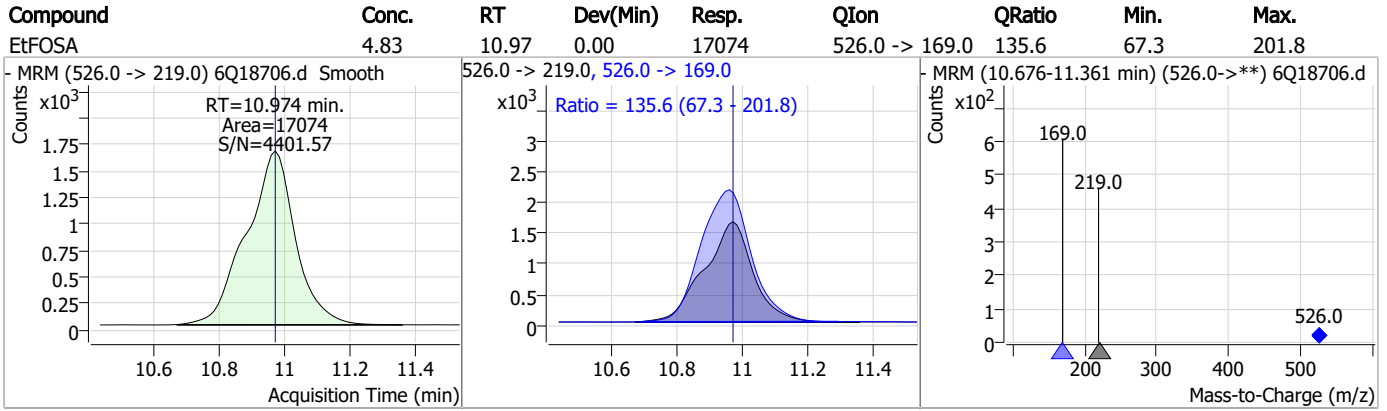
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.91	10.91	-0.01	50276				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	1.86	10.97	0.00	7578				



Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP97143-MS Method: EPA DRAFT 1633
Lab FileID: 6Q18706.D Analyst approved: 06/05/23 12:52 Martha Valls
Injection Time: 06/01/23 22:36 Supervisor approved: 06/06/23 13:23 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.4.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18707.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:51:08 PM
 Sample Name : op97143-msd
 Vial : P3-C6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP97143,S6Q280,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	145815	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	47654	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	51697	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	48659	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	72299	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	32245	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	19276	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	24294	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	23524	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	11310	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	19336	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	19487	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	11678	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	10746	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3100	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4335	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4409	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	21820	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	33270	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	19324	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	65648	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	97342	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	8448	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	8063	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	14485	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	58313	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	8335	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	75282	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	26758	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	39494	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	46836	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3100	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4335	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4409	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	23524	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	11310	1.12 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.5%		
13C3-PFBS	5.334	302.1 -> 79.9	19487	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C3-PFHxS	7.130	402.1 -> 79.9	11678	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	2.860	216.8 -> 171.9	145815	10.50 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C4-PFHpA	6.369	367.1 -> 322.0	48659	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C5-PFHxA	5.417	318.0 -> 273.0	51697	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C5-PFPeA	4.222	268.3 -> 223.0	47654	5.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C6-PFDA	8.027	519.1 -> 474.1	19276	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	24294	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-FOSA	9.598	506.1 -> 77.8	19336	1.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 70.0%	
13C8-PFOA	7.026	421.1 -> 376.0	72299	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOS	8.177	507.1 -> 79.9	10746	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C9-PFNA	7.545	472.1 -> 427.0	32245	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	21820	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	33270	10.81 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	8063	1.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.1%	
d5-EtFOSAA	8.279	589.2 -> 419.0	19324	4.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
d7-MeFOSE	10.647	623.2 -> 58.9	65648	18.05 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 72.2%	
d9-EtFOSE	10.894	639.2 -> 58.9	97342	20.46 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	8448	1.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.8%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	45247	10.05 µg/L	98
		327.1 -> 80.9	16383		
6:2FTS	6.801	427.1 -> 407.0	45221	10.61 µg/L	96
		427.1 -> 80.9	14831		
8:2FTS	7.816	527.1 -> 507.0	25294	10.31 µg/L	98
		527.1 -> 80.8	10105		
EtFOSAA	8.280	584.2 -> 419.1	7523	3.03 µg/L	94
		584.2 -> 526.0	3976		
FOSA	9.602	498.1 -> 77.9	20930	3.13 µg/L	99
		498.1 -> 478.0	658		
MeFOSAA	8.085	570.1 -> 419.0	12732	2.84 µg/L	88
		570.1 -> 483.0	2719		
PFBA	2.868	212.8 -> 168.9	55766	11.55 µg/L	100
PFBS	5.335	298.7 -> 79.9	16134	2.43 µg/L	98
		298.7 -> 98.8	5967		
PFDA	8.027	512.9 -> 469.0	60137	2.69 µg/L	97
		512.9 -> 219.0	10320		
PFDODA	8.888	613.1 -> 569.0	40613	2.51 µg/L	98
		613.1 -> 319.0	6110		
PFDS	9.052	599.0 -> 79.9	6306	2.35 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3160		
PFHpA	6.370	363.1 -> 319.0	86215	4.00 µg/L	98
		363.1 -> 169.0	13792		
PFHpS	7.685	449.0 -> 79.9	13612	2.64 µg/L	96
		449.0 -> 98.9	6791		
PFHxA	5.420	313.0 -> 269.0	77951	4.49 µg/L	100
		313.0 -> 118.9	4142		
PFHxS	7.131	398.7 -> 79.9	32161	6.09 µg/L	93
		398.7 -> 98.9	15018		
PFNA	7.545	463.0 -> 419.0	73135	3.20 µg/L	98
		463.0 -> 219.0	13616		
PFNS	8.631	548.8 -> 79.9	10127	2.35 µg/L	97
		548.8 -> 98.9	5401		
PFOA	7.028	413.0 -> 369.0	135633	4.39 µg/L	95
		413.0 -> 169.0	23001		
PFOS	8.178	498.9 -> 79.9	42348	8.62 µg/L	m 99
		498.9 -> 98.8	19824		
PFPeA	4.224	263.0 -> 219.0	93288	8.15 µg/L	100
PFPeS	6.422	349.1 -> 79.9	14645	2.78 µg/L	99
		349.1 -> 98.9	6955		
PFTeDA	9.628	713.1 -> 669.0	31527	2.83 µg/L	100
		713.1 -> 168.9	2704		
PFTrDA	9.284	663.0 -> 619.0	38867	2.38 µg/L	96
		663.0 -> 168.9	4263		
PFUnDA	8.468	563.1 -> 519.0	44160	2.80 µg/L	91
		563.1 -> 269.1	7017		
11CI-PF3OUdS	9.336	630.9 -> 450.9	57984	4.64 µg/L	99
		632.9 -> 452.9	18072		
9CI-PF3ONS	8.508	530.8 -> 351.0	89010	4.53 µg/L	100
		532.8 -> 353.0	29283		
ADONA	6.632	376.9 -> 250.9	220389	4.99 µg/L	100
		376.9 -> 84.8	59373		
HFPO-DA	5.783	284.9 -> 168.9	14317	5.08 µg/L	97
		284.9 -> 184.9	1794		
3:3FTCA	3.709	241.0 -> 177.0	8126	11.09 µg/L	93
		241.0 -> 117.0	1141		
5:3FTCA	6.086	341.0 -> 237.1	195032	62.46 µg/L	98
		341.0 -> 217.0	143082		
7:3FTCA	7.510	441.0 -> 316.9	138986	64.99 µg/L	98
		441.0 -> 336.9	315893		
EtFOSA	10.974	526.0 -> 219.0	18717	4.75 µg/L	94
		526.0 -> 169.0	23957		
EtFOSE	10.907	630.0 -> 58.9	54979	12.66 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	15268	5.15 µg/L	90
		511.9 -> 169.0	21836		
MeFOSE	10.673	616.1 -> 58.9	32733	12.55 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	2885	2.42 µg/L	93
		699.1 -> 98.8	1620		
NFDHA	5.299	295.0 -> 201.0	11517	5.45 µg/L	91
		295.0 -> 84.9	3024		
PFMBA	4.638	279.0 -> 85.1	43598	5.60 µg/L	100
PFMPA	3.388	229.0 -> 84.9	33638	5.55 µg/L	100
PFEESA	5.875	314.8 -> 134.9	108266	4.91 µg/L	99
		314.8 -> 82.9	3617		

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

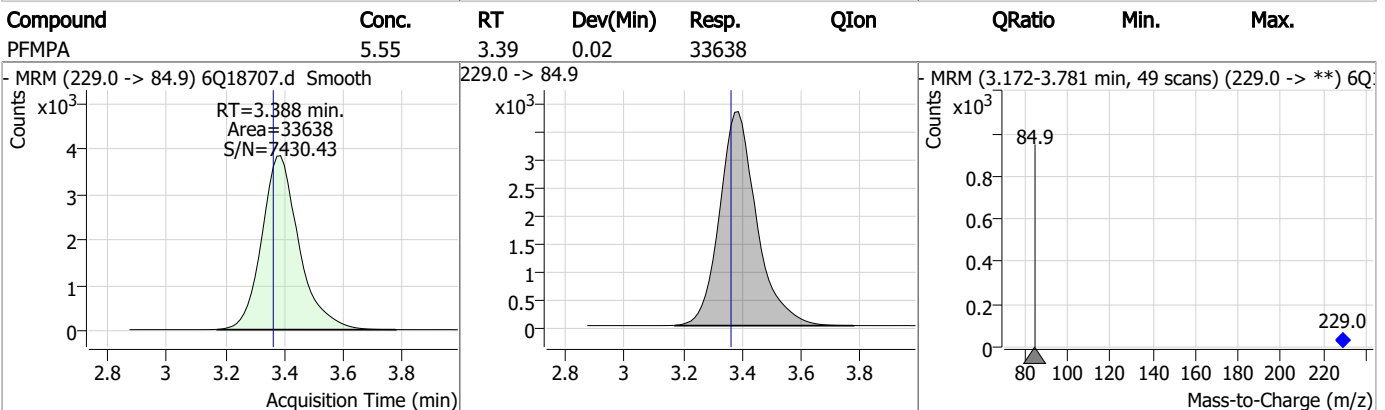
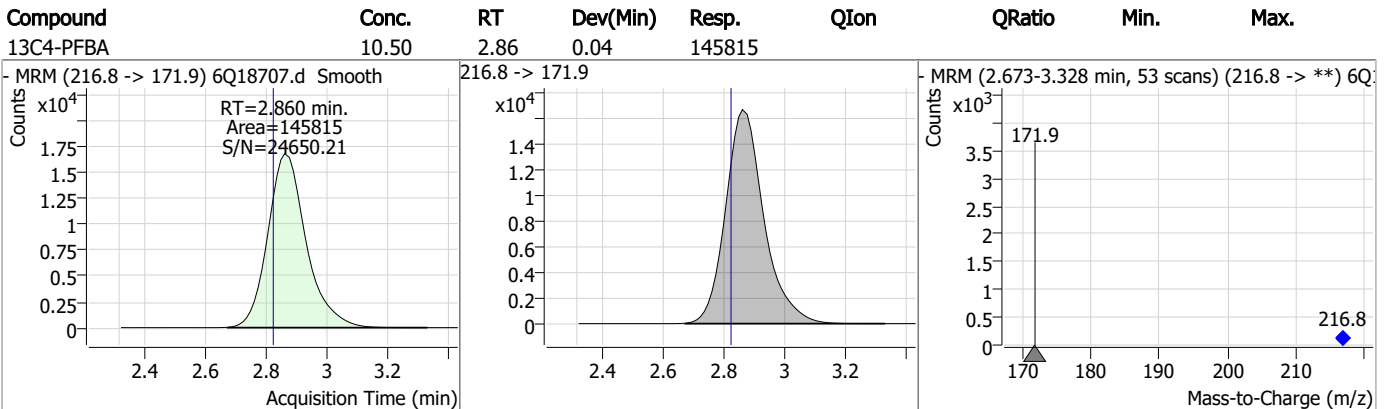
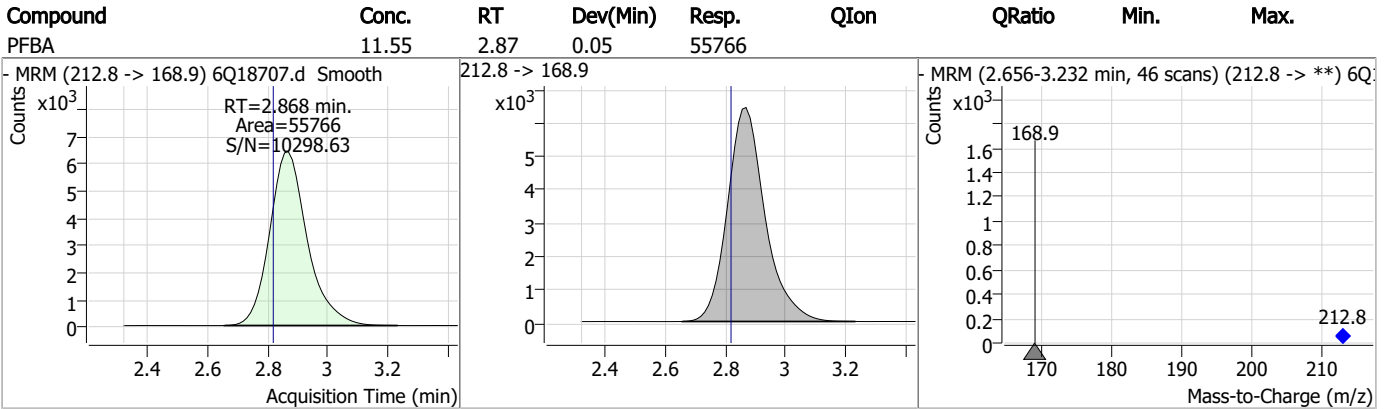
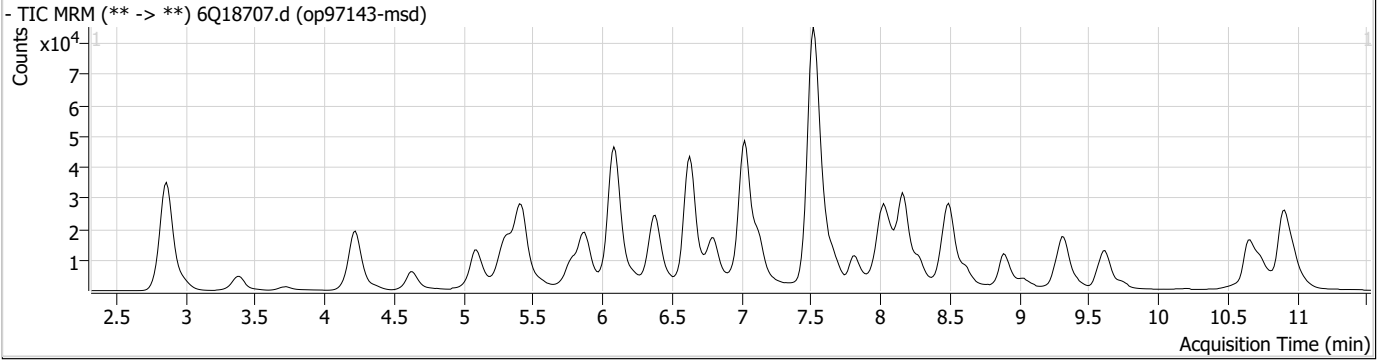
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.4.2
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Perfluorinated Compounds by LC/MS/MS

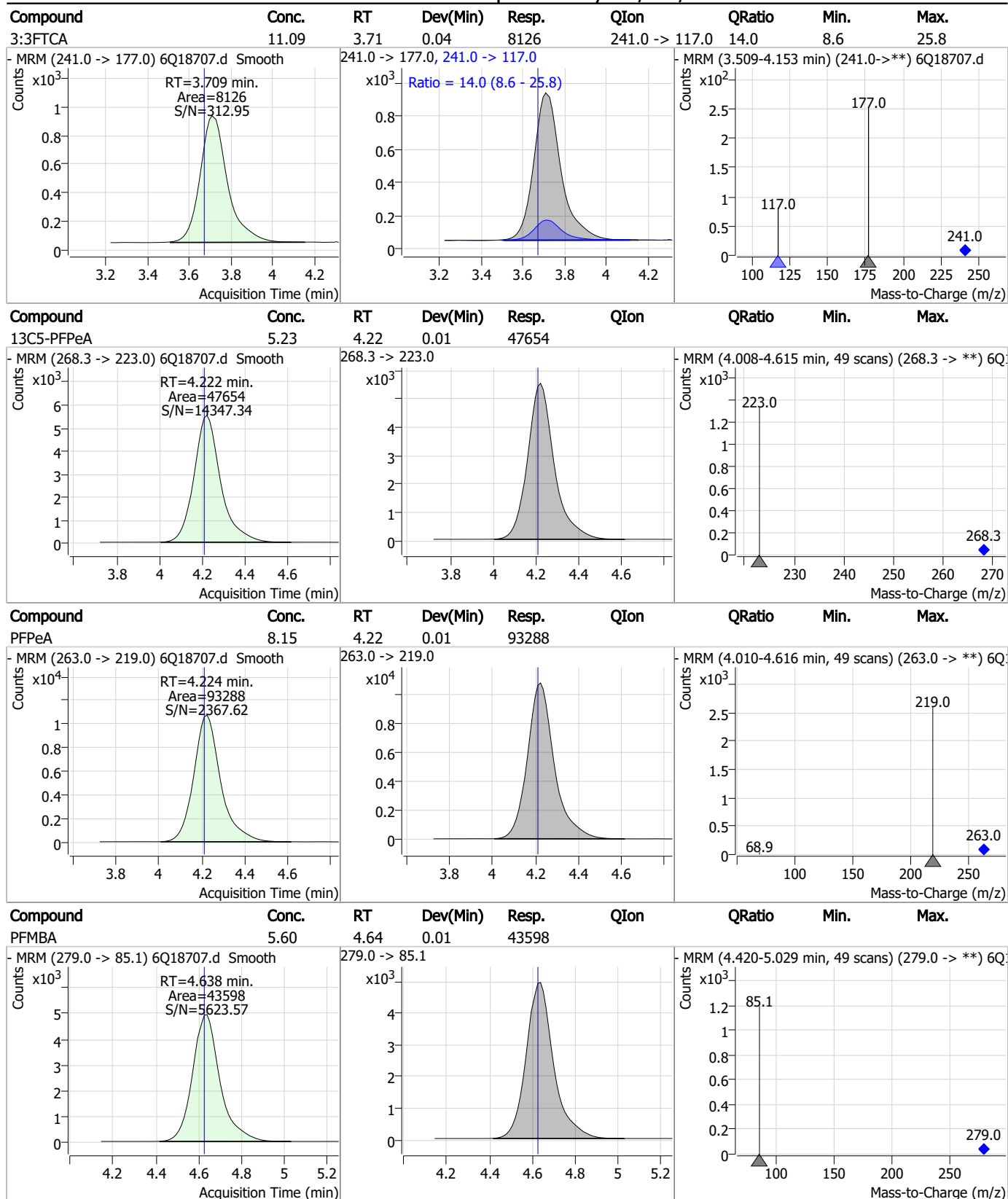


7.4.2

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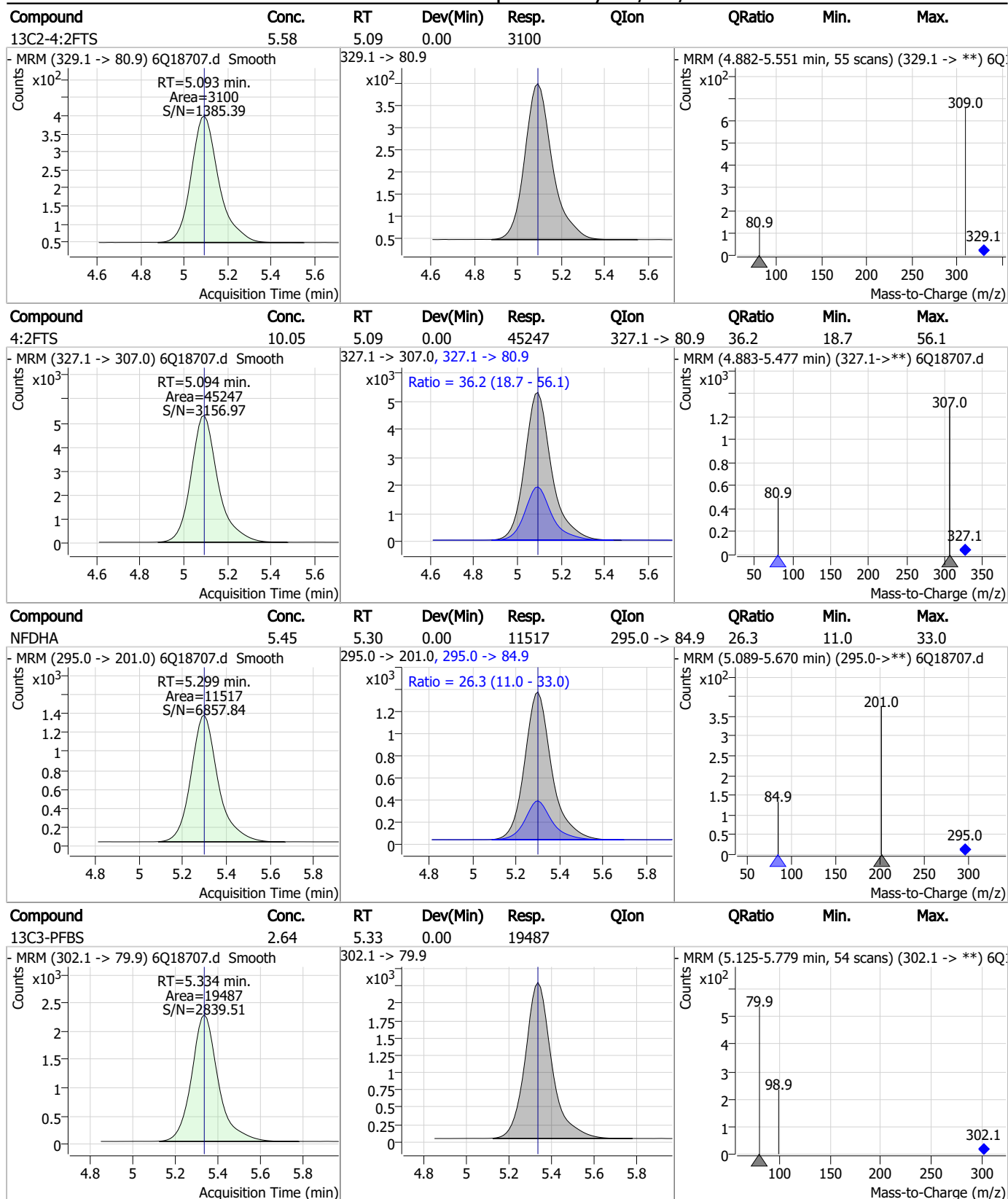
Perfluorinated Compounds by LC/MS/MS



7.4.2

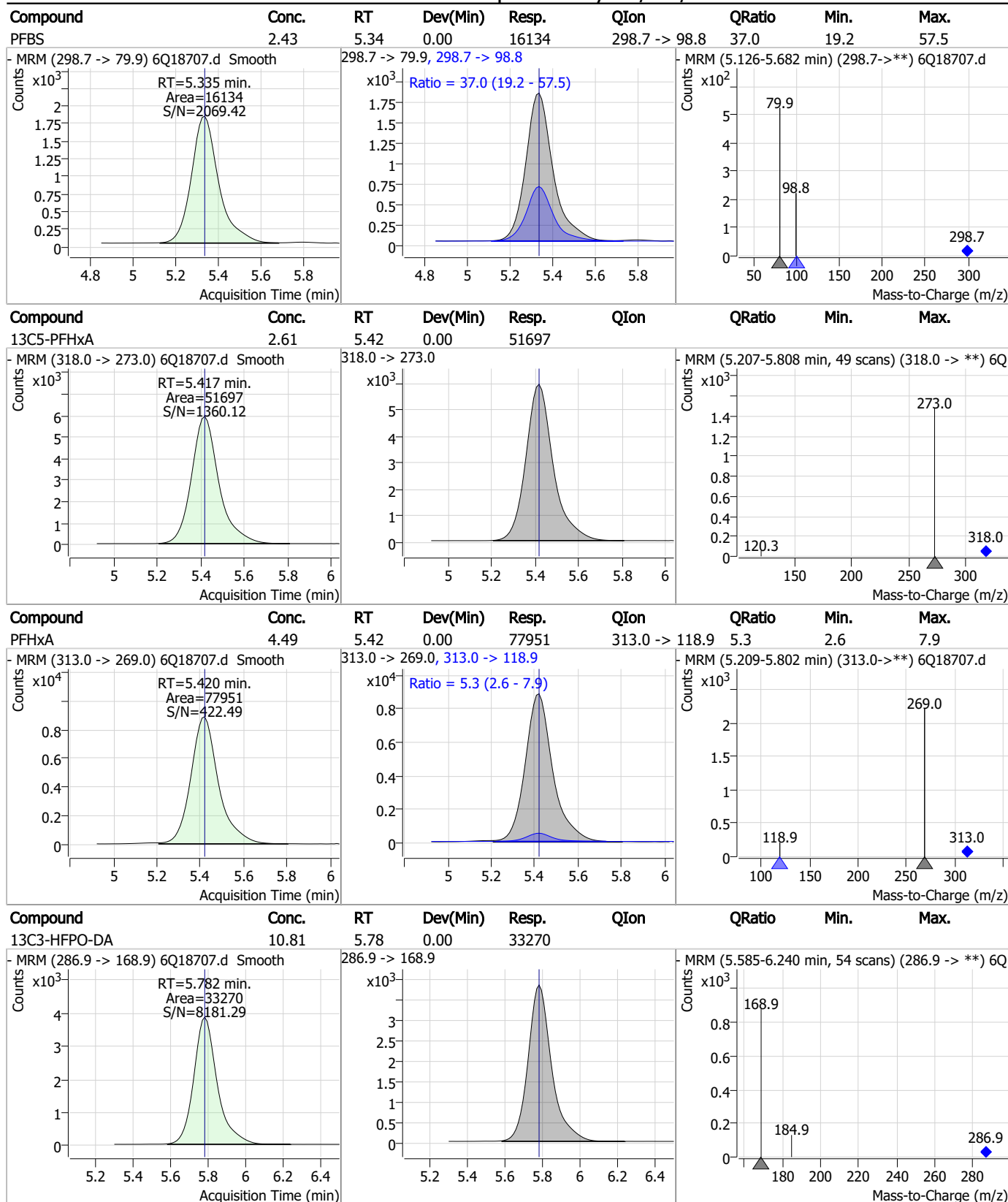
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Perfluorinated Compounds by LC/MS/MS



7.4.2
7

Perfluorinated Compounds by LC/MS/MS

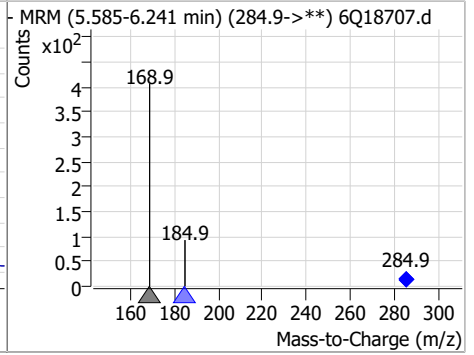
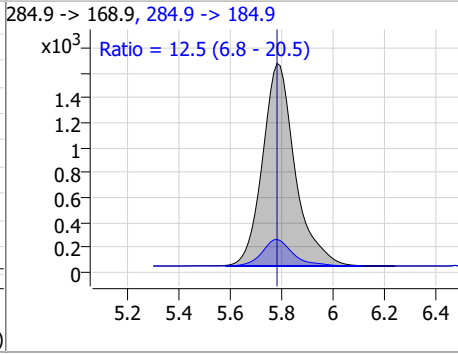
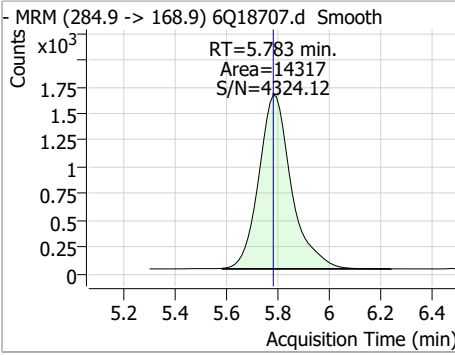


7.4.2
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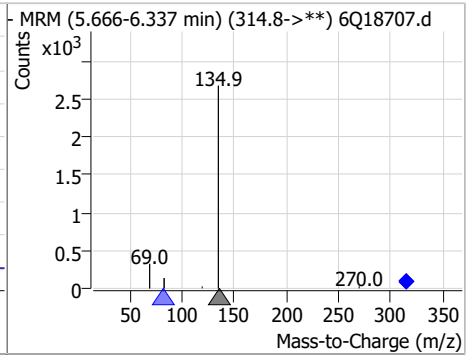
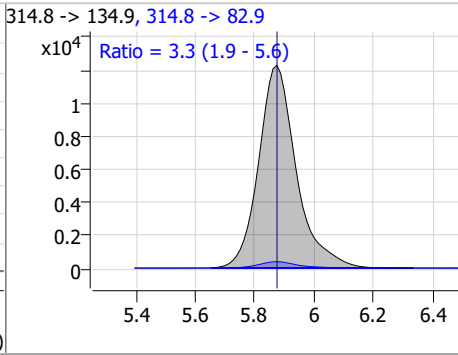
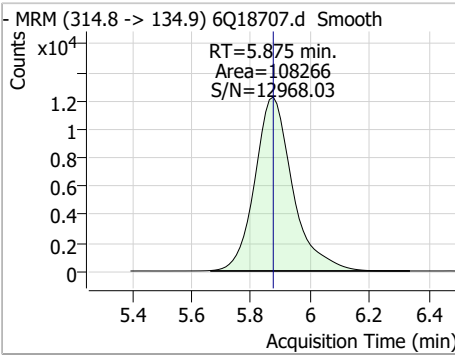


Perfluorinated Compounds by LC/MS/MS

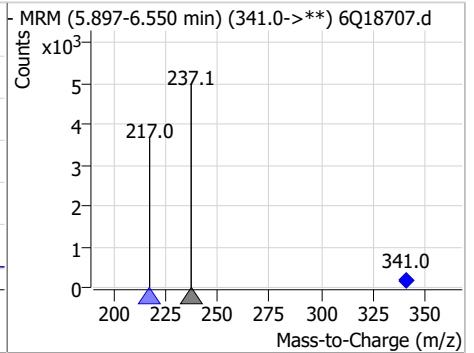
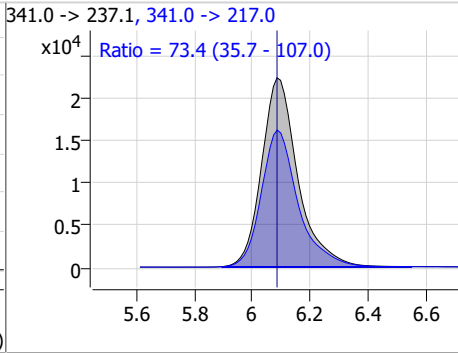
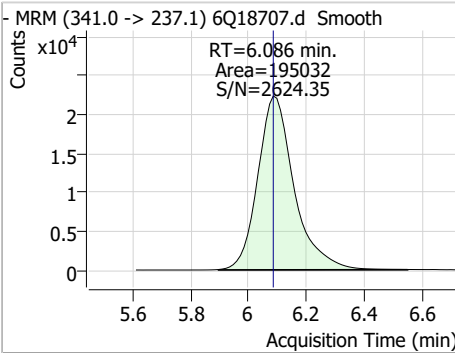
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.08	5.78	0.00	14317	284.9 -> 184.9	12.5	6.8	20.5



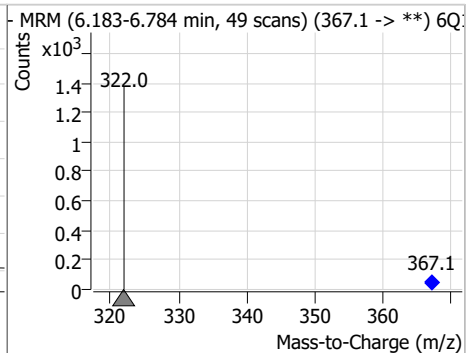
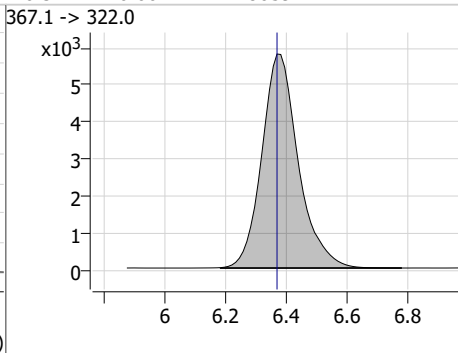
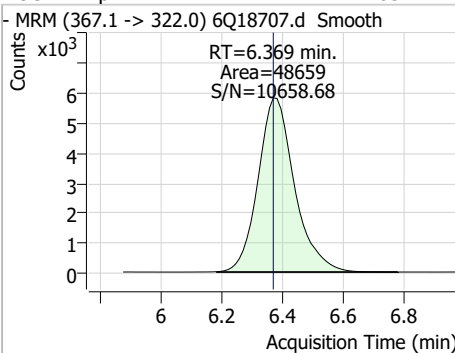
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.91	5.88	0.00	108266	314.8 -> 82.9	3.3	1.9	5.6



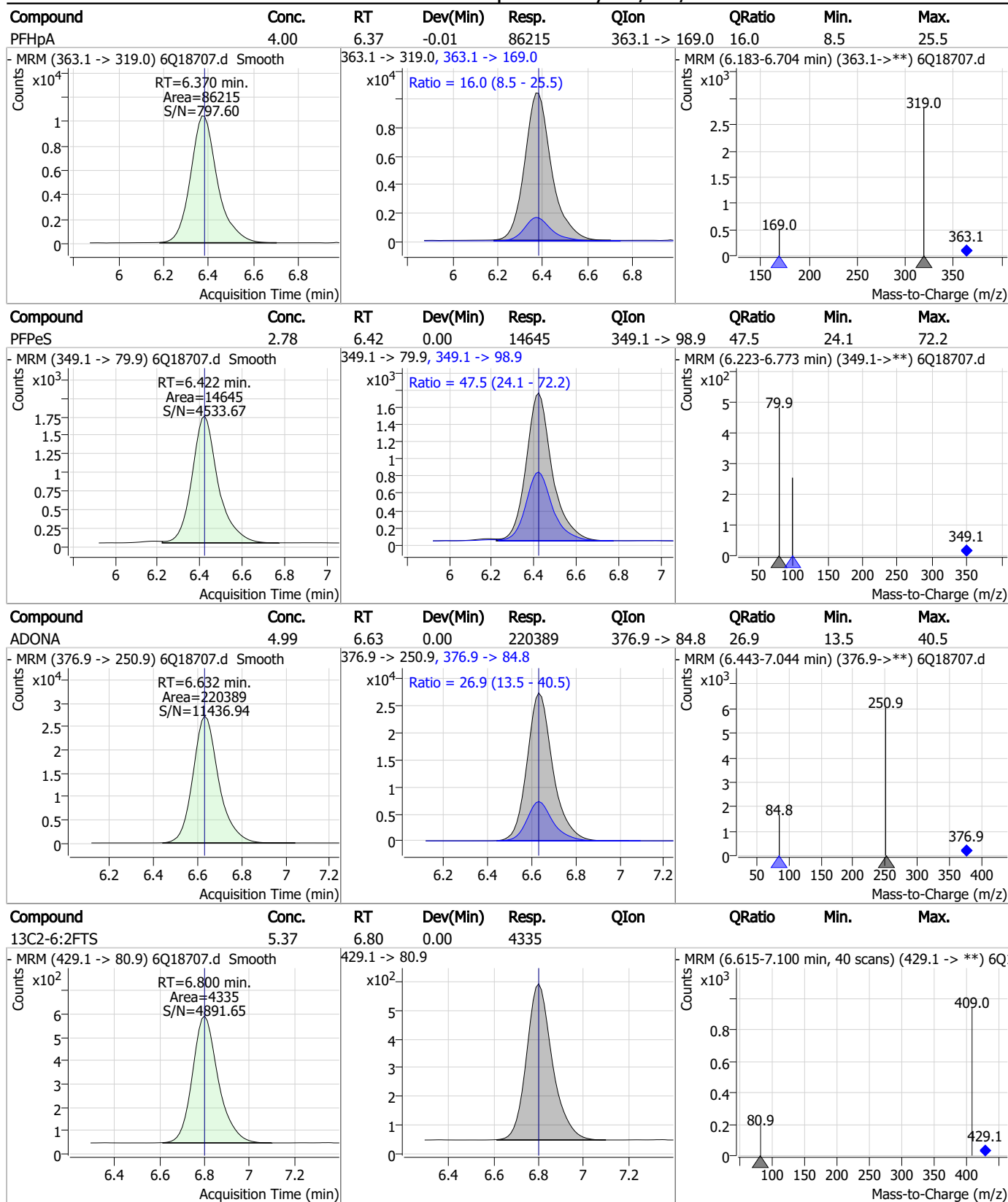
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	62.46	6.09	0.00	195032	341.0 -> 217.0	73.4	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.65	6.37	0.00	48659	367.1 -> 322.0			

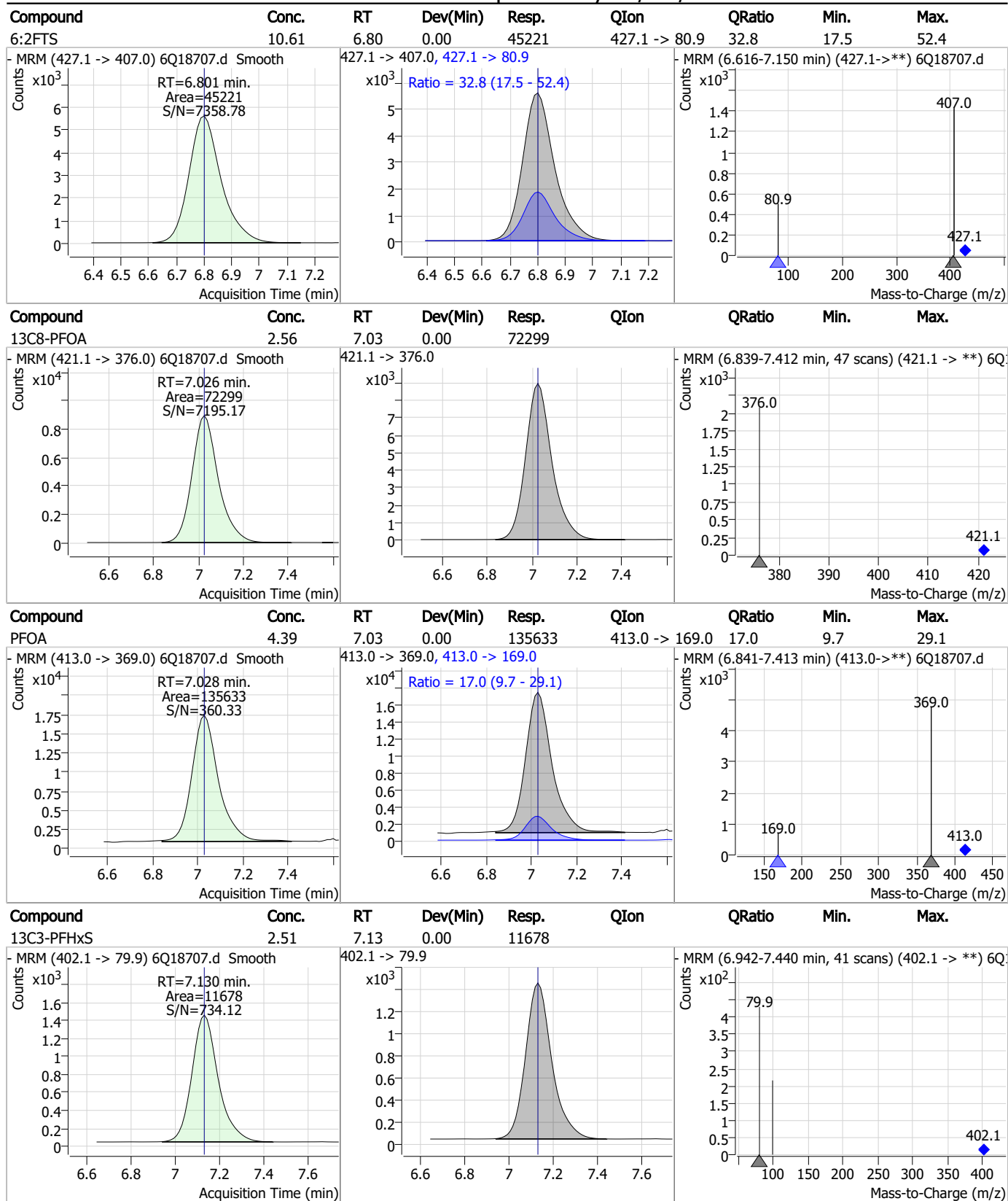


Perfluorinated Compounds by LC/MS/MS



7.4.2
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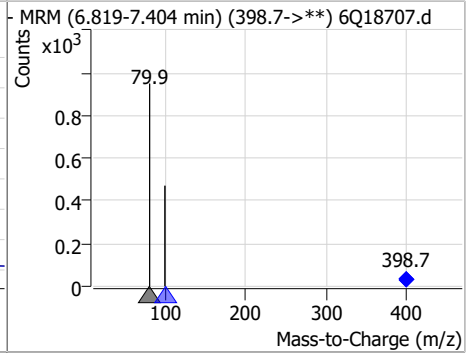
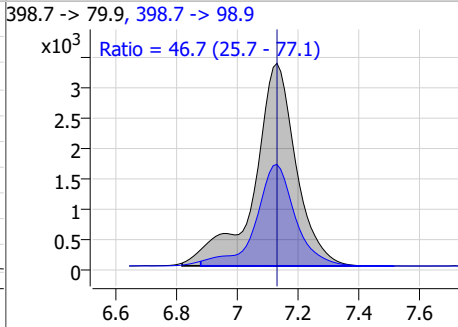
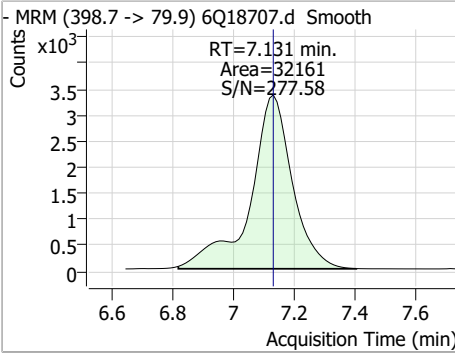
Perfluorinated Compounds by LC/MS/MS



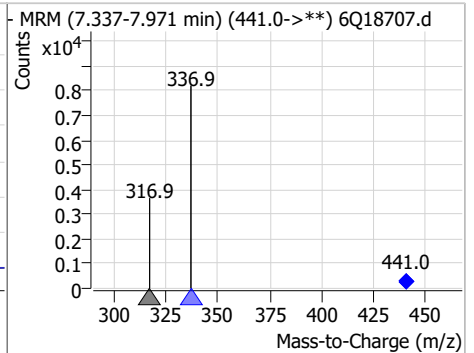
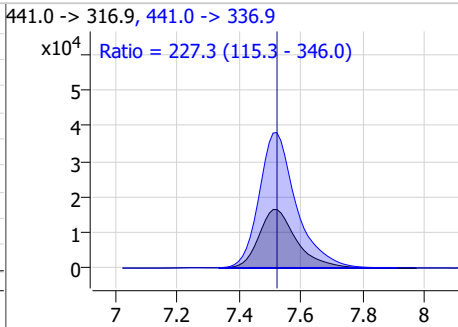
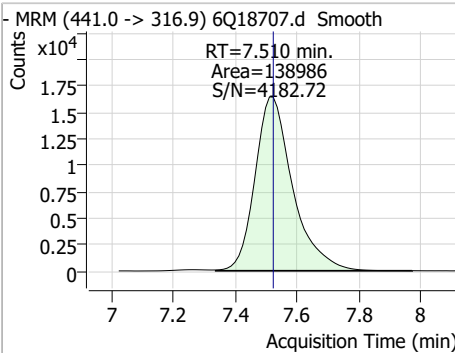
7.4.2
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Perfluorinated Compounds by LC/MS/MS

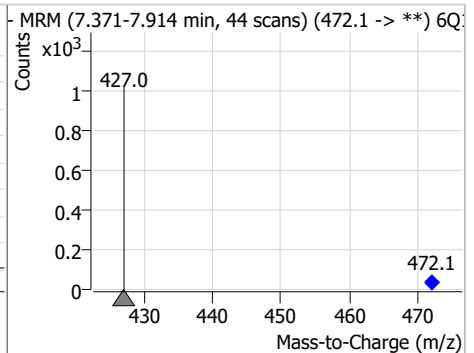
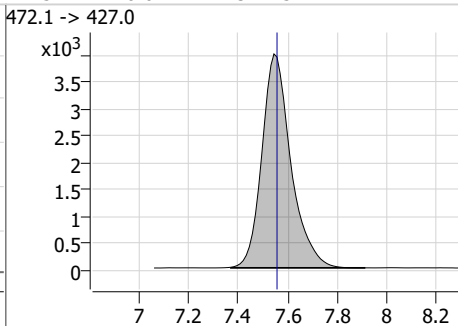
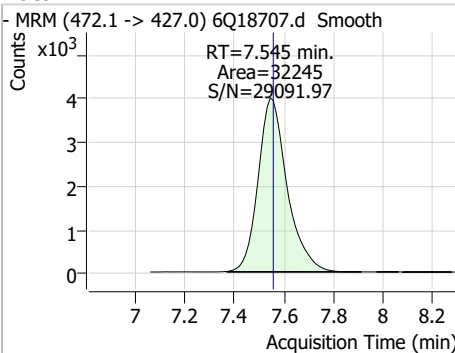
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	6.09	7.13	0.00	32161	398.7 -> 98.9	46.7	25.7	77.1



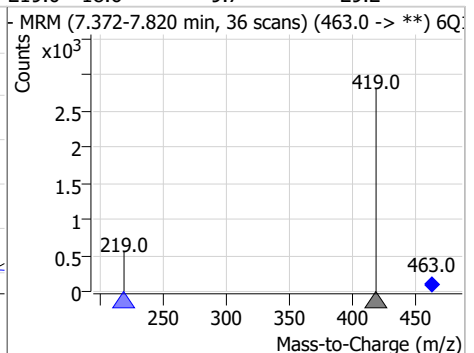
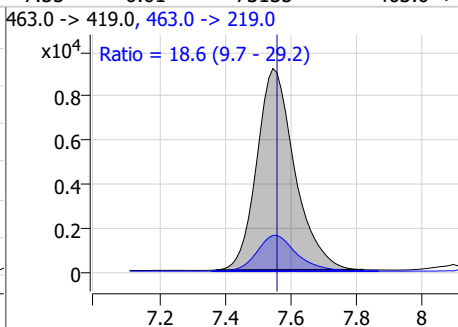
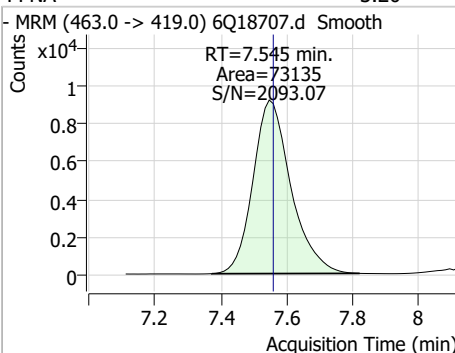
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.99	7.51	-0.01	138986	441.0 -> 336.9	227.3	115.3	346.0



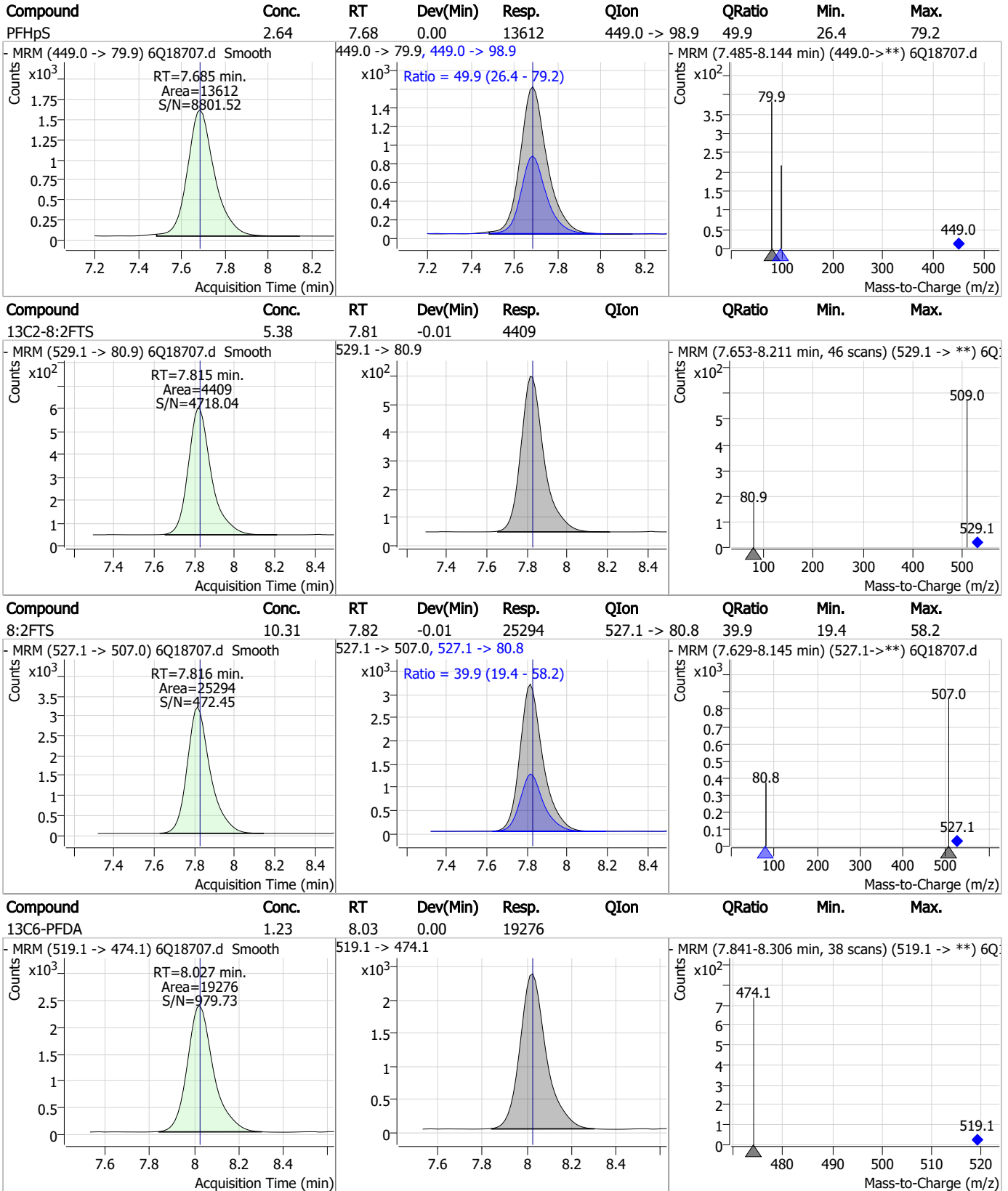
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.54	-0.01	32245	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.20	7.55	-0.01	73135	463.0 -> 219.0	18.6	9.7	29.2



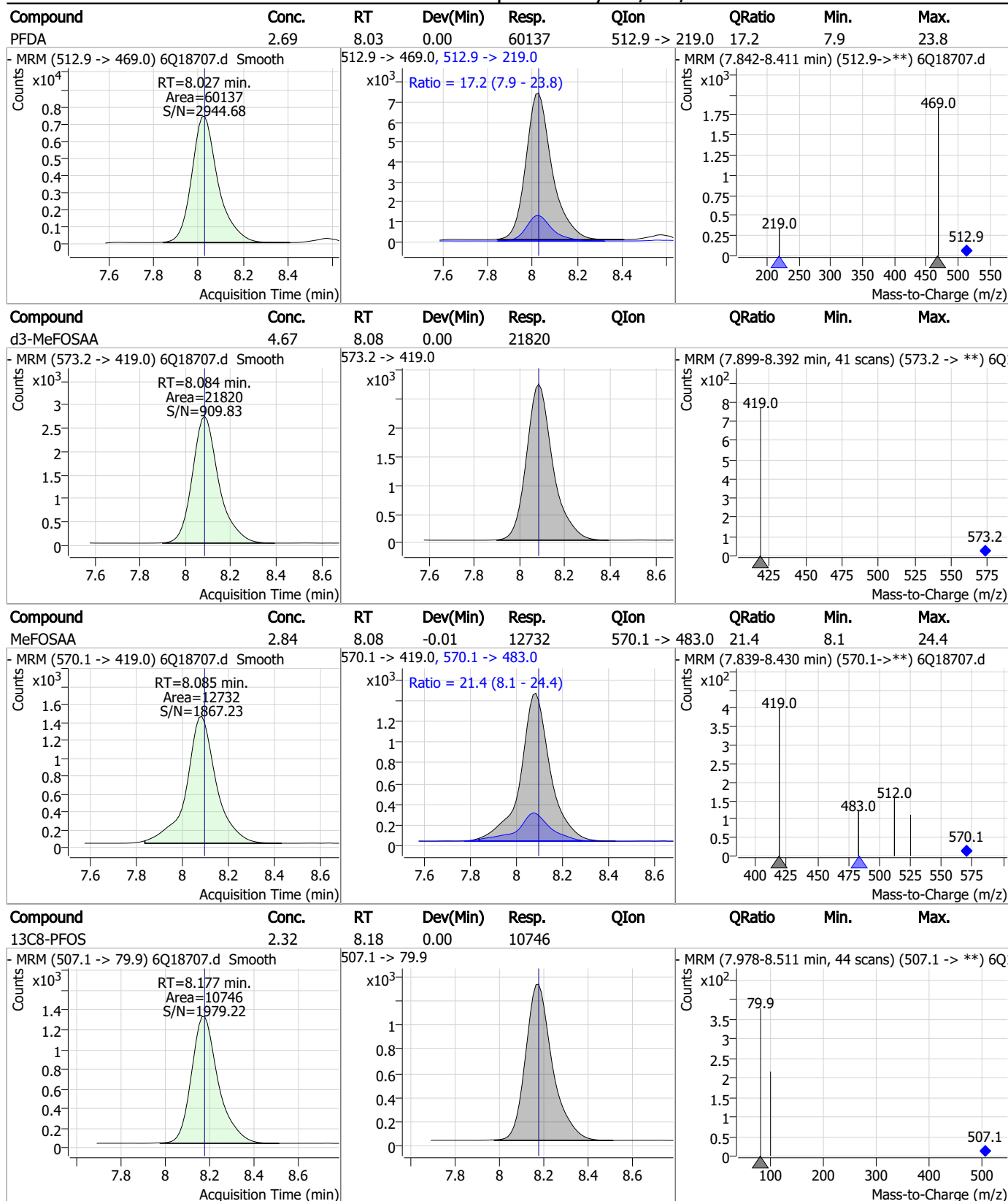
Perfluorinated Compounds by LC/MS/MS



7.4.2

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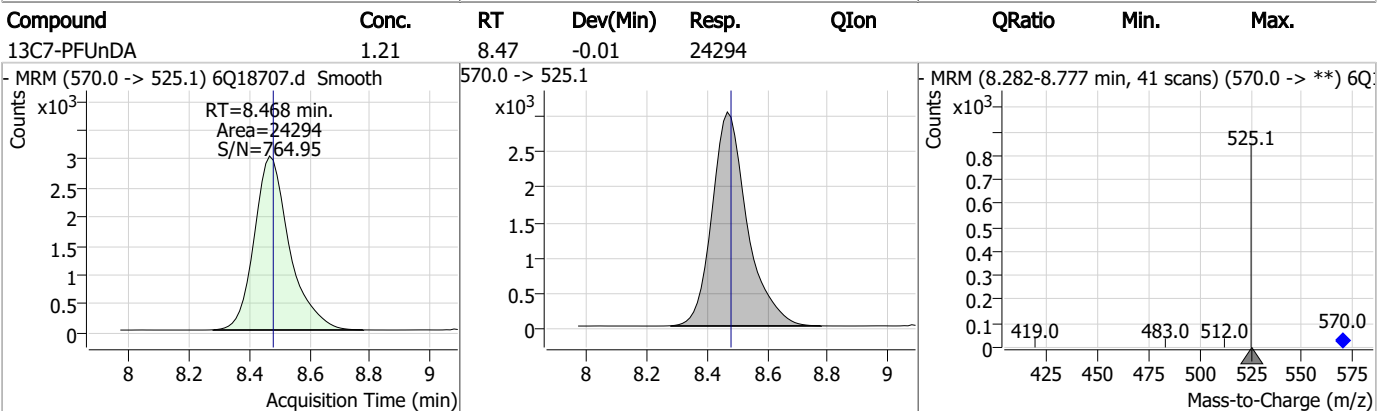
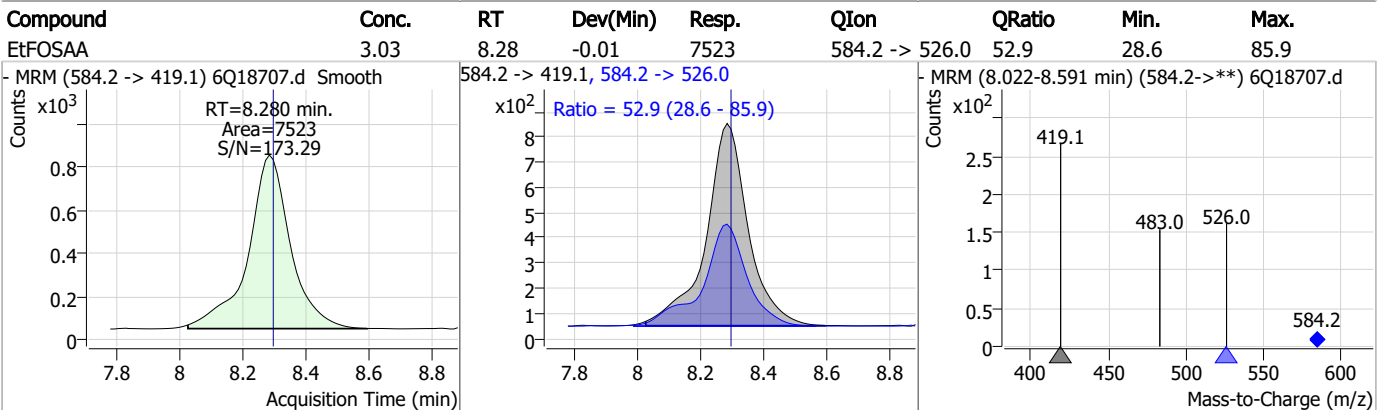
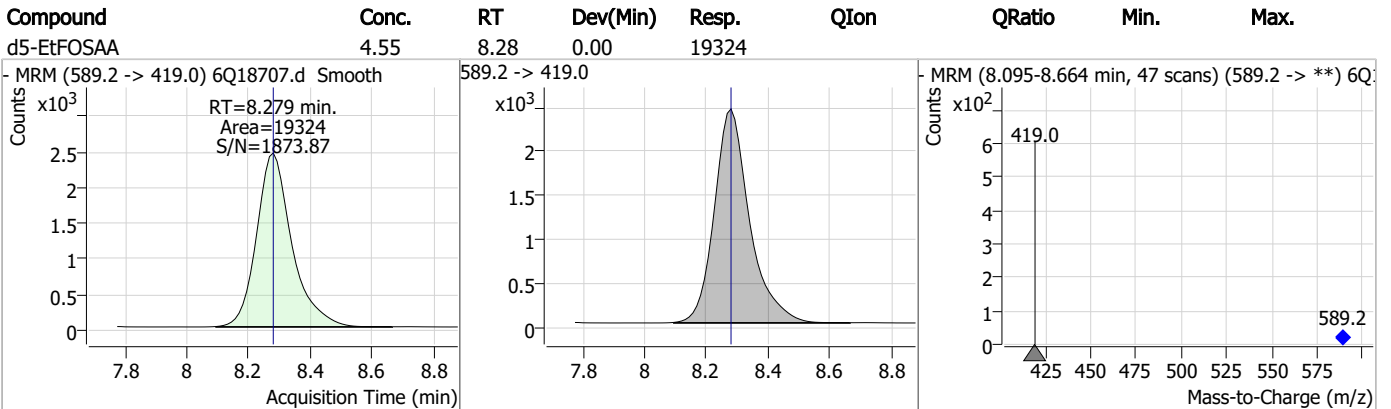
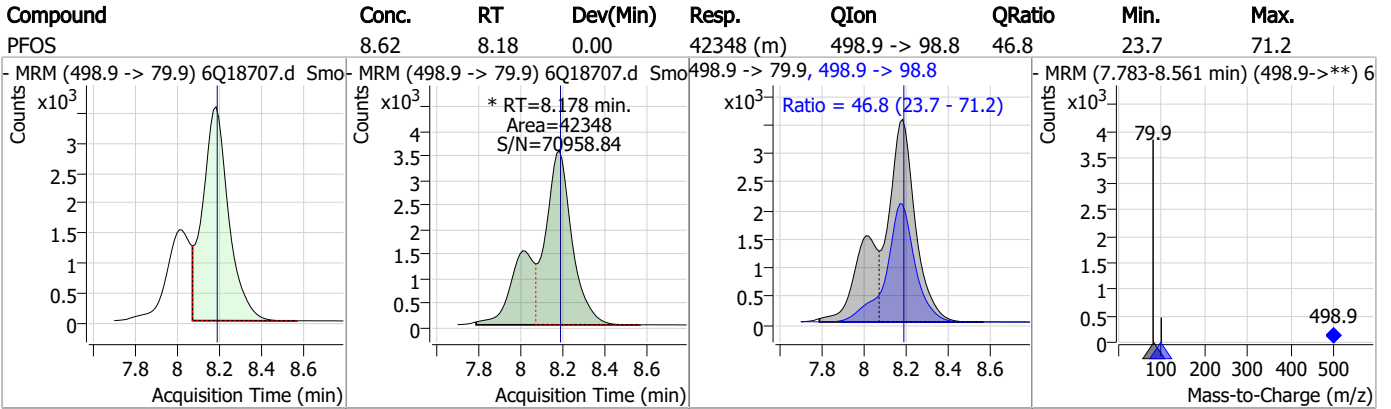
Perfluorinated Compounds by LC/MS/MS



7.4.2

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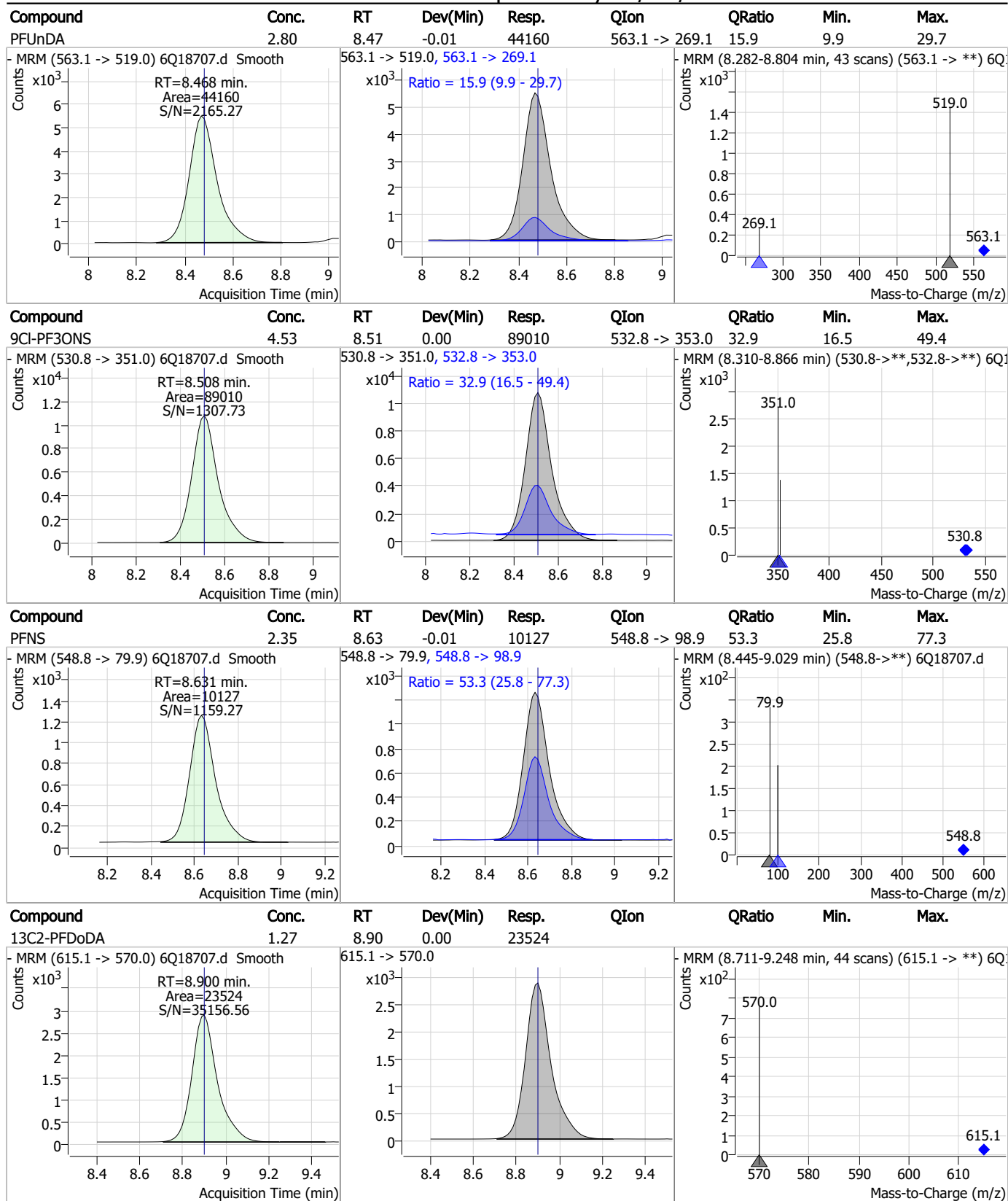
Perfluorinated Compounds by LC/MS/MS



7.4.2

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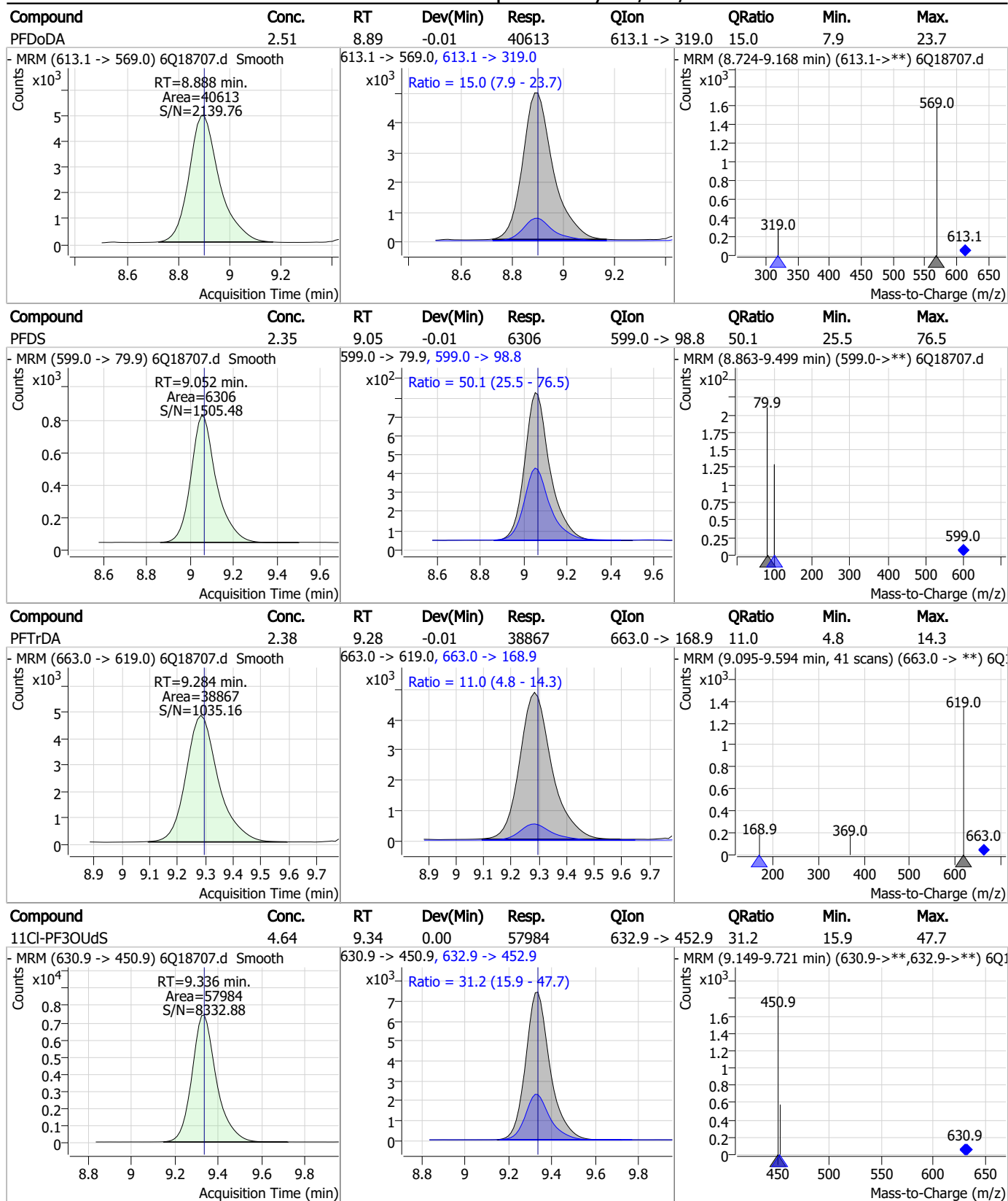
Perfluorinated Compounds by LC/MS/MS



7.4.2

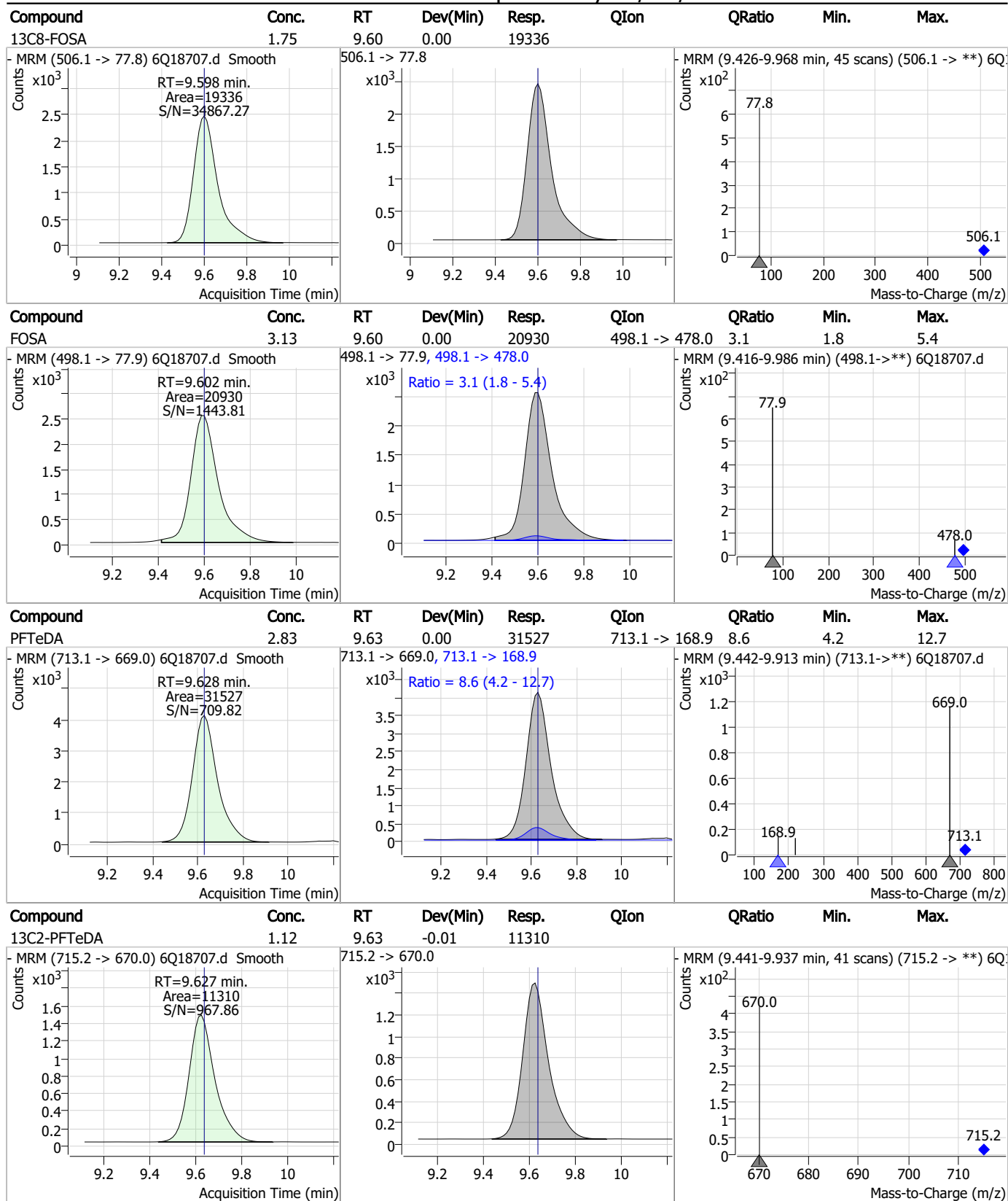
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Perfluorinated Compounds by LC/MS/MS



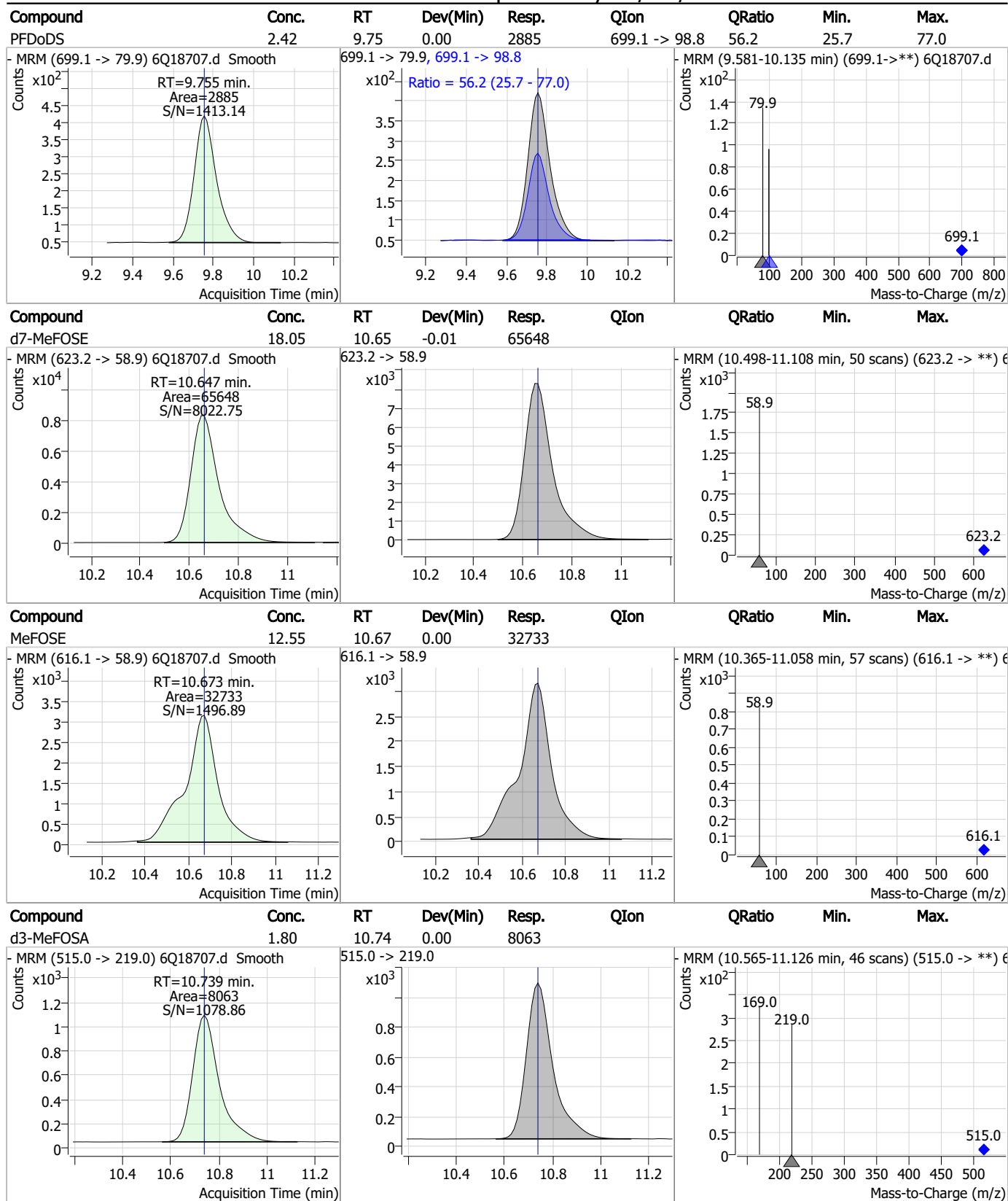
7.4.2
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Perfluorinated Compounds by LC/MS/MS



7.4.2
7

Perfluorinated Compounds by LC/MS/MS

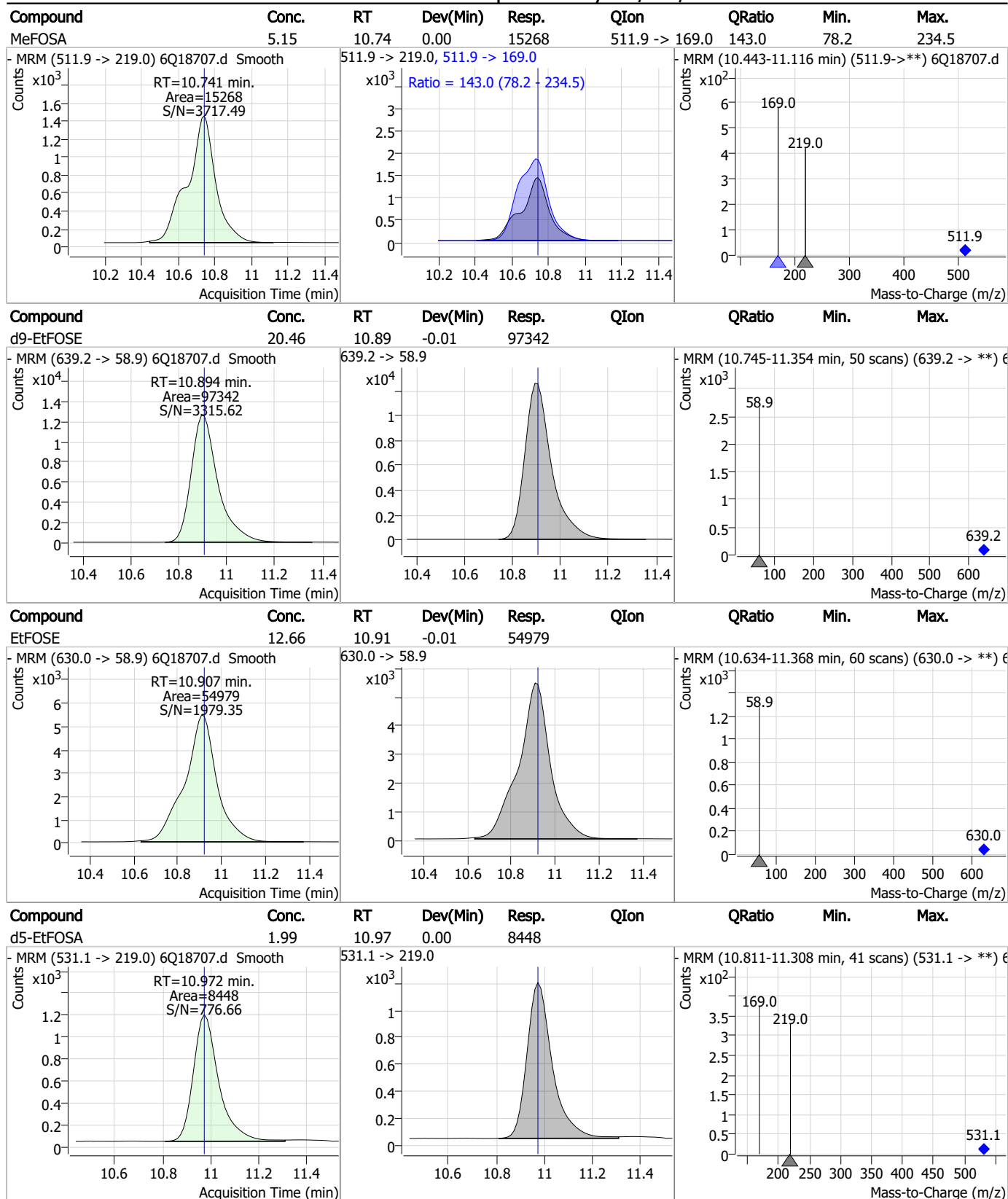


7.4.2

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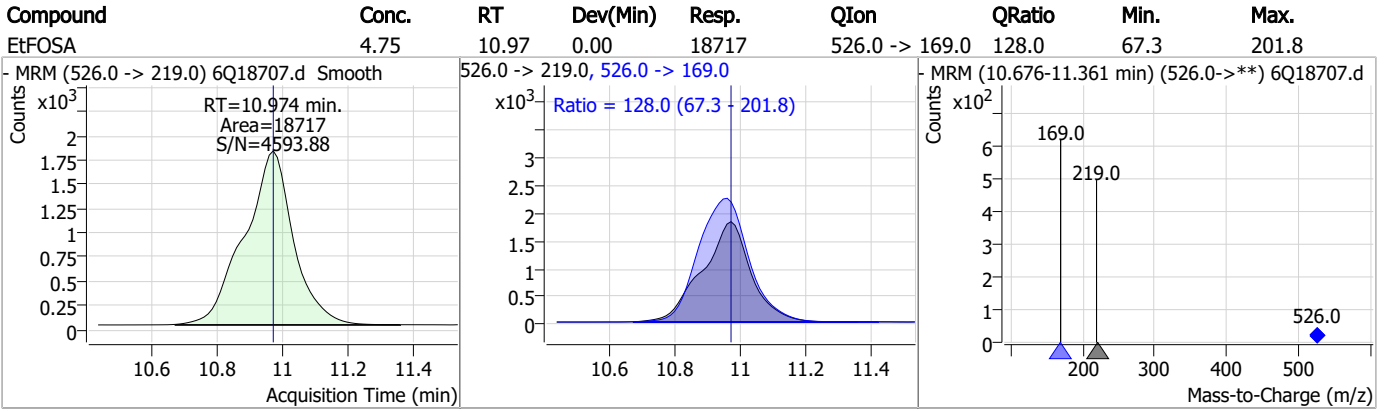


Perfluorinated Compounds by LC/MS/MS



7.4.2
7

Perfluorinated Compounds by LC/MS/MS



7.4.2

7

Manual Integration Approval Summary

Sample Number: OP97143-MSD Method: EPA DRAFT 1633
Lab FileID: 6Q18707.D Analyst approved: 06/05/23 12:52 Martha Valls
Injection Time: 06/01/23 22:51 Supervisor approved: 06/06/23 13:23 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.4.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19269.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 10:33:56 PM
 Sample Name : op97275-ms
 Vial : P2-B7
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	5452	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	12007	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	49550	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	50535	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	81282	2.50 µg/L	0.012
M9-PFNA	7.882	472.1 -> 427.0	37521	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	22472	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28264	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	24055	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	10219	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	25303	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18749	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11954	2.50 µg/L	0.000
M8-PFOS	8.550	507.1 -> 79.9	11842	2.50 µg/L	-0.012
M2-4:2FTS	5.454	329.1 -> 80.9	3741	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	3854	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4137	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	34513	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	28922	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	29588	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	92769	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	125878	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11297	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	11432	2.50 µg/L	-0.012
13C4-PFOS	8.551	502.8 -> 79.9	16170	2.50 µg/L	-0.012
13C3-PFBA	3.101	216.0 -> 172.0	60540	5.00 µg/L	0.012
18O2-PFHxS	7.477	403.0 -> 83.9	8151	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	74385	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	29907	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	46890	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	46959	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3741	7.45 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 149.1%		
13C2-6:2FTS	7.113	429.1 -> 80.9	3854	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4137	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-PFDoDA	9.297	615.1 -> 570.0	24055	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFTeDA	10.012	715.2 -> 670.0	10219	0.88 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 70.4%		
13C3-PFBS	5.746	302.1 -> 79.9	18749	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C3-PFHxS	7.478	402.1 -> 79.9	11954	2.76 µg/L	0.000

7.4.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C4-PFBA	3.097	216.8 -> 171.9	5452	0.38 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 3.8%		
13C4-PFHpA	6.707	367.1 -> 322.0	50535	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C5-PFHxA	5.792	318.0 -> 273.0	49550	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C5-PFPeA	4.560	268.3 -> 223.0	12007	1.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 26.5%		
13C6-PFDA	8.387	519.1 -> 474.1	22472	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C7-PFUnDA	8.866	570.0 -> 525.1	28264	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C8-FOSA	9.674	506.1 -> 77.8	25303	2.11 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 84.5%		
13C8-PFOA	7.352	421.1 -> 376.0	81282	2.93 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C8-PFOS	8.550	507.1 -> 79.9	11842	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C9-PFNA	7.882	472.1 -> 427.0	37521	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.9%		
d3-MeFOSAA	8.407	573.2 -> 419.0	34513	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C3-HFPO-DA	6.169	286.9 -> 168.9	28922	8.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 89.9%		
d3-MeFOSA	10.763	515.0 -> 219.0	11432	2.13 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 85.1%		
d5-EtFOSAA	8.615	589.2 -> 419.0	29588	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.6%		
d7-MeFOSE	10.685	623.2 -> 58.9	92769	15.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 62.5%		
d9-EtFOSE	10.930	639.2 -> 58.9	125878	16.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 67.9%		
d5-EtFOSA	10.996	531.1 -> 219.0	11297	2.17 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.8%		
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	50039	7.72 µg/L	97
		327.1 -> 80.9	19468		
6:2FTS	7.113	427.1 -> 407.0	43832	9.41 µg/L	88
		427.1 -> 80.9	12868		
8:2FTS	8.164	527.1 -> 507.0	21089	7.66 µg/L	94
		527.1 -> 80.8	9084		
EtFOSAA	8.617	584.2 -> 419.1	10630	2.16 µg/L	m 94
		584.2 -> 526.0	5758		
FOSA	9.677	498.1 -> 77.9	23108	2.23 µg/L	99
		498.1 -> 478.0	708		
MeFOSAA	8.408	570.1 -> 419.0	20594	2.45 µg/L	m 100
		570.1 -> 483.0	4067		
PFBA	3.106	212.8 -> 168.9	1771	8.14 µg/L	100
PFBS	5.747	298.7 -> 79.9	15608	1.90 µg/L	91
		298.7 -> 98.8	6212		
PFDA	8.388	512.9 -> 469.0	68093	2.03 µg/L	98
		512.9 -> 219.0	10905		
PFDoDA	9.298	613.1 -> 569.0	43121	2.18 µg/L	97
		613.1 -> 319.0	6707		
PFDS	9.462	599.0 -> 79.9	6554	1.83 µg/L	96

7.4.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2792			
PFHpA	6.708	363.1 -> 319.0	57971	2.14	µg/L	100
		363.1 -> 169.0	9222			
PFHpS	8.046	449.0 -> 79.9	14955	2.10	µg/L	97
		449.0 -> 98.9	7619			
PFHxA	5.795	313.0 -> 269.0	41491	2.09	µg/L	99
		313.0 -> 118.9	2151			
PFHxS	7.479	398.7 -> 79.9	14884	2.07	µg/L	m 99
		398.7 -> 98.9	6826			
PFNA	7.896	463.0 -> 419.0	71055	2.06	µg/L	97
		463.0 -> 219.0	13581			
PFNS	9.041	548.8 -> 79.9	13305	2.12	µg/L	92
		548.8 -> 98.9	5810			
PFOA	7.353	413.0 -> 369.0	97411	2.34	µg/L	98
		413.0 -> 169.0	16330			
PFOS	8.552	498.9 -> 79.9	14671	2.10	µg/L	m 87
		498.9 -> 98.8	6278			
PFPeA	4.563	263.0 -> 219.0	15246	4.31	µg/L	100
PFPeS	6.785	349.1 -> 79.9	14277	2.16	µg/L	96
		349.1 -> 98.9	6156			
PFTeDA	10.013	713.1 -> 669.0	26904	2.20	µg/L	100
		713.1 -> 168.9	2352			
PFTrDA	9.681	663.0 -> 619.0	39088	1.99	µg/L	97
		663.0 -> 168.9	4355			
PFUnDA	8.866	563.1 -> 519.0	48946	2.36	µg/L	100
		563.1 -> 269.1	8031			
11CI-PF3OUdS	9.733	630.9 -> 450.9	54502	4.00	µg/L	99
		632.9 -> 452.9	16040			
9CI-PF3ONS	8.906	530.8 -> 351.0	112254	4.93	µg/L	92
		532.8 -> 353.0	38625			
ADONA	6.959	376.9 -> 250.9	240281	4.91	µg/L	98
		376.9 -> 84.8	64638			
HFPO-DA	6.169	284.9 -> 168.9	12700	4.04	µg/L	96
		284.9 -> 184.9	1568			
3:3FTCA	3.971	241.0 -> 177.0	610	2.53	µg/L	m 97
		241.0 -> 117.0	73			
5:3FTCA	6.374	341.0 -> 237.1	217385	56.47	µg/L	97
		341.0 -> 217.0	167537			
7:3FTCA	7.748	441.0 -> 316.9	198404	72.01	µg/L	92
		441.0 -> 336.9	432306			
EtFOSA	10.997	526.0 -> 219.0	26291	4.35	µg/L	m 98
		526.0 -> 169.0	33986			
EtFOSE	10.943	630.0 -> 58.9	73823	11.11	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	21576	4.31	µg/L	m 95
		511.9 -> 169.0	31233			
MeFOSE	10.697	616.1 -> 58.9	45968	11.32	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	2032	1.14	µg/L	98
		699.1 -> 98.8	1208			
NFDHA	5.673	295.0 -> 201.0	9458	3.76	µg/L	95
		295.0 -> 84.9	2491			
PFMBA	4.988	279.0 -> 85.1	17988	7.10	µg/L	100
PFMPA	3.680	229.0 -> 84.9	2291	1.16	µg/L	100
PFEESA	6.288	314.8 -> 134.9	106300	4.35	µg/L	99
		314.8 -> 82.9	3933			

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



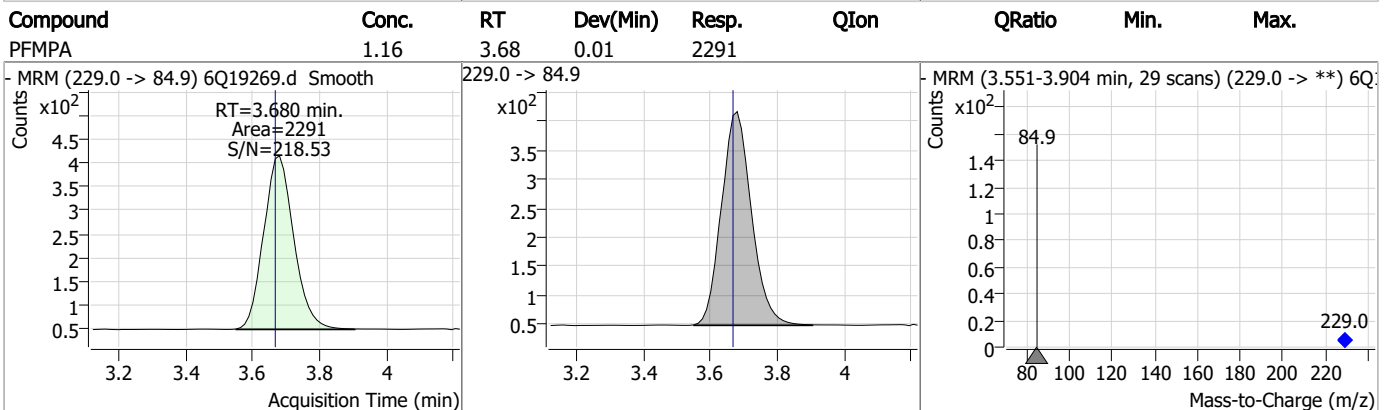
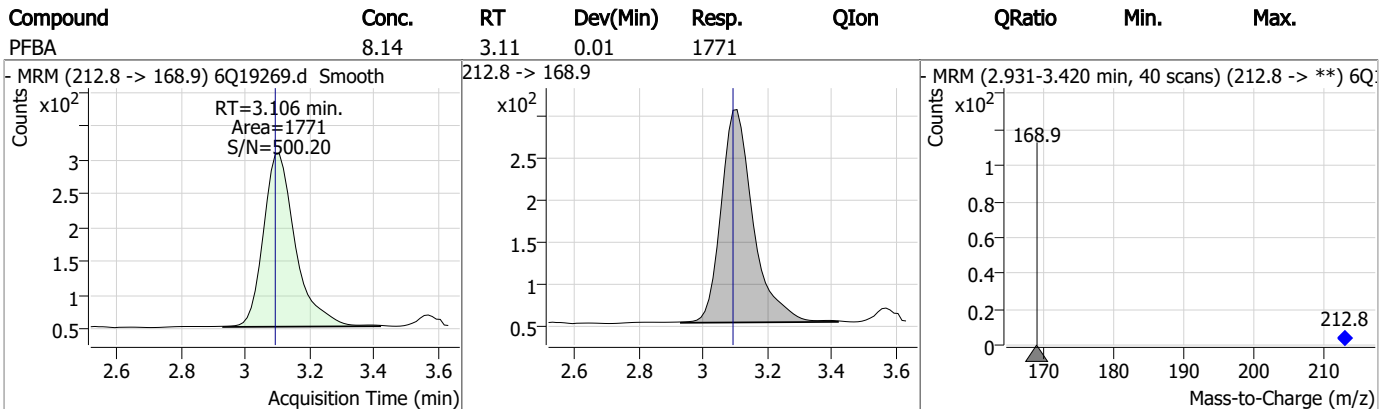
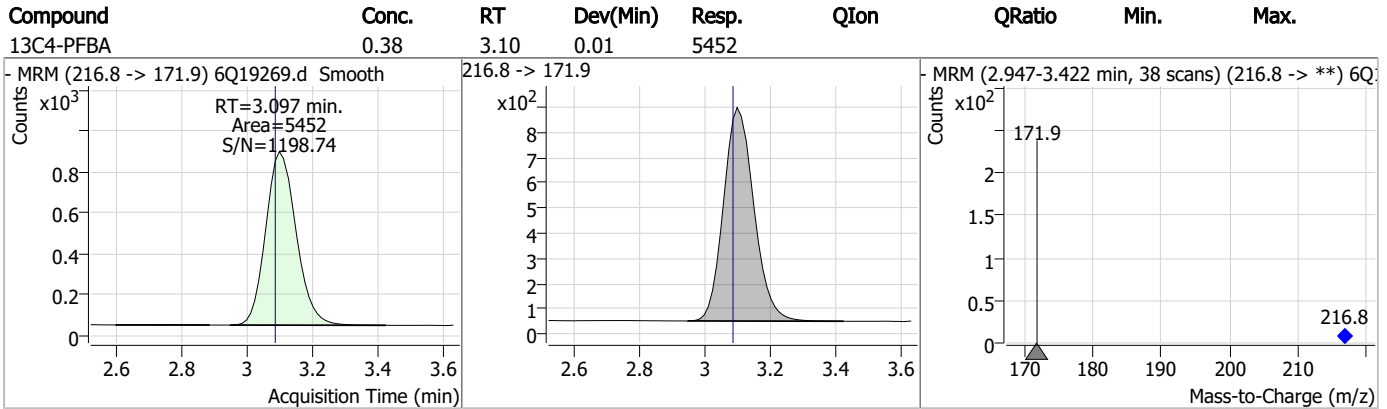
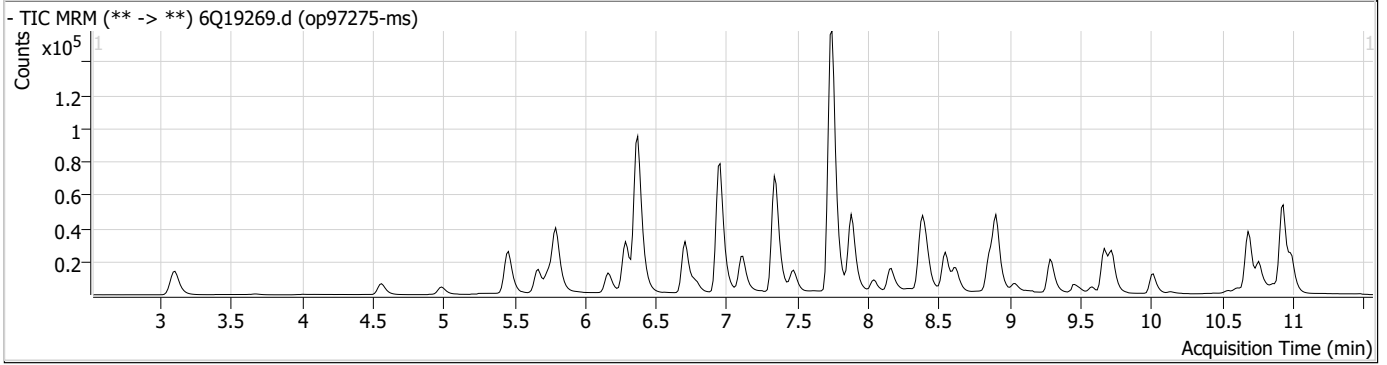
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.4.3

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Perfluorinated Compounds by LC/MS/MS

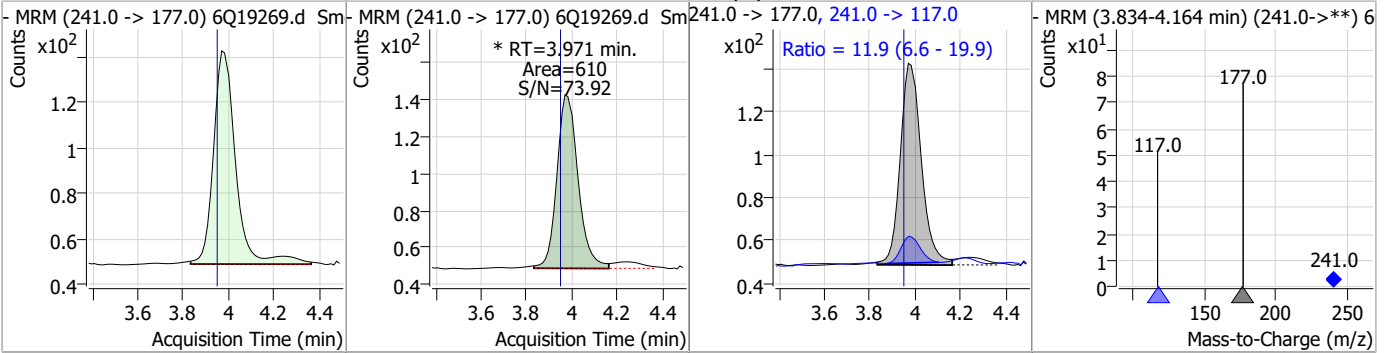


7.4.3

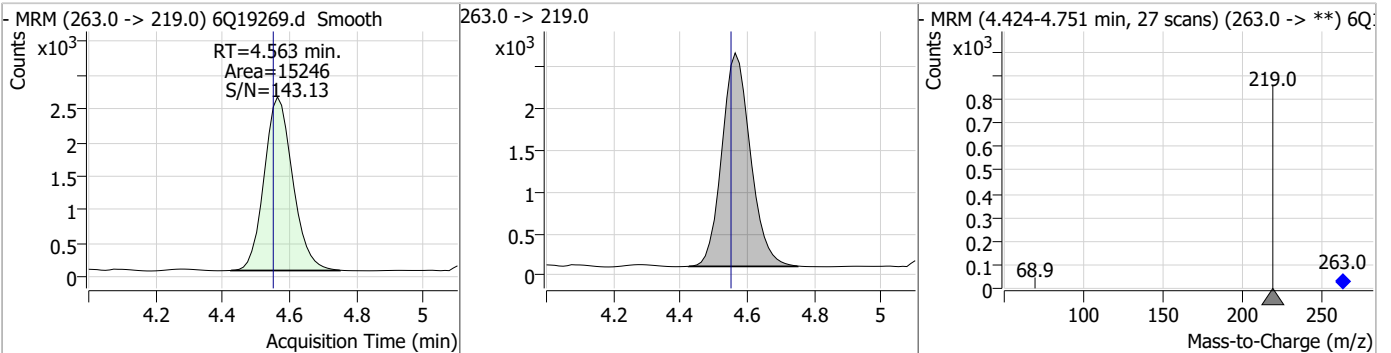
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Perfluorinated Compounds by LC/MS/MS

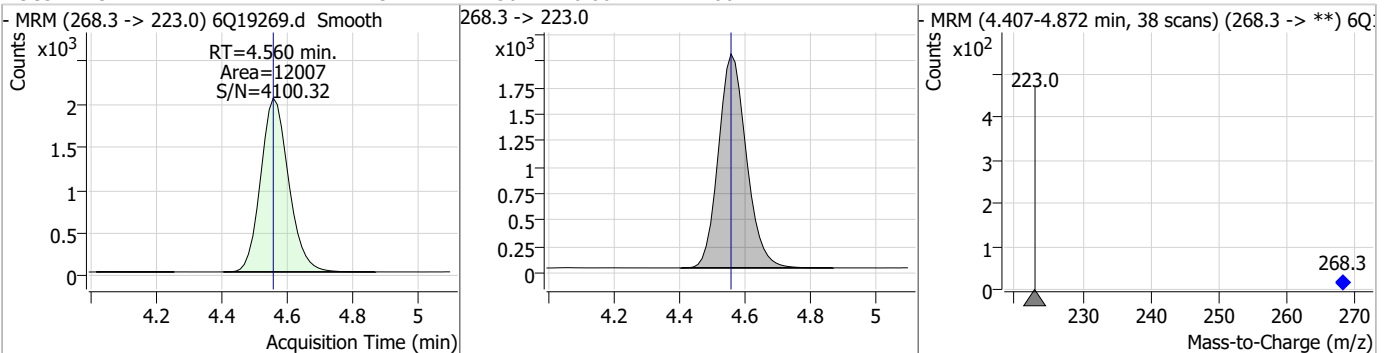
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.53	3.97	0.02	610 (m)	241.0 -> 117.0	11.9	6.6	19.9



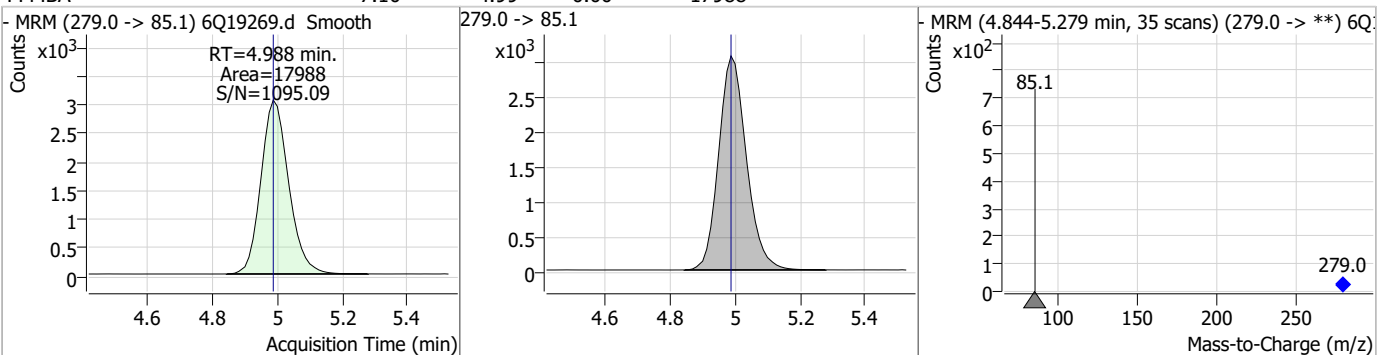
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.31	4.56	0.01	15246				



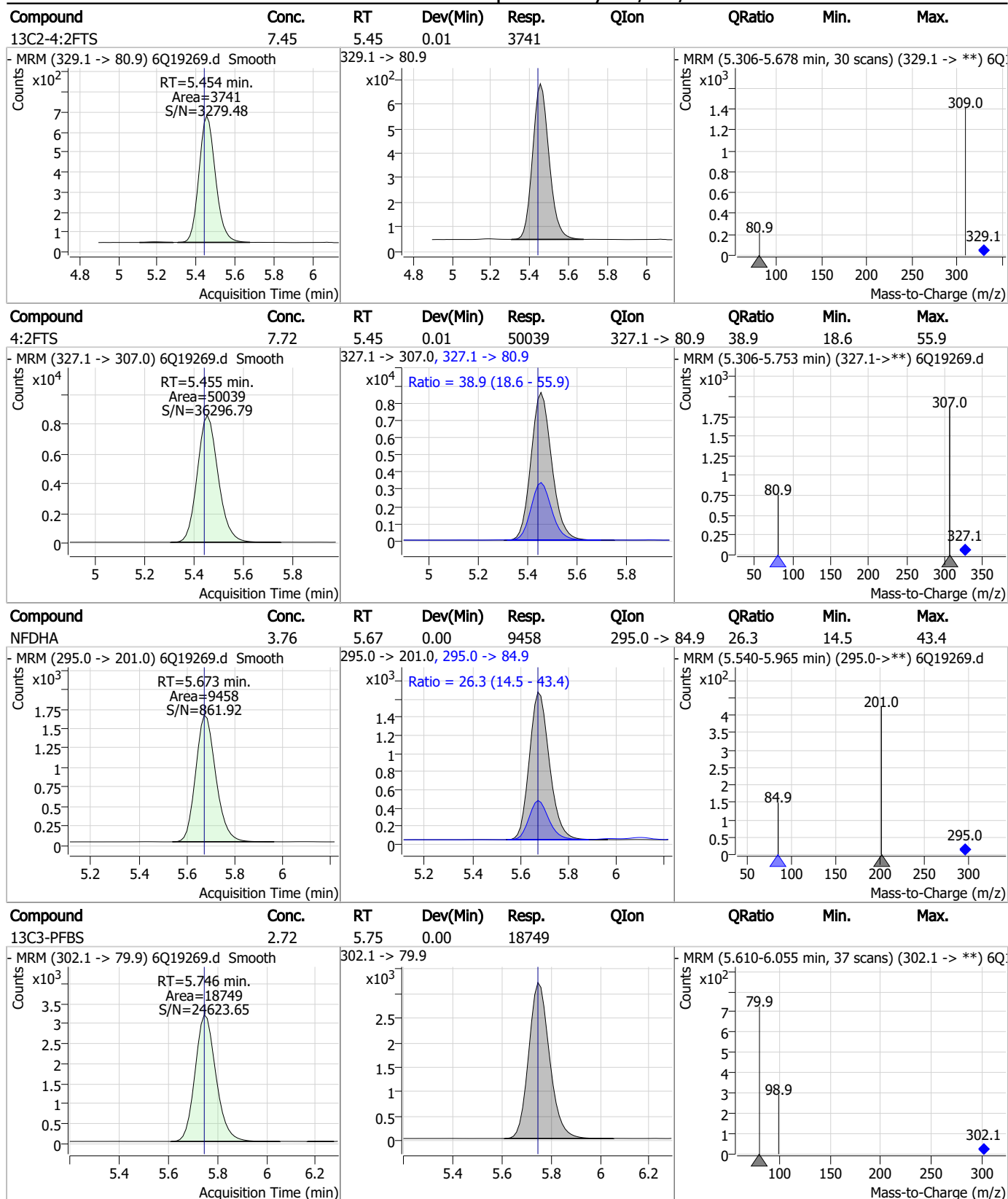
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.32	4.56	0.00	12007				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	7.10	4.99	0.00	17988				



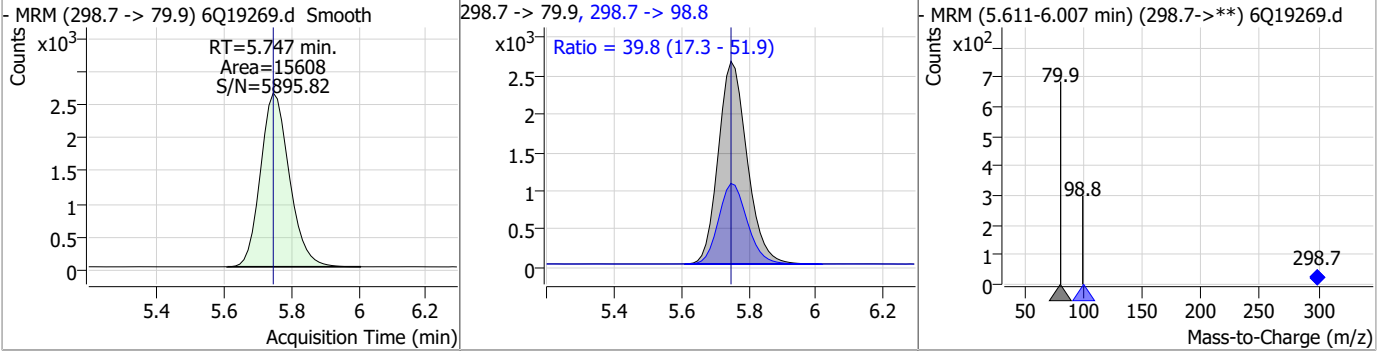
Perfluorinated Compounds by LC/MS/MS



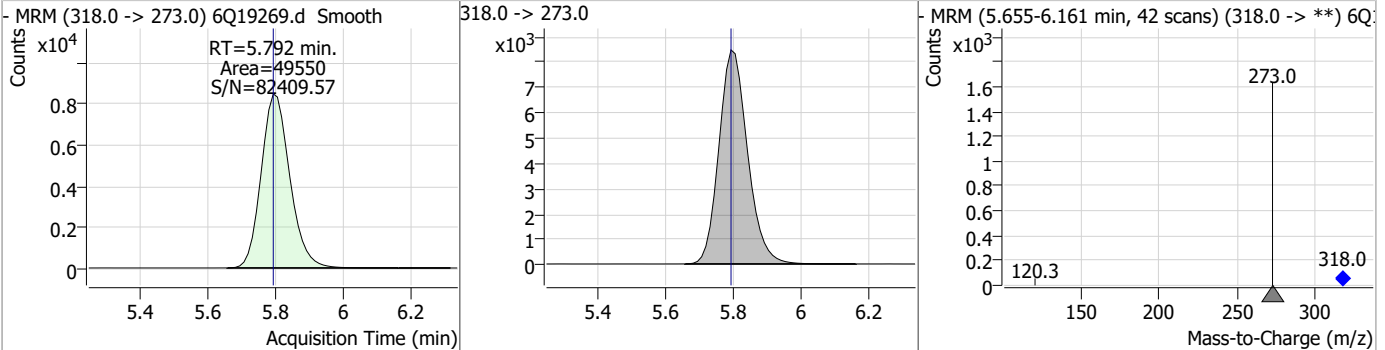
7.4.3
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Perfluorinated Compounds by LC/MS/MS

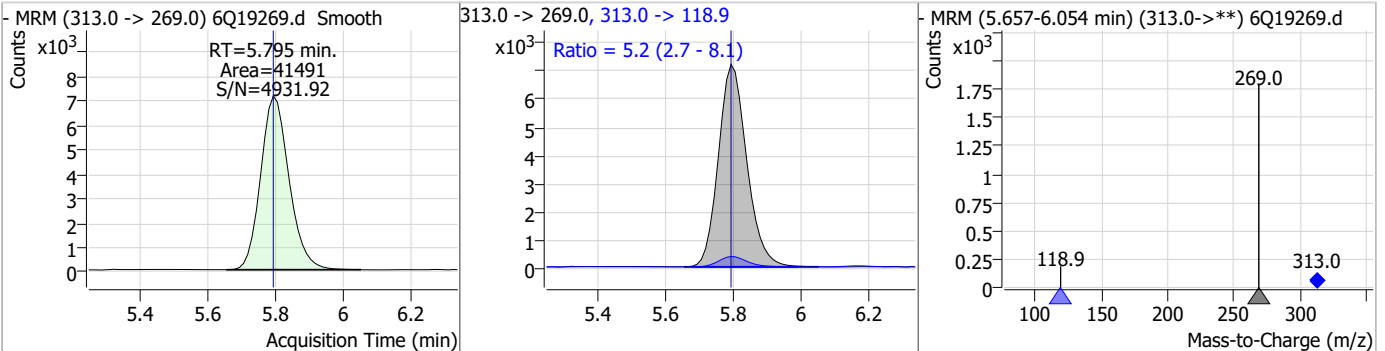
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.90	5.75	0.00	15608	298.7 -> 98.8	39.8	17.3	51.9



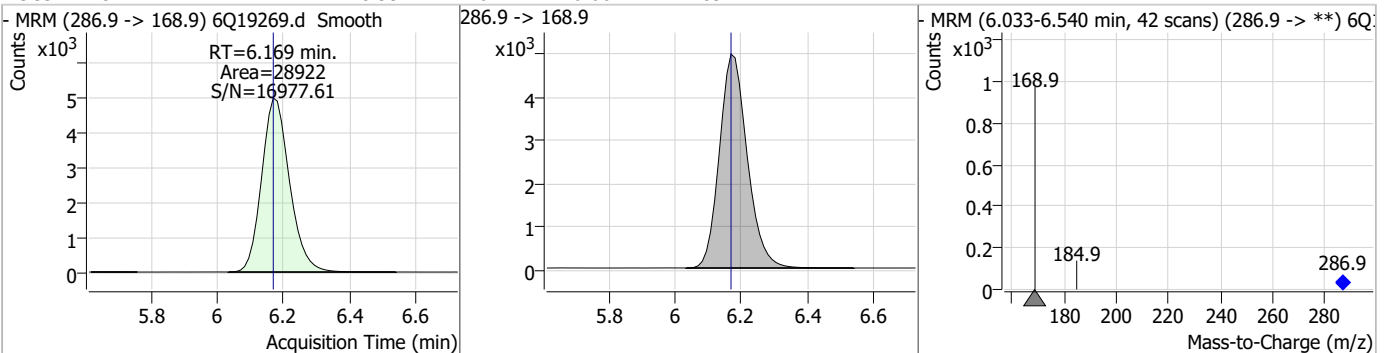
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.44	5.79	0.00	49550				



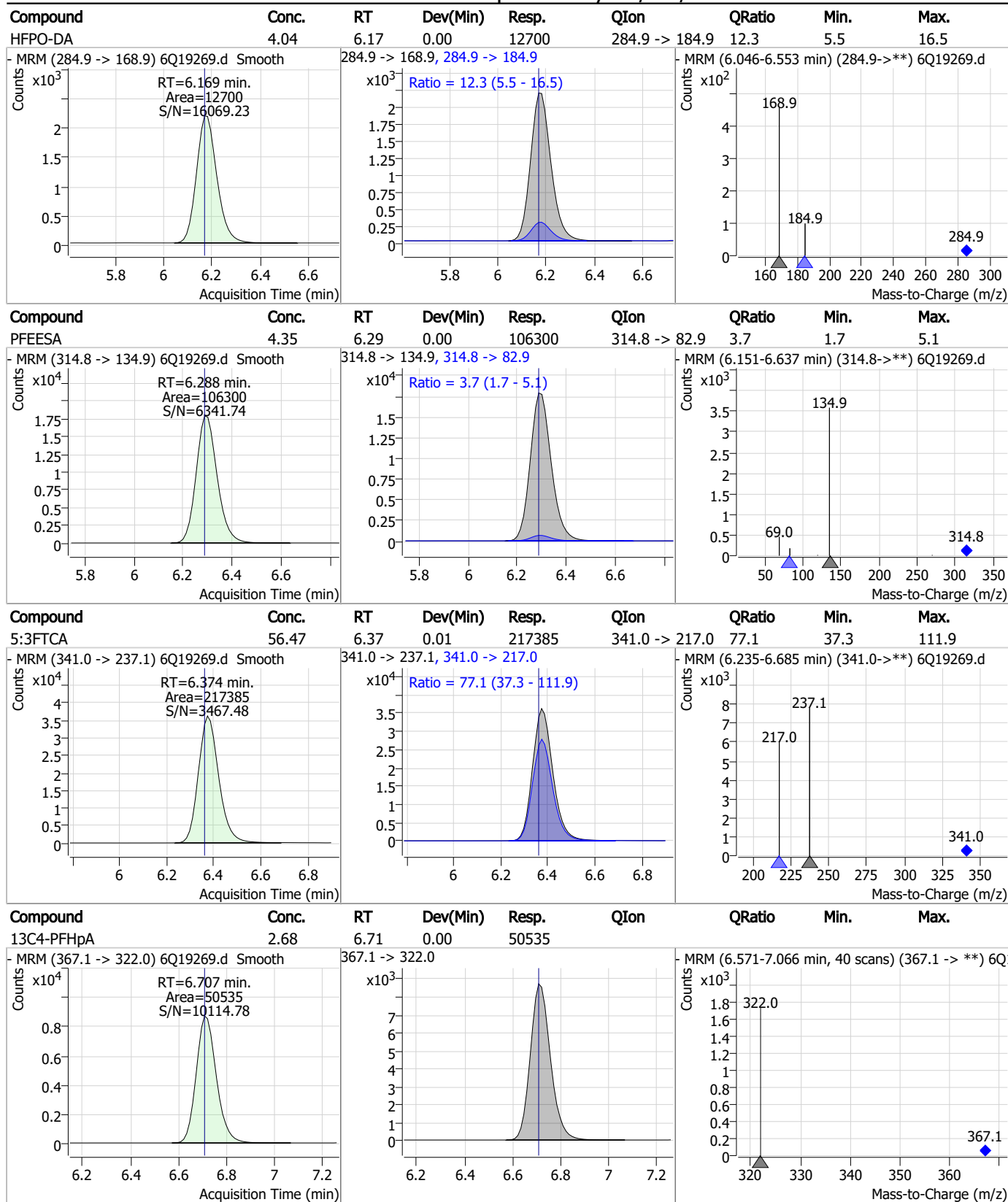
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.09	5.79	0.00	41491	313.0 -> 118.9	5.2	2.7	8.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.99	6.17	0.00	28922				

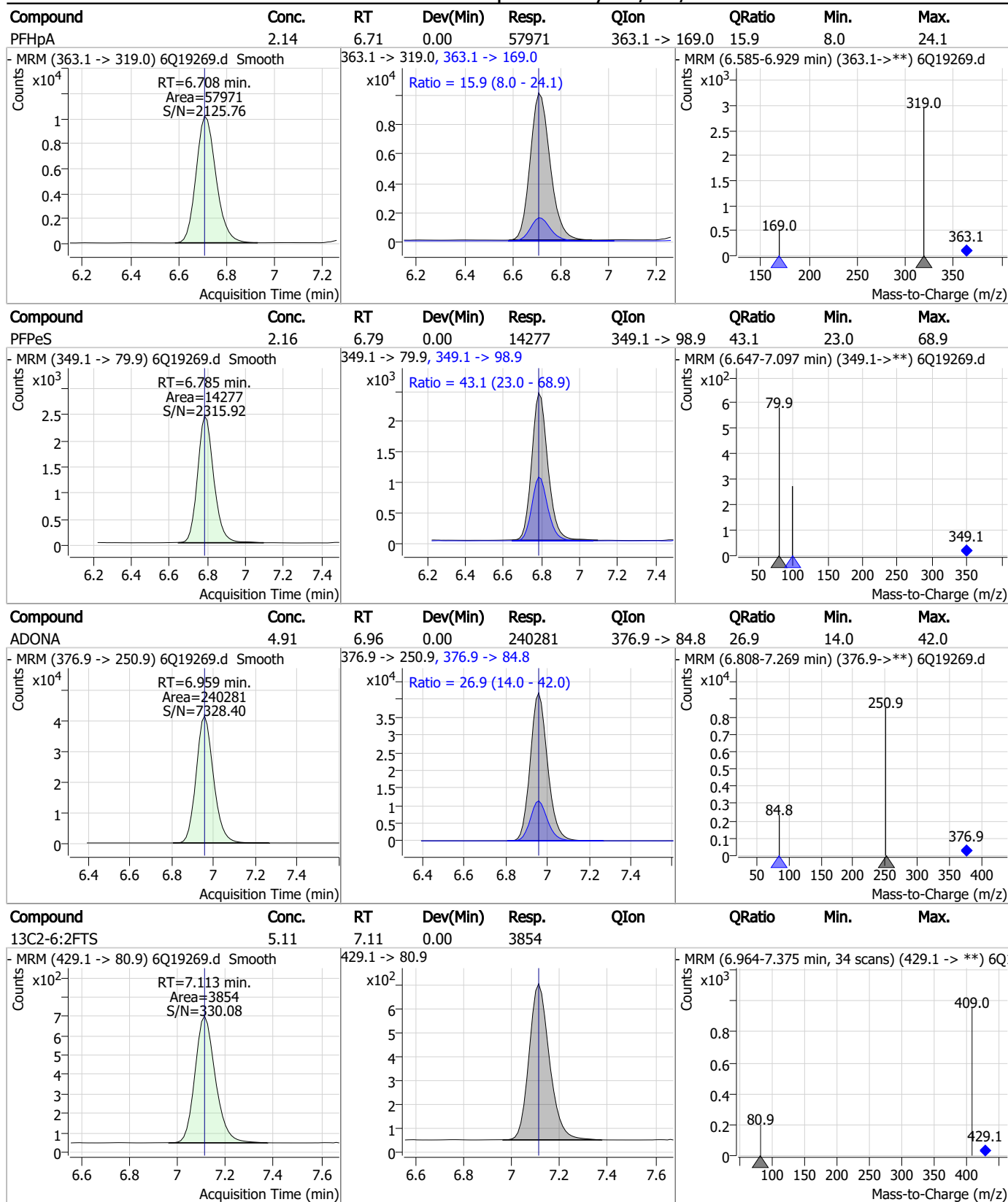


Perfluorinated Compounds by LC/MS/MS



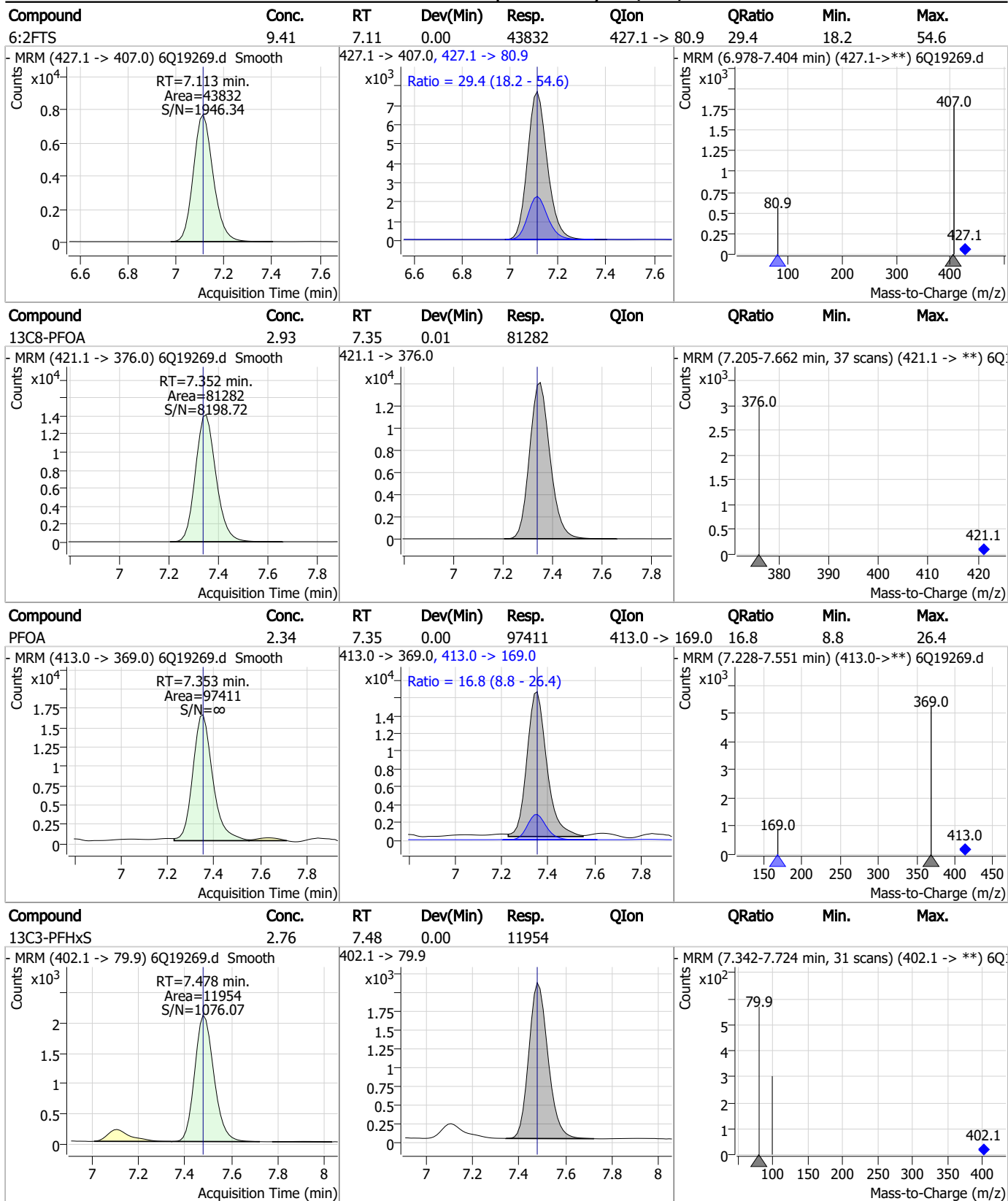
7.4.3
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Perfluorinated Compounds by LC/MS/MS



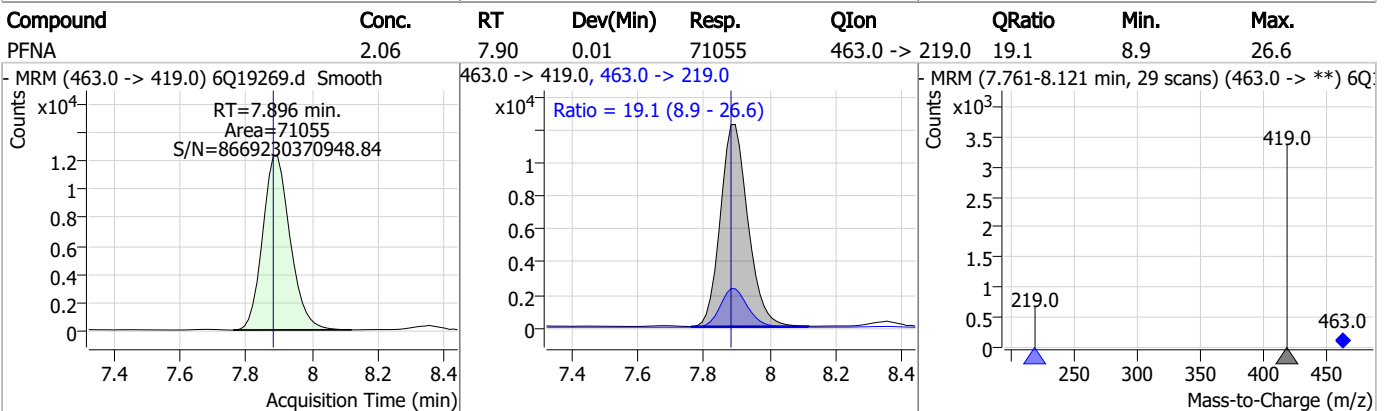
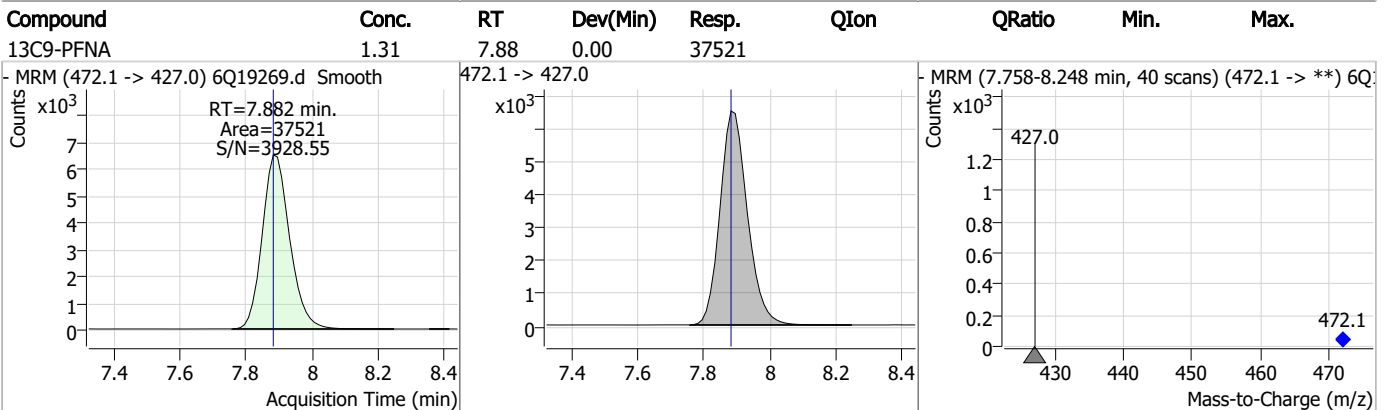
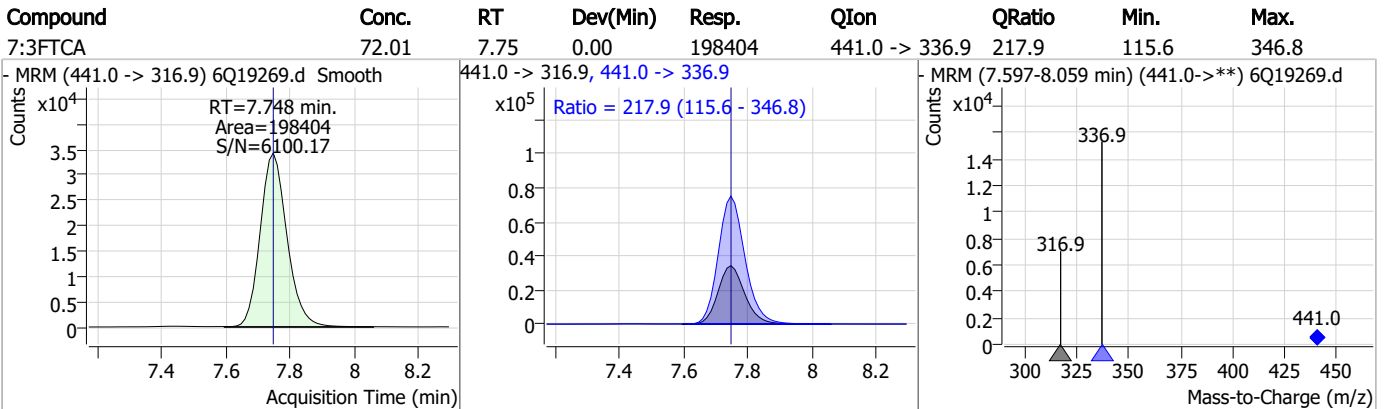
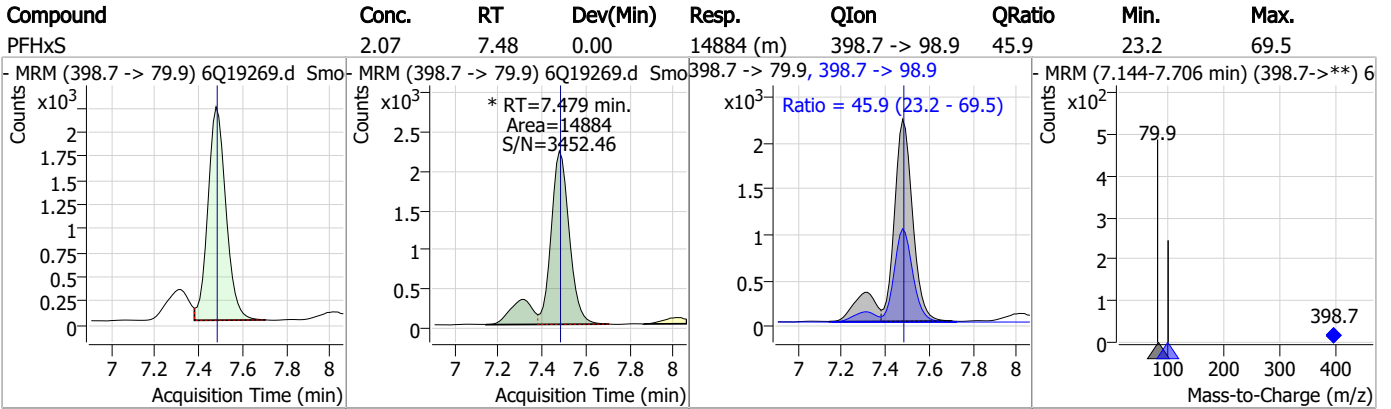
7.4.3
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Perfluorinated Compounds by LC/MS/MS



7.4.3
7

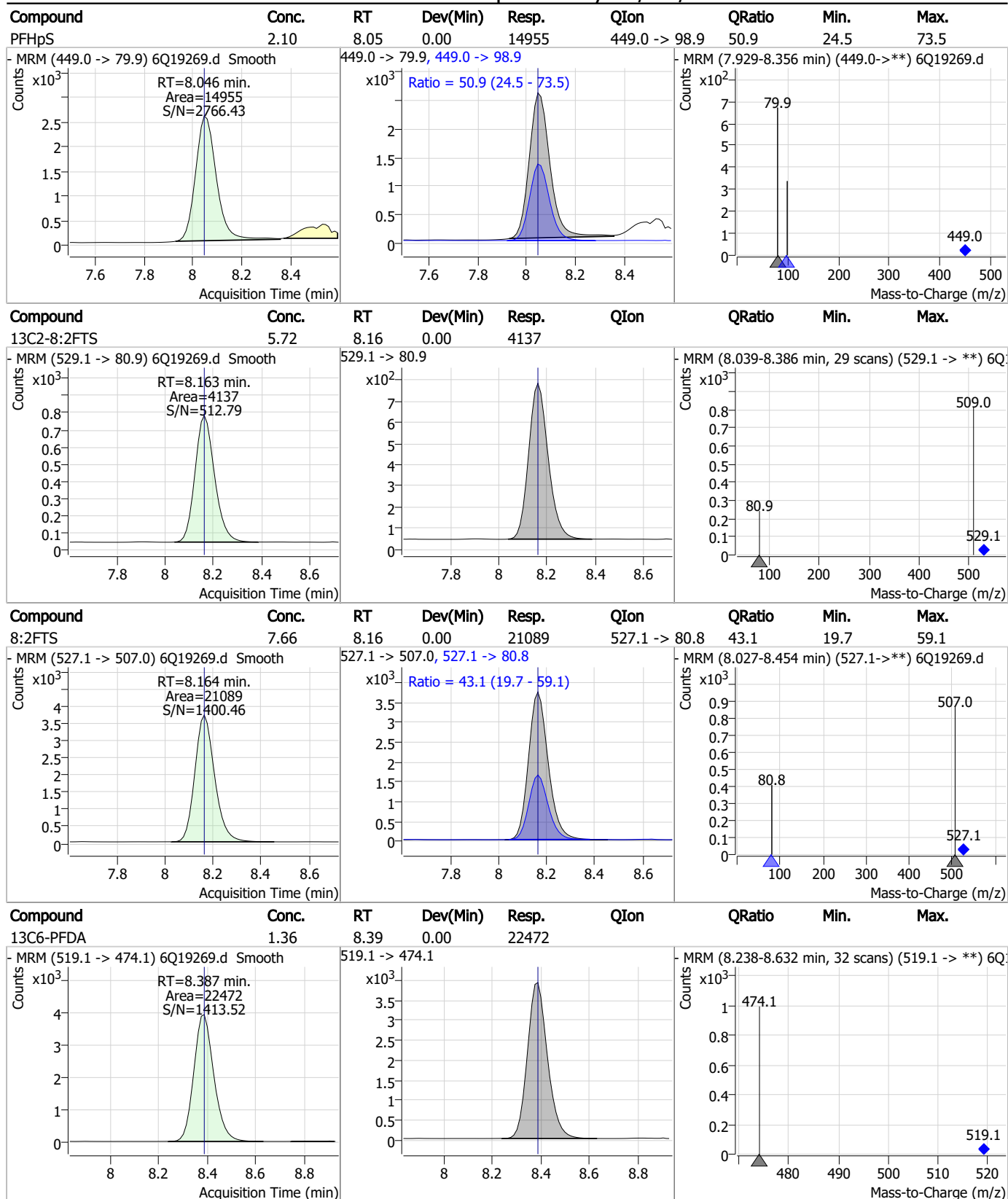
Perfluorinated Compounds by LC/MS/MS



7.4.3

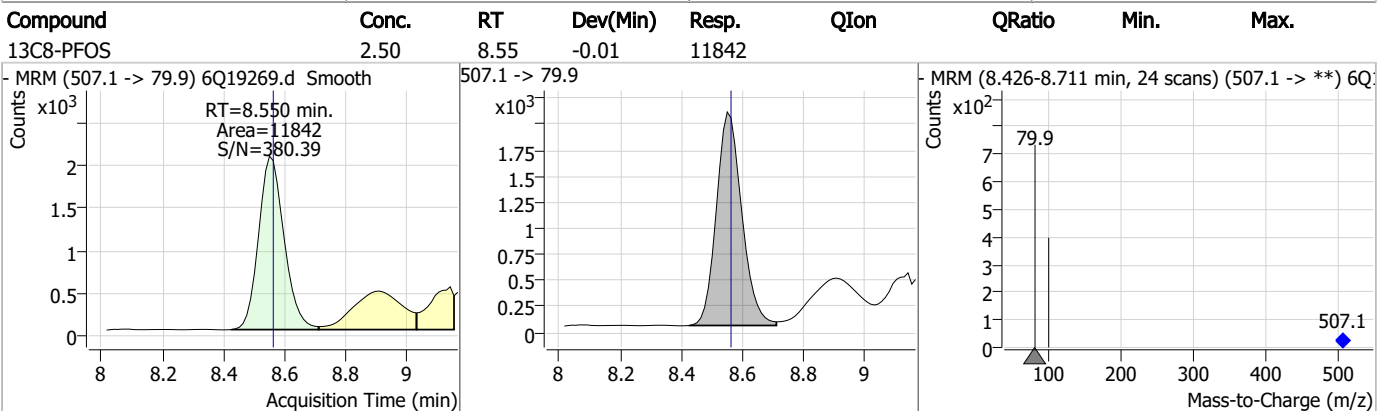
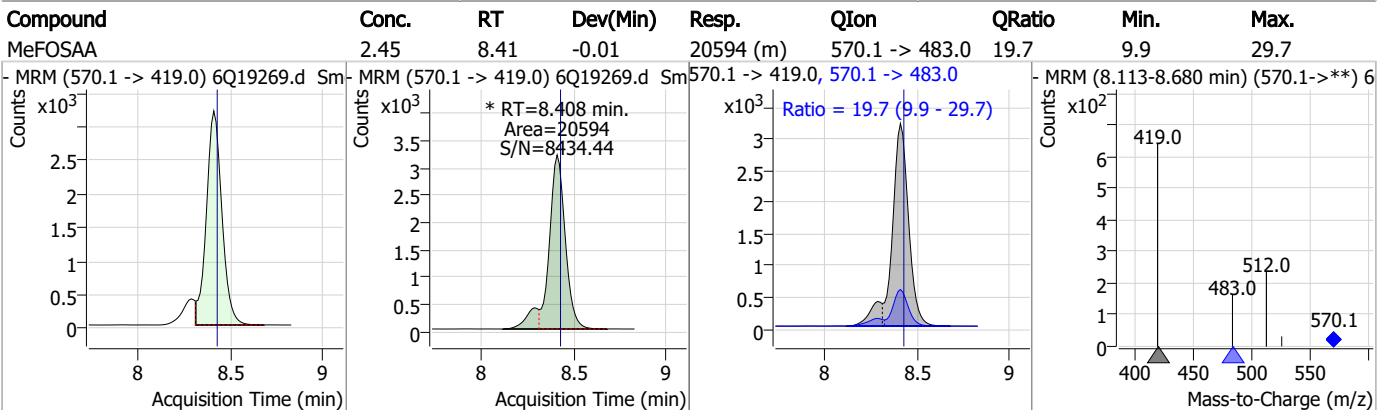
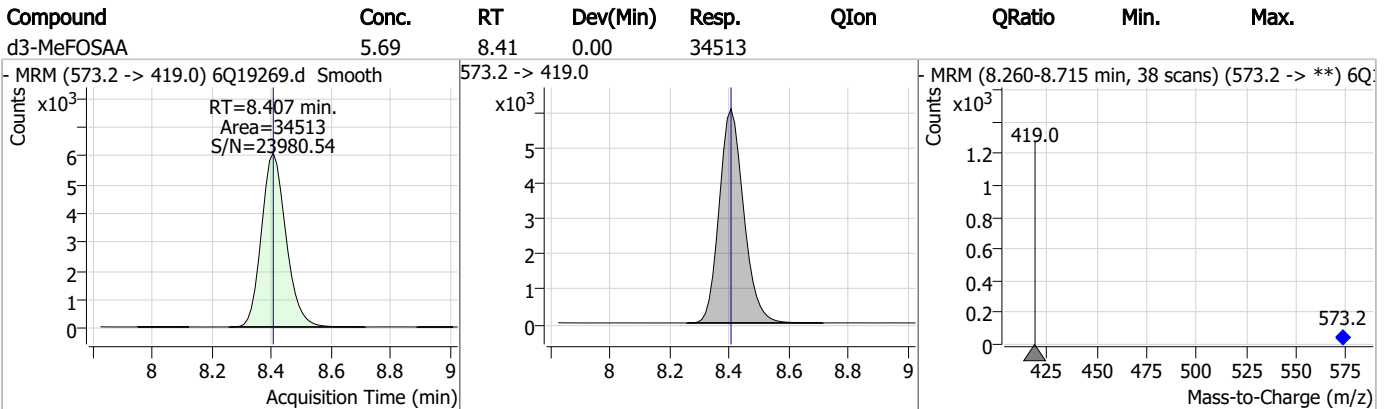
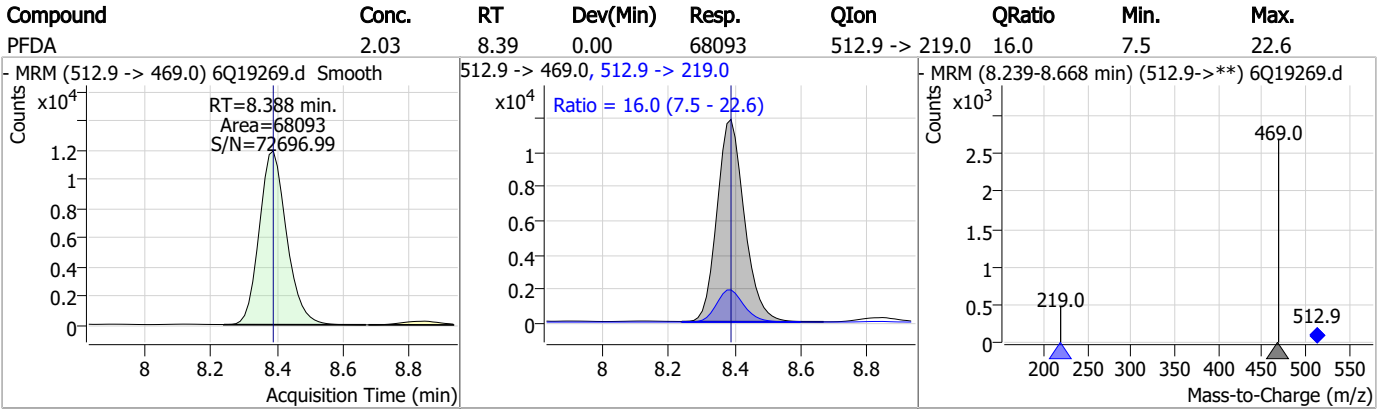
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Perfluorinated Compounds by LC/MS/MS



7.4.3
7

Perfluorinated Compounds by LC/MS/MS



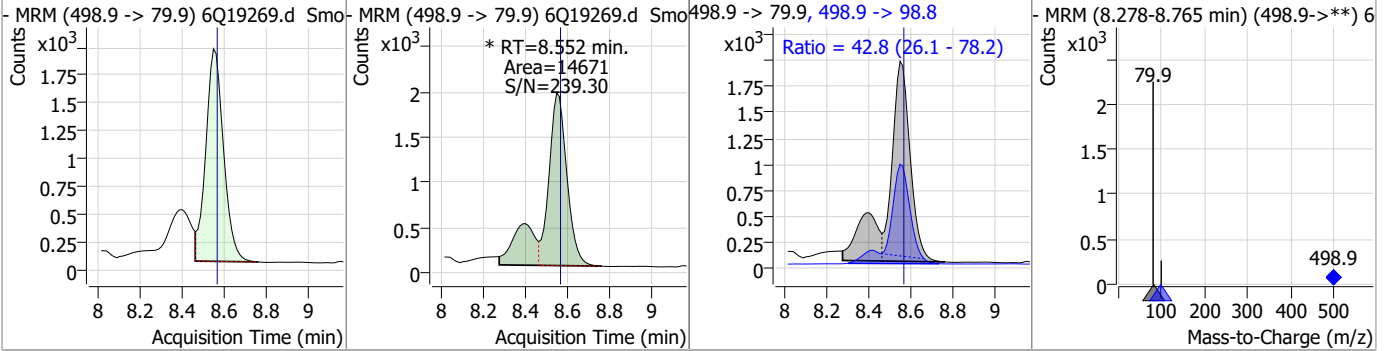
7.4.3

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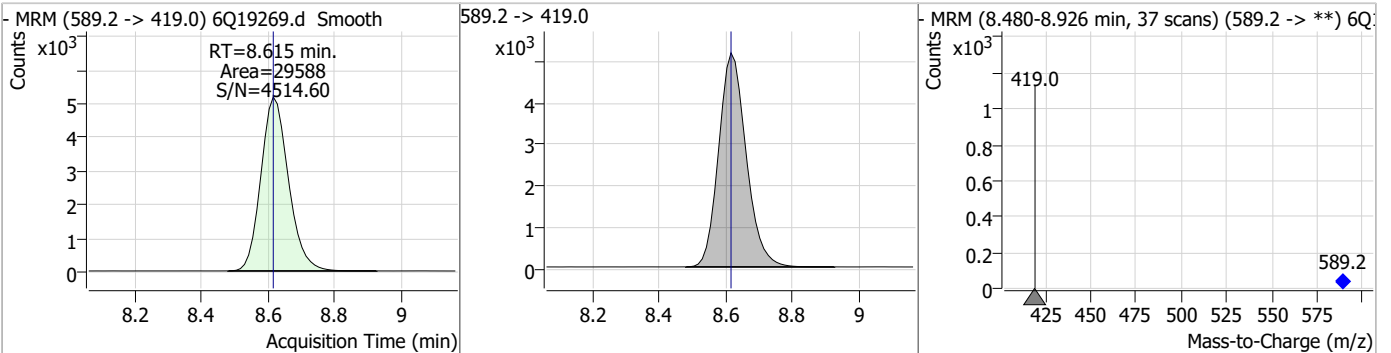


Perfluorinated Compounds by LC/MS/MS

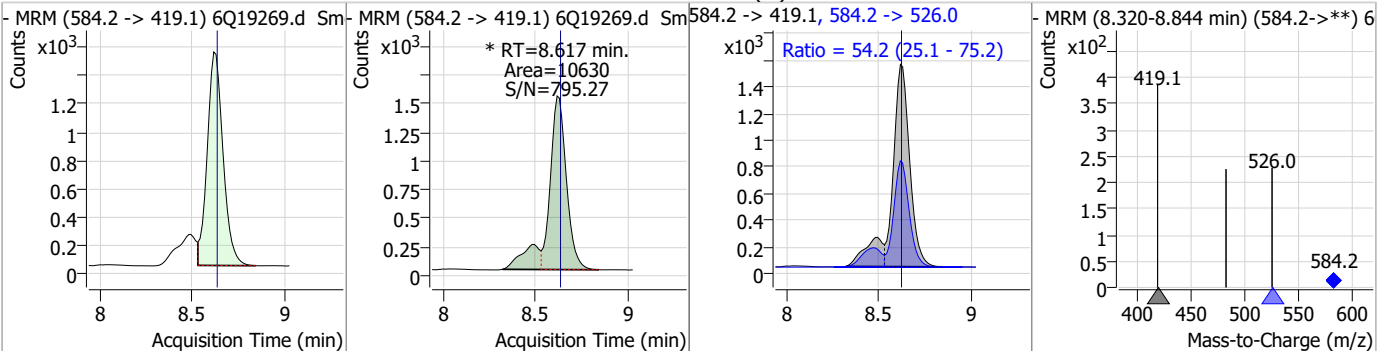
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.10	8.55	-0.01	14671 (m)	498.9 -> 98.8	42.8	26.1	78.2



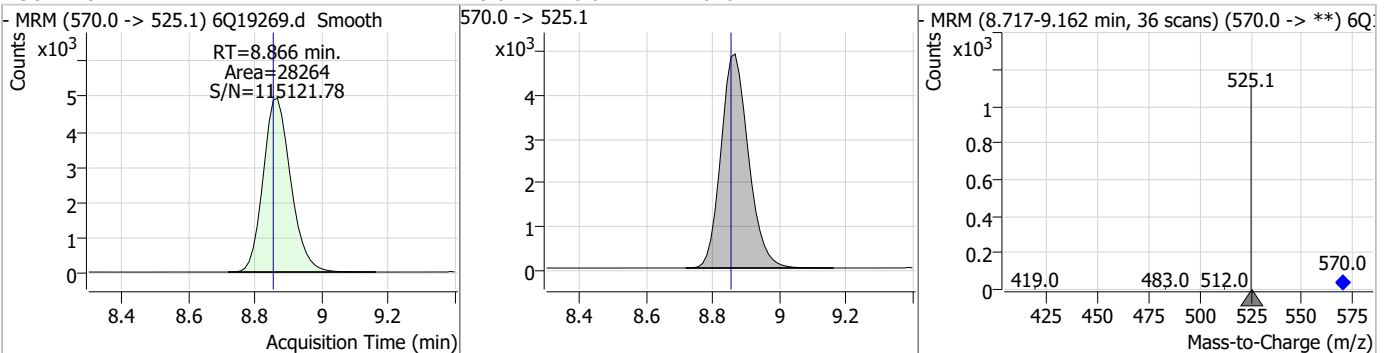
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.78	8.62	0.00	29588				



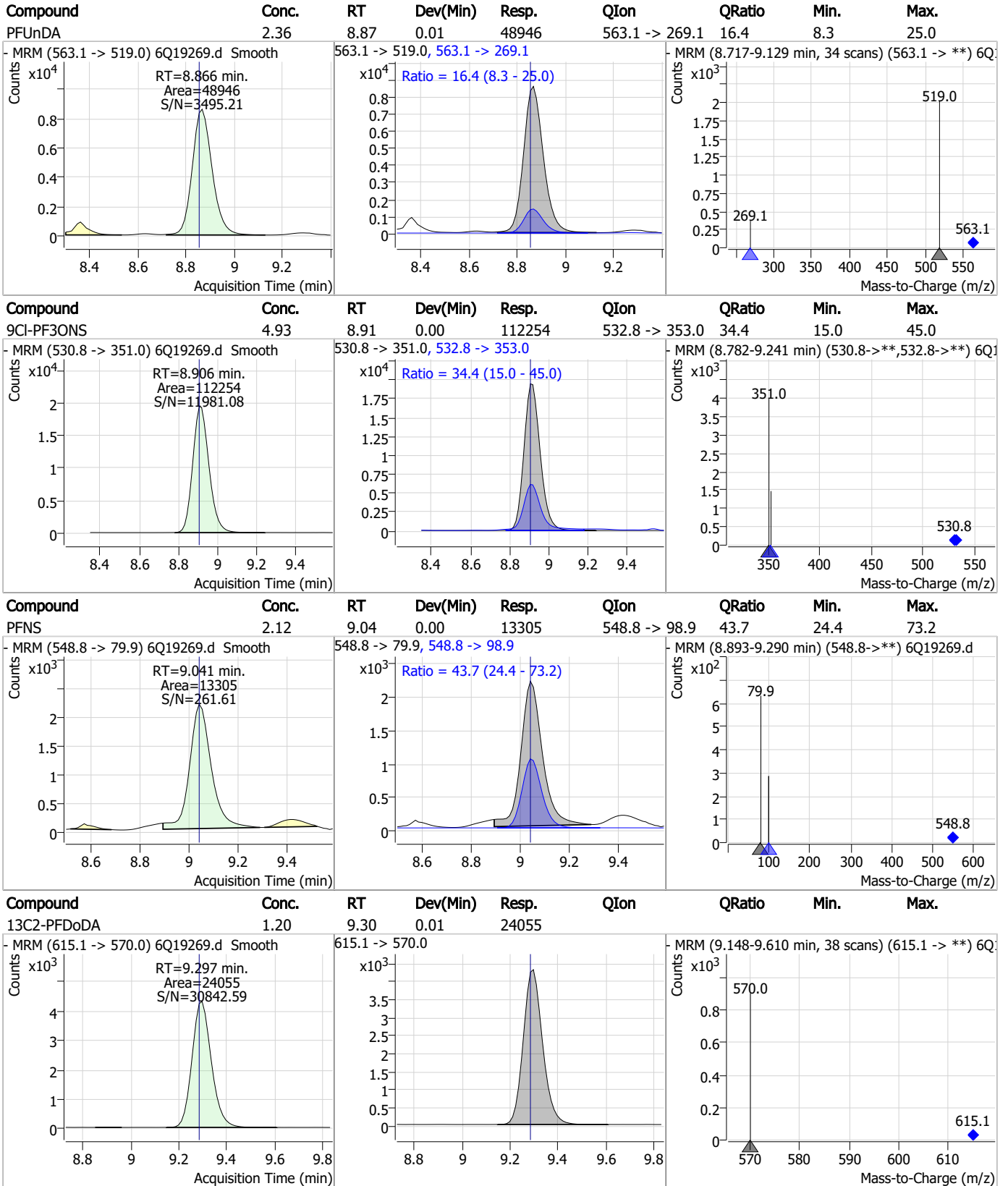
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.16	8.62	-0.01	10630 (m)	584.2 -> 526.0	54.2	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.87	0.01	28264				



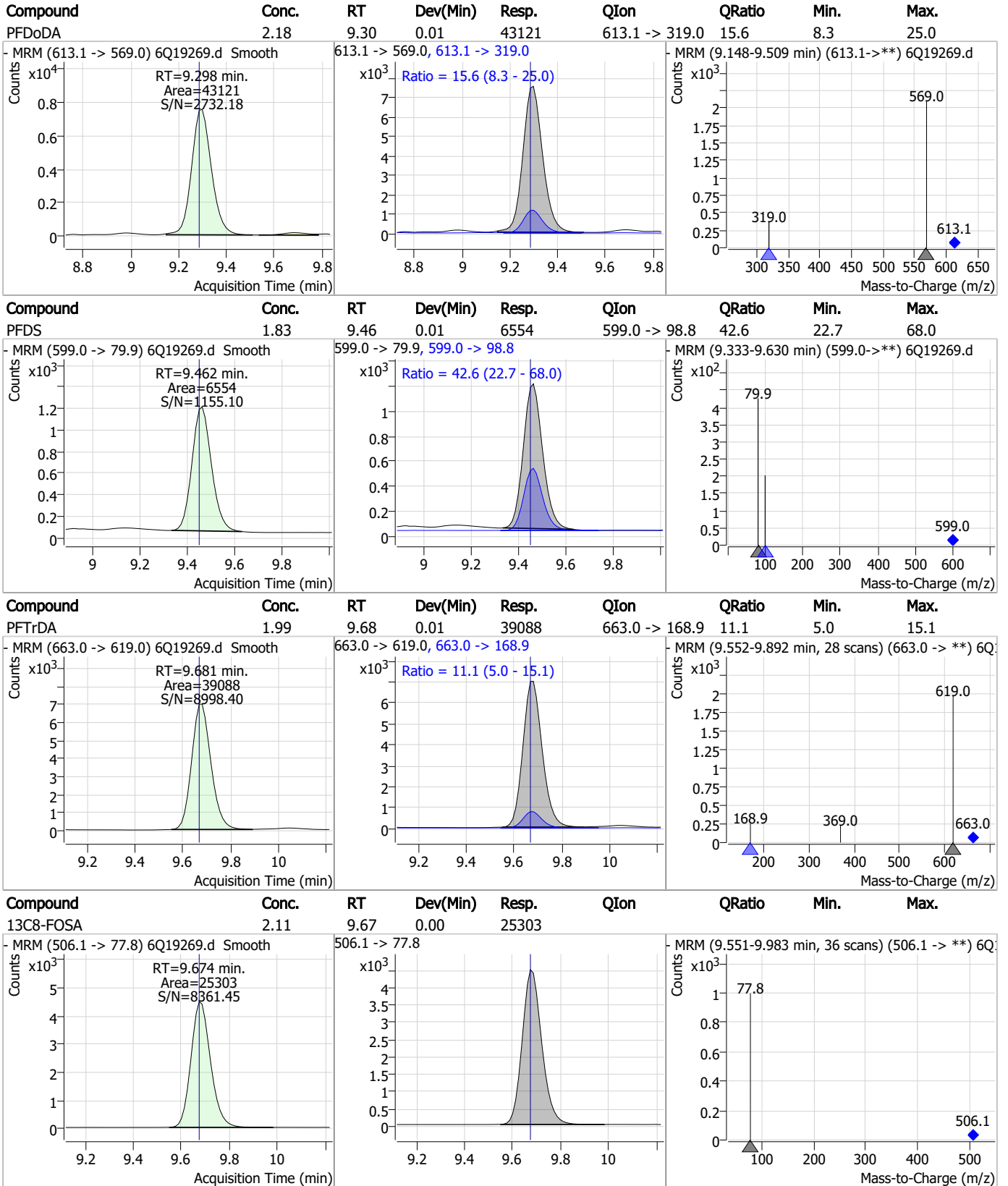
Perfluorinated Compounds by LC/MS/MS



7.4.3

7

Perfluorinated Compounds by LC/MS/MS

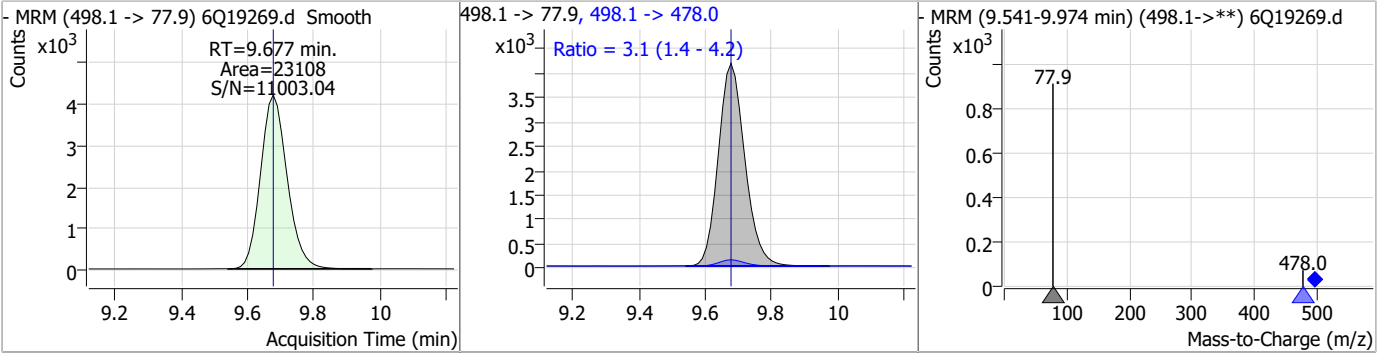


7.4.3

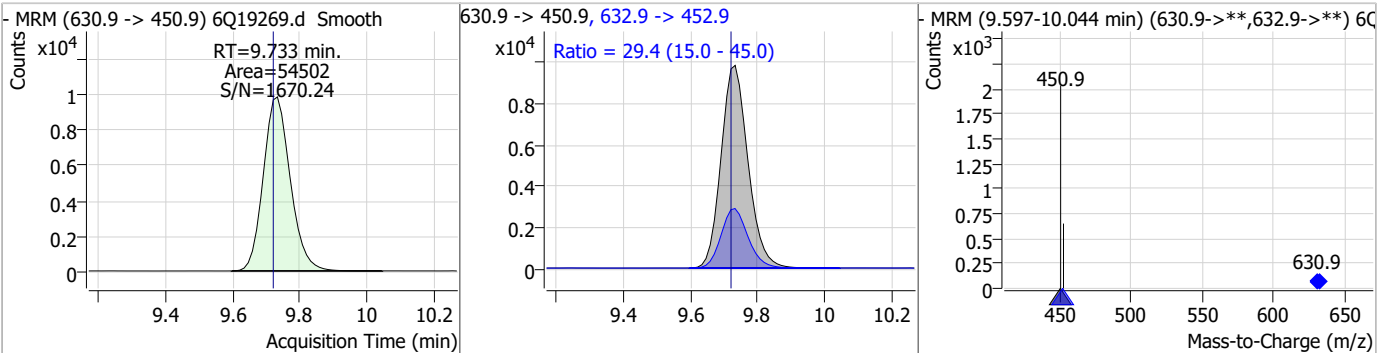
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Perfluorinated Compounds by LC/MS/MS

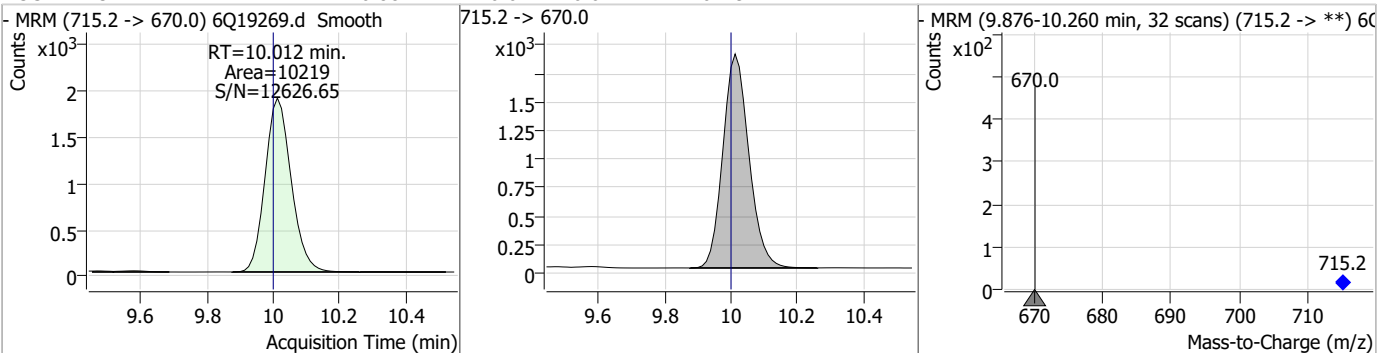
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.23	9.68	0.00	23108	498.1 -> 478.0	3.1	1.4	4.2



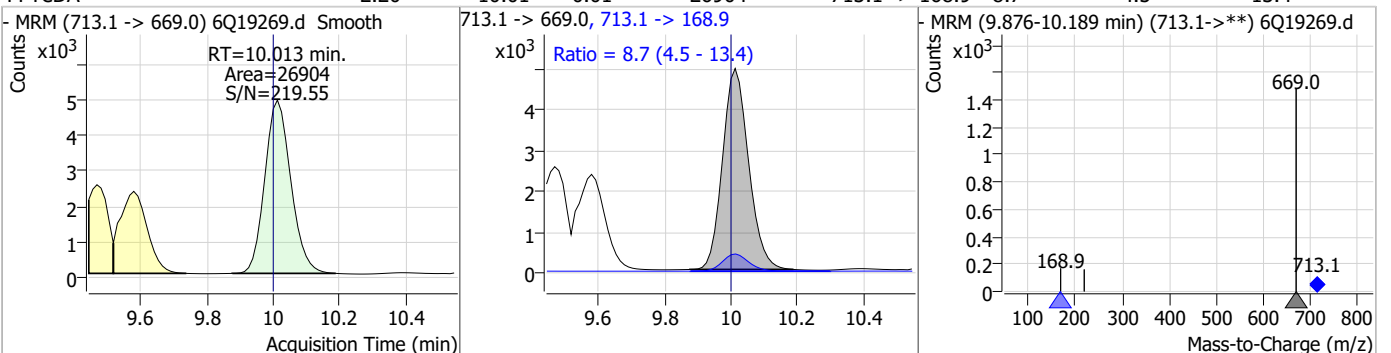
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.00	9.73	0.01	54502	632.9 -> 452.9	29.4	15.0	45.0



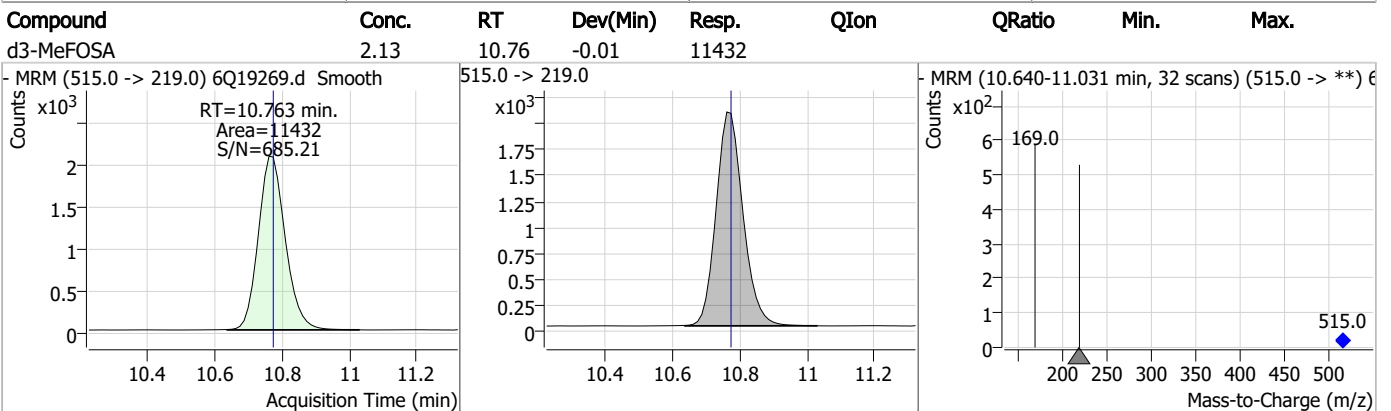
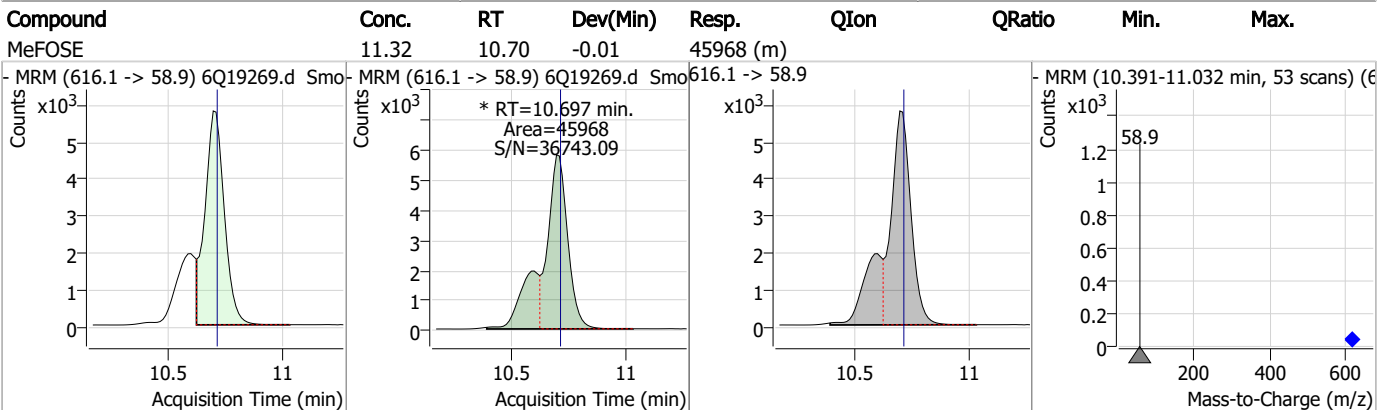
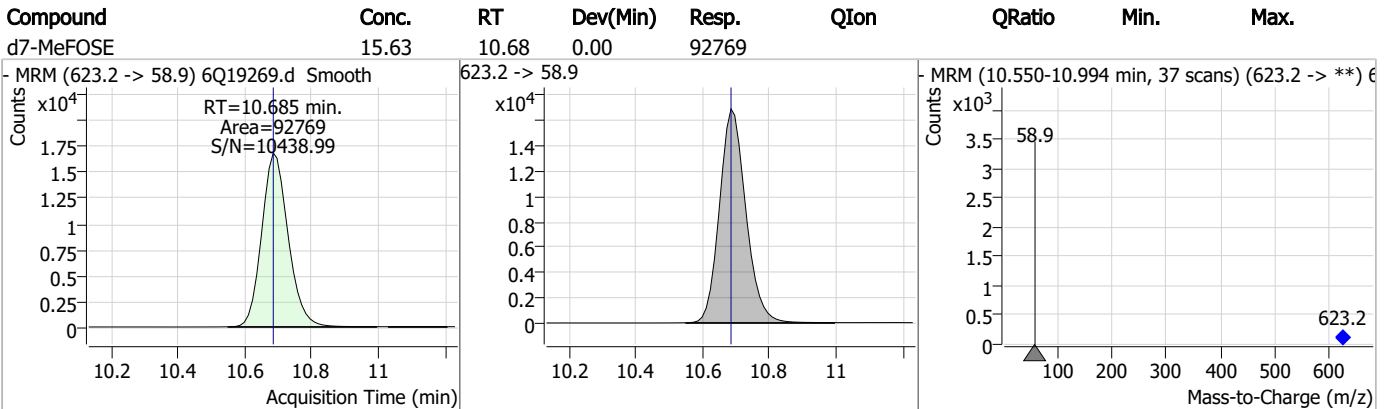
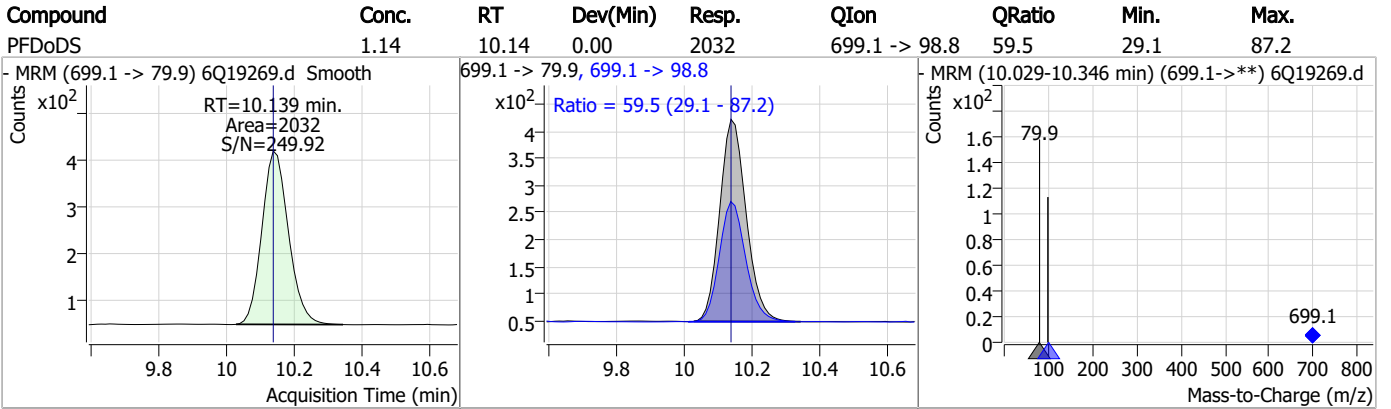
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.88	10.01	0.01	10219	715.2 -> 670.0	-	-	-



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.20	10.01	0.01	26904	713.1 -> 168.9	8.7	4.5	13.4



Perfluorinated Compounds by LC/MS/MS

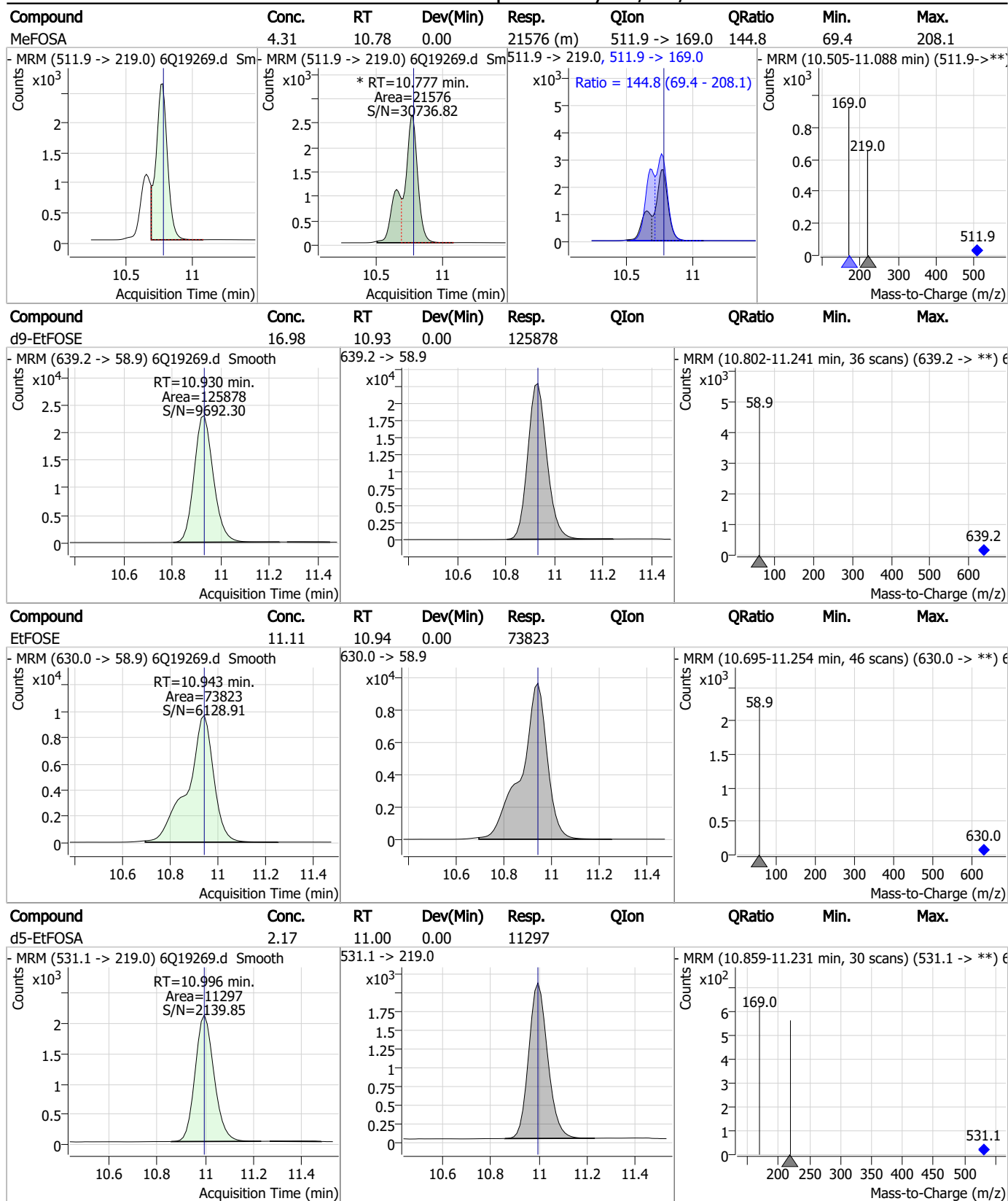


7.4.3

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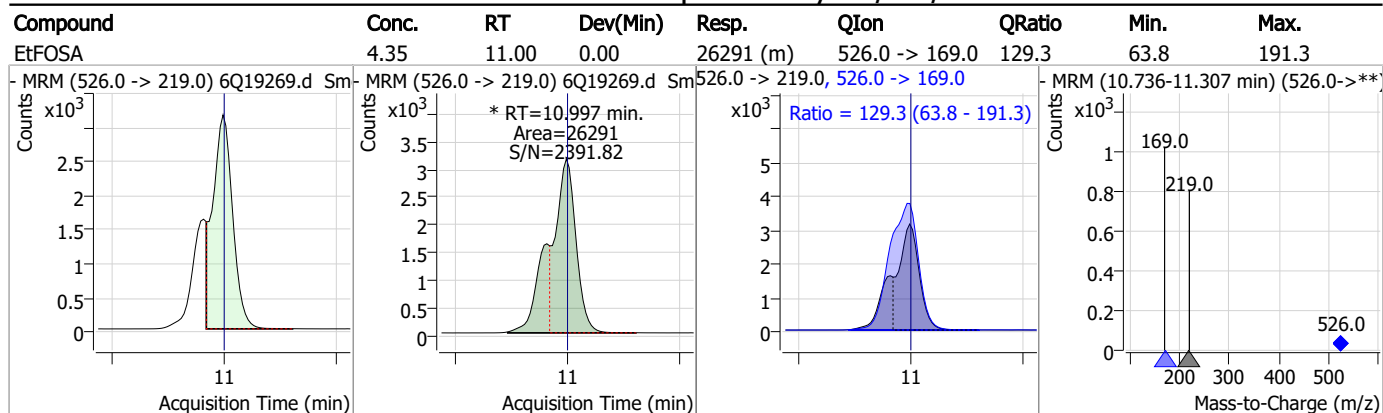
Perfluorinated Compounds by LC/MS/MS



7.4.3

7

Perfluorinated Compounds by LC/MS/MS



7.4.3

7

Manual Integration Approval Summary

Sample Number: OP97275-MS Method: EPA DRAFT 1633
Lab FileID: 6Q19269.D Analyst approved: 06/13/23 13:40 Natasha Gumtie
Injection Time: 06/12/23 22:33 Supervisor approved: 06/13/23 13:43 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
3:3 Fluorotelomer carboxylate	356-02-5		3.97	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.41	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.55	Split peak
EtFOSAA	2991-50-6		8.62	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.78	Split peak
EtFOSA	4151-50-2		11.00	Split peak

7.4.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19275.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 11:57:47 PM
 Sample Name : op97275-dup
 Vial : P2-C2
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97275,S6Q287,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	160655	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	54297	5.00 µg/L	0.000
M5-PFHxA	5.804	318.0 -> 273.0	58999	2.50 µg/L	0.012
M4-PFHpA	6.719	367.1 -> 322.0	55766	2.50 µg/L	0.012
M8-PFOA	7.352	421.1 -> 376.0	82399	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	41971	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	24815	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	26763	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	22941	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	12656	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	25097	2.50 µg/L	0.000
M3-PFBS	5.759	302.1 -> 79.9	23054	2.50 µg/L	0.012
M3-PFHxS	7.478	402.1 -> 79.9	13254	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11143	2.50 µg/L	0.000
M2-4:2FTS	5.454	329.1 -> 80.9	3769	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	5497	5.00 µg/L	0.000
M2-8:2FTS	8.175	529.1 -> 80.9	4607	5.00 µg/L	0.012
M3-MeFOSAA	8.420	573.2 -> 419.0	28941	5.00 µg/L	0.012
M3-HFPO-DA	6.181	286.9 -> 168.9	34946	10.00 µg/L	0.012
M5-EtFOSAA	8.628	589.2 -> 419.0	25029	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	94393	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	138478	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11282	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	10246	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14400	2.50 µg/L	0.000
13C3-PFBA	3.101	216.0 -> 172.0	60101	5.00 µg/L	0.012
18O2-PFHxS	7.490	403.0 -> 83.9	9141	2.50 µg/L	0.012
13C4-PFOA	7.352	417.1 -> 372.0	80015	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	29208	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	43269	1.25 µg/L	0.013
13C2-PFHxA	5.805	315.1 -> 270.0	48351	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3769	6.70 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 133.9%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5497	6.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.0%		
13C2-8:2FTS	8.175	529.1 -> 80.9	4607	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-PFDoDA	9.297	615.1 -> 570.0	22941	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-PFTeDA	10.012	715.2 -> 670.0	12656	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.3%		
13C3-PFBS	5.759	302.1 -> 79.9	23054	2.98 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 119.4%		
13C3-PFHxS	7.478	402.1 -> 79.9	13254	2.73 µg/L	0.000

7.5.1
7

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	3.097	216.8 -> 171.9	160655	11.38 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C4-PFHpA	6.719	367.1 -> 322.0	55766	2.87 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.8%	
13C5-PFHxA	5.804	318.0 -> 273.0	58999	2.82 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C5-PFPeA	4.560	268.3 -> 223.0	54297	5.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C6-PFDA	8.387	519.1 -> 474.1	24815	1.54 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 123.2%	
13C7-PFUnDA	8.866	570.0 -> 525.1	26763	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C8-FOSA	9.674	506.1 -> 77.8	25097	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-PFOA	7.352	421.1 -> 376.0	82399	2.76 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C8-PFOS	8.563	507.1 -> 79.9	11143	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C9-PFNA	7.895	472.1 -> 427.0	41971	1.59 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 127.2%	
d3-MeFOSAA	8.420	573.2 -> 419.0	28941	5.36 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C3-HFPO-DA	6.181	286.9 -> 168.9	34946	10.55 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d3-MeFOSA	10.775	515.0 -> 219.0	10246	2.14 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.6%	
d5-EtFOSAA	8.628	589.2 -> 419.0	25029	5.49 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
d7-MeFOSE	10.685	623.2 -> 58.9	94393	17.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 71.4%	
d9-EtFOSE	10.930	639.2 -> 58.9	138478	20.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
d5-EtFOSA	10.996	531.1 -> 219.0	11282	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	7.113	427.1 -> 407.0 427.1 -> 80.9	4142 1316	0.62 µg/L	92
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	9.685	613.1 -> 569.0 613.1 -> 319.0	0 0	µg/L	m 1
PFDS	-	599.0 -> 79.9	-	N.D.	

7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.355	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	0	N.D.		
		548.8 -> 79.9				
PFOA	7.898	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	0	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
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.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.5.1
7

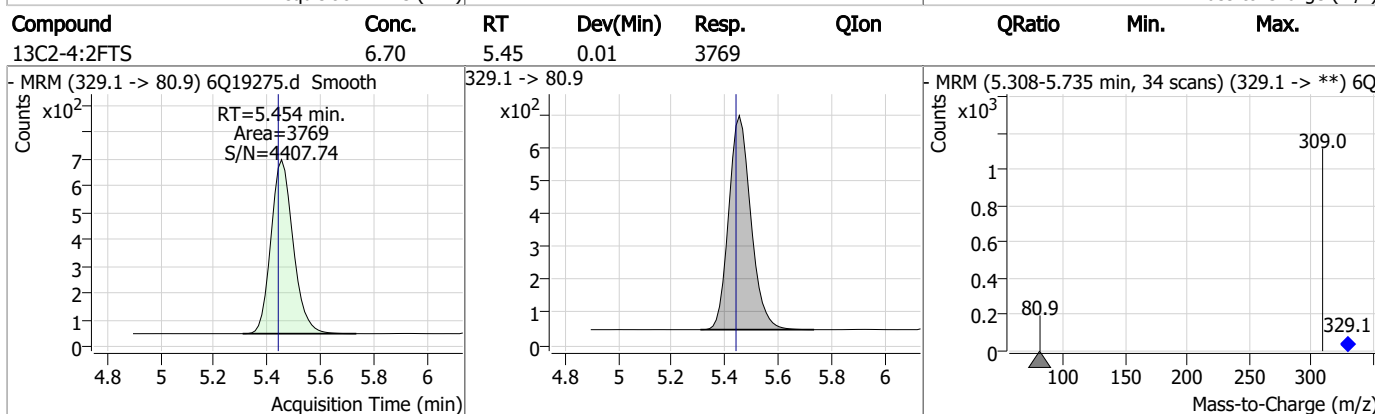
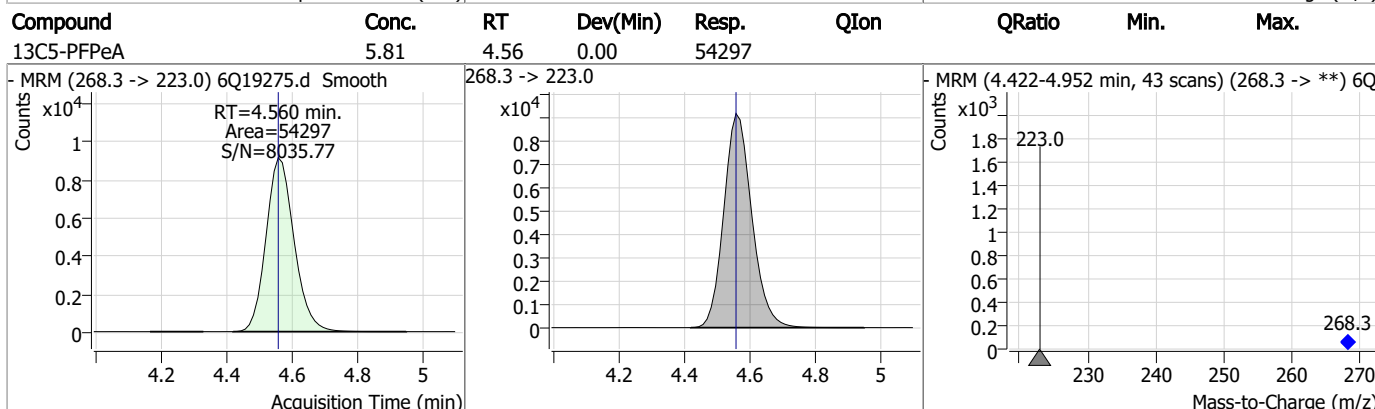
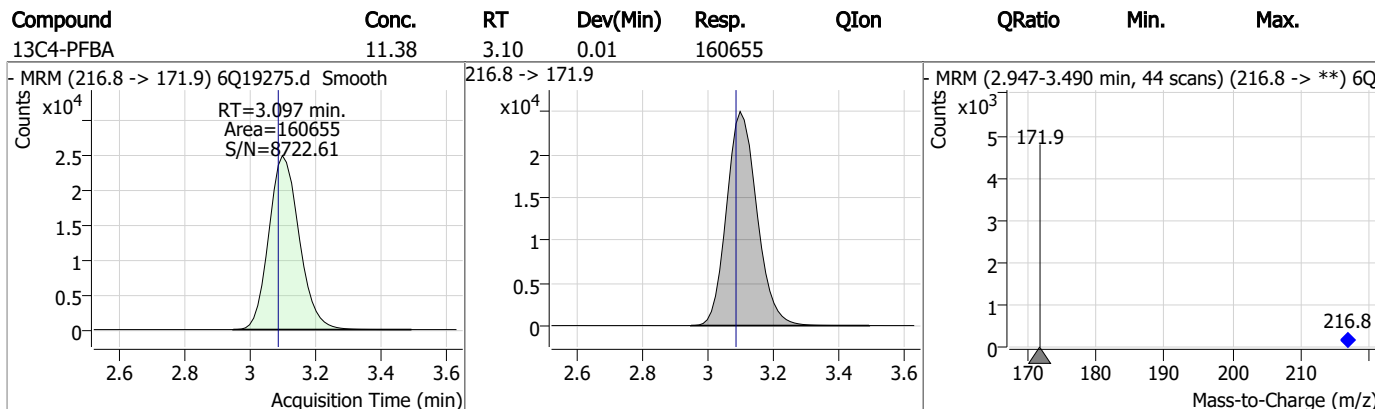
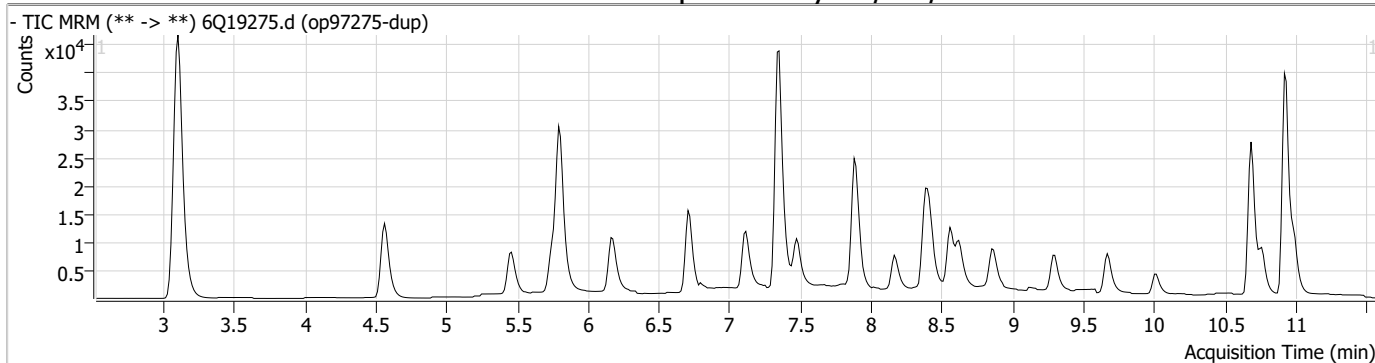
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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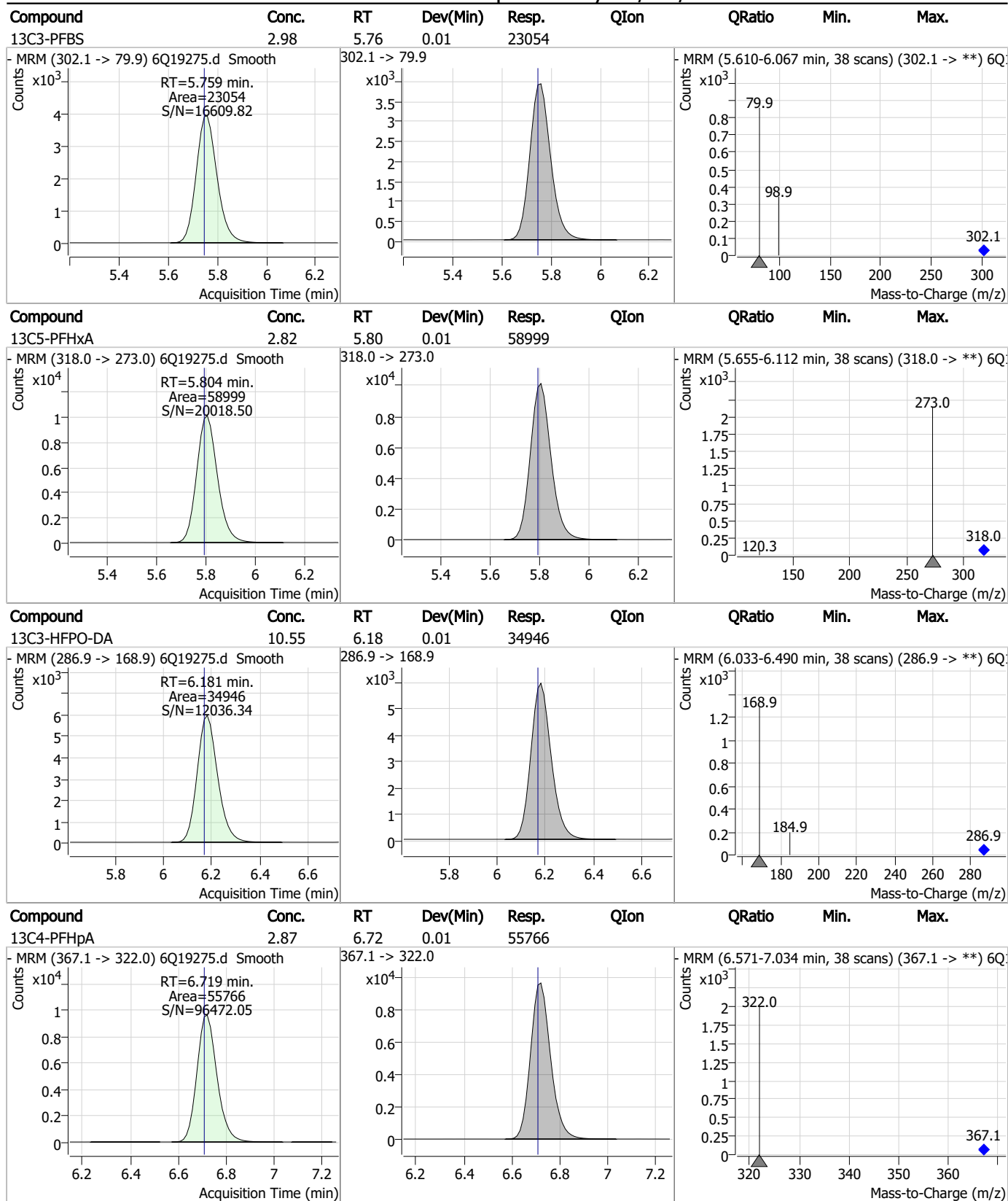
7.5.1

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Perfluorinated Compounds by LC/MS/MS



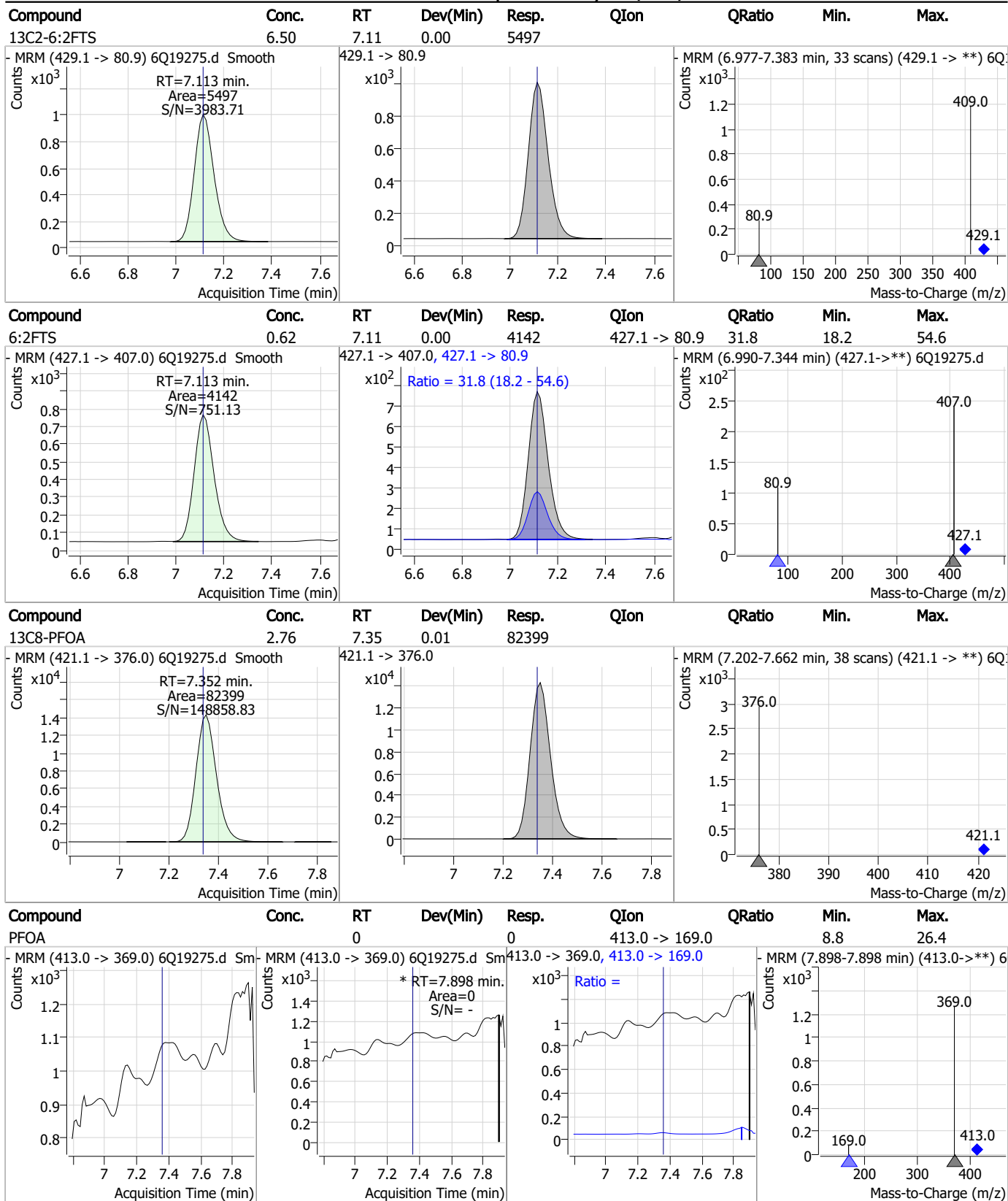
Perfluorinated Compounds by LC/MS/MS



7.5.1
7

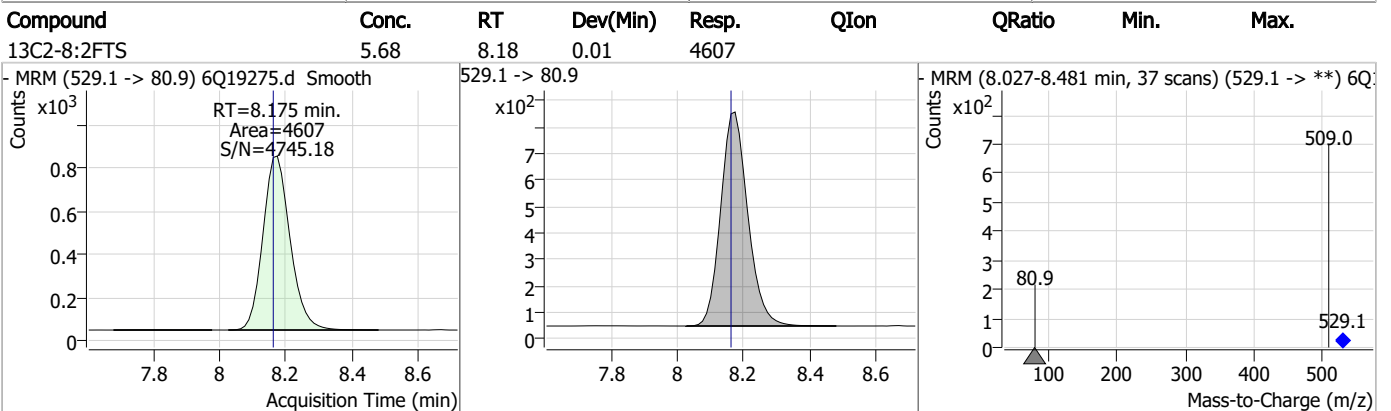
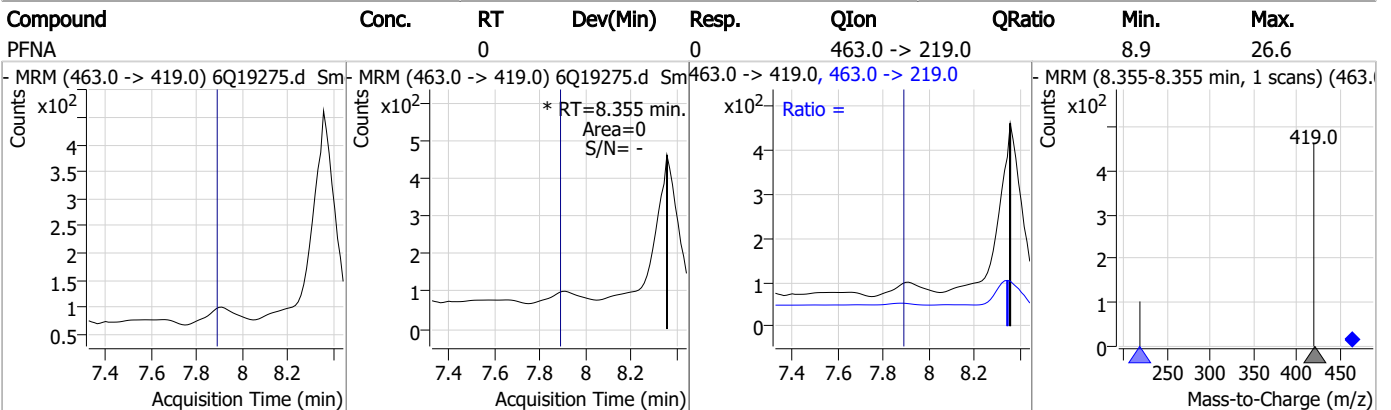
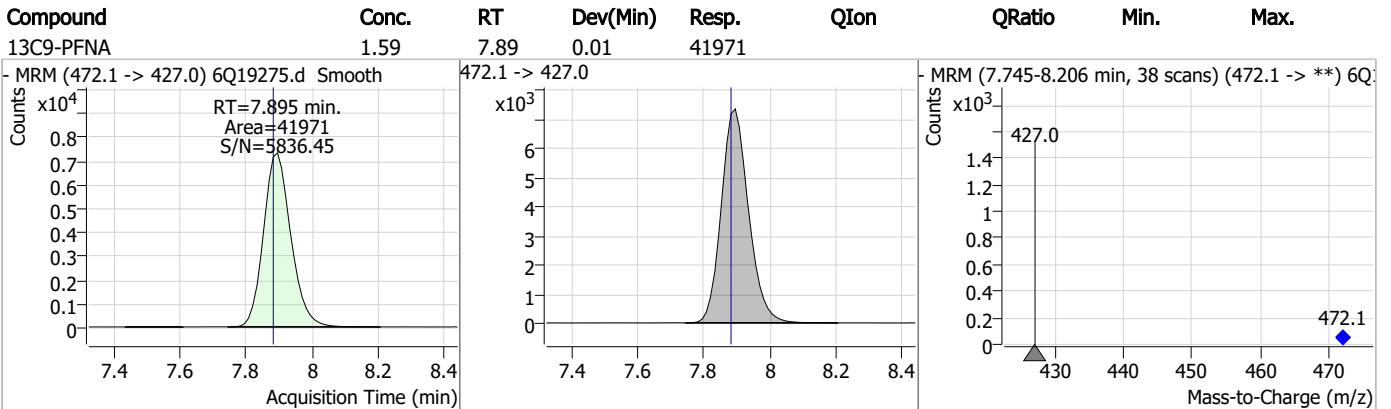
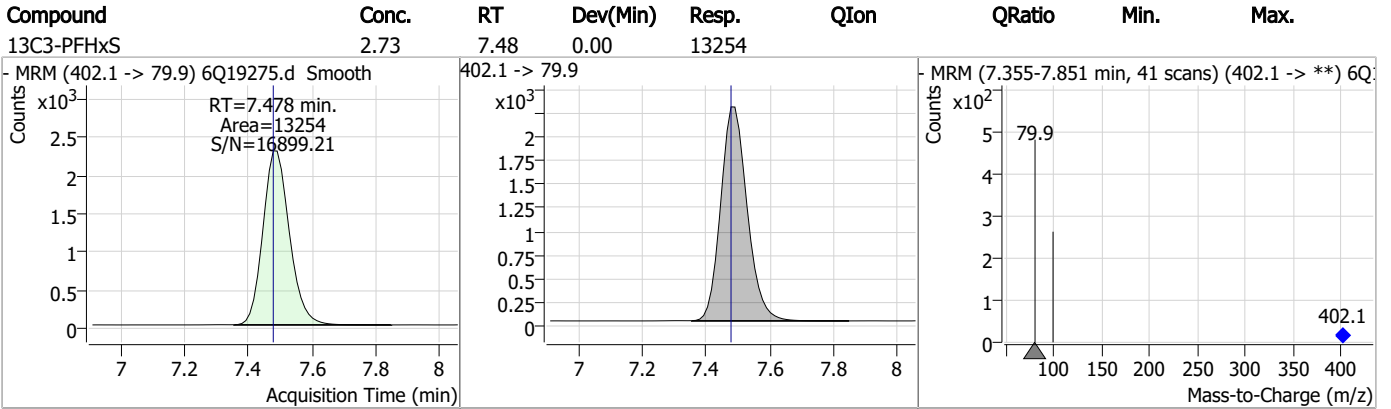


Perfluorinated Compounds by LC/MS/MS



7.5.1
7

Perfluorinated Compounds by LC/MS/MS



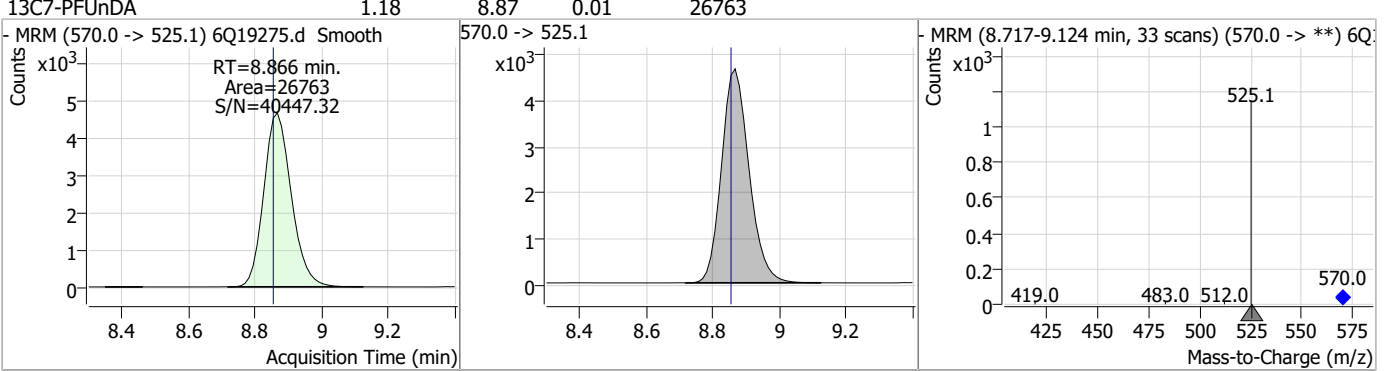
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.54	8.39	0.00	24815				
d3-MeFOSAA	5.36	8.42	0.01	28941				
13C8-PFOS	2.64	8.56	0.00	11143				
d5-EtFOSAA	5.49	8.63	0.01	25029				

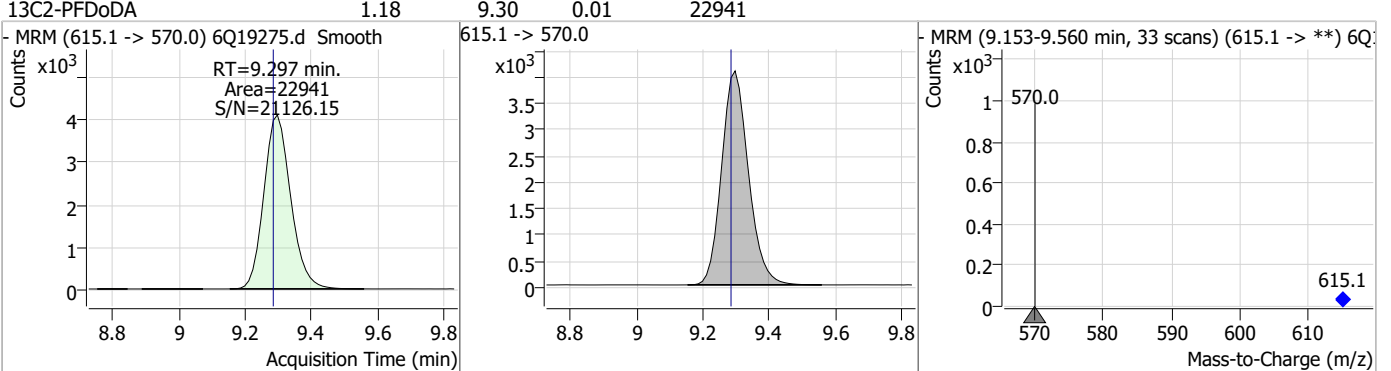
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

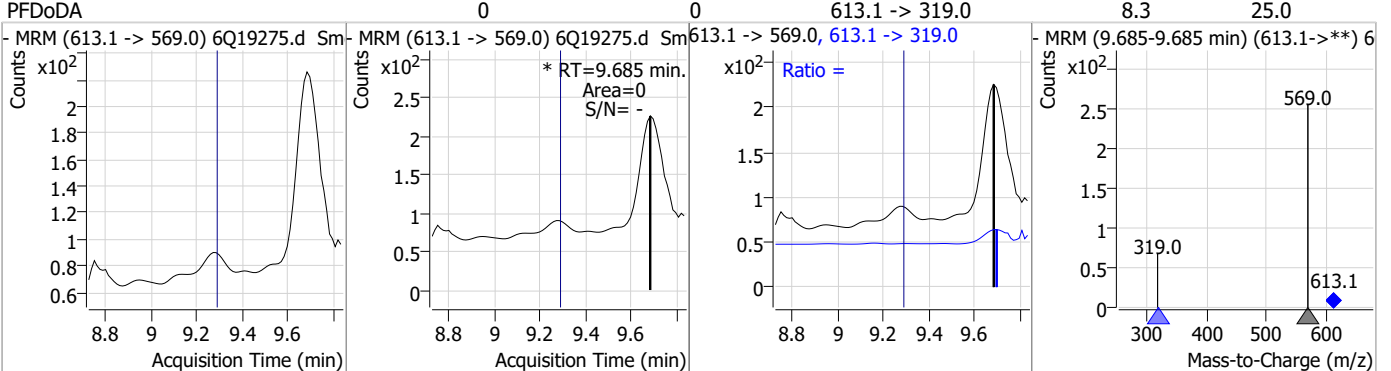
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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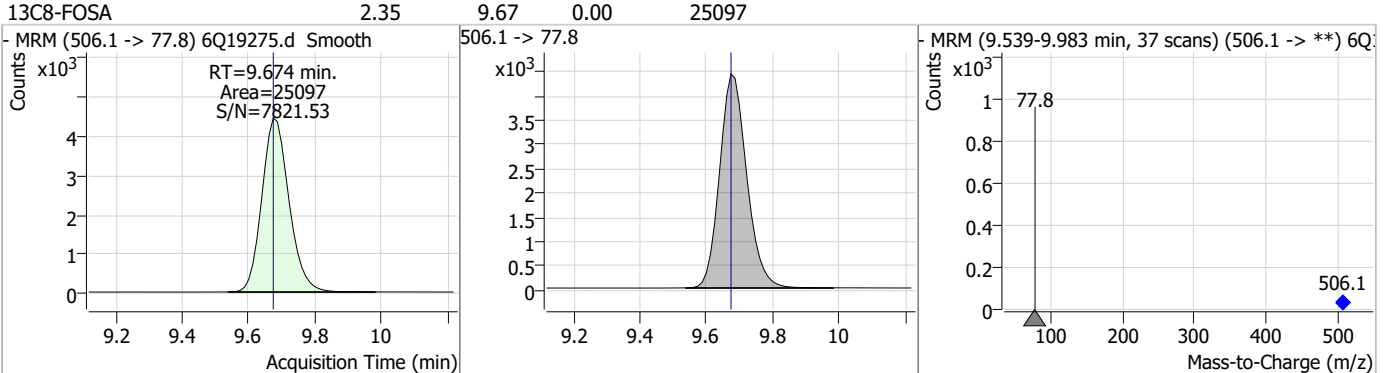
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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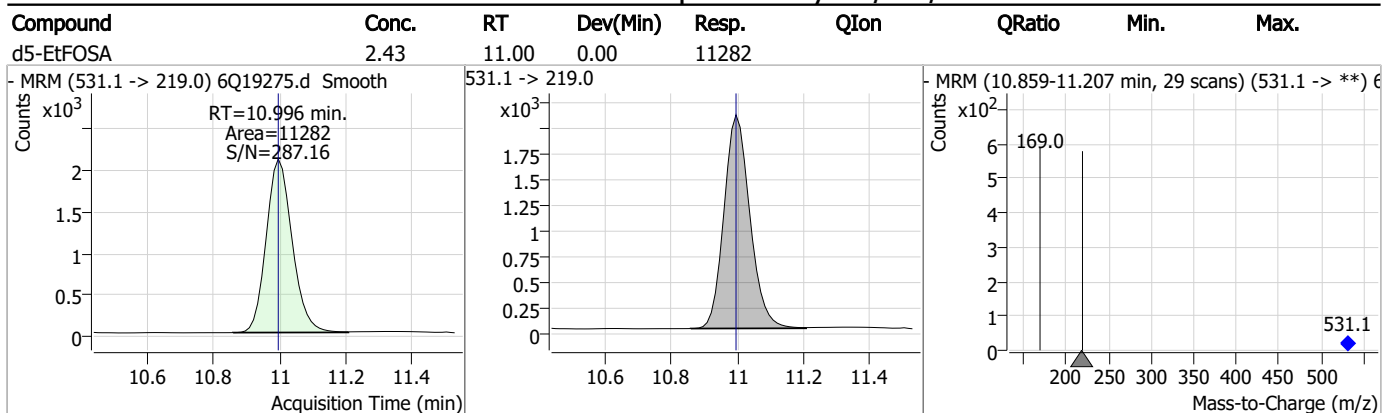


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.12	10.01	0.01	12656				
d7-MeFOSE	17.86	10.68	0.00	94393				
d3-MeFOSA	2.14	10.78	0.00	10246				
d9-EtFOSE	20.98	10.93	0.00	138478				

7.5.1
7

Perfluorinated Compounds by LC/MS/MS



7.5.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)
Norman Farmer
 06/01/23 14:43

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18583.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:32:54 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q279 TDCA.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

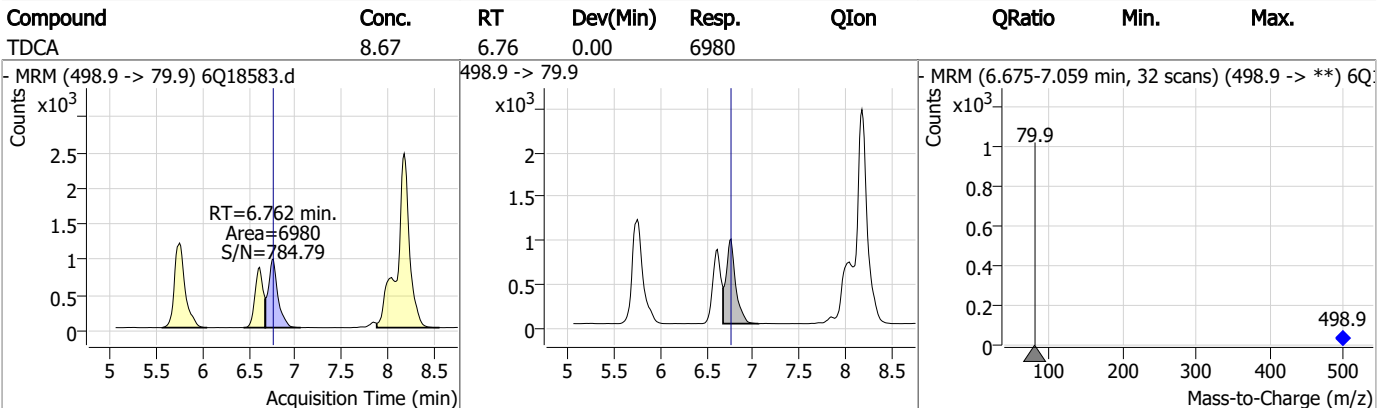
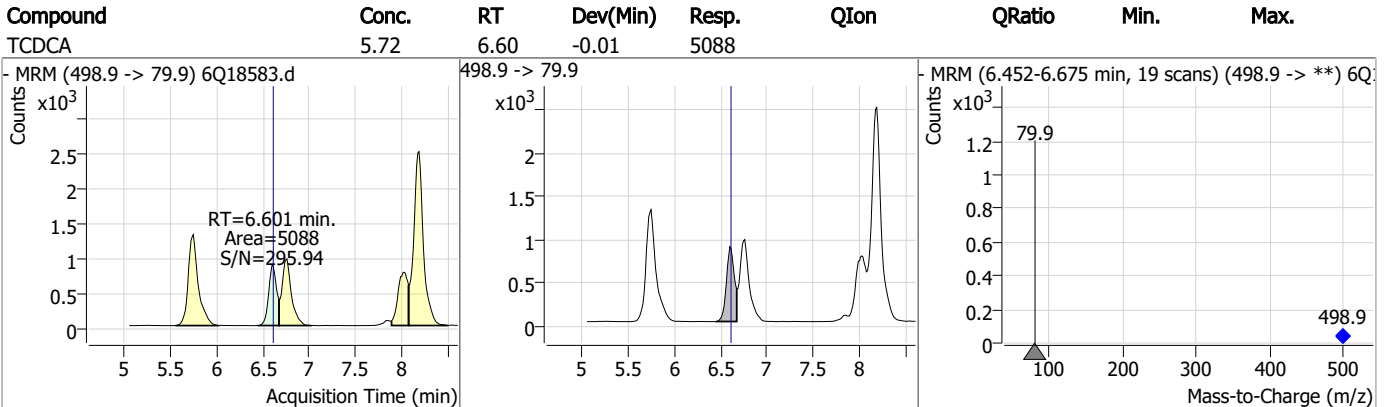
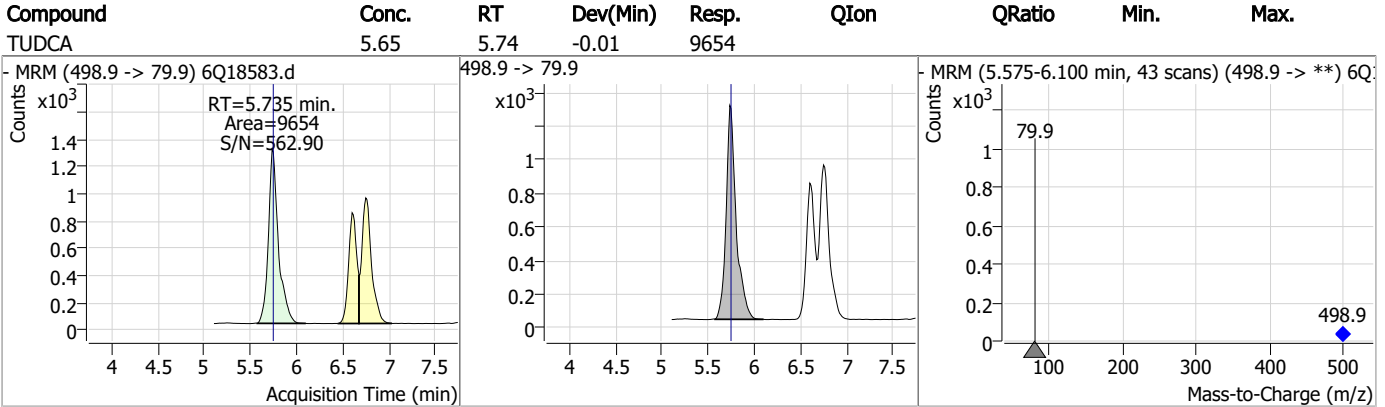
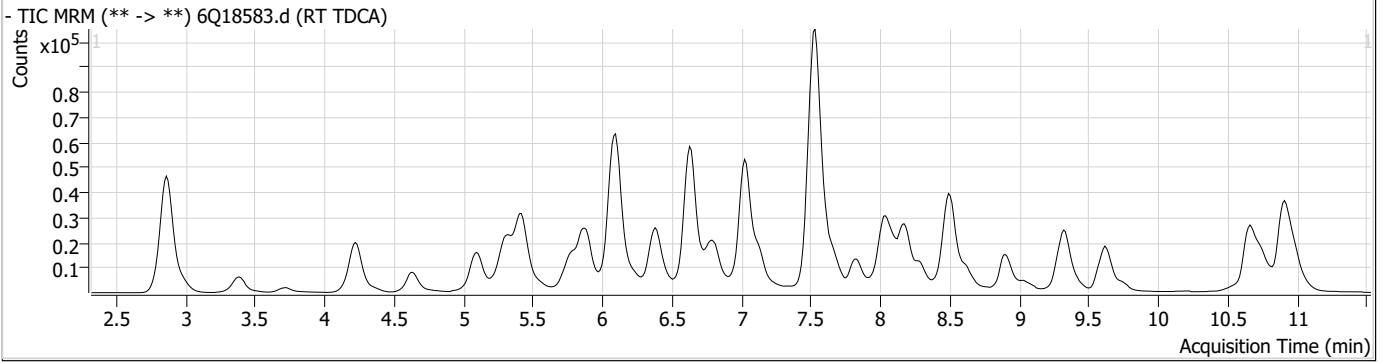
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.177	507.1 -> 79.9	19278	2.50 µg/L	-0.025
13C4-PFOS	8.190	502.8 -> 79.9	25303	2.50 µg/L	-0.012
System Monitoring Compounds					
13C8-PFOS	8.177	507.1 -> 79.9	19278	1.93 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 77.3%		
Target Compounds					
PFOS	8.178	498.9 -> 79.9 498.9 -> 98.8	24044 10818	3.65 µg/L #m	74
TCDCa	6.601	498.9 -> 79.9	5088	5.72 ng/ml	100
TDCA	6.762	498.9 -> 79.9	6980	8.67 ng/ml	100
TUDCA	5.735	498.9 -> 79.9	9654	5.65 ng/ml	100

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

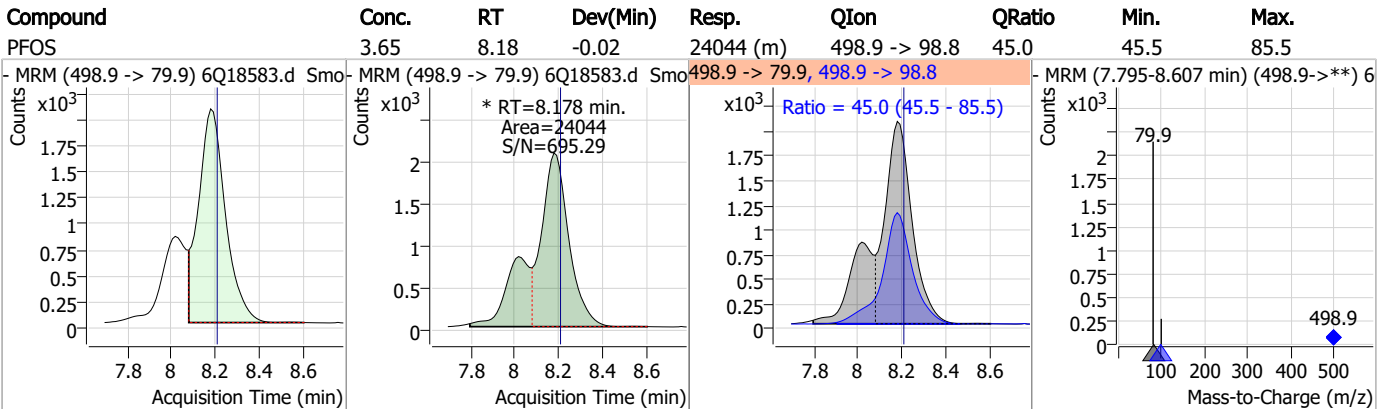
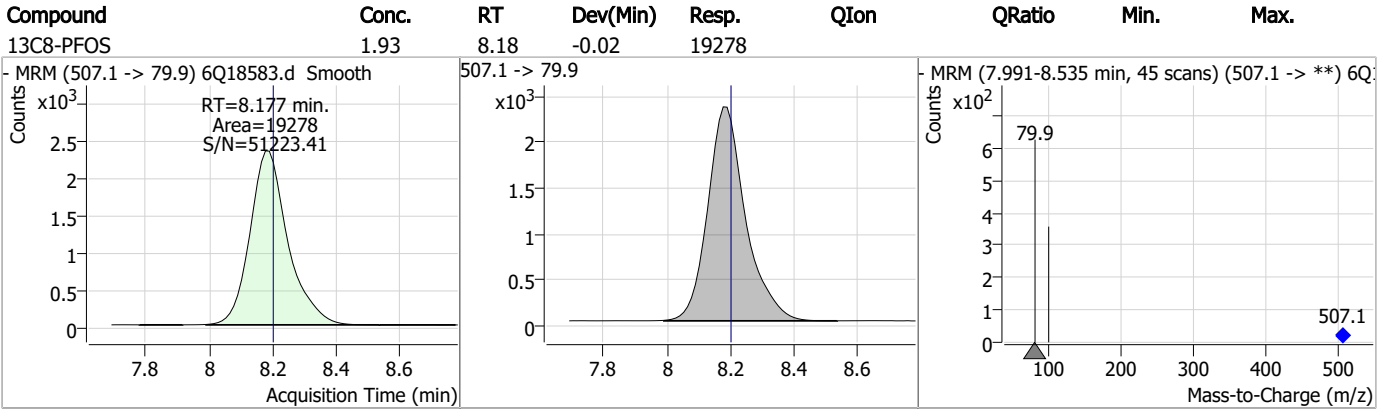
7.6.1
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1

7



Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18583.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:32 Supervisor approved: 06/01/23 14:43 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.6.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18584.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:47:23 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	184317	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	59764	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	64248	2.50 µg/L	0.000
M4-PFHpA	6.382	367.1 -> 322.0	59302	2.50 µg/L	0.012
M8-PFOA	7.026	421.1 -> 376.0	92001	2.50 µg/L	0.000
M9-PFNA	7.557	472.1 -> 427.0	37990	1.25 µg/L	0.000
M6-PFDA	8.027	519.1 -> 474.1	25438	1.25 µg/L	0.000
M7-PFUnDA	8.480	570.0 -> 525.1	29427	1.25 µg/L	0.000
M2-PFDoDA	8.912	615.1 -> 570.0	29037	1.25 µg/L	0.012
M2-PFTeDA	9.639	715.2 -> 670.0	16093	1.25 µg/L	0.000
M8-FOSA	9.611	506.1 -> 77.8	31533	2.50 µg/L	0.012
M3-PFBS	5.334	302.1 -> 79.9	24390	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15405	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13670	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3284	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5069	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4764	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	27275	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41907	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25666	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	106437	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	133388	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12888	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13977	2.50 µg/L	0.000
13C4-PFOS	8.190	502.8 -> 79.9	16948	2.50 µg/L	0.000
13C3-PFBA	2.864	216.0 -> 172.0	78242	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	11045	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	93299	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	32534	1.25 µg/L	0.000
13C5-PFNA	7.557	468.0 -> 423.0	49070	1.25 µg/L	0.000
13C2-PFHxA	5.417	315.1 -> 270.0	62936	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3284	4.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5069	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4764	4.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.8%		
13C2-PFDoDA	8.912	615.1 -> 570.0	29037	1.29 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	9.639	715.2 -> 670.0	16093	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFBS	5.334	302.1 -> 79.9	24390	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	15405	2.50 µg/L	0.000

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	2.860	216.8 -> 171.9	184317	9.89 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.382	367.1 -> 322.0	59302	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	64248	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.222	268.3 -> 223.0	59764	4.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C6-PFDA	8.027	519.1 -> 474.1	25438	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C7-PFUnDA	8.480	570.0 -> 525.1	29427	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C8-FOSA	9.611	506.1 -> 77.8	31533	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.026	421.1 -> 376.0	92001	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C8-PFOS	8.177	507.1 -> 79.9	13670	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C9-PFNA	7.557	472.1 -> 427.0	37990	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	27275	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41907	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	13977	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25666	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d7-MeFOSE	10.660	623.2 -> 58.9	106437	25.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	133388	23.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12888	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	258816	54.25 µg/L	96
		327.1 -> 80.9	95733		
6:2FTS	6.801	427.1 -> 407.0	256685	51.53 µg/L	100
		427.1 -> 80.9	87375		
8:2FTS	7.828	527.1 -> 507.0	148544	56.06 µg/L	95
		527.1 -> 80.8	58928		
EtFOSAA	8.293	584.2 -> 419.1	46640	14.12 µg/L	97
		584.2 -> 526.0	24113		
FOSA	9.602	498.1 -> 77.9	359973	32.98 µg/L	100
		498.1 -> 478.0	10498		
MeFOSAA	8.097	570.1 -> 419.0	82143	14.65 µg/L	99
		570.1 -> 483.0	16064		
PFBA	2.868	212.8 -> 168.9	346074	56.71 µg/L	100
PFBS	5.335	298.7 -> 79.9	98352	11.85 µg/L	94
		298.7 -> 98.8	39061		
PFDA	8.027	512.9 -> 469.0	392824	13.32 µg/L	100
		512.9 -> 219.0	63646		
PFDoDA	8.900	613.1 -> 569.0	270018	13.54 µg/L	95
		613.1 -> 319.0	42654		
PFDS	9.064	599.0 -> 79.9	44655	13.07 µg/L	100

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.382	599.0 -> 98.8	21835	14.40	µg/L	96
		363.1 -> 319.0	377962			
PFHpS	7.685	363.1 -> 169.0	63431	13.47	µg/L	99
		449.0 -> 79.9	88264			
PFHxA	5.420	449.0 -> 98.9	43121	13.82	µg/L	98
		313.0 -> 269.0	298167			
PFHxS	7.131	313.0 -> 118.9	15638	12.28	µg/L	99
		398.7 -> 79.9	85596			
PFNA	7.421	398.7 -> 98.9	41074	31.68	µg/L	m
		463.0 -> 419.0	852890			
PFNS	8.644	463.0 -> 219.0	177688	13.84	µg/L	98
		548.8 -> 79.9	75961			
PFOA	7.028	548.8 -> 98.9	38180	31.05	µg/L	m
		413.0 -> 369.0	1219762			
PFOS	8.178	413.0 -> 169.0	223458	13.47	µg/L	m
		498.9 -> 79.9	84152			
PFPeA	4.224	498.9 -> 98.8	40831	28.17	µg/L	100
		263.0 -> 219.0	404414			
PFPeS	6.422	349.1 -> 79.9	85668	12.34	µg/L	96
		349.1 -> 98.9	38425			
PFTeDA	9.628	713.1 -> 669.0	211277	13.35	µg/L	96
		713.1 -> 168.9	19042			
PFTrDA	9.296	663.0 -> 619.0	280949	13.95	µg/L	97
		663.0 -> 168.9	28727			
PFUnDA	8.480	563.1 -> 519.0	286066	14.96	µg/L	99
		563.1 -> 269.1	45475			
11CI-PF3OUdS	9.336	630.9 -> 450.9	397806	25.30	µg/L	99
		632.9 -> 452.9	121214			
9CI-PF3ONS	8.508	530.8 -> 351.0	636777	25.70	µg/L	97
		532.8 -> 353.0	197077			
ADONA	6.632	376.9 -> 250.9	1431492	25.72	µg/L	100
		376.9 -> 84.8	381084			
HFPO-DA	5.783	284.9 -> 168.9	96682	27.22	µg/L	98
		284.9 -> 184.9	12230			
3:3FTCA	3.709	241.0 -> 177.0	64579	70.30	µg/L	97
		241.0 -> 117.0	8590			
5:3FTCA	6.099	341.0 -> 237.1	1272409	327.88	µg/L	96
		341.0 -> 217.0	944163			
7:3FTCA	7.523	441.0 -> 316.9	849719	319.72	µg/L	100
		441.0 -> 336.9	1871272			
EtFOSA	10.974	526.0 -> 219.0	283011	47.11	µg/L	96
		526.0 -> 169.0	363370			
EtFOSE	10.920	630.0 -> 58.9	534275	89.78	µg/L	100
		511.9 -> 219.0	230564			
MeFOSA	10.741	511.9 -> 169.0	323092	44.86	µg/L	94
		616.1 -> 58.9	380421			
MeFOSE	10.673	699.1 -> 79.9	20577	89.94	µg/L	100
		699.1 -> 98.8	10652			
PFDoDS	9.767	295.0 -> 201.0	75790	13.55	µg/L	97
		295.0 -> 84.9	19804			
NFDHA	5.299	279.0 -> 85.1	281574	28.85	µg/L	98
		229.0 -> 84.9	222270			
PFMBA	4.638	314.8 -> 134.9	712861	26.03	µg/L	99
		314.8 -> 82.9	25054			

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

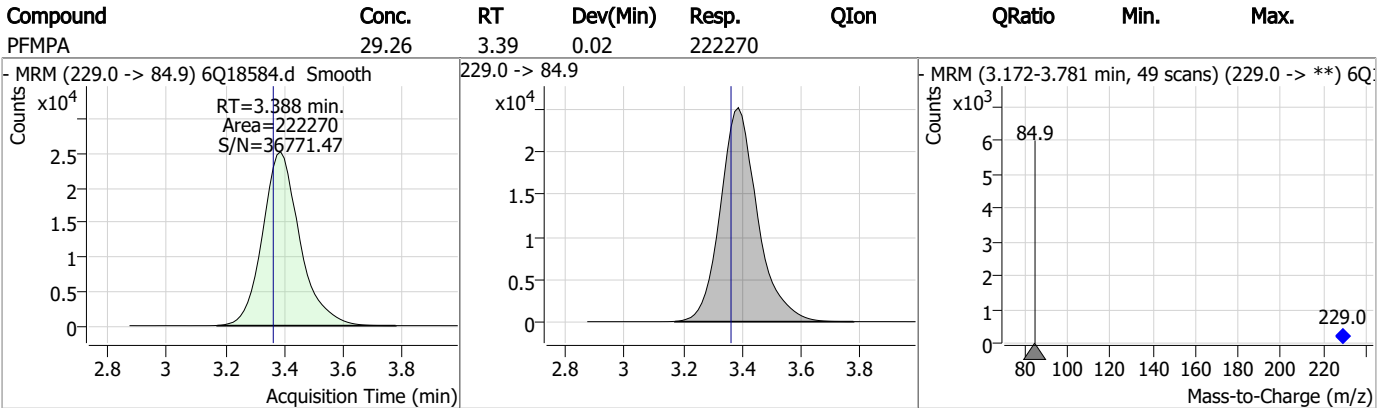
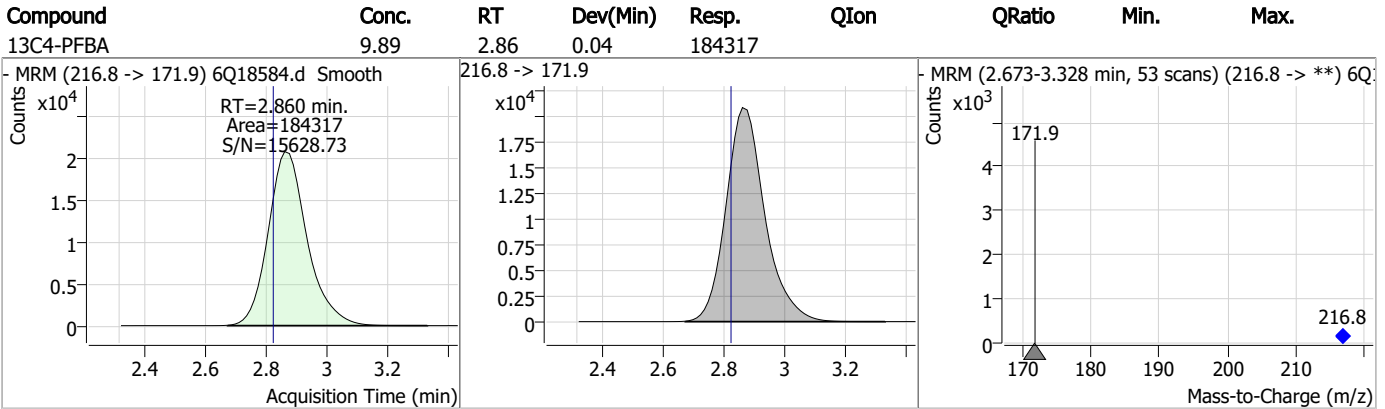
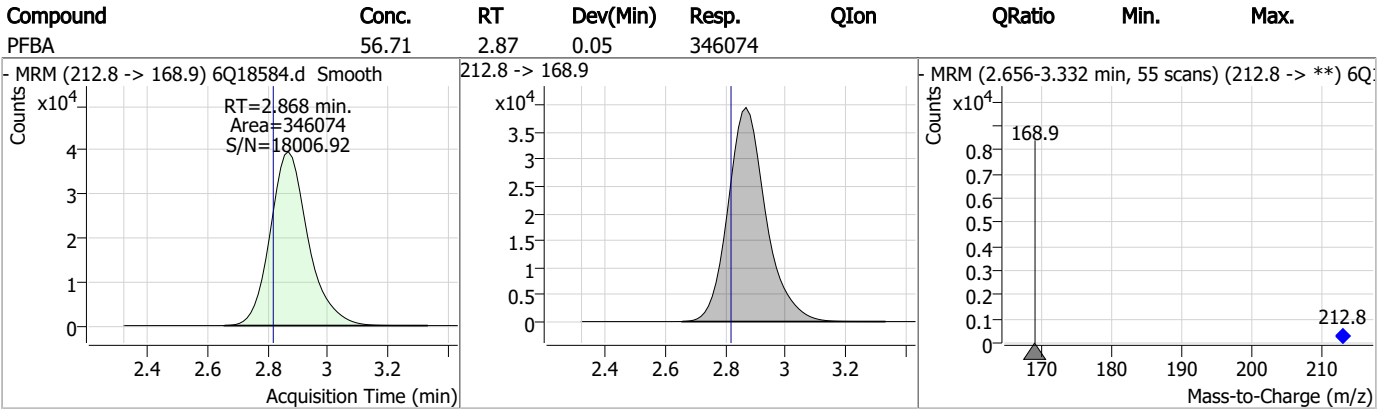
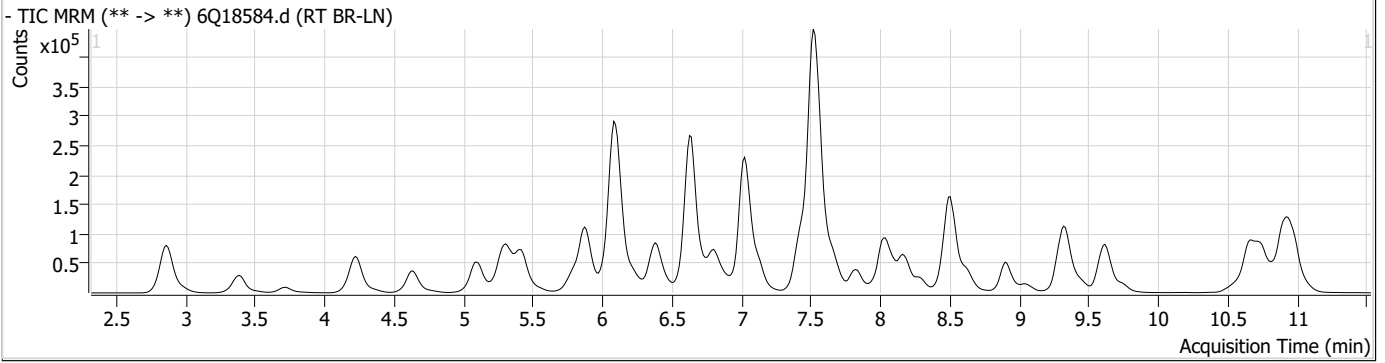
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.2

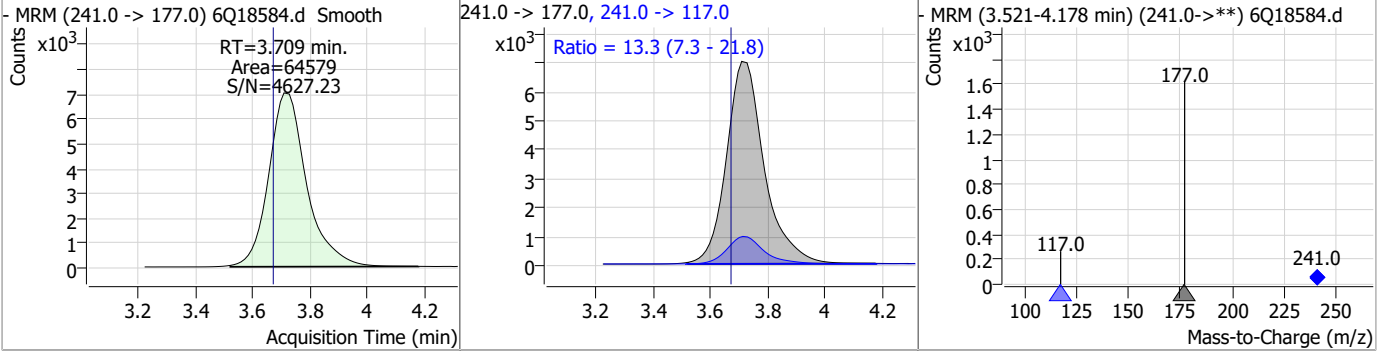
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Perfluorinated Compounds by LC/MS/MS

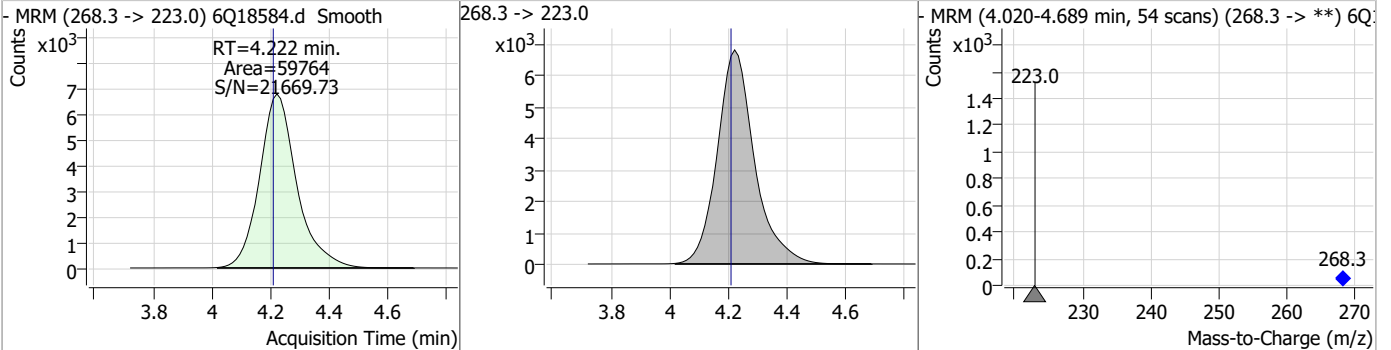


Perfluorinated Compounds by LC/MS/MS

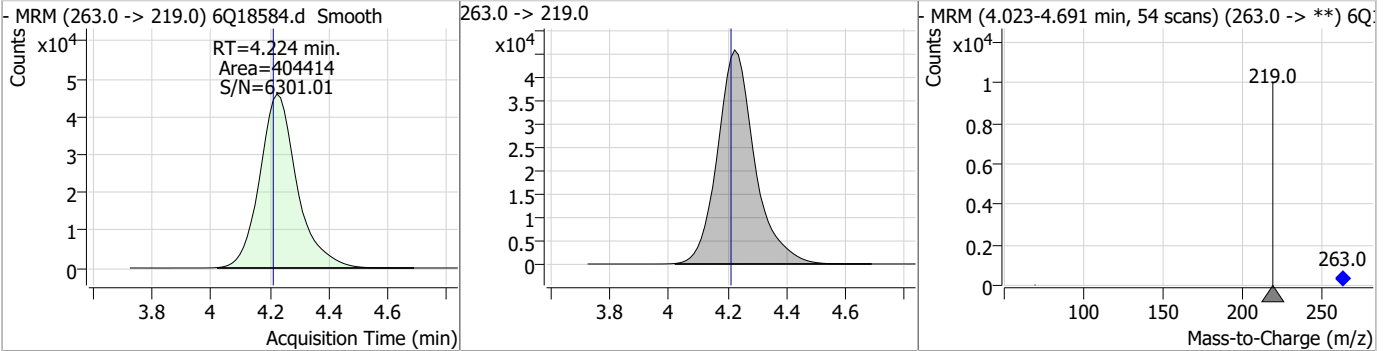
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	70.30	3.71	0.04	64579	241.0 -> 117.0	13.3	7.3	21.8



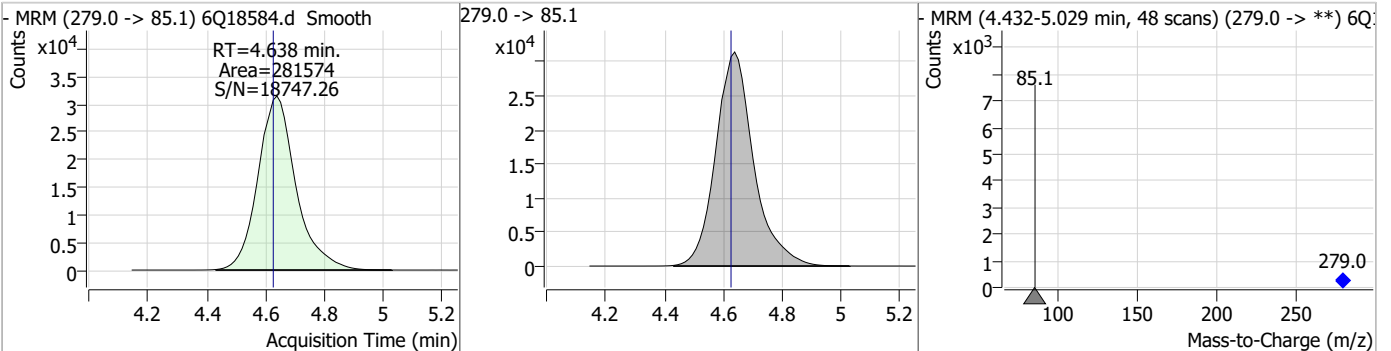
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.88	4.22	0.01	59764				



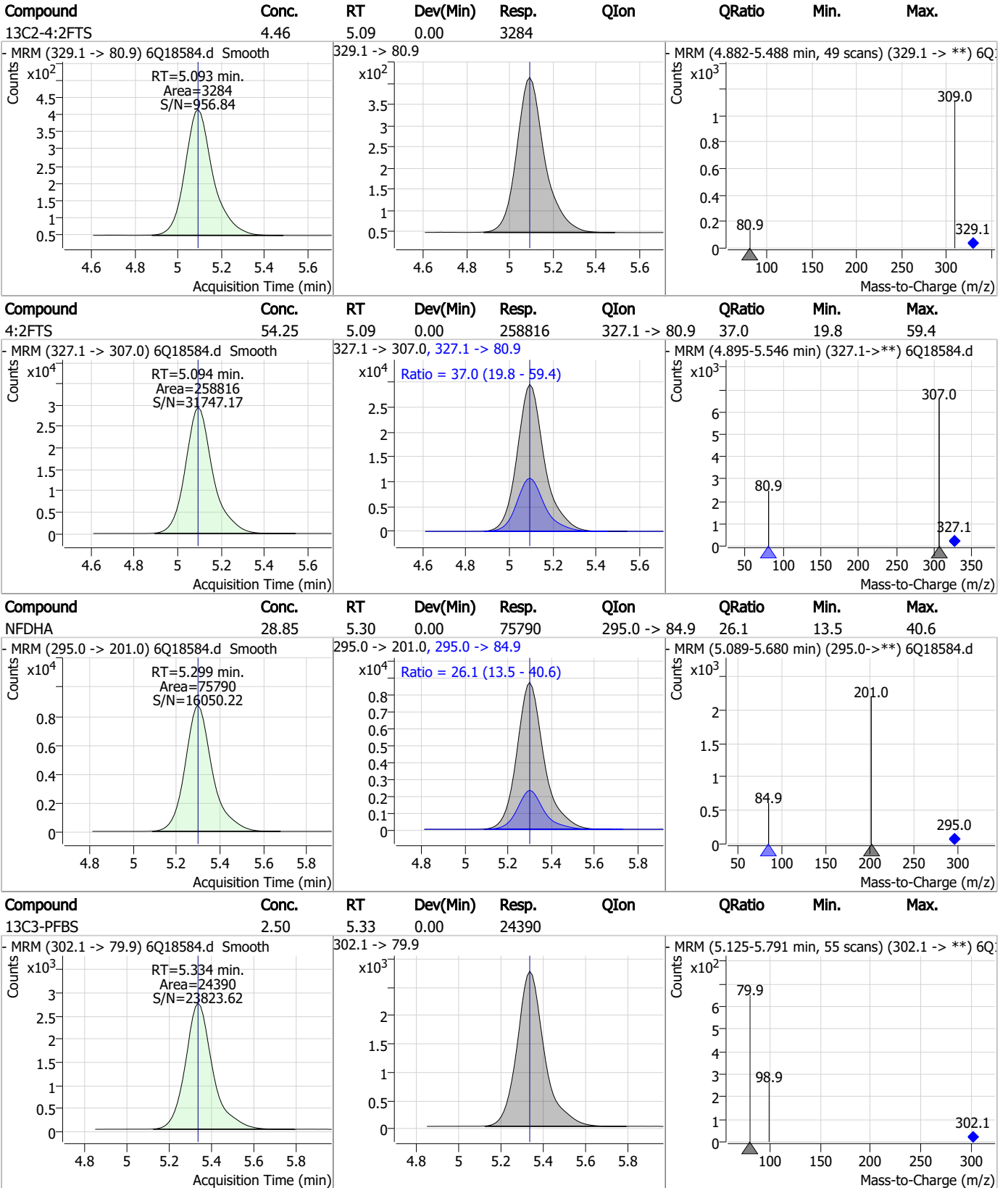
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.17	4.22	0.01	404414				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.82	4.64	0.01	281574				



Perfluorinated Compounds by LC/MS/MS

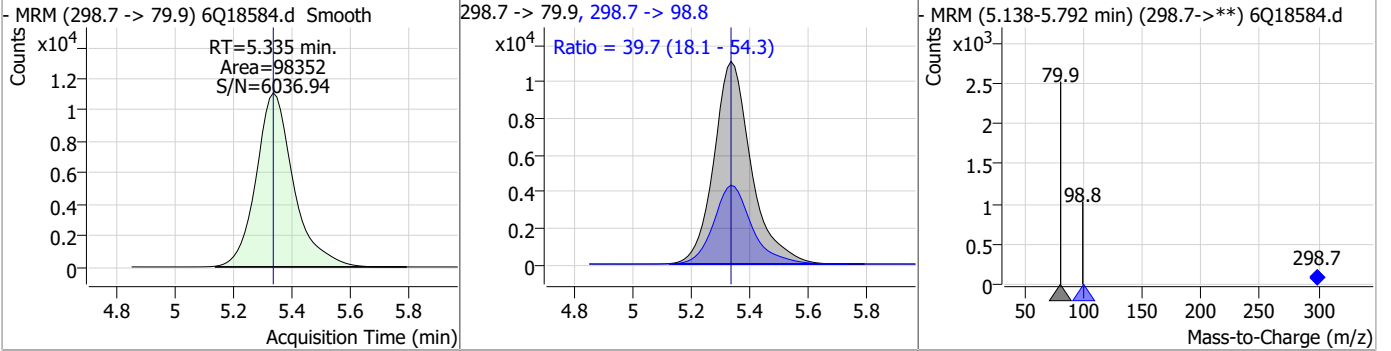


7.6.2

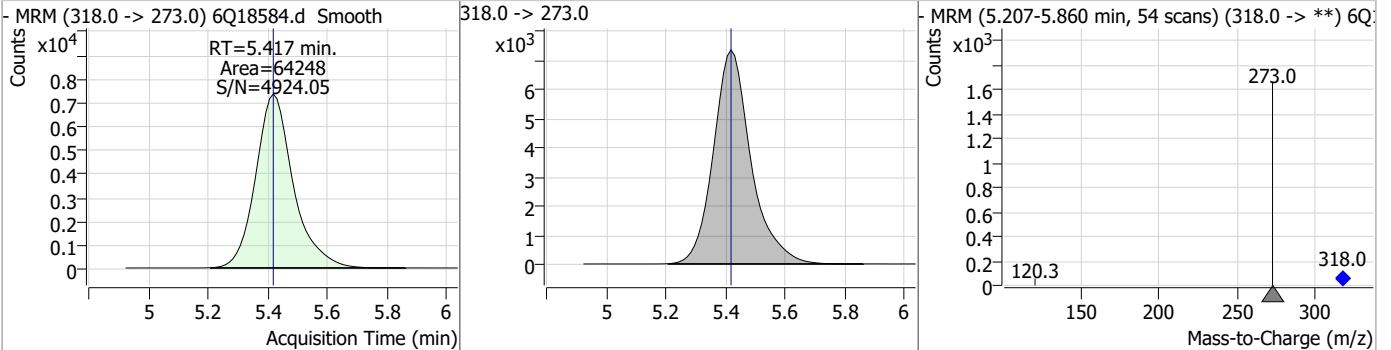
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Perfluorinated Compounds by LC/MS/MS

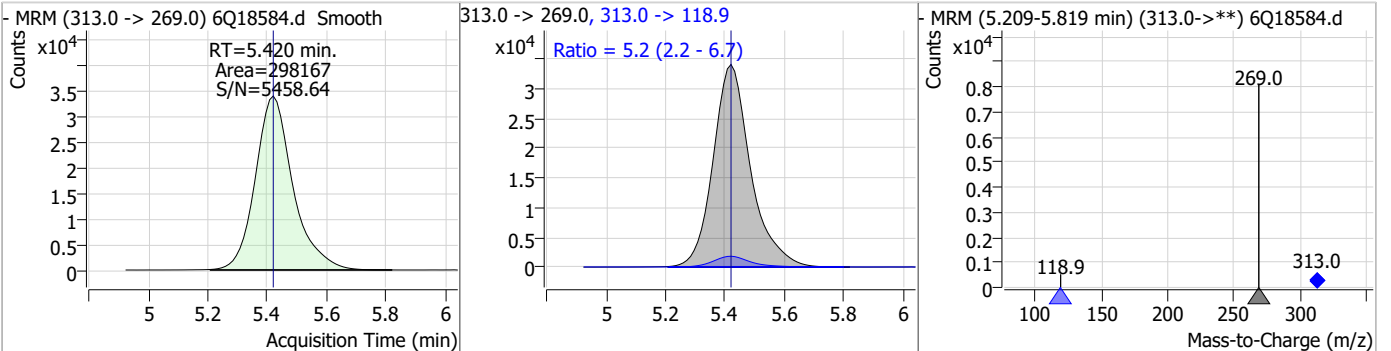
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.85	5.34	0.00	98352	298.7 -> 98.8	39.7	18.1	54.3



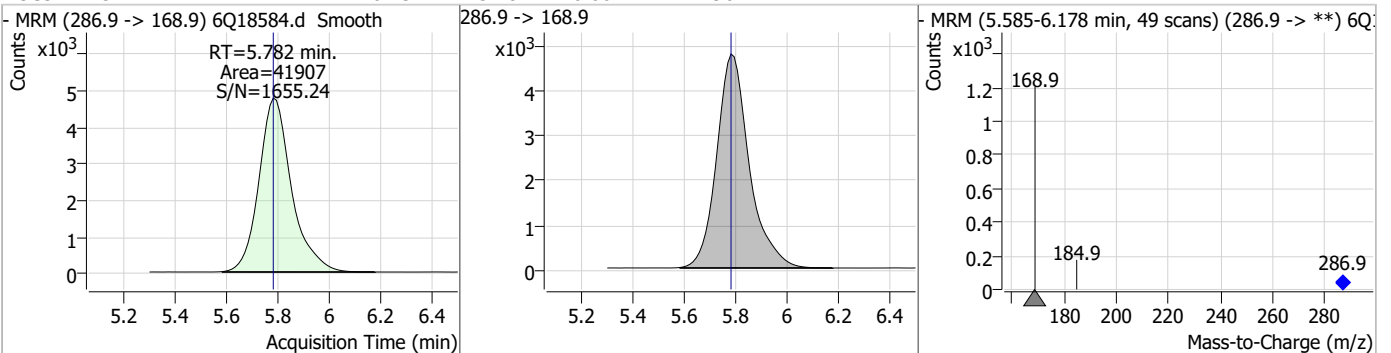
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.42	0.00	64248				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.82	5.42	0.00	298167	313.0 -> 118.9	5.2	2.2	6.7

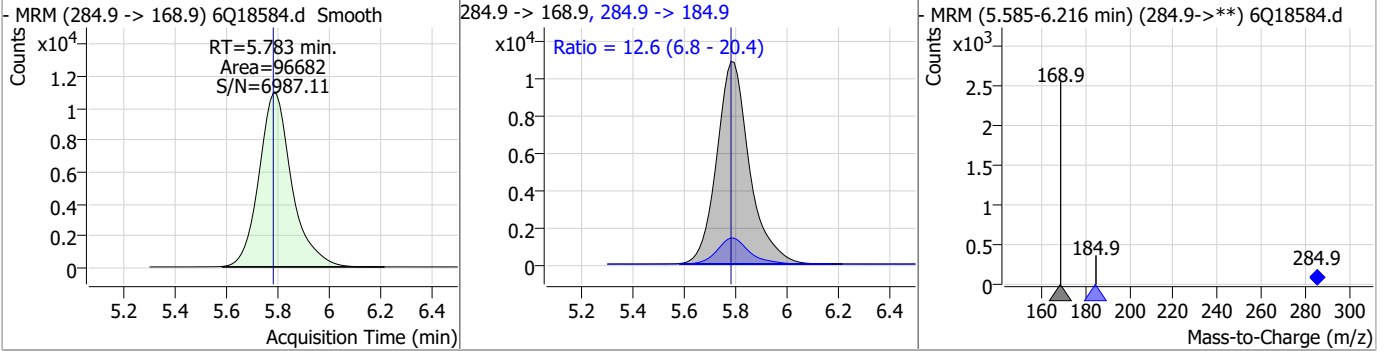


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.13	5.78	0.00	41907				

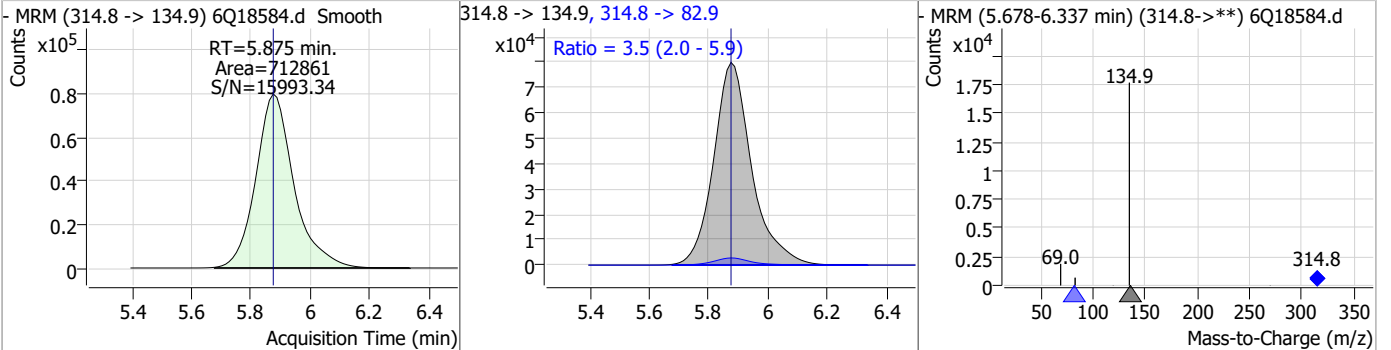


Perfluorinated Compounds by LC/MS/MS

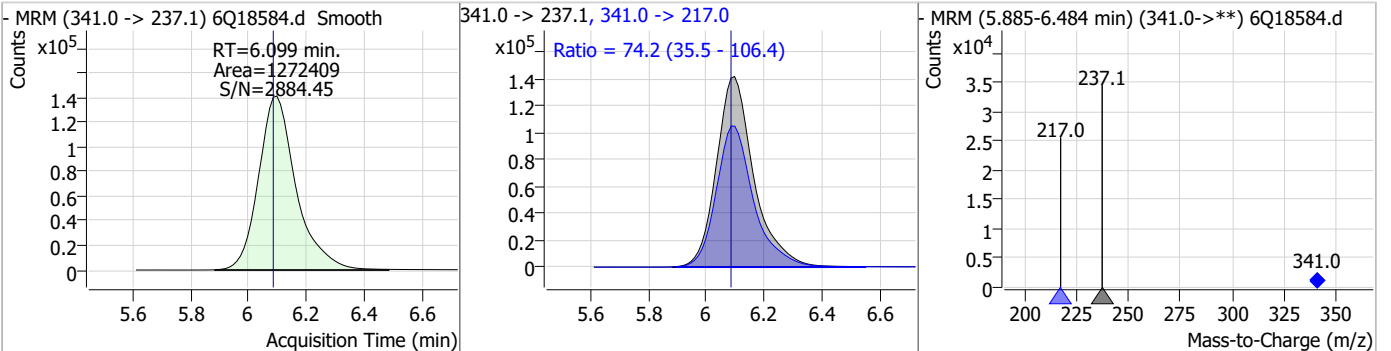
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	27.22	5.78	0.00	96682	284.9 -> 184.9	12.6	6.8	20.4



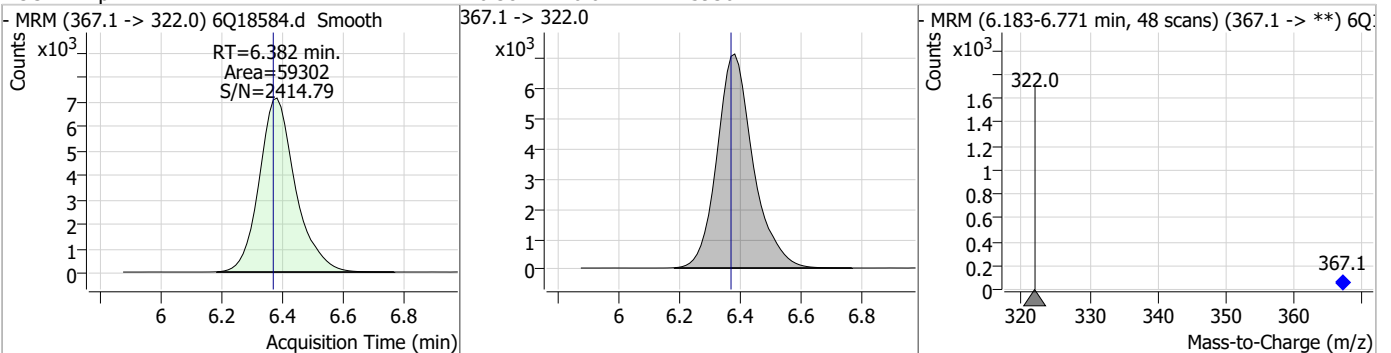
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	26.03	5.88	0.00	712861	314.8 -> 82.9	3.5	2.0	5.9



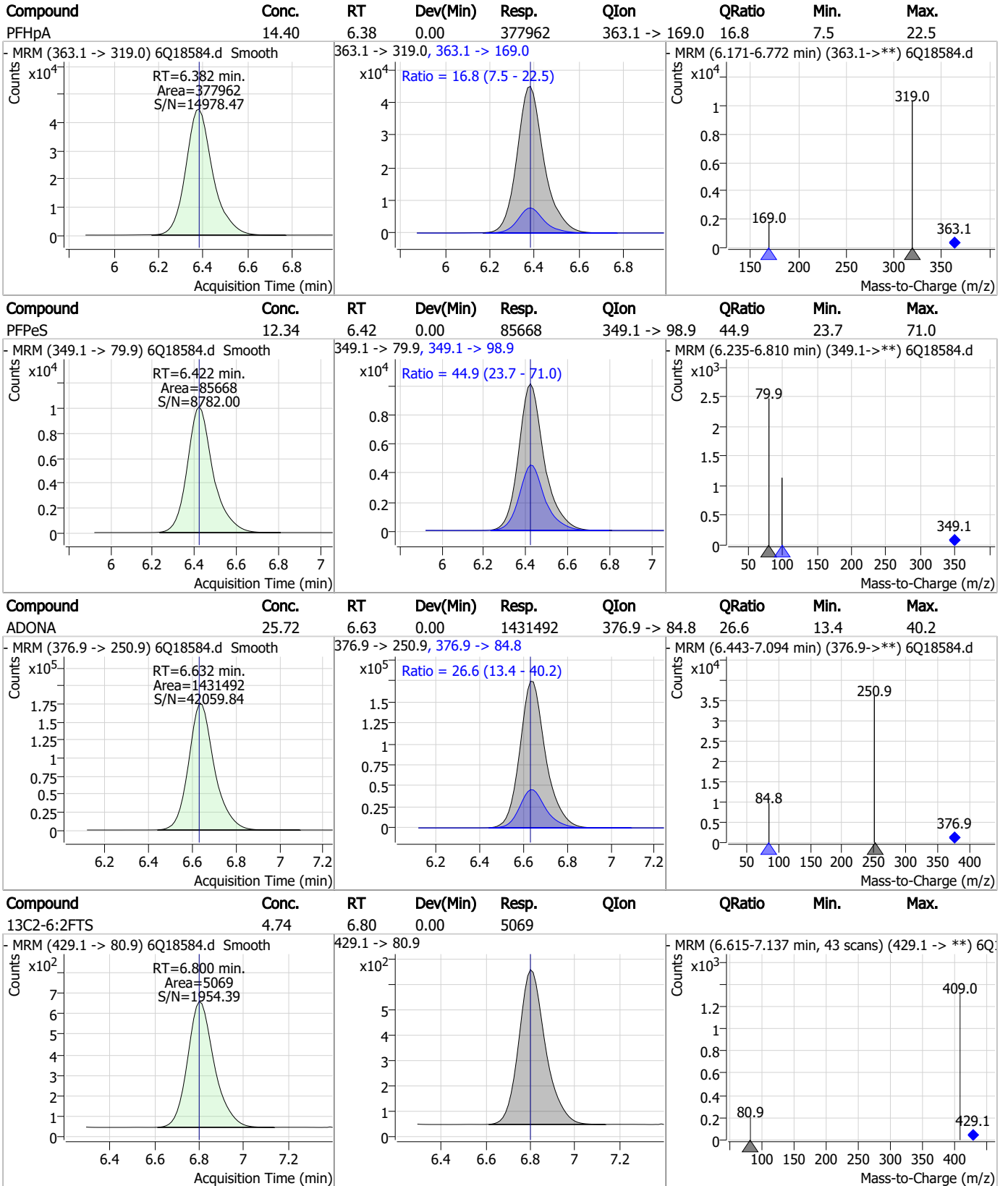
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	327.88	6.10	0.01	1272409	341.0 -> 217.0	74.2	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.41	6.38	0.01	59302	367.1 -> 322.0			



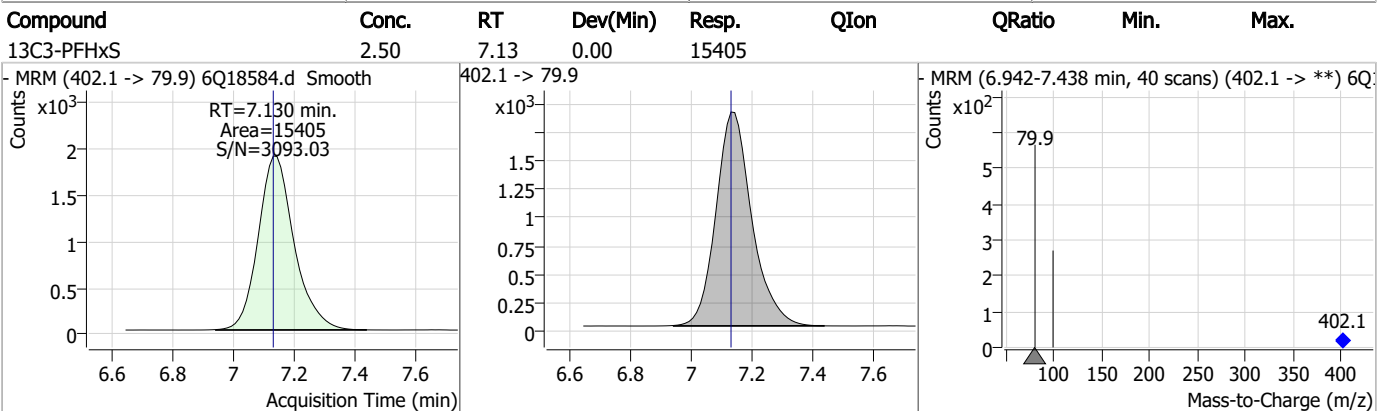
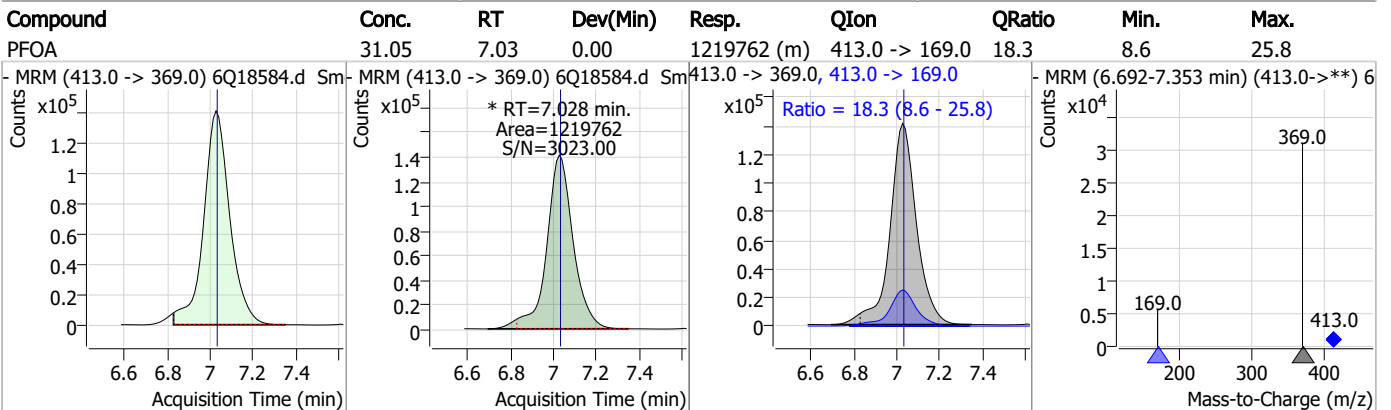
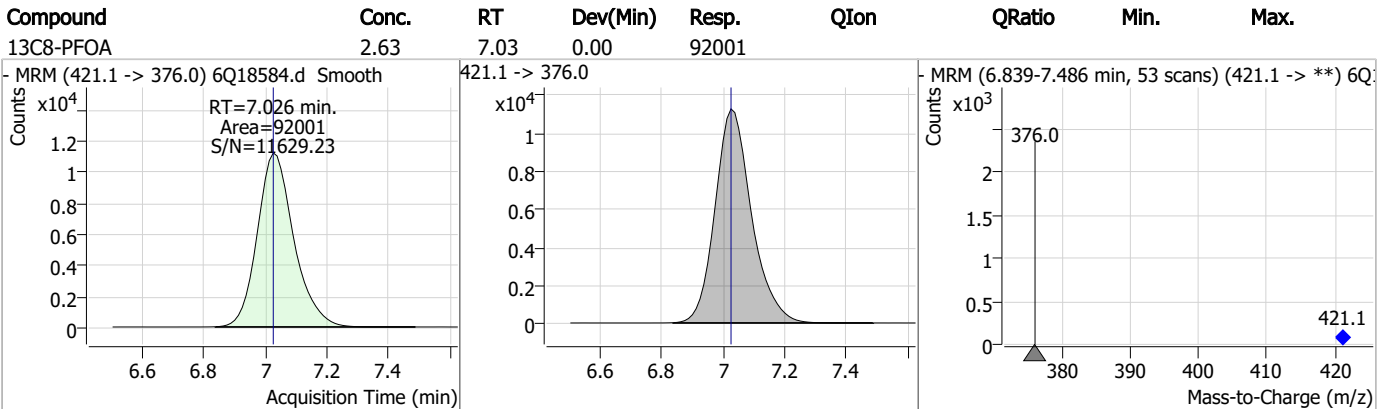
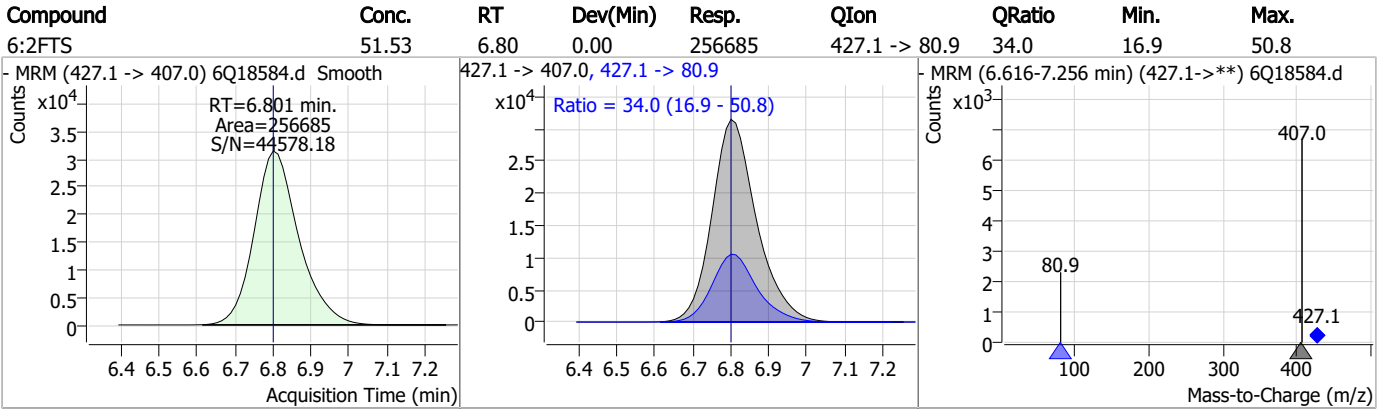
Perfluorinated Compounds by LC/MS/MS



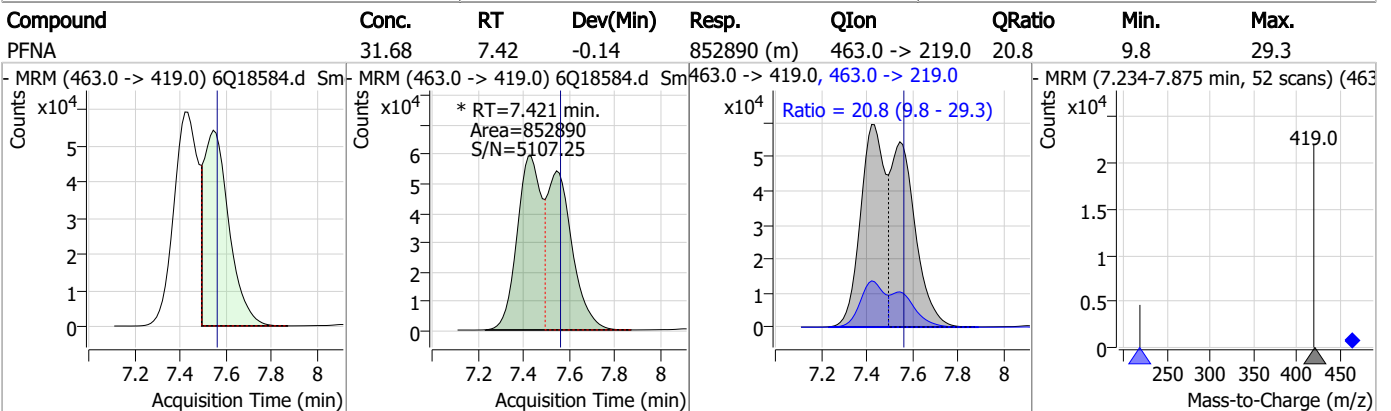
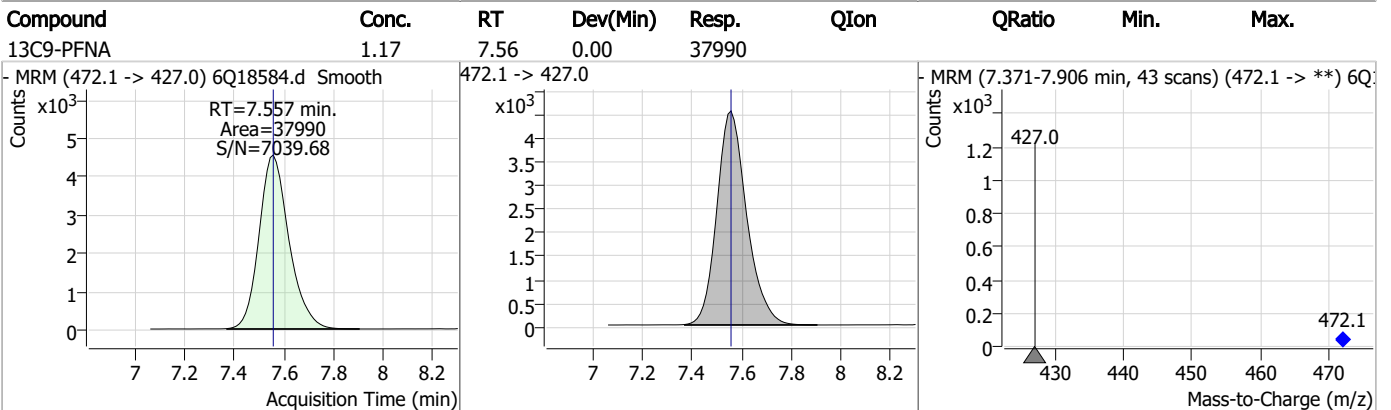
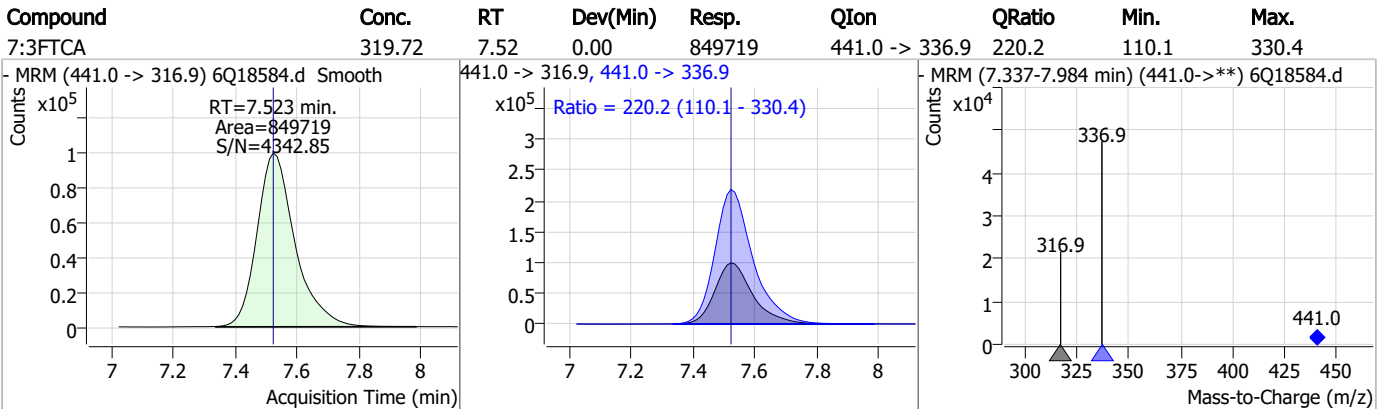
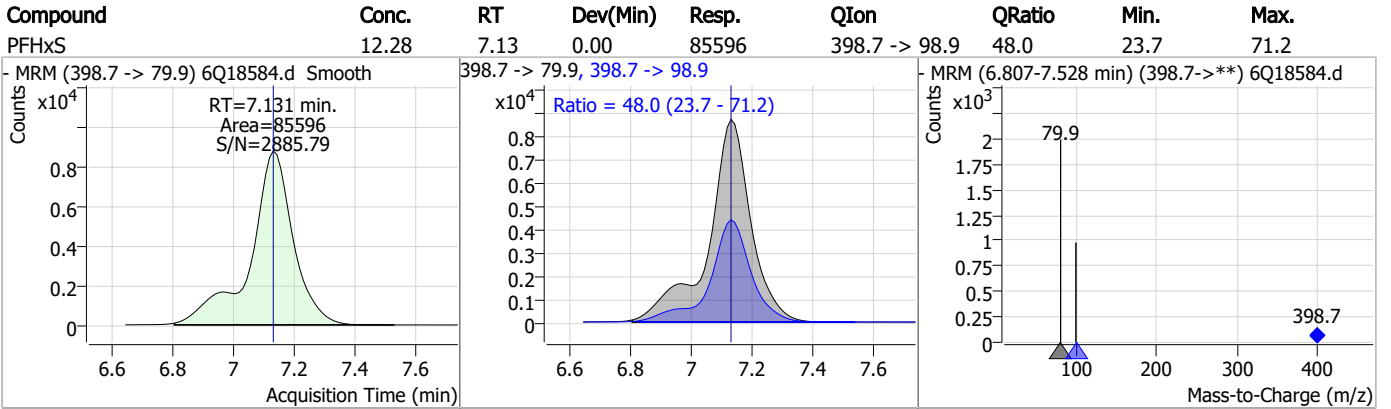
7.6.2

7

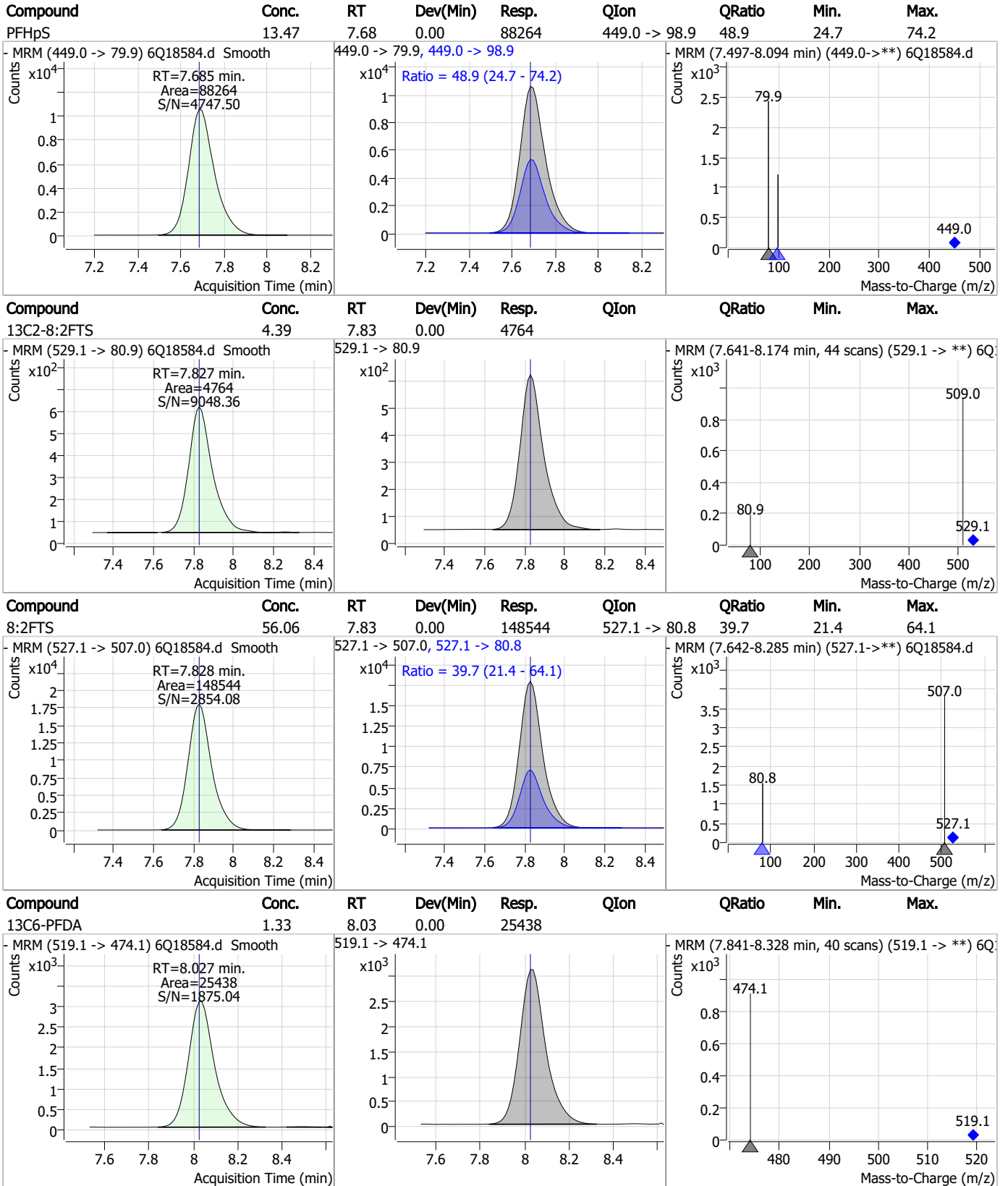
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

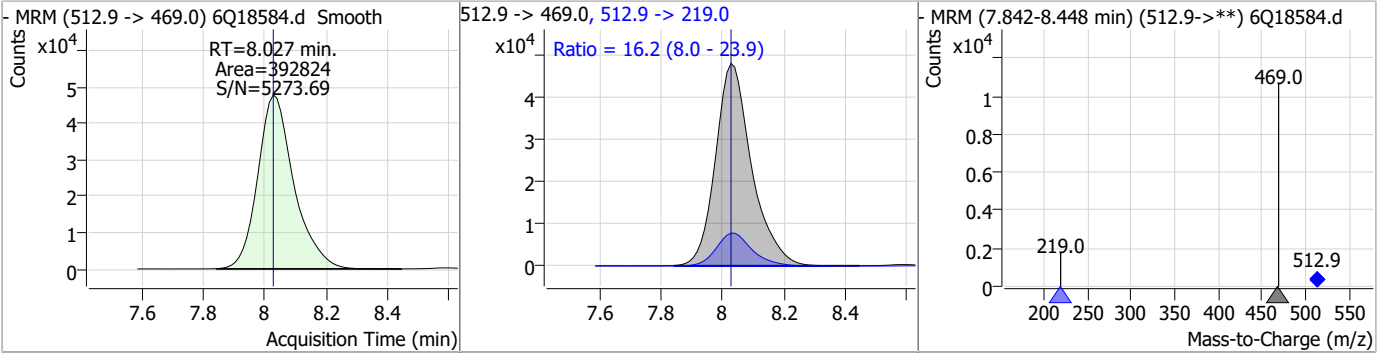


7.6.2

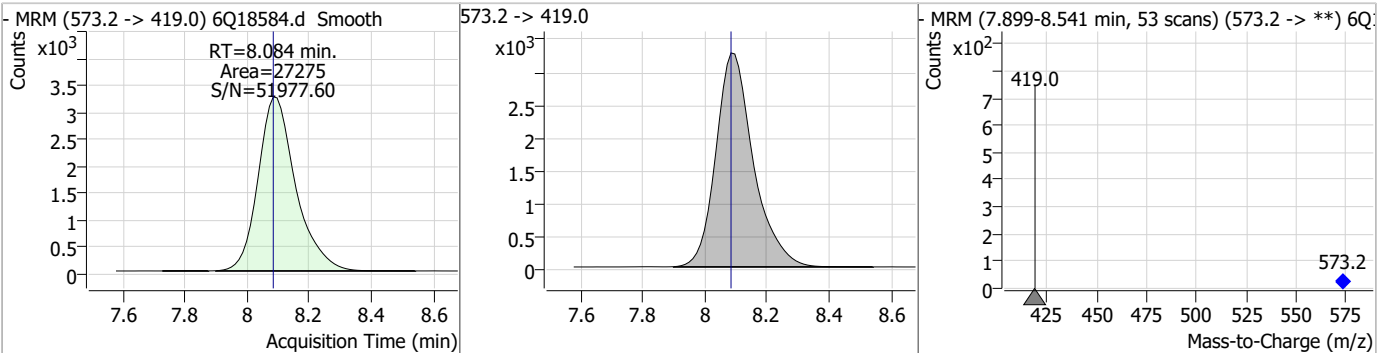
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Perfluorinated Compounds by LC/MS/MS

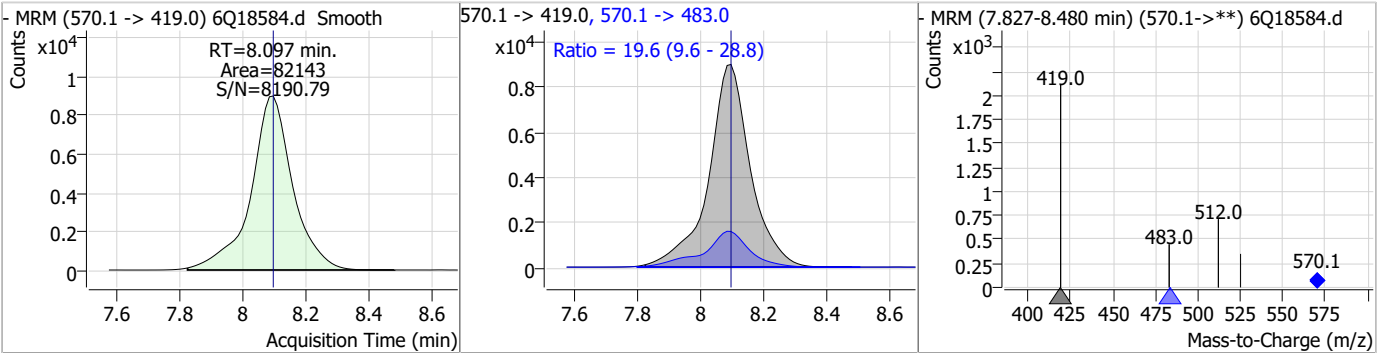
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	13.32	8.03	0.00	392824	512.9 -> 219.0	16.2	8.0	23.9



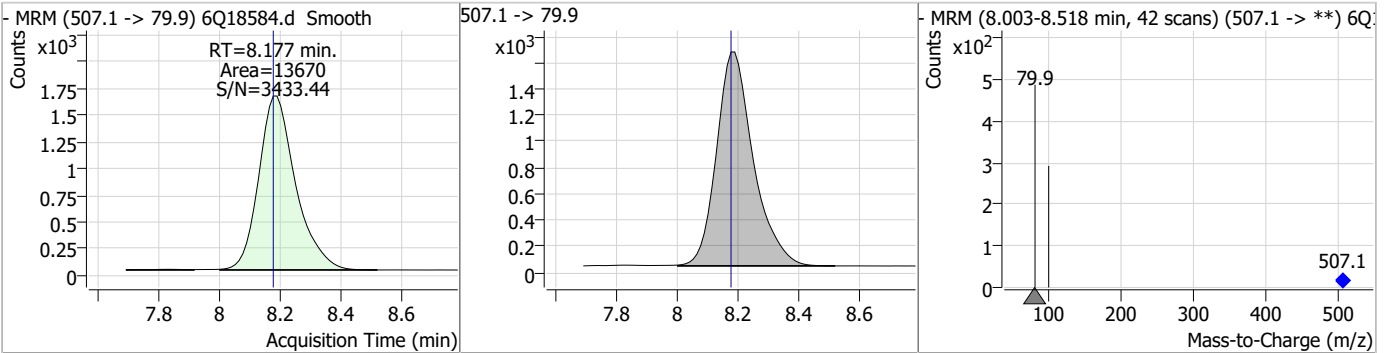
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.99	8.08	0.00	27275				



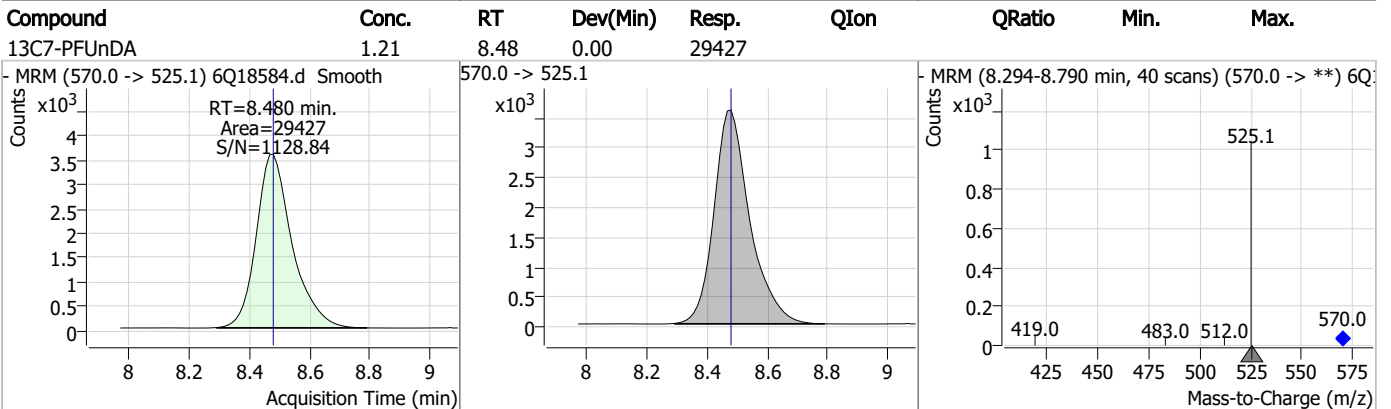
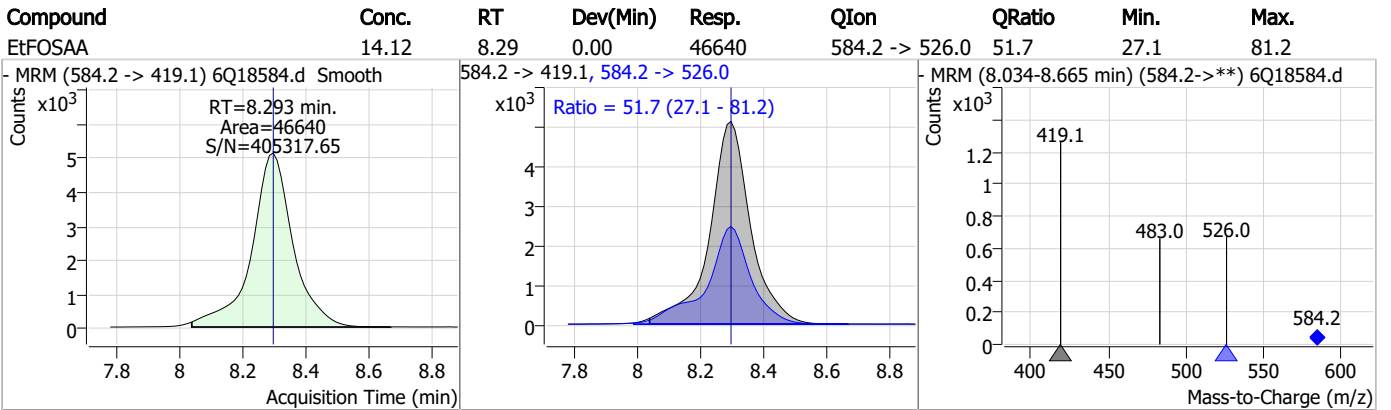
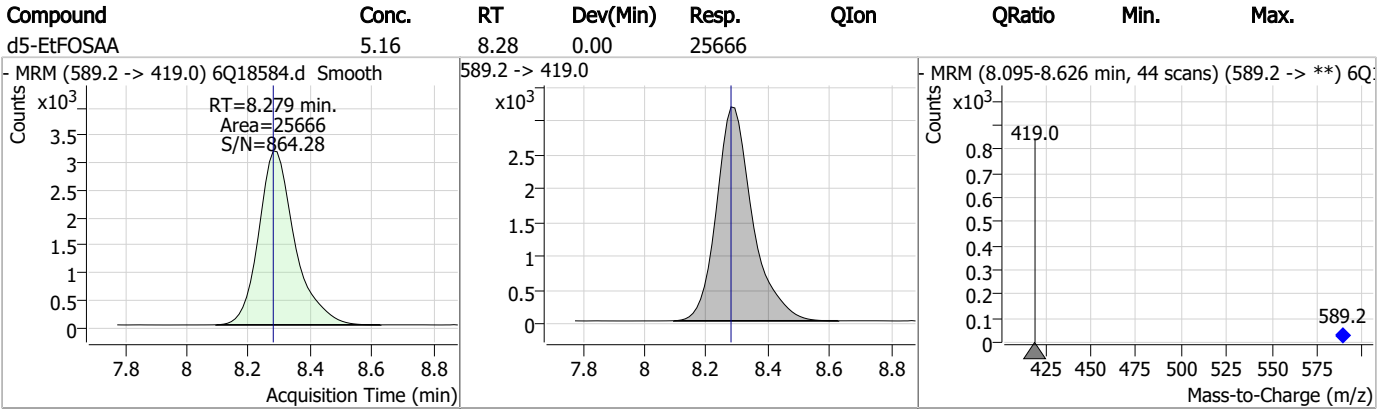
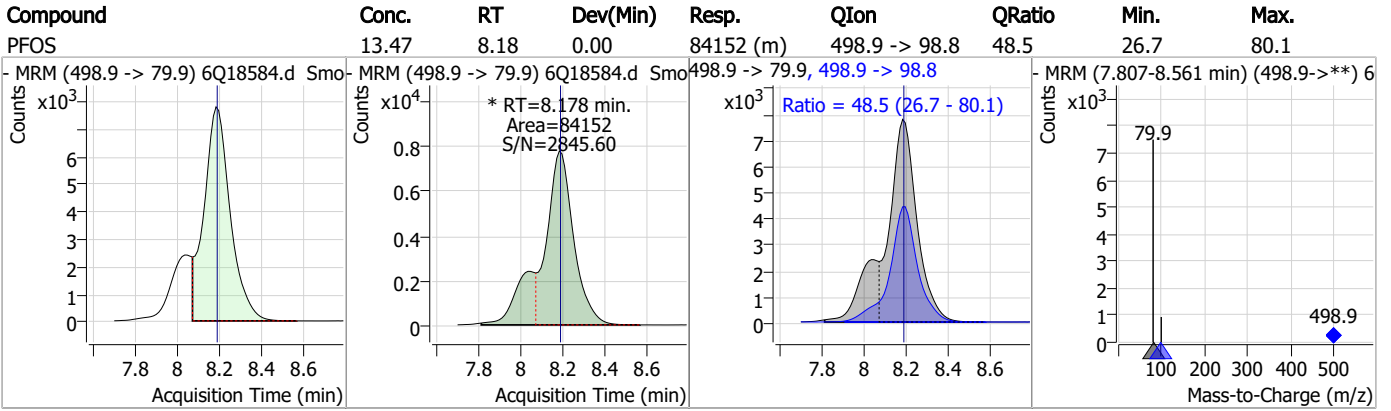
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.65	8.10	0.00	82143	570.1 -> 483.0	19.6	9.6	28.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.52	8.18	0.00	13670				

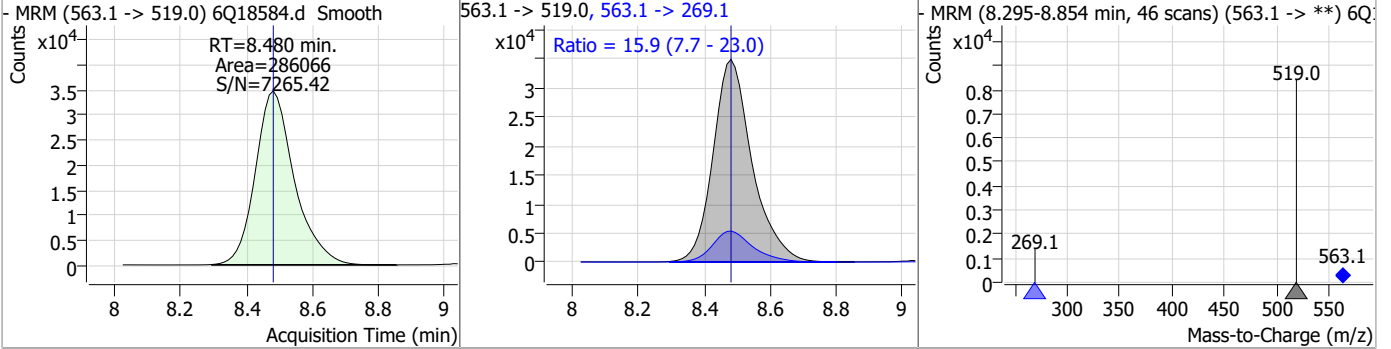


Perfluorinated Compounds by LC/MS/MS

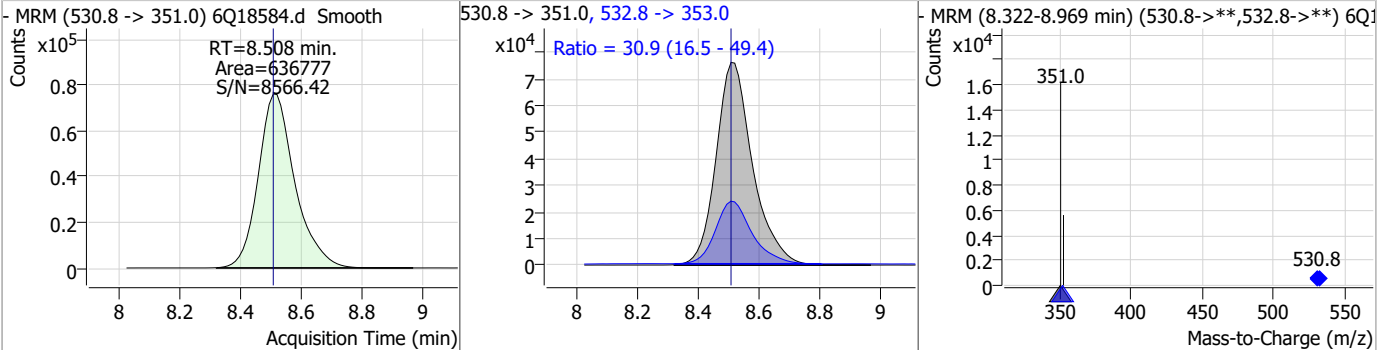


Perfluorinated Compounds by LC/MS/MS

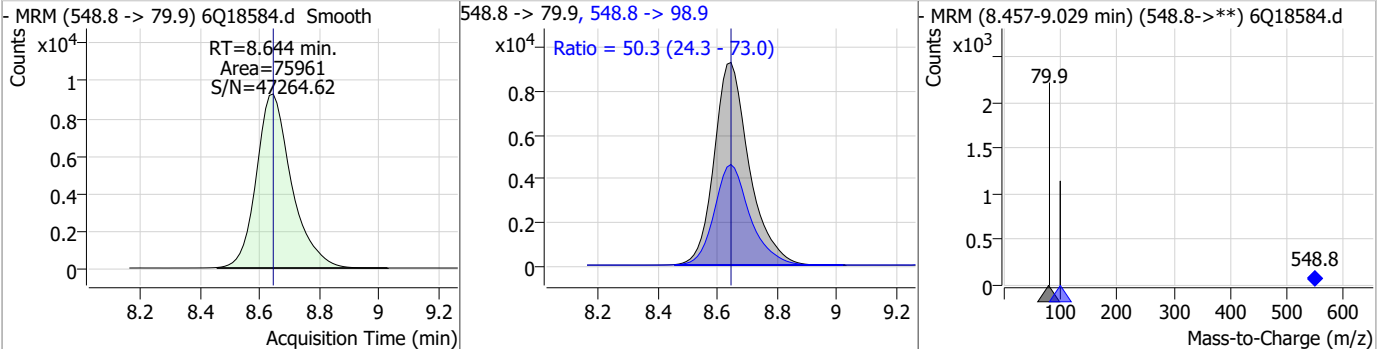
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.96	8.48	0.00	286066	563.1 -> 269.1	15.9	7.7	23.0



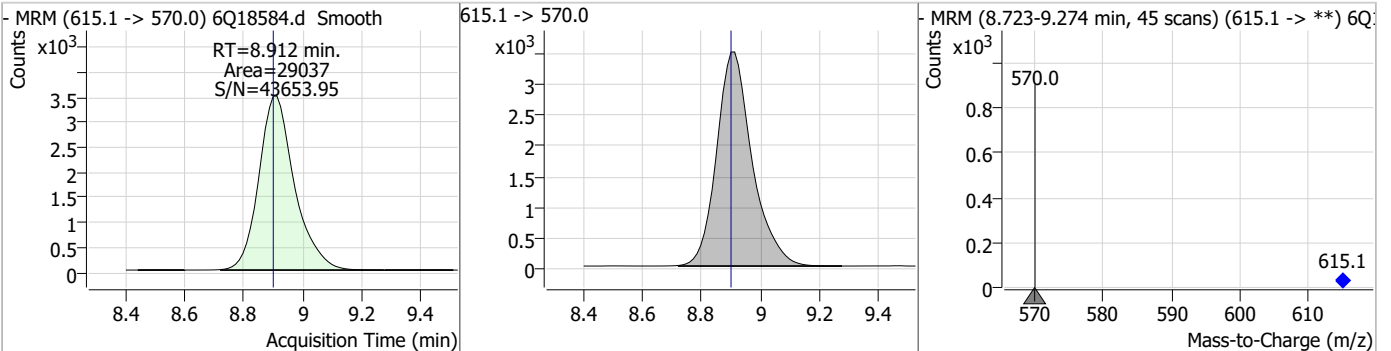
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	25.70	8.51	0.00	636777	532.8 -> 353.0	30.9	16.5	49.4



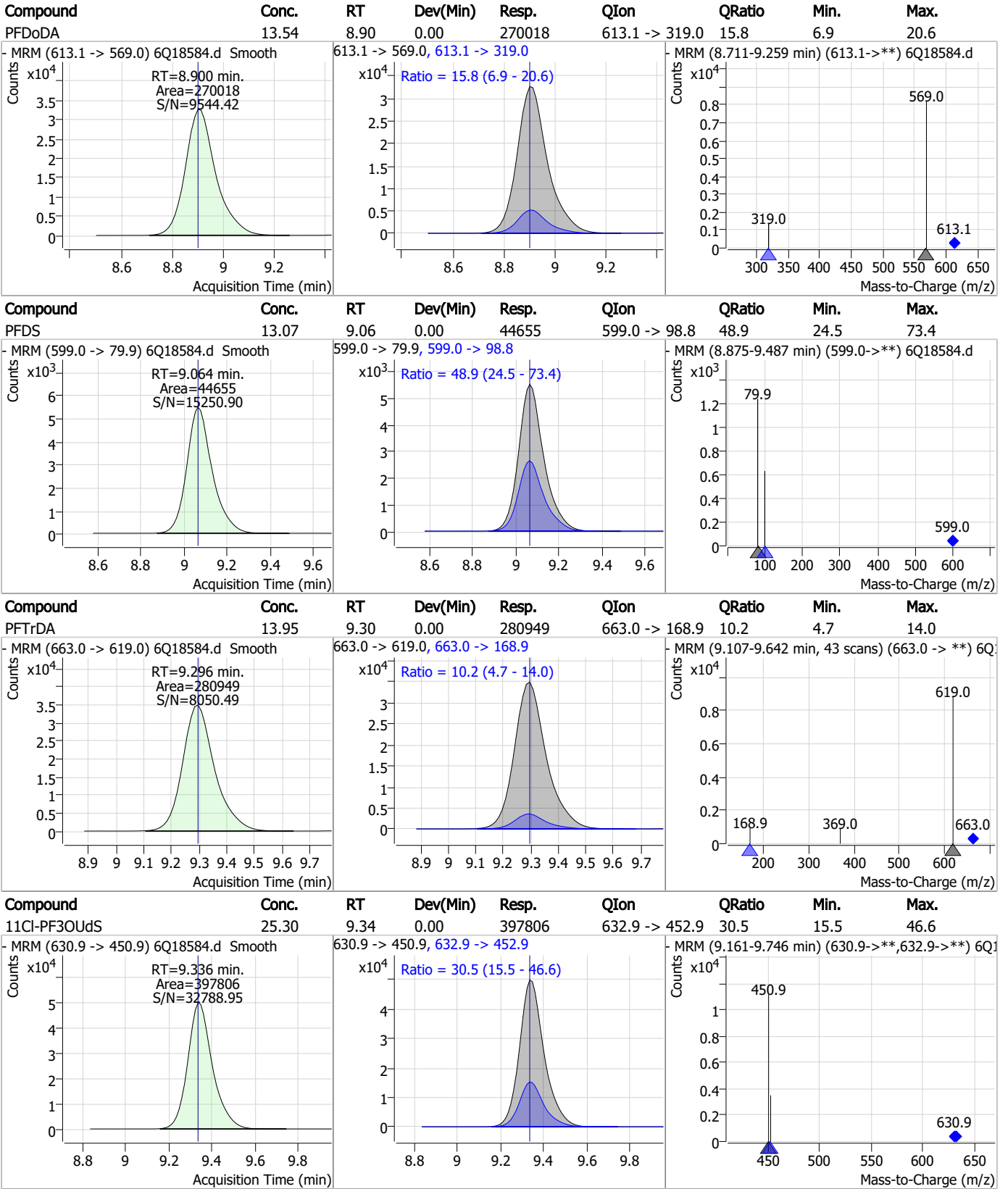
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.84	8.64	0.00	75961	548.8 -> 98.9	50.3	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.91	0.01	29037	615.1 -> 570.0	-	-	-



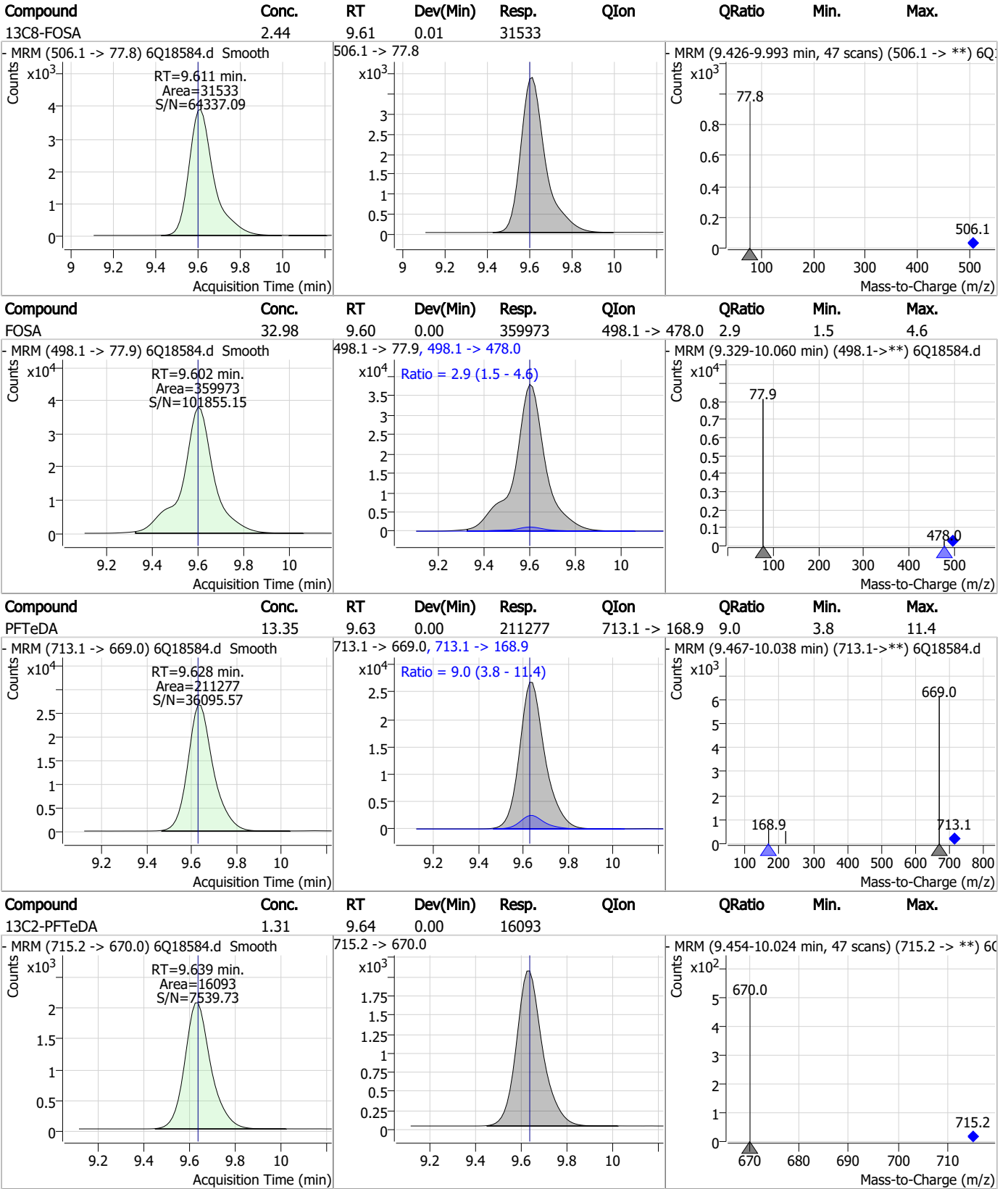
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

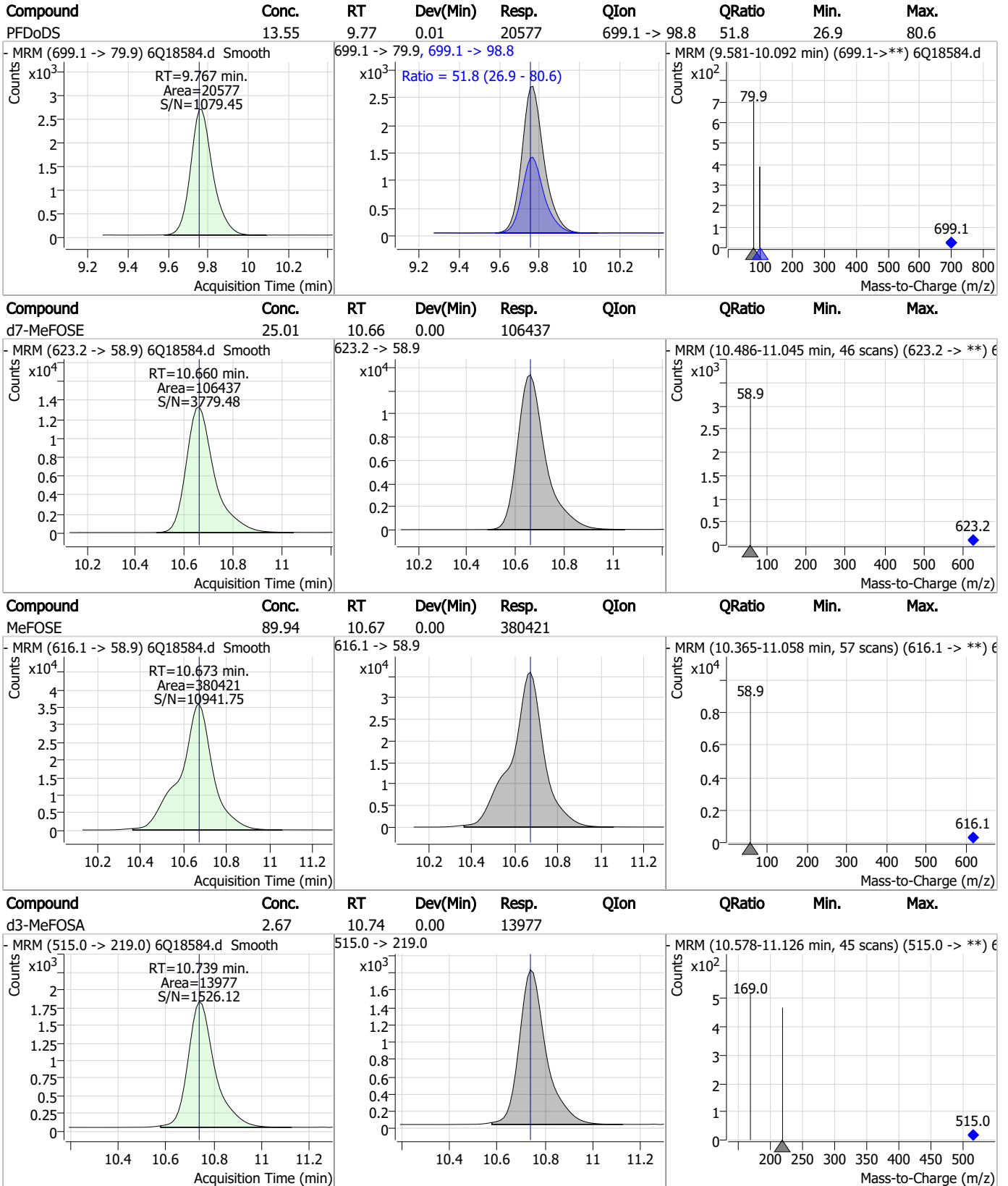
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Perfluorinated Compounds by LC/MS/MS

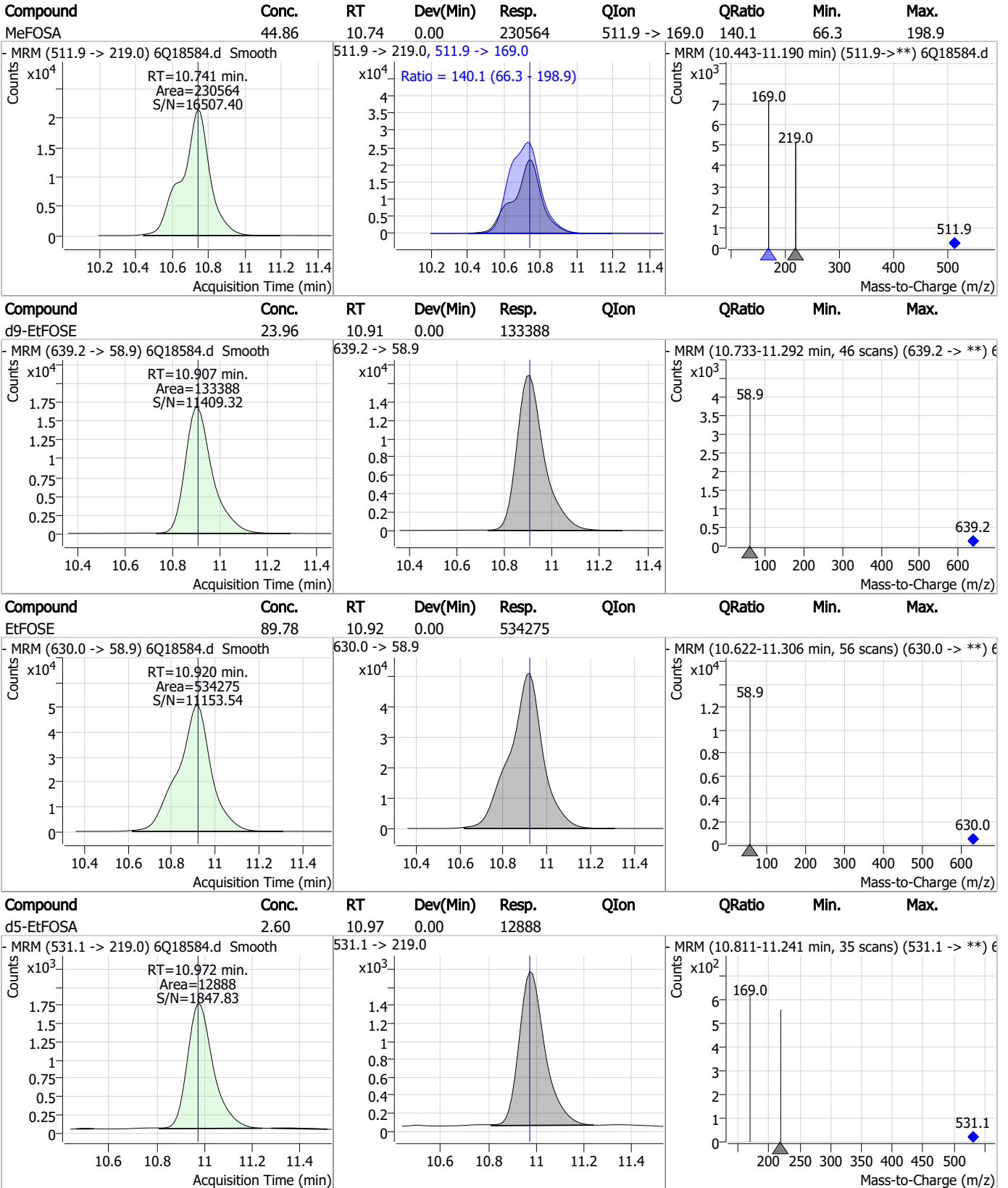


7.6.2

7



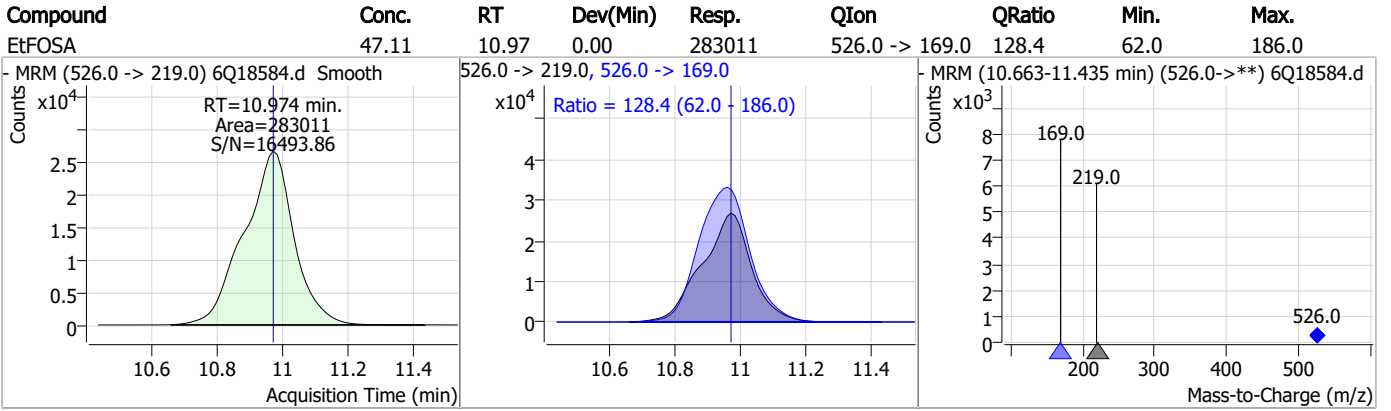
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18584.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:47 Supervisor approved: 06/01/23 14:43 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.03	Split peak
Perfluorononanoic acid	375-95-1		7.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.6.2.1

7

Perfluorinated Compounds by LC/MS/MS

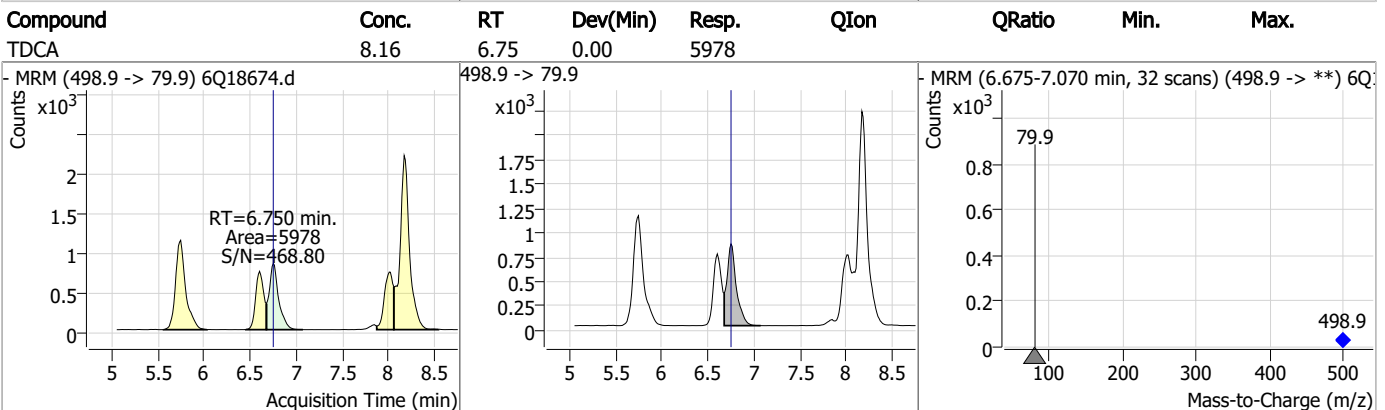
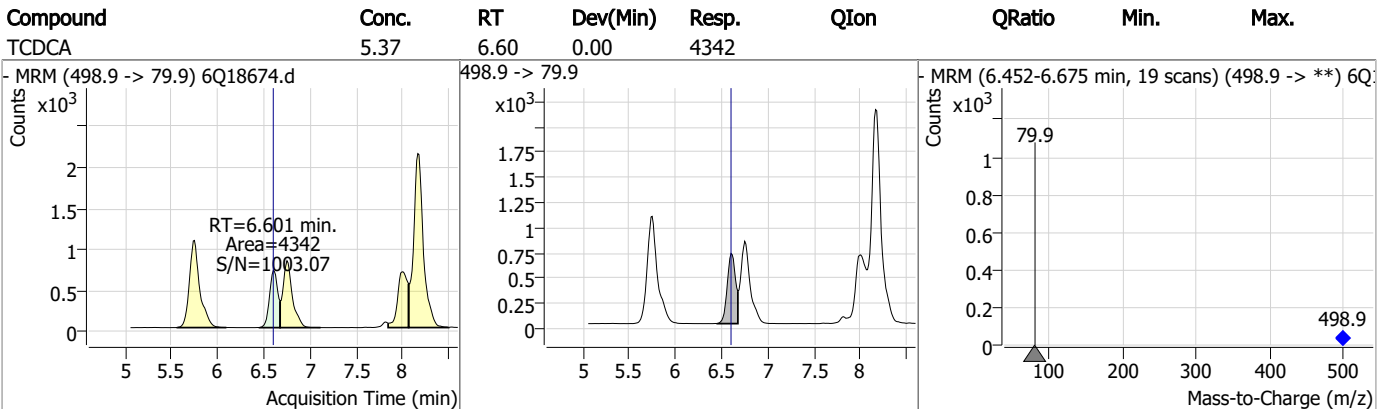
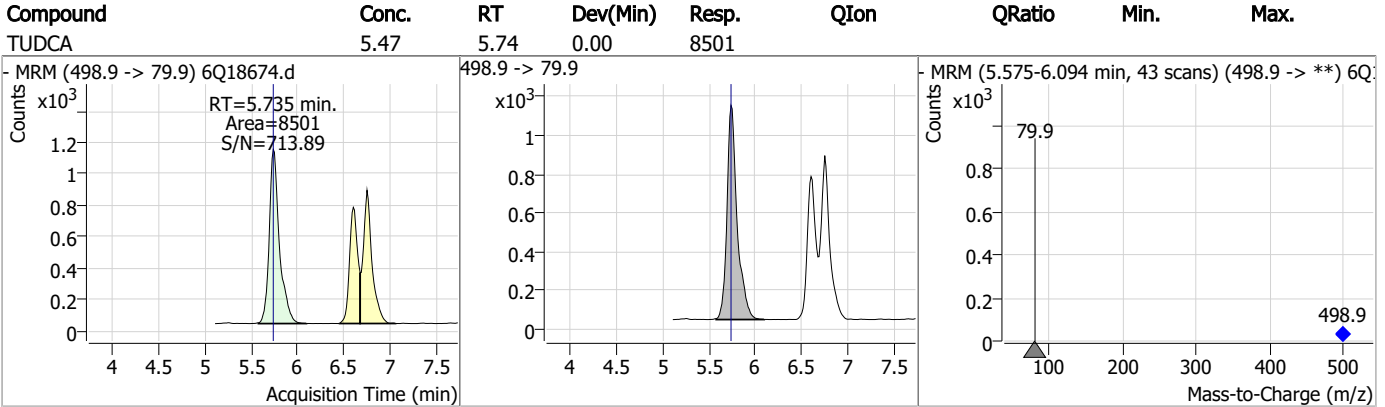
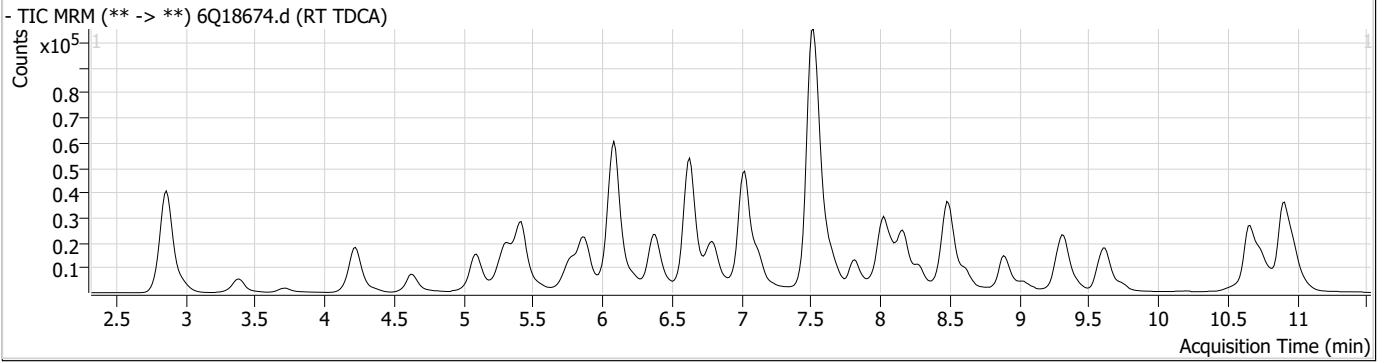
Data File : 6Q18674.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 2:52:20 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q280 TDCA.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.177	507.1 -> 79.9	17539	2.50	µg/L	0.000	
13C4-PFOS	8.165	502.8 -> 79.9	21132	2.50	µg/L	0.000	
System Monitoring Compounds							
13C8-PFOS	8.177	507.1 -> 79.9	17539	2.11	µg/L	0.000	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 84.2%				
Target Compounds							
PFOS	8.166	498.9 -> 79.9 498.9 -> 98.8	20684 10065	3.45	µg/L	m	79
TCDCa	6.601	498.9 -> 79.9	4342	5.37	ng/ml		100
TDCA	6.750	498.9 -> 79.9	5978	8.16	ng/ml		100
TUDCA	5.735	498.9 -> 79.9	8501	5.47	ng/ml		100

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

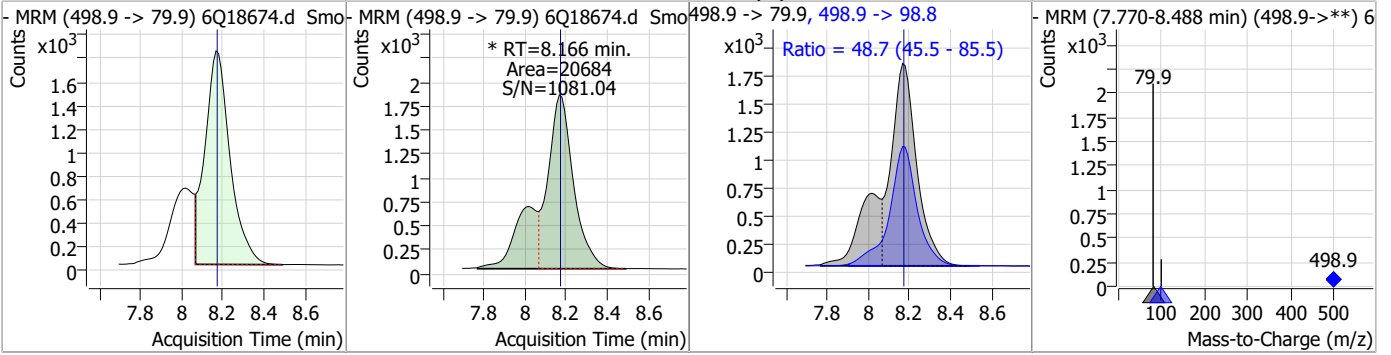
7.6.3
7

Perfluorinated Compounds by LC/MS/MS

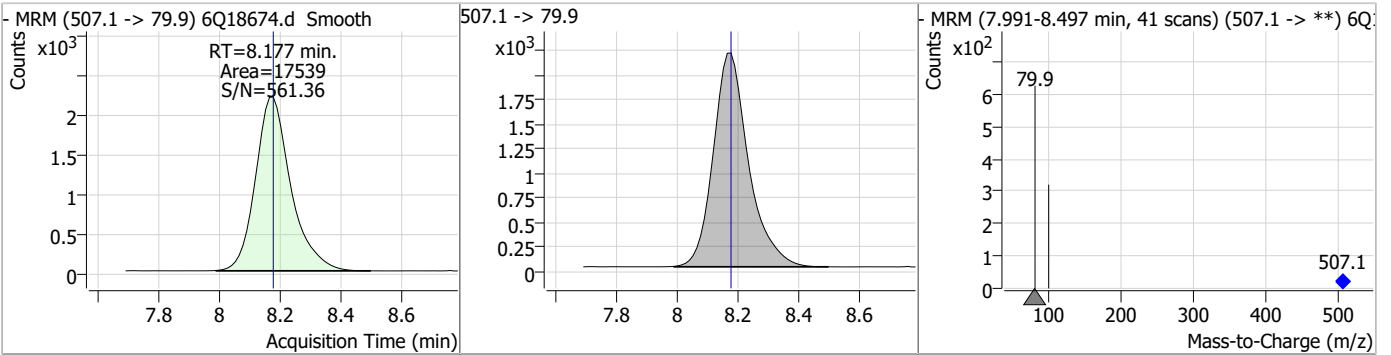


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.45	8.17	0.00	20684 (m)	498.9 -> 98.8	48.7	45.5	85.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.11	8.18	0.00	17539				



7.6.3

7

Manual Integration Approval Summary

Sample Number: S6Q280-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18674.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 14:52 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18675.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 3:06:48 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	157185	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	51817	5.00 µg/L	0.012
M5-PFHxA	5.417	318.0 -> 273.0	56499	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	54025	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	81739	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	37741	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22835	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	27127	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	26766	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14824	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	29296	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	20052	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	12221	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	11968	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	2906	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	4645	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4361	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25018	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	36596	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	21956	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	98004	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	123111	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11840	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12363	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	16190	2.50 µg/L	-0.012
13C3-PFBA	2.864	216.0 -> 172.0	66175	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	9449	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	84641	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	31437	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	45422	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	52792	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	2906	4.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4645	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4361	4.70 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26766	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14824	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFBS	5.334	302.1 -> 79.9	20052	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	12221	2.32 µg/L	0.000

7.6.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C4-PFBA	2.860	216.8 -> 171.9	157185	9.97 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.369	367.1 -> 322.0	54025	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFHxA	5.417	318.0 -> 273.0	56499	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.222	268.3 -> 223.0	51817	5.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.027	519.1 -> 474.1	22835	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C7-PFUnDA	8.468	570.0 -> 525.1	27127	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-FOSA	9.598	506.1 -> 77.8	29296	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C8-PFOA	7.026	421.1 -> 376.0	81739	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-PFOS	8.177	507.1 -> 79.9	11968	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C9-PFNA	7.545	472.1 -> 427.0	37741	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25018	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	36596	10.55 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	12363	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	21956	4.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
d7-MeFOSE	10.647	623.2 -> 58.9	98004	24.10 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	123111	23.15 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	11840	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	239716	56.79 µg/L	96
		327.1 -> 80.9	83524		
6:2FTS	6.801	427.1 -> 407.0	248939	54.53 µg/L	93
		427.1 -> 80.9	77032		
8:2FTS	7.816	527.1 -> 507.0	137878	56.84 µg/L	99
		527.1 -> 80.8	54642		
EtFOSAA	8.280	584.2 -> 419.1	41723	14.77 µg/L	96
		584.2 -> 526.0	22751		
FOSA	9.589	498.1 -> 77.9	329566	32.50 µg/L	98
		498.1 -> 478.0	10086		
MeFOSAA	8.085	570.1 -> 419.0	77131	14.99 µg/L	93
		570.1 -> 483.0	14669		
PFBA	2.868	212.8 -> 168.9	295732	56.83 µg/L	100
PFBS	5.335	298.7 -> 79.9	83061	12.18 µg/L	97
		298.7 -> 98.8	30548		
PFDA	8.027	512.9 -> 469.0	365775	13.82 µg/L	99
		512.9 -> 219.0	57308		
PFDoDA	8.900	613.1 -> 569.0	255649	13.91 µg/L	98
		613.1 -> 319.0	38372		
PFDS	9.052	599.0 -> 79.9	39004	13.04 µg/L	96

7.6.4

7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	18821	13.78	µg/L	97
		363.1 -> 319.0	329513			
PFHpS	7.685	363.1 -> 169.0	52168	12.79	µg/L	99
		449.0 -> 79.9	73398			
PFHxA	5.420	449.0 -> 98.9	38078	14.06	µg/L	99
		313.0 -> 269.0	266775			
PFHxS	7.131	313.0 -> 118.9	13414	12.92	µg/L	m
		398.7 -> 79.9	71427			
PFNA	7.421	398.7 -> 98.9	34202	30.46	µg/L	m
		463.0 -> 419.0	814683			
PFNS	8.631	463.0 -> 219.0	161385	13.10	µg/L	100
		548.8 -> 79.9	62935			
PFOA	7.028	548.8 -> 98.9	32326	30.37	µg/L	m
		413.0 -> 369.0	1059896			
PFOS	8.178	413.0 -> 169.0	194227	13.19	µg/L	100
		498.9 -> 79.9	72152			
PFPeA	4.224	498.9 -> 98.8	34420	28.42	µg/L	100
		263.0 -> 219.0	353704			
PFPeS	6.422	349.1 -> 79.9	73056	13.26	µg/L	99
		349.1 -> 98.9	34489			
PFTeDA	9.628	713.1 -> 669.0	192634	13.21	µg/L	99
		713.1 -> 168.9	16740			
PFTrDA	9.284	663.0 -> 619.0	268639	14.47	µg/L	99
		663.0 -> 168.9	26436			
PFUnDA	8.468	563.1 -> 519.0	265555	15.07	µg/L	90
		563.1 -> 269.1	40271			
11CI-PF3OUdS	9.336	630.9 -> 450.9	358093	26.08	µg/L	99
		632.9 -> 452.9	116790			
9CI-PF3ONS	8.508	530.8 -> 351.0	547614	25.31	µg/L	100
		532.8 -> 353.0	180594			
ADONA	6.632	376.9 -> 250.9	1238482	25.48	µg/L	98
		376.9 -> 84.8	324698			
HFPO-DA	5.783	284.9 -> 168.9	85272	27.49	µg/L	96
		284.9 -> 184.9	10308			
3:3FTCA	3.709	241.0 -> 177.0	57334	71.98	µg/L	91
		241.0 -> 117.0	7560			
5:3FTCA	6.086	341.0 -> 237.1	1109300	325.06	µg/L	93
		341.0 -> 217.0	858599			
7:3FTCA	7.510	441.0 -> 316.9	824008	352.57	µg/L	97
		441.0 -> 336.9	1861560			
EtFOSA	10.974	526.0 -> 219.0	241428	43.75	µg/L	99
		526.0 -> 169.0	327474			
EtFOSE	10.907	630.0 -> 58.9	483924	88.11	µg/L	100
		511.9 -> 219.0	204969			
MeFOSA	10.741	511.9 -> 169.0	287682	45.08	µg/L	88
		616.1 -> 58.9	343002			
MeFOSE	10.673	699.1 -> 79.9	18140	88.07	µg/L	100
		699.1 -> 98.8	9225			
PFDoDS	9.755	295.0 -> 201.0	63804	13.65	µg/L	99
		295.0 -> 84.9	17195			
NFDHA	5.299	279.0 -> 85.1	241844	27.62	µg/L	90
		229.0 -> 84.9	190634			
PFMBA	4.638	314.8 -> 134.9	596660	28.55	µg/L	100
		314.8 -> 82.9	21270			
PFMPA	3.376			28.94	µg/L	100
PFEESA	5.875			24.78	µg/L	100

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

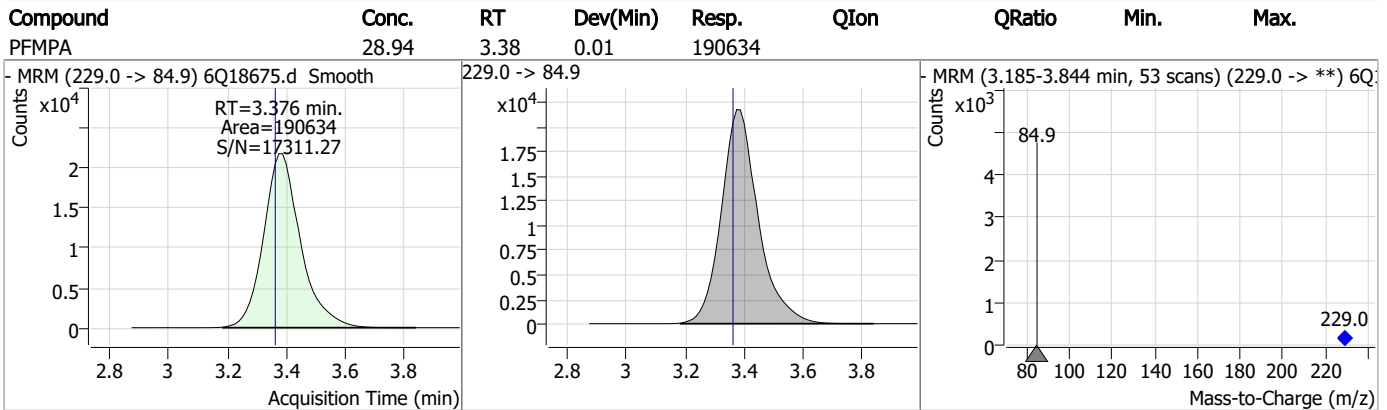
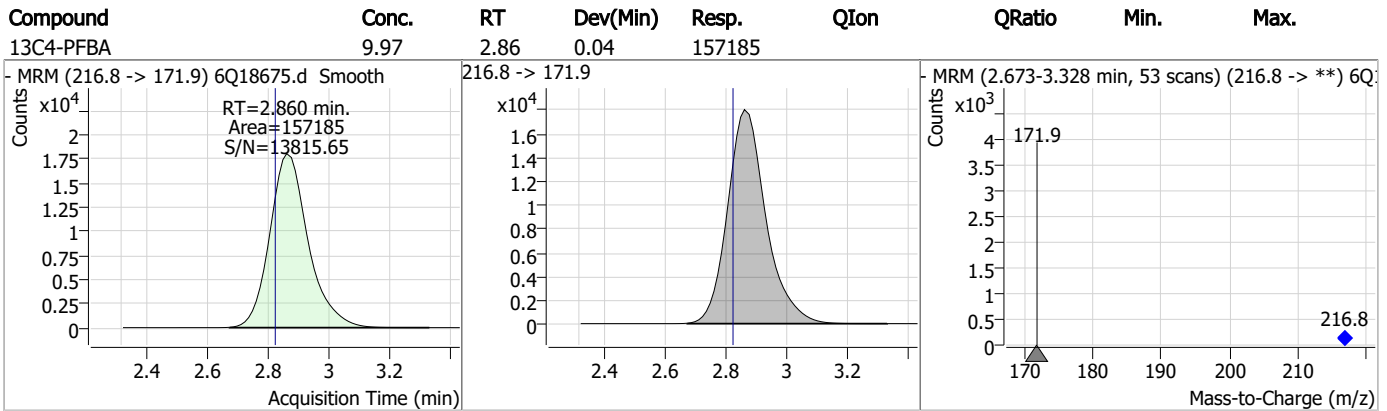
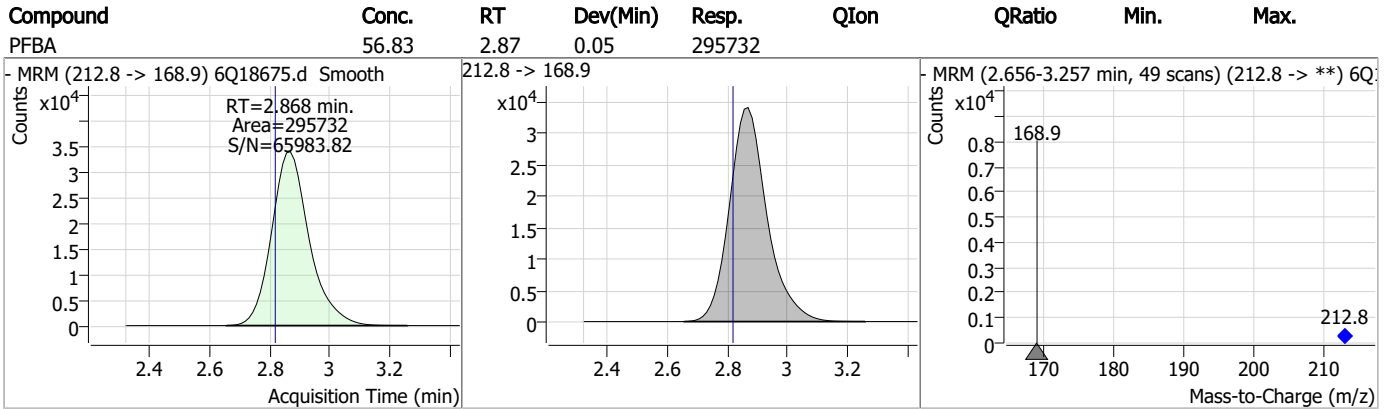
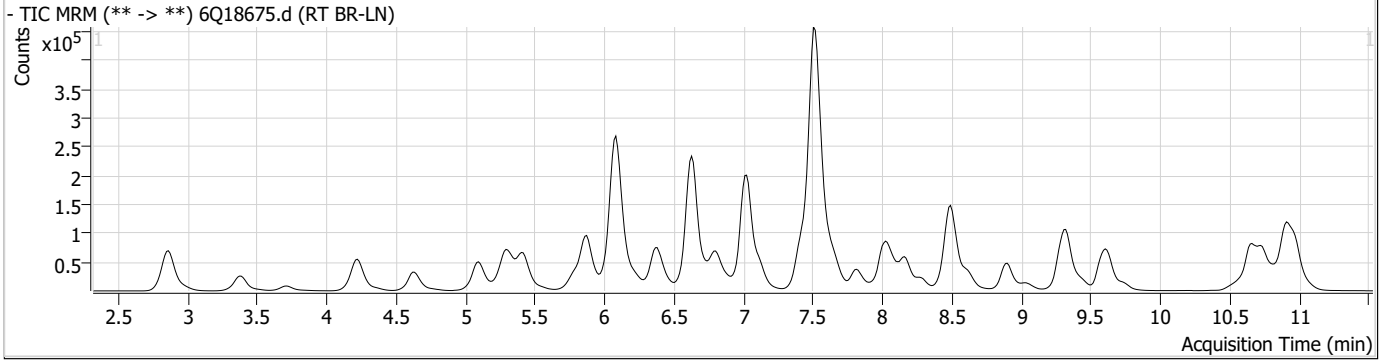
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.4

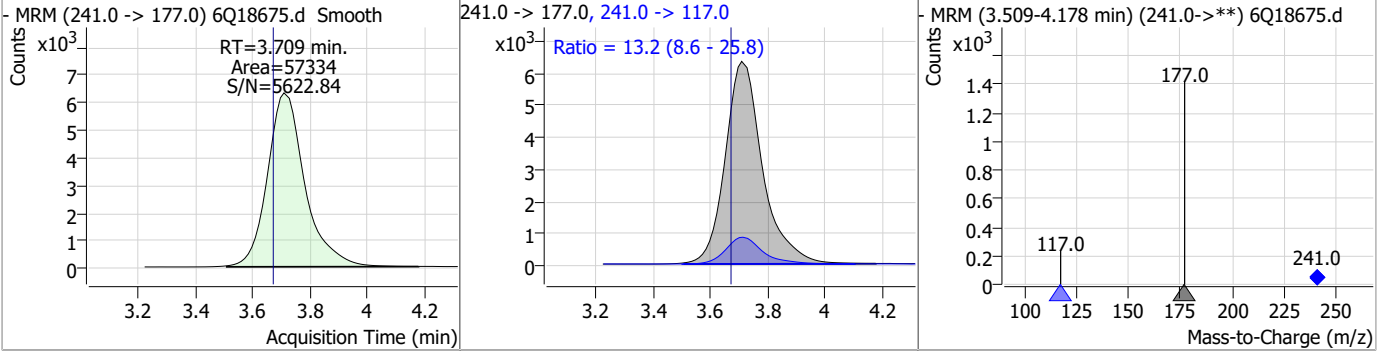
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Perfluorinated Compounds by LC/MS/MS

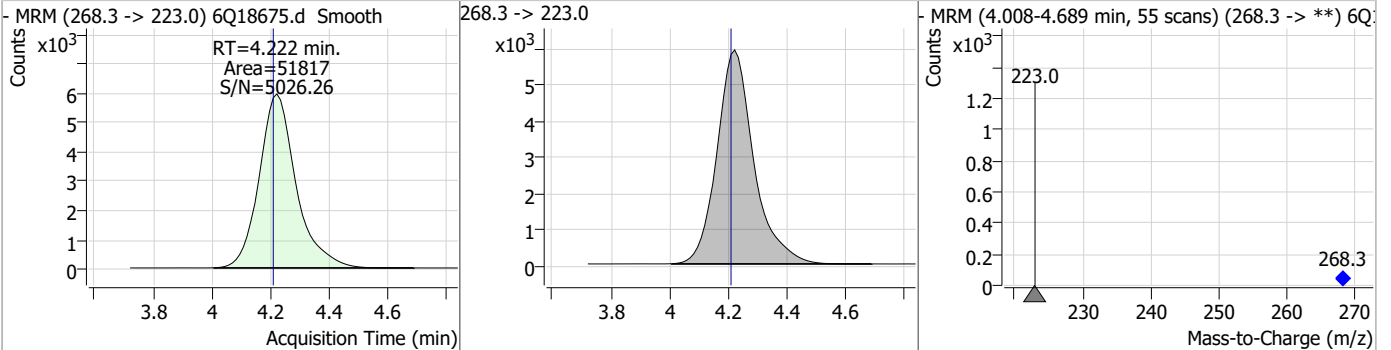


Perfluorinated Compounds by LC/MS/MS

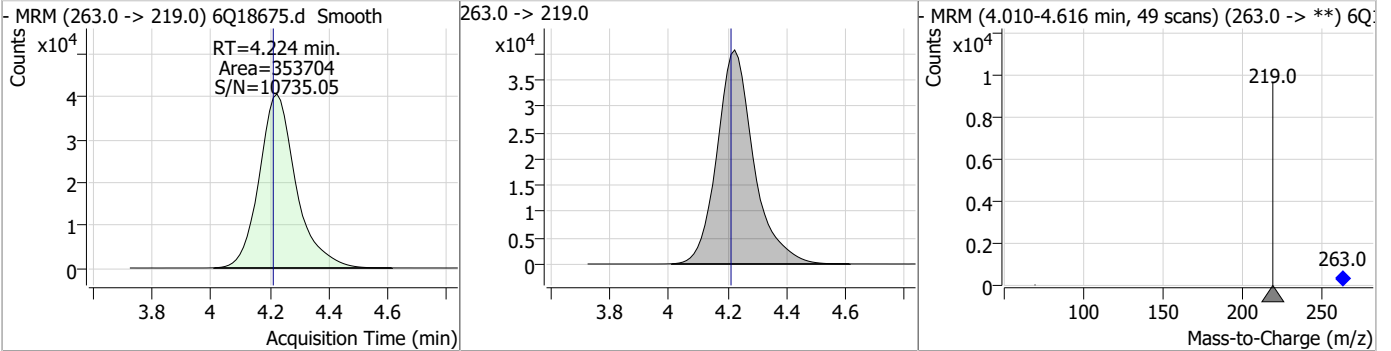
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	71.98	3.71	0.04	57334	241.0 -> 117.0	13.2	8.6	25.8



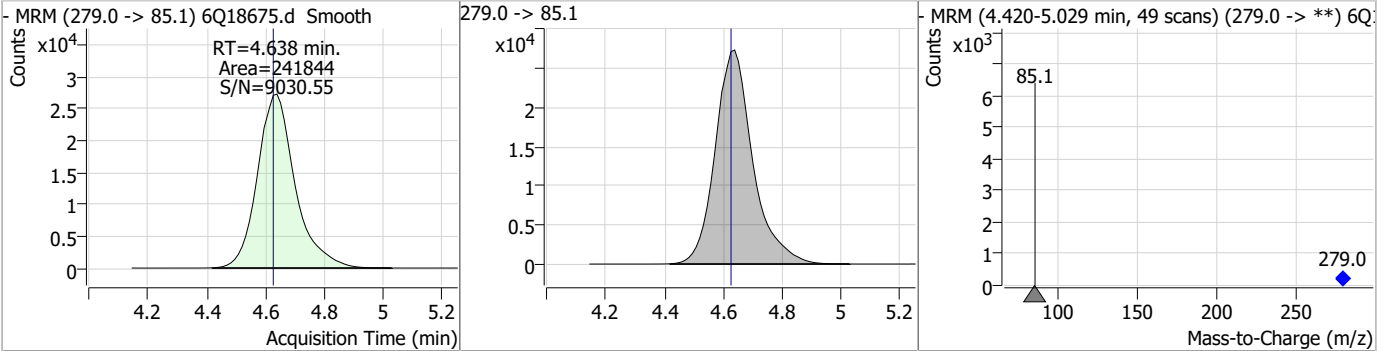
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.22	0.01	51817	268.3 -> 223.0	13.2	8.6	25.8



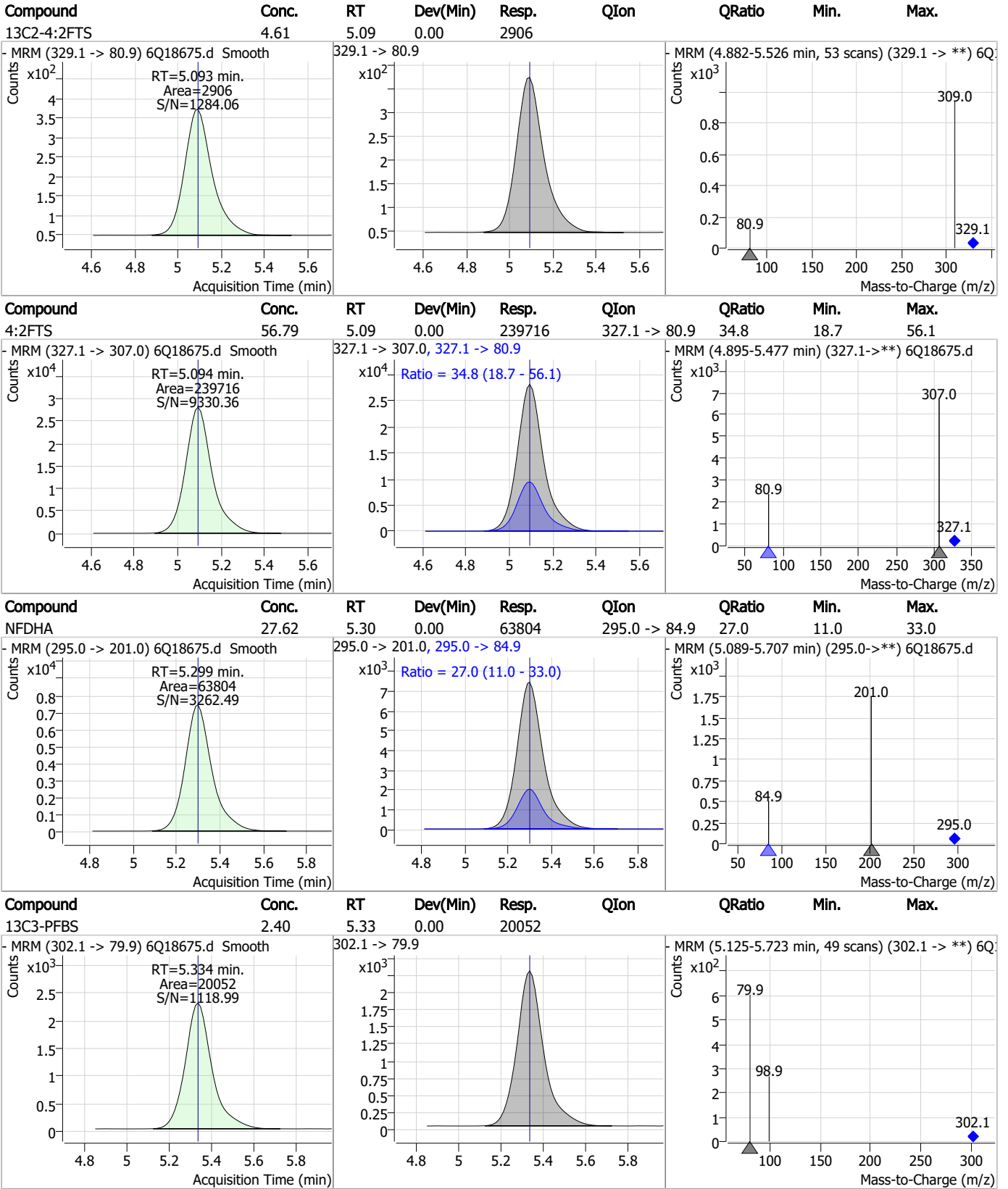
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	28.42	4.22	0.01	353704	263.0 -> 219.0	13.2	8.6	25.8



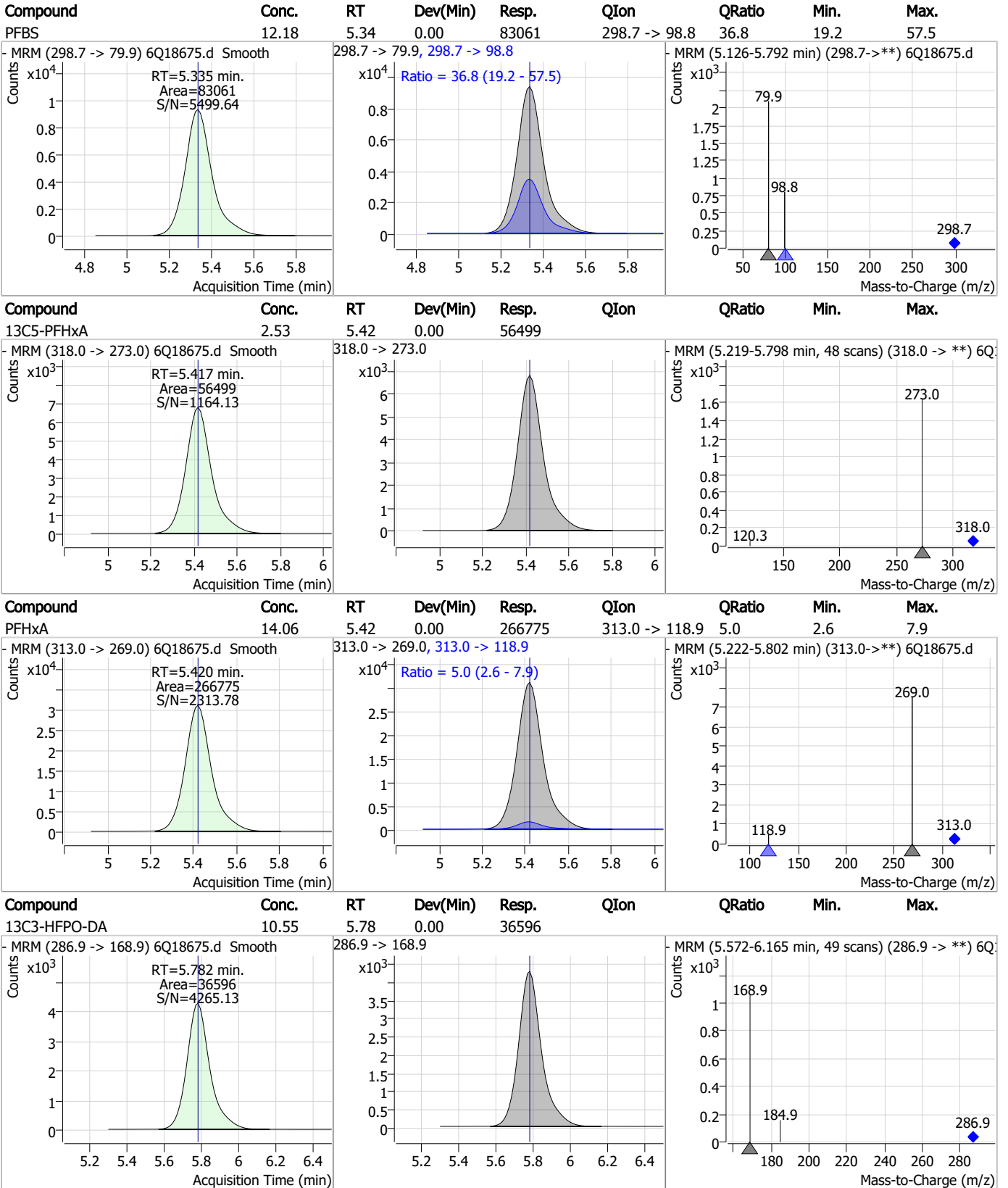
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.55	4.64	0.01	241844	279.0 -> 85.1	13.2	8.6	25.8



Perfluorinated Compounds by LC/MS/MS



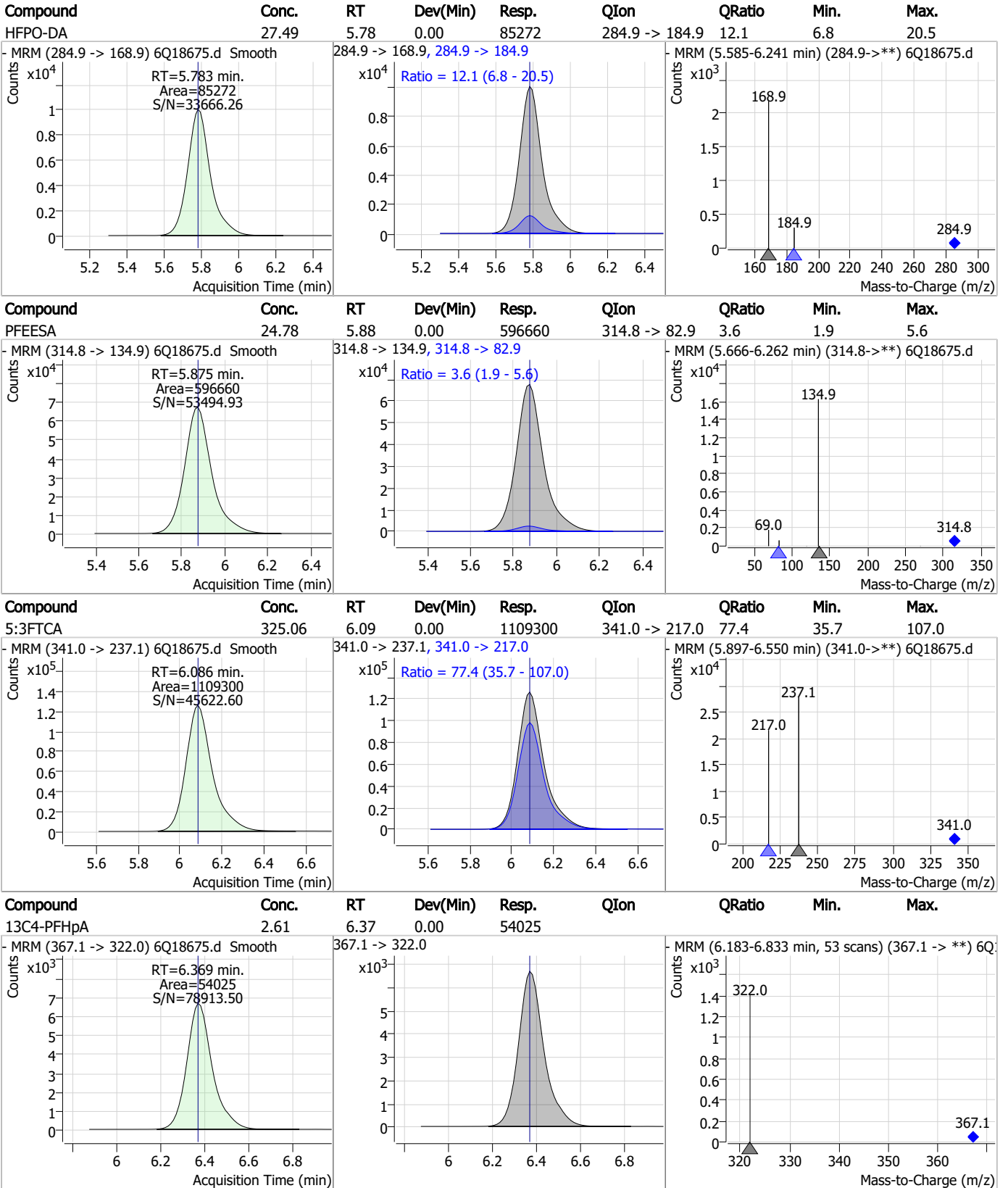
Perfluorinated Compounds by LC/MS/MS



7.6.4

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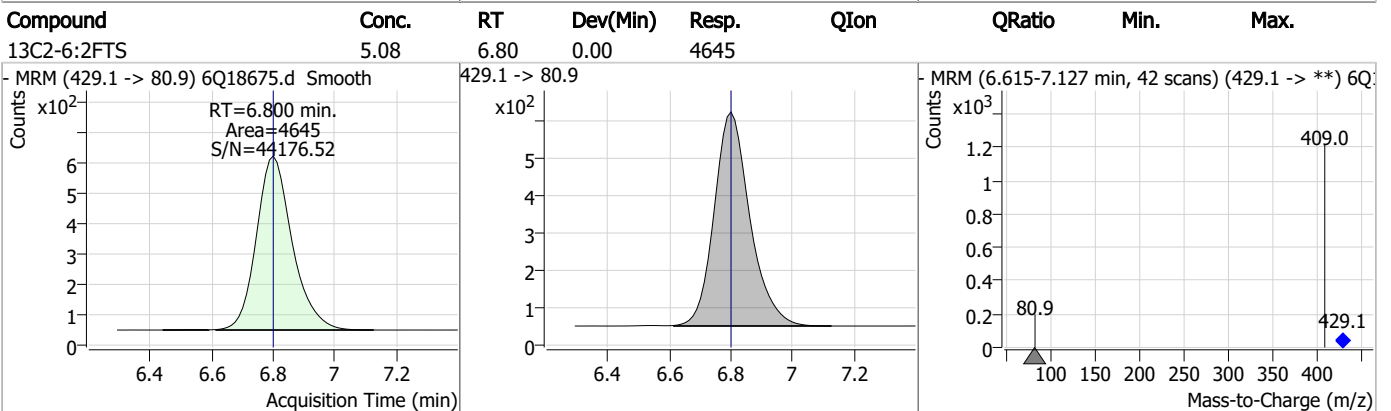
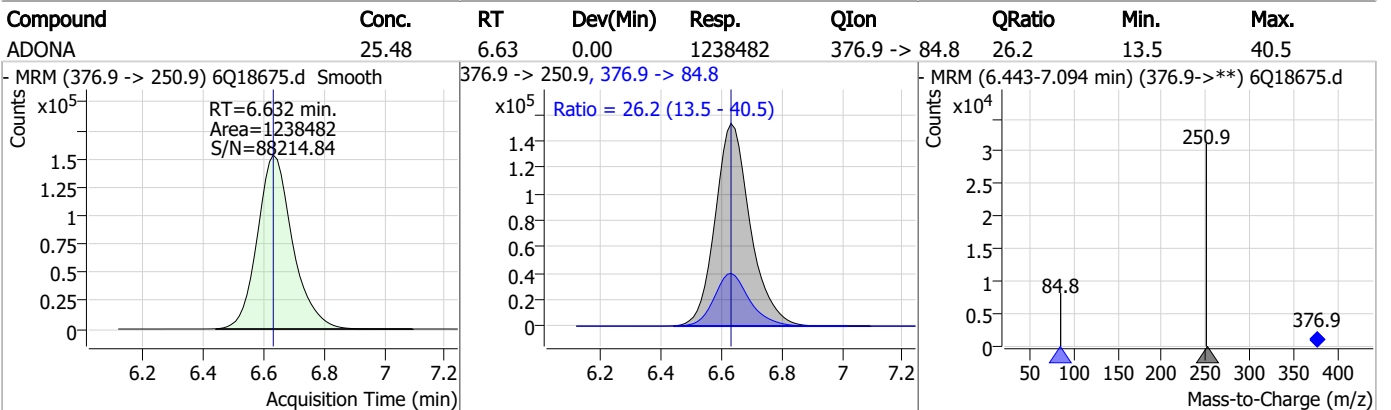
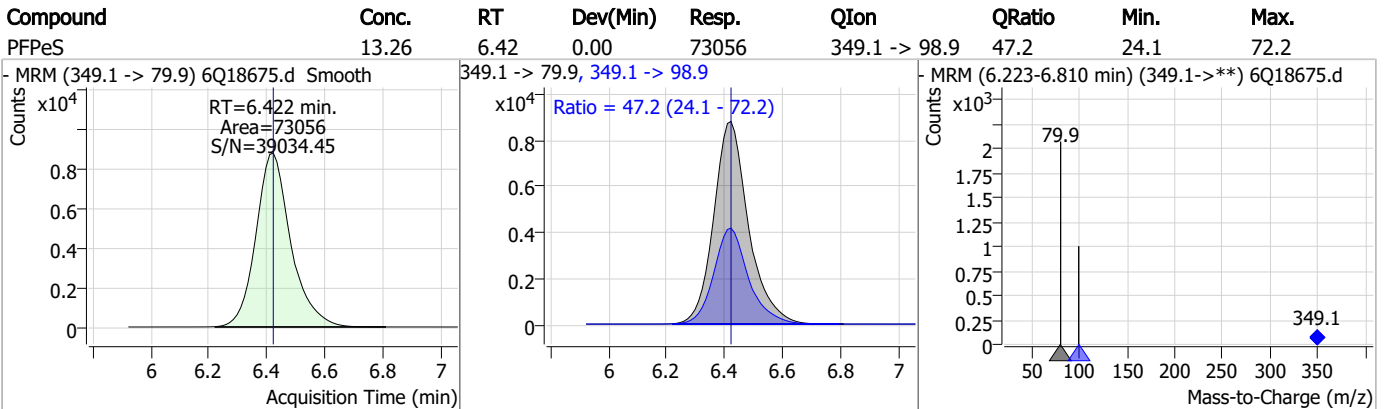
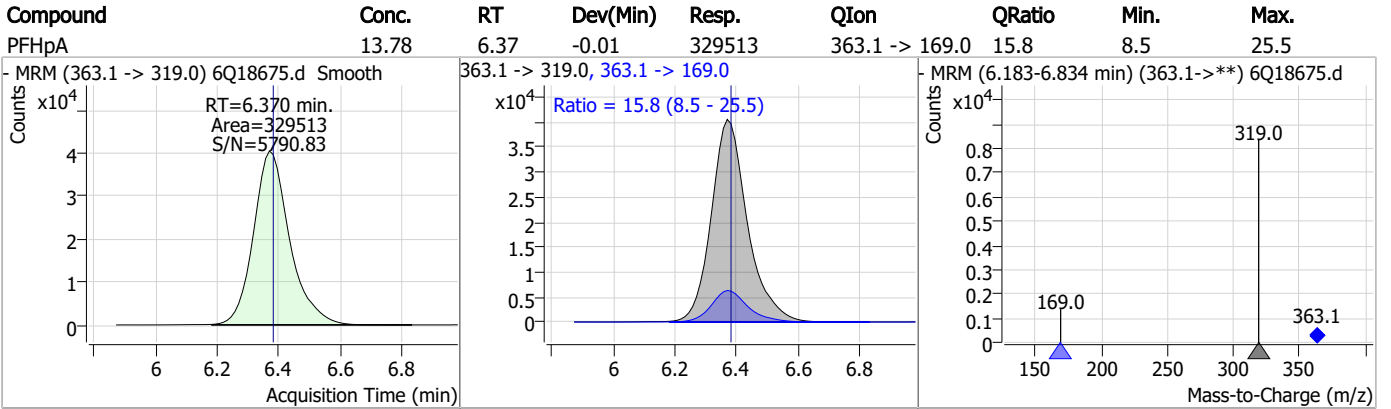
Perfluorinated Compounds by LC/MS/MS



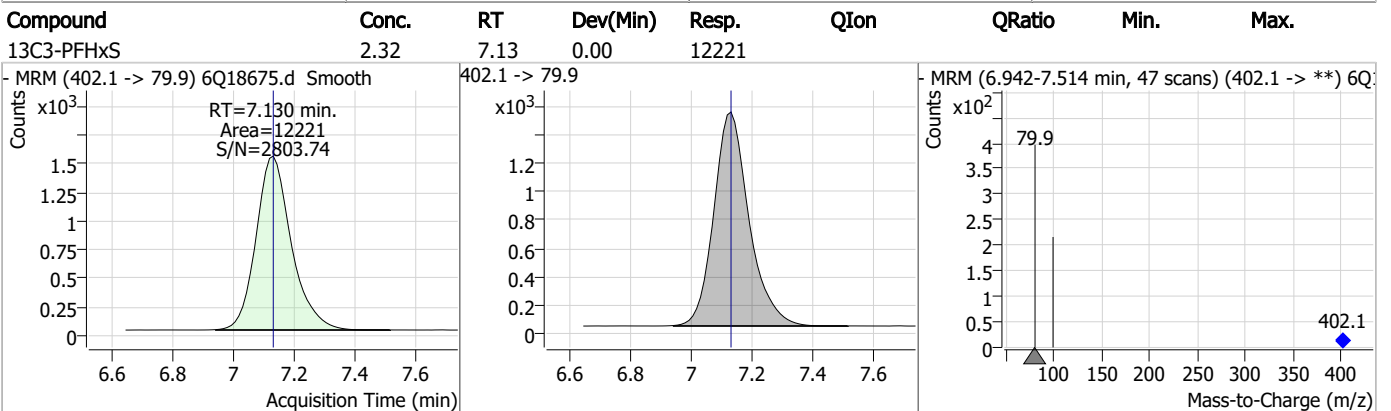
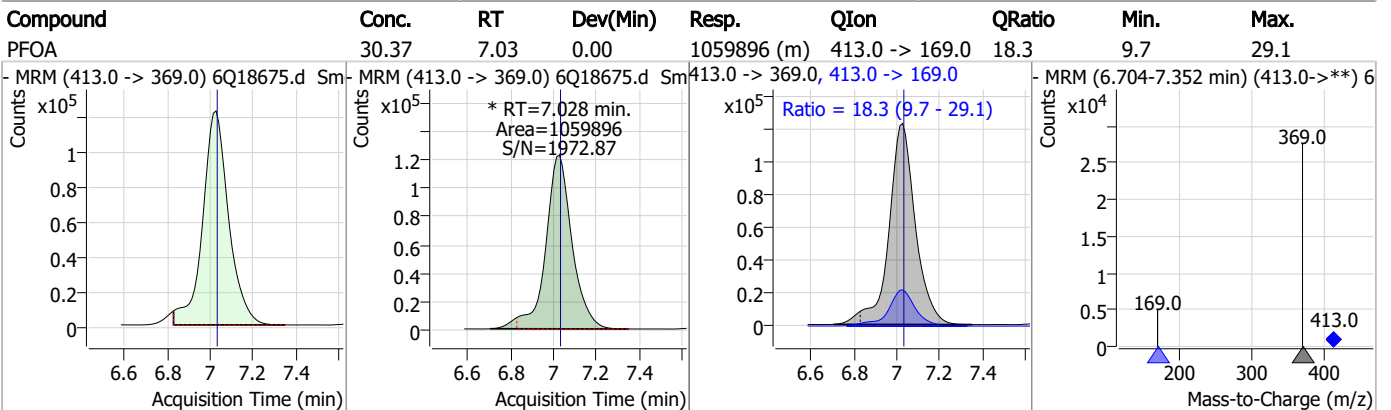
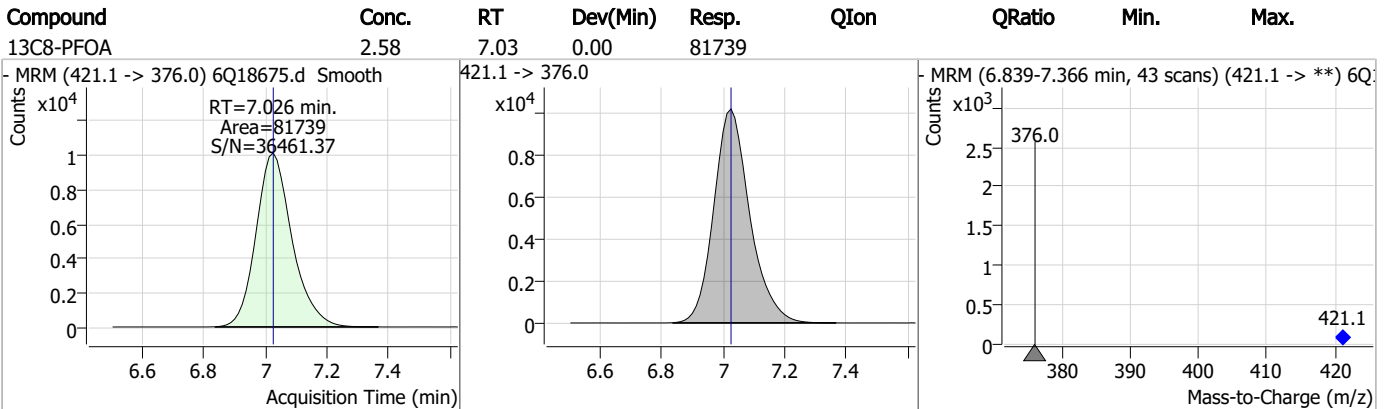
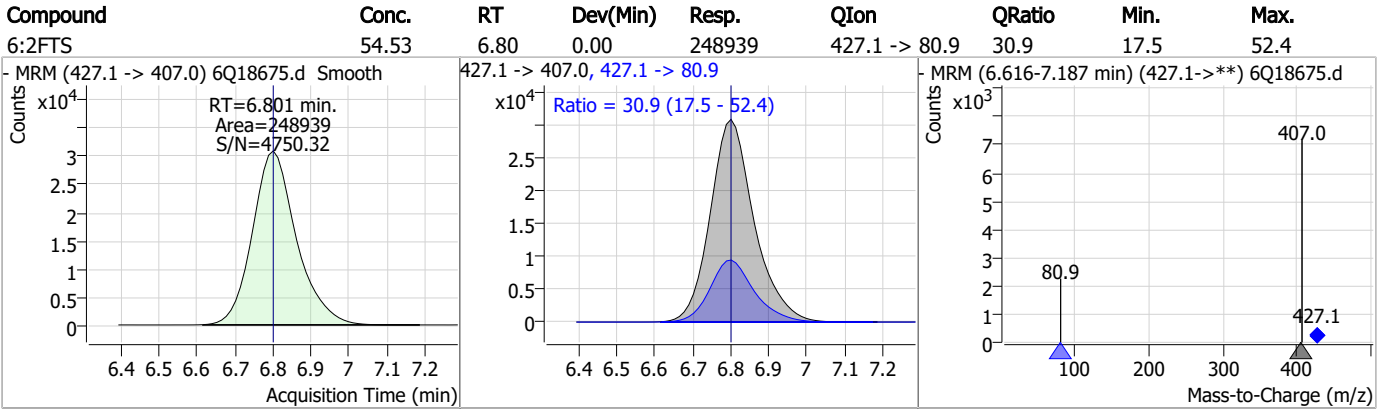
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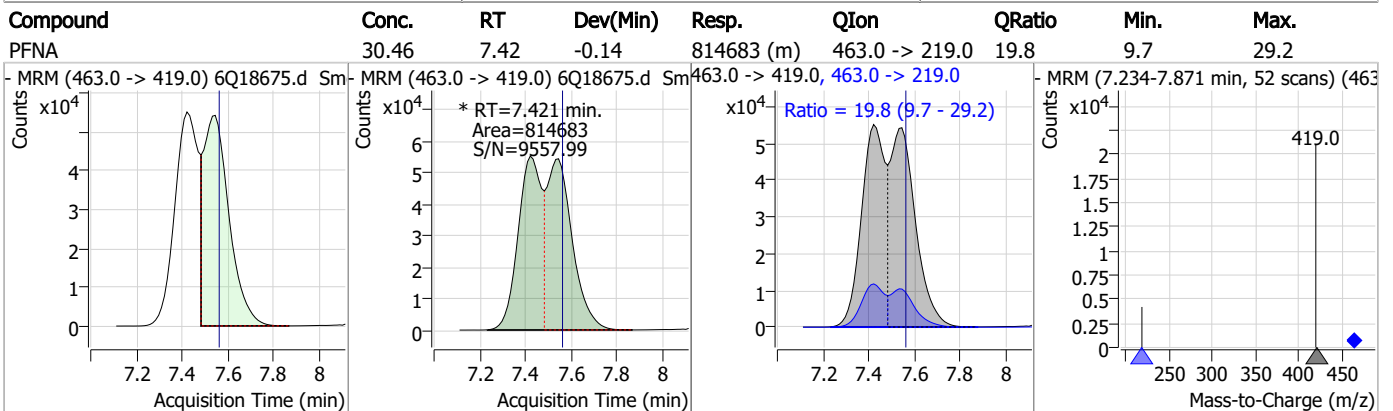
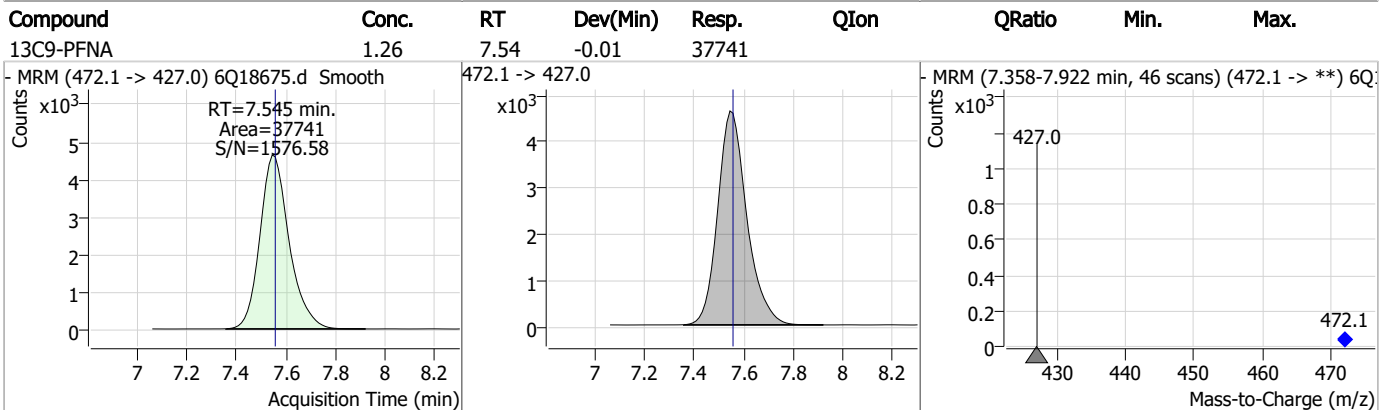
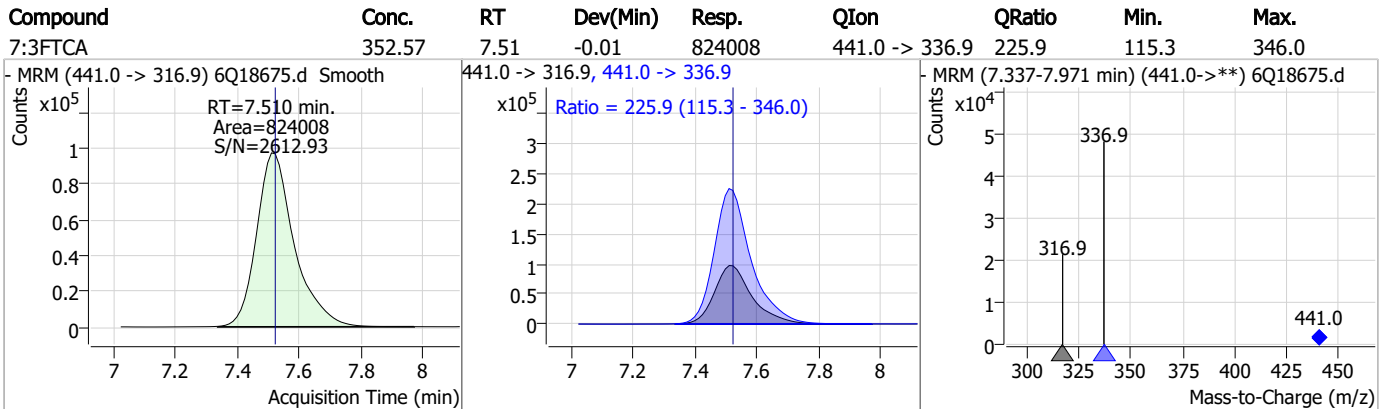
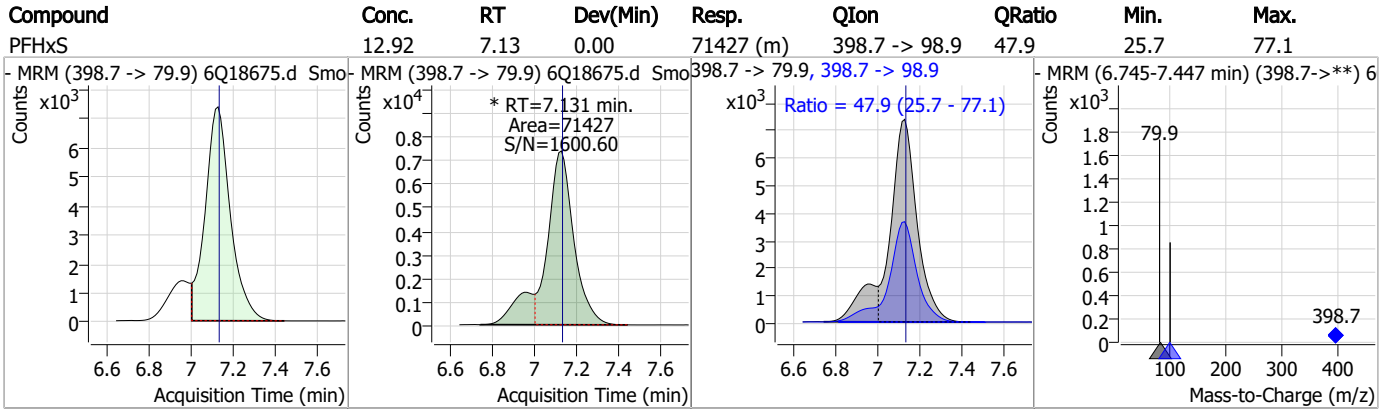
Perfluorinated Compounds by LC/MS/MS



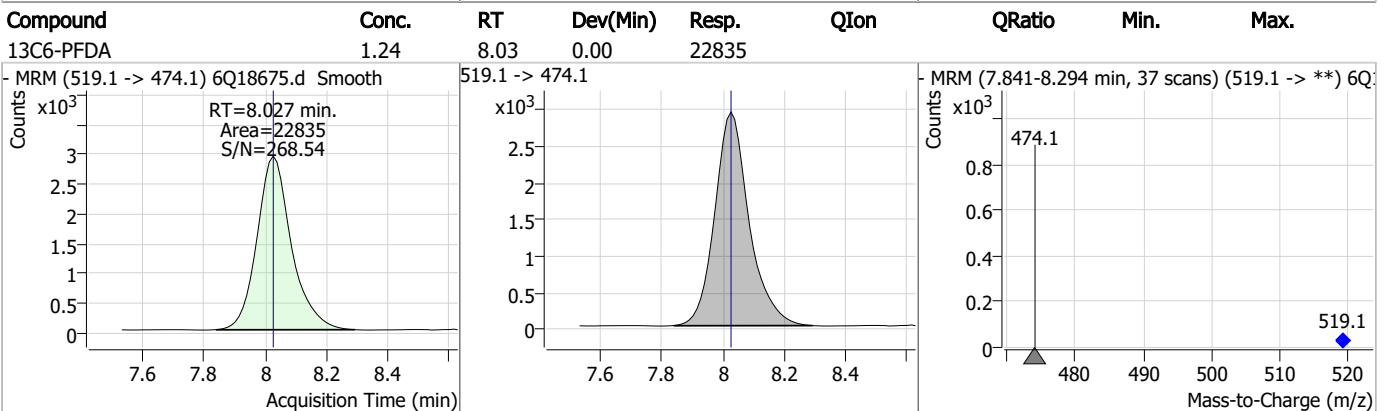
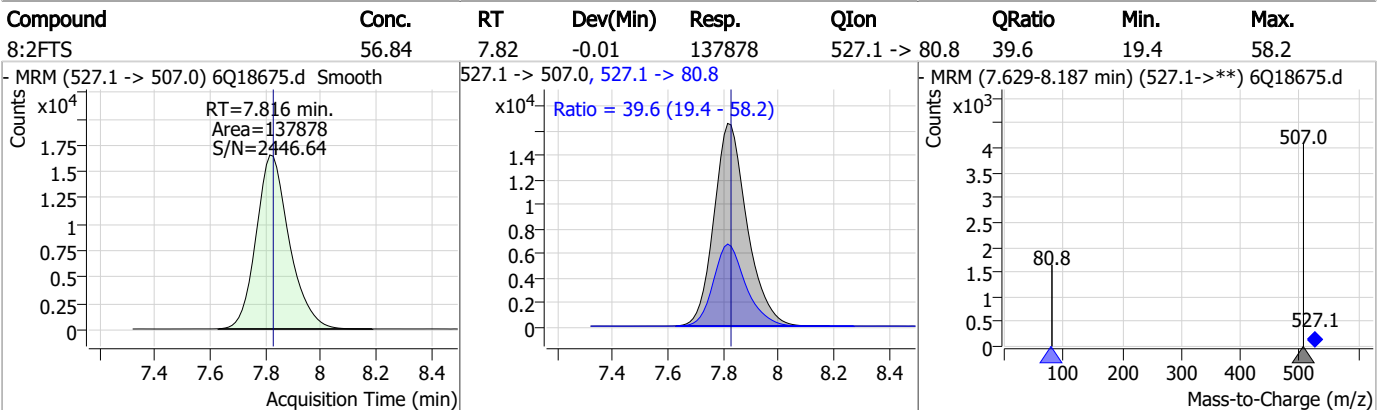
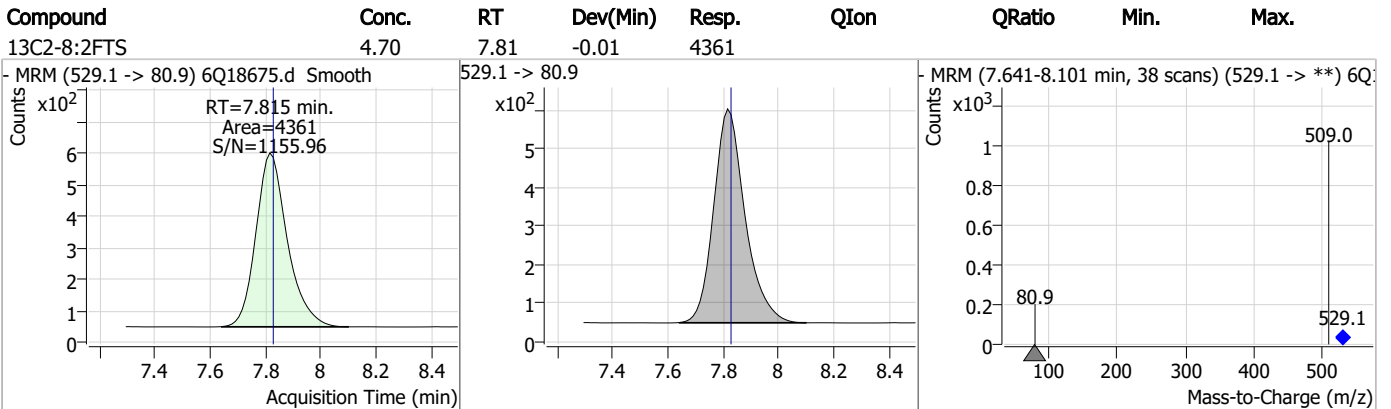
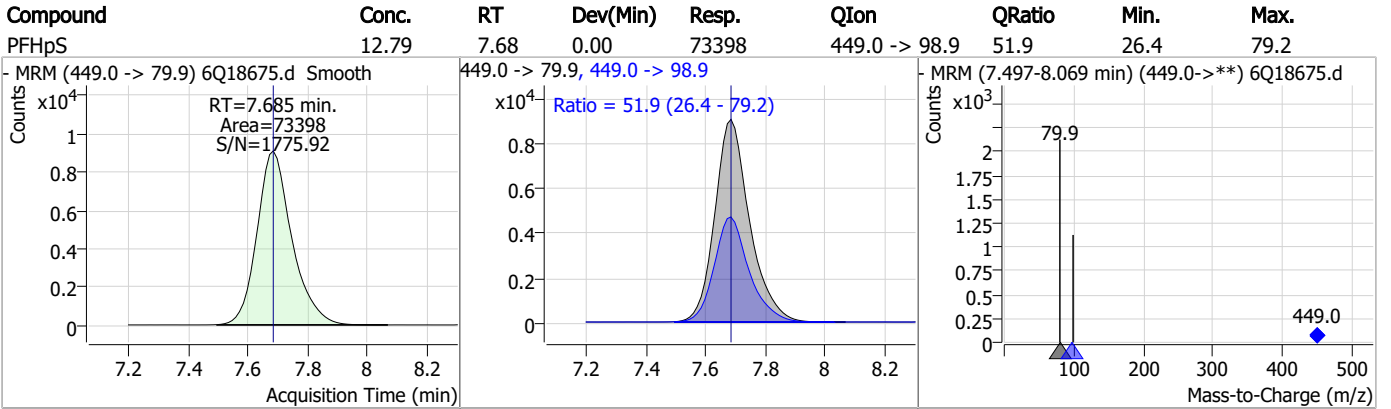
Perfluorinated Compounds by LC/MS/MS



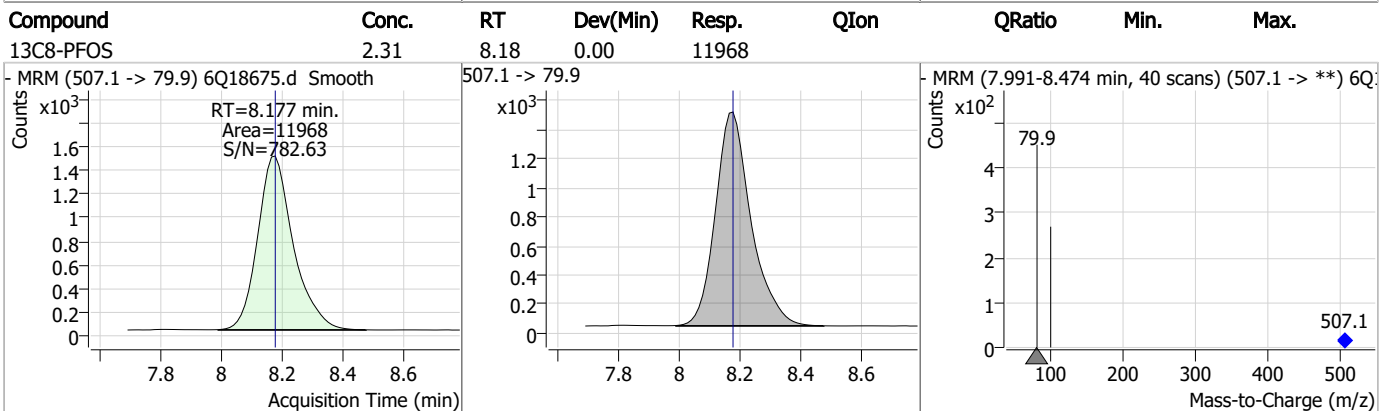
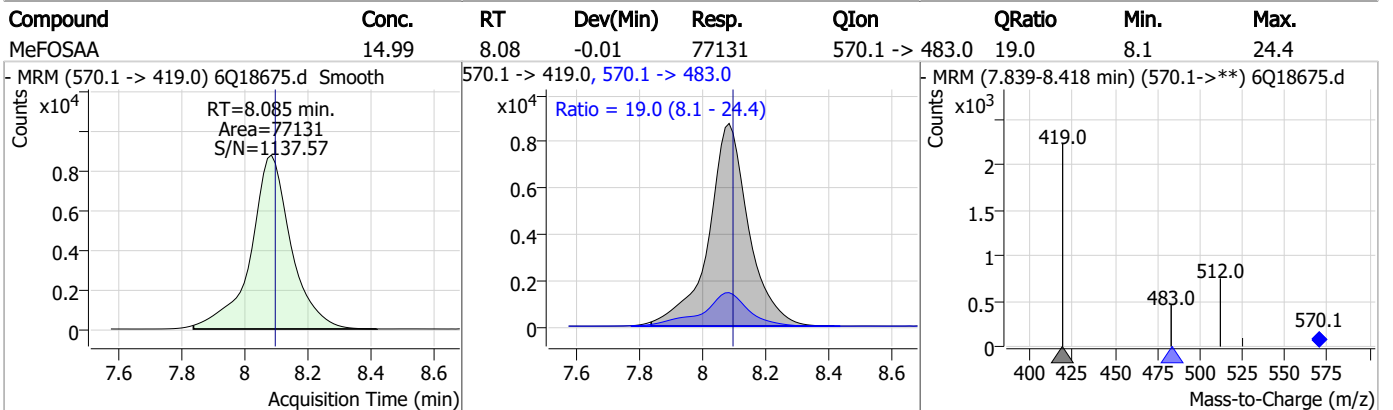
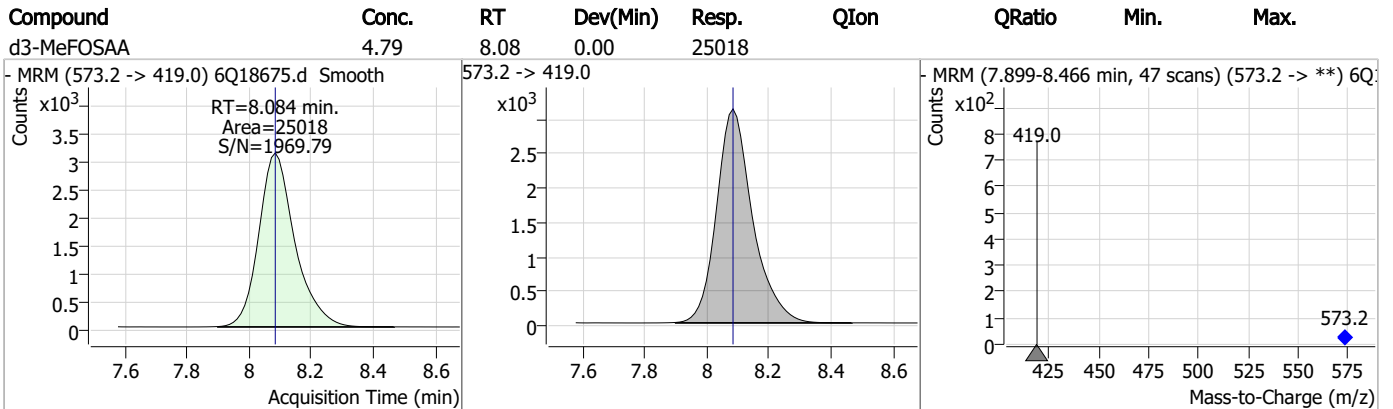
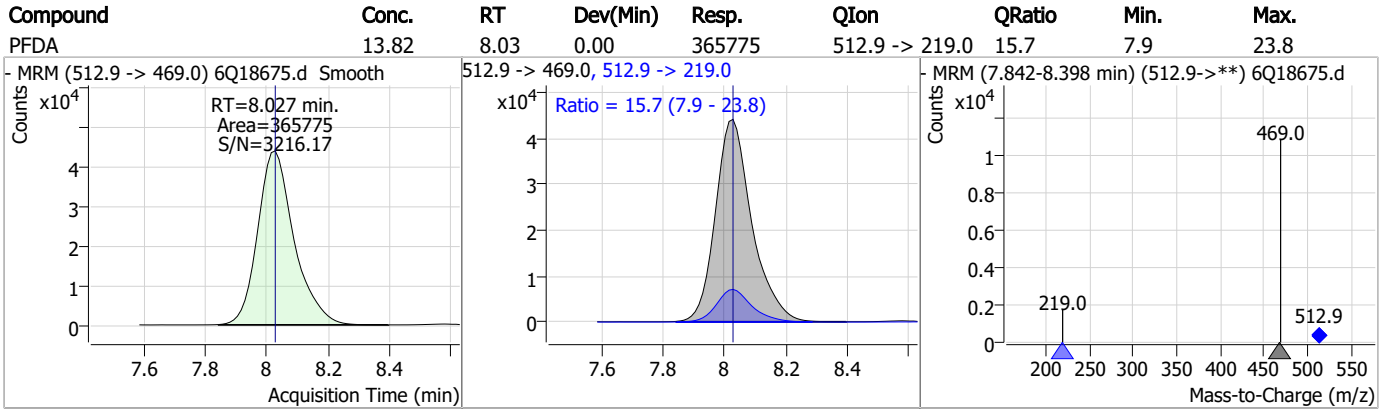
Perfluorinated Compounds by LC/MS/MS



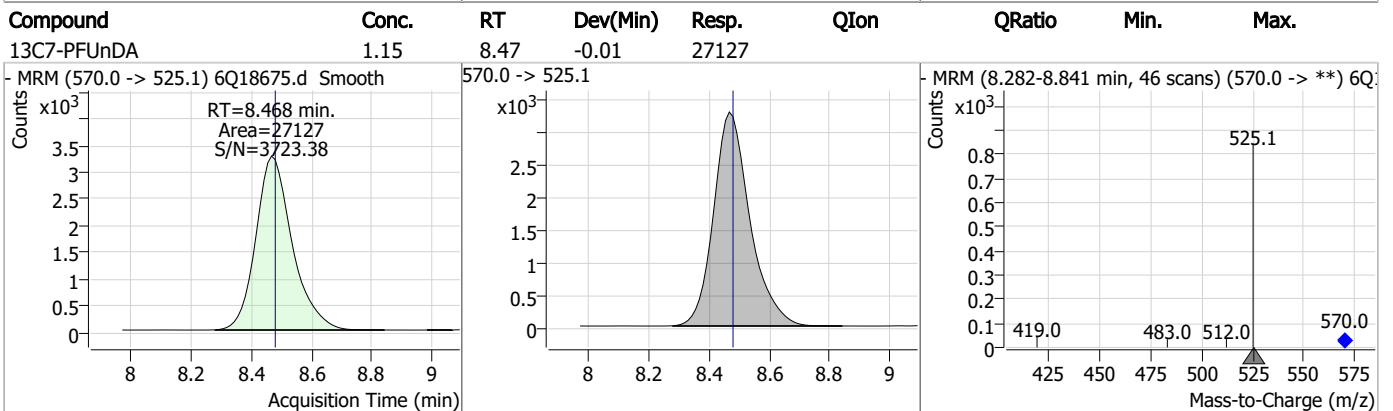
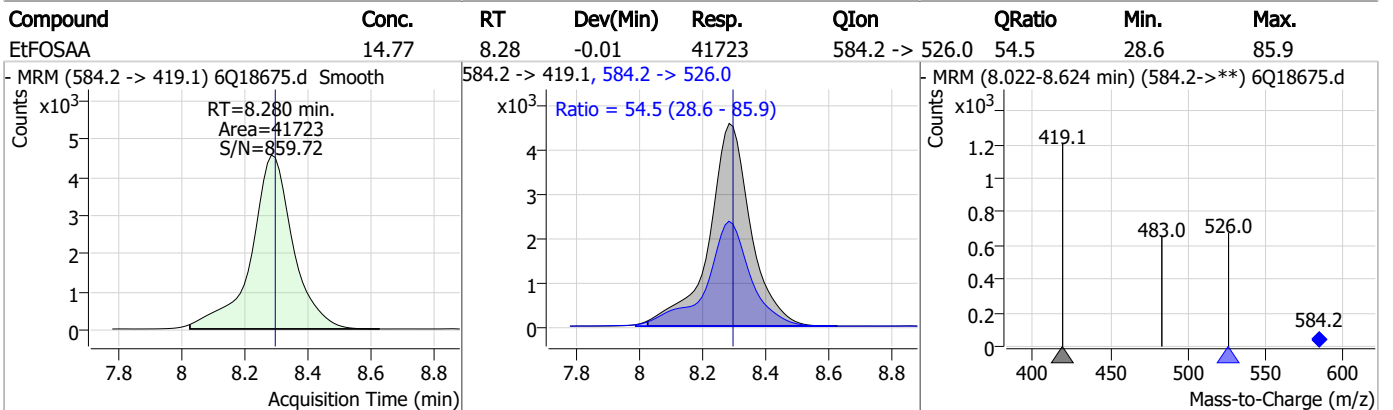
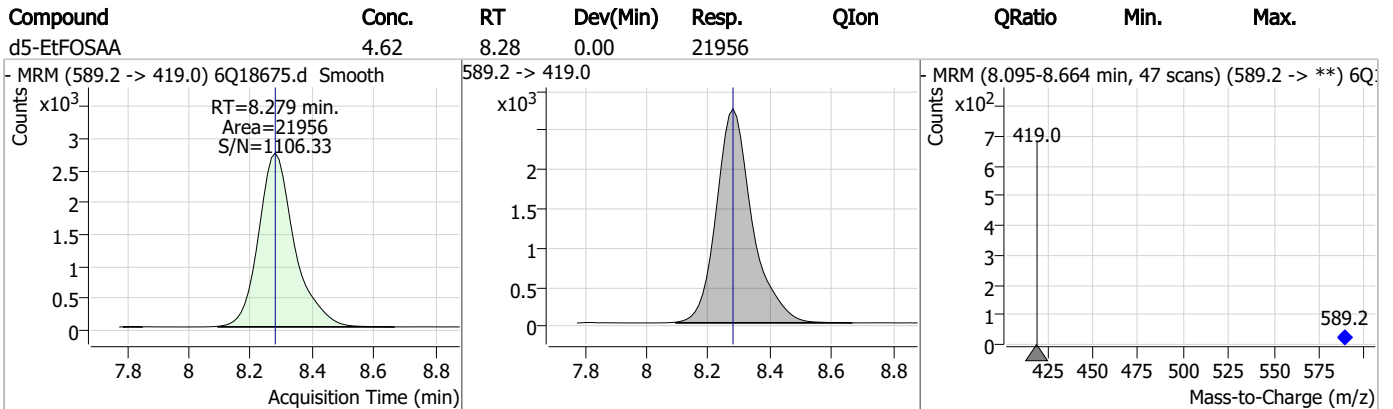
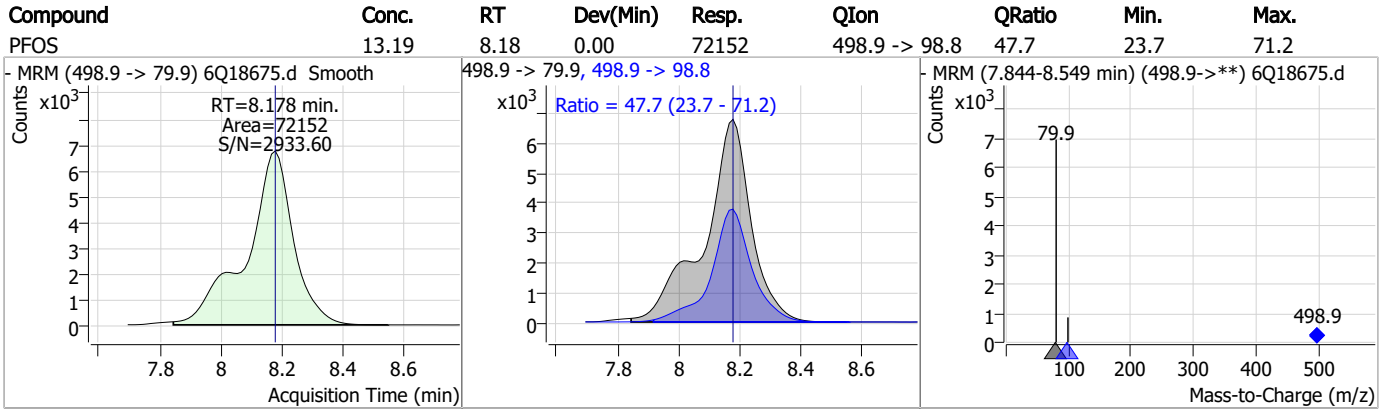
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

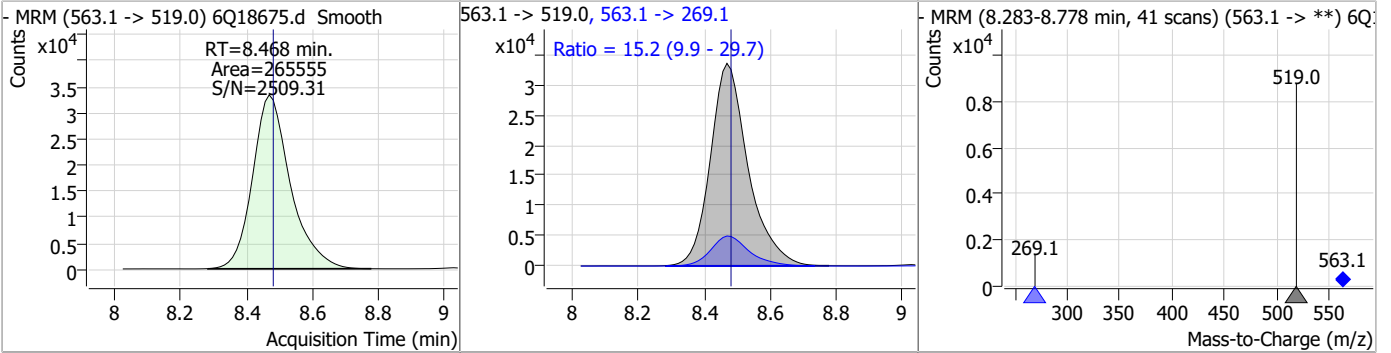


Perfluorinated Compounds by LC/MS/MS

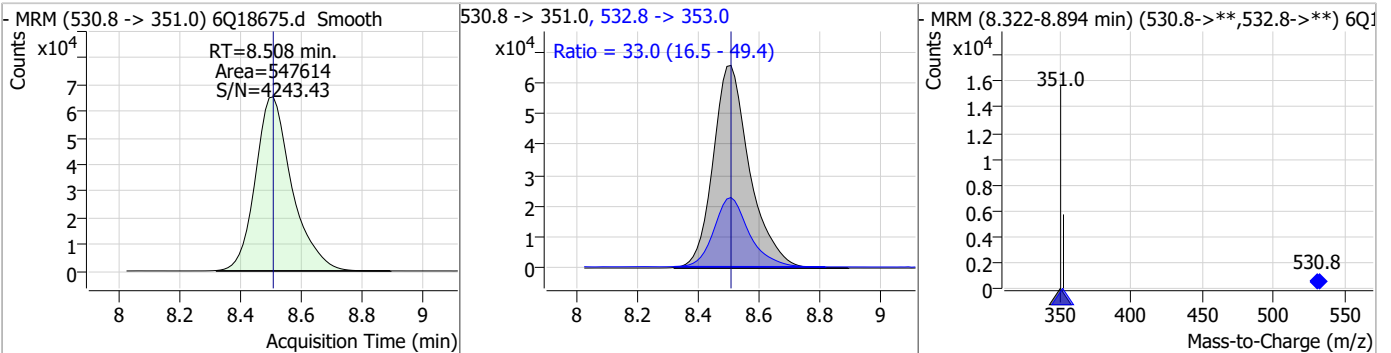


Perfluorinated Compounds by LC/MS/MS

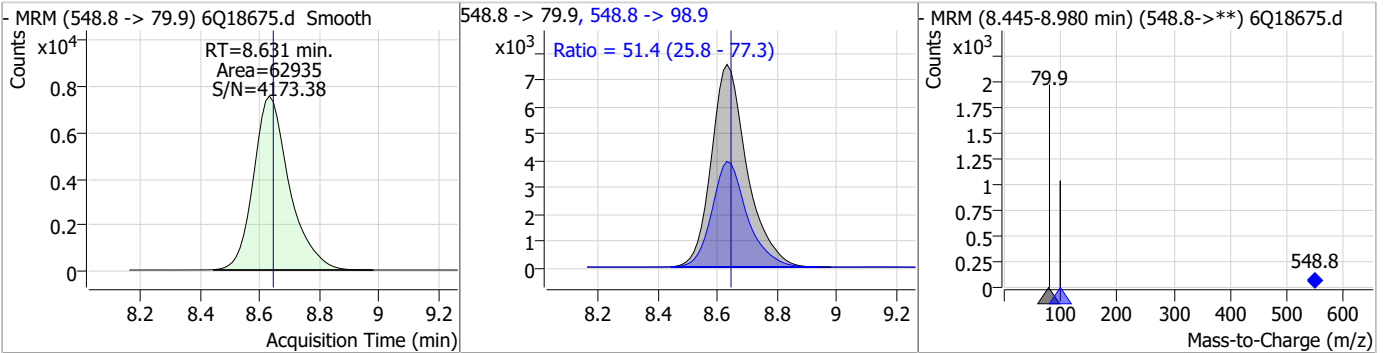
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	15.07	8.47	-0.01	265555	563.1 -> 269.1	15.2	9.9	29.7



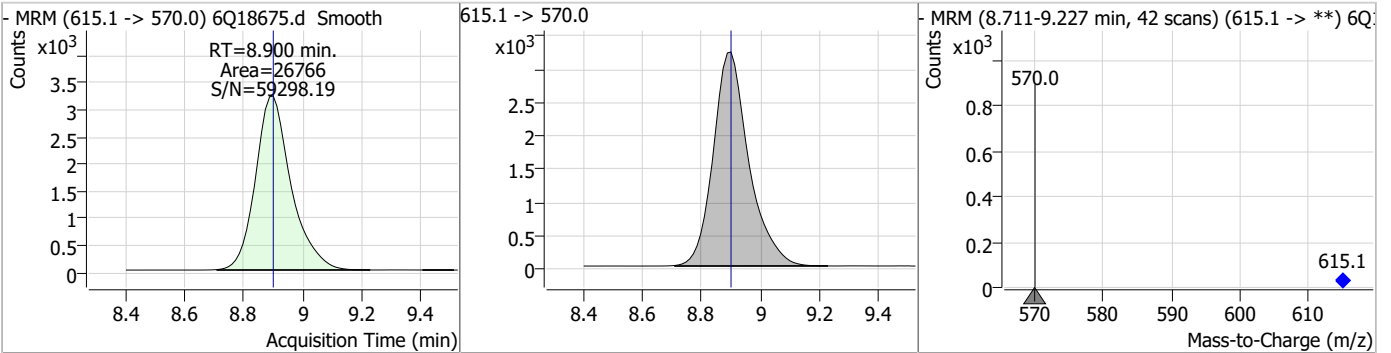
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	25.31	8.51	0.00	547614	532.8 -> 353.0	33.0	16.5	49.4



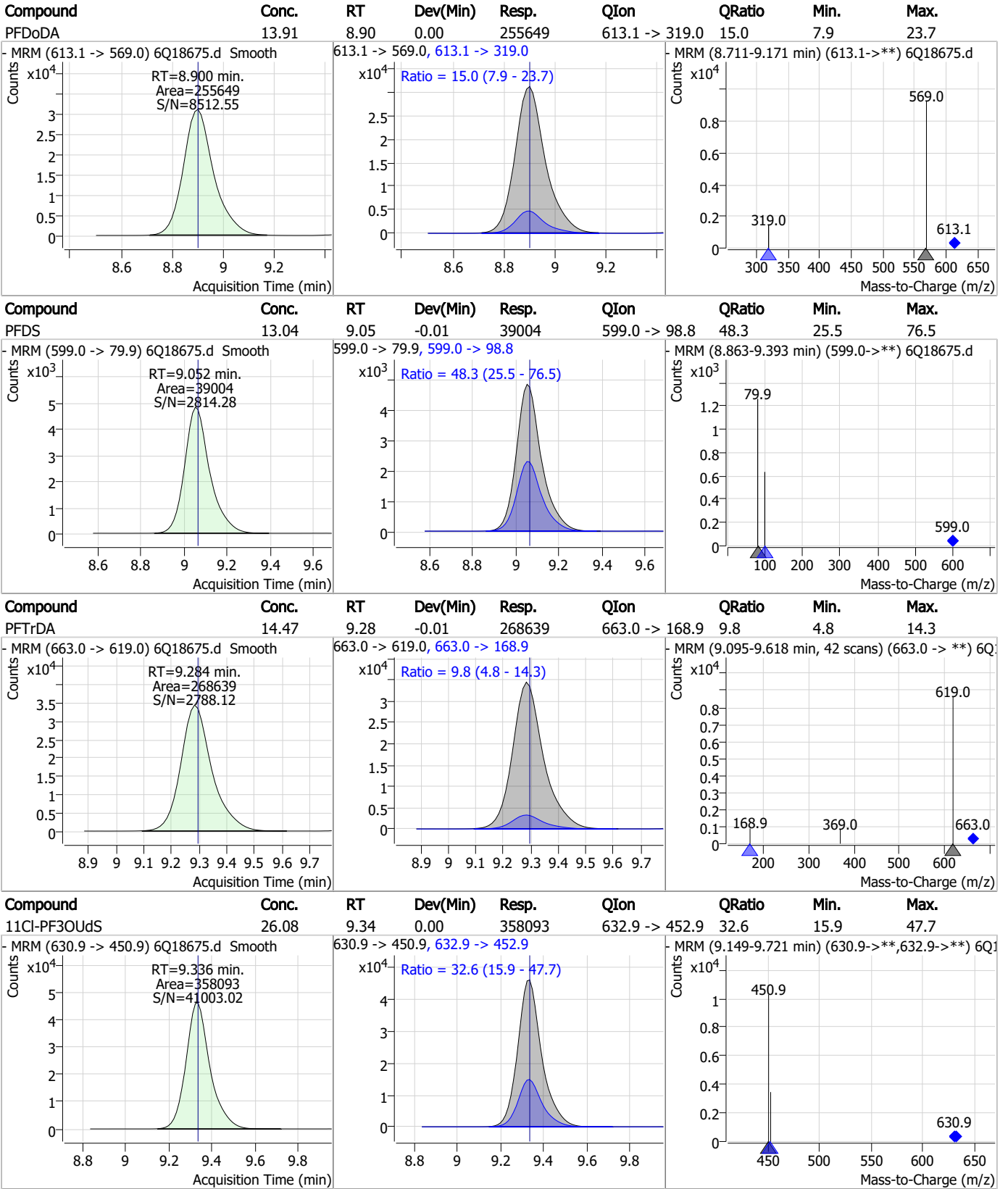
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.10	8.63	-0.01	62935	548.8 -> 98.9	51.4	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	8.90	0.00	26766	615.1 -> 570.0	-	-	-



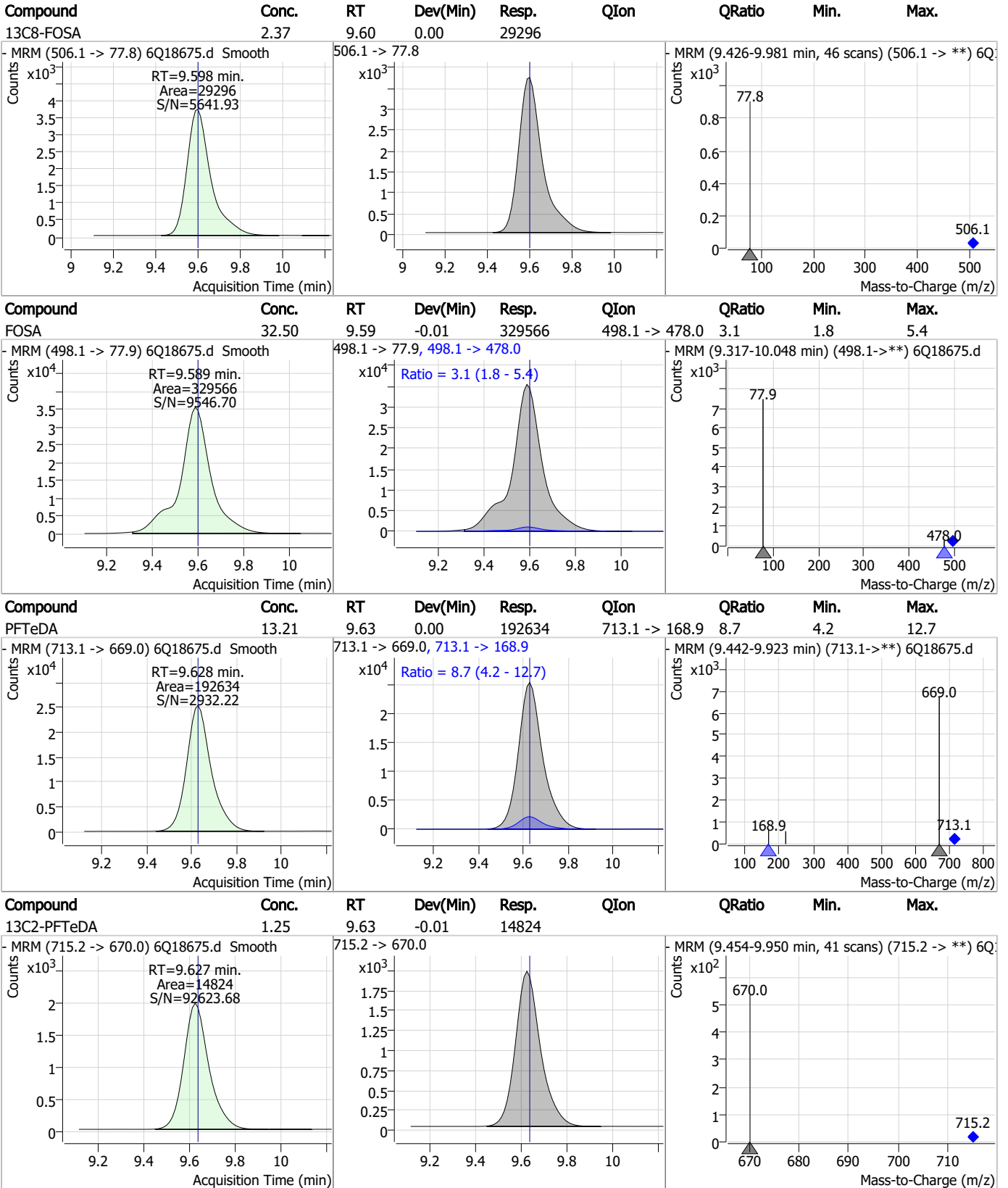
Perfluorinated Compounds by LC/MS/MS



7.6.4

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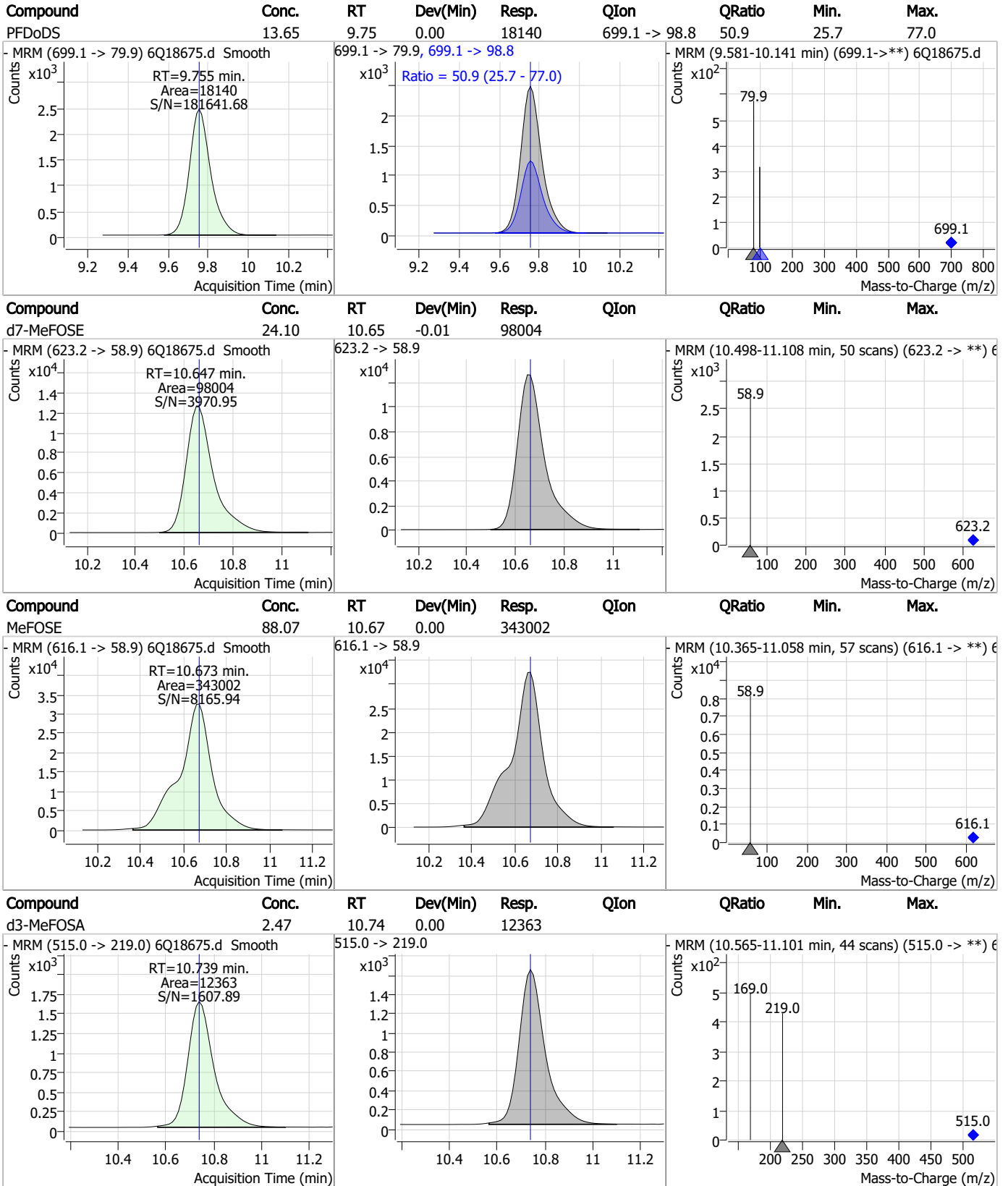
Perfluorinated Compounds by LC/MS/MS



7.6.4

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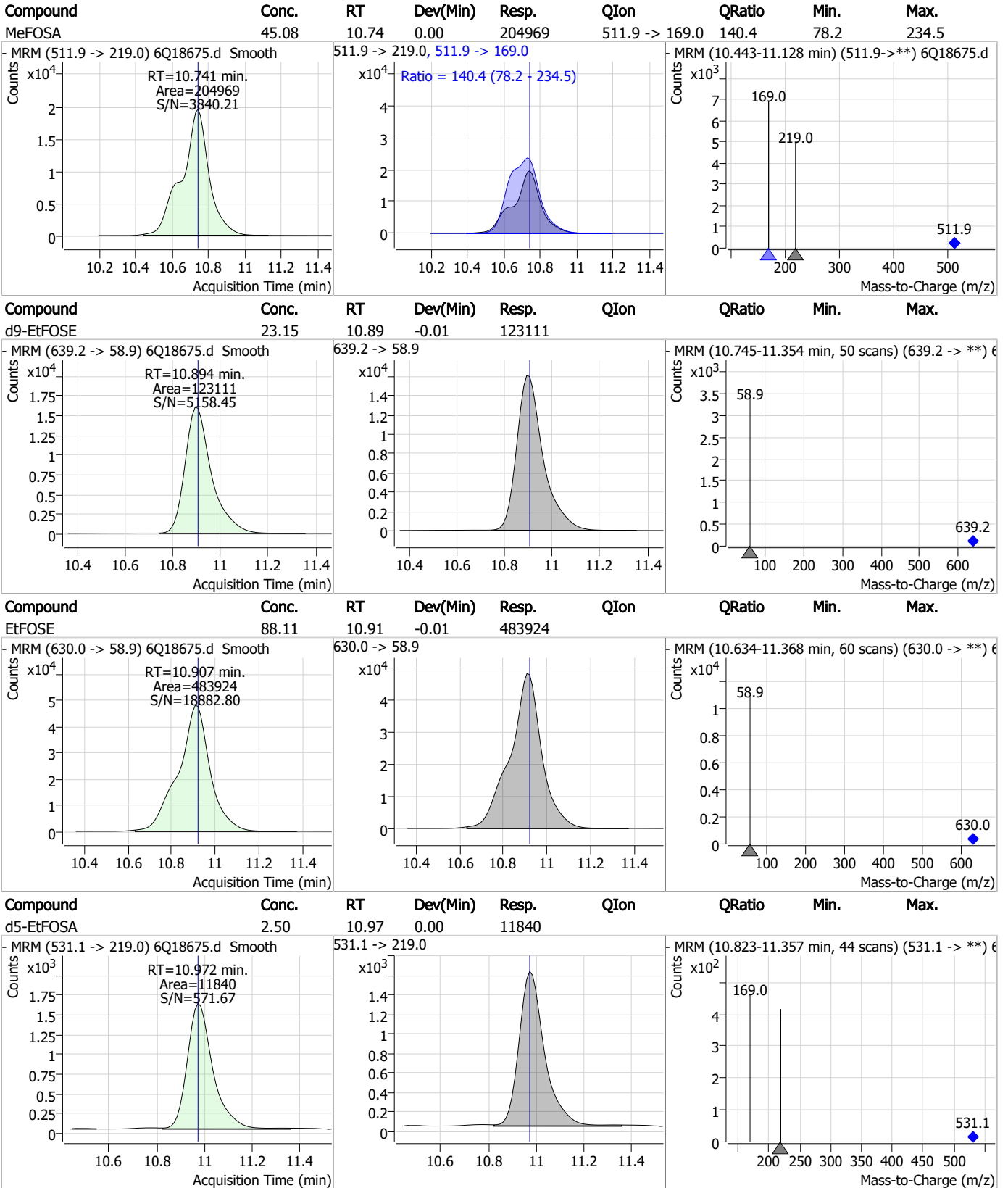
Perfluorinated Compounds by LC/MS/MS



7.6.4

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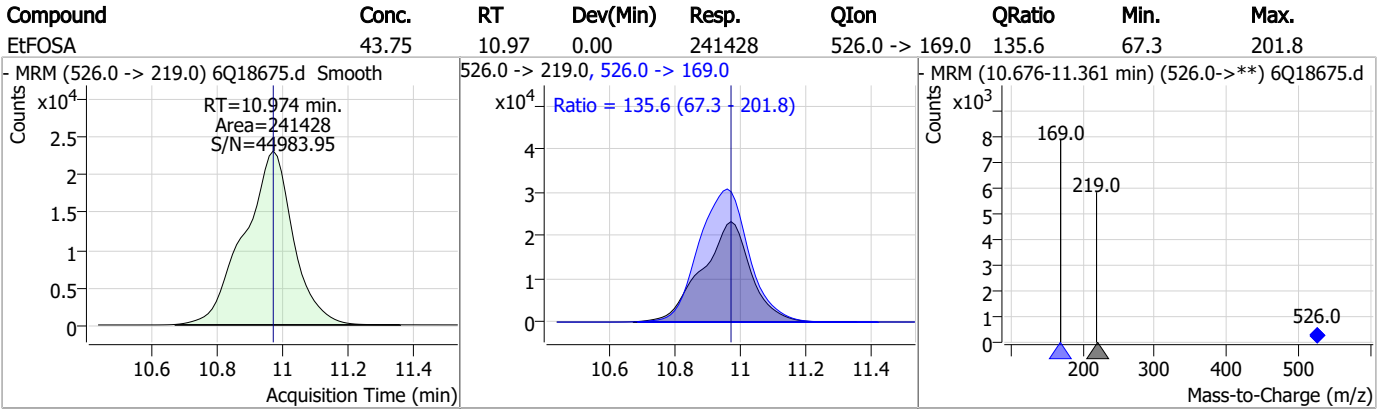
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S6Q280-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18675.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 15:06 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.03	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorononanoic acid	375-95-1		7.42	Split peak

7.6.4.1

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Perfluorinated Compounds by LC/MS/MS

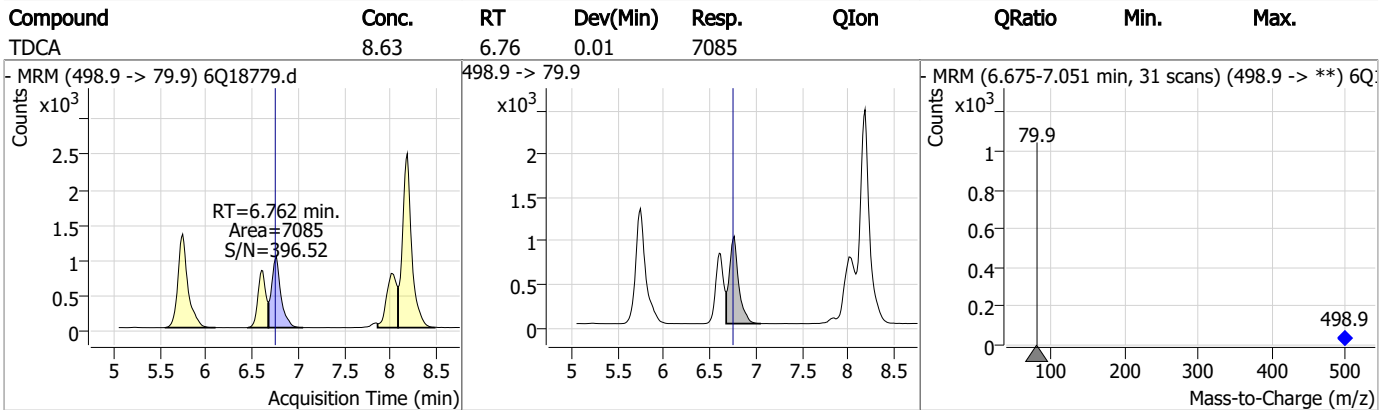
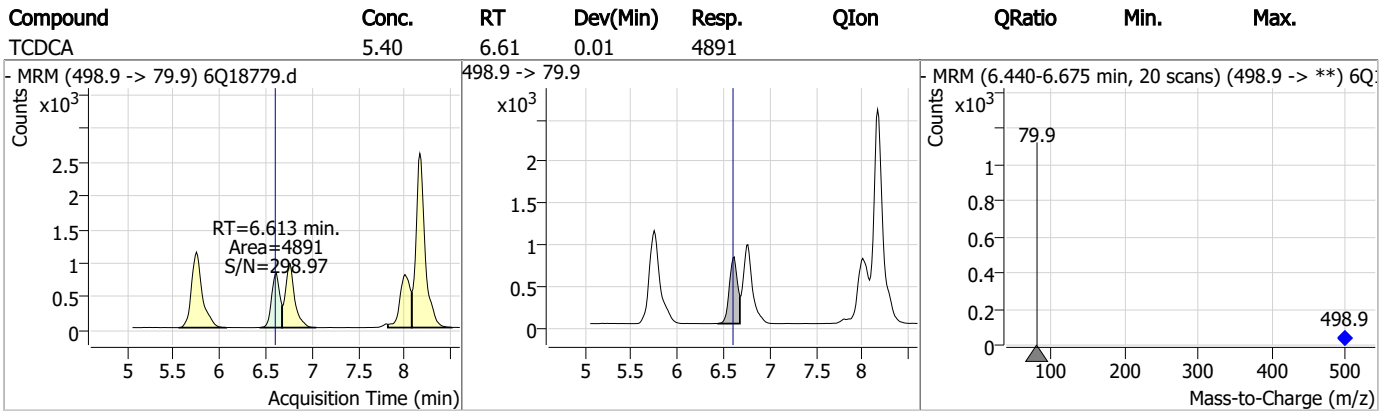
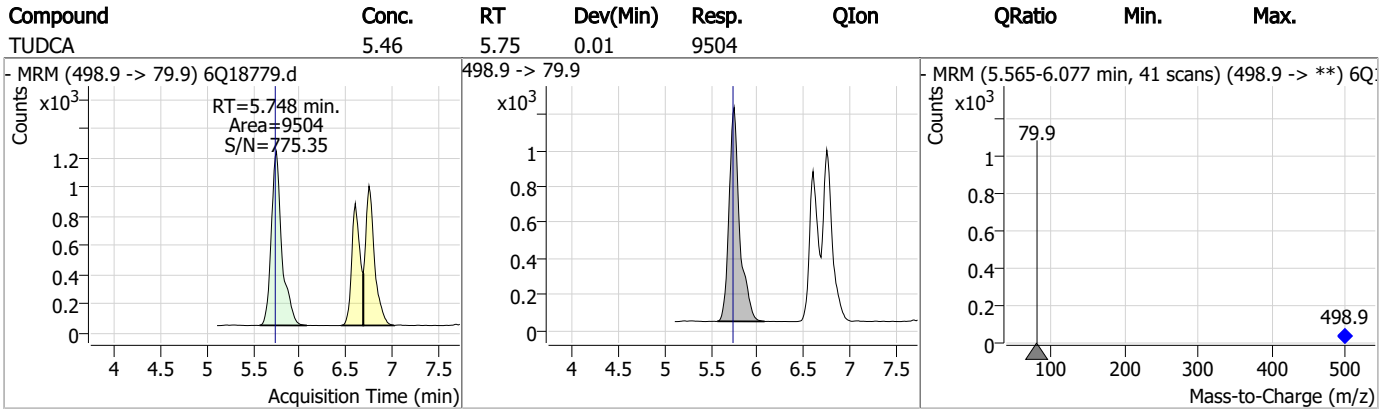
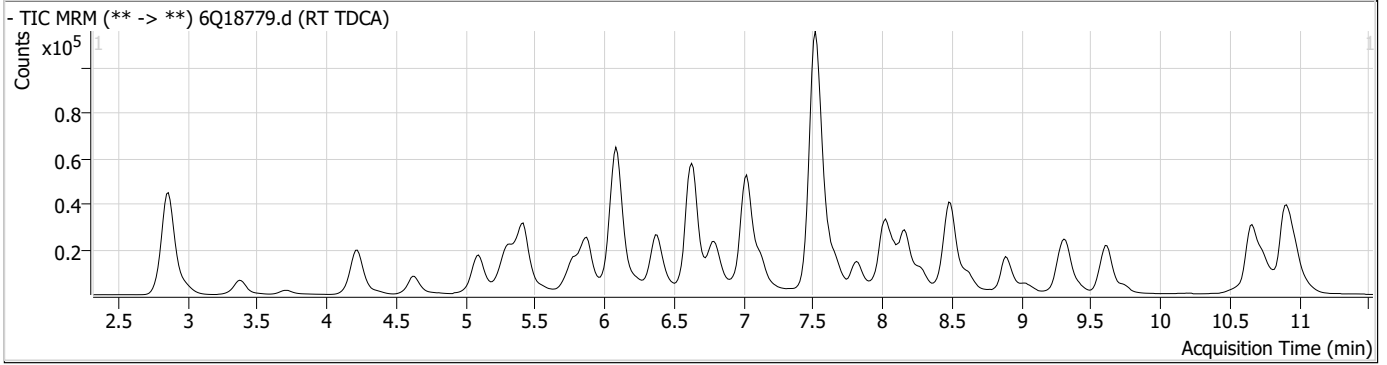
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 Acq. Date-Time : 6/2/2023 4:13:49 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q280 TDCA.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)	QValue
Internal Standards						
M8-PFOS	8.177	507.1 -> 79.9	19639	2.50 µg/L	0.000	
13C4-PFOS	8.178	502.8 -> 79.9	24260	2.50 µg/L	0.012	
System Monitoring Compounds						
13C8-PFOS	8.177	507.1 -> 79.9	19639	2.05 µg/L	0.000	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 82.1%			
Target Compounds						
PFOS	8.166	498.9 -> 79.9 498.9 -> 98.8	22382 11175	3.34 µg/L m		80
TCDCa	6.613	498.9 -> 79.9	4891	5.40 ng/ml		100
TDCA	6.762	498.9 -> 79.9	7085	8.63 ng/ml		100
TUDCA	5.748	498.9 -> 79.9	9504	5.46 ng/ml		100

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

7.6.5
7

Perfluorinated Compounds by LC/MS/MS

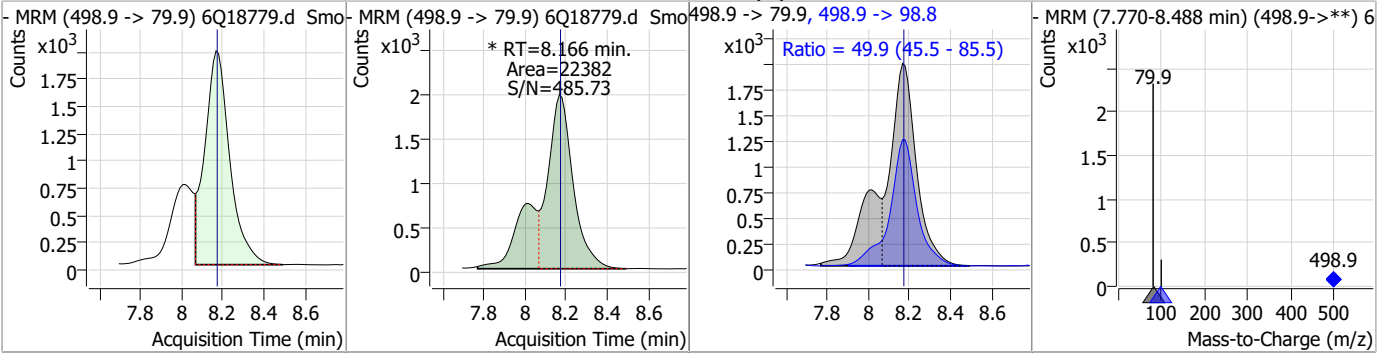


7.6.5

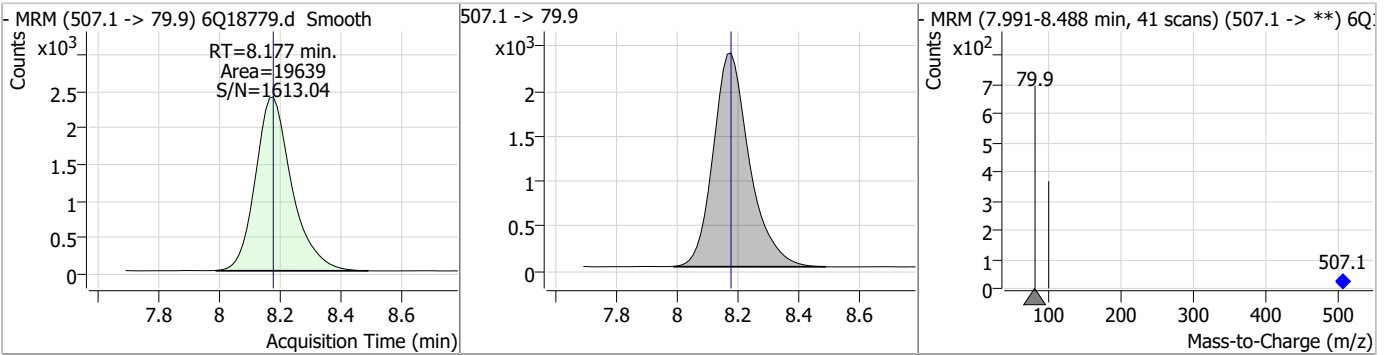
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.34	8.17	0.00	22382 (m)	498.9 -> 98.8	49.9	45.5	85.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.05	8.18	0.00	19639				



7.6.5
7

Manual Integration Approval Summary

Sample Number: S6Q280-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18779.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 16:13 Supervisor approved: 06/06/23 07:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.6.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18780.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 4:28:19 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.860	216.8 -> 171.9	175578	10.00 µg/L	0.037
M5-PFPeA	4.222	268.3 -> 223.0	57492	5.00 µg/L	0.012
M5-PFHxA	5.404	318.0 -> 273.0	64699	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	59211	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	92257	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	41425	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25217	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	30789	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30268	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16383	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32522	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23143	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14670	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13455	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3525	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5233	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5427	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	29068	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40811	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26886	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	108538	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	135160	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12663	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13574	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	17289	2.50 µg/L	-0.025
13C3-PFBA	2.864	216.0 -> 172.0	74056	5.00 µg/L	0.037
18O2-PFHxS	7.129	403.0 -> 83.9	10579	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	93109	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	33871	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	49758	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	57679	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3525	5.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5233	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5427	5.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30268	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16383	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-PFBS	5.322	302.1 -> 79.9	23143	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	14670	2.48 µg/L	0.000

7.6.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFBA	2.860	216.8 -> 171.9	175578	9.95 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	59211	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C5-PFHxA	5.404	318.0 -> 273.0	64699	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFPeA	4.222	268.3 -> 223.0	57492	5.12 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C6-PFDA	8.014	519.1 -> 474.1	25217	1.27 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30789	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-FOSA	9.598	506.1 -> 77.8	32522	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOA	7.013	421.1 -> 376.0	92257	2.64 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C8-PFOS	8.177	507.1 -> 79.9	13455	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C9-PFNA	7.545	472.1 -> 427.0	41425	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	29068	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40811	10.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13574	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26886	5.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	108538	25.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	135160	23.80 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	12663	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	263555	51.48 µg/L	99
		327.1 -> 80.9	97559		
6:2FTS	6.801	427.1 -> 407.0	265670	51.66 µg/L	97
		427.1 -> 80.9	87814		
8:2FTS	7.816	527.1 -> 507.0	159309	52.77 µg/L	97
		527.1 -> 80.8	58623		
EtFOSAA	8.280	584.2 -> 419.1	49002	14.17 µg/L	93
		584.2 -> 526.0	25661		
FOSA	9.602	498.1 -> 77.9	368501	32.73 µg/L	98
		498.1 -> 478.0	11114		
MeFOSAA	8.085	570.1 -> 419.0	84740	14.18 µg/L	92
		570.1 -> 483.0	16589		
PFBA	2.868	212.8 -> 168.9	328856	56.57 µg/L	100
PFBS	5.323	298.7 -> 79.9	91946	11.68 µg/L	99
		298.7 -> 98.8	34780		
PFDA	8.027	512.9 -> 469.0	400834	13.71 µg/L	98
		512.9 -> 219.0	60727		
PFDoDA	8.888	613.1 -> 569.0	278272	13.39 µg/L	98
		613.1 -> 319.0	42086		
PFDS	9.052	599.0 -> 79.9	45622	13.56 µg/L	96

7.6.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	22060	13.70	µg/L	99
		363.1 -> 319.0	358908			
PFHpS	7.685	363.1 -> 169.0	58869	13.46	µg/L	93
		449.0 -> 79.9	86839			
PFHxA	5.407	449.0 -> 98.9	41703	13.26	µg/L	100
		313.0 -> 269.0	288048			
PFHxS	7.119	313.0 -> 118.9	14696	11.90	µg/L	m
		398.7 -> 79.9	78976			
PFNA	7.533	398.7 -> 98.9	38844	29.19	µg/L	m
		463.0 -> 419.0	856829			
PFNS	8.631	463.0 -> 219.0	184543	12.95	µg/L	96
		548.8 -> 79.9	69934			
PFOA	7.028	548.8 -> 98.9	37815	29.04	µg/L	m
		413.0 -> 369.0	1143994			
PFOS	8.166	413.0 -> 169.0	219810	13.10	µg/L	m
		498.9 -> 79.9	80571			
PFPeA	4.224	498.9 -> 98.8	38985	27.89	µg/L	100
		263.0 -> 219.0	385166			
PFPeS	6.422	349.1 -> 79.9	85752	12.97	µg/L	95
		349.1 -> 98.9	38635			
PFTeDA	9.628	713.1 -> 669.0	225992	14.02	µg/L	100
		713.1 -> 168.9	18609			
PFTrDA	9.284	663.0 -> 619.0	281425	13.41	µg/L	95
		663.0 -> 168.9	31661			
PFUnDA	8.468	563.1 -> 519.0	298815	14.94	µg/L	89
		563.1 -> 269.1	43801			
11CI-PF3OUdS	9.323	630.9 -> 450.9	395262	25.81	µg/L	97
		632.9 -> 452.9	119440			
9CI-PF3ONS	8.495	530.8 -> 351.0	607598	25.18	µg/L	97
		532.8 -> 353.0	189919			
ADONA	6.632	376.9 -> 250.9	1372939	25.33	µg/L	100
		376.9 -> 84.8	370043			
HFPO-DA	5.783	284.9 -> 168.9	98419	28.45	µg/L	96
		284.9 -> 184.9	11803			
3:3FTCA	3.709	241.0 -> 177.0	62410	70.62	µg/L	91
		241.0 -> 117.0	8407			
5:3FTCA	6.086	341.0 -> 237.1	1249624	319.76	µg/L	98
		341.0 -> 217.0	915925			
7:3FTCA	7.510	441.0 -> 316.9	869516	324.89	µg/L	100
		441.0 -> 336.9	2004428			
EtFOSA	10.974	526.0 -> 219.0	273964	46.42	µg/L	97
		526.0 -> 169.0	358318			
EtFOSE	10.920	630.0 -> 58.9	533267	88.44	µg/L	100
		511.9 -> 219.0	226978			
MeFOSA	10.741	511.9 -> 169.0	319831	45.47	µg/L	88
		616.1 -> 58.9	380795			
MeFOSE	10.673	699.1 -> 79.9	19868	88.28	µg/L	100
		699.1 -> 98.8	10766			
PFDoDS	9.755	295.0 -> 201.0	73615	13.29	µg/L	96
		295.0 -> 84.9	18579			
NFDHA	5.288	279.0 -> 85.1	274775	27.83	µg/L	93
		229.0 -> 84.9	214520			
PFMBA	4.626	314.8 -> 134.9	644440	29.24	µg/L	100
		314.8 -> 82.9	23446			
PFMPA	3.376			29.35	µg/L	100
PFEESA	5.862			23.37	µg/L	100

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

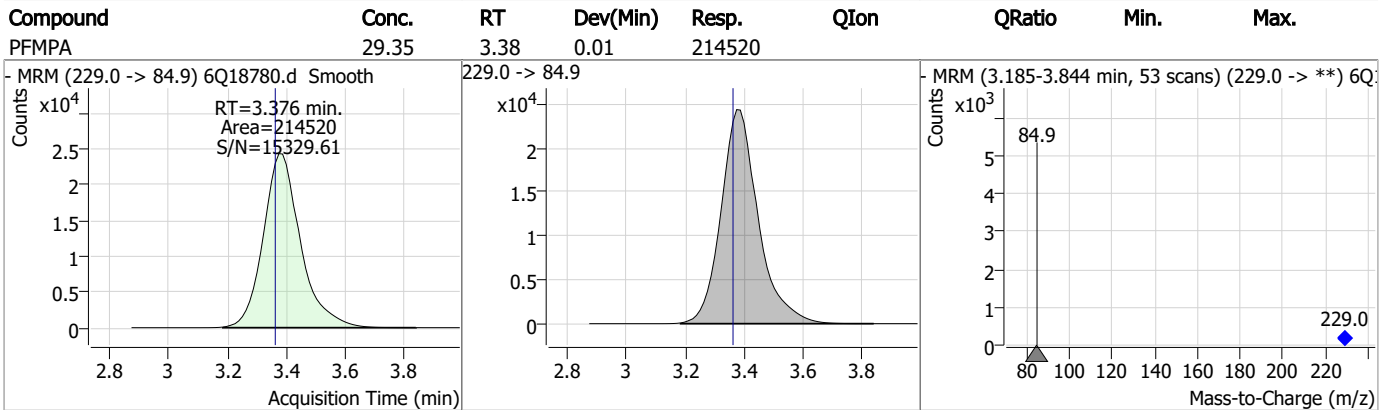
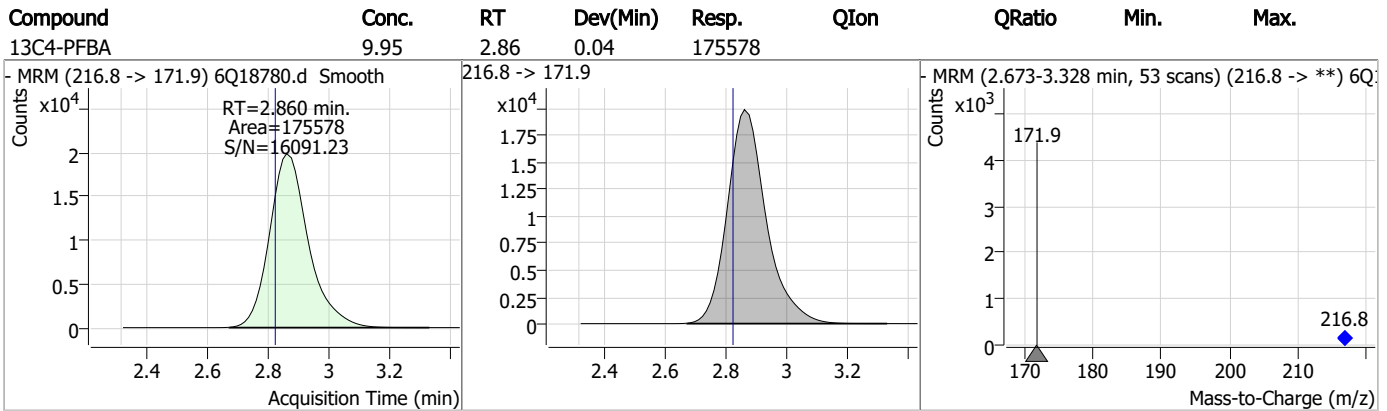
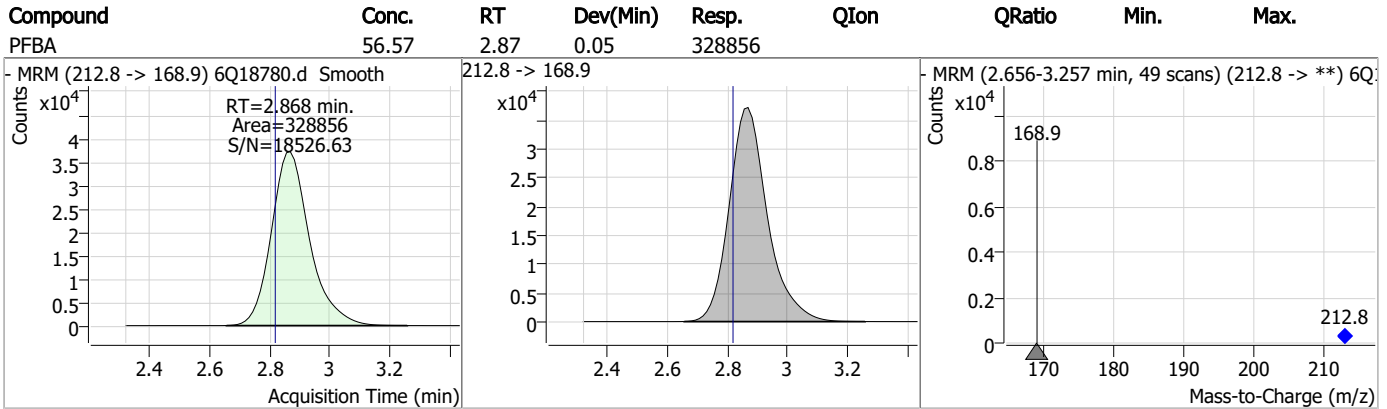
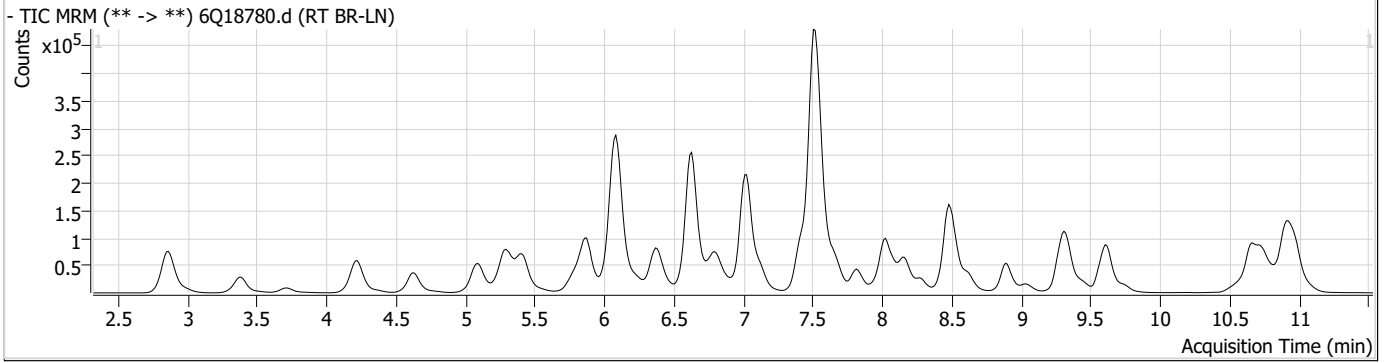
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.6

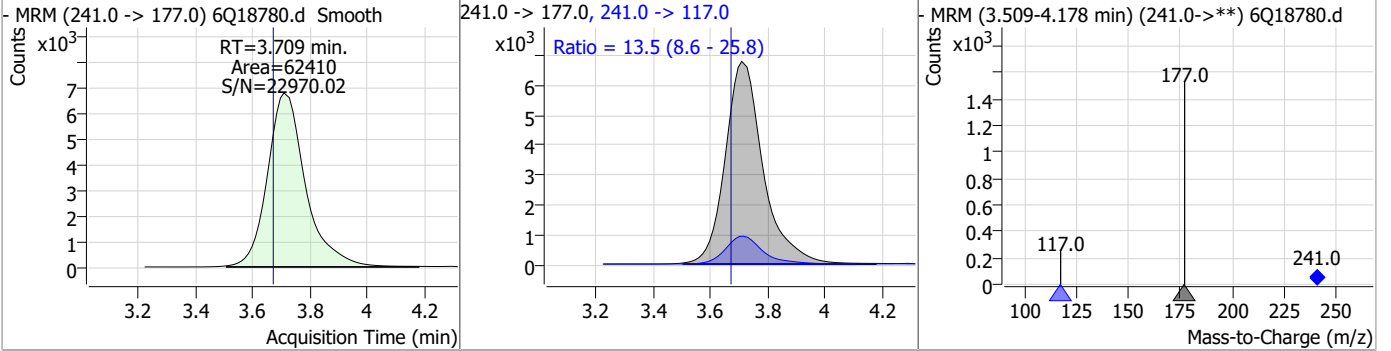
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Perfluorinated Compounds by LC/MS/MS

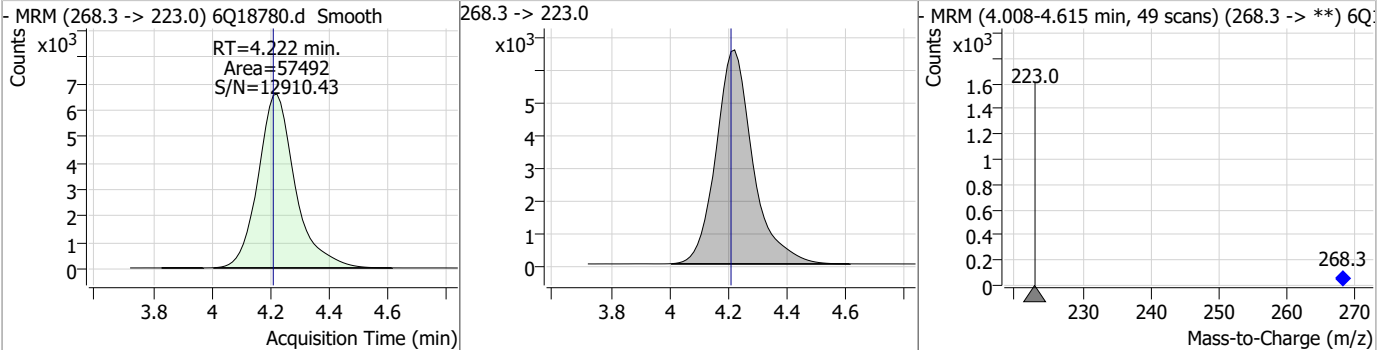


Perfluorinated Compounds by LC/MS/MS

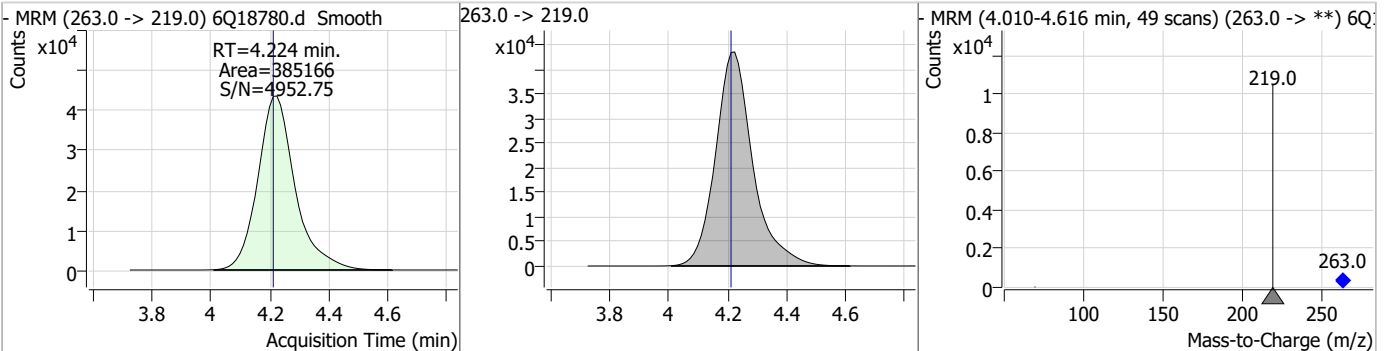
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	70.62	3.71	0.04	62410	241.0 -> 117.0	13.5	8.6	25.8



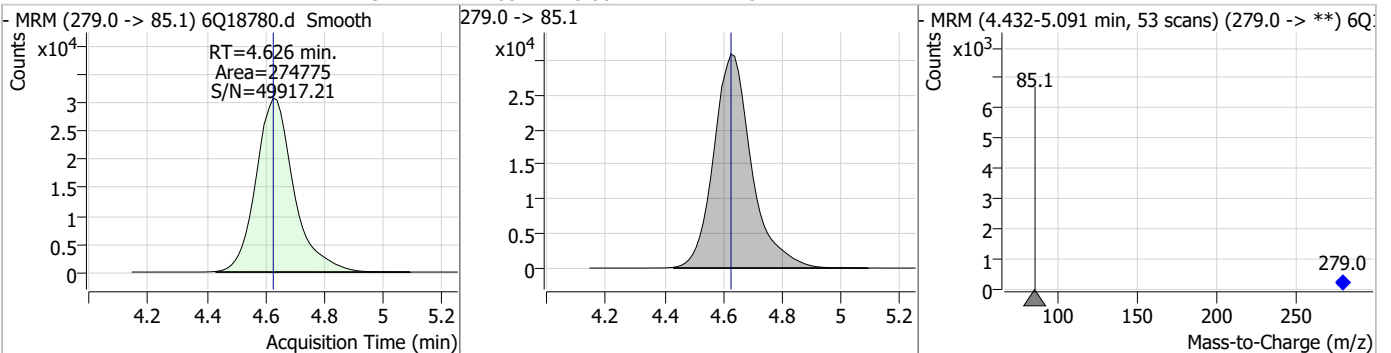
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.12	4.22	0.01	57492				



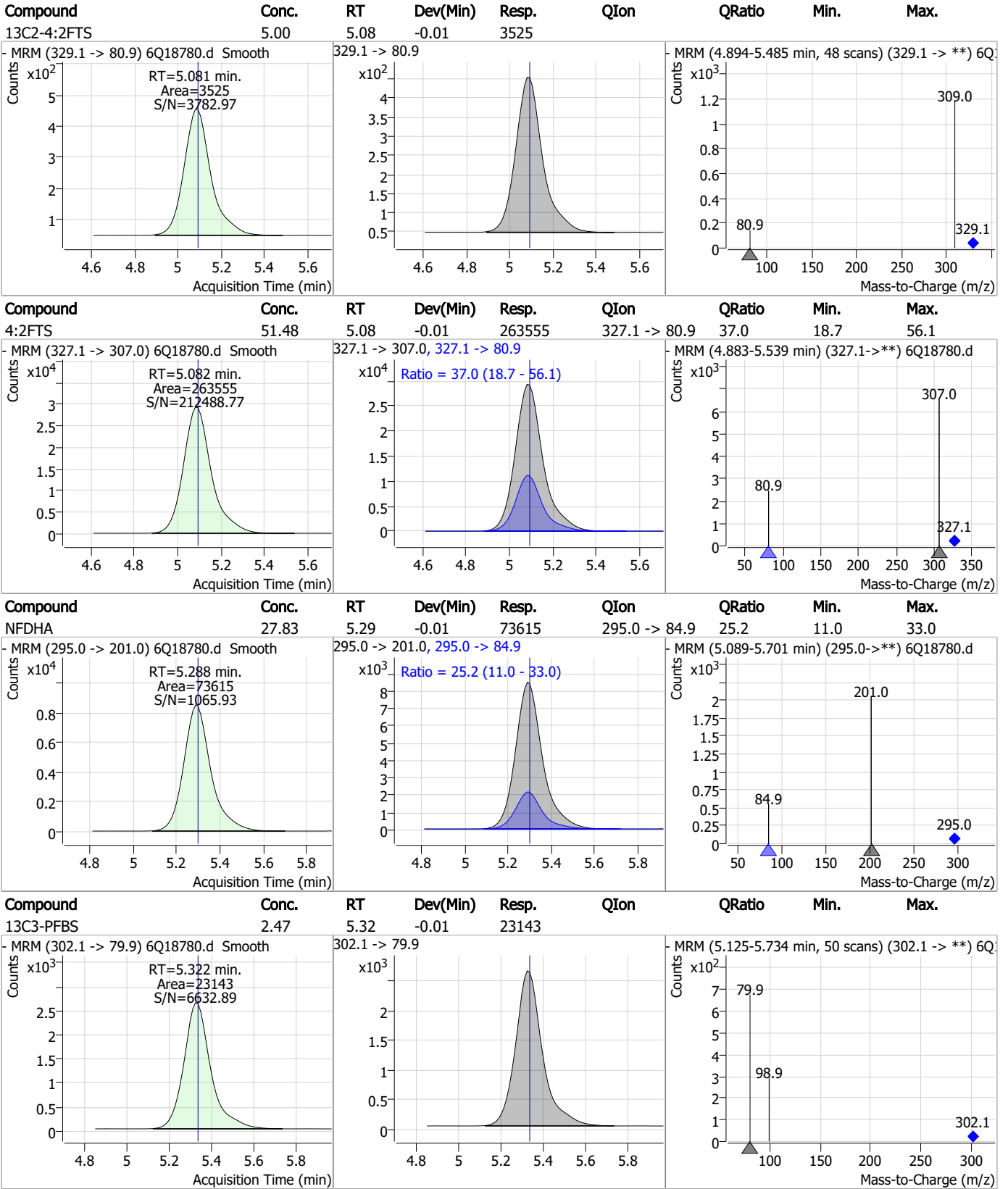
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.89	4.22	0.01	385166				



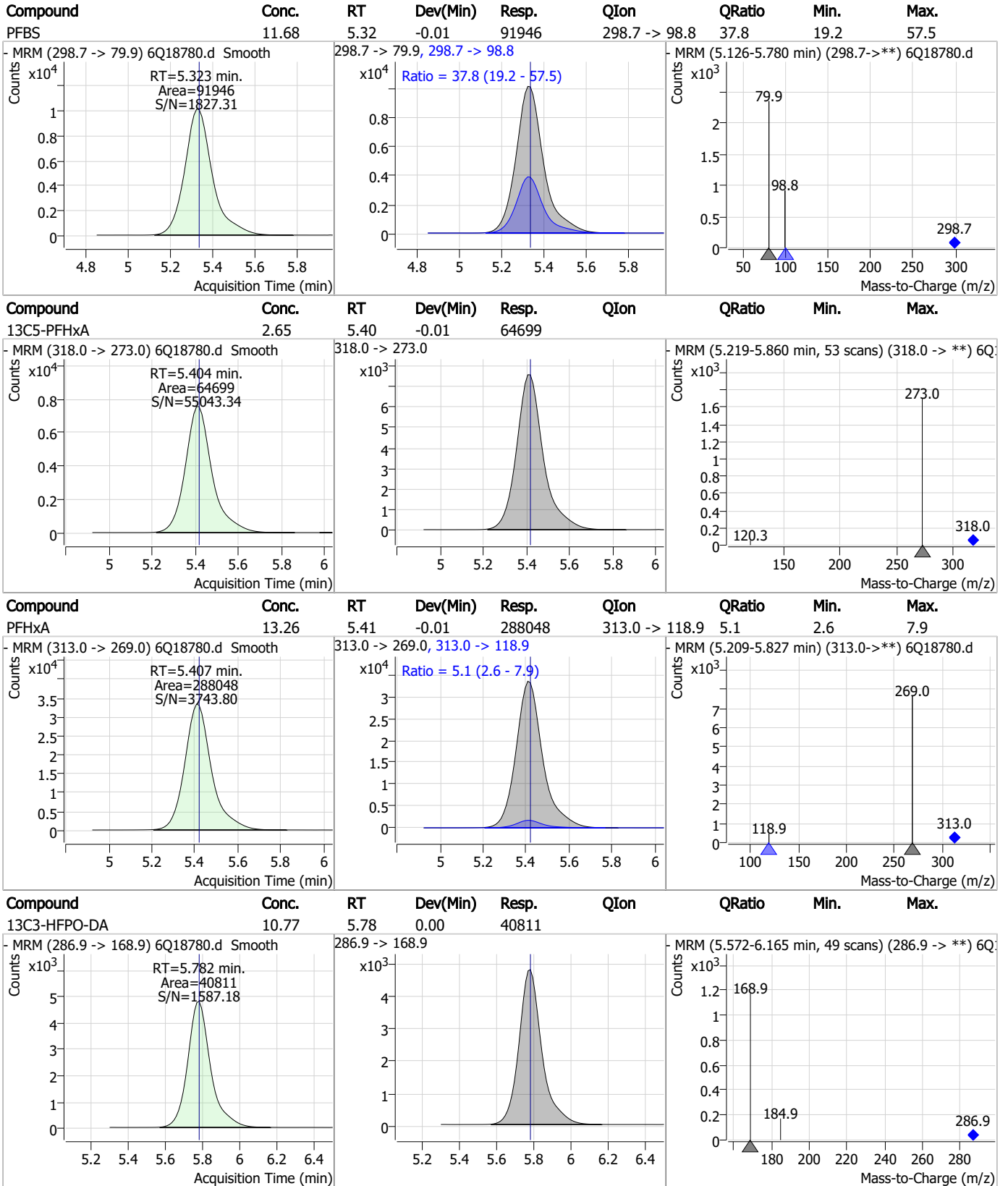
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	29.24	4.63	0.00	274775				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

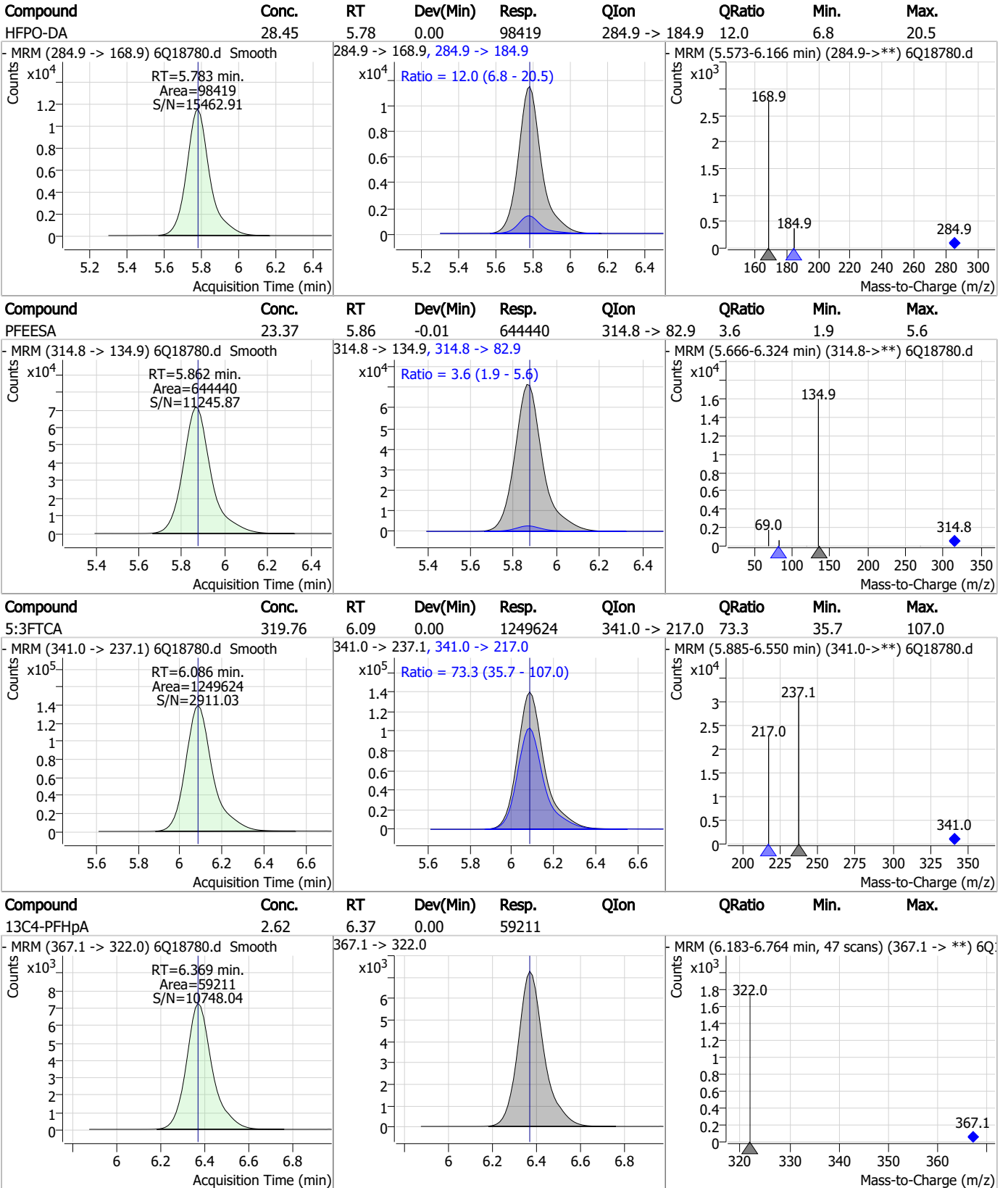


7.6.6

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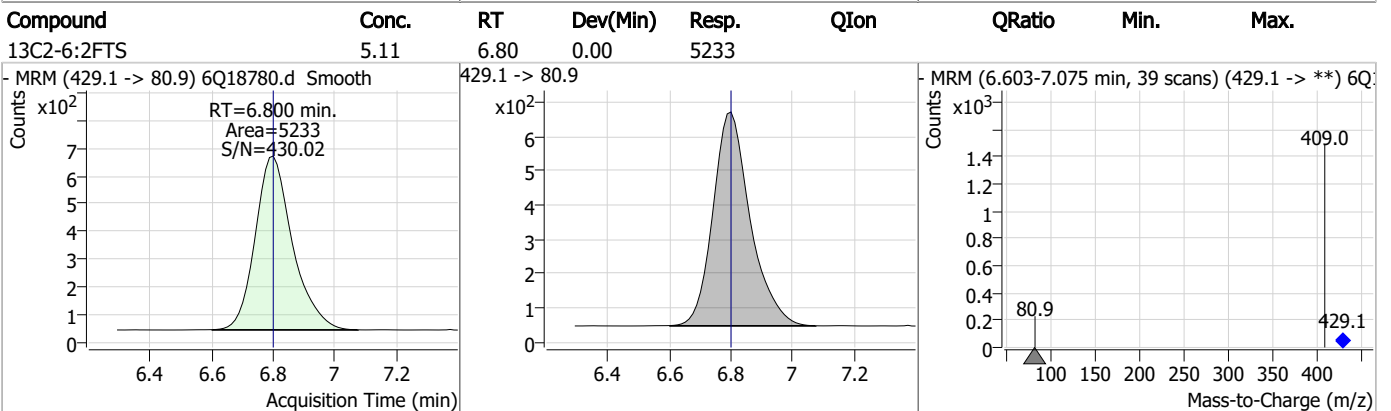
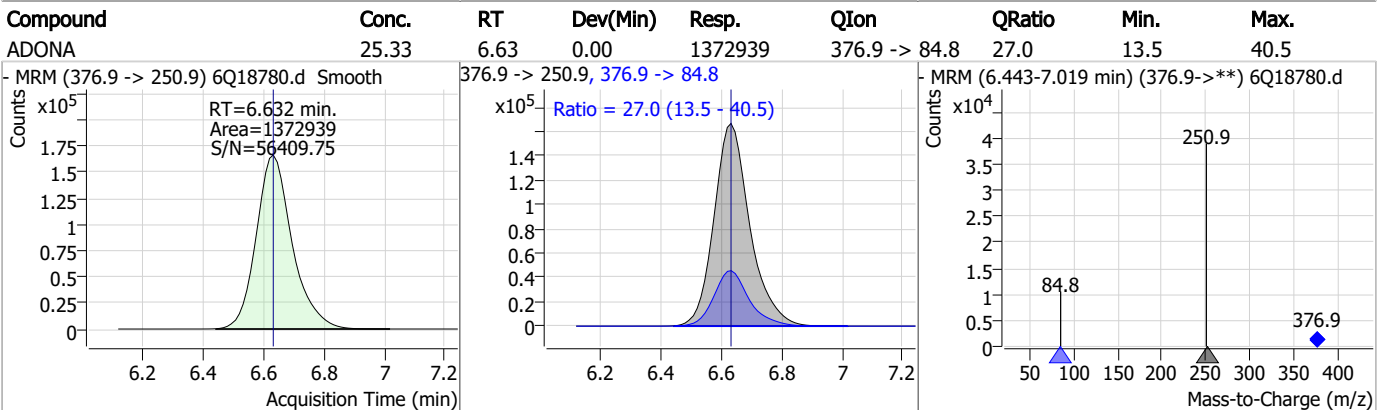
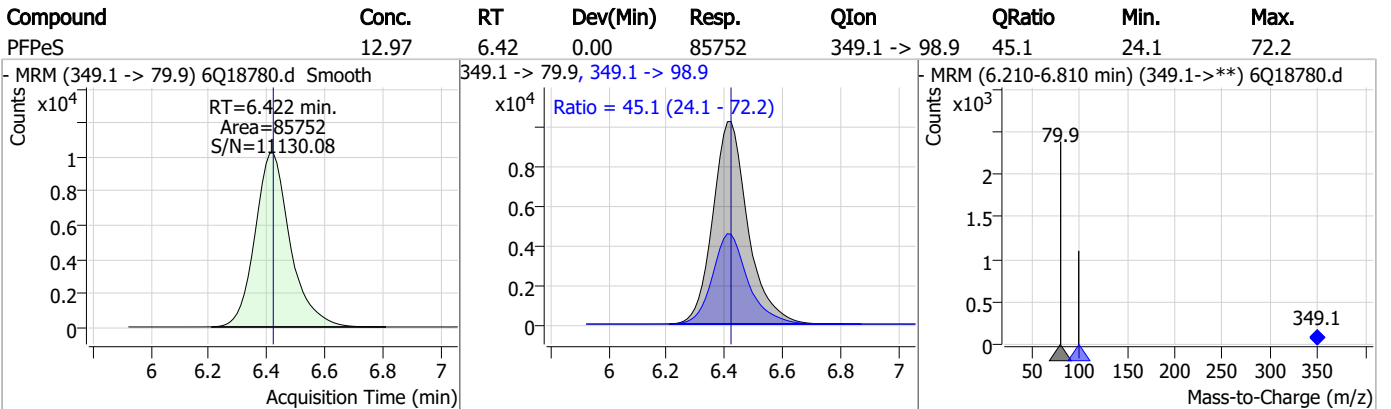
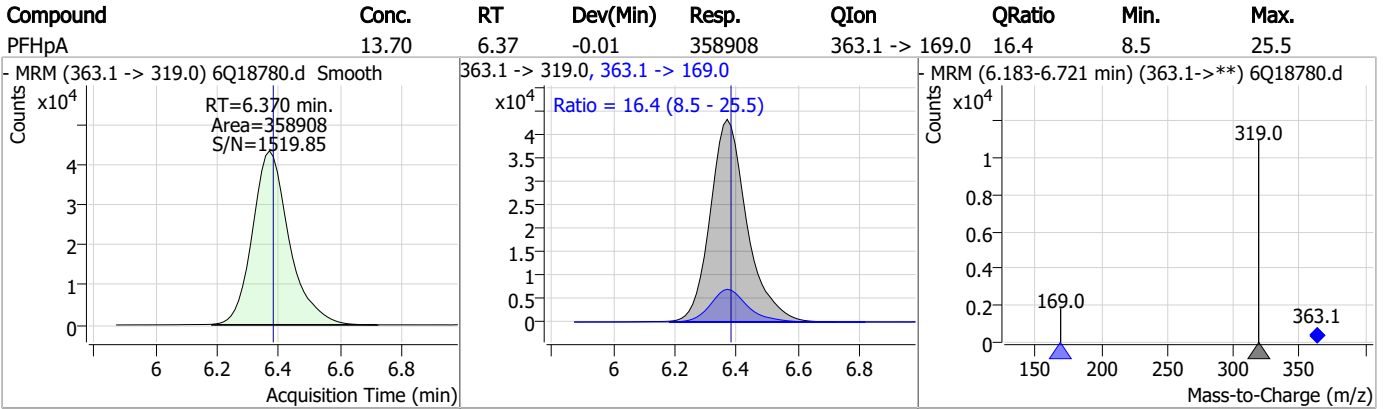
Perfluorinated Compounds by LC/MS/MS



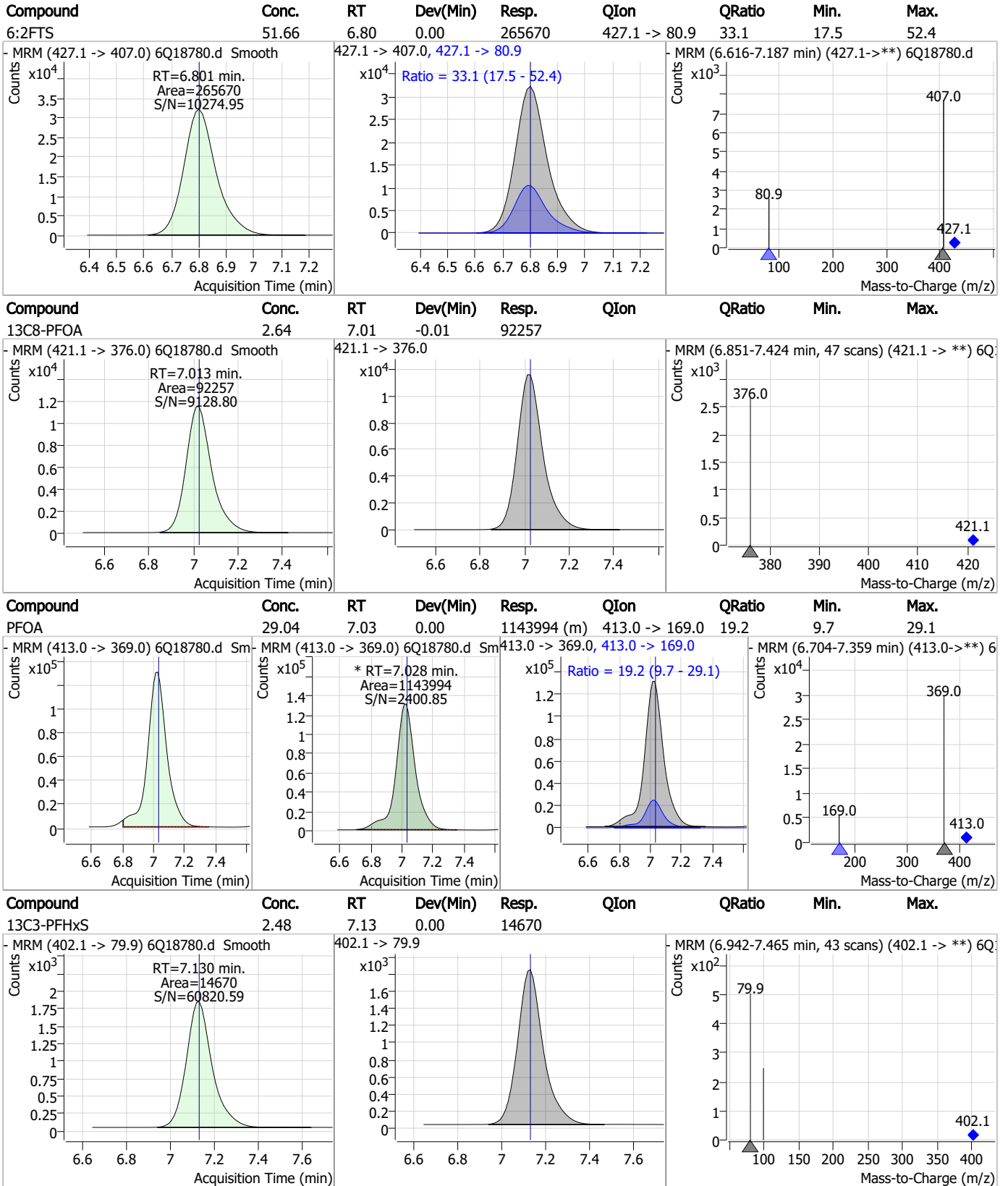
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Perfluorinated Compounds by LC/MS/MS



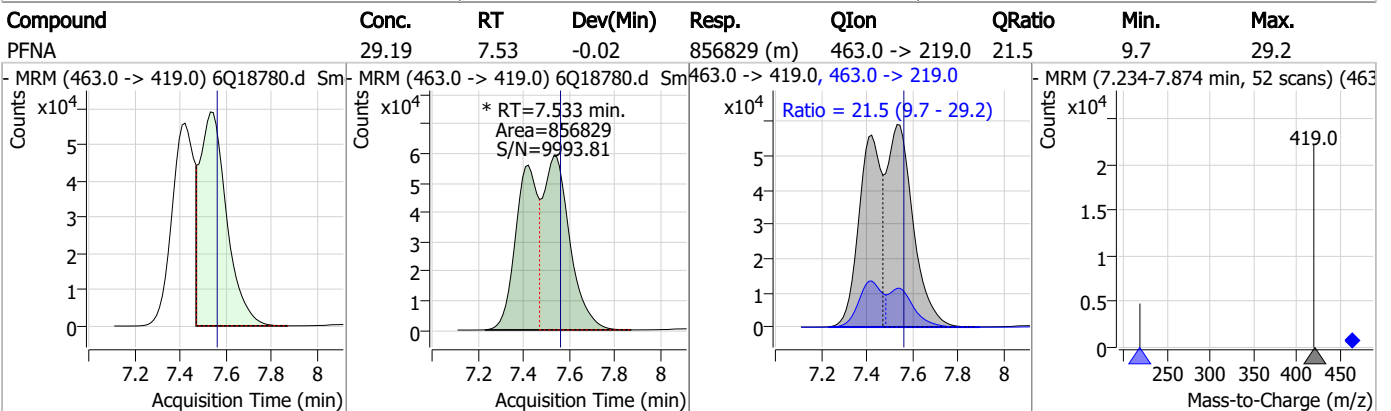
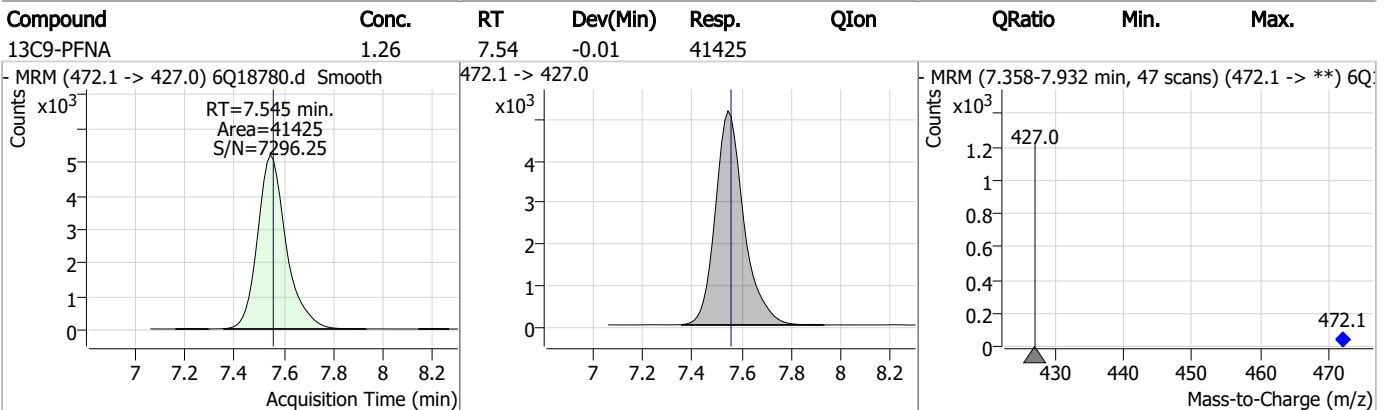
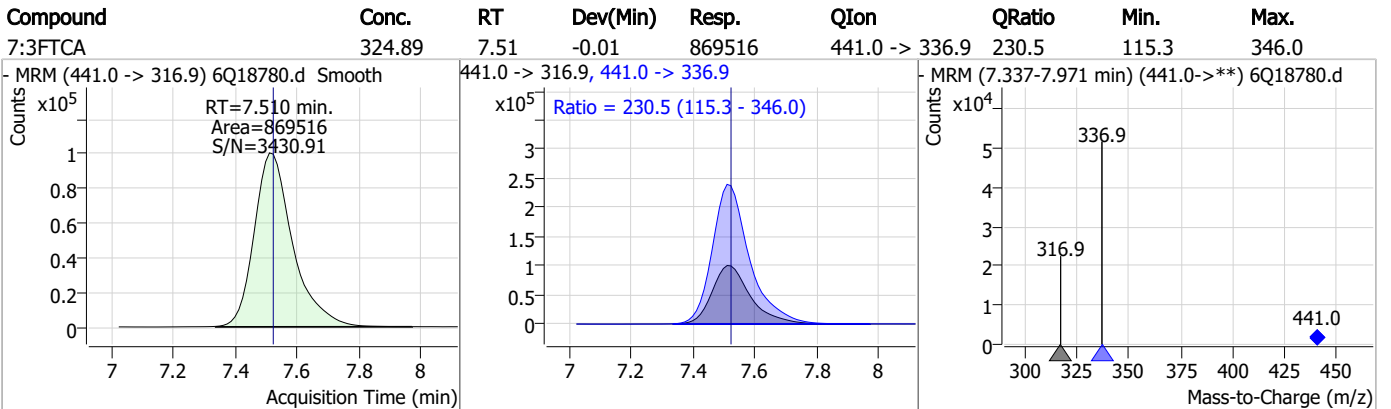
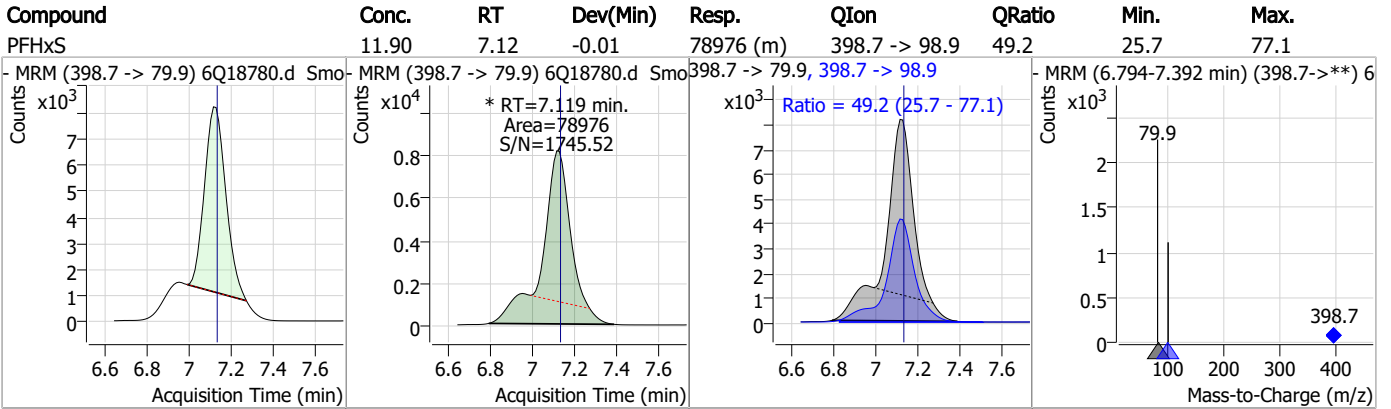
Perfluorinated Compounds by LC/MS/MS



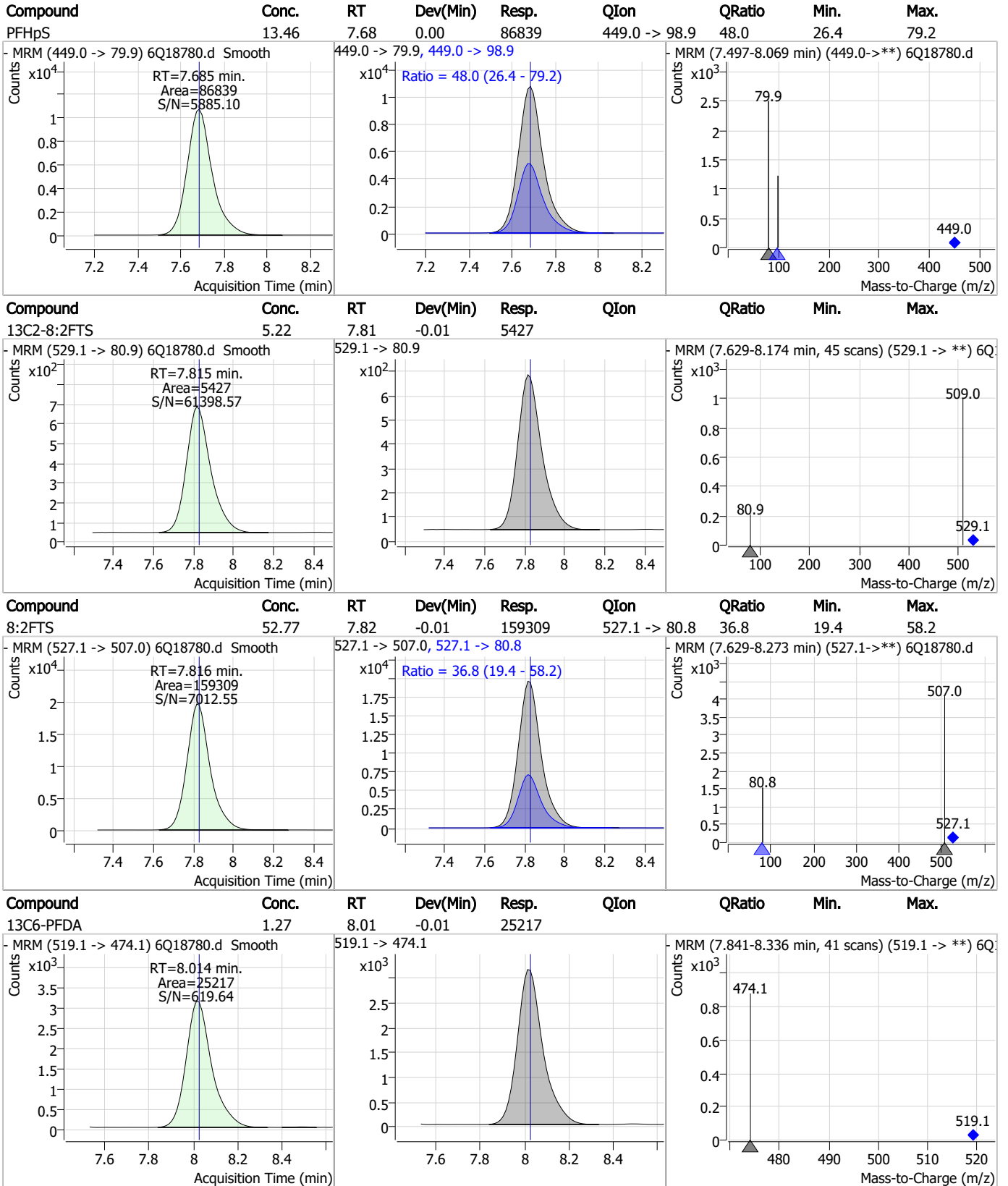
7.6.6

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Perfluorinated Compounds by LC/MS/MS



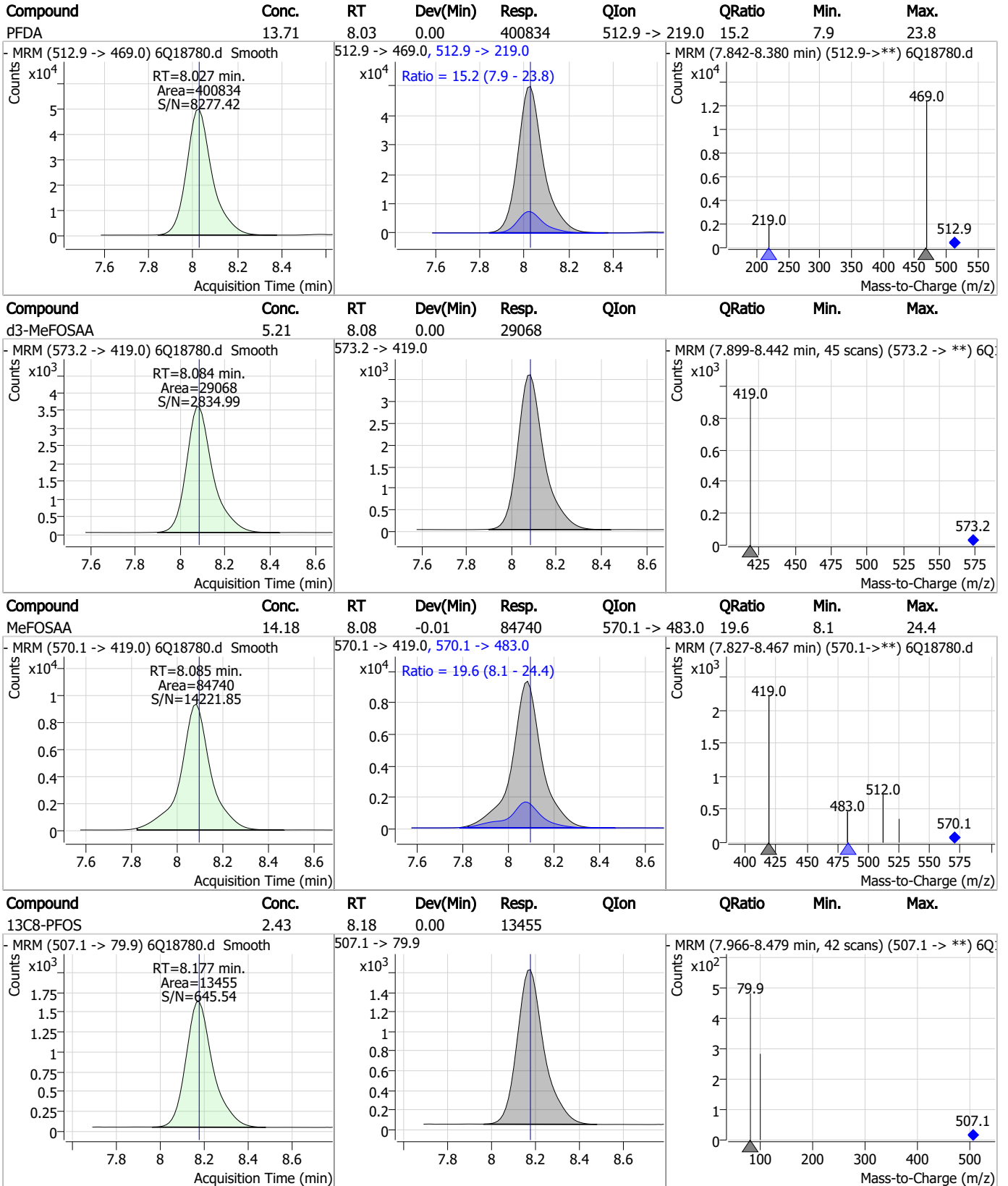
Perfluorinated Compounds by LC/MS/MS



7.6.6

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Perfluorinated Compounds by LC/MS/MS



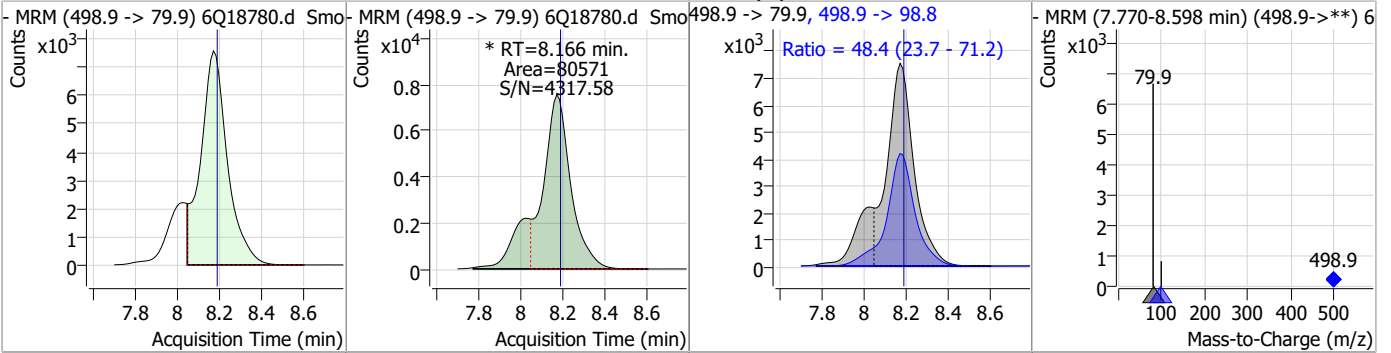
7.6.6

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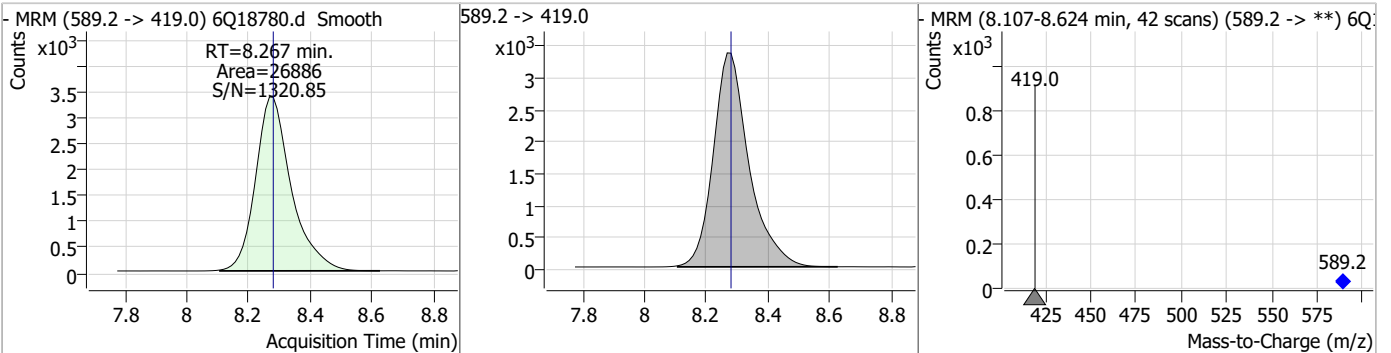


Perfluorinated Compounds by LC/MS/MS

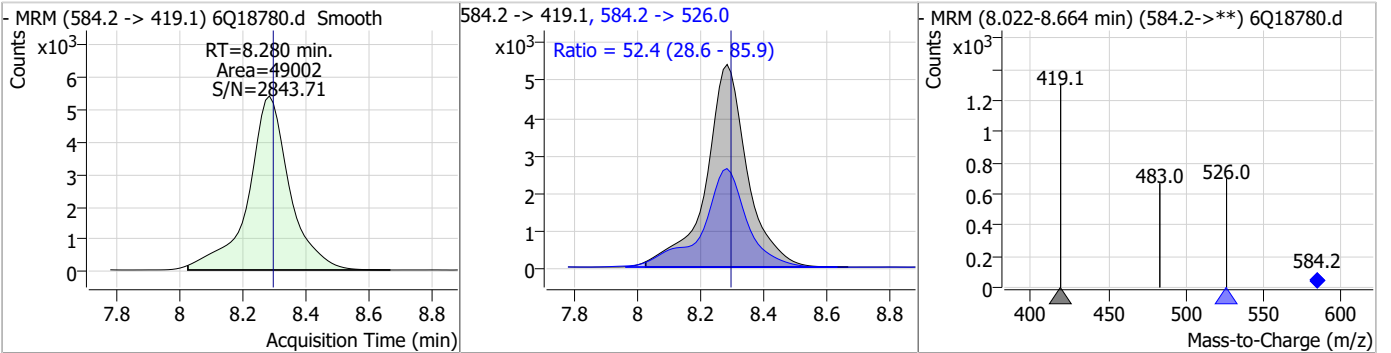
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	13.10	8.17	-0.01	80571 (m)	498.9 -> 98.8	48.4	23.7	71.2



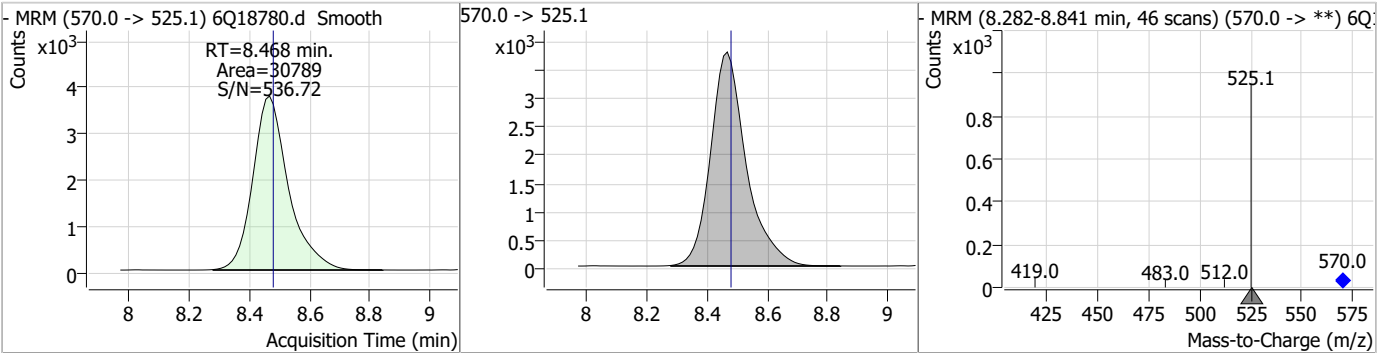
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.27	-0.01	26886				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.17	8.28	-0.01	49002	584.2 -> 526.0	52.4	28.6	85.9

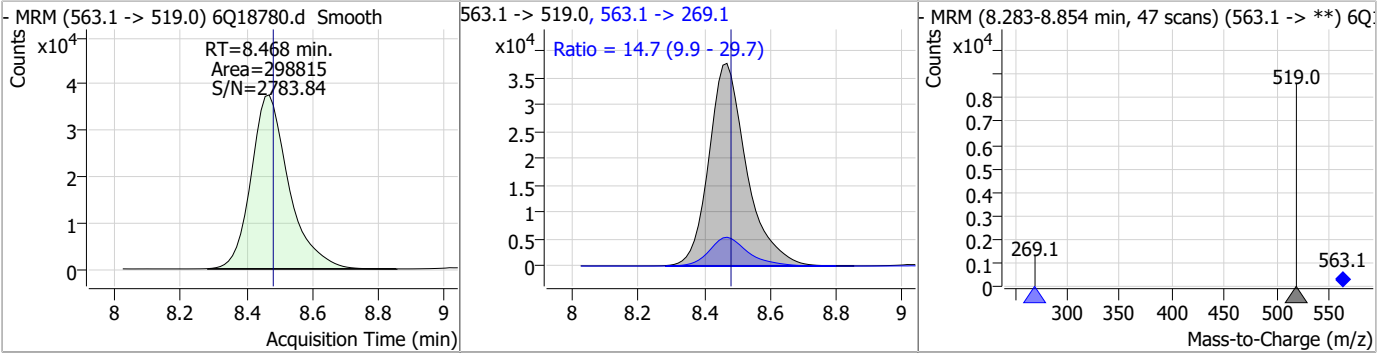


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.47	-0.01	30789				

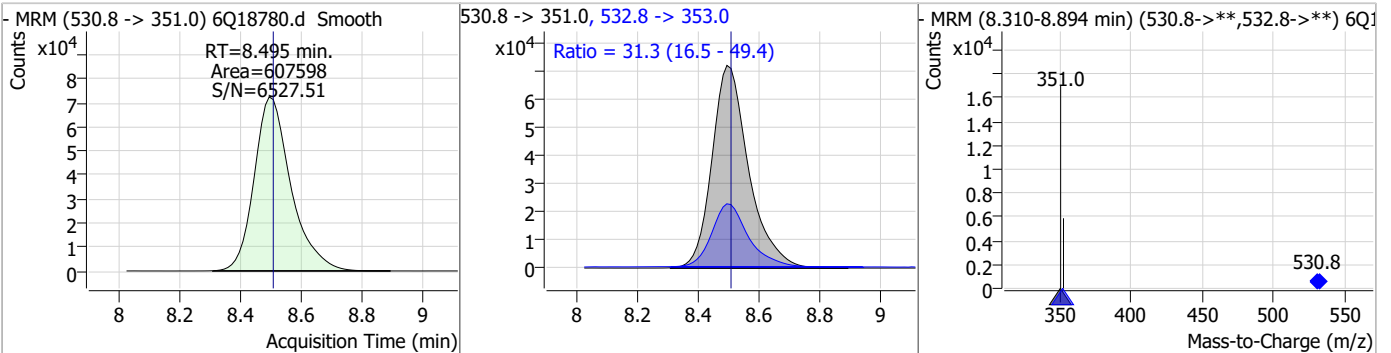


Perfluorinated Compounds by LC/MS/MS

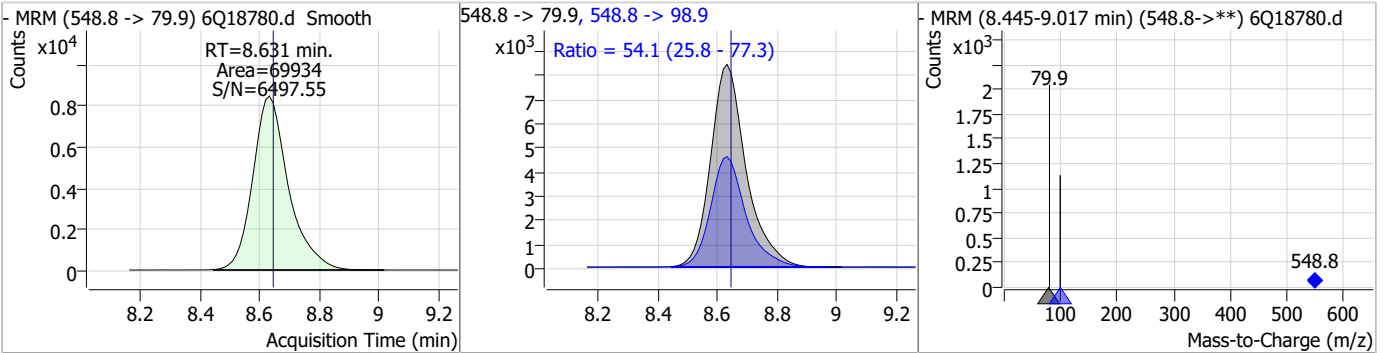
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.94	8.47	-0.01	298815	563.1 -> 269.1	14.7	9.9	29.7



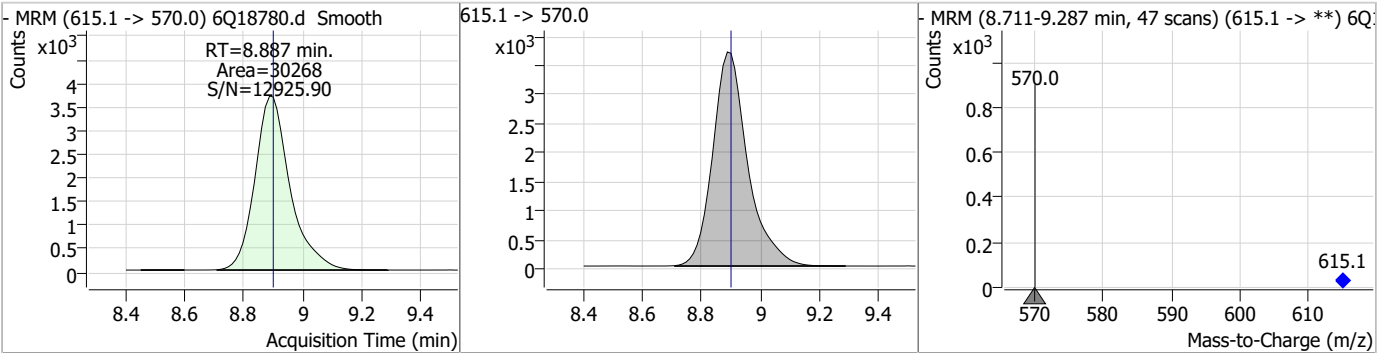
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	25.18	8.49	-0.01	607598	532.8 -> 353.0	31.3	16.5	49.4



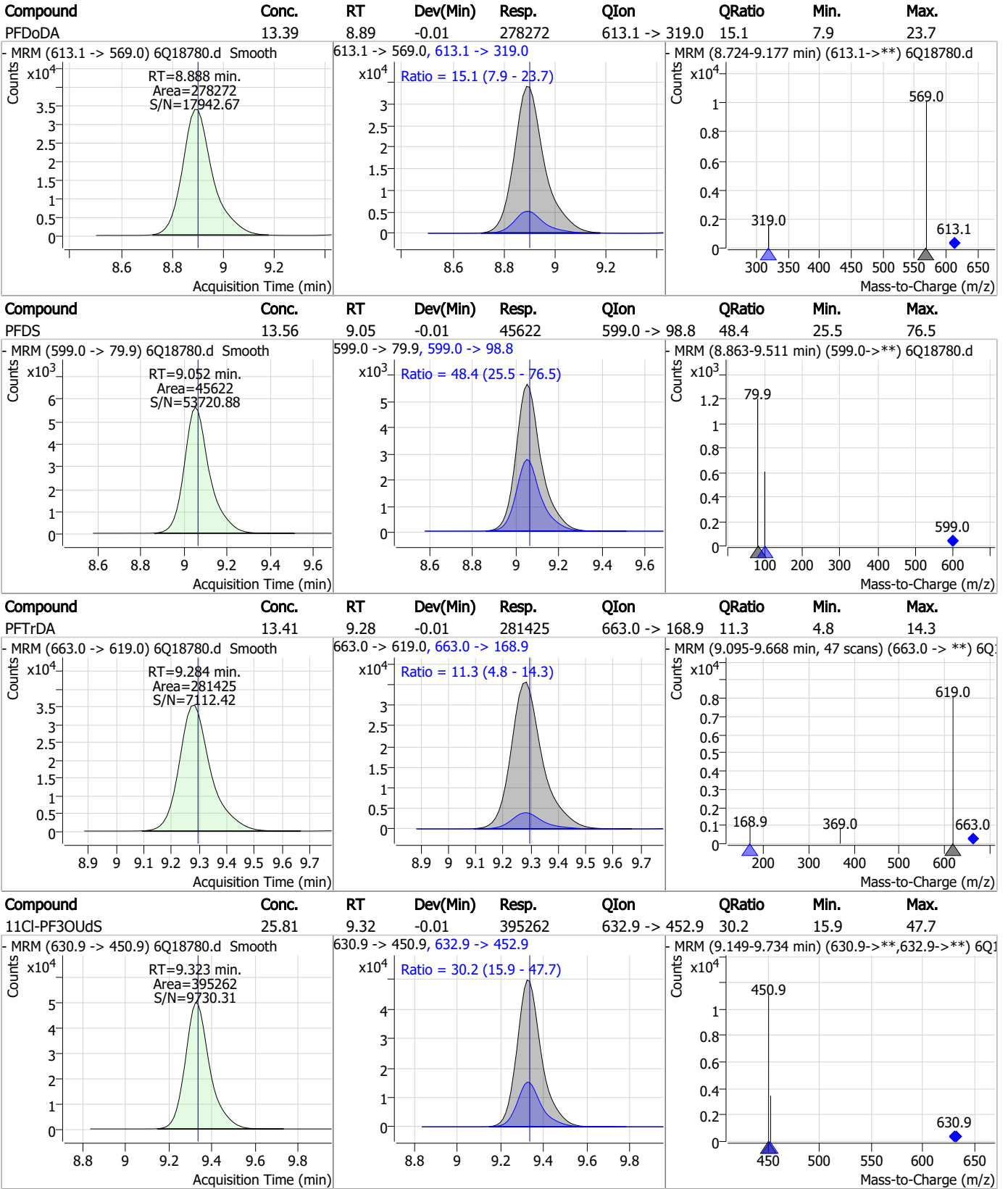
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.95	8.63	-0.01	69934	548.8 -> 98.9	54.1	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.89	-0.01	30268	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

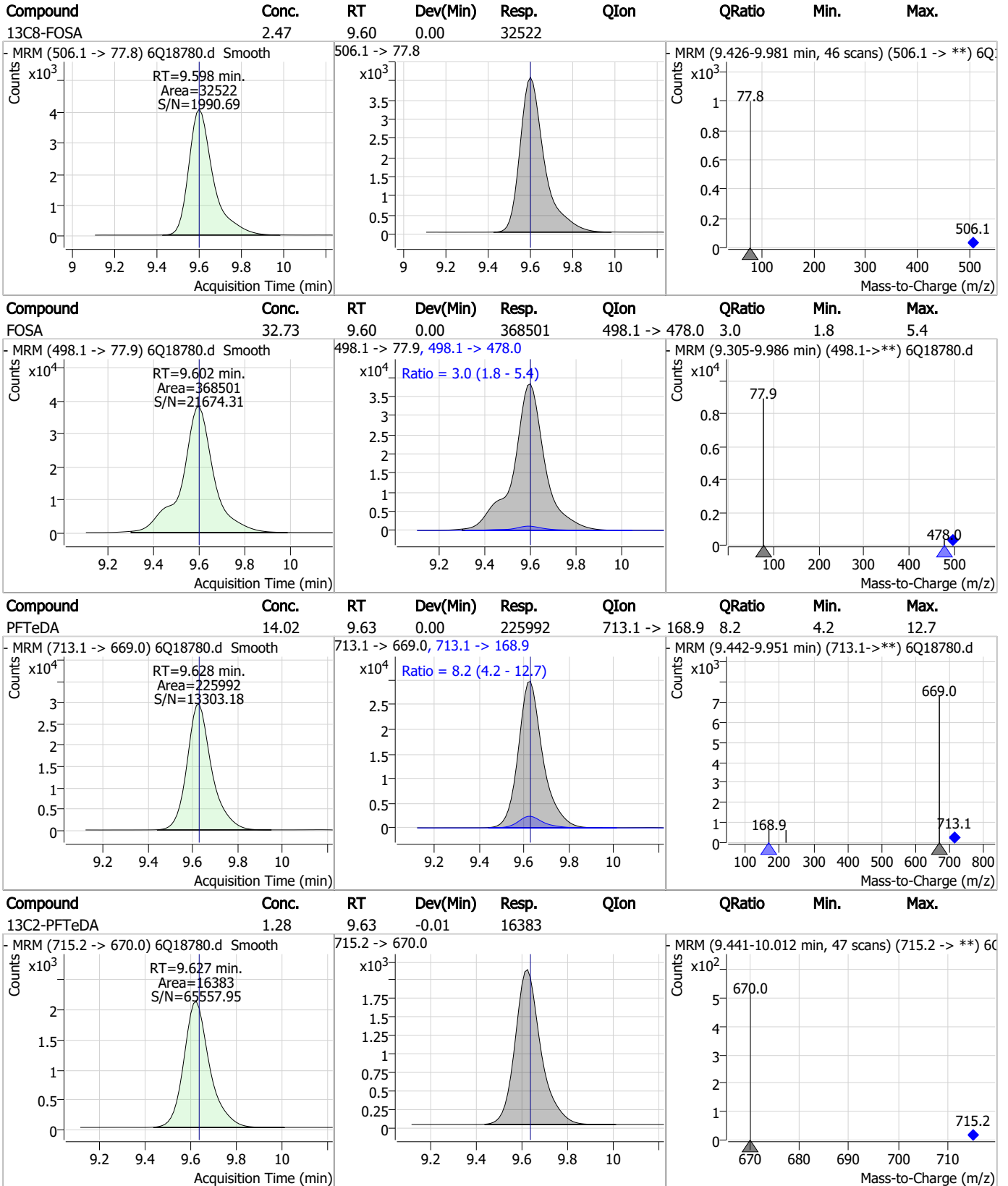


7.6.6

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Perfluorinated Compounds by LC/MS/MS



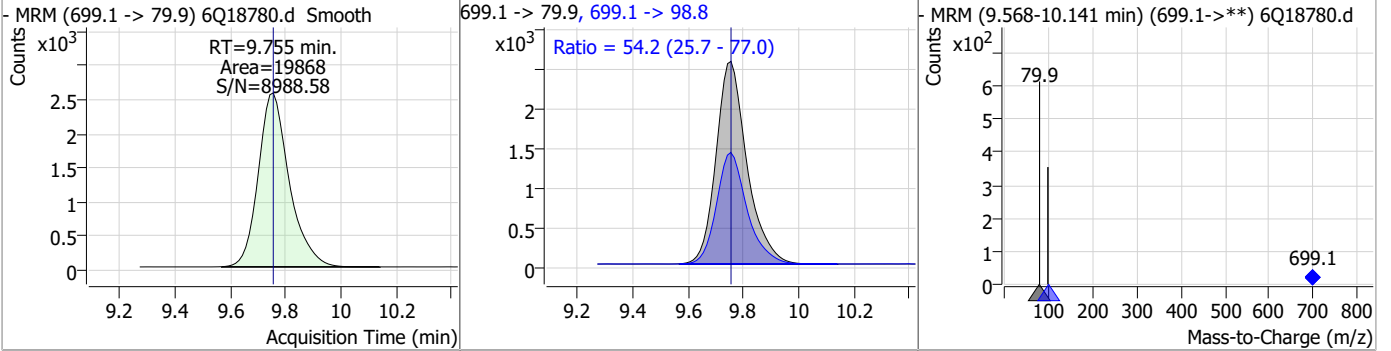
7.6.6

7

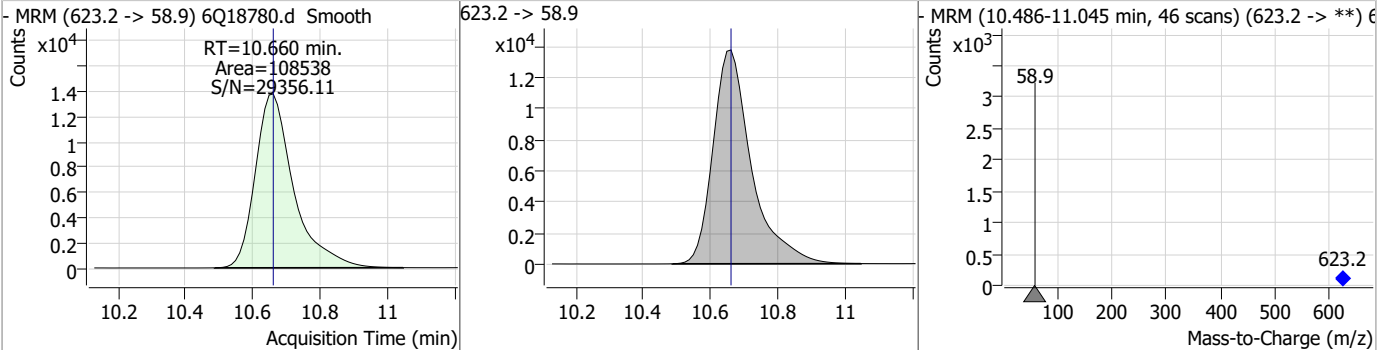


Perfluorinated Compounds by LC/MS/MS

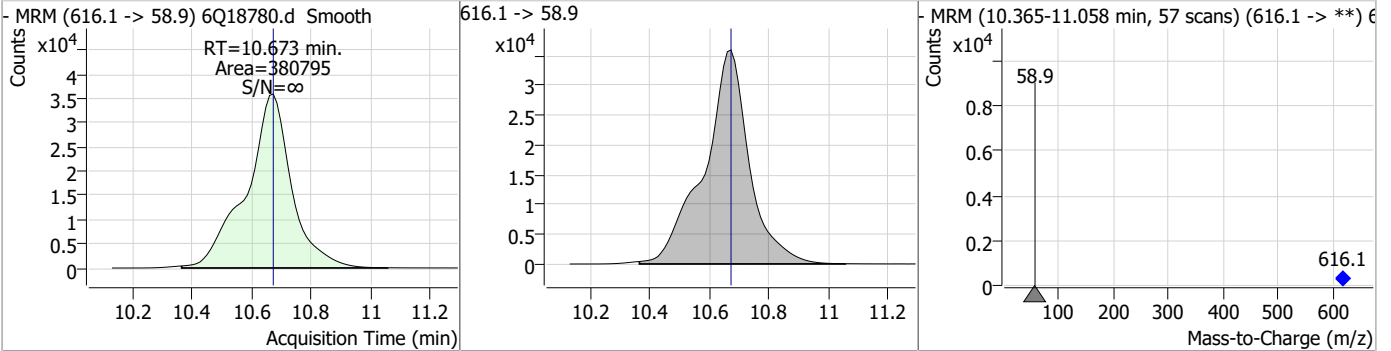
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	13.29	9.75	0.00	19868	699.1 -> 98.8	54.2	25.7	77.0



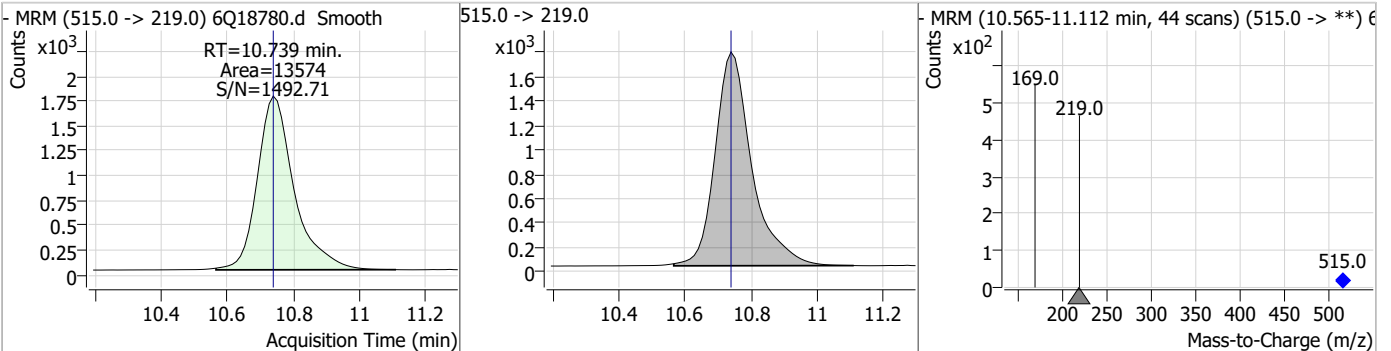
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.00	10.66	0.00	108538				



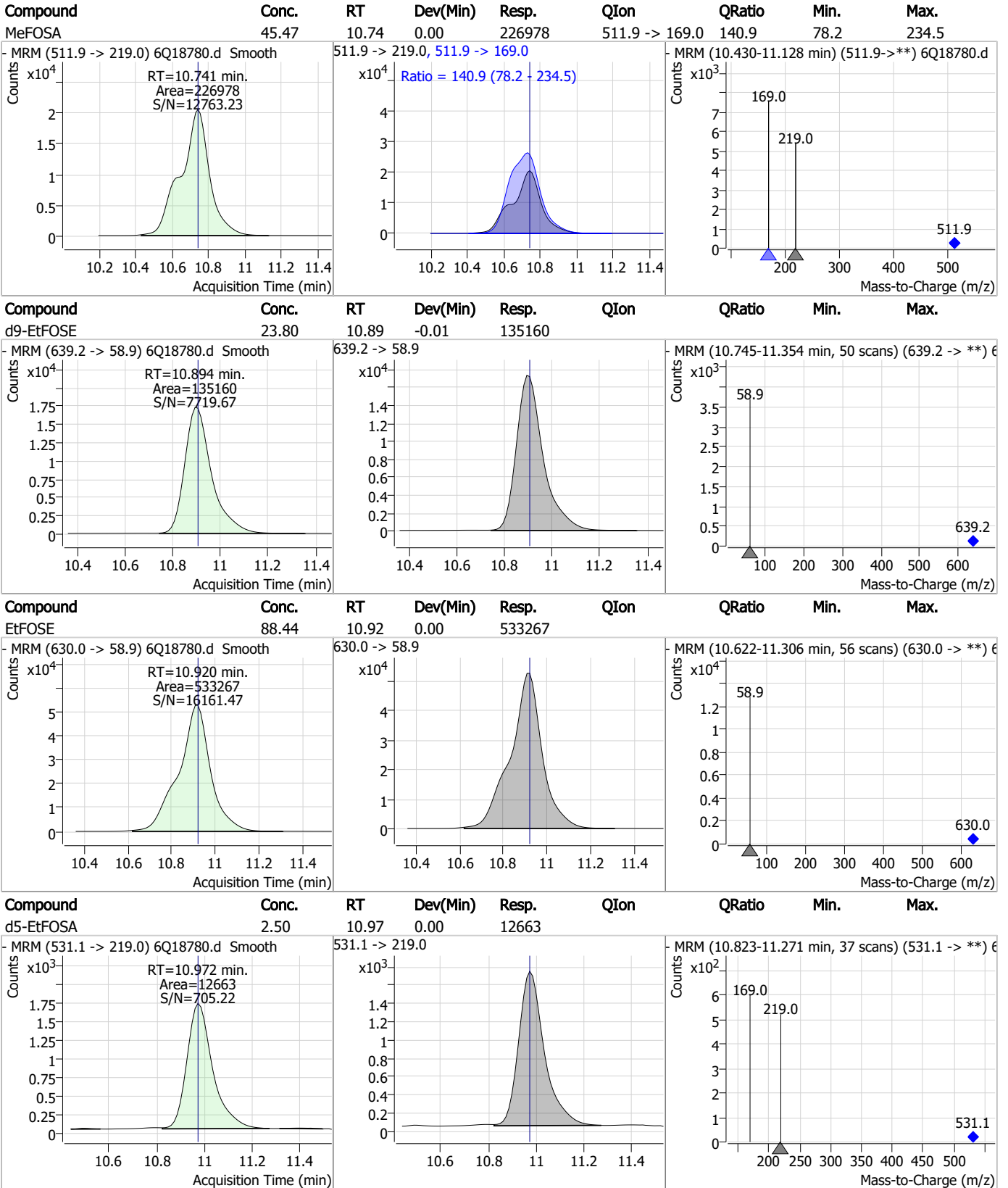
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	88.28	10.67	0.00	380795				



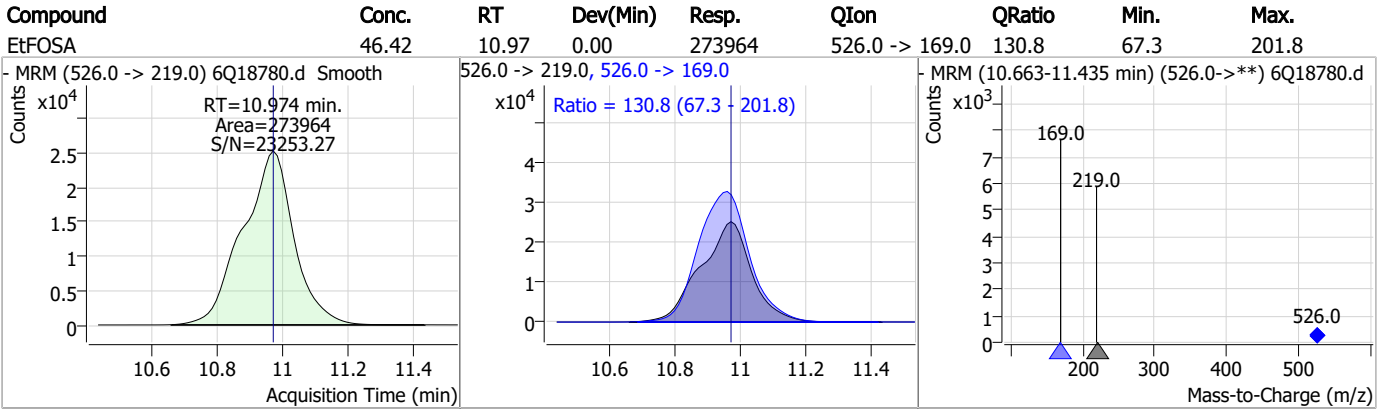
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	10.74	0.00	13574				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.6

7

Manual Integration Approval Summary

Sample Number: S6Q280-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18780.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 16:28 Supervisor approved: 06/06/23 07:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.03	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorononanoic acid	375-95-1		7.53	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.6.6.1
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Perfluorinated Compounds by LC/MS/MS

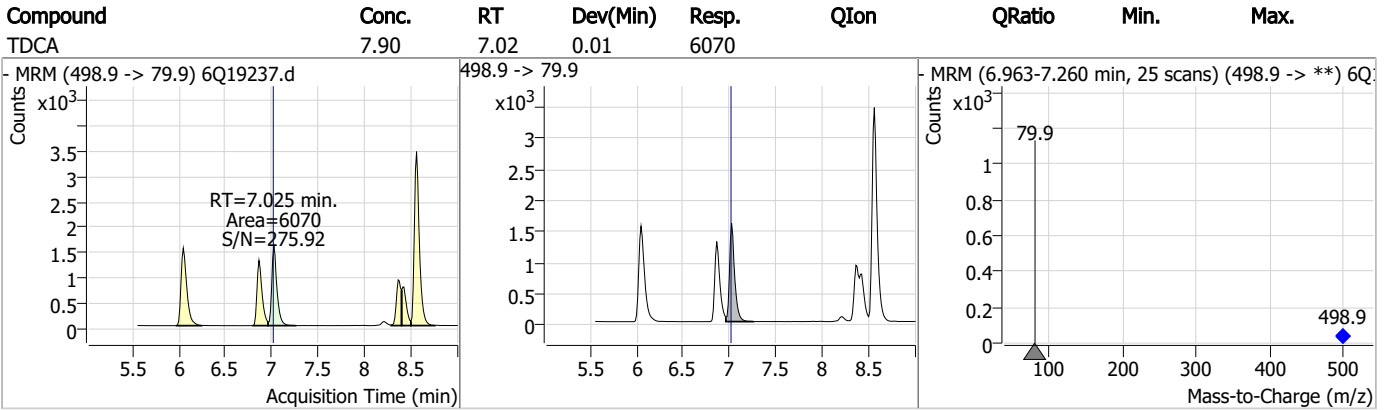
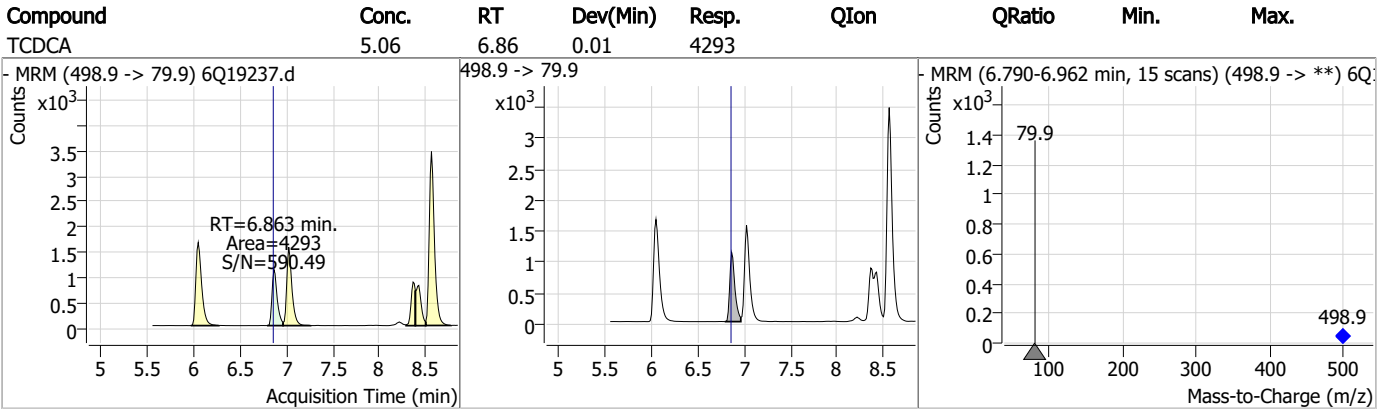
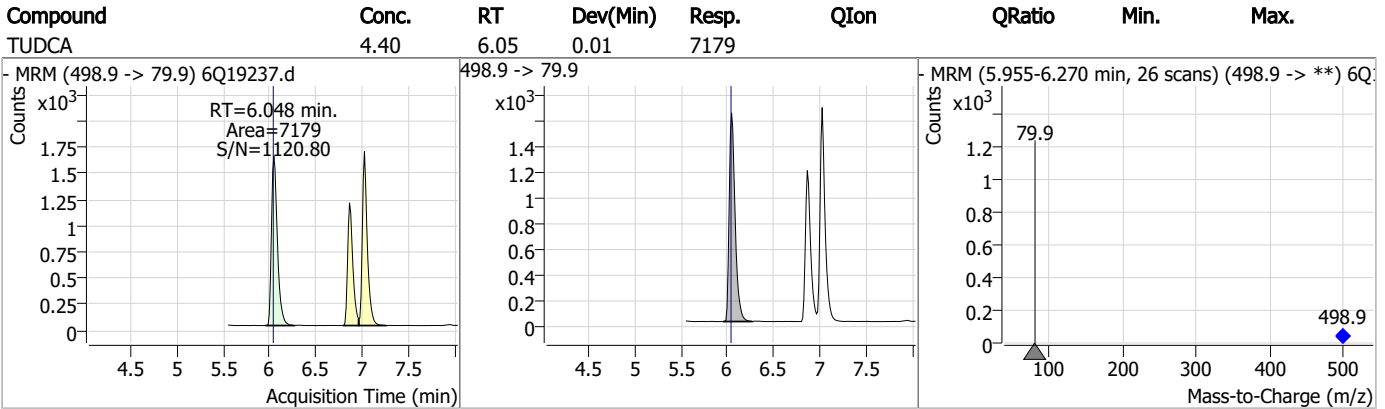
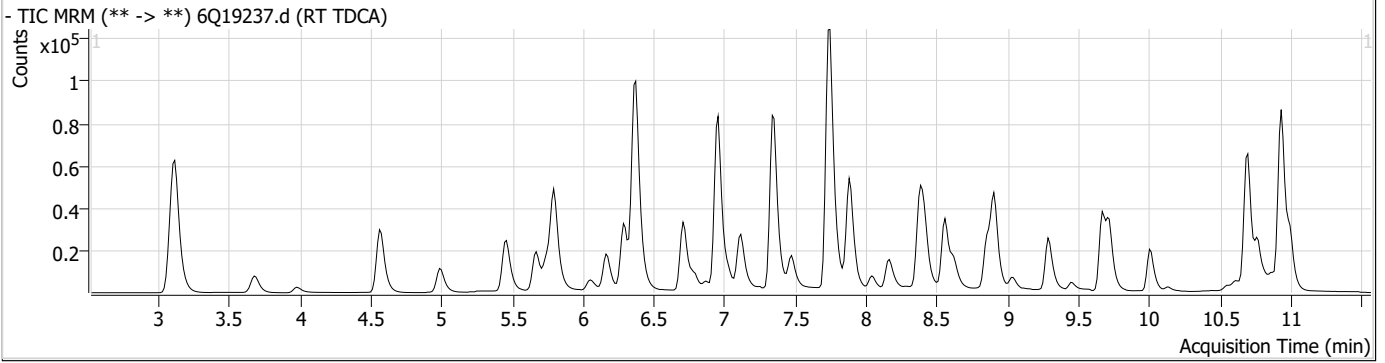
Data File : 6Q19237.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 3:06:30 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q287 TDCA.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.563	507.1 -> 79.9	18396	2.50	µg/L	-0.008	
13C4-PFOS	8.563	502.8 -> 79.9	21725	2.50	µg/L	-0.008	
System Monitoring Compounds							
13C8-PFOS	8.563	507.1 -> 79.9	18396	2.15	µg/L	-0.008	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 85.9%				
Target Compounds							
PFOS	8.564	498.9 -> 79.9 498.9 -> 98.8	18527 8860	2.95	µg/L	m	91
TCDCa	6.863	498.9 -> 79.9	4293	5.06	ng/ml		100
TDCA	7.025	498.9 -> 79.9	6070	7.90	ng/ml		100
TUDCA	6.048	498.9 -> 79.9	7179	4.40	ng/ml		100

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

7.6.7
7

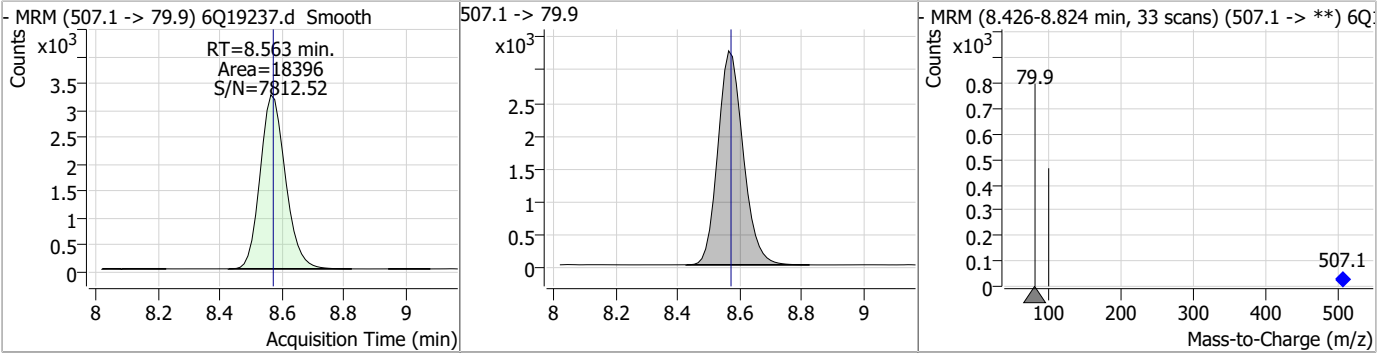
Perfluorinated Compounds by LC/MS/MS



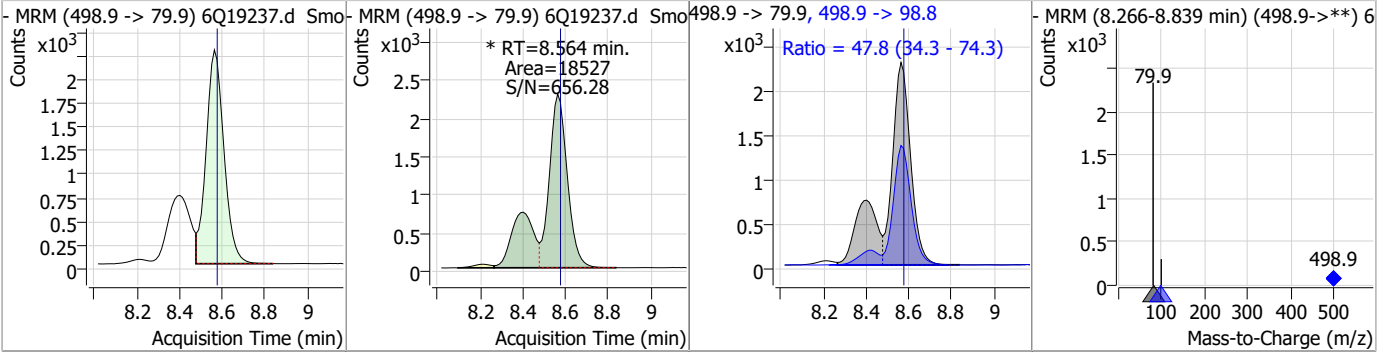
7.6.7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.15	8.56	-0.01	18396				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.95	8.56	-0.01	18527 (m)	498.9 -> 98.8	47.8	34.3	74.3



7.6.7
7



Manual Integration Approval Summary

Sample Number: S6Q287-RT Method: EPA DRAFT 1633
Lab FileID: 6Q19237.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 15:06 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak

7.6.7.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19238.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 3:20:32 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	173502	10.00 µg/L	0.012
M5-PFPeA	4.573	268.3 -> 223.0	58399	5.00 µg/L	0.012
M5-PFHxA	5.804	318.0 -> 273.0	64389	2.50 µg/L	0.012
M4-PFHpA	6.719	367.1 -> 322.0	58907	2.50 µg/L	0.012
M8-PFOA	7.352	421.1 -> 376.0	94648	2.50 µg/L	0.012
M9-PFNA	7.882	472.1 -> 427.0	43435	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	28274	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	36802	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	32345	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	18717	1.25 µg/L	0.012
M8-FOSA	9.687	506.1 -> 77.8	33070	2.50 µg/L	0.012
M3-PFBS	5.771	302.1 -> 79.9	23859	2.50 µg/L	0.025
M3-PFHxS	7.478	402.1 -> 79.9	14887	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	14717	2.50 µg/L	0.000
M2-4:2FTS	5.454	329.1 -> 80.9	3237	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4723	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4668	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	33909	5.00 µg/L	0.000
M3-HFPO-DA	6.181	286.9 -> 168.9	41422	10.00 µg/L	0.012
M5-EtFOSAA	8.615	589.2 -> 419.0	30490	5.00 µg/L	0.000
M7-MeFOSE	10.696	623.2 -> 58.9	159432	25.00 µg/L	0.011
M9-EtFOSE	10.930	639.2 -> 58.9	204912	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	13479	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	14229	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	18304	2.50 µg/L	0.000
13C3-PFBA	3.101	216.0 -> 172.0	72393	5.00 µg/L	0.012
18O2-PFHxS	7.490	403.0 -> 83.9	10881	2.50 µg/L	0.012
13C4-PFOA	7.352	417.1 -> 372.0	99779	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	34220	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	56442	1.25 µg/L	0.000
13C2-PFHxA	5.805	315.1 -> 270.0	60834	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	3237	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4723	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4668	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFDoDA	9.285	615.1 -> 570.0	32345	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.1%		
13C2-PFTeDA	10.012	715.2 -> 670.0	18717	1.41 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C3-PFBS	5.771	302.1 -> 79.9	23859	2.59 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFHxS	7.478	402.1 -> 79.9	14887	2.58 µg/L	0.000

7.6.8
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C4-PFBA	3.097	216.8 -> 171.9	173502	10.21 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C4-PFHpA	6.719	367.1 -> 322.0	58907	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C5-PFHxA	5.804	318.0 -> 273.0	64389	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFPeA	4.573	268.3 -> 223.0	58399	4.97 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C6-PFDA	8.387	519.1 -> 474.1	28274	1.50 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C7-PFUnDA	8.853	570.0 -> 525.1	36802	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C8-FOSA	9.687	506.1 -> 77.8	33070	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C8-PFOA	7.352	421.1 -> 376.0	94648	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.563	507.1 -> 79.9	14717	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C9-PFNA	7.882	472.1 -> 427.0	43435	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSAA	8.407	573.2 -> 419.0	33909	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-HFPO-DA	6.181	286.9 -> 168.9	41422	9.93 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d3-MeFOSA	10.775	515.0 -> 219.0	14229	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
d5-EtFOSAA	8.615	589.2 -> 419.0	30490	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d7-MeFOSE	10.696	623.2 -> 58.9	159432	23.73 µg/L	0.011
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d9-EtFOSE	10.930	639.2 -> 58.9	204912	24.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d5-EtFOSA	10.996	531.1 -> 219.0	13479	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	200424	35.74 µg/L	100
		327.1 -> 80.9	74272		
6:2FTS	7.113	427.1 -> 407.0	206575	36.20 µg/L	94
		427.1 -> 80.9	67661		
8:2FTS	8.164	527.1 -> 507.0	114917	37.02 µg/L	98
		527.1 -> 80.8	43707		
EtFOSAA	8.617	584.2 -> 419.1	47559	9.39 µg/L	m 95
		584.2 -> 526.0	25511		
FOSA	9.677	498.1 -> 77.9	326935	24.09 µg/L	m 99
		498.1 -> 478.0	10156		
MeFOSAA	8.421	570.1 -> 419.0	86013	10.43 µg/L	m 99
		570.1 -> 483.0	17235		
PFBA	3.106	212.8 -> 168.9	264536	38.24 µg/L	100
PFBS	5.772	298.7 -> 79.9	90349	8.63 µg/L	97
		298.7 -> 98.8	32966		
PFDA	8.388	512.9 -> 469.0	399881	9.46 µg/L	98
		512.9 -> 219.0	55834		
PFDoDA	9.298	613.1 -> 569.0	253782	9.55 µg/L	96
		613.1 -> 319.0	37531		
PFDS	9.462	599.0 -> 79.9	33820	7.61 µg/L	85

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18719			
PFHpA	6.720	363.1 -> 319.0	305757	9.69	µg/L	98
		363.1 -> 169.0	51263			
PFHpS	8.059	449.0 -> 79.9	78314	8.84	µg/L	92
		449.0 -> 98.9	34179			
PFHxA	5.807	313.0 -> 269.0	242020	9.38	µg/L	99
		313.0 -> 118.9	12447			
PFHxS	7.479	398.7 -> 79.9	72509	8.10	µg/L	m 97
		398.7 -> 98.9	35172			
PFNA	7.883	463.0 -> 419.0	766460	19.23	µg/L	m 93
		463.0 -> 219.0	158139			
PFNS	9.041	548.8 -> 79.9	67405	8.66	µg/L	99
		548.8 -> 98.9	33222			
PFOA	7.353	413.0 -> 369.0	991379	20.42	µg/L	m 96
		413.0 -> 169.0	190070			
PFOS	8.564	498.9 -> 79.9	67730	7.81	µg/L	m 100
		498.9 -> 98.8	35329			
PFPeA	4.576	263.0 -> 219.0	319731	18.61	µg/L	100
PFPeS	6.798	349.1 -> 79.9	74221	9.02	µg/L	99
		349.1 -> 98.9	33411			
PFTeDA	10.013	713.1 -> 669.0	222518	9.94	µg/L	98
		713.1 -> 168.9	18309			
PFTrDA	9.669	663.0 -> 619.0	241848	9.34	µg/L	97
		663.0 -> 168.9	26623			
PFUnDA	8.854	563.1 -> 519.0	277909	10.29	µg/L	97
		563.1 -> 269.1	42250			
11Cl-PF3OUdS	9.721	630.9 -> 450.9	362129	18.55	µg/L	99
		632.9 -> 452.9	109872			
9Cl-PF3ONS	8.918	530.8 -> 351.0	546221	16.75	µg/L	93
		532.8 -> 353.0	185484			
ADONA	6.959	376.9 -> 250.9	1230700	17.56	µg/L	100
		376.9 -> 84.8	344861			
HFPO-DA	6.182	284.9 -> 168.9	80171	18.09	µg/L	96
		284.9 -> 184.9	9997			
3:3FTCA	3.958	241.0 -> 177.0	54264	46.18	µg/L	100
		241.0 -> 117.0	7244			
5:3FTCA	6.374	341.0 -> 237.1	1212372	242.35	µg/L	94
		341.0 -> 217.0	846175			
7:3FTCA	7.736	441.0 -> 316.9	812285	226.88	µg/L	93
		441.0 -> 336.9	1966703			
EtFOSA	11.010	526.0 -> 219.0	264084	36.58	µg/L	m 98
		526.0 -> 169.0	342354			
EtFOSE	10.943	630.0 -> 58.9	691533	63.92	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	222991	35.75	µg/L	m 100
		511.9 -> 169.0	310572			
MeFOSE	10.709	616.1 -> 58.9	462834	66.33	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	20059	9.07	µg/L	95
		699.1 -> 98.8	10882			
NFDHA	5.686	295.0 -> 201.0	64166	19.65	µg/L	90
		295.0 -> 84.9	15277			
PFMBA	5.000	279.0 -> 85.1	232920	18.89	µg/L	100
PFMPA	3.680	229.0 -> 84.9	184031	19.21	µg/L	100
PFEESA	6.301	314.8 -> 134.9	600322	18.91	µg/L	100
		314.8 -> 82.9	19863			

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

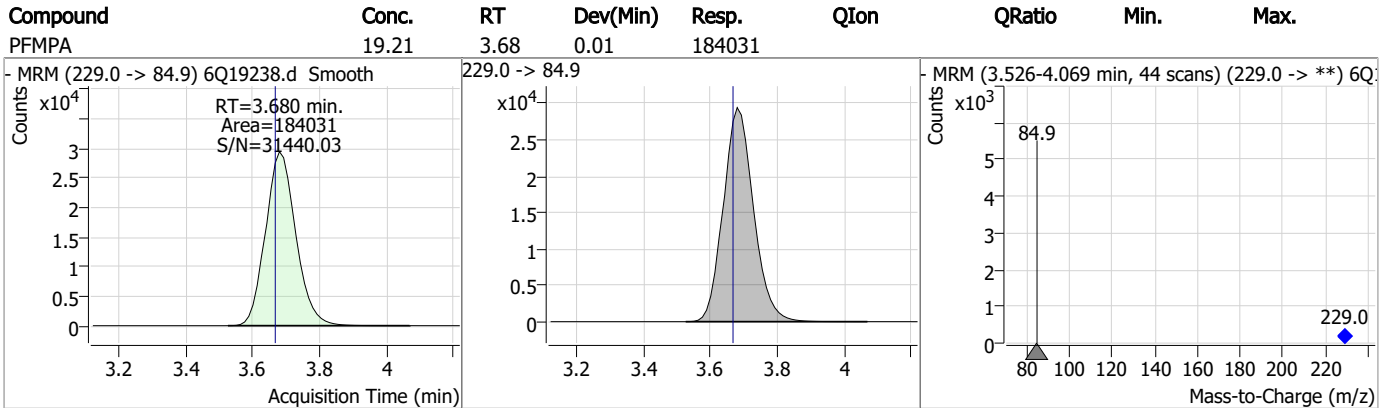
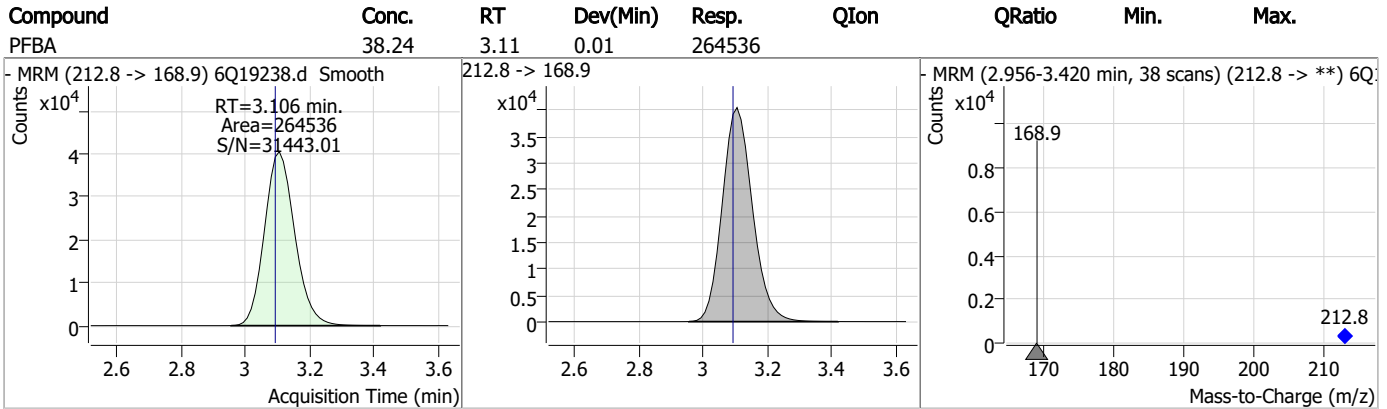
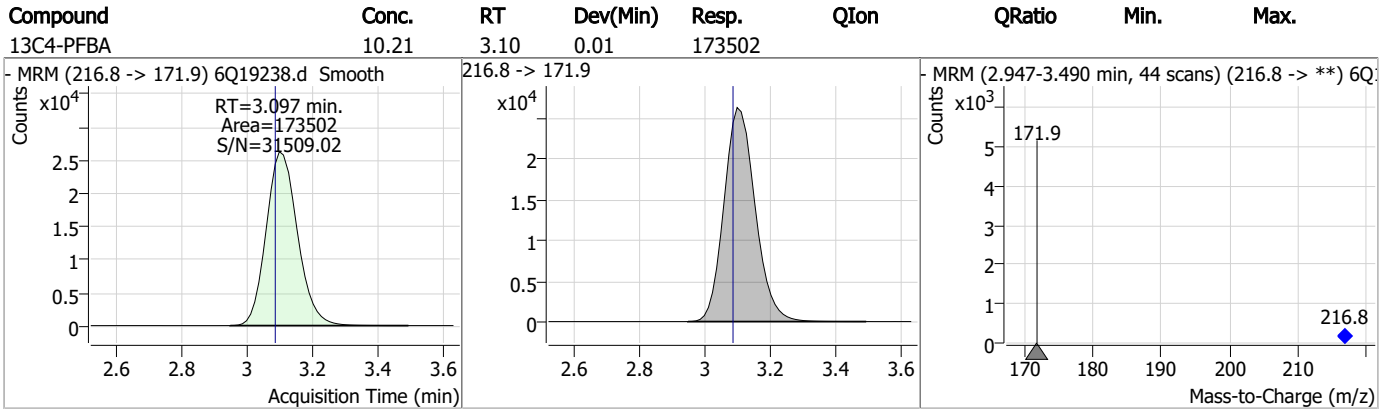
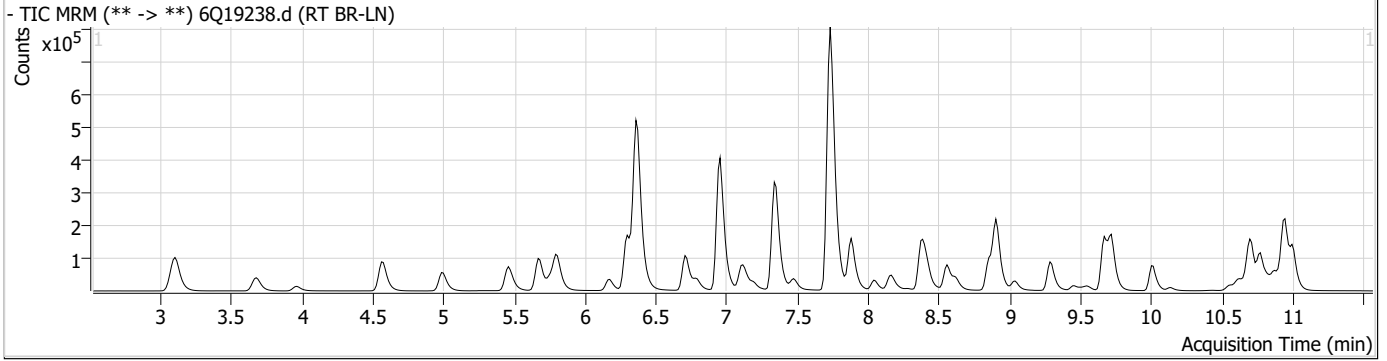
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.6.8

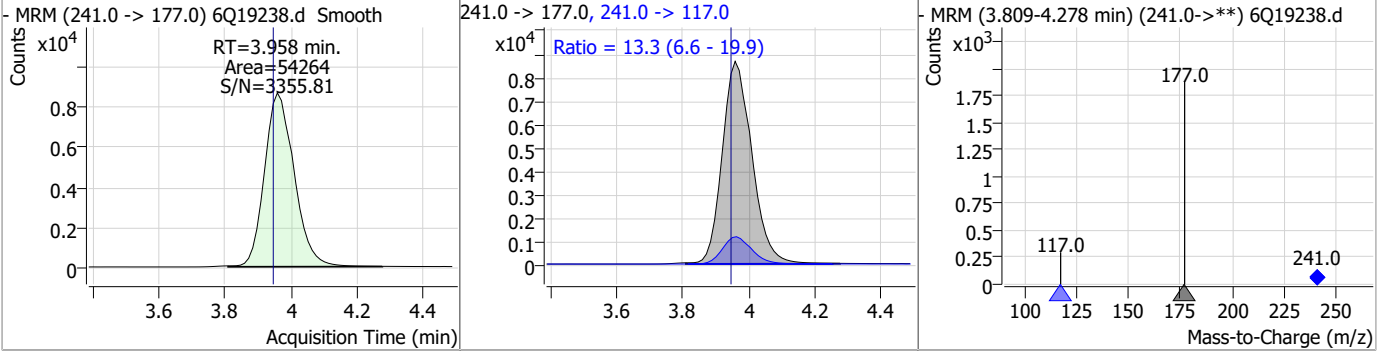
7

Perfluorinated Compounds by LC/MS/MS

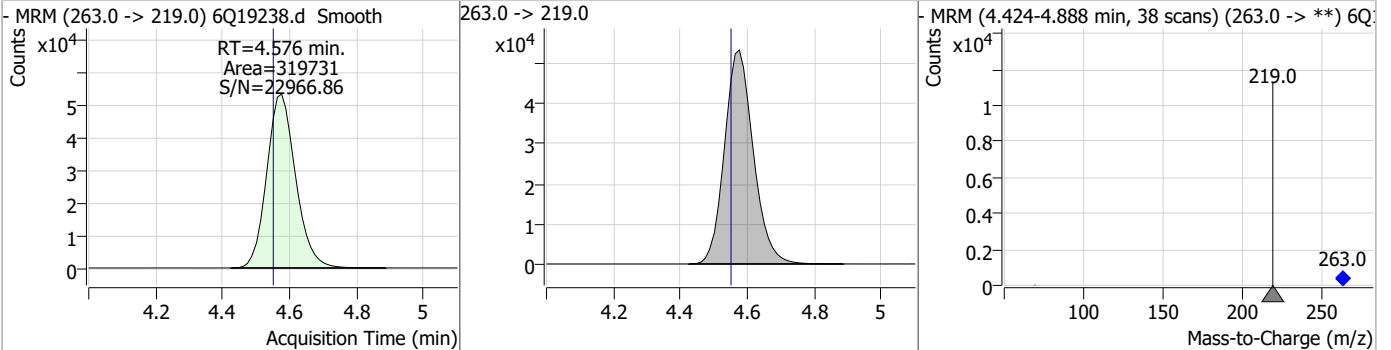


Perfluorinated Compounds by LC/MS/MS

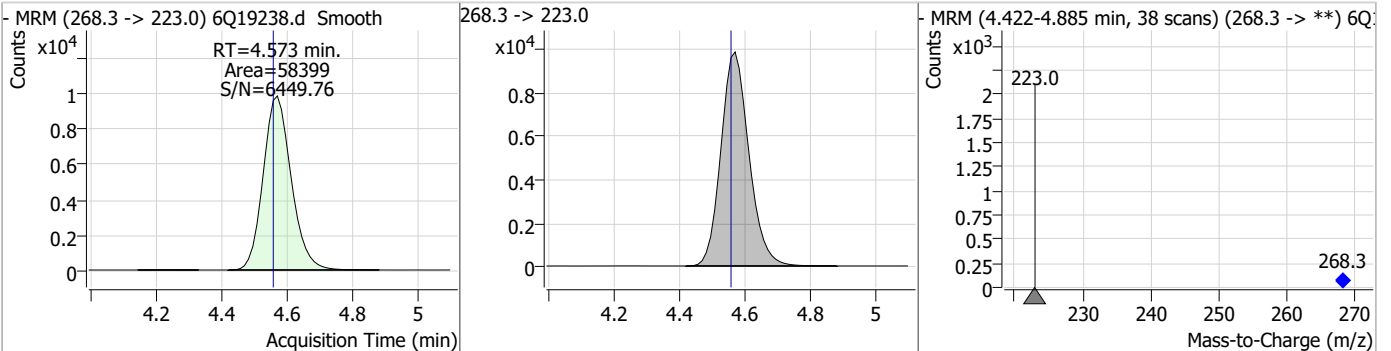
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	46.18	3.96	0.01	54264	241.0 -> 117.0	13.3	6.6	19.9



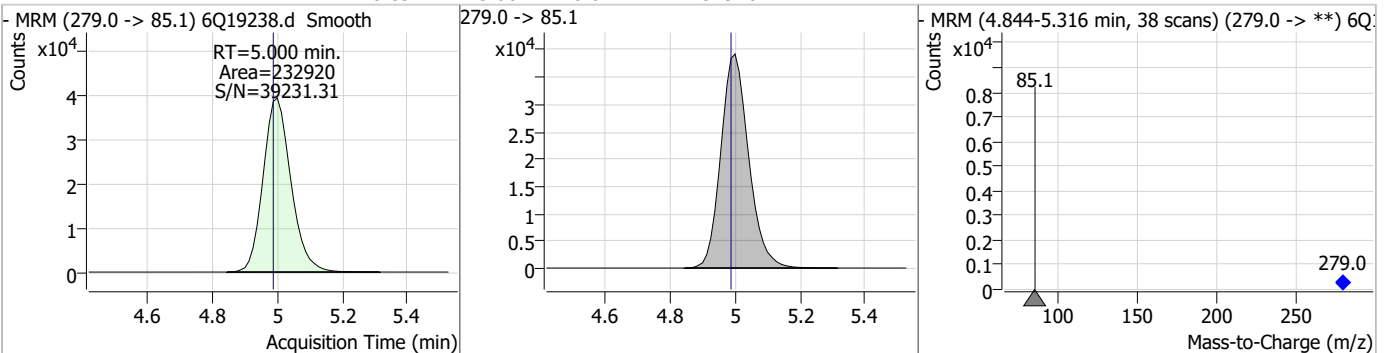
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.61	4.58	0.02	319731				



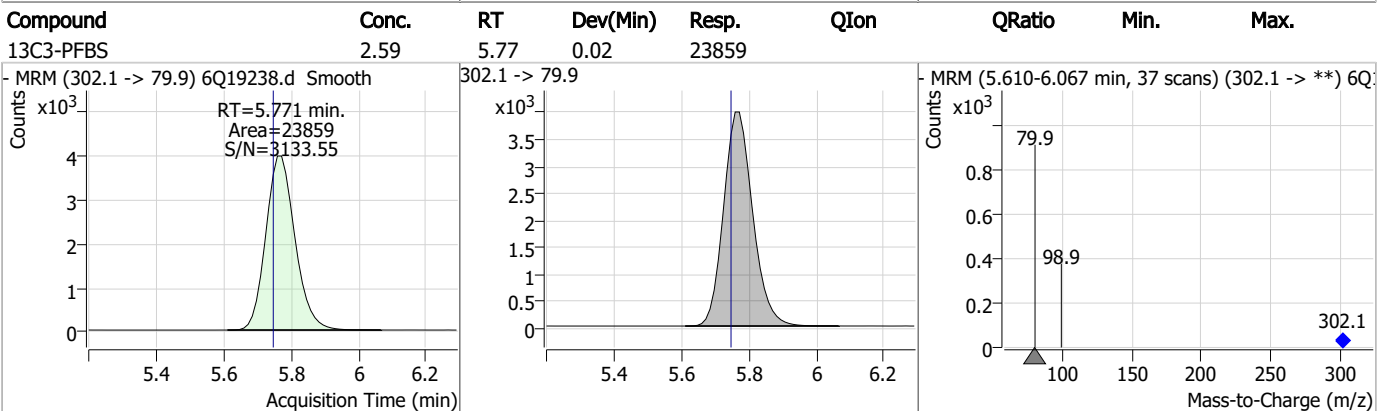
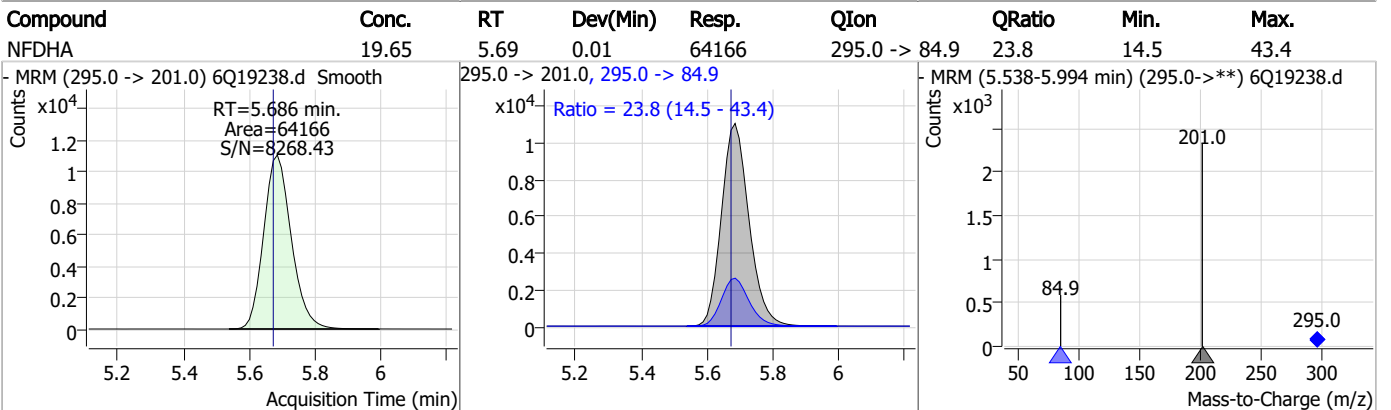
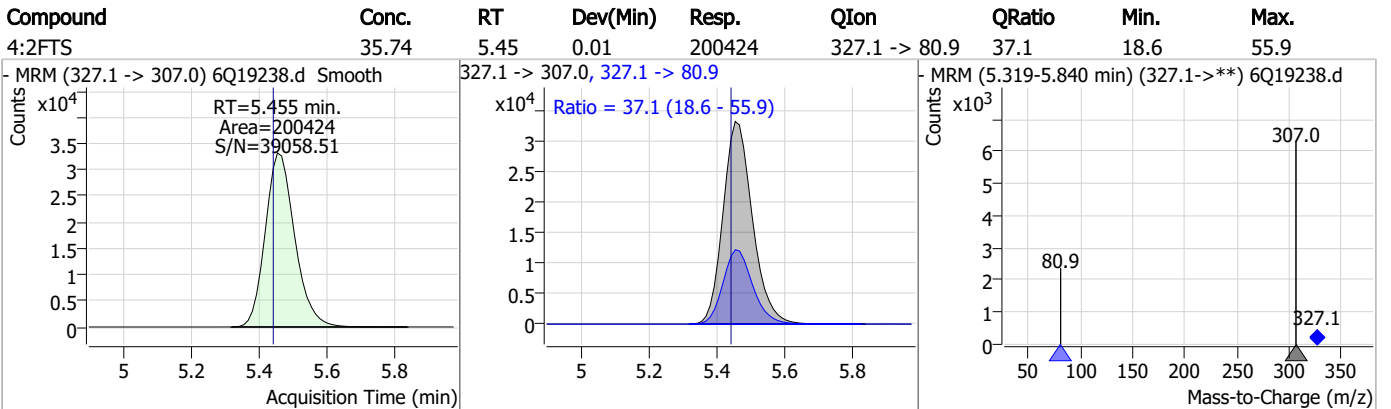
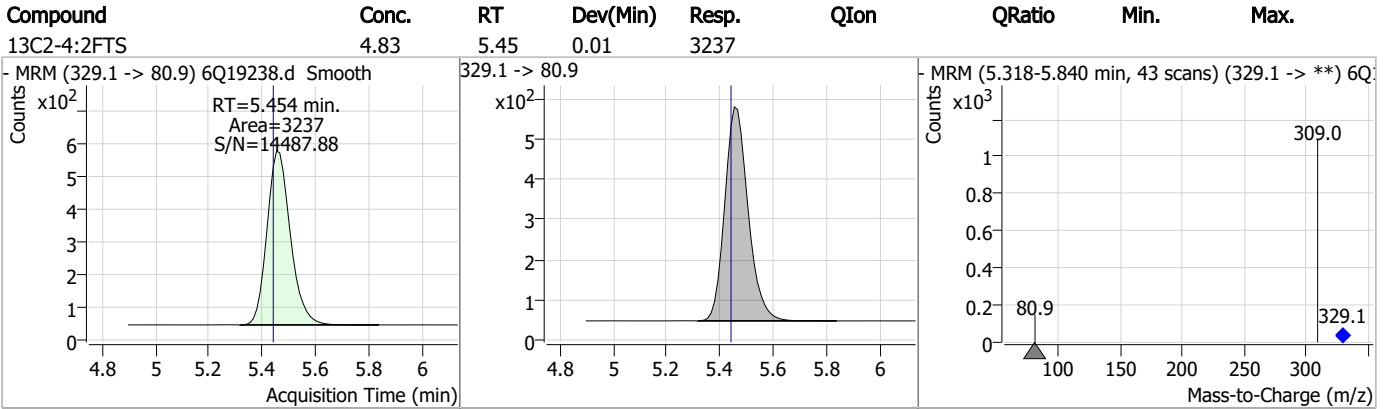
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.97	4.57	0.01	58399				



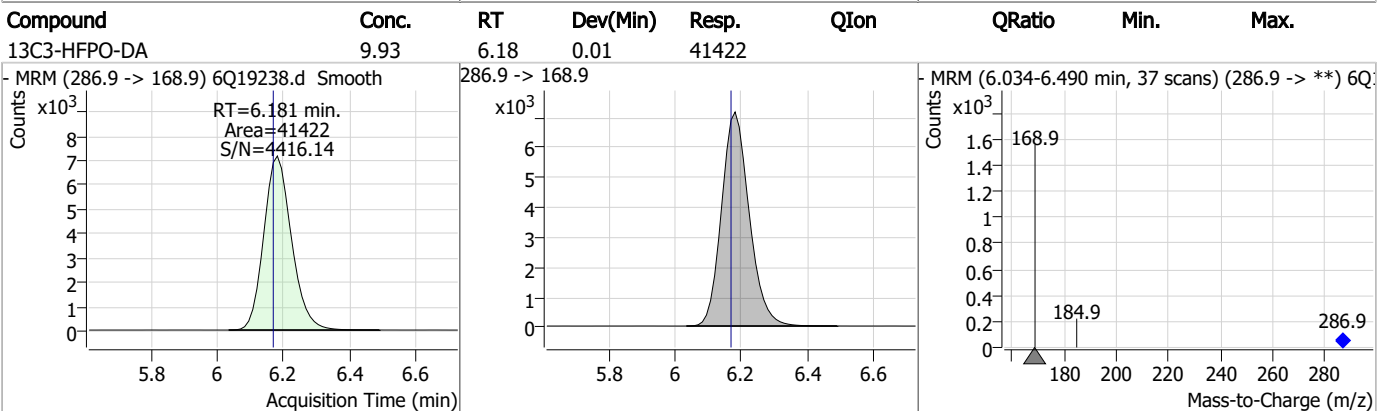
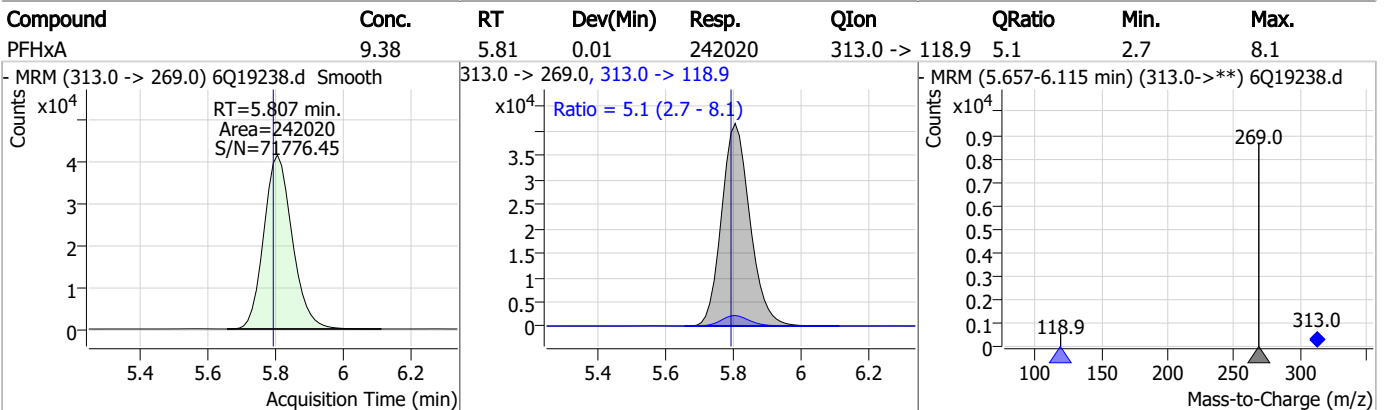
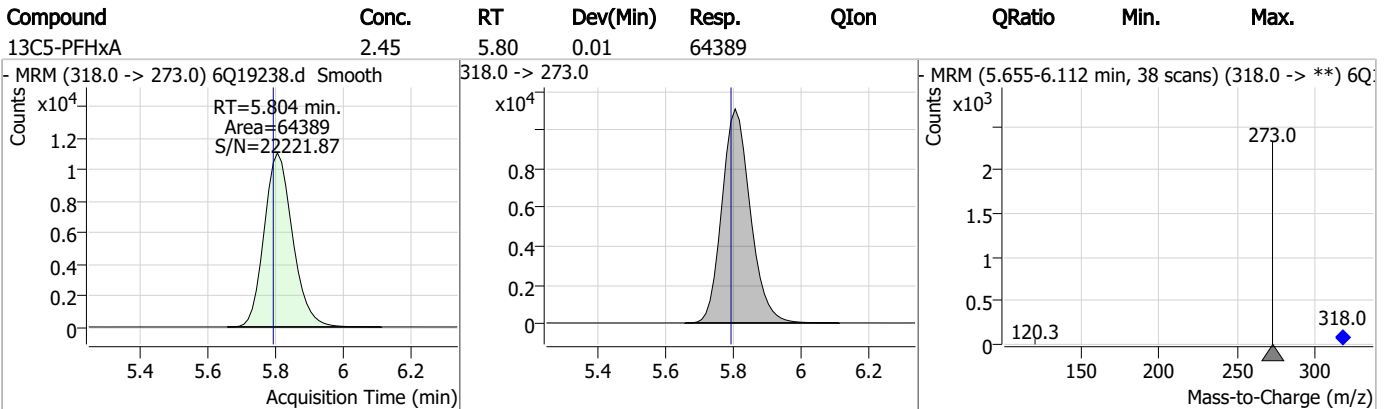
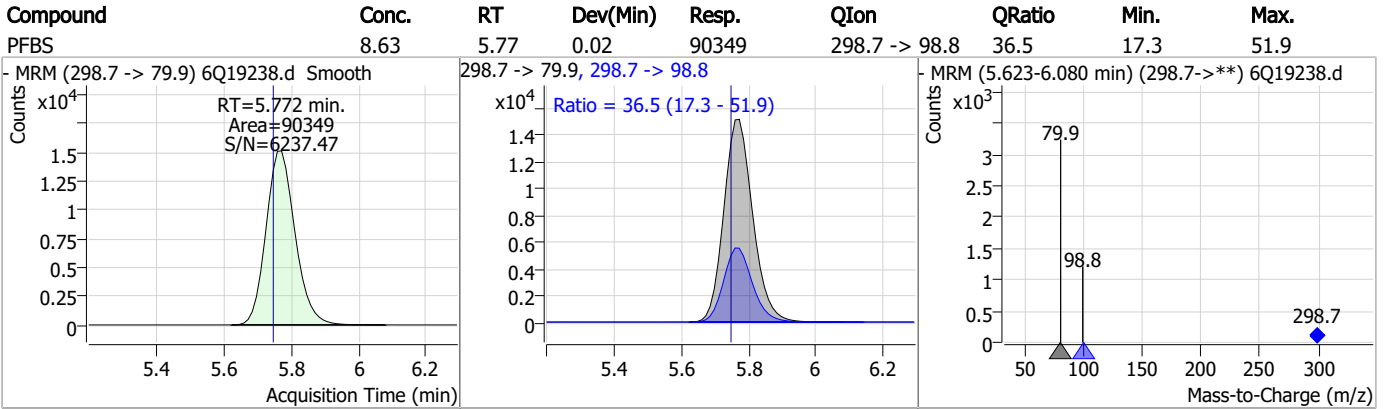
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	18.89	5.00	0.01	232920				



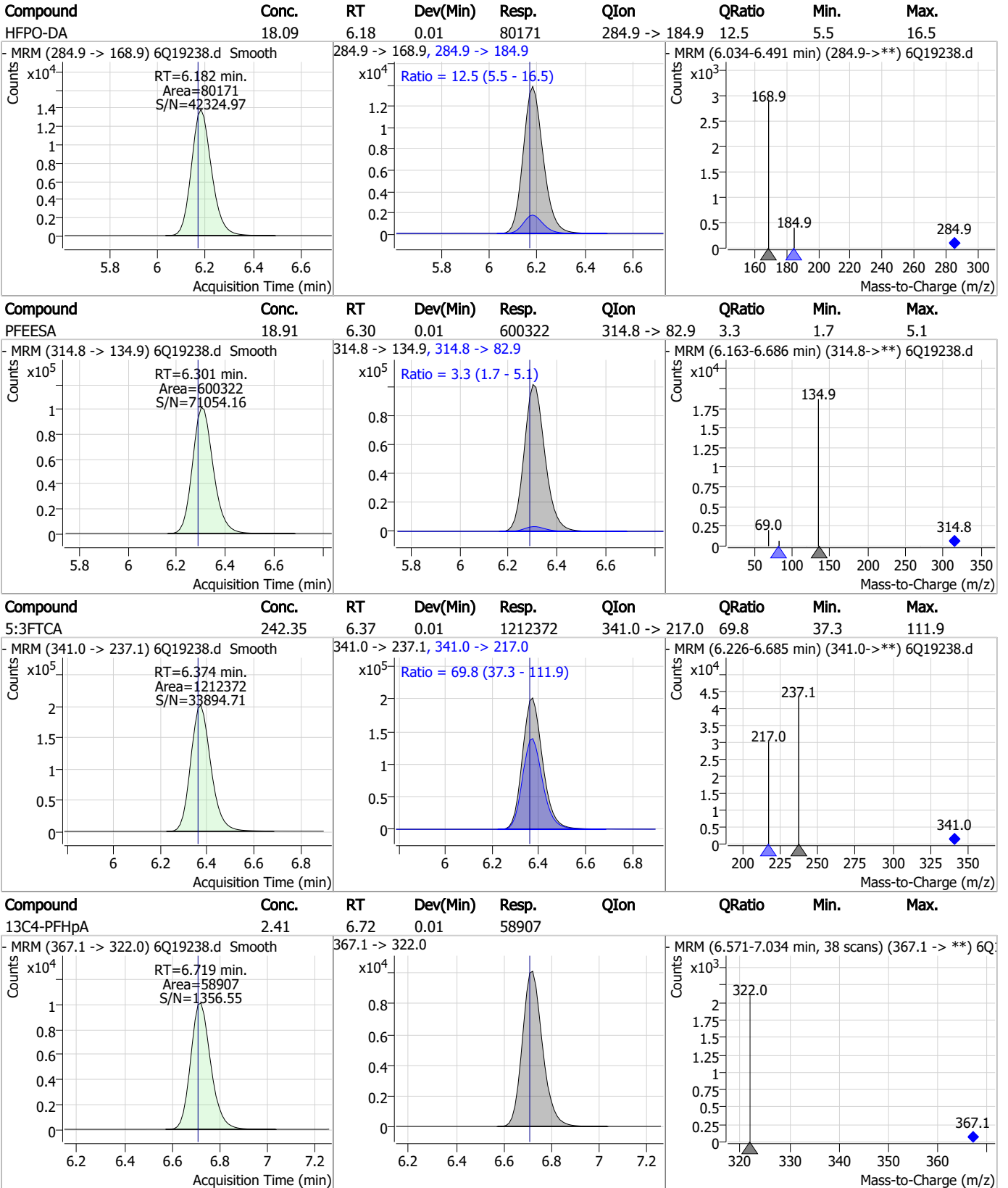
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



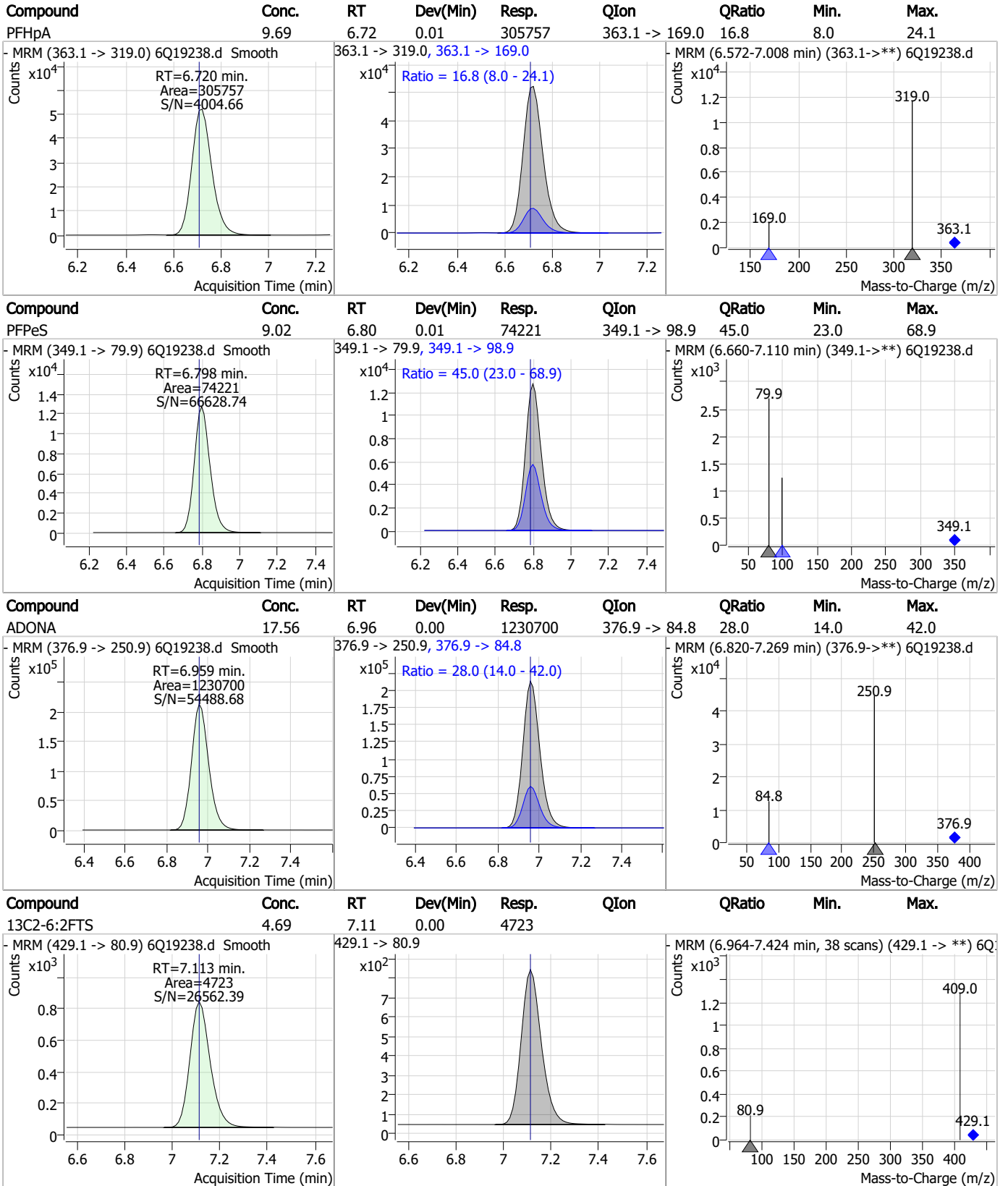
Perfluorinated Compounds by LC/MS/MS



7.6.8

7

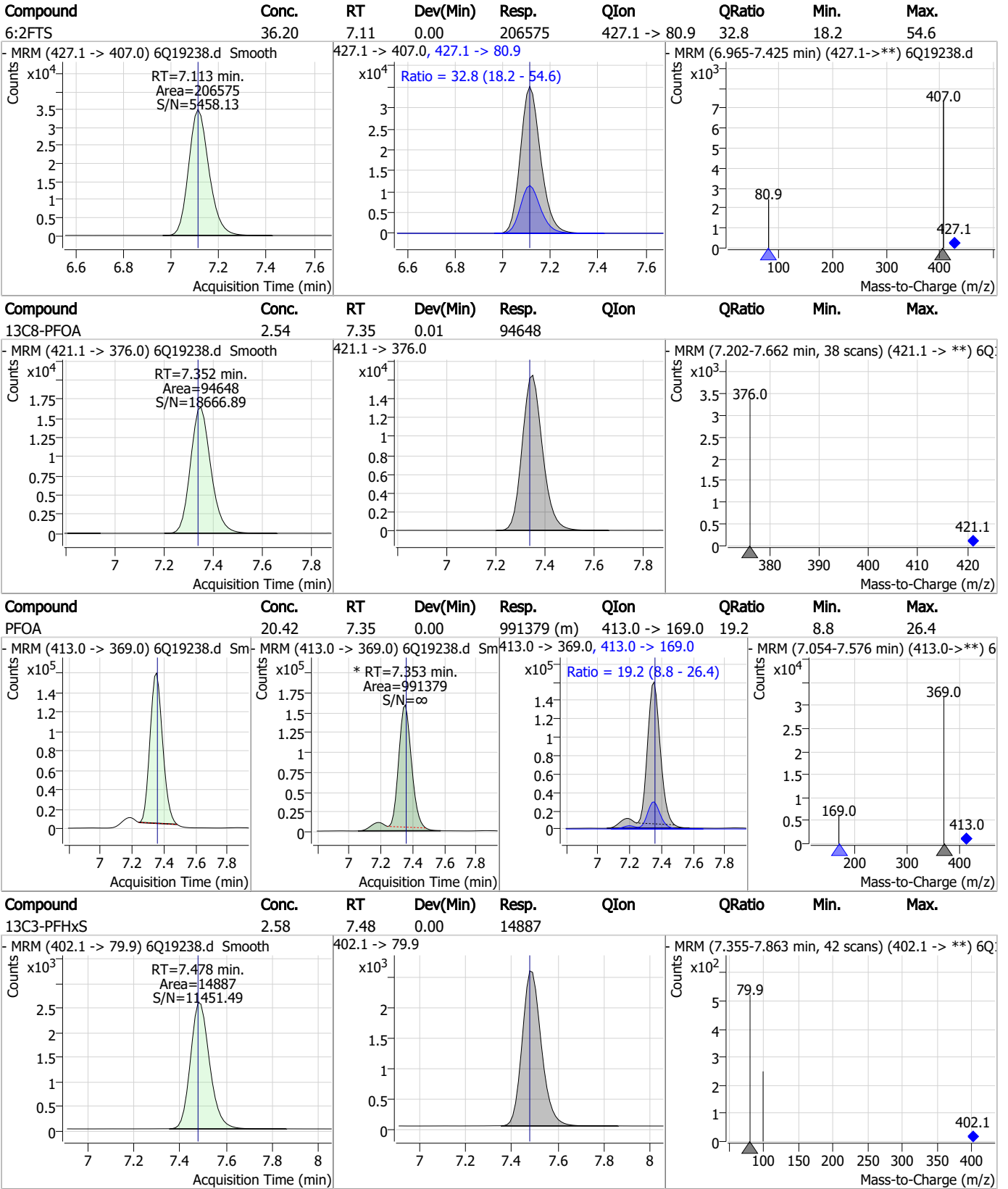
Perfluorinated Compounds by LC/MS/MS



7.6.8

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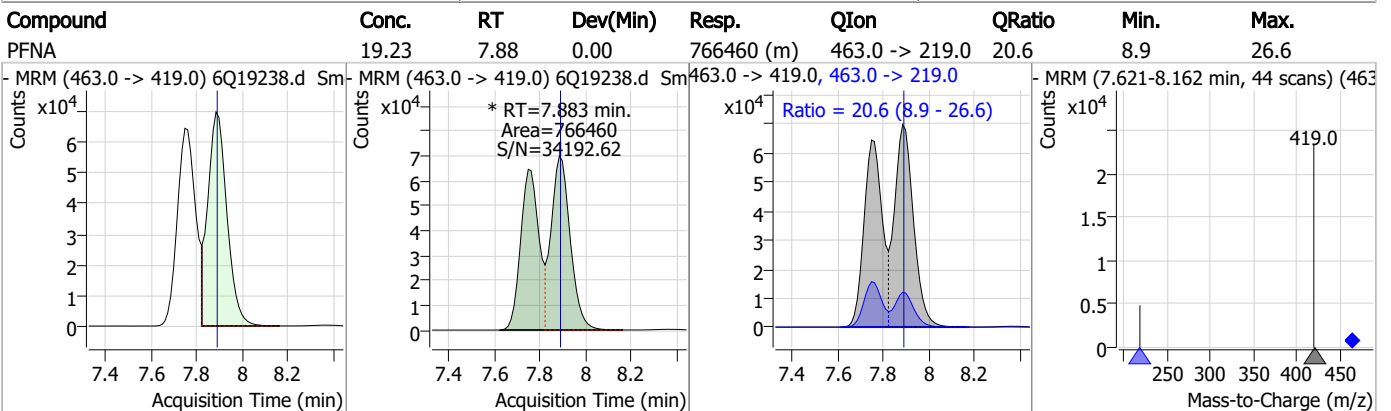
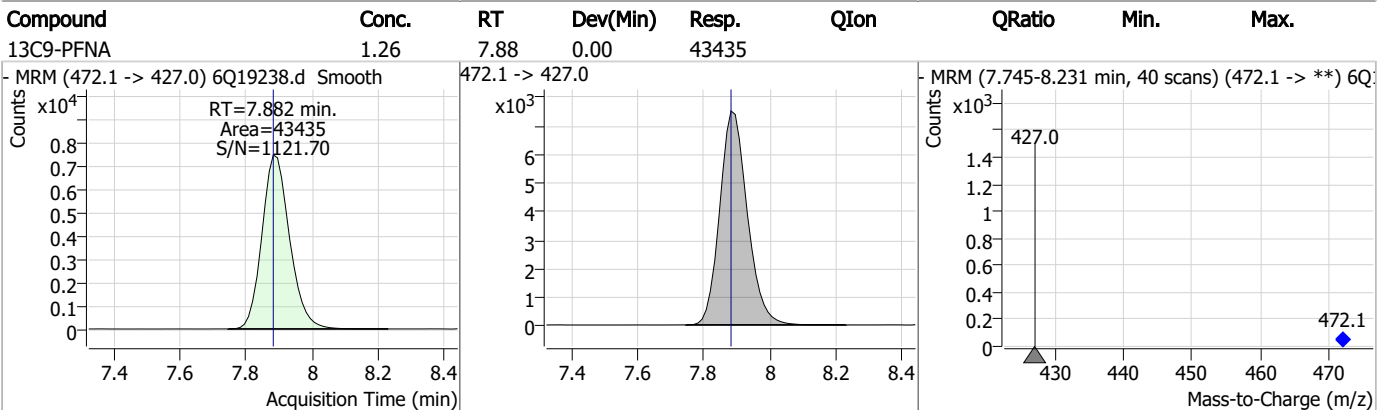
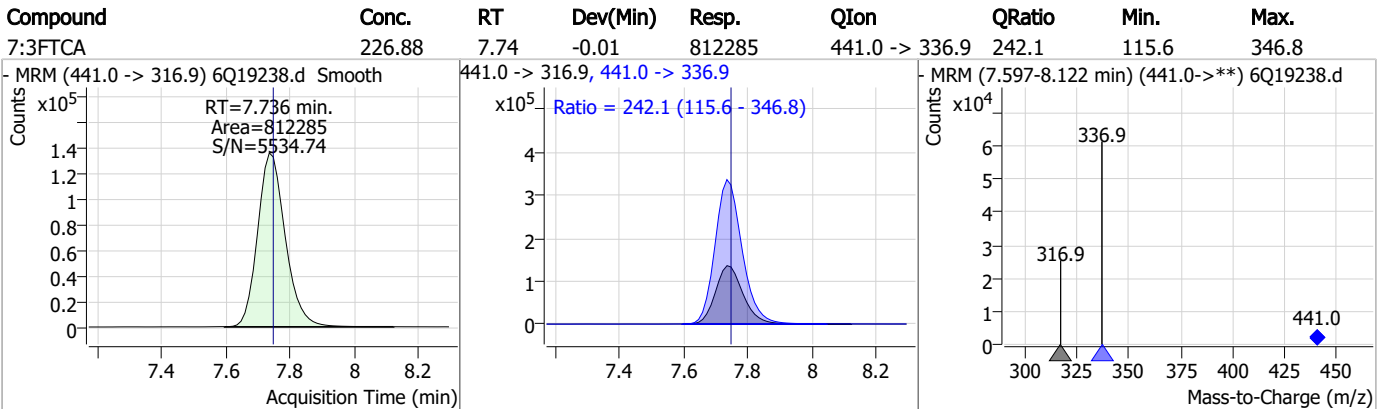
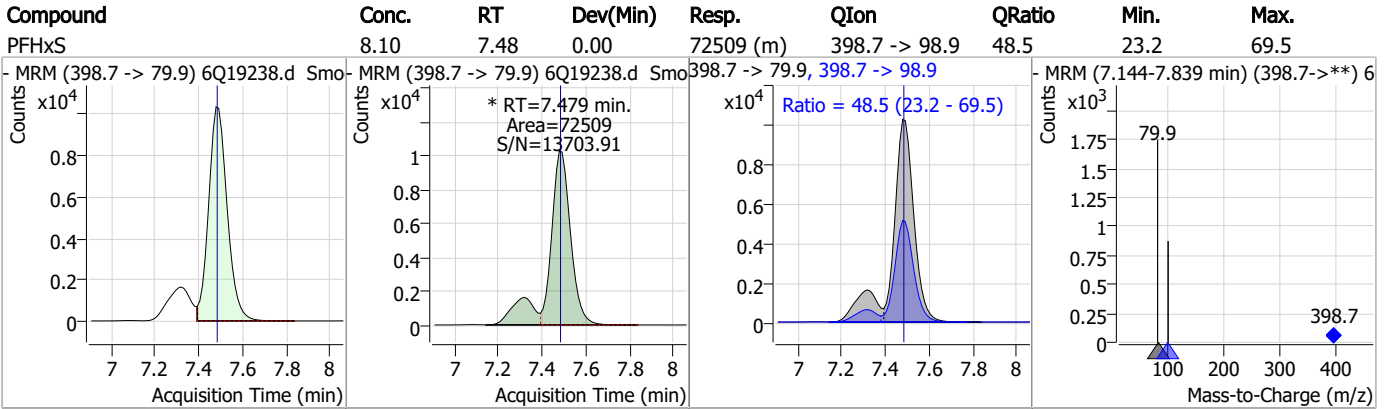
Perfluorinated Compounds by LC/MS/MS



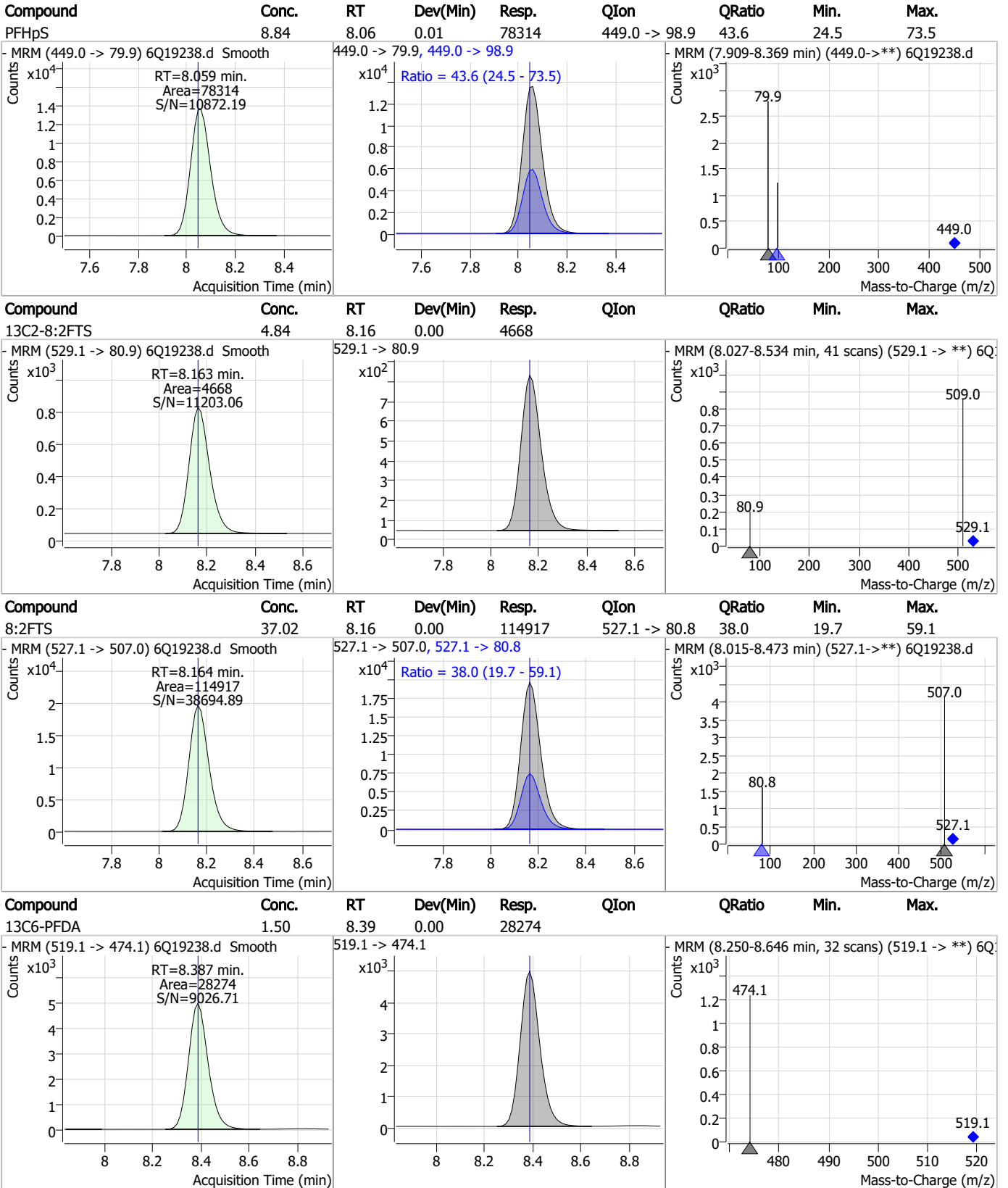
7.6.8



Perfluorinated Compounds by LC/MS/MS



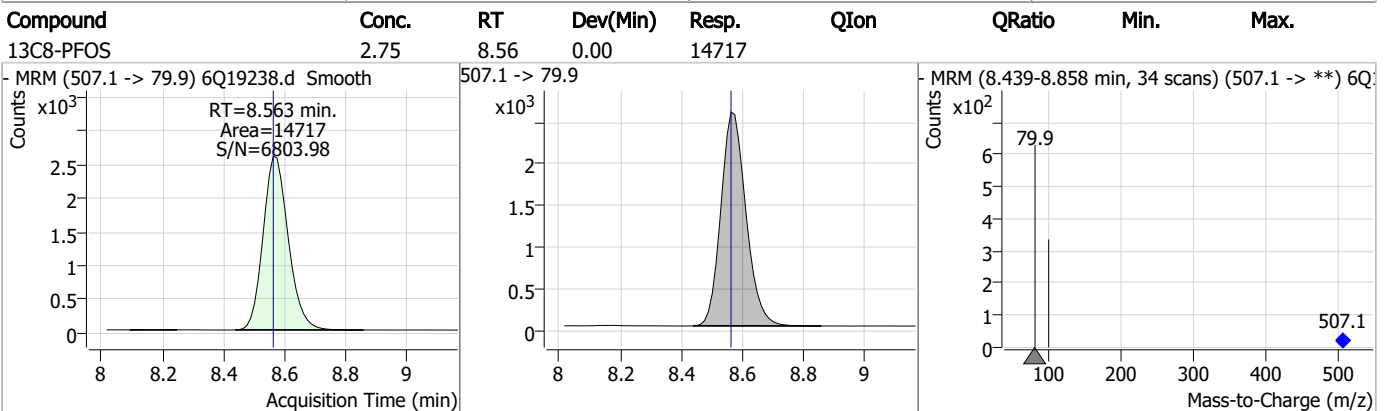
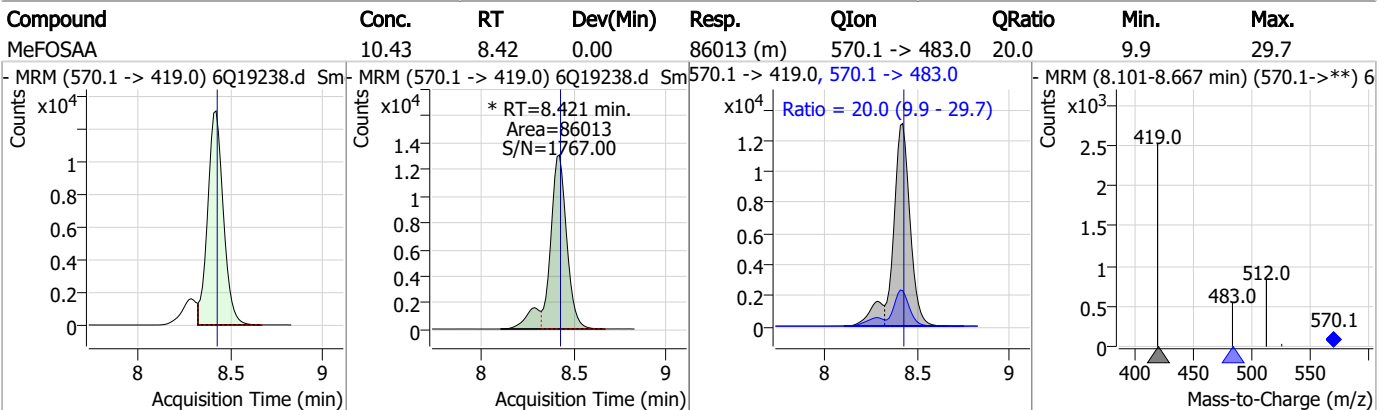
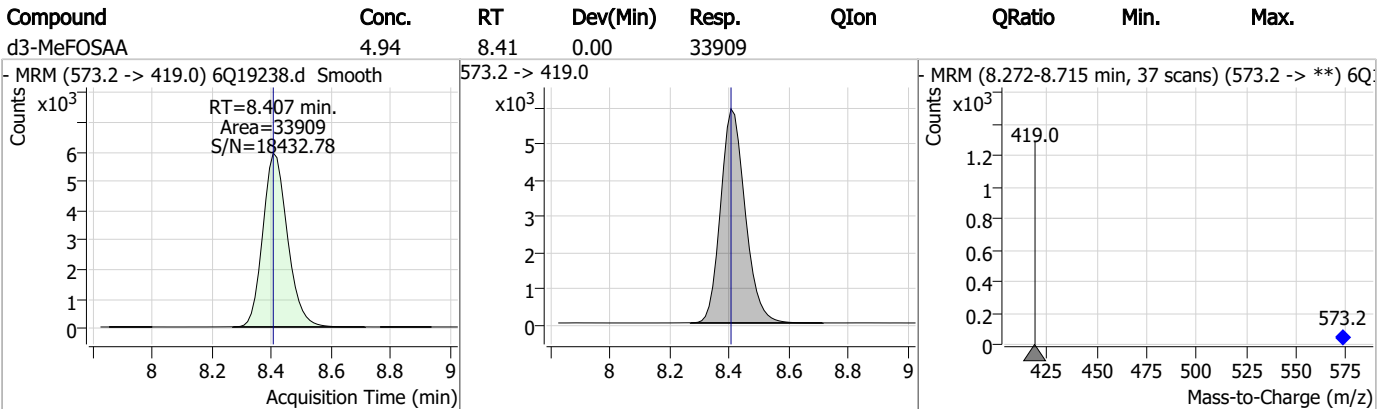
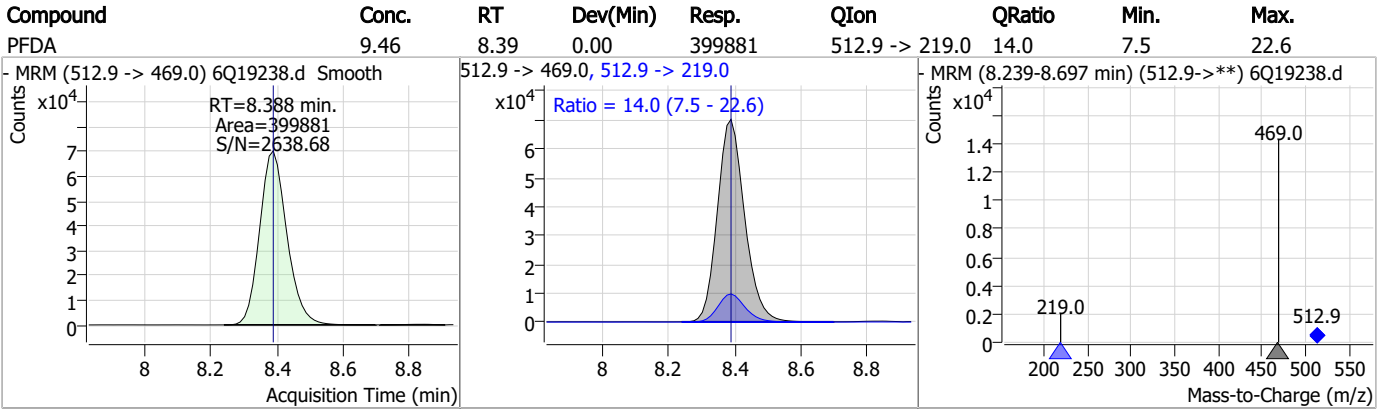
Perfluorinated Compounds by LC/MS/MS



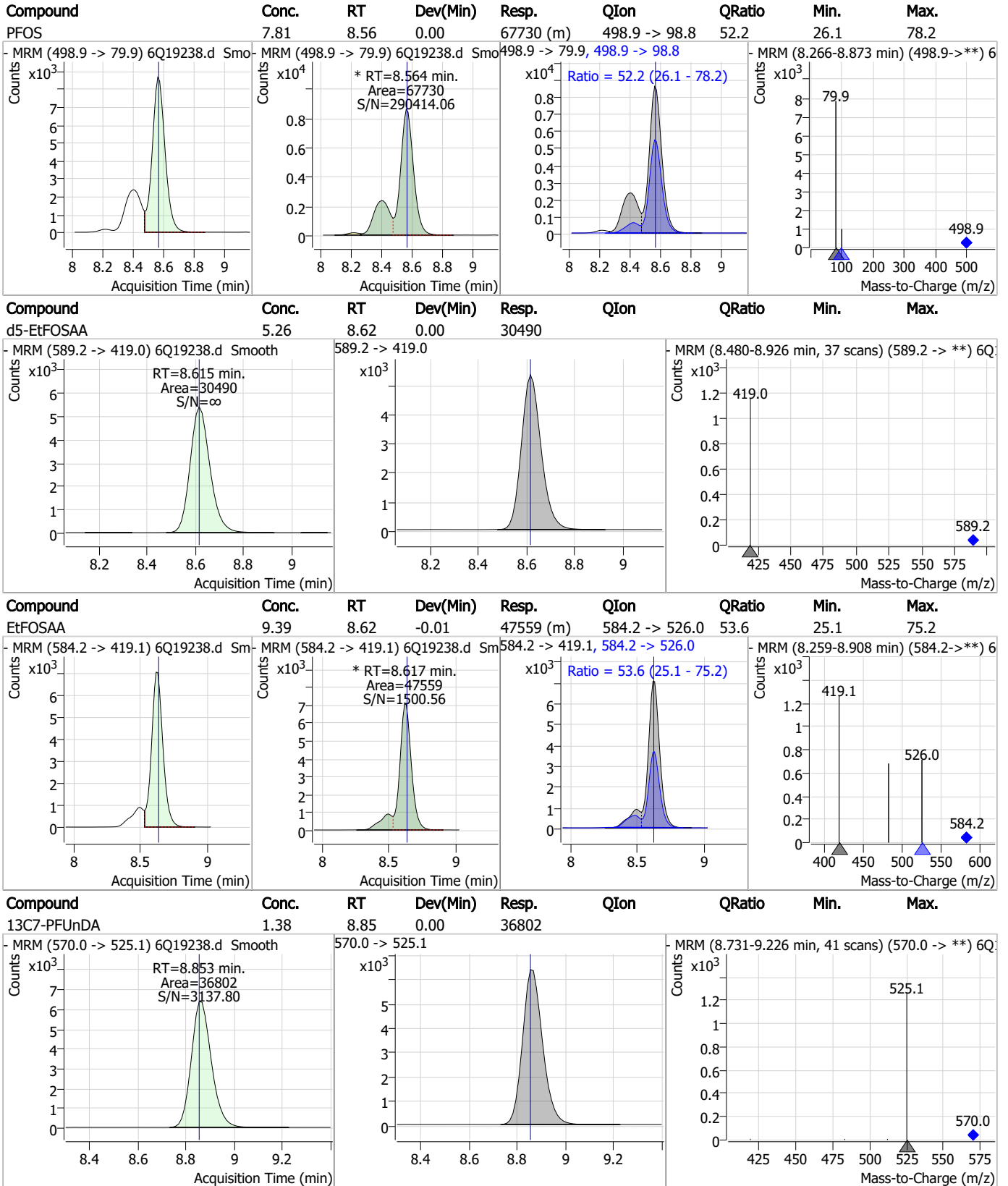
7.6.8

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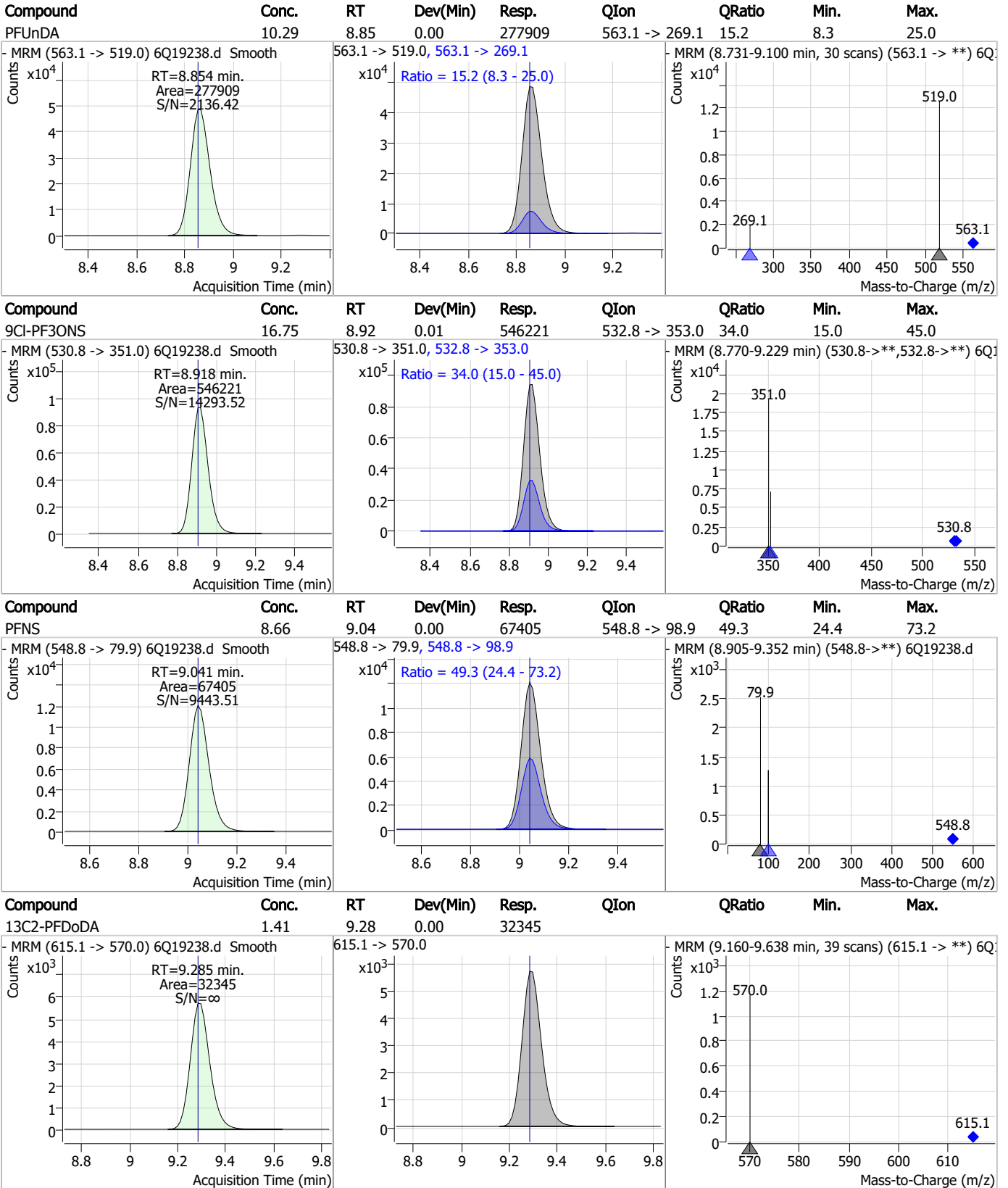
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



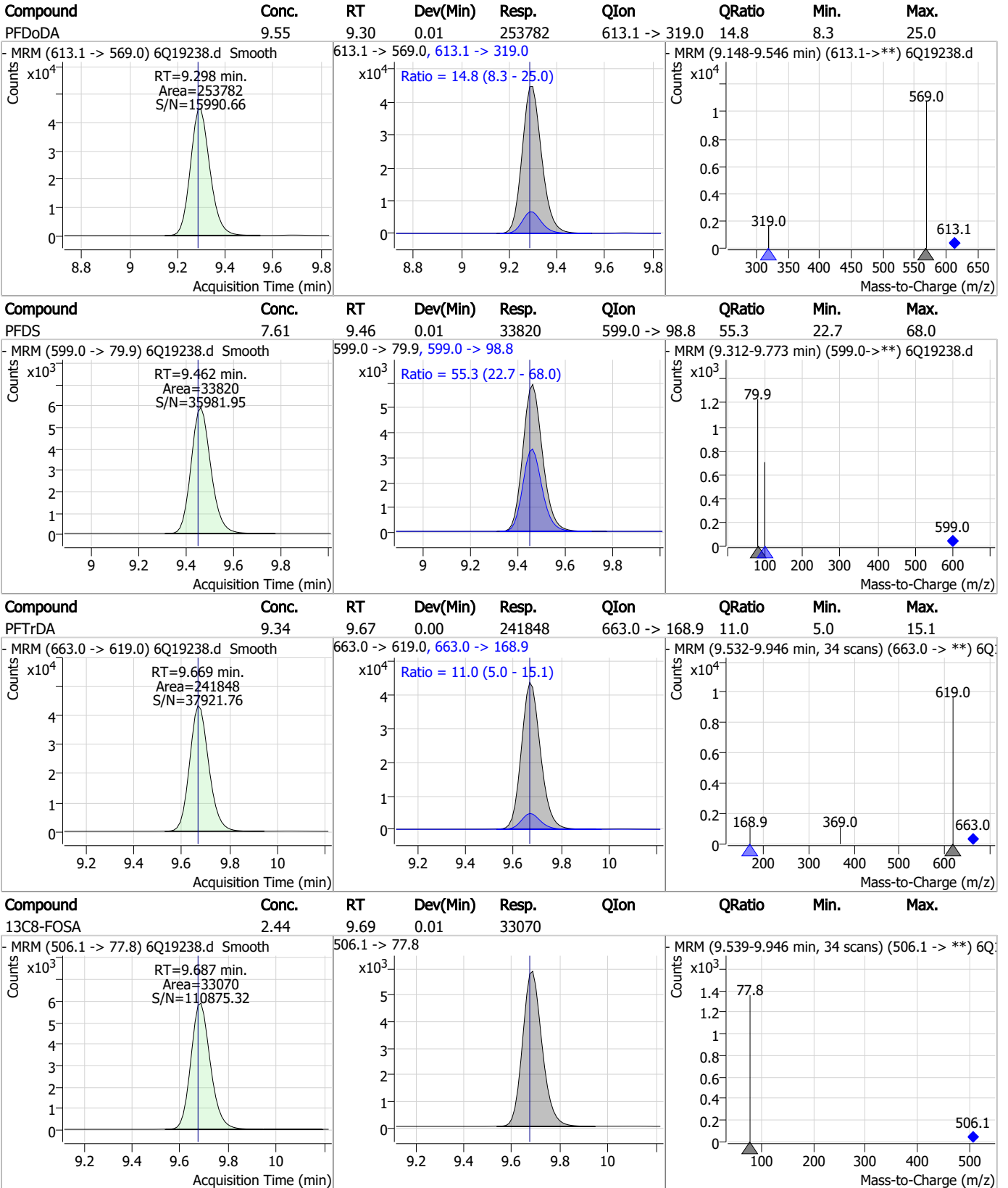
Perfluorinated Compounds by LC/MS/MS



7.6.8

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Perfluorinated Compounds by LC/MS/MS

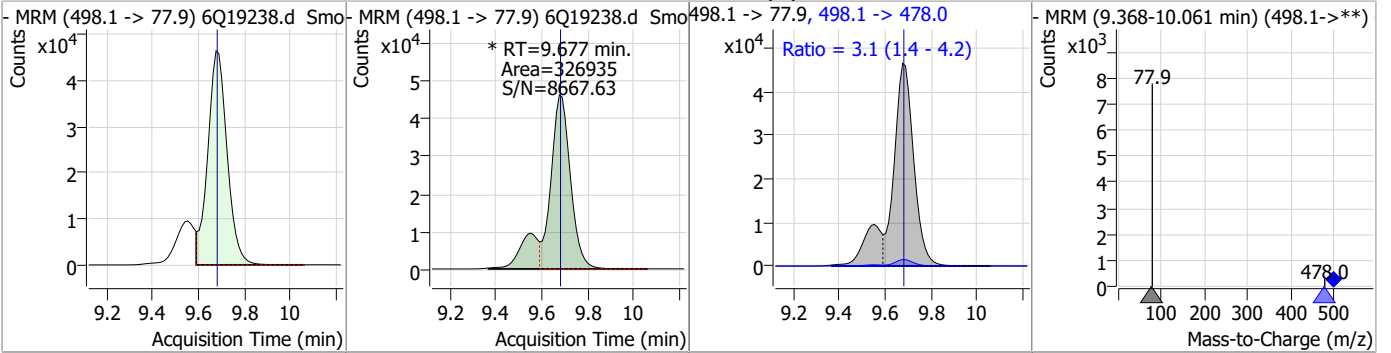


7.6.8

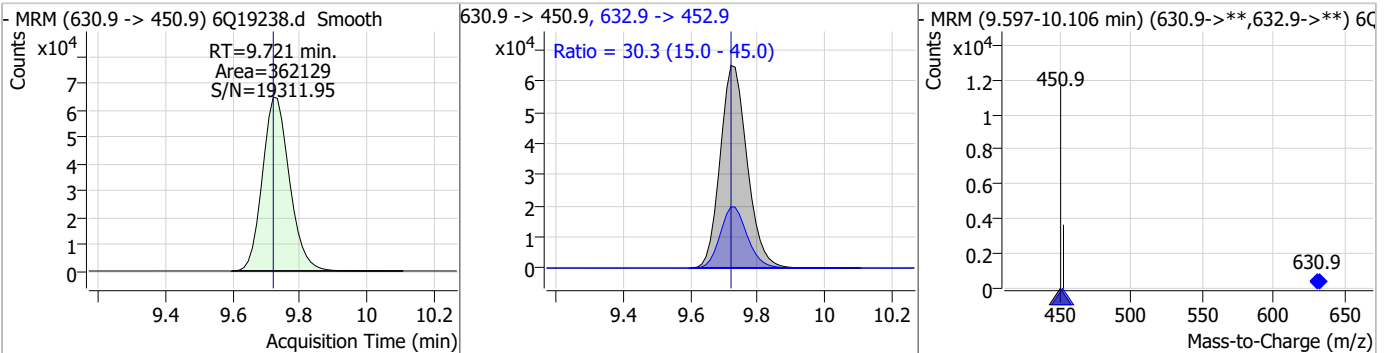
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Perfluorinated Compounds by LC/MS/MS

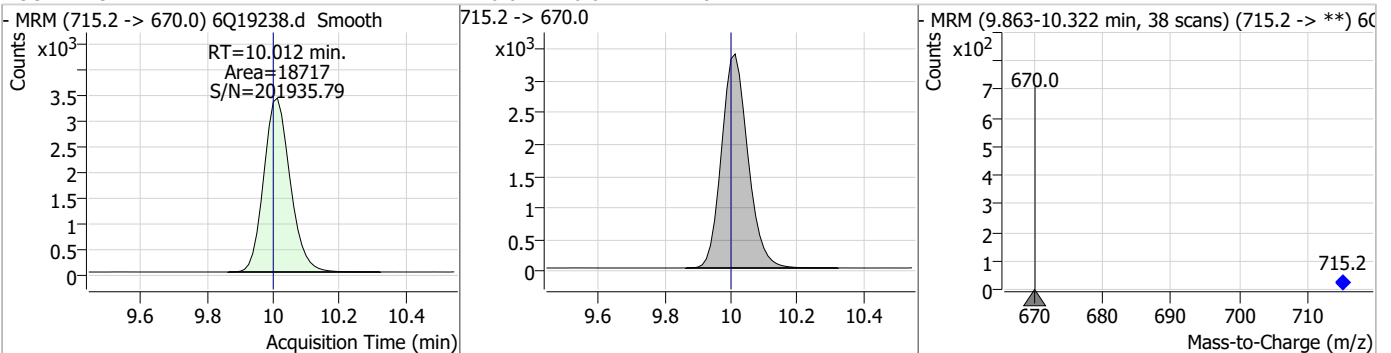
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	24.09	9.68	0.00	326935 (m)	498.1 -> 478.0	3.1	1.4	4.2



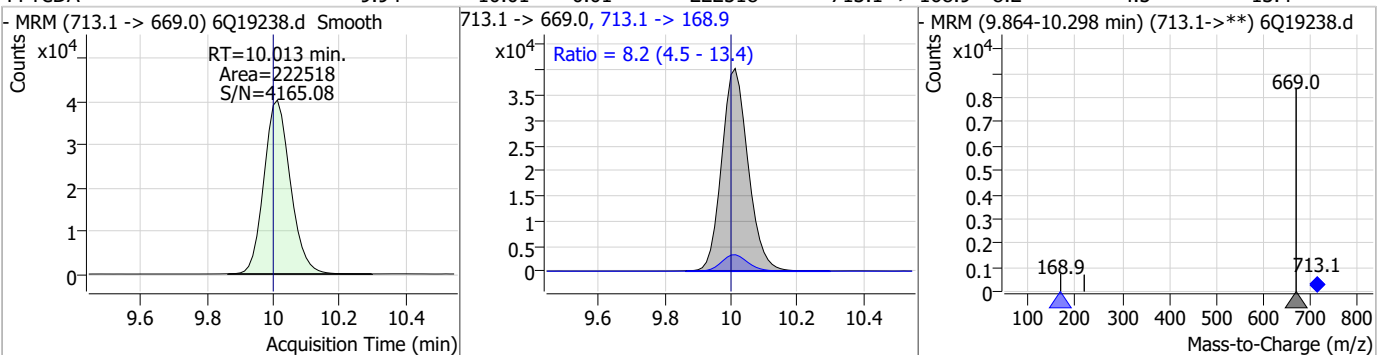
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	18.55	9.72	0.00	362129	632.9 -> 452.9	30.3	15.0	45.0



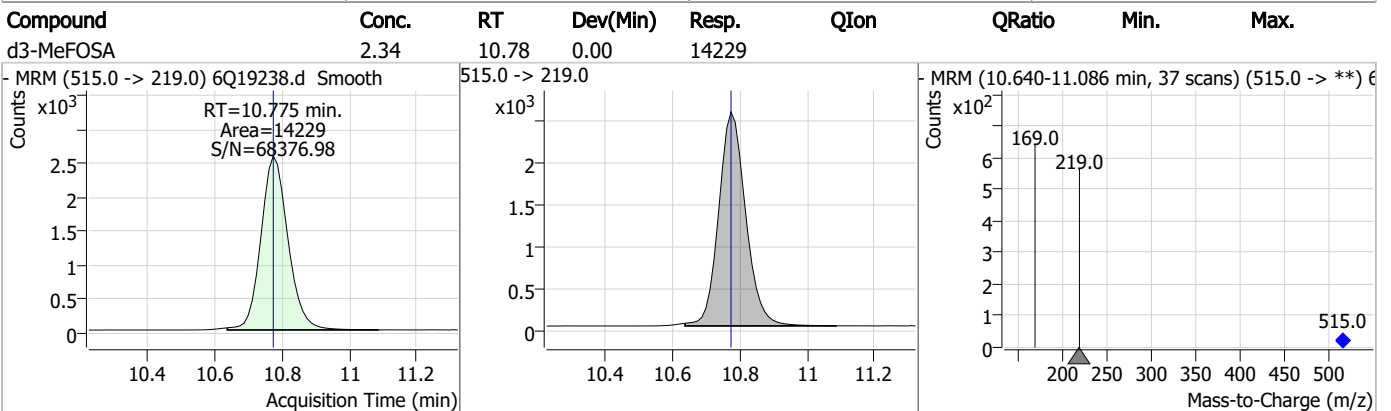
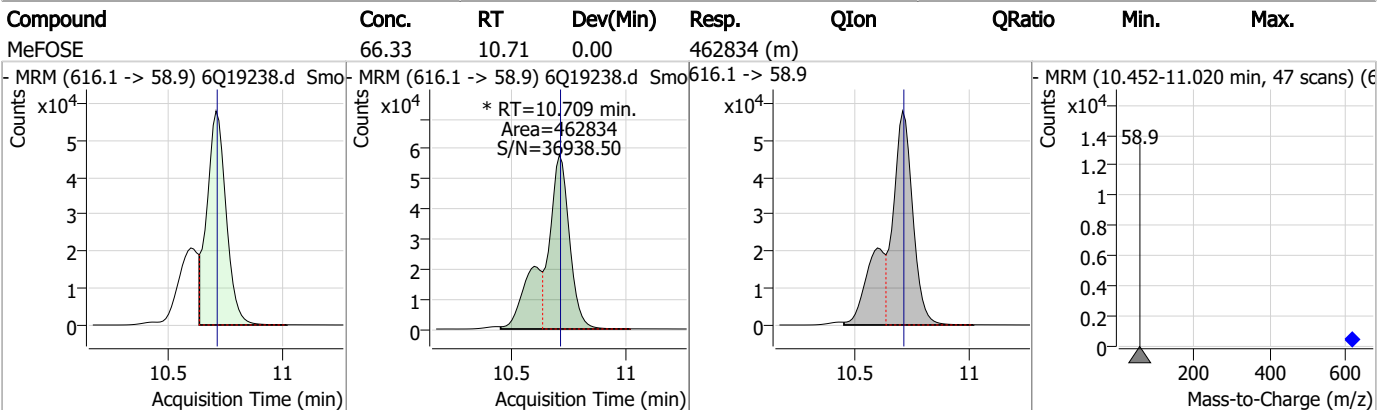
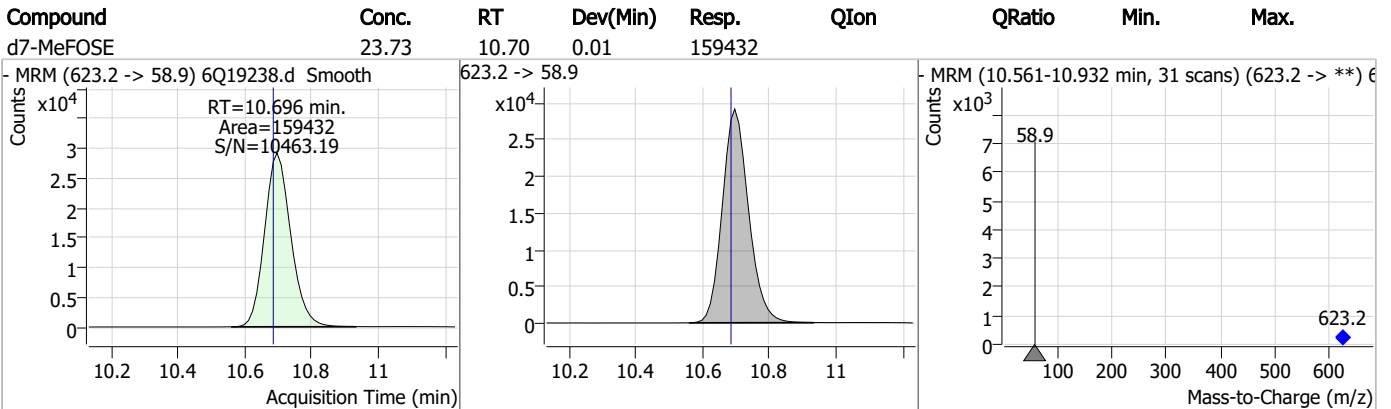
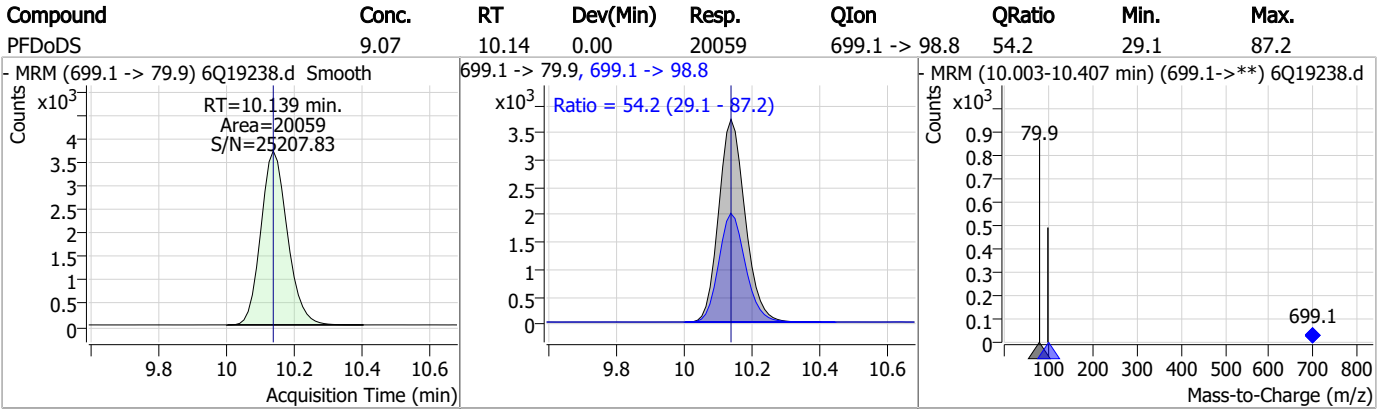
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.41	10.01	0.01	18717	715.2 -> 670.0	8.2	4.5	13.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.94	10.01	0.01	222518	713.1 -> 168.9	8.2	4.5	13.4

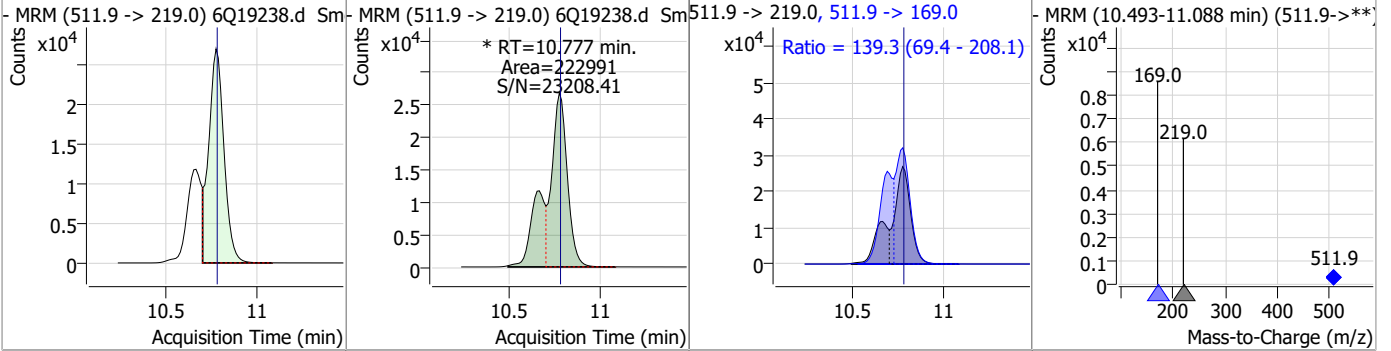


Perfluorinated Compounds by LC/MS/MS

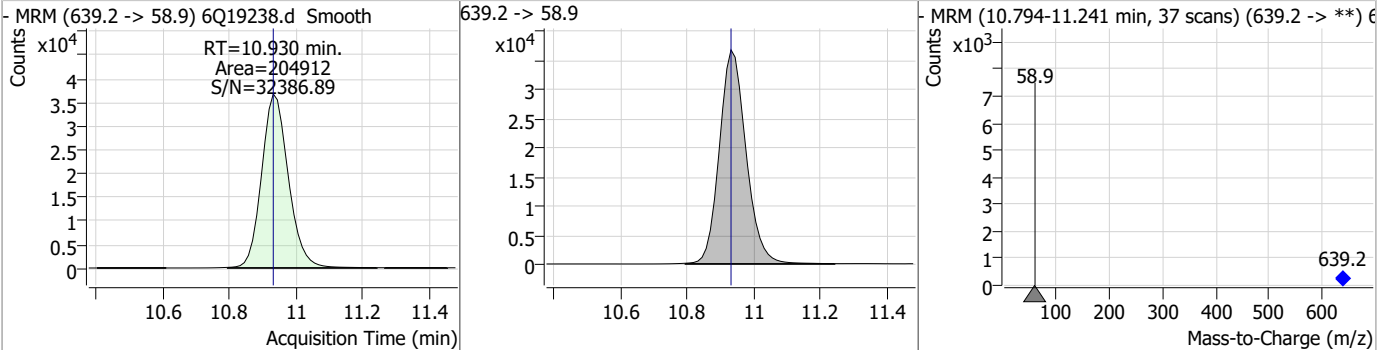


Perfluorinated Compounds by LC/MS/MS

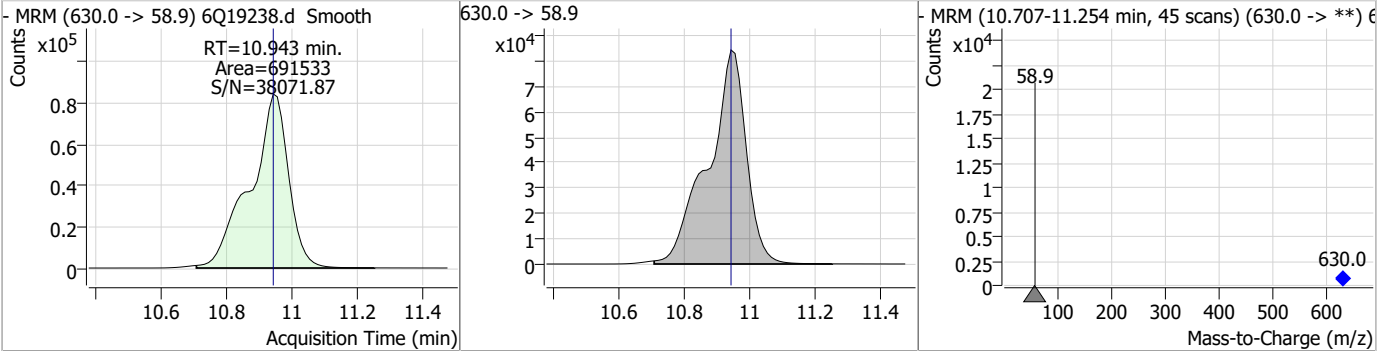
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSEA	35.75	10.78	0.00	222991 (m)	511.9 -> 169.0	139.3	69.4	208.1



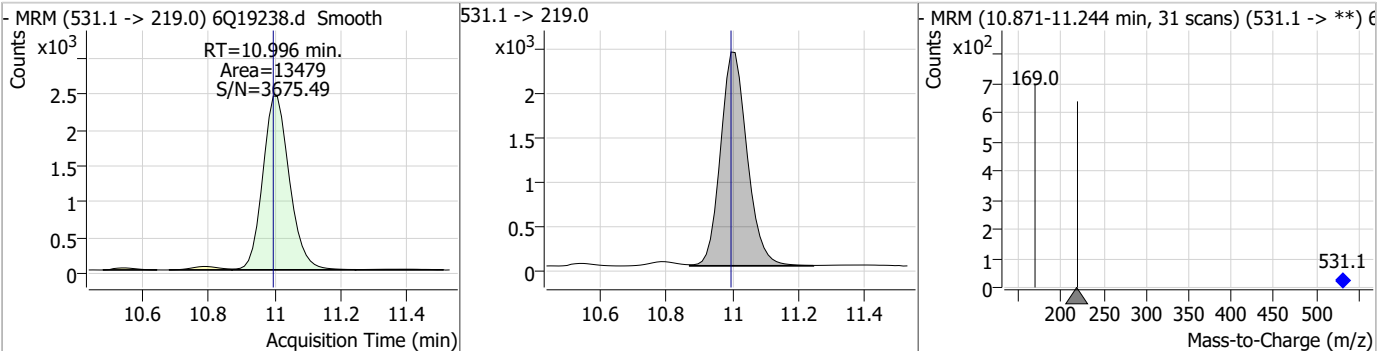
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.42	10.93	0.00	204912				



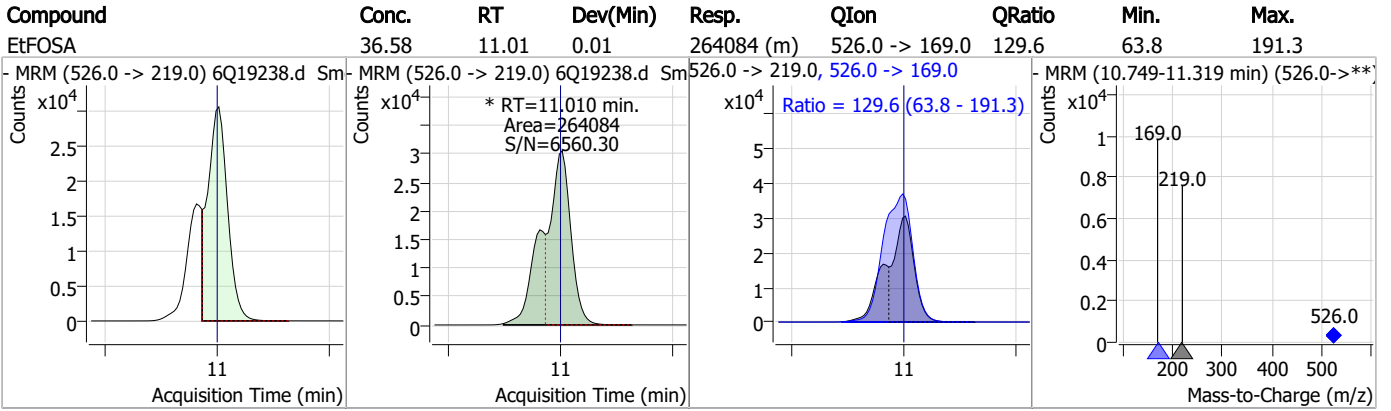
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	63.92	10.94	0.00	691533				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSEA	2.29	11.00	0.00	13479				



Perfluorinated Compounds by LC/MS/MS



7.6.8

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Manual Integration Approval Summary

Sample Number: S6Q287-RT Method: EPA DRAFT 1633
Lab FileID: 6Q19238.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 15:20 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.35	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
Perfluorononanoic acid	375-95-1		7.88	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.62	Split peak
PFOSA	754-91-6		9.68	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak
EtFOSA	4151-50-2		11.01	Split peak

7.6.8.1
7

QQQ Check Tune Report



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 30 May 2023 10:49:21
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.78E+0 [R] (Torr); 2.89E-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

7.7.1

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QQQ Check Tune Report



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	112.95	-0.04	Pass	0.70	0.65	-0.05	Pass	455038
302.00	301.98	-0.02	Pass	0.70	0.68	-0.02	Pass	1143761
601.98	601.92	-0.06	Pass	0.70	0.60	-0.10	Pass	2118549
1033.99	1033.82	-0.17	Pass	0.70	0.59	-0.11	Pass	1683143
1633.95	1633.69	-0.26	Adjust	0.70	0.64	-0.06	Pass	1158862
2233.91	2233.43	-0.48	Adjust	0.70	0.70	0.00	Pass	440499

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	0.70	0.70	0.00	Pass	142184
112.99	112.96	-0.03	Pass	0.70	0.76	0.06	Pass	581275
302.00	301.97	-0.03	Pass	0.70	0.63	-0.07	Pass	1512926
601.98	601.97	-0.01	Pass	0.70	0.68	-0.02	Pass	1340144
1033.99	1033.86	-0.13	Pass	0.70	0.69	-0.01	Pass	900417
1633.95	1633.75	-0.20	Pass	0.70	0.74	0.04	Pass	690843
2233.91	2233.62	-0.29	Pass	0.70	0.69	-0.01	Pass	267882

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	1.20	0.00	Pass	527677
302.00	301.90	-0.10	Pass	1.20	1.35	0.15	Pass	1480594
601.98	601.94	-0.04	Pass	1.20	1.48	0.28	Pass	3006683
1033.99	1033.77	-0.22	Pass	1.20	1.45	0.25	Pass	2687346
1633.95	1633.65	-0.30	Pass	1.20	1.44	0.24	Pass	1828520
2233.91	2233.52	-0.39	Pass	1.20	1.38	0.18	Pass	851214

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.08	-0.12	Pass	175167
112.99	112.96	-0.03	Pass	1.20	1.13	-0.07	Pass	723223
302.00	301.91	-0.09	Pass	1.20	1.12	-0.08	Pass	1714873
601.98	601.88	-0.10	Pass	1.20	1.30	0.10	Pass	2021470
1033.99	1033.82	-0.17	Pass	1.20	1.32	0.12	Pass	1614259
1633.95	1633.70	-0.25	Pass	1.20	1.21	0.01	Pass	1644467
2233.91	2233.55	-0.36	Pass	1.20	1.08	-0.12	Pass	660835

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.92	-0.07	Pass	2.50	2.42	-0.08	Pass	572643
302.00	301.78	-0.22	Pass	2.50	2.58	0.08	Pass	1936780
601.98	601.85	-0.13	Pass	2.50	2.68	0.18	Pass	3673966
1033.99	1033.77	-0.22	Pass	2.50	2.66	0.16	Pass	4191544
1633.95	1633.55	-0.40	Pass	2.50	2.61	0.11	Pass	3493161
2233.91	2233.42	-0.49	Pass	2.50	2.17	-0.33	Pass	2051281

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.93	-0.07	Pass	2.50	2.52	0.02	Pass	203780
112.99	112.93	-0.06	Pass	2.50	2.53	0.03	Pass	984576
302.00	301.95	-0.05	Pass	2.50	2.55	0.05	Pass	2407993
601.98	601.85	-0.13	Pass	2.50	2.70	0.20	Pass	3235376
1033.99	1033.89	-0.10	Pass	2.50	2.83	0.33	Pass	3164989
1633.95	1633.60	-0.35	Pass	2.50	2.42	-0.08	Pass	3058922
2233.91	2233.65	-0.26	Pass	2.50	2.33	-0.17	Pass	1539250

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18586.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:16:21 PM
 Sample Name : ic279-1
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	175926	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58775	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	64804	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	58558	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92083	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41065	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31631	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	28658	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15918	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32460	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	23309	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	14544	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13033	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3770	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5269	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5181	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25301	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	106215	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	145212	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12992	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12922	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17710	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	73829	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	10307	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97513	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	33316	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50593	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	60249	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3770	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5269	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5181	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-PFDoDA	8.900	615.1 -> 570.0	28658	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15918	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-PFBS	5.334	302.1 -> 79.9	23309	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.130	402.1 -> 79.9	14544	2.53 µg/L	0.000

7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFBA	2.822	216.8 -> 171.9	175926	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	58558	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.417	318.0 -> 273.0	64804	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	58775	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C6-PFDA	8.027	519.1 -> 474.1	24385	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31631	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.598	506.1 -> 77.8	32460	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	7.026	421.1 -> 376.0	92083	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.177	507.1 -> 79.9	13033	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C9-PFNA	7.545	472.1 -> 427.0	41065	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28690	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40509	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	12922	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25301	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	106215	23.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	145212	24.96 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	12992	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	4574	0.84 µg/L	96
		327.1 -> 80.9	1710		
6:2FTS	6.801	427.1 -> 407.0	4592	0.89 µg/L	98
		427.1 -> 80.9	1605		
8:2FTS	7.816	527.1 -> 507.0	2744	0.95 µg/L	94
		527.1 -> 80.8	1065		
EtFOSAA	8.280	584.2 -> 419.1	788	0.24 µg/L	96
		584.2 -> 526.0	451		
FOSA	9.589	498.1 -> 77.9	2619	0.23 µg/L	98
		498.1 -> 478.0	94		
MeFOSAA	8.085	570.1 -> 419.0	1177	0.20 µg/L	93
		570.1 -> 483.0	191		
PFBA	2.818	212.8 -> 168.9	5281	0.91 µg/L	100
PFBS	5.335	298.7 -> 79.9	1603	0.20 µg/L	96
		298.7 -> 98.8	614		
PFDA	8.027	512.9 -> 469.0	6728	0.24 µg/L	100
		512.9 -> 219.0	1068		
PFDODA	8.900	613.1 -> 569.0	4579	0.23 µg/L	95
		613.1 -> 319.0	724		
PFDS	9.052	599.0 -> 79.9	769	0.24 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	392			
PFHpA	6.382	363.1 -> 319.0	6054	0.23	µg/L	95
		363.1 -> 169.0	1031			
PFHpS	7.685	449.0 -> 79.9	1473	0.24	µg/L	95
		449.0 -> 98.9	778			
PFHxA	5.420	313.0 -> 269.0	4961	0.23	µg/L	98
		313.0 -> 118.9	260			
PFHxS	7.131	398.7 -> 79.9	1378	0.21	µg/L	m 94
		398.7 -> 98.9	709			
PFNA	7.545	463.0 -> 419.0	7040	0.24	µg/L	100
		463.0 -> 219.0	1371			
PFNS	8.631	548.8 -> 79.9	1282	0.25	µg/L	96
		548.8 -> 98.9	661			
PFOA	7.028	413.0 -> 369.0	8309	0.21	µg/L	95
		413.0 -> 169.0	1614			
PFOS	8.178	498.9 -> 79.9	1321	0.22	µg/L	92
		498.9 -> 98.8	627			
PFPeA	4.212	263.0 -> 219.0	6565	0.47	µg/L	100
PFPeS	6.422	349.1 -> 79.9	1435	0.22	µg/L	99
		349.1 -> 98.9	691			
PFTeDA	9.628	713.1 -> 669.0	3669	0.23	µg/L	98
		713.1 -> 168.9	310			
PFTrDA	9.284	663.0 -> 619.0	4782	0.24	µg/L	99
		663.0 -> 168.9	457			
PFUnDA	8.468	563.1 -> 519.0	4625	0.23	µg/L	89
		563.1 -> 269.1	917			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	6290	0.41	µg/L	99
		632.9 -> 452.9	2001			
9Cl-PF3ONS	8.508	530.8 -> 351.0	9821	0.41	µg/L	100
		532.8 -> 353.0	3236			
ADONA	6.632	376.9 -> 250.9	23388	0.43	µg/L	100
		376.9 -> 84.8	6321			
HFPO-DA	5.783	284.9 -> 168.9	1549	0.45	µg/L	100
		284.9 -> 184.9	211			
3:3FTCA	3.671	241.0 -> 177.0	1013	1.12	µg/L	93
		241.0 -> 117.0	174			
5:3FTCA	6.086	341.0 -> 237.1	23311	5.96	µg/L	99
		341.0 -> 217.0	16635			
7:3FTCA	7.510	441.0 -> 316.9	15138	5.65	µg/L	94
		441.0 -> 336.9	34923			
EtFOSA	10.974	526.0 -> 219.0	2683	0.44	µg/L	91
		526.0 -> 169.0	3611			
EtFOSE	10.907	630.0 -> 58.9	7379	1.14	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	2165	0.46	µg/L	80
		511.9 -> 169.0	3384			
MeFOSE	10.661	616.1 -> 58.9	4968	1.18	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	331	0.23	µg/L	97
		699.1 -> 98.8	170			
NFDHA	5.288	295.0 -> 201.0	1301	0.49	µg/L	90
		295.0 -> 84.9	286			
PFMBA	4.626	279.0 -> 85.1	4455	0.46	µg/L	100
PFMPA	3.363	229.0 -> 84.9	3329	0.45	µg/L	100
PFEESA	5.875	314.8 -> 134.9	10878	0.39	µg/L	99
		314.8 -> 82.9	403			

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

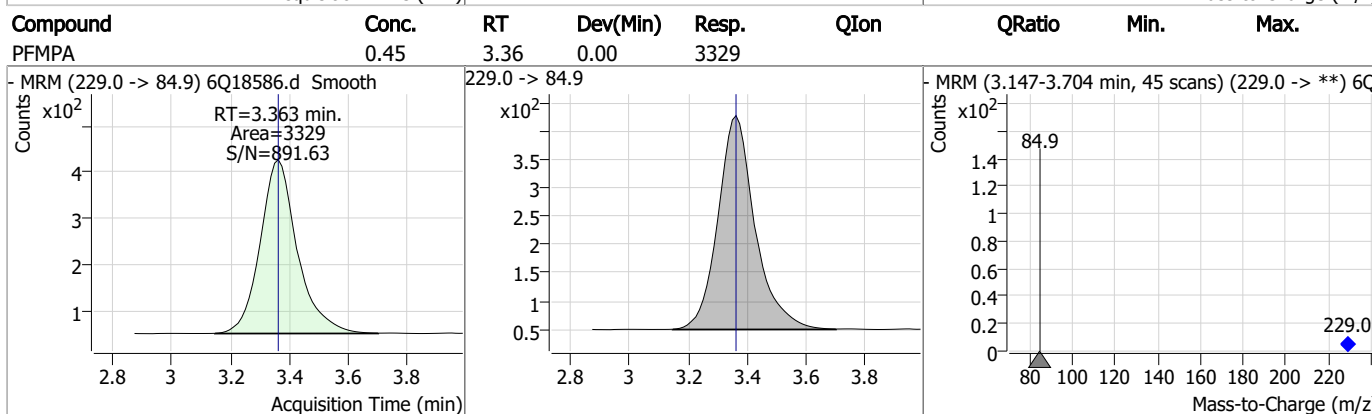
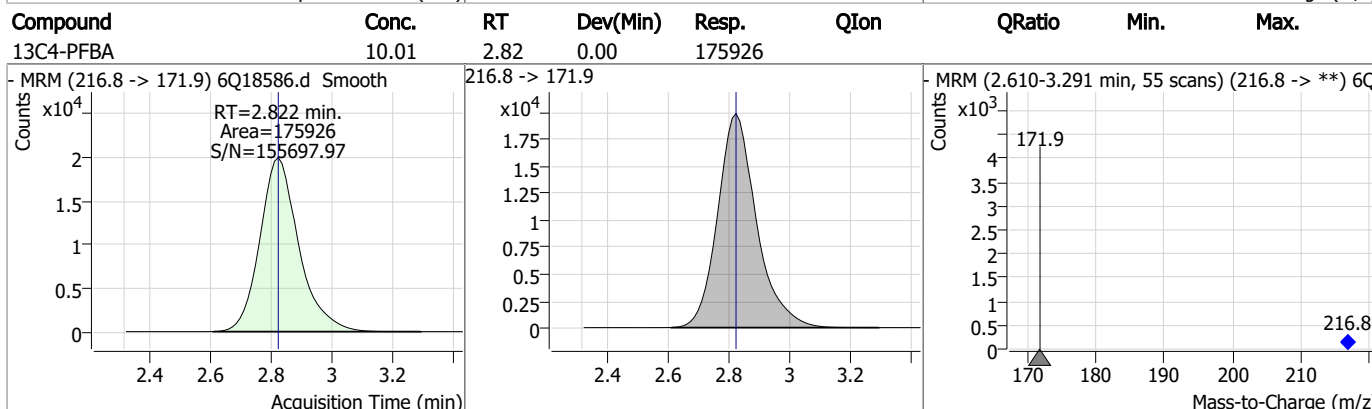
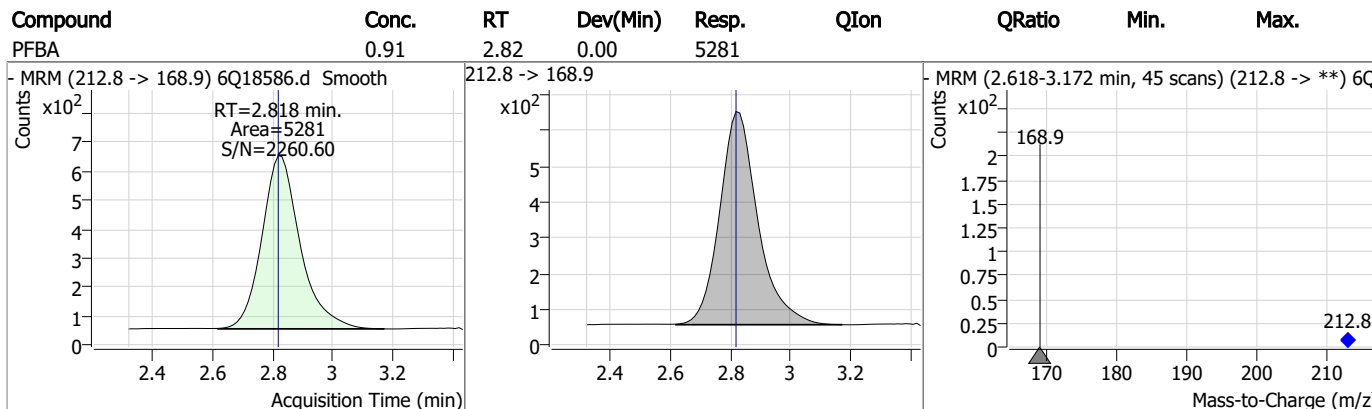
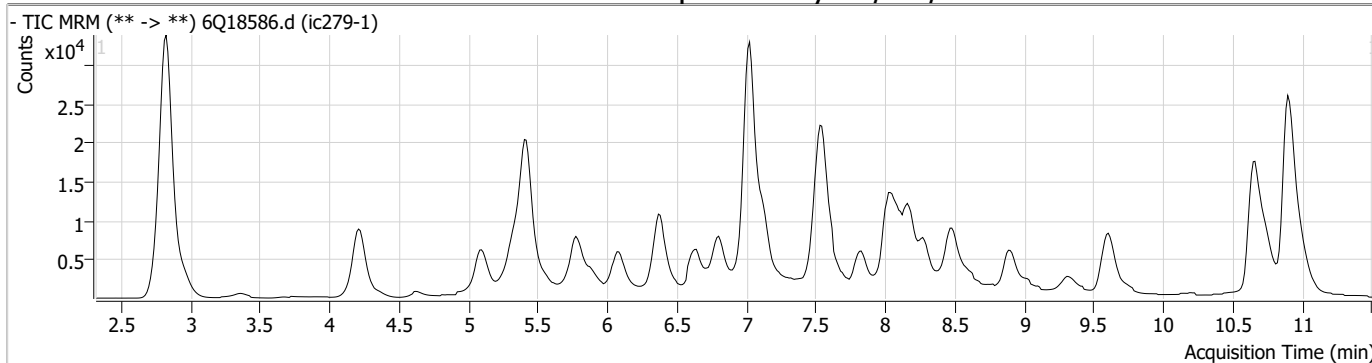
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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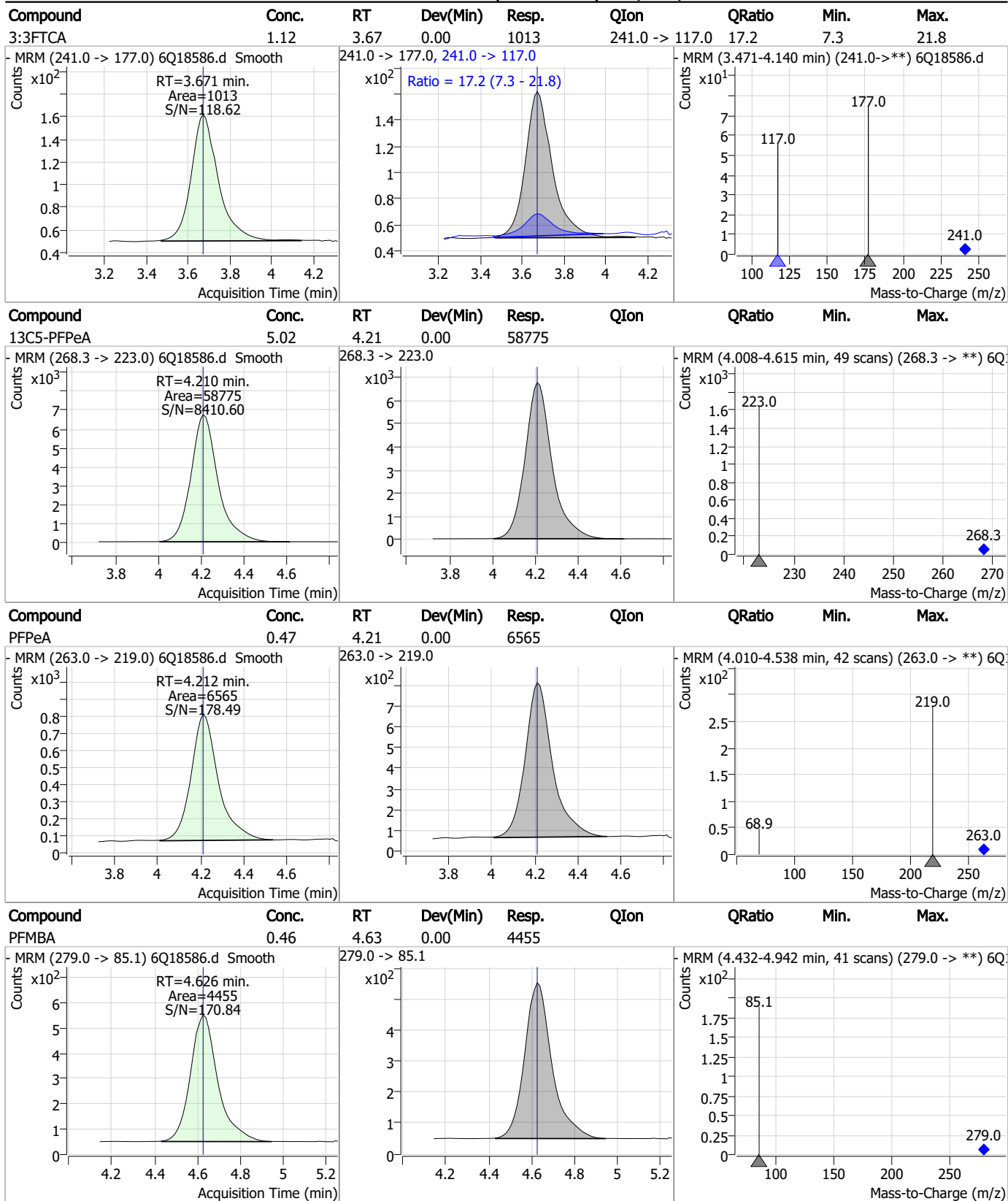
7.7.2
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Perfluorinated Compounds by LC/MS/MS

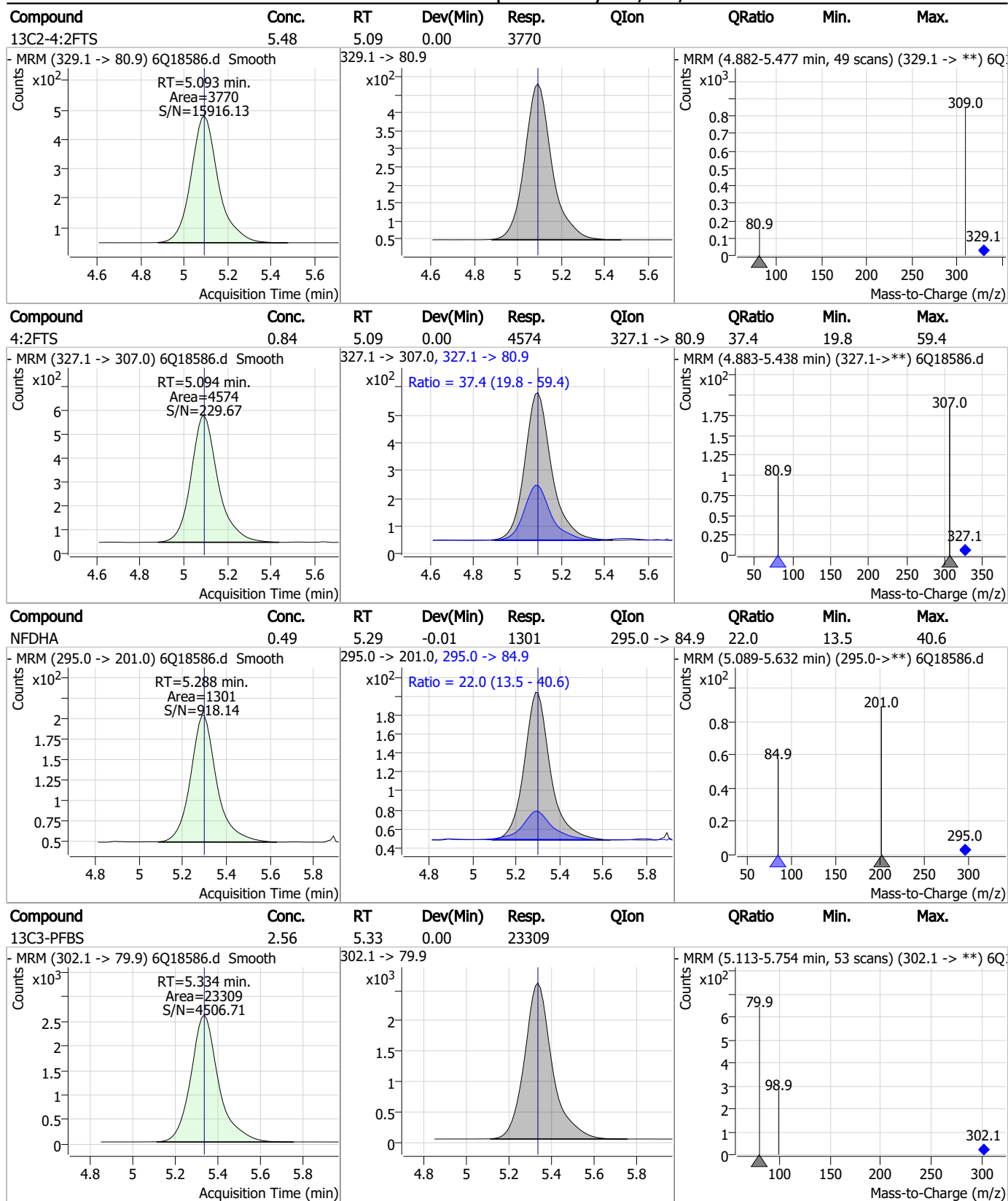


Perfluorinated Compounds by LC/MS/MS



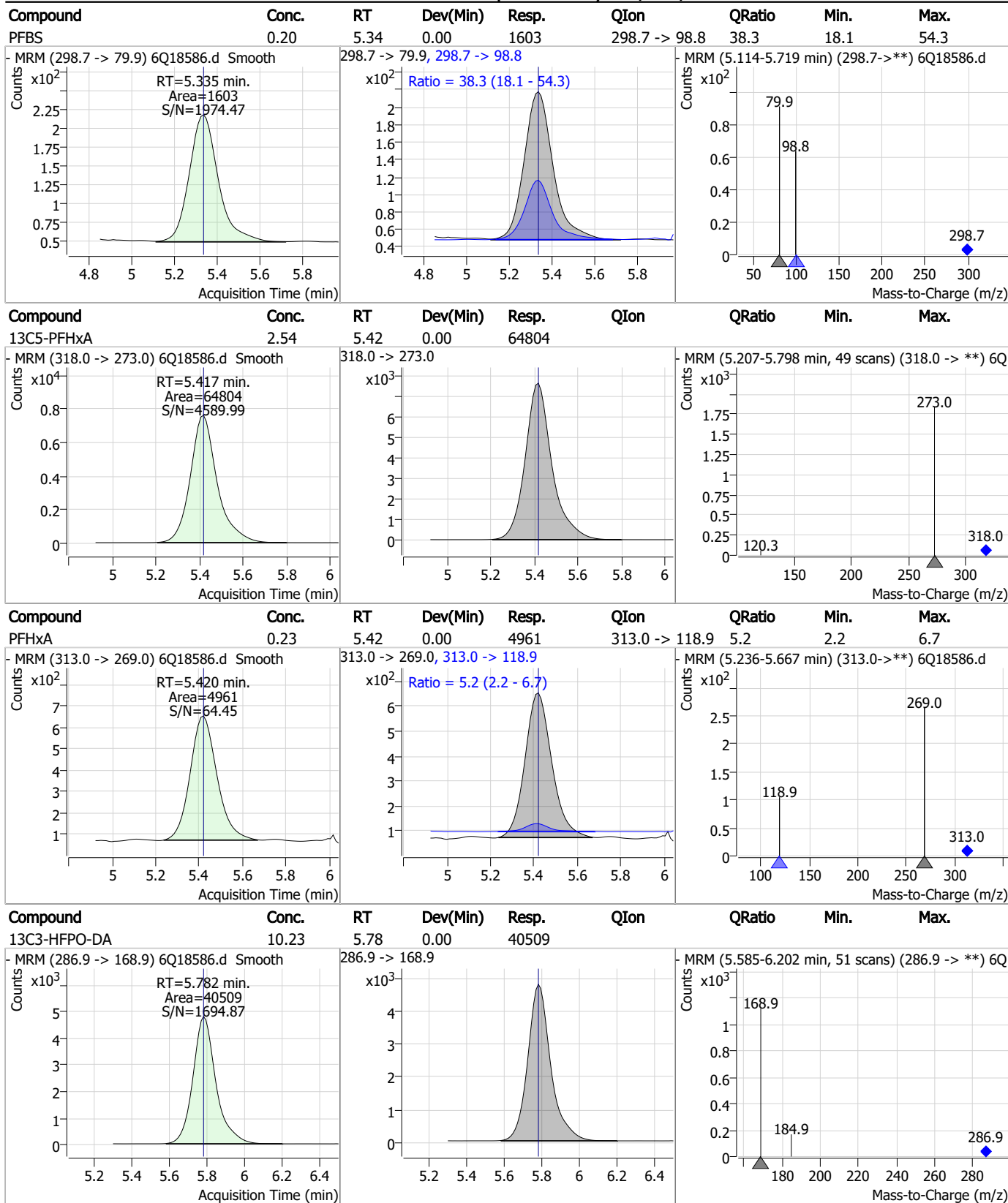
7.7.2
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Perfluorinated Compounds by LC/MS/MS



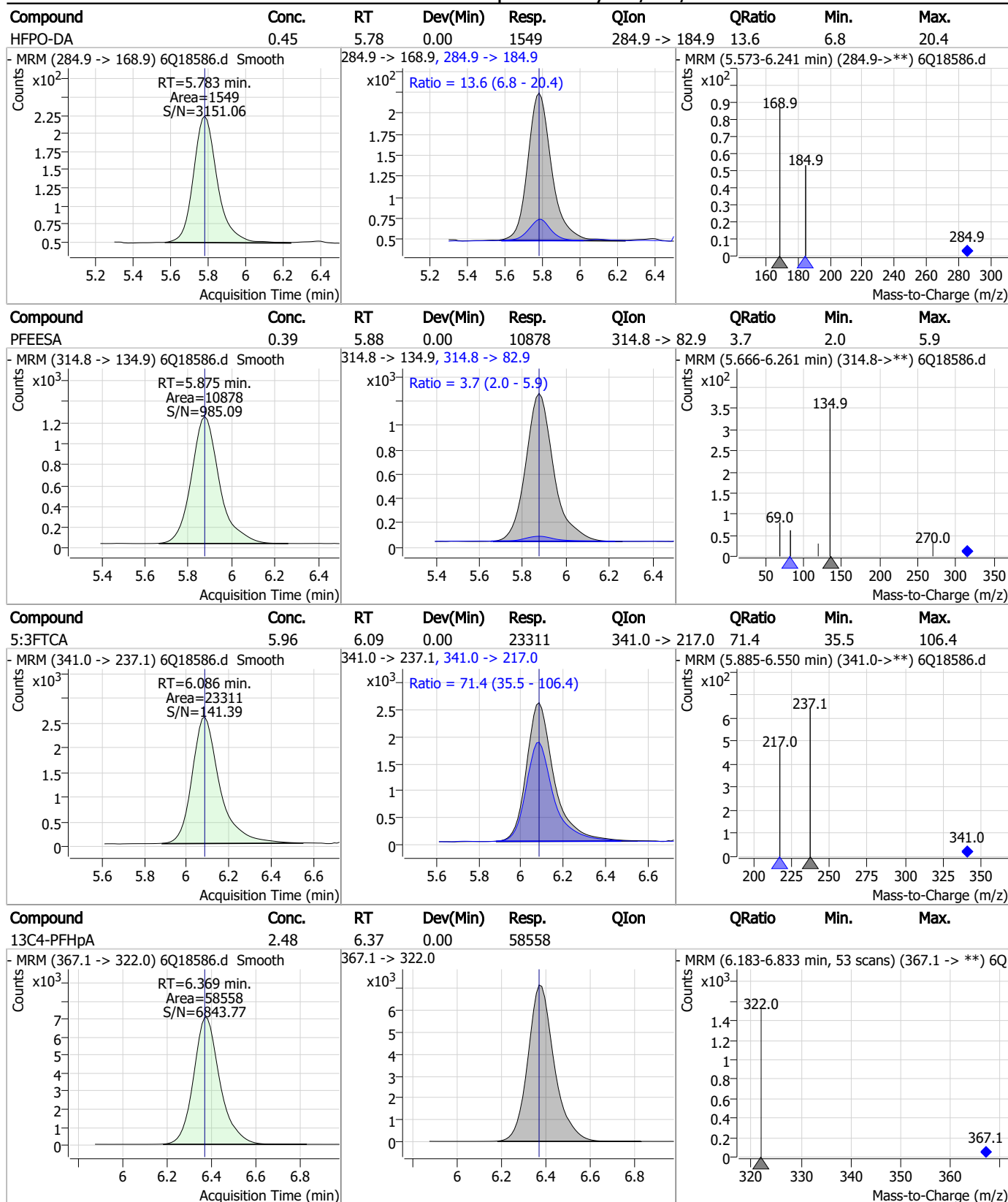
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Perfluorinated Compounds by LC/MS/MS



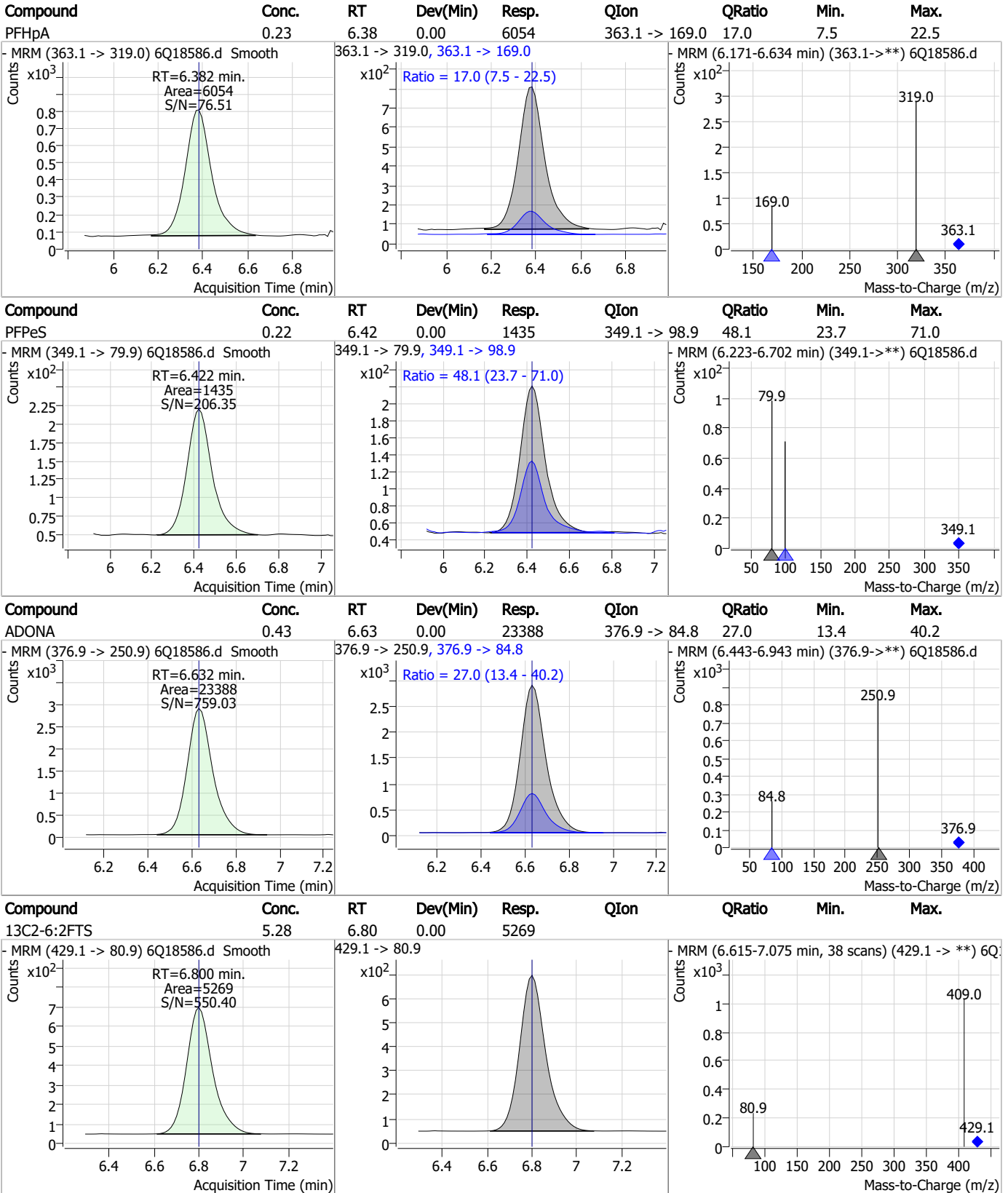
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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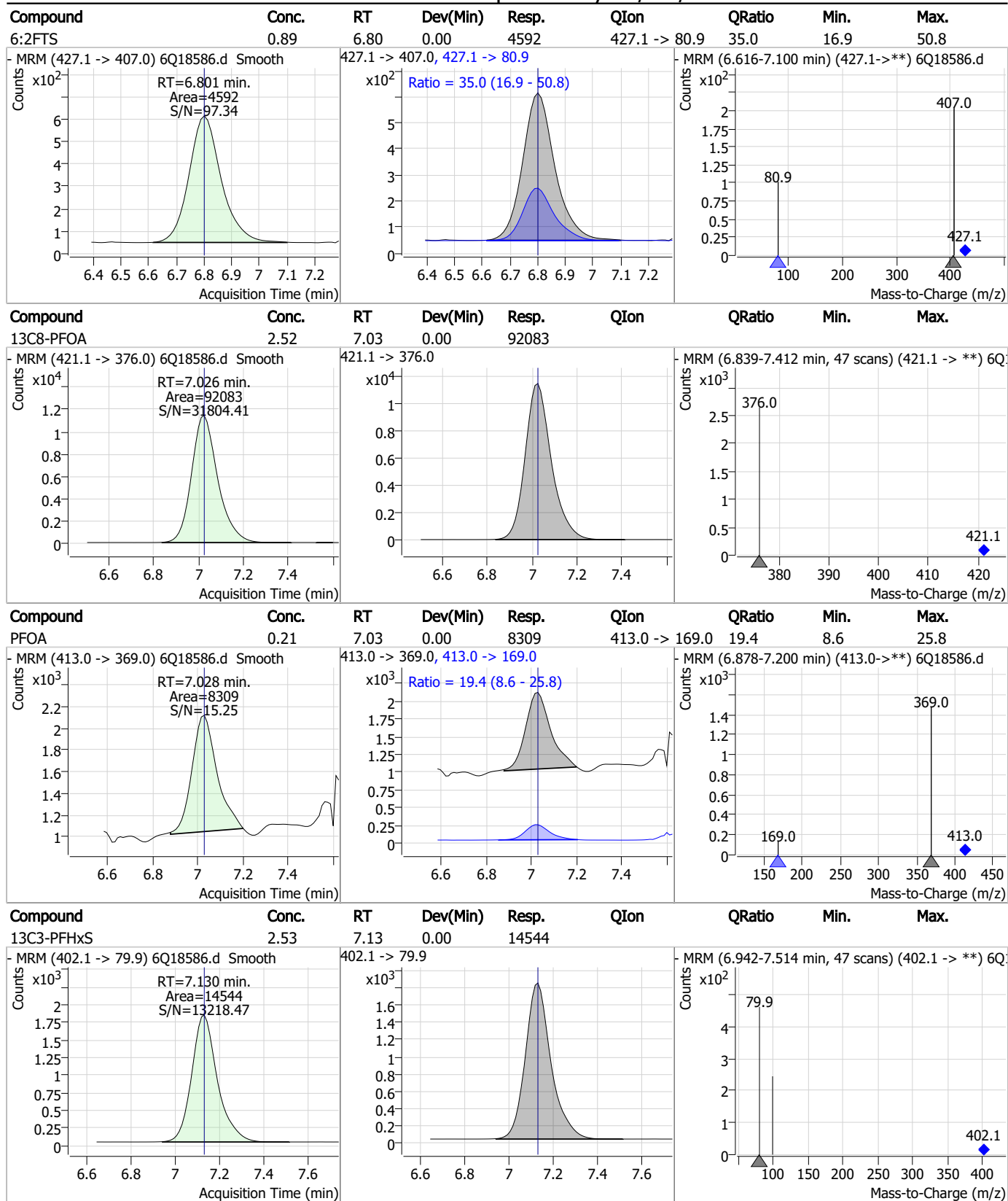
Perfluorinated Compounds by LC/MS/MS



7.7.2

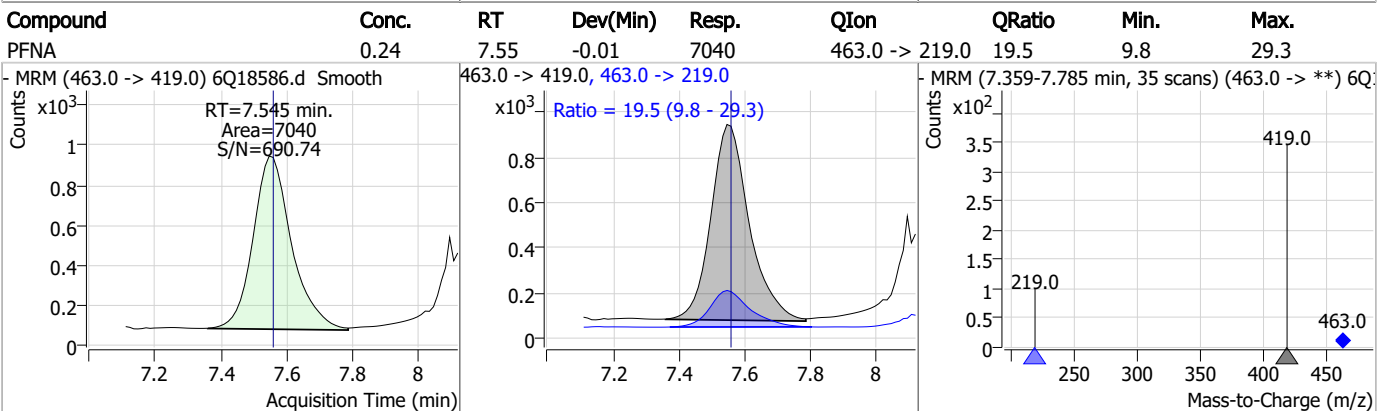
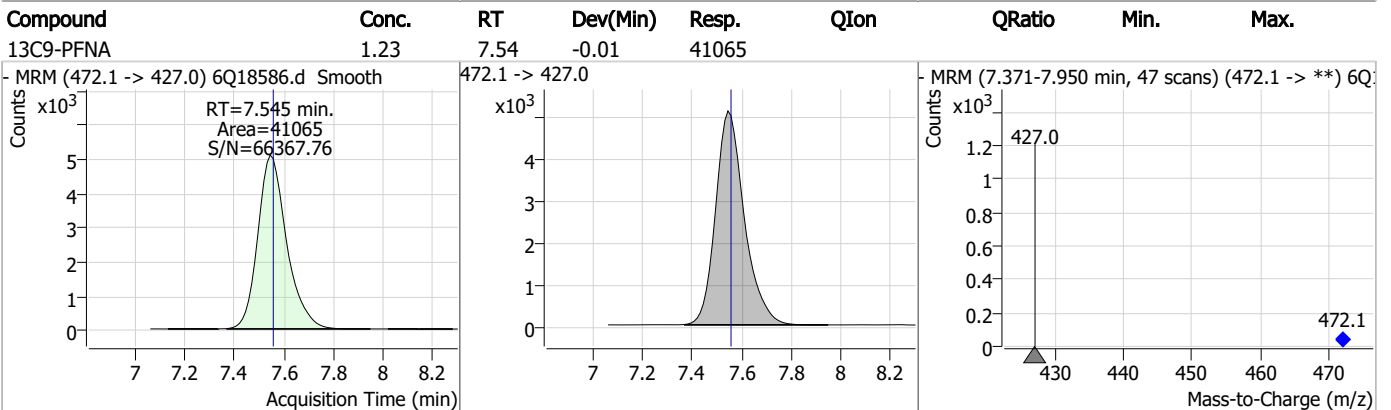
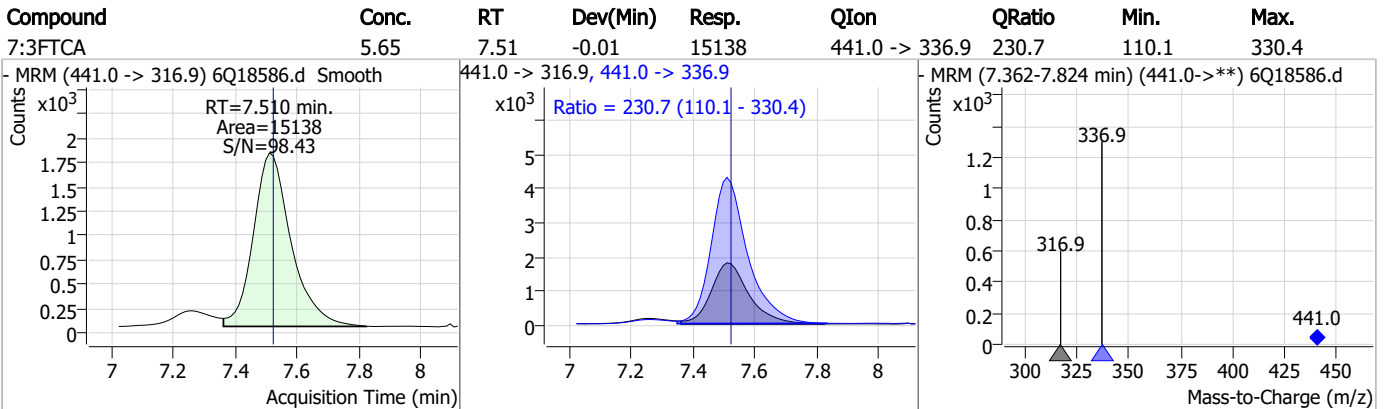
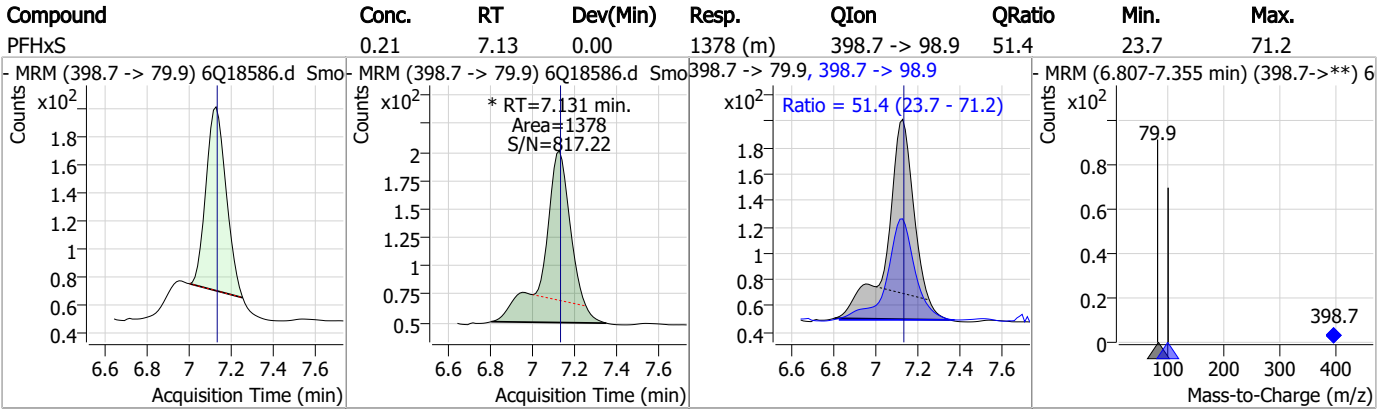
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Perfluorinated Compounds by LC/MS/MS

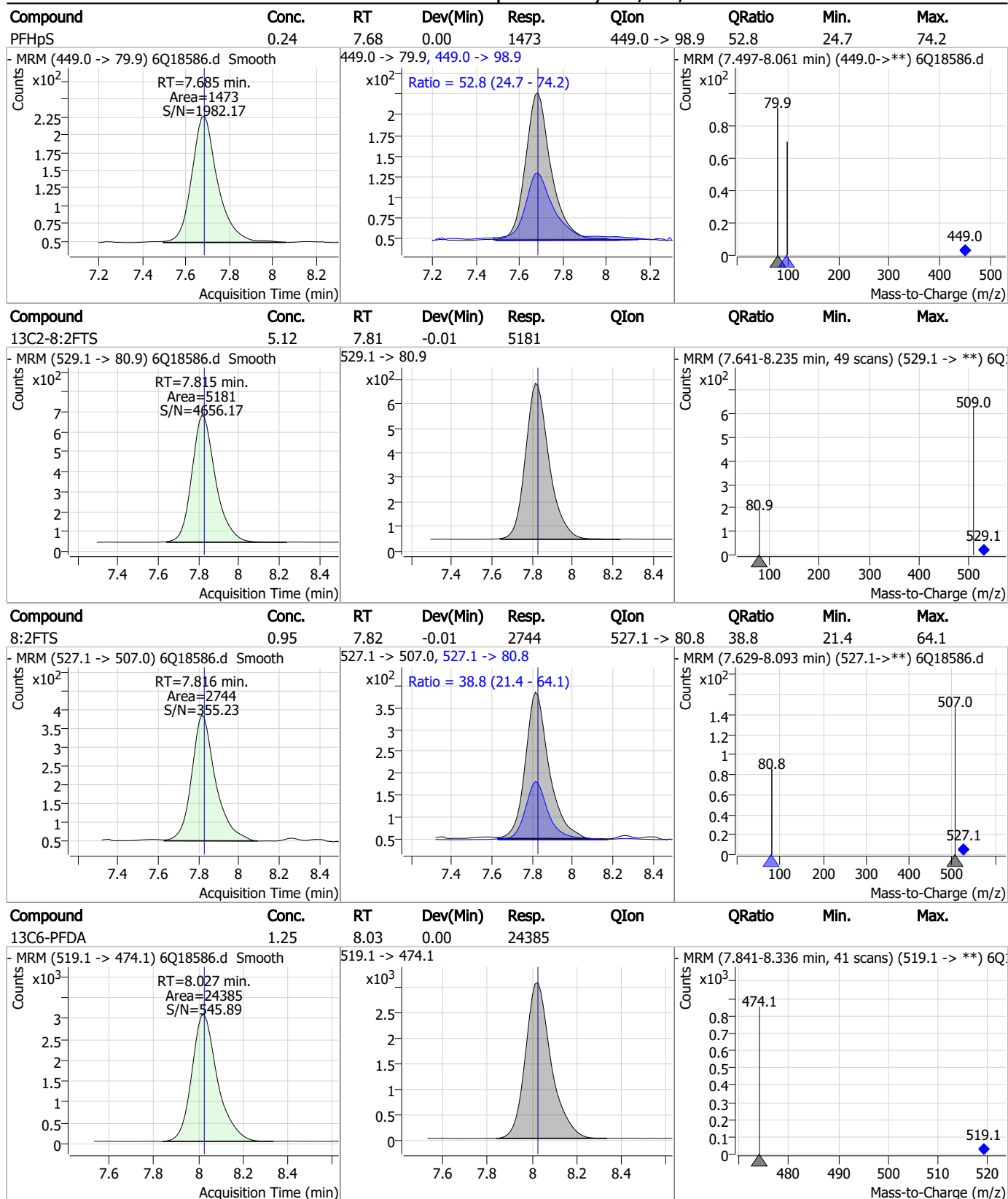


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Perfluorinated Compounds by LC/MS/MS



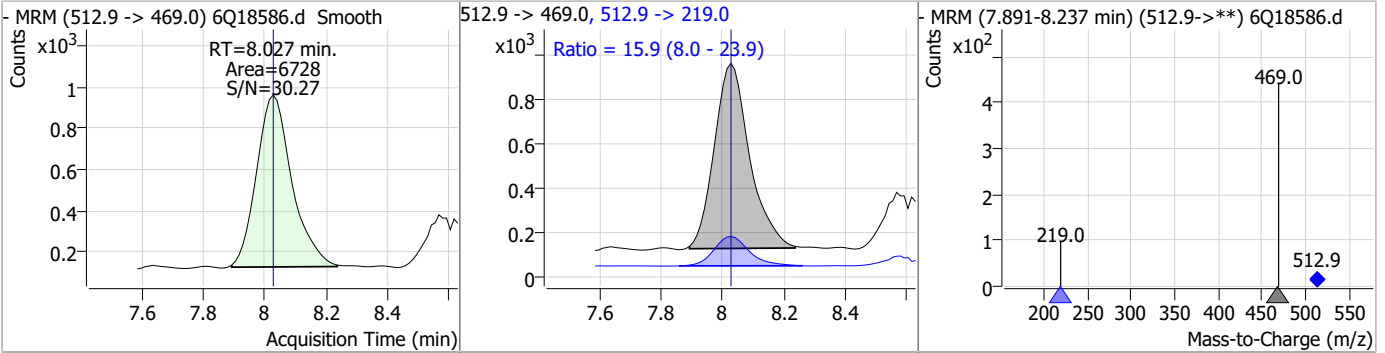
Perfluorinated Compounds by LC/MS/MS



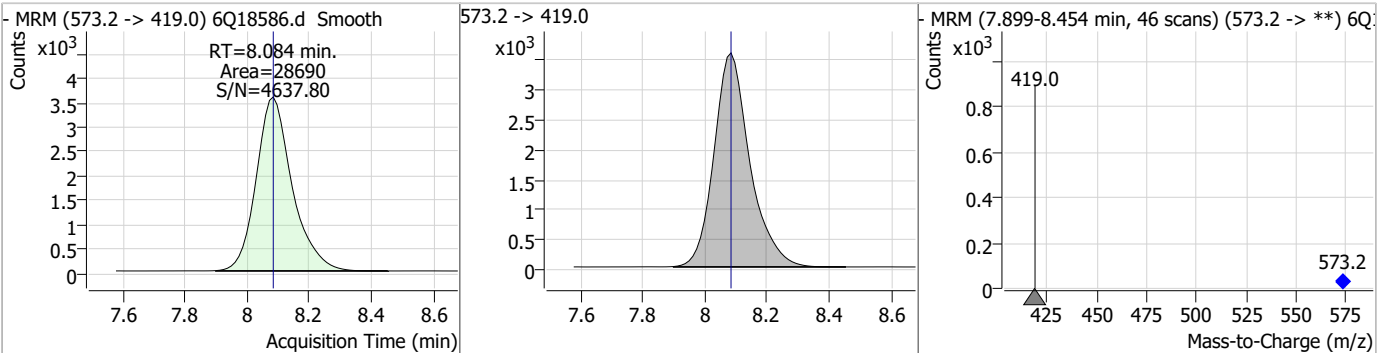
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Perfluorinated Compounds by LC/MS/MS

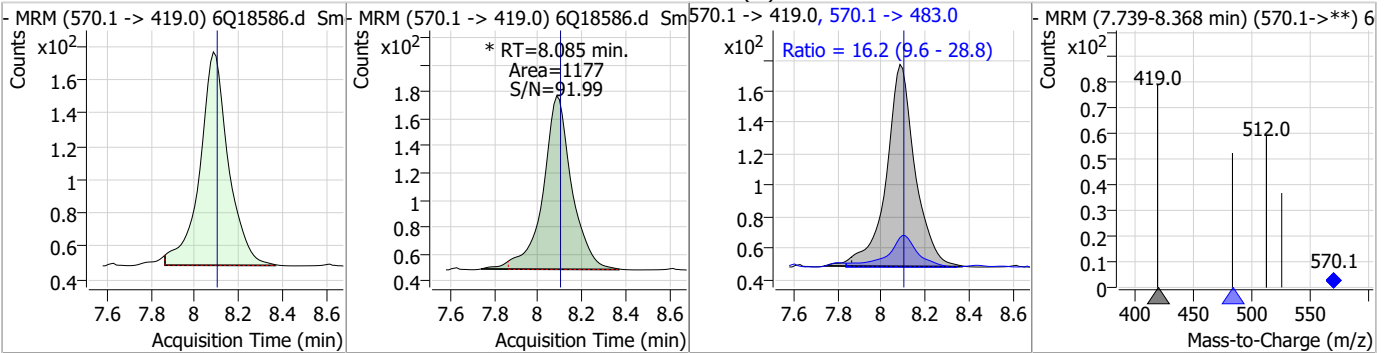
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.24	8.03	0.00	6728	512.9 -> 219.0	15.9	8.0	23.9



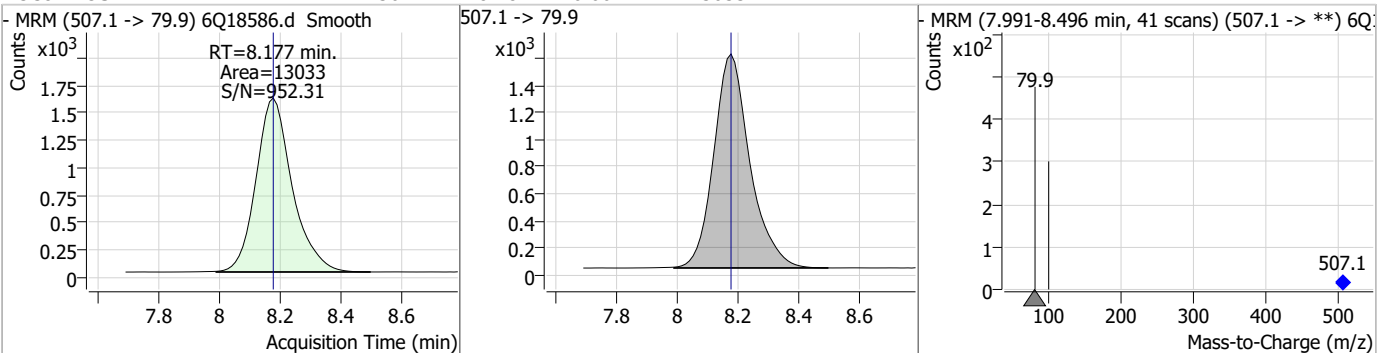
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.02	8.08	0.00	28690				



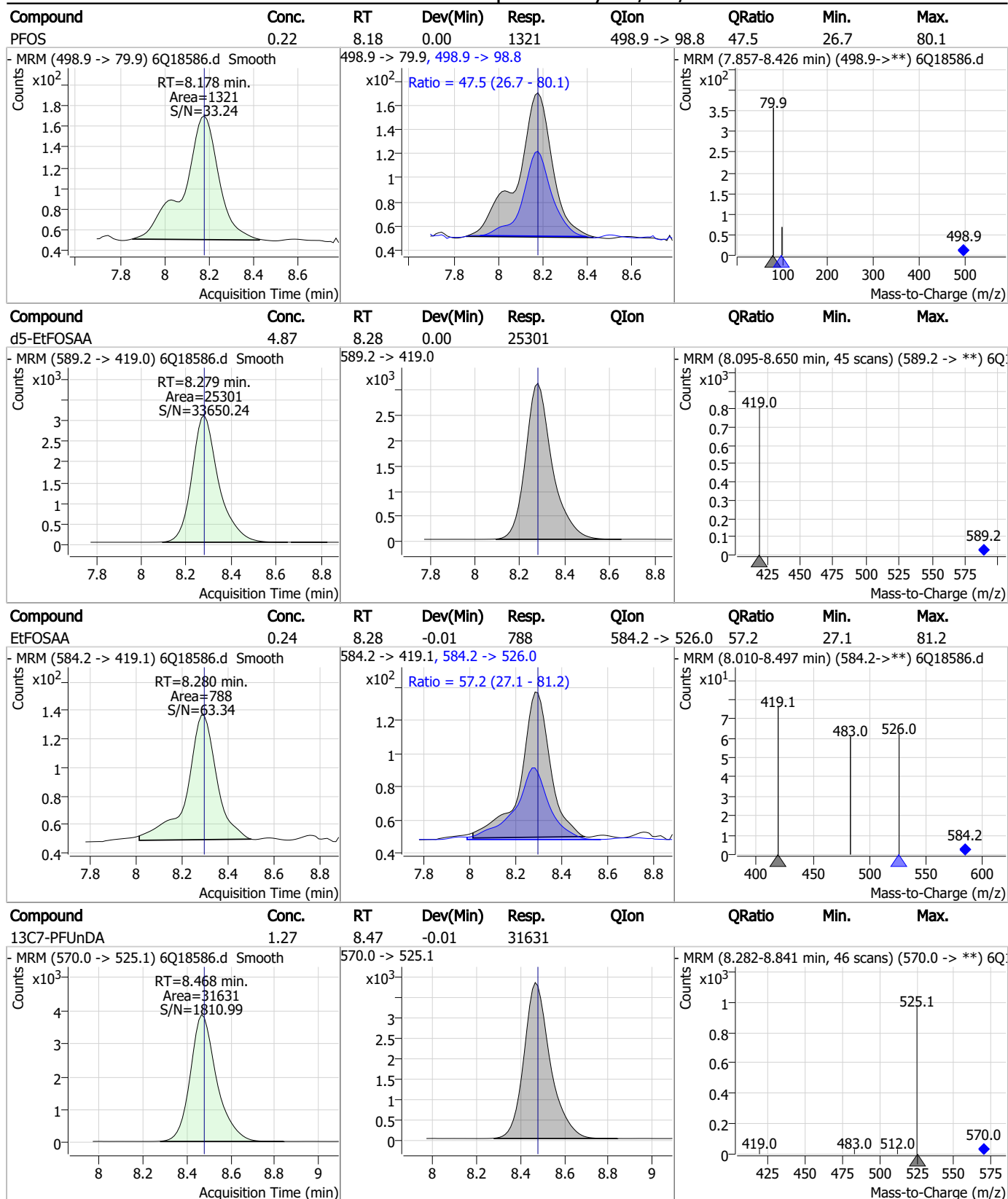
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.08	-0.01	1177 (m)	570.1 -> 483.0	16.2	9.6	28.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.30	8.18	0.00	13033				



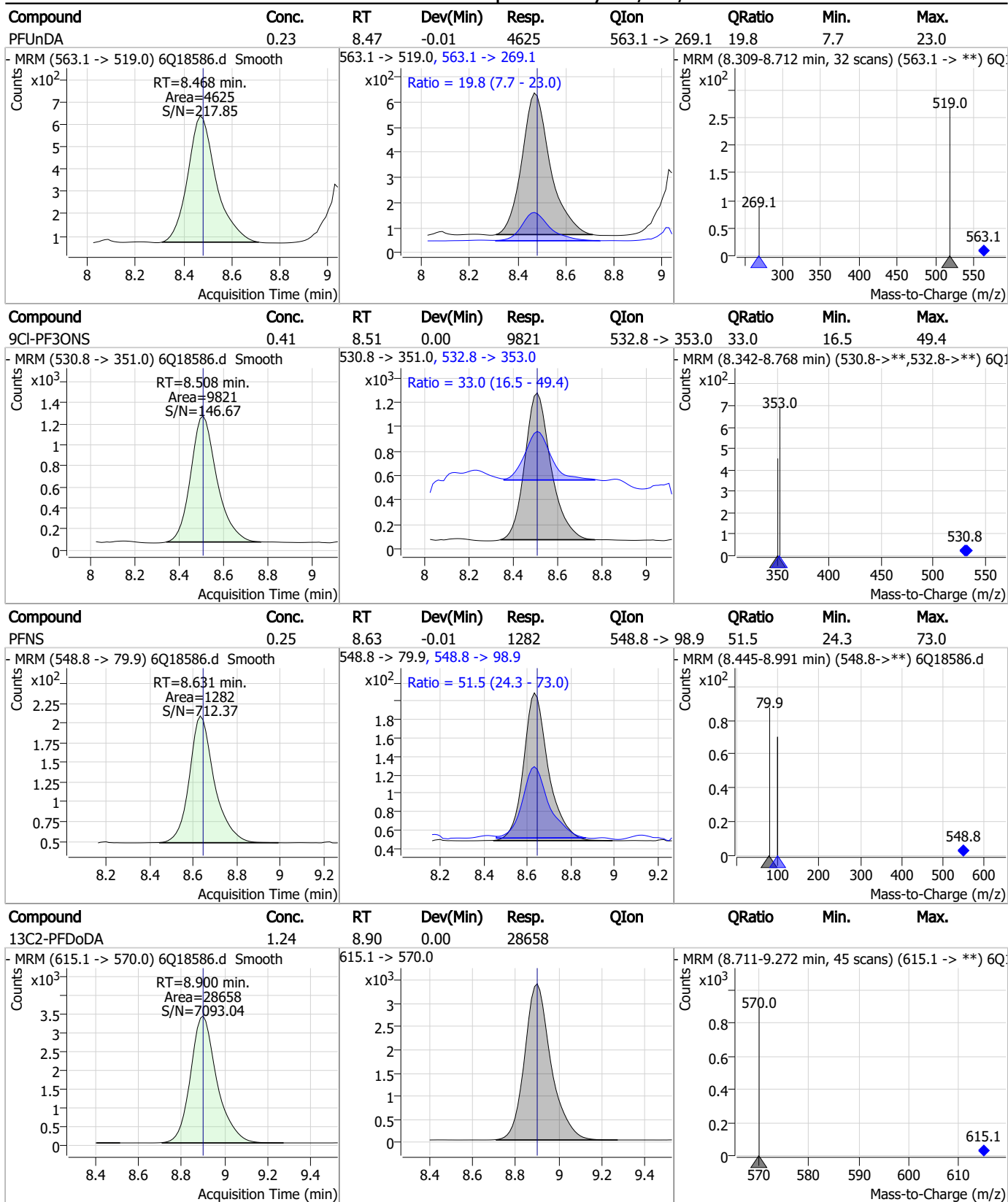
Perfluorinated Compounds by LC/MS/MS



7.7.2
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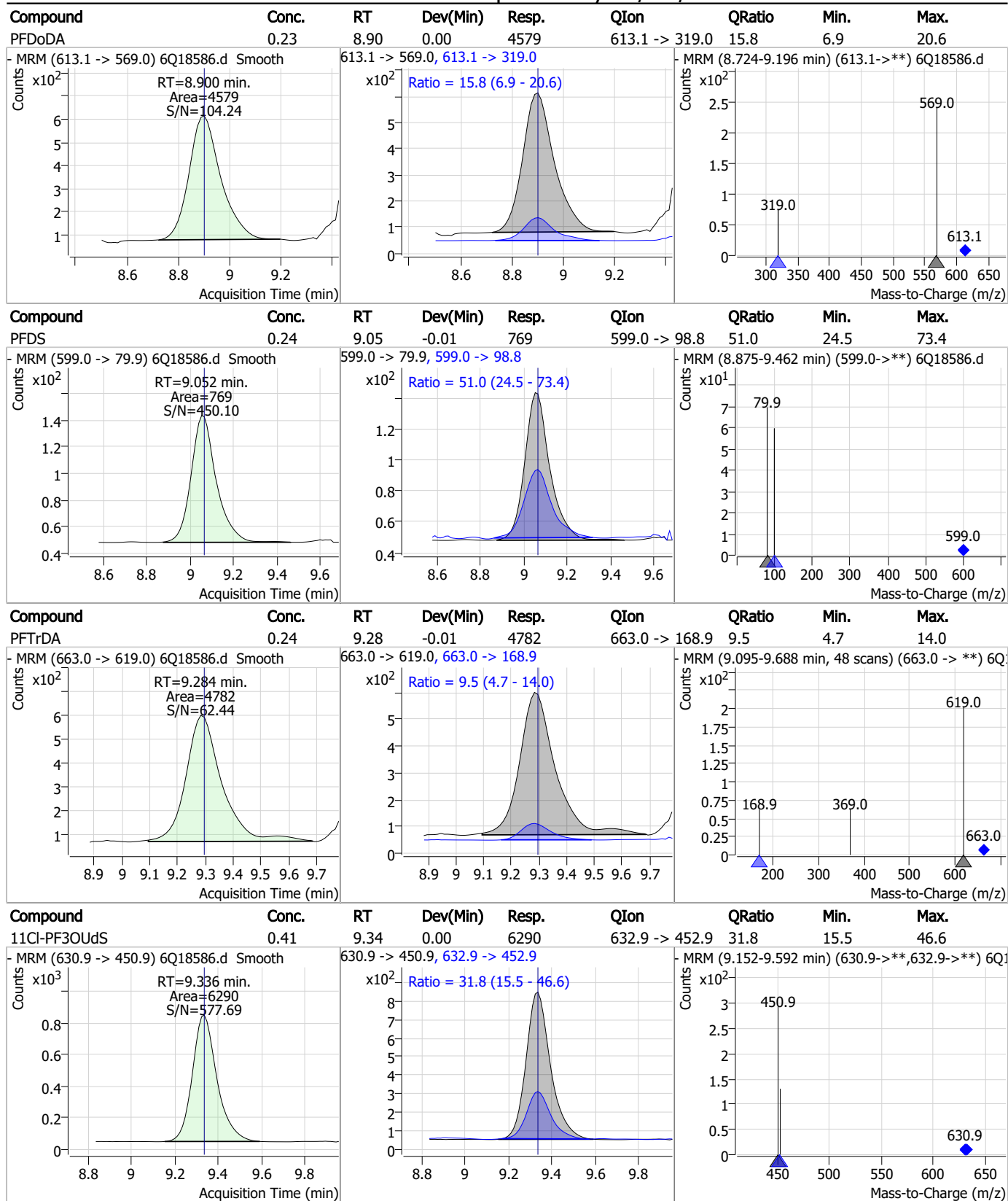


Perfluorinated Compounds by LC/MS/MS



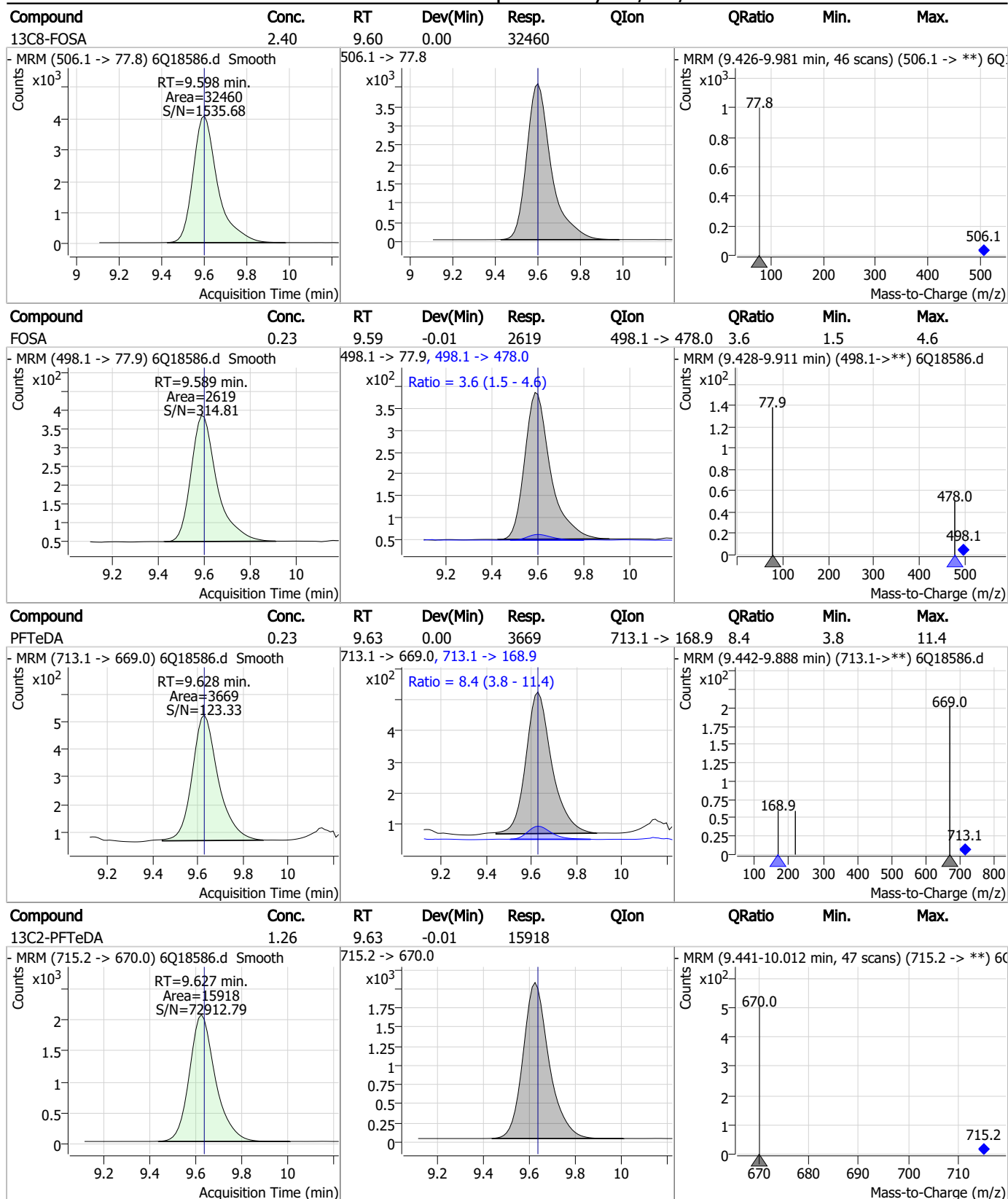
7.7.2

Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

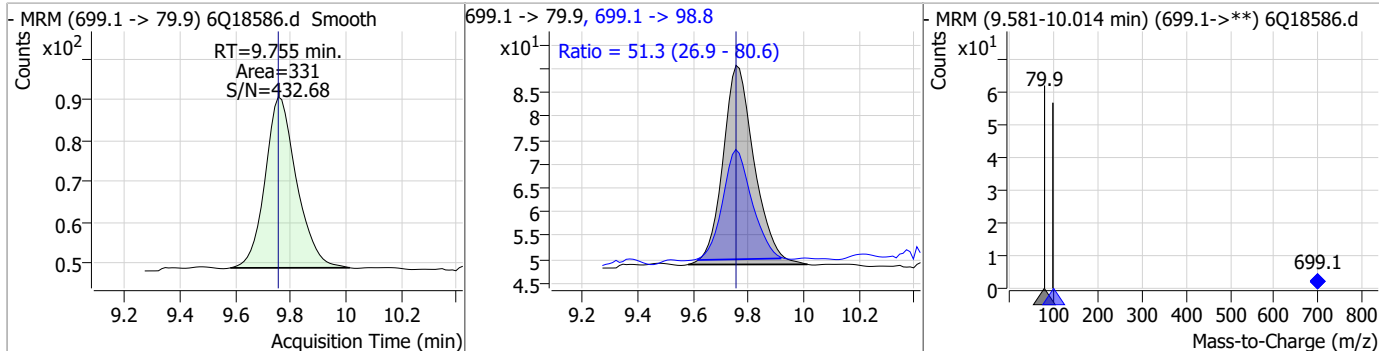


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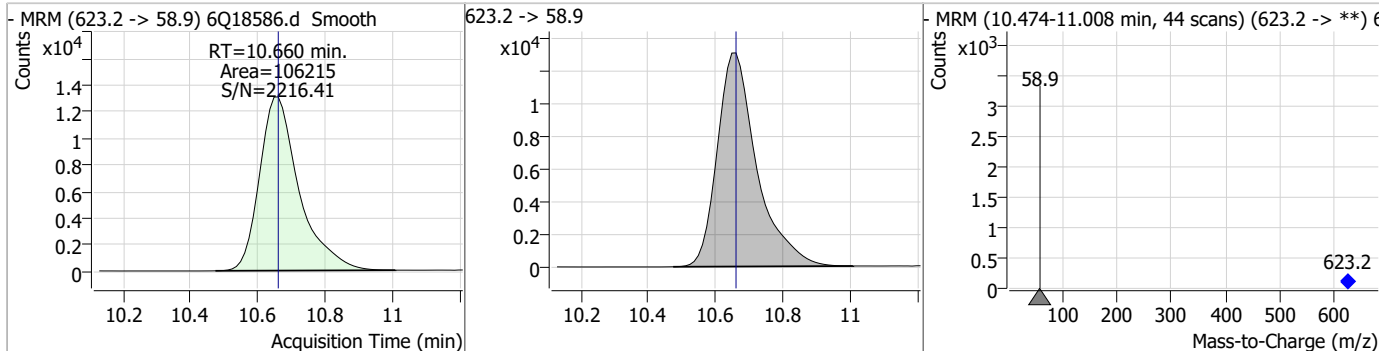
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Perfluorinated Compounds by LC/MS/MS

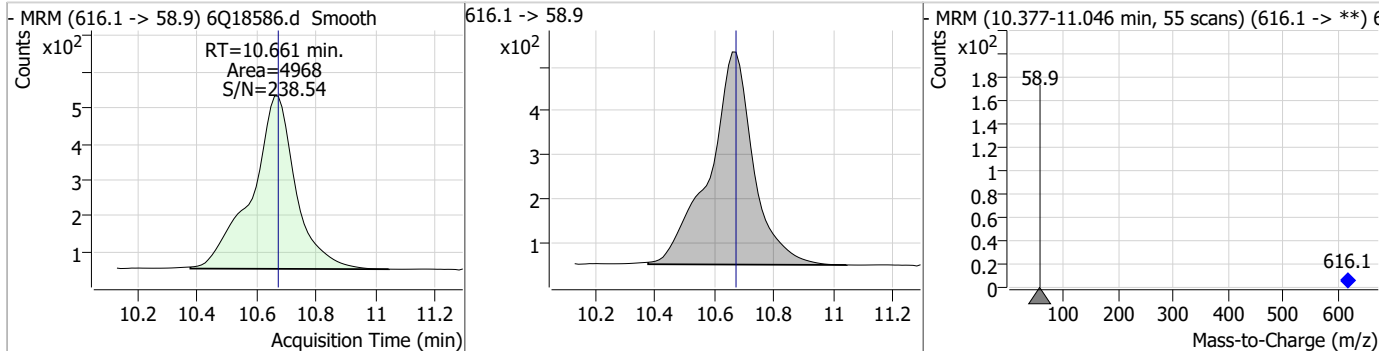
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.23	9.75	0.00	331	699.1 -> 98.8	51.3	26.9	80.6



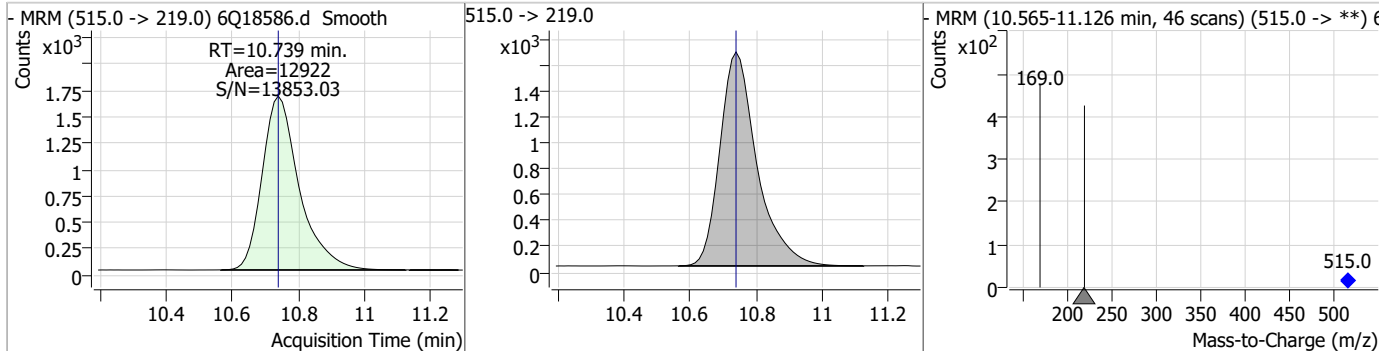
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.88	10.66	0.00	106215				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.18	10.66	-0.01	4968				

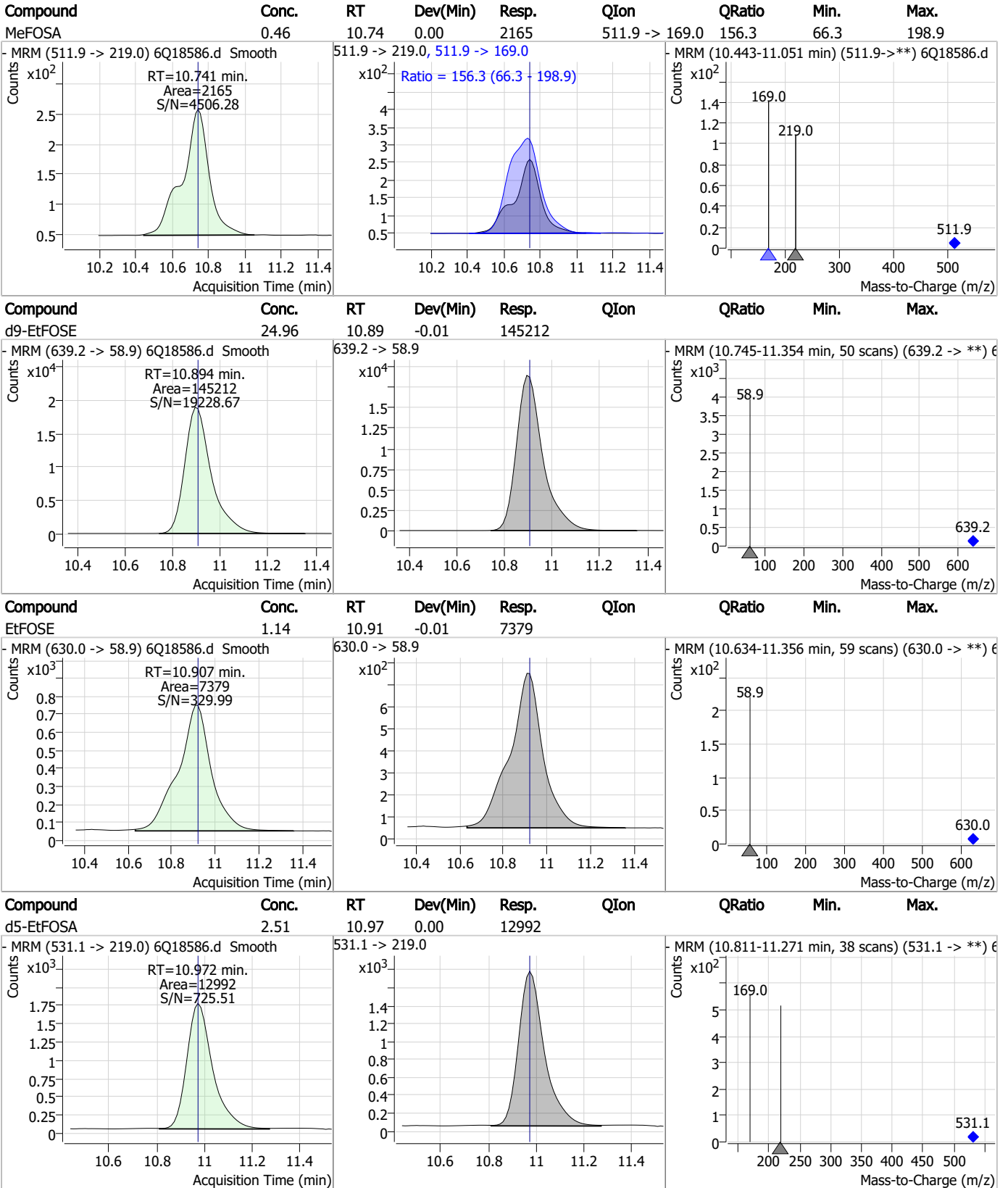


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.36	10.74	0.00	12922				



7.7.2
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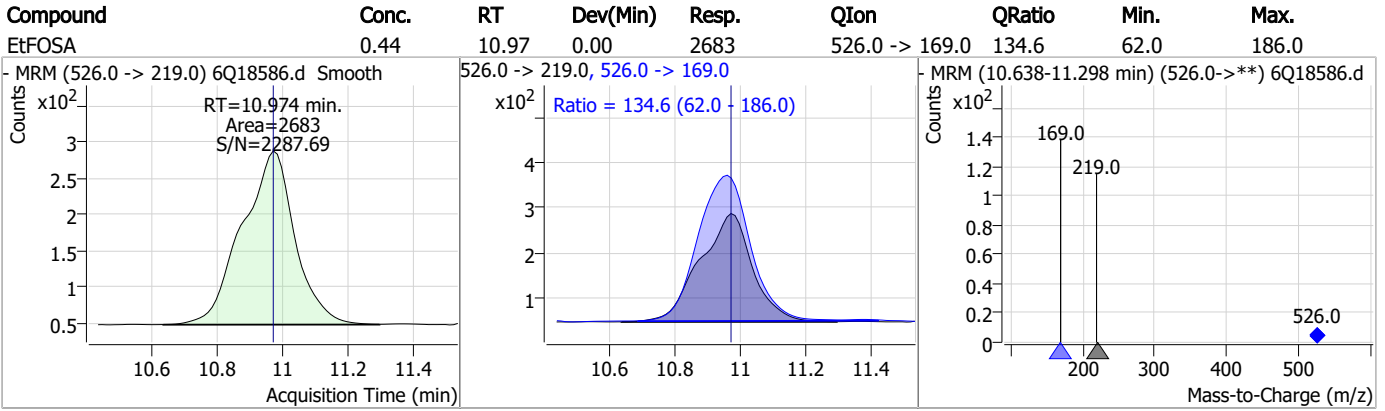
Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18586.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:16 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
MeFOSAA	2355-31-9		8.09	Split peak

7.7.2.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18587.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:30:51 PM
 Sample Name : ic279-2
 Vial : P1-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187848	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63117	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	69879	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	64325	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	96705	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	45166	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26931	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	34115	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31844	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16834	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35306	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24913	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15879	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3997	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5904	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5927	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26923	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	119651	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	150276	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13212	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13947	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18570	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78663	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11055	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104993	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	36190	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	53128	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64575	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3997	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5904	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5927	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31844	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16834	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFBS	5.322	302.1 -> 79.9	24913	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	15879	2.57 µg/L	0.000

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C4-PFBA	2.822	216.8 -> 171.9	187848	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	64325	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	5.417	318.0 -> 273.0	69879	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	63117	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.014	519.1 -> 474.1	26931	1.27 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	34115	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.598	506.1 -> 77.8	35306	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.026	421.1 -> 376.0	96705	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.177	507.1 -> 79.9	14878	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.545	472.1 -> 427.0	45166	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30777	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42658	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	13947	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26923	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	119651	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
d9-EtFOSE	10.894	639.2 -> 58.9	150276	24.63 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	13212	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	8300	1.43 µg/L	100
		327.1 -> 80.9	3305		
6:2FTS	6.801	427.1 -> 407.0	8991	1.55 µg/L	96
		427.1 -> 80.9	2856		
8:2FTS	7.816	527.1 -> 507.0	4819	1.46 µg/L	100
		527.1 -> 80.8	2059		
EtFOSAA	8.280	584.2 -> 419.1	1265	0.37 µg/L	72
		584.2 -> 526.0	940		
FOSA	9.589	498.1 -> 77.9	5069	0.41 µg/L	99
		498.1 -> 478.0	143		
MeFOSAA	8.085	570.1 -> 419.0	2704	0.43 µg/L	96
		570.1 -> 483.0	571		
PFBA	2.818	212.8 -> 168.9	10022	1.61 µg/L	100
PFBS	5.323	298.7 -> 79.9	3011	0.36 µg/L	98
		298.7 -> 98.8	1118		
PFDA	8.027	512.9 -> 469.0	12768	0.41 µg/L	94
		512.9 -> 219.0	1732		
PFDODA	8.900	613.1 -> 569.0	8861	0.41 µg/L	97
		613.1 -> 319.0	1333		
PFDS	9.052	599.0 -> 79.9	1548	0.42 µg/L	93

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	679			
PFHpA	6.370	363.1 -> 319.0	11262	0.40	µg/L	94
		363.1 -> 169.0	1971			
PFHpS	7.685	449.0 -> 79.9	2874	0.40	µg/L	90
		449.0 -> 98.9	1232			
PFHxA	5.407	313.0 -> 269.0	9354	0.40	µg/L	99
		313.0 -> 118.9	466			
PFHxS	7.119	398.7 -> 79.9	2706	0.38	µg/L	m 95
		398.7 -> 98.9	1380			
PFNA	7.545	463.0 -> 419.0	12632	0.39	µg/L	98
		463.0 -> 219.0	2580			
PFNS	8.631	548.8 -> 79.9	2254	0.38	µg/L	85
		548.8 -> 98.9	1334			
PFOA	7.015	413.0 -> 369.0	16855	0.41	µg/L	96
		413.0 -> 169.0	3211			
PFOS	8.166	498.9 -> 79.9	2444	0.36	µg/L	m 99
		498.9 -> 98.8	1293			
PFPeA	4.212	263.0 -> 219.0	12188	0.80	µg/L	100
PFPeS	6.410	349.1 -> 79.9	2857	0.40	µg/L	95
		349.1 -> 98.9	1264			
PFTeDA	9.628	713.1 -> 669.0	6383	0.39	µg/L	93
		713.1 -> 168.9	644			
PFTrDA	9.284	663.0 -> 619.0	8810	0.40	µg/L	96
		663.0 -> 168.9	959			
PFUnDA	8.468	563.1 -> 519.0	9113	0.41	µg/L	94
		563.1 -> 269.1	1628			
11CI-PF3OUdS	9.336	630.9 -> 450.9	11999	0.75	µg/L	99
		632.9 -> 452.9	3648			
9CI-PF3ONS	8.508	530.8 -> 351.0	18045	0.72	µg/L	85
		532.8 -> 353.0	7481			
ADONA	6.632	376.9 -> 250.9	42594	0.75	µg/L	99
		376.9 -> 84.8	11674			
HFPO-DA	5.783	284.9 -> 168.9	2876	0.80	µg/L	97
		284.9 -> 184.9	362			
3:3FTCA	3.671	241.0 -> 177.0	1940	2.00	µg/L	99
		241.0 -> 117.0	271			
5:3FTCA	6.086	341.0 -> 237.1	43016	10.19	µg/L	97
		341.0 -> 217.0	31729			
7:3FTCA	7.510	441.0 -> 316.9	29615	10.25	µg/L	97
		441.0 -> 336.9	63812			
EtFOSA	10.974	526.0 -> 219.0	5236	0.85	µg/L	94
		526.0 -> 169.0	6866			
EtFOSE	10.907	630.0 -> 58.9	13675	2.04	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	4316	0.84	µg/L	94
		511.9 -> 169.0	6039			
MeFOSE	10.661	616.1 -> 58.9	9134	1.92	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	659	0.40	µg/L	98
		699.1 -> 98.8	342			
NFDHA	5.288	295.0 -> 201.0	2337	0.82	µg/L	97
		295.0 -> 84.9	599			
PFMBA	4.626	279.0 -> 85.1	8284	0.80	µg/L	100
PFMPA	3.363	229.0 -> 84.9	6426	0.80	µg/L	100
PFEESA	5.875	314.8 -> 134.9	20510	0.69	µg/L	99
		314.8 -> 82.9	704			

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

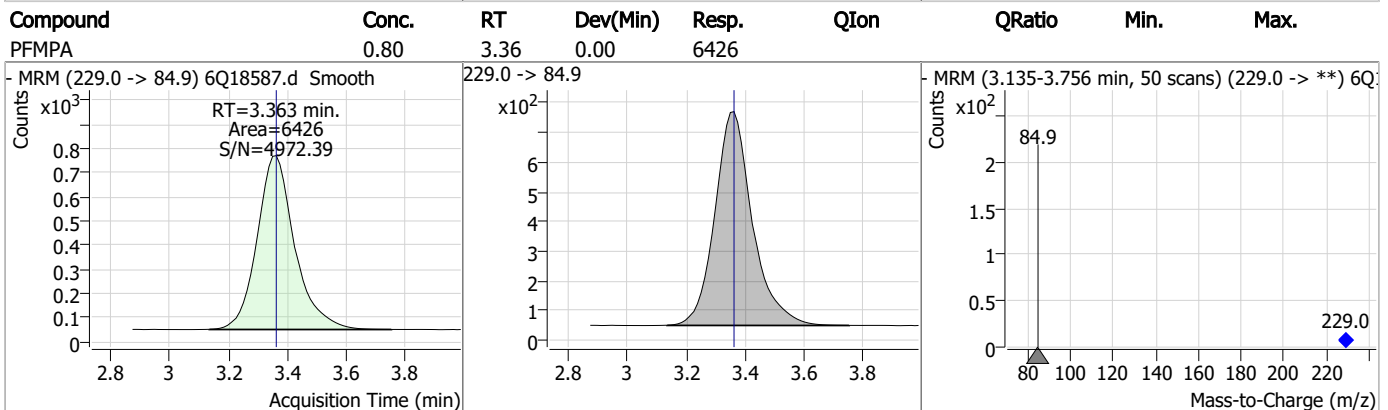
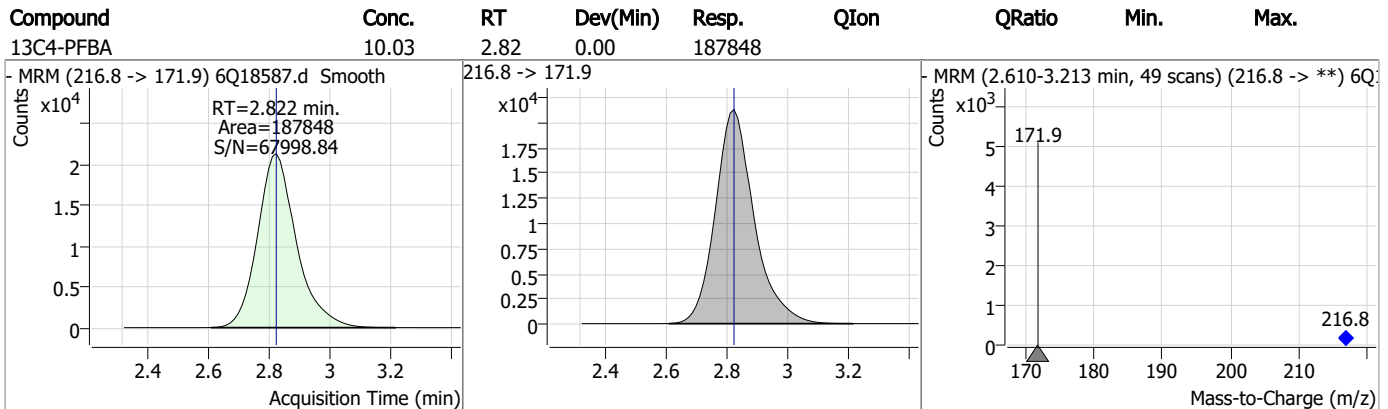
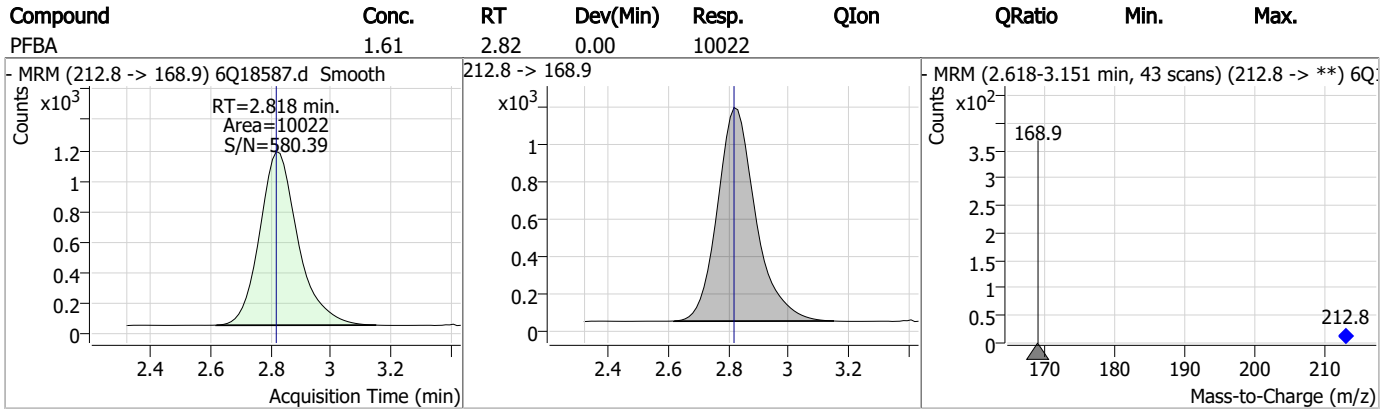
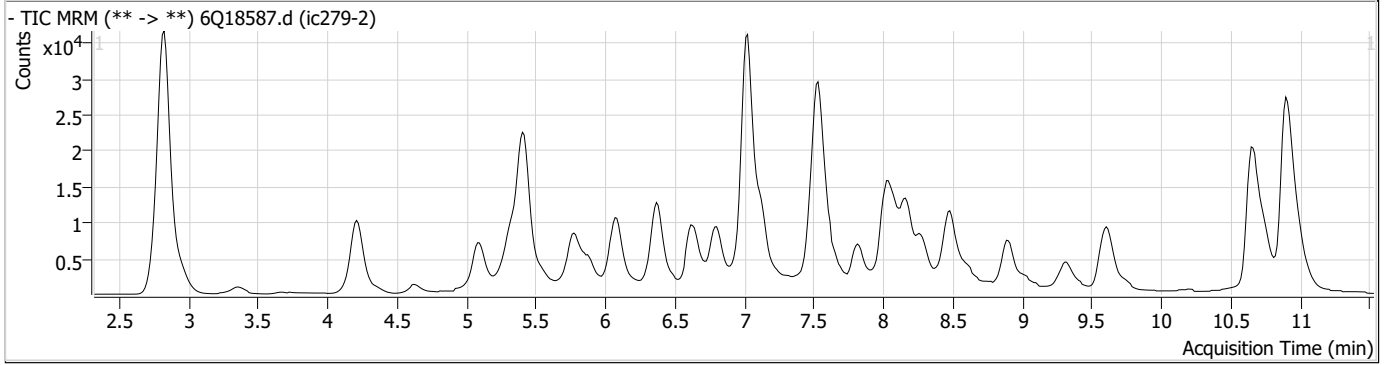
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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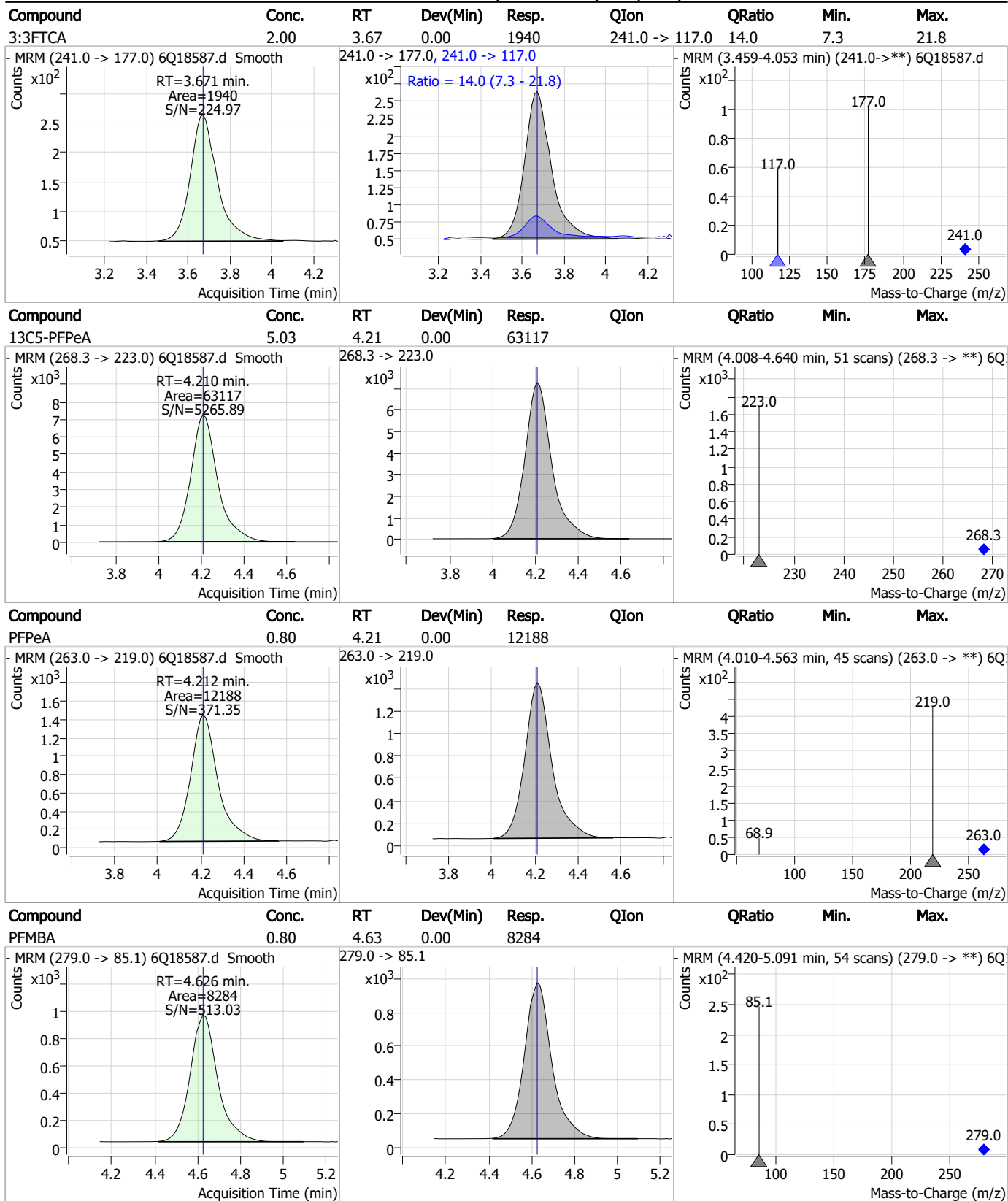
7.7.3

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Perfluorinated Compounds by LC/MS/MS

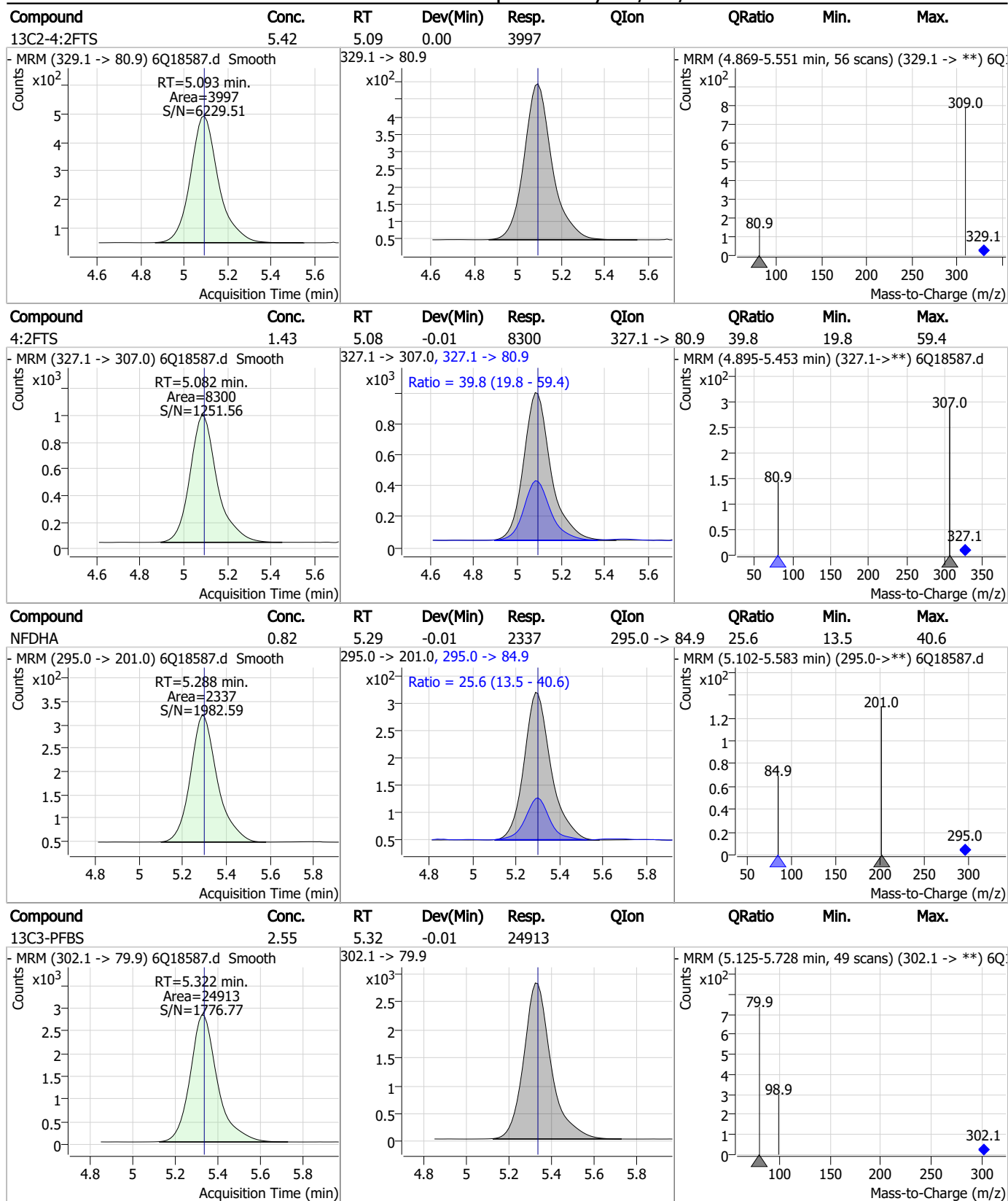


Perfluorinated Compounds by LC/MS/MS



7.7.3
7

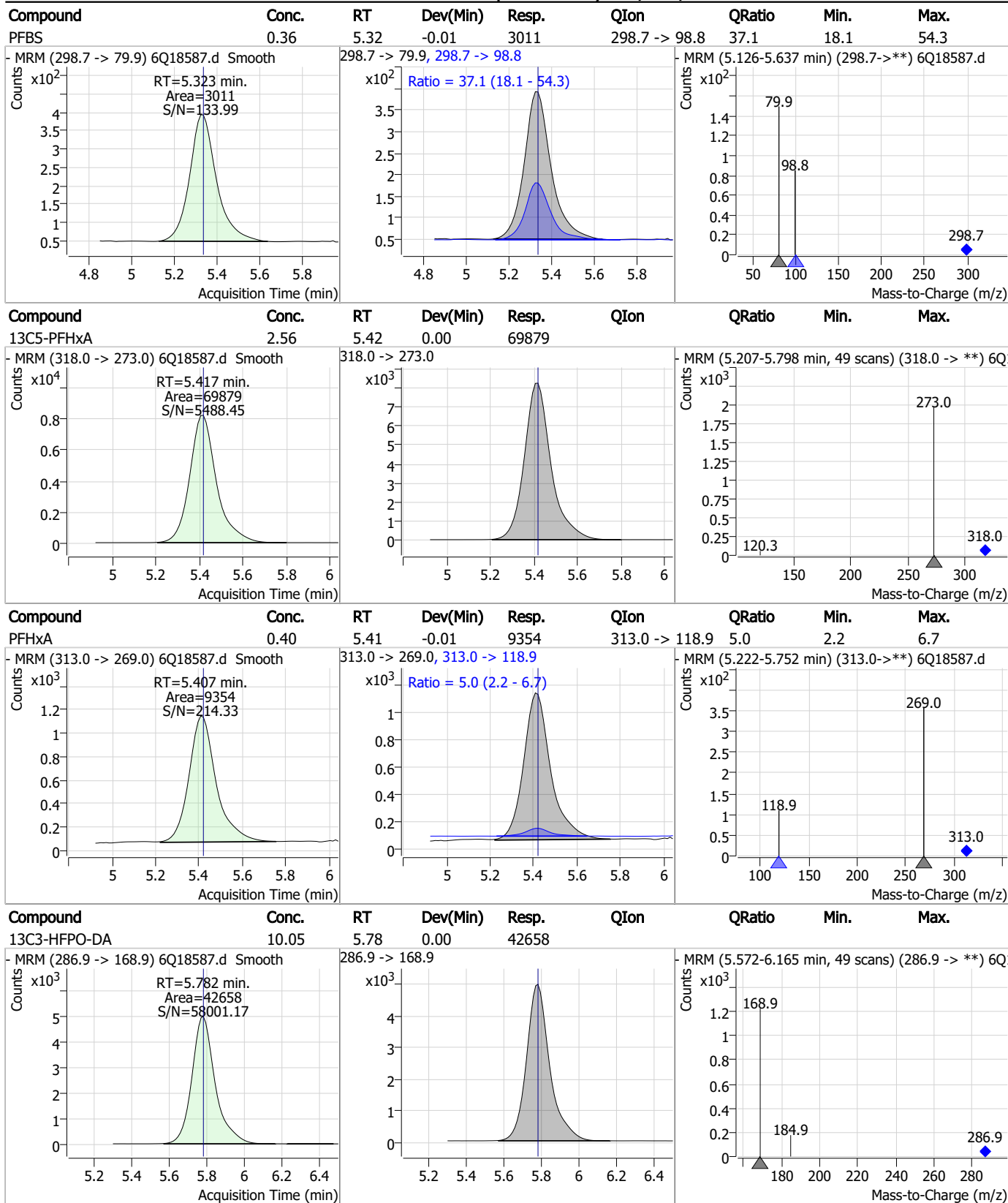
Perfluorinated Compounds by LC/MS/MS



7.7.3

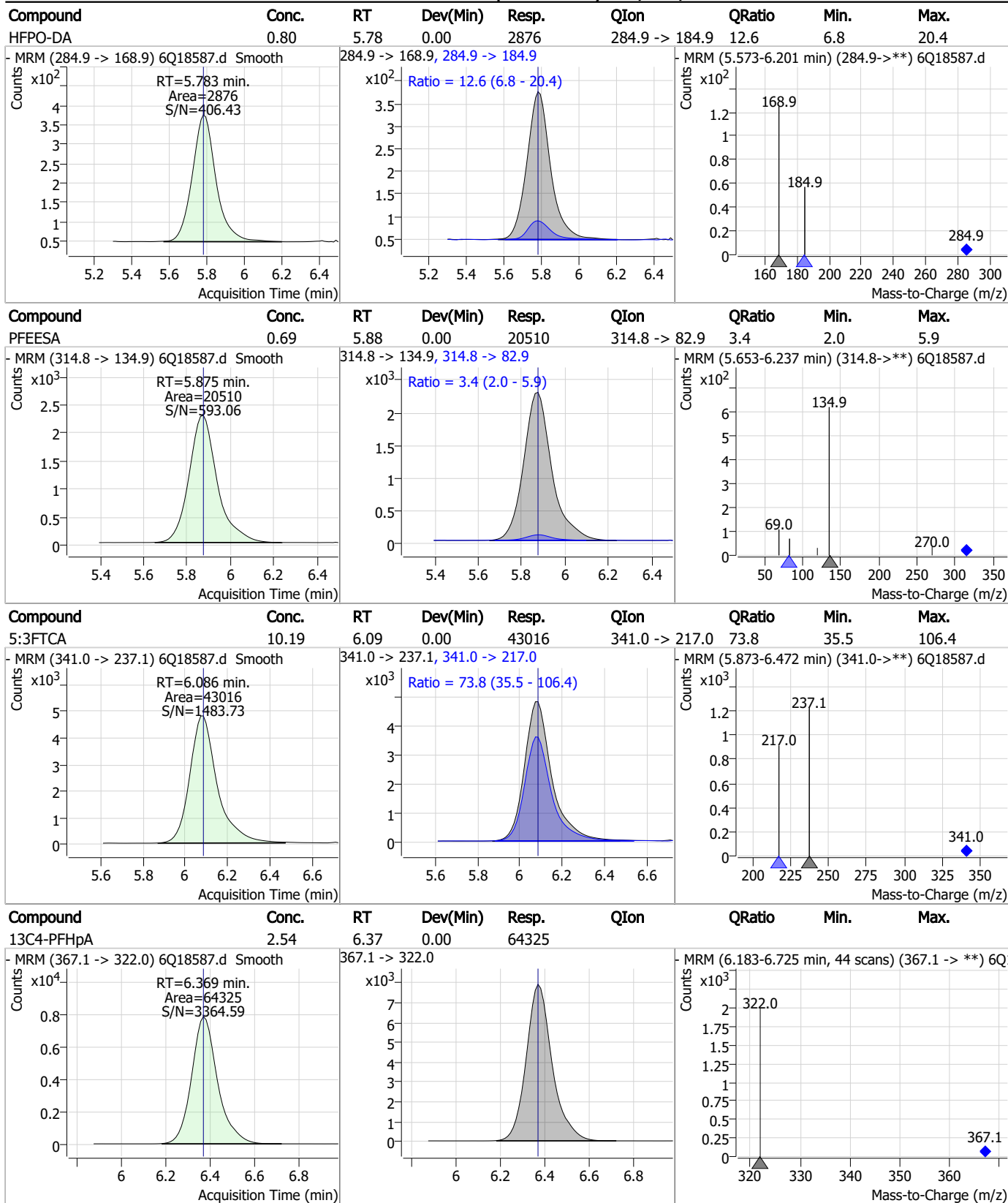
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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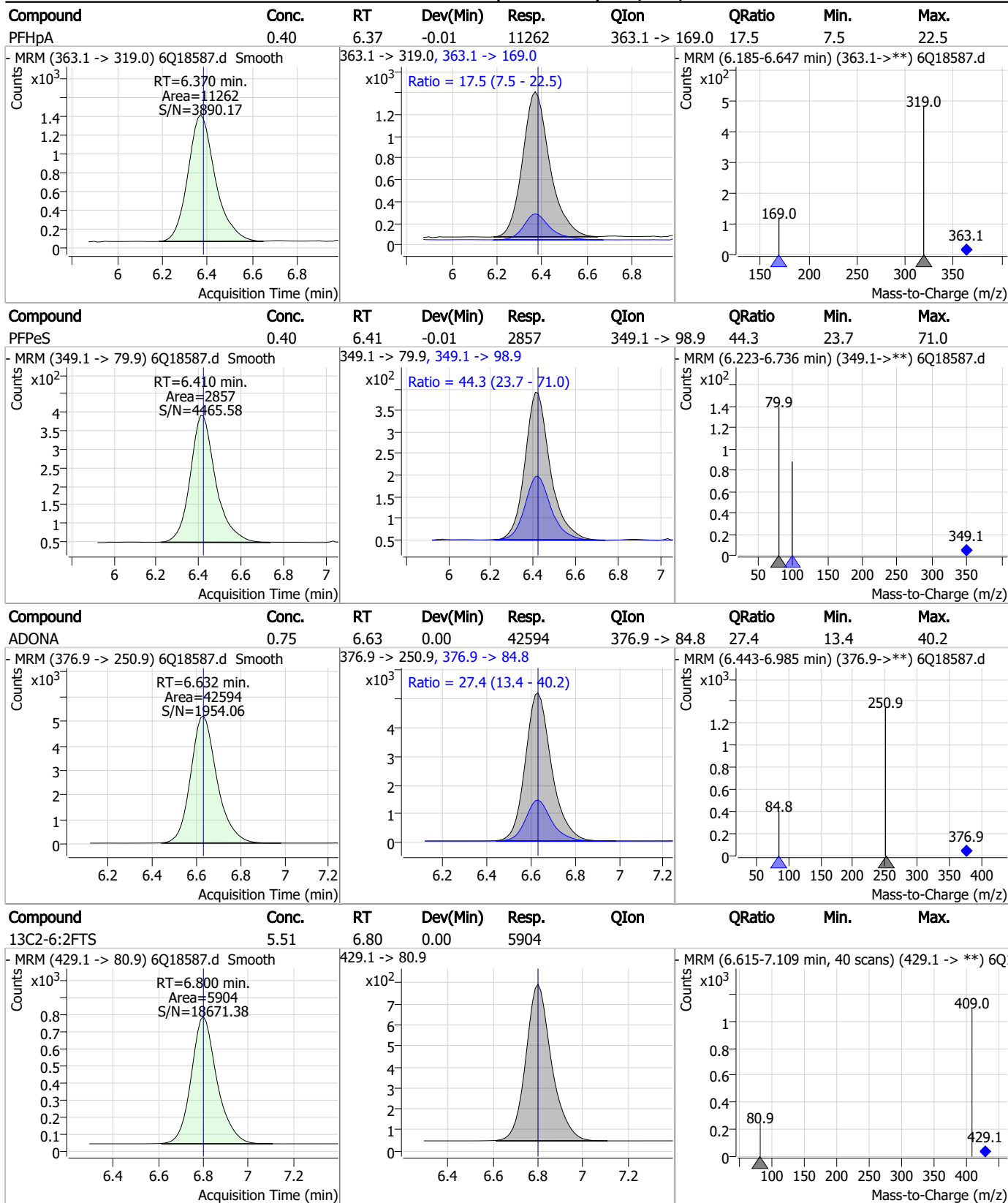
Perfluorinated Compounds by LC/MS/MS



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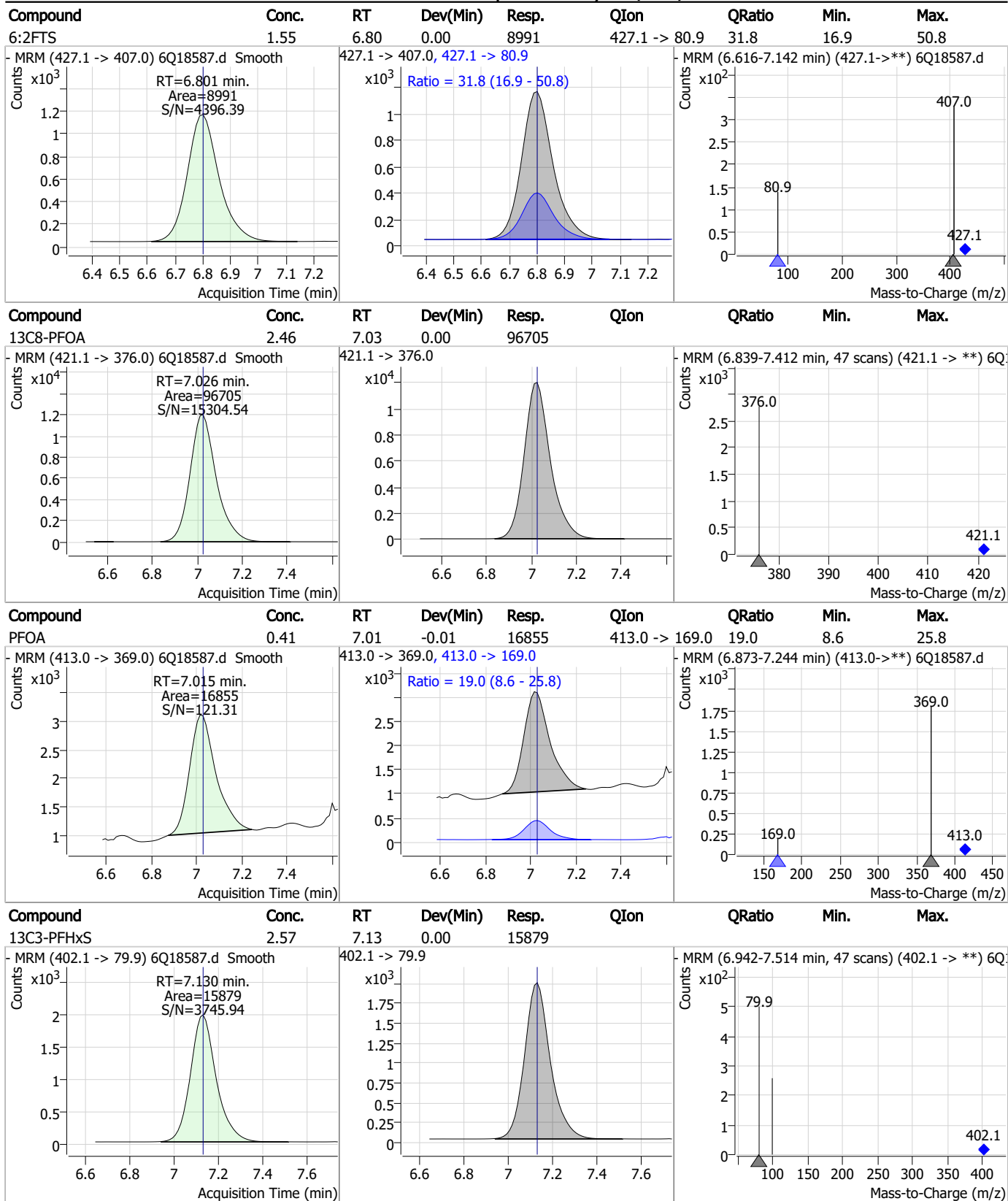
Perfluorinated Compounds by LC/MS/MS



7.7.3

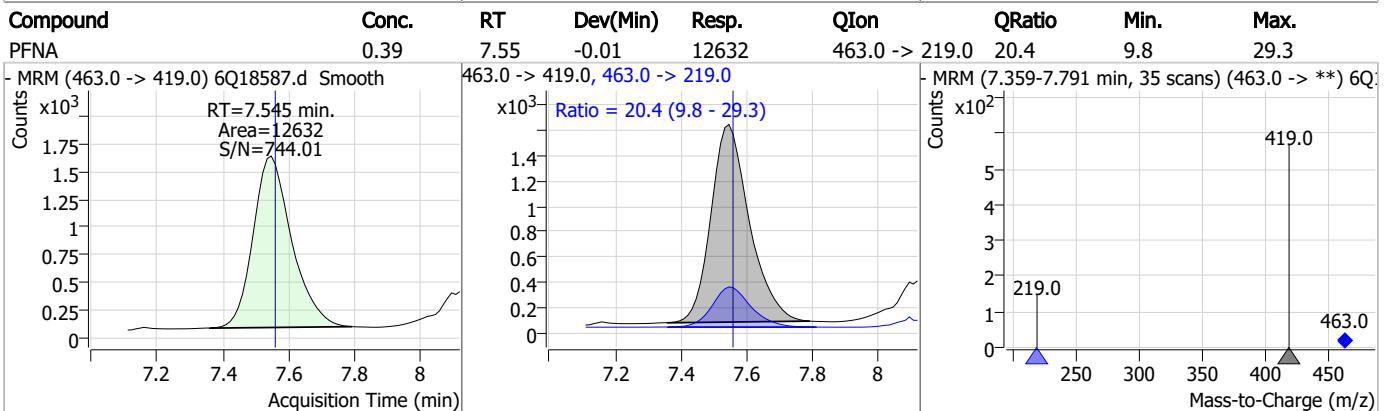
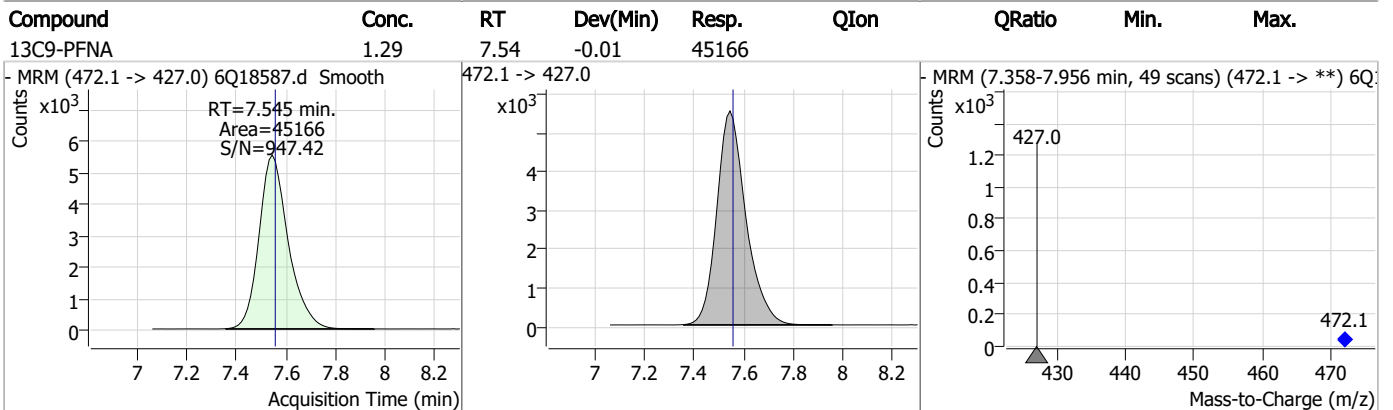
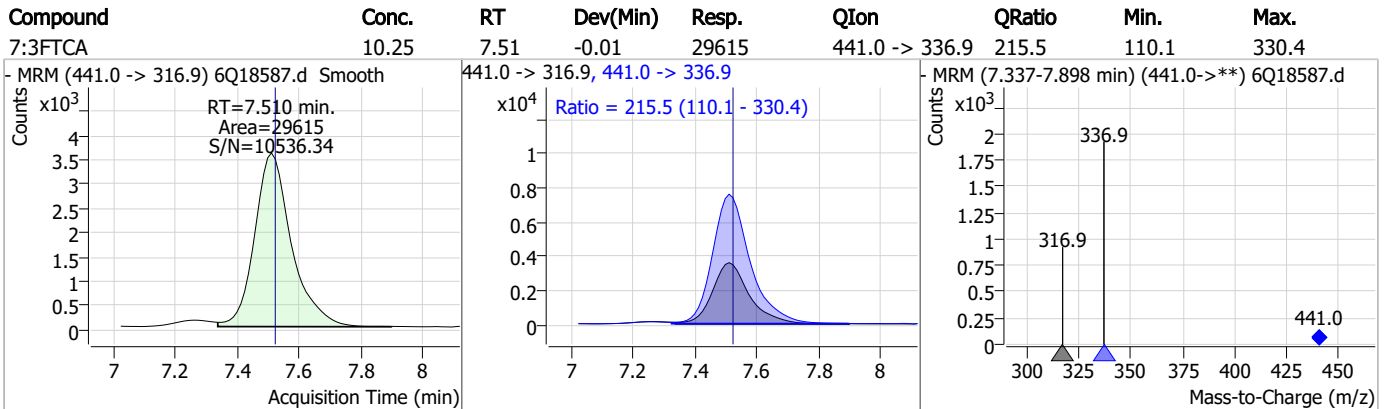
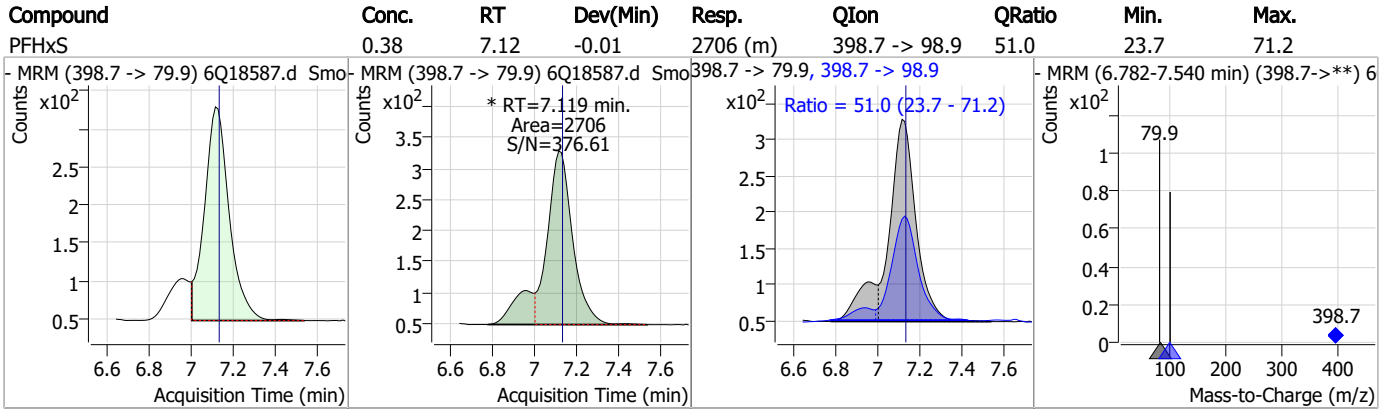
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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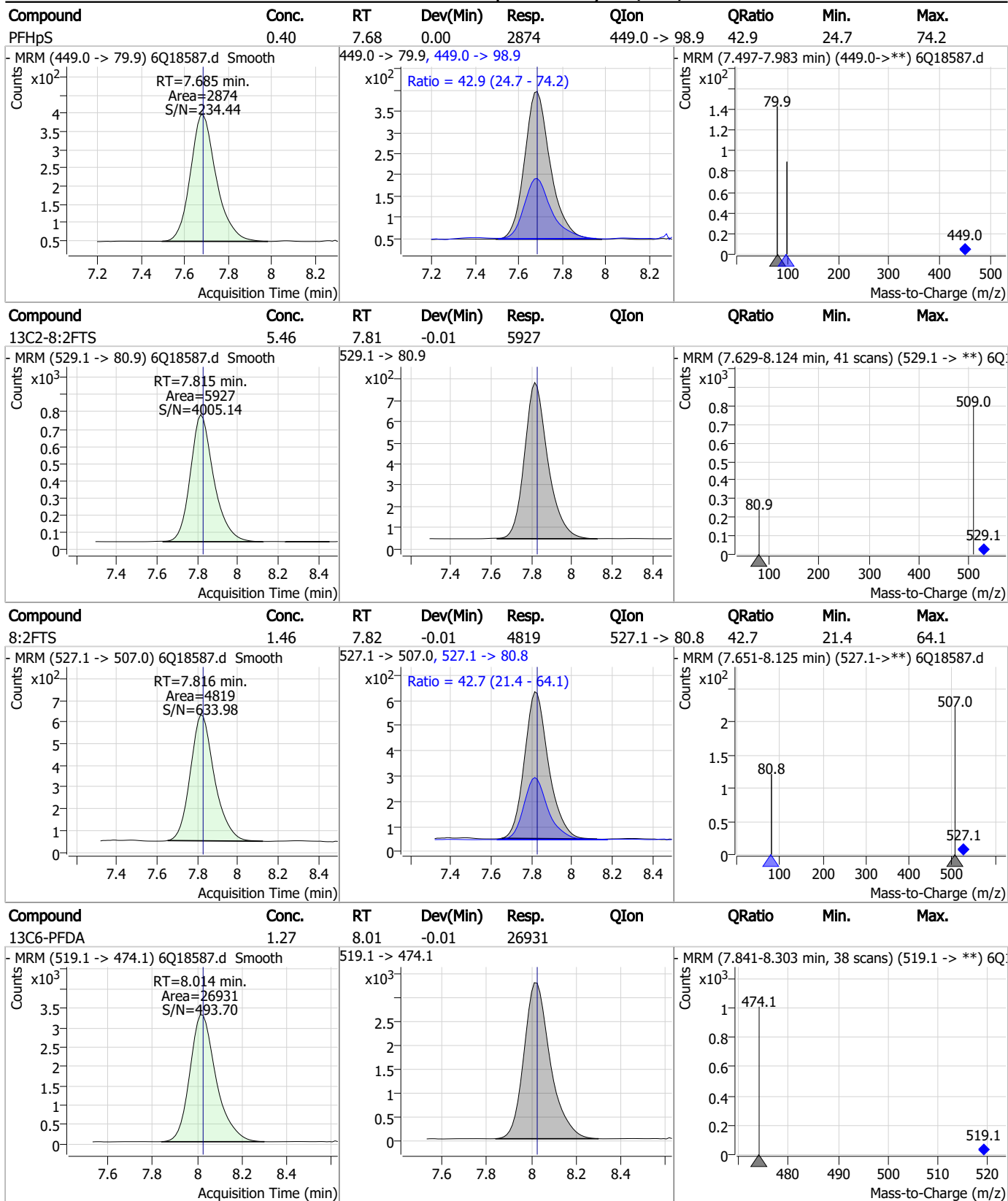
Perfluorinated Compounds by LC/MS/MS



7.7.3

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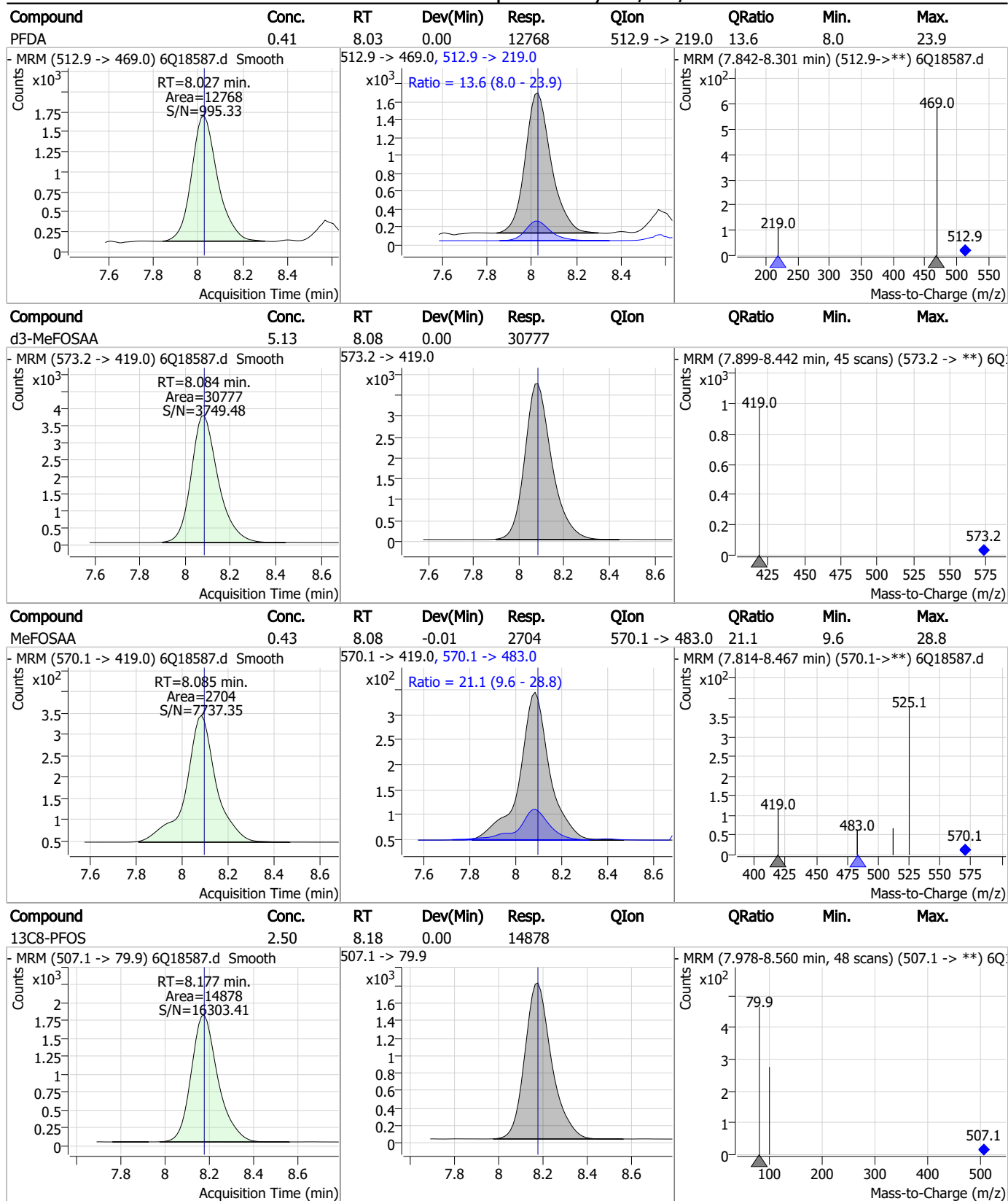
Perfluorinated Compounds by LC/MS/MS



7.7.3

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Perfluorinated Compounds by LC/MS/MS

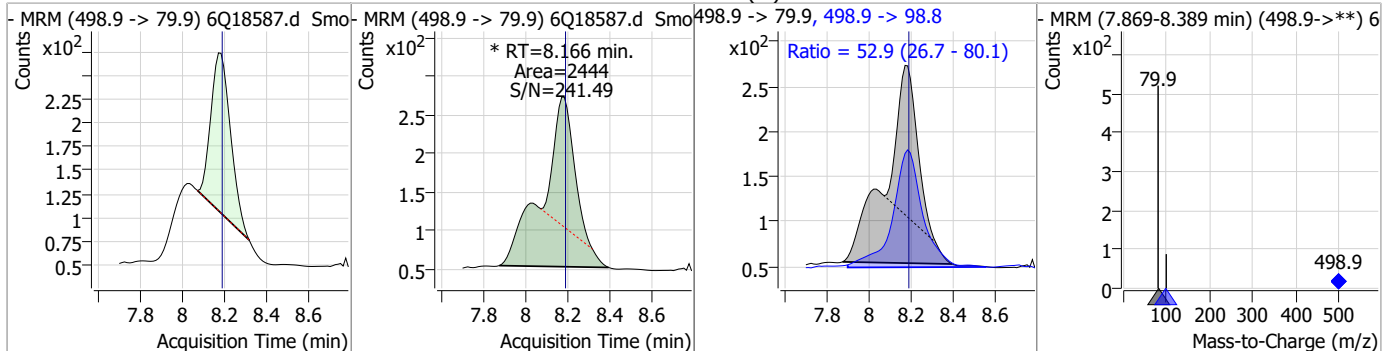


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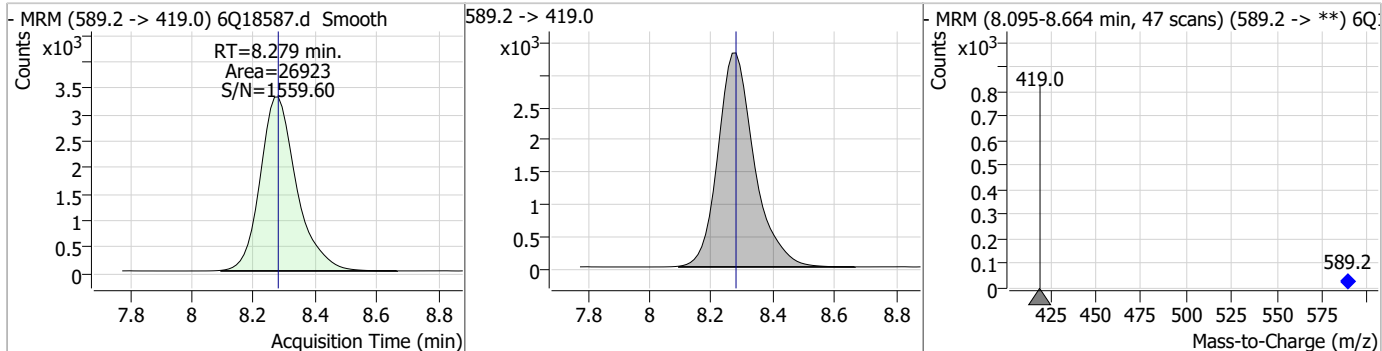
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Perfluorinated Compounds by LC/MS/MS

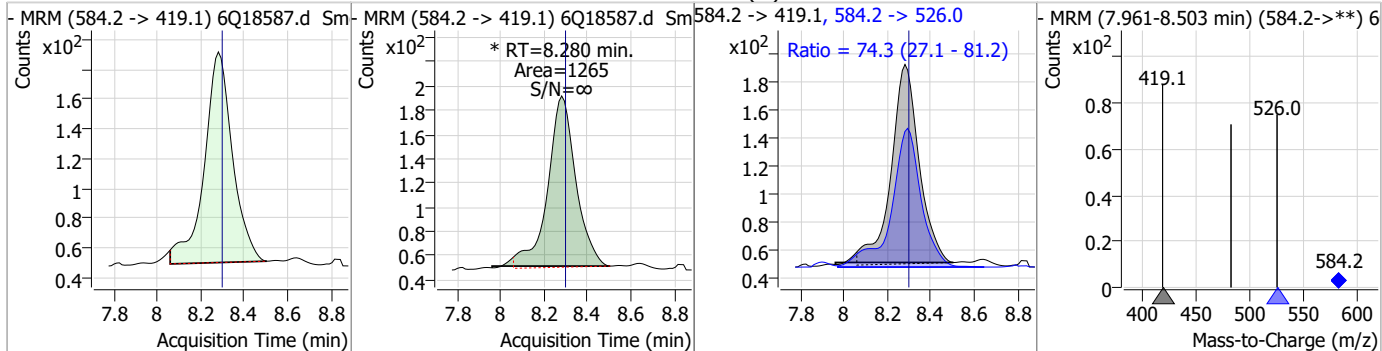
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.36	8.17	-0.01	2444 (m)	498.9 -> 98.8	52.9	26.7	80.1



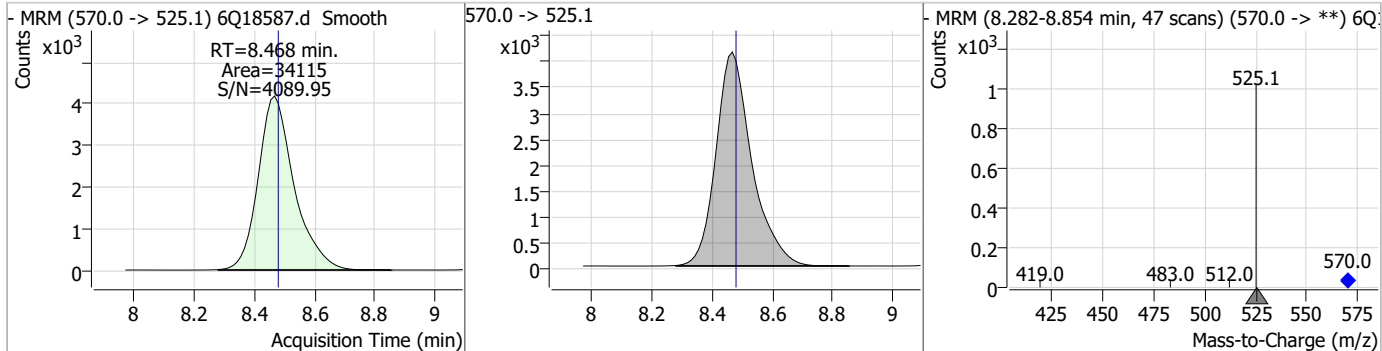
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.94	8.28	0.00	26923				



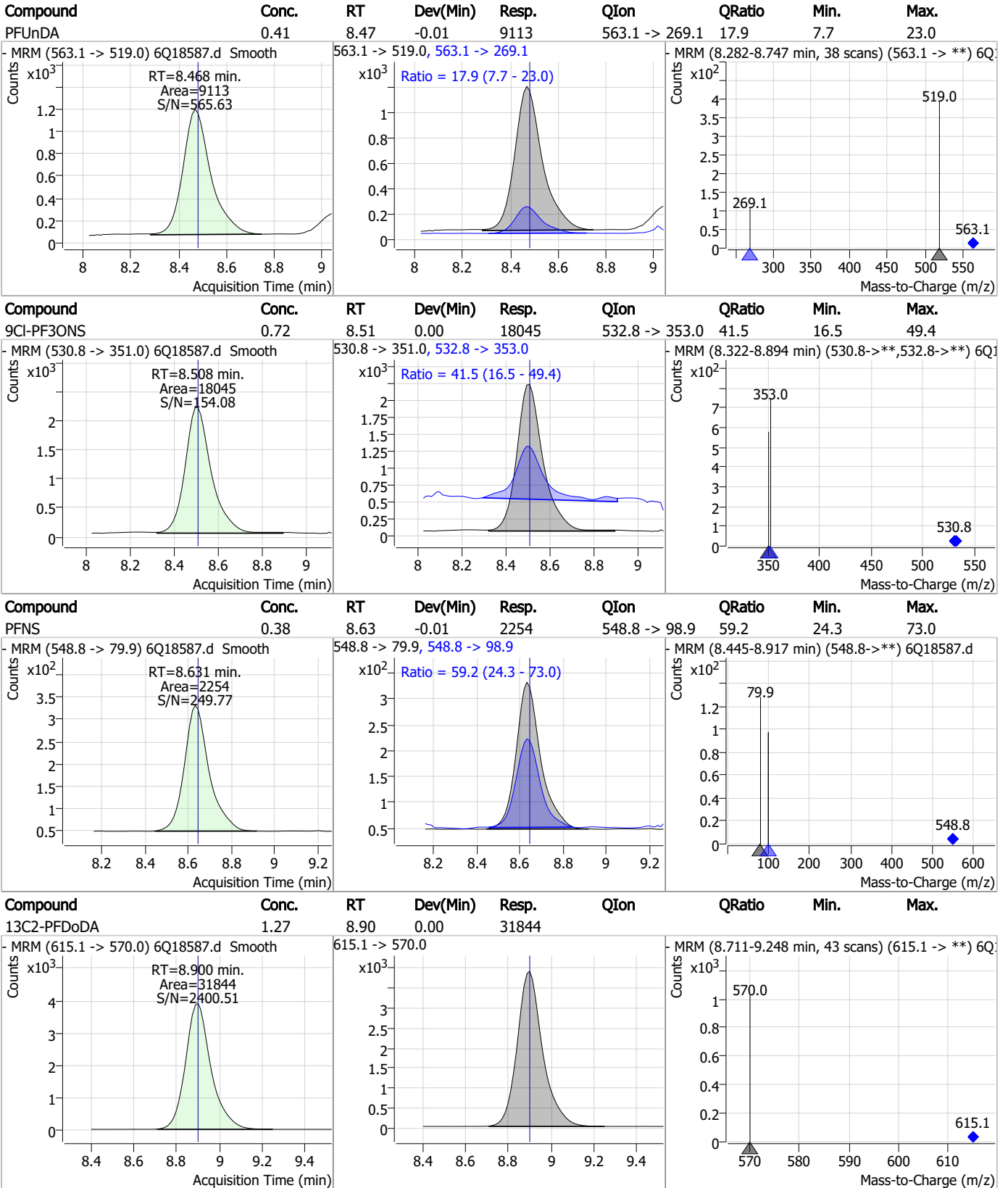
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.37	8.28	-0.01	1265 (m)	584.2 -> 526.0	74.3	27.1	81.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.47	-0.01	34115				



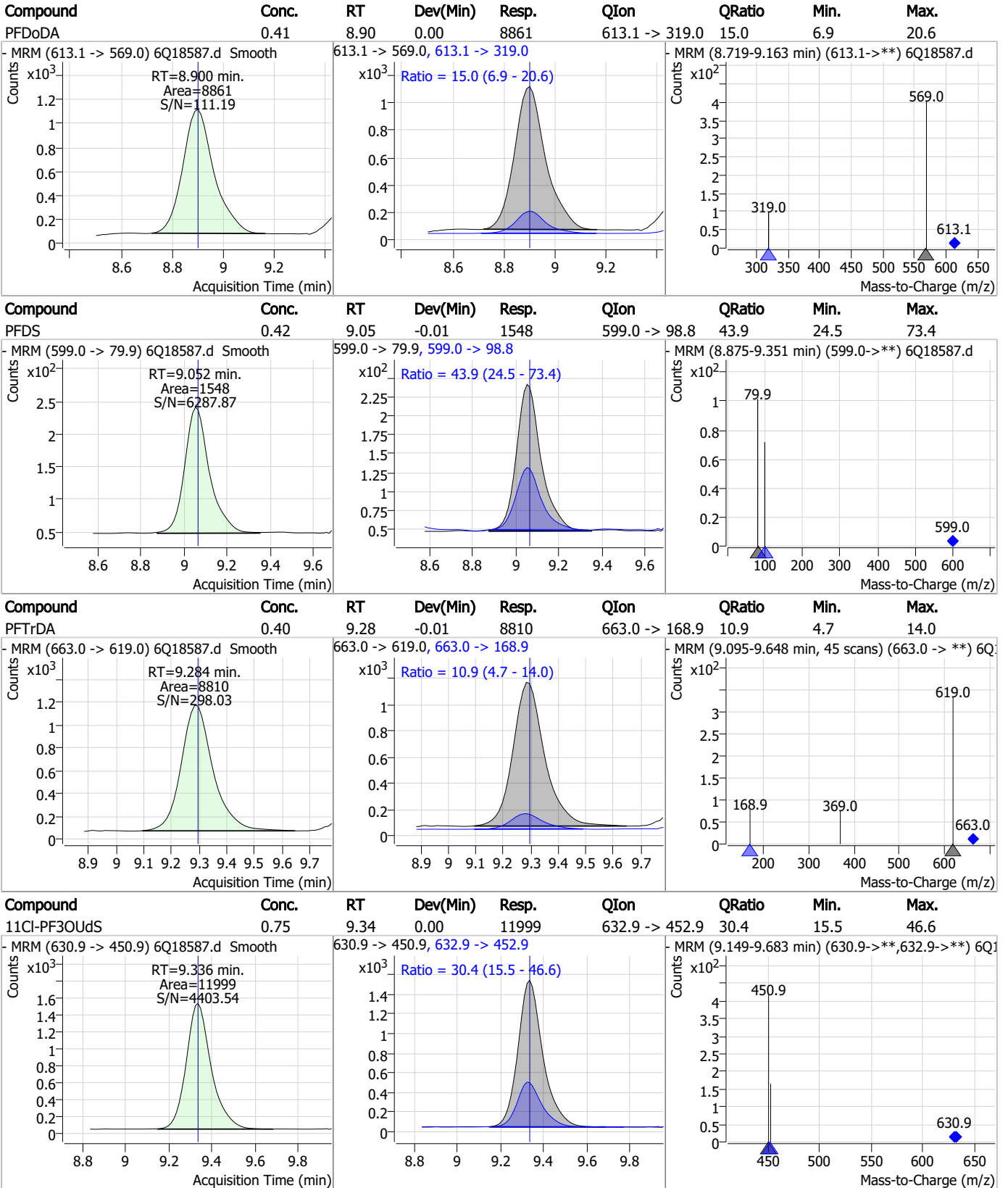
Perfluorinated Compounds by LC/MS/MS



7.7.3

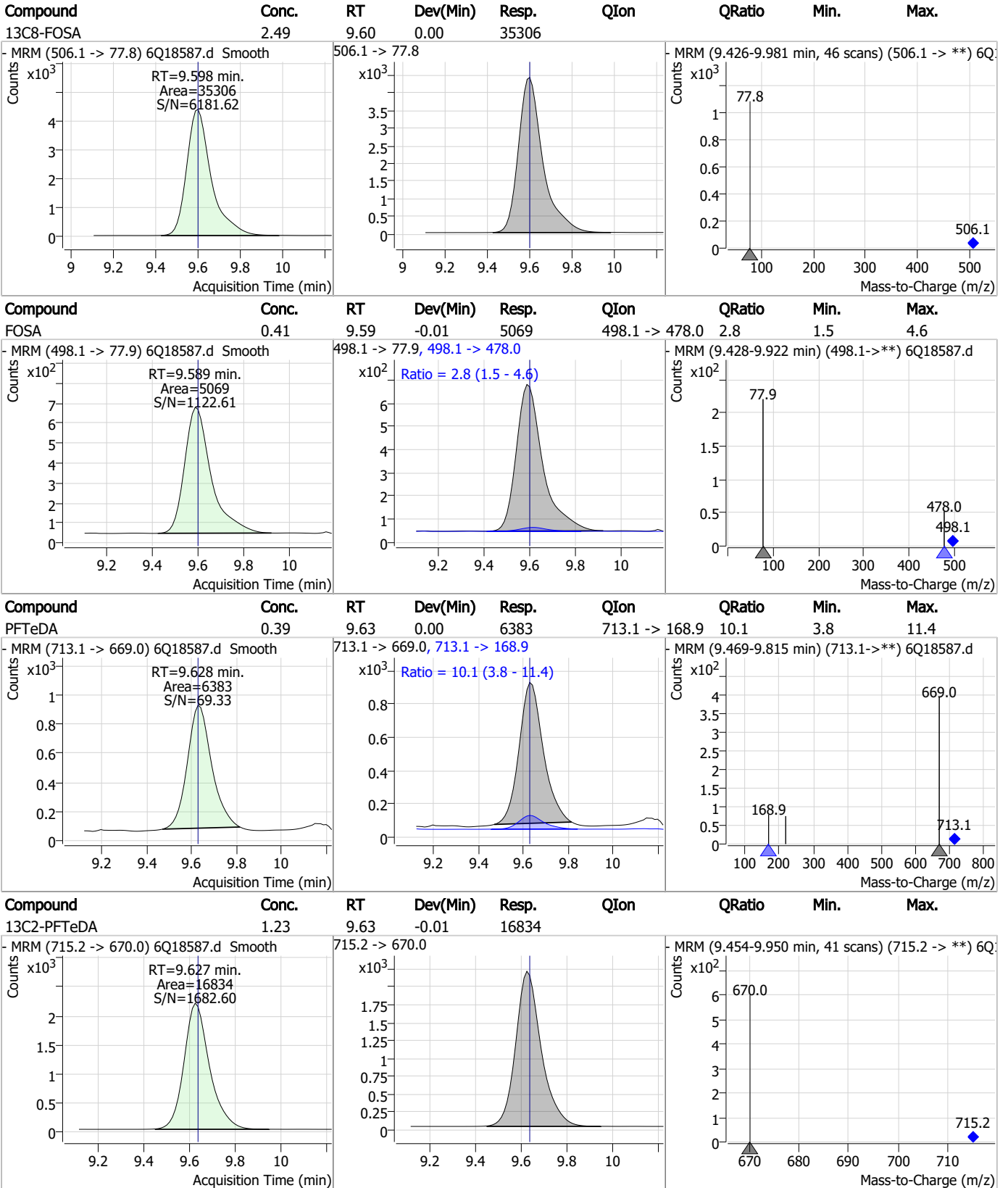
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS

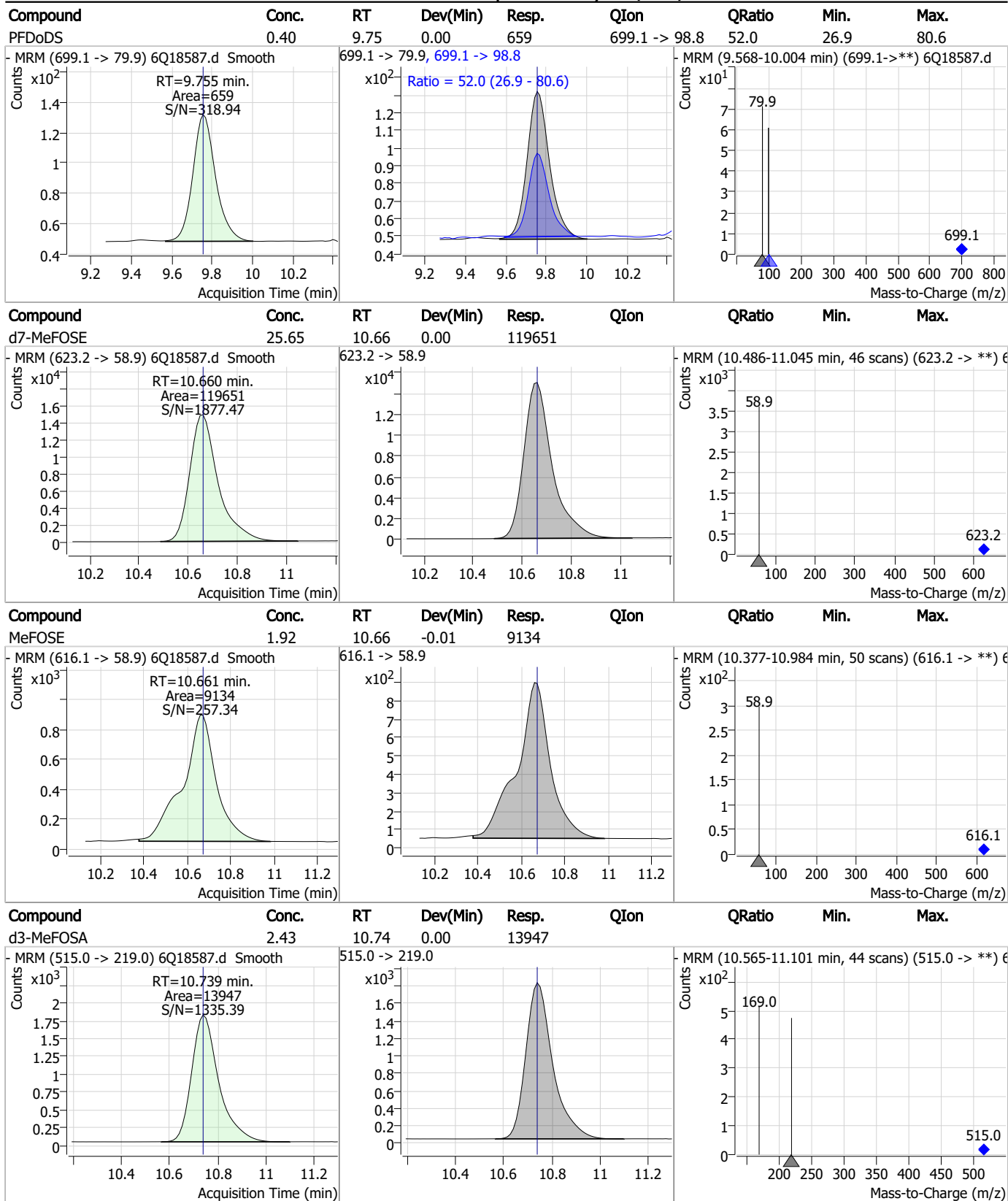


7.7.3

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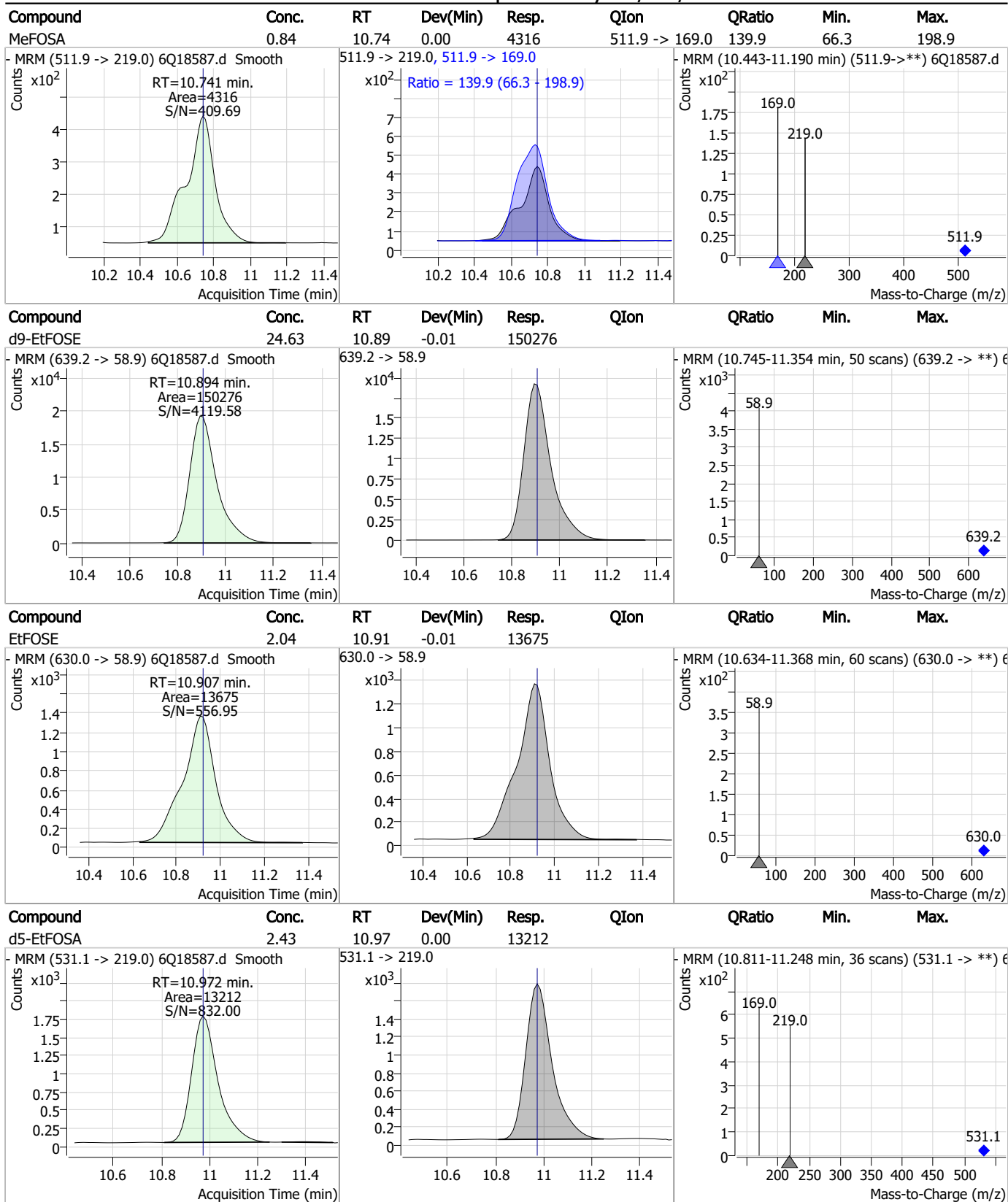


Perfluorinated Compounds by LC/MS/MS



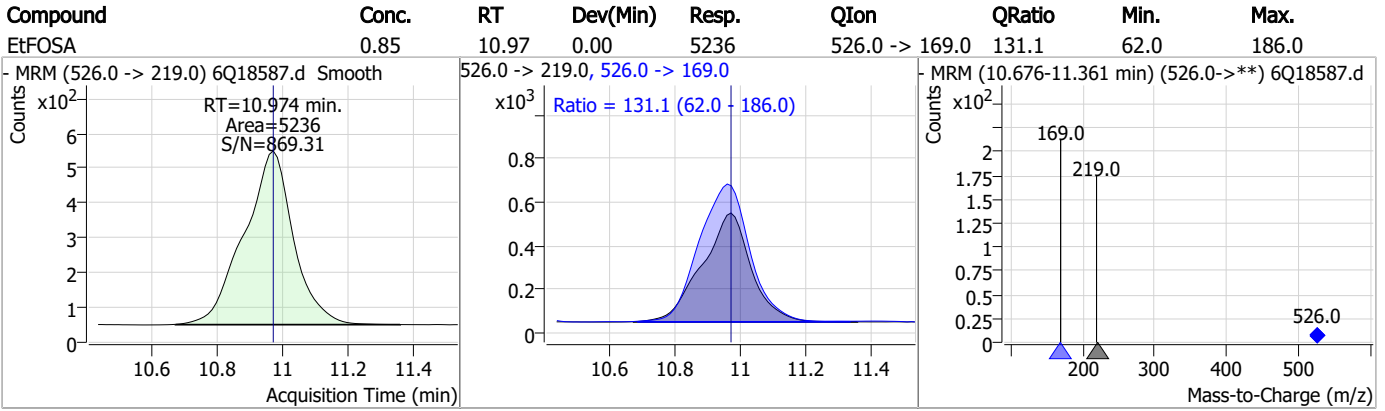
7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18587.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:30 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

7.7.3.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18588.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:45:22 PM
 Sample Name : ic279-3
 Vial : P1-A4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187370	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62639	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68931	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62931	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	98434	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43906	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	28212	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33495	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31515	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17235	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	35552	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24967	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15139	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14222	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3844	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5719	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5271	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	27962	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40832	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117703	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153171	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13351	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	18134	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	78981	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10927	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103303	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	38097	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	52961	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	63376	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3844	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5719	5.40 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5271	4.91 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31515	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17235	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24967	2.58 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.130	402.1 -> 79.9	15139	2.48 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C4-PFBA	2.822	216.8 -> 171.9	187370	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C4-PFHpA	6.369	367.1 -> 322.0	62931	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C5-PFHxA	5.404	318.0 -> 273.0	68931	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C5-PFPeA	4.210	268.3 -> 223.0	62639	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C6-PFDA	8.027	519.1 -> 474.1	28212	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C7-PFUnDA	8.468	570.0 -> 525.1	33495	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C8-FOSA	9.598	506.1 -> 77.8	35552	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C8-PFOA	7.026	421.1 -> 376.0	98434	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C8-PFOS	8.177	507.1 -> 79.9	14222	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C9-PFNA	7.545	472.1 -> 427.0	43906	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
d3-MeFOSAA	8.084	573.2 -> 419.0	27962	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C3-HFPO-DA	5.782	286.9 -> 168.9	40832	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
d3-MeFOSA	10.739	515.0 -> 219.0	14012	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
d5-EtFOSAA	8.279	589.2 -> 419.0	27544	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
d7-MeFOSE	10.660	623.2 -> 58.9	117703	25.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
d9-EtFOSE	10.907	639.2 -> 58.9	153171	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d5-EtFOSA	10.972	531.1 -> 219.0	13351	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	26825	4.80 µg/L	94
		327.1 -> 80.9	9707		
6:2FTS	6.801	427.1 -> 407.0	25540	4.54 µg/L	98
		427.1 -> 80.9	8914		
8:2FTS	7.816	527.1 -> 507.0	15451	5.27 µg/L	93
		527.1 -> 80.8	5868		
EtFOSAA	8.280	584.2 -> 419.1	4271	1.21 µg/L	97
		584.2 -> 526.0	2412		
FOSA	9.589	498.1 -> 77.9	14948	1.21 µg/L	100
		498.1 -> 478.0	462		
MeFOSAA	8.085	570.1 -> 419.0	7435	1.29 µg/L	99
		570.1 -> 483.0	1461		
PFBA	2.818	212.8 -> 168.9	30157	4.86 µg/L	100
PFBS	5.323	298.7 -> 79.9	9111	1.07 µg/L	97
		298.7 -> 98.8	3443		
PFDA	8.027	512.9 -> 469.0	35852	1.10 µg/L	99
		512.9 -> 219.0	5917		
PFDODA	8.900	613.1 -> 569.0	26862	1.24 µg/L	95
		613.1 -> 319.0	4178		
PFDS	9.064	599.0 -> 79.9	4370	1.23 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2090			
PFHpA	6.370	363.1 -> 319.0	34372	1.23	µg/L	96
		363.1 -> 169.0	5719			
PFHpS	7.685	449.0 -> 79.9	8125	1.19	µg/L	100
		449.0 -> 98.9	3995			
PFHxA	5.407	313.0 -> 269.0	27090	1.17	µg/L	96
		313.0 -> 118.9	1569			
PFHxS	7.119	398.7 -> 79.9	8079	1.18	µg/L	m 97
		398.7 -> 98.9	3650			
PFNA	7.545	463.0 -> 419.0	37524	1.21	µg/L	100
		463.0 -> 219.0	7401			
PFNS	8.631	548.8 -> 79.9	6966	1.22	µg/L	99
		548.8 -> 98.9	3453			
PFOA	7.028	413.0 -> 369.0	50028	1.19	µg/L	98
		413.0 -> 169.0	8173			
PFOS	8.178	498.9 -> 79.9	7692	1.18	µg/L	m 98
		498.9 -> 98.8	4010			
PFPeA	4.212	263.0 -> 219.0	36747	2.44	µg/L	100
PFPeS	6.410	349.1 -> 79.9	7727	1.13	µg/L	97
		349.1 -> 98.9	3786			
PFTeDA	9.628	713.1 -> 669.0	21136	1.25	µg/L	96
		713.1 -> 168.9	1865			
PFTrDA	9.284	663.0 -> 619.0	26434	1.21	µg/L	97
		663.0 -> 168.9	2776			
PFUnDA	8.468	563.1 -> 519.0	26286	1.21	µg/L	95
		563.1 -> 269.1	4591			
11CI-PF3OUdS	9.336	630.9 -> 450.9	37610	2.45	µg/L	97
		632.9 -> 452.9	11098			
9CI-PF3ONS	8.508	530.8 -> 351.0	57452	2.38	µg/L	100
		532.8 -> 353.0	18801			
ADONA	6.632	376.9 -> 250.9	130357	2.40	µg/L	99
		376.9 -> 84.8	35366			
HFPO-DA	5.770	284.9 -> 168.9	8787	2.54	µg/L	99
		284.9 -> 184.9	1229			
3:3FTCA	3.671	241.0 -> 177.0	5932	6.16	µg/L	99
		241.0 -> 117.0	843			
5:3FTCA	6.074	341.0 -> 237.1	125804	30.22	µg/L	95
		341.0 -> 217.0	94435			
7:3FTCA	7.510	441.0 -> 316.9	81482	28.58	µg/L	84
		441.0 -> 336.9	200432			
EtFOSA	10.974	526.0 -> 219.0	15129	2.43	µg/L	90
		526.0 -> 169.0	20436			
EtFOSE	10.920	630.0 -> 58.9	42639	6.24	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	12710	2.47	µg/L	93
		511.9 -> 169.0	17862			
MeFOSE	10.673	616.1 -> 58.9	28431	6.08	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	2029	1.28	µg/L	95
		699.1 -> 98.8	1015			
NFDHA	5.288	295.0 -> 201.0	6915	2.45	µg/L	93
		295.0 -> 84.9	1612			
PFMBA	4.626	279.0 -> 85.1	25336	2.47	µg/L	100
PFMPA	3.351	229.0 -> 84.9	19888	2.50	µg/L	100
PFEESA	5.862	314.8 -> 134.9	62574	2.13	µg/L	100
		314.8 -> 82.9	2487			

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

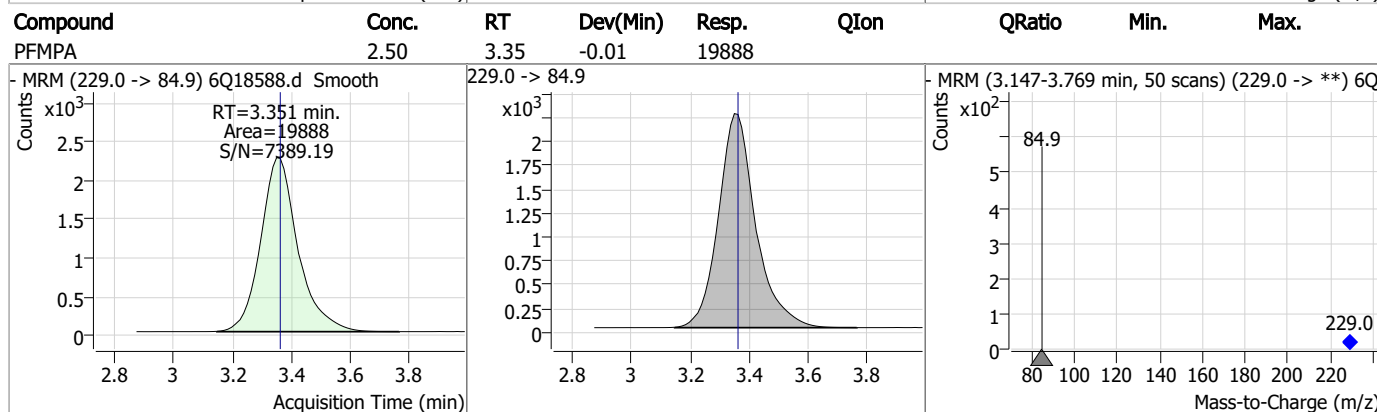
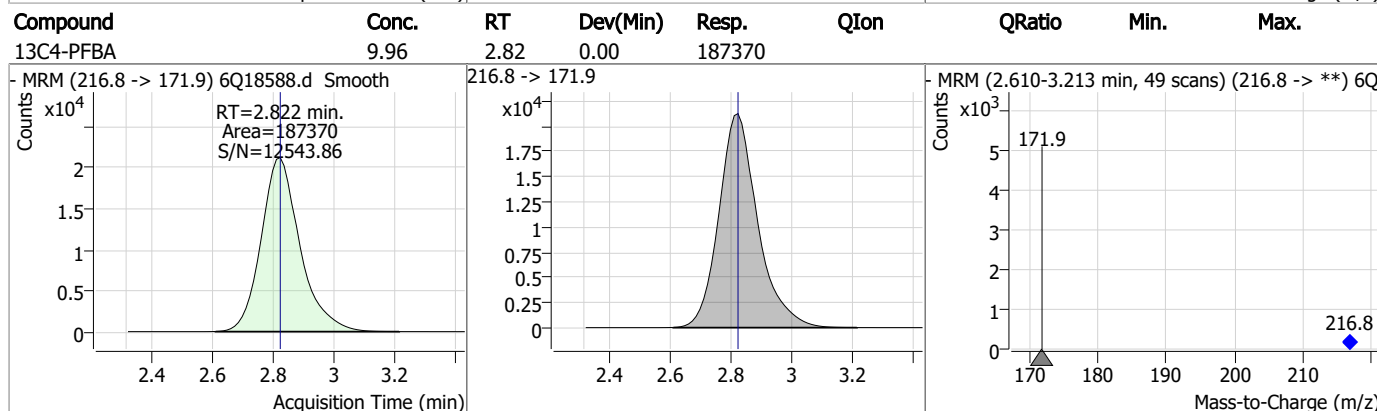
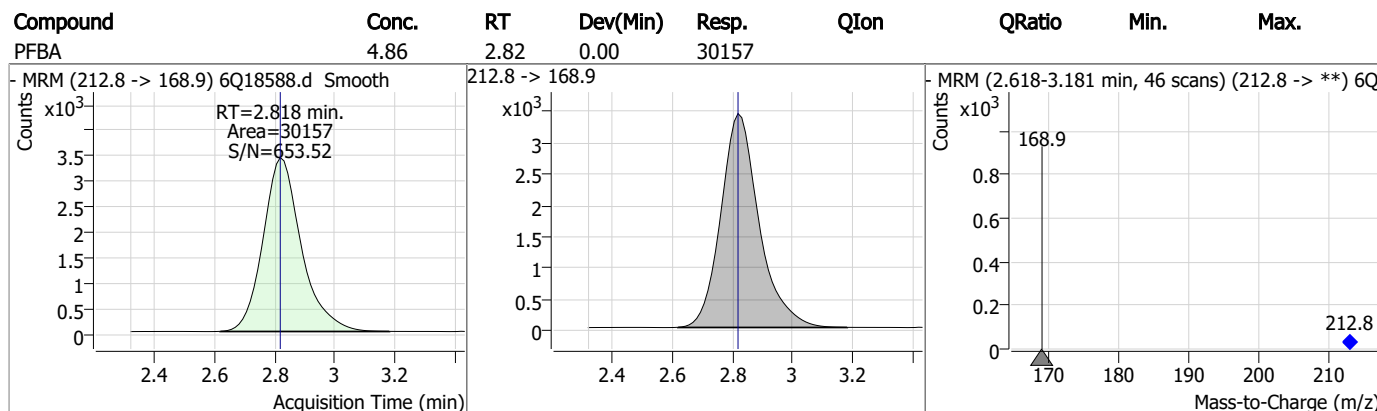
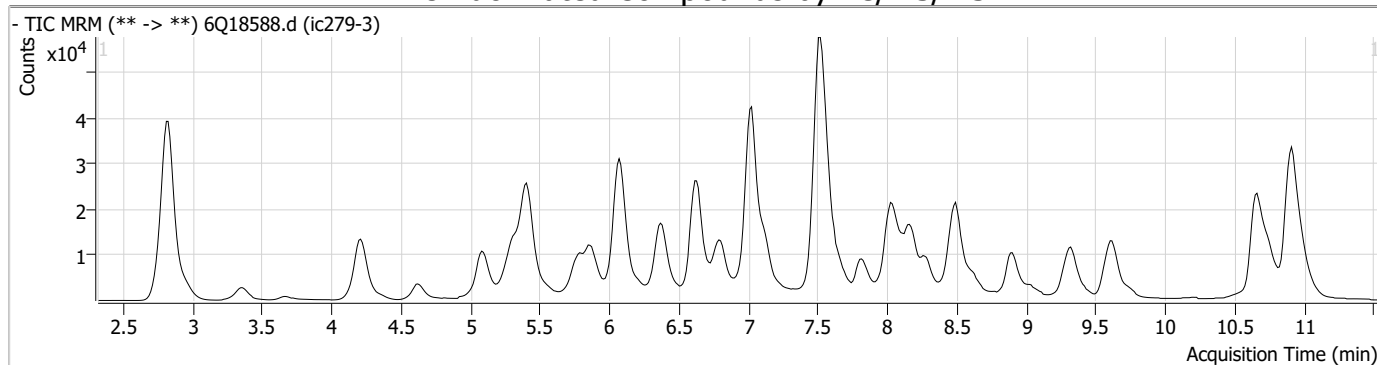
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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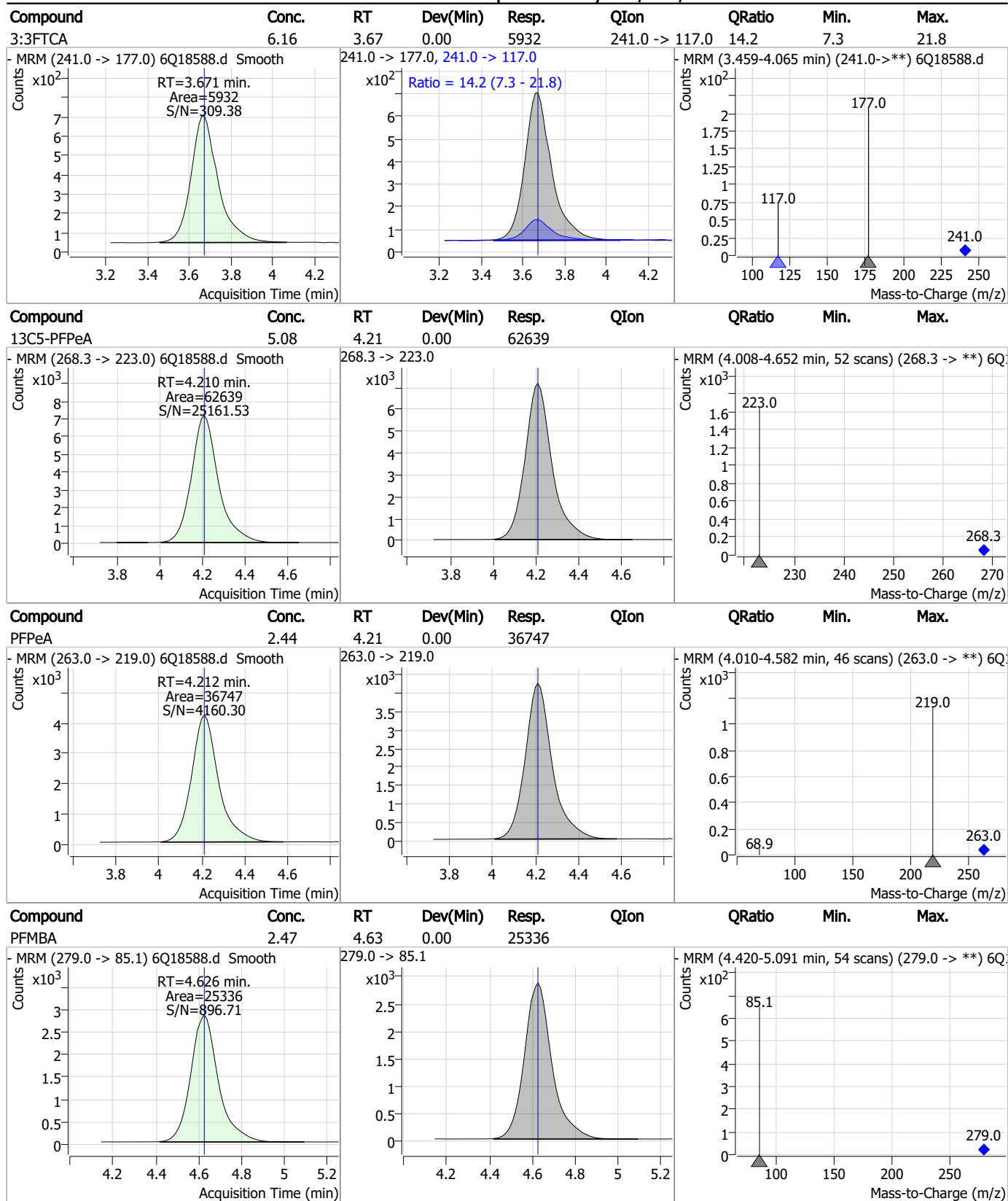
7.7.4

7

Perfluorinated Compounds by LC/MS/MS



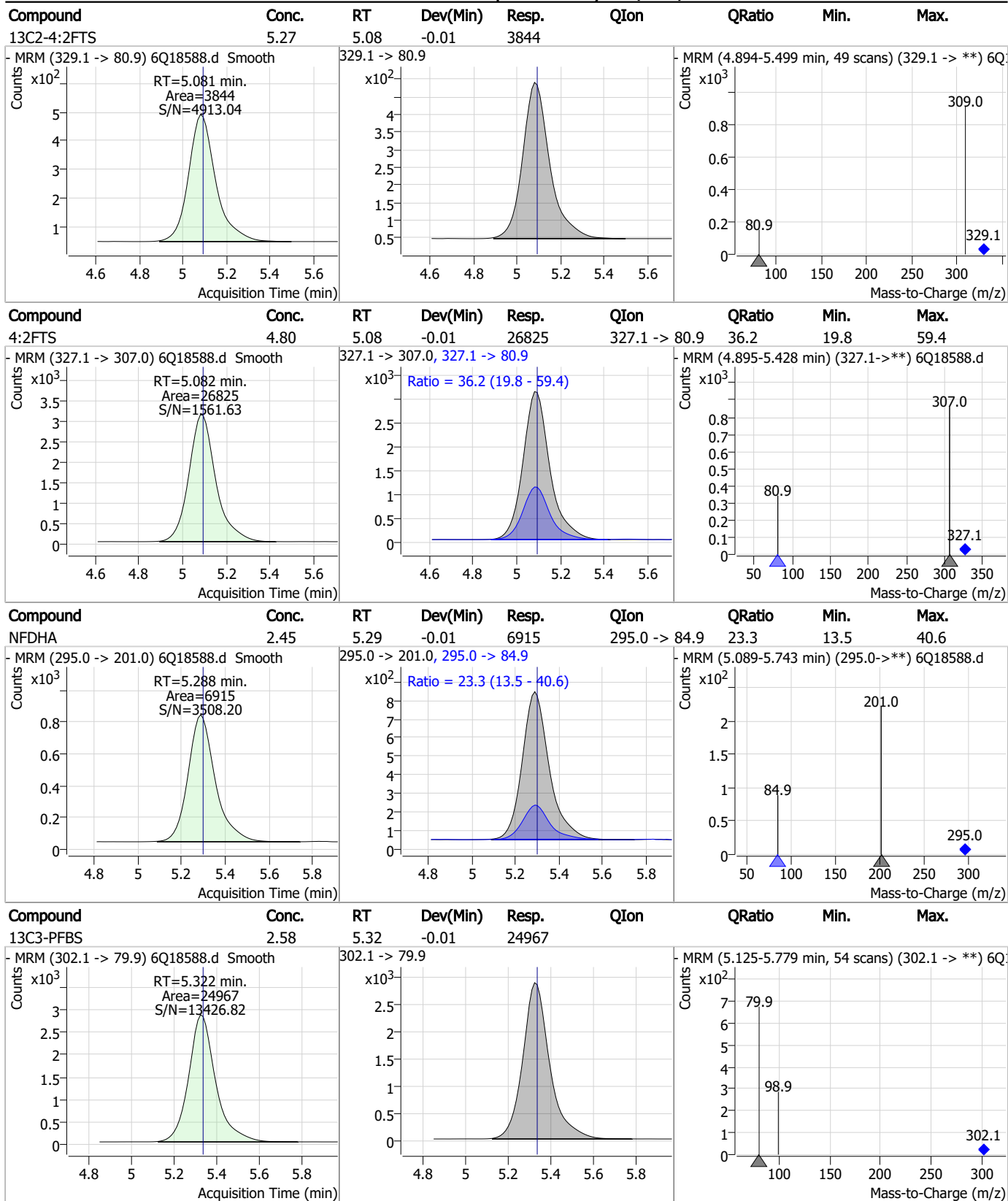
Perfluorinated Compounds by LC/MS/MS



7.7.4

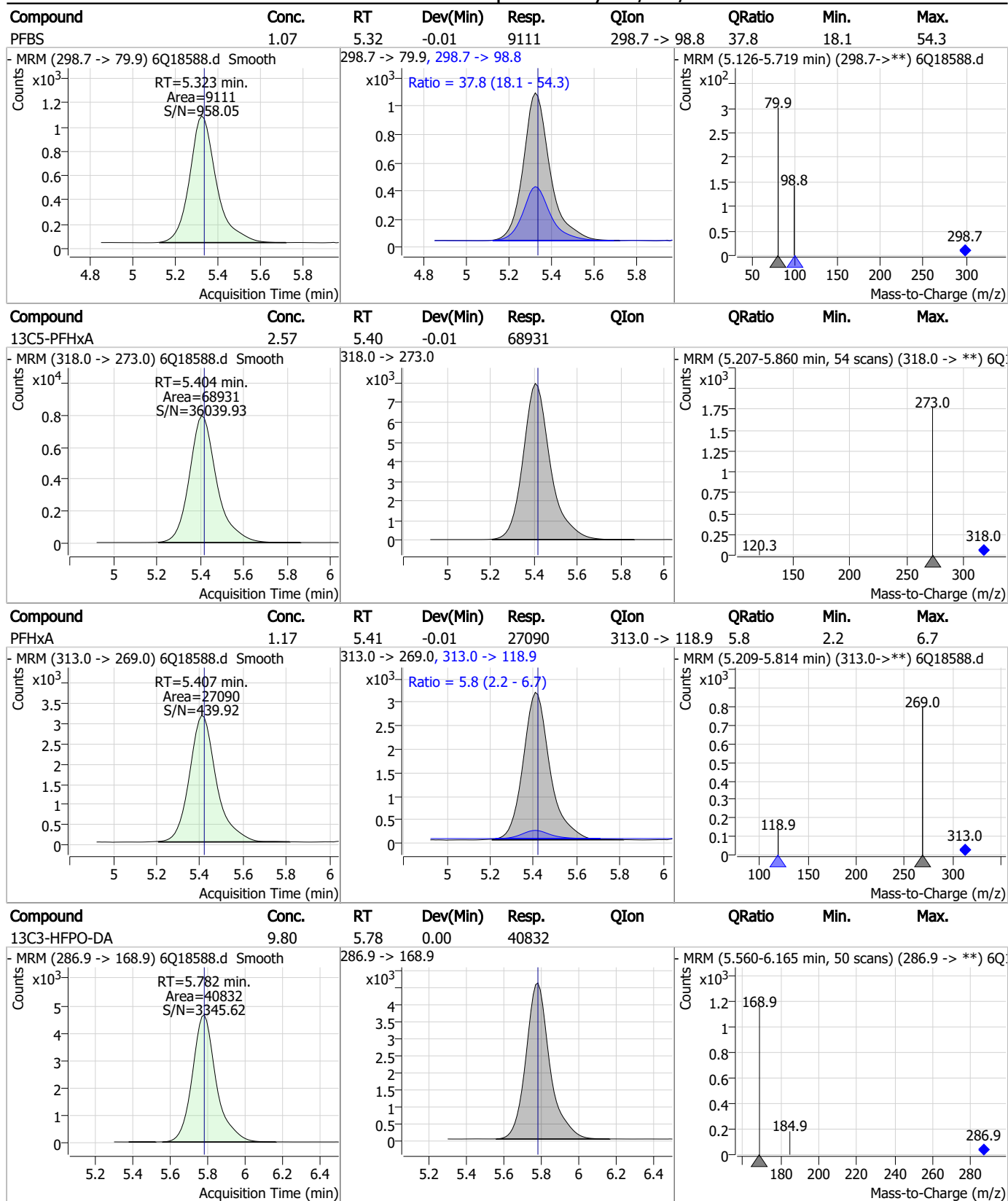
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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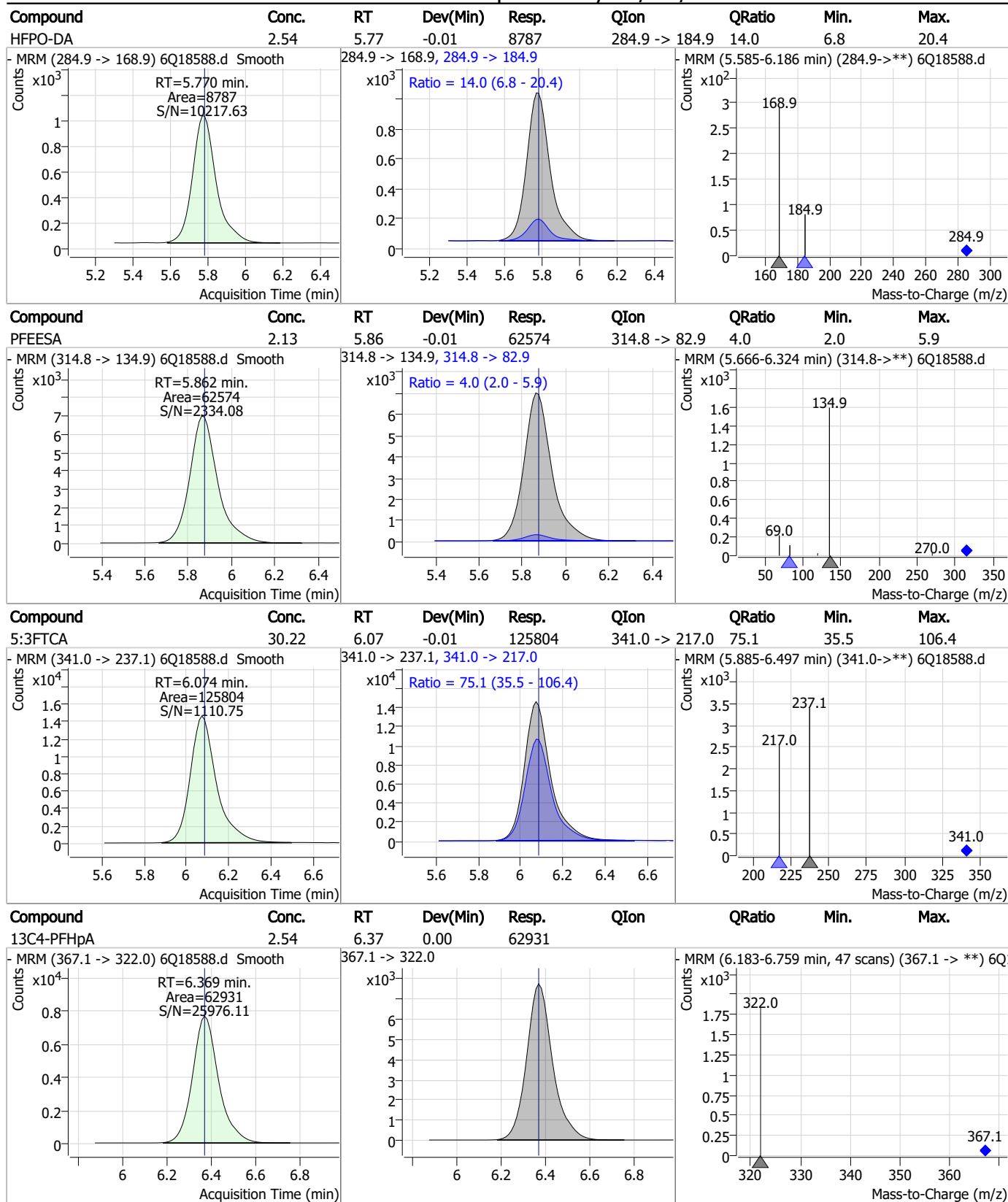
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7.7.4

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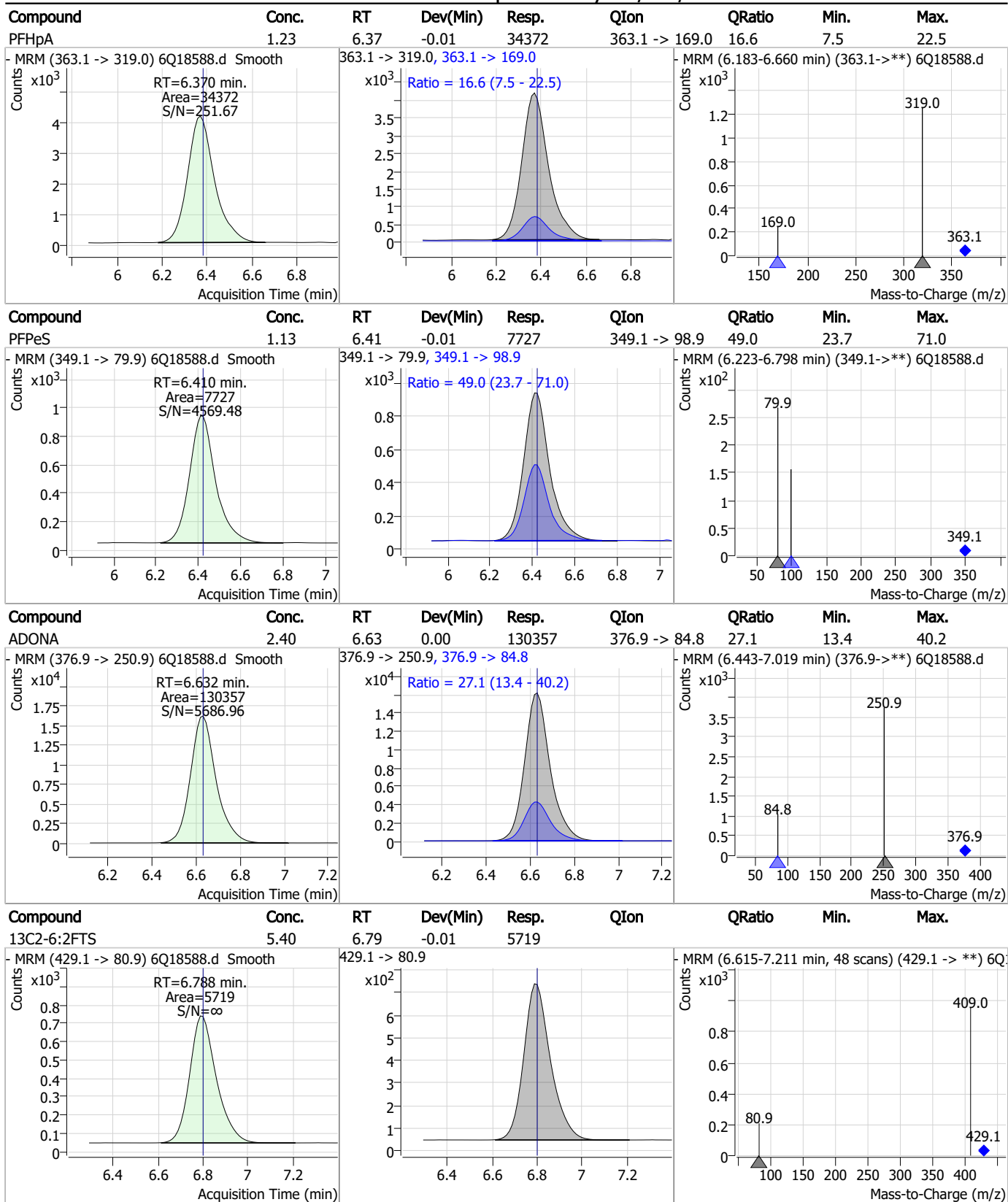
Perfluorinated Compounds by LC/MS/MS



7.7.4

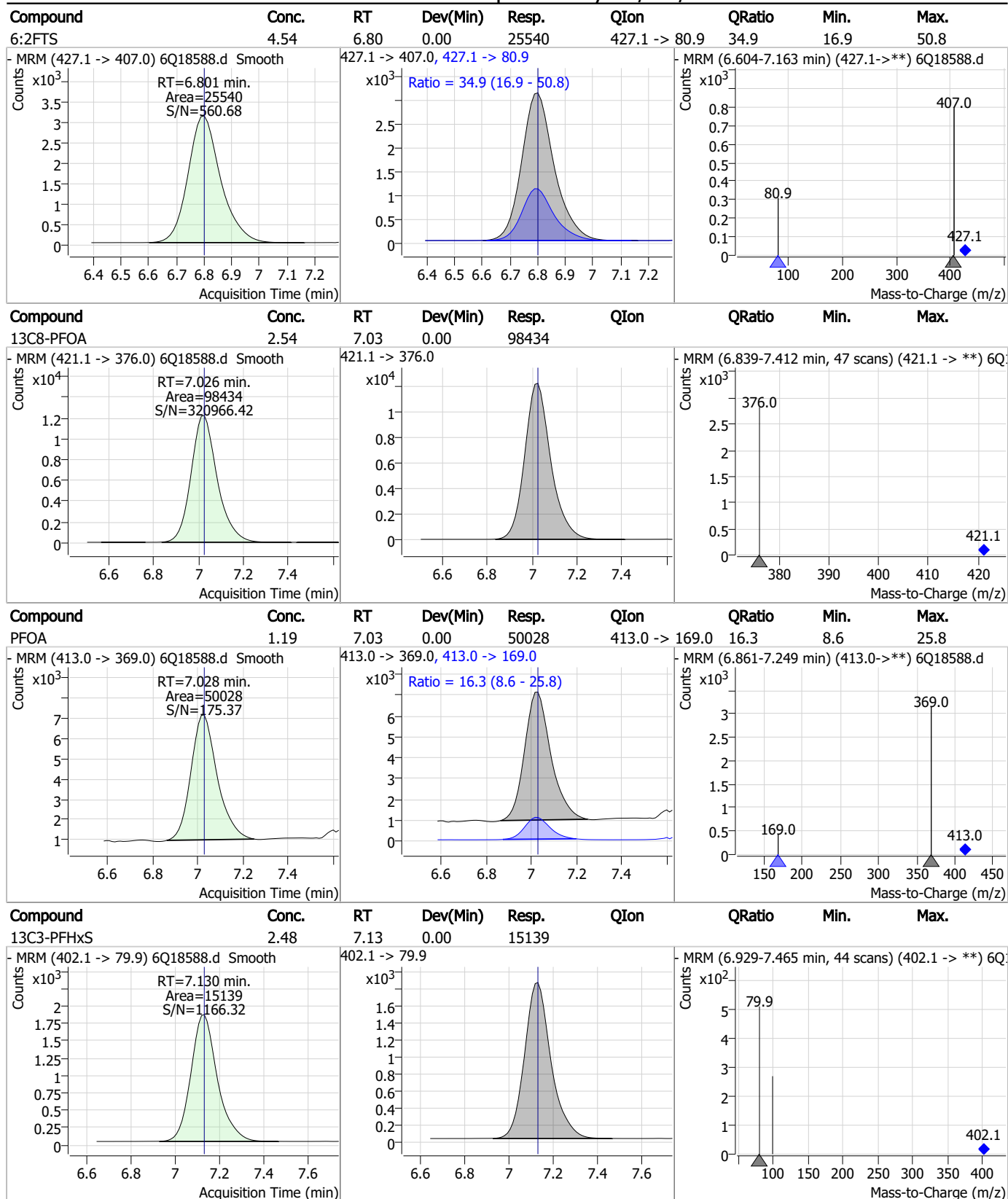
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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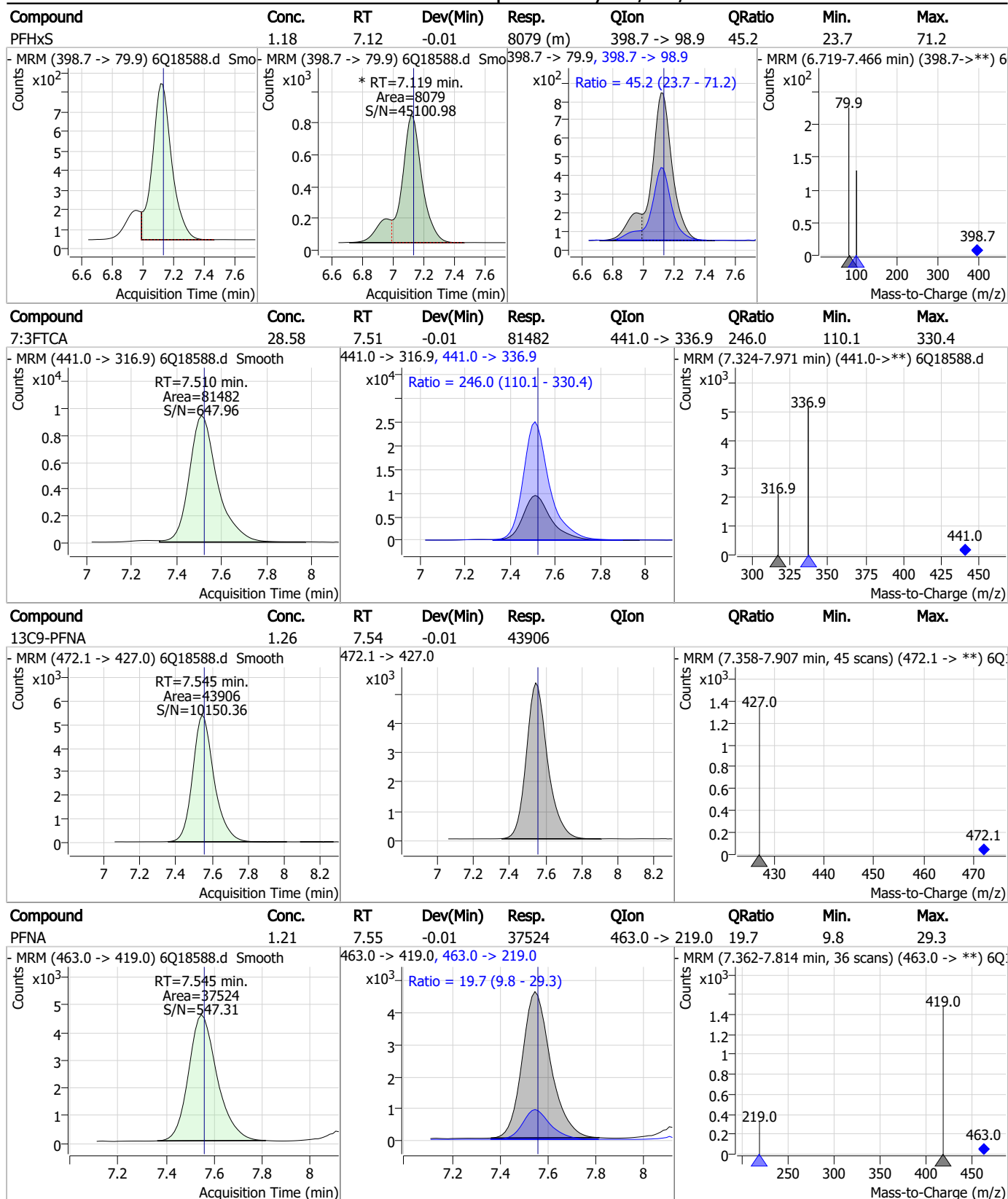
Perfluorinated Compounds by LC/MS/MS



7.7.4

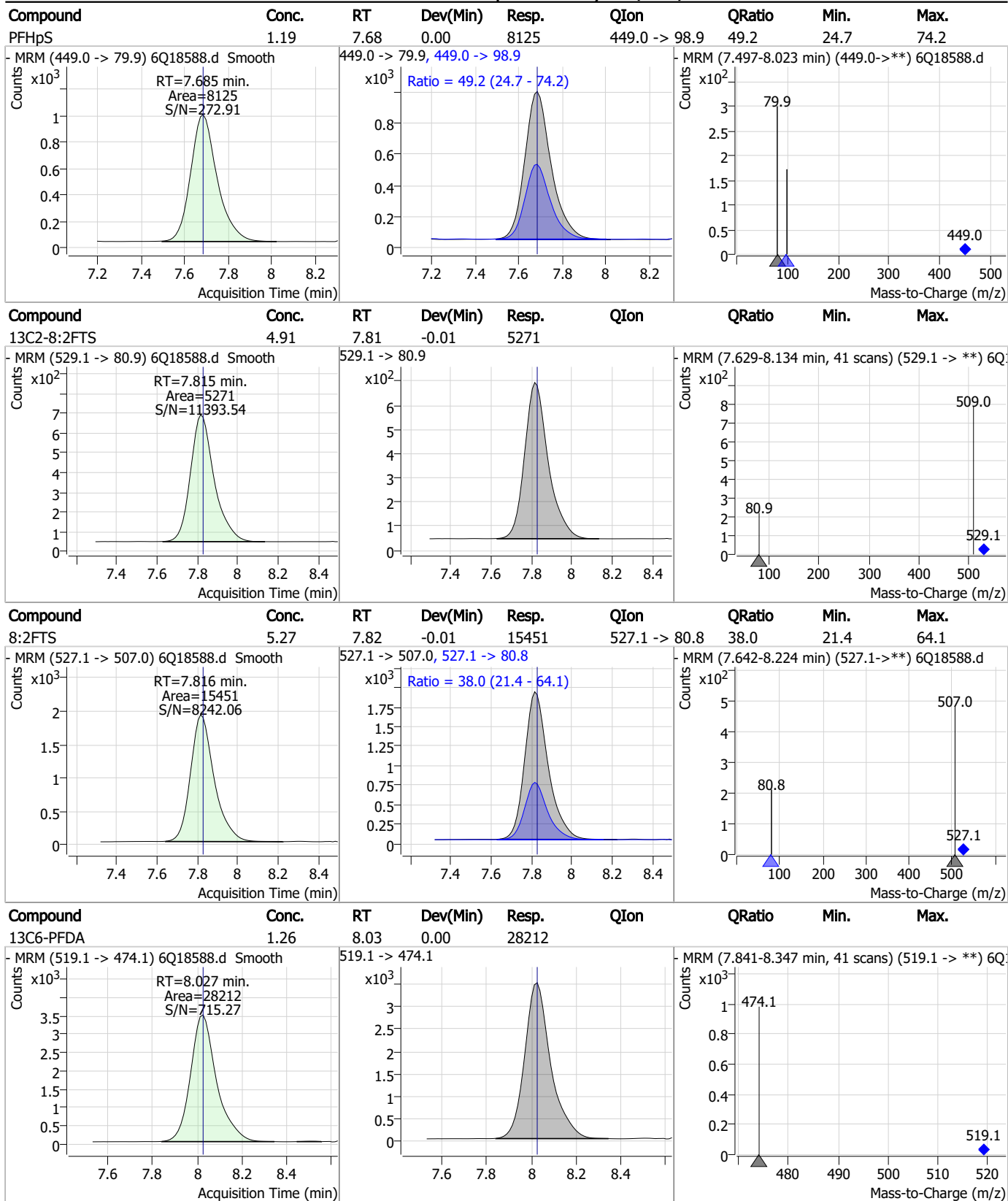
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Perfluorinated Compounds by LC/MS/MS



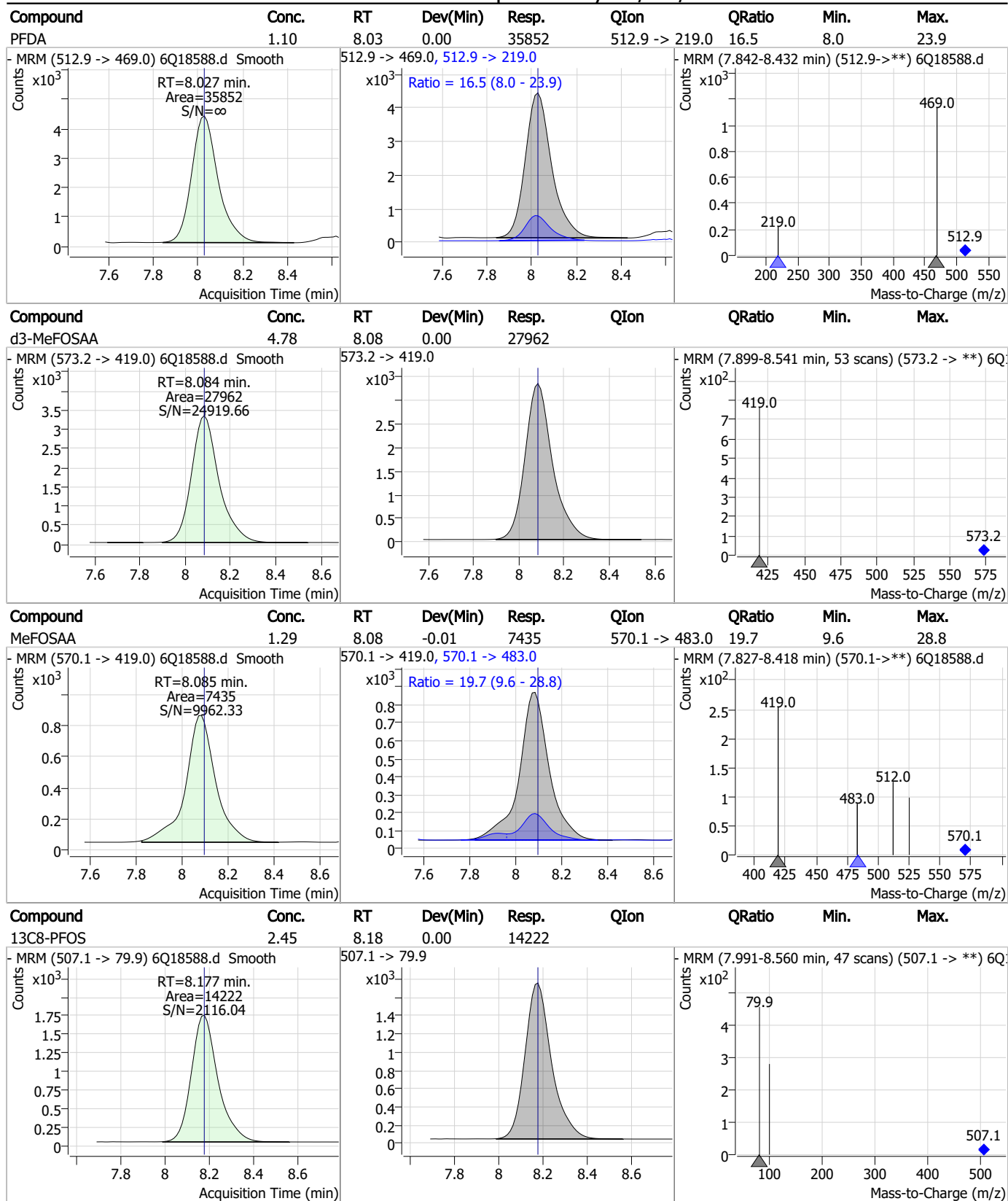
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

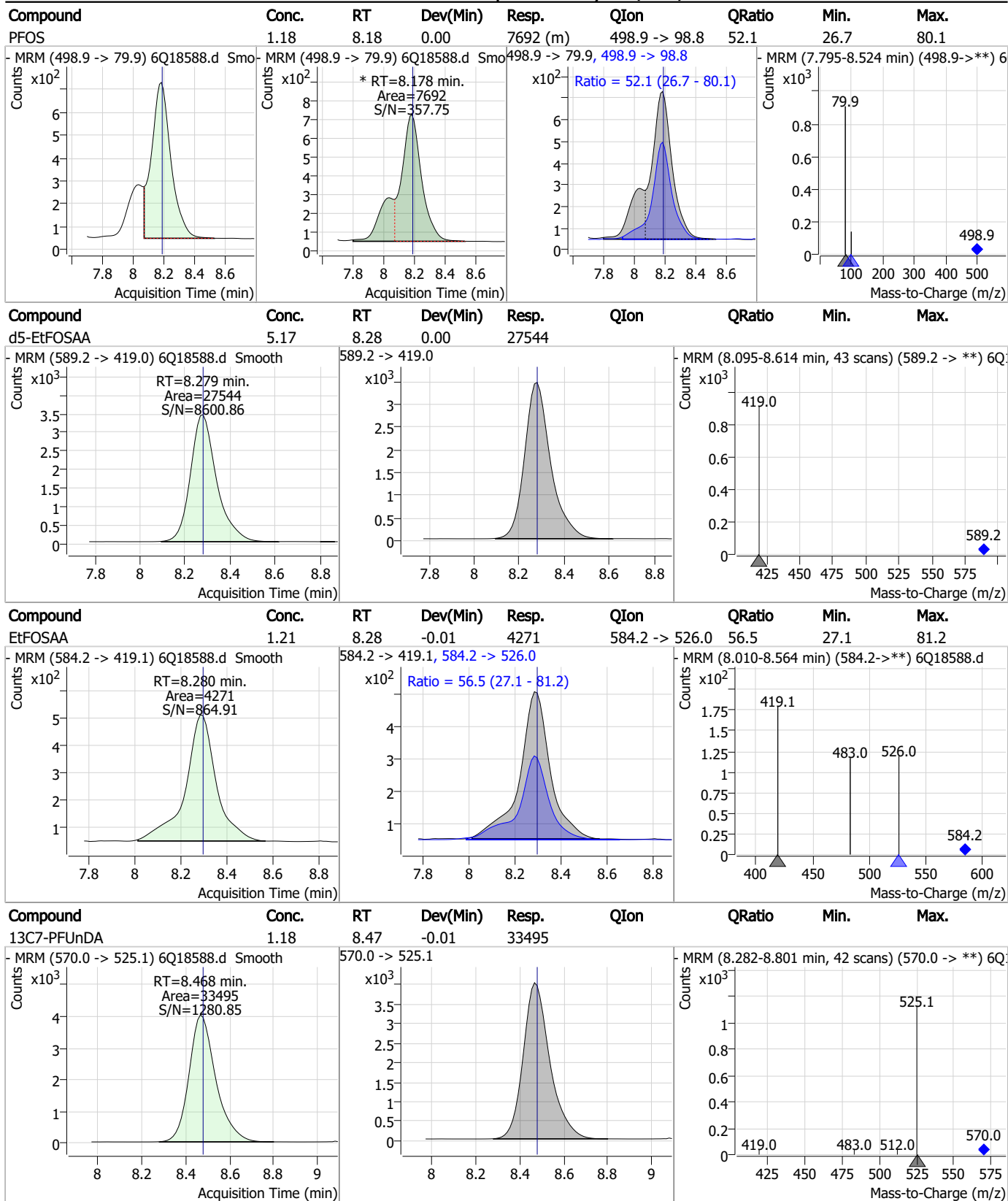
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7.7.4

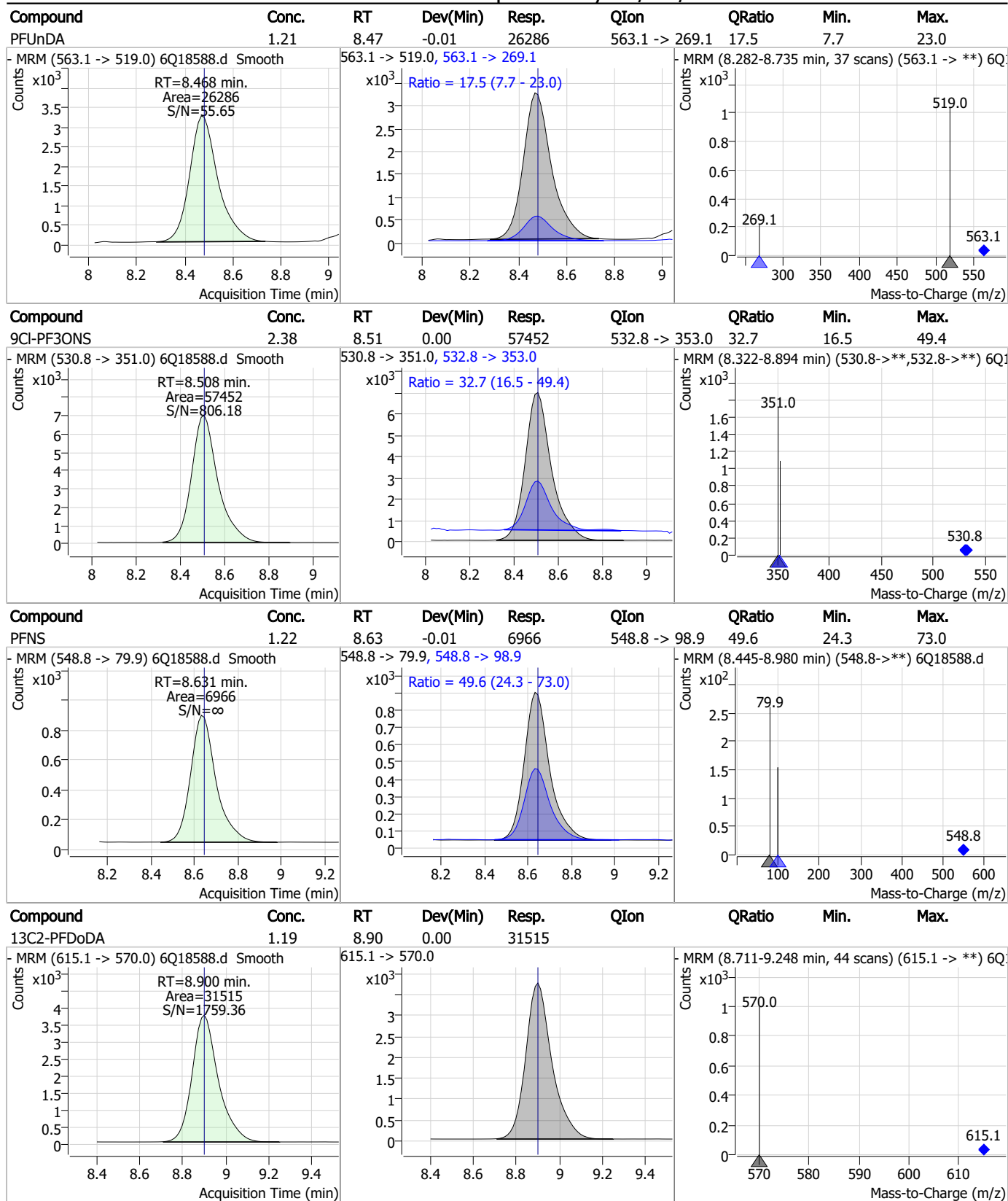
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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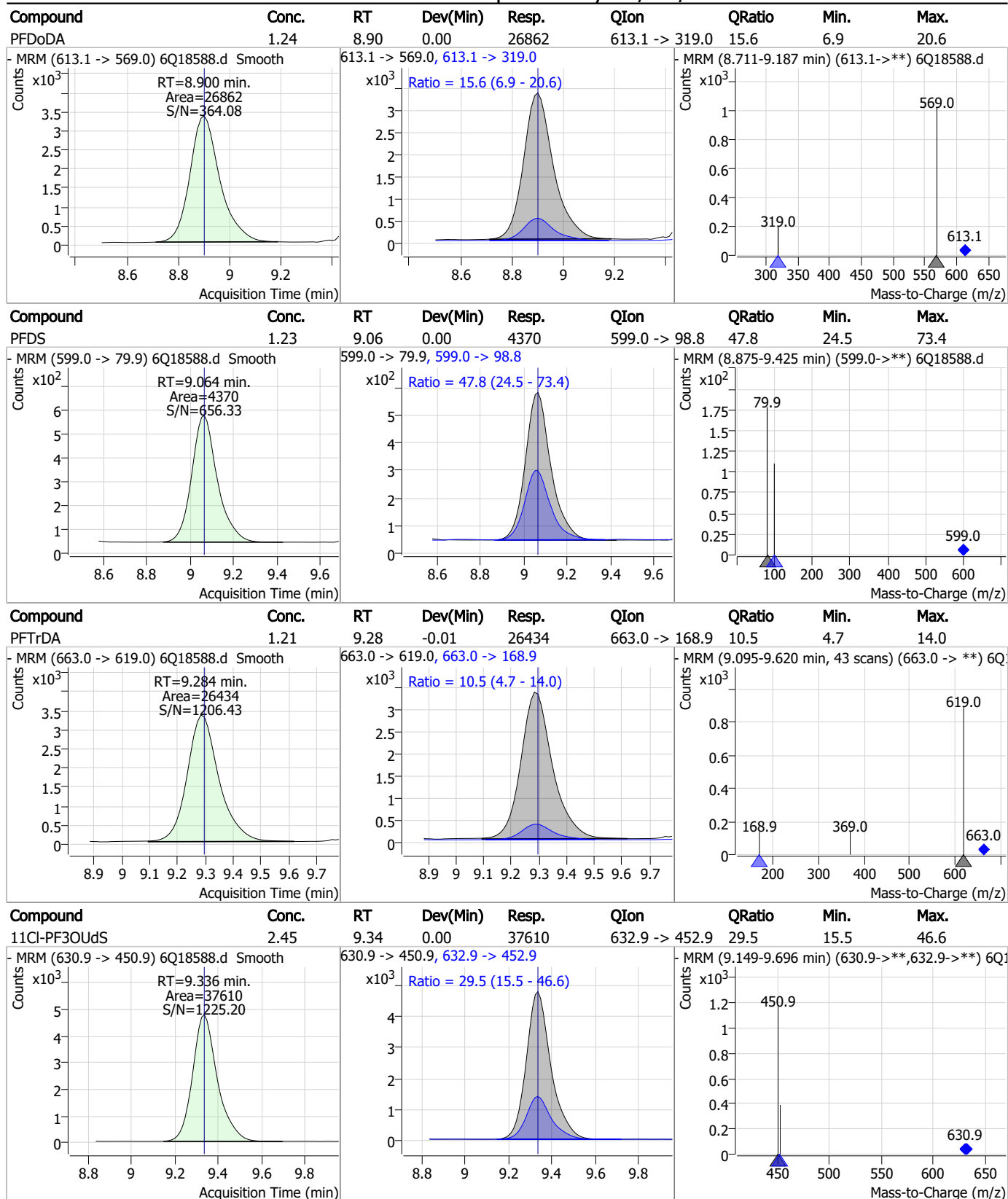
Perfluorinated Compounds by LC/MS/MS



7.7.4

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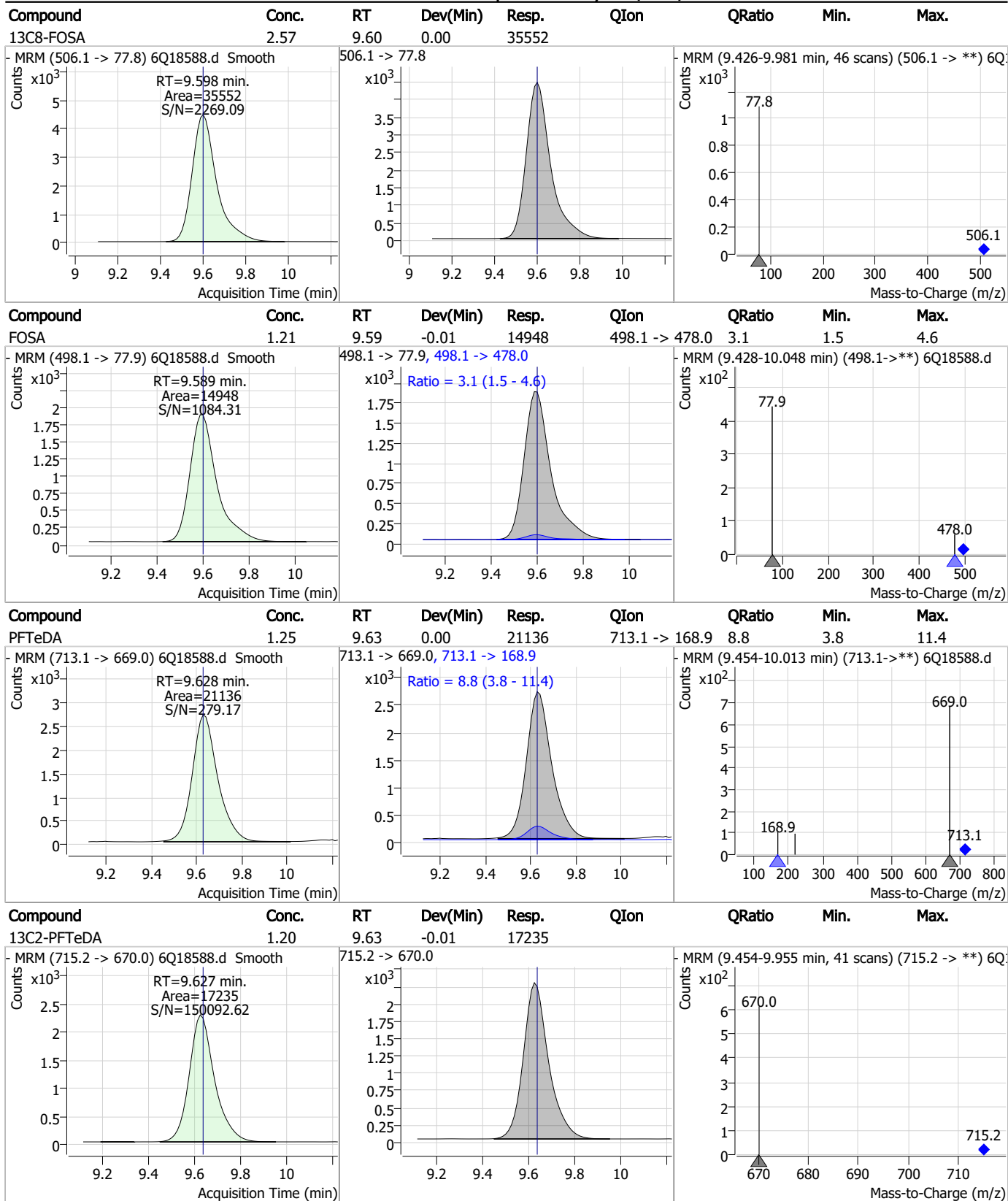
Perfluorinated Compounds by LC/MS/MS



7.7.4

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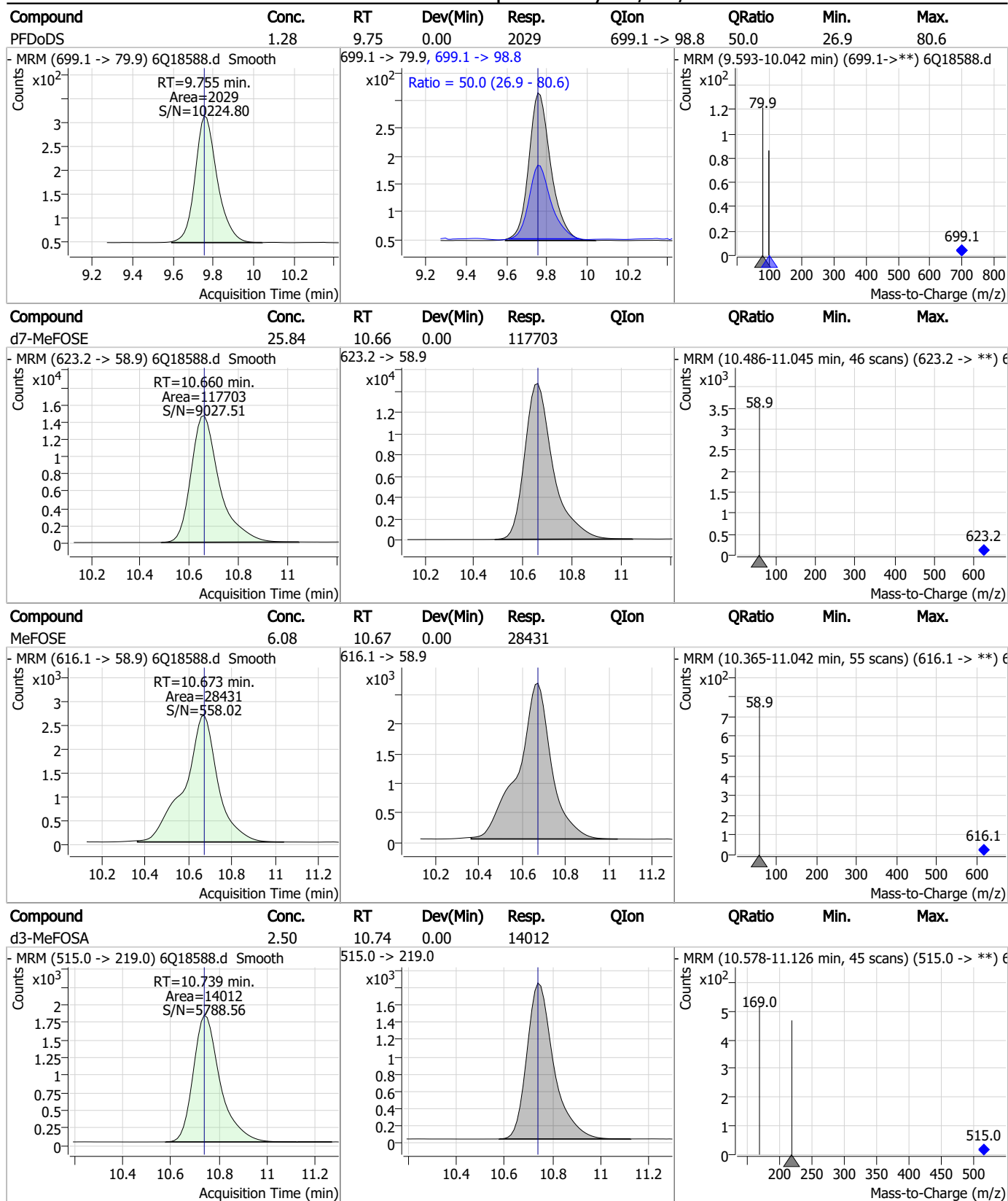
Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS

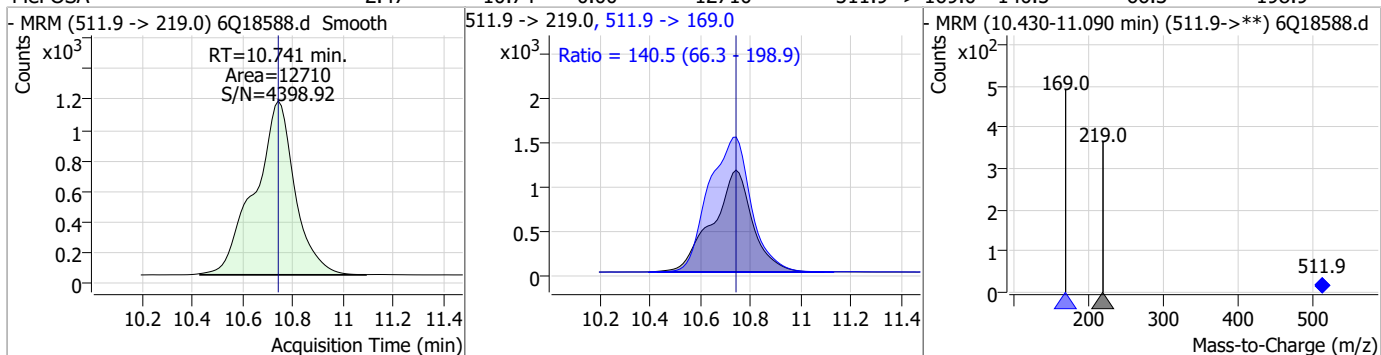


7.7.4

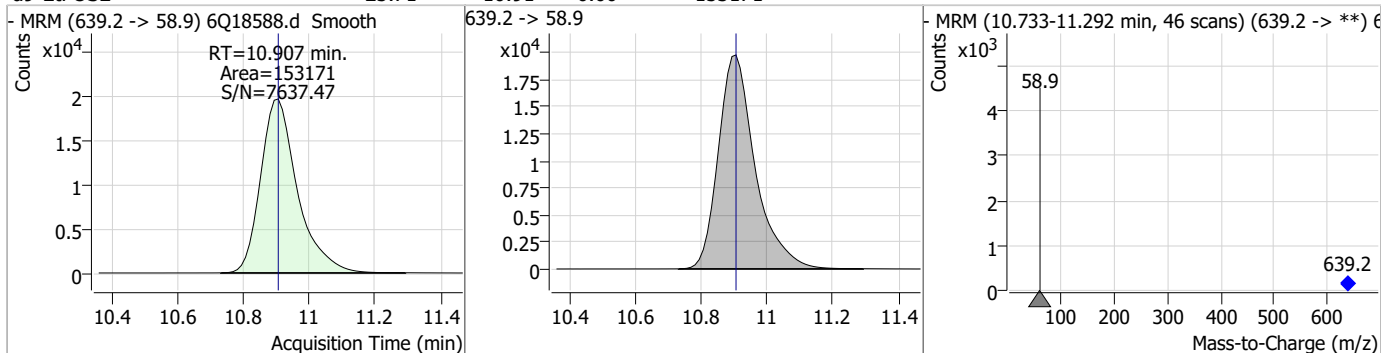
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Perfluorinated Compounds by LC/MS/MS

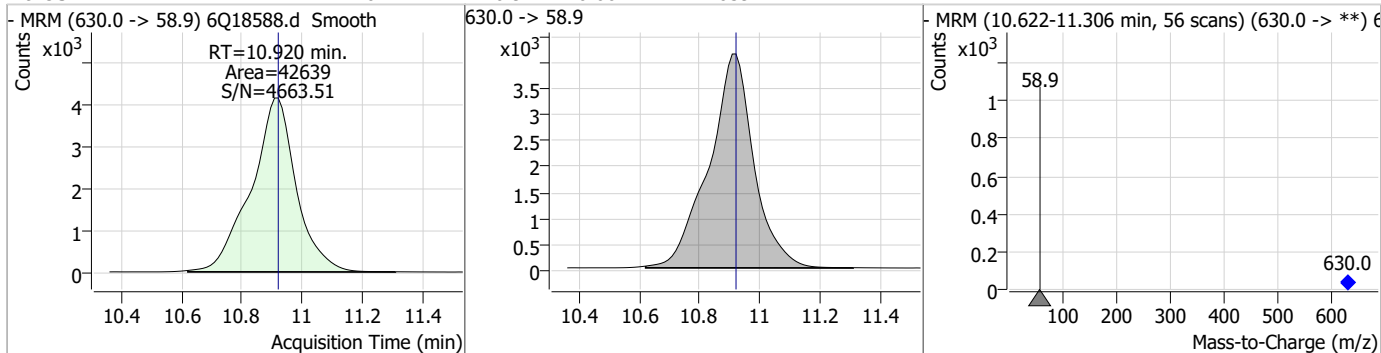
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.47	10.74	0.00	12710	511.9 -> 169.0	140.5	66.3	198.9



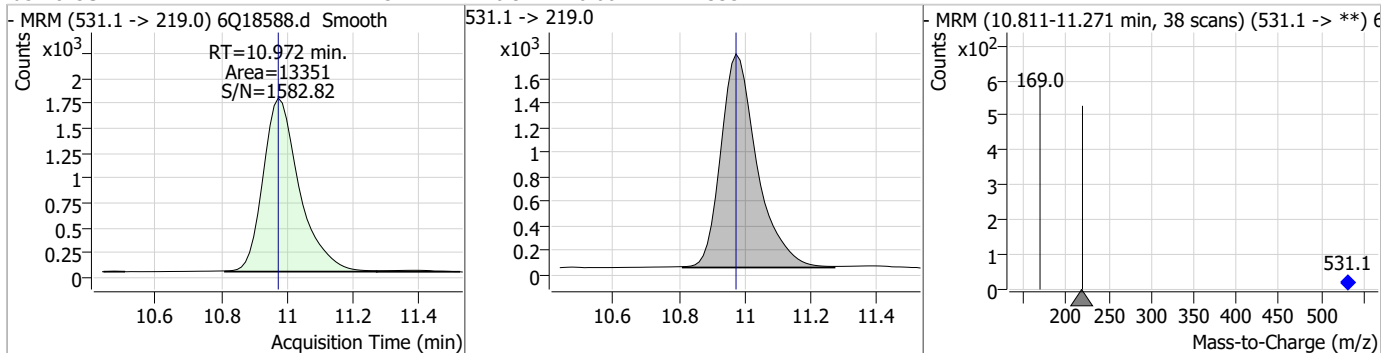
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.71	10.91	0.00	153171				



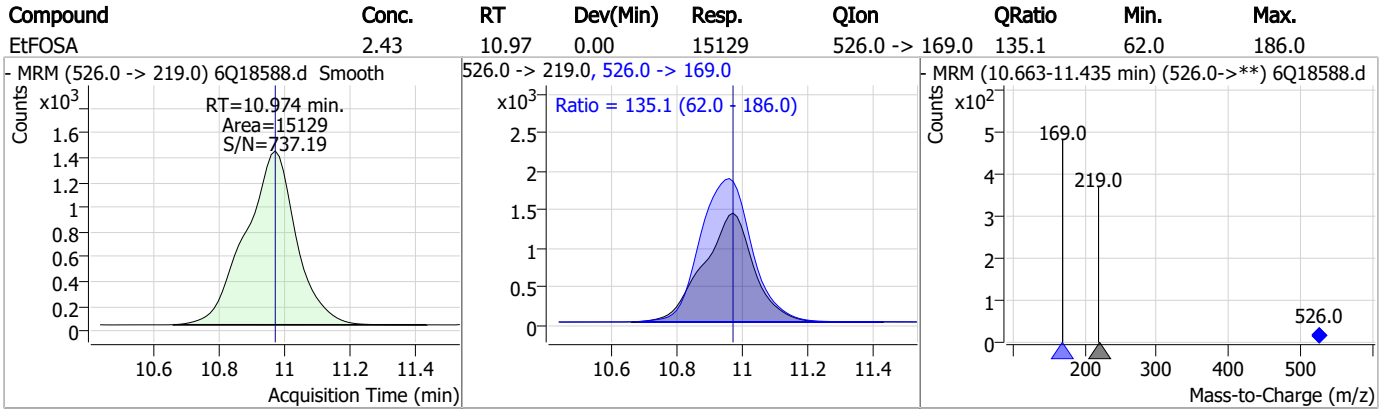
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	6.24	10.92	0.00	42639				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.52	10.97	0.00	13351				



Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18588.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:45 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.18	Split peak

7.7.4.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18589.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:59:51 PM
 Sample Name : icc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	189555	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	63493	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	69513	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	64957	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	97956	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	44035	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25820	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	35422	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31033	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16887	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34925	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15545	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15184	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3758	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5472	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5633	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28440	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	41571	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	27173	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	117040	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	153531	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	13495	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14341	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	19853	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78902	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11237	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	103323	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	35484	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	58126	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	66686	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3758	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5472	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5633	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31033	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16887	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFBS	5.322	302.1 -> 79.9	24869	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15545	2.48 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFBA	2.822	216.8 -> 171.9	189555	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	64957	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	69513	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	63493	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.027	519.1 -> 474.1	25820	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	35422	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.598	506.1 -> 77.8	34925	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C8-PFOA	7.026	421.1 -> 376.0	97956	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.177	507.1 -> 79.9	15184	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C9-PFNA	7.545	472.1 -> 427.0	44035	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28440	4.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	41571	9.49 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	14341	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	27173	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	117040	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	153531	23.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13495	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	51425	9.42 µg/L	96
		327.1 -> 80.9	19128		
6:2FTS	6.801	427.1 -> 407.0	50102	9.32 µg/L	98
		427.1 -> 80.9	16529		
8:2FTS	7.816	527.1 -> 507.0	29747	9.49 µg/L	92
		527.1 -> 80.8	11252		
EtFOSAA	8.280	584.2 -> 419.1	8210	2.35 µg/L	98
		584.2 -> 526.0	4591		
FOSA	9.589	498.1 -> 77.9	29050	2.40 µg/L	99
		498.1 -> 478.0	792		
MeFOSAA	8.085	570.1 -> 419.0	14399	2.46 µg/L	95
		570.1 -> 483.0	3104		
PFBA	2.818	212.8 -> 168.9	59471	9.48 µg/L	100
PFBS	5.323	298.7 -> 79.9	18127	2.14 µg/L	97
		298.7 -> 98.8	6865		
PFDA	8.027	512.9 -> 469.0	74108	2.48 µg/L	99
		512.9 -> 219.0	12035		
PFDODA	8.900	613.1 -> 569.0	52039	2.44 µg/L	96
		613.1 -> 319.0	7920		
PFDS	9.052	599.0 -> 79.9	8728	2.30 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3939		
PFHpA	6.370	363.1 -> 319.0	66315	2.31 µg/L	97
		363.1 -> 169.0	10881		
PFHpS	7.685	449.0 -> 79.9	15706	2.16 µg/L	98
		449.0 -> 98.9	8011		
PFHxA	5.407	313.0 -> 269.0	56570	2.42 µg/L	98
		313.0 -> 118.9	2891		
PFHxS	7.131	398.7 -> 79.9	15719	2.24 µg/L	100
		398.7 -> 98.9	7434		
PFNA	7.545	463.0 -> 419.0	69229	2.22 µg/L	96
		463.0 -> 219.0	14725		
PFNS	8.631	548.8 -> 79.9	13620	2.23 µg/L	96
		548.8 -> 98.9	7016		
PFOA	7.028	413.0 -> 369.0	101772	2.43 µg/L	100
		413.0 -> 169.0	17392		
PFOS	8.178	498.9 -> 79.9	15311	2.21 µg/L	95
		498.9 -> 98.8	7621		
PFPeA	4.212	263.0 -> 219.0	72565	4.76 µg/L	100
PFPeS	6.410	349.1 -> 79.9	15859	2.26 µg/L	99
		349.1 -> 98.9	7345		
PFTeDA	9.628	713.1 -> 669.0	41426	2.49 µg/L	97
		713.1 -> 168.9	3558		
PFTrDA	9.284	663.0 -> 619.0	54476	2.53 µg/L	97
		663.0 -> 168.9	5606		
PFUnDA	8.468	563.1 -> 519.0	52765	2.29 µg/L	95
		563.1 -> 269.1	9210		
11Cl-PF3OUdS	9.336	630.9 -> 450.9	75994	4.87 µg/L	98
		632.9 -> 452.9	22667		
9Cl-PF3ONS	8.508	530.8 -> 351.0	118573	4.82 µg/L	96
		532.8 -> 353.0	36306		
ADONA	6.632	376.9 -> 250.9	261173	4.73 µg/L	99
		376.9 -> 84.8	68875		
HFPO-DA	5.770	284.9 -> 168.9	17708	5.03 µg/L	94
		284.9 -> 184.9	2012		
3:3FTCA	3.659	241.0 -> 177.0	11513	11.80 µg/L	99
		241.0 -> 117.0	1602		
5:3FTCA	6.074	341.0 -> 237.1	248699	59.23 µg/L	97
		341.0 -> 217.0	182017		
7:3FTCA	7.510	441.0 -> 316.9	175170	60.92 µg/L	97
		441.0 -> 336.9	376547		
EtFOSA	10.974	526.0 -> 219.0	30802	4.90 µg/L	93
		526.0 -> 169.0	40785		
EtFOSE	10.907	630.0 -> 58.9	82238	12.01 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	25190	4.78 µg/L	94
		511.9 -> 169.0	35040		
MeFOSE	10.673	616.1 -> 58.9	56031	12.05 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3730	2.21 µg/L	97
		699.1 -> 98.8	2084		
NFDHA	5.288	295.0 -> 201.0	13306	4.68 µg/L	98
		295.0 -> 84.9	3439		
PFMBA	4.626	279.0 -> 85.1	49585	4.78 µg/L	100
PFMPA	3.351	229.0 -> 84.9	38660	4.79 µg/L	100
PFEESA	5.862	314.8 -> 134.9	127899	4.32 µg/L	99
		314.8 -> 82.9	4516		

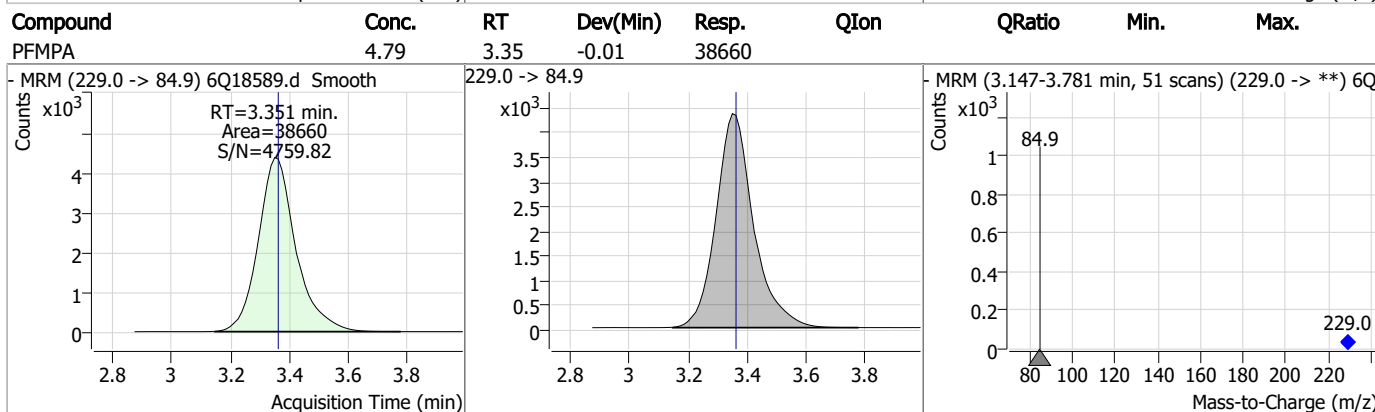
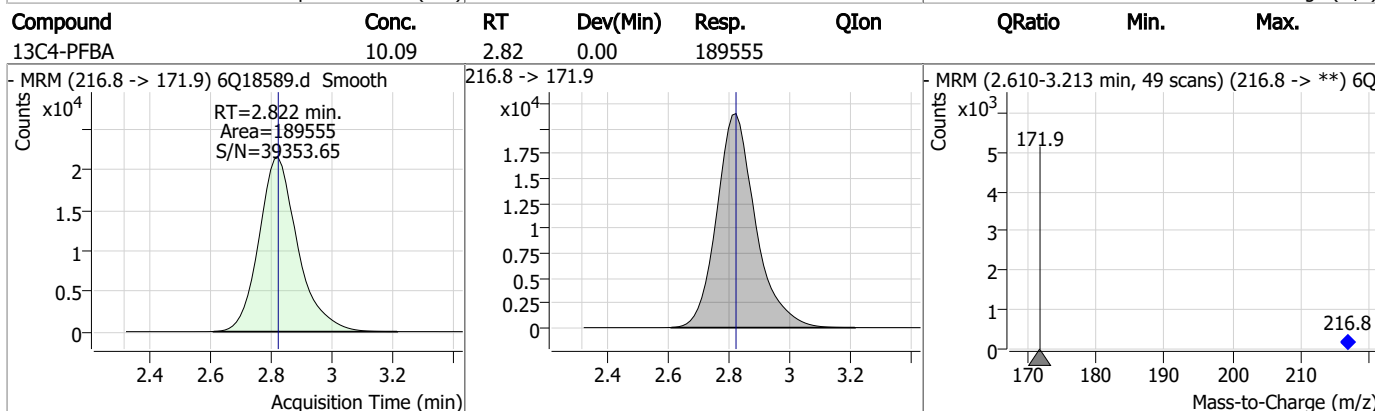
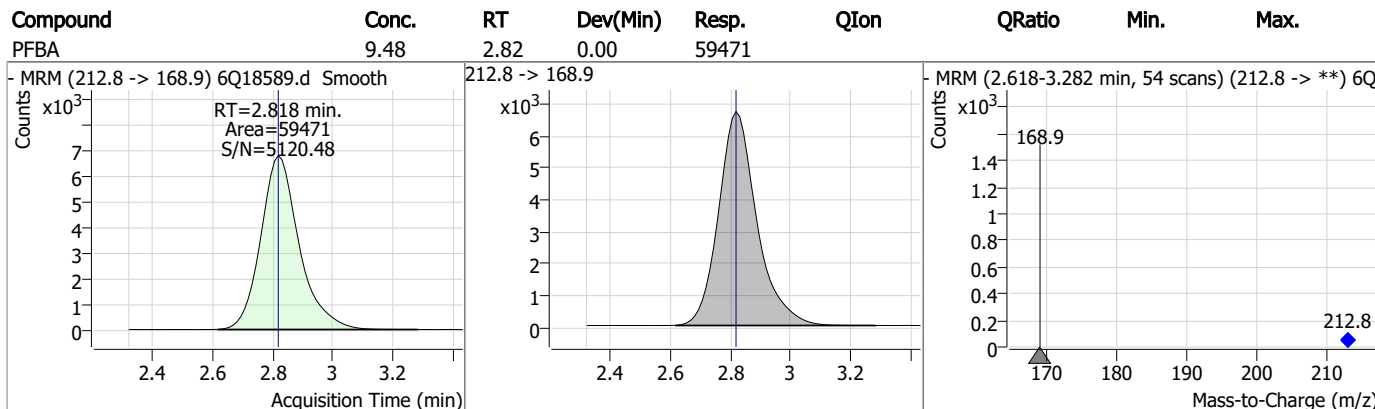
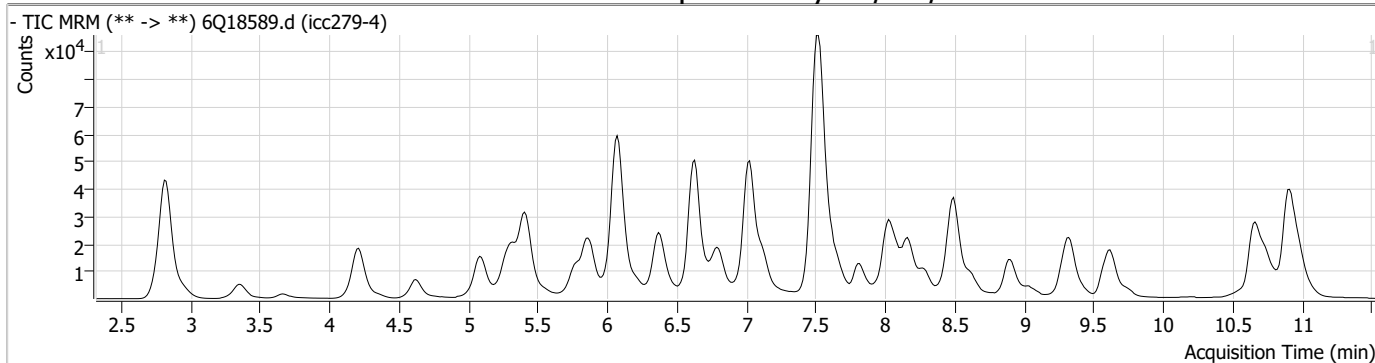
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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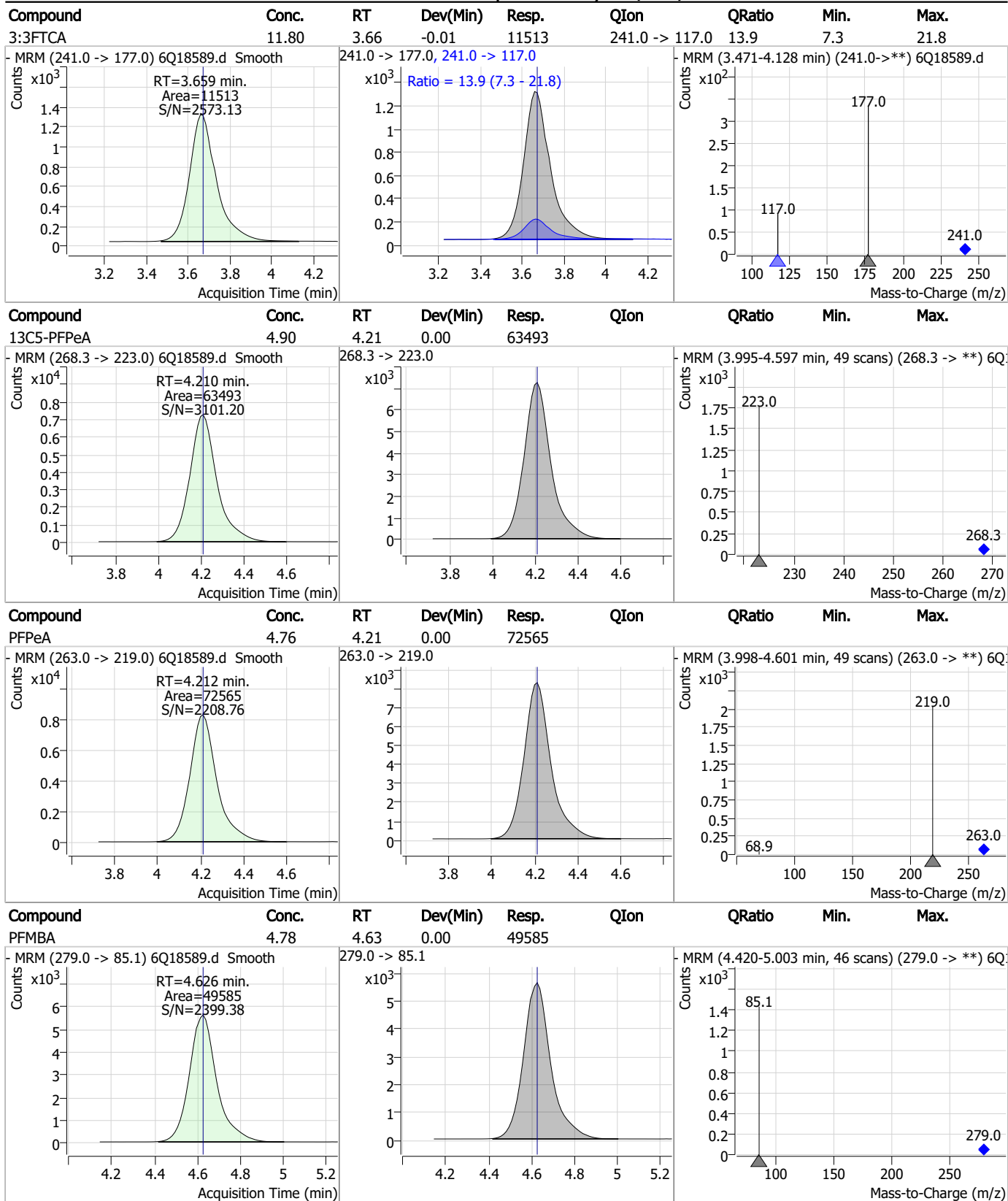
7.7.5
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Perfluorinated Compounds by LC/MS/MS



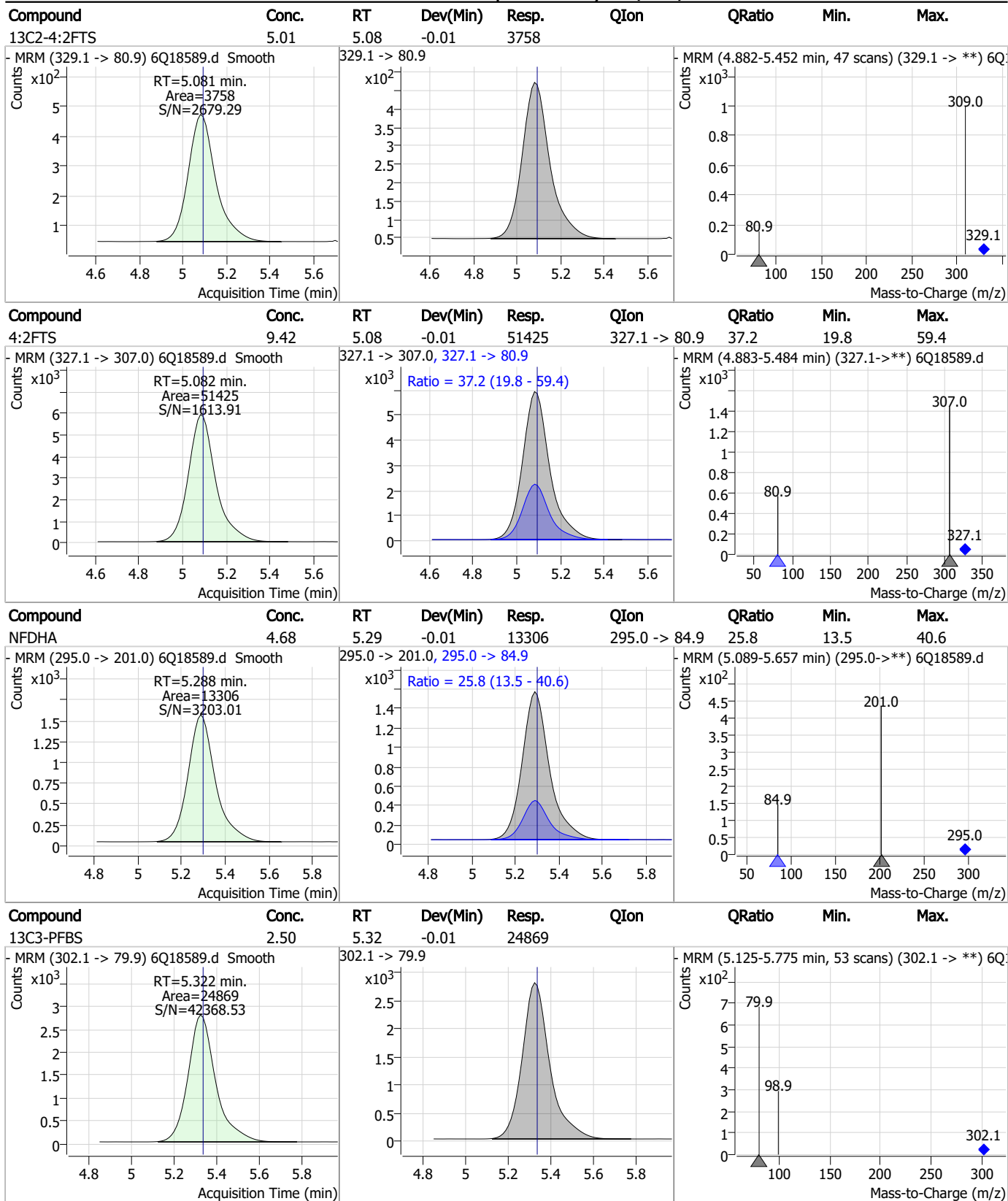
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Perfluorinated Compounds by LC/MS/MS



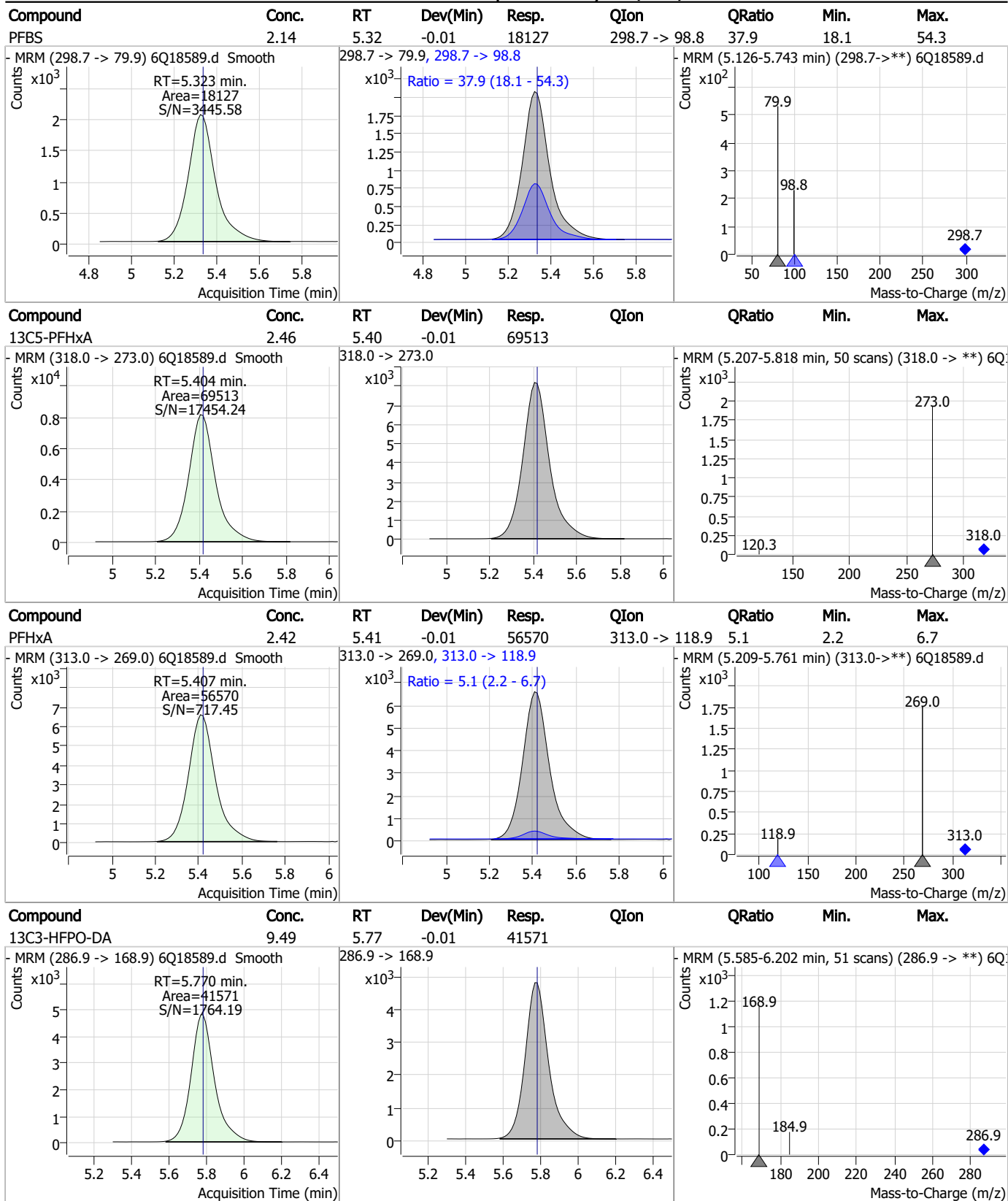
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Perfluorinated Compounds by LC/MS/MS



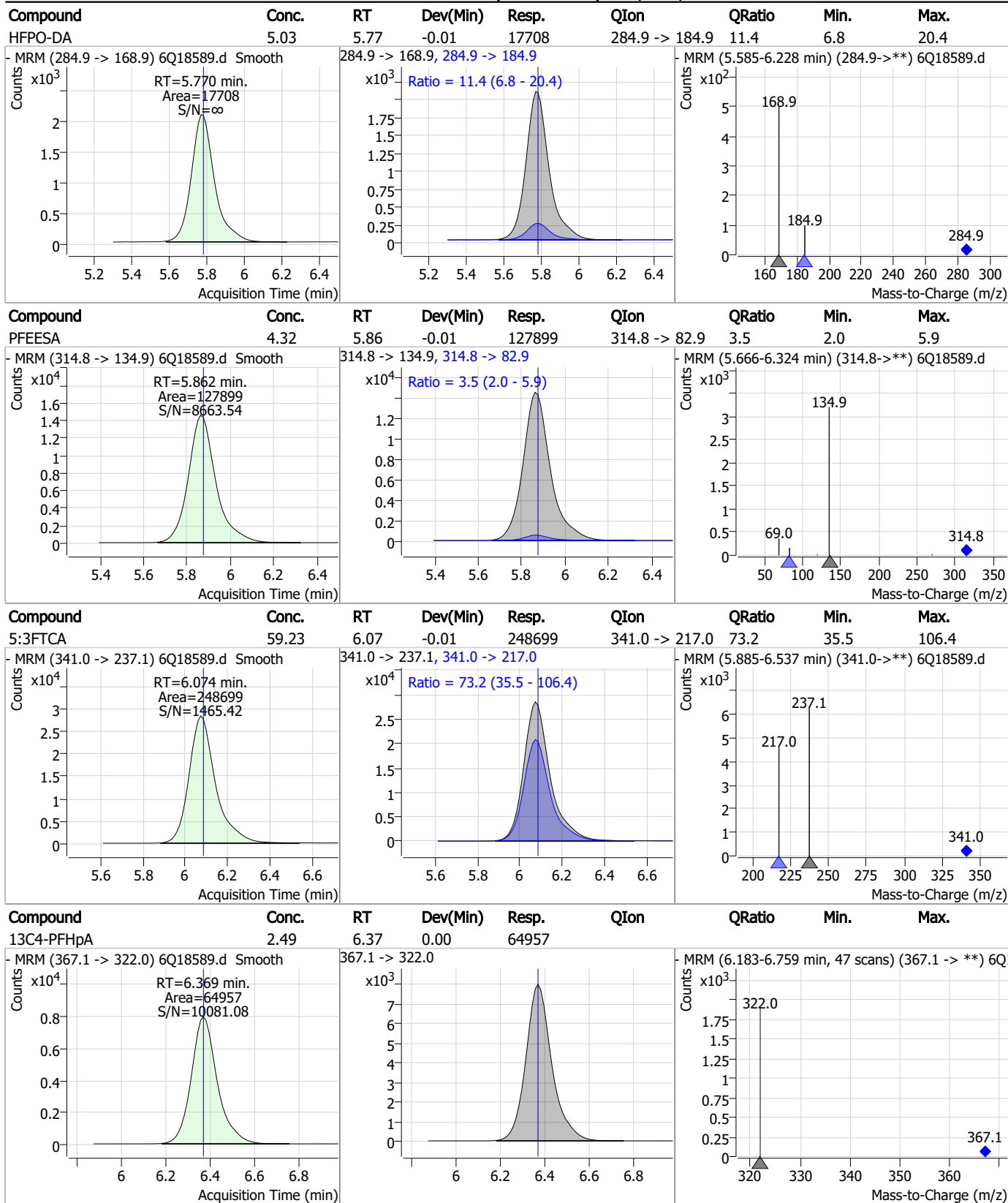
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Perfluorinated Compounds by LC/MS/MS



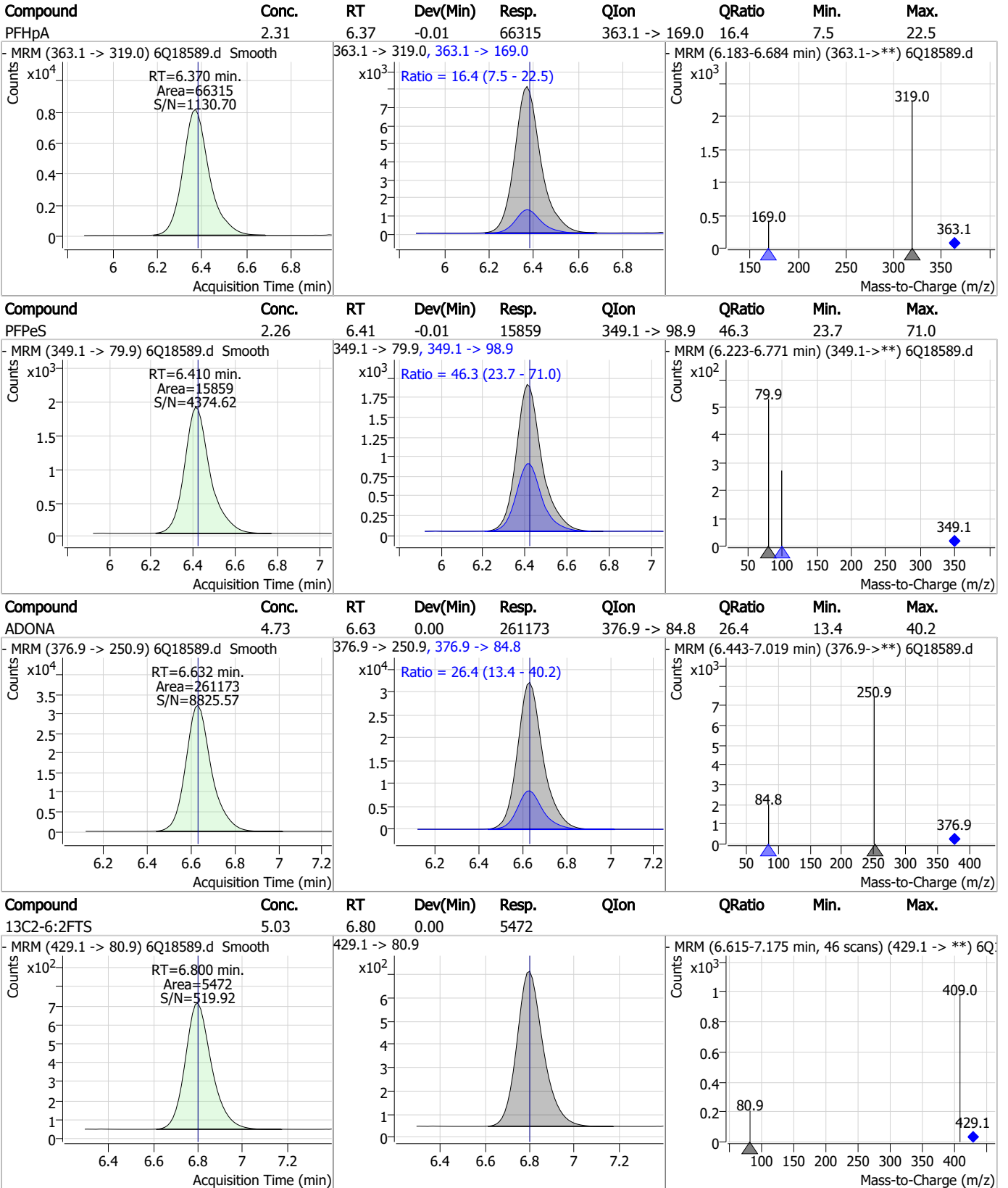
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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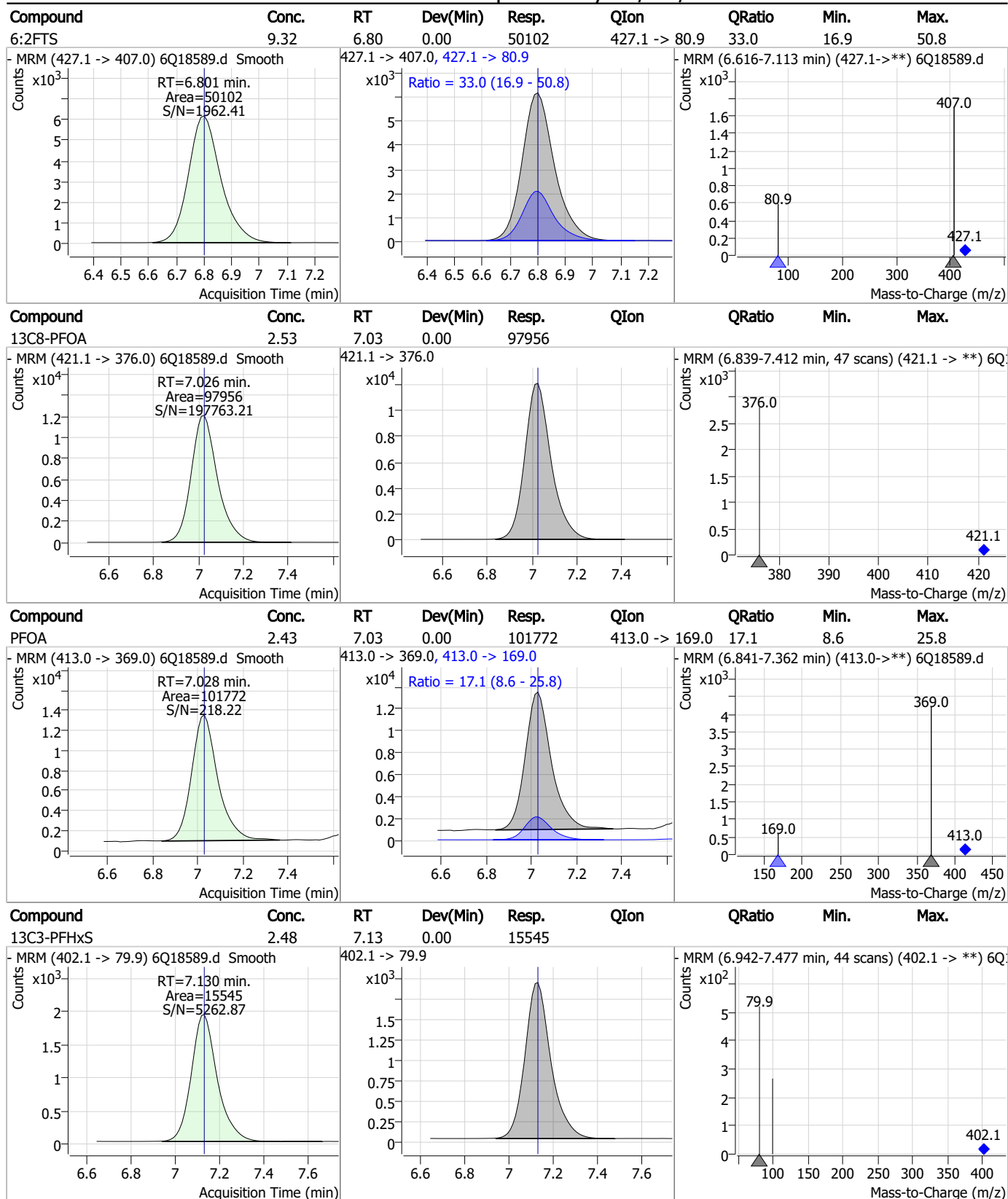
Perfluorinated Compounds by LC/MS/MS



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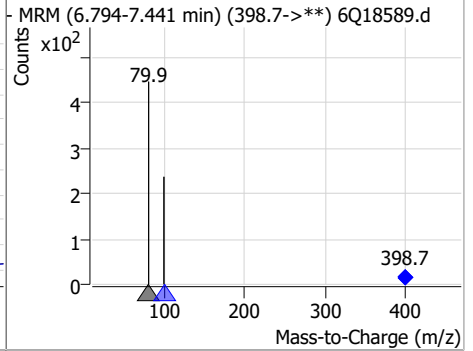
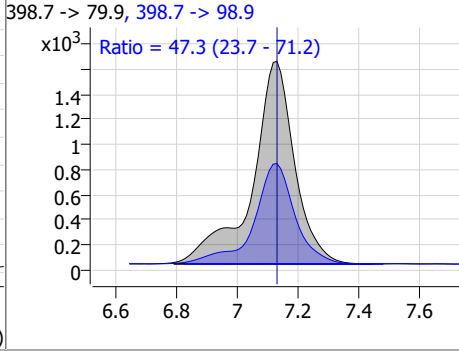
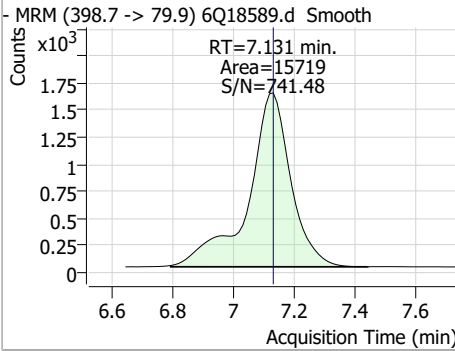
Perfluorinated Compounds by LC/MS/MS



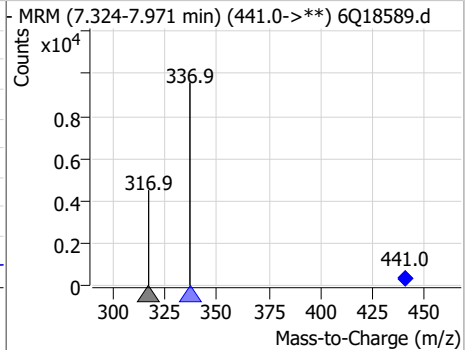
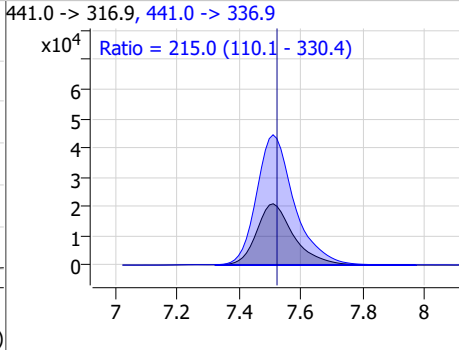
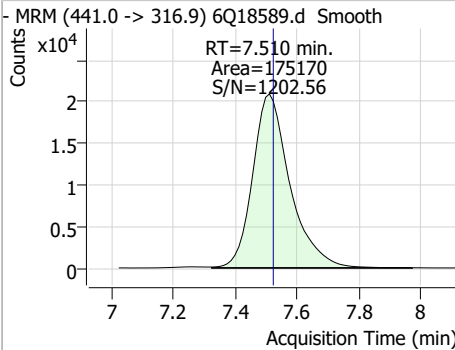
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Perfluorinated Compounds by LC/MS/MS

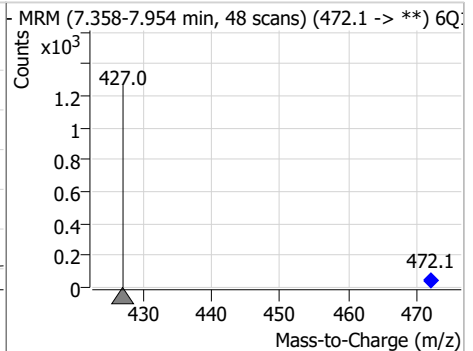
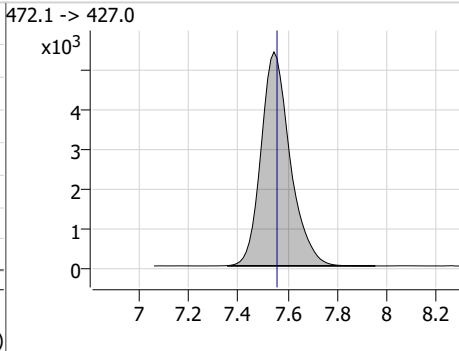
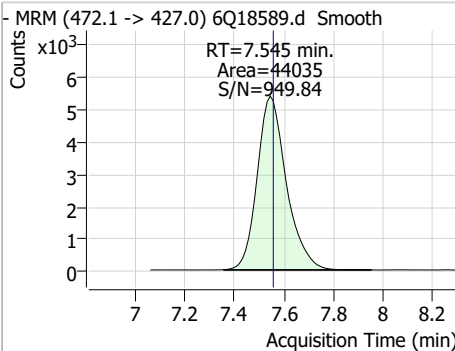
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.24	7.13	0.00	15719	398.7 -> 98.9	47.3	23.7	71.2



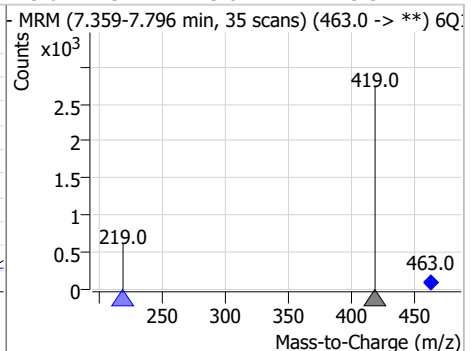
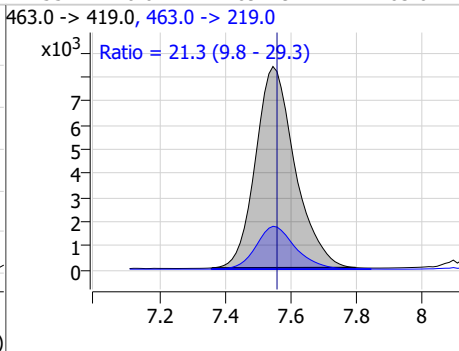
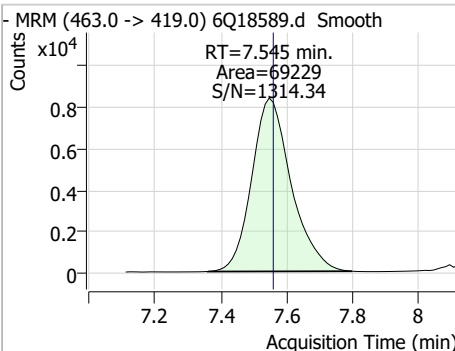
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.92	7.51	-0.01	175170	441.0 -> 336.9	215.0	110.1	330.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.15	7.54	-0.01	44035	472.1 -> 427.0			



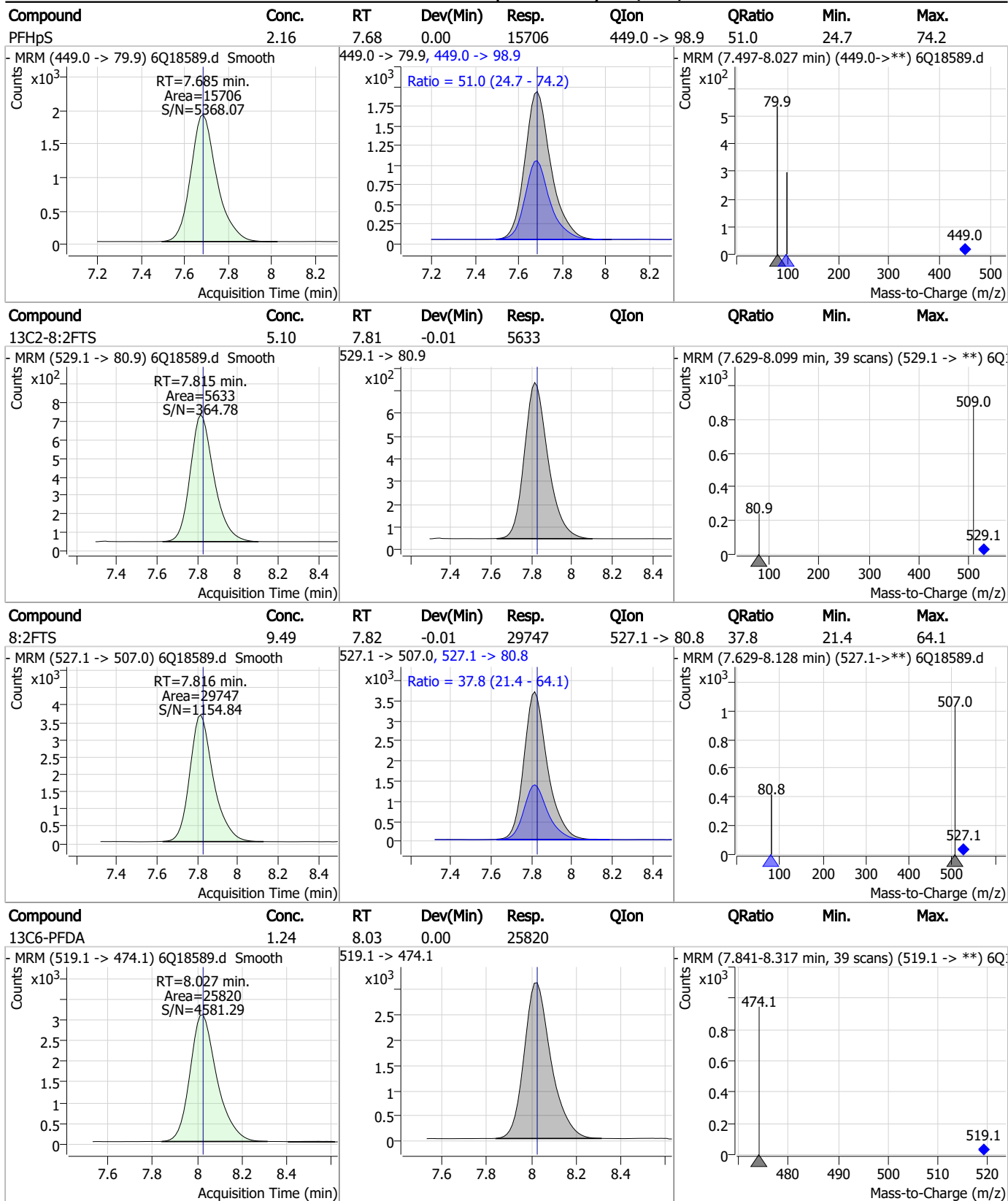
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.22	7.55	-0.01	69229	463.0 -> 219.0	21.3	9.8	29.3



7.7.5

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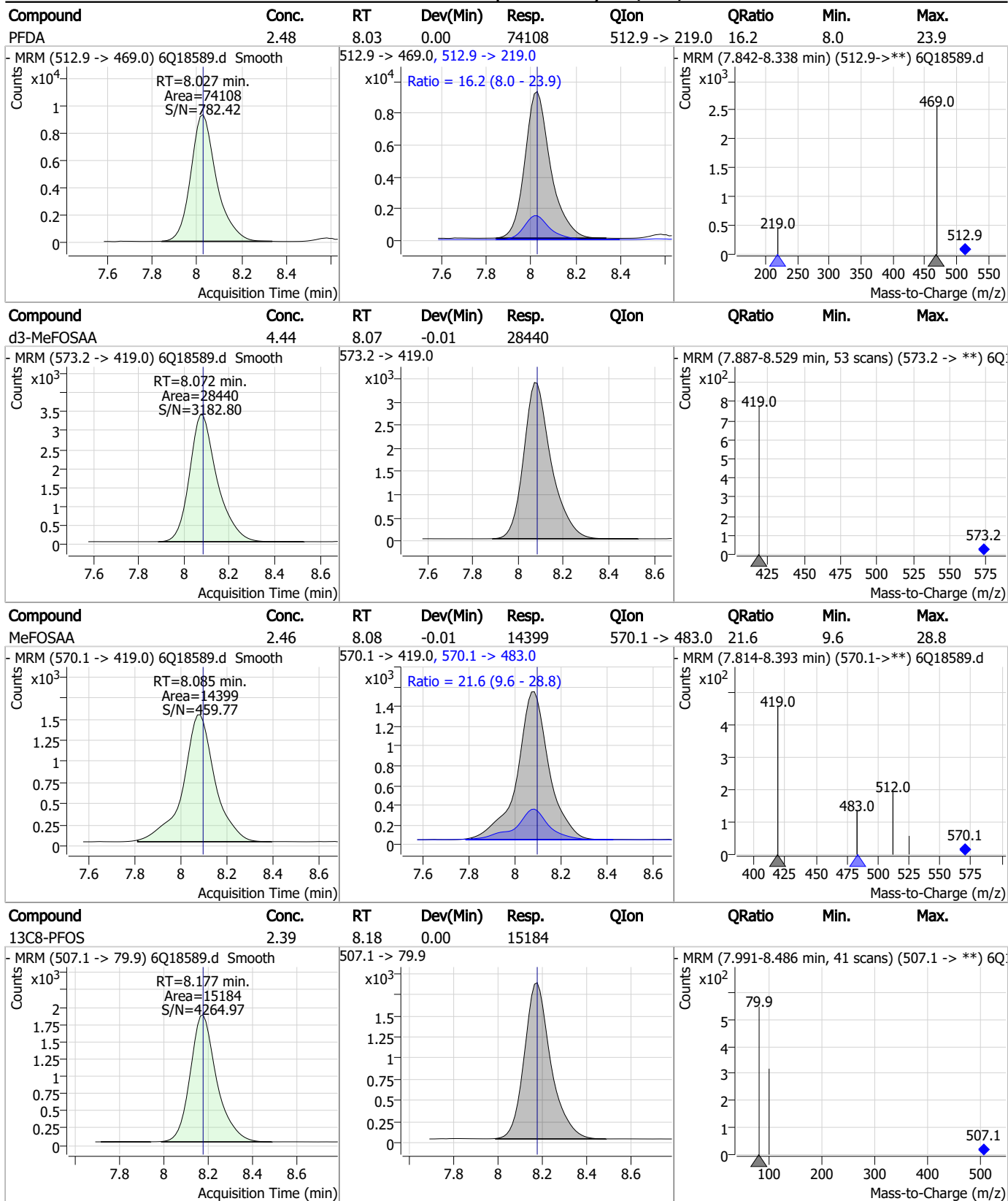
Perfluorinated Compounds by LC/MS/MS



7.7.5
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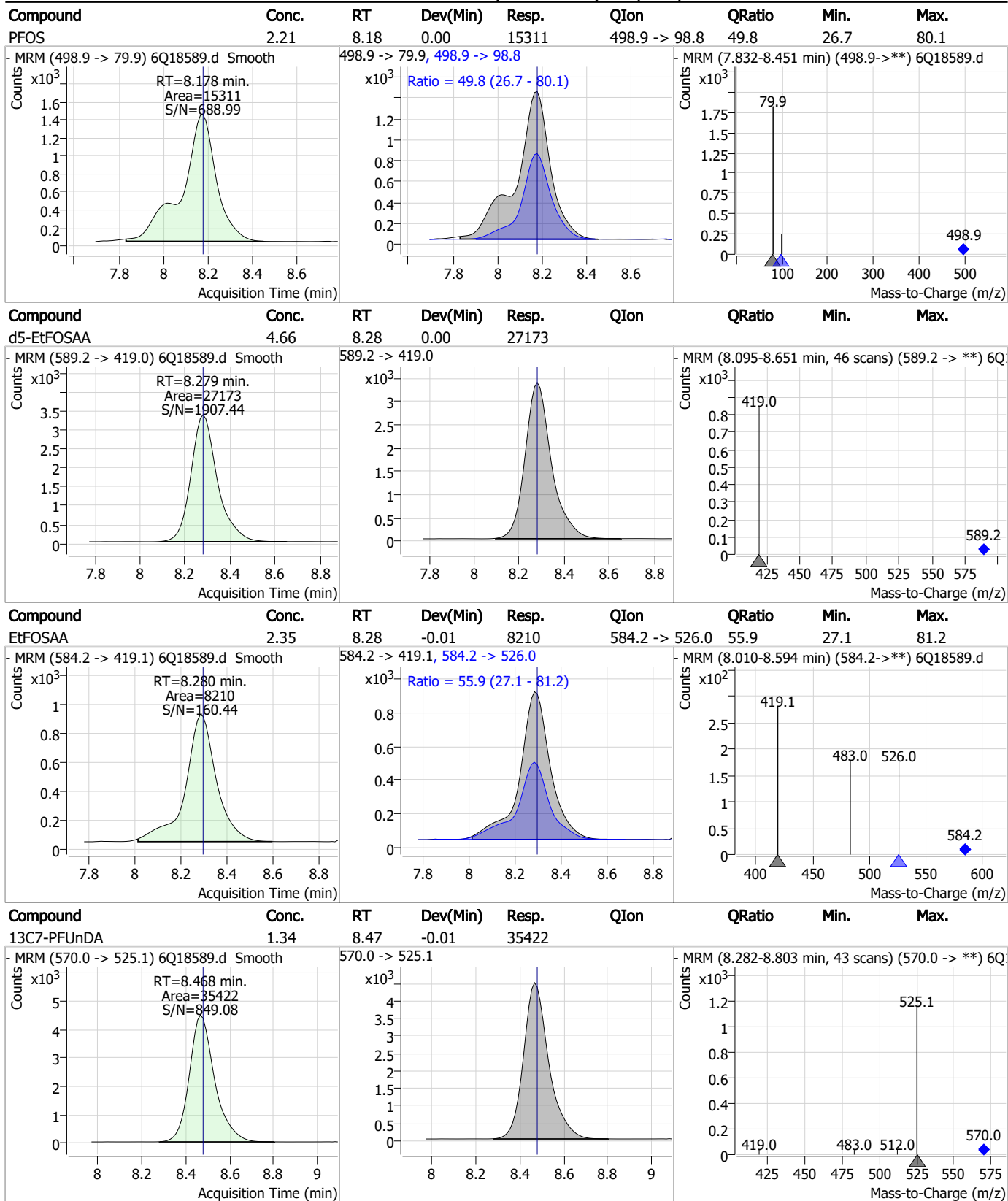
Perfluorinated Compounds by LC/MS/MS



7.7.5
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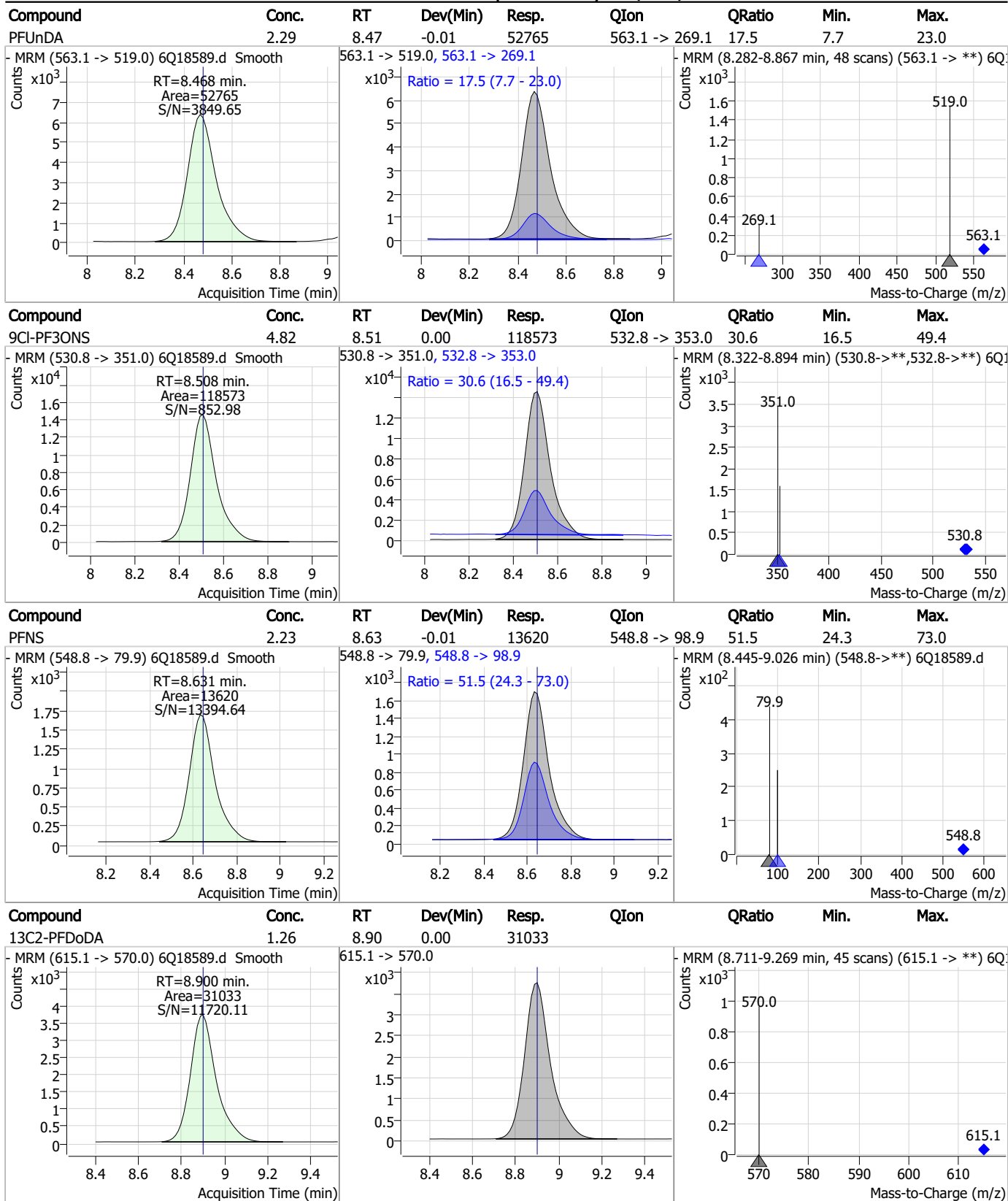


Perfluorinated Compounds by LC/MS/MS



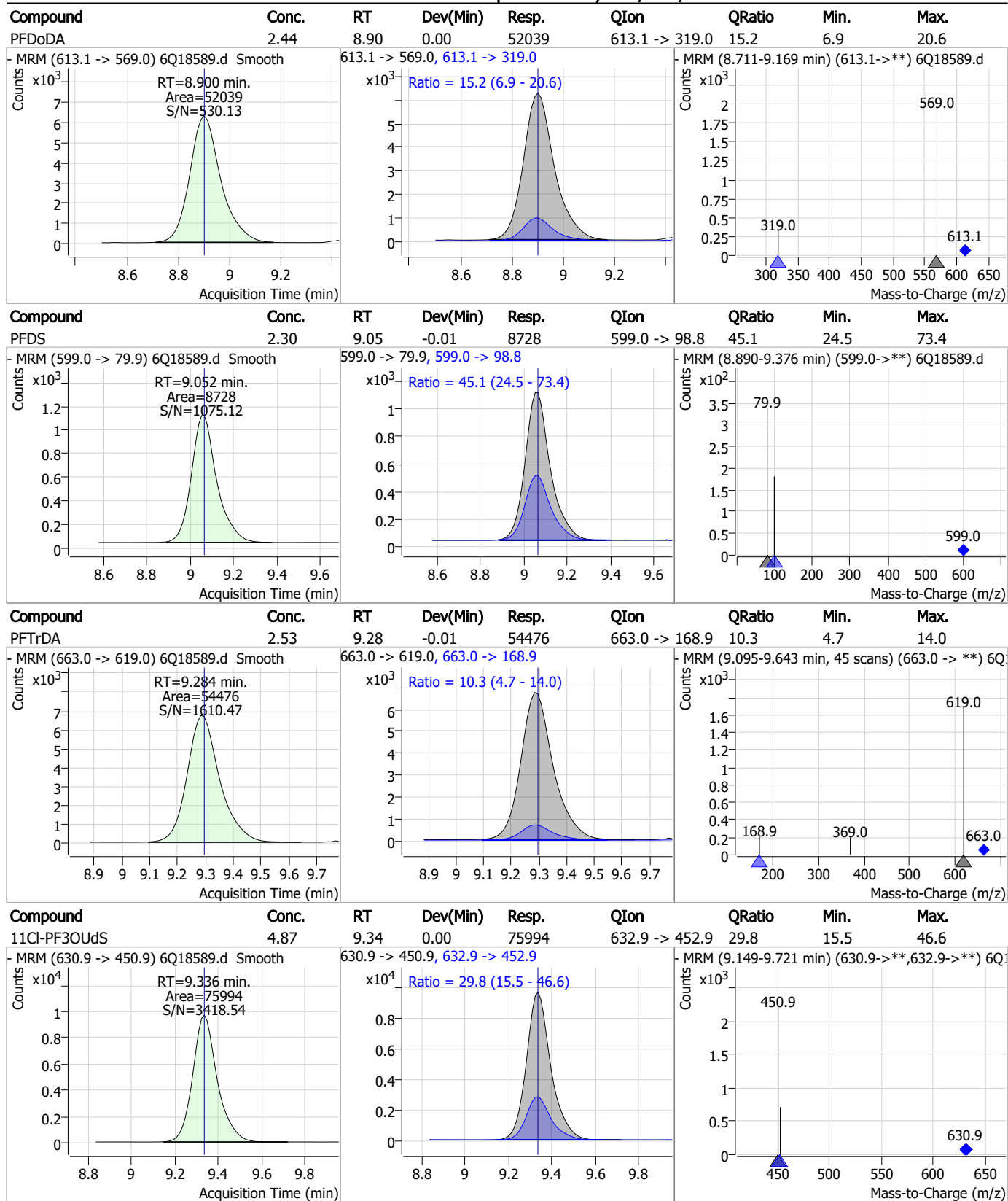
7.7.5
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Perfluorinated Compounds by LC/MS/MS



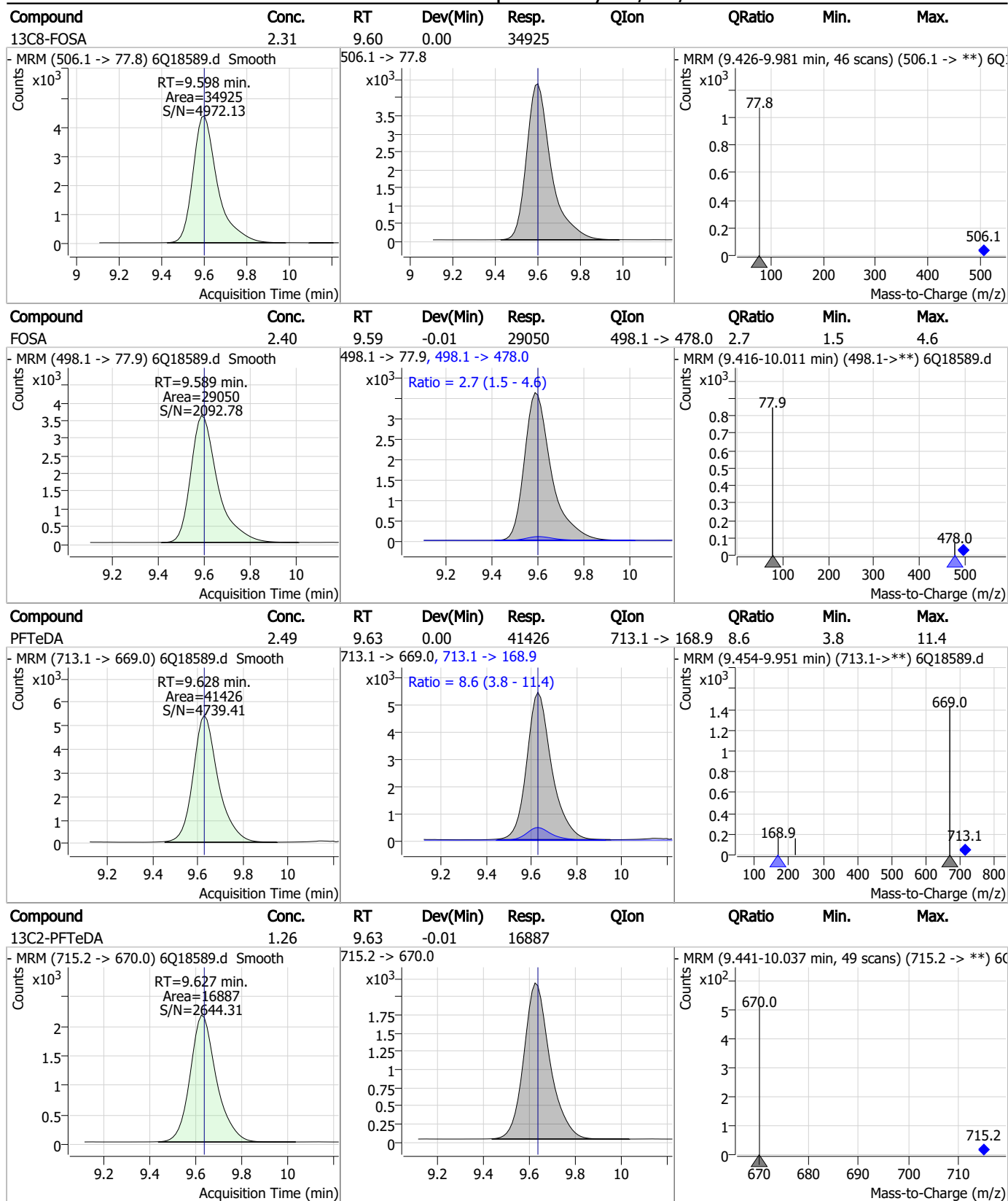
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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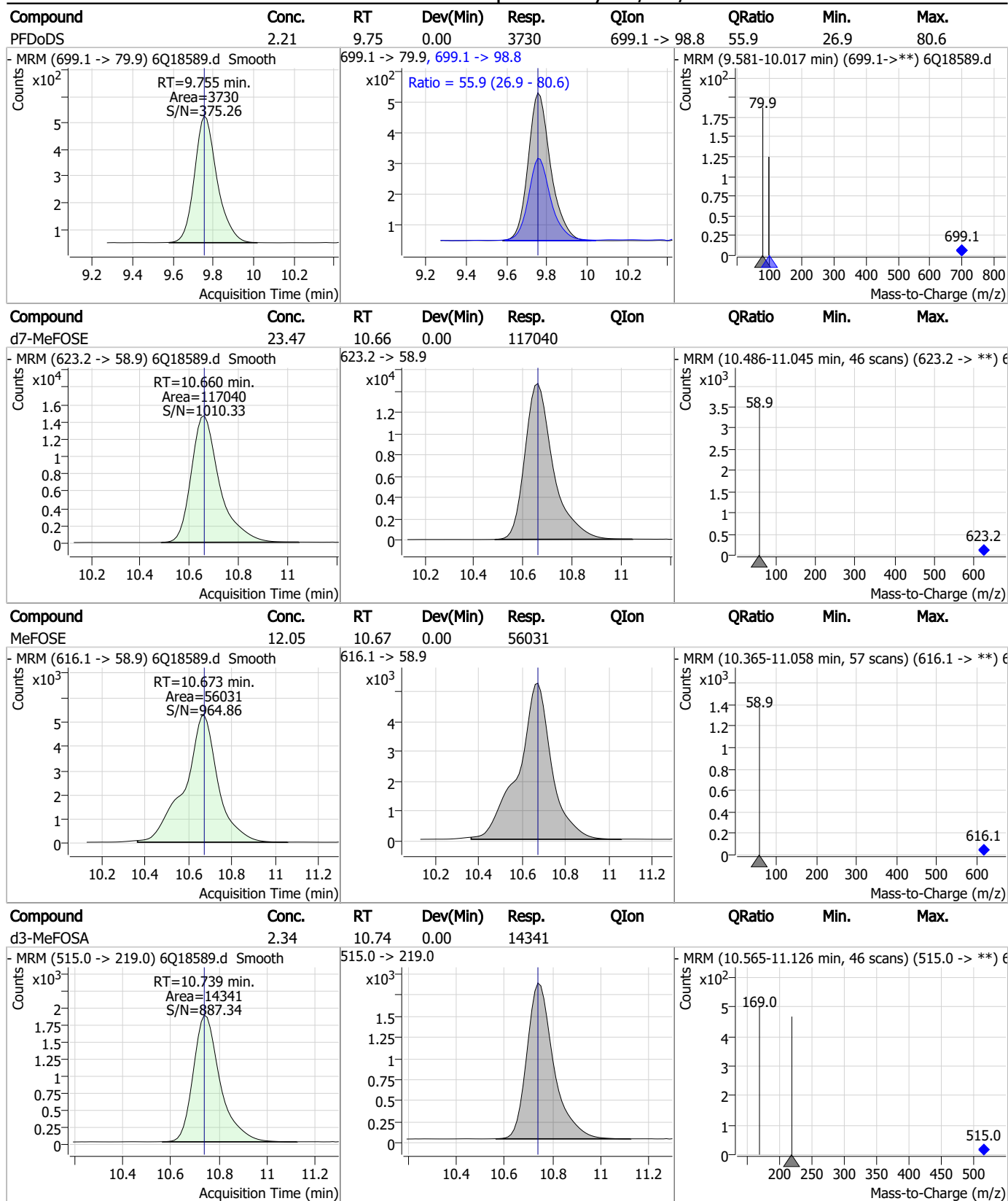
Perfluorinated Compounds by LC/MS/MS



7.7.5

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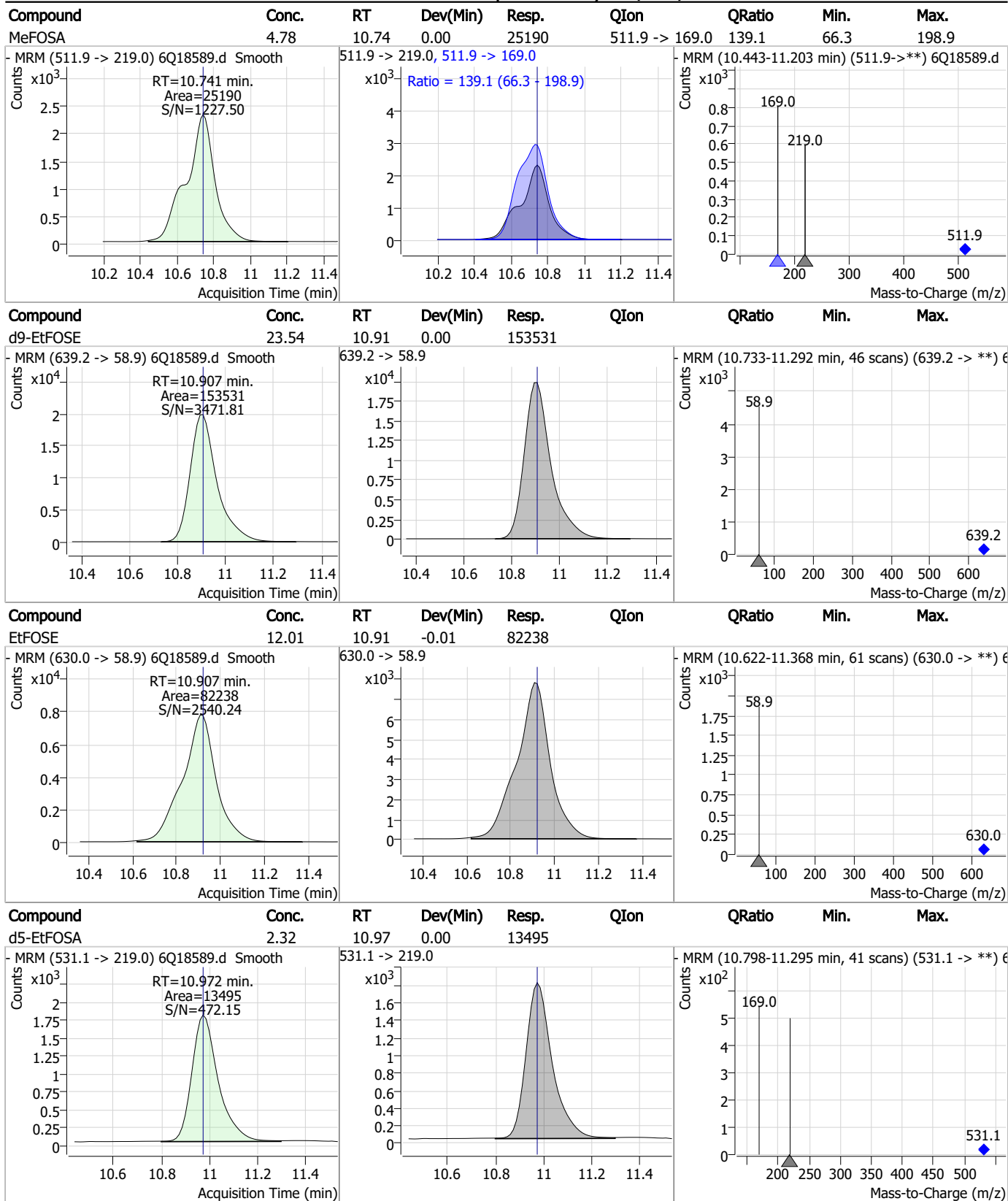
Perfluorinated Compounds by LC/MS/MS



7.7.5

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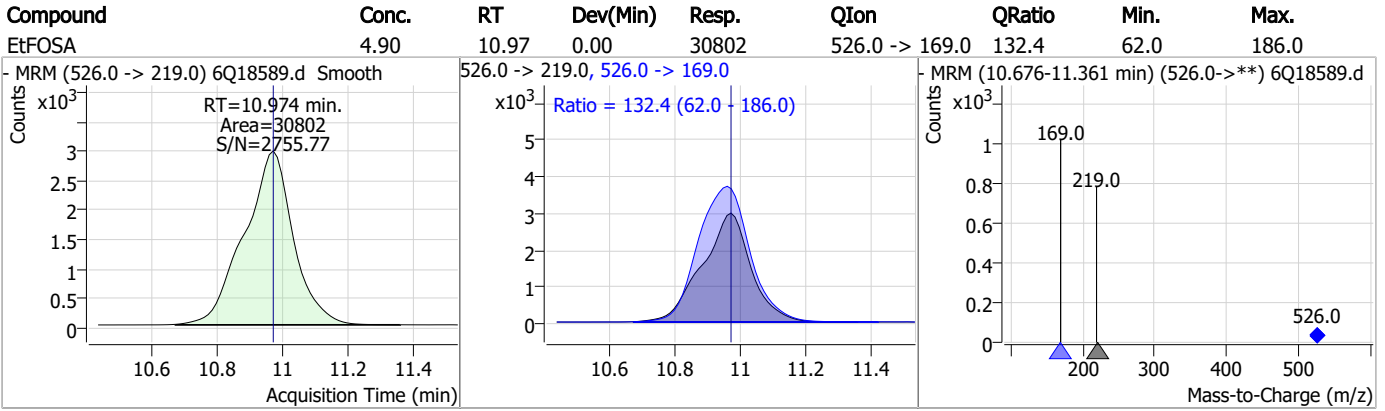
Perfluorinated Compounds by LC/MS/MS



7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18590.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:14:21 PM
 Sample Name : ic279-5
 Vial : P1-A6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187880	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62954	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	67445	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62246	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	99446	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	45750	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
M7-PFUnDA	8.455	570.0 -> 525.1	34273	1.25 µg/L	-0.025
M2-PFDoDA	8.887	615.1 -> 570.0	32244	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	17929	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35190	2.50 µg/L	-0.012
M3-PFBS	5.322	302.1 -> 79.9	24935	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	15616	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14763	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3776	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5453	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5898	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	120691	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	152625	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13841	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13866	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18357	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78647	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10998	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	104265	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	36093	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	52987	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	64076	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3776	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5453	5.12 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5898	5.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-PFDoDA	8.887	615.1 -> 570.0	32244	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17929	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C3-PFBS	5.322	302.1 -> 79.9	24935	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	15616	2.54 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFBA	2.822	216.8 -> 171.9	187880	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	62246	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.404	318.0 -> 273.0	67445	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62954	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.014	519.1 -> 474.1	26521	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.455	570.0 -> 525.1	34273	1.27 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.586	506.1 -> 77.8	35190	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOA	7.013	421.1 -> 376.0	99446	2.55 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOS	8.165	507.1 -> 79.9	14763	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.545	472.1 -> 427.0	45750	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSAA	8.072	573.2 -> 419.0	32778	5.53 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42108	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	13866	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26979	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	120691	26.18 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	152625	25.31 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSA	10.972	531.1 -> 219.0	13841	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	98060	17.88 µg/L	96
		327.1 -> 80.9	36547		
6:2FTS	6.789	427.1 -> 407.0	101082	18.86 µg/L	97
		427.1 -> 80.9	32468		
8:2FTS	7.816	527.1 -> 507.0	55700	16.98 µg/L	96
		527.1 -> 80.8	22317		
EtFOSAA	8.280	584.2 -> 419.1	17051	4.91 µg/L	98
		584.2 -> 526.0	9540		
FOSA	9.589	498.1 -> 77.9	57690	4.74 µg/L	100
		498.1 -> 478.0	1790		
MeFOSAA	8.073	570.1 -> 419.0	30838	4.58 µg/L	99
		570.1 -> 483.0	6087		
PFBA	2.818	212.8 -> 168.9	119132	19.15 µg/L	100
PFBS	5.323	298.7 -> 79.9	35285	4.16 µg/L	97
		298.7 -> 98.8	13354		
PFDA	8.014	512.9 -> 469.0	143973	4.68 µg/L	99
		512.9 -> 219.0	23728		
PFDoDA	8.888	613.1 -> 569.0	103411	4.67 µg/L	96
		613.1 -> 319.0	16004		
PFDS	9.052	599.0 -> 79.9	17202	4.66 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	7926		
PFHpA	6.370	363.1 -> 319.0	134100	4.87 µg/L	97
		363.1 -> 169.0	21692		
PFHpS	7.673	449.0 -> 79.9	32049	4.53 µg/L	98
		449.0 -> 98.9	16285		
PFHxA	5.407	313.0 -> 269.0	107925	4.77 µg/L	98
		313.0 -> 118.9	5659		
PFHxS	7.119	398.7 -> 79.9	30346	4.30 µg/L	100
		398.7 -> 98.9	14465		
PFNA	7.545	463.0 -> 419.0	155123	4.79 µg/L	97
		463.0 -> 219.0	28167		
PFNS	8.631	548.8 -> 79.9	27107	4.57 µg/L	96
		548.8 -> 98.9	13999		
PFOA	7.015	413.0 -> 369.0	199283	4.69 µg/L	99
		413.0 -> 169.0	35542		
PFOS	8.166	498.9 -> 79.9	30197	4.48 µg/L	91
		498.9 -> 98.8	14141		
PFPeA	4.212	263.0 -> 219.0	144374	9.55 µg/L	100
PFPeS	6.410	349.1 -> 79.9	30757	4.37 µg/L	98
		349.1 -> 98.9	14232		
PFTeDA	9.628	713.1 -> 669.0	81291	4.61 µg/L	97
		713.1 -> 168.9	7055		
PFTrDA	9.284	663.0 -> 619.0	108478	4.85 µg/L	97
		663.0 -> 168.9	11146		
PFUnDA	8.468	563.1 -> 519.0	111368	5.00 µg/L	98
		563.1 -> 269.1	16291		
11CI-PF3OUdS	9.336	630.9 -> 450.9	142513	9.02 µg/L	100
		632.9 -> 452.9	44315		
9CI-PF3ONS	8.495	530.8 -> 351.0	225942	9.08 µg/L	99
		532.8 -> 353.0	72959		
ADONA	6.632	376.9 -> 250.9	513058	9.17 µg/L	98
		376.9 -> 84.8	141815		
HFPO-DA	5.783	284.9 -> 168.9	33213	9.31 µg/L	98
		284.9 -> 184.9	4234		
3:3FTCA	3.671	241.0 -> 177.0	22809	23.57 µg/L	98
		241.0 -> 117.0	3091		
5:3FTCA	6.074	341.0 -> 237.1	474474	116.47 µg/L	93
		341.0 -> 217.0	364763		
7:3FTCA	7.510	441.0 -> 316.9	344194	123.37 µg/L	99
		441.0 -> 336.9	761300		
EtFOSA	10.974	526.0 -> 219.0	60538	9.38 µg/L	97
		526.0 -> 169.0	77131		
EtFOSE	10.907	630.0 -> 58.9	164750	24.20 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	50777	9.96 µg/L	95
		511.9 -> 169.0	70280		
MeFOSE	10.673	616.1 -> 58.9	108332	22.59 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	7468	4.55 µg/L	98
		699.1 -> 98.8	3886		
NFDHA	5.288	295.0 -> 201.0	26552	9.63 µg/L	98
		295.0 -> 84.9	6879		
PFMBA	4.626	279.0 -> 85.1	98078	9.53 µg/L	100
PFMPA	3.363	229.0 -> 84.9	76163	9.52 µg/L	100
PFEESA	5.862	314.8 -> 134.9	257995	8.98 µg/L	99
		314.8 -> 82.9	9081		

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

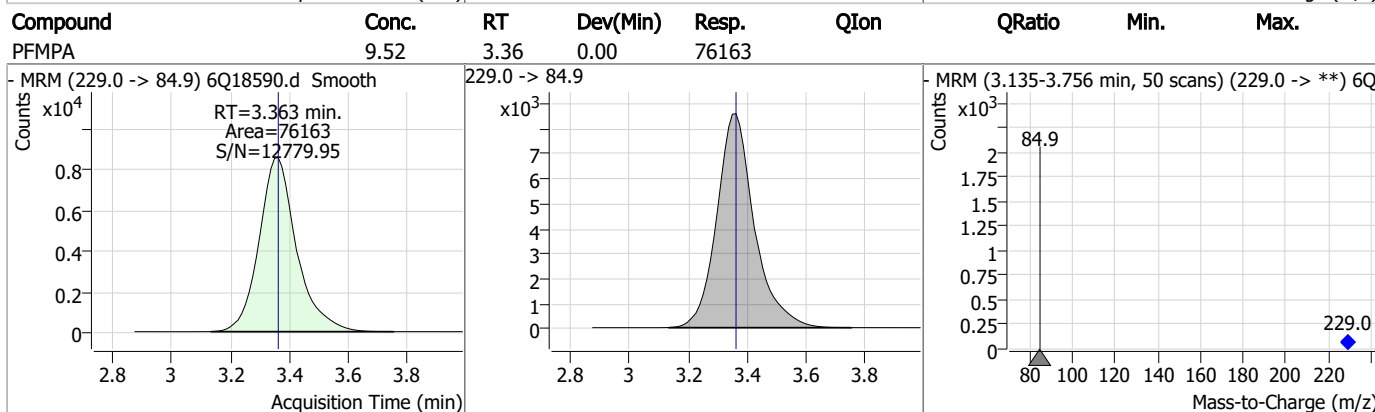
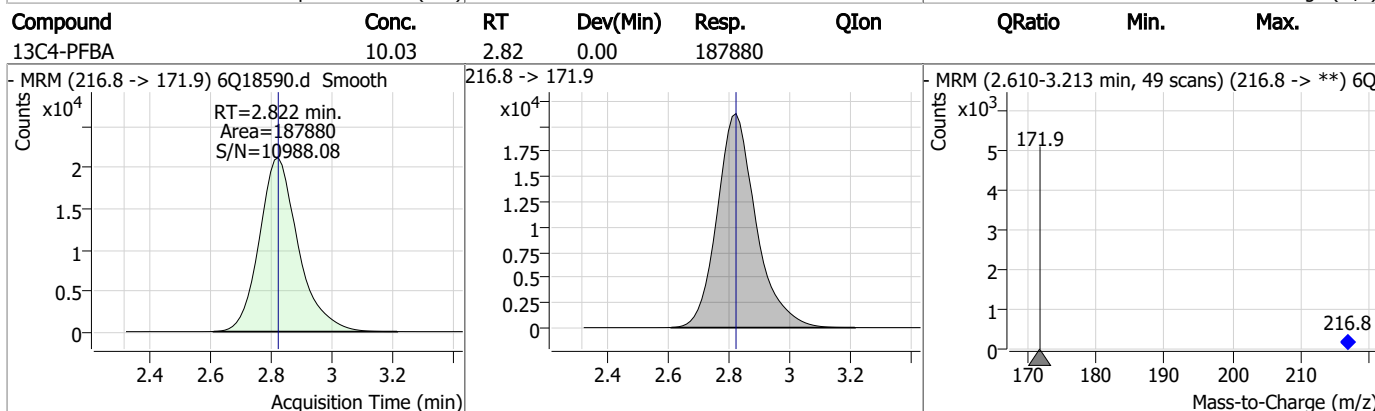
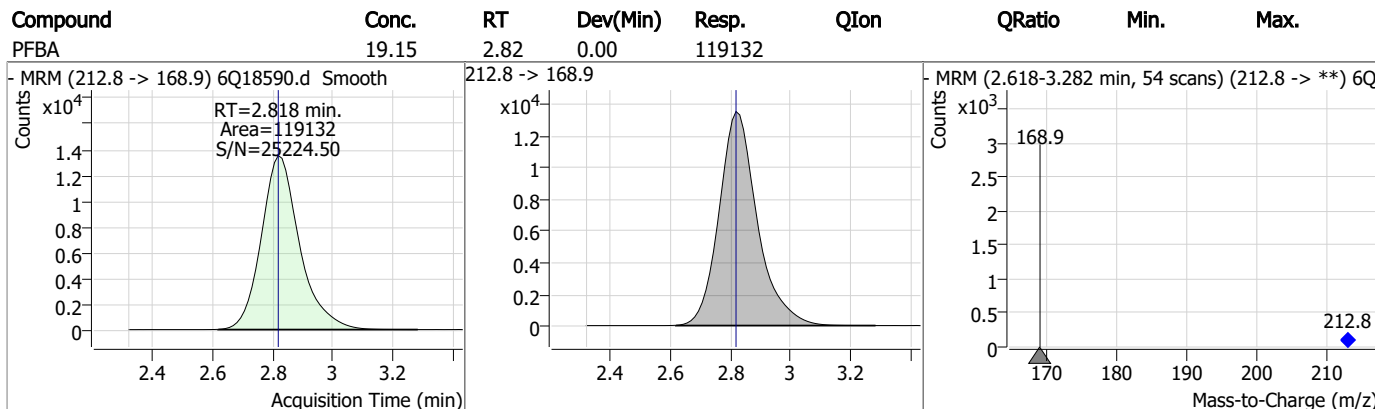
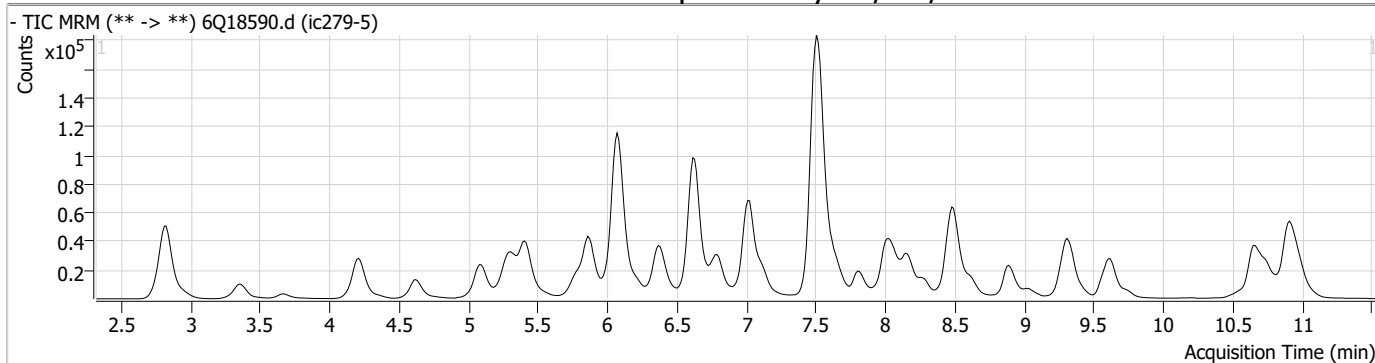
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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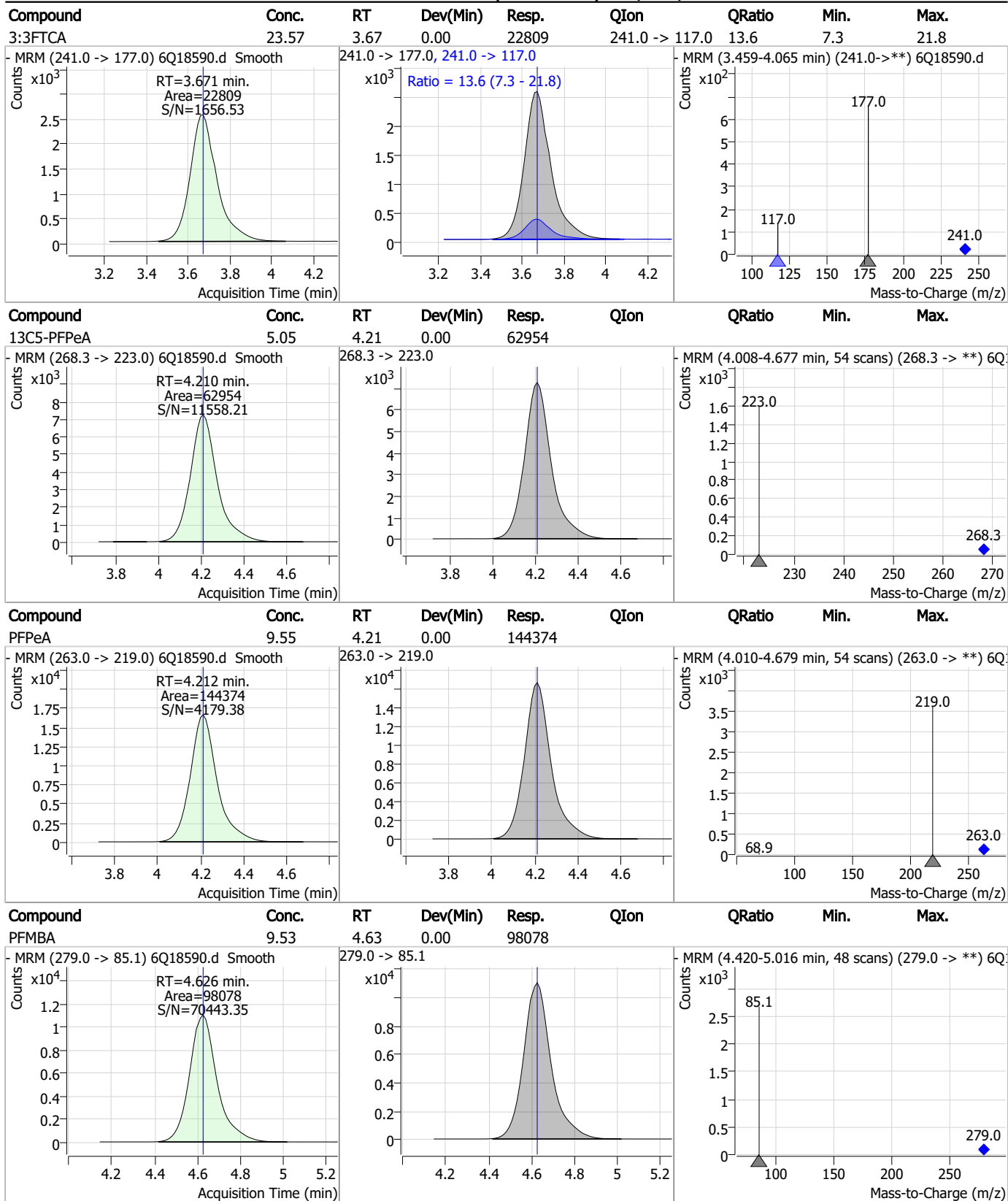
7.7.6
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Perfluorinated Compounds by LC/MS/MS

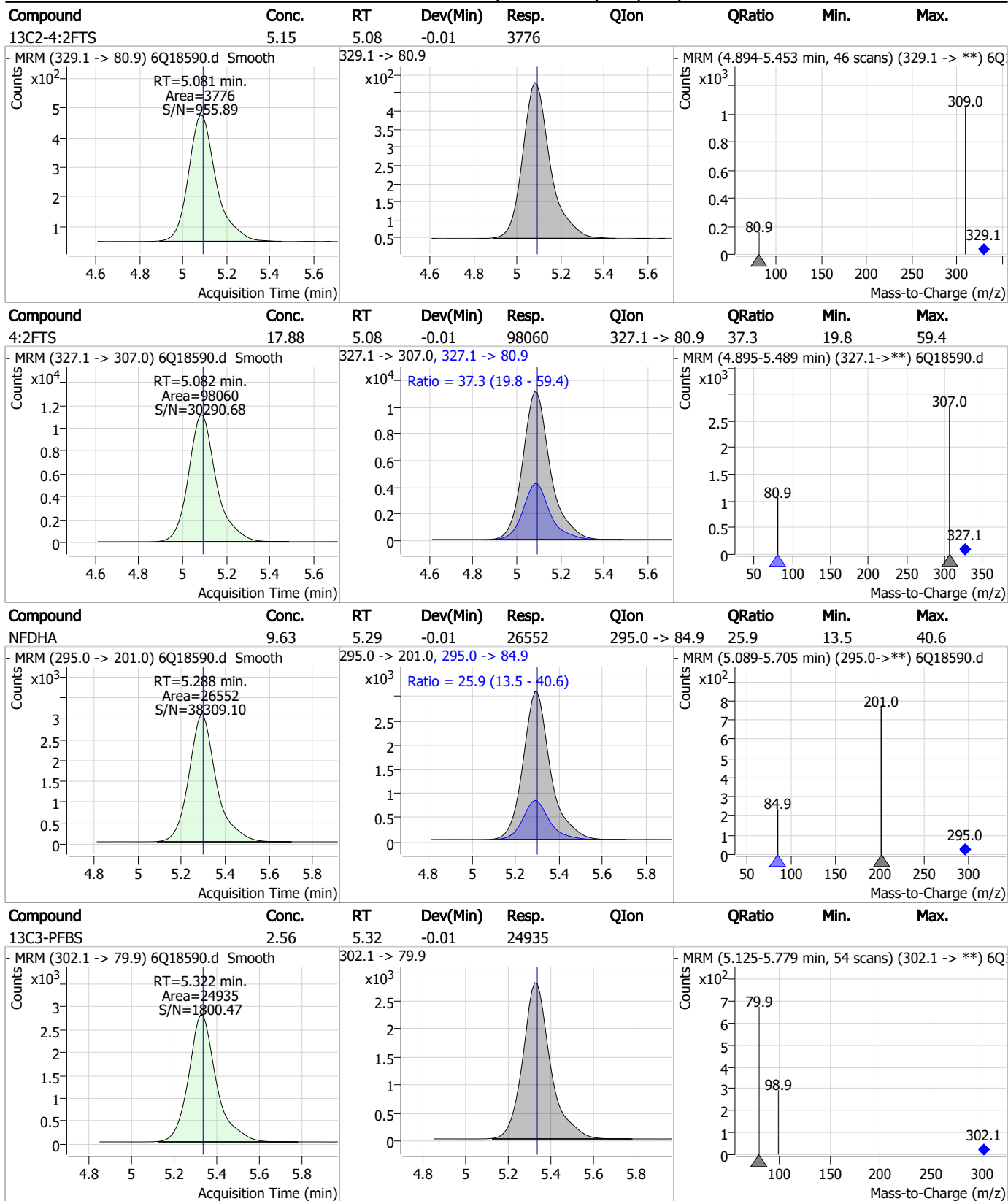


Perfluorinated Compounds by LC/MS/MS



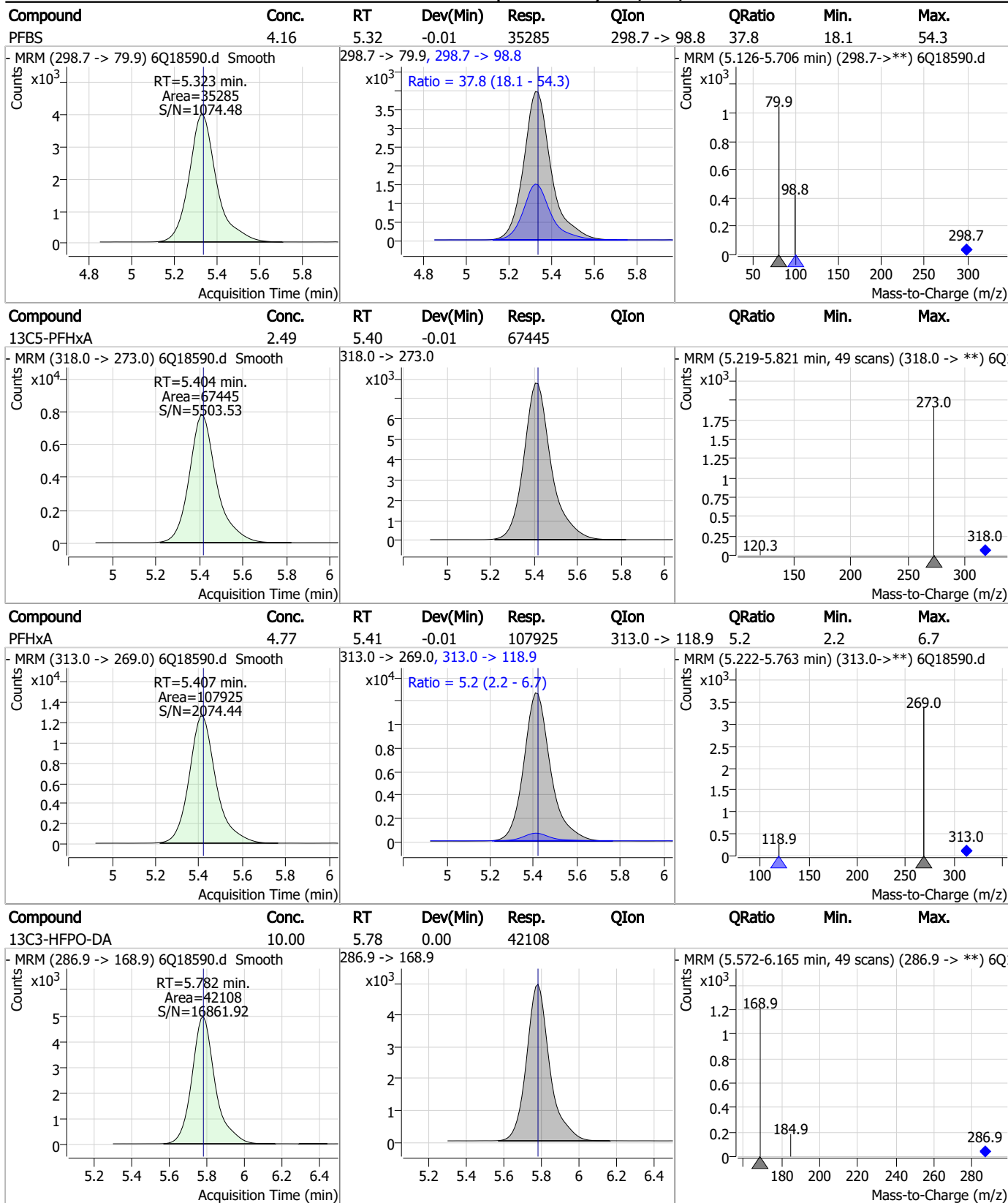
7.7.6
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Perfluorinated Compounds by LC/MS/MS



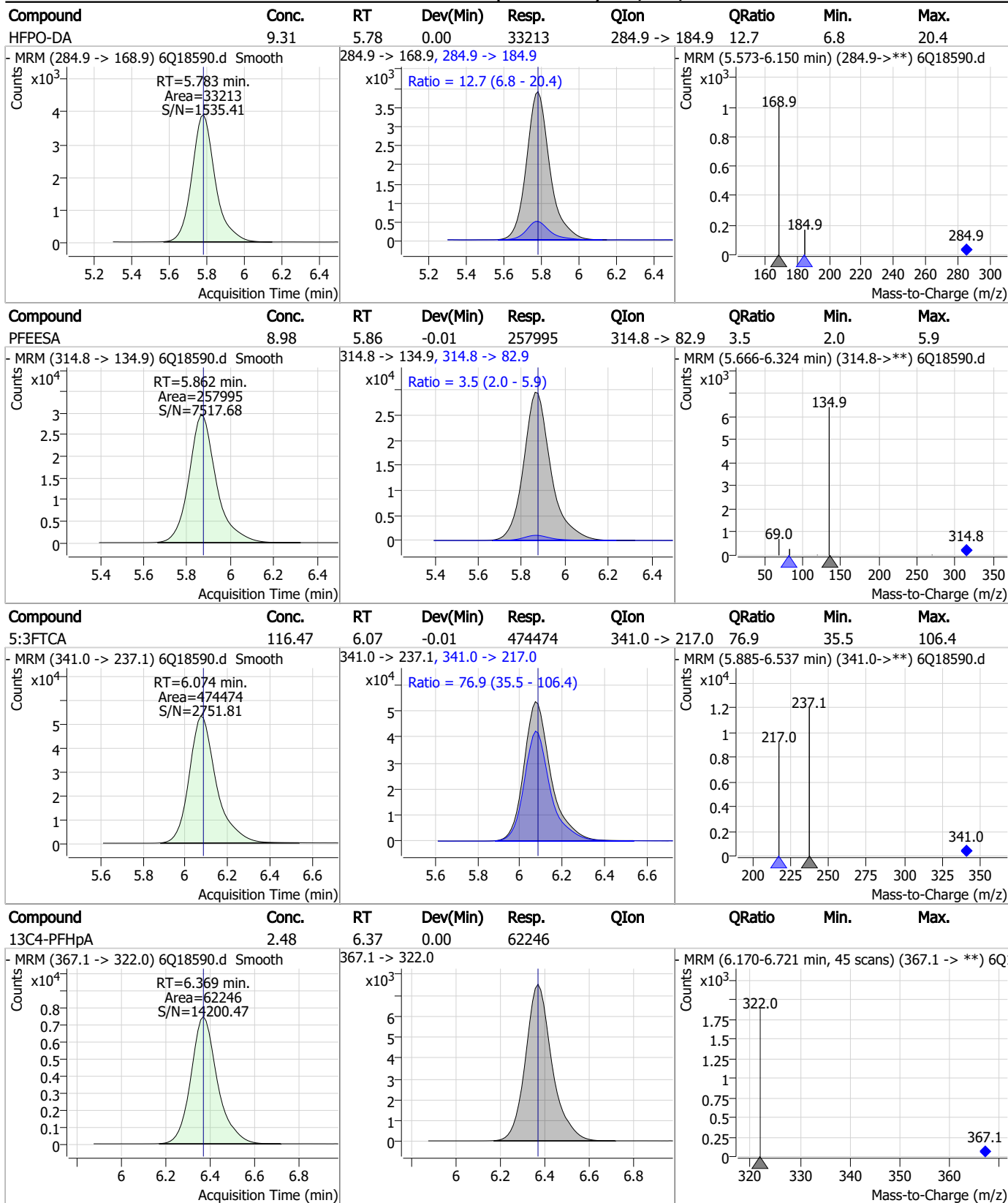
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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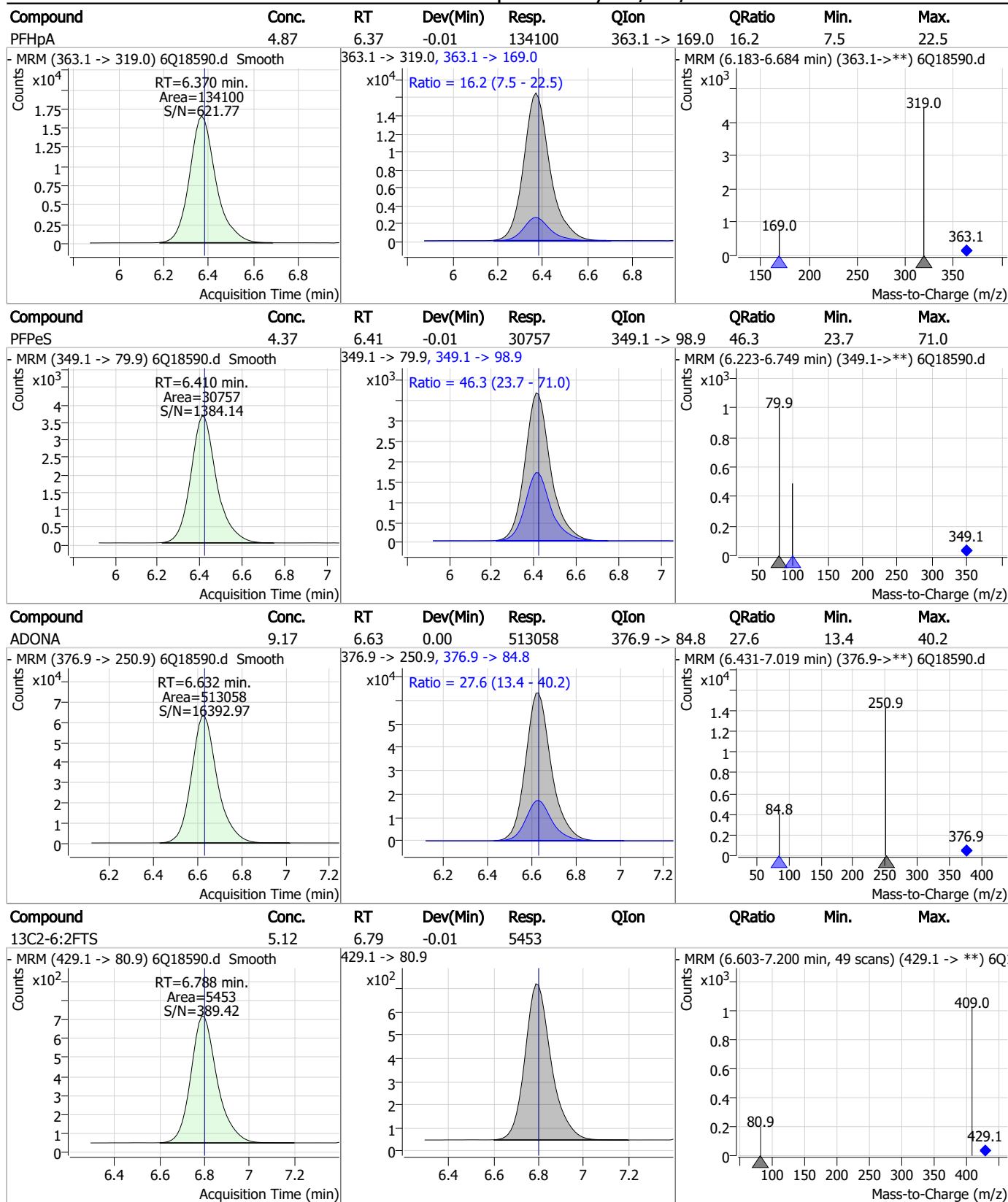
Perfluorinated Compounds by LC/MS/MS



7.7.6
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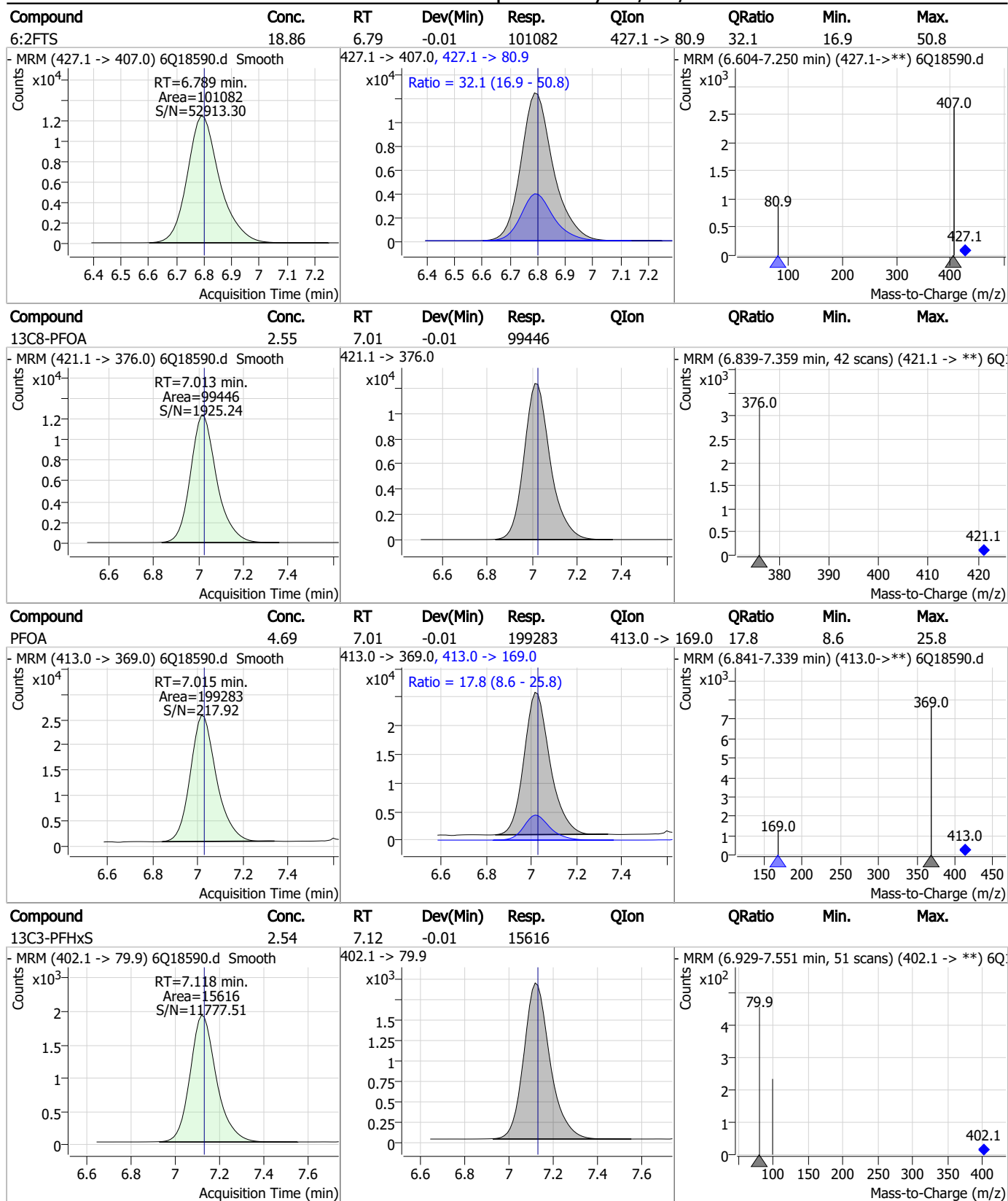
Perfluorinated Compounds by LC/MS/MS



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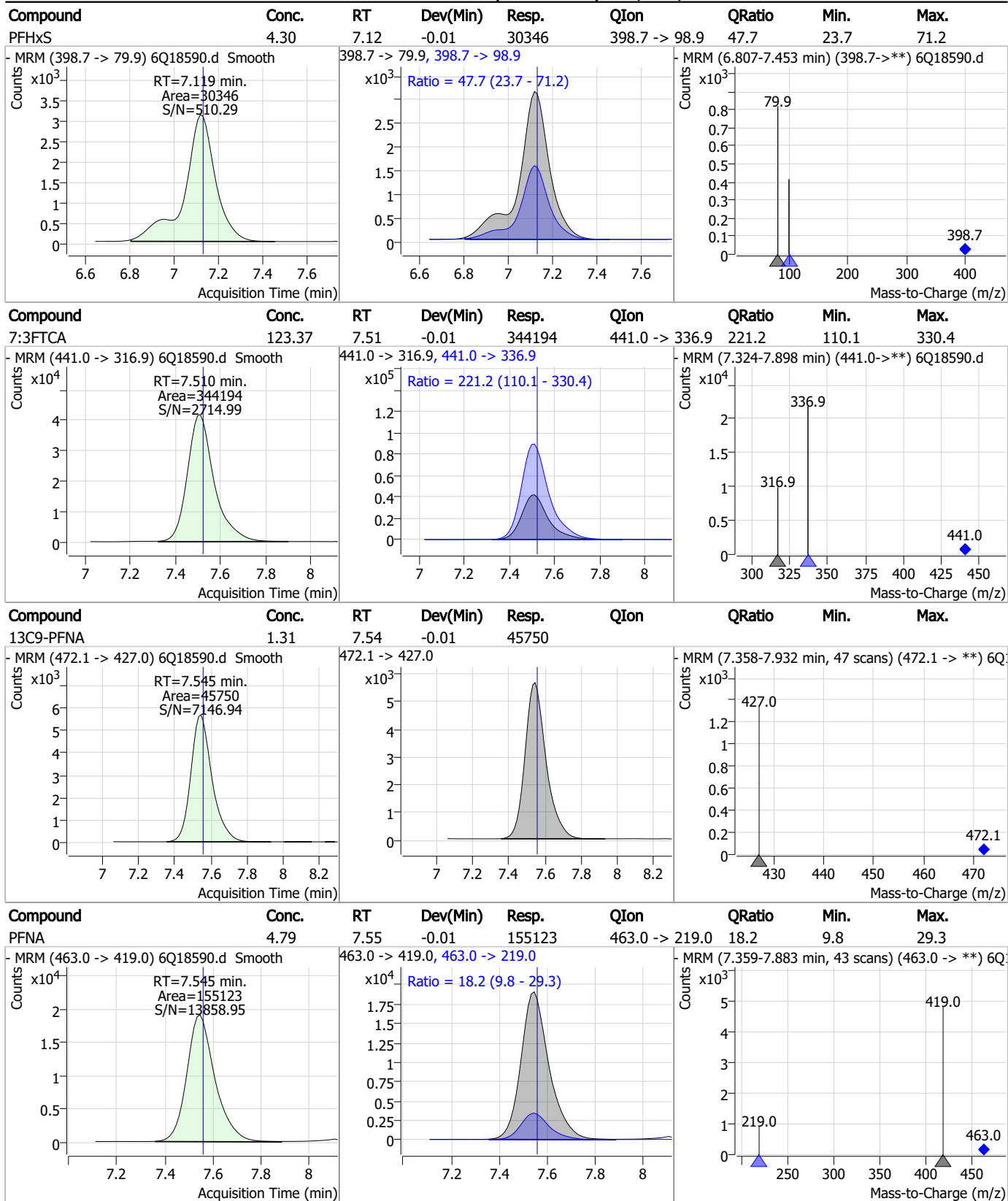


Perfluorinated Compounds by LC/MS/MS



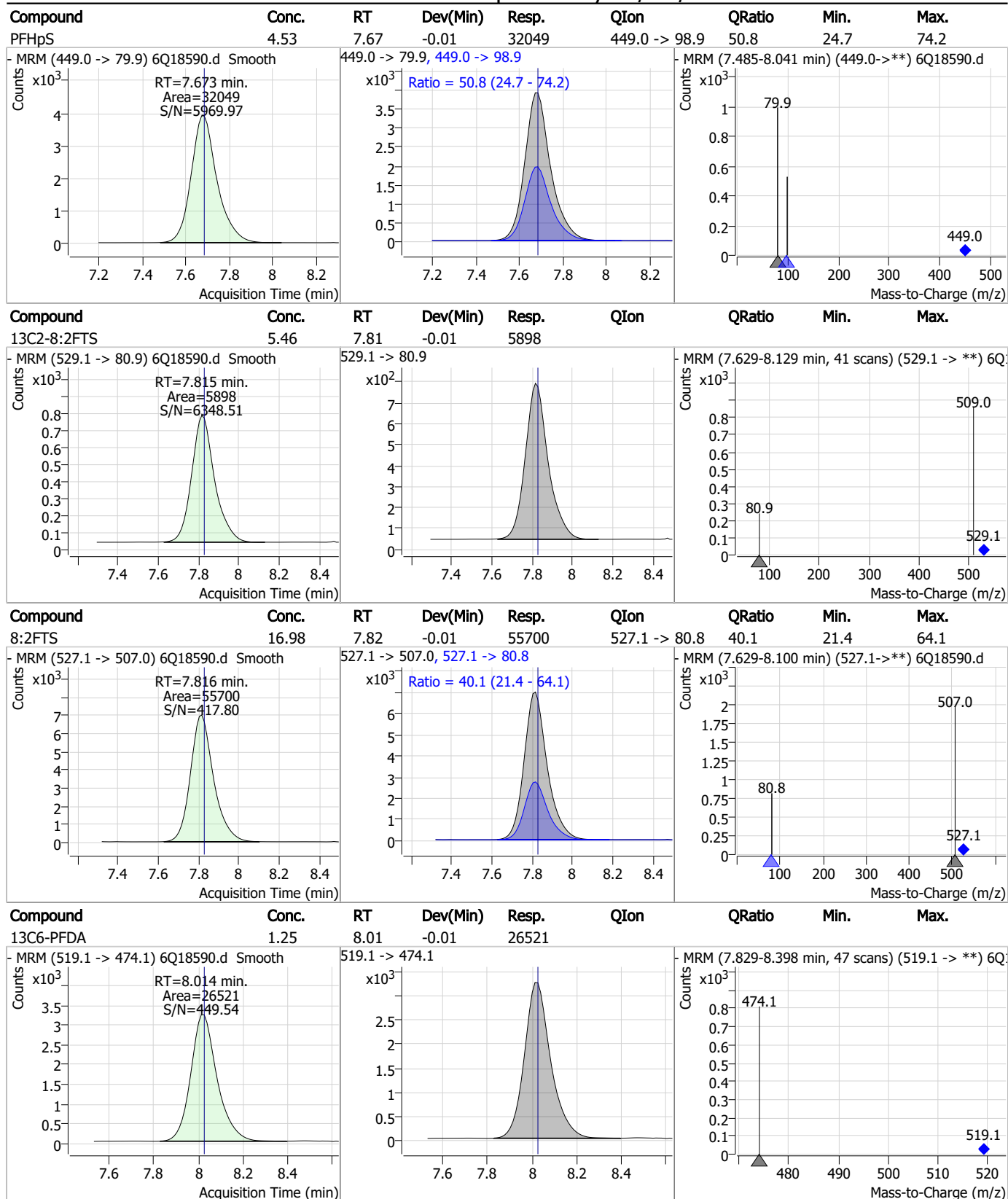
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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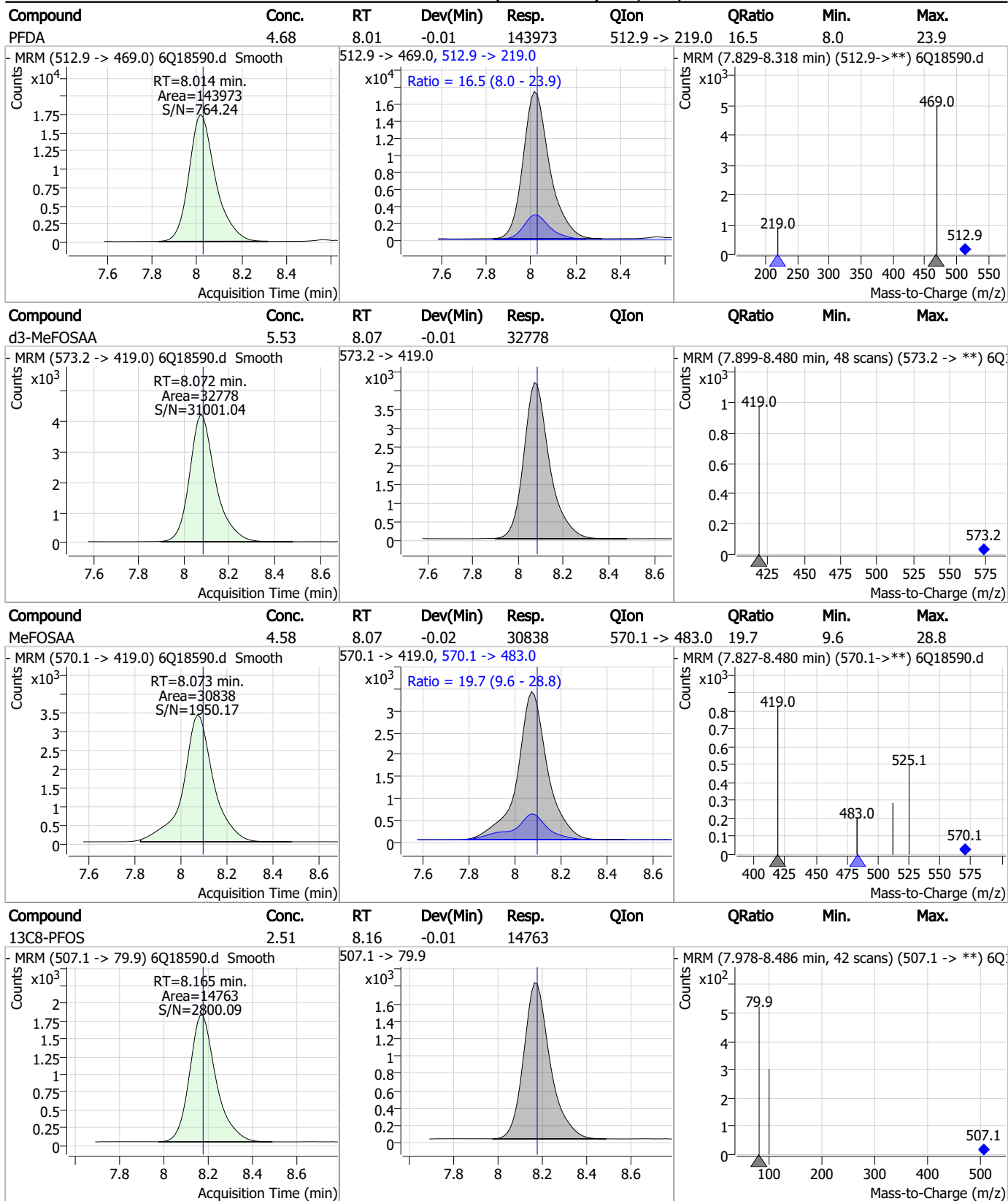
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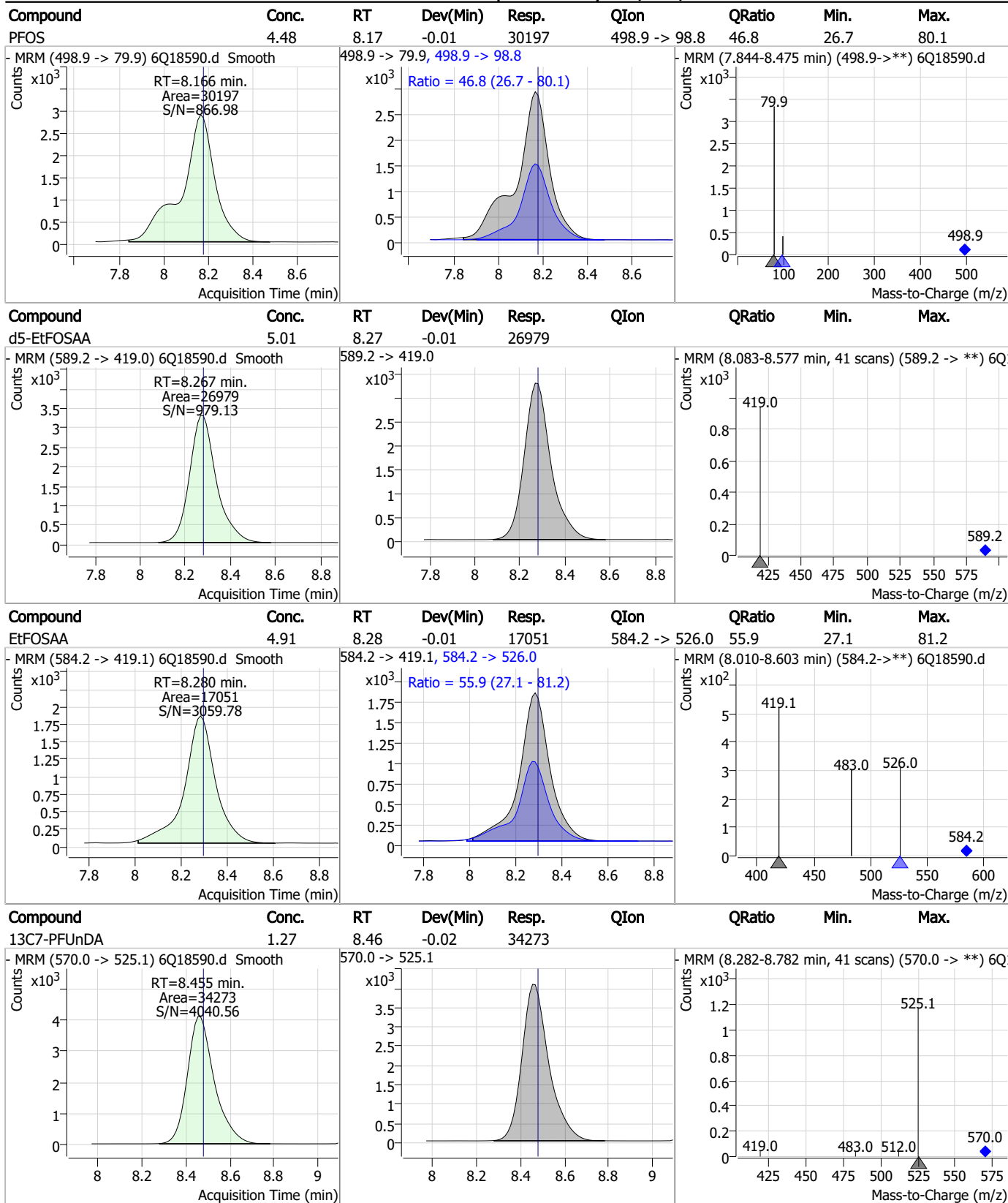
Perfluorinated Compounds by LC/MS/MS



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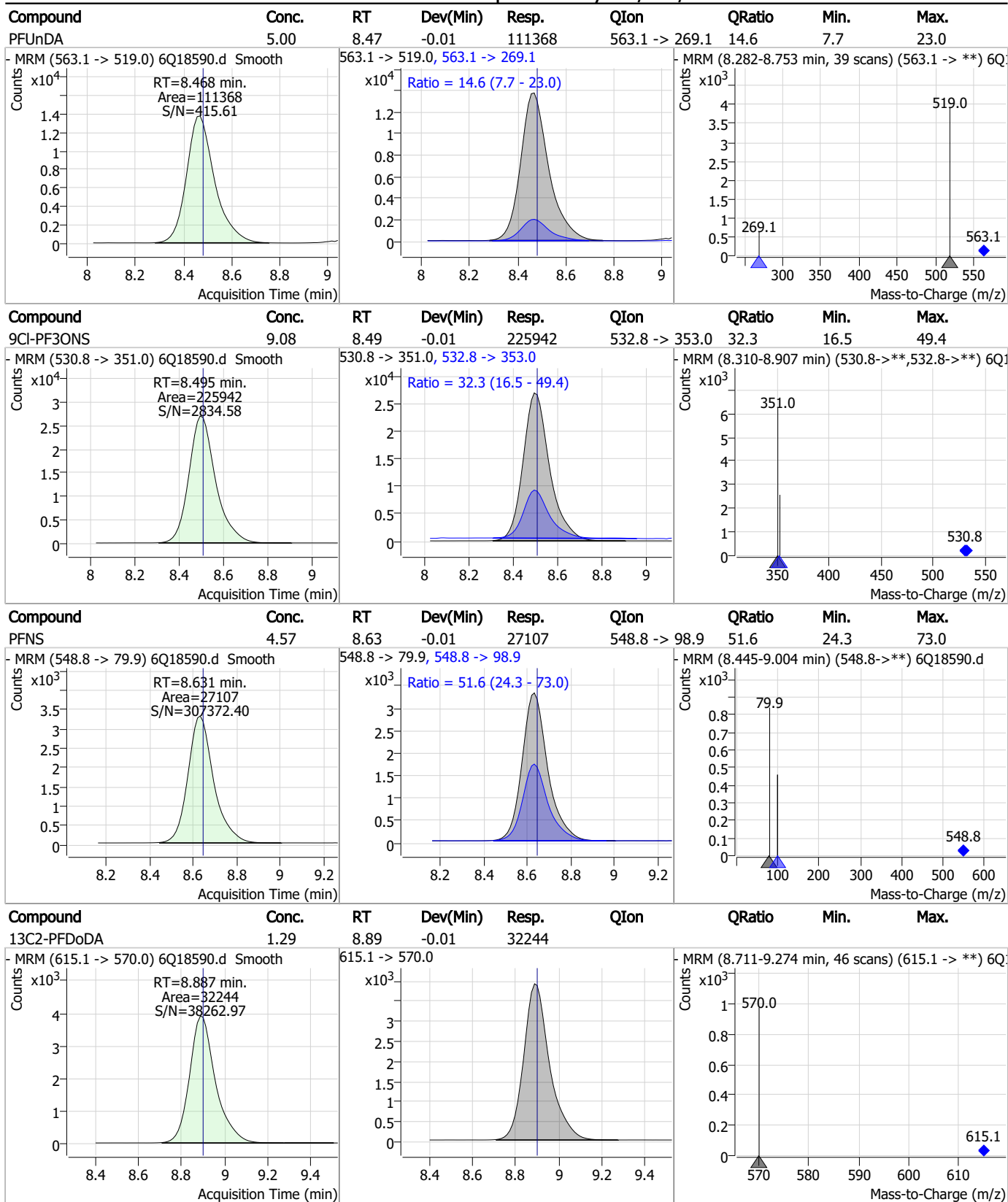
Perfluorinated Compounds by LC/MS/MS



7.7.6
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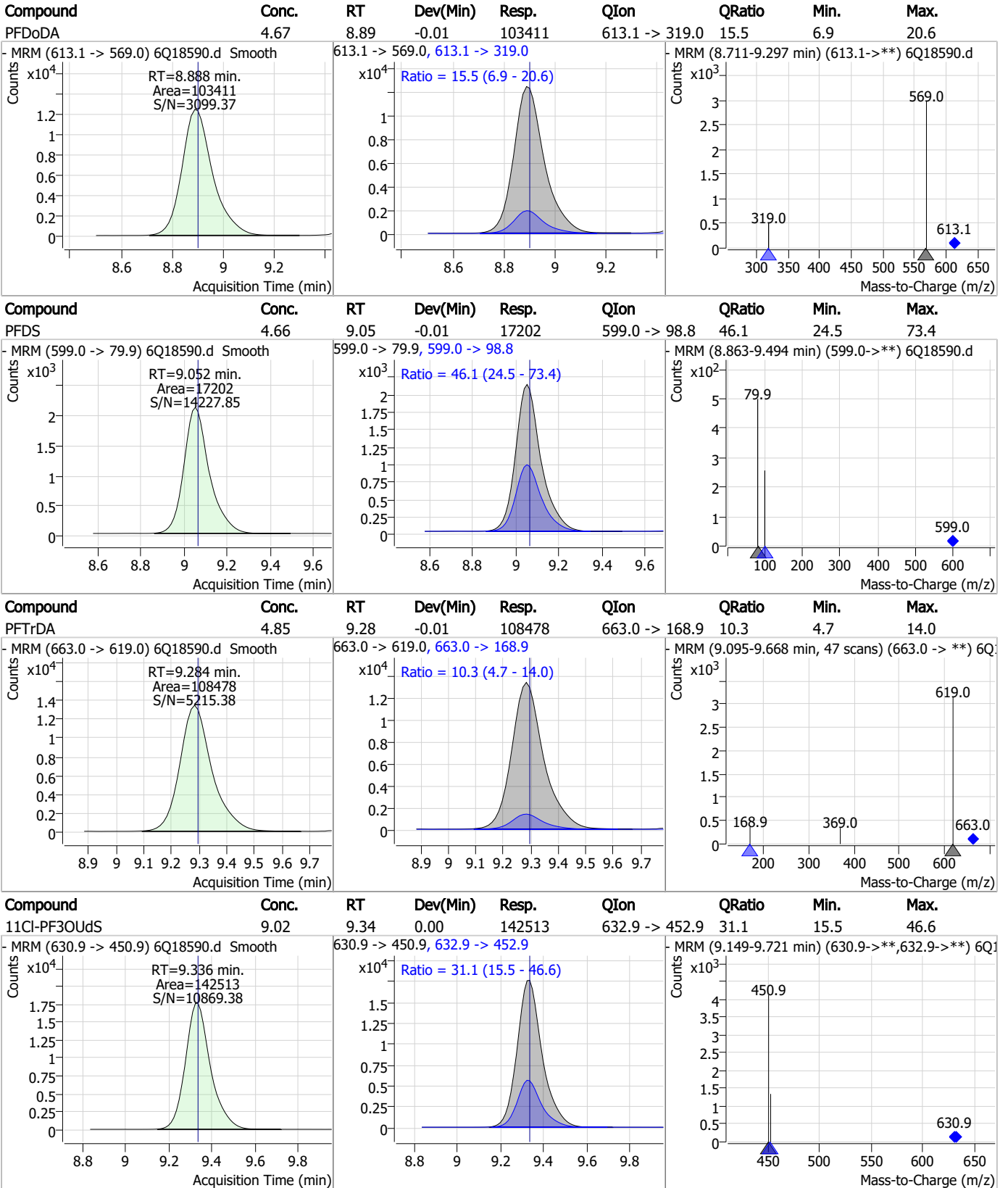
Perfluorinated Compounds by LC/MS/MS



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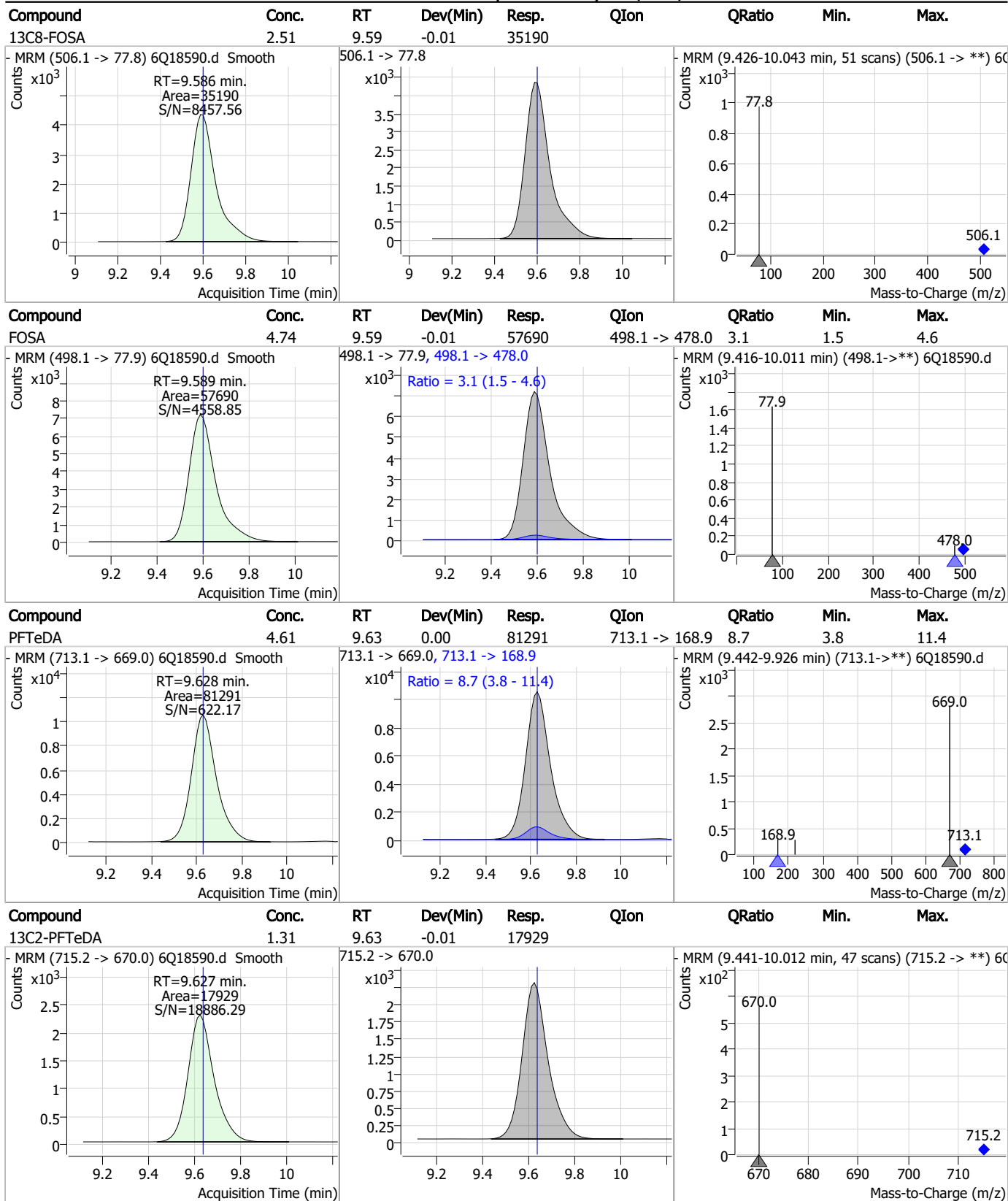
Perfluorinated Compounds by LC/MS/MS



7.7.6

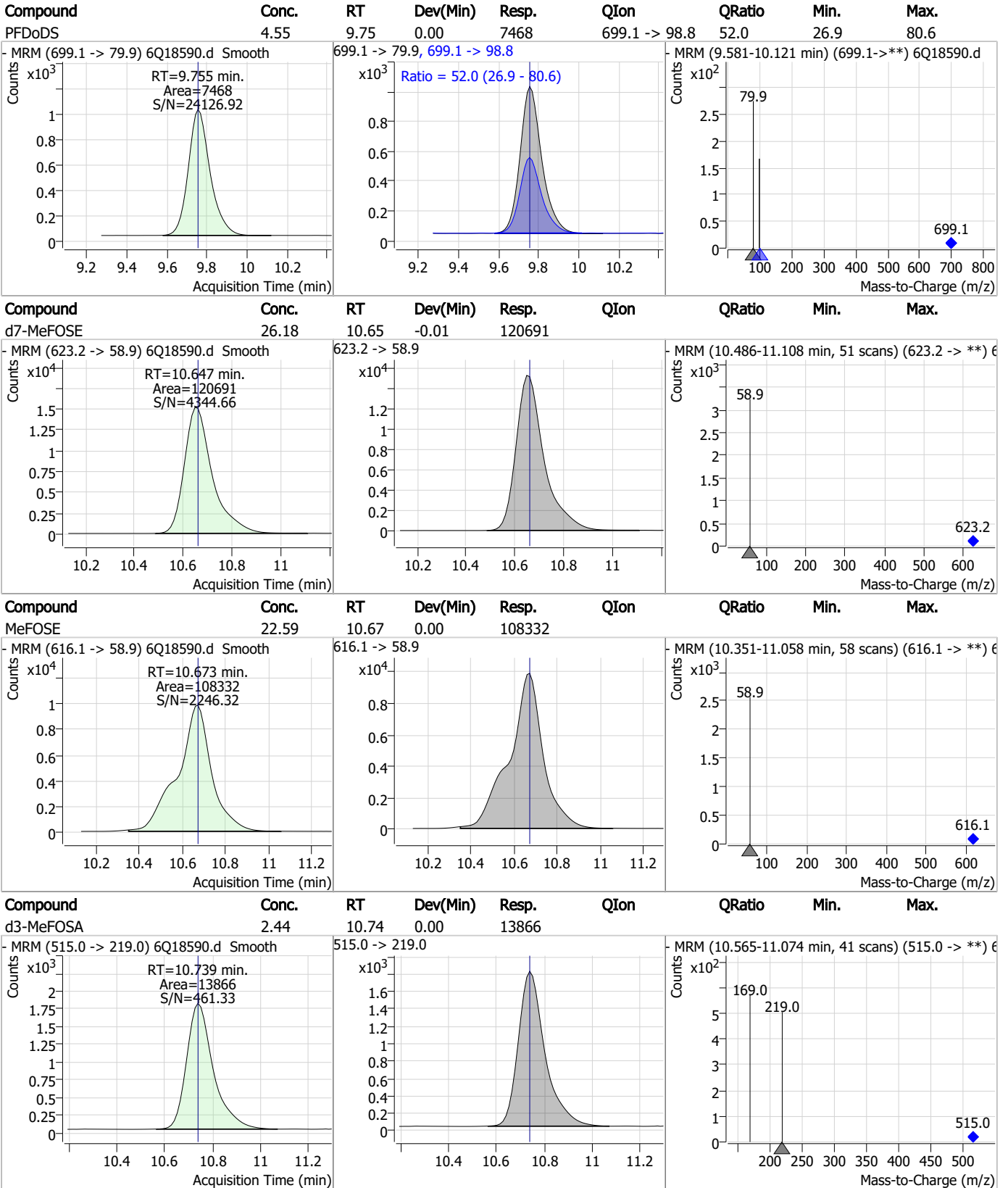
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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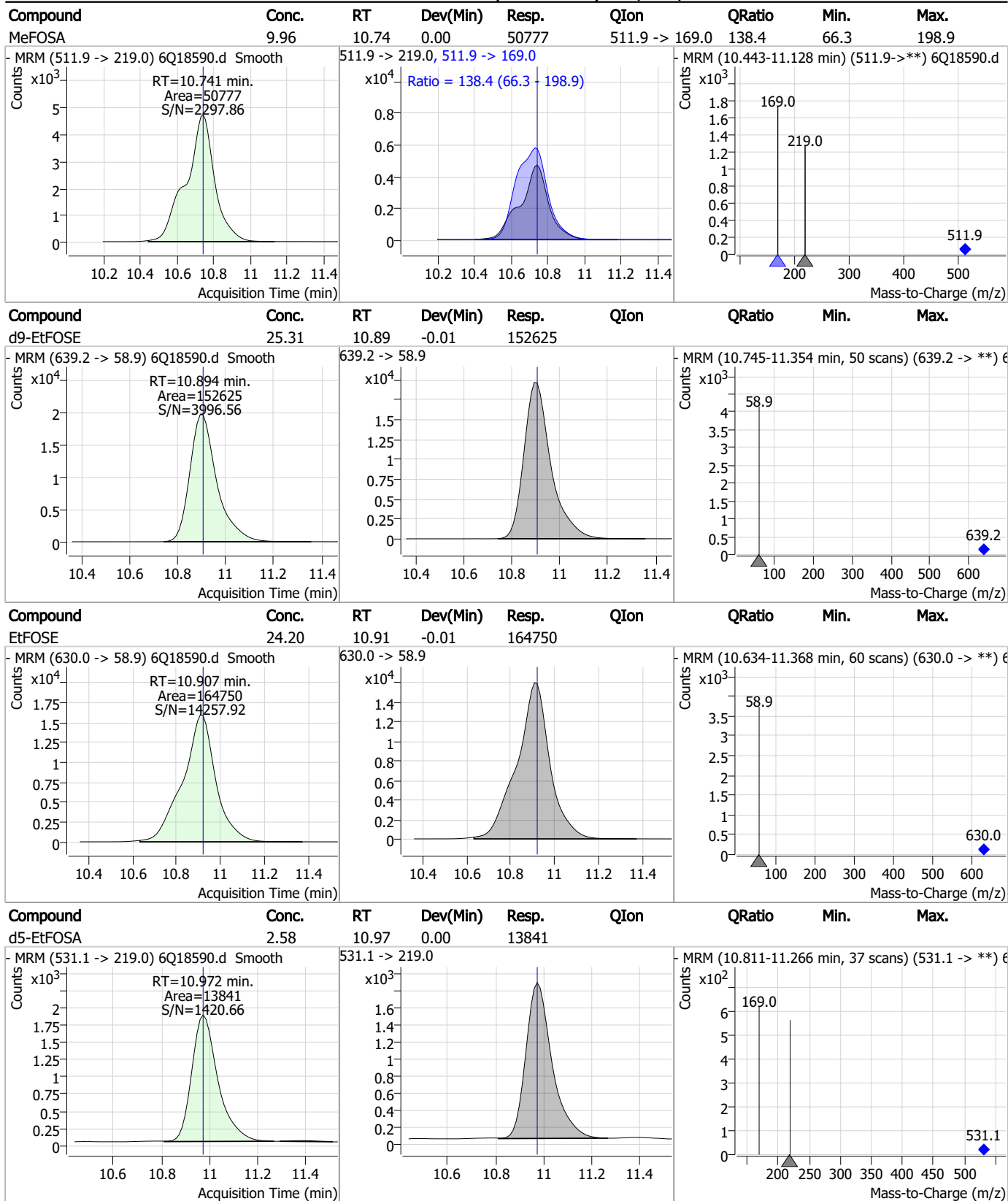
Perfluorinated Compounds by LC/MS/MS



7.7.6

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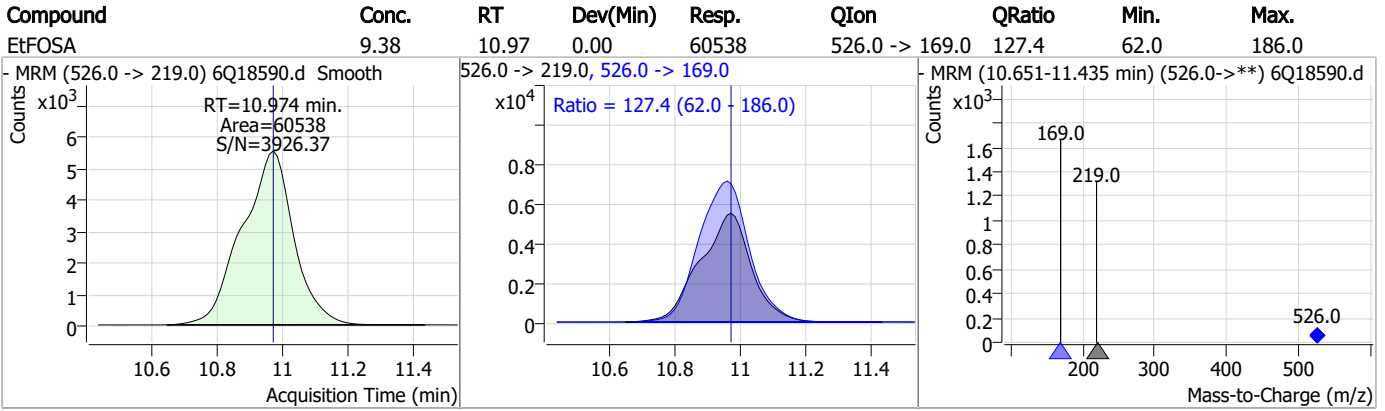
Perfluorinated Compounds by LC/MS/MS



7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18591.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:28:50 PM
 Sample Name : ic279-6
 Vial : P1-A7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	187223	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62656	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	68771	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	63077	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	95236	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	43575	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26462	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33640	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	31346	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16999	1.25 µg/L	-0.012
M8-FOSA	9.586	506.1 -> 77.8	35644	2.50 µg/L	-0.012
M3-PFBS	5.334	302.1 -> 79.9	24809	2.50 µg/L	0.000
M3-PFHxS	7.130	402.1 -> 79.9	15368	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	15892	2.50 µg/L	0.000
M2-4:2FTS	5.093	329.1 -> 80.9	3628	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5079	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	5275	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	115482	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	156806	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13452	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14515	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17429	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	78677	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	11436	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	104791	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	37496	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	55883	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	64647	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3628	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5079	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-8:2FTS	7.827	529.1 -> 80.9	5275	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	31346	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16999	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C3-PFBS	5.334	302.1 -> 79.9	24809	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	15368	2.41 µg/L	0.000

7.7.7
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C4-PFBA	2.822	216.8 -> 171.9	187223	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	63077	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	68771	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	62656	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.027	519.1 -> 474.1	26462	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33640	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-FOSA	9.586	506.1 -> 77.8	35644	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C8-PFOA	7.026	421.1 -> 376.0	95236	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.177	507.1 -> 79.9	15892	2.85 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C9-PFNA	7.545	472.1 -> 427.0	43575	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.7%	
d3-MeFOSAA	8.084	573.2 -> 419.0	30953	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	42934	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	14515	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	26452	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
d7-MeFOSE	10.647	623.2 -> 58.9	115482	26.38 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d9-EtFOSE	10.894	639.2 -> 58.9	156806	27.39 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
d5-EtFOSA	10.972	531.1 -> 219.0	13452	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	248579	47.17 µg/L	96
		327.1 -> 80.9	92560		
6:2FTS	6.801	427.1 -> 407.0	246153	49.32 µg/L	99
		427.1 -> 80.9	82513		
8:2FTS	7.816	527.1 -> 507.0	140681	47.95 µg/L	97
		527.1 -> 80.8	57259		
EtFOSAA	8.280	584.2 -> 419.1	42790	12.57 µg/L	96
		584.2 -> 526.0	24496		
FOSA	9.589	498.1 -> 77.9	149971	12.15 µg/L	100
		498.1 -> 478.0	4666		
MeFOSAA	8.085	570.1 -> 419.0	76629	12.04 µg/L	98
		570.1 -> 483.0	15562		
PFBA	2.818	212.8 -> 168.9	308042	49.70 µg/L	100
PFBS	5.323	298.7 -> 79.9	90329	10.70 µg/L	95
		298.7 -> 98.8	35360		
PFDA	8.027	512.9 -> 469.0	379279	12.36 µg/L	100
		512.9 -> 219.0	60207		
PFDoDA	8.888	613.1 -> 569.0	268807	12.49 µg/L	96
		613.1 -> 319.0	40976		
PFDS	9.052	599.0 -> 79.9	42166	10.61 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	20128			
PFHpA	6.370	363.1 -> 319.0	344728	12.35	µg/L	98
		363.1 -> 169.0	55086			
PFHpS	7.685	449.0 -> 79.9	80819	10.61	µg/L	97
		449.0 -> 98.9	38330			
PFHxA	5.420	313.0 -> 269.0	283376	12.27	µg/L	98
		313.0 -> 118.9	14200			
PFHxS	7.131	398.7 -> 79.9	78663	11.32	µg/L	m 99
		398.7 -> 98.9	36605			
PFNA	7.545	463.0 -> 419.0	385428	12.48	µg/L	100
		463.0 -> 219.0	75050			
PFNS	8.631	548.8 -> 79.9	67979	10.66	µg/L	93
		548.8 -> 98.9	36354			
PFOA	7.028	413.0 -> 369.0	523746	12.88	µg/L	99
		413.0 -> 169.0	92825			
PFOS	8.166	498.9 -> 79.9	77612	10.69	µg/L	m 93
		498.9 -> 98.8	37321			
PFPeA	4.212	263.0 -> 219.0	373747	24.84	µg/L	100
PFPeS	6.422	349.1 -> 79.9	80140	11.57	µg/L	97
		349.1 -> 98.9	36129			
PFTeDA	9.628	713.1 -> 669.0	209256	12.51	µg/L	98
		713.1 -> 168.9	17688			
PFTrDA	9.284	663.0 -> 619.0	270193	12.43	µg/L	96
		663.0 -> 168.9	29476			
PFUnDA	8.468	563.1 -> 519.0	275143	12.59	µg/L	98
		563.1 -> 269.1	44300			
11Cl-PF3OUdS	9.323	630.9 -> 450.9	376001	23.34	µg/L	97
		632.9 -> 452.9	110095			
9Cl-PF3ONS	8.495	530.8 -> 351.0	569045	22.42	µg/L	99
		532.8 -> 353.0	191583			
ADONA	6.632	376.9 -> 250.9	1278083	22.41	µg/L	100
		376.9 -> 84.8	340840			
HFPO-DA	5.783	284.9 -> 168.9	86401	23.74	µg/L	97
		284.9 -> 184.9	10545			
3:3FTCA	3.671	241.0 -> 177.0	59768	62.06	µg/L	97
		241.0 -> 117.0	7931			
5:3FTCA	6.086	341.0 -> 237.1	1250433	301.02	µg/L	97
		341.0 -> 217.0	922064			
7:3FTCA	7.510	441.0 -> 316.9	875743	307.84	µg/L	98
		441.0 -> 336.9	1962989			
EtFOSA	10.974	526.0 -> 219.0	152729	24.36	µg/L	88
		526.0 -> 169.0	210391			
EtFOSE	10.907	630.0 -> 58.9	419307	59.94	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	129419	24.25	µg/L	90
		511.9 -> 169.0	187451			
MeFOSE	10.661	616.1 -> 58.9	292024	63.63	µg/L	100
PFDoS	9.755	699.1 -> 79.9	19043	10.79	µg/L	99
		699.1 -> 98.8	10316			
NFDHA	5.288	295.0 -> 201.0	68239	24.27	µg/L	98
		295.0 -> 84.9	17621			
PFMBA	4.626	279.0 -> 85.1	254903	24.89	µg/L	100
PFMPA	3.363	229.0 -> 84.9	197427	24.79	µg/L	100
PFEESA	5.875	314.8 -> 134.9	658465	22.47	µg/L	98
		314.8 -> 82.9	22317			

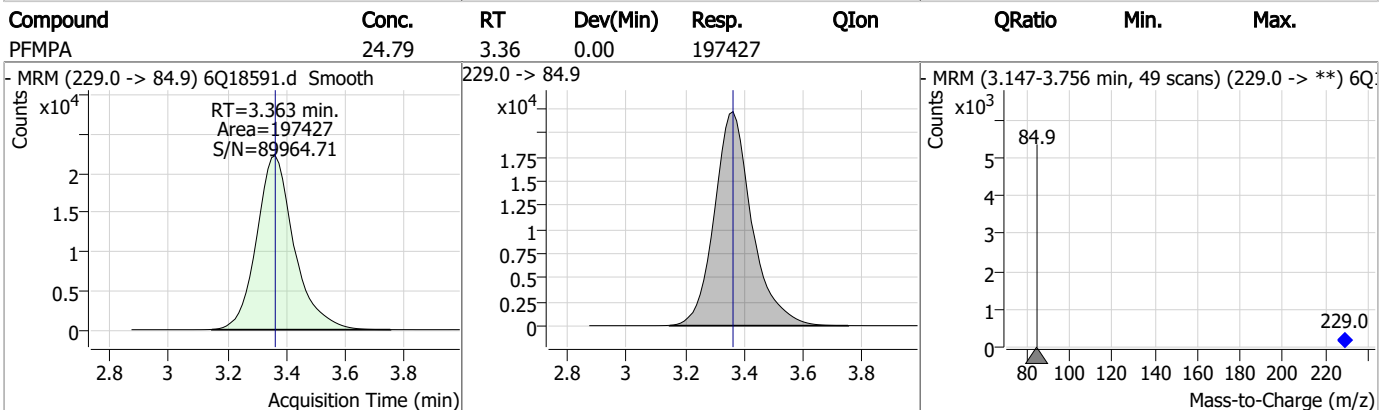
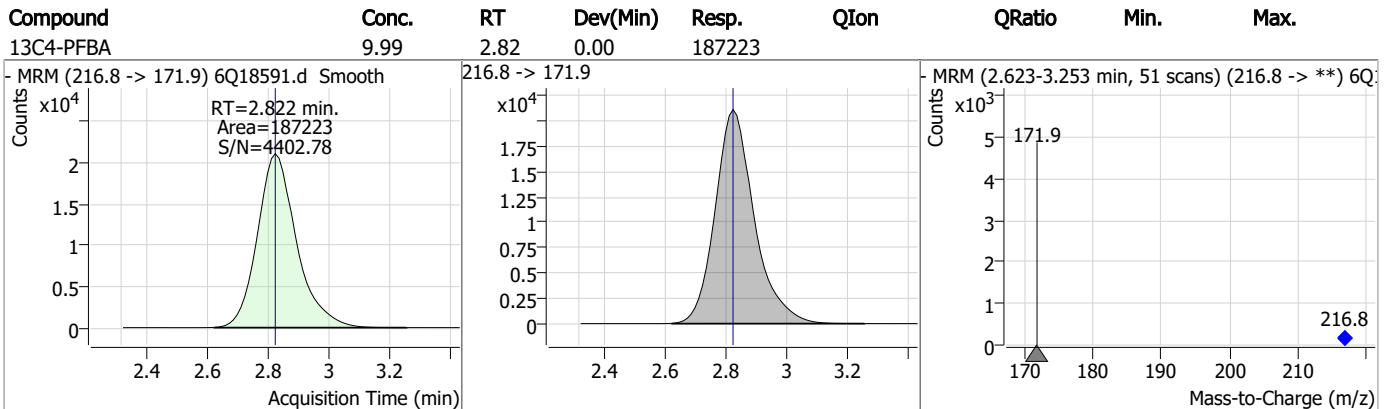
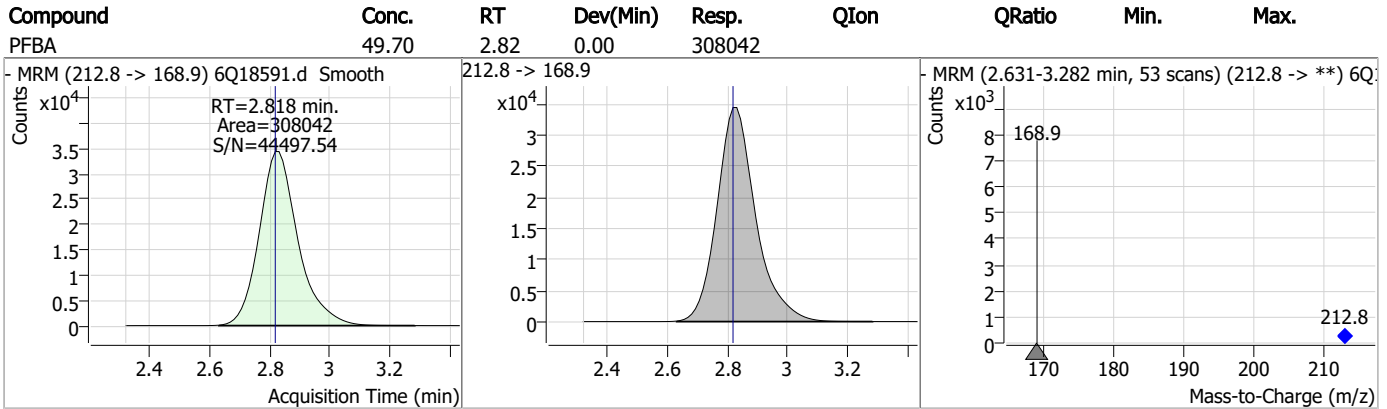
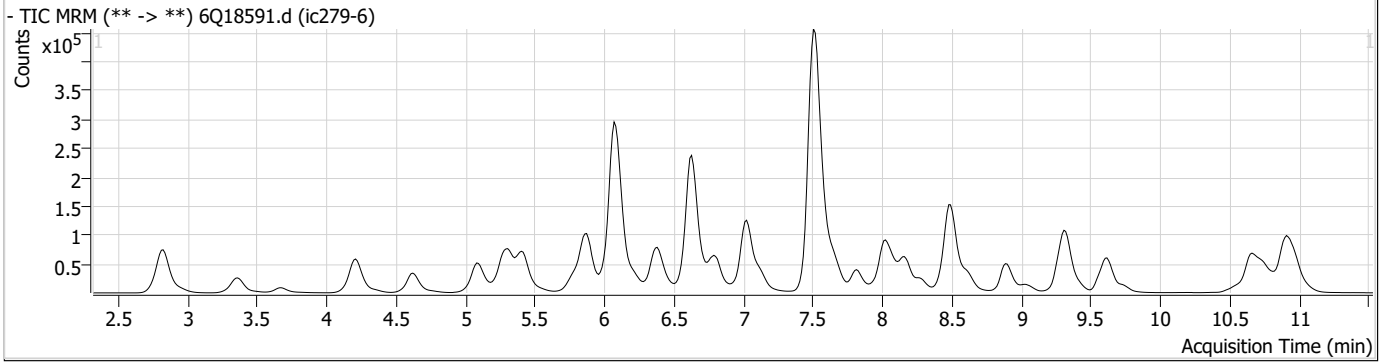
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

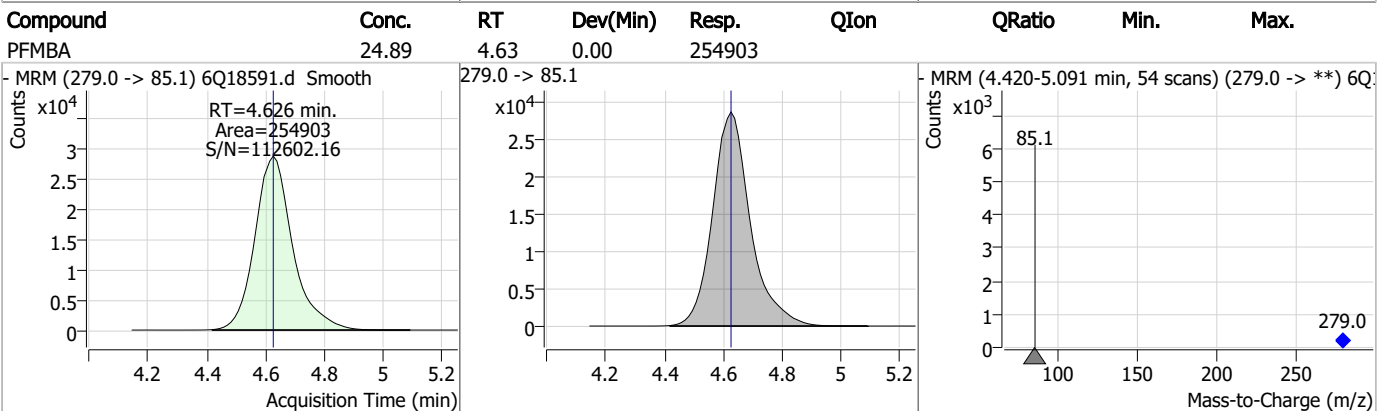
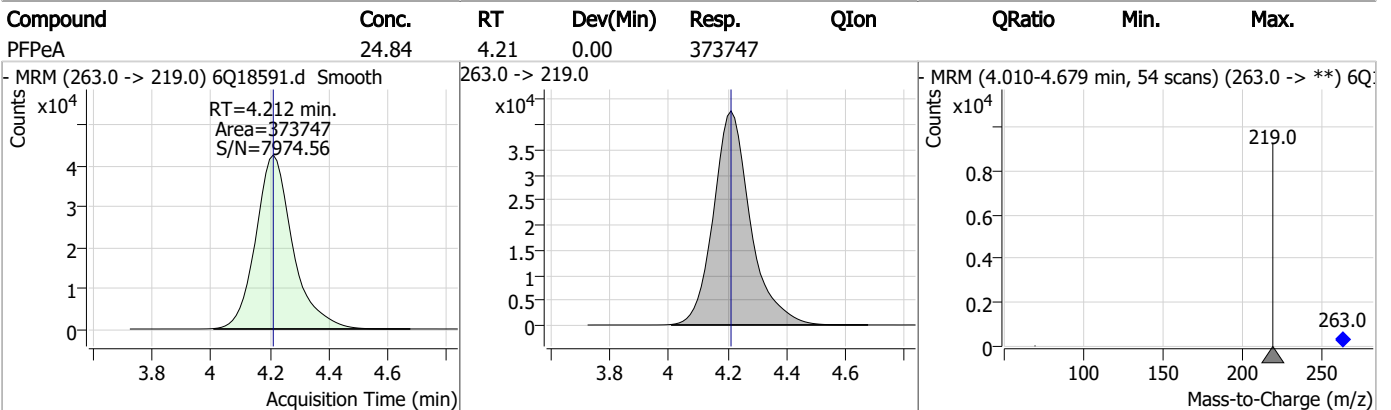
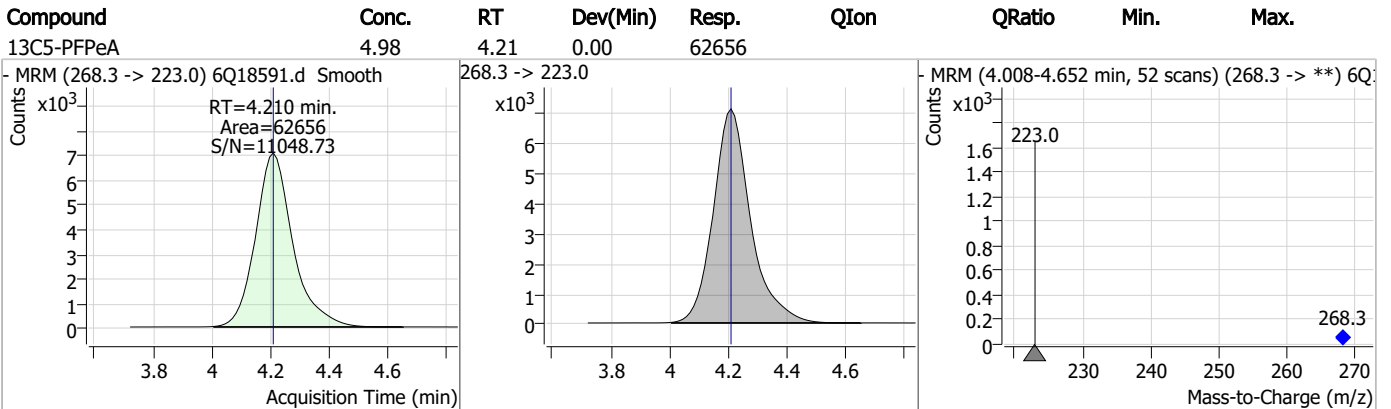
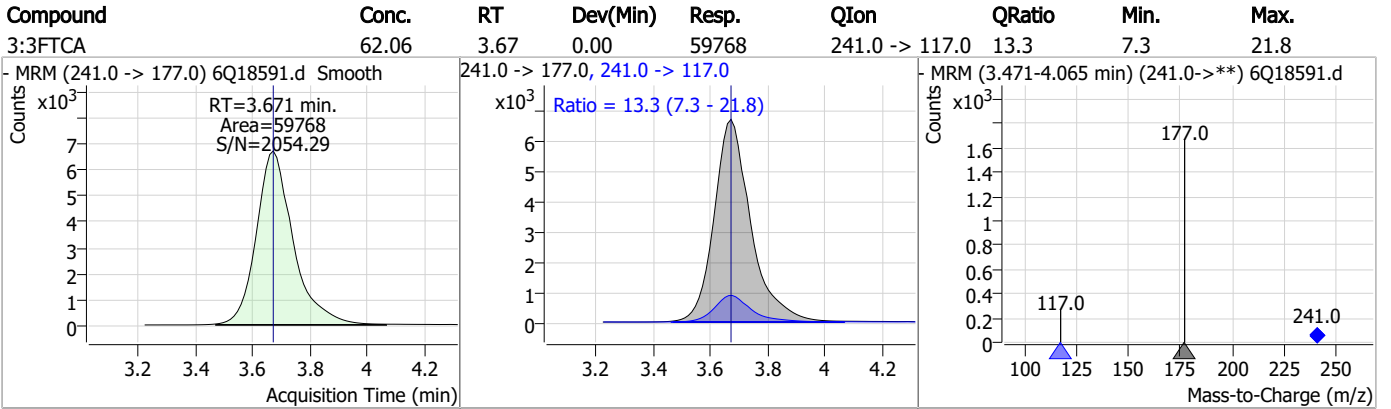
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7
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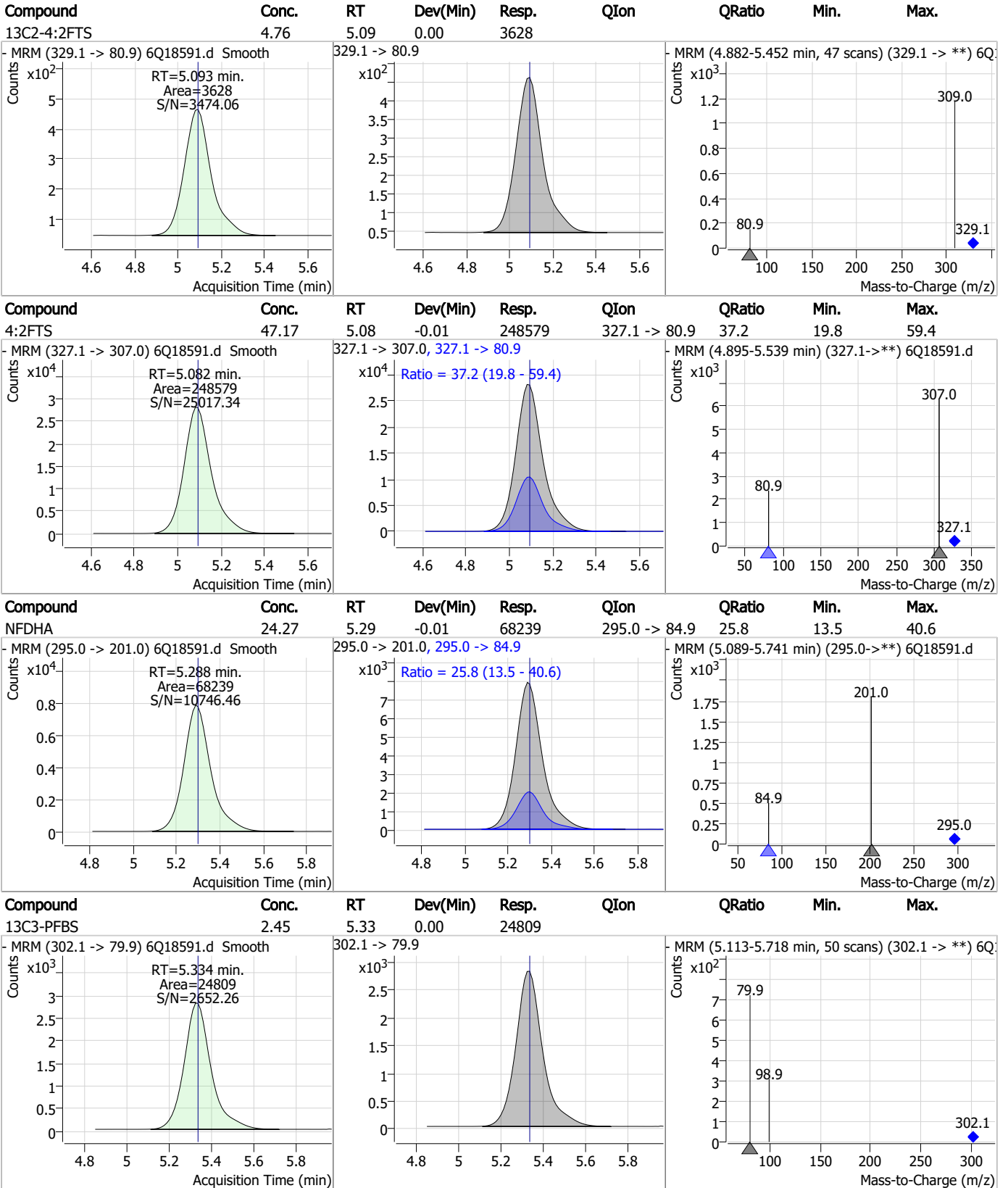
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



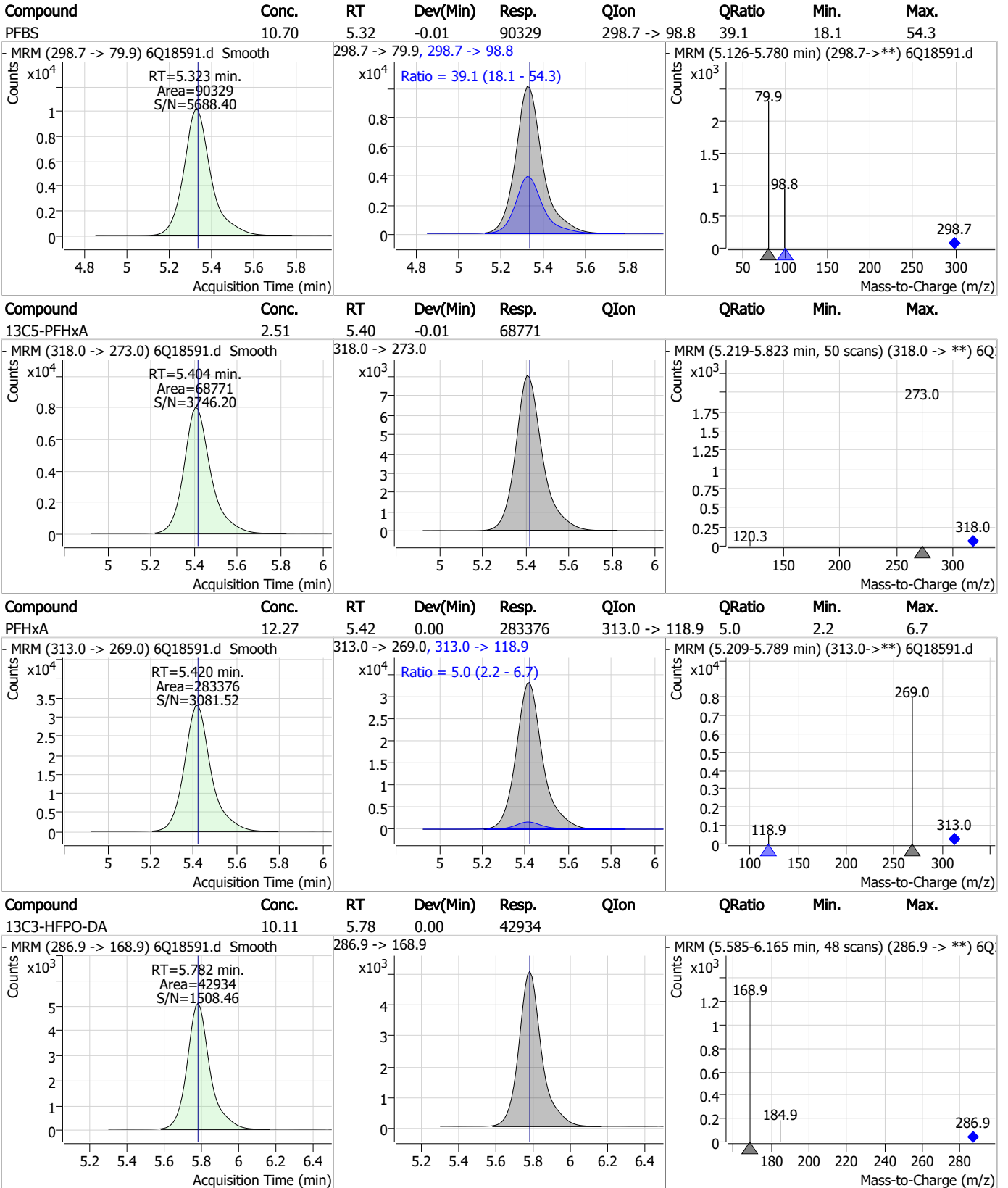
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

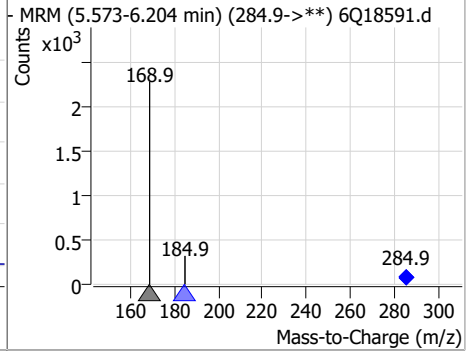
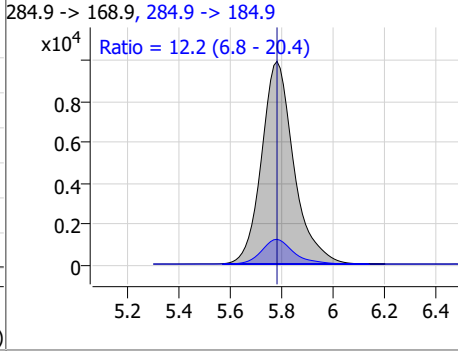
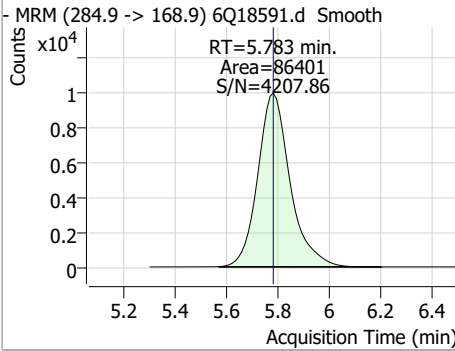


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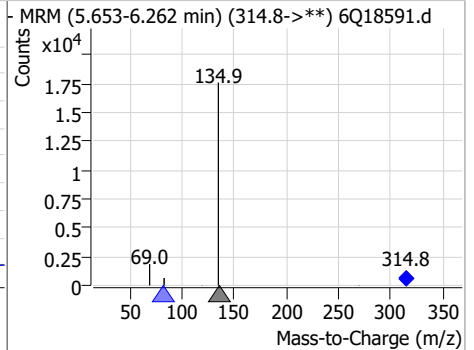
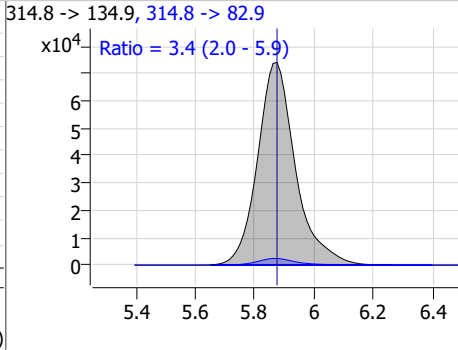
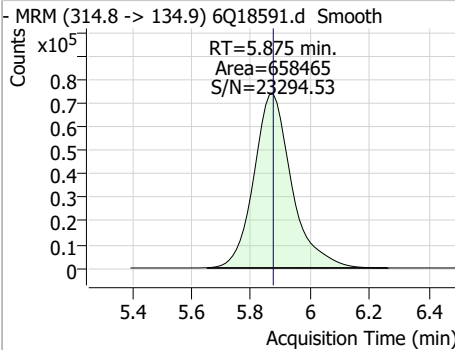
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Perfluorinated Compounds by LC/MS/MS

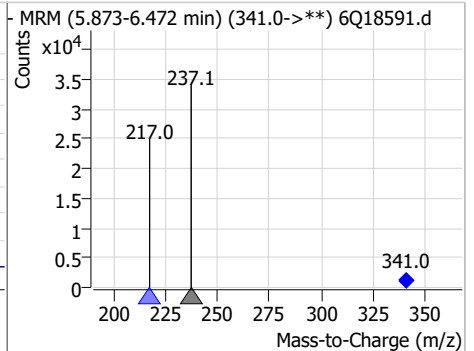
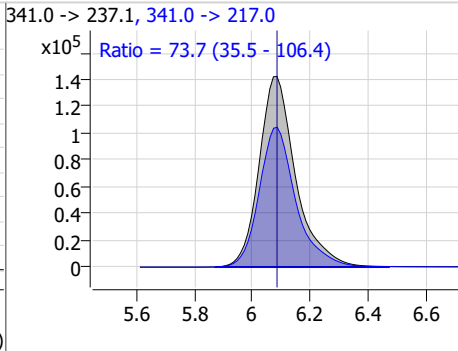
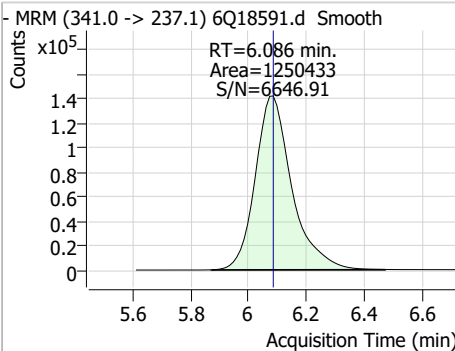
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	23.74	5.78	0.00	86401	284.9 -> 184.9	12.2	6.8	20.4



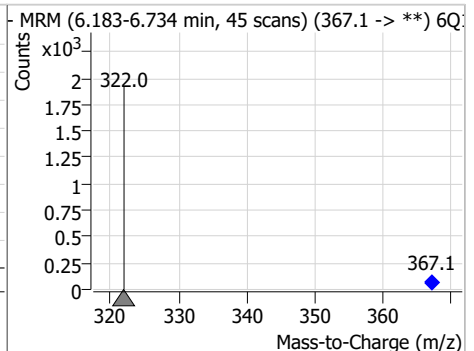
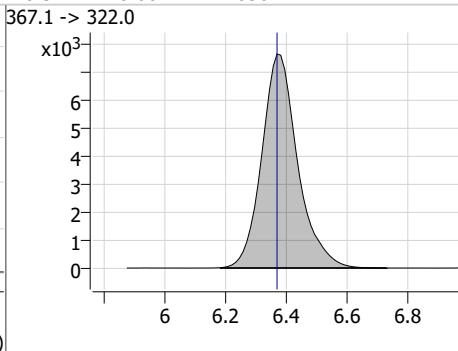
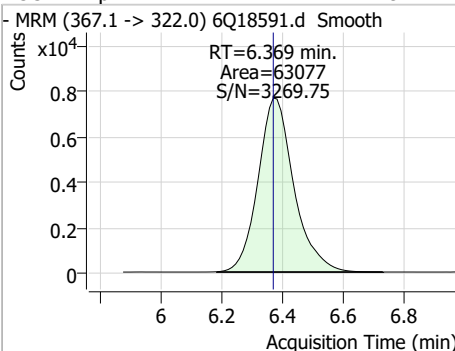
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.47	5.88	0.00	658465	314.8 -> 82.9	3.4	2.0	5.9



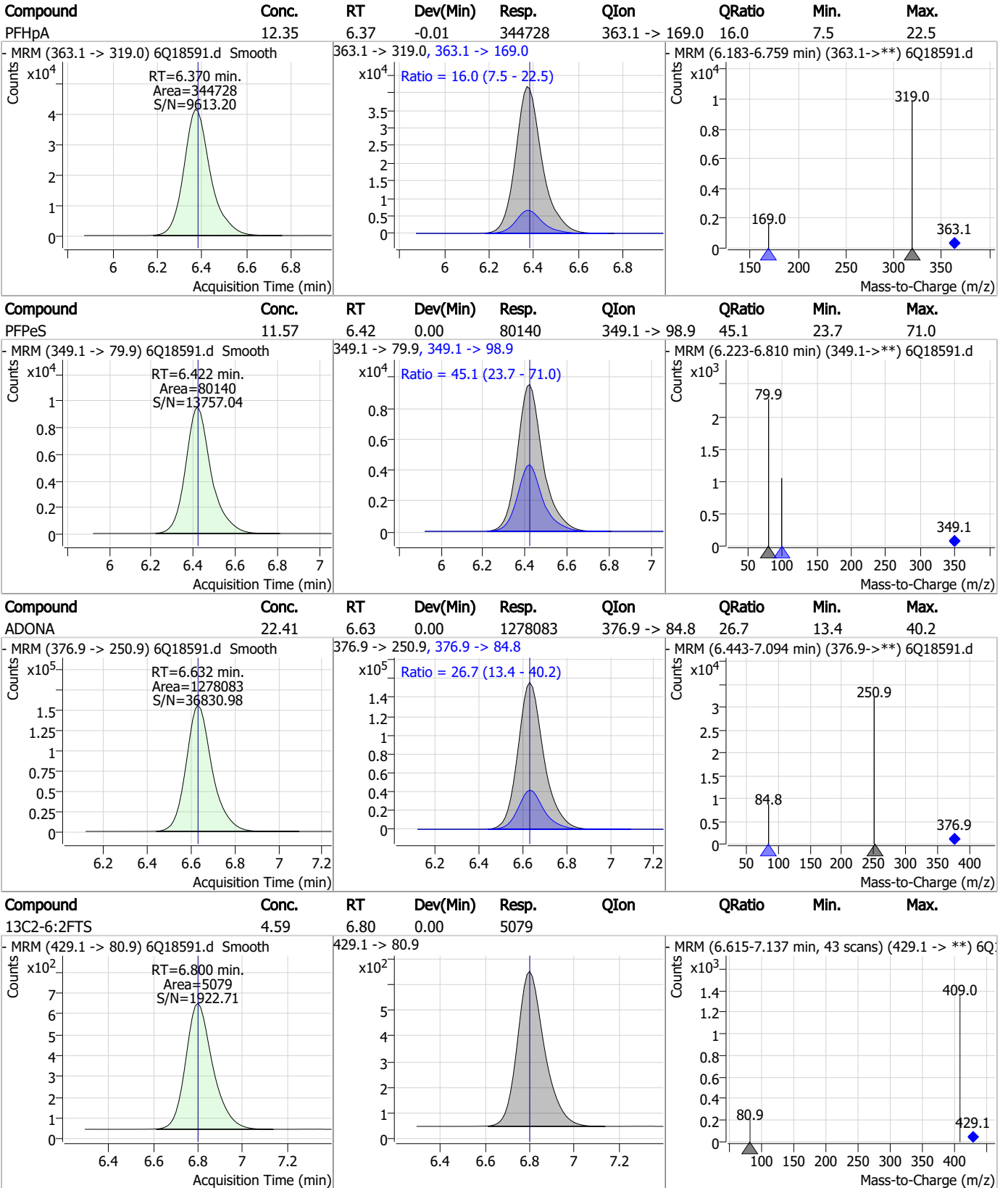
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	301.02	6.09	0.00	1250433	341.0 -> 217.0	73.7	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.37	0.00	63077	367.1 -> 322.0			

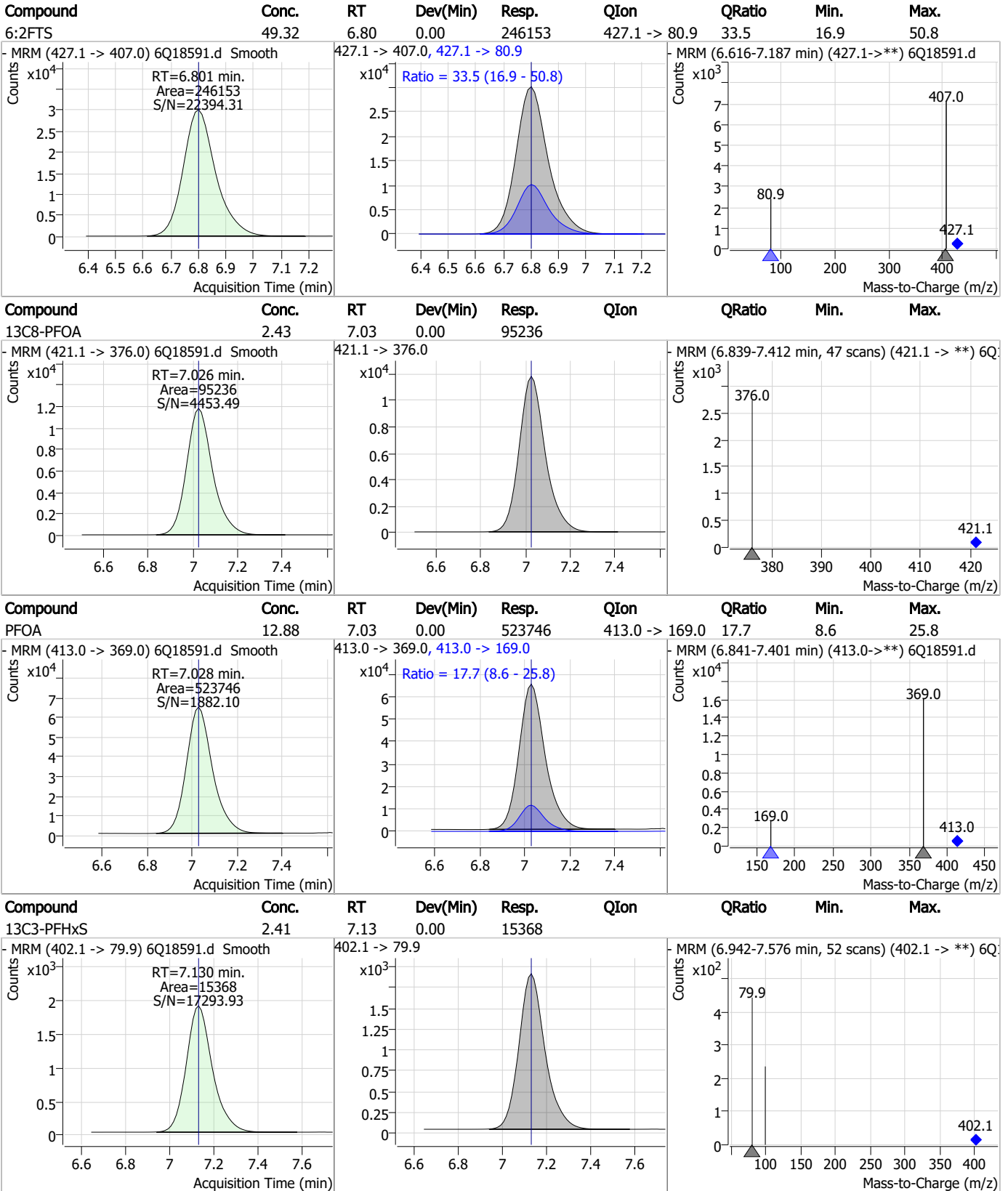


Perfluorinated Compounds by LC/MS/MS



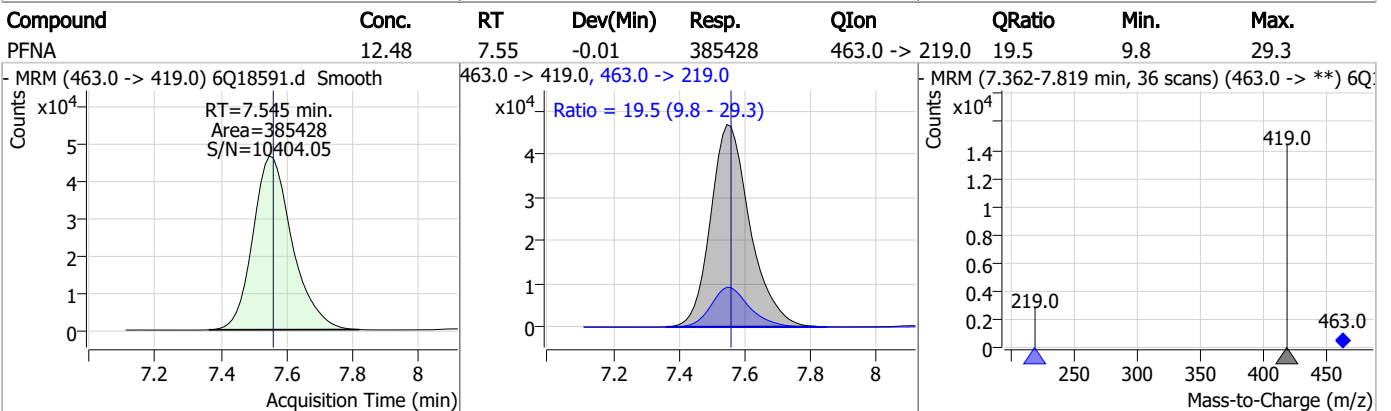
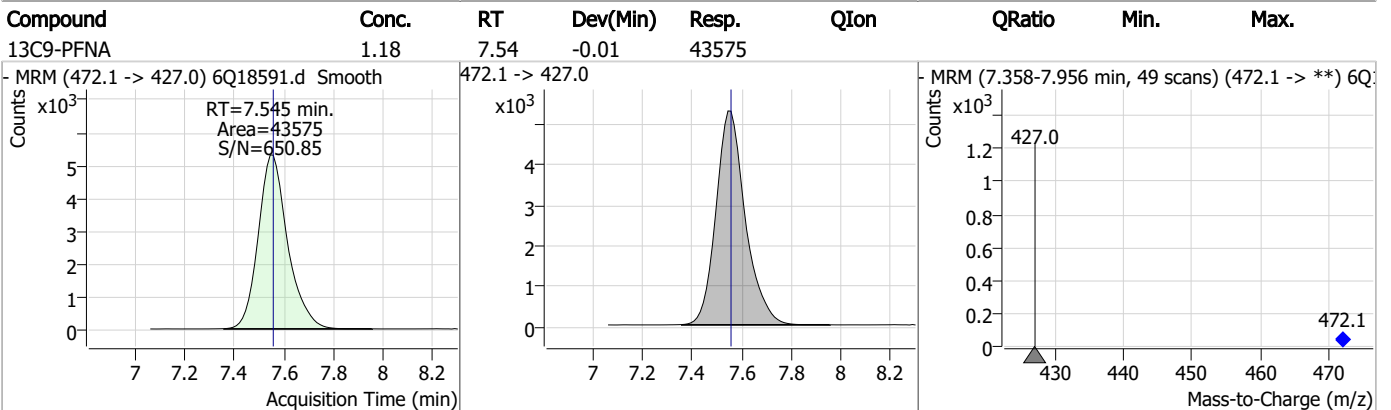
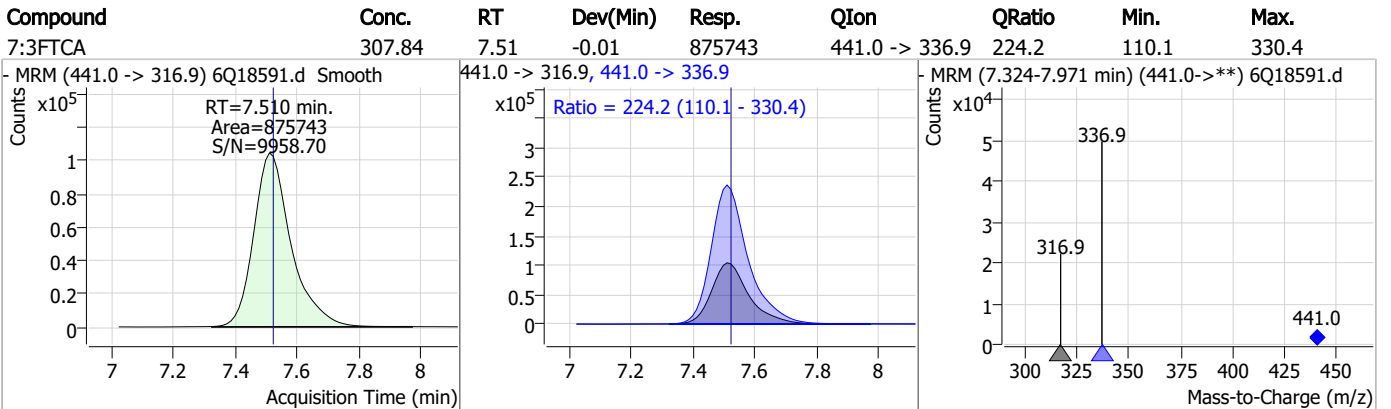
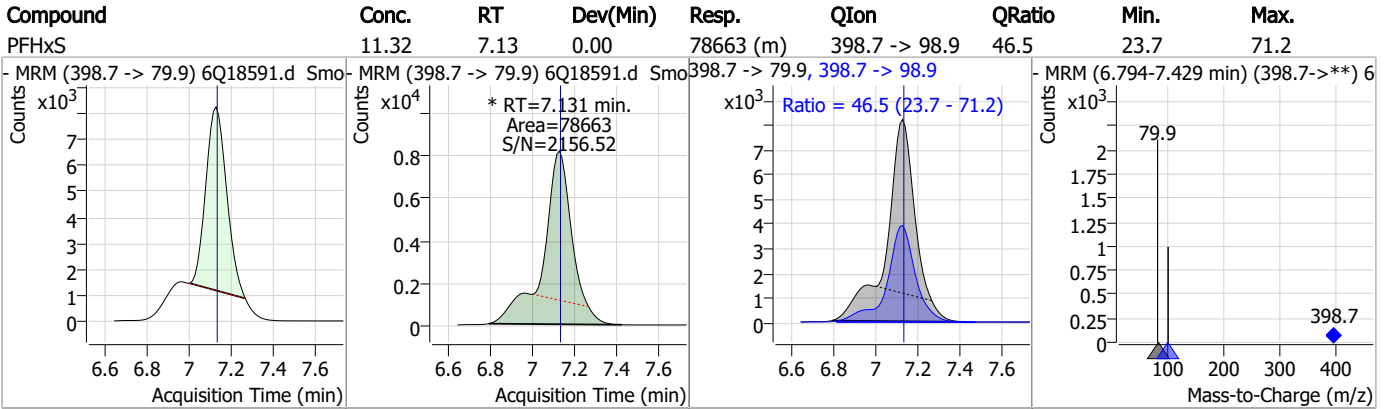
7.7.7
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Perfluorinated Compounds by LC/MS/MS

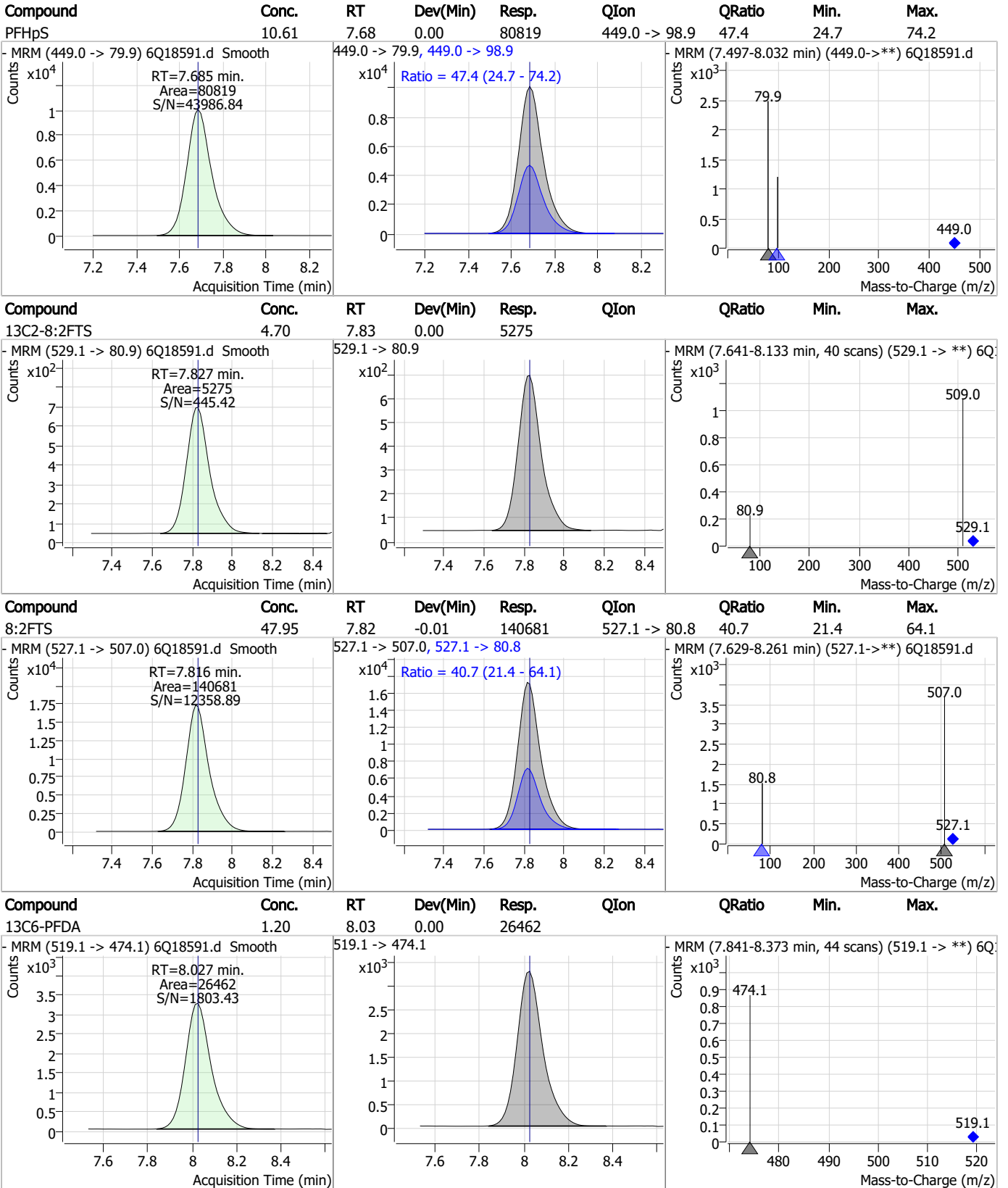


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Perfluorinated Compounds by LC/MS/MS



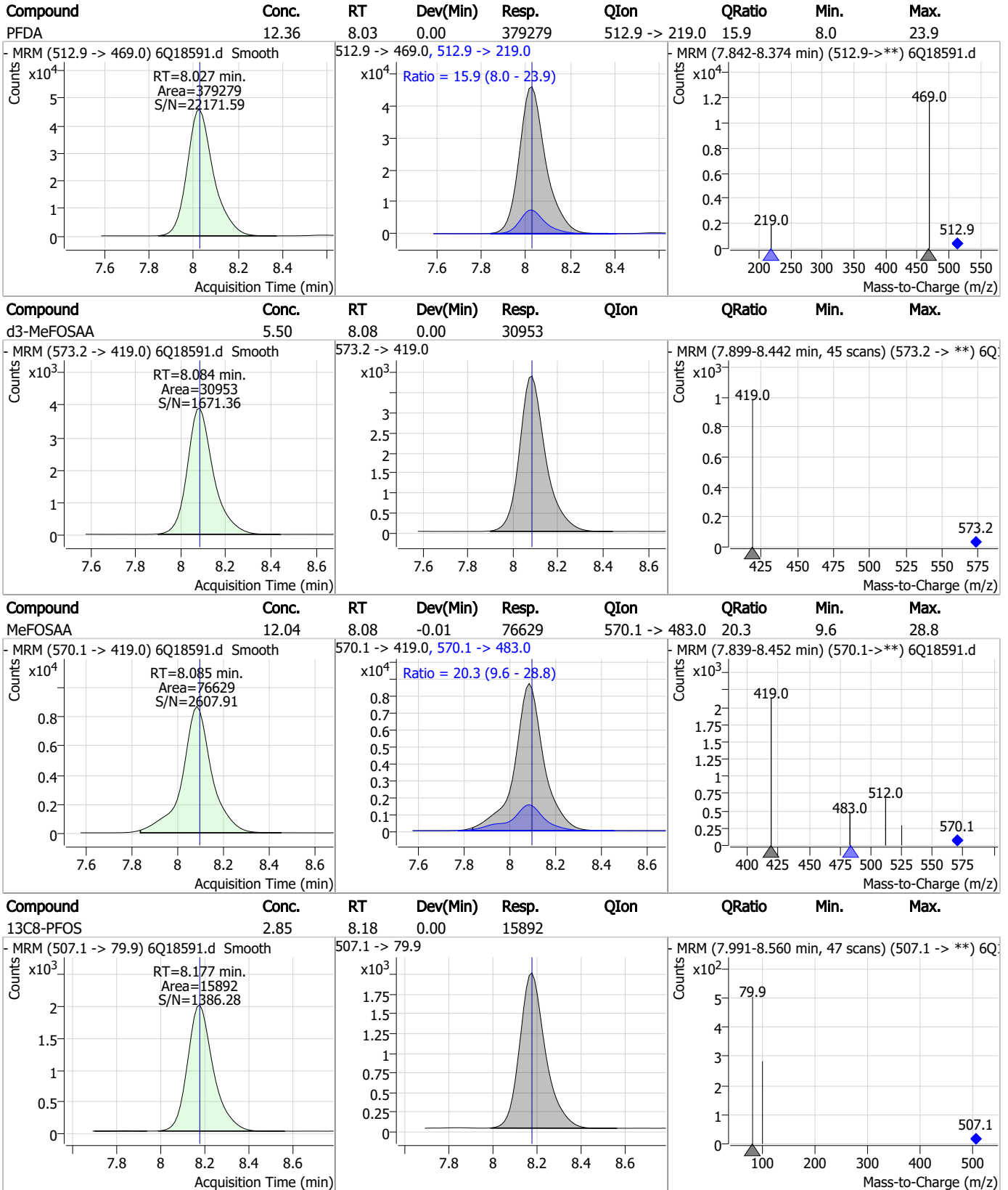
Perfluorinated Compounds by LC/MS/MS



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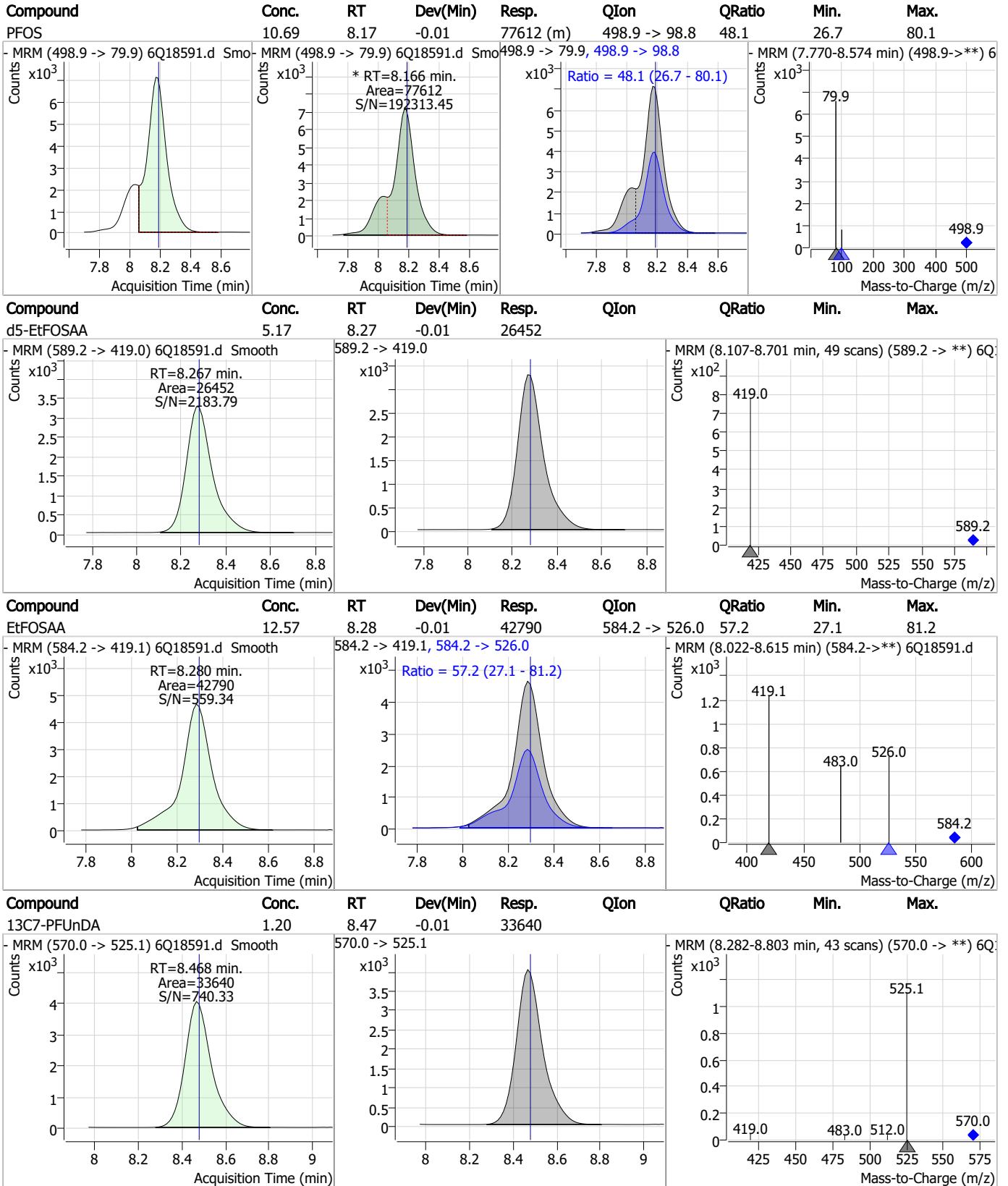
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

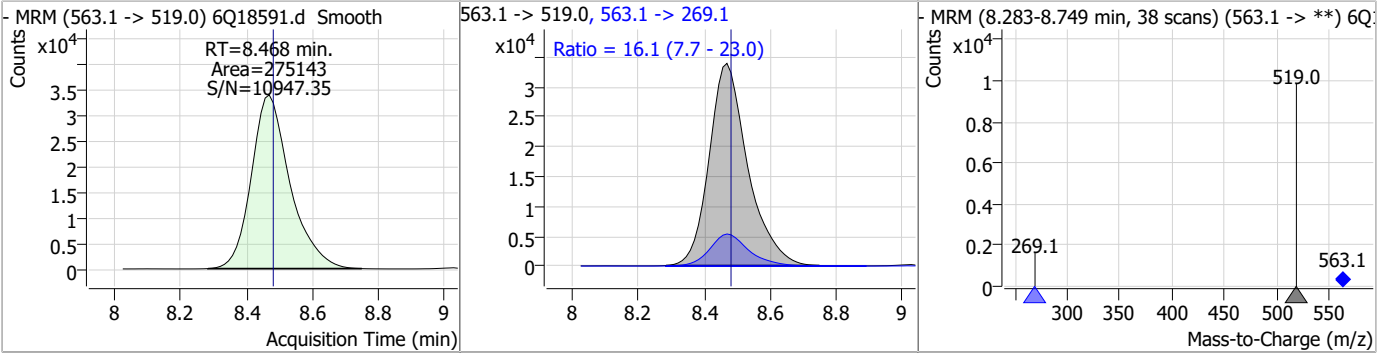


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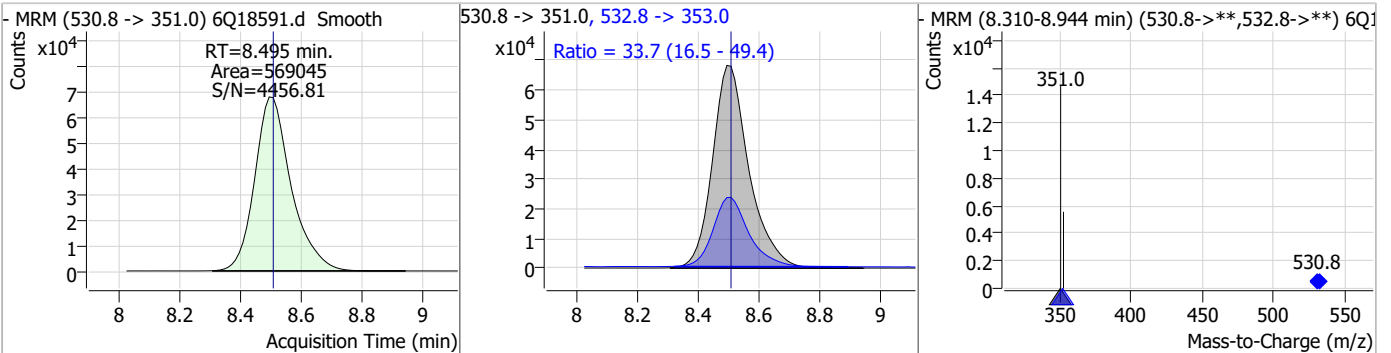
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Perfluorinated Compounds by LC/MS/MS

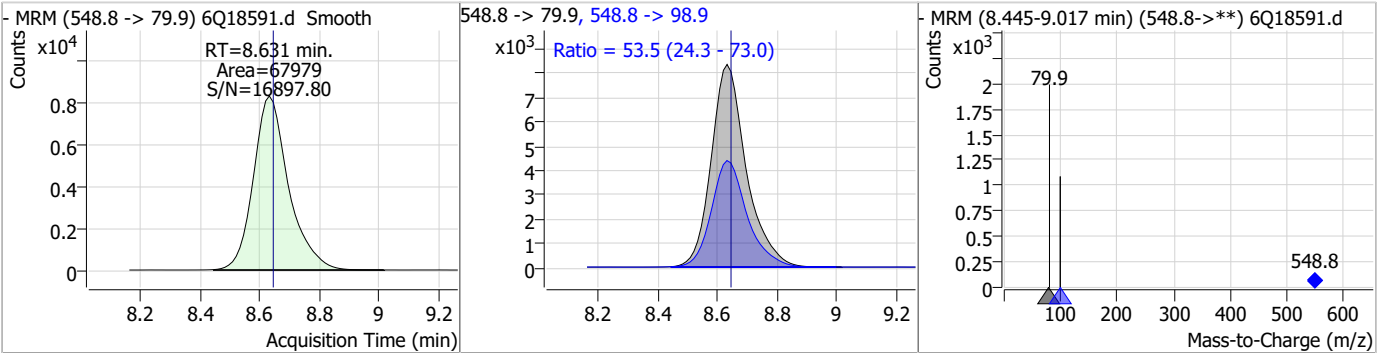
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.59	8.47	-0.01	275143	563.1 -> 269.1	16.1	7.7	23.0



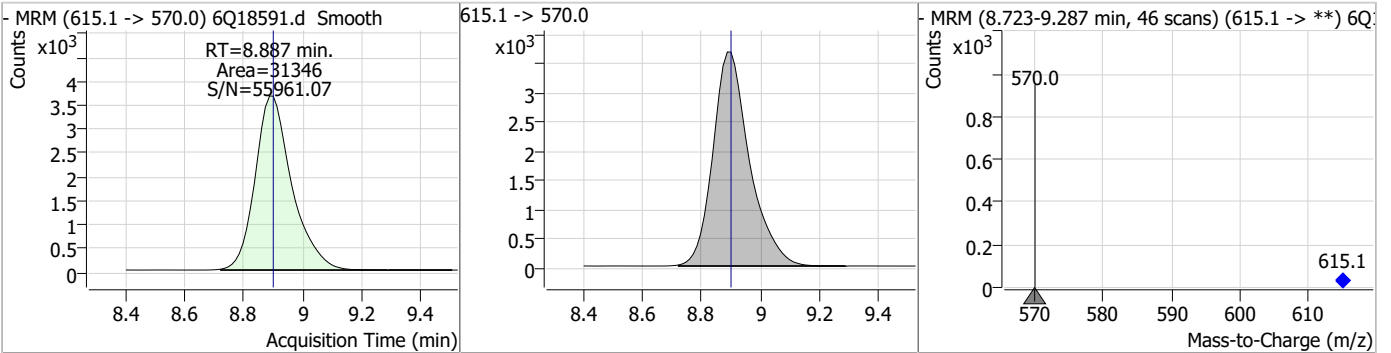
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	22.42	8.49	-0.01	569045	532.8 -> 353.0	33.7	16.5	49.4



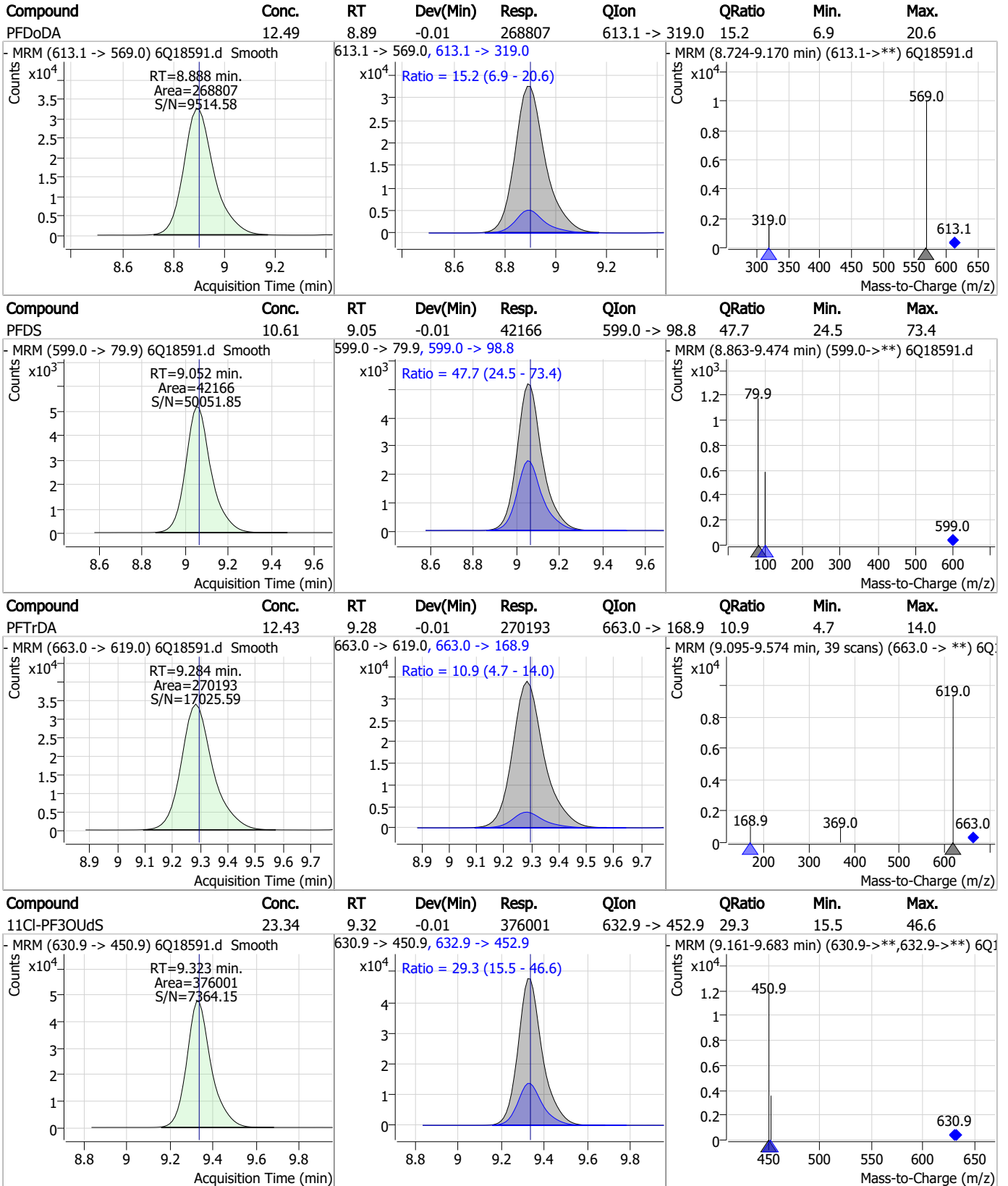
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.66	8.63	-0.01	67979	548.8 -> 98.9	53.5	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.89	-0.01	31346	615.1 -> 570.0			

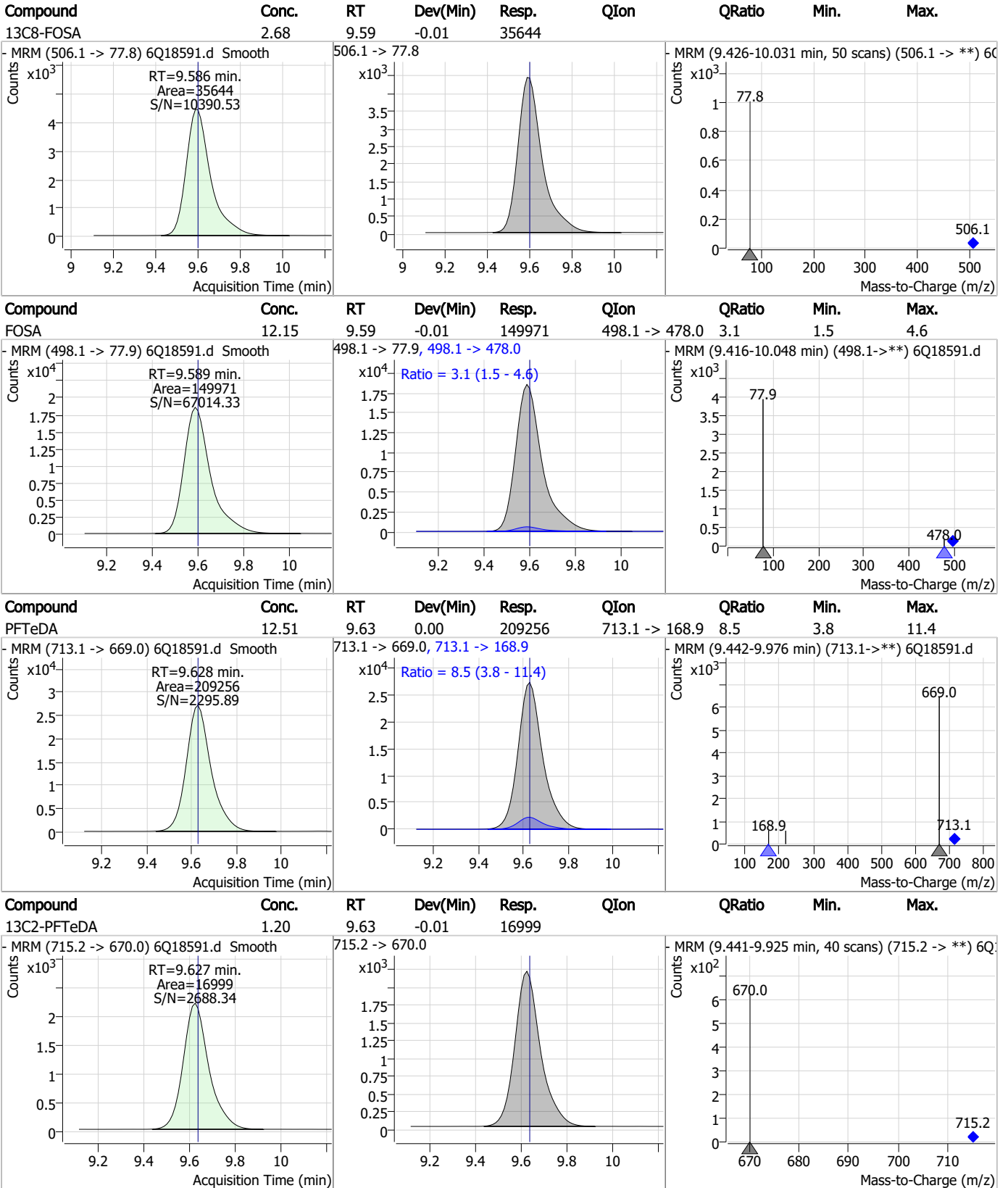


Perfluorinated Compounds by LC/MS/MS



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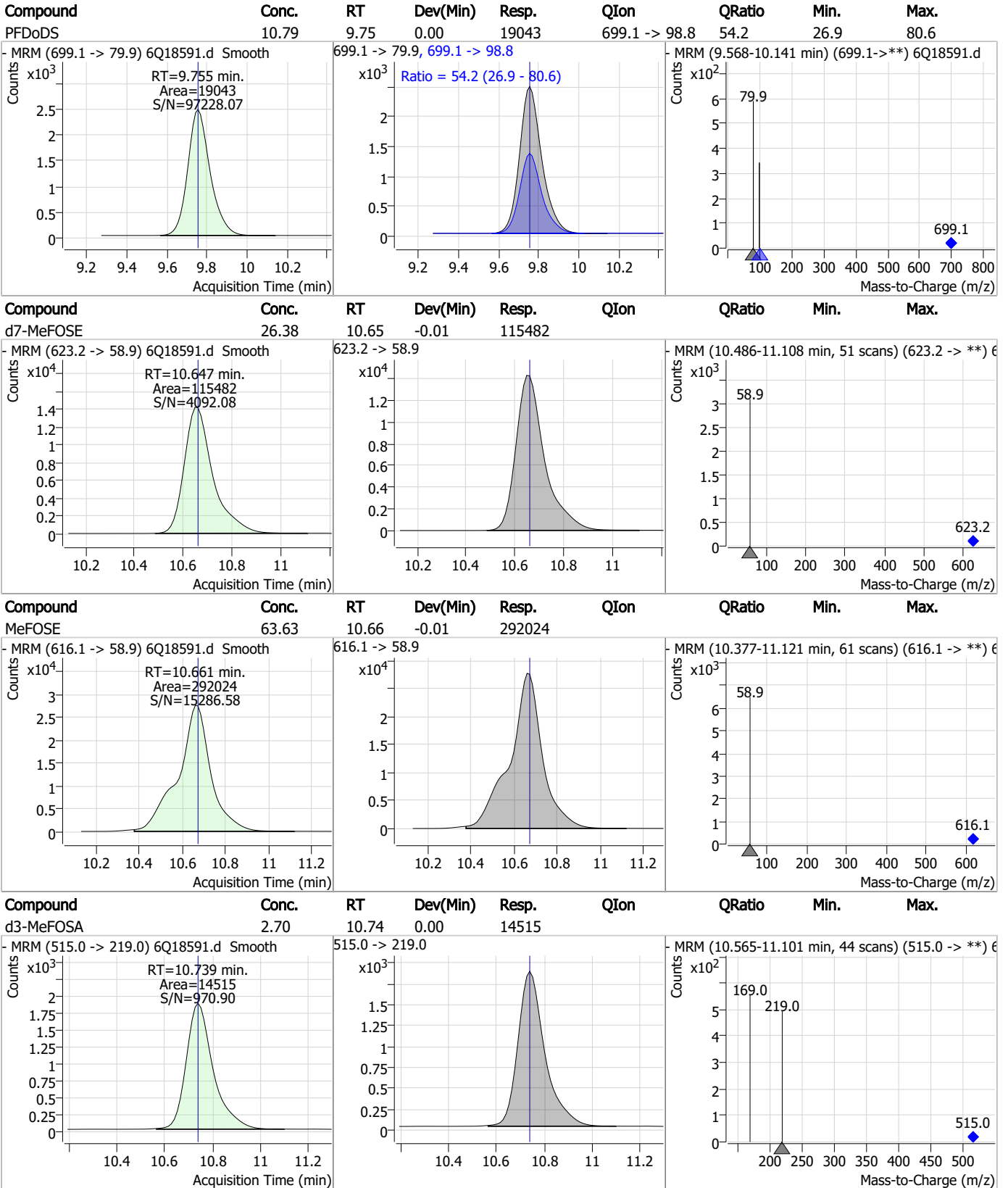
Perfluorinated Compounds by LC/MS/MS



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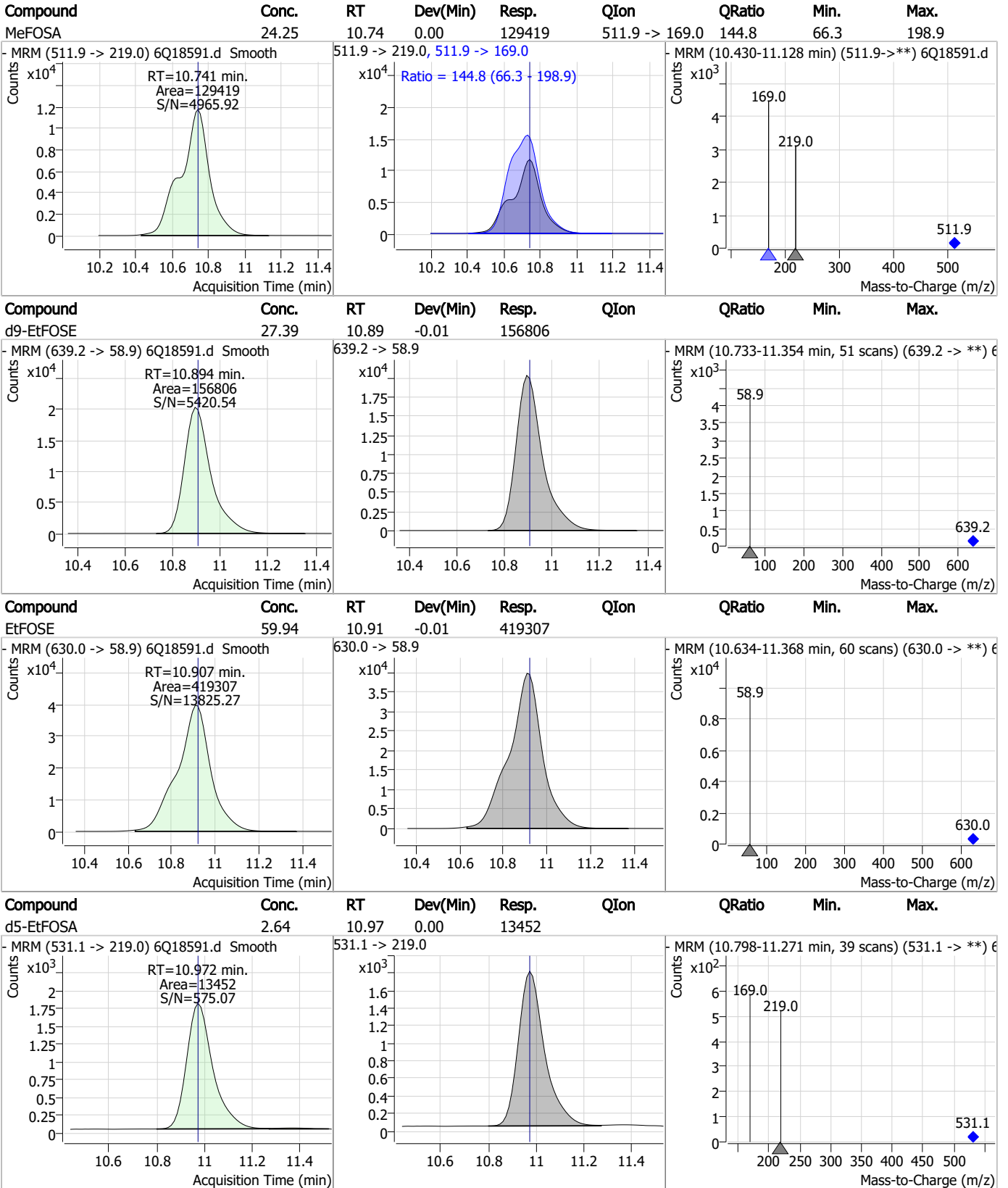
Perfluorinated Compounds by LC/MS/MS



7.7.7

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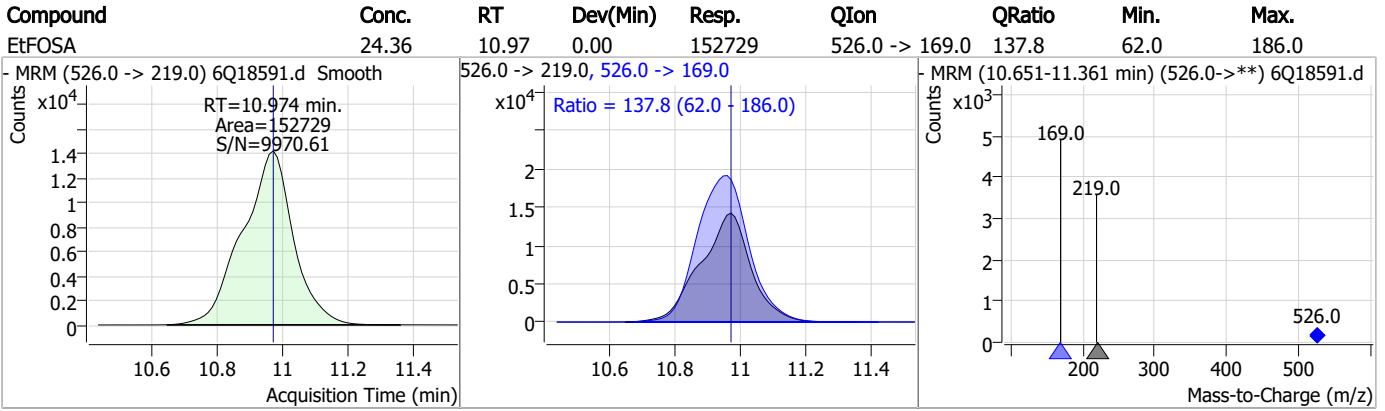
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-IC279
Lab FileID: 6Q18591.D
Injection Time: 05/31/23 18:28

Method: EPA DRAFT 1633
Analyst approved: 06/01/23 11:12 Martha Valls
Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

777.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18592.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:43:19 PM
 Sample Name : ic279-7
 Vial : P1-A8
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	173909	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	59923	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	64695	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	61221	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	92604	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	41267	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	26149	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33011	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	30068	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16581	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34285	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23470	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	15119	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	14029	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3287	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4859	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4858	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28241	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25438	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	110296	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	143947	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13881	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17752	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	73362	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10445	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	97223	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34474	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	49011	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61263	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3287	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4859	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4858	4.73 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	30068	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16581	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.322	302.1 -> 79.9	23470	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	15119	2.59 µg/L	0.000

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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	2.822	216.8 -> 171.9	173909	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	61221	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFHxA	5.404	318.0 -> 273.0	64695	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	59923	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.027	519.1 -> 474.1	26149	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33011	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34285	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOA	7.026	421.1 -> 376.0	92604	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.177	507.1 -> 79.9	14029	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C9-PFNA	7.545	472.1 -> 427.0	41267	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28241	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	41014	10.19 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	13881	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25438	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	110296	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.894	639.2 -> 58.9	143947	24.68 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	13006	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	461734	96.69 µg/L	96
		327.1 -> 80.9	170644		
6:2FTS	6.801	427.1 -> 407.0	454138	95.12 µg/L	97
		427.1 -> 80.9	145960		
8:2FTS	7.816	527.1 -> 507.0	264319	97.83 µg/L	92
		527.1 -> 80.8	99847		
EtFOSAA	8.280	584.2 -> 419.1	84735	25.89 µg/L	97
		584.2 -> 526.0	44261		
FOSA	9.589	498.1 -> 77.9	295311	24.88 µg/L	100
		498.1 -> 478.0	8483		
MeFOSAA	8.085	570.1 -> 419.0	150677	25.95 µg/L	100
		570.1 -> 483.0	29222		
PFBA	2.818	212.8 -> 168.9	587033	101.96 µg/L	100
PFBS	5.323	298.7 -> 79.9	179888	22.53 µg/L	100
		298.7 -> 98.8	65061		
PFDA	8.027	512.9 -> 469.0	752039	24.80 µg/L	99
		512.9 -> 219.0	115710		
PFDoDA	8.900	613.1 -> 569.0	526213	25.49 µg/L	97
		613.1 -> 319.0	79479		
PFDS	9.052	599.0 -> 79.9	81025	23.10 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	40858			
PFHpA	6.370	363.1 -> 319.0	661062	24.40	µg/L	98
		363.1 -> 169.0	105903			
PFHpS	7.685	449.0 -> 79.9	160648	23.88	µg/L	100
		449.0 -> 98.9	79054			
PFHxA	5.407	313.0 -> 269.0	544910	25.09	µg/L	98
		313.0 -> 118.9	27606			
PFHxS	7.131	398.7 -> 79.9	151573	22.16	µg/L	m 98
		398.7 -> 98.9	73693			
PFNA	7.545	463.0 -> 419.0	715129	24.46	µg/L	99
		463.0 -> 219.0	144309			
PFNS	8.631	548.8 -> 79.9	139044	24.69	µg/L	99
		548.8 -> 98.9	68535			
PFOA	7.028	413.0 -> 369.0	1015265	25.68	µg/L	99
		413.0 -> 169.0	178898			
PFOS	8.178	498.9 -> 79.9	150352	23.45	µg/L	91
		498.9 -> 98.8	70289			
PFPeA	4.212	263.0 -> 219.0	716320	49.77	µg/L	100
PFPeS	6.422	349.1 -> 79.9	157507	23.11	µg/L	96
		349.1 -> 98.9	70365			
PFTeDA	9.628	713.1 -> 669.0	415094	25.45	µg/L	99
		713.1 -> 168.9	33581			
PFTrDA	9.284	663.0 -> 619.0	514804	24.69	µg/L	95
		663.0 -> 168.9	57093			
PFUnDA	8.468	563.1 -> 519.0	552916	25.78	µg/L	100
		563.1 -> 269.1	85701			
11Cl-PF3OUdS	9.336	630.9 -> 450.9	699278	45.44	µg/L	99
		632.9 -> 452.9	220802			
9Cl-PF3ONS	8.508	530.8 -> 351.0	1126698	46.47	µg/L	97
		532.8 -> 353.0	352413			
ADONA	6.632	376.9 -> 250.9	2530342	46.45	µg/L	99
		376.9 -> 84.8	662153			
HFPO-DA	5.783	284.9 -> 168.9	176481	50.77	µg/L	95
		284.9 -> 184.9	20631			
3:3FTCA	3.659	241.0 -> 177.0	116182	126.13	µg/L	96
		241.0 -> 117.0	15056			
5:3FTCA	6.074	341.0 -> 237.1	2422580	619.95	µg/L	100
		341.0 -> 217.0	1724946			
7:3FTCA	7.510	441.0 -> 316.9	1687899	630.71	µg/L	96
		441.0 -> 336.9	3600820			
EtFOSA	10.974	526.0 -> 219.0	298243	49.20	µg/L	91
		526.0 -> 169.0	399918			
EtFOSE	10.907	630.0 -> 58.9	800380	124.63	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	252486	49.46	µg/L	94
		511.9 -> 169.0	353674			
MeFOSE	10.661	616.1 -> 58.9	552583	126.07	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	38653	24.80	µg/L	98
		699.1 -> 98.8	20250			
NFDHA	5.288	295.0 -> 201.0	126994	48.02	µg/L	98
		295.0 -> 84.9	33424			
PFMBA	4.626	279.0 -> 85.1	485738	49.59	µg/L	100
PFMPA	3.351	229.0 -> 84.9	385009	50.54	µg/L	100
PFEESA	5.862	314.8 -> 134.9	1215259	44.07	µg/L	99
		314.8 -> 82.9	42433			

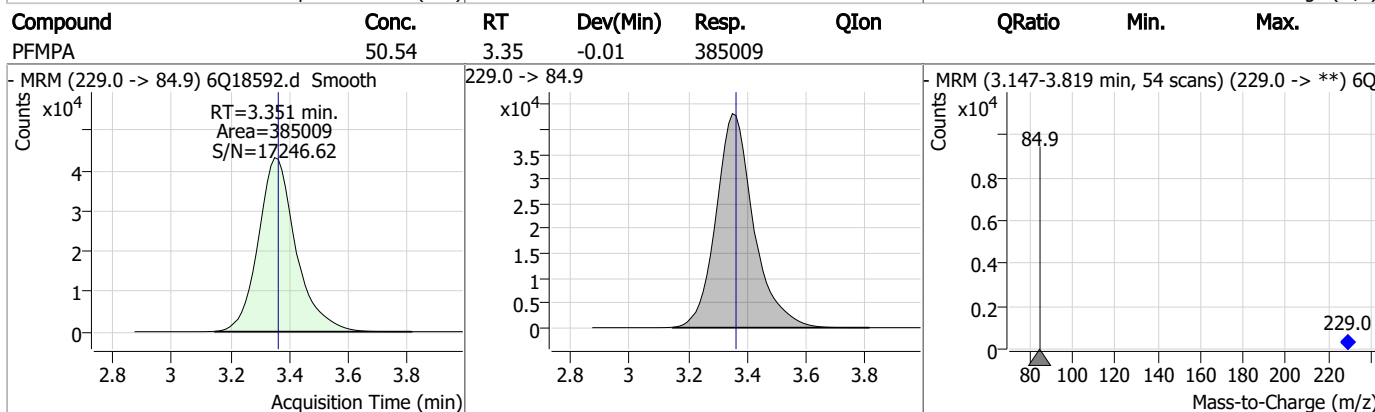
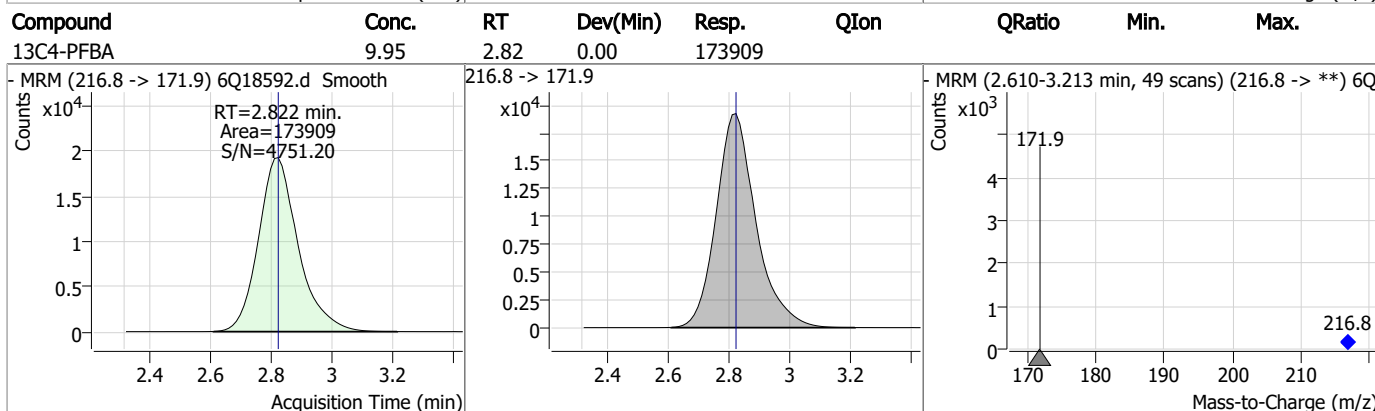
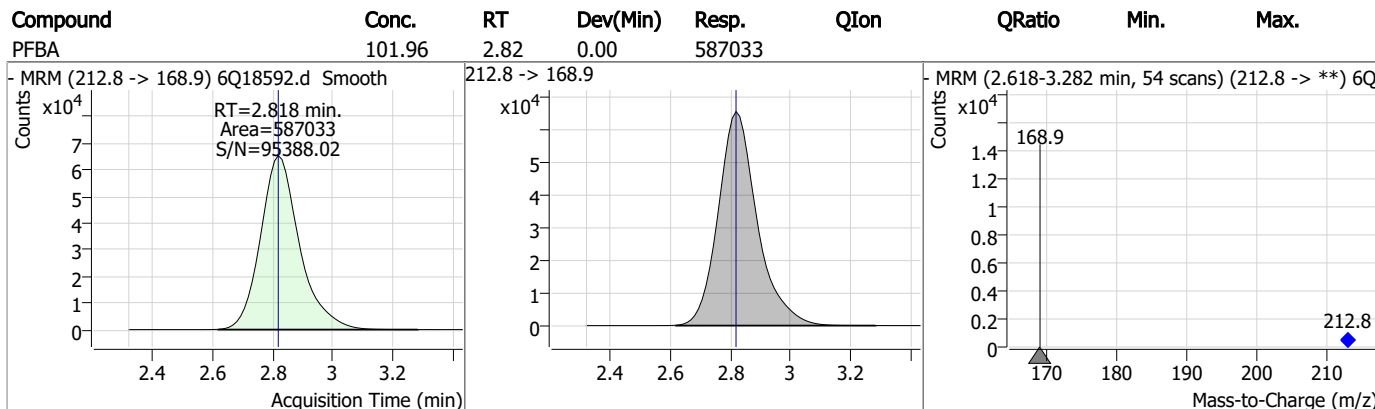
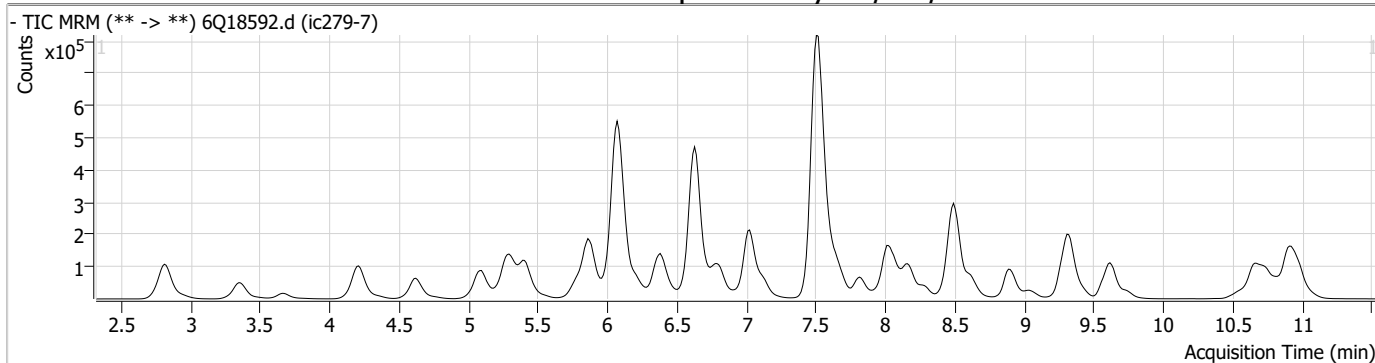
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

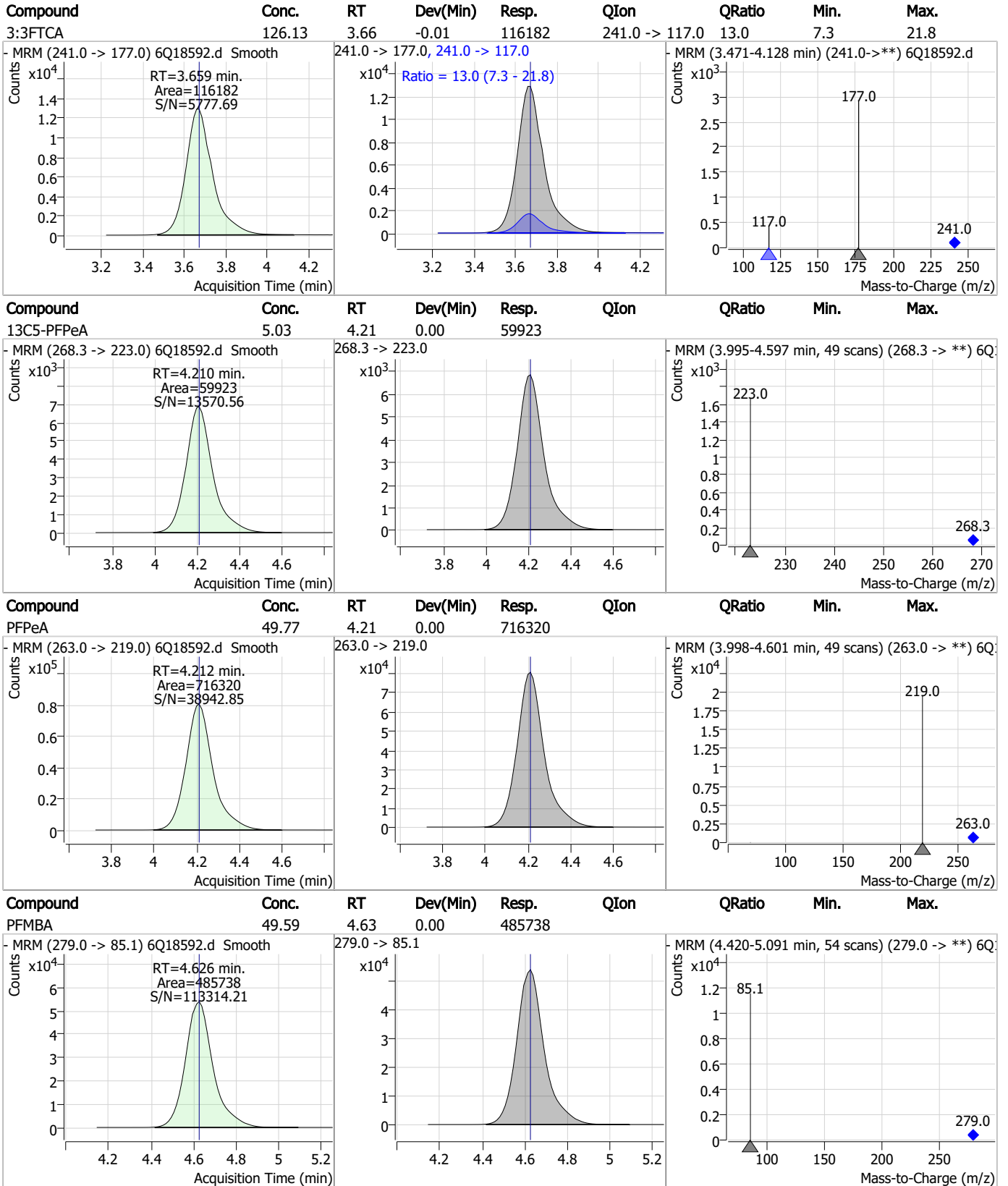
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.8
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Perfluorinated Compounds by LC/MS/MS



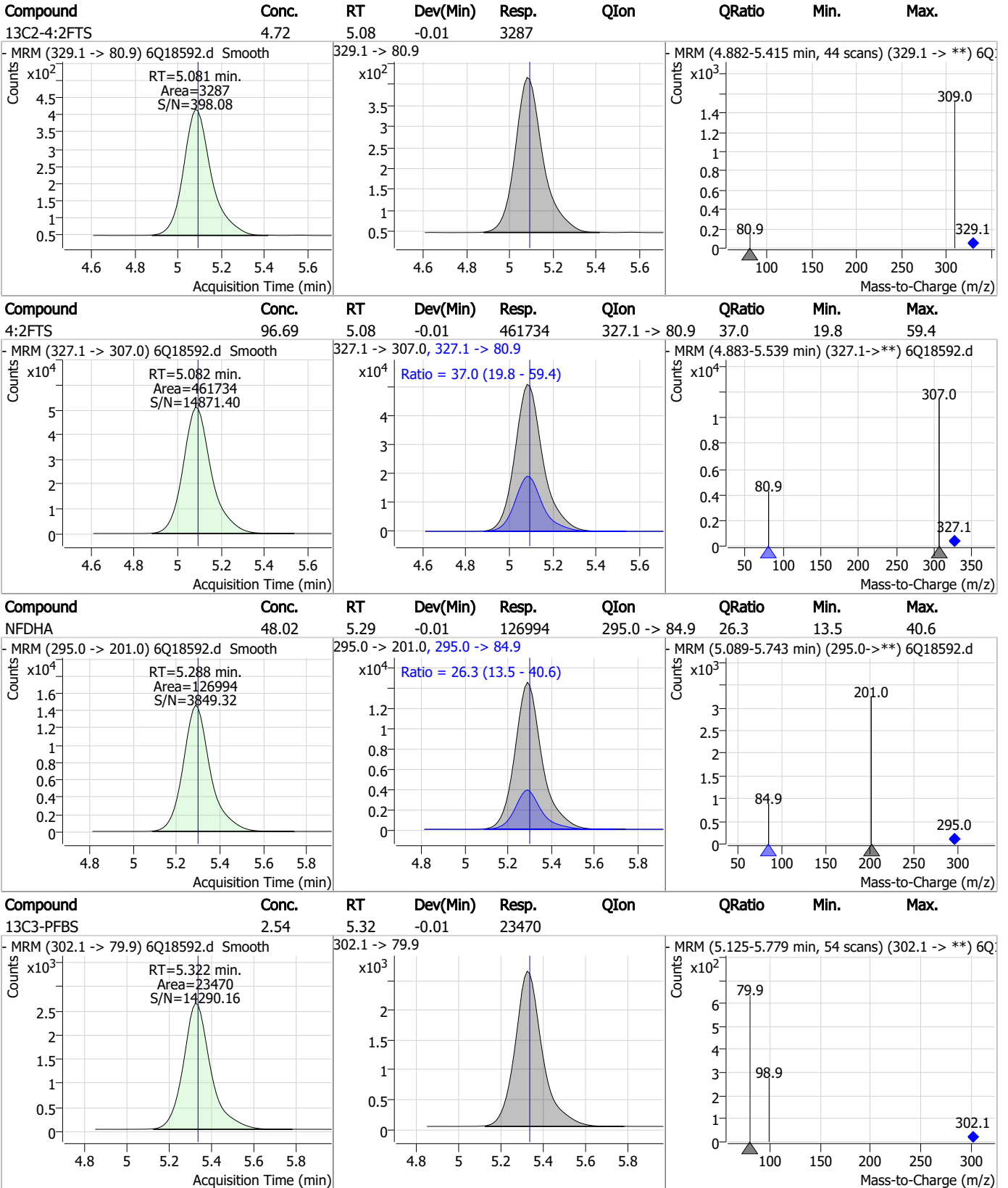
Perfluorinated Compounds by LC/MS/MS



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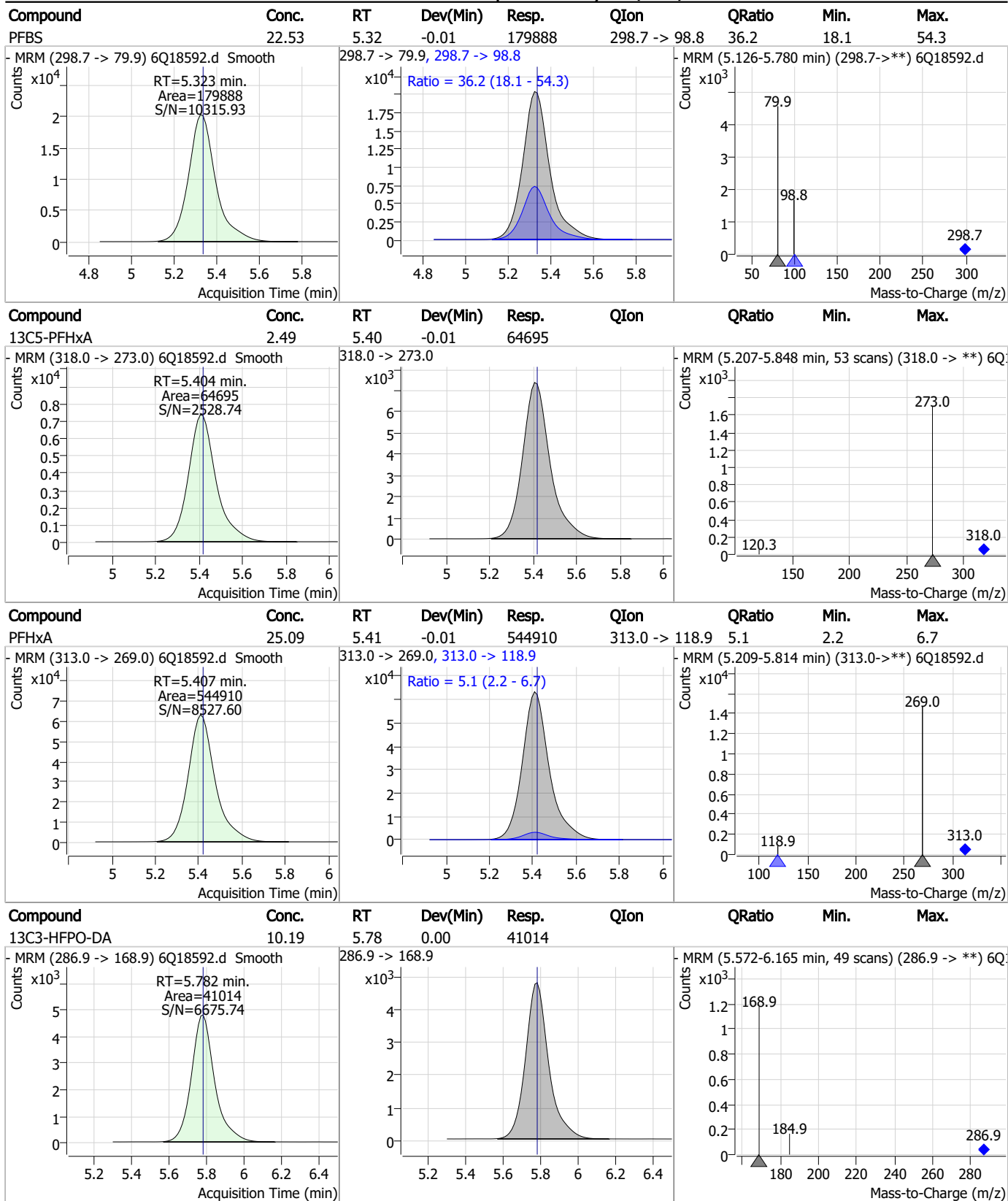
Perfluorinated Compounds by LC/MS/MS



7.7.8

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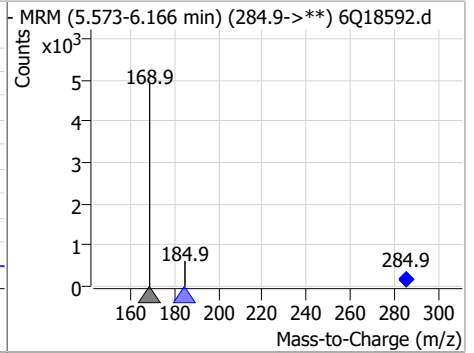
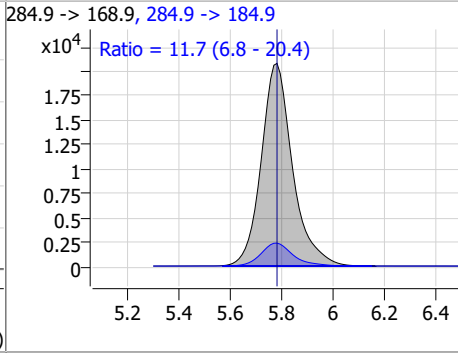
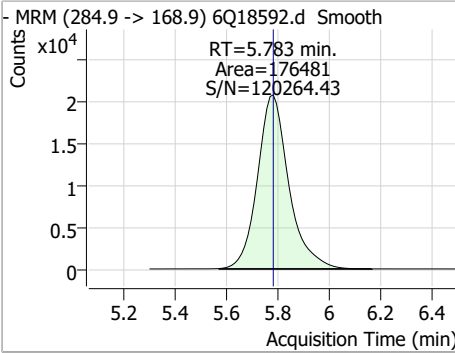
Perfluorinated Compounds by LC/MS/MS



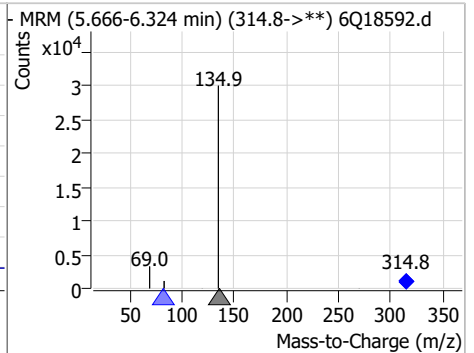
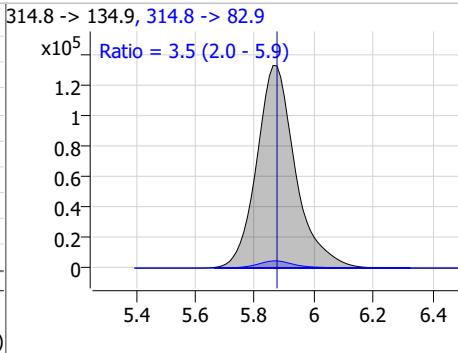
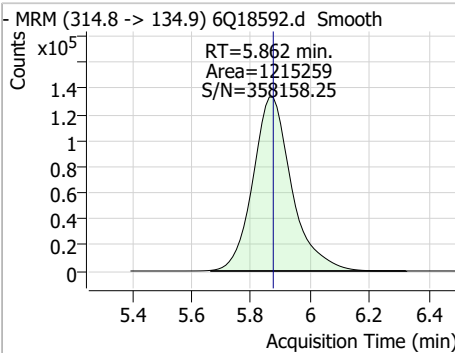
7.7.8
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Perfluorinated Compounds by LC/MS/MS

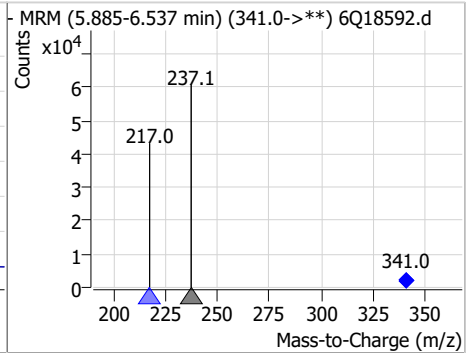
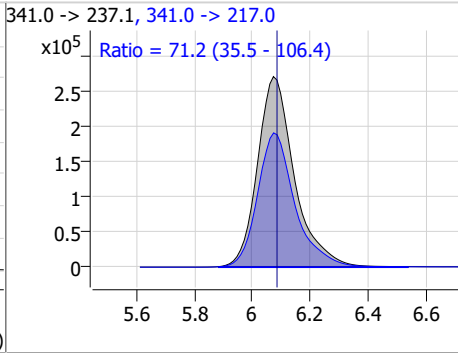
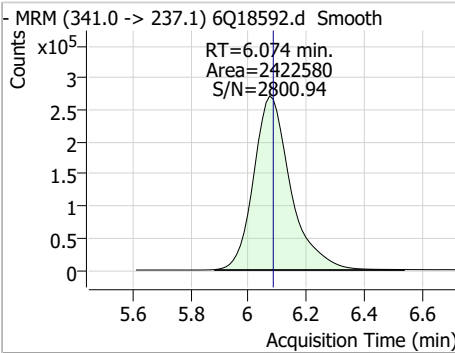
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.77	5.78	0.00	176481	284.9 -> 184.9	11.7	6.8	20.4



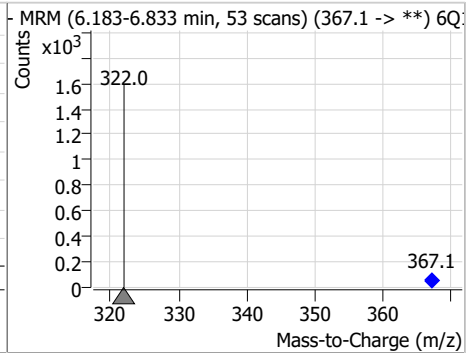
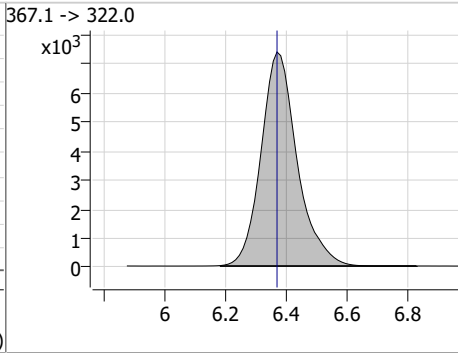
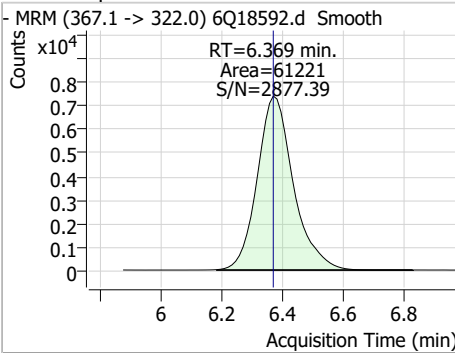
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	44.07	5.86	-0.01	1215259	314.8 -> 82.9	3.5	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	619.95	6.07	-0.01	2422580	341.0 -> 217.0	71.2	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.37	0.00	61221	367.1 -> 322.0			

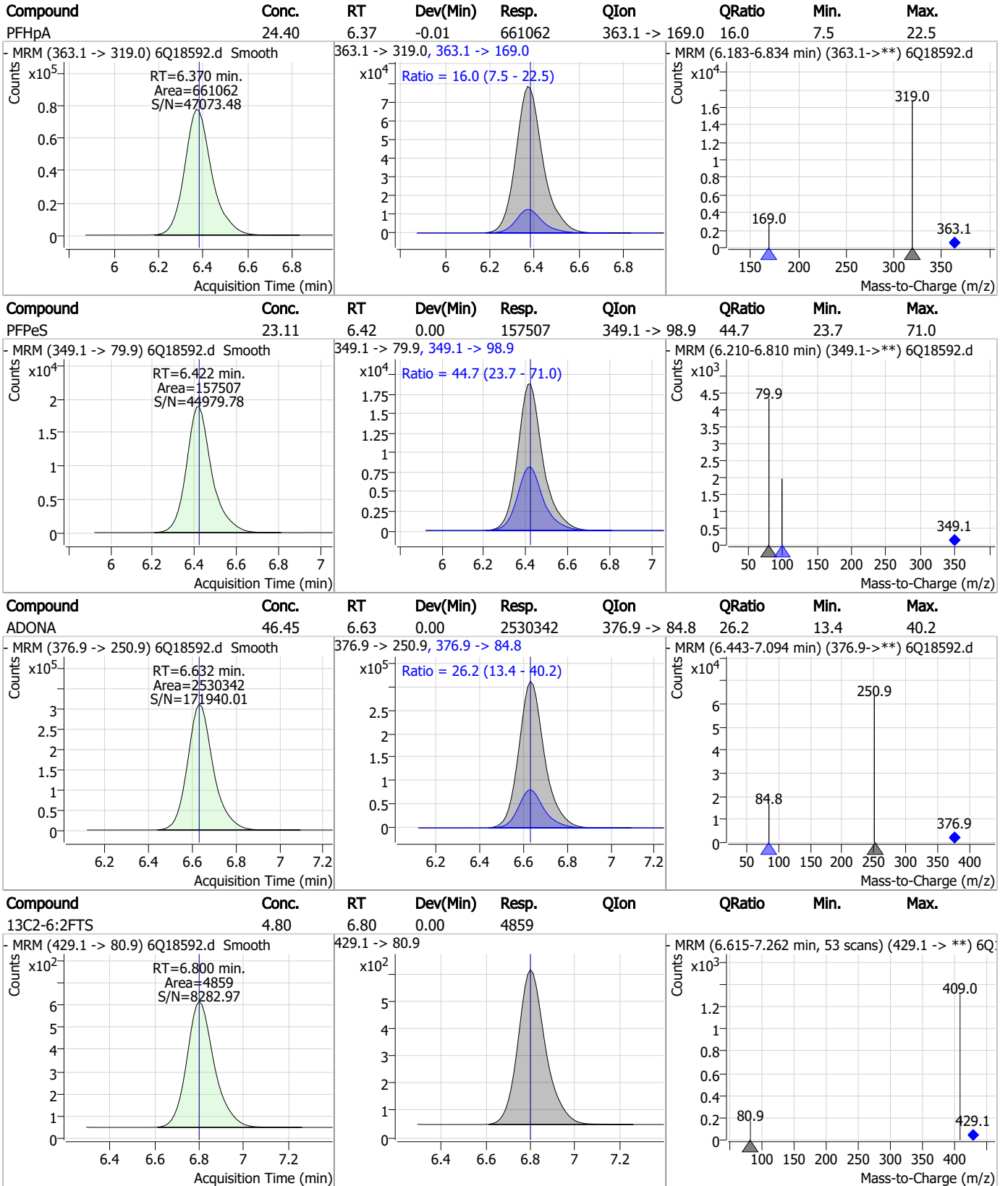


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Perfluorinated Compounds by LC/MS/MS

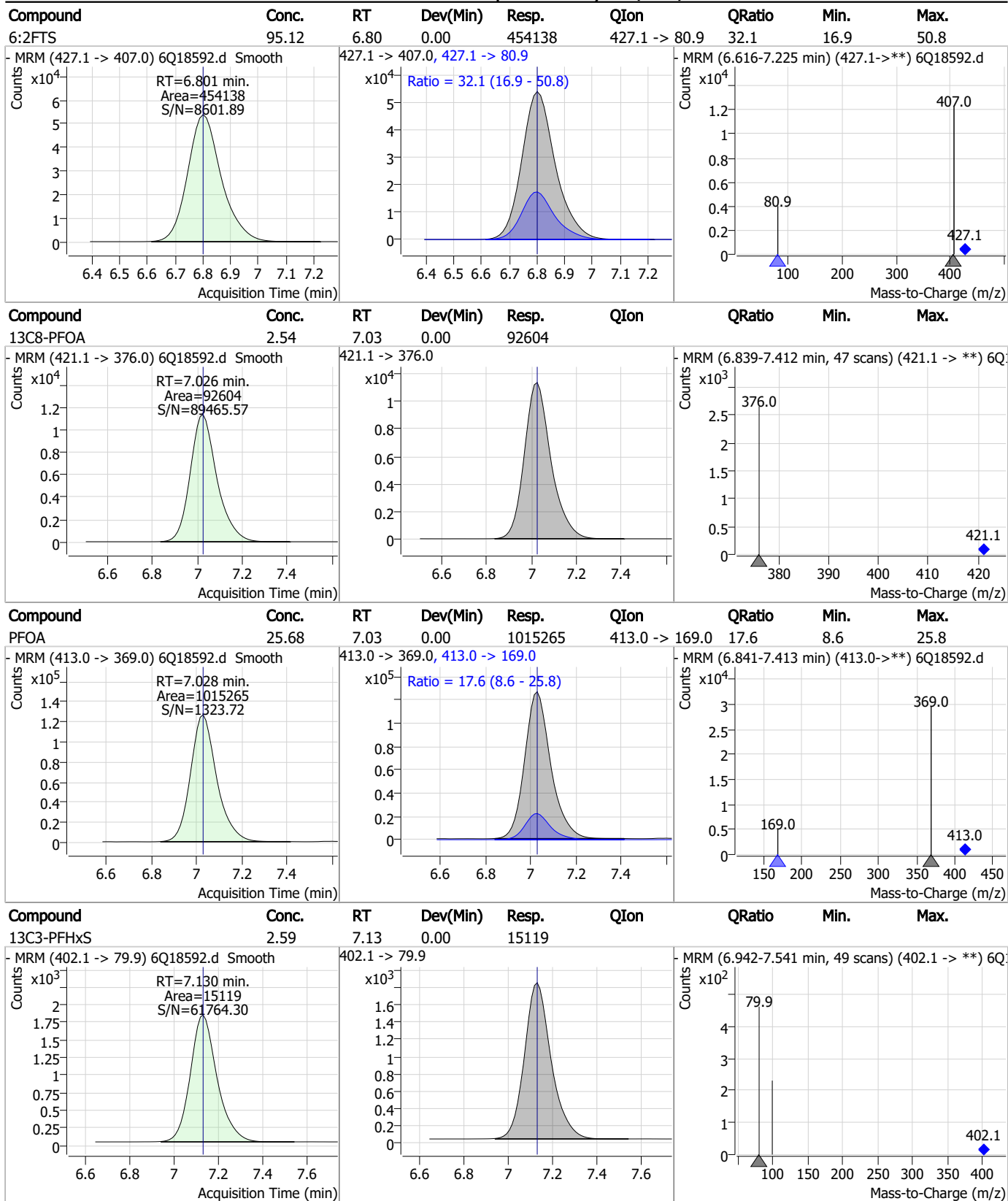


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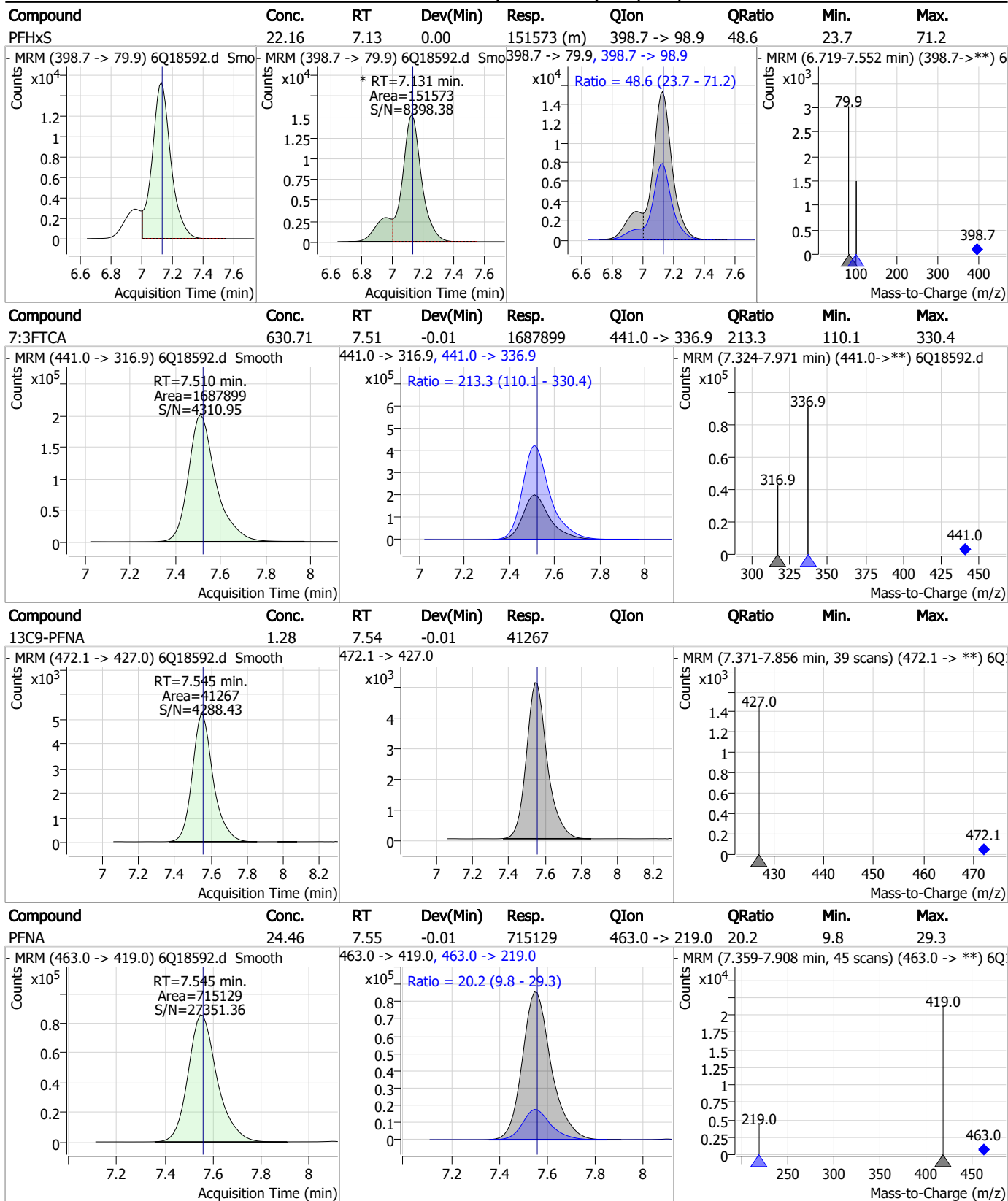


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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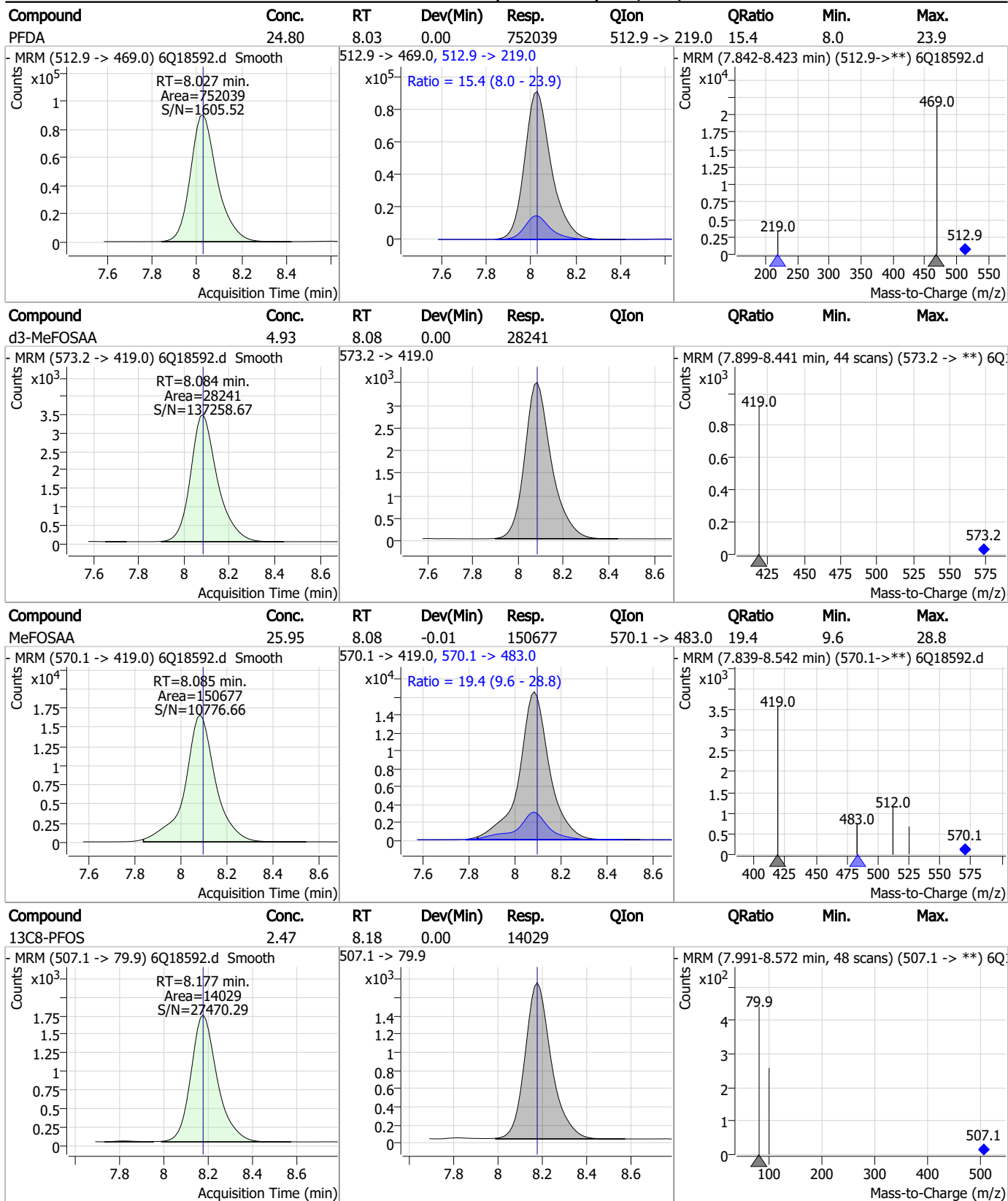
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	23.88	7.68	0.00	160648	449.0 -> 98.9	49.2	24.7	74.2
13C2-8:2FTS	4.73	7.81	-0.01	4858	529.1 -> 80.9			
8:2FTS	97.83	7.82	-0.01	264319	527.1 -> 80.8	37.8	21.4	64.1
13C6-PFDA	1.29	8.03	0.00	26149	519.1 -> 474.1			

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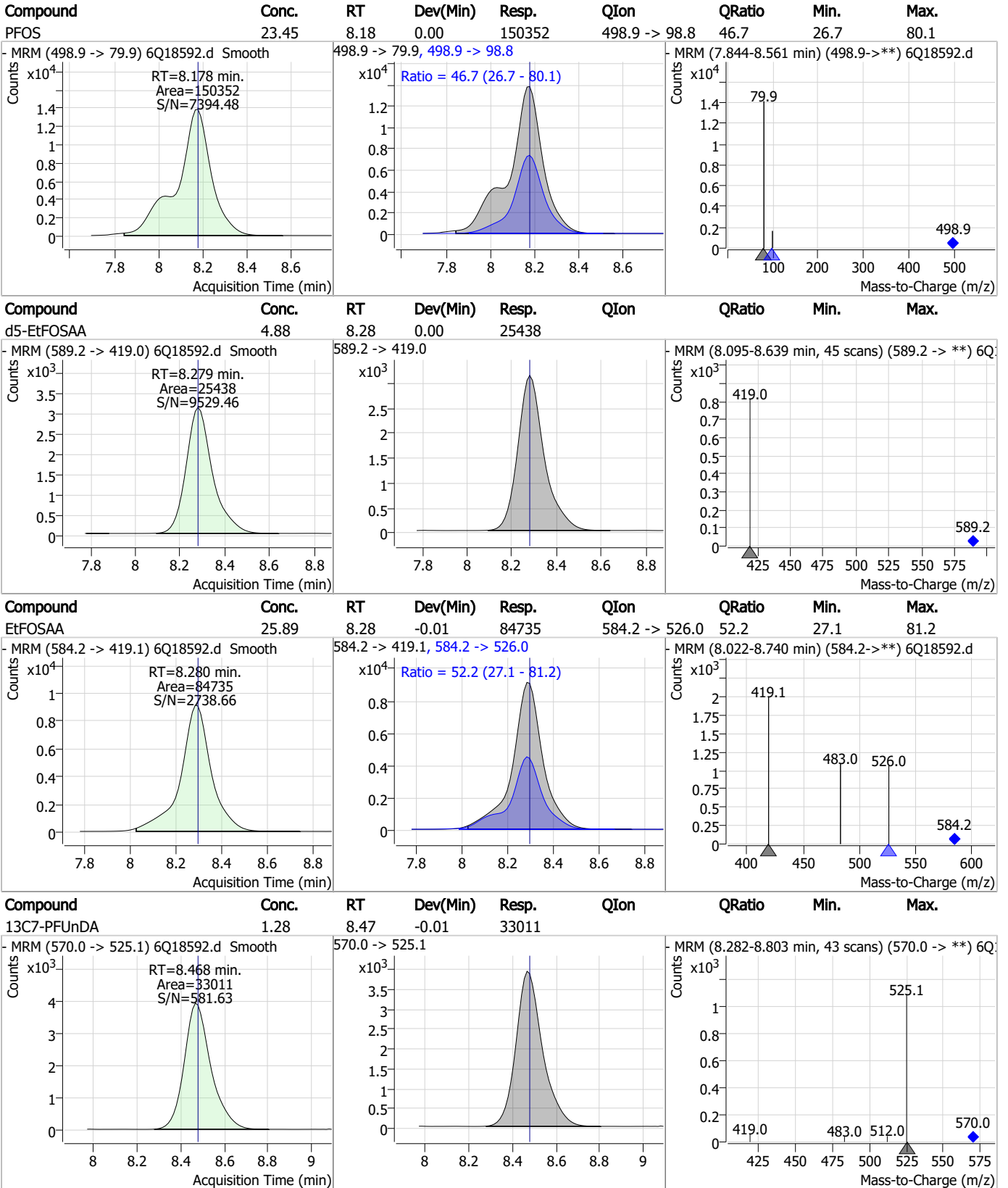


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

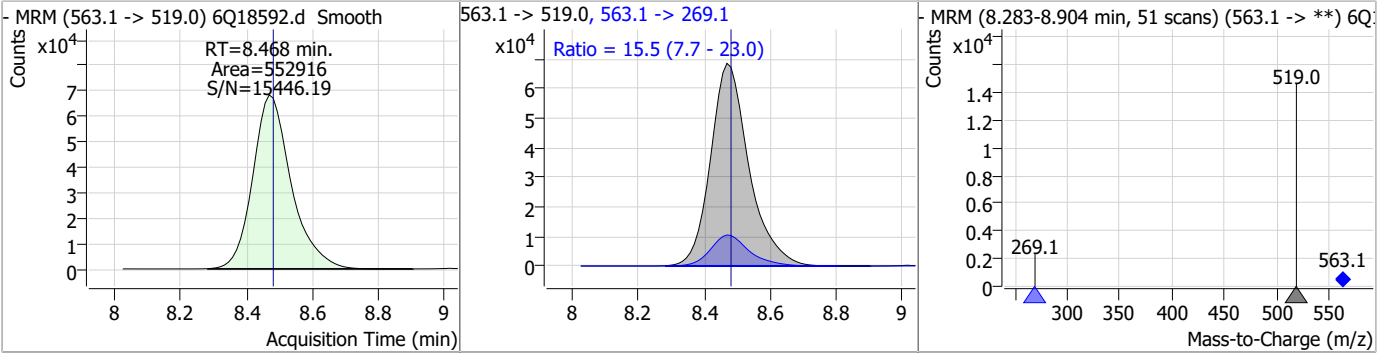


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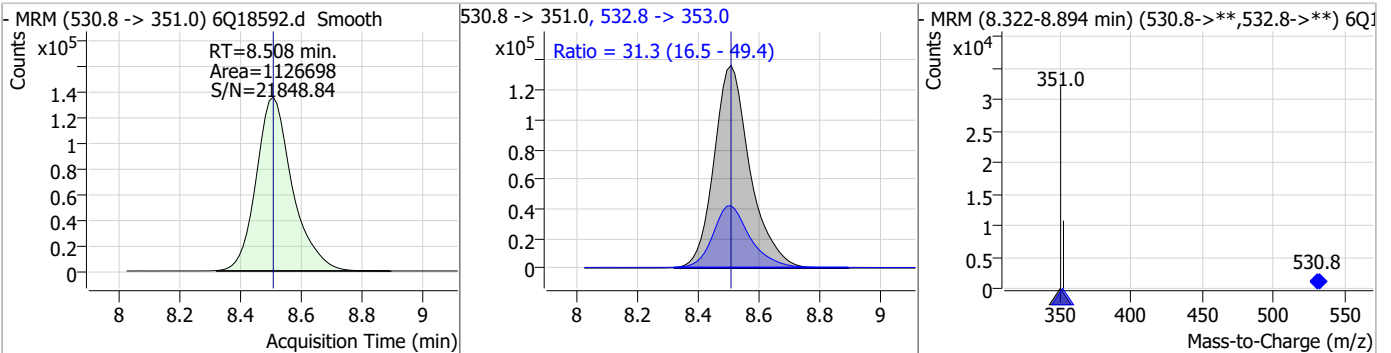
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Perfluorinated Compounds by LC/MS/MS

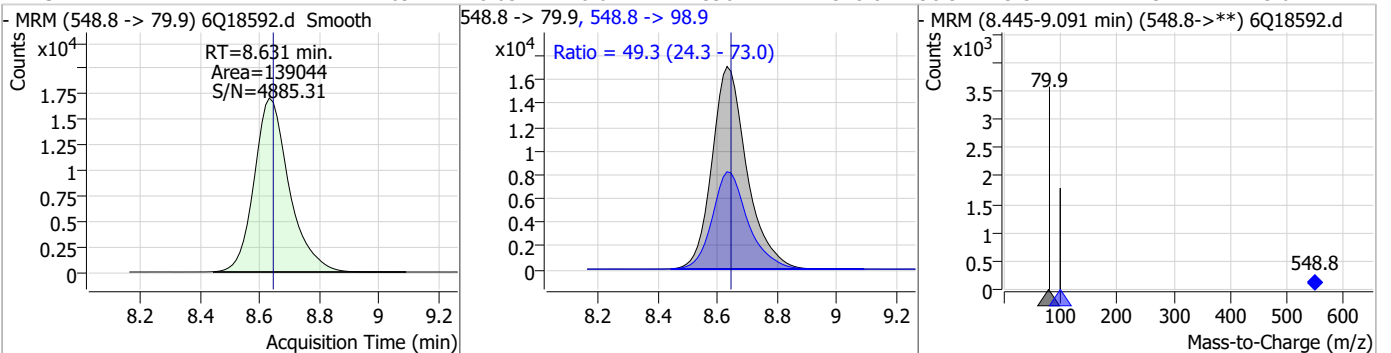
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	25.78	8.47	-0.01	552916	563.1 -> 269.1	15.5	7.7	23.0



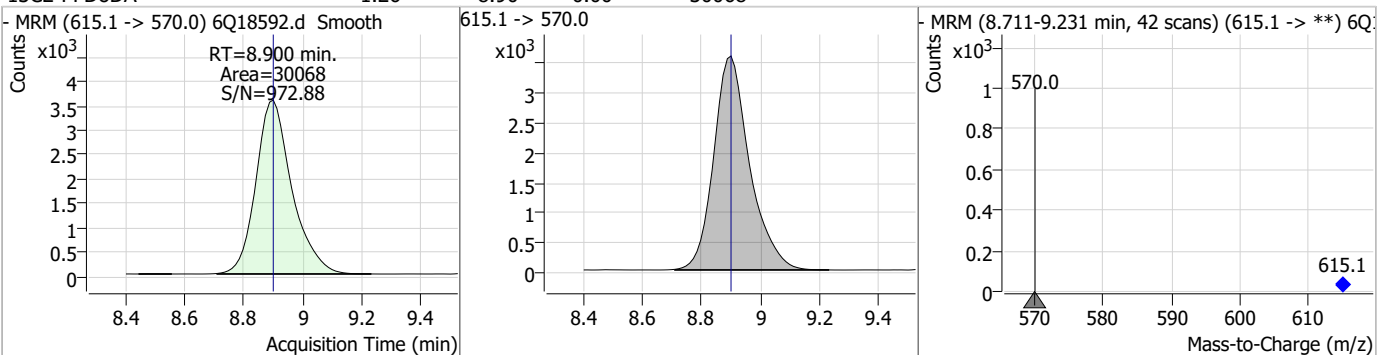
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	46.47	8.51	0.00	1126698	532.8 -> 353.0	31.3	16.5	49.4



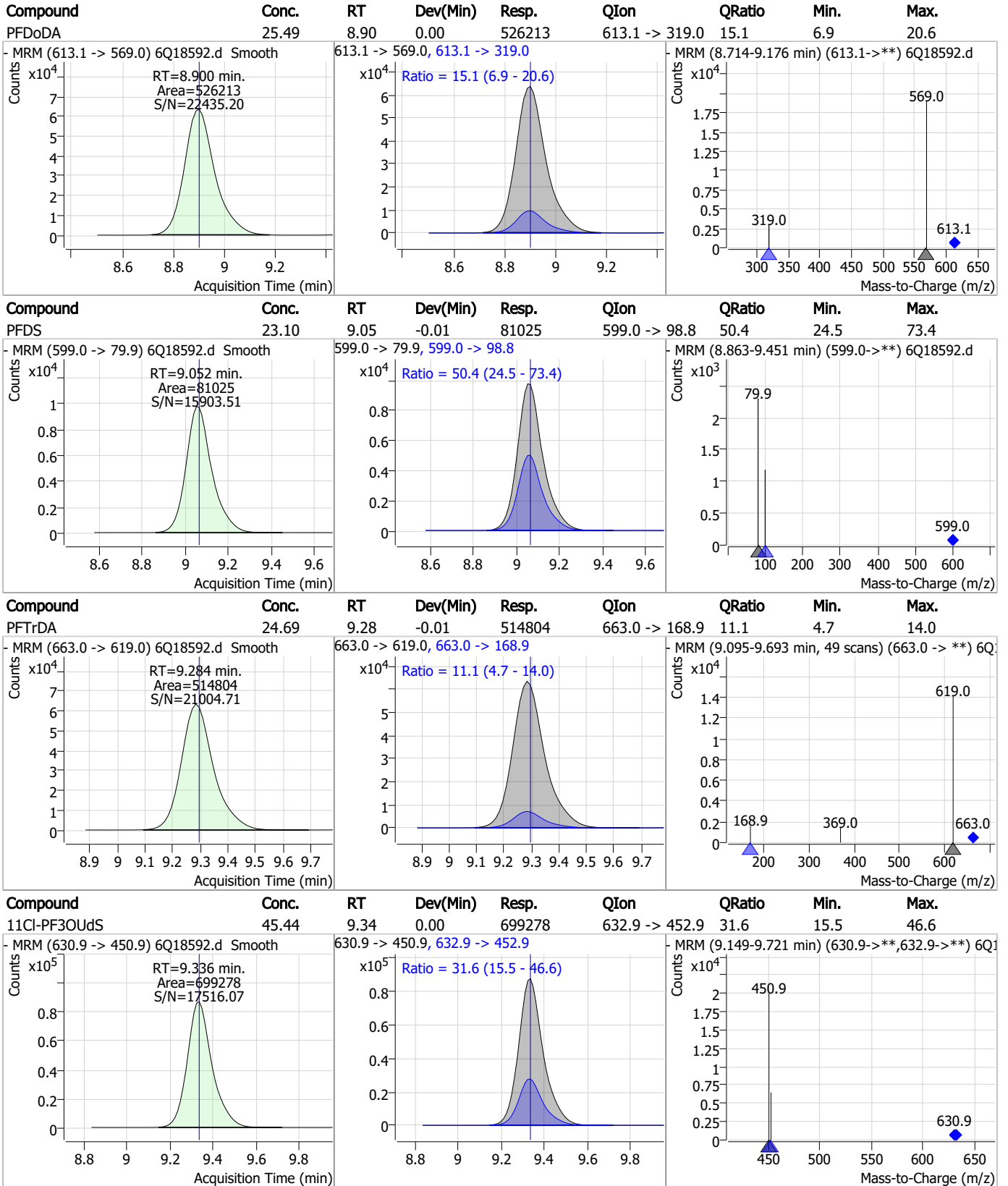
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	24.69	8.63	-0.01	139044	548.8 -> 98.9	49.3	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	8.90	0.00	30068	615.1 -> 570.0			



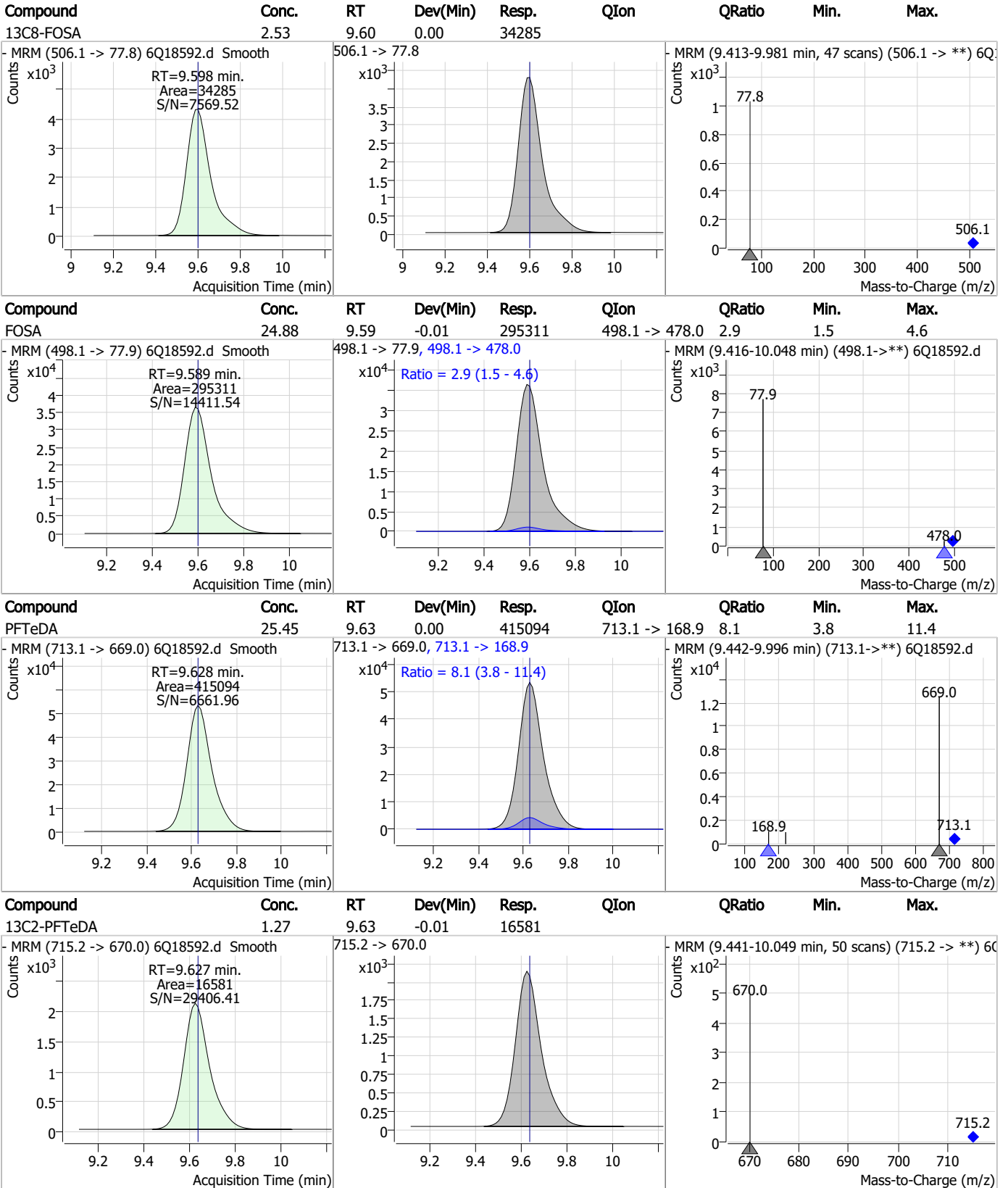
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



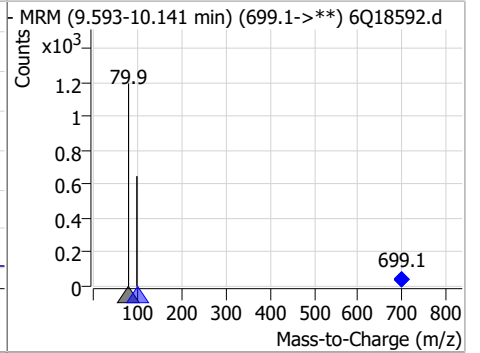
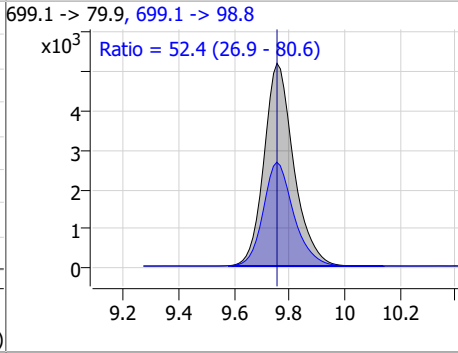
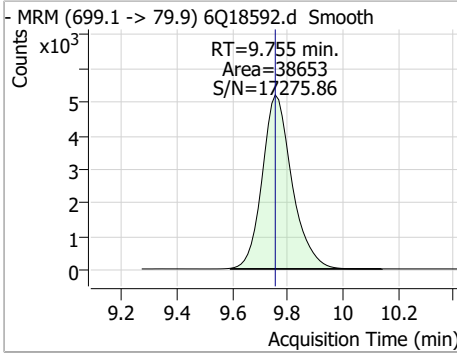
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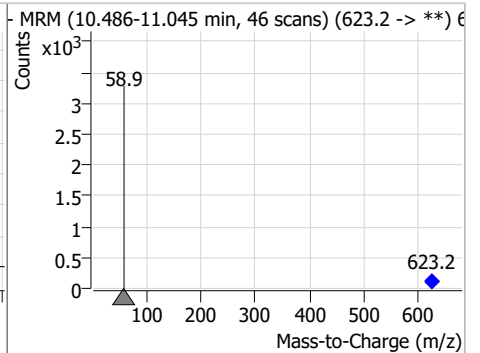
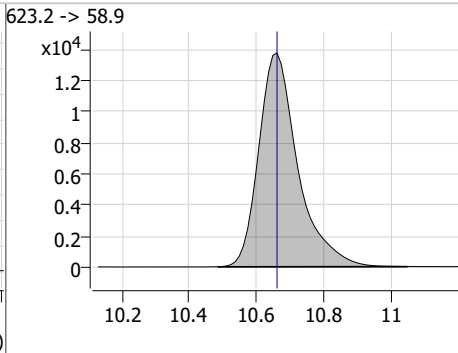
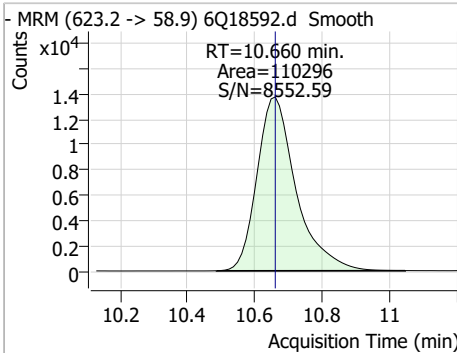


Perfluorinated Compounds by LC/MS/MS

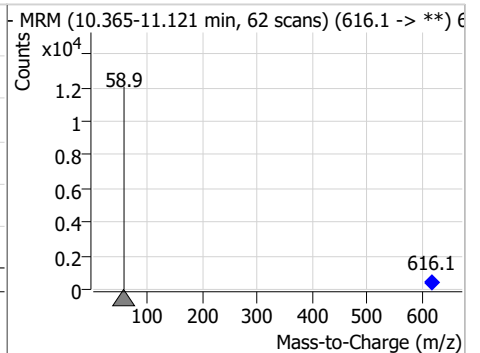
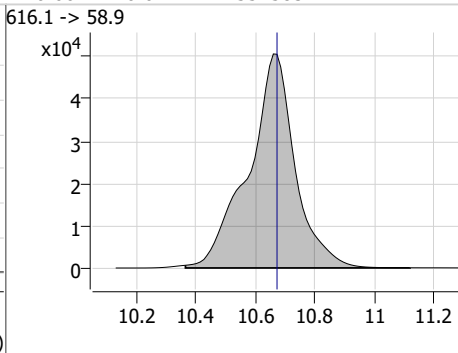
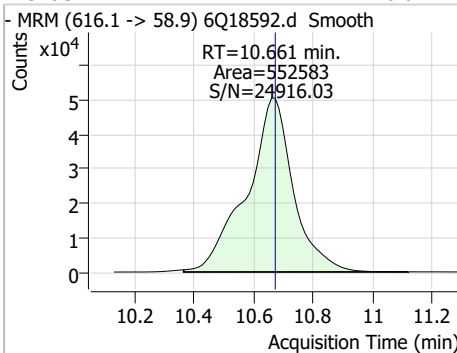
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	24.80	9.75	0.00	38653	699.1 -> 98.8	52.4	26.9	80.6



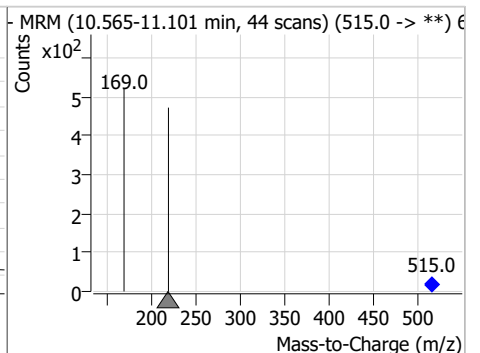
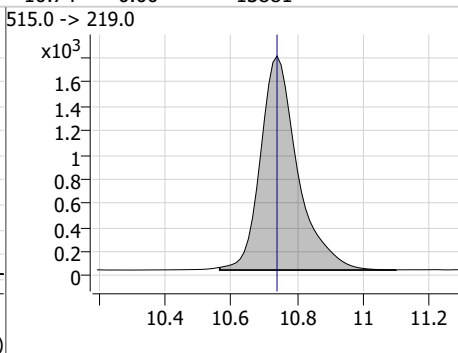
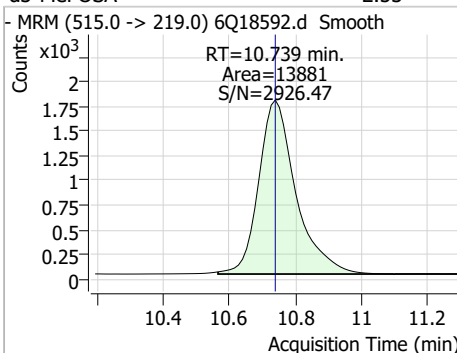
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.74	10.66	0.00	110296				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	126.07	10.66	-0.01	552583				

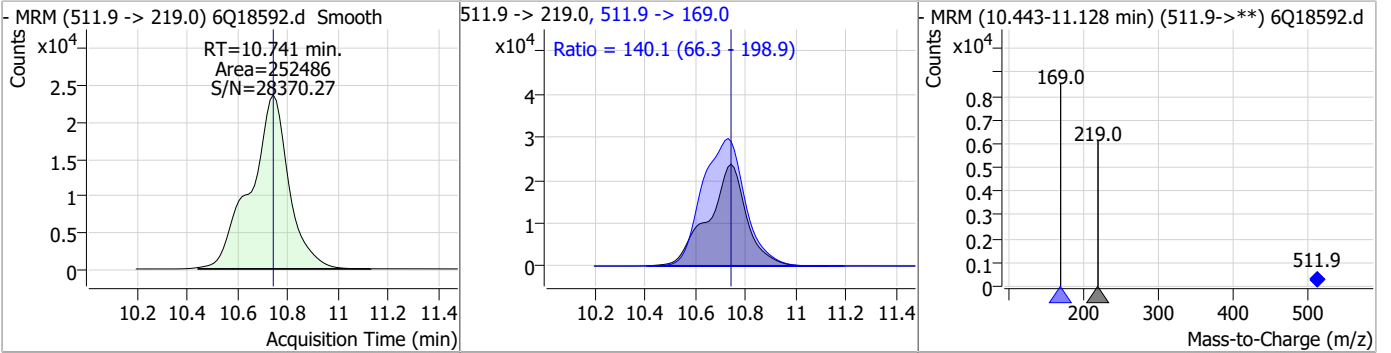


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.74	0.00	13881				

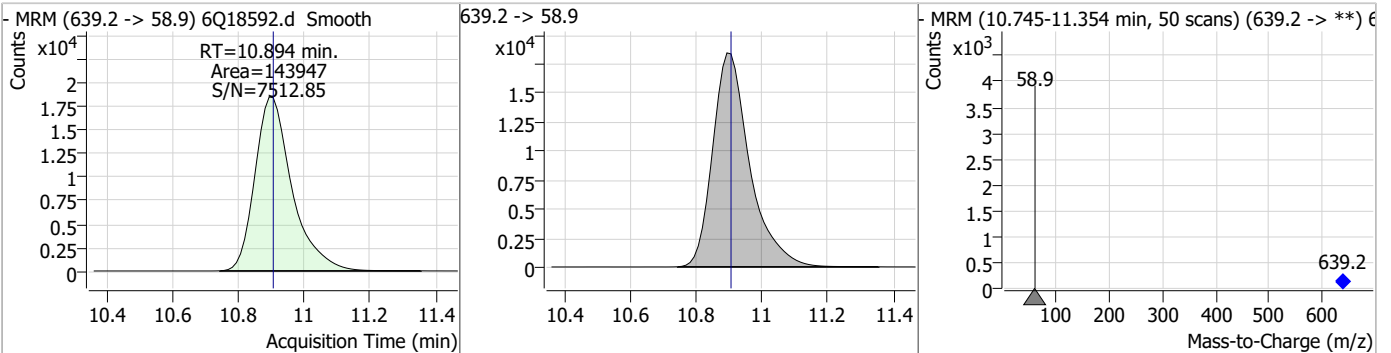


Perfluorinated Compounds by LC/MS/MS

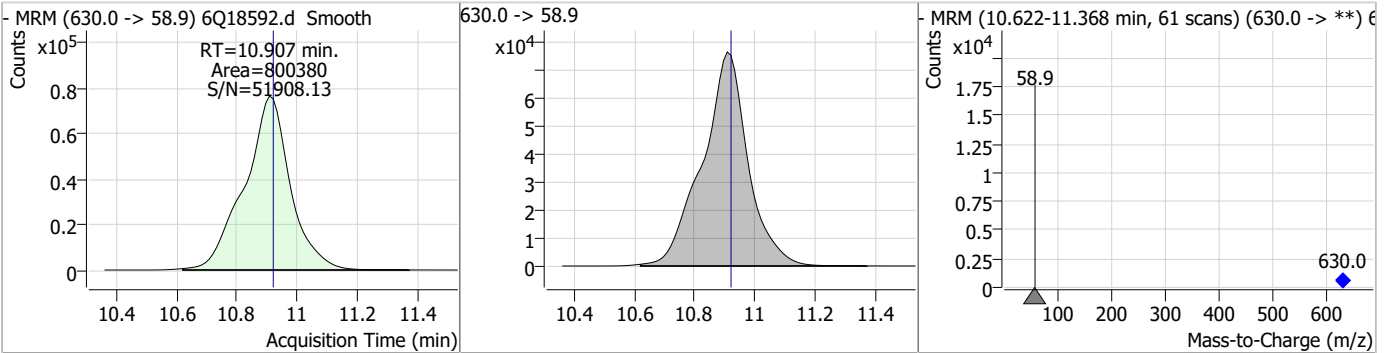
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.46	10.74	0.00	252486	511.9 -> 169.0	140.1	66.3	198.9



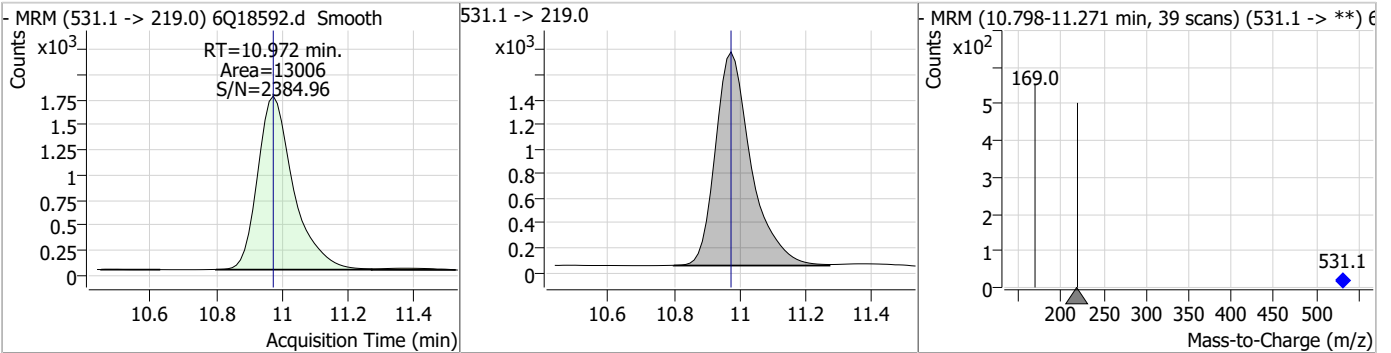
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.68	10.89	-0.01	143947				



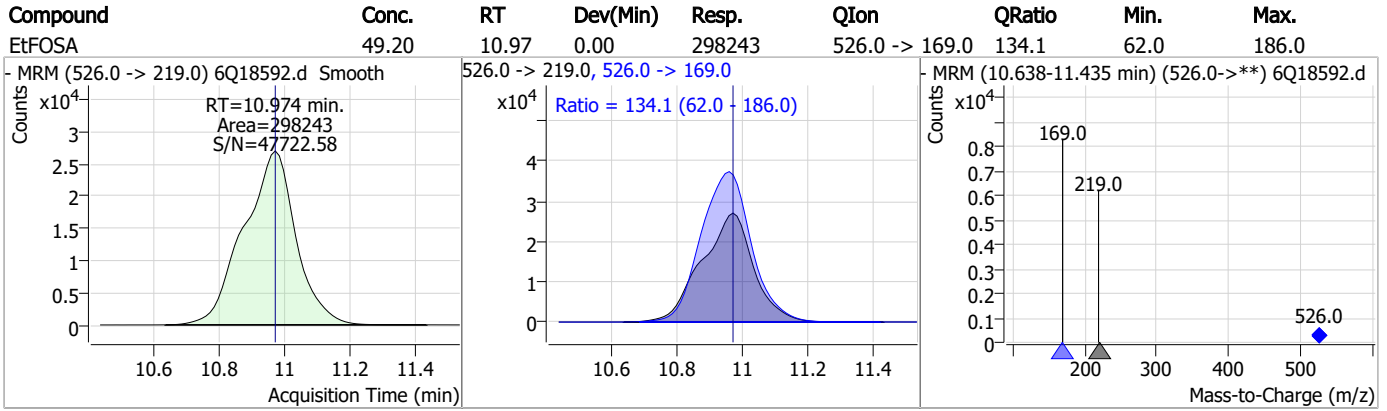
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	124.63	10.91	-0.01	800380				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	10.97	0.00	13006				



Perfluorinated Compounds by LC/MS/MS



7.7.8

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18592.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:43 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18593.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:57:48 PM
 Sample Name : ic279-8
 Vial : P1-A9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	164700	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58183	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61194	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	57581	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88048	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40750	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24672	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	31035	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	31036	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	16403	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32407	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22054	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14812	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13909	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3073	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4551	5.00 µg/L	0.000
M2-8:2FTS	7.827	529.1 -> 80.9	4892	5.00 µg/L	0.000
M3-MeFOSAA	8.084	573.2 -> 419.0	25736	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	102229	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	133237	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	14213	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17067	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	69548	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11007	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	96660	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34426	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	47576	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	60813	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3073	4.19 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 83.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4551	4.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.4%		
13C2-8:2FTS	7.827	529.1 -> 80.9	4892	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.5%		
13C2-PFDoDA	8.900	615.1 -> 570.0	31036	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16403	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C3-PFBS	5.322	302.1 -> 79.9	22054	2.26 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	14812	2.41 µg/L	0.000

7.7.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C4-PFBA	2.822	216.8 -> 171.9	164700	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.369	367.1 -> 322.0	57581	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	61194	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	58183	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.027	519.1 -> 474.1	24672	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	31035	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C8-FOSA	9.598	506.1 -> 77.8	32407	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.026	421.1 -> 376.0	88048	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.177	507.1 -> 79.9	13909	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.545	472.1 -> 427.0	40750	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25736	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40478	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSA	10.739	515.0 -> 219.0	14213	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26530	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	102229	23.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	133237	23.77 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12467	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	954876	213.90 µg/L	95
		327.1 -> 80.9	348699		
6:2FTS	6.801	427.1 -> 407.0	895923	200.34 µg/L	99
		427.1 -> 80.9	310885		
8:2FTS	7.816	527.1 -> 507.0	534956	196.60 µg/L	94
		527.1 -> 80.8	208860		
EtFOSAA	8.280	584.2 -> 419.1	202511	59.33 µg/L	96
		584.2 -> 526.0	103330		
FOSA	9.589	498.1 -> 77.9	665967	59.37 µg/L	100
		498.1 -> 478.0	20420		
MeFOSAA	8.085	570.1 -> 419.0	330253	62.41 µg/L	100
		570.1 -> 483.0	63777		
PFBA	2.818	212.8 -> 168.9	1319896	242.06 µg/L	100
PFBS	5.323	298.7 -> 79.9	418240	55.74 µg/L	99
		298.7 -> 98.8	153640		
PFDA	8.027	512.9 -> 469.0	1793791	62.71 µg/L	98
		512.9 -> 219.0	270042		
PFDoDA	8.900	613.1 -> 569.0	1199772	56.30 µg/L	96
		613.1 -> 319.0	183508		
PFDS	9.064	599.0 -> 79.9	193689	55.70 µg/L	98

7.7.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	97226			
PFHpA	6.370	363.1 -> 319.0	1584265	62.17	µg/L	97
		363.1 -> 169.0	256962			
PFHpS	7.685	449.0 -> 79.9	381288	57.18	µg/L	98
		449.0 -> 98.9	182291			
PFHxA	5.407	313.0 -> 269.0	1308494	63.69	µg/L	99
		313.0 -> 118.9	64395			
PFHxS	7.131	398.7 -> 79.9	349987	52.24	µg/L	m 97
		398.7 -> 98.9	174081			
PFNA	7.545	463.0 -> 419.0	1836171	63.59	µg/L	98
		463.0 -> 219.0	338668			
PFNS	8.631	548.8 -> 79.9	313808	56.21	µg/L	90
		548.8 -> 98.9	173944			
PFOA	7.028	413.0 -> 369.0	2352092	62.57	µg/L	100
		413.0 -> 169.0	408702			
PFOS	8.178	498.9 -> 79.9	358245	56.35	µg/L	93
		498.9 -> 98.8	173832			
PFPeA	4.212	263.0 -> 219.0	1677106	120.01	µg/L	100
PFPeS	6.422	349.1 -> 79.9	374345	56.08	µg/L	95
		349.1 -> 98.9	164186			
PFTeDA	9.628	713.1 -> 669.0	936983	58.07	µg/L	97
		713.1 -> 168.9	82003			
PFTrDA	9.284	663.0 -> 619.0	1167971	54.26	µg/L	96
		663.0 -> 168.9	124493			
PFUnDA	8.468	563.1 -> 519.0	1166697	57.85	µg/L	97
		563.1 -> 269.1	193233			
11CI-PF3OUdS	9.336	630.9 -> 450.9	1685097	110.95	µg/L	99
		632.9 -> 452.9	516091			
9CI-PF3ONS	8.508	530.8 -> 351.0	2667025	111.44	µg/L	95
		532.8 -> 353.0	808397			
ADONA	6.632	376.9 -> 250.9	5935424	110.40	µg/L	99
		376.9 -> 84.8	1547138			
HFPO-DA	5.783	284.9 -> 168.9	412278	120.17	µg/L	96
		284.9 -> 184.9	48712			
3:3FTCA	3.671	241.0 -> 177.0	277738	310.54	µg/L	96
		241.0 -> 117.0	36199			
5:3FTCA	6.074	341.0 -> 237.1	5595577	1513.86	µg/L	96
		341.0 -> 217.0	4166787			
7:3FTCA	7.510	441.0 -> 316.9	3782443	1494.24	µg/L	90
		441.0 -> 336.9	8936470			
EtFOSA	10.974	526.0 -> 219.0	712424	122.60	µg/L	99
		526.0 -> 169.0	891954			
EtFOSE	10.907	630.0 -> 58.9	1779906	299.44	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	596067	114.04	µg/L	96
		511.9 -> 169.0	818238			
MeFOSE	10.673	616.1 -> 58.9	1264982	311.37	µg/L	100
PFDoDS	9.755	699.1 -> 79.9	90931	58.86	µg/L	98
		699.1 -> 98.8	47551			
NFDHA	5.288	295.0 -> 201.0	293121	117.17	µg/L	98
		295.0 -> 84.9	76201			
PFMBA	4.626	279.0 -> 85.1	1130590	118.88	µg/L	100
PFMPA	3.351	229.0 -> 84.9	900418	121.74	µg/L	100
PFEESA	5.875	314.8 -> 134.9	2873554	110.18	µg/L	99
		314.8 -> 82.9	98610			

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

7.7.9
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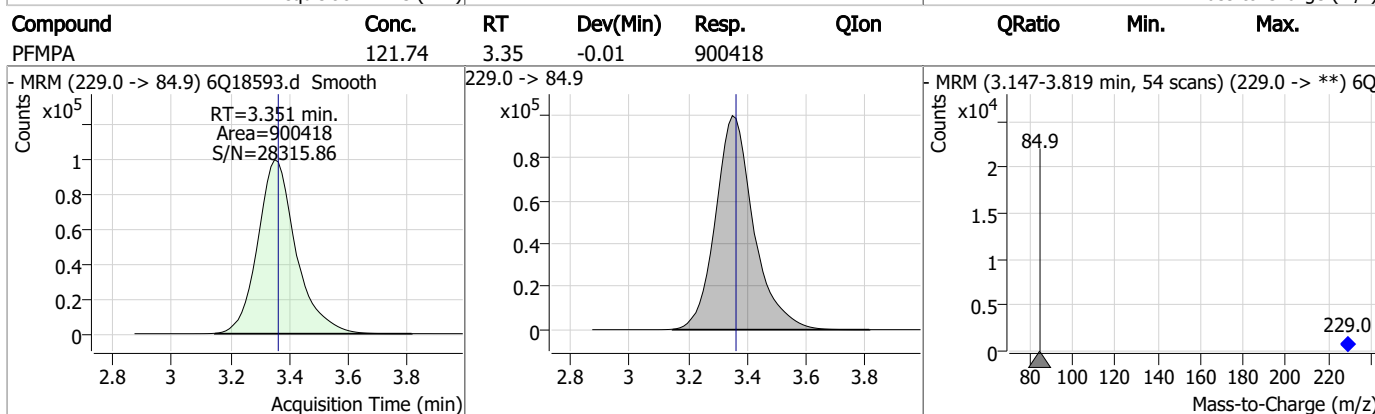
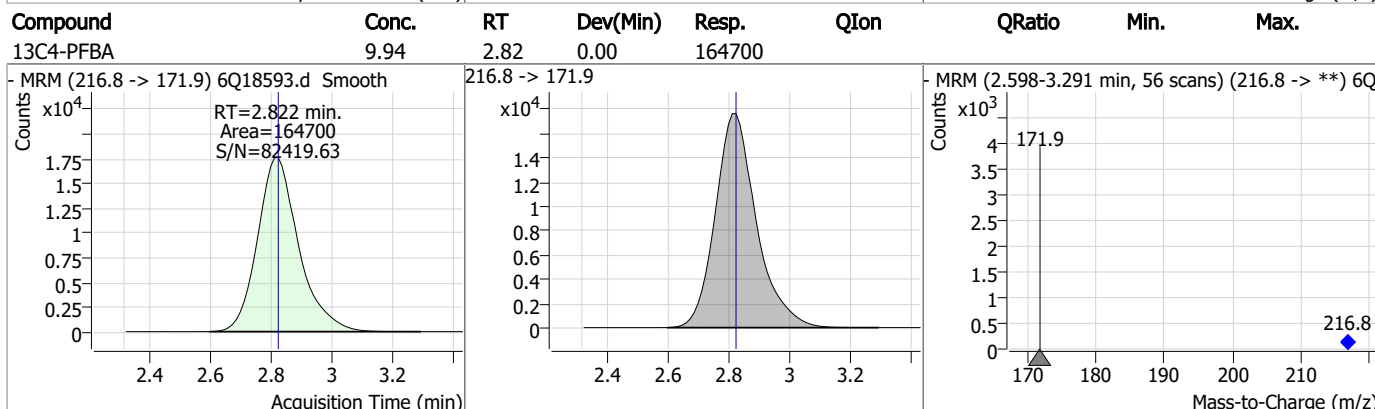
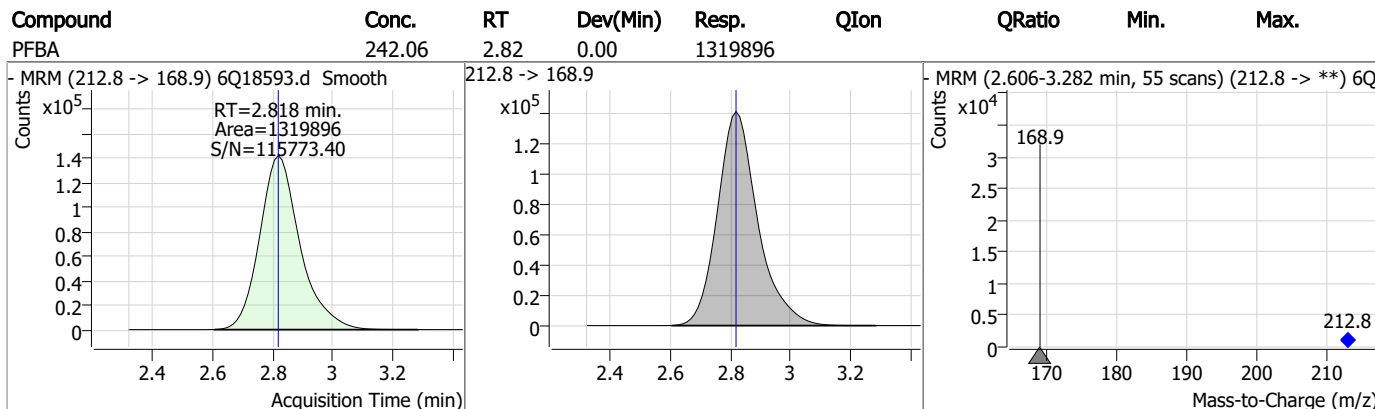
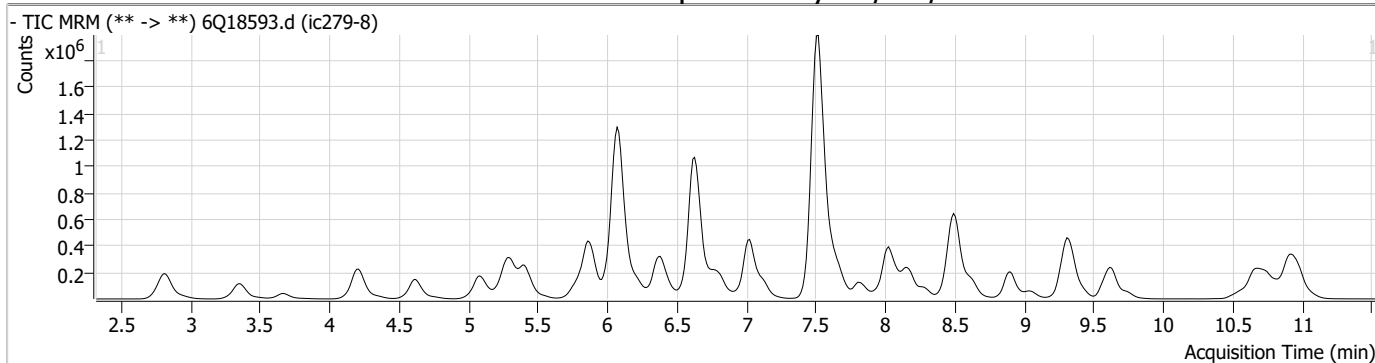
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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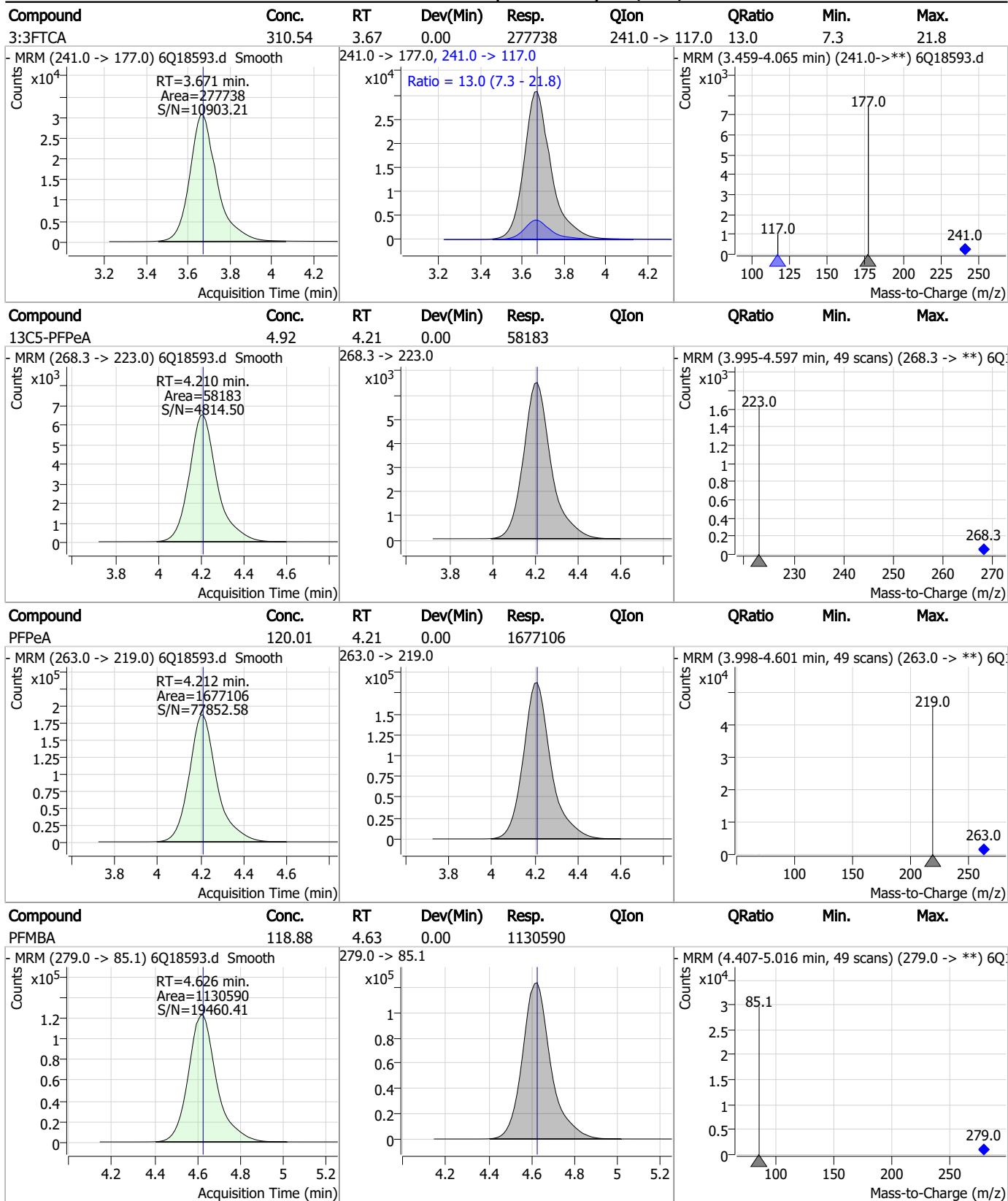
7.7.9

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Perfluorinated Compounds by LC/MS/MS

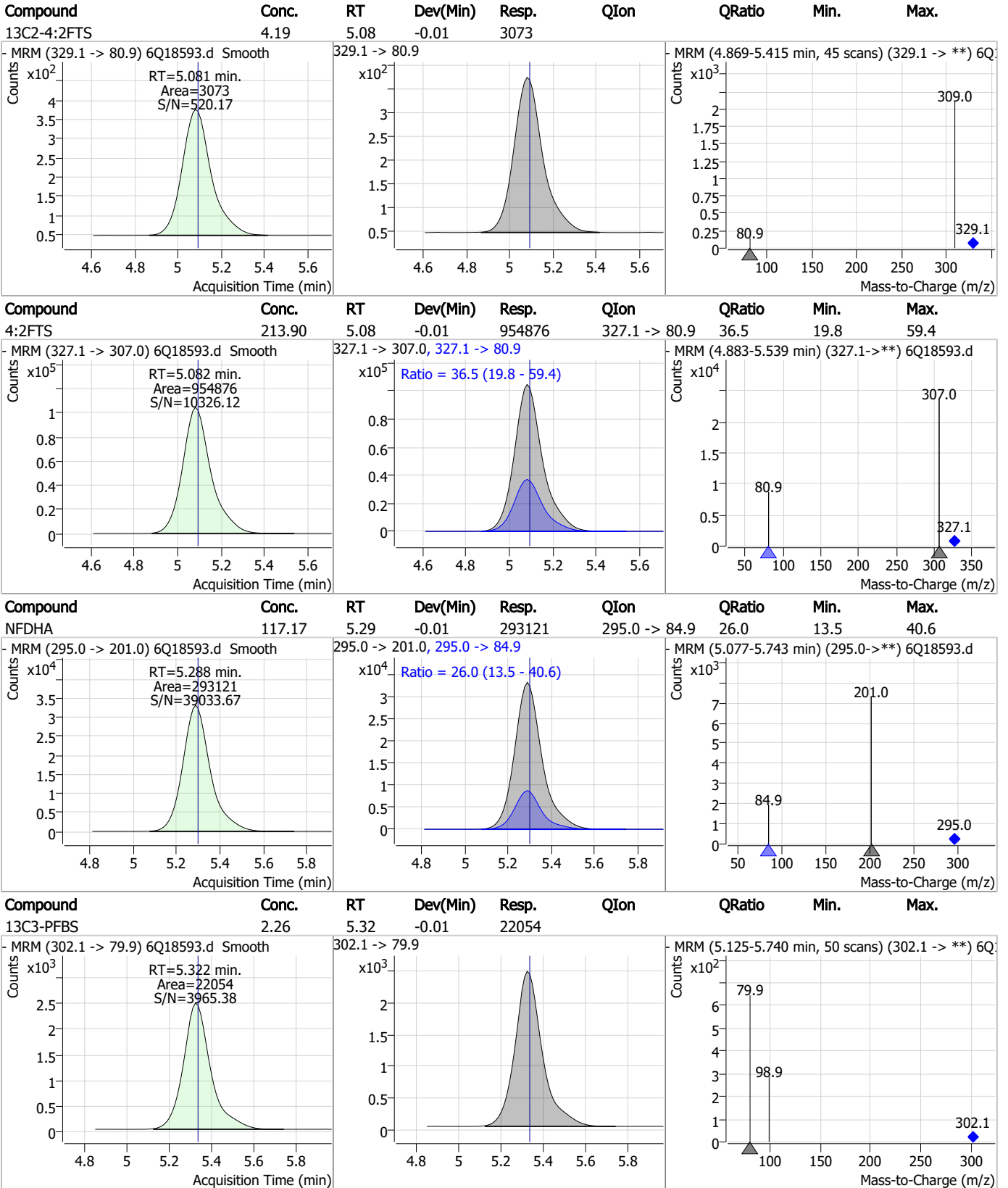


Perfluorinated Compounds by LC/MS/MS



7.7.9
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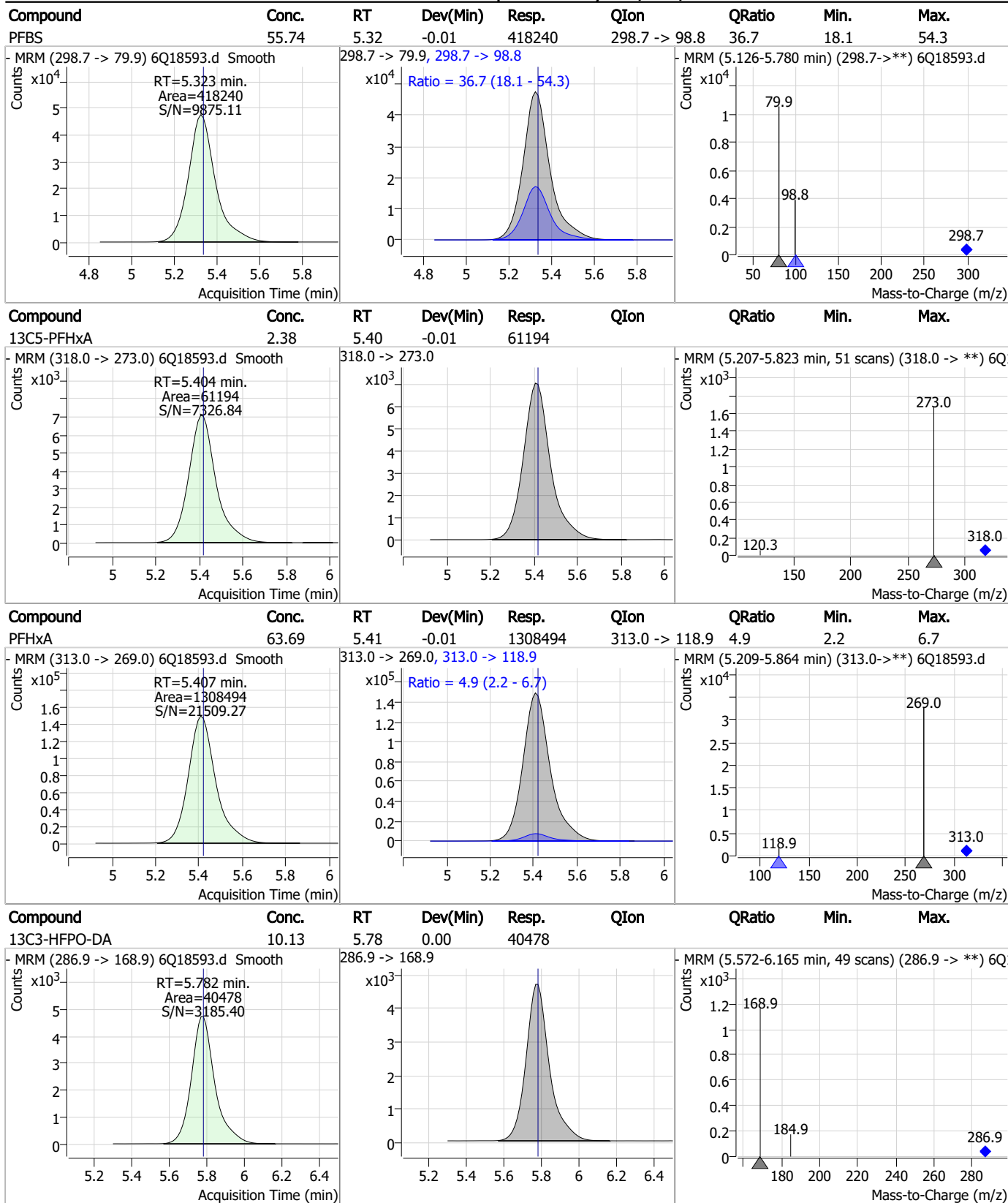
Perfluorinated Compounds by LC/MS/MS



7.7.9

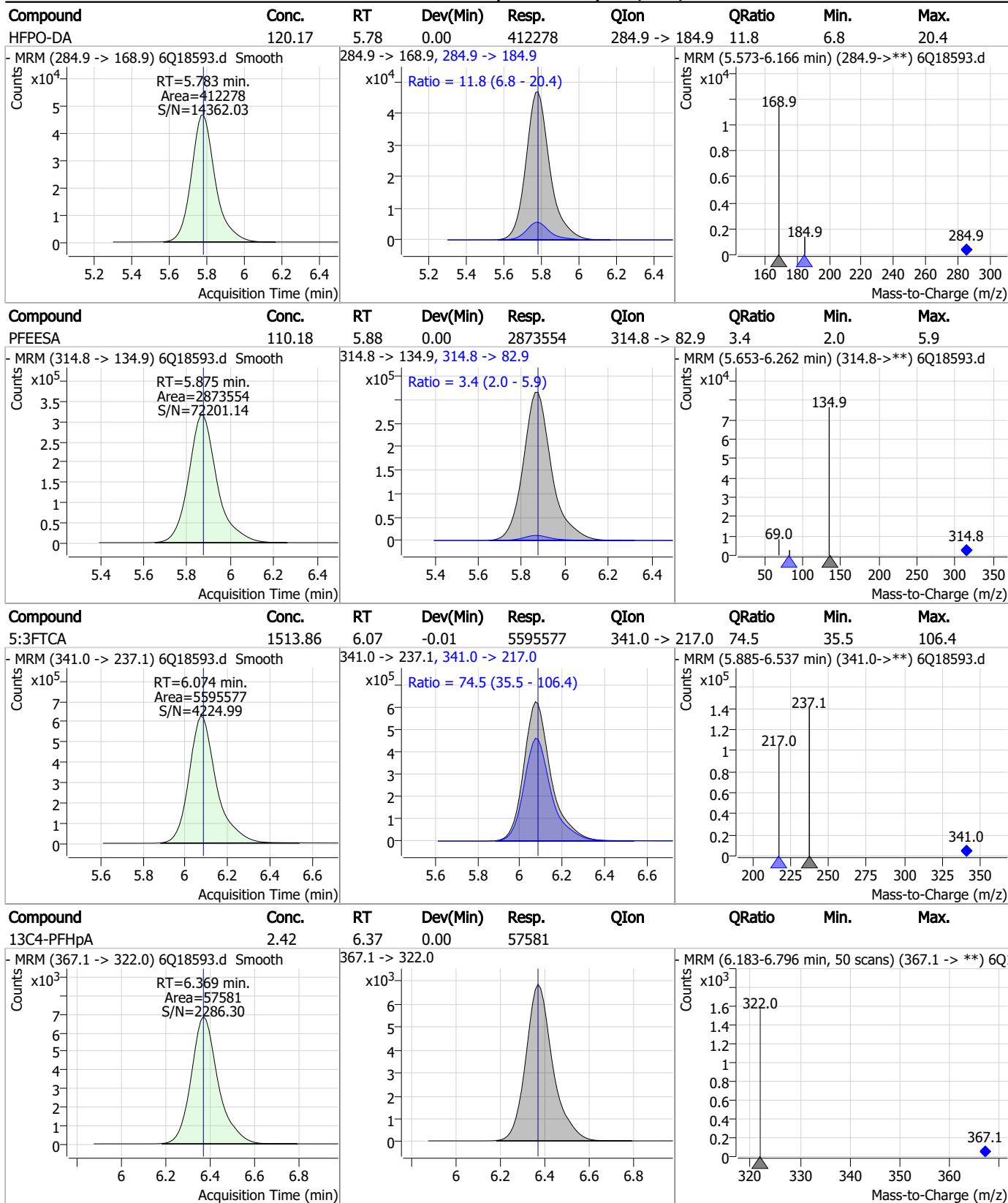
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Perfluorinated Compounds by LC/MS/MS



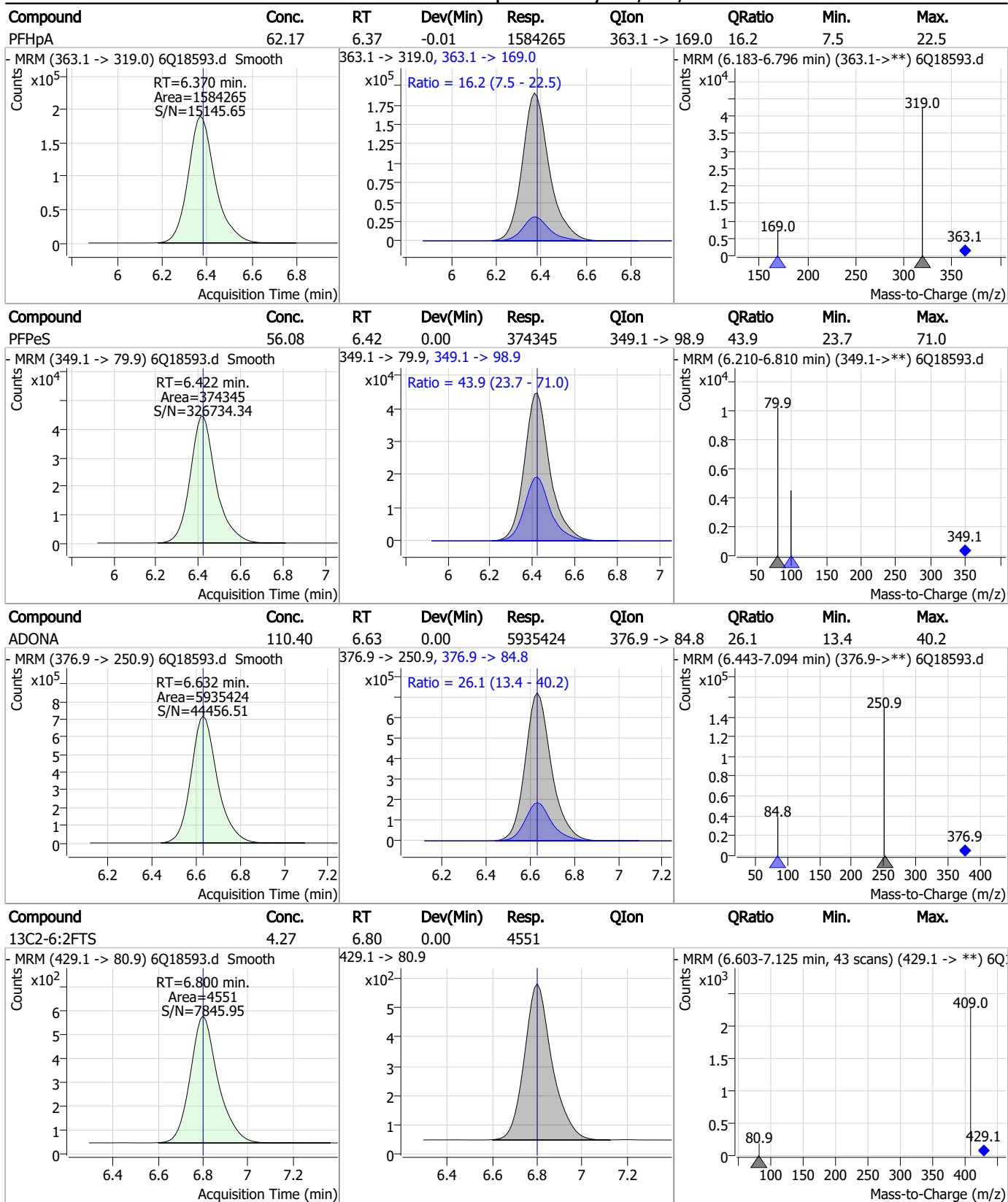
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Perfluorinated Compounds by LC/MS/MS



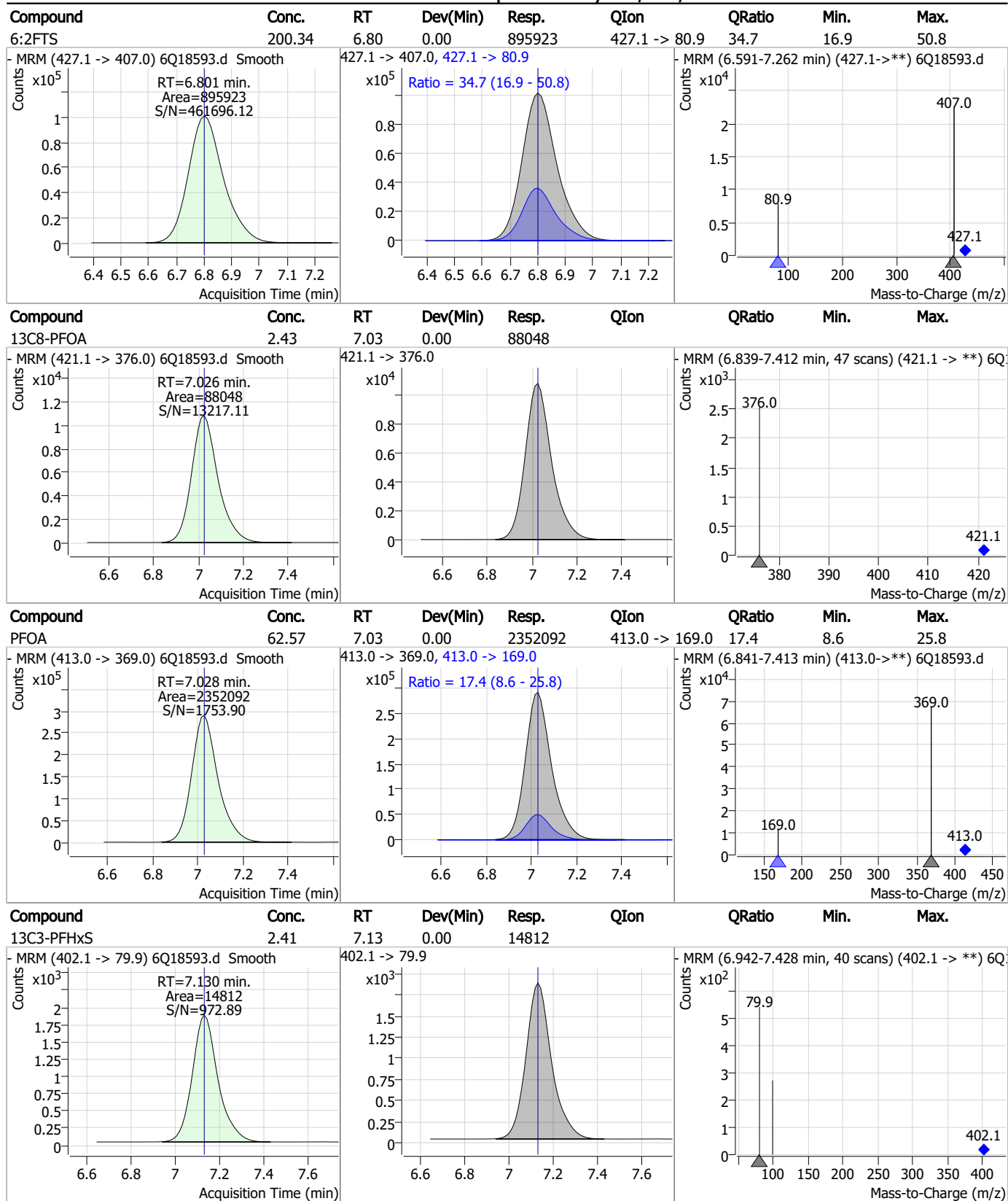
7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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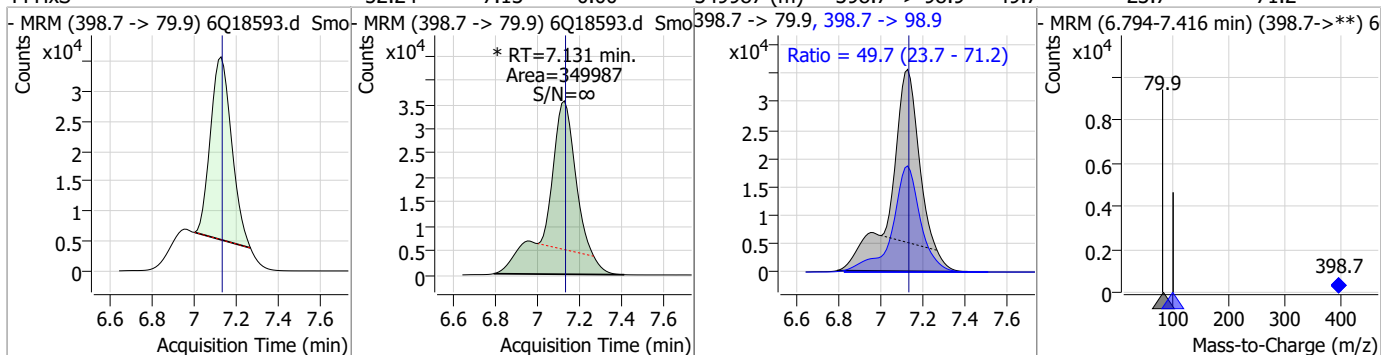
Perfluorinated Compounds by LC/MS/MS



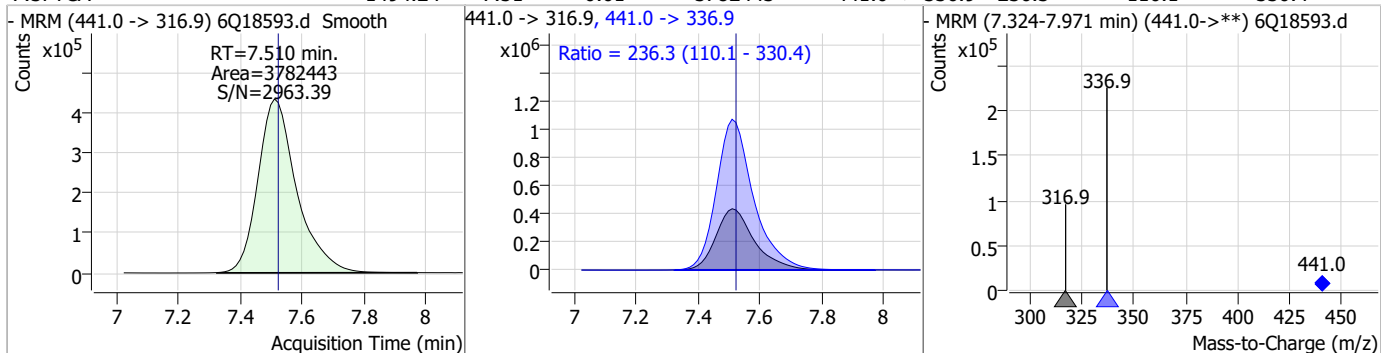
7.7.9
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Perfluorinated Compounds by LC/MS/MS

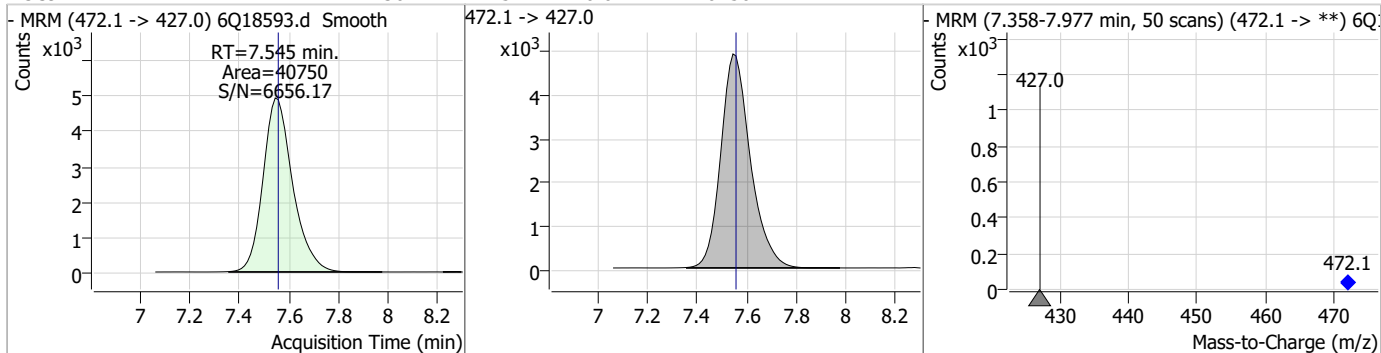
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	52.24	7.13	0.00	349987 (m)	398.7 -> 98.9	49.7	23.7	71.2



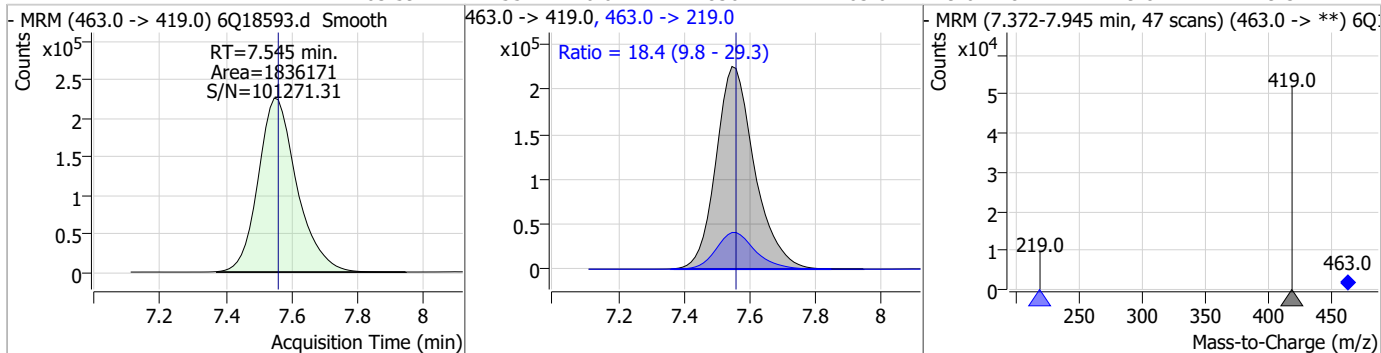
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1494.24	7.51	-0.01	3782443	441.0 -> 336.9	236.3	110.1	330.4



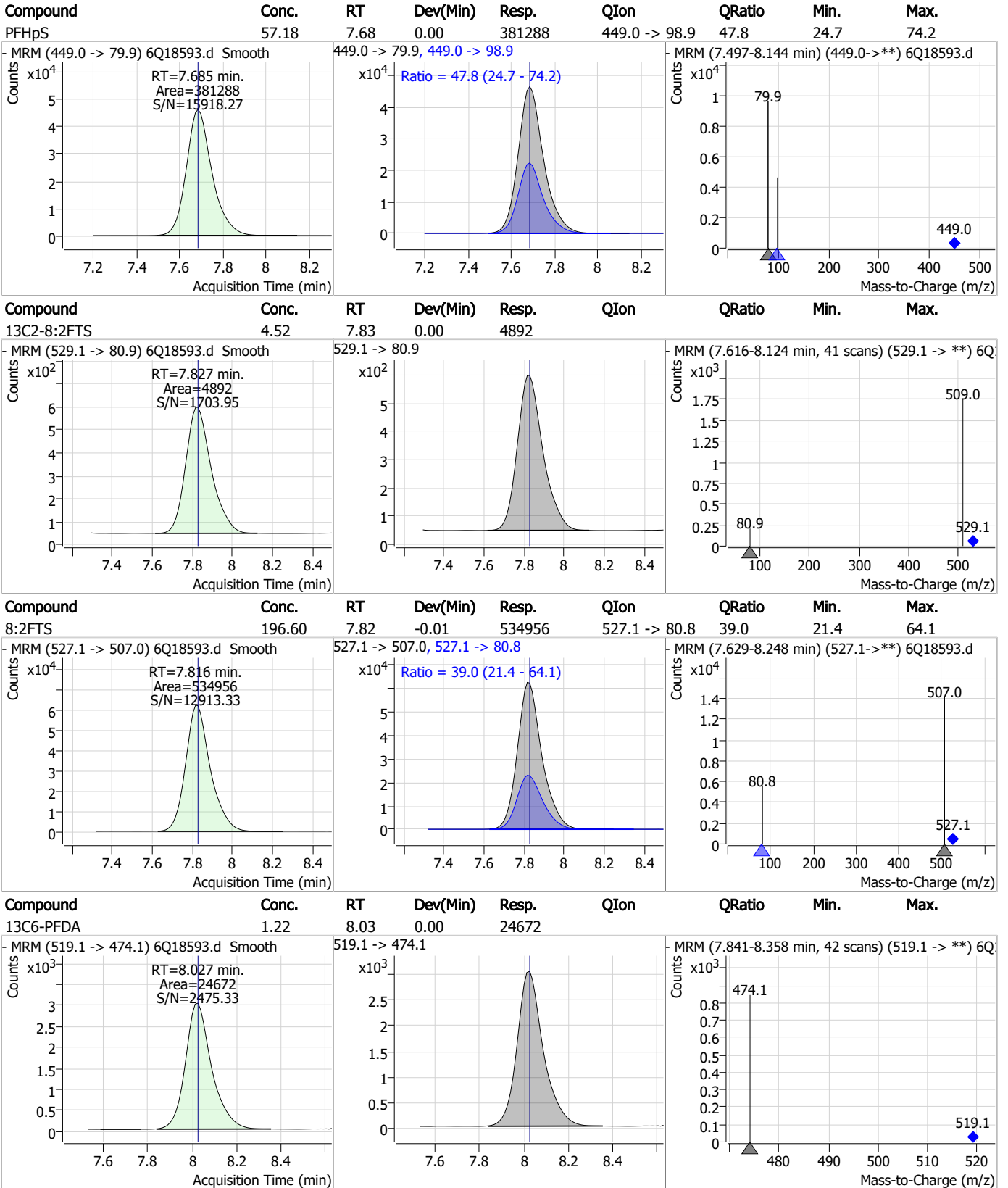
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.54	-0.01	40750				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	63.59	7.55	-0.01	1836171	463.0 -> 219.0	18.4	9.8	29.3



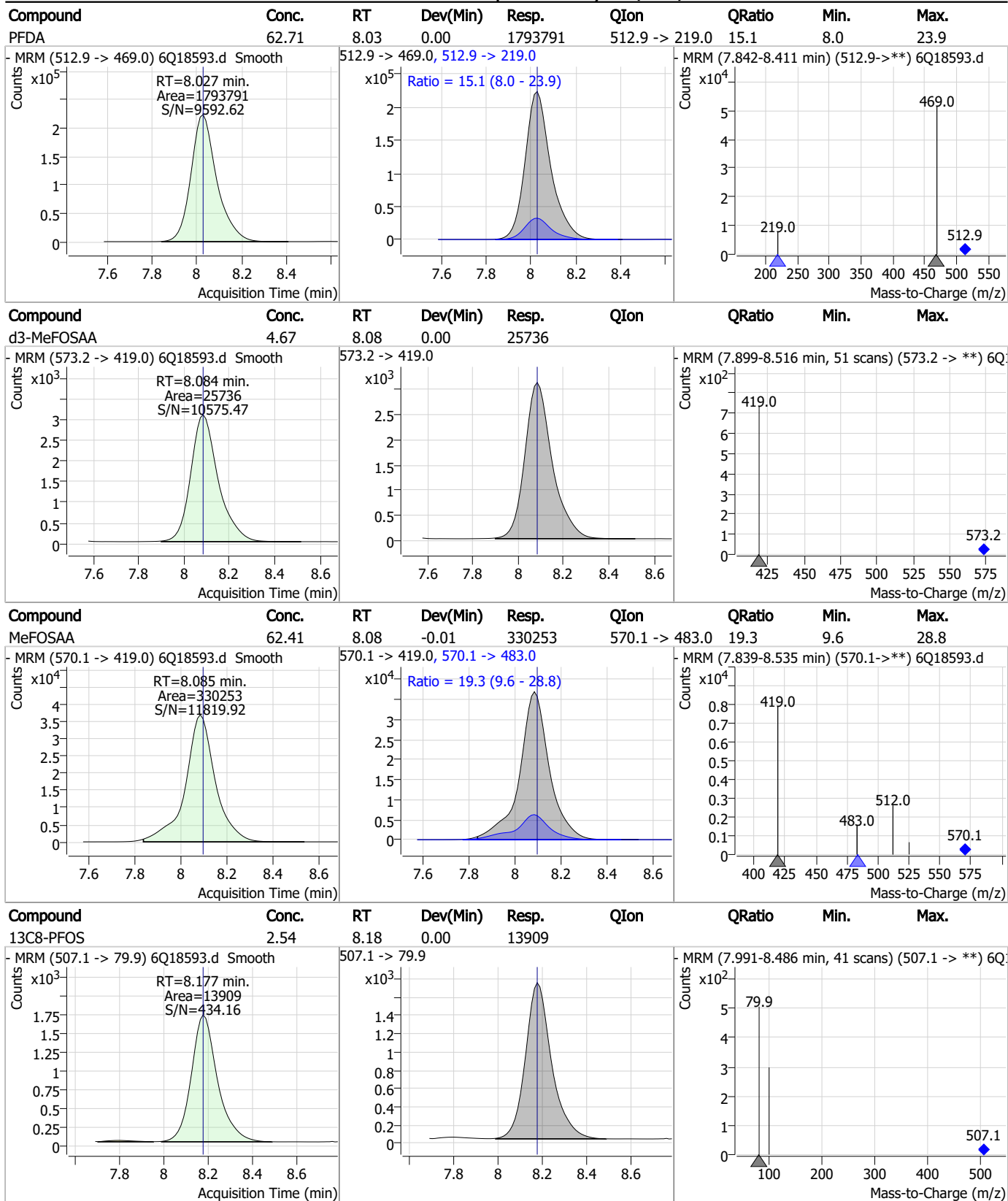
Perfluorinated Compounds by LC/MS/MS



7.7.9

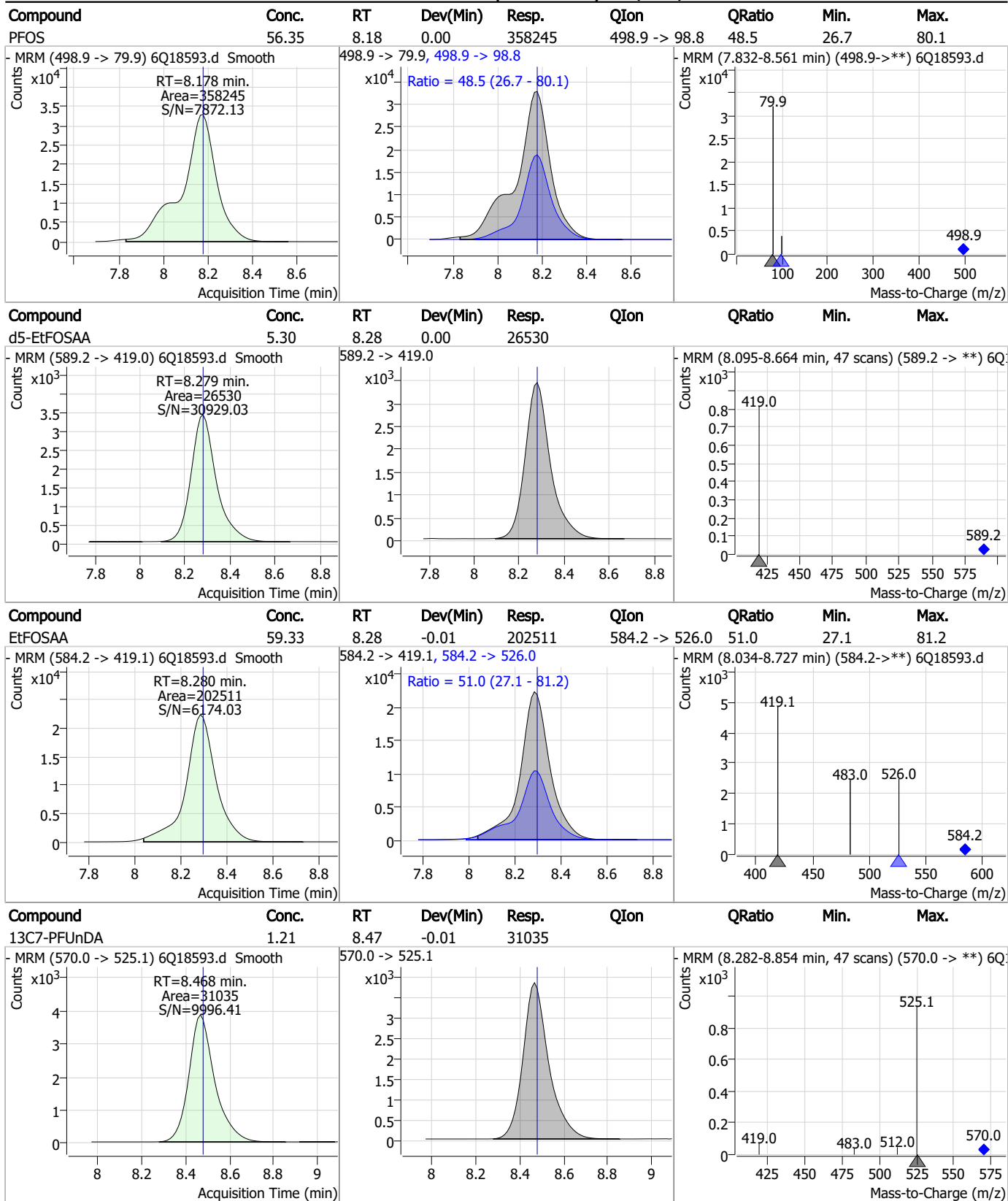
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Perfluorinated Compounds by LC/MS/MS



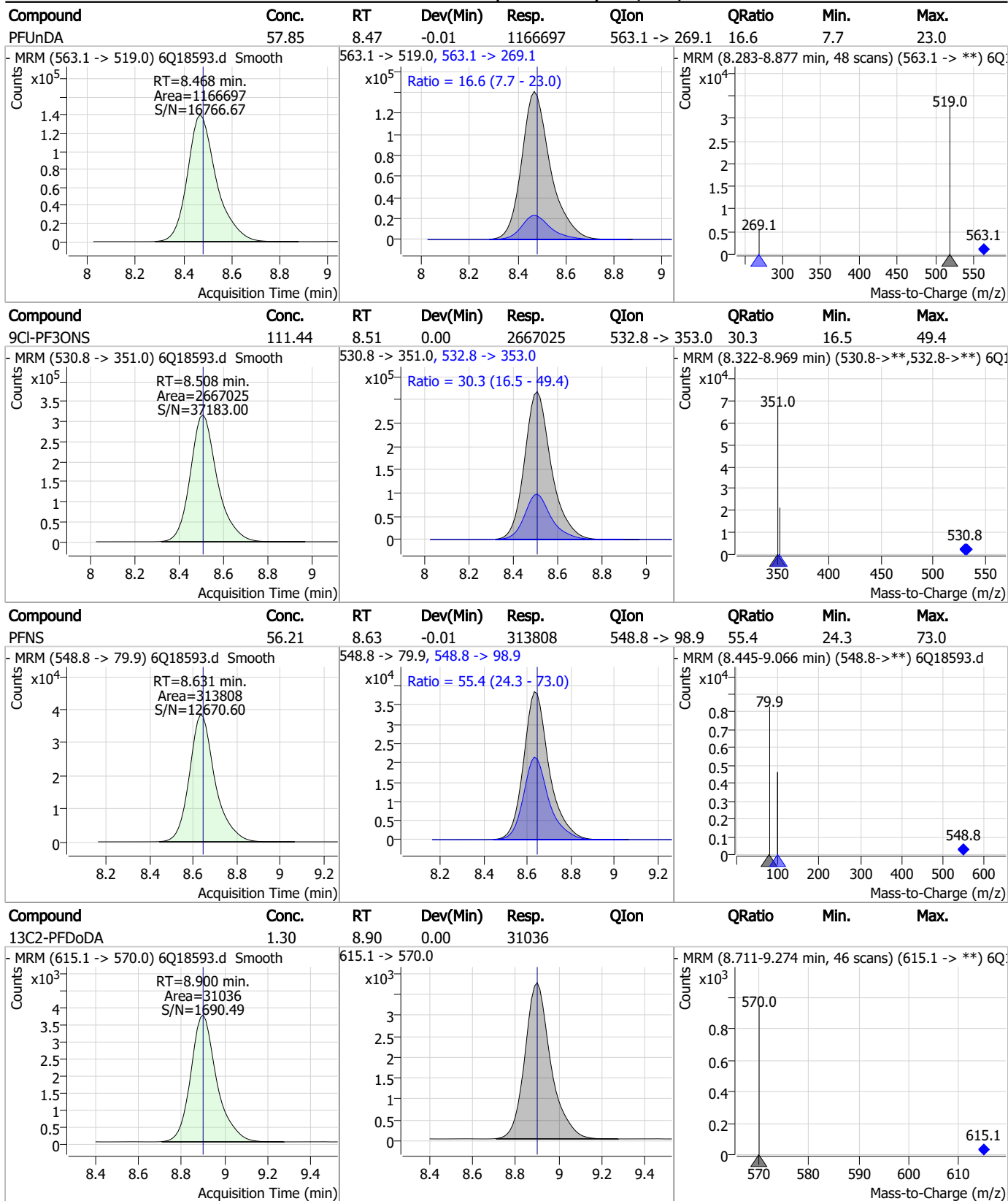
7.7.9
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Perfluorinated Compounds by LC/MS/MS



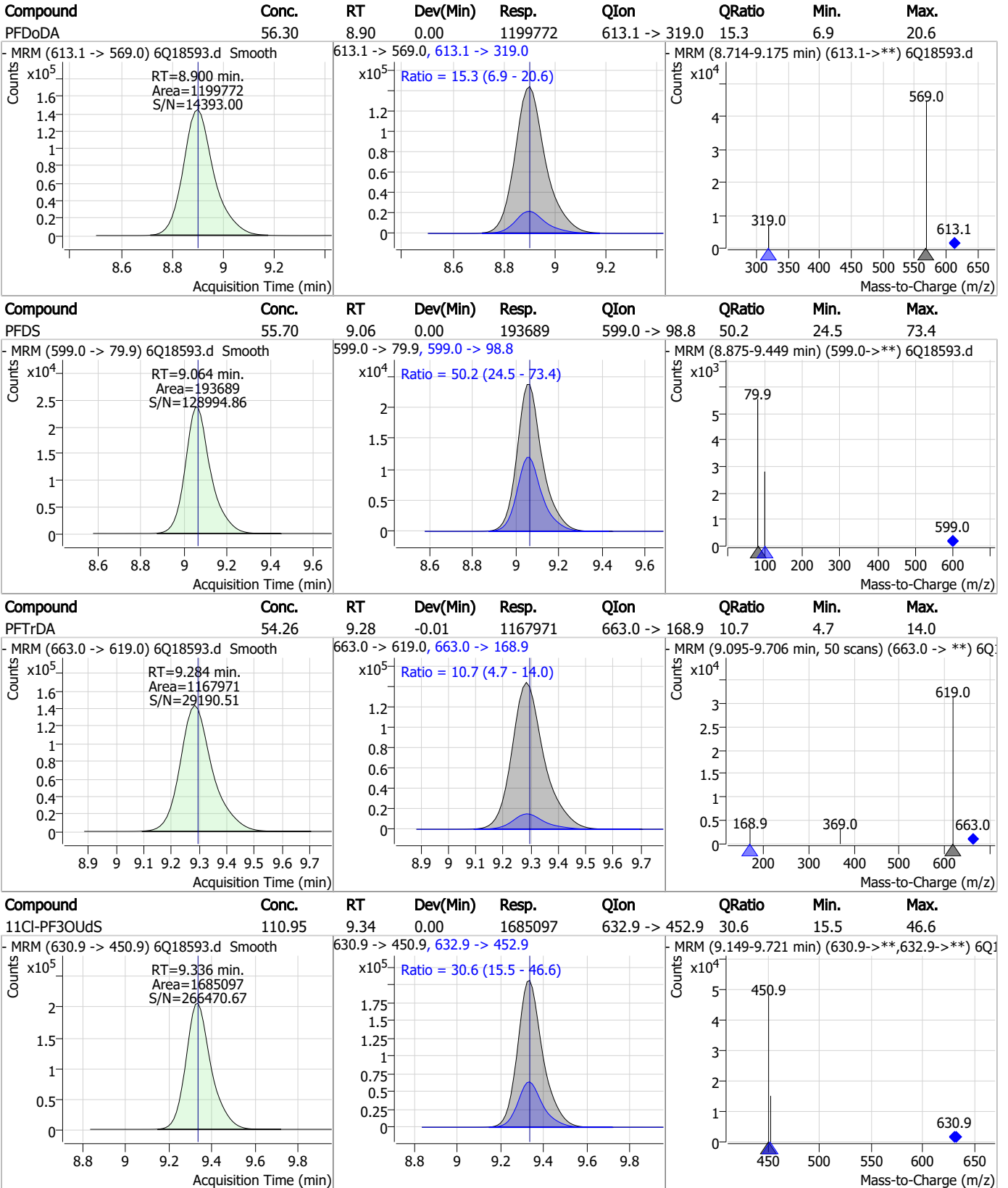
7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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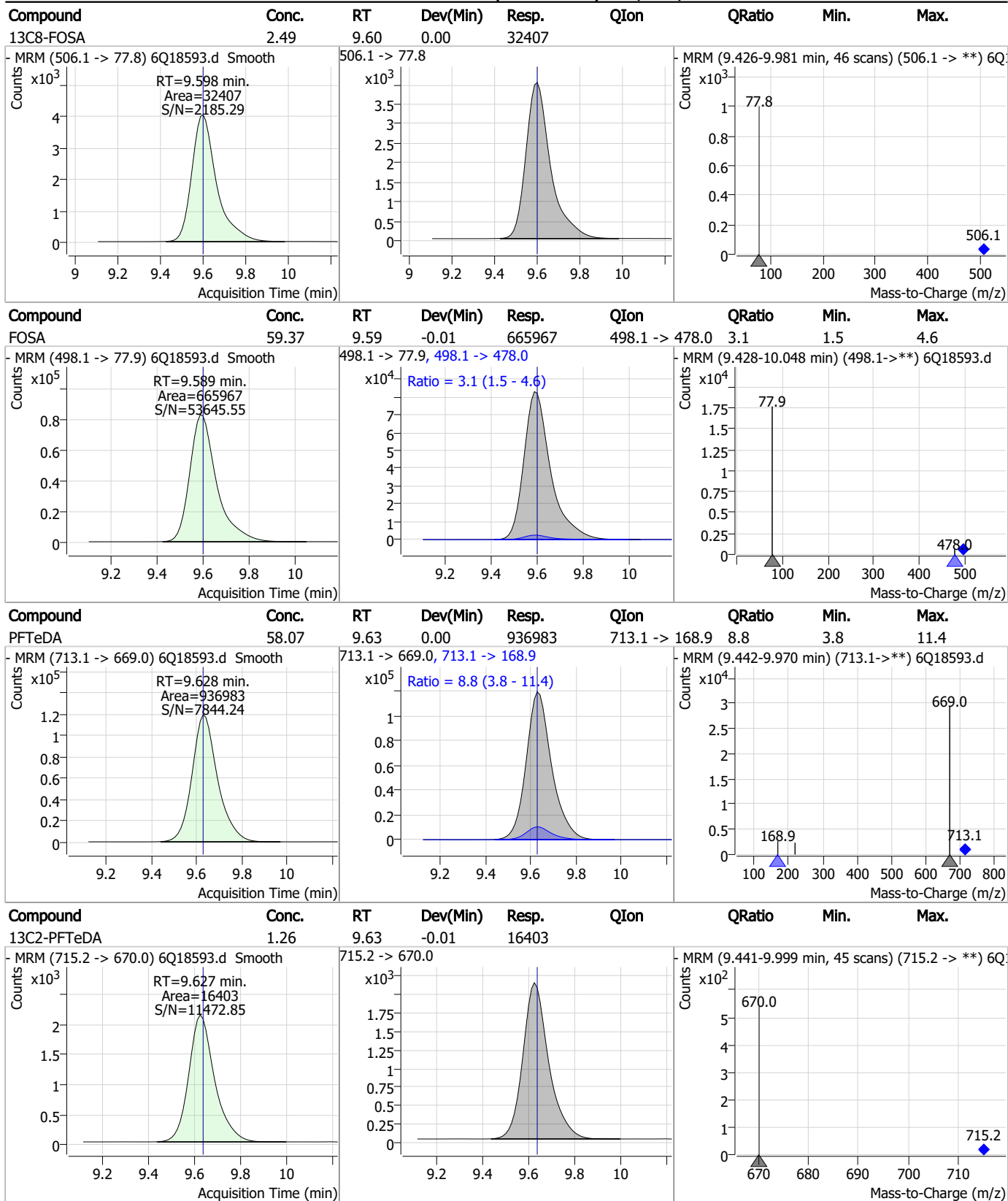
Perfluorinated Compounds by LC/MS/MS



7.7.9

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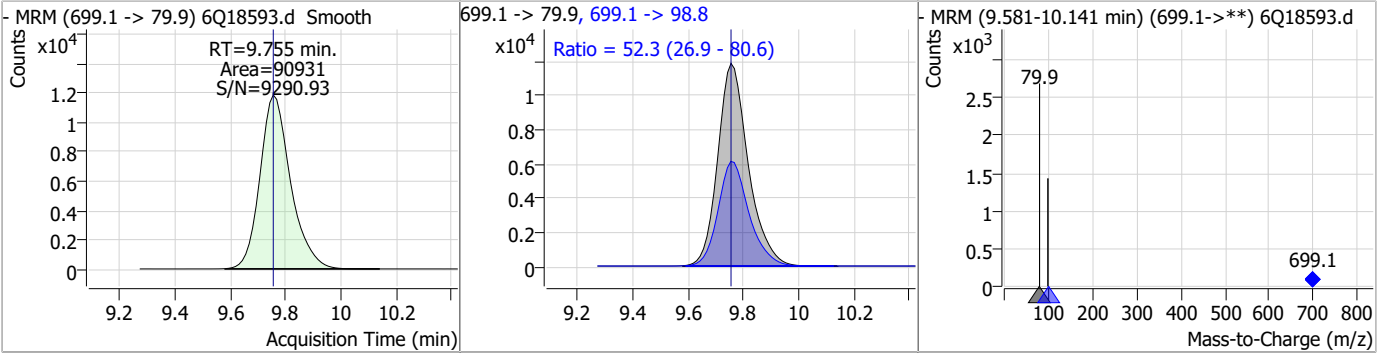
Perfluorinated Compounds by LC/MS/MS



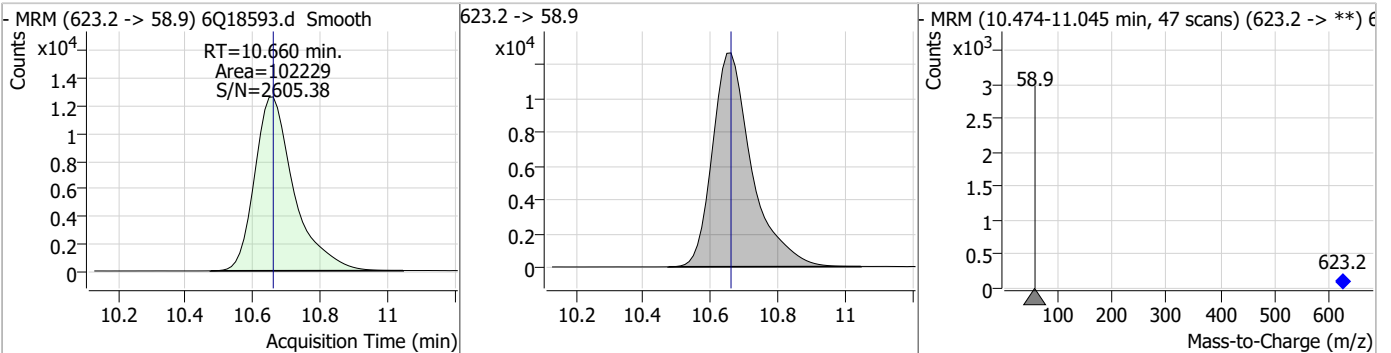
7.7.9
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Perfluorinated Compounds by LC/MS/MS

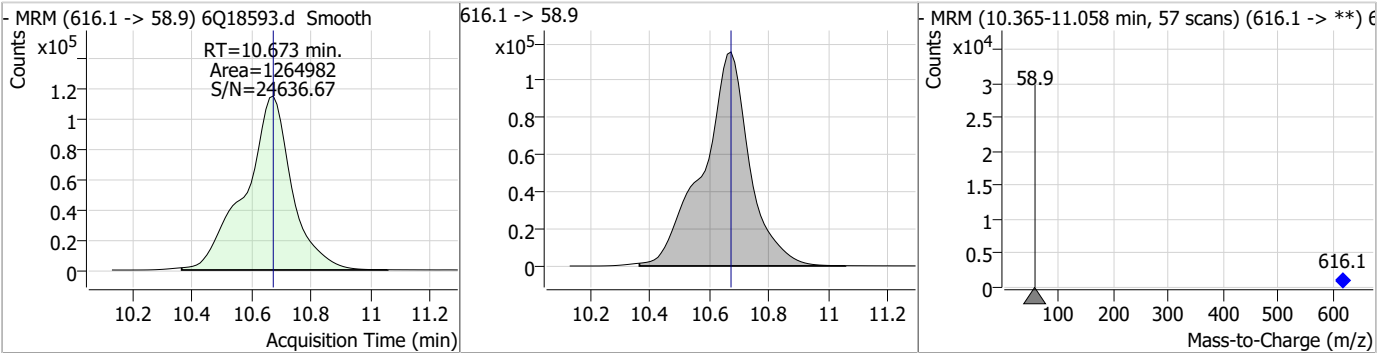
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	58.86	9.75	0.00	90931	699.1 -> 98.8	52.3	26.9	80.6



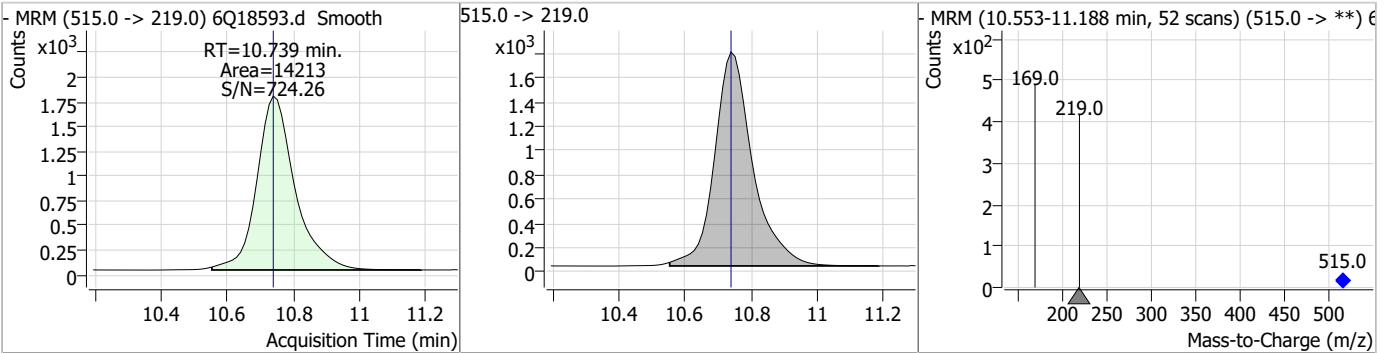
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.85	10.66	0.00	102229				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	311.37	10.67	0.00	1264982				

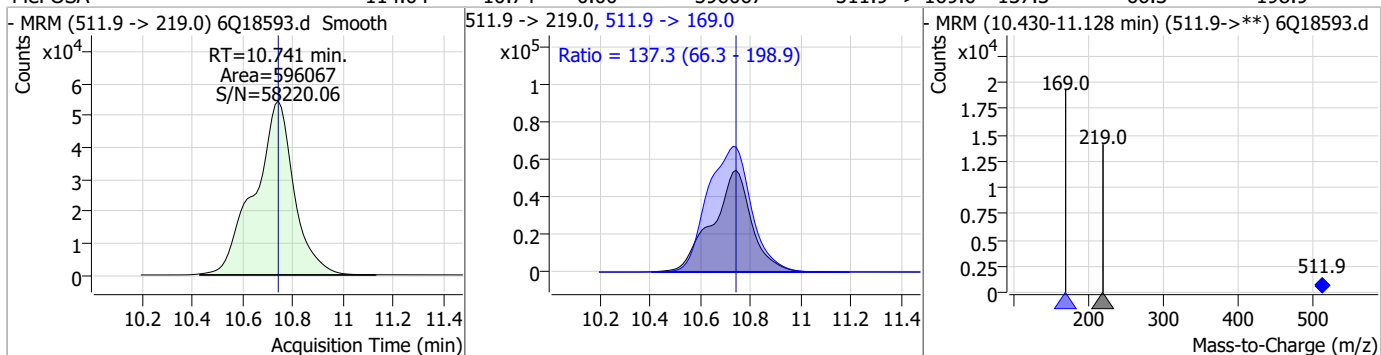


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.70	10.74	0.00	14213				

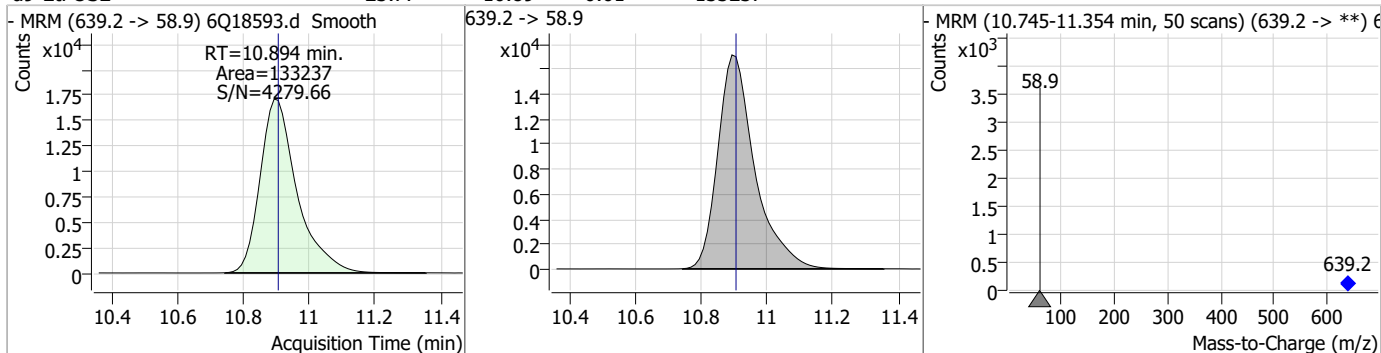


Perfluorinated Compounds by LC/MS/MS

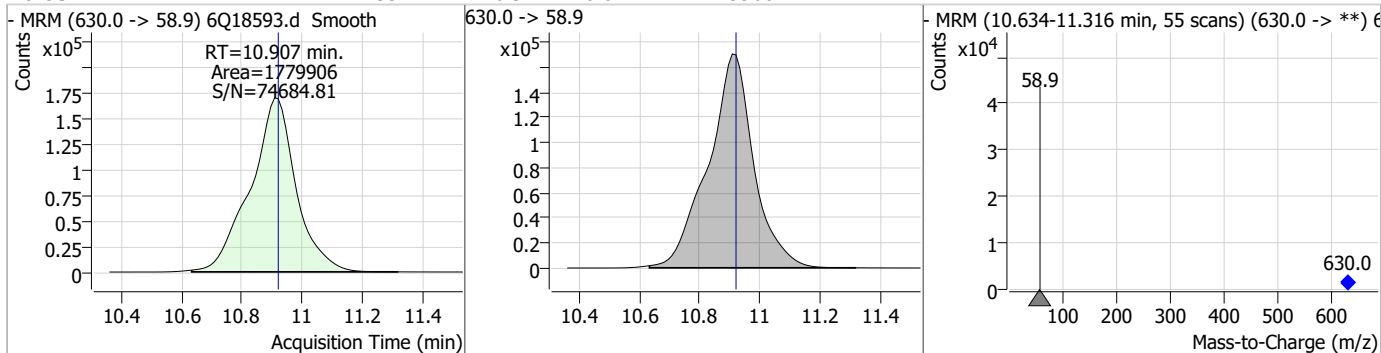
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	114.04	10.74	0.00	596067	511.9 -> 169.0	137.3	66.3	198.9



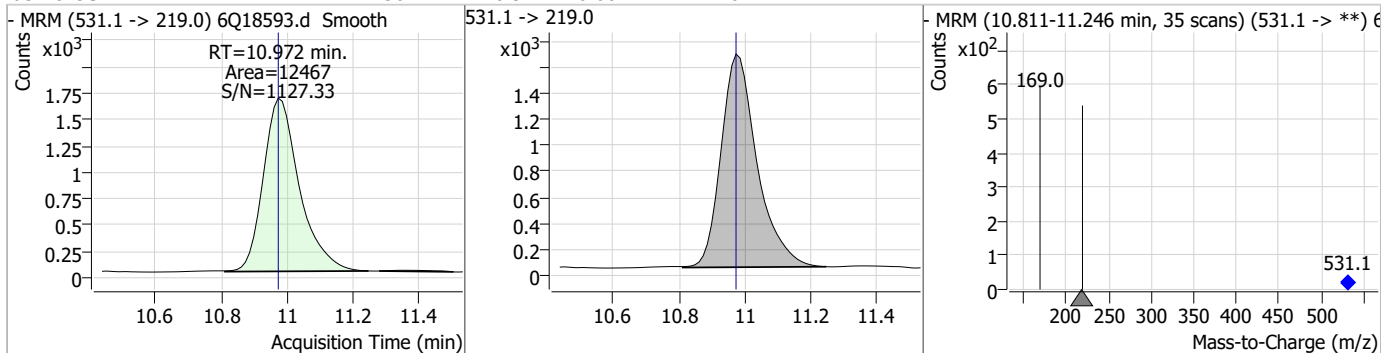
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.77	10.89	-0.01	133237				



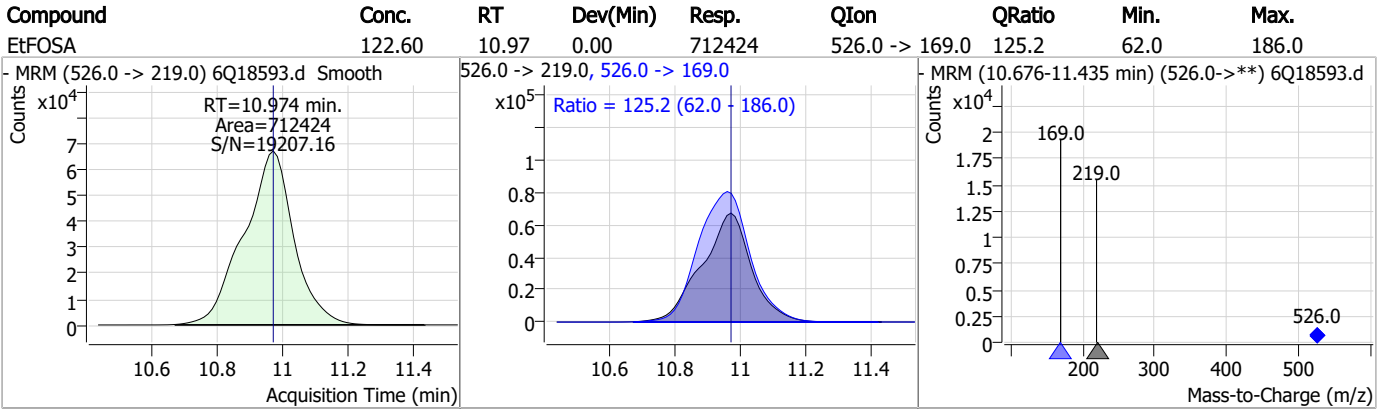
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	299.44	10.91	-0.01	1779906				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	10.97	0.00	12467				



Perfluorinated Compounds by LC/MS/MS



7.7.9

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18593.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:57 Supervisor approved: 06/01/23 14:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.9.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18595.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:26:45 PM
 Sample Name : icv279-4
 Vial : P1-B1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	170457	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	63595	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	58610	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	89653	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	40289	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24134	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	33620	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	29418	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	15555	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33177	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	13810	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	12998	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3600	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5027	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4884	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27516	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	100839	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	133717	25.00 µg/L	0.000
M5-EtFOSA	10.972	531.1 -> 219.0	12229	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12293	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17202	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	71357	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10292	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	98236	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34106	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50284	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	58580	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3600	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5027	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4884	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	29418	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15555	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.322	302.1 -> 79.9	22744	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFHxS	7.130	402.1 -> 79.9	13810	2.40 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C4-PFBA	2.822	216.8 -> 171.9	170457	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	58610	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.404	318.0 -> 273.0	63595	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	57026	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.027	519.1 -> 474.1	24134	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	33620	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-FOSA	9.598	506.1 -> 77.8	33177	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOA	7.026	421.1 -> 376.0	89653	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.177	507.1 -> 79.9	12998	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.545	472.1 -> 427.0	40289	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27516	4.96 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38707	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	12293	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.279	589.2 -> 419.0	26462	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	100839	23.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	133717	23.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	12229	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	48916	9.35 µg/L	99
		327.1 -> 80.9	19622		
6:2FTS	6.801	427.1 -> 407.0	51987	10.52 µg/L	99
		427.1 -> 80.9	17303		
8:2FTS	7.816	527.1 -> 507.0	28525	10.50 µg/L	96
		527.1 -> 80.8	11388		
EtFOSAA	8.280	584.2 -> 419.1	8691	2.55 µg/L	100
		584.2 -> 526.0	4733		
FOSA	9.589	498.1 -> 77.9	29778	2.59 µg/L	99
		498.1 -> 478.0	815		
MeFOSAA	8.085	570.1 -> 419.0	15457	2.73 µg/L	99
		570.1 -> 483.0	2869		
PFBA	2.818	212.8 -> 168.9	59467	10.54 µg/L	100
PFBS	5.323	298.7 -> 79.9	17085	2.21 µg/L	94
		298.7 -> 98.8	6838		
PFDA	8.027	512.9 -> 469.0	73429	2.62 µg/L	98
		512.9 -> 219.0	12351		
PFDODA	8.900	613.1 -> 569.0	50767	2.51 µg/L	94
		613.1 -> 319.0	8133		
PFDS	9.052	599.0 -> 79.9	8551	2.63 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	4094	2.61	µg/L	98
		363.1 -> 319.0	67586			
PFHpS	7.685	363.1 -> 169.0	10768	2.49	µg/L	93
		449.0 -> 79.9	15515			
PFHxA	5.407	449.0 -> 98.9	8412	2.61	µg/L	99
		313.0 -> 269.0	55703			
PFHxS	7.131	313.0 -> 118.9	2729	2.44	µg/L	98
		398.7 -> 79.9	15232			
PFNA	7.545	398.7 -> 98.9	7474	2.68	µg/L	99
		463.0 -> 419.0	76579			
PFNS	8.631	463.0 -> 219.0	14717	2.49	µg/L	93
		548.8 -> 79.9	12985			
PFOA	7.028	548.8 -> 98.9	6937	2.46	µg/L	96
		413.0 -> 369.0	94175			
PFOS	8.166	413.0 -> 169.0	17844	2.53	µg/L	96
		498.9 -> 79.9	15016			
PFPeA	4.212	498.9 -> 98.8	7539	5.24	µg/L	100
		263.0 -> 219.0	71774			
PFPeS	6.410	349.1 -> 79.9	16466	2.65	µg/L	92
		349.1 -> 98.9	6942			
PFTeDA	9.628	713.1 -> 669.0	40144	2.62	µg/L	97
		713.1 -> 168.9	3528			
PFTrDA	9.284	663.0 -> 619.0	50595	2.48	µg/L	94
		663.0 -> 168.9	5843			
PFUnDA	8.468	563.1 -> 519.0	53459	2.45	µg/L	96
		563.1 -> 269.1	8997			
11CI-PF3OUdS	9.336	630.9 -> 450.9	72474	4.99	µg/L	100
		632.9 -> 452.9	22415			
9CI-PF3ONS	8.508	530.8 -> 351.0	116131	5.07	µg/L	94
		532.8 -> 353.0	34208			
ADONA	6.632	376.9 -> 250.9	254905	4.96	µg/L	98
		376.9 -> 84.8	70354			
HFPO-DA	5.783	284.9 -> 168.9	16543	5.04	µg/L	97
		284.9 -> 184.9	2036			
3:3FTCA	3.659	241.0 -> 177.0	11434	13.04	µg/L	98
		241.0 -> 117.0	1565			
5:3FTCA	6.074	341.0 -> 237.1	250883	65.31	µg/L	99
		341.0 -> 217.0	180428			
7:3FTCA	7.510	441.0 -> 316.9	167621	63.72	µg/L	97
		441.0 -> 336.9	378472			
EtFOSA	10.974	526.0 -> 219.0	29907	5.25	µg/L	94
		526.0 -> 169.0	39103			
EtFOSE	10.907	630.0 -> 58.9	81046	13.59	µg/L	100
		511.9 -> 219.0	25097			
MeFOSA	10.741	511.9 -> 169.0	34435	5.55	µg/L	96
		616.1 -> 58.9	56174			
MeFOSE	10.673	699.1 -> 79.9	3790	14.02	µg/L	100
		699.1 -> 98.8	1984			
PFDoDS	9.755	295.0 -> 201.0	13465	2.63	µg/L	98
		295.0 -> 84.9	3401			
NFDHA	5.288	279.0 -> 85.1	48666	5.18	µg/L	96
		229.0 -> 84.9	38219			
PFMBA	4.626	314.8 -> 134.9	121513	5.27	µg/L	100
		314.8 -> 82.9	4672			
PFMPA	3.351			4.48	µg/L	100
PFEESA	5.862					

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

7.7.10
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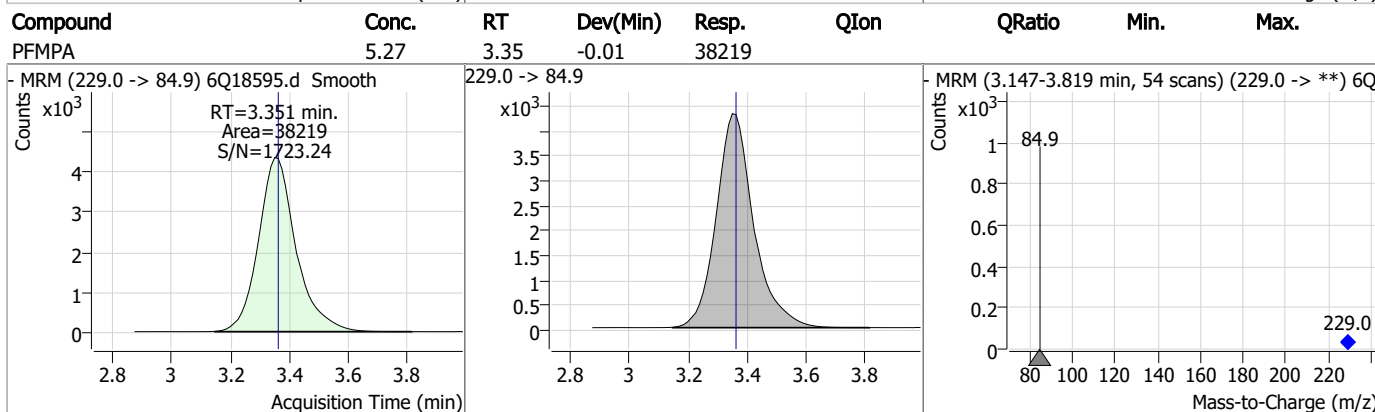
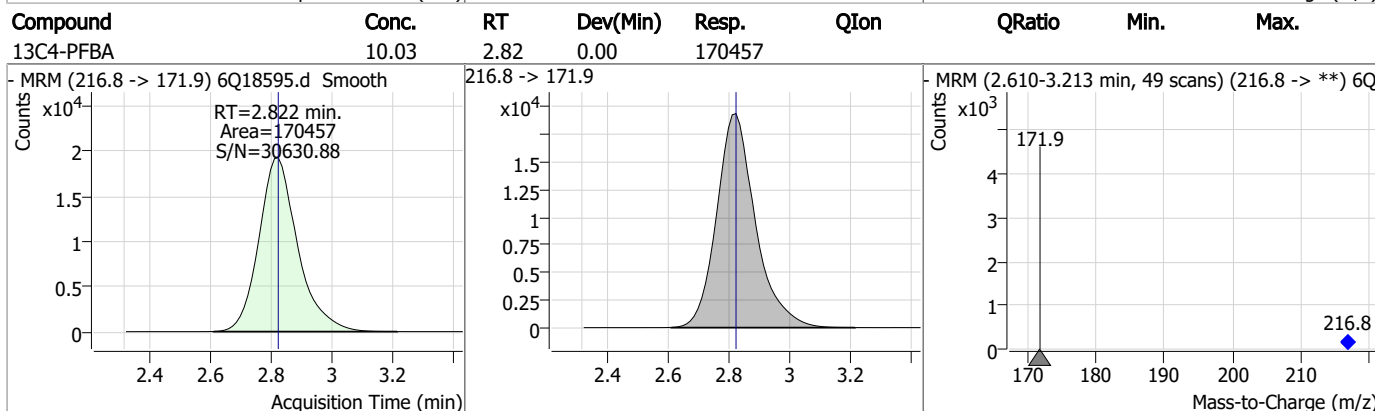
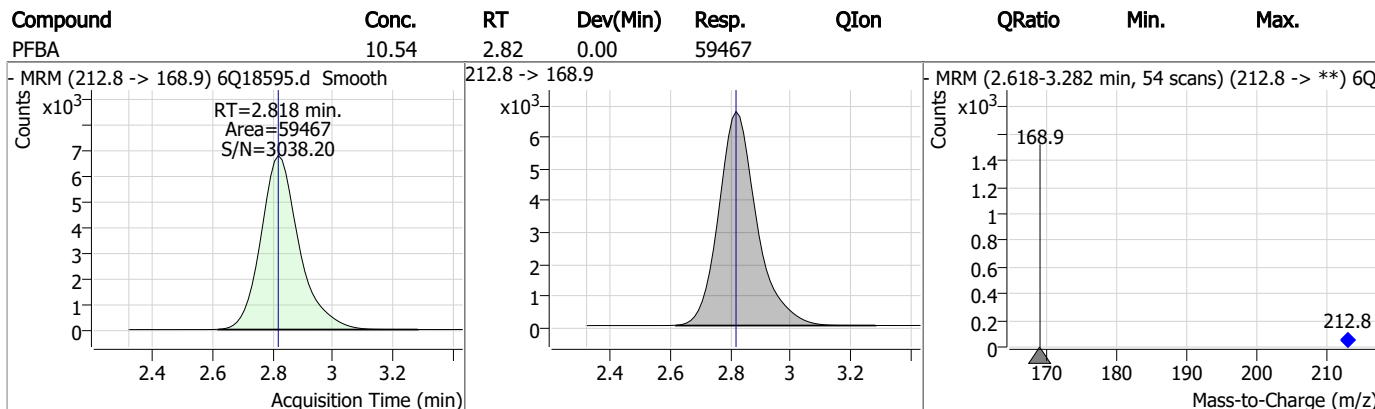
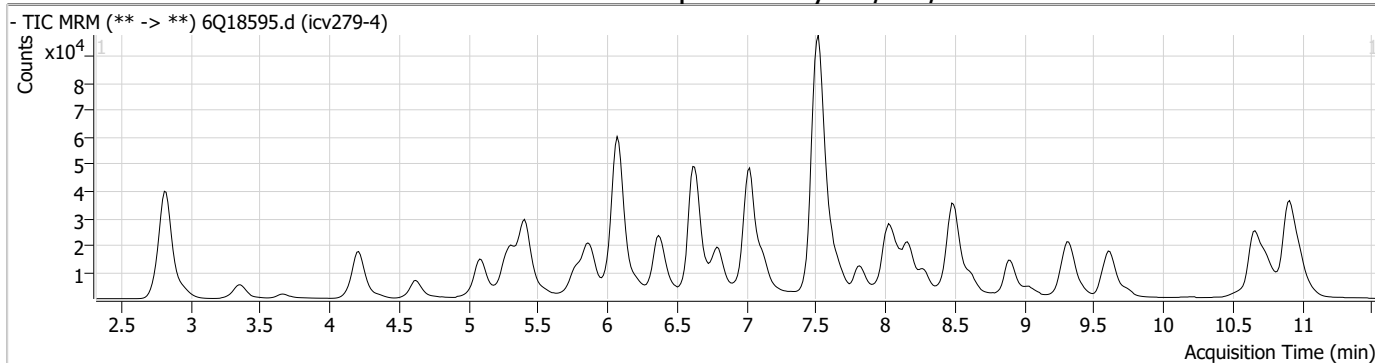
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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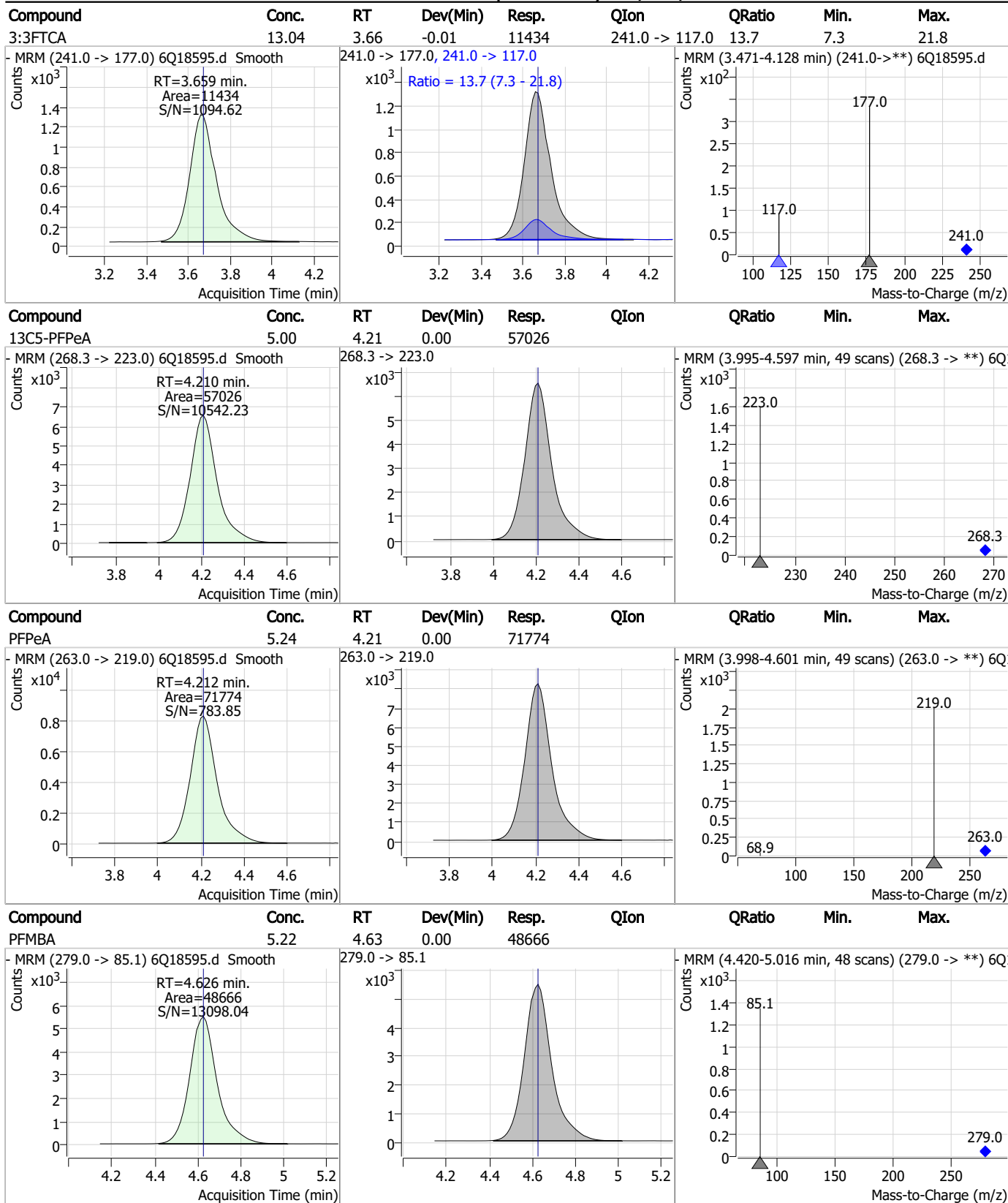
7.7.10

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Perfluorinated Compounds by LC/MS/MS

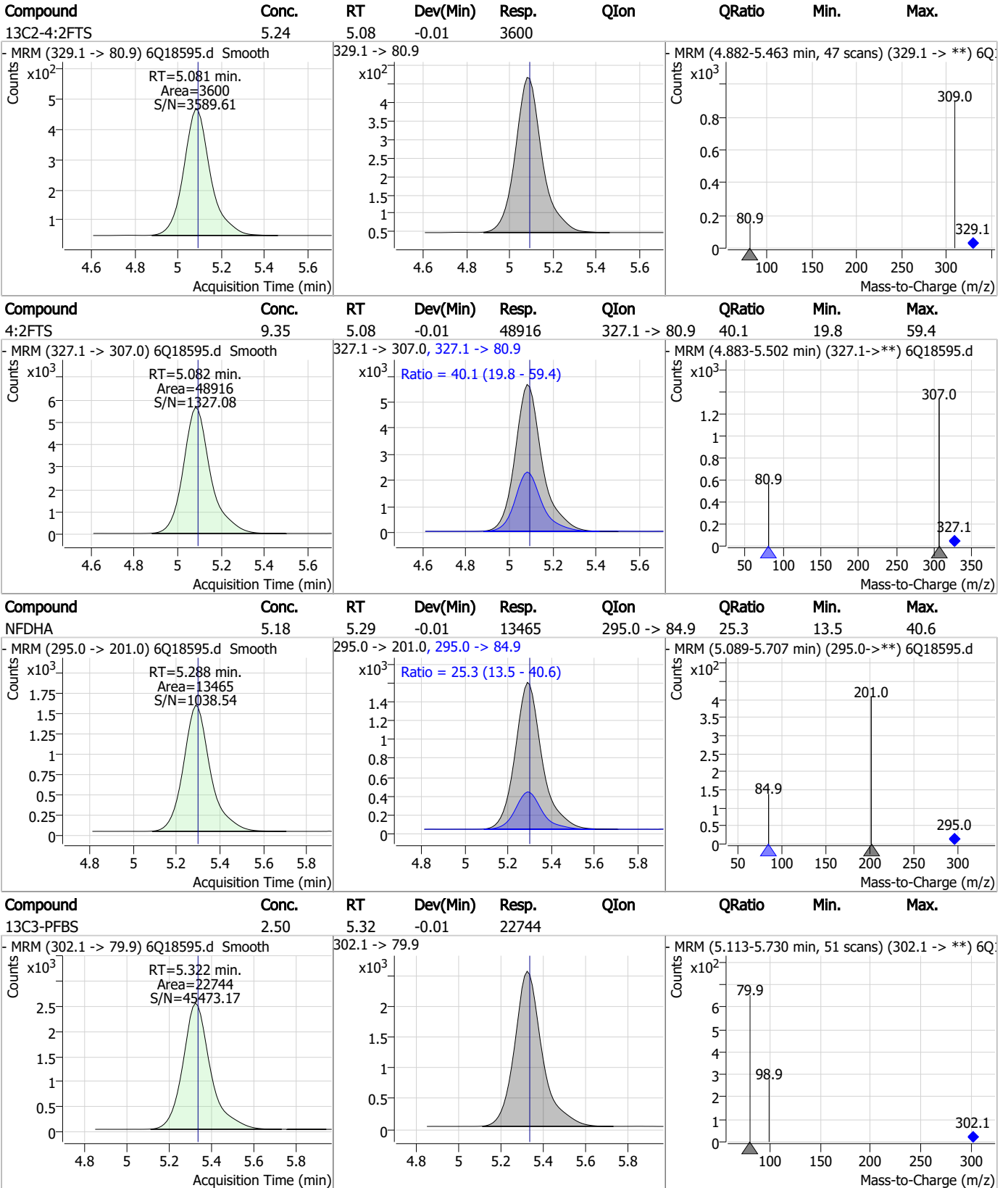


Perfluorinated Compounds by LC/MS/MS



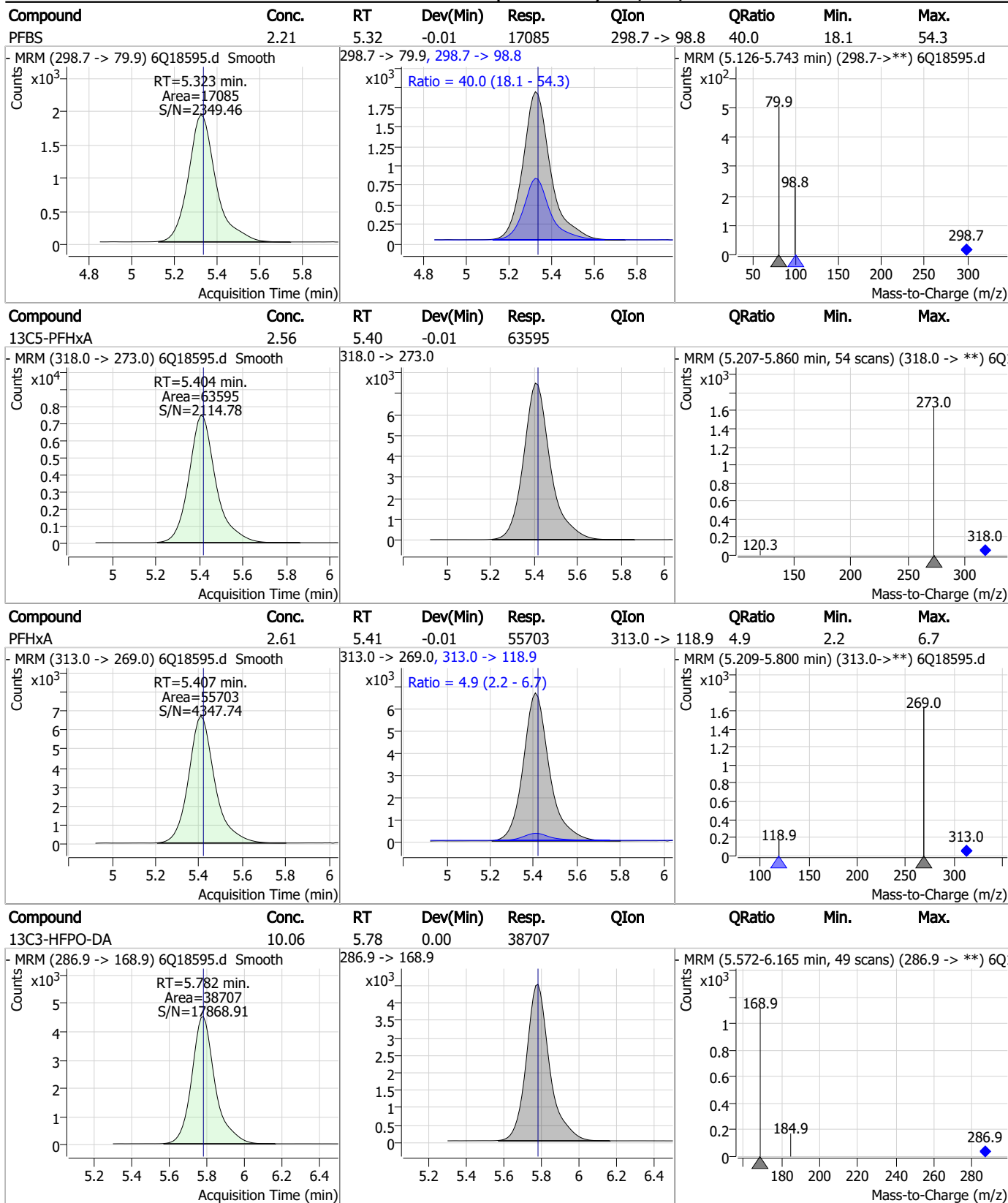
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

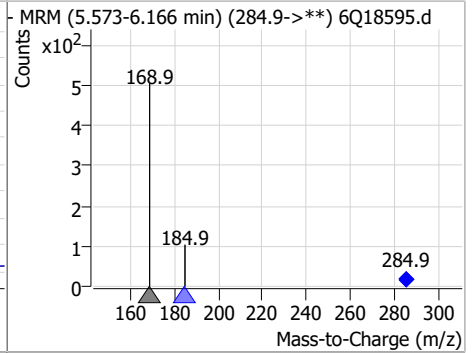
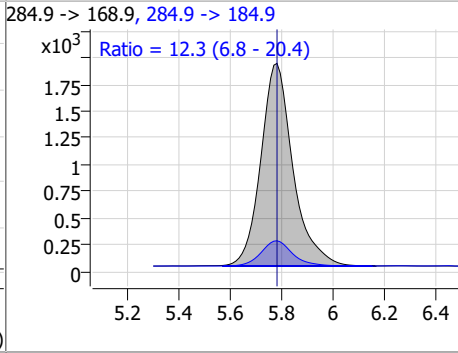
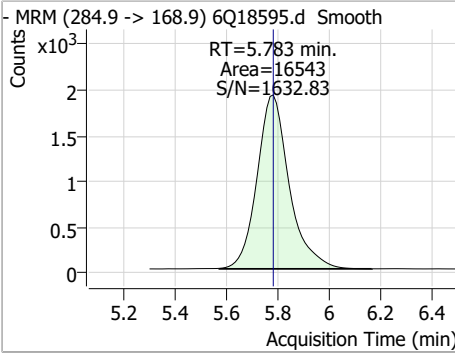
Perfluorinated Compounds by LC/MS/MS



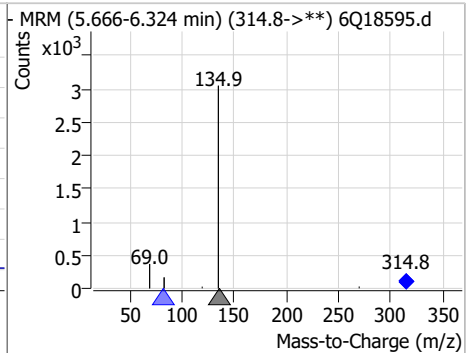
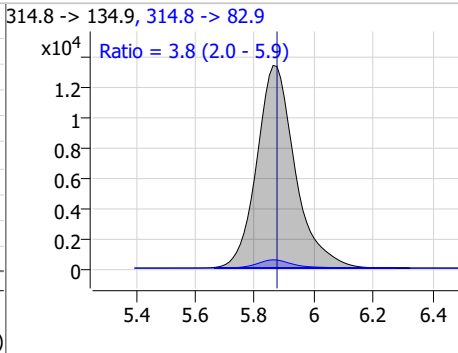
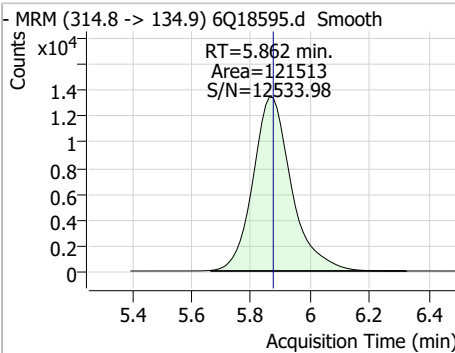
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

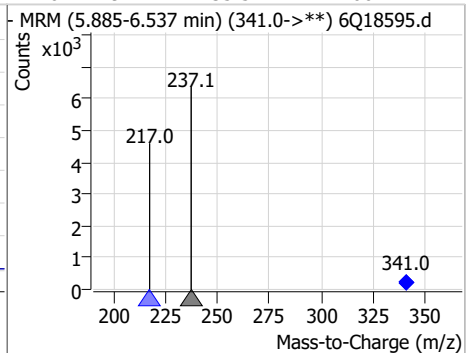
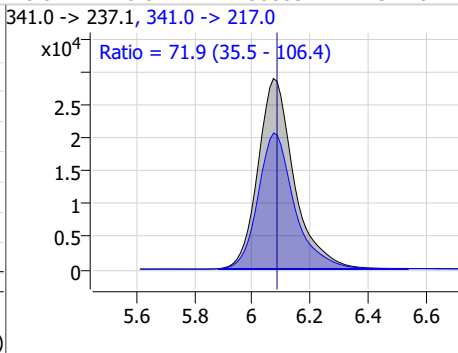
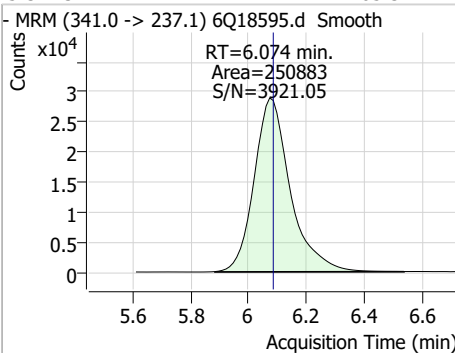
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.04	5.78	0.00	16543	284.9 -> 184.9	12.3	6.8	20.4



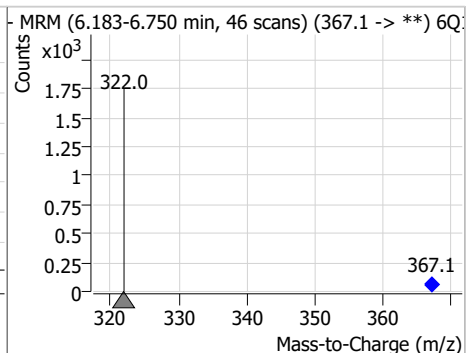
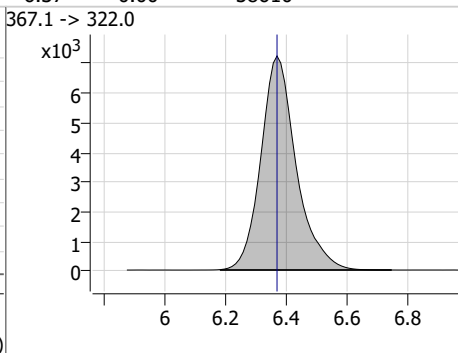
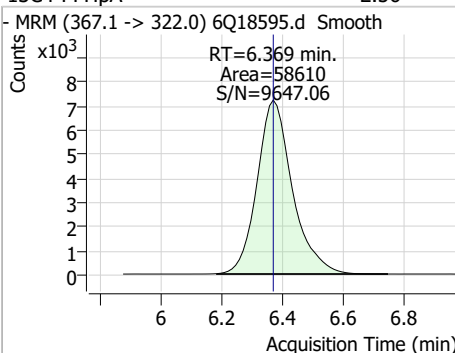
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.48	5.86	-0.01	121513	314.8 -> 82.9	3.8	2.0	5.9



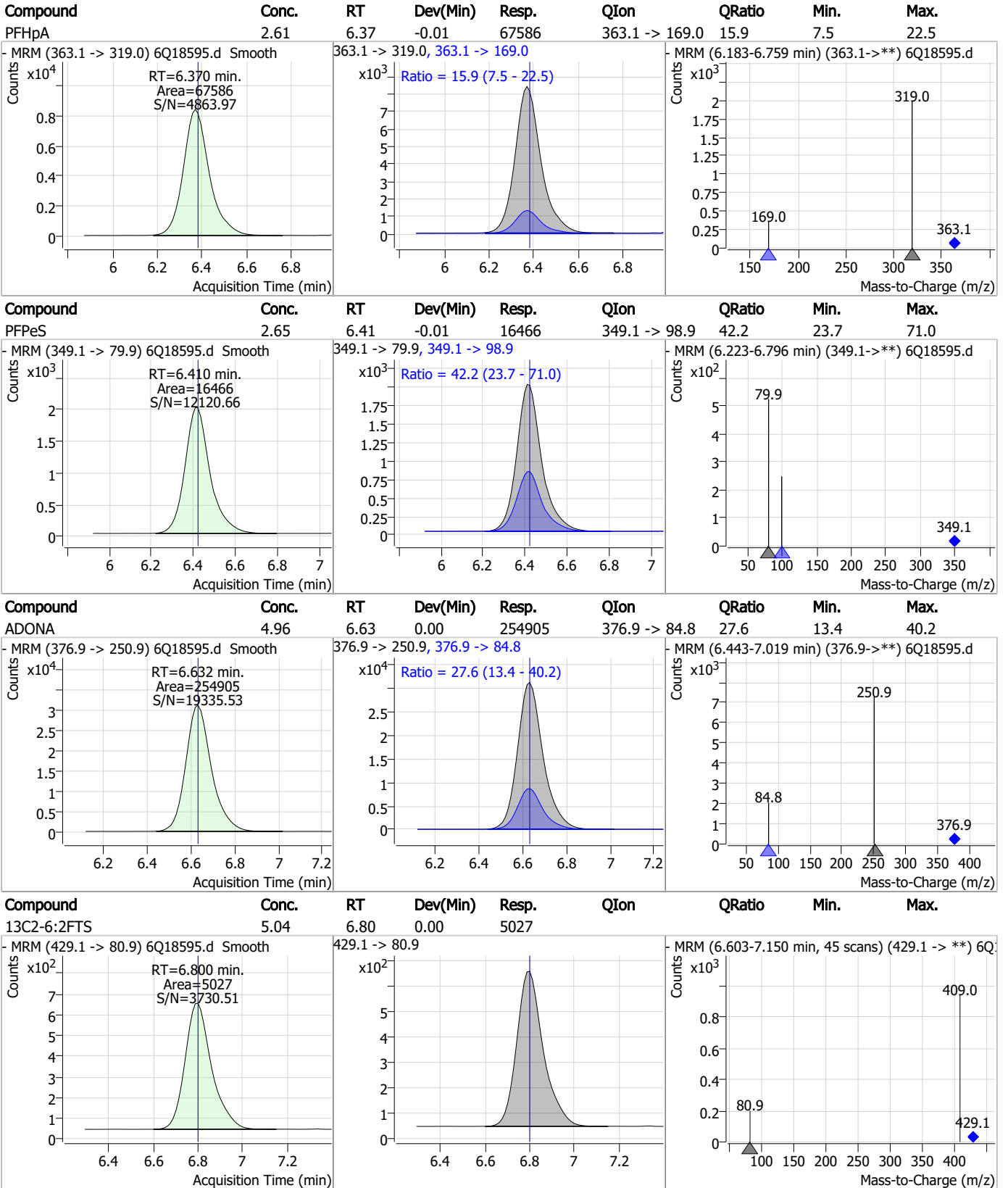
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.31	6.07	-0.01	250883	341.0 -> 217.0	71.9	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.37	0.00	58610	367.1 -> 322.0			

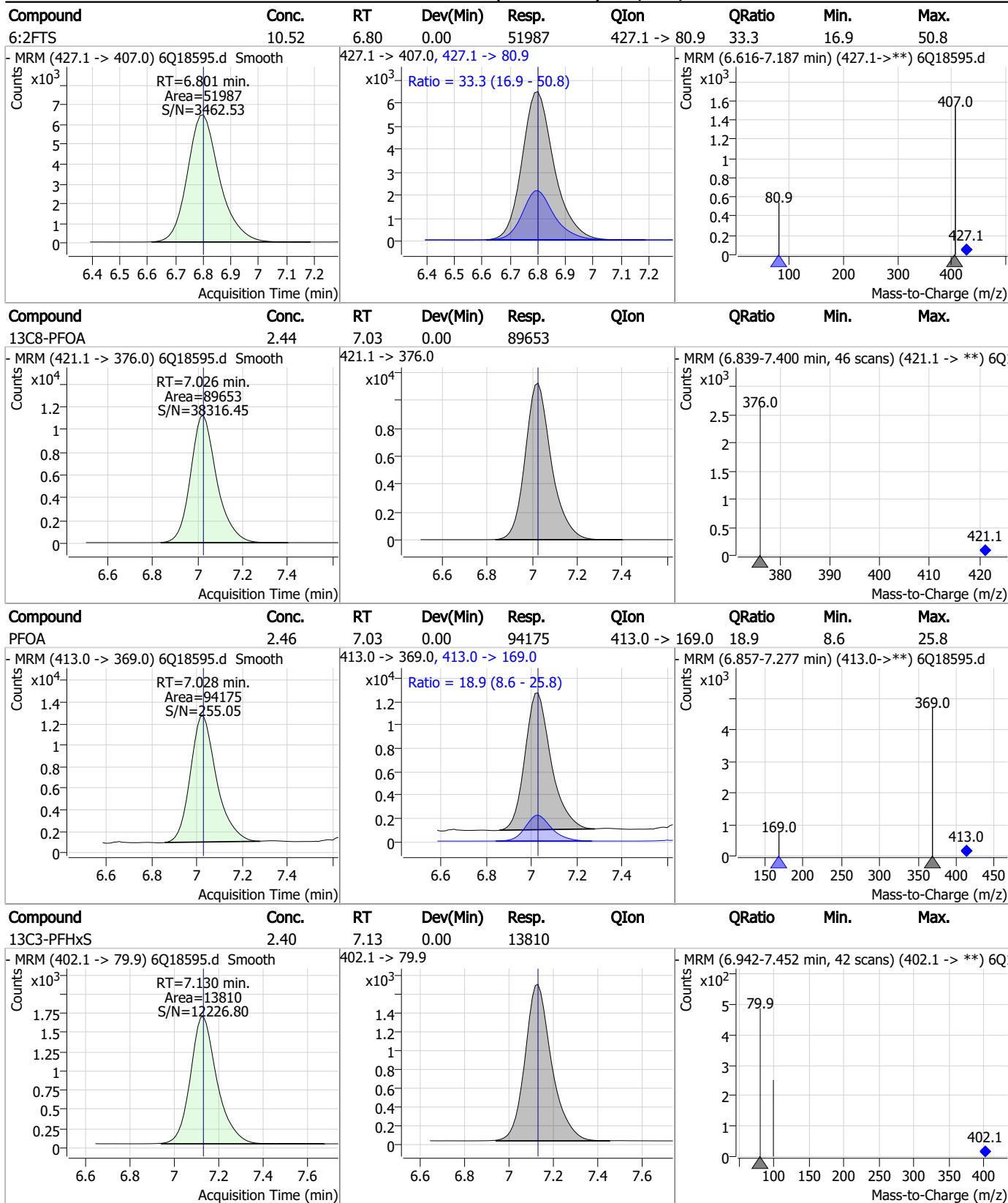


Perfluorinated Compounds by LC/MS/MS



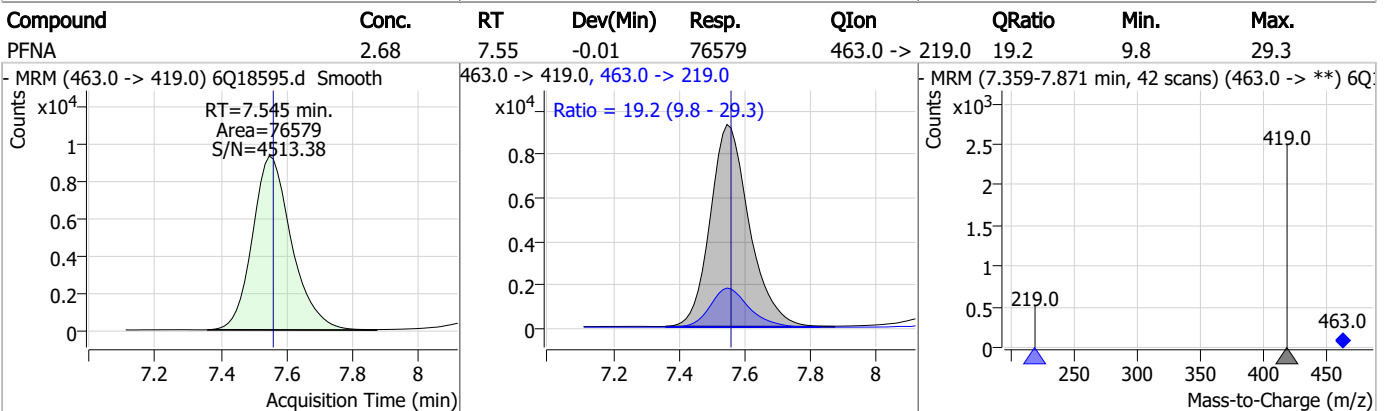
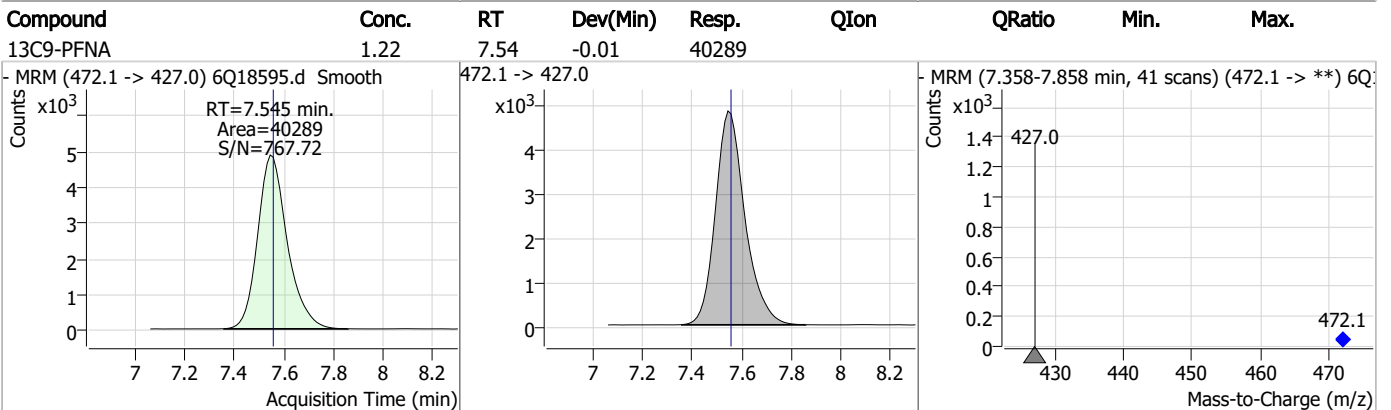
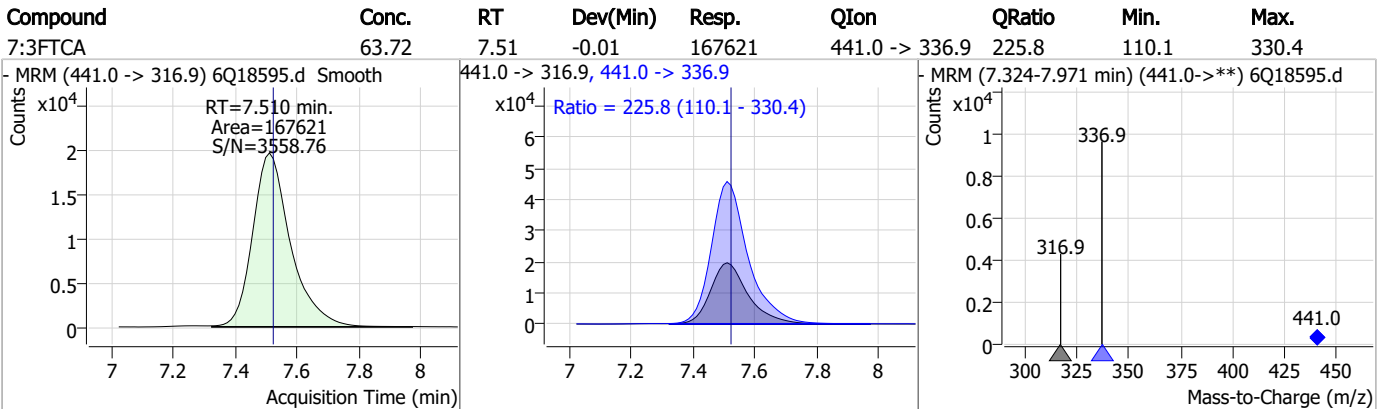
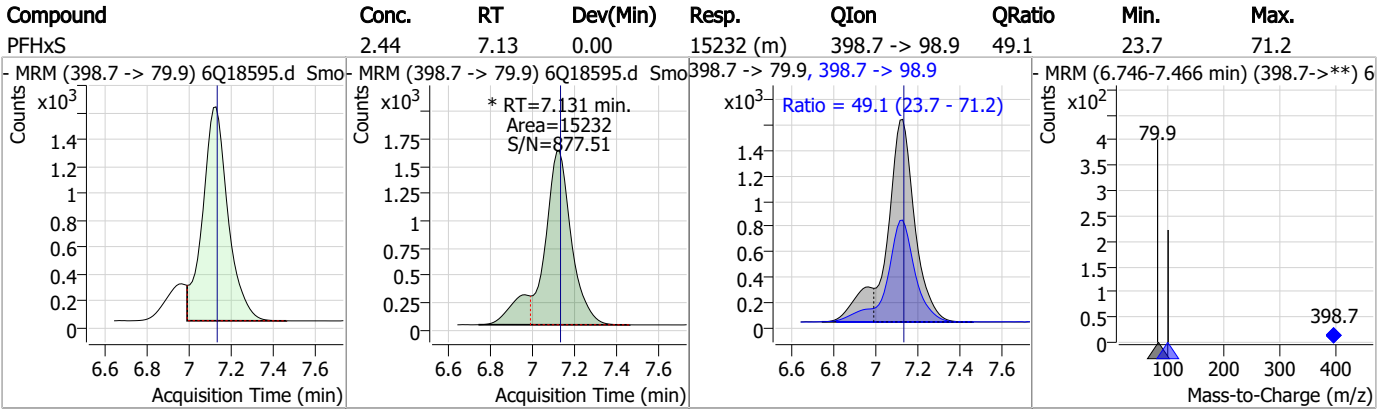
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



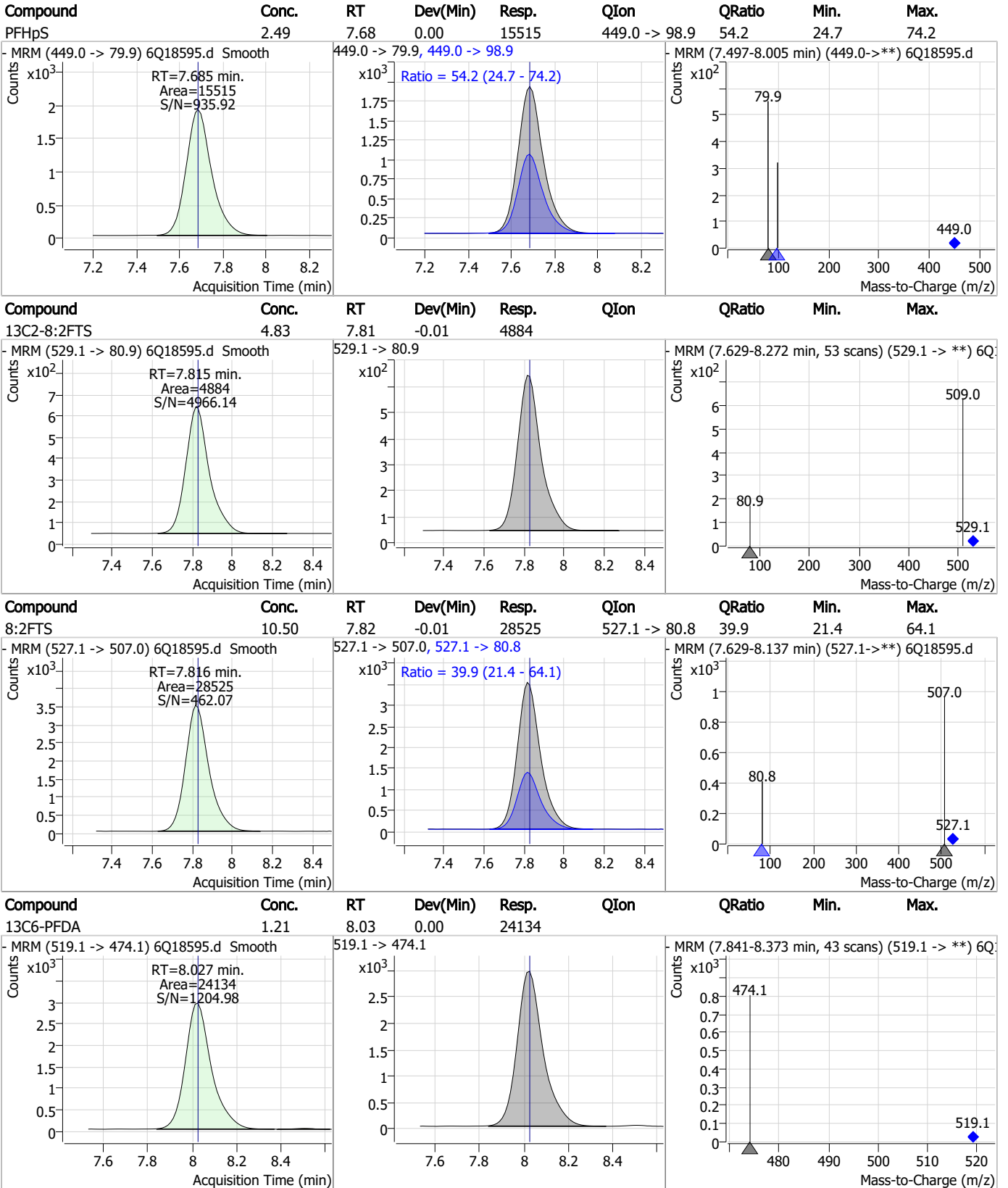
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

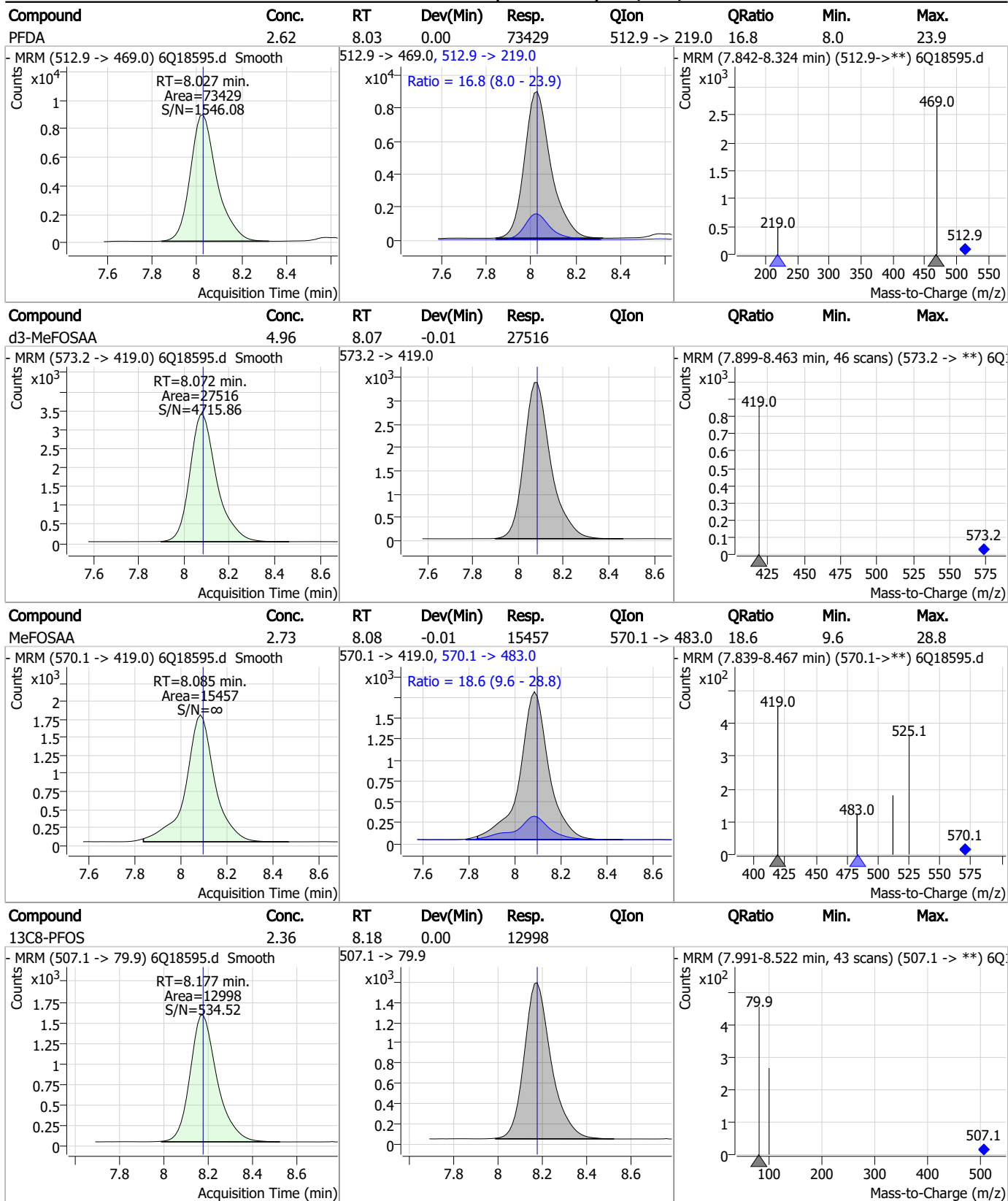
Perfluorinated Compounds by LC/MS/MS



7.7.10 7

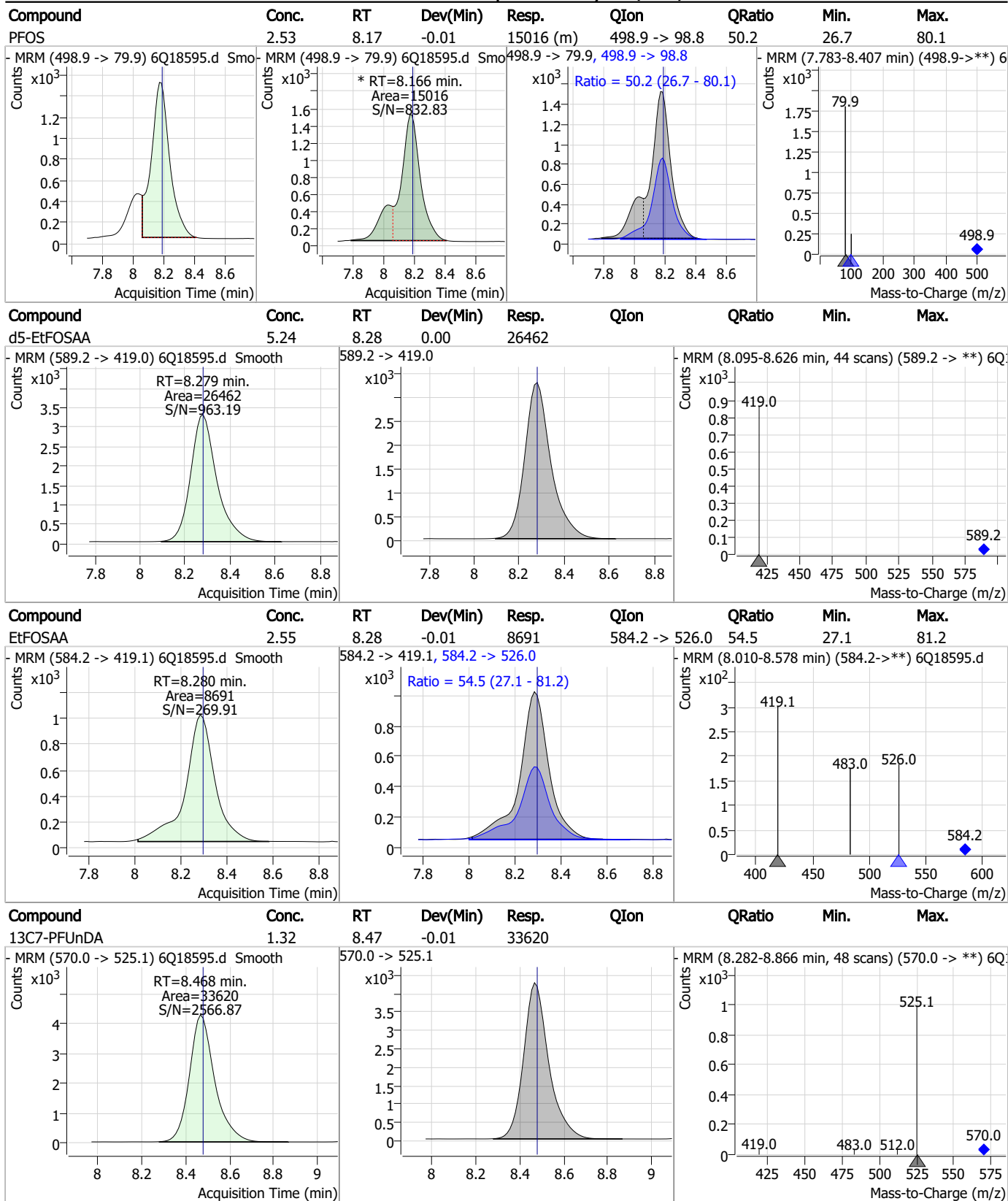


Perfluorinated Compounds by LC/MS/MS



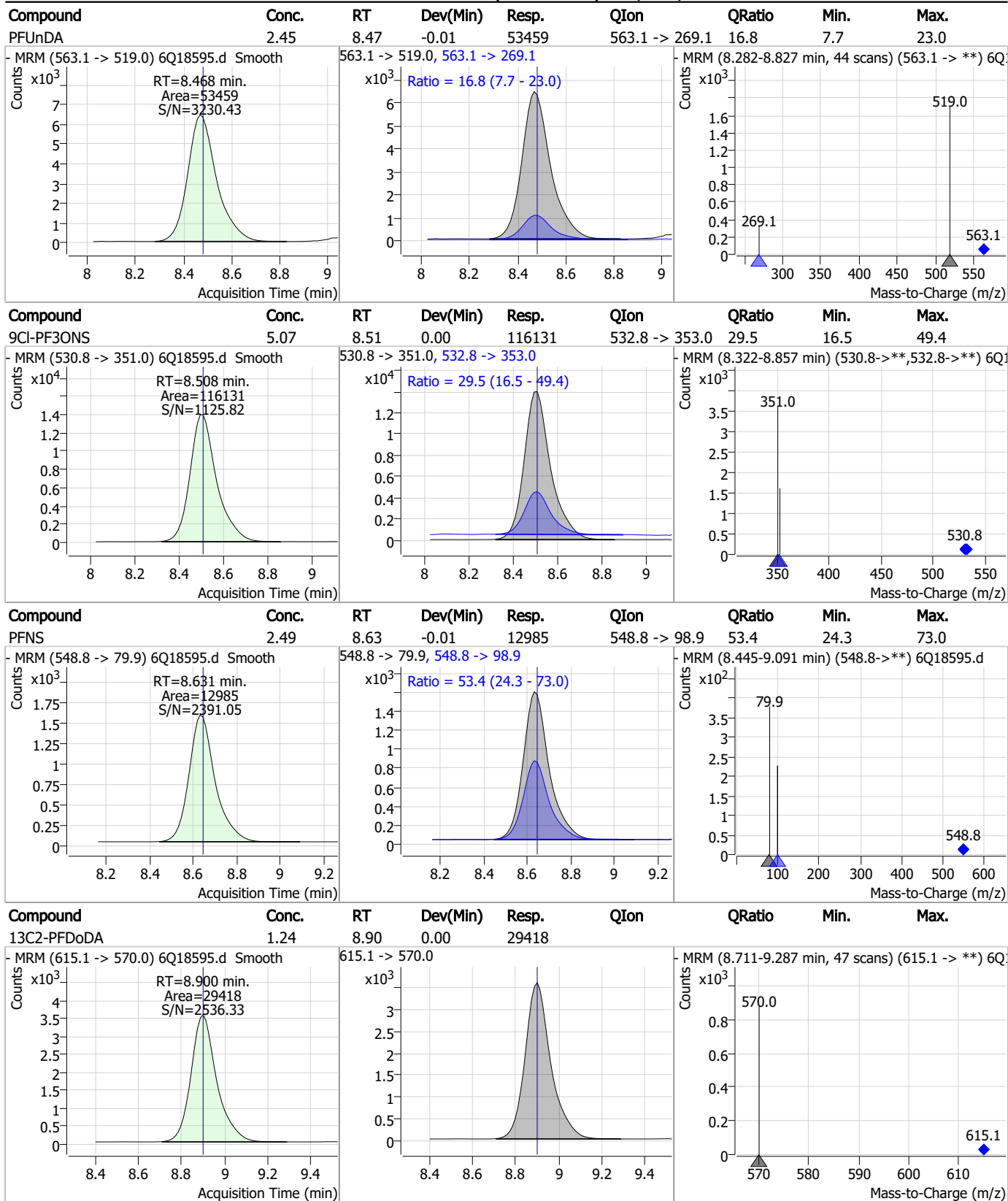
7.7.10
7

Perfluorinated Compounds by LC/MS/MS



7.7.10
7

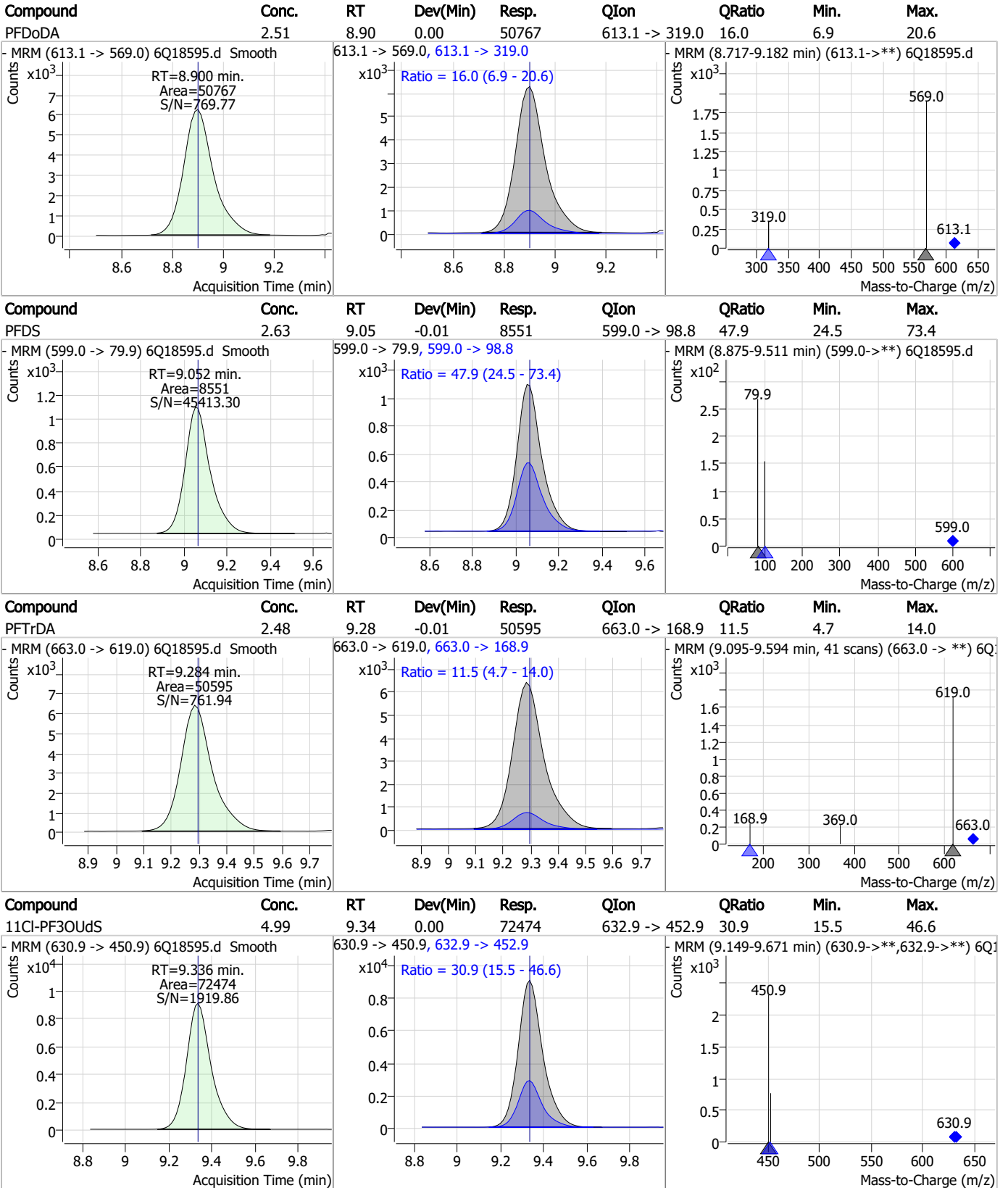
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



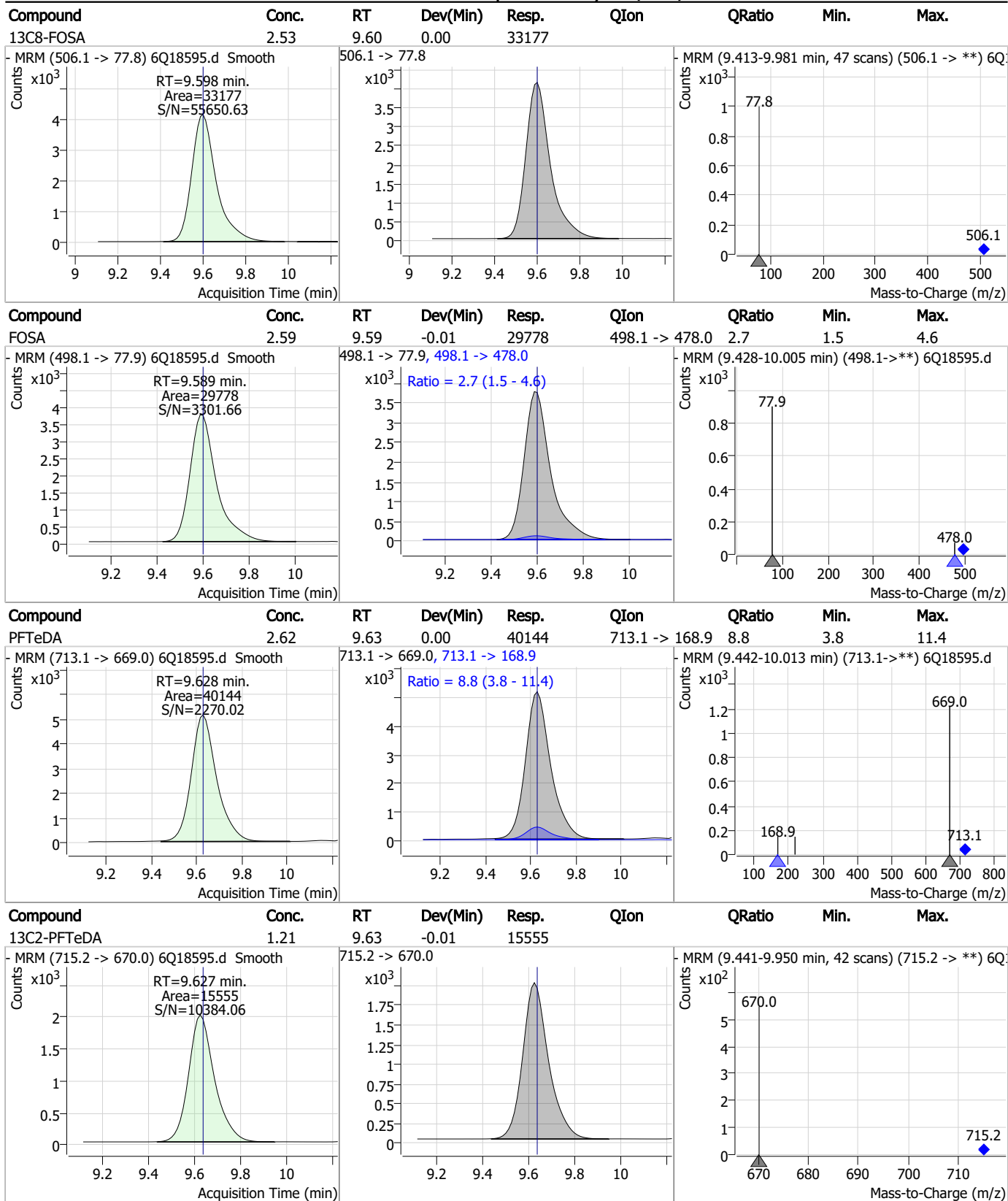
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



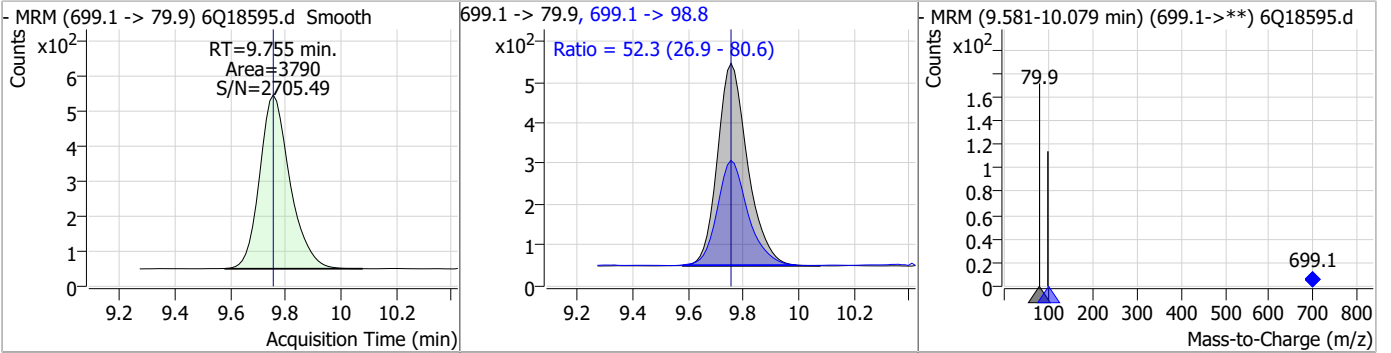
Perfluorinated Compounds by LC/MS/MS



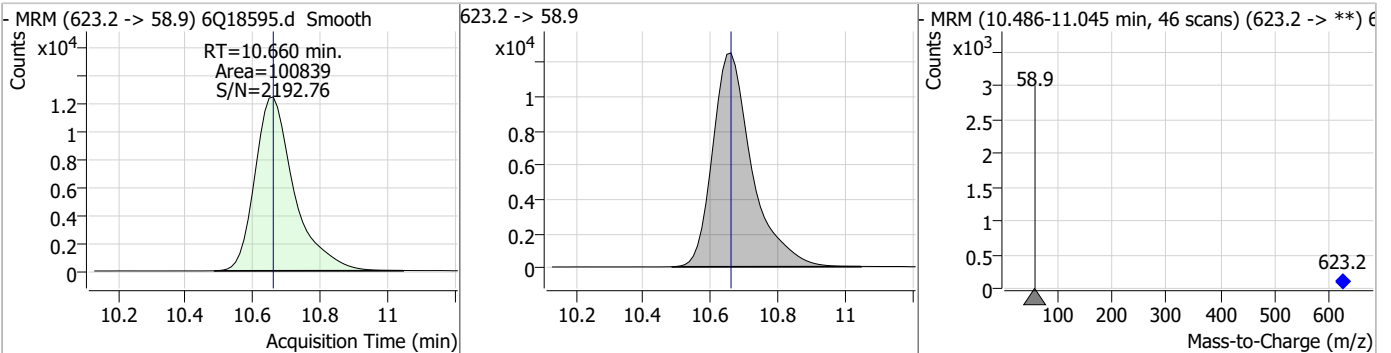
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

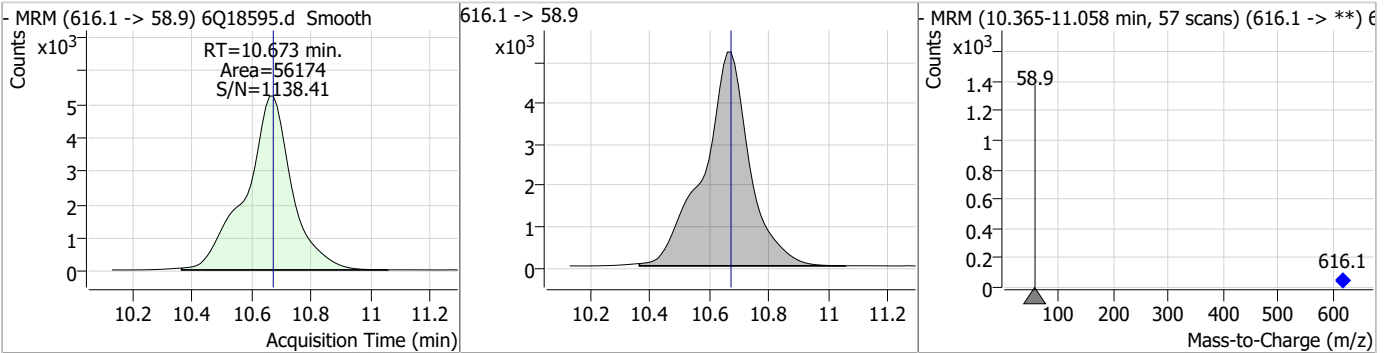
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.63	9.75	0.00	3790	699.1 -> 98.8	52.3	26.9	80.6



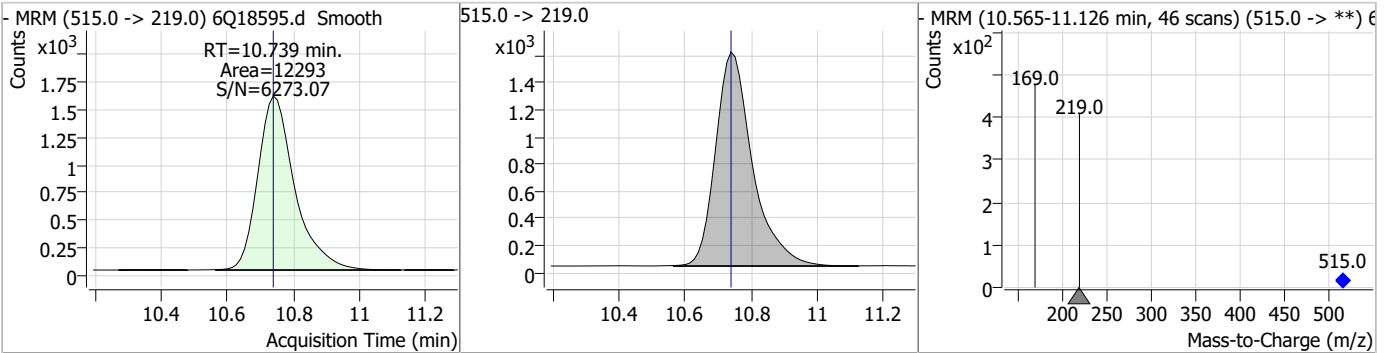
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.34	10.66	0.00	100839				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	14.02	10.67	0.00	56174				

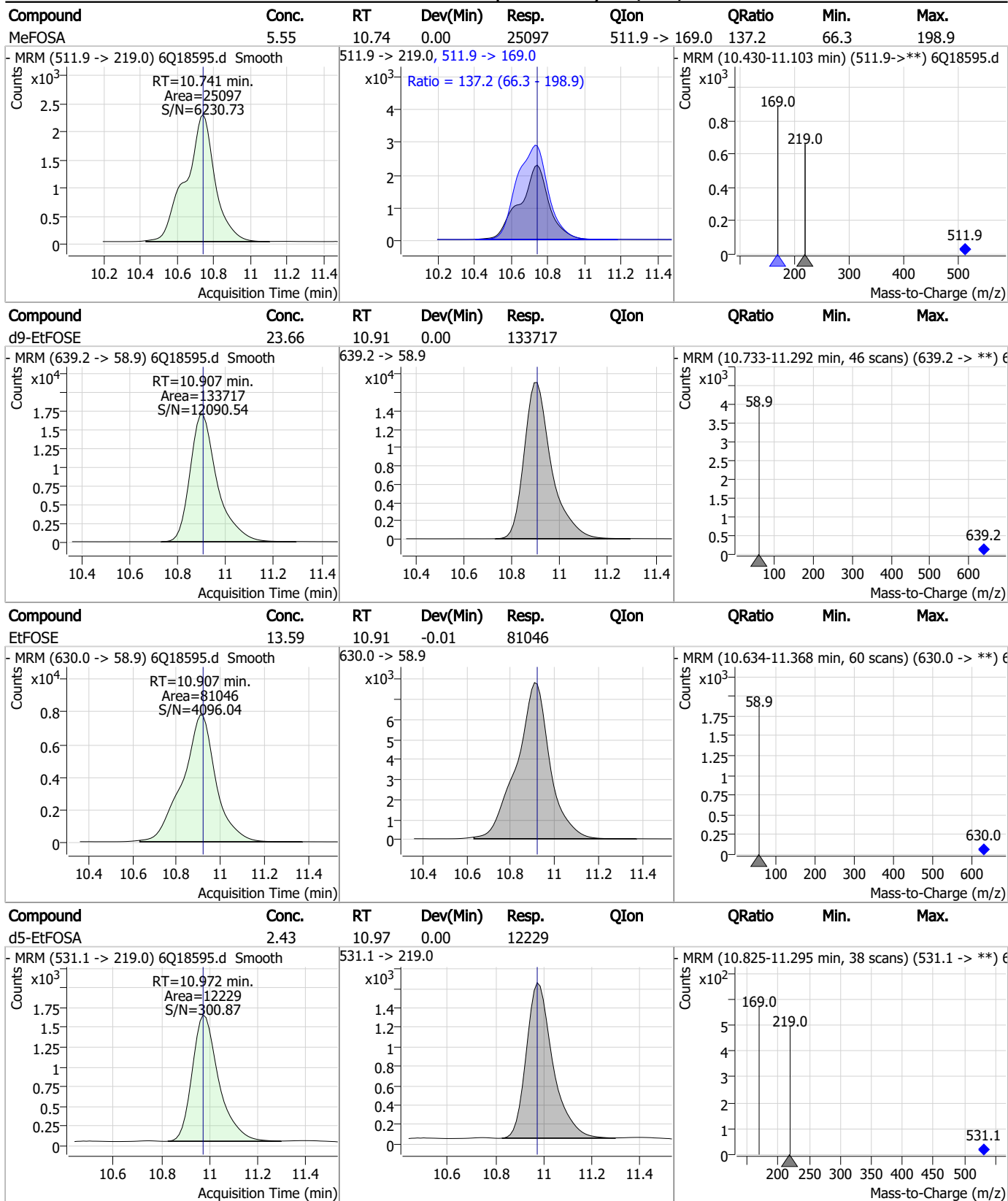


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	10.74	0.00	12293				



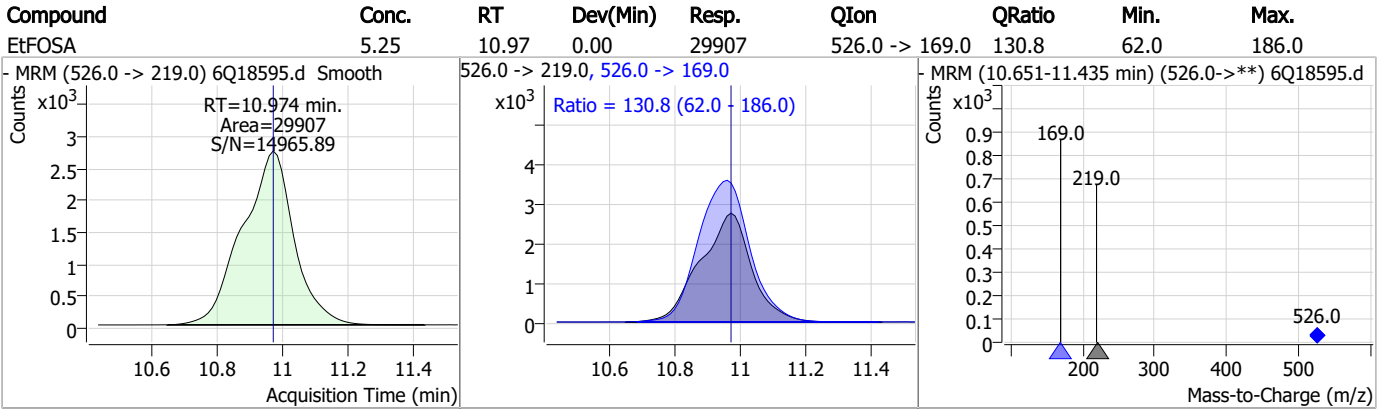
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10
7

Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18595.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:26 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.10.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18596.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:41:13 PM
 Sample Name : icv279-20
 Vial : P1-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	186962	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	62853	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	68388	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	62709	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	94819	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	43451	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25438	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32143	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	32578	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	17789	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	34684	2.50 µg/L	0.000
M3-PFBS	5.334	302.1 -> 79.9	24348	2.50 µg/L	0.000
M3-PFHxS	7.118	402.1 -> 79.9	14940	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	14671	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3772	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5749	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28514	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25180	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	115543	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	149096	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13637	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13536	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18696	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	78415	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	11177	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	100296	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	34929	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	53262	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61388	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3772	5.06 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5411	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5749	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFDoDA	8.900	615.1 -> 570.0	32578	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-PFTeDA	9.627	715.2 -> 670.0	17789	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFBS	5.334	302.1 -> 79.9	24348	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFHxS	7.118	402.1 -> 79.9	14940	2.39 µg/L	-0.012

7.7.11
7

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	2.822	216.8 -> 171.9	186962	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	62709	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFHxA	5.417	318.0 -> 273.0	68388	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C5-PFPeA	4.210	268.3 -> 223.0	62853	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C6-PFDA	8.014	519.1 -> 474.1	25438	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32143	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-FOSA	9.598	506.1 -> 77.8	34684	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOA	7.013	421.1 -> 376.0	94819	2.52 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOS	8.165	507.1 -> 79.9	14671	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C9-PFNA	7.545	472.1 -> 427.0	43451	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28514	4.72 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	43052	10.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	13536	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25180	4.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	115543	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	149096	24.28 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	13637	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	106559	19.45 µg/L	99
		327.1 -> 80.9	41236		
6:2FTS	6.789	427.1 -> 407.0	108000	20.31 µg/L	98
		427.1 -> 80.9	35107		
8:2FTS	7.816	527.1 -> 507.0	57936	18.12 µg/L	96
		527.1 -> 80.8	23329		
EtFOSAA	8.280	584.2 -> 419.1	68565	21.17 µg/L	95
		584.2 -> 526.0	34564		
FOSA	9.589	498.1 -> 77.9	212928	17.73 µg/L	99
		498.1 -> 478.0	6898		
MeFOSAA	8.085	570.1 -> 419.0	122540	20.90 µg/L	98
		570.1 -> 483.0	22605		
PFBA	2.818	212.8 -> 168.9	117681	19.01 µg/L	100
PFBS	5.323	298.7 -> 79.9	164900	19.91 µg/L	100
		298.7 -> 98.8	60156		
PFDA	8.014	512.9 -> 469.0	593616	20.13 µg/L	99
		512.9 -> 219.0	93514		
PFDoDA	8.900	613.1 -> 569.0	386783	17.29 µg/L	97
		613.1 -> 319.0	57188		
PFDS	9.052	599.0 -> 79.9	68402	18.65 µg/L	99

7.7.11
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	34080	19.31 µg/L	99
		363.1 -> 319.0	535964		
PFHpS	7.673	363.1 -> 169.0	83630	19.13 µg/L	97
		449.0 -> 79.9	134544		
PFHxA	5.407	449.0 -> 98.9	64128	18.15 µg/L	98
		313.0 -> 269.0	416654		
PFHxS	7.119	313.0 -> 118.9	22162	20.60 µg/L	99
		398.7 -> 79.9	139202		
PFNA	7.545	398.7 -> 98.9	65641	20.84 µg/L	100
		463.0 -> 419.0	641763		
PFNS	8.631	463.0 -> 219.0	125644	19.77 µg/L	100
		548.8 -> 79.9	116407		
PFOA	7.028	548.8 -> 98.9	56297	19.19 µg/L	100
		413.0 -> 369.0	776954		
PFOS	8.166	413.0 -> 169.0	134705	16.71 µg/L	95
		498.9 -> 79.9	112048		
PFPeA	4.212	498.9 -> 98.8	55641	19.67 µg/L	100
		263.0 -> 219.0	296977		
PFPeS	6.422	349.1 -> 79.9	130985	19.45 µg/L	99
		349.1 -> 98.9	62624		
PFTeDA	9.628	713.1 -> 669.0	332044	18.97 µg/L	97
		713.1 -> 168.9	28380		
PFTrDA	9.284	663.0 -> 619.0	360376	15.95 µg/L	94
		663.0 -> 168.9	41925		
PFUnDA	8.468	563.1 -> 519.0	390329	18.69 µg/L	96
		563.1 -> 269.1	66877		
11Cl-PF3OUdS	9.336	630.9 -> 450.9	315465	19.53 µg/L	98
		632.9 -> 452.9	94491		
9Cl-PF3ONS	8.495	530.8 -> 351.0	510603	20.06 µg/L	97
		532.8 -> 353.0	158372		
ADONA	6.632	376.9 -> 250.9	988864	17.29 µg/L	99
		376.9 -> 84.8	270258		
HFPO-DA	5.783	284.9 -> 168.9	67617	18.53 µg/L	95
		284.9 -> 184.9	7725		
3:3FTCA	3.659	241.0 -> 177.0	18175	18.81 µg/L	97
		241.0 -> 117.0	2385		
5:3FTCA	6.074	341.0 -> 237.1	81054	19.62 µg/L	95
		341.0 -> 217.0	61014		
7:3FTCA	7.510	441.0 -> 316.9	53207	18.81 µg/L	90
		441.0 -> 336.9	125849		
EtFOSA	10.974	526.0 -> 219.0	112015	17.62 µg/L	89
		526.0 -> 169.0	125550		
EtFOSE	10.920	630.0 -> 58.9	660042	99.23 µg/L	100
		511.9 -> 219.0	95732		
MeFOSA	10.741	511.9 -> 169.0	105640	19.23 µg/L	81
		616.1 -> 58.9	449429		
MeFOSE	10.673	699.1 -> 79.9	28833	97.88 µg/L	100
		699.1 -> 98.8	15285		
PFDoDS	9.755	295.0 -> 201.0	53119	17.69 µg/L	99
		295.0 -> 84.9	13945		
NFDHA	5.288	279.0 -> 85.1	201256	19.00 µg/L	98
		229.0 -> 84.9	156145		
PFMBA	4.626	314.8 -> 134.9	490283	19.54 µg/L	100
		314.8 -> 82.9	16928		
PFMPA	3.351			16.82 µg/L	99
PFEESA	5.862				

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



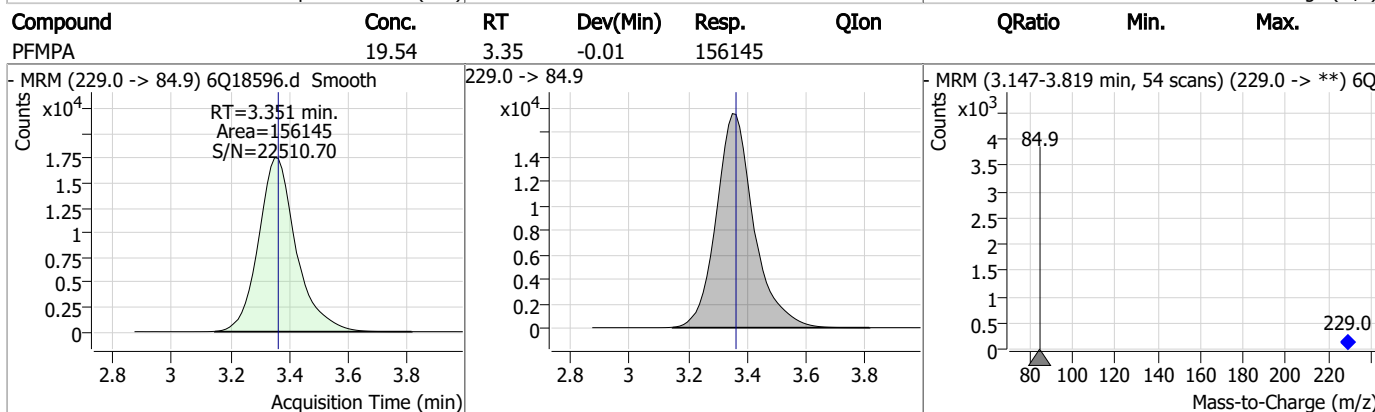
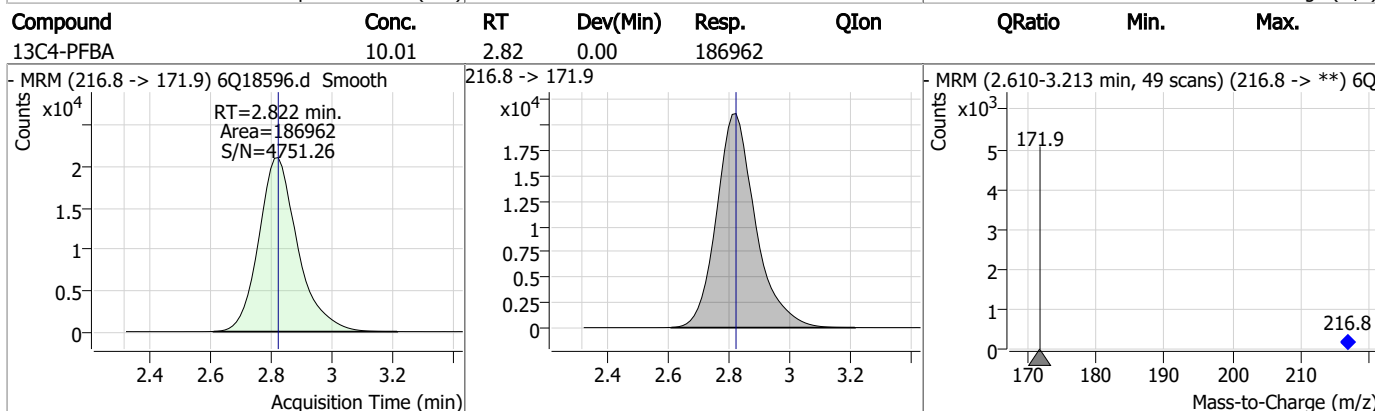
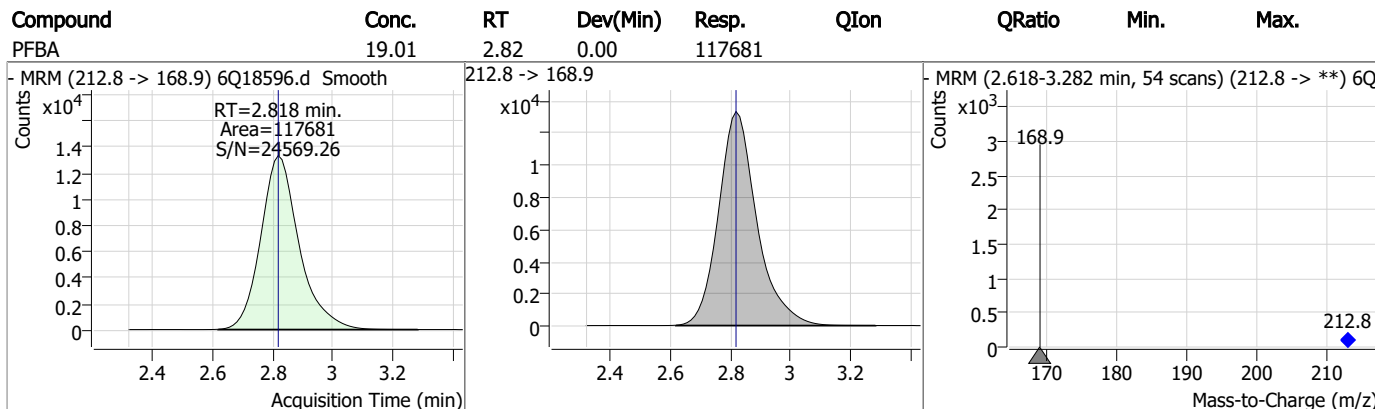
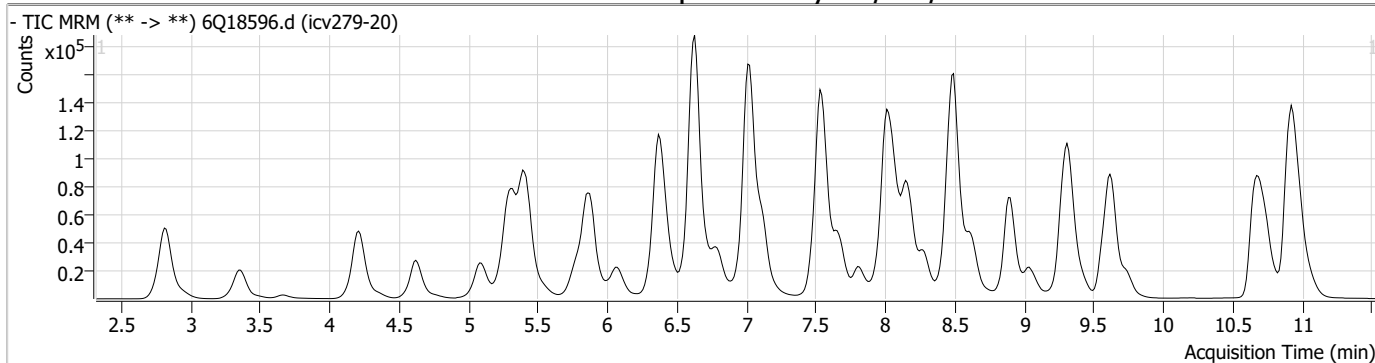
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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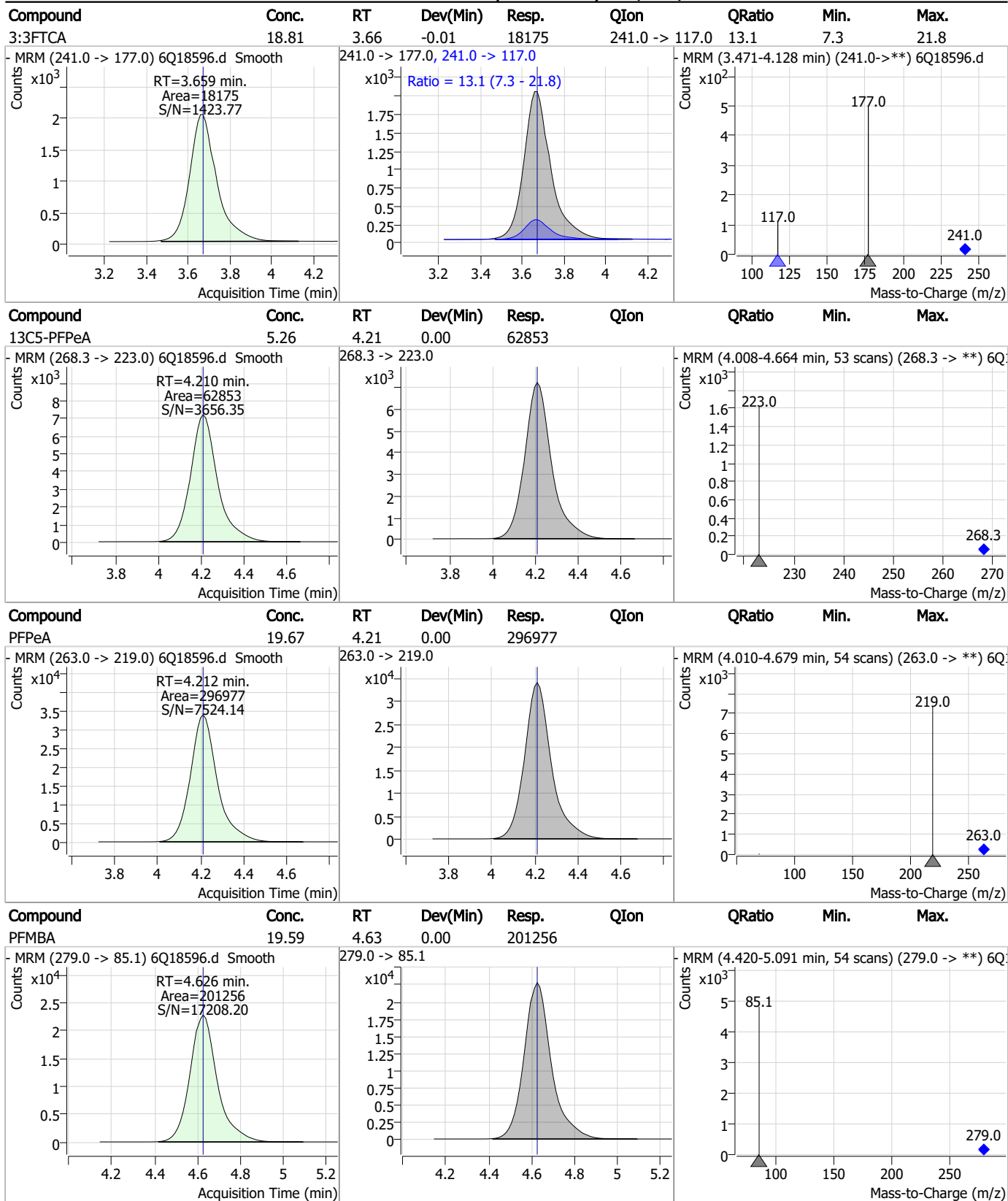
7.7.11

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Perfluorinated Compounds by LC/MS/MS



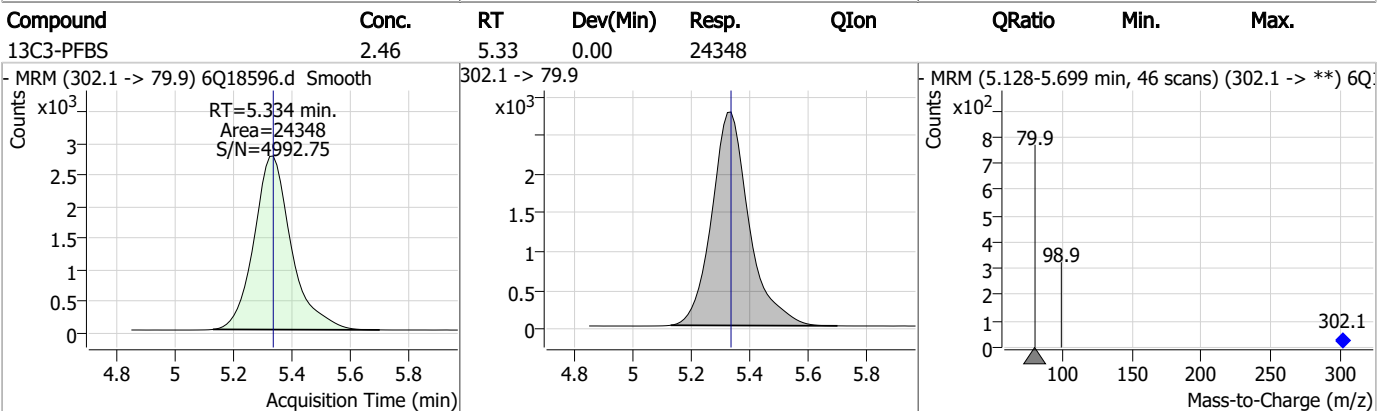
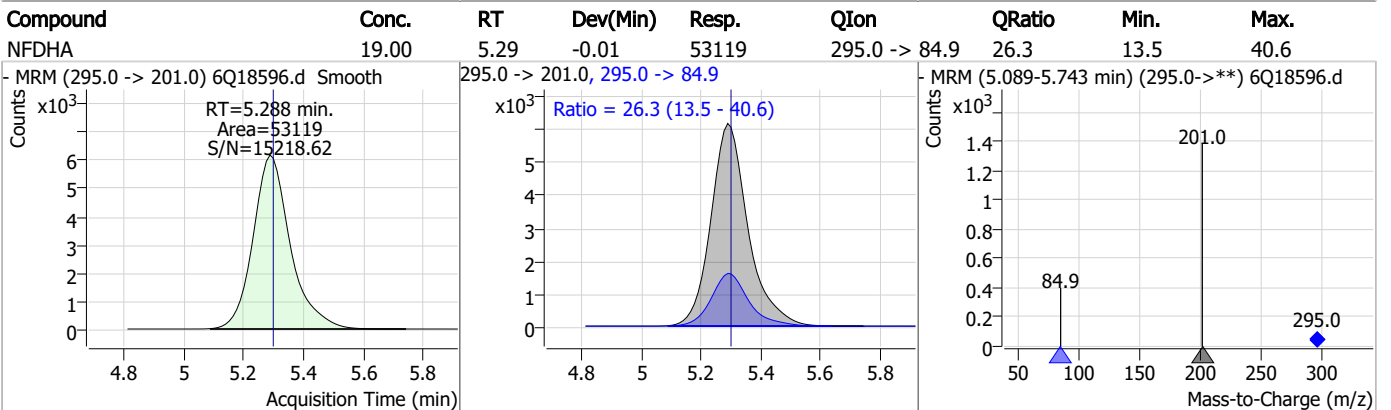
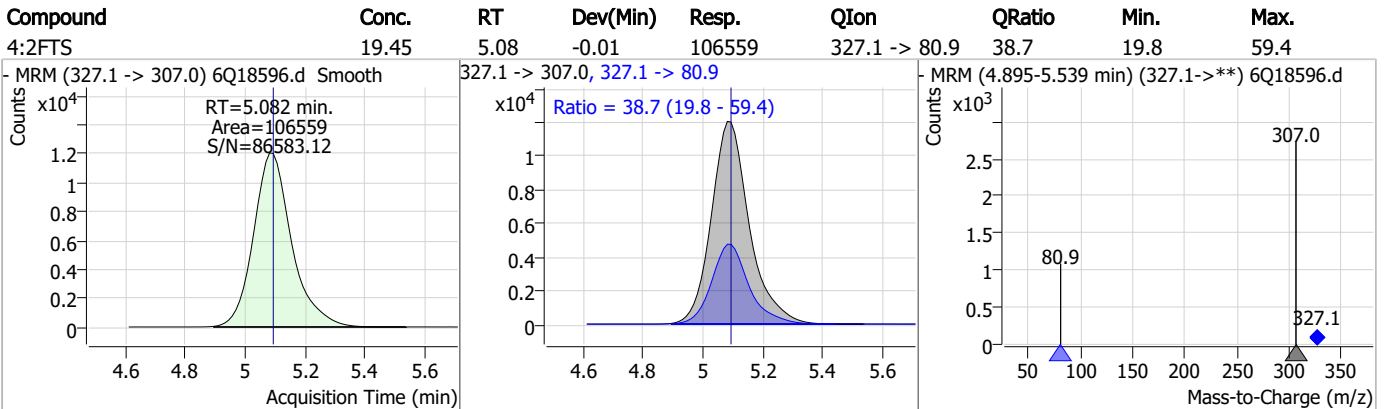
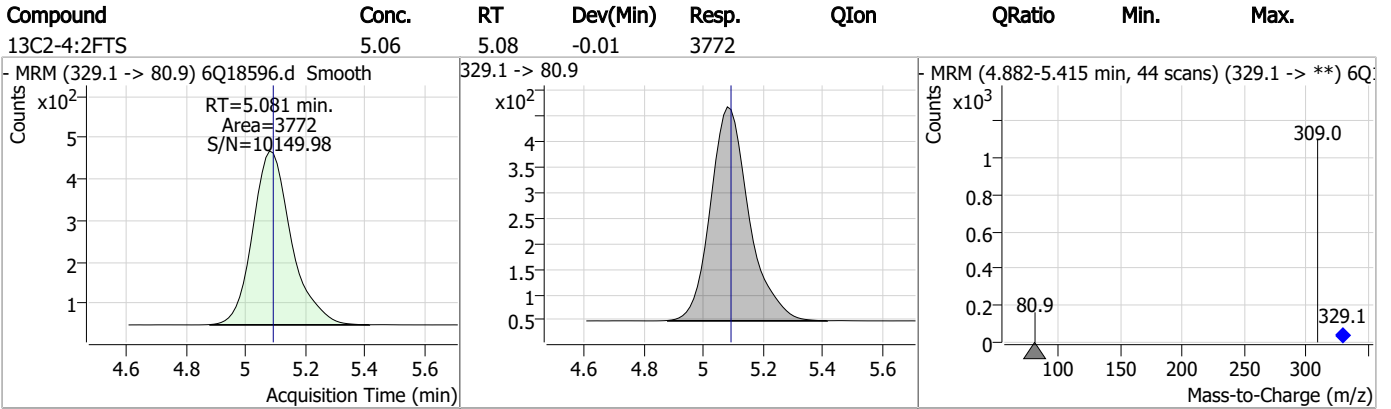
Perfluorinated Compounds by LC/MS/MS



7.7.11

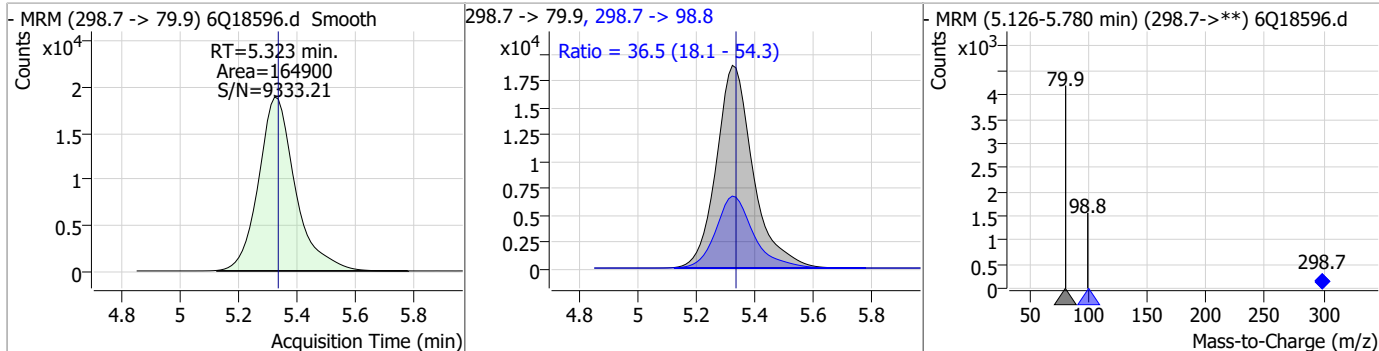
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Perfluorinated Compounds by LC/MS/MS

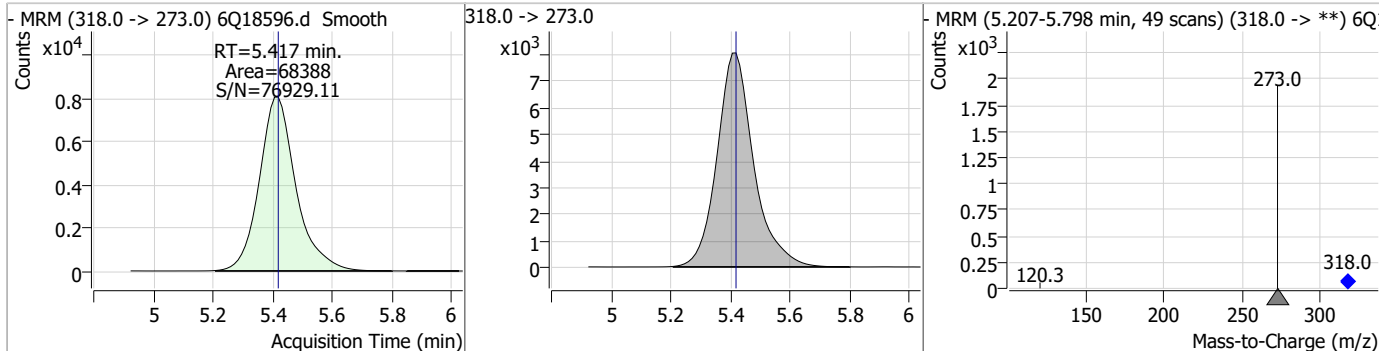


Perfluorinated Compounds by LC/MS/MS

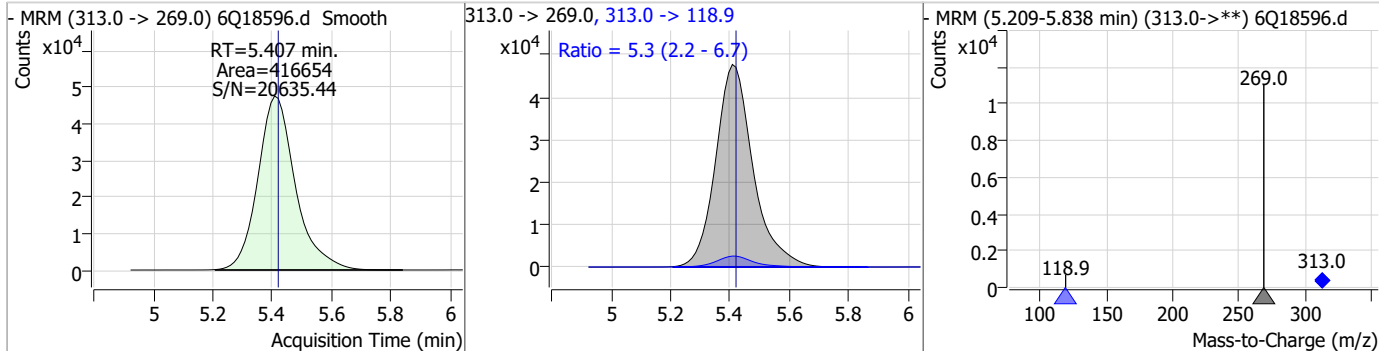
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.91	5.32	-0.01	164900	298.7 -> 98.8	36.5	18.1	54.3



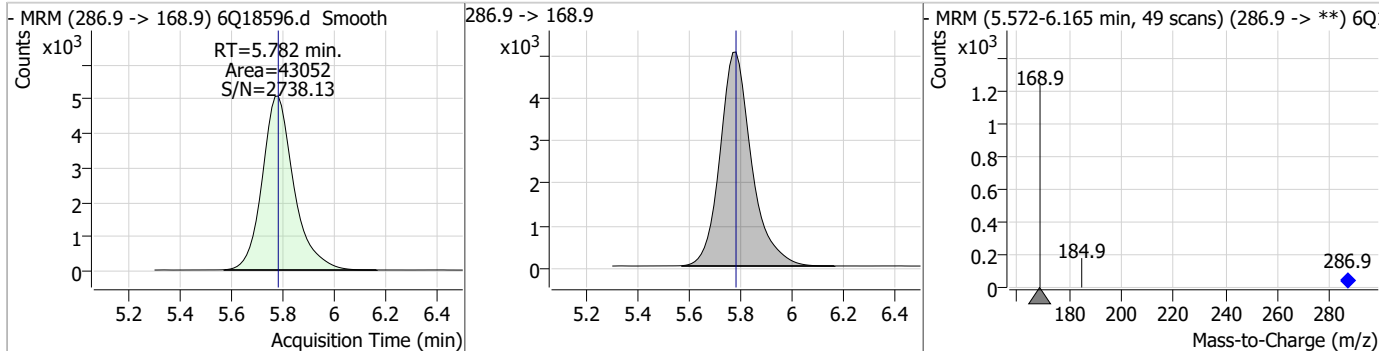
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.63	5.42	0.00	68388				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.15	5.41	-0.01	416654	313.0 -> 118.9	5.3	2.2	6.7

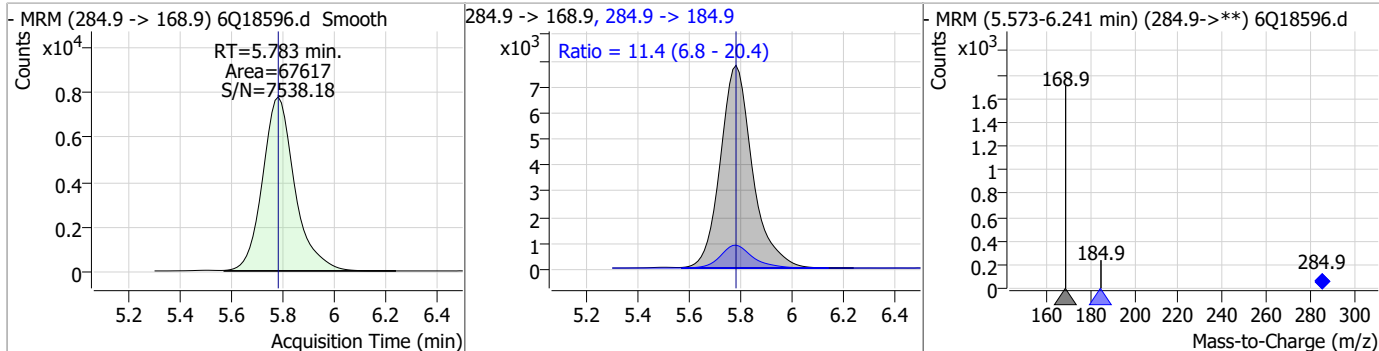


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	5.78	0.00	43052				

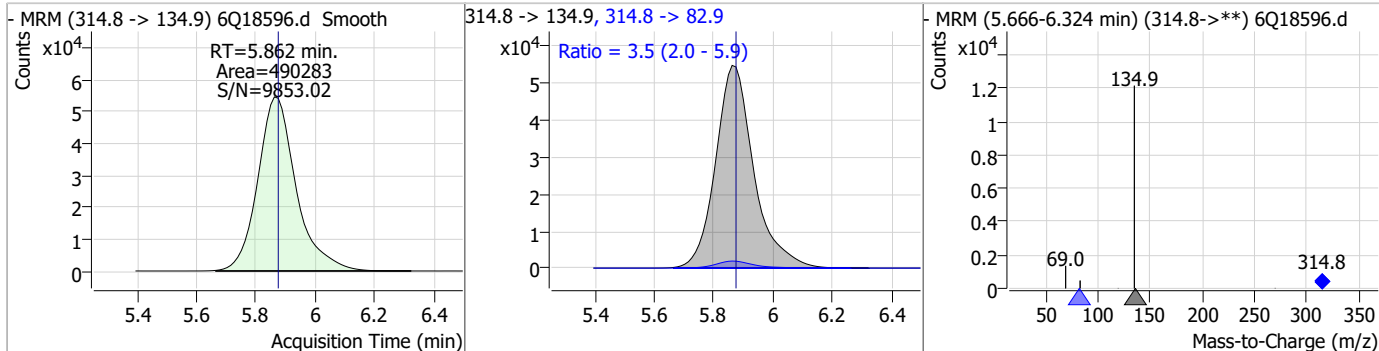


Perfluorinated Compounds by LC/MS/MS

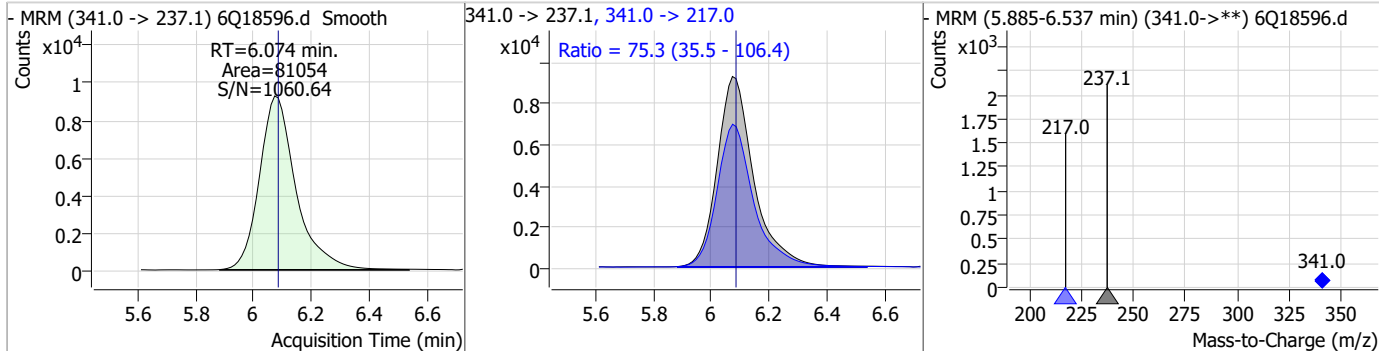
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.53	5.78	0.00	67617	284.9 -> 184.9	11.4	6.8	20.4



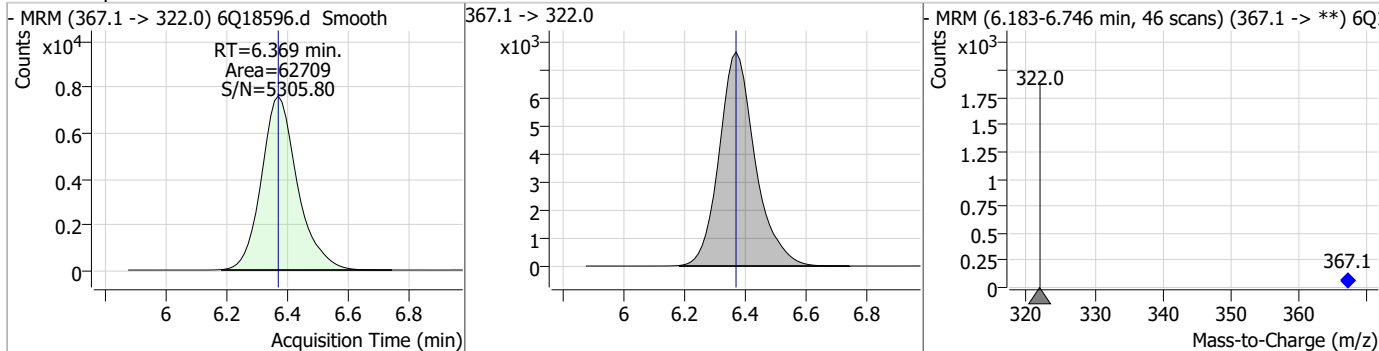
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	16.82	5.86	-0.01	490283	314.8 -> 82.9	3.5	2.0	5.9



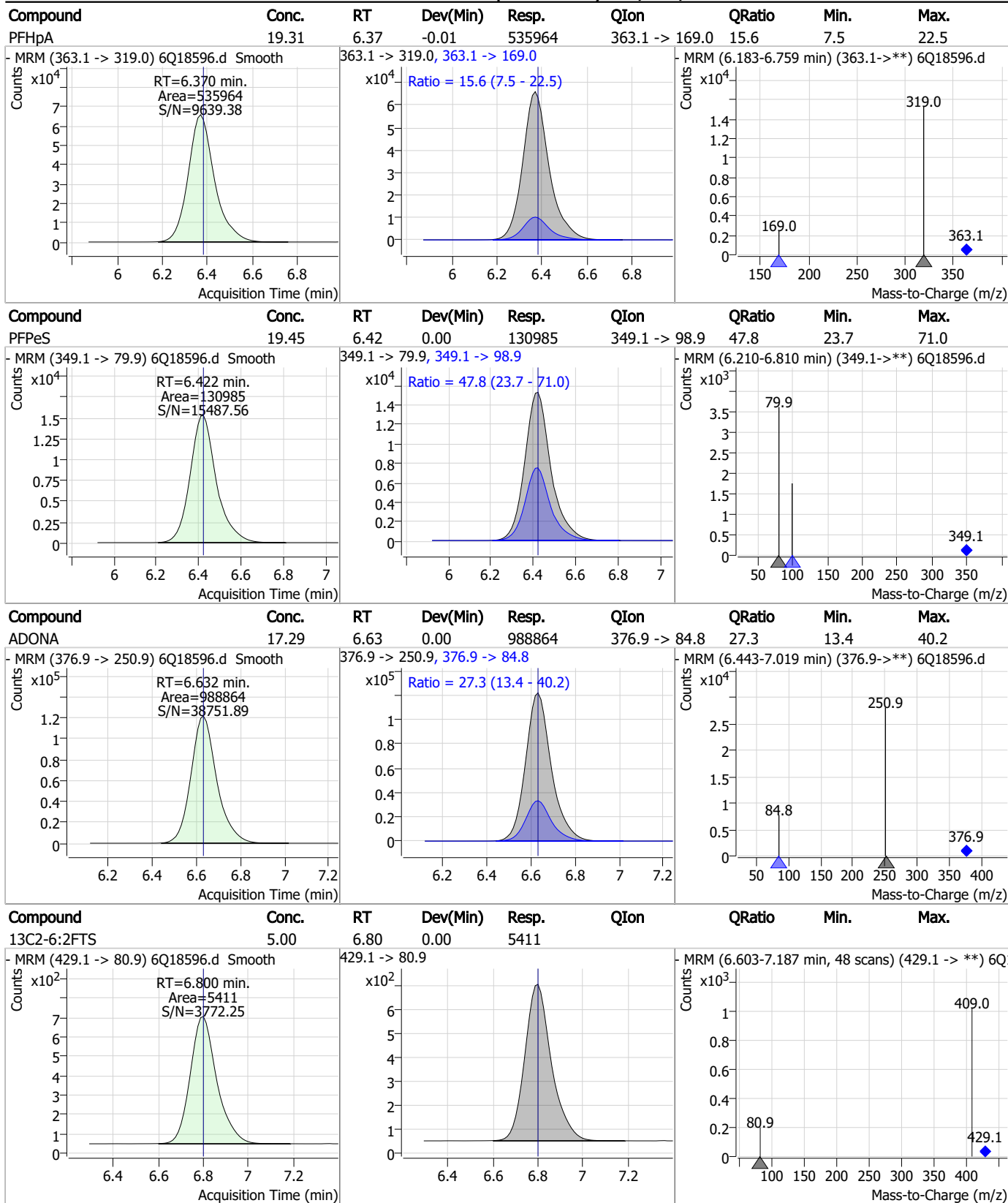
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	19.62	6.07	-0.01	81054	341.0 -> 217.0	75.3	35.5	106.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.61	6.37	0.00	62709	367.1 -> 322.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

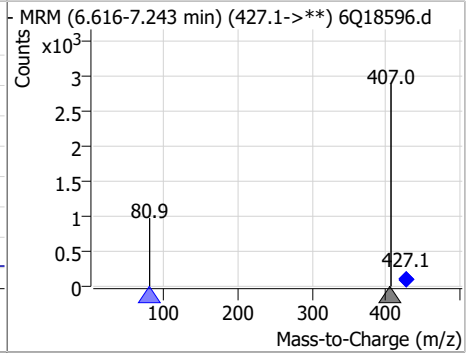
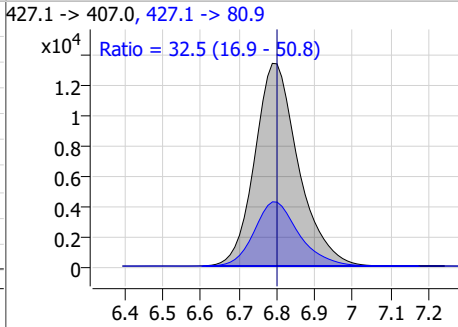
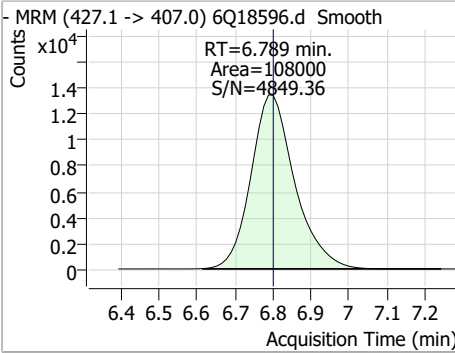


7.7.11
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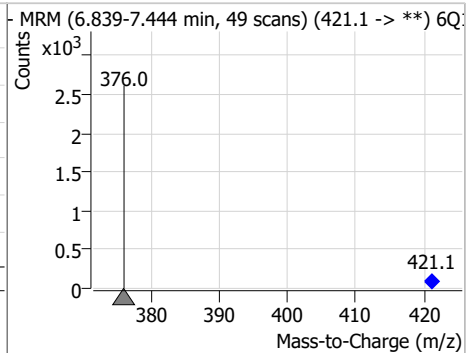
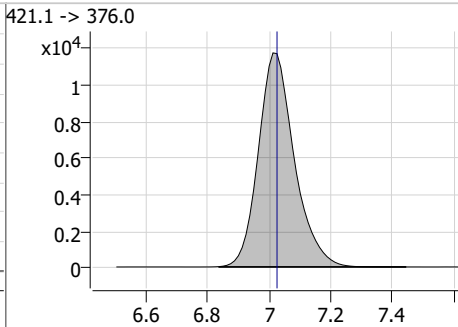
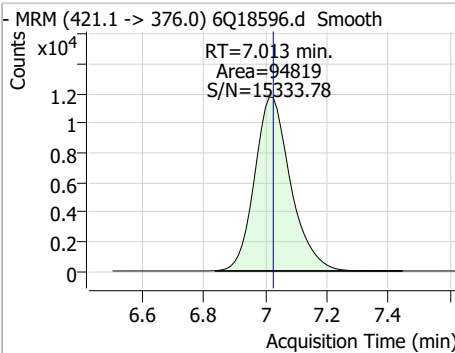


Perfluorinated Compounds by LC/MS/MS

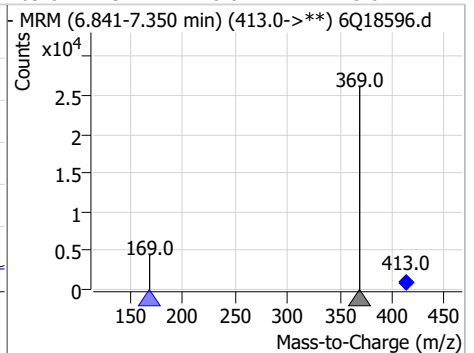
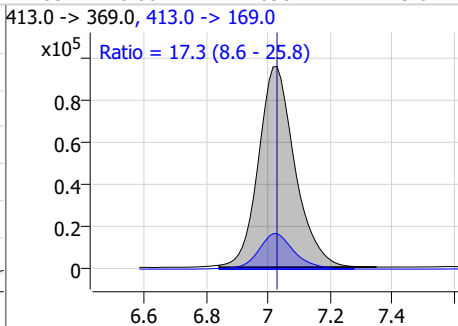
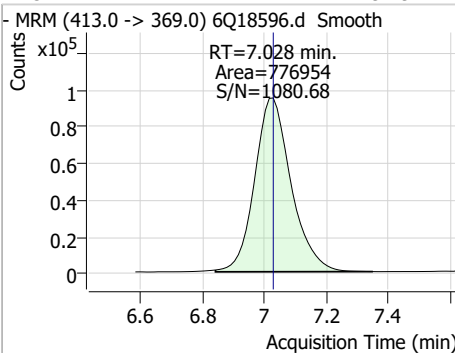
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.31	6.79	-0.01	108000	427.1 -> 80.9	32.5	16.9	50.8



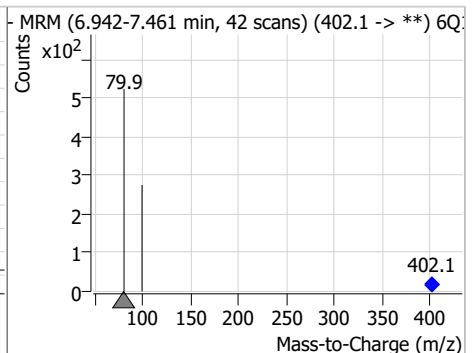
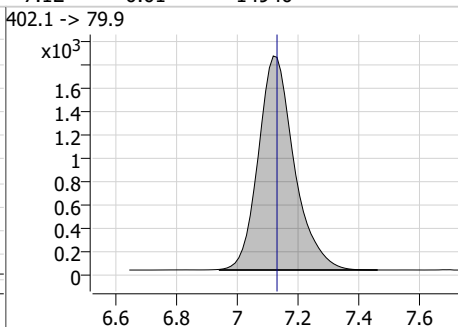
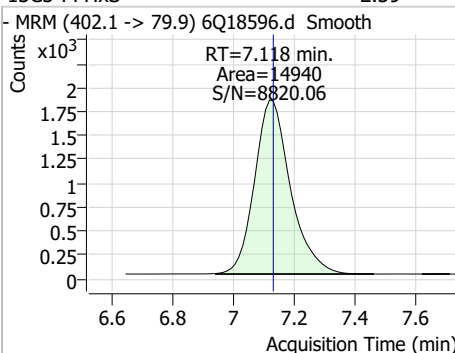
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.01	-0.01	94819	421.1 -> 376.0			



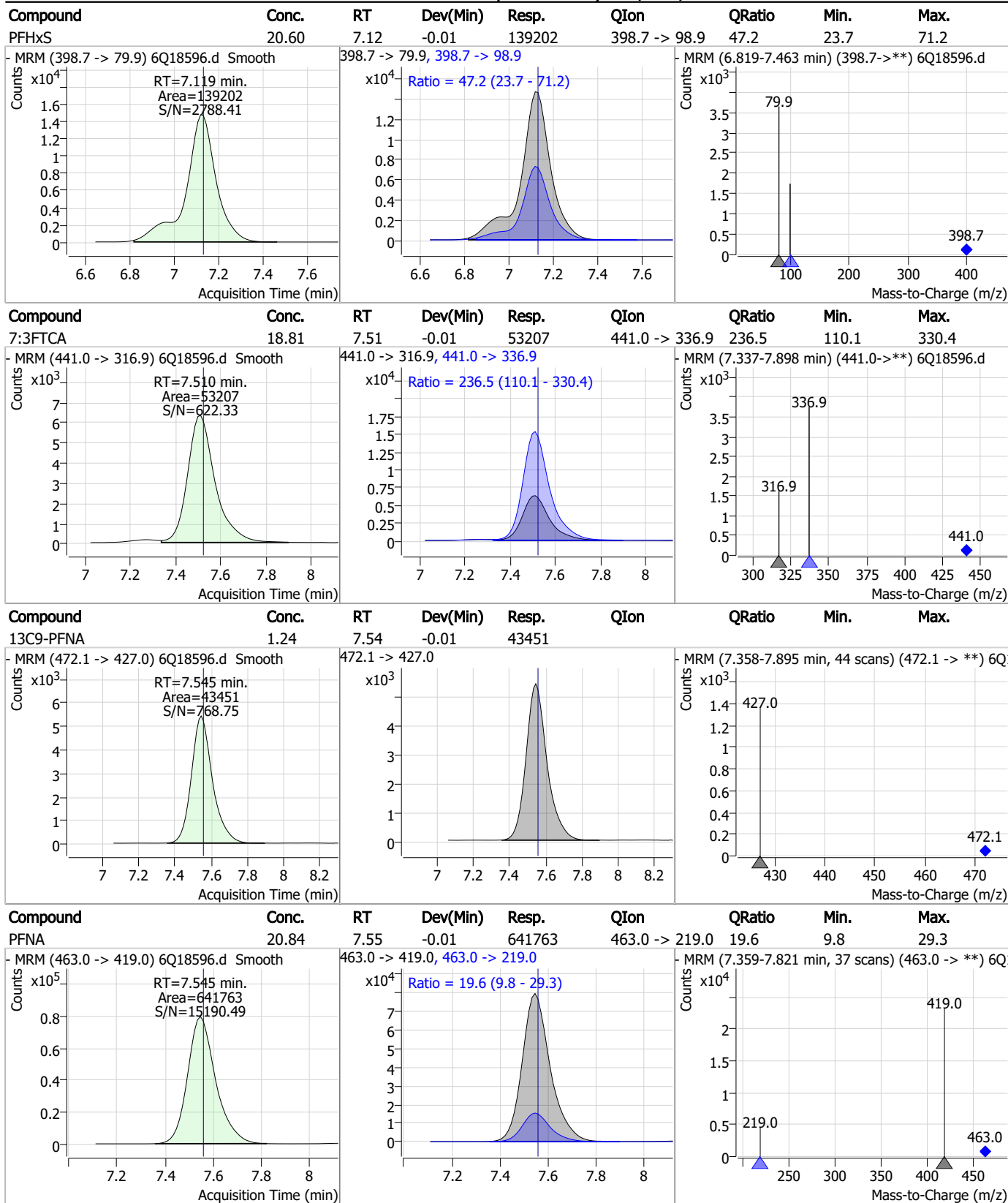
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.19	7.03	0.00	776954	413.0 -> 169.0	17.3	8.6	25.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.39	7.12	-0.01	14940	402.1 -> 79.9			

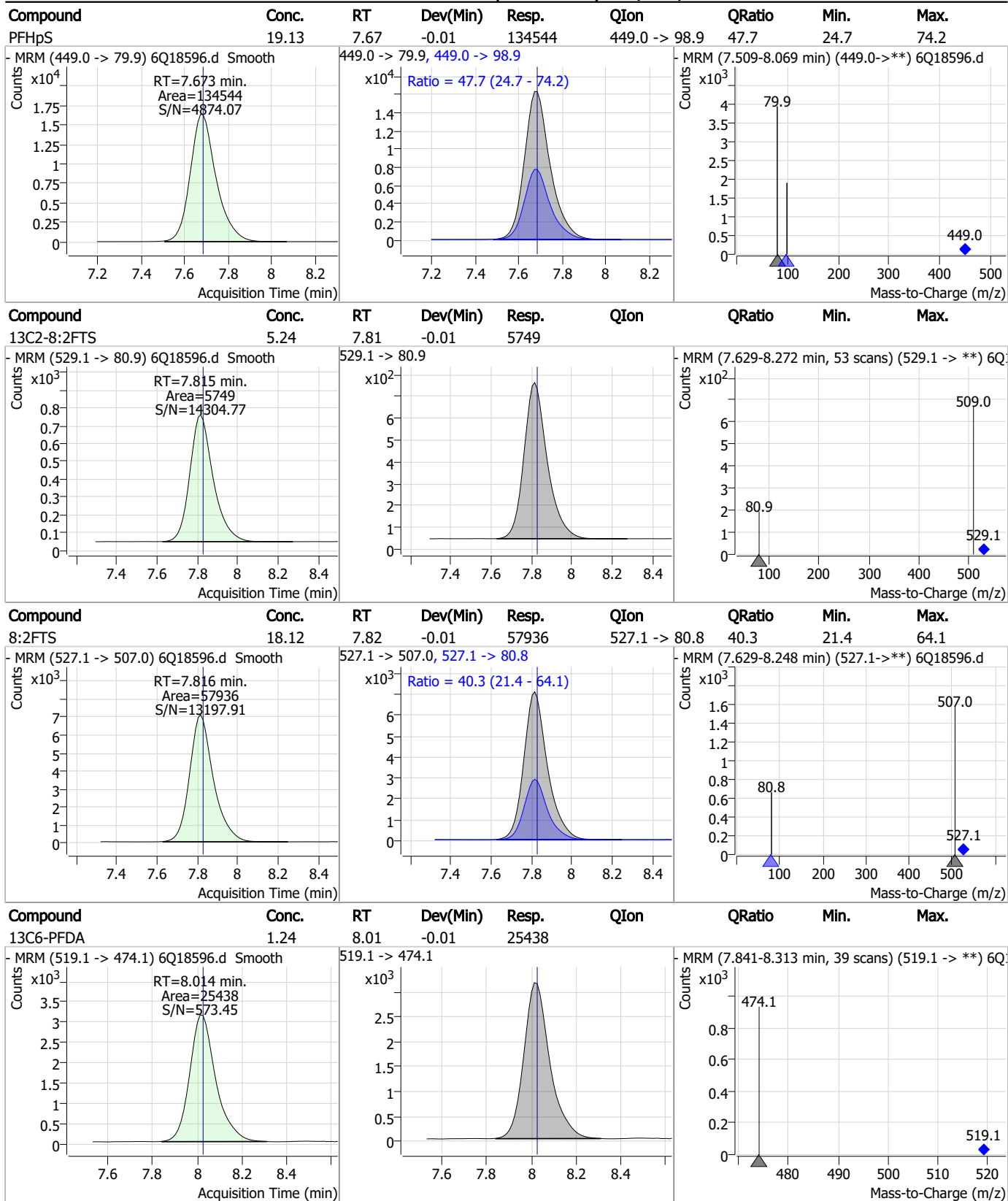


Perfluorinated Compounds by LC/MS/MS



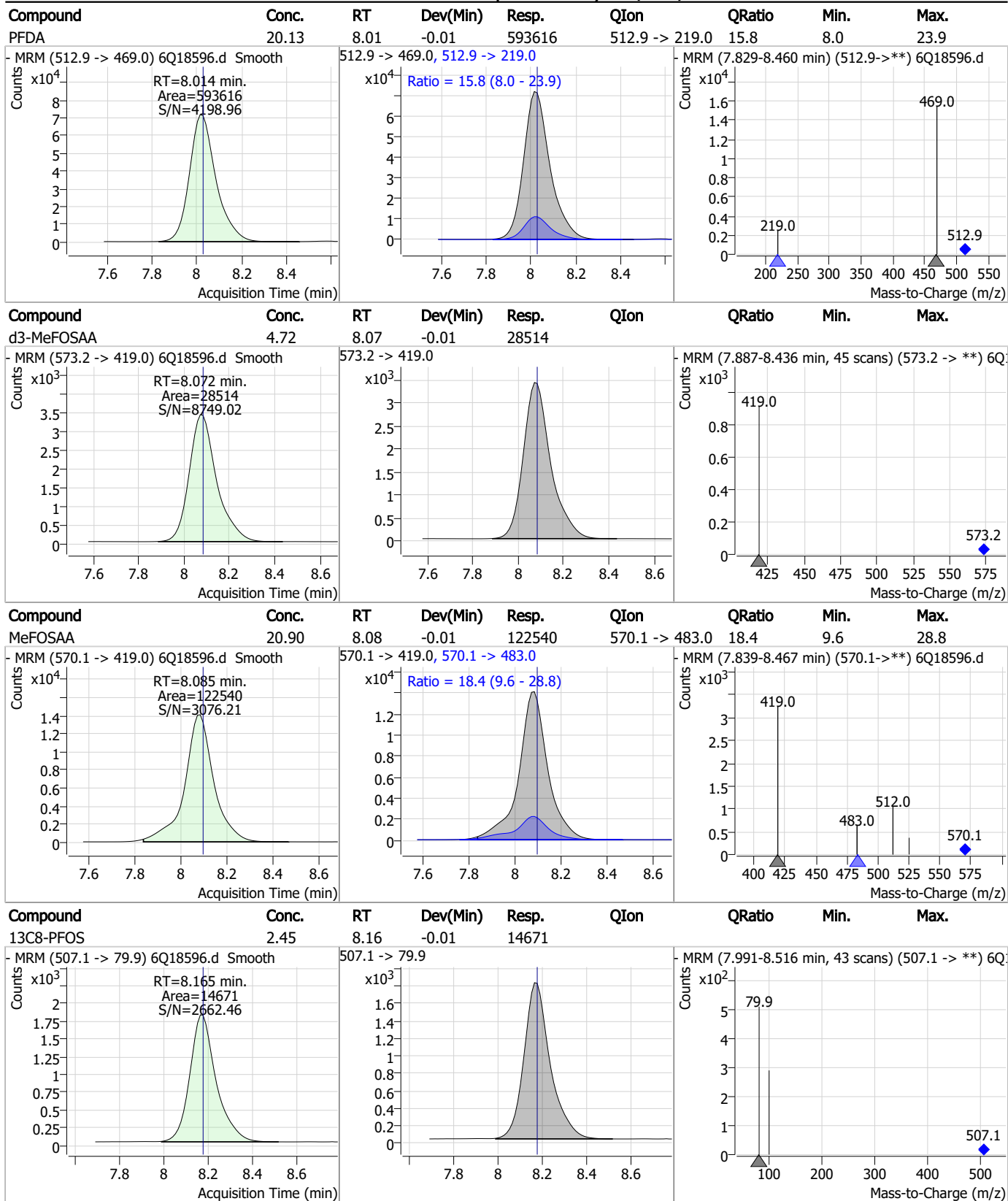
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Perfluorinated Compounds by LC/MS/MS



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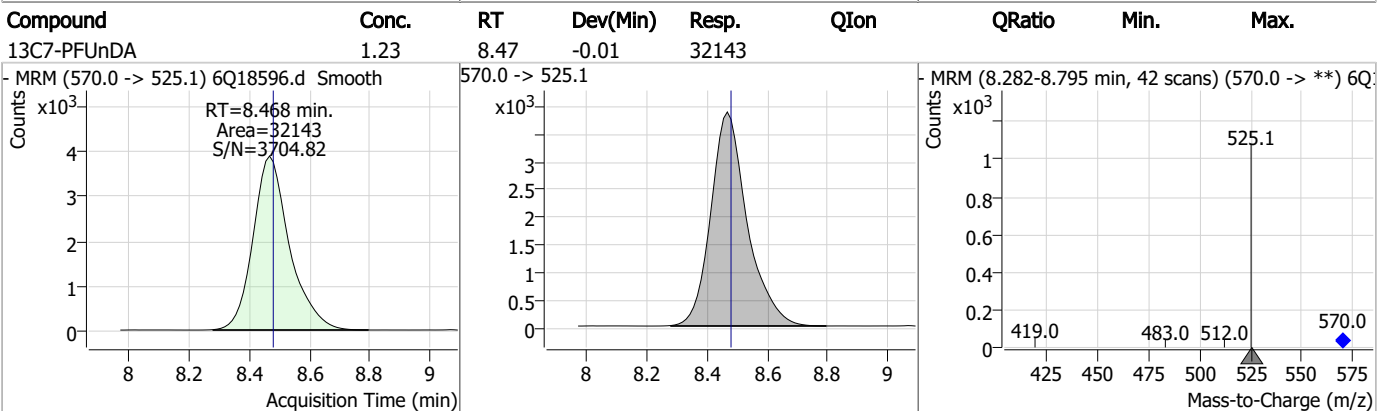
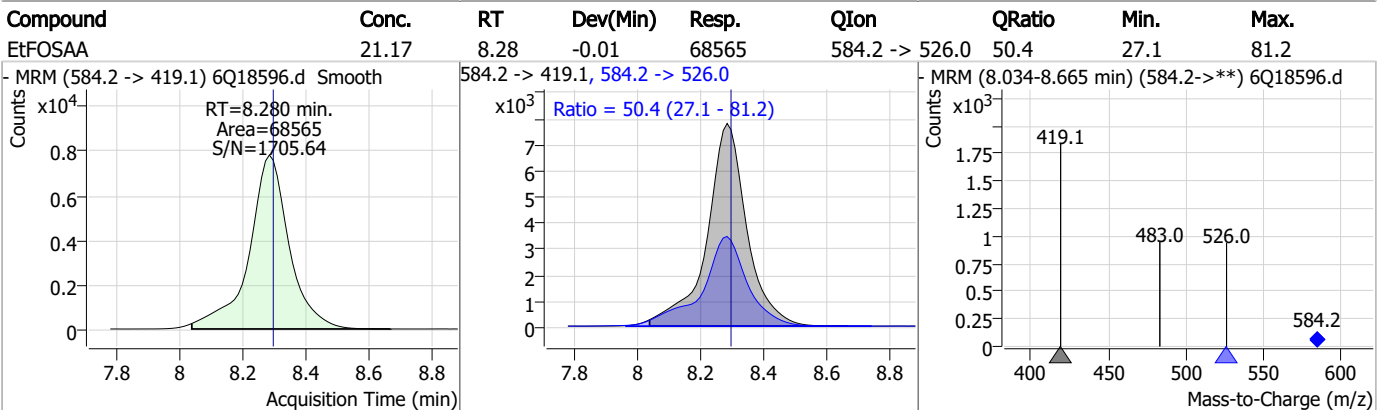
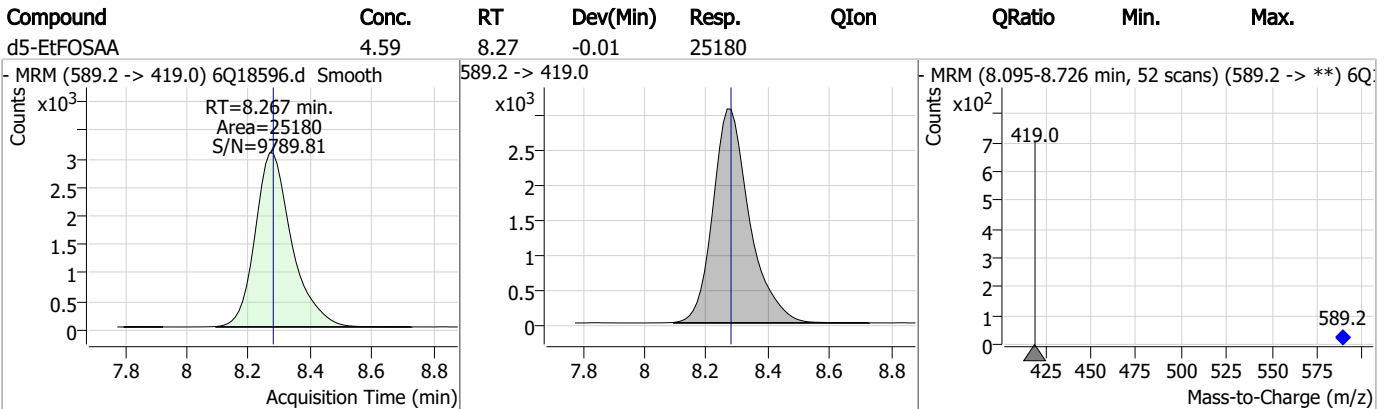
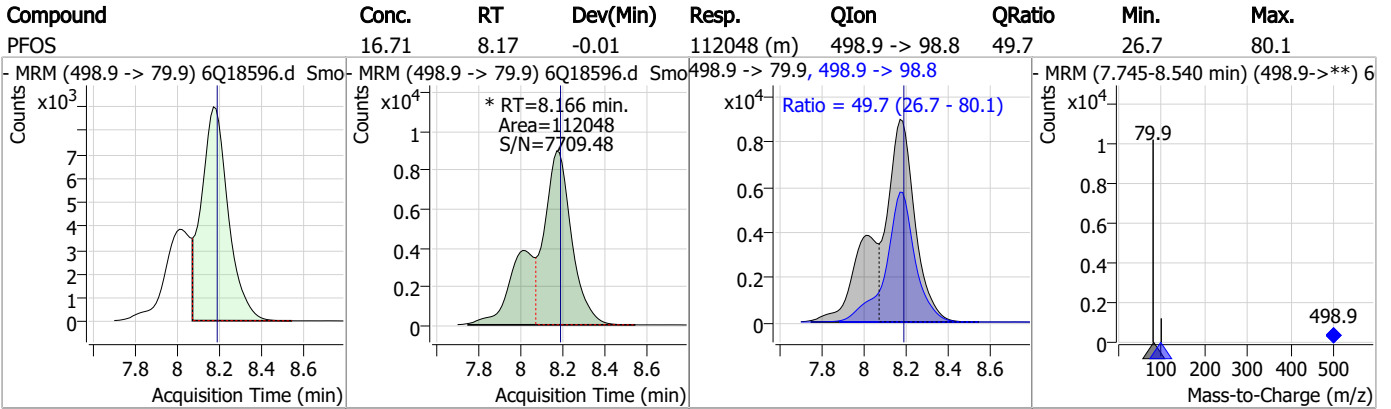
Perfluorinated Compounds by LC/MS/MS



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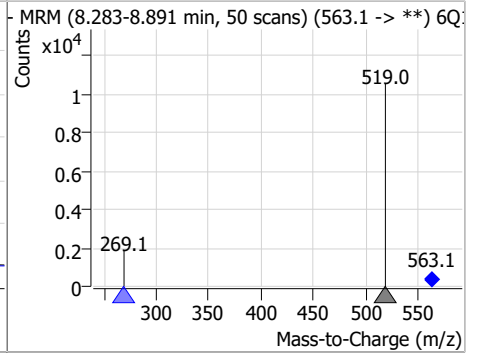
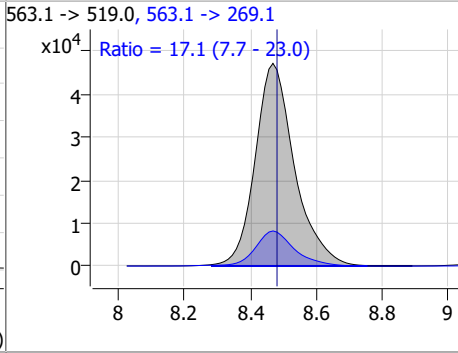
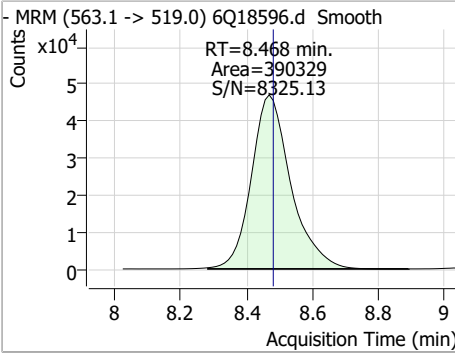


Perfluorinated Compounds by LC/MS/MS

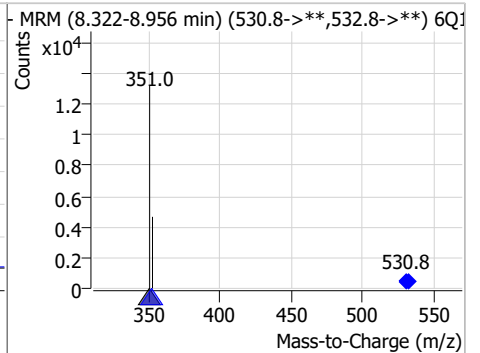
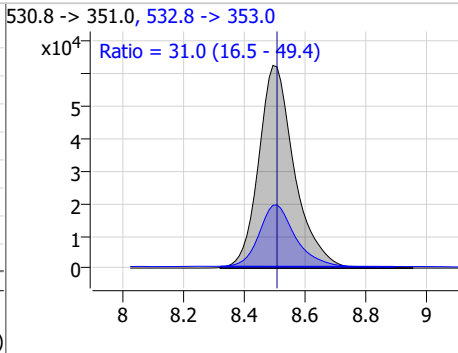
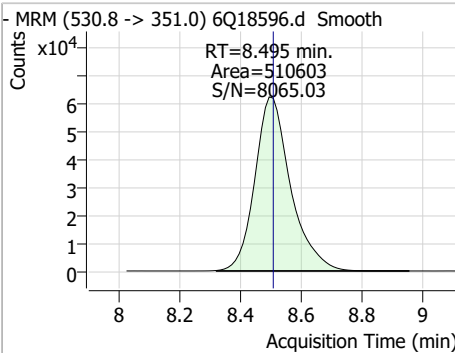


Perfluorinated Compounds by LC/MS/MS

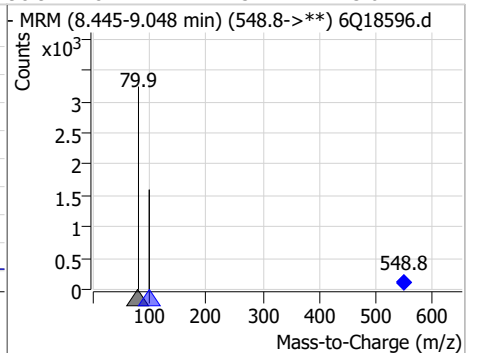
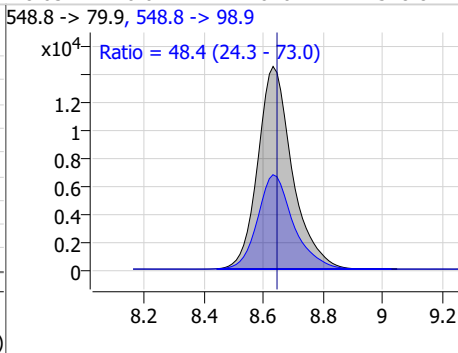
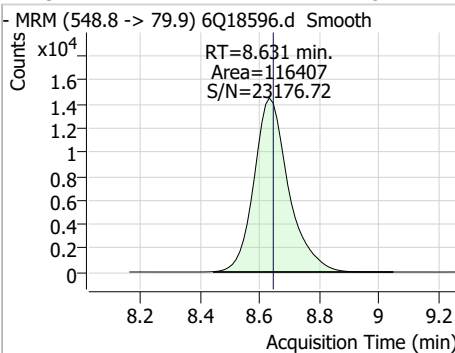
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.69	8.47	-0.01	390329	563.1 -> 269.1	17.1	7.7	23.0



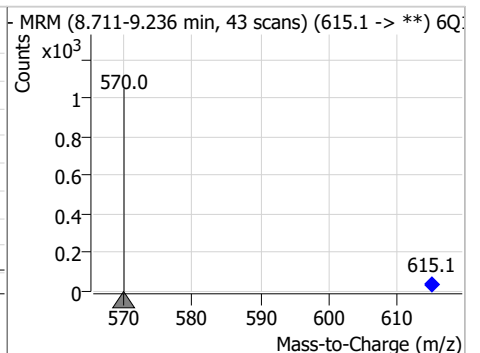
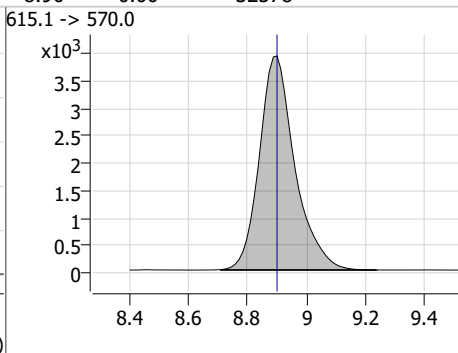
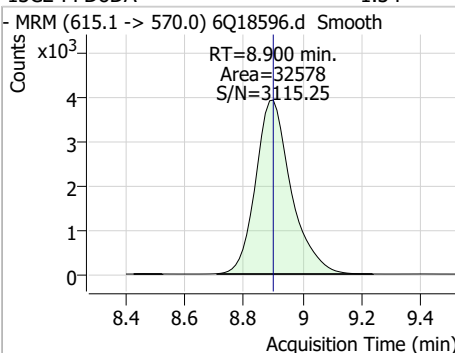
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	20.06	8.49	-0.01	510603	532.8 -> 353.0	31.0	16.5	49.4



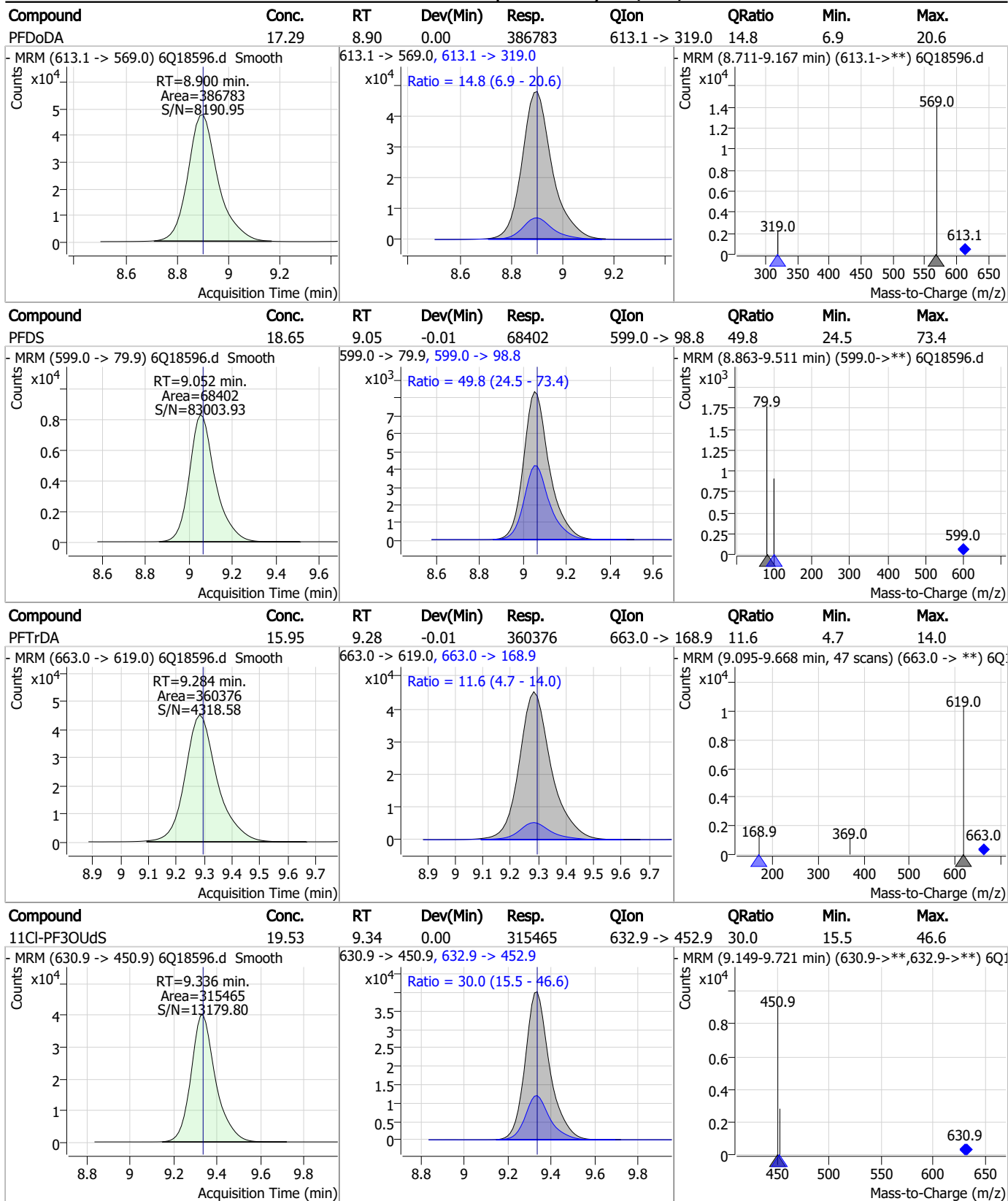
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.77	8.63	-0.01	116407	548.8 -> 98.9	48.4	24.3	73.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.34	8.90	0.00	32578	615.1 -> 570.0			



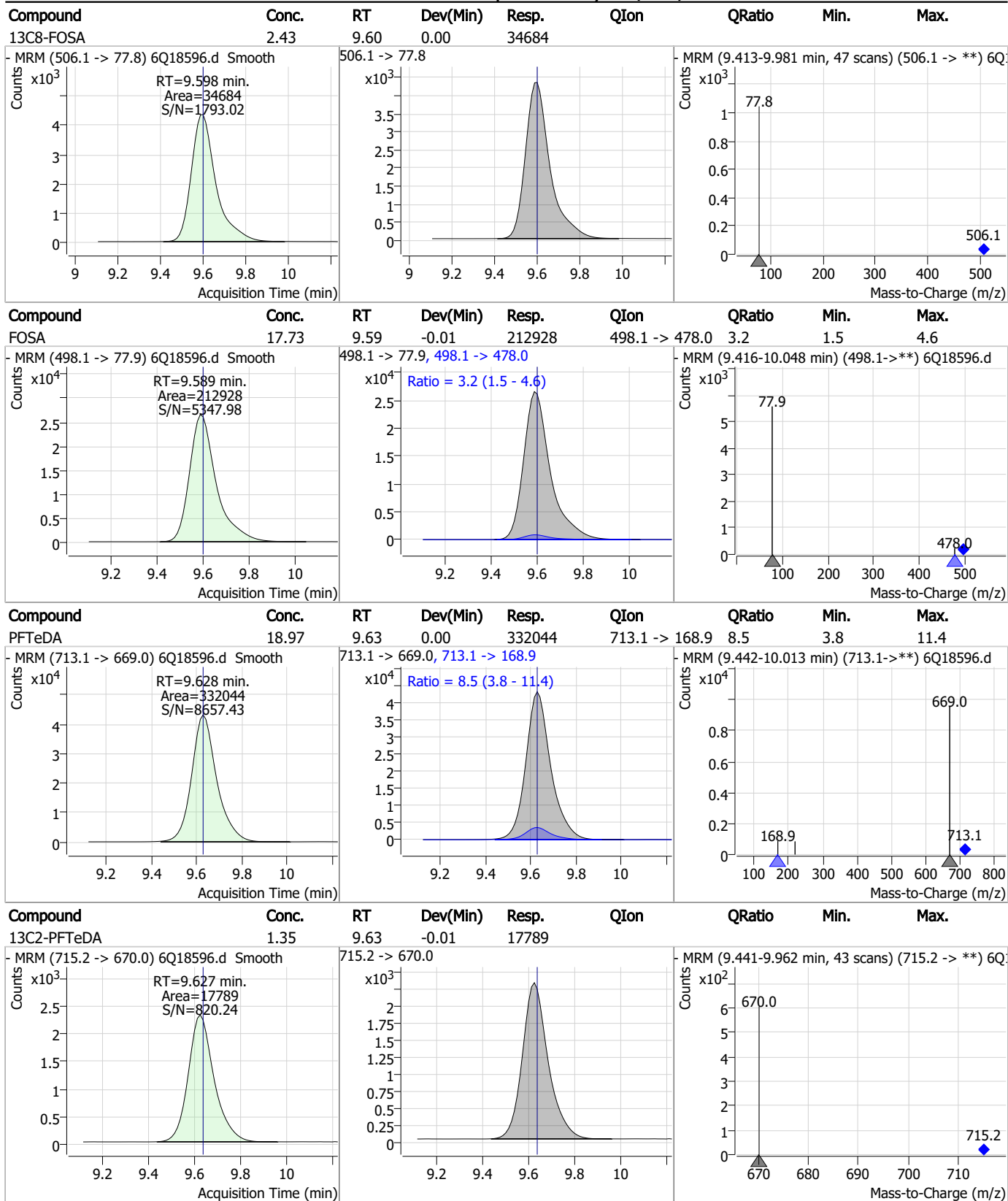
Perfluorinated Compounds by LC/MS/MS



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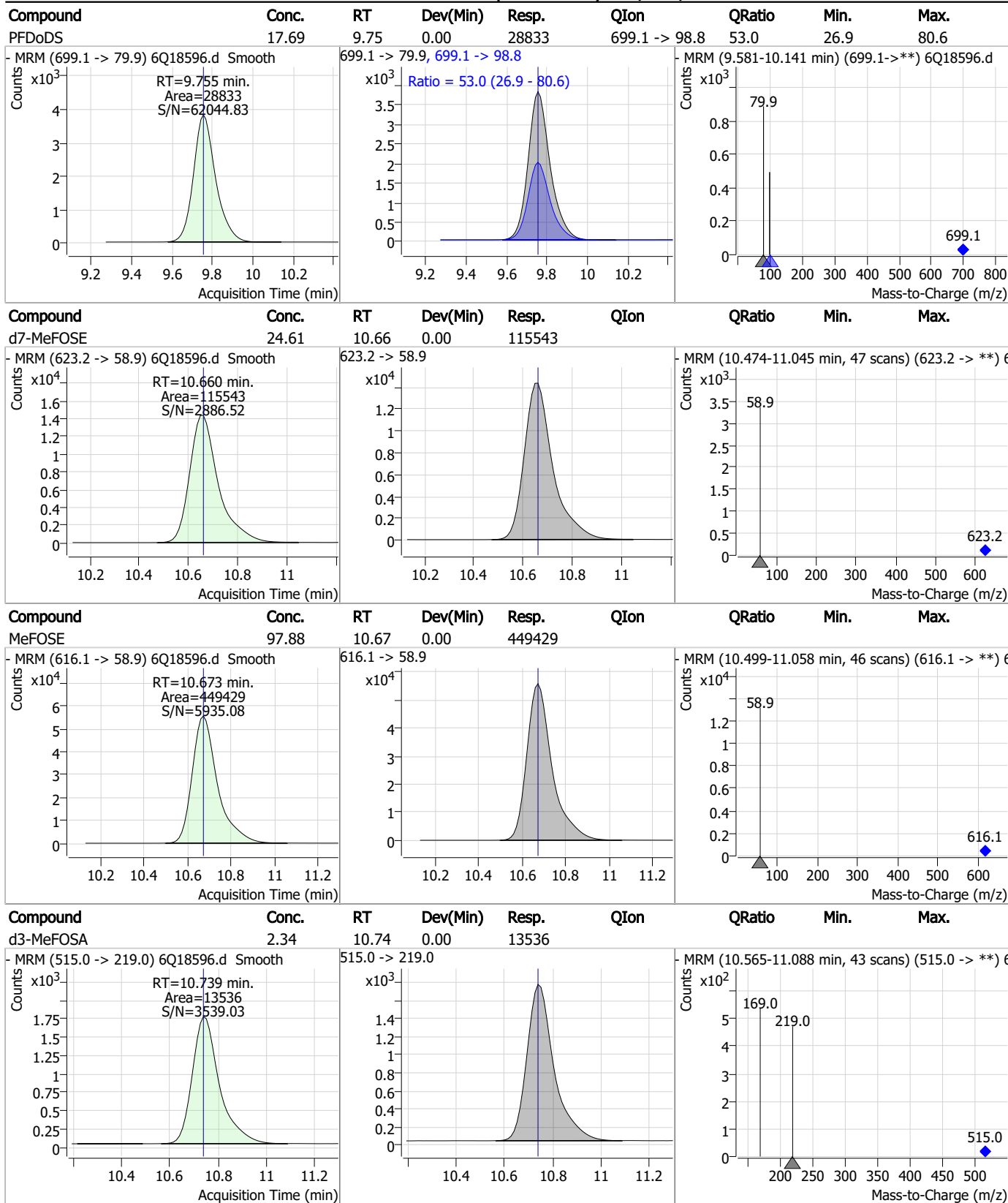


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

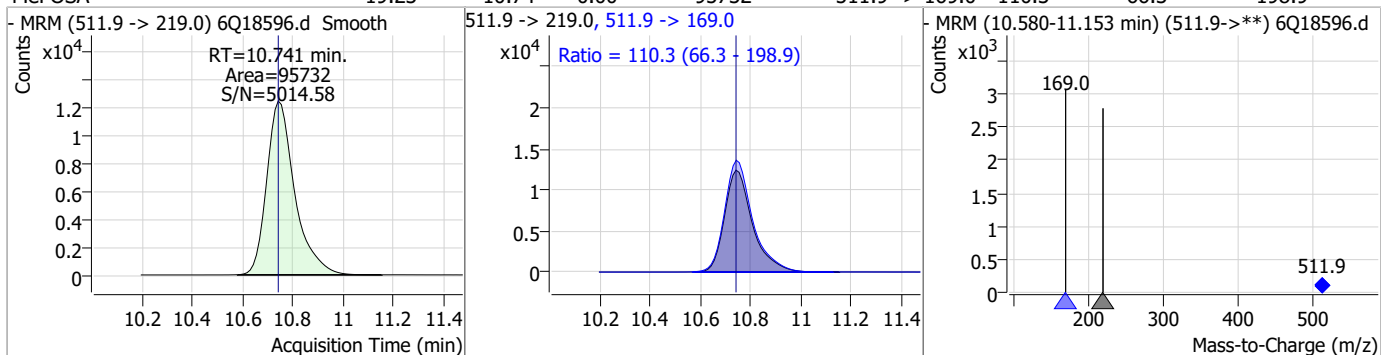


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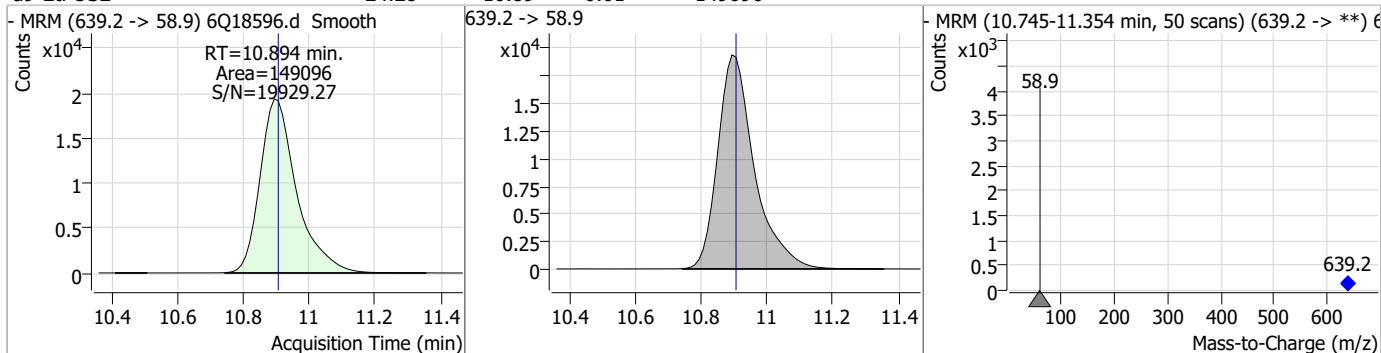


Perfluorinated Compounds by LC/MS/MS

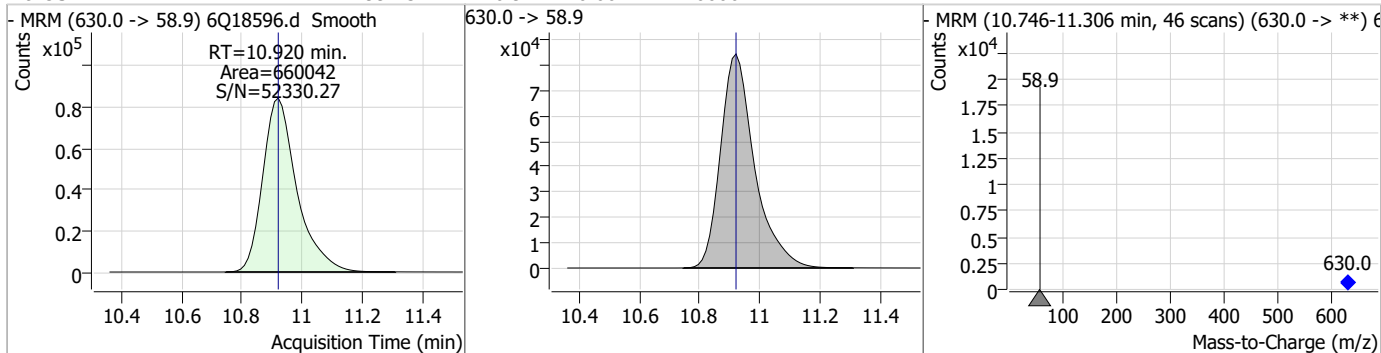
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.23	10.74	0.00	95732	511.9 -> 169.0	110.3	66.3	198.9



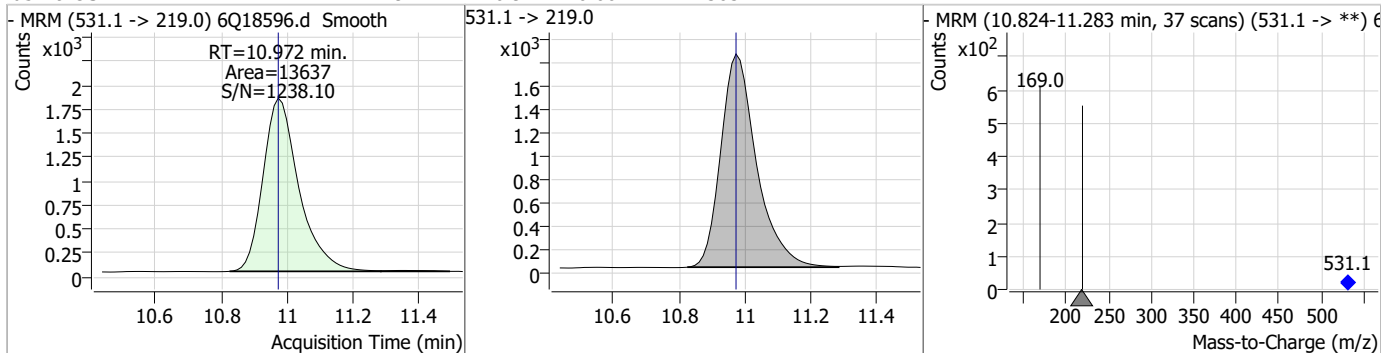
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.28	10.89	-0.01	149096				



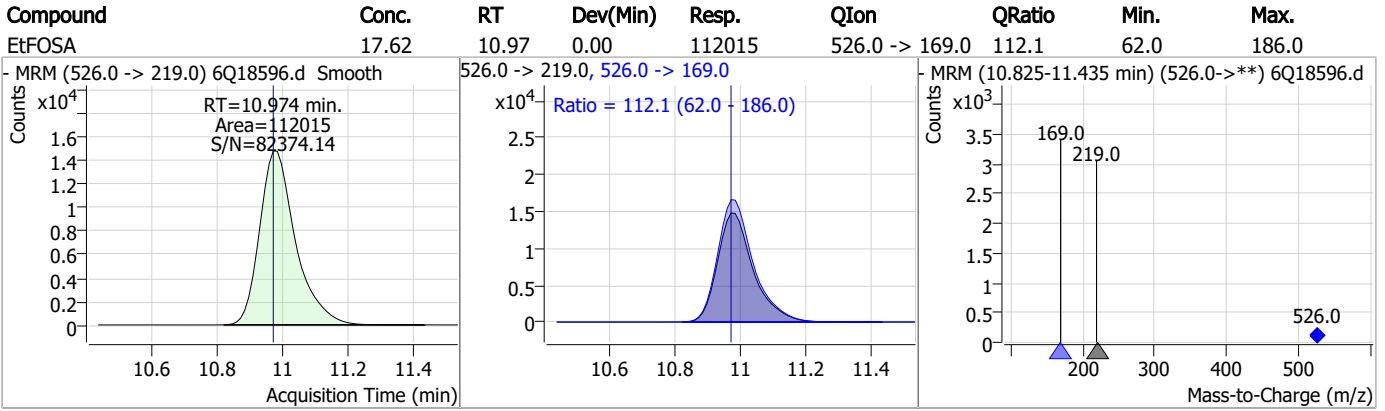
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	99.23	10.92	0.00	660042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.49	10.97	0.00	13637				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18596.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:41 Supervisor approved: 06/01/23 15:02 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18679.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 4:05:39 PM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	149925	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	49913	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	54690	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	52356	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	82292	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	36408	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	22327	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	29658	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	26718	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14353	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	27685	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	19370	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	12827	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	11943	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3243	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	4745	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	4575	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	25224	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	34379	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	22445	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	96833	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	122935	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11214	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11320	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	15446	2.50 µg/L	-0.012
13C3-PFBA	2.827	216.0 -> 172.0	62567	5.00 µg/L	0.000
18O2-PFHxS	7.129	403.0 -> 83.9	9141	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	83348	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	29382	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	45559	1.25 µg/L	-0.012
13C2-PFHxA	5.417	315.1 -> 270.0	51927	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3243	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	4745	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-8:2FTS	7.815	529.1 -> 80.9	4575	5.09 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-PFDoDA	8.900	615.1 -> 570.0	26718	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14353	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C3-PFBS	5.322	302.1 -> 79.9	19370	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C3-PFHxS	7.130	402.1 -> 79.9	12827	2.51 µg/L	0.000

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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	2.822	216.8 -> 171.9	149925	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	52356	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFHxA	5.404	318.0 -> 273.0	54690	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.210	268.3 -> 223.0	49913	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.027	519.1 -> 474.1	22327	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C7-PFUnDA	8.468	570.0 -> 525.1	29658	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C8-FOSA	9.598	506.1 -> 77.8	27685	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-PFOA	7.026	421.1 -> 376.0	82292	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.165	507.1 -> 79.9	11943	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C9-PFNA	7.545	472.1 -> 427.0	36408	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
d3-MeFOSAA	8.084	573.2 -> 419.0	25224	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	34379	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	11320	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
d5-EtFOSAA	8.279	589.2 -> 419.0	22445	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	96833	24.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d9-EtFOSE	10.894	639.2 -> 58.9	122935	24.23 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	11214	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
Target Compounds					QValue
4:2FTS	5.094	327.1 -> 307.0	4231	0.90 µg/L	94
		327.1 -> 80.9	1439		
6:2FTS	6.801	427.1 -> 407.0	4267	0.92 µg/L	95
		427.1 -> 80.9	1369		
8:2FTS	7.816	527.1 -> 507.0	2474	0.97 µg/L	99
		527.1 -> 80.8	944		
EtFOSAA	8.280	584.2 -> 419.1	743	0.26 µg/L	100
		584.2 -> 526.0	427		
FOSA	9.589	498.1 -> 77.9	2251	0.23 µg/L	100
		498.1 -> 478.0	81		
MeFOSAA	8.085	570.1 -> 419.0	1310	0.25 µg/L	88
		570.1 -> 483.0	280		
PFBA	2.818	212.8 -> 168.9	4500	0.91 µg/L	100
PFBS	5.323	298.7 -> 79.9	1447	0.22 µg/L	97
		298.7 -> 98.8	528		
PFDA	8.027	512.9 -> 469.0	5948	0.23 µg/L	96
		512.9 -> 219.0	857		
PFDODA	8.900	613.1 -> 569.0	4298	0.23 µg/L	100
		613.1 -> 319.0	678		
PFDS	9.052	599.0 -> 79.9	645	0.22 µg/L	94

7.7.12
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	356	0.23	µg/L	99
		363.1 -> 319.0	5321			
PFHpS	7.685	363.1 -> 169.0	919	0.21	µg/L	91
		449.0 -> 79.9	1199			
PFHxA	5.407	449.0 -> 98.9	710	0.23	µg/L	100
		313.0 -> 269.0	4237			
PFHxS	7.131	313.0 -> 118.9	227	0.23	µg/L	93
		398.7 -> 79.9	1328			
PFNA	7.545	398.7 -> 98.9	620	0.24	µg/L	100
		463.0 -> 419.0	6210			
PFNS	8.631	463.0 -> 219.0	1222	0.24	µg/L	96
		548.8 -> 79.9	1135			
PFOA	7.028	548.8 -> 98.9	551	0.23	µg/L	98
		413.0 -> 369.0	8236			
PFOS	8.178	413.0 -> 169.0	1533	0.19	µg/L	83
		498.9 -> 79.9	1047			
PFPeA	4.212	498.9 -> 98.8	616	0.48	µg/L	100
		263.0 -> 219.0	5785			
PFPeS	6.422	349.1 -> 79.9	1148	0.20	µg/L	98
		349.1 -> 98.9	536			
PFTeDA	9.628	713.1 -> 669.0	3488	0.25	µg/L	97
		713.1 -> 168.9	333			
PFTrDA	9.284	663.0 -> 619.0	4173	0.23	µg/L	97
		663.0 -> 168.9	440			
PFUnDA	8.468	563.1 -> 519.0	4211	0.22	µg/L	88
		563.1 -> 269.1	601			
11CI-PF3OUdS	9.336	630.9 -> 450.9	5661	0.44	µg/L	99
		632.9 -> 452.9	1834			
9CI-PF3ONS	8.508	530.8 -> 351.0	9335	0.46	µg/L	89
		532.8 -> 353.0	3660			
ADONA	6.632	376.9 -> 250.9	19620	0.43	µg/L	97
		376.9 -> 84.8	5592			
HFPO-DA	5.783	284.9 -> 168.9	1357	0.47	µg/L	98
		284.9 -> 184.9	196			
3:3FTCA	3.684	241.0 -> 177.0	895	1.17	µg/L	94
		241.0 -> 117.0	130			
5:3FTCA	6.086	341.0 -> 237.1	19995	6.05	µg/L	97
		341.0 -> 217.0	14748			
7:3FTCA	7.510	441.0 -> 316.9	14317	6.33	µg/L	88
		441.0 -> 336.9	30183			
EtFOSA	10.974	526.0 -> 219.0	2314	0.44	µg/L	99
		526.0 -> 169.0	3144			
EtFOSE	10.907	630.0 -> 58.9	6323	1.15	µg/L	100
		511.9 -> 219.0	1891			
MeFOSA	10.741	511.9 -> 169.0	2650	0.45	µg/L	88
		616.1 -> 58.9	4324			
MeFOSE	10.673	699.1 -> 79.9	285	1.12	µg/L	100
		699.1 -> 98.8	167			
PFDoDS	9.755	295.0 -> 201.0	1060	0.21	µg/L	90
		295.0 -> 84.9	276			
NFDHA	5.299	279.0 -> 85.1	3757	0.46	µg/L	100
		229.0 -> 84.9	2928			
PFMBA	4.626	314.8 -> 134.9	8995	0.46	µg/L	100
		314.8 -> 82.9	377			
PFMPA	3.363			0.39	µg/L	99
PFEESA	5.875					

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

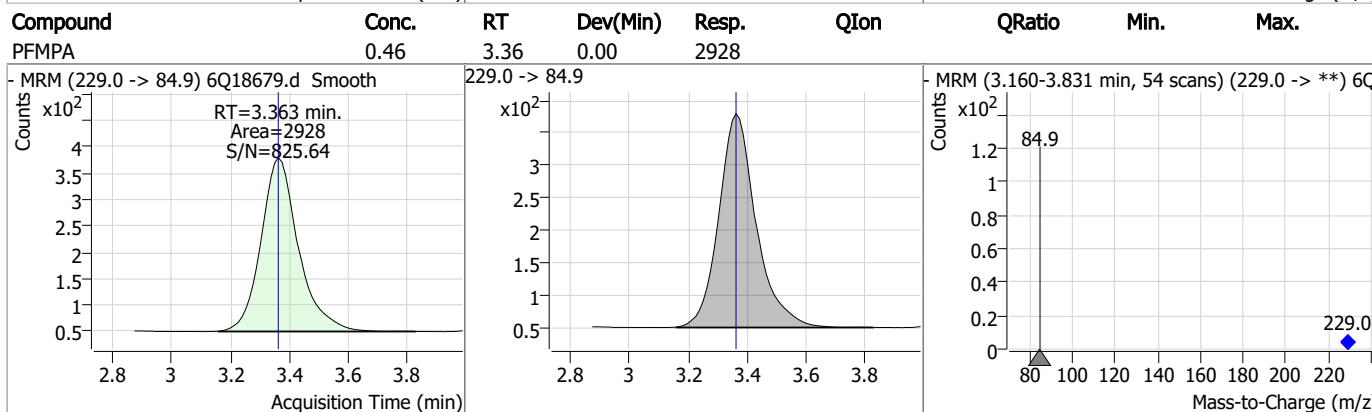
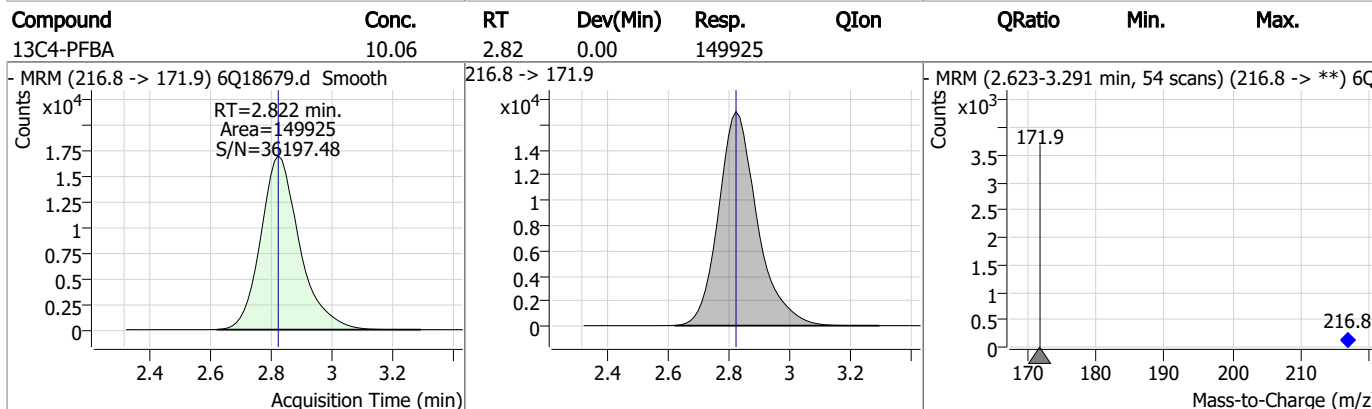
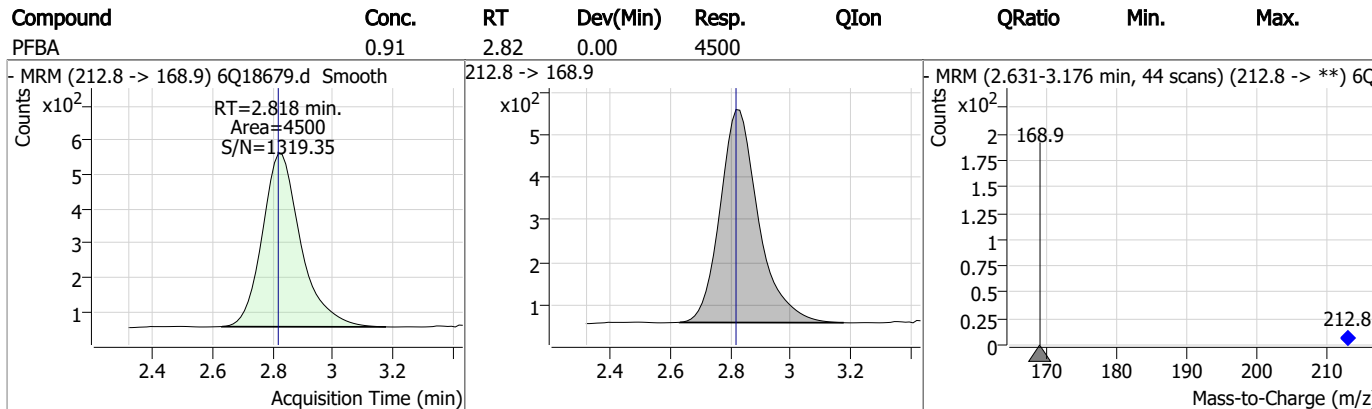
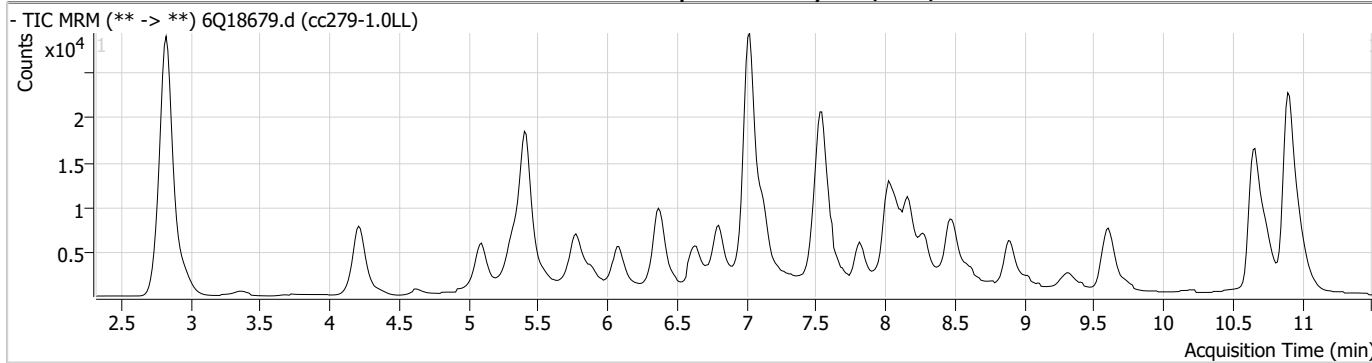
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.12

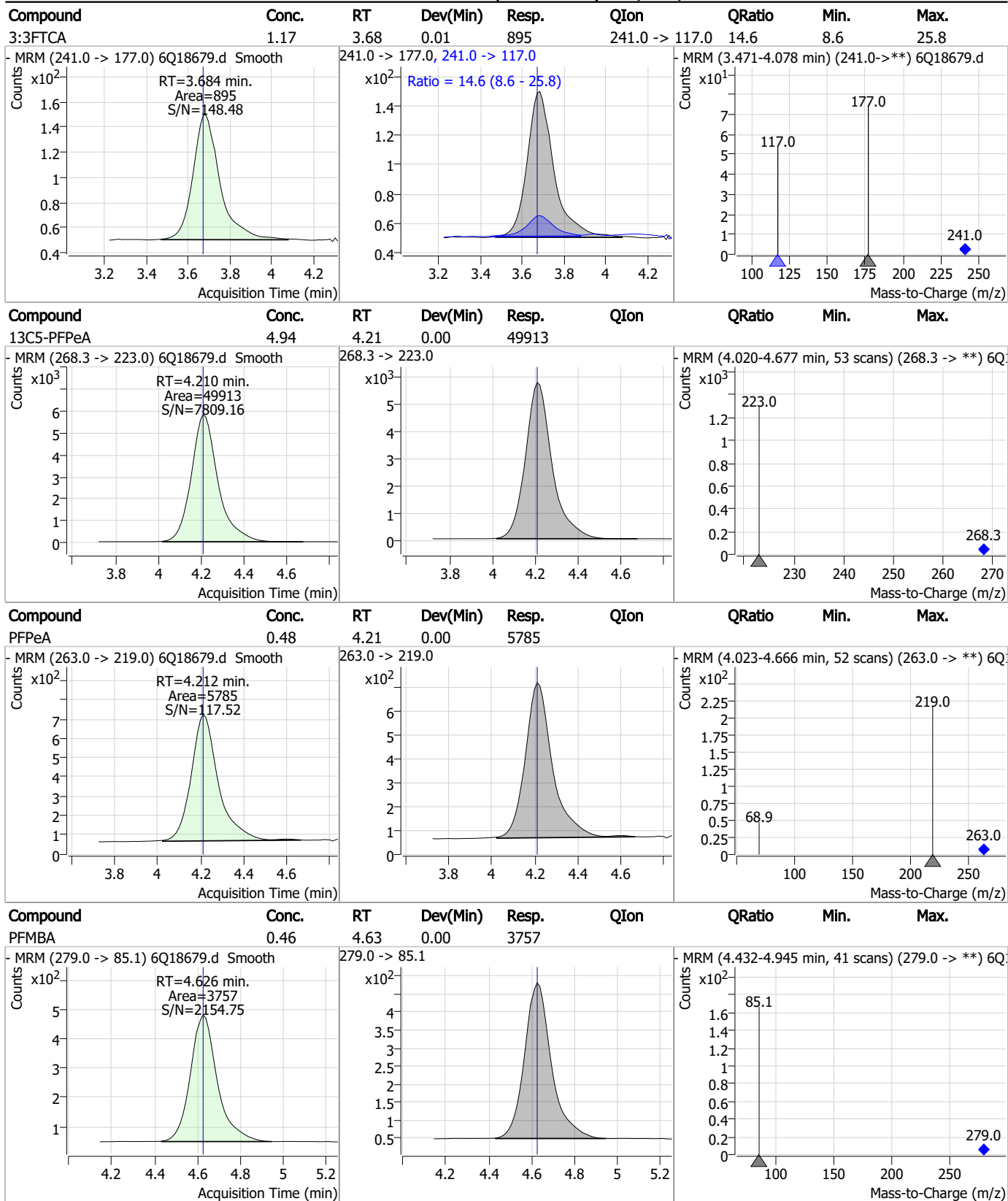
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Perfluorinated Compounds by LC/MS/MS



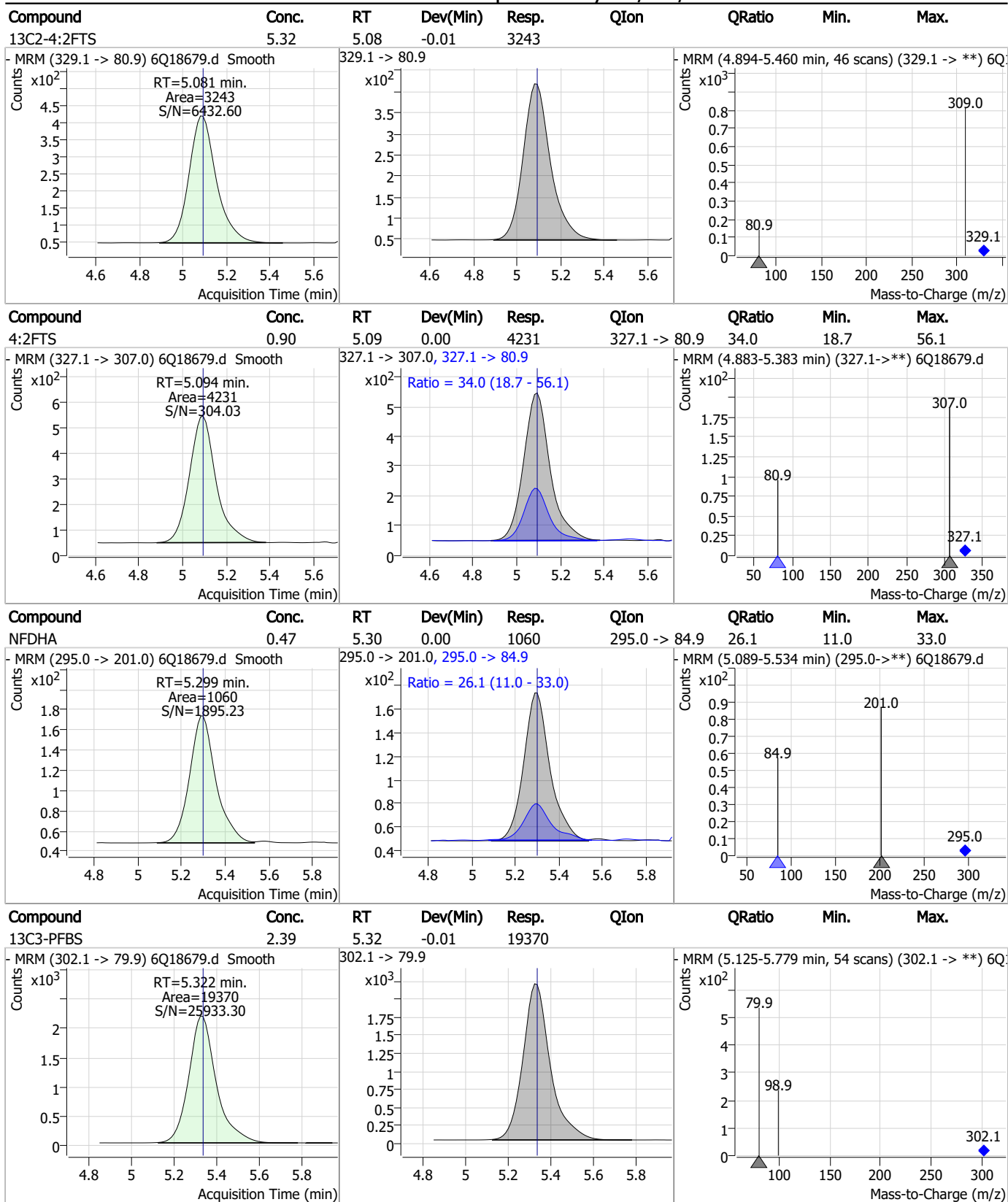
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Perfluorinated Compounds by LC/MS/MS



7.7.12

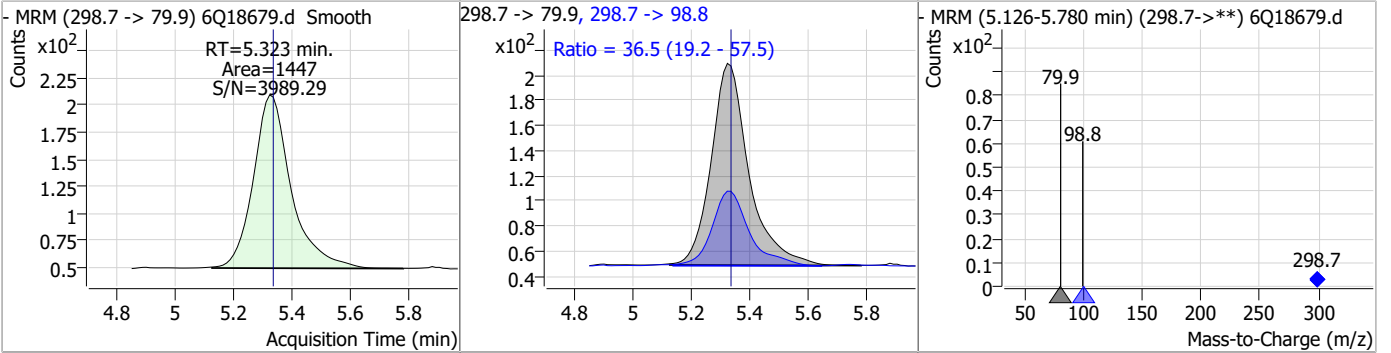
Perfluorinated Compounds by LC/MS/MS



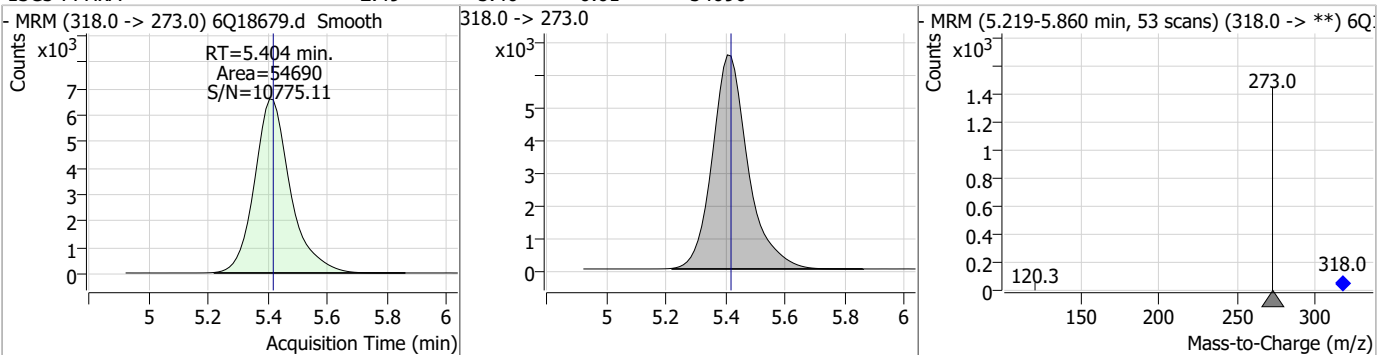
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Perfluorinated Compounds by LC/MS/MS

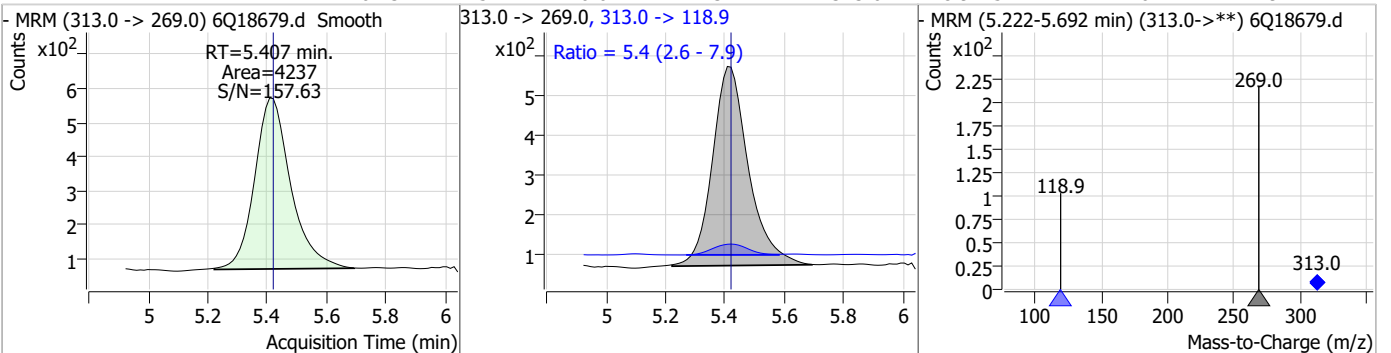
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.22	5.32	-0.01	1447	298.7 -> 98.8	36.5	19.2	57.5



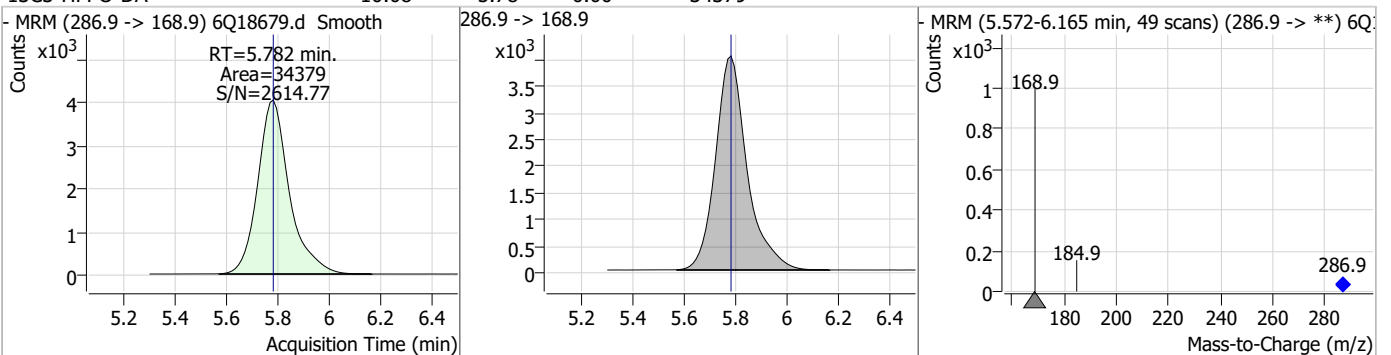
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.40	-0.01	54690				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.23	5.41	-0.01	4237	313.0 -> 118.9	5.4	2.6	7.9

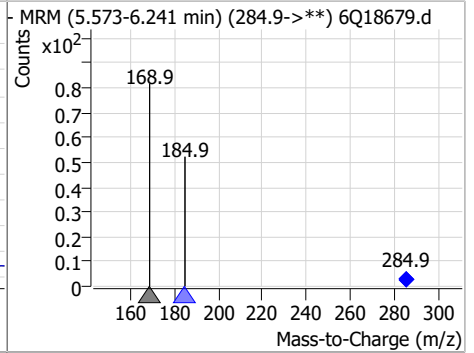
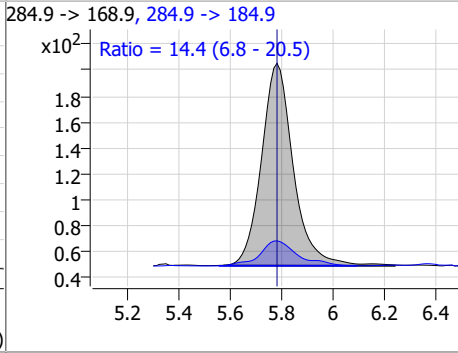
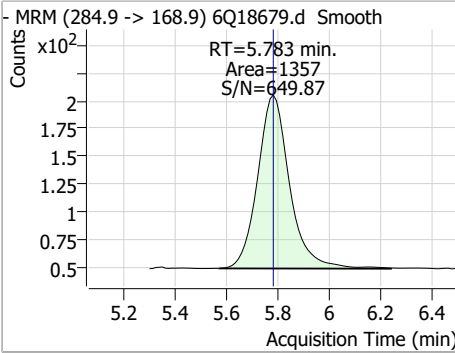


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.08	5.78	0.00	34379				

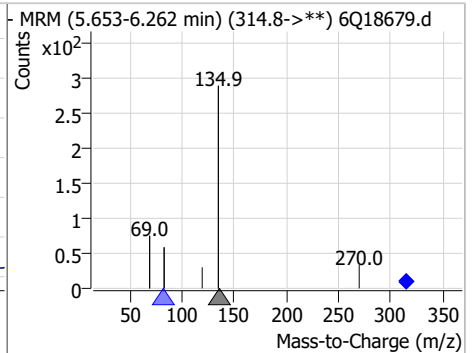
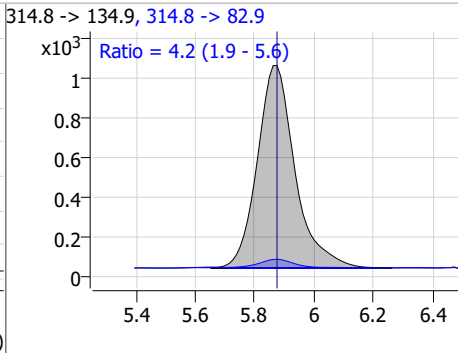
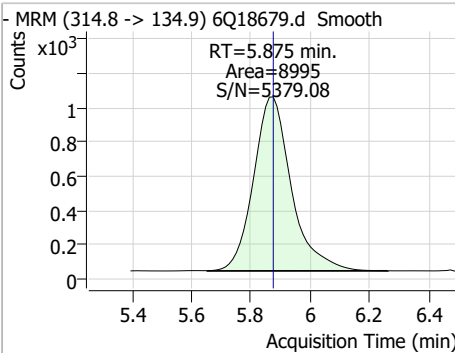


Perfluorinated Compounds by LC/MS/MS

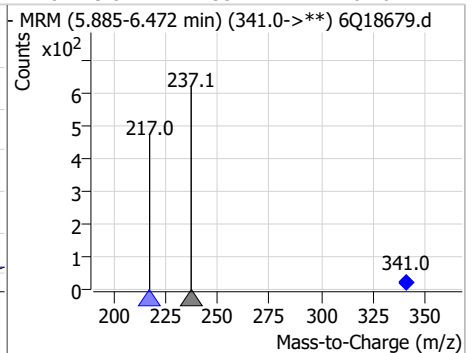
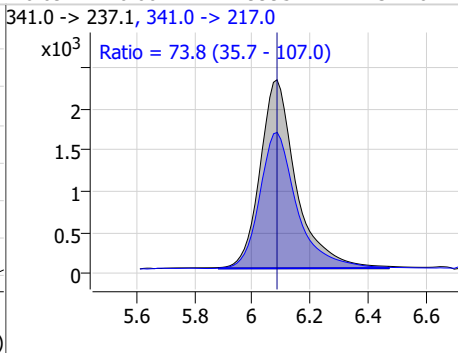
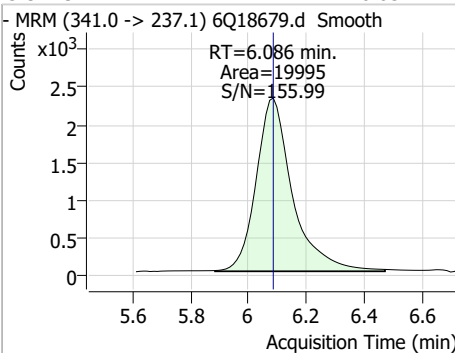
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.47	5.78	0.00	1357	284.9 -> 184.9	14.4	6.8	20.5



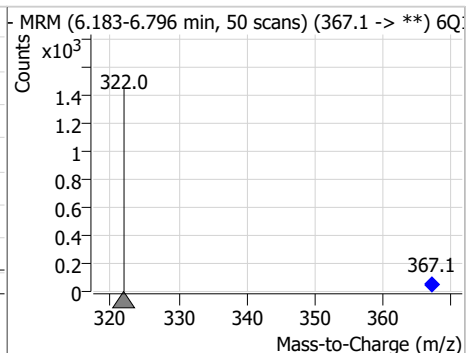
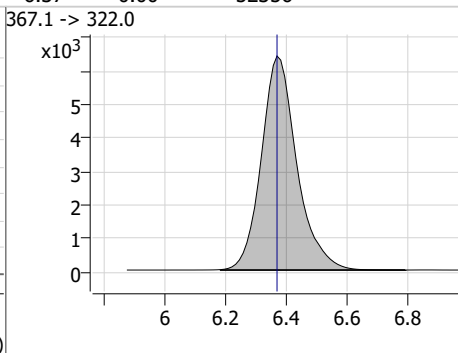
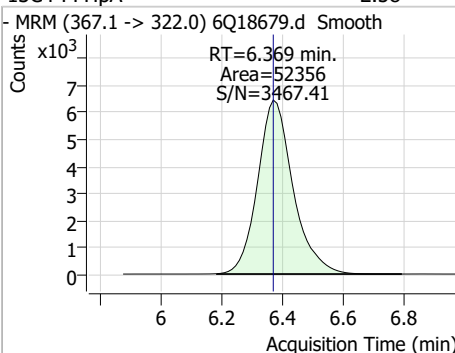
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.39	5.88	0.00	8995	314.8 -> 82.9	4.2	1.9	5.6



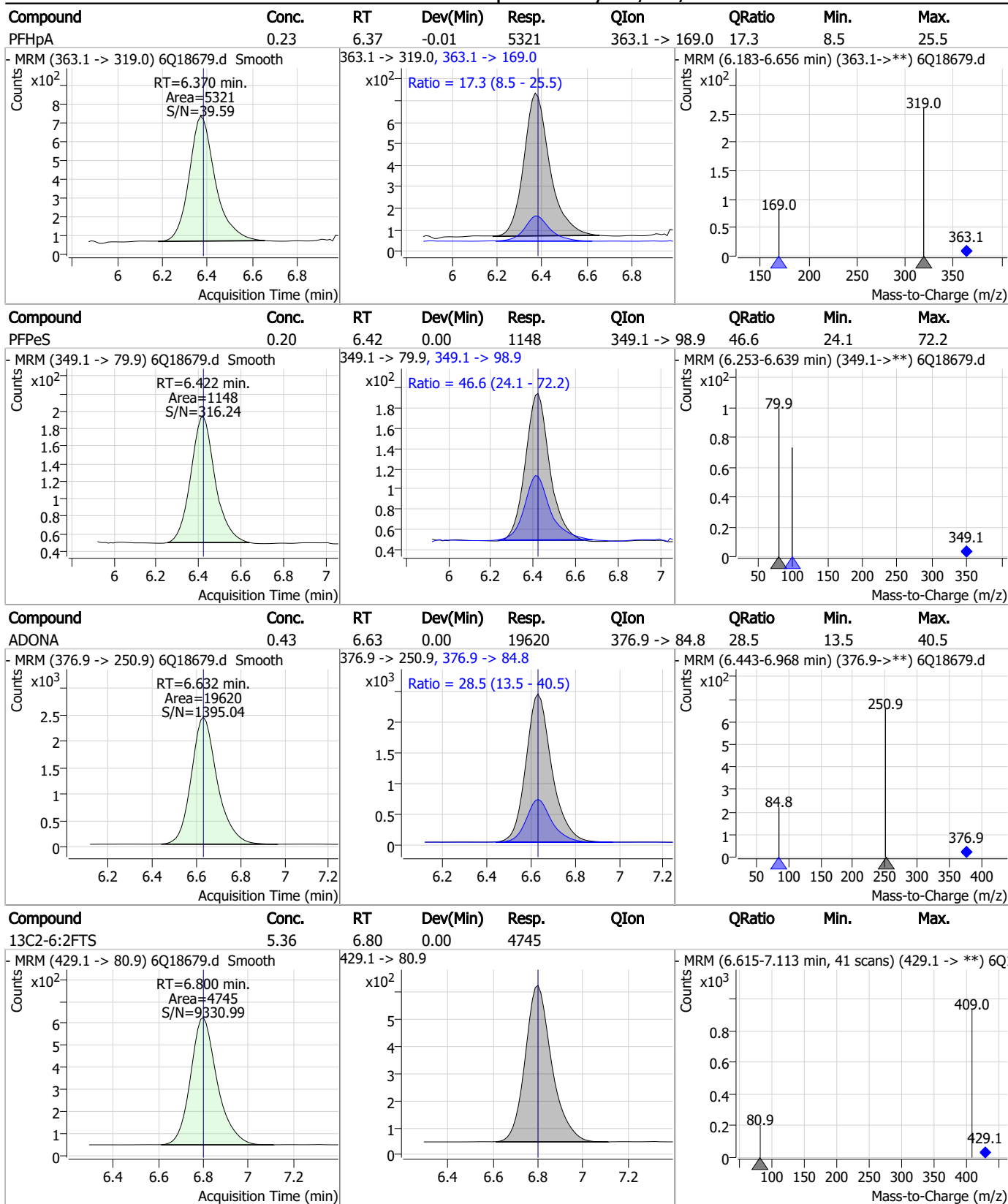
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	6.05	6.09	0.00	19995	341.0 -> 217.0	73.8	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.37	0.00	52356	367.1 -> 322.0			

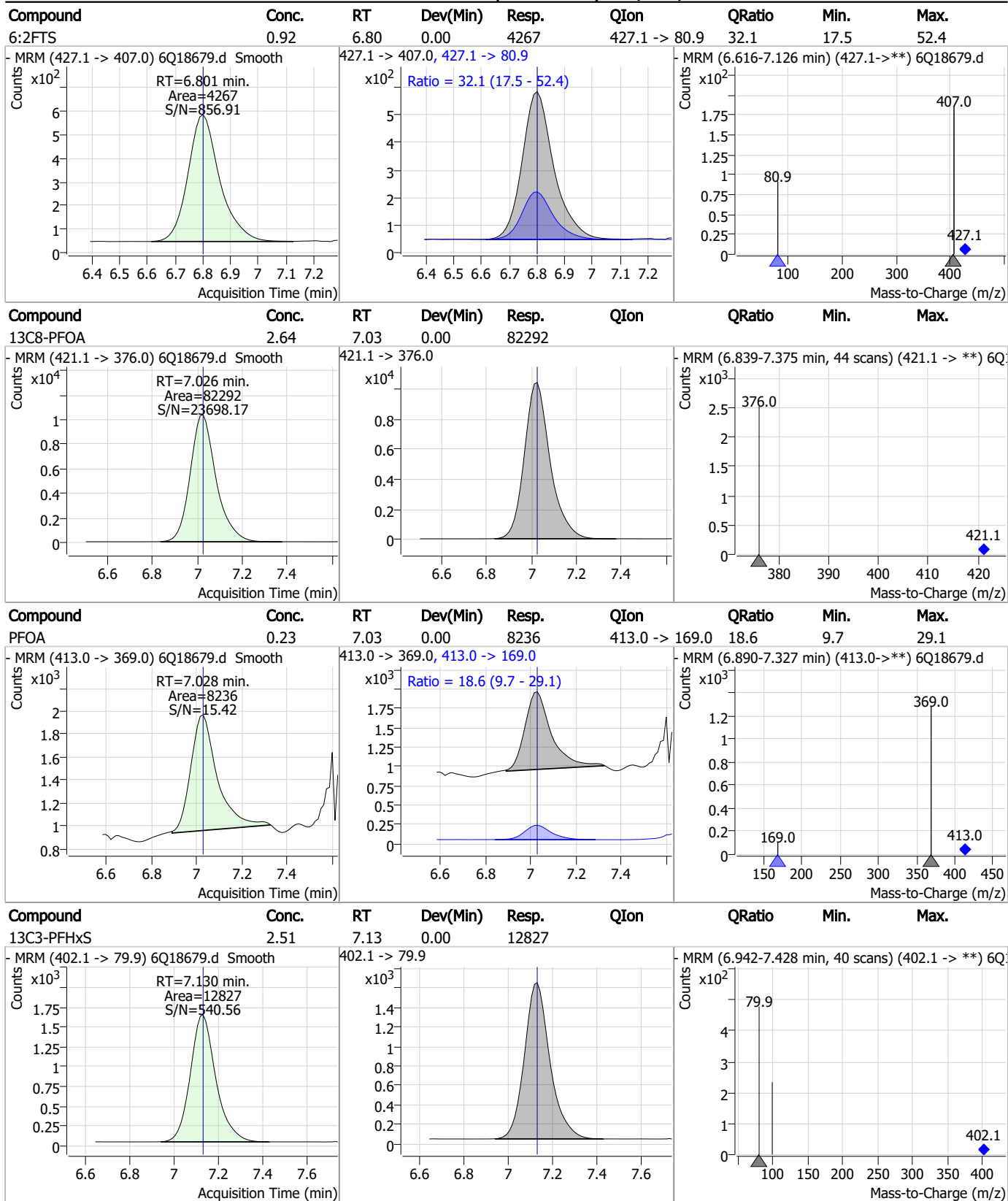


Perfluorinated Compounds by LC/MS/MS



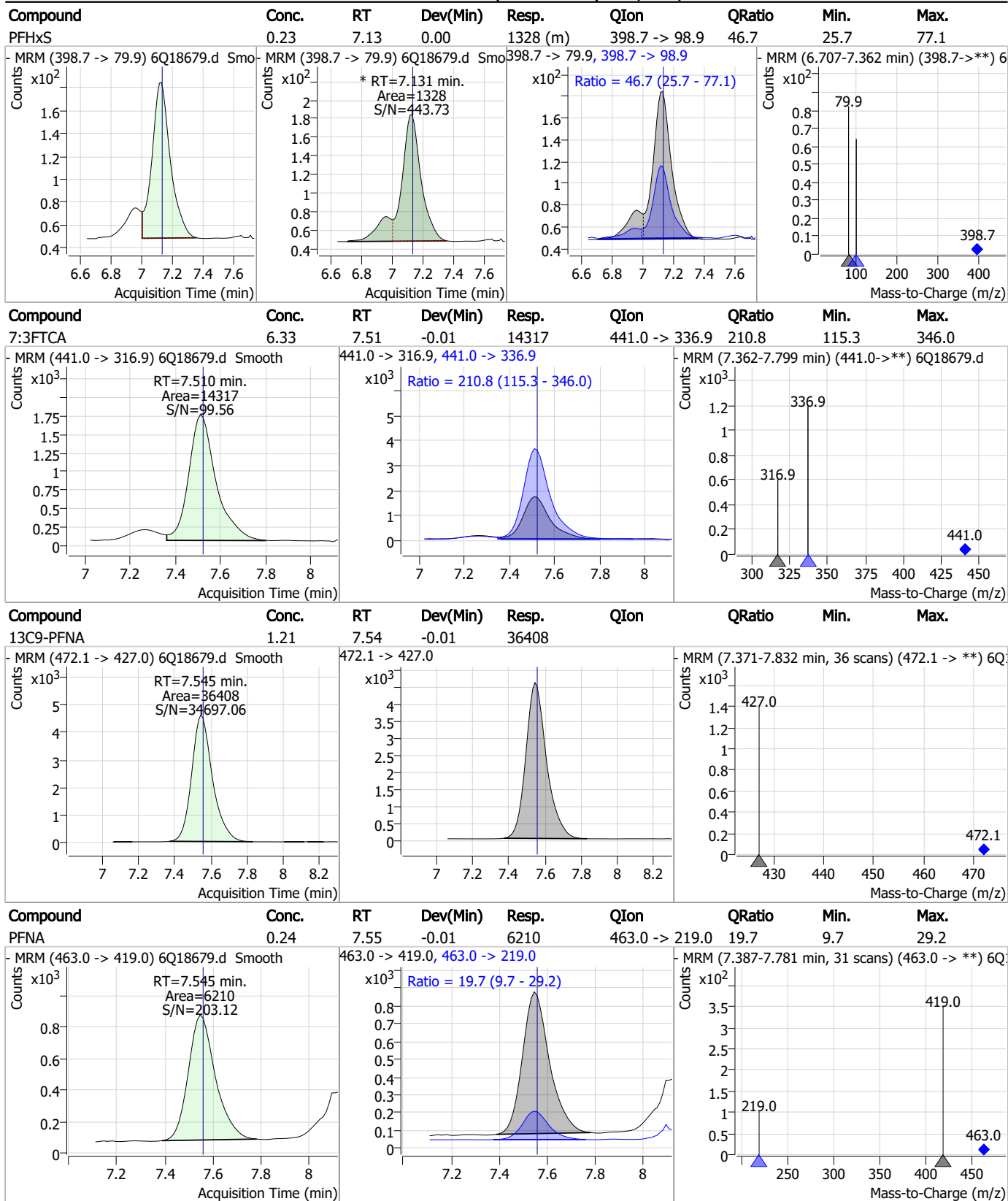
7.7.12

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



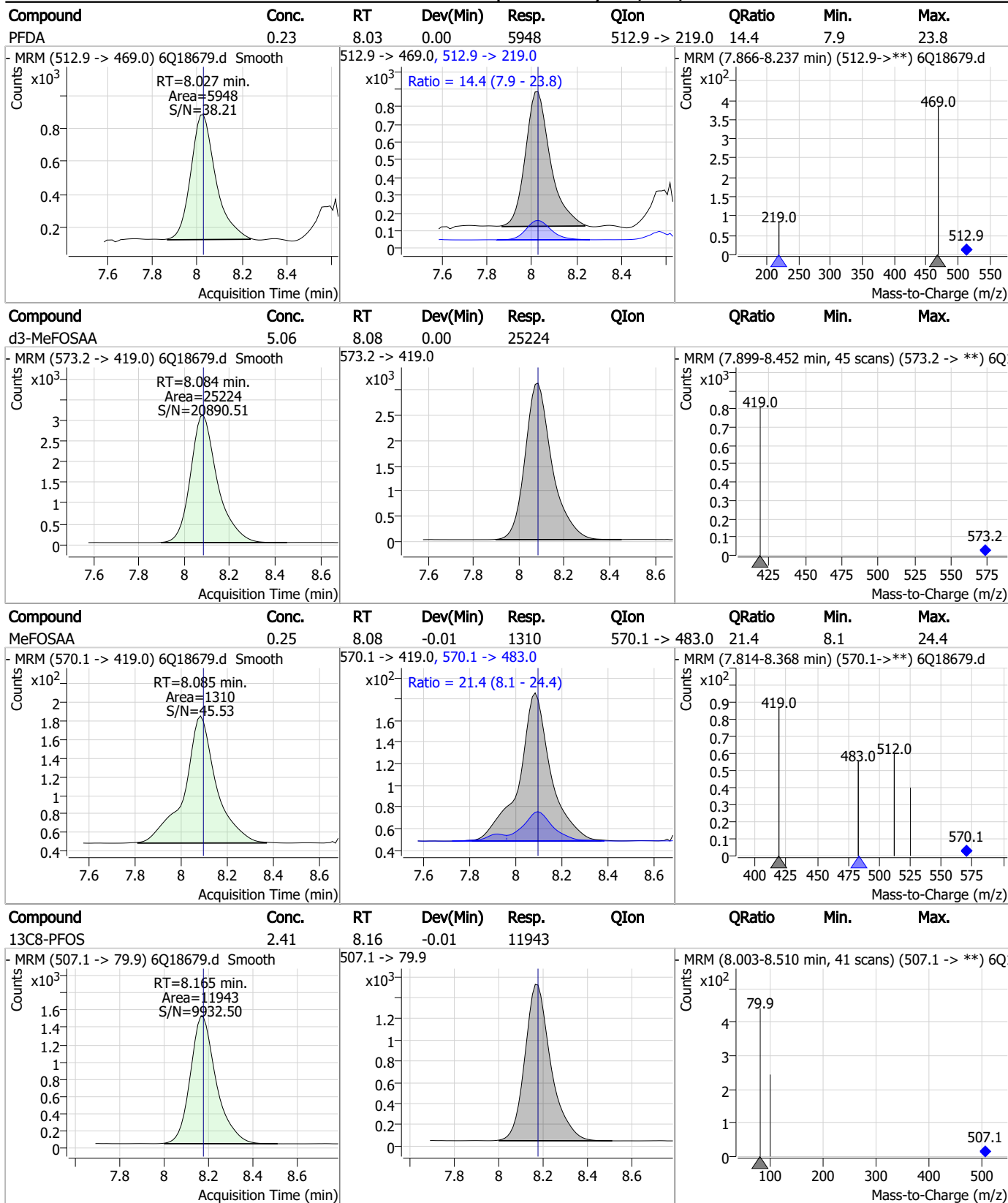
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.21	7.68	0.00	1199	449.0 -> 98.9	59.2	26.4	79.2
13C2-8:2FTS	5.09	7.81	-0.01	4575	529.1 -> 80.9	59.2	26.4	79.2
8:2FTS	0.97	7.82	-0.01	2474	527.1 -> 80.8	38.2	19.4	58.2
13C6-PFDA	1.30	8.03	0.00	22327	519.1 -> 474.1	59.2	26.4	79.2

7.7.12
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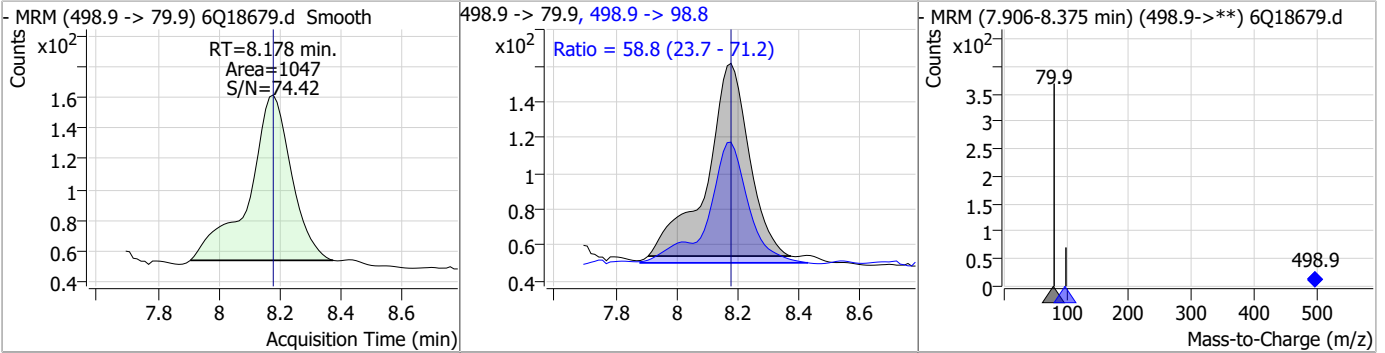
Perfluorinated Compounds by LC/MS/MS



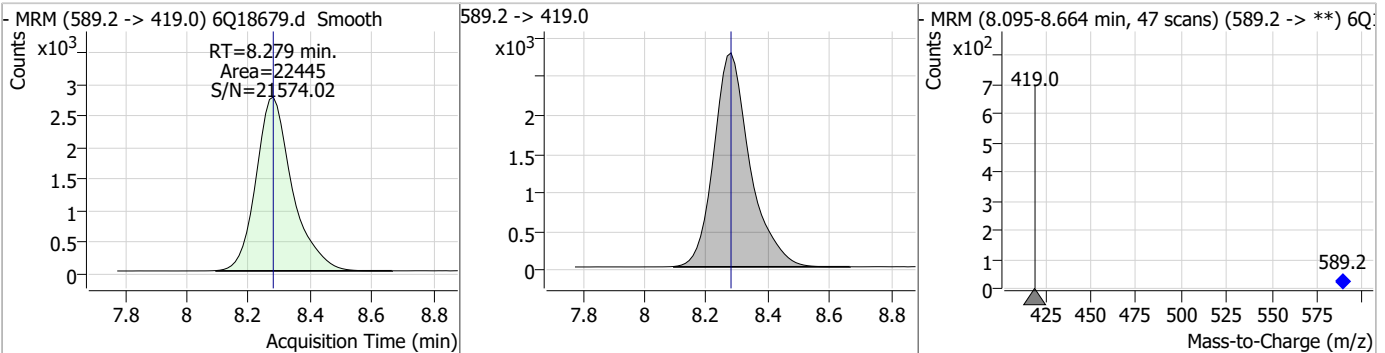
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Perfluorinated Compounds by LC/MS/MS

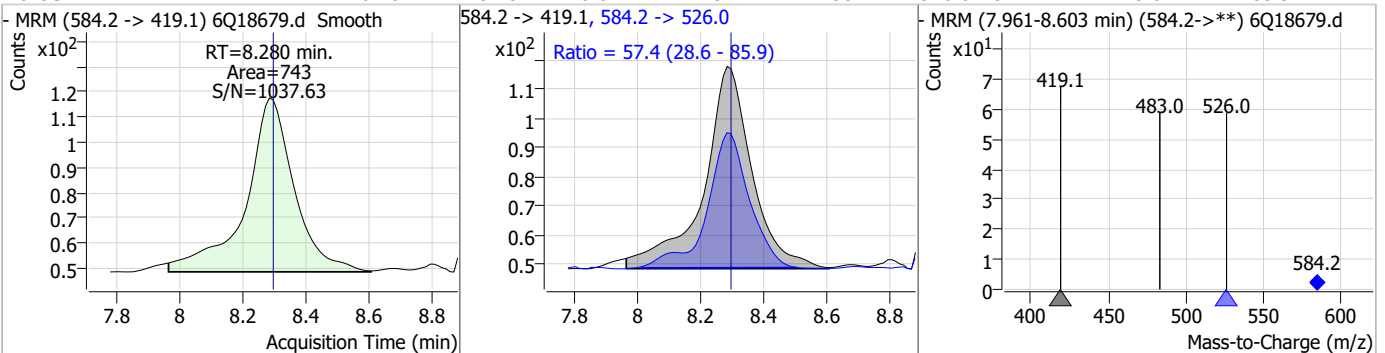
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.18	0.00	1047	498.9 -> 98.8	58.8	23.7	71.2



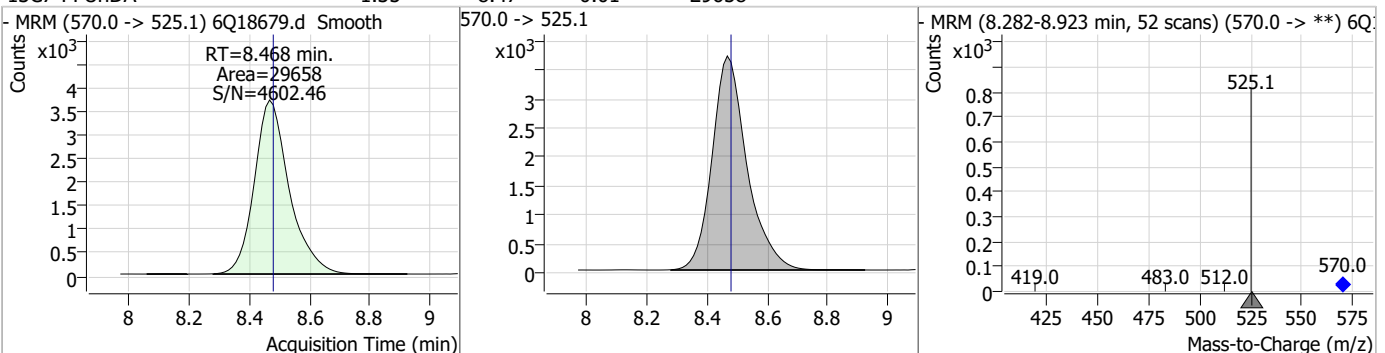
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.95	8.28	0.00	22445				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.26	8.28	-0.01	743	584.2 -> 526.0	57.4	28.6	85.9

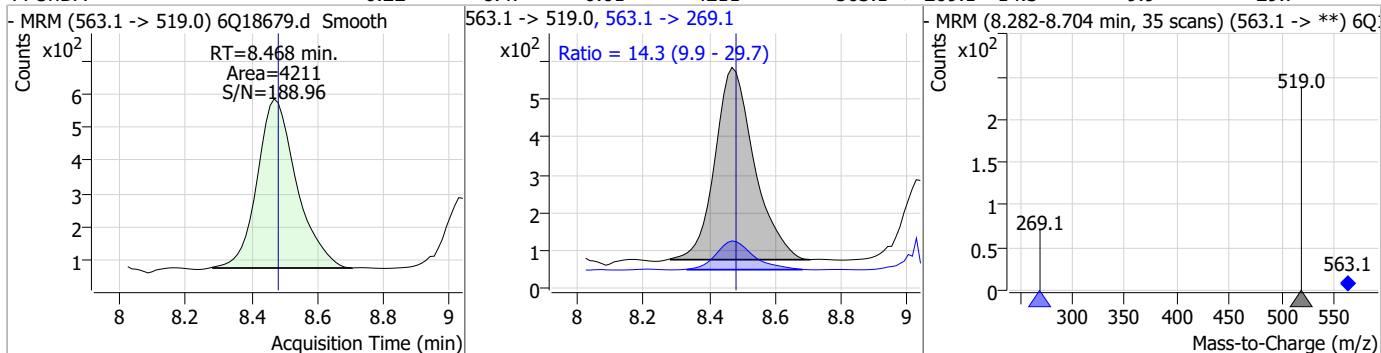


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.47	-0.01	29658				

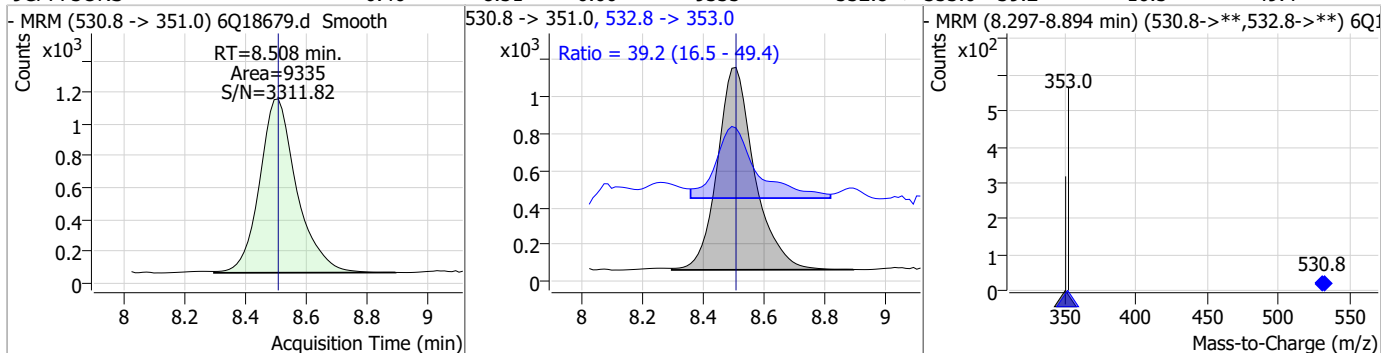


Perfluorinated Compounds by LC/MS/MS

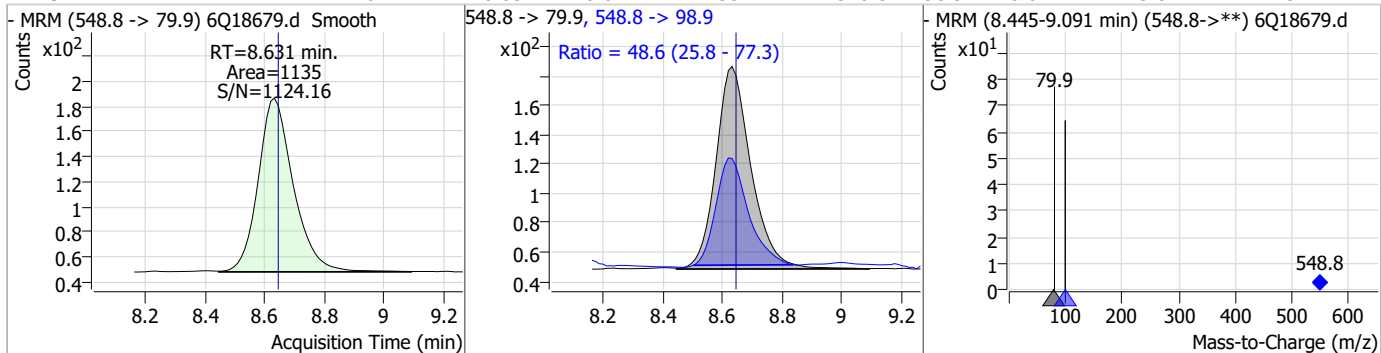
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.22	8.47	-0.01	4211	563.1 -> 269.1	14.3	9.9	29.7



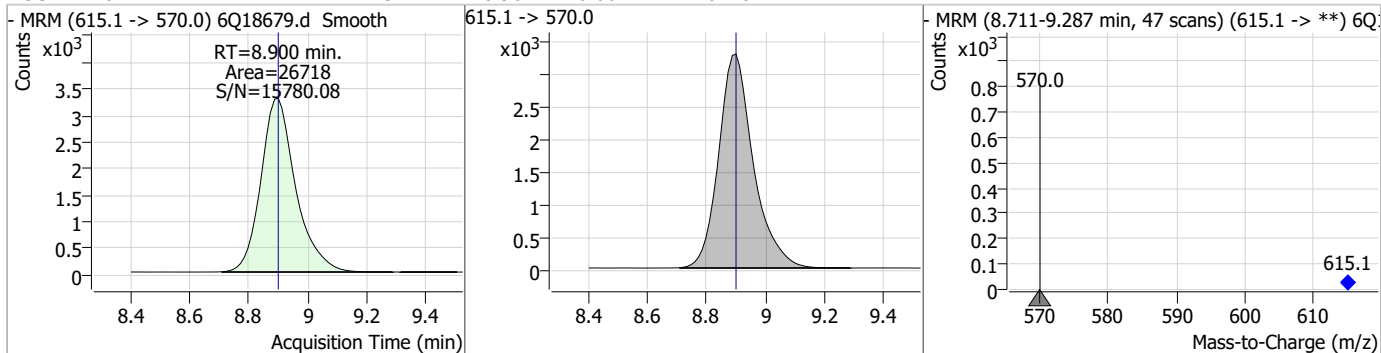
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.46	8.51	0.00	9335	532.8 -> 353.0	39.2	16.5	49.4



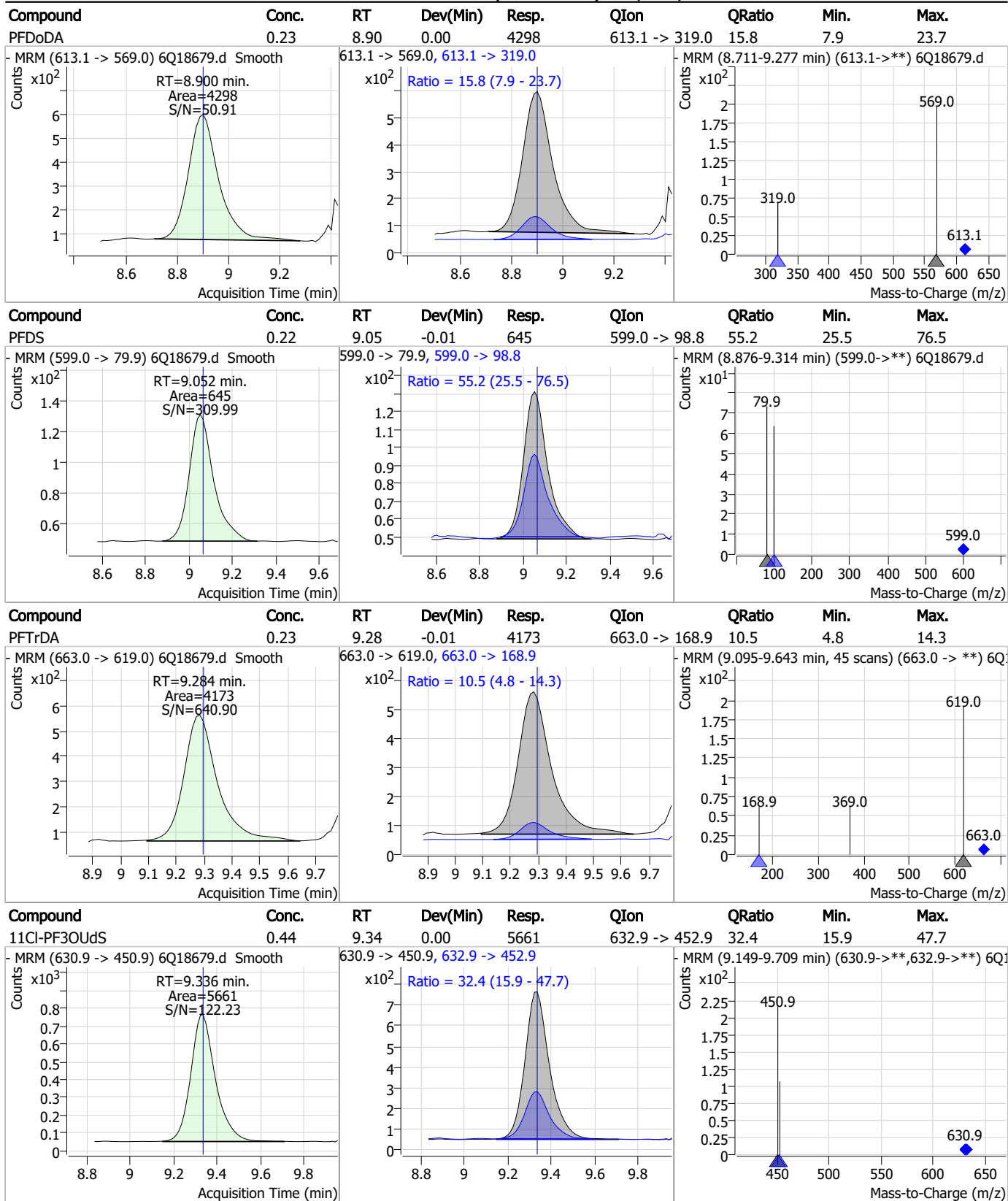
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.24	8.63	-0.01	1135	548.8 -> 98.9	48.6	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	8.90	0.00	26718	615.1 -> 570.0			

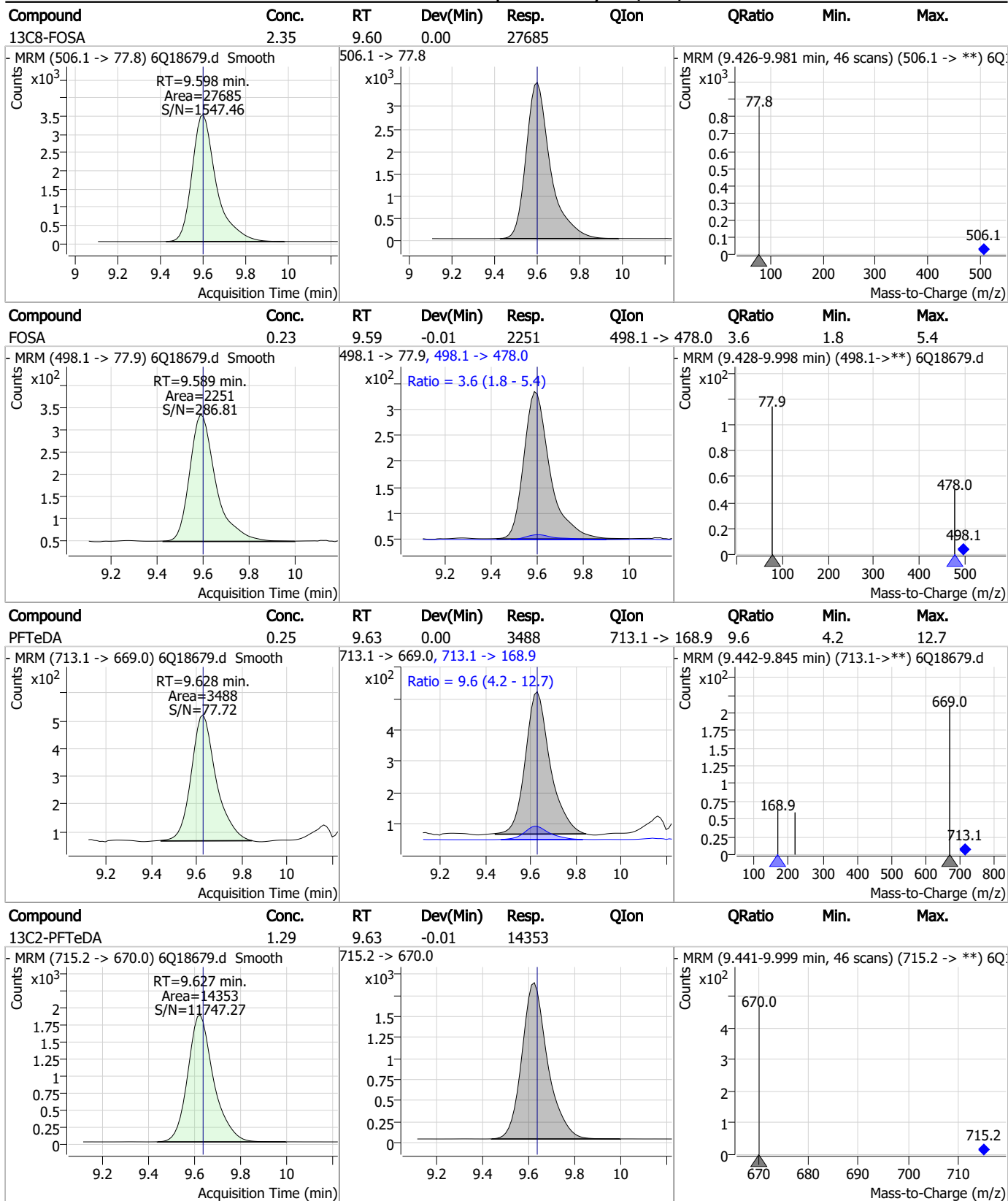


Perfluorinated Compounds by LC/MS/MS



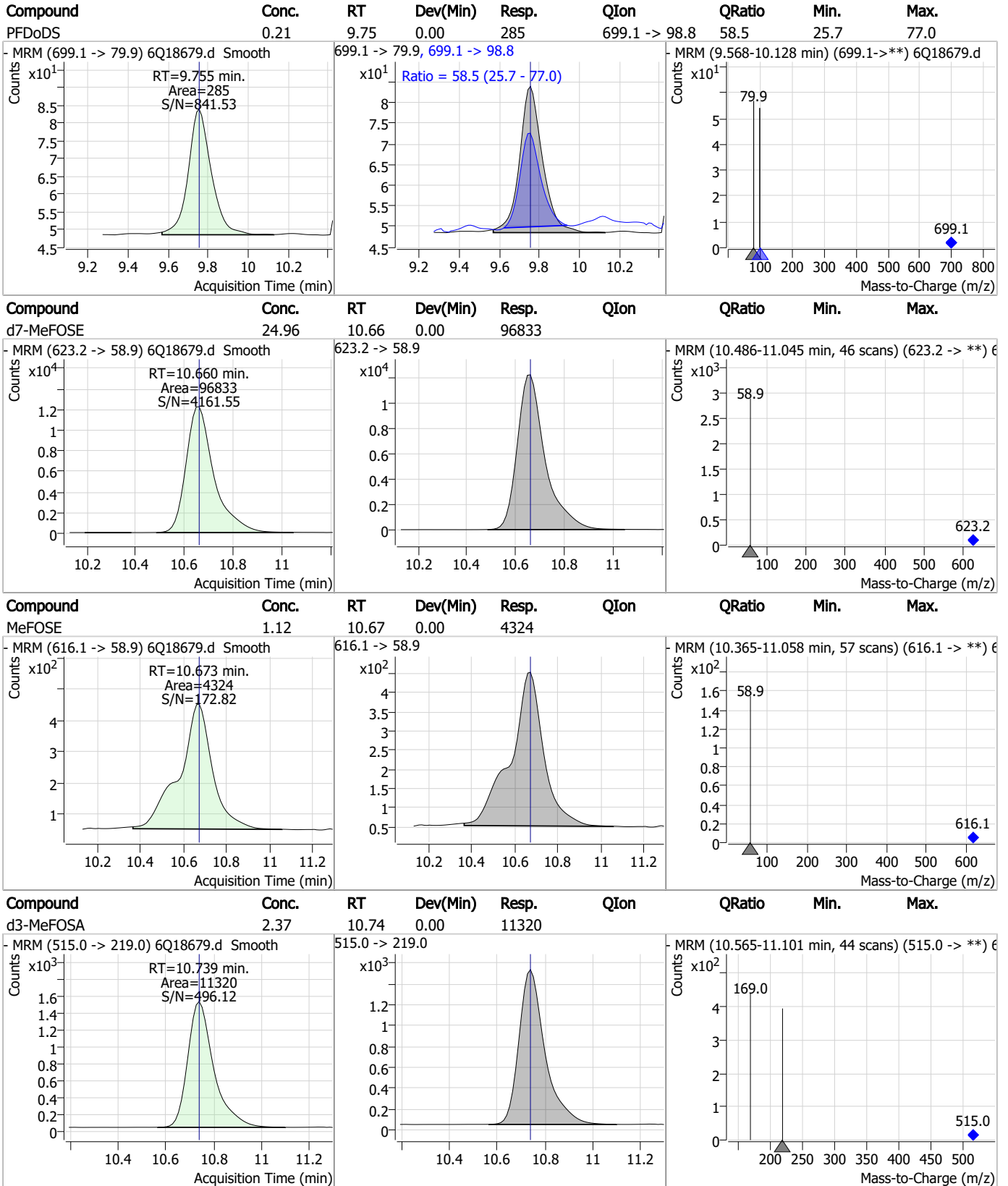
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Perfluorinated Compounds by LC/MS/MS



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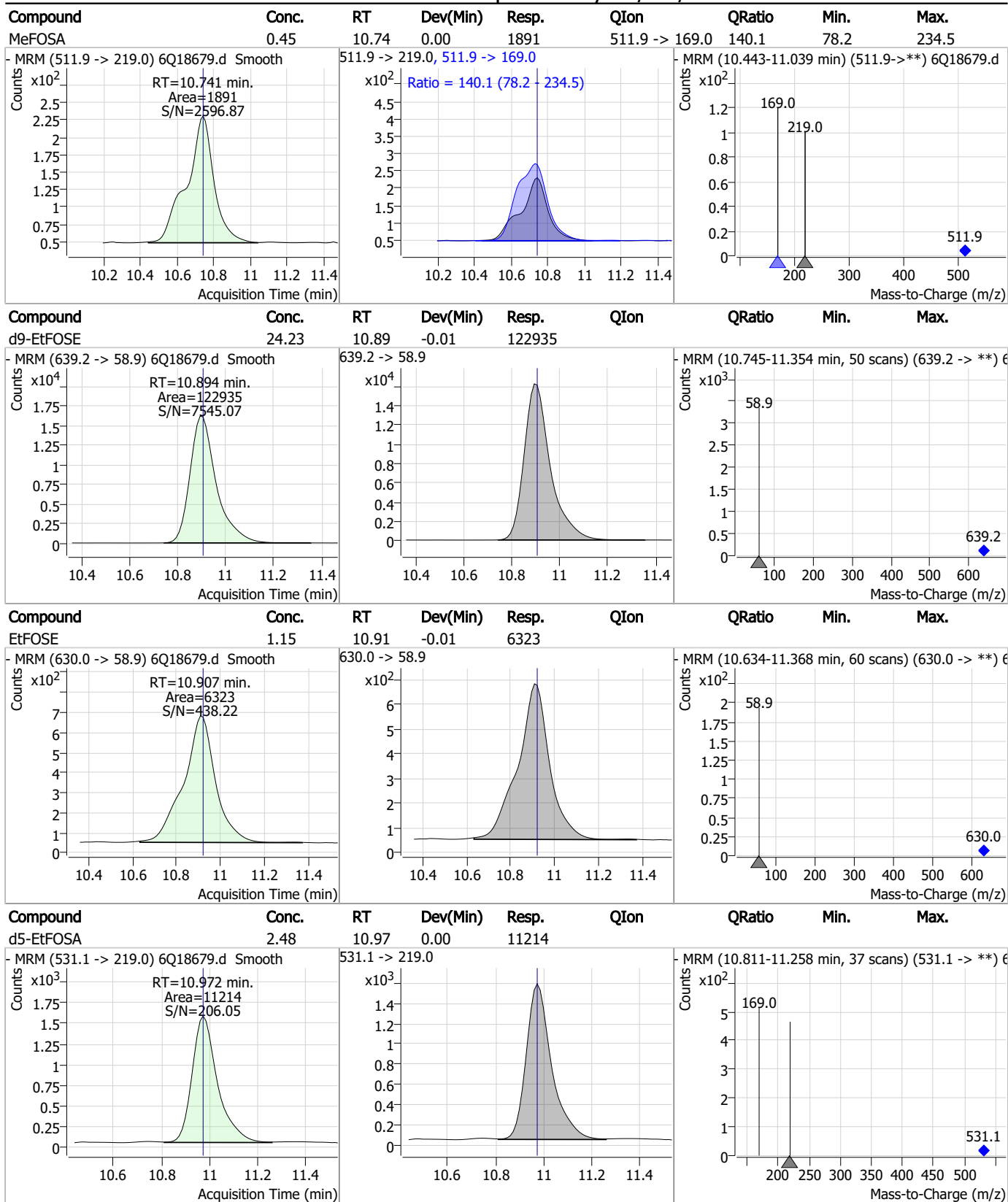
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



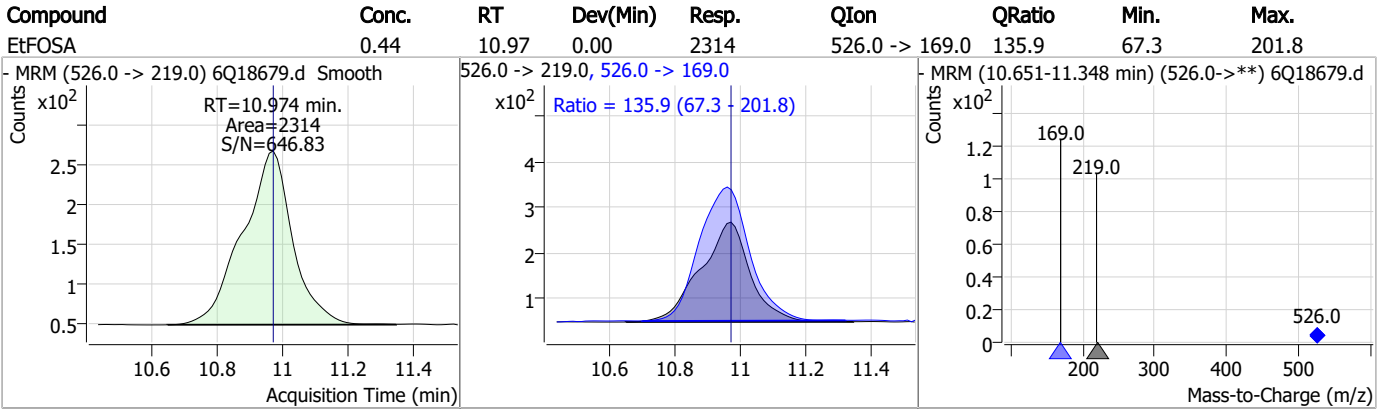
Perfluorinated Compounds by LC/MS/MS



7.7.12

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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18679.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 16:05 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18690.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:45:01 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	165251	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	55584	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	60028	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	56671	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	88765	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42600	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	25383	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	34532	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	33681	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	19063	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	41393	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	22745	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14160	2.50 µg/L	0.000
M8-PFOS	8.177	507.1 -> 79.9	13989	2.50 µg/L	0.000
M2-4:2FTS	5.081	329.1 -> 80.9	3686	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5374	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	6123	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	34129	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	37487	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	34925	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	167136	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	200675	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12317	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13046	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	16630	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	69481	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10423	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	94894	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	34912	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50117	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	55803	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3686	5.30 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5374	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	6123	5.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.6%		
13C2-PFDoDA	8.900	615.1 -> 570.0	33681	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	19063	1.44 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C3-PFBS	5.322	302.1 -> 79.9	22745	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFHxS	7.130	402.1 -> 79.9	14160	2.43 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C4-PFBA	2.822	216.8 -> 171.9	165251	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.369	367.1 -> 322.0	56671	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	60028	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	55584	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C6-PFDA	8.014	519.1 -> 474.1	25383	1.24 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C7-PFUnDA	8.468	570.0 -> 525.1	34532	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-FOSA	9.598	506.1 -> 77.8	41393	3.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 130.6%	
13C8-PFOA	7.026	421.1 -> 376.0	88765	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOS	8.177	507.1 -> 79.9	13989	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C9-PFNA	7.545	472.1 -> 427.0	42600	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSAA	8.084	573.2 -> 419.0	34129	6.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 127.2%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	37487	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSA	10.739	515.0 -> 219.0	13046	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
d5-EtFOSAA	8.279	589.2 -> 419.0	34925	7.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 143.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	167136	40.02 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 160.1%	
d9-EtFOSE	10.894	639.2 -> 58.9	200675	36.73 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 146.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	12317	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	46759	8.73 µg/L	99
		327.1 -> 80.9	17727		
6:2FTS	6.801	427.1 -> 407.0	51251	9.70 µg/L	93
		427.1 -> 80.9	15836		
8:2FTS	7.816	527.1 -> 507.0	30871	9.06 µg/L	99
		527.1 -> 80.8	12173		
EtFOSAA	8.280	584.2 -> 419.1	11409	2.54 µg/L	92
		584.2 -> 526.0	5888		
FOSA	9.589	498.1 -> 77.9	33261	2.32 µg/L	98
		498.1 -> 478.0	962		
MeFOSAA	8.085	570.1 -> 419.0	17106	2.44 µg/L	94
		570.1 -> 483.0	3221		
PFBA	2.818	212.8 -> 168.9	53090	9.70 µg/L	100
PFBS	5.323	298.7 -> 79.9	15579	2.01 µg/L	99
		298.7 -> 98.8	6021		
PFDA	8.027	512.9 -> 469.0	70545	2.40 µg/L	99
		512.9 -> 219.0	11408		
PFDODA	8.900	613.1 -> 569.0	58400	2.53 µg/L	100
		613.1 -> 319.0	9138		
PFDS	9.052	599.0 -> 79.9	7385	2.11 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3670	2.41 µg/L	98
		363.1 -> 319.0	60395		
PFHpS	7.685	363.1 -> 169.0	9802	2.08 µg/L	96
		449.0 -> 79.9	13977		
PFHxA	5.407	449.0 -> 98.9	6945	2.30 µg/L	99
		313.0 -> 269.0	46363		
PFHxS	7.119	313.0 -> 118.9	2495	2.14 µg/L	94
		398.7 -> 79.9	13688		
PFNA	7.545	398.7 -> 98.9	6424	2.33 µg/L	100
		463.0 -> 419.0	70396		
PFNS	8.631	463.0 -> 219.0	13663	2.14 µg/L	93
		548.8 -> 79.9	11995		
PFOA	7.028	548.8 -> 98.9	6724	2.34 µg/L	97
		413.0 -> 369.0	88532		
PFOS	8.166	413.0 -> 169.0	15932	2.23 µg/L	99
		498.9 -> 79.9	14250		
PFPeA	4.212	498.9 -> 98.8	6854	4.83 µg/L	100
		263.0 -> 219.0	64456		
PFPeS	6.422	349.1 -> 79.9	14212	2.23 µg/L	94
		349.1 -> 98.9	6305		
PFTeDA	9.628	713.1 -> 669.0	44579	2.38 µg/L	100
		713.1 -> 168.9	3757		
PFTrDA	9.284	663.0 -> 619.0	67418	2.89 µg/L	97
		663.0 -> 168.9	7210		
PFUnDA	8.468	563.1 -> 519.0	54190	2.42 µg/L	92
		563.1 -> 269.1	8808		
11CI-PF3OUdS	9.323	630.9 -> 450.9	66878	4.75 µg/L	96
		632.9 -> 452.9	19896		
9CI-PF3ONS	8.495	530.8 -> 351.0	105781	4.77 µg/L	94
		532.8 -> 353.0	31188		
ADONA	6.632	376.9 -> 250.9	229427	4.61 µg/L	99
		376.9 -> 84.8	63207		
HFPO-DA	5.770	284.9 -> 168.9	15154	4.77 µg/L	97
		284.9 -> 184.9	1856		
3:3FTCA	3.671	241.0 -> 177.0	10295	12.05 µg/L	92
		241.0 -> 117.0	1407		
5:3FTCA	6.074	341.0 -> 237.1	213221	58.81 µg/L	96
		341.0 -> 217.0	158623		
7:3FTCA	7.510	441.0 -> 316.9	162339	65.38 µg/L	90
		441.0 -> 336.9	348475		
EtFOSA	10.974	526.0 -> 219.0	27301	4.76 µg/L	97
		526.0 -> 169.0	37686		
EtFOSE	10.907	630.0 -> 58.9	108586	12.13 µg/L	100
		511.9 -> 219.0	23378		
MeFOSA	10.741	511.9 -> 169.0	33481	4.87 µg/L	90
		616.1 -> 58.9	80884		
MeFOSE	10.673	699.1 -> 79.9	3242	12.18 µg/L	100
		699.1 -> 98.8	1671		
PFDoDS	9.755	295.0 -> 201.0	11939	2.09 µg/L	100
		295.0 -> 84.9	3267		
NFDHA	5.288	279.0 -> 85.1	44188	4.86 µg/L	100
		229.0 -> 84.9	34296		
PFMBA	4.626	314.8 -> 134.9	106752	4.85 µg/L	100
		314.8 -> 82.9	3933		
PFMPA	3.351			4.17 µg/L	100
PFEESA	5.862				

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

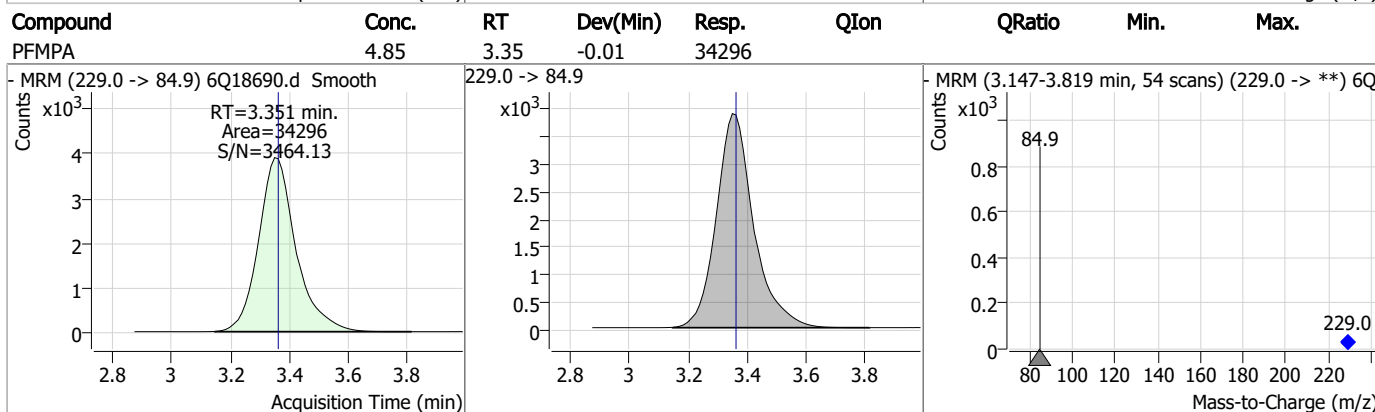
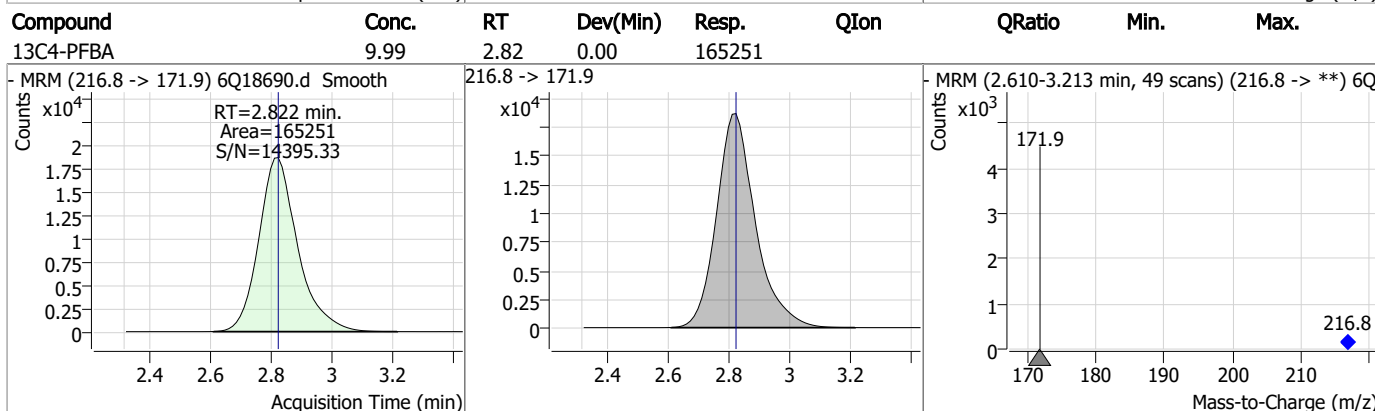
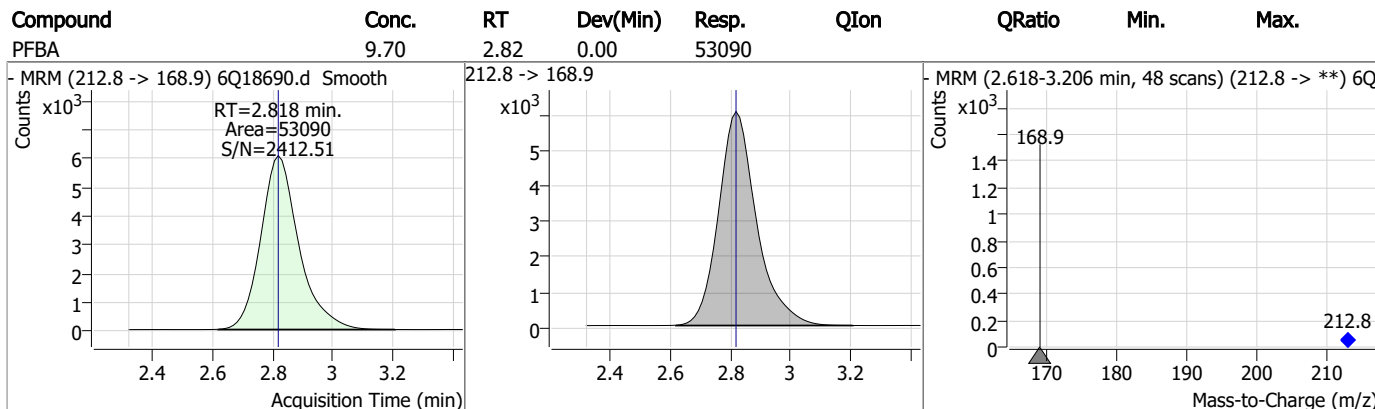
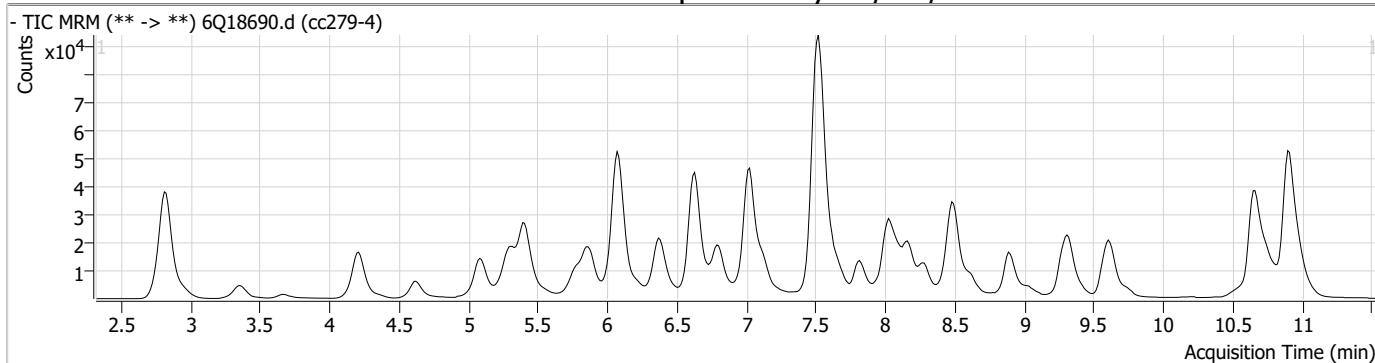
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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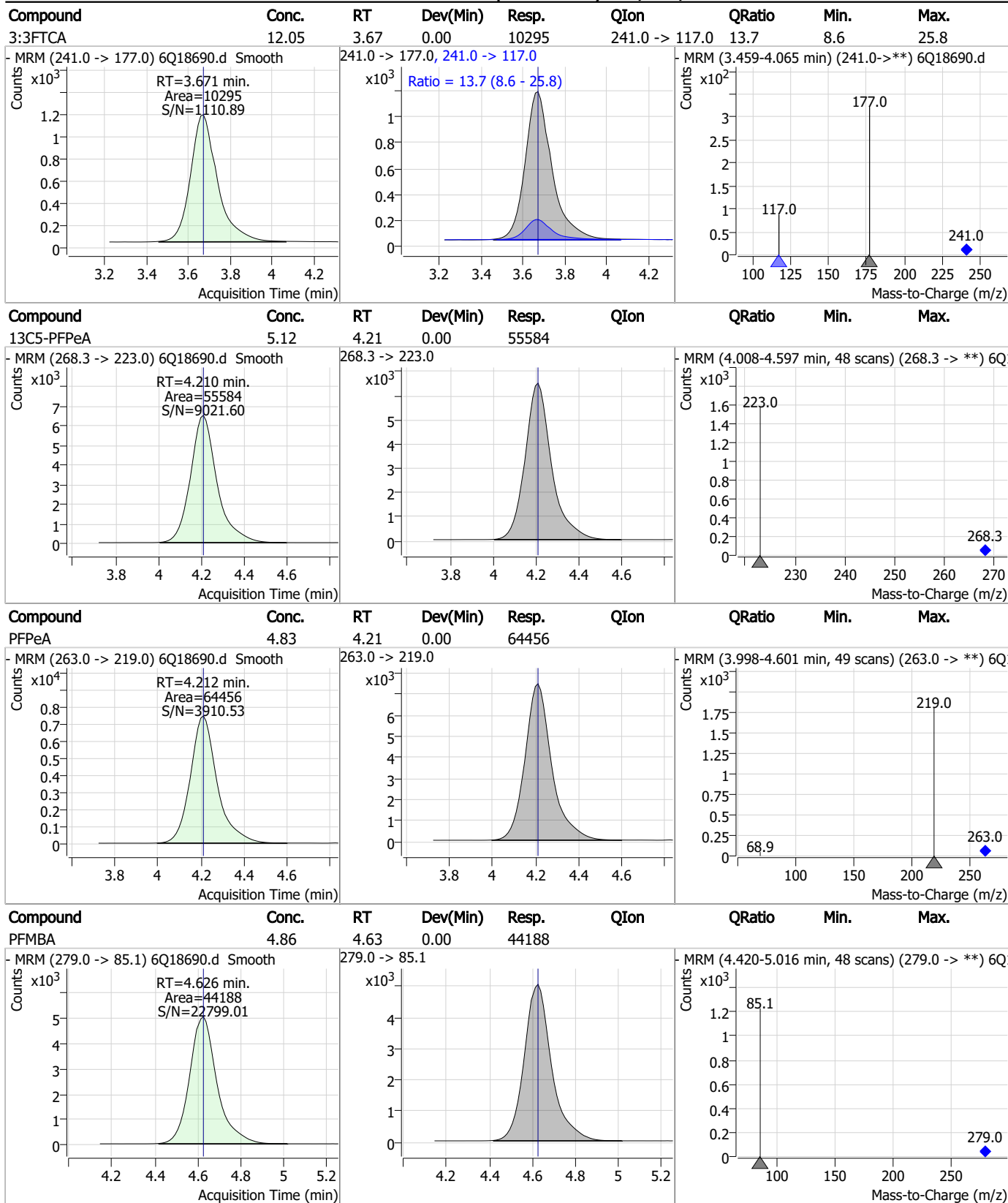
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Perfluorinated Compounds by LC/MS/MS



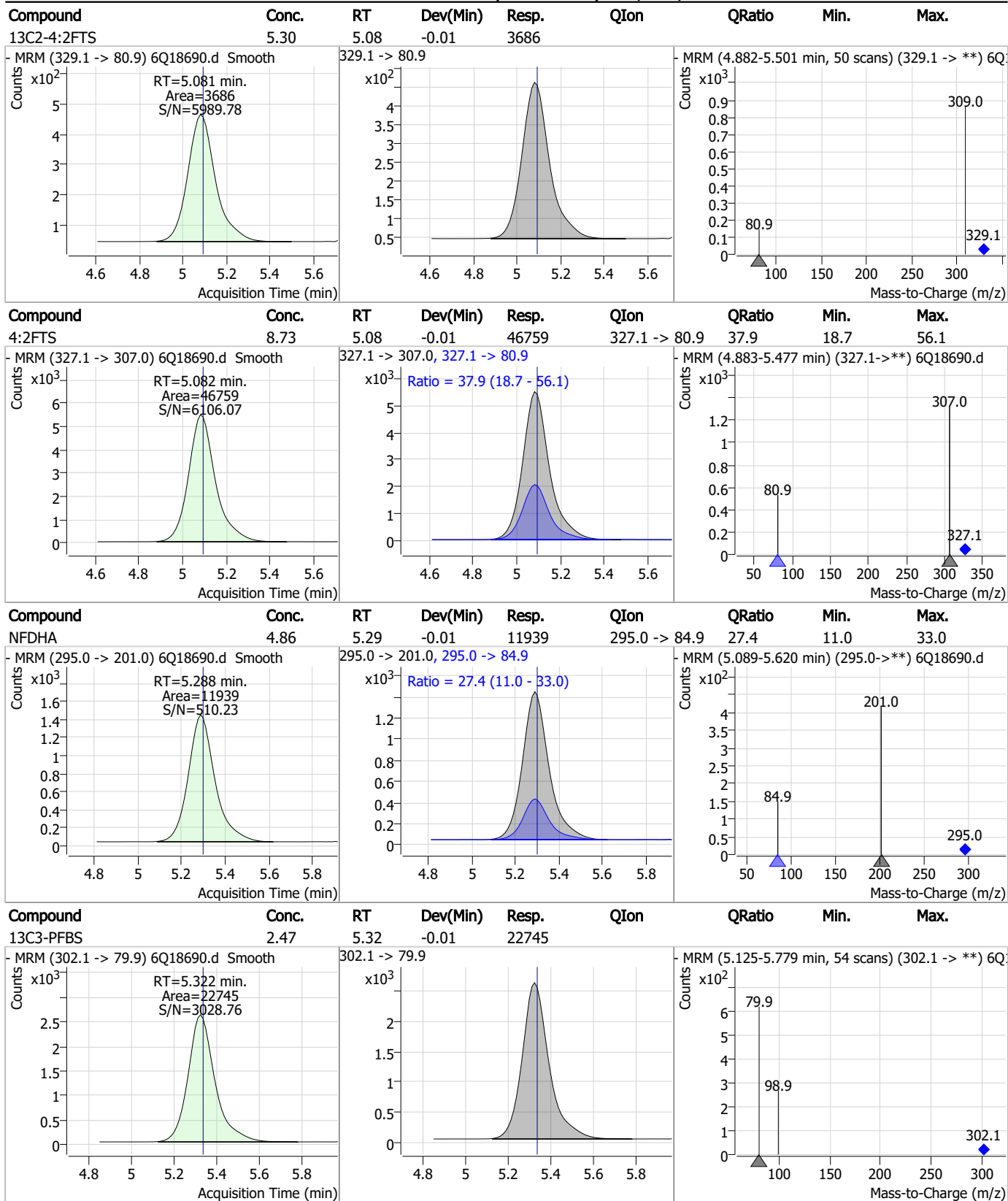
Perfluorinated Compounds by LC/MS/MS



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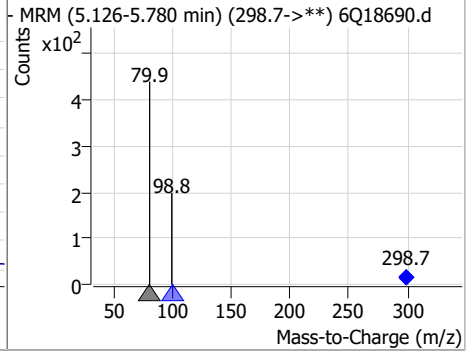
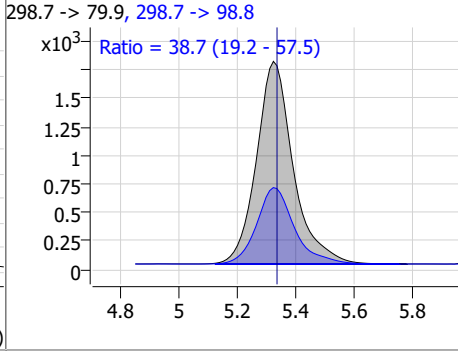
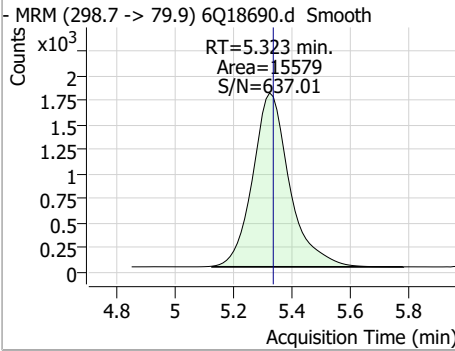
Perfluorinated Compounds by LC/MS/MS



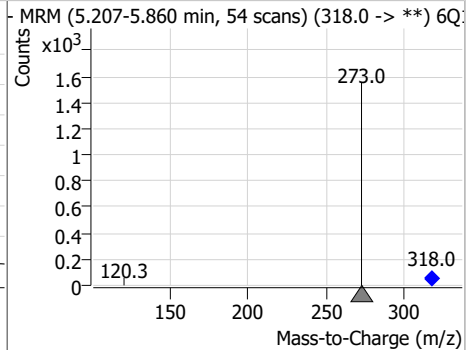
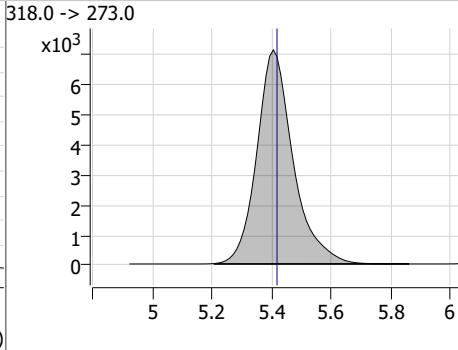
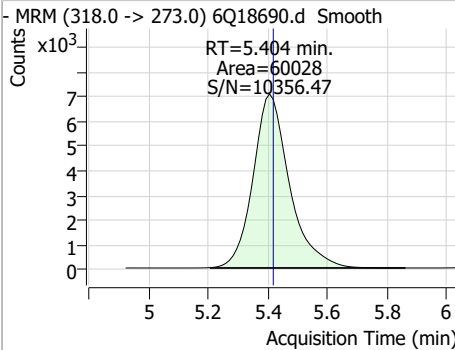
7.7.13
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Perfluorinated Compounds by LC/MS/MS

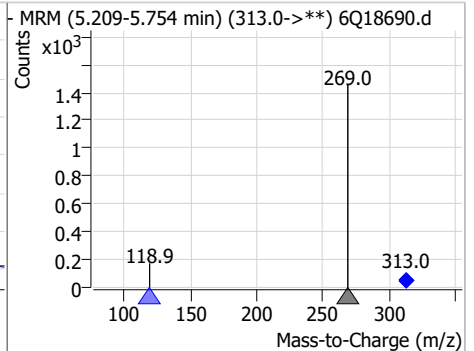
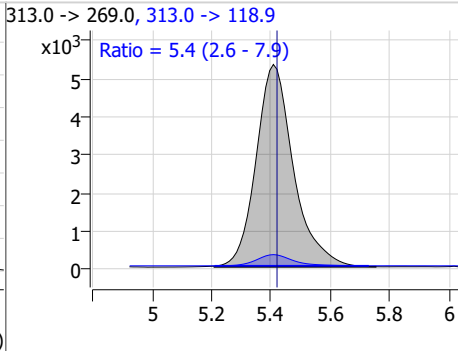
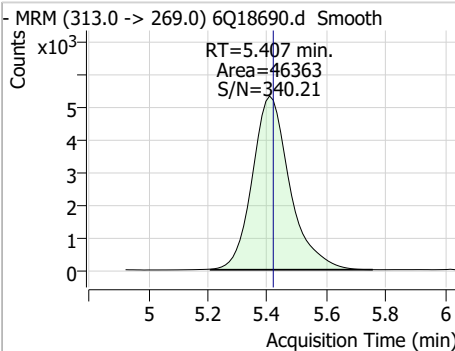
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	5.32	-0.01	15579	298.7 -> 98.8	38.7	19.2	57.5



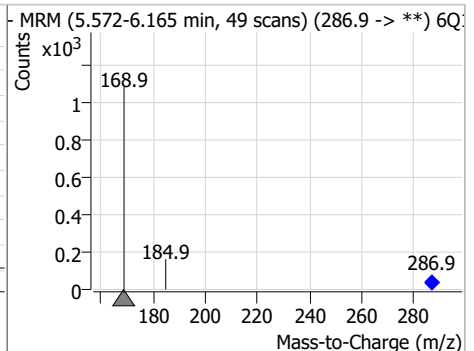
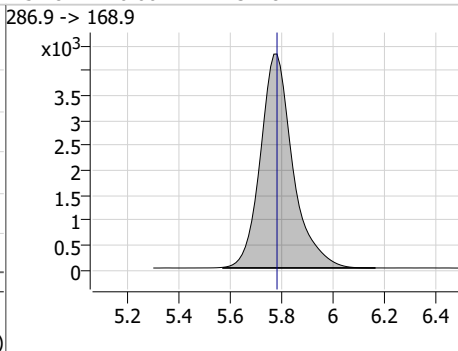
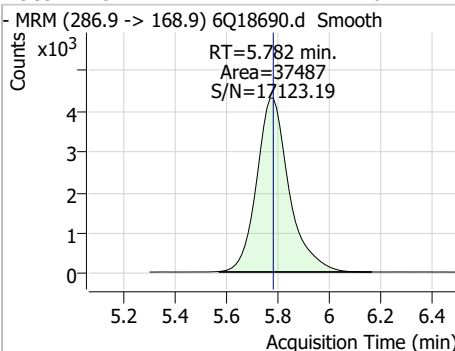
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.40	-0.01	60028				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.30	5.41	-0.01	46363	313.0 -> 118.9	5.4	2.6	7.9

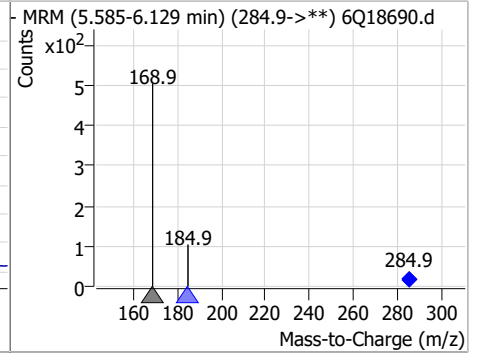
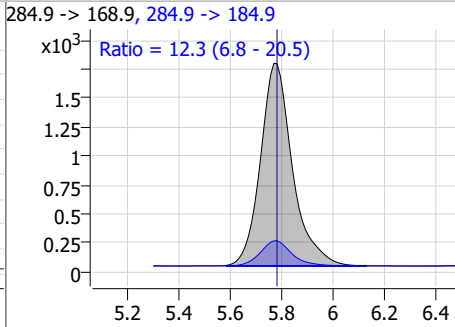
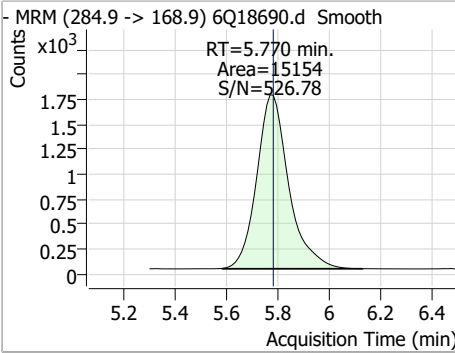


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.22	5.78	0.00	37487				

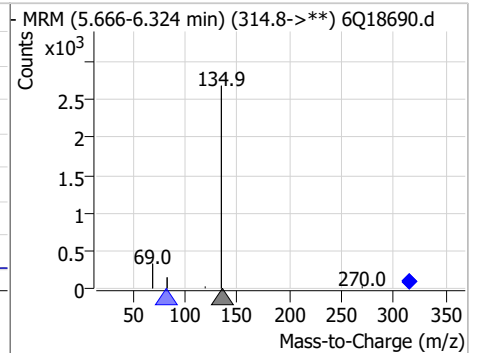
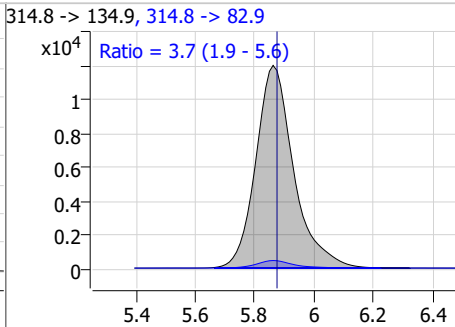
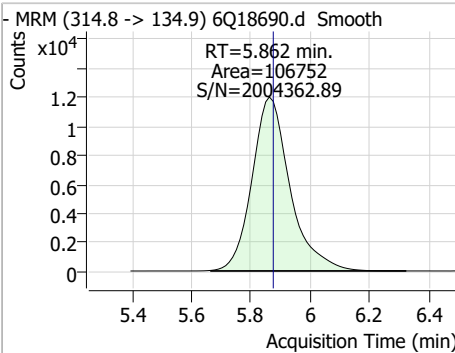


Perfluorinated Compounds by LC/MS/MS

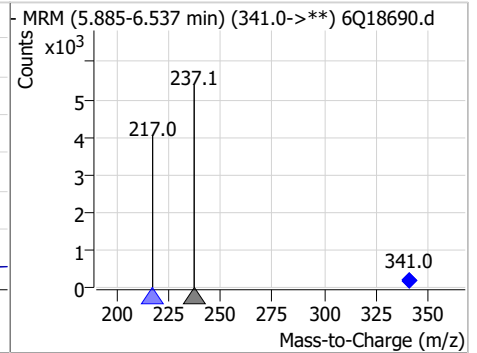
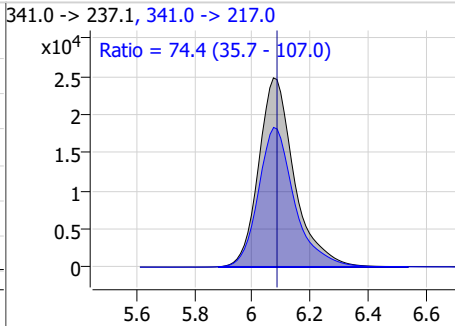
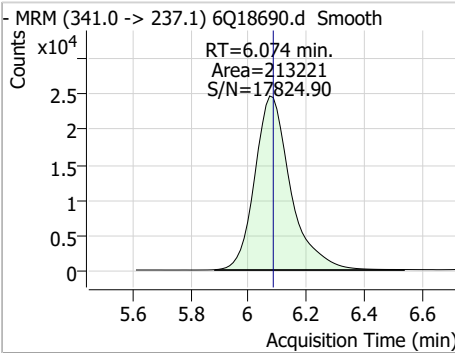
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.77	5.77	-0.01	15154	284.9 -> 184.9	12.3	6.8	20.5



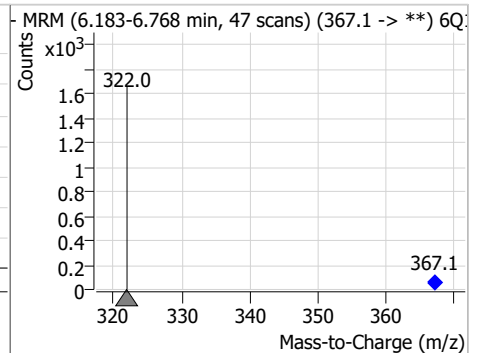
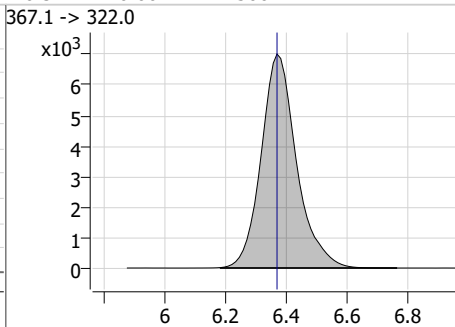
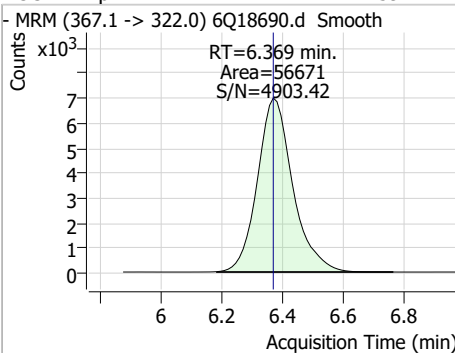
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.17	5.86	-0.01	106752	314.8 -> 82.9	3.7	1.9	5.6



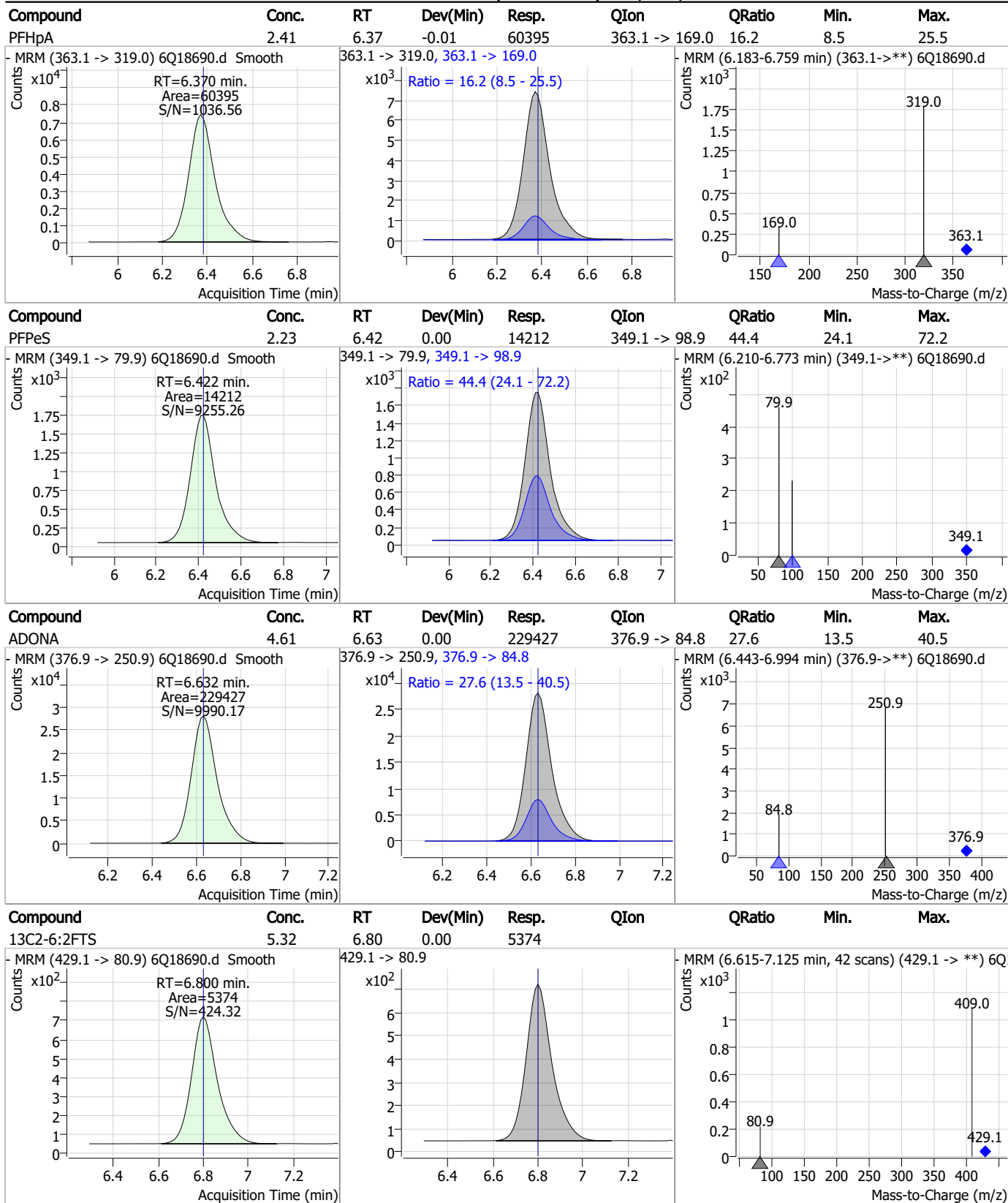
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.81	6.07	-0.01	213221	341.0 -> 217.0	74.4	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.37	0.00	56671	367.1 -> 322.0			

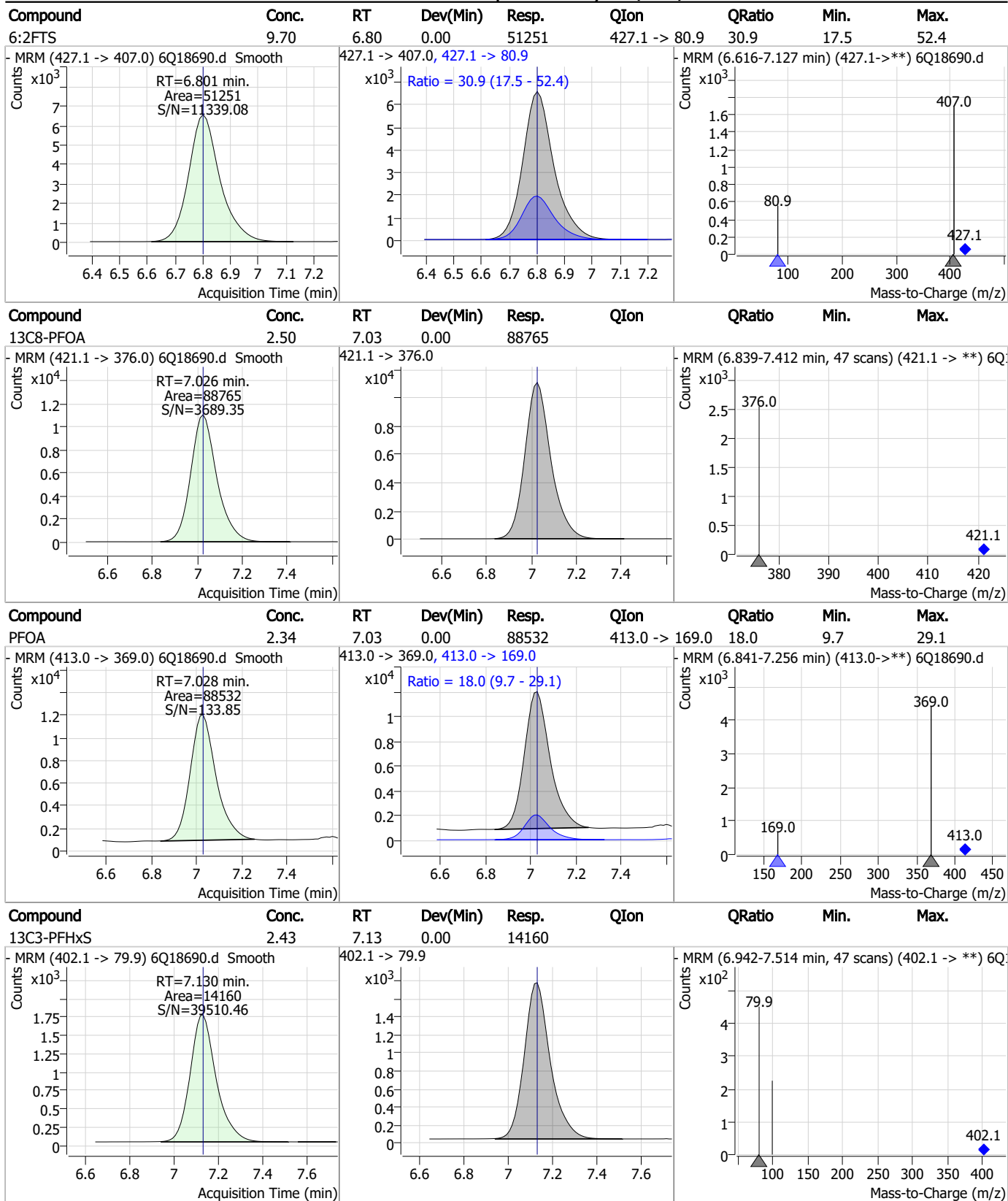


Perfluorinated Compounds by LC/MS/MS



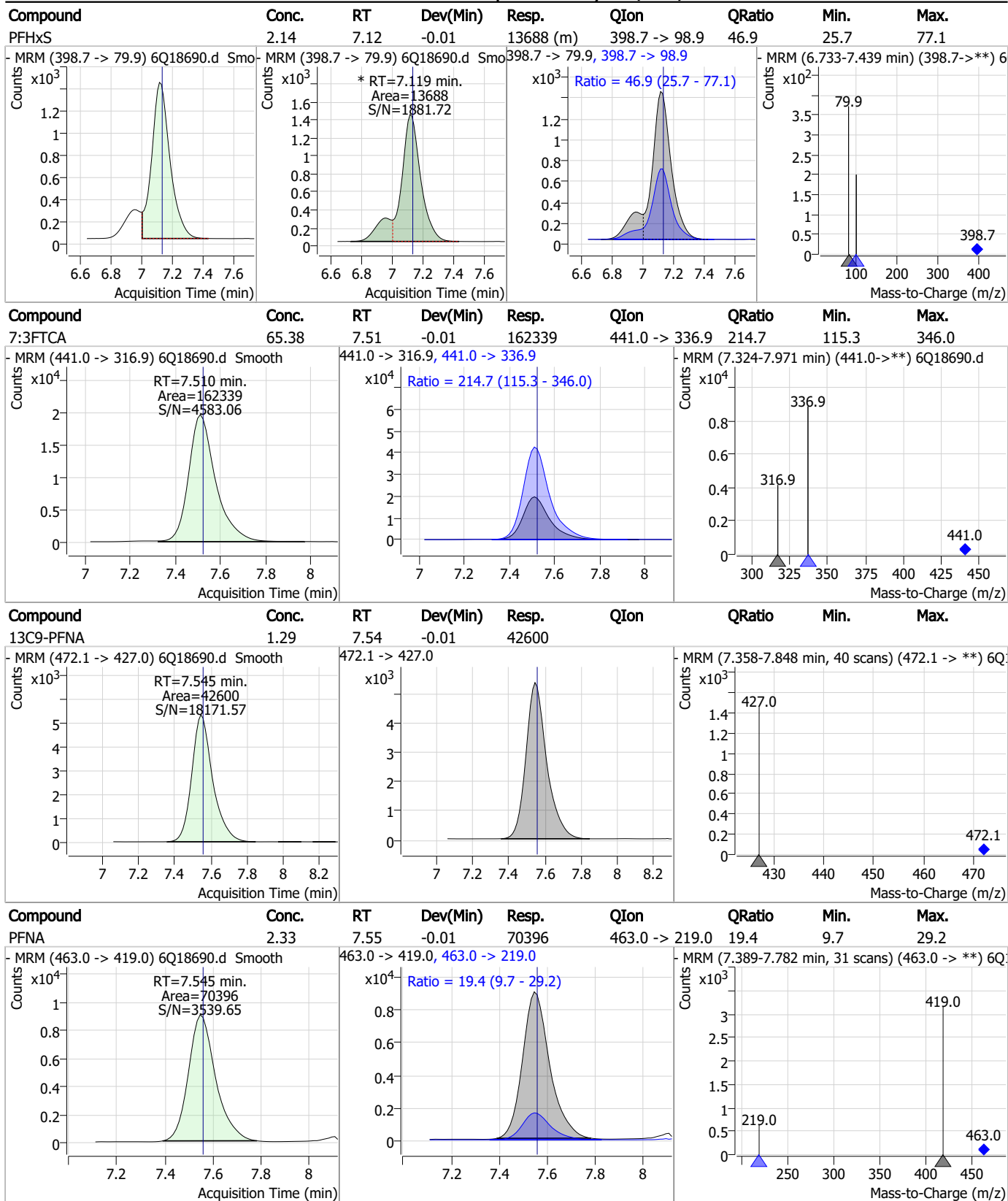
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Perfluorinated Compounds by LC/MS/MS



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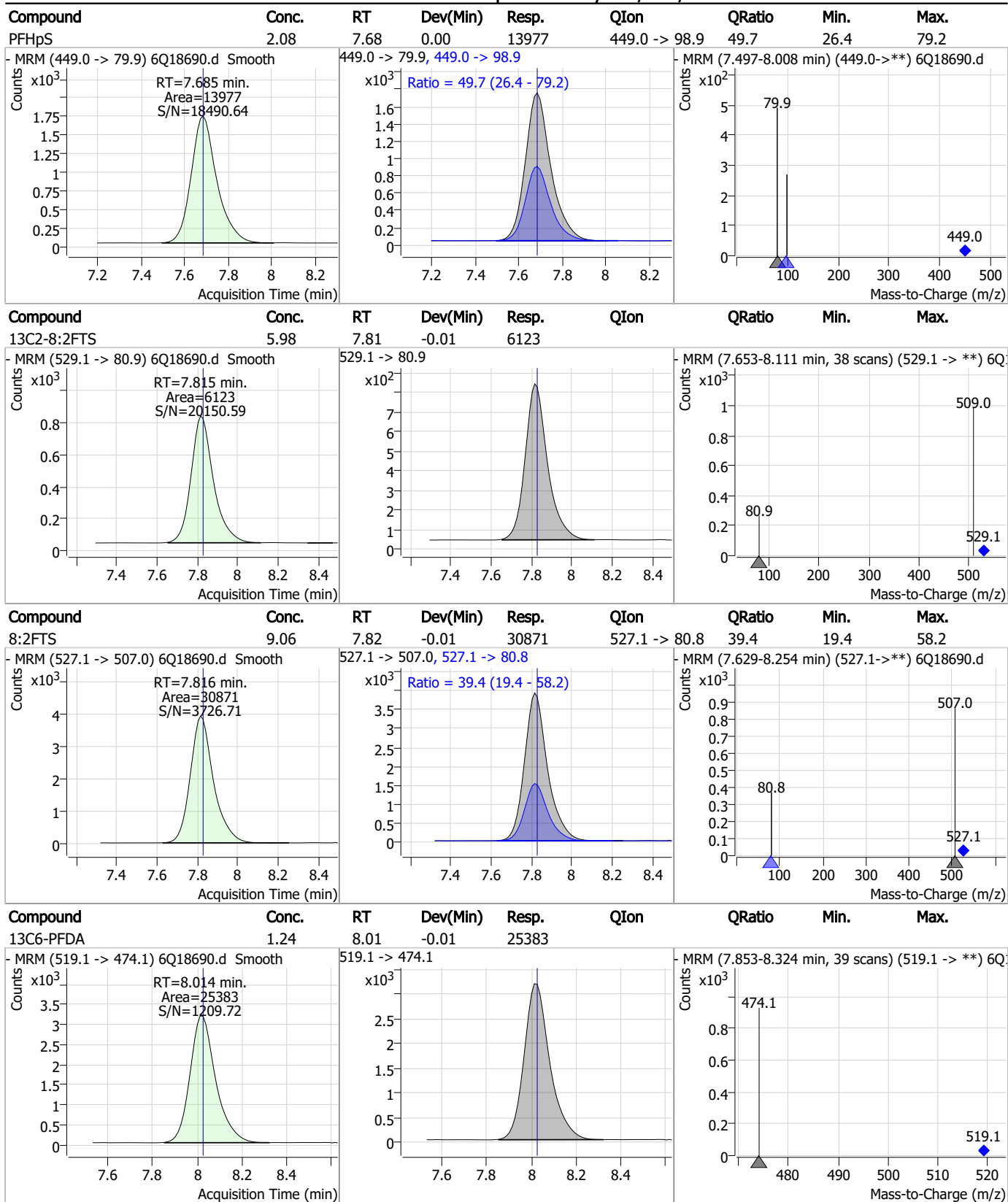
Perfluorinated Compounds by LC/MS/MS



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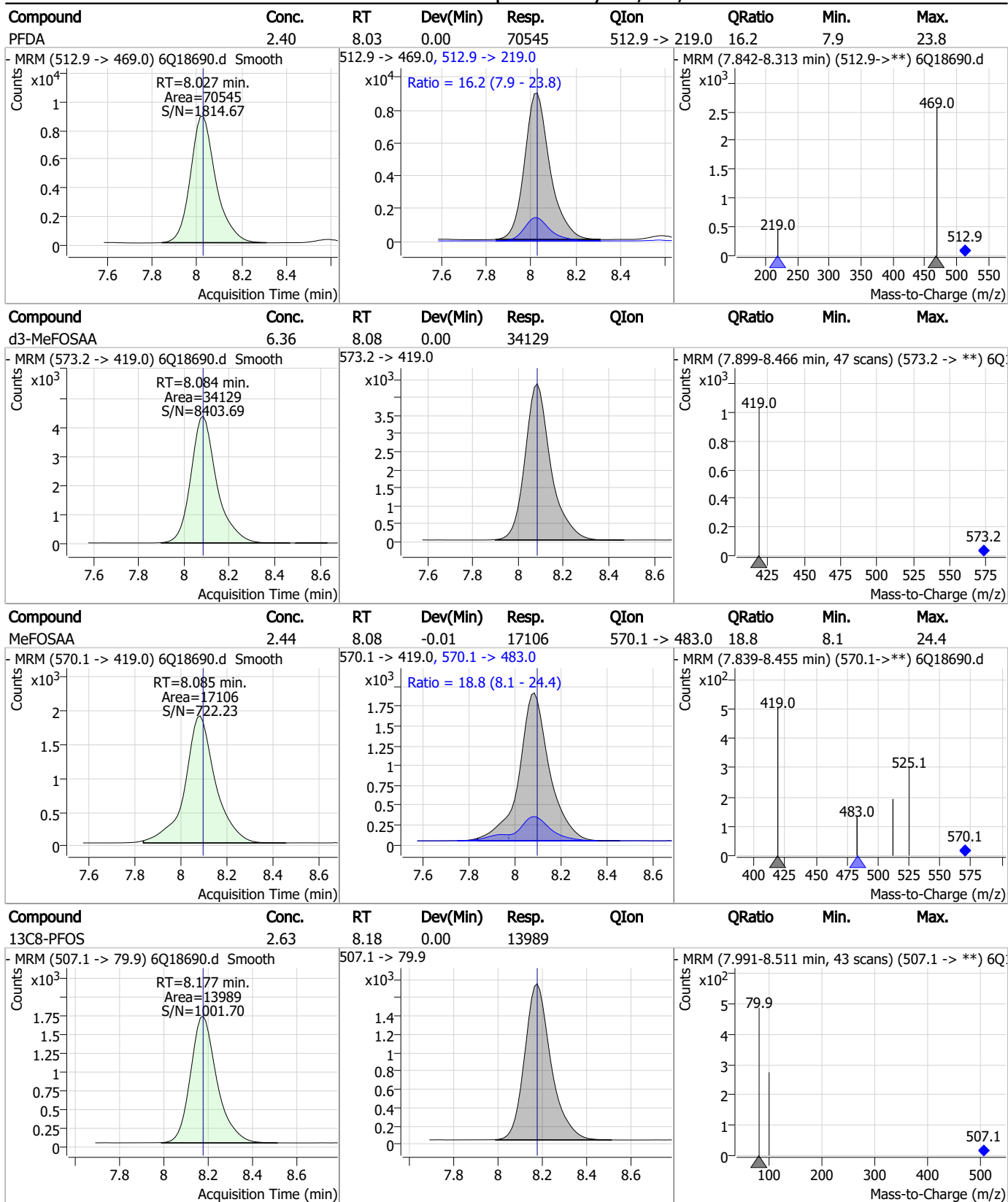
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

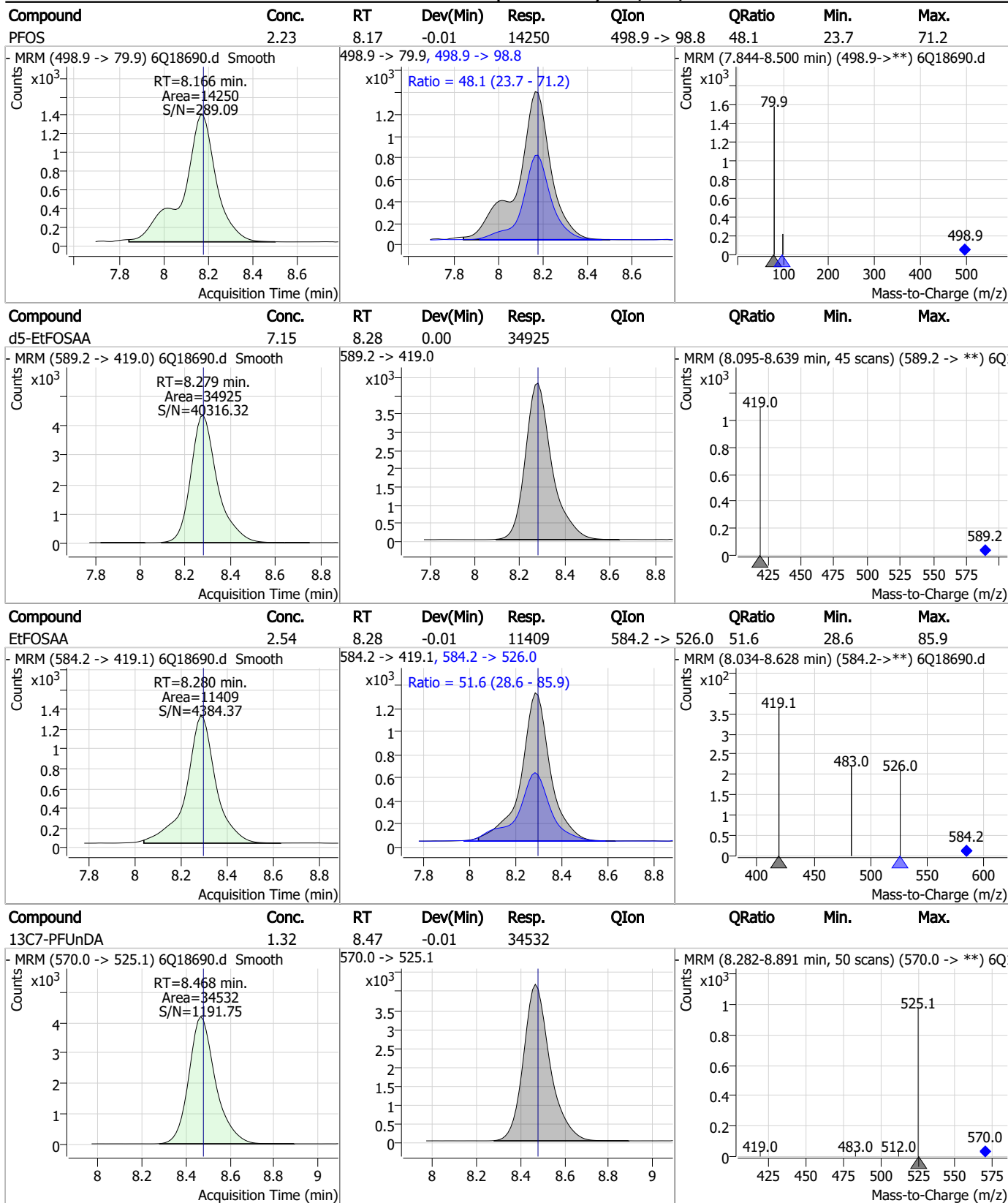


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Perfluorinated Compounds by LC/MS/MS

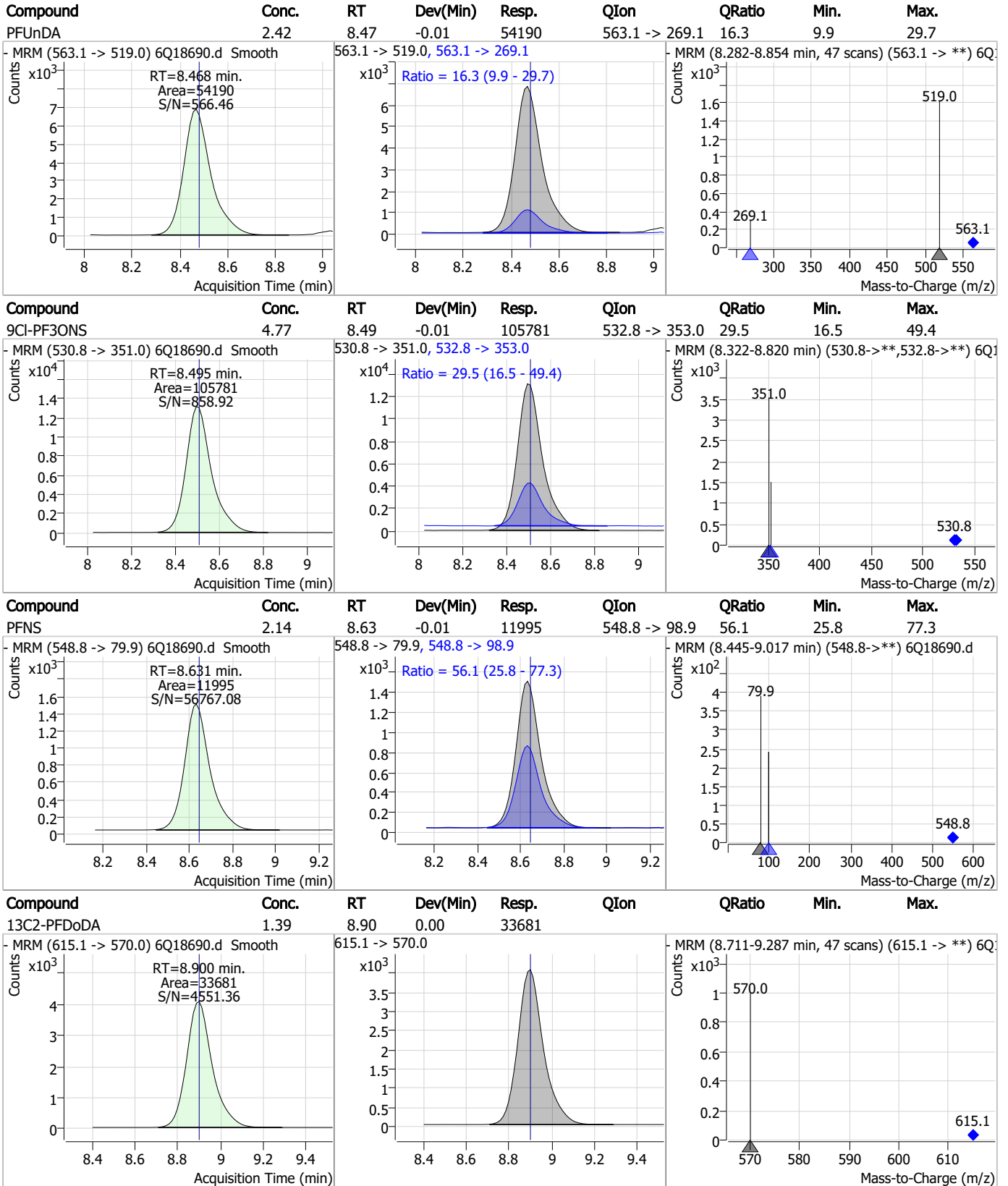


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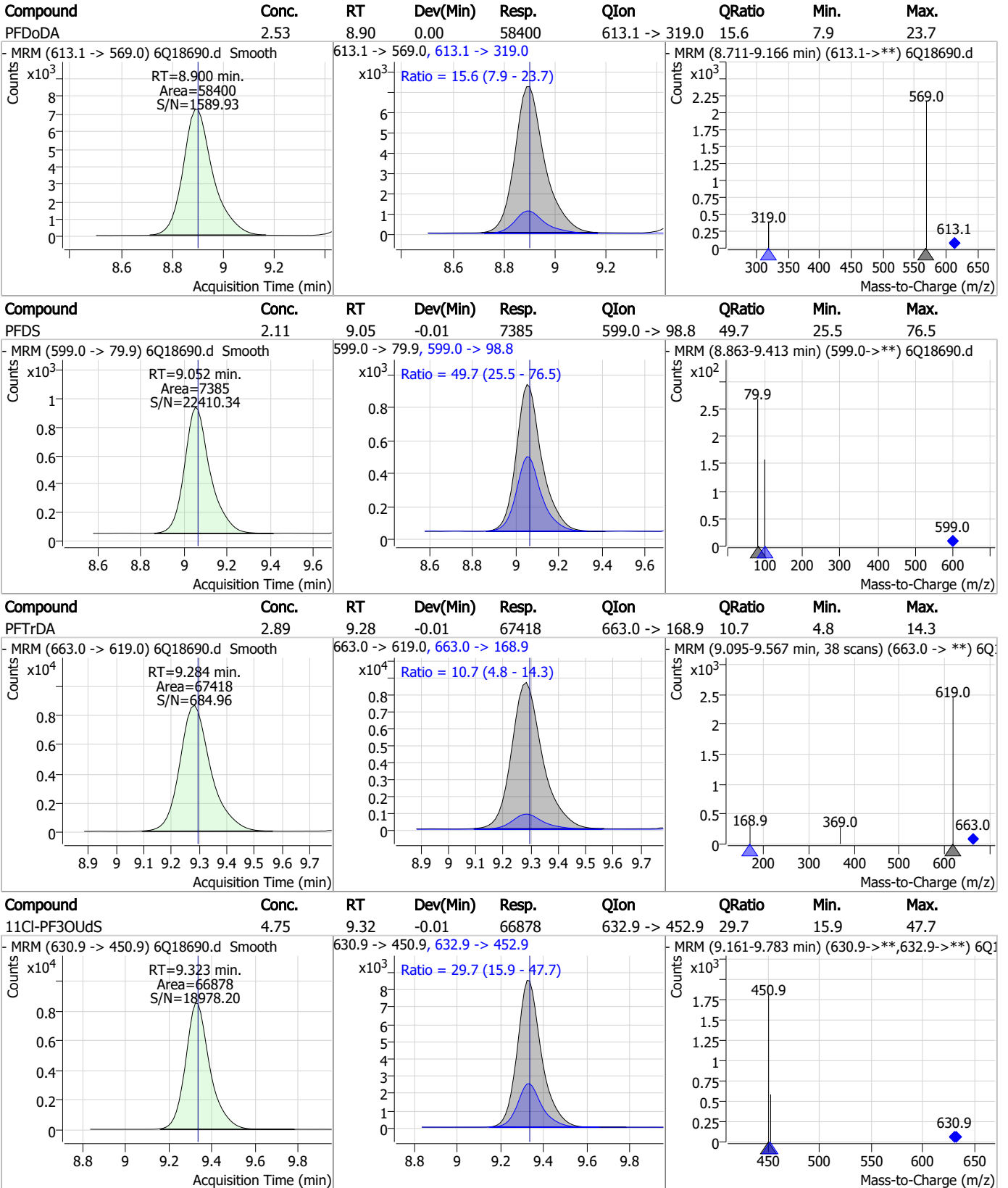
Perfluorinated Compounds by LC/MS/MS



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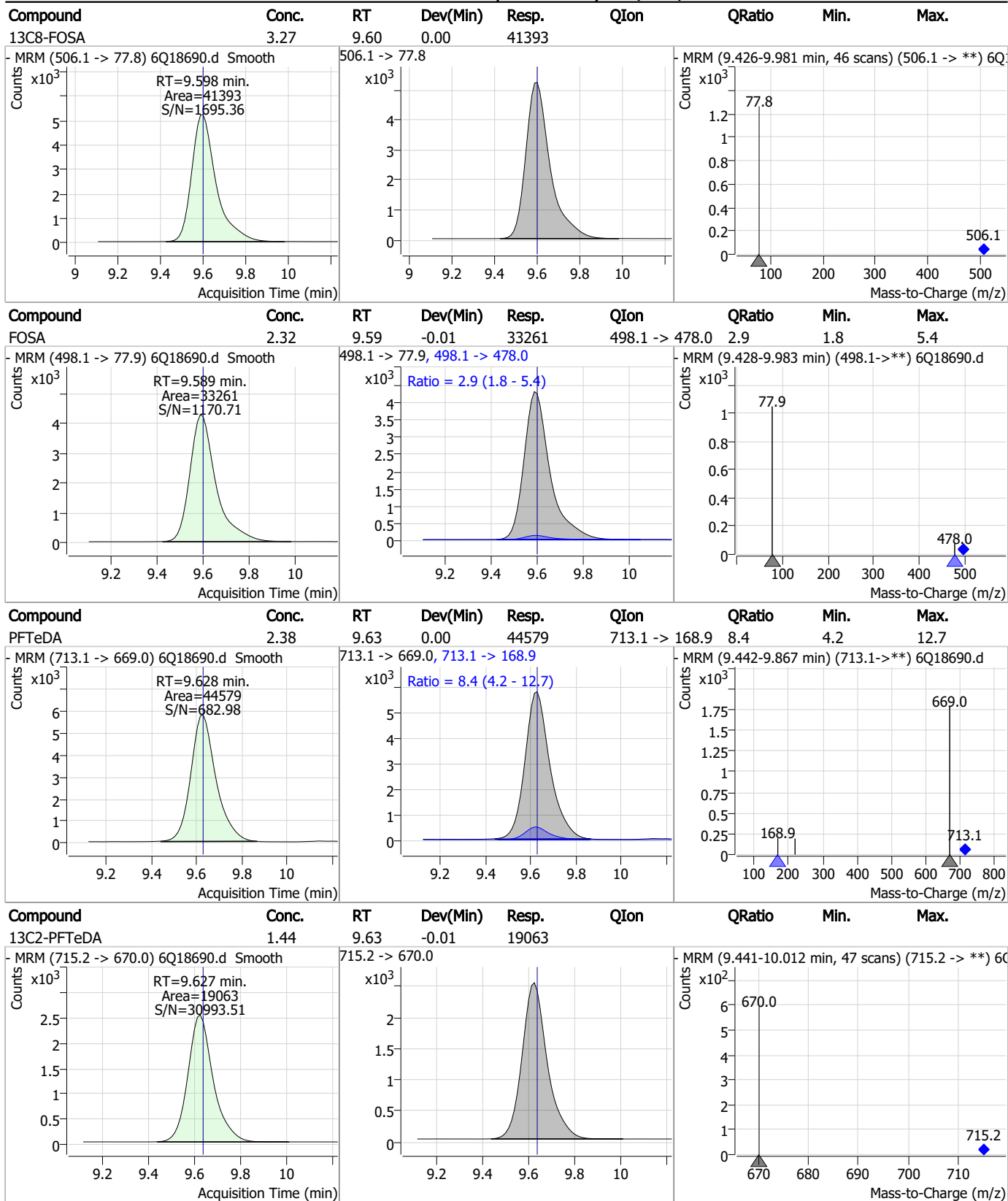
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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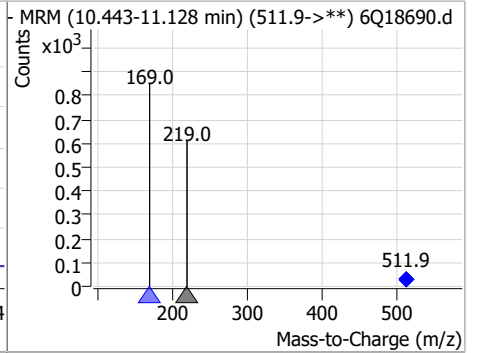
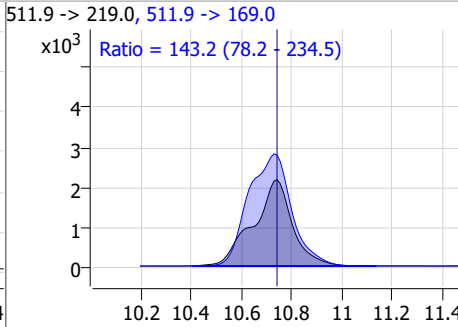
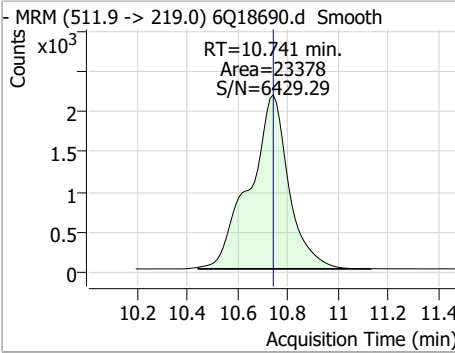
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.09	9.75	0.00	3242	699.1 -> 98.8	51.6	25.7	77.0
d7-MeFOSE	40.02	10.65	-0.01	167136				
MeFOSE	12.18	10.67	0.00	80884				
d3-MeFOSA	2.54	10.74	0.00	13046				

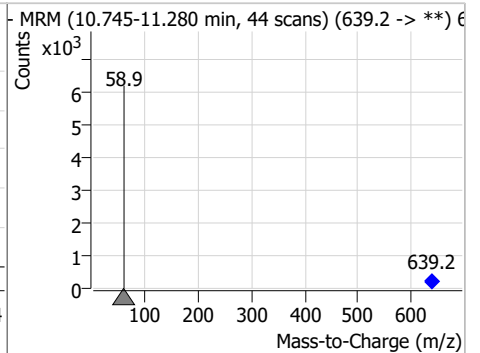
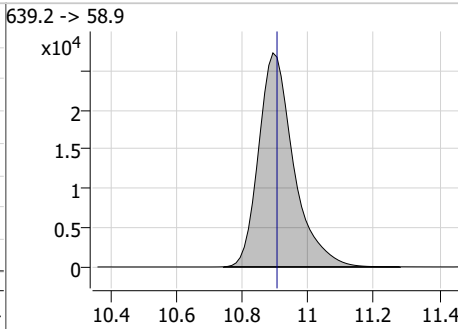
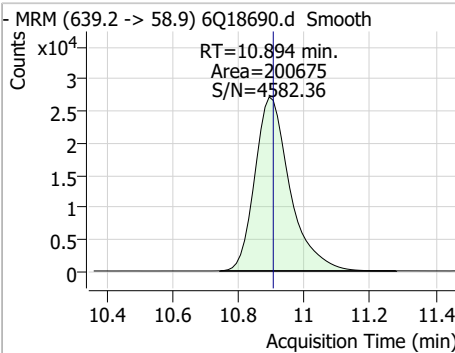
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Perfluorinated Compounds by LC/MS/MS

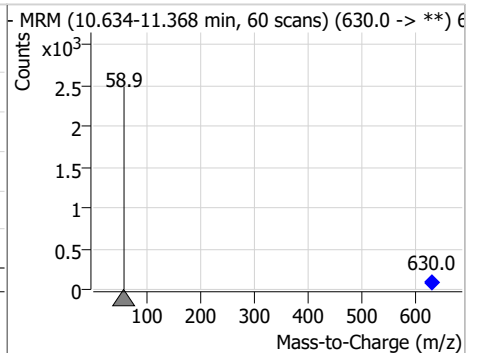
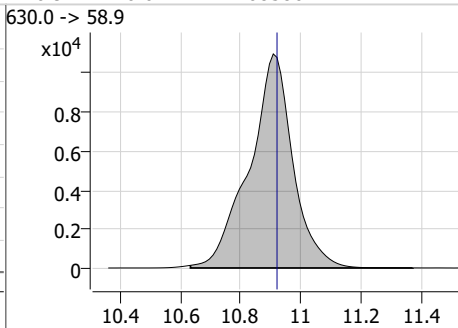
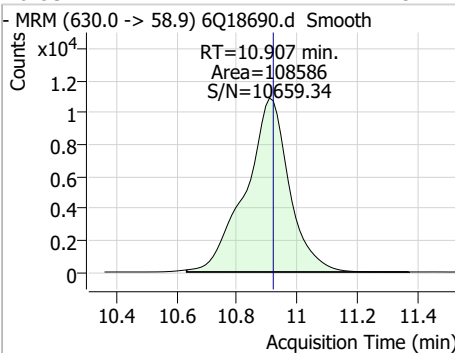
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.87	10.74	0.00	23378	511.9 -> 169.0	143.2	78.2	234.5



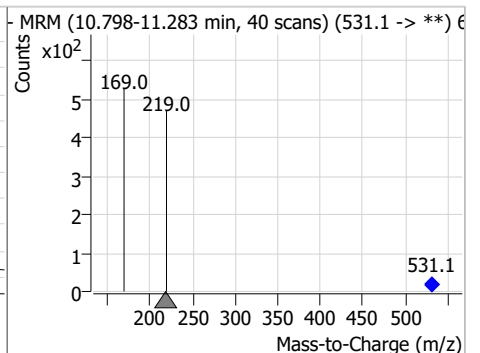
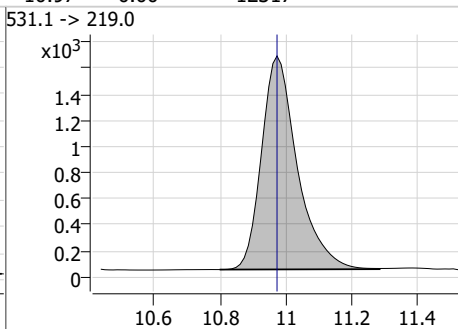
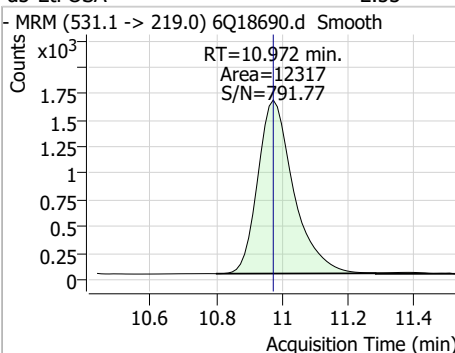
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	36.73	10.89	-0.01	200675				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.13	10.91	-0.01	108586				



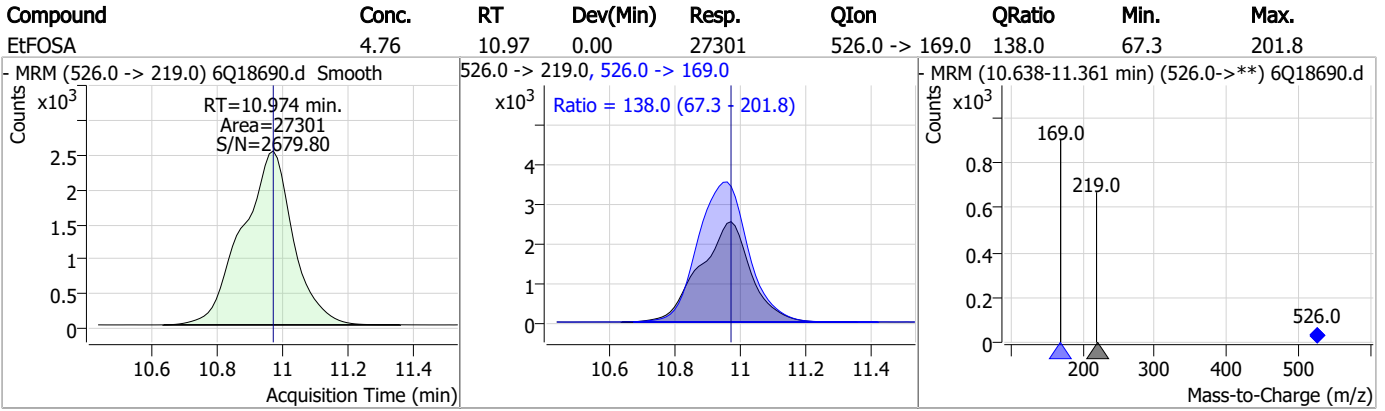
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.53	10.97	0.00	12317				



7.7.13
7



Perfluorinated Compounds by LC/MS/MS



7.7.13
7



Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18690.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 18:45 Supervisor approved: 06/06/23 13:23 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak

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7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18699.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 8:55:21 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	166463	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	55879	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	59692	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	55563	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	91150	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	40048	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	22631	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32768	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	28533	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	15694	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	31179	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23624	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	13751	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12788	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3657	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5080	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5504	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	26804	5.00 µg/L	0.000
M3-HFPO-DA	5.770	286.9 -> 168.9	38232	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	25112	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	105715	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	142437	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12292	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12303	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16880	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	69806	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10194	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	96024	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	31992	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	49889	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	54874	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3657	5.38 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5080	5.14 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5504	5.50 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	28533	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15694	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFBS	5.322	302.1 -> 79.9	23624	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.118	402.1 -> 79.9	13751	2.41 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C4-PFBA	2.822	216.8 -> 171.9	166463	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	55563	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.404	318.0 -> 273.0	59692	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	55879	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C6-PFDA	8.014	519.1 -> 474.1	22631	1.21 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32768	1.37 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C8-FOSA	9.598	506.1 -> 77.8	31179	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOA	7.013	421.1 -> 376.0	91150	2.53 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C8-PFOS	8.165	507.1 -> 79.9	12788	2.36 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C9-PFNA	7.545	472.1 -> 427.0	40048	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.084	573.2 -> 419.0	26804	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	38232	10.60 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSA	10.739	515.0 -> 219.0	12303	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25112	5.07 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	105715	24.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d9-EtFOSE	10.894	639.2 -> 58.9	142437	25.69 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
d5-EtFOSA	10.972	531.1 -> 219.0	12292	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	46535	8.76 µg/L	99
		327.1 -> 80.9	17640		
6:2FTS	6.789	427.1 -> 407.0	47039	9.42 µg/L	99
		427.1 -> 80.9	16260		
8:2FTS	7.816	527.1 -> 507.0	26330	8.60 µg/L	97
		527.1 -> 80.8	10726		
EtFOSAA	8.280	584.2 -> 419.1	7694	2.38 µg/L	99
		584.2 -> 526.0	4466		
FOSA	9.589	498.1 -> 77.9	25471	2.36 µg/L	99
		498.1 -> 478.0	819		
MeFOSAA	8.073	570.1 -> 419.0	14199	2.58 µg/L	89
		570.1 -> 483.0	2982		
PFBA	2.818	212.8 -> 168.9	53068	9.63 µg/L	100
PFBS	5.323	298.7 -> 79.9	15667	1.95 µg/L	99
		298.7 -> 98.8	5911		
PFDA	8.014	512.9 -> 469.0	71609	2.73 µg/L	96
		512.9 -> 219.0	10156		
PFDODA	8.888	613.1 -> 569.0	46814	2.39 µg/L	100
		613.1 -> 319.0	7371		
PFDS	9.052	599.0 -> 79.9	7339	2.30 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3513	2.47	µg/L	99
		363.1 -> 319.0	60777			
PFHpS	7.685	363.1 -> 169.0	9997	2.35	µg/L	95
		449.0 -> 79.9	14408			
PFHxA	5.407	449.0 -> 98.9	7062	2.27	µg/L	99
		313.0 -> 269.0	45509			
PFHxS	7.119	313.0 -> 118.9	2580	2.26	µg/L	95
		398.7 -> 79.9	14056			
PFNA	7.545	398.7 -> 98.9	6694	2.50	µg/L	97
		463.0 -> 419.0	71029			
PFNS	8.631	463.0 -> 219.0	13024	2.38	µg/L	100
		548.8 -> 79.9	12228			
PFOA	7.015	548.8 -> 98.9	6327	2.40	µg/L	94
		413.0 -> 369.0	93296			
PFOS	8.166	413.0 -> 169.0	15753	2.29	µg/L	94
		498.9 -> 79.9	13398			
PFPeA	4.212	498.9 -> 98.8	6912	4.84	µg/L	100
		263.0 -> 219.0	64942			
PFPeS	6.410	349.1 -> 79.9	13796	2.23	µg/L	99
		349.1 -> 98.9	6745			
PFTeDA	9.628	713.1 -> 669.0	36062	2.34	µg/L	99
		713.1 -> 168.9	3163			
PFTrDA	9.284	663.0 -> 619.0	48871	2.47	µg/L	97
		663.0 -> 168.9	5256			
PFUnDA	8.468	563.1 -> 519.0	47404	2.23	µg/L	92
		563.1 -> 269.1	7727			
11CI-PF3OUdS	9.323	630.9 -> 450.9	65801	4.59	µg/L	99
		632.9 -> 452.9	20655			
9CI-PF3ONS	8.495	530.8 -> 351.0	100659	4.45	µg/L	100
		532.8 -> 353.0	32957			
ADONA	6.632	376.9 -> 250.9	226556	4.46	µg/L	98
		376.9 -> 84.8	63073			
HFPO-DA	5.770	284.9 -> 168.9	15205	4.69	µg/L	96
		284.9 -> 184.9	1840			
3:3FTCA	3.671	241.0 -> 177.0	10247	11.93	µg/L	92
		241.0 -> 117.0	1408			
5:3FTCA	6.074	341.0 -> 237.1	212891	59.05	µg/L	97
		341.0 -> 217.0	156628			
7:3FTCA	7.510	441.0 -> 316.9	154856	62.71	µg/L	96
		441.0 -> 336.9	347297			
EtFOSA	10.974	526.0 -> 219.0	27215	4.75	µg/L	96
		526.0 -> 169.0	35353			
EtFOSE	10.920	630.0 -> 58.9	72822	11.46	µg/L	100
		511.9 -> 219.0	22871			
MeFOSA	10.741	511.9 -> 169.0	31754	5.06	µg/L	87
		616.1 -> 58.9	51074			
MeFOSE	10.673	699.1 -> 79.9	3326	12.16	µg/L	100
		699.1 -> 98.8	1761			
PFDoDS	9.755	295.0 -> 201.0	11956	2.34	µg/L	98
		295.0 -> 84.9	3131			
NFDHA	5.288	279.0 -> 85.1	44259	4.90	µg/L	91
		229.0 -> 84.9	34540			
PFMBA	4.626	314.8 -> 134.9	109410	4.85	µg/L	100
PFMPA	3.351	314.8 -> 82.9	3878	4.86	µg/L	100
PFEESA	5.862			4.30	µg/L	100

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

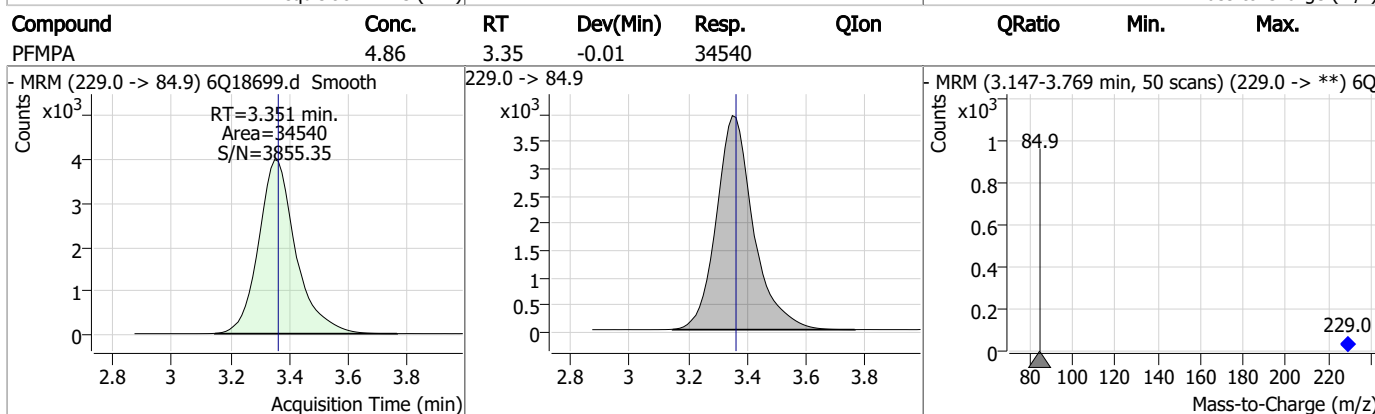
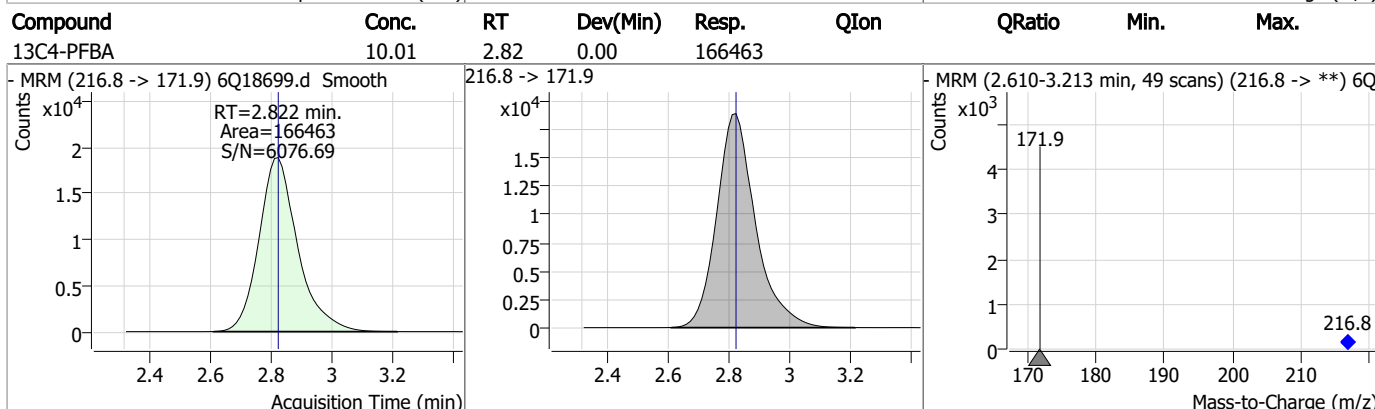
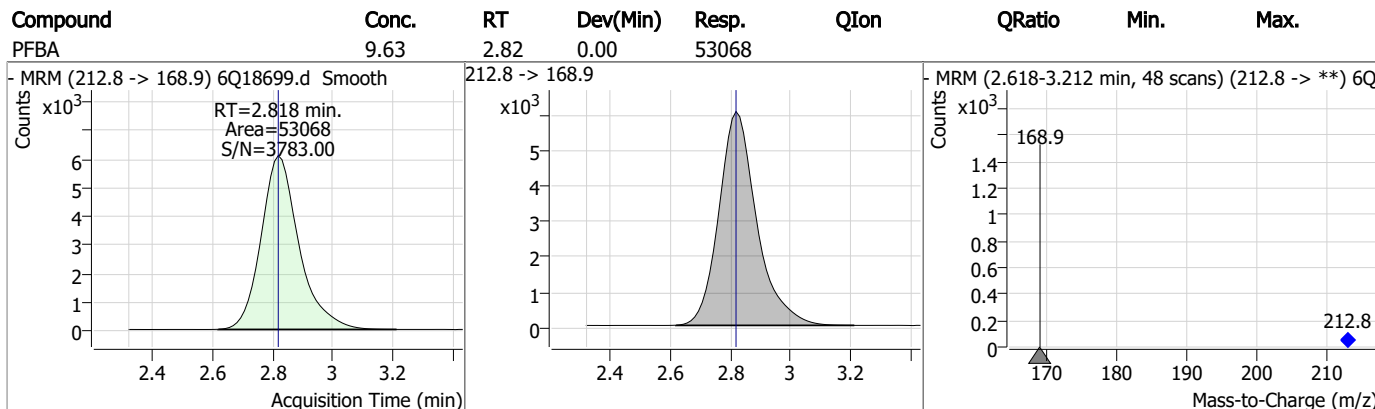
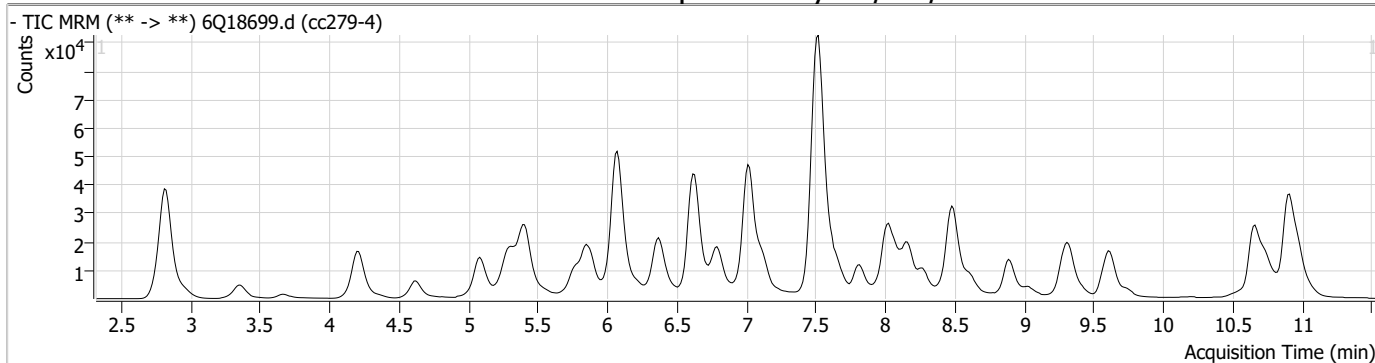
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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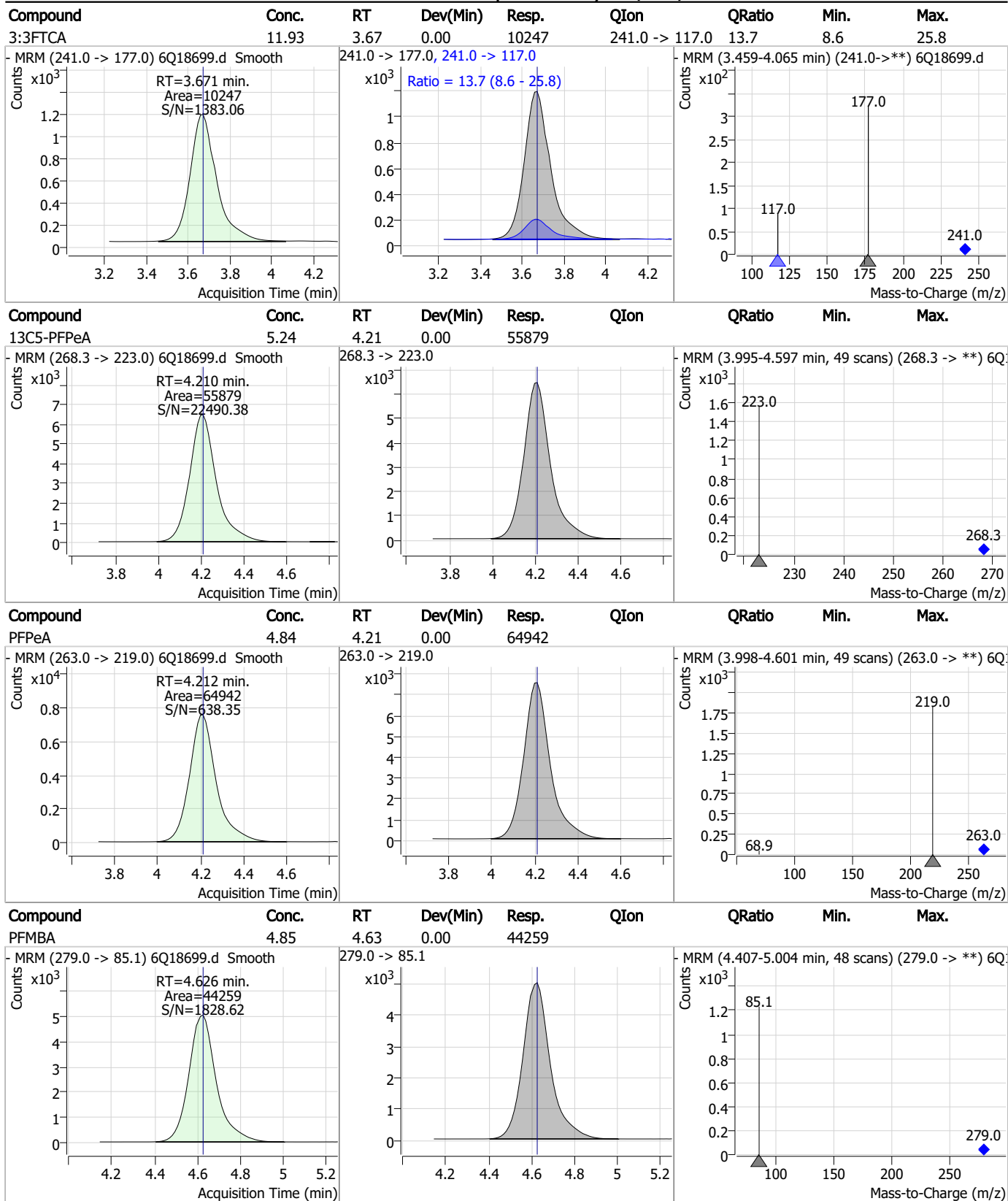
7.7.14

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Perfluorinated Compounds by LC/MS/MS



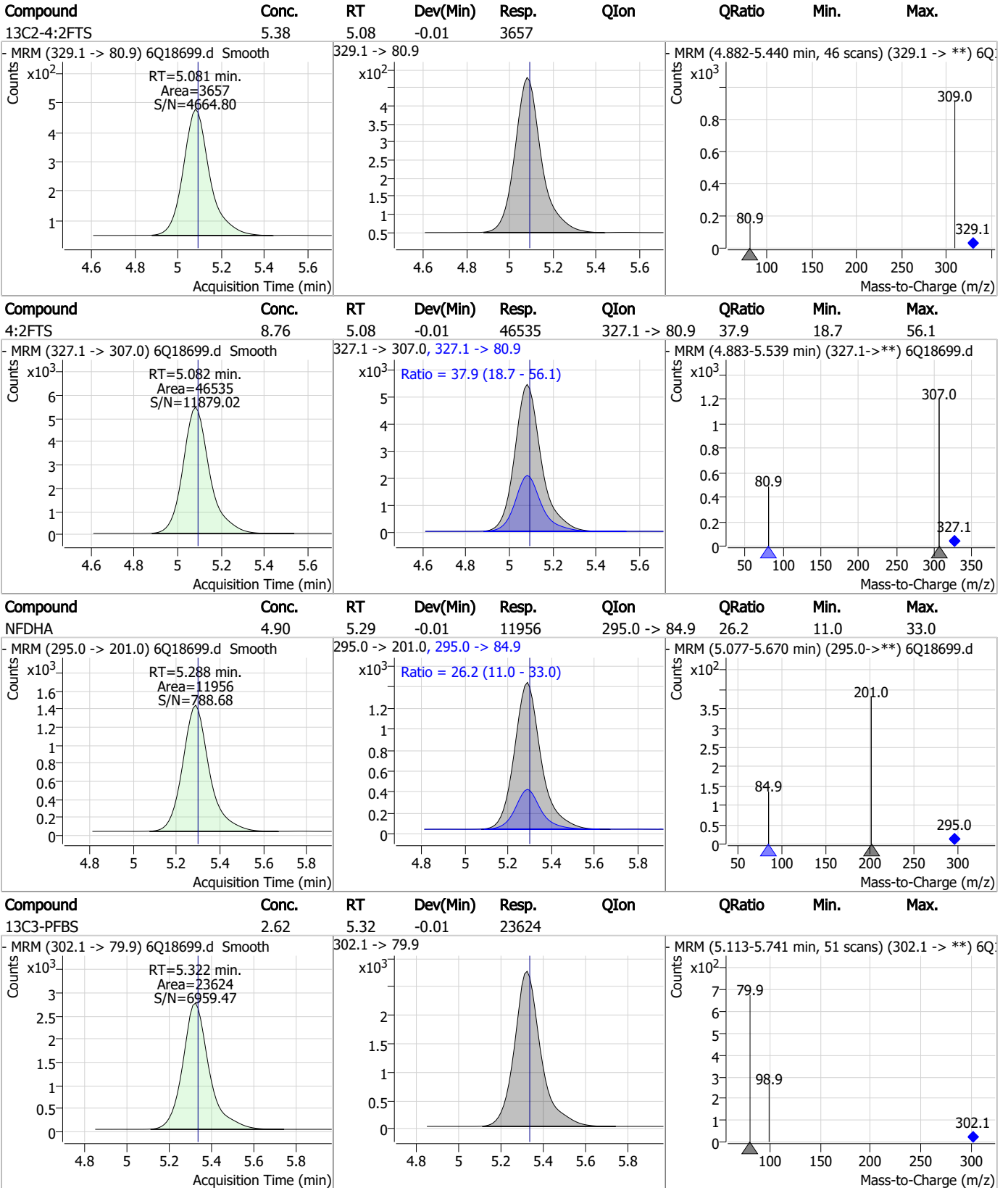
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

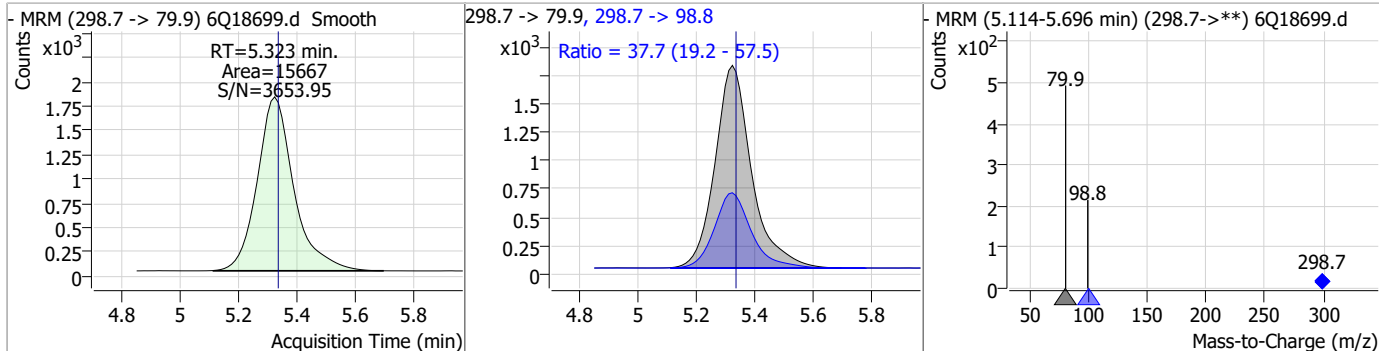


7.7.14

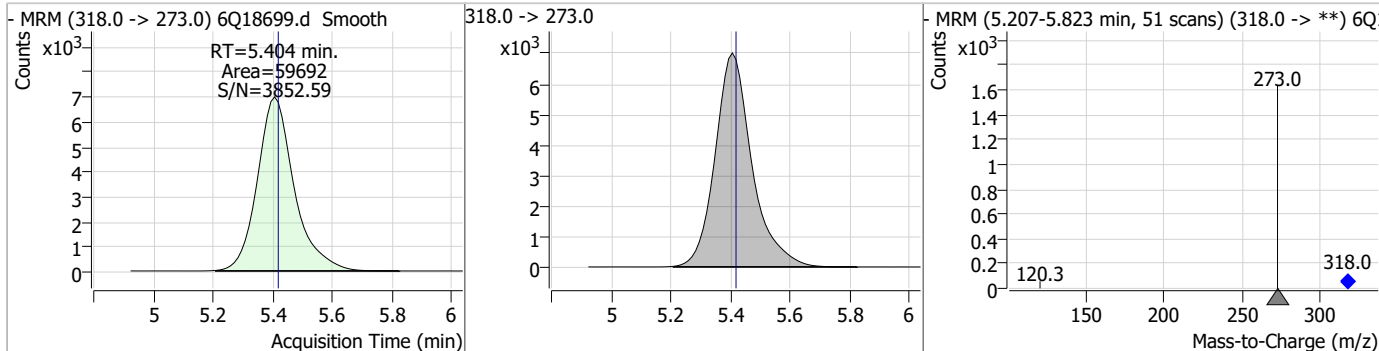


Perfluorinated Compounds by LC/MS/MS

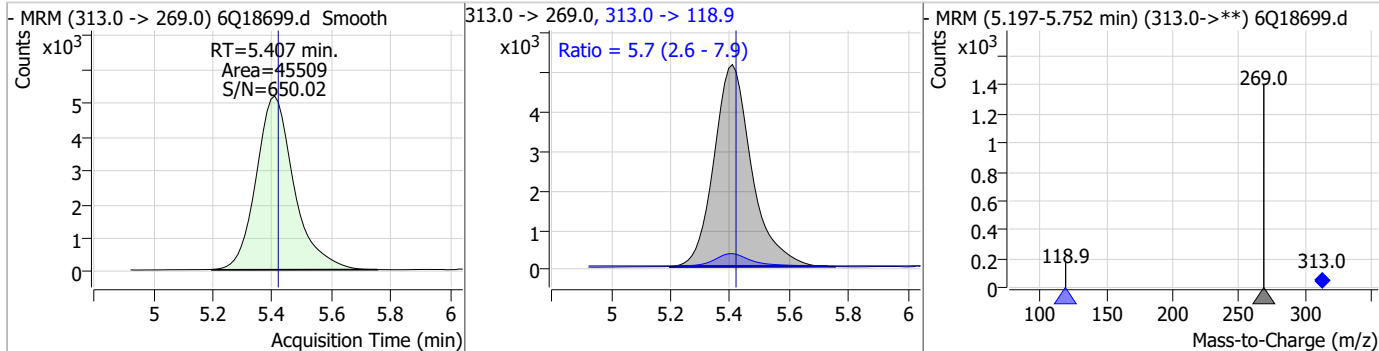
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.95	5.32	-0.01	15667	298.7 -> 98.8	37.7	19.2	57.5



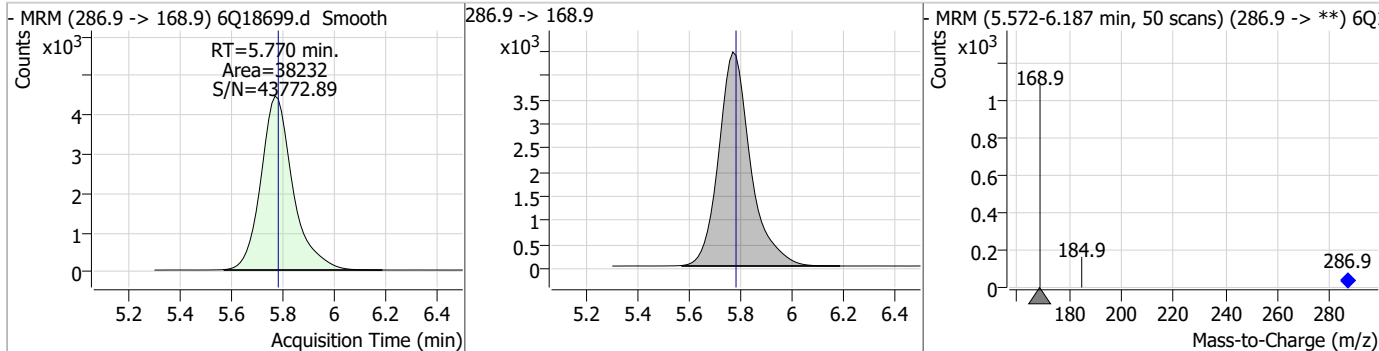
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.40	-0.01	59692				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.27	5.41	-0.01	45509	313.0 -> 118.9	5.7	2.6	7.9



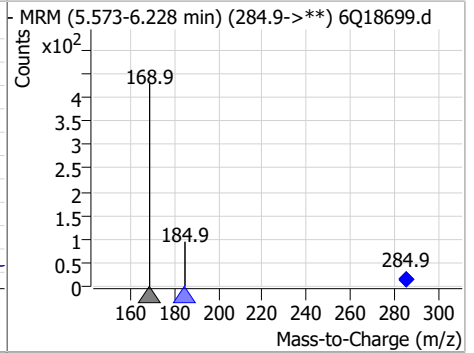
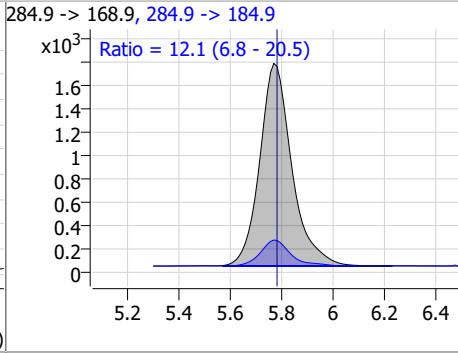
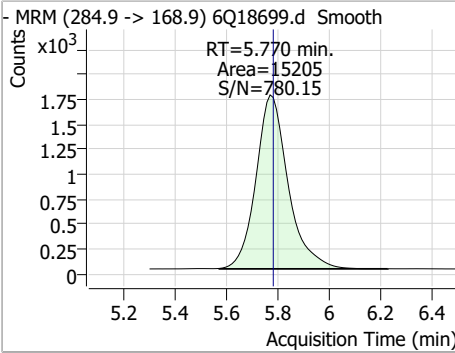
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.60	5.77	-0.01	38232				



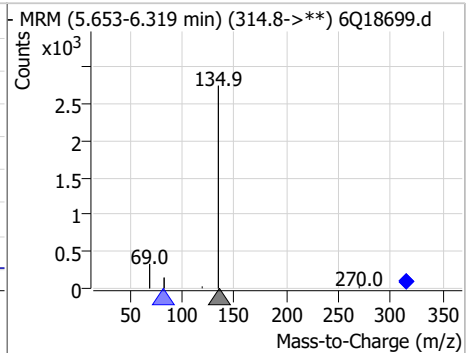
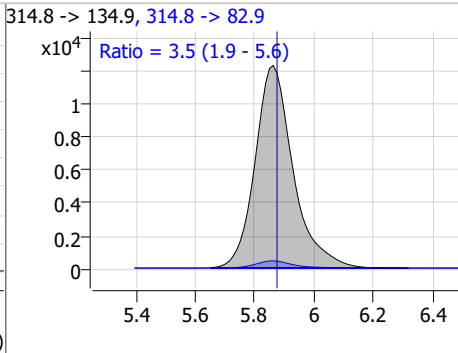
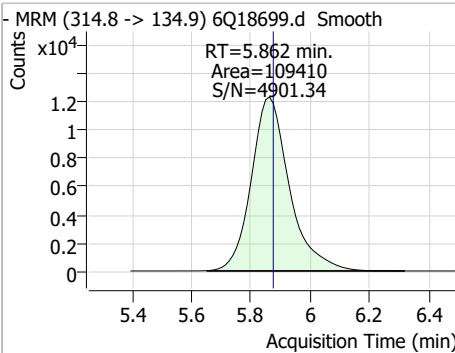
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Perfluorinated Compounds by LC/MS/MS

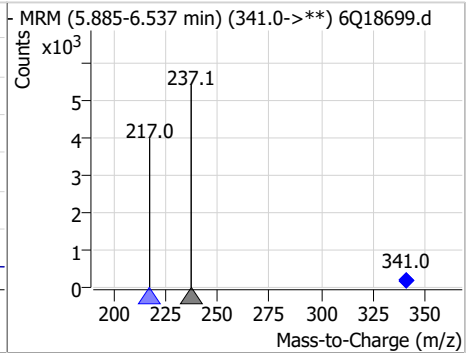
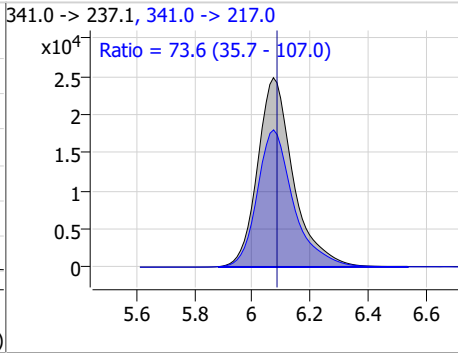
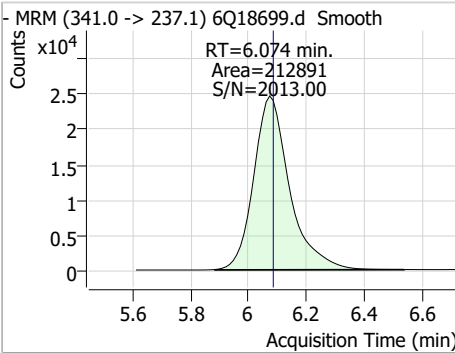
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.69	5.77	-0.01	15205	284.9 -> 184.9	12.1	6.8	20.5



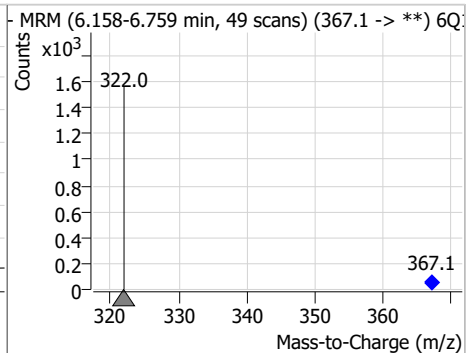
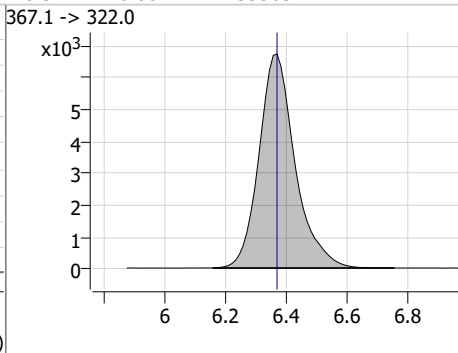
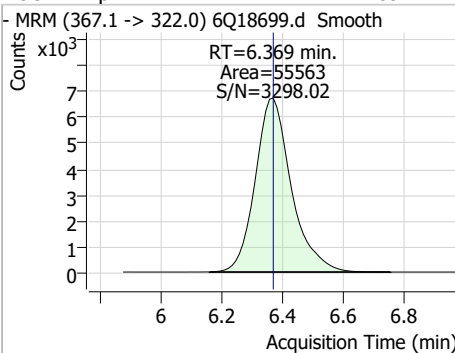
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.30	5.86	-0.01	109410	314.8 -> 82.9	3.5	1.9	5.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.05	6.07	-0.01	212891	341.0 -> 217.0	73.6	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.37	0.00	55563	367.1 -> 322.0			

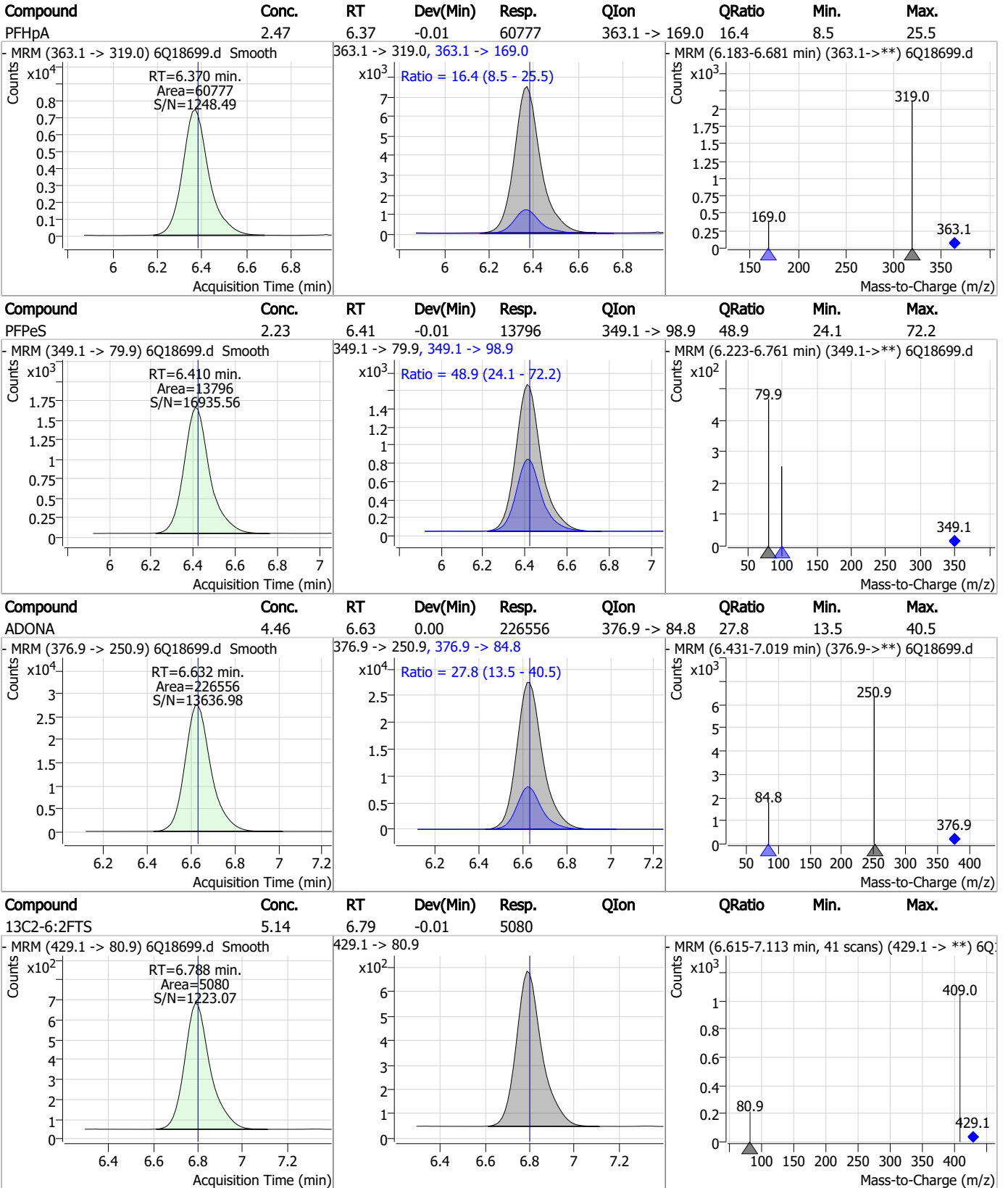


7.7.14

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Perfluorinated Compounds by LC/MS/MS

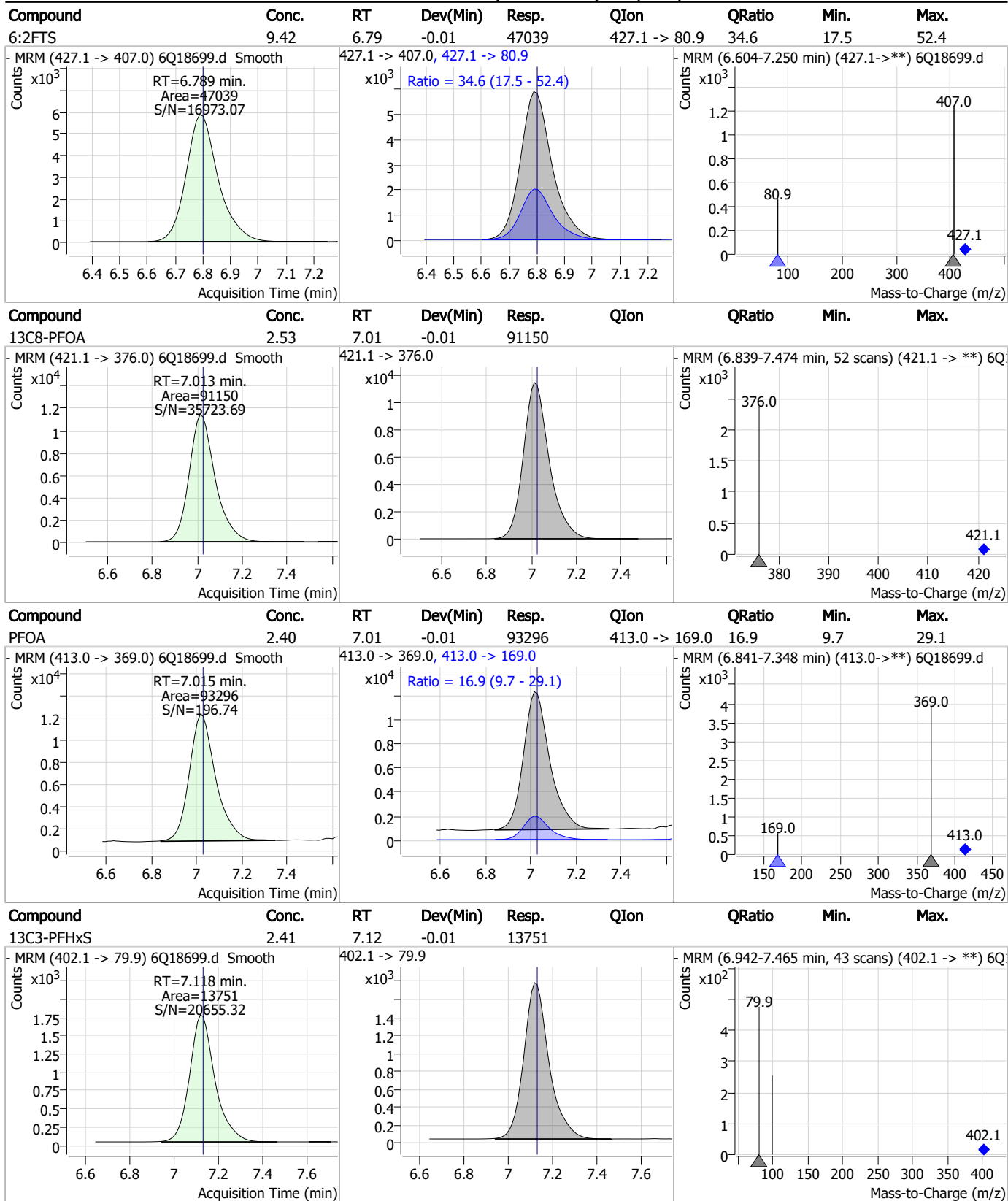


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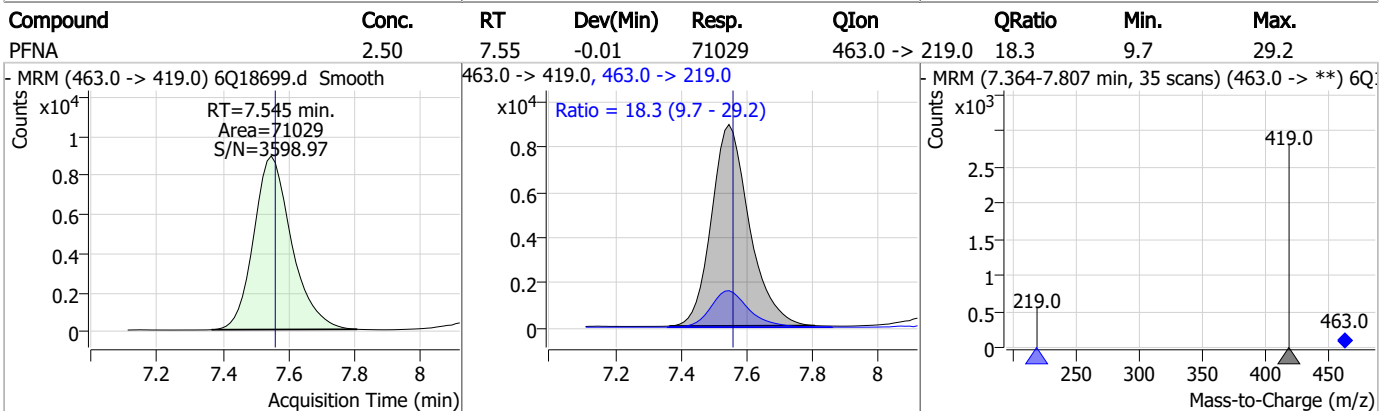
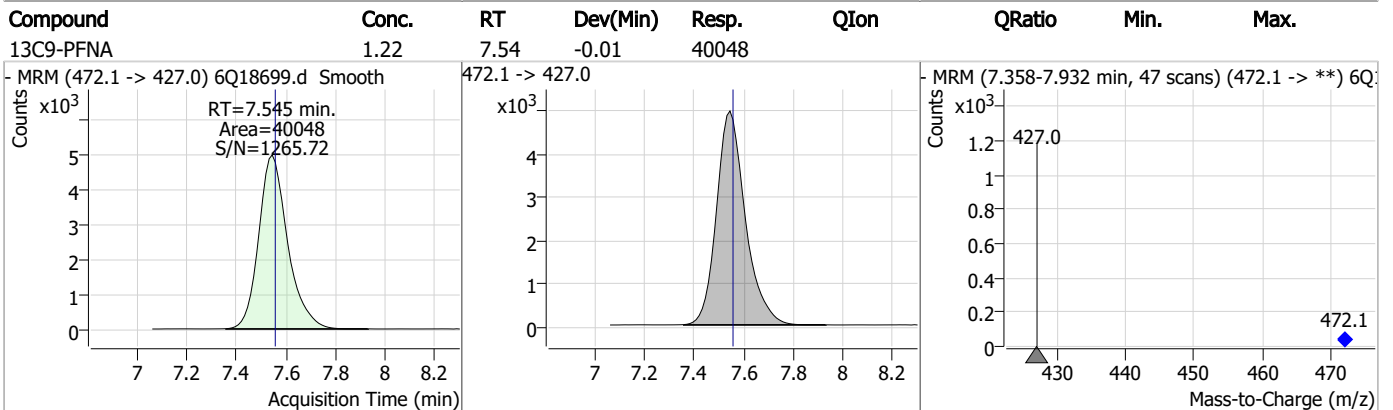
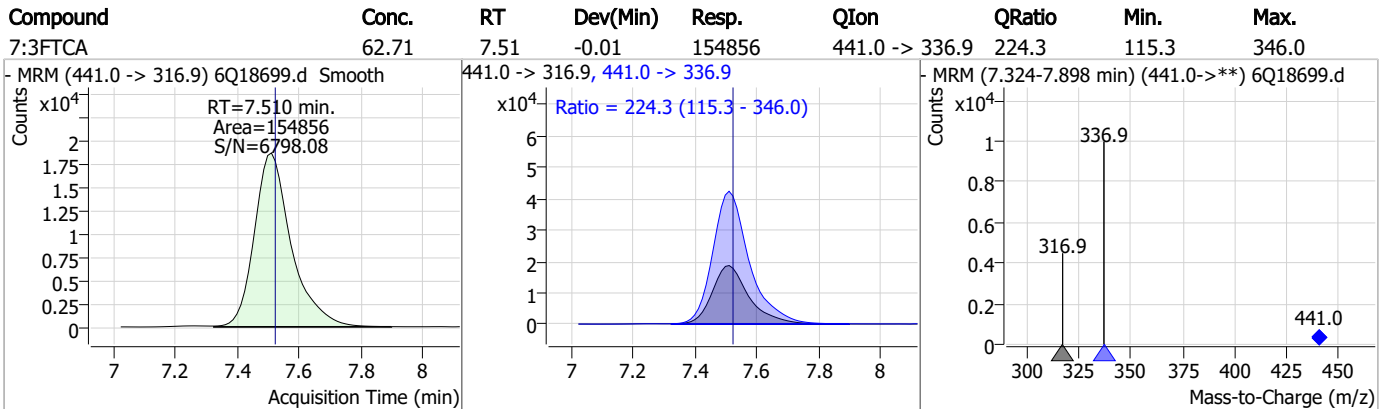
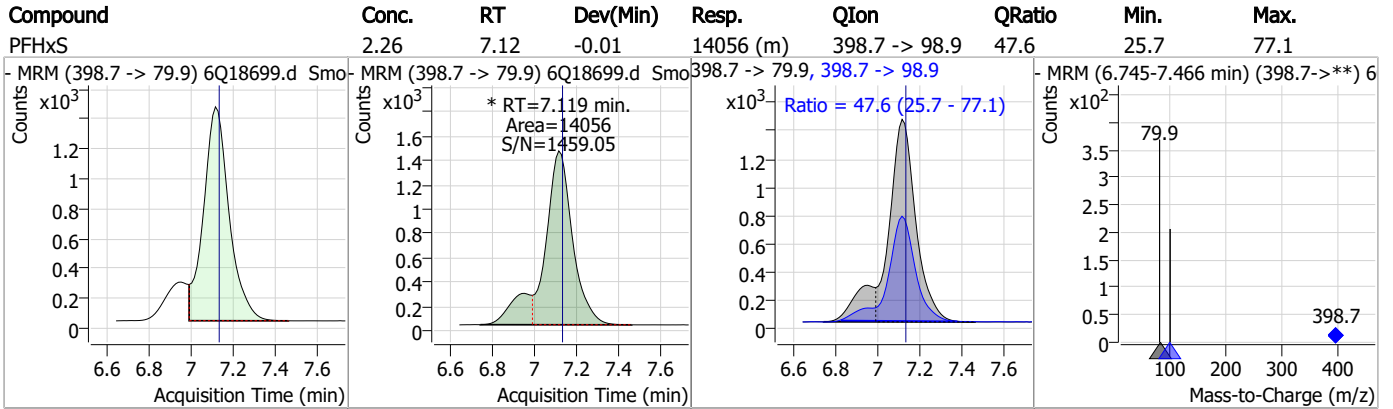
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

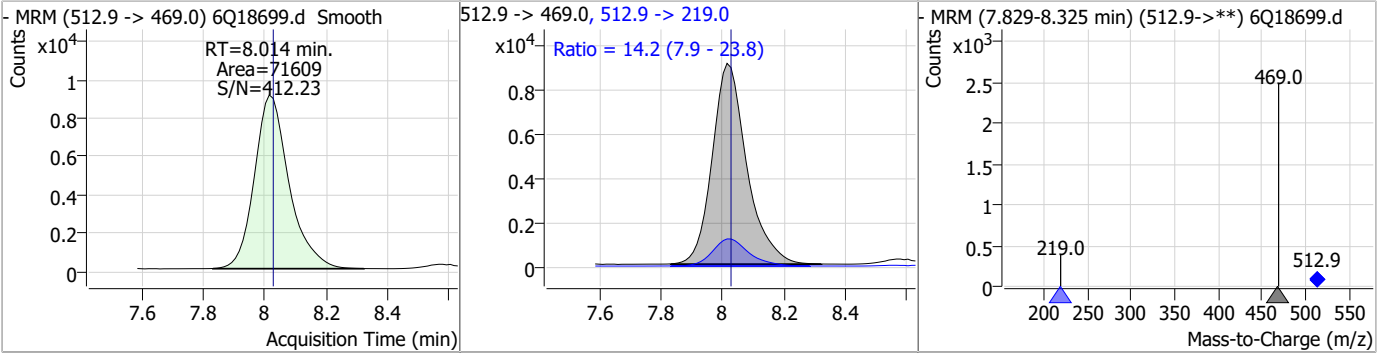
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.35	7.68	0.00	14408	449.0 -> 98.9	49.0	26.4	79.2
13C2-8:2FTS	5.50	7.81	-0.01	5504	529.1 -> 80.9	40.7	19.4	58.2
8:2FTS	8.60	7.82	-0.01	26330	527.1 -> 80.8	40.7	19.4	58.2
13C6-PFDA	1.21	8.01	-0.01	22631	519.1 -> 474.1	40.7	19.4	58.2

7.7.14

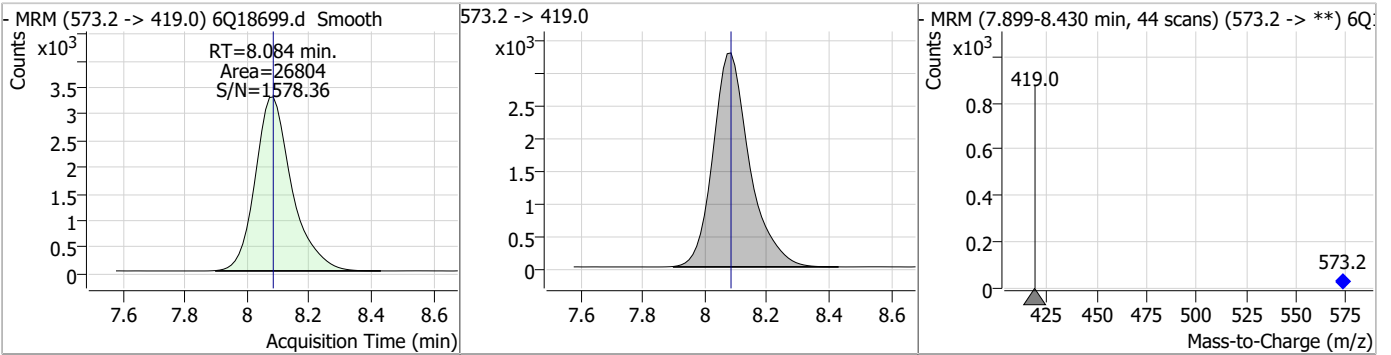


Perfluorinated Compounds by LC/MS/MS

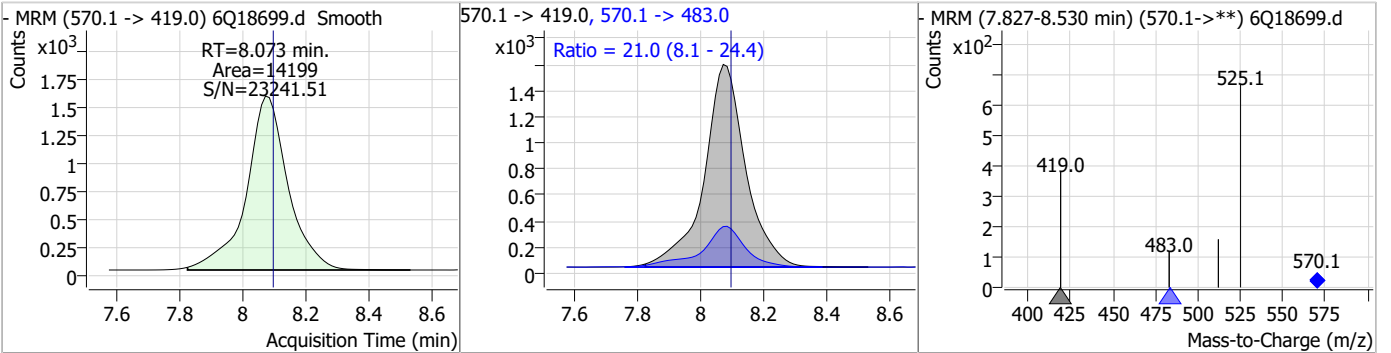
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.73	8.01	-0.01	71609	512.9 -> 219.0	14.2	7.9	23.8



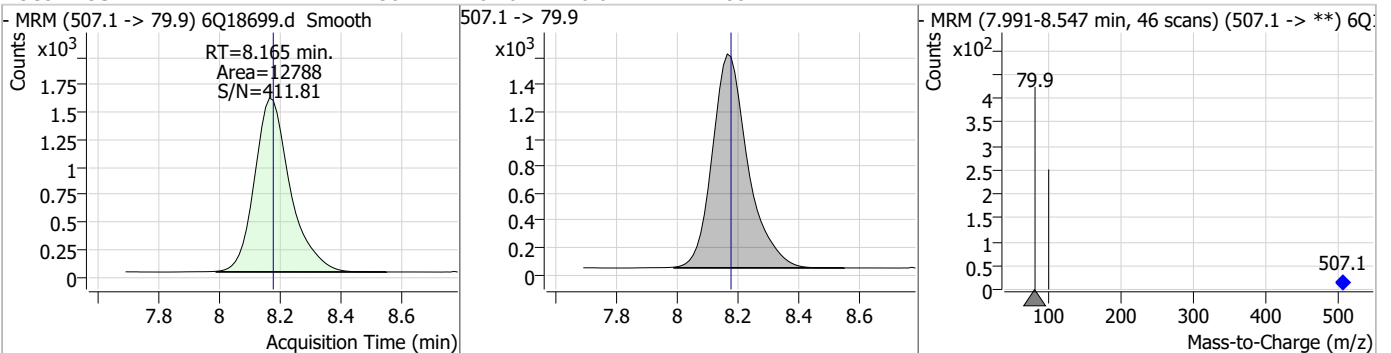
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.92	8.08	0.00	26804				



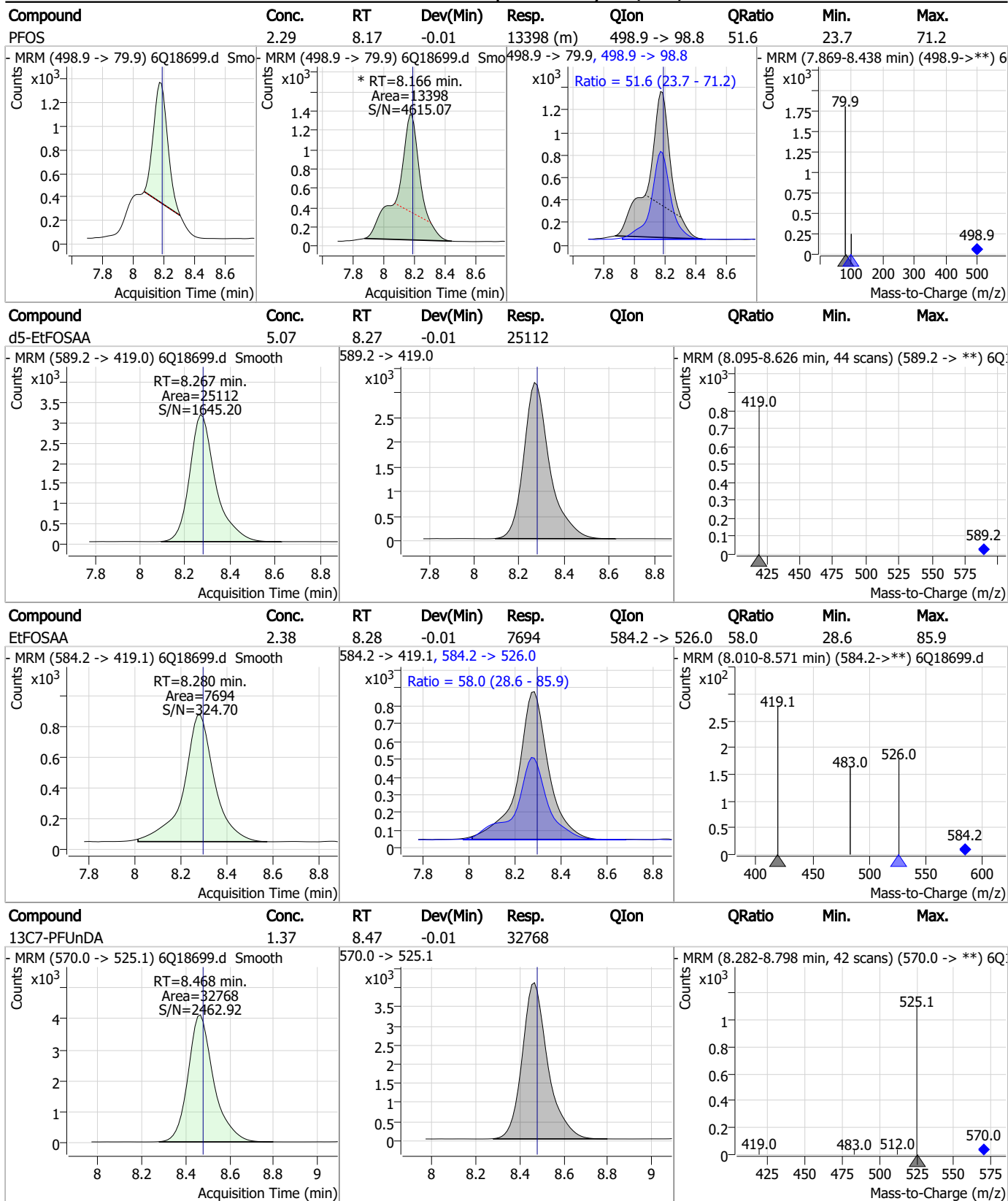
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.58	8.07	-0.02	14199	570.1 -> 483.0	21.0	8.1	24.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.36	8.16	-0.01	12788				

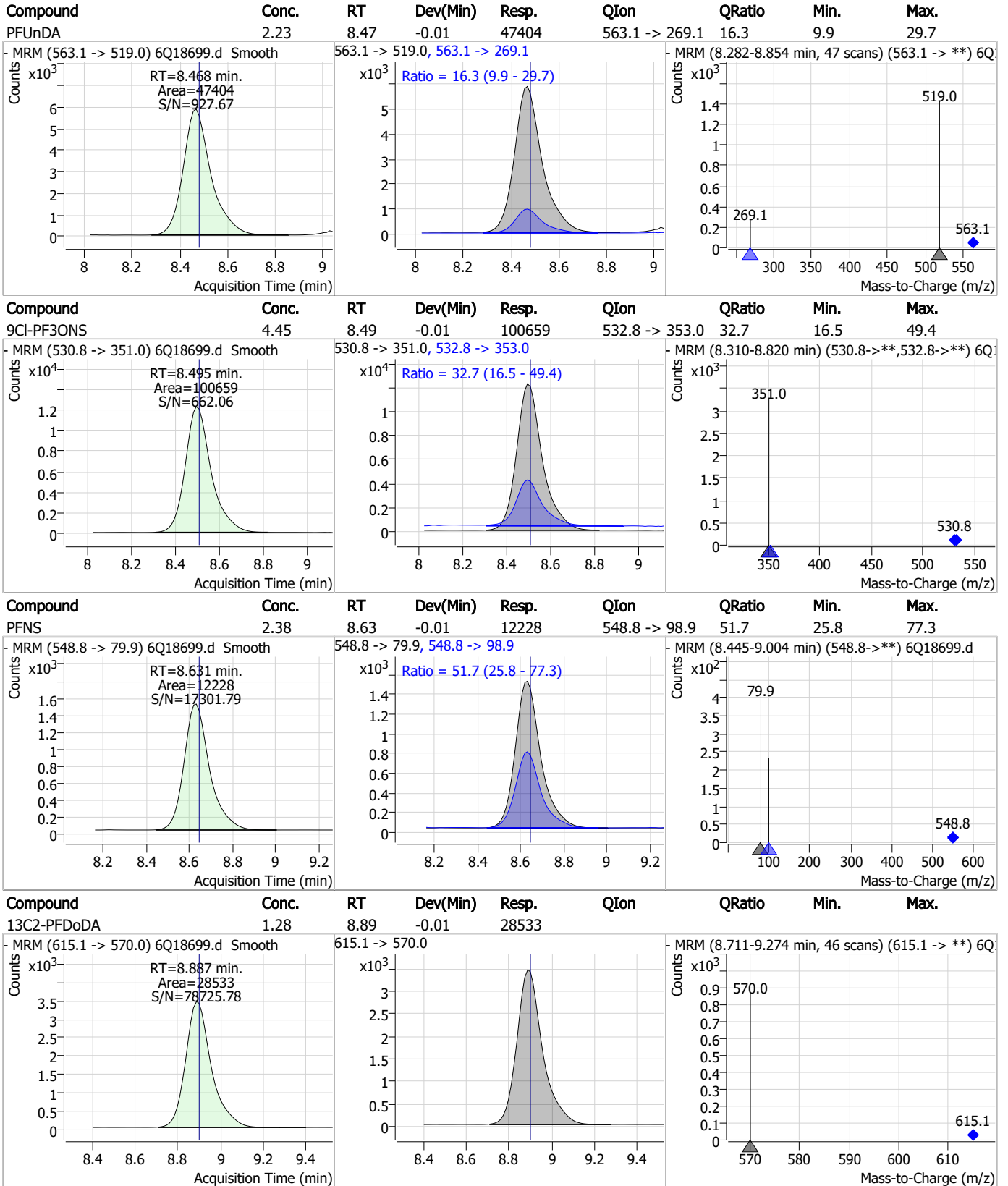


Perfluorinated Compounds by LC/MS/MS



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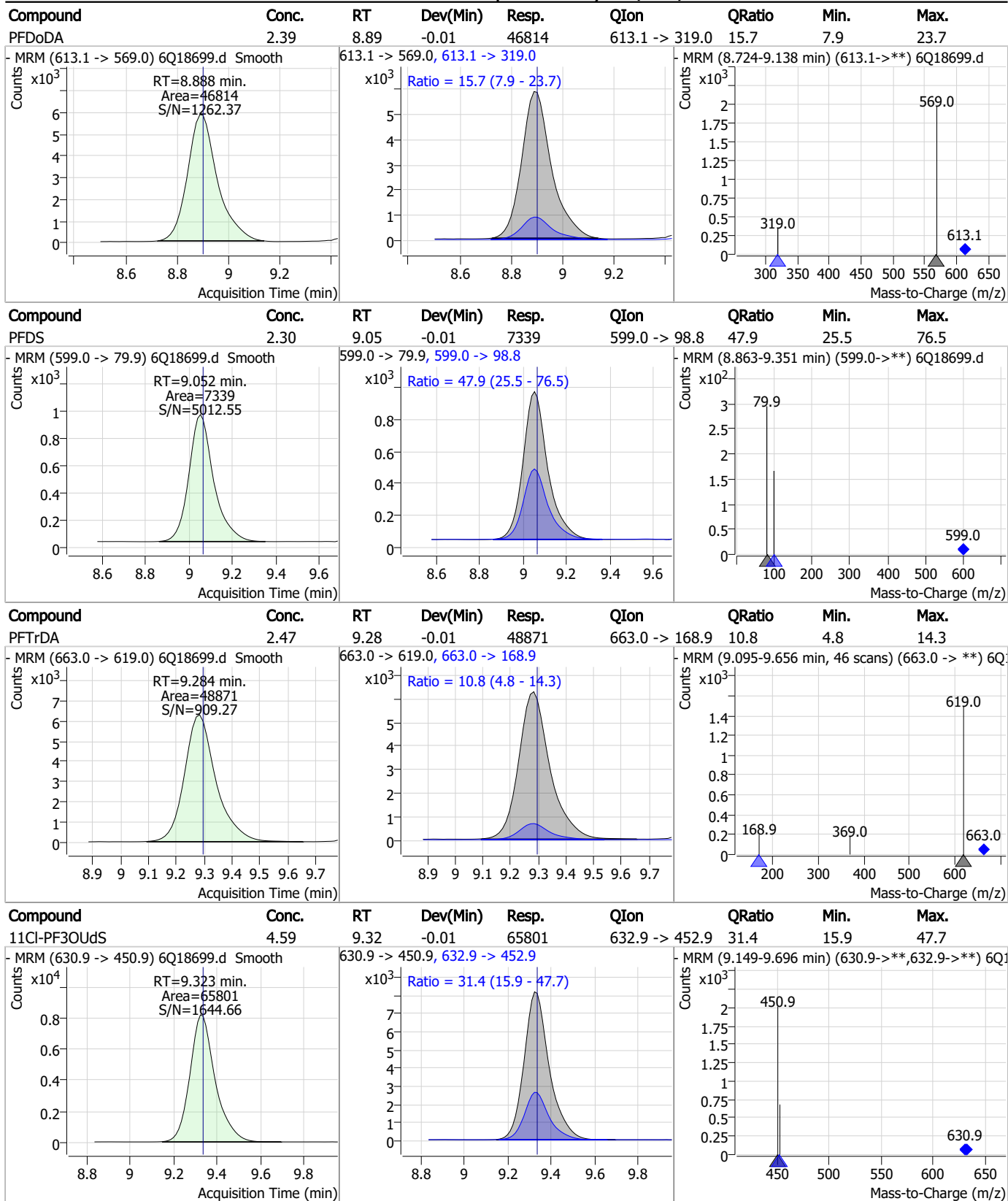
Perfluorinated Compounds by LC/MS/MS



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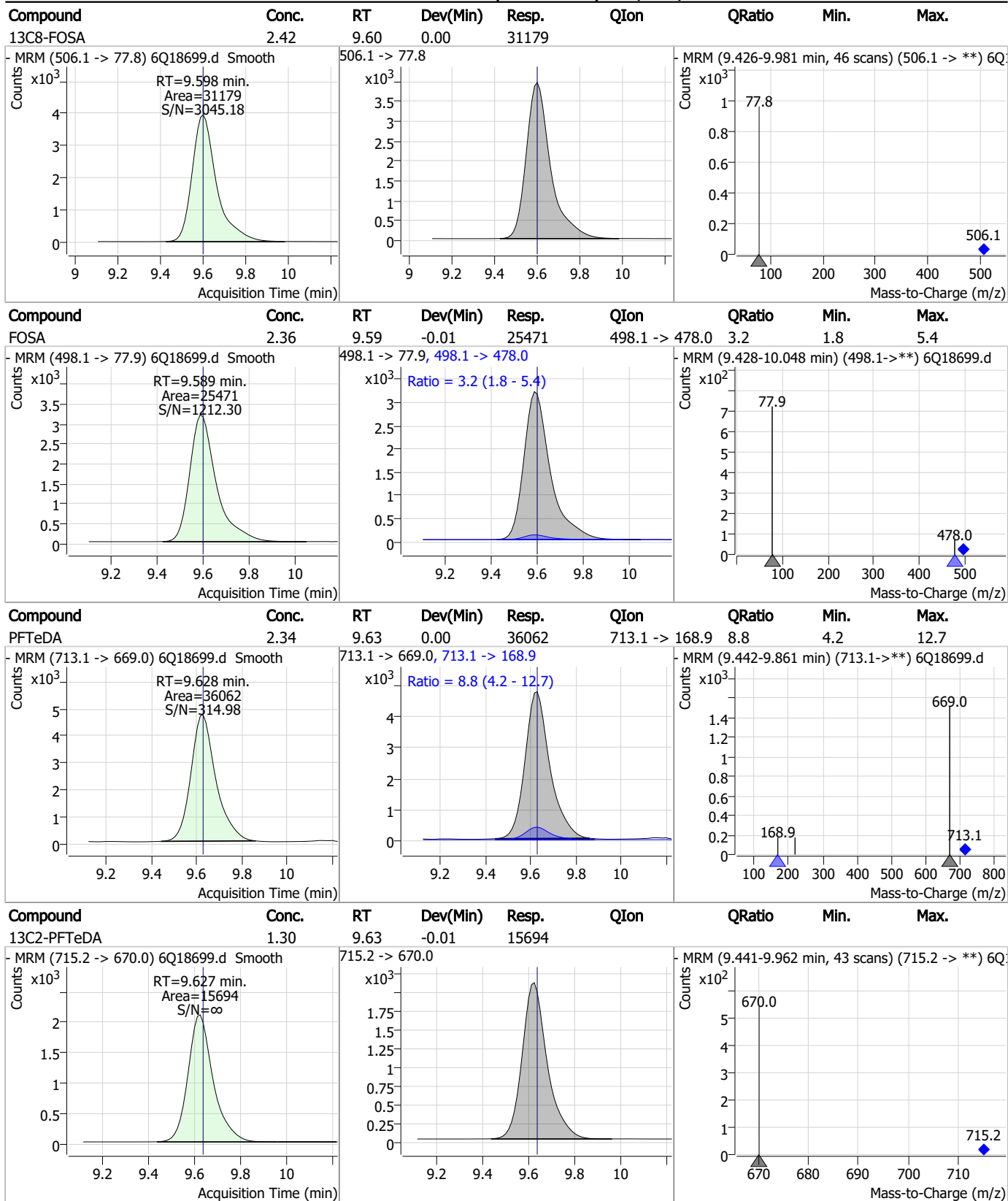


Perfluorinated Compounds by LC/MS/MS



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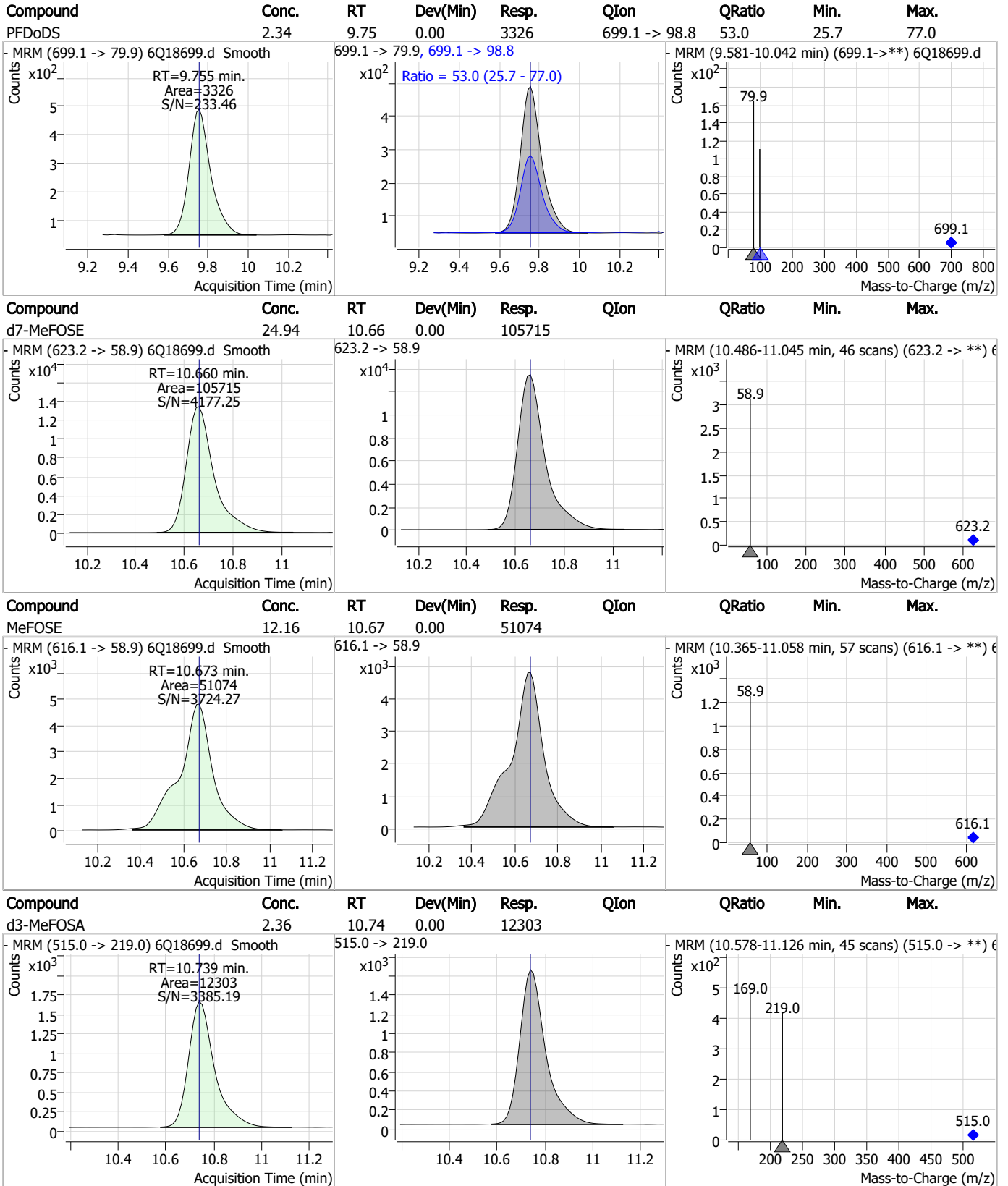
Perfluorinated Compounds by LC/MS/MS



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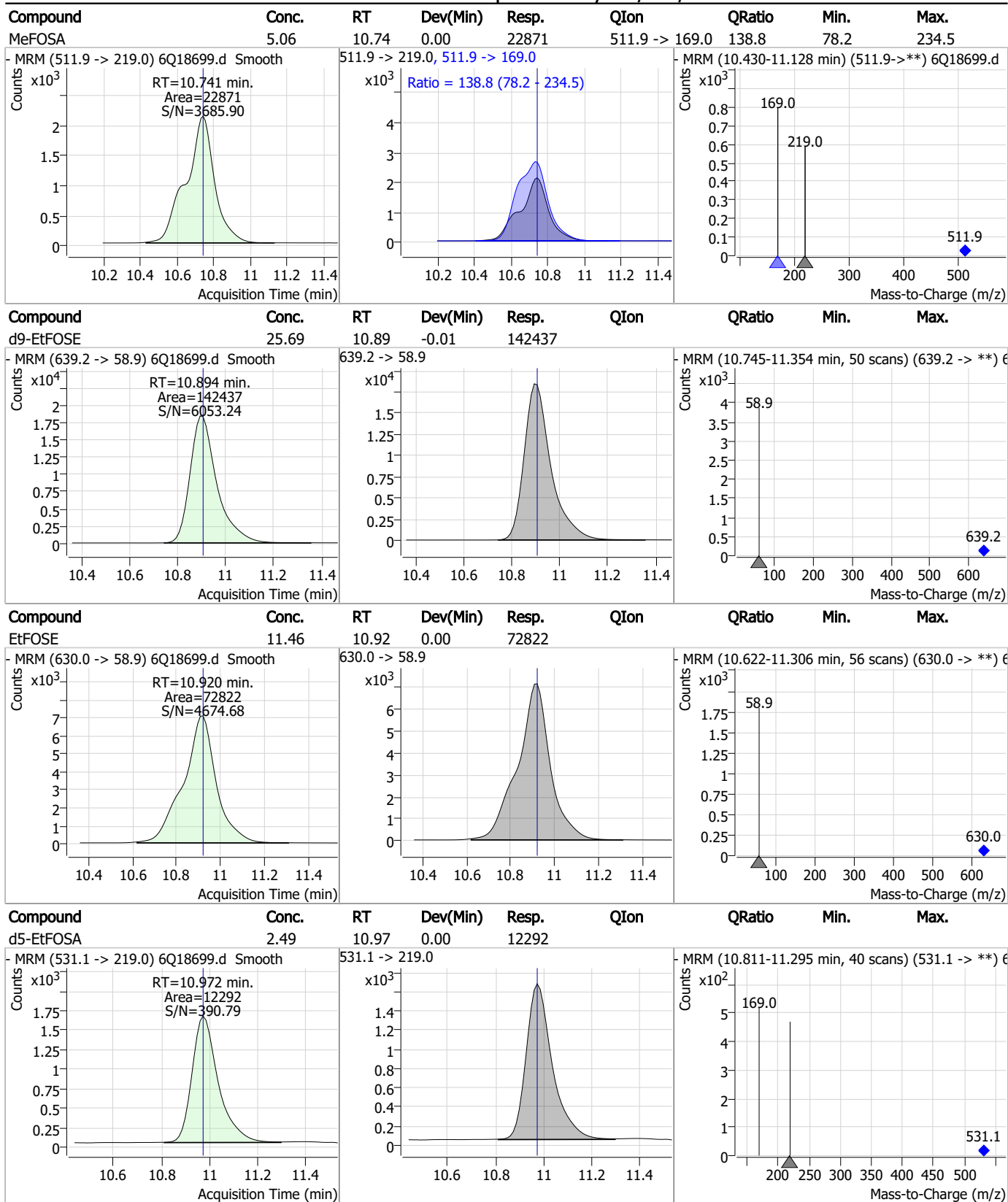
Perfluorinated Compounds by LC/MS/MS



7.7.14



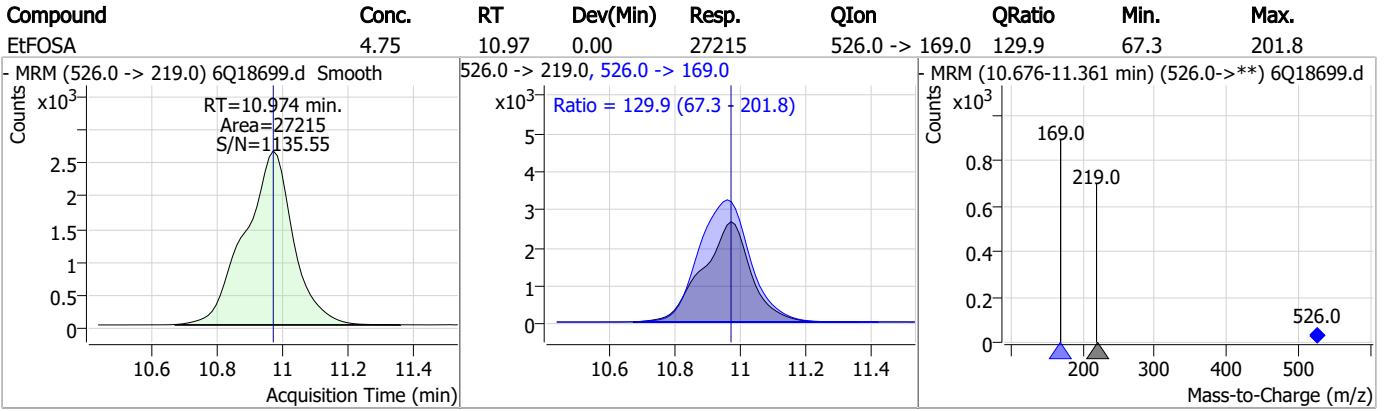
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18699.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 20:55 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

7.7.14.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18711.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 11:49:06 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	170386	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	57145	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61008	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	59289	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	91987	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	42324	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	24274	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	32448	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30130	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	15377	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32393	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23331	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14117	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13948	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3735	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5305	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5417	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	30218	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	38888	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	27394	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	109495	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	142550	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12056	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12459	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16946	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	71414	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10425	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	95726	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	32193	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	48901	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	58324	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3735	5.37 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5305	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5417	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30130	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15377	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-PFBS	5.322	302.1 -> 79.9	23331	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	14117	2.42 µg/L	-0.012

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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	2.822	216.8 -> 171.9	170386	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.369	367.1 -> 322.0	59289	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFHxA	5.404	318.0 -> 273.0	61008	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFPeA	4.210	268.3 -> 223.0	57145	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C6-PFDA	8.027	519.1 -> 474.1	24274	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32448	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C8-FOSA	9.598	506.1 -> 77.8	32393	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-PFOA	7.013	421.1 -> 376.0	91987	2.57 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOS	8.165	507.1 -> 79.9	13948	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C9-PFNA	7.545	472.1 -> 427.0	42324	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%	
d3-MeFOSAA	8.072	573.2 -> 419.0	30218	5.52 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	38888	10.15 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSA	10.739	515.0 -> 219.0	12459	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSAA	8.267	589.2 -> 419.0	27394	5.51 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
d7-MeFOSE	10.647	623.2 -> 58.9	109495	25.73 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	142550	25.61 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d5-EtFOSA	10.972	531.1 -> 219.0	12056	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	48913	9.02 µg/L	97
		327.1 -> 80.9	17499		
6:2FTS	6.789	427.1 -> 407.0	47750	9.16 µg/L	98
		427.1 -> 80.9	16196		
8:2FTS	7.816	527.1 -> 507.0	28378	9.42 µg/L	100
		527.1 -> 80.8	10943		
EtFOSAA	8.280	584.2 -> 419.1	8170	2.32 µg/L	97
		584.2 -> 526.0	4498		
FOSA	9.589	498.1 -> 77.9	26331	2.35 µg/L	98
		498.1 -> 478.0	737		
MeFOSAA	8.073	570.1 -> 419.0	14367	2.31 µg/L	92
		570.1 -> 483.0	2820		
PFBA	2.818	212.8 -> 168.9	54421	9.65 µg/L	100
PFBS	5.323	298.7 -> 79.9	15976	2.01 µg/L	100
		298.7 -> 98.8	6087		
PFDA	8.014	512.9 -> 469.0	71774	2.55 µg/L	96
		512.9 -> 219.0	10224		
PFDODA	8.888	613.1 -> 569.0	47367	2.29 µg/L	99
		613.1 -> 319.0	7274		
PFDS	9.052	599.0 -> 79.9	7694	2.21 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3842	2.28	µg/L	100
		363.1 -> 319.0	59781			
PFHpS	7.673	363.1 -> 169.0	10254	2.19	µg/L	94
		449.0 -> 79.9	14666			
PFHxA	5.407	449.0 -> 98.9	7082	2.36	µg/L	100
		313.0 -> 269.0	48430			
PFHxS	7.119	313.0 -> 118.9	2498	2.24	µg/L	95
		398.7 -> 79.9	14310			
PFNA	7.545	398.7 -> 98.9	6866	2.35	µg/L	99
		463.0 -> 419.0	70395			
PFNS	8.631	463.0 -> 219.0	13427	2.24	µg/L	94
		548.8 -> 79.9	12526			
PFOA	7.015	548.8 -> 98.9	6957	2.26	µg/L	98
		413.0 -> 369.0	88623			
PFOS	8.166	413.0 -> 169.0	16189	2.07	µg/L	95
		498.9 -> 79.9	13216			
PFPeA	4.212	498.9 -> 98.8	6746	4.77	µg/L	100
		263.0 -> 219.0	65536			
PFPeS	6.410	349.1 -> 79.9	14255	2.24	µg/L	97
		349.1 -> 98.9	6578			
PFTeDA	9.628	713.1 -> 669.0	37466	2.48	µg/L	99
		713.1 -> 168.9	3273			
PFTrDA	9.284	663.0 -> 619.0	47377	2.27	µg/L	96
		663.0 -> 168.9	5213			
PFUnDA	8.468	563.1 -> 519.0	49650	2.35	µg/L	90
		563.1 -> 269.1	7602			
11Cl-PF3OUdS	9.323	630.9 -> 450.9	65180	4.47	µg/L	98
		632.9 -> 452.9	20033			
9Cl-PF3ONS	8.495	530.8 -> 351.0	102638	4.46	µg/L	96
		532.8 -> 353.0	31684			
ADONA	6.620	376.9 -> 250.9	230071	4.45	µg/L	100
		376.9 -> 84.8	62215			
HFPO-DA	5.770	284.9 -> 168.9	15881	4.82	µg/L	95
		284.9 -> 184.9	1842			
3:3FTCA	3.671	241.0 -> 177.0	10570	12.03	µg/L	92
		241.0 -> 117.0	1451			
5:3FTCA	6.074	341.0 -> 237.1	219539	59.58	µg/L	95
		341.0 -> 217.0	165997			
7:3FTCA	7.510	441.0 -> 316.9	157747	62.51	µg/L	95
		441.0 -> 336.9	351259			
EtFOSA	10.974	526.0 -> 219.0	26333	4.69	µg/L	97
		526.0 -> 169.0	36354			
EtFOSE	10.907	630.0 -> 58.9	74207	11.67	µg/L	100
		511.9 -> 219.0	22541			
MeFOSA	10.741	511.9 -> 169.0	32797	4.92	µg/L	92
		616.1 -> 58.9	51003			
MeFOSE	10.673	699.1 -> 79.9	3623	11.72	µg/L	100
		699.1 -> 98.8	1888			
PFDoDS	9.755	295.0 -> 201.0	12094	2.34	µg/L	99
		295.0 -> 84.9	3101			
NFDHA	5.288	279.0 -> 85.1	46337	4.85	µg/L	92
		229.0 -> 84.9	35580			
PFMBA	4.626	314.8 -> 134.9	110233	4.96	µg/L	100
		314.8 -> 82.9	3887			
PFMPA	3.351			4.90	µg/L	100
PFEESA	5.862			4.24	µg/L	99

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



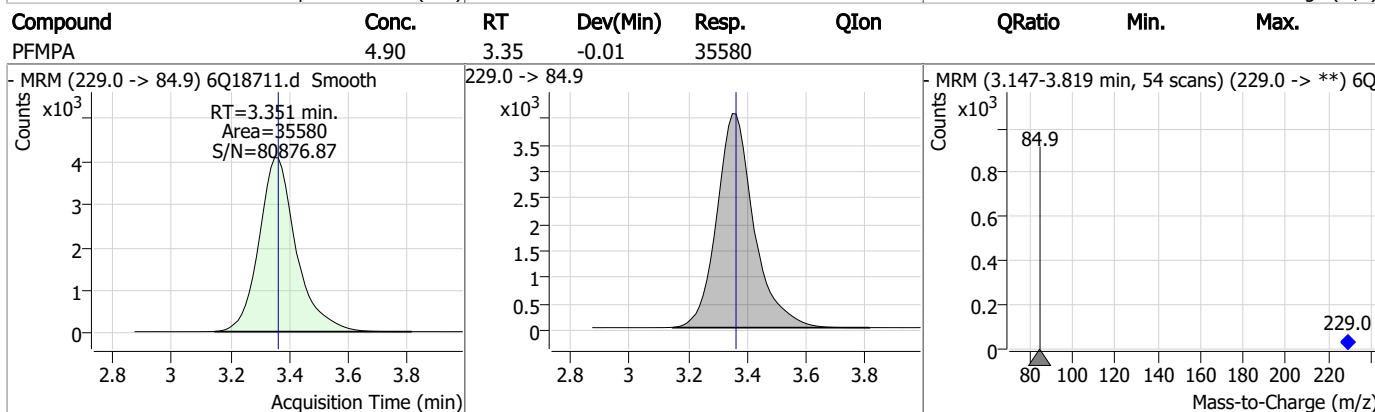
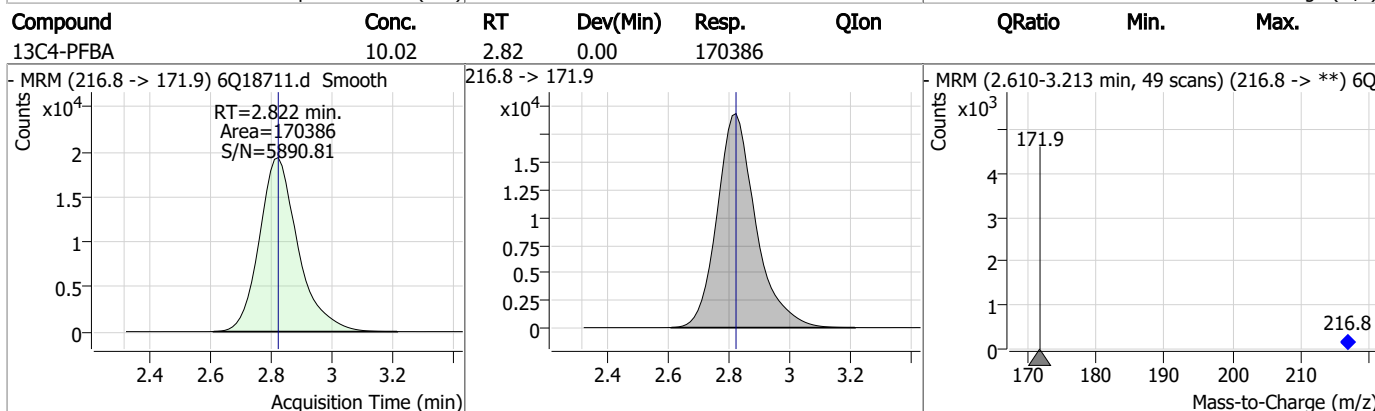
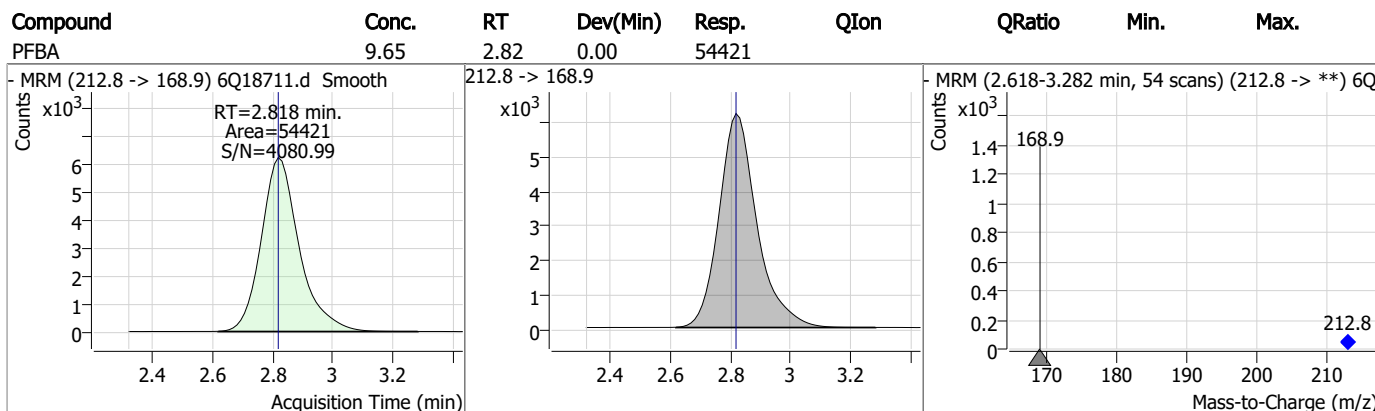
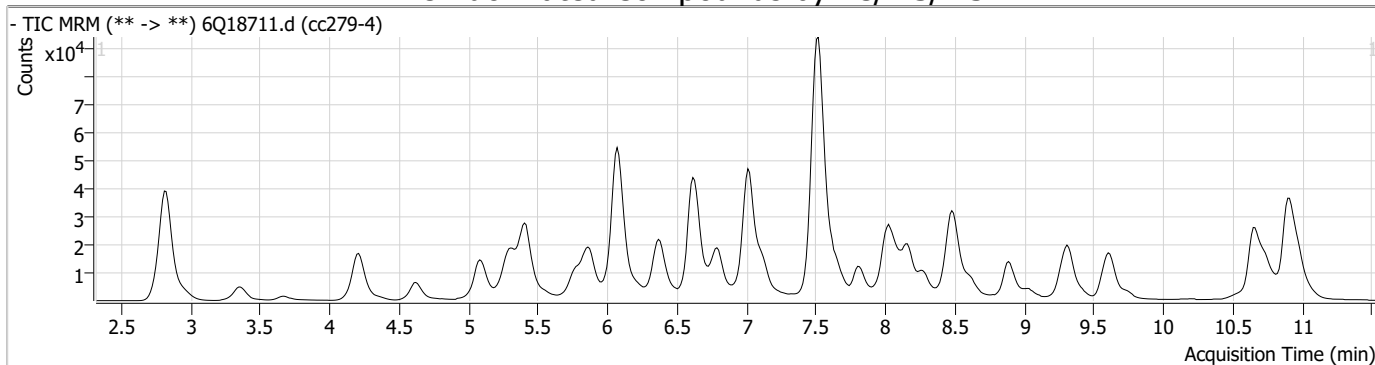
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS

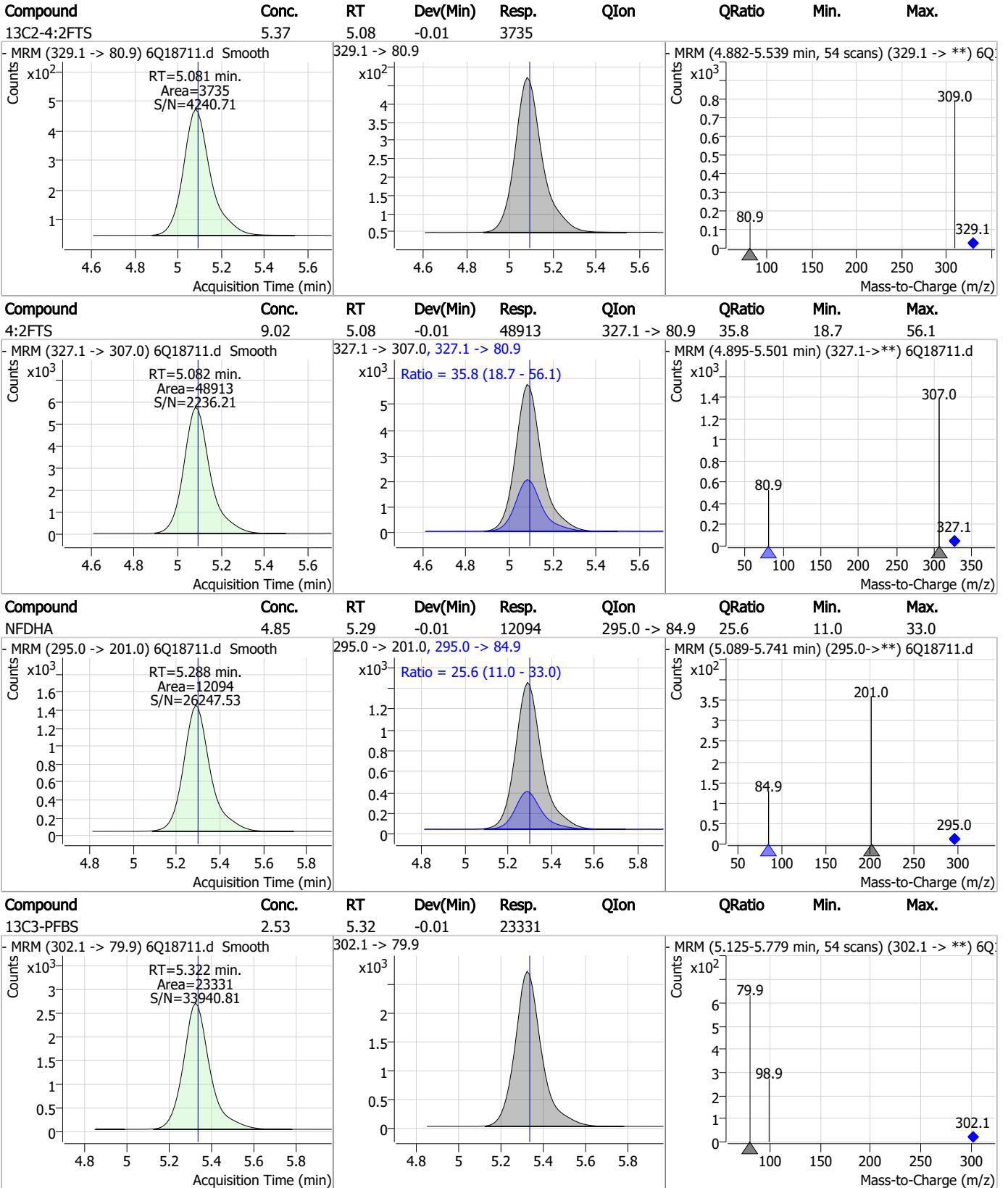


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.03	3.67	0.00	10570	241.0 -> 117.0	13.7	8.6	25.8
13C5-PFPeA	5.04	4.21	0.00	57145	241.0 -> 117.0	13.7	8.6	25.8
PFPeA	4.77	4.21	0.00	65536	241.0 -> 117.0	13.7	8.6	25.8
PFMBA	4.96	4.63	0.00	46337	241.0 -> 117.0	13.7	8.6	25.8

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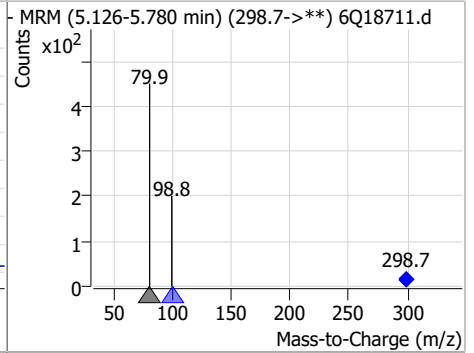
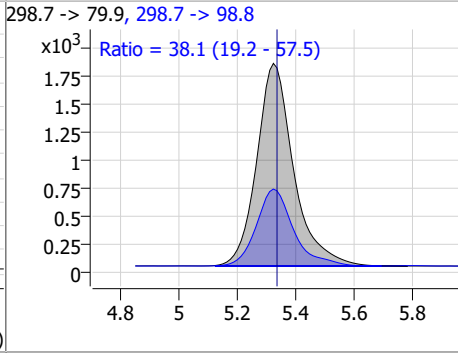
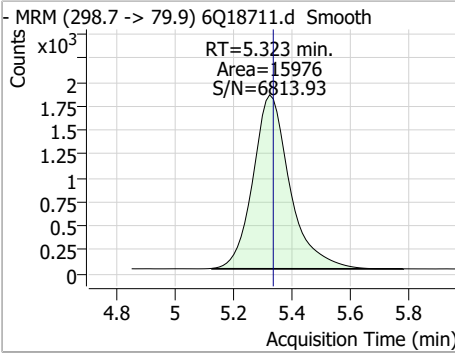
Perfluorinated Compounds by LC/MS/MS



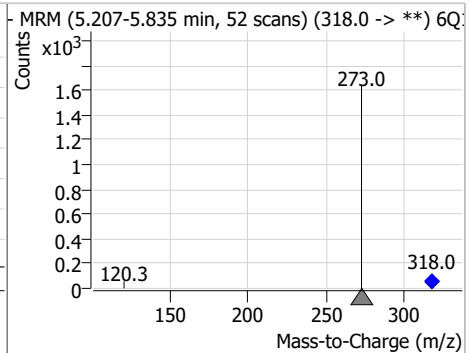
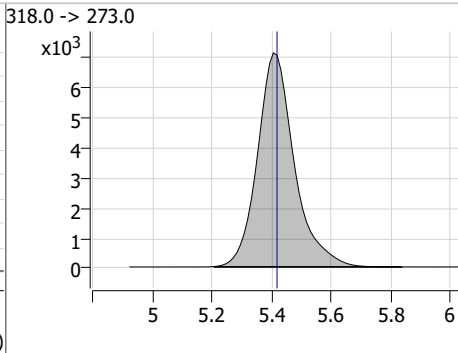
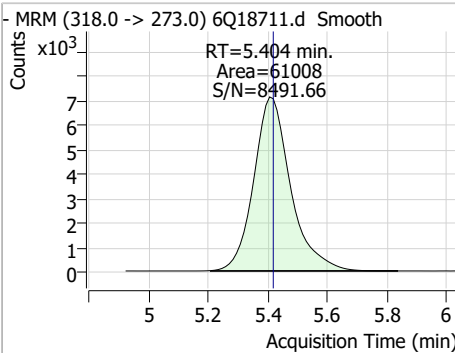
7.7.15 7

Perfluorinated Compounds by LC/MS/MS

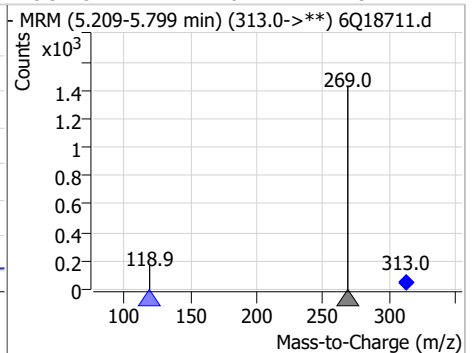
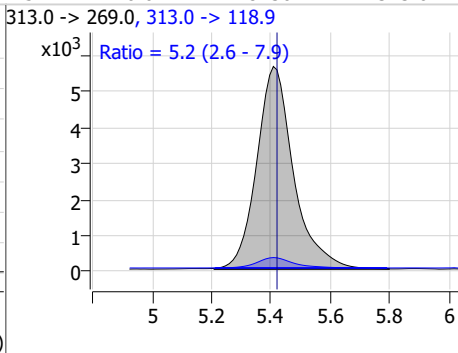
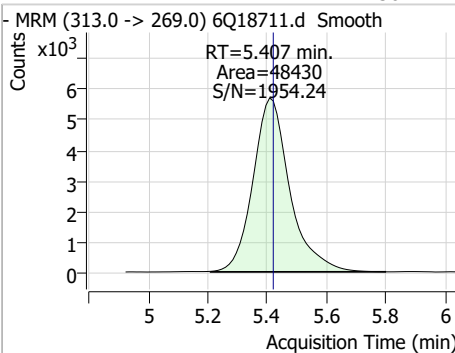
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	5.32	-0.01	15976	298.7 -> 98.8	38.1	19.2	57.5



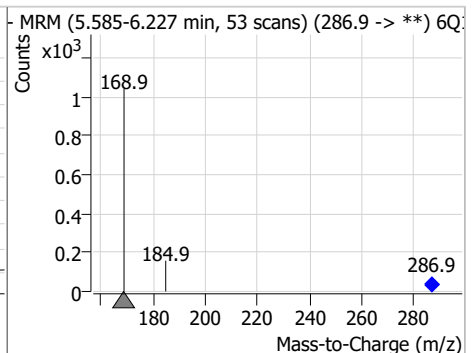
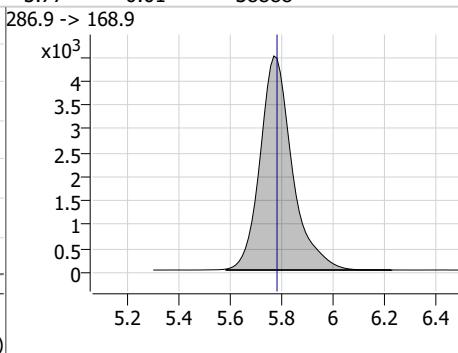
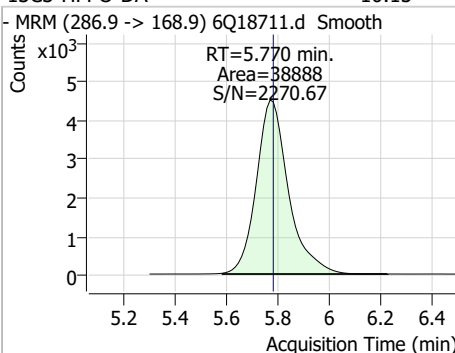
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.40	-0.01	61008	318.0 -> 273.0	5.2	2.6	7.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.36	5.41	-0.01	48430	313.0 -> 118.9	5.2	2.6	7.9

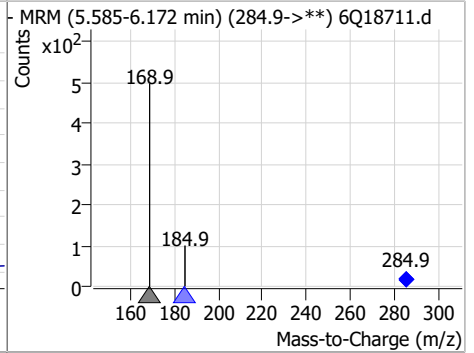
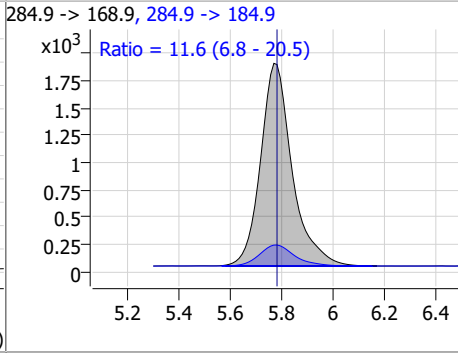
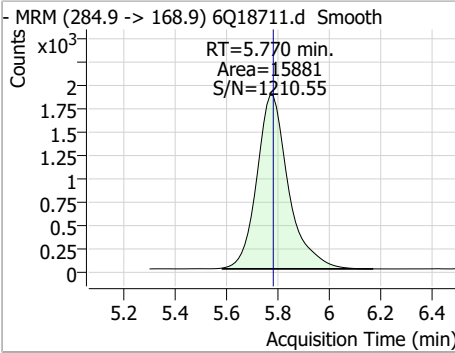


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.15	5.77	-0.01	38888	286.9 -> 168.9	5.2	2.6	7.9

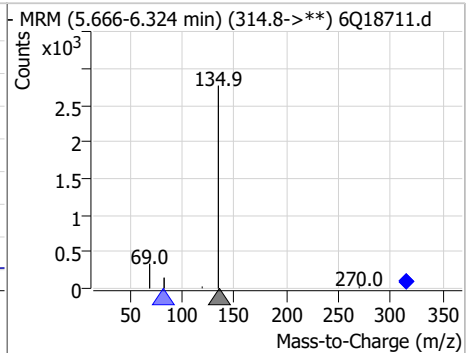
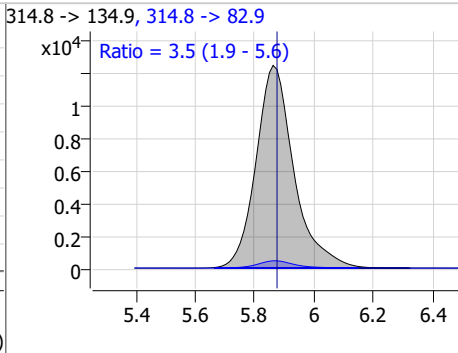
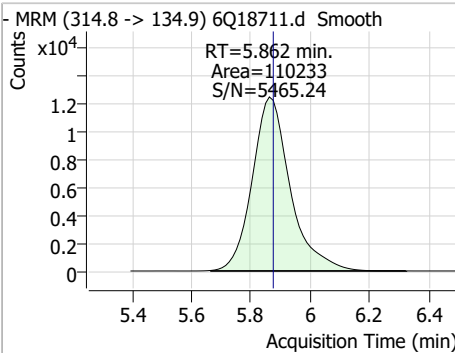


Perfluorinated Compounds by LC/MS/MS

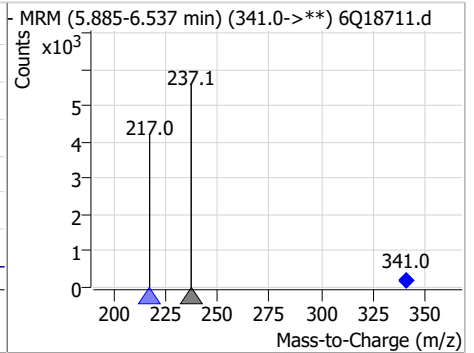
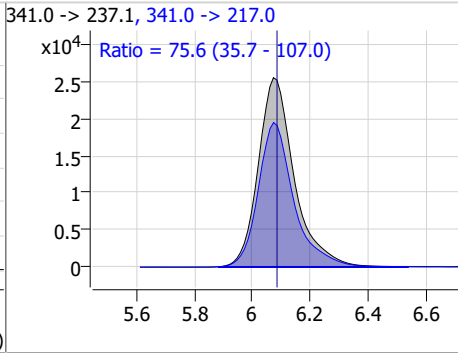
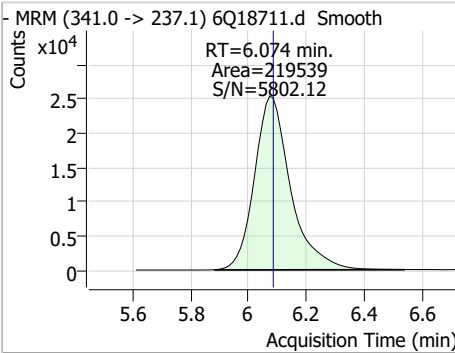
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.82	5.77	-0.01	15881	284.9 -> 184.9	11.6	6.8	20.5



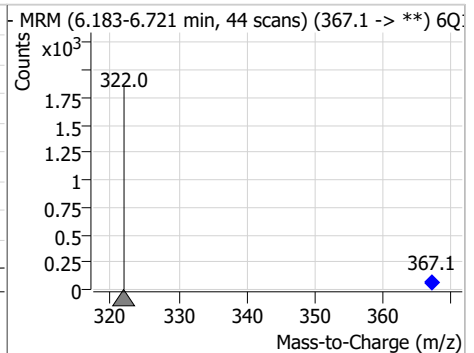
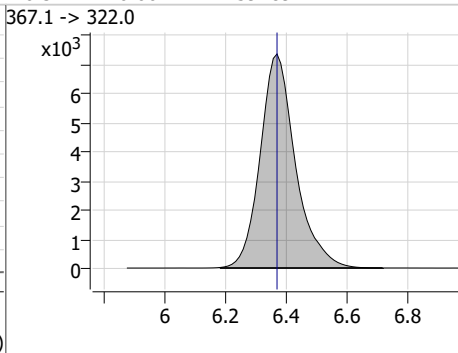
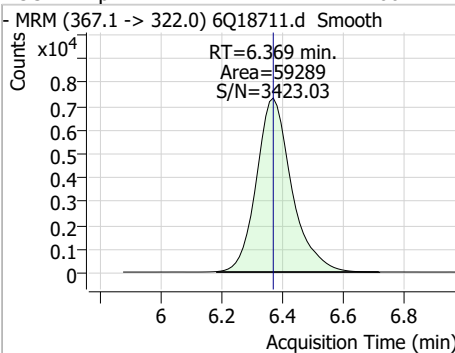
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.24	5.86	-0.01	110233	314.8 -> 82.9	3.5	1.9	5.6



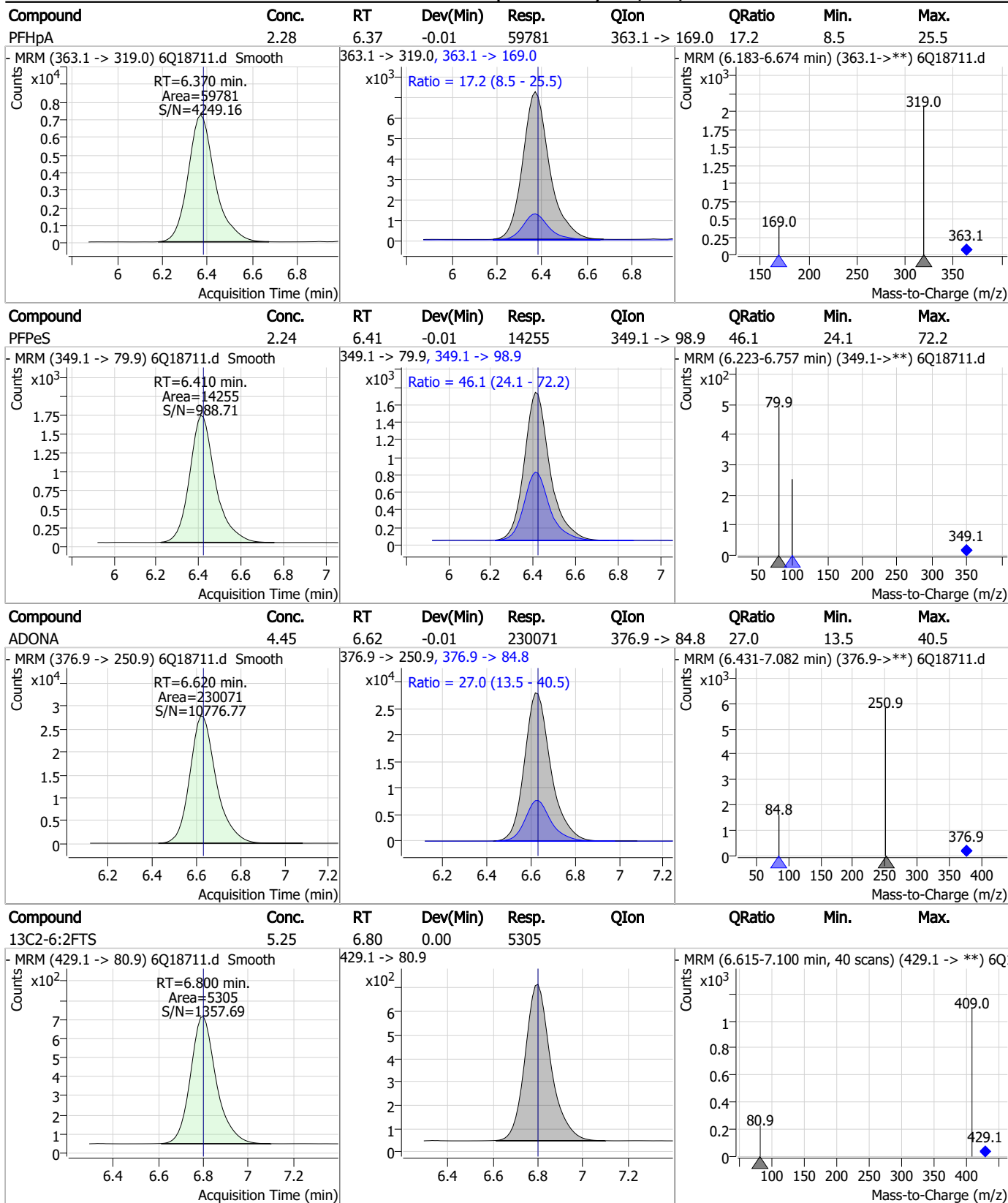
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.58	6.07	-0.01	219539	341.0 -> 217.0	75.6	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.60	6.37	0.00	59289	367.1 -> 322.0			

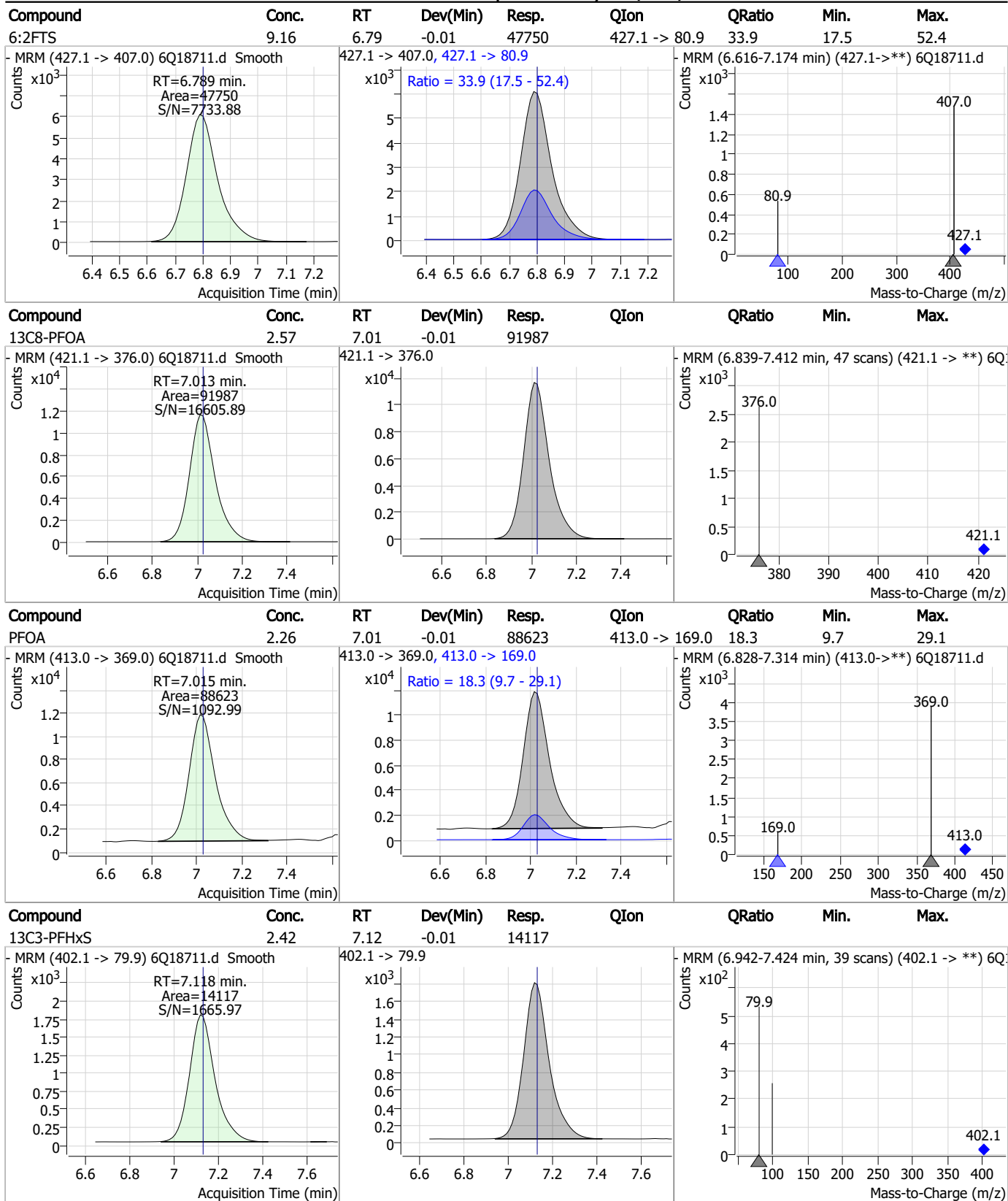


Perfluorinated Compounds by LC/MS/MS



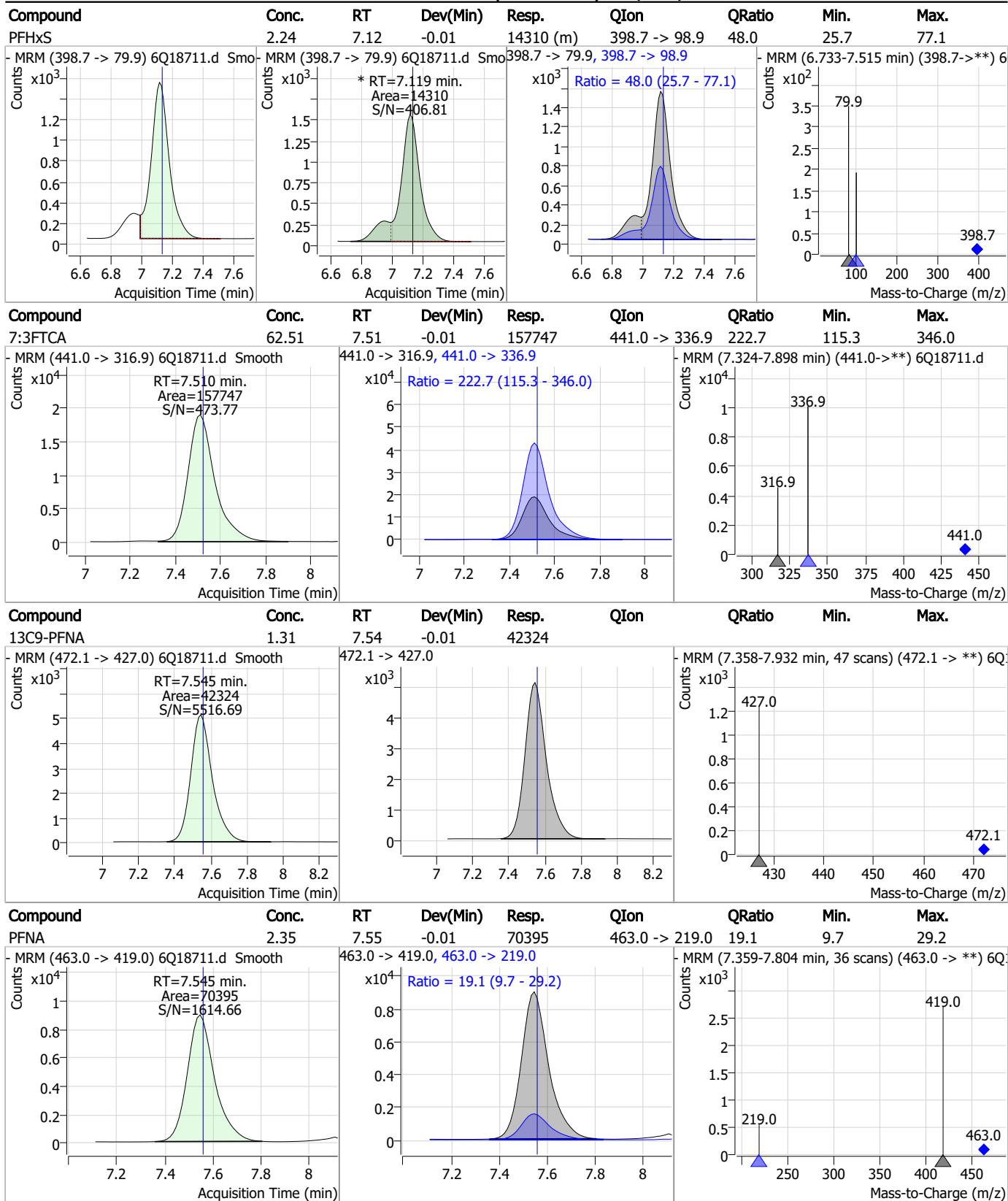
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Perfluorinated Compounds by LC/MS/MS



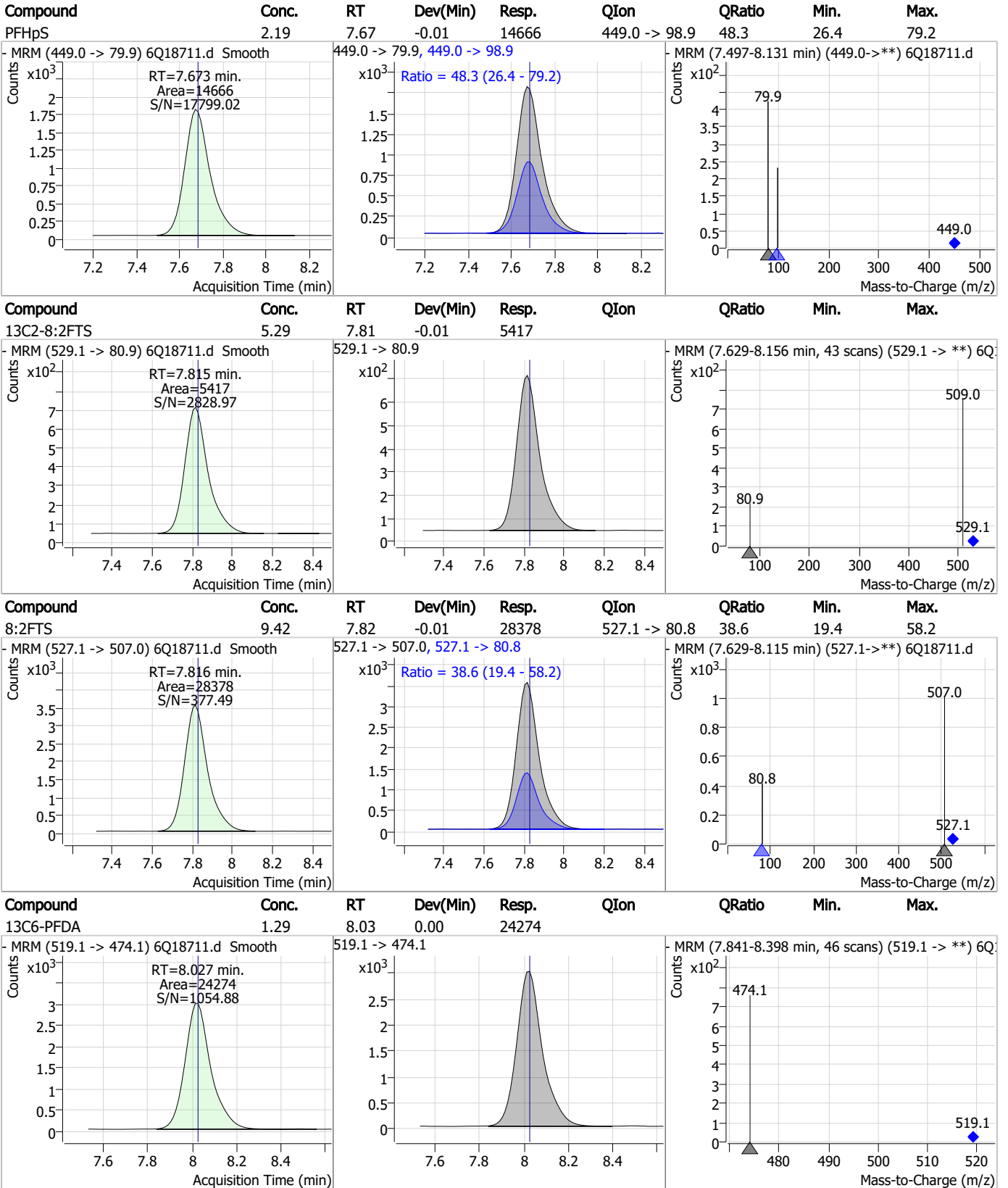
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

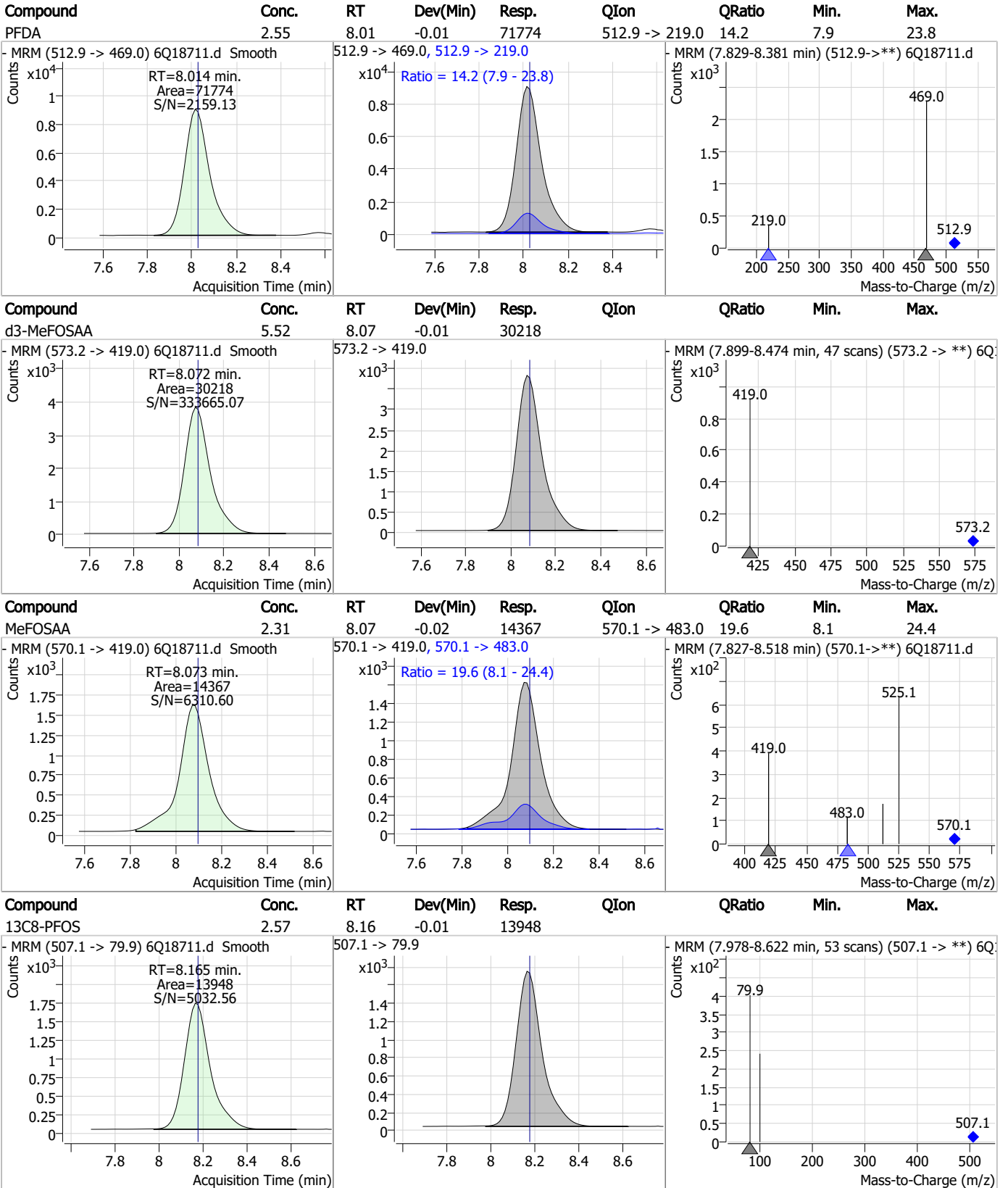


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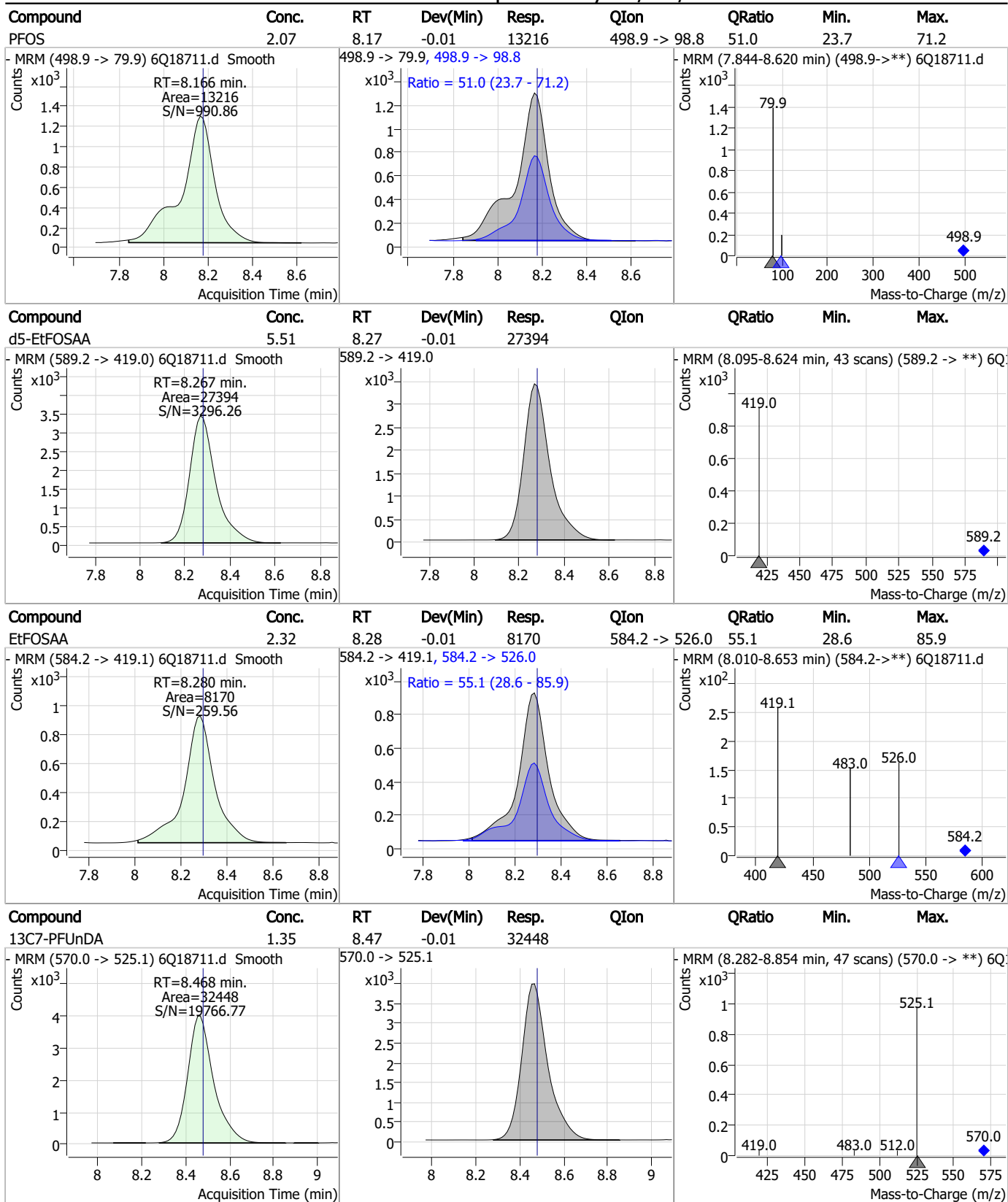
Perfluorinated Compounds by LC/MS/MS



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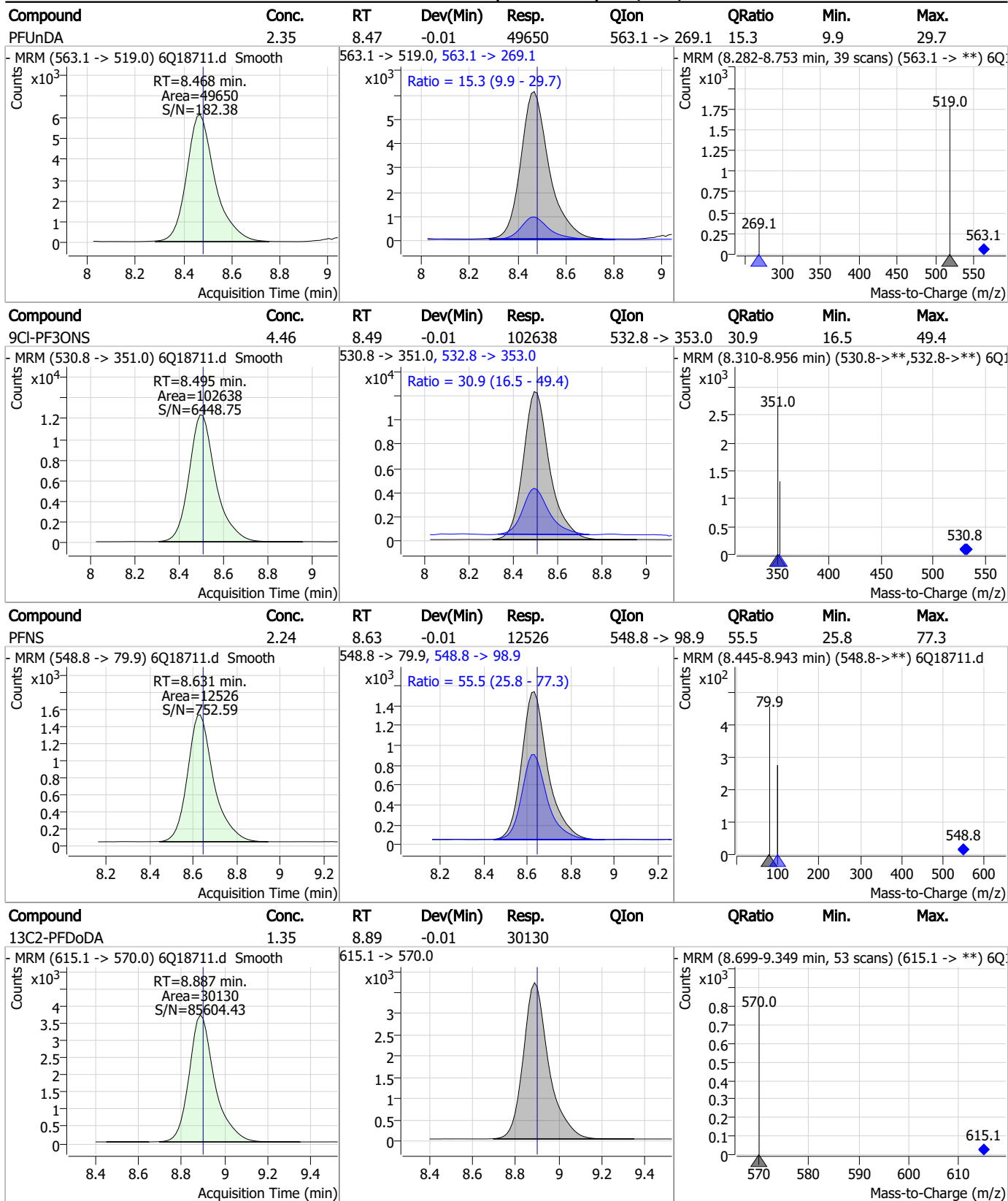
Perfluorinated Compounds by LC/MS/MS



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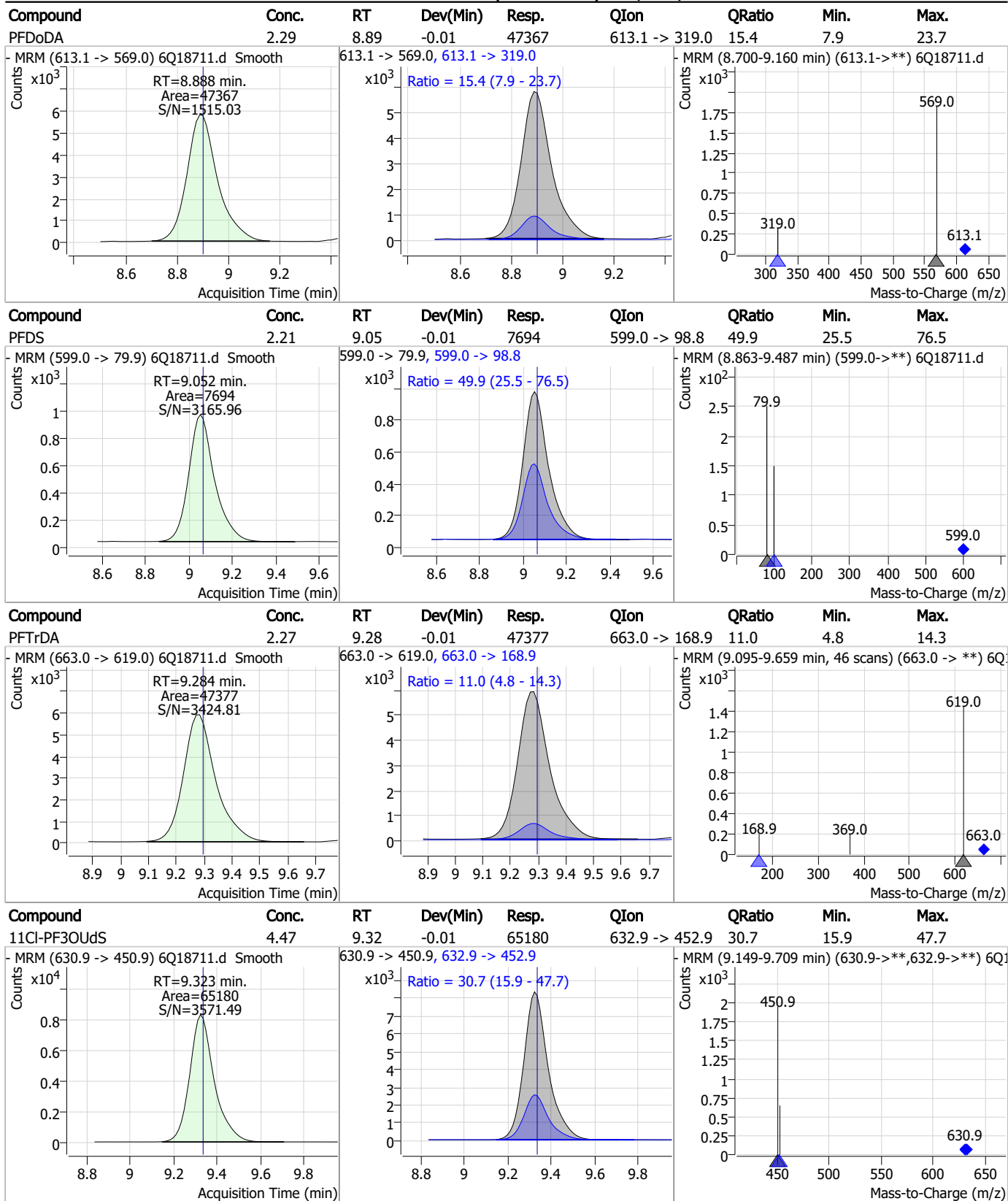
Perfluorinated Compounds by LC/MS/MS



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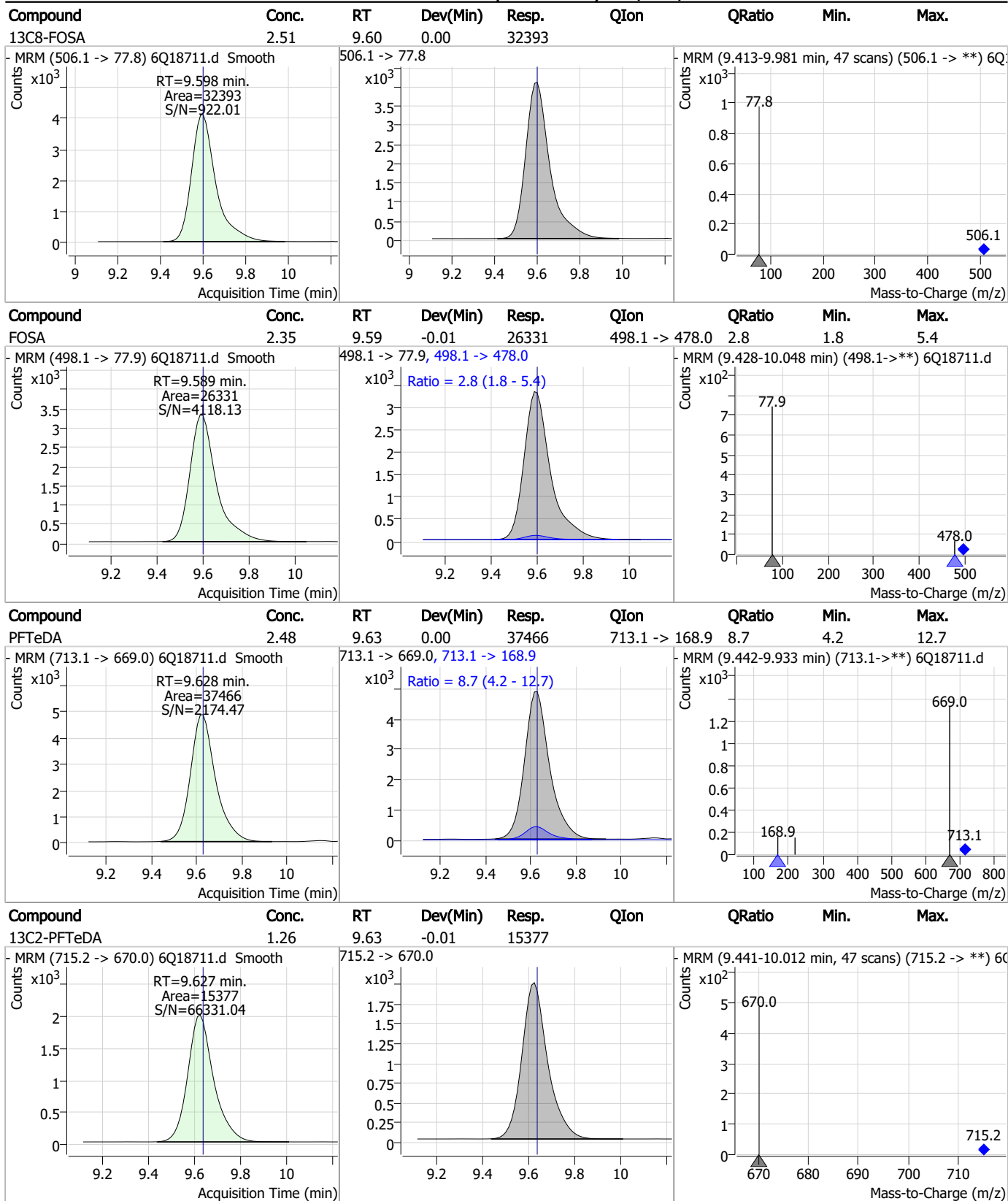
Perfluorinated Compounds by LC/MS/MS



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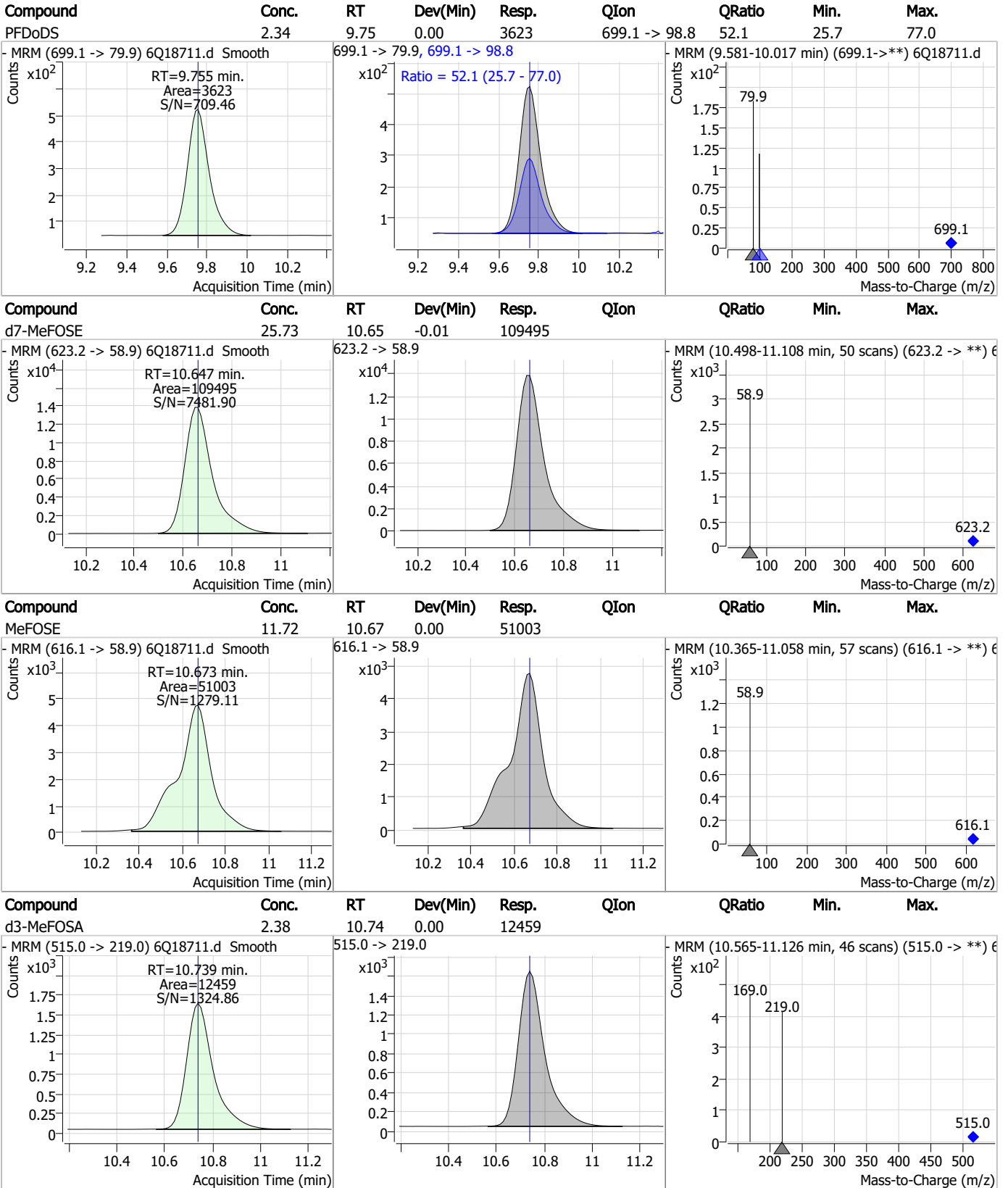


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

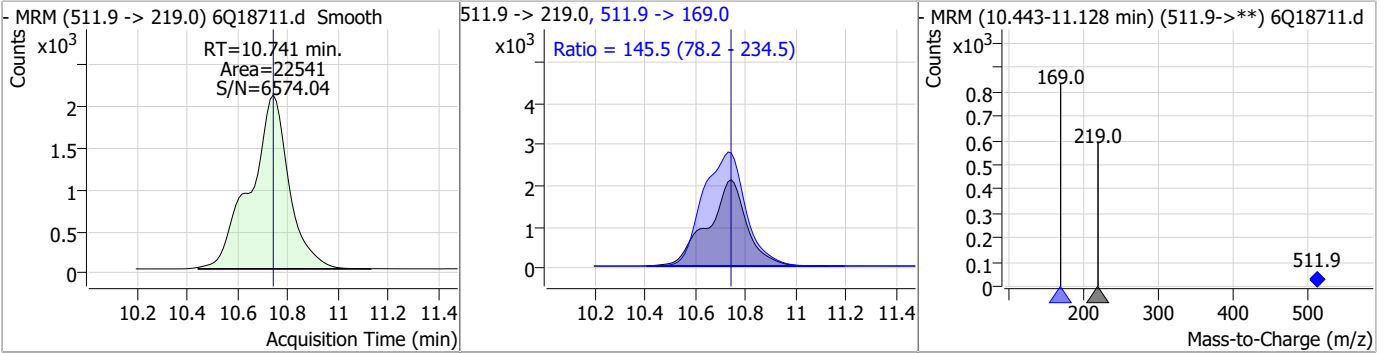


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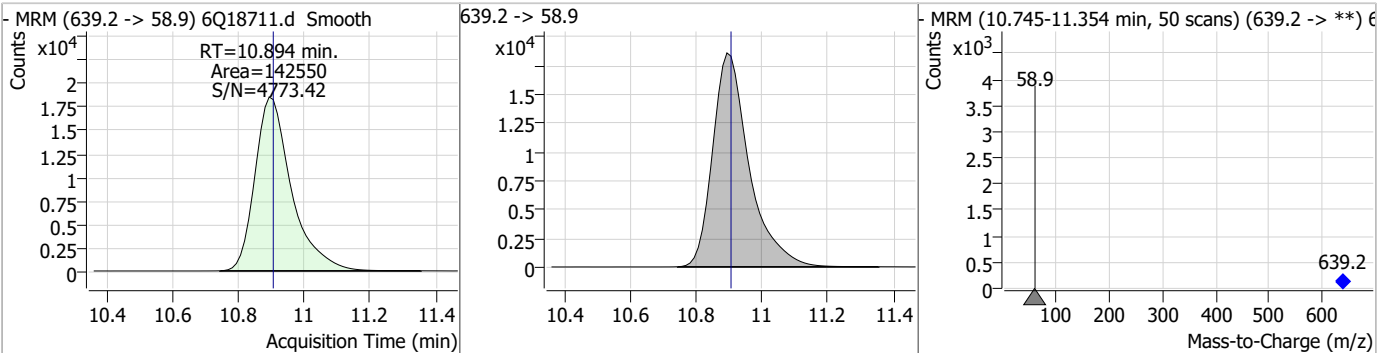


Perfluorinated Compounds by LC/MS/MS

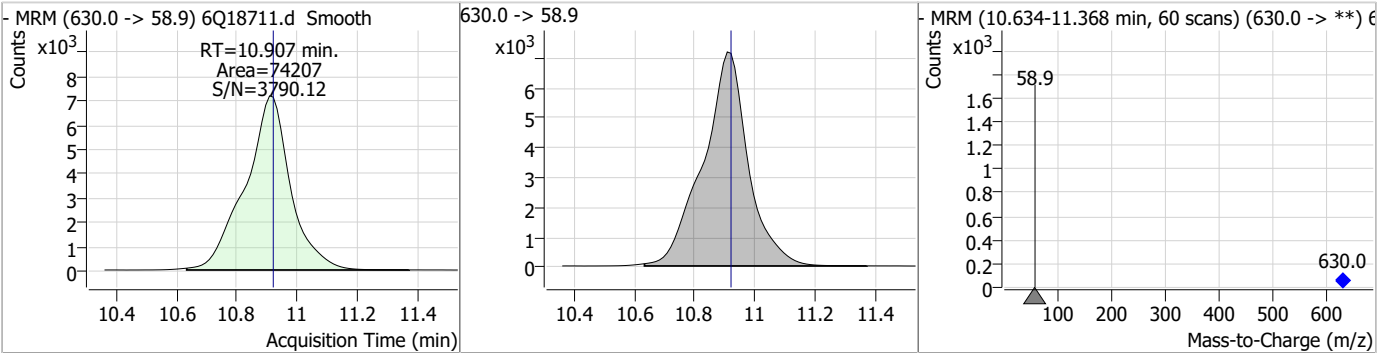
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.92	10.74	0.00	22541	511.9 -> 169.0	145.5	78.2	234.5



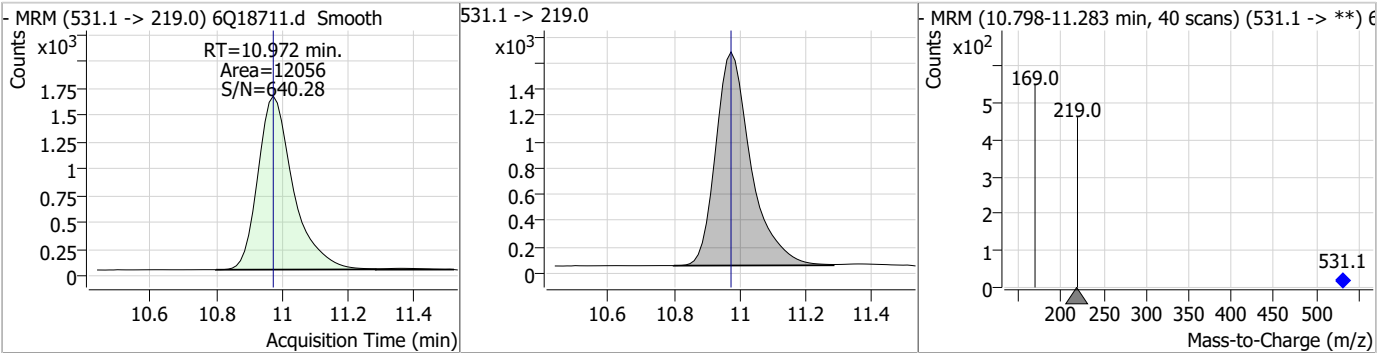
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.61	10.89	-0.01	142550				



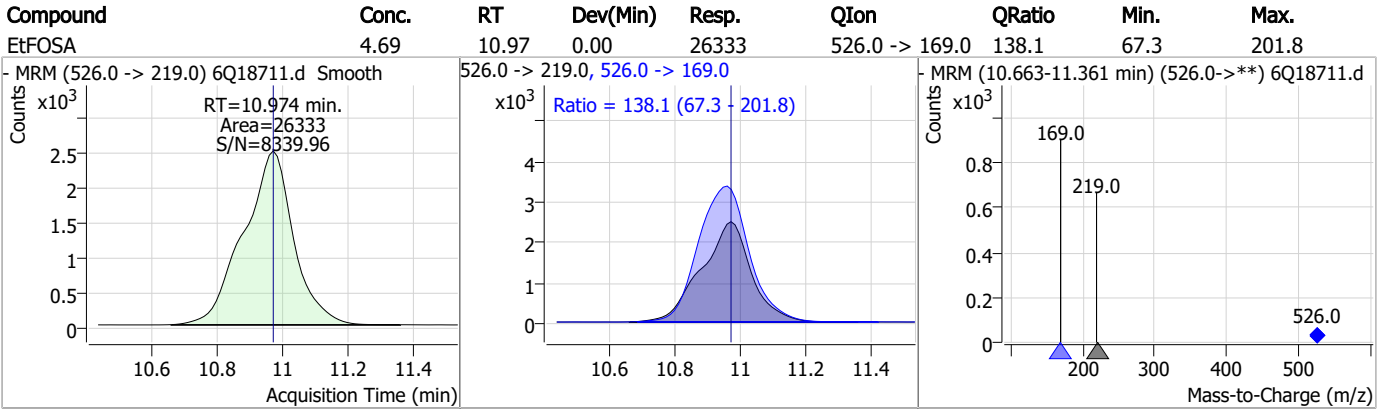
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.67	10.91	-0.01	74207				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.43	10.97	0.00	12056				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18711.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/01/23 23:49 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18720.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 1:59:25 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	171185	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	56928	5.00 µg/L	0.000
M5-PFHxA	5.417	318.0 -> 273.0	61026	2.50 µg/L	0.000
M4-PFHpA	6.369	367.1 -> 322.0	58208	2.50 µg/L	0.000
M8-PFOA	7.026	421.1 -> 376.0	91932	2.50 µg/L	0.000
M9-PFNA	7.545	472.1 -> 427.0	42892	1.25 µg/L	-0.012
M6-PFDA	8.027	519.1 -> 474.1	25209	1.25 µg/L	0.000
M7-PFUnDA	8.468	570.0 -> 525.1	32495	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	29451	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	15825	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	32023	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23145	2.50 µg/L	-0.012
M3-PFHxS	7.130	402.1 -> 79.9	14488	2.50 µg/L	0.000
M8-PFOS	8.165	507.1 -> 79.9	12983	2.50 µg/L	-0.012
M2-4:2FTS	5.093	329.1 -> 80.9	3811	5.00 µg/L	0.000
M2-6:2FTS	6.800	429.1 -> 80.9	5511	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5378	5.00 µg/L	-0.012
M3-MeFOSAA	8.084	573.2 -> 419.0	28711	5.00 µg/L	0.000
M3-HFPO-DA	5.782	286.9 -> 168.9	40297	10.00 µg/L	0.000
M5-EtFOSAA	8.279	589.2 -> 419.0	25741	5.00 µg/L	0.000
M7-MeFOSE	10.647	623.2 -> 58.9	107910	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	140867	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12212	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12108	2.50 µg/L	0.000
13C4-PFOS	8.178	502.8 -> 79.9	17883	2.50 µg/L	-0.012
13C3-PFBA	2.814	216.0 -> 172.0	71653	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	10568	2.50 µg/L	0.000
13C4-PFOA	7.026	417.1 -> 372.0	94628	2.50 µg/L	0.000
13C2-PFDA	8.027	515.1 -> 470.1	33938	1.25 µg/L	0.000
13C5-PFNA	7.545	468.0 -> 423.0	50031	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	59088	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.093	329.1 -> 80.9	3811	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5511	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5378	5.18 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-PFDoDA	8.887	615.1 -> 570.0	29451	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C2-PFTeDA	9.627	715.2 -> 670.0	15825	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.322	302.1 -> 79.9	23145	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFHxS	7.130	402.1 -> 79.9	14488	2.45 µg/L	0.000

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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	2.822	216.8 -> 171.9	171185	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.369	367.1 -> 322.0	58208	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFHxA	5.417	318.0 -> 273.0	61026	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFPeA	4.210	268.3 -> 223.0	56928	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C6-PFDA	8.027	519.1 -> 474.1	25209	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32495	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-FOSA	9.598	506.1 -> 77.8	32023	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C8-PFOA	7.026	421.1 -> 376.0	91932	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C8-PFOS	8.165	507.1 -> 79.9	12983	2.27 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C9-PFNA	7.545	472.1 -> 427.0	42892	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
d3-MeFOSAA	8.084	573.2 -> 419.0	28711	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	40297	10.38 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d3-MeFOSA	10.739	515.0 -> 219.0	12108	2.19 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.7%	
d5-EtFOSAA	8.279	589.2 -> 419.0	25741	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d7-MeFOSE	10.647	623.2 -> 58.9	107910	24.03 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d9-EtFOSE	10.894	639.2 -> 58.9	140867	23.98 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
d5-EtFOSA	10.972	531.1 -> 219.0	12212	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	48201	8.71 µg/L	98
		327.1 -> 80.9	18552		
6:2FTS	6.801	427.1 -> 407.0	48417	8.94 µg/L	95
		427.1 -> 80.9	15581		
8:2FTS	7.816	527.1 -> 507.0	27013	9.03 µg/L	94
		527.1 -> 80.8	11461		
EtFOSAA	8.280	584.2 -> 419.1	8077	2.44 µg/L	94
		584.2 -> 526.0	4236		
FOSA	9.589	498.1 -> 77.9	25305	2.28 µg/L	99
		498.1 -> 478.0	848		
MeFOSAA	8.085	570.1 -> 419.0	14350	2.43 µg/L	90
		570.1 -> 483.0	2932		
PFBA	2.818	212.8 -> 168.9	54495	9.62 µg/L	100
PFBS	5.323	298.7 -> 79.9	16386	2.08 µg/L	97
		298.7 -> 98.8	5999		
PFDA	8.014	512.9 -> 469.0	72958	2.50 µg/L	96
		512.9 -> 219.0	10391		
PFDoDA	8.888	613.1 -> 569.0	48123	2.38 µg/L	98
		613.1 -> 319.0	7289		
PFDS	9.052	599.0 -> 79.9	8053	2.48 µg/L	92

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3658	2.38	µg/L	99
		363.1 -> 319.0	61204			
PFHpS	7.685	363.1 -> 169.0	10154	2.31	µg/L	99
		449.0 -> 79.9	14353			
PFHxA	5.420	449.0 -> 98.9	7701	2.41	µg/L	100
		313.0 -> 269.0	49378			
PFHxS	7.131	313.0 -> 118.9	2491	2.11	µg/L	98
		398.7 -> 79.9	13829			
PFNA	7.545	398.7 -> 98.9	6897	2.38	µg/L	97
		463.0 -> 419.0	72338			
PFNS	8.631	463.0 -> 219.0	13033	2.39	µg/L	98
		548.8 -> 79.9	12475			
PFOA	7.028	548.8 -> 98.9	6214	2.46	µg/L	95
		413.0 -> 369.0	96527			
PFOS	8.166	413.0 -> 169.0	16471	2.39	µg/L	96
		498.9 -> 79.9	14172			
PFPeA	4.212	498.9 -> 98.8	7078	4.88	µg/L	100
		263.0 -> 219.0	66670			
PFPeS	6.422	349.1 -> 79.9	14258	2.18	µg/L	98
		349.1 -> 98.9	6657			
PFTeDA	9.628	713.1 -> 669.0	38153	2.45	µg/L	99
		713.1 -> 168.9	3340			
PFTrDA	9.284	663.0 -> 619.0	50481	2.47	µg/L	98
		663.0 -> 168.9	5164			
PFUnDA	8.468	563.1 -> 519.0	49869	2.36	µg/L	92
		563.1 -> 269.1	8040			
11CI-PF3OUdS	9.323	630.9 -> 450.9	64663	4.28	µg/L	97
		632.9 -> 452.9	21507			
9CI-PF3ONS	8.495	530.8 -> 351.0	102166	4.29	µg/L	95
		532.8 -> 353.0	30708			
ADONA	6.632	376.9 -> 250.9	238874	4.46	µg/L	98
		376.9 -> 84.8	62502			
HFPO-DA	5.783	284.9 -> 168.9	15591	4.56	µg/L	95
		284.9 -> 184.9	1797			
3:3FTCA	3.671	241.0 -> 177.0	10562	12.07	µg/L	92
		241.0 -> 117.0	1461			
5:3FTCA	6.074	341.0 -> 237.1	218607	59.31	µg/L	94
		341.0 -> 217.0	166508			
7:3FTCA	7.510	441.0 -> 316.9	156407	61.96	µg/L	97
		441.0 -> 336.9	352264			
EtFOSA	10.974	526.0 -> 219.0	28276	4.97	µg/L	97
		526.0 -> 169.0	37076			
EtFOSE	10.907	630.0 -> 58.9	75915	12.08	µg/L	100
		511.9 -> 219.0	23169			
MeFOSA	10.741	511.9 -> 169.0	32087	5.20	µg/L	86
		616.1 -> 58.9	51117			
MeFOSE	10.661	699.1 -> 79.9	3576	11.92	µg/L	100
		699.1 -> 98.8	1915			
PFDoDS	9.755	295.0 -> 201.0	12045	2.48	µg/L	97
		295.0 -> 84.9	3079			
NFDHA	5.288	279.0 -> 85.1	45542	4.83	µg/L	93
		229.0 -> 84.9	35742			
PFMBA	4.626	314.8 -> 134.9	114570	4.94	µg/L	100
PFMPA	3.363	314.8 -> 82.9	3952	4.41	µg/L	99
PFEESA	5.862					

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

7.7.16
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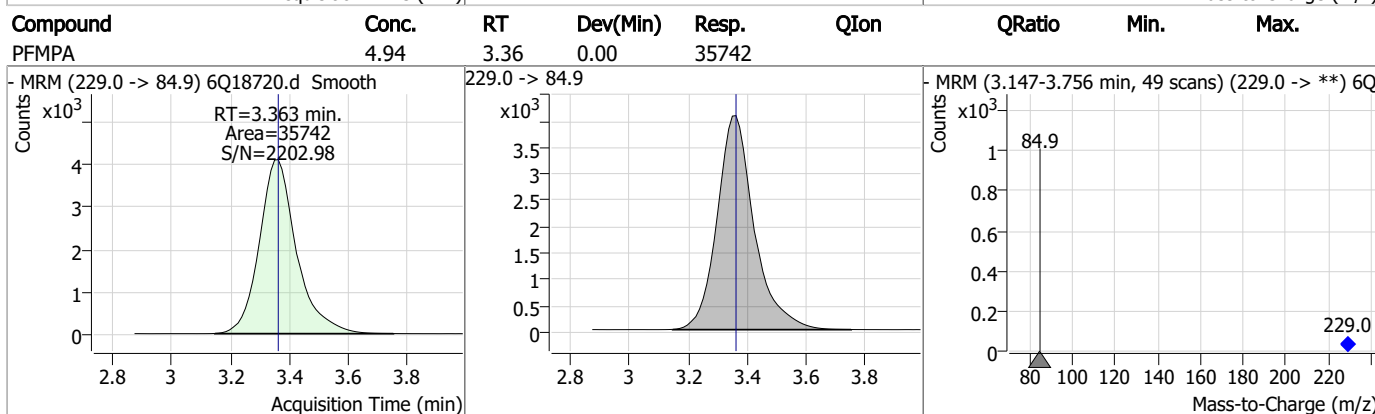
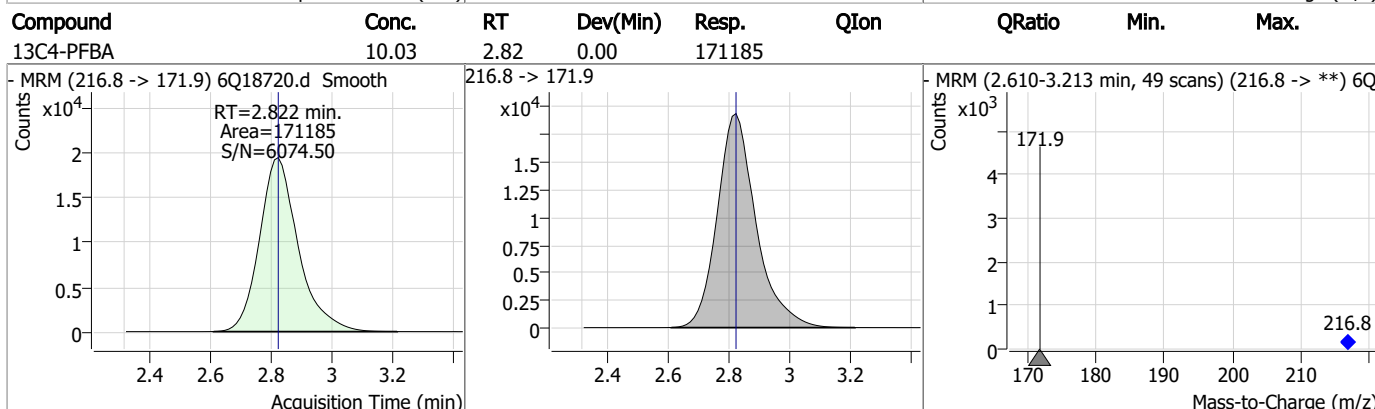
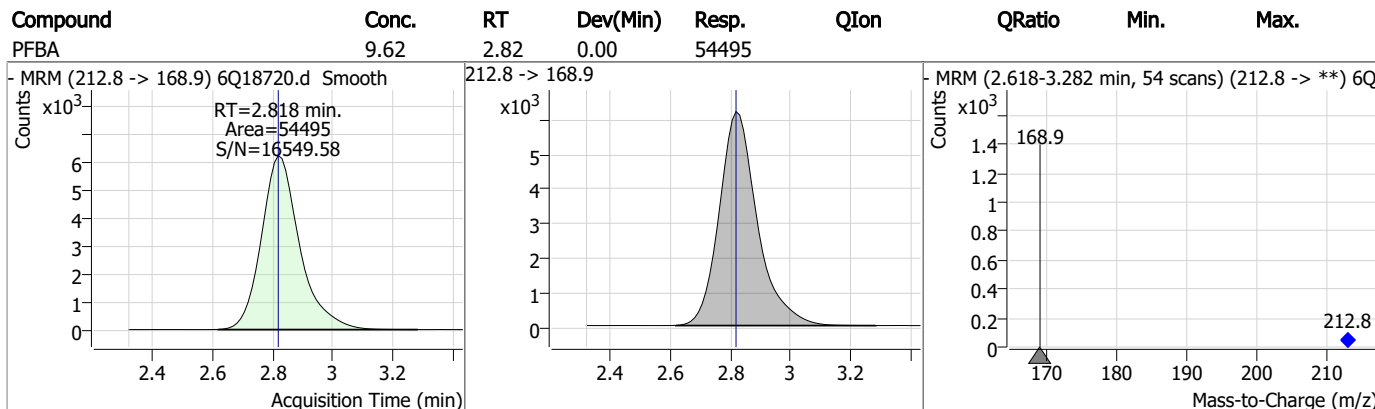
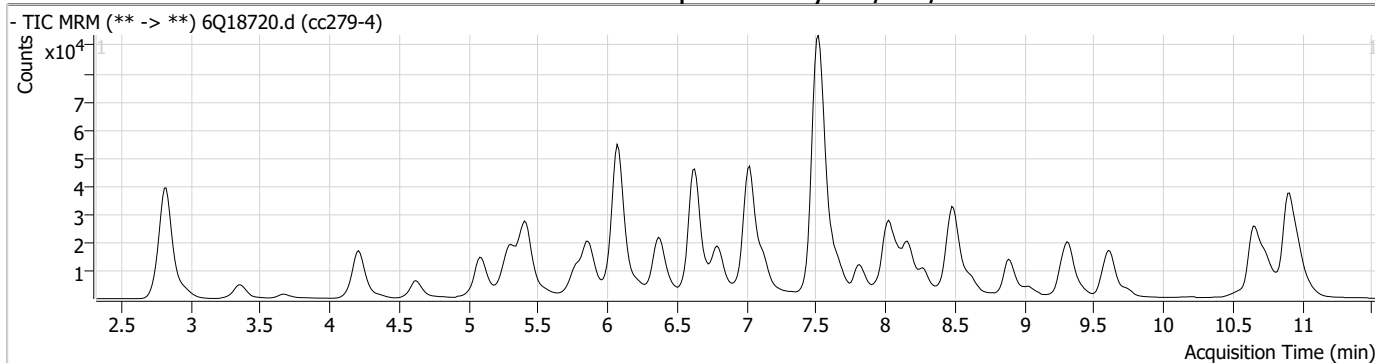
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.16

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Perfluorinated Compounds by LC/MS/MS

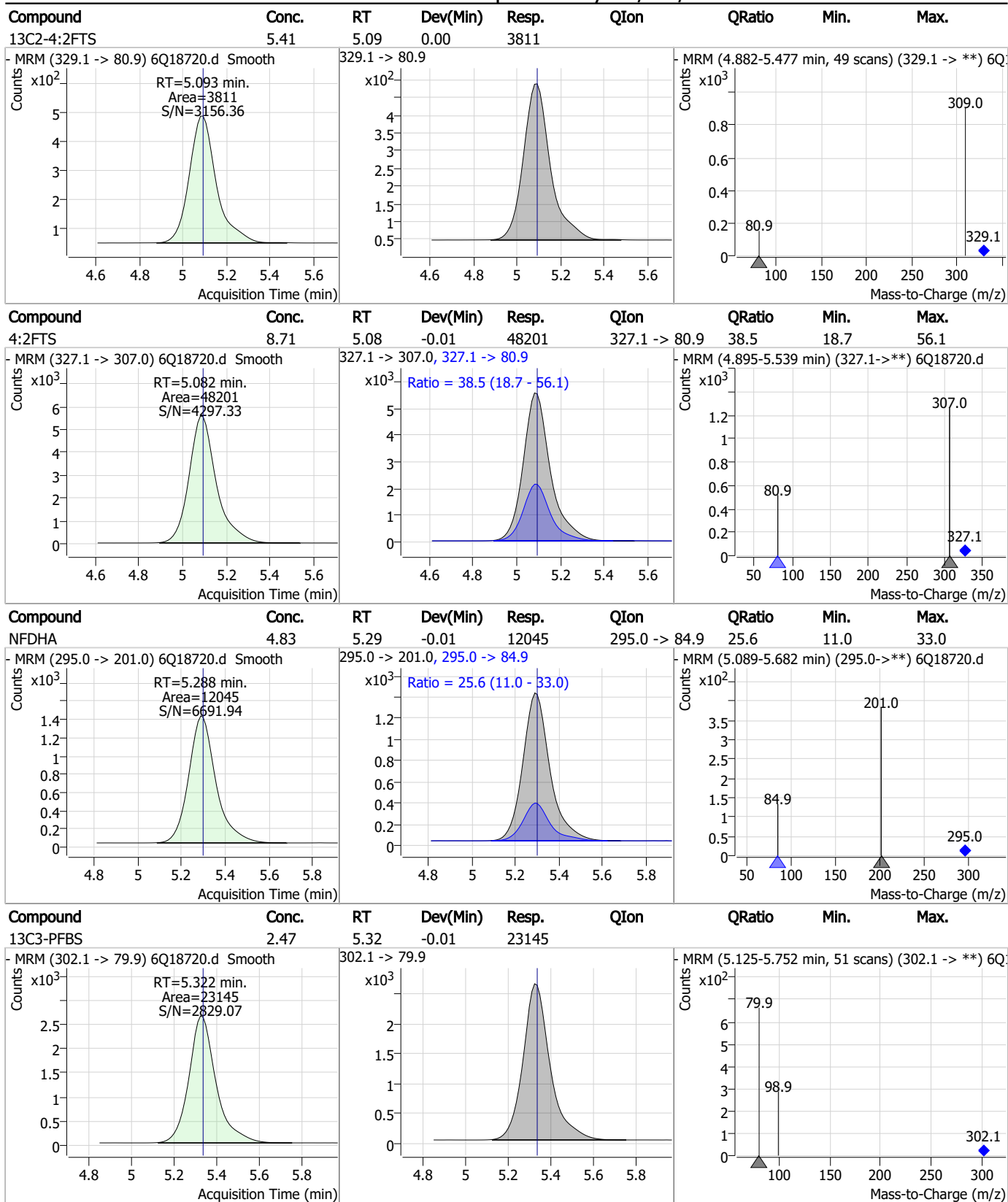


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.07	3.67	0.00	10562	241.0 -> 117.0	13.8	8.6	25.8
13C5-PFPeA	4.95	4.21	0.00	56928	241.0 -> 117.0	13.8	8.6	25.8
PFPeA	4.88	4.21	0.00	66670	263.0 -> 223.0	13.8	8.6	25.8
PFMBA	4.89	4.63	0.00	45542	263.0 -> 219.0	13.8	8.6	25.8

7.7.16
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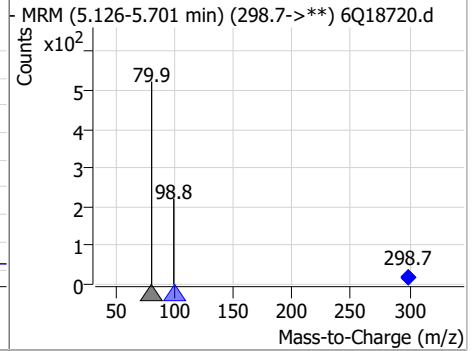
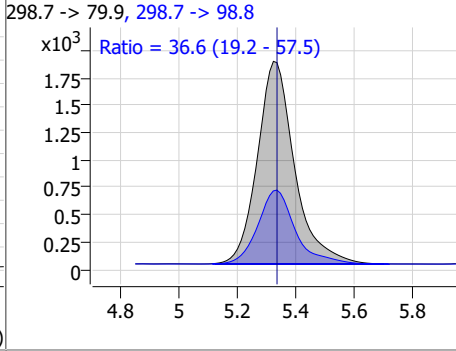
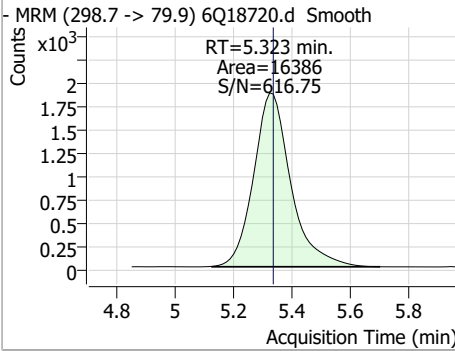
Perfluorinated Compounds by LC/MS/MS



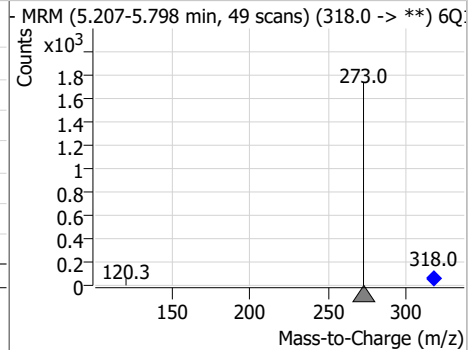
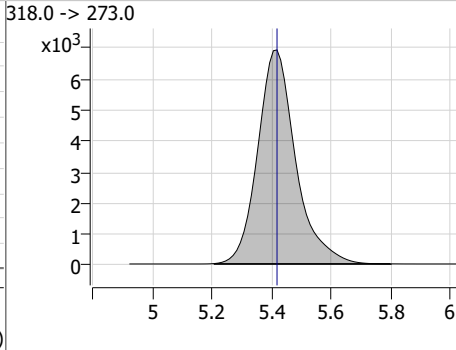
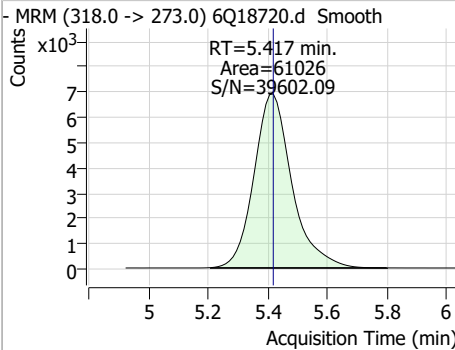
7.7.16
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Perfluorinated Compounds by LC/MS/MS

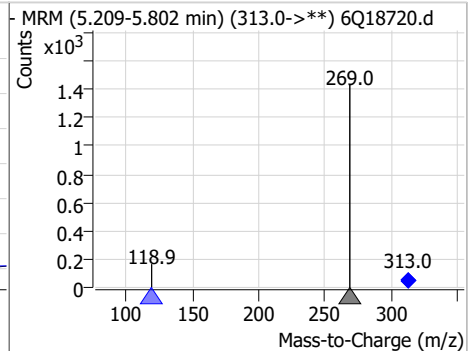
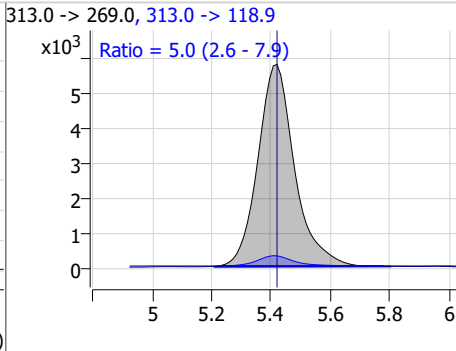
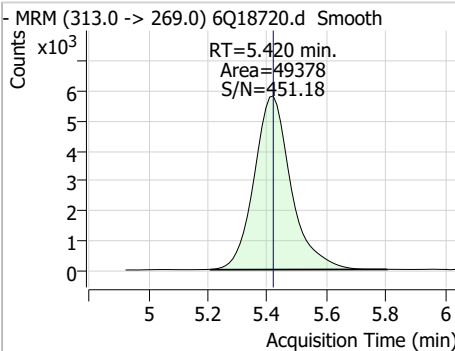
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.08	5.32	-0.01	16386	298.7 -> 98.8	36.6	19.2	57.5



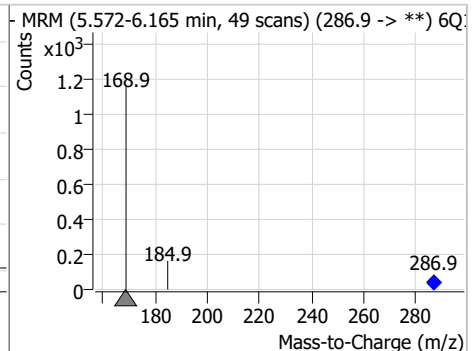
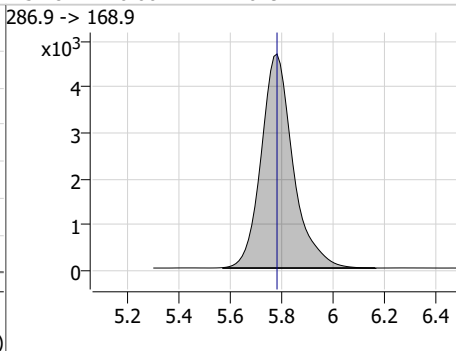
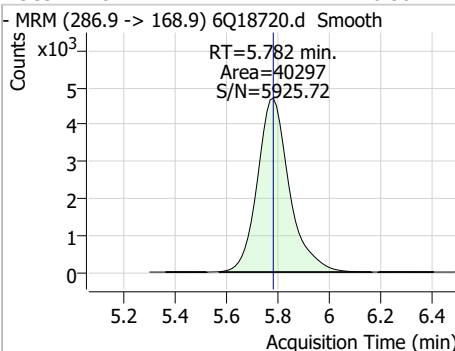
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.44	5.42	0.00	61026	318.0 -> 273.0	5.0	2.6	7.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.41	5.42	0.00	49378	313.0 -> 118.9	5.0	2.6	7.9

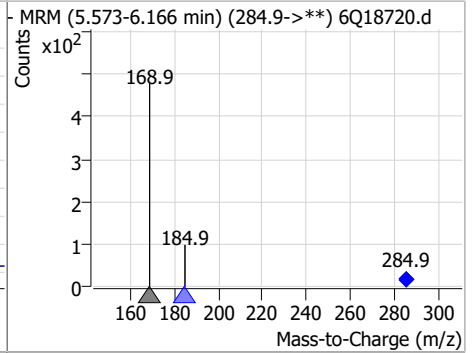
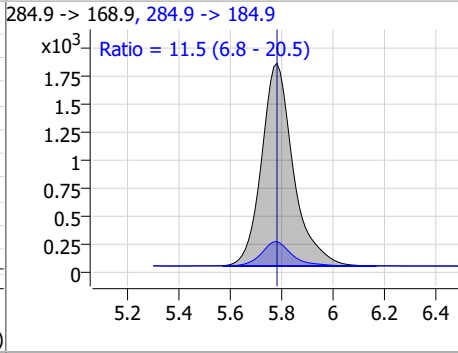
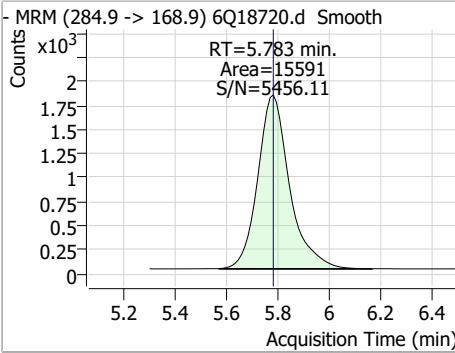


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.38	5.78	0.00	40297	286.9 -> 168.9	5.0	2.6	7.9

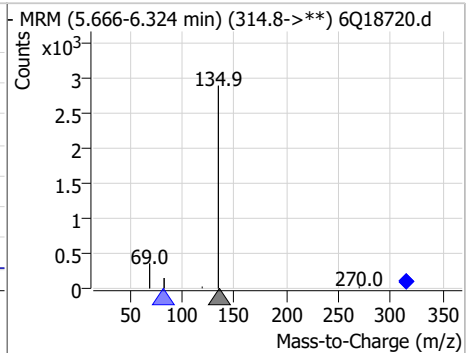
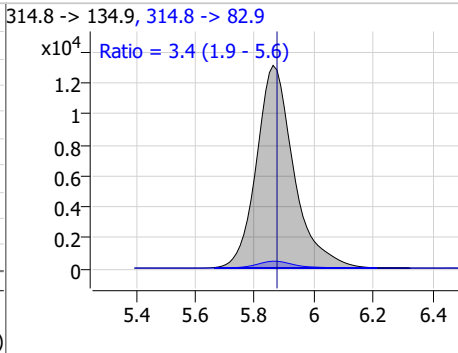
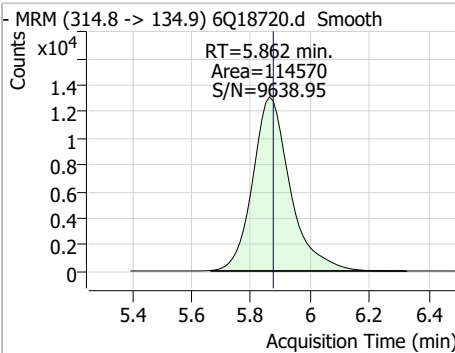


Perfluorinated Compounds by LC/MS/MS

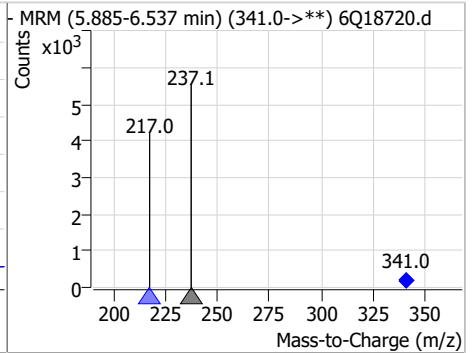
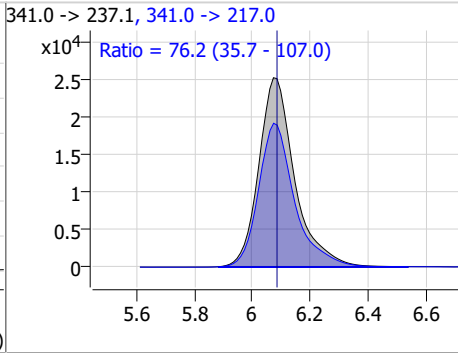
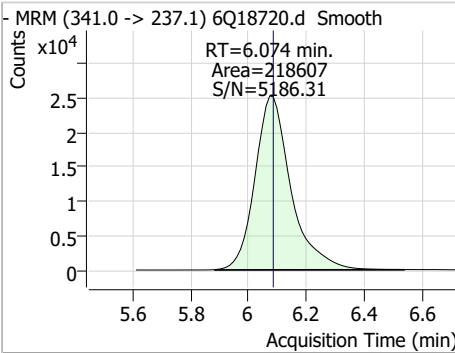
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.56	5.78	0.00	15591	284.9 -> 184.9	11.5	6.8	20.5



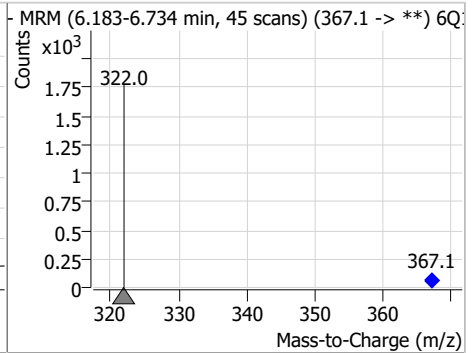
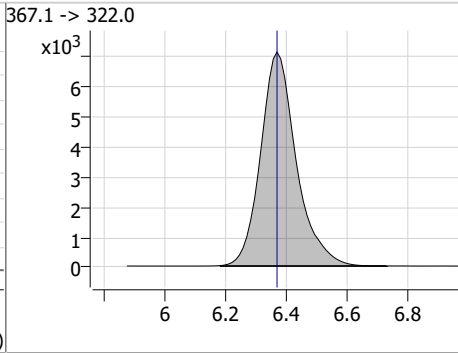
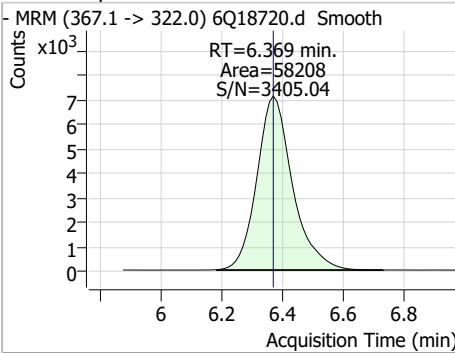
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.41	5.86	-0.01	114570	314.8 -> 82.9	3.4	1.9	5.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.31	6.07	-0.01	218607	341.0 -> 217.0	76.2	35.7	107.0



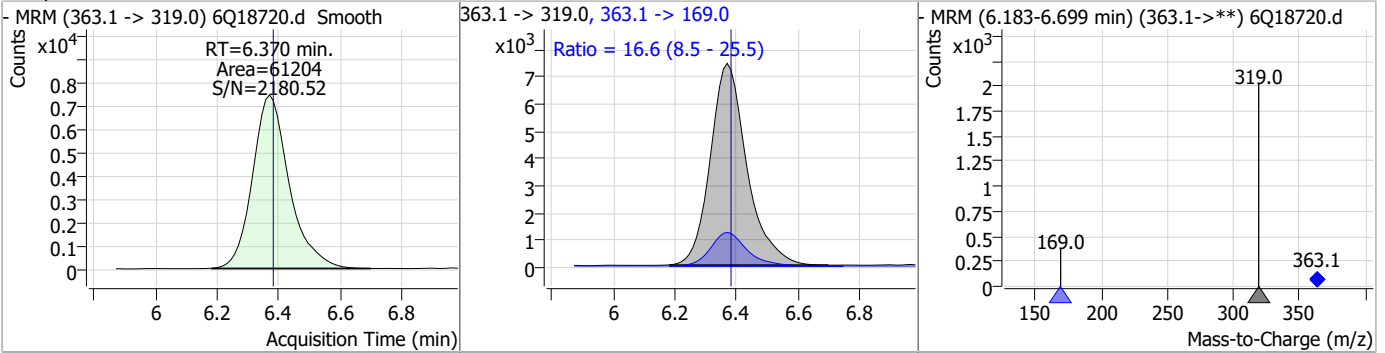
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.52	6.37	0.00	58208	367.1 -> 322.0			



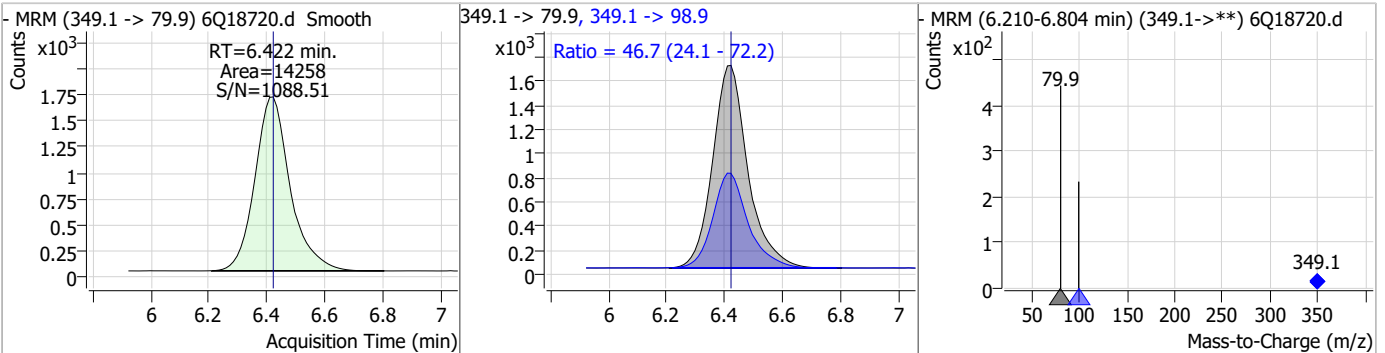
7.7.16
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Perfluorinated Compounds by LC/MS/MS

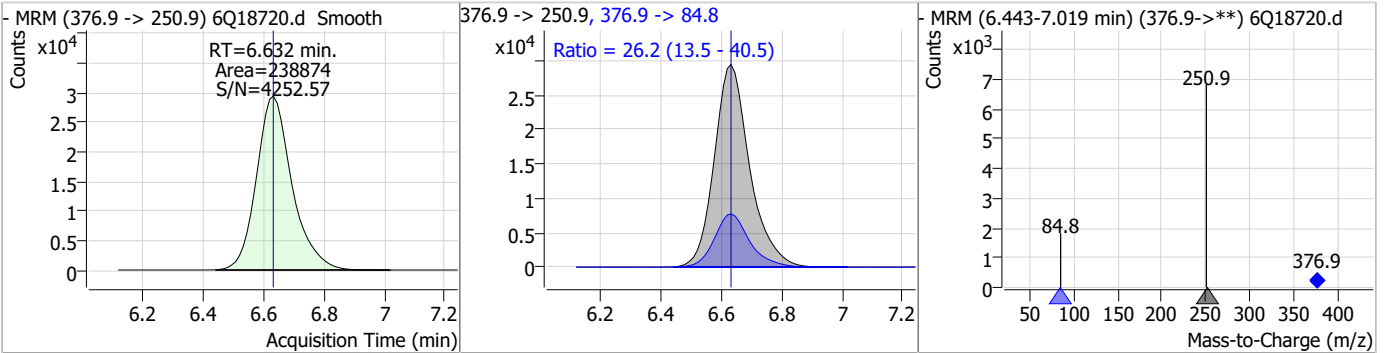
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.38	6.37	-0.01	61204	363.1 -> 169.0	16.6	8.5	25.5



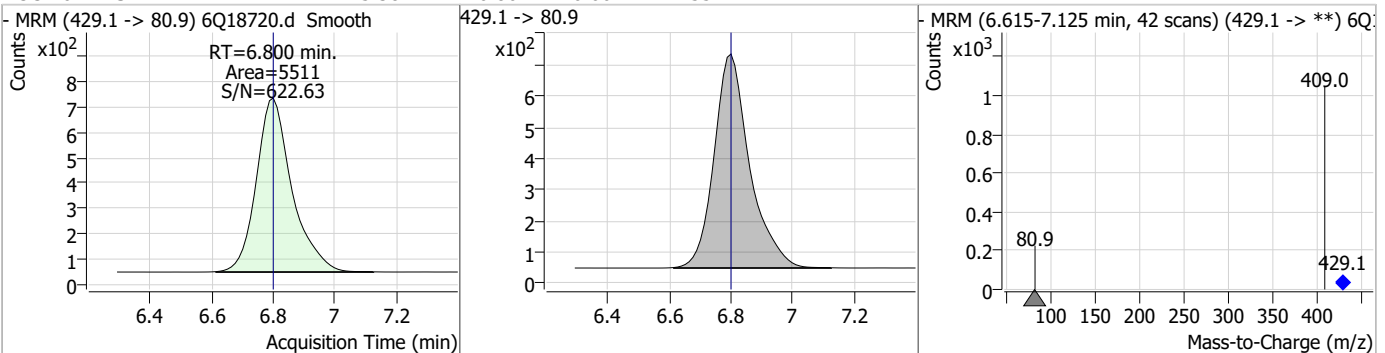
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.18	6.42	0.00	14258	349.1 -> 98.9	46.7	24.1	72.2



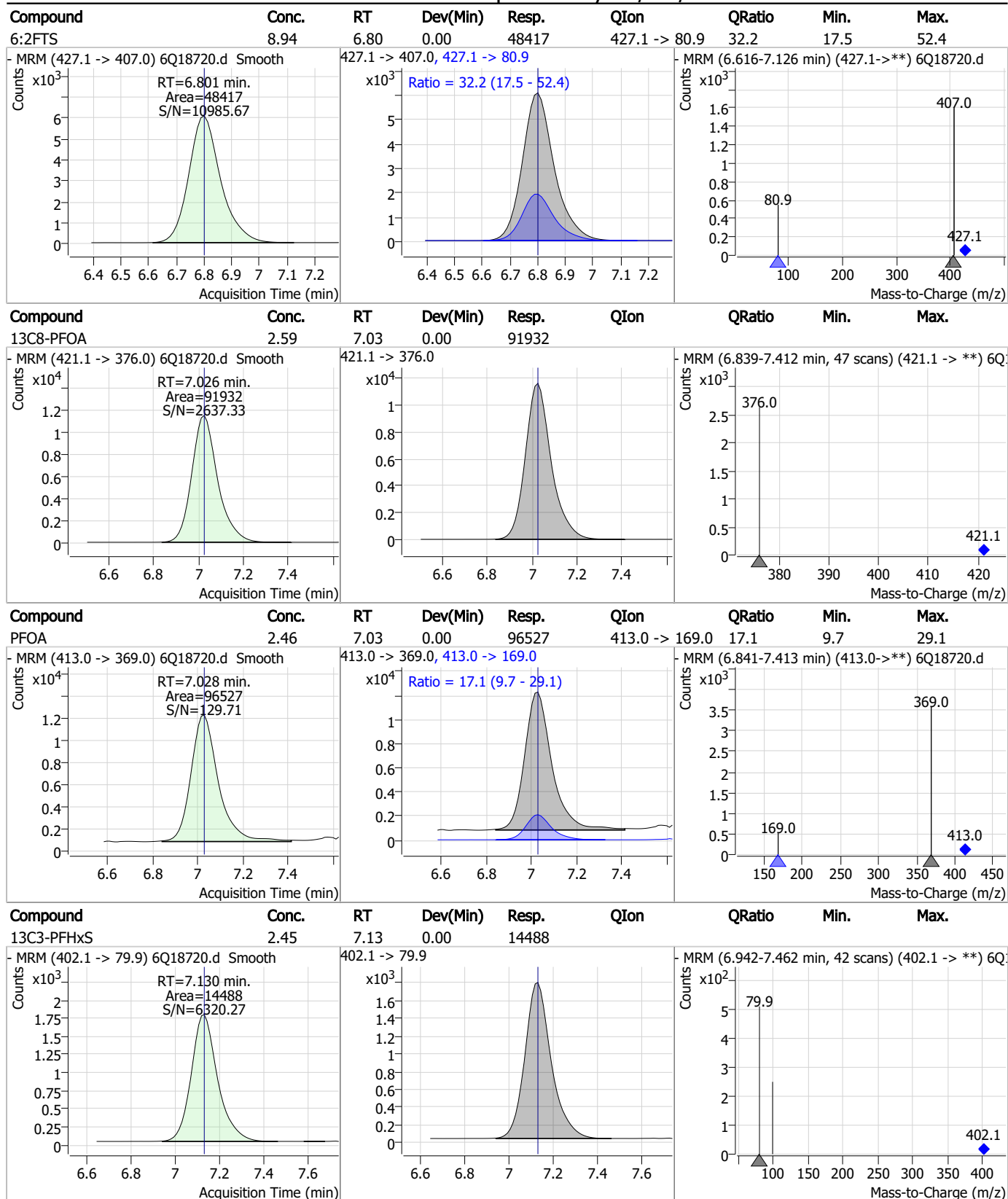
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.46	6.63	0.00	238874	376.9 -> 84.8	26.2	13.5	40.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6-2FTS	5.38	6.80	0.00	5511	429.1 -> 80.9			



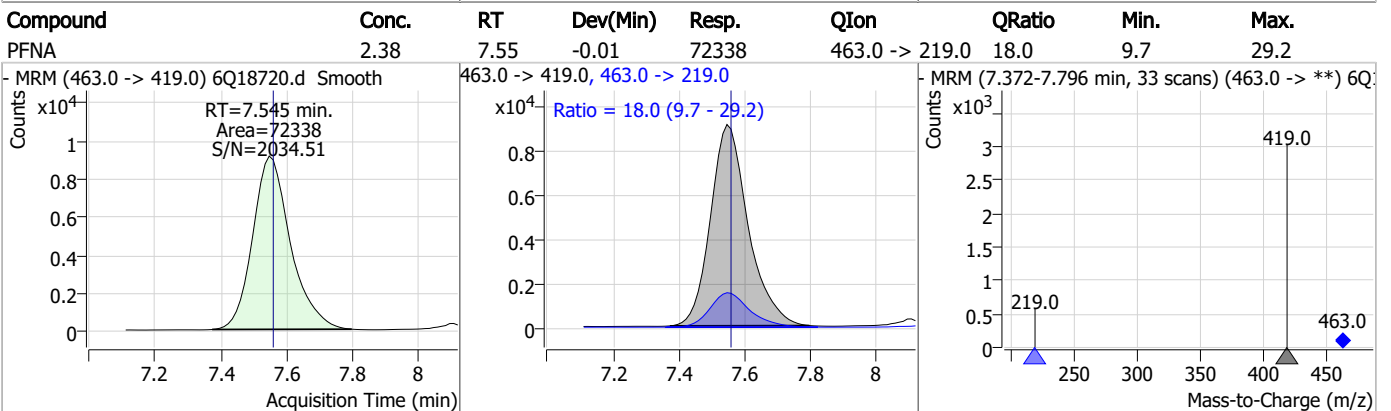
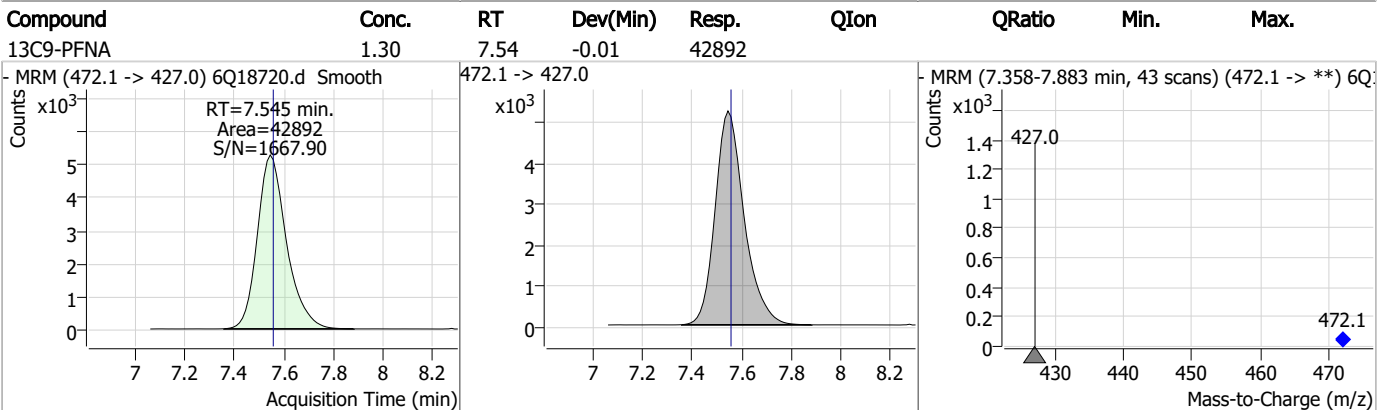
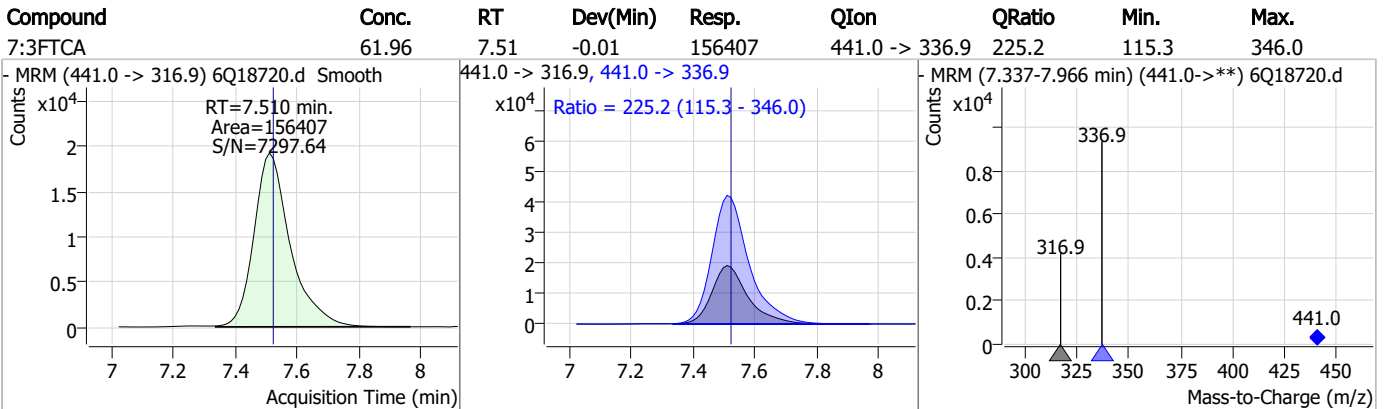
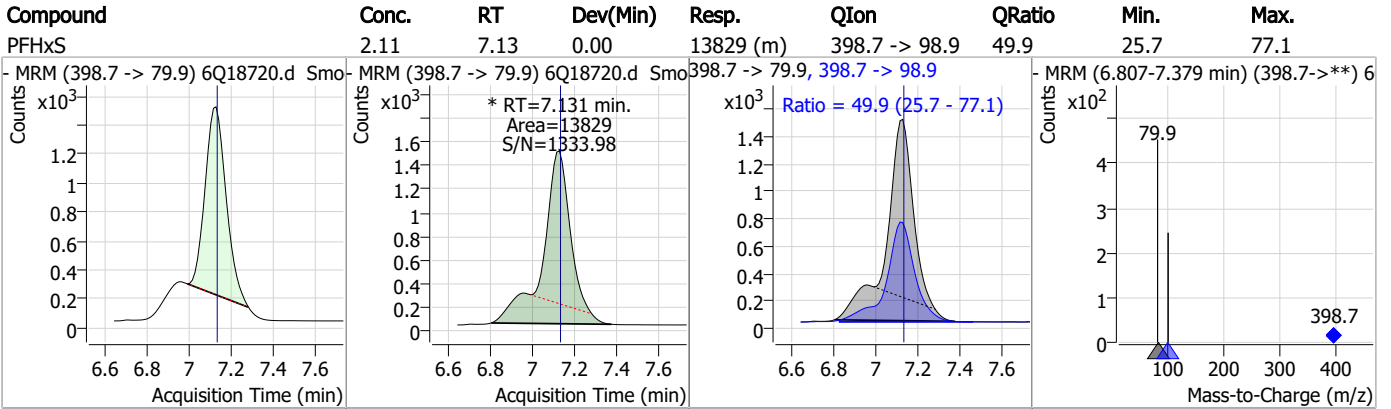
Perfluorinated Compounds by LC/MS/MS



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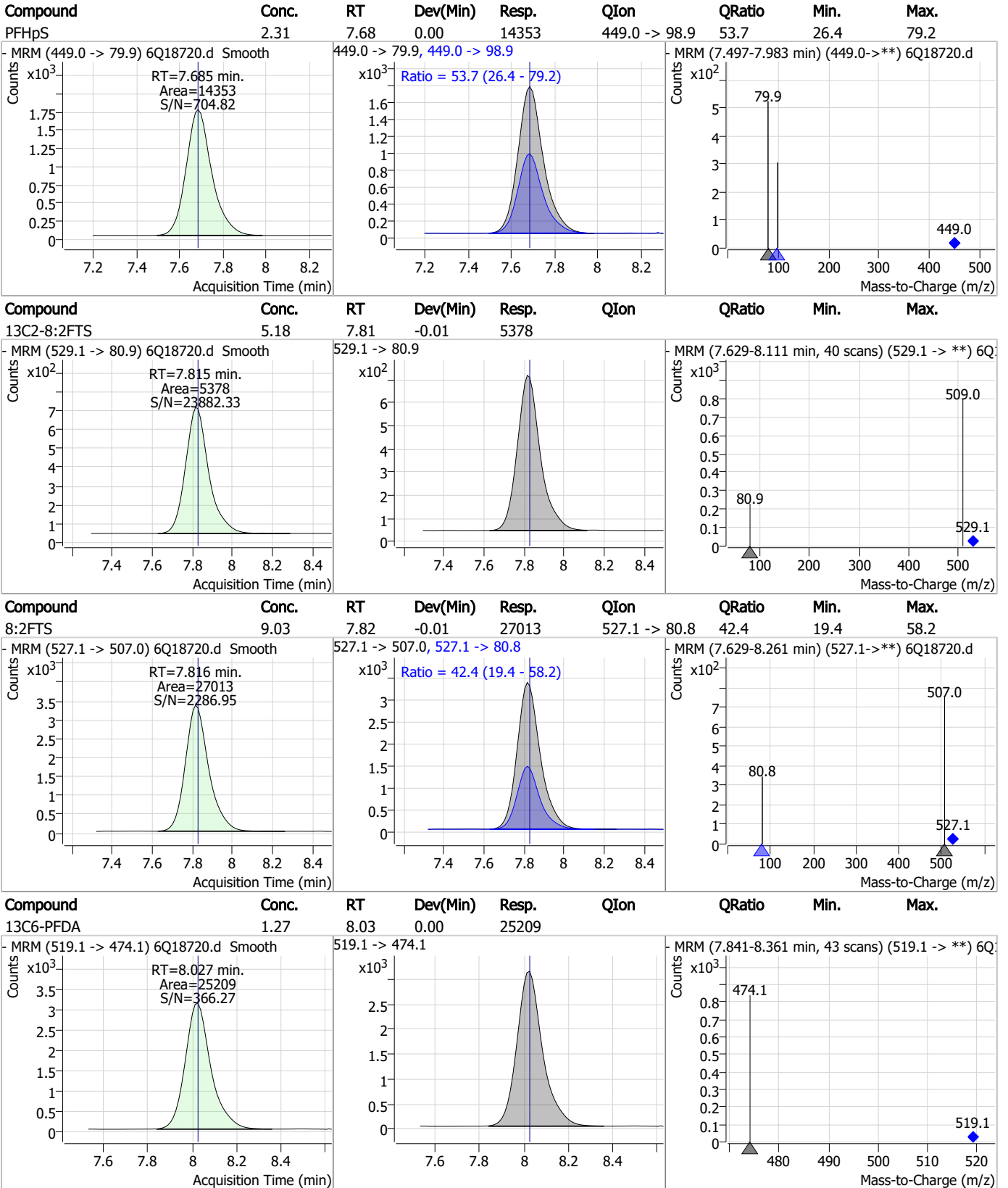
Perfluorinated Compounds by LC/MS/MS



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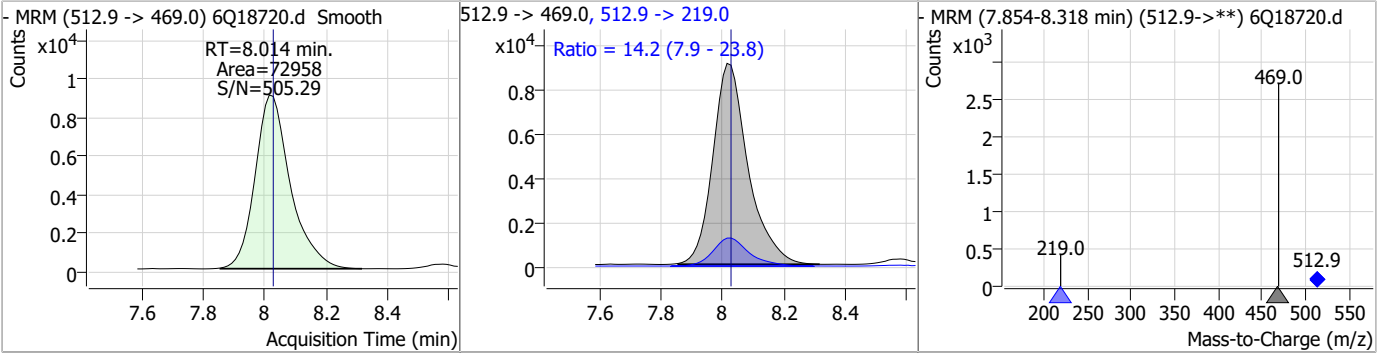
Perfluorinated Compounds by LC/MS/MS



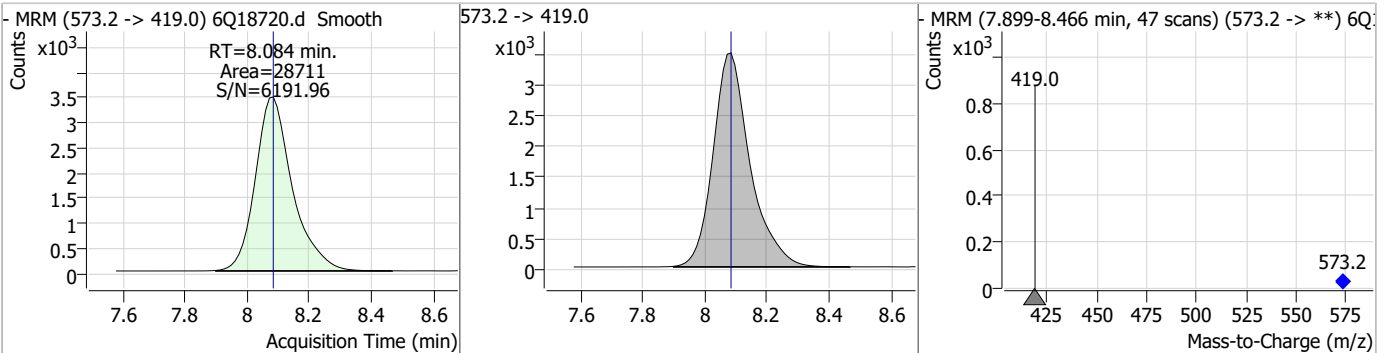
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Perfluorinated Compounds by LC/MS/MS

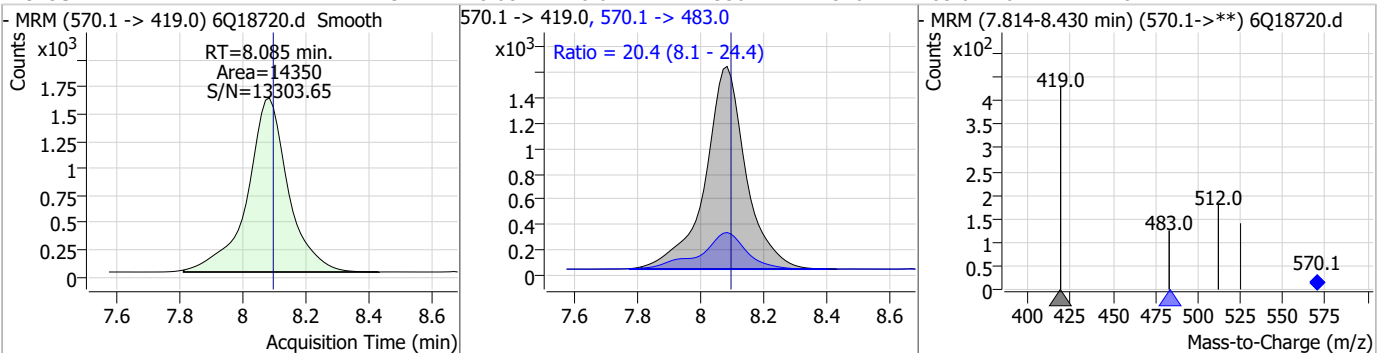
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.50	8.01	-0.01	72958	512.9 -> 219.0	14.2	7.9	23.8



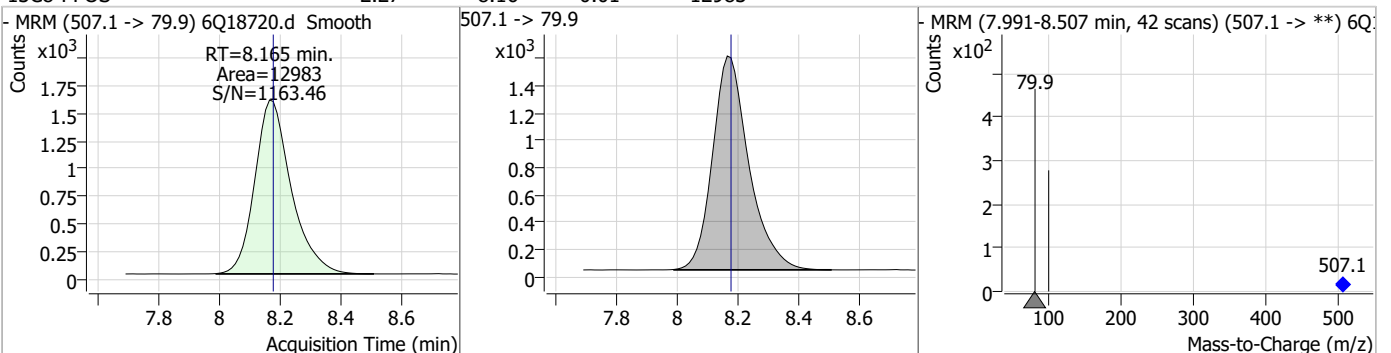
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.97	8.08	0.00	28711				



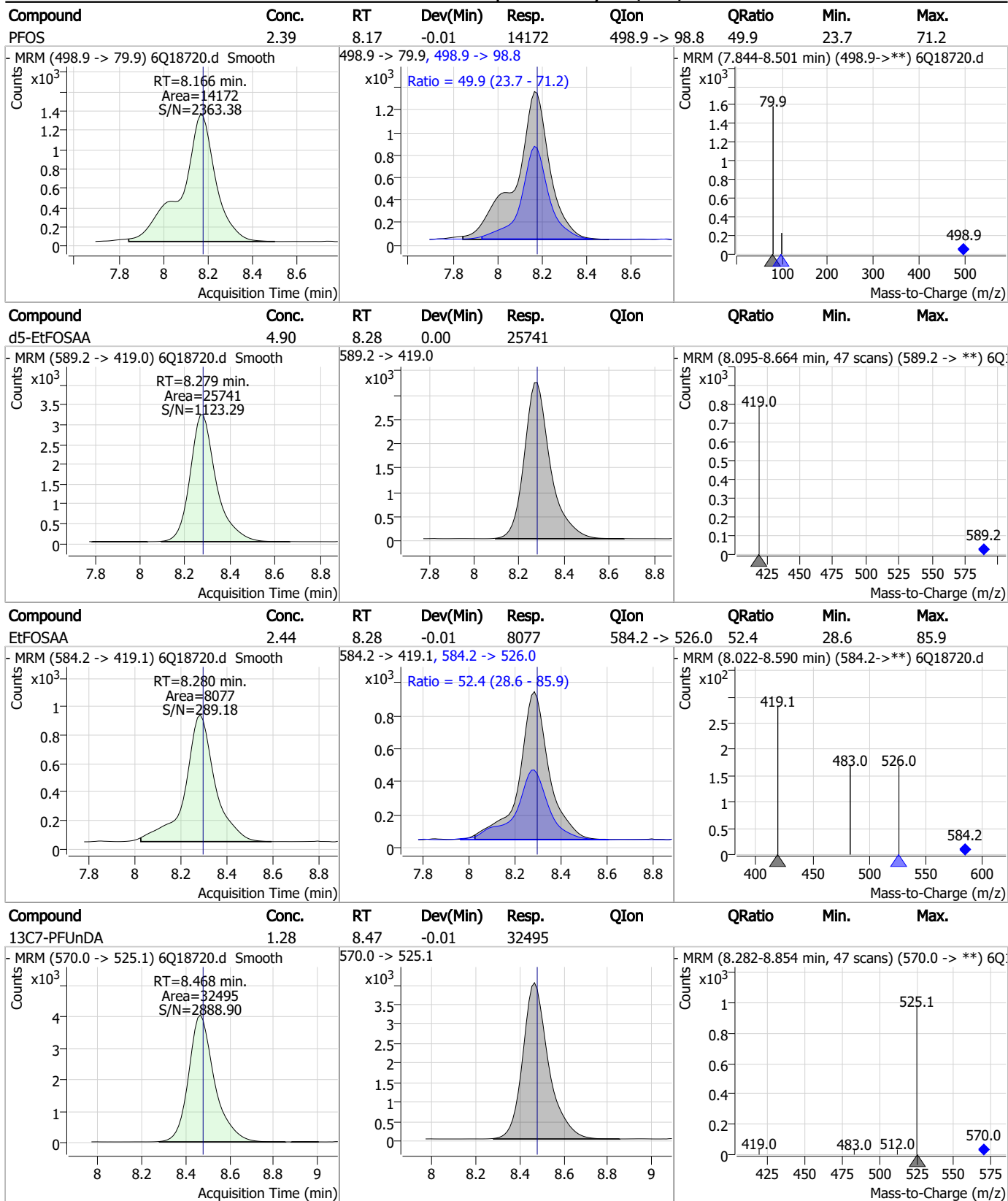
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.43	8.08	-0.01	14350	570.1 -> 483.0	20.4	8.1	24.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.27	8.16	-0.01	12983				



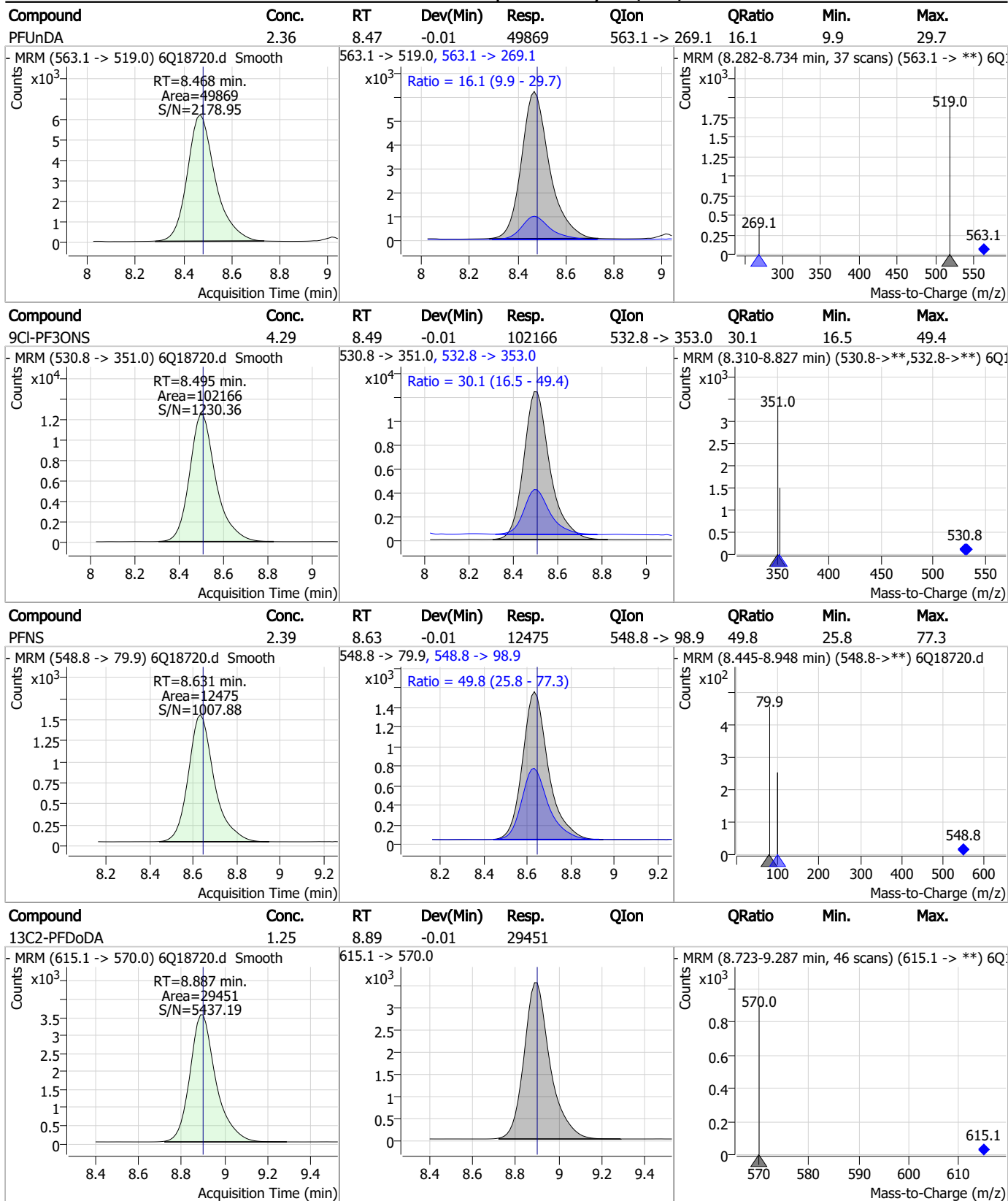
Perfluorinated Compounds by LC/MS/MS



7.7.16

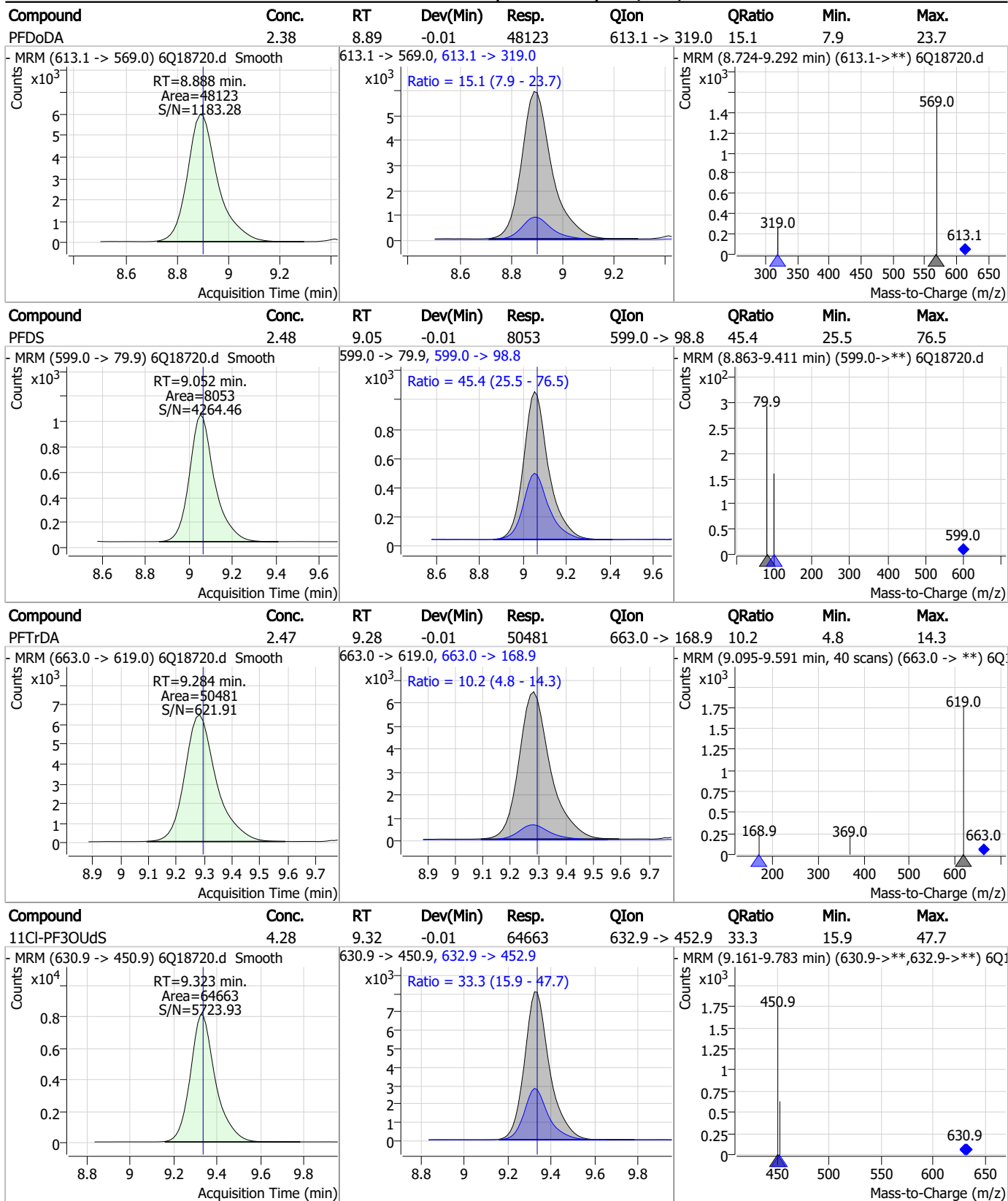
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Perfluorinated Compounds by LC/MS/MS



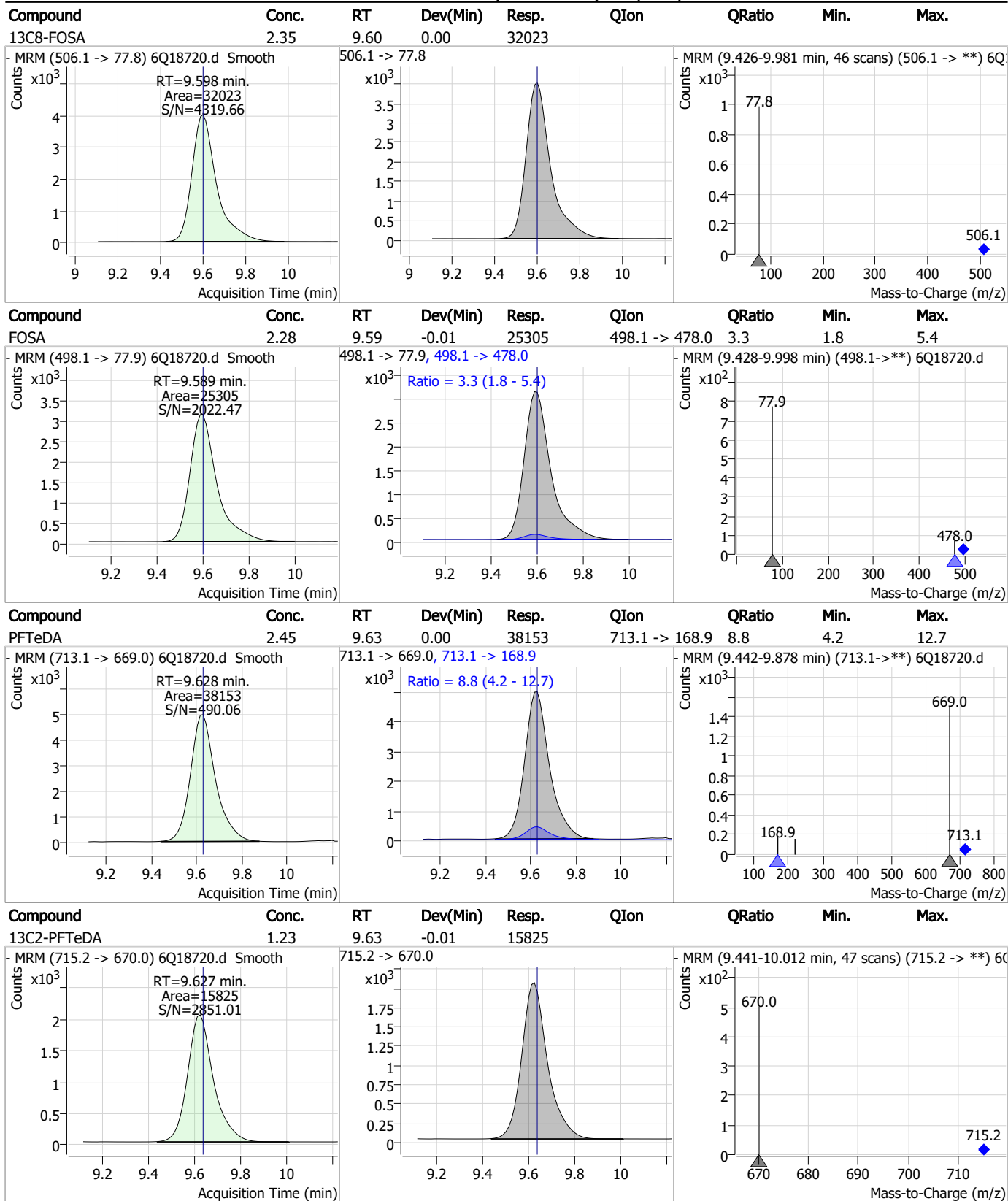
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

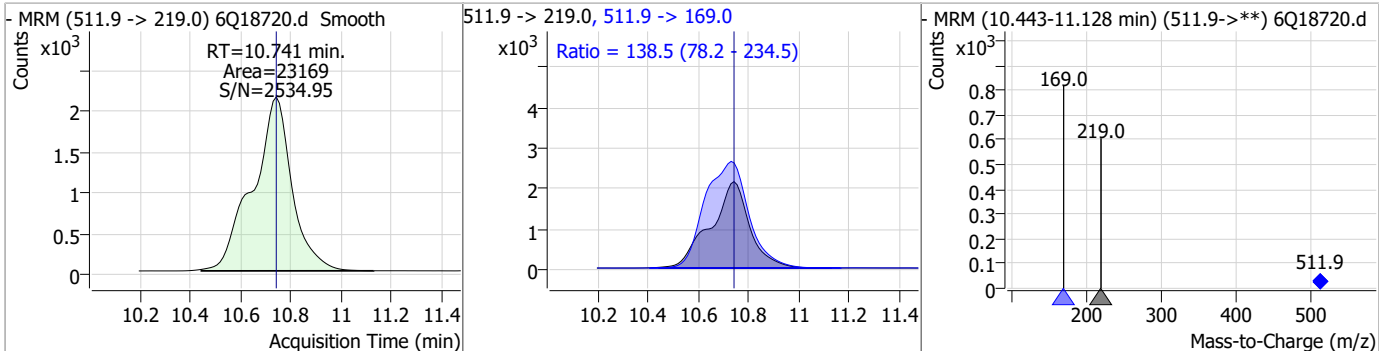
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.48	9.75	0.00	3576	699.1 -> 98.8	53.6	25.7	77.0
- MRM (699.1 -> 79.9) 6Q18720.d Smooth			699.1 -> 79.9, 699.1 -> 98.8			- MRM (9.568-10.141 min) (699.1->**) 6Q18720.d		
d7-MeFOSE	24.03	10.65	-0.01	107910				
- MRM (623.2 -> 58.9) 6Q18720.d Smooth			623.2 -> 58.9			- MRM (10.486-11.108 min, 51 scans) (623.2 -> **) 6Q18720.d		
MeFOSE	11.92	10.66	-0.01	51117				
- MRM (616.1 -> 58.9) 6Q18720.d Smooth			616.1 -> 58.9			- MRM (10.377-11.121 min, 61 scans) (616.1 -> **) 6Q18720.d		
d3-MeFOSA	2.19	10.74	0.00	12108				
- MRM (515.0 -> 219.0) 6Q18720.d Smooth			515.0 -> 219.0			- MRM (10.565-11.126 min, 46 scans) (515.0 -> **) 6Q18720.d		

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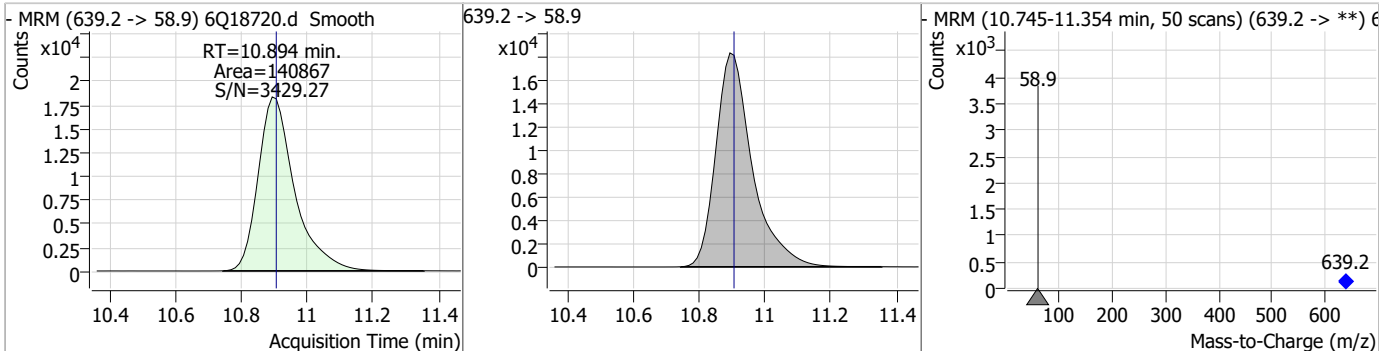


Perfluorinated Compounds by LC/MS/MS

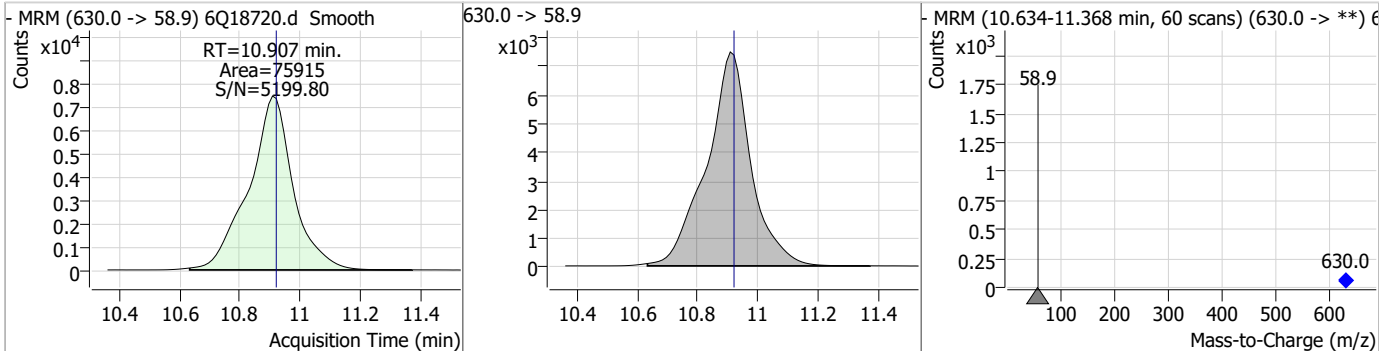
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.20	10.74	0.00	23169	511.9 -> 169.0	138.5	78.2	234.5



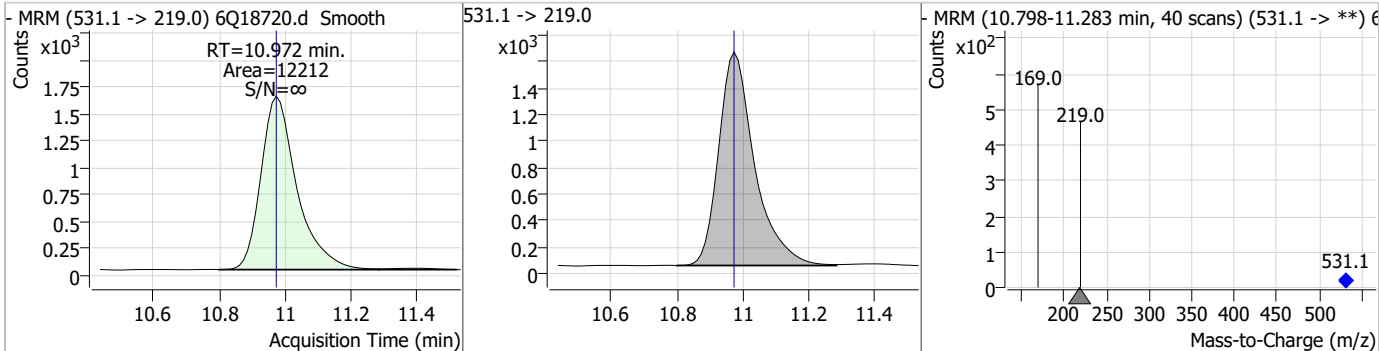
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.98	10.89	-0.01	140867				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.08	10.91	-0.01	75915				



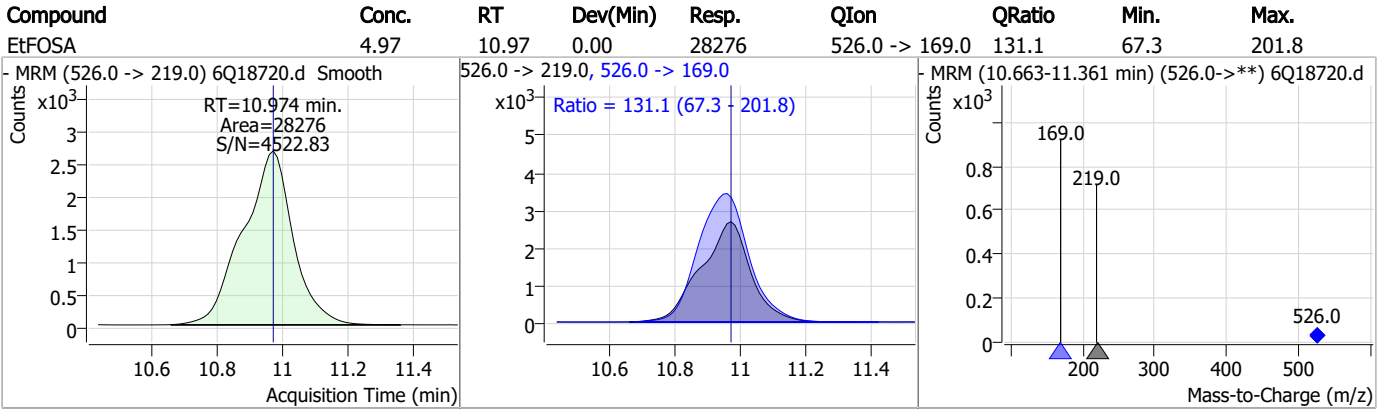
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.33	10.97	0.00	12212				



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18720.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 01:59 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.13	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18721.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 2:13:54 AM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	158630	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	53624	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	59237	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	55438	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	85479	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	38605	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23253	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	29139	1.25 µg/L	-0.012
M2-PFDoDA	8.900	615.1 -> 570.0	28491	1.25 µg/L	0.000
M2-PFTeDA	9.627	715.2 -> 670.0	14628	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	30485	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	21242	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	13974	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12331	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3444	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5193	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5053	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27024	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	34982	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	23898	5.00 µg/L	-0.012
M7-MeFOSE	10.647	623.2 -> 58.9	96986	25.00 µg/L	-0.012
M9-EtFOSE	10.894	639.2 -> 58.9	129632	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11339	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11487	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	15861	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	66540	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	9978	2.50 µg/L	-0.012
13C4-PFOA	7.026	417.1 -> 372.0	92137	2.50 µg/L	0.000
13C2-PFDA	8.014	515.1 -> 470.1	31793	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	47328	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	55037	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3444	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5193	5.37 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5053	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-PFDoDA	8.900	615.1 -> 570.0	28491	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-PFTeDA	9.627	715.2 -> 670.0	14628	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C3-PFBS	5.322	302.1 -> 79.9	21242	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFHxS	7.118	402.1 -> 79.9	13974	2.51 µg/L	-0.012

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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	2.822	216.8 -> 171.9	158630	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.369	367.1 -> 322.0	55438	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C5-PFHxA	5.404	318.0 -> 273.0	59237	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	4.210	268.3 -> 223.0	53624	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.014	519.1 -> 474.1	23253	1.25 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C7-PFUnDA	8.468	570.0 -> 525.1	29139	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-FOSA	9.598	506.1 -> 77.8	30485	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	7.013	421.1 -> 376.0	85479	2.48 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOS	8.165	507.1 -> 79.9	12331	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C9-PFNA	7.545	472.1 -> 427.0	38605	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27024	5.28 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	34982	9.67 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSA	10.739	515.0 -> 219.0	11487	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
d5-EtFOSAA	8.267	589.2 -> 419.0	23898	5.13 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
d7-MeFOSE	10.647	623.2 -> 58.9	96986	24.35 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	129632	24.88 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	11339	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	4482	0.90 µg/L	99
		327.1 -> 80.9	1654		
6:2FTS	6.789	427.1 -> 407.0	4511	0.88 µg/L	96
		427.1 -> 80.9	1482		
8:2FTS	7.816	527.1 -> 507.0	2632	0.94 µg/L	95
		527.1 -> 80.8	1109		
EtFOSAA	8.280	584.2 -> 419.1	719	0.23 µg/L	93
		584.2 -> 526.0	450		
FOSA	9.589	498.1 -> 77.9	2416	0.23 µg/L	100
		498.1 -> 478.0	87		
MeFOSAA	8.085	570.1 -> 419.0	1399	0.25 µg/L	85
		570.1 -> 483.0	315		
PFBA	2.818	212.8 -> 168.9	4833	0.92 µg/L	100
PFBS	5.323	298.7 -> 79.9	1531	0.21 µg/L	93
		298.7 -> 98.8	526		
PFDA	8.014	512.9 -> 469.0	6327	0.23 µg/L	96
		512.9 -> 219.0	892		
PFDODA	8.888	613.1 -> 569.0	4377	0.22 µg/L	97
		613.1 -> 319.0	630		
PFDS	9.052	599.0 -> 79.9	682	0.22 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	328	0.23	µg/L	98
		363.1 -> 319.0	5701			
PFHpS	7.685	363.1 -> 169.0	928	0.22	µg/L	97
		449.0 -> 79.9	1299			
PFHxA	5.407	449.0 -> 98.9	712	0.22	µg/L	98
		313.0 -> 269.0	4357			
PFHxS	7.131	313.0 -> 118.9	251	0.22	µg/L	86
		398.7 -> 79.9	1369			
PFNA	7.545	398.7 -> 98.9	569	0.23	µg/L	98
		463.0 -> 419.0	6311			
PFNS	8.631	463.0 -> 219.0	1287	0.23	µg/L	91
		548.8 -> 79.9	1155			
PFOA	7.028	548.8 -> 98.9	665	0.23	µg/L	95
		413.0 -> 369.0	8231			
PFOS	8.166	413.0 -> 169.0	1394	0.21	µg/L	90
		498.9 -> 79.9	1173			
PFPeA	4.212	498.9 -> 98.8	639	0.48	µg/L	100
		263.0 -> 219.0	6201			
PFPeS	6.410	349.1 -> 79.9	1368	0.22	µg/L	99
		349.1 -> 98.9	664			
PFTeDA	9.628	713.1 -> 669.0	3429	0.24	µg/L	99
		713.1 -> 168.9	280			
PFTrDA	9.284	663.0 -> 619.0	4519	0.23	µg/L	98
		663.0 -> 168.9	461			
PFUnDA	8.468	563.1 -> 519.0	4692	0.25	µg/L	93
		563.1 -> 269.1	777			
11Cl-PF3OUdS	9.323	630.9 -> 450.9	6324	0.48	µg/L	91
		632.9 -> 452.9	1700			
9Cl-PF3ONS	8.495	530.8 -> 351.0	9789	0.47	µg/L	96
		532.8 -> 353.0	3434			
ADONA	6.632	376.9 -> 250.9	21057	0.45	µg/L	99
		376.9 -> 84.8	5796			
HFPO-DA	5.783	284.9 -> 168.9	1421	0.48	µg/L	87
		284.9 -> 184.9	119			
3:3FTCA	3.671	241.0 -> 177.0	933	1.13	µg/L	94
		241.0 -> 117.0	138			
5:3FTCA	6.074	341.0 -> 237.1	20345	5.69	µg/L	93
		341.0 -> 217.0	15732			
7:3FTCA	7.510	441.0 -> 316.9	14357	5.86	µg/L	99
		441.0 -> 336.9	32850			
EtFOSA	10.974	526.0 -> 219.0	2471	0.47	µg/L	98
		526.0 -> 169.0	3376			
EtFOSE	10.907	630.0 -> 58.9	6743	1.17	µg/L	100
		511.9 -> 219.0	2146			
MeFOSA	10.741	511.9 -> 169.0	2912	0.51	µg/L	84
		616.1 -> 58.9	4449			
MeFOSE	10.661	699.1 -> 79.9	332	1.15	µg/L	100
		699.1 -> 98.8	186			
PFDoDS	9.755	295.0 -> 201.0	965	0.24	µg/L	93
		295.0 -> 84.9	283			
NFDHA	5.288	279.0 -> 85.1	4089	0.40	µg/L	85
		229.0 -> 84.9	3121			
PFMBA	4.626	314.8 -> 134.9	10094	0.46	µg/L	100
		314.8 -> 82.9	410			
PFMPA	3.351			0.40	µg/L	99
PFEESA	5.862					

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

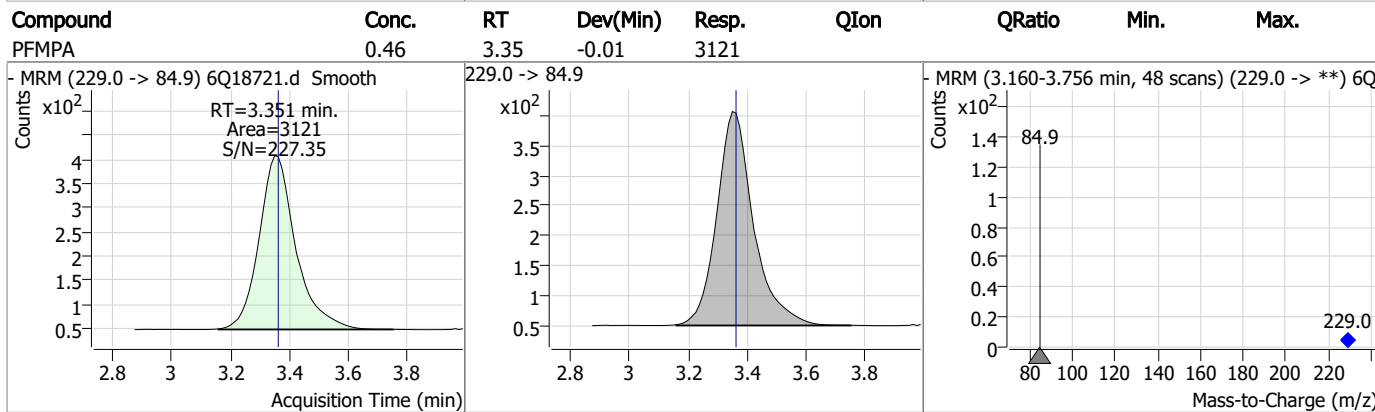
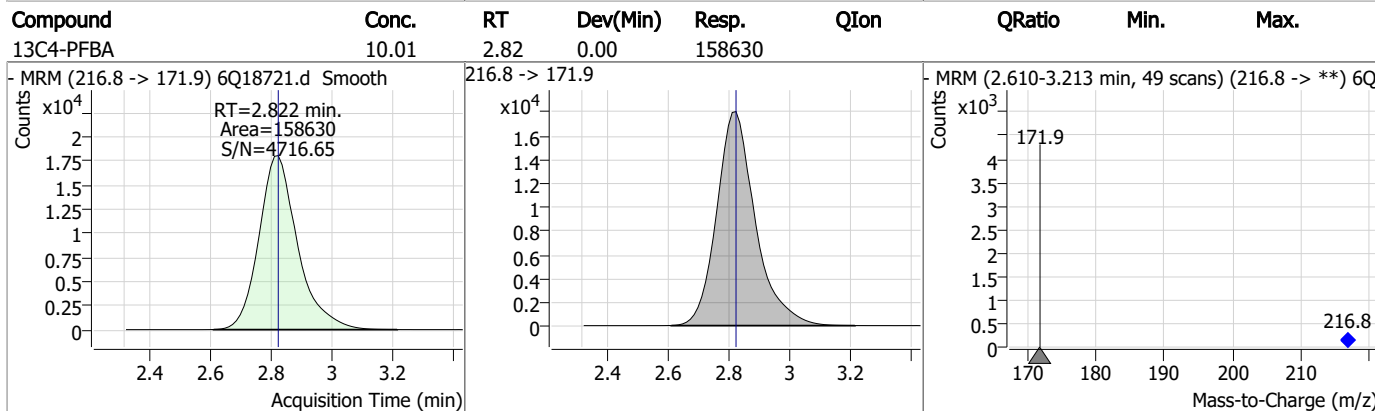
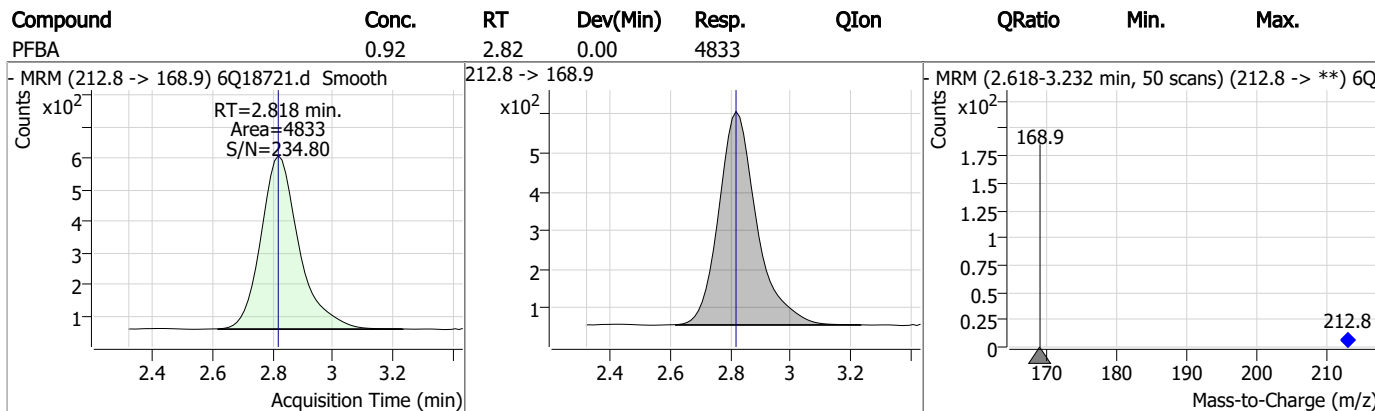
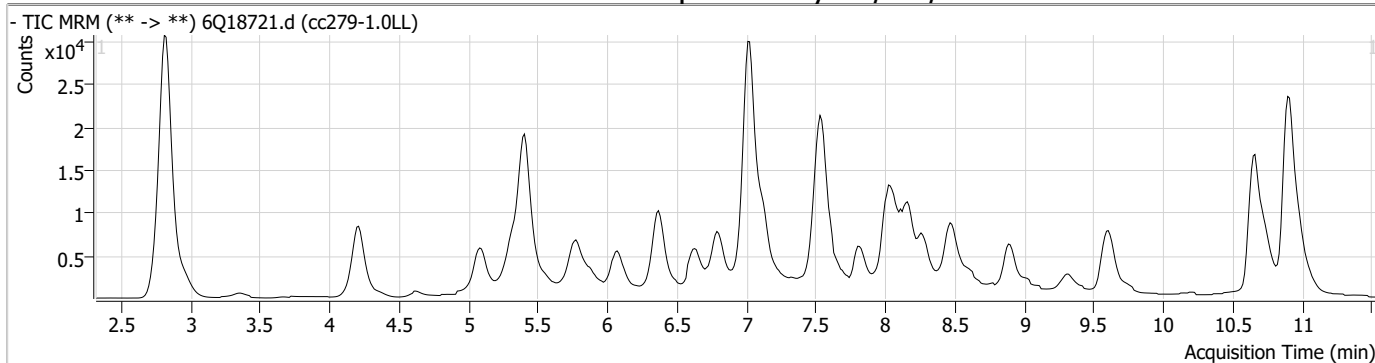
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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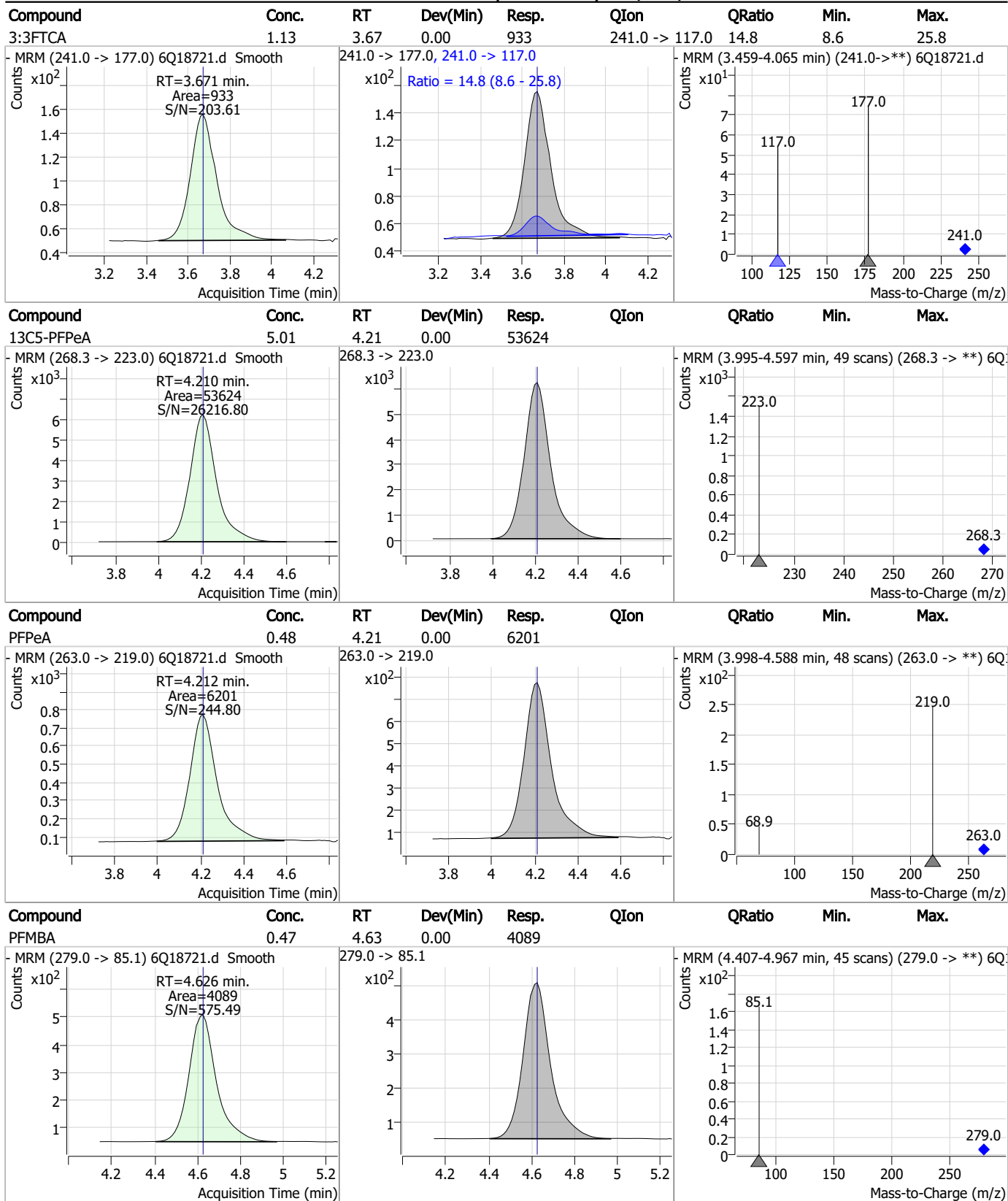


Perfluorinated Compounds by LC/MS/MS



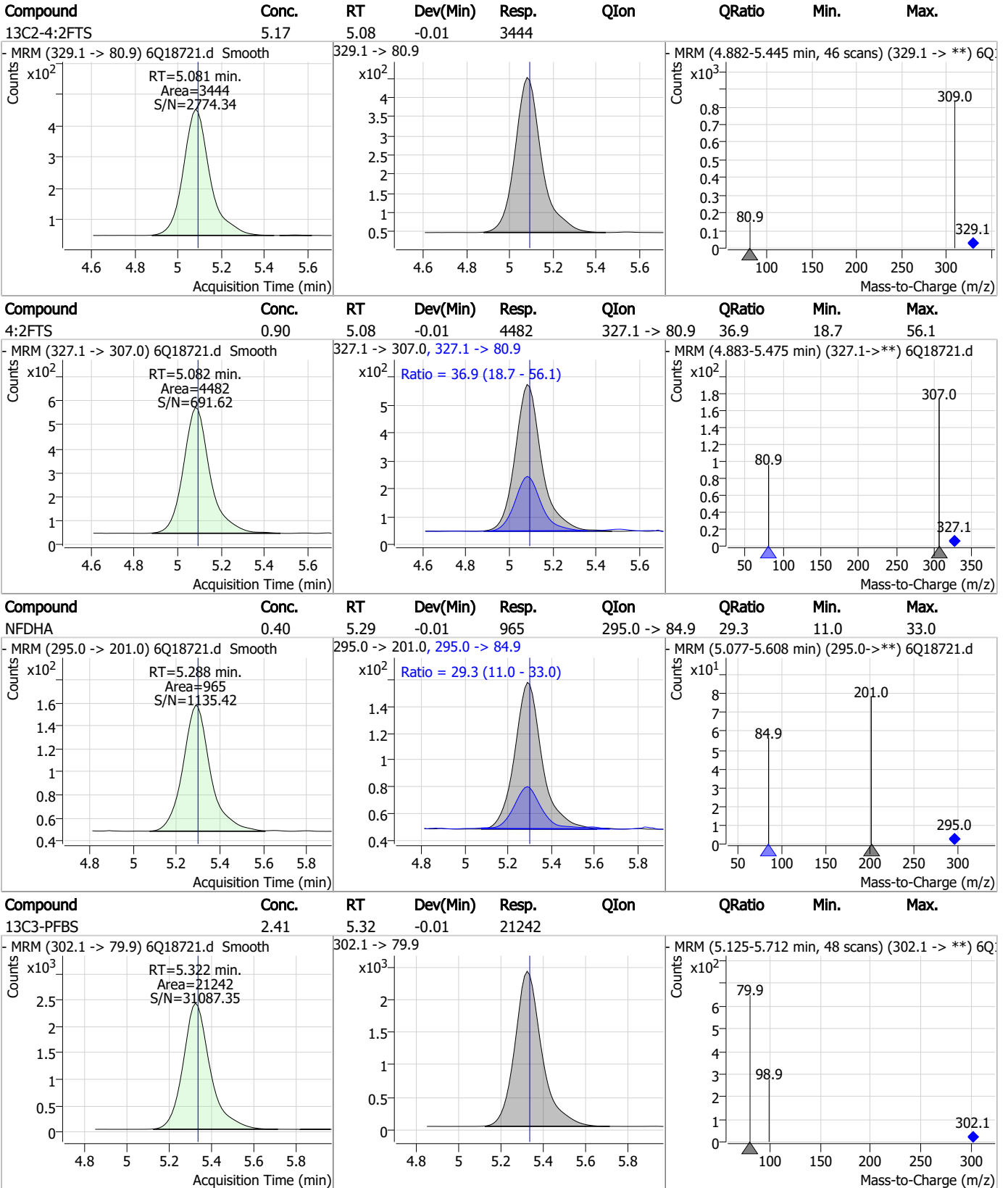
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Perfluorinated Compounds by LC/MS/MS



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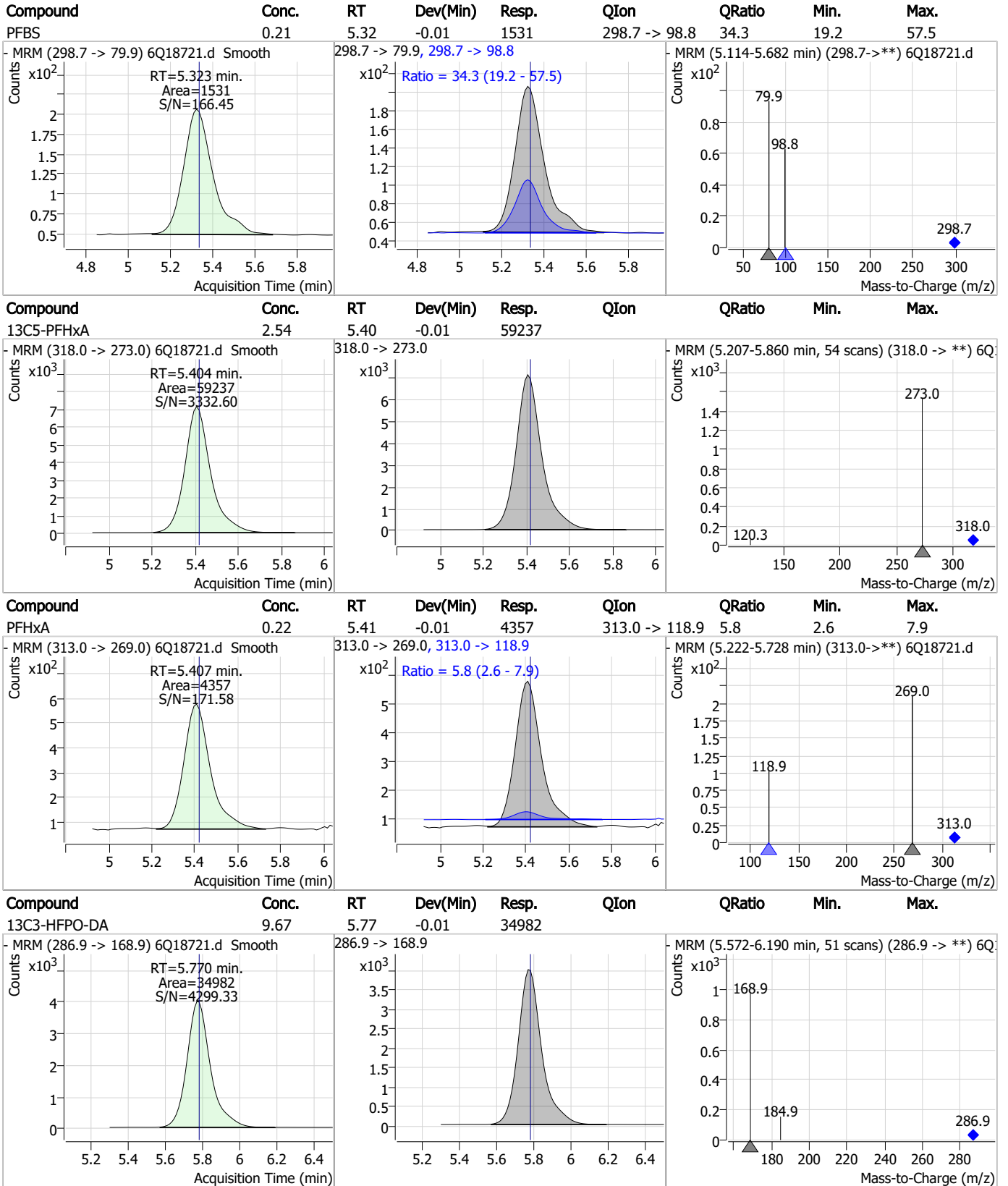
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

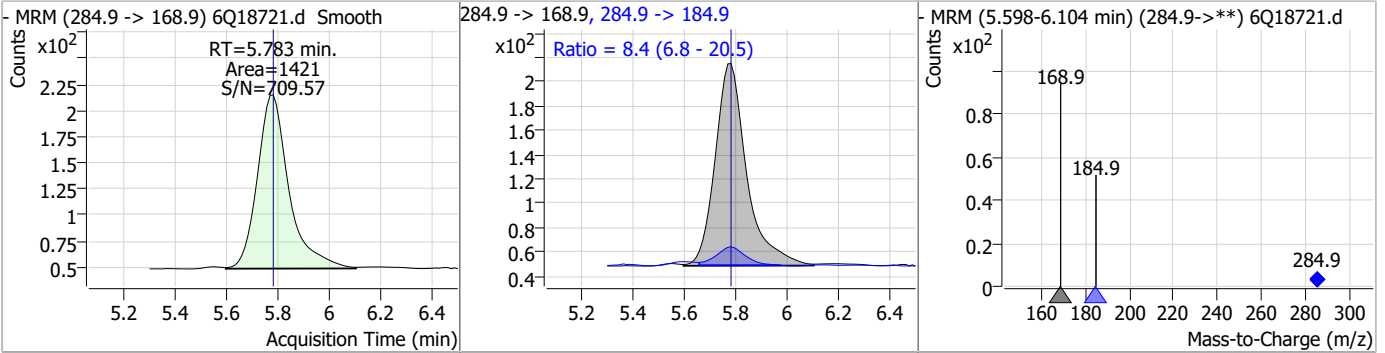


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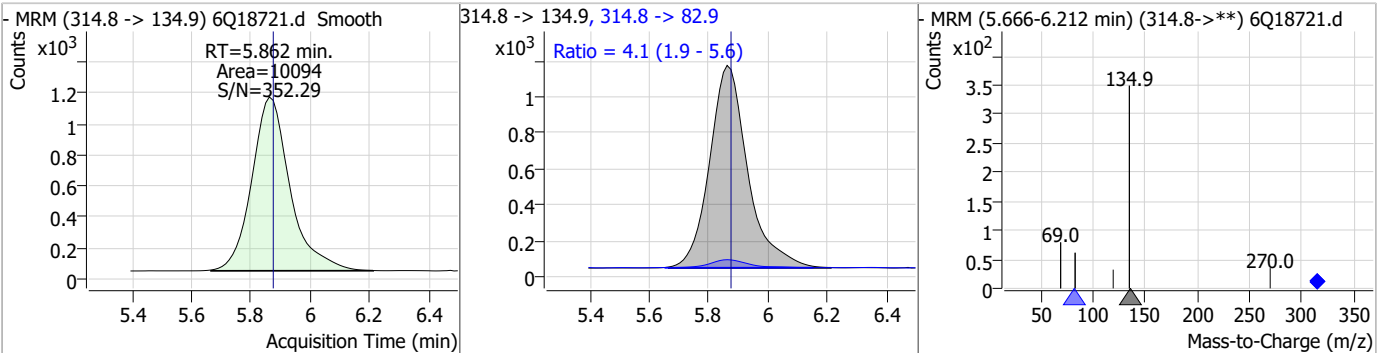


Perfluorinated Compounds by LC/MS/MS

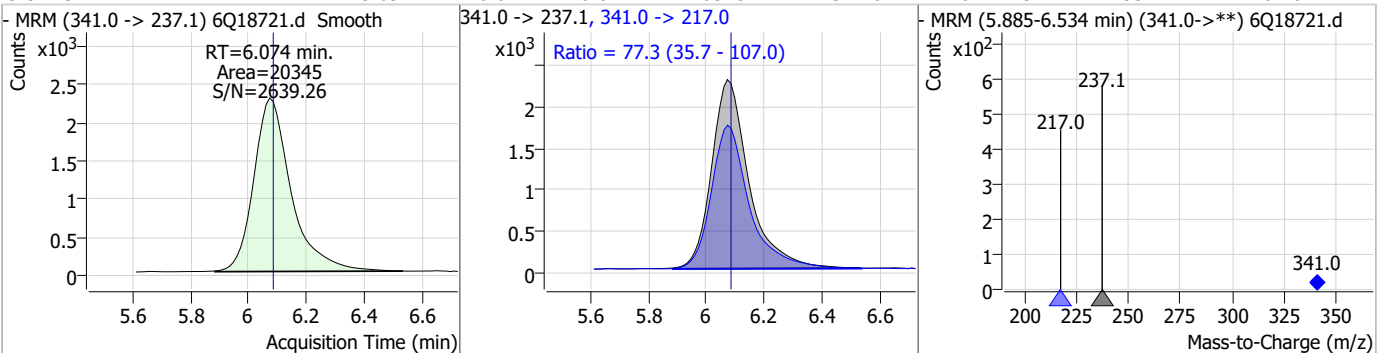
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.48	5.78	0.00	1421	284.9 -> 184.9	8.4	6.8	20.5



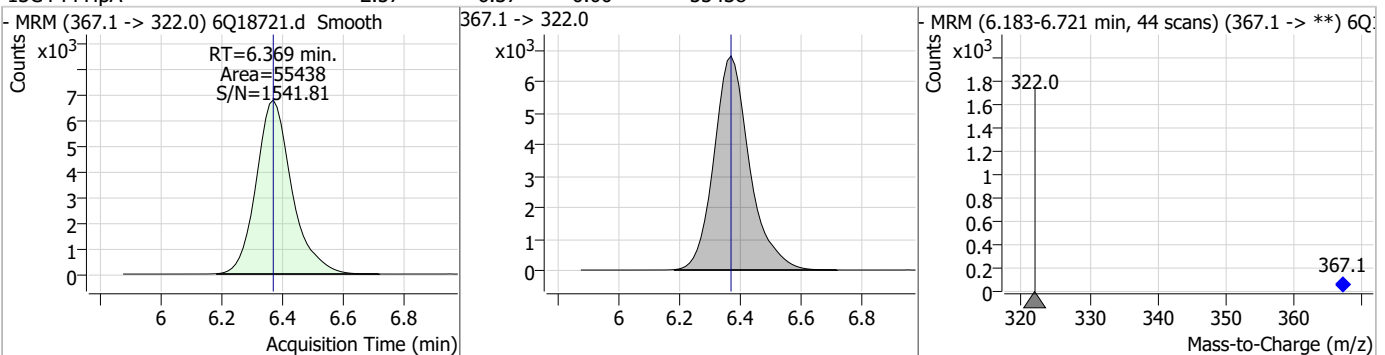
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.40	5.86	-0.01	10094	314.8 -> 82.9	4.1	1.9	5.6



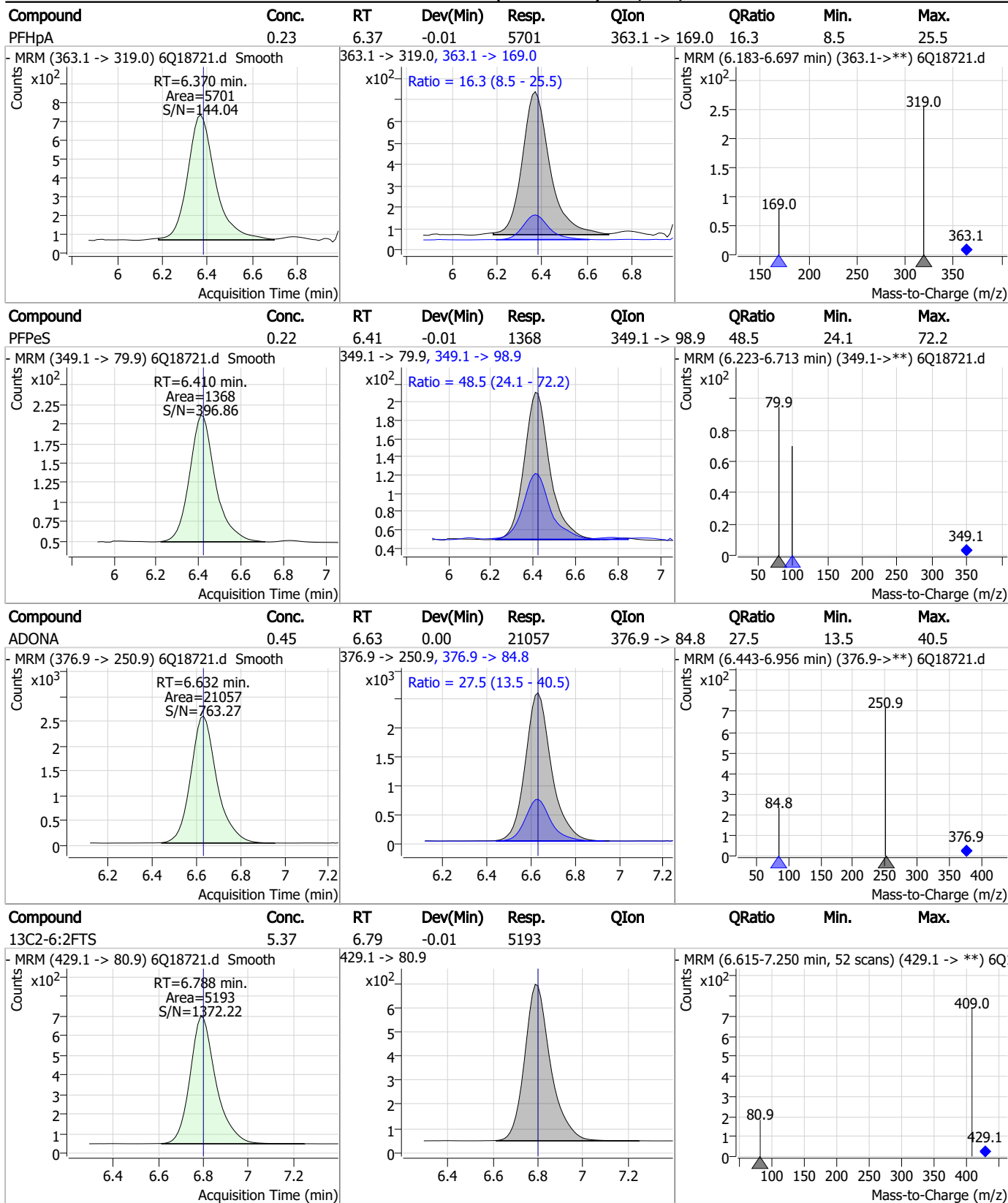
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.69	6.07	-0.01	20345	341.0 -> 217.0	77.3	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	6.37	0.00	55438	367.1 -> 322.0	-	-	-



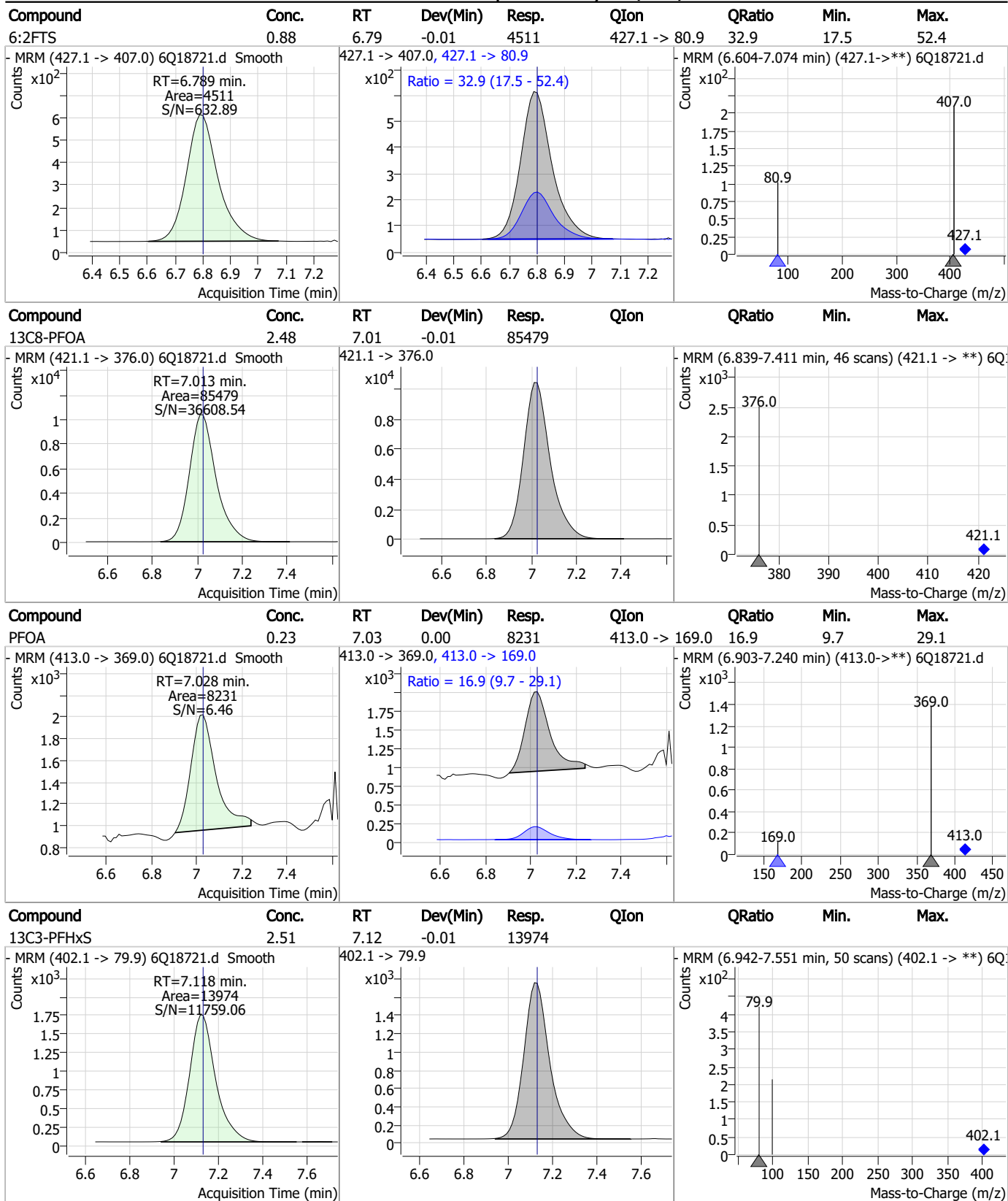
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

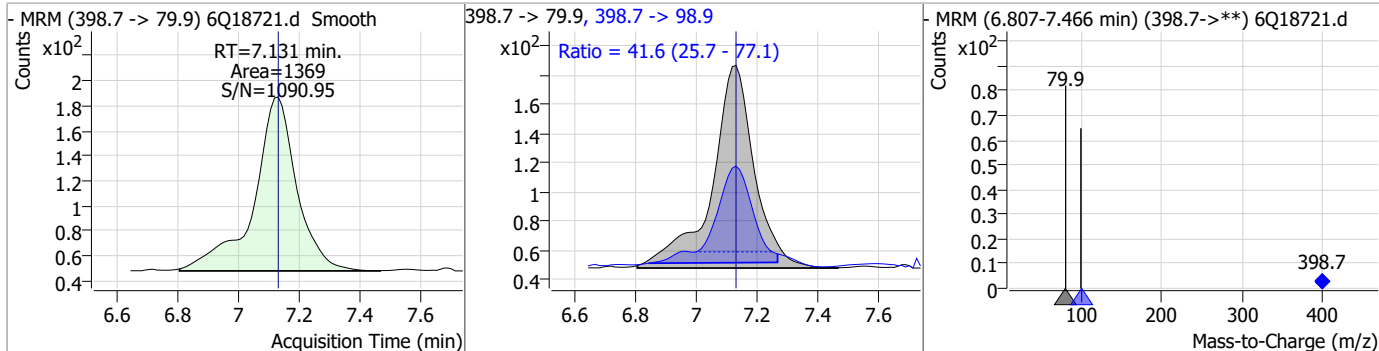


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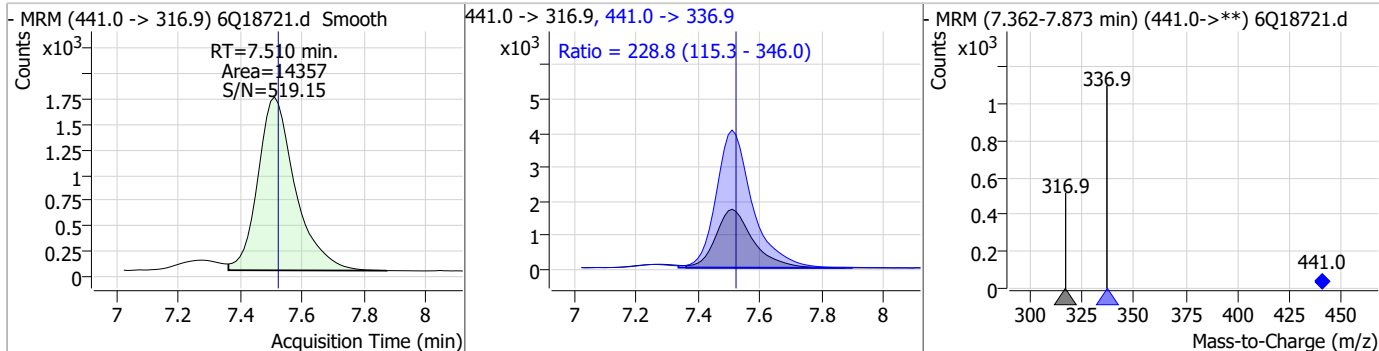


Perfluorinated Compounds by LC/MS/MS

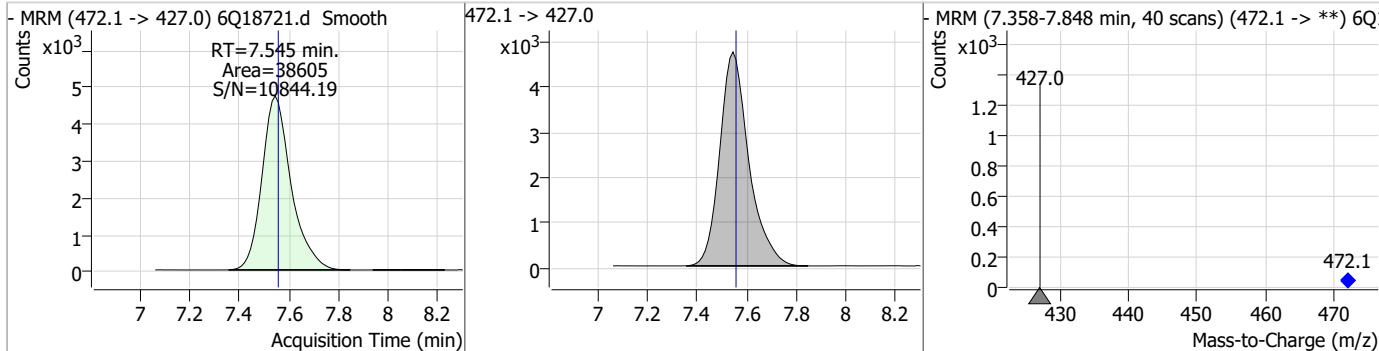
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.22	7.13	0.00	1369	398.7 -> 98.9	41.6	25.7	77.1



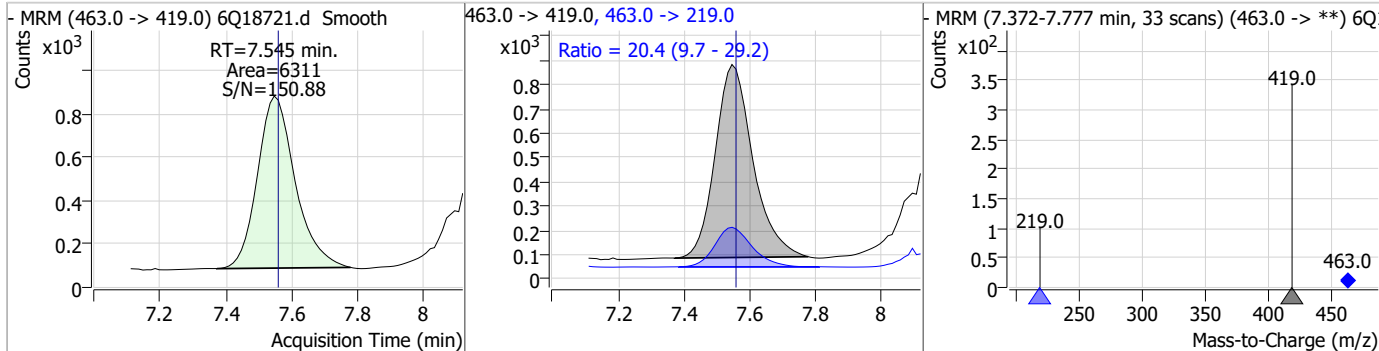
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	5.86	7.51	-0.01	14357	441.0 -> 336.9	228.8	115.3	346.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.54	-0.01	38605	472.1 -> 427.0			

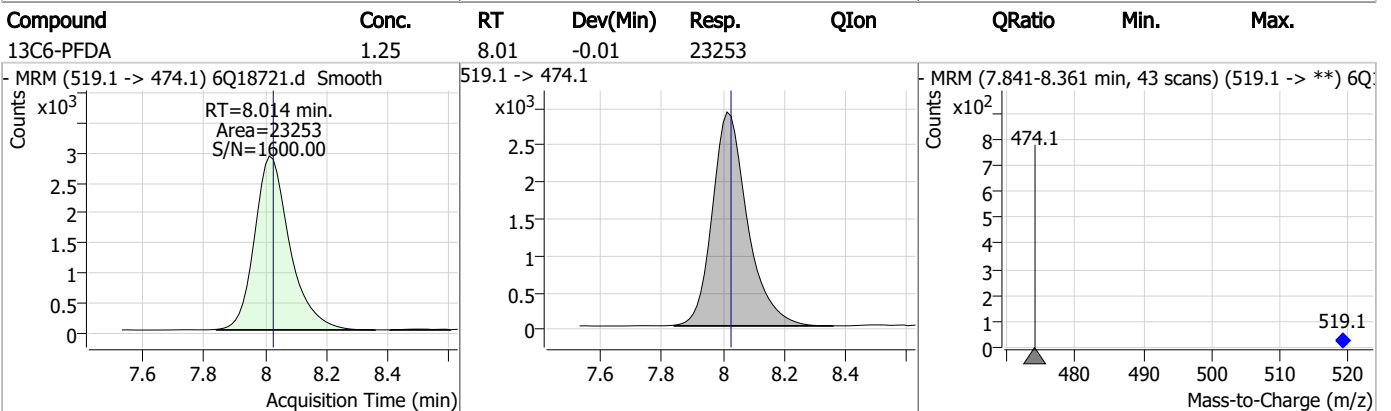
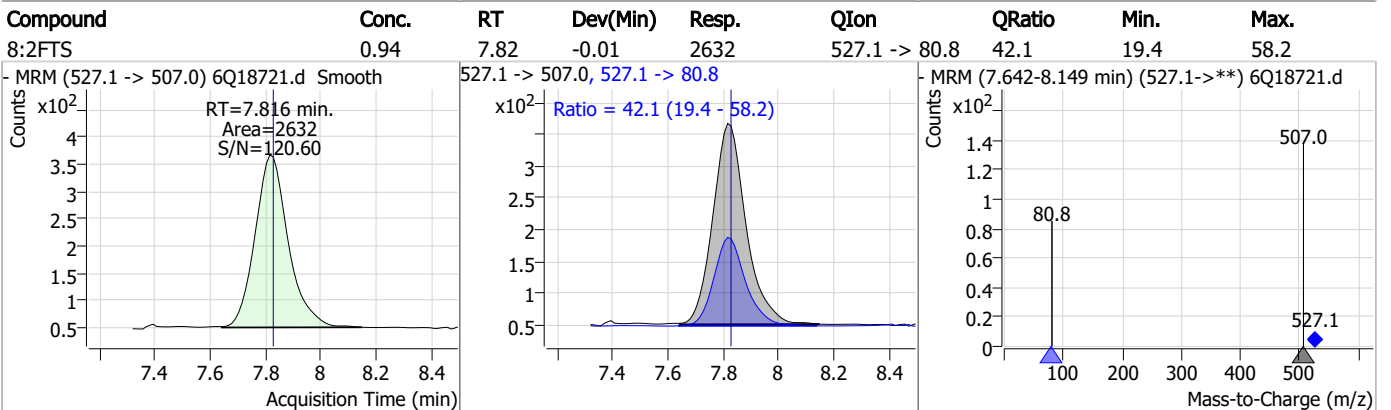
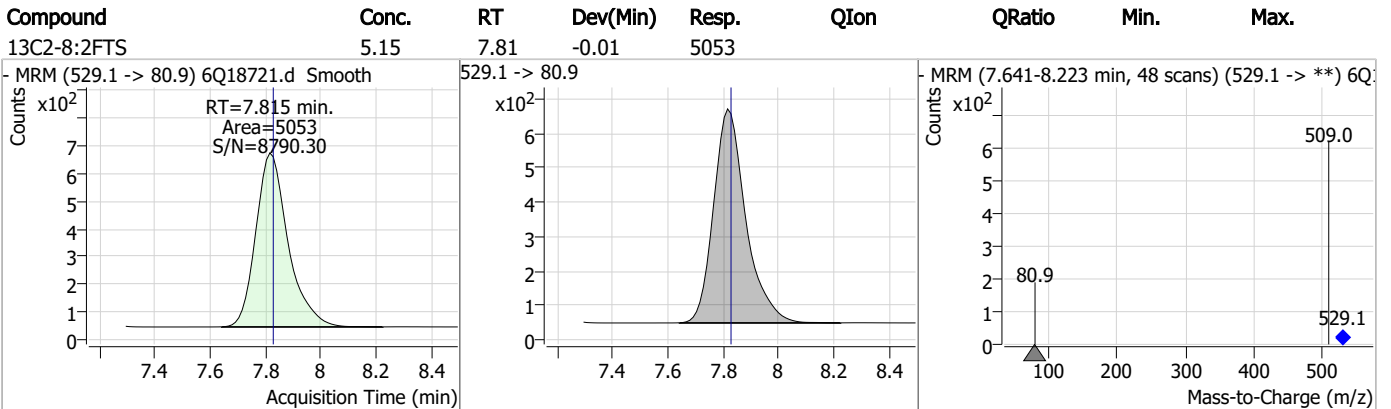
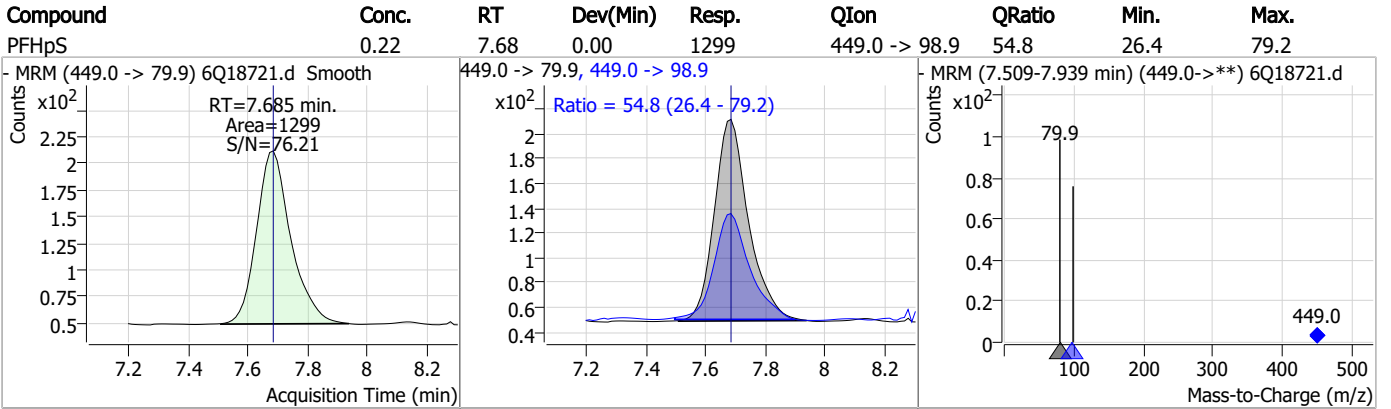


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.23	7.55	-0.01	6311	463.0 -> 219.0	20.4	9.7	29.2

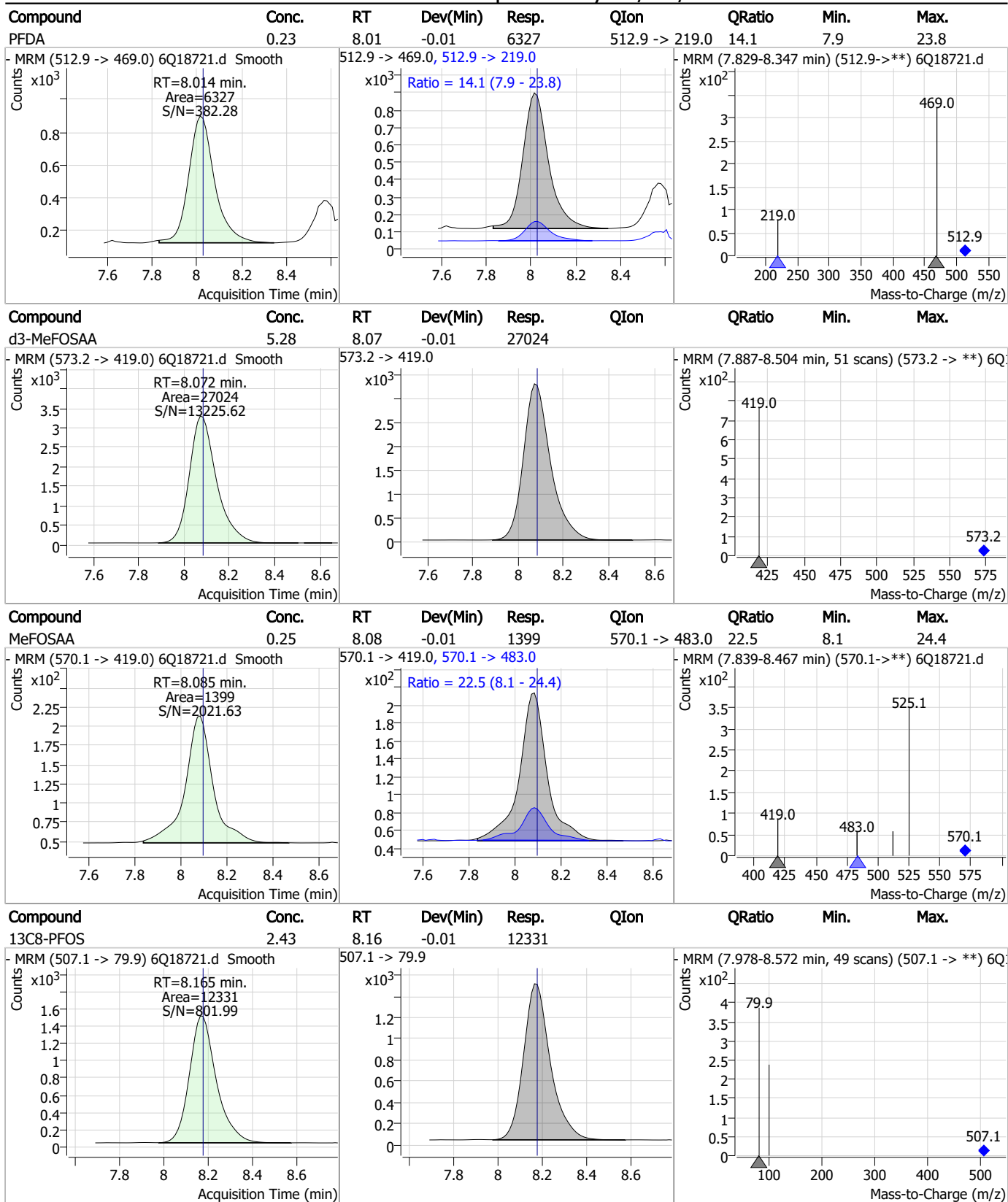


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Perfluorinated Compounds by LC/MS/MS



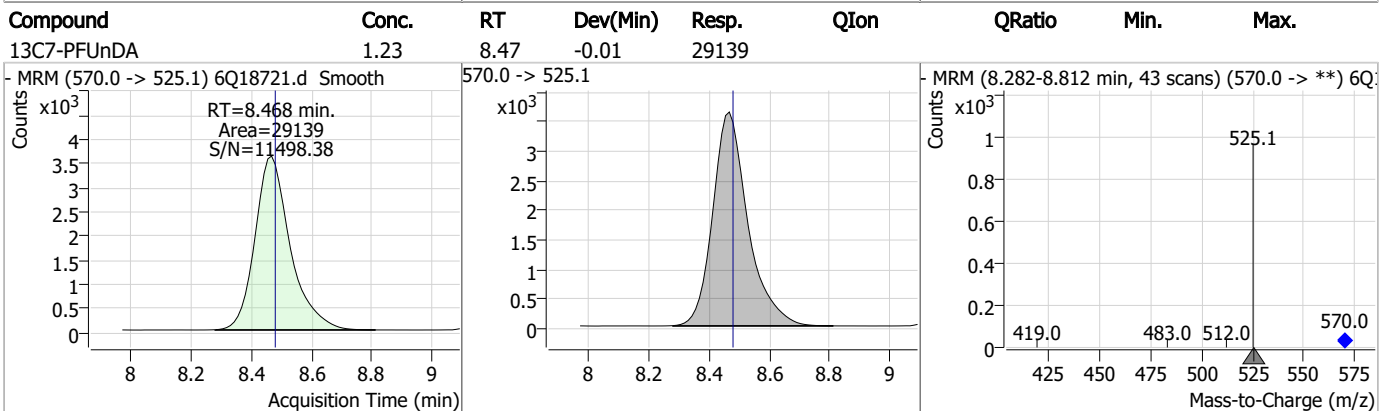
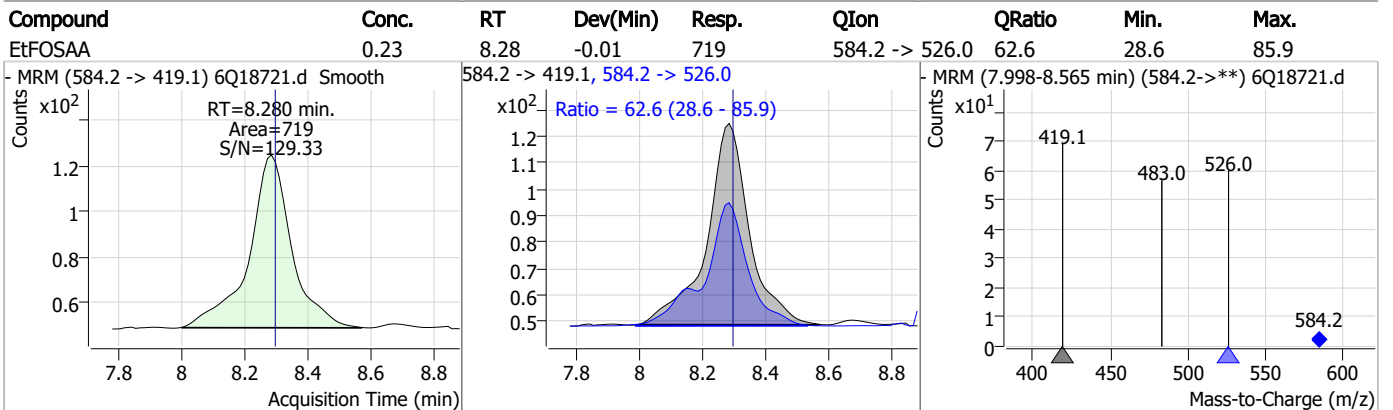
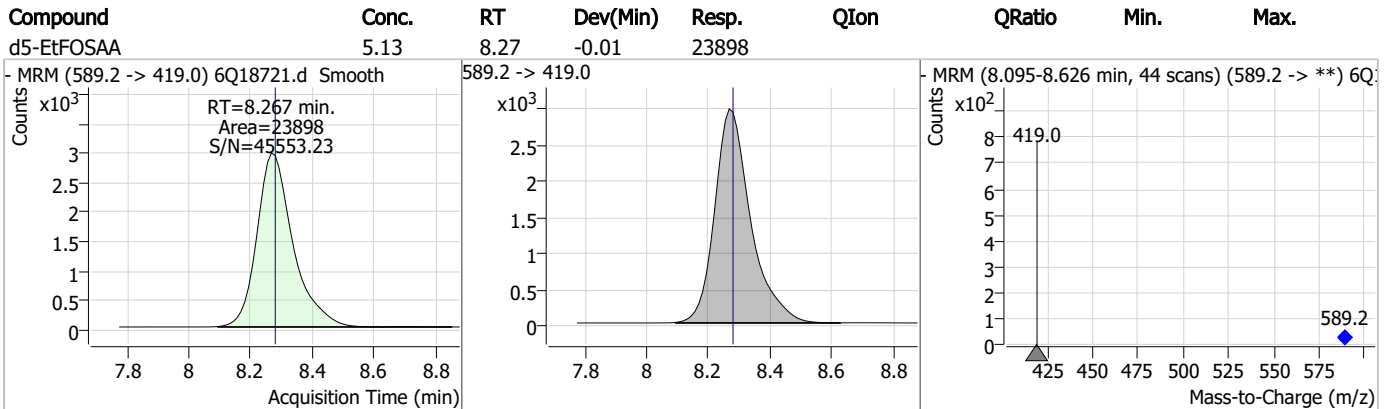
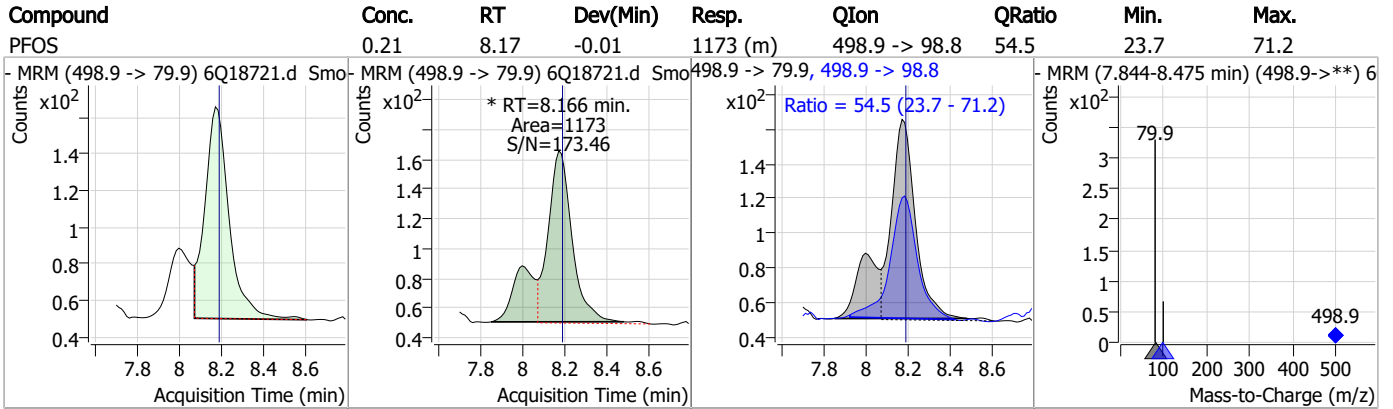
Perfluorinated Compounds by LC/MS/MS



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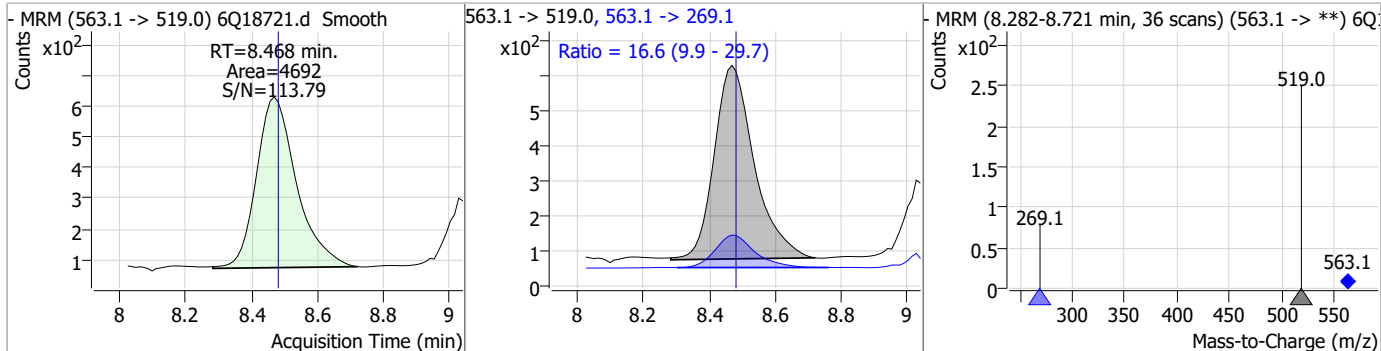


Perfluorinated Compounds by LC/MS/MS

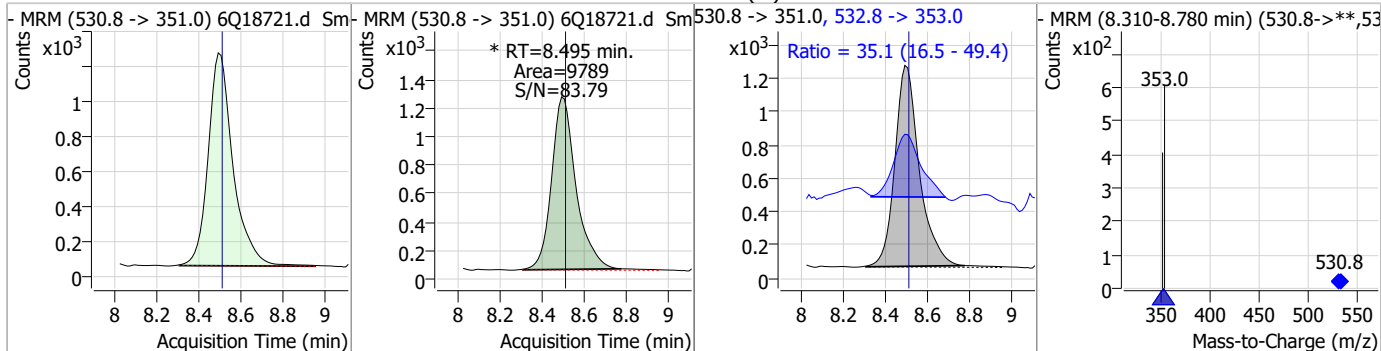


Perfluorinated Compounds by LC/MS/MS

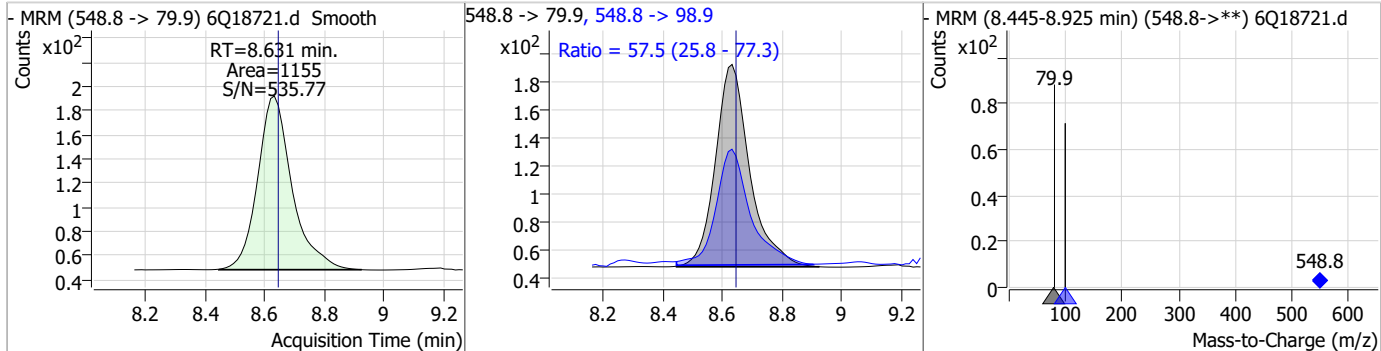
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.25	8.47	-0.01	4692	563.1 -> 269.1	16.6	9.9	29.7



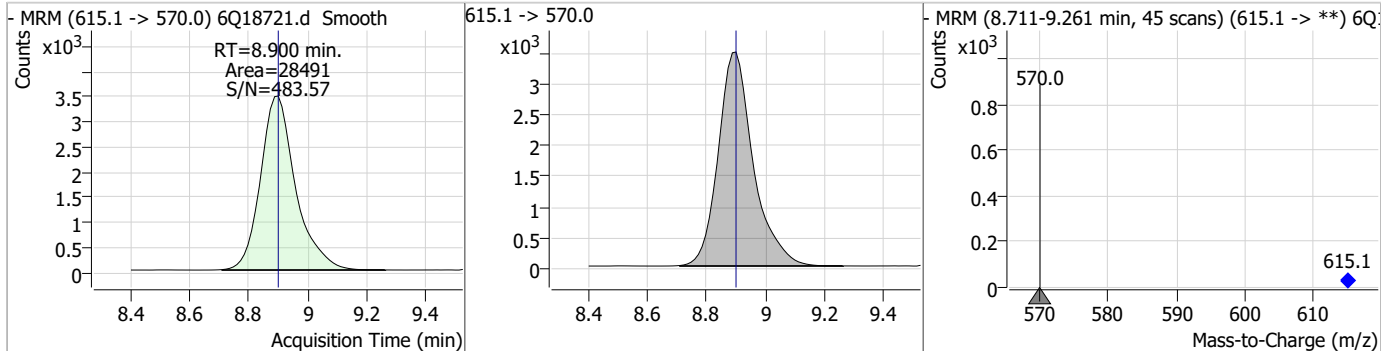
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.47	8.49	-0.01	9789 (m)	532.8 -> 353.0	35.1	16.5	49.4



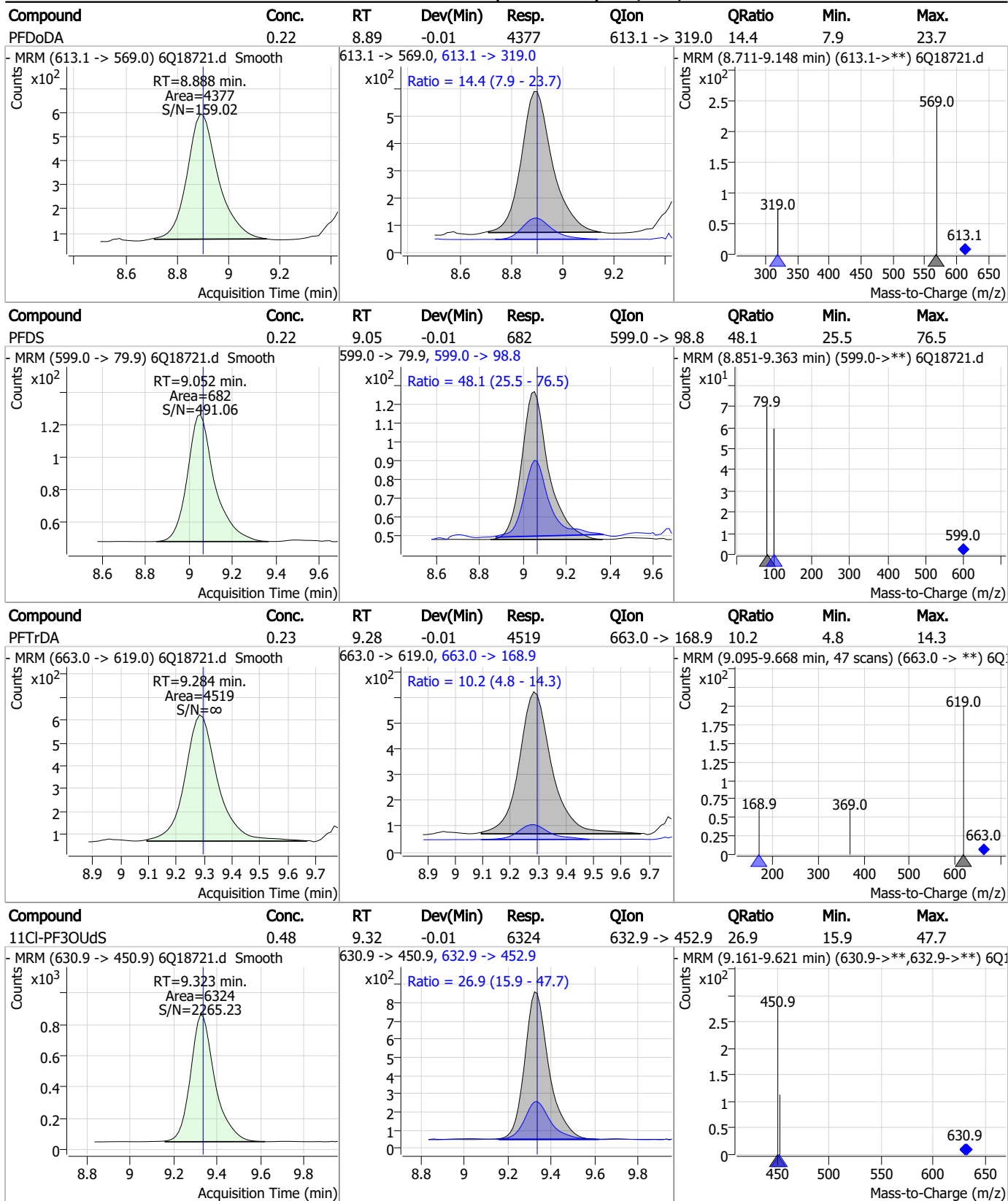
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.23	8.63	-0.01	1155	548.8 -> 98.9	57.5	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.90	0.00	28491	615.1 -> 570.0			

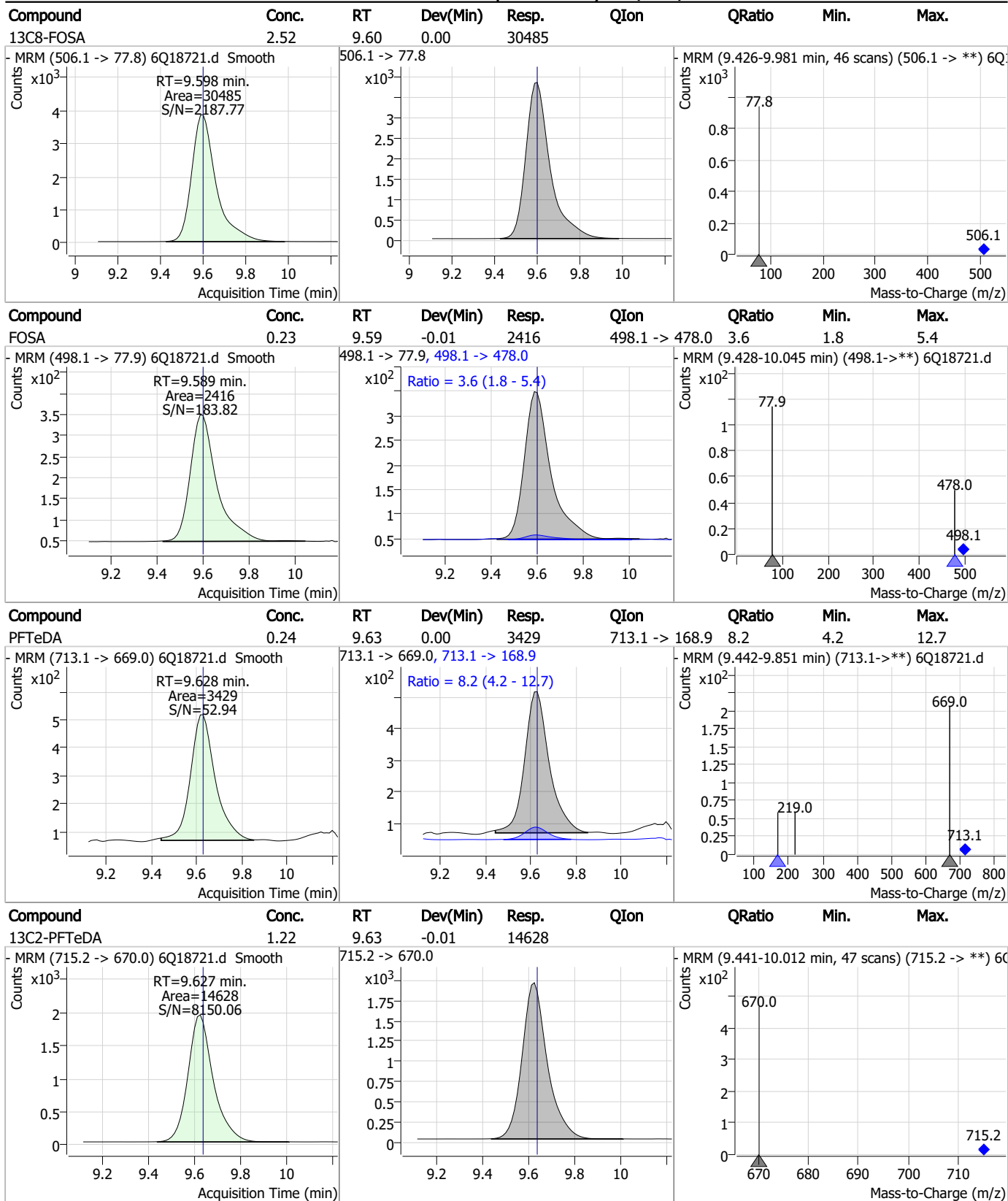


Perfluorinated Compounds by LC/MS/MS



7.7.17

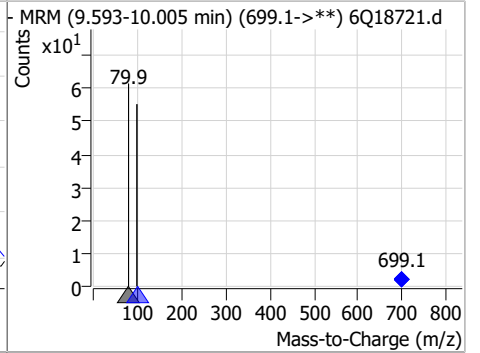
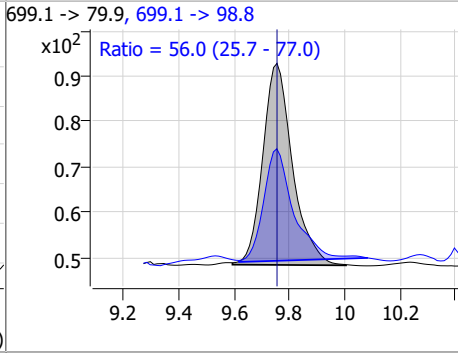
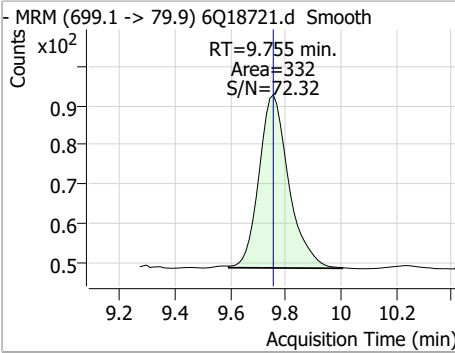
Perfluorinated Compounds by LC/MS/MS



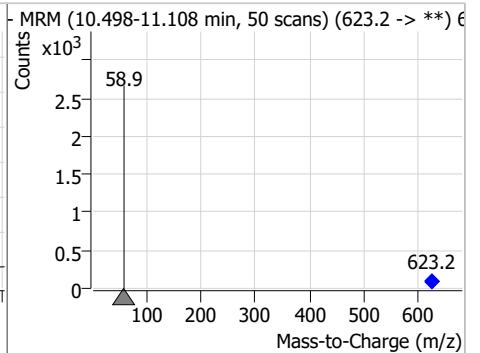
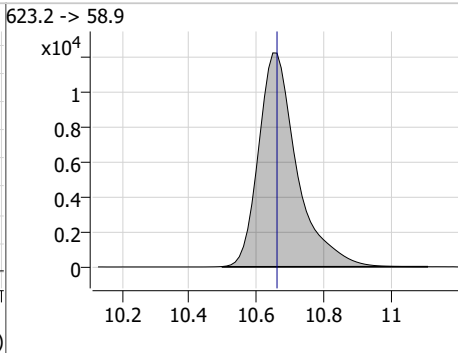
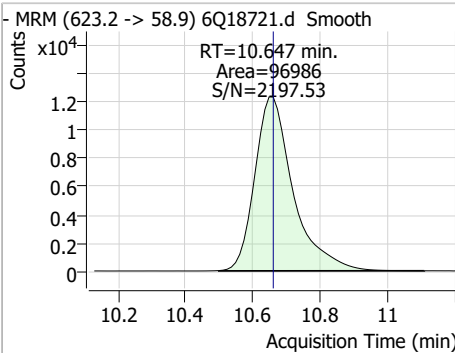
7.7.17

Perfluorinated Compounds by LC/MS/MS

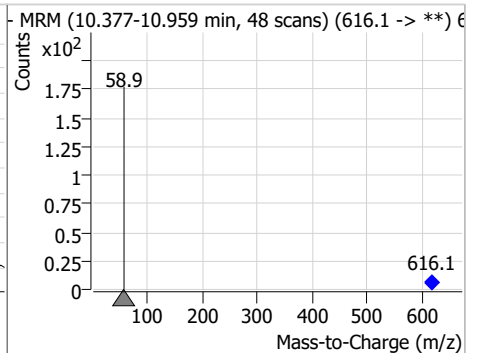
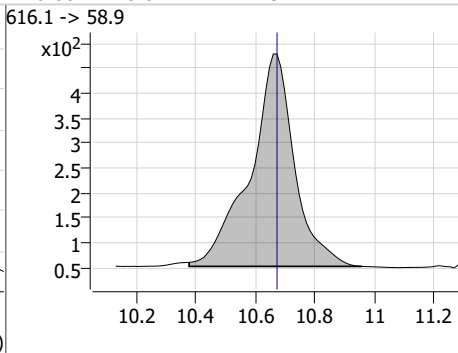
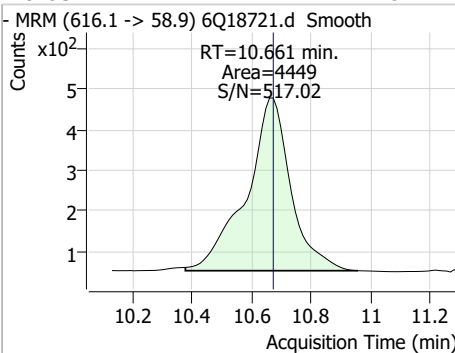
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.24	9.75	0.00	332	699.1 -> 98.8	56.0	25.7	77.0



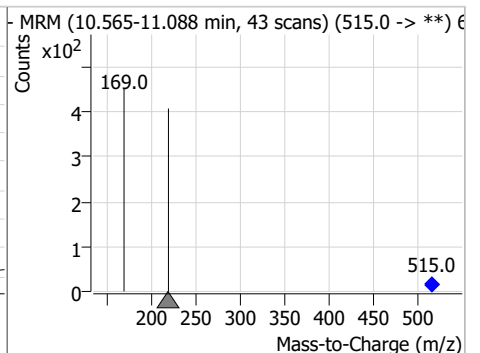
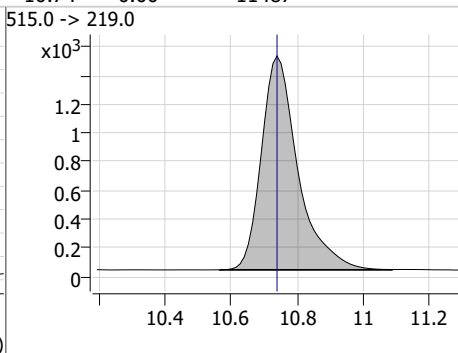
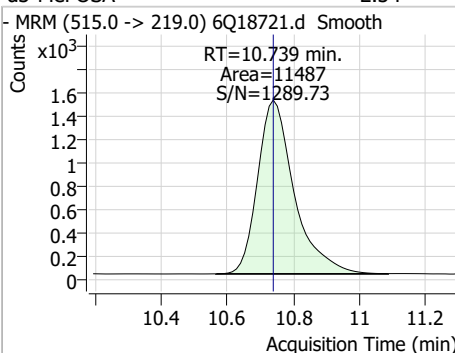
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.35	10.65	-0.01	96986				



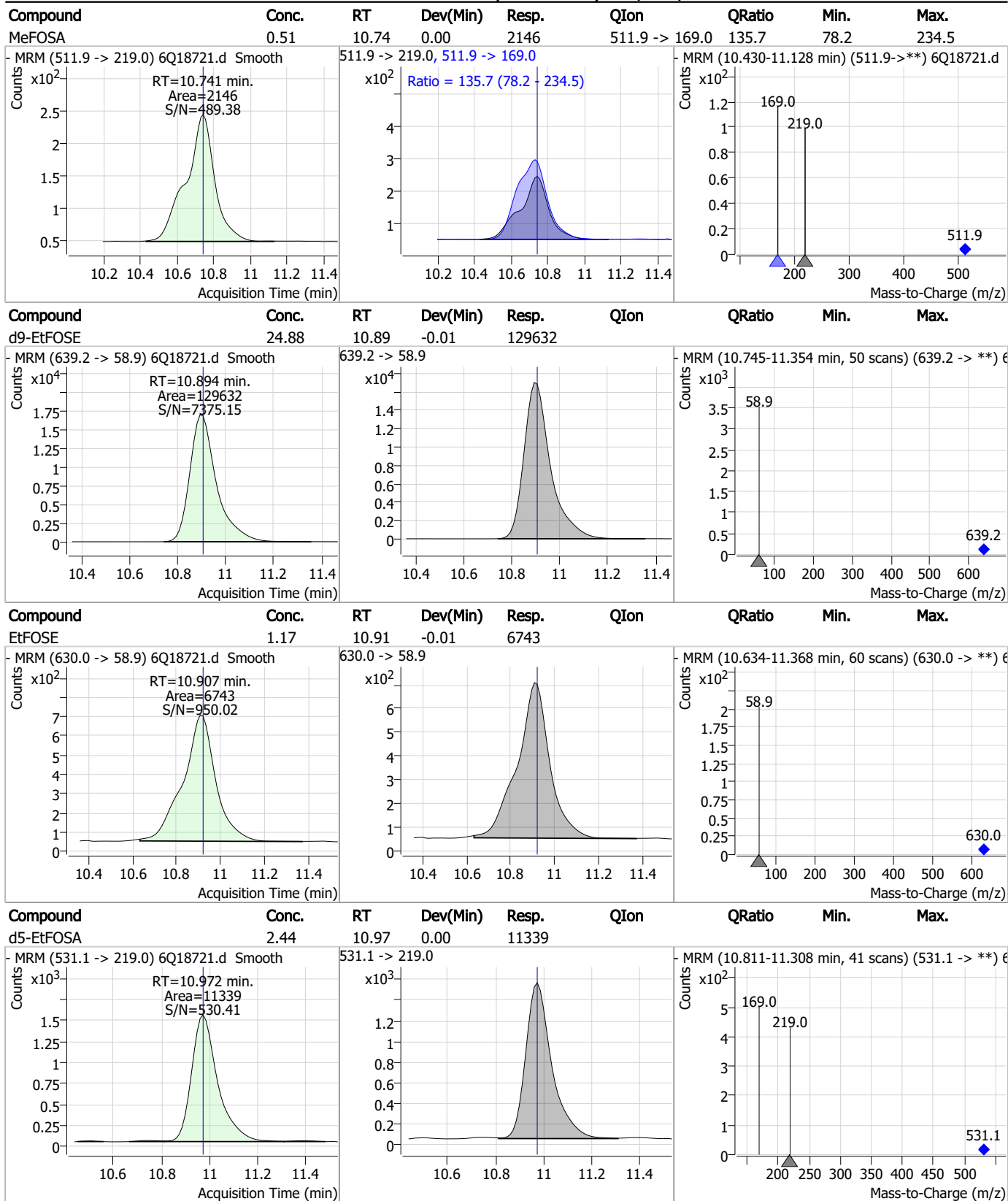
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.15	10.66	-0.01	4449				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.74	0.00	11487				



Perfluorinated Compounds by LC/MS/MS

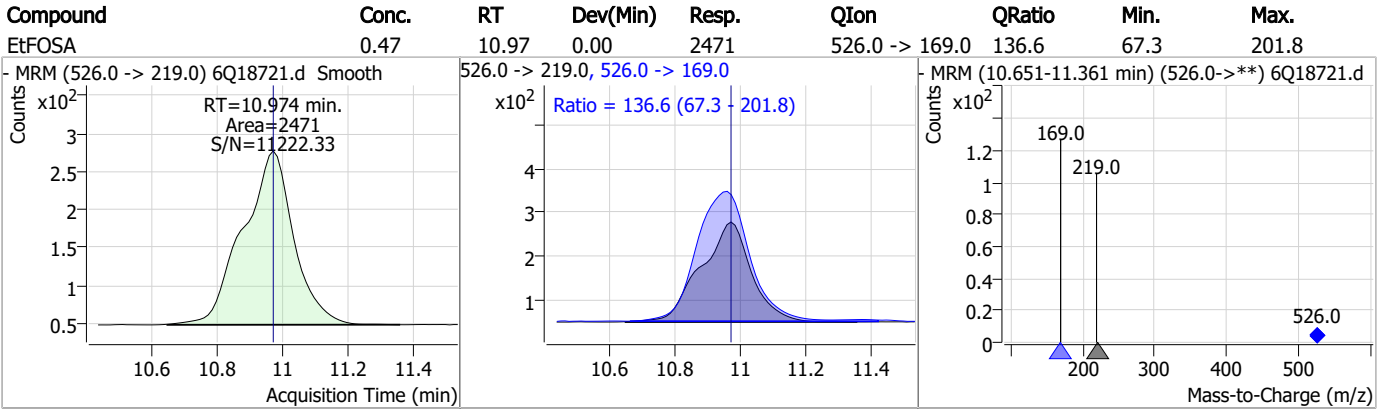


7.7.17

7



Perfluorinated Compounds by LC/MS/MS



7.7.17

7

Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18721.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 02:13 Supervisor approved: 06/06/23 07:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
9CI-PF3ONS (F-53B Major)	756426-58-1		8.49	Poor instrument integration

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7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18733.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 5:07:36 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.822	216.8 -> 171.9	173284	10.00 µg/L	0.000
M5-PFPeA	4.210	268.3 -> 223.0	58424	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	62513	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	57612	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	91274	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	43434	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	27182	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32317	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30513	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16500	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33106	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	23408	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14374	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13999	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3848	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5421	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5481	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	28633	5.00 µg/L	-0.012
M3-HFPO-DA	5.782	286.9 -> 168.9	38993	10.00 µg/L	0.000
M5-EtFOSAA	8.267	589.2 -> 419.0	25231	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	111559	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	143322	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	12933	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	12600	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	17794	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	73110	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10617	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	101083	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	33560	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	52309	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	58990	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3848	5.43 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5421	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5481	5.25 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30513	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16500	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C3-PFBS	5.322	302.1 -> 79.9	23408	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFHxS	7.118	402.1 -> 79.9	14374	2.42 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C4-PFBA	2.822	216.8 -> 171.9	173284	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.369	367.1 -> 322.0	57612	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	5.404	318.0 -> 273.0	62513	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	58424	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	8.014	519.1 -> 474.1	27182	1.38 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32317	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-FOSA	9.598	506.1 -> 77.8	33106	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOA	7.013	421.1 -> 376.0	91274	2.41 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOS	8.165	507.1 -> 79.9	13999	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C9-PFNA	7.545	472.1 -> 427.0	43434	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
d3-MeFOSAA	8.072	573.2 -> 419.0	28633	4.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.782	286.9 -> 168.9	38993	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.739	515.0 -> 219.0	12600	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
d5-EtFOSAA	8.267	589.2 -> 419.0	25231	4.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	111559	24.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d9-EtFOSE	10.894	639.2 -> 58.9	143322	24.52 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSA	10.972	531.1 -> 219.0	12933	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	50260	8.99 µg/L	99
		327.1 -> 80.9	18952		
6:2FTS	6.789	427.1 -> 407.0	51328	9.64 µg/L	97
		427.1 -> 80.9	17044		
8:2FTS	7.816	527.1 -> 507.0	28198	9.25 µg/L	98
		527.1 -> 80.8	11237		
EtFOSAA	8.280	584.2 -> 419.1	8203	2.53 µg/L	99
		584.2 -> 526.0	4647		
FOSA	9.589	498.1 -> 77.9	26530	2.32 µg/L	99
		498.1 -> 478.0	850		
MeFOSAA	8.073	570.1 -> 419.0	14640	2.49 µg/L	90
		570.1 -> 483.0	2994		
PFBA	2.818	212.8 -> 168.9	55357	9.65 µg/L	100
PFBS	5.323	298.7 -> 79.9	16411	2.06 µg/L	98
		298.7 -> 98.8	6122		
PFDA	8.014	512.9 -> 469.0	67910	2.15 µg/L	100
		512.9 -> 219.0	10838		
PFDODA	8.888	613.1 -> 569.0	47315	2.26 µg/L	100
		613.1 -> 319.0	7463		
PFDS	9.052	599.0 -> 79.9	7851	2.24 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	3812	2.48	µg/L	98
		363.1 -> 319.0	63185			
PFHpS	7.673	363.1 -> 169.0	10152	2.17	µg/L	99
		449.0 -> 79.9	14536			
PFHxA	5.407	449.0 -> 98.9	7754	2.43	µg/L	99
		313.0 -> 269.0	51059			
PFHxS	7.119	313.0 -> 118.9	2544	2.15	µg/L	98
		398.7 -> 79.9	13976			
PFNA	7.545	398.7 -> 98.9	7001	2.22	µg/L	99
		463.0 -> 419.0	68316			
PFNS	8.619	463.0 -> 219.0	13603	2.14	µg/L	94
		548.8 -> 79.9	12030			
PFOA	7.015	548.8 -> 98.9	6661	2.45	µg/L	95
		413.0 -> 369.0	95595			
PFOS	8.166	413.0 -> 169.0	16380	2.27	µg/L	100
		498.9 -> 79.9	14528			
PFPeA	4.212	498.9 -> 98.8	6930	4.78	µg/L	100
		263.0 -> 219.0	67060			
PFPeS	6.410	349.1 -> 79.9	14400	2.22	µg/L	100
		349.1 -> 98.9	6940			
PFTeDA	9.628	713.1 -> 669.0	38621	2.38	µg/L	99
		713.1 -> 168.9	3409			
PFTrDA	9.284	663.0 -> 619.0	50650	2.39	µg/L	95
		663.0 -> 168.9	5695			
PFUnDA	8.468	563.1 -> 519.0	50014	2.38	µg/L	91
		563.1 -> 269.1	7868			
11CI-PF3OUdS	9.323	630.9 -> 450.9	69770	4.77	µg/L	96
		632.9 -> 452.9	20715			
9CI-PF3ONS	8.495	530.8 -> 351.0	108017	4.69	µg/L	93
		532.8 -> 353.0	31334			
ADONA	6.632	376.9 -> 250.9	234743	4.53	µg/L	98
		376.9 -> 84.8	66234			
HFPO-DA	5.770	284.9 -> 168.9	16870	5.10	µg/L	95
		284.9 -> 184.9	1959			
3:3FTCA	3.671	241.0 -> 177.0	10788	12.01	µg/L	90
		241.0 -> 117.0	1407			
5:3FTCA	6.074	341.0 -> 237.1	223005	59.06	µg/L	96
		341.0 -> 217.0	166323			
7:3FTCA	7.510	441.0 -> 316.9	156311	60.45	µg/L	99
		441.0 -> 336.9	358056			
EtFOSA	10.974	526.0 -> 219.0	28532	4.73	µg/L	97
		526.0 -> 169.0	37466			
EtFOSE	10.907	630.0 -> 58.9	75724	11.84	µg/L	100
		511.9 -> 219.0	23732			
MeFOSA	10.741	511.9 -> 169.0	32366	5.12	µg/L	85
		616.1 -> 58.9	51843			
MeFOSE	10.673	699.1 -> 79.9	3636	11.69	µg/L	100
		699.1 -> 98.8	1973			
PFDoDS	9.755	295.0 -> 201.0	12278	2.34	µg/L	96
		295.0 -> 84.9	3145			
NFDHA	5.288	279.0 -> 85.1	45558	4.80	µg/L	92
		229.0 -> 84.9	35973			
PFMBA	4.626	314.8 -> 134.9	114420	4.77	µg/L	100
		314.8 -> 82.9	3708			
PFMPA	3.351			4.84	µg/L	100
PFEESA	5.862			4.29	µg/L	99

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

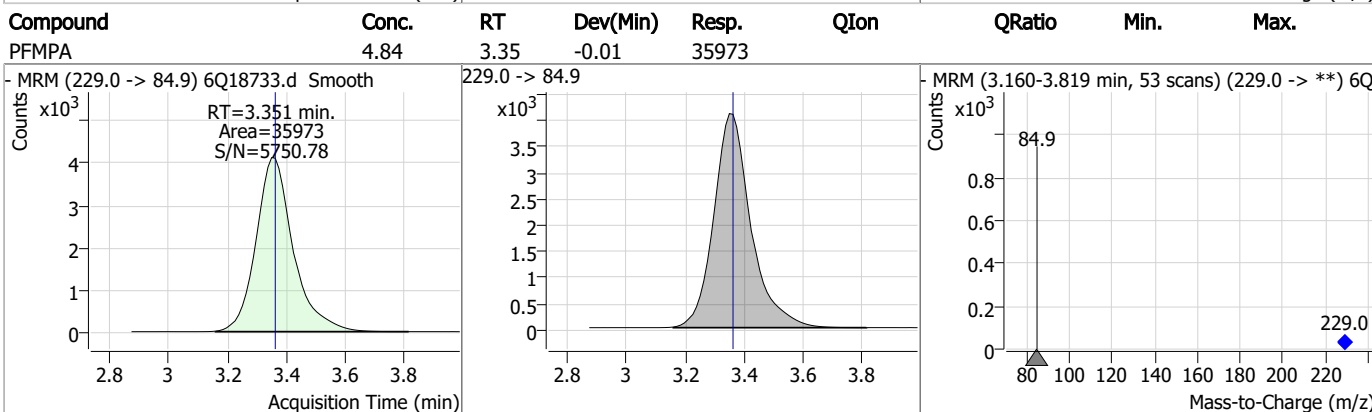
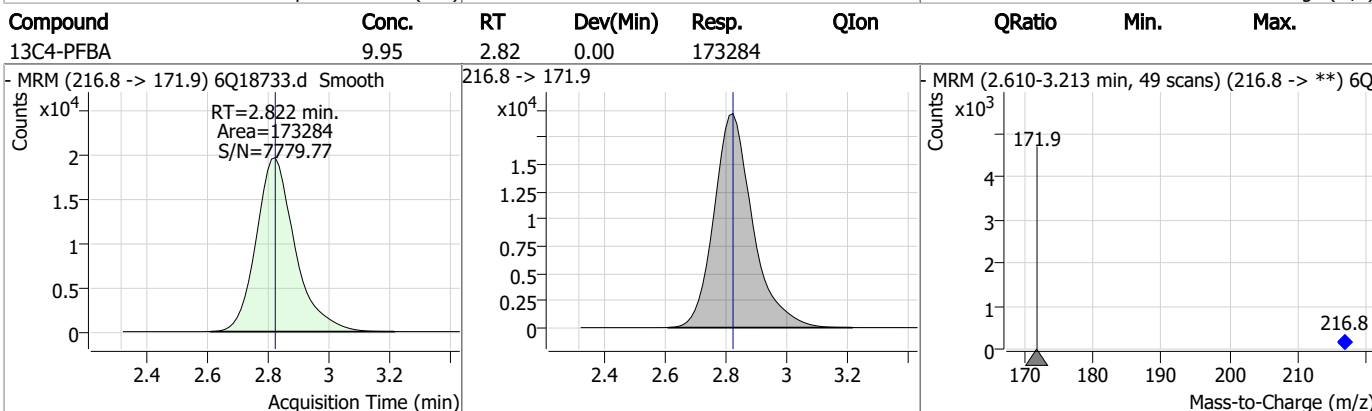
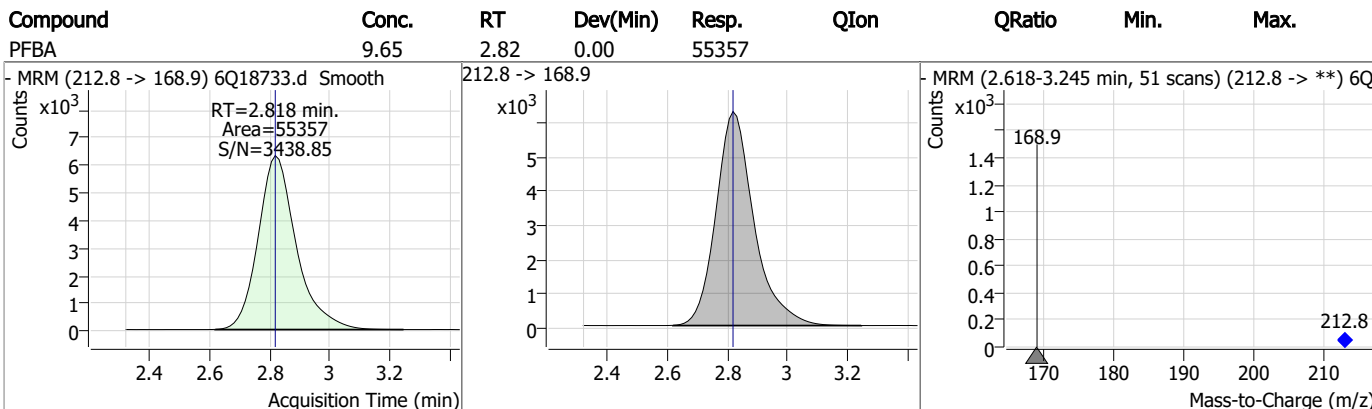
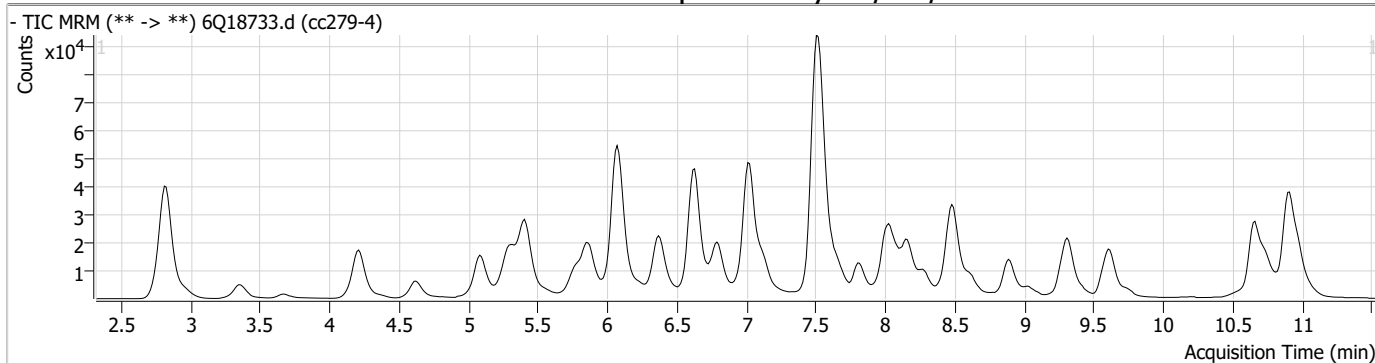


Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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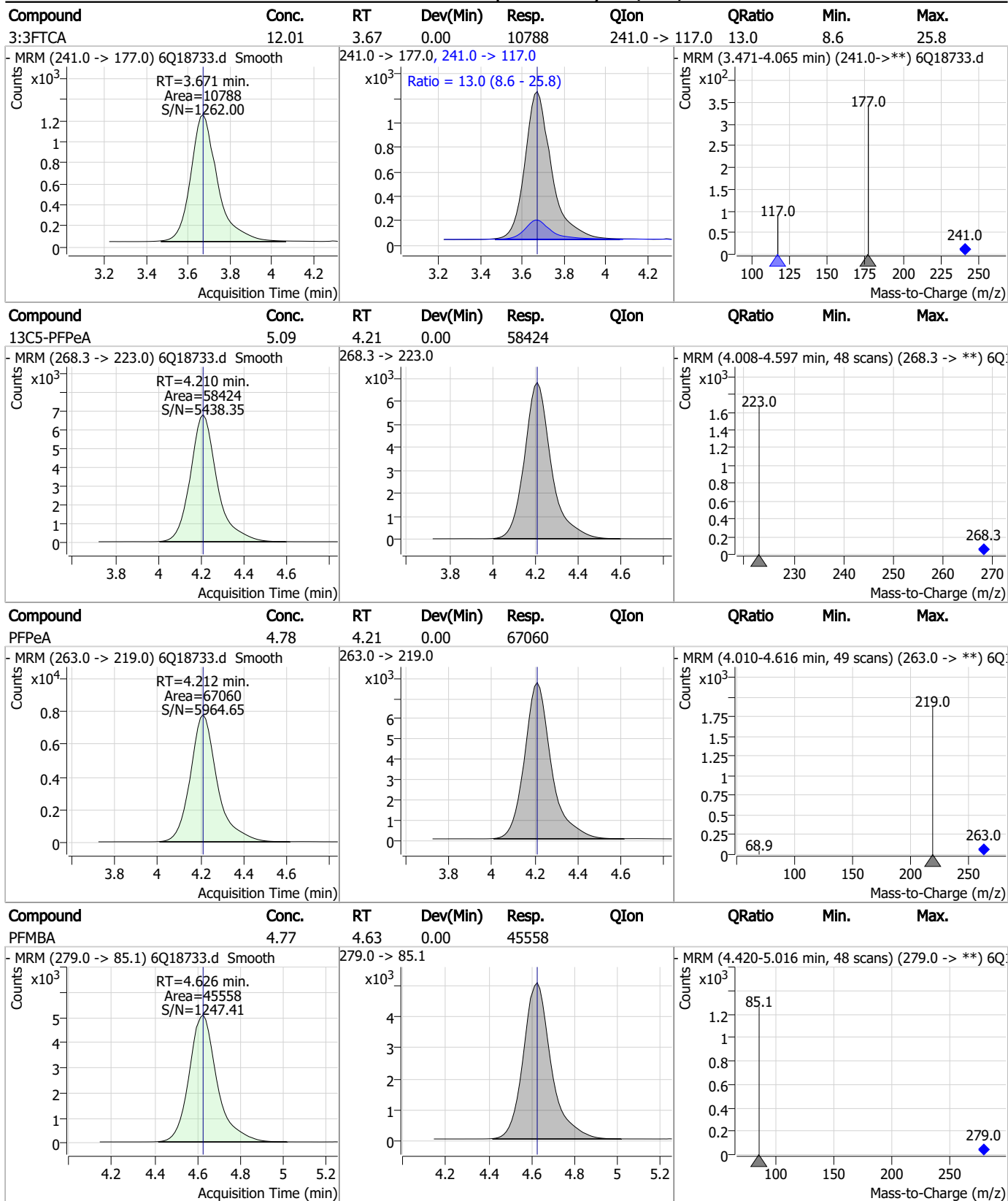
7.7.18
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Perfluorinated Compounds by LC/MS/MS



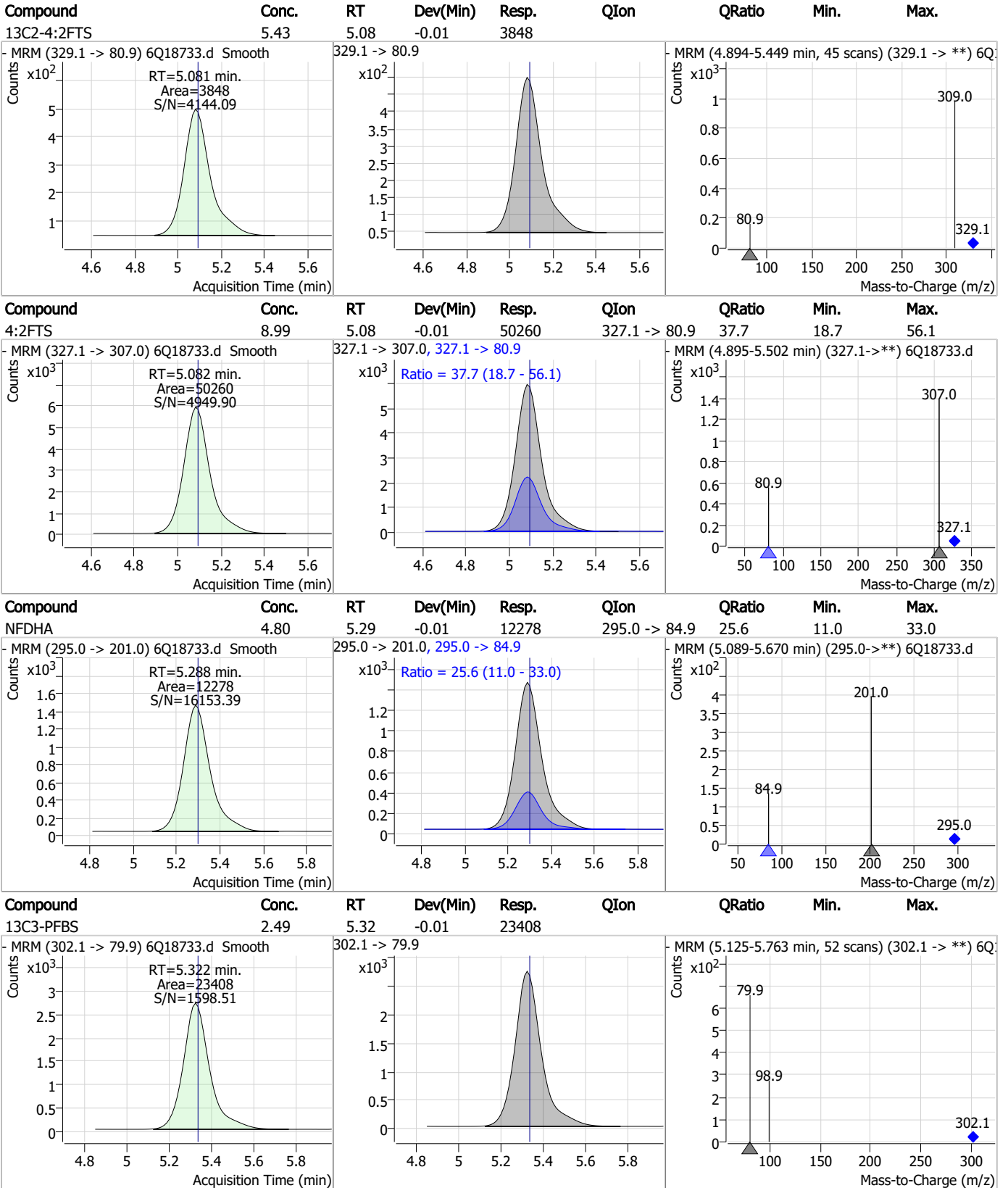
7.7.18
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Perfluorinated Compounds by LC/MS/MS



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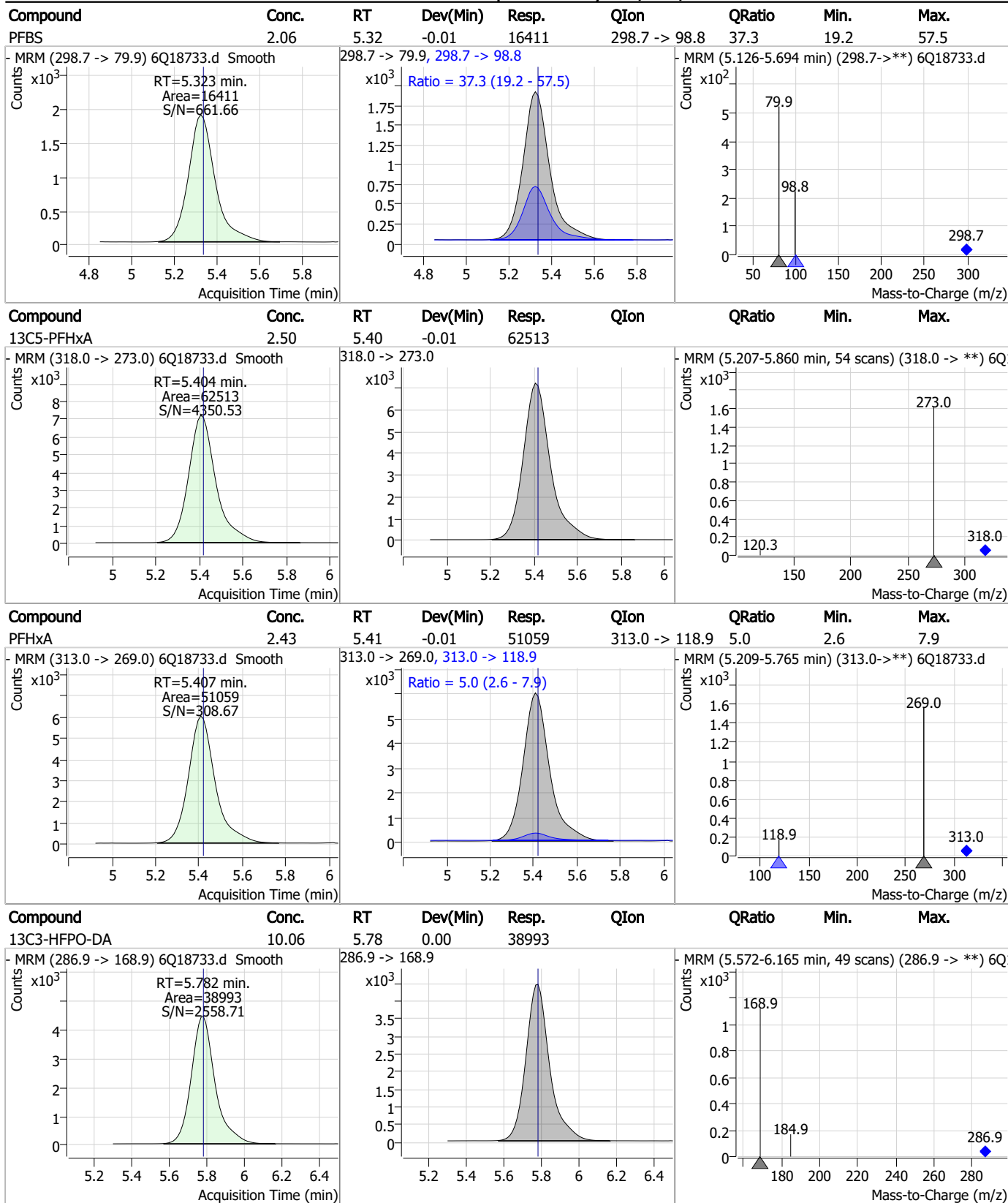
Perfluorinated Compounds by LC/MS/MS



7.7.18 7



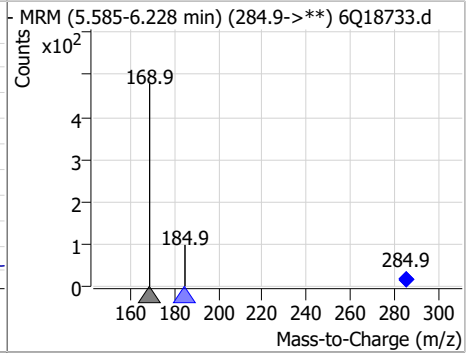
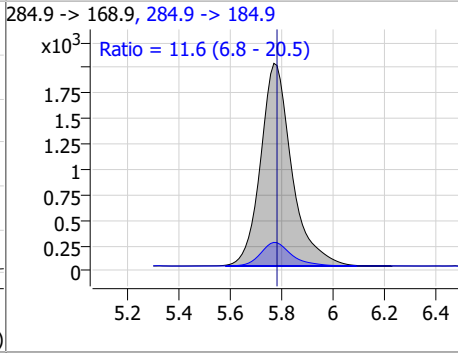
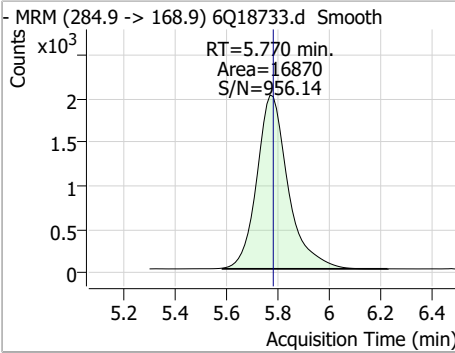
Perfluorinated Compounds by LC/MS/MS



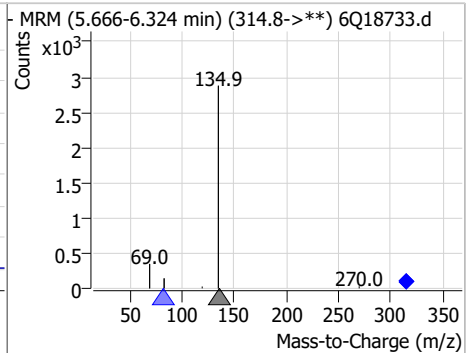
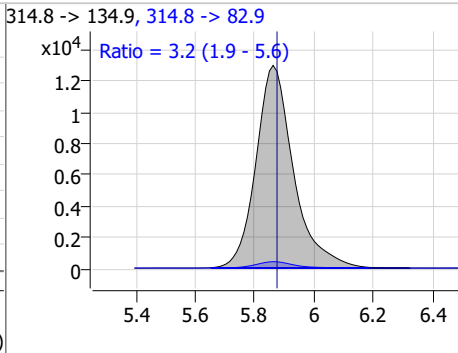
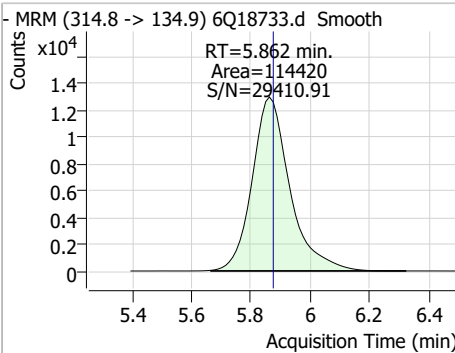
7.7.18

Perfluorinated Compounds by LC/MS/MS

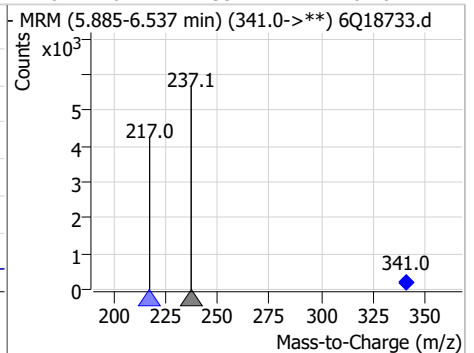
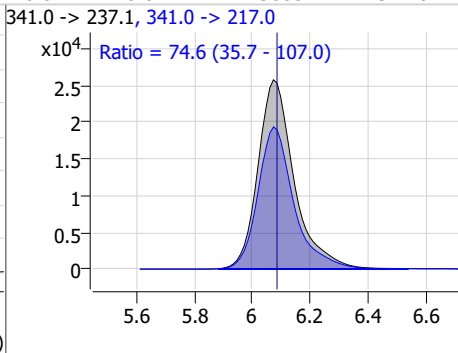
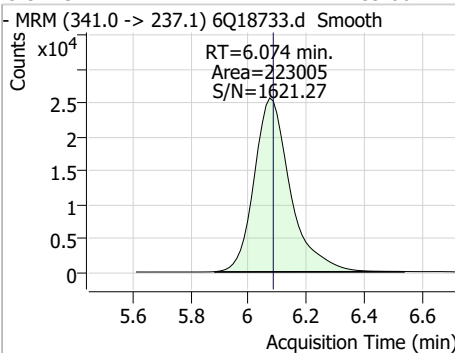
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.10	5.77	-0.01	16870	284.9 -> 184.9	11.6	6.8	20.5



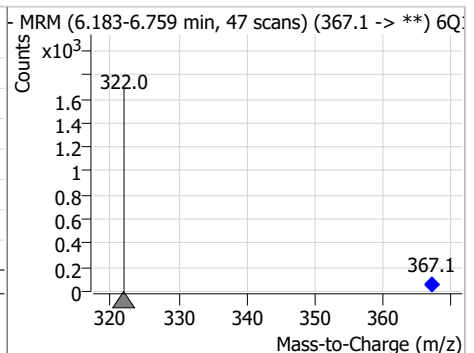
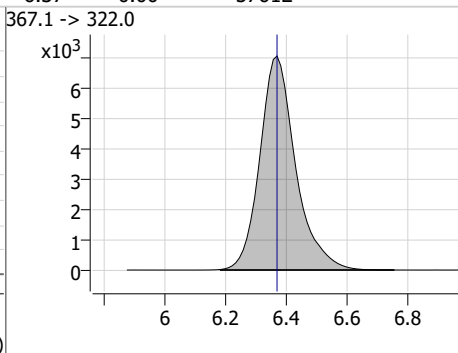
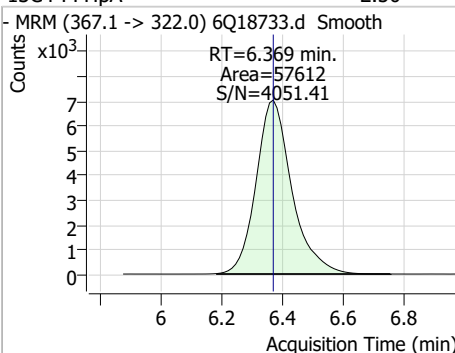
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.29	5.86	-0.01	114420	314.8 -> 82.9	3.2	1.9	5.6



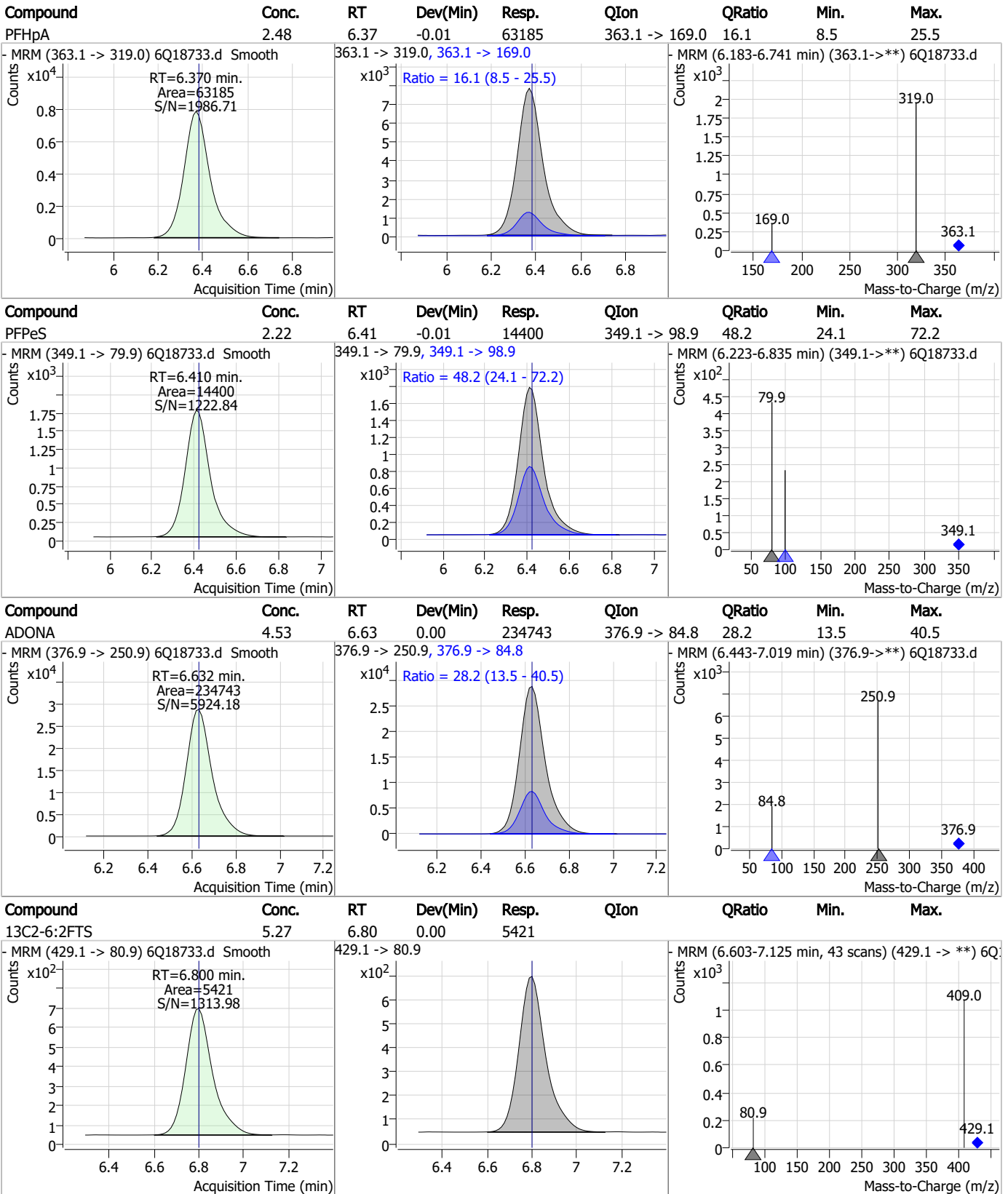
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.06	6.07	-0.01	223005	341.0 -> 217.0	74.6	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.37	0.00	57612	367.1 -> 322.0			



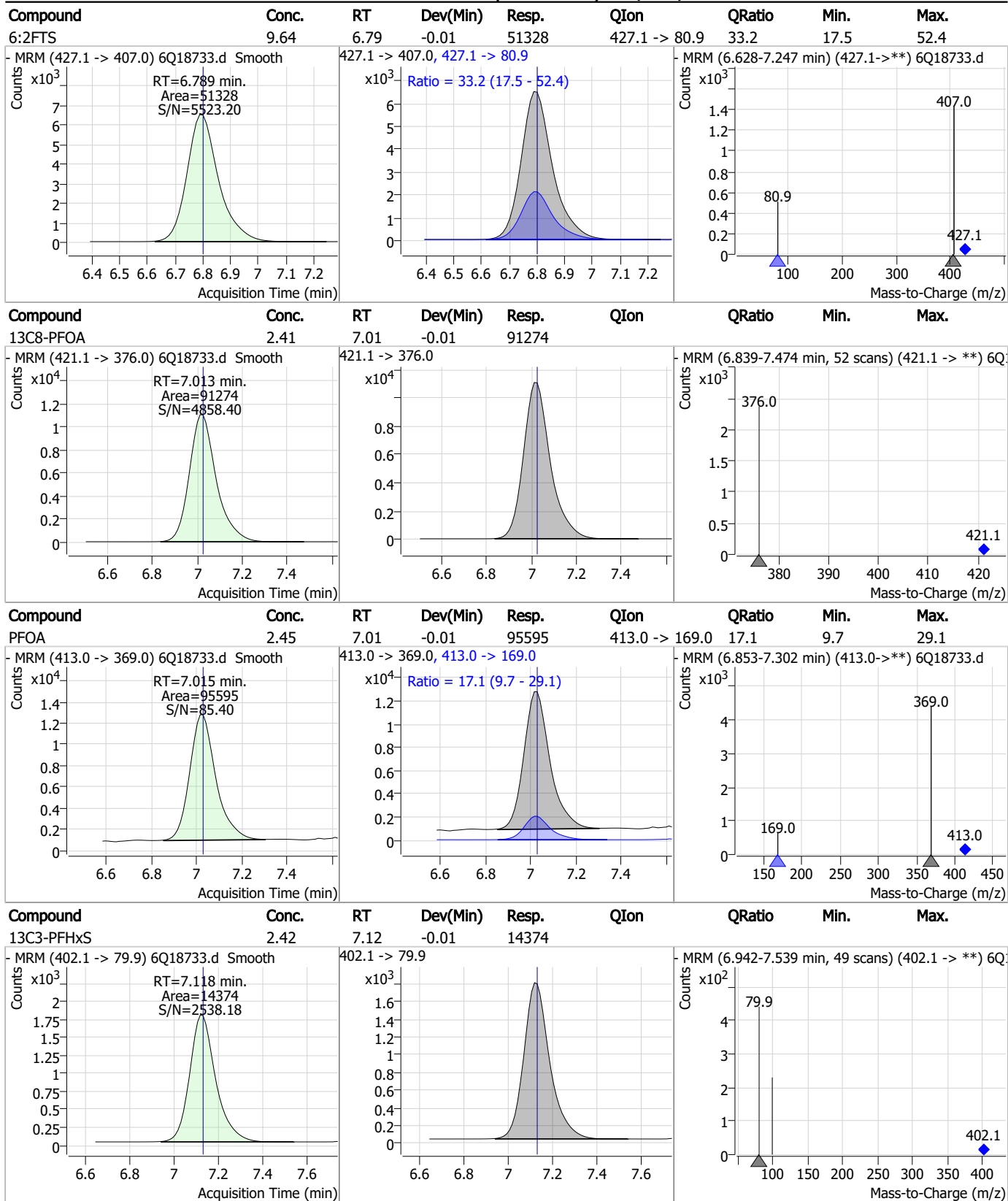
Perfluorinated Compounds by LC/MS/MS



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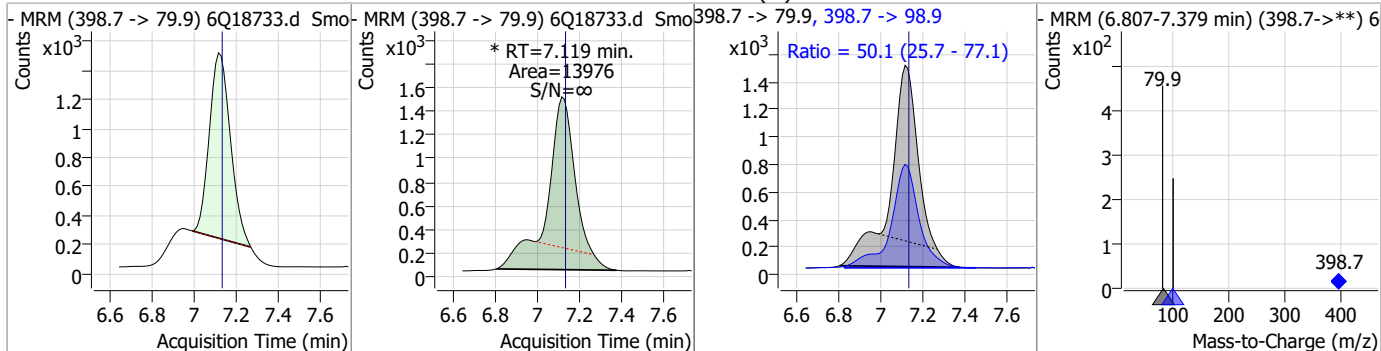
Perfluorinated Compounds by LC/MS/MS



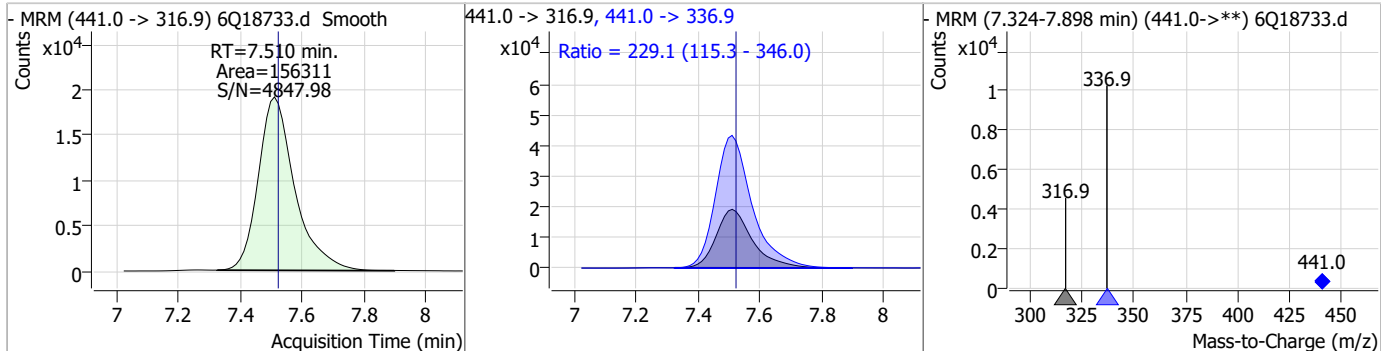
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Perfluorinated Compounds by LC/MS/MS

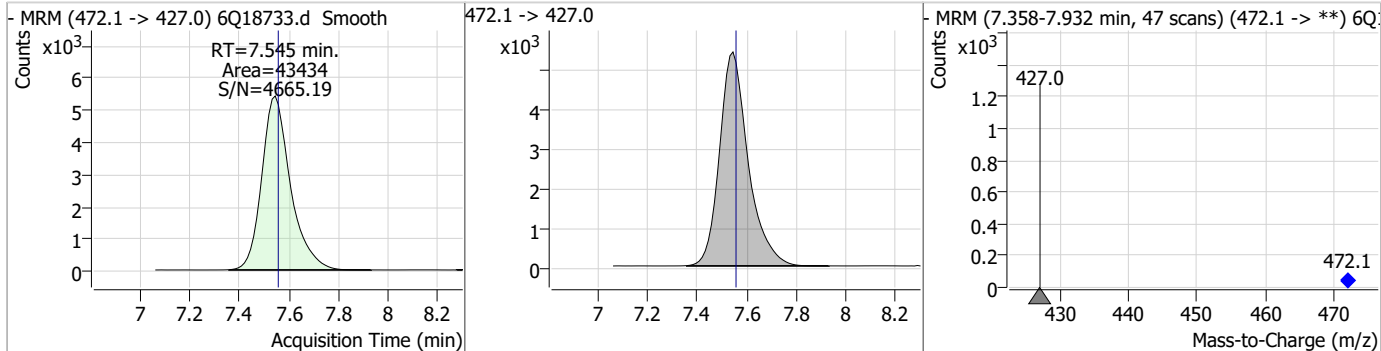
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.15	7.12	-0.01	13976 (m)	398.7 -> 98.9	50.1	25.7	77.1



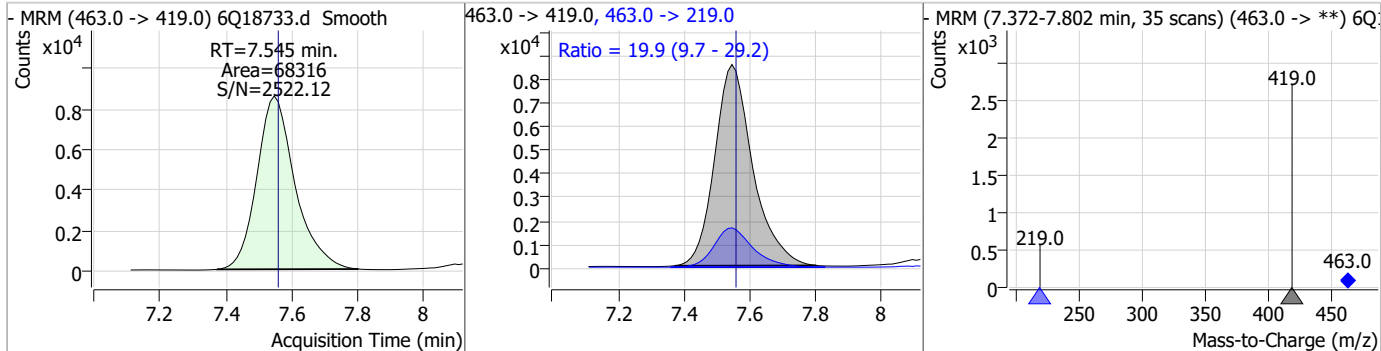
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	60.45	7.51	-0.01	156311	441.0 -> 336.9	229.1	115.3	346.0



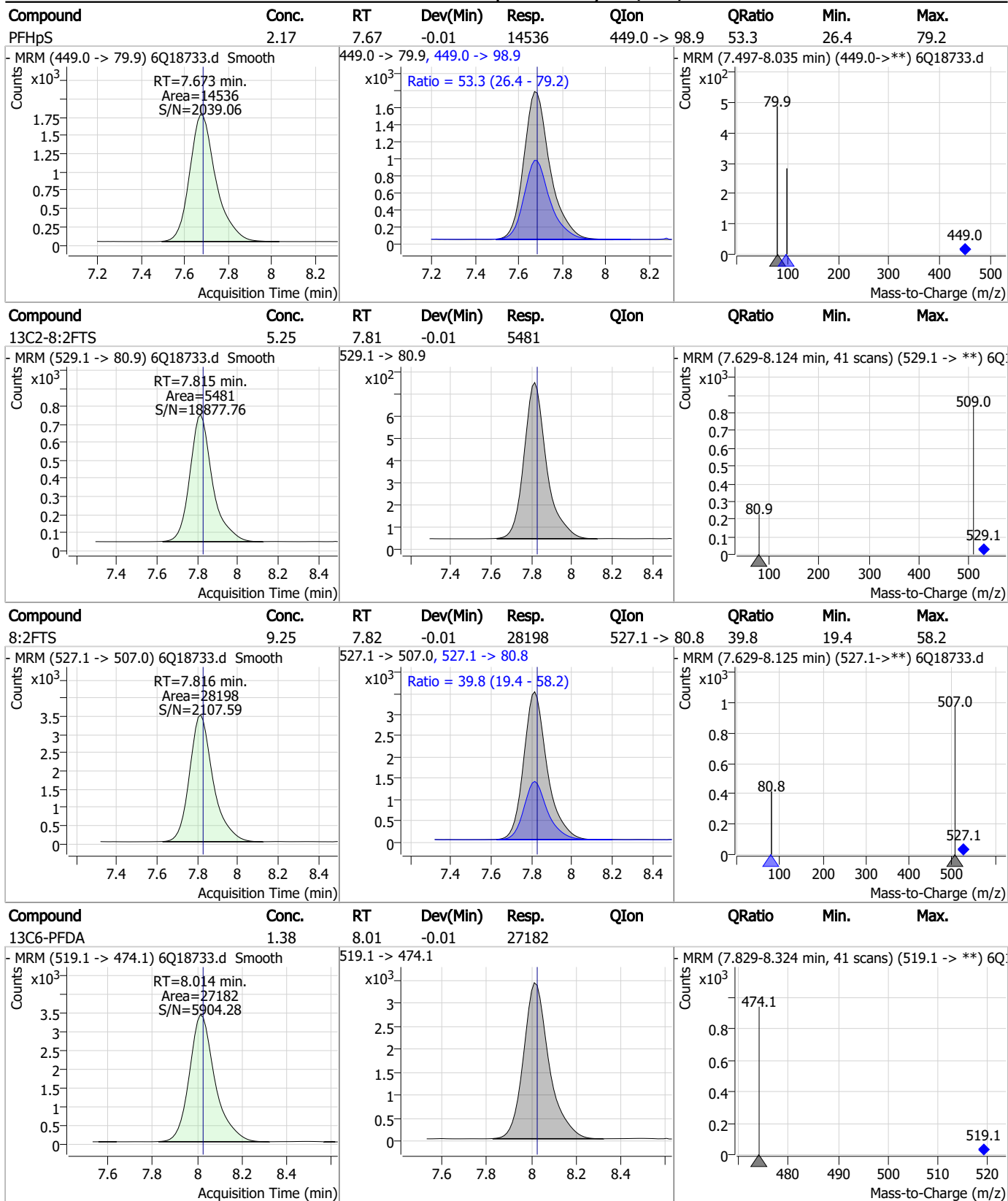
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.54	-0.01	43434				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.22	7.55	-0.01	68316	463.0 -> 219.0	19.9	9.7	29.2

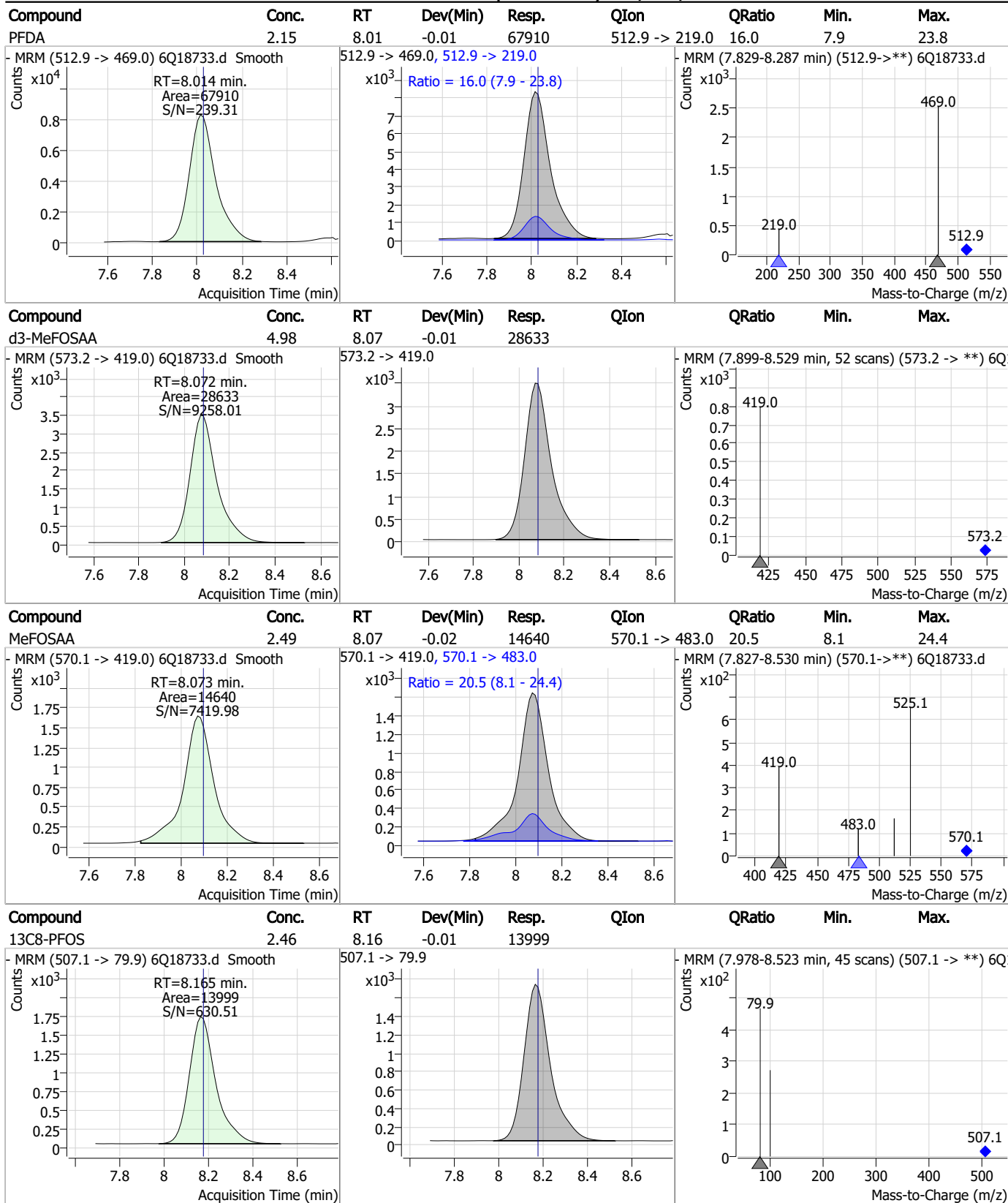


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

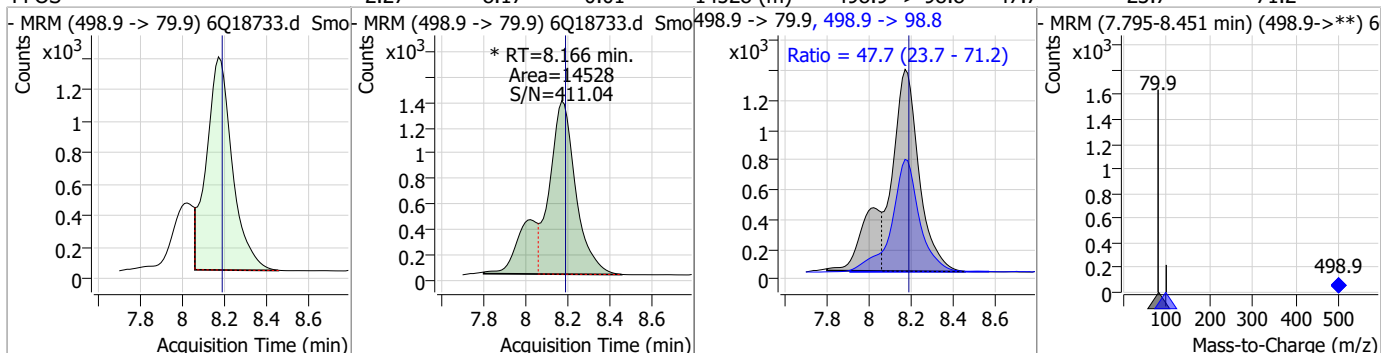


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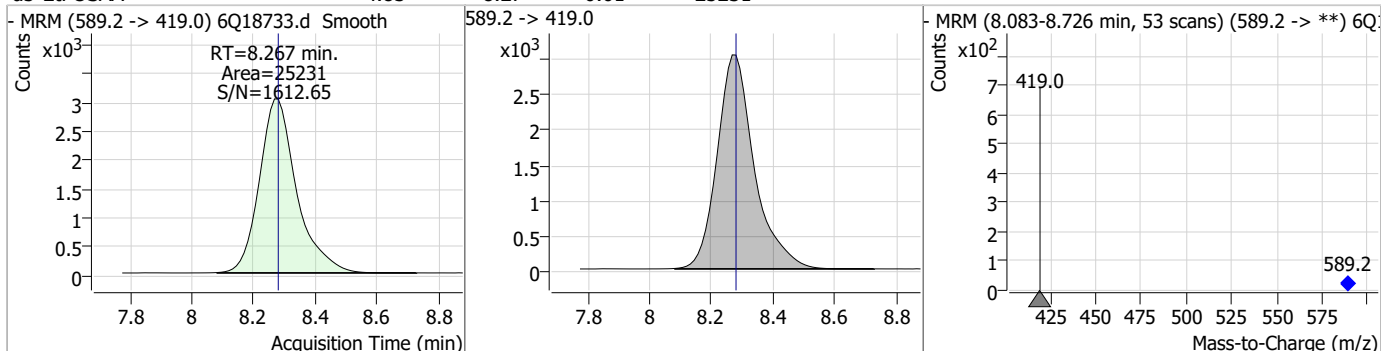
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Perfluorinated Compounds by LC/MS/MS

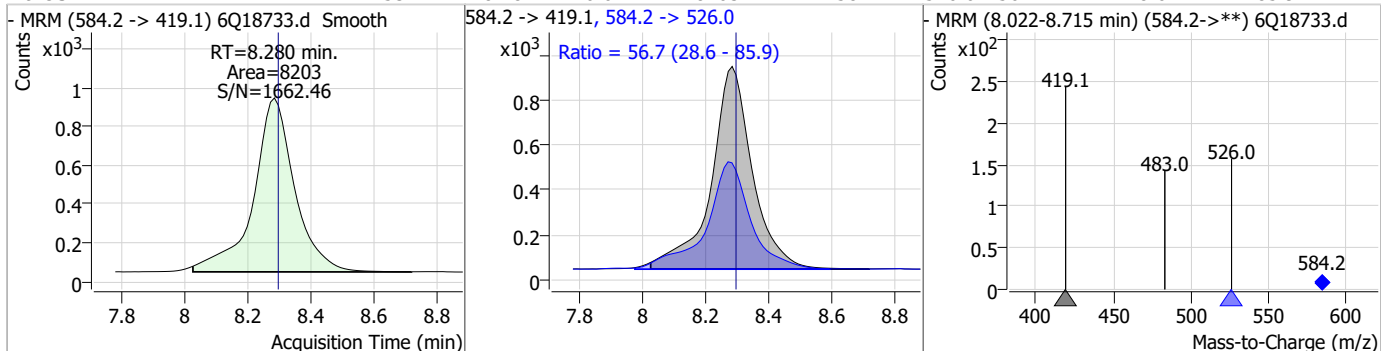
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.27	8.17	-0.01	14528 (m)	498.9 -> 98.8	47.7	23.7	71.2



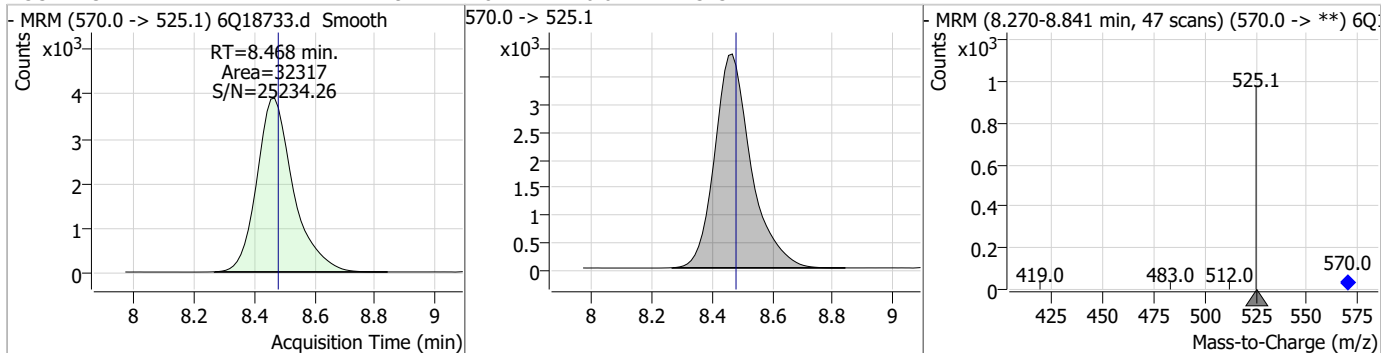
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.83	8.27	-0.01	25231				



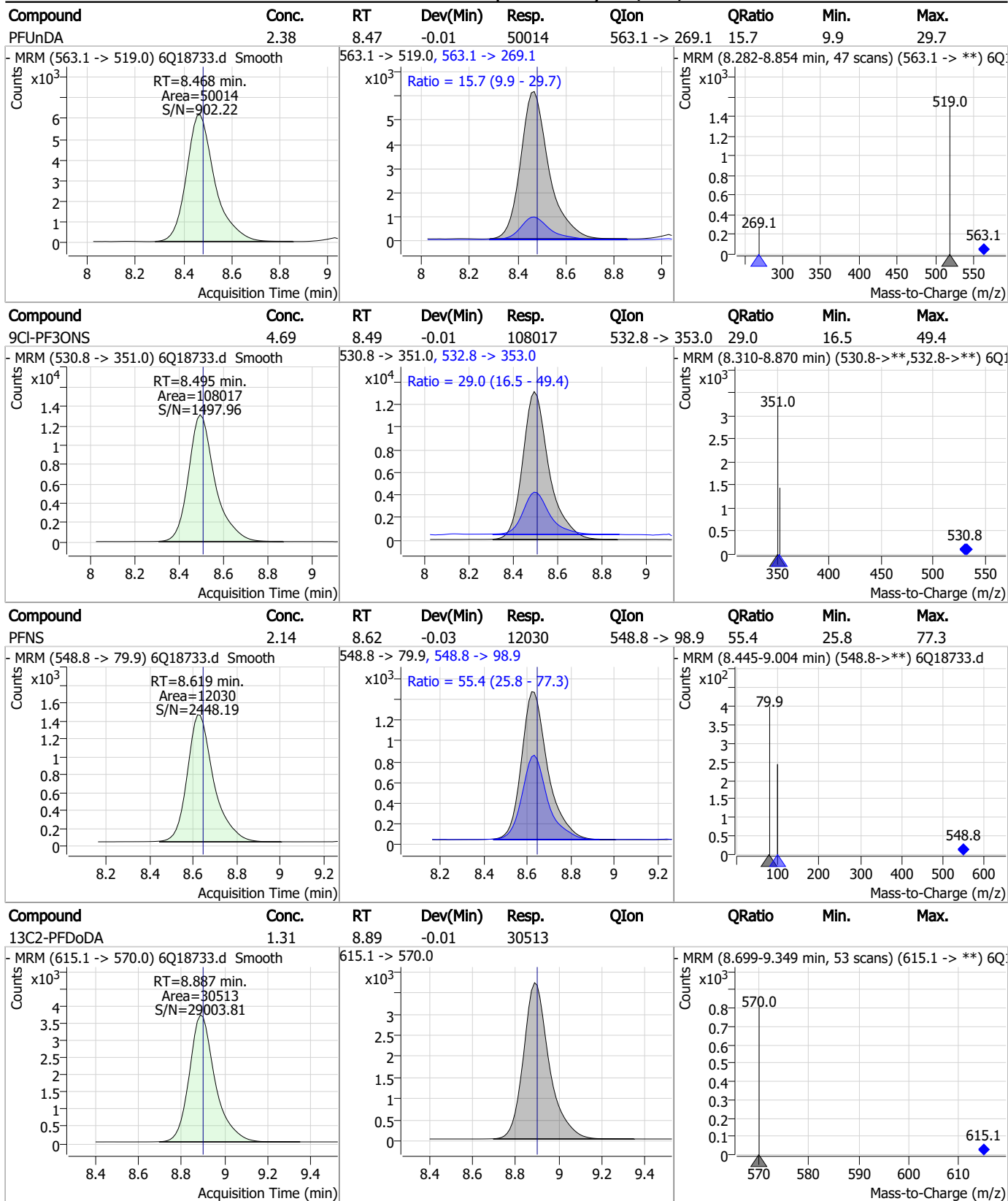
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.53	8.28	-0.01	8203	584.2 -> 526.0	56.7	28.6	85.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.47	-0.01	32317				

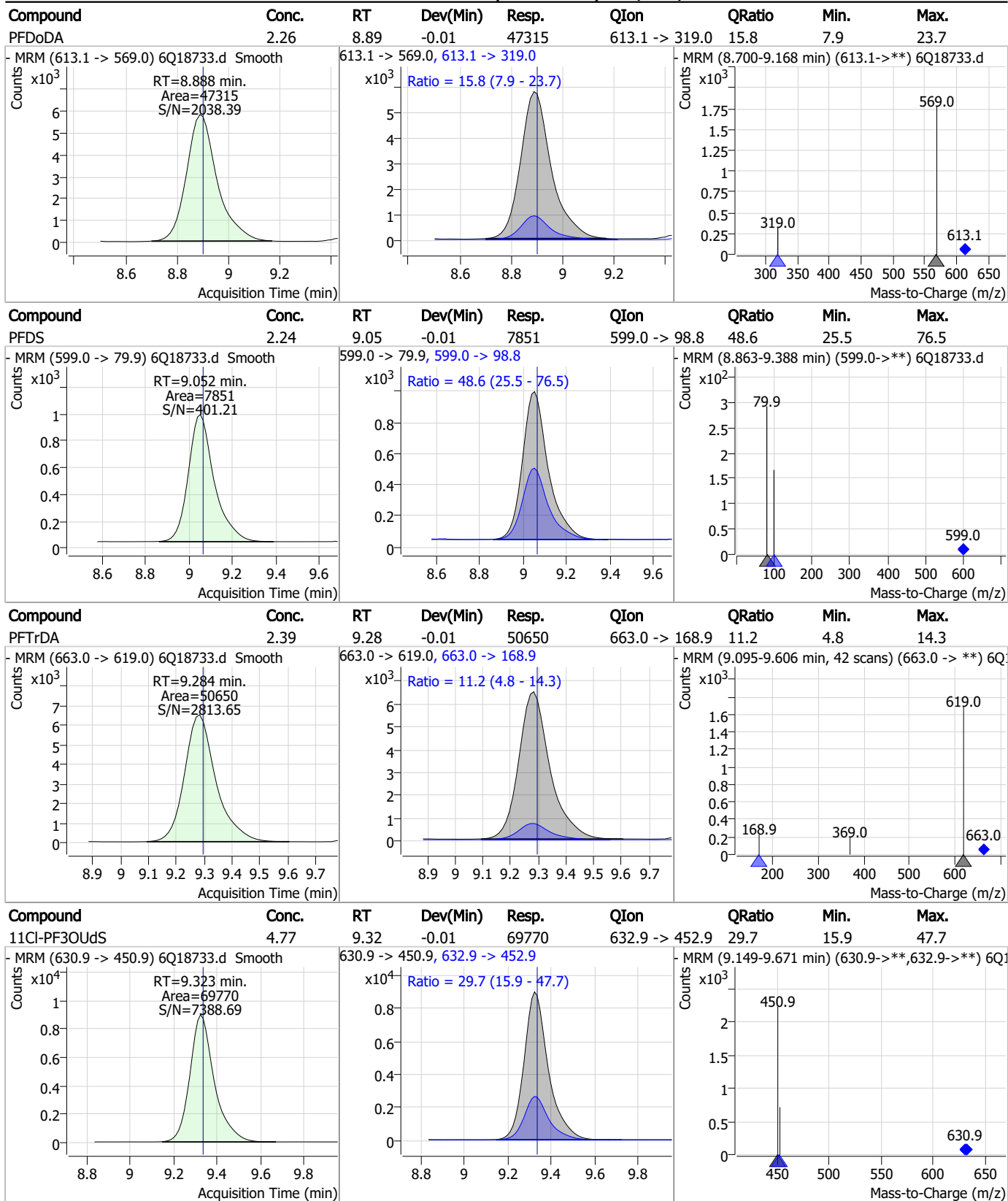


Perfluorinated Compounds by LC/MS/MS



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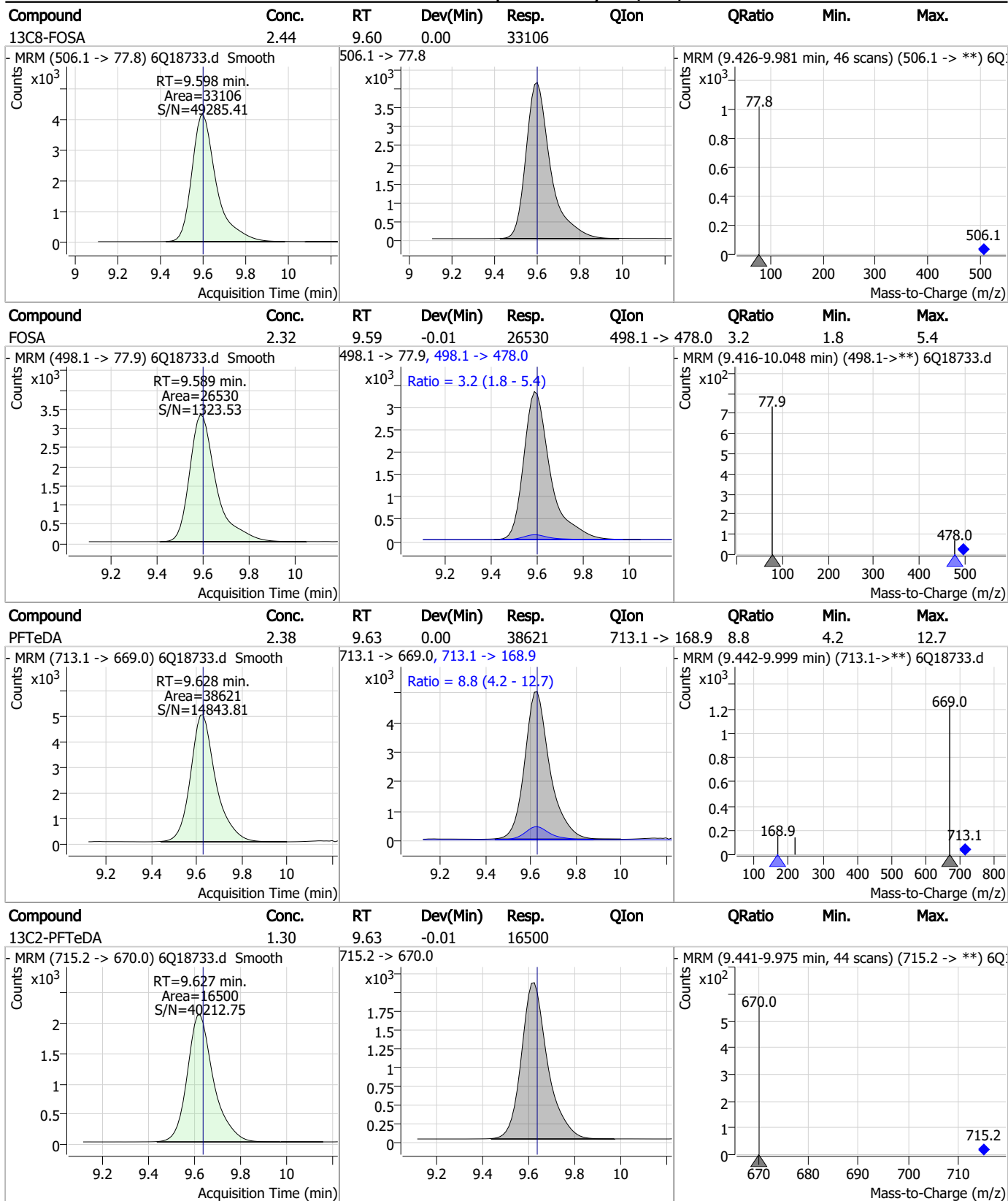
Perfluorinated Compounds by LC/MS/MS



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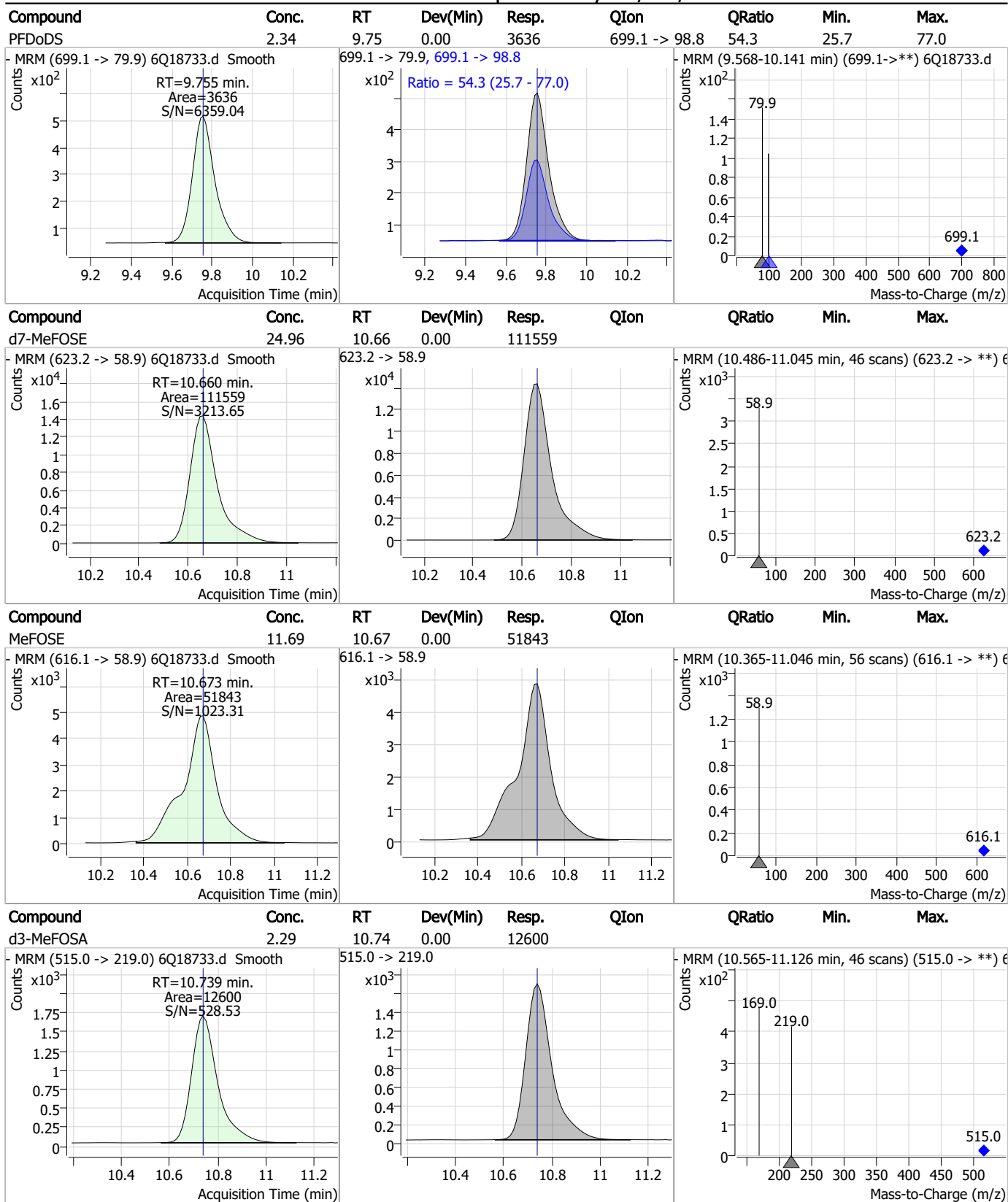
Perfluorinated Compounds by LC/MS/MS



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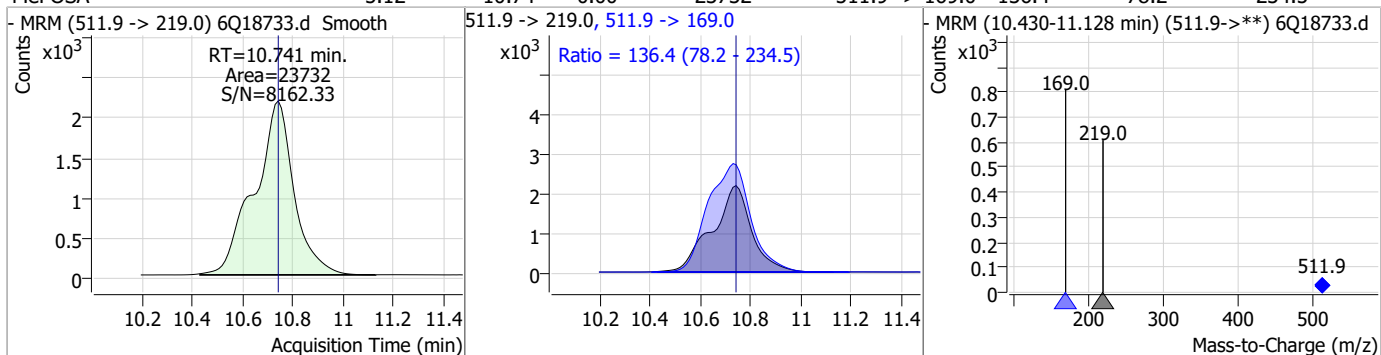
Perfluorinated Compounds by LC/MS/MS



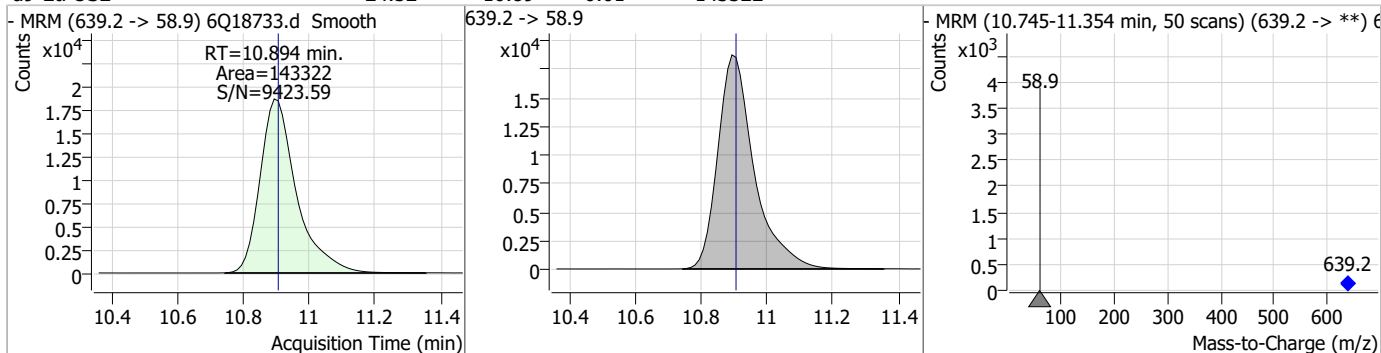
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Perfluorinated Compounds by LC/MS/MS

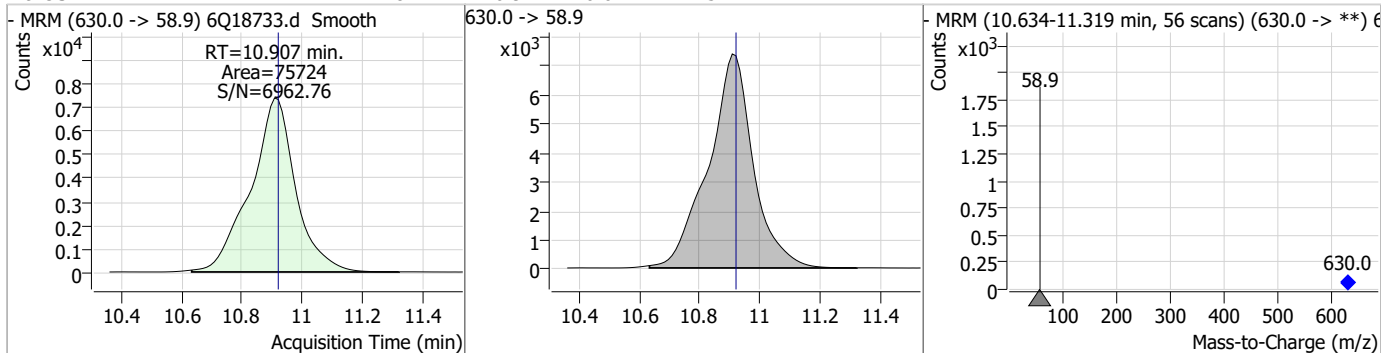
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.12	10.74	0.00	23732	511.9 -> 169.0	136.4	78.2	234.5



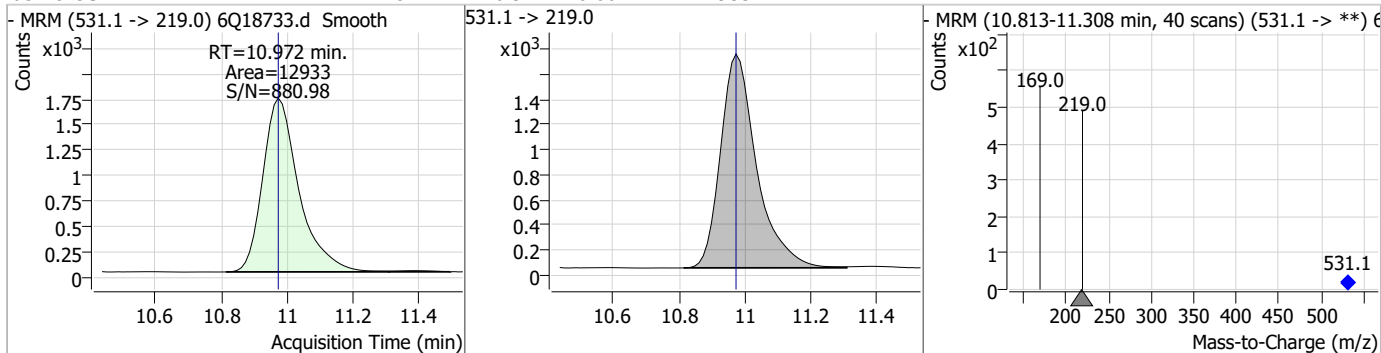
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.52	10.89	-0.01	143322				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.84	10.91	-0.01	75724				

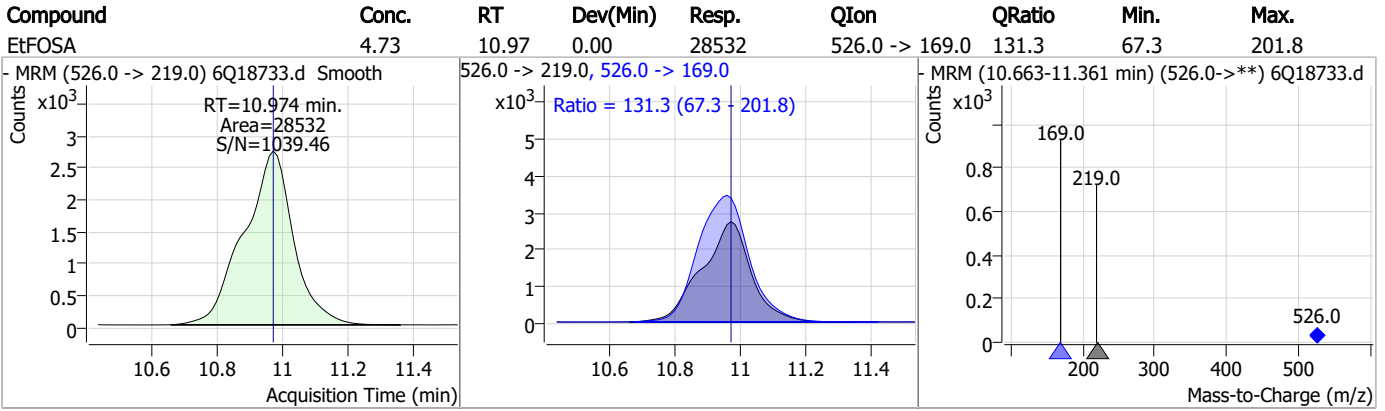


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.48	10.97	0.00	12933				



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18733.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 05:07 Supervisor approved: 06/06/23 07:46 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18777.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 3:44:48 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	178423	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	60020	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	65356	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	62597	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	92802	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	43519	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	27143	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	32551	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	30707	1.25 µg/L	-0.012
M2-PFTeDA	9.627	715.2 -> 670.0	16543	1.25 µg/L	-0.012
M8-FOSA	9.598	506.1 -> 77.8	33799	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	24046	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	14593	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	13829	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3826	5.00 µg/L	-0.012
M2-6:2FTS	6.788	429.1 -> 80.9	5588	5.00 µg/L	-0.012
M2-8:2FTS	7.815	529.1 -> 80.9	5769	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	31278	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	43381	10.00 µg/L	-0.012
M5-EtFOSAA	8.267	589.2 -> 419.0	28760	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	114250	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	151095	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	13373	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	13161	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	18313	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	75247	5.00 µg/L	-0.013
18O2-PFHxS	7.117	403.0 -> 83.9	10307	2.50 µg/L	-0.012
13C4-PFOA	7.013	417.1 -> 372.0	102427	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	33967	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	51103	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	61086	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3826	5.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C2-6:2FTS	6.788	429.1 -> 80.9	5588	5.60 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5769	5.70 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C2-PFDoDA	8.887	615.1 -> 570.0	30707	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-PFTeDA	9.627	715.2 -> 670.0	16543	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFBS	5.322	302.1 -> 79.9	24046	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFHxS	7.118	402.1 -> 79.9	14593	2.53 µg/L	-0.012

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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	2.810	216.8 -> 171.9	178423	9.96 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.369	367.1 -> 322.0	62597	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C5-PFHxA	5.404	318.0 -> 273.0	65356	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	60020	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.014	519.1 -> 474.1	27143	1.36 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C7-PFUnDA	8.468	570.0 -> 525.1	32551	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-FOSA	9.598	506.1 -> 77.8	33799	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C8-PFOA	7.013	421.1 -> 376.0	92802	2.42 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C8-PFOS	8.165	507.1 -> 79.9	13829	2.36 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.545	472.1 -> 427.0	43519	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.4%	
d3-MeFOSAA	8.072	573.2 -> 419.0	31278	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	43381	10.81 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
d3-MeFOSA	10.739	515.0 -> 219.0	13161	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
d5-EtFOSAA	8.267	589.2 -> 419.0	28760	5.35 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	114250	24.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	151095	25.12 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSA	10.972	531.1 -> 219.0	13373	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	50553	9.10 µg/L	99
		327.1 -> 80.9	19195		
6:2FTS	6.789	427.1 -> 407.0	52674	9.59 µg/L	97
		427.1 -> 80.9	17546		
8:2FTS	7.816	527.1 -> 507.0	29153	9.09 µg/L	99
		527.1 -> 80.8	11547		
EtFOSAA	8.280	584.2 -> 419.1	8499	2.30 µg/L	99
		584.2 -> 526.0	4801		
FOSA	9.602	498.1 -> 77.9	27650	2.36 µg/L	98
		498.1 -> 478.0	790		
MeFOSAA	8.073	570.1 -> 419.0	16194	2.52 µg/L	97
		570.1 -> 483.0	2837		
PFBA	2.818	212.8 -> 168.9	56852	9.62 µg/L	100
PFBS	5.323	298.7 -> 79.9	16750	2.05 µg/L	97
		298.7 -> 98.8	6161		
PFDA	8.014	512.9 -> 469.0	71367	2.27 µg/L	99
		512.9 -> 219.0	11170		
PFDODA	8.888	613.1 -> 569.0	48693	2.31 µg/L	99
		613.1 -> 319.0	7905		
PFDS	9.052	599.0 -> 79.9	8181	2.37 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	3934		
PFHpA	6.358	363.1 -> 319.0	65963	2.38 µg/L	96
		363.1 -> 169.0	10174		
PFHpS	7.673	449.0 -> 79.9	15243	2.30 µg/L	96
		449.0 -> 98.9	7594		
PFHxA	5.407	313.0 -> 269.0	51834	2.36 µg/L	99
		313.0 -> 118.9	2842		
PFHxS	7.119	398.7 -> 79.9	14681	2.22 µg/L	97
		398.7 -> 98.9	7191		
PFNA	7.545	463.0 -> 419.0	73665	2.39 µg/L	100
		463.0 -> 219.0	14415		
PFNS	8.631	548.8 -> 79.9	12516	2.25 µg/L	94
		548.8 -> 98.9	6976		
PFOA	7.015	413.0 -> 369.0	94573	2.39 µg/L	98
		413.0 -> 169.0	17325		
PFOS	8.166	498.9 -> 79.9	14025	2.22 µg/L	92
		498.9 -> 98.8	7399		
PFPeA	4.212	263.0 -> 219.0	69497	4.82 µg/L	100
PFPeS	6.410	349.1 -> 79.9	15514	2.36 µg/L	98
		349.1 -> 98.9	7201		
PFTeDA	9.628	713.1 -> 669.0	40659	2.50 µg/L	99
		713.1 -> 168.9	3591		
PFTrDA	9.284	663.0 -> 619.0	50262	2.36 µg/L	97
		663.0 -> 168.9	5344		
PFUnDA	8.468	563.1 -> 519.0	50731	2.40 µg/L	93
		563.1 -> 269.1	8423		
11CI-PF3OUdS	9.323	630.9 -> 450.9	70161	4.31 µg/L	97
		632.9 -> 452.9	20965		
9CI-PF3ONS	8.495	530.8 -> 351.0	112909	4.40 µg/L	92
		532.8 -> 353.0	32360		
ADONA	6.620	376.9 -> 250.9	251279	4.36 µg/L	100
		376.9 -> 84.8	67300		
HFPO-DA	5.770	284.9 -> 168.9	16771	4.56 µg/L	94
		284.9 -> 184.9	1853		
3:3FTCA	3.671	241.0 -> 177.0	10959	11.88 µg/L	92
		241.0 -> 117.0	1484		
5:3FTCA	6.074	341.0 -> 237.1	229465	58.13 µg/L	95
		341.0 -> 217.0	173477		
7:3FTCA	7.510	441.0 -> 316.9	159881	59.14 µg/L	97
		441.0 -> 336.9	360640		
EtFOSA	10.974	526.0 -> 219.0	28756	4.61 µg/L	98
		526.0 -> 169.0	37990		
EtFOSE	10.907	630.0 -> 58.9	75447	11.19 µg/L	100
MeFOSA	10.741	511.9 -> 219.0	23852	4.93 µg/L	87
		511.9 -> 169.0	33178		
MeFOSE	10.673	616.1 -> 58.9	51438	11.33 µg/L	100
PFDoDS	9.755	699.1 -> 79.9	3620	2.36 µg/L	92
		699.1 -> 98.8	2049		
NFDHA	5.288	295.0 -> 201.0	13101	4.90 µg/L	92
		295.0 -> 84.9	3376		
PFMBA	4.626	279.0 -> 85.1	47892	4.88 µg/L	100
PFMPA	3.351	229.0 -> 84.9	37236	4.88 µg/L	100
PFEESA	5.862	314.8 -> 134.9	115828	4.16 µg/L	100
		314.8 -> 82.9	4185		

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

7.7.19
7

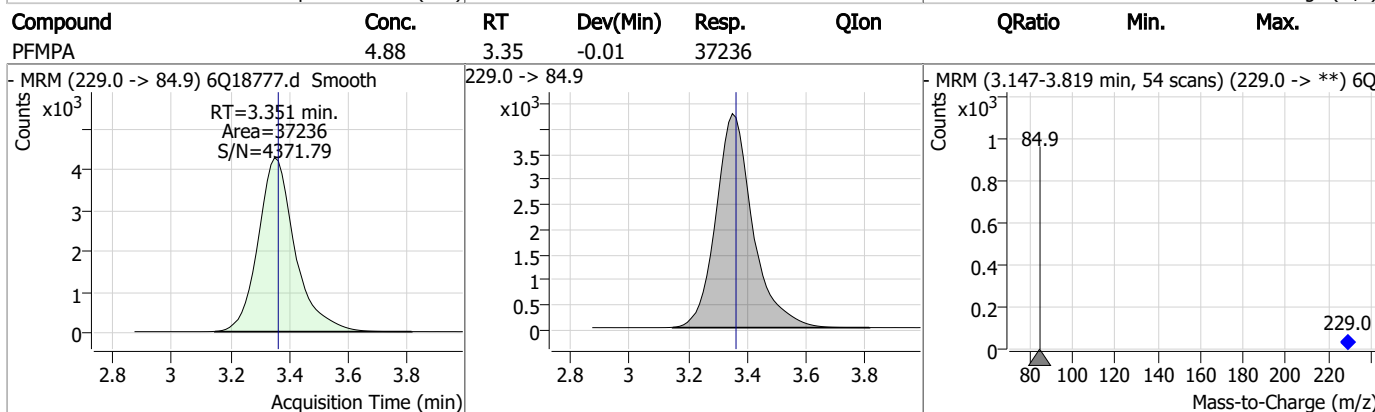
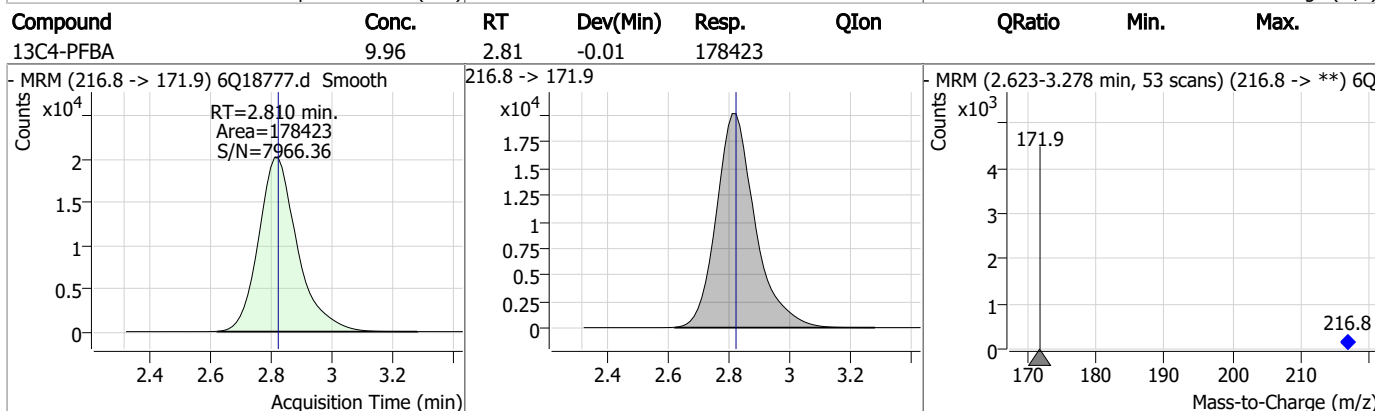
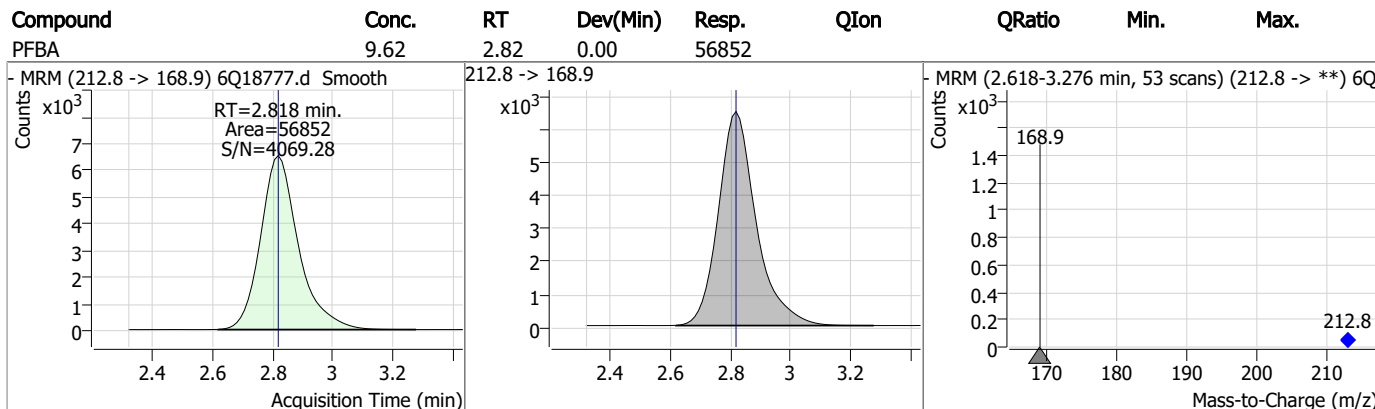
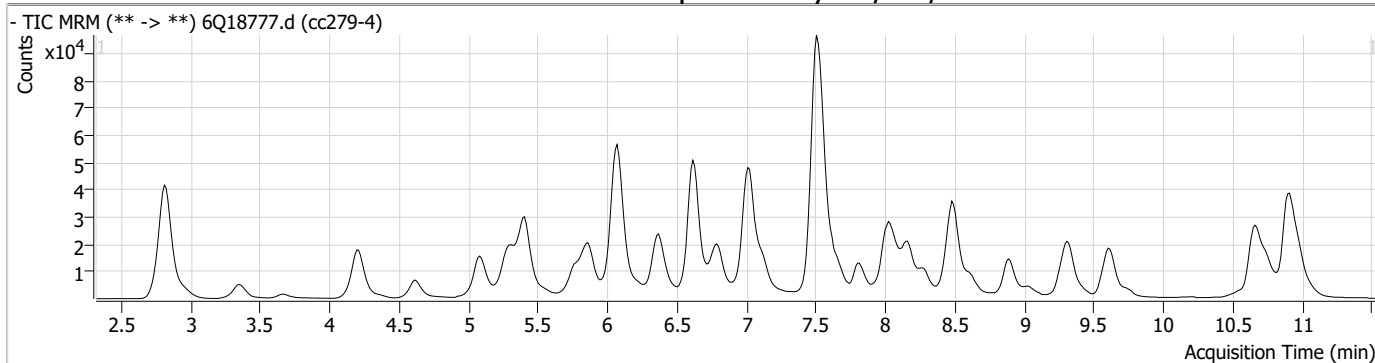
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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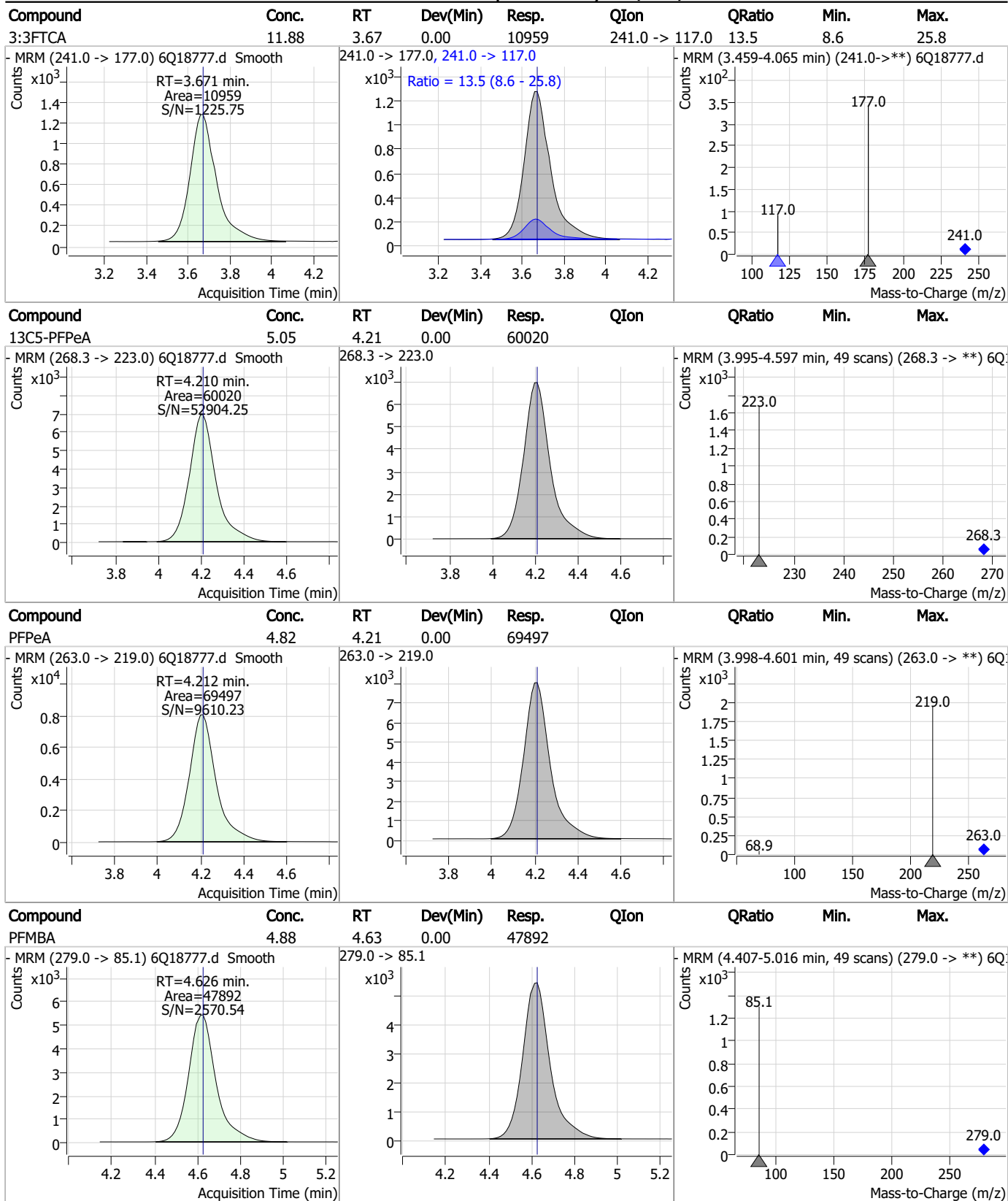
7.7.19

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Perfluorinated Compounds by LC/MS/MS

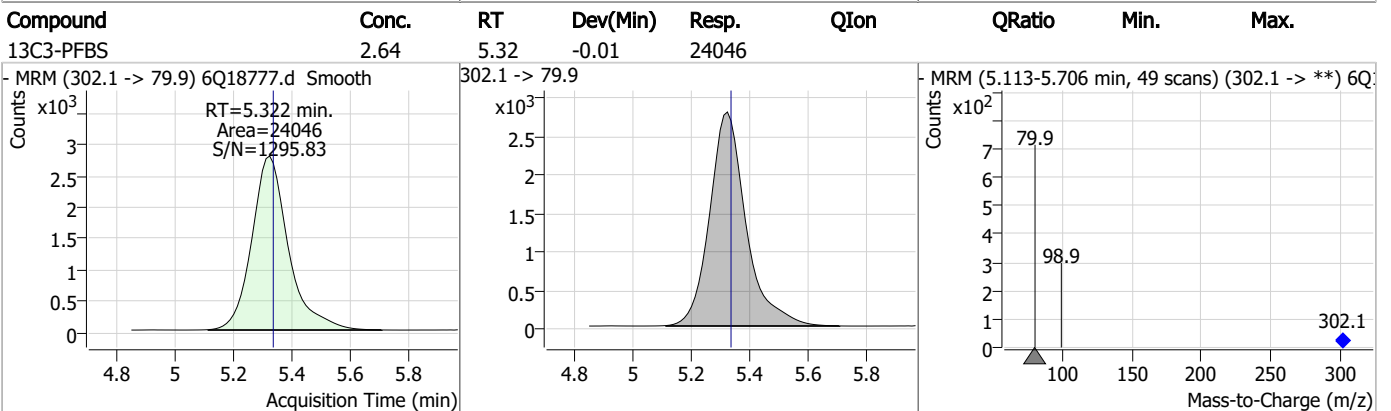
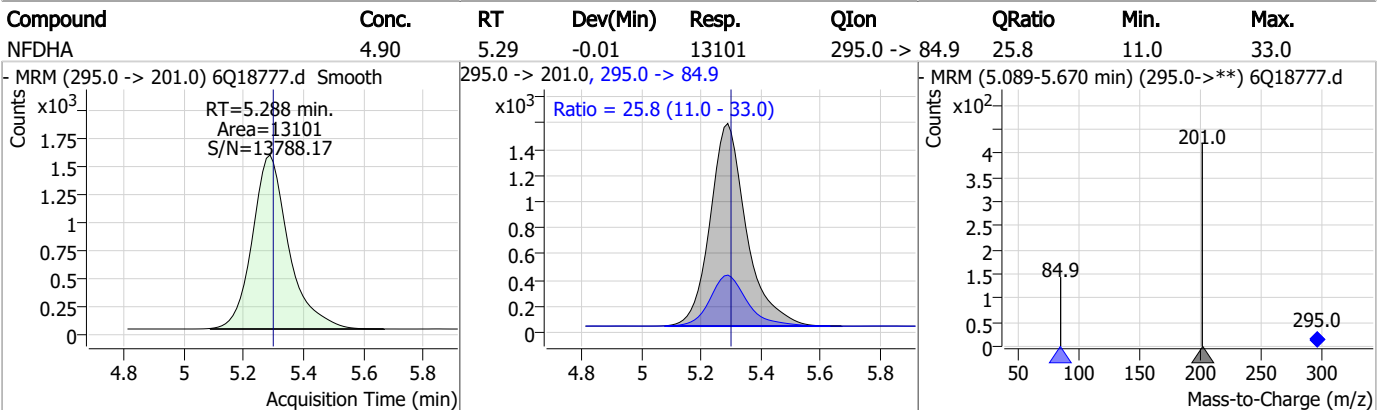
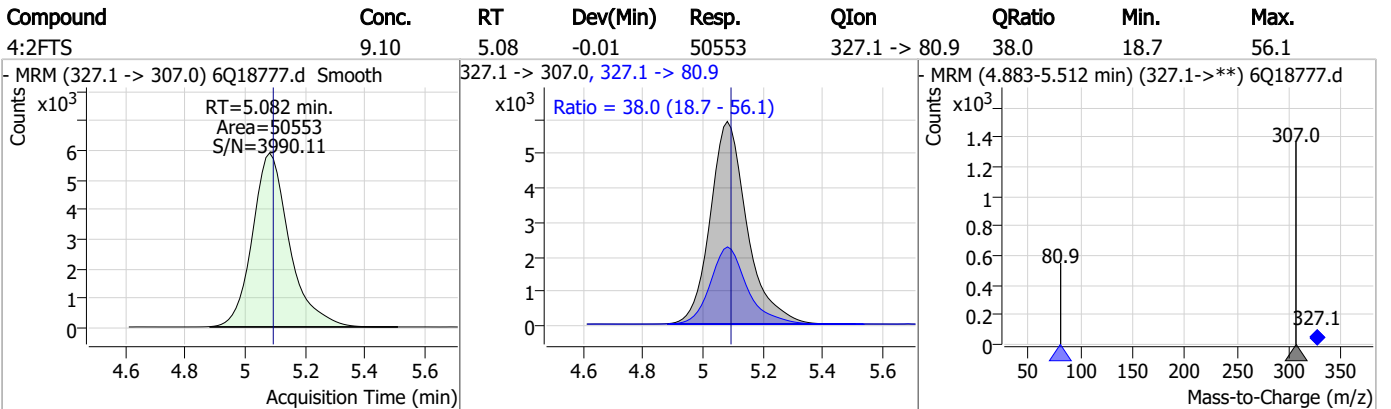
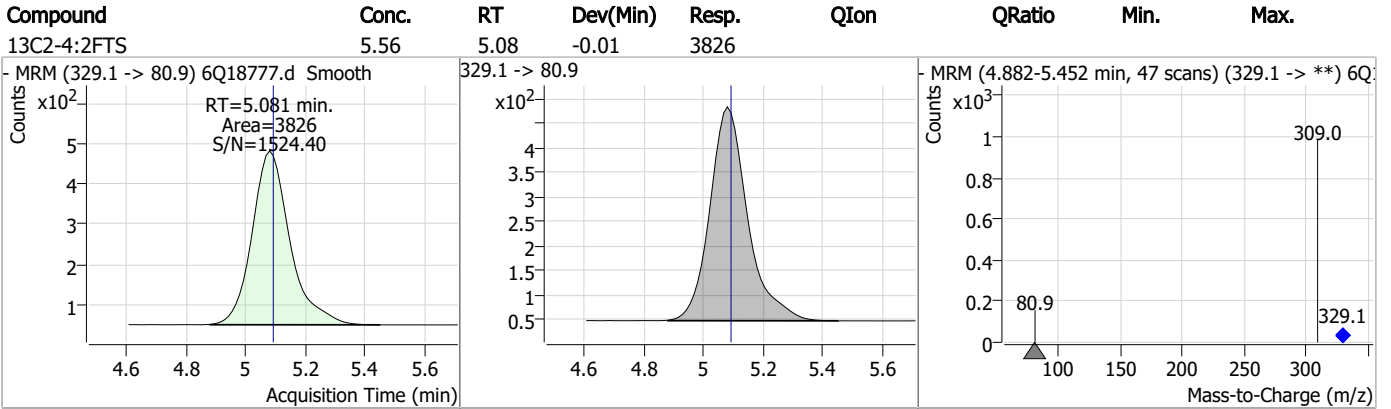


Perfluorinated Compounds by LC/MS/MS



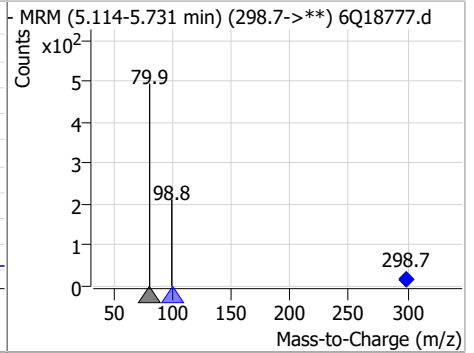
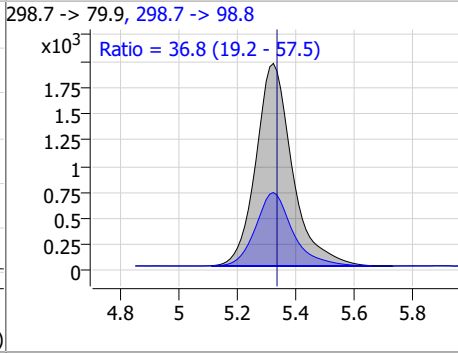
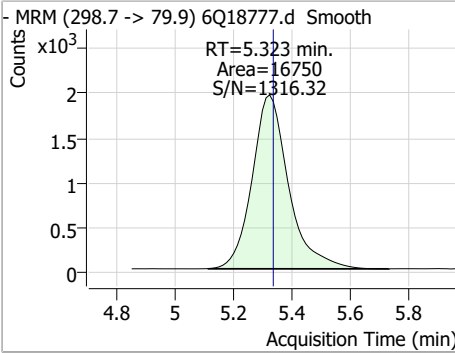
7.7.19

Perfluorinated Compounds by LC/MS/MS

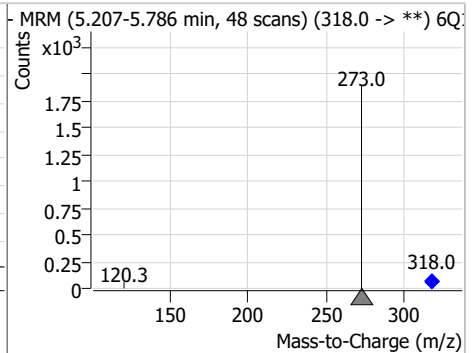
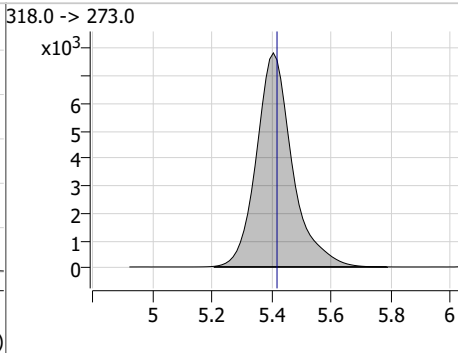
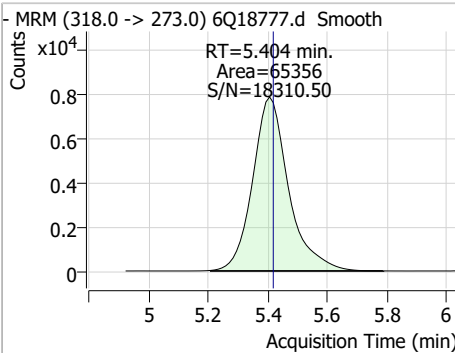


Perfluorinated Compounds by LC/MS/MS

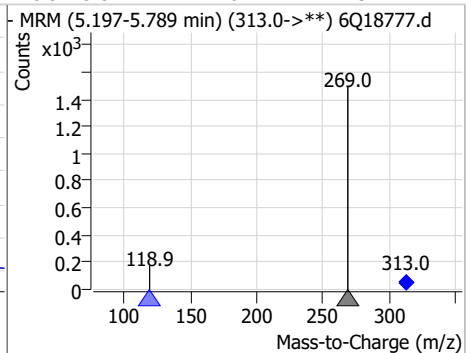
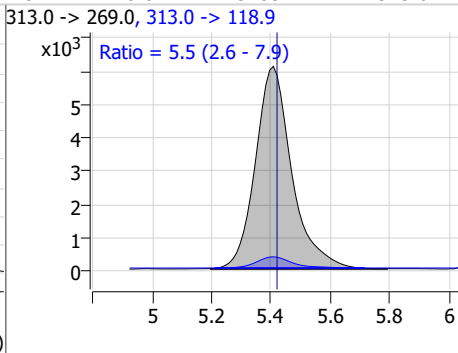
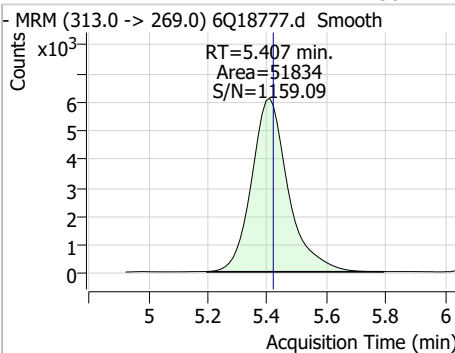
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.05	5.32	-0.01	16750	298.7 -> 98.8	36.8	19.2	57.5



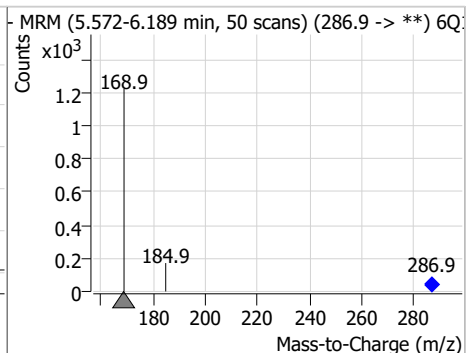
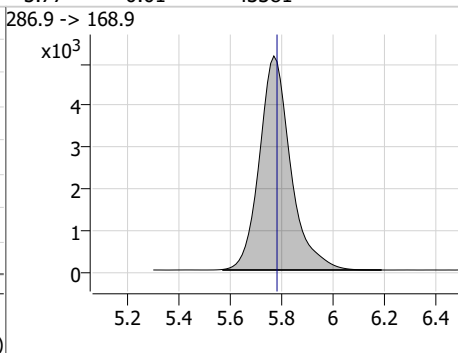
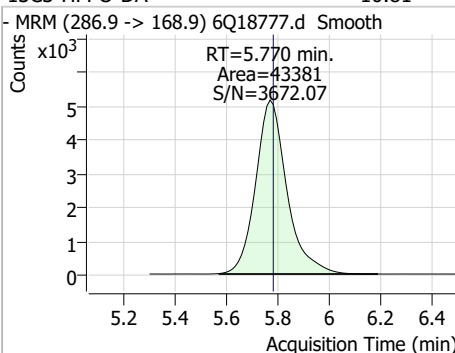
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.40	-0.01	65356	318.0 -> 273.0	5.5	2.6	7.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.36	5.41	-0.01	51834	313.0 -> 118.9	5.5	2.6	7.9

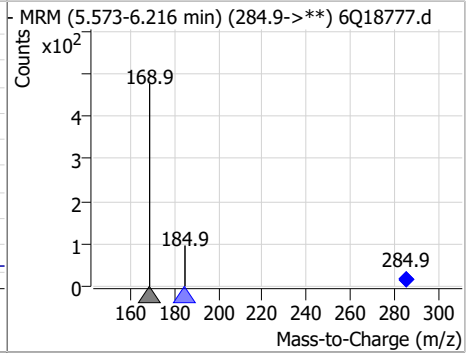
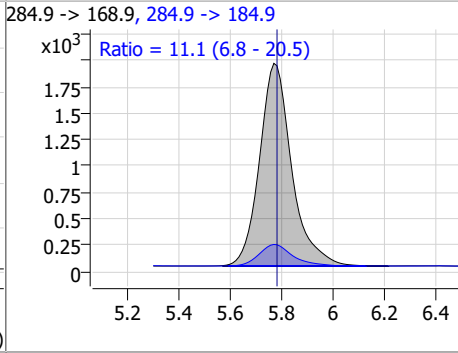
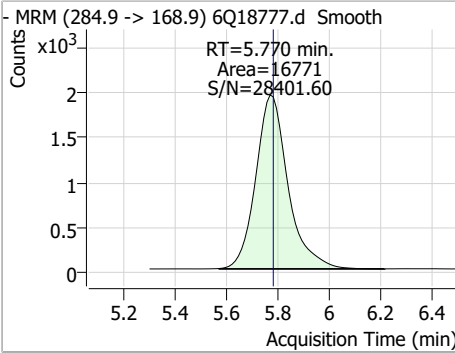


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.81	5.77	-0.01	43381	286.9 -> 168.9	5.5	2.6	7.9

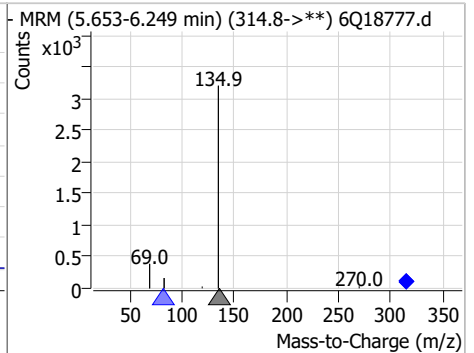
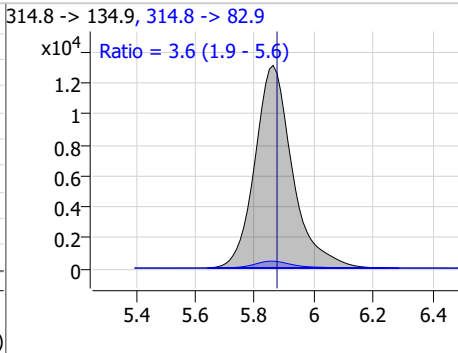
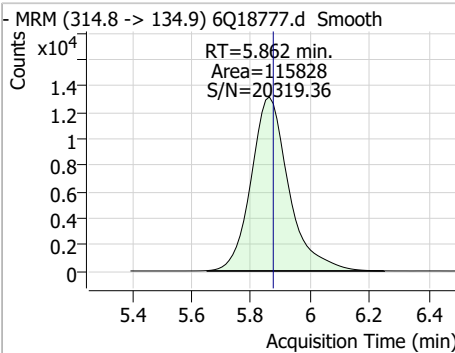


Perfluorinated Compounds by LC/MS/MS

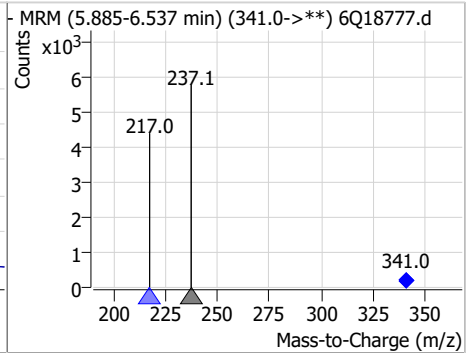
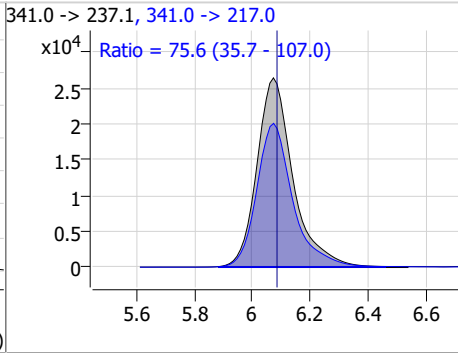
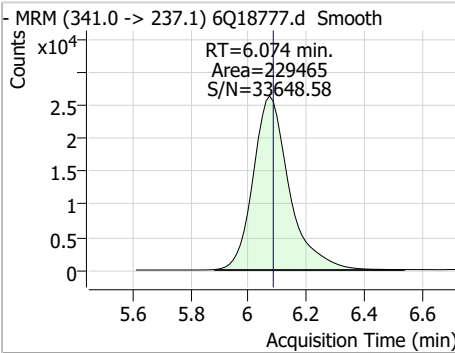
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.56	5.77	-0.01	16771	284.9 -> 184.9	11.1	6.8	20.5



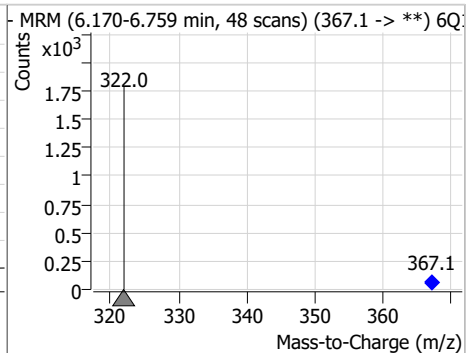
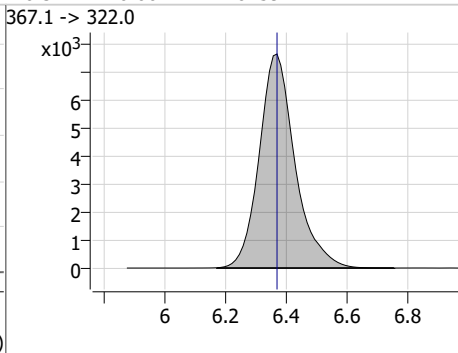
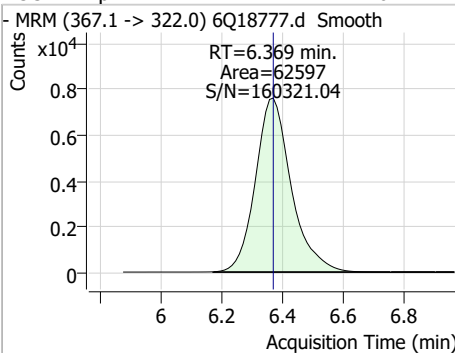
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.16	5.86	-0.01	115828	314.8 -> 82.9	3.6	1.9	5.6



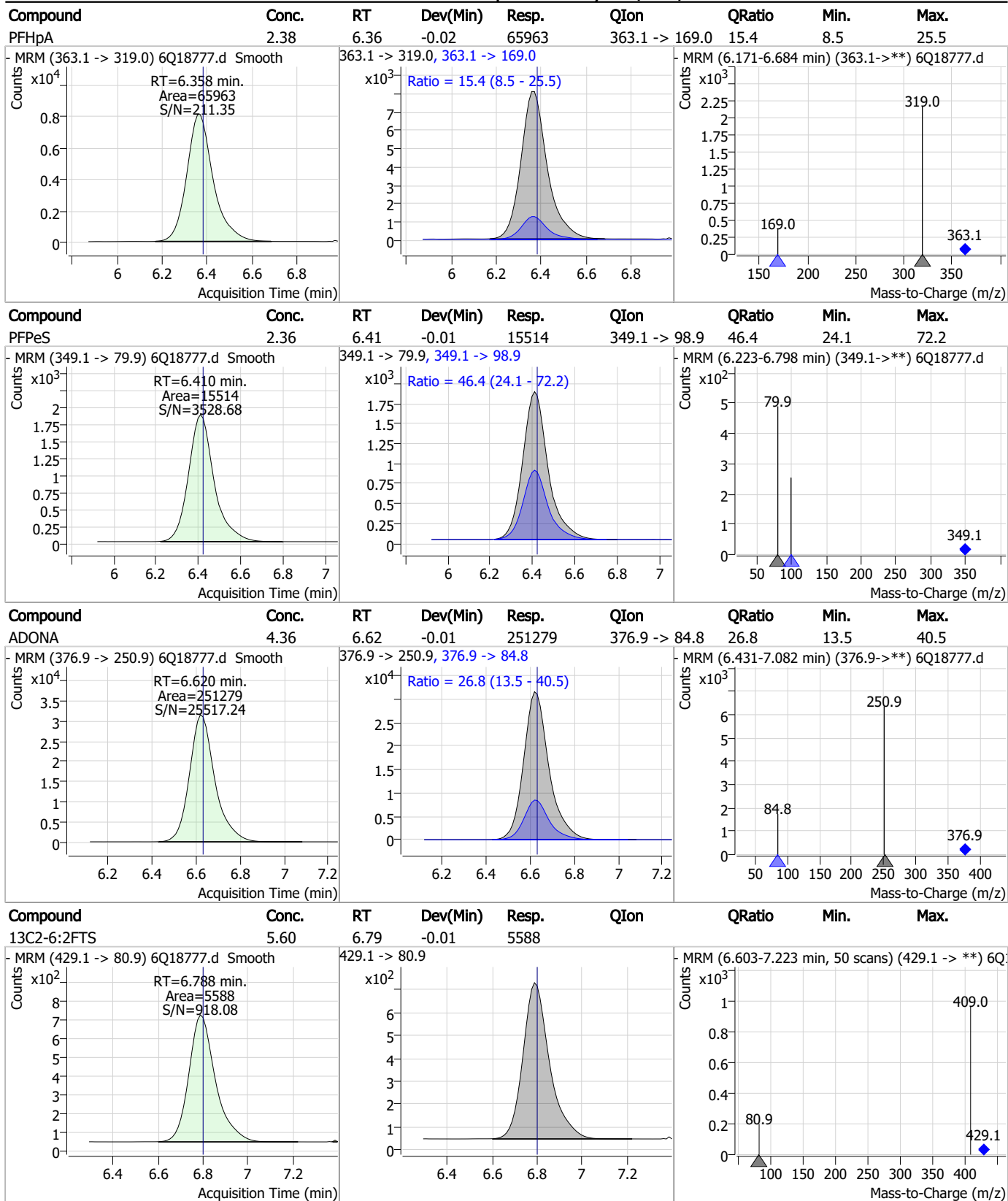
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.13	6.07	-0.01	229465	341.0 -> 217.0	75.6	35.7	107.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.62	6.37	0.00	62597	367.1 -> 322.0			

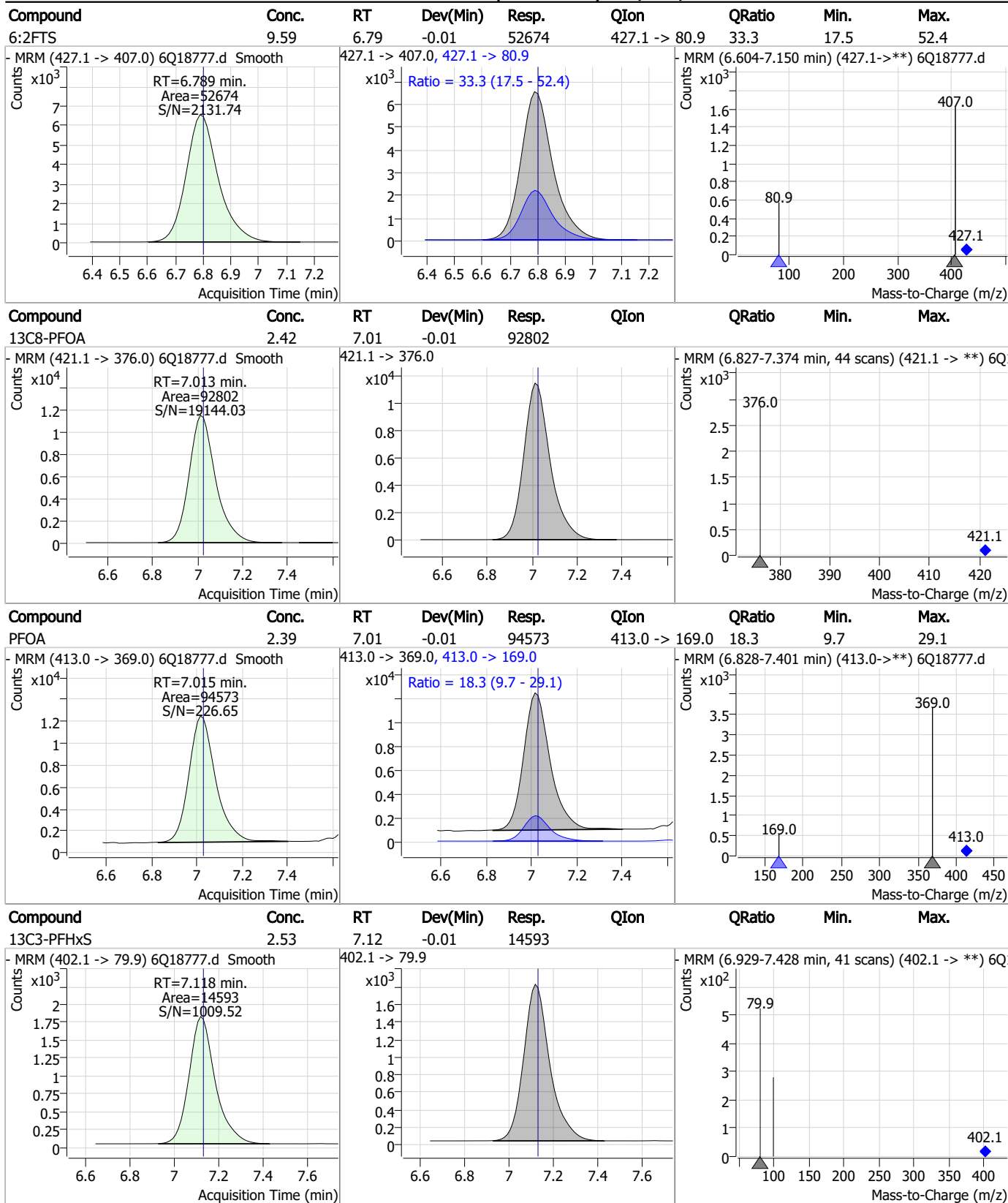


Perfluorinated Compounds by LC/MS/MS



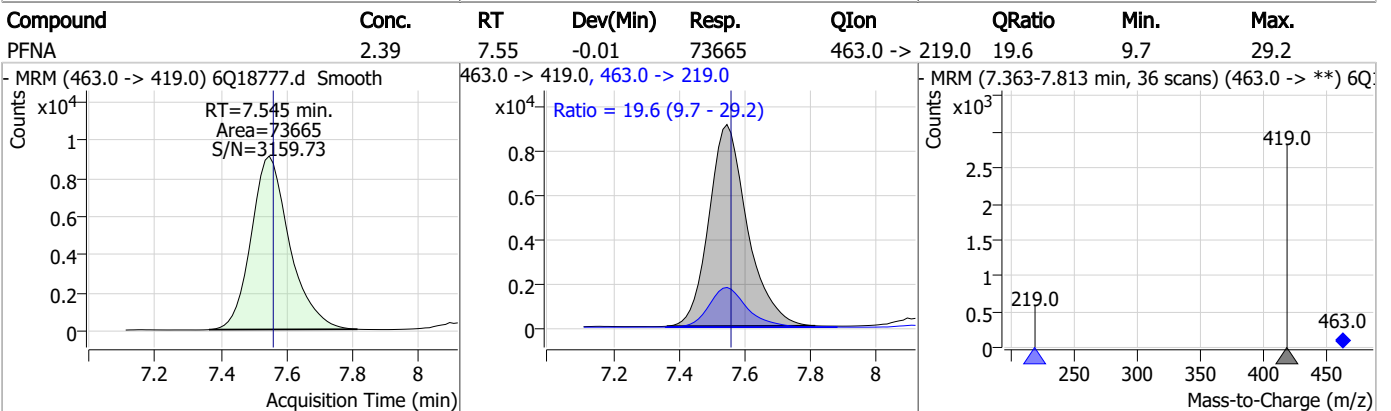
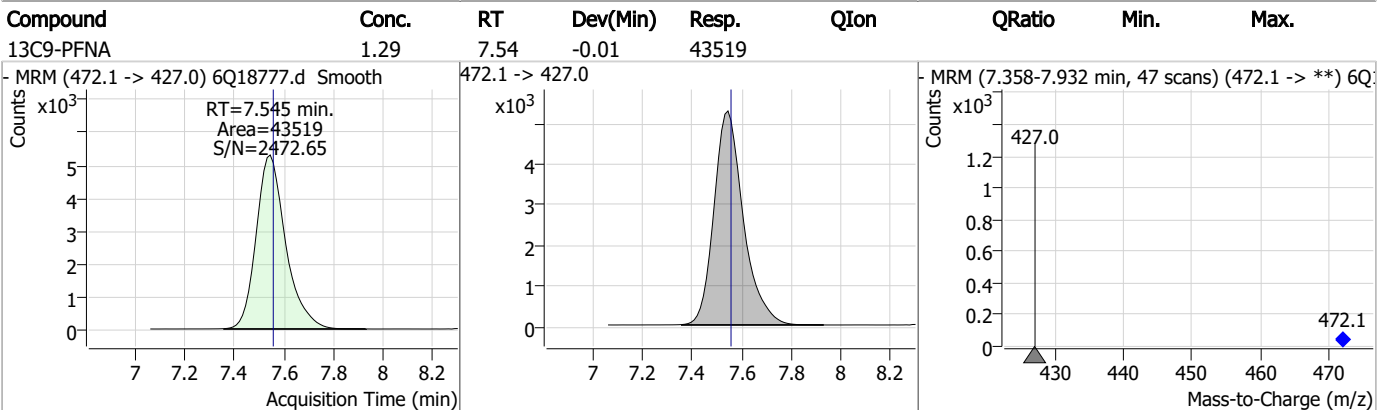
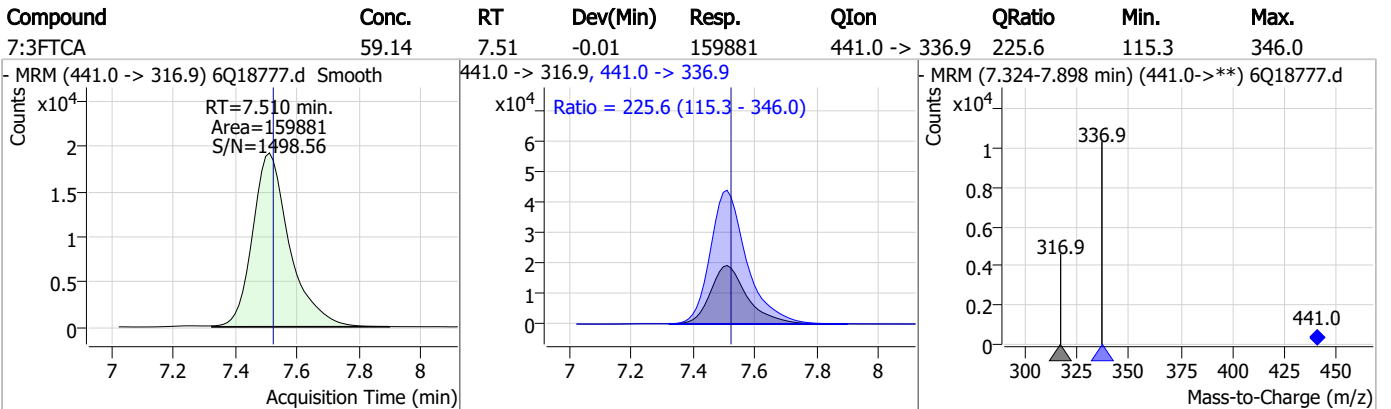
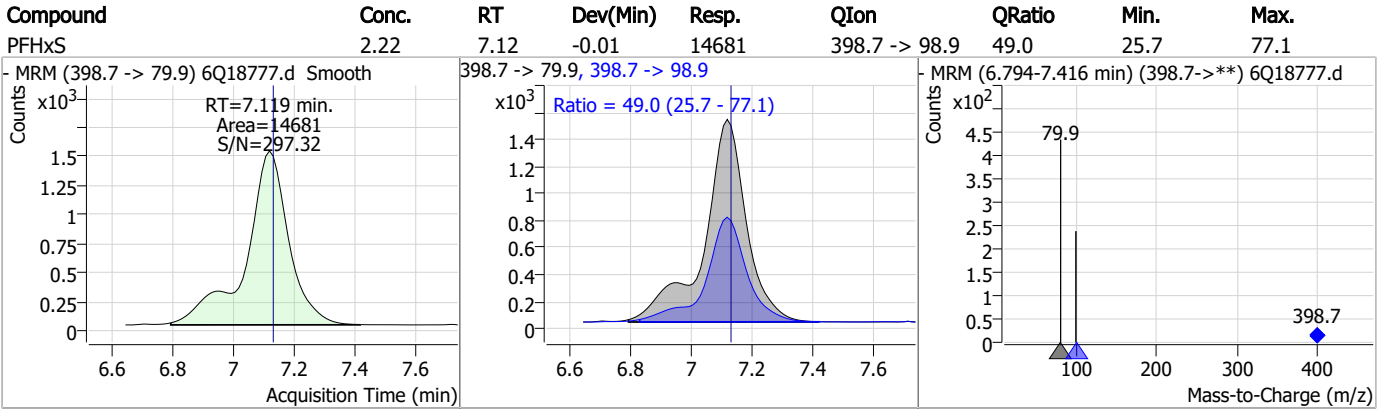
7.7.19 7

Perfluorinated Compounds by LC/MS/MS



7.7.19

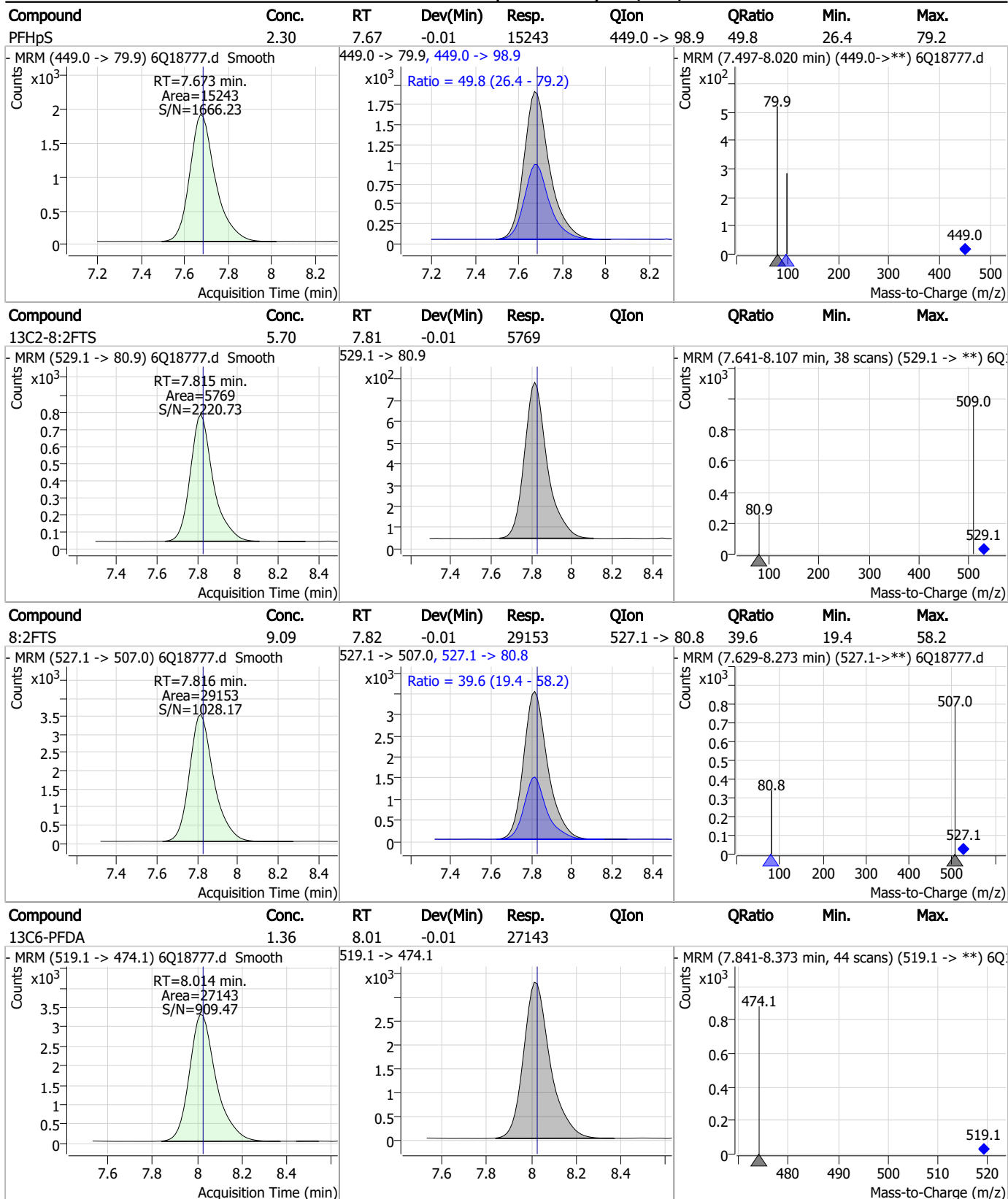
Perfluorinated Compounds by LC/MS/MS



7.7.19 7

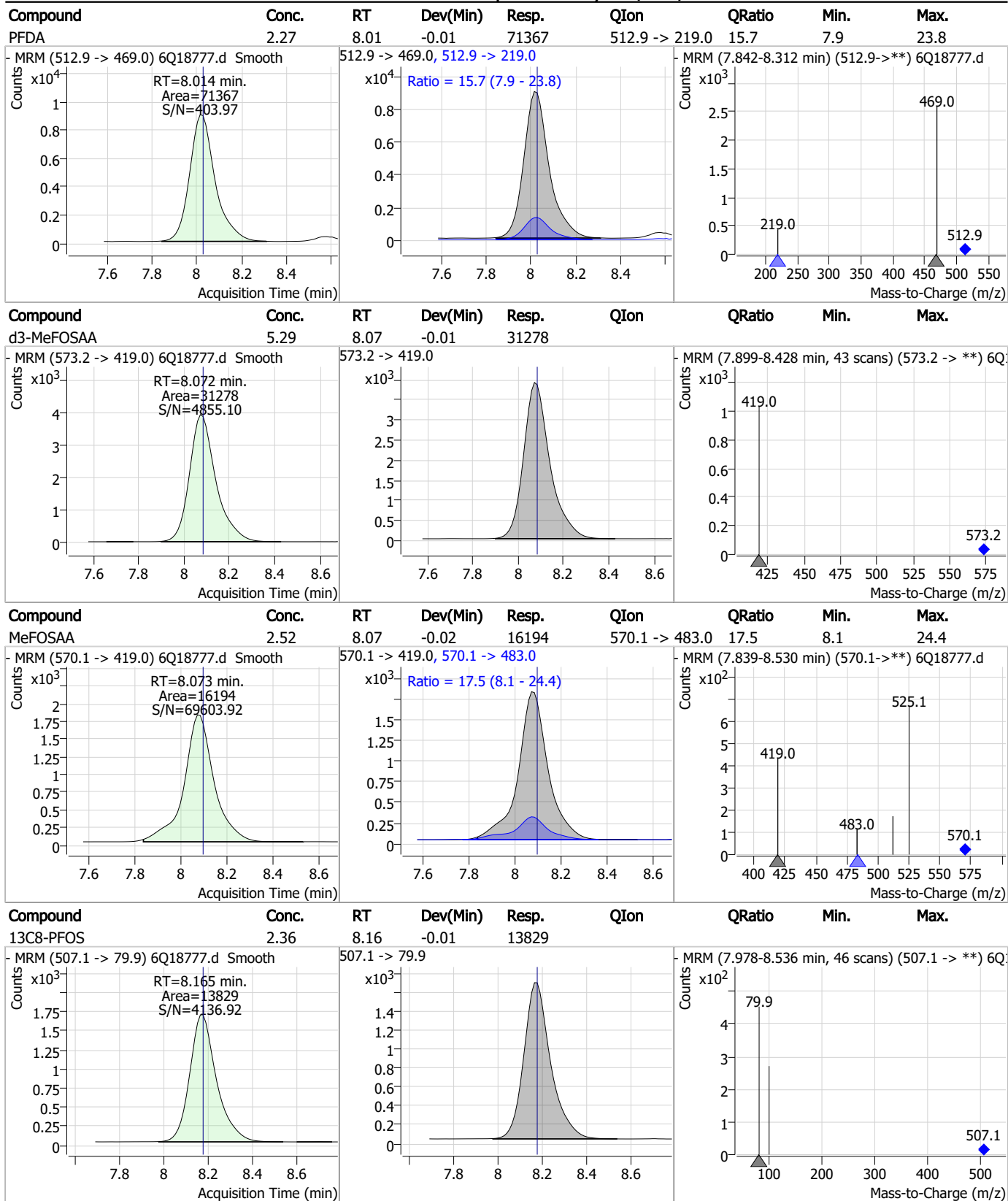


Perfluorinated Compounds by LC/MS/MS



7.7.19 7

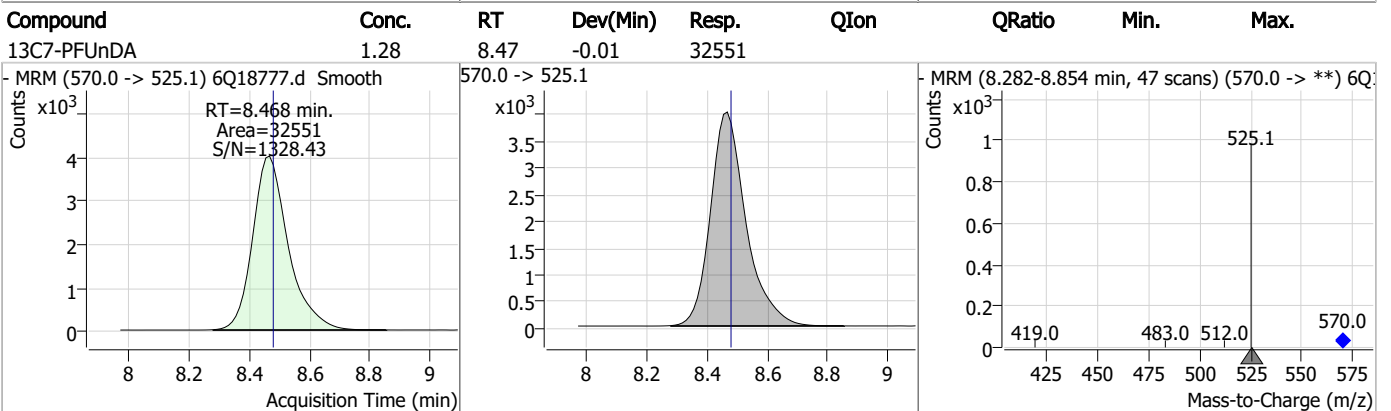
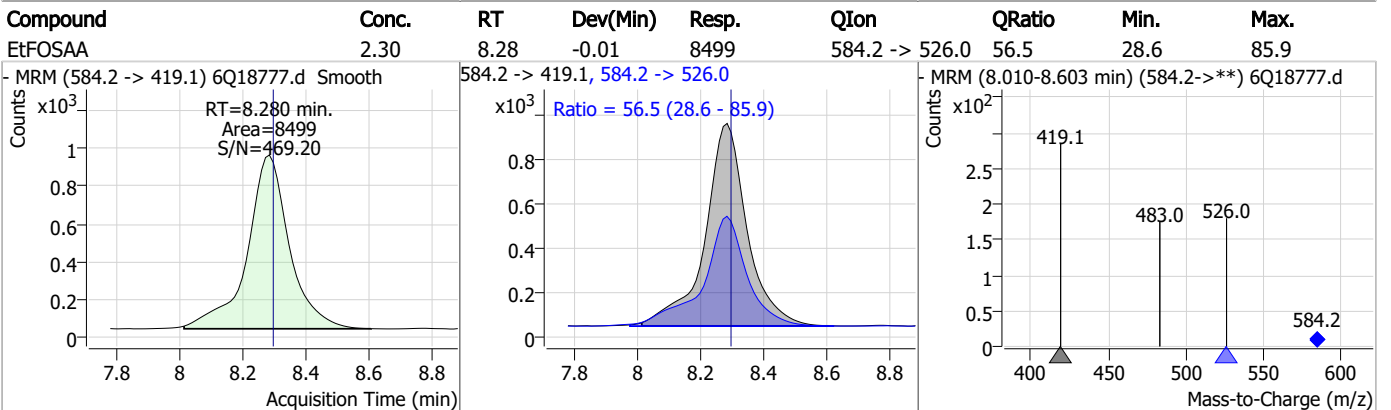
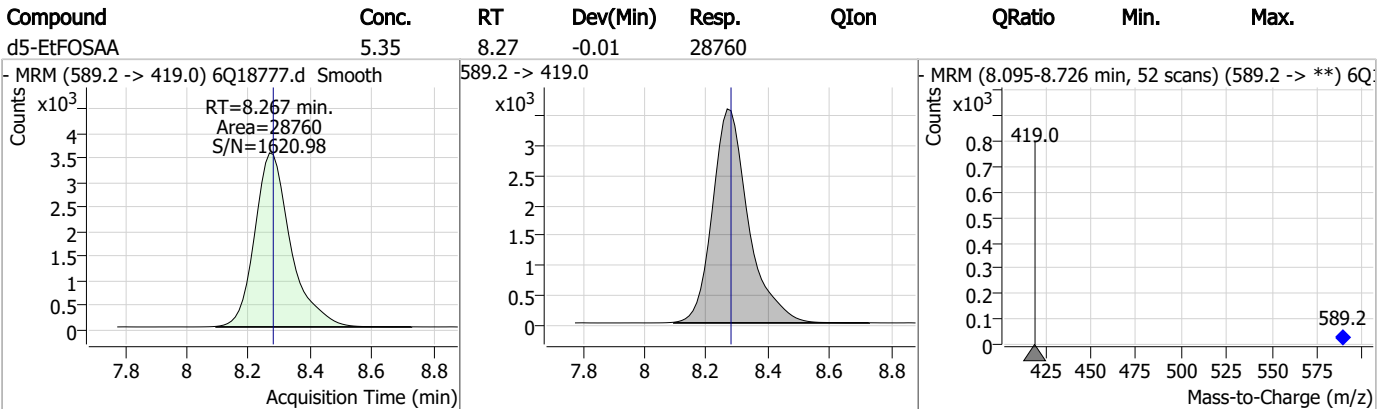
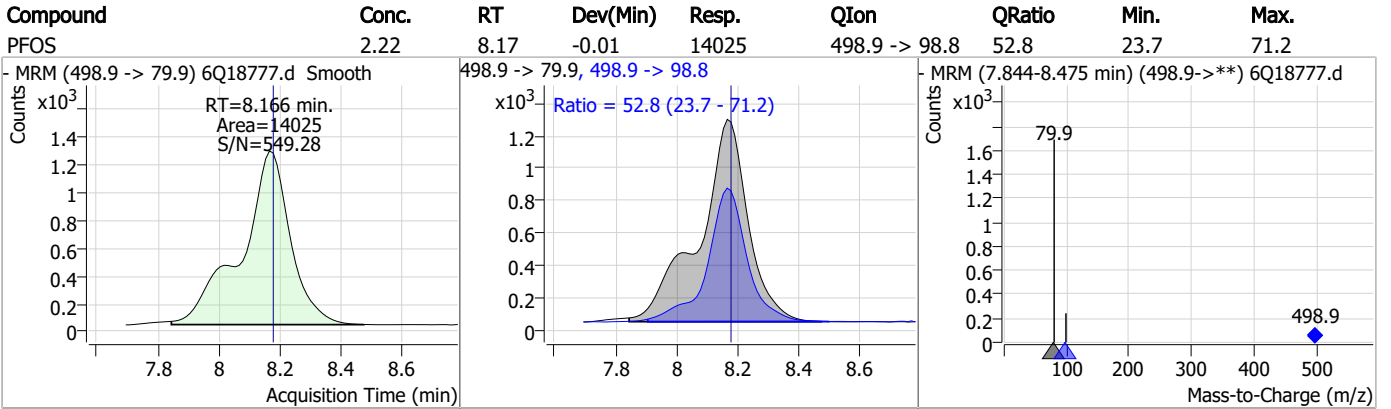
Perfluorinated Compounds by LC/MS/MS



7.7.19
7

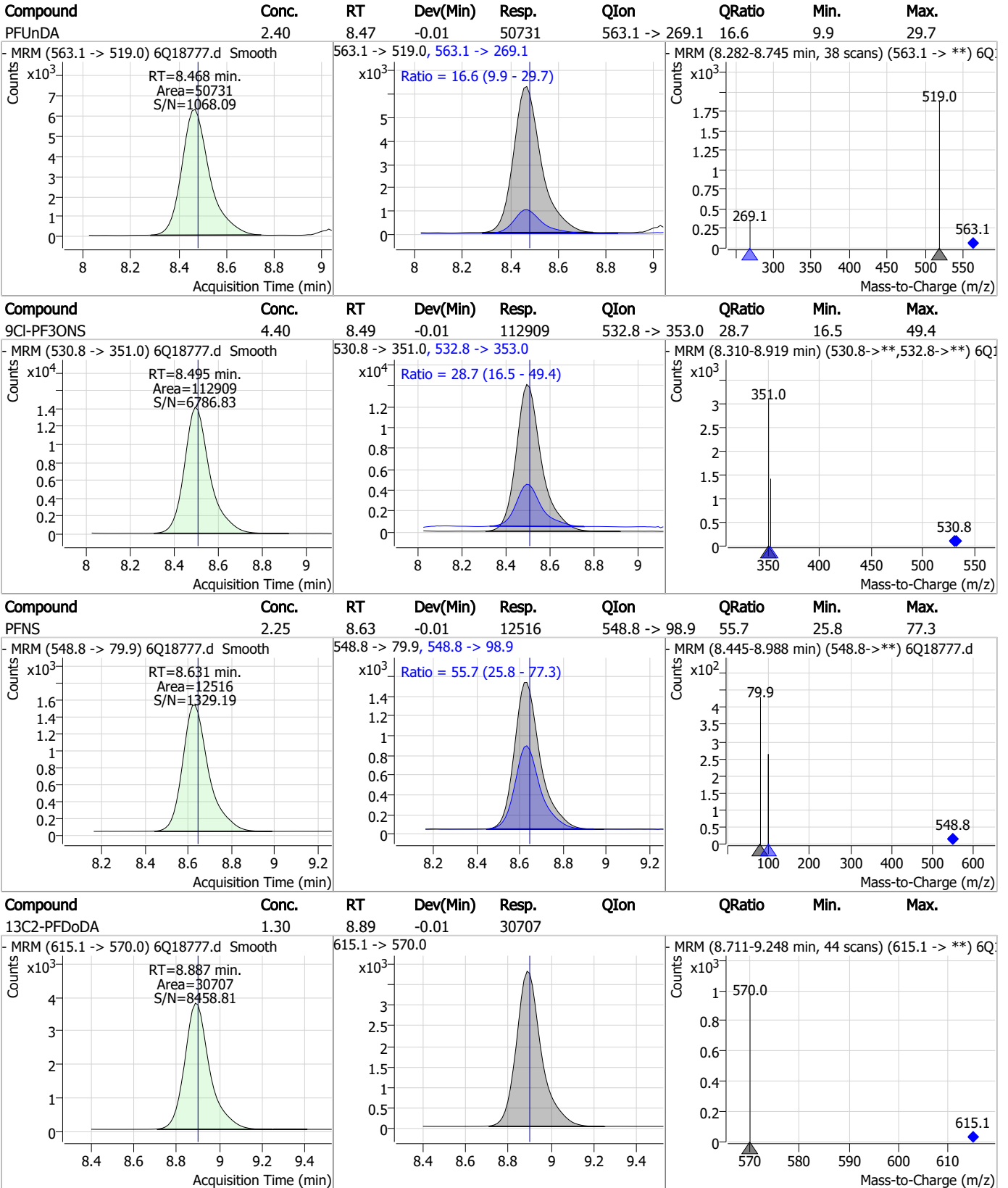


Perfluorinated Compounds by LC/MS/MS



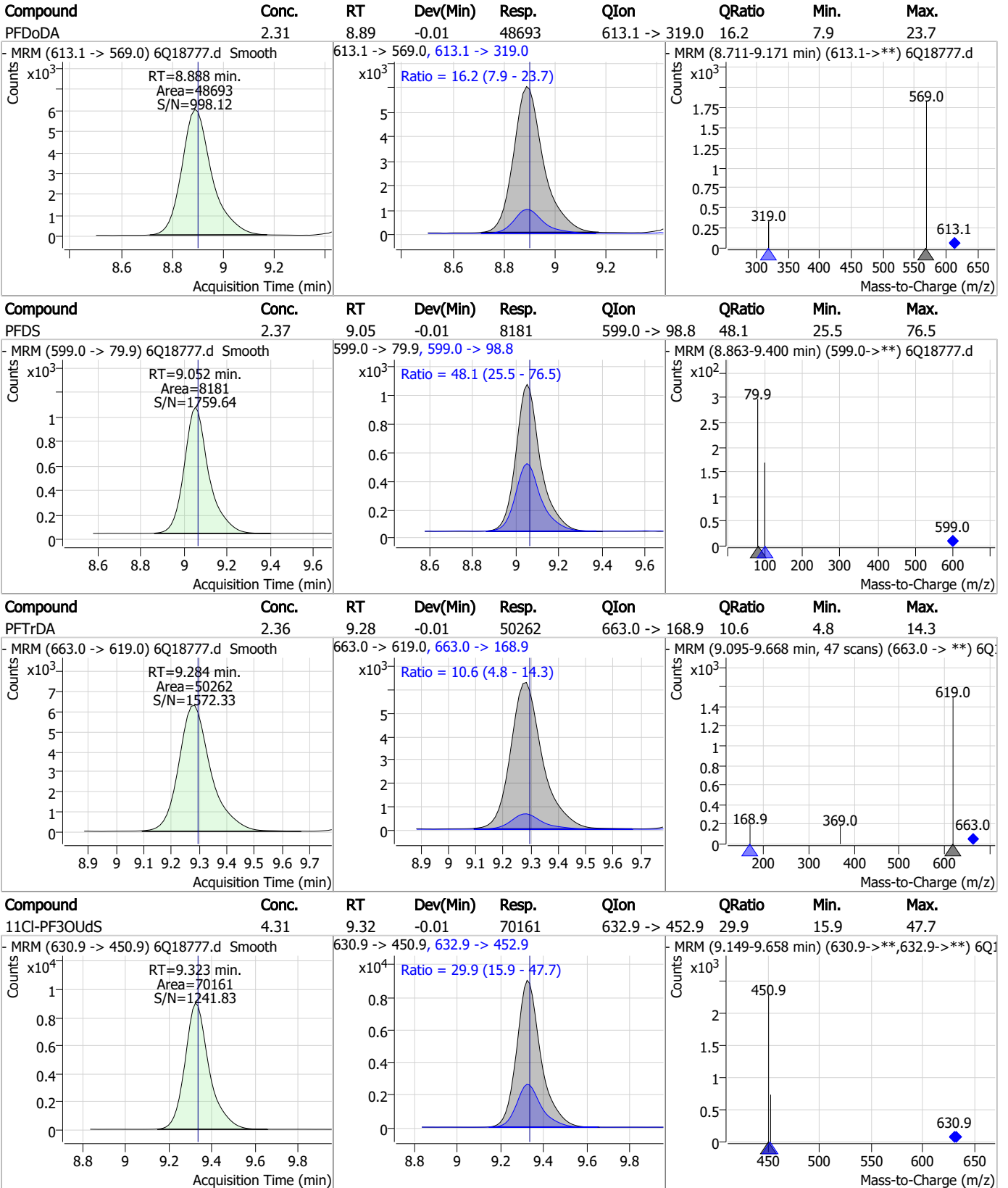
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Perfluorinated Compounds by LC/MS/MS



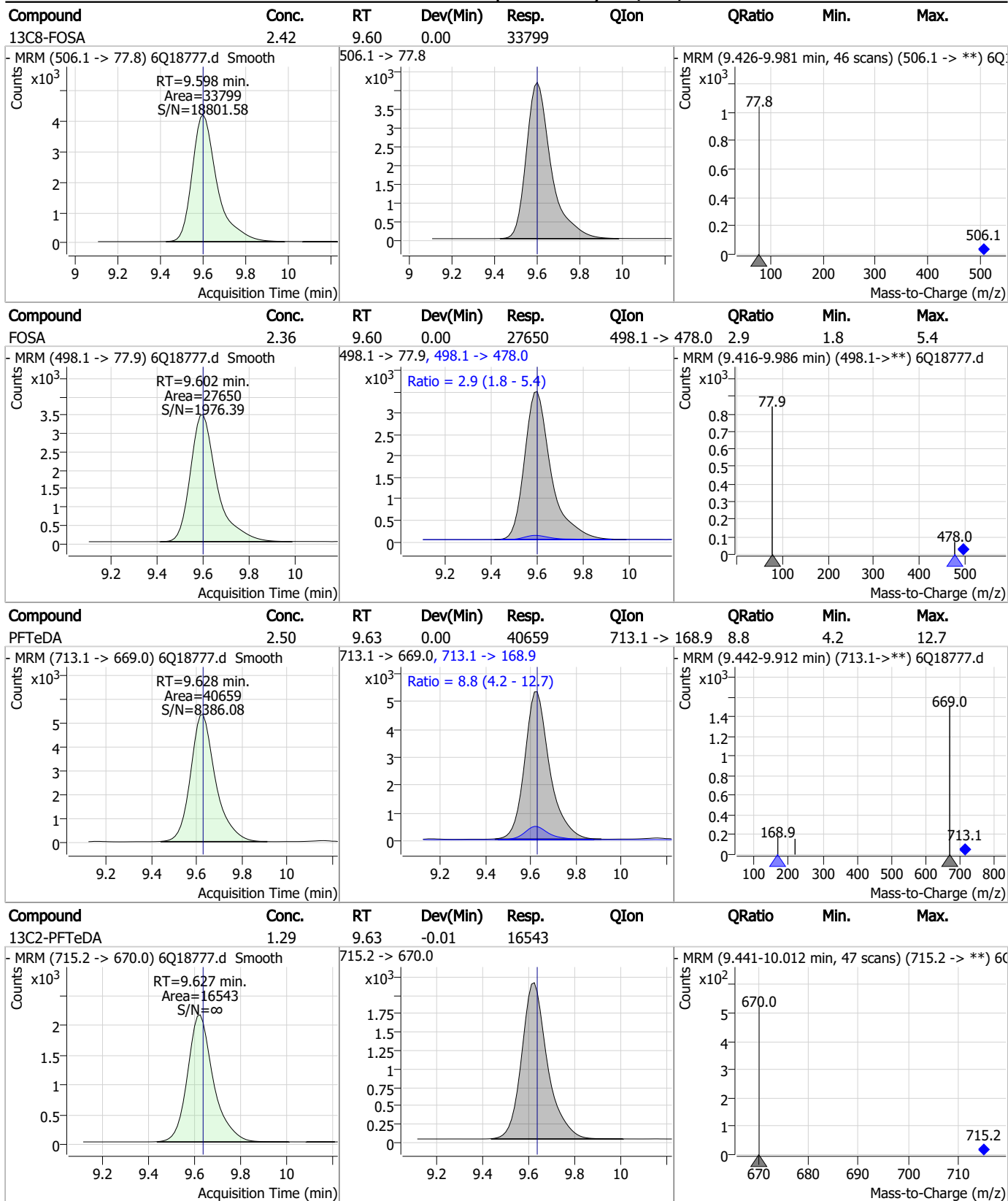
7.7.19 7

Perfluorinated Compounds by LC/MS/MS



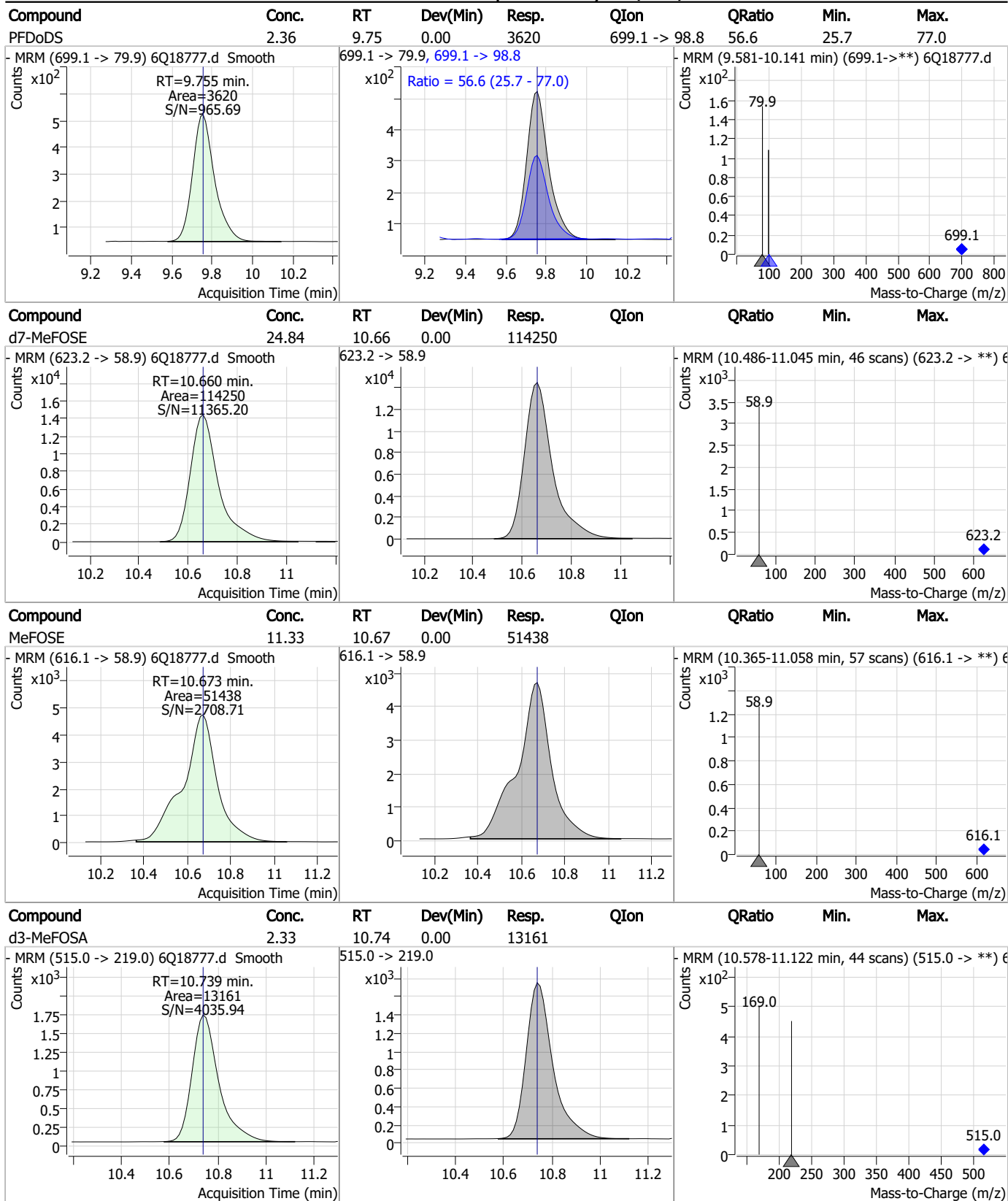
7.7.19
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Perfluorinated Compounds by LC/MS/MS



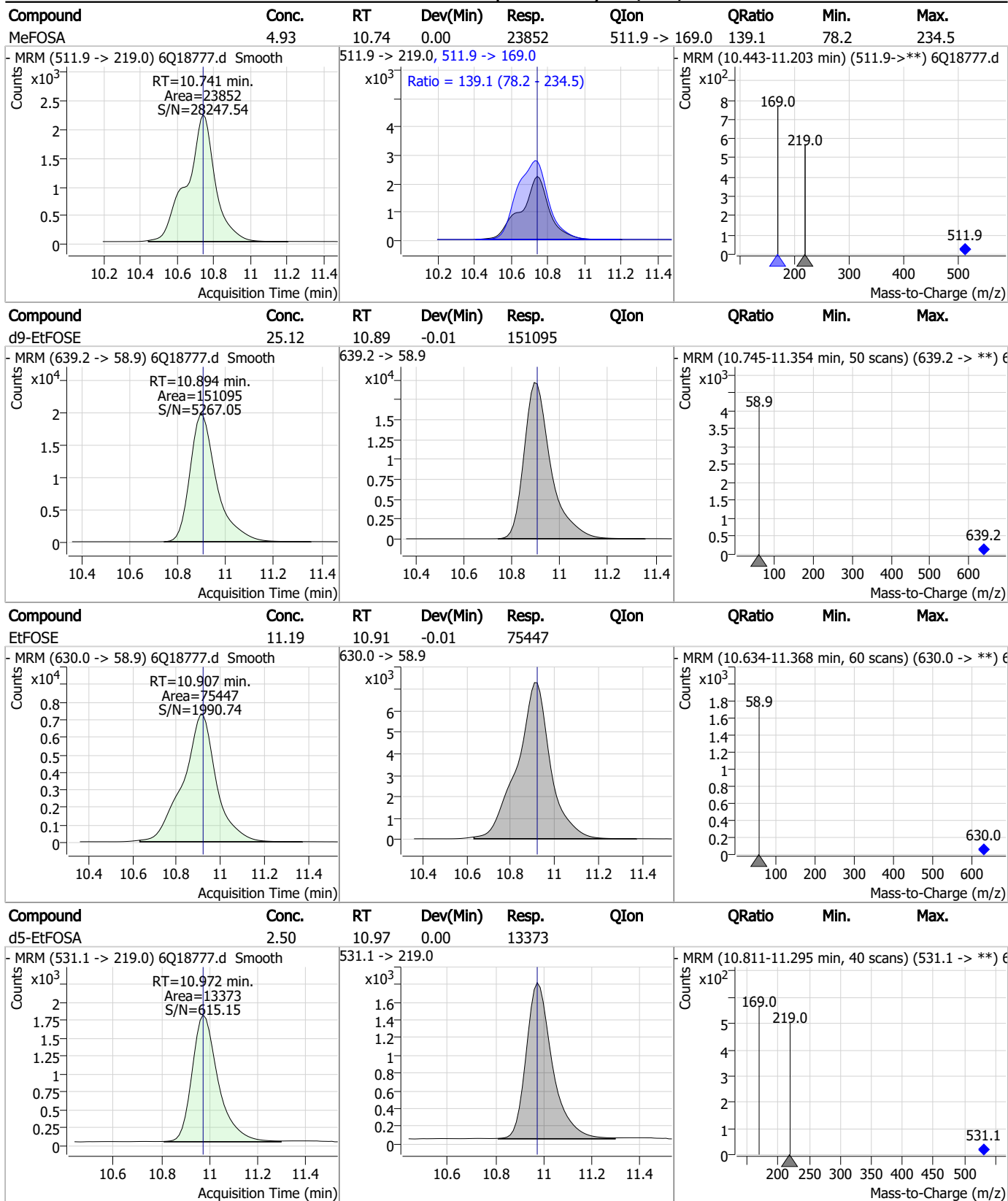
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Perfluorinated Compounds by LC/MS/MS



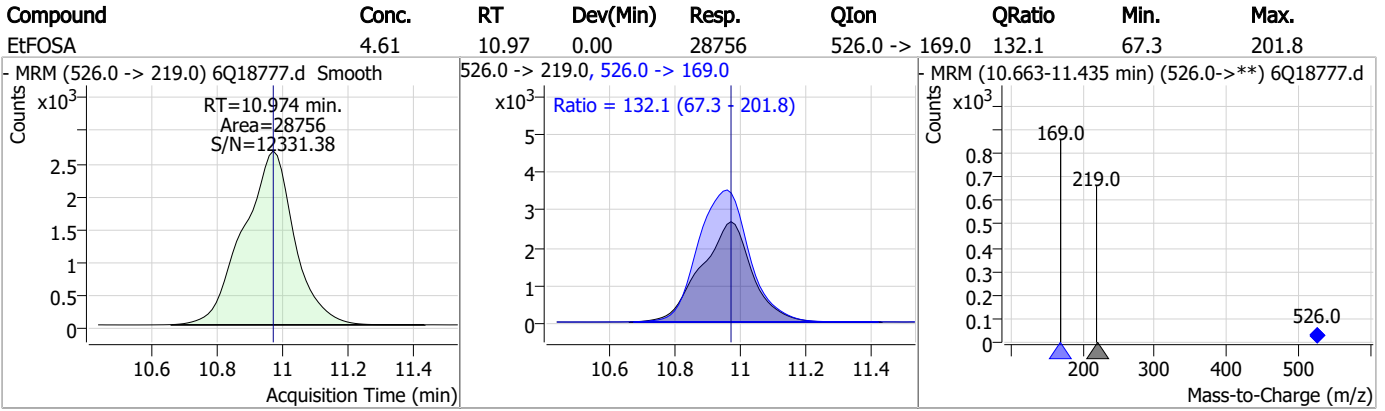
7.7.19

Perfluorinated Compounds by LC/MS/MS



7.7.19

Perfluorinated Compounds by LC/MS/MS



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7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18783.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/2/2023 5:11:45 PM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : s6q280.batch.bin
 Sample Information : OP96663,S6Q280,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.810	216.8 -> 171.9	162329	10.00 µg/L	-0.012
M5-PFPeA	4.210	268.3 -> 223.0	54267	5.00 µg/L	0.000
M5-PFHxA	5.404	318.0 -> 273.0	61087	2.50 µg/L	-0.012
M4-PFHpA	6.369	367.1 -> 322.0	57620	2.50 µg/L	0.000
M8-PFOA	7.013	421.1 -> 376.0	86078	2.50 µg/L	-0.013
M9-PFNA	7.545	472.1 -> 427.0	40282	1.25 µg/L	-0.012
M6-PFDA	8.014	519.1 -> 474.1	23132	1.25 µg/L	-0.013
M7-PFUnDA	8.468	570.0 -> 525.1	30464	1.25 µg/L	-0.012
M2-PFDoDA	8.887	615.1 -> 570.0	27065	1.25 µg/L	-0.012
M2-PFTeDA	9.615	715.2 -> 670.0	15385	1.25 µg/L	-0.025
M8-FOSA	9.598	506.1 -> 77.8	30361	2.50 µg/L	0.000
M3-PFBS	5.322	302.1 -> 79.9	21588	2.50 µg/L	-0.012
M3-PFHxS	7.118	402.1 -> 79.9	13236	2.50 µg/L	-0.012
M8-PFOS	8.165	507.1 -> 79.9	12571	2.50 µg/L	-0.012
M2-4:2FTS	5.081	329.1 -> 80.9	3746	5.00 µg/L	-0.012
M2-6:2FTS	6.800	429.1 -> 80.9	5429	5.00 µg/L	0.000
M2-8:2FTS	7.815	529.1 -> 80.9	5454	5.00 µg/L	-0.012
M3-MeFOSAA	8.072	573.2 -> 419.0	27644	5.00 µg/L	-0.012
M3-HFPO-DA	5.770	286.9 -> 168.9	36060	10.00 µg/L	-0.012
M5-EtFOSAA	8.279	589.2 -> 419.0	24912	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	99435	25.00 µg/L	0.000
M9-EtFOSE	10.894	639.2 -> 58.9	131911	25.00 µg/L	-0.012
M5-EtFOSA	10.972	531.1 -> 219.0	11607	2.50 µg/L	0.000
M3-MeFOSA	10.739	515.0 -> 219.0	11552	2.50 µg/L	0.000
13C4-PFOS	8.165	502.8 -> 79.9	16258	2.50 µg/L	-0.025
13C3-PFBA	2.814	216.0 -> 172.0	68737	5.00 µg/L	-0.013
18O2-PFHxS	7.129	403.0 -> 83.9	9985	2.50 µg/L	0.000
13C4-PFOA	7.013	417.1 -> 372.0	92853	2.50 µg/L	-0.013
13C2-PFDA	8.014	515.1 -> 470.1	29947	1.25 µg/L	-0.013
13C5-PFNA	7.545	468.0 -> 423.0	48813	1.25 µg/L	-0.012
13C2-PFHxA	5.405	315.1 -> 270.0	54389	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.081	329.1 -> 80.9	3746	5.62 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C2-6:2FTS	6.800	429.1 -> 80.9	5429	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C2-8:2FTS	7.815	529.1 -> 80.9	5454	5.56 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.2%		
13C2-PFDoDA	8.887	615.1 -> 570.0	27065	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-PFTeDA	9.615	715.2 -> 670.0	15385	1.36 µg/L	-0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C3-PFBS	5.322	302.1 -> 79.9	21588	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFHxS	7.118	402.1 -> 79.9	13236	2.37 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C4-PFBA	2.810	216.8 -> 171.9	162329	9.92 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.369	367.1 -> 322.0	57620	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C5-PFHxA	5.404	318.0 -> 273.0	61087	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFPeA	4.210	268.3 -> 223.0	54267	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C6-PFDA	8.014	519.1 -> 474.1	23132	1.32 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C7-PFUnDA	8.468	570.0 -> 525.1	30464	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C8-FOSA	9.598	506.1 -> 77.8	30361	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-PFOA	7.013	421.1 -> 376.0	86078	2.47 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.165	507.1 -> 79.9	12571	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C9-PFNA	7.545	472.1 -> 427.0	40282	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
d3-MeFOSAA	8.072	573.2 -> 419.0	27644	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C3-HFPO-DA	5.770	286.9 -> 168.9	36060	10.09 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSA	10.739	515.0 -> 219.0	11552	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
d5-EtFOSAA	8.279	589.2 -> 419.0	24912	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	99435	24.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d9-EtFOSE	10.894	639.2 -> 58.9	131911	24.70 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d5-EtFOSA	10.972	531.1 -> 219.0	11607	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
Target Compounds					QValue
4:2FTS	5.082	327.1 -> 307.0	4614	0.85 µg/L	99
		327.1 -> 80.9	1686		
6:2FTS	6.801	427.1 -> 407.0	4522	0.85 µg/L	97
		427.1 -> 80.9	1498		
8:2FTS	7.816	527.1 -> 507.0	2721	0.90 µg/L	97
		527.1 -> 80.8	1007		
EtFOSAA	8.280	584.2 -> 419.1	716	0.22 µg/L	97
		584.2 -> 526.0	423		
FOSA	9.589	498.1 -> 77.9	2355	0.22 µg/L	99
		498.1 -> 478.0	96		
MeFOSAA	8.085	570.1 -> 419.0	1341	0.24 µg/L	96
		570.1 -> 483.0	238		
PFBA	2.818	212.8 -> 168.9	4818	0.90 µg/L	100
PFBS	5.323	298.7 -> 79.9	1357	0.18 µg/L	92
		298.7 -> 98.8	582		
PFDA	8.014	512.9 -> 469.0	6463	0.24 µg/L	98
		512.9 -> 219.0	1084	m	
PFDODA	8.888	613.1 -> 569.0	4664	0.25 µg/L	97
		613.1 -> 319.0	670		
PFDS	9.052	599.0 -> 79.9	722	0.23 µg/L	96

7.7.20
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.370	599.0 -> 98.8	348	0.21	µg/L	95
		363.1 -> 319.0	5323			
PFHpS	7.673	363.1 -> 169.0	1023	0.21	µg/L	90
		449.0 -> 79.9	1272			
PFHxA	5.407	449.0 -> 98.9	758	0.22	µg/L	98
		313.0 -> 269.0	4491			
PFHxS	7.119	313.0 -> 118.9	266	0.22	µg/L	m
		398.7 -> 79.9	1325			
PFNA	7.545	398.7 -> 98.9	626	0.23	µg/L	96
		463.0 -> 419.0	6463			
PFNS	8.631	463.0 -> 219.0	1375	0.23	µg/L	94
		548.8 -> 79.9	1172			
PFOA	7.015	548.8 -> 98.9	557	0.23	µg/L	97
		413.0 -> 369.0	8534			
PFOS	8.166	413.0 -> 169.0	1541	0.21	µg/L	m
		498.9 -> 79.9	1179			
PFPeA	4.212	498.9 -> 98.8	560	0.48	µg/L	100
		263.0 -> 219.0	6218			
PFPeS	6.410	349.1 -> 79.9	1318	0.22	µg/L	96
		349.1 -> 98.9	599			
PFTeDA	9.628	713.1 -> 669.0	3894	0.26	µg/L	98
		713.1 -> 168.9	354			
PFTrDA	9.284	663.0 -> 619.0	4535	0.24	µg/L	97
		663.0 -> 168.9	475			
PFUnDA	8.468	563.1 -> 519.0	4733	0.24	µg/L	89
		563.1 -> 269.1	701			
11CI-PF3OUdS	9.323	630.9 -> 450.9	6240	0.46	µg/L	98
		632.9 -> 452.9	1911			
9CI-PF3ONS	8.495	530.8 -> 351.0	9655	0.45	µg/L	m
		532.8 -> 353.0	2633			
ADONA	6.632	376.9 -> 250.9	21654	0.45	µg/L	99
		376.9 -> 84.8	6006			
HFPO-DA	5.783	284.9 -> 168.9	1393	0.46	µg/L	92
		284.9 -> 184.9	146			
3:3FTCA	3.659	241.0 -> 177.0	984	1.18	µg/L	97
		241.0 -> 117.0	182			
5:3FTCA	6.074	341.0 -> 237.1	21626	5.86	µg/L	97
		341.0 -> 217.0	16025			
7:3FTCA	7.510	441.0 -> 316.9	14943	5.91	µg/L	93
		441.0 -> 336.9	32810			
EtFOSA	10.974	526.0 -> 219.0	2731	0.50	µg/L	91
		526.0 -> 169.0	3381			
EtFOSE	10.907	630.0 -> 58.9	6939	1.18	µg/L	100
MeFOSA	10.741	511.9 -> 219.0	2149	0.51	µg/L	92
		511.9 -> 169.0	3129			
MeFOSE	10.673	616.1 -> 58.9	4666	1.18	µg/L	100
PFDoDS	9.742	699.1 -> 79.9	308	0.22	µg/L	91
		699.1 -> 98.8	178			
NFDHA	5.288	295.0 -> 201.0	1095	0.44	µg/L	90
		295.0 -> 84.9	291			
PFMBA	4.626	279.0 -> 85.1	4108	0.46	µg/L	100
PFMPA	3.351	229.0 -> 84.9	3189	0.46	µg/L	100
PFEESA	5.862	314.8 -> 134.9	10212	0.39	µg/L	98
		314.8 -> 82.9	297			

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



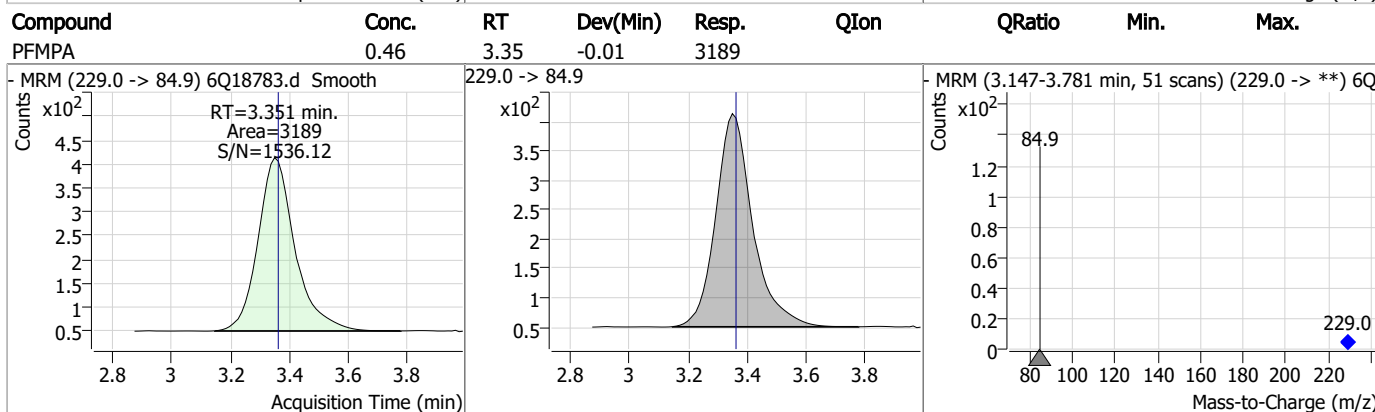
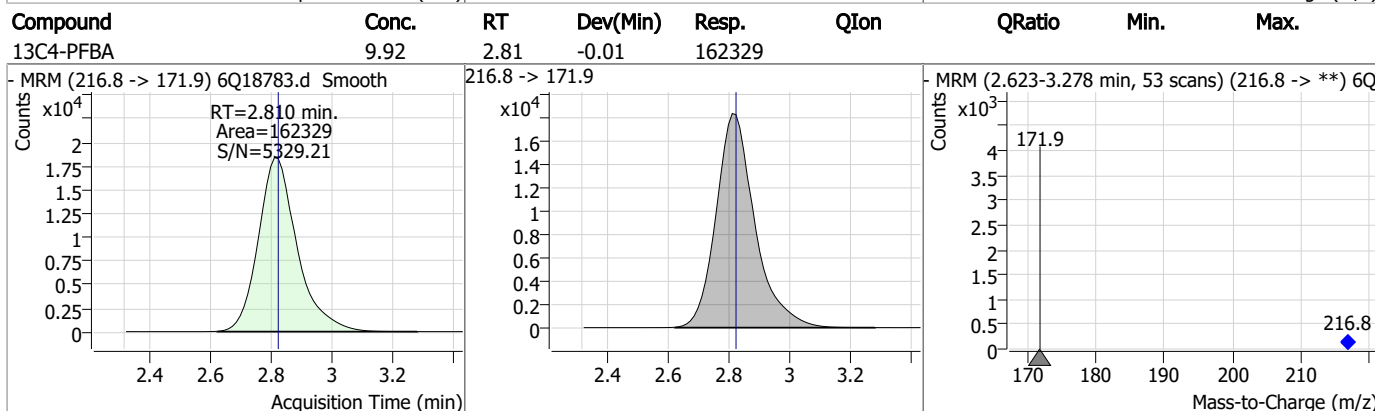
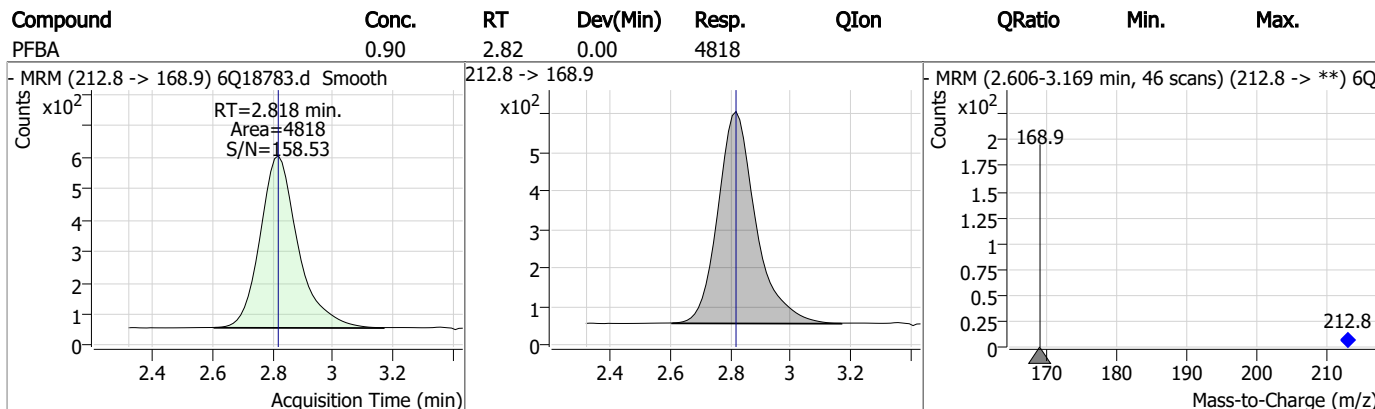
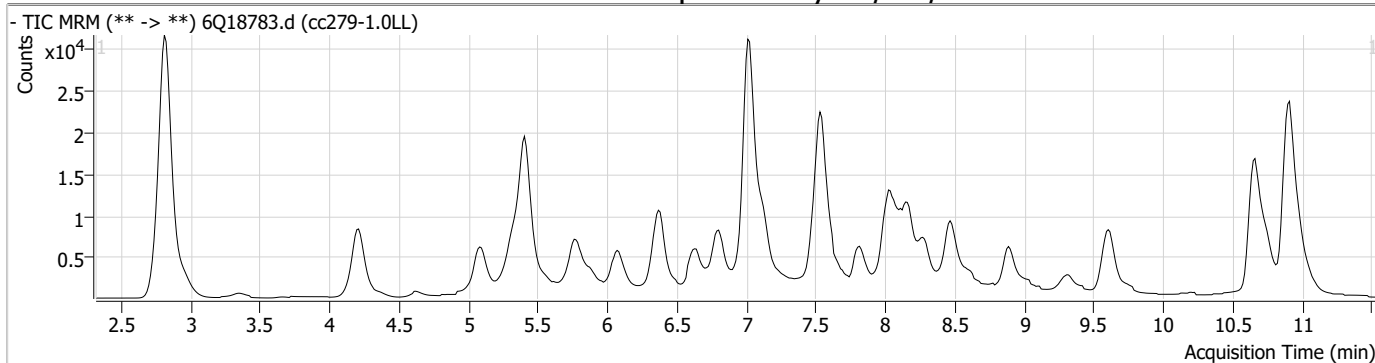
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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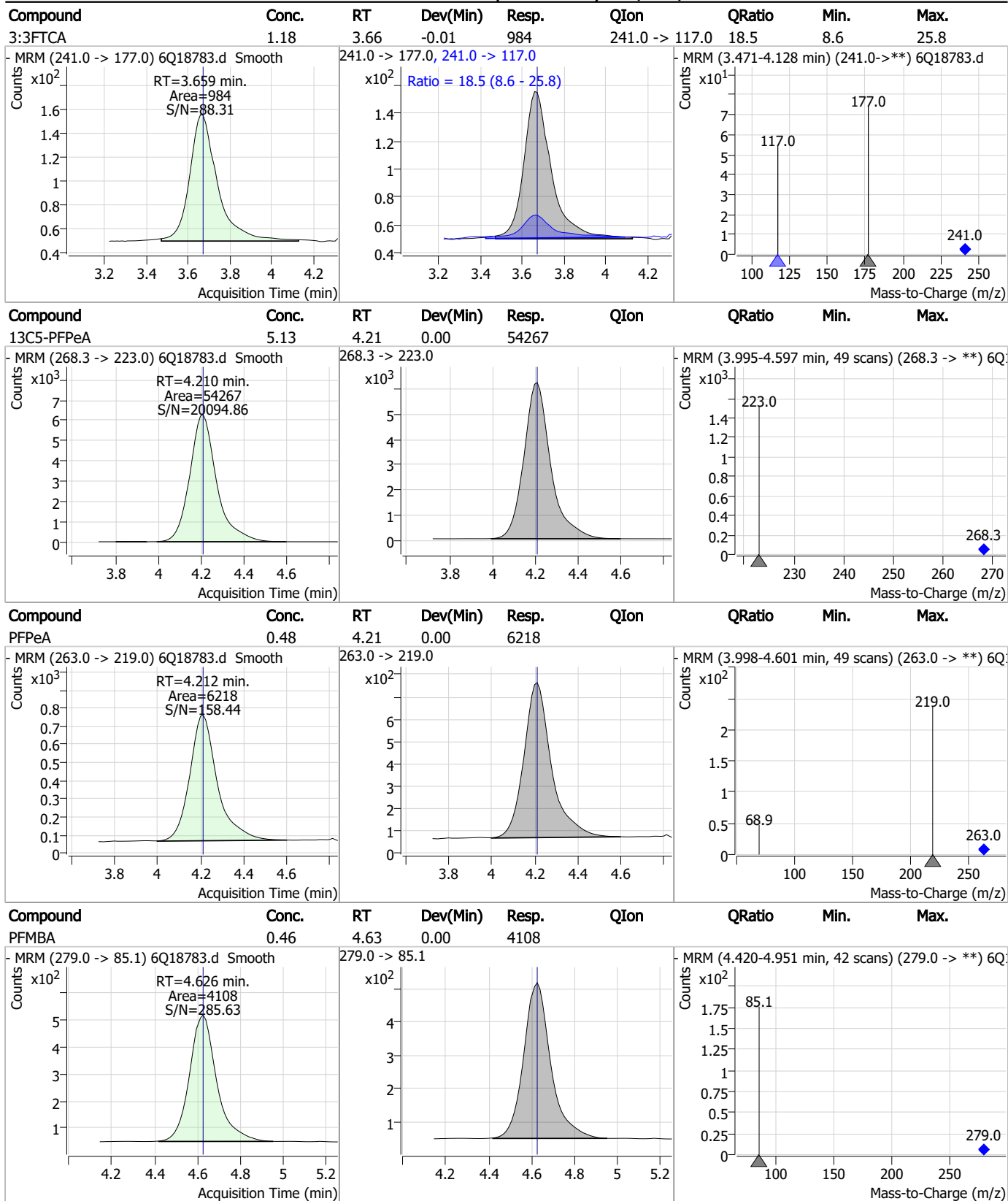
7.7.20

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Perfluorinated Compounds by LC/MS/MS

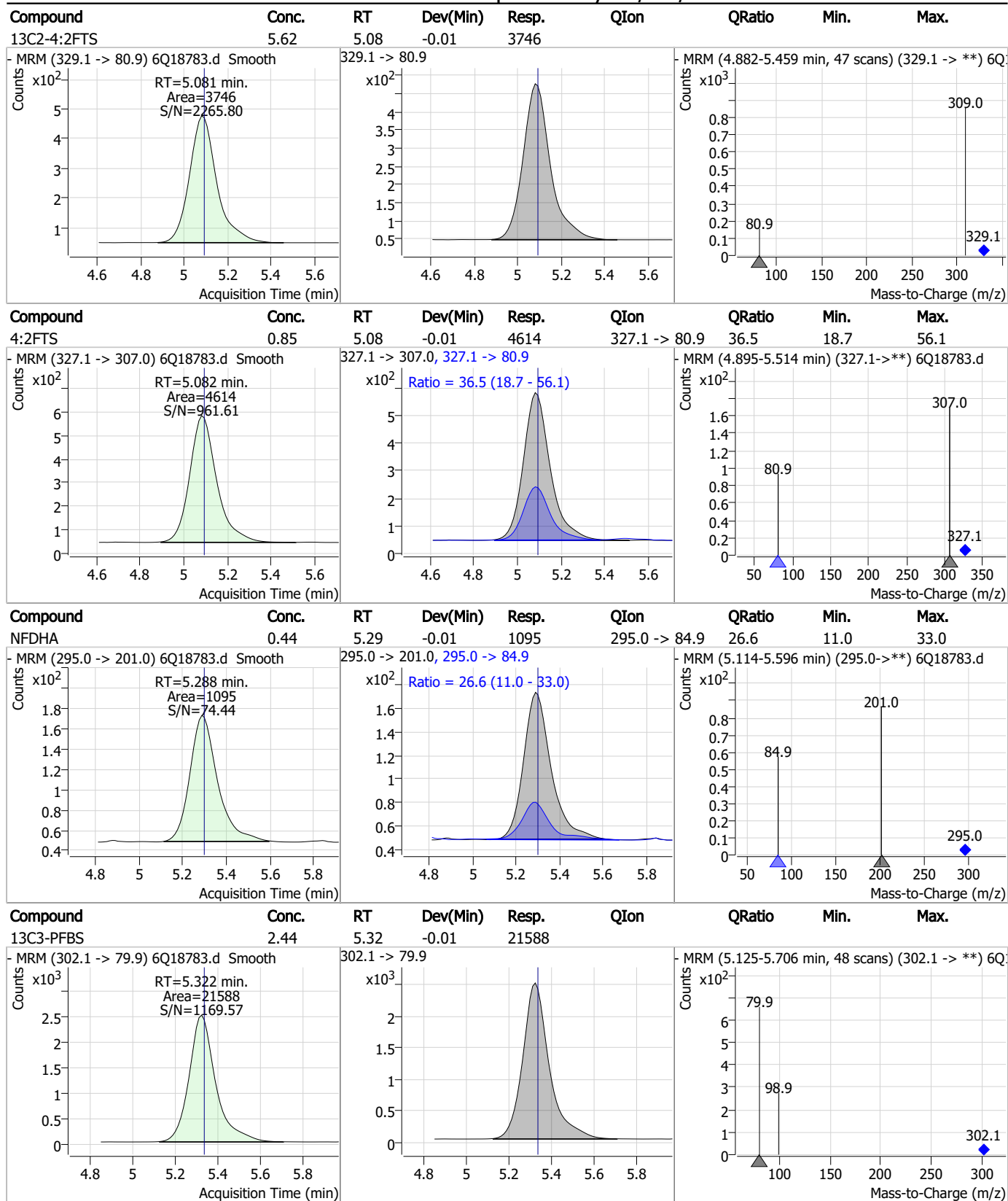


Perfluorinated Compounds by LC/MS/MS



7.7.20 7

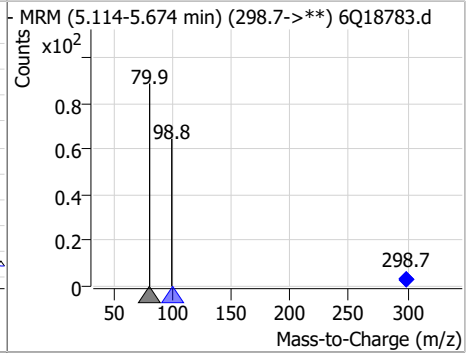
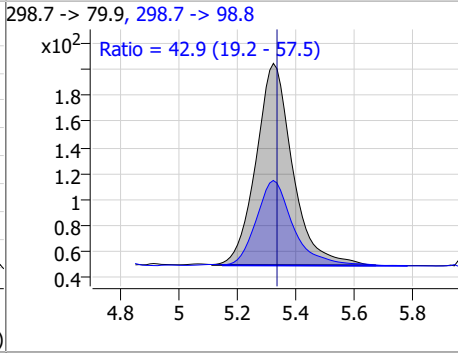
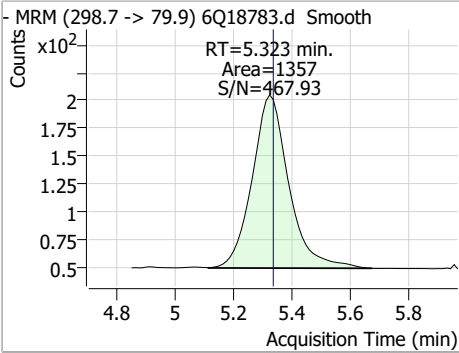
Perfluorinated Compounds by LC/MS/MS



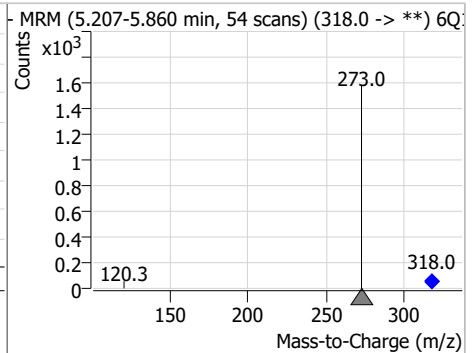
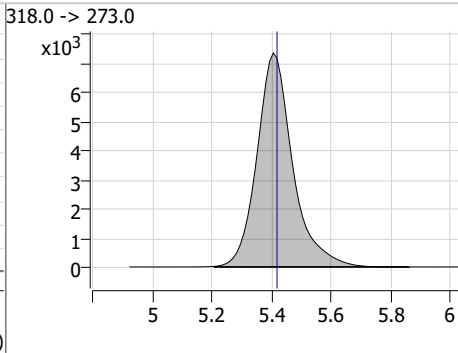
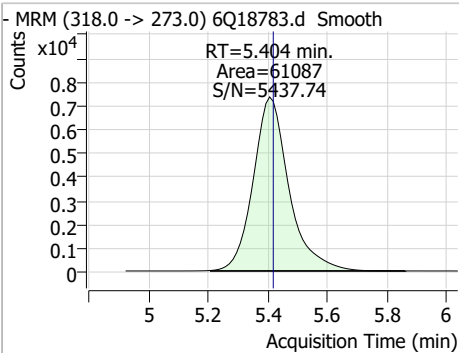
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Perfluorinated Compounds by LC/MS/MS

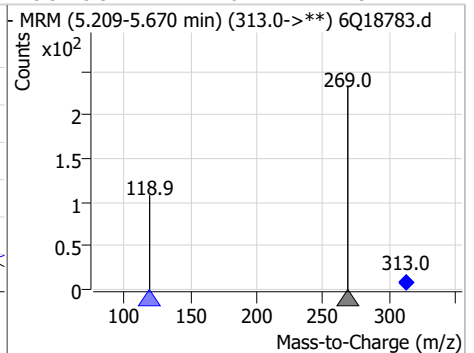
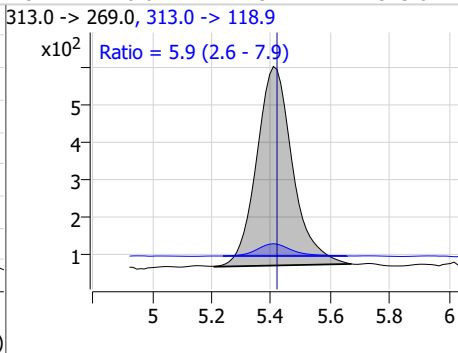
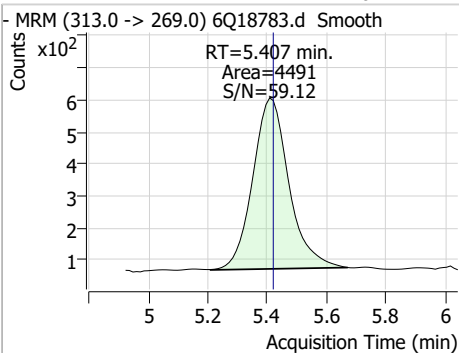
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.18	5.32	-0.01	1357	298.7 -> 98.8	42.9	19.2	57.5



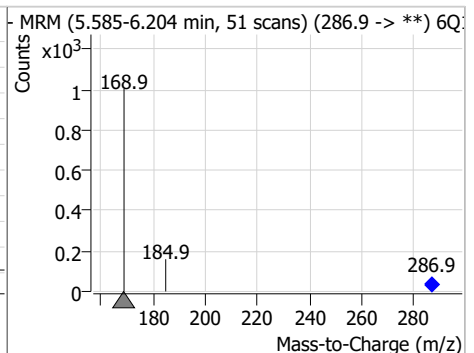
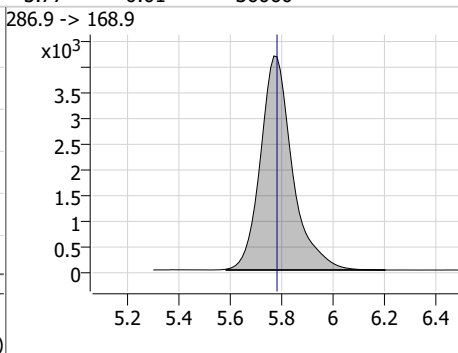
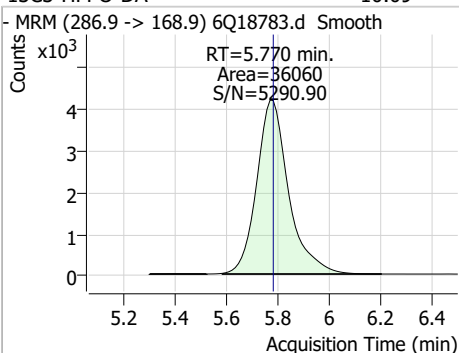
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.65	5.40	-0.01	61087	318.0 -> 273.0	5.9	2.6	7.9



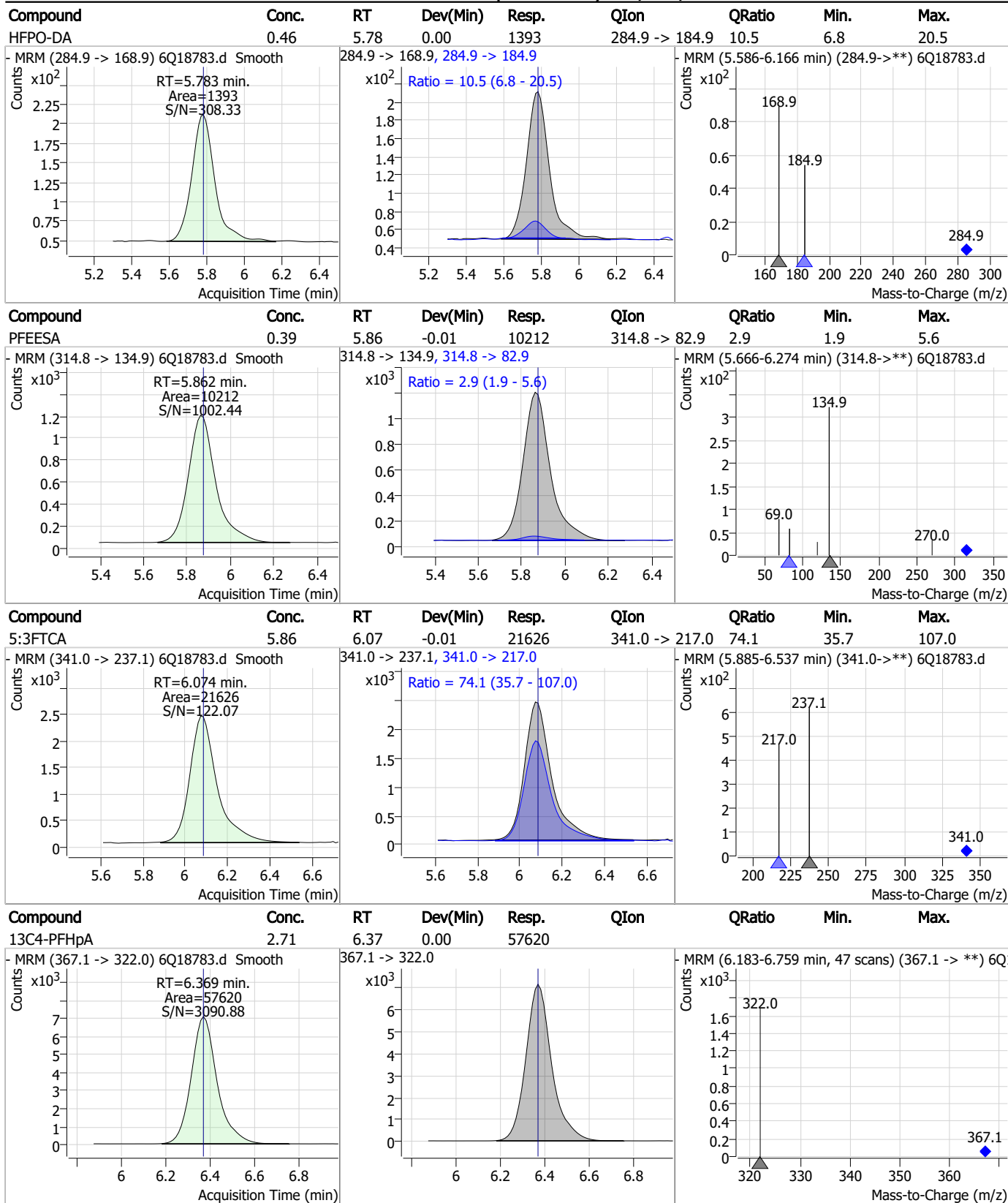
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.41	-0.01	4491	313.0 -> 118.9	5.9	2.6	7.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.09	5.77	-0.01	36060	286.9 -> 168.9	5.9	2.6	7.9



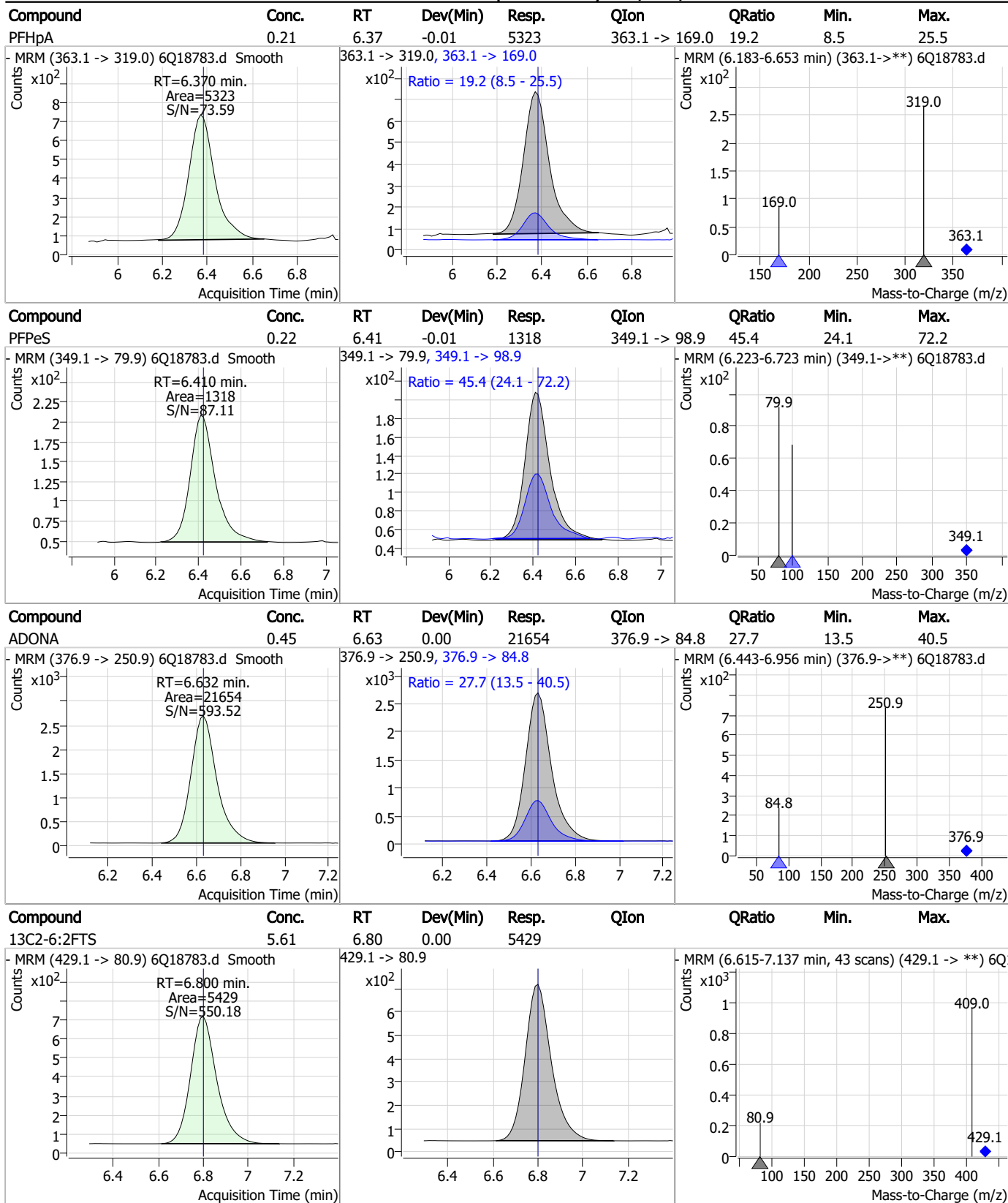
Perfluorinated Compounds by LC/MS/MS



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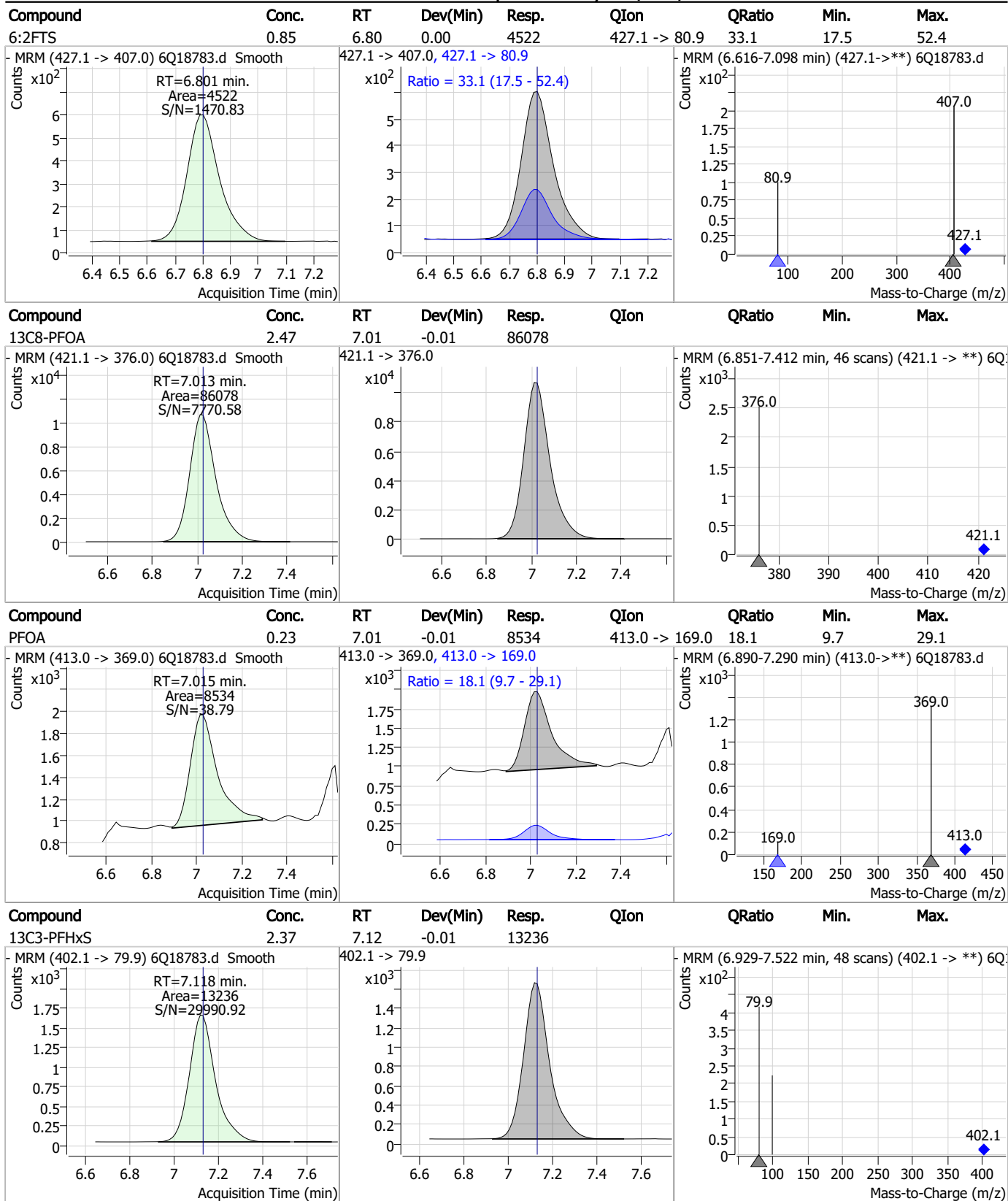


Perfluorinated Compounds by LC/MS/MS



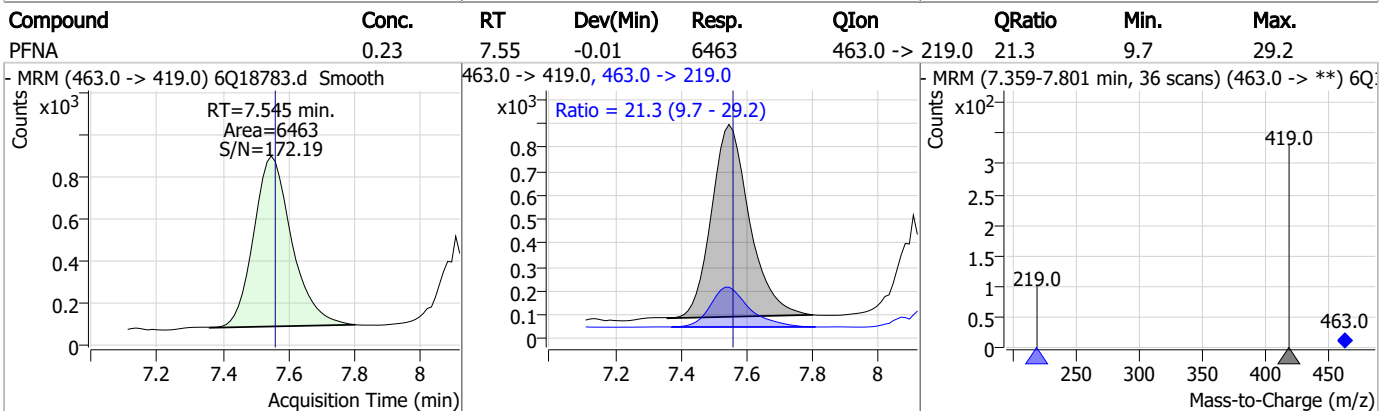
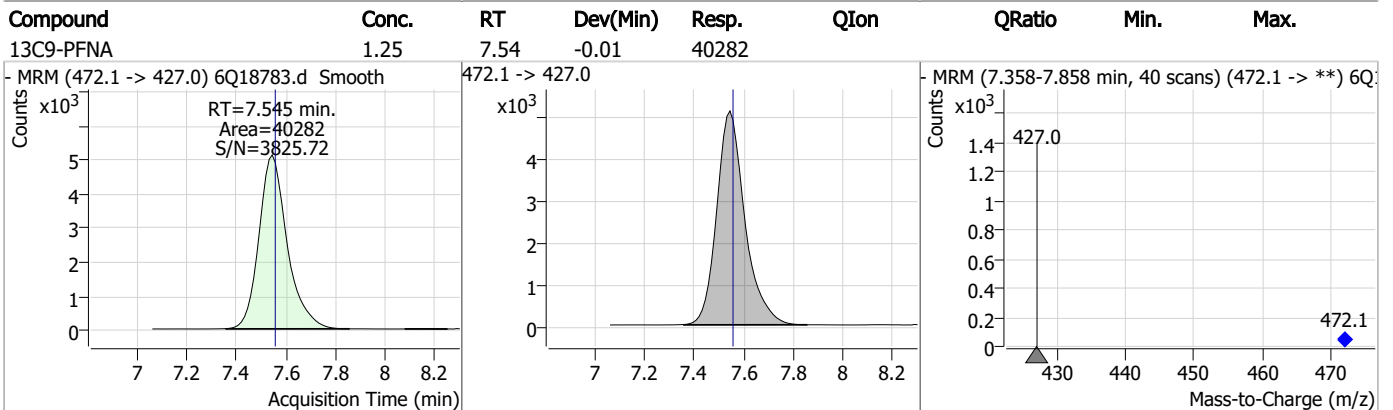
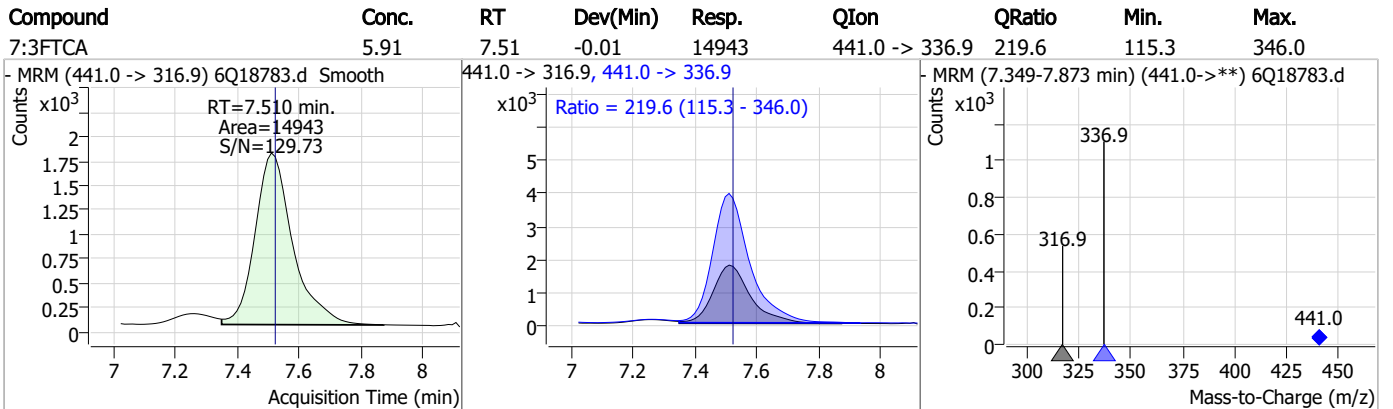
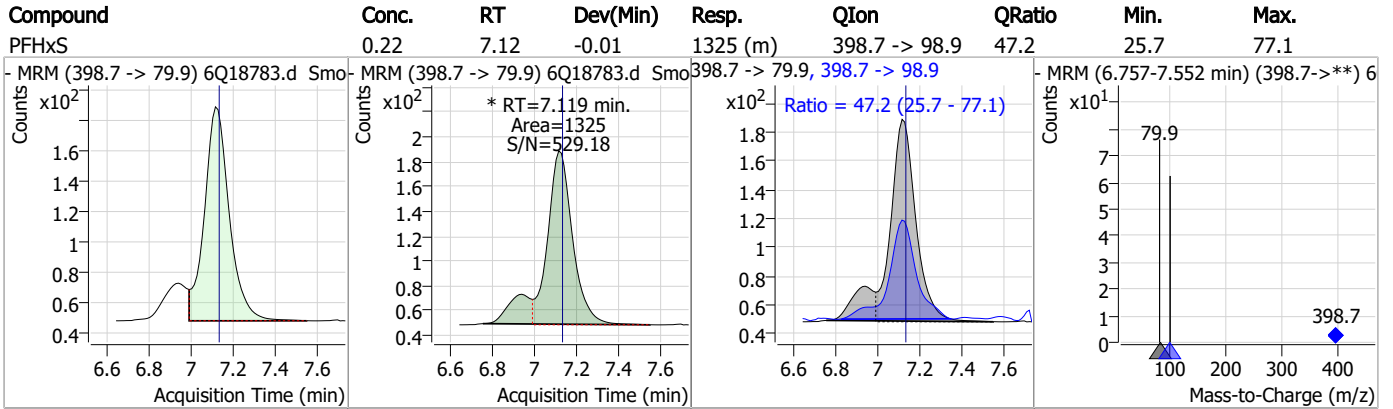
7.7.20 7

Perfluorinated Compounds by LC/MS/MS



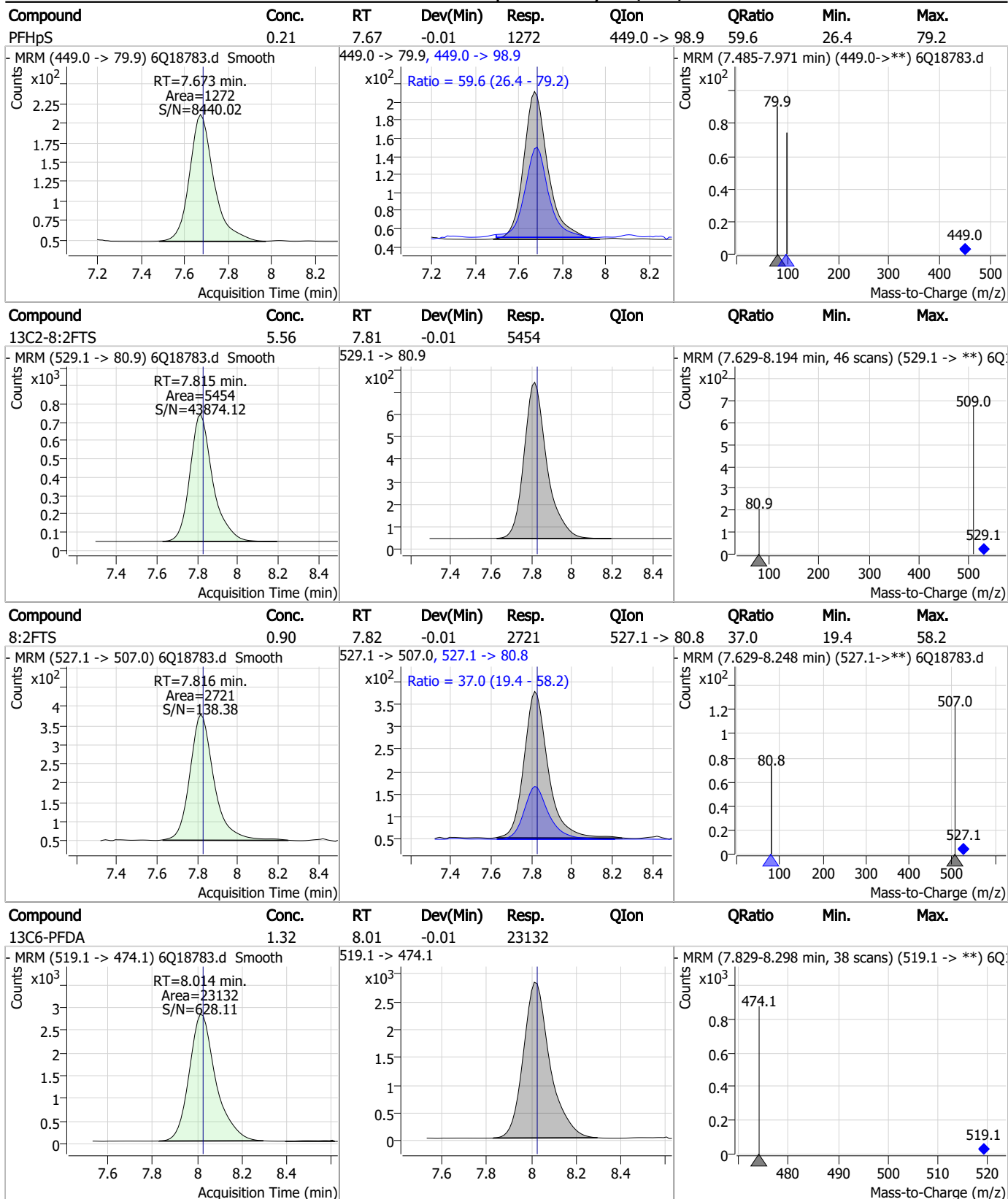
7.7.20 7

Perfluorinated Compounds by LC/MS/MS



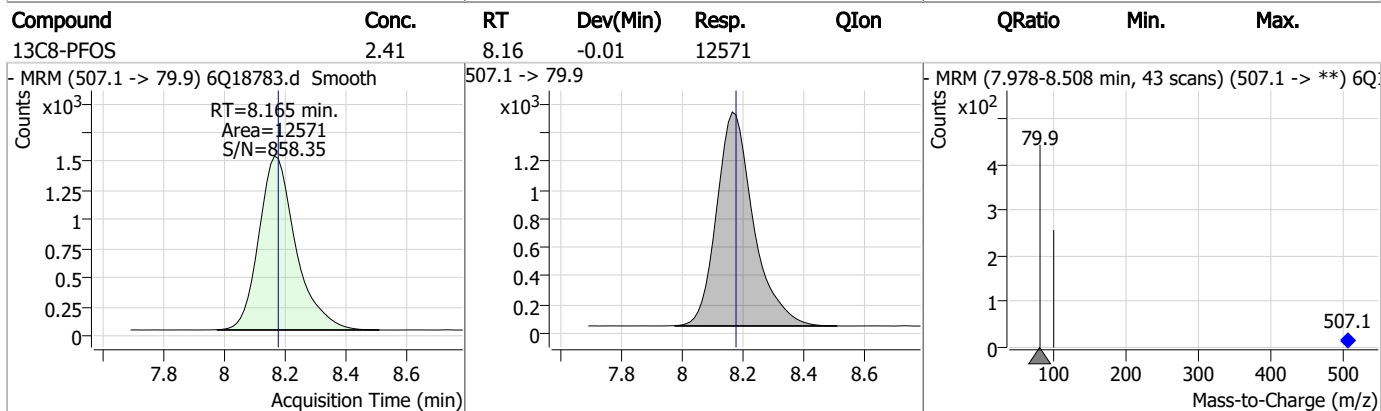
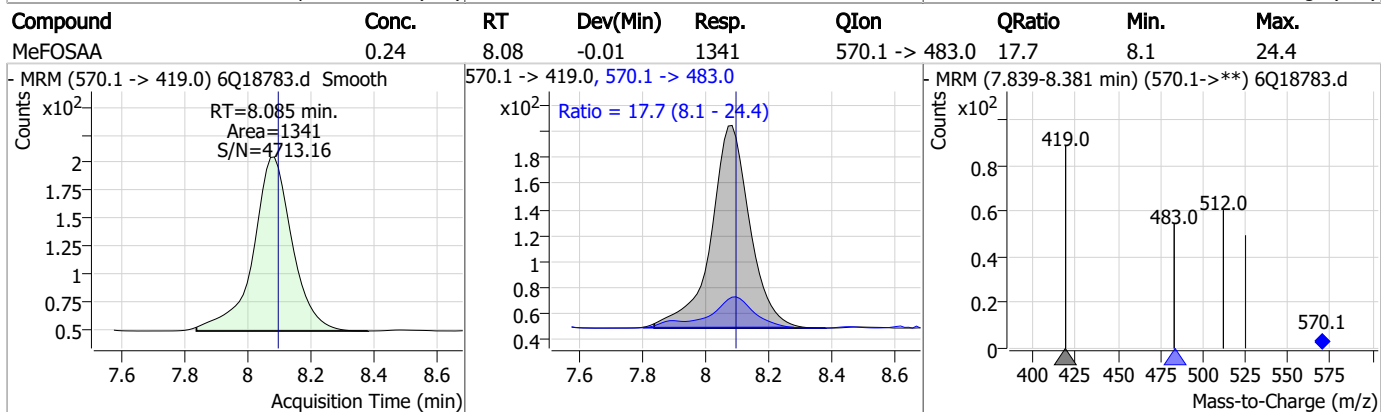
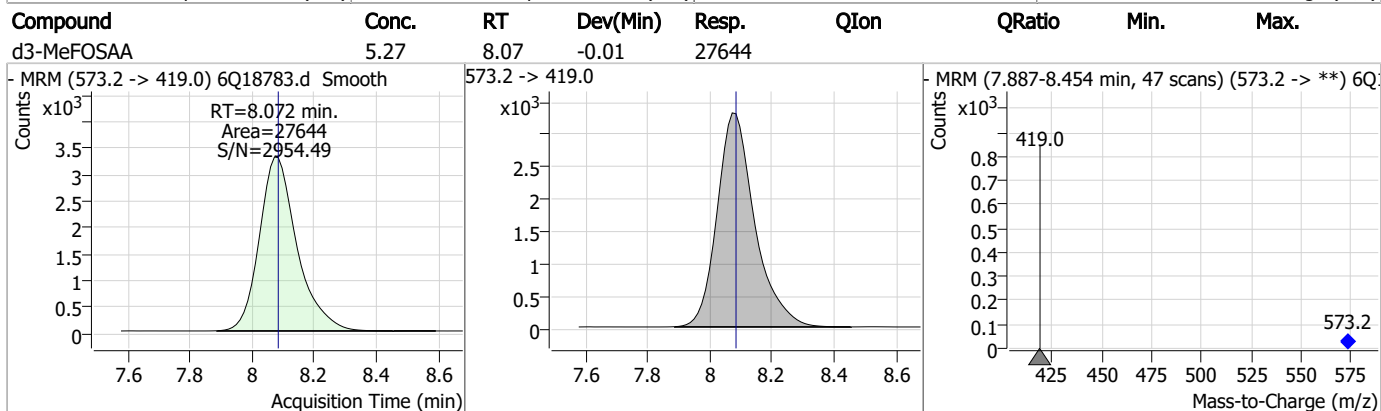
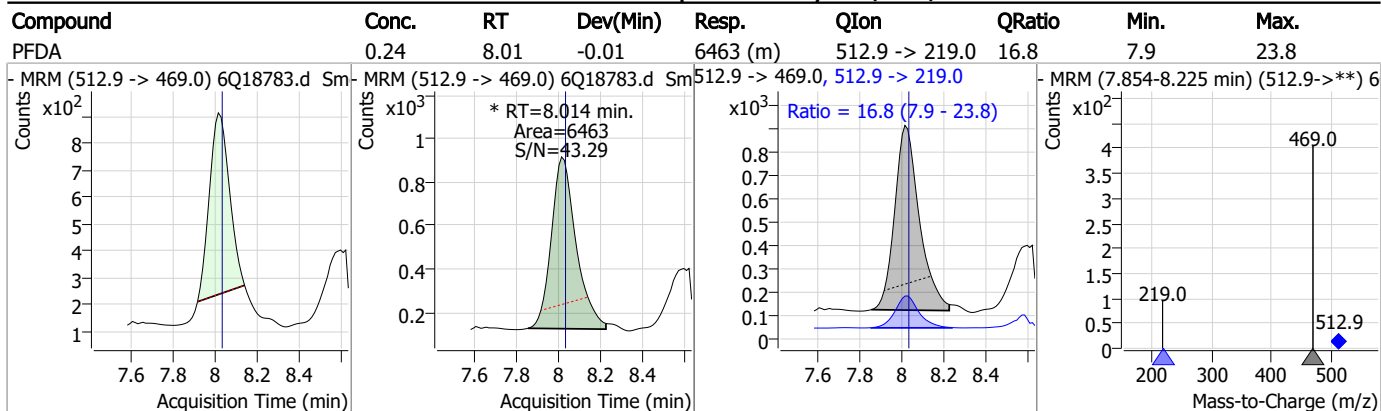
7.7.20 7

Perfluorinated Compounds by LC/MS/MS



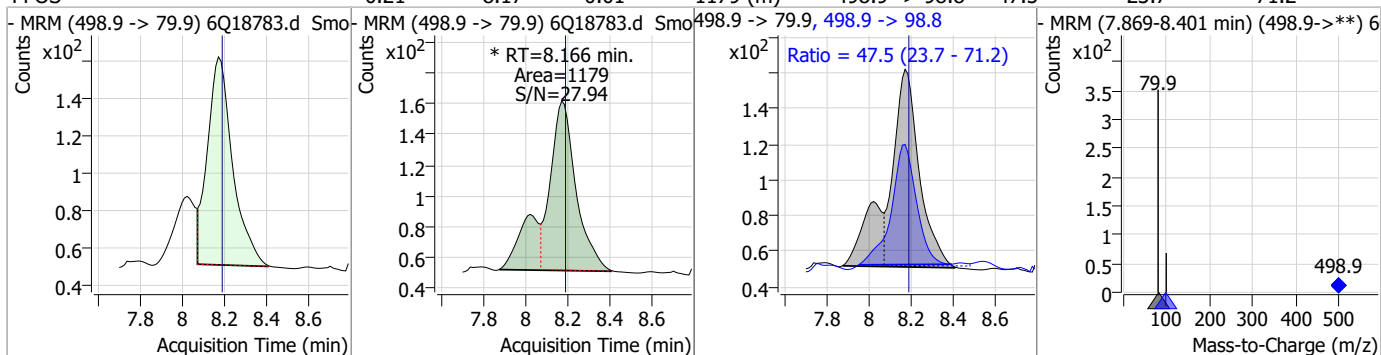
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Perfluorinated Compounds by LC/MS/MS

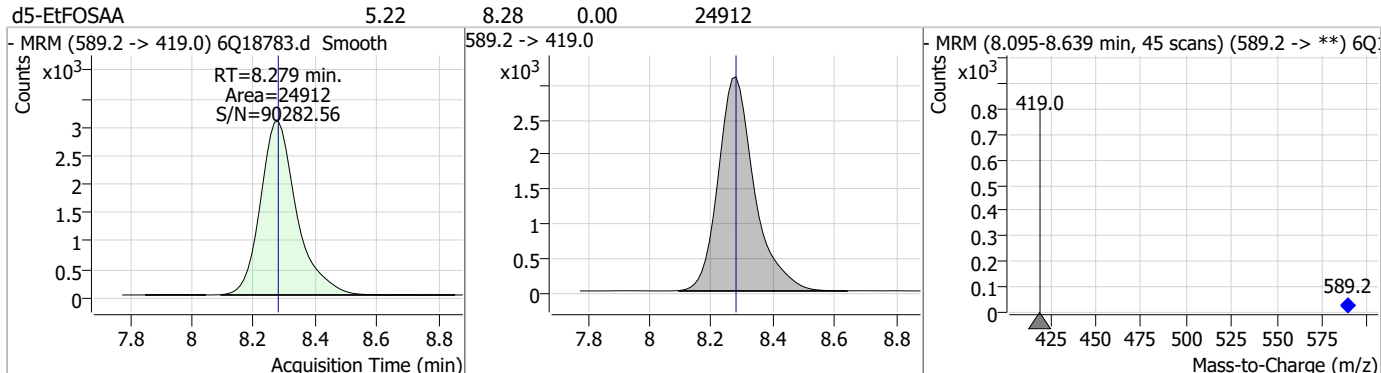


Perfluorinated Compounds by LC/MS/MS

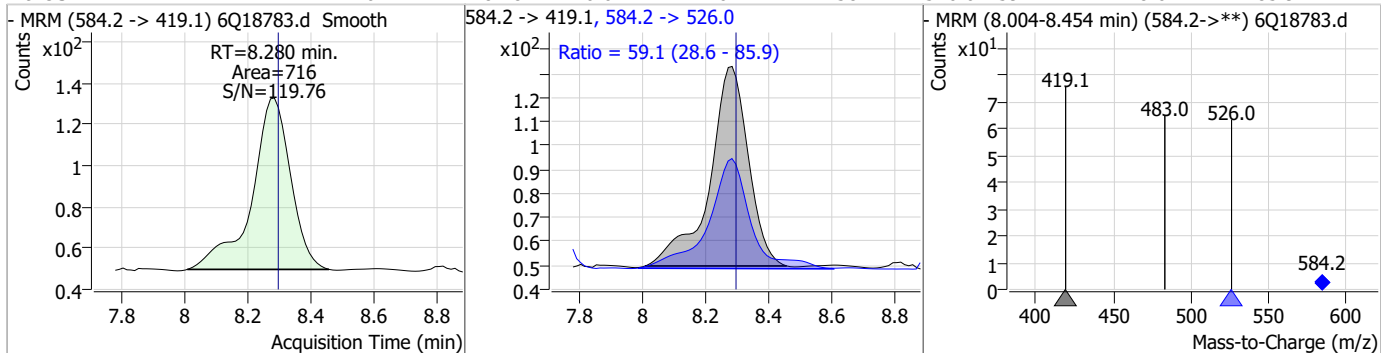
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.21	8.17	-0.01	1179 (m)	498.9 -> 98.8	47.5	23.7	71.2



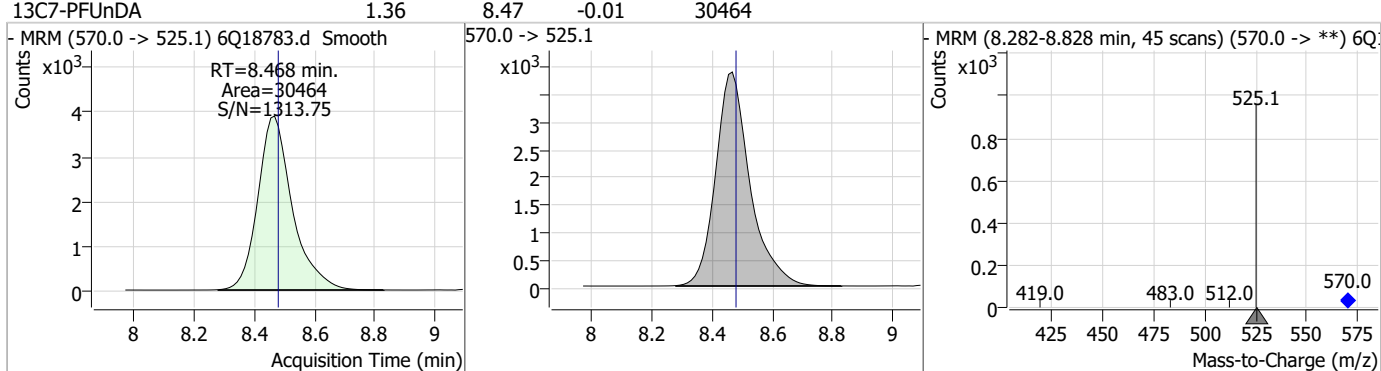
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.22	8.28	0.00	24912				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.28	-0.01	716	584.2 -> 526.0	59.1	28.6	85.9

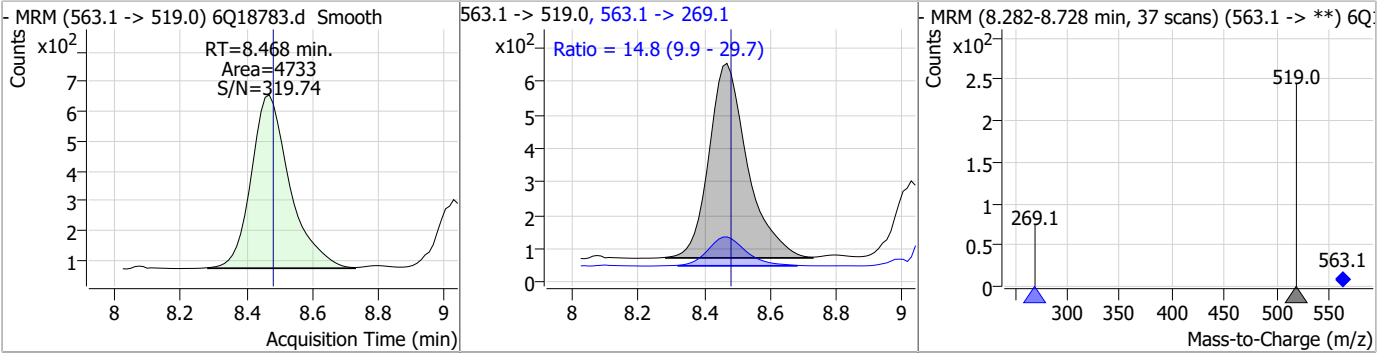


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.36	8.47	-0.01	30464				

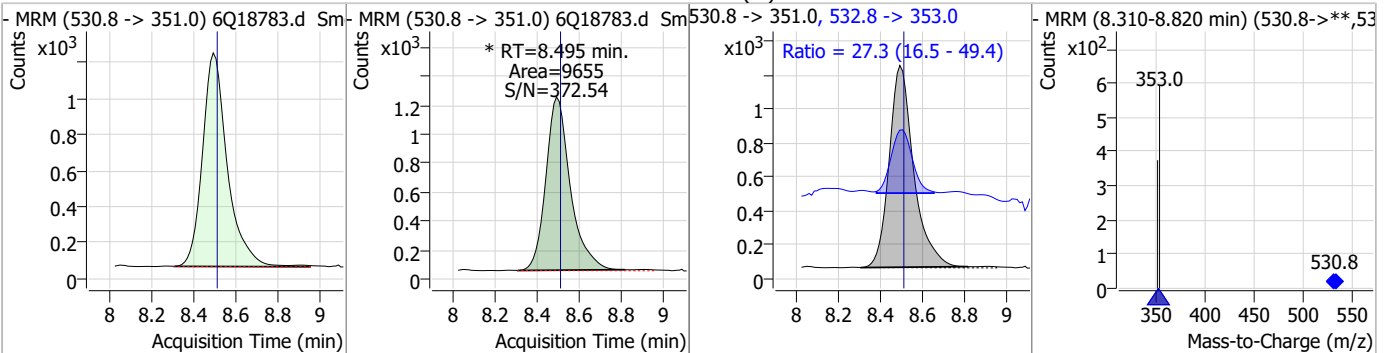


Perfluorinated Compounds by LC/MS/MS

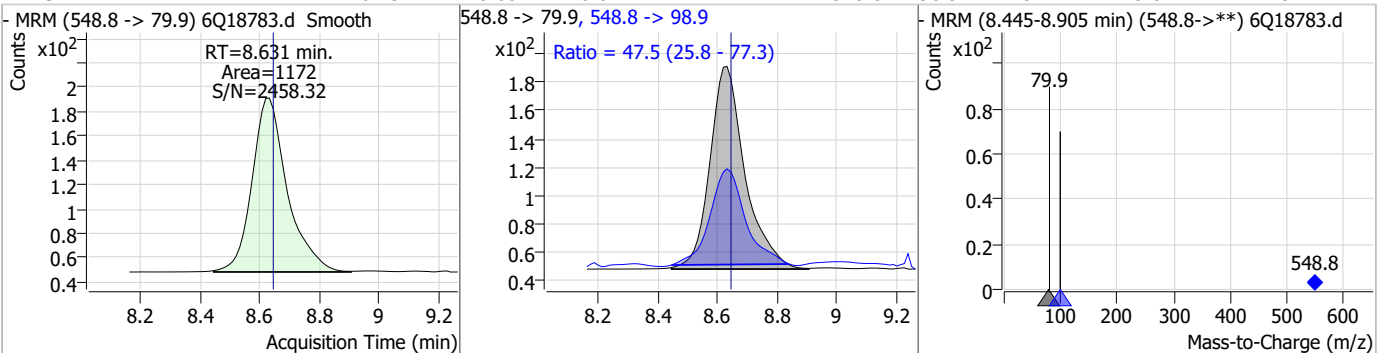
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.24	8.47	-0.01	4733	563.1 -> 269.1	14.8	9.9	29.7



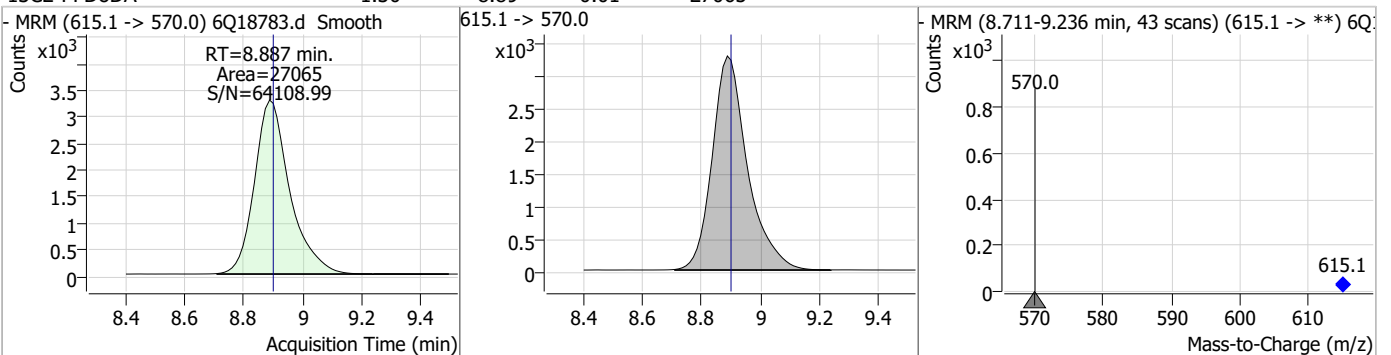
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.45	8.49	-0.01	9655 (m)	532.8 -> 353.0	27.3	16.5	49.4



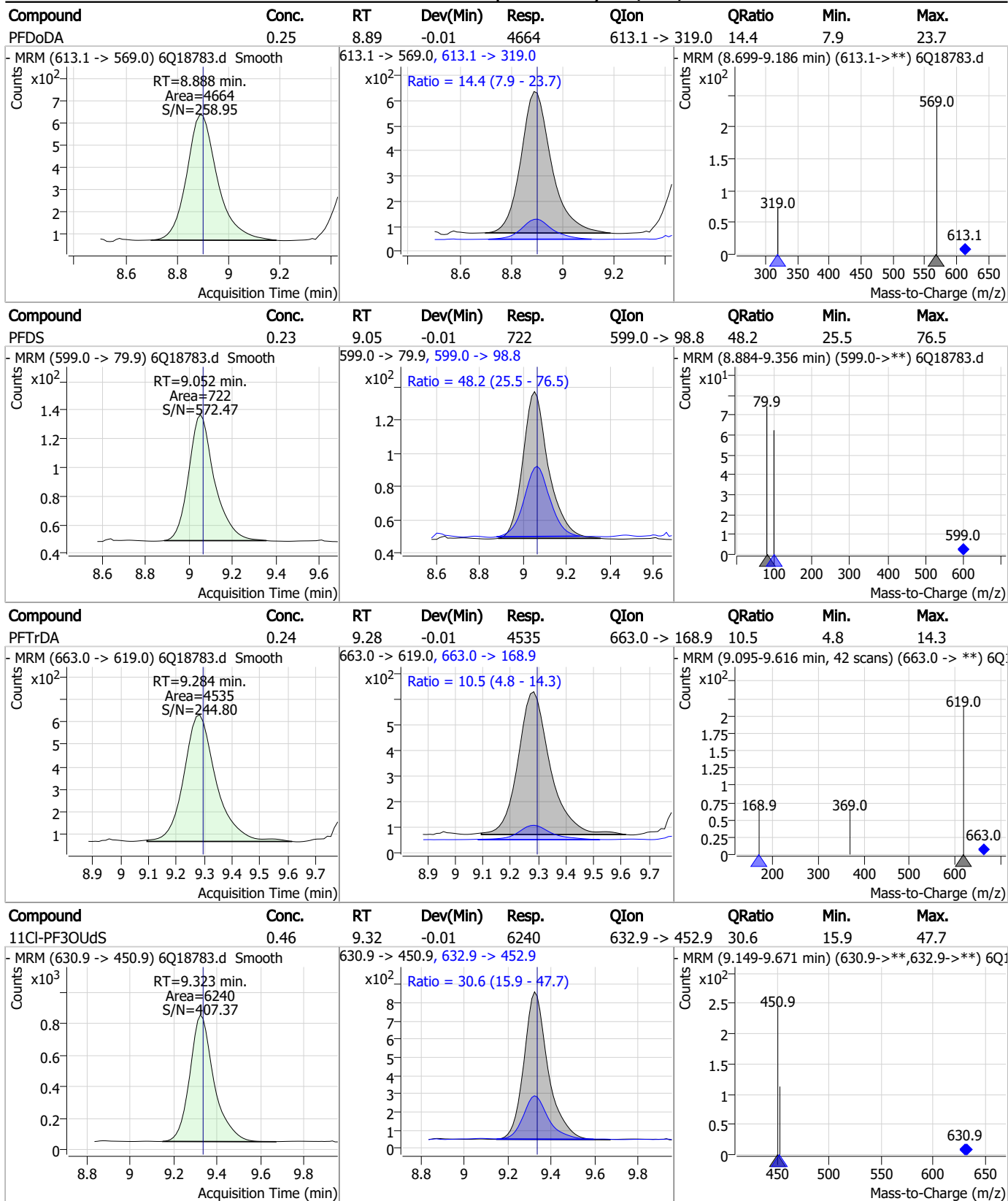
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.23	8.63	-0.01	1172	548.8 -> 98.9	47.5	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.30	8.89	-0.01	27065				

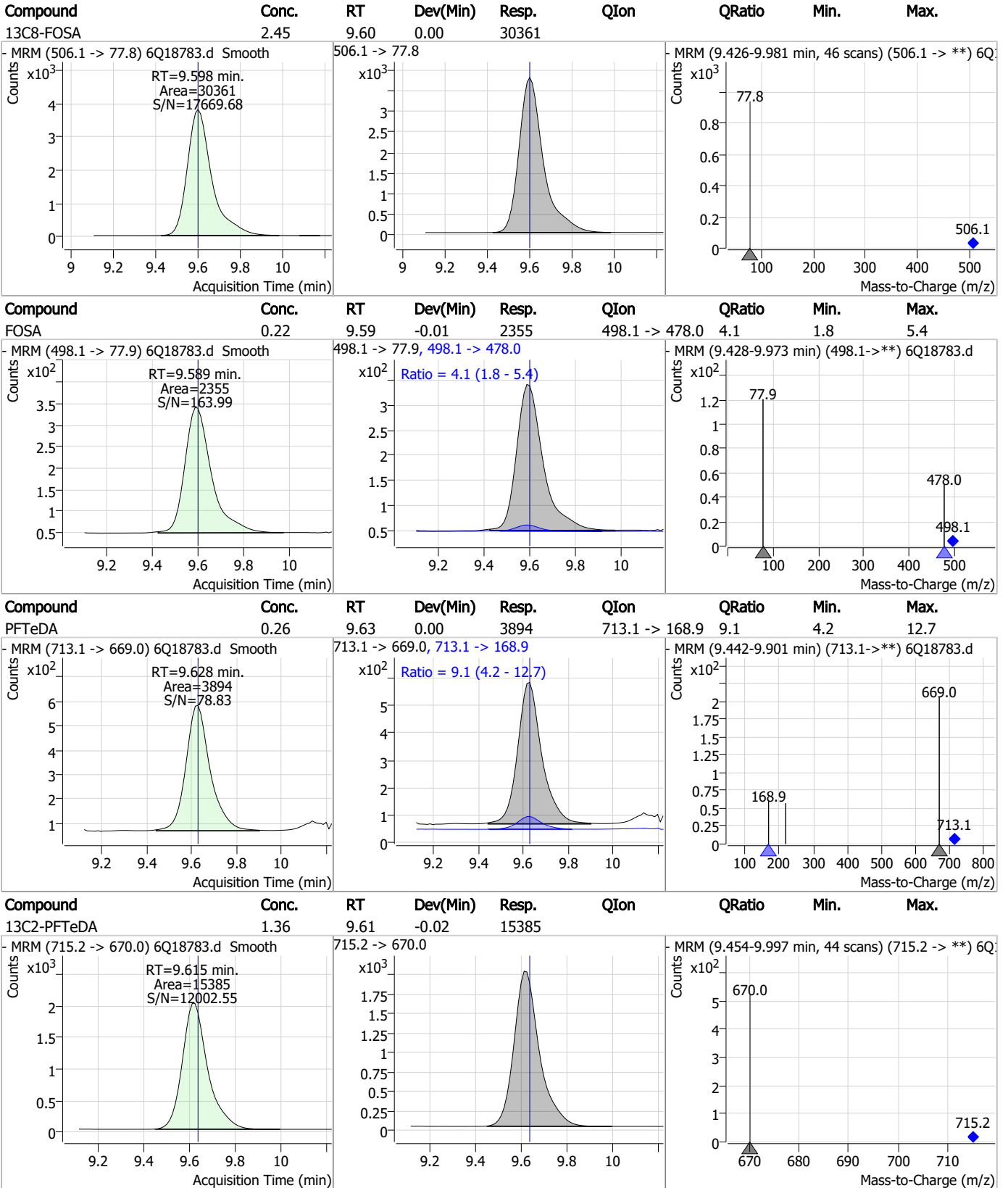


Perfluorinated Compounds by LC/MS/MS



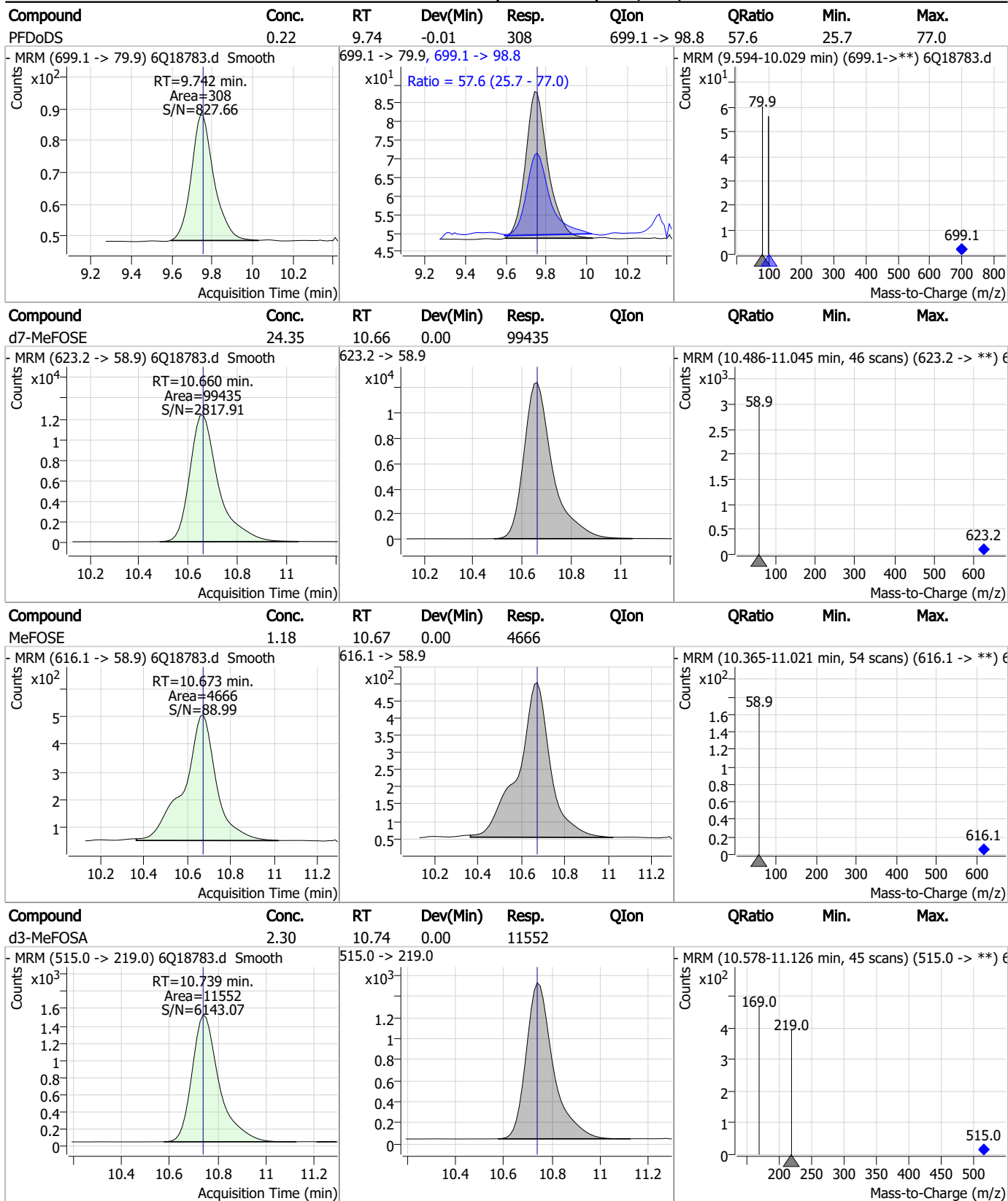
7.7.20
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Perfluorinated Compounds by LC/MS/MS



7.7.20 7

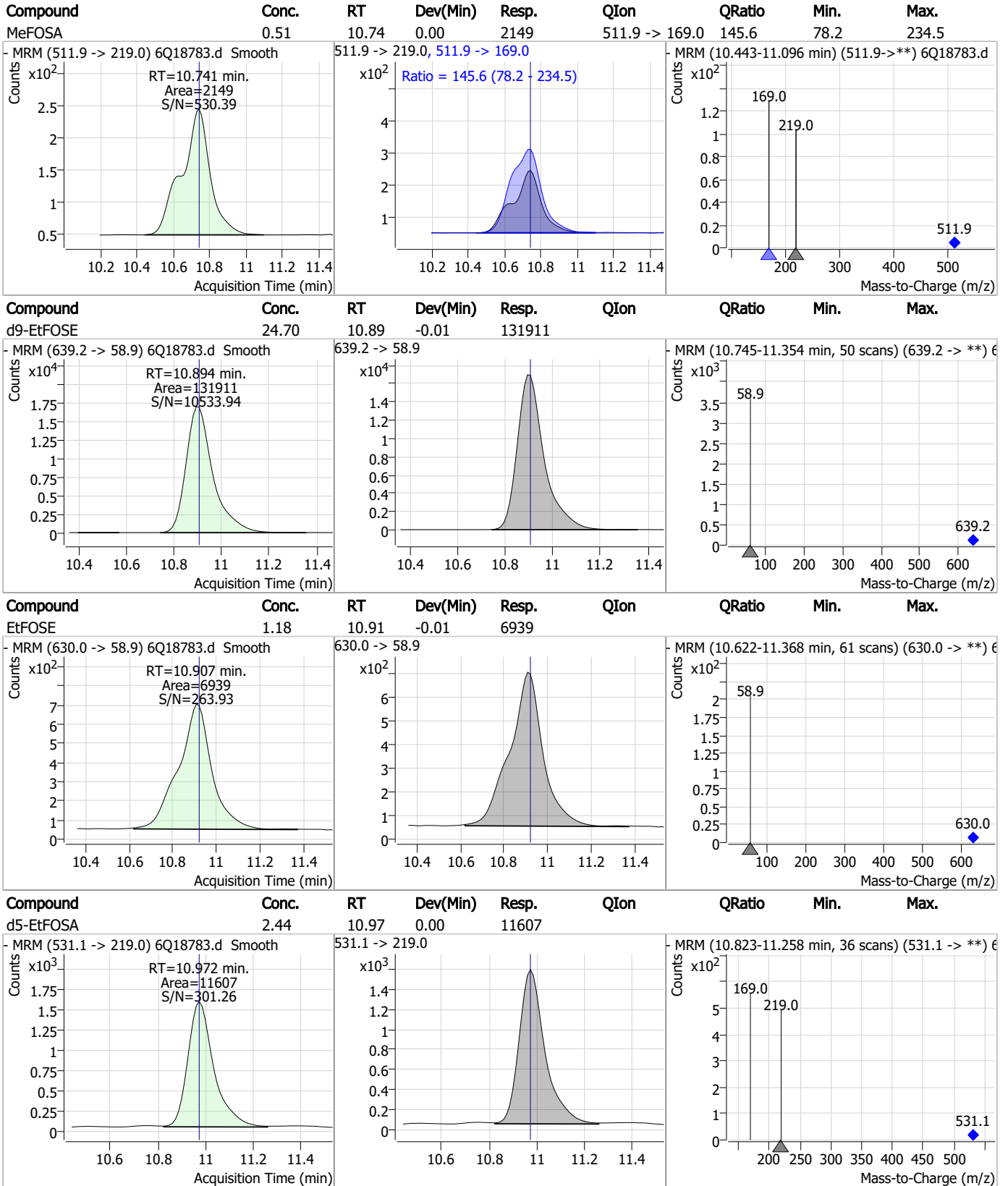
Perfluorinated Compounds by LC/MS/MS



7.7.20 7



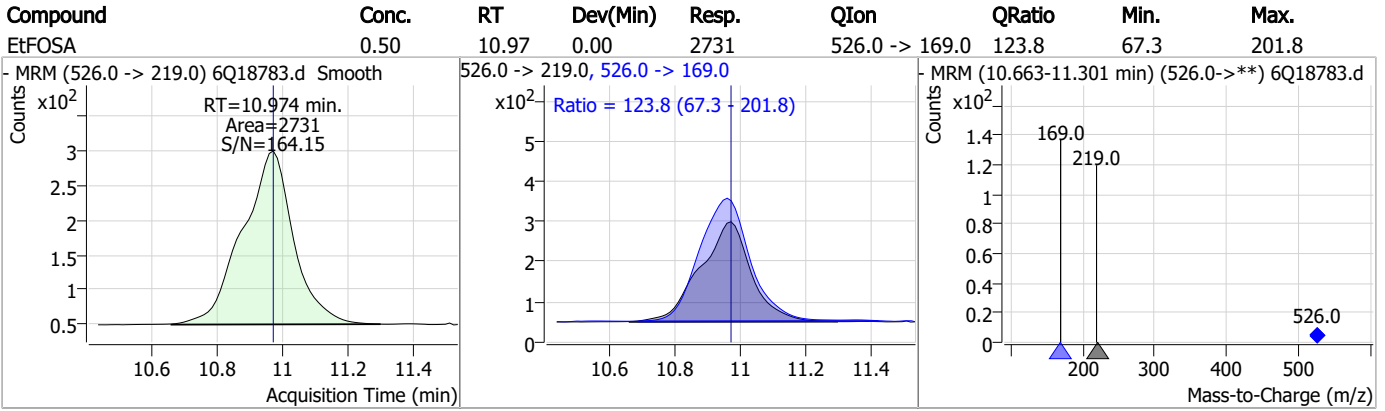
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q280-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18783.D Analyst approved: 06/05/23 12:08 Martha Valls
Injection Time: 06/02/23 17:11 Supervisor approved: 06/06/23 07:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.12	Split peak
Perfluorodecanoic acid	335-76-2		8.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.17	Split peak
9Cl-PF3ONS (F-53B Major)	756426-58-1		8.49	Poor instrument integration

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QQQ Check Tune Report



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 12 June 2023 11:10:10
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); 2.91E-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

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QQQ Check Tune Report



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	112.94	-0.05	Pass	0.70	0.68	-0.02	Pass	505636
302.00	302.00	0.00	Pass	0.70	0.62	-0.08	Pass	1713538
601.98	601.91	-0.07	Pass	0.70	0.63	-0.07	Pass	2651543
1033.99	1033.84	-0.15	Pass	0.70	0.62	-0.08	Pass	1652200
1633.95	1633.75	-0.20	Pass	0.70	0.65	-0.05	Pass	1203916
2233.91	2233.49	-0.42	Adjust	0.70	0.72	0.02	Pass	450099

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	0.71	0.01	Pass	136298
112.99	112.97	-0.02	Pass	0.70	0.75	0.05	Pass	568475
302.00	301.95	-0.05	Pass	0.70	0.68	-0.02	Pass	1432404
601.98	601.92	-0.06	Pass	0.70	0.68	-0.02	Pass	1573782
1033.99	1033.86	-0.13	Pass	0.70	0.80	0.10	Pass	668021
1633.95	1633.75	-0.20	Pass	0.70	0.72	0.02	Pass	626213
2233.91	2233.65	-0.26	Pass	0.70	0.73	0.03	Pass	238662

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	1.20	1.24	0.04	Pass	551558
302.00	301.92	-0.08	Pass	1.20	1.36	0.16	Pass	1926886
601.98	601.92	-0.06	Pass	1.20	1.47	0.27	Pass	3639494
1033.99	1033.80	-0.19	Pass	1.20	1.42	0.22	Pass	2675380
1633.95	1633.67	-0.28	Pass	1.20	1.43	0.23	Pass	1854895
2233.91	2233.61	-0.30	Pass	1.20	1.44	0.24	Pass	889574

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.00	0.00	Pass	1.20	1.06	-0.14	Pass	187295
112.99	112.95	-0.04	Pass	1.20	1.17	-0.03	Pass	689310
302.00	301.93	-0.07	Pass	1.20	1.10	-0.10	Pass	1593512
601.98	601.87	-0.11	Pass	1.20	1.35	0.15	Pass	2900281
1033.99	1033.80	-0.19	Pass	1.20	1.34	0.14	Pass	1283499
1633.95	1633.70	-0.25	Pass	1.20	1.34	0.14	Pass	1424585
2233.91	2233.57	-0.34	Pass	1.20	1.24	0.04	Pass	536341

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.89	-0.10	Pass	2.50	2.43	-0.07	Pass	635982
302.00	301.79	-0.21	Pass	2.50	2.58	0.08	Pass	2260761
601.98	601.84	-0.14	Pass	2.50	2.68	0.18	Pass	4333703
1033.99	1033.78	-0.21	Pass	2.50	2.53	0.03	Pass	3946646
1633.95	1633.60	-0.35	Pass	2.50	2.40	-0.10	Pass	3760339
2233.91	2233.47	-0.44	Pass	2.50	2.39	-0.11	Pass	2129248

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.94	-0.06	Pass	2.50	2.52	0.02	Pass	211683
112.99	112.90	-0.09	Pass	2.50	2.58	0.08	Pass	913590
302.00	301.94	-0.06	Pass	2.50	2.42	-0.08	Pass	3054825
601.98	601.90	-0.08	Pass	2.50	2.65	0.15	Pass	3596588
1033.99	1033.90	-0.09	Pass	2.50	2.77	0.27	Pass	2872723
1633.95	1633.61	-0.34	Pass	2.50	2.44	-0.06	Pass	3054172
2233.91	2233.67	-0.24	Pass	2.50	2.44	-0.06	Pass	1493945

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19240.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 3:48:29 PM
 Sample Name : ic287-1
 Vial : P1-A2
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	141802	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	46457	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	52106	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	47109	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	76517	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	31530	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	20007	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	28301	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	23939	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	14434	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	28411	2.50 µg/L	0.000
M3-PFBS	5.733	302.1 -> 79.9	20100	2.50 µg/L	-0.013
M3-PFHxS	7.478	402.1 -> 79.9	11616	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11429	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3369	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4646	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4474	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	27762	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	31125	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	23287	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	154459	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	184380	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11976	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12102	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	15749	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	60023	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	9150	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	85888	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	31636	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	44152	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	48552	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3369	5.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.6%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4646	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4474	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-PFDoDA	9.285	615.1 -> 570.0	23939	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.6%		
13C2-PFTeDA	10.012	715.2 -> 670.0	14434	1.18 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C3-PFBS	5.733	302.1 -> 79.9	20100	2.60 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C3-PFHxS	7.478	402.1 -> 79.9	11616	2.39 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C4-PFBA	3.085	216.8 -> 171.9	141802	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.707	367.1 -> 322.0	47109	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFHxA	5.792	318.0 -> 273.0	52106	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFPeA	4.548	268.3 -> 223.0	46457	4.95 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	8.387	519.1 -> 474.1	20007	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C7-PFUnDA	8.853	570.0 -> 525.1	28301	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C8-FOSA	9.674	506.1 -> 77.8	28411	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOA	7.339	421.1 -> 376.0	76517	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C8-PFOS	8.563	507.1 -> 79.9	11429	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C9-PFNA	7.882	472.1 -> 427.0	31530	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%	
d3-MeFOSAA	8.420	573.2 -> 419.0	27762	4.70 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31125	9.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
d3-MeFOSA	10.775	515.0 -> 219.0	12102	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.615	589.2 -> 419.0	23287	4.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
d7-MeFOSE	10.685	623.2 -> 58.9	154459	26.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
d9-EtFOSE	10.930	639.2 -> 58.9	184380	25.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d5-EtFOSA	10.996	531.1 -> 219.0	11976	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	4645	0.80 µg/L	96
		327.1 -> 80.9	1830		
6:2FTS	7.113	427.1 -> 407.0	5124	0.91 µg/L	95
		427.1 -> 80.9	1715		
8:2FTS	8.164	527.1 -> 507.0	2592	0.87 µg/L	97
		527.1 -> 80.8	1075		
EtFOSAA	8.617	584.2 -> 419.1	954	0.25 µg/L	m 88
		584.2 -> 526.0	561		
FOSA	9.677	498.1 -> 77.9	2820	0.24 µg/L	100
		498.1 -> 478.0	81		
MeFOSAA	8.421	570.1 -> 419.0	1559	0.23 µg/L	m 94
		570.1 -> 483.0	352		
PFBA	3.093	212.8 -> 168.9	5207	0.92 µg/L	100
PFBS	5.734	298.7 -> 79.9	1693	0.19 µg/L	100
		298.7 -> 98.8	587		
PFDA	8.388	512.9 -> 469.0	6756	0.23 µg/L	95
		512.9 -> 219.0	1152		
PFDODA	9.285	613.1 -> 569.0	4989	0.25 µg/L	98
		613.1 -> 319.0	780		
PFDS	9.462	599.0 -> 79.9	744	0.22 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	354			
PFHpA	6.708	363.1 -> 319.0	6190	0.25	µg/L	98
		363.1 -> 169.0	1050			
PFHpS	8.046	449.0 -> 79.9	1527	0.22	µg/L	97
		449.0 -> 98.9	719			
PFHxA	5.795	313.0 -> 269.0	4612	0.22	µg/L	97
		313.0 -> 118.9	292			
PFHxS	7.479	398.7 -> 79.9	1643	0.24	µg/L	m 94
		398.7 -> 98.9	700			
PFNA	7.883	463.0 -> 419.0	7142	0.25	µg/L	92
		463.0 -> 219.0	1516			
PFNS	9.041	548.8 -> 79.9	1328	0.22	µg/L	93
		548.8 -> 98.9	709			
PFOA	7.341	413.0 -> 369.0	9117	0.23	µg/L	99
		413.0 -> 169.0	1563			
PFOS	8.564	498.9 -> 79.9	1450	0.22	µg/L	m 91
		498.9 -> 98.8	661			
PFPeA	4.551	263.0 -> 219.0	6450	0.47	µg/L	100
PFPeS	6.785	349.1 -> 79.9	1438	0.22	µg/L	91
		349.1 -> 98.9	747			
PFTeDA	10.000	713.1 -> 669.0	4123	0.24	µg/L	100
		713.1 -> 168.9	360			
PFTrDA	9.669	663.0 -> 619.0	5007	0.25	µg/L	95
		663.0 -> 168.9	587			
PFUnDA	8.854	563.1 -> 519.0	4762	0.23	µg/L	94
		563.1 -> 269.1	904			
11CI-PF3OUdS	9.721	630.9 -> 450.9	6441	0.44	µg/L	93
		632.9 -> 452.9	2189			
9CI-PF3ONS	8.906	530.8 -> 351.0	10960	0.45	µg/L	99
		532.8 -> 353.0	3245			
ADONA	6.959	376.9 -> 250.9	25746	0.49	µg/L	99
		376.9 -> 84.8	7087			
HFPO-DA	6.169	284.9 -> 168.9	1865	0.55	µg/L	96
		284.9 -> 184.9	179			
3:3FTCA	3.946	241.0 -> 177.0	1058	1.13	µg/L	99
		241.0 -> 117.0	138			
5:3FTCA	6.361	341.0 -> 237.1	24429	6.03	µg/L	98
		341.0 -> 217.0	17805			
7:3FTCA	7.736	441.0 -> 316.9	17169	5.93	µg/L	88
		441.0 -> 336.9	36207			
EtFOSA	10.997	526.0 -> 219.0	2863	0.45	µg/L	93
		526.0 -> 169.0	3880			
EtFOSE	10.943	630.0 -> 58.9	11124	1.14	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	2391	0.45	µg/L	m 86
		511.9 -> 169.0	3734			
MeFOSE	10.709	616.1 -> 58.9	7857	1.16	µg/L	100
PFDoDS	10.139	699.1 -> 79.9	389	0.23	µg/L	95
		699.1 -> 98.8	242			
NFDHA	5.661	295.0 -> 201.0	1316	0.50	µg/L	90
		295.0 -> 84.9	310			
PFMBA	4.975	279.0 -> 85.1	4573	0.47	µg/L	100
PFMPA	3.667	229.0 -> 84.9	3534	0.46	µg/L	100
PFEESA	6.288	314.8 -> 134.9	11574	0.45	µg/L	99
		314.8 -> 82.9	352			

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

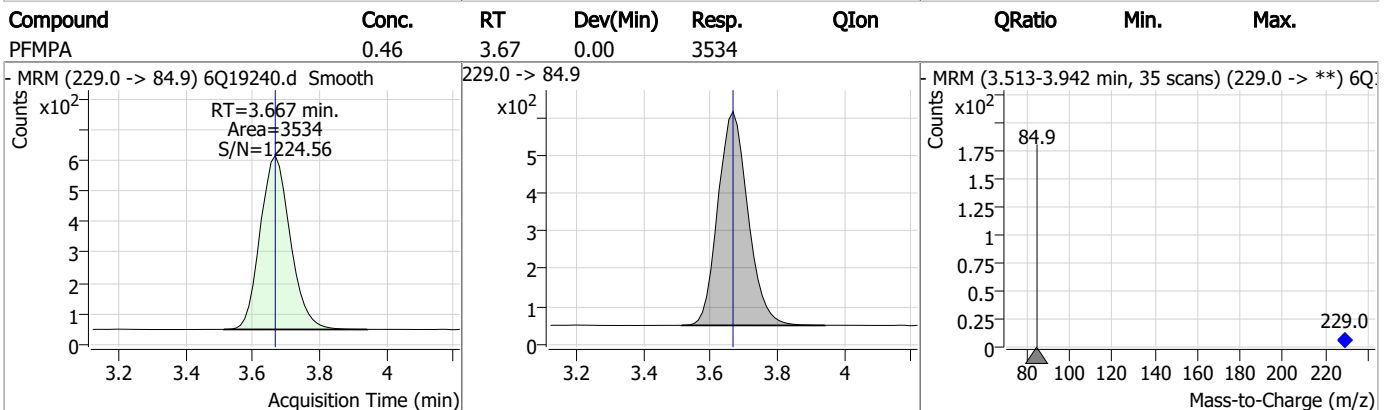
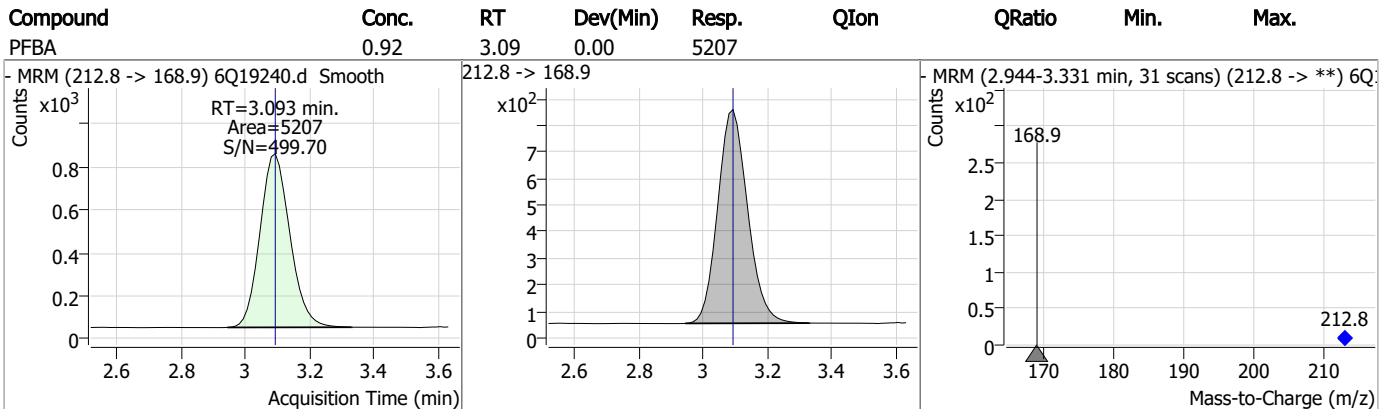
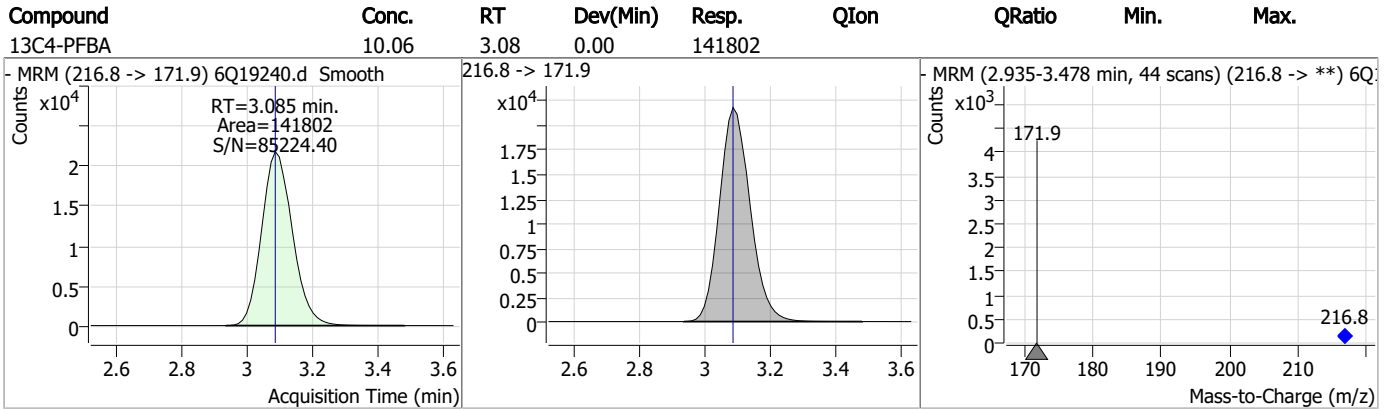
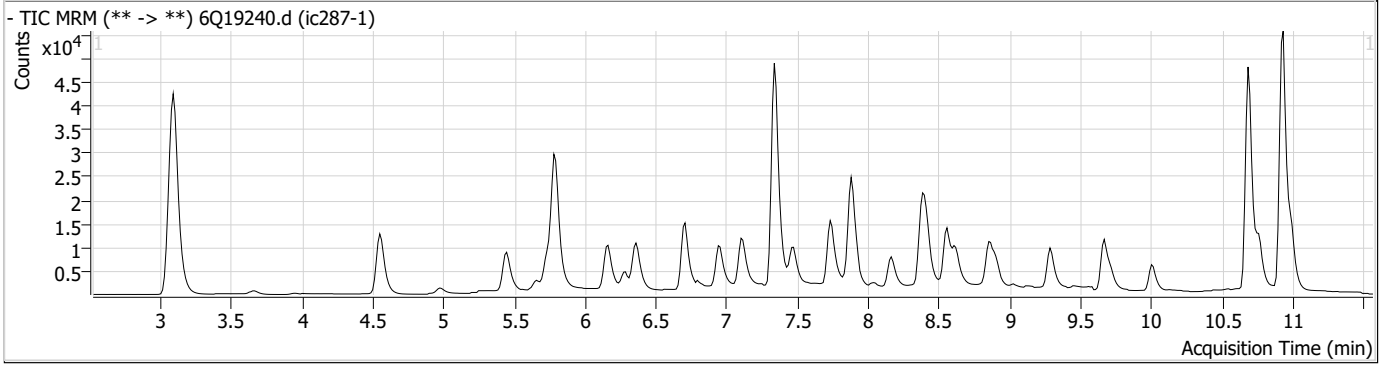
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS

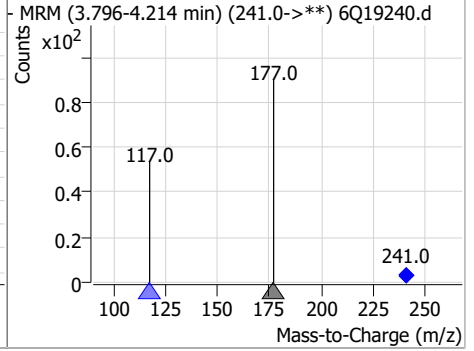
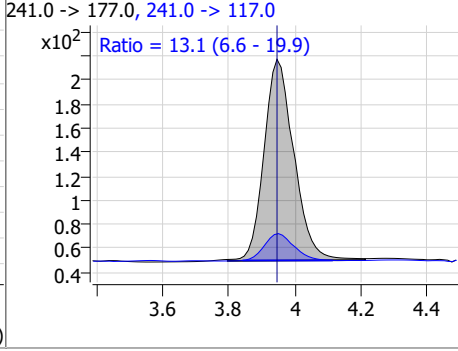
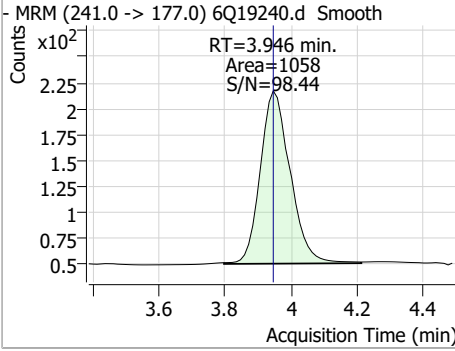


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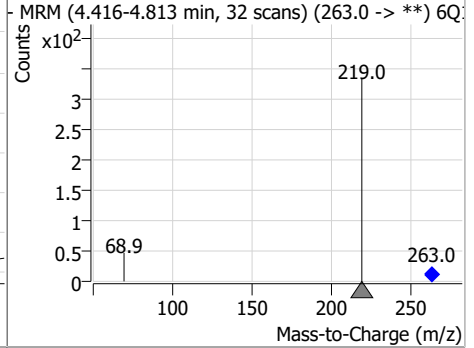
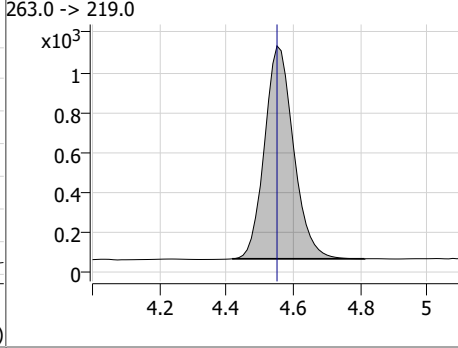
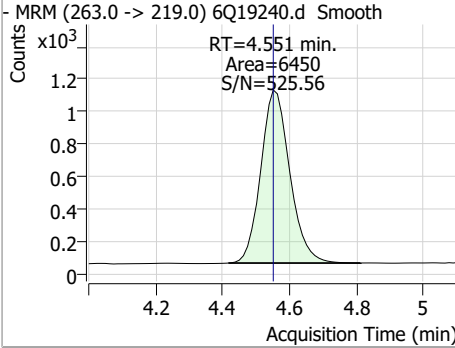
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Perfluorinated Compounds by LC/MS/MS

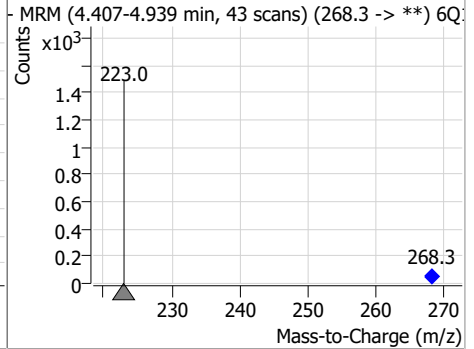
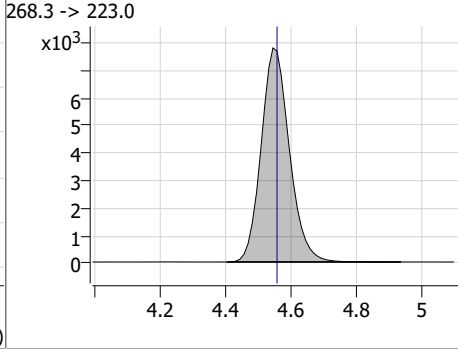
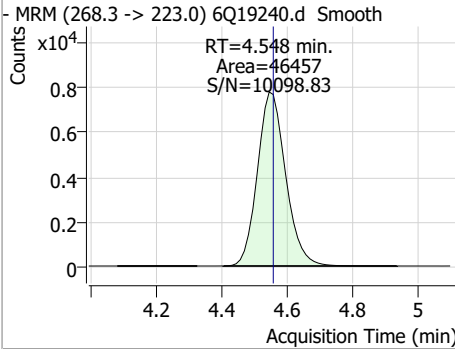
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.13	3.95	0.00	1058	241.0 -> 117.0	13.1	6.6	19.9



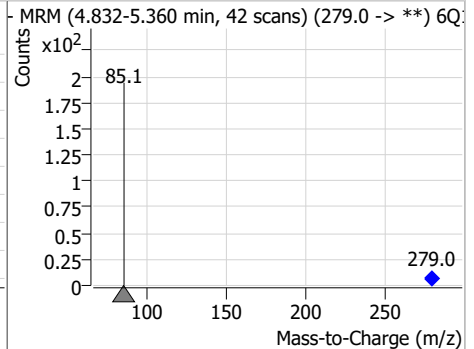
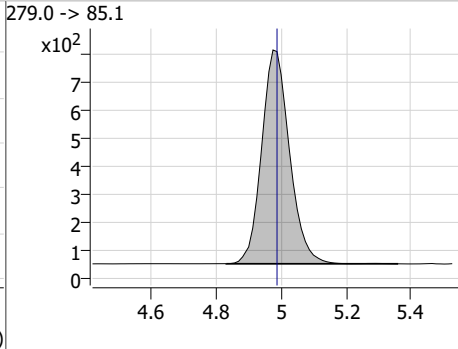
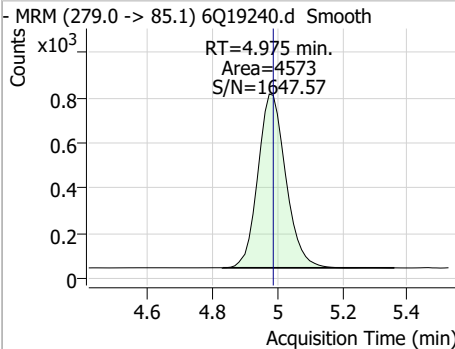
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	4.55	0.00	6450				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.95	4.55	-0.01	46457				

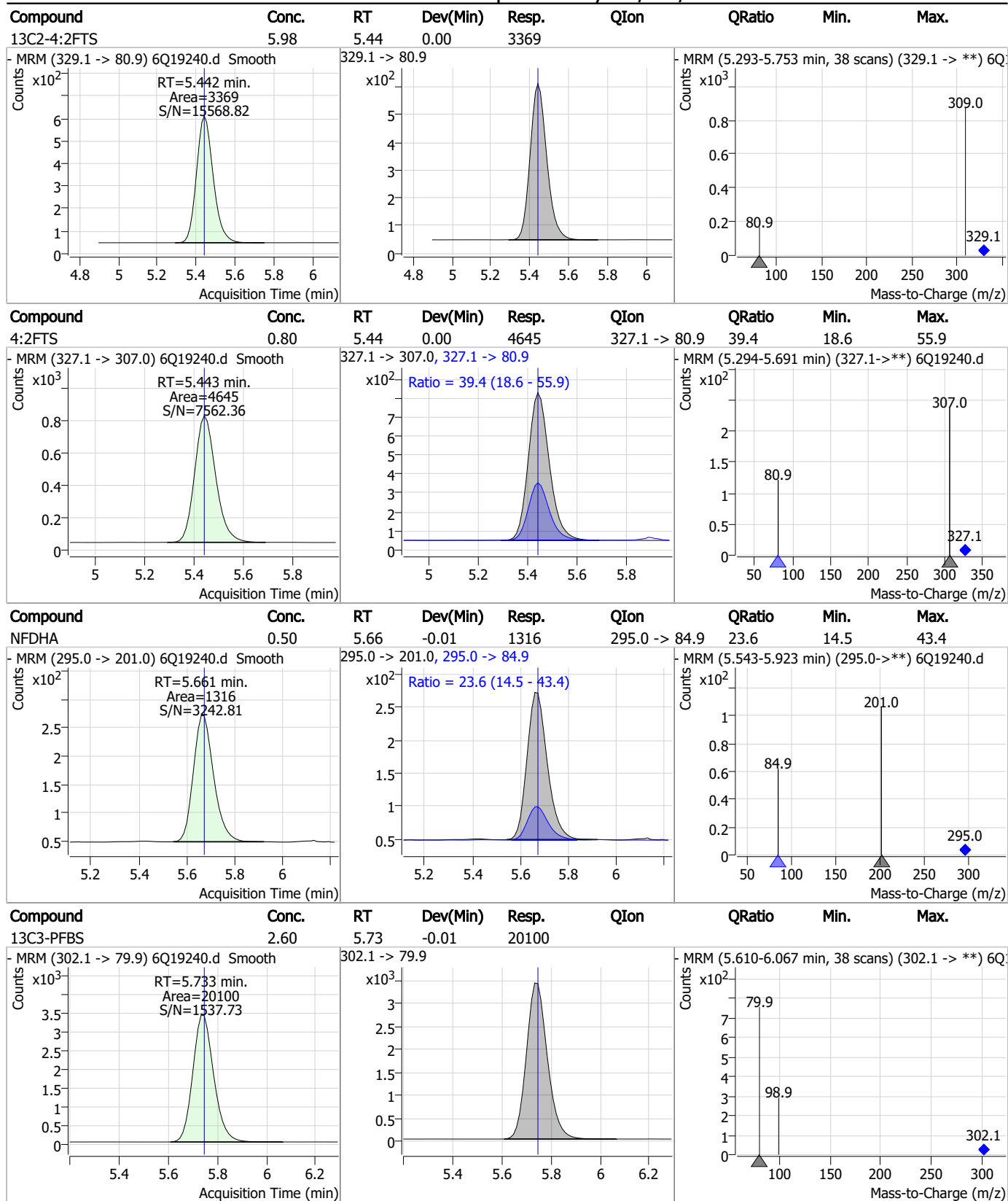


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.47	4.98	-0.01	4573				



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Perfluorinated Compounds by LC/MS/MS

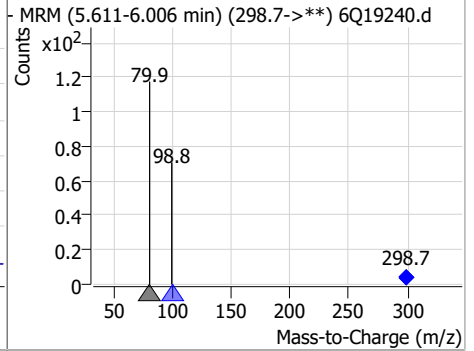
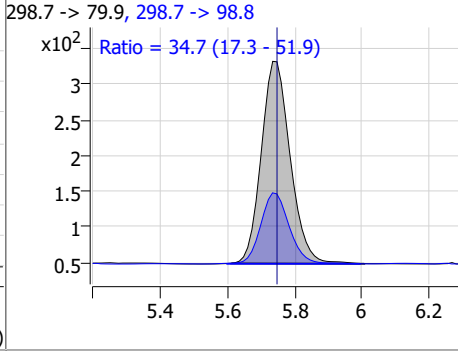
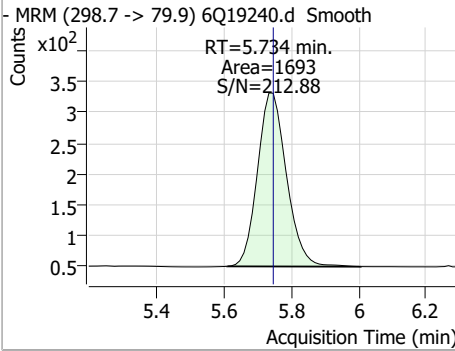


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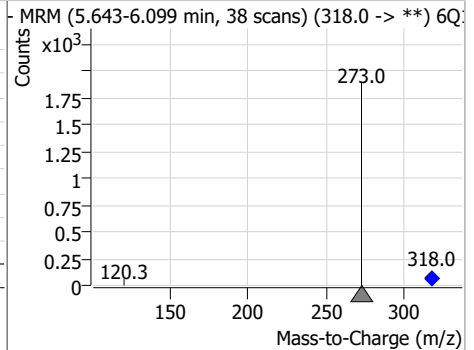
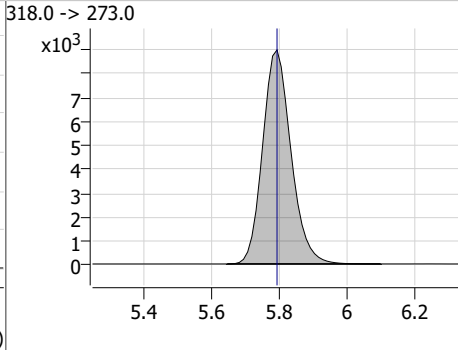
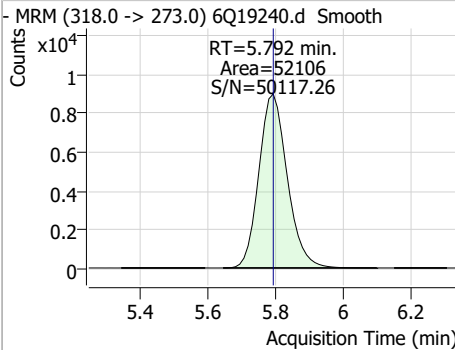
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Perfluorinated Compounds by LC/MS/MS

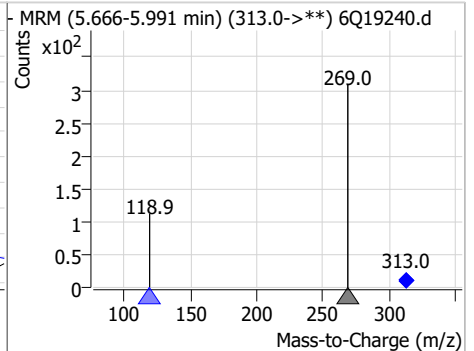
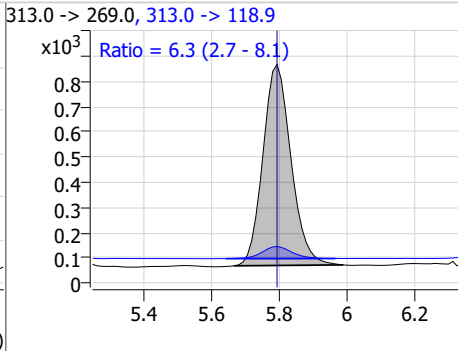
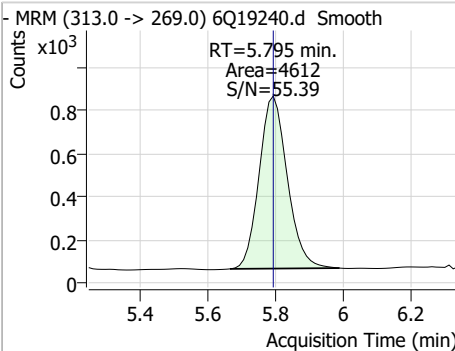
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.73	-0.01	1693	298.7 -> 98.8	34.7	17.3	51.9



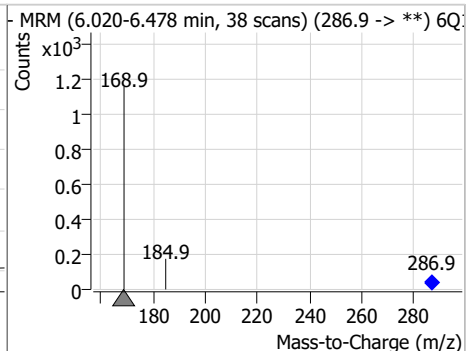
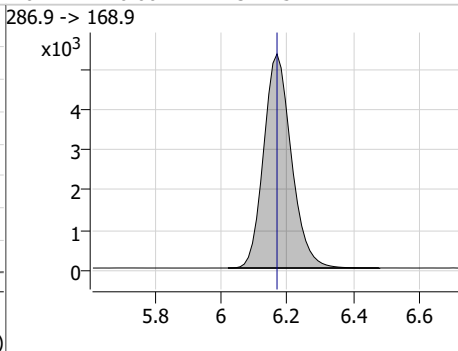
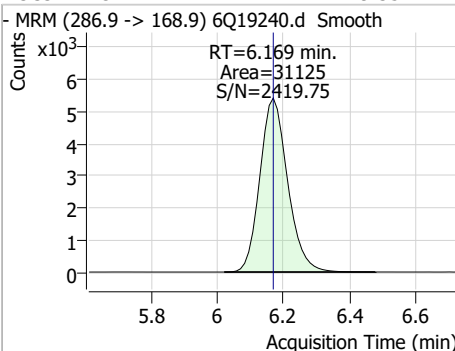
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.79	0.00	52106	318.0 -> 273.0	6.3	2.7	8.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.79	0.00	4612	313.0 -> 118.9	6.3	2.7	8.1

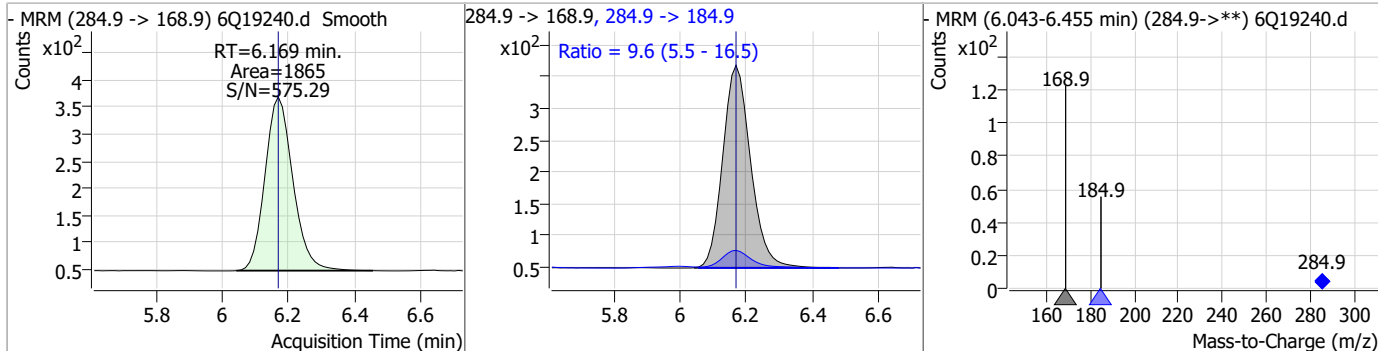


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.35	6.17	0.00	31125	286.9 -> 168.9	6.3	2.7	8.1

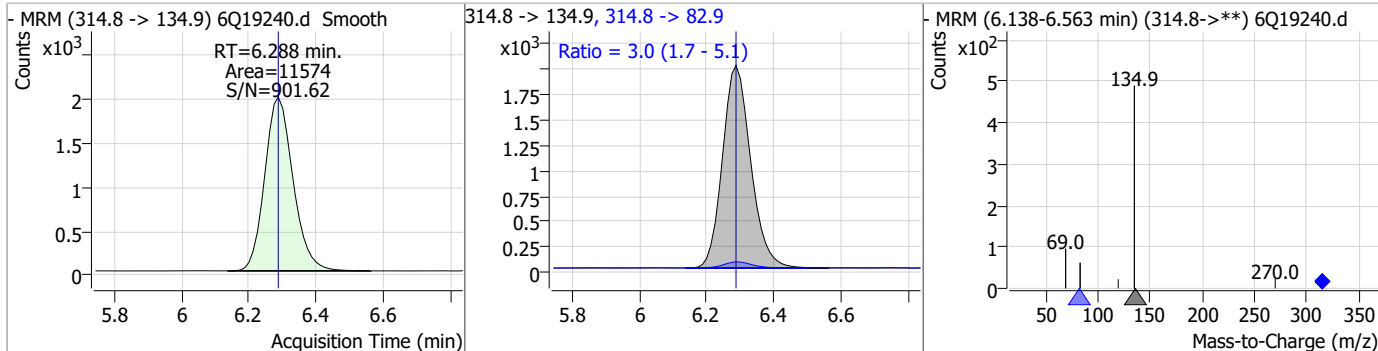


Perfluorinated Compounds by LC/MS/MS

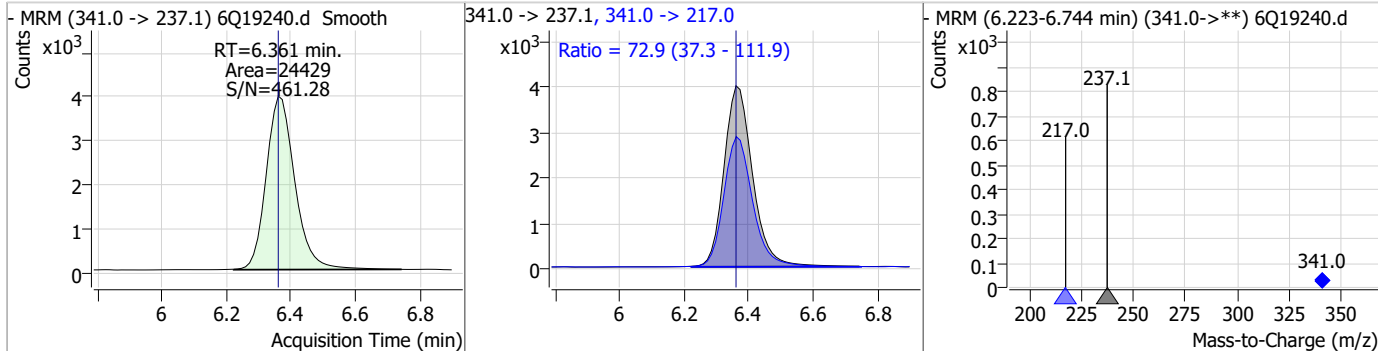
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.55	6.17	0.00	1865	284.9 -> 184.9	9.6	5.5	16.5



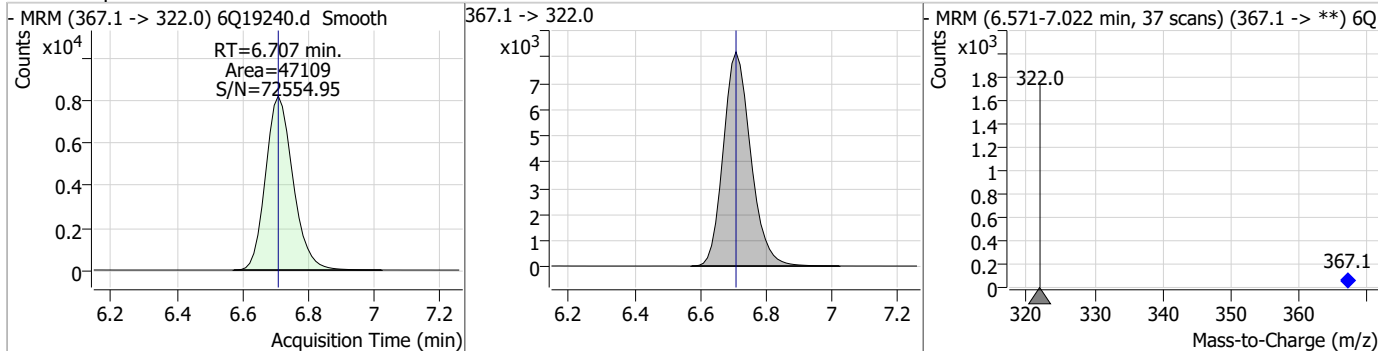
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.45	6.29	0.00	11574	314.8 -> 82.9	3.0	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	6.03	6.36	0.00	24429	341.0 -> 217.0	72.9	37.3	111.9

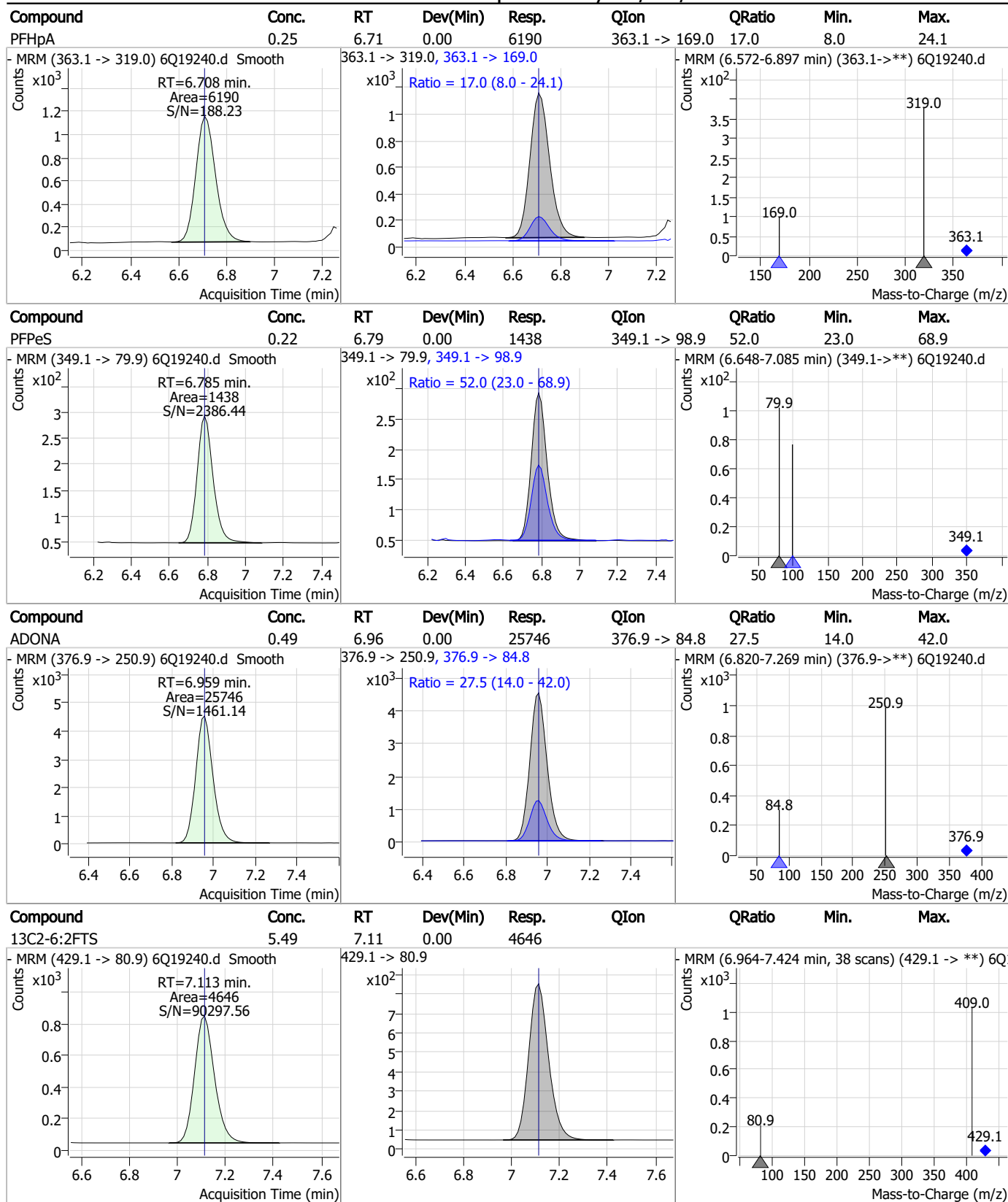


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.41	6.71	0.00	47109	367.1 -> 322.0			



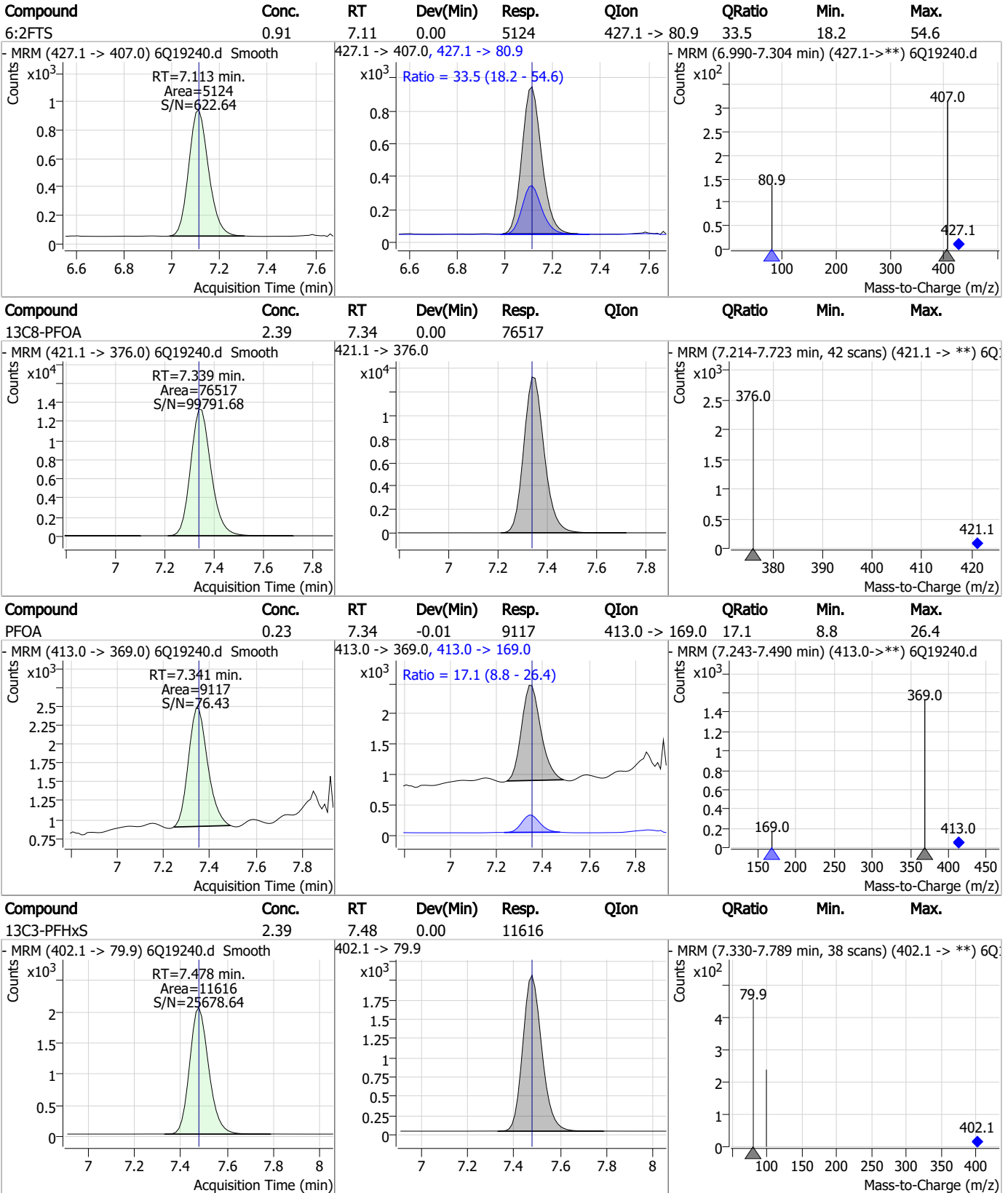
7.7.22
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Perfluorinated Compounds by LC/MS/MS



7.7.22
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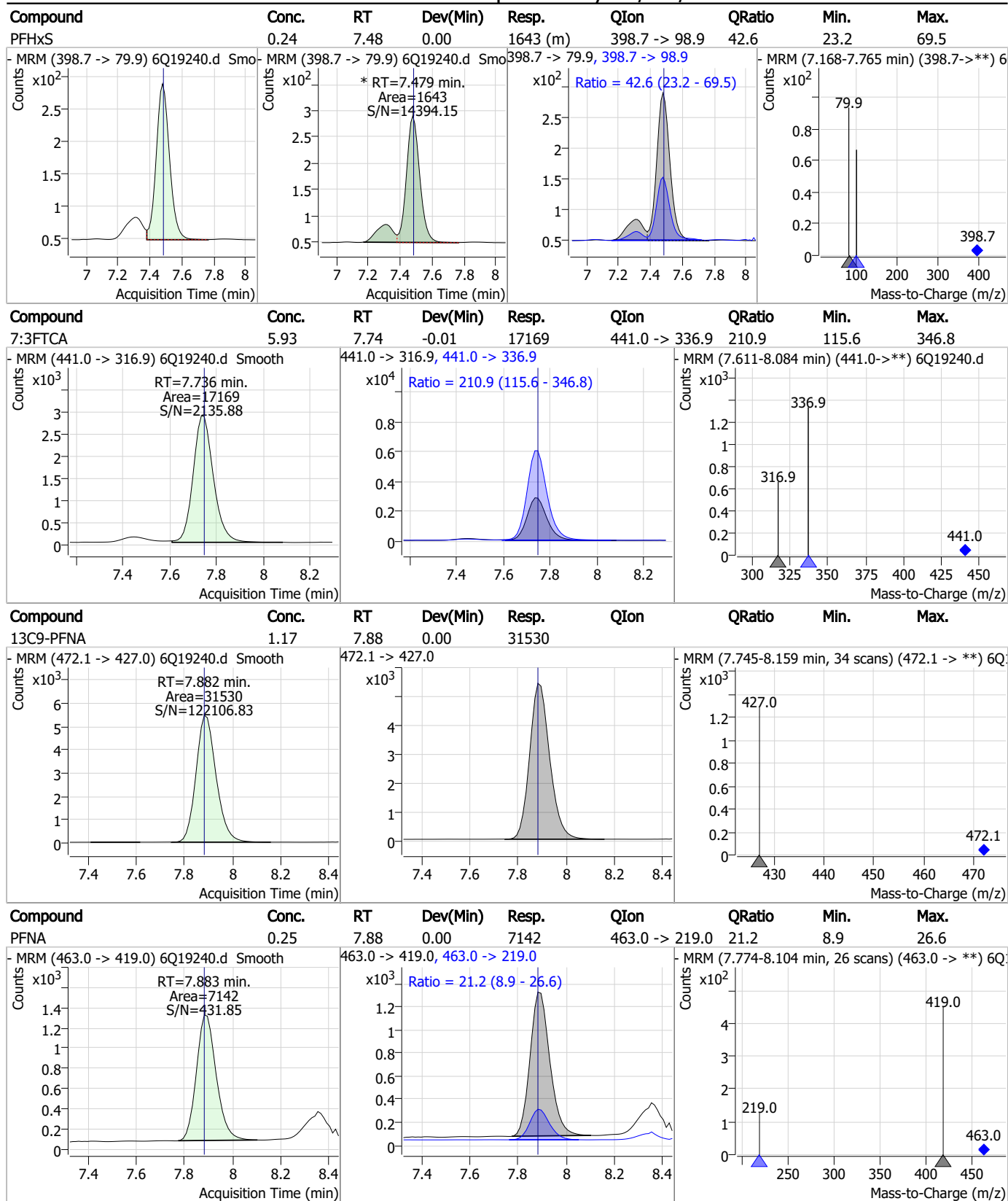
Perfluorinated Compounds by LC/MS/MS



7.7.22 7



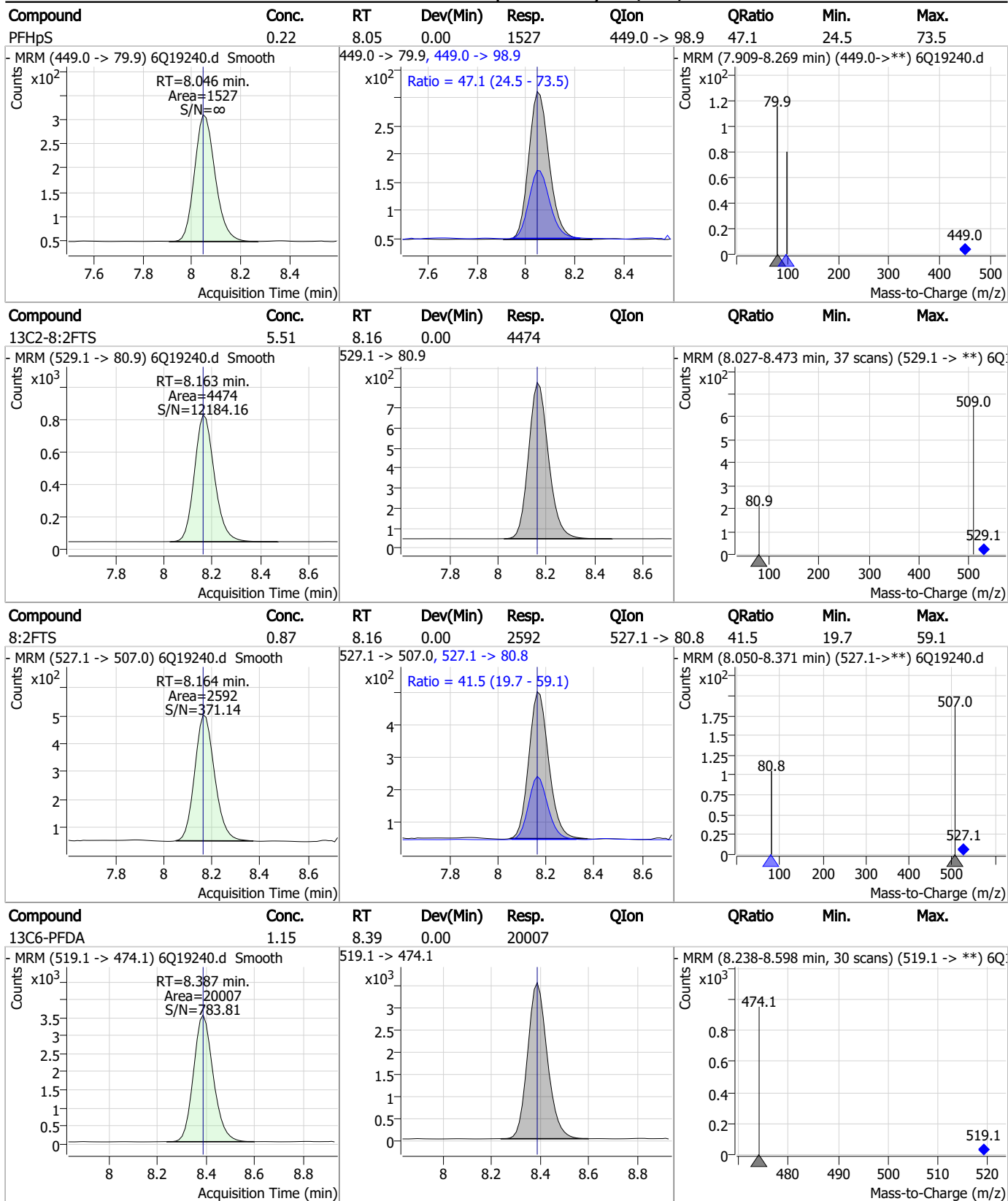
Perfluorinated Compounds by LC/MS/MS



7.7.22

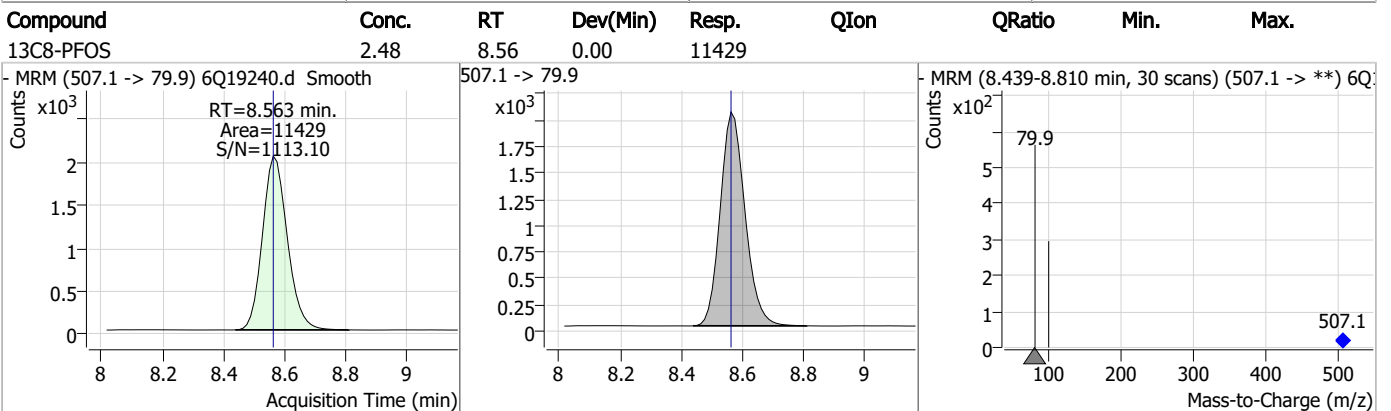
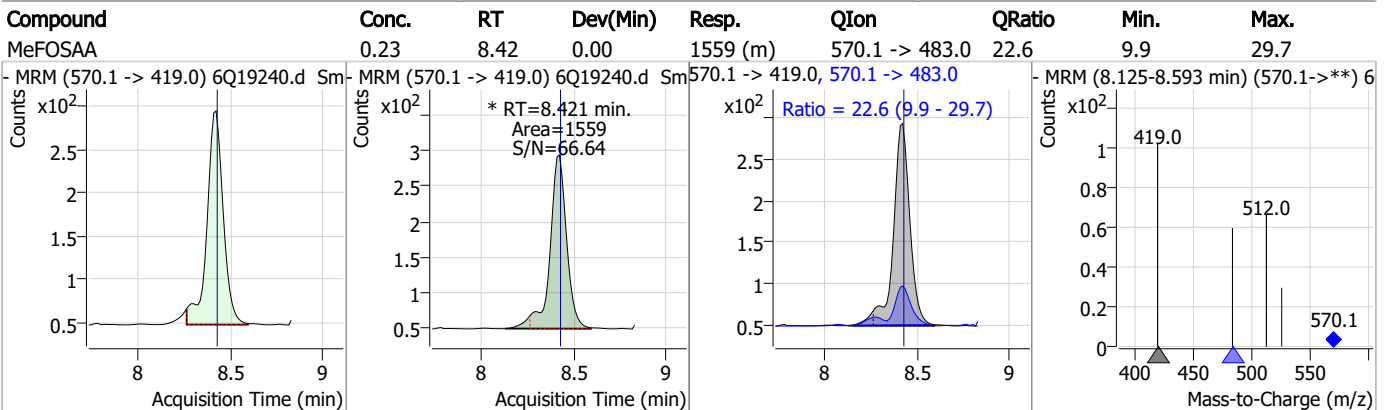
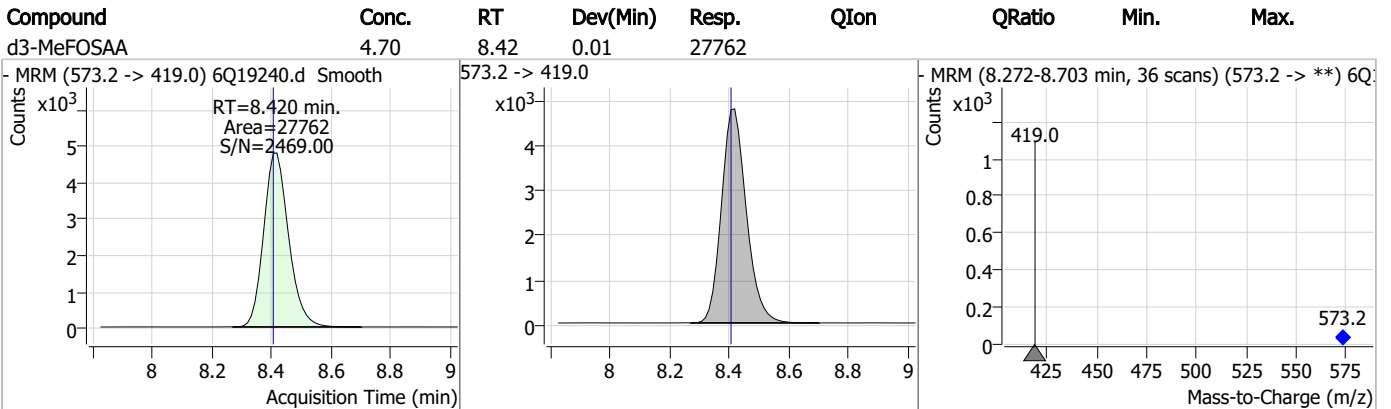
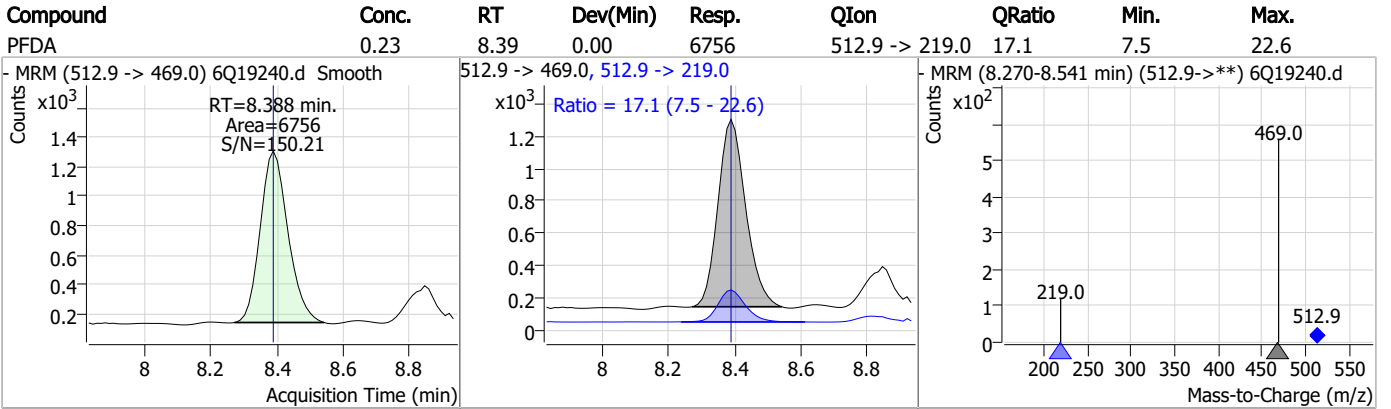
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Perfluorinated Compounds by LC/MS/MS



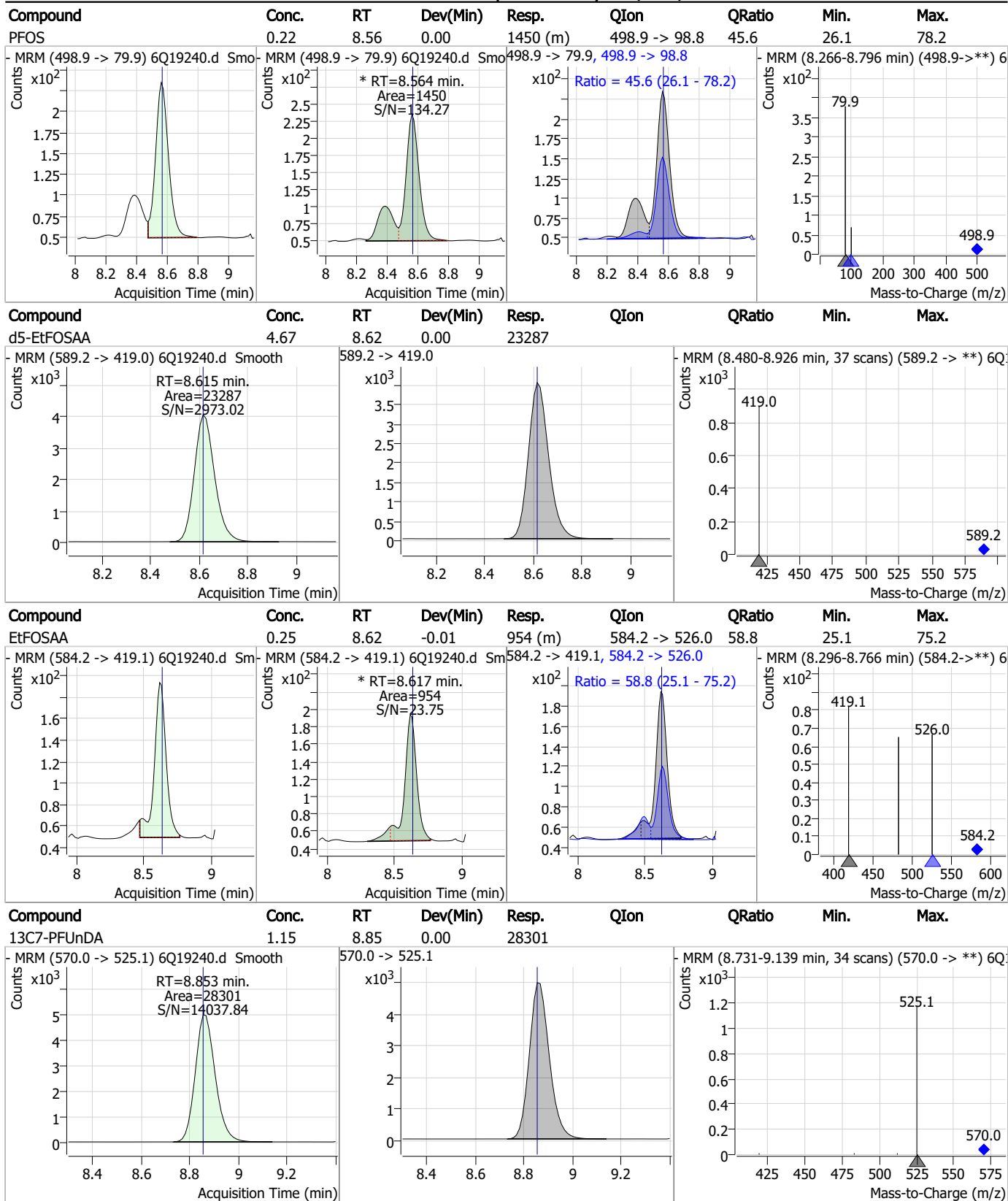
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Perfluorinated Compounds by LC/MS/MS



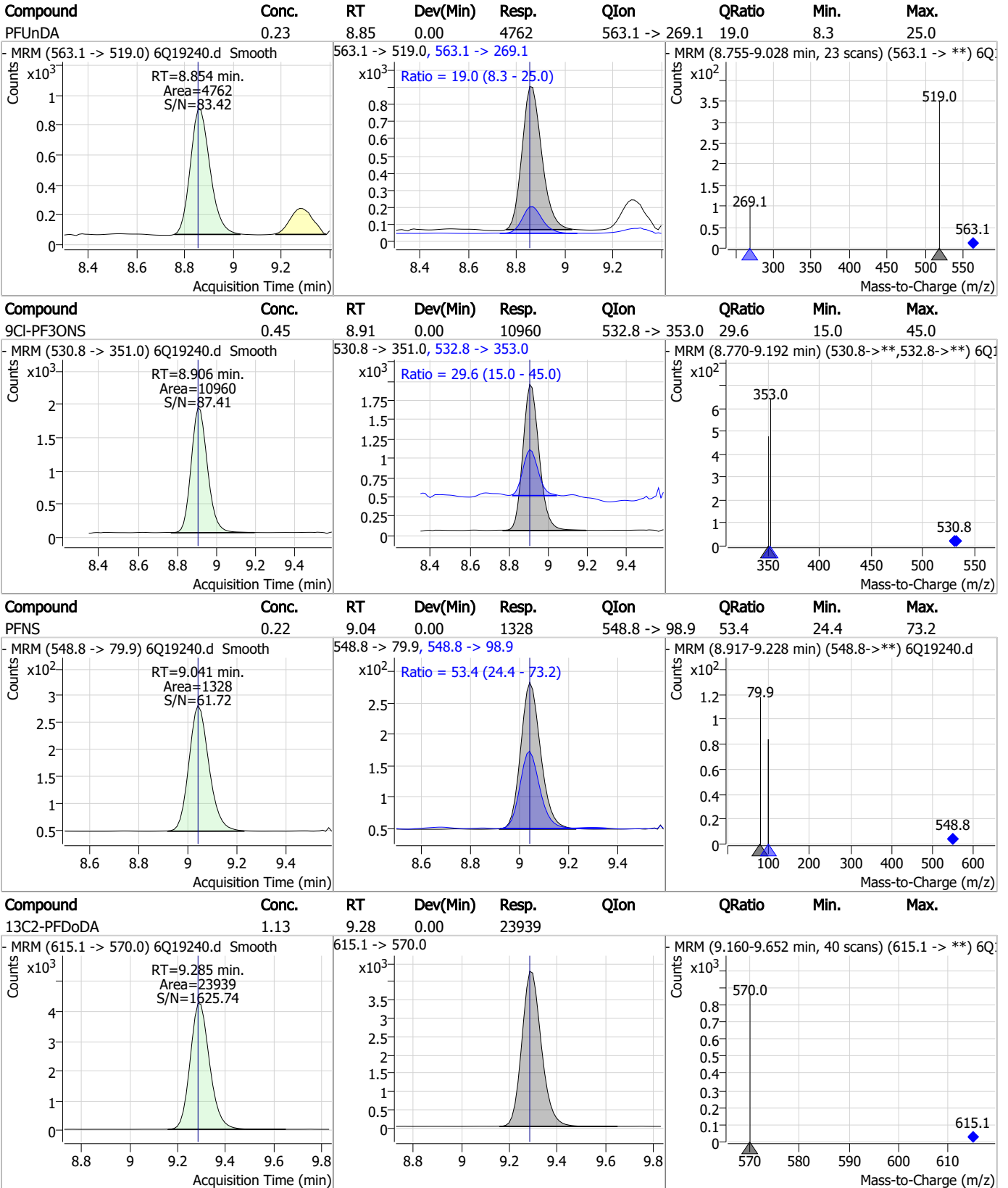
7.7.22 7

Perfluorinated Compounds by LC/MS/MS



7.7.22 7

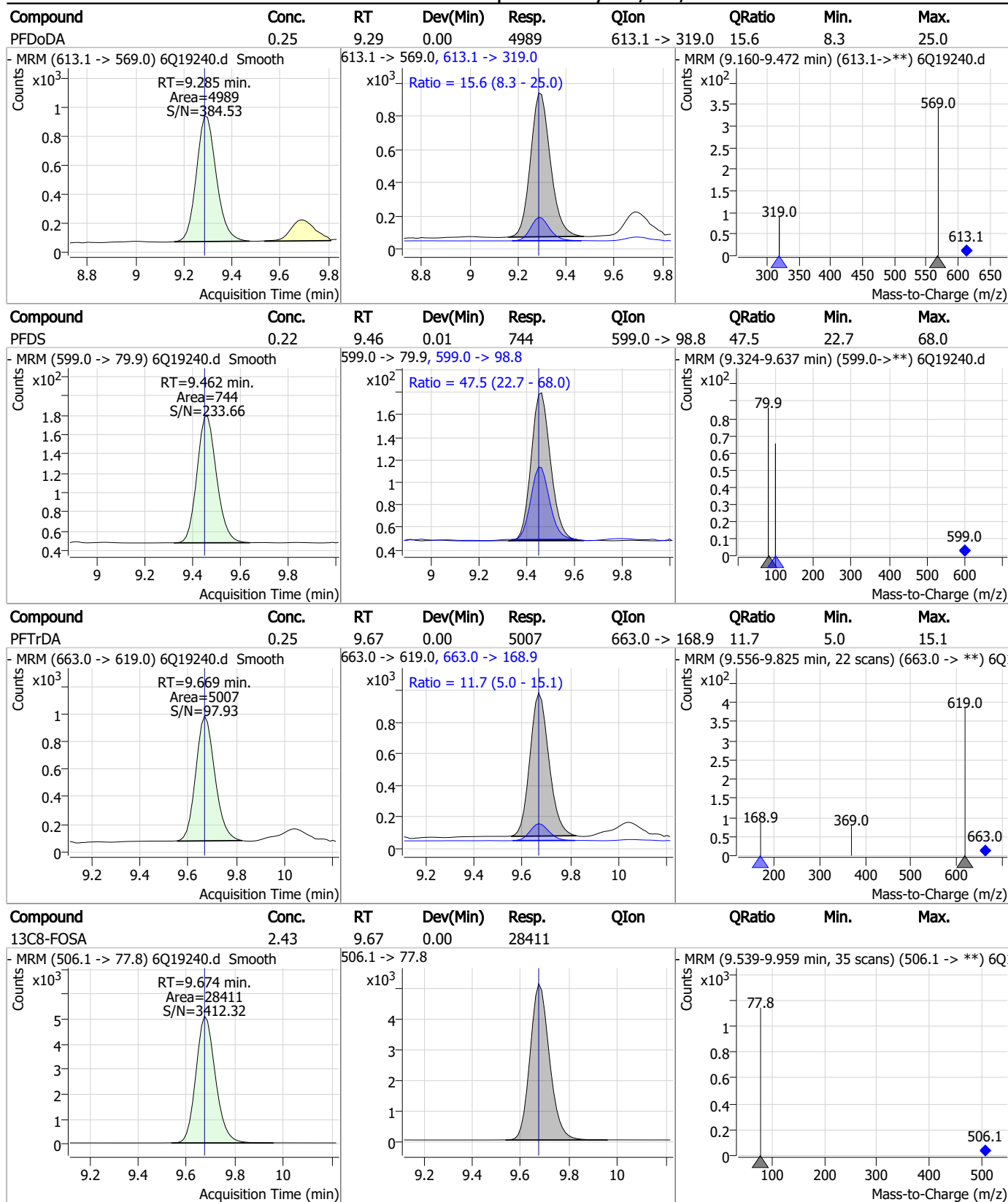
Perfluorinated Compounds by LC/MS/MS



7.7.22 7



Perfluorinated Compounds by LC/MS/MS

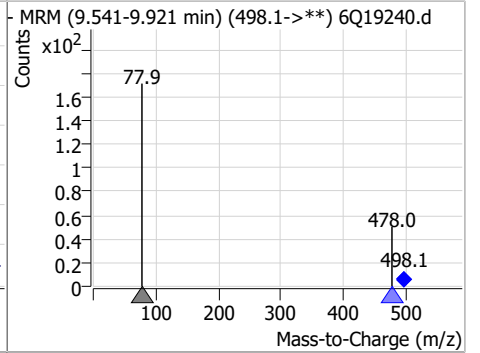
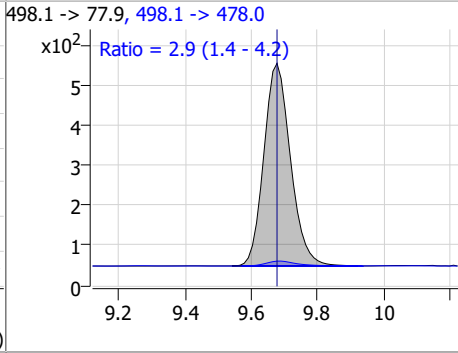
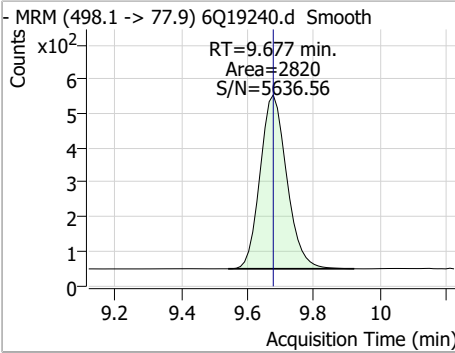


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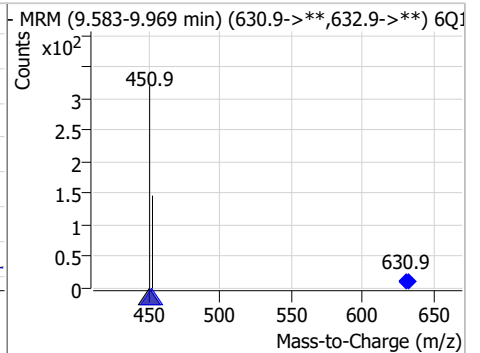
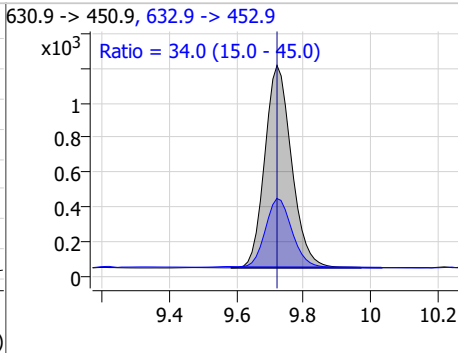
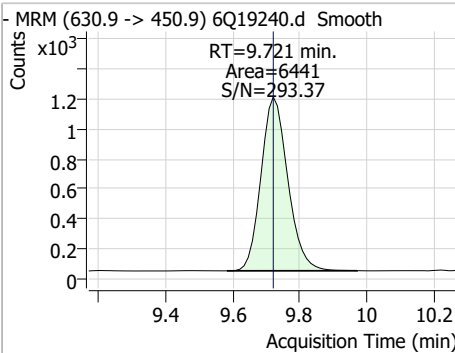
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Perfluorinated Compounds by LC/MS/MS

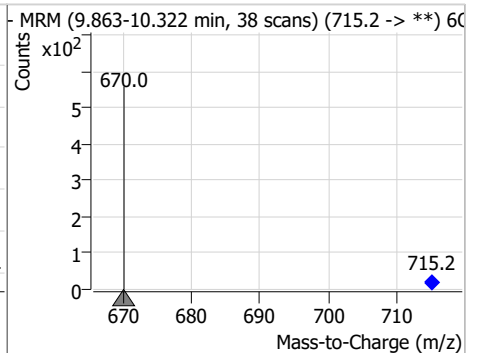
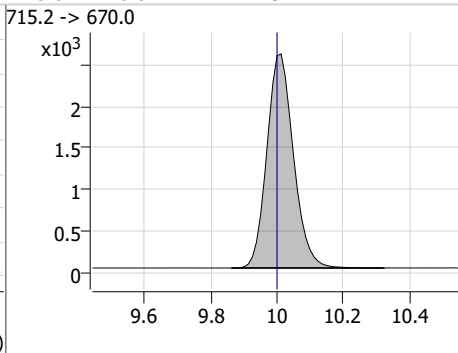
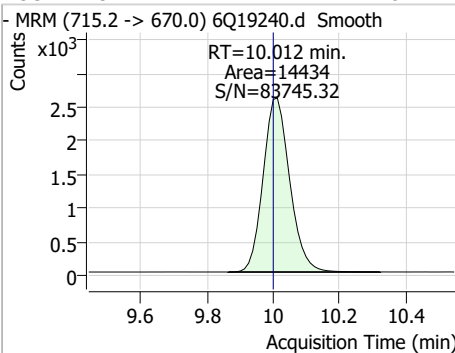
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.24	9.68	0.00	2820	498.1 -> 478.0	2.9	1.4	4.2



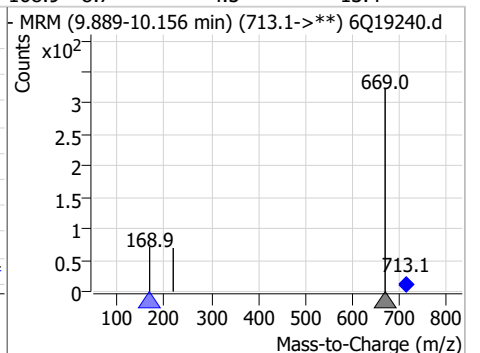
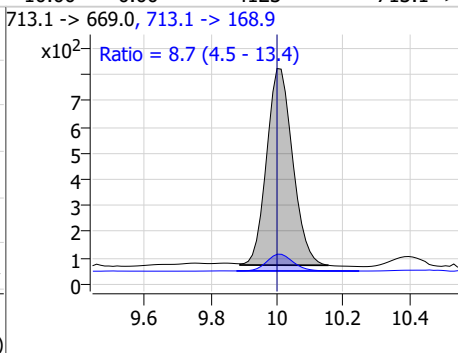
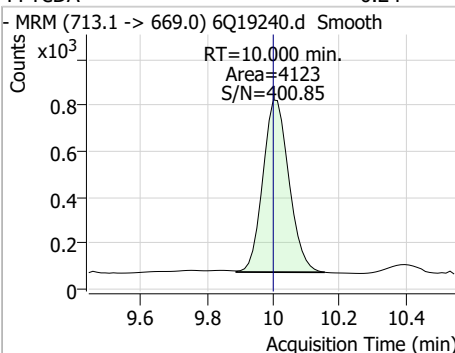
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	0.44	9.72	0.00	6441	632.9 -> 452.9	34.0	15.0	45.0



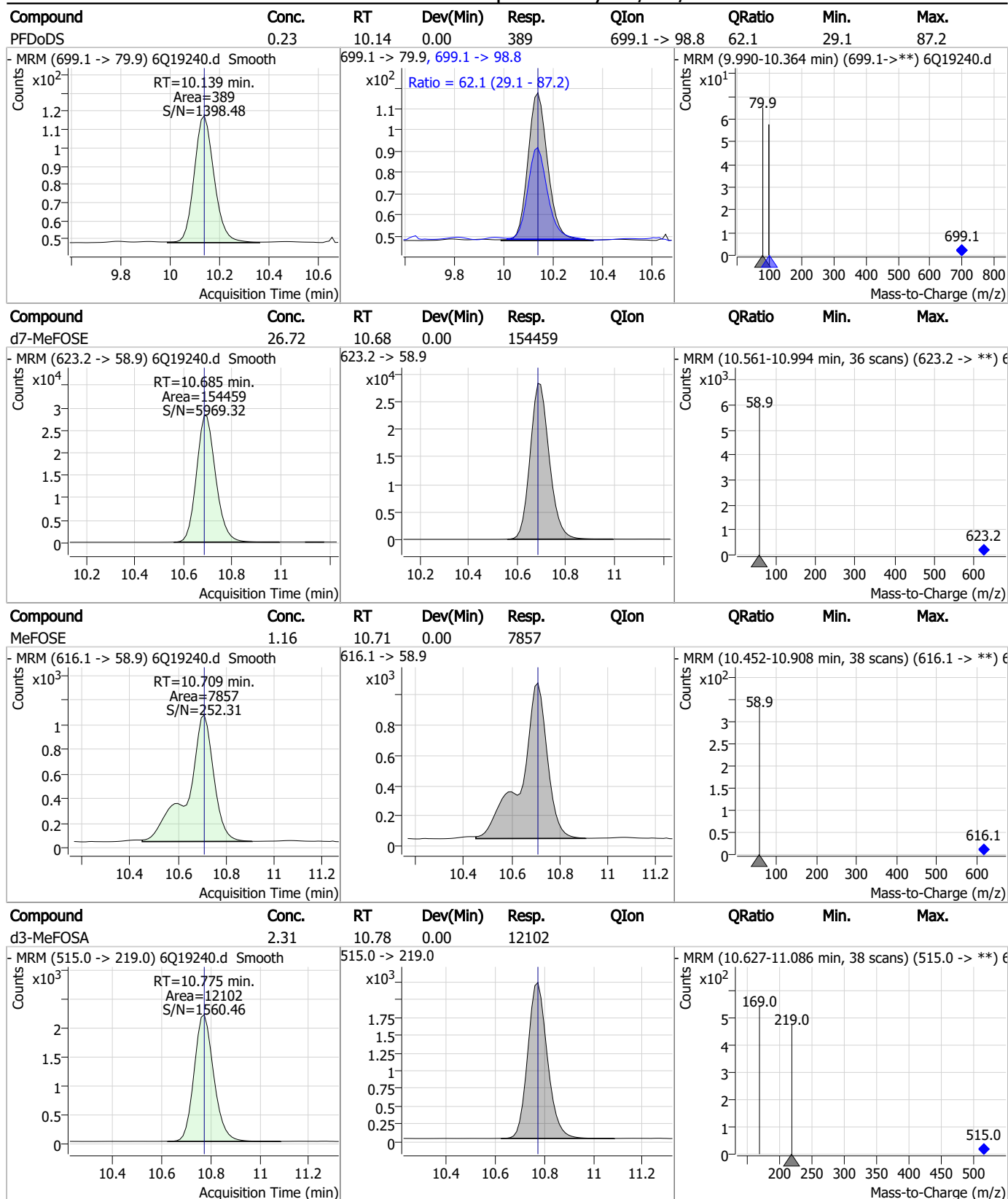
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	10.01	0.01	14434	715.2 -> 670.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.24	10.00	0.00	4123	713.1 -> 168.9	8.7	4.5	13.4



Perfluorinated Compounds by LC/MS/MS

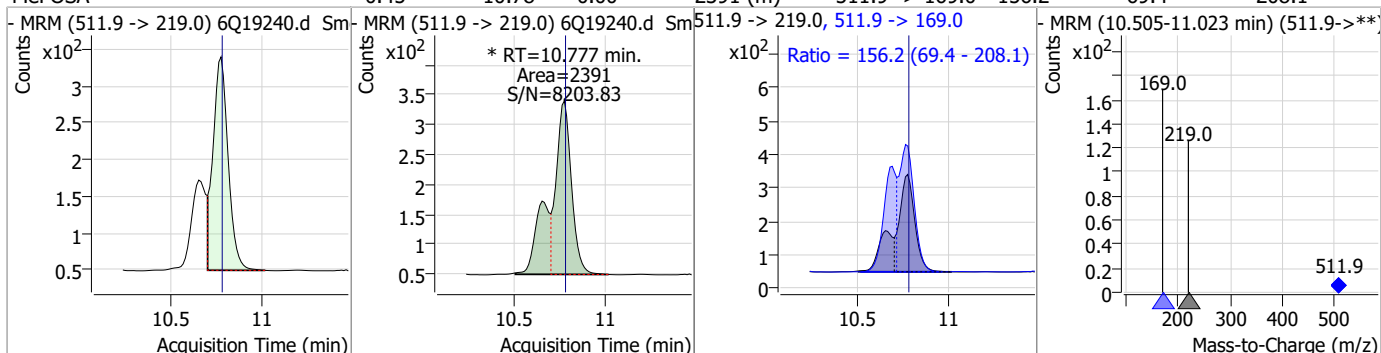


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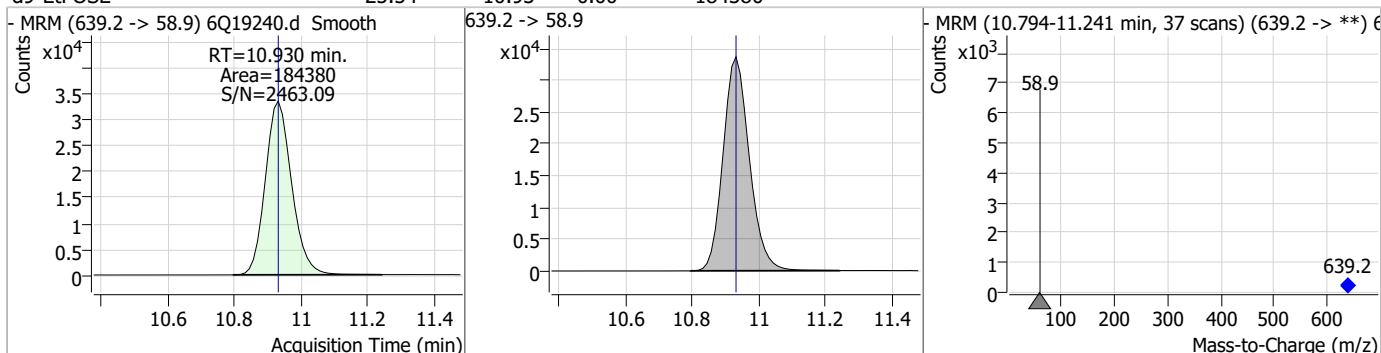
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Perfluorinated Compounds by LC/MS/MS

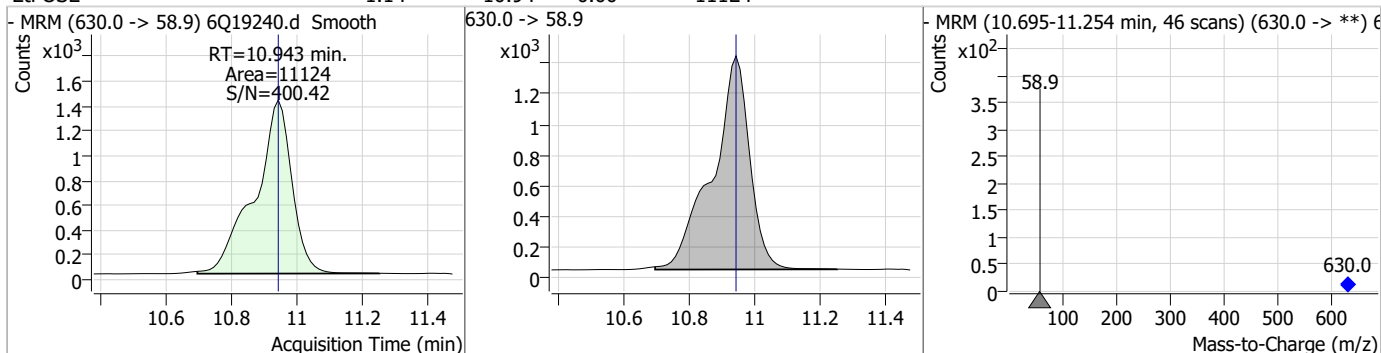
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.45	10.78	0.00	2391 (m)	511.9 -> 169.0	156.2	69.4	208.1



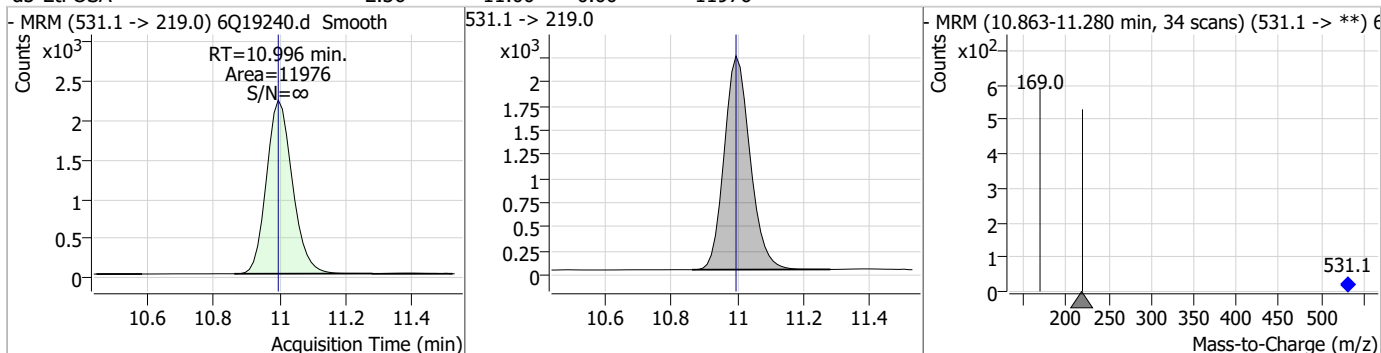
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.54	10.93	0.00	184380				



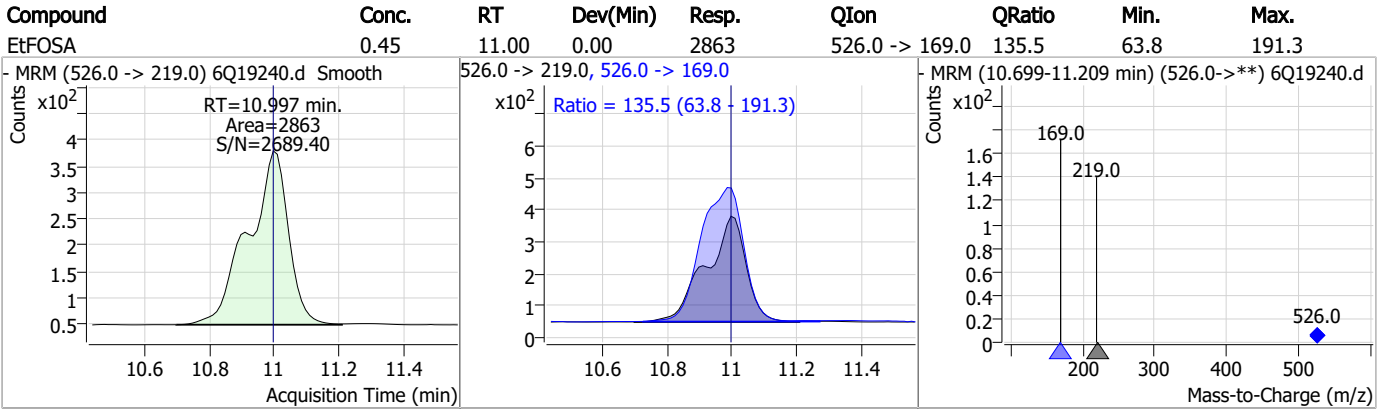
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.14	10.94	0.00	11124				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.36	11.00	0.00	11976				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19240.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 15:48 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.62	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19241.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 4:02:28 PM
 Sample Name : ic287-2
 Vial : P1-A3
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	141637	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	46702	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	52337	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	46461	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	72753	2.50 µg/L	0.012
M9-PFNA	7.882	472.1 -> 427.0	32924	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	20732	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	30042	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24226	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	14311	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	27114	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18551	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11498	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10281	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3155	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4774	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4231	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	27089	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	31821	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	24295	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	144782	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	187235	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12325	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12131	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14271	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	59922	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8539	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	79841	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	29653	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	44971	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	45094	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3155	6.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.0%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4774	6.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.8%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4231	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.8%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24226	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFTeDA	10.012	715.2 -> 670.0	14311	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C3-PFBS	5.746	302.1 -> 79.9	18551	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFHxS	7.478	402.1 -> 79.9	11498	2.54 µg/L	0.000

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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	3.085	216.8 -> 171.9	141637	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.707	367.1 -> 322.0	46461	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.792	318.0 -> 273.0	52337	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C5-PFPeA	4.548	268.3 -> 223.0	46702	5.36 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C6-PFDA	8.387	519.1 -> 474.1	20732	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C7-PFUnDA	8.853	570.0 -> 525.1	30042	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-FOSA	9.674	506.1 -> 77.8	27114	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOA	7.352	421.1 -> 376.0	72753	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-PFOS	8.563	507.1 -> 79.9	10281	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C9-PFNA	7.882	472.1 -> 427.0	32924	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSAA	8.420	573.2 -> 419.0	27089	5.06 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31821	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSA	10.775	515.0 -> 219.0	12131	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
d5-EtFOSAA	8.615	589.2 -> 419.0	24295	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	144782	27.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
d9-EtFOSE	10.930	639.2 -> 58.9	187235	28.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 114.5%	
d5-EtFOSA	10.996	531.1 -> 219.0	12325	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	8637	1.58 µg/L	96
		327.1 -> 80.9	3424		
6:2FTS	7.113	427.1 -> 407.0	9198	1.59 µg/L	95
		427.1 -> 80.9	3057		
8:2FTS	8.164	527.1 -> 507.0	5065	1.80 µg/L	95
		527.1 -> 80.8	1856		
EtFOSAA	8.629	584.2 -> 419.1	1566	0.39 µg/L	m 98
		584.2 -> 526.0	767		
FOSA	9.677	498.1 -> 77.9	4795	0.43 µg/L	99
		498.1 -> 478.0	155		
MeFOSAA	8.421	570.1 -> 419.0	2934	0.45 µg/L	m 96
		570.1 -> 483.0	638		
PFBA	3.093	212.8 -> 168.9	9170	1.62 µg/L	100
PFBS	5.747	298.7 -> 79.9	3112	0.38 µg/L	95
		298.7 -> 98.8	1167		
PFDA	8.388	512.9 -> 469.0	12250	0.40 µg/L	97
		512.9 -> 219.0	2015		
PFDODA	9.285	613.1 -> 569.0	8766	0.44 µg/L	98
		613.1 -> 319.0	1372		
PFDS	9.450	599.0 -> 79.9	1329	0.43 µg/L	85

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	734			
PFHpA	6.708	363.1 -> 319.0	10471	0.42	µg/L	100
		363.1 -> 169.0	1679			
PFHpS	8.046	449.0 -> 79.9	2393	0.39	µg/L	91
		449.0 -> 98.9	1323			
PFHxA	5.795	313.0 -> 269.0	8571	0.41	µg/L	99
		313.0 -> 118.9	423			
PFHxS	7.479	398.7 -> 79.9	2694	0.39	µg/L	m 96
		398.7 -> 98.9	1326			
PFNA	7.883	463.0 -> 419.0	12433	0.41	µg/L	94
		463.0 -> 219.0	2533			
PFNS	9.041	548.8 -> 79.9	2311	0.43	µg/L	91
		548.8 -> 98.9	1267			
PFOA	7.353	413.0 -> 369.0	15981	0.43	µg/L	98
		413.0 -> 169.0	2969			
PFOS	8.564	498.9 -> 79.9	2426	0.40	µg/L	m 92
		498.9 -> 98.8	1130			
PFPeA	4.551	263.0 -> 219.0	11427	0.83	µg/L	100
PFPeS	6.785	349.1 -> 79.9	2669	0.42	µg/L	91
		349.1 -> 98.9	1072			
PFTeDA	10.000	713.1 -> 669.0	7311	0.43	µg/L	97
		713.1 -> 168.9	572			
PFTrDA	9.669	663.0 -> 619.0	8832	0.44	µg/L	98
		663.0 -> 168.9	954			
PFUnDA	8.866	563.1 -> 519.0	8571	0.39	µg/L	97
		563.1 -> 269.1	1535			
11CI-PF3OUdS	9.721	630.9 -> 450.9	12285	0.82	µg/L	99
		632.9 -> 452.9	3725			
9CI-PF3ONS	8.906	530.8 -> 351.0	20519	0.82	µg/L	92
		532.8 -> 353.0	5213			
ADONA	6.959	376.9 -> 250.9	42272	0.79	µg/L	98
		376.9 -> 84.8	11368			
HFPO-DA	6.169	284.9 -> 168.9	2728	0.79	µg/L	94
		284.9 -> 184.9	363			
3:3FTCA	3.946	241.0 -> 177.0	1893	2.01	µg/L	97
		241.0 -> 117.0	274			
5:3FTCA	6.361	341.0 -> 237.1	41391	10.18	µg/L	98
		341.0 -> 217.0	31474			
7:3FTCA	7.748	441.0 -> 316.9	30546	10.50	µg/L	81
		441.0 -> 336.9	61132			
EtFOSA	10.997	526.0 -> 219.0	5382	0.82	µg/L	98
		526.0 -> 169.0	6987			
EtFOSE	10.943	630.0 -> 58.9	19916	2.01	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	4470	0.84	µg/L	m 96
		511.9 -> 169.0	6394			
MeFOSE	10.709	616.1 -> 58.9	12458	1.97	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	635	0.41	µg/L	93
		699.1 -> 98.8	338			
NFDHA	5.673	295.0 -> 201.0	2117	0.80	µg/L	100
		295.0 -> 84.9	612			
PFMBA	4.988	279.0 -> 85.1	7958	0.81	µg/L	100
PFMPA	3.667	229.0 -> 84.9	6148	0.80	µg/L	100
PFEESA	6.288	314.8 -> 134.9	19459	0.75	µg/L	98
		314.8 -> 82.9	808			

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

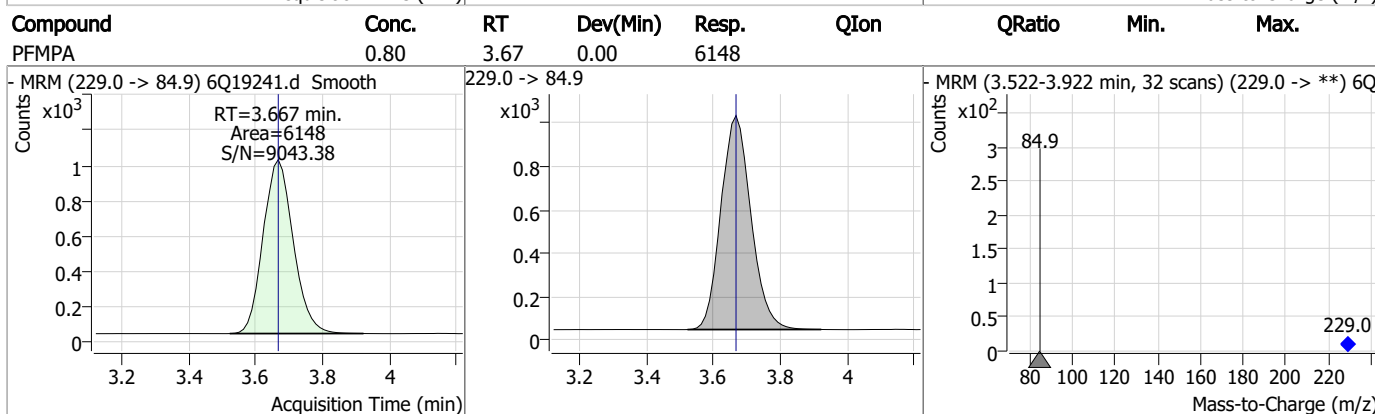
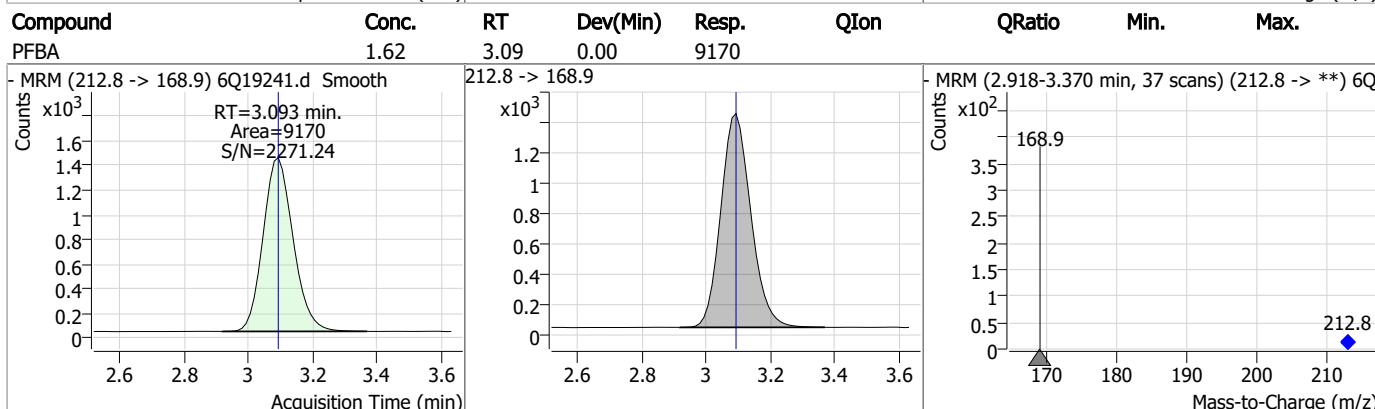
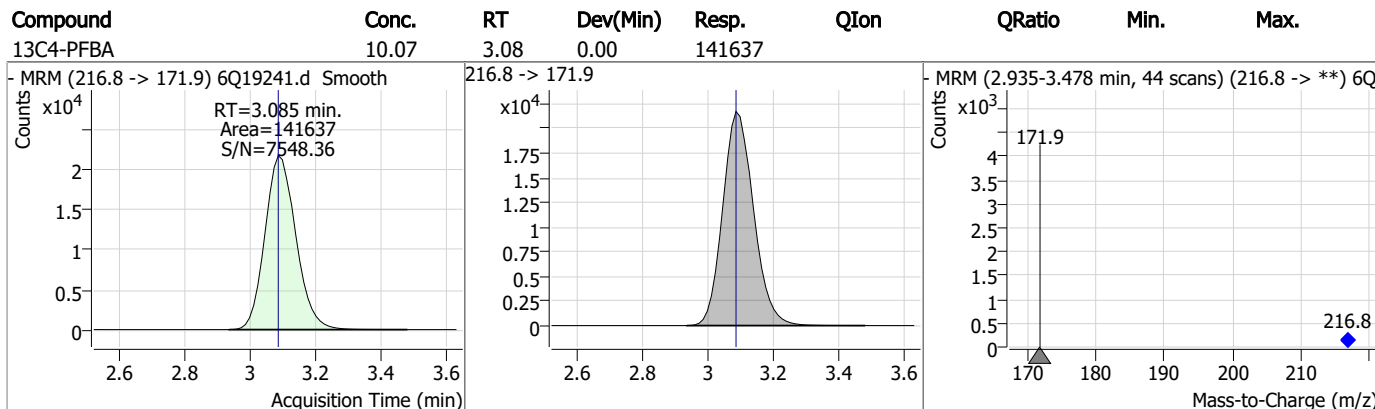
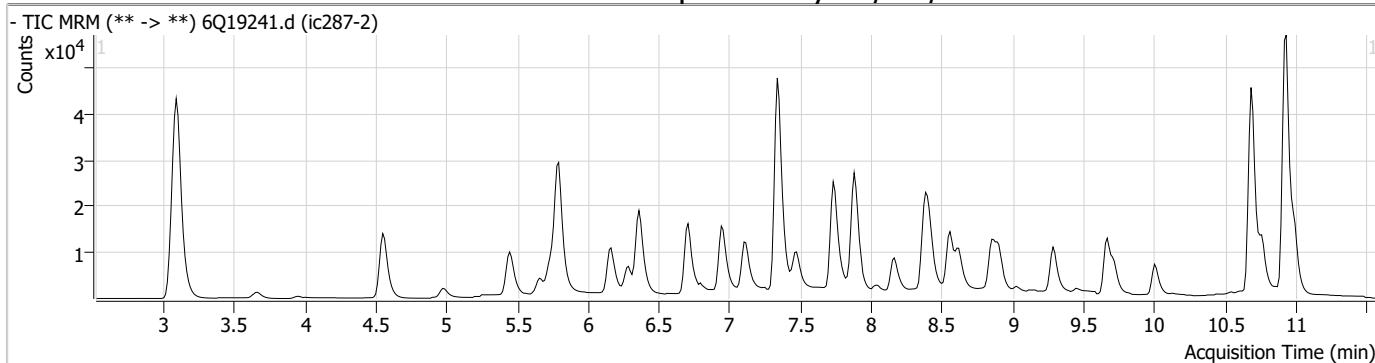
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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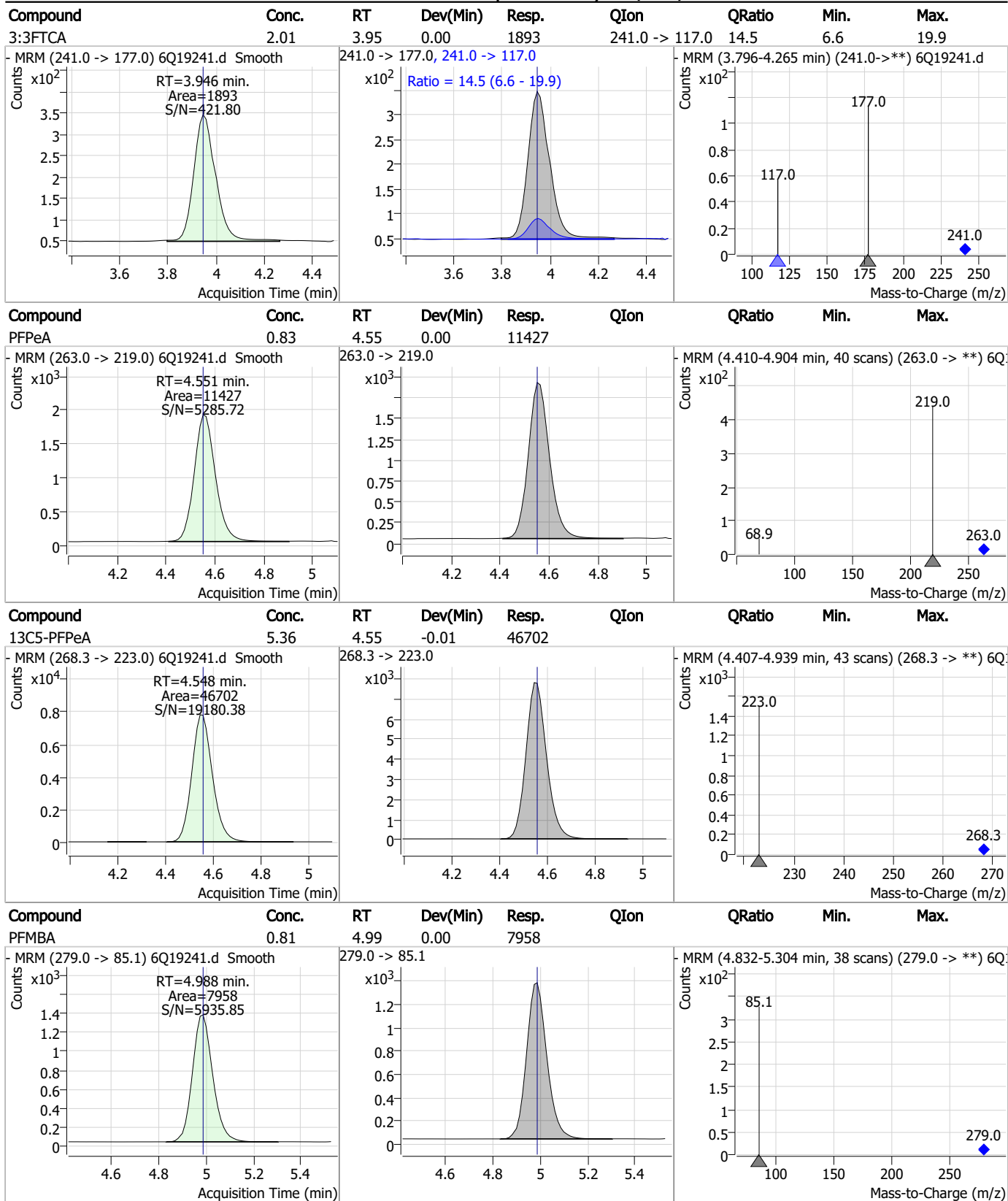


Perfluorinated Compounds by LC/MS/MS



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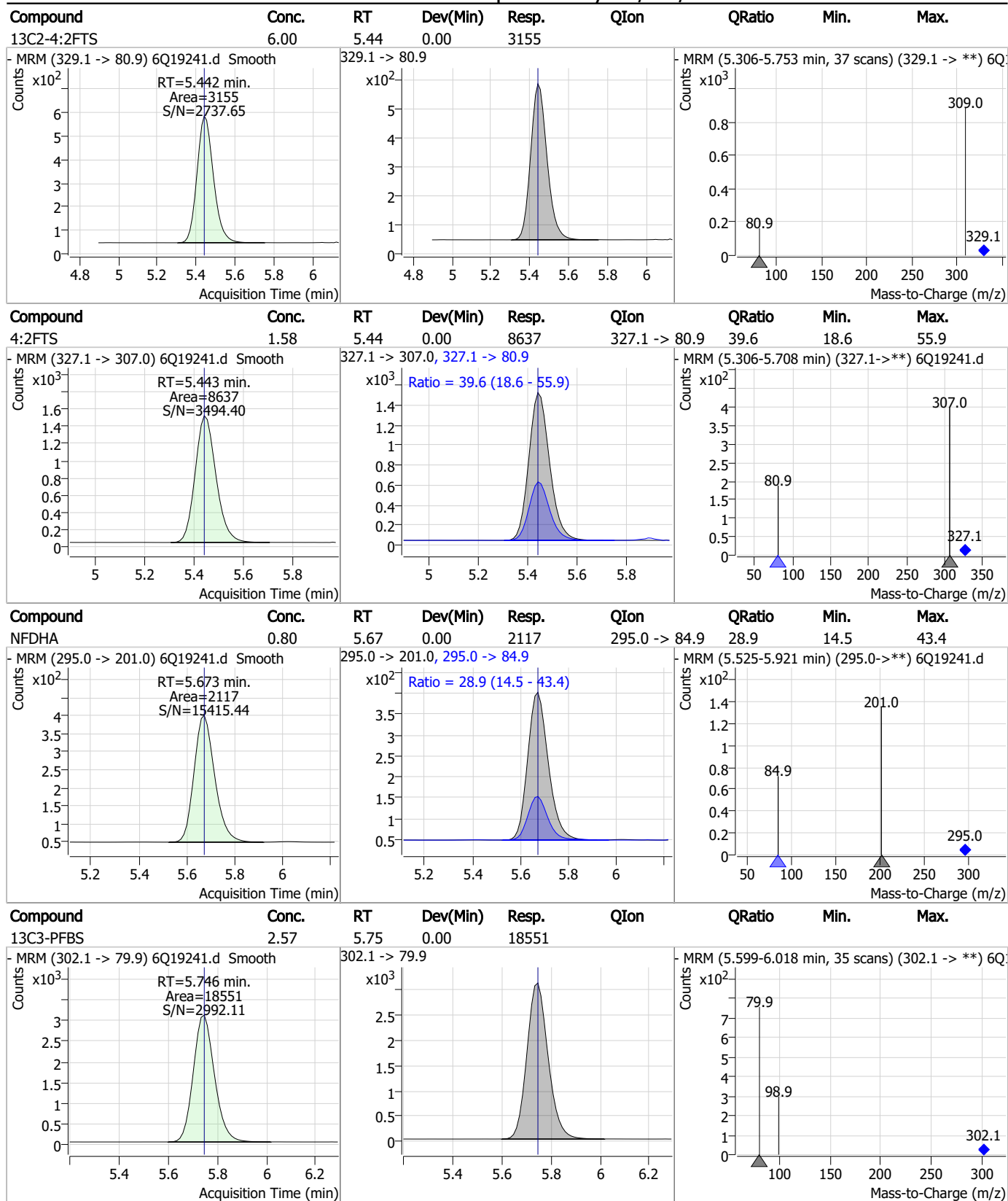
Perfluorinated Compounds by LC/MS/MS



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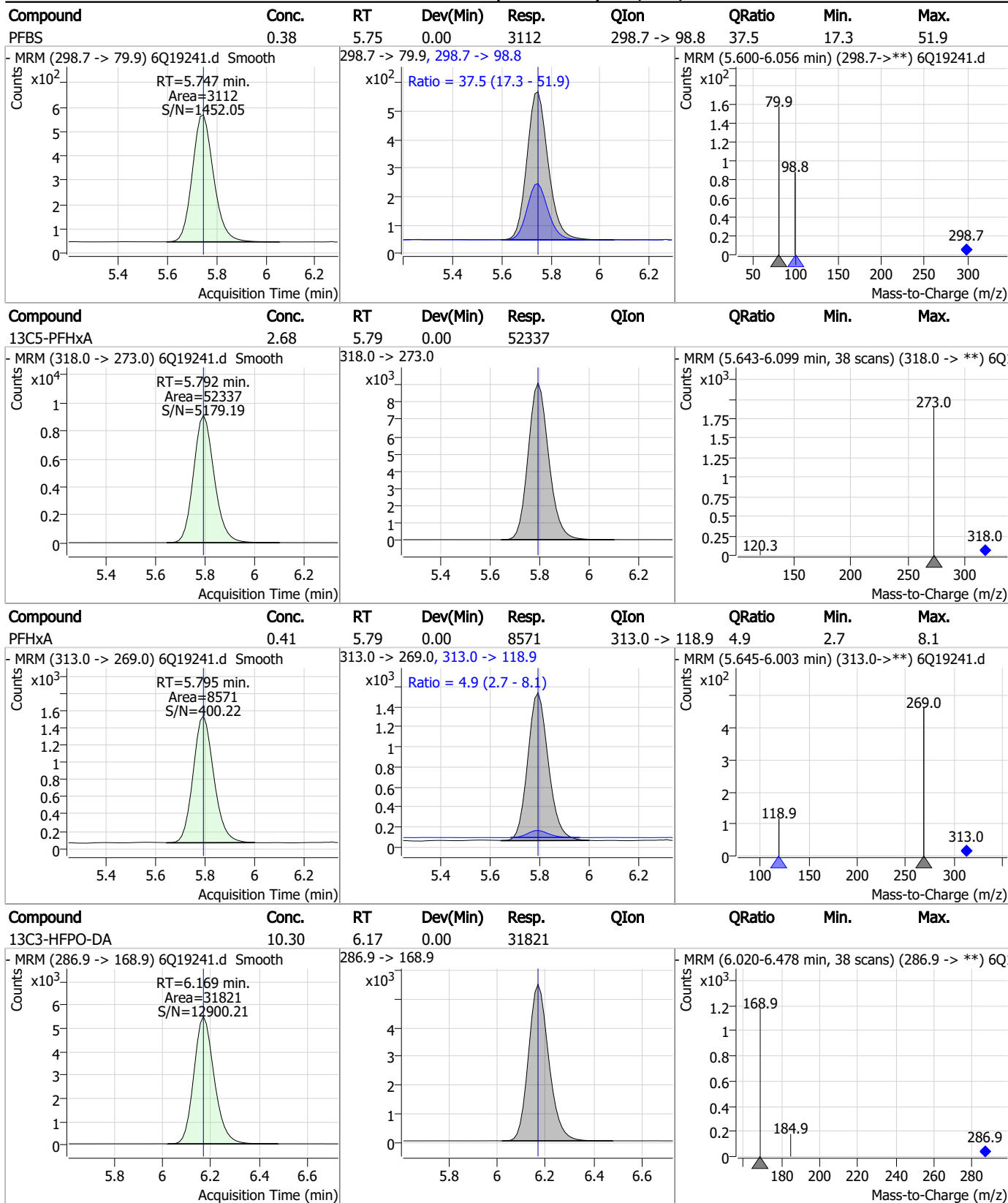
Perfluorinated Compounds by LC/MS/MS



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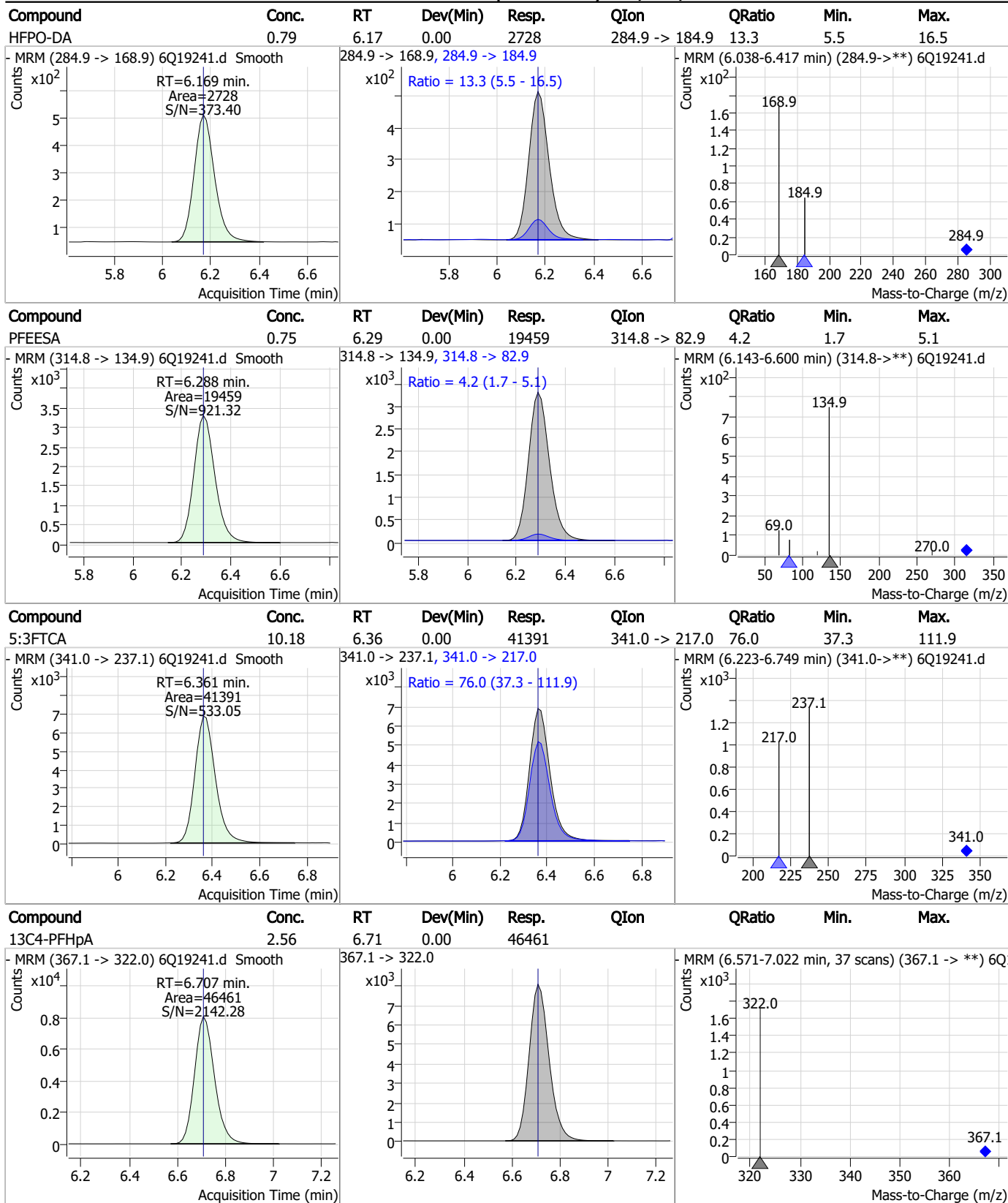
Perfluorinated Compounds by LC/MS/MS



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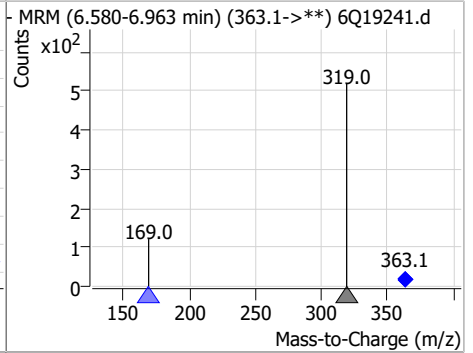
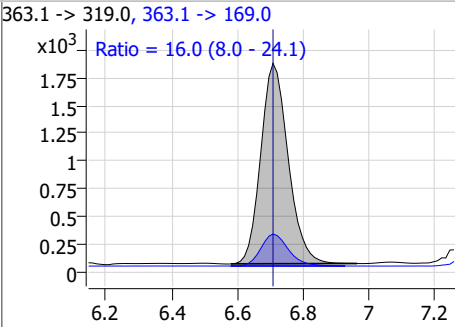
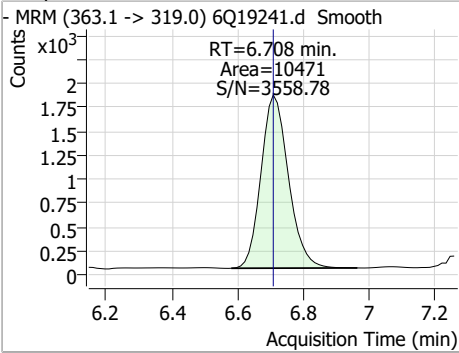
Perfluorinated Compounds by LC/MS/MS



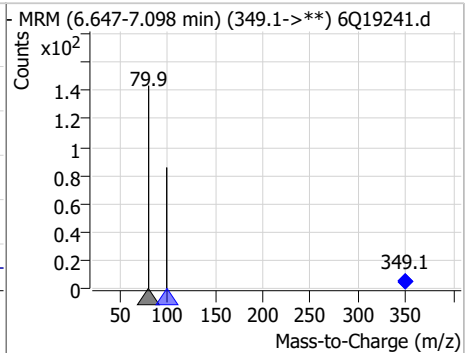
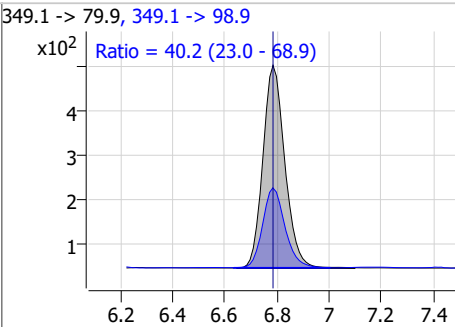
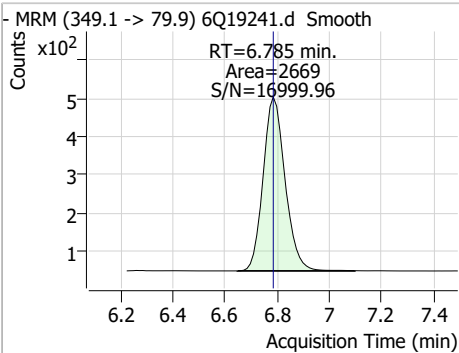
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Perfluorinated Compounds by LC/MS/MS

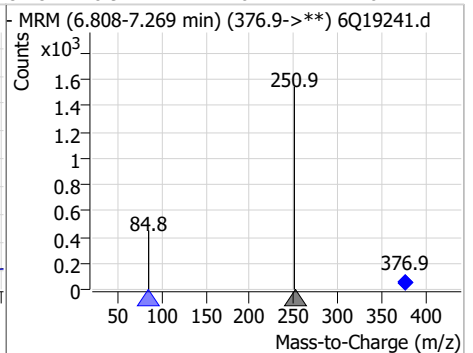
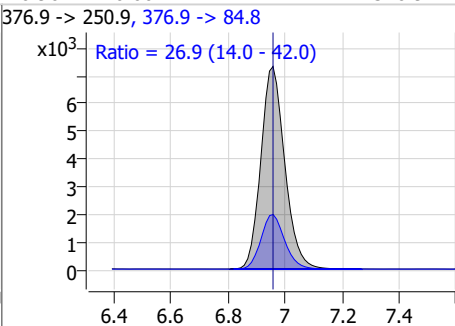
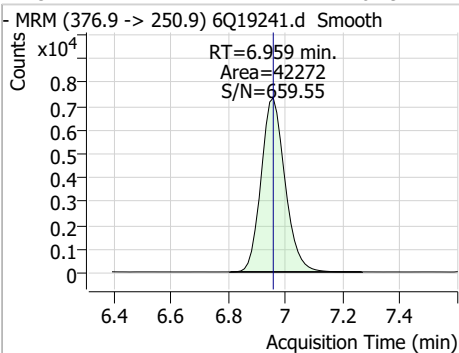
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.42	6.71	0.00	10471	363.1 -> 169.0	16.0	8.0	24.1



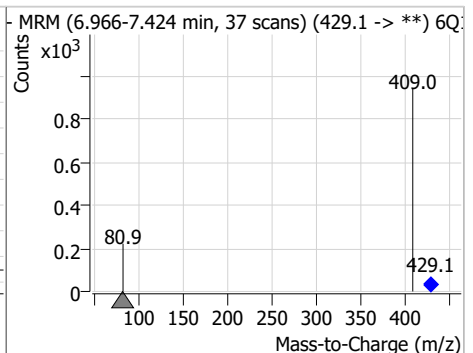
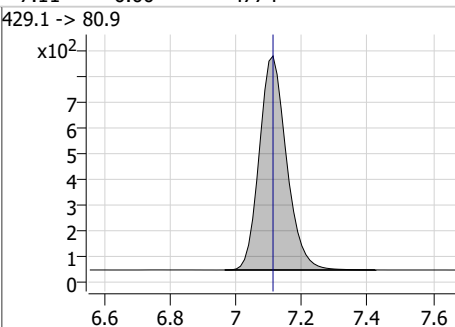
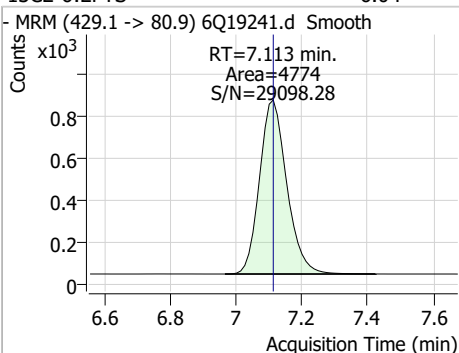
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.42	6.79	0.00	2669	349.1 -> 98.9	40.2	23.0	68.9



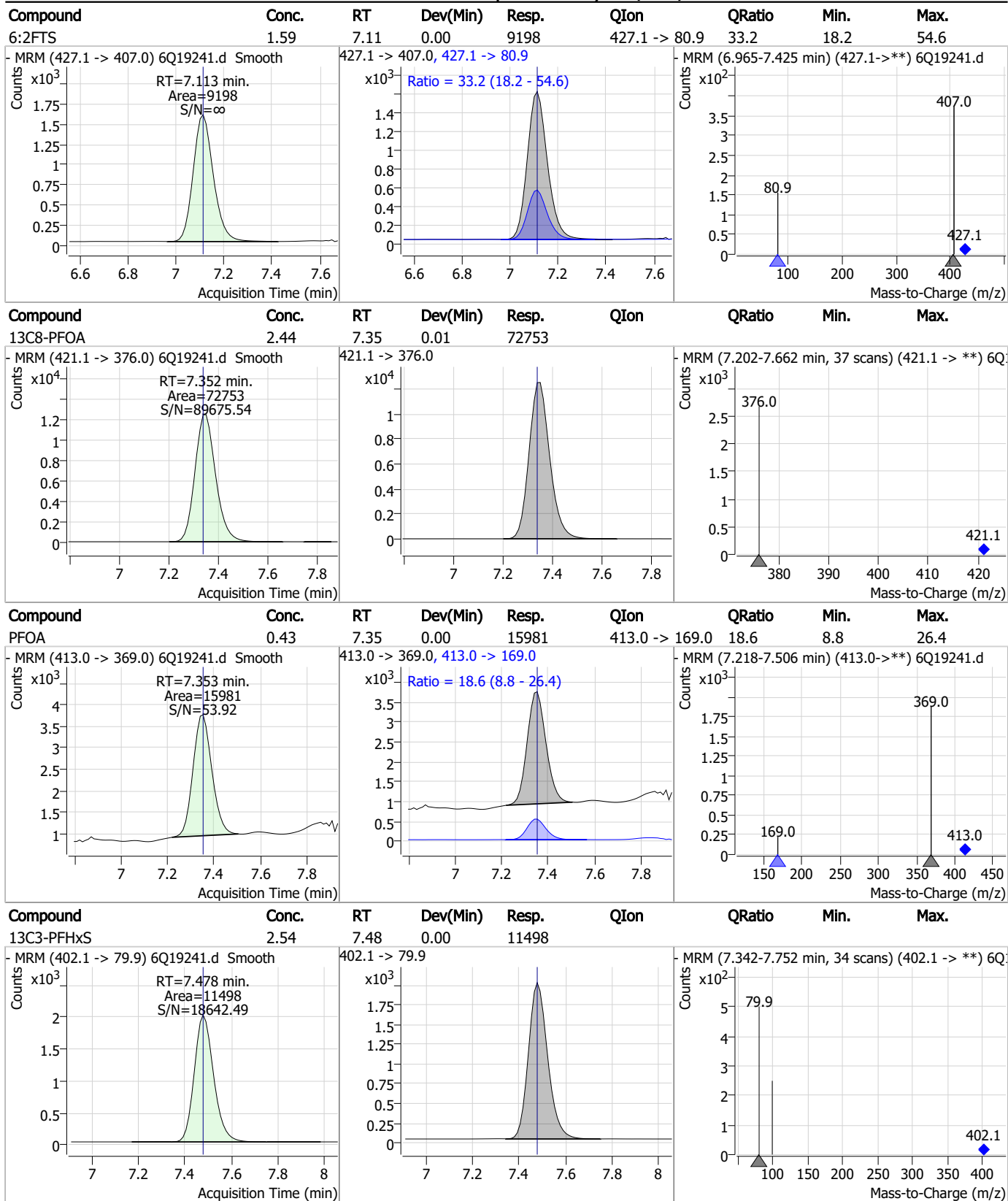
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	6.96	0.00	42272	376.9 -> 84.8	26.9	14.0	42.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.04	7.11	0.00	4774	429.1 -> 80.9			



Perfluorinated Compounds by LC/MS/MS

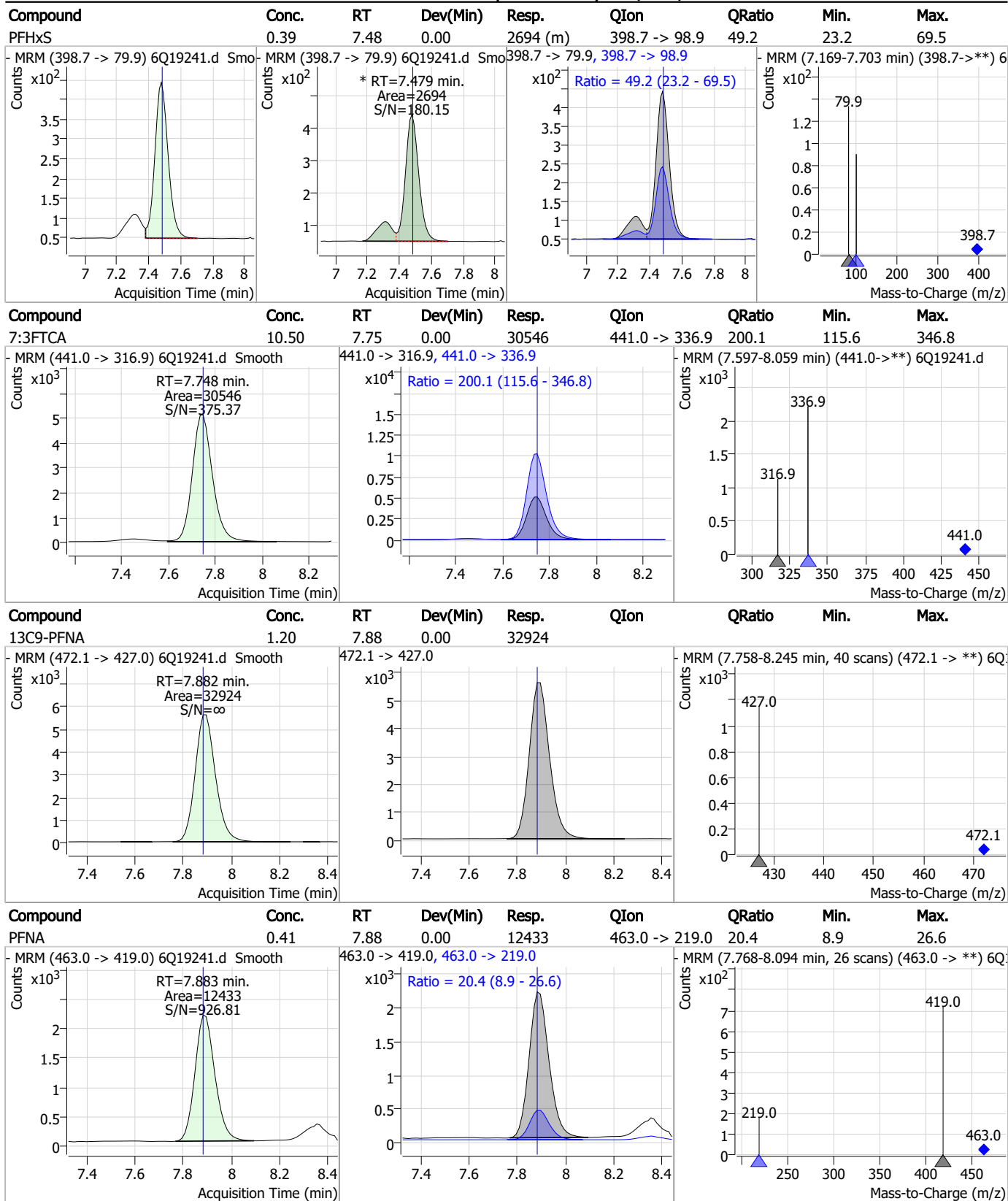


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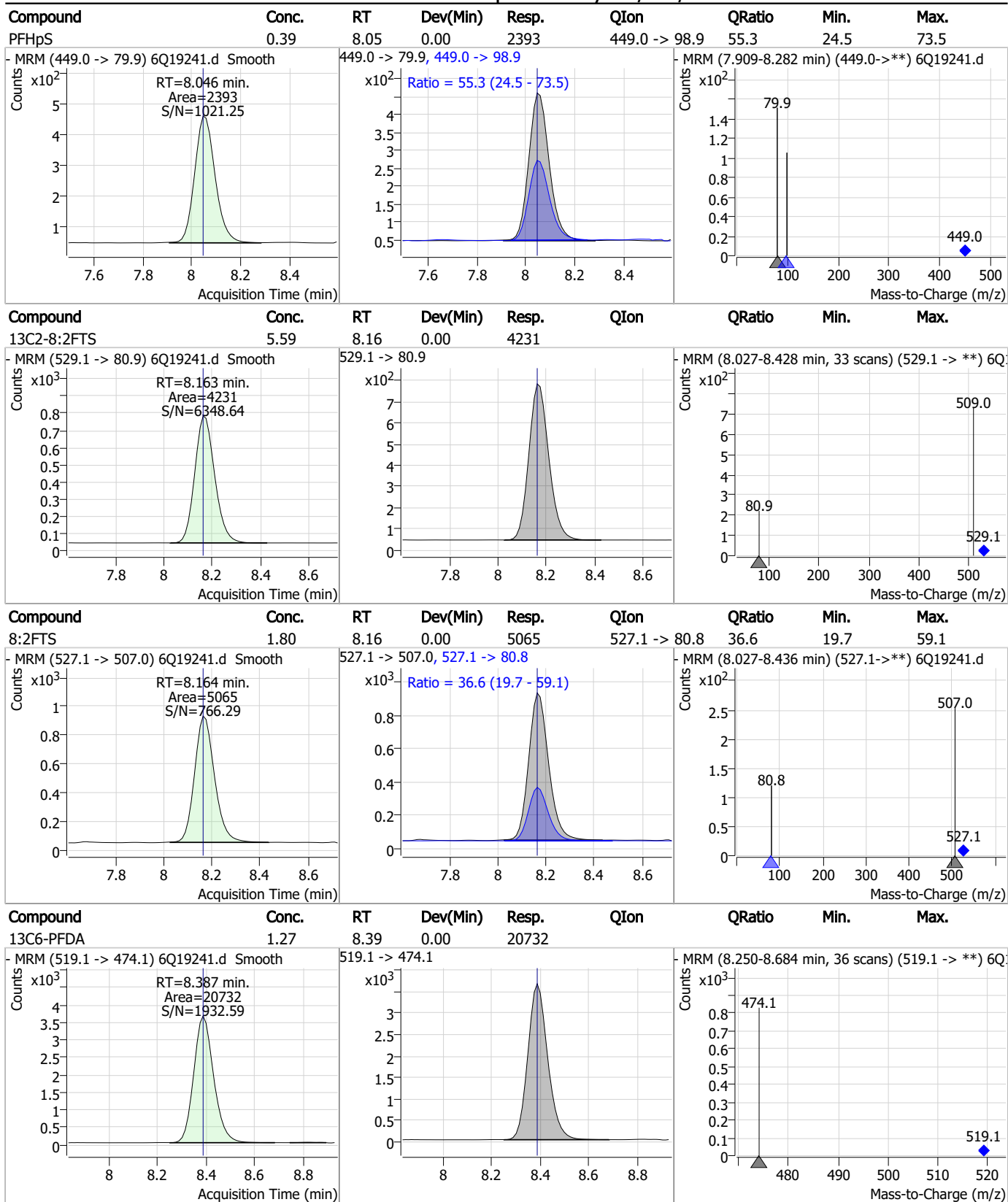


Perfluorinated Compounds by LC/MS/MS



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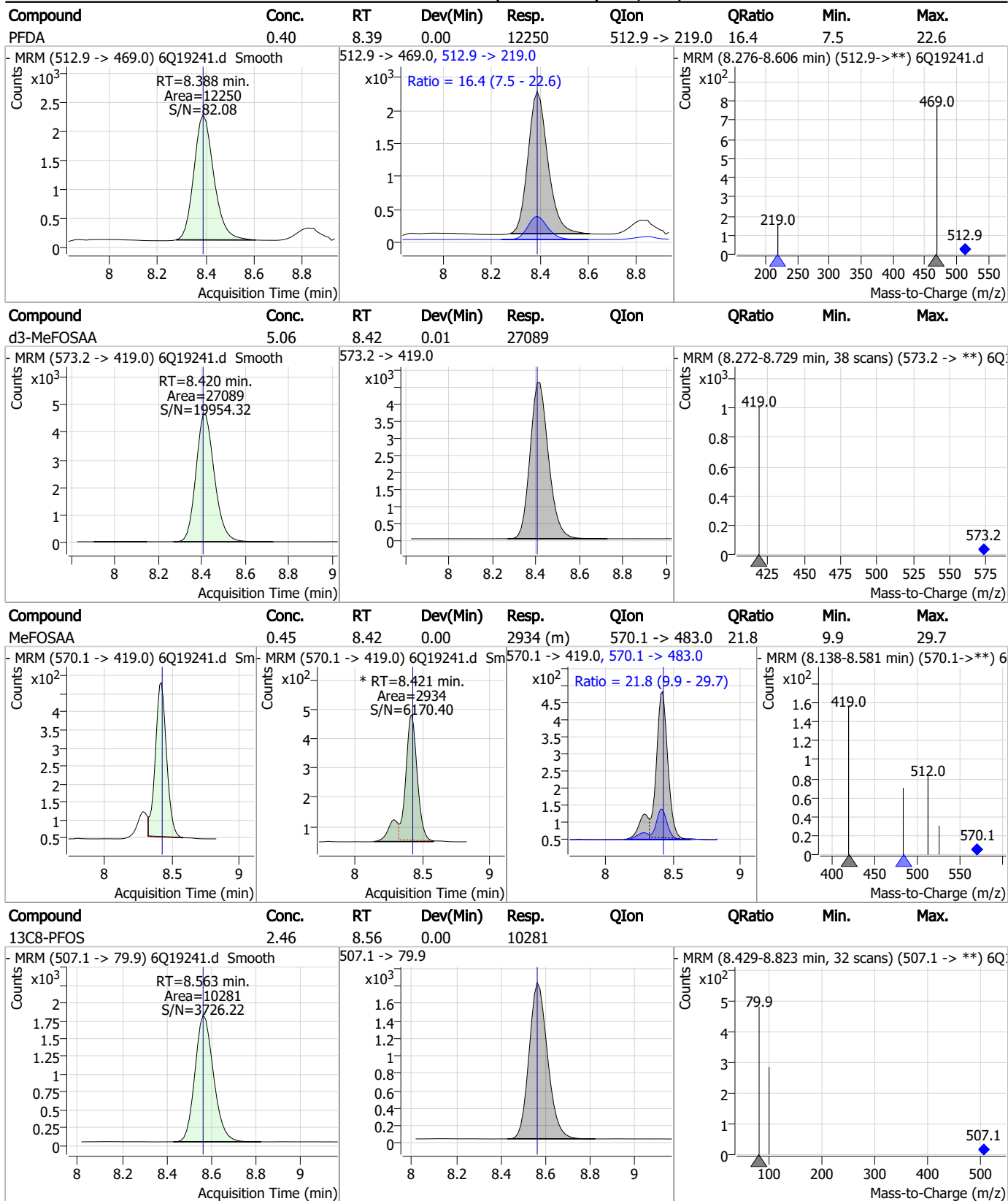
Perfluorinated Compounds by LC/MS/MS



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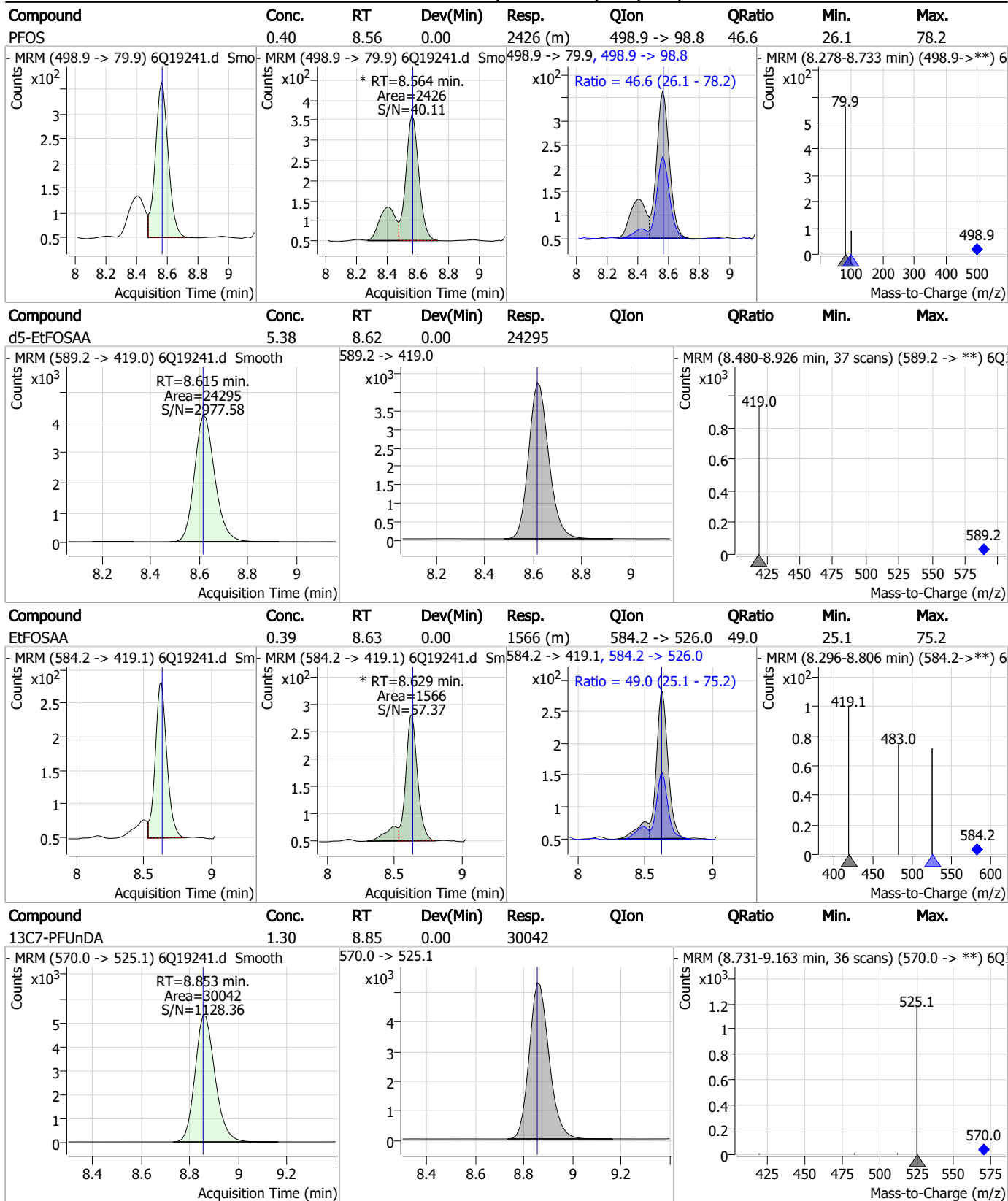
Perfluorinated Compounds by LC/MS/MS



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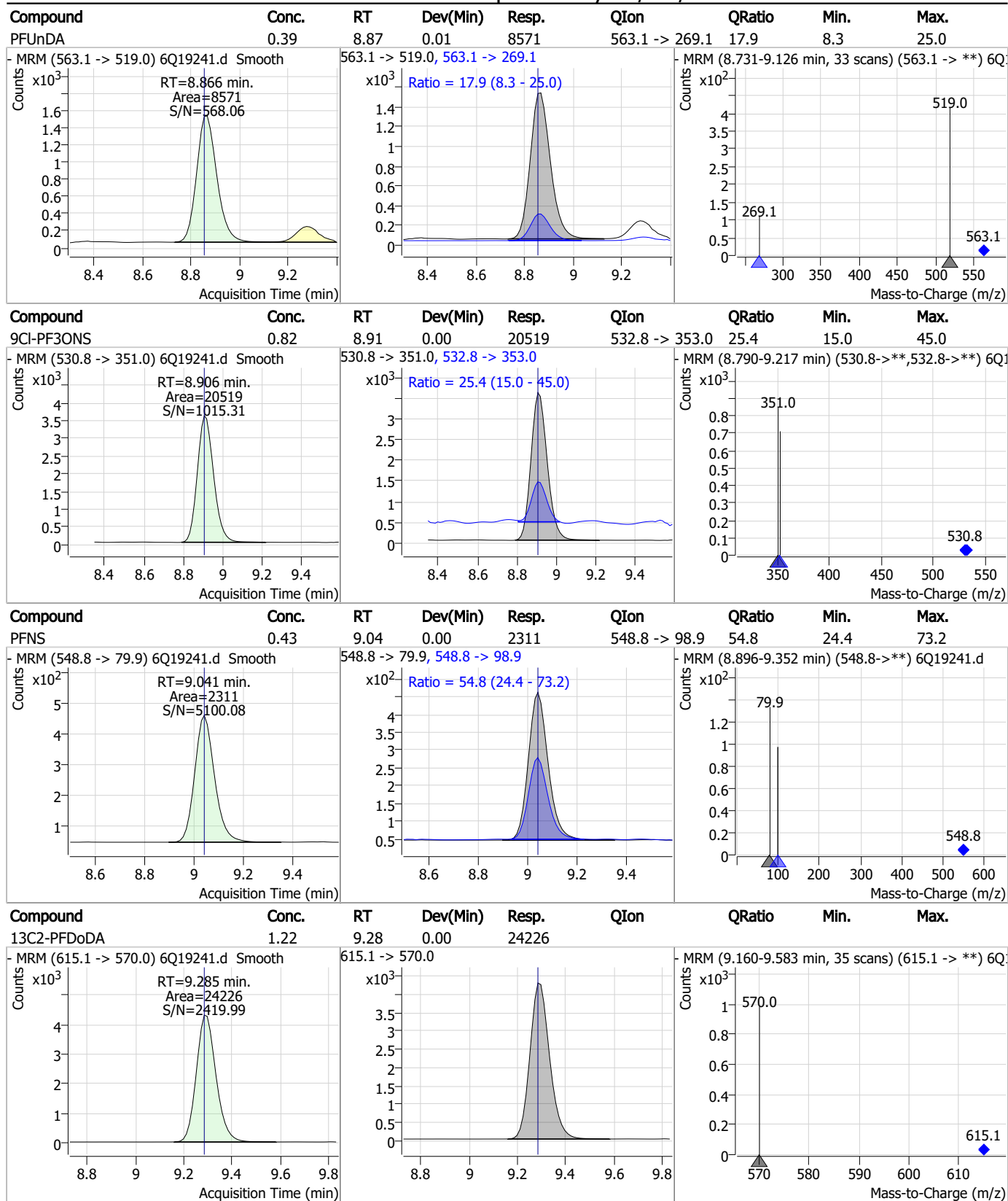
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Perfluorinated Compounds by LC/MS/MS



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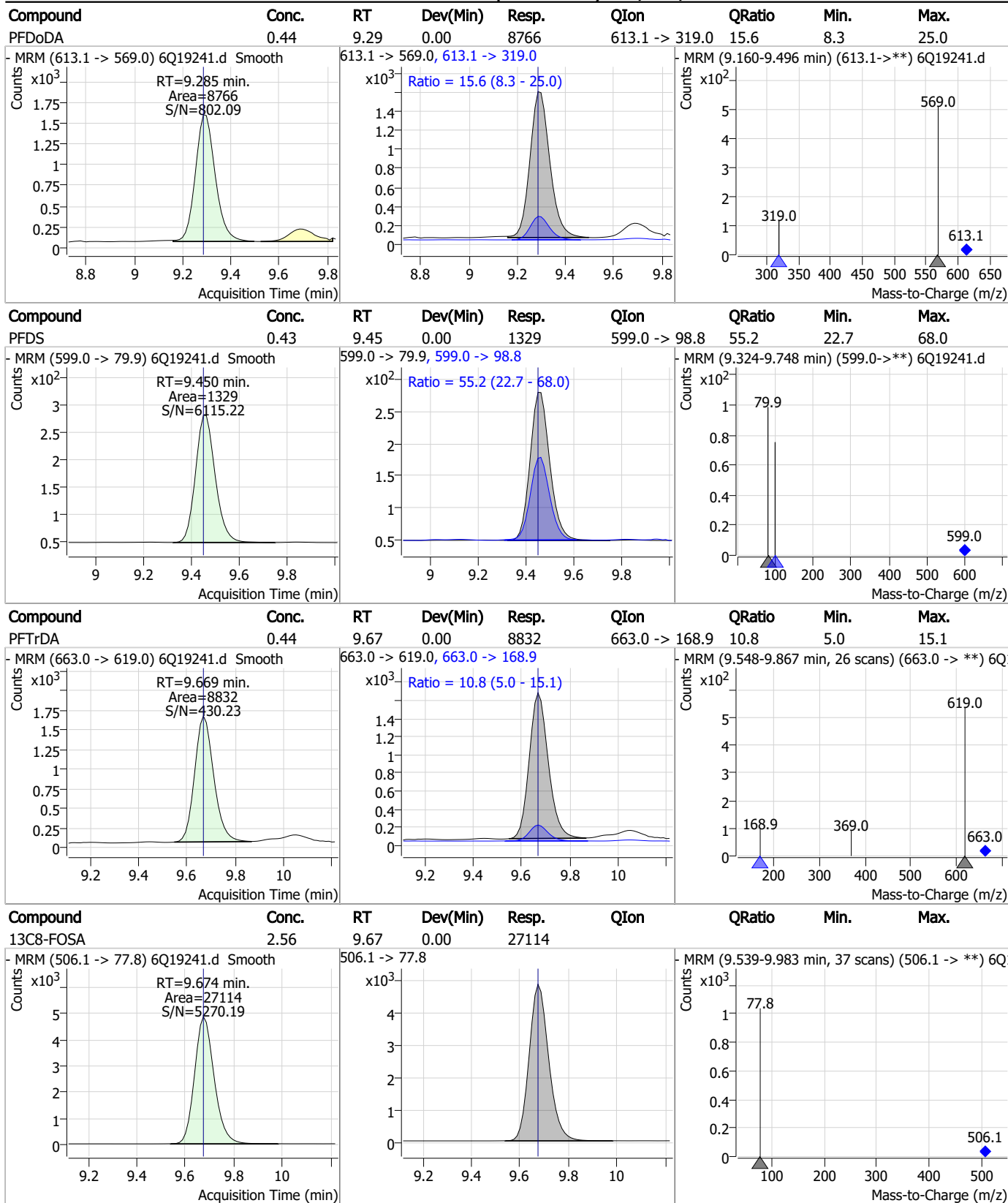
Perfluorinated Compounds by LC/MS/MS



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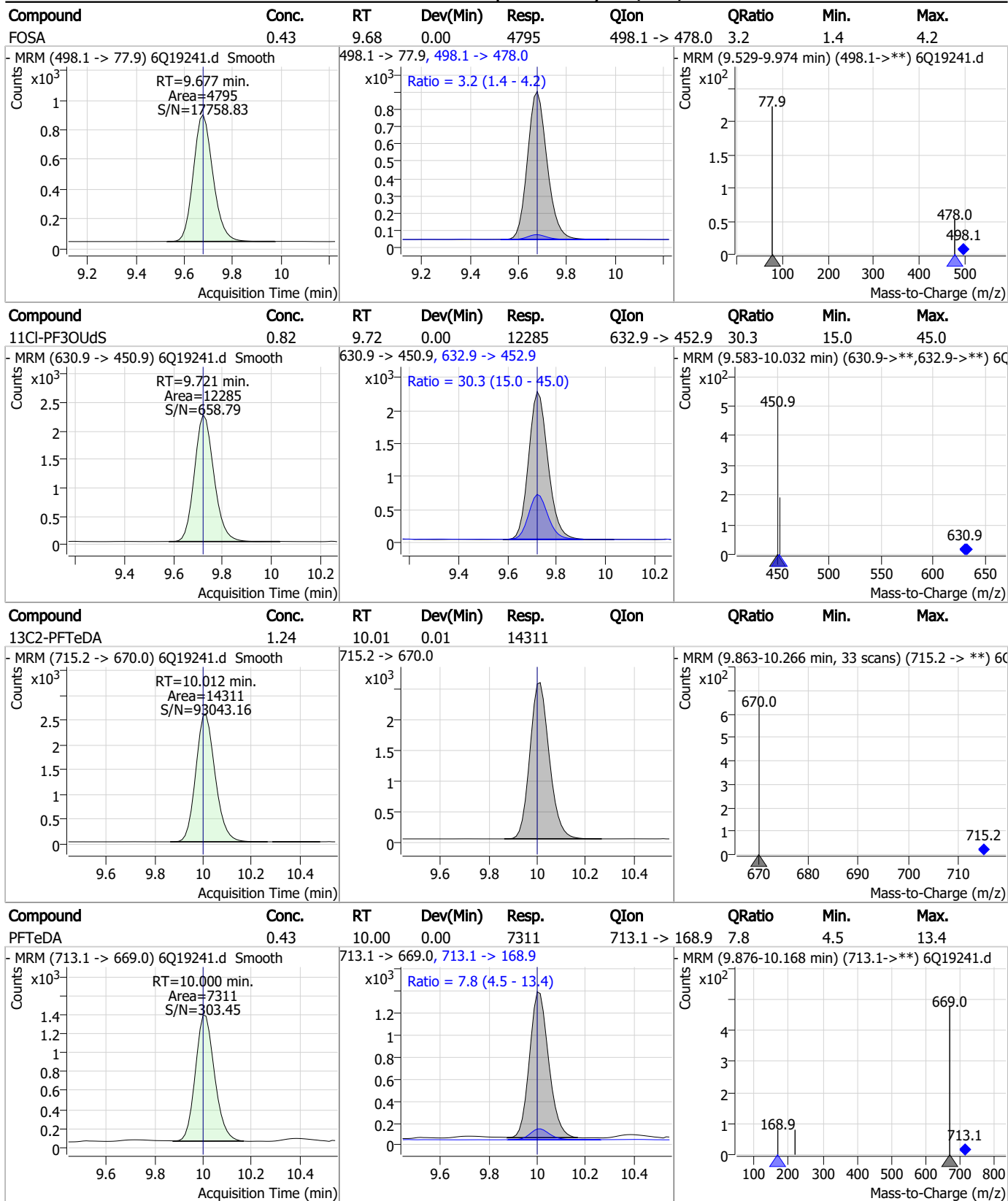
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

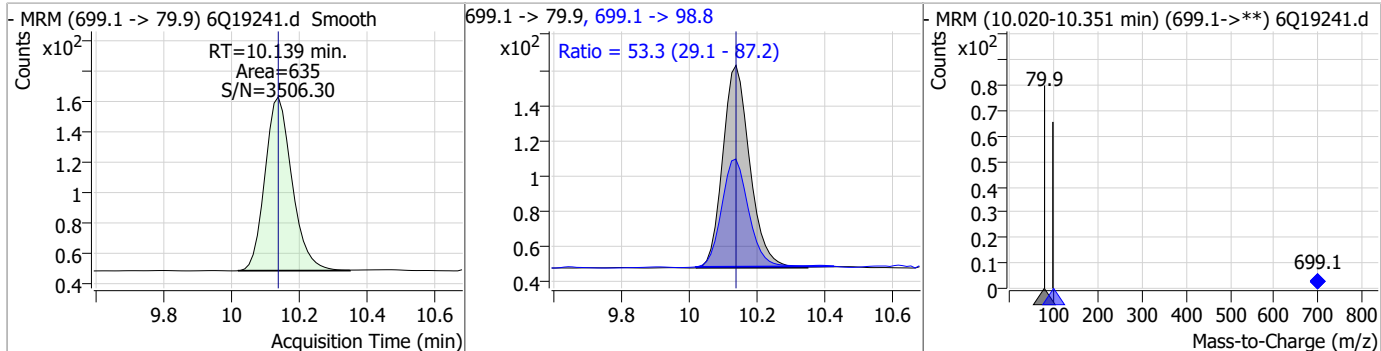


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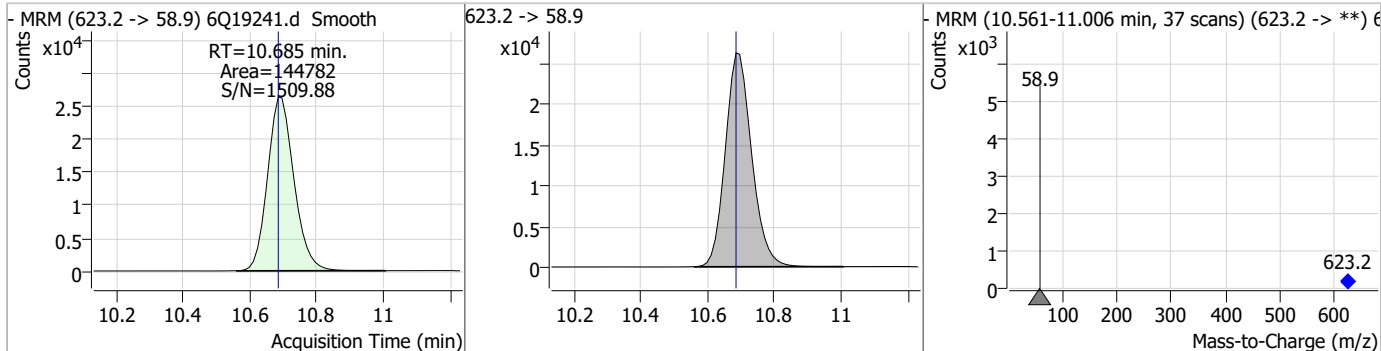
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Perfluorinated Compounds by LC/MS/MS

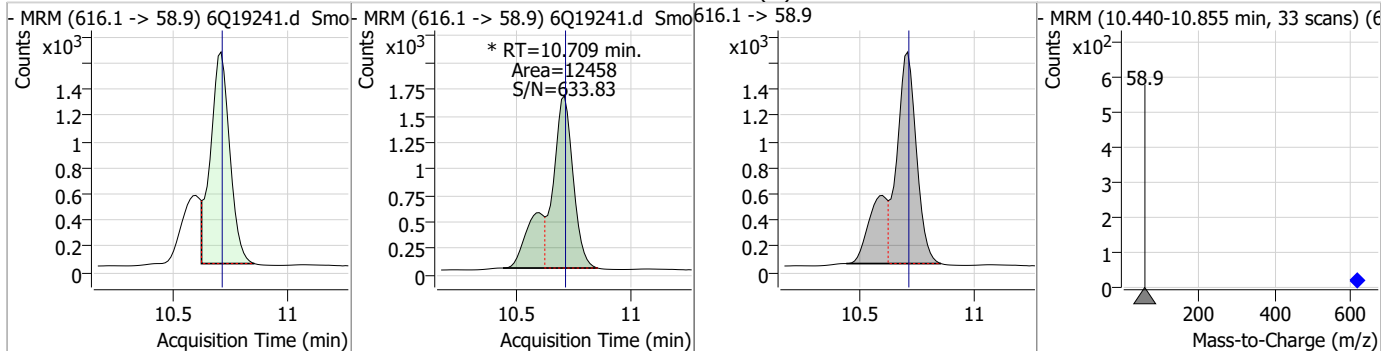
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.41	10.14	0.00	635	699.1 -> 98.8	53.3	29.1	87.2



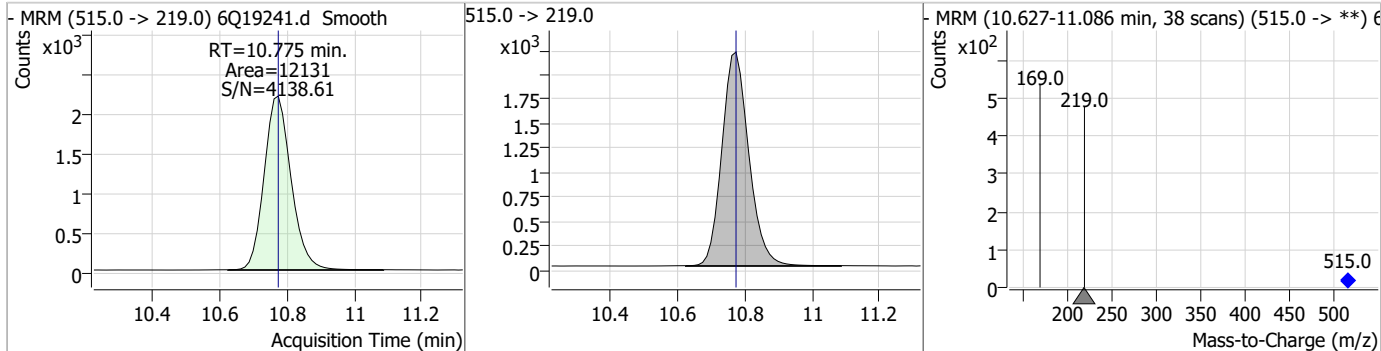
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.64	10.68	0.00	144782				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.97	10.71	0.00	12458 (m)				

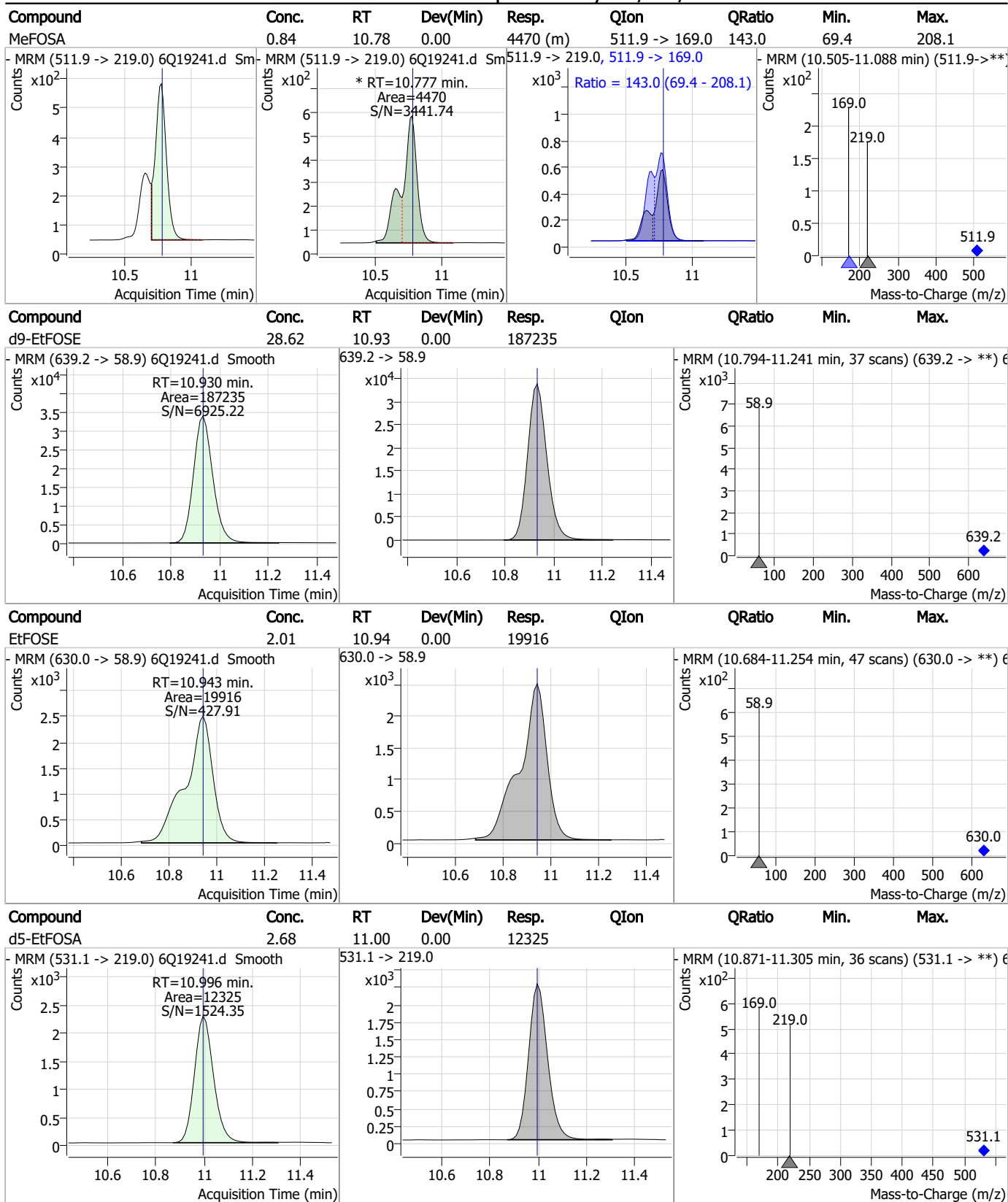


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	10.78	0.00	12131				



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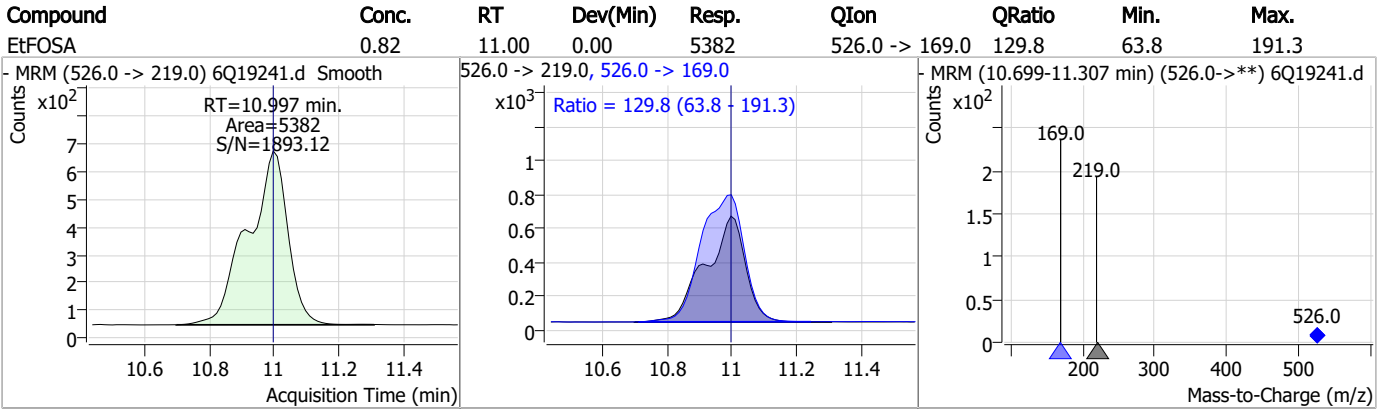
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287
Lab FileID: 6Q19241.D
Injection Time: 06/12/23 16:02

Method: EPA DRAFT 1633
Analyst approved: 06/13/23 11:17 Martha Valls
Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19242.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 4:16:26 PM
 Sample Name : ic287-3
 Vial : P1-A4
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	143061	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	46649	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	49589	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	49032	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	75639	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	35354	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	20900	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28241	1.25 µg/L	0.012
M2-PFDoDA	9.285	615.1 -> 570.0	24416	1.25 µg/L	0.000
M2-PFTeDA	10.000	715.2 -> 670.0	14951	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	29269	2.50 µg/L	0.000
M3-PFBS	5.733	302.1 -> 79.9	18902	2.50 µg/L	-0.013
M3-PFHxS	7.478	402.1 -> 79.9	11876	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10824	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3053	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4491	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4193	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	28612	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	30998	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	22570	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	138232	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	179833	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11785	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11959	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14957	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	60602	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	9310	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	79875	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	29031	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	44466	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	49118	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3053	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4491	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4193	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24416	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	10.000	715.2 -> 670.0	14951	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C3-PFBS	5.733	302.1 -> 79.9	18902	2.40 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	11876	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 = 96.1%	
13C4-PFBA	3.085	216.8 -> 171.9	143061	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.707	367.1 -> 322.0	49032	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.792	318.0 -> 273.0	49589	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C5-PFPeA	4.548	268.3 -> 223.0	46649	4.92 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C6-PFDA	8.387	519.1 -> 474.1	20900	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C7-PFUnDA	8.866	570.0 -> 525.1	28241	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-FOSA	9.674	506.1 -> 77.8	29269	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C8-PFOA	7.339	421.1 -> 376.0	75639	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-PFOS	8.563	507.1 -> 79.9	10824	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C9-PFNA	7.882	472.1 -> 427.0	35354	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
d3-MeFOSAA	8.407	573.2 -> 419.0	28612	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	30998	9.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.1%	
d3-MeFOSA	10.775	515.0 -> 219.0	11959	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSAA	8.615	589.2 -> 419.0	22570	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	138232	25.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d9-EtFOSE	10.930	639.2 -> 58.9	179833	26.23 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d5-EtFOSA	10.996	531.1 -> 219.0	11785	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	24436	4.62 µg/L	97
		327.1 -> 80.9	9488		
6:2FTS	7.113	427.1 -> 407.0	26731	4.93 µg/L	91
		427.1 -> 80.9	8380		
8:2FTS	8.164	527.1 -> 507.0	14300	5.13 µg/L	93
		527.1 -> 80.8	5011		
EtFOSAA	8.629	584.2 -> 419.1	5011	1.34 µg/L	m 99
		584.2 -> 526.0	2498		
FOSA	9.677	498.1 -> 77.9	14159	1.18 µg/L	99
		498.1 -> 478.0	457		
MeFOSAA	8.421	570.1 -> 419.0	8918	1.28 µg/L	m 98
		570.1 -> 483.0	1684		
PFBA	3.093	212.8 -> 168.9	27526	4.83 µg/L	100
PFBS	5.734	298.7 -> 79.9	8825	1.06 µg/L	95
		298.7 -> 98.8	3294		
PFDA	8.388	512.9 -> 469.0	37273	1.19 µg/L	99
		512.9 -> 219.0	5748		
PFDODA	9.285	613.1 -> 569.0	24592	1.23 µg/L	98
		613.1 -> 319.0	3932		
PFDS	9.450	599.0 -> 79.9	3724	1.14 µg/L	89

7.7.24

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1952			
PFHpA	6.708	363.1 -> 319.0	30488	1.16	µg/L	99
		363.1 -> 169.0	5013			
PFHpS	8.046	449.0 -> 79.9	7775	1.19	µg/L	99
		449.0 -> 98.9	3750			
PFHxA	5.795	313.0 -> 269.0	24765	1.25	µg/L	98
		313.0 -> 118.9	1137			
PFHxS	7.479	398.7 -> 79.9	7698	1.08	µg/L	m 97
		398.7 -> 98.9	3722			
PFNA	7.883	463.0 -> 419.0	37813	1.17	µg/L	97
		463.0 -> 219.0	7188			
PFNS	9.041	548.8 -> 79.9	6520	1.14	µg/L	90
		548.8 -> 98.9	3610			
PFOA	7.353	413.0 -> 369.0	47258	1.22	µg/L	99
		413.0 -> 169.0	8600			
PFOS	8.564	498.9 -> 79.9	7452	1.17	µg/L	m 93
		498.9 -> 98.8	3523			
PFPeA	4.551	263.0 -> 219.0	33153	2.42	µg/L	100
PFPeS	6.785	349.1 -> 79.9	7290	1.11	µg/L	97
		349.1 -> 98.9	3479			
PFTeDA	10.013	713.1 -> 669.0	21164	1.18	µg/L	100
		713.1 -> 168.9	1870			
PFTrDA	9.669	663.0 -> 619.0	26317	1.31	µg/L	95
		663.0 -> 168.9	3071			
PFUnDA	8.866	563.1 -> 519.0	26598	1.28	µg/L	98
		563.1 -> 269.1	4187			
11CI-PF3OUdS	9.721	630.9 -> 450.9	37492	2.57	µg/L	98
		632.9 -> 452.9	10830			
9CI-PF3ONS	8.906	530.8 -> 351.0	56818	2.33	µg/L	100
		532.8 -> 353.0	16950			
ADONA	6.959	376.9 -> 250.9	129243	2.46	µg/L	98
		376.9 -> 84.8	34622			
HFPO-DA	6.169	284.9 -> 168.9	8543	2.53	µg/L	98
		284.9 -> 184.9	886			
3:3FTCA	3.946	241.0 -> 177.0	5568	5.93	µg/L	100
		241.0 -> 117.0	751			
5:3FTCA	6.361	341.0 -> 237.1	122167	31.71	µg/L	97
		341.0 -> 217.0	93759			
7:3FTCA	7.736	441.0 -> 316.9	89234	32.36	µg/L	85
		441.0 -> 336.9	184412			
EtFOSA	10.997	526.0 -> 219.0	16314	2.58	µg/L	97
		526.0 -> 169.0	20306			
EtFOSE	10.943	630.0 -> 58.9	61914	6.52	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	13476	2.57	µg/L	m 100
		511.9 -> 169.0	18735			
MeFOSE	10.709	616.1 -> 58.9	37877	6.26	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	1992	1.23	µg/L	97
		699.1 -> 98.8	1118			
NFDHA	5.673	295.0 -> 201.0	6328	2.52	µg/L	96
		295.0 -> 84.9	1679			
PFMBA	4.975	279.0 -> 85.1	23828	2.42	µg/L	100
PFMPA	3.667	229.0 -> 84.9	18437	2.41	µg/L	100
PFEESA	6.288	314.8 -> 134.9	60754	2.49	µg/L	99
		314.8 -> 82.9	2203			

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

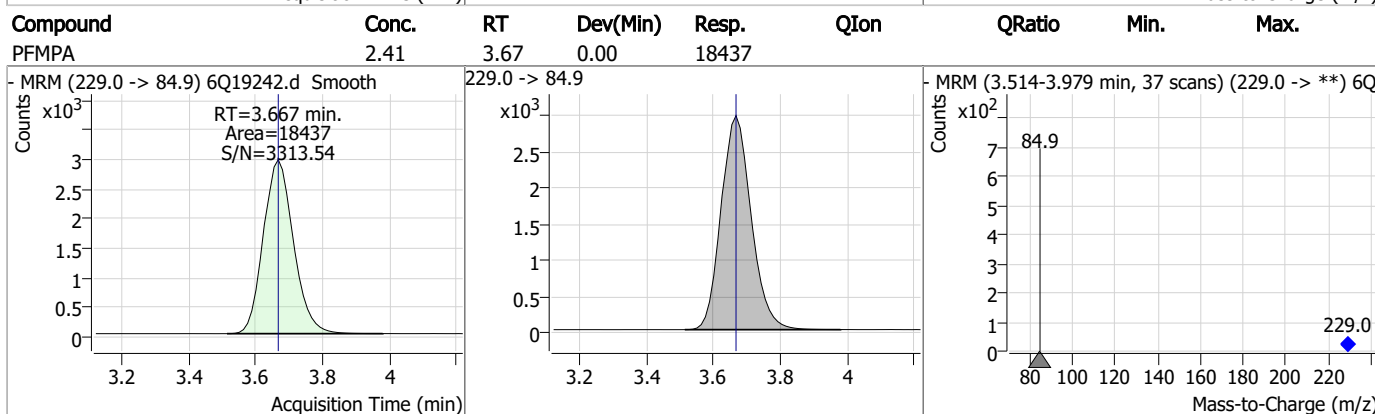
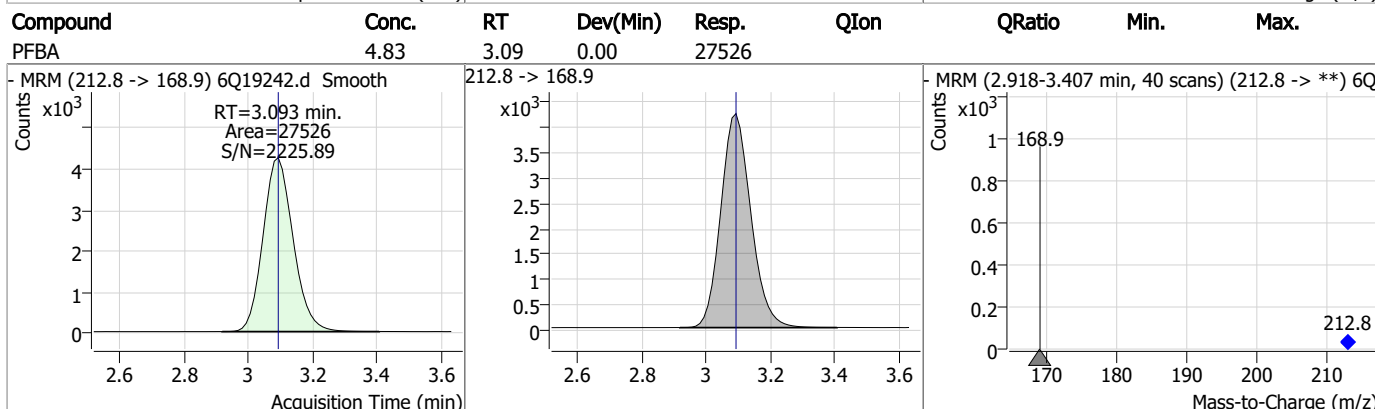
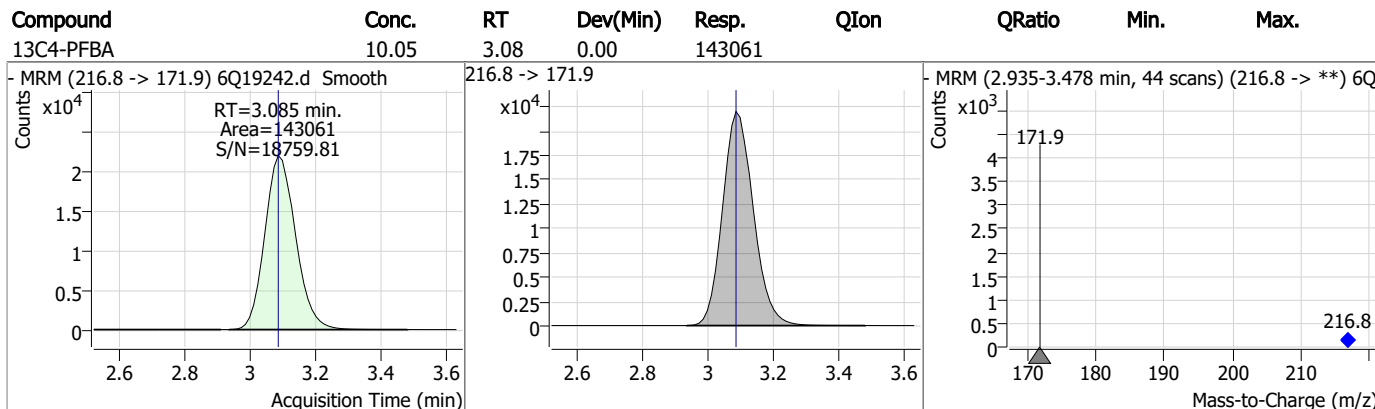
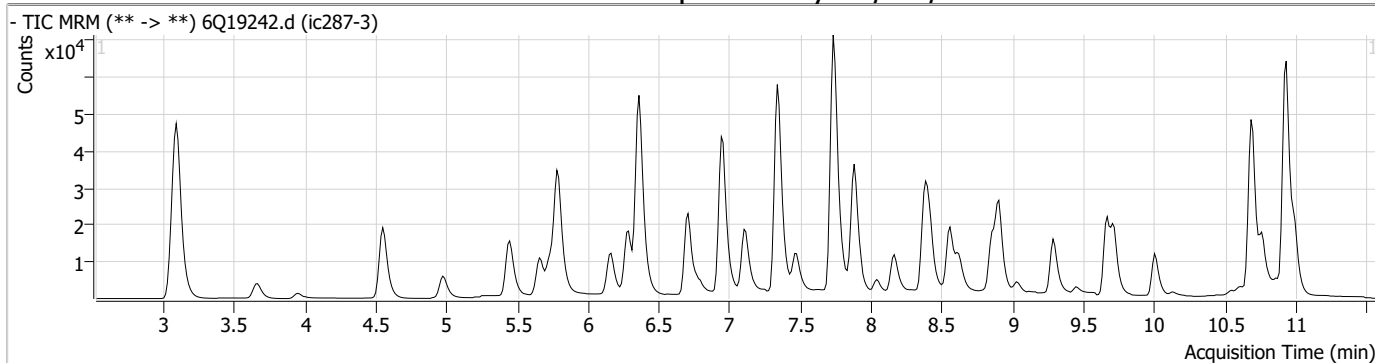
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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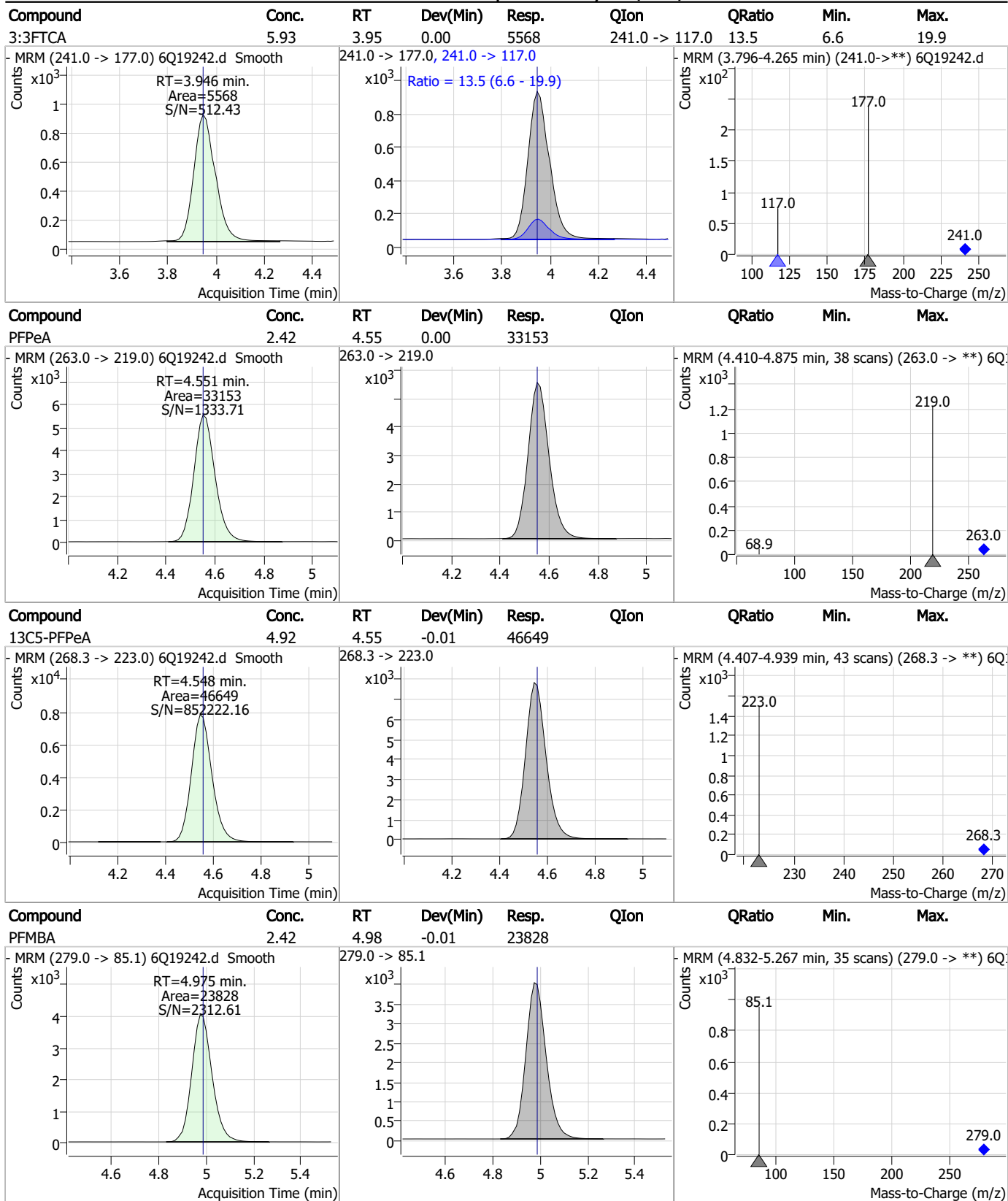
7.7.24

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Perfluorinated Compounds by LC/MS/MS

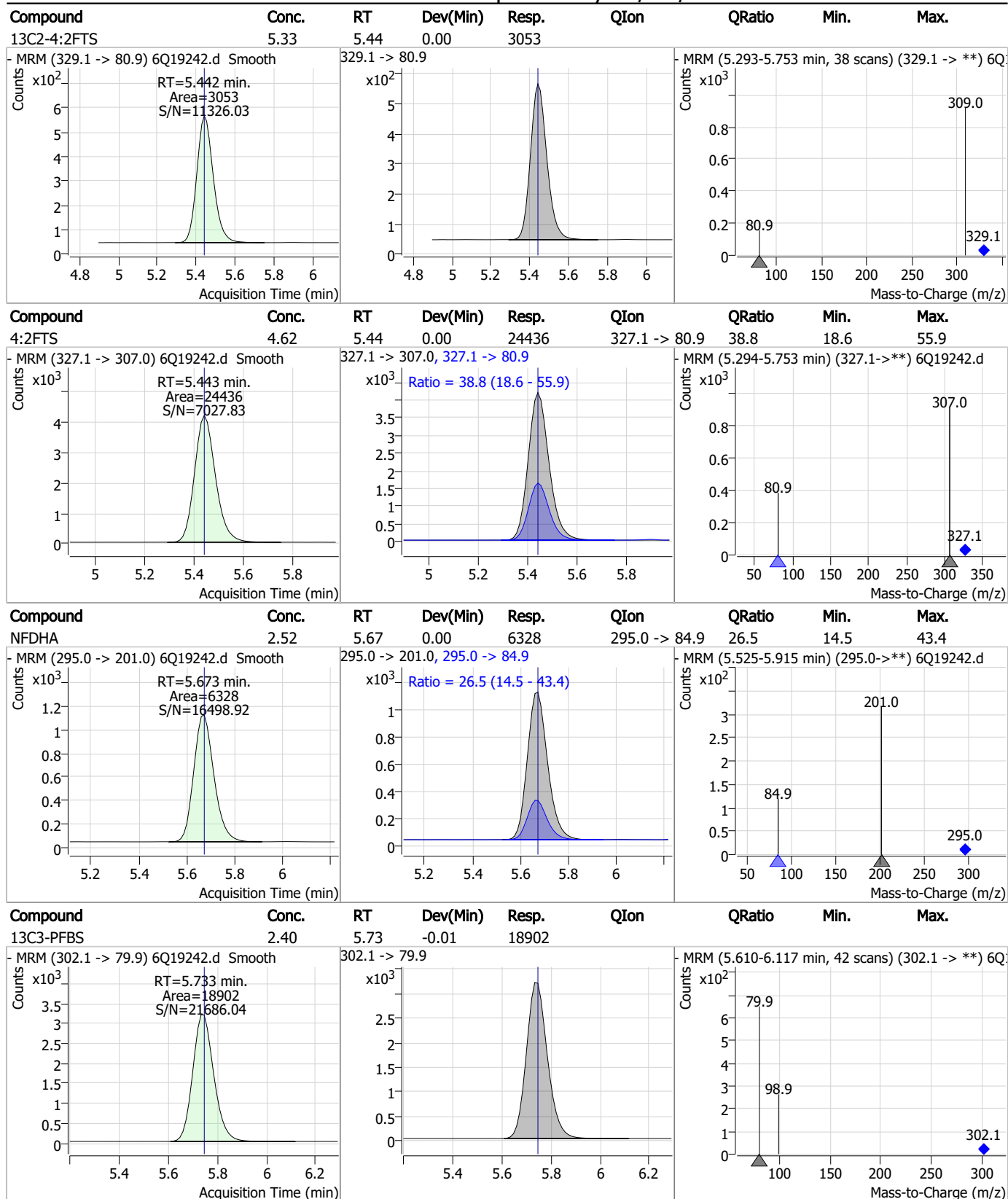


Perfluorinated Compounds by LC/MS/MS



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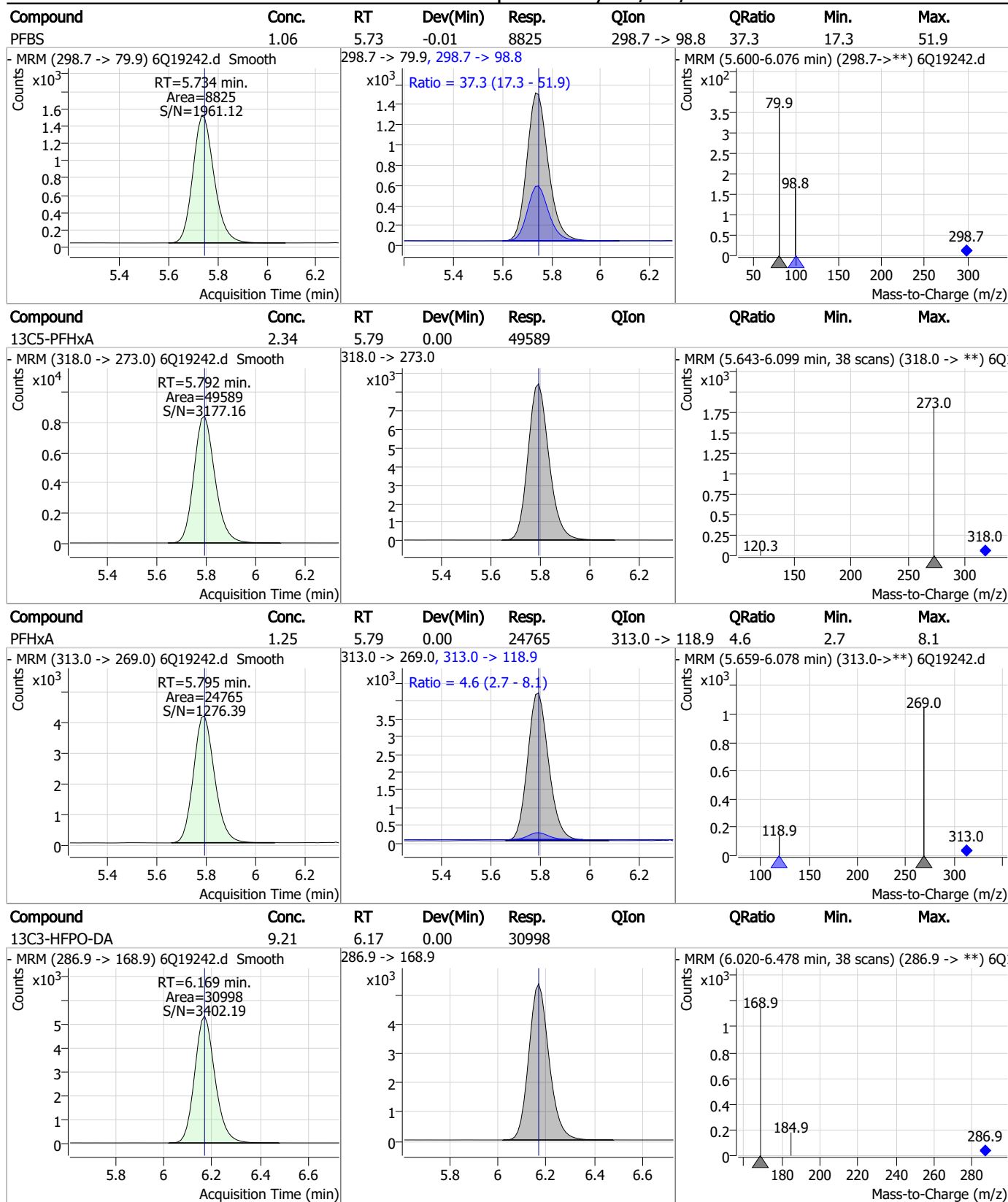
Perfluorinated Compounds by LC/MS/MS



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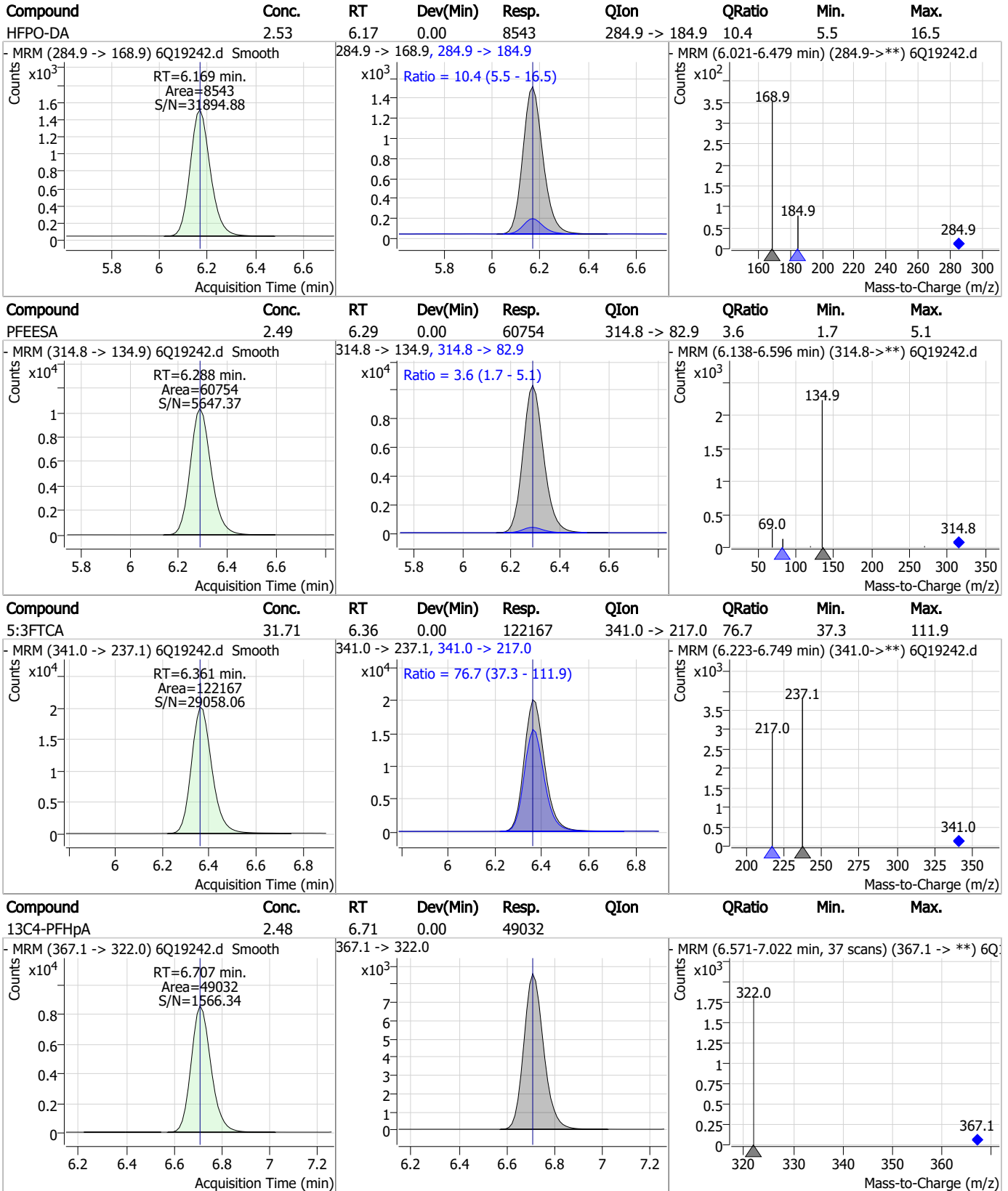
Perfluorinated Compounds by LC/MS/MS



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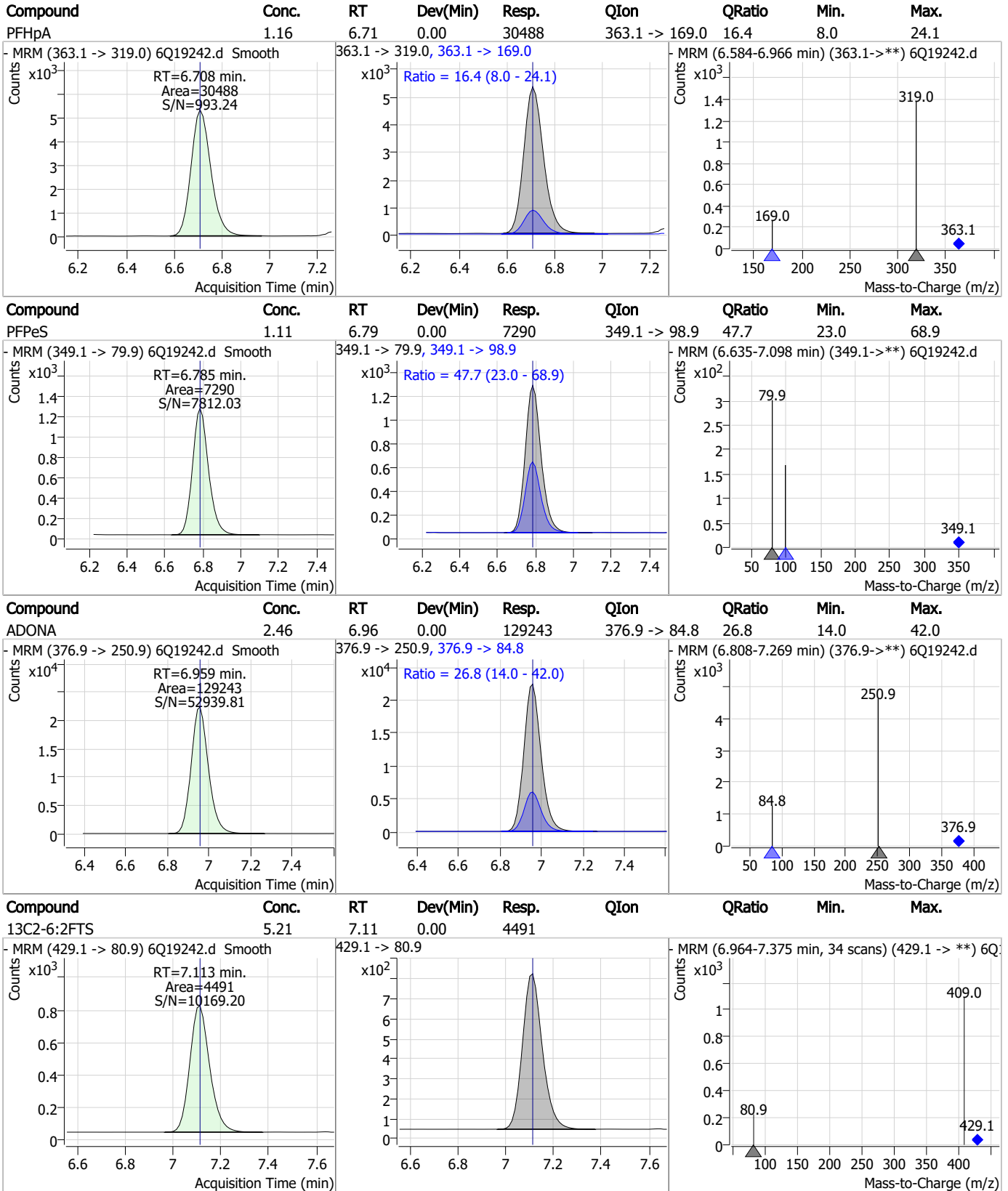
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Perfluorinated Compounds by LC/MS/MS



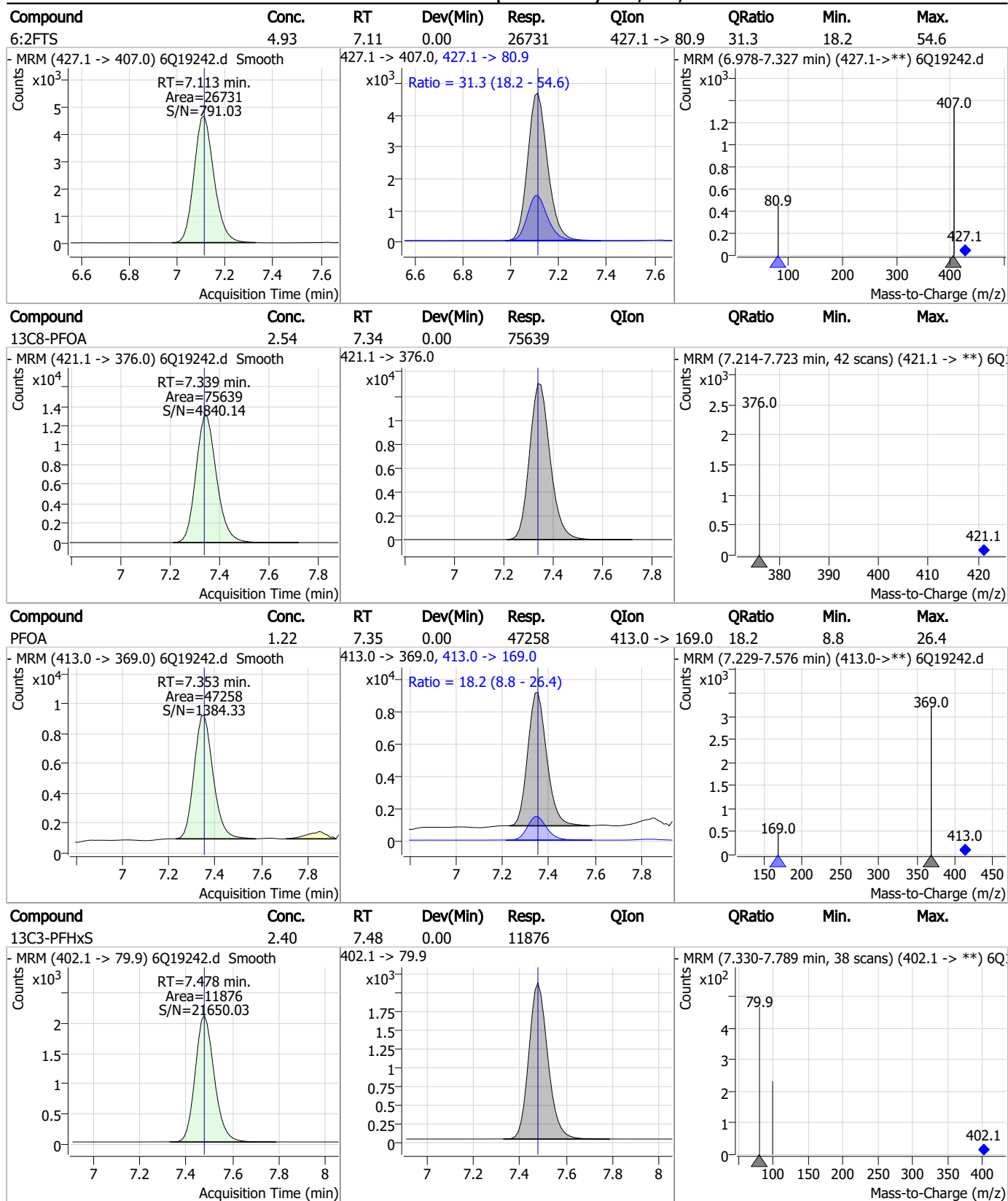
7.7.24 7

Perfluorinated Compounds by LC/MS/MS



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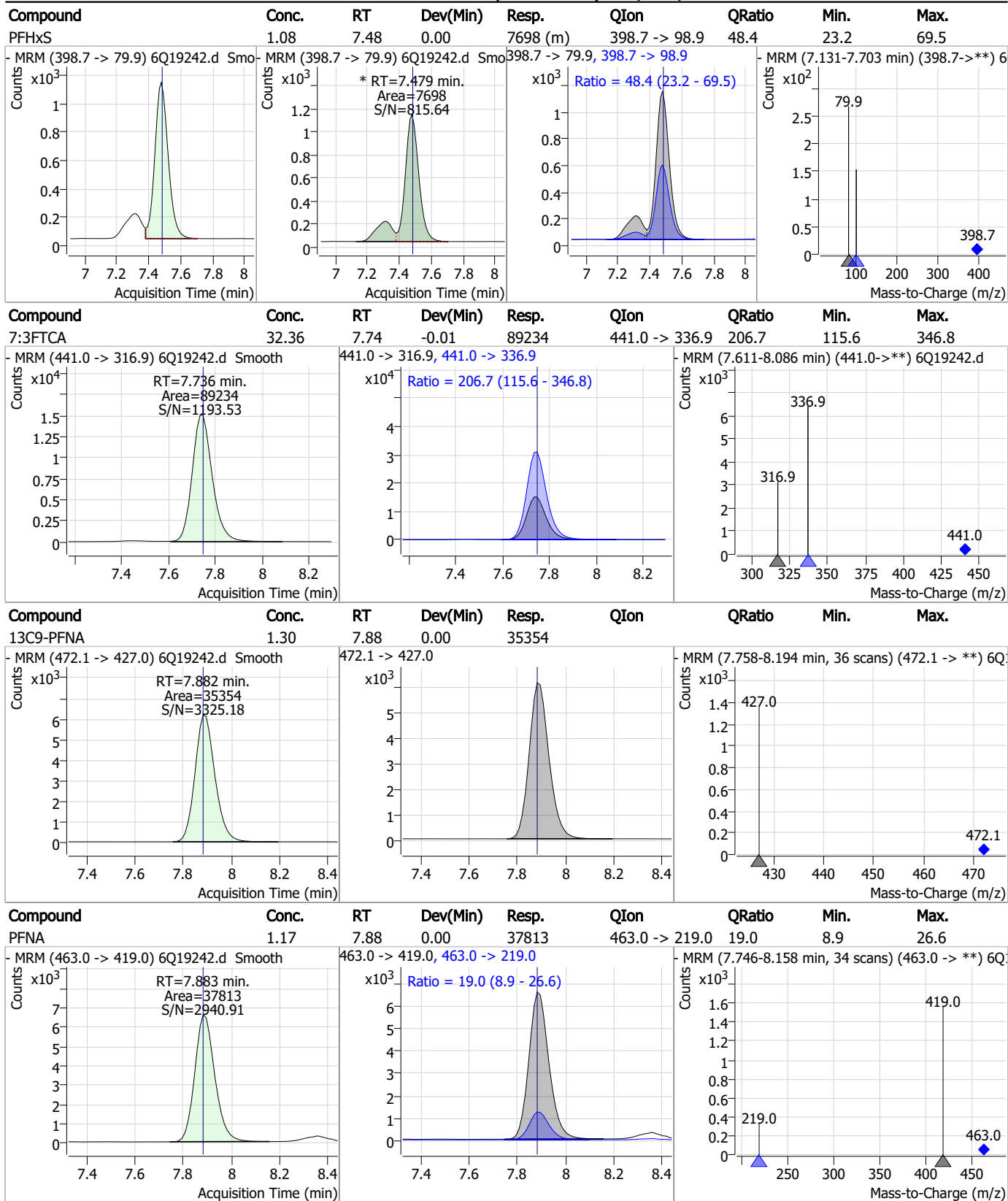
Perfluorinated Compounds by LC/MS/MS



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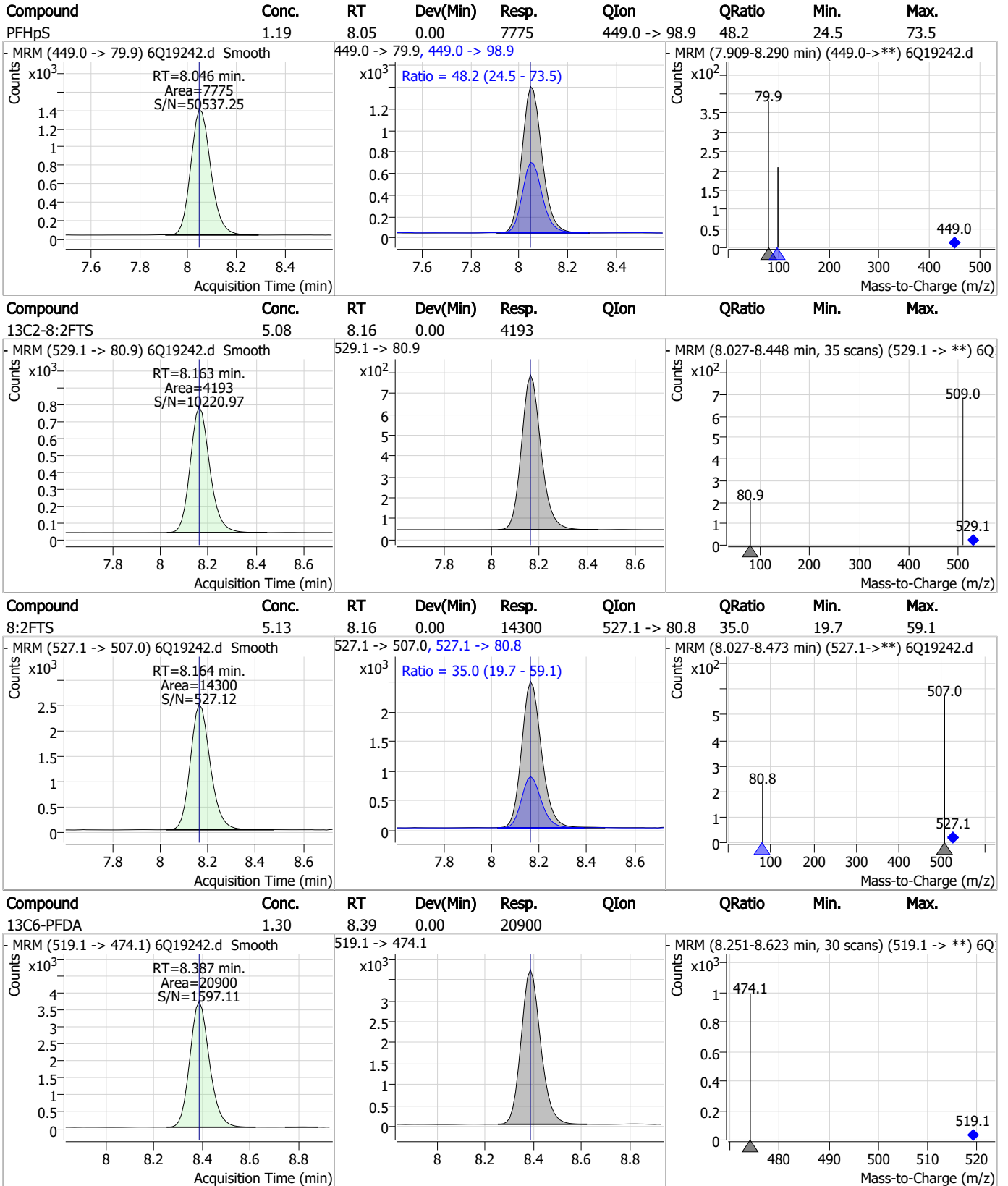
Perfluorinated Compounds by LC/MS/MS



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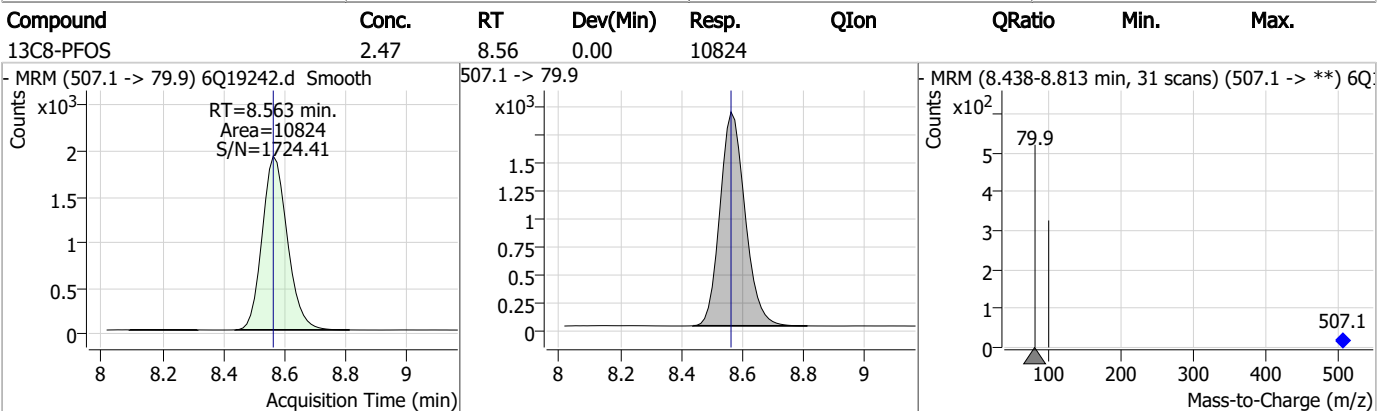
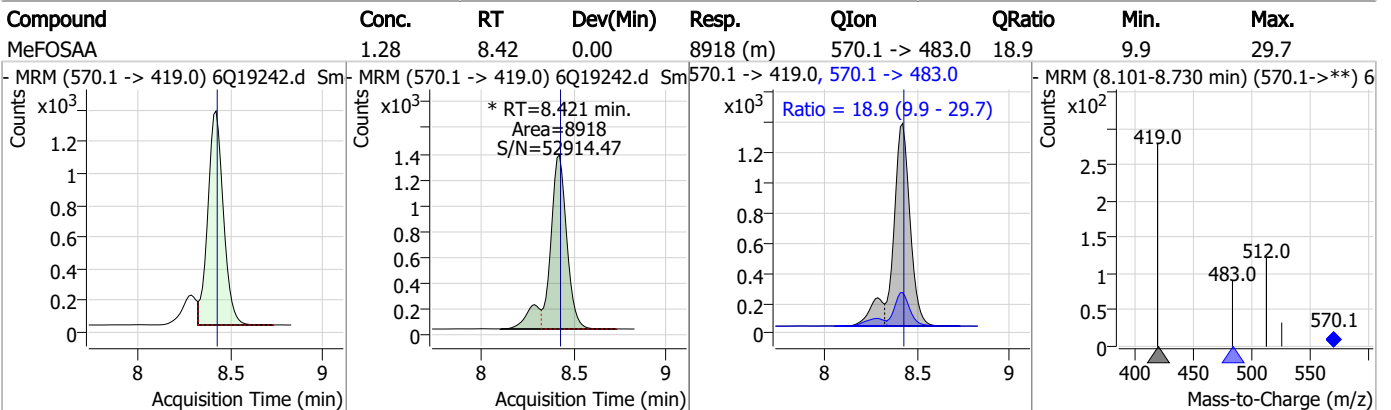
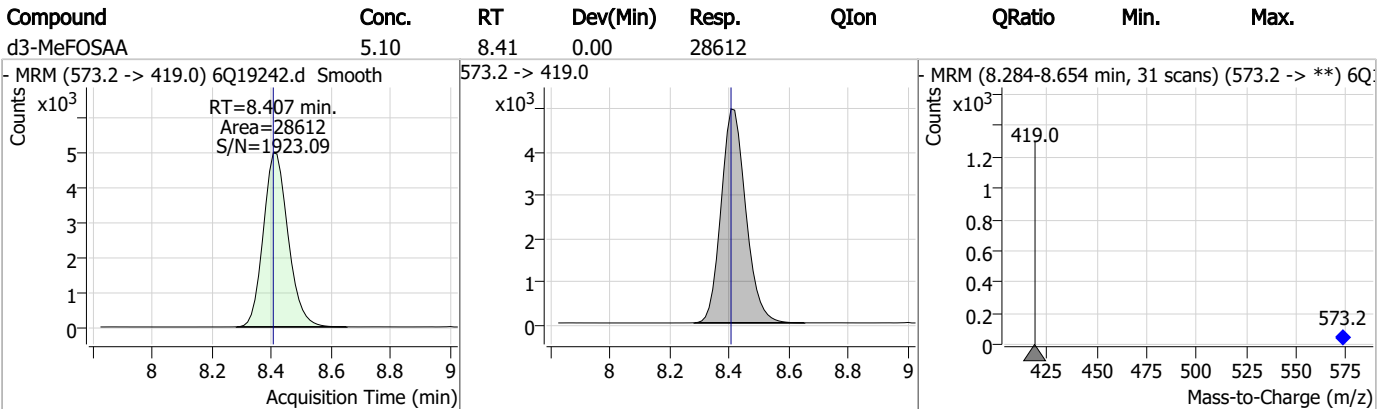
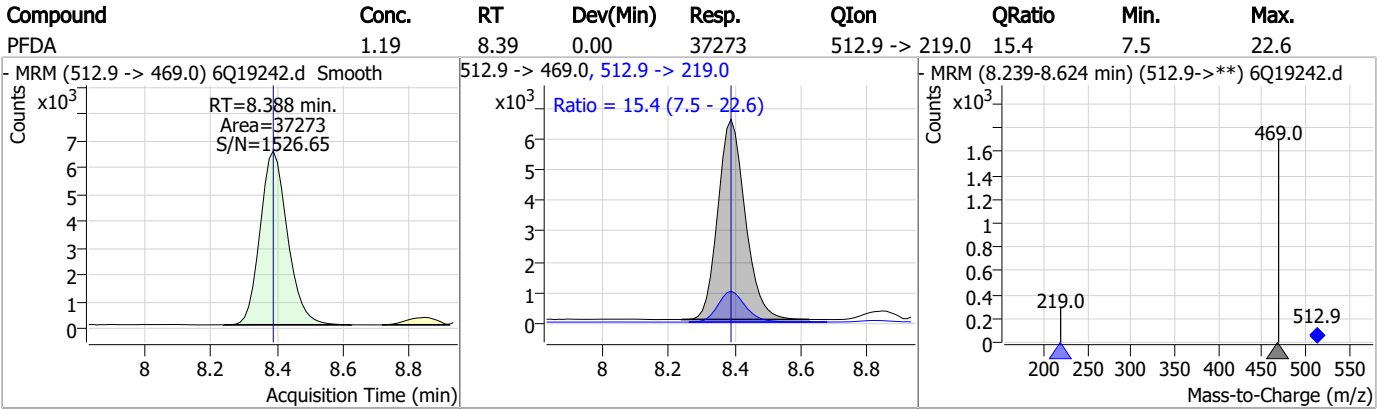
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Perfluorinated Compounds by LC/MS/MS



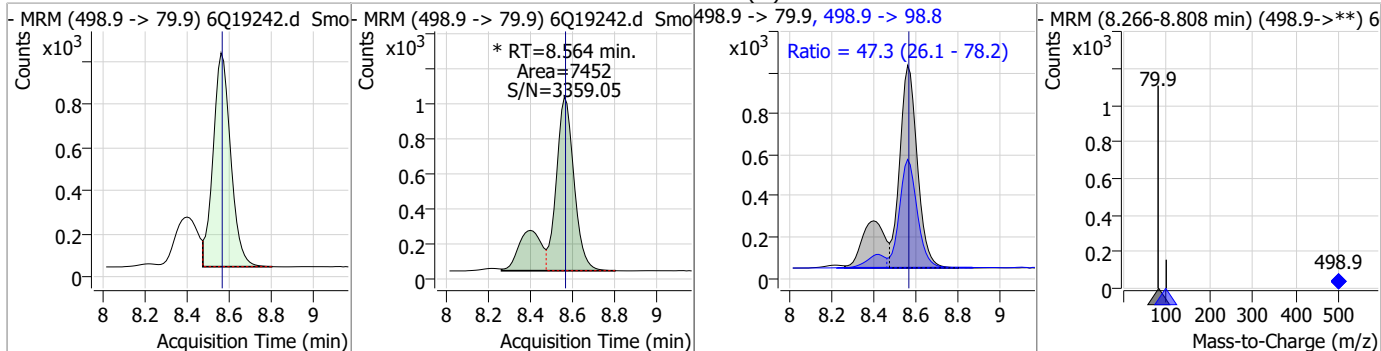
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Perfluorinated Compounds by LC/MS/MS

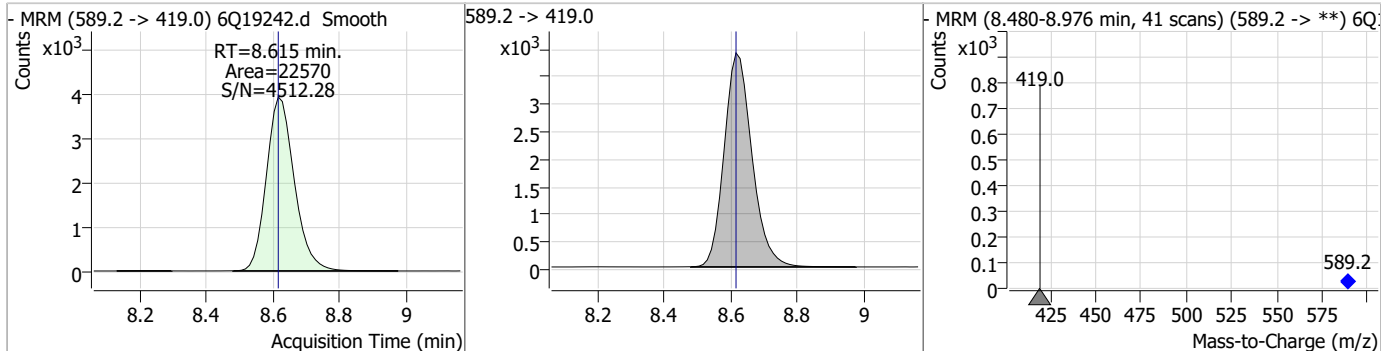


Perfluorinated Compounds by LC/MS/MS

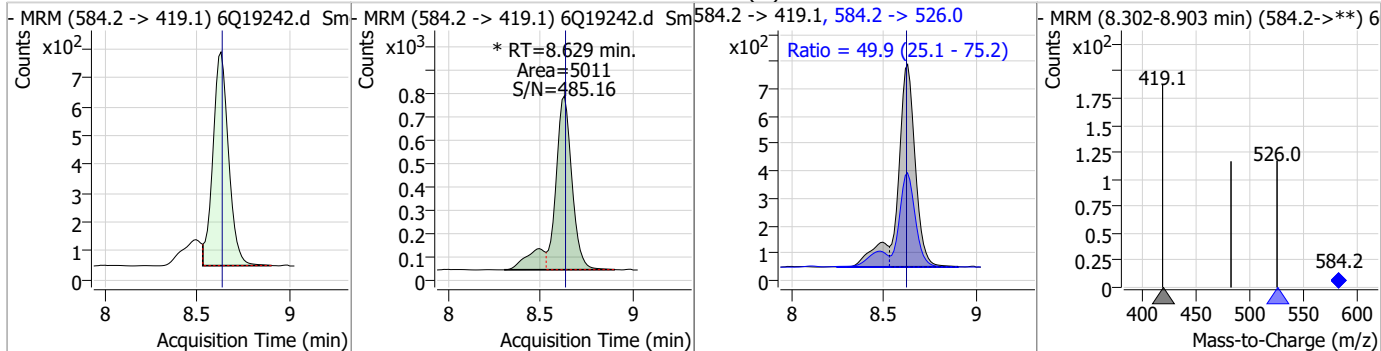
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.17	8.56	0.00	7452 (m)	498.9 -> 98.8	47.3	26.1	78.2



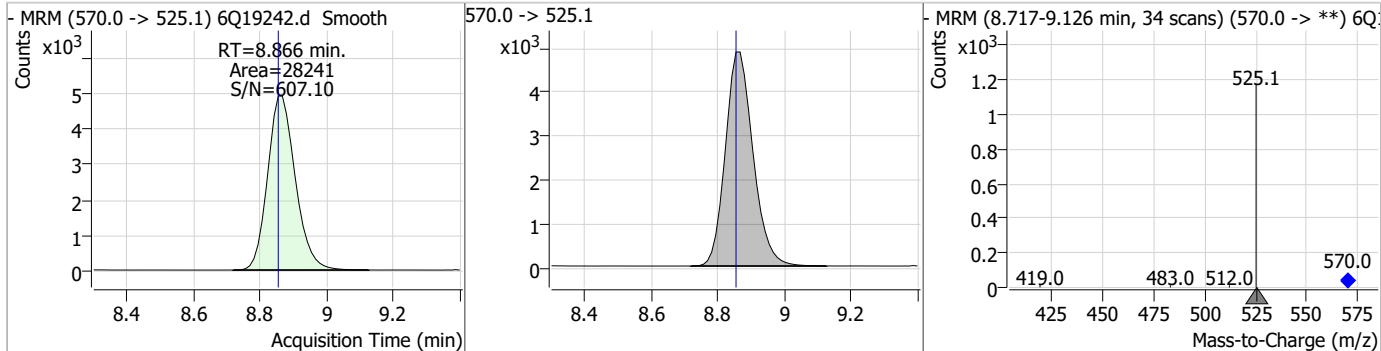
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.77	8.62	0.00	22570				



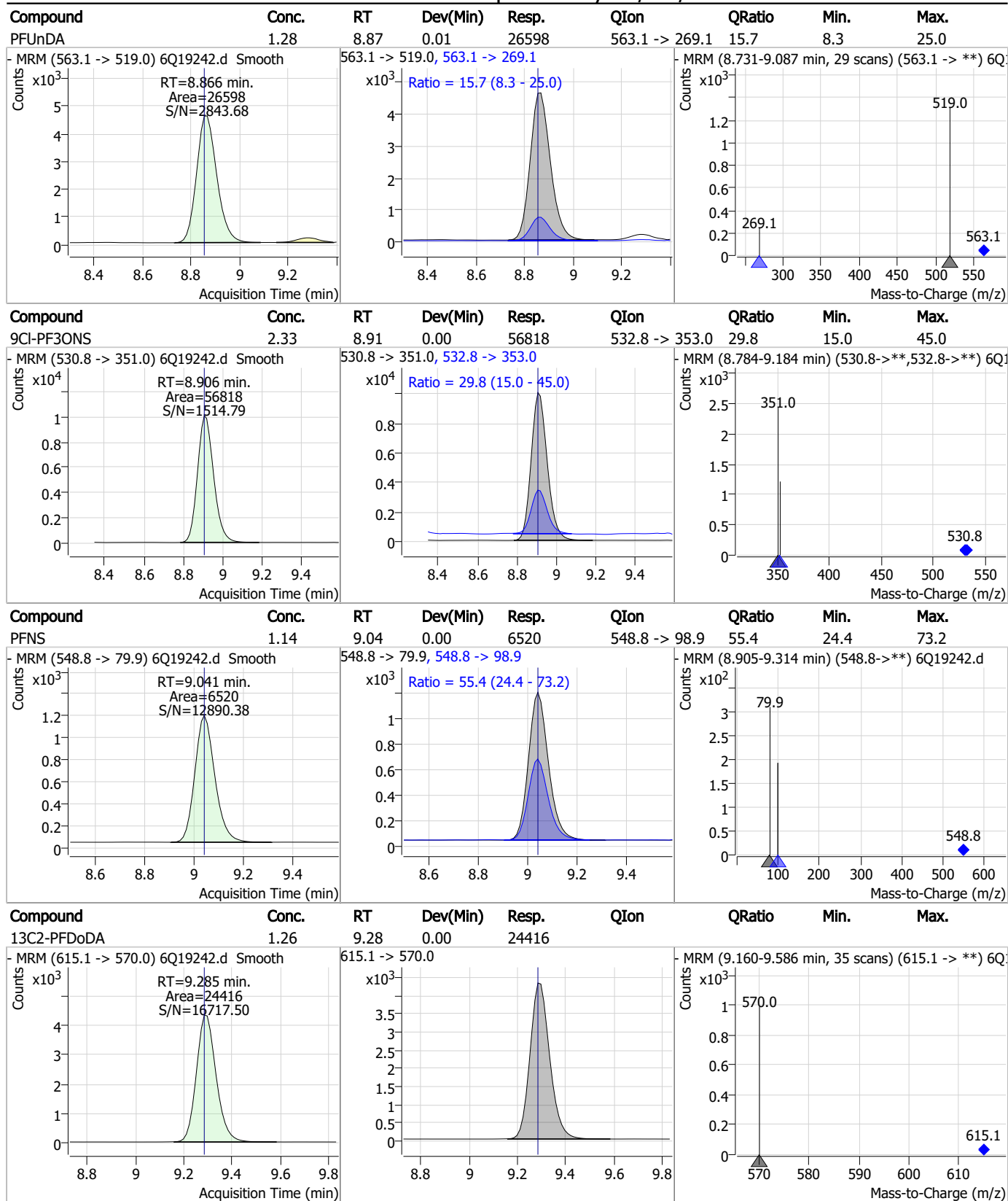
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.34	8.63	0.00	5011 (m)	584.2 -> 526.0	49.9	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.87	0.01	28241				



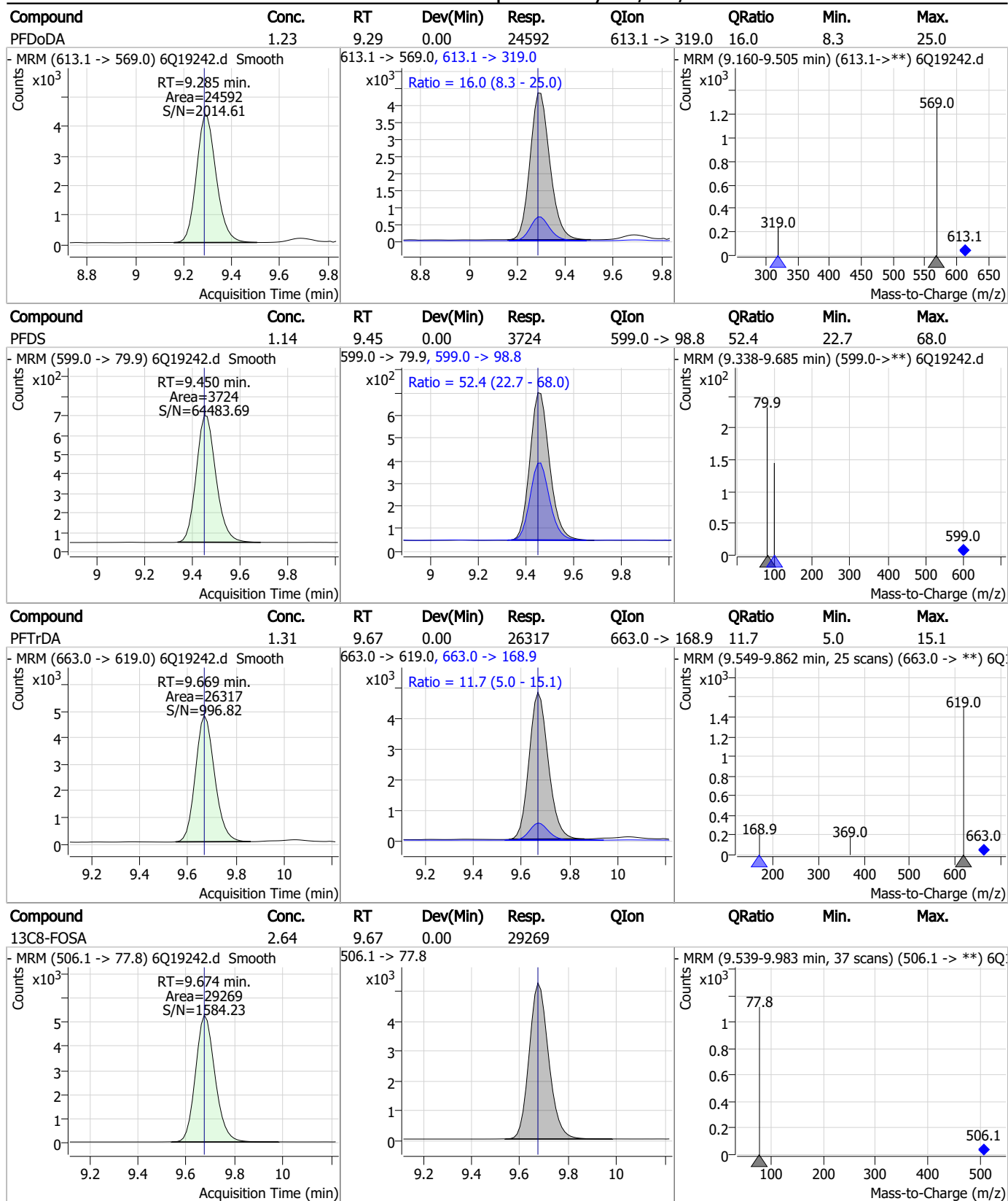
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

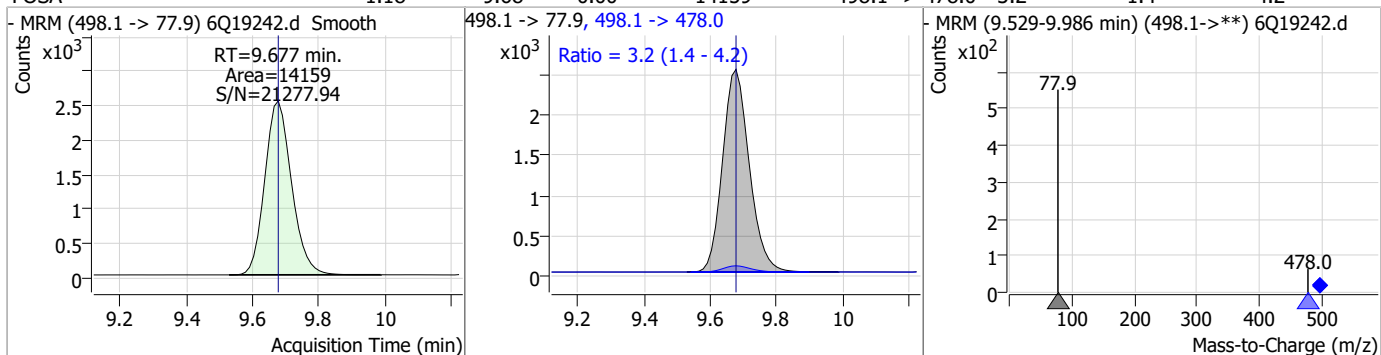


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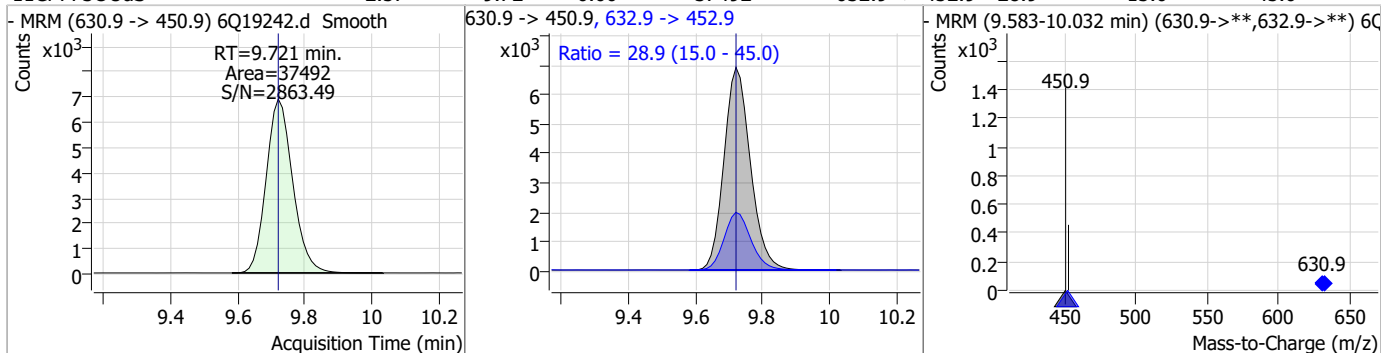
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Perfluorinated Compounds by LC/MS/MS

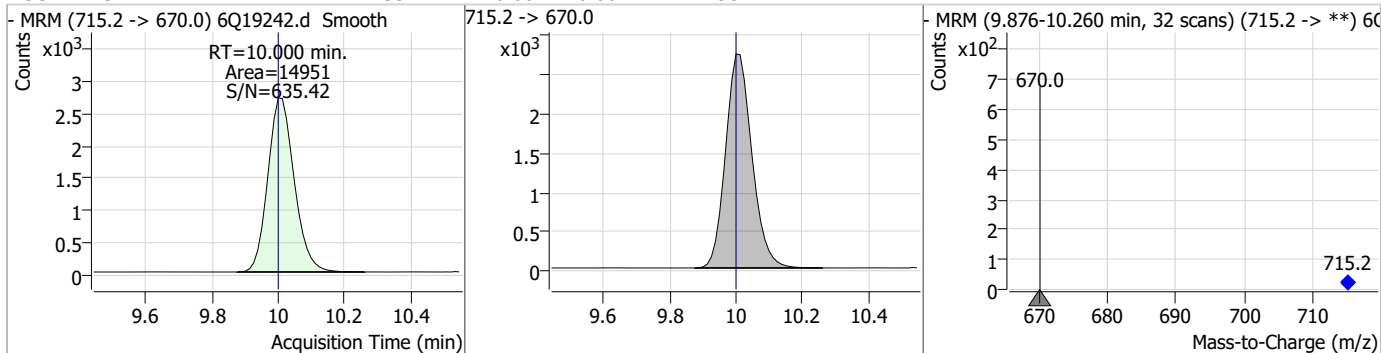
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.18	9.68	0.00	14159	498.1 -> 478.0	3.2	1.4	4.2



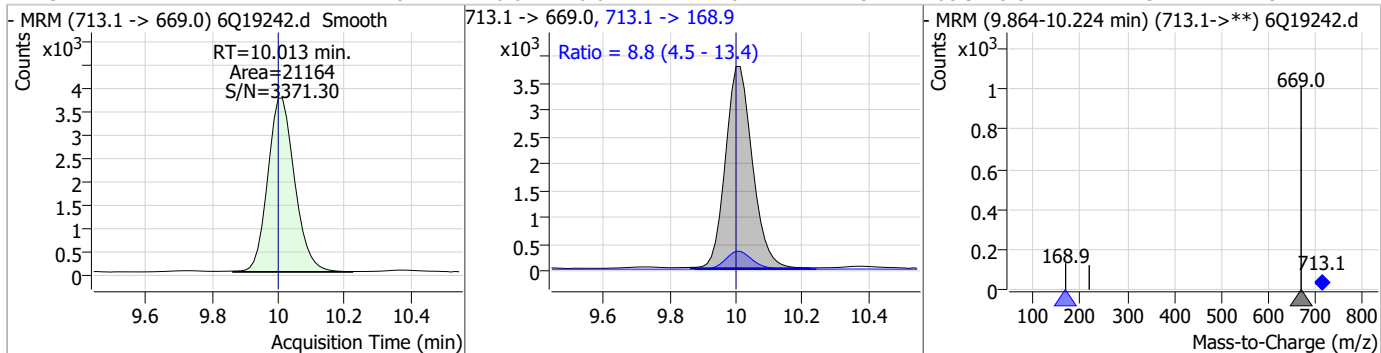
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	2.57	9.72	0.00	37492	630.9 -> 452.9	28.9	15.0	45.0



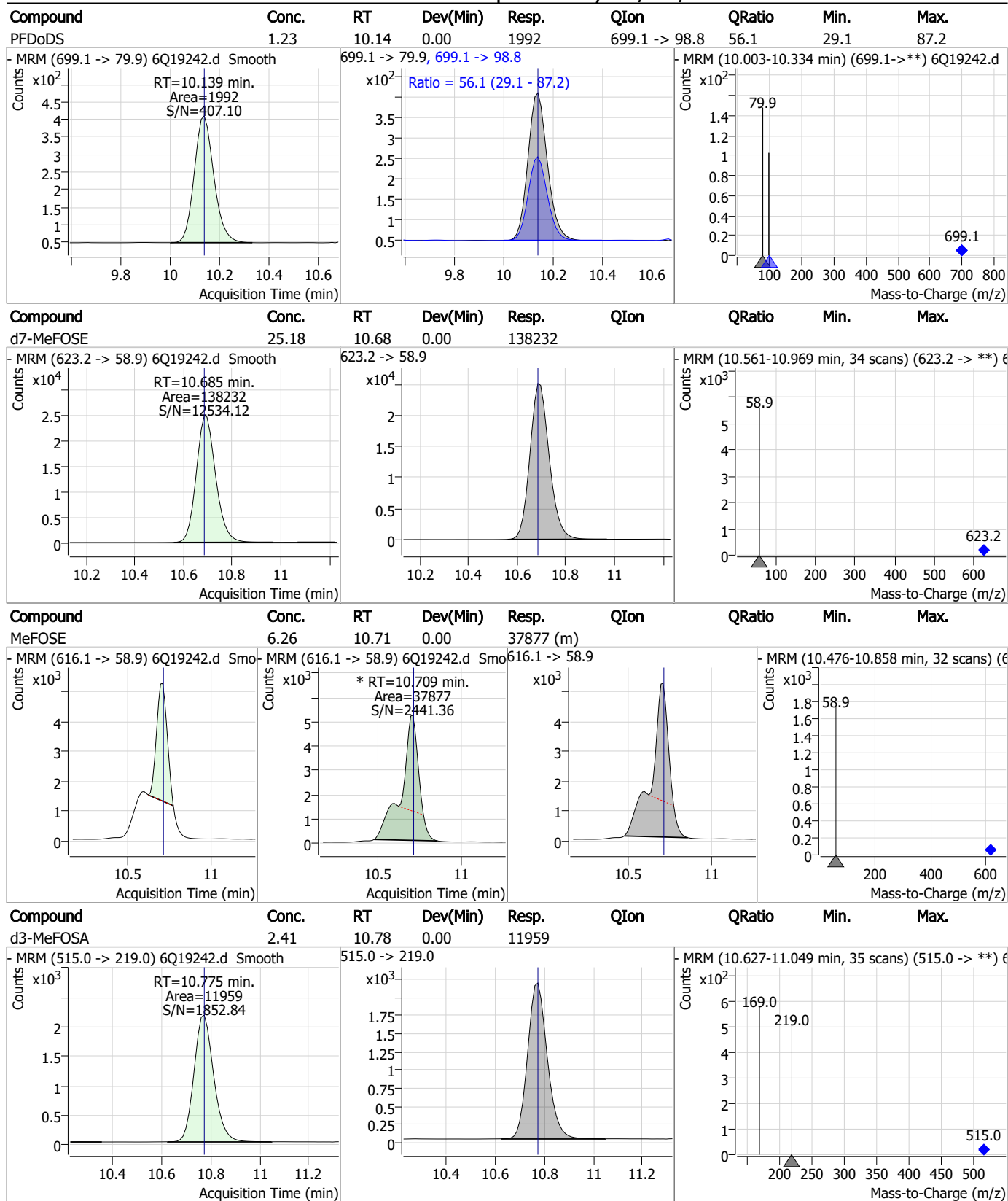
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	10.00	0.00	14951	715.2 -> 670.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.18	10.01	0.01	21164	713.1 -> 168.9	8.8	4.5	13.4



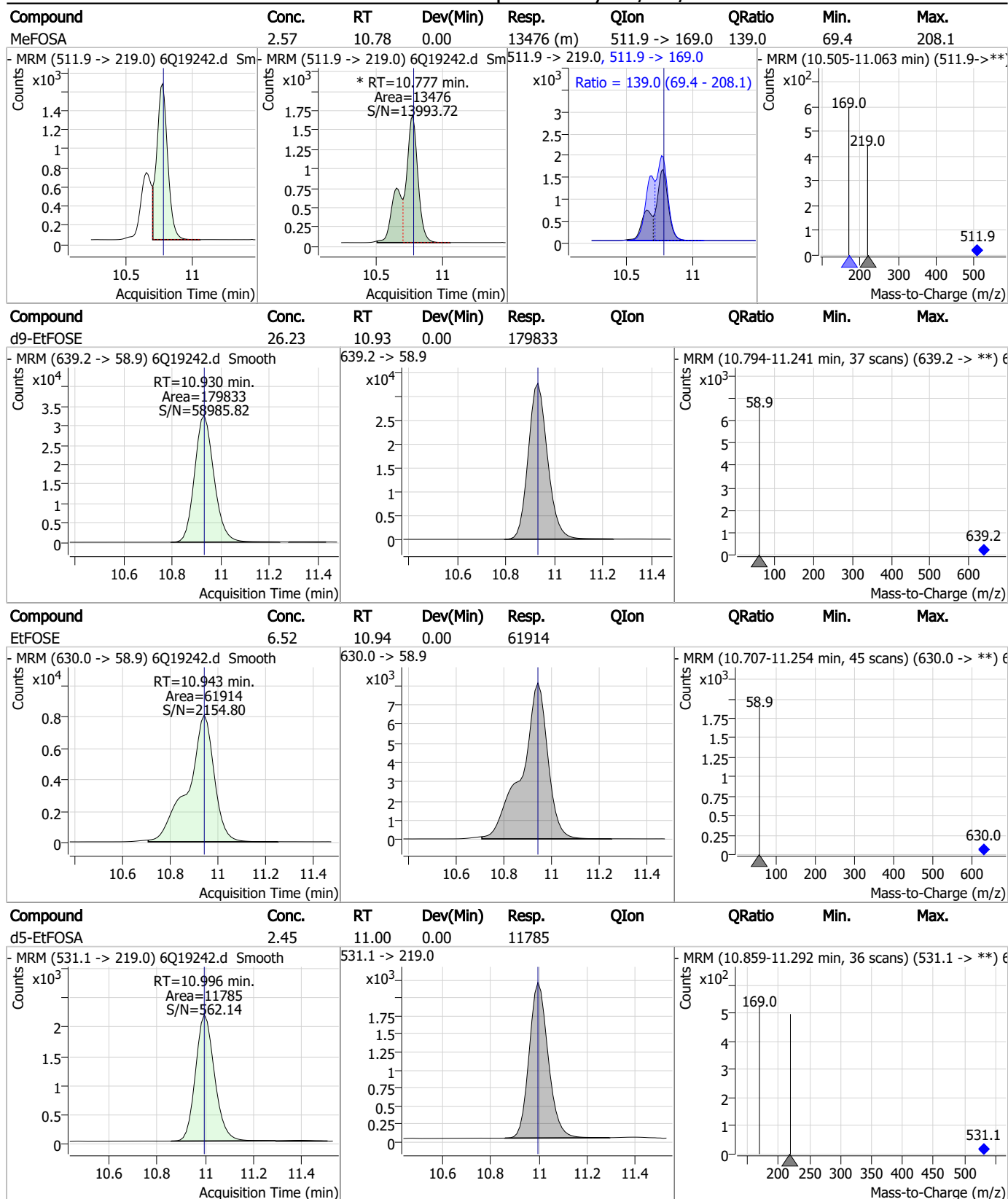
Perfluorinated Compounds by LC/MS/MS



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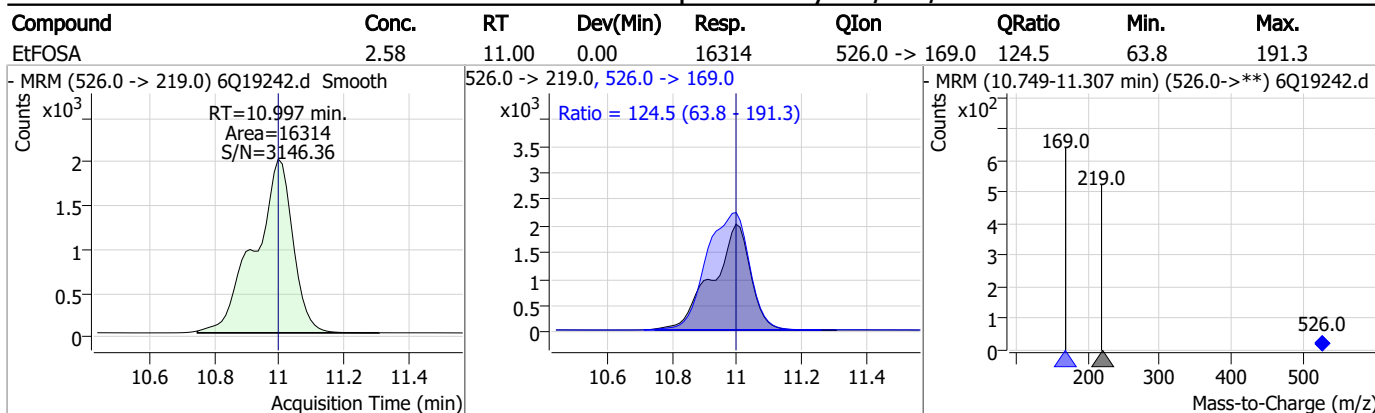
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19242.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 16:16 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19243.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 4:30:26 PM
 Sample Name : icc287-4
 Vial : P1-A5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	140568	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	46426	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	50144	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	46358	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	77838	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	33668	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	20761	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	28975	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	23513	1.25 µg/L	0.000
M2-PFTeDA	10.000	715.2 -> 670.0	13874	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	27697	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18313	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11807	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	11305	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2968	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4234	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4193	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	29917	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	31005	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	24915	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	143603	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	178733	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11928	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12025	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14630	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	59704	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8292	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	80335	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	28105	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	44687	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	47220	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2968	5.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.2%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4234	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.3%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4193	5.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.1%		
13C2-PFDoDA	9.285	615.1 -> 570.0	23513	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	10.000	715.2 -> 670.0	13874	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C3-PFBS	5.746	302.1 -> 79.9	18313	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	11807	2.68 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 = 107.3%	
13C4-PFBA	3.085	216.8 -> 171.9	140568	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.707	367.1 -> 322.0	46358	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C5-PFHxA	5.792	318.0 -> 273.0	50144	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.560	268.3 -> 223.0	46426	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	8.387	519.1 -> 474.1	20761	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C7-PFUnDA	8.853	570.0 -> 525.1	28975	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C8-FOSA	9.674	506.1 -> 77.8	27697	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-PFOA	7.339	421.1 -> 376.0	77838	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C8-PFOS	8.563	507.1 -> 79.9	11305	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C9-PFNA	7.882	472.1 -> 427.0	33668	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSAA	8.407	573.2 -> 419.0	29917	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31005	9.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
d3-MeFOSA	10.775	515.0 -> 219.0	12025	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
d5-EtFOSAA	8.615	589.2 -> 419.0	24915	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	143603	26.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d9-EtFOSE	10.930	639.2 -> 58.9	178733	26.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d5-EtFOSA	10.996	531.1 -> 219.0	11928	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	47239	9.19 µg/L	100
		327.1 -> 80.9	17595		
6:2FTS	7.113	427.1 -> 407.0	47115	9.21 µg/L	100
		427.1 -> 80.9	17157		
8:2FTS	8.164	527.1 -> 507.0	26695	9.57 µg/L	100
		527.1 -> 80.8	10523		
EtFOSAA	8.629	584.2 -> 419.1	9230	2.23 µg/L	m 100
		584.2 -> 526.0	4629		
FOSA	9.677	498.1 -> 77.9	27116	2.39 µg/L	100
		498.1 -> 478.0	754		
MeFOSAA	8.421	570.1 -> 419.0	16974	2.33 µg/L	m 100
		570.1 -> 483.0	3358		
PFBA	3.093	212.8 -> 168.9	53583	9.56 µg/L	100
PFBS	5.747	298.7 -> 79.9	17811	2.22 µg/L	100
		298.7 -> 98.8	6160		
PFDA	8.388	512.9 -> 469.0	70834	2.28 µg/L	100
		512.9 -> 219.0	10658		
PFDODA	9.285	613.1 -> 569.0	46000	2.38 µg/L	100
		613.1 -> 319.0	7676		
PFDS	9.450	599.0 -> 79.9	7772	2.28 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.708	599.0 -> 98.8	3522	2.47	µg/L	100
		363.1 -> 319.0	61235			
PFHpS	8.046	363.1 -> 169.0	9828	2.13	µg/L	100
		449.0 -> 79.9	14466			
PFHxA	5.795	449.0 -> 98.9	7089	2.34	µg/L	100
		313.0 -> 269.0	47031			
PFHxS	7.479	313.0 -> 118.9	2536	2.15	µg/L	100
		398.7 -> 79.9	15250			
PFNA	7.883	398.7 -> 98.9	7061	2.53	µg/L	100
		463.0 -> 419.0	78087			
PFNS	9.041	463.0 -> 219.0	13826	2.27	µg/L	100
		548.8 -> 79.9	13594			
PFOA	7.353	548.8 -> 98.9	6636	2.38	µg/L	100
		413.0 -> 369.0	94981			
PFOS	8.564	413.0 -> 169.0	16702	2.09	µg/L	100
		498.9 -> 79.9	13905			
PFPeA	4.551	498.9 -> 98.8	7249	4.72	µg/L	100
		263.0 -> 219.0	64525			
PFPeS	6.785	349.1 -> 79.9	14597	2.24	µg/L	100
		349.1 -> 98.9	6705			
PFTeDA	10.000	713.1 -> 669.0	40562	2.45	µg/L	100
		713.1 -> 168.9	3612			
PFTrDA	9.669	663.0 -> 619.0	50072	2.61	µg/L	100
		663.0 -> 168.9	5028			
PFUnDA	8.854	563.1 -> 519.0	52562	2.47	µg/L	100
		563.1 -> 269.1	8750			
11CI-PF3OUdS	9.721	630.9 -> 450.9	73440	5.03	µg/L	100
		632.9 -> 452.9	22023			
9CI-PF3ONS	8.906	530.8 -> 351.0	115870	4.75	µg/L	100
		532.8 -> 353.0	34769			
ADONA	6.959	376.9 -> 250.9	239236	4.56	µg/L	100
		376.9 -> 84.8	66960			
HFPO-DA	6.169	284.9 -> 168.9	16822	5.00	µg/L	100
		284.9 -> 184.9	1847			
3:3FTCA	3.946	241.0 -> 177.0	10943	11.71	µg/L	100
		241.0 -> 117.0	1453			
5:3FTCA	6.361	341.0 -> 237.1	238074	61.11	µg/L	100
		341.0 -> 217.0	177547			
7:3FTCA	7.748	441.0 -> 316.9	166781	59.82	µg/L	100
		441.0 -> 336.9	385570			
EtFOSA	10.997	526.0 -> 219.0	31209	4.89	µg/L	100
		526.0 -> 169.0	39793			
EtFOSE	10.943	630.0 -> 58.9	115263	12.21	µg/L	100
		511.9 -> 219.0	25896			
MeFOSA	10.777	511.9 -> 169.0	35919	4.91	µg/L	100
		616.1 -> 58.9	73632			
MeFOSE	10.709	699.1 -> 79.9	3732	11.71	µg/L	100
		699.1 -> 98.8	2168			
PFDoDS	10.139	295.0 -> 201.0	11826	2.20	µg/L	100
		295.0 -> 84.9	3420			
NFDHA	5.673	279.0 -> 85.1	45915	4.65	µg/L	100
		229.0 -> 84.9	36379			
PFMBA	4.988	314.8 -> 134.9	116442	4.78	µg/L	100
		314.8 -> 82.9	3989			
PFMPA	3.667			4.71	µg/L	100
PFEESA	6.288			4.71	µg/L	100

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

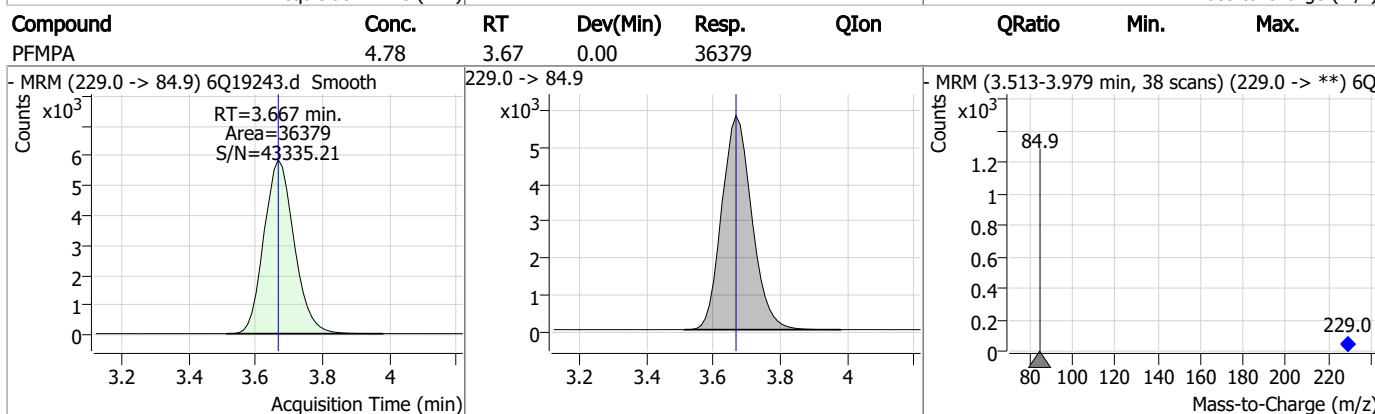
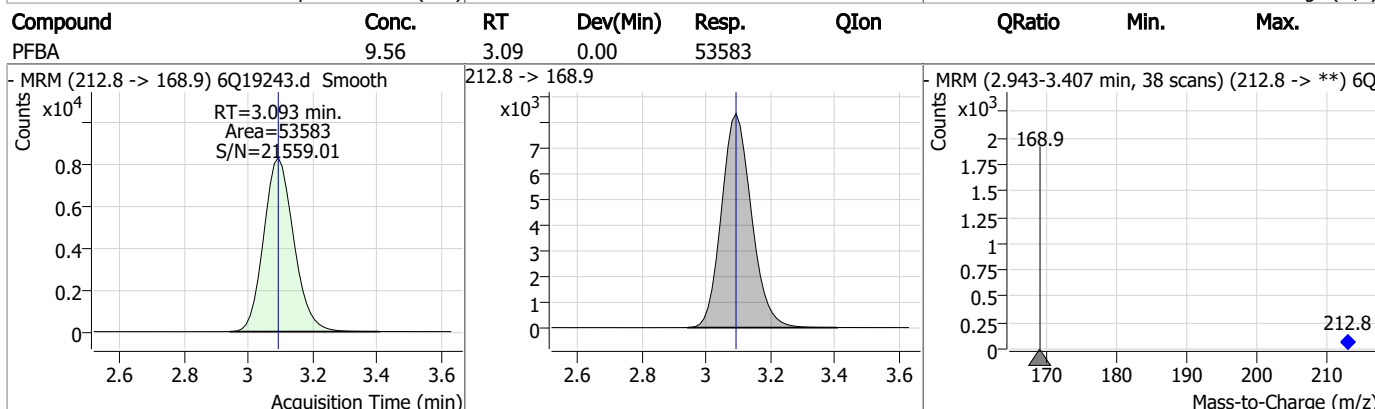
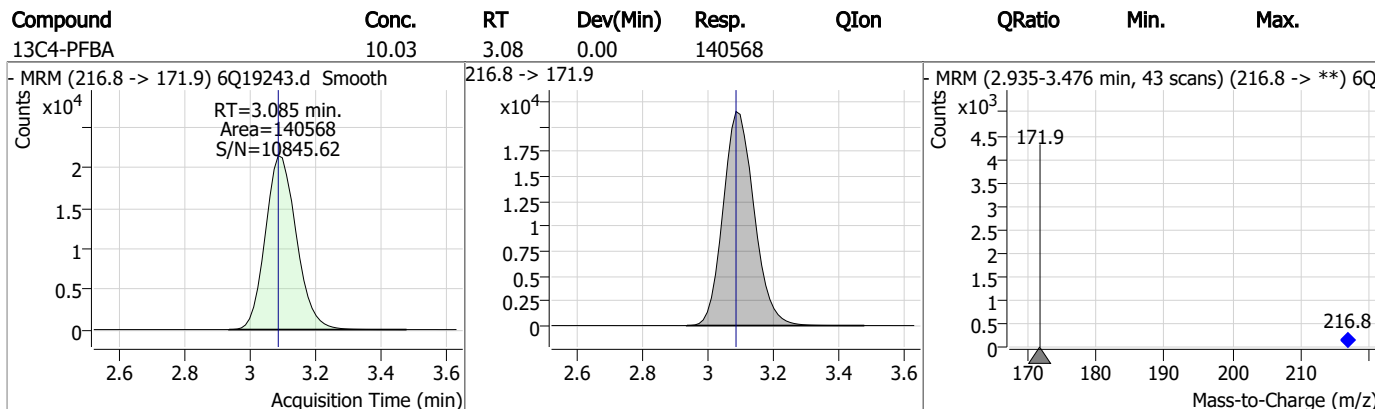
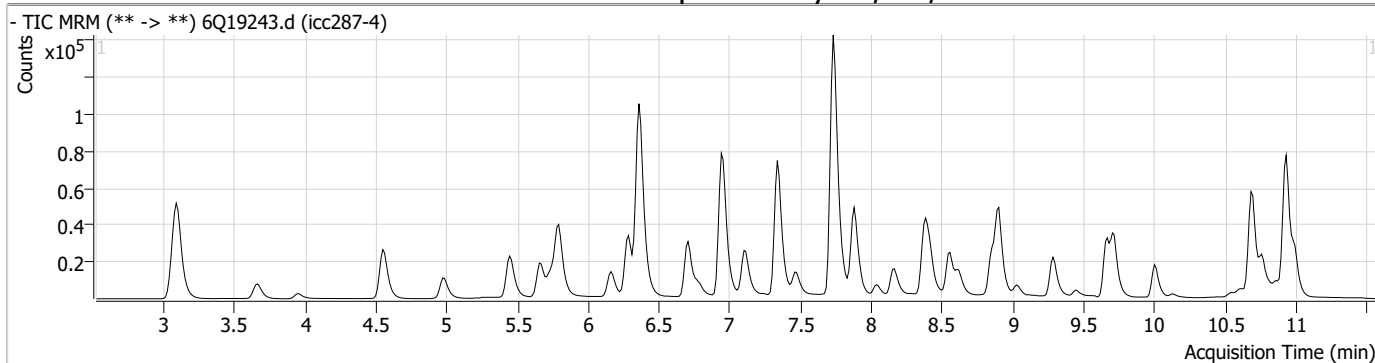
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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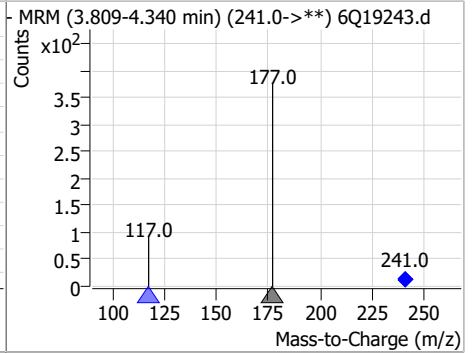
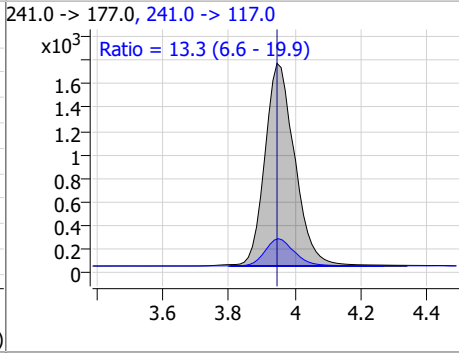
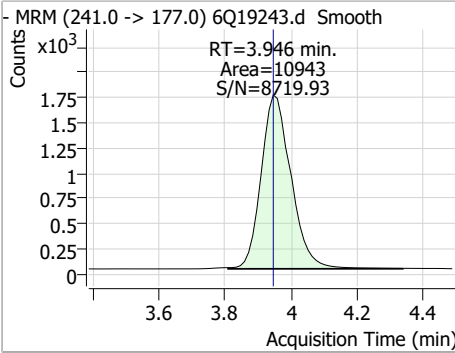


Perfluorinated Compounds by LC/MS/MS

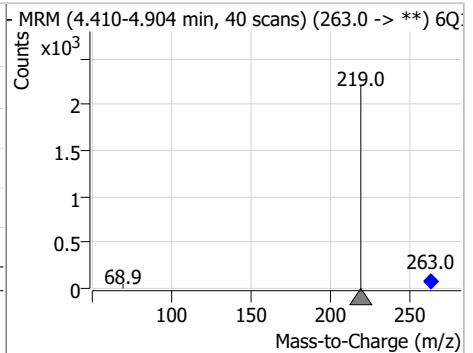
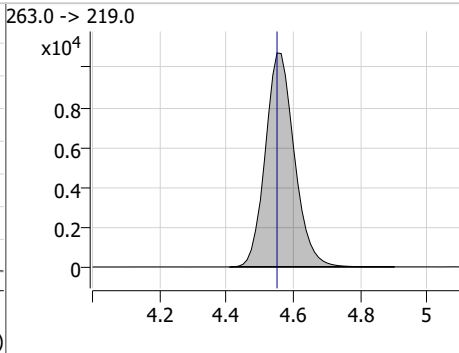
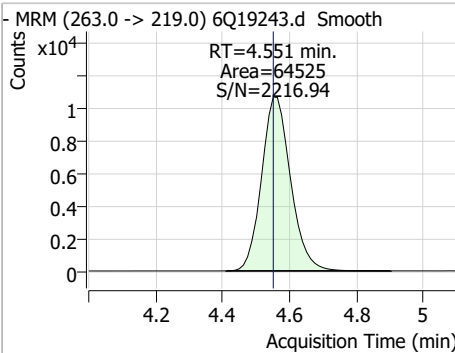


Perfluorinated Compounds by LC/MS/MS

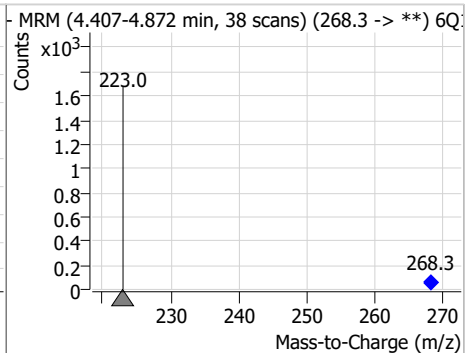
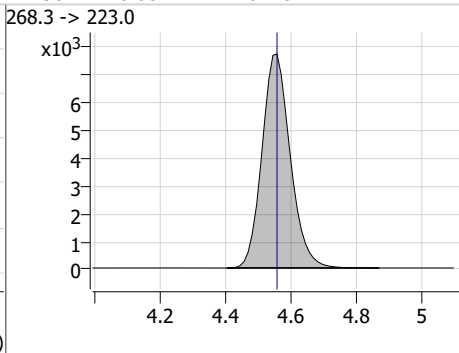
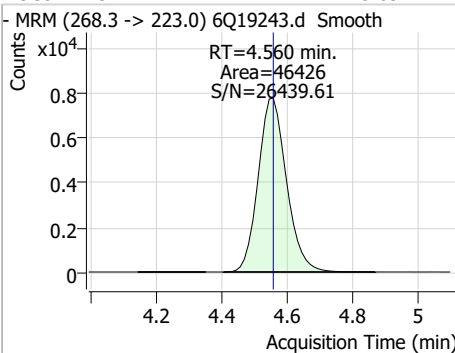
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.71	3.95	0.00	10943	241.0 -> 117.0	13.3	6.6	19.9



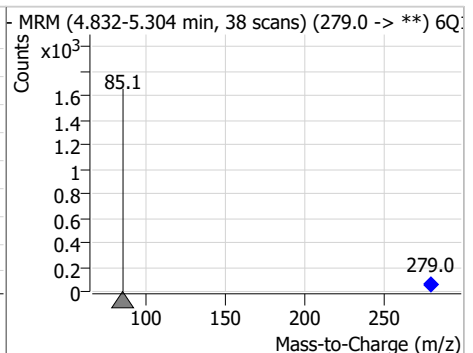
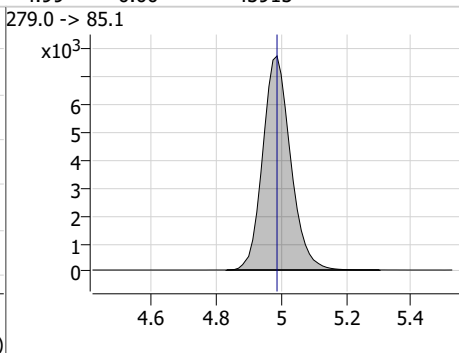
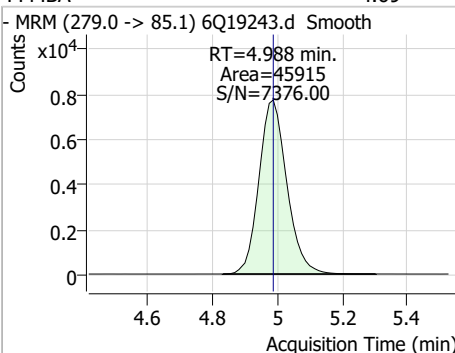
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.72	4.55	0.00	64525				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.56	0.00	46426				



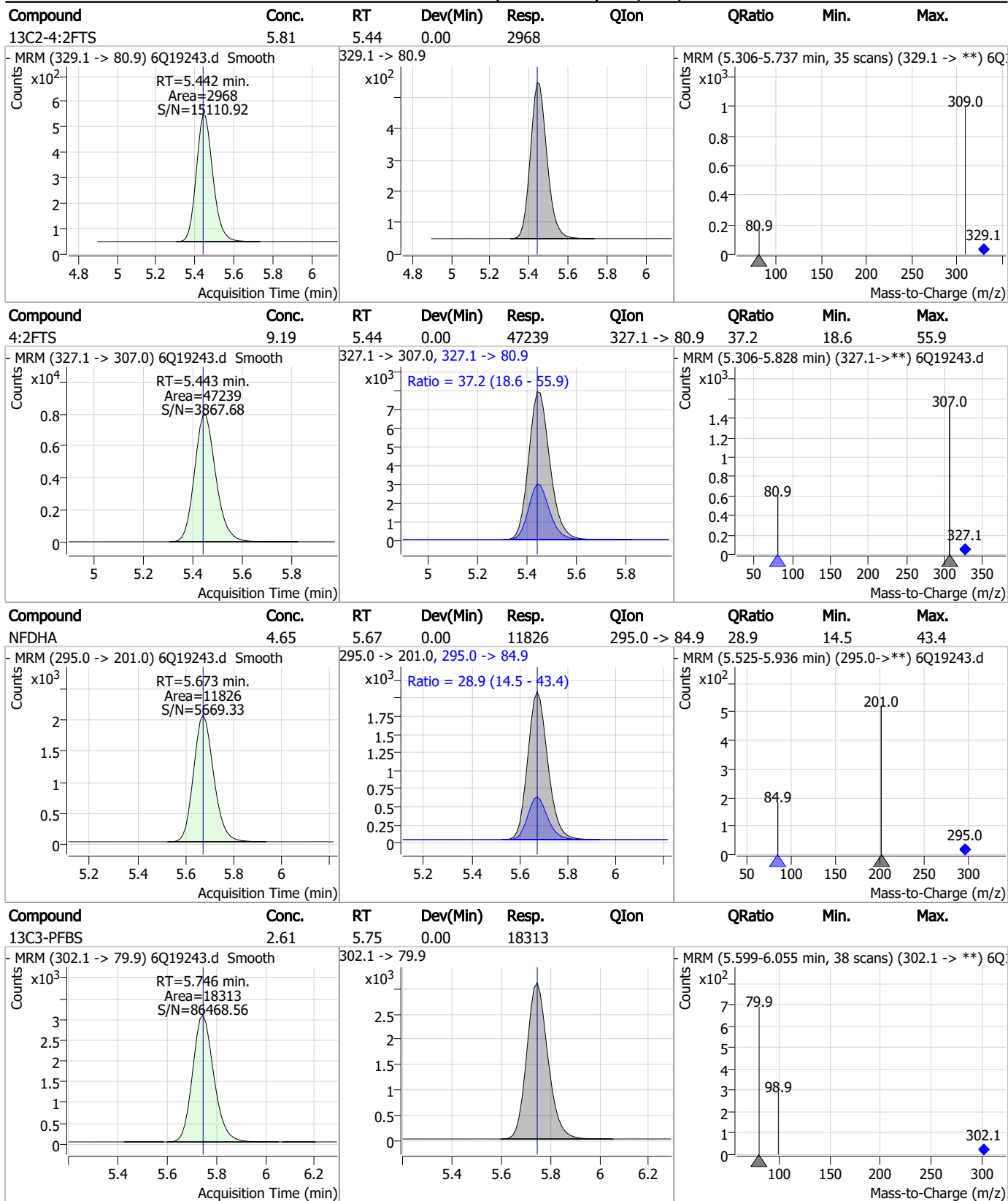
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.69	4.99	0.00	45915				



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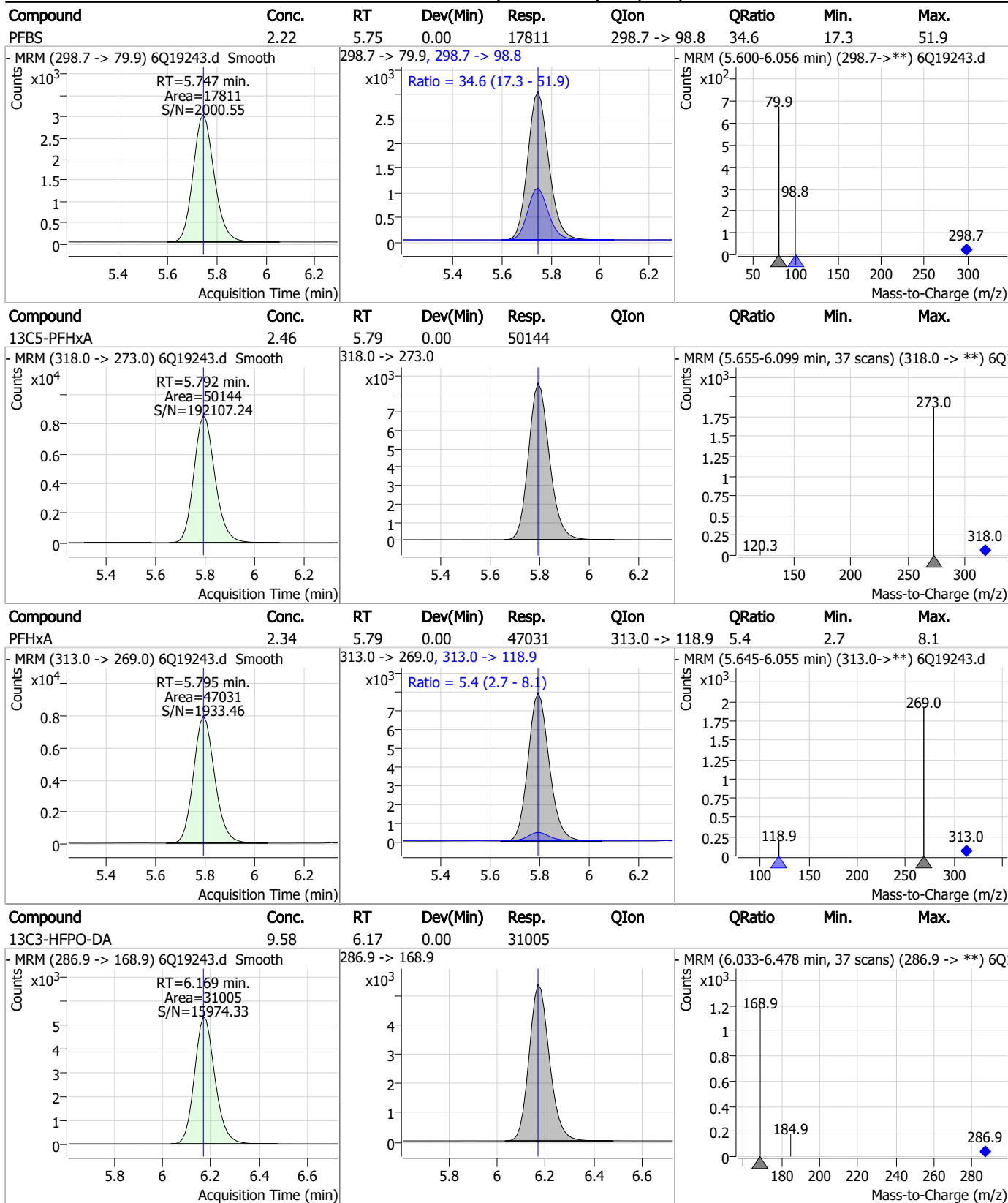
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Perfluorinated Compounds by LC/MS/MS



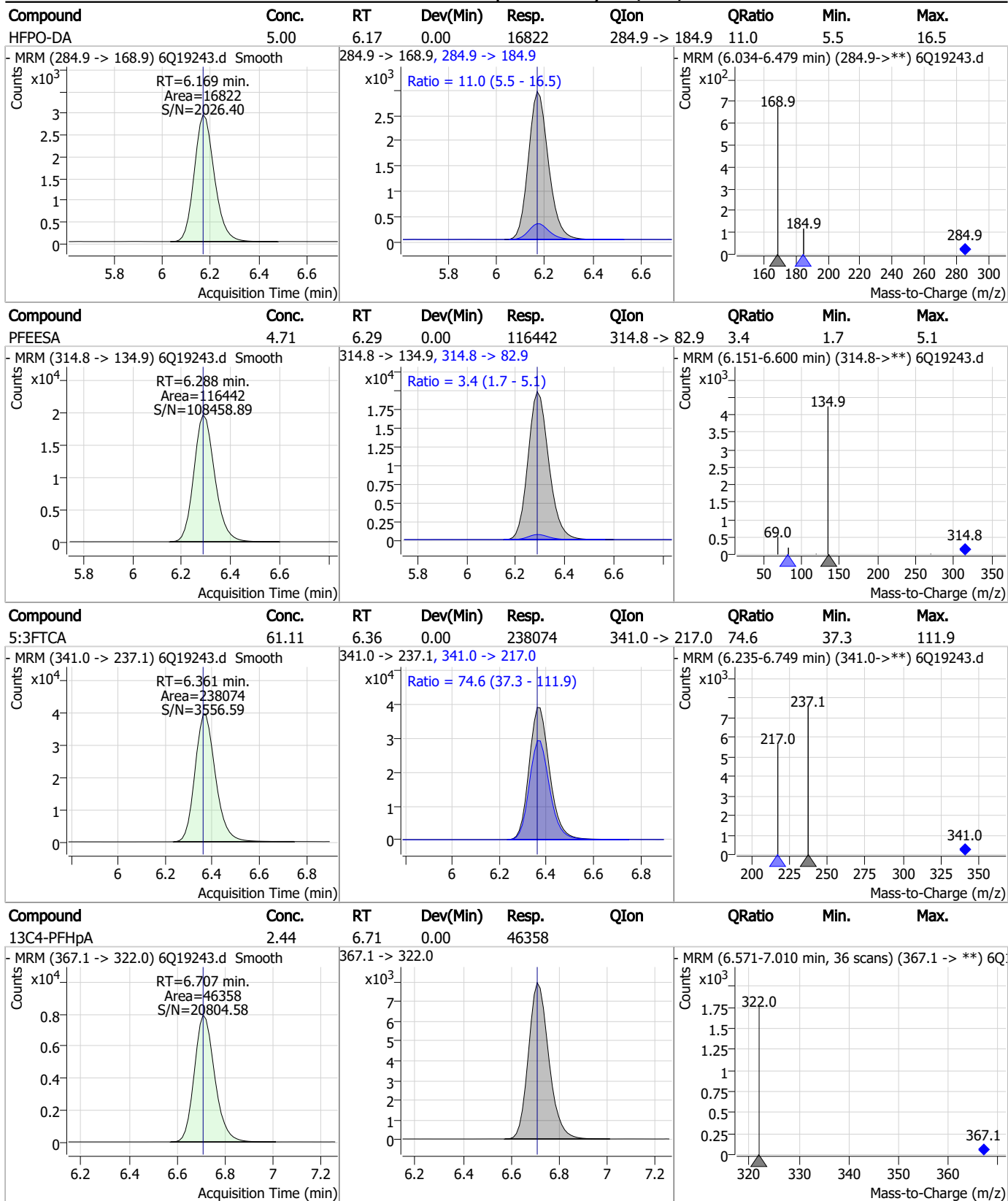
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Perfluorinated Compounds by LC/MS/MS



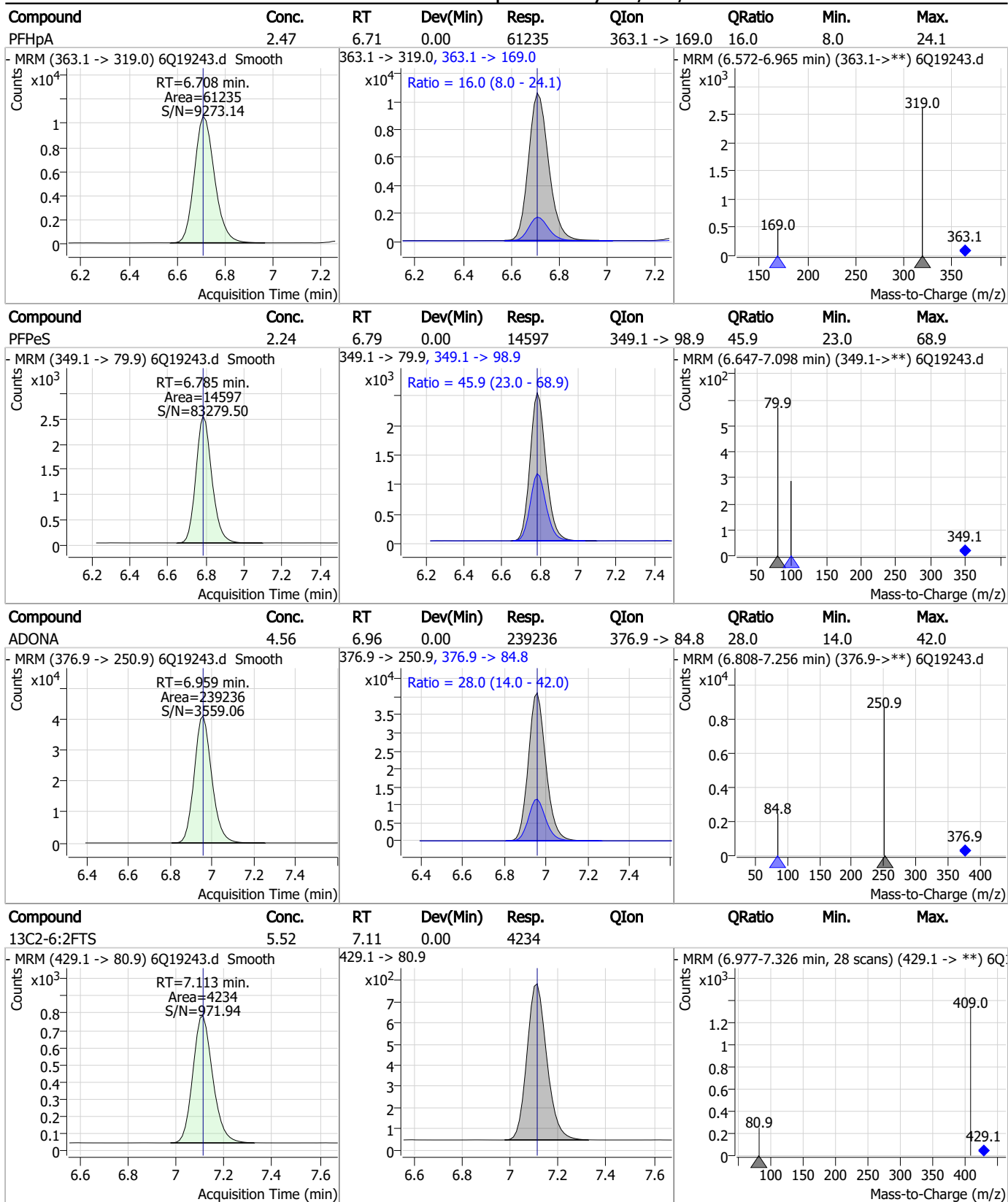
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Perfluorinated Compounds by LC/MS/MS



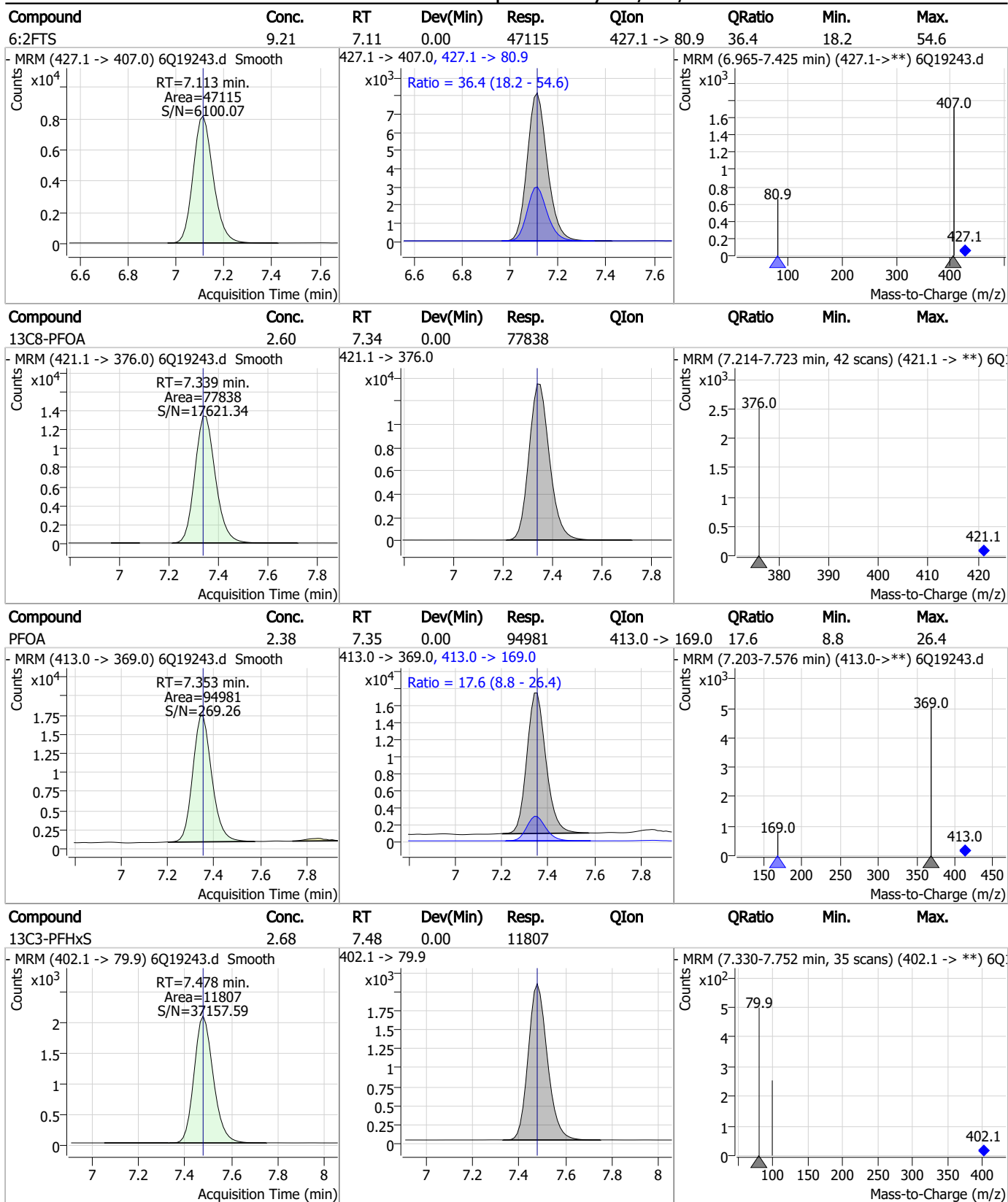
7.7.25
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Perfluorinated Compounds by LC/MS/MS



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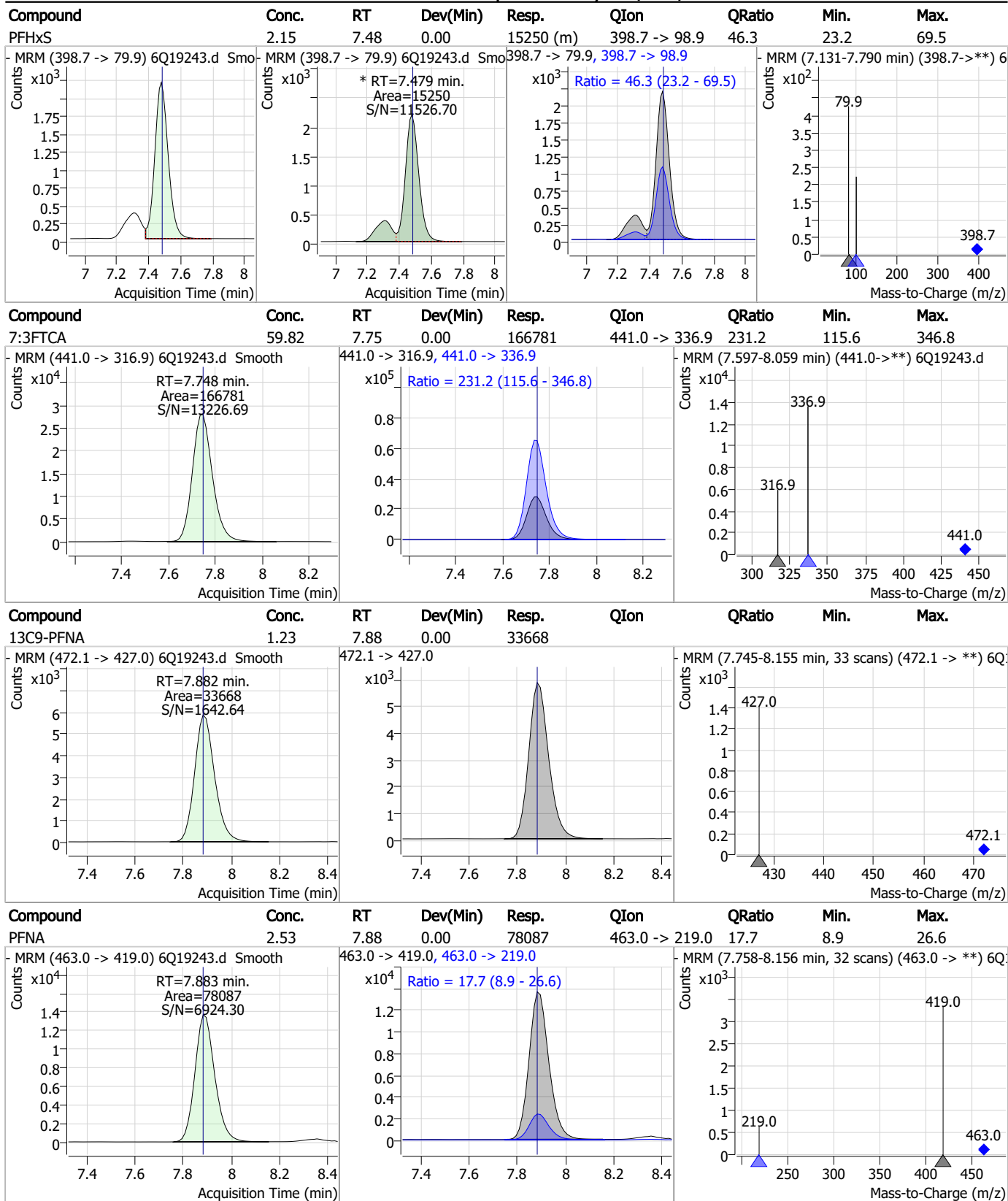
Perfluorinated Compounds by LC/MS/MS



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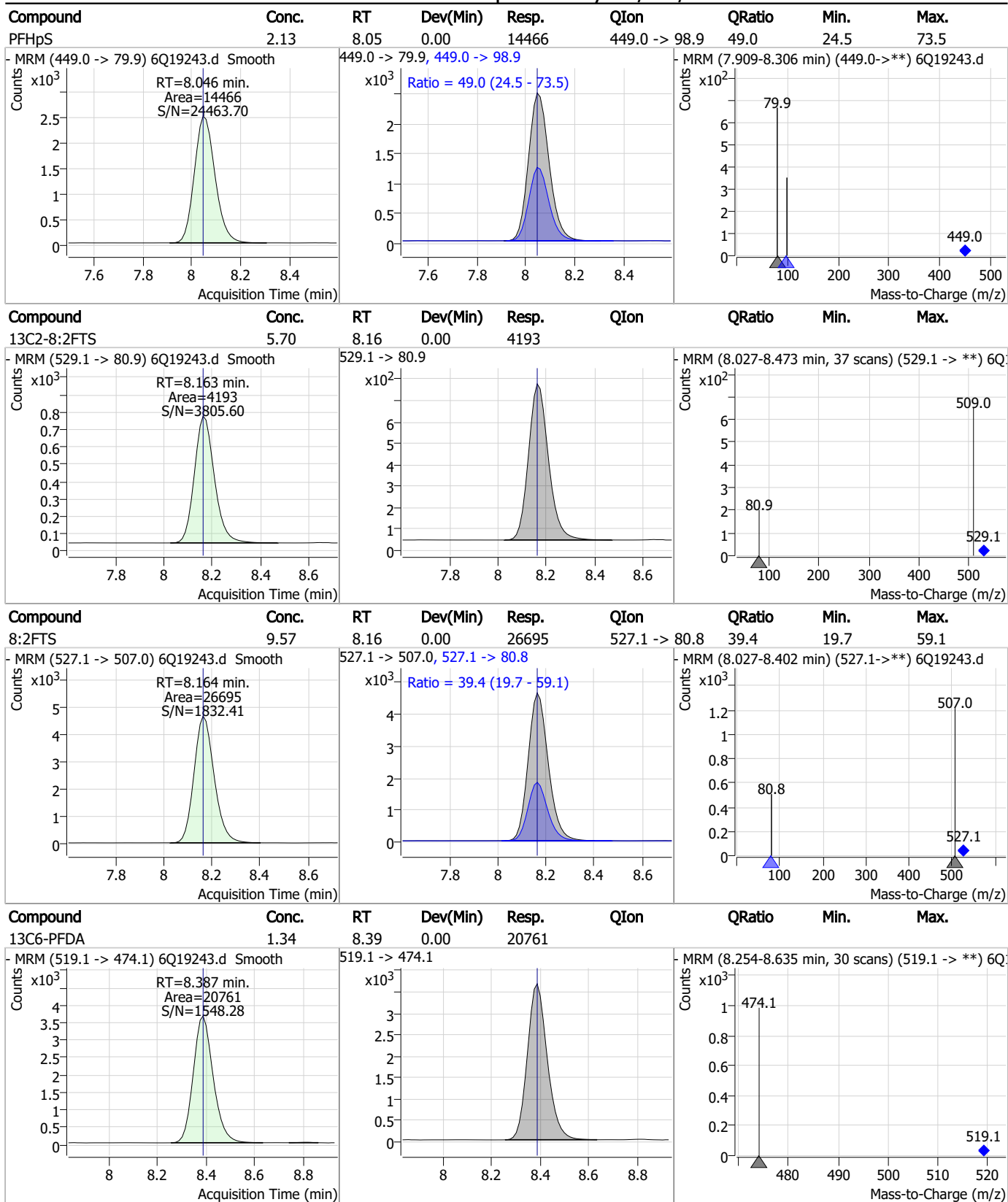
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Perfluorinated Compounds by LC/MS/MS



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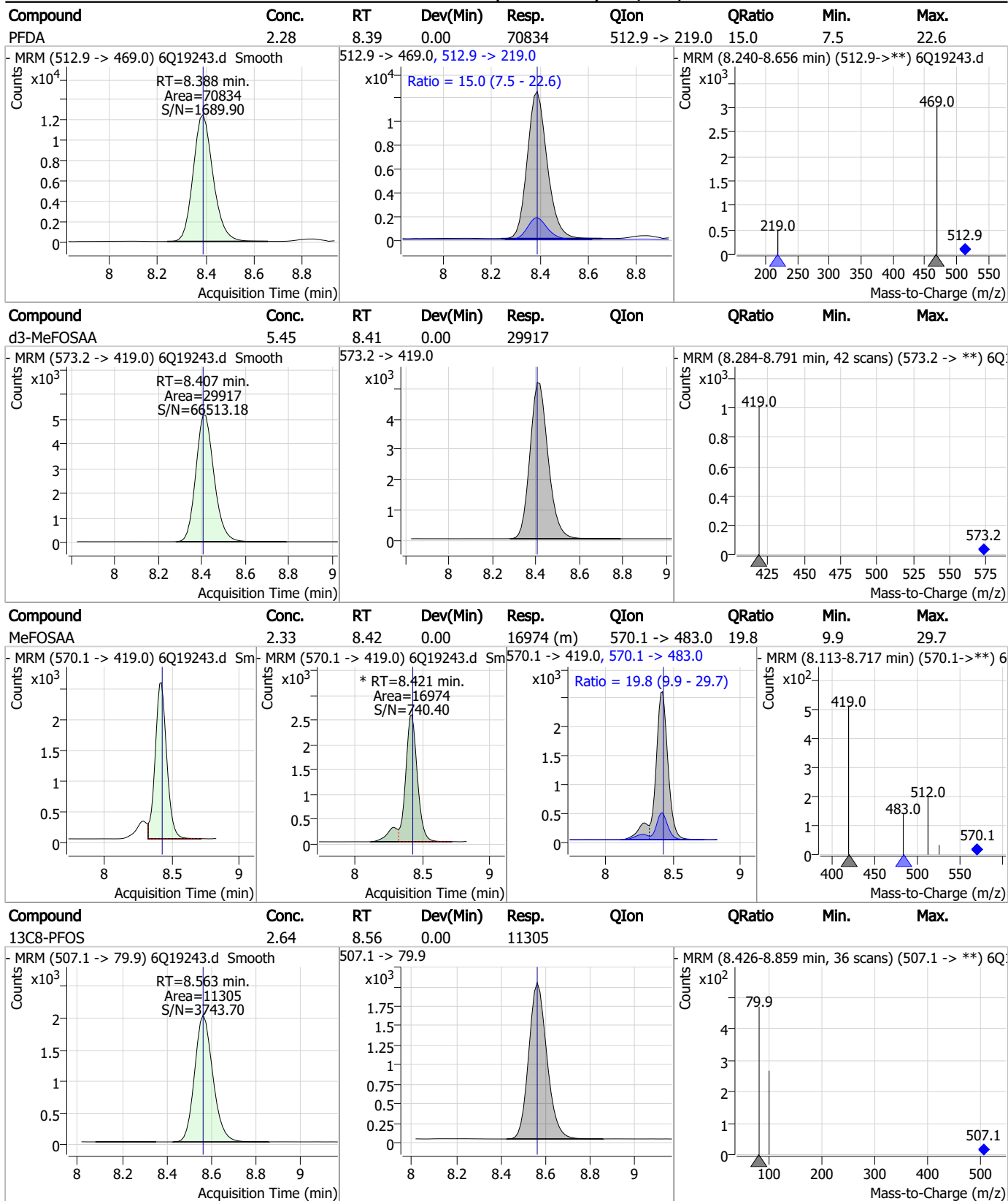
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

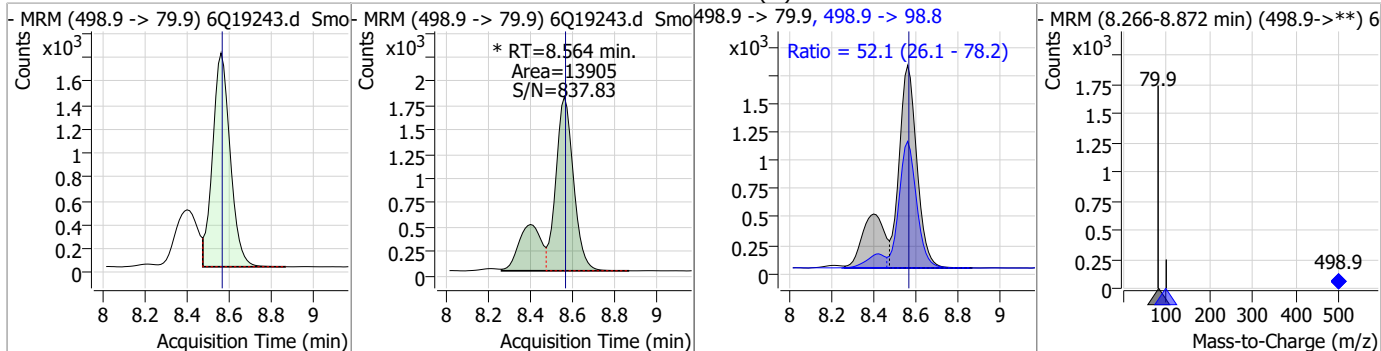


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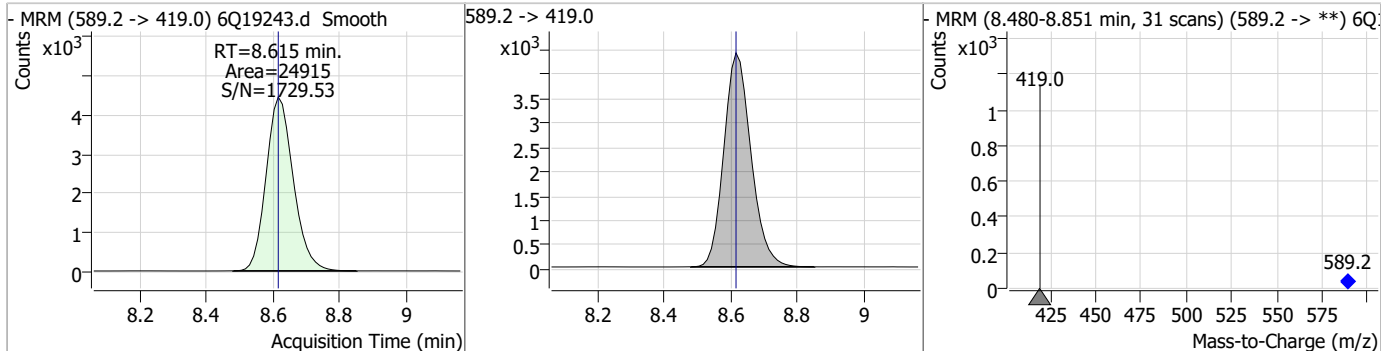
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Perfluorinated Compounds by LC/MS/MS

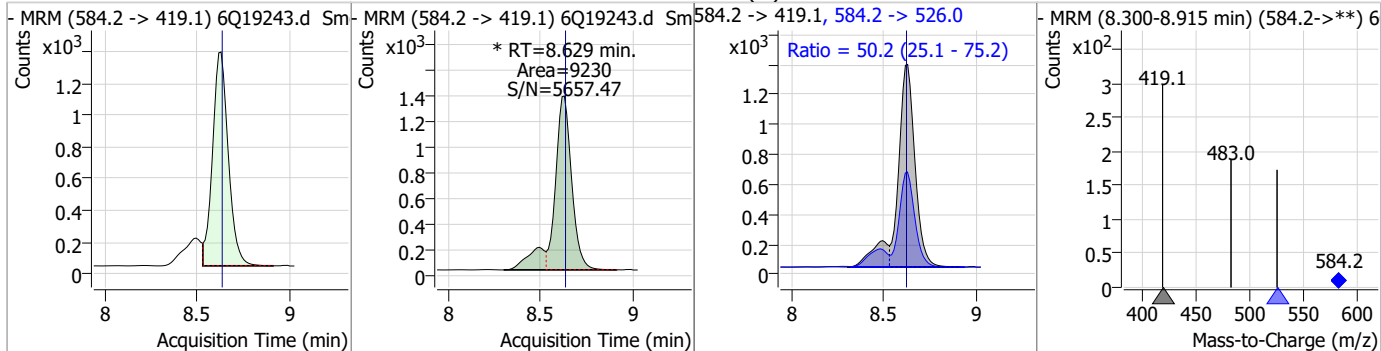
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.09	8.56	0.00	13905 (m)	498.9 -> 98.8	52.1	26.1	78.2



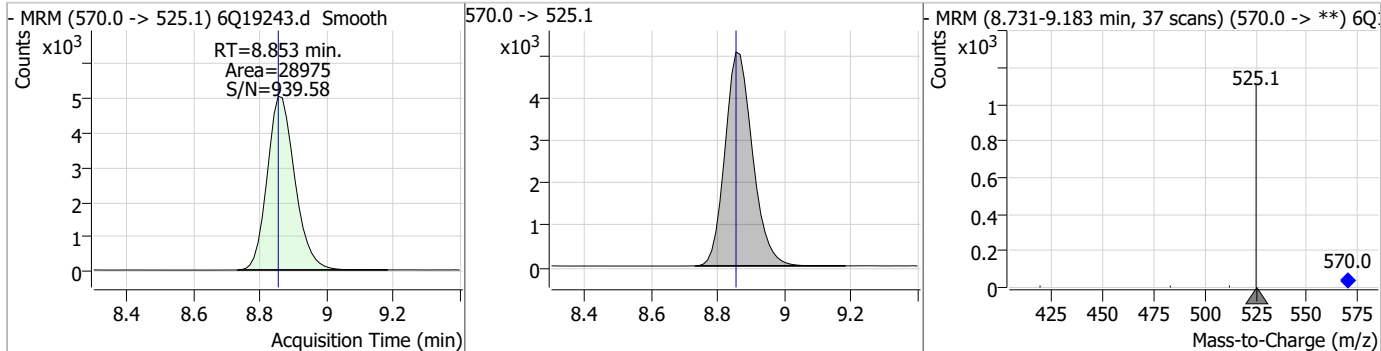
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.38	8.62	0.00	24915				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.23	8.63	0.00	9230 (m)	584.2 -> 526.0	50.2	25.1	75.2

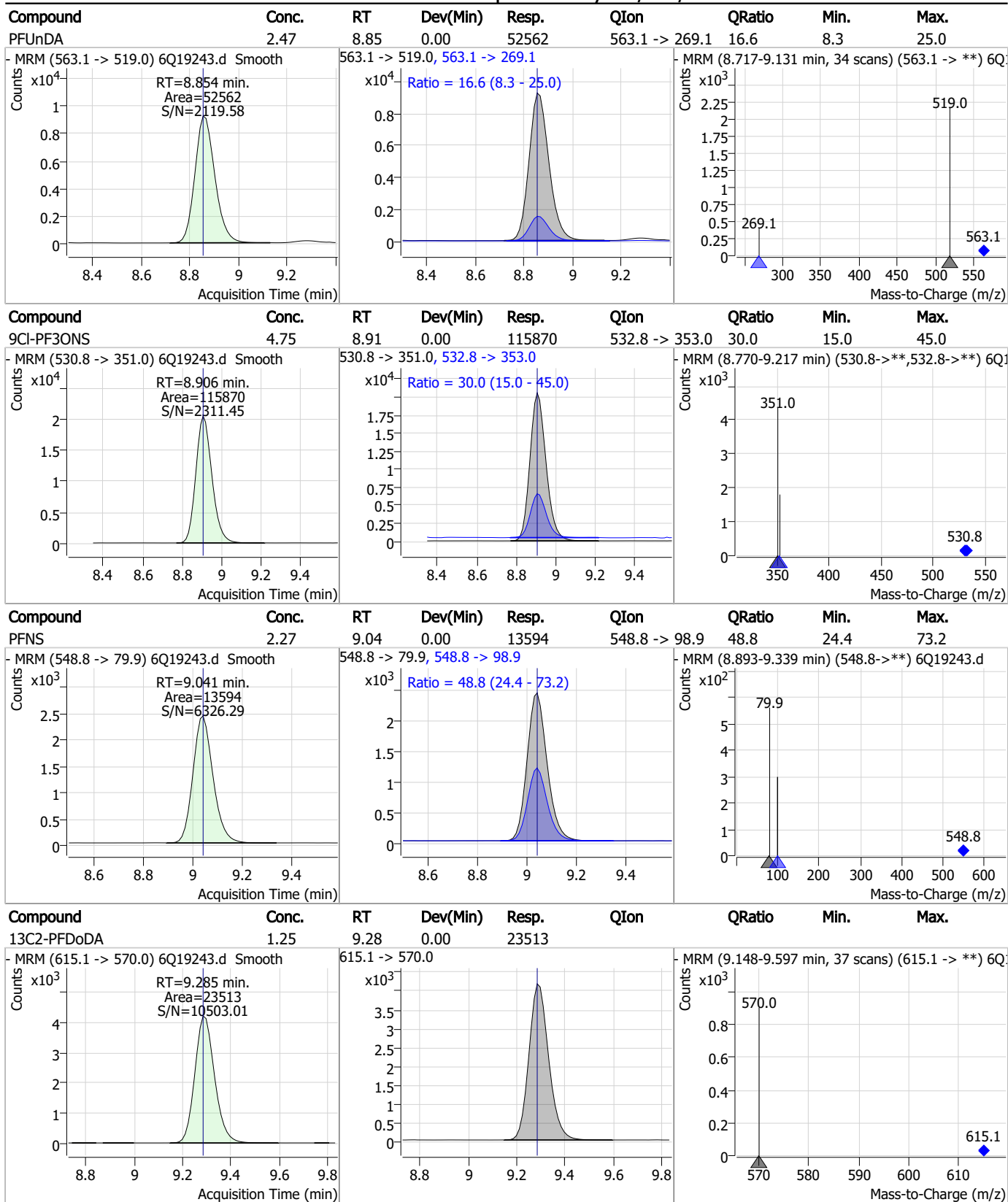


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	8.85	0.00	28975				



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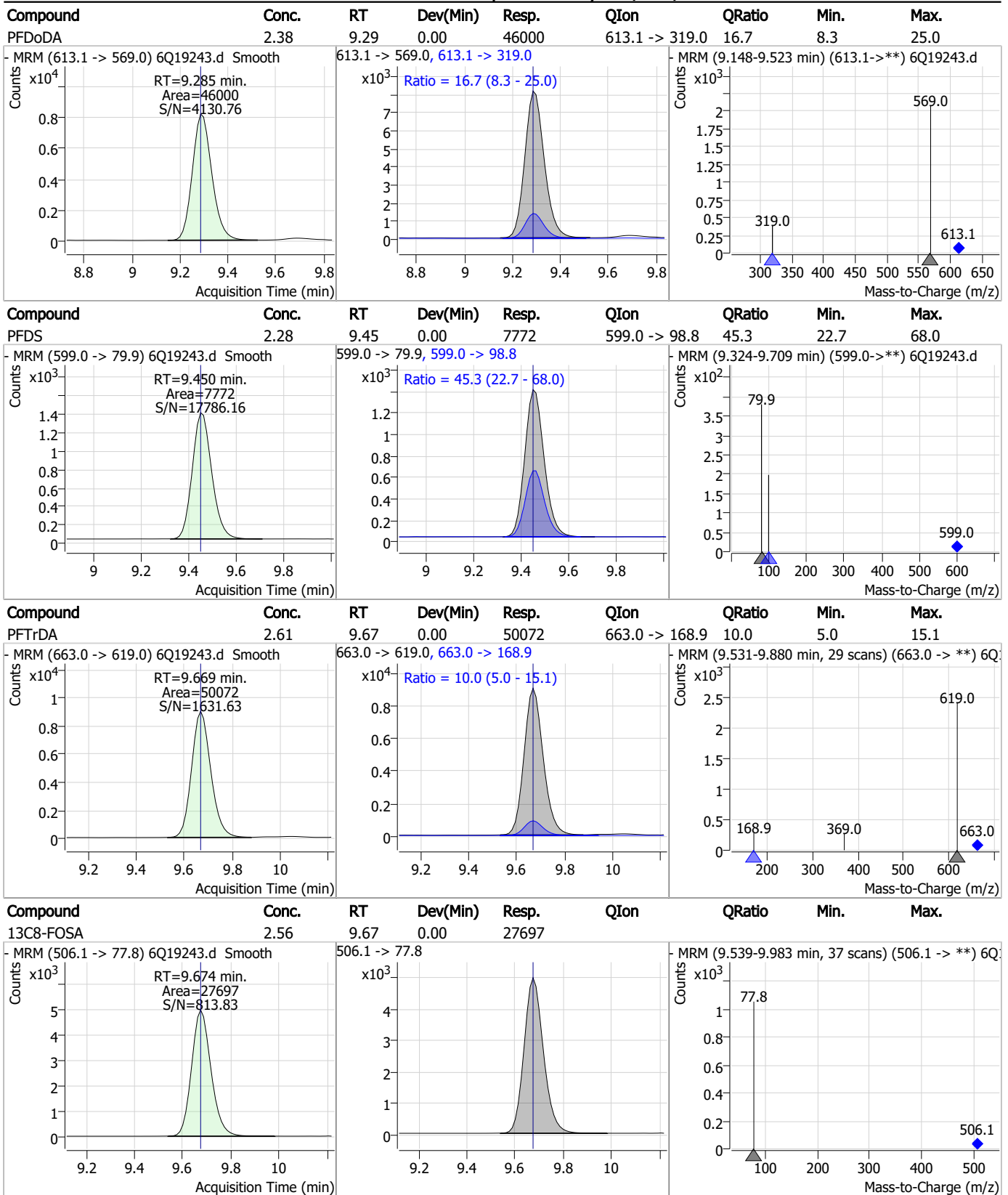
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

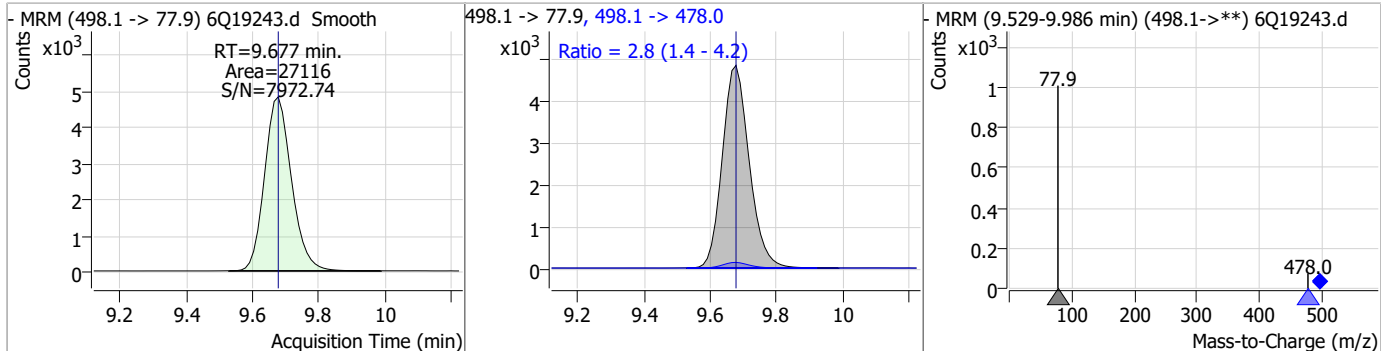


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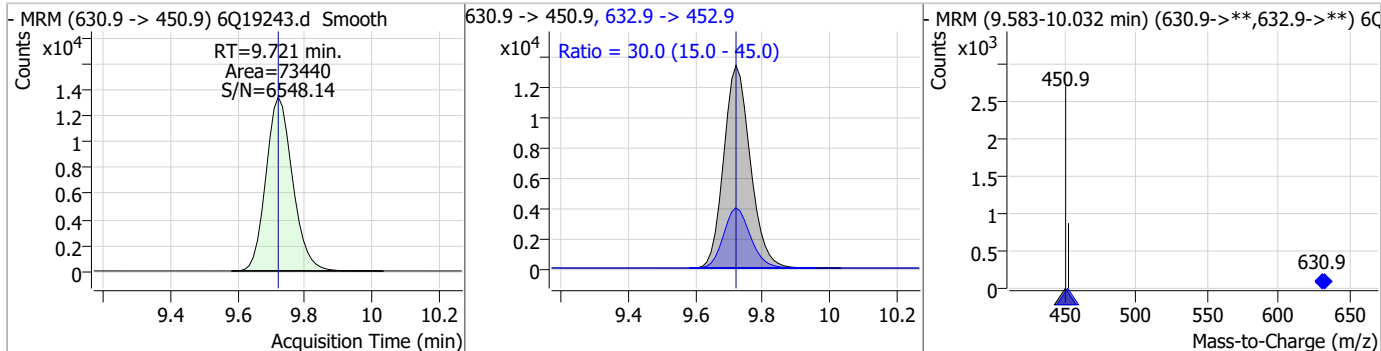
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Perfluorinated Compounds by LC/MS/MS

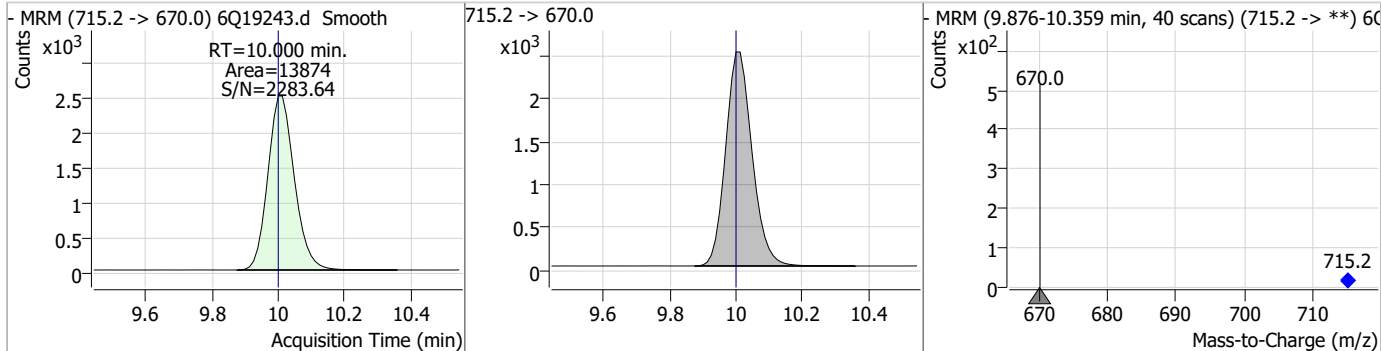
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.39	9.68	0.00	27116	498.1 -> 478.0	2.8	1.4	4.2



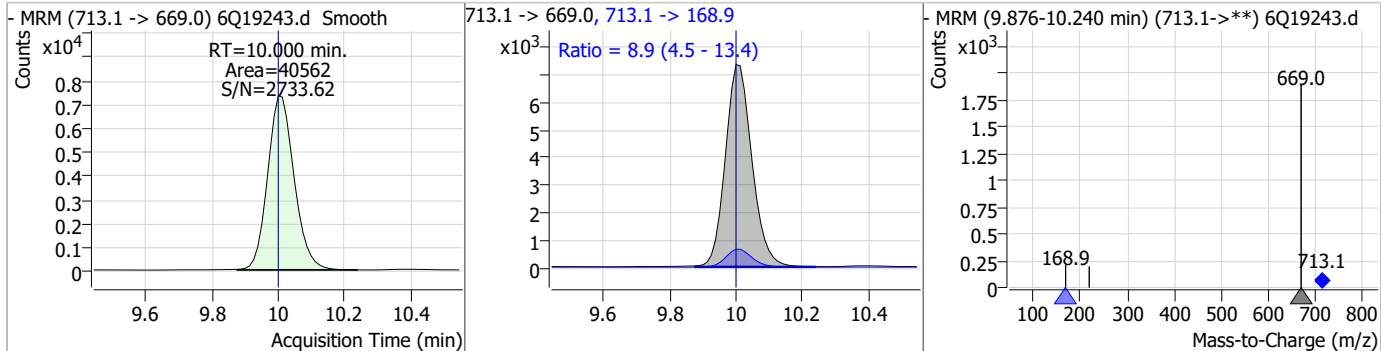
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	5.03	9.72	0.00	73440	632.9 -> 452.9	30.0	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	10.00	0.00	13874	715.2 -> 670.0	8.9	4.5	13.4

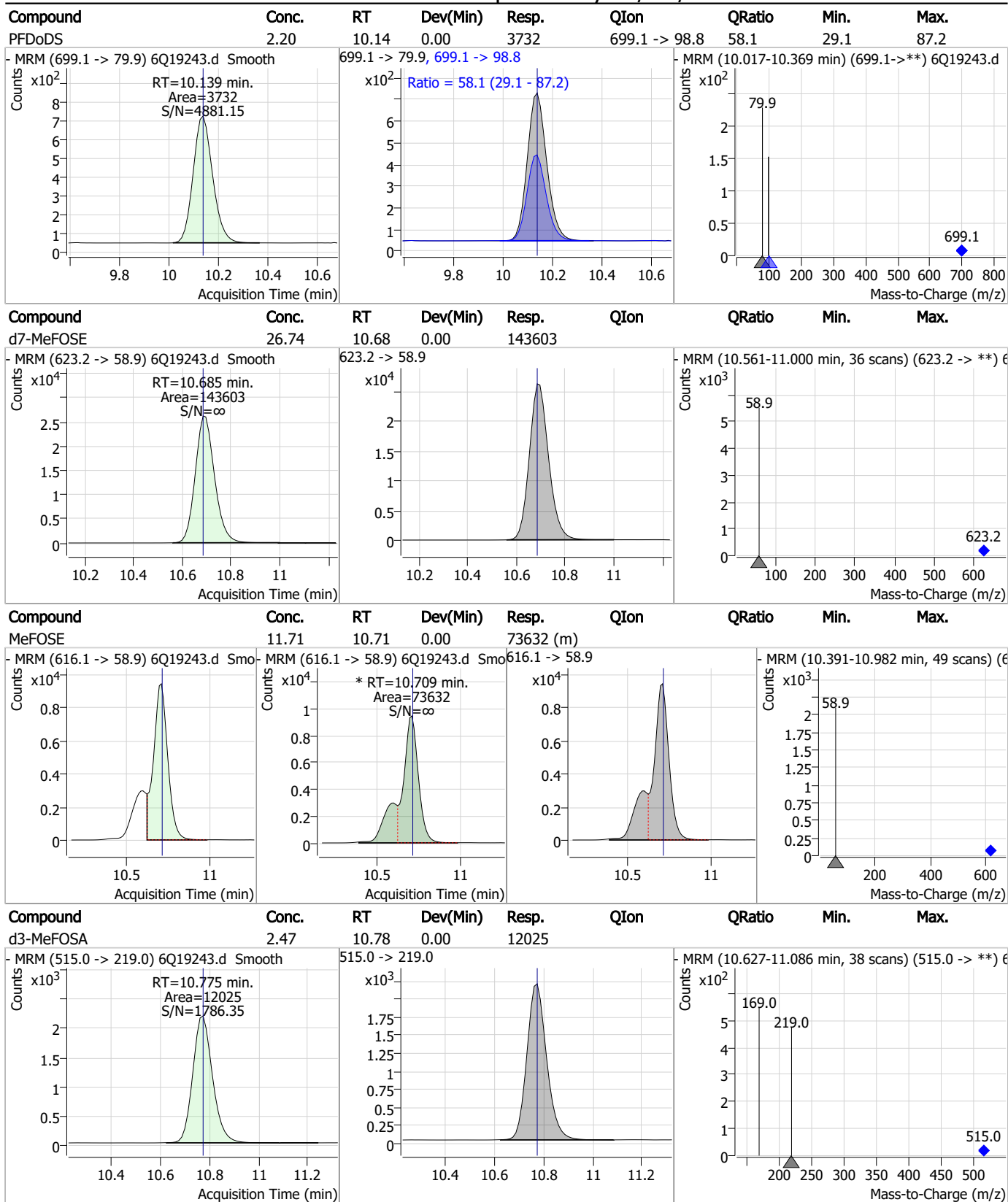


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.45	10.00	0.00	40562	713.1 -> 168.9	8.9	4.5	13.4



7.7.25
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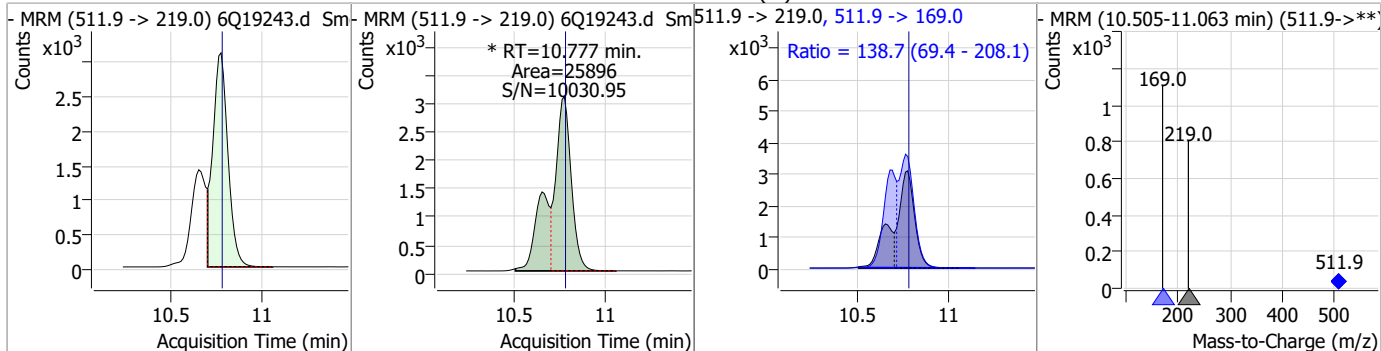
Perfluorinated Compounds by LC/MS/MS



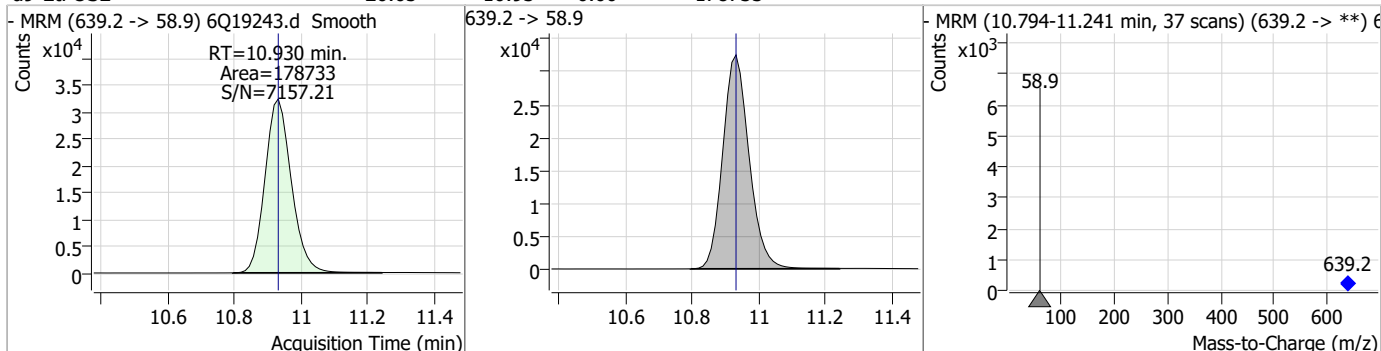
7.7.25
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Perfluorinated Compounds by LC/MS/MS

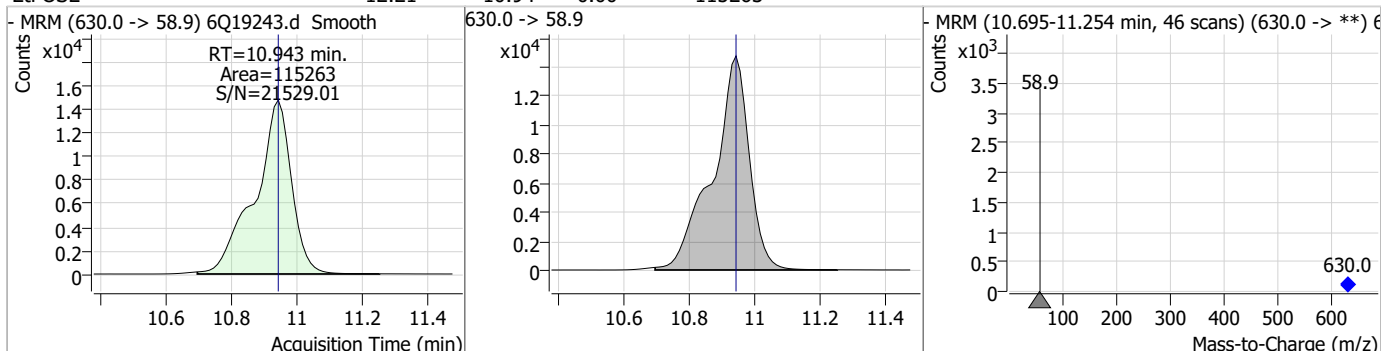
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.91	10.78	0.00	25896 (m)	511.9 -> 169.0	138.7	69.4	208.1



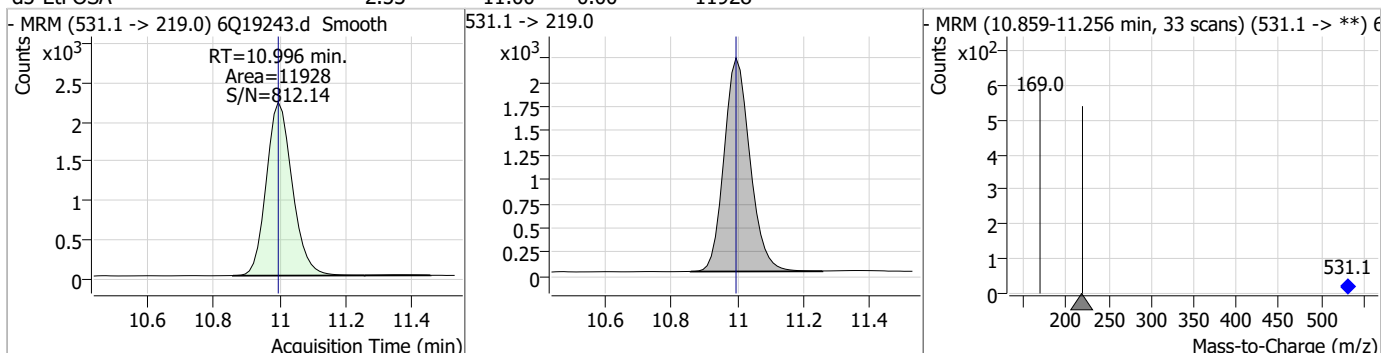
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.65	10.93	0.00	178733				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.21	10.94	0.00	115263				

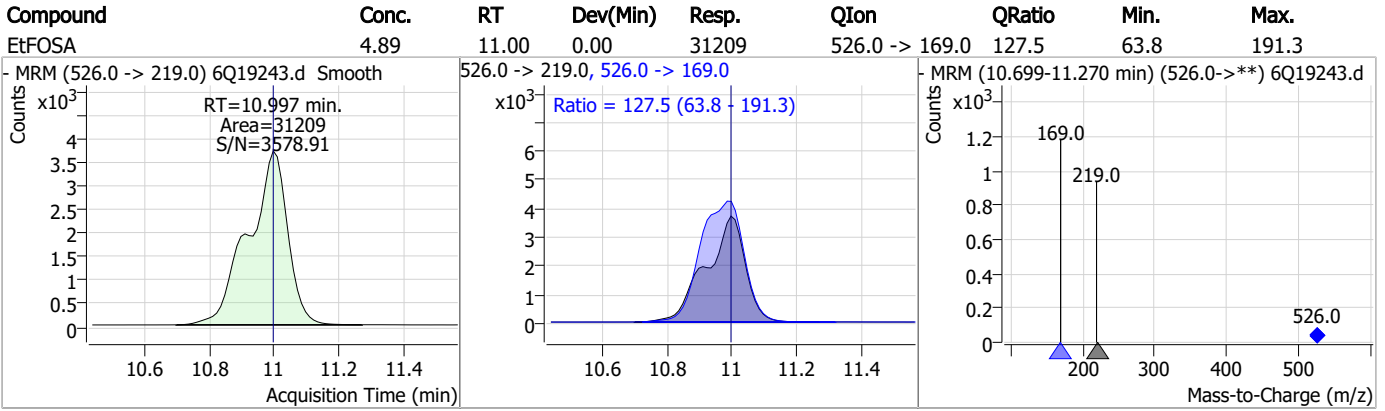


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.53	11.00	0.00	11928				



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7

Perfluorinated Compounds by LC/MS/MS



7.7.25

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Manual Integration Approval Summary

Sample Number: S6Q287-ICC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19243.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 16:30 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 06/13/23 13:30

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19244.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 4:44:24 PM
 Sample Name : ic287-5
 Vial : P1-A6
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	137979	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	46117	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	51063	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	48617	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	74791	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	33143	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	19932	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	27348	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24002	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	13422	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	26700	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18768	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11881	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10727	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2645	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4421	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	3907	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	28391	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	34308	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	23861	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	131760	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	171457	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12091	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11941	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14272	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	59320	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8581	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	78548	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	26515	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	45624	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	46137	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2645	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4421	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.3%		
13C2-8:2FTS	8.163	529.1 -> 80.9	3907	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24002	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13422	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFBS	5.746	302.1 -> 79.9	18768	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	11881	2.61 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFBA	3.085	216.8 -> 171.9	137979	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.707	367.1 -> 322.0	48617	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C5-PFHxA	5.792	318.0 -> 273.0	51063	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.548	268.3 -> 223.0	46117	5.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	8.387	519.1 -> 474.1	19932	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C7-PFUnDA	8.853	570.0 -> 525.1	27348	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C8-FOSA	9.674	506.1 -> 77.8	26700	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOA	7.339	421.1 -> 376.0	74791	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C8-PFOS	8.563	507.1 -> 79.9	10727	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.882	472.1 -> 427.0	33143	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.2%	
d3-MeFOSAA	8.407	573.2 -> 419.0	28391	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	34308	10.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
d3-MeFOSA	10.775	515.0 -> 219.0	11941	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSAA	8.615	589.2 -> 419.0	23861	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d7-MeFOSE	10.685	623.2 -> 58.9	131760	25.15 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d9-EtFOSE	10.930	639.2 -> 58.9	171457	26.21 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d5-EtFOSA	10.996	531.1 -> 219.0	12091	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	88718	19.36 µg/L	99
		327.1 -> 80.9	33509		
6:2FTS	7.113	427.1 -> 407.0	96150	18.00 µg/L	94
		427.1 -> 80.9	31617		
8:2FTS	8.164	527.1 -> 507.0	48540	18.68 µg/L	99
		527.1 -> 80.8	18890		
EtFOSAA	8.629	584.2 -> 419.1	18048	4.56 µg/L	m 94
		584.2 -> 526.0	9853		
FOSA	9.677	498.1 -> 77.9	52005	4.75 µg/L	99
		498.1 -> 478.0	1683		
MeFOSAA	8.421	570.1 -> 419.0	31743	4.60 µg/L	m 99
		570.1 -> 483.0	6390		
PFBA	3.093	212.8 -> 168.9	105316	19.14 µg/L	100
PFBS	5.747	298.7 -> 79.9	34466	4.19 µg/L	97
		298.7 -> 98.8	12545		
PFDA	8.388	512.9 -> 469.0	145247	4.87 µg/L	98
		512.9 -> 219.0	22767		
PFDODA	9.285	613.1 -> 569.0	92882	4.71 µg/L	98
		613.1 -> 319.0	14748		
PFDS	9.450	599.0 -> 79.9	14859	4.59 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	6861			
PFHpA	6.708	363.1 -> 319.0	117809	4.53	µg/L	100
		363.1 -> 169.0	18963			
PFHpS	8.046	449.0 -> 79.9	30976	4.80	µg/L	92
		449.0 -> 98.9	13426			
PFHxA	5.795	313.0 -> 269.0	94930	4.64	µg/L	99
		313.0 -> 118.9	4958			
PFHxS	7.479	398.7 -> 79.9	30641	4.29	µg/L	100
		398.7 -> 98.9	14167		m	
PFNA	7.883	463.0 -> 419.0	148242	4.87	µg/L	95
		463.0 -> 219.0	29179			
PFNS	9.041	548.8 -> 79.9	26480	4.67	µg/L	95
		548.8 -> 98.9	13894			
PFOA	7.341	413.0 -> 369.0	169565	4.42	µg/L	97
		413.0 -> 169.0	32001			
PFOS	8.564	498.9 -> 79.9	27623	4.37	µg/L	95
		498.9 -> 98.8	13380		m	
PFPeA	4.551	263.0 -> 219.0	127412	9.39	µg/L	100
PFPeS	6.785	349.1 -> 79.9	28928	4.40	µg/L	98
		349.1 -> 98.9	12985			
PFTeDA	10.013	713.1 -> 669.0	78139	4.87	µg/L	99
		713.1 -> 168.9	6583			
PFTrDA	9.669	663.0 -> 619.0	94911	4.87	µg/L	96
		663.0 -> 168.9	10903			
PFUnDA	8.866	563.1 -> 519.0	99256	4.95	µg/L	99
		563.1 -> 269.1	16899			
11Cl-PF3OUdS	9.721	630.9 -> 450.9	131445	8.13	µg/L	93
		632.9 -> 452.9	44569			
9Cl-PF3ONS	8.906	530.8 -> 351.0	220086	8.15	µg/L	96
		532.8 -> 353.0	70259			
ADONA	6.959	376.9 -> 250.9	485634	8.37	µg/L	99
		376.9 -> 84.8	137949			
HFPO-DA	6.169	284.9 -> 168.9	32460	8.75	µg/L	99
		284.9 -> 184.9	3688			
3:3FTCA	3.946	241.0 -> 177.0	21533	23.20	µg/L	99
		241.0 -> 117.0	2794			
5:3FTCA	6.361	341.0 -> 237.1	468114	117.99	µg/L	98
		341.0 -> 217.0	341709			
7:3FTCA	7.736	441.0 -> 316.9	316852	111.60	µg/L	99
		441.0 -> 336.9	738549			
EtFOSA	10.997	526.0 -> 219.0	59535	9.19	µg/L	94
		526.0 -> 169.0	80283			
EtFOSE	10.943	630.0 -> 58.9	214413	23.68	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	53068	10.14	µg/L	97
		511.9 -> 169.0	71971		m	
MeFOSE	10.709	616.1 -> 58.9	142488	24.71	µg/L	100
PFDoDS	10.139	699.1 -> 79.9	7752	4.81	µg/L	92
		699.1 -> 98.8	4036			
NFDHA	5.673	295.0 -> 201.0	24703	9.54	µg/L	94
		295.0 -> 84.9	6316			
PFMBA	4.975	279.0 -> 85.1	90850	9.33	µg/L	100
PFMPA	3.667	229.0 -> 84.9	71241	9.42	µg/L	100
PFEESA	6.288	314.8 -> 134.9	217581	8.64	µg/L	99
		314.8 -> 82.9	7999			

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

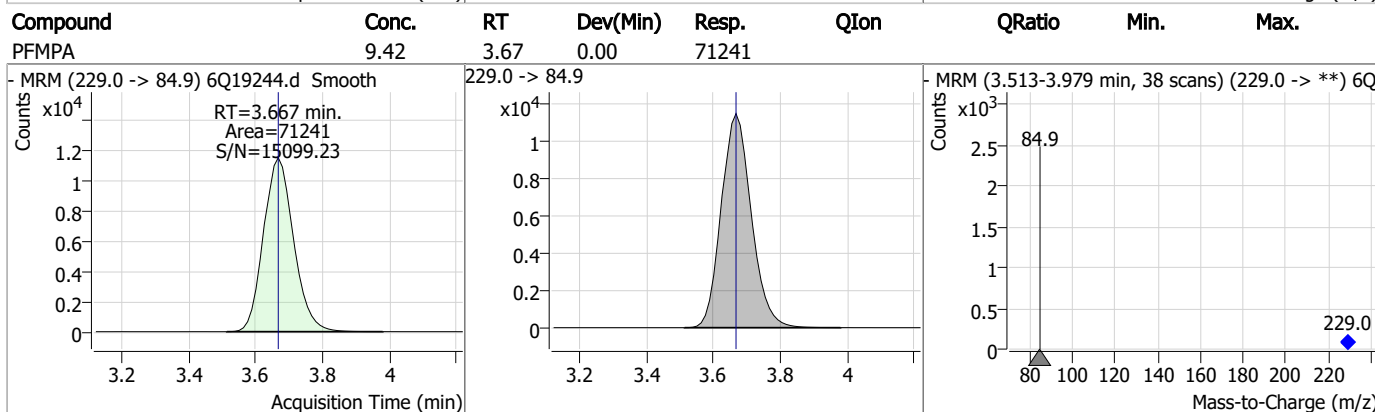
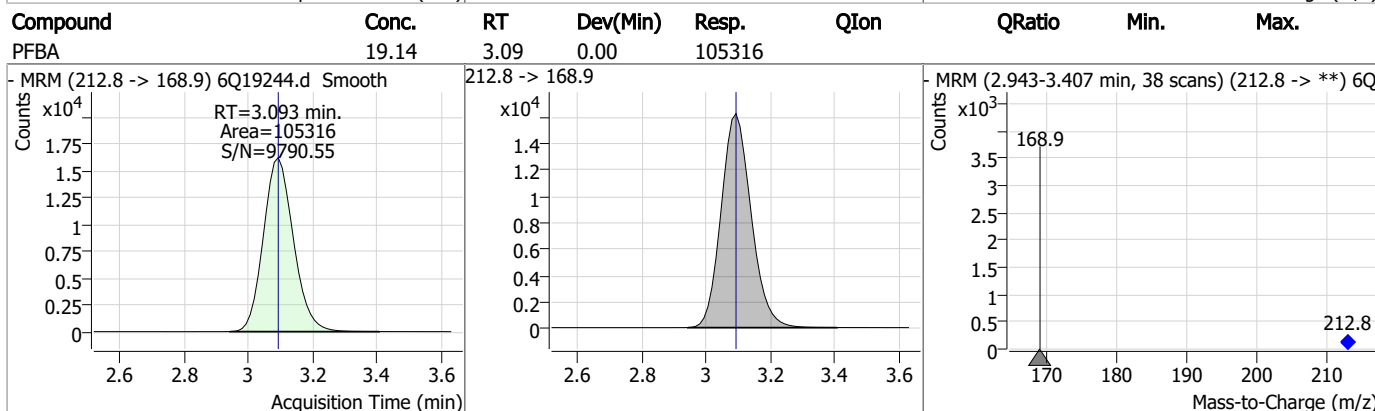
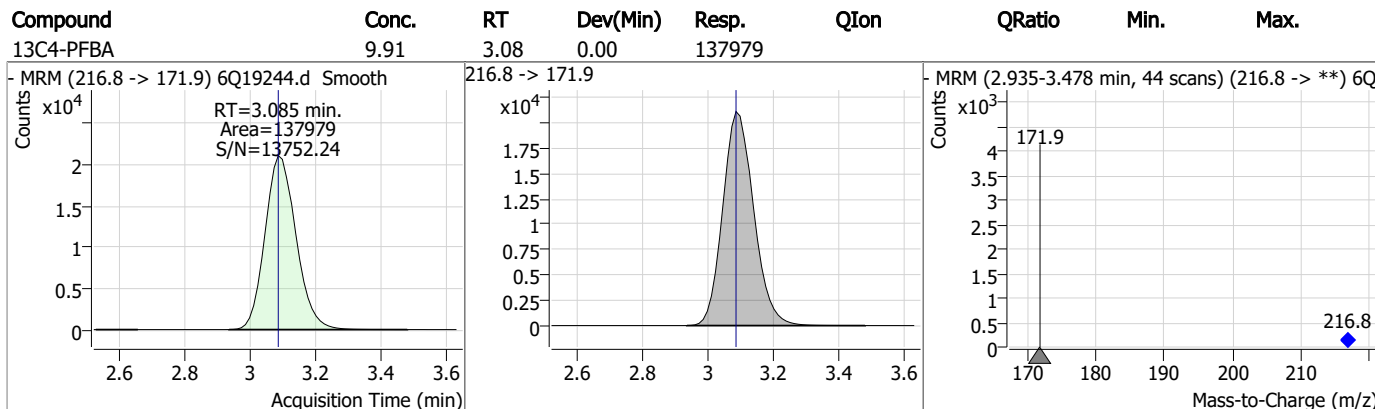
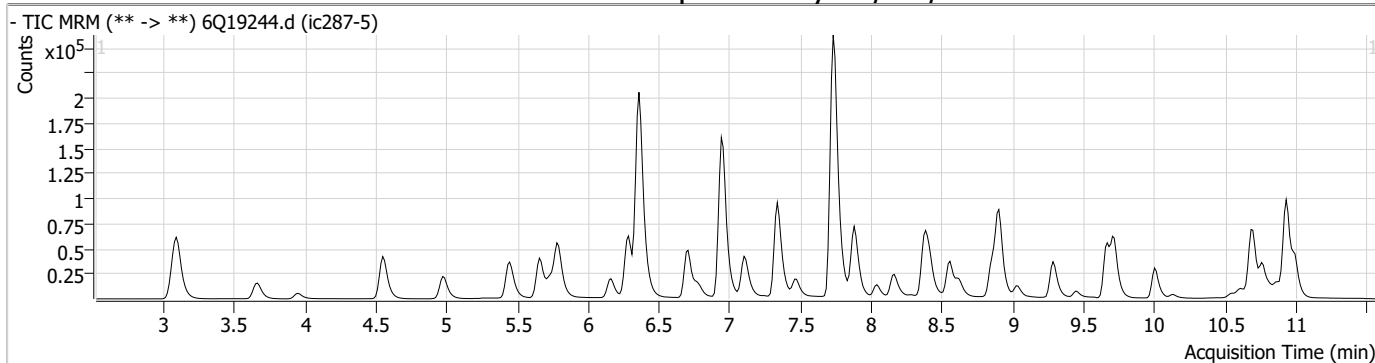
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS



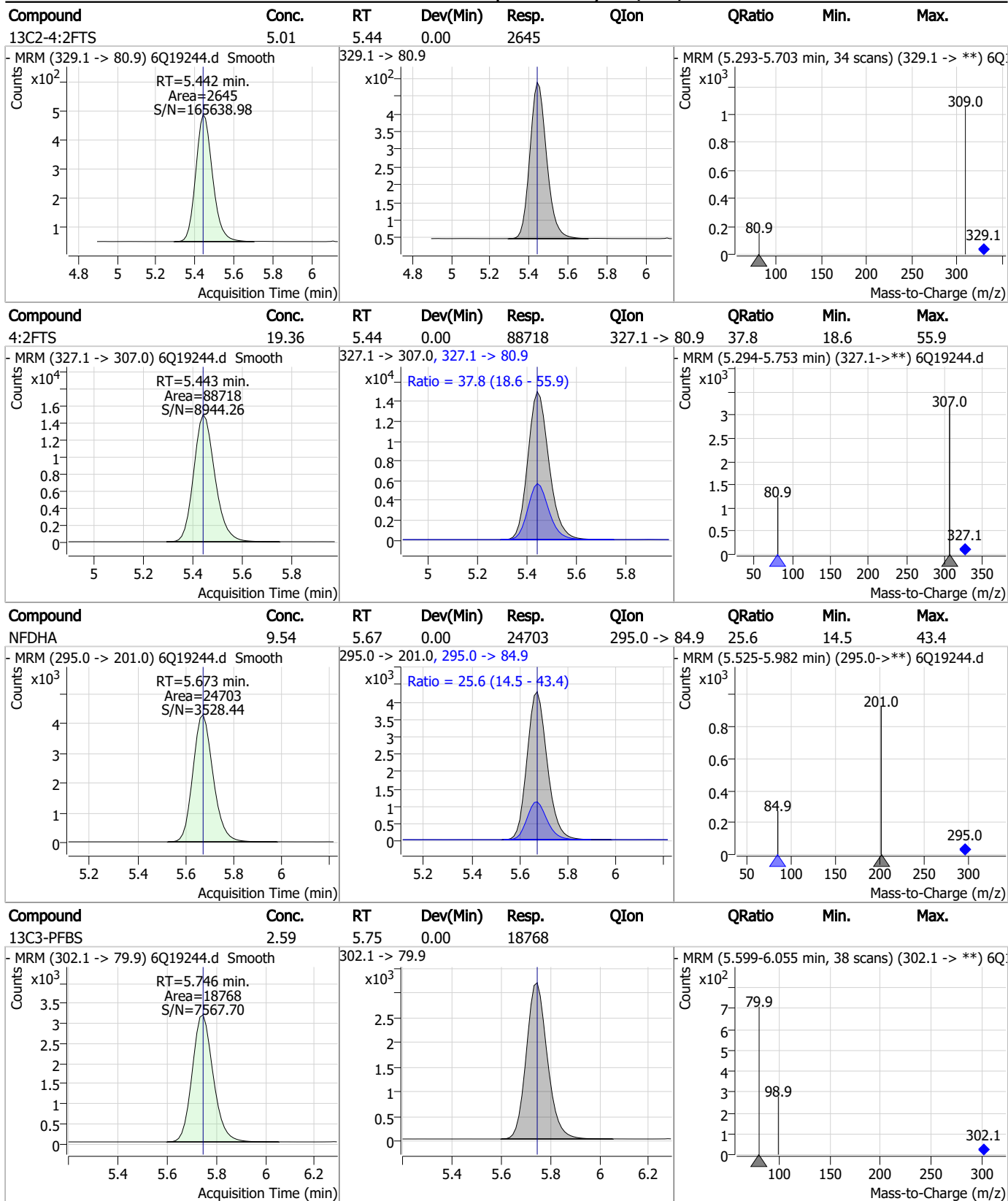
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	23.20	3.95	0.00	21533	241.0 -> 117.0	13.0	6.6	19.9
- MRM (241.0 -> 177.0) 6Q19244.d Smooth			241.0 -> 177.0, 241.0 -> 117.0			- MRM (3.796-4.265 min) (241.0->**) 6Q19244.d		
PFPeA	9.39	4.55	0.00	127412				
- MRM (263.0 -> 219.0) 6Q19244.d Smooth			263.0 -> 219.0			- MRM (4.410-4.904 min, 40 scans) (263.0 -> **) 6Q19244.d		
13C5-PFPeA	5.17	4.55	-0.01	46117				
- MRM (268.3 -> 223.0) 6Q19244.d Smooth			268.3 -> 223.0			- MRM (4.407-4.910 min, 40 scans) (268.3 -> **) 6Q19244.d		
PFMBA	9.33	4.98	-0.01	90850				
- MRM (279.0 -> 85.1) 6Q19244.d Smooth			279.0 -> 85.1			- MRM (4.844-5.339 min, 39 scans) (279.0 -> **) 6Q19244.d		

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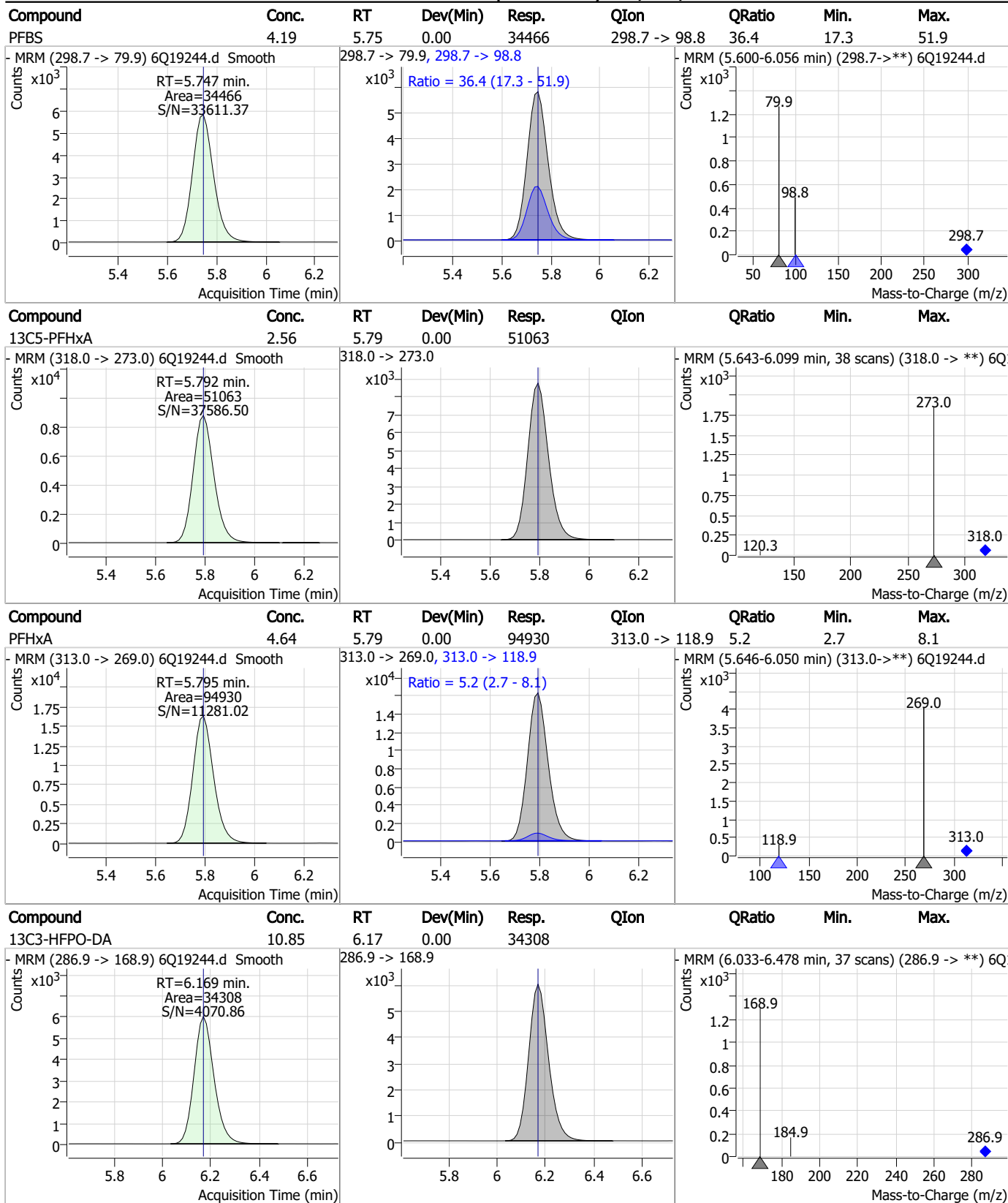
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

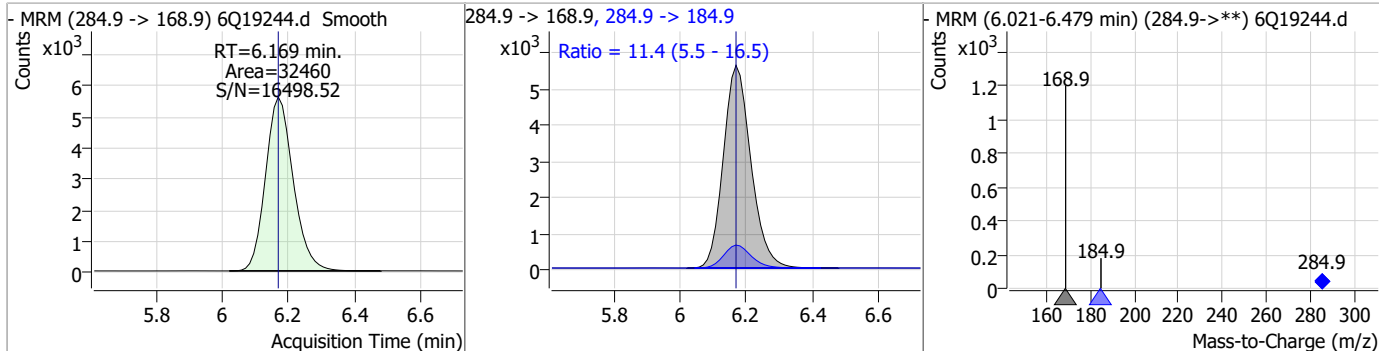


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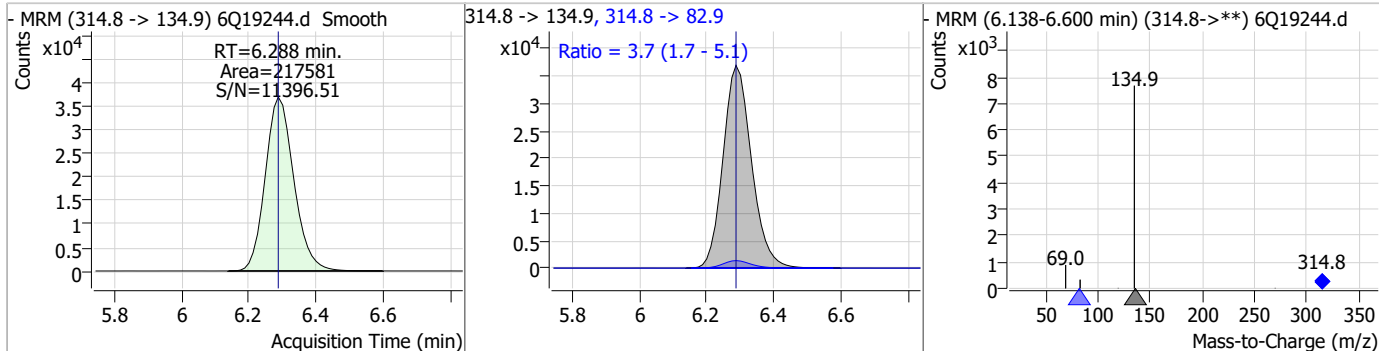
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Perfluorinated Compounds by LC/MS/MS

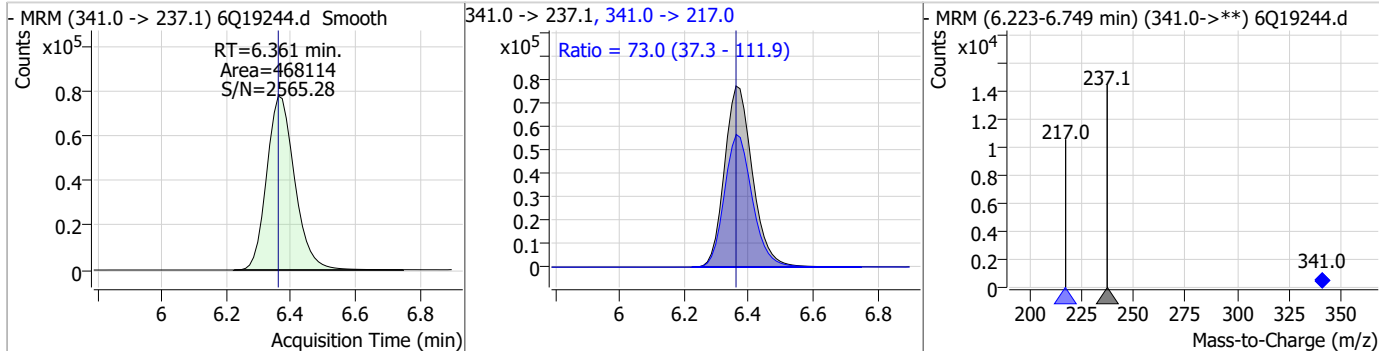
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	8.75	6.17	0.00	32460	284.9 -> 184.9	11.4	5.5	16.5



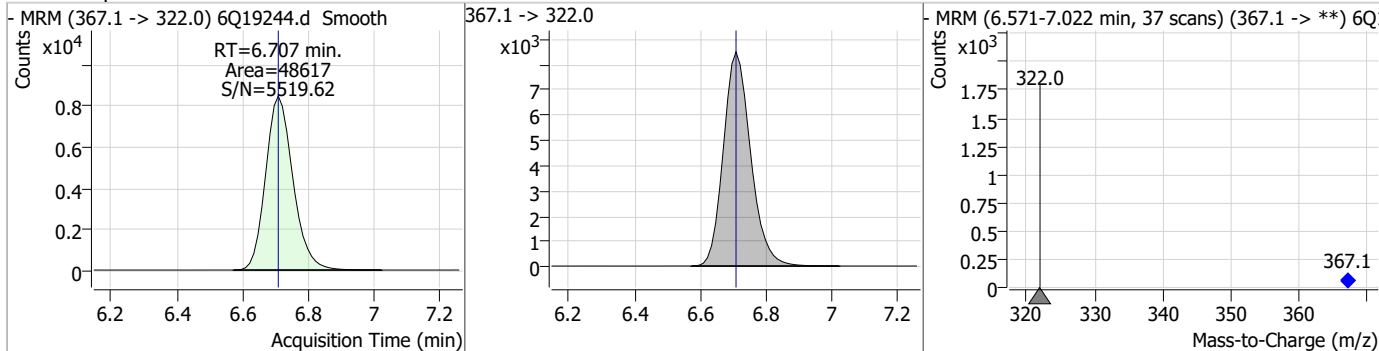
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	8.64	6.29	0.00	217581	314.8 -> 82.9	3.7	1.7	5.1



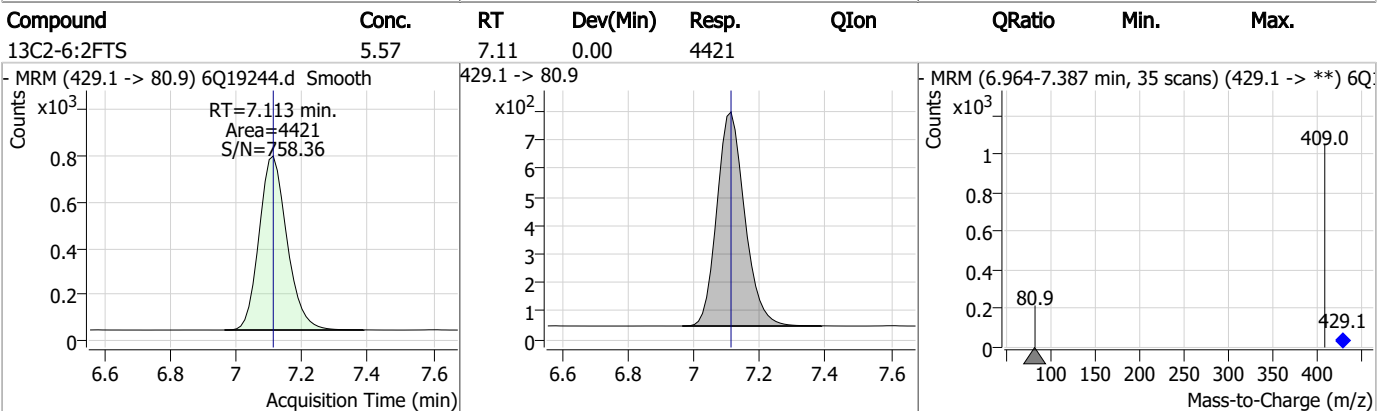
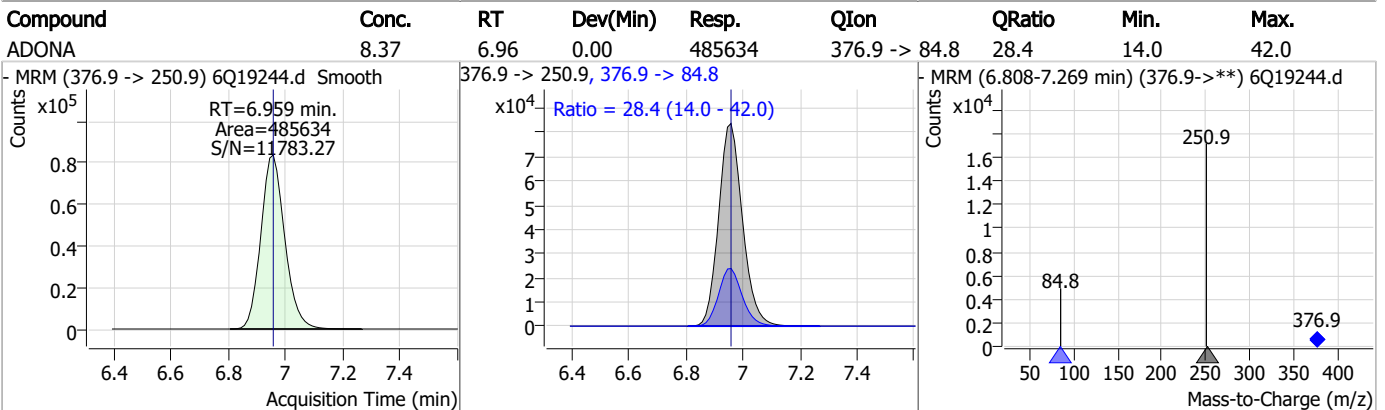
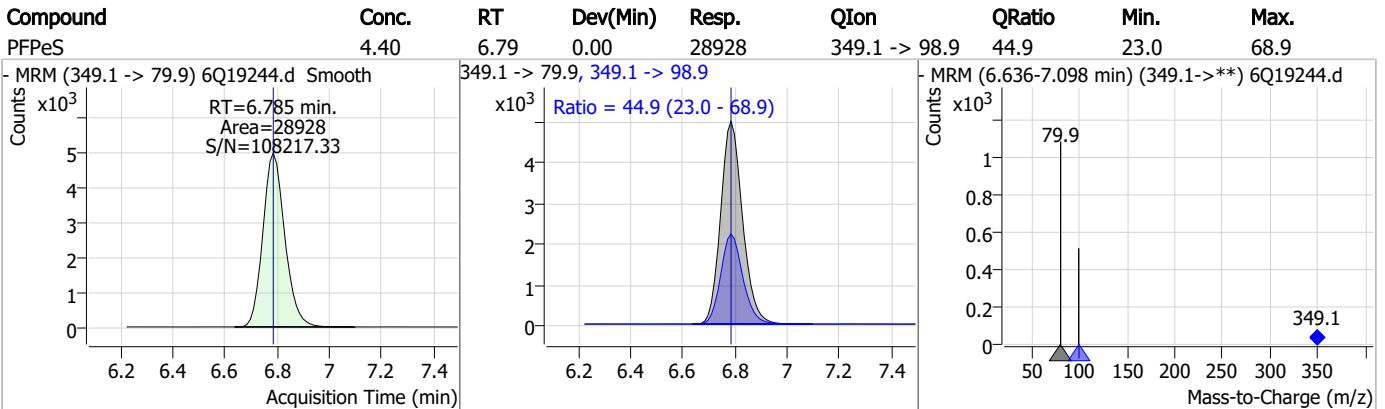
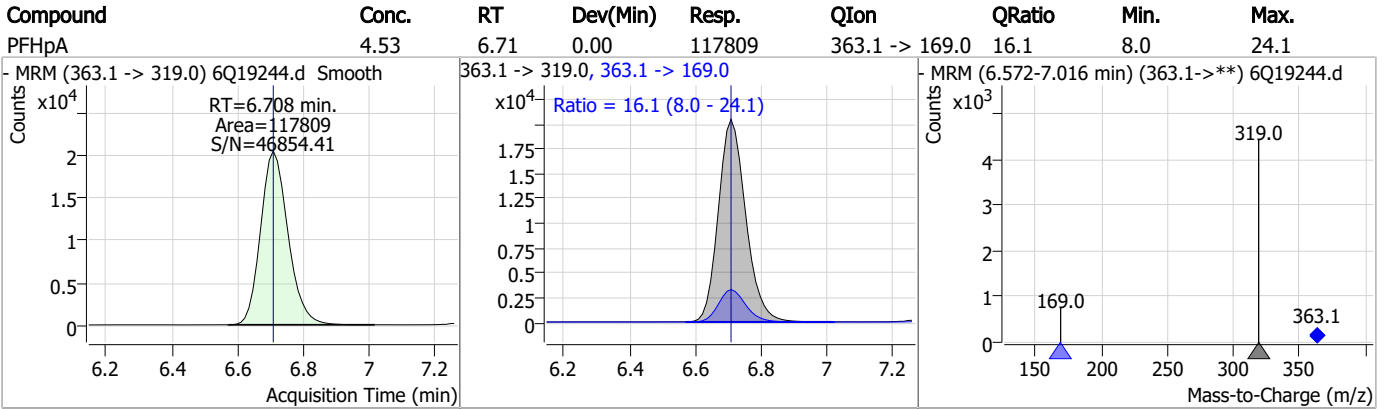
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	117.99	6.36	0.00	468114	341.0 -> 217.0	73.0	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.62	6.71	0.00	48617	367.1 -> 322.0			

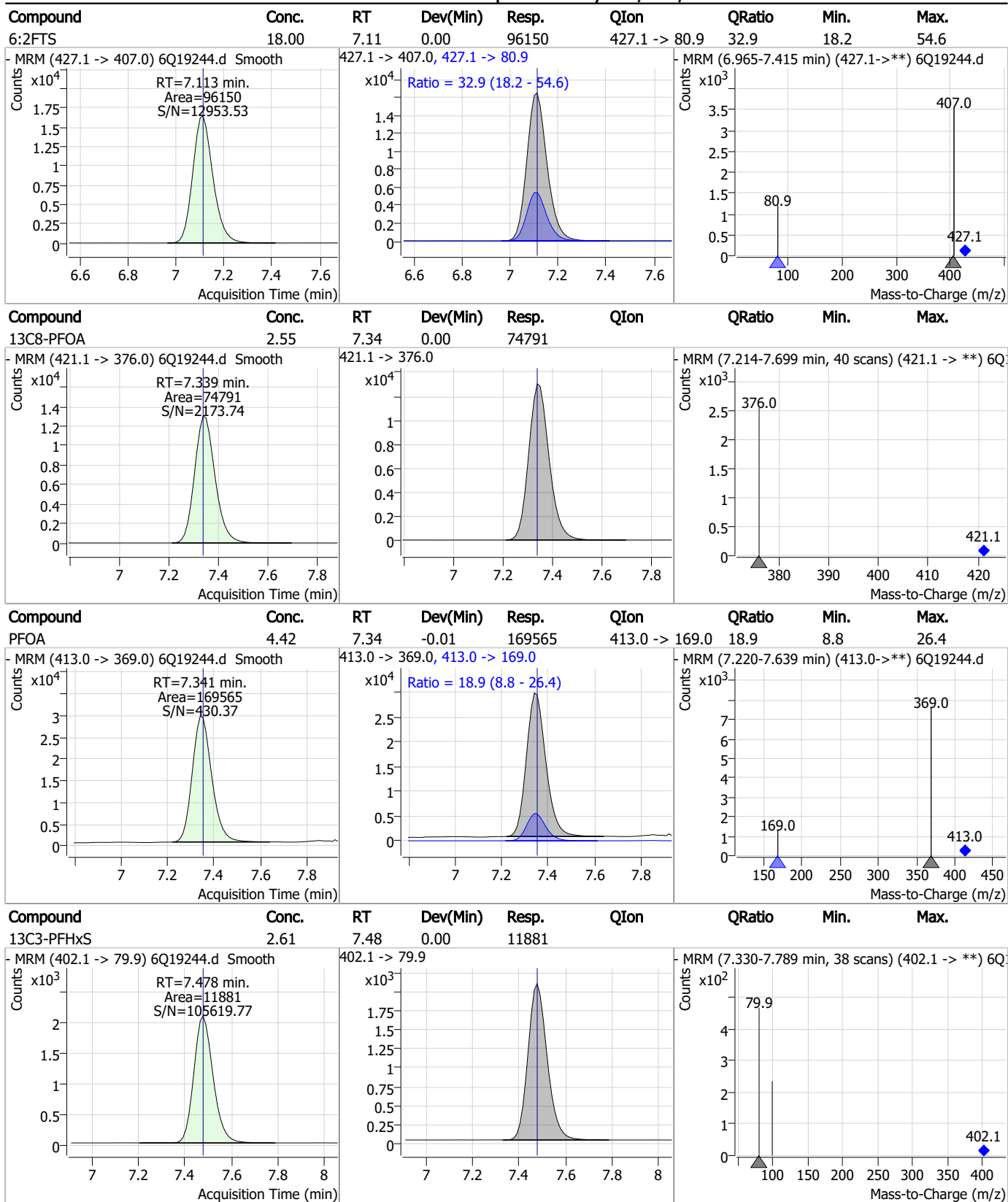


Perfluorinated Compounds by LC/MS/MS



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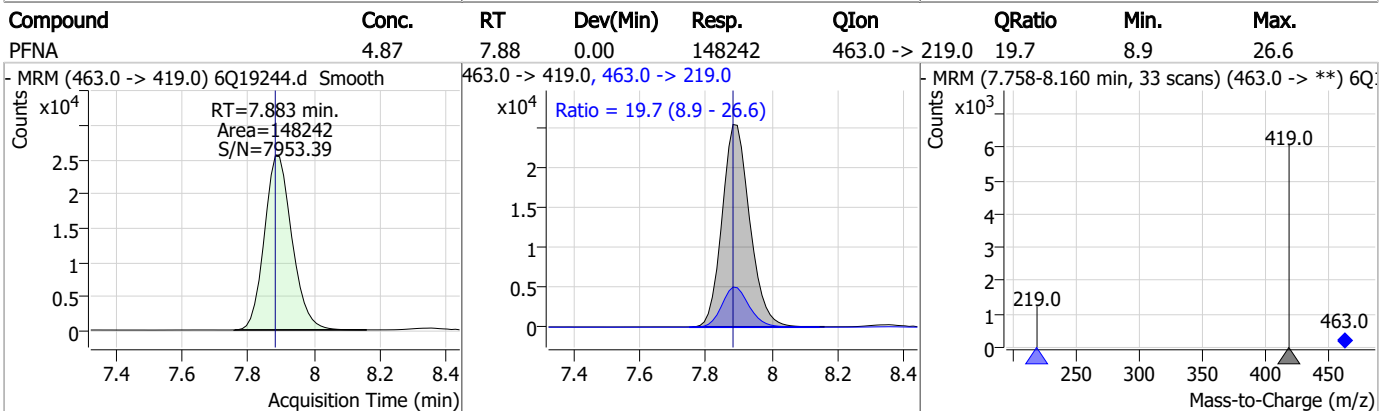
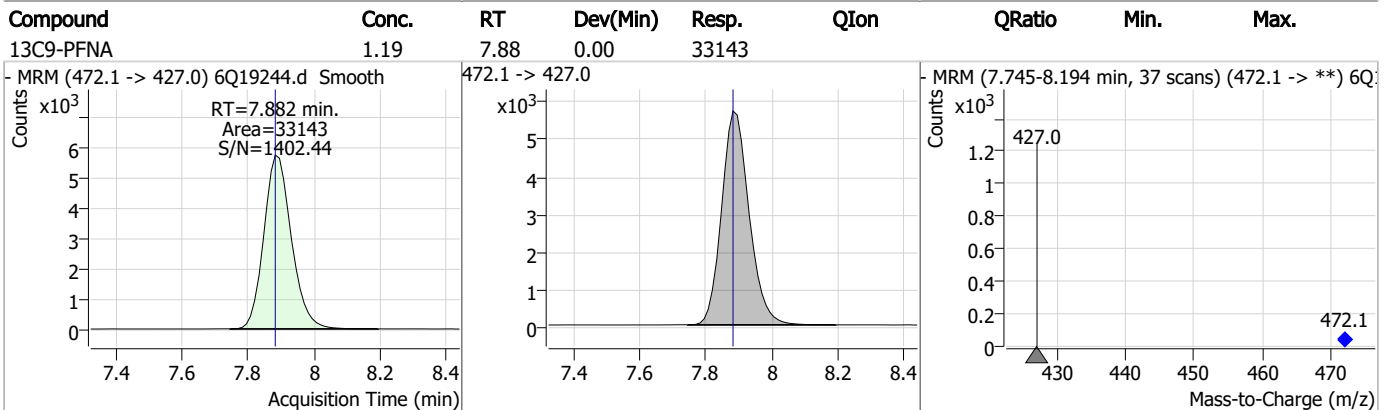
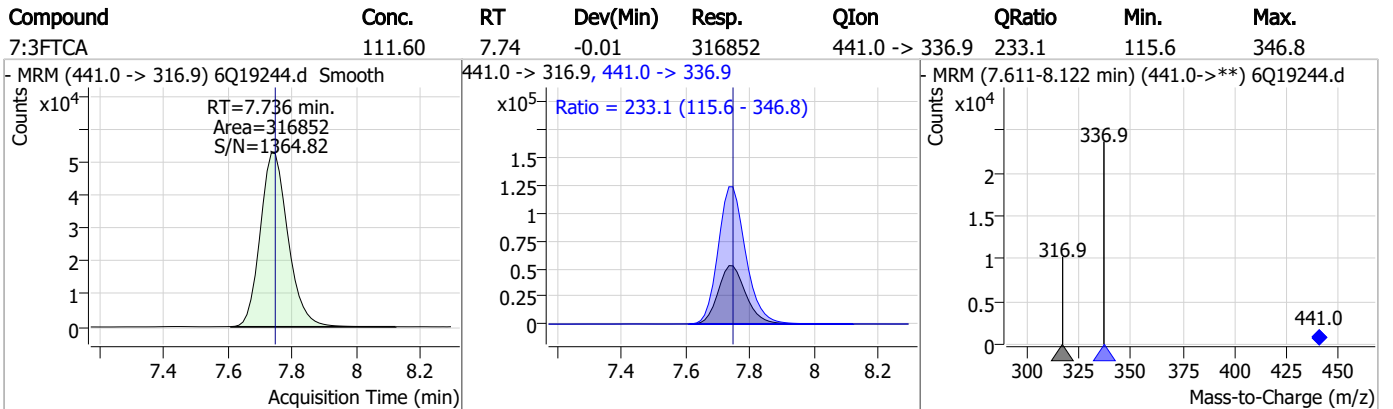
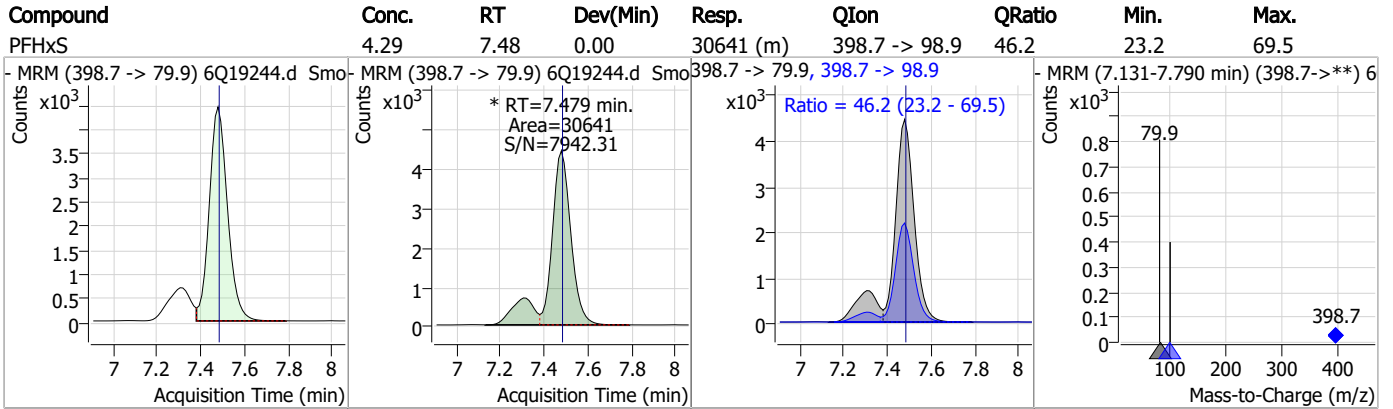
Perfluorinated Compounds by LC/MS/MS



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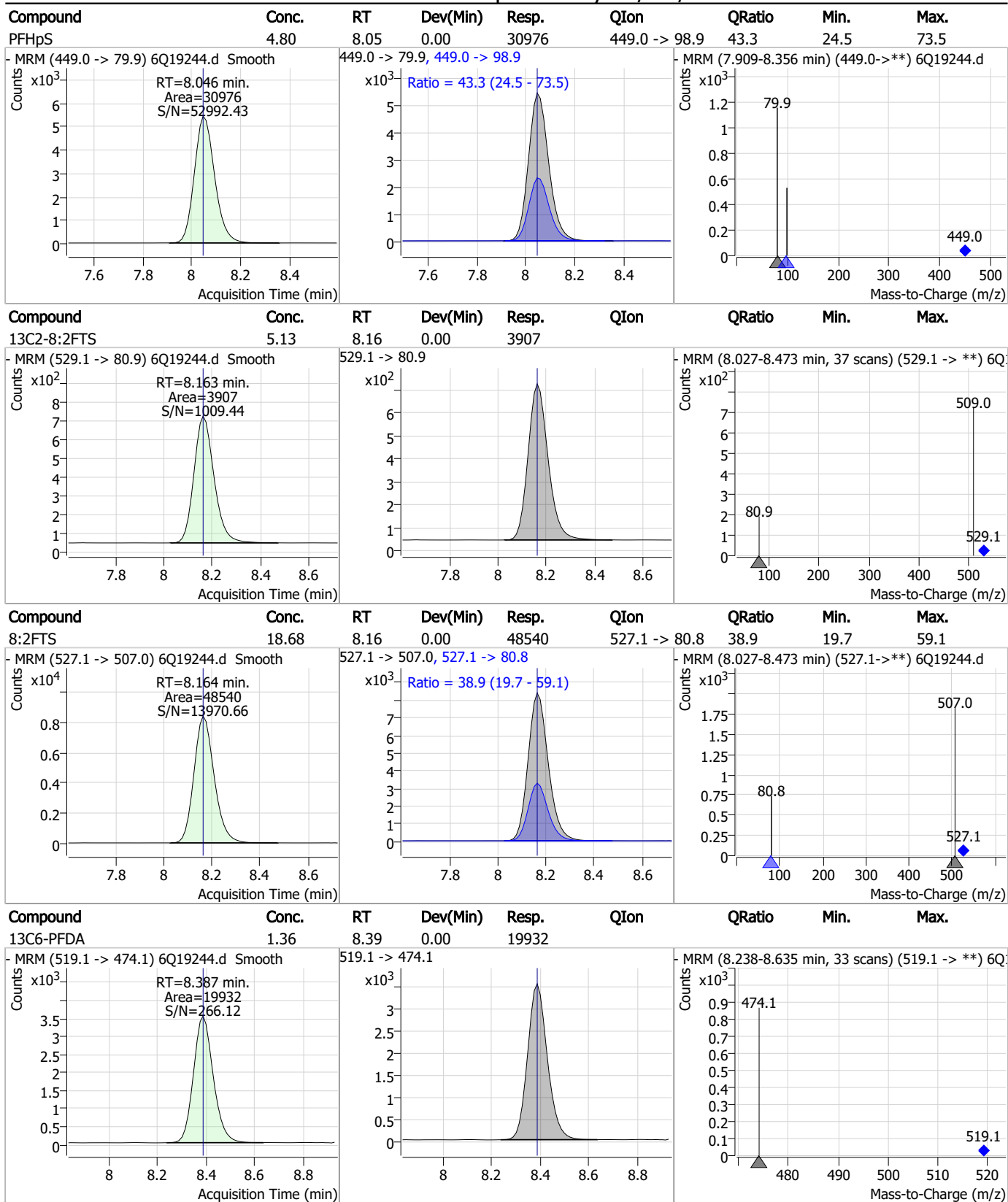
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Perfluorinated Compounds by LC/MS/MS



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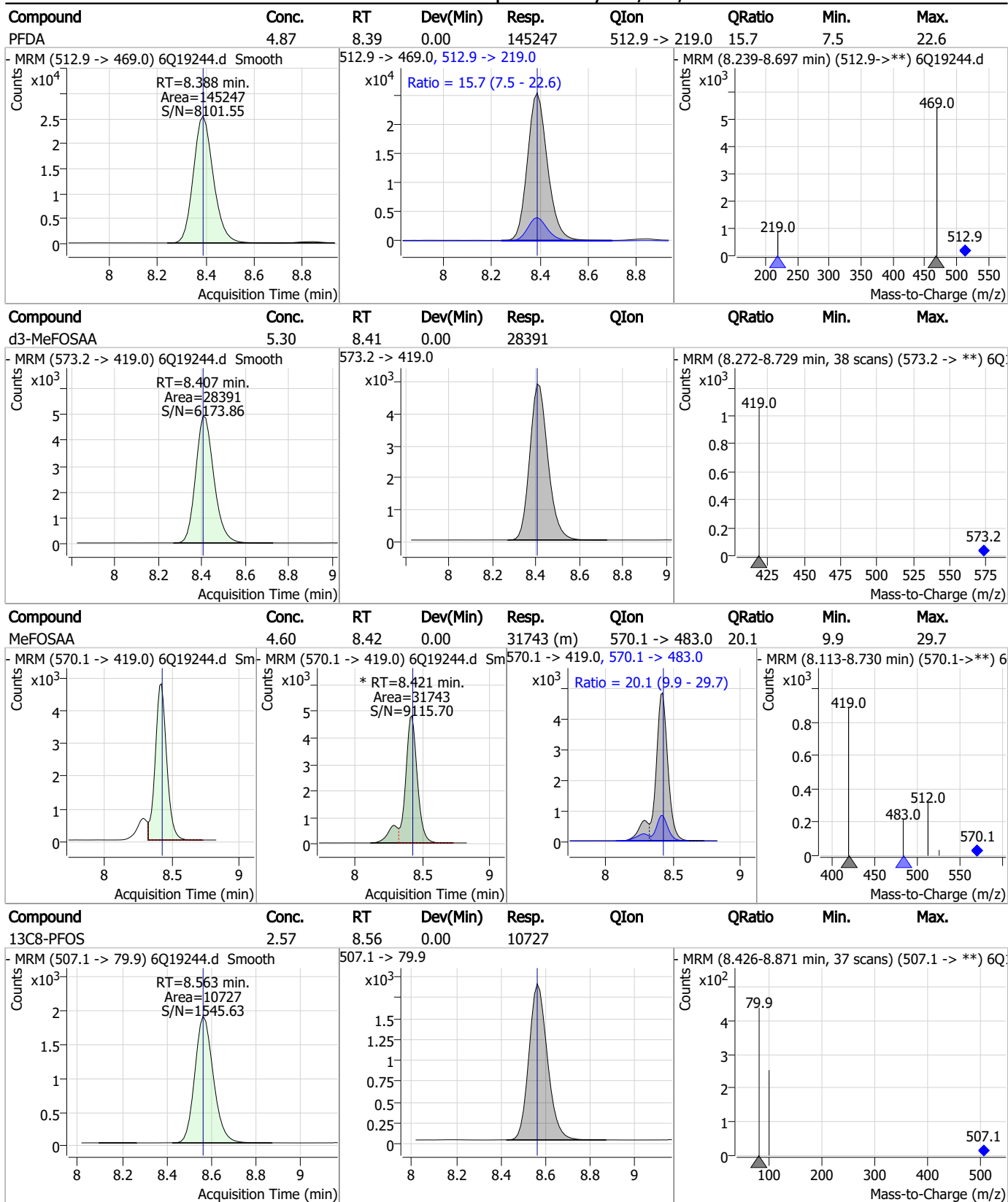
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

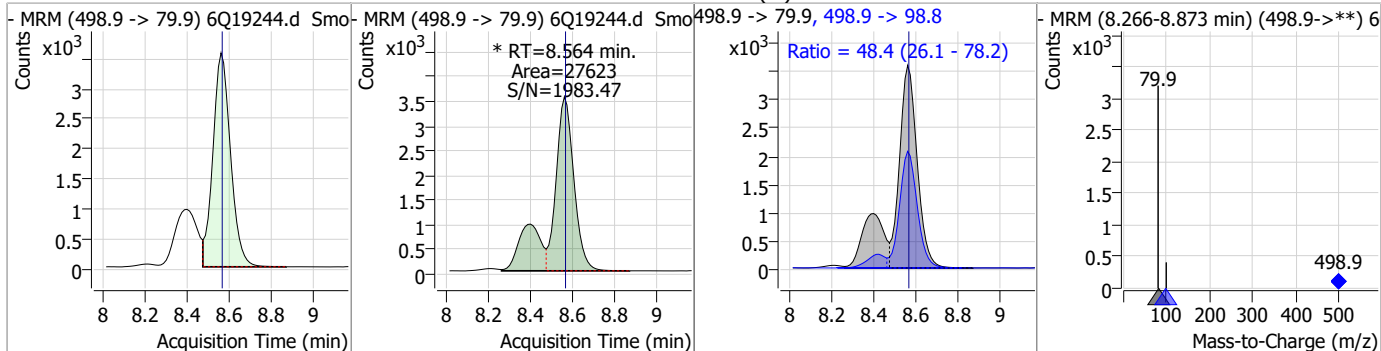


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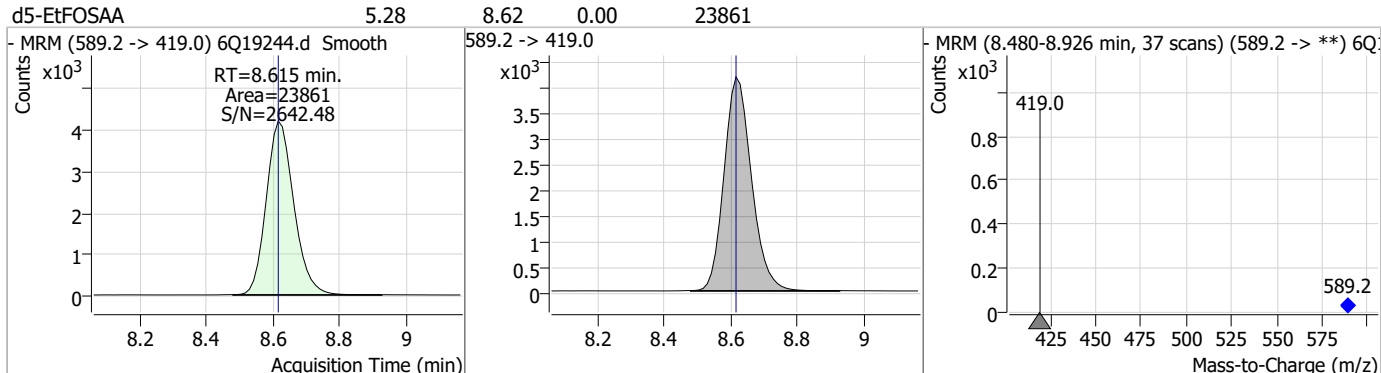
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Perfluorinated Compounds by LC/MS/MS

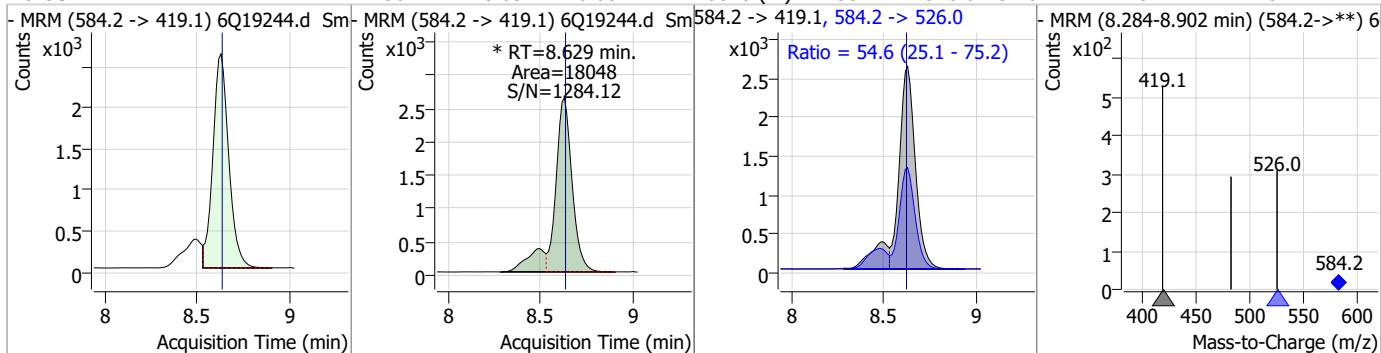
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.37	8.56	0.00	27623 (m)	498.9 -> 98.8	48.4	26.1	78.2



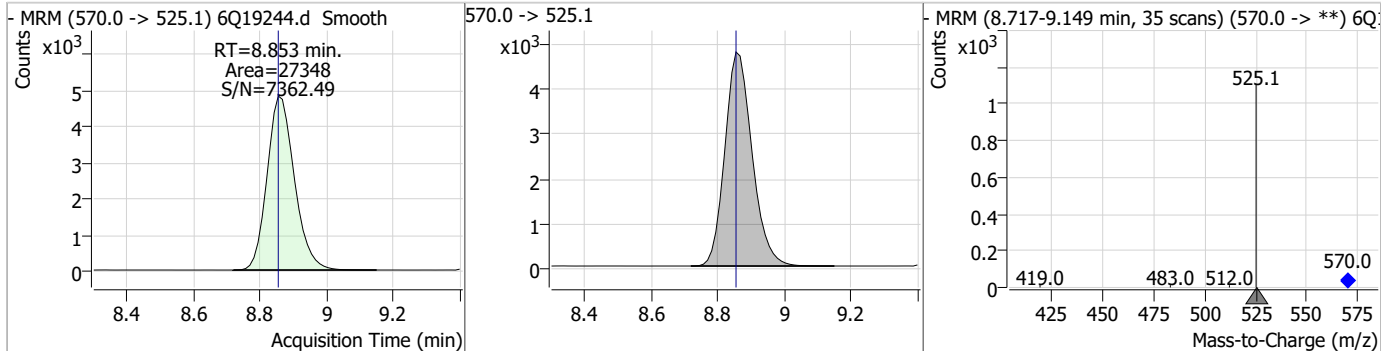
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.28	8.62	0.00	23861				



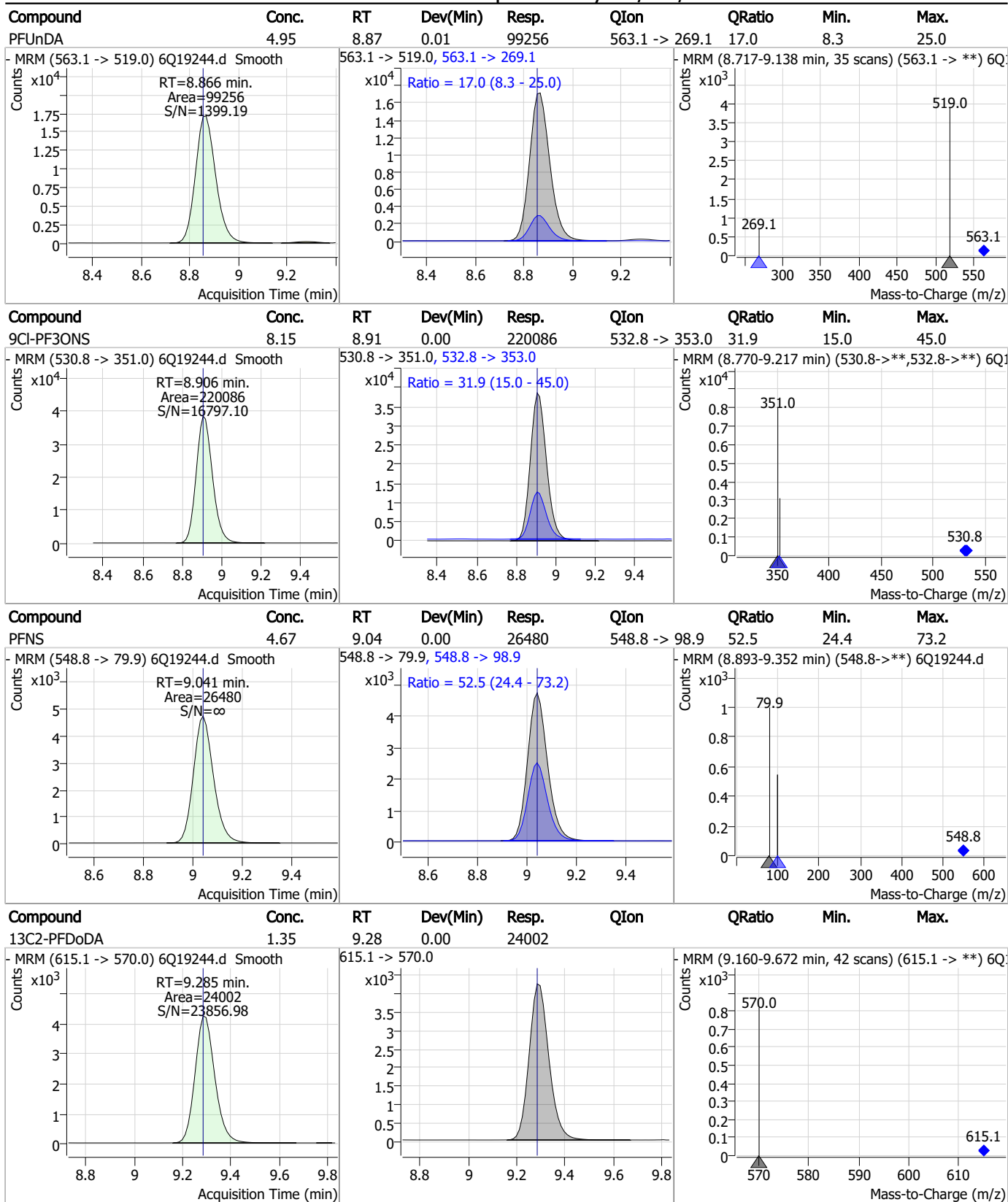
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.56	8.63	0.00	18048 (m)	584.2 -> 526.0	54.6	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	8.85	0.00	27348				



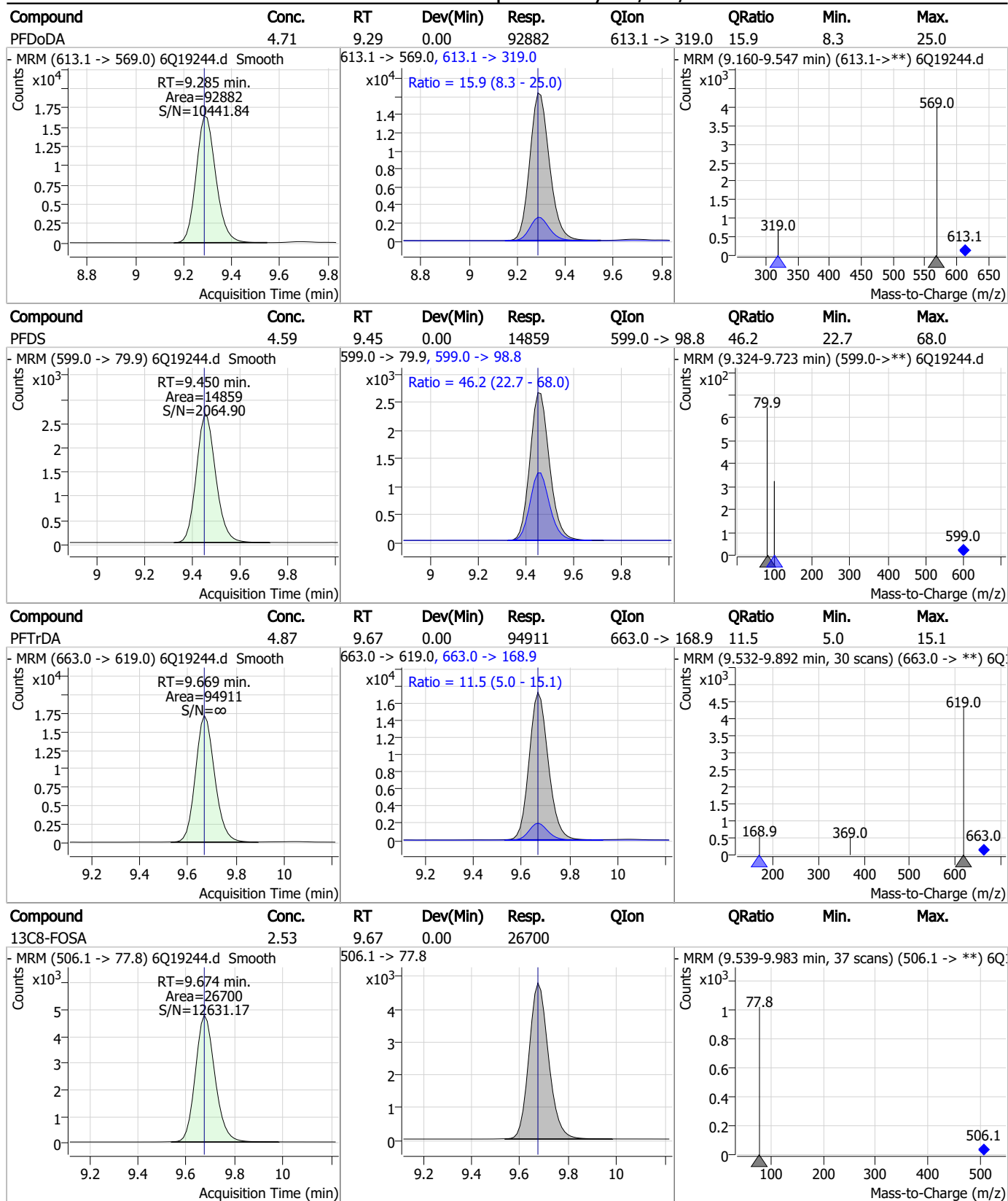
Perfluorinated Compounds by LC/MS/MS



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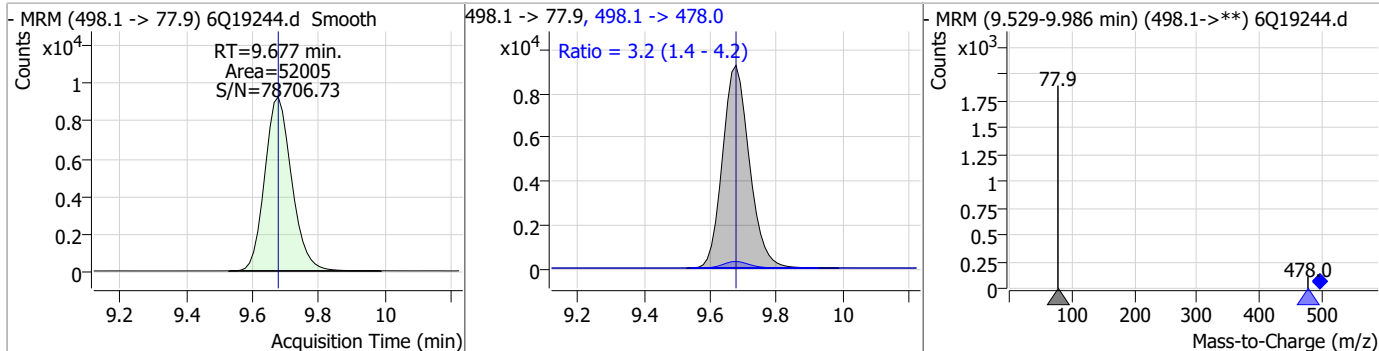
Perfluorinated Compounds by LC/MS/MS



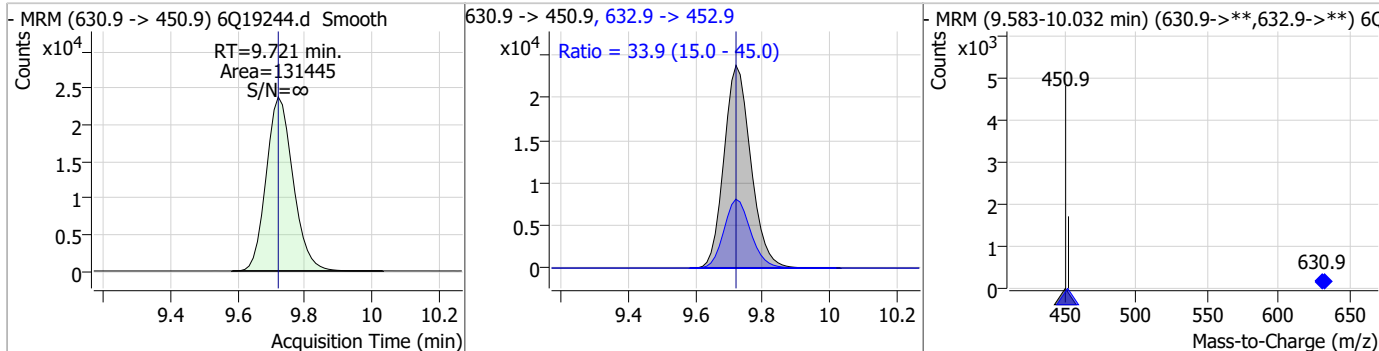
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Perfluorinated Compounds by LC/MS/MS

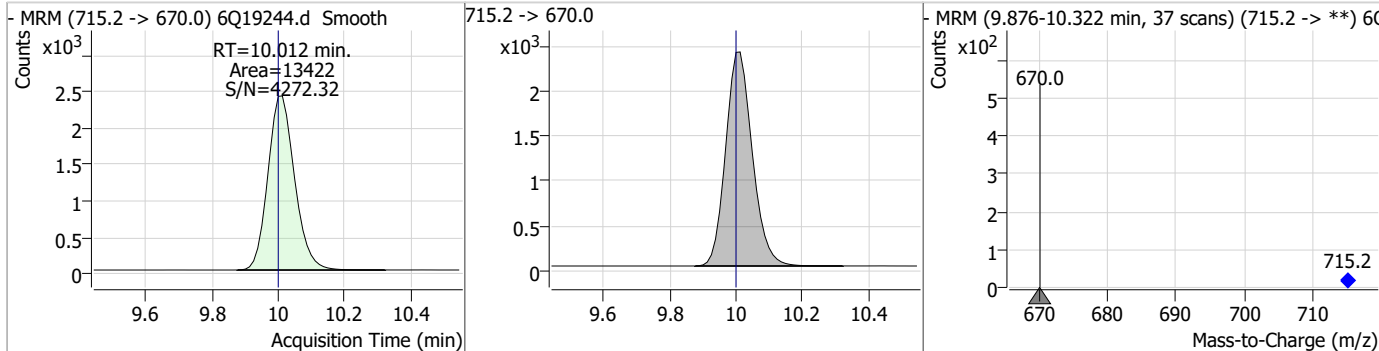
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.75	9.68	0.00	52005	498.1 -> 478.0	3.2	1.4	4.2



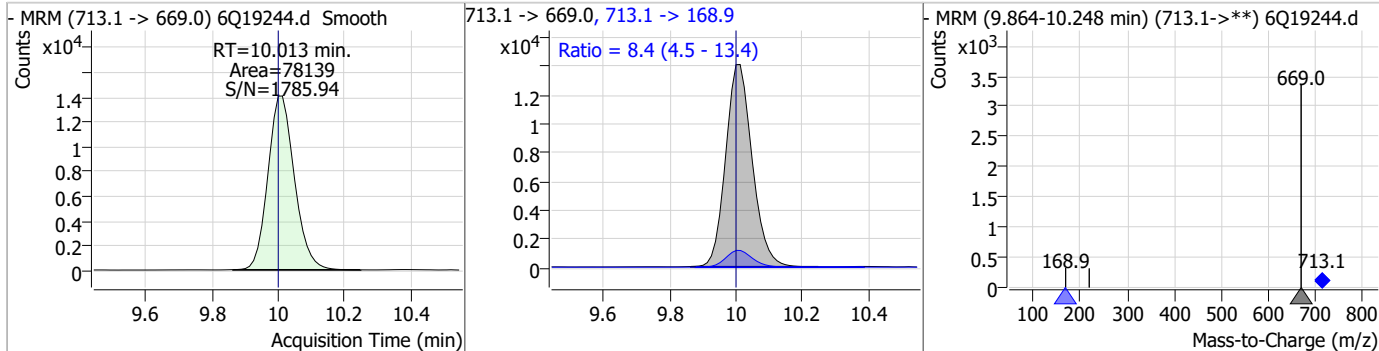
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	8.13	9.72	0.00	131445	632.9 -> 452.9	33.9	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.30	10.01	0.01	13422	715.2 -> 670.0			

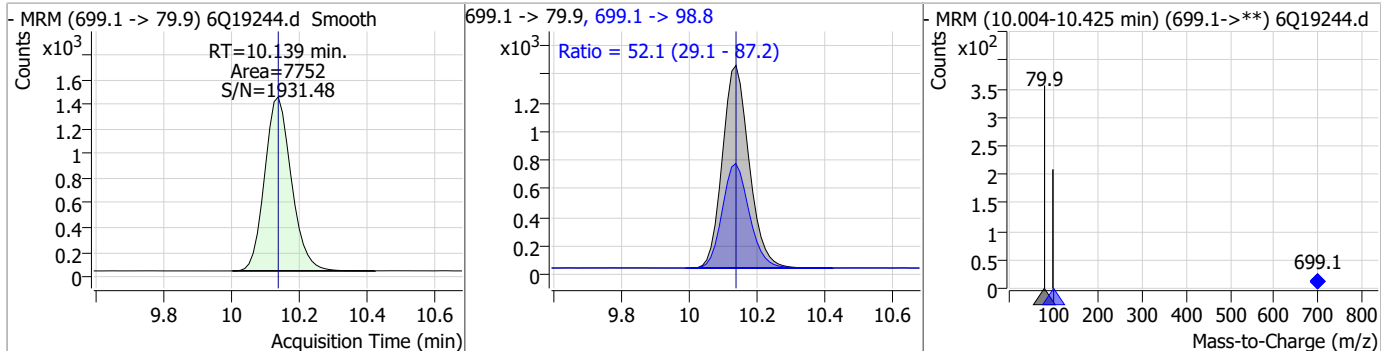


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.87	10.01	0.01	78139	713.1 -> 168.9	8.4	4.5	13.4

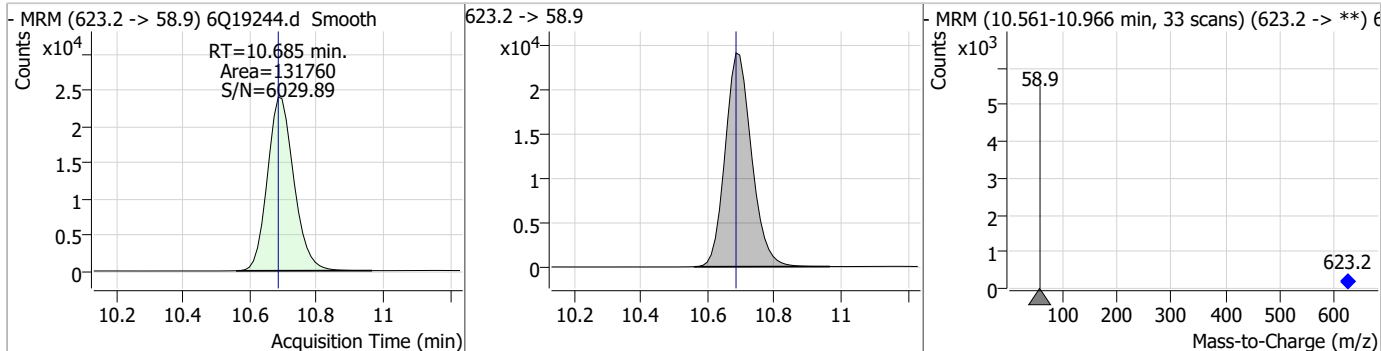


Perfluorinated Compounds by LC/MS/MS

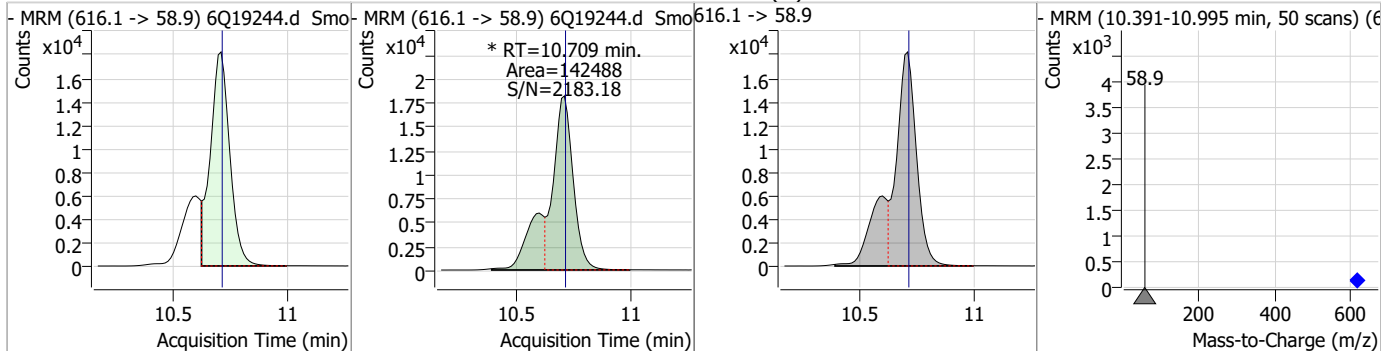
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	4.81	10.14	0.00	7752	699.1 -> 98.8	52.1	29.1	87.2



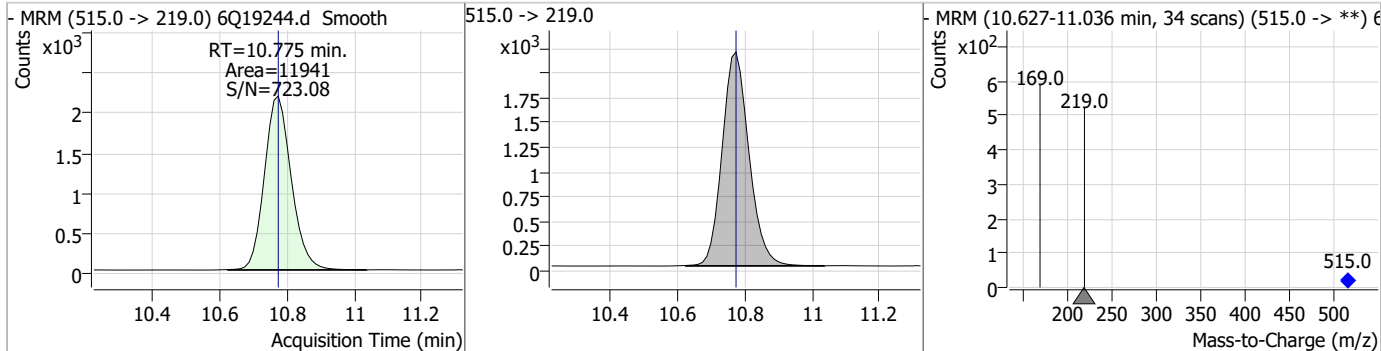
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.15	10.68	0.00	131760				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.71	10.71	0.00	142488 (m)				

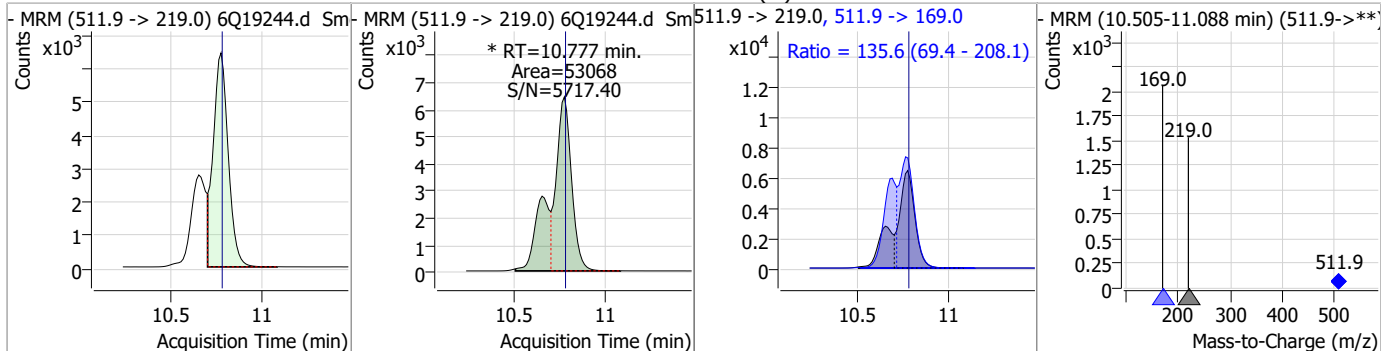


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.52	10.78	0.00	11941				

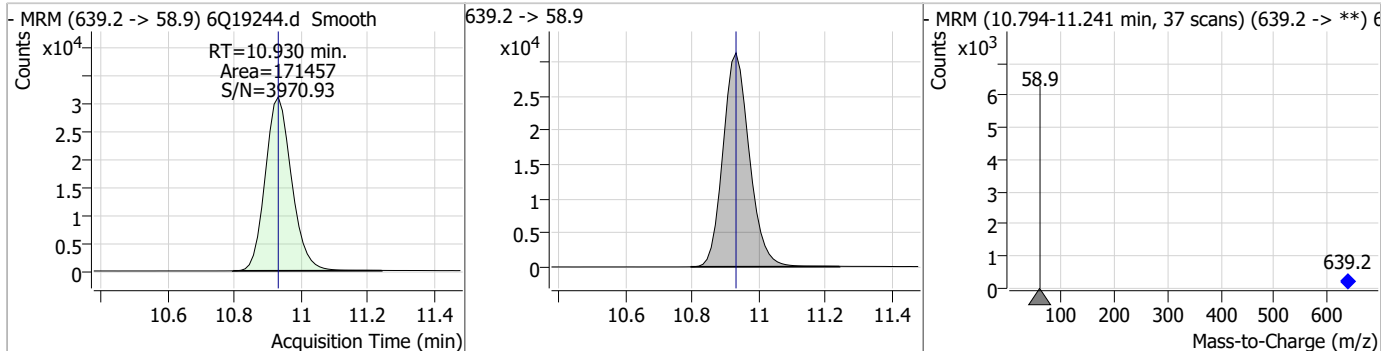


Perfluorinated Compounds by LC/MS/MS

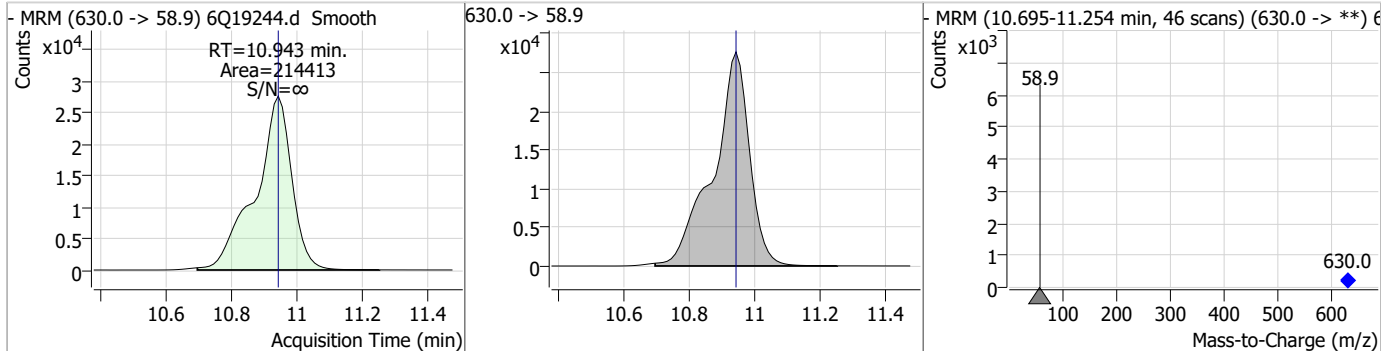
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.14	10.78	0.00	53068 (m)	511.9 -> 169.0	135.6	69.4	208.1



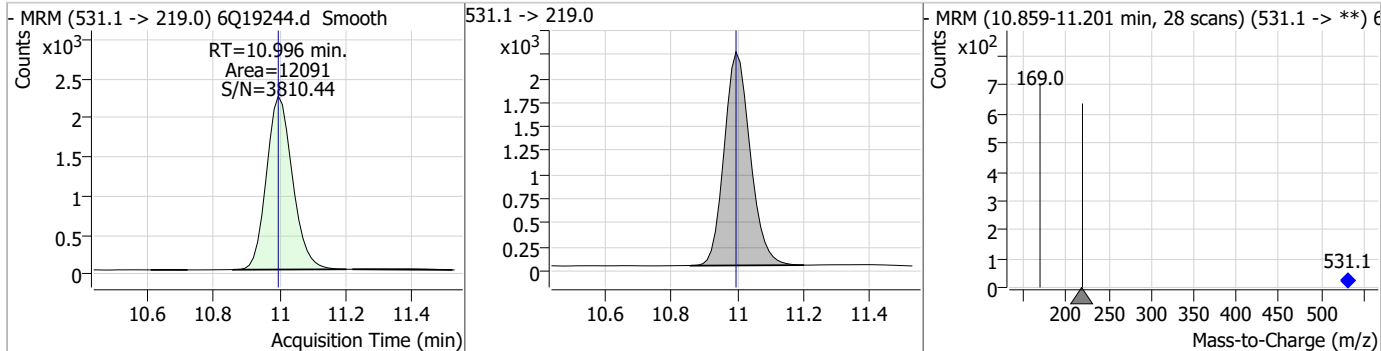
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.21	10.93	0.00	171457				



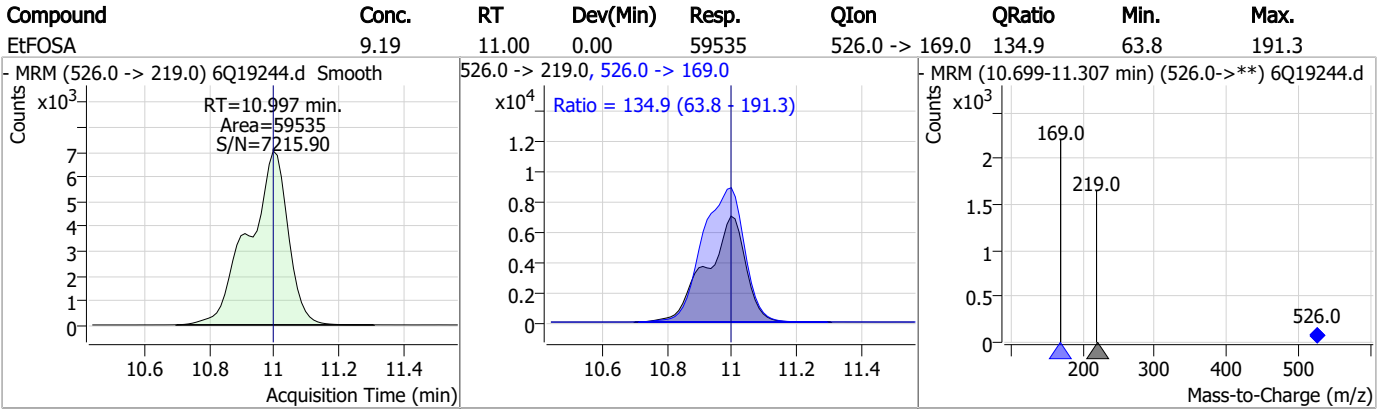
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	23.68	10.94	0.00	214413				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.63	11.00	0.00	12091				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19244.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 16:44 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 06/13/23 13:30

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19245.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 4:58:24 PM
 Sample Name : ic287-6
 Vial : P1-A7
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	132203	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	43186	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	50132	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	43925	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	70482	2.50 µg/L	0.012
M9-PFNA	7.882	472.1 -> 427.0	32482	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	18605	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	27197	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24101	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	12979	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	26036	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	17423	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11355	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10325	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2477	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	3788	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	3463	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	28133	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	30820	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	22192	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	127973	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	164671	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11215	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11793	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14199	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	56399	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8843	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	79764	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	27702	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	39348	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	44846	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2477	4.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.0%		
13C2-6:2FTS	7.113	429.1 -> 80.9	3788	4.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-8:2FTS	8.163	529.1 -> 80.9	3463	4.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.3%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24101	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.1%		
13C2-PFTeDA	10.012	715.2 -> 670.0	12979	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.746	302.1 -> 79.9	17423	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C3-PFHxS	7.478	402.1 -> 79.9	11355	2.42 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C4-PFBA	3.085	216.8 -> 171.9	132203	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.707	367.1 -> 322.0	43925	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C5-PFHxA	5.792	318.0 -> 273.0	50132	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFPeA	4.560	268.3 -> 223.0	43186	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C6-PFDA	8.387	519.1 -> 474.1	18605	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C7-PFUnDA	8.853	570.0 -> 525.1	27197	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C8-FOSA	9.674	506.1 -> 77.8	26036	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C8-PFOA	7.352	421.1 -> 376.0	70482	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C8-PFOS	8.563	507.1 -> 79.9	10325	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C9-PFNA	7.882	472.1 -> 427.0	32482	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.2%		
d3-MeFOSAA	8.407	573.2 -> 419.0	28133	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C3-HFPO-DA	6.169	286.9 -> 168.9	30820	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
d3-MeFOSA	10.775	515.0 -> 219.0	11793	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
d5-EtFOSAA	8.615	589.2 -> 419.0	22192	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
d7-MeFOSE	10.685	623.2 -> 58.9	127973	24.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
d9-EtFOSE	10.930	639.2 -> 58.9	164671	25.30 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
d5-EtFOSA	10.996	531.1 -> 219.0	11215	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	191336	44.58 µg/L	98
		327.1 -> 80.9	73815		
6:2FTS	7.113	427.1 -> 407.0	204501	44.69 µg/L	94
		427.1 -> 80.9	66855		
8:2FTS	8.164	527.1 -> 507.0	110613	48.02 µg/L	97
		527.1 -> 80.8	41869		
EtFOSAA	8.629	584.2 -> 419.1	44763	12.15 µg/L	m 93
		584.2 -> 526.0	24752		
FOSA	9.677	498.1 -> 77.9	130298	12.19 µg/L	100
		498.1 -> 478.0	3847		
MeFOSAA	8.421	570.1 -> 419.0	80109	11.71 µg/L	m 98
		570.1 -> 483.0	16546		
PFBA	3.093	212.8 -> 168.9	259199	49.17 µg/L	100
PFBS	5.747	298.7 -> 79.9	83979	10.99 µg/L	95
		298.7 -> 98.8	31374		
PFDA	8.388	512.9 -> 469.0	354118	12.73 µg/L	97
		512.9 -> 219.0	58196		
PFDoDA	9.285	613.1 -> 569.0	222006	11.22 µg/L	99
		613.1 -> 319.0	36261		
PFDS	9.450	599.0 -> 79.9	37461	12.02 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18551			
PFHpA	6.708	363.1 -> 319.0	301021	12.80	µg/L	100
		363.1 -> 169.0	48229			
PFHpS	8.046	449.0 -> 79.9	71271	11.46	µg/L	99
		449.0 -> 98.9	35505			
PFHxA	5.795	313.0 -> 269.0	248240	12.36	µg/L	98
		313.0 -> 118.9	11668			
PFHxS	7.479	398.7 -> 79.9	72892	10.67	µg/L	m 96
		398.7 -> 98.9	35604			
PFNA	7.896	463.0 -> 419.0	355191	11.92	µg/L	97
		463.0 -> 219.0	67621			
PFNS	9.041	548.8 -> 79.9	62624	11.47	µg/L	94
		548.8 -> 98.9	32965			
PFOA	7.353	413.0 -> 369.0	445265	12.32	µg/L	97
		413.0 -> 169.0	83984			
PFOS	8.564	498.9 -> 79.9	69334	11.40	µg/L	m 96
		498.9 -> 98.8	34156			
PFPeA	4.551	263.0 -> 219.0	312877	24.62	µg/L	100
PFPeS	6.785	349.1 -> 79.9	69082	11.00	µg/L	100
		349.1 -> 98.9	31902			
PFTeDA	10.013	713.1 -> 669.0	199361	12.85	µg/L	99
		713.1 -> 168.9	16866			
PFTrDA	9.669	663.0 -> 619.0	240096	12.56	µg/L	98
		663.0 -> 168.9	25443			
PFUnDA	8.866	563.1 -> 519.0	225075	11.28	µg/L	97
		563.1 -> 269.1	40141			
11CI-PF3OUdS	9.721	630.9 -> 450.9	351989	24.23	µg/L	99
		632.9 -> 452.9	103243			
9CI-PF3ONS	8.906	530.8 -> 351.0	545926	22.50	µg/L	98
		532.8 -> 353.0	157482			
ADONA	6.959	376.9 -> 250.9	1189647	22.82	µg/L	99
		376.9 -> 84.8	327742			
HFPO-DA	6.169	284.9 -> 168.9	83161	25.42	µg/L	99
		284.9 -> 184.9	9467			
3:3FTCA	3.946	241.0 -> 177.0	53695	61.79	µg/L	99
		241.0 -> 117.0	6968			
5:3FTCA	6.361	341.0 -> 237.1	1172900	301.14	µg/L	92
		341.0 -> 217.0	791854			
7:3FTCA	7.748	441.0 -> 316.9	765528	274.63	µg/L	99
		441.0 -> 336.9	1778224			
EtFOSA	10.997	526.0 -> 219.0	149648	24.91	µg/L	98
		526.0 -> 169.0	194376			
EtFOSE	10.943	630.0 -> 58.9	520987	59.92	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	127120	24.59	µg/L	m 95
		511.9 -> 169.0	184765			
MeFOSE	10.709	616.1 -> 58.9	343915	61.40	µg/L	m 100
PFDoS	10.139	699.1 -> 79.9	18700	12.06	µg/L	95
		699.1 -> 98.8	10122			
NFDHA	5.673	295.0 -> 201.0	62032	24.40	µg/L	95
		295.0 -> 84.9	16273			
PFMBA	4.988	279.0 -> 85.1	227765	24.98	µg/L	100
PFMPA	3.667	229.0 -> 84.9	176088	24.86	µg/L	100
PFEESA	6.288	314.8 -> 134.9	563830	22.81	µg/L	100
		314.8 -> 82.9	19382			

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

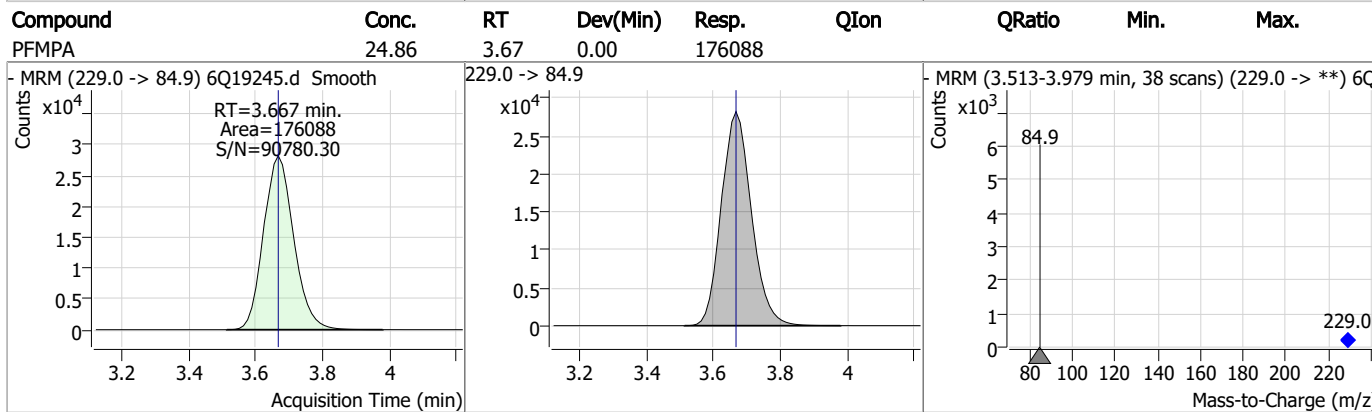
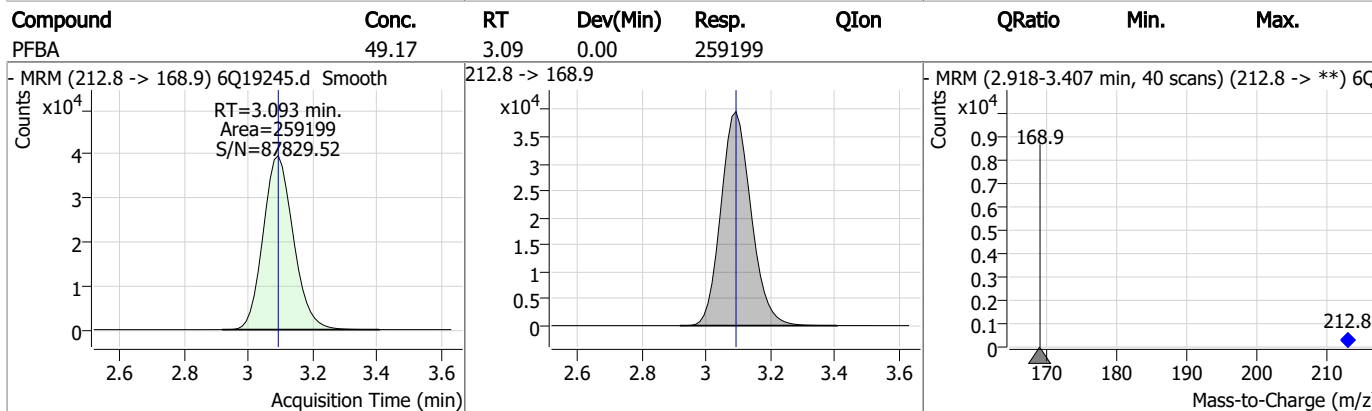
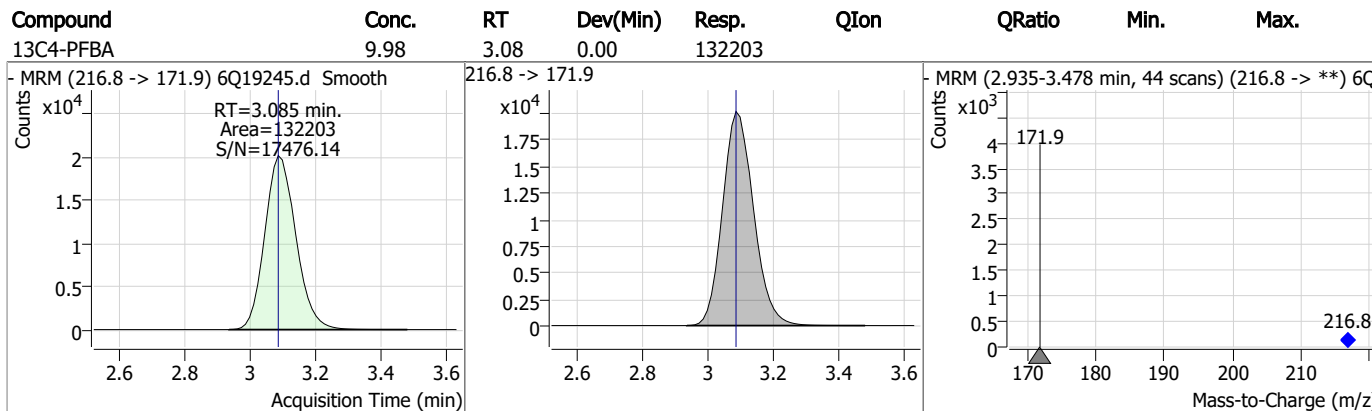
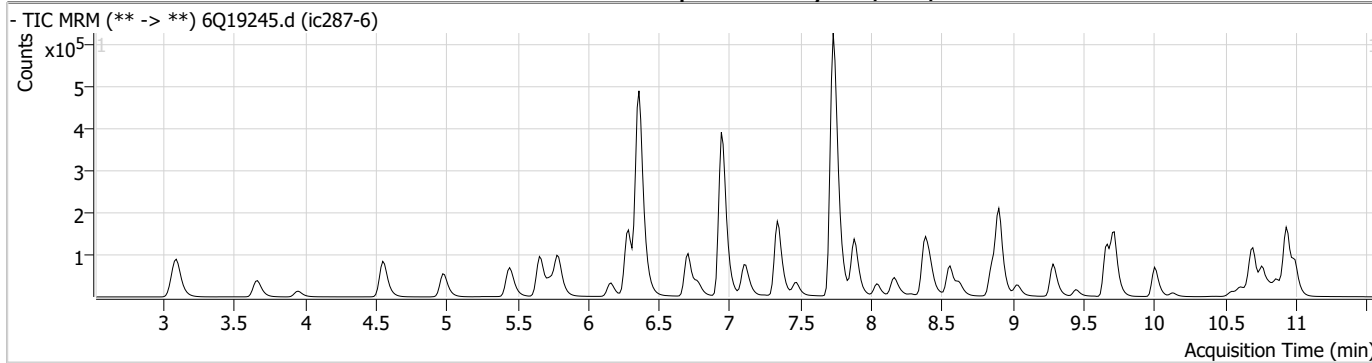
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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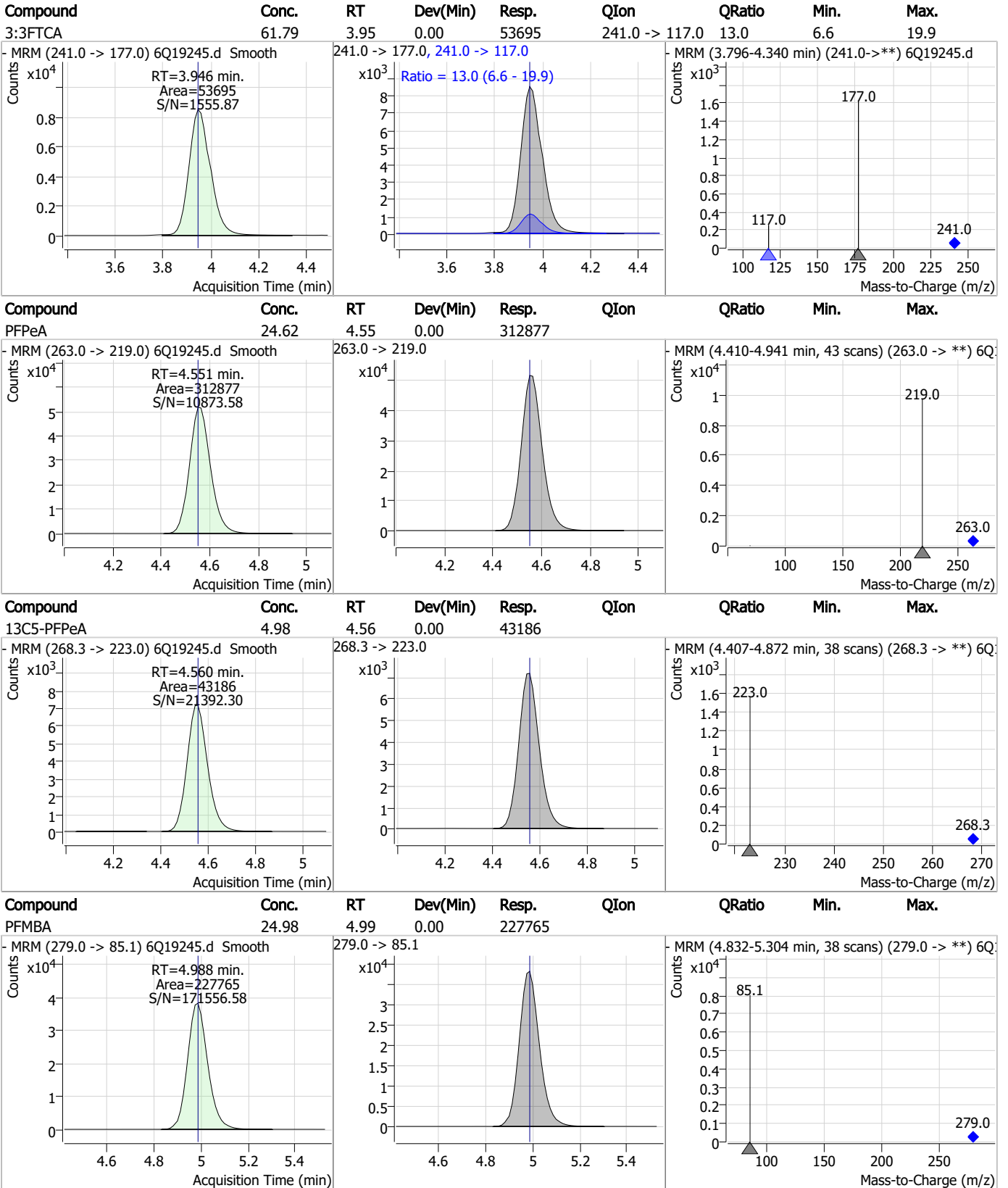
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Perfluorinated Compounds by LC/MS/MS



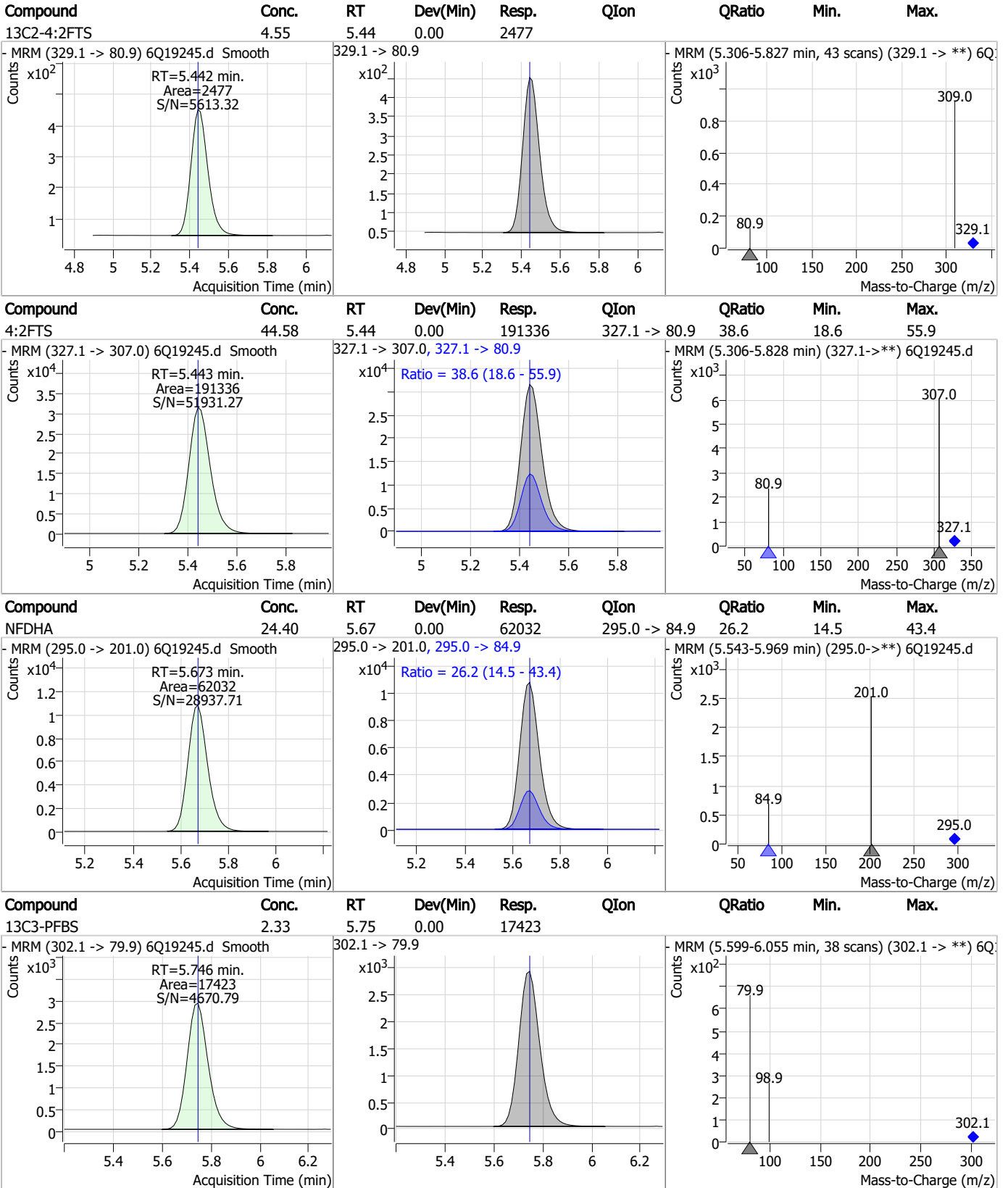
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Perfluorinated Compounds by LC/MS/MS



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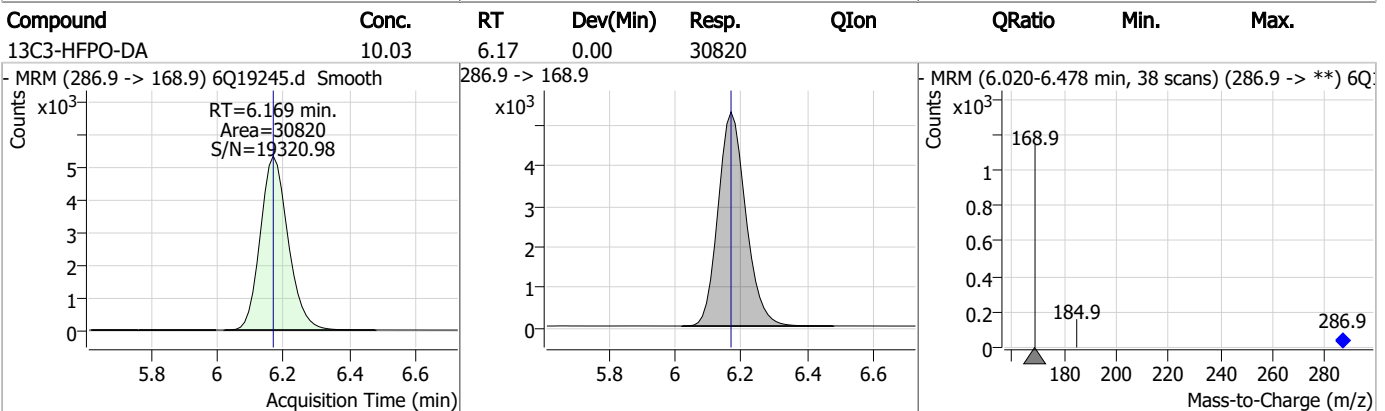
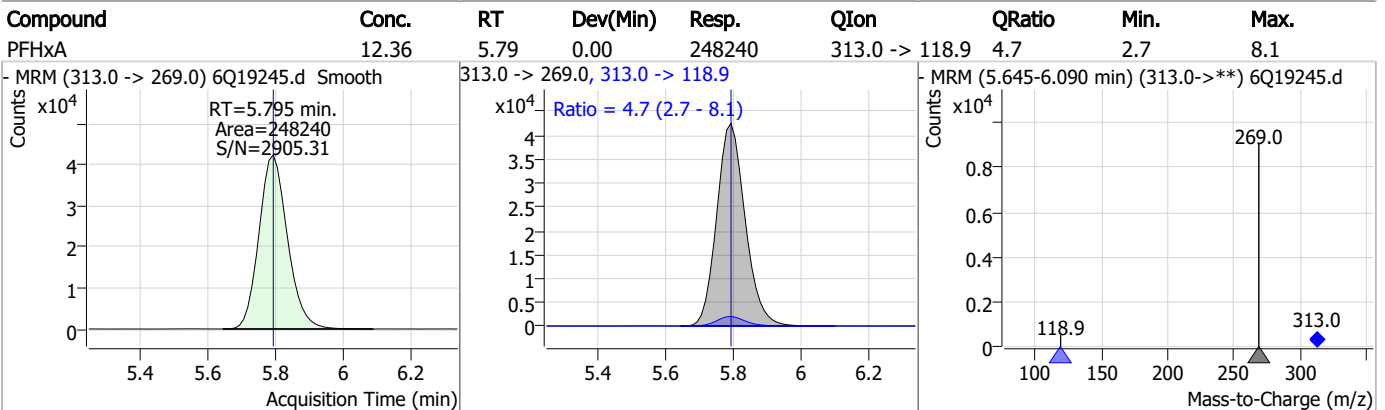
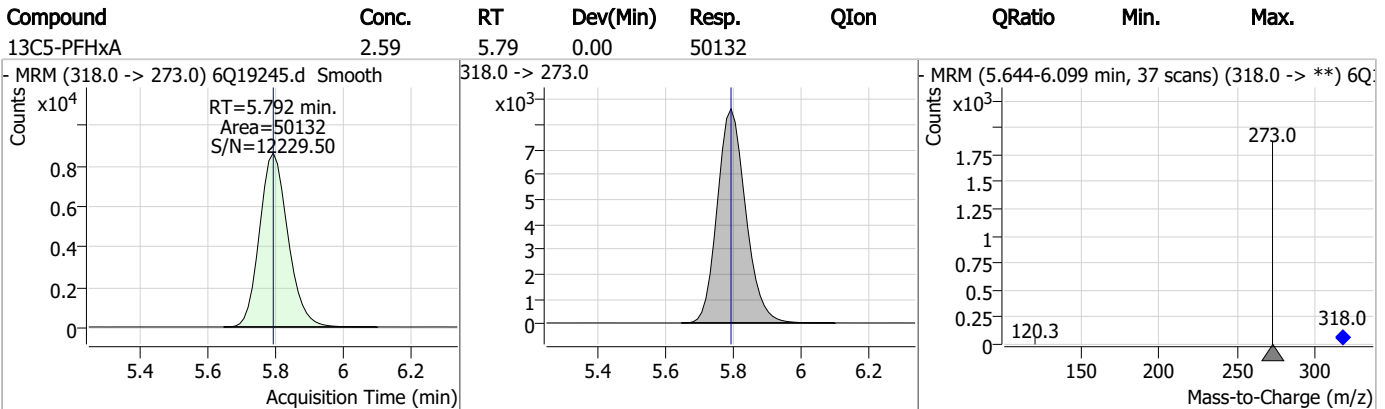
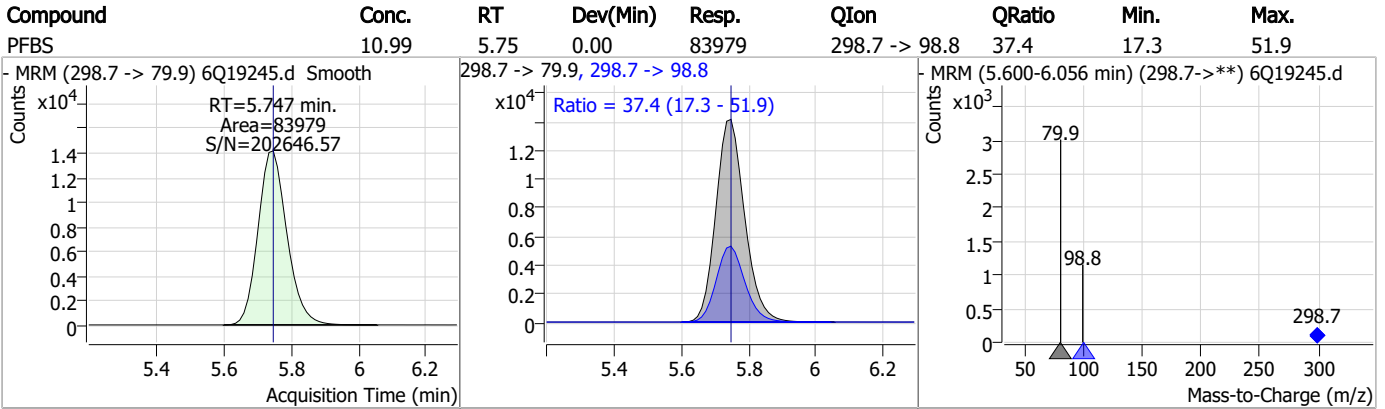
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

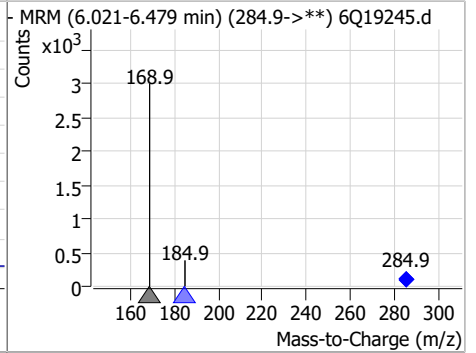
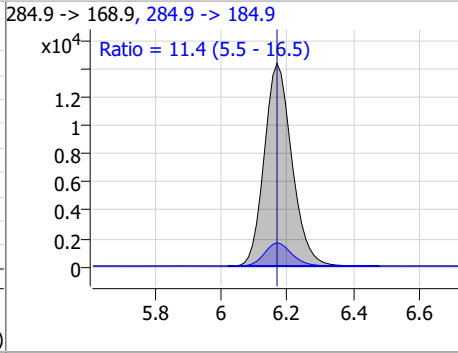
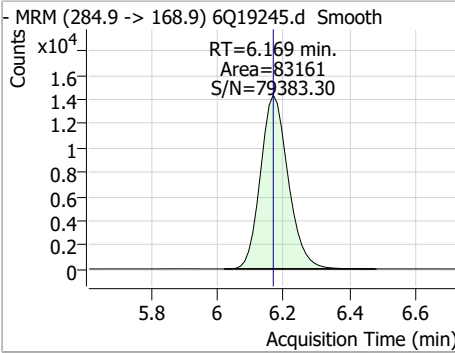


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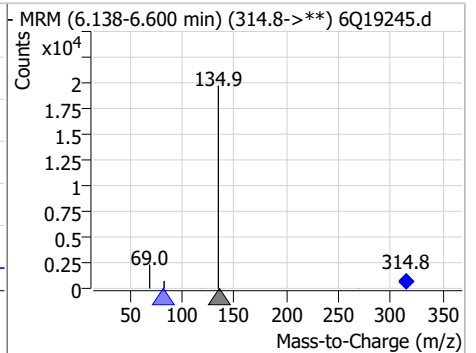
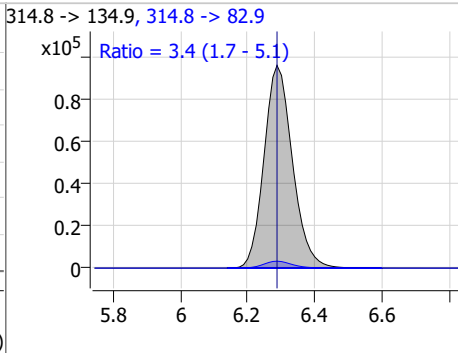
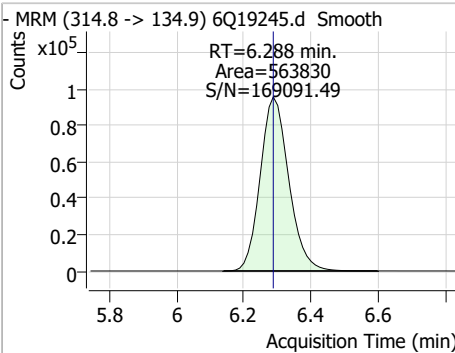
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Perfluorinated Compounds by LC/MS/MS

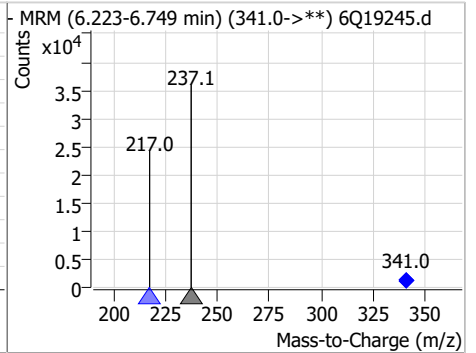
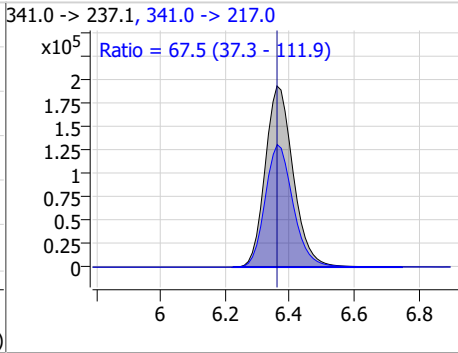
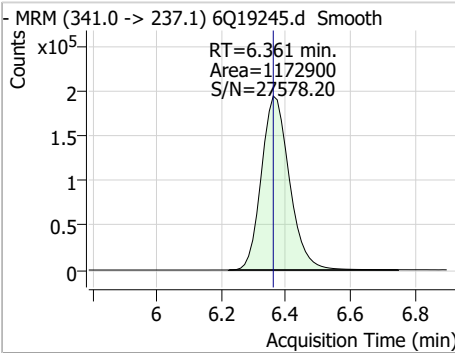
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.42	6.17	0.00	83161	284.9 -> 184.9	11.4	5.5	16.5



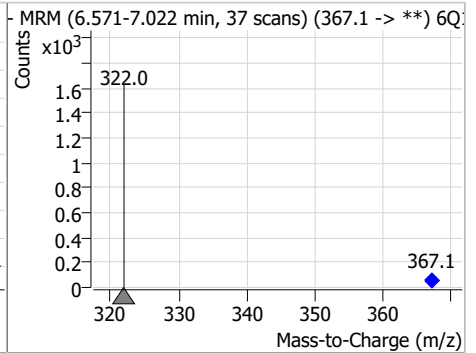
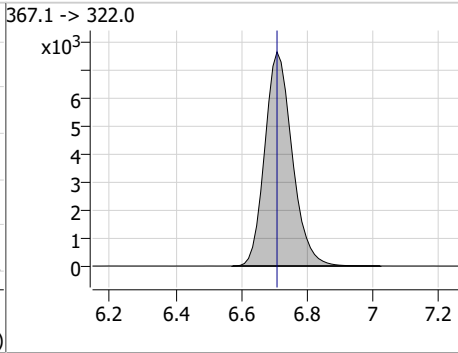
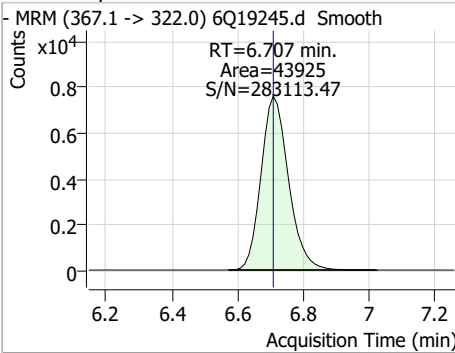
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.81	6.29	0.00	563830	314.8 -> 82.9	3.4	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	301.14	6.36	0.00	1172900	341.0 -> 217.0	67.5	37.3	111.9

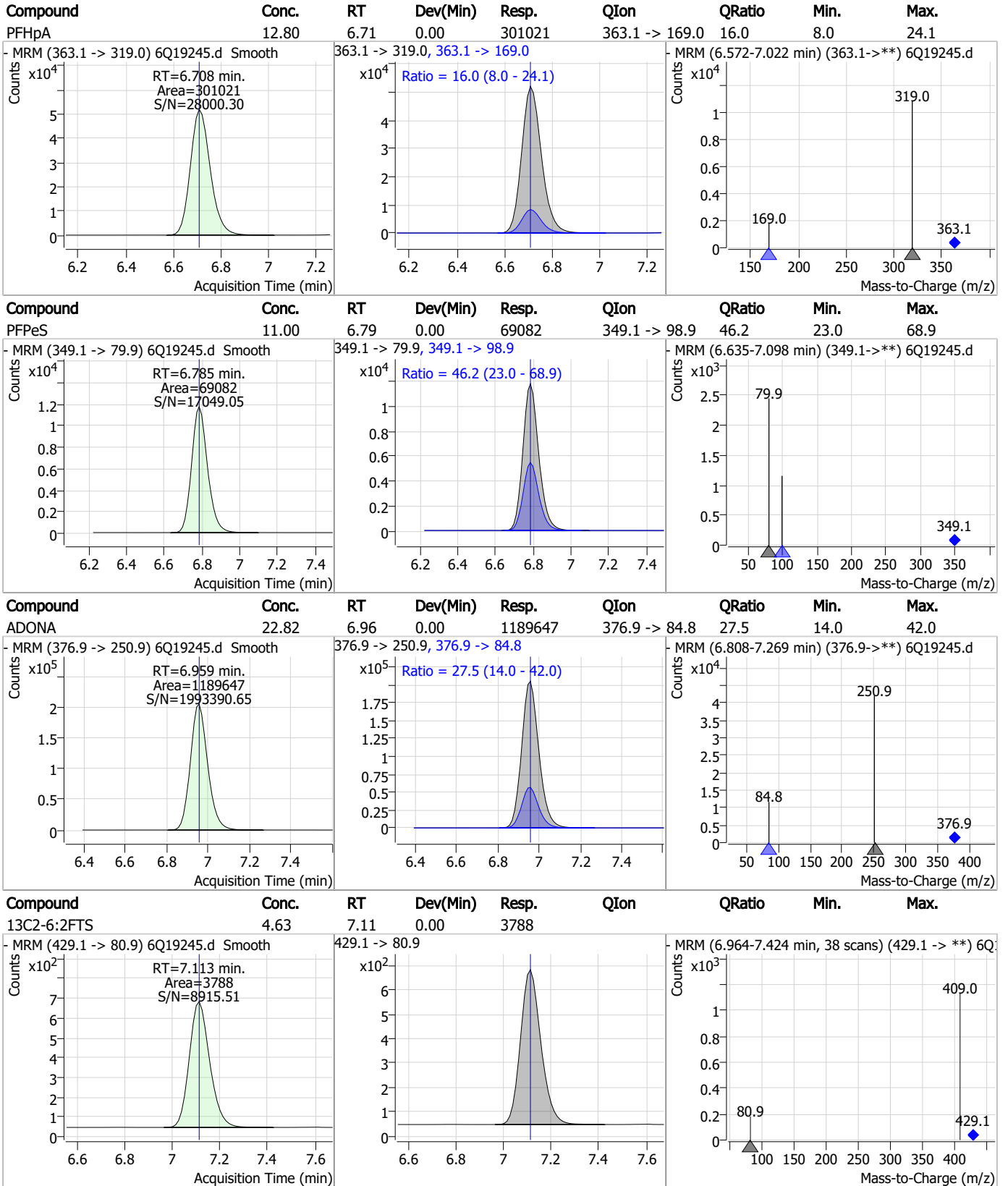


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.44	6.71	0.00	43925	367.1 -> 322.0			



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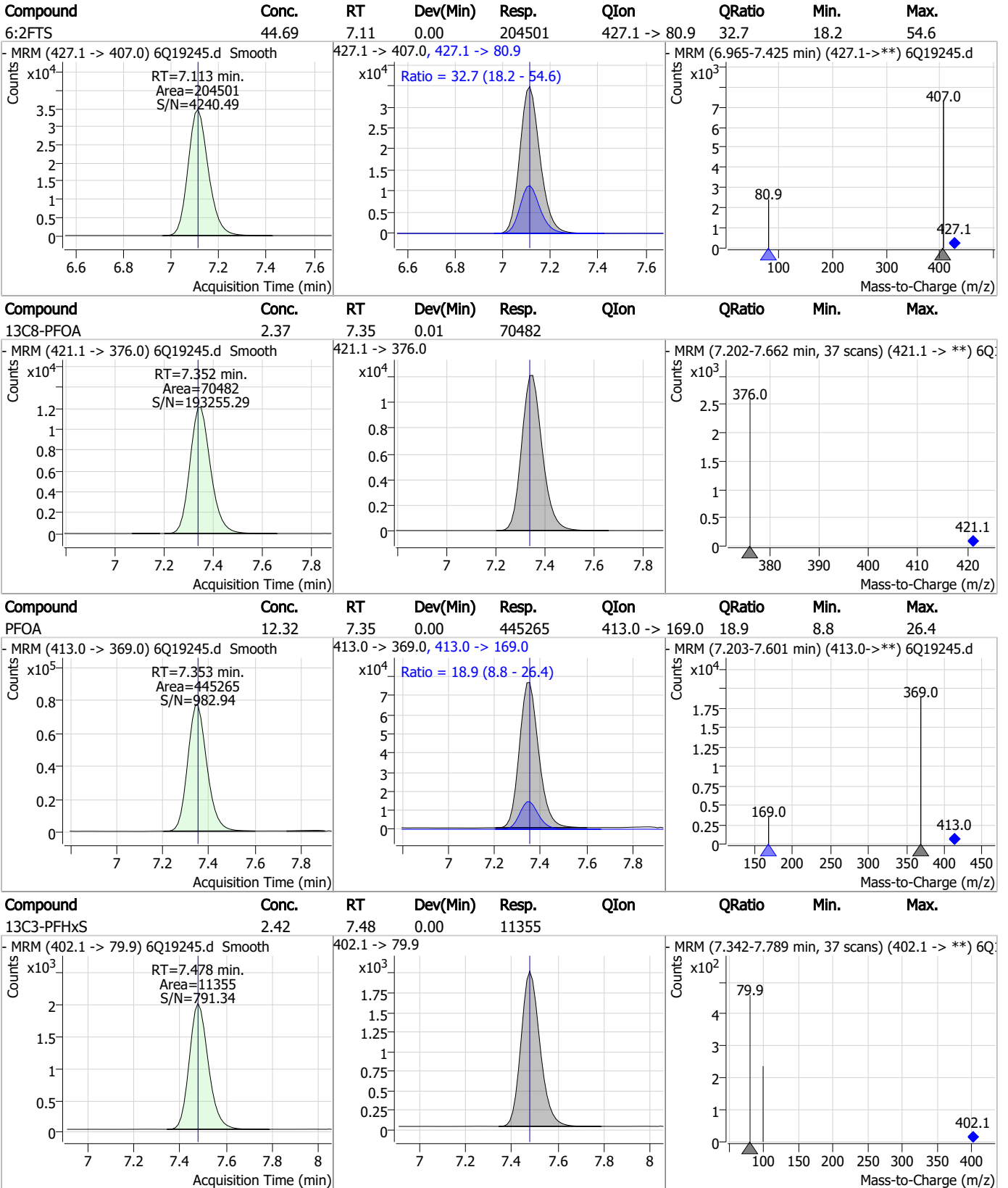
Perfluorinated Compounds by LC/MS/MS



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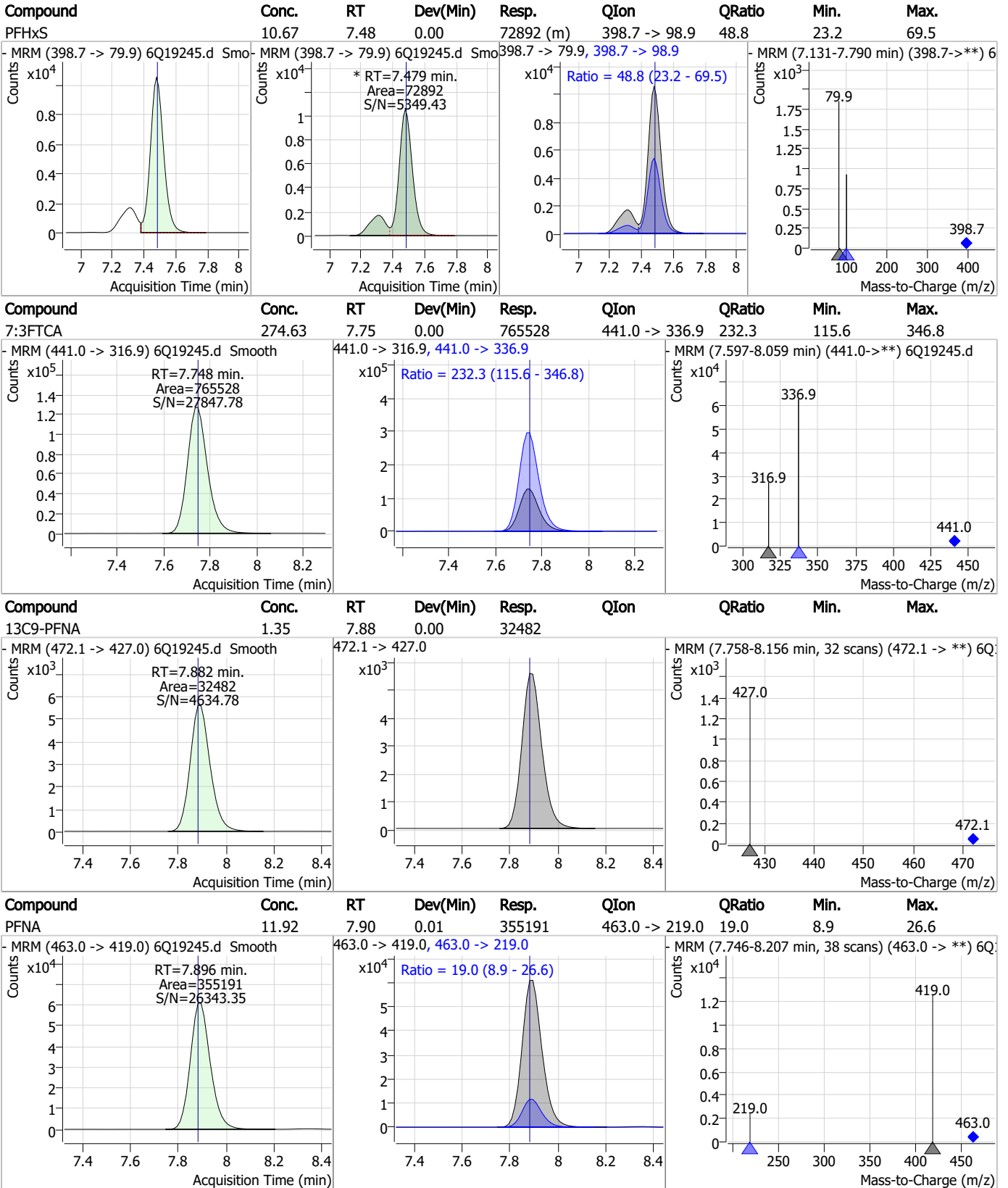
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

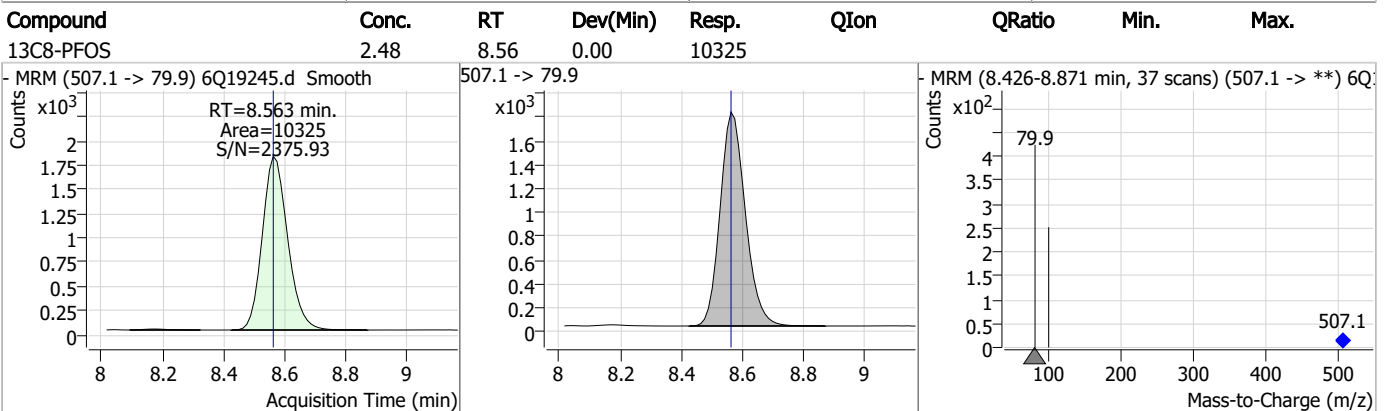
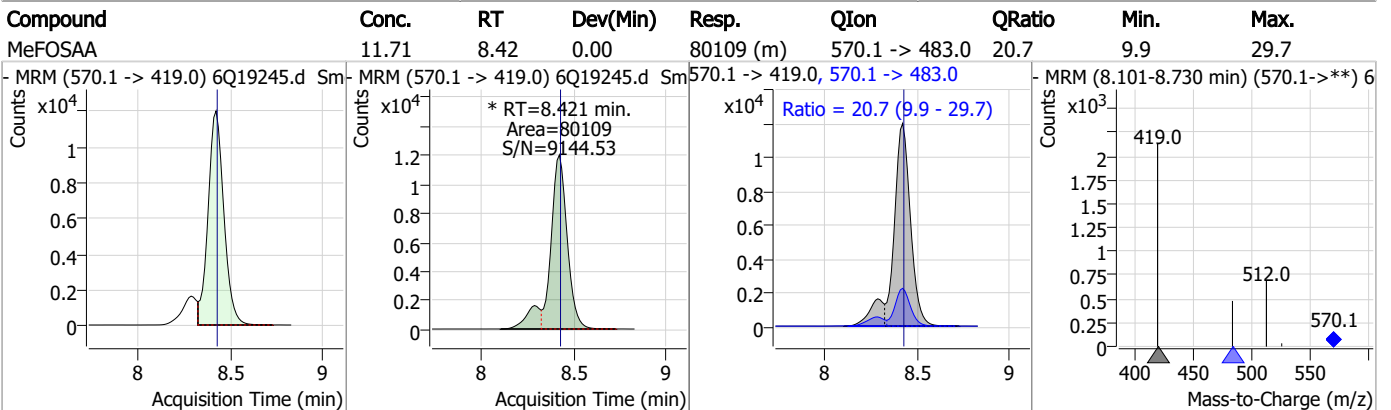
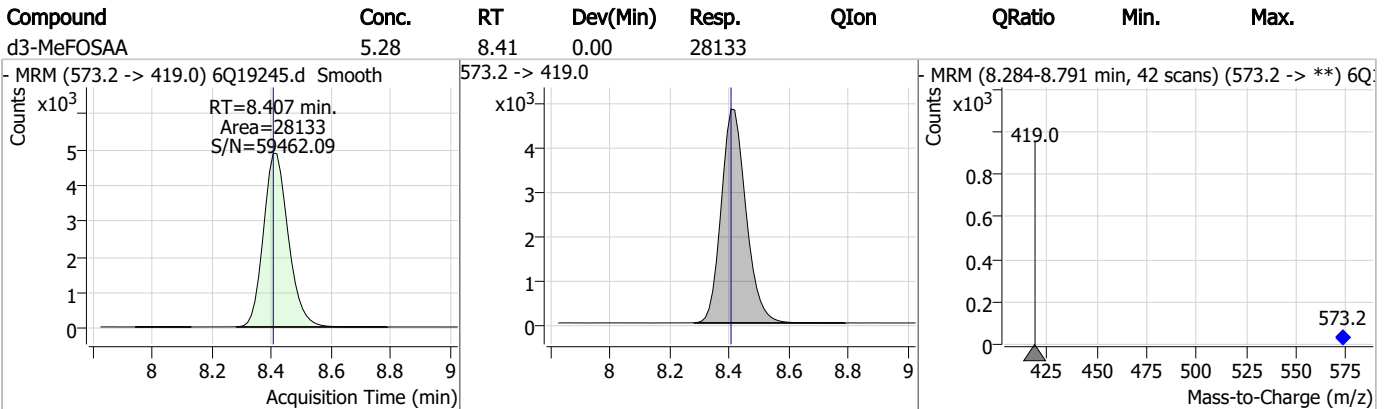
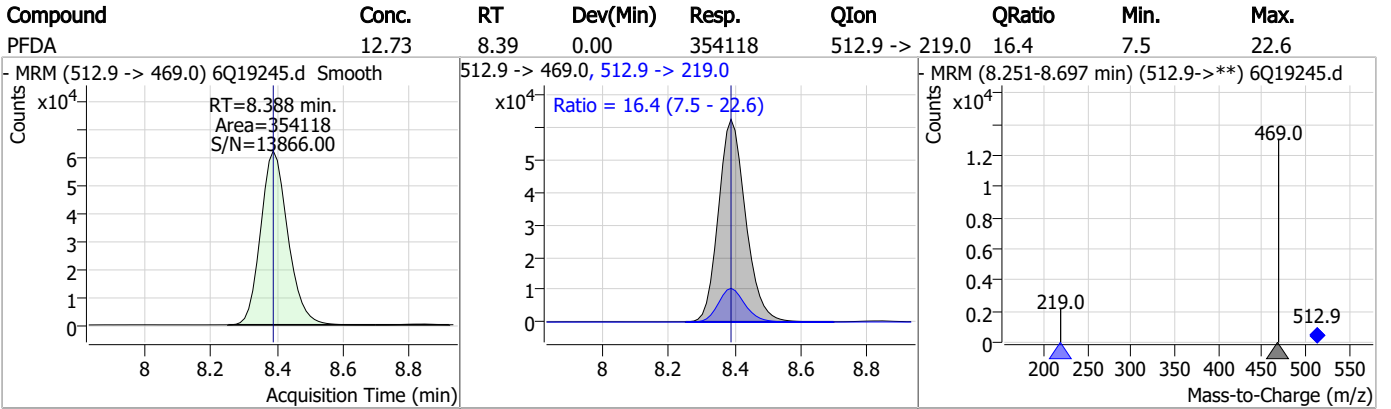
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.46	8.05	0.00	71271	449.0 -> 98.9	49.8	24.5	73.5
13C2-8:2FTS	4.42	8.16	0.00	3463				
8:2FTS	48.02	8.16	0.00	110613	527.1 -> 80.8	37.9	19.7	59.1
13C6-PFDA	1.22	8.39	0.00	18605				

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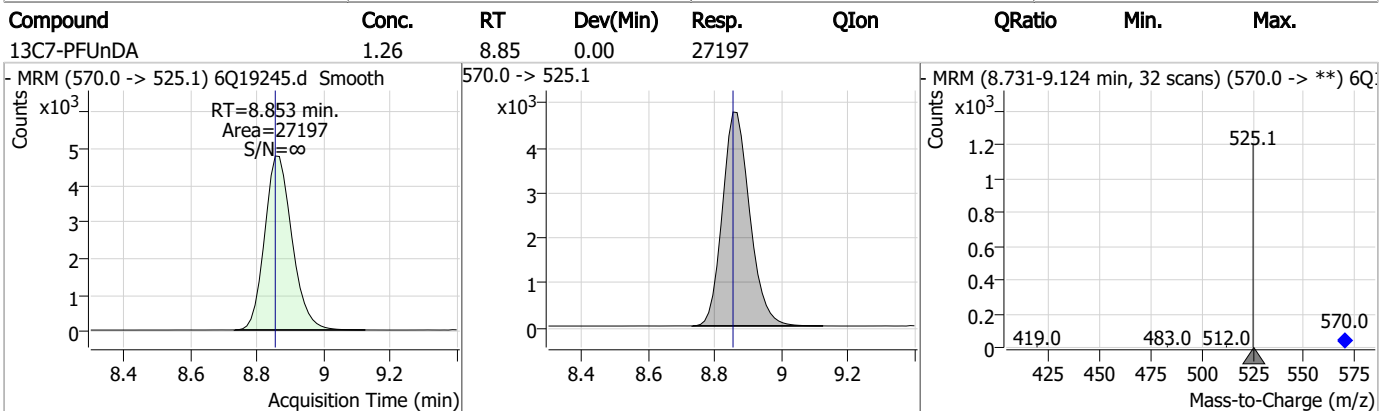
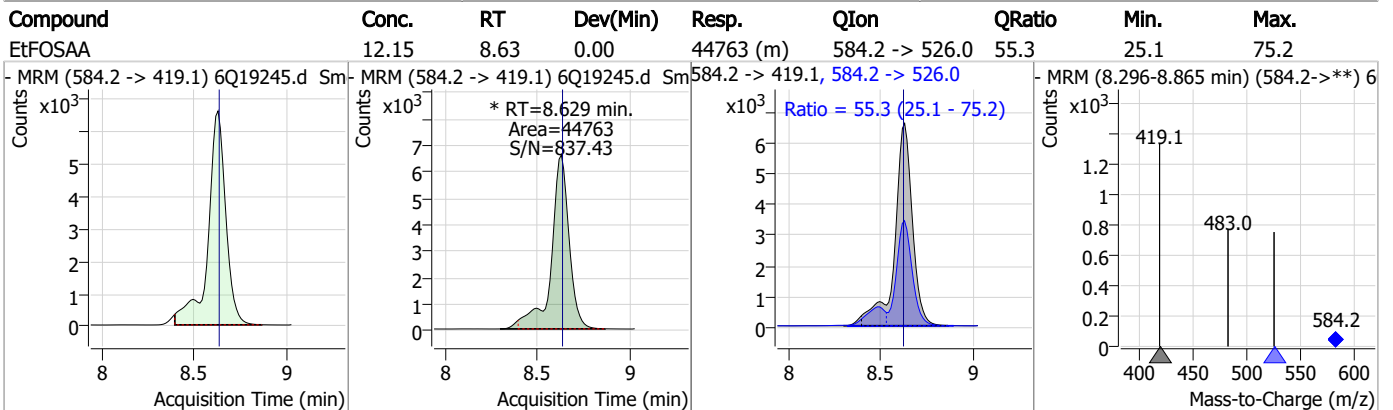
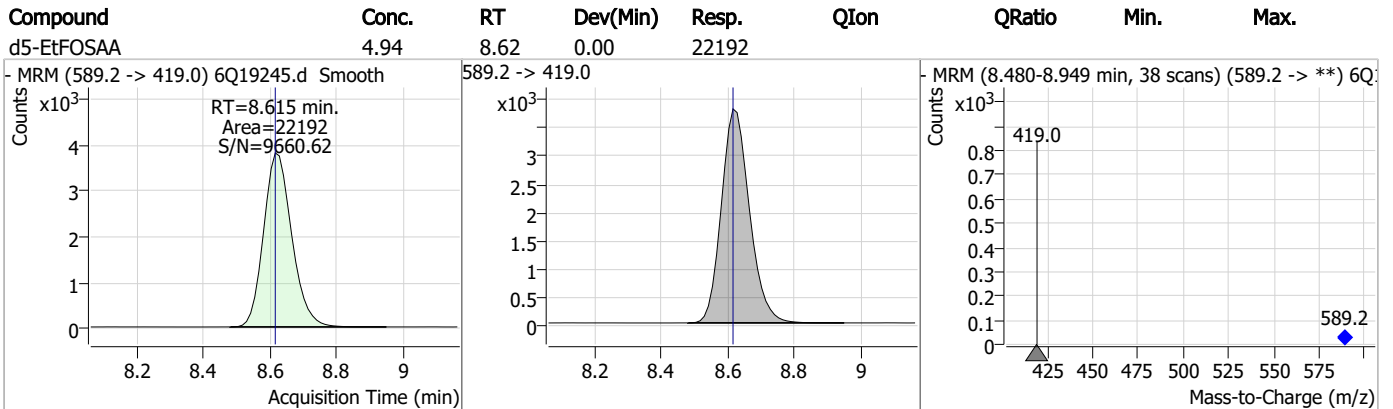
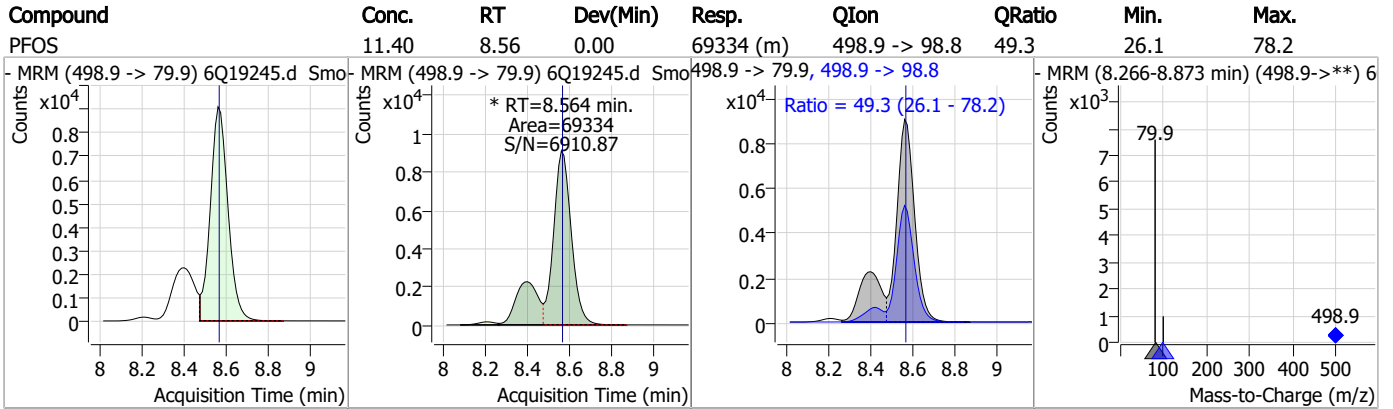
Perfluorinated Compounds by LC/MS/MS



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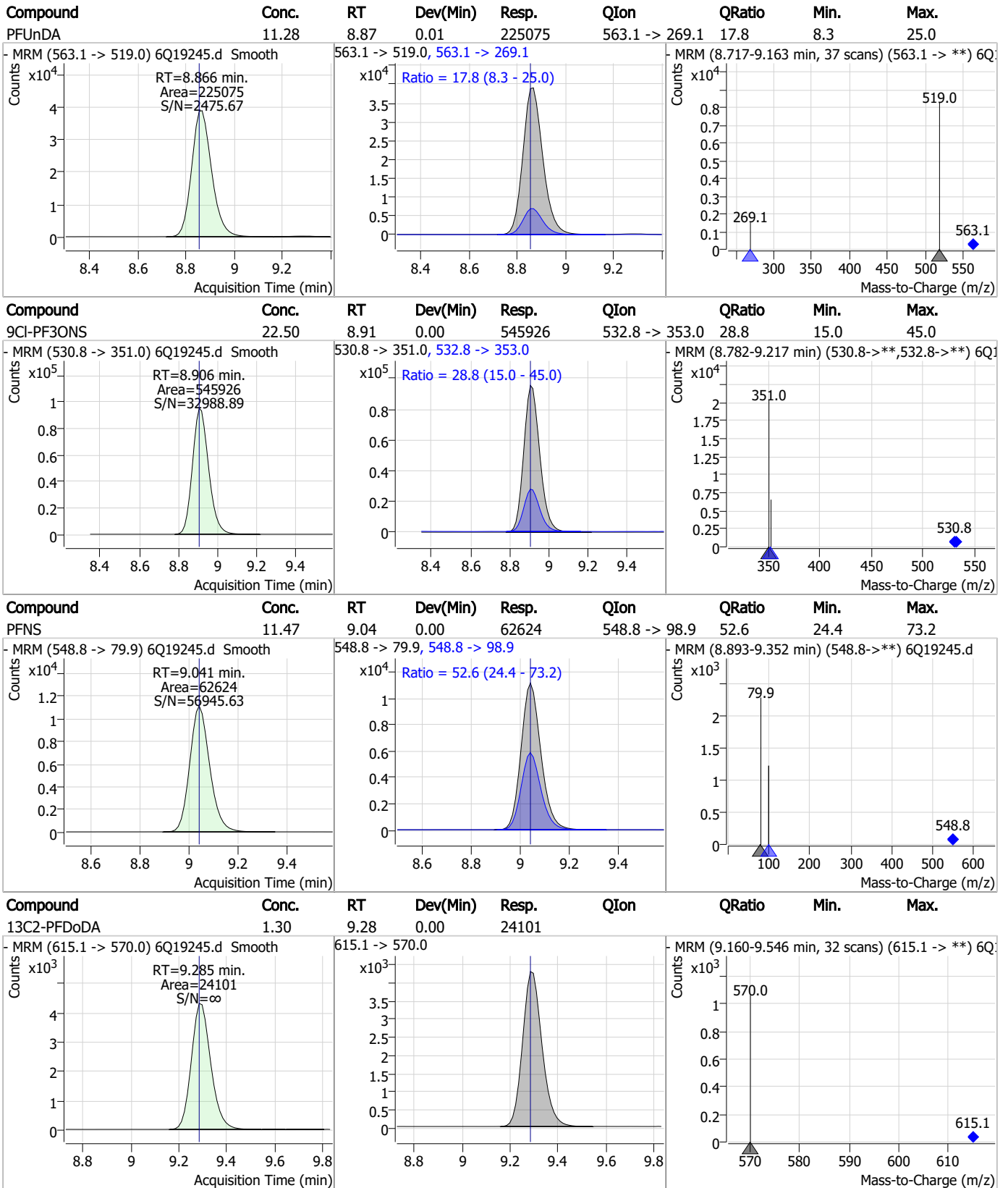
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Perfluorinated Compounds by LC/MS/MS



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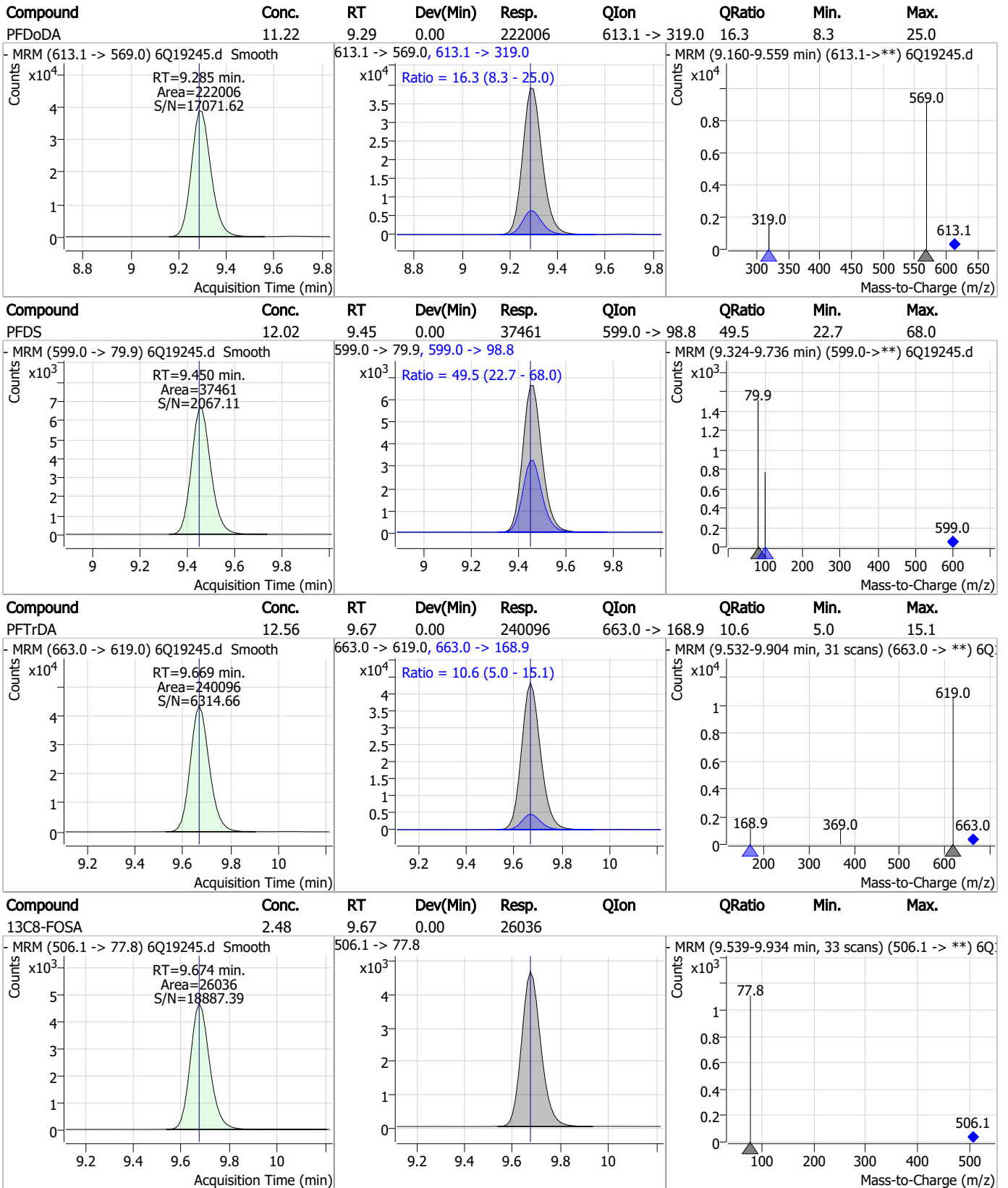
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

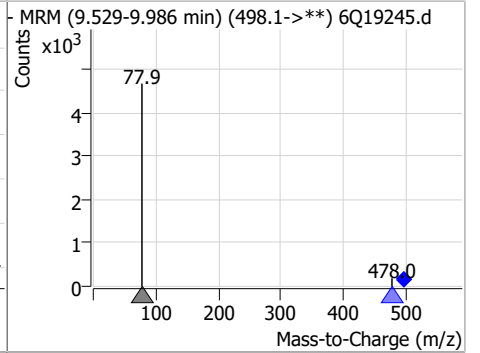
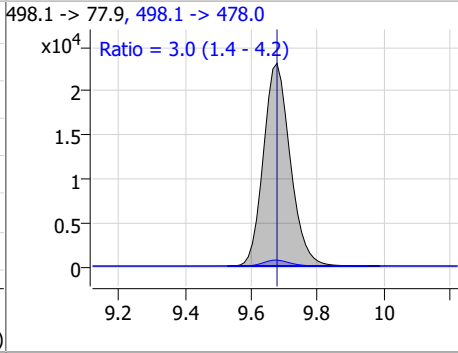
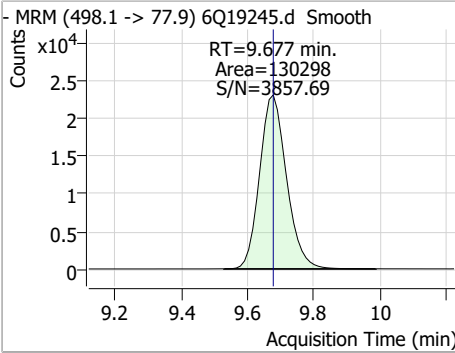


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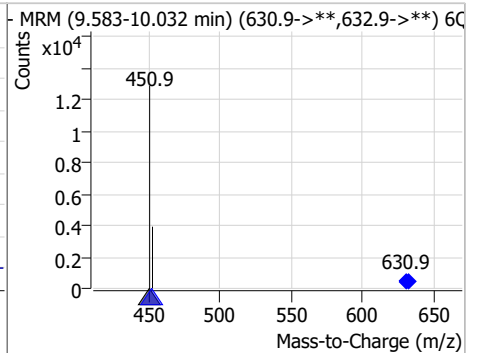
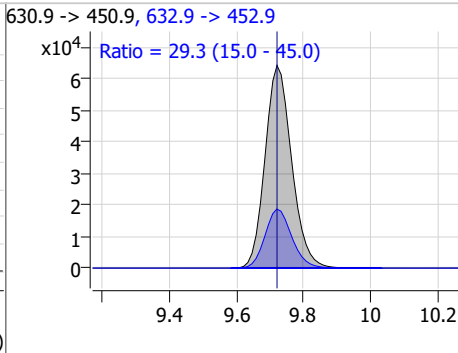
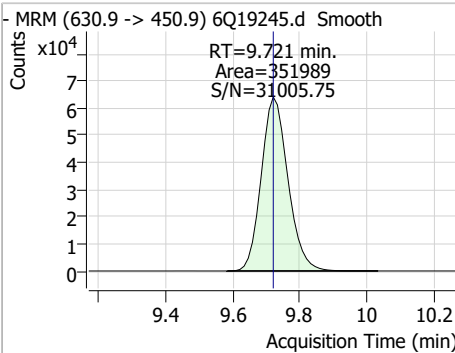


Perfluorinated Compounds by LC/MS/MS

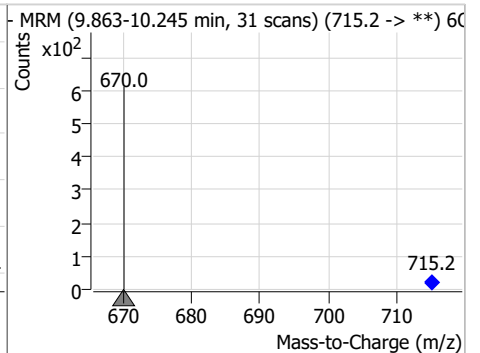
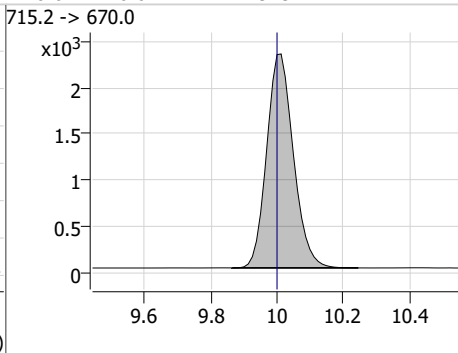
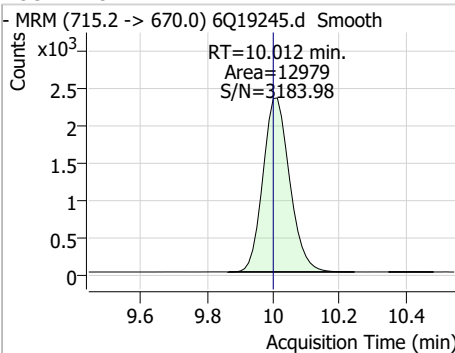
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	12.19	9.68	0.00	130298	498.1 -> 478.0	3.0	1.4	4.2



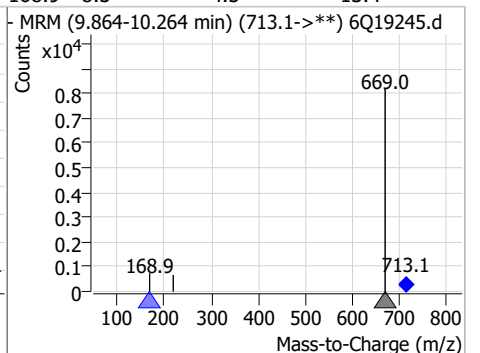
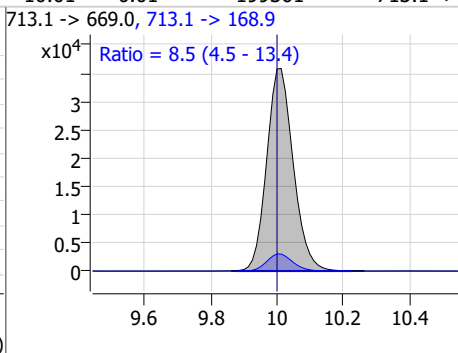
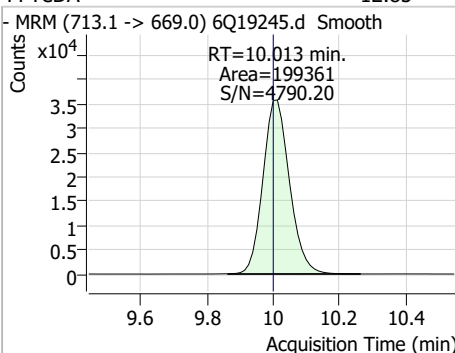
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	24.23	9.72	0.00	351989	632.9 -> 452.9	29.3	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	10.01	0.01	12979	715.2 -> 670.0			

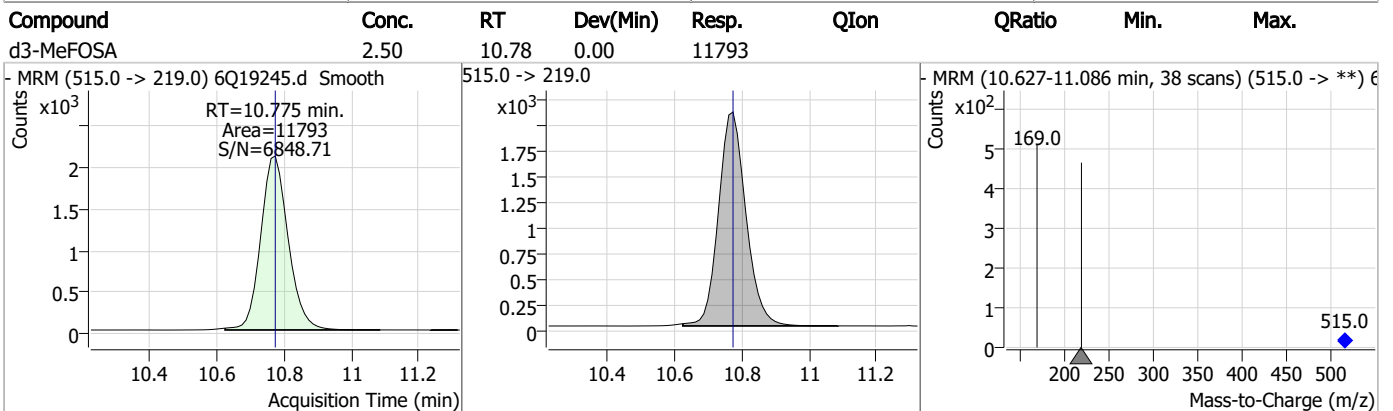
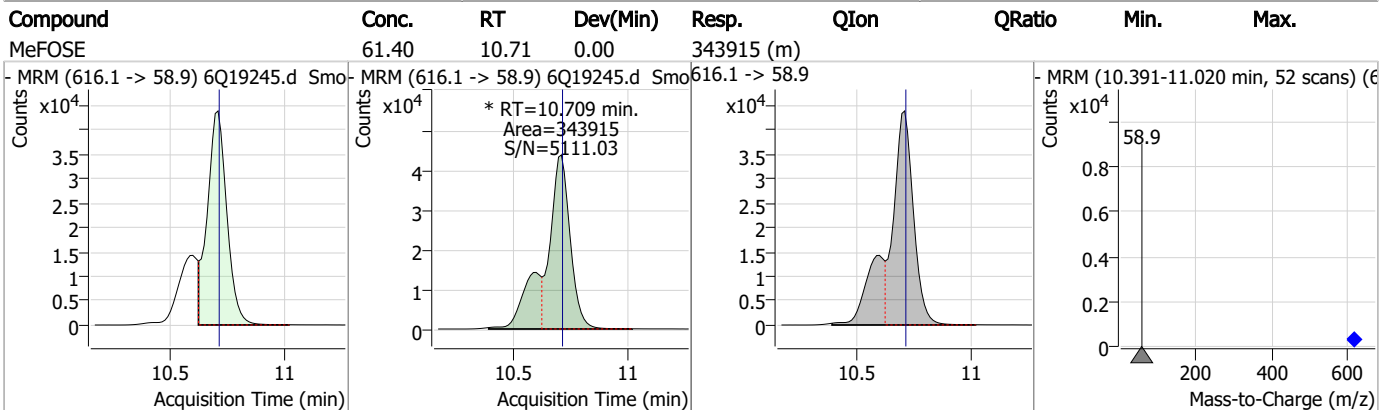
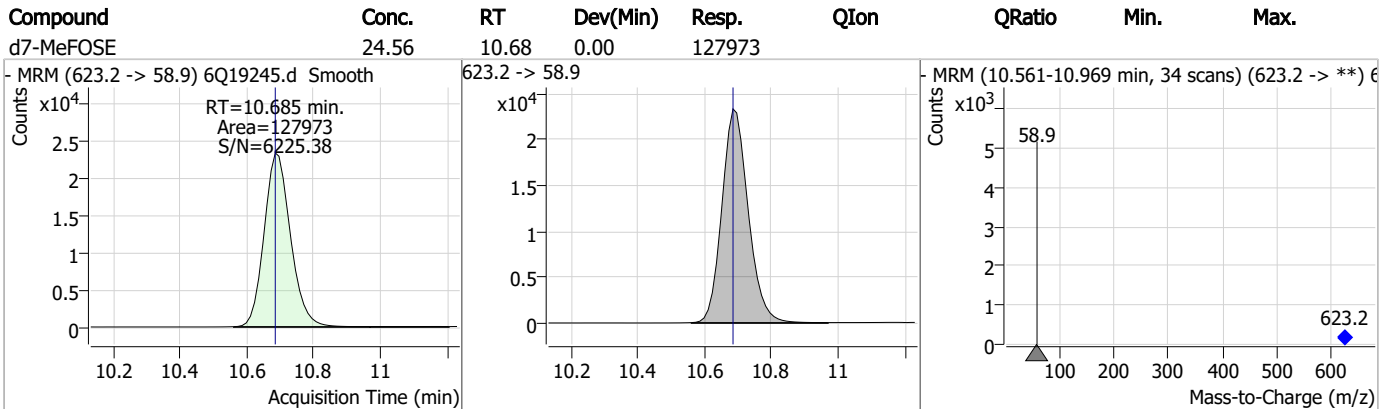
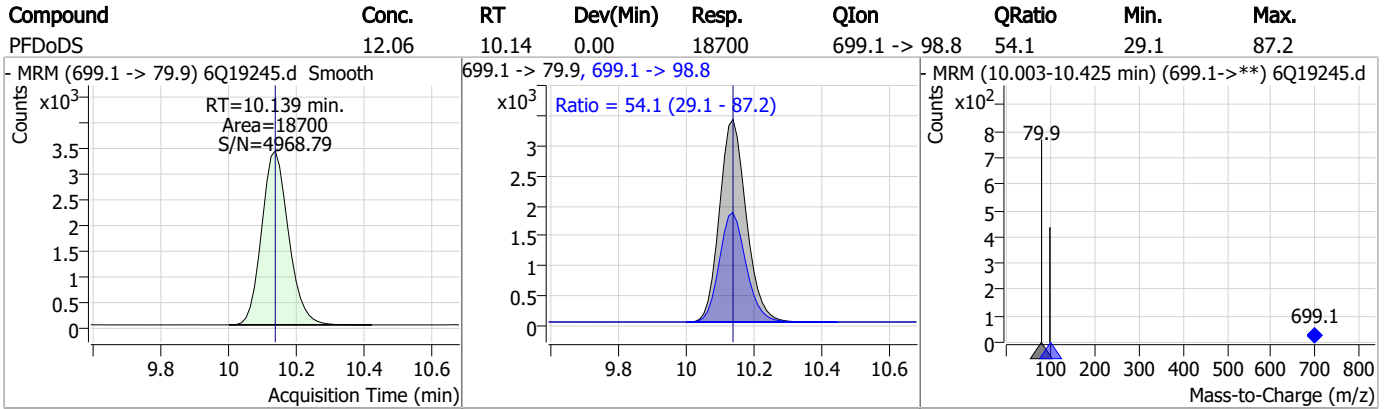


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.85	10.01	0.01	199361	713.1 -> 168.9	8.5	4.5	13.4

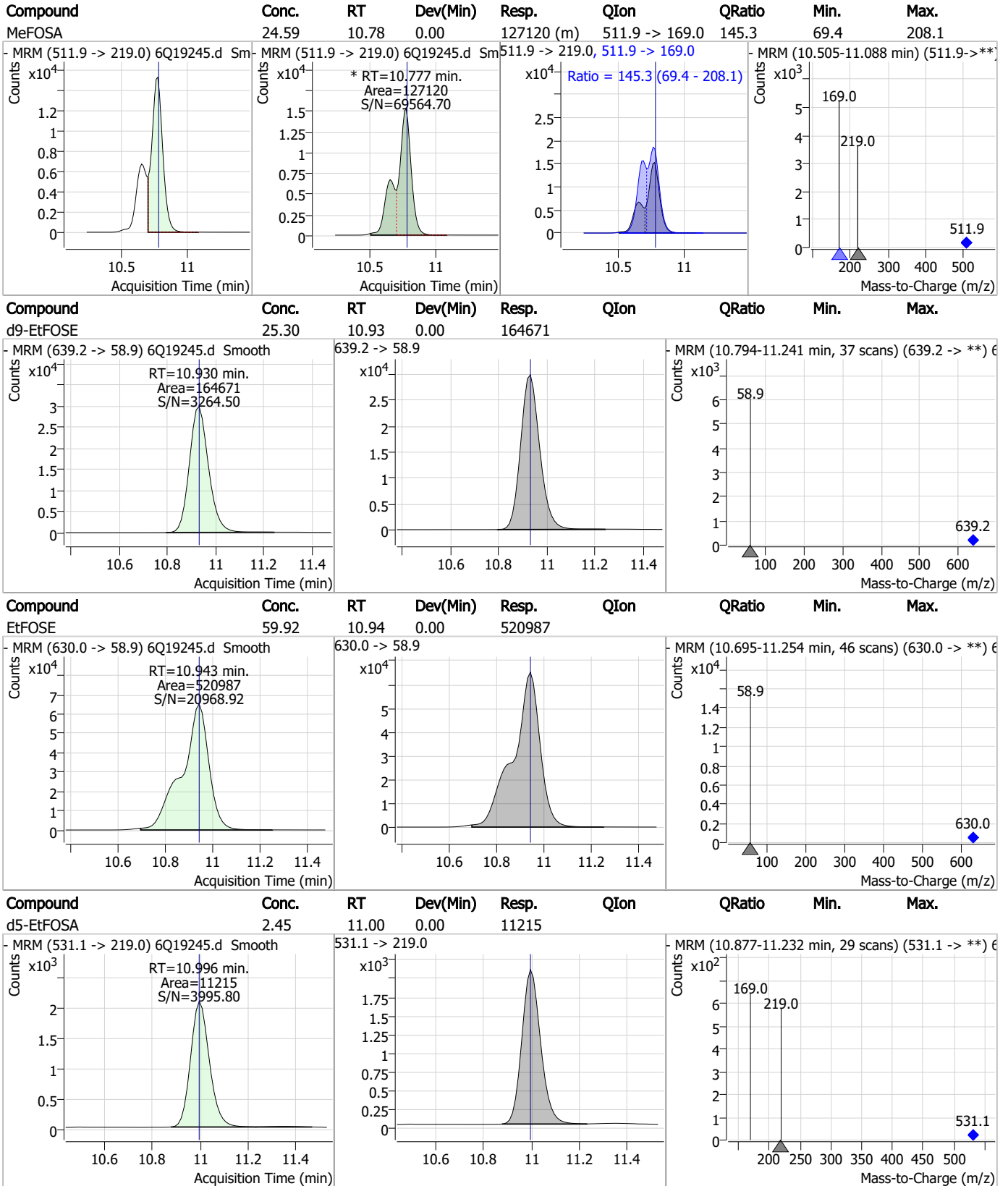


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Perfluorinated Compounds by LC/MS/MS



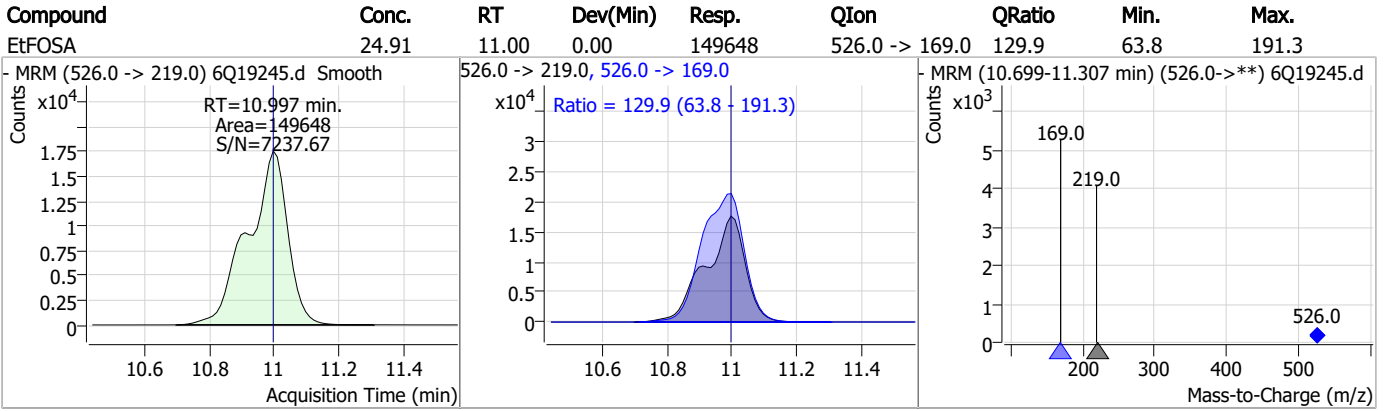
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19245.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 16:58 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Manual Integrations
APPROVED
(compounds with "m" flag)

Natasha Gumtie
06/13/23 13:30

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19246.d
Operator : marthav
Acq. Method : 1633full.m
Acq. Date-Time : 6/12/2023 5:12:24 PM
Sample Name : ic287-7
Vial : P1-A8
DA Method File : 1633_061223_S6Q287.quantmethod.xml
Batch Name : s6q287.batch.bin
Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	125745	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	42802	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	47522	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	46843	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	72285	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	34107	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	19544	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	28278	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	22875	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	13417	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	25082	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	17616	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	10950	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10476	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2020	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	3030	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	3390	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	24762	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	31335	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	22145	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	121506	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	139492	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11255	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12359	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14104	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	54135	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8229	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	75304	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	28547	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	42566	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	47605	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2020	3.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 79.7%		
13C2-6:2FTS	7.113	429.1 -> 80.9	3030	3.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 79.6%		
13C2-8:2FTS	8.163	529.1 -> 80.9	3390	4.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-PFDoDA	9.285	615.1 -> 570.0	22875	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13417	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.746	302.1 -> 79.9	17616	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-PFHxS	7.478	402.1 -> 79.9	10950	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 = 100.2%	
13C4-PFBA	3.085	216.8 -> 171.9	125745	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.707	367.1 -> 322.0	46843	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFHxA	5.792	318.0 -> 273.0	47522	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C5-PFPeA	4.548	268.3 -> 223.0	42802	4.65 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C6-PFDA	8.387	519.1 -> 474.1	19544	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C7-PFUnDA	8.853	570.0 -> 525.1	28278	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C8-FOSA	9.674	506.1 -> 77.8	25082	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	7.339	421.1 -> 376.0	72285	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-PFOS	8.563	507.1 -> 79.9	10476	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C9-PFNA	7.882	472.1 -> 427.0	34107	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSAA	8.407	573.2 -> 419.0	24762	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31335	9.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSA	10.775	515.0 -> 219.0	12359	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
d5-EtFOSAA	8.615	589.2 -> 419.0	22145	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d7-MeFOSE	10.685	623.2 -> 58.9	121506	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d9-EtFOSE	10.930	639.2 -> 58.9	139492	21.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.3%	
d5-EtFOSA	10.996	531.1 -> 219.0	11255	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	319247	91.20 µg/L	97
		327.1 -> 80.9	125033		
6:2FTS	7.113	427.1 -> 407.0	344298	94.06 µg/L	93
		427.1 -> 80.9	111367		
8:2FTS	8.164	527.1 -> 507.0	190812	84.63 µg/L	99
		527.1 -> 80.8	73609		
EtFOSAA	8.629	584.2 -> 419.1	85532	23.26 µg/L	m 88
		584.2 -> 526.0	50194		
FOSA	9.677	498.1 -> 77.9	248853	24.18 µg/L	99
		498.1 -> 478.0	7683		
MeFOSAA	8.421	570.1 -> 419.0	149422	24.82 µg/L	m 97
		570.1 -> 483.0	31547		
PFBA	3.093	212.8 -> 168.9	496554	99.03 µg/L	100
PFBS	5.747	298.7 -> 79.9	163771	21.19 µg/L	93
		298.7 -> 98.8	62896		
PFDA	8.388	512.9 -> 469.0	689058	23.58 µg/L	99
		512.9 -> 219.0	105749		
PFDoDA	9.285	613.1 -> 569.0	445344	23.71 µg/L	100
		613.1 -> 319.0	74169		
PFDS	9.450	599.0 -> 79.9	72760	23.01 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	34355			
PFHpA	6.708	363.1 -> 319.0	566096	22.57	µg/L	100
		363.1 -> 169.0	91539			
PFHpS	8.046	449.0 -> 79.9	142486	22.59	µg/L	99
		449.0 -> 98.9	68425			
PFHxA	5.795	313.0 -> 269.0	493435	25.92	µg/L	98
		313.0 -> 118.9	23571			
PFHxS	7.479	398.7 -> 79.9	143747	21.83	µg/L	m 95
		398.7 -> 98.9	71203			
PFNA	7.883	463.0 -> 419.0	726994	23.23	µg/L	99
		463.0 -> 219.0	131137			
PFNS	9.041	548.8 -> 79.9	124425	22.46	µg/L	96
		548.8 -> 98.9	63757			
PFOA	7.341	413.0 -> 369.0	930123	25.09	µg/L	99
		413.0 -> 169.0	159369			
PFOS	8.564	498.9 -> 79.9	129743	21.02	µg/L	m 97
		498.9 -> 98.8	64476			
PFPeA	4.551	263.0 -> 219.0	611757	48.57	µg/L	100
PFPeS	6.785	349.1 -> 79.9	140718	23.24	µg/L	96
		349.1 -> 98.9	60735			
PFTeDA	10.000	713.1 -> 669.0	366063	22.82	µg/L	98
		713.1 -> 168.9	30538			
PFTrDA	9.669	663.0 -> 619.0	436481	24.97	µg/L	95
		663.0 -> 168.9	51992			
PFUnDA	8.854	563.1 -> 519.0	473466	22.82	µg/L	98
		563.1 -> 269.1	83481			
11CI-PF3OUdS	9.721	630.9 -> 450.9	641838	43.46	µg/L	97
		632.9 -> 452.9	202733			
9CI-PF3ONS	8.906	530.8 -> 351.0	1102872	44.71	µg/L	96
		532.8 -> 353.0	356652			
ADONA	6.959	376.9 -> 250.9	2383560	44.97	µg/L	96
		376.9 -> 84.8	613667			
HFPO-DA	6.169	284.9 -> 168.9	165410	51.19	µg/L	97
		284.9 -> 184.9	19792			
3:3FTCA	3.946	241.0 -> 177.0	107307	124.59	µg/L	99
		241.0 -> 117.0	13858			
5:3FTCA	6.361	341.0 -> 237.1	2202827	596.63	µg/L	95
		341.0 -> 217.0	1552464			
7:3FTCA	7.736	441.0 -> 316.9	1557945	589.60	µg/L	98
		441.0 -> 336.9	3662129			
EtFOSA	10.997	526.0 -> 219.0	288600	47.87	µg/L	m 91
		526.0 -> 169.0	397146			
EtFOSE	10.943	630.0 -> 58.9	877080	119.08	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	247112	45.61	µg/L	m 96
		511.9 -> 169.0	355015			
MeFOSE	10.697	616.1 -> 58.9	628136	118.11	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	35205	22.37	µg/L	99
		699.1 -> 98.8	20107			
NFDHA	5.673	295.0 -> 201.0	119320	49.51	µg/L	93
		295.0 -> 84.9	30005			
PFMBA	4.988	279.0 -> 85.1	444098	49.15	µg/L	100
PFMPA	3.667	229.0 -> 84.9	347368	49.48	µg/L	100
PFEESA	6.288	314.8 -> 134.9	1144537	48.85	µg/L	99
		314.8 -> 82.9	40896			

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

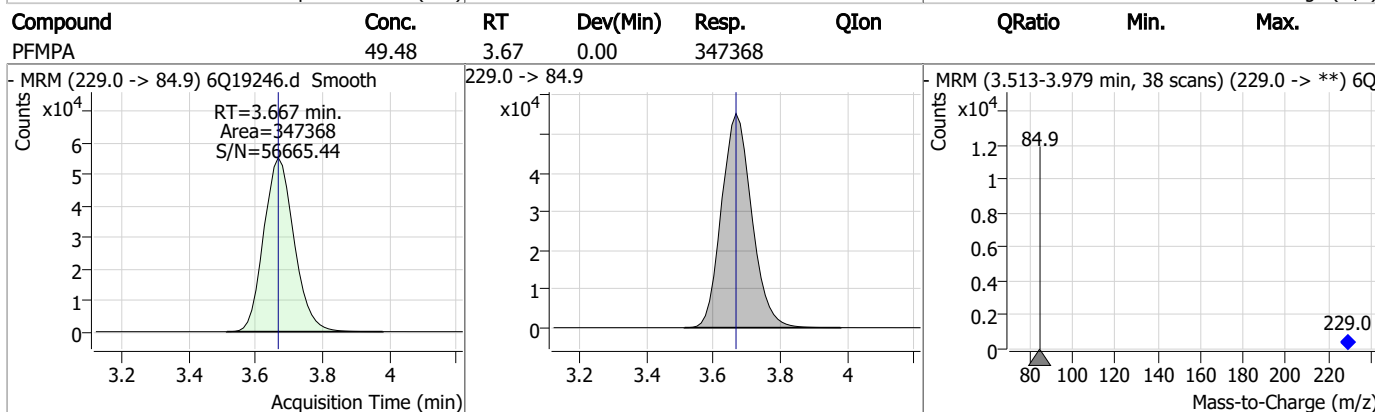
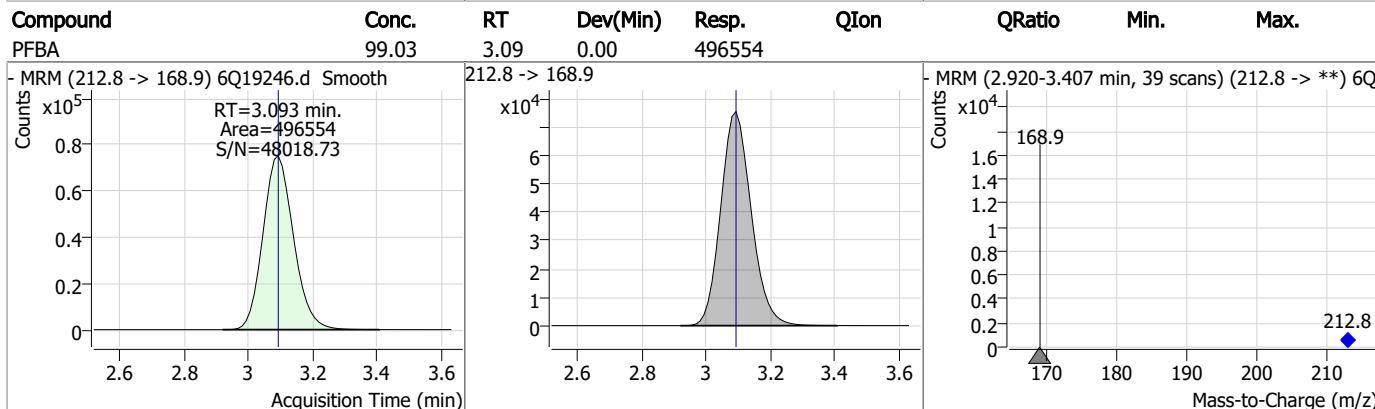
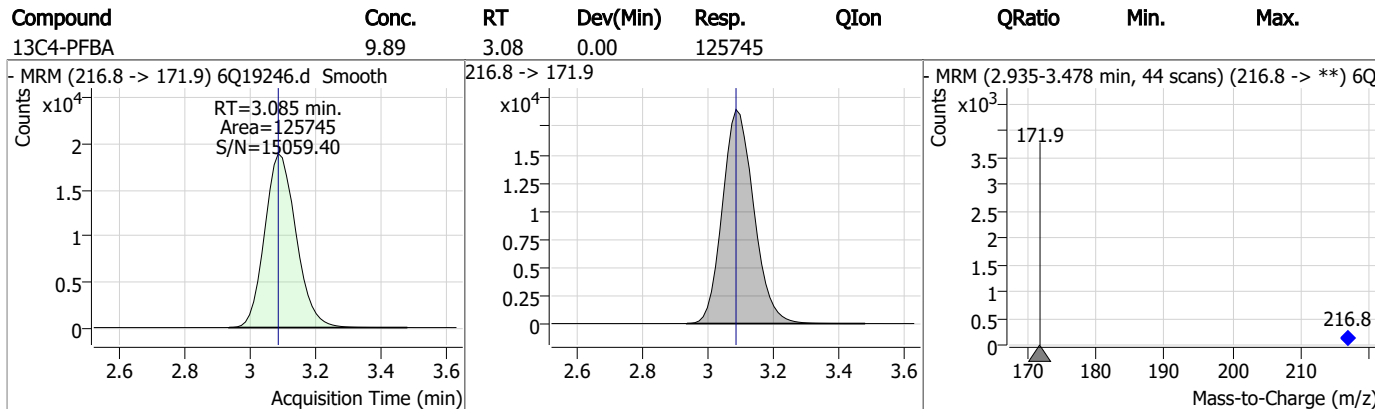
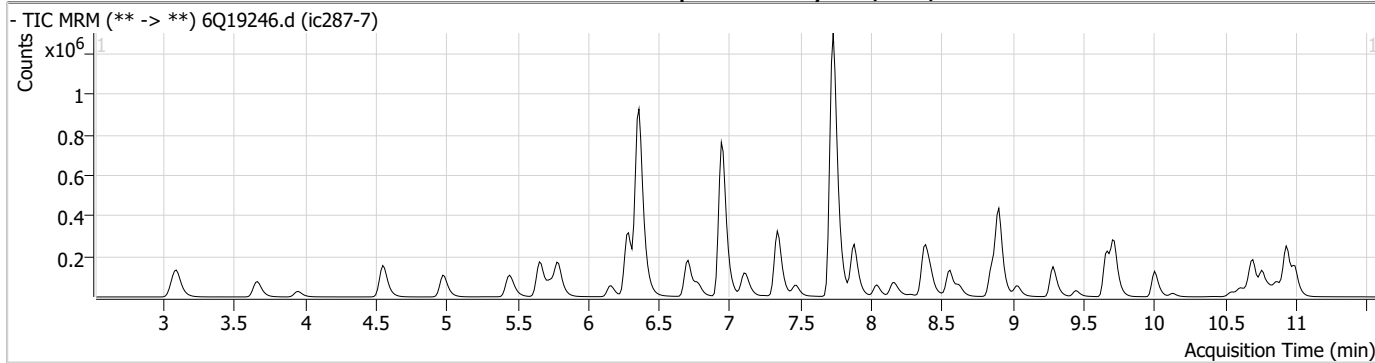
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.28

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Perfluorinated Compounds by LC/MS/MS



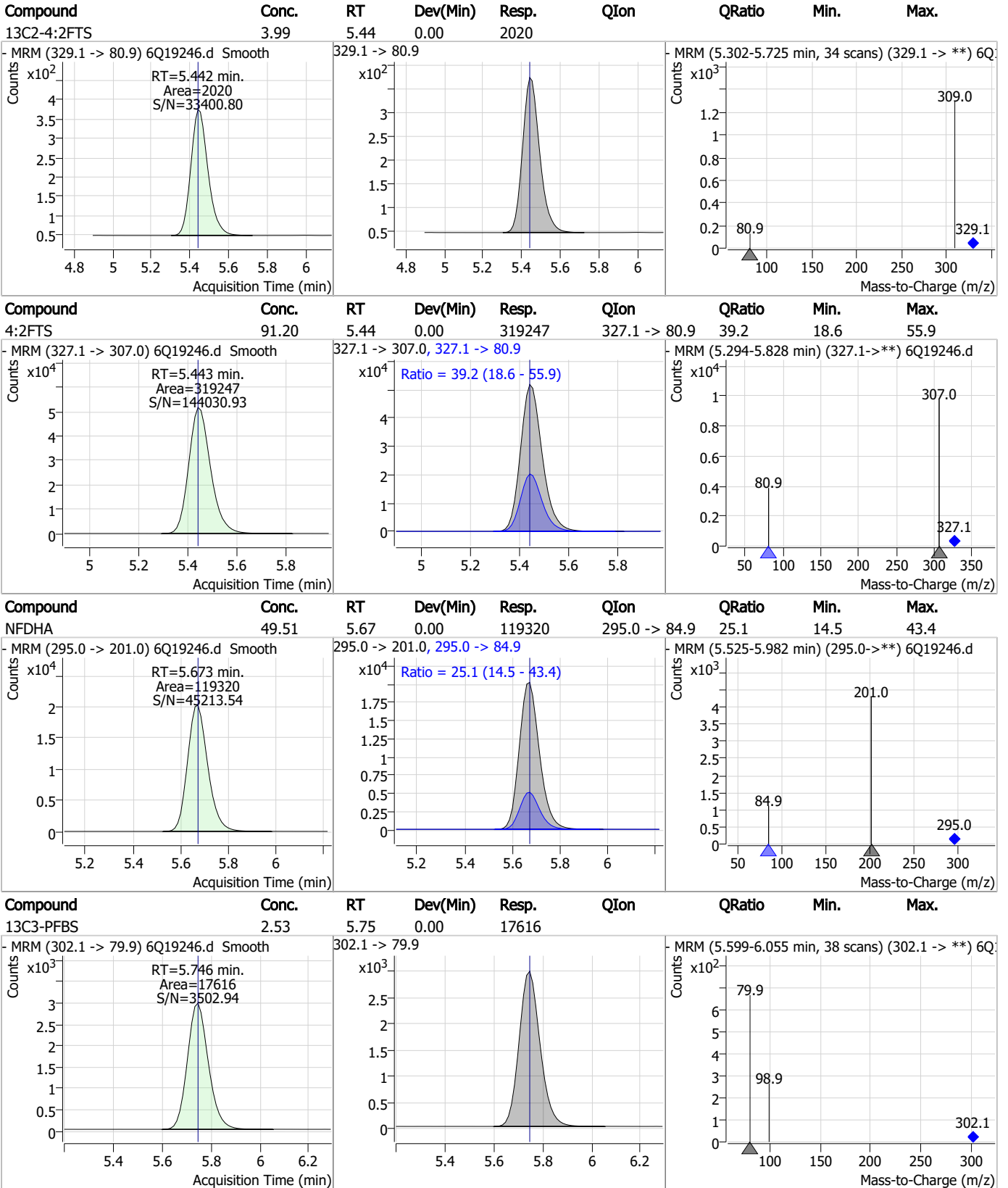
7.7.28
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	124.59	3.95	0.00	107307	241.0 -> 117.0	12.9	6.6	19.9
PFPeA	48.57	4.55	0.00	611757	263.0 -> 219.0			
13C5-PFPeA	4.65	4.55	-0.01	42802	268.3 -> 223.0			
PFMBA	49.15	4.99	0.00	444098	279.0 -> 85.1			

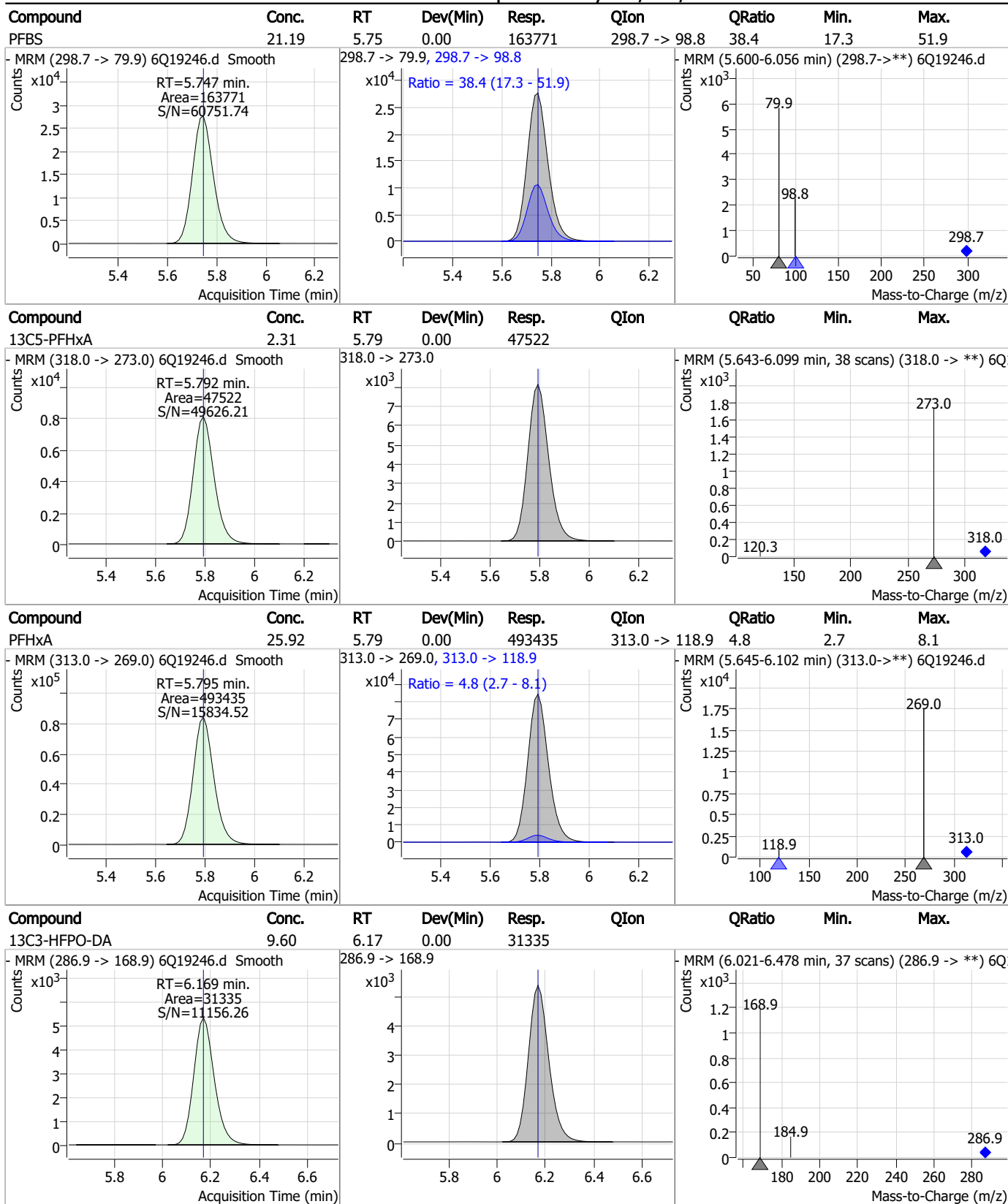
7.7.28 7

Perfluorinated Compounds by LC/MS/MS



7.7.28
7

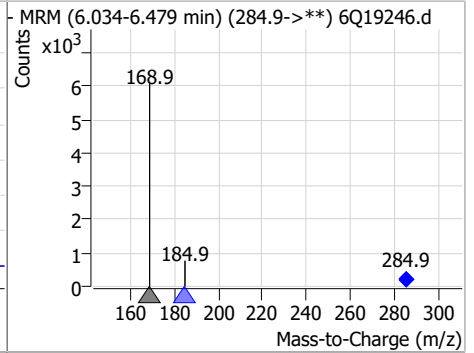
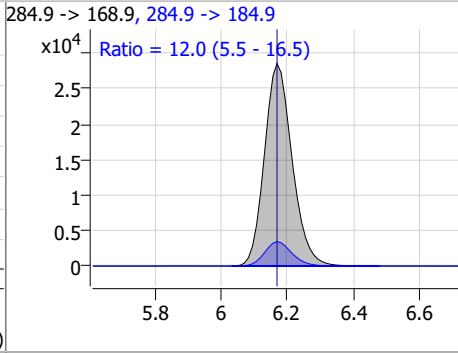
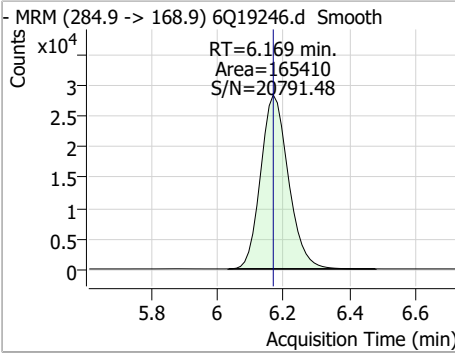
Perfluorinated Compounds by LC/MS/MS



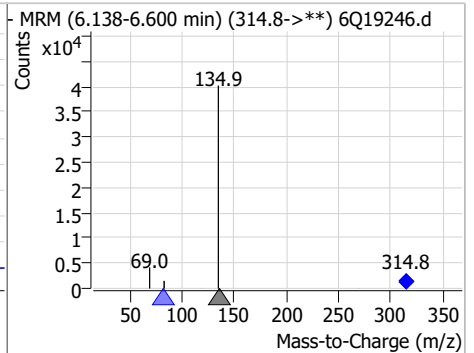
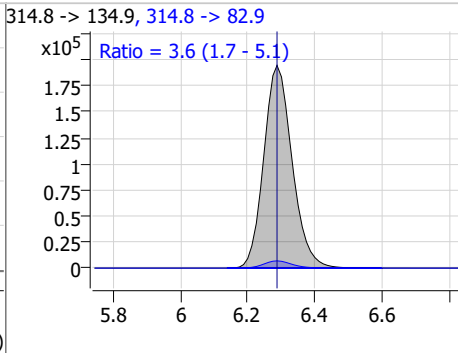
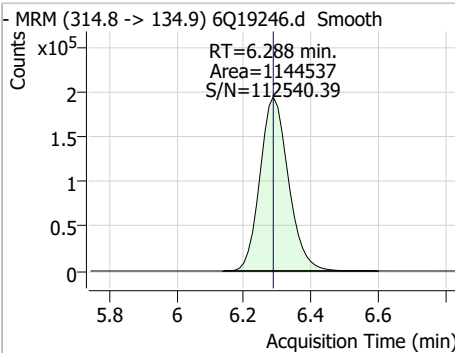
7.7.28
7

Perfluorinated Compounds by LC/MS/MS

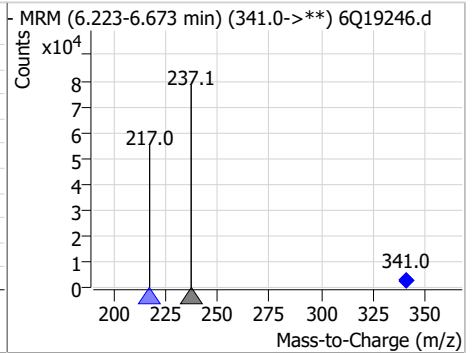
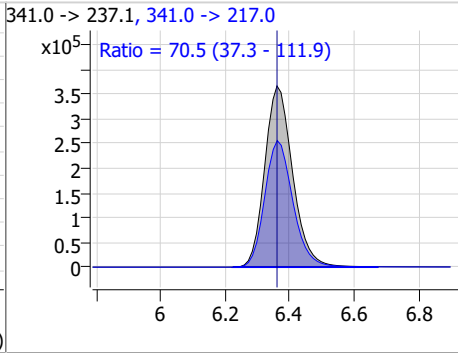
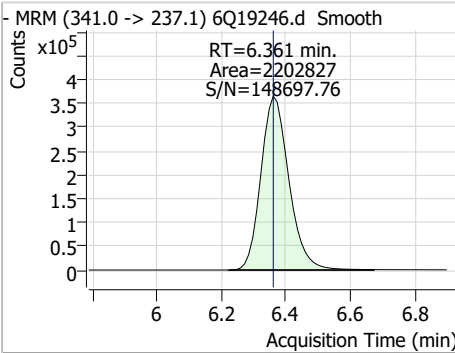
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	51.19	6.17	0.00	165410	284.9 -> 184.9	12.0	5.5	16.5



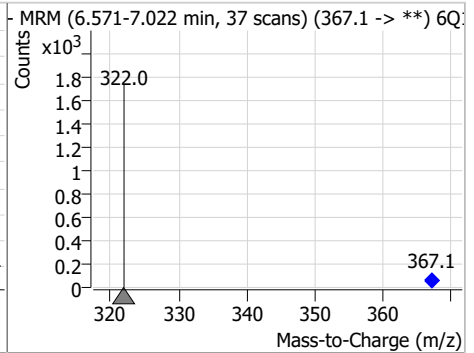
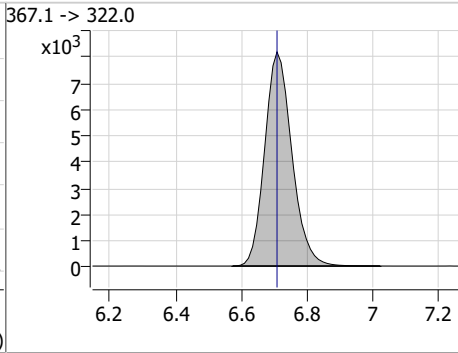
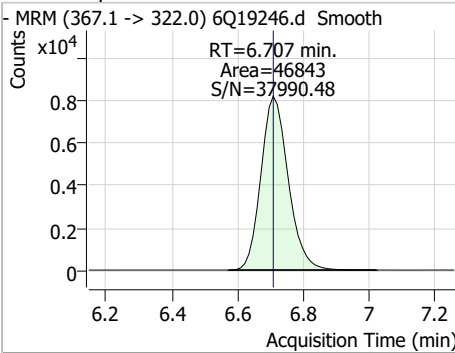
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	48.85	6.29	0.00	1144537	314.8 -> 82.9	3.6	1.7	5.1



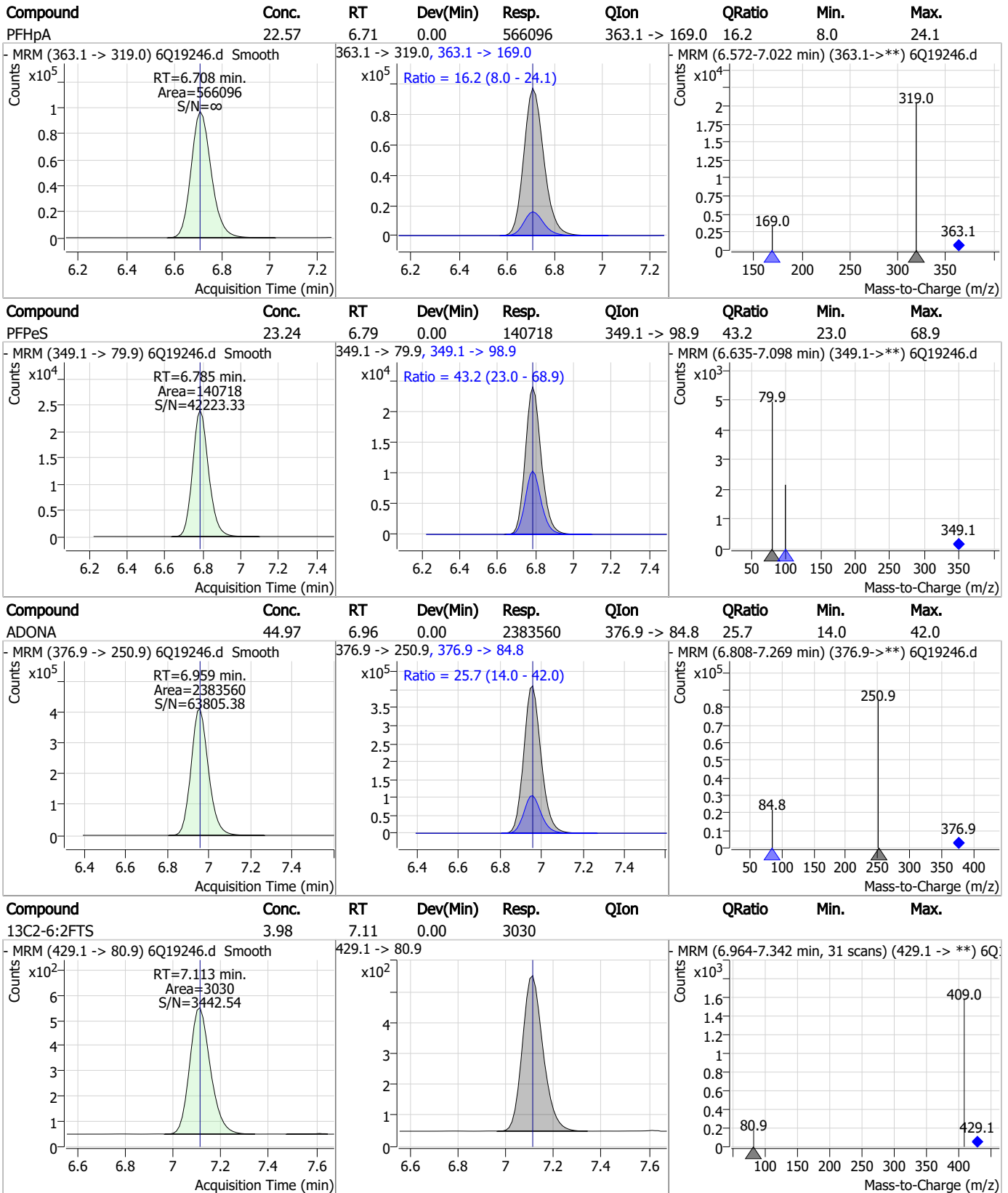
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	596.63	6.36	0.00	2202827	341.0 -> 217.0	70.5	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.71	0.00	46843	367.1 -> 322.0			

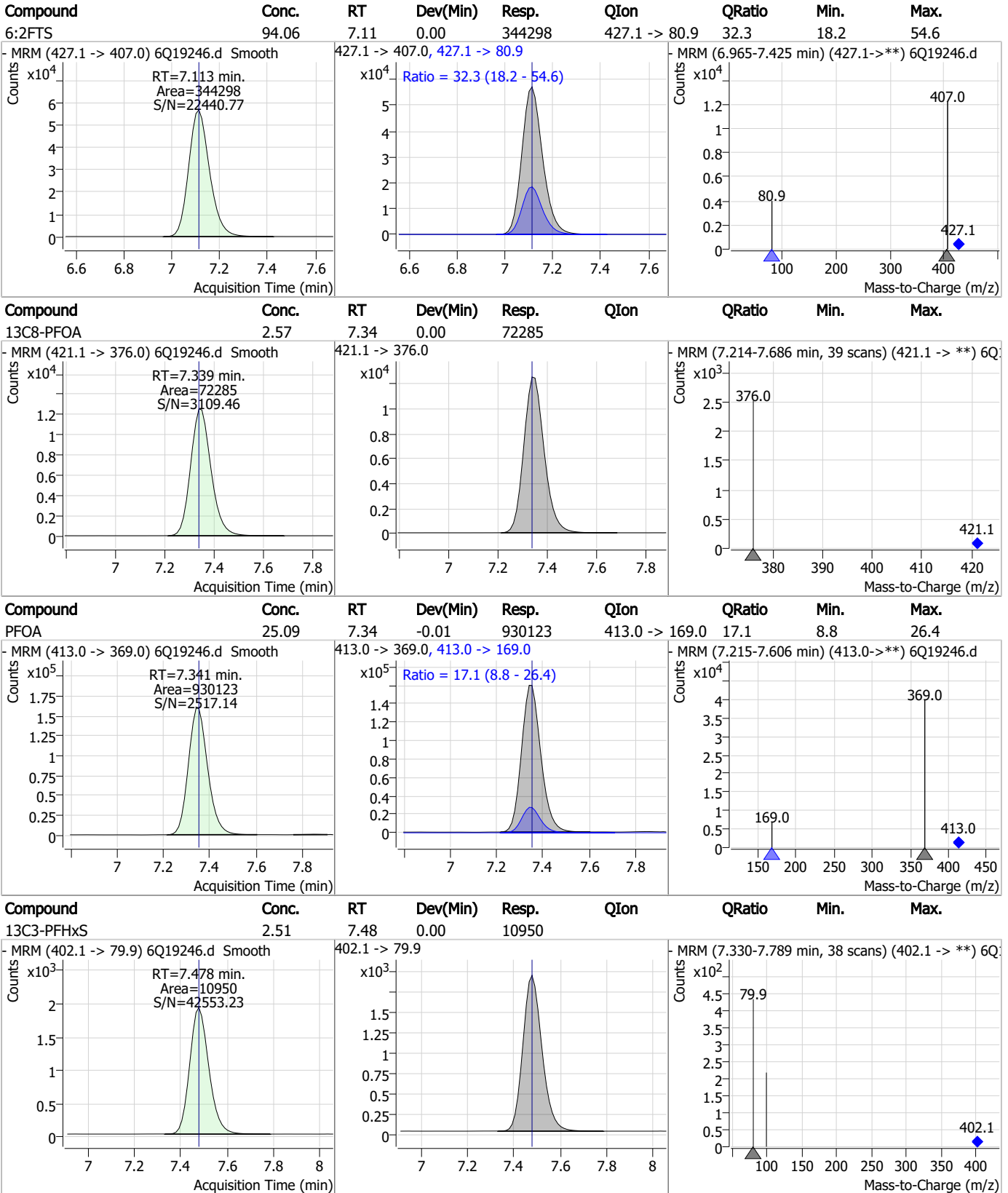


Perfluorinated Compounds by LC/MS/MS



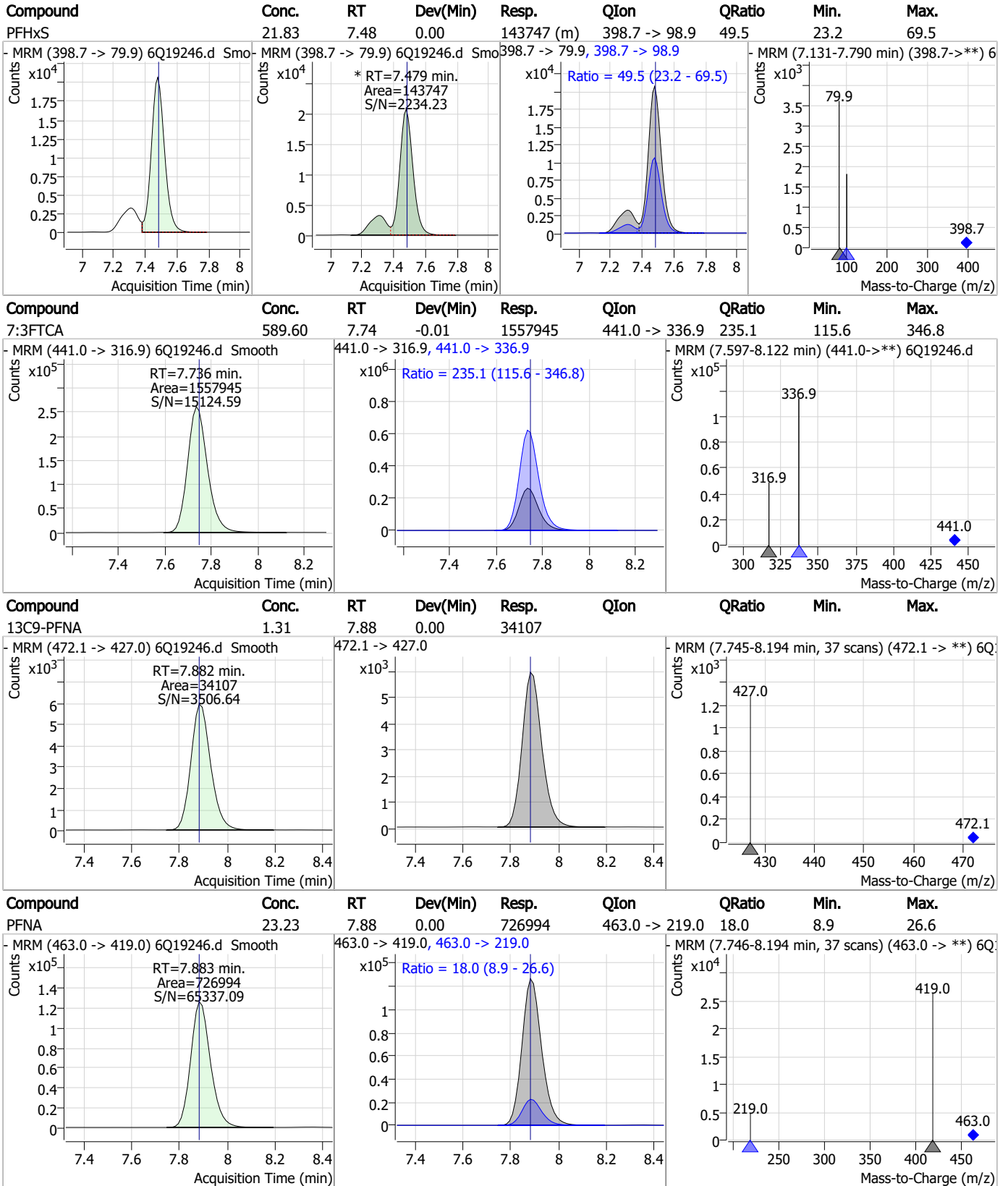
7.7.28 7

Perfluorinated Compounds by LC/MS/MS



7.7.28 7

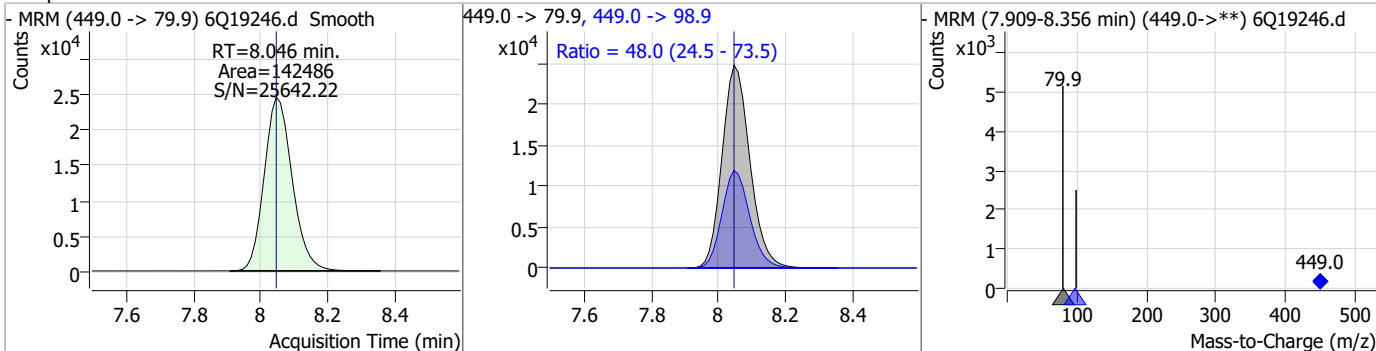
Perfluorinated Compounds by LC/MS/MS



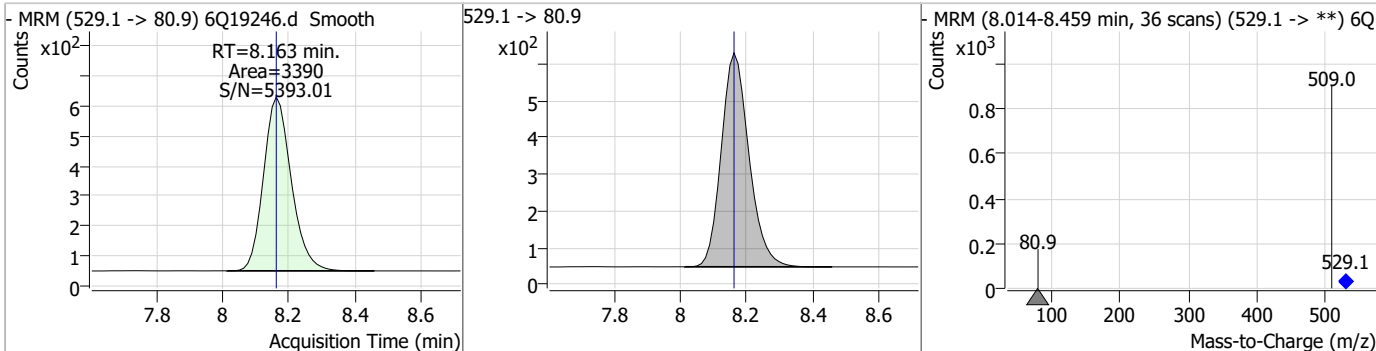
7.7.28
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Perfluorinated Compounds by LC/MS/MS

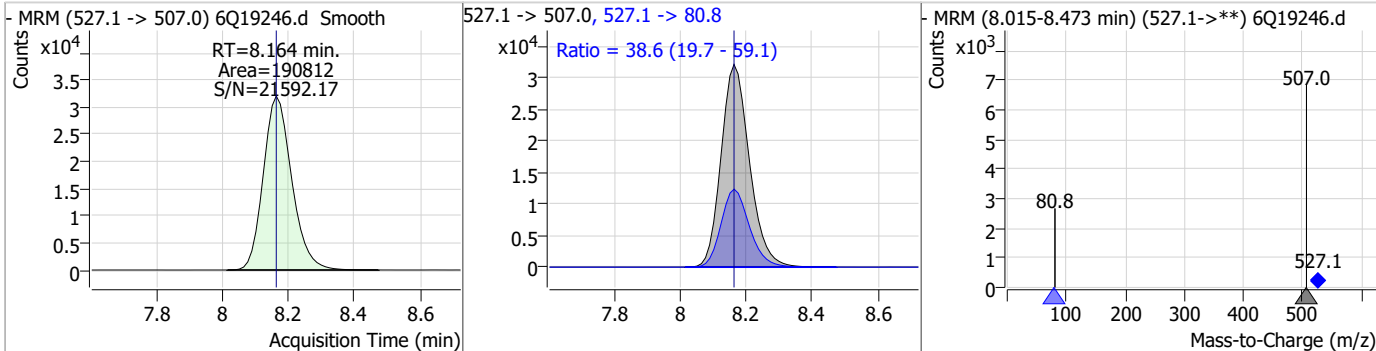
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.59	8.05	0.00	142486	449.0 -> 98.9	48.0	24.5	73.5



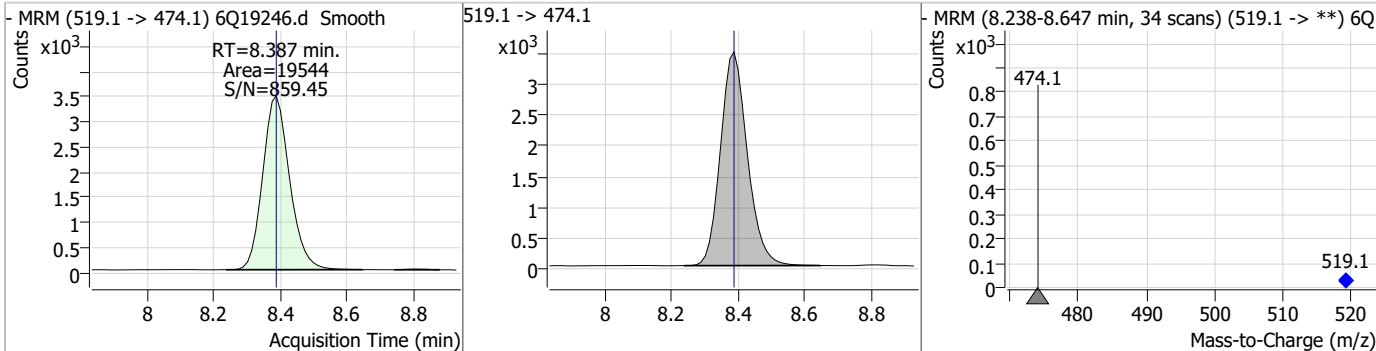
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.65	8.16	0.00	3390				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	84.63	8.16	0.00	190812	527.1 -> 80.8	38.6	19.7	59.1



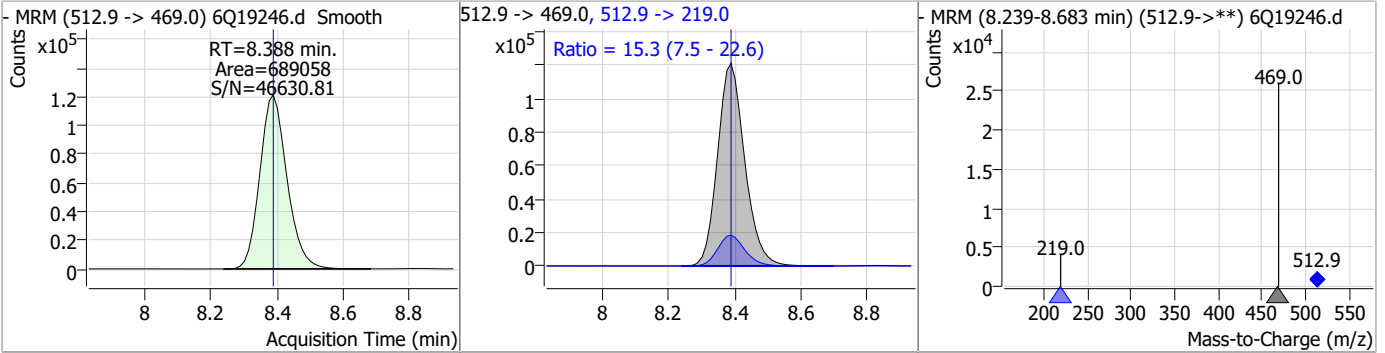
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.24	8.39	0.00	19544				



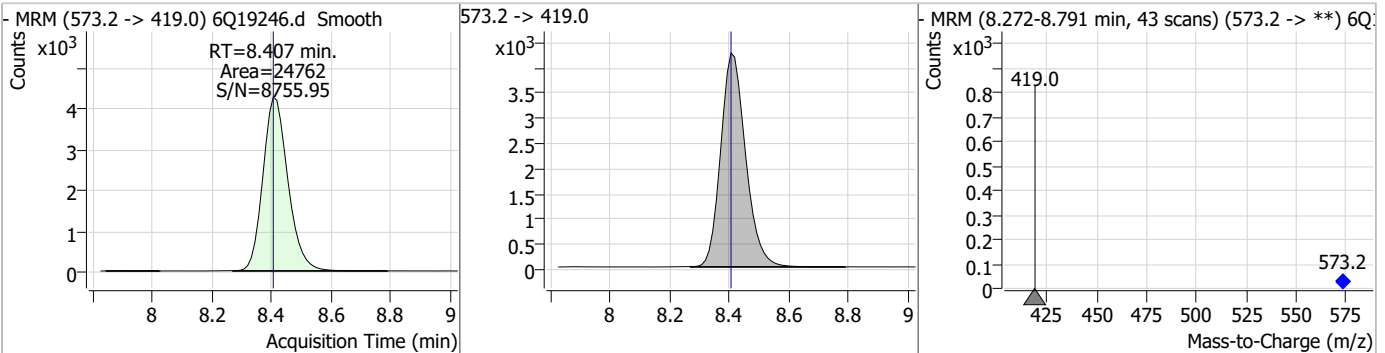
7.7.28
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Perfluorinated Compounds by LC/MS/MS

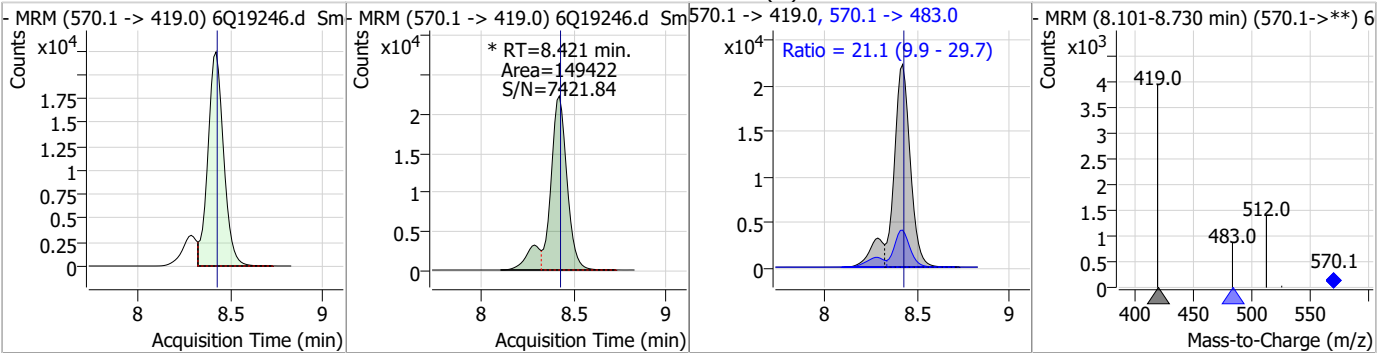
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	23.58	8.39	0.00	689058	512.9 -> 219.0	15.3	7.5	22.6



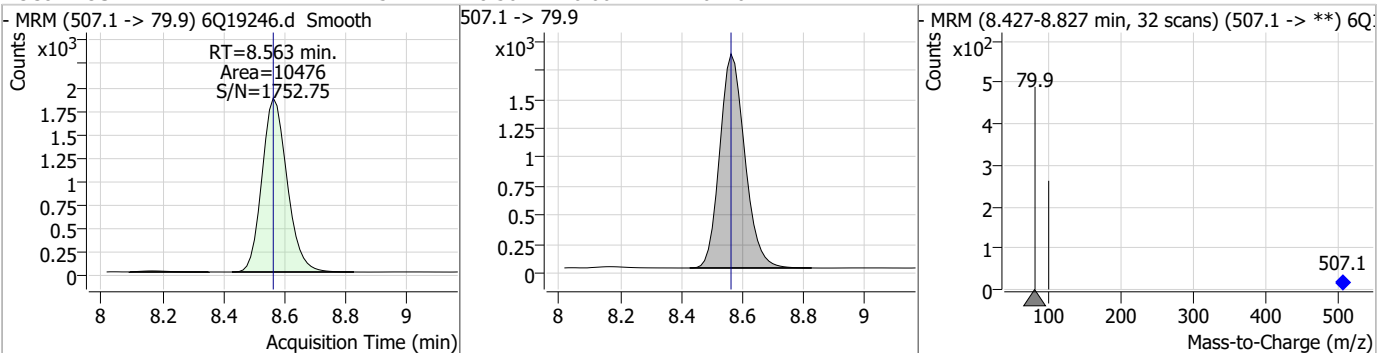
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.68	8.41	0.00	24762				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.82	8.42	0.00	149422 (m)	570.1 -> 483.0	21.1	9.9	29.7

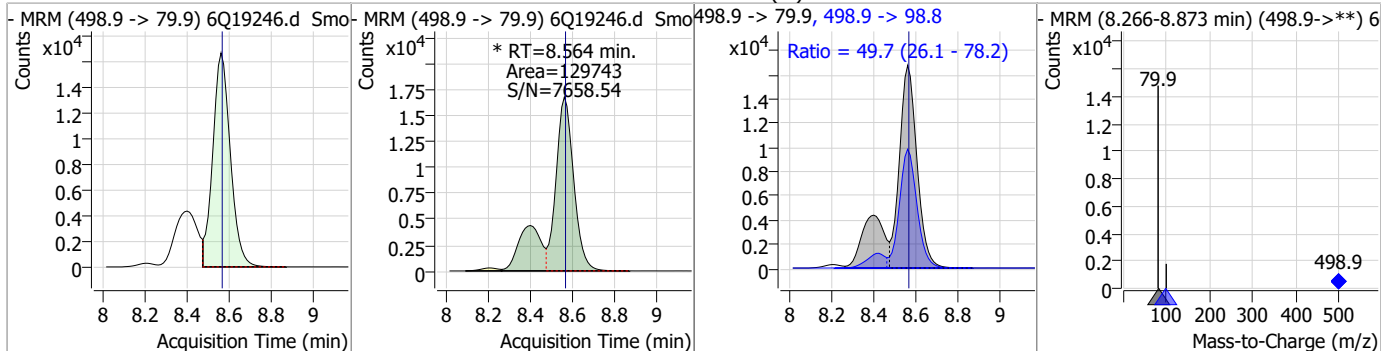


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.54	8.56	0.00	10476				

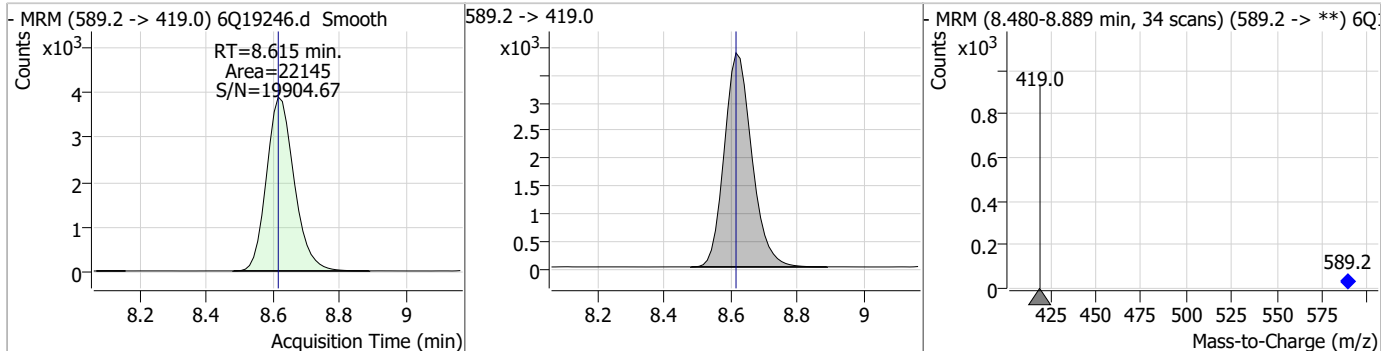


Perfluorinated Compounds by LC/MS/MS

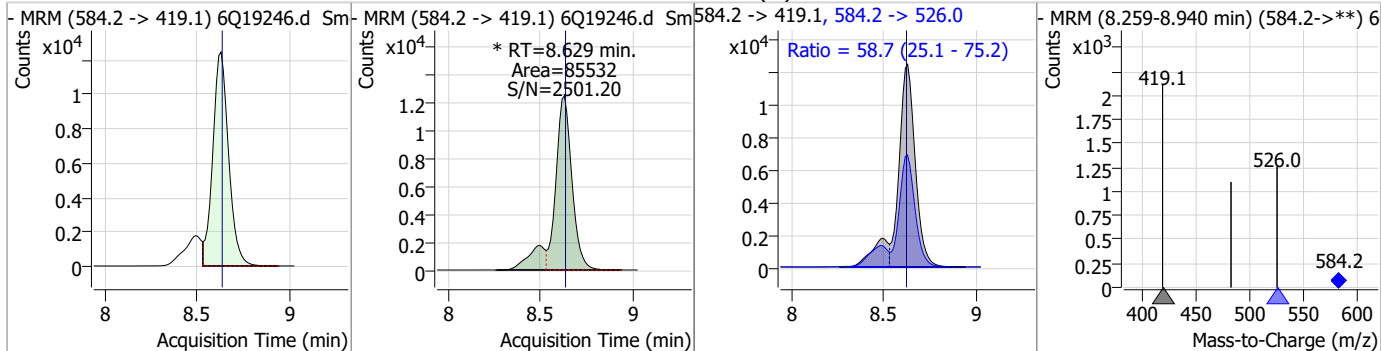
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.02	8.56	0.00	129743 (m)	498.9 -> 98.8	49.7	26.1	78.2



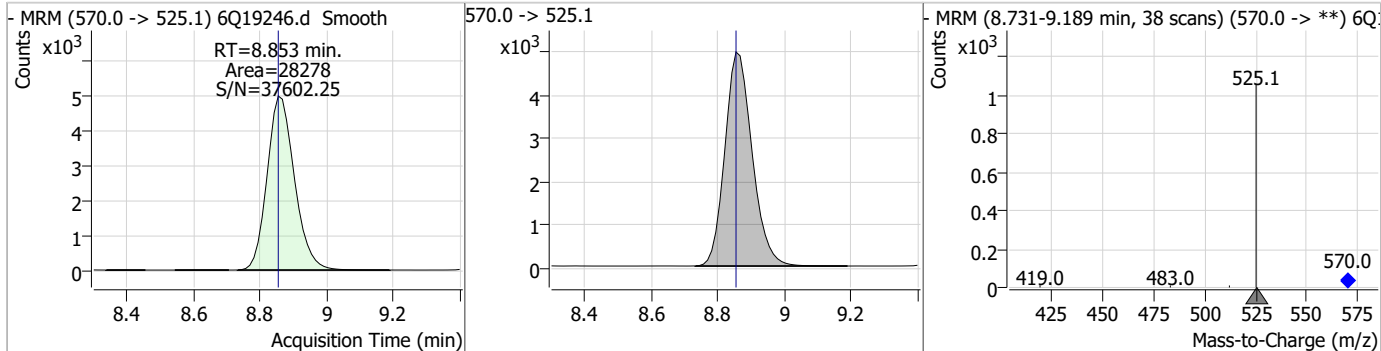
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.96	8.62	0.00	22145				



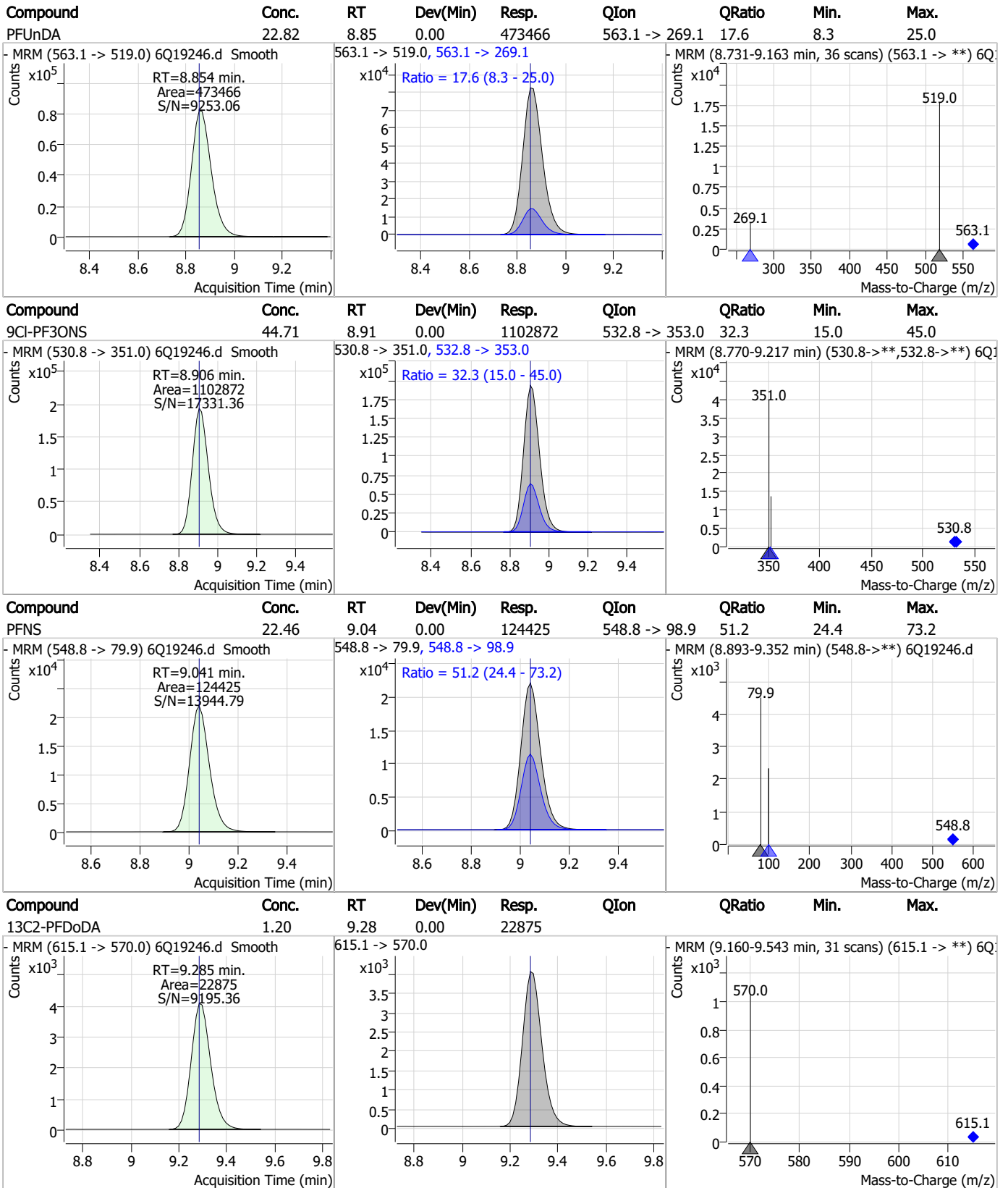
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.26	8.63	0.00	85532 (m)	584.2 -> 526.0	58.7	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.85	0.00	28278				



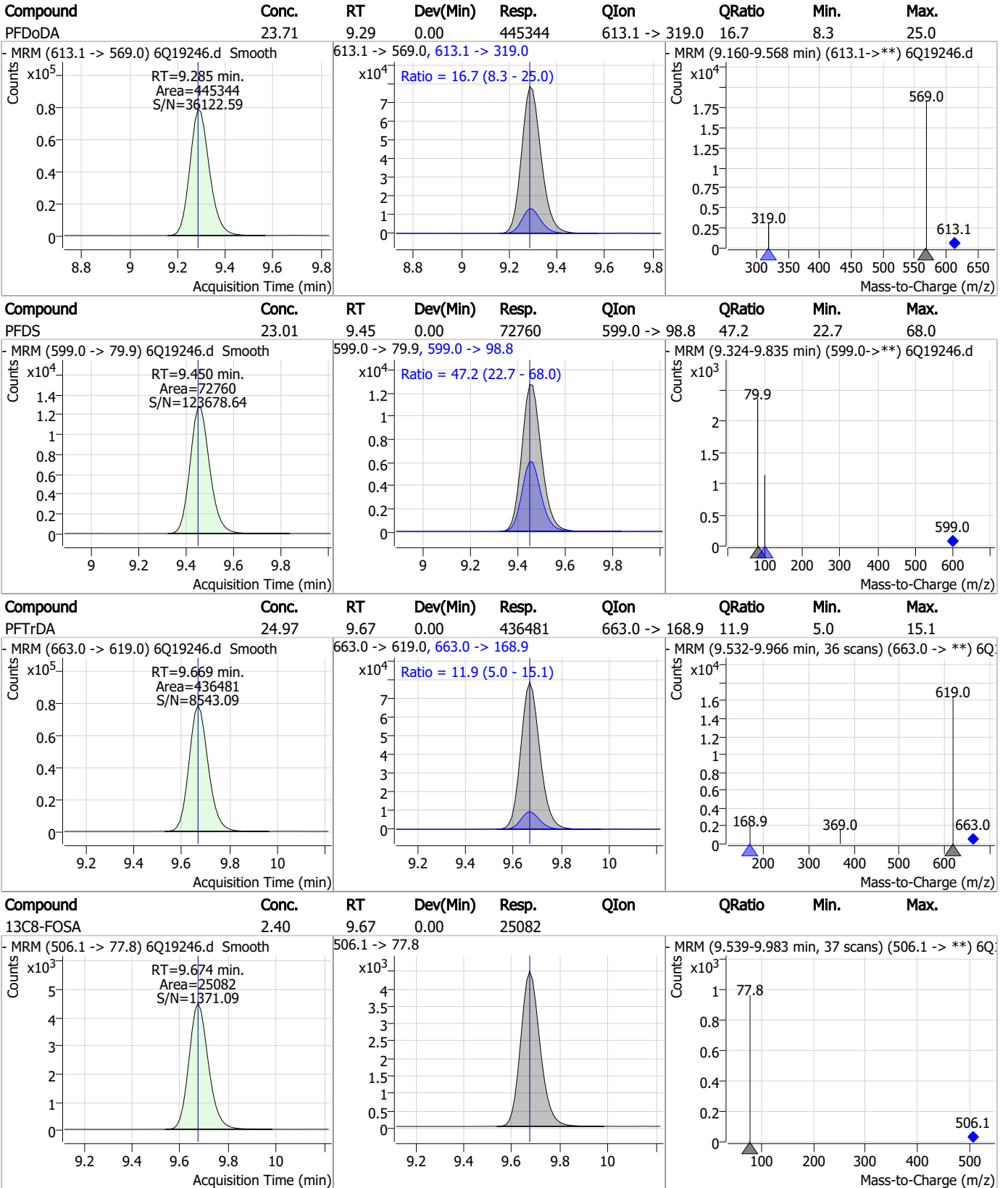
Perfluorinated Compounds by LC/MS/MS



7.7.28
7



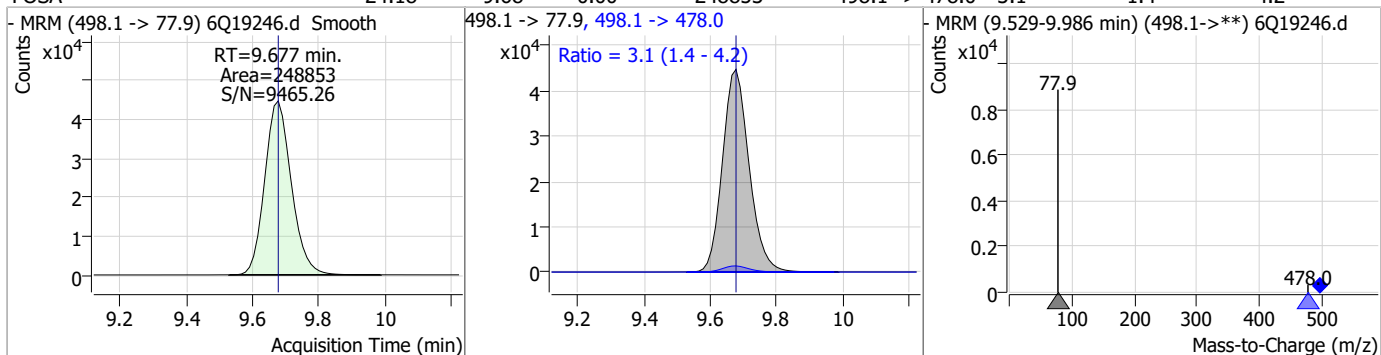
Perfluorinated Compounds by LC/MS/MS



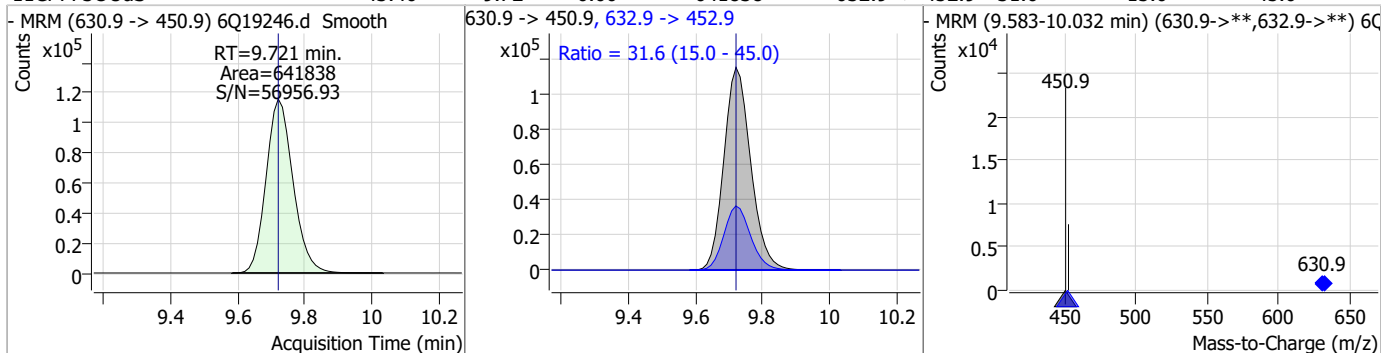
7.7.28 7

Perfluorinated Compounds by LC/MS/MS

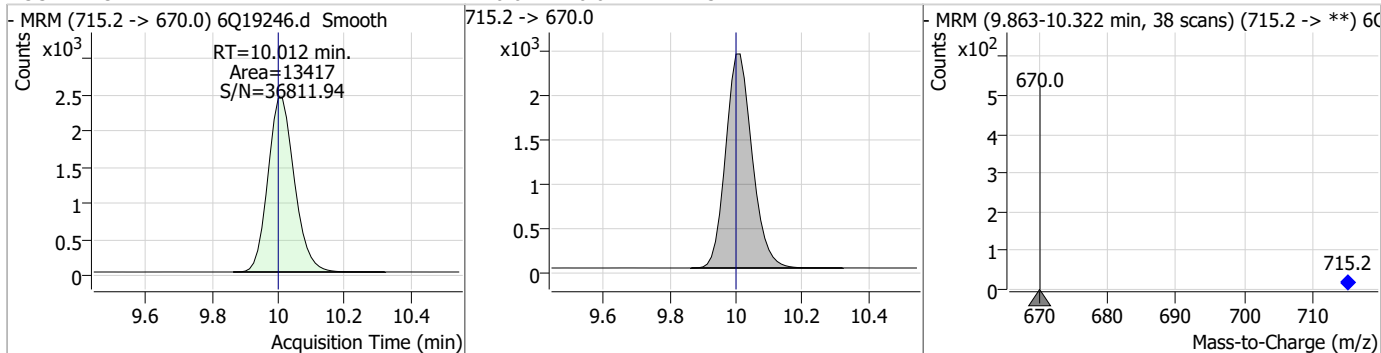
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	24.18	9.68	0.00	248853	498.1 -> 478.0	3.1	1.4	4.2



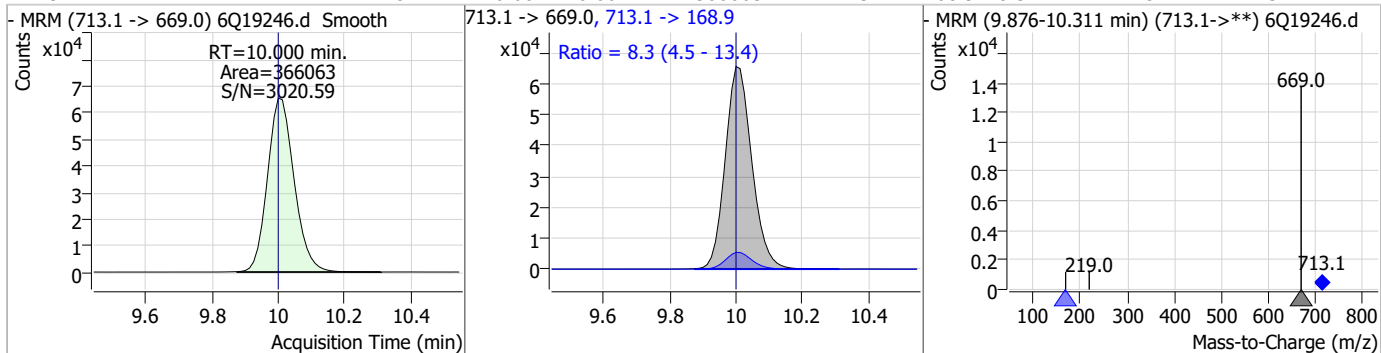
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	43.46	9.72	0.00	641838	632.9 -> 452.9	31.6	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	10.01	0.01	13417	715.2 -> 670.0			

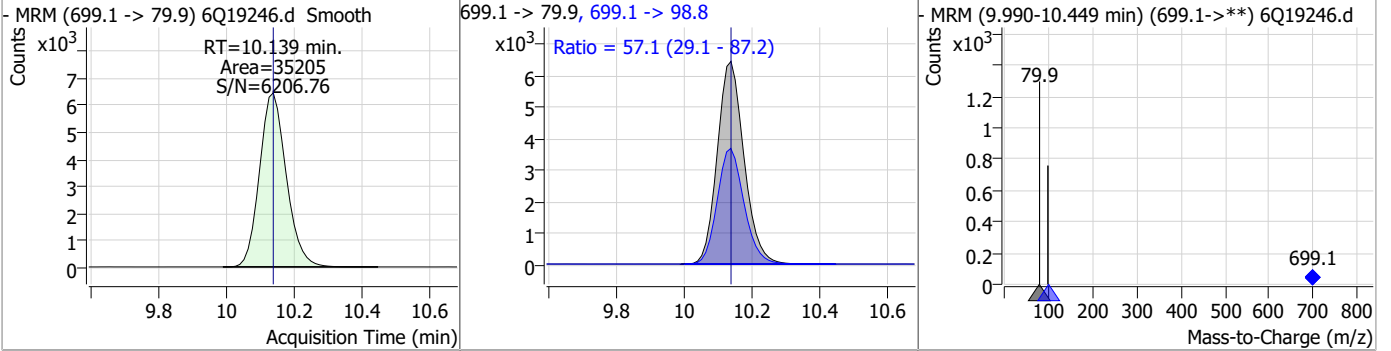


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.82	10.00	0.00	366063	713.1 -> 168.9	8.3	4.5	13.4

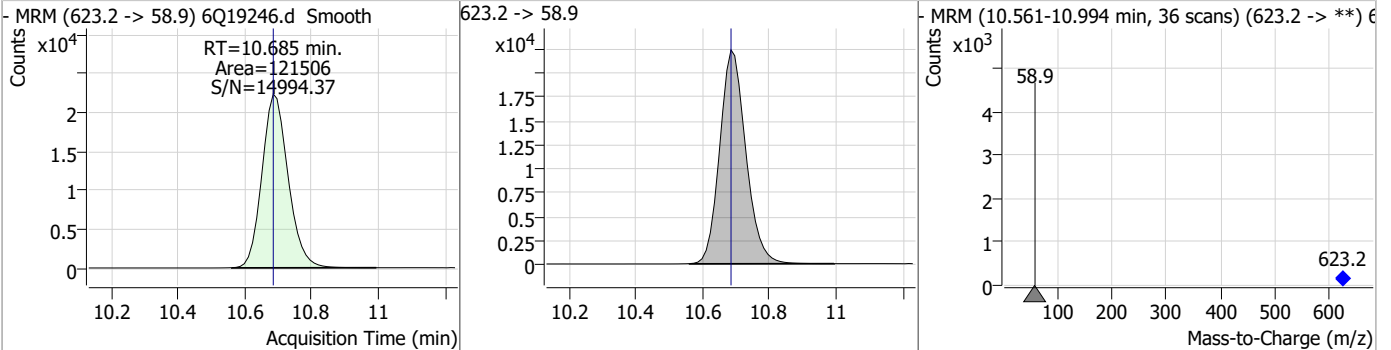


Perfluorinated Compounds by LC/MS/MS

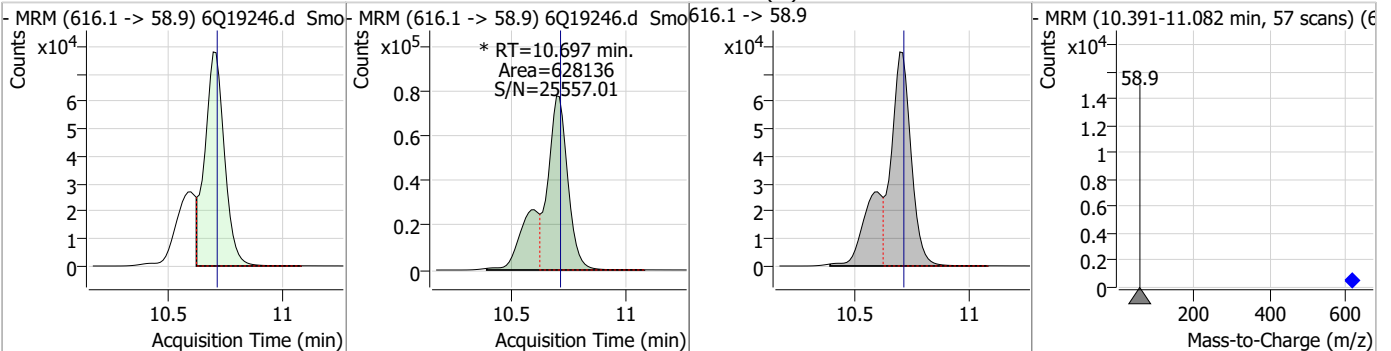
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	22.37	10.14	0.00	35205	699.1 -> 98.8	57.1	29.1	87.2



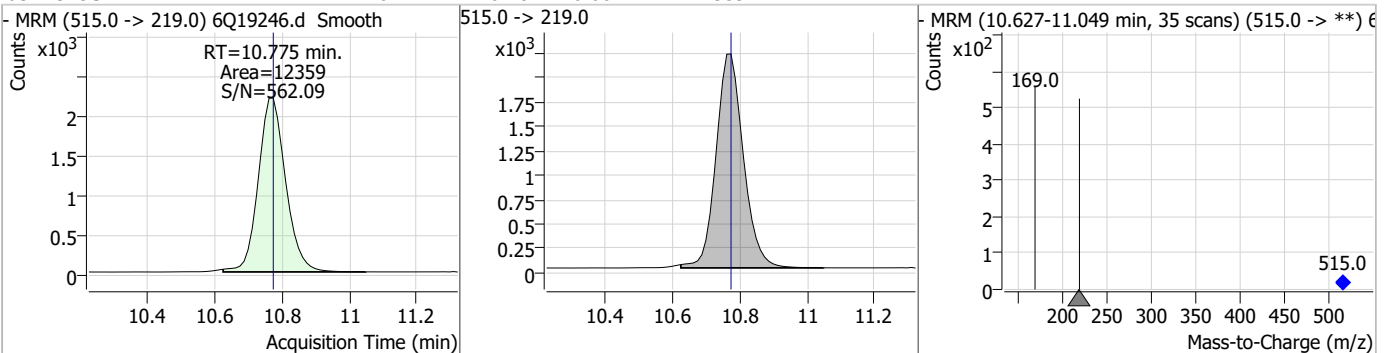
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.47	10.68	0.00	121506				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	118.11	10.70	-0.01	628136 (m)				

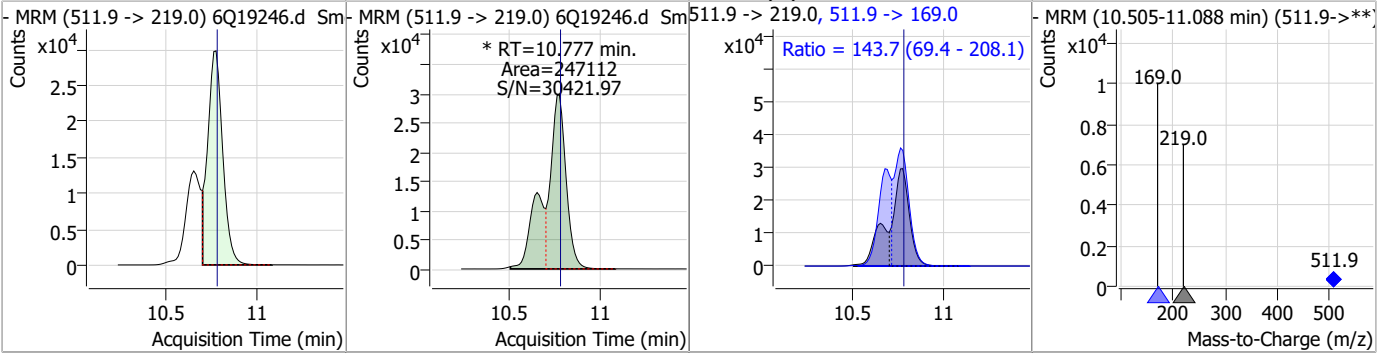


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.64	10.78	0.00	12359				

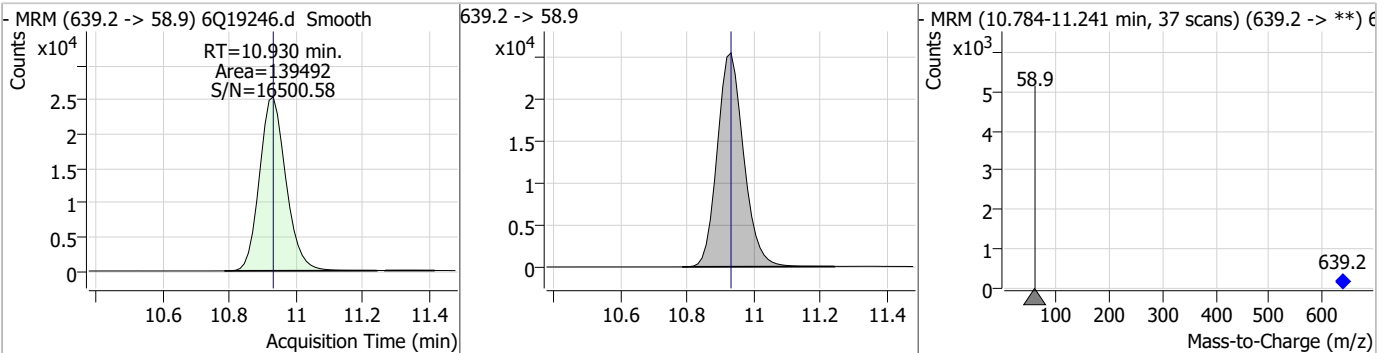


Perfluorinated Compounds by LC/MS/MS

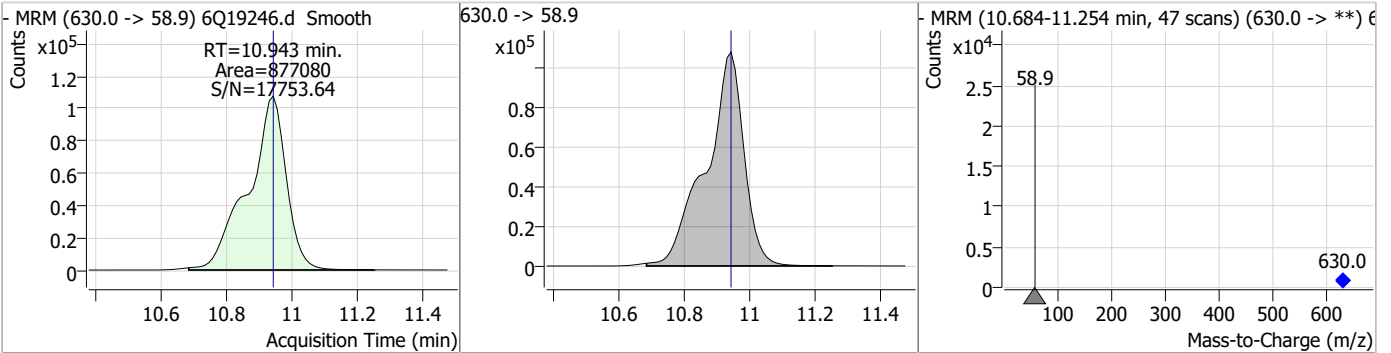
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	45.61	10.78	0.00	247112 (m)	511.9 -> 169.0	143.7	69.4	208.1



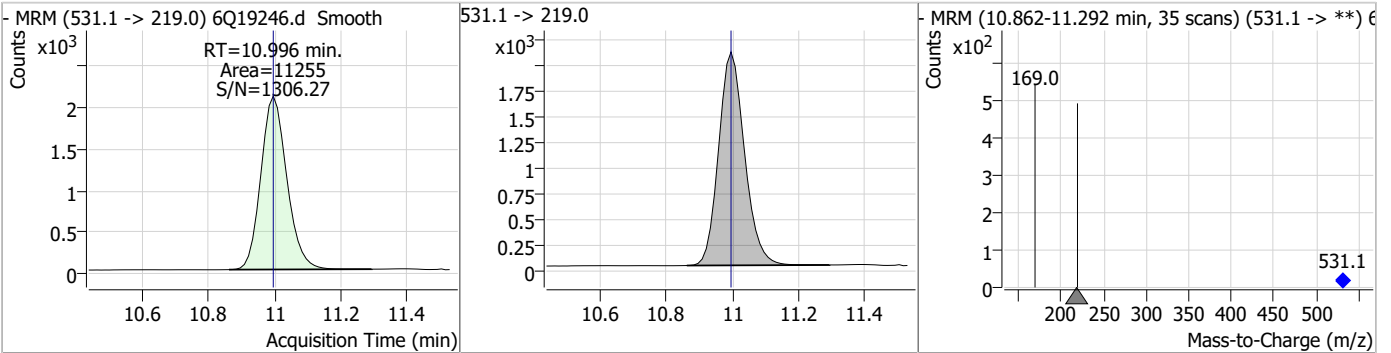
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.58	10.93	0.00	139492				



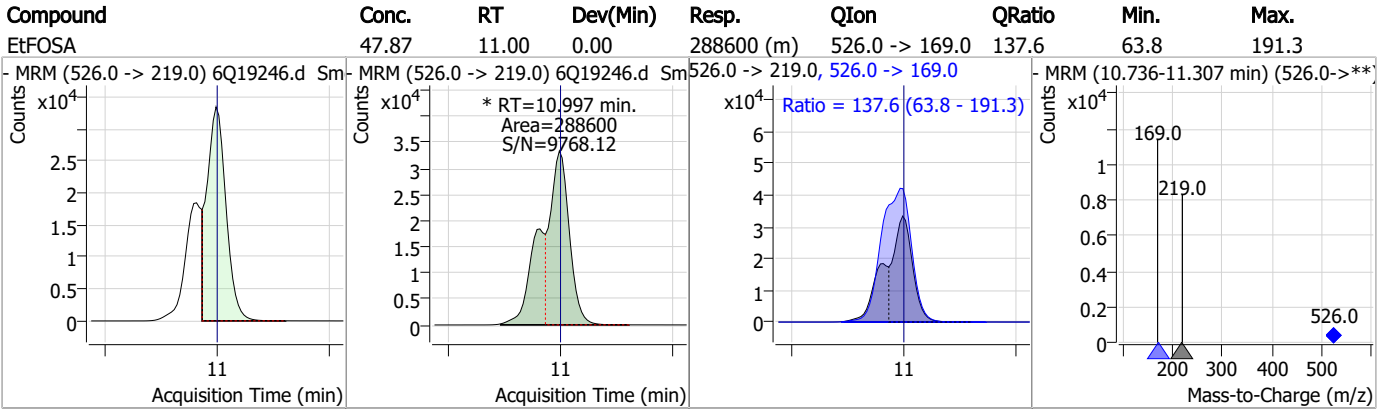
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	119.08	10.94	0.00	877080				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.48	11.00	0.00	11255				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287
Lab FileID: 6Q19246.D
Injection Time: 06/12/23 17:12

Method: EPA DRAFT 1633
Analyst approved: 06/13/23 11:17 Martha Valls
Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.78	Split peak
EtFOSA	4151-50-2		11.00	Split peak

7.7.28.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19247.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 5:26:22 PM
 Sample Name : ic287-8
 Vial : P1-A9
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	107551	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	38053	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	45239	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	42014	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	66044	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	30093	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	15930	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	22156	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	21945	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	12527	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	23436	2.50 µg/L	0.000
M3-PFBS	5.733	302.1 -> 79.9	16037	2.50 µg/L	-0.013
M3-PFHxS	7.478	402.1 -> 79.9	10477	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	9139	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	1652	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	2652	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	2789	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	21865	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	30703	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	19227	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	99154	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	119991	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	10264	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11385	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	13163	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	45777	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8032	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	69644	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	25655	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	39897	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	40425	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	1652	3.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 66.8%		
13C2-6:2FTS	7.113	429.1 -> 80.9	2652	3.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 71.4%		
13C2-8:2FTS	8.163	529.1 -> 80.9	2789	3.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 78.3%		
13C2-PFDoDA	9.285	615.1 -> 570.0	21945	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-PFTeDA	10.012	715.2 -> 670.0	12527	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-PFBS	5.733	302.1 -> 79.9	16037	2.36 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	10477	2.46 µg/L	0.000

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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	3.085	216.8 -> 171.9	107551	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.707	367.1 -> 322.0	42014	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.792	318.0 -> 273.0	45239	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFPeA	4.548	268.3 -> 223.0	38053	4.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C6-PFDA	8.387	519.1 -> 474.1	15930	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.0%	
13C7-PFUnDA	8.853	570.0 -> 525.1	22156	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.8%	
13C8-FOSA	9.674	506.1 -> 77.8	23436	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOA	7.339	421.1 -> 376.0	66044	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOS	8.563	507.1 -> 79.9	9139	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C9-PFNA	7.882	472.1 -> 427.0	30093	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSAA	8.407	573.2 -> 419.0	21865	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	30703	11.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
d3-MeFOSA	10.775	515.0 -> 219.0	11385	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
d5-EtFOSAA	8.615	589.2 -> 419.0	19227	4.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
d7-MeFOSE	10.685	623.2 -> 58.9	99154	20.52 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.1%	
d9-EtFOSE	10.930	639.2 -> 58.9	119991	19.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.5%	
d5-EtFOSA	10.996	531.1 -> 219.0	10264	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0 327.1 -> 80.9	647063 234404	226.04 µg/L	98
6:2FTS	7.101	427.1 -> 407.0 427.1 -> 80.9	658139 209635	205.42 µg/L	92
8:2FTS	8.164	527.1 -> 507.0 527.1 -> 80.8	344571 142602	185.74 µg/L	97
EtFOSAA	8.629	584.2 -> 419.1 584.2 -> 526.0	203609 107554	63.78 µg/L	m 96
FOSA	9.677	498.1 -> 77.9 498.1 -> 478.0	555895 16541	57.80 µg/L	99
MeFOSAA	8.421	570.1 -> 419.0 570.1 -> 483.0	306876 71429	57.72 µg/L	m 92
PFBA	3.081	212.8 -> 168.9	1053218	245.59 µg/L	100
PFBS	5.734	298.7 -> 79.9 298.7 -> 98.8	385200 145014	54.76 µg/L	95
PFDA	8.388	512.9 -> 469.0 512.9 -> 219.0	1604902 251022	67.39 µg/L	98
PFDoDA	9.285	613.1 -> 569.0 613.1 -> 319.0	1021611 162771	56.69 µg/L	98
PFDS	9.450	599.0 -> 79.9	163362	59.22 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	80001			
PFHpA	6.708	363.1 -> 319.0	1369330	60.86	µg/L	98
		363.1 -> 169.0	207411			
PFHpS	8.046	449.0 -> 79.9	332175	60.37	µg/L	98
		449.0 -> 98.9	168149			
PFHxA	5.795	313.0 -> 269.0	1117113	61.64	µg/L	99
		313.0 -> 118.9	54869			
PFHxS	7.479	398.7 -> 79.9	337846	53.62	µg/L	m 99
		398.7 -> 98.9	159554			
PFNA	7.883	463.0 -> 419.0	1616379	58.53	µg/L	98
		463.0 -> 219.0	300962			
PFNS	9.041	548.8 -> 79.9	291047	60.22	µg/L	100
		548.8 -> 98.9	142161			
PFOA	7.341	413.0 -> 369.0	2049298	60.50	µg/L	97
		413.0 -> 169.0	386105			
PFOS	8.564	498.9 -> 79.9	319827	59.40	µg/L	m 97
		498.9 -> 98.8	159927			
PFPeA	4.551	263.0 -> 219.0	1365326	121.93	µg/L	100
PFPeS	6.785	349.1 -> 79.9	319874	55.22	µg/L	97
		349.1 -> 98.9	140010			
PFTeDA	10.000	713.1 -> 669.0	840551	56.12	µg/L	100
		713.1 -> 168.9	74647			
PFTrDA	9.669	663.0 -> 619.0	926986	62.50	µg/L	96
		663.0 -> 168.9	105795			
PFUnDA	8.854	563.1 -> 519.0	1078807	66.36	µg/L	99
		563.1 -> 269.1	183876			
11Cl-PF3OUdS	9.721	630.9 -> 450.9	1367365	94.48	µg/L	93
		632.9 -> 452.9	463585			
9Cl-PF3ONS	8.906	530.8 -> 351.0	2502748	103.54	µg/L	98
		532.8 -> 353.0	778317			
ADONA	6.946	376.9 -> 250.9	5251694	101.11	µg/L	97
		376.9 -> 84.8	1386406			
HFPO-DA	6.169	284.9 -> 168.9	361156	124.44	µg/L	97
		284.9 -> 184.9	44156			
3:3FTCA	3.946	241.0 -> 177.0	251182	328.03	µg/L	99
		241.0 -> 117.0	32878			
5:3FTCA	6.361	341.0 -> 237.1	4949359	1408.16	µg/L	98
		341.0 -> 217.0	3615309			
7:3FTCA	7.736	441.0 -> 316.9	4080004	1621.97	µg/L	82
		441.0 -> 336.9	8234193			
EtFOSA	10.997	526.0 -> 219.0	673849	122.58	µg/L	98
		526.0 -> 169.0	840340			
EtFOSE	10.943	630.0 -> 58.9	1922391	303.43	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	562499	112.71	µg/L	m 94
		511.9 -> 169.0	824039			
MeFOSE	10.709	616.1 -> 58.9	1356843	312.64	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	78822	57.41	µg/L	95
		699.1 -> 98.8	42851			
NFDHA	5.673	295.0 -> 201.0	258383	112.63	µg/L	95
		295.0 -> 84.9	68409			
PFMBA	4.975	279.0 -> 85.1	1008690	125.57	µg/L	100
PFMPA	3.667	229.0 -> 84.9	773929	124.00	µg/L	100
PFEESA	6.288	314.8 -> 134.9	2439974	109.40	µg/L	99
		314.8 -> 82.9	90764			

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

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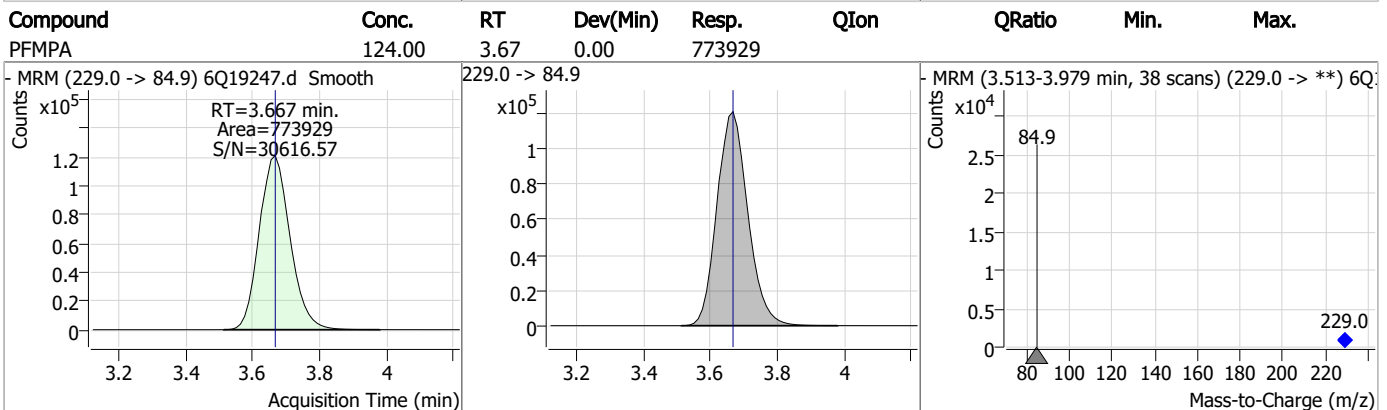
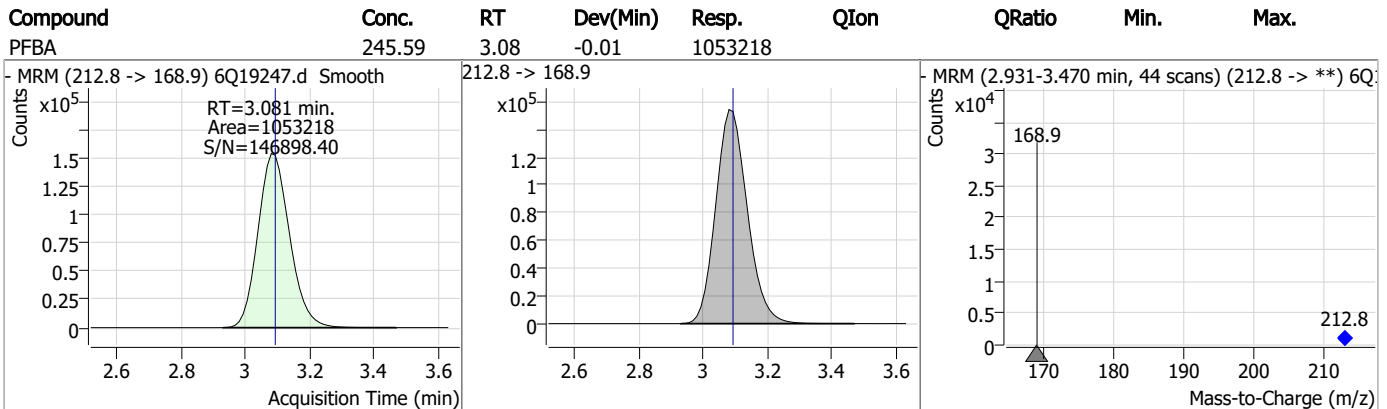
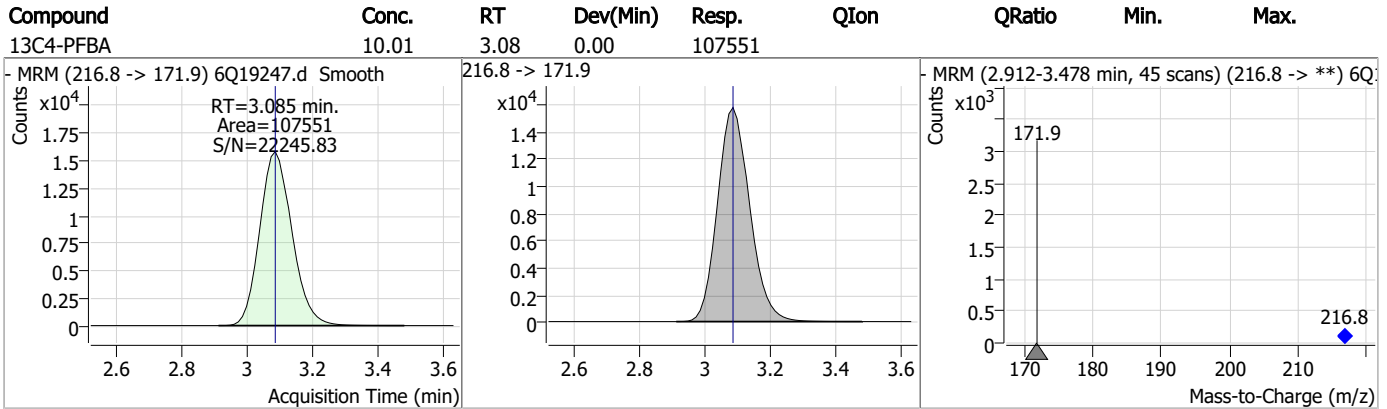
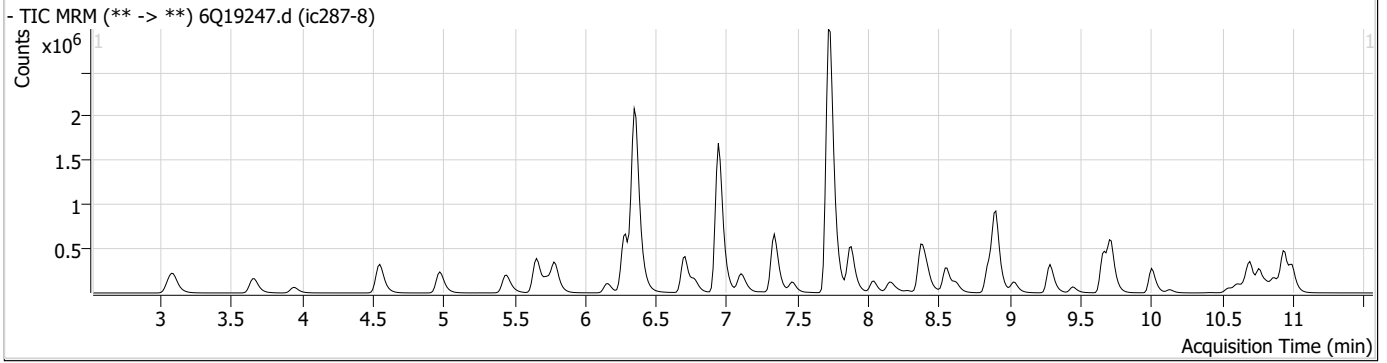
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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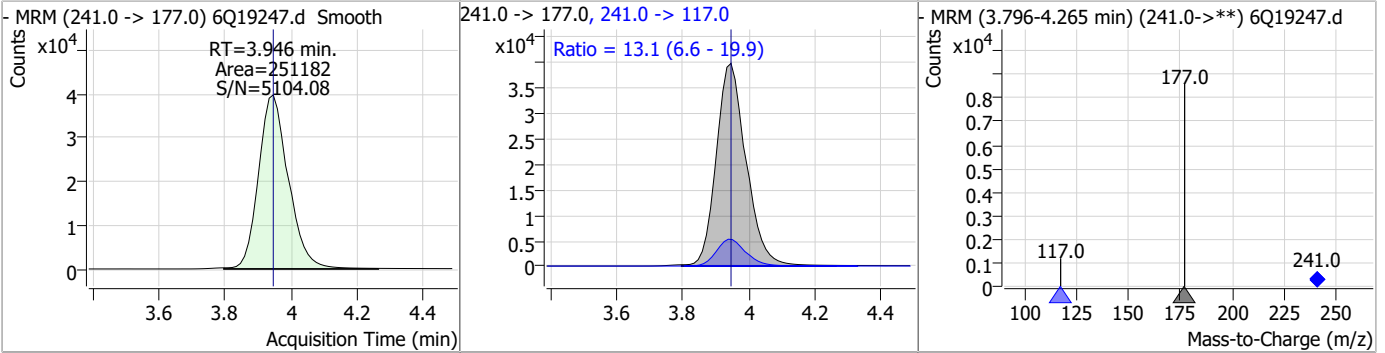
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Perfluorinated Compounds by LC/MS/MS

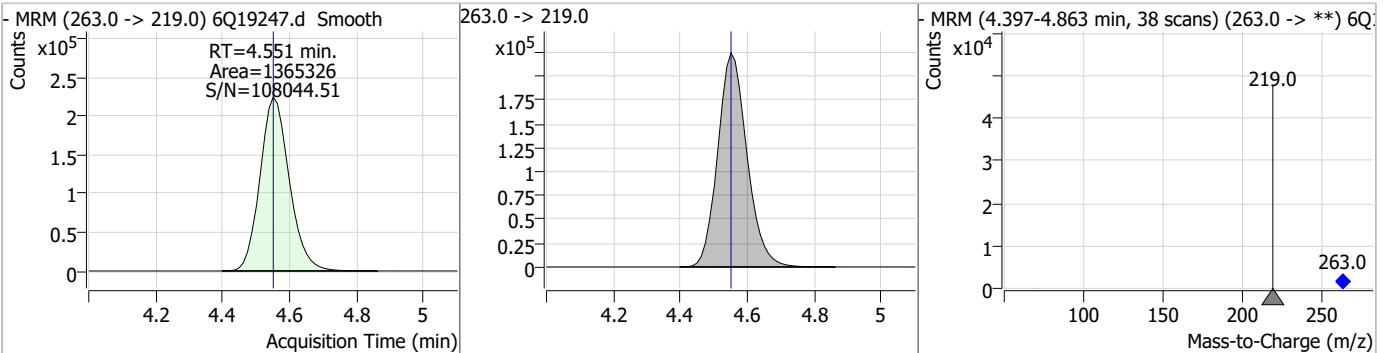


Perfluorinated Compounds by LC/MS/MS

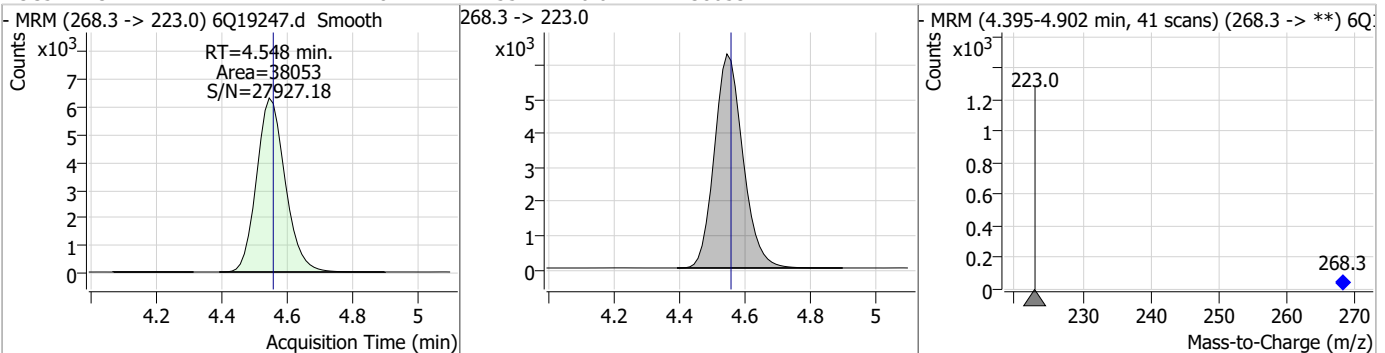
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	328.03	3.95	0.00	251182	241.0 -> 117.0	13.1	6.6	19.9



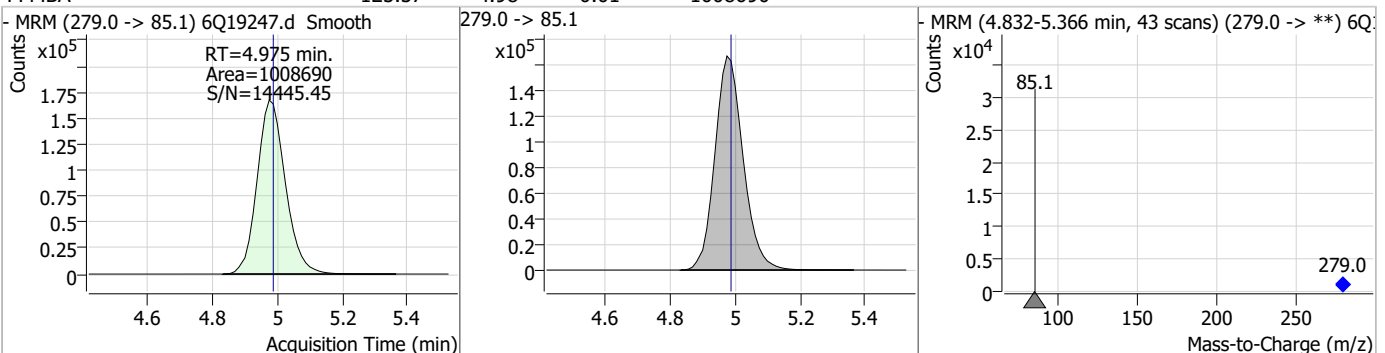
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	121.93	4.55	0.00	1365326				



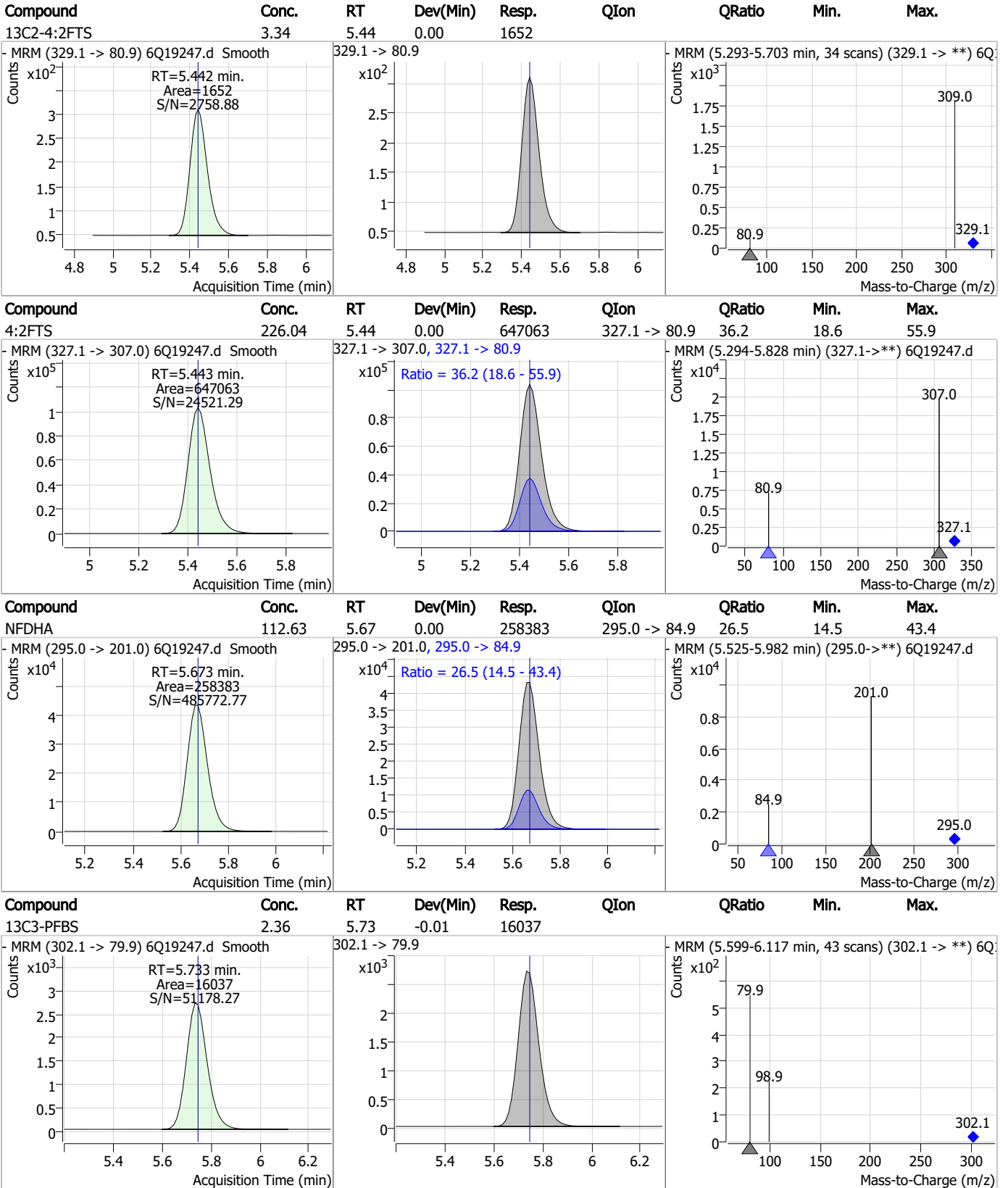
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.87	4.55	-0.01	38053				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	125.57	4.98	-0.01	1008690				

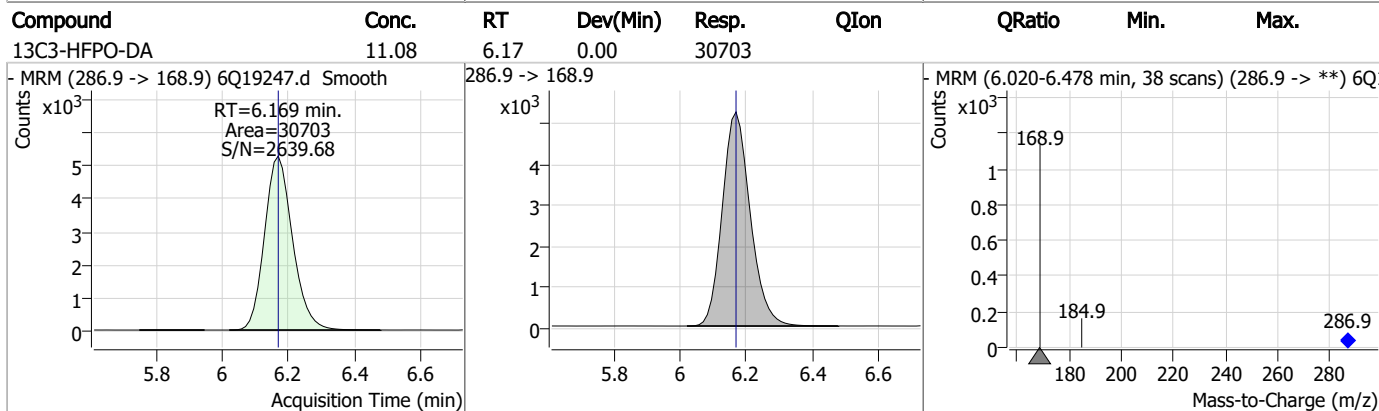
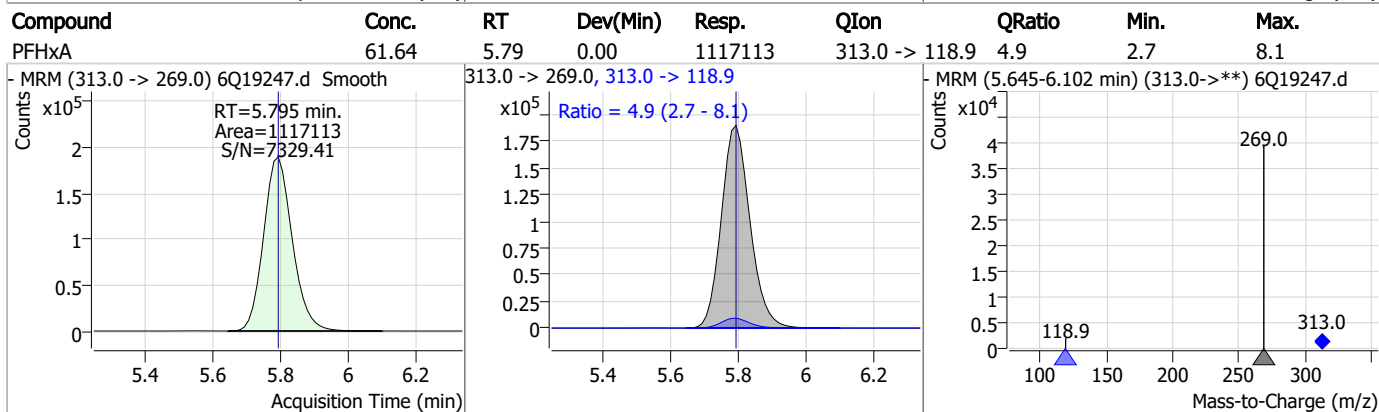
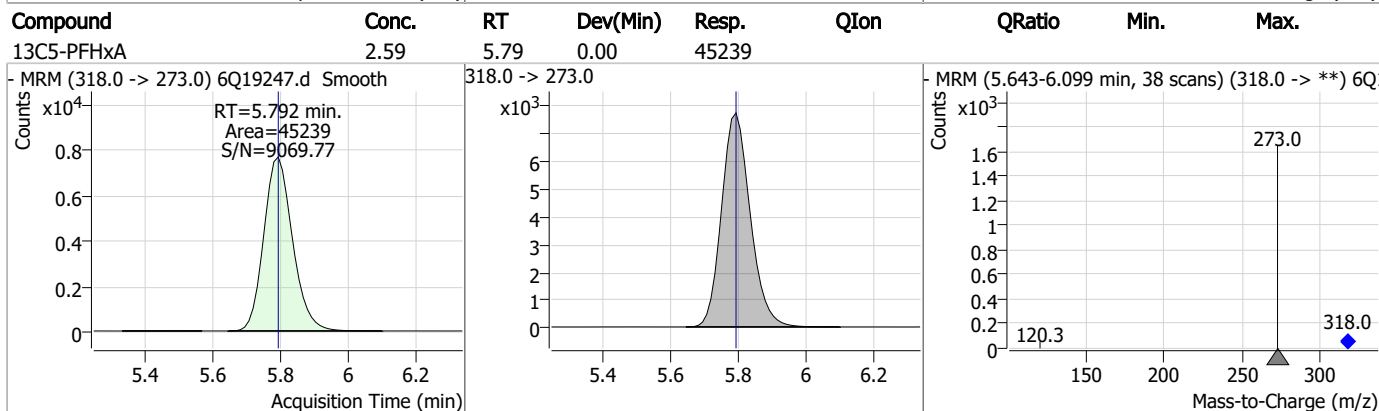
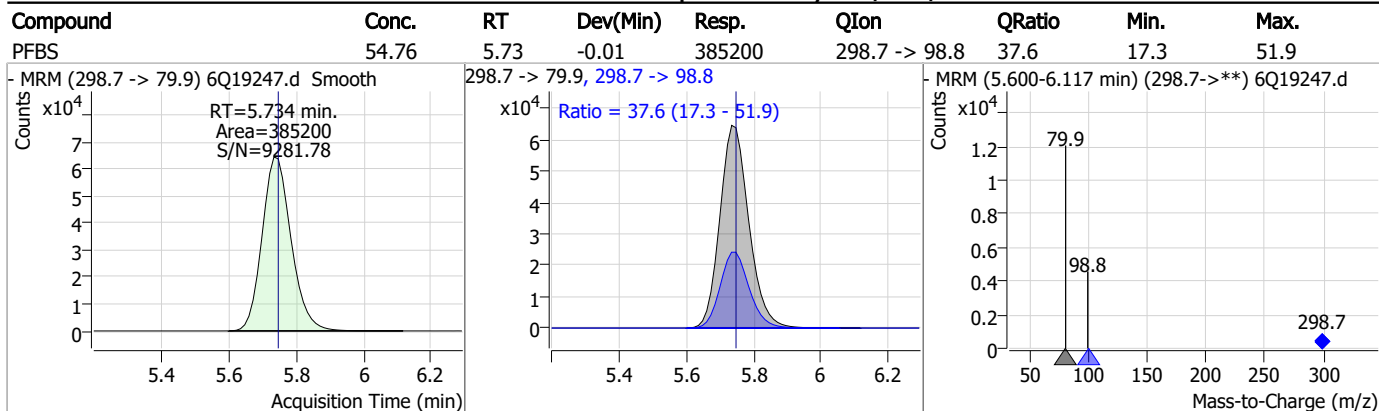


Perfluorinated Compounds by LC/MS/MS



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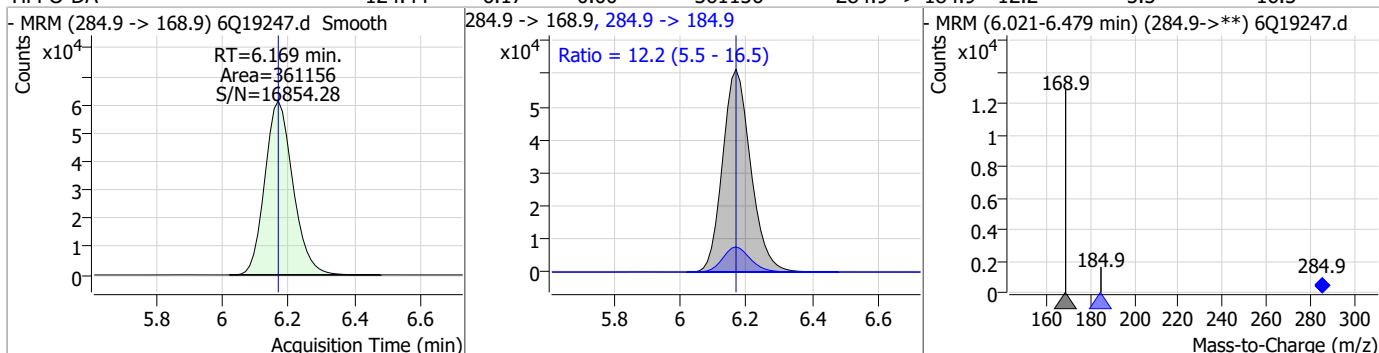
Perfluorinated Compounds by LC/MS/MS



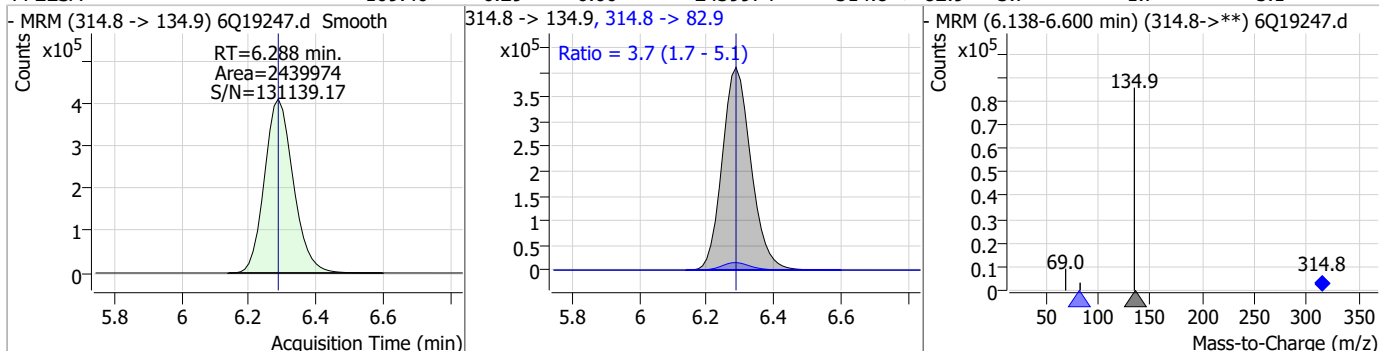
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Perfluorinated Compounds by LC/MS/MS

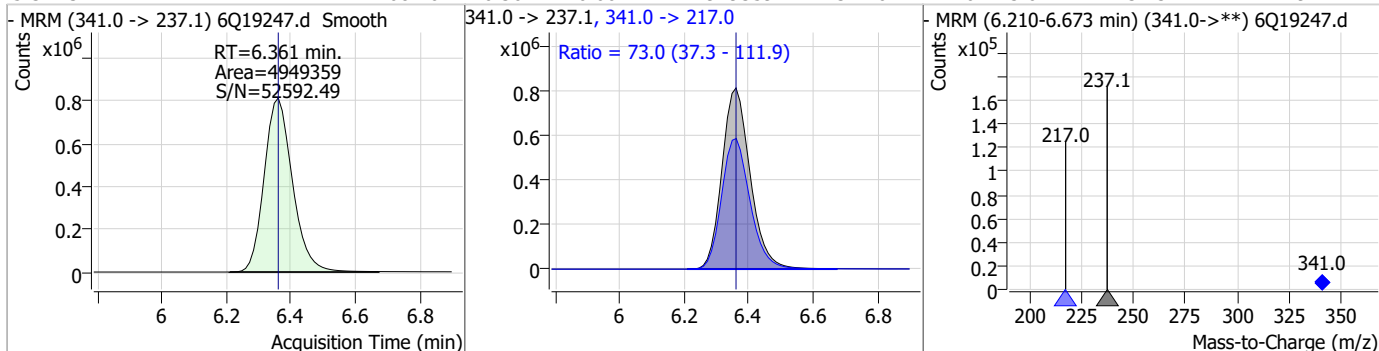
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	124.44	6.17	0.00	361156	284.9 -> 184.9	12.2	5.5	16.5



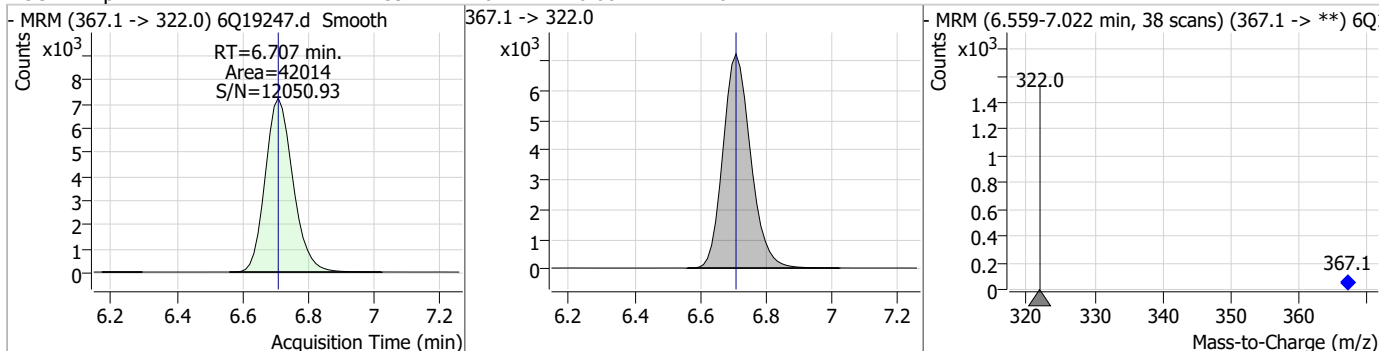
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	109.40	6.29	0.00	2439974	314.8 -> 82.9	3.7	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1408.16	6.36	0.00	4949359	341.0 -> 217.0	73.0	37.3	111.9

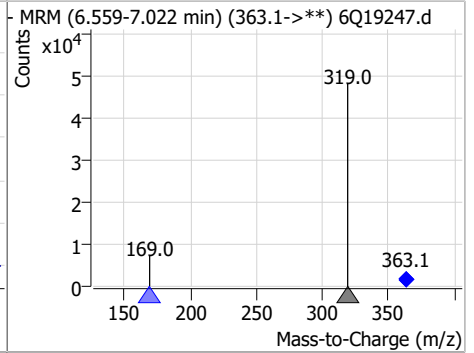
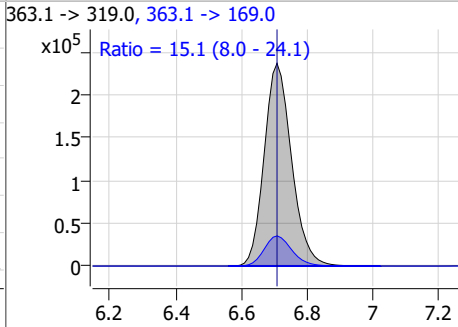
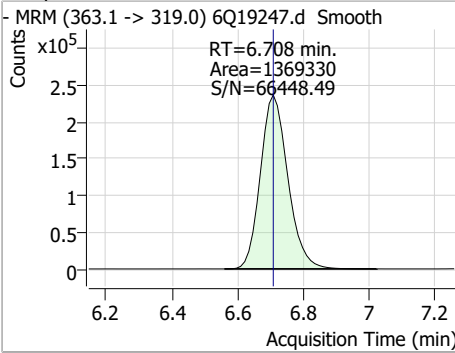


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.71	0.00	42014	367.1 -> 322.0			

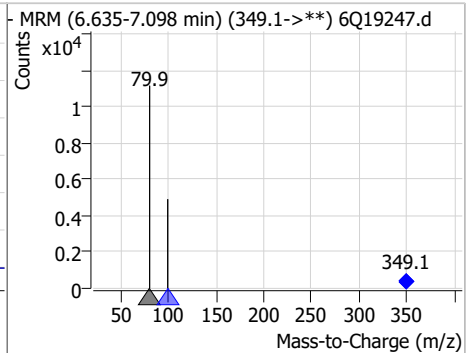
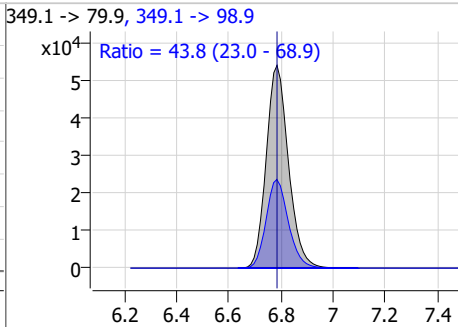
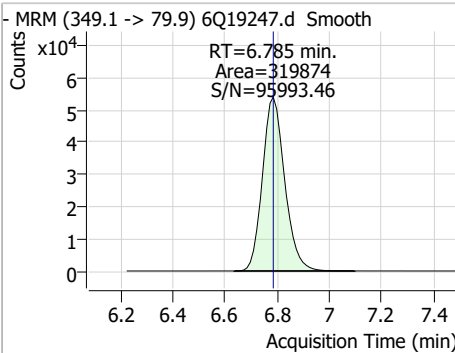


Perfluorinated Compounds by LC/MS/MS

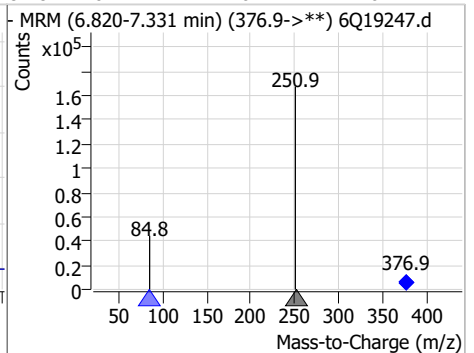
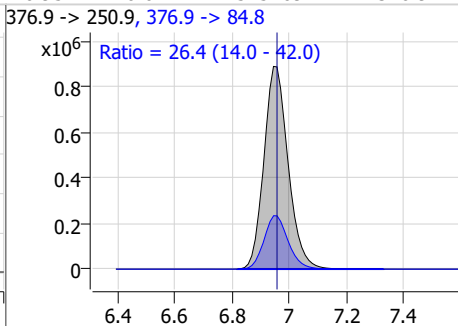
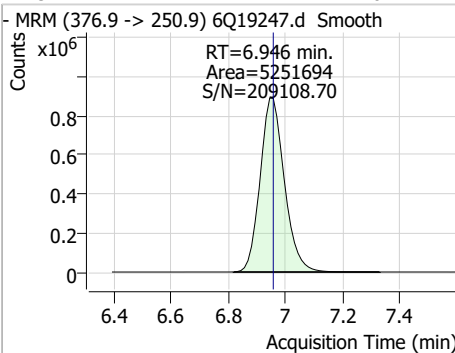
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	60.86	6.71	0.00	1369330	363.1 -> 169.0	15.1	8.0	24.1



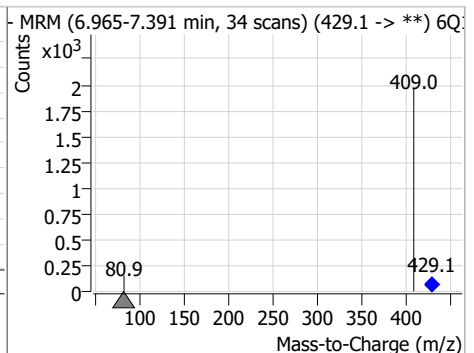
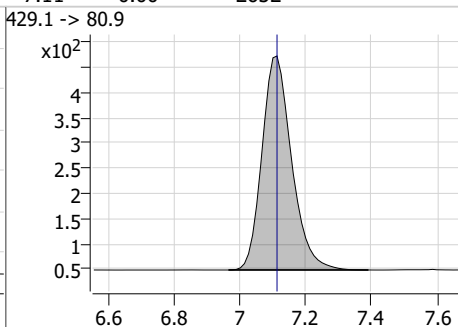
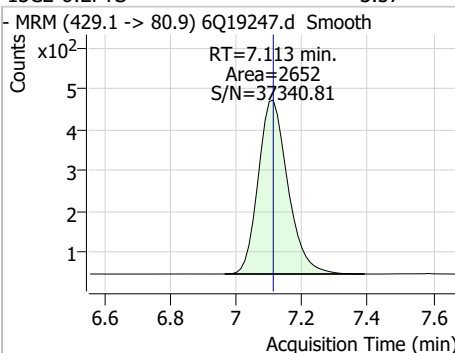
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	55.22	6.79	0.00	319874	349.1 -> 98.9	43.8	23.0	68.9



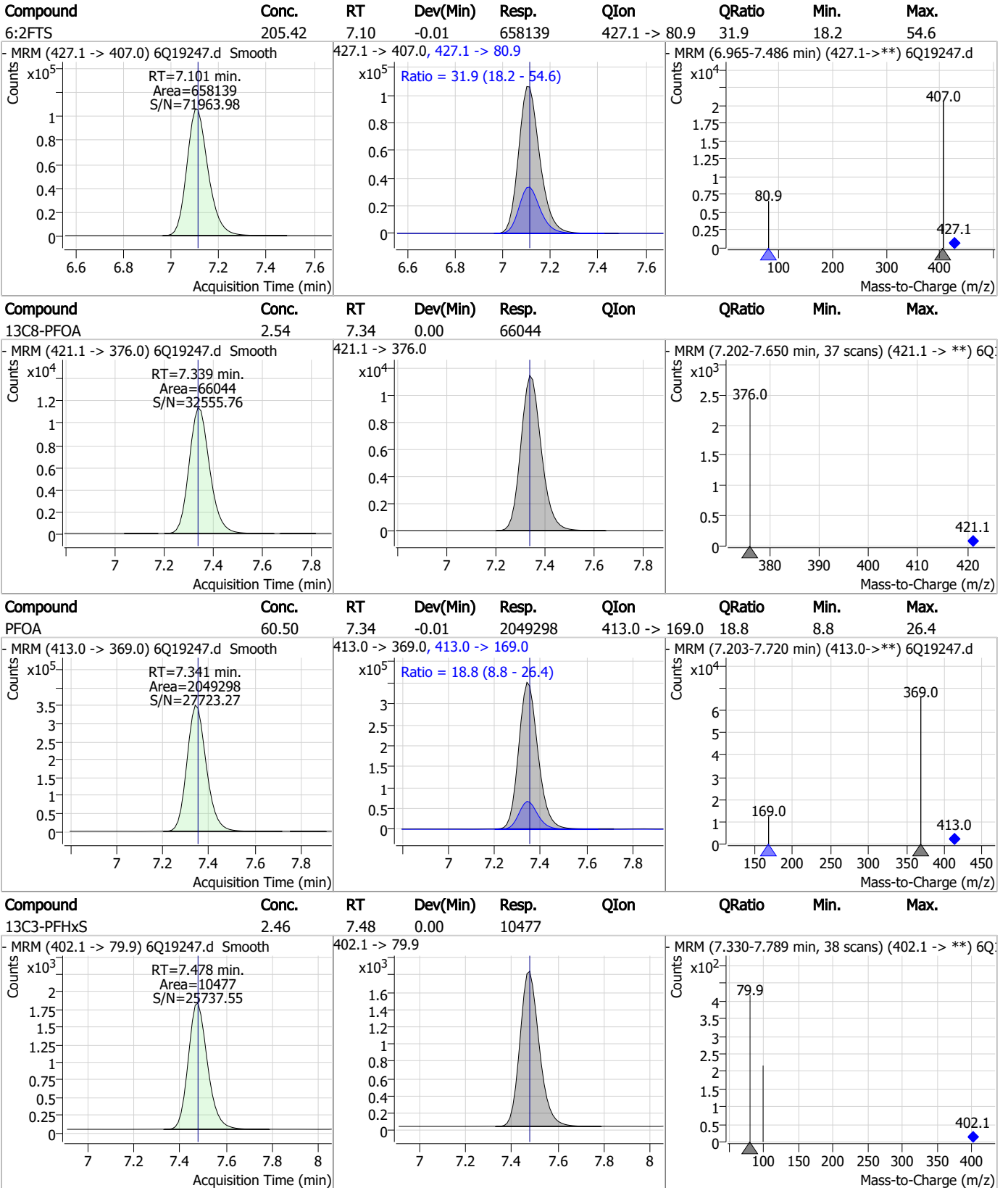
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	101.11	6.95	-0.01	5251694	376.9 -> 84.8	26.4	14.0	42.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.57	7.11	0.00	2652	429.1 -> 80.9			



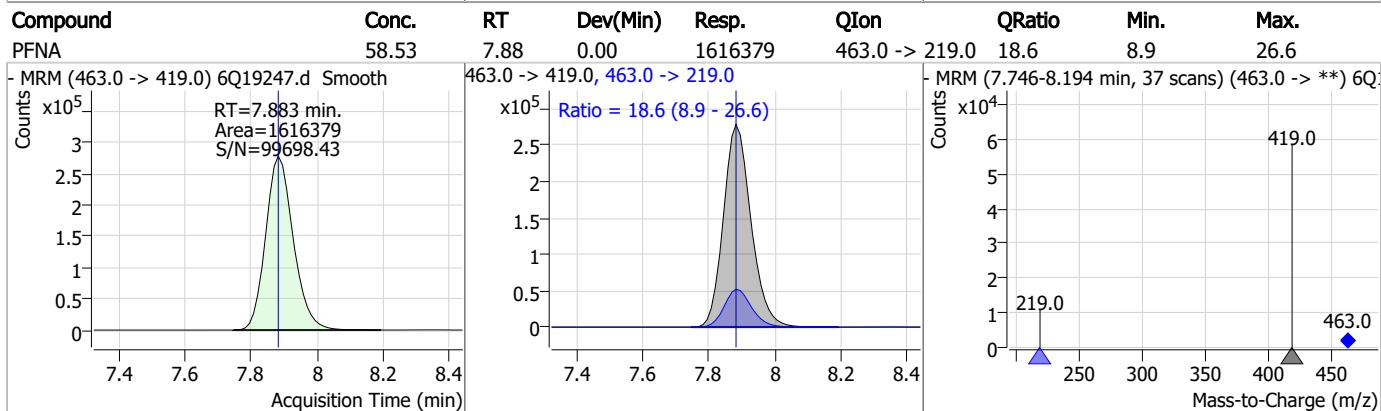
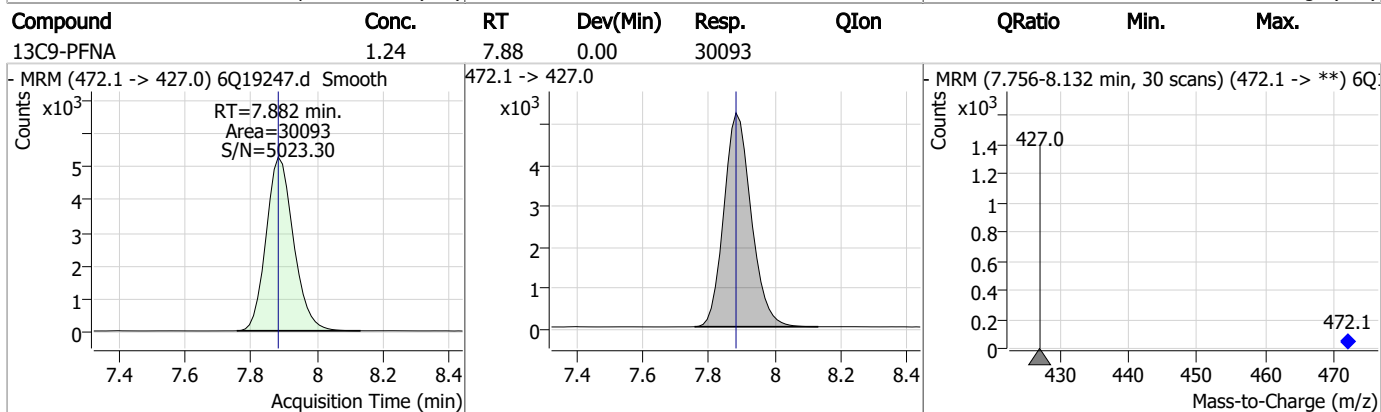
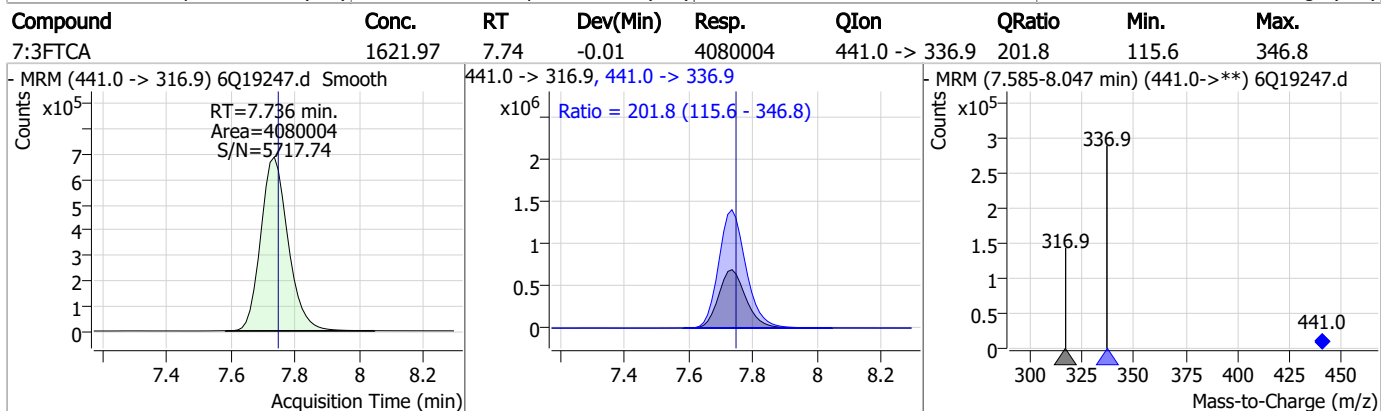
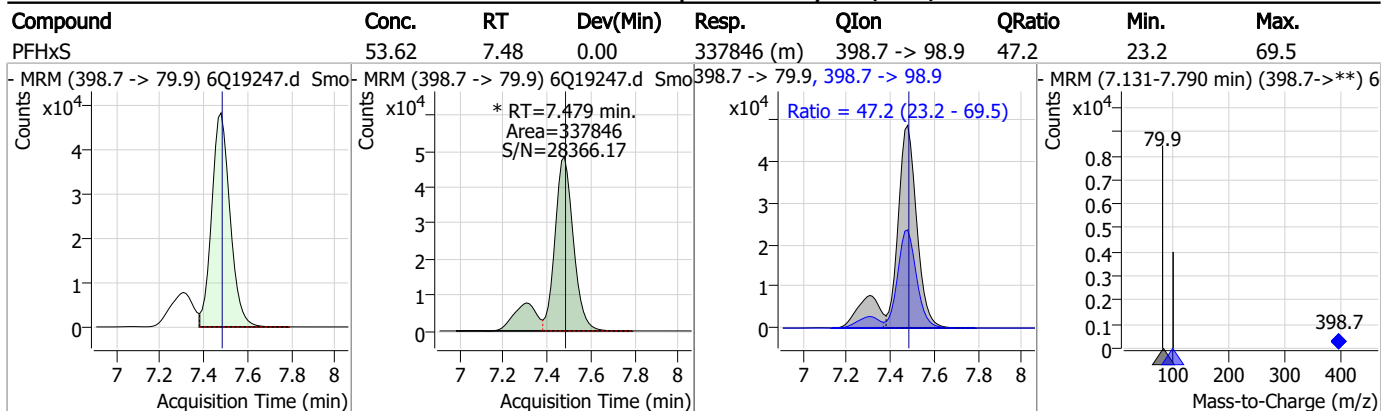
Perfluorinated Compounds by LC/MS/MS



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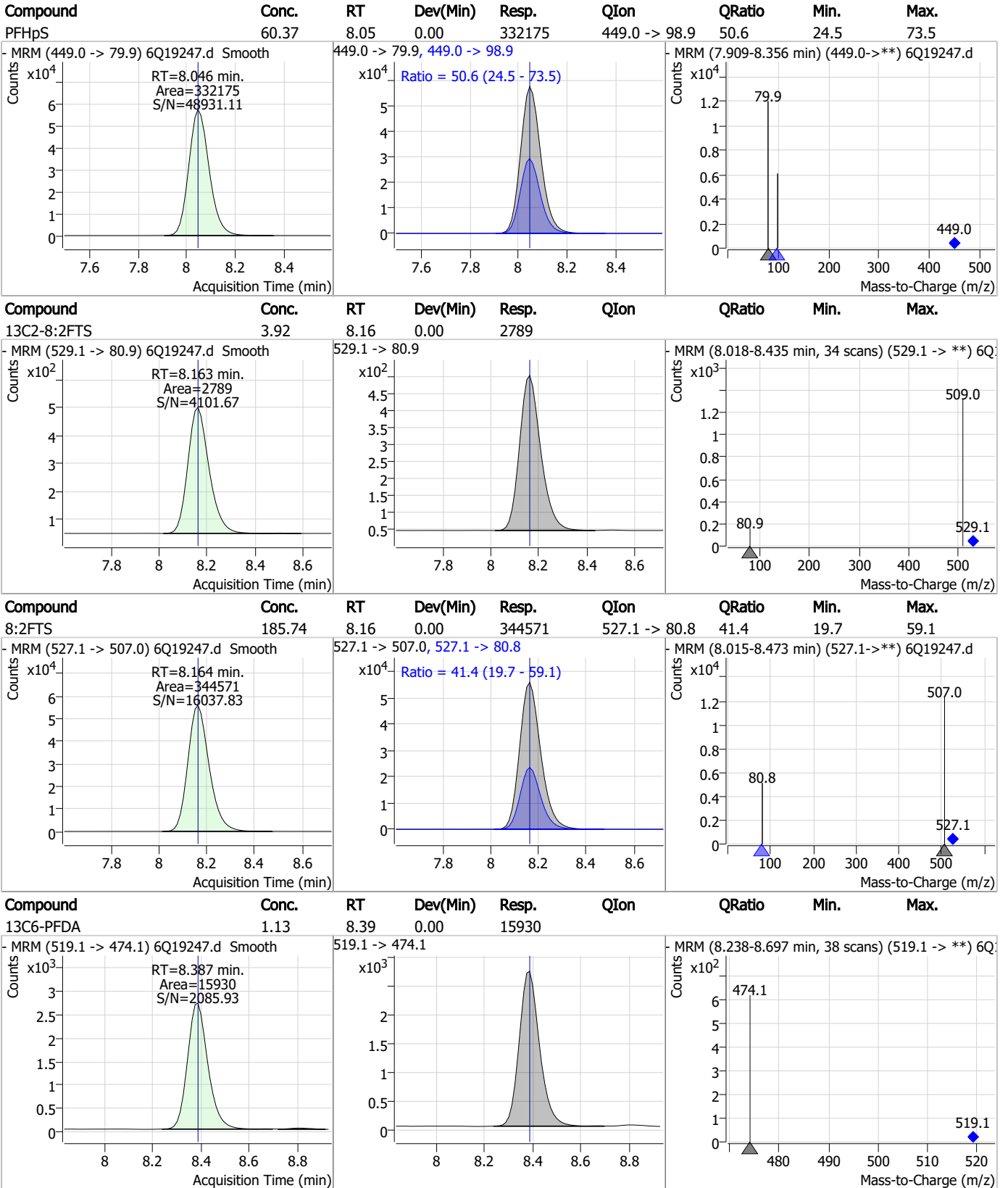
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Perfluorinated Compounds by LC/MS/MS



7.7.29
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Perfluorinated Compounds by LC/MS/MS

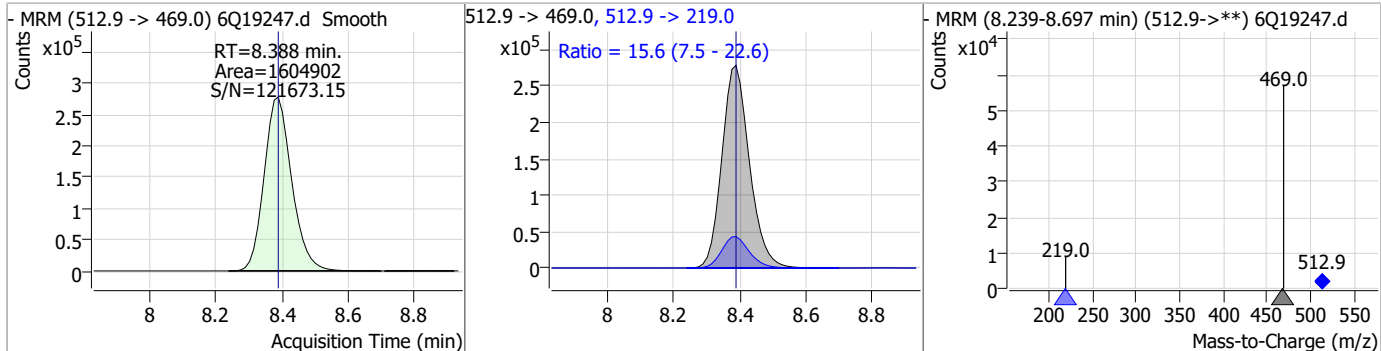


7.7.29

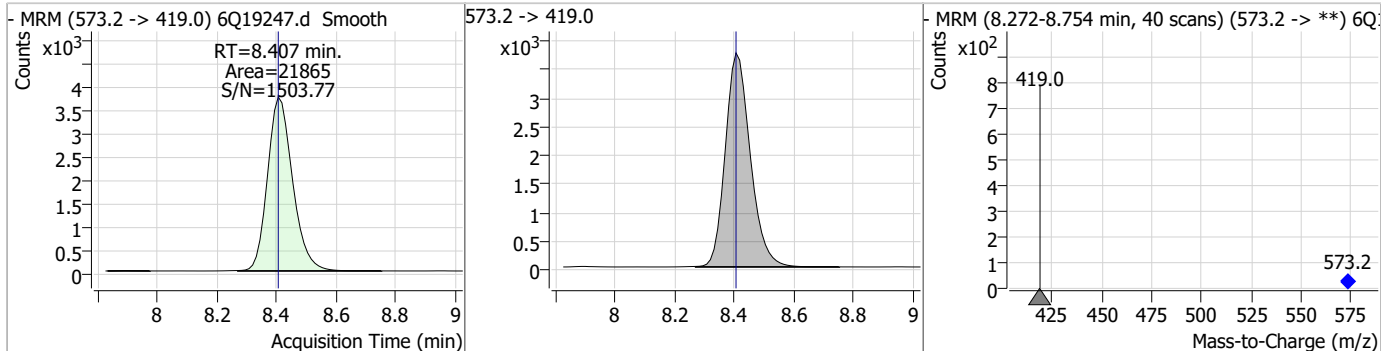
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Perfluorinated Compounds by LC/MS/MS

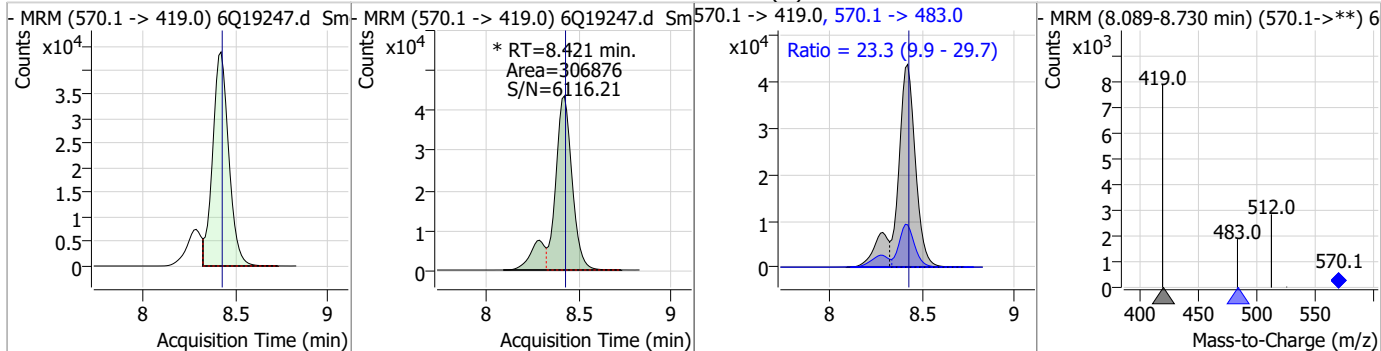
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	67.39	8.39	0.00	1604902	512.9 -> 219.0	15.6	7.5	22.6



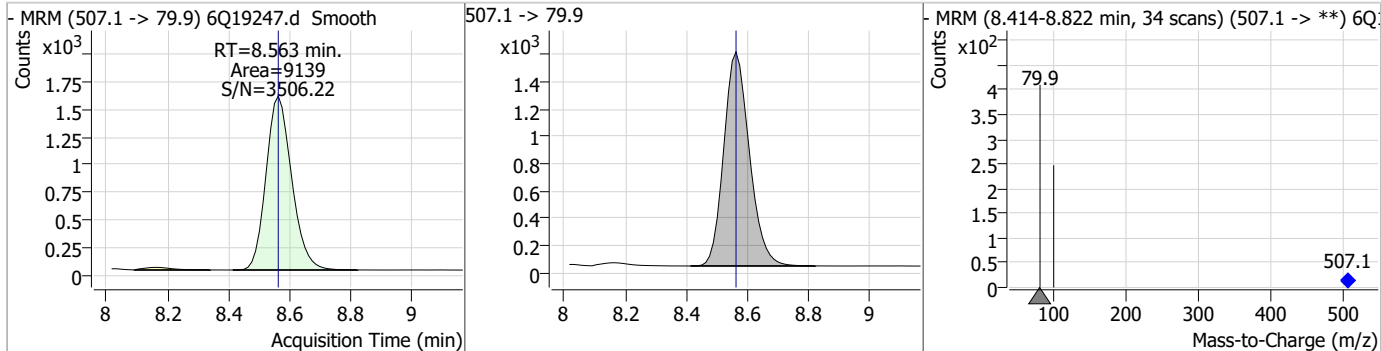
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.43	8.41	0.00	21865				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	57.72	8.42	0.00	306876 (m)	570.1 -> 483.0	23.3	9.9	29.7



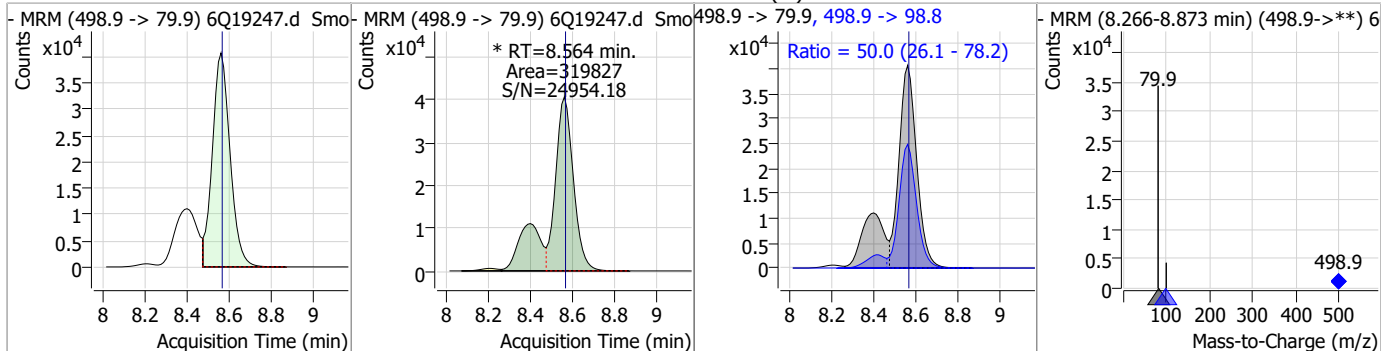
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.37	8.56	0.00	9139				



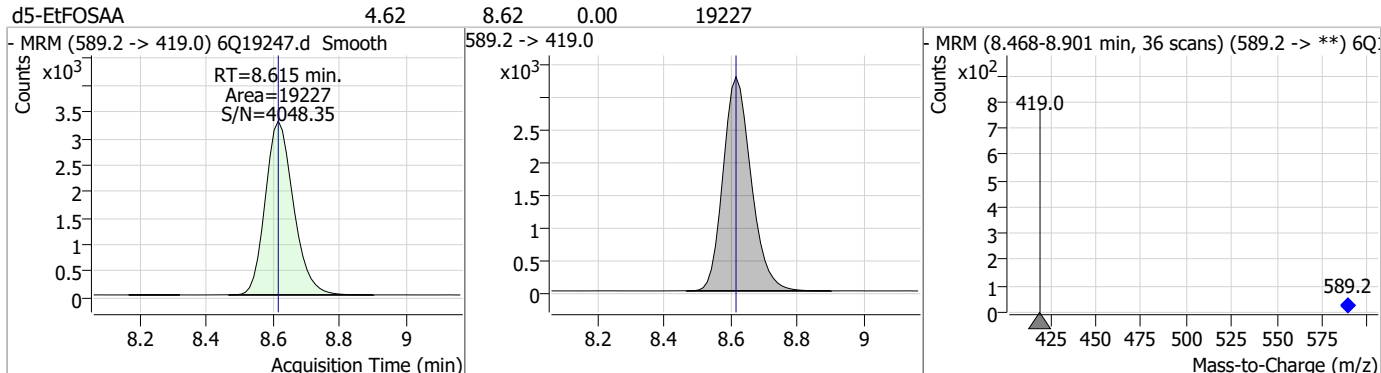
7.7.29
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Perfluorinated Compounds by LC/MS/MS

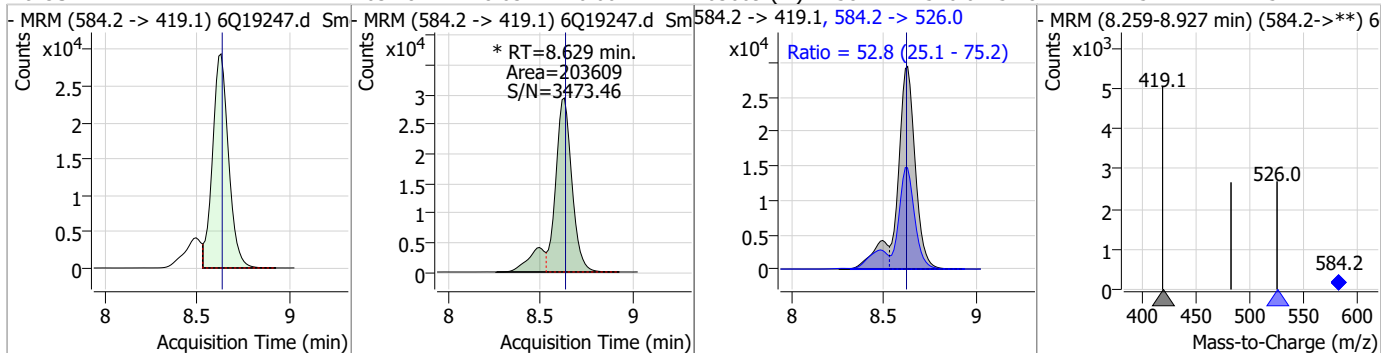
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	59.40	8.56	0.00	319827 (m)	498.9 -> 98.8	50.0	26.1	78.2



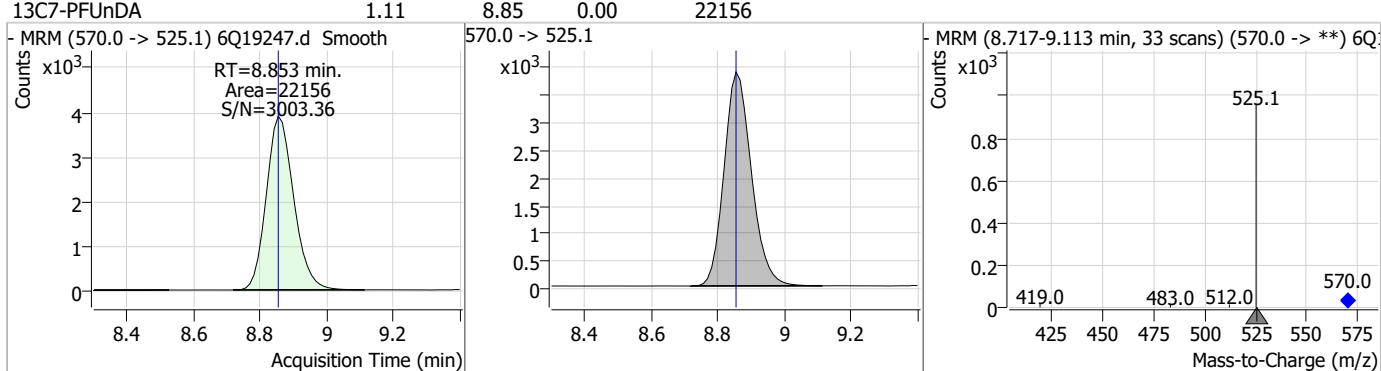
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.62	8.62	0.00	19227				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	63.78	8.63	0.00	203609 (m)	584.2 -> 526.0	52.8	25.1	75.2

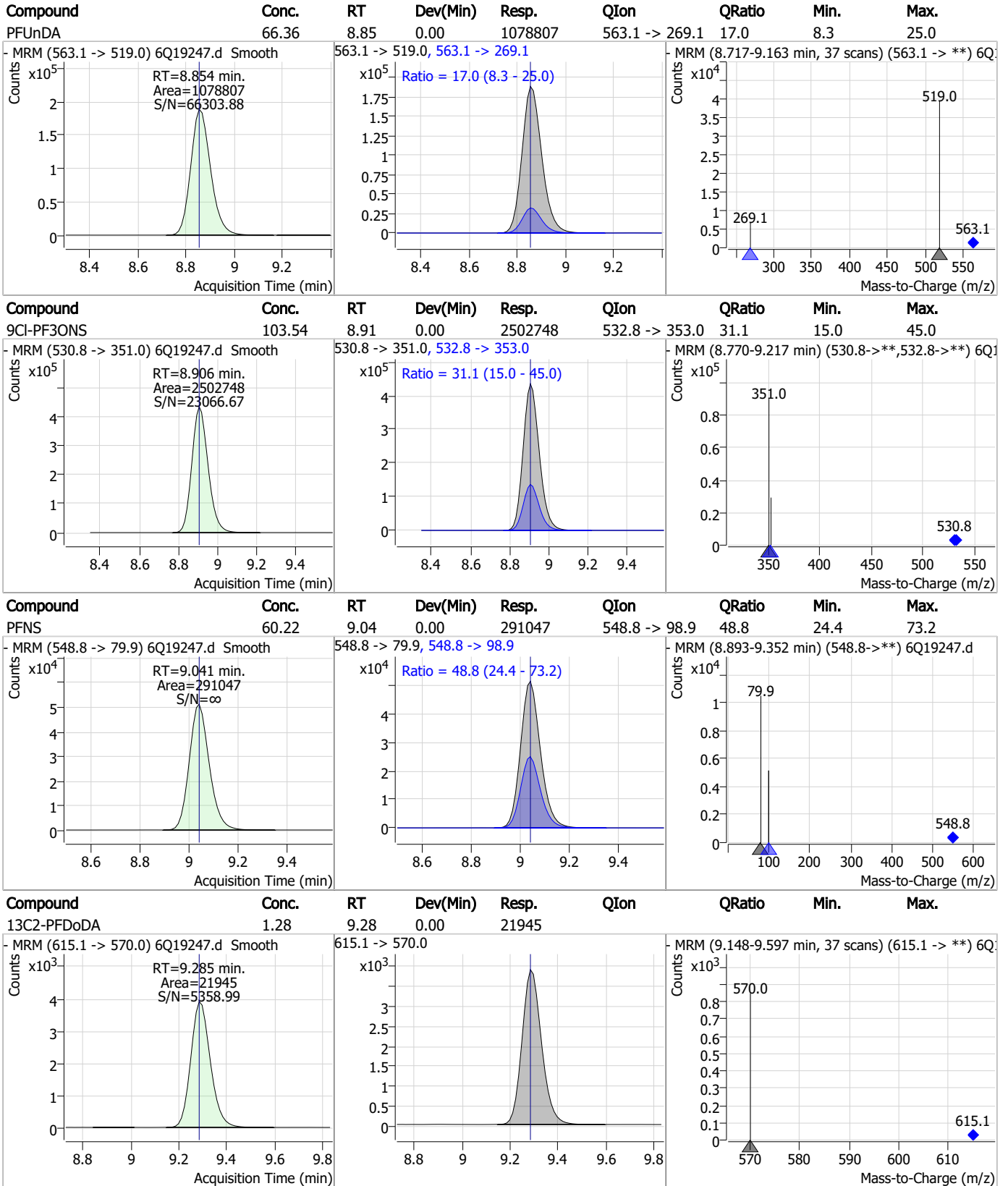


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.11	8.85	0.00	22156				



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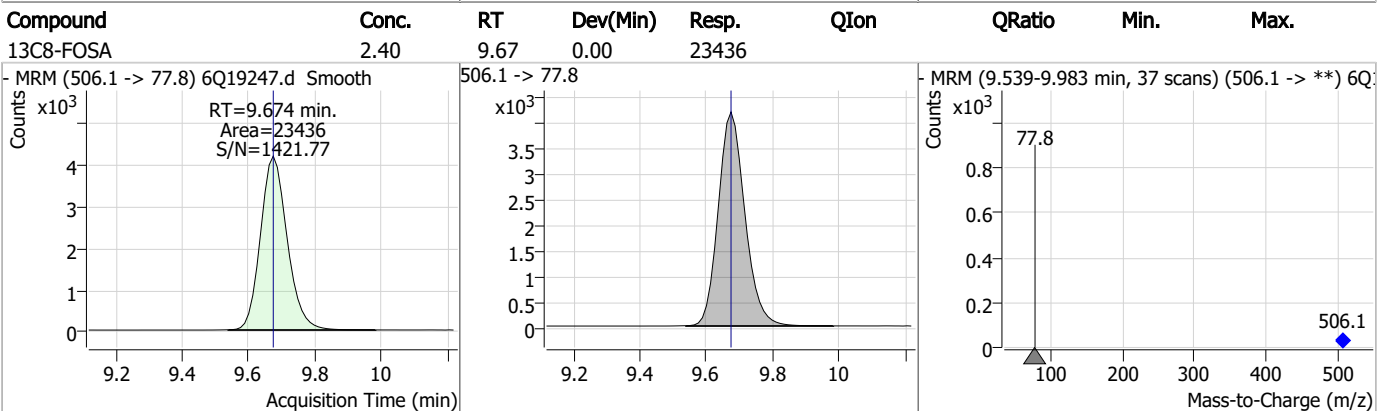
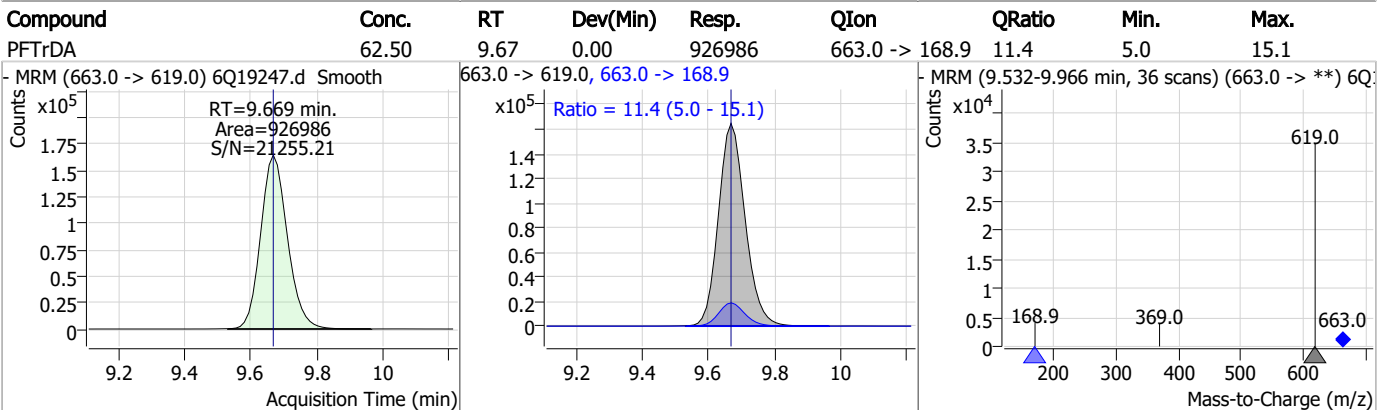
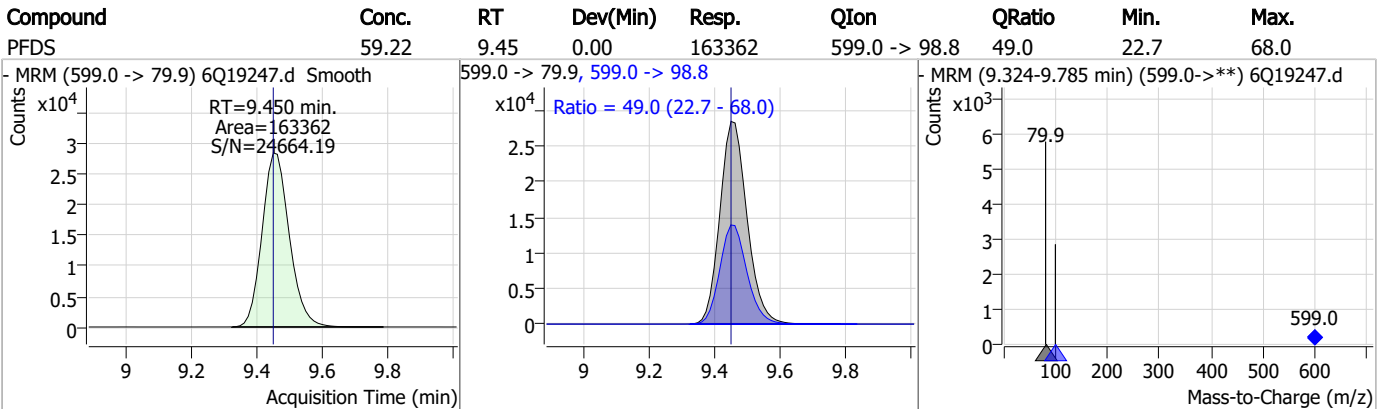
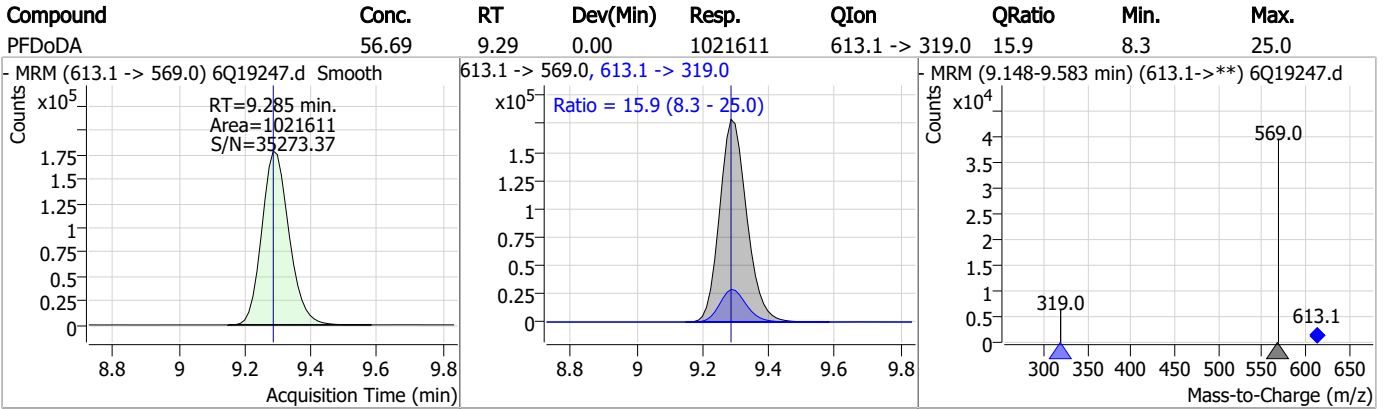
Perfluorinated Compounds by LC/MS/MS



7.7.29 7



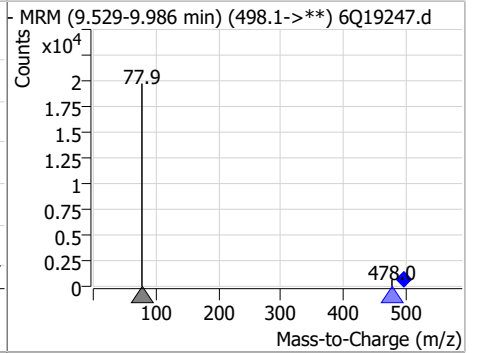
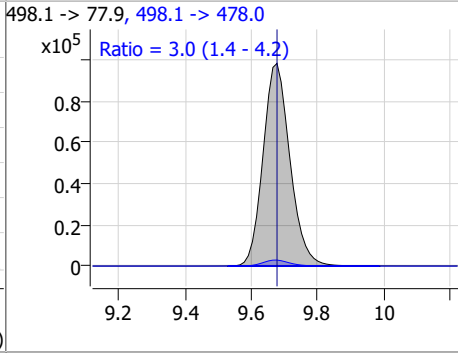
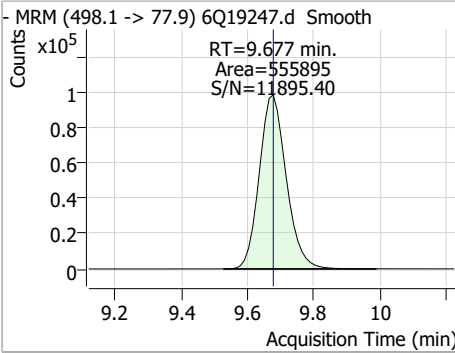
Perfluorinated Compounds by LC/MS/MS



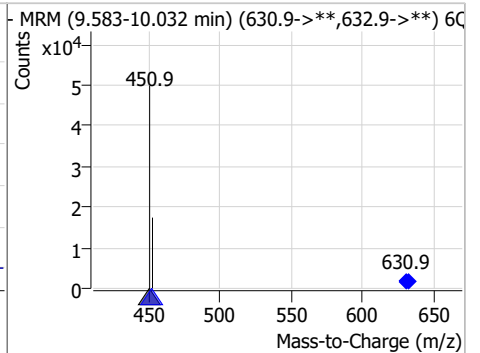
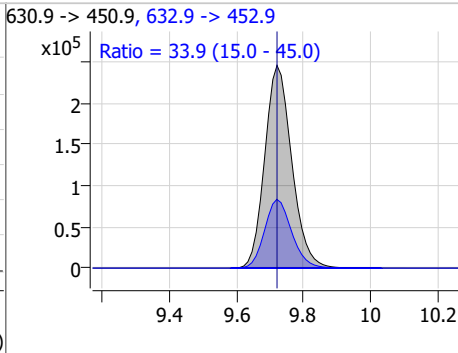
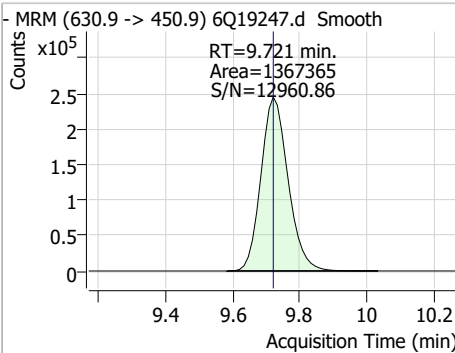
7.7.29
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Perfluorinated Compounds by LC/MS/MS

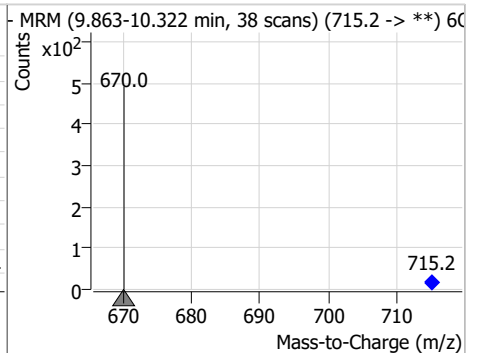
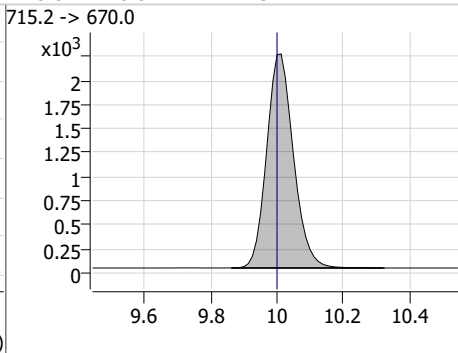
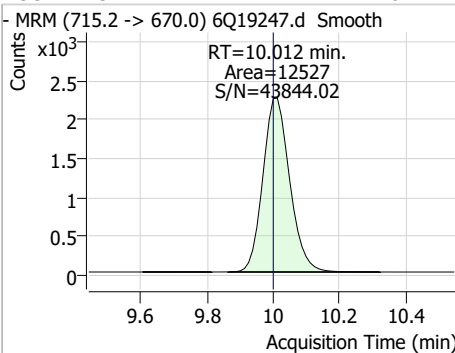
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	57.80	9.68	0.00	555895	498.1 -> 478.0	3.0	1.4	4.2



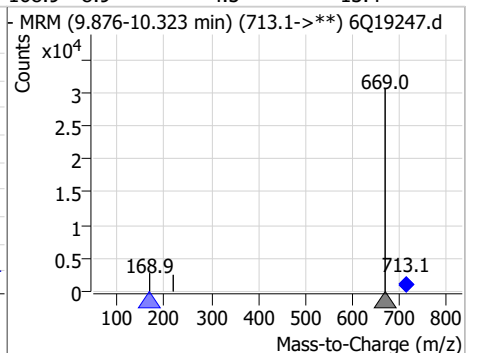
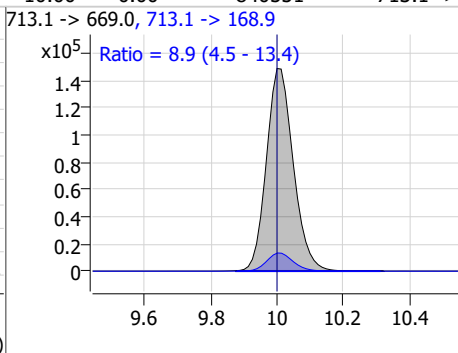
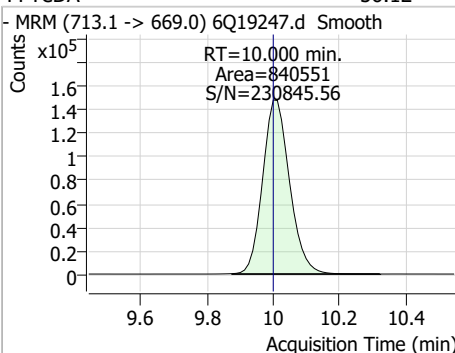
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	94.48	9.72	0.00	1367365	632.9 -> 452.9	33.9	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	10.01	0.01	12527	715.2 -> 670.0			

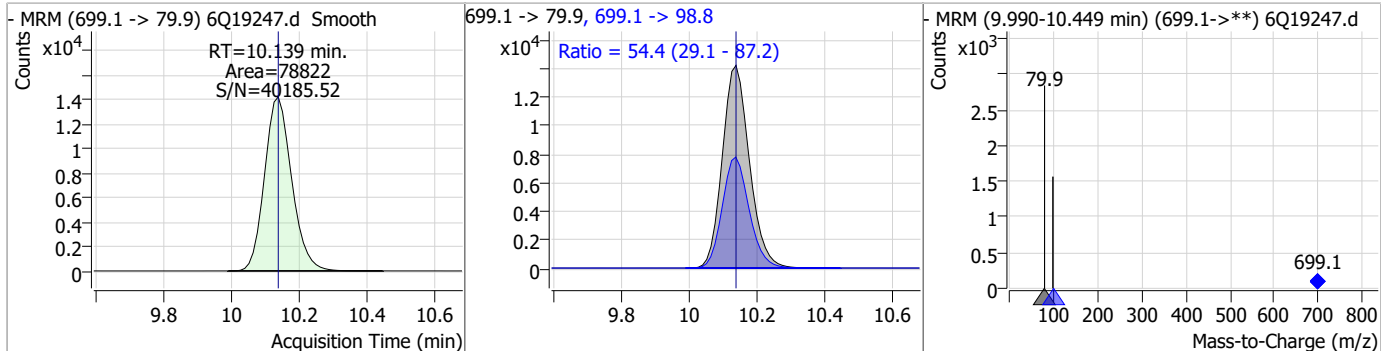


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	56.12	10.00	0.00	840551	713.1 -> 168.9	8.9	4.5	13.4

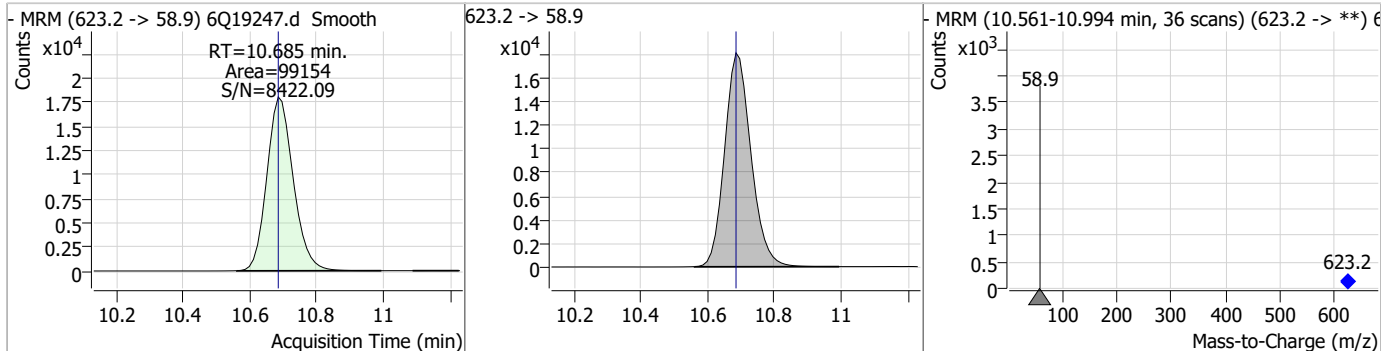


Perfluorinated Compounds by LC/MS/MS

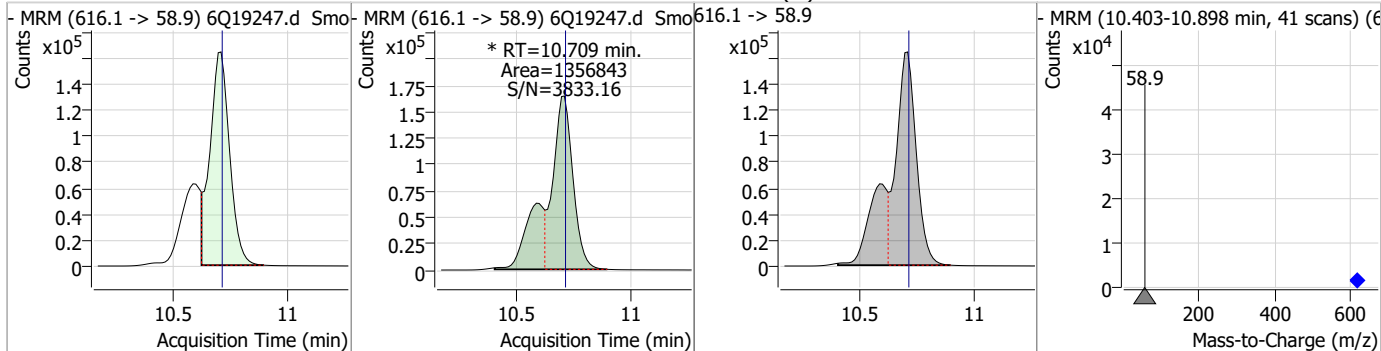
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	57.41	10.14	0.00	78822	699.1 -> 98.8	54.4	29.1	87.2



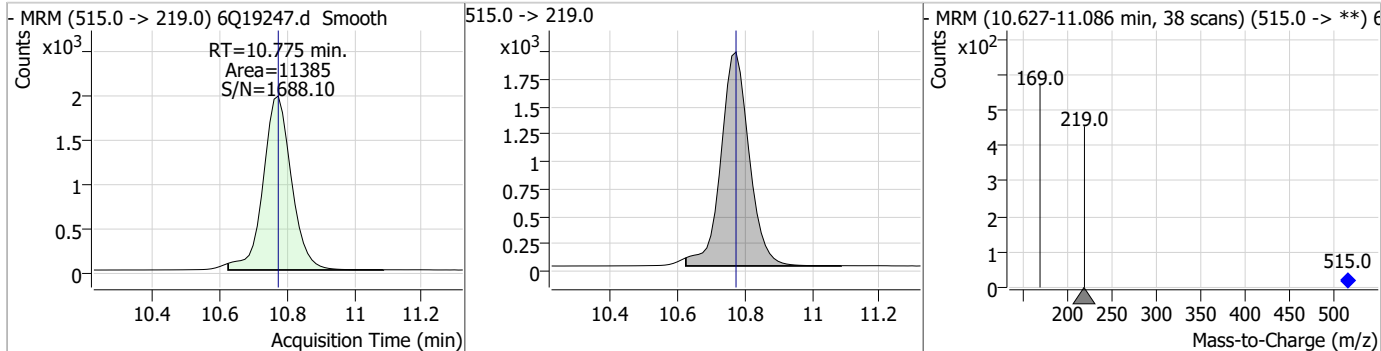
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.52	10.68	0.00	99154				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	312.64	10.71	0.00	1356843 (m)				

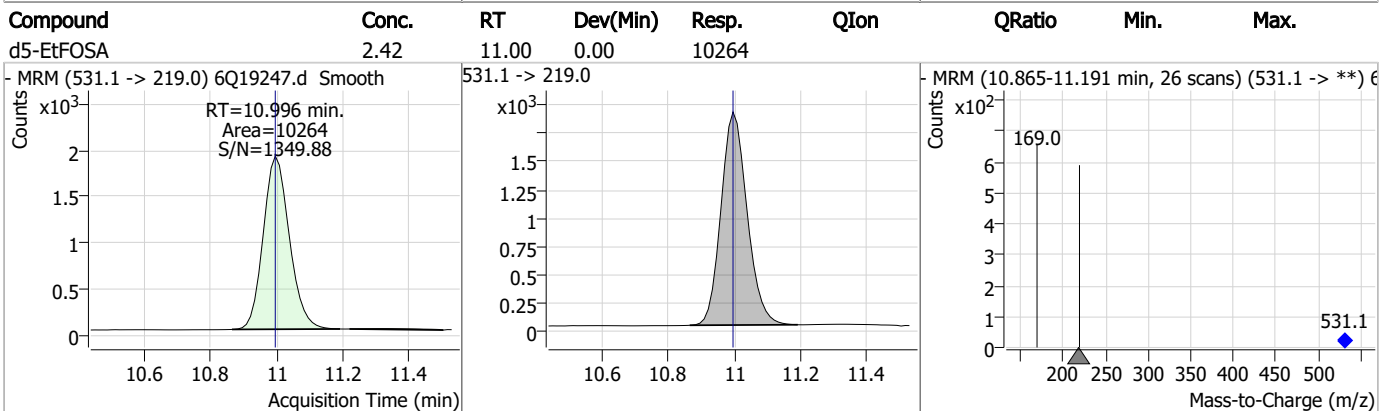
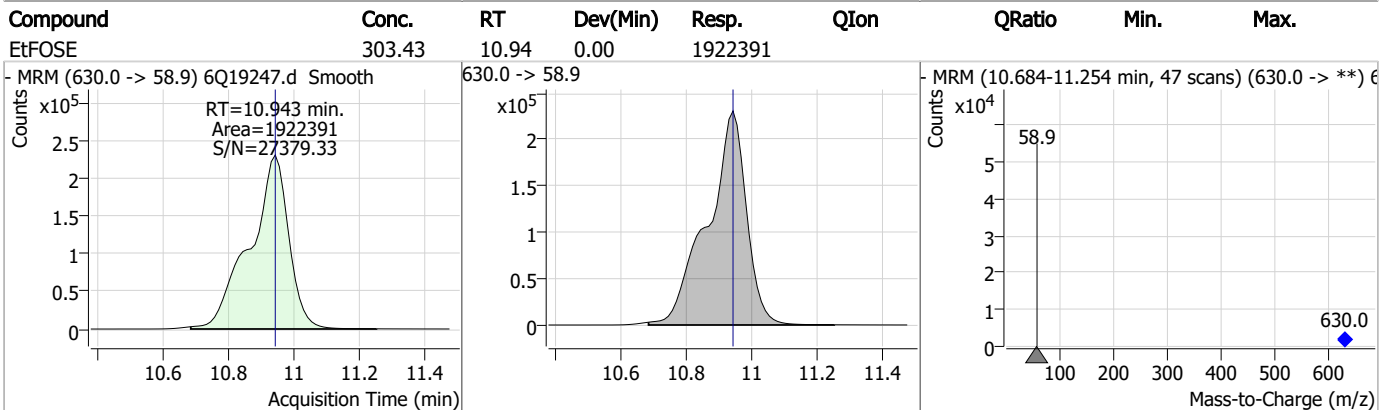
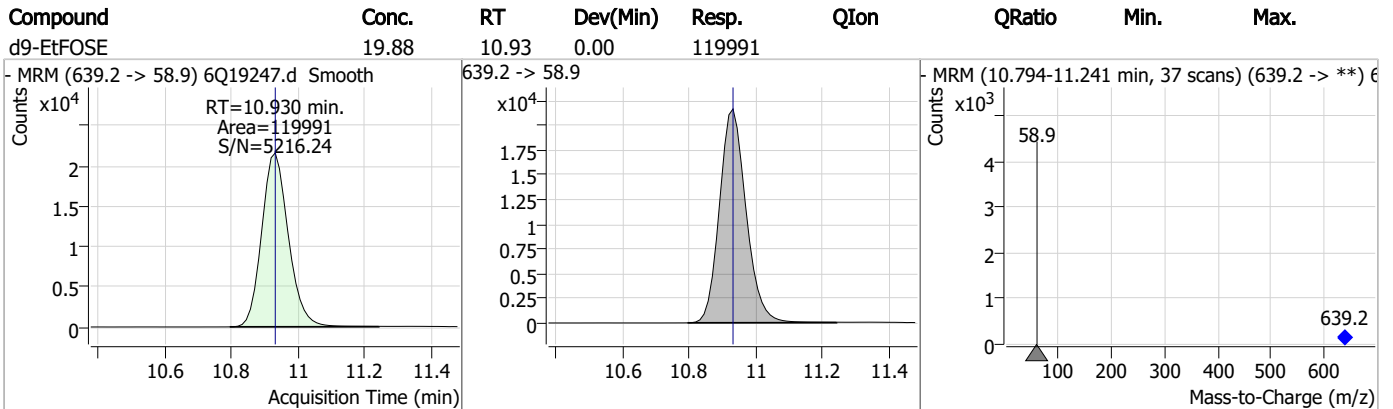
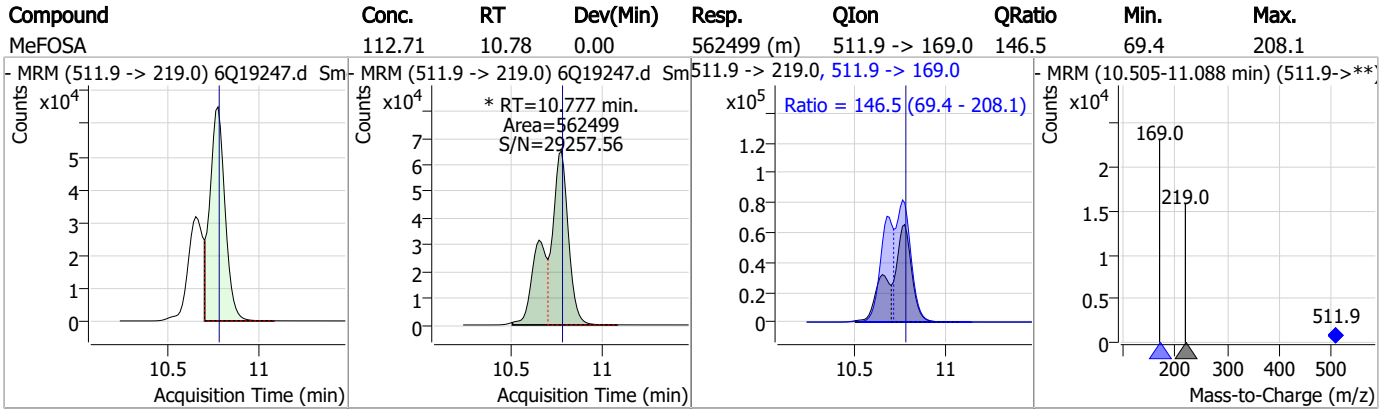


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.60	10.78	0.00	11385				



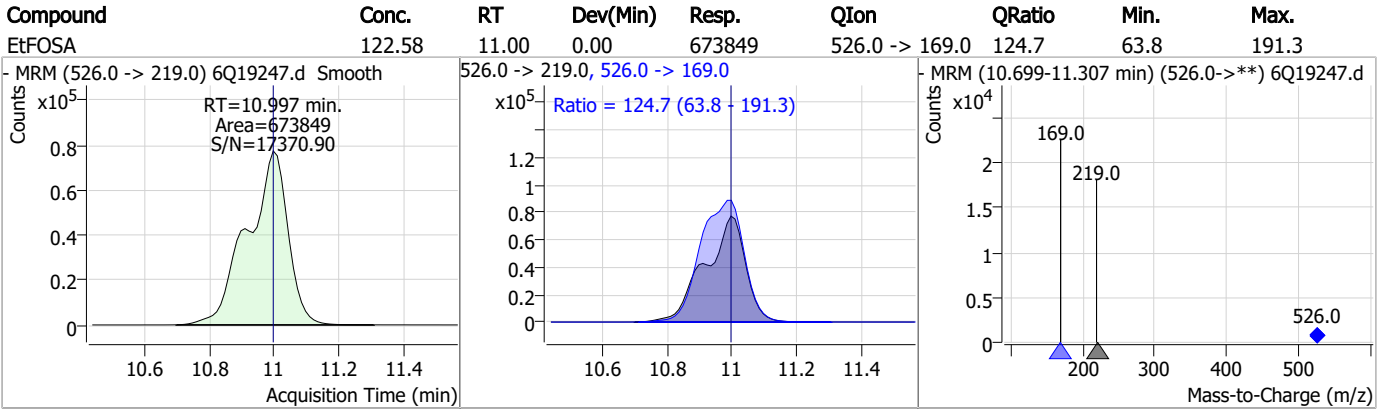
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-IC287
Lab FileID: 6Q19247.D
Injection Time: 06/12/23 17:26

Method: EPA DRAFT 1633
Analyst approved: 06/13/23 11:17 Martha Valls
Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19249.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 5:54:22 PM
 Sample Name : icv287-4
 Vial : P1-B1
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	138939	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	45630	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	48344	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	49072	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	73137	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	37163	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	21065	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	28133	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24745	1.25 µg/L	0.000
M2-PFTeDA	10.000	715.2 -> 670.0	13071	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	27264	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	17475	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11079	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10731	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2815	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4400	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	3830	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	26894	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	32463	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	23097	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	127718	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	145062	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11987	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12004	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	13775	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	59115	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8940	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	80168	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	28486	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	45264	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	46876	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2815	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4400	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-8:2FTS	8.163	529.1 -> 80.9	3830	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24745	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFTeDA	10.000	715.2 -> 670.0	13071	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C3-PFBS	5.746	302.1 -> 79.9	17475	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	11079	2.33 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C4-PFBA	3.085	216.8 -> 171.9	138939	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.707	367.1 -> 322.0	49072	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C5-PFHxA	5.792	318.0 -> 273.0	48344	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C5-PFPeA	4.548	268.3 -> 223.0	45630	5.04 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.387	519.1 -> 474.1	21065	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C7-PFUnDA	8.853	570.0 -> 525.1	28133	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.674	506.1 -> 77.8	27264	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C8-PFOA	7.339	421.1 -> 376.0	73137	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.563	507.1 -> 79.9	10731	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C9-PFNA	7.882	472.1 -> 427.0	37163	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSAA	8.407	573.2 -> 419.0	26894	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	32463	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.775	515.0 -> 219.0	12004	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
d5-EtFOSAA	8.615	589.2 -> 419.0	23097	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	127718	25.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d9-EtFOSE	10.930	639.2 -> 58.9	145062	22.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
d5-EtFOSA	10.996	531.1 -> 219.0	11987	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	47396	9.72 µg/L	95
		327.1 -> 80.9	19014		
6:2FTS	7.113	427.1 -> 407.0	46511	8.75 µg/L	98
		427.1 -> 80.9	16457		
8:2FTS	8.164	527.1 -> 507.0	26351	10.34 µg/L	92
		527.1 -> 80.8	9119		
EtFOSAA	8.617	584.2 -> 419.1	10251	2.67 µg/L	m 98
		584.2 -> 526.0	4972		
FOSA	9.677	498.1 -> 77.9	26243	2.35 µg/L	99
		498.1 -> 478.0	867		
MeFOSAA	8.421	570.1 -> 419.0	16950	2.59 µg/L	m 98
		570.1 -> 483.0	3543		
PFBA	3.093	212.8 -> 168.9	55375	10.00 µg/L	100
PFBS	5.747	298.7 -> 79.9	17249	2.25 µg/L	91
		298.7 -> 98.8	6840		
PFDA	8.388	512.9 -> 469.0	75033	2.38 µg/L	100
		512.9 -> 219.0	11341		
PFDoDA	9.285	613.1 -> 569.0	51391	2.53 µg/L	94
		613.1 -> 319.0	7210		
PFDS	9.450	599.0 -> 79.9	8025	2.48 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3727			
PFHpA	6.708	363.1 -> 319.0	60539	2.30	µg/L	99
		363.1 -> 169.0	9437			
PFHpS	8.046	449.0 -> 79.9	14950	2.31	µg/L	96
		449.0 -> 98.9	7728			
PFHxA	5.795	313.0 -> 269.0	52011	2.69	µg/L	99
		313.0 -> 118.9	2721			
PFHxS	7.479	398.7 -> 79.9	14995	2.25	µg/L	m 95
		398.7 -> 98.9	7449			
PFNA	7.883	463.0 -> 419.0	74877	2.20	µg/L	95
		463.0 -> 219.0	14885			
PFNS	9.041	548.8 -> 79.9	13578	2.39	µg/L	94
		548.8 -> 98.9	7162			
PFOA	7.341	413.0 -> 369.0	93809	2.50	µg/L	99
		413.0 -> 169.0	17077			
PFOS	8.564	498.9 -> 79.9	13759	2.18	µg/L	m 97
		498.9 -> 98.8	7503			
PFPeA	4.551	263.0 -> 219.0	66604	4.96	µg/L	100
PFPeS	6.785	349.1 -> 79.9	14620	2.39	µg/L	100
		349.1 -> 98.9	6711			
PFTeDA	10.000	713.1 -> 669.0	39723	2.54	µg/L	100
		713.1 -> 168.9	3478			
PFTrDA	9.669	663.0 -> 619.0	48247	2.39	µg/L	96
		663.0 -> 168.9	5547			
PFUnDA	8.854	563.1 -> 519.0	51922	2.52	µg/L	99
		563.1 -> 269.1	8745			
11CI-PF3OUdS	9.721	630.9 -> 450.9	70521	4.61	µg/L	98
		632.9 -> 452.9	21984			
9CI-PF3ONS	8.906	530.8 -> 351.0	121769	4.76	µg/L	97
		532.8 -> 353.0	34731			
ADONA	6.959	376.9 -> 250.9	251455	4.58	µg/L	98
		376.9 -> 84.8	67235			
HFPO-DA	6.169	284.9 -> 168.9	17134	4.86	µg/L	98
		284.9 -> 184.9	1985			
3:3FTCA	3.946	241.0 -> 177.0	11109	12.10	µg/L	100
		241.0 -> 117.0	1481			
5:3FTCA	6.361	341.0 -> 237.1	245798	65.44	µg/L	98
		341.0 -> 217.0	178603			
7:3FTCA	7.736	441.0 -> 316.9	179546	66.79	µg/L	85
		441.0 -> 336.9	370625			
EtFOSA	10.997	526.0 -> 219.0	30428	4.74	µg/L	94
		526.0 -> 169.0	40934			
EtFOSE	10.943	630.0 -> 58.9	97165	12.69	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	25928	4.93	µg/L	m 97
		511.9 -> 169.0	37027			
MeFOSE	10.709	616.1 -> 58.9	68156	12.19	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	3994	2.48	µg/L	89
		699.1 -> 98.8	1985			
NFDHA	5.673	295.0 -> 201.0	12807	5.22	µg/L	95
		295.0 -> 84.9	3339			
PFMBA	4.975	279.0 -> 85.1	47705	4.95	µg/L	100
PFMPA	3.667	229.0 -> 84.9	36882	4.93	µg/L	100
PFEESA	6.288	314.8 -> 134.9	125759	5.28	µg/L	100
		314.8 -> 82.9	4385			

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

7.7.30
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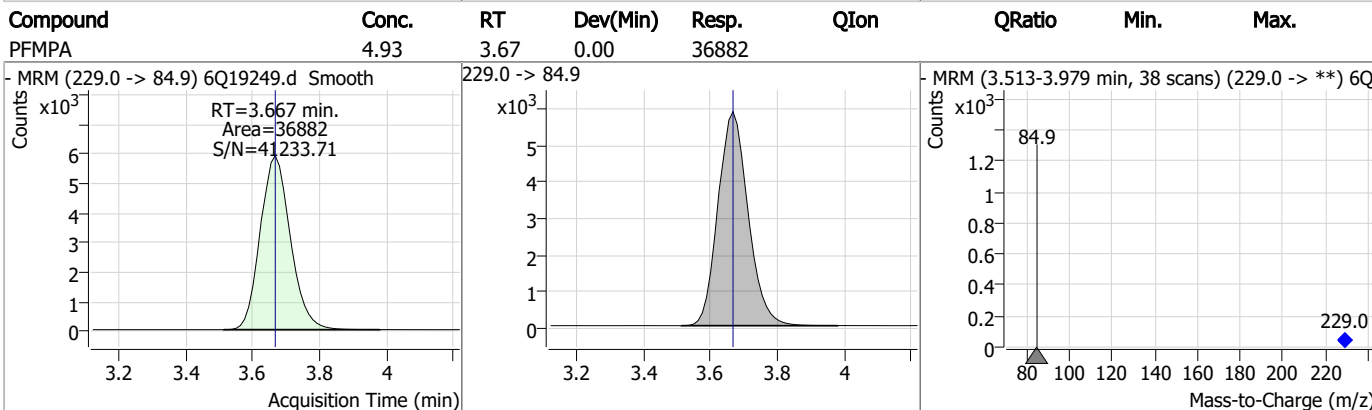
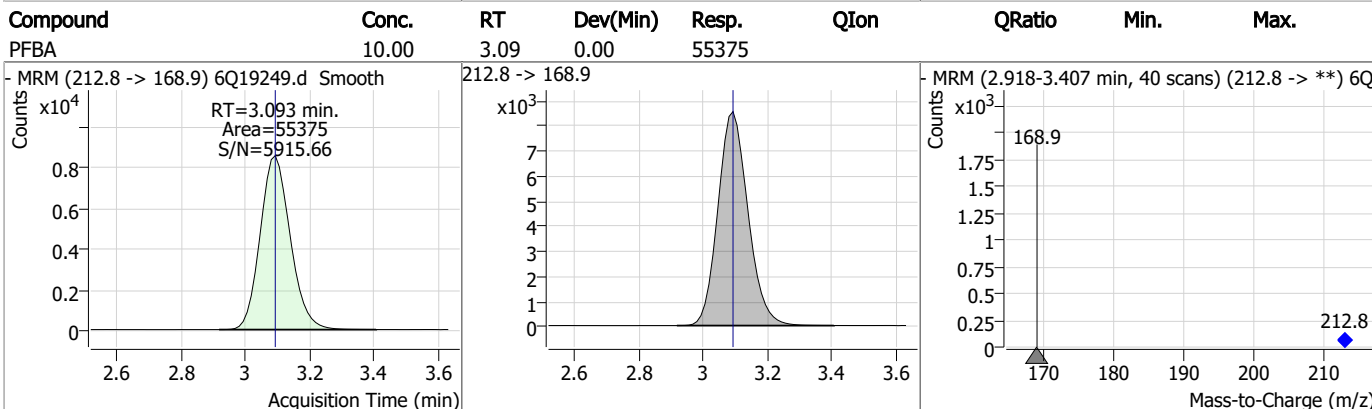
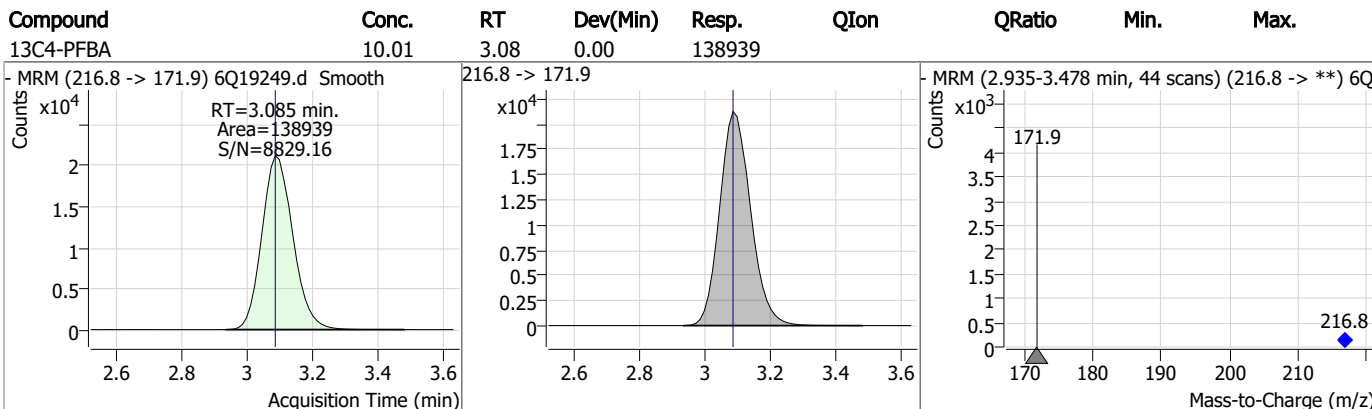
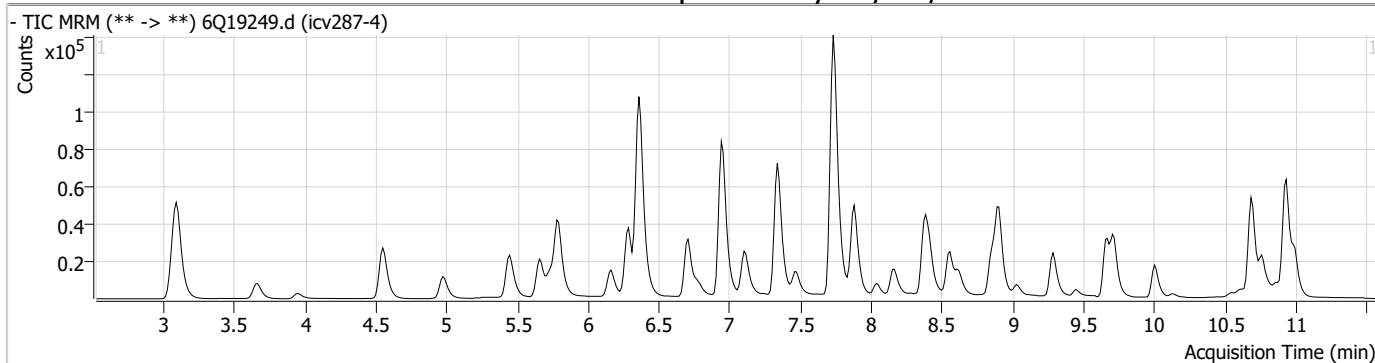
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.30

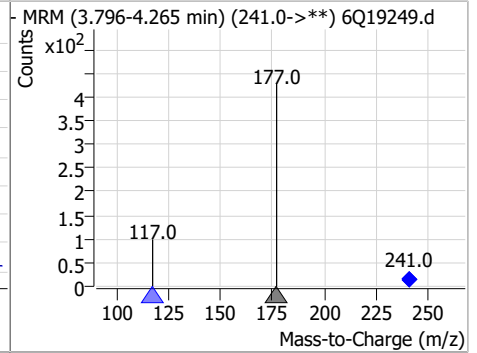
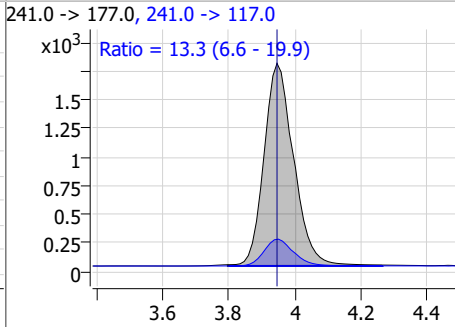
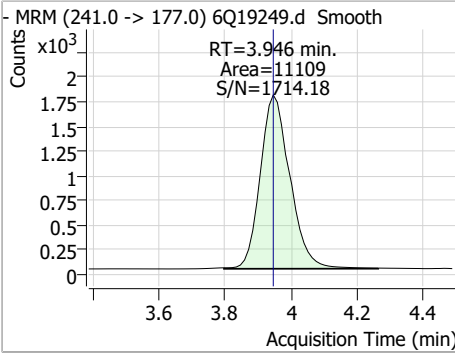
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Perfluorinated Compounds by LC/MS/MS

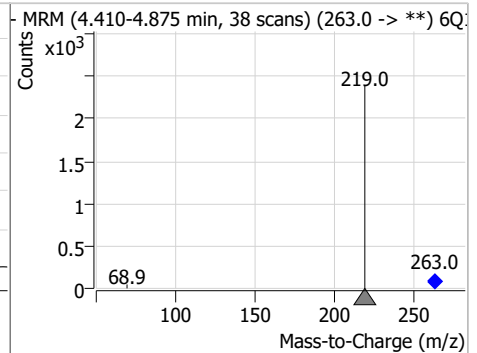
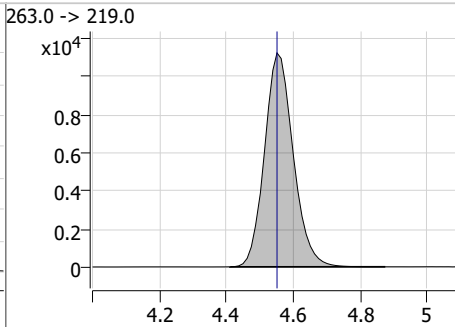
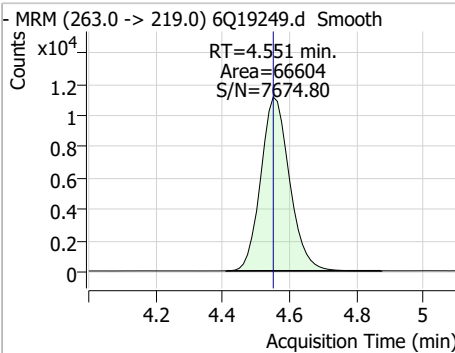


Perfluorinated Compounds by LC/MS/MS

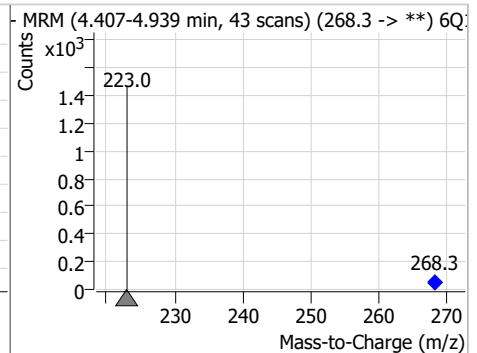
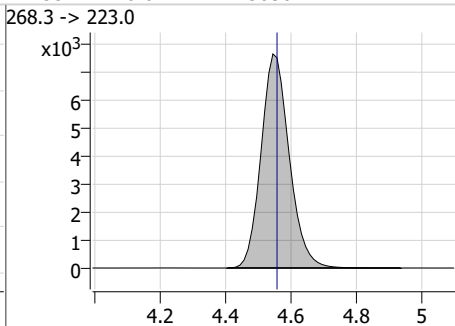
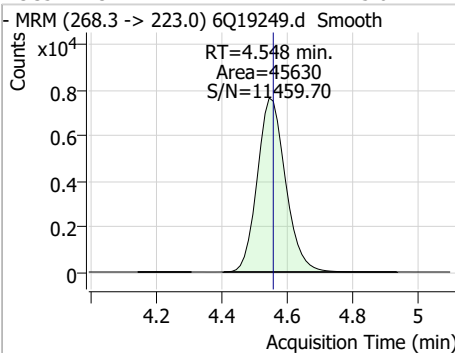
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.10	3.95	0.00	11109	241.0 -> 117.0	13.3	6.6	19.9



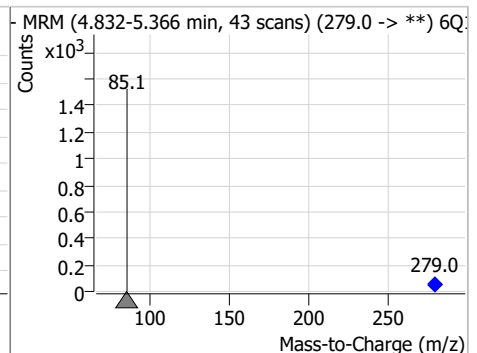
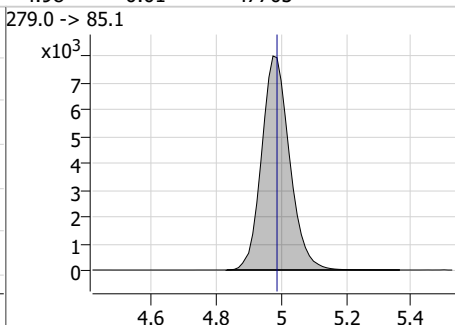
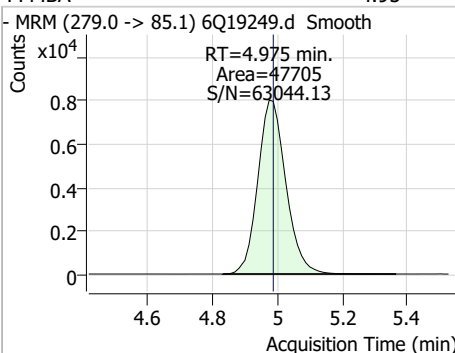
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.96	4.55	0.00	66604				



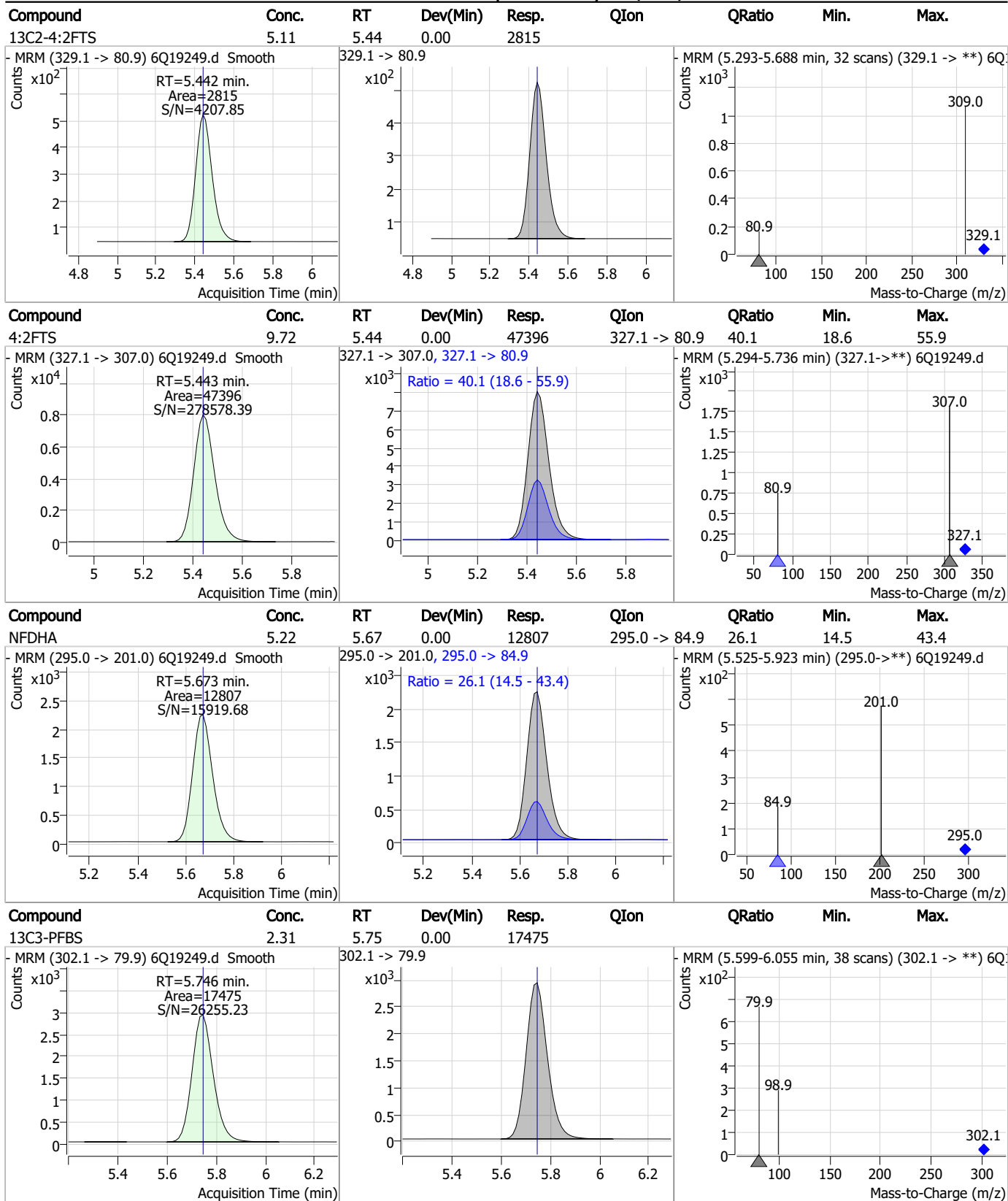
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.55	-0.01	45630				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.95	4.98	-0.01	47705				



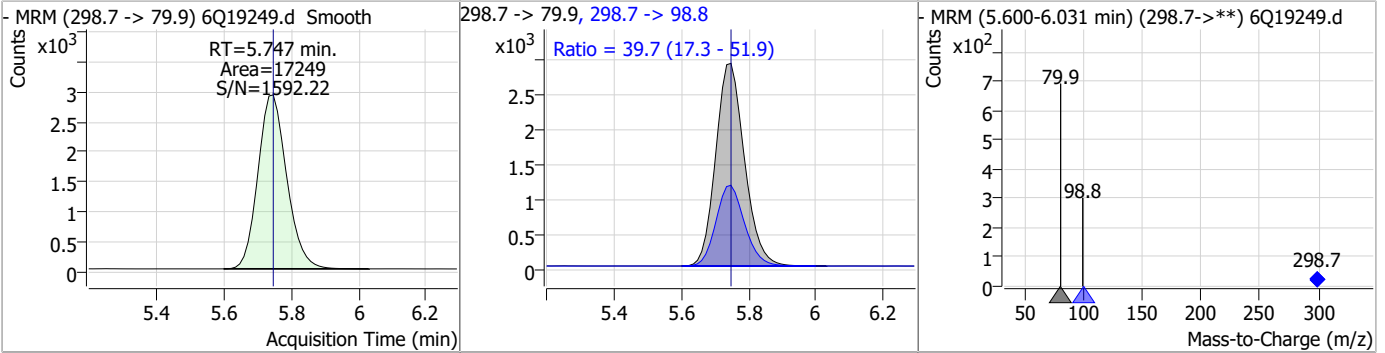
Perfluorinated Compounds by LC/MS/MS



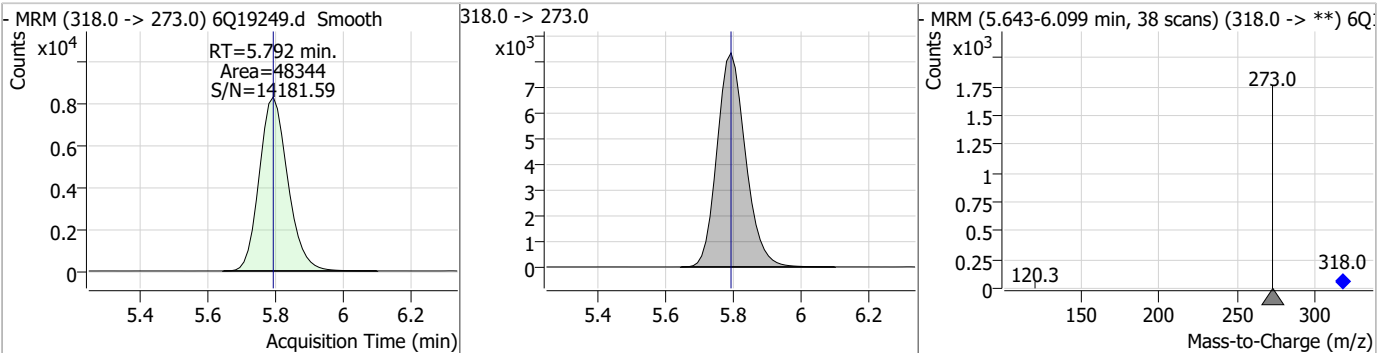
7.7.30
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Perfluorinated Compounds by LC/MS/MS

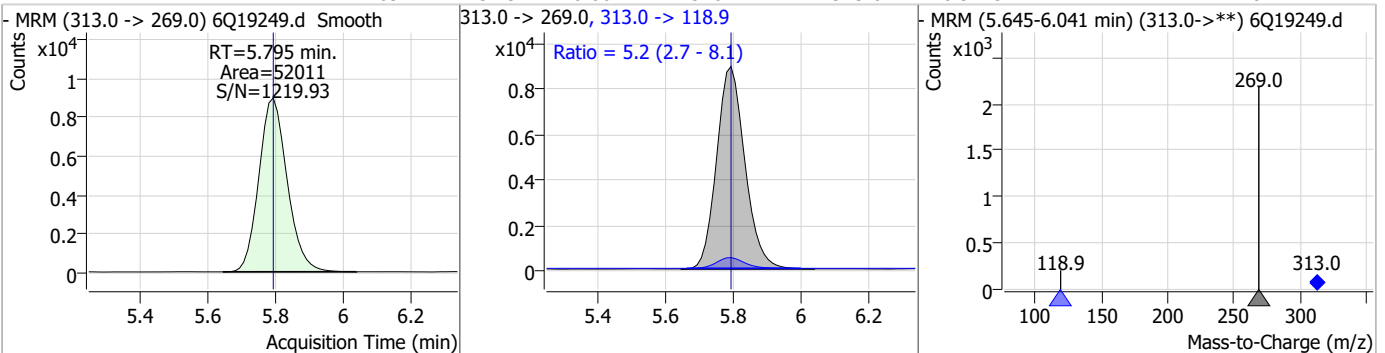
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.25	5.75	0.00	17249	298.7 -> 98.8	39.7	17.3	51.9



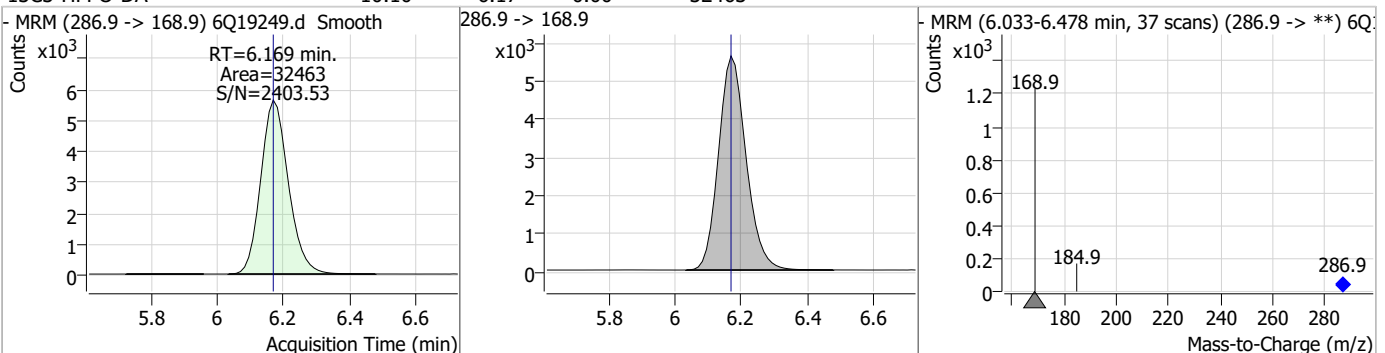
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.79	0.00	48344				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.69	5.79	0.00	52011	313.0 -> 118.9	5.2	2.7	8.1

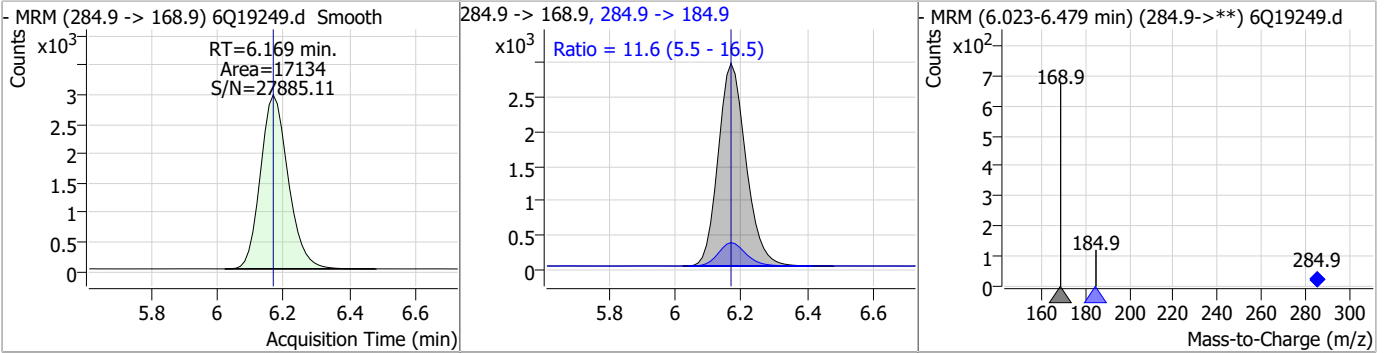


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.10	6.17	0.00	32463				

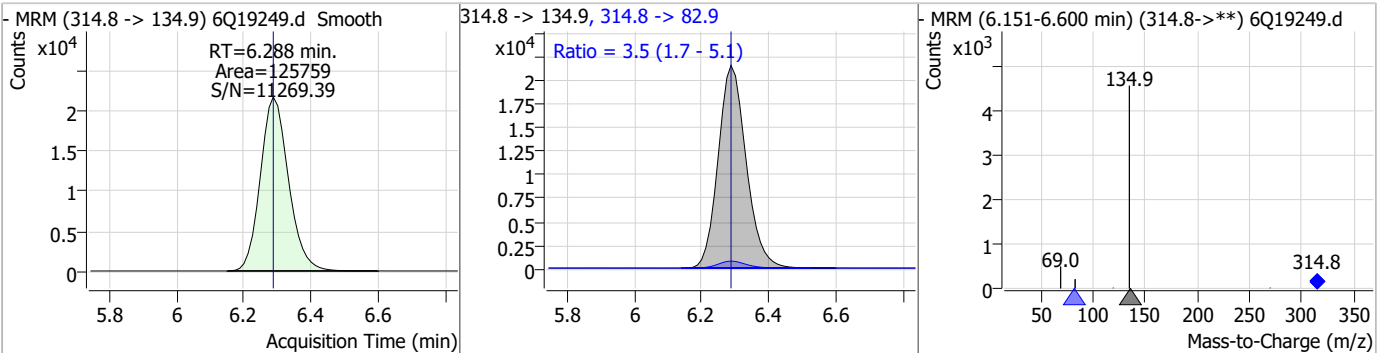


Perfluorinated Compounds by LC/MS/MS

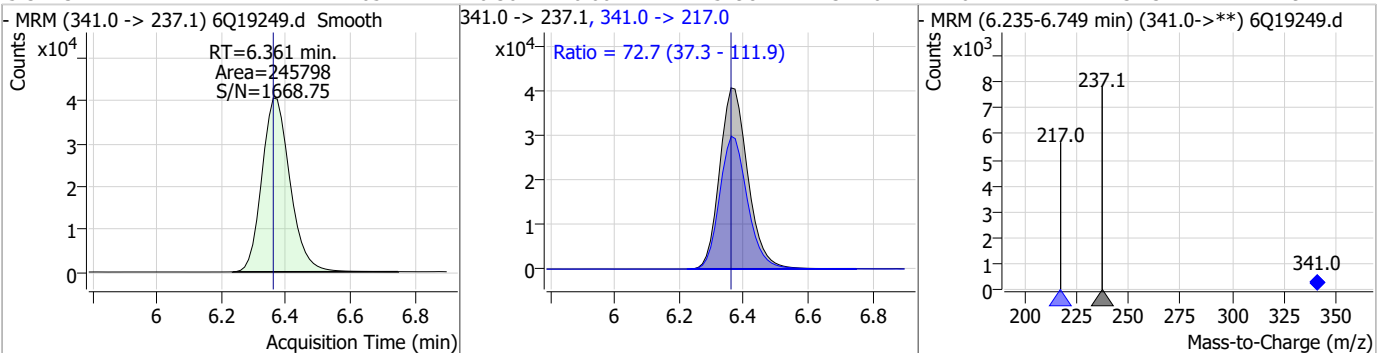
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.86	6.17	0.00	17134	284.9 -> 184.9	11.6	5.5	16.5



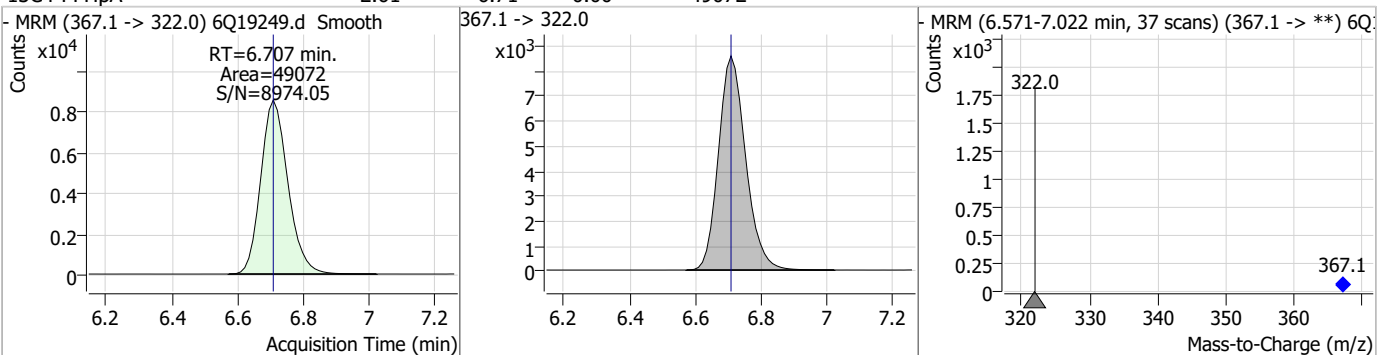
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.28	6.29	0.00	125759	314.8 -> 82.9	3.5	1.7	5.1



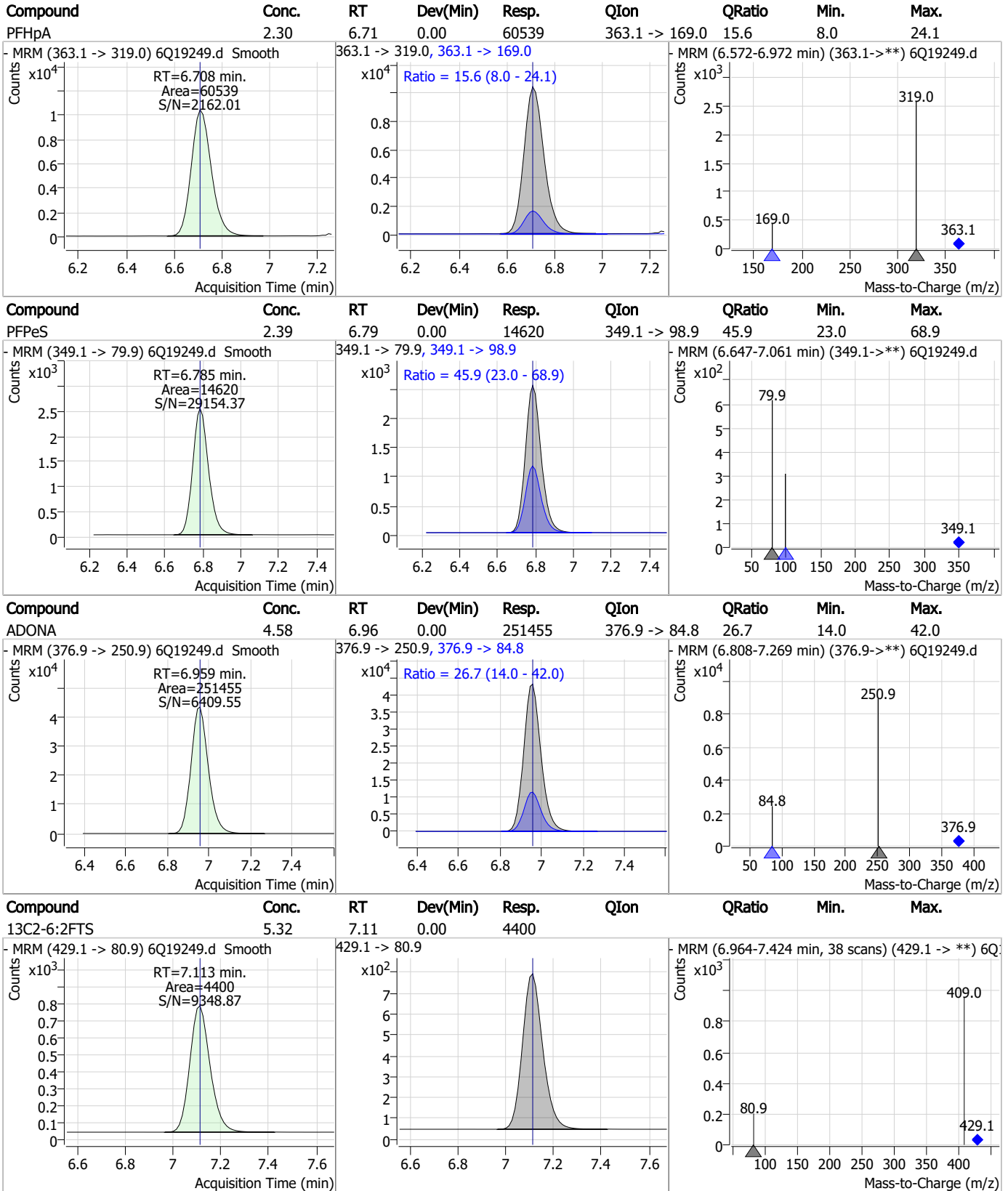
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	65.44	6.36	0.00	245798	341.0 -> 217.0	72.7	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.61	6.71	0.00	49072	367.1 -> 322.0			



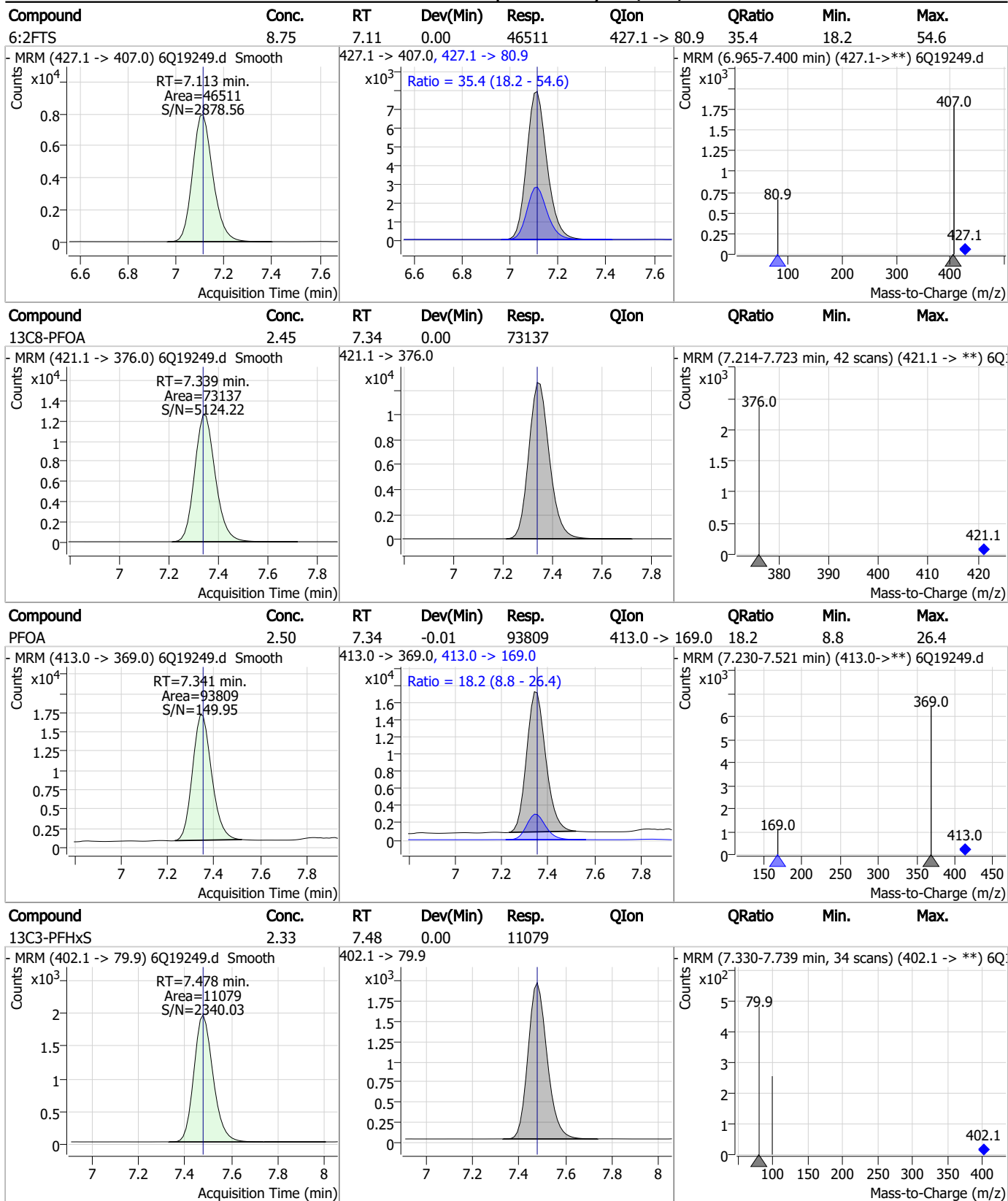
Perfluorinated Compounds by LC/MS/MS



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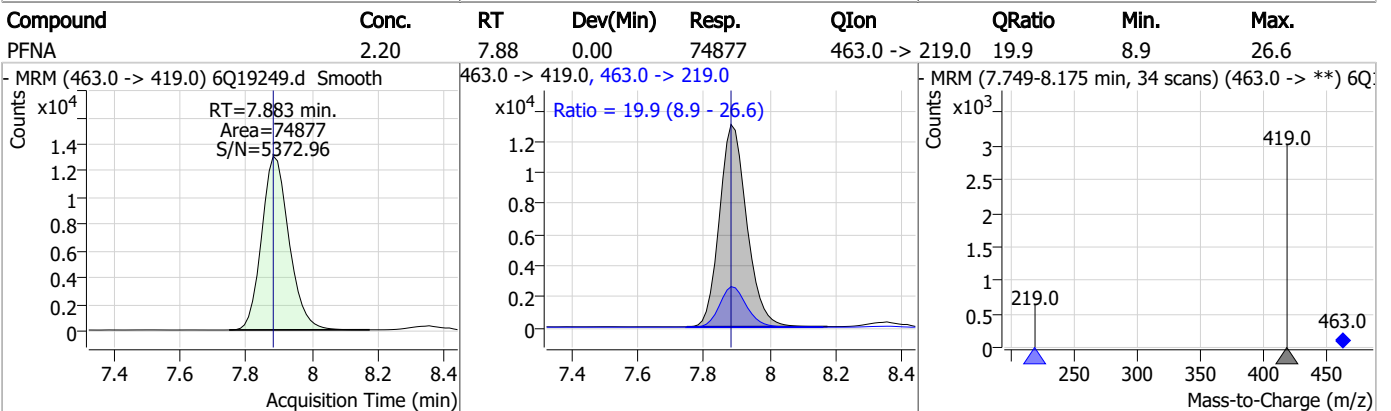
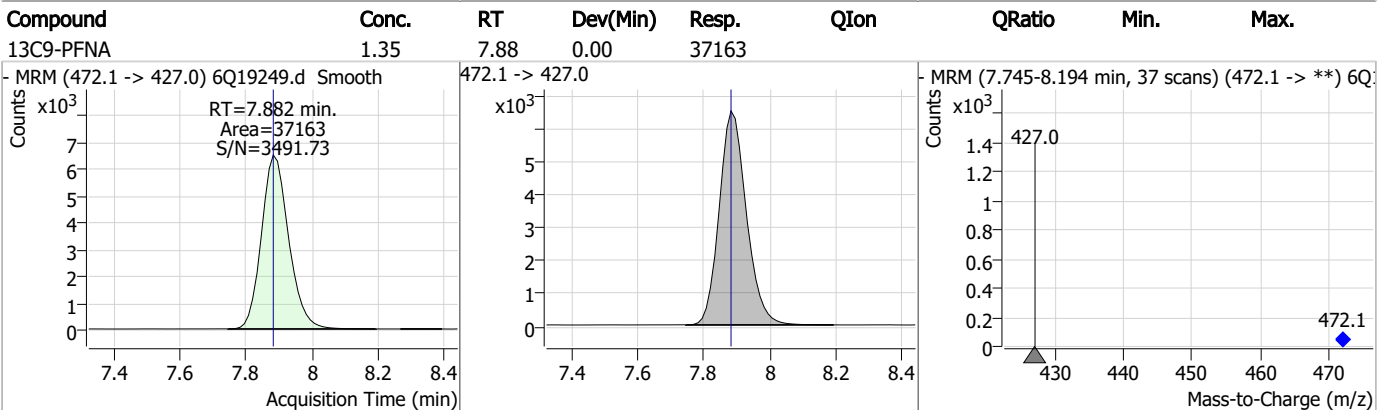
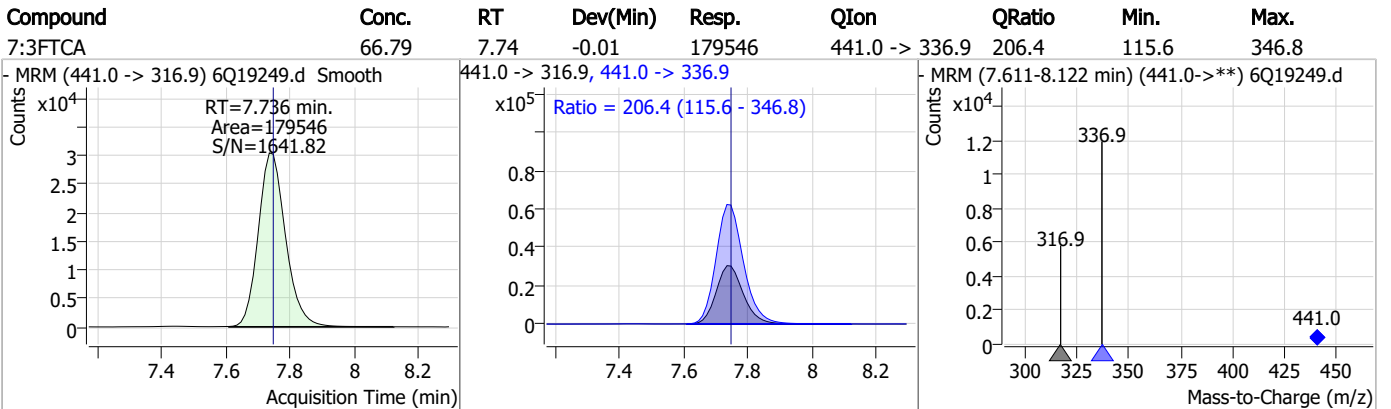
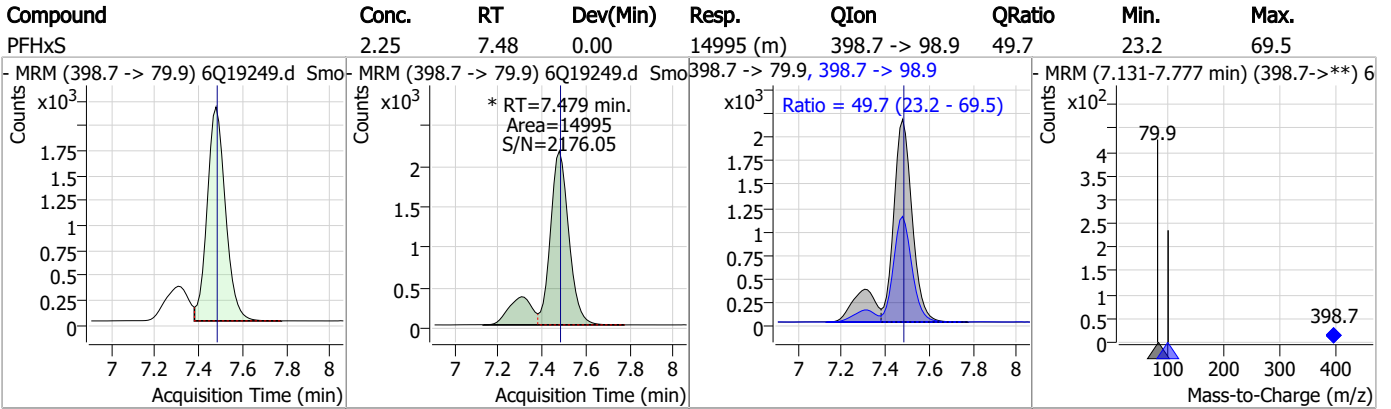


Perfluorinated Compounds by LC/MS/MS

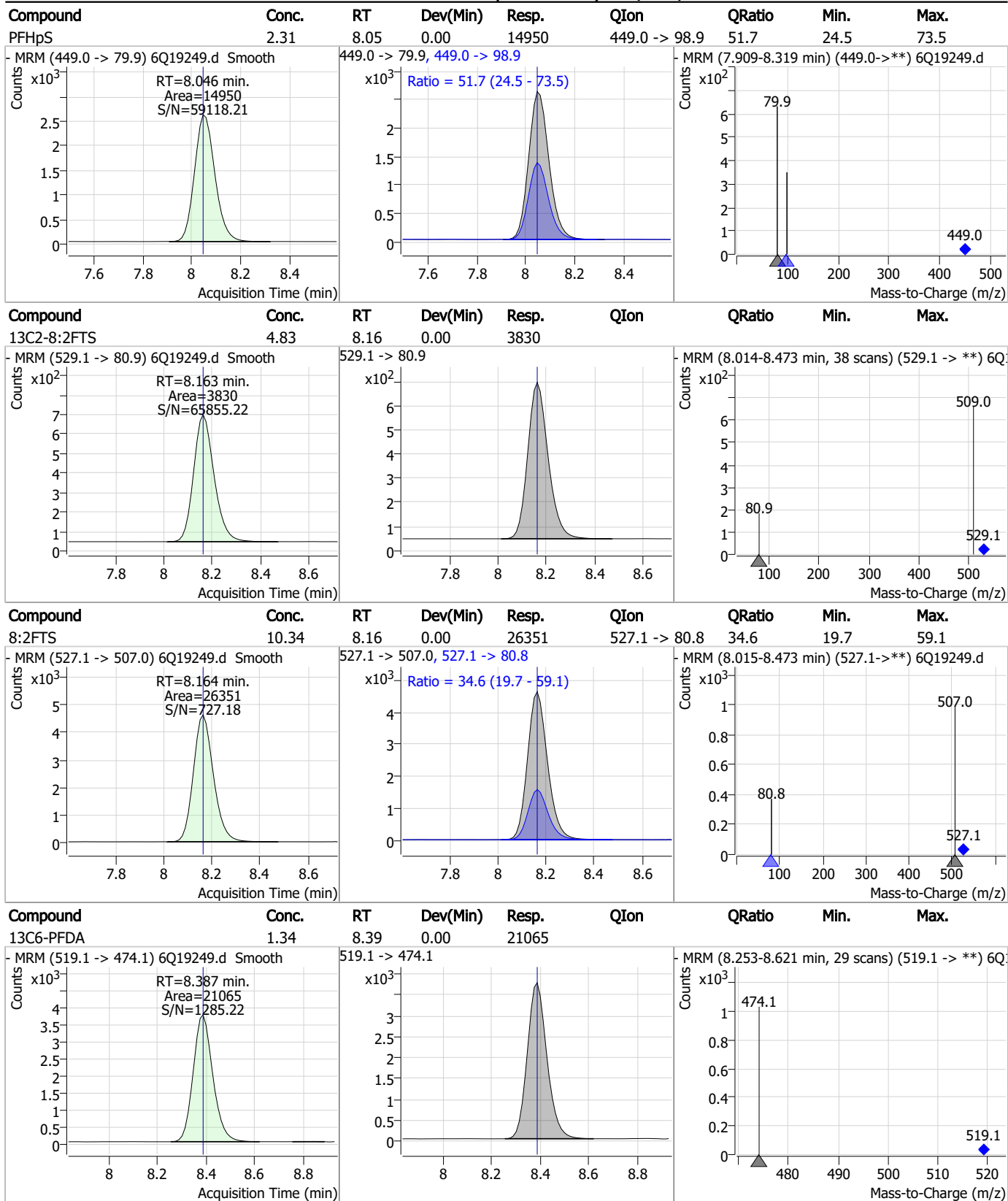


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

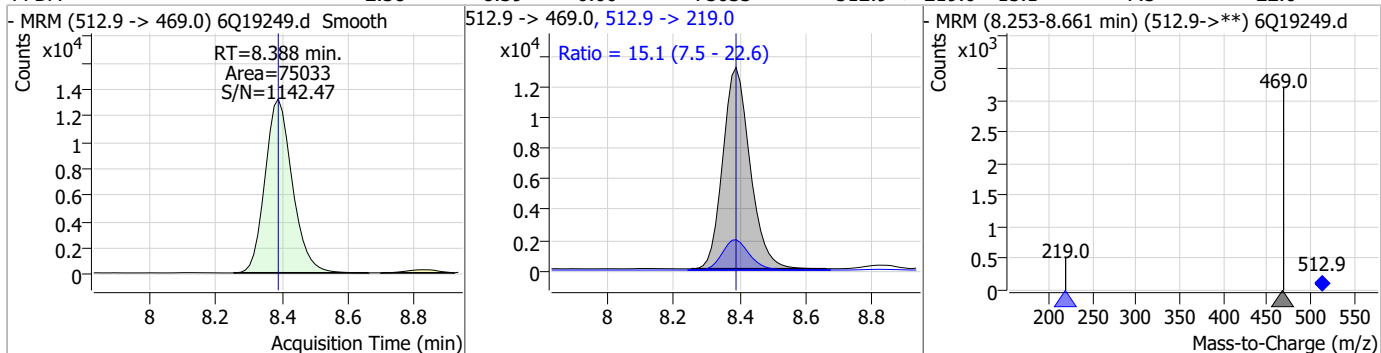


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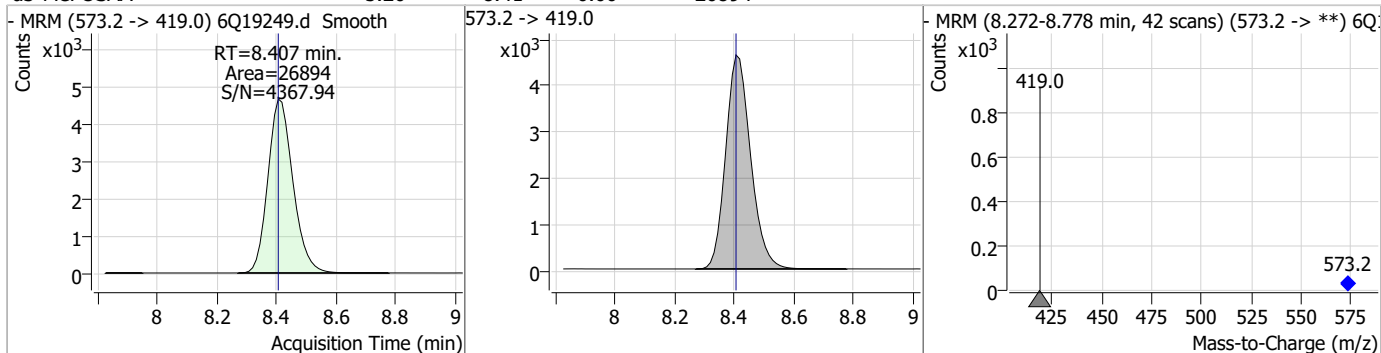
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Perfluorinated Compounds by LC/MS/MS

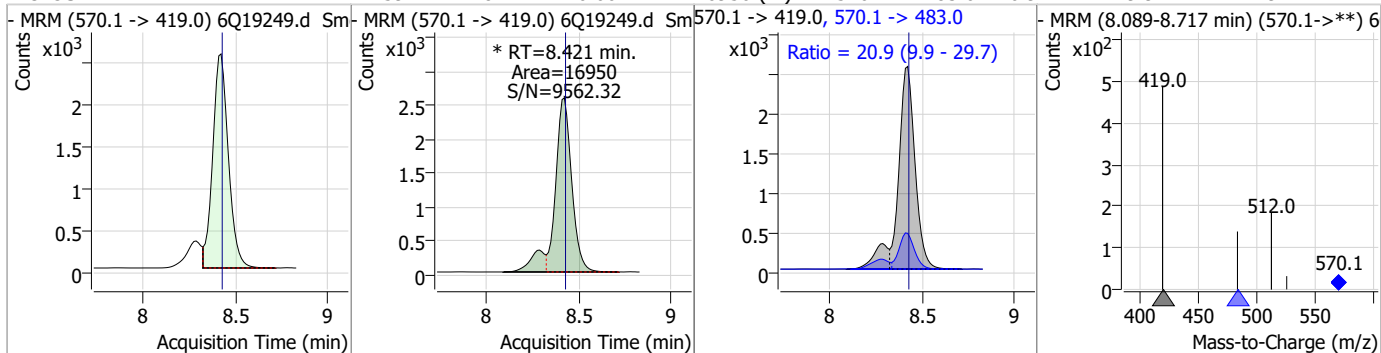
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.38	8.39	0.00	75033	512.9 -> 219.0	15.1	7.5	22.6



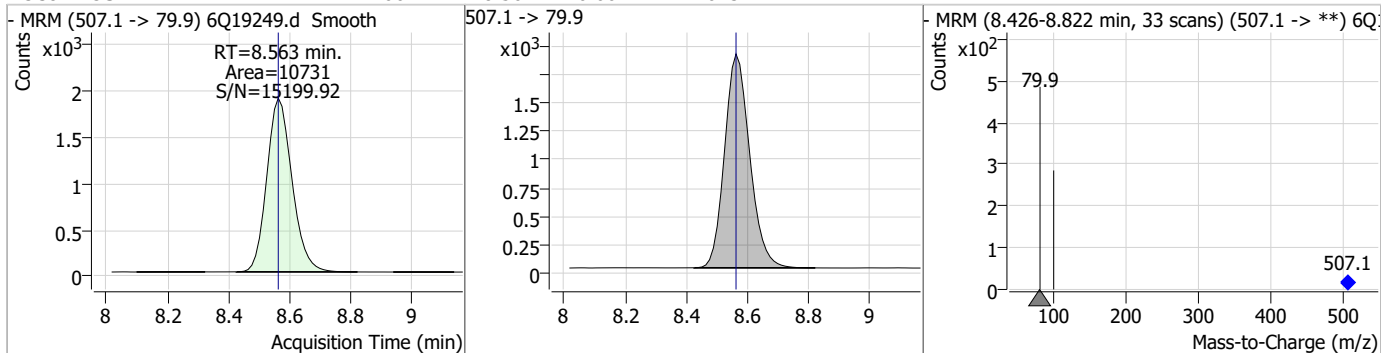
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.20	8.41	0.00	26894				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.59	8.42	0.00	16950 (m)	570.1 -> 483.0	20.9	9.9	29.7



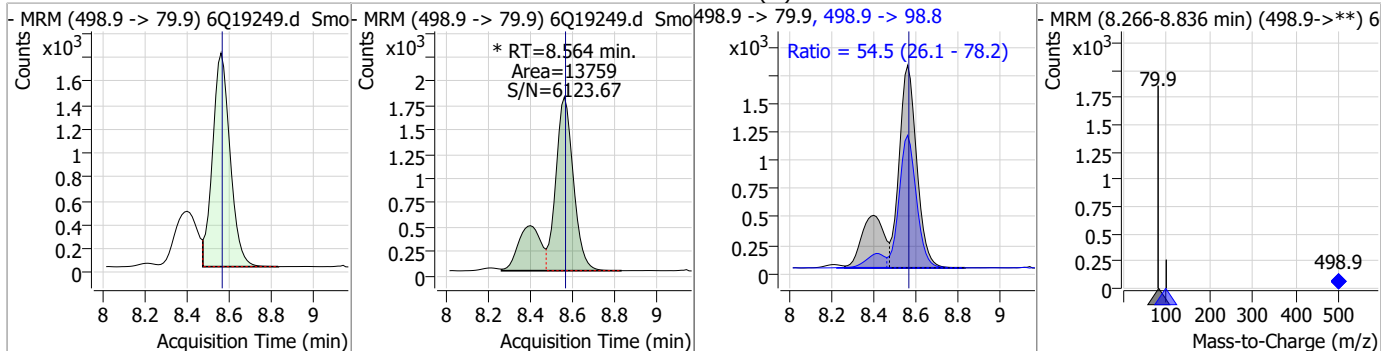
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.66	8.56	0.00	10731				



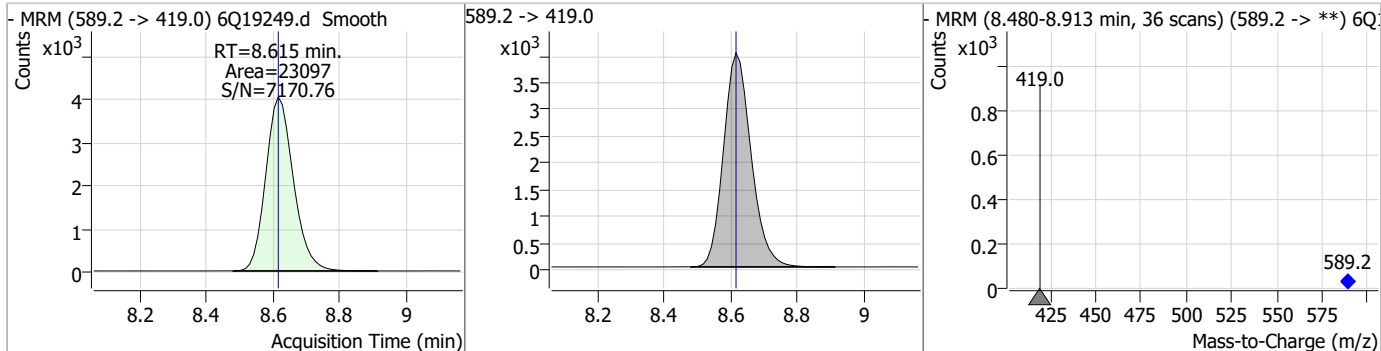
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Perfluorinated Compounds by LC/MS/MS

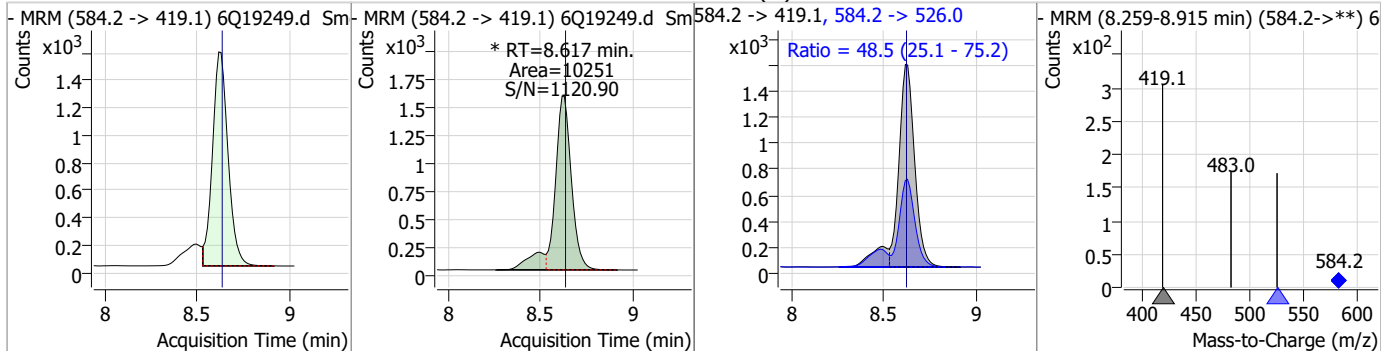
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.18	8.56	0.00	13759 (m)	498.9 -> 98.8	54.5	26.1	78.2



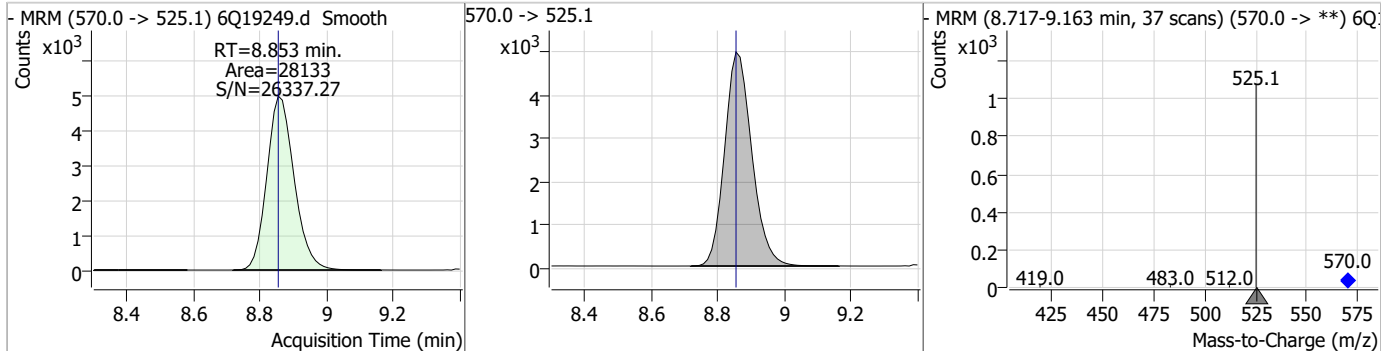
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.62	0.00	23097				



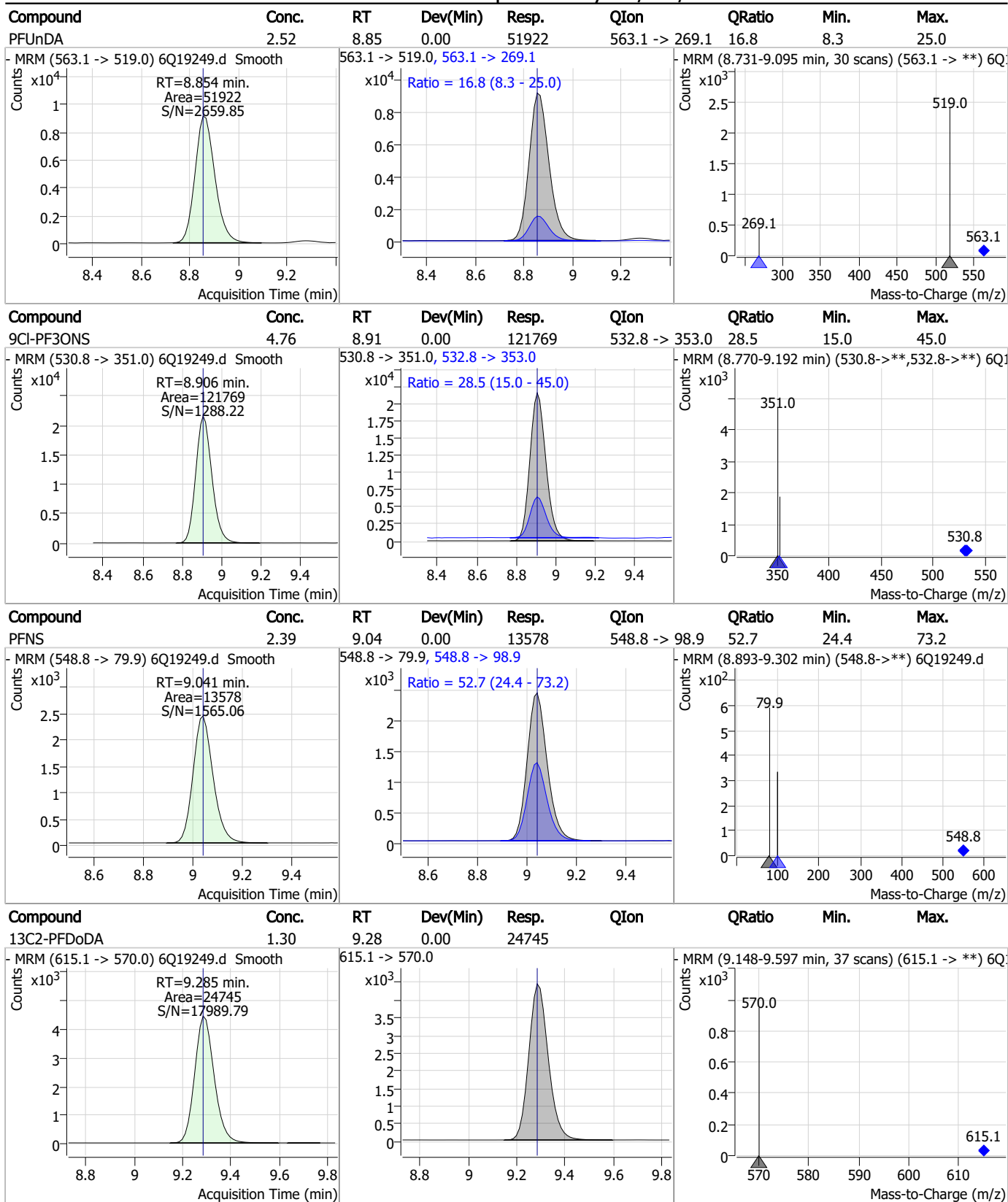
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.67	8.62	-0.01	10251 (m)	584.2 -> 526.0	48.5	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.85	0.00	28133				



Perfluorinated Compounds by LC/MS/MS

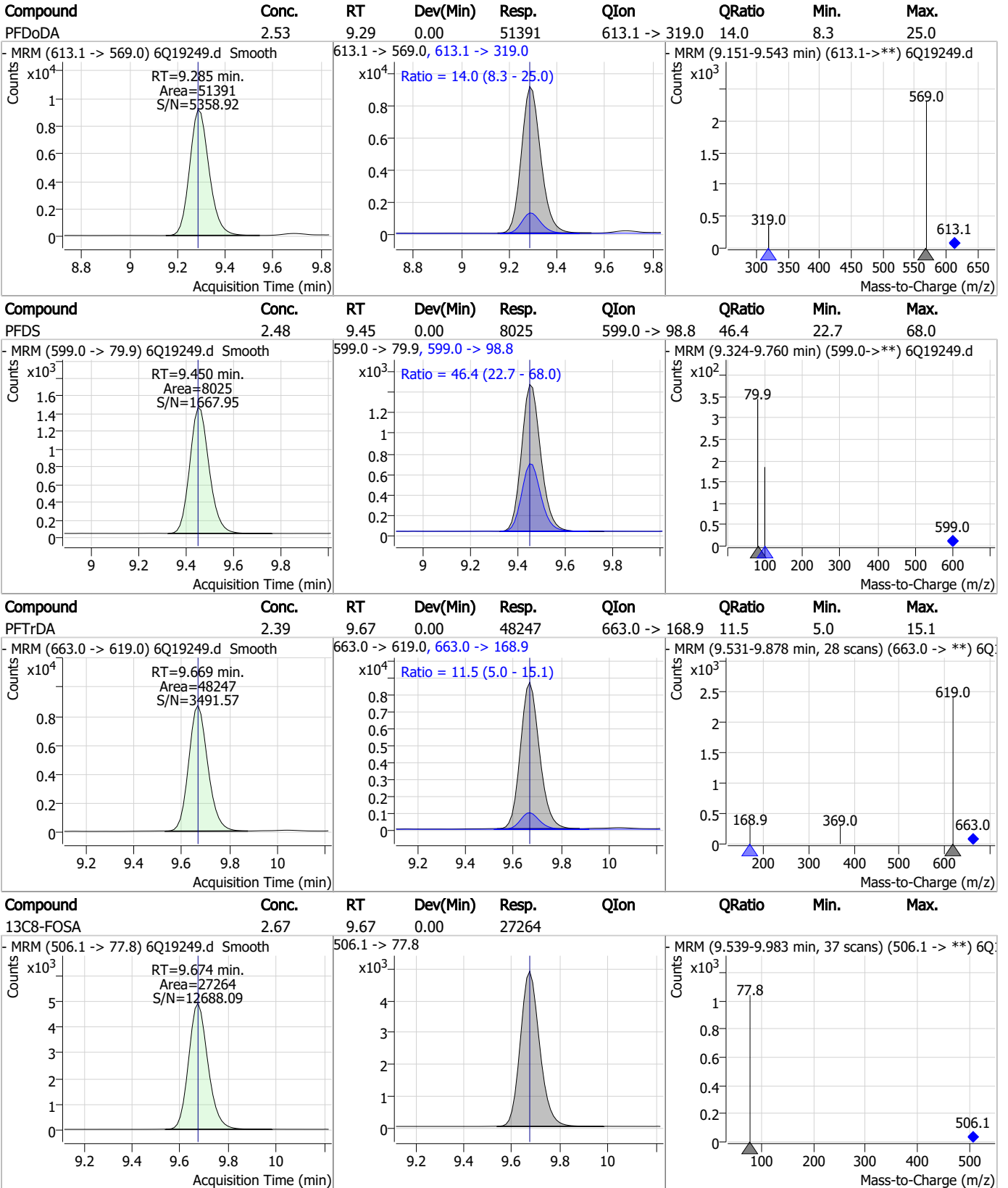


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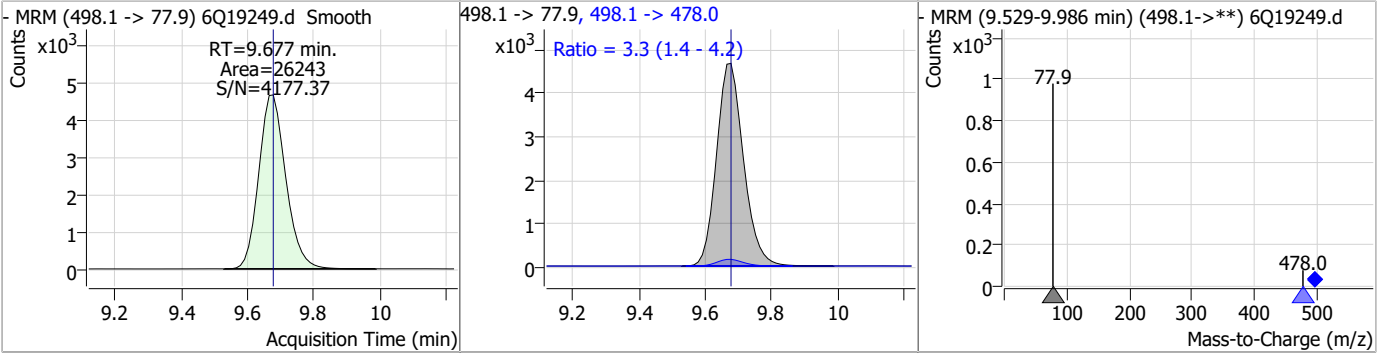
Perfluorinated Compounds by LC/MS/MS



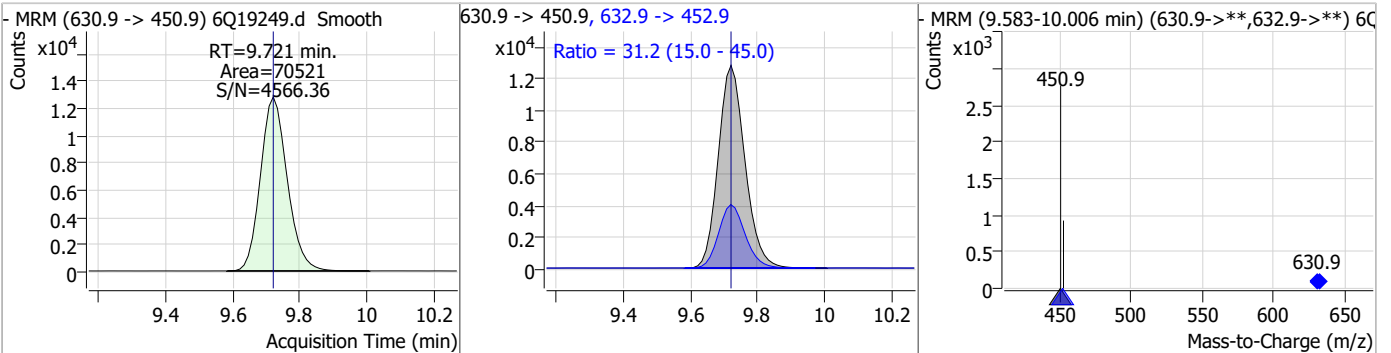
7.7.30 7

Perfluorinated Compounds by LC/MS/MS

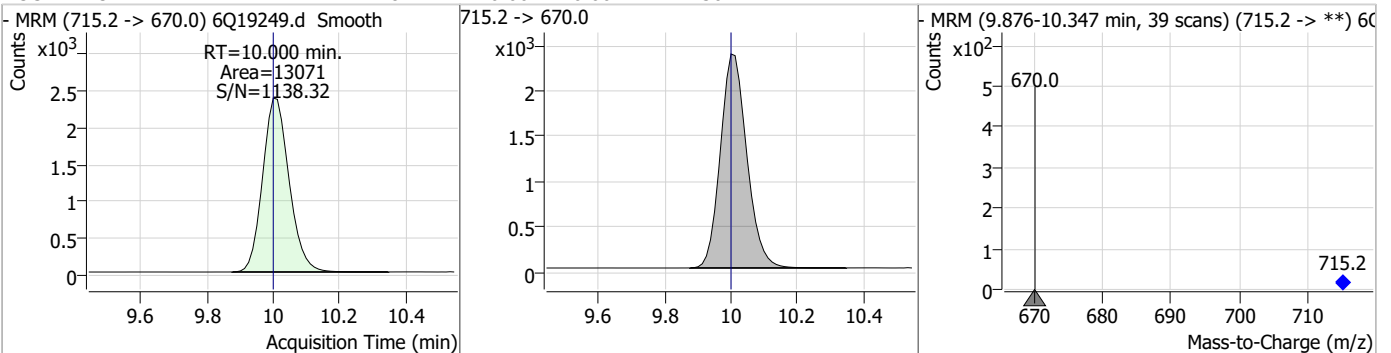
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.35	9.68	0.00	26243	498.1 -> 478.0	3.3	1.4	4.2



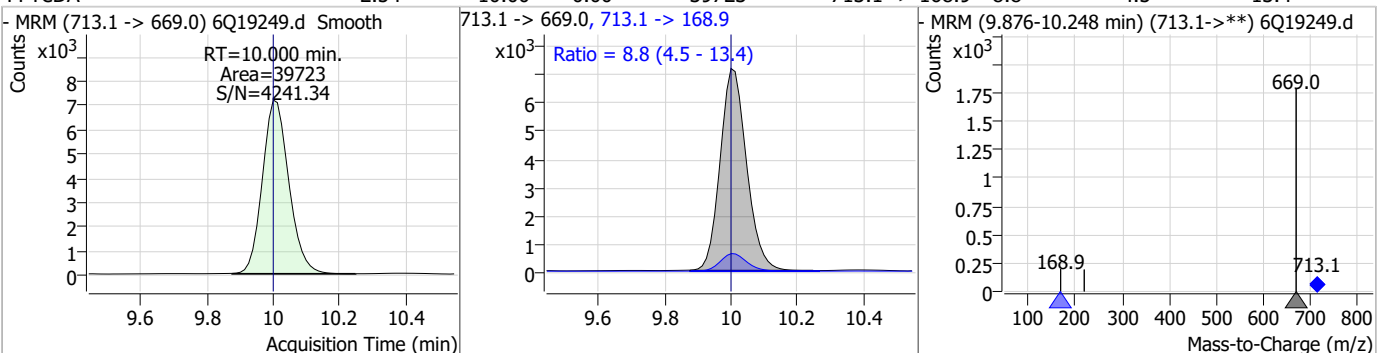
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.61	9.72	0.00	70521	632.9 -> 452.9	31.2	15.0	45.0



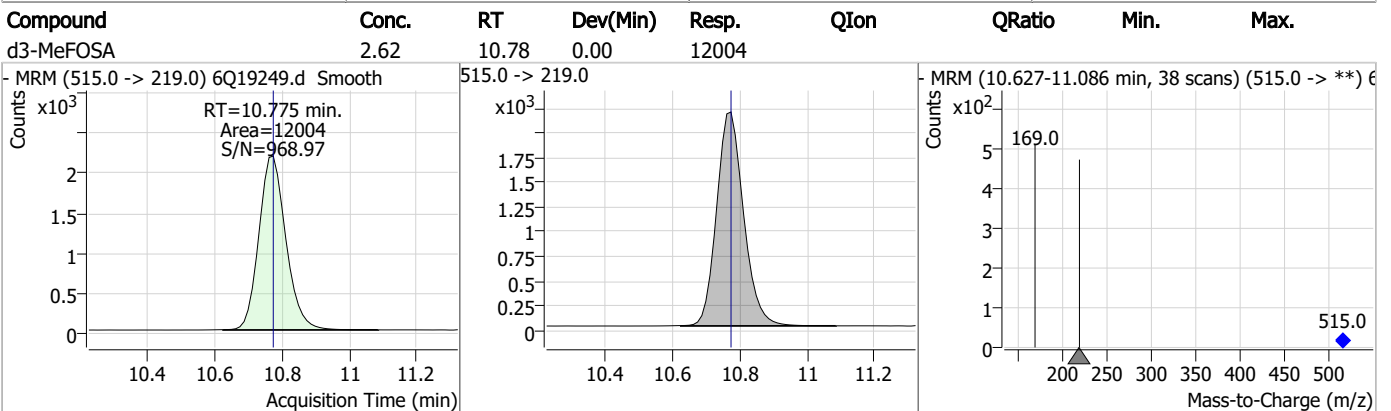
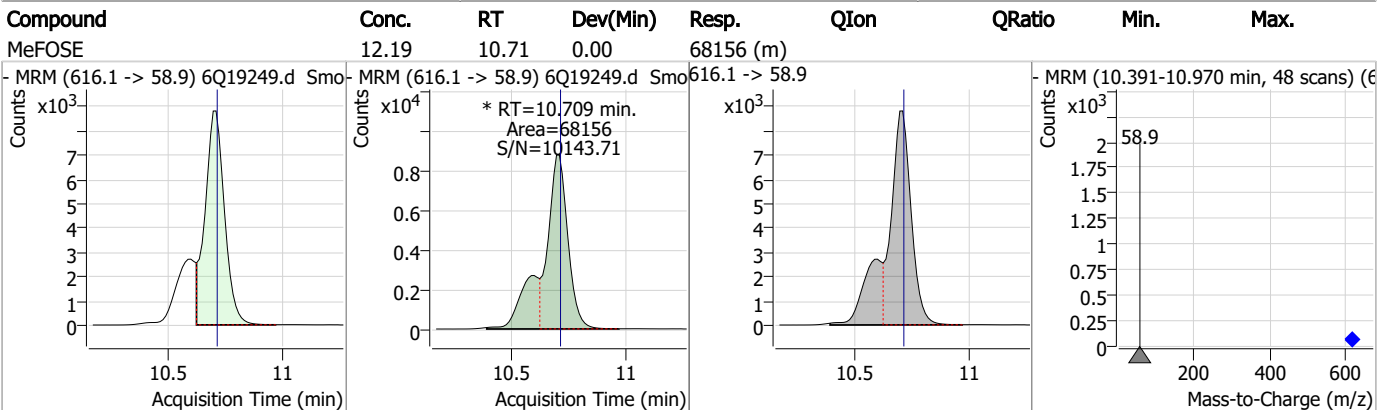
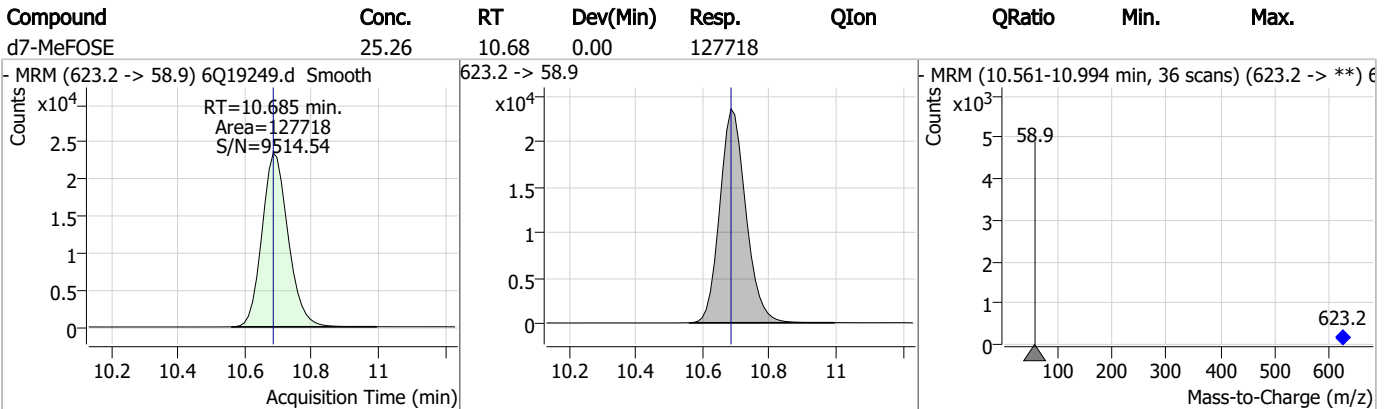
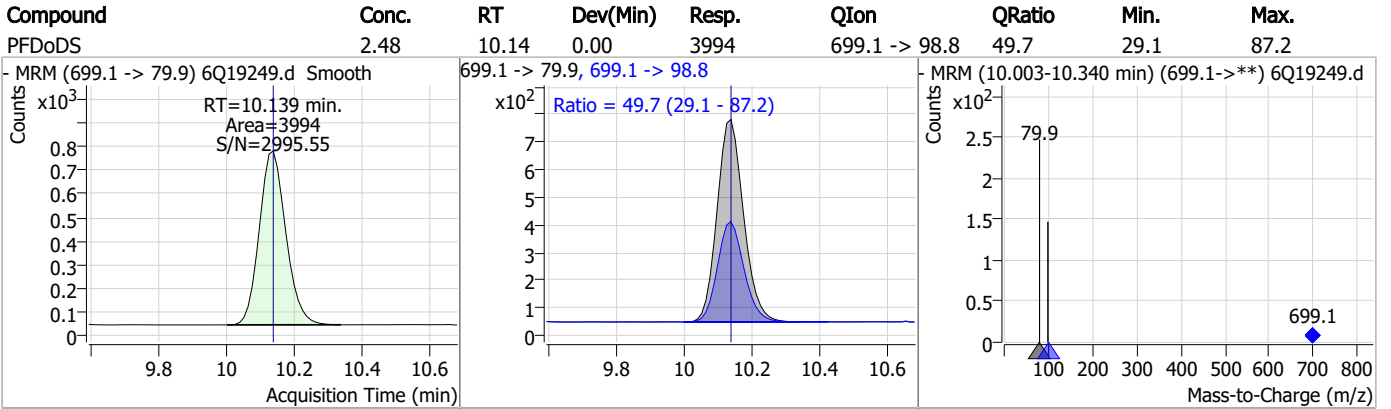
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	10.00	0.00	13071	715.2 -> 670.0	8.8	4.5	13.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.54	10.00	0.00	39723	713.1 -> 168.9	8.8	4.5	13.4

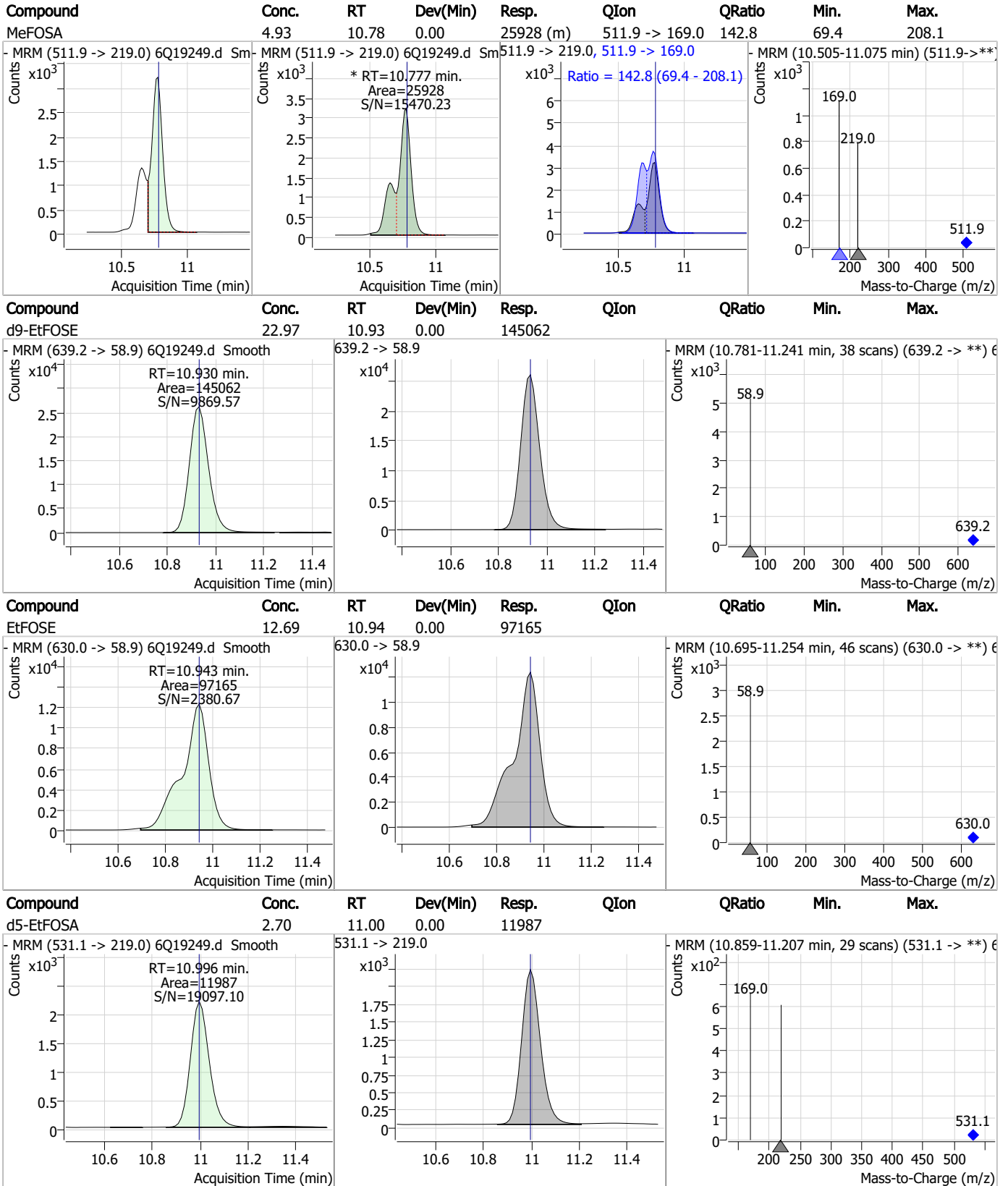


Perfluorinated Compounds by LC/MS/MS



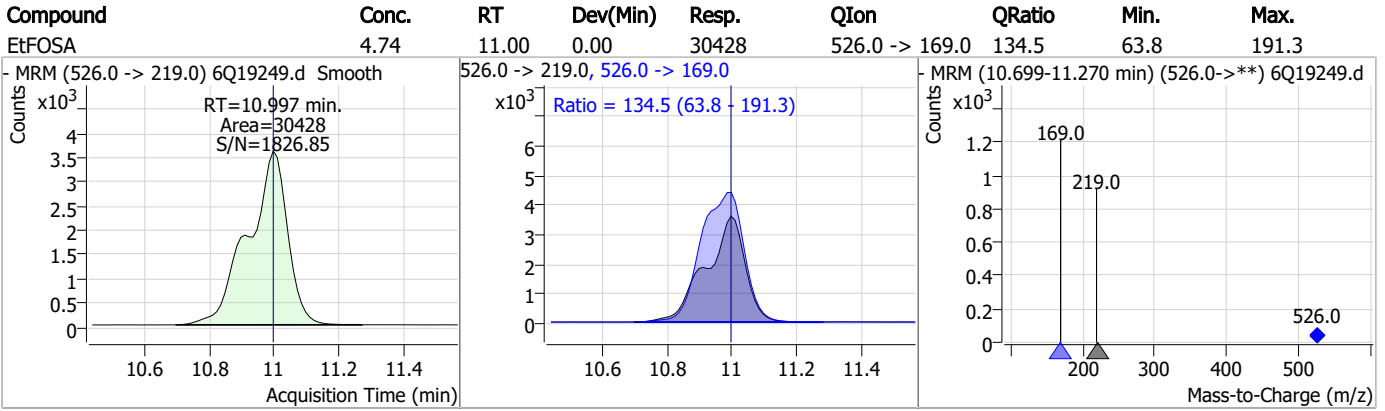
7.7.30
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.30
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Manual Integration Approval Summary

Sample Number: S6Q287-ICV287 Method: EPA DRAFT 1633
Lab FileID: 6Q19249.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 17:54 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.62	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

7.7.30.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19250.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 6:08:20 PM
 Sample Name : icv287-20
 Vial : P1-B2
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	186903	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	61219	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	65602	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	63373	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	101827	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	46220	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	27311	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	38591	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	31985	1.25 µg/L	0.000
M2-PFTeDA	10.000	715.2 -> 670.0	18345	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	34417	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	24612	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	15038	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	14017	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3729	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	5634	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4977	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	35496	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	43327	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	32282	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	145105	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	163323	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	14632	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	14215	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	18783	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	78453	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	10637	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	105398	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	36813	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	58683	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	61420	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3729	5.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.9%		
13C2-6:2FTS	7.113	429.1 -> 80.9	5634	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4977	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFDoDA	9.285	615.1 -> 570.0	31985	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFTeDA	10.000	715.2 -> 670.0	18345	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C3-PFBS	5.746	302.1 -> 79.9	24612	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C3-PFHxS	7.478	402.1 -> 79.9	15038	2.66 µg/L	0.000

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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	3.085	216.8 -> 171.9	186903	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C4-PFHpA	6.707	367.1 -> 322.0	63373	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C5-PFHxA	5.792	318.0 -> 273.0	65602	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C5-PFPeA	4.548	268.3 -> 223.0	61219	5.16 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C6-PFDA	8.387	519.1 -> 474.1	27311	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C7-PFUnDA	8.853	570.0 -> 525.1	38591	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C8-FOSA	9.674	506.1 -> 77.8	34417	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C8-PFOA	7.339	421.1 -> 376.0	101827	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C8-PFOS	8.563	507.1 -> 79.9	14017	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C9-PFNA	7.882	472.1 -> 427.0	46220	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
d3-MeFOSAA	8.407	573.2 -> 419.0	35496	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-HFPO-DA	6.169	286.9 -> 168.9	43327	10.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d3-MeFOSA	10.775	515.0 -> 219.0	14215	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.1%		
d5-EtFOSAA	8.615	589.2 -> 419.0	32282	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
d7-MeFOSE	10.685	623.2 -> 58.9	145105	21.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 84.2%		
d9-EtFOSE	10.930	639.2 -> 58.9	163323	18.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 75.9%		
d5-EtFOSA	10.996	531.1 -> 219.0	14632	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.7%		
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	103082	15.95 µg/L	99
		327.1 -> 80.9	39099		
6:2FTS	7.113	427.1 -> 407.0	103556	15.21 µg/L	98
		427.1 -> 80.9	36542		
8:2FTS	8.164	527.1 -> 507.0	53526	16.17 µg/L	100
		527.1 -> 80.8	21146		
EtFOSAA	8.629	584.2 -> 419.1	76704	14.31 µg/L	m 97
		584.2 -> 526.0	40197		
FOSA	9.677	498.1 -> 77.9	222669	15.76 µg/L	100
		498.1 -> 478.0	6283		
MeFOSAA	8.421	570.1 -> 419.0	136370	15.80 µg/L	m 96
		570.1 -> 483.0	29574		
PFBA	3.081	212.8 -> 168.9	116588	15.64 µg/L	100
PFBS	5.747	298.7 -> 79.9	178958	16.58 µg/L	97
		298.7 -> 98.8	65156		
PFDA	8.388	512.9 -> 469.0	653938	16.02 µg/L	99
		512.9 -> 219.0	102008		
PFDoDA	9.285	613.1 -> 569.0	382562	14.57 µg/L	94
		613.1 -> 319.0	54590		
PFDS	9.450	599.0 -> 79.9	73695	17.42 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.708	599.0 -> 98.8	31510	15.33	µg/L	99
		363.1 -> 319.0	520287			
PFHpS	8.046	363.1 -> 169.0	84421	15.90	µg/L	96
		449.0 -> 79.9	134182			
PFHxA	5.795	449.0 -> 98.9	61804	16.13	µg/L	99
		313.0 -> 269.0	423968			
PFHxS	7.479	313.0 -> 118.9	22017	16.84	µg/L	97
		398.7 -> 79.9	152256			
PFNA	7.883	398.7 -> 98.9	67616	15.88	µg/L	96
		463.0 -> 419.0	673473			
PFNS	9.041	463.0 -> 219.0	129587	15.22	µg/L	84
		548.8 -> 79.9	112824			
PFOA	7.341	548.8 -> 98.9	67239	15.25	µg/L	100
		413.0 -> 369.0	796387			
PFOS	8.564	413.0 -> 169.0	139290	14.85	µg/L	89
		498.9 -> 79.9	122591			
PFPeA	4.551	498.9 -> 98.8	54751	16.06	µg/L	100
		263.0 -> 219.0	289348			
PFPeS	6.785	349.1 -> 79.9	139616	16.79	µg/L	100
		349.1 -> 98.9	64441			
PFTeDA	10.000	713.1 -> 669.0	337213	15.37	µg/L	100
		713.1 -> 168.9	29432			
PFTrDA	9.669	663.0 -> 619.0	369971	14.67	µg/L	100
		663.0 -> 168.9	37611			
PFUnDA	8.854	563.1 -> 519.0	418249	14.77	µg/L	98
		563.1 -> 269.1	72855			
11CI-PF3OUdS	9.721	630.9 -> 450.9	307399	15.05	µg/L	95
		632.9 -> 452.9	100291			
9CI-PF3ONS	8.906	530.8 -> 351.0	524183	15.37	µg/L	95
		532.8 -> 353.0	172035			
ADONA	6.959	376.9 -> 250.9	1048412	14.30	µg/L	98
		376.9 -> 84.8	282797			
HFPO-DA	6.169	284.9 -> 168.9	66352	14.25	µg/L	97
		284.9 -> 184.9	8014			
3:3FTCA	3.946	241.0 -> 177.0	18633	15.13	µg/L	100
		241.0 -> 117.0	2462			
5:3FTCA	6.361	341.0 -> 237.1	86072	16.89	µg/L	100
		341.0 -> 217.0	64252			
7:3FTCA	7.748	441.0 -> 316.9	60806	16.67	µg/L	90
		441.0 -> 336.9	130034			
EtFOSA	10.997	526.0 -> 219.0	121412	15.49	µg/L	83
		526.0 -> 169.0	130442			
EtFOSE	10.943	630.0 -> 58.9	747230	86.65	µg/L	100
		511.9 -> 219.0	101806			
MeFOSA	10.777	511.9 -> 169.0	115188	16.34	µg/L	79
		616.1 -> 58.9	539183			
MeFOSE	10.709	699.1 -> 79.9	30951	84.90	µg/L	100
		699.1 -> 98.8	17015			
PFDoDS	10.139	295.0 -> 201.0	52773	14.70	µg/L	96
		295.0 -> 84.9	14563			
NFDHA	5.673	279.0 -> 85.1	203278	15.86	µg/L	98
		229.0 -> 84.9	158370			
PFMBA	4.988	314.8 -> 134.9	483864	15.77	µg/L	100
		314.8 -> 82.9	18753			
PFMPA	3.667			14.96	µg/L	99
PFEESA	6.288					

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

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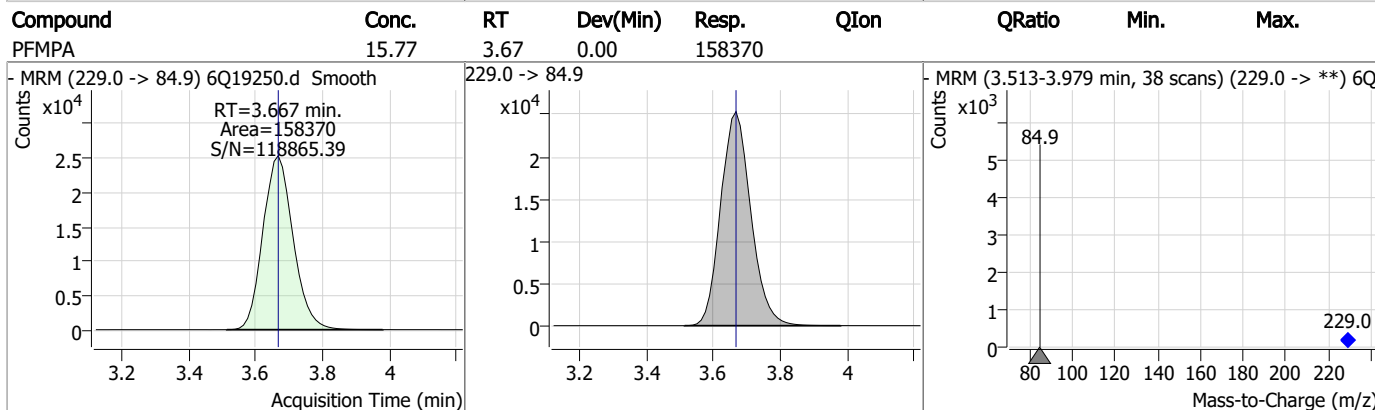
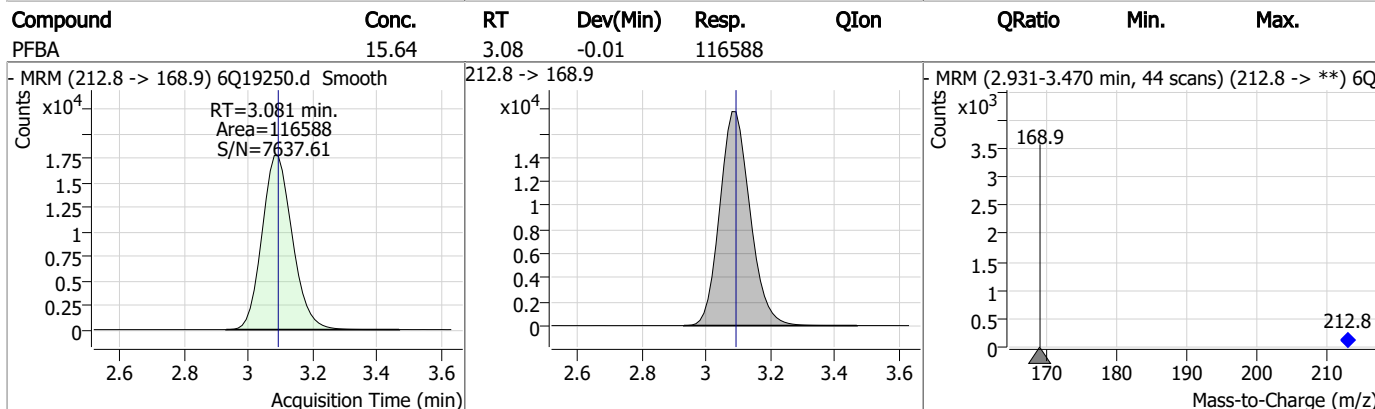
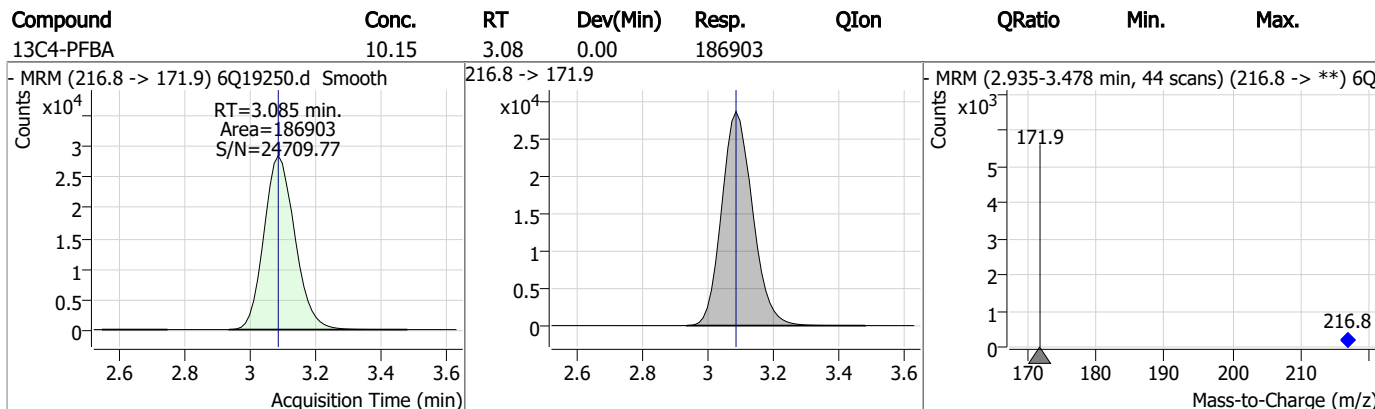
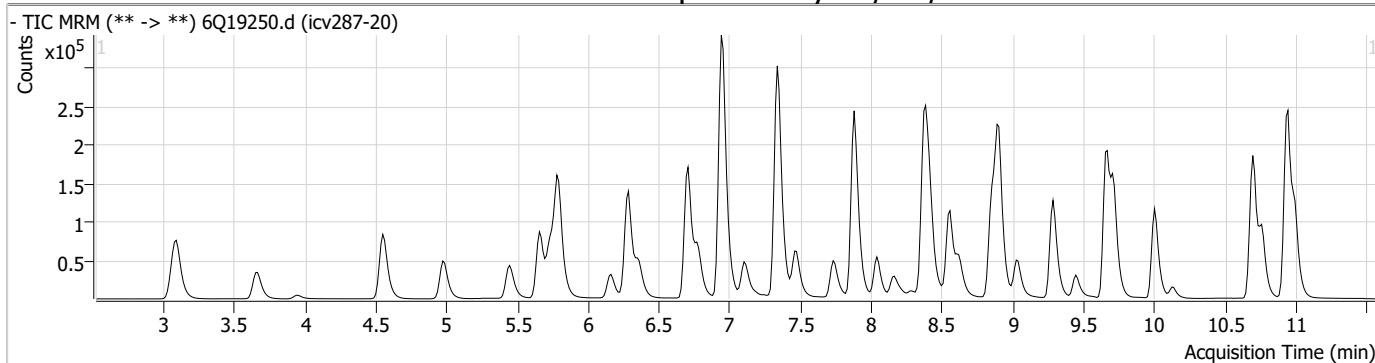
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS

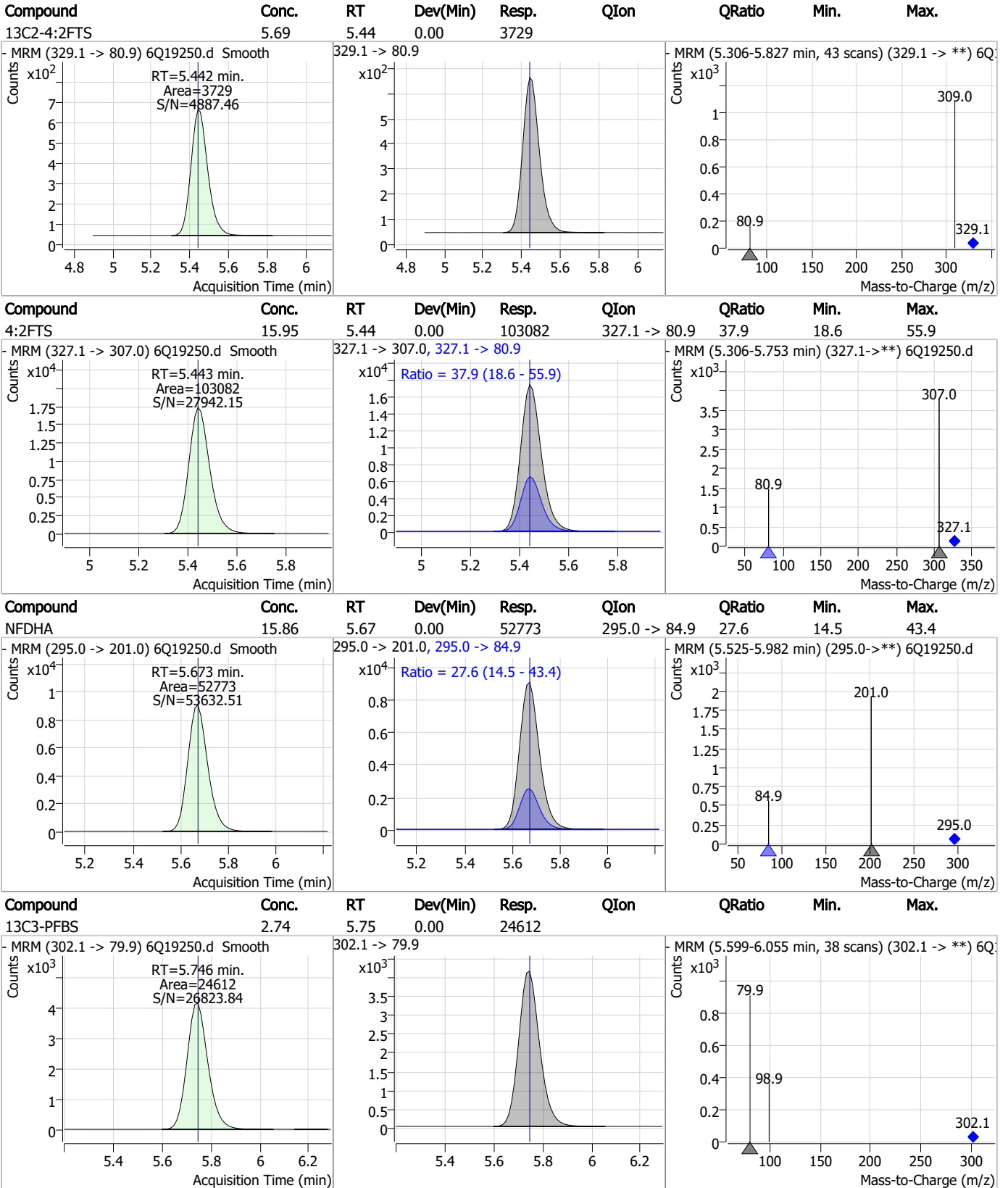


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	15.13	3.95	0.00	18633	241.0 -> 117.0	13.2	6.6	19.9
PFPeA	16.06	4.55	0.00	289348				
13C5-PFPeA	5.16	4.55	-0.01	61219				
PFMBA	15.73	4.99	0.00	203278				

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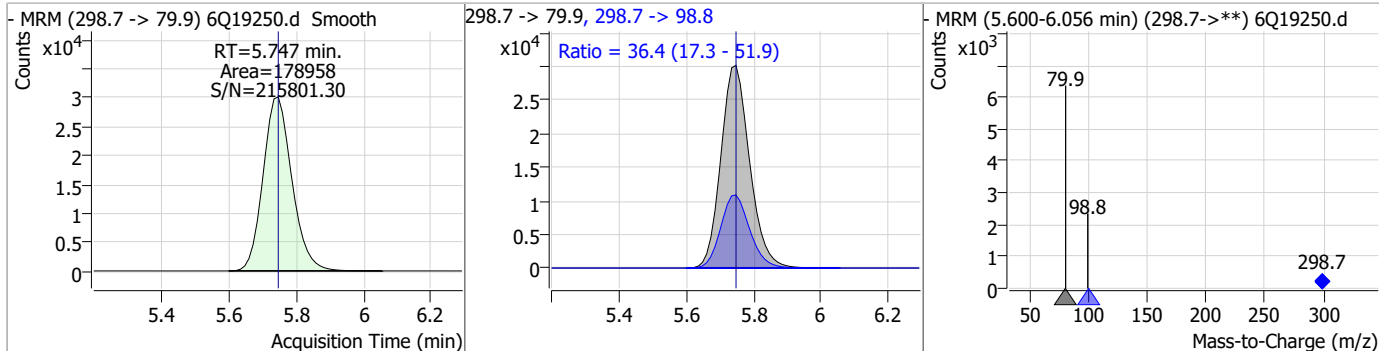
Perfluorinated Compounds by LC/MS/MS



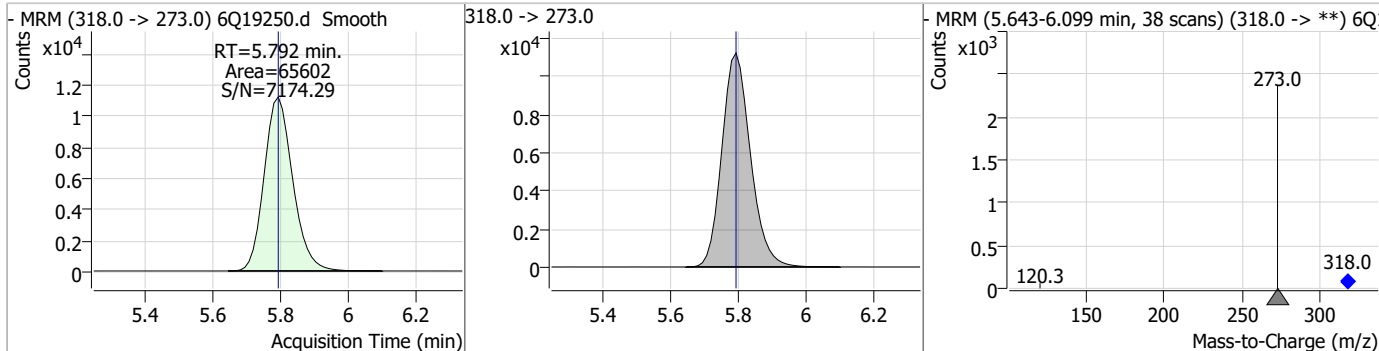
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Perfluorinated Compounds by LC/MS/MS

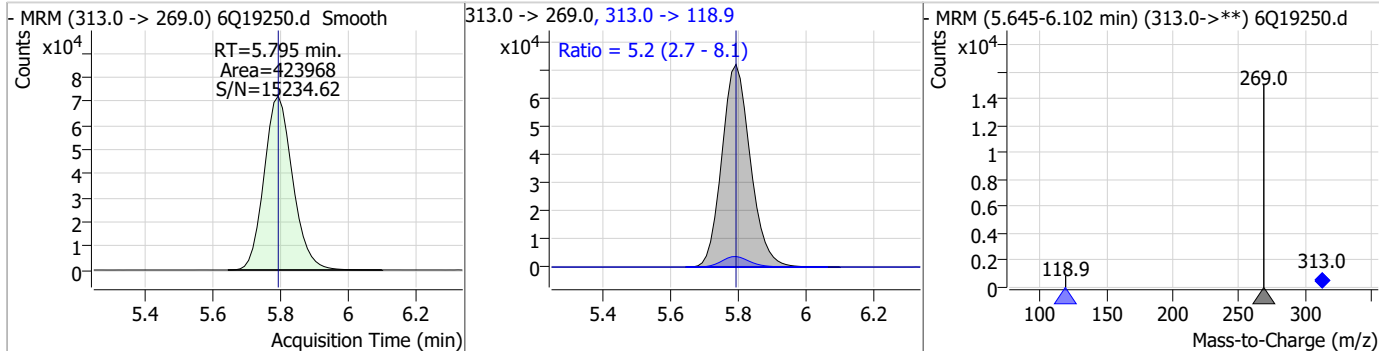
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.58	5.75	0.00	178958	298.7 -> 98.8	36.4	17.3	51.9



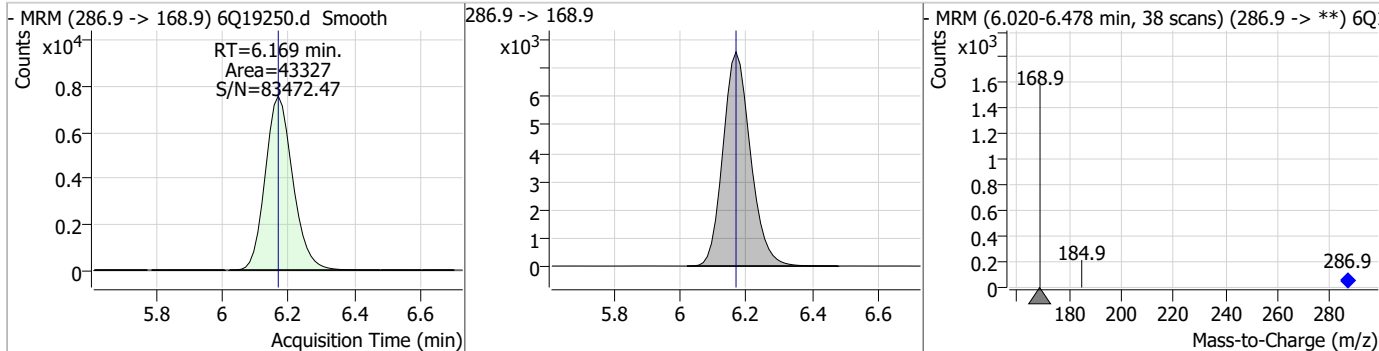
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.79	0.00	65602				



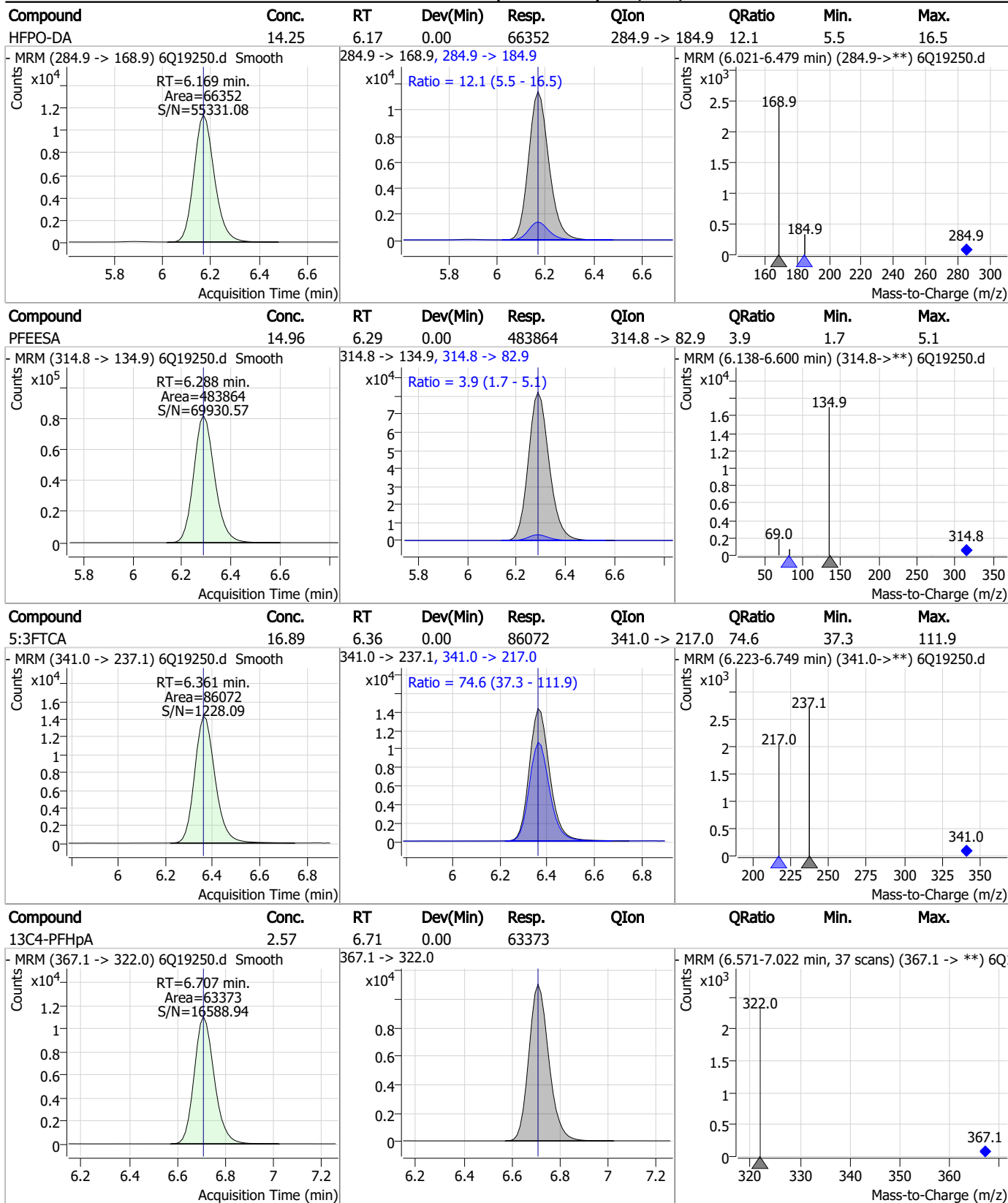
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.13	5.79	0.00	423968	313.0 -> 118.9	5.2	2.7	8.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.29	6.17	0.00	43327				

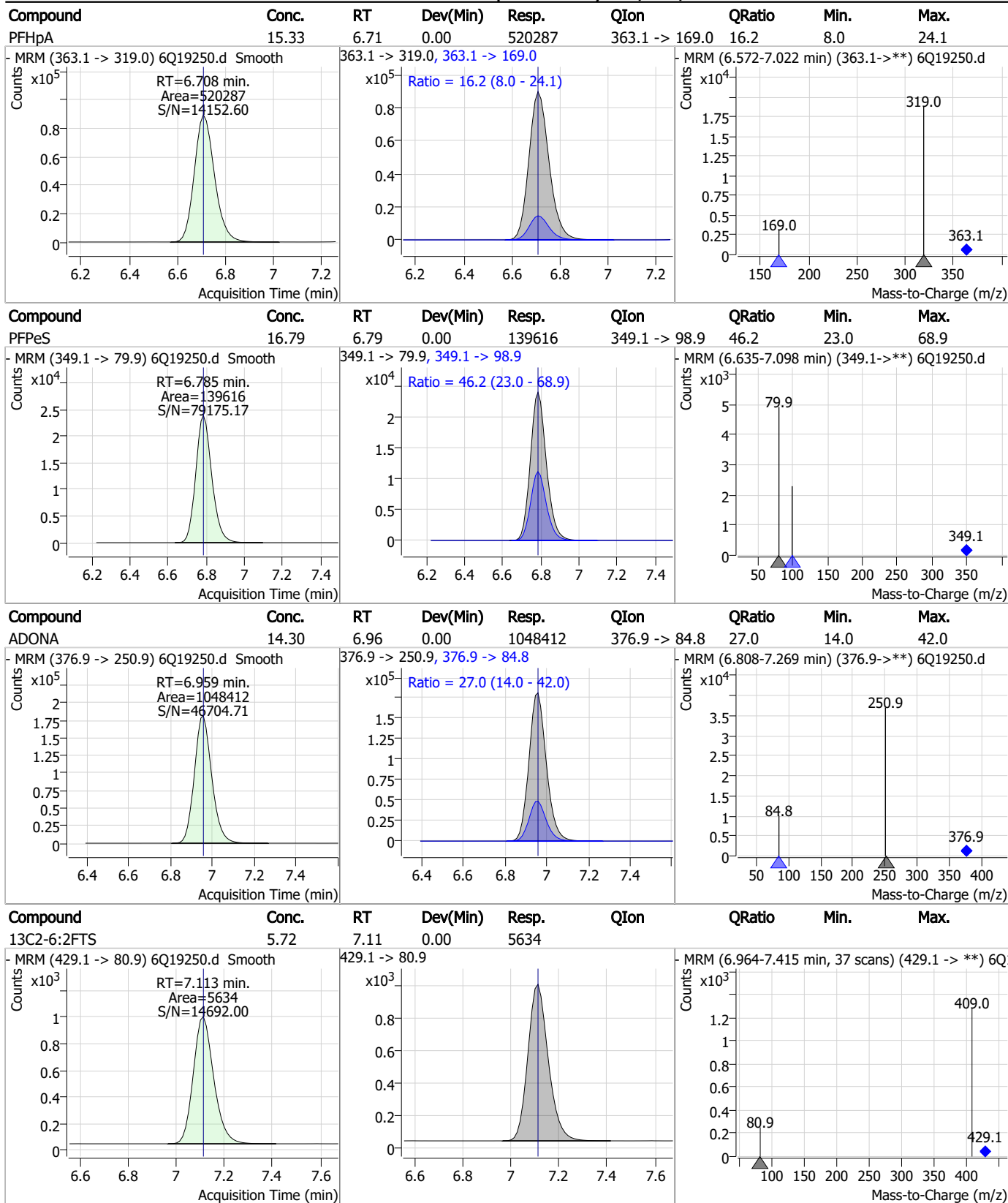


Perfluorinated Compounds by LC/MS/MS



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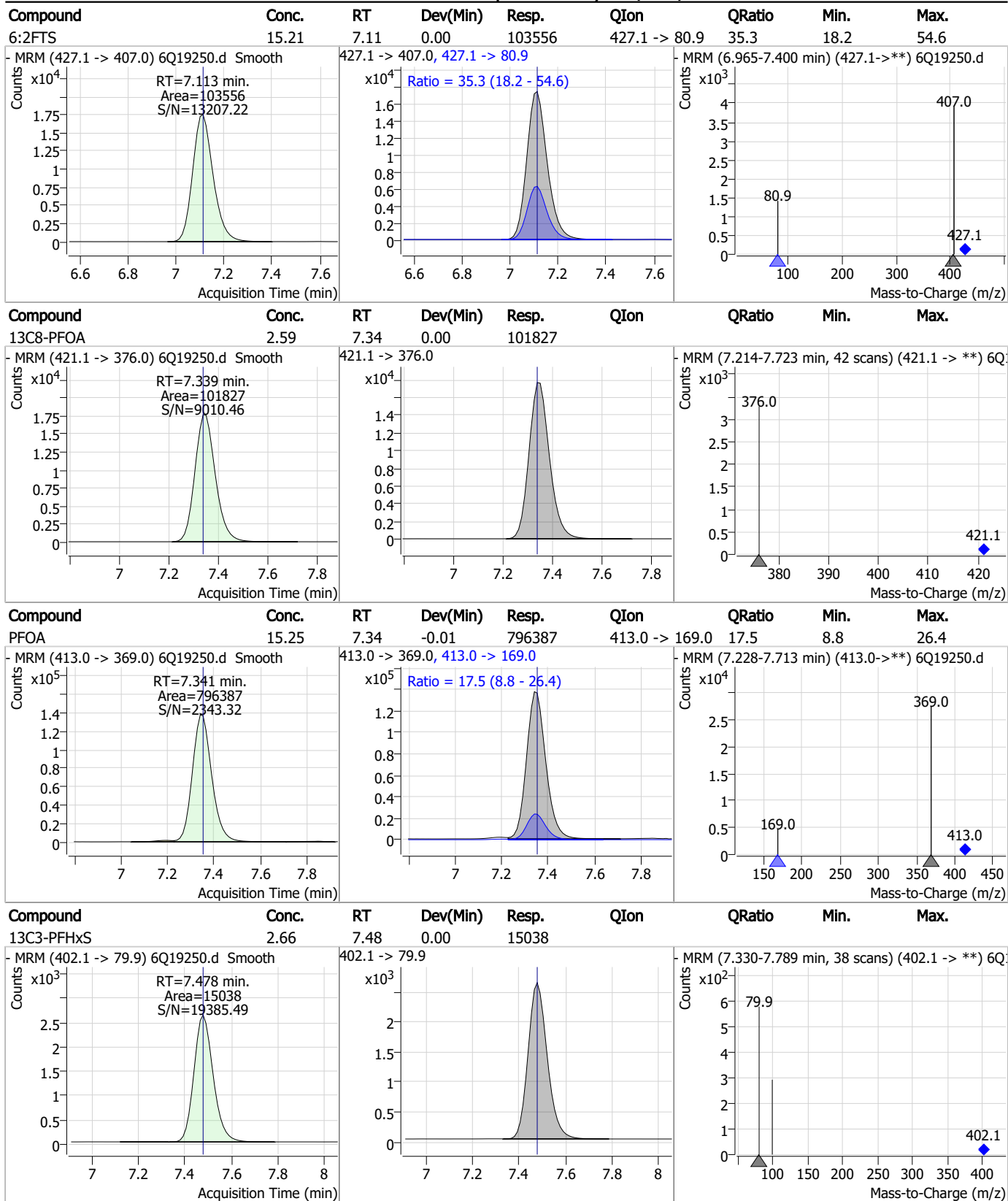
Perfluorinated Compounds by LC/MS/MS



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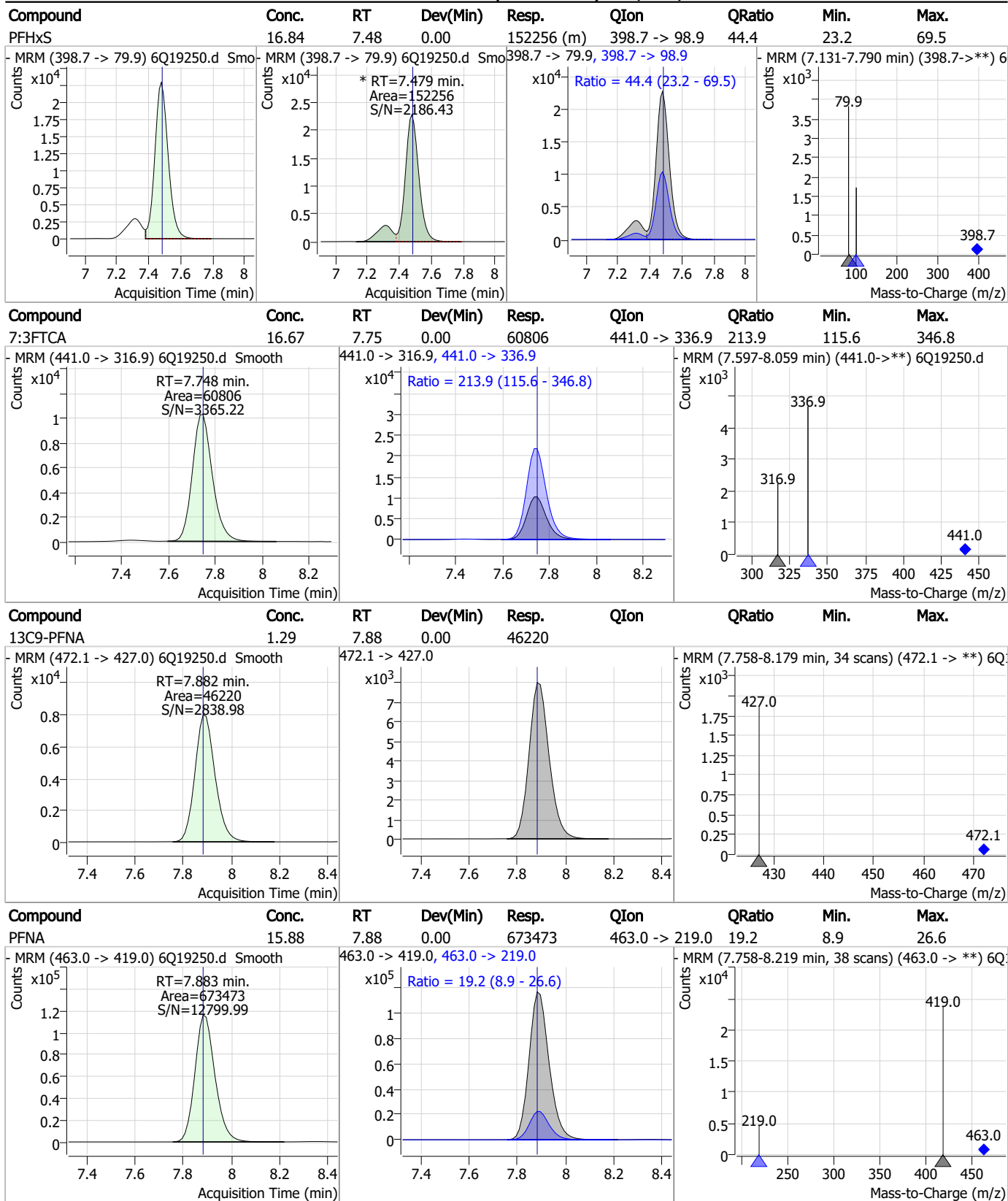
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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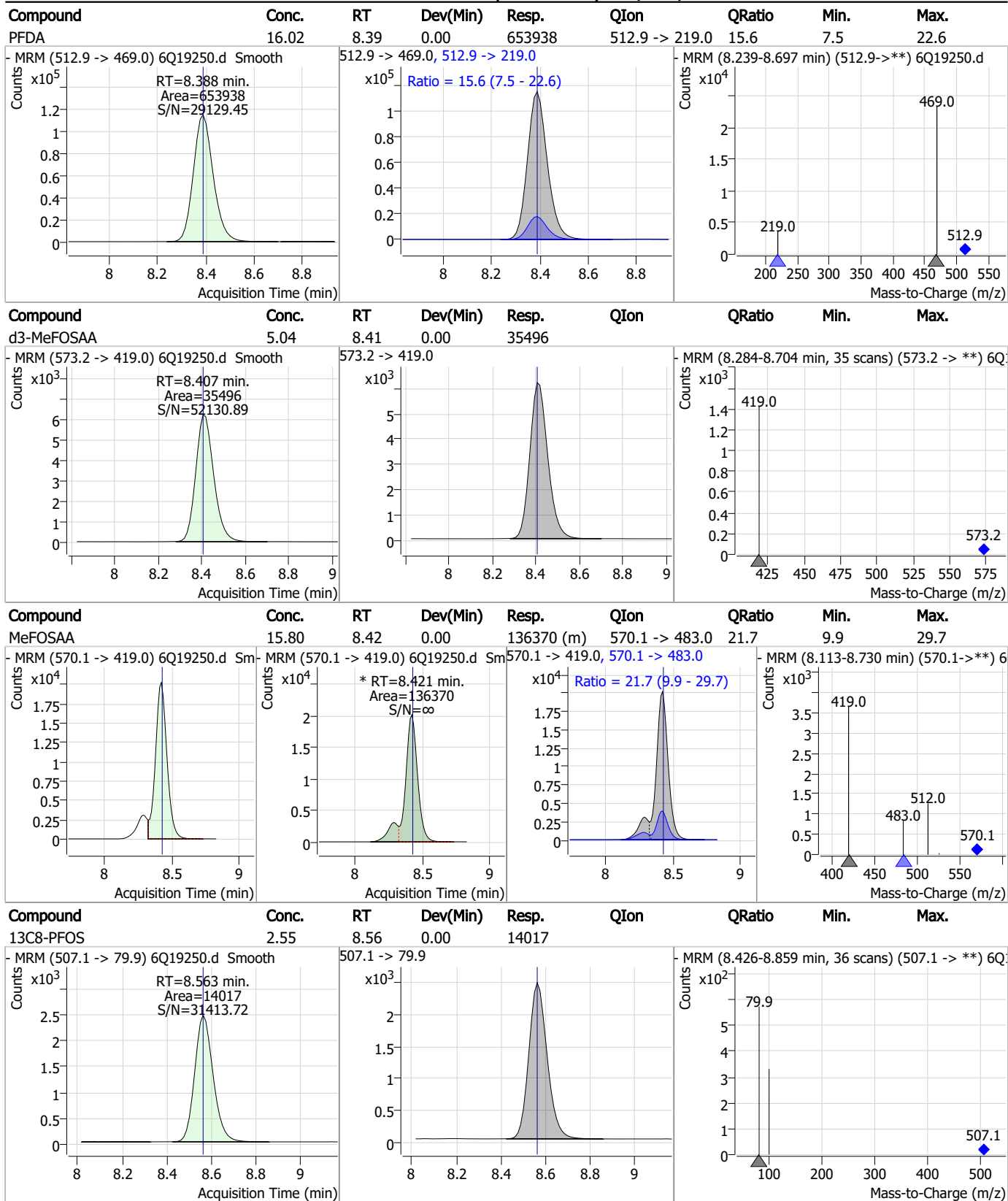
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	15.90	8.05	0.00	134182	449.0 -> 98.9	46.1	24.5	73.5
13C2-8:2FTS	5.28	8.16	0.00	4977	529.1 -> 80.9			
8:2FTS	16.17	8.16	0.00	53526	527.1 -> 80.8	39.5	19.7	59.1
13C6-PFDA	1.34	8.39	0.00	27311	519.1 -> 474.1			

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Perfluorinated Compounds by LC/MS/MS

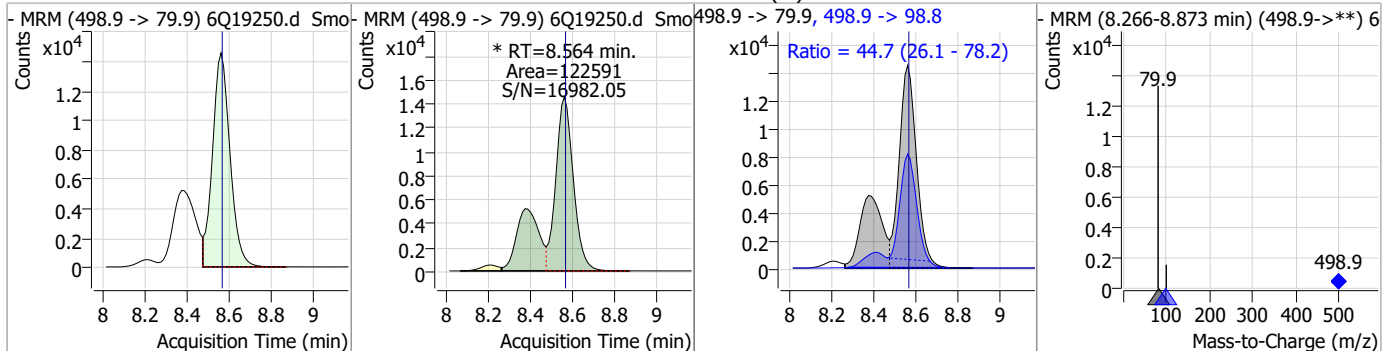


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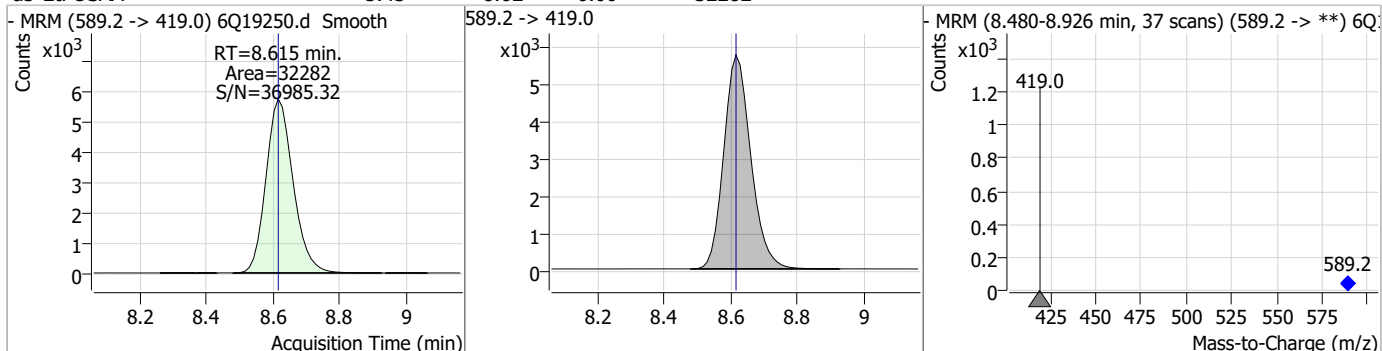
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Perfluorinated Compounds by LC/MS/MS

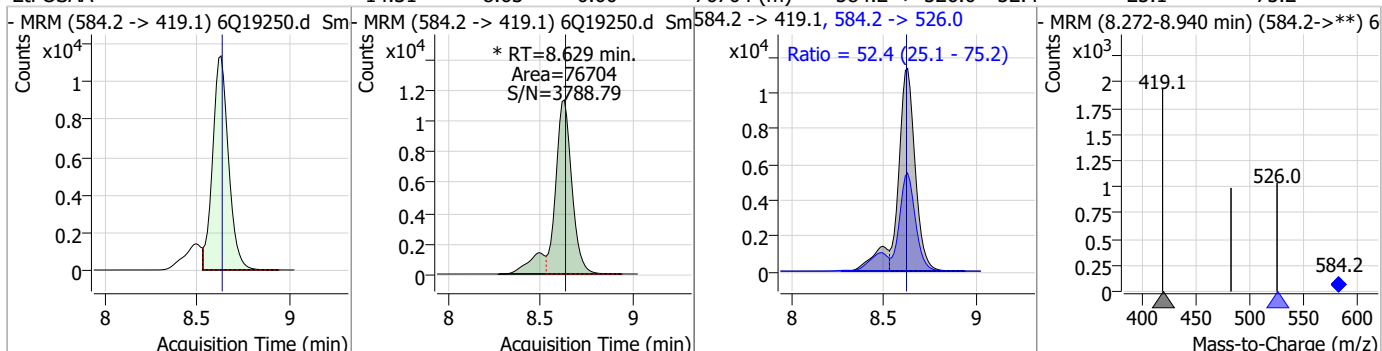
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	14.85	8.56	0.00	122591 (m)	498.9 -> 98.8	44.7	26.1	78.2



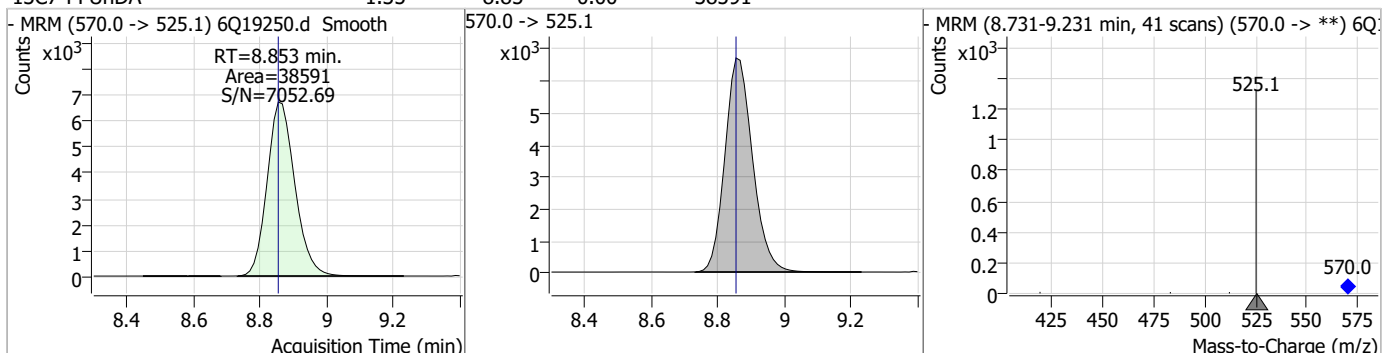
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.43	8.62	0.00	32282				



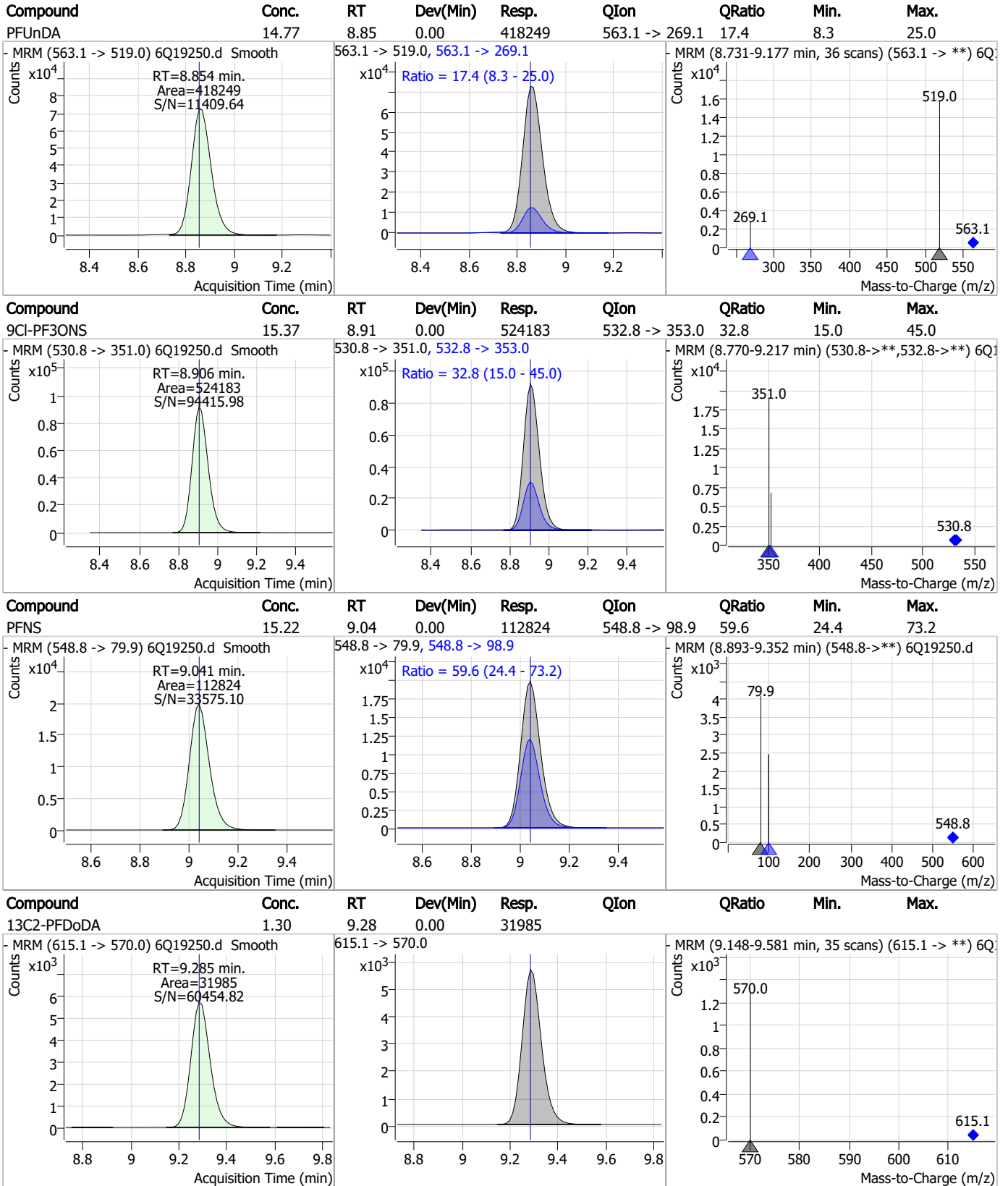
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.31	8.63	0.00	76704 (m)	584.2 -> 526.0	52.4	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.85	0.00	38591				

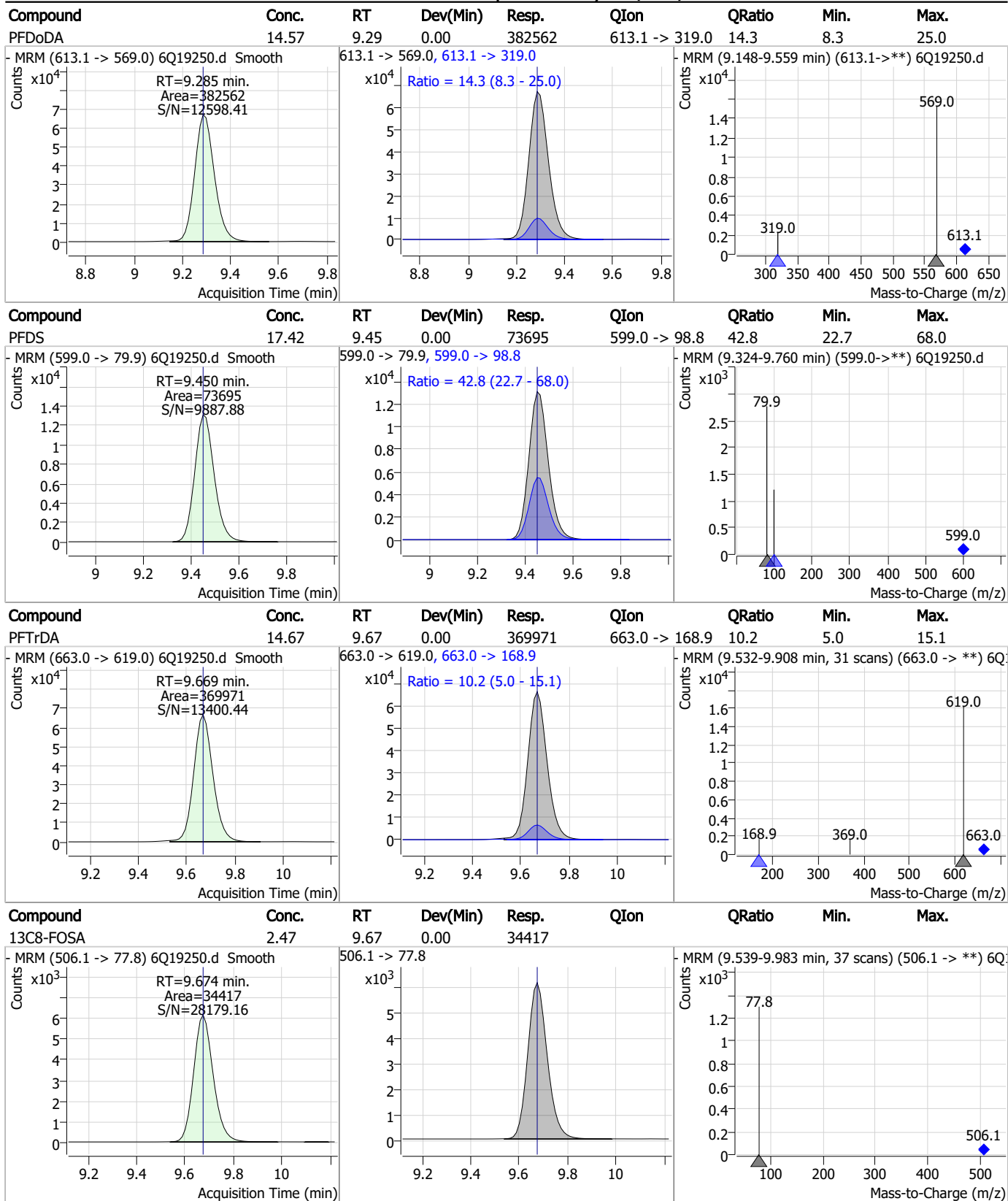


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

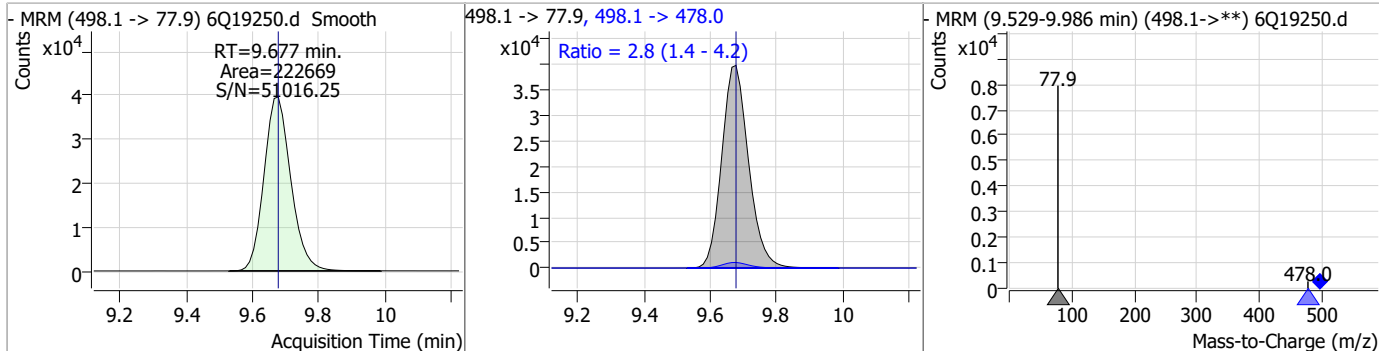


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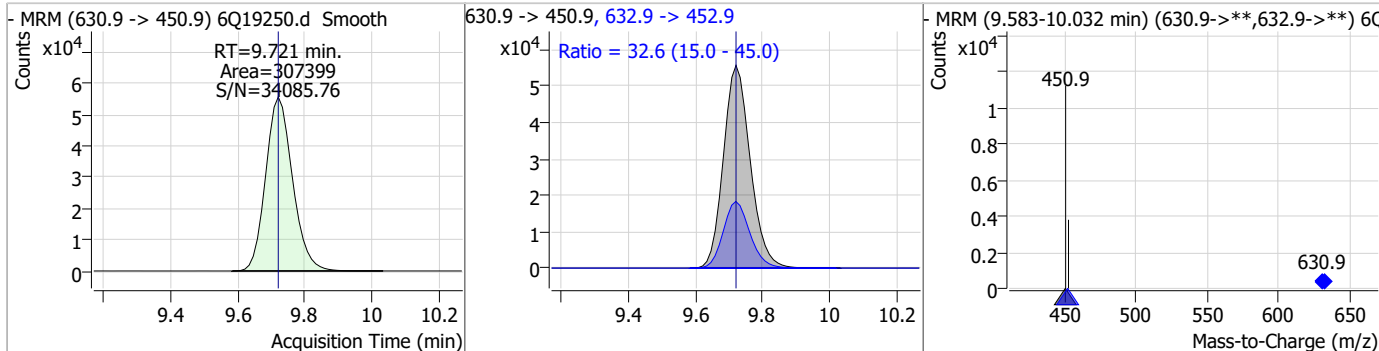
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Perfluorinated Compounds by LC/MS/MS

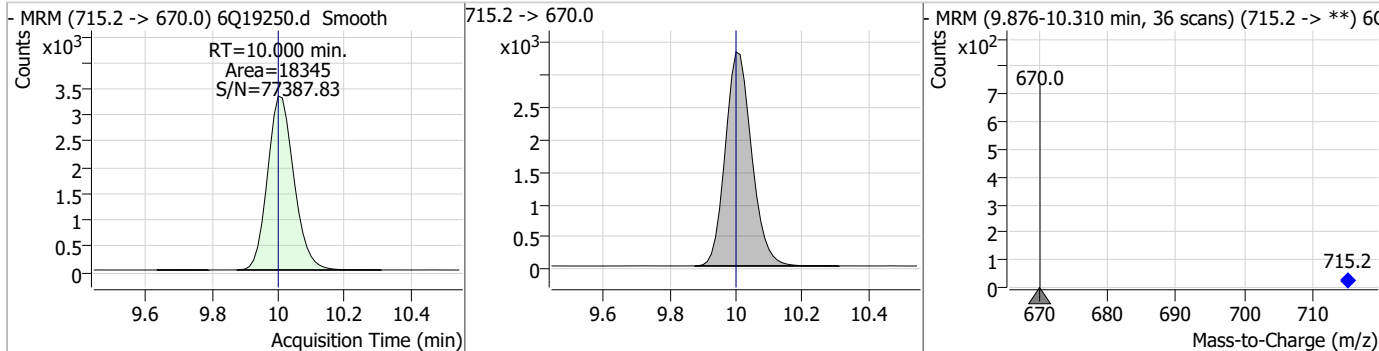
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	15.76	9.68	0.00	222669	498.1 -> 478.0	2.8	1.4	4.2



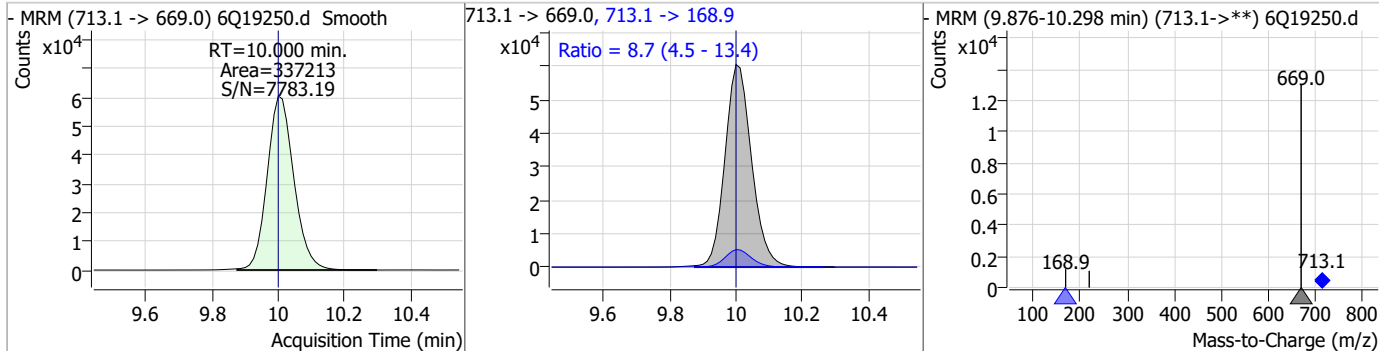
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11CI-PF3OUds	15.05	9.72	0.00	307399	630.9 -> 452.9	32.6	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.28	10.00	0.00	18345	715.2 -> 670.0	8.7	4.5	13.4

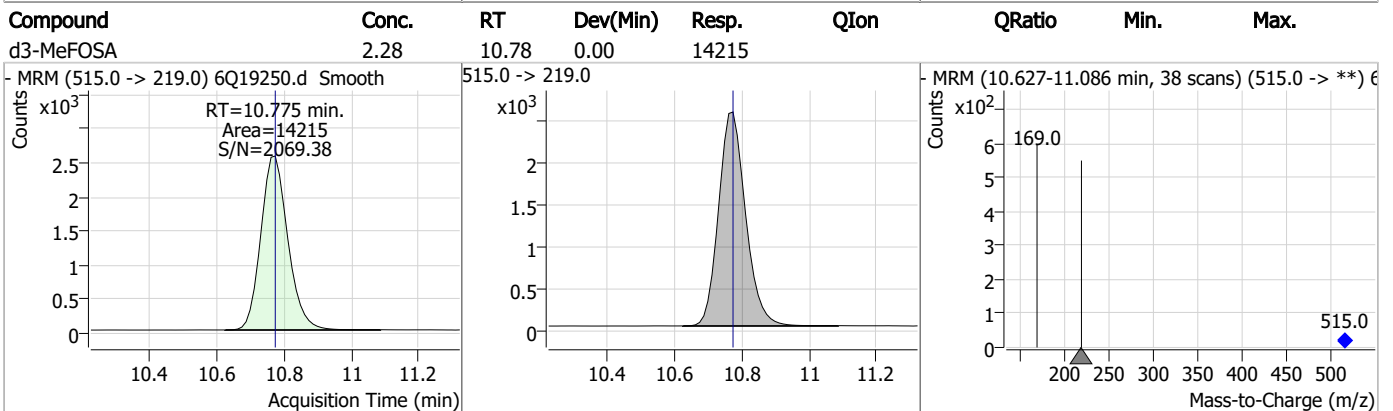
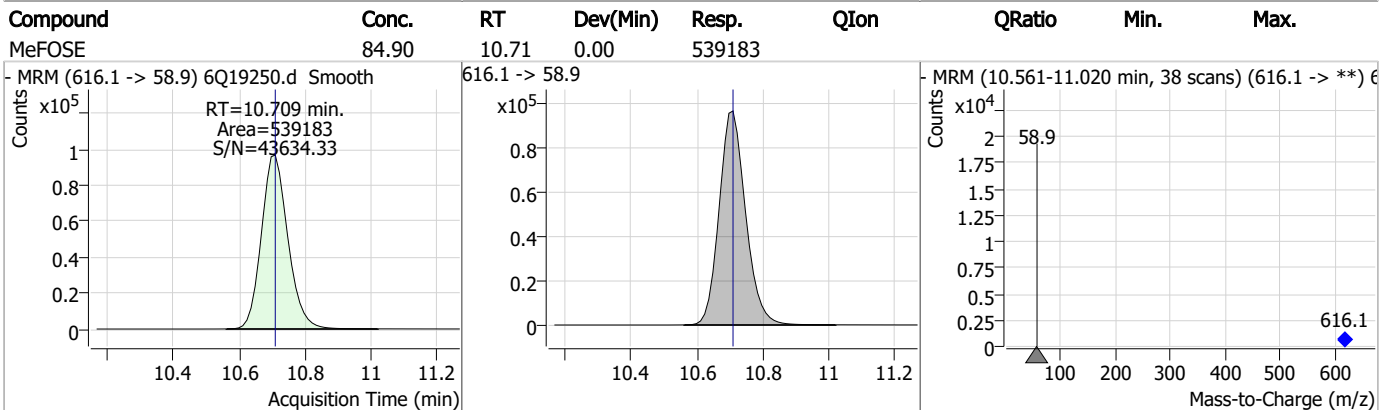
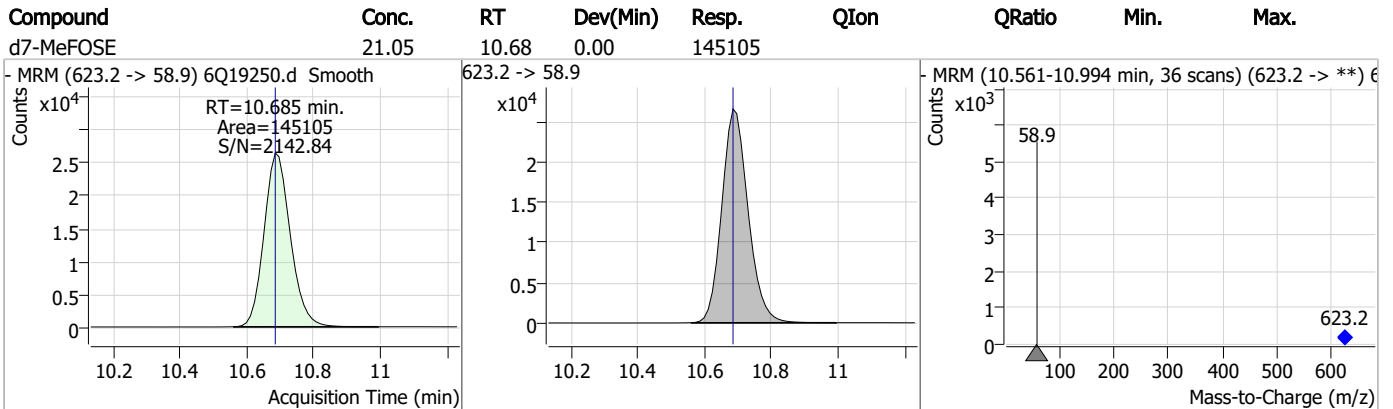
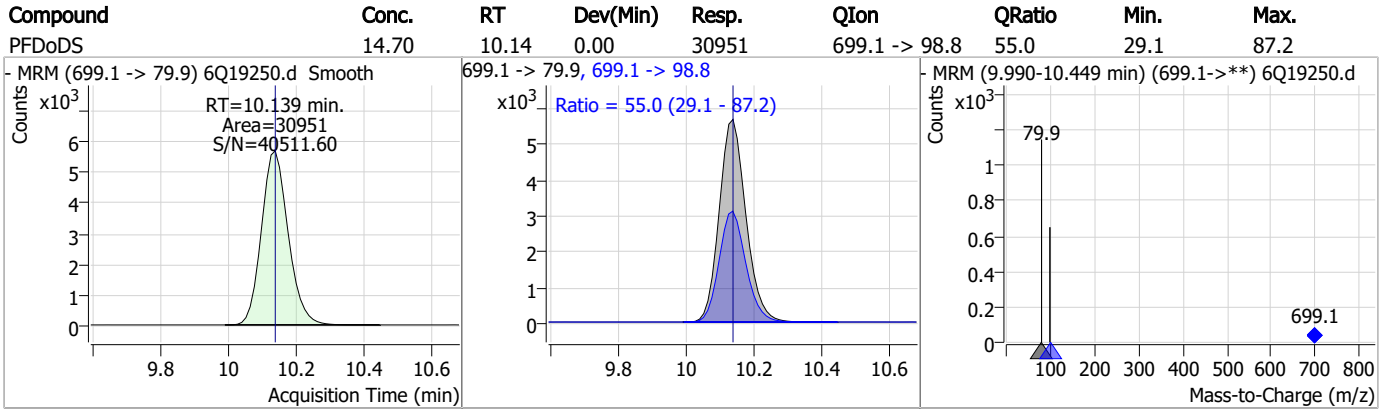


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	15.37	10.00	0.00	337213	713.1 -> 168.9	8.7	4.5	13.4



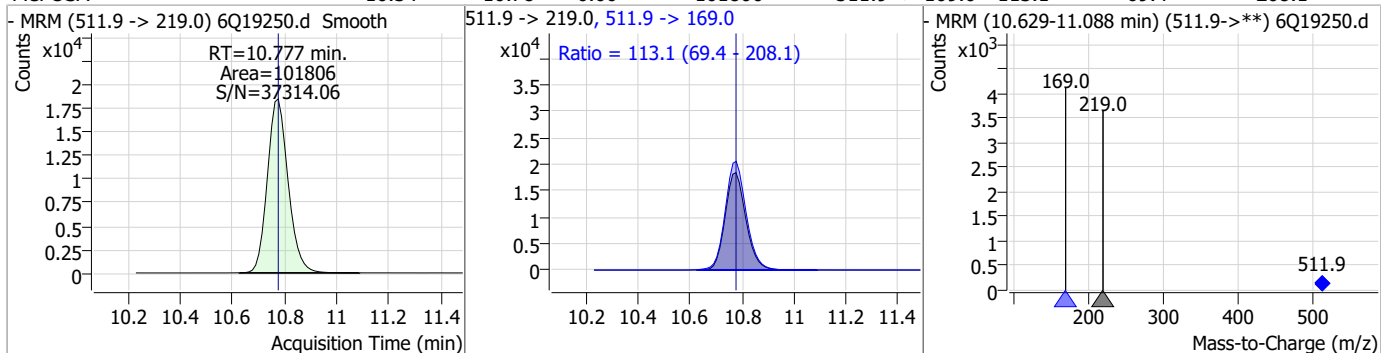
7.7.31
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Perfluorinated Compounds by LC/MS/MS

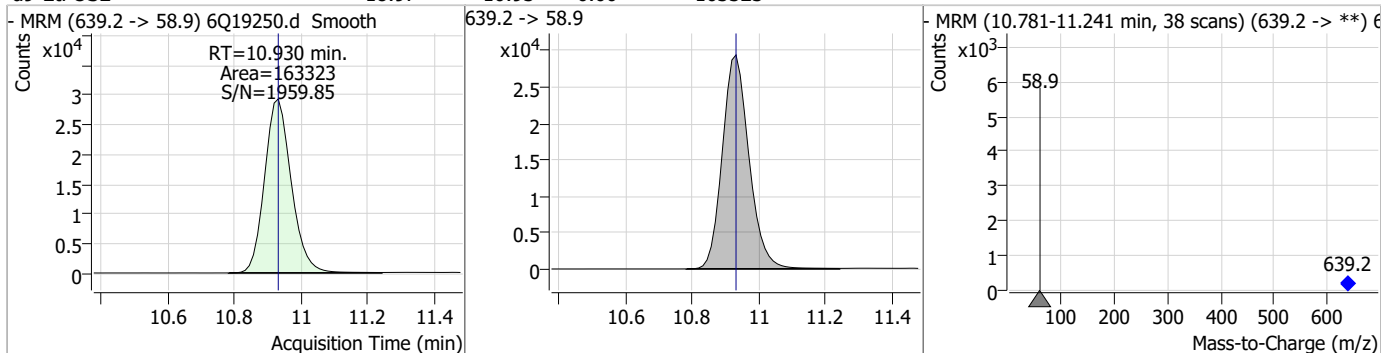


Perfluorinated Compounds by LC/MS/MS

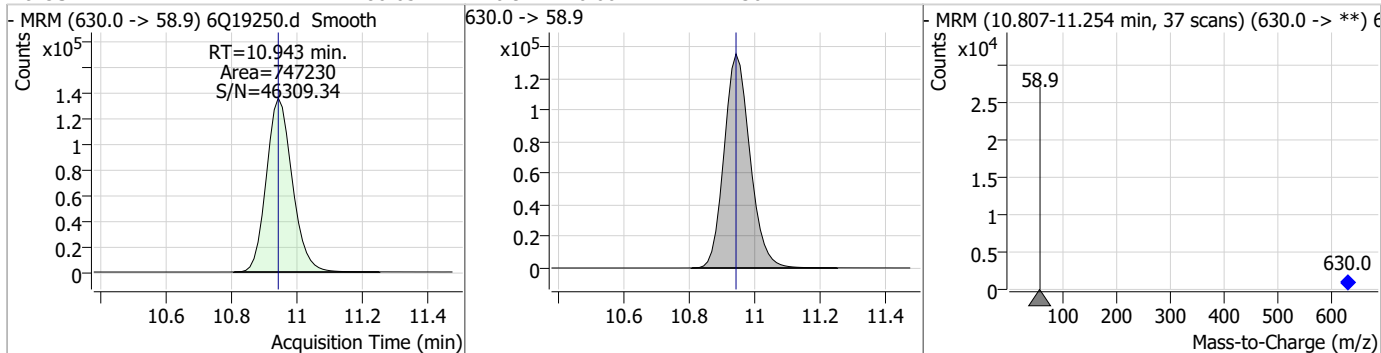
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	16.34	10.78	0.00	101806	511.9 -> 169.0	113.1	69.4	208.1



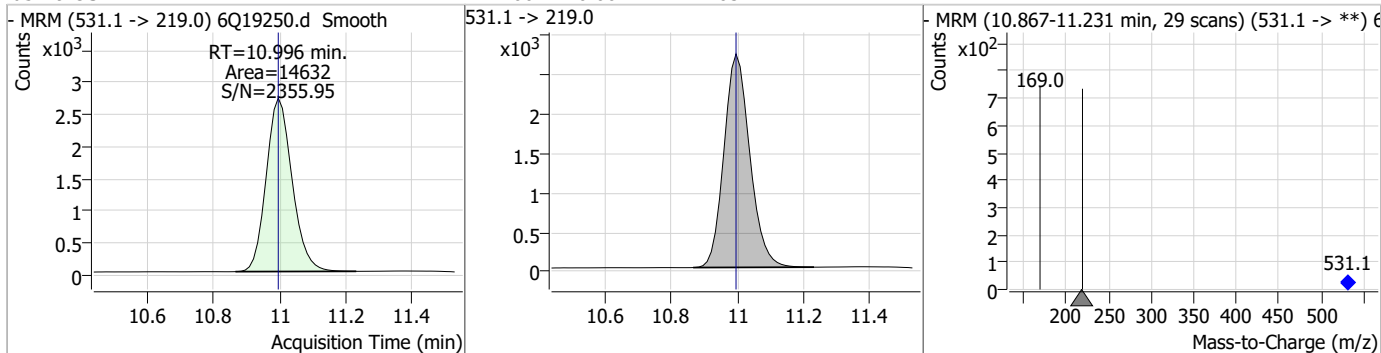
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	18.97	10.93	0.00	163323				



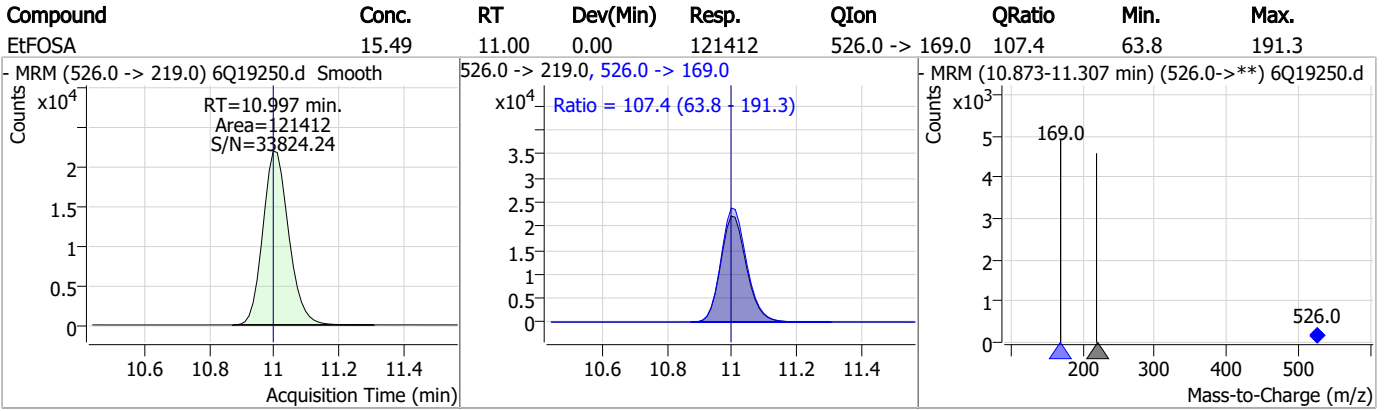
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	86.65	10.94	0.00	747230				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	11.00	0.00	14632				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-ICV287 Method: EPA DRAFT 1633
Lab FileID: 6Q19250.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 18:08 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19251.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 6:22:19 PM
 Sample Name : cc287-4
 Vial : P1-A5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	140270	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	46375	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	50151	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	48099	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	76437	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	35340	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	19802	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	30248	1.25 µg/L	0.000
M2-PFDoDA	9.297	615.1 -> 570.0	24556	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	13761	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	28573	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18541	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11225	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10401	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	2998	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4461	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4354	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	27294	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	33246	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	22836	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	124597	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	153027	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11858	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	11160	2.50 µg/L	-0.012
13C4-PFOS	8.563	502.8 -> 79.9	16110	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	59611	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8337	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	79099	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	29366	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	43164	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	48787	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	2998	5.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.8%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4461	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.6%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4354	5.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.8%		
13C2-PFDoDA	9.297	615.1 -> 570.0	24556	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13761	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.746	302.1 -> 79.9	18541	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C3-PFHxS	7.478	402.1 -> 79.9	11225	2.54 µg/L	0.000

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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	3.085	216.8 -> 171.9	140270	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.707	367.1 -> 322.0	48099	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C5-PFHxA	5.792	318.0 -> 273.0	50151	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C5-PFPeA	4.560	268.3 -> 223.0	46375	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.387	519.1 -> 474.1	19802	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C7-PFUnDA	8.853	570.0 -> 525.1	30248	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-FOSA	9.674	506.1 -> 77.8	28573	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C8-PFOA	7.339	421.1 -> 376.0	76437	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-PFOS	8.563	507.1 -> 79.9	10401	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C9-PFNA	7.882	472.1 -> 427.0	35340	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.3%	
d3-MeFOSAA	8.407	573.2 -> 419.0	27294	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.3%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	33246	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d3-MeFOSA	10.763	515.0 -> 219.0	11160	2.08 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.4%	
d5-EtFOSAA	8.615	589.2 -> 419.0	22836	4.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	124597	21.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.3%	
d9-EtFOSE	10.930	639.2 -> 58.9	153027	20.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.9%	
d5-EtFOSA	10.996	531.1 -> 219.0	11858	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	47571	9.16 µg/L	98
		327.1 -> 80.9	17215		
6:2FTS	7.113	427.1 -> 407.0	53437	9.92 µg/L	90
		427.1 -> 80.9	16285		
8:2FTS	8.164	527.1 -> 507.0	24635	8.51 µg/L	96
		527.1 -> 80.8	10317		
EtFOSAA	8.629	584.2 -> 419.1	9418	2.48 µg/L	m 98
		584.2 -> 526.0	4886		
FOSA	9.677	498.1 -> 77.9	26749	2.28 µg/L	99
		498.1 -> 478.0	816		
MeFOSAA	8.421	570.1 -> 419.0	17015	2.56 µg/L	m 100
		570.1 -> 483.0	3385		
PFBA	3.093	212.8 -> 168.9	54045	9.66 µg/L	100
PFBS	5.747	298.7 -> 79.9	16967	2.09 µg/L	93
		298.7 -> 98.8	6589		
PFDA	8.388	512.9 -> 469.0	68642	2.32 µg/L	98
		512.9 -> 219.0	10892		
PFDODA	9.298	613.1 -> 569.0	47602	2.36 µg/L	96
		613.1 -> 319.0	7223		
PFDS	9.462	599.0 -> 79.9	7629	2.43 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3798			
PFHpA	6.708	363.1 -> 319.0	57423	2.23	µg/L	97
		363.1 -> 169.0	9923			
PFHpS	8.046	449.0 -> 79.9	15833	2.53	µg/L	97
		449.0 -> 98.9	7486			
PFHxA	5.795	313.0 -> 269.0	48907	2.43	µg/L	99
		313.0 -> 118.9	2436			
PFHxS	7.479	398.7 -> 79.9	14376	2.13	µg/L	m 93
		398.7 -> 98.9	7308			
PFNA	7.883	463.0 -> 419.0	76743	2.37	µg/L	100
		463.0 -> 219.0	13595			
PFNS	9.041	548.8 -> 79.9	13347	2.43	µg/L	99
		548.8 -> 98.9	6570			
PFOA	7.341	413.0 -> 369.0	94219	2.40	µg/L	98
		413.0 -> 169.0	15822			
PFOS	8.564	498.9 -> 79.9	13698	2.24	µg/L	m 97
		498.9 -> 98.8	6876			
PFPeA	4.563	263.0 -> 219.0	64688	4.74	µg/L	100
PFPeS	6.785	349.1 -> 79.9	14495	2.34	µg/L	100
		349.1 -> 98.9	6673			
PFTeDA	10.013	713.1 -> 669.0	39768	2.42	µg/L	99
		713.1 -> 168.9	3449			
PFTrDA	9.669	663.0 -> 619.0	48503	2.42	µg/L	98
		663.0 -> 168.9	5254			
PFUnDA	8.866	563.1 -> 519.0	50657	2.28	µg/L	100
		563.1 -> 269.1	8469			
11CI-PF3OUdS	9.721	630.9 -> 450.9	73003	4.66	µg/L	99
		632.9 -> 452.9	21480			
9CI-PF3ONS	8.906	530.8 -> 351.0	117897	4.50	µg/L	98
		532.8 -> 353.0	36832			
ADONA	6.959	376.9 -> 250.9	233692	4.16	µg/L	98
		376.9 -> 84.8	68231			
HFPO-DA	6.169	284.9 -> 168.9	16087	4.46	µg/L	99
		284.9 -> 184.9	1836			
3:3FTCA	3.946	241.0 -> 177.0	10841	11.62	µg/L	99
		241.0 -> 117.0	1396			
5:3FTCA	6.374	341.0 -> 237.1	245095	62.90	µg/L	94
		341.0 -> 217.0	171068			
7:3FTCA	7.736	441.0 -> 316.9	170320	61.08	µg/L	93
		441.0 -> 336.9	373646			
EtFOSA	10.997	526.0 -> 219.0	29550	4.65	µg/L	94
		526.0 -> 169.0	39821			
EtFOSE	10.943	630.0 -> 58.9	91388	11.31	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	25048	5.12	µg/L	m 98
		511.9 -> 169.0	35455			
MeFOSE	10.697	616.1 -> 58.9	66303	12.16	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	3593	2.30	µg/L	99
		699.1 -> 98.8	2058			
NFDHA	5.673	295.0 -> 201.0	12242	4.81	µg/L	98
		295.0 -> 84.9	3399			
PFMBA	4.988	279.0 -> 85.1	46173	4.72	µg/L	100
PFMPA	3.667	229.0 -> 84.9	36110	4.75	µg/L	100
PFEESA	6.288	314.8 -> 134.9	118394	4.79	µg/L	100
		314.8 -> 82.9	3918			

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

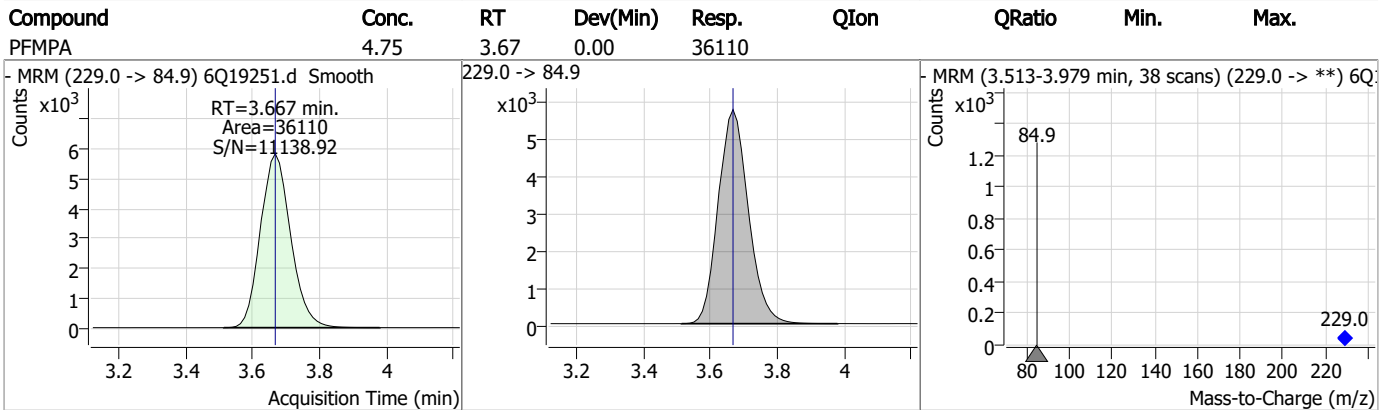
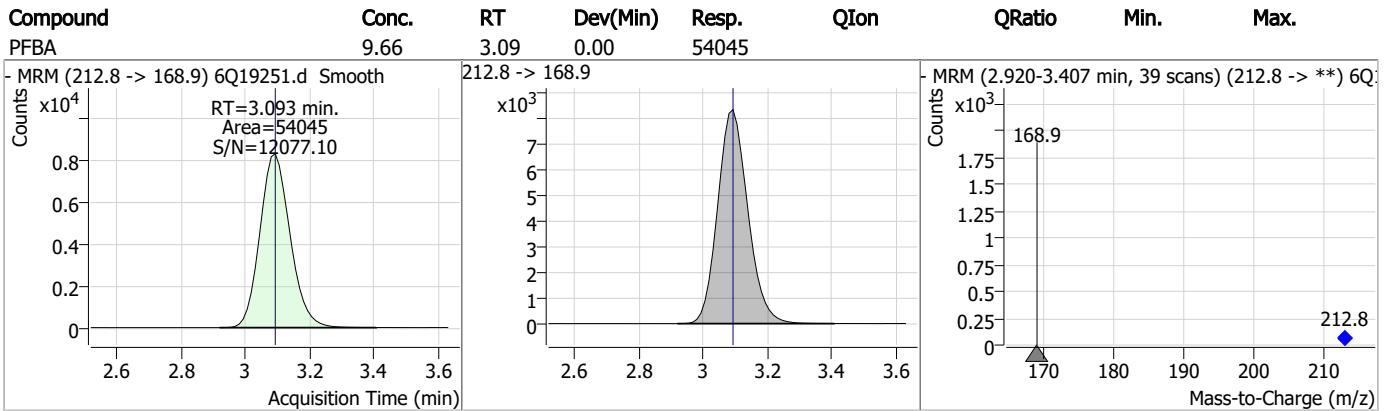
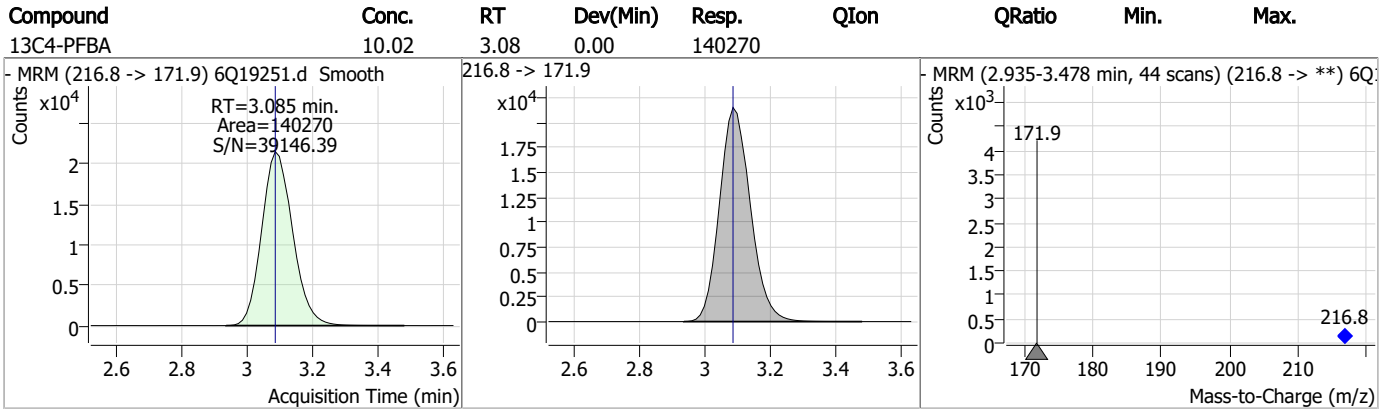
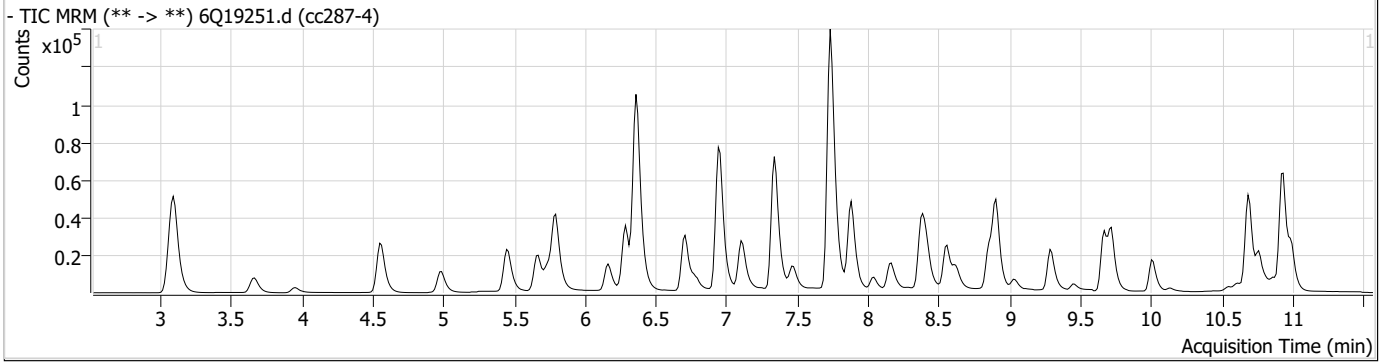
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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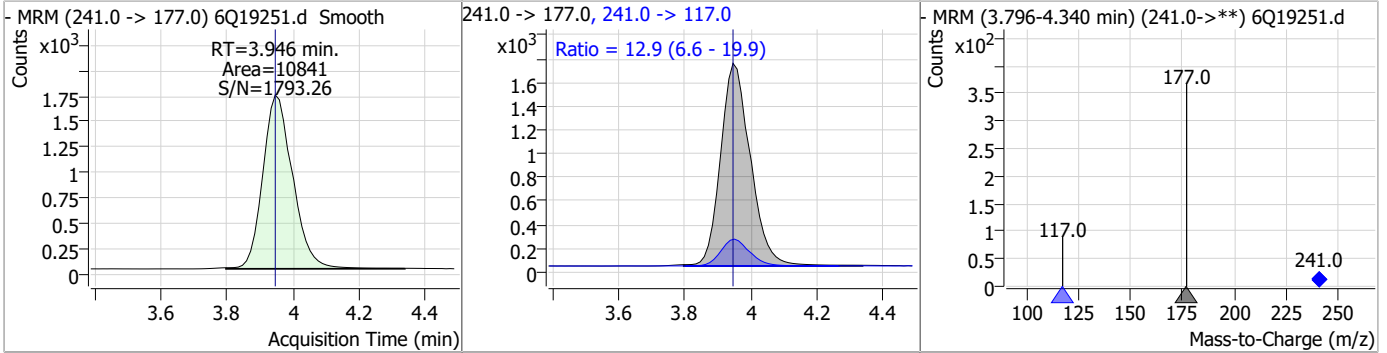
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Perfluorinated Compounds by LC/MS/MS

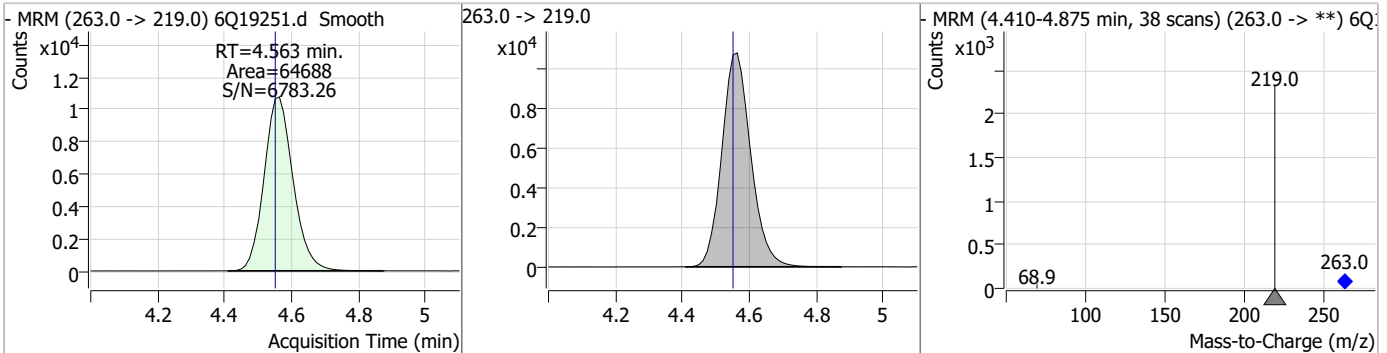


Perfluorinated Compounds by LC/MS/MS

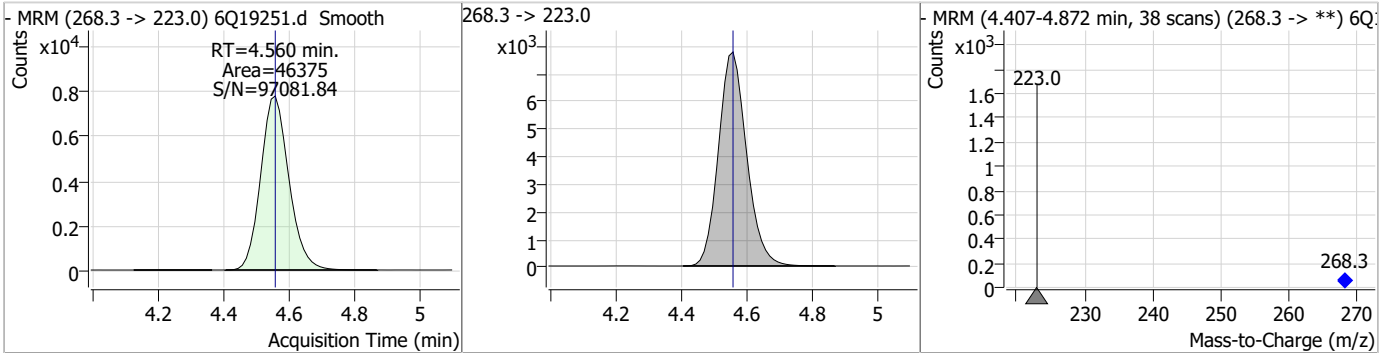
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.62	3.95	0.00	10841	241.0 -> 117.0	12.9	6.6	19.9



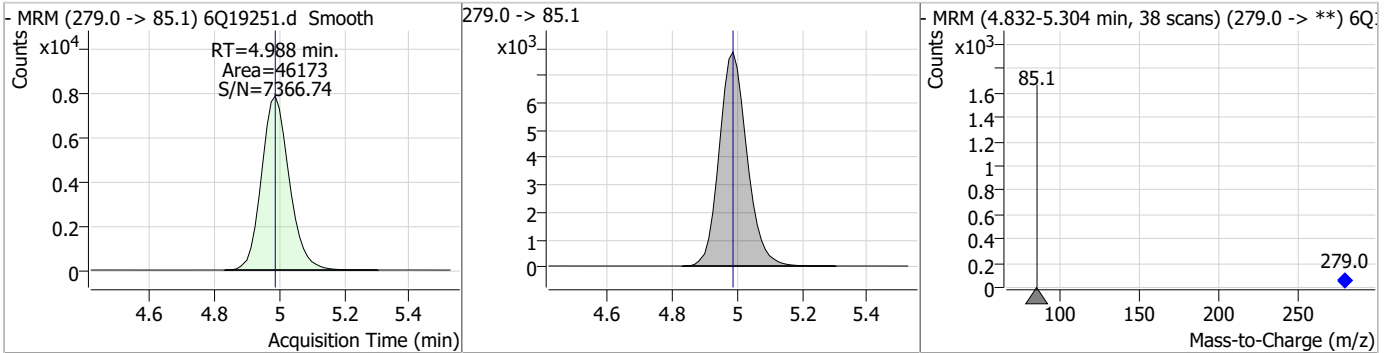
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.74	4.56	0.01	64688				



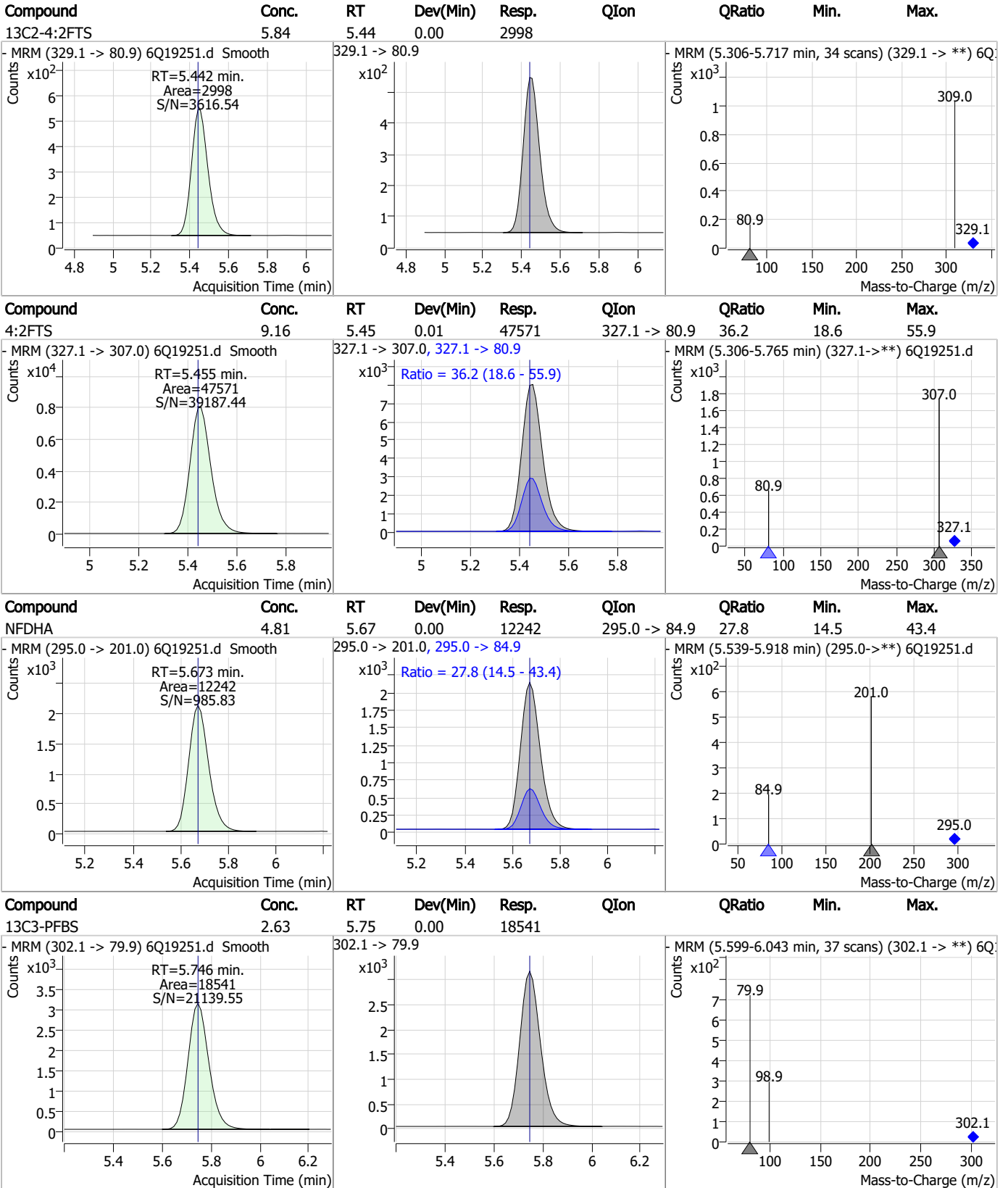
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.92	4.56	0.00	46375				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.72	4.99	0.00	46173				



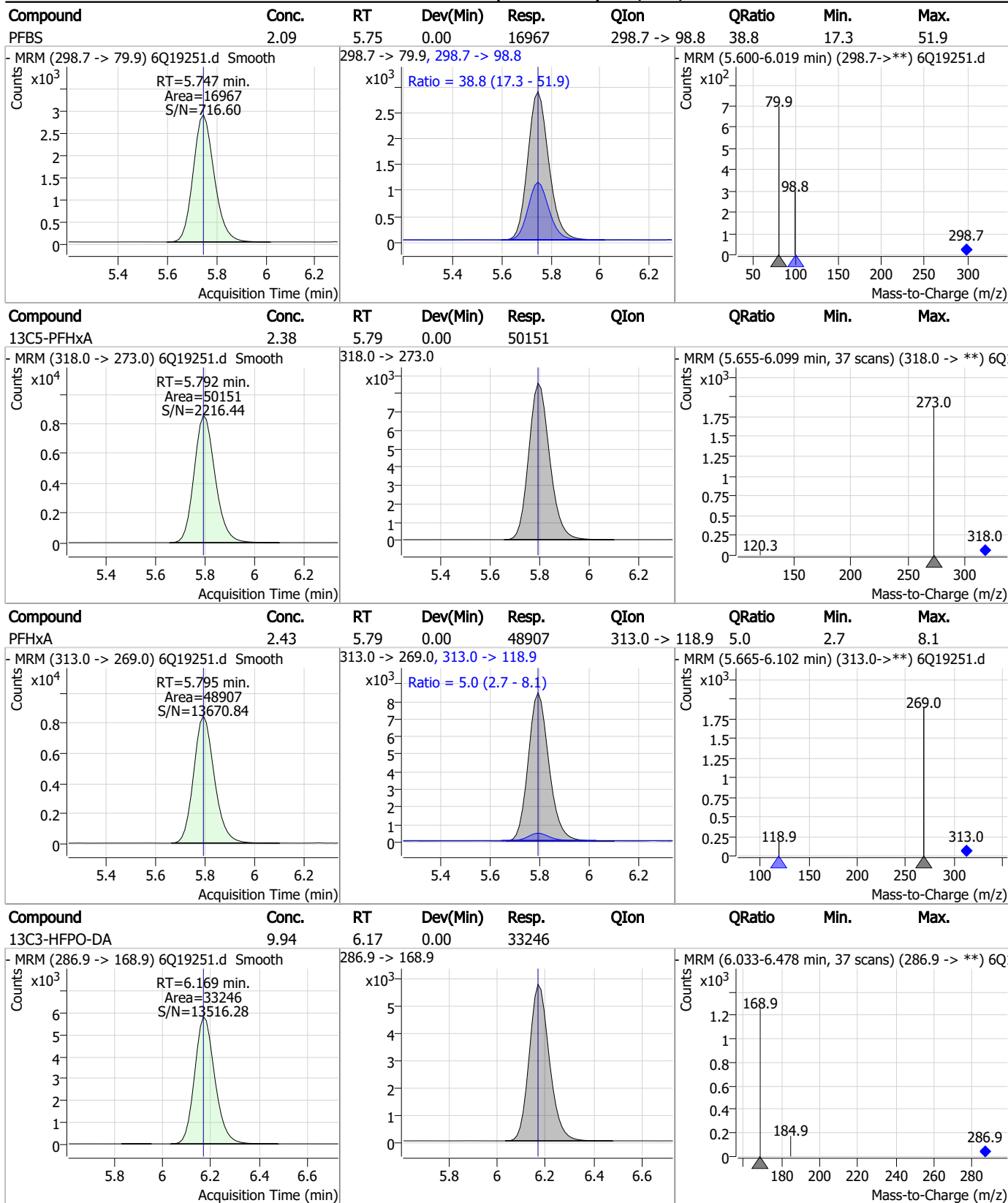
Perfluorinated Compounds by LC/MS/MS



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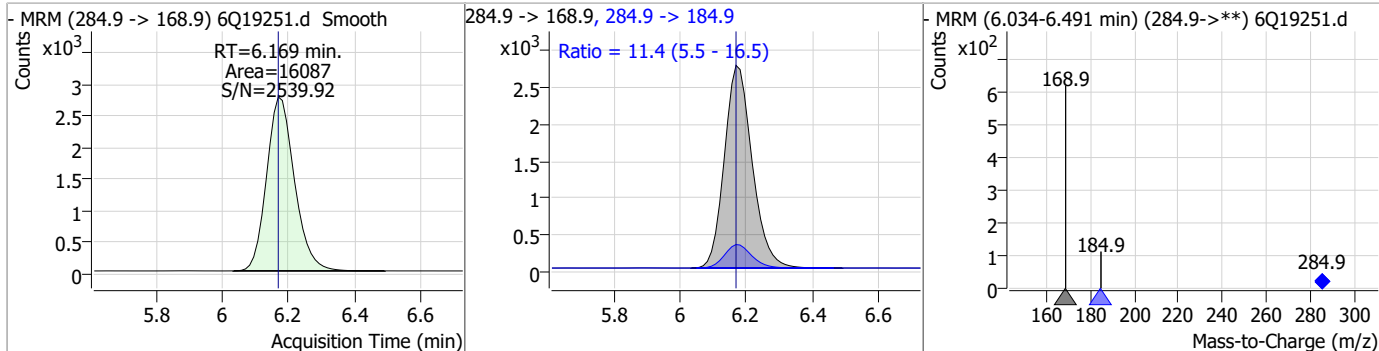
Perfluorinated Compounds by LC/MS/MS



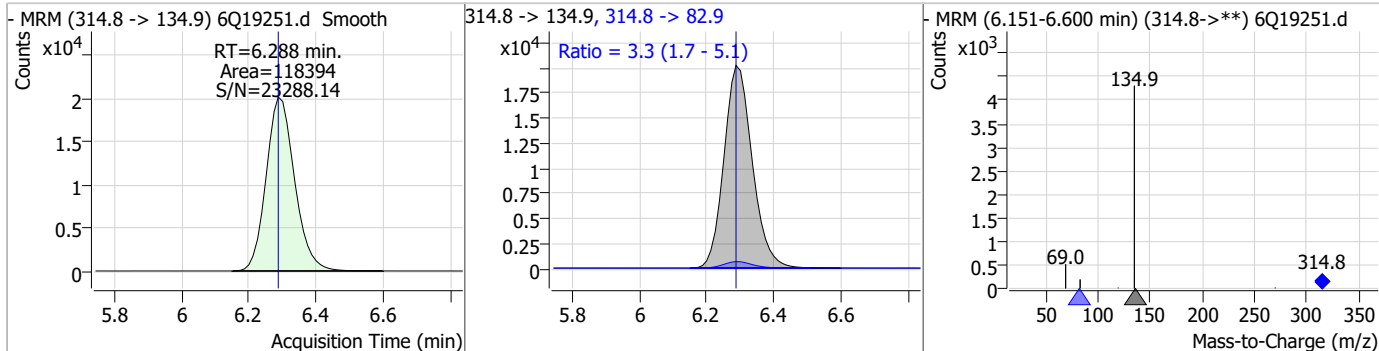
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Perfluorinated Compounds by LC/MS/MS

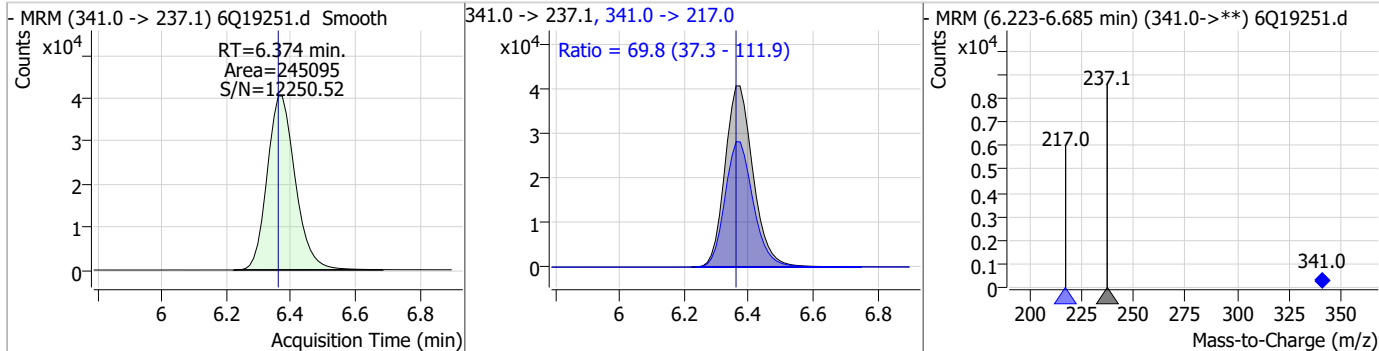
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.46	6.17	0.00	16087	284.9 -> 184.9	11.4	5.5	16.5



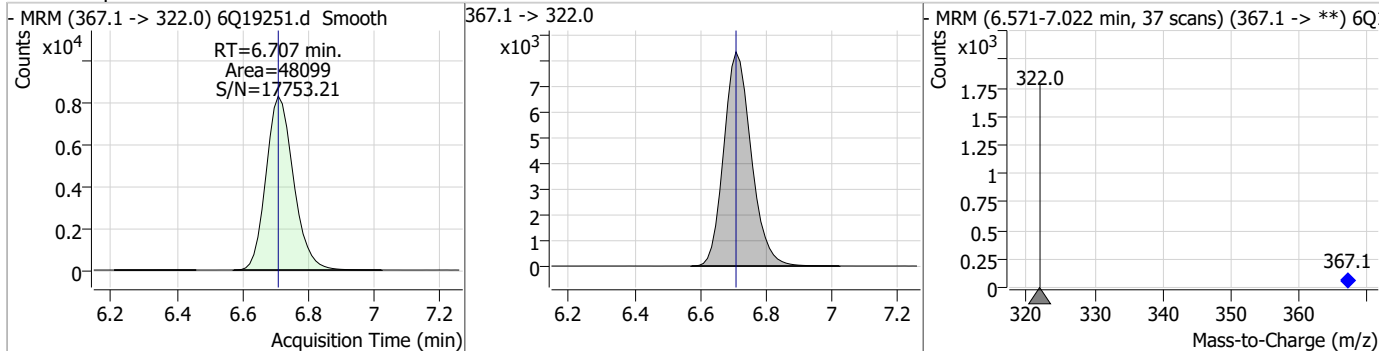
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.79	6.29	0.00	118394	314.8 -> 82.9	3.3	1.7	5.1



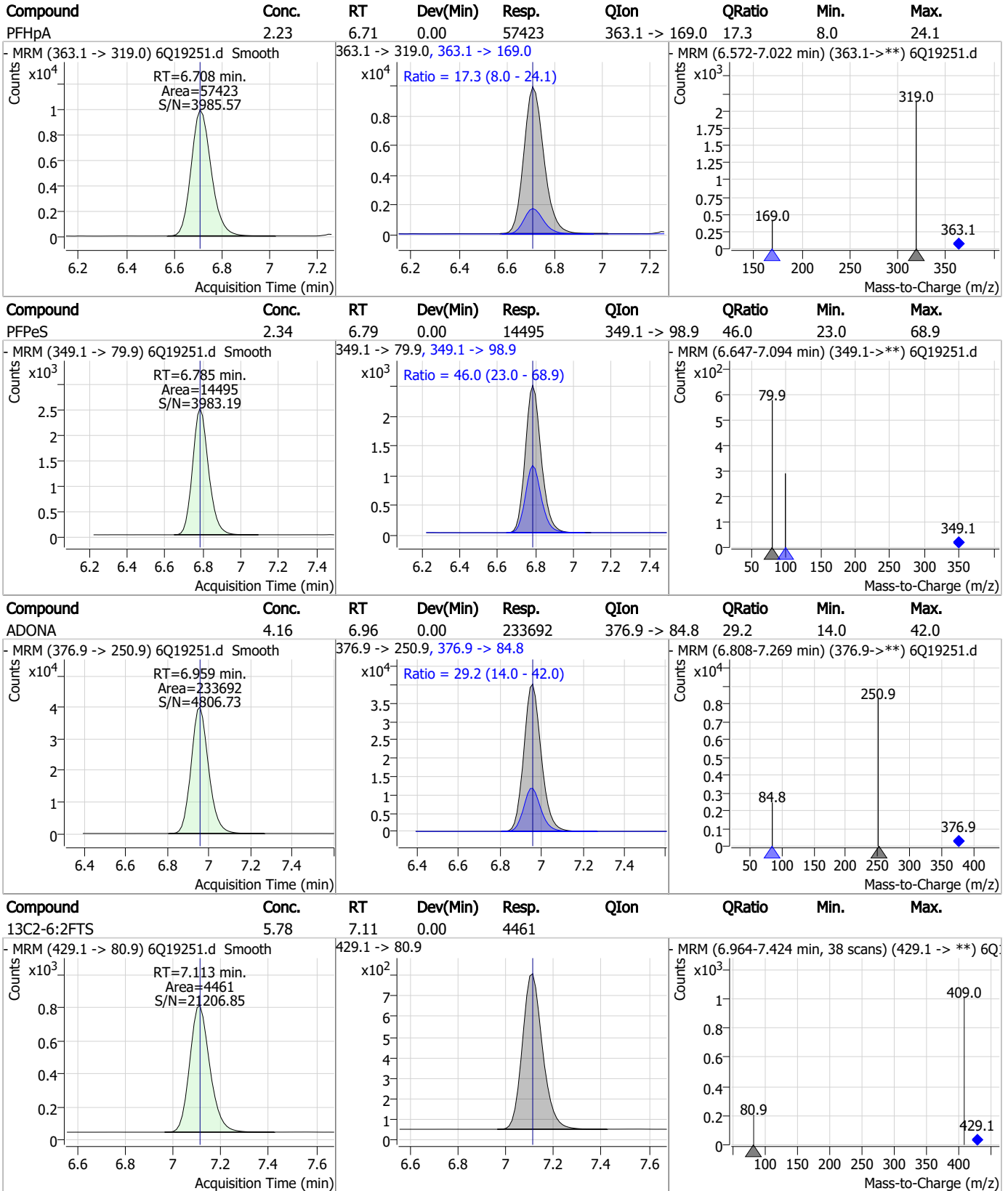
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	62.90	6.37	0.01	245095	341.0 -> 217.0	69.8	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.71	0.00	48099	367.1 -> 322.0			



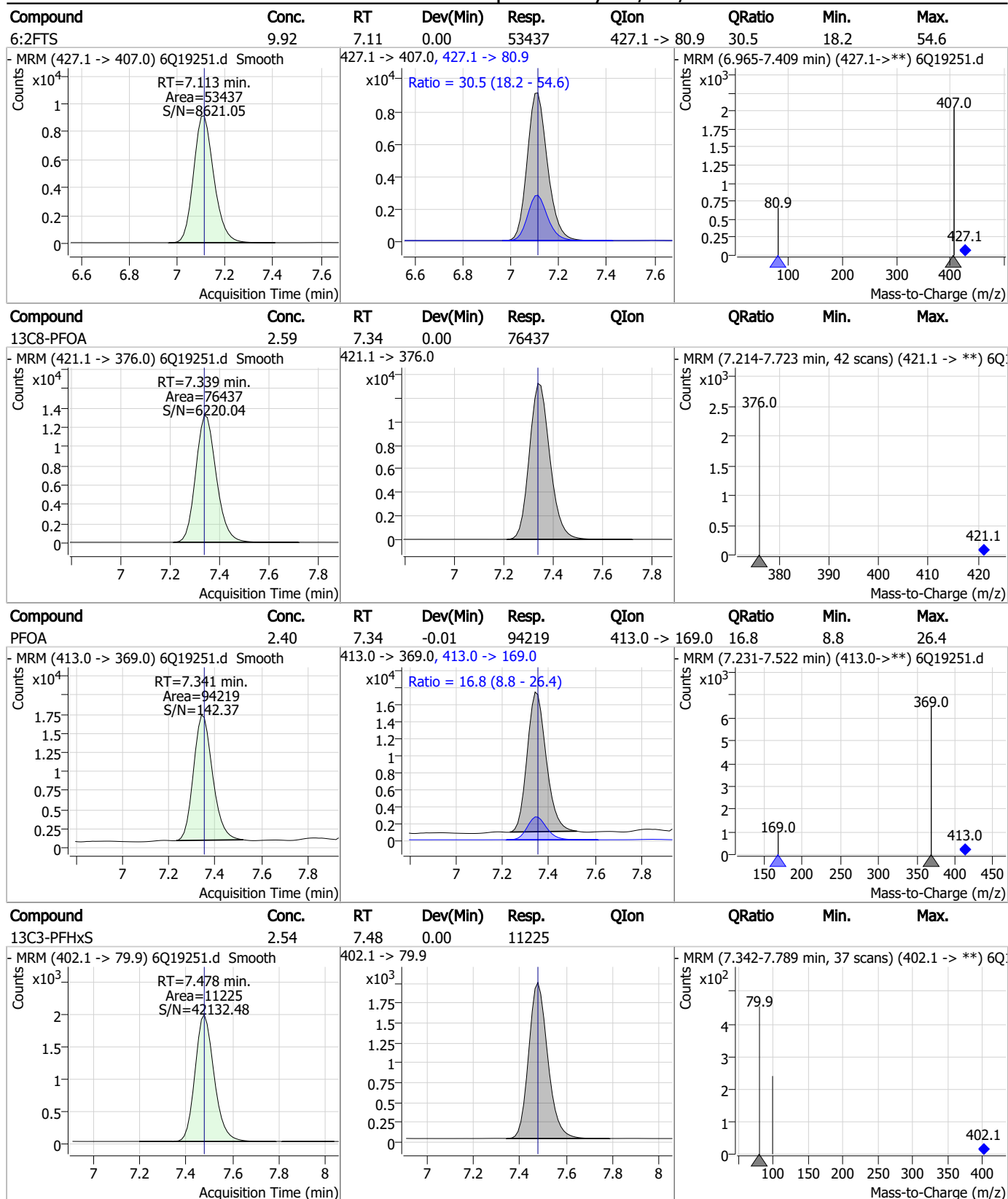
Perfluorinated Compounds by LC/MS/MS



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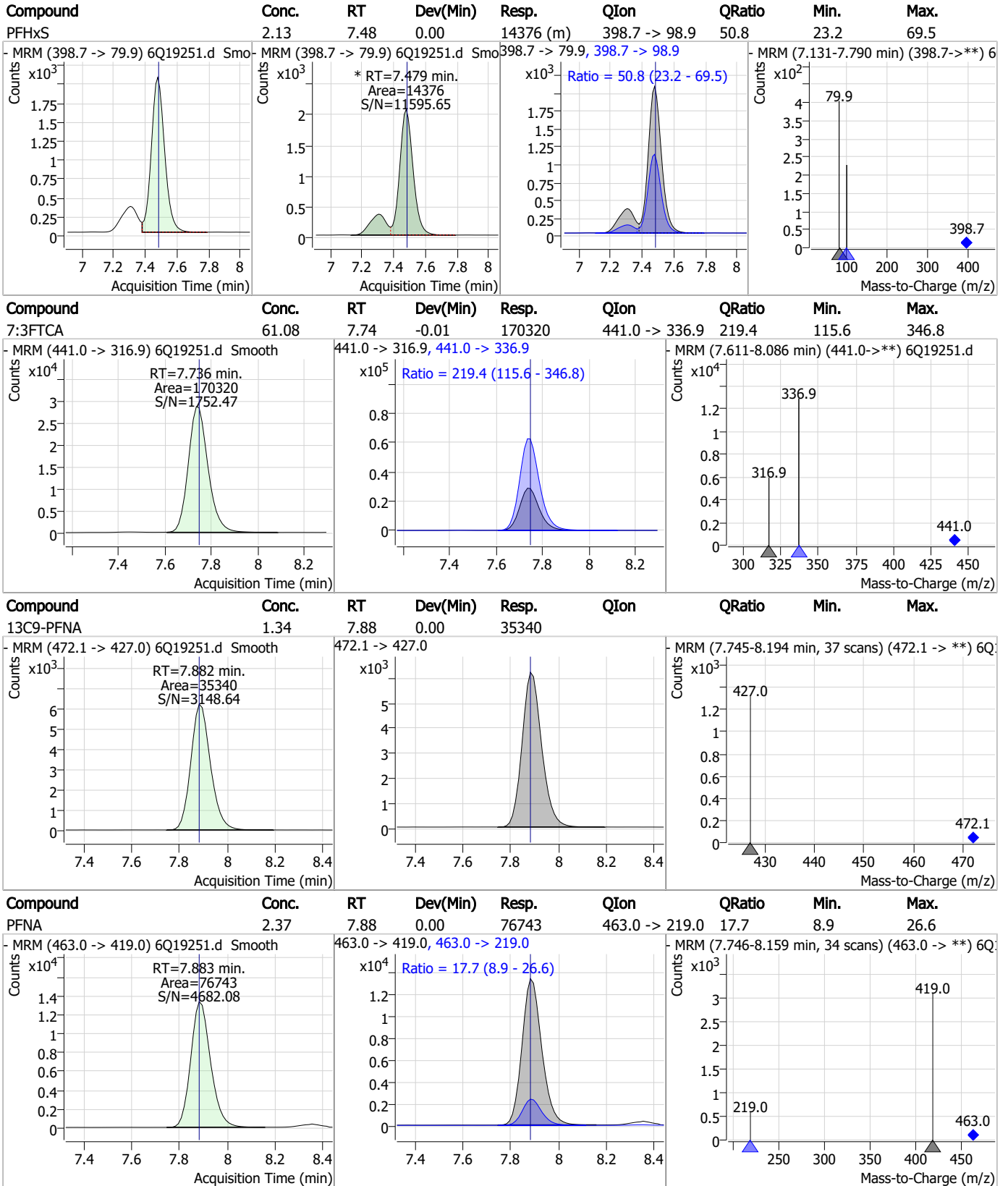
Perfluorinated Compounds by LC/MS/MS



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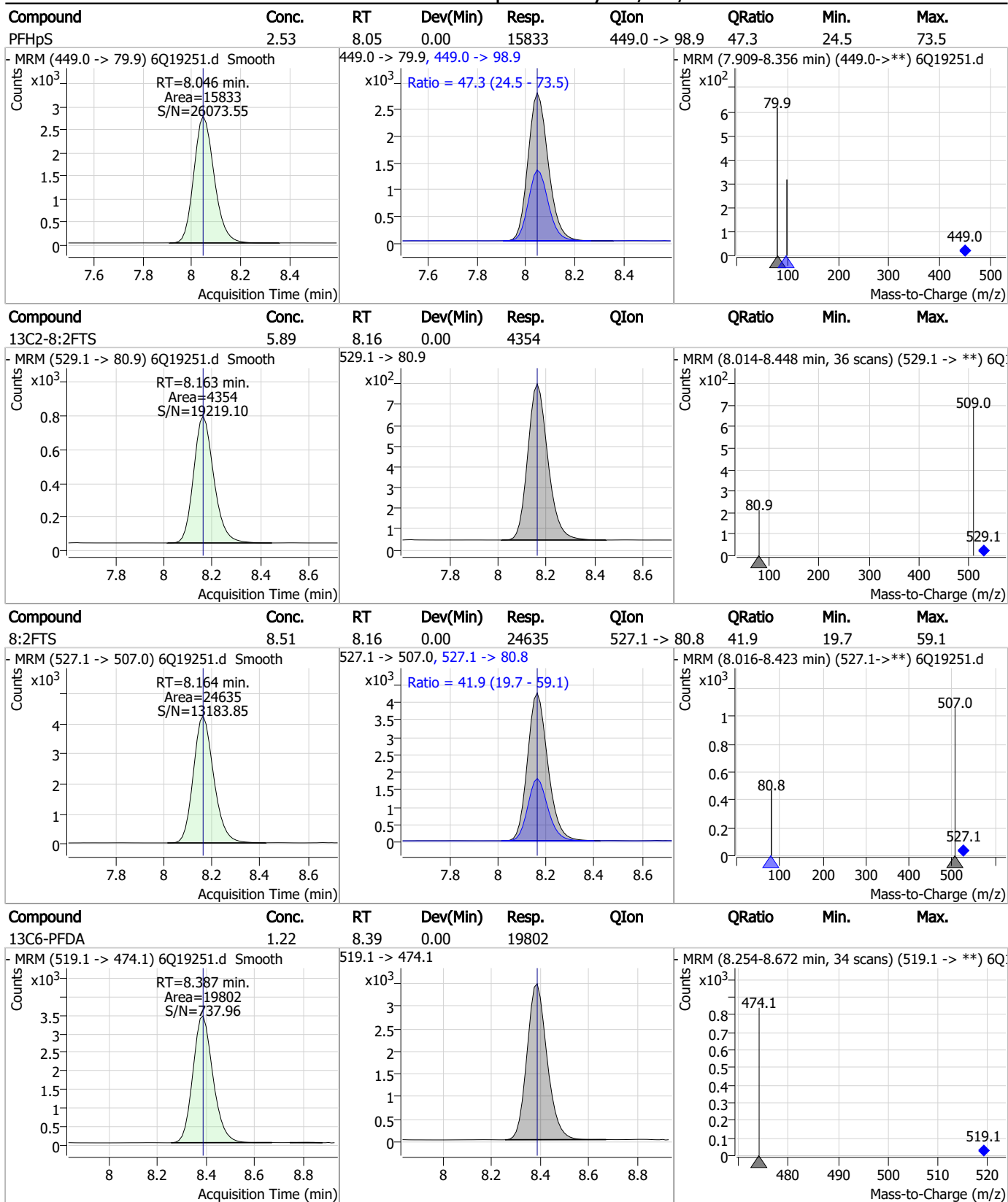
Perfluorinated Compounds by LC/MS/MS



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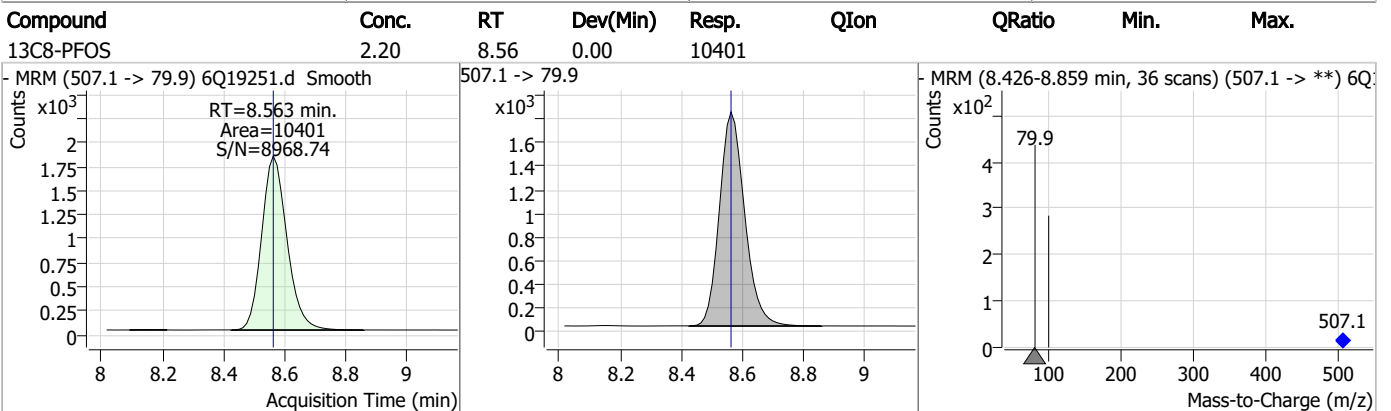
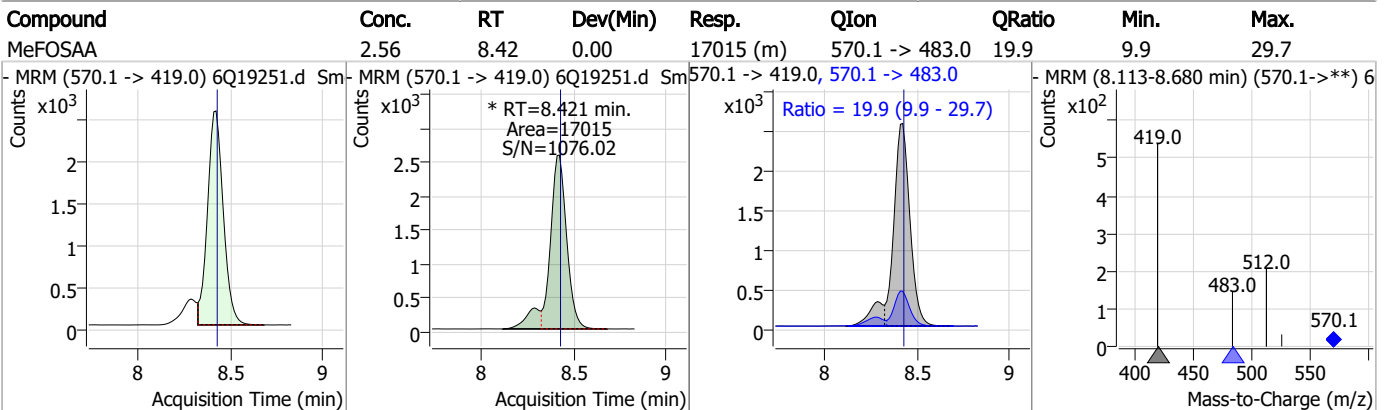
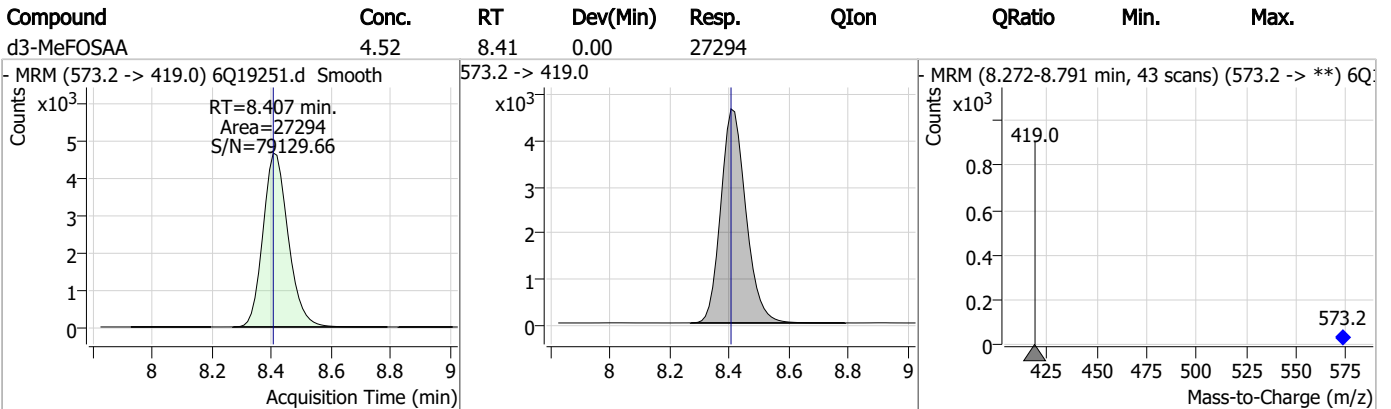
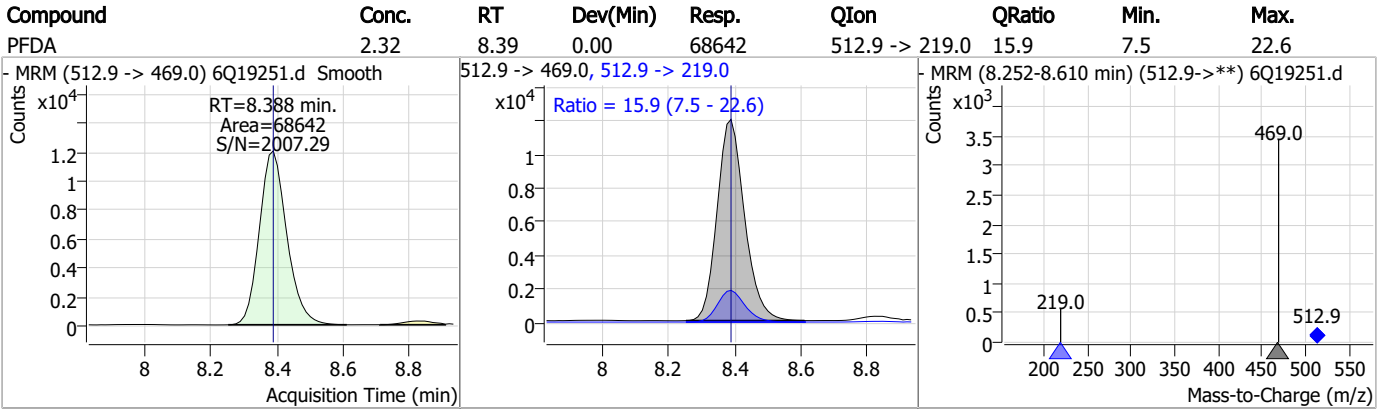


Perfluorinated Compounds by LC/MS/MS



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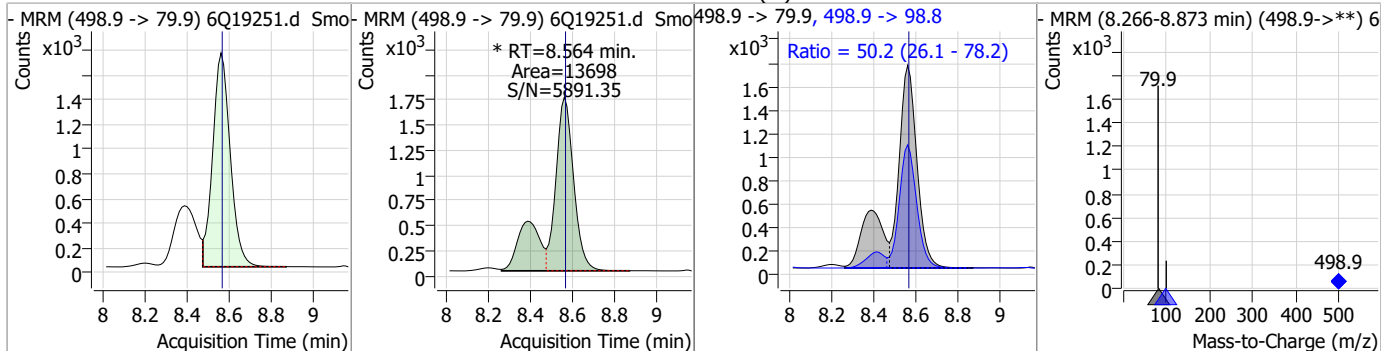
Perfluorinated Compounds by LC/MS/MS



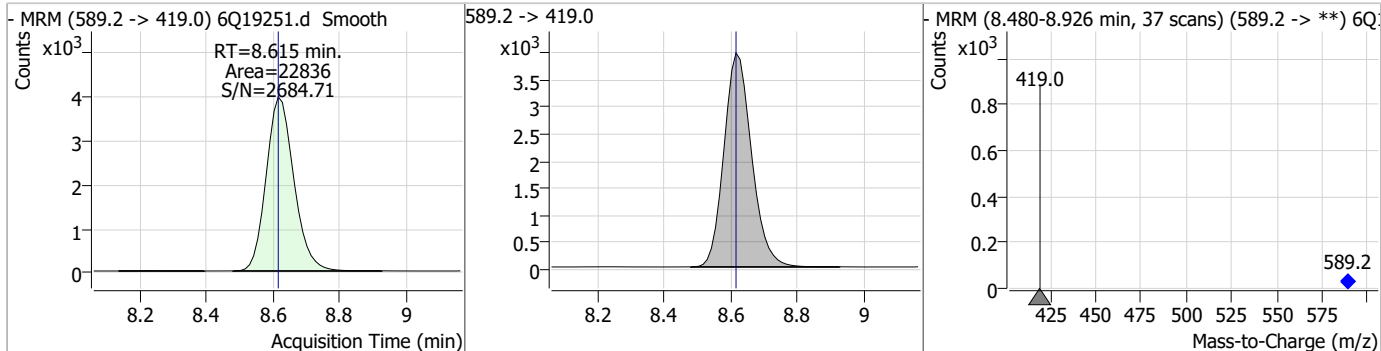
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Perfluorinated Compounds by LC/MS/MS

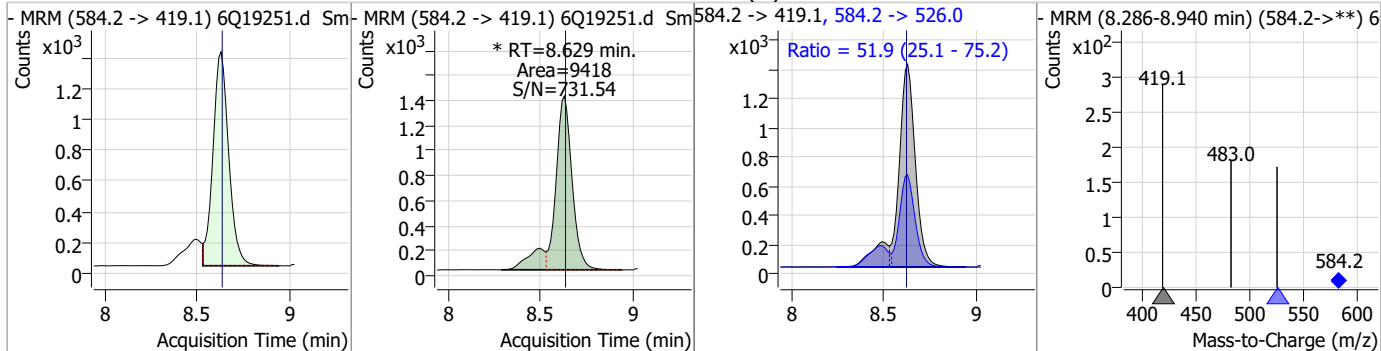
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.24	8.56	0.00	13698 (m)	498.9 -> 98.8	50.2	26.1	78.2



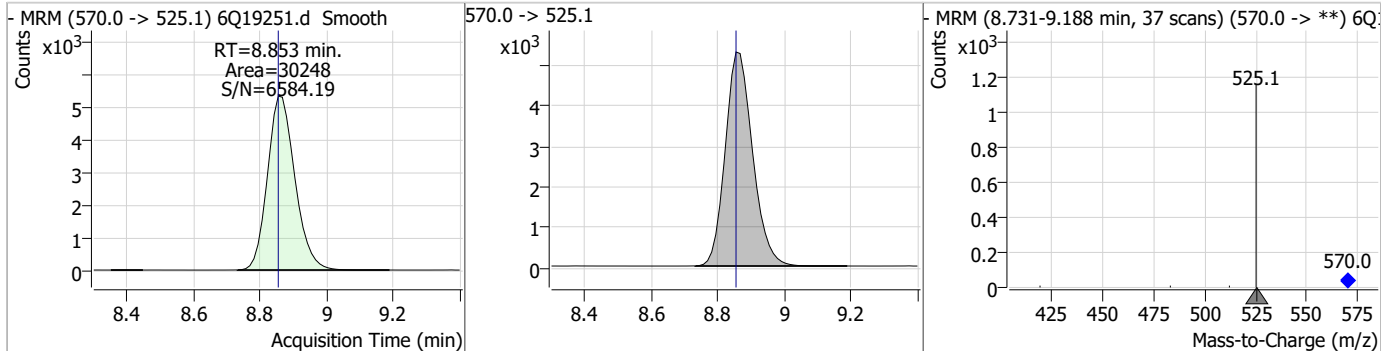
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.48	8.62	0.00	22836				



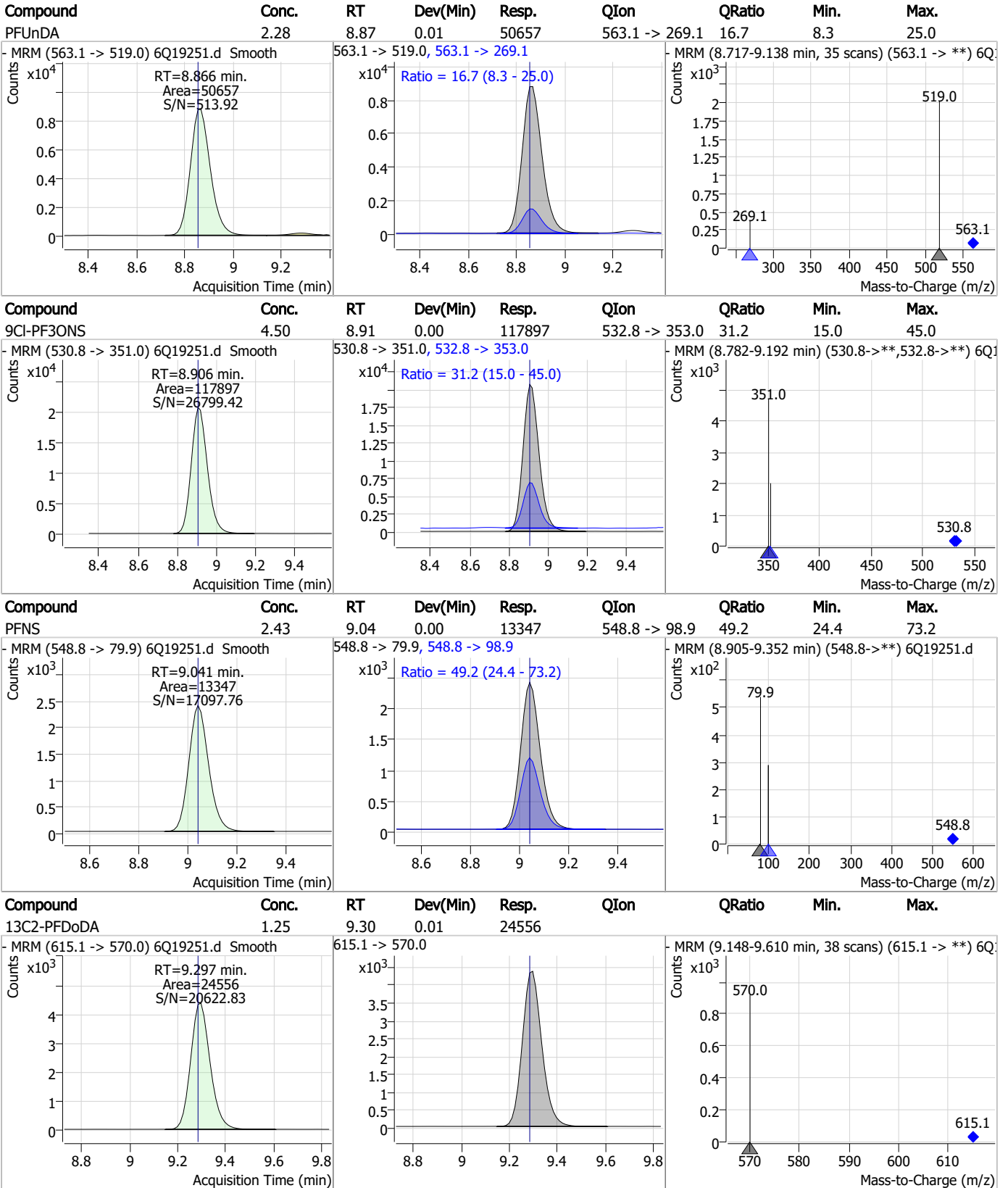
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.48	8.63	0.00	9418 (m)	584.2 -> 526.0	51.9	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.85	0.00	30248				



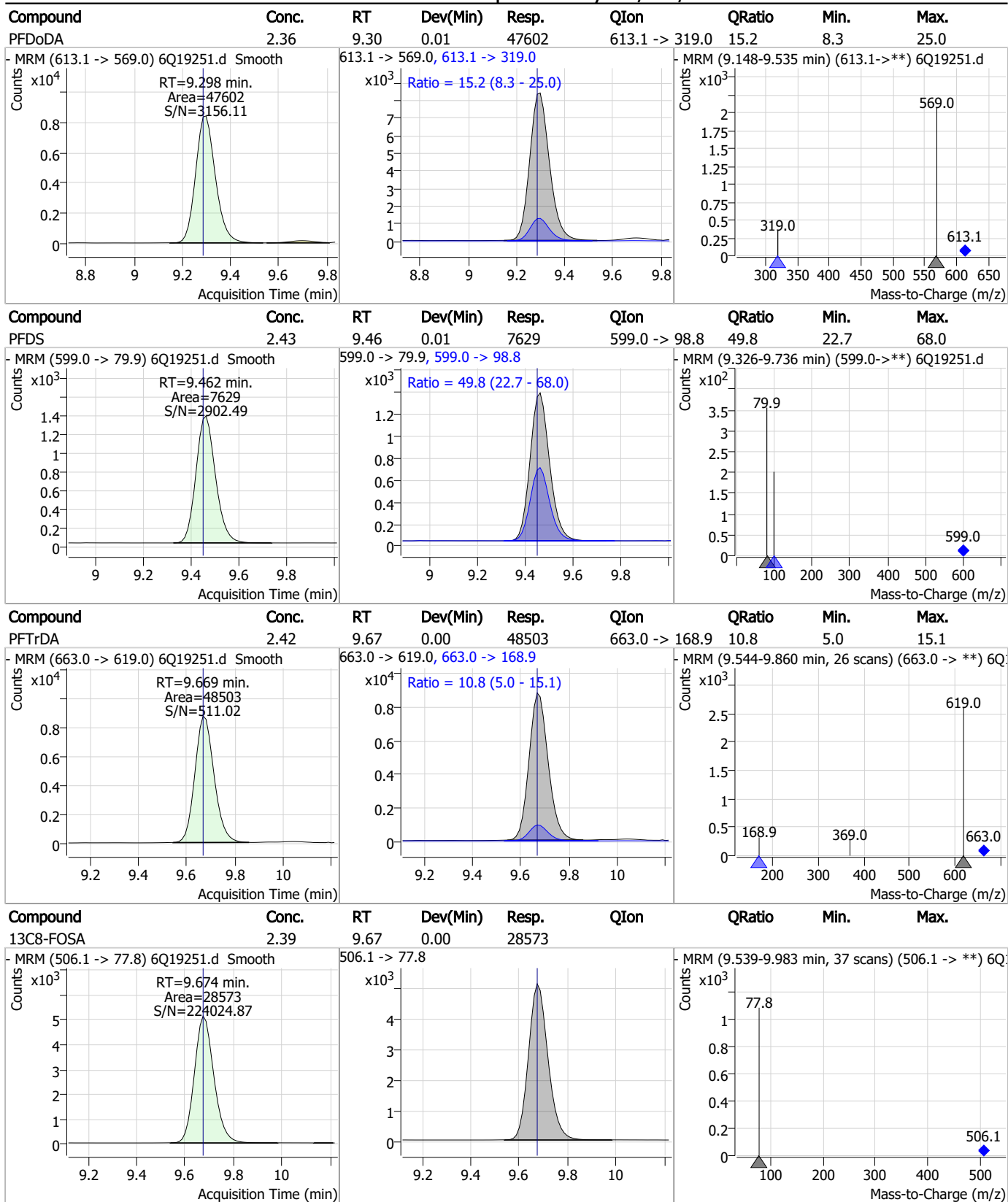
Perfluorinated Compounds by LC/MS/MS



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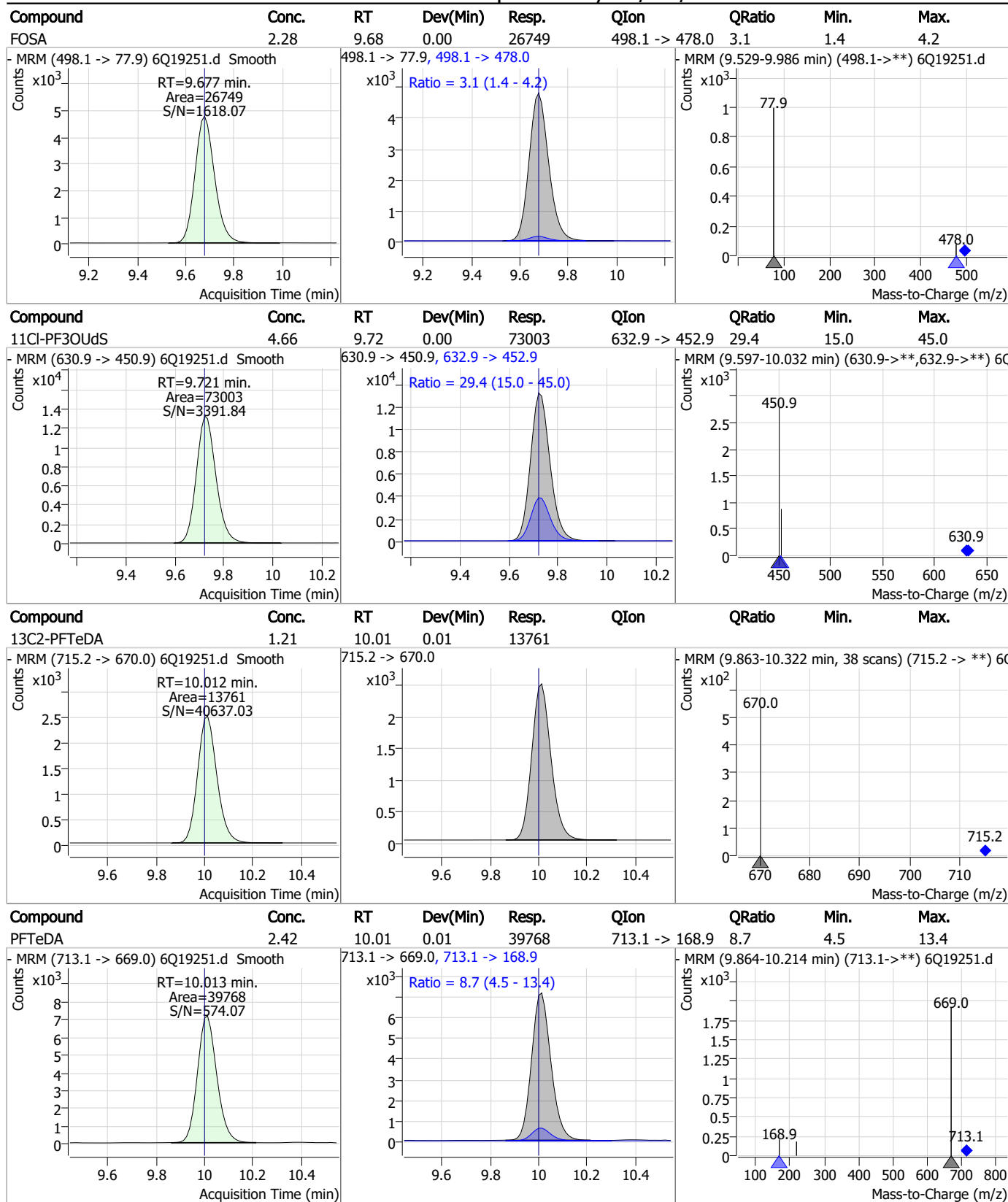


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

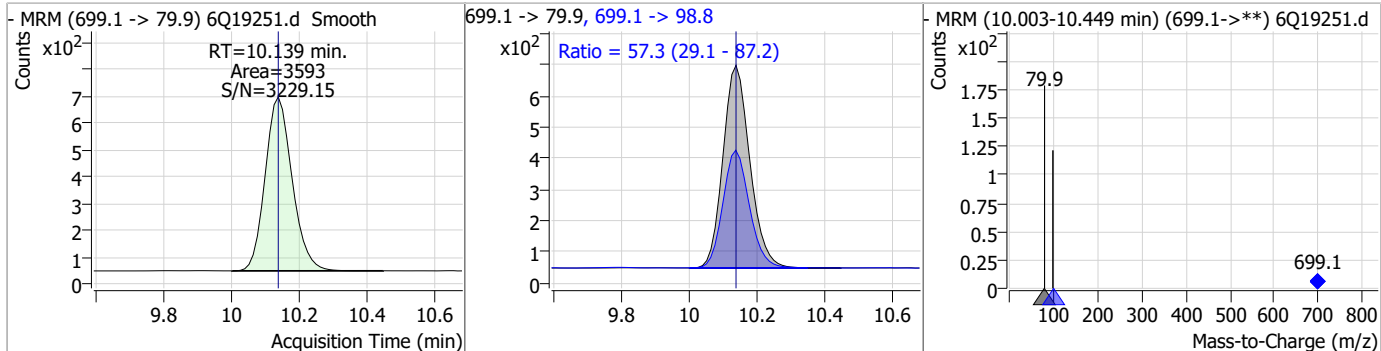


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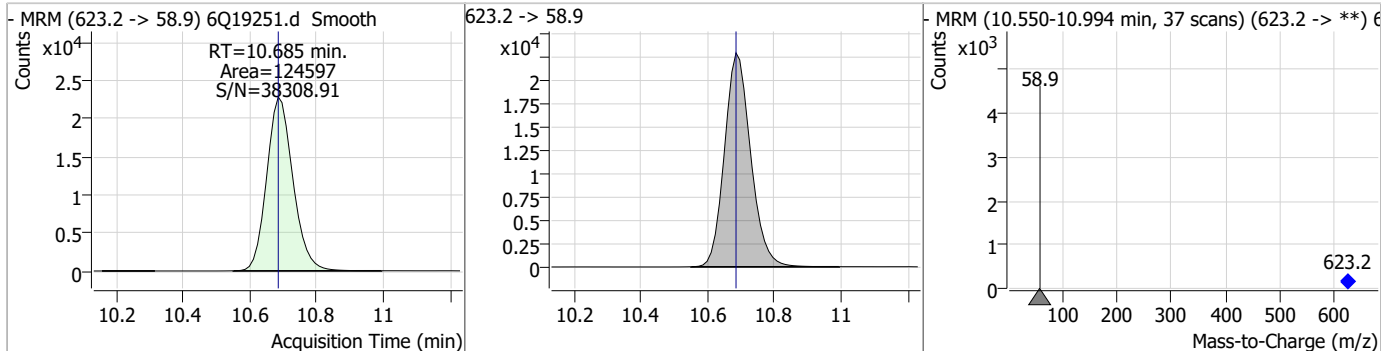


Perfluorinated Compounds by LC/MS/MS

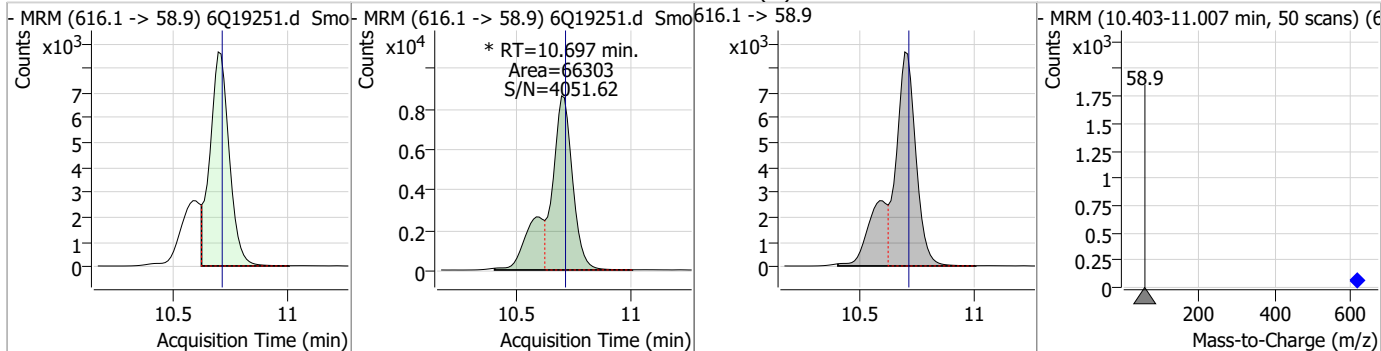
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.30	10.14	0.00	3593	699.1 -> 98.8	57.3	29.1	87.2



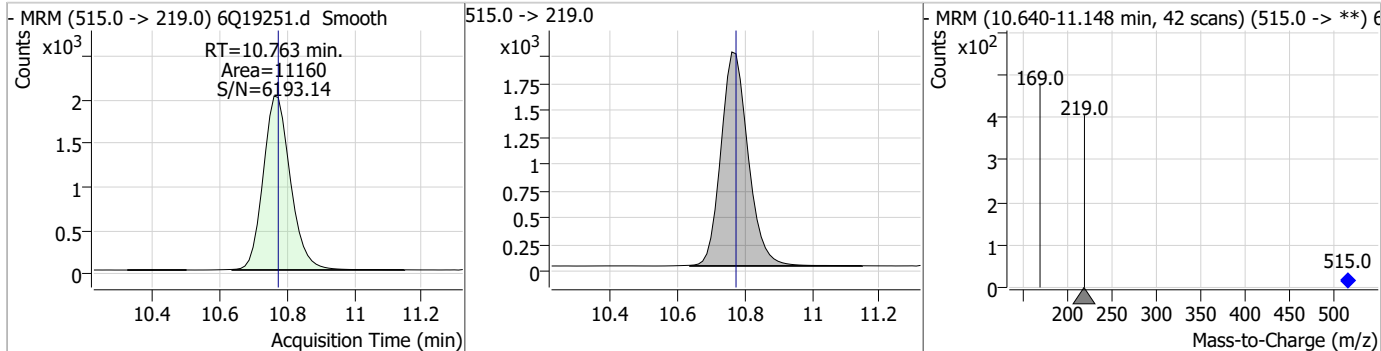
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.07	10.68	0.00	124597				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.16	10.70	-0.01	66303 (m)				



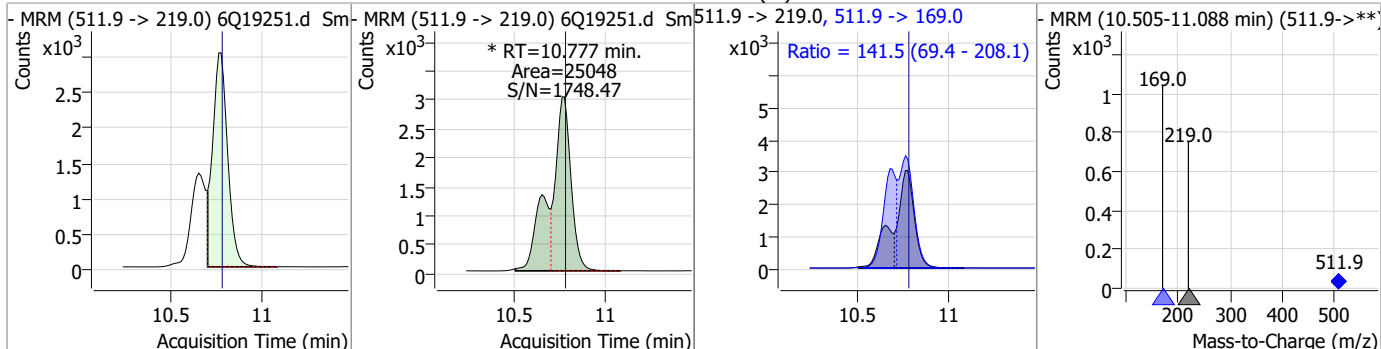
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.08	10.76	-0.01	11160				



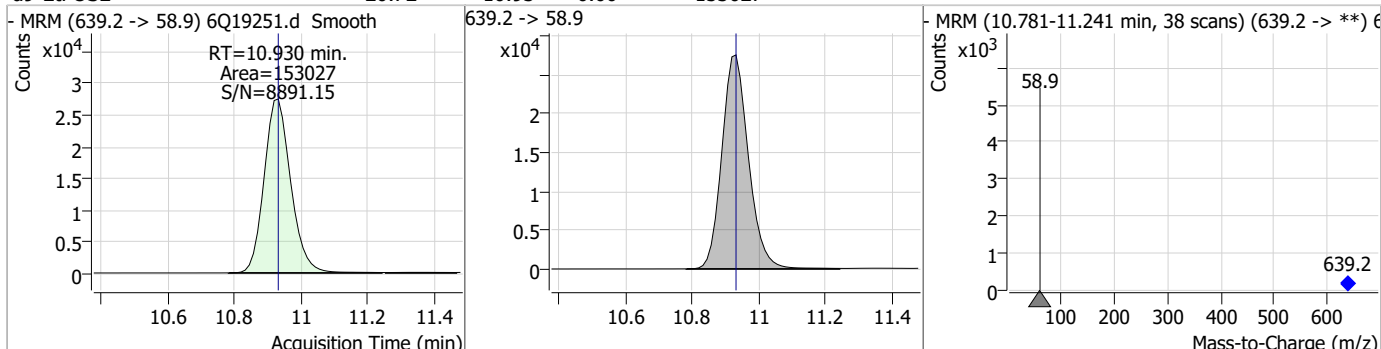
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Perfluorinated Compounds by LC/MS/MS

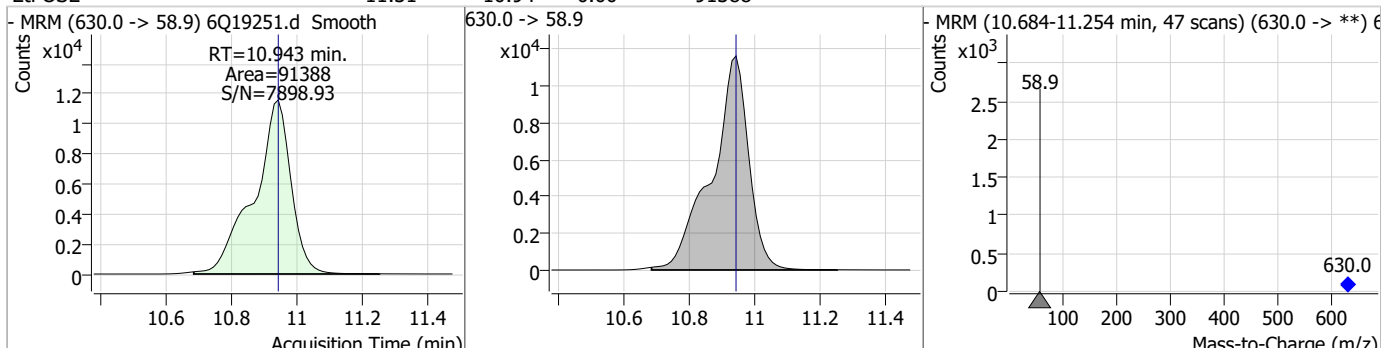
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.12	10.78	0.00	25048 (m)	511.9 -> 169.0	141.5	69.4	208.1



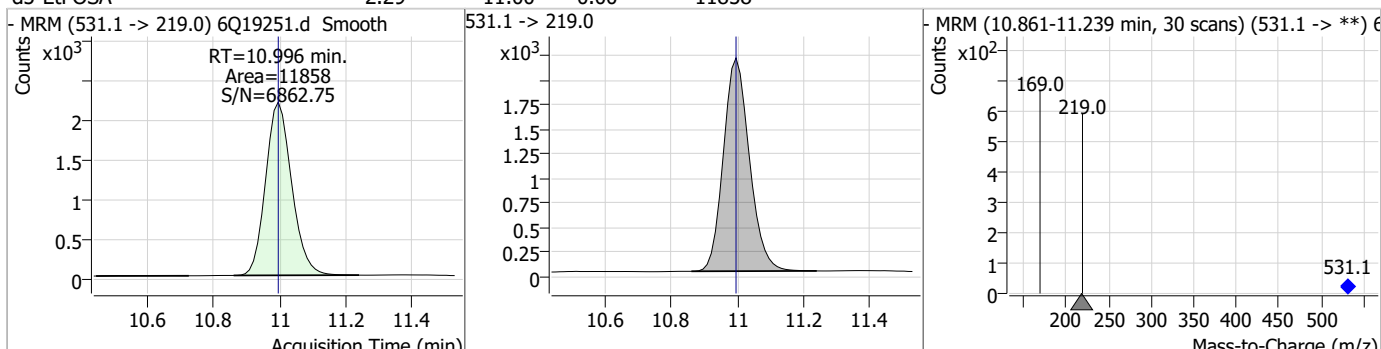
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.72	10.93	0.00	153027				



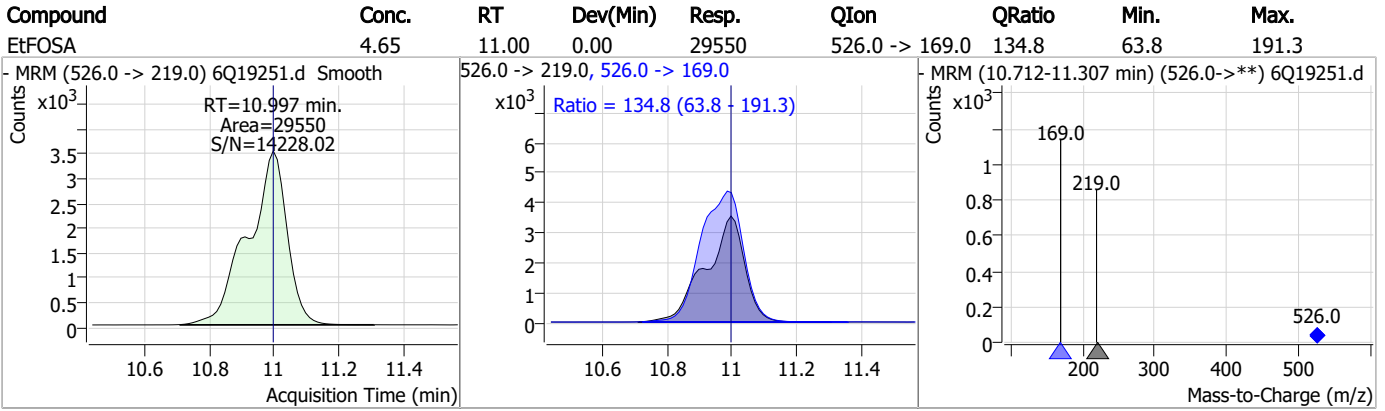
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.31	10.94	0.00	91388				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.29	11.00	0.00	11858				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-CC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19251.D Analyst approved: 06/13/23 14:02 Natasha Gumtie
Injection Time: 06/12/23 18:22 Supervisor approved: 06/13/23 14:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.78	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19252.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 6:36:17 PM
 Sample Name : cc287-1.0LL
 Vial : P1-A2
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	142355	10.00 µg/L	0.000
M5-PFPeA	4.548	268.3 -> 223.0	46475	5.00 µg/L	-0.012
M5-PFHxA	5.792	318.0 -> 273.0	50078	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	47459	2.50 µg/L	0.000
M8-PFOA	7.339	421.1 -> 376.0	72537	2.50 µg/L	0.000
M9-PFNA	7.882	472.1 -> 427.0	36103	1.25 µg/L	0.000
M6-PFDA	8.387	519.1 -> 474.1	21298	1.25 µg/L	0.000
M7-PFUnDA	8.853	570.0 -> 525.1	28138	1.25 µg/L	0.000
M2-PFDoDA	9.285	615.1 -> 570.0	24027	1.25 µg/L	0.000
M2-PFTeDA	10.012	715.2 -> 670.0	13468	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	27793	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18331	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	12137	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10531	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3186	5.00 µg/L	0.000
M2-6:2FTS	7.100	429.1 -> 80.9	5206	5.00 µg/L	-0.012
M2-8:2FTS	8.163	529.1 -> 80.9	4483	5.00 µg/L	0.000
M3-MeFOSAA	8.407	573.2 -> 419.0	27261	5.00 µg/L	0.000
M3-HFPO-DA	6.169	286.9 -> 168.9	31949	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	23261	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	137507	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	152177	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12361	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	12023	2.50 µg/L	0.000
13C4-PFOS	8.563	502.8 -> 79.9	14671	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	60469	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	9116	2.50 µg/L	0.000
13C4-PFOA	7.340	417.1 -> 372.0	74594	2.50 µg/L	0.000
13C2-PFDA	8.388	515.1 -> 470.1	26163	1.25 µg/L	0.000
13C5-PFNA	7.882	468.0 -> 423.0	46193	1.25 µg/L	0.000
13C2-PFHxA	5.792	315.1 -> 270.0	45630	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3186	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C2-6:2FTS	7.100	429.1 -> 80.9	5206	6.17 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.4%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4483	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.9%		
13C2-PFDoDA	9.285	615.1 -> 570.0	24027	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13468	1.33 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C3-PFBS	5.746	302.1 -> 79.9	18331	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C3-PFHxS	7.478	402.1 -> 79.9	12137	2.51 µg/L	0.000

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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	3.085	216.8 -> 171.9	142355	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.707	367.1 -> 322.0	47459	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.792	318.0 -> 273.0	50078	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.548	268.3 -> 223.0	46475	5.27 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C6-PFDA	8.387	519.1 -> 474.1	21298	1.47 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.0%	
13C7-PFUnDA	8.853	570.0 -> 525.1	28138	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C8-FOSA	9.674	506.1 -> 77.8	27793	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-PFOA	7.339	421.1 -> 376.0	72537	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOS	8.563	507.1 -> 79.9	10531	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C9-PFNA	7.882	472.1 -> 427.0	36103	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
d3-MeFOSAA	8.407	573.2 -> 419.0	27261	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31949	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d3-MeFOSA	10.775	515.0 -> 219.0	12023	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
d5-EtFOSAA	8.615	589.2 -> 419.0	23261	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d7-MeFOSE	10.685	623.2 -> 58.9	137507	25.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d9-EtFOSE	10.930	639.2 -> 58.9	152177	22.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.5%	
d5-EtFOSA	10.996	531.1 -> 219.0	12361	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
Target Compounds					QValue
4:2FTS	5.443	327.1 -> 307.0	5120	0.93 µg/L	99
		327.1 -> 80.9	1922		
6:2FTS	7.113	427.1 -> 407.0	4726	0.75 µg/L	95
		427.1 -> 80.9	1572		
8:2FTS	8.164	527.1 -> 507.0	2859	0.96 µg/L	92
		527.1 -> 80.8	981		
EtFOSAA	8.617	584.2 -> 419.1	924	0.24 µg/L	m 81
		584.2 -> 526.0	584		
FOSA	9.677	498.1 -> 77.9	2671	0.23 µg/L	97
		498.1 -> 478.0	102		
MeFOSAA	8.421	570.1 -> 419.0	1842	0.28 µg/L	m 97
		570.1 -> 483.0	343		
PFBA	3.093	212.8 -> 168.9	5307	0.93 µg/L	100
PFBS	5.747	298.7 -> 79.9	1739	0.22 µg/L	94
		298.7 -> 98.8	666		
PFDA	8.388	512.9 -> 469.0	7124	0.22 µg/L	95
		512.9 -> 219.0	1228		
PFDODA	9.285	613.1 -> 569.0	4864	0.25 µg/L	97
		613.1 -> 319.0	751		
PFDS	9.450	599.0 -> 79.9	892	0.28 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	393			
PFHpA	6.708	363.1 -> 319.0	5930	0.23	µg/L	99
		363.1 -> 169.0	976			
PFHpS	8.046	449.0 -> 79.9	1550	0.24	µg/L	90
		449.0 -> 98.9	654			
PFHxA	5.795	313.0 -> 269.0	4689	0.23	µg/L	98
		313.0 -> 118.9	279			
PFHxS	7.479	398.7 -> 79.9	1413	0.19	µg/L	m 87
		398.7 -> 98.9	781			
PFNA	7.883	463.0 -> 419.0	7304	0.22	µg/L	94
		463.0 -> 219.0	1484			
PFNS	9.041	548.8 -> 79.9	1324	0.24	µg/L	96
		548.8 -> 98.9	679			
PFOA	7.341	413.0 -> 369.0	9068	0.24	µg/L	99
		413.0 -> 169.0	1650			
PFOS	8.564	498.9 -> 79.9	1411	0.23	µg/L	m 96
		498.9 -> 98.8	775			
PFPeA	4.551	263.0 -> 219.0	6452	0.47	µg/L	100
PFPeS	6.785	349.1 -> 79.9	1498	0.22	µg/L	100
		349.1 -> 98.9	684			
PFTeDA	10.013	713.1 -> 669.0	3939	0.24	µg/L	97
		713.1 -> 168.9	314			
PFTrDA	9.669	663.0 -> 619.0	4931	0.25	µg/L	96
		663.0 -> 168.9	567			
PFUnDA	8.854	563.1 -> 519.0	4944	0.24	µg/L	98
		563.1 -> 269.1	859			
11CI-PF3OUdS	9.721	630.9 -> 450.9	6586	0.44	µg/L	99
		632.9 -> 452.9	2000			
9CI-PF3ONS	8.906	530.8 -> 351.0	11187	0.44	µg/L	90
		532.8 -> 353.0	2771			
ADONA	6.946	376.9 -> 250.9	24245	0.45	µg/L	98
		376.9 -> 84.8	6569			
HFPO-DA	6.169	284.9 -> 168.9	1619	0.46	µg/L	97
		284.9 -> 184.9	158			
3:3FTCA	3.946	241.0 -> 177.0	1058	1.13	µg/L	100
		241.0 -> 117.0	140			
5:3FTCA	6.361	341.0 -> 237.1	24344	6.26	µg/L	97
		341.0 -> 217.0	17538			
7:3FTCA	7.736	441.0 -> 316.9	16880	6.06	µg/L	87
		441.0 -> 336.9	35418			
EtFOSA	10.997	526.0 -> 219.0	2780	0.42	µg/L	m 92
		526.0 -> 169.0	3809			
EtFOSE	10.943	630.0 -> 58.9	9044	1.13	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	2535	0.48	µg/L	m 96
		511.9 -> 169.0	3402			
MeFOSE	10.709	616.1 -> 58.9	6391	1.06	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	389	0.25	µg/L	98
		699.1 -> 98.8	221			
NFDHA	5.673	295.0 -> 201.0	1166	0.46	µg/L	100
		295.0 -> 84.9	335			
PFMBA	4.988	279.0 -> 85.1	4609	0.47	µg/L	100
PFMPA	3.667	229.0 -> 84.9	3508	0.46	µg/L	100
PFEESA	6.288	314.8 -> 134.9	11981	0.49	µg/L	100
		314.8 -> 82.9	418			

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



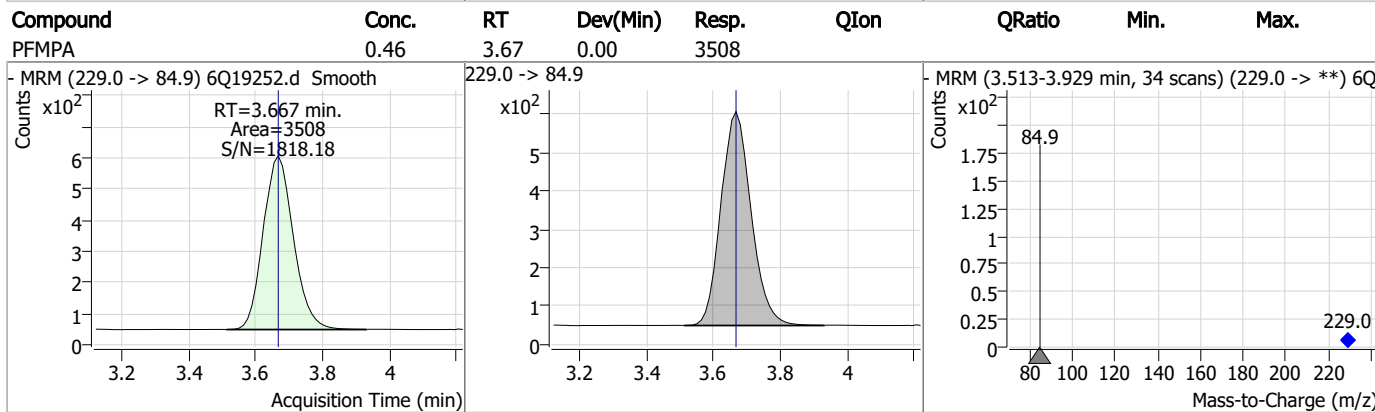
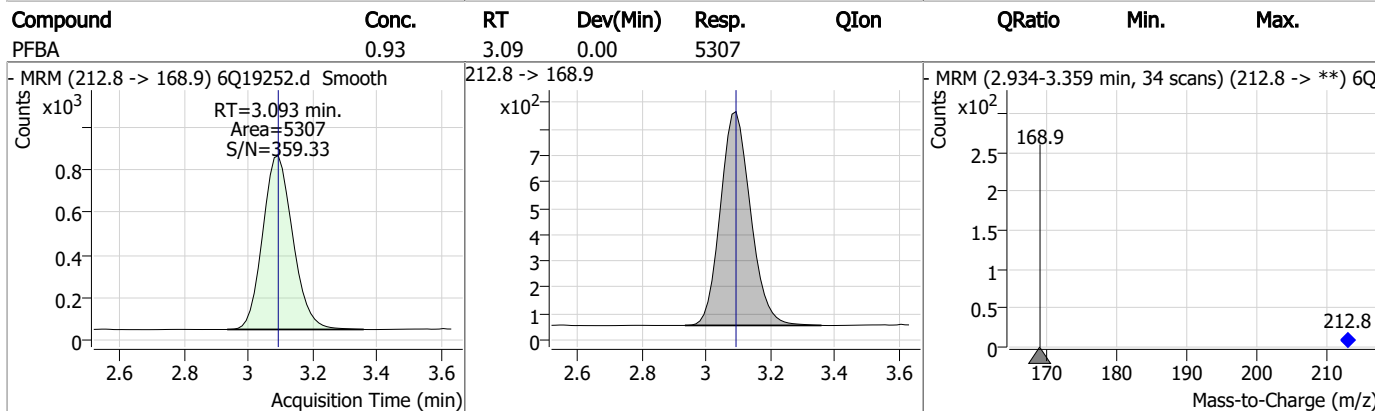
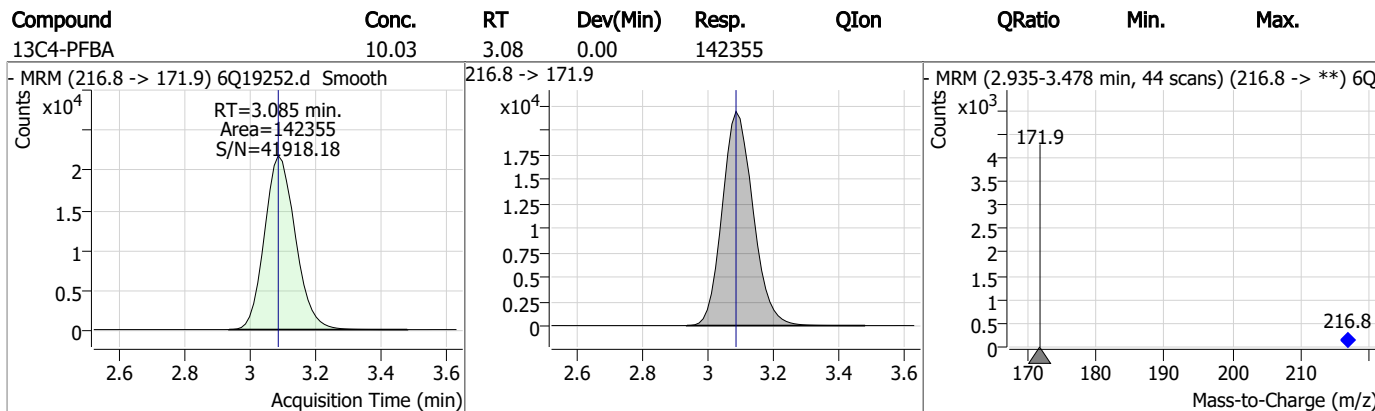
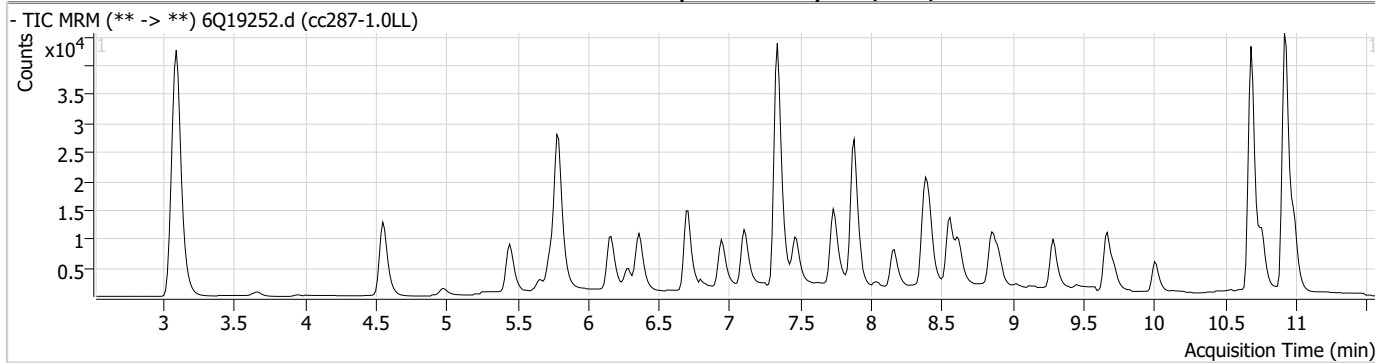
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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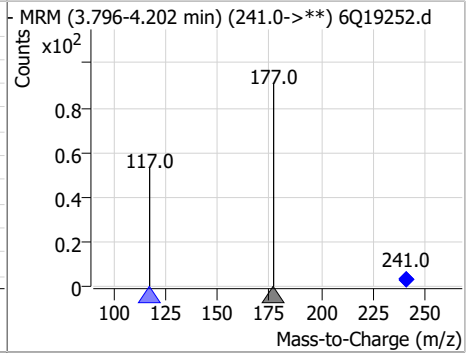
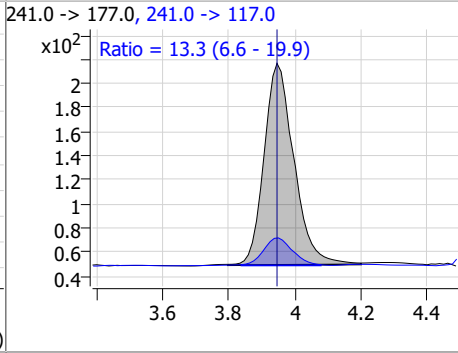
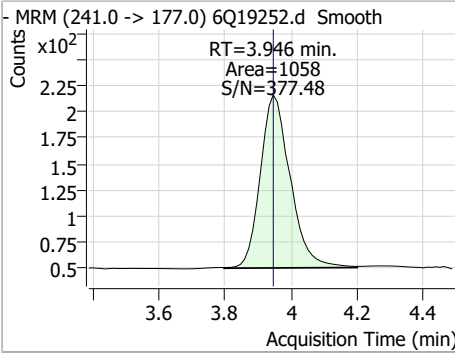
Perfluorinated Compounds by LC/MS/MS



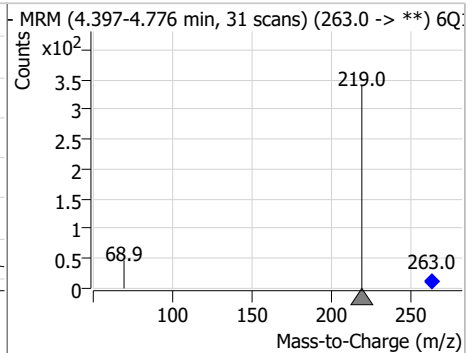
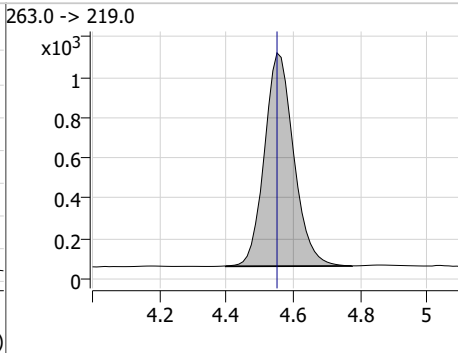
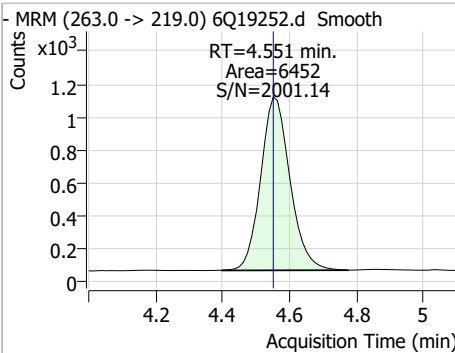
7.7.33
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Perfluorinated Compounds by LC/MS/MS

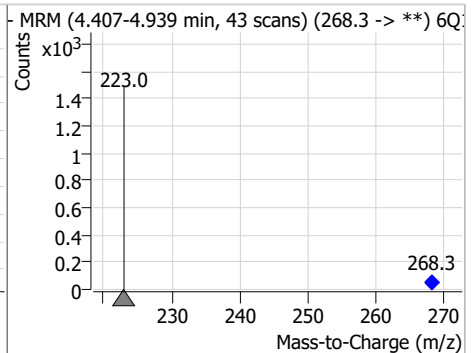
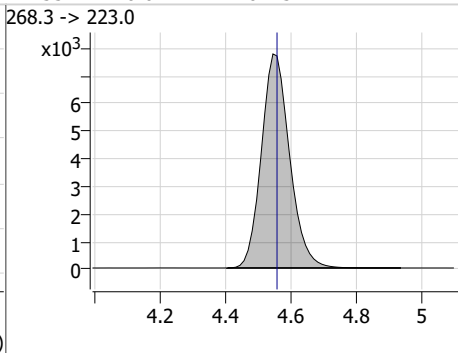
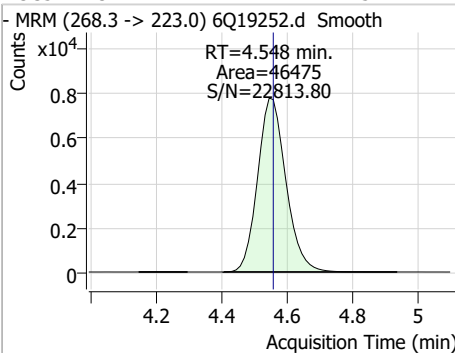
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.13	3.95	0.00	1058	241.0 -> 117.0	13.3	6.6	19.9



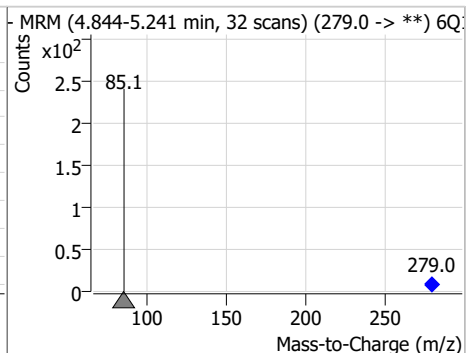
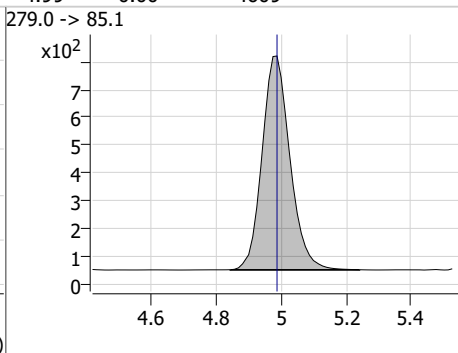
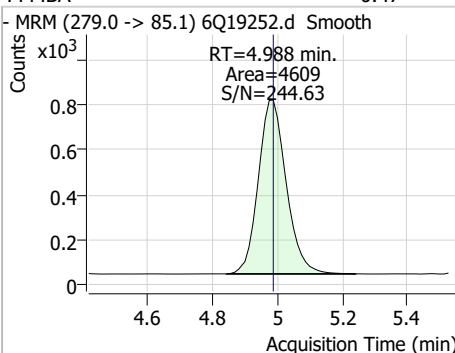
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	4.55	0.00	6452				



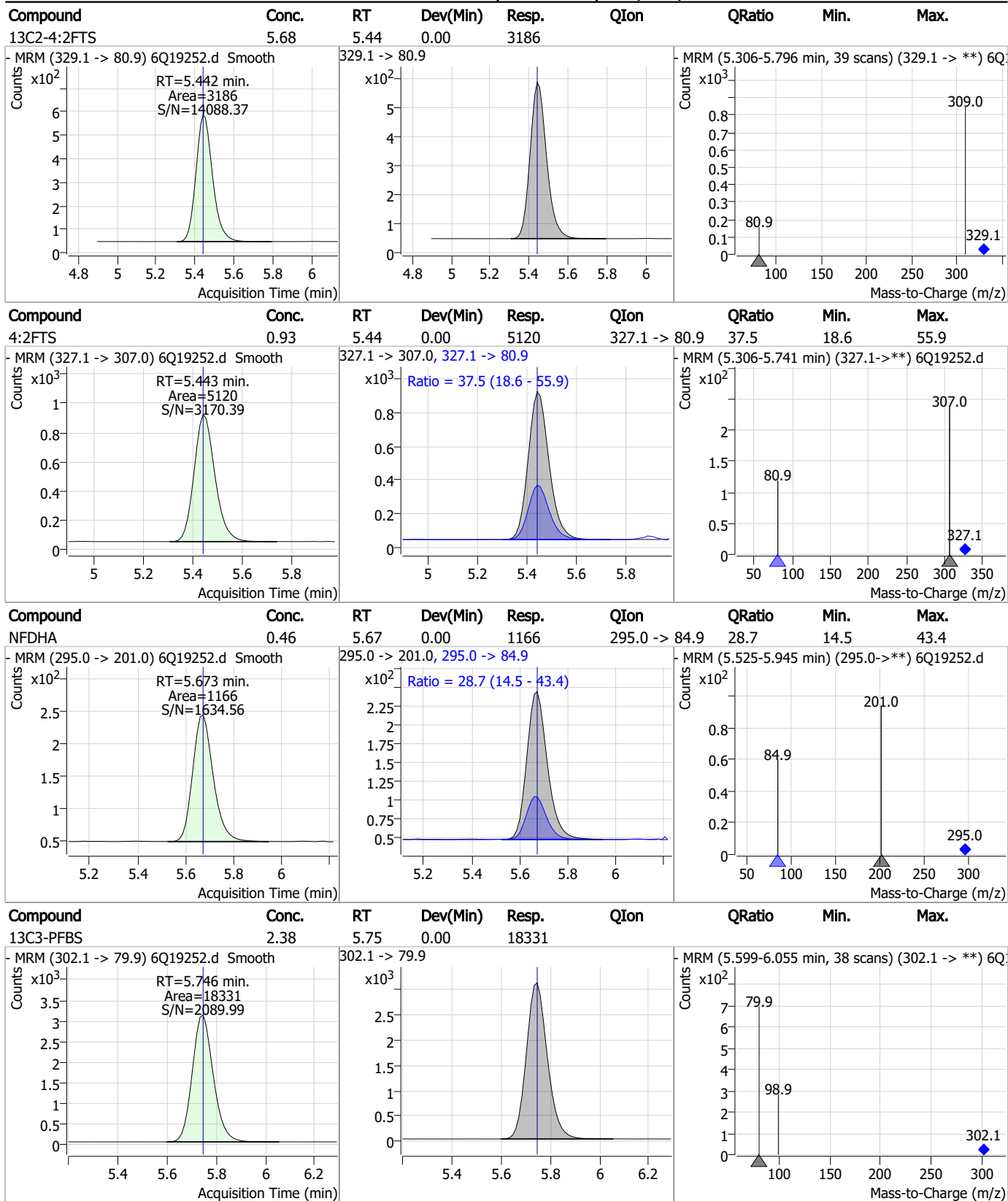
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.27	4.55	-0.01	46475				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.47	4.99	0.00	4609				

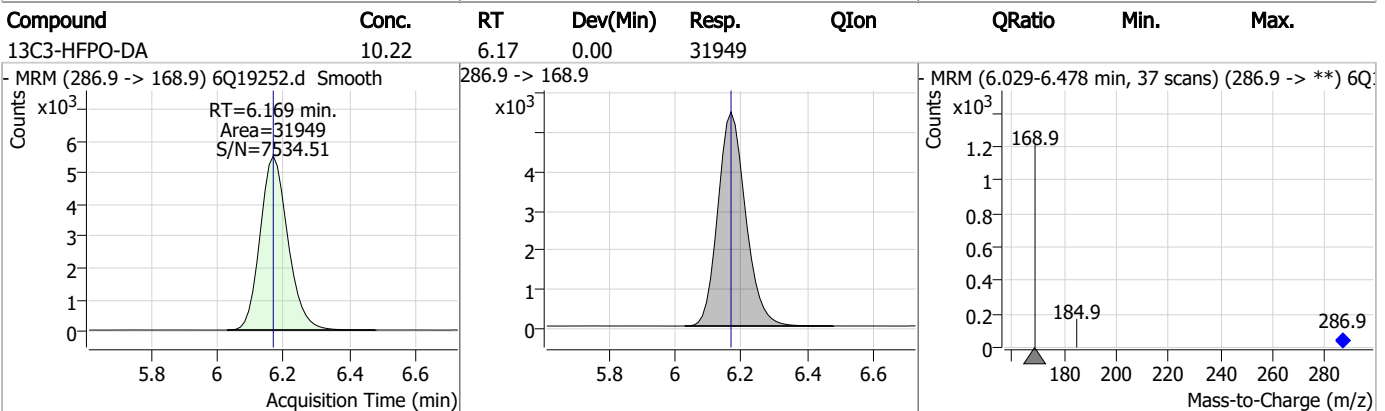
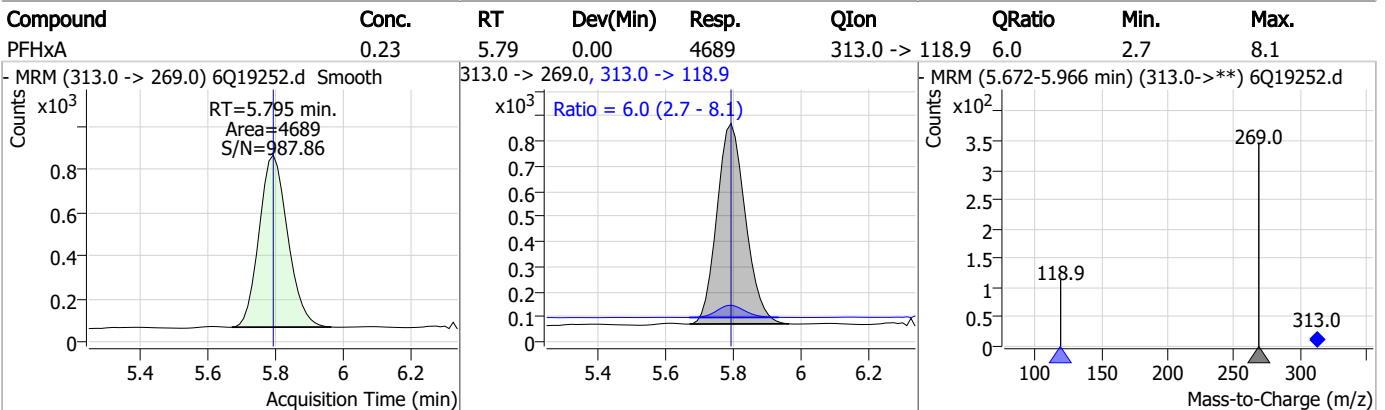
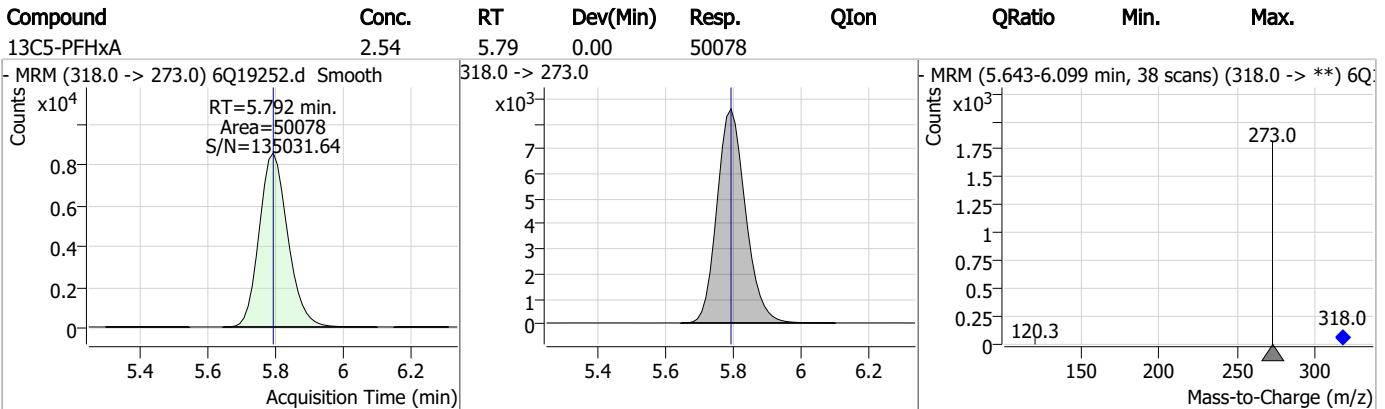
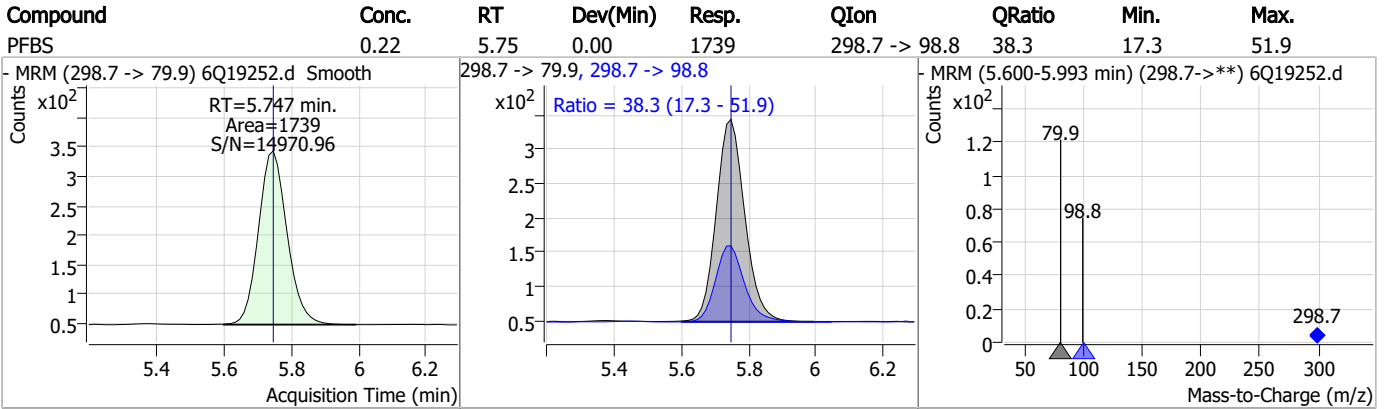


Perfluorinated Compounds by LC/MS/MS



7.7.33
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Perfluorinated Compounds by LC/MS/MS

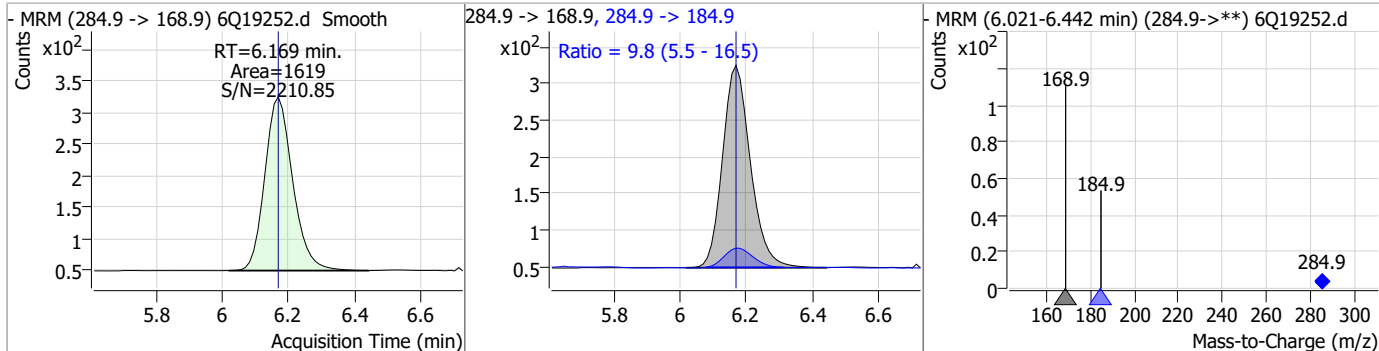


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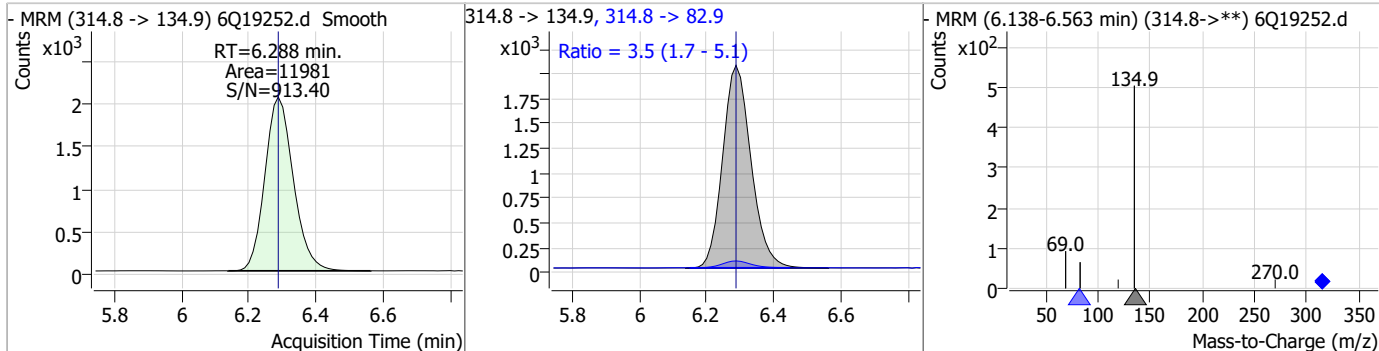


Perfluorinated Compounds by LC/MS/MS

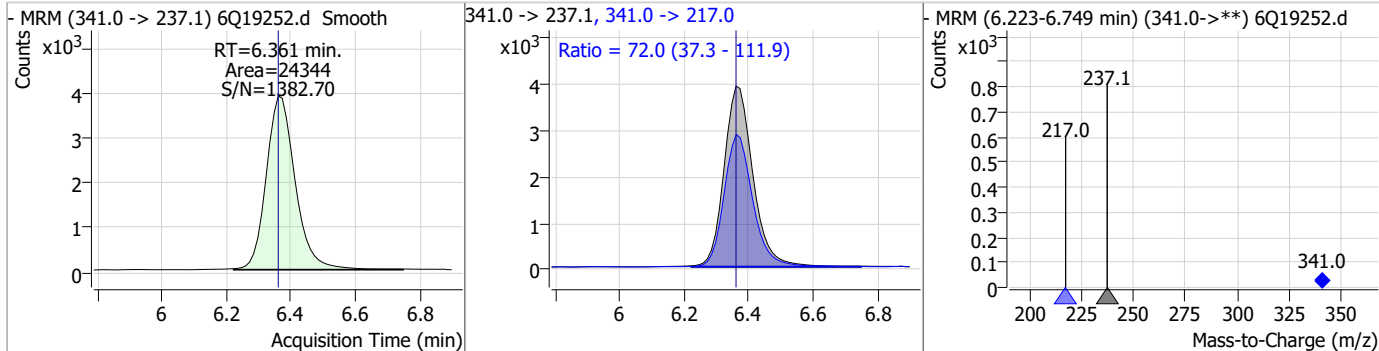
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.46	6.17	0.00	1619	284.9 -> 184.9	9.8	5.5	16.5



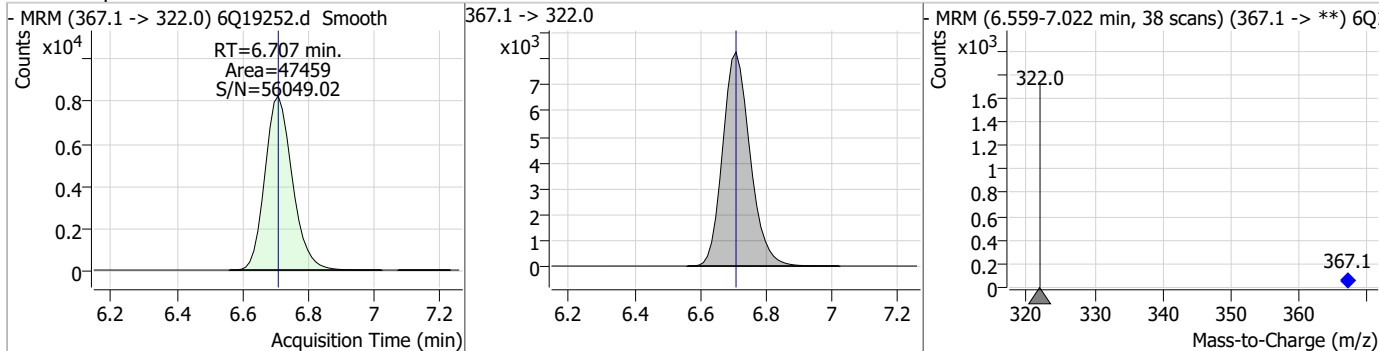
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.49	6.29	0.00	11981	314.8 -> 82.9	3.5	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	6.26	6.36	0.00	24344	341.0 -> 217.0	72.0	37.3	111.9

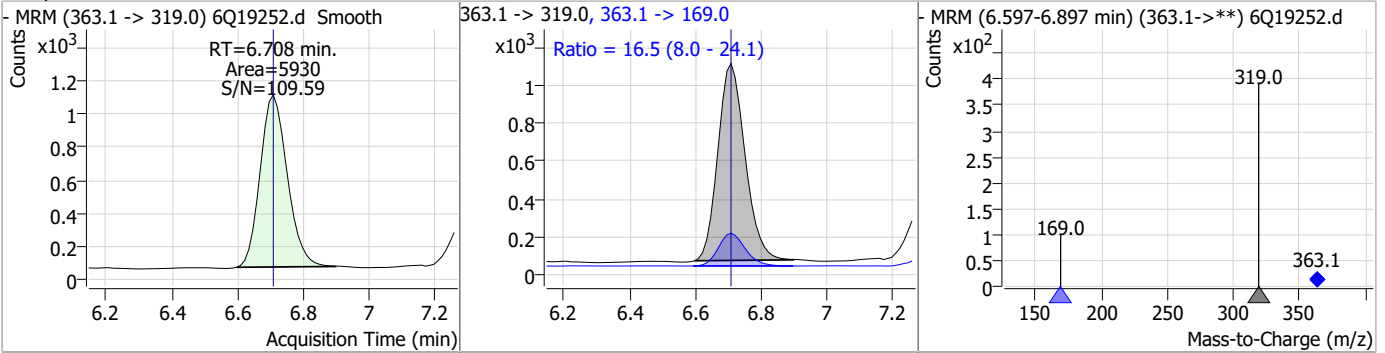


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	6.71	0.00	47459	367.1 -> 322.0			

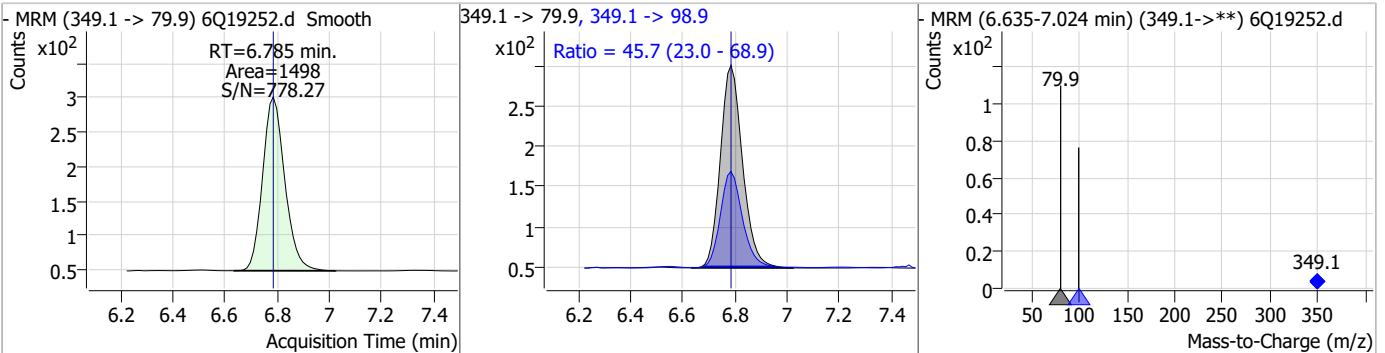


Perfluorinated Compounds by LC/MS/MS

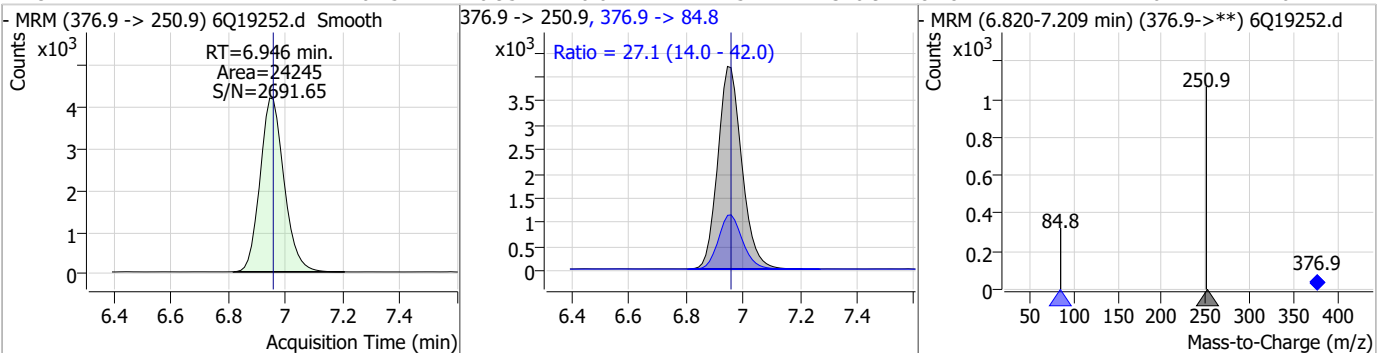
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.23	6.71	0.00	5930	363.1 -> 169.0	16.5	8.0	24.1



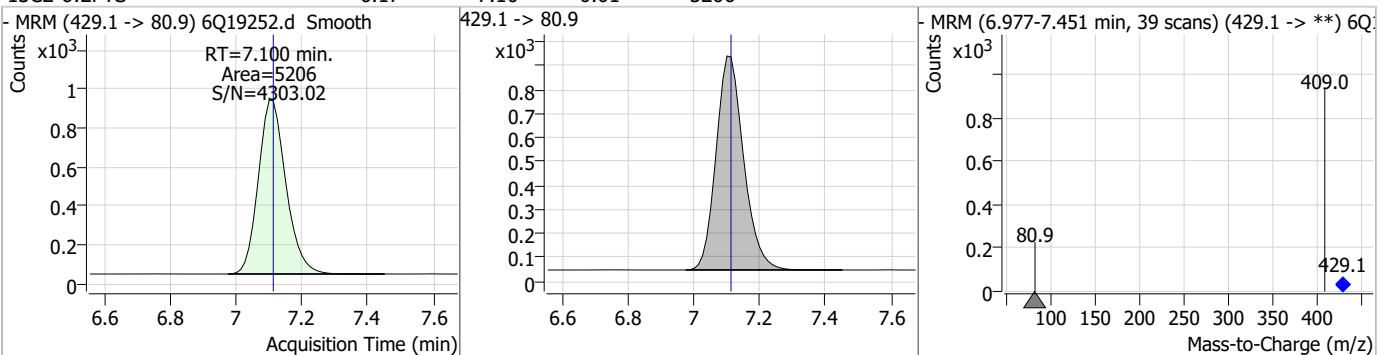
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.22	6.79	0.00	1498	349.1 -> 98.9	45.7	23.0	68.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.45	6.95	-0.01	24245	376.9 -> 84.8	27.1	14.0	42.0

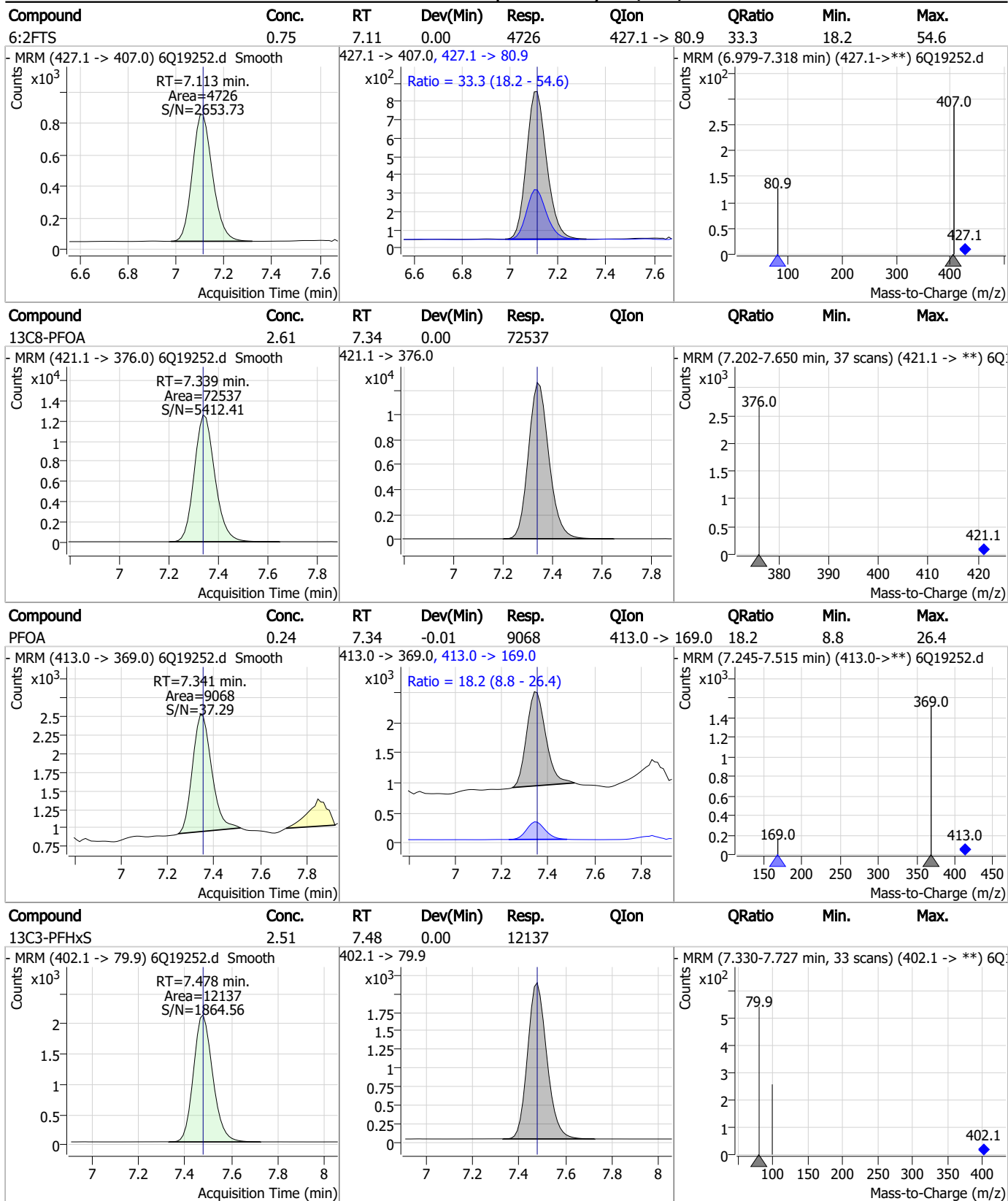


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.17	7.10	-0.01	5206	429.1 -> 80.9			



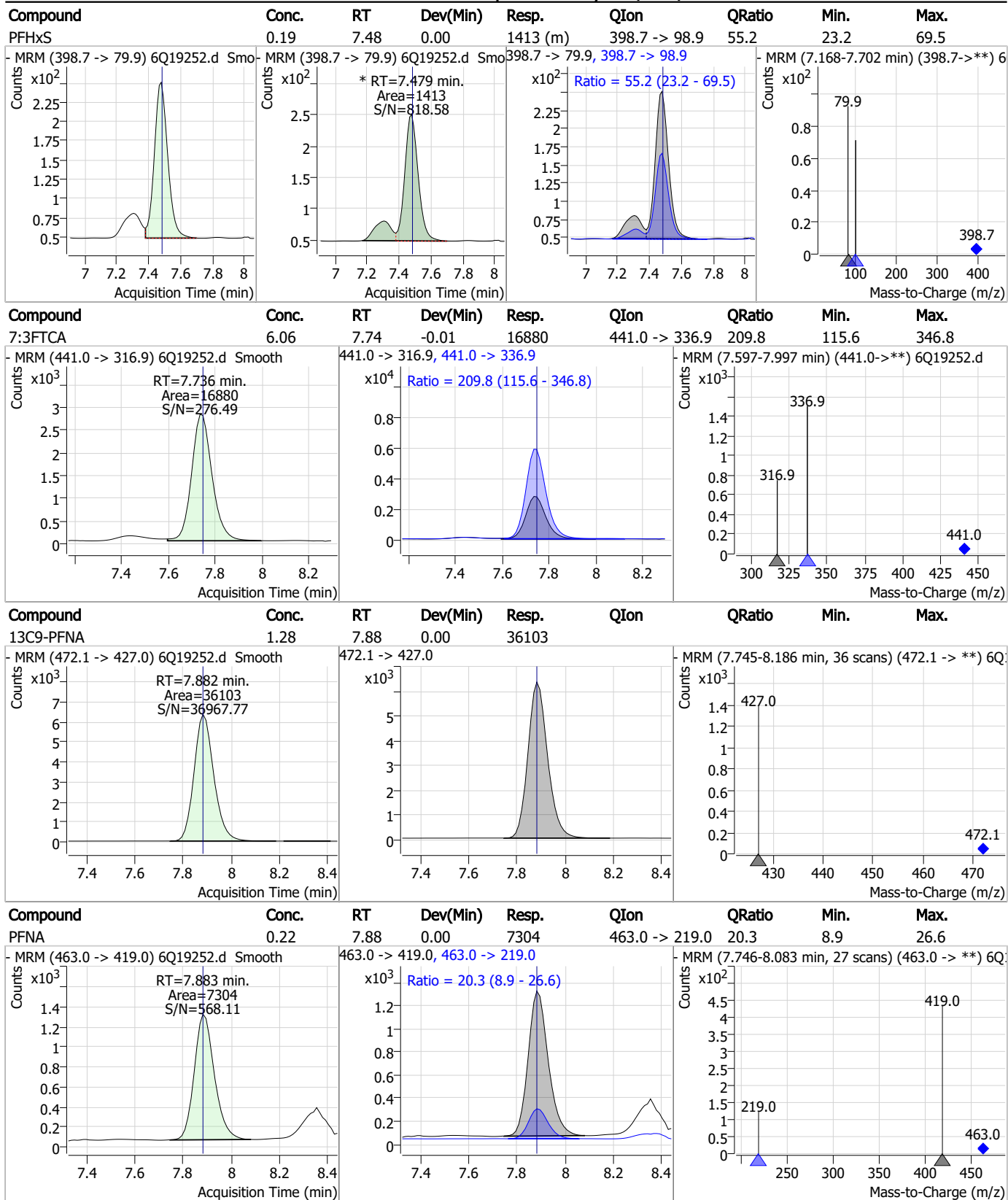
7.7.33 7

Perfluorinated Compounds by LC/MS/MS



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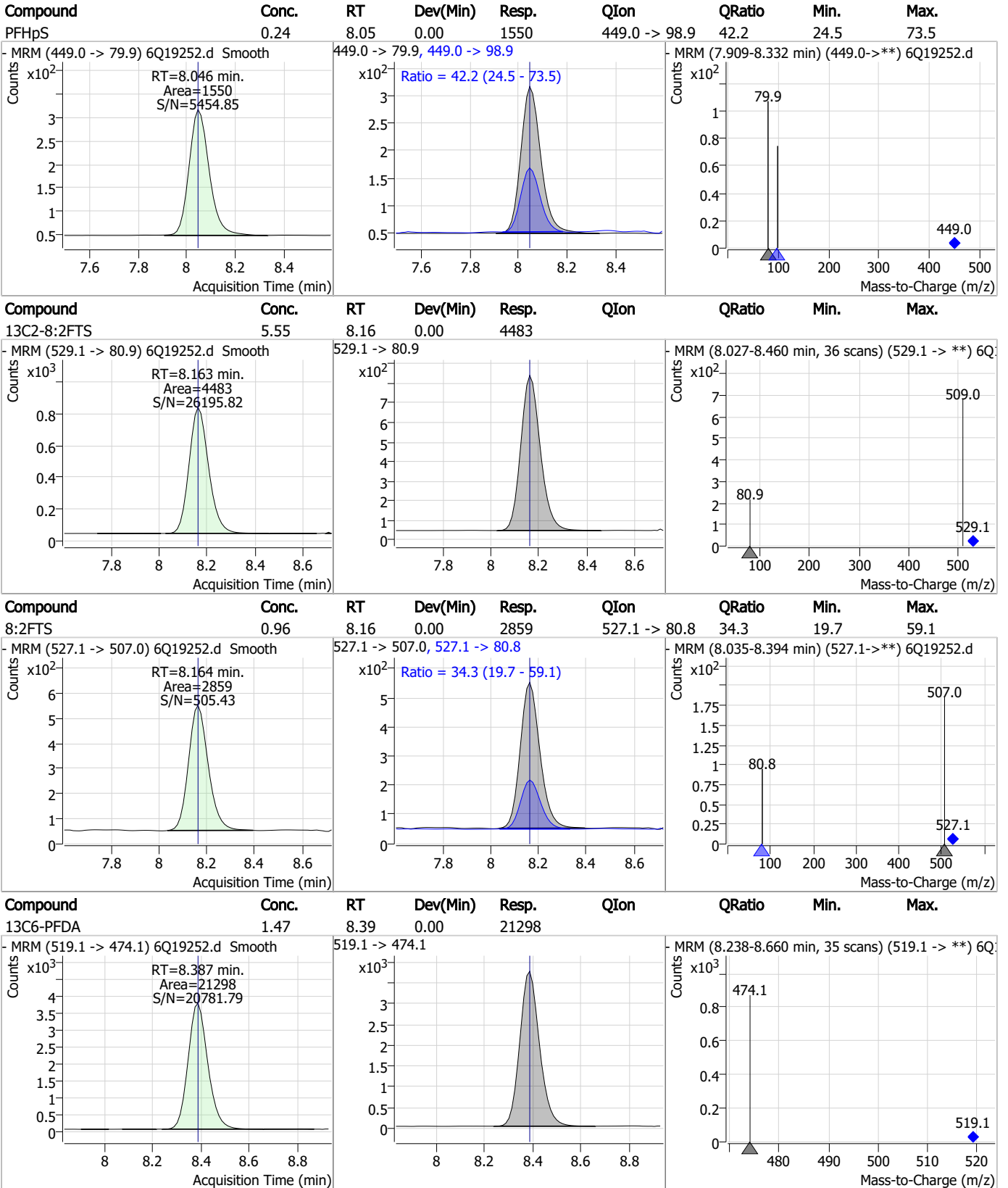
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

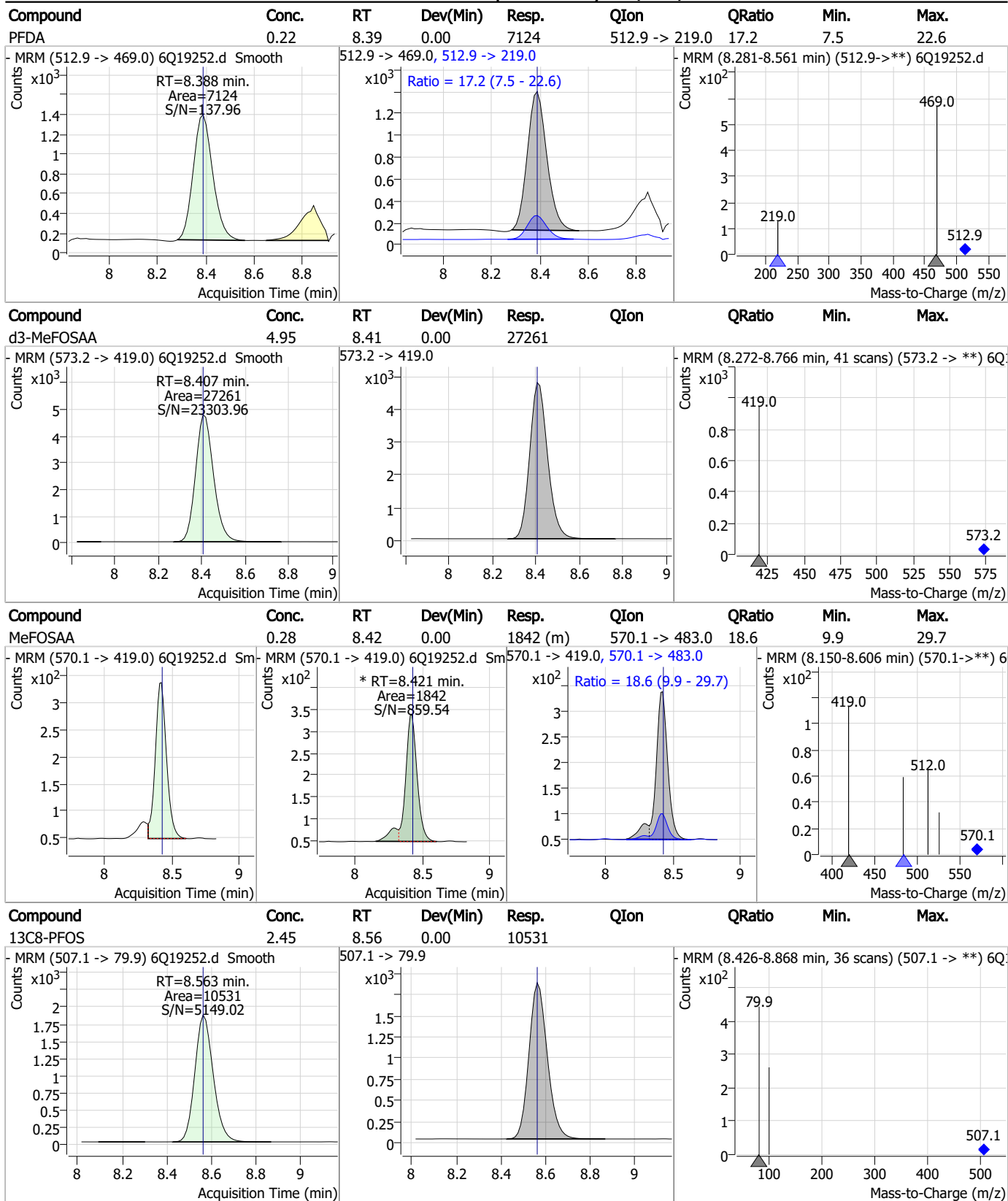


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Perfluorinated Compounds by LC/MS/MS

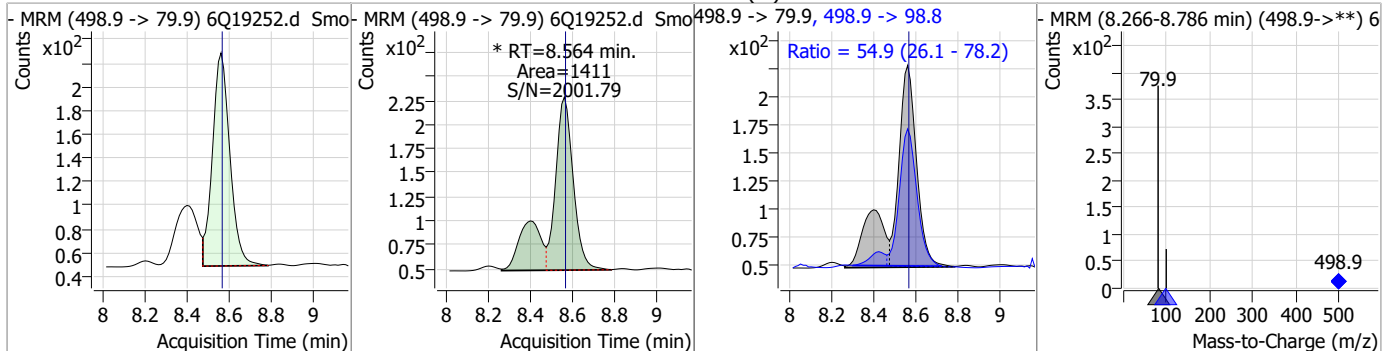


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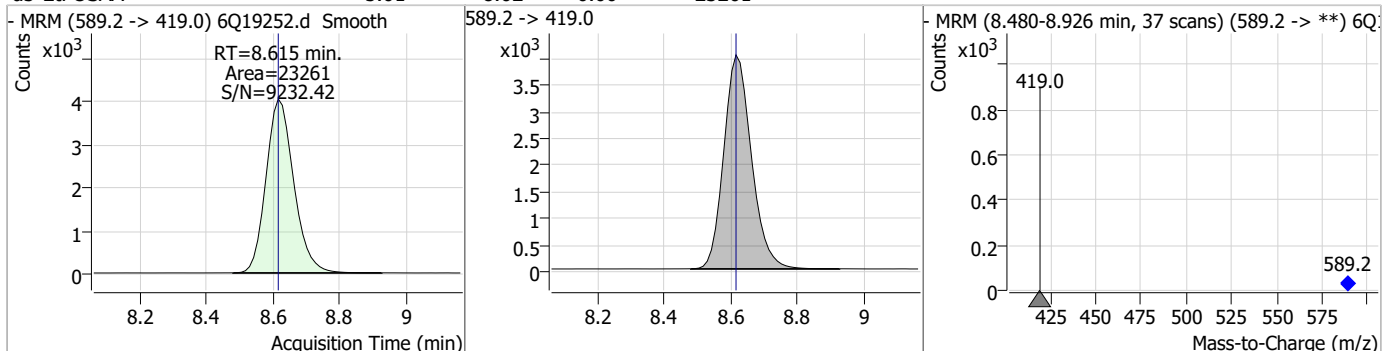


Perfluorinated Compounds by LC/MS/MS

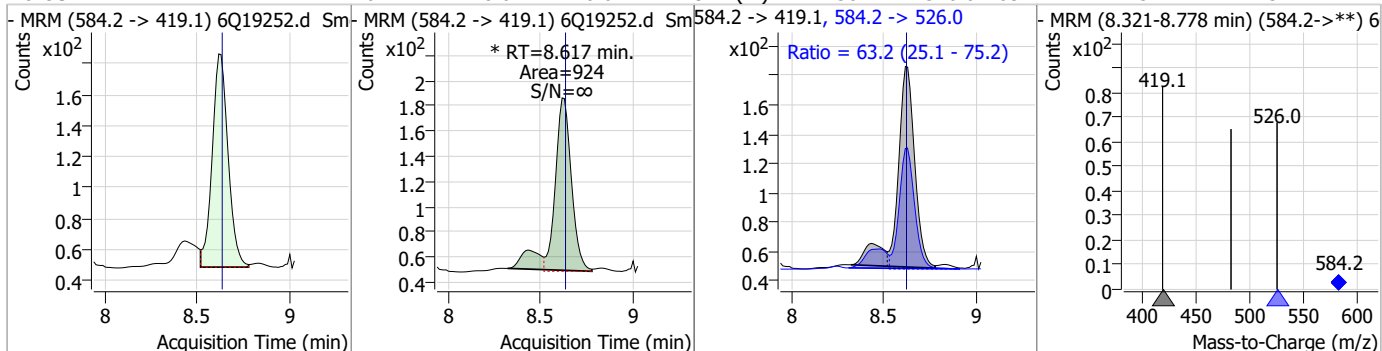
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.23	8.56	0.00	1411 (m)	498.9 -> 98.8	54.9	26.1	78.2



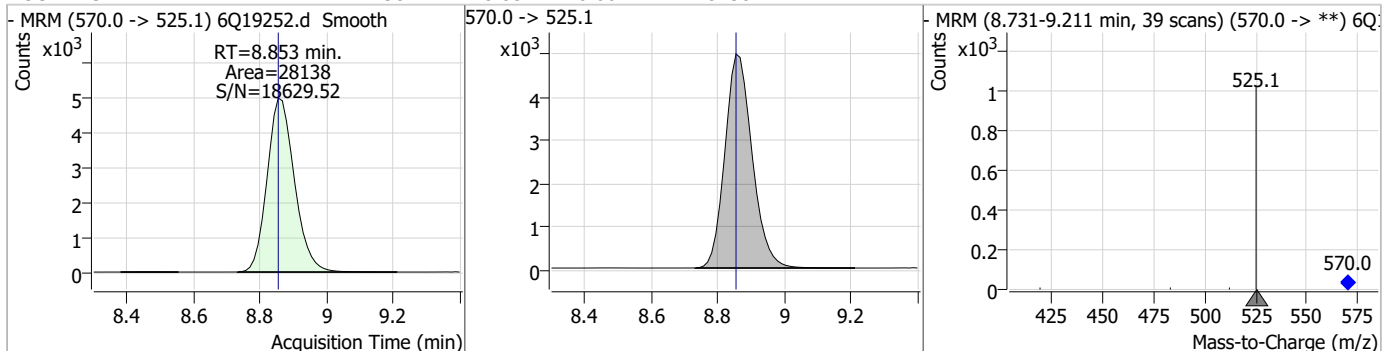
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.01	8.62	0.00	23261				



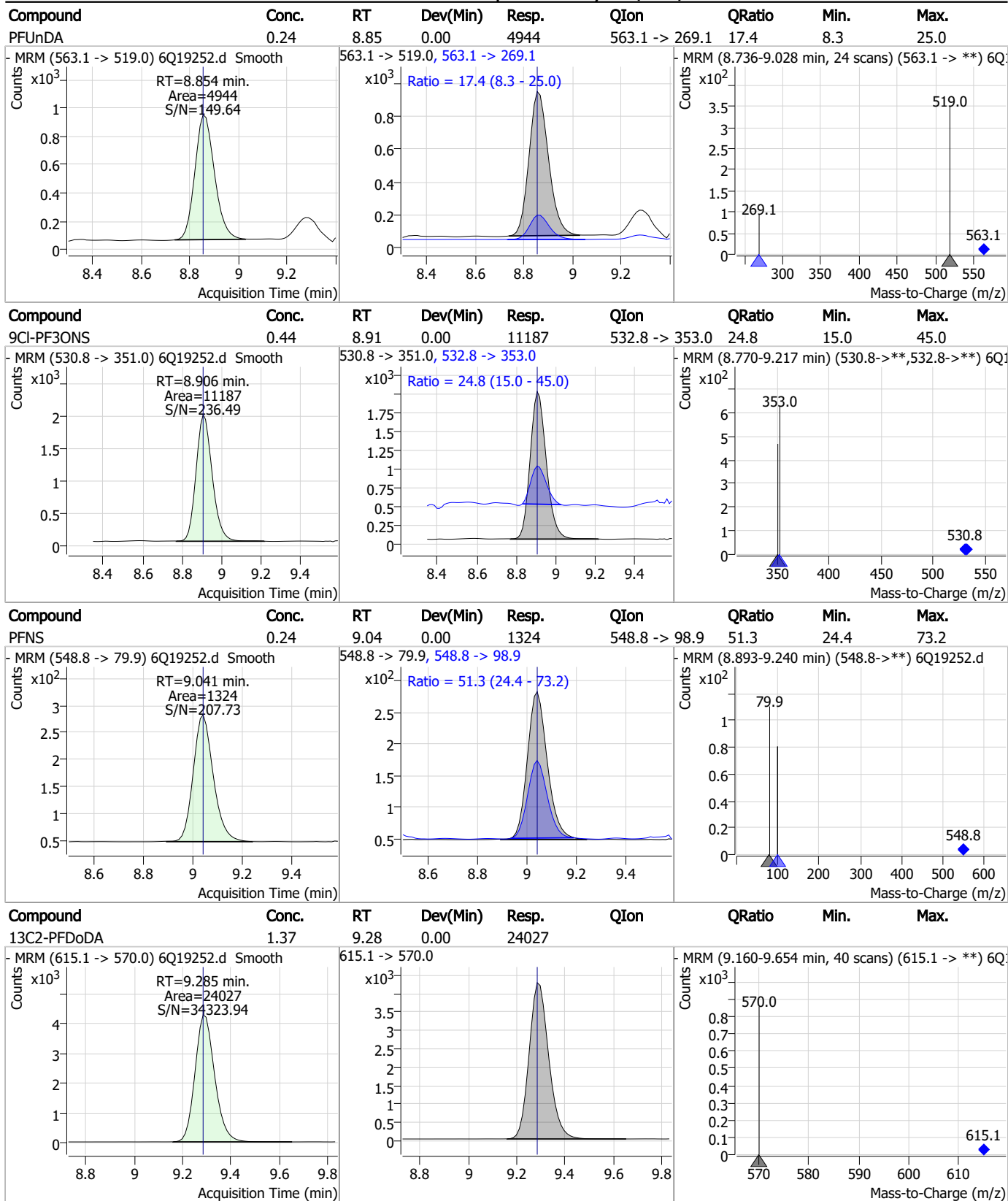
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.24	8.62	-0.01	924 (m)	584.2 -> 526.0	63.2	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.38	8.85	0.00	28138				



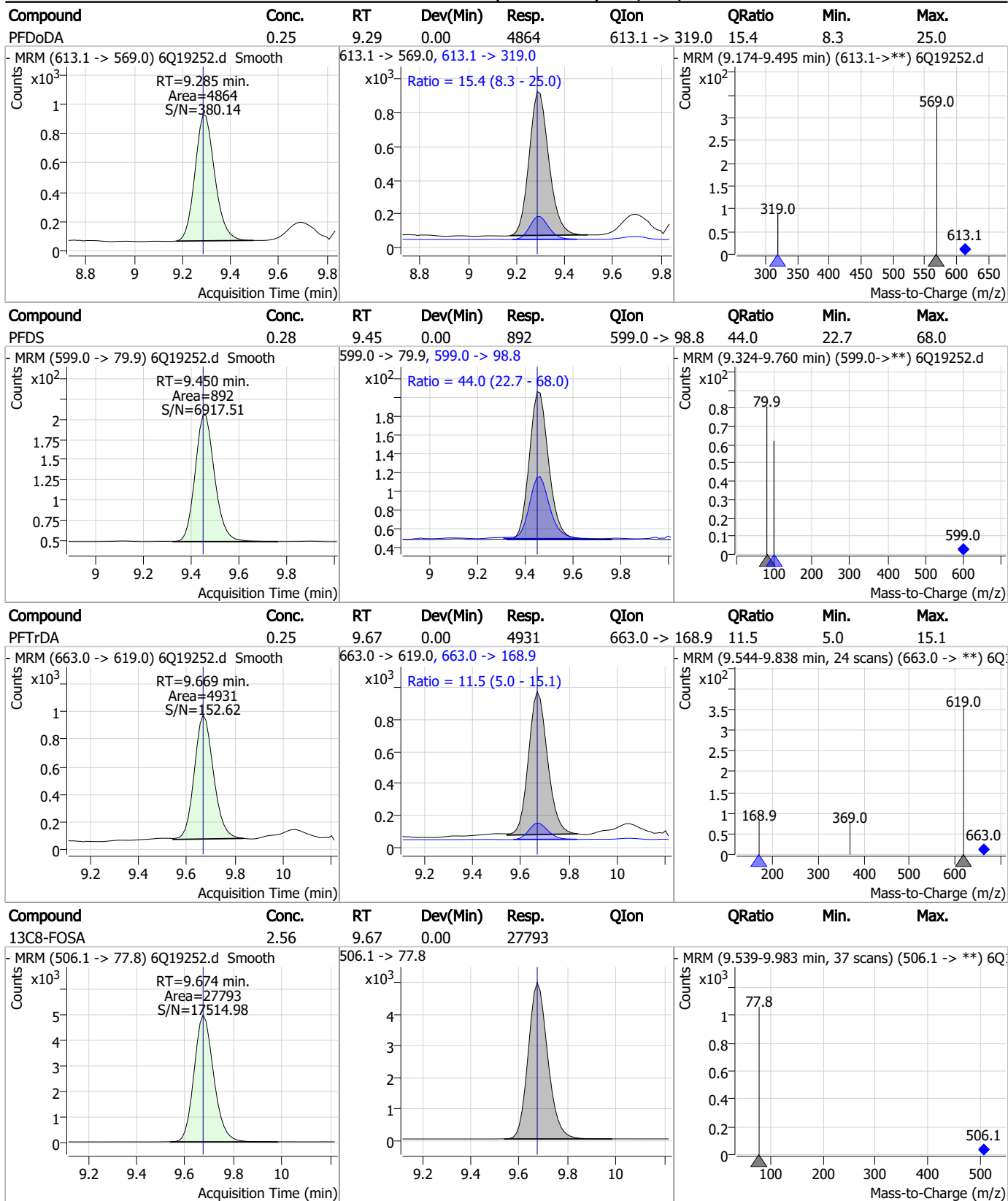
Perfluorinated Compounds by LC/MS/MS



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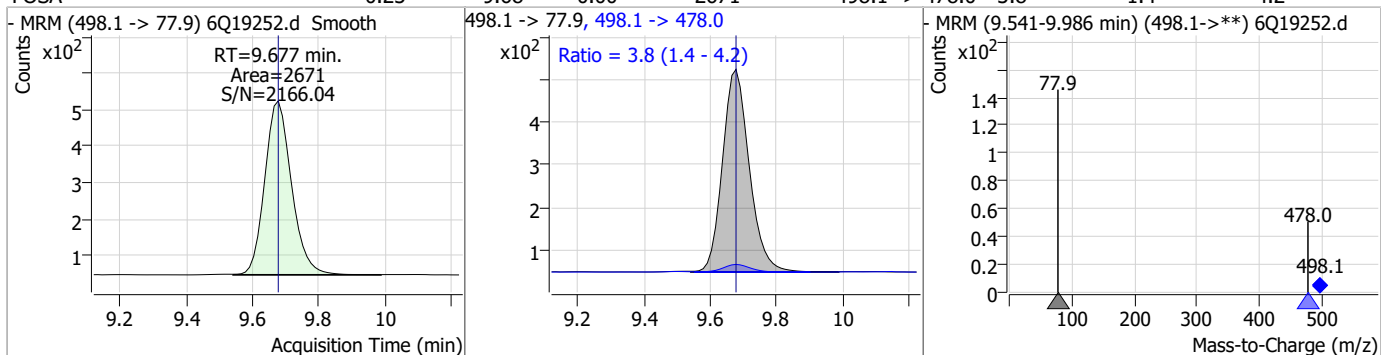
Perfluorinated Compounds by LC/MS/MS



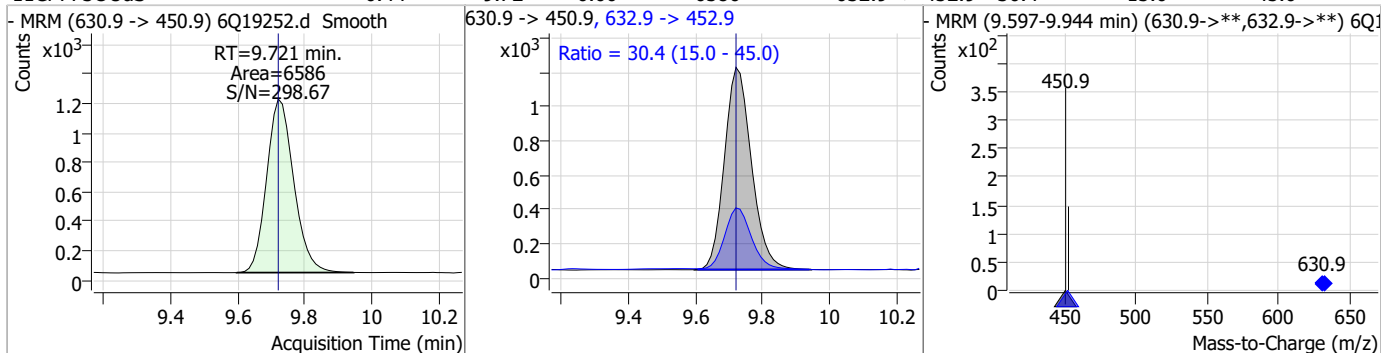
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Perfluorinated Compounds by LC/MS/MS

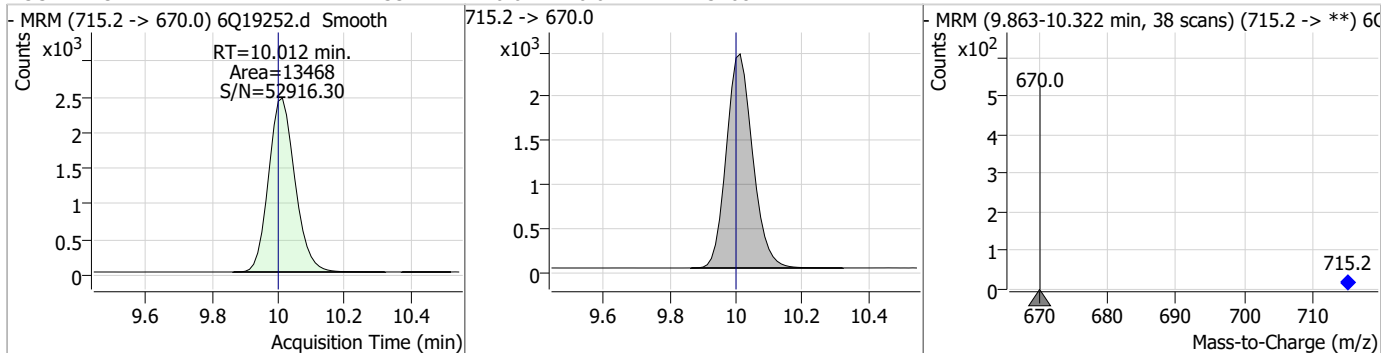
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.23	9.68	0.00	2671	498.1 -> 478.0	3.8	1.4	4.2



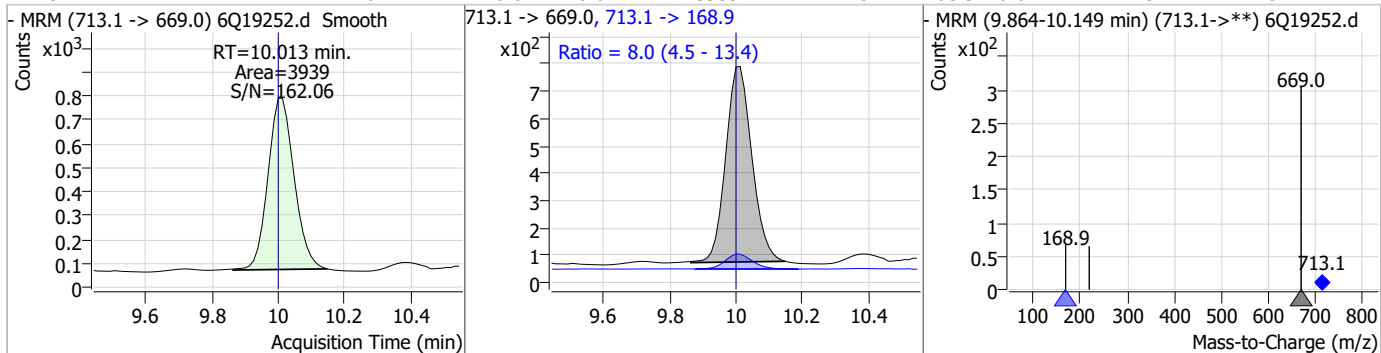
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	0.44	9.72	0.00	6586	632.9 -> 452.9	30.4	15.0	45.0



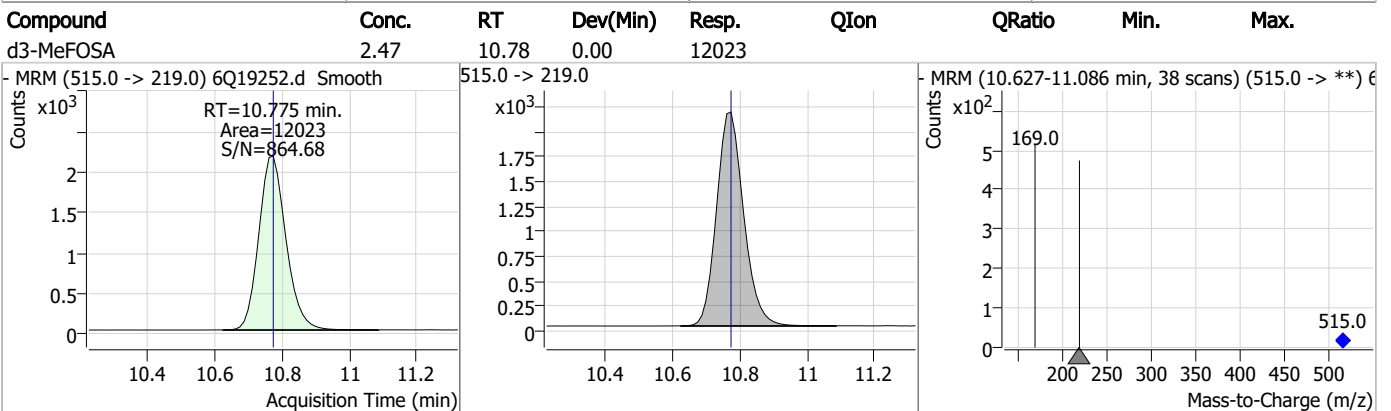
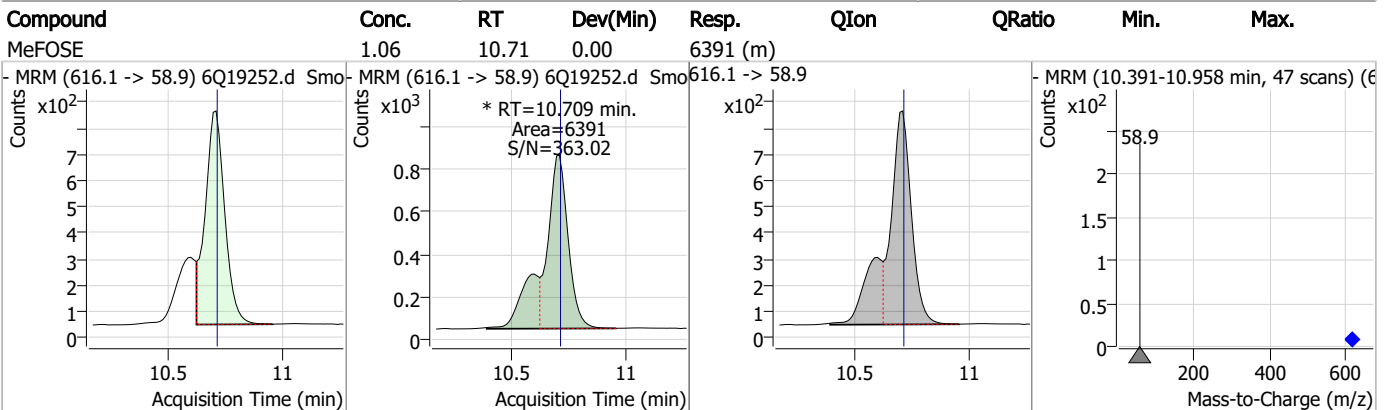
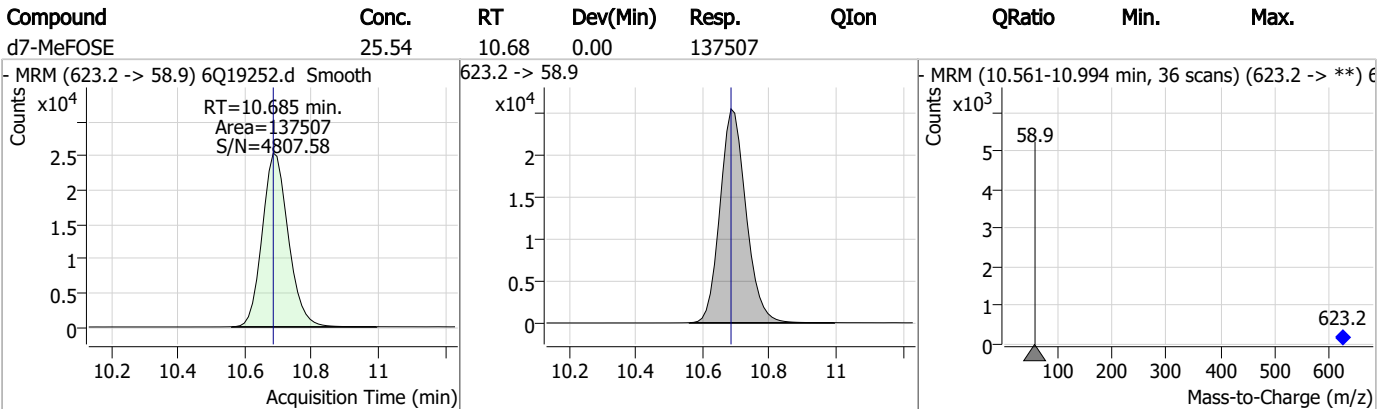
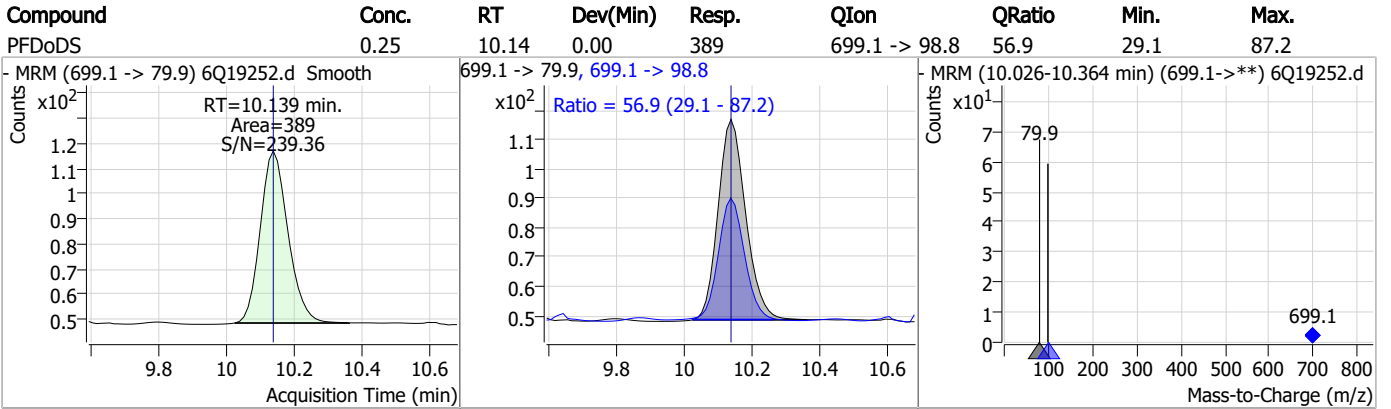
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	10.01	0.01	13468	715.2 -> 670.0	8.0	4.5	13.4



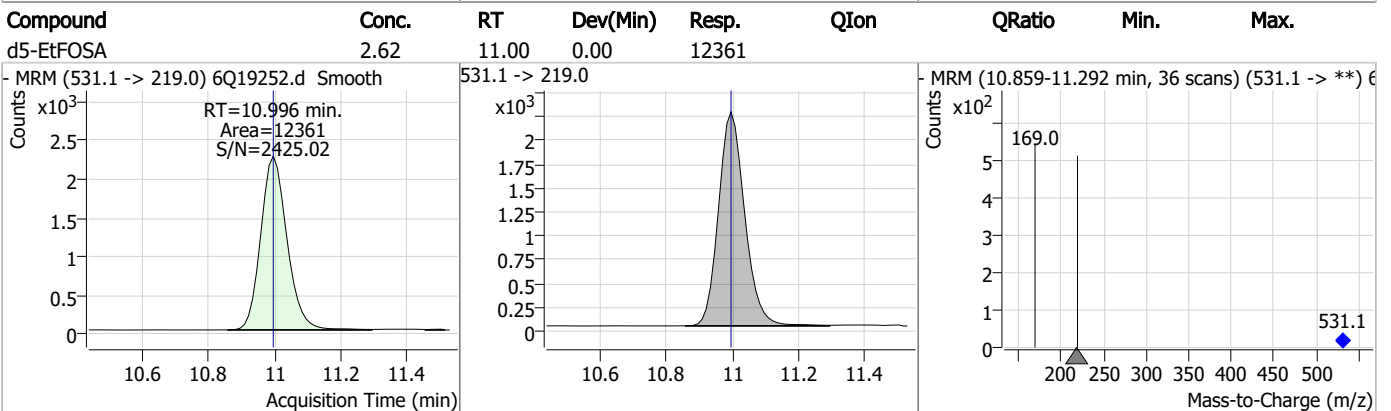
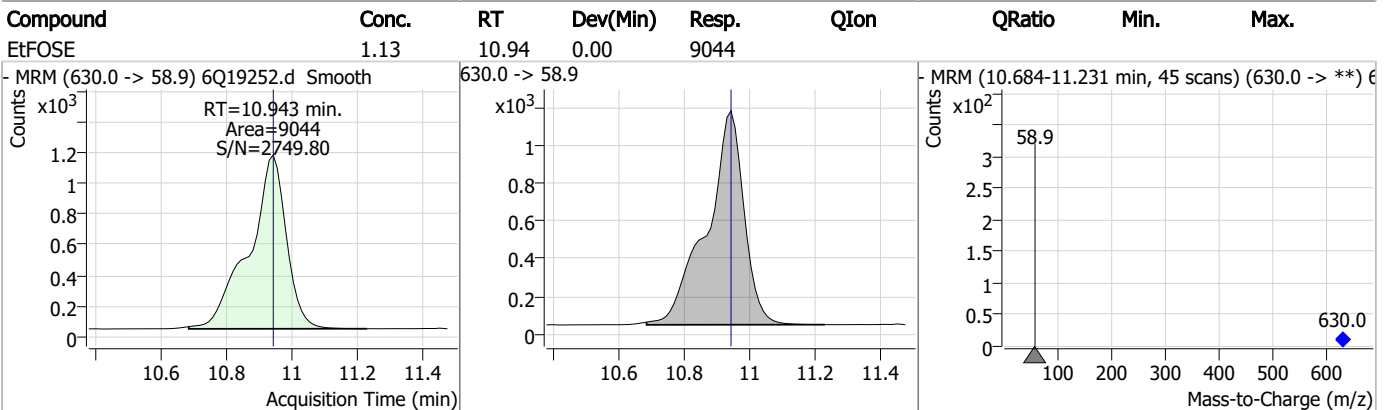
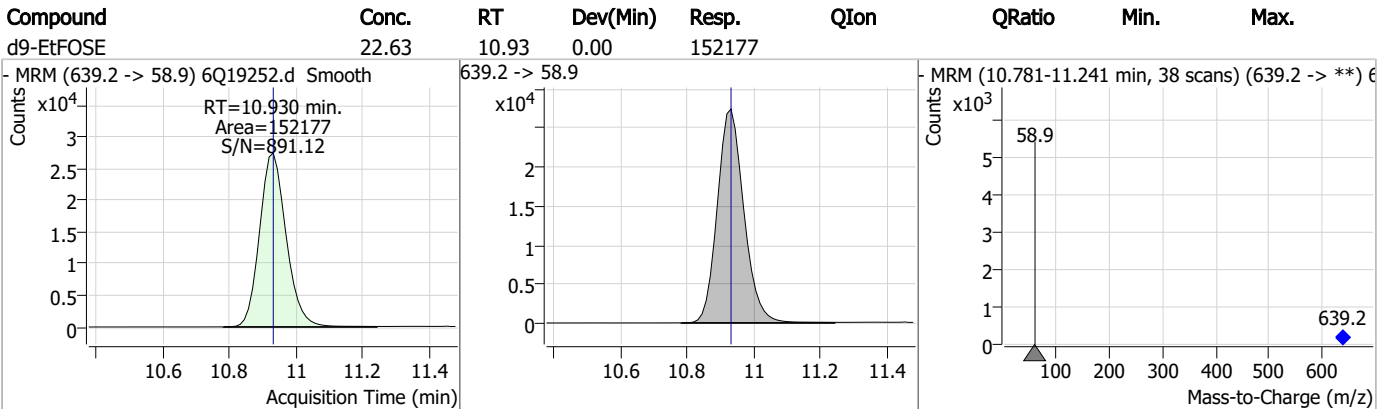
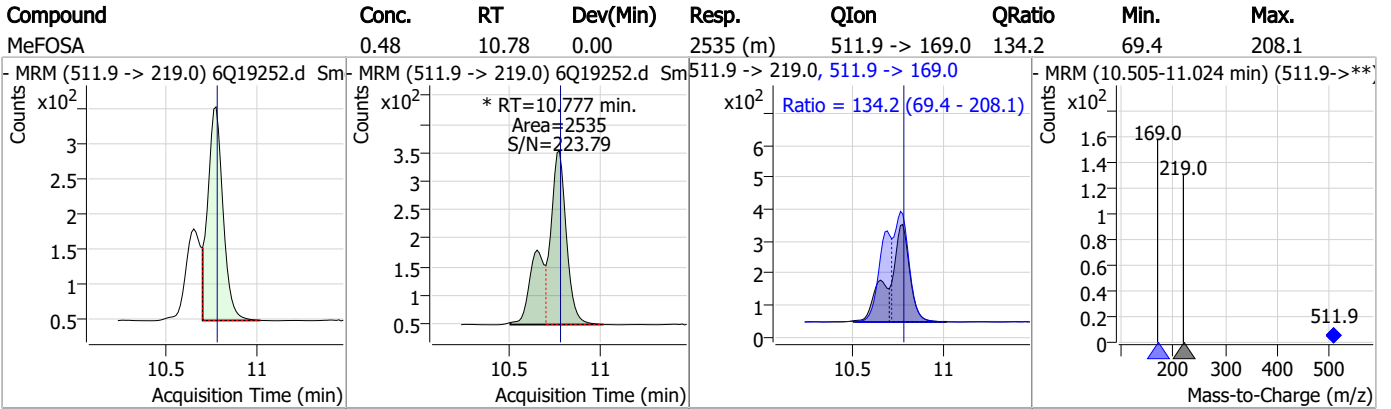
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.24	10.01	0.01	3939	713.1 -> 168.9	8.0	4.5	13.4



Perfluorinated Compounds by LC/MS/MS



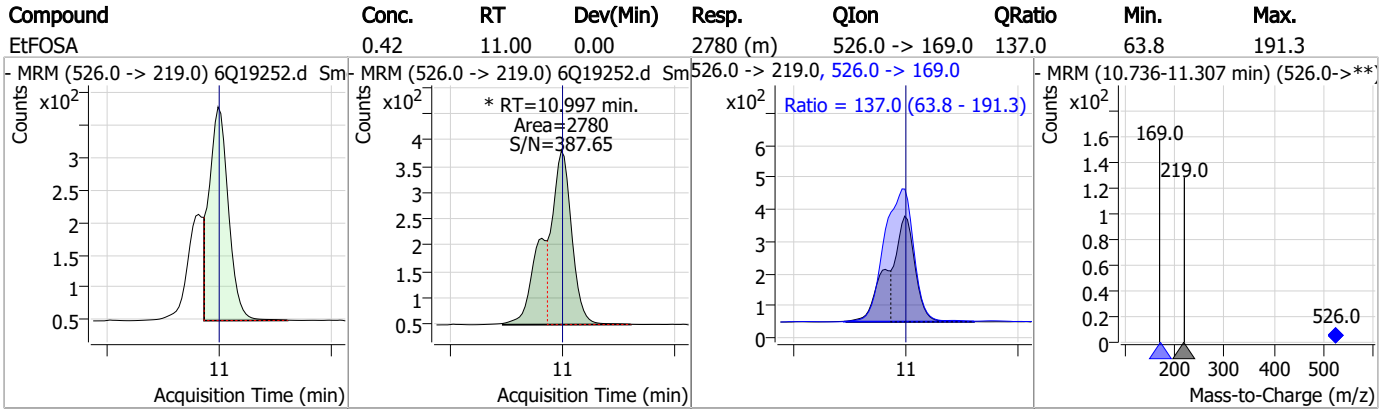
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-CC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19252.D Analyst approved: 06/13/23 14:02 Natasha Gumtie
Injection Time: 06/12/23 18:36 Supervisor approved: 06/13/23 14:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.62	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak
EtFOSA	4151-50-2		11.00	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19261.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 8:42:06 PM
 Sample Name : cc287-4
 Vial : P1-A5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.085	216.8 -> 171.9	143394	10.00 µg/L	0.000
M5-PFPeA	4.560	268.3 -> 223.0	46436	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	49436	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	50855	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	73028	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	34204	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	22300	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28743	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	24163	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	12917	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	26536	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18885	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11414	2.50 µg/L	0.000
M8-PFOS	8.563	507.1 -> 79.9	10842	2.50 µg/L	0.000
M2-4:2FTS	5.442	329.1 -> 80.9	3003	5.00 µg/L	0.000
M2-6:2FTS	7.113	429.1 -> 80.9	4508	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	3851	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	29382	5.00 µg/L	0.012
M3-HFPO-DA	6.169	286.9 -> 168.9	31726	10.00 µg/L	0.000
M5-EtFOSAA	8.615	589.2 -> 419.0	22179	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	125060	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	141281	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11687	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	12258	2.50 µg/L	-0.012
13C4-PFOS	8.563	502.8 -> 79.9	15582	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	60775	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	8932	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	83698	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	31467	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	45724	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	48200	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.442	329.1 -> 80.9	3003	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4508	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-8:2FTS	8.163	529.1 -> 80.9	3851	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-PFDoDA	9.297	615.1 -> 570.0	24163	1.15 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.9%		
13C2-PFTeDA	10.012	715.2 -> 670.0	12917	1.06 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.6%		
13C3-PFBS	5.746	302.1 -> 79.9	18885	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	11414	2.41 µg/L	0.000

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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	3.085	216.8 -> 171.9	143394	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.707	367.1 -> 322.0	50855	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C5-PFHxA	5.792	318.0 -> 273.0	49436	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C5-PFPeA	4.560	268.3 -> 223.0	46436	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.387	519.1 -> 474.1	22300	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C7-PFUnDA	8.866	570.0 -> 525.1	28743	1.17 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C8-FOSA	9.674	506.1 -> 77.8	26536	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C8-PFOA	7.352	421.1 -> 376.0	73028	2.34 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C8-PFOS	8.563	507.1 -> 79.9	10842	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C9-PFNA	7.895	472.1 -> 427.0	34204	1.23 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSAA	8.420	573.2 -> 419.0	29382	5.03 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-HFPO-DA	6.169	286.9 -> 168.9	31726	9.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	12258	2.37 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSAA	8.615	589.2 -> 419.0	22179	4.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.0%	
d7-MeFOSE	10.685	623.2 -> 58.9	125060	21.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.5%	
d9-EtFOSE	10.930	639.2 -> 58.9	141281	19.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.1%	
d5-EtFOSA	10.996	531.1 -> 219.0	11687	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	49023	9.42 µg/L	97
		327.1 -> 80.9	17377		
6:2FTS	7.113	427.1 -> 407.0	49515	9.09 µg/L	94
		427.1 -> 80.9	16240		
8:2FTS	8.164	527.1 -> 507.0	25436	9.93 µg/L	99
		527.1 -> 80.8	9931		
EtFOSAA	8.629	584.2 -> 419.1	9118	2.48 µg/L	m 99
		584.2 -> 526.0	4515		
FOSA	9.677	498.1 -> 77.9	25756	2.37 µg/L	99
		498.1 -> 478.0	825		
MeFOSAA	8.421	570.1 -> 419.0	18483	2.59 µg/L	m 98
		570.1 -> 483.0	3476		
PFBA	3.093	212.8 -> 168.9	54982	9.62 µg/L	100
PFBS	5.747	298.7 -> 79.9	17518	2.11 µg/L	95
		298.7 -> 98.8	6537		
PFDA	8.388	512.9 -> 469.0	70699	2.12 µg/L	99
		512.9 -> 219.0	10780		
PFDODA	9.298	613.1 -> 569.0	47493	2.39 µg/L	97
		613.1 -> 319.0	7299		
PFDS	9.462	599.0 -> 79.9	7860	2.40 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.708	599.0 -> 98.8	3926	2.20	µg/L	98
		363.1 -> 319.0	60027			
PFHpS	8.059	363.1 -> 169.0	10021	2.14	µg/L	90
		449.0 -> 79.9	13981			
PFHxA	5.795	449.0 -> 98.9	7776	2.58	µg/L	98
		313.0 -> 269.0	51073			
PFHxS	7.479	313.0 -> 118.9	2498	2.21	µg/L	m
		398.7 -> 79.9	15142			
PFNA	7.896	398.7 -> 98.9	7347	2.35	µg/L	98
		463.0 -> 419.0	73834			
PFNS	9.041	463.0 -> 219.0	13648	2.40	µg/L	96
		548.8 -> 79.9	13766			
PFOA	7.353	548.8 -> 98.9	7120	2.66	µg/L	97
		413.0 -> 369.0	99522			
PFOS	8.564	413.0 -> 169.0	16370	2.11	µg/L	m
		498.9 -> 79.9	13503			
PFPeA	4.563	498.9 -> 98.8	6712	4.77	µg/L	100
		263.0 -> 219.0	65194			
PFPeS	6.785	349.1 -> 79.9	14401	2.28	µg/L	99
		349.1 -> 98.9	6708			
PFTeDA	10.013	713.1 -> 669.0	38922	2.52	µg/L	100
		713.1 -> 168.9	3521			
PFTrDA	9.669	663.0 -> 619.0	47103	2.39	µg/L	98
		663.0 -> 168.9	5044			
PFUnDA	8.866	563.1 -> 519.0	50857	2.41	µg/L	99
		563.1 -> 269.1	8743			
11CI-PF3OUdS	9.721	630.9 -> 450.9	67569	4.52	µg/L	96
		632.9 -> 452.9	21712			
9CI-PF3ONS	8.906	530.8 -> 351.0	111862	4.48	µg/L	93
		532.8 -> 353.0	38034			
ADONA	6.959	376.9 -> 250.9	252726	4.71	µg/L	97
		376.9 -> 84.8	67034			
HFPO-DA	6.169	284.9 -> 168.9	16892	4.91	µg/L	98
		284.9 -> 184.9	1963			
3:3FTCA	3.946	241.0 -> 177.0	11162	11.95	µg/L	100
		241.0 -> 117.0	1488			
5:3FTCA	6.374	341.0 -> 237.1	254574	66.28	µg/L	93
		341.0 -> 217.0	174158			
7:3FTCA	7.748	441.0 -> 316.9	164470	59.83	µg/L	98
		441.0 -> 336.9	373472			
EtFOSA	10.997	526.0 -> 219.0	30087	4.81	µg/L	98
		526.0 -> 169.0	39205			
EtFOSE	10.943	630.0 -> 58.9	91872	12.32	µg/L	100
		511.9 -> 219.0	25285			
MeFOSA	10.765	511.9 -> 169.0	35903	4.71	µg/L	m
		616.1 -> 58.9	64473			
MeFOSE	10.697	699.1 -> 79.9	3756	11.78	µg/L	m
		699.1 -> 98.8	1963			
PFDoDS	10.139	295.0 -> 201.0	11793	2.31	µg/L	92
		295.0 -> 84.9	3124			
NFDHA	5.673	279.0 -> 85.1	47786	4.70	µg/L	95
		229.0 -> 84.9	36661			
PFMBA	4.988	314.8 -> 134.9	123119	4.88	µg/L	100
		314.8 -> 82.9	4229			
PFMPA	3.667			4.81	µg/L	100
PFEESA	6.288			5.05	µg/L	100

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

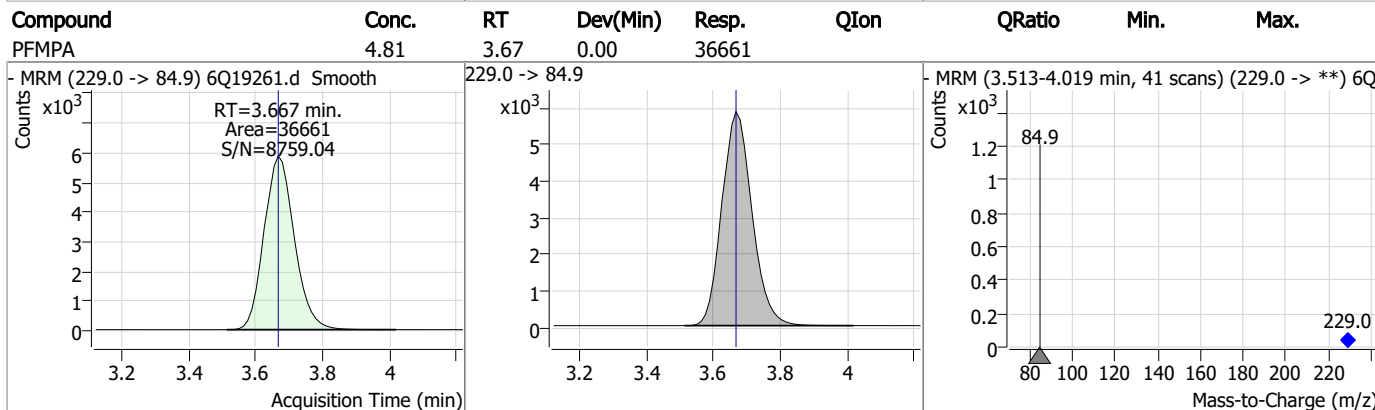
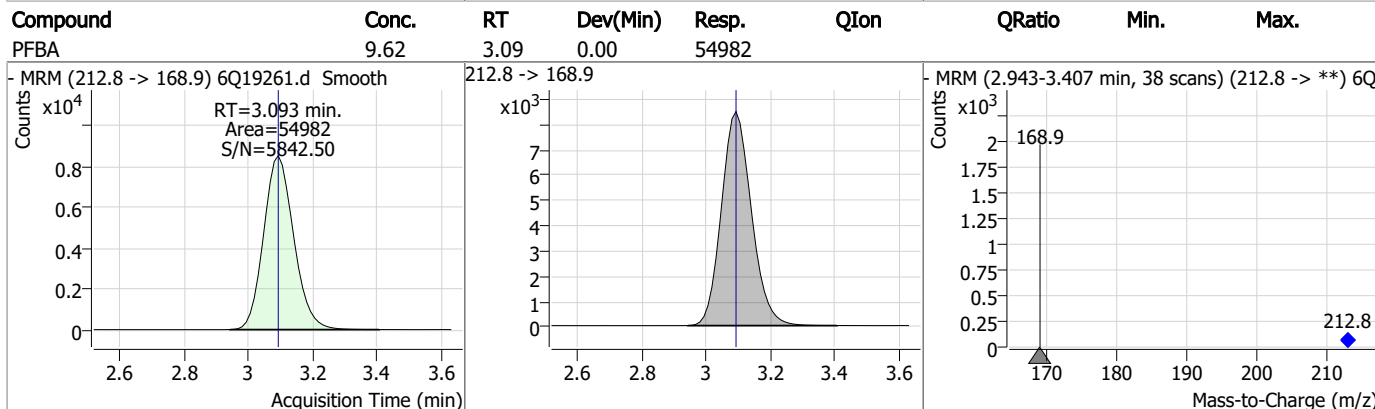
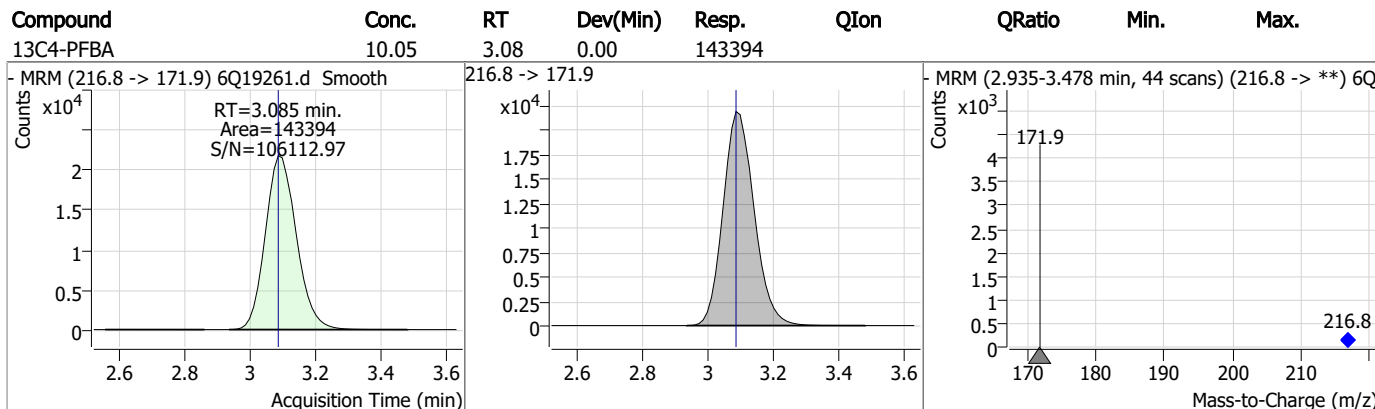
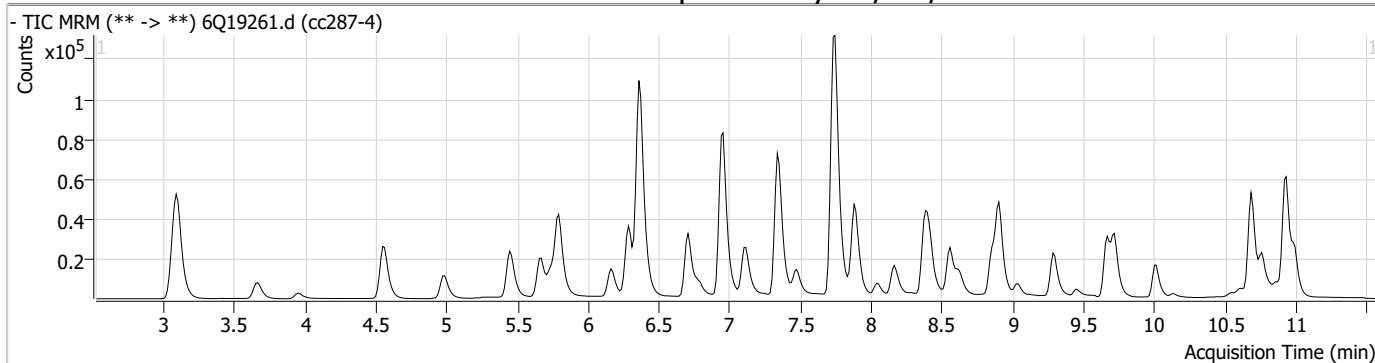
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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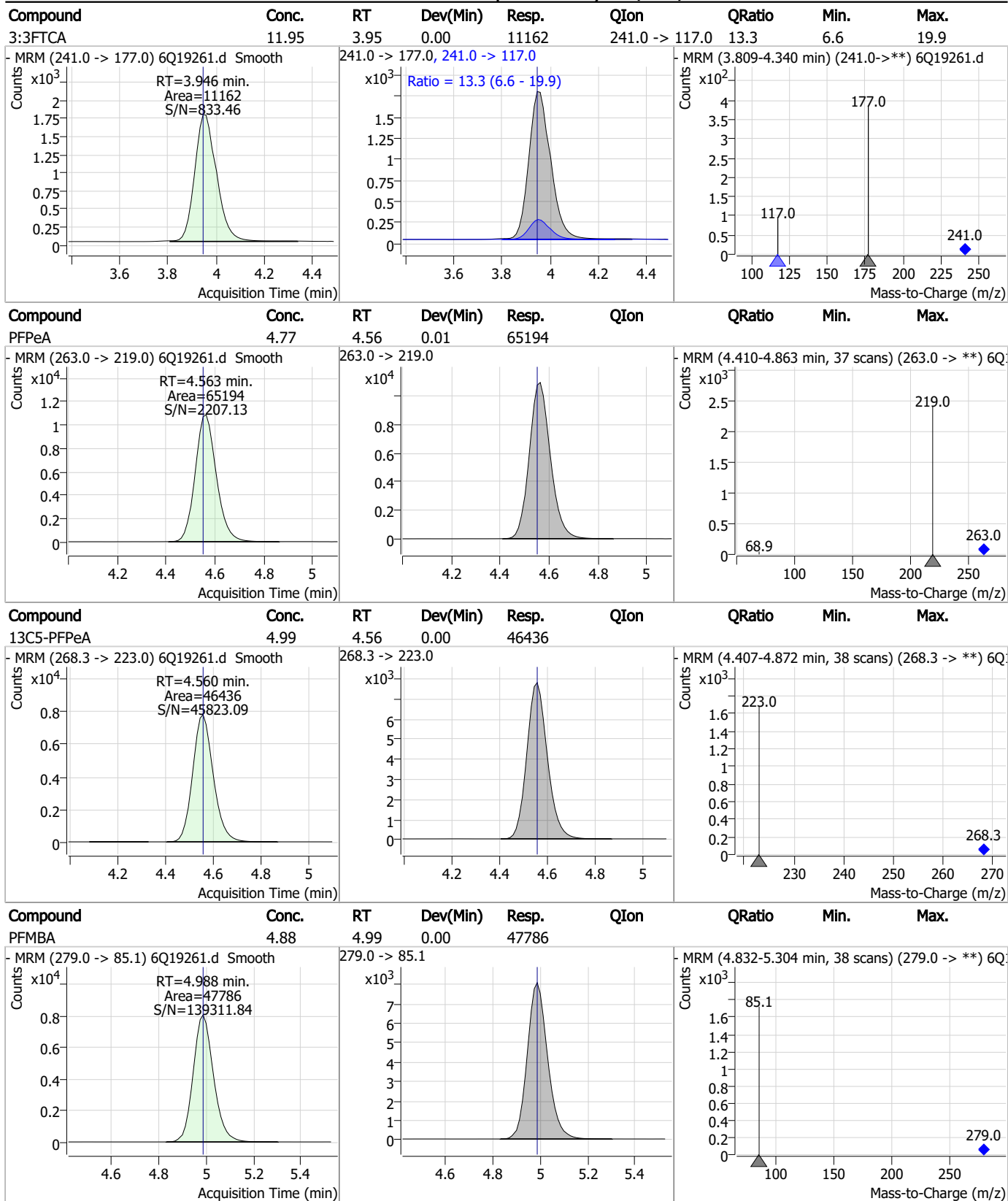
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Perfluorinated Compounds by LC/MS/MS



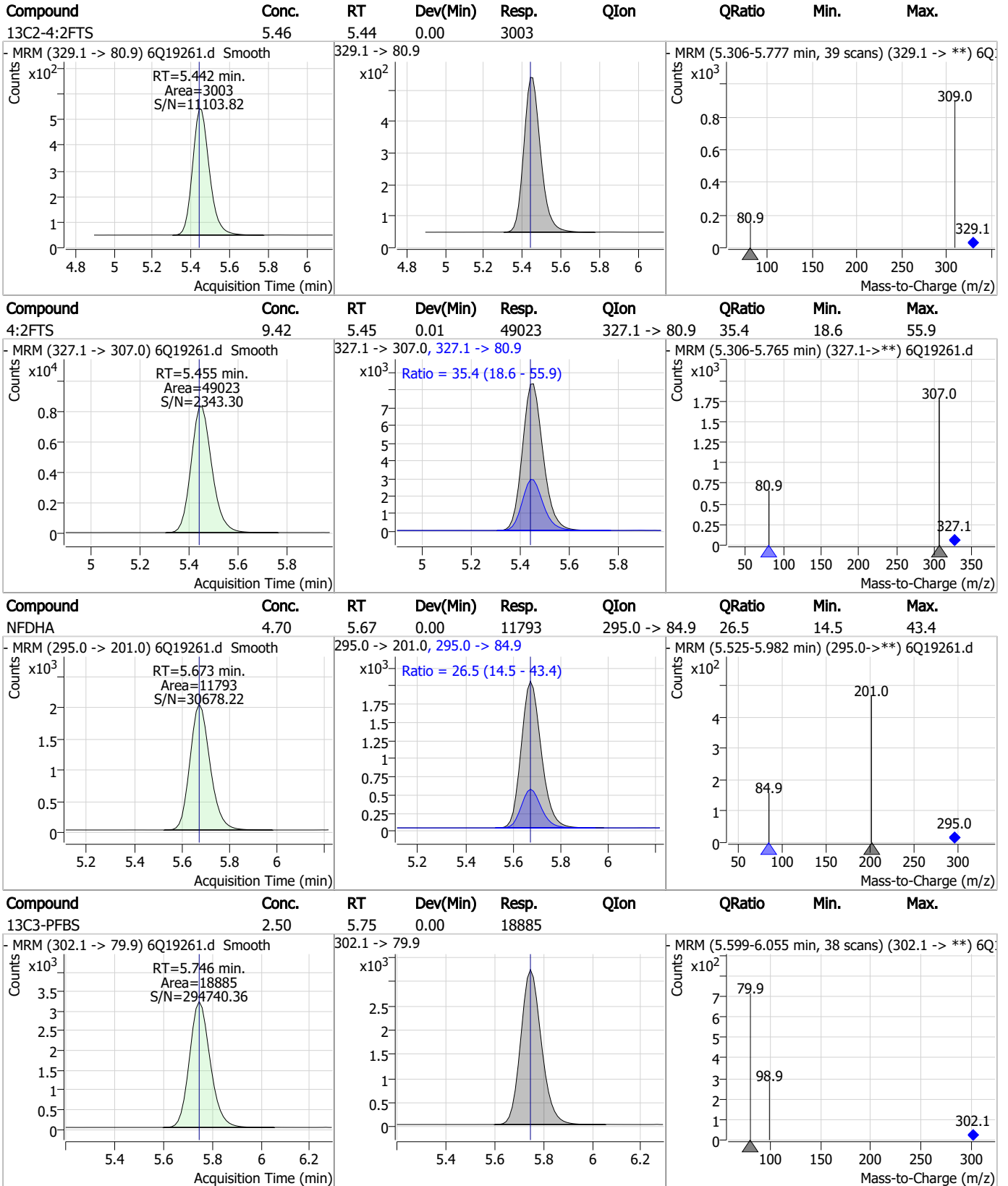
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Perfluorinated Compounds by LC/MS/MS



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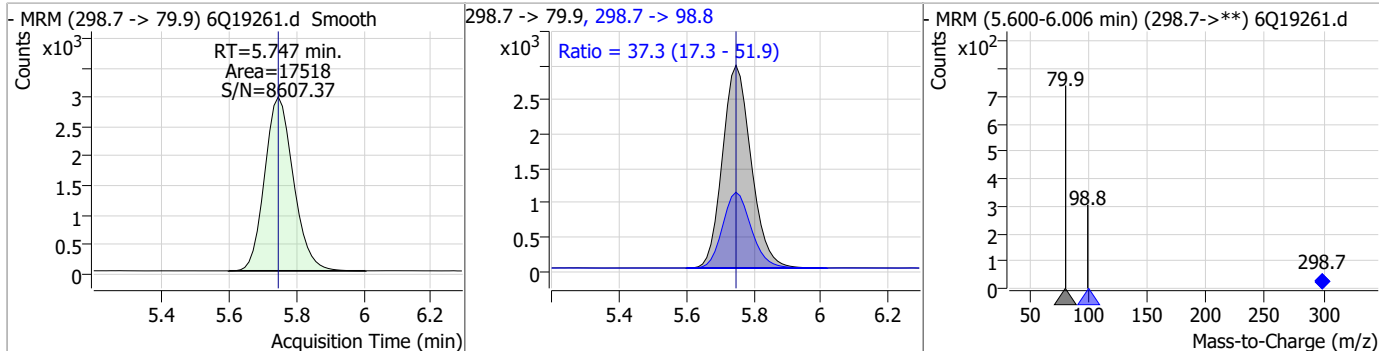
Perfluorinated Compounds by LC/MS/MS



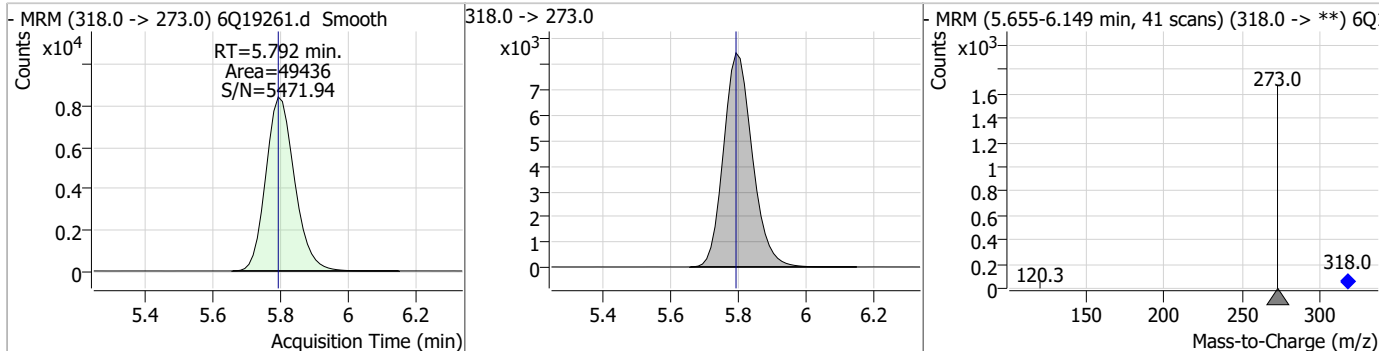
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Perfluorinated Compounds by LC/MS/MS

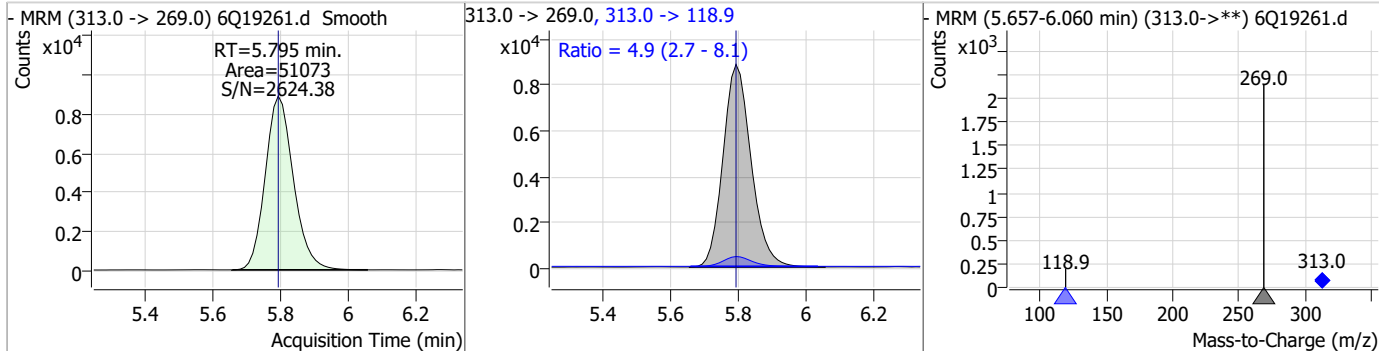
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.11	5.75	0.00	17518	298.7 -> 98.8	37.3	17.3	51.9



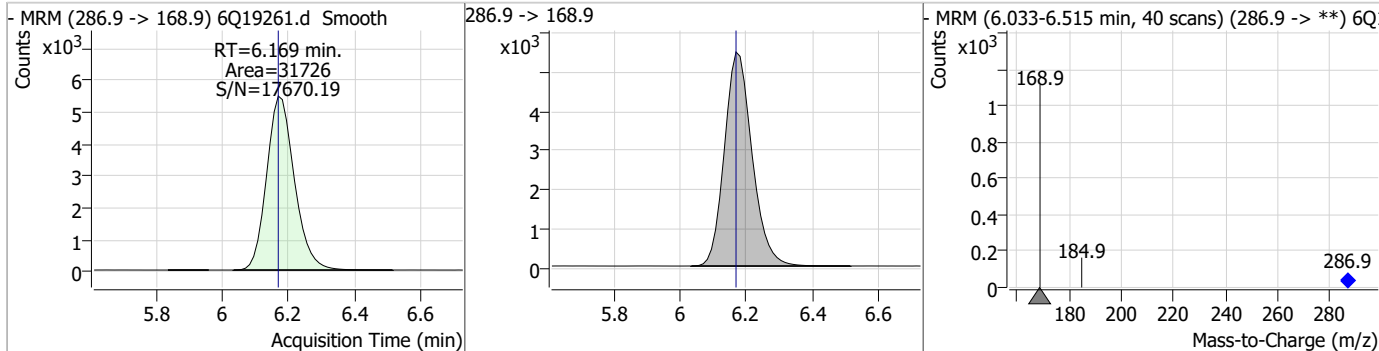
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.37	5.79	0.00	49436				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.58	5.79	0.00	51073	313.0 -> 118.9	4.9	2.7	8.1

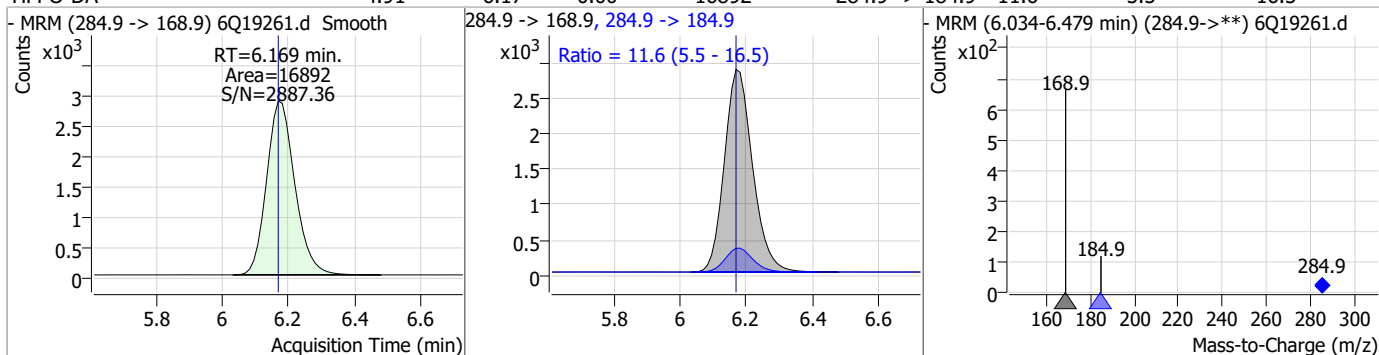


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.60	6.17	0.00	31726				

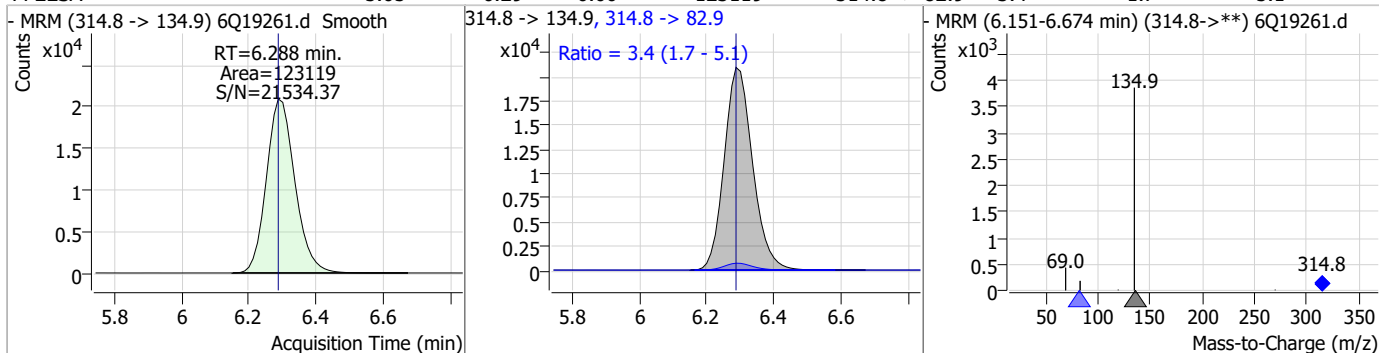


Perfluorinated Compounds by LC/MS/MS

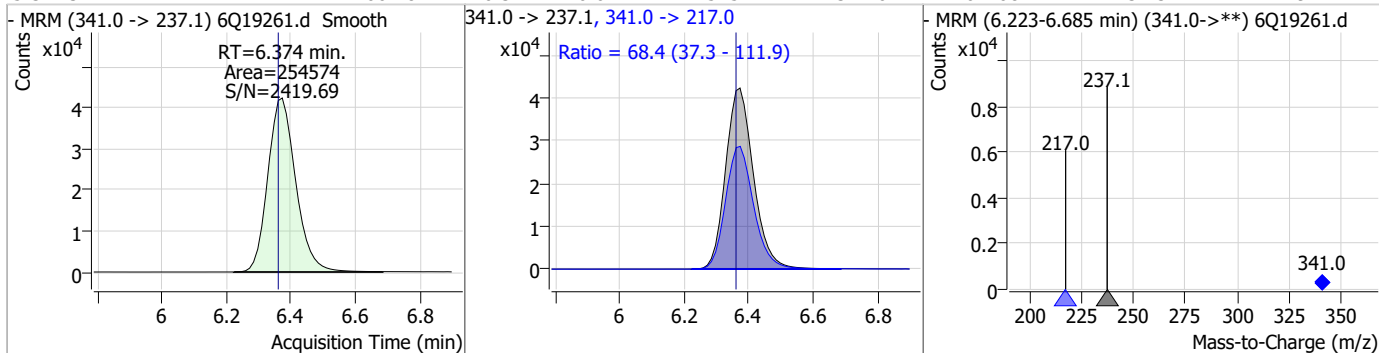
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.91	6.17	0.00	16892	284.9 -> 184.9	11.6	5.5	16.5



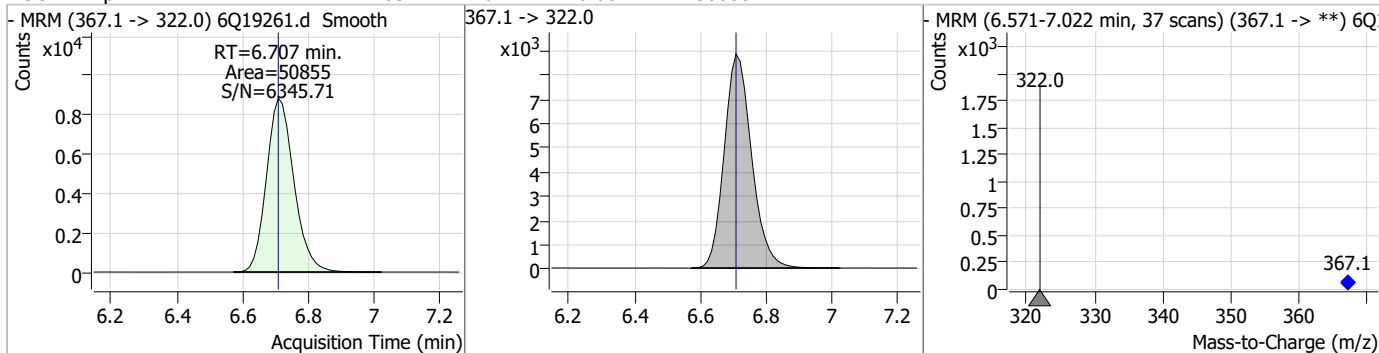
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.05	6.29	0.00	123119	314.8 -> 82.9	3.4	1.7	5.1



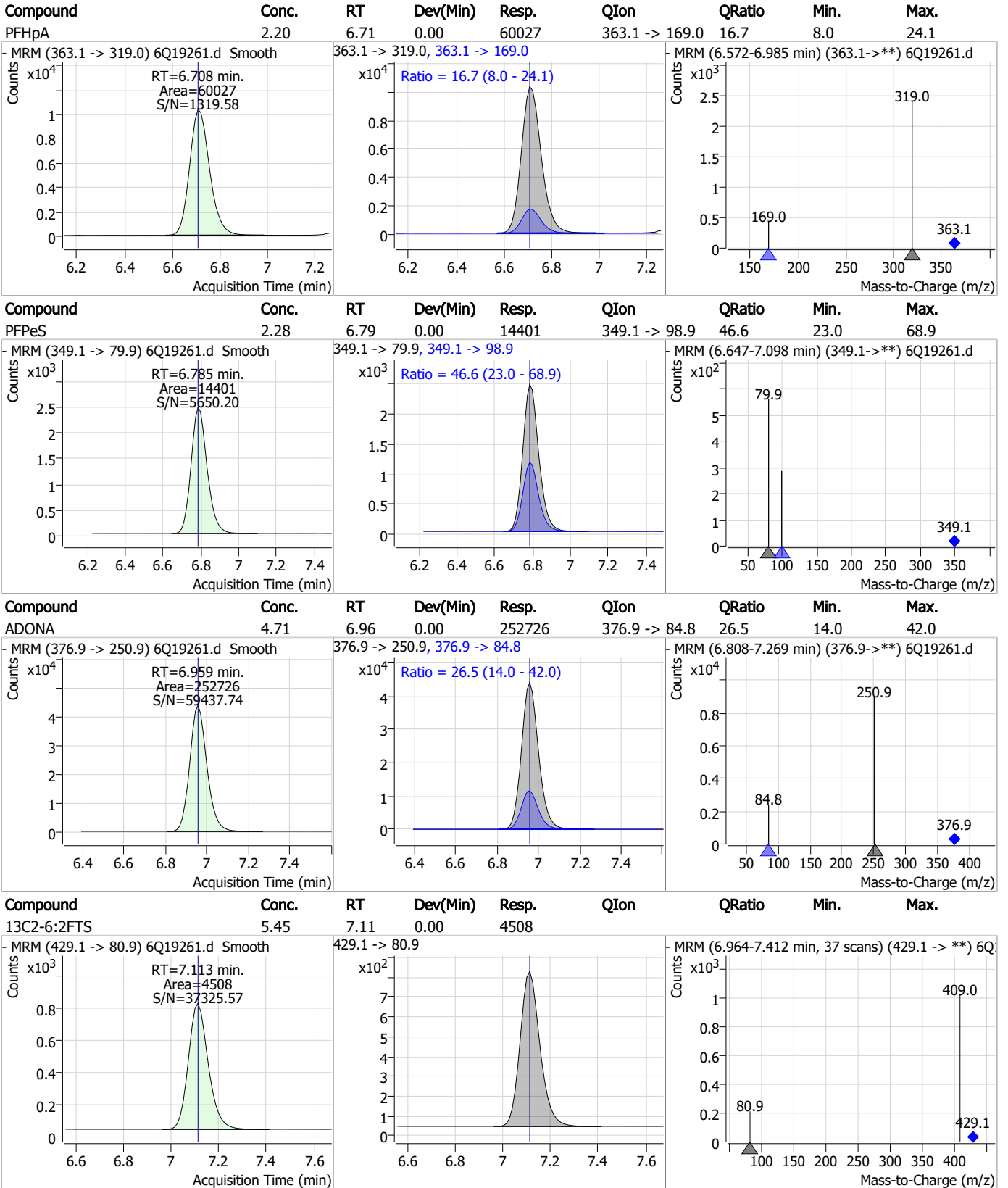
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	66.28	6.37	0.01	254574	341.0 -> 217.0	68.4	37.3	111.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.63	6.71	0.00	50855	367.1 -> 322.0			



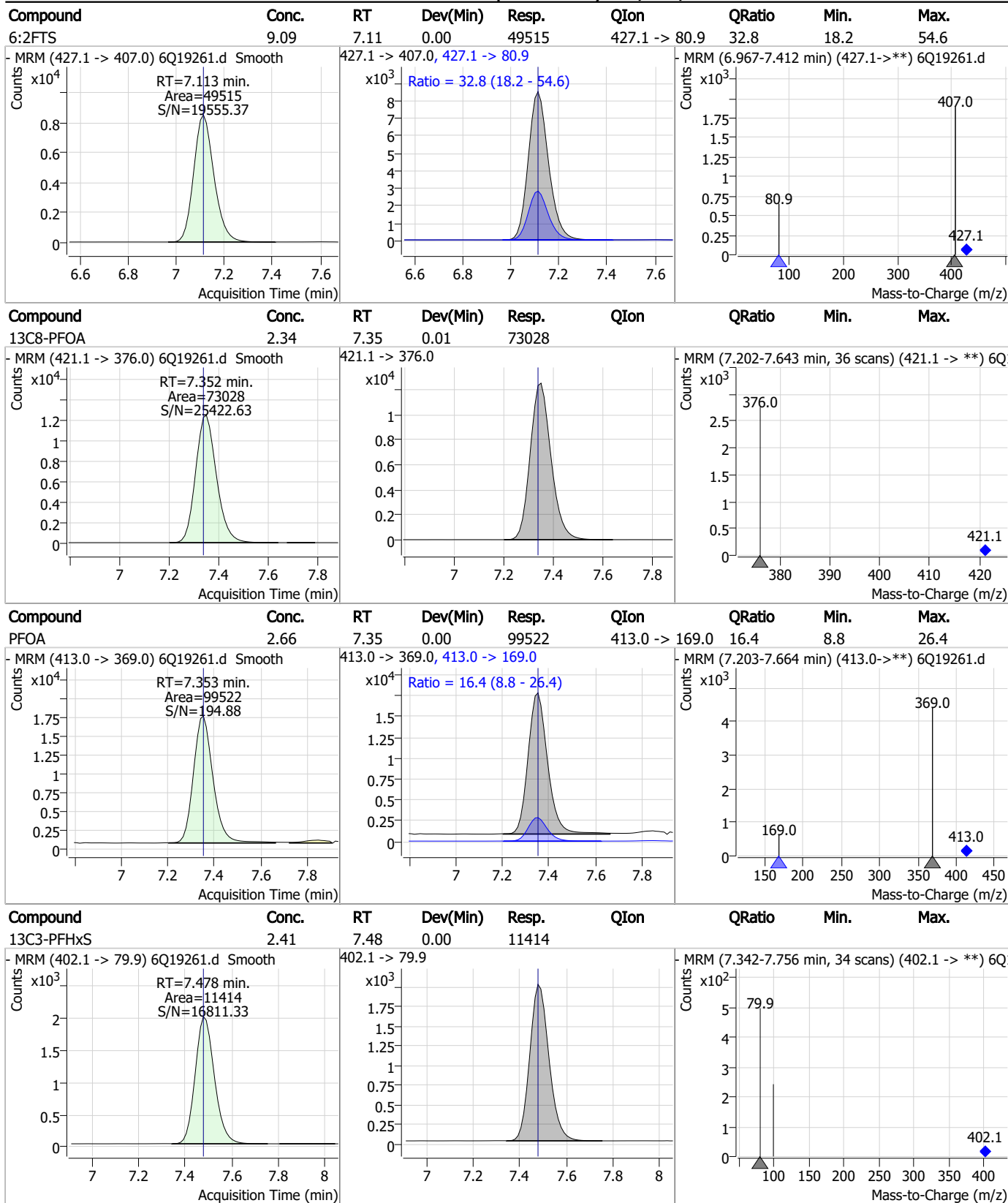
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

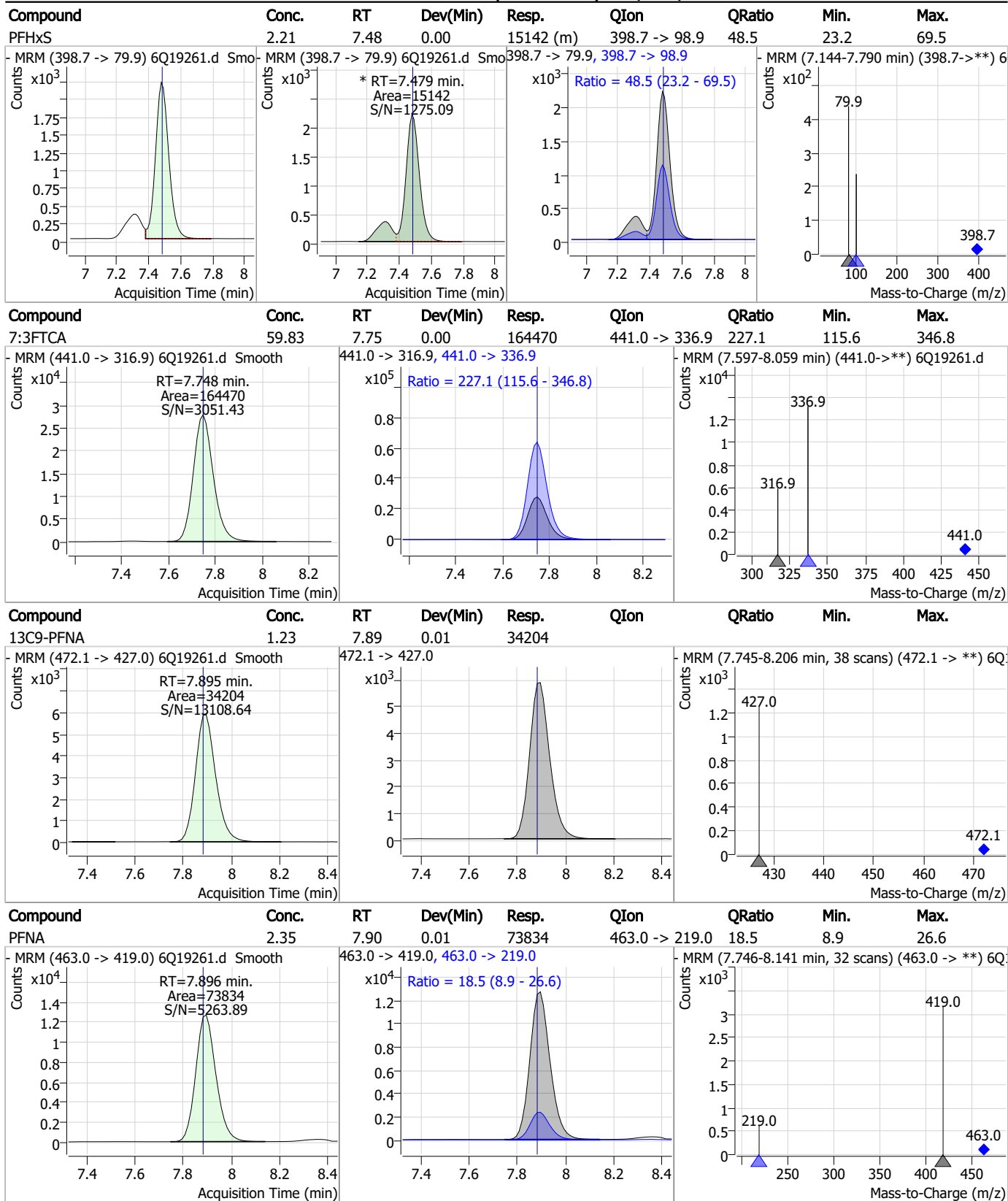


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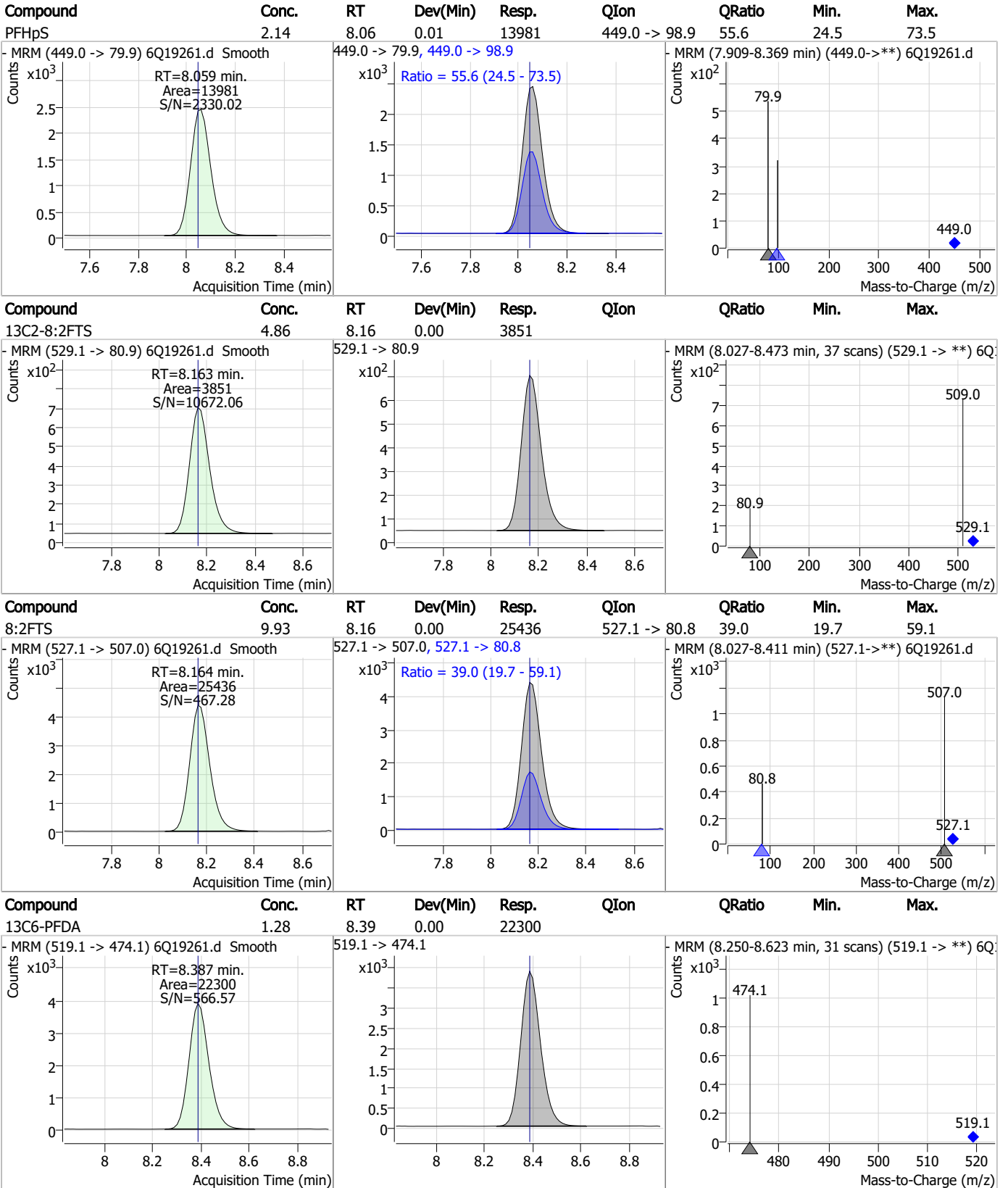


Perfluorinated Compounds by LC/MS/MS



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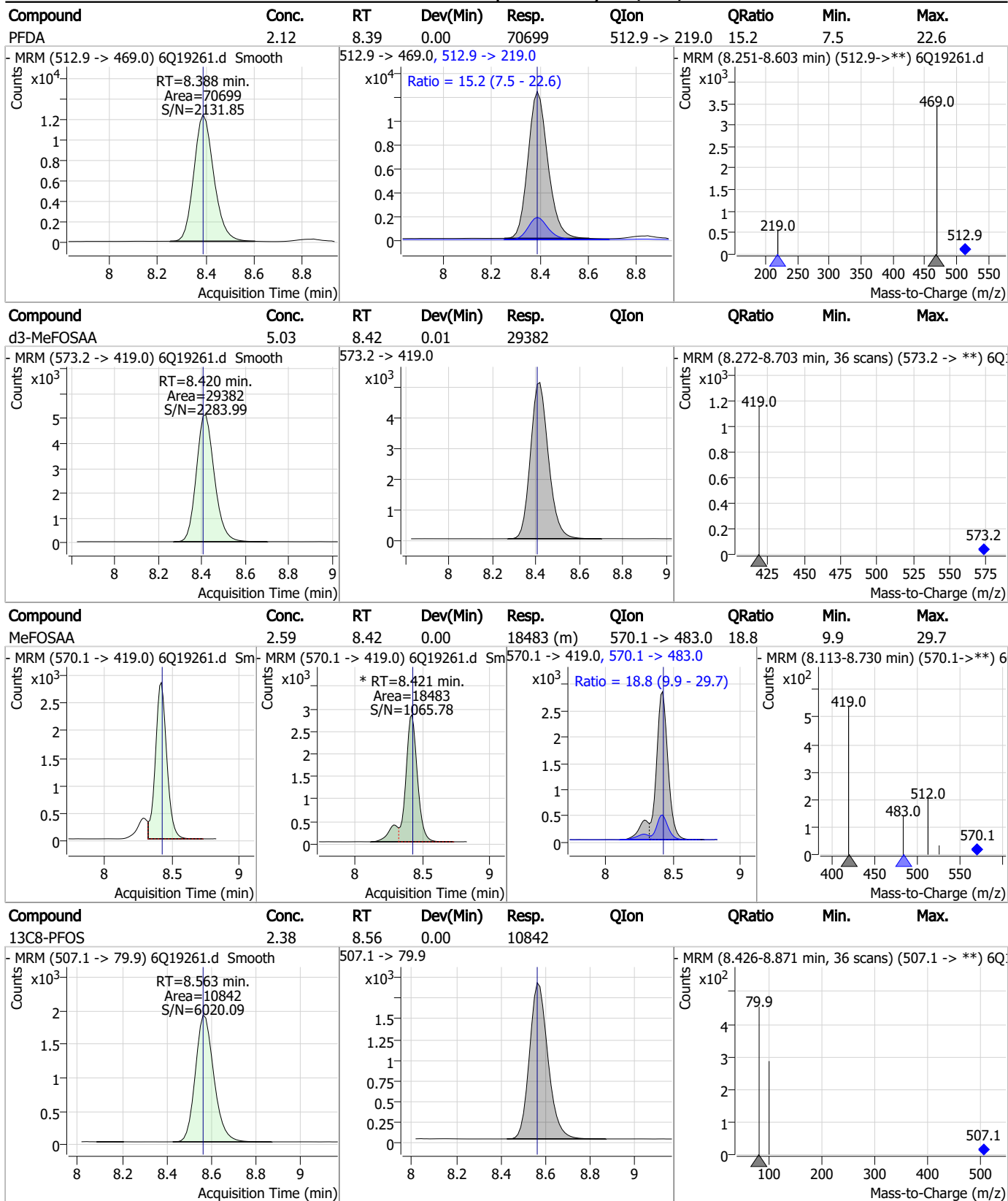
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

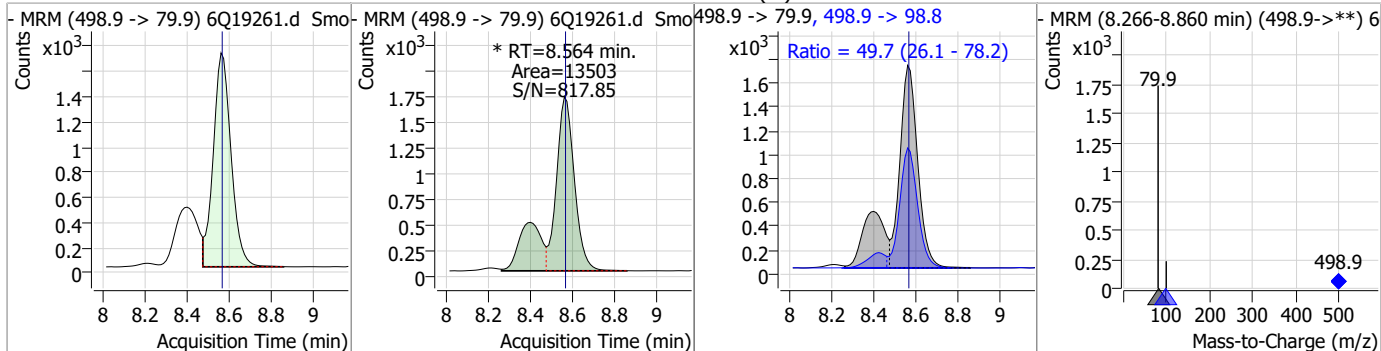


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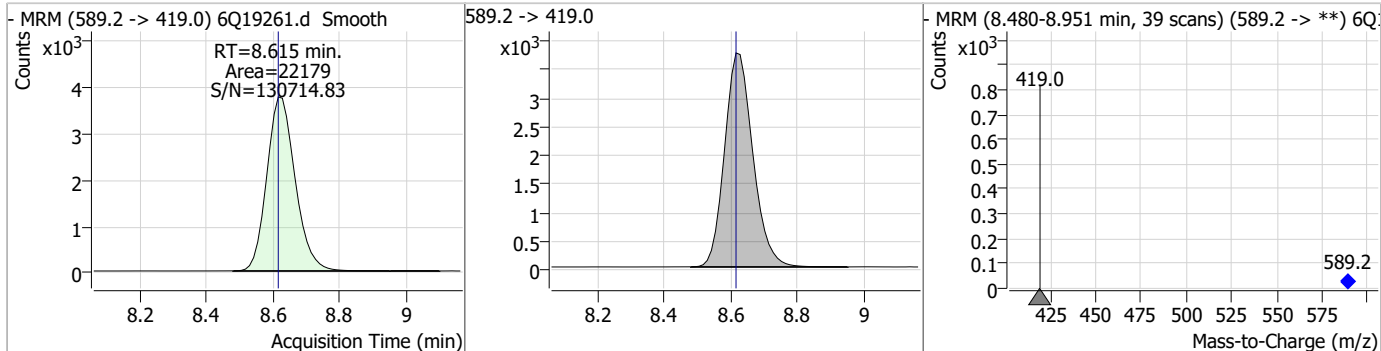
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Perfluorinated Compounds by LC/MS/MS

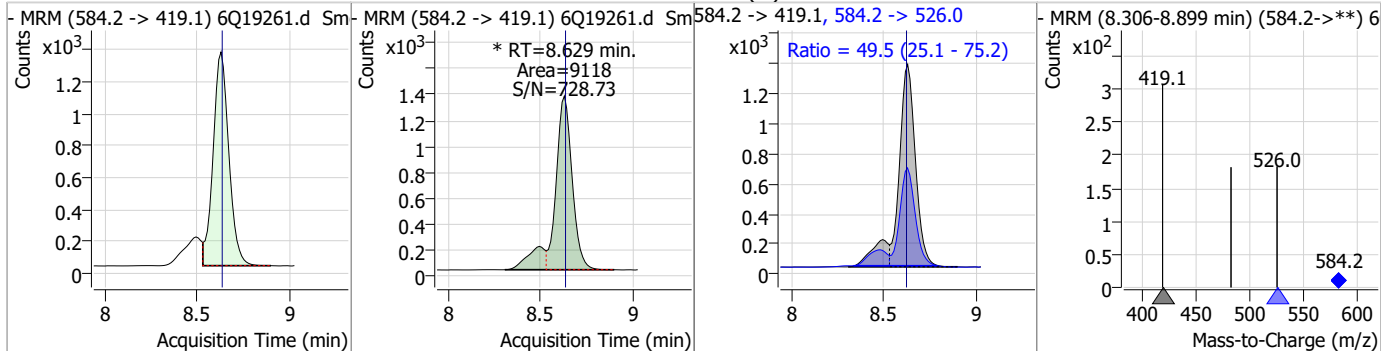
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.11	8.56	0.00	13503 (m)	498.9 -> 98.8	49.7	26.1	78.2



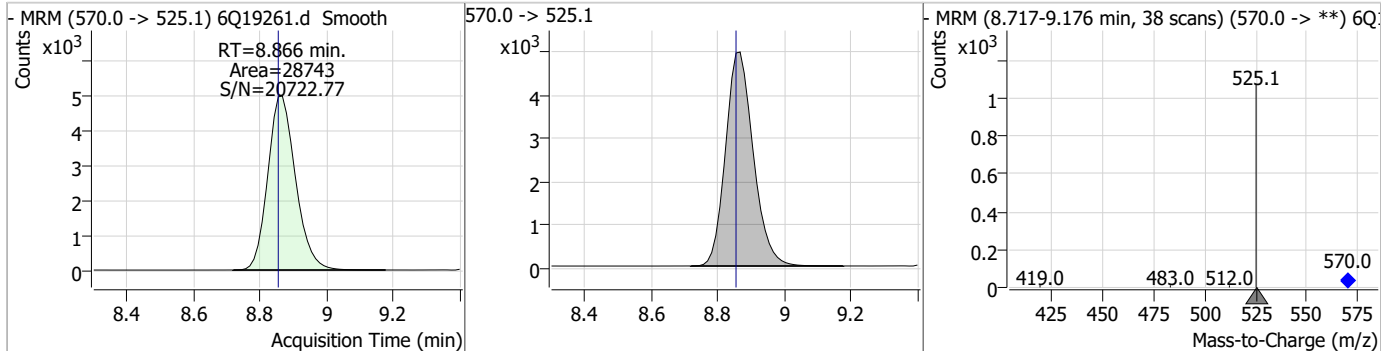
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.50	8.62	0.00	22179				



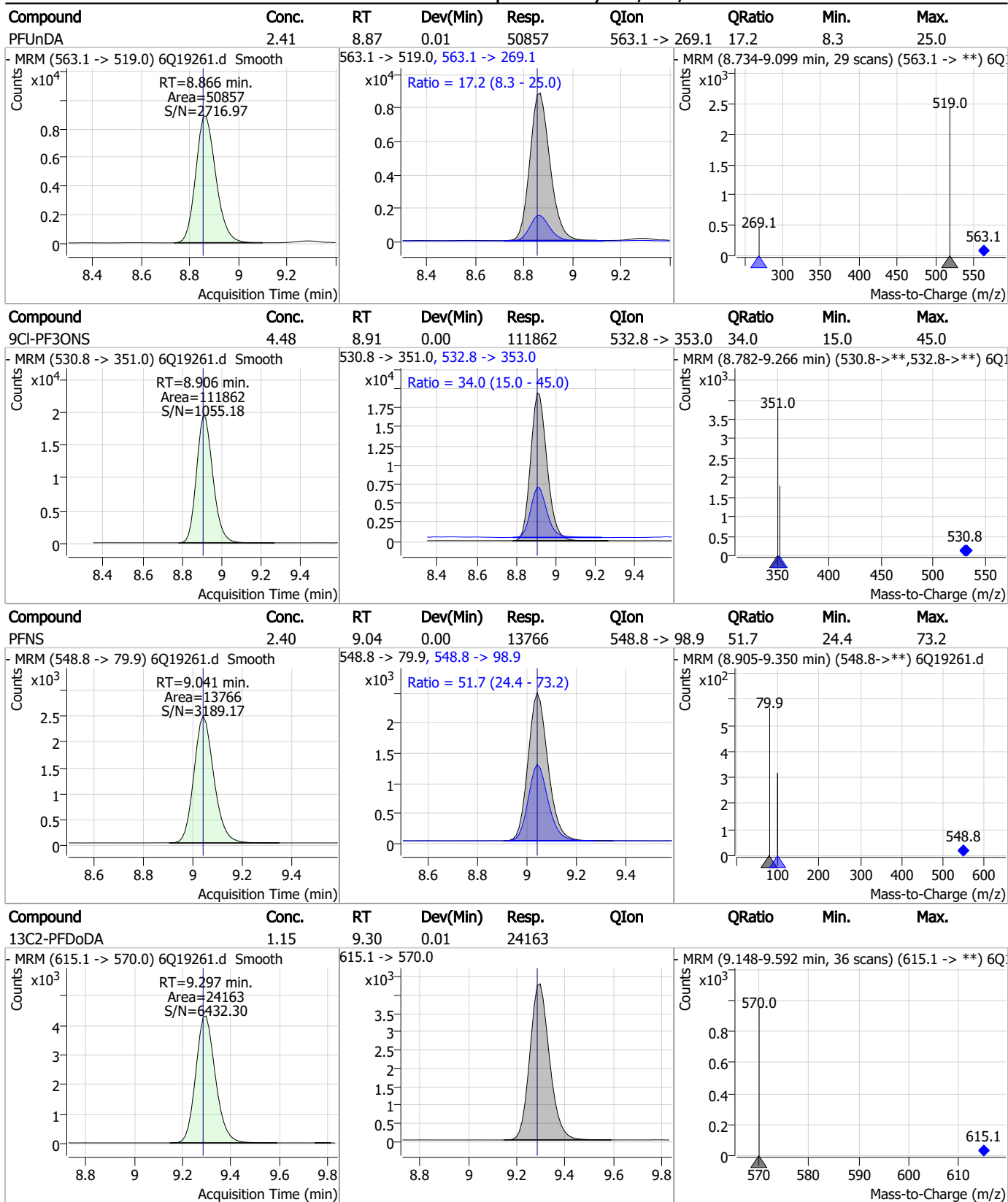
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.48	8.63	0.00	9118 (m)	584.2 -> 526.0	49.5	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.17	8.87	0.01	28743				



Perfluorinated Compounds by LC/MS/MS

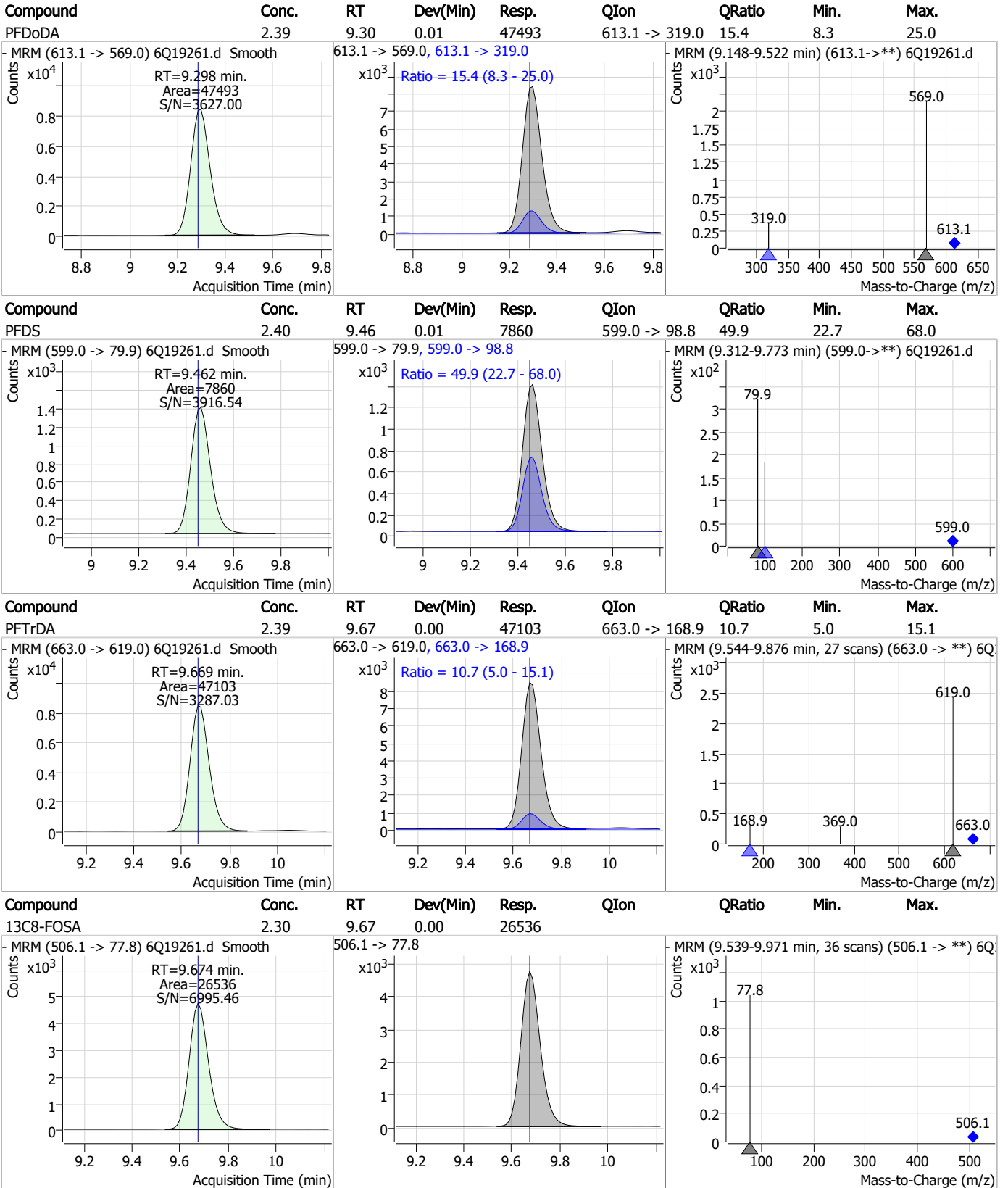


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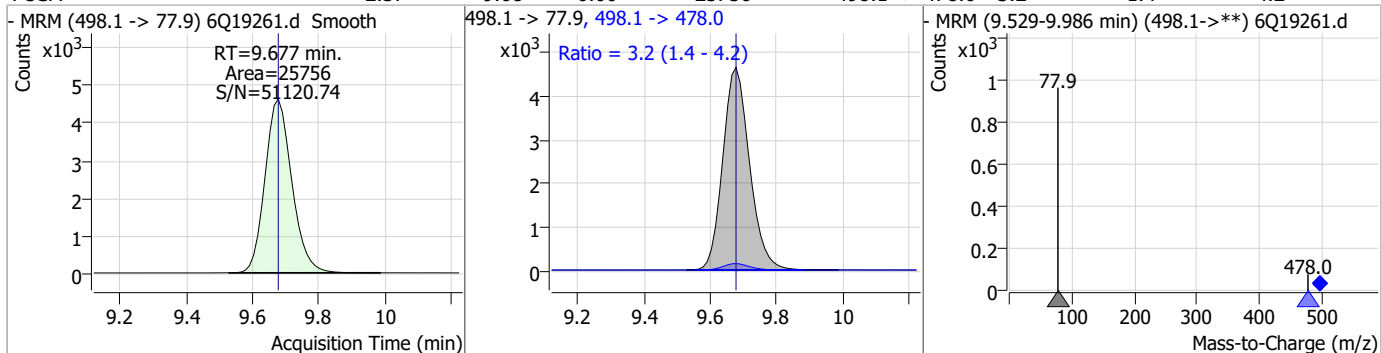
Perfluorinated Compounds by LC/MS/MS



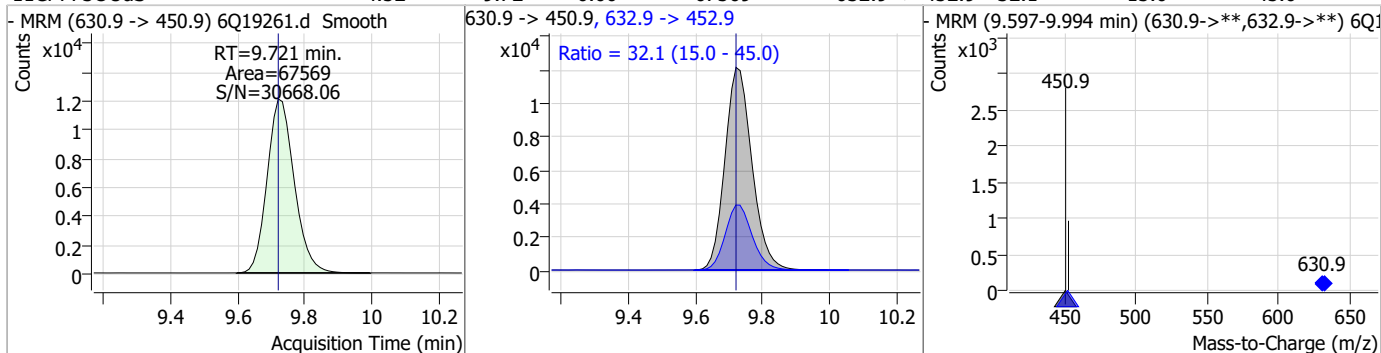
7.7.34 7

Perfluorinated Compounds by LC/MS/MS

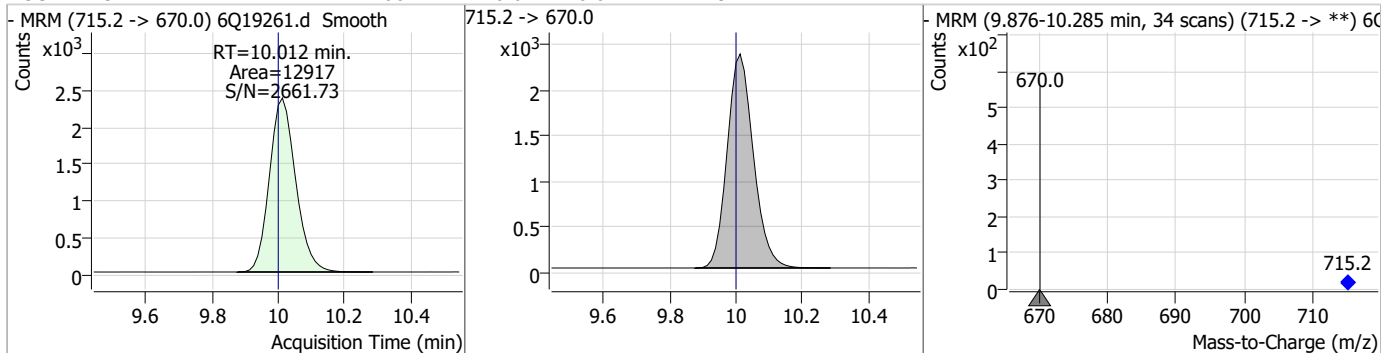
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.37	9.68	0.00	25756	498.1 -> 478.0	3.2	1.4	4.2



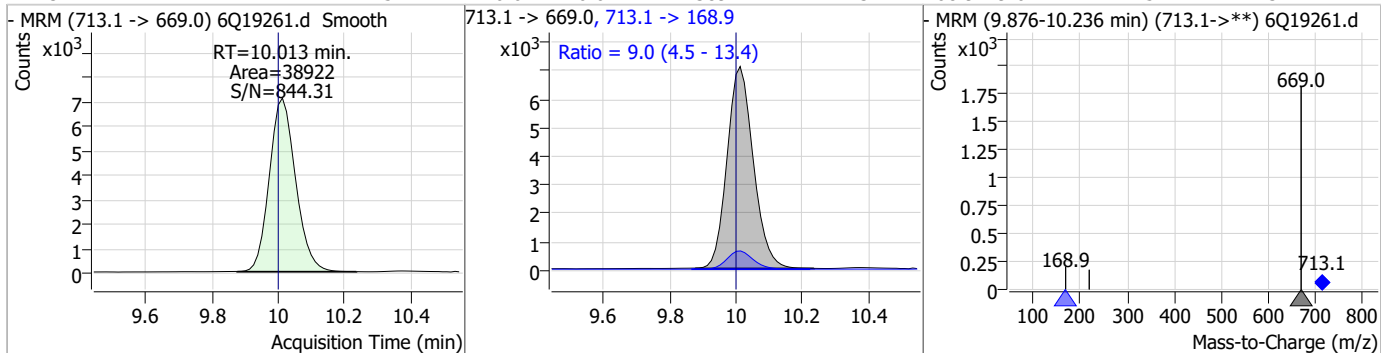
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.52	9.72	0.00	67569	630.9 -> 452.9	32.1	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.06	10.01	0.01	12917	715.2 -> 670.0			

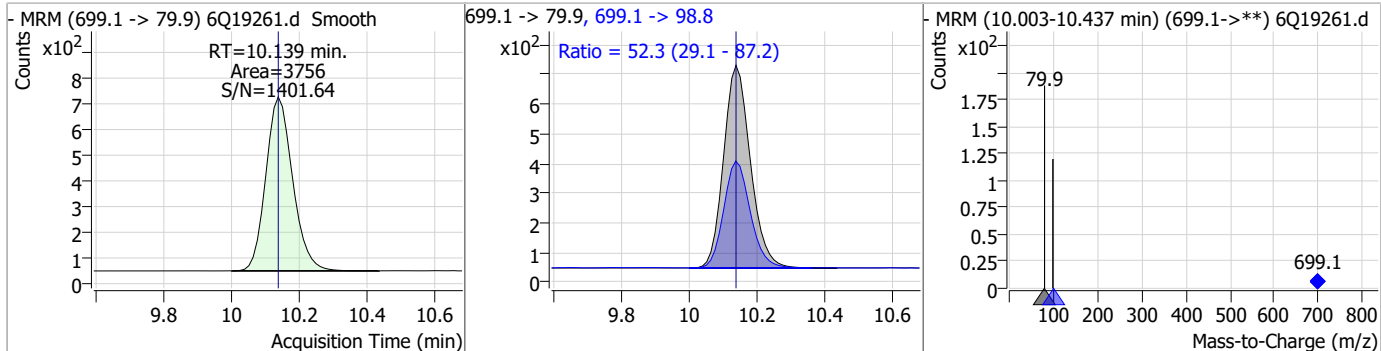


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.52	10.01	0.01	38922	713.1 -> 168.9	9.0	4.5	13.4

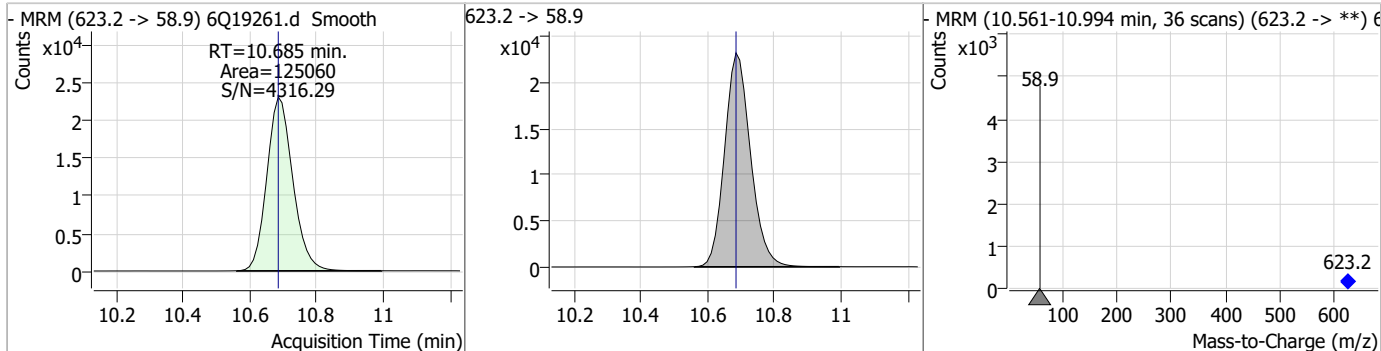


Perfluorinated Compounds by LC/MS/MS

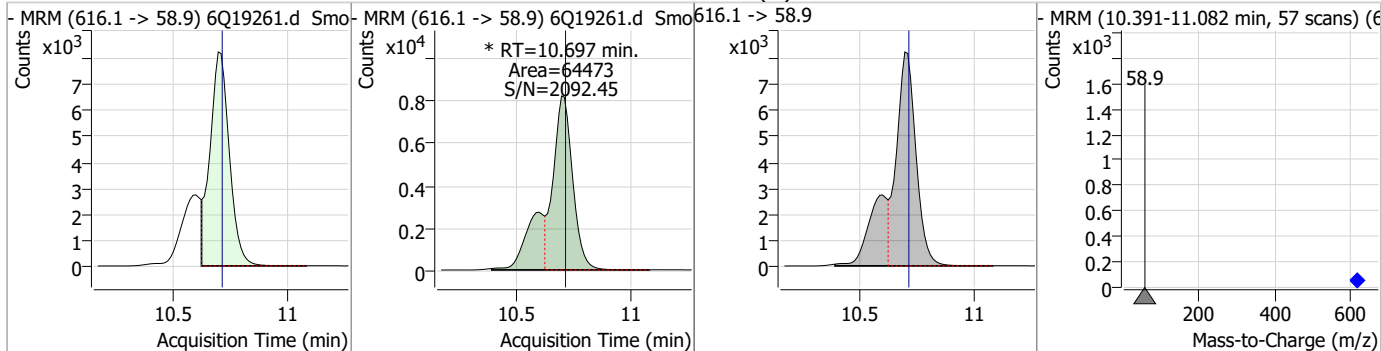
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.31	10.14	0.00	3756	699.1 -> 98.8	52.3	29.1	87.2



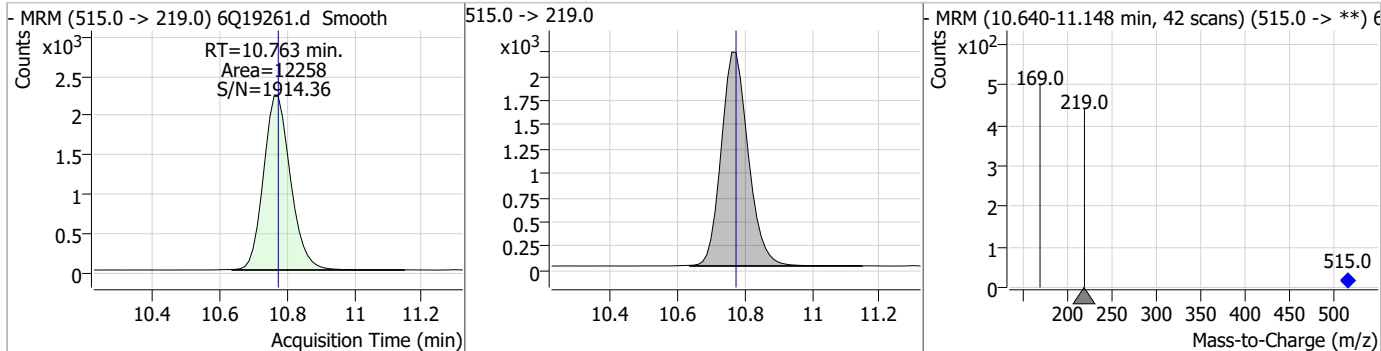
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.87	10.68	0.00	125060				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.78	10.70	-0.01	64473 (m)				



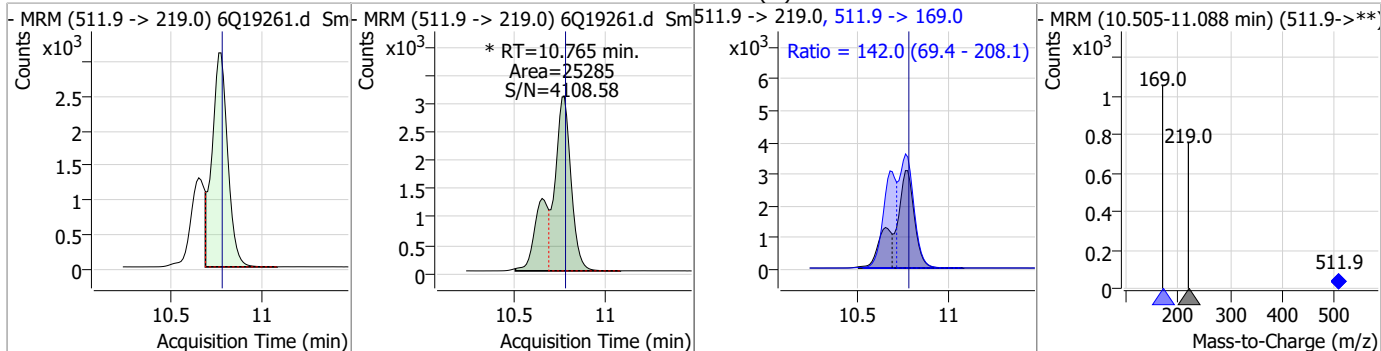
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.37	10.76	-0.01	12258				



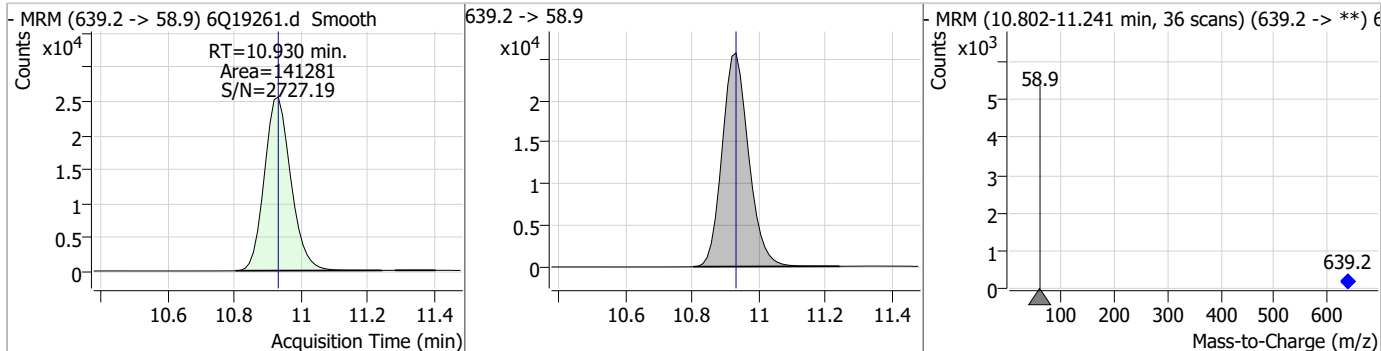
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Perfluorinated Compounds by LC/MS/MS

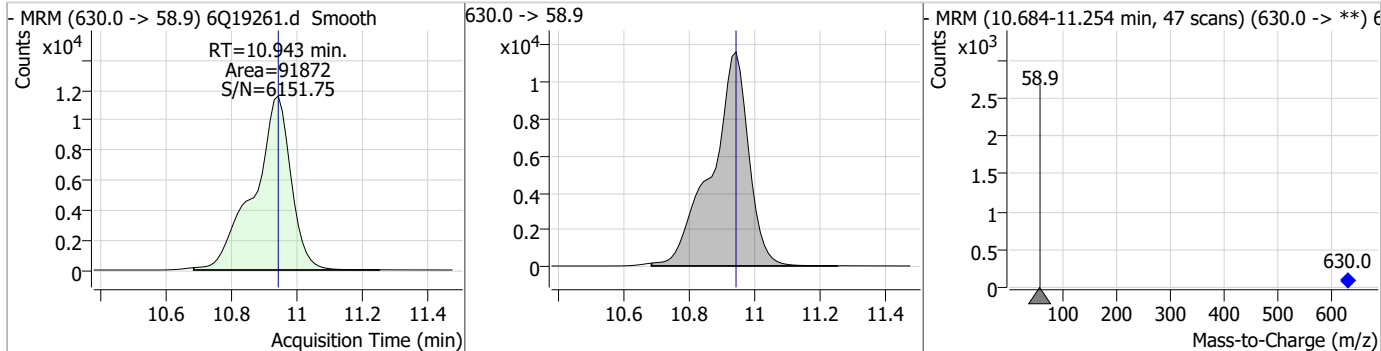
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	4.71	10.76	-0.01	25285 (m)	511.9 -> 169.0	142.0	69.4	208.1



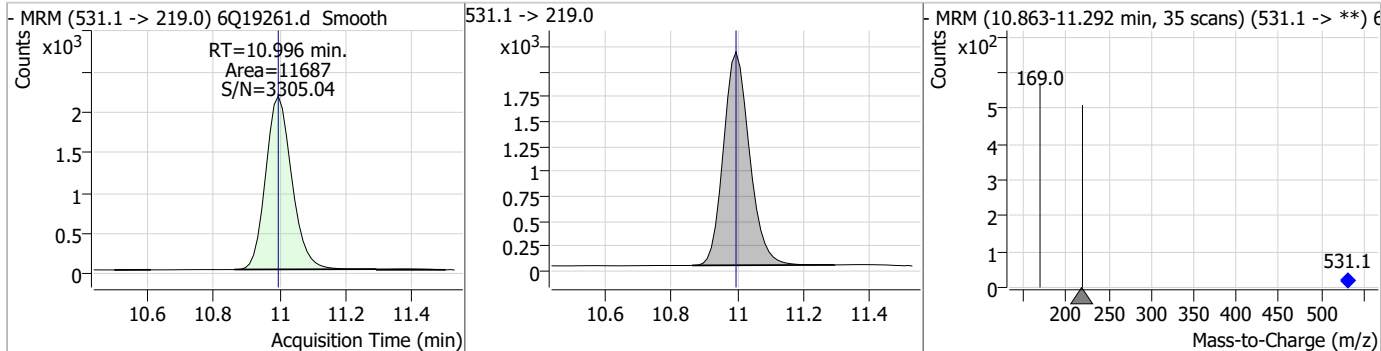
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	19.78	10.93	0.00	141281				



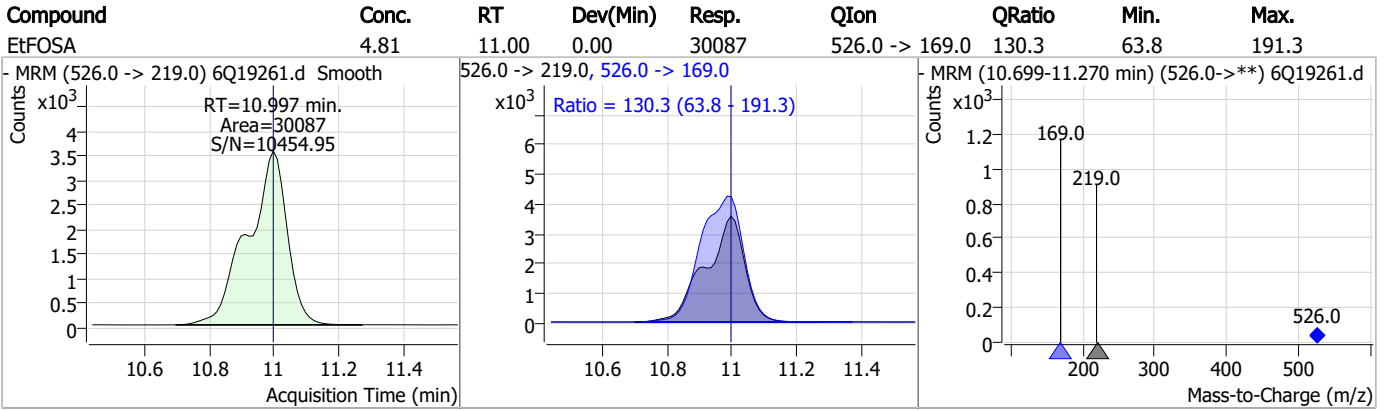
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.32	10.94	0.00	91872				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.33	11.00	0.00	11687				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-CC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19261.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 20:42 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19272.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/12/2023 11:15:53 PM
 Sample Name : cc287-4
 Vial : P1-A5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	145070	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	47365	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	53136	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	47733	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	79266	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	37328	1.25 µg/L	0.013
M6-PFDA	8.387	519.1 -> 474.1	20215	1.25 µg/L	0.000
M7-PFUnDA	8.866	570.0 -> 525.1	28148	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	25191	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	13684	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	27703	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	18631	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11657	2.50 µg/L	0.000
M8-PFOS	8.575	507.1 -> 79.9	11274	2.50 µg/L	0.012
M2-4:2FTS	5.454	329.1 -> 80.9	2820	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4494	5.00 µg/L	0.000
M2-8:2FTS	8.163	529.1 -> 80.9	4287	5.00 µg/L	0.000
M3-MeFOSAA	8.420	573.2 -> 419.0	28901	5.00 µg/L	0.012
M3-HFPO-DA	6.181	286.9 -> 168.9	33370	10.00 µg/L	0.012
M5-EtFOSAA	8.628	589.2 -> 419.0	24177	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	124035	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	141083	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	11723	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	11899	2.50 µg/L	-0.012
13C4-PFOS	8.563	502.8 -> 79.9	15470	2.50 µg/L	0.000
13C3-PFBA	3.089	216.0 -> 172.0	61662	5.00 µg/L	0.000
18O2-PFHxS	7.477	403.0 -> 83.9	9625	2.50 µg/L	0.000
13C4-PFOA	7.352	417.1 -> 372.0	83204	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	31042	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	46757	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	50016	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	2820	4.76 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4494	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-8:2FTS	8.163	529.1 -> 80.9	4287	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-PFDoDA	9.297	615.1 -> 570.0	25191	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13684	1.14 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.9%		
13C3-PFBS	5.746	302.1 -> 79.9	18631	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.6%		
13C3-PFHxS	7.478	402.1 -> 79.9	11657	2.28 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C4-PFBA	3.097	216.8 -> 171.9	145070	10.02 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.707	367.1 -> 322.0	47733	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C5-PFHxA	5.792	318.0 -> 273.0	53136	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.560	268.3 -> 223.0	47365	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C6-PFDA	8.387	519.1 -> 474.1	20215	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C7-PFUnDA	8.866	570.0 -> 525.1	28148	1.17 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C8-FOSA	9.674	506.1 -> 77.8	27703	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C8-PFOA	7.352	421.1 -> 376.0	79266	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C8-PFOS	8.575	507.1 -> 79.9	11274	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C9-PFNA	7.895	472.1 -> 427.0	37328	1.31 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%	
d3-MeFOSAA	8.420	573.2 -> 419.0	28901	4.98 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C3-HFPO-DA	6.181	286.9 -> 168.9	33370	9.73 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSA	10.763	515.0 -> 219.0	11899	2.31 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
d5-EtFOSAA	8.628	589.2 -> 419.0	24177	4.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d7-MeFOSE	10.685	623.2 -> 58.9	124035	21.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.4%	
d9-EtFOSE	10.930	639.2 -> 58.9	141083	19.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.6%	
d5-EtFOSA	10.996	531.1 -> 219.0	11723	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	49015	10.03 µg/L	97
		327.1 -> 80.9	17438		
6:2FTS	7.113	427.1 -> 407.0	48396	8.91 µg/L	94
		427.1 -> 80.9	15870		
8:2FTS	8.164	527.1 -> 507.0	25925	9.09 µg/L	99
		527.1 -> 80.8	10046		
EtFOSAA	8.629	584.2 -> 419.1	9656	2.41 µg/L	m 95
		584.2 -> 526.0	5210		
FOSA	9.677	498.1 -> 77.9	27317	2.40 µg/L	100
		498.1 -> 478.0	749		
MeFOSAA	8.421	570.1 -> 419.0	17576	2.50 µg/L	m 99
		570.1 -> 483.0	3528		
PFBA	3.093	212.8 -> 168.9	55749	9.64 µg/L	100
PFBS	5.747	298.7 -> 79.9	16866	2.06 µg/L	87
		298.7 -> 98.8	7060		
PFDA	8.388	512.9 -> 469.0	72046	2.38 µg/L	98
		512.9 -> 219.0	11394		
PFDODA	9.298	613.1 -> 569.0	48375	2.34 µg/L	96
		613.1 -> 319.0	7220		
PFDS	9.462	599.0 -> 79.9	7908	2.32 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3788			
PFHpA	6.720	363.1 -> 319.0	59445	2.33	µg/L	96
		363.1 -> 169.0	10559			
PFHpS	8.059	449.0 -> 79.9	14870	2.19	µg/L	98
		449.0 -> 98.9	7089			
PFHxA	5.795	313.0 -> 269.0	50195	2.36	µg/L	98
		313.0 -> 118.9	2449			
PFHxS	7.479	398.7 -> 79.9	14568	2.08	µg/L	m 95
		398.7 -> 98.9	7273			
PFNA	7.896	463.0 -> 419.0	75688	2.21	µg/L	97
		463.0 -> 219.0	14368			
PFNS	9.041	548.8 -> 79.9	13728	2.30	µg/L	94
		548.8 -> 98.9	7231			
PFOA	7.353	413.0 -> 369.0	98210	2.42	µg/L	98
		413.0 -> 169.0	16595			
PFOS	8.564	498.9 -> 79.9	13853	2.09	µg/L	m 97
		498.9 -> 98.8	7487			
PFPeA	4.563	263.0 -> 219.0	66418	4.77	µg/L	100
PFPeS	6.785	349.1 -> 79.9	14901	2.31	µg/L	100
		349.1 -> 98.9	6860			
PFTeDA	10.013	713.1 -> 669.0	39378	2.41	µg/L	99
		713.1 -> 168.9	3311			
PFTrDA	9.681	663.0 -> 619.0	48747	2.37	µg/L	97
		663.0 -> 168.9	5448			
PFUnDA	8.866	563.1 -> 519.0	54840	2.66	µg/L	98
		563.1 -> 269.1	8514			
11CI-PF3OUdS	9.733	630.9 -> 450.9	72717	4.62	µg/L	97
		632.9 -> 452.9	20638			
9CI-PF3ONS	8.918	530.8 -> 351.0	114336	4.35	µg/L	96
		532.8 -> 353.0	36524			
ADONA	6.959	376.9 -> 250.9	256326	4.54	µg/L	97
		376.9 -> 84.8	67056			
HFPO-DA	6.182	284.9 -> 168.9	15733	4.34	µg/L	95
		284.9 -> 184.9	2015			
3:3FTCA	3.958	241.0 -> 177.0	11078	11.62	µg/L	99
		241.0 -> 117.0	1438			
5:3FTCA	6.374	341.0 -> 237.1	245874	59.56	µg/L	96
		341.0 -> 217.0	174224			
7:3FTCA	7.748	441.0 -> 316.9	171837	58.16	µg/L	95
		441.0 -> 336.9	410157			
EtFOSA	10.997	526.0 -> 219.0	29910	4.76	µg/L	m 93
		526.0 -> 169.0	40479			
EtFOSE	10.943	630.0 -> 58.9	91318	12.26	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	25768	4.94	µg/L	m 98
		511.9 -> 169.0	35262			
MeFOSE	10.697	616.1 -> 58.9	65501	12.07	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	3825	2.26	µg/L	94
		699.1 -> 98.8	2055			
NFDHA	5.673	295.0 -> 201.0	12799	4.75	µg/L	93
		295.0 -> 84.9	3237			
PFMBA	4.988	279.0 -> 85.1	47184	4.72	µg/L	100
PFMPA	3.667	229.0 -> 84.9	37584	4.84	µg/L	100
PFEESA	6.301	314.8 -> 134.9	117640	4.49	µg/L	100
		314.8 -> 82.9	3994			

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

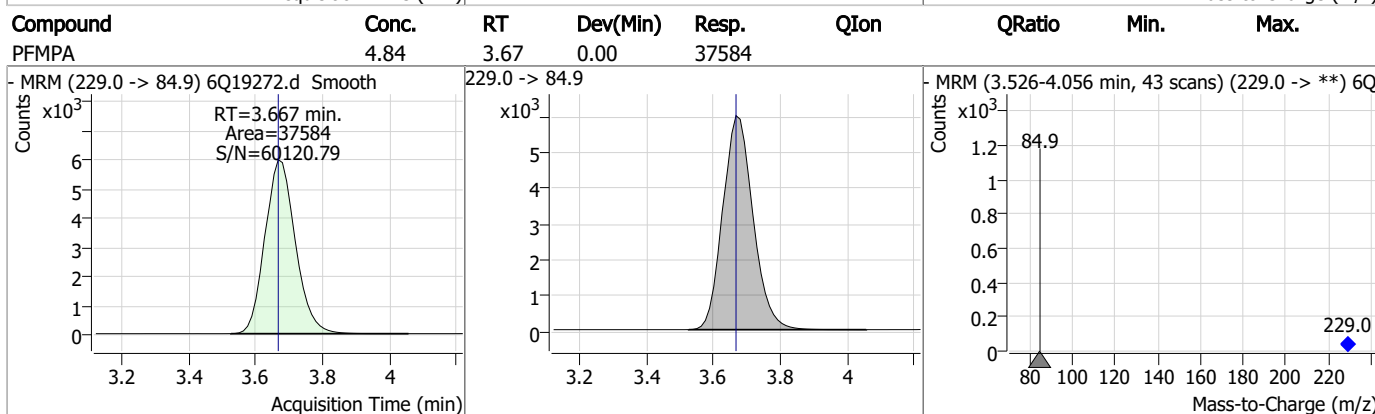
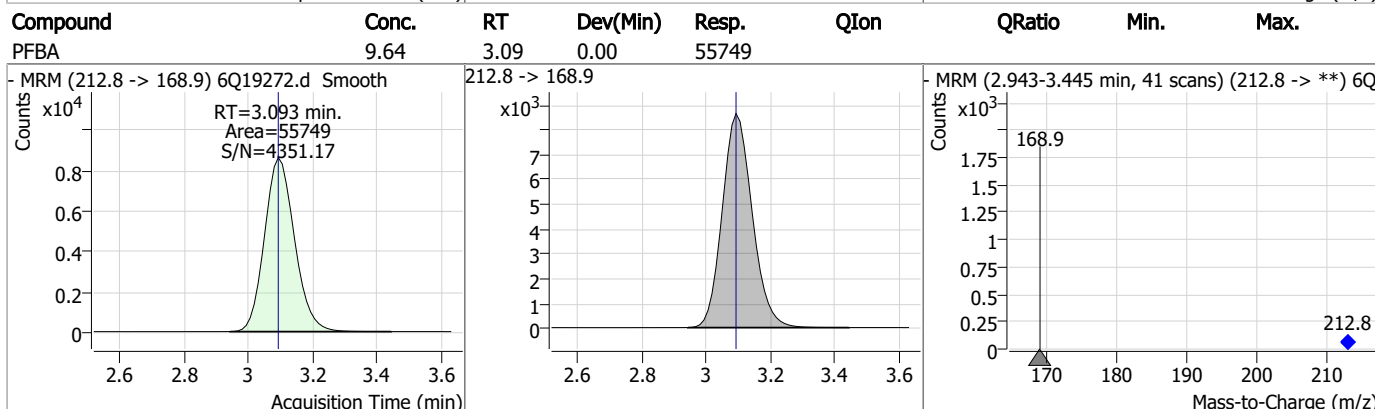
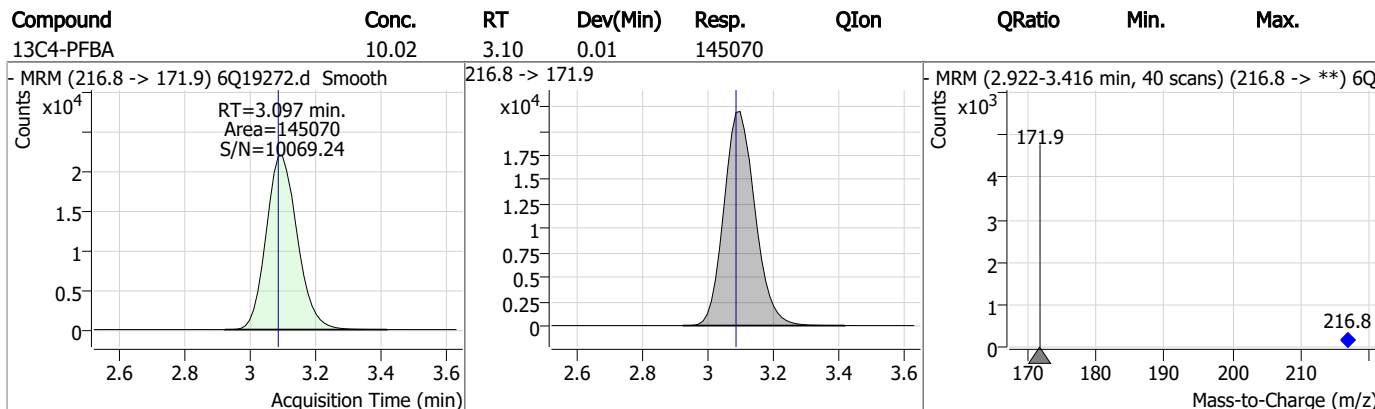
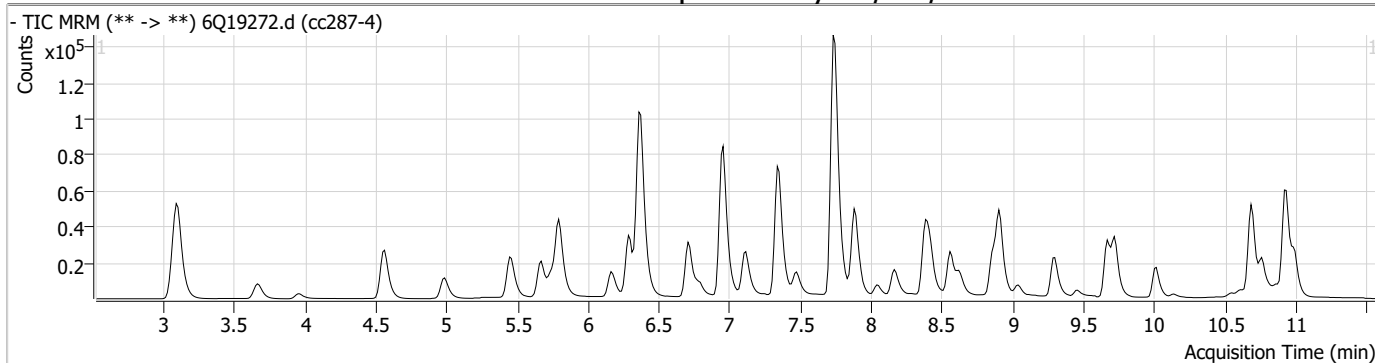
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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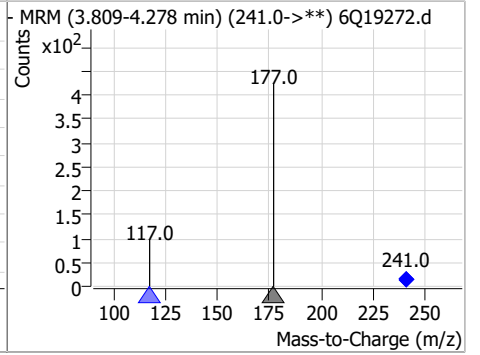
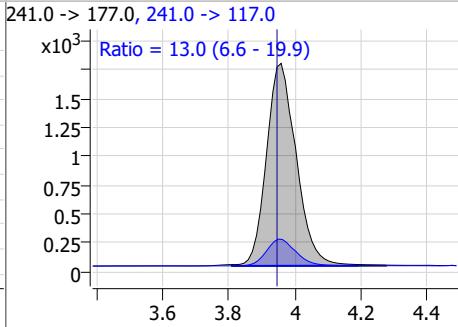
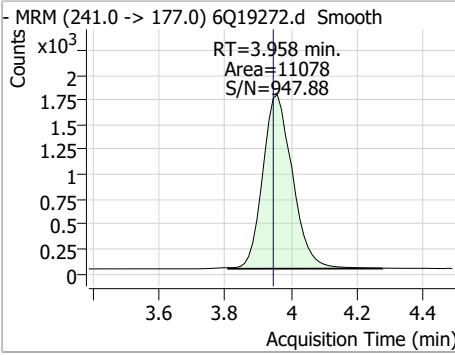
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Perfluorinated Compounds by LC/MS/MS

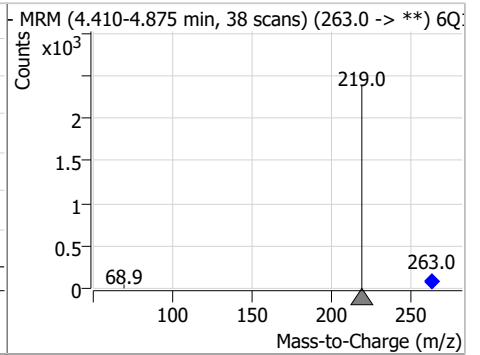
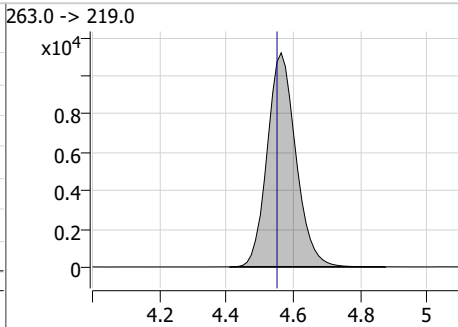
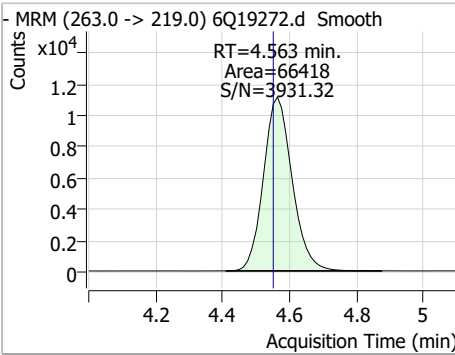


Perfluorinated Compounds by LC/MS/MS

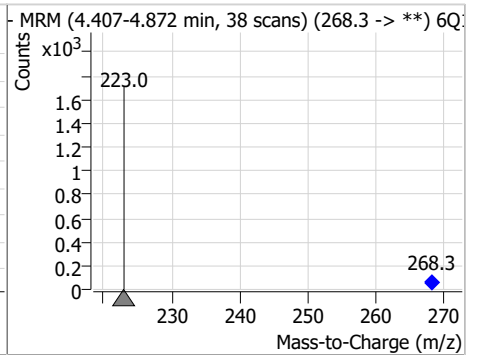
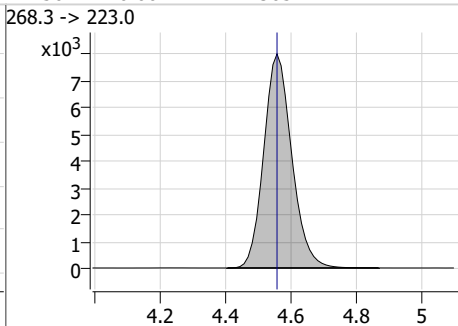
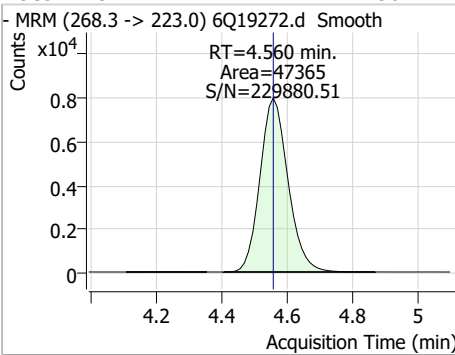
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.62	3.96	0.01	11078	241.0 -> 117.0	13.0	6.6	19.9



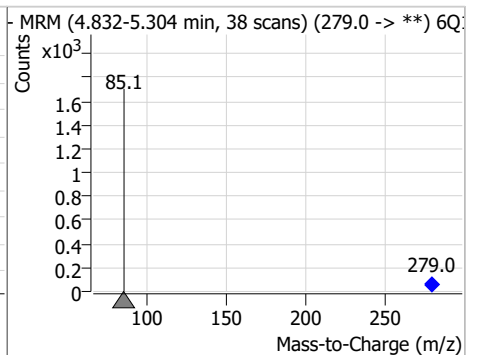
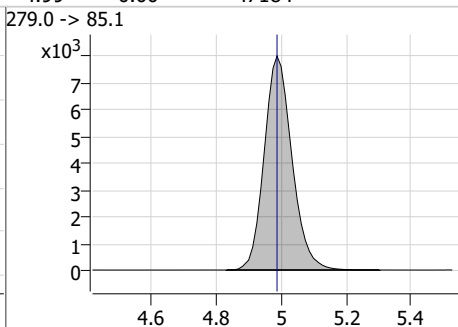
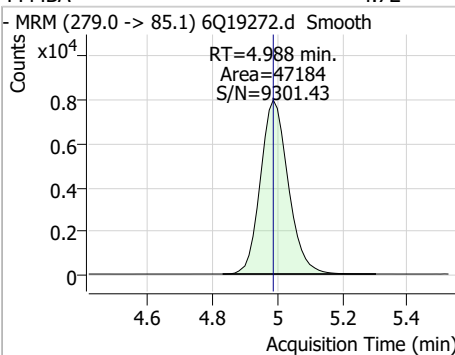
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.77	4.56	0.01	66418				



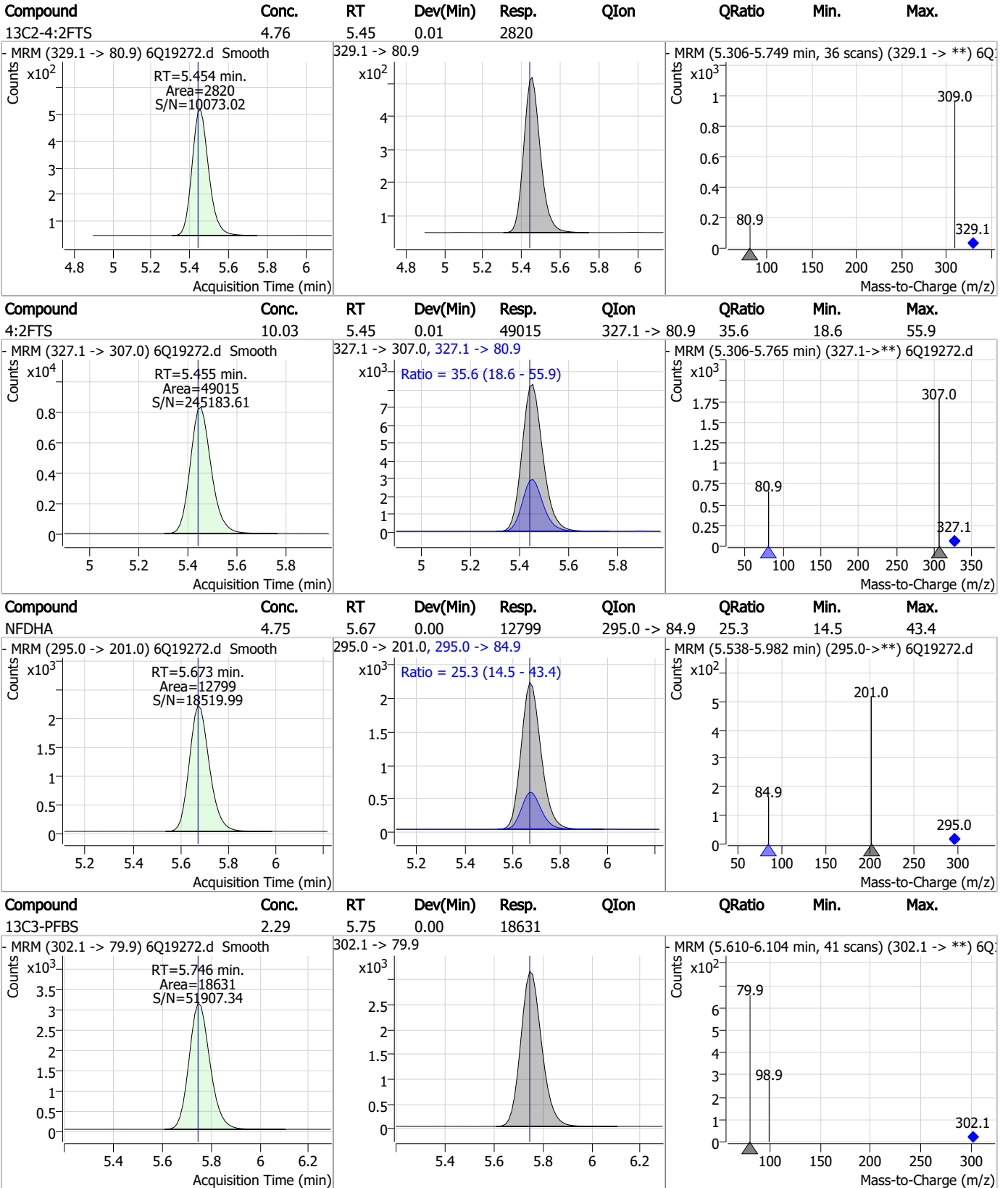
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.90	4.56	0.00	47365				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.72	4.99	0.00	47184				

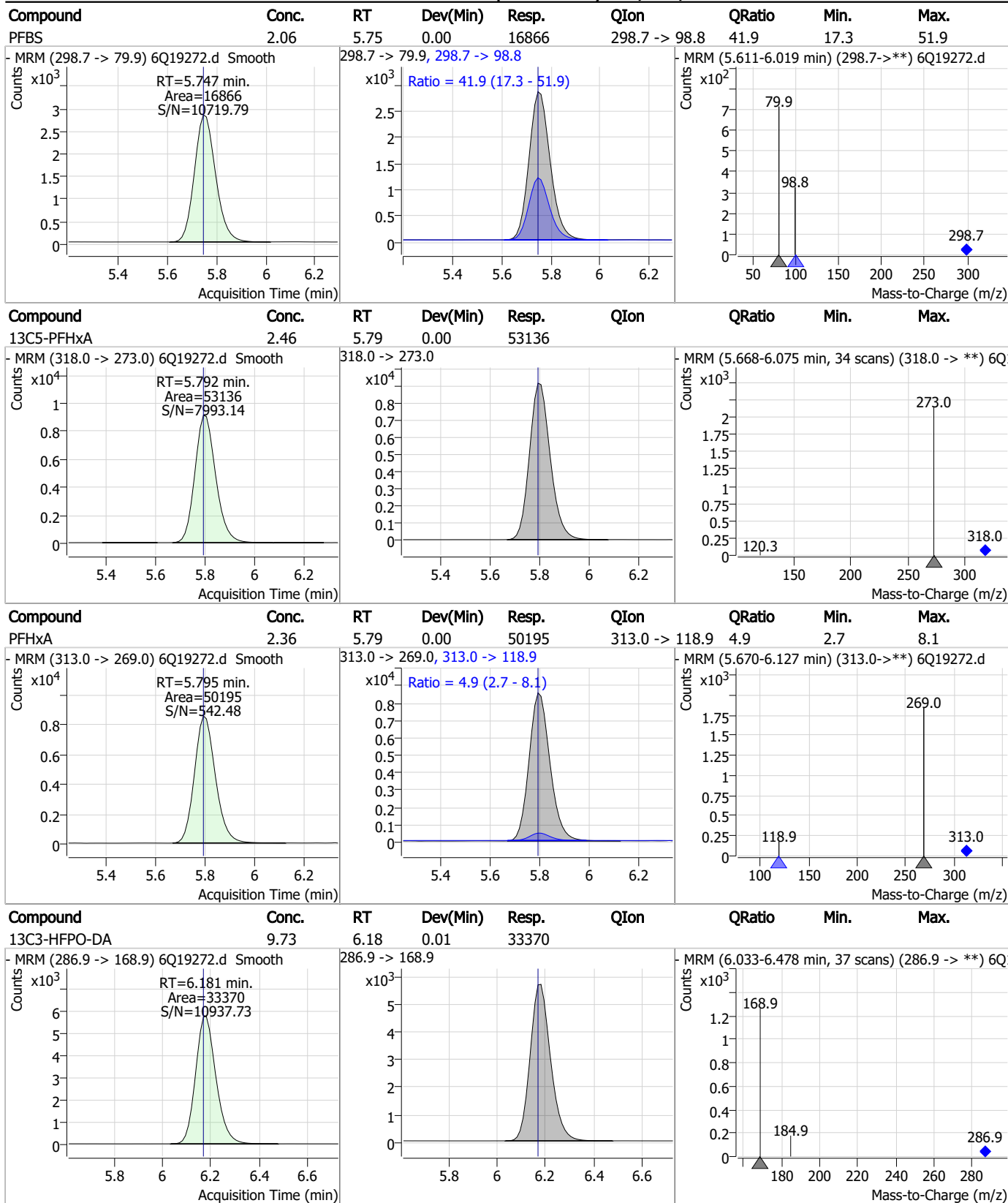


Perfluorinated Compounds by LC/MS/MS



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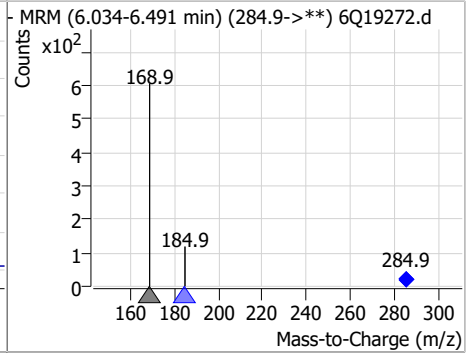
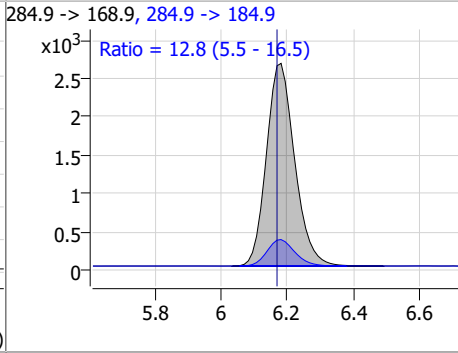
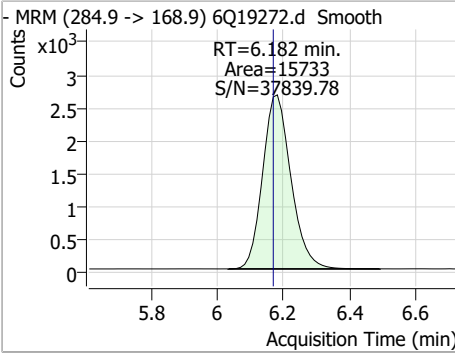
Perfluorinated Compounds by LC/MS/MS



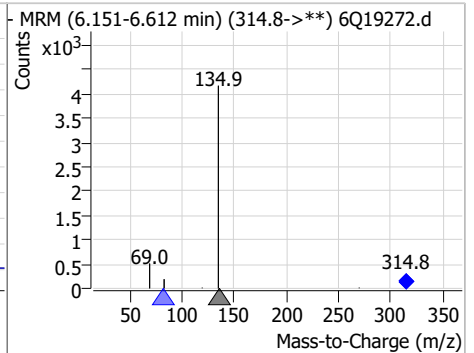
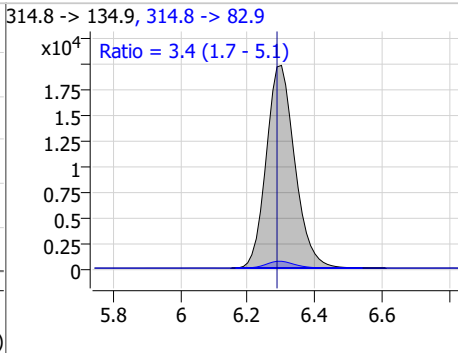
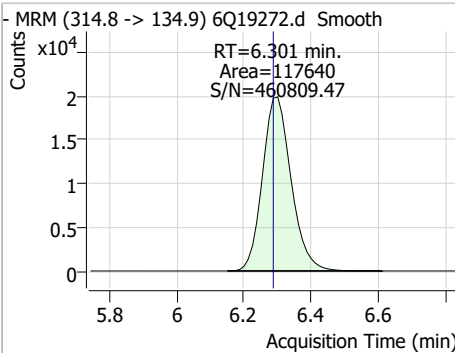
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Perfluorinated Compounds by LC/MS/MS

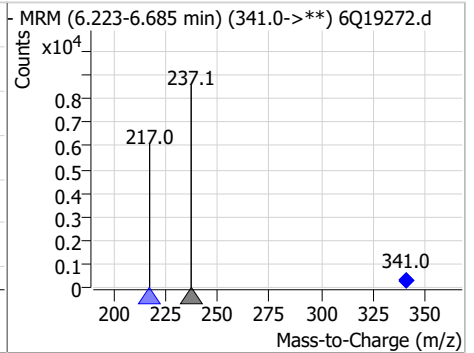
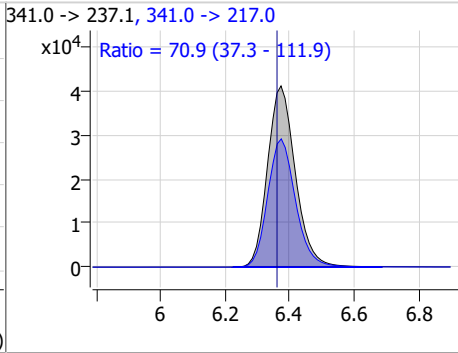
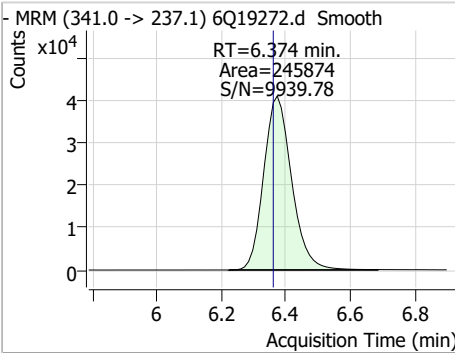
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.34	6.18	0.01	15733	284.9 -> 184.9	12.8	5.5	16.5



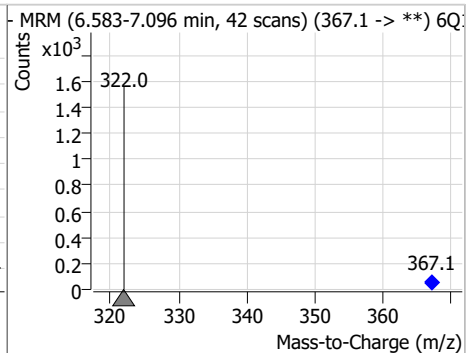
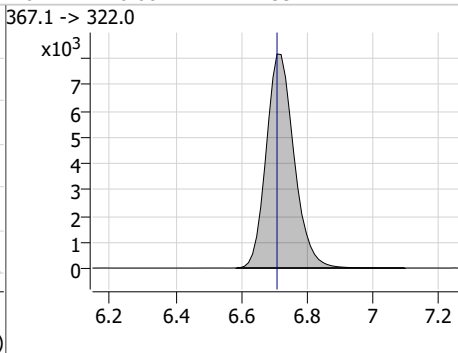
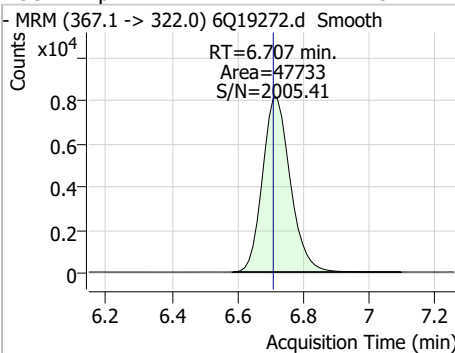
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.49	6.30	0.01	117640	314.8 -> 82.9	3.4	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.56	6.37	0.01	245874	341.0 -> 217.0	70.9	37.3	111.9

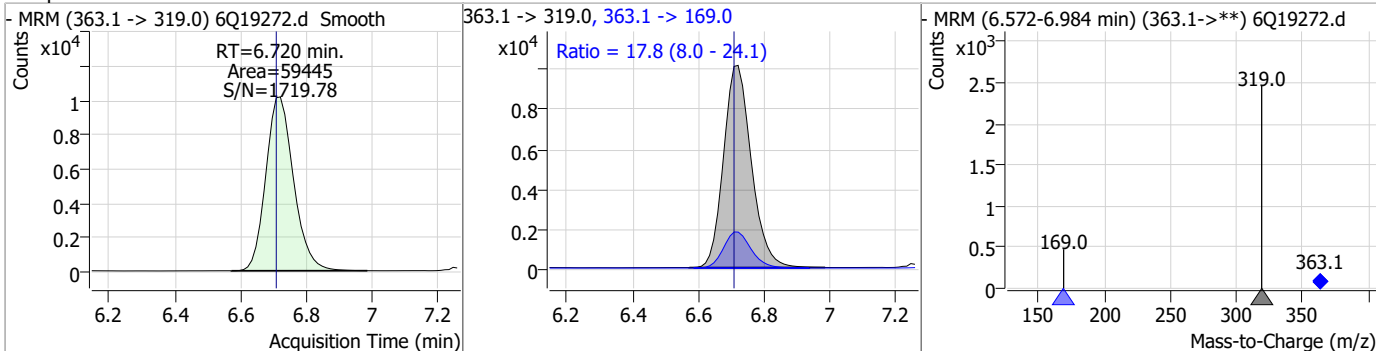


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.37	6.71	0.00	47733	367.1 -> 322.0			

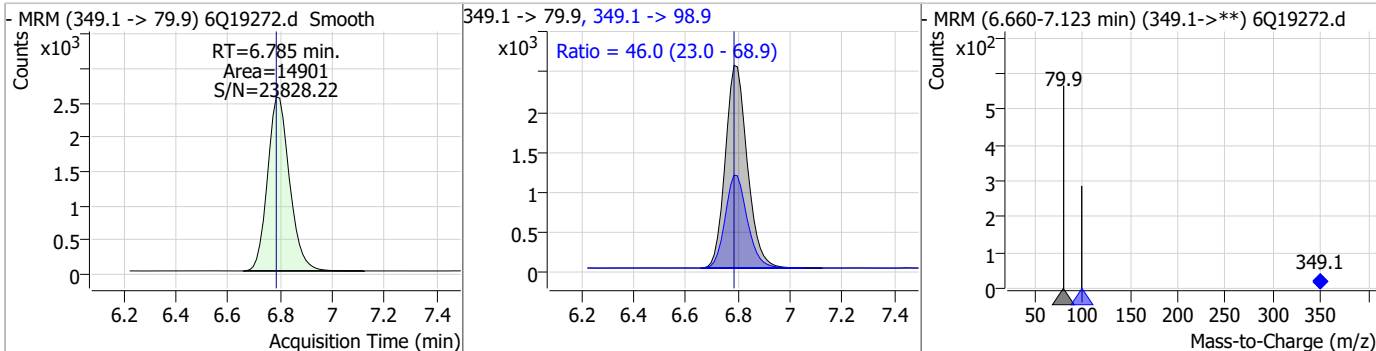


Perfluorinated Compounds by LC/MS/MS

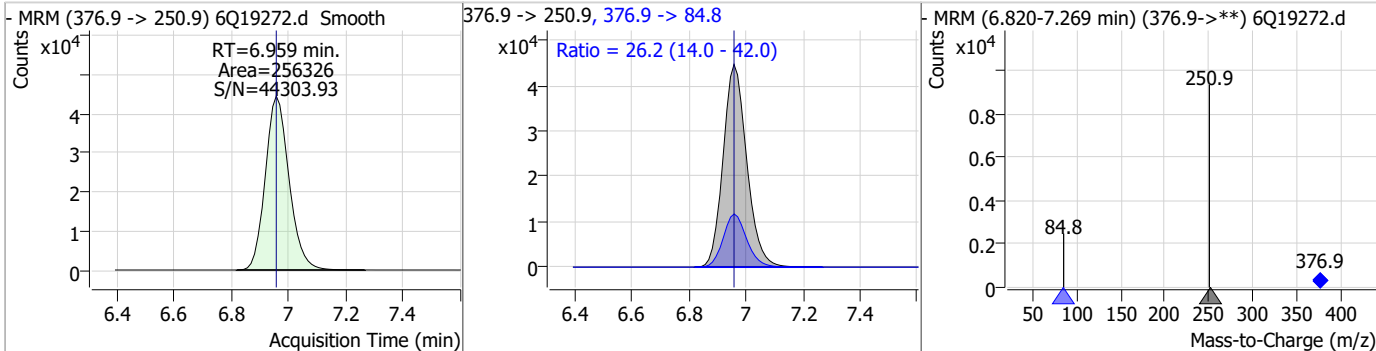
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.33	6.72	0.01	59445	363.1 -> 169.0	17.8	8.0	24.1



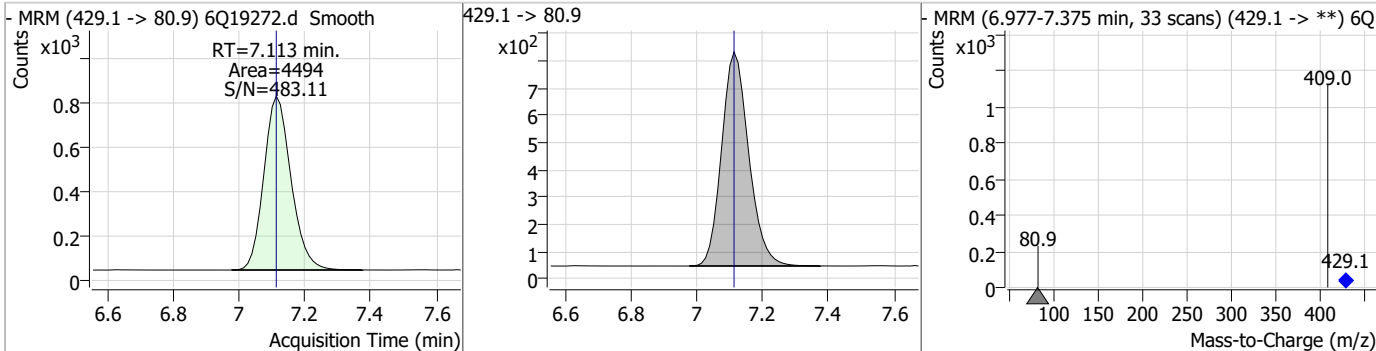
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.31	6.79	0.00	14901	349.1 -> 98.9	46.0	23.0	68.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.54	6.96	0.00	256326	376.9 -> 84.8	26.2	14.0	42.0

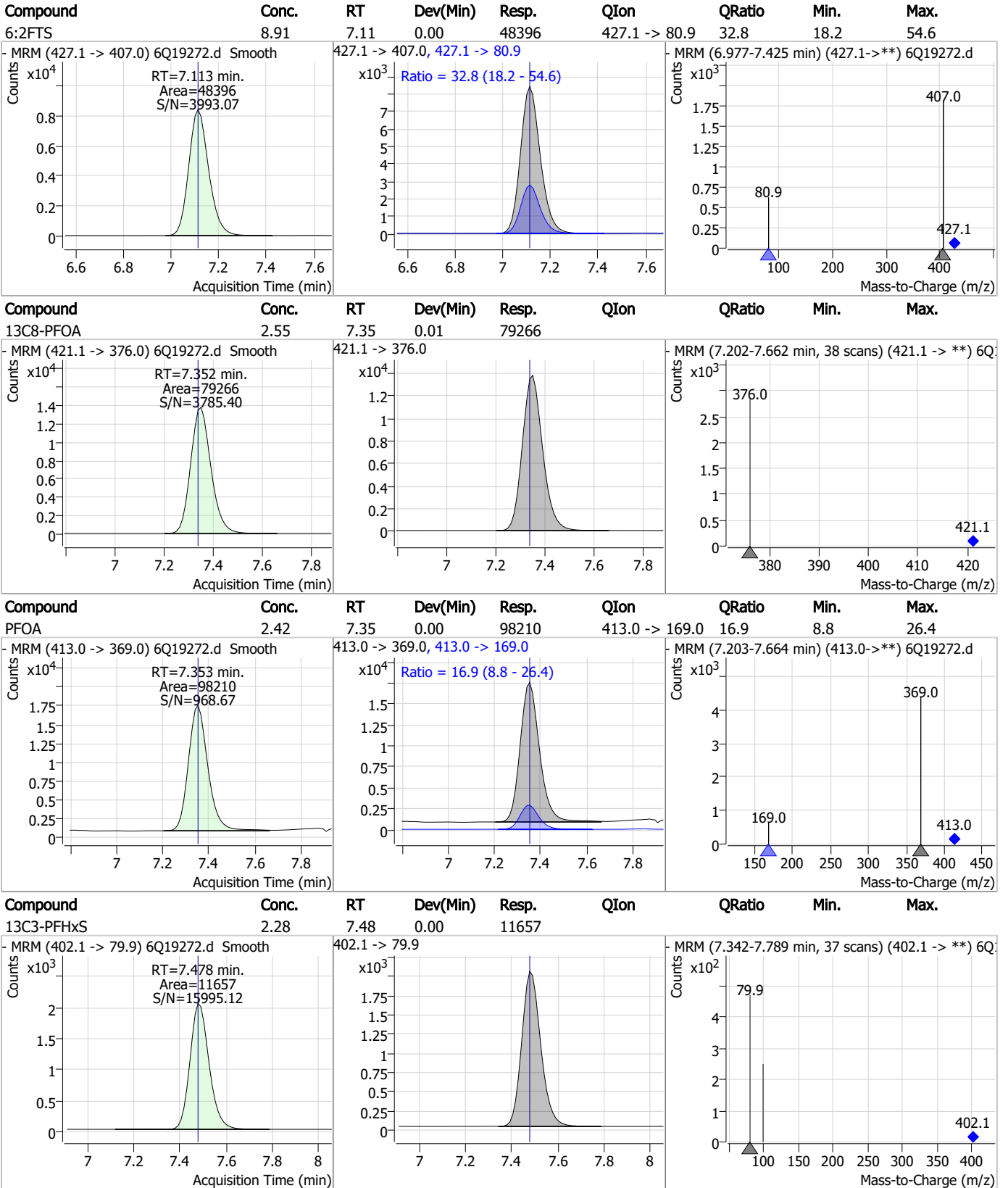


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.05	7.11	0.00	4494	429.1 -> 80.9			



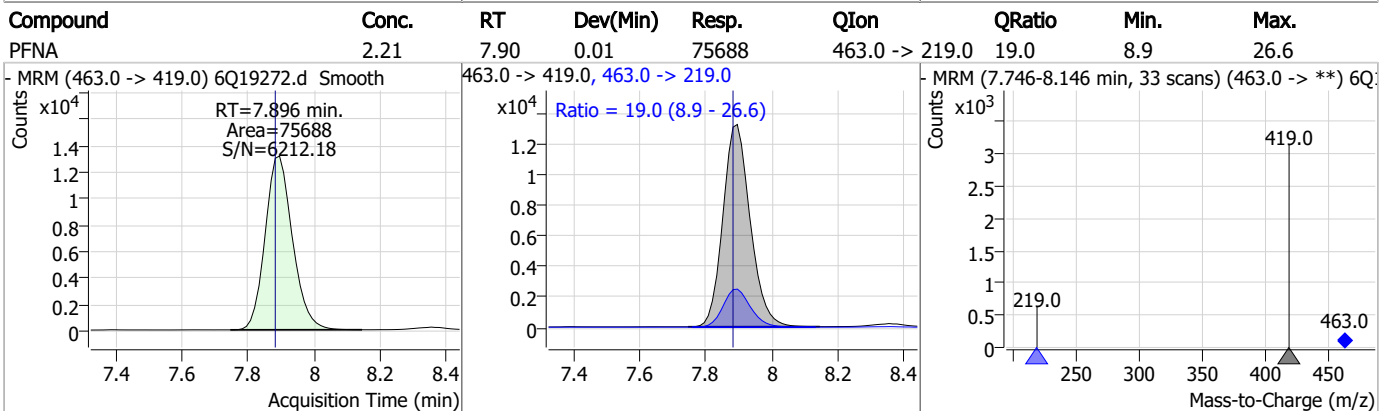
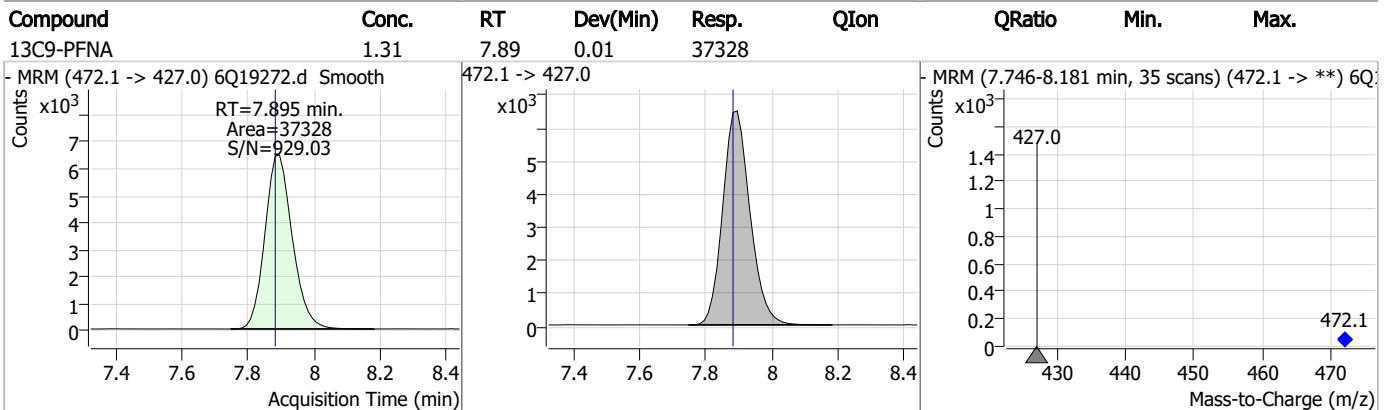
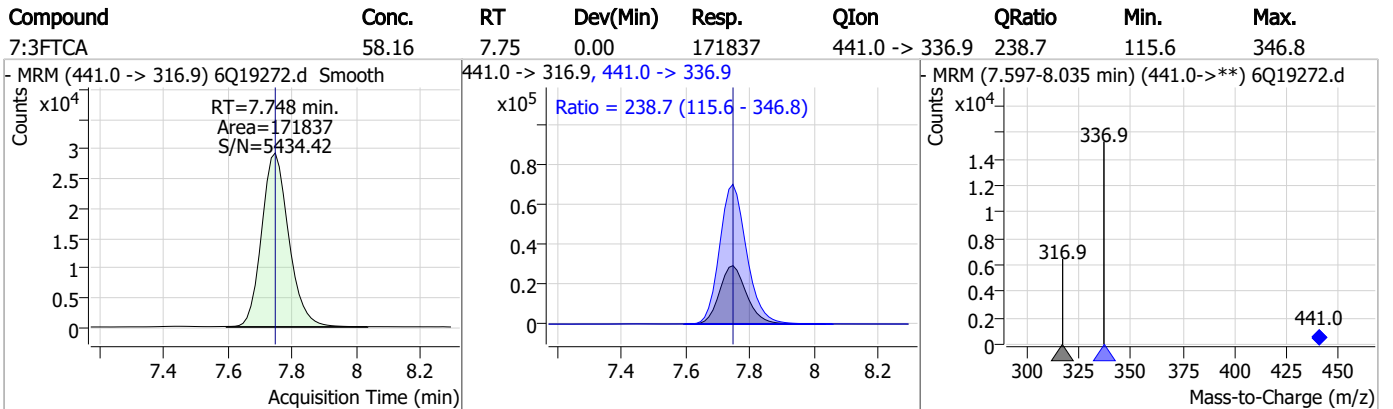
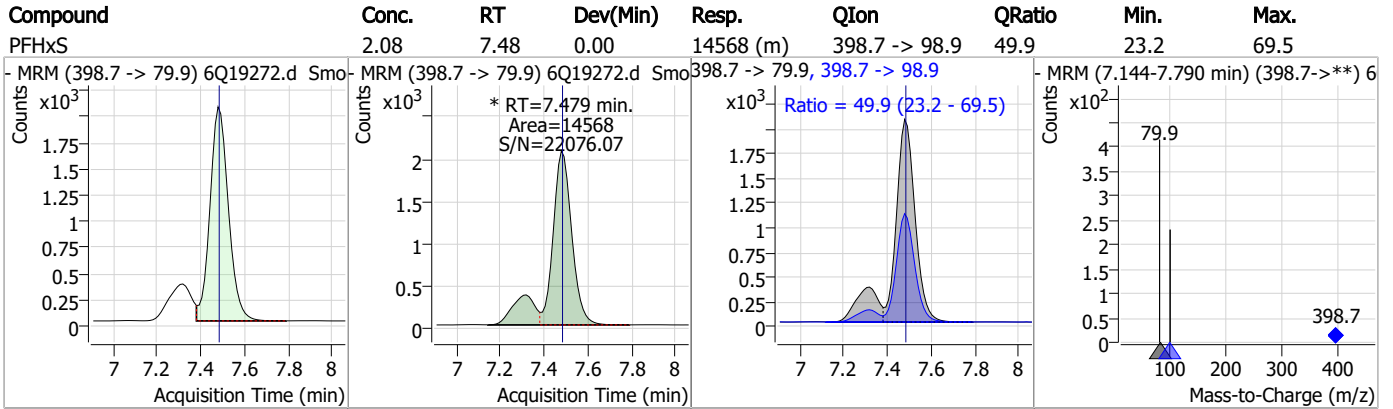
7.7.35
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Perfluorinated Compounds by LC/MS/MS



7.7.35
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Perfluorinated Compounds by LC/MS/MS



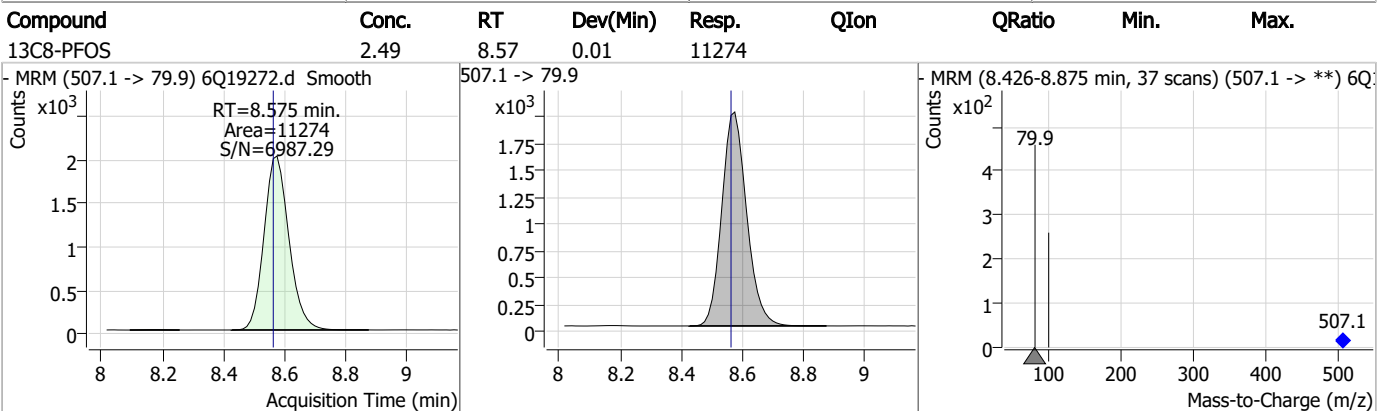
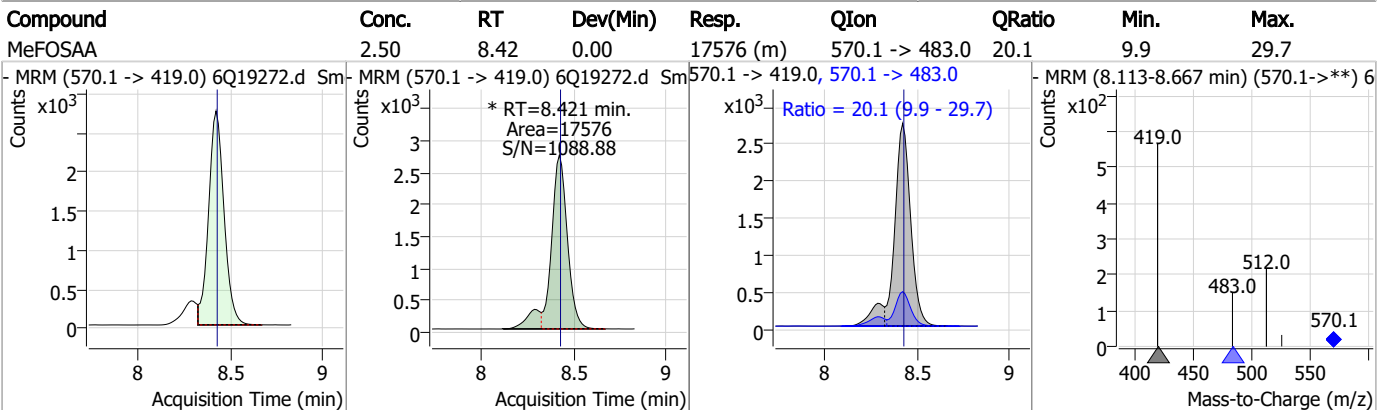
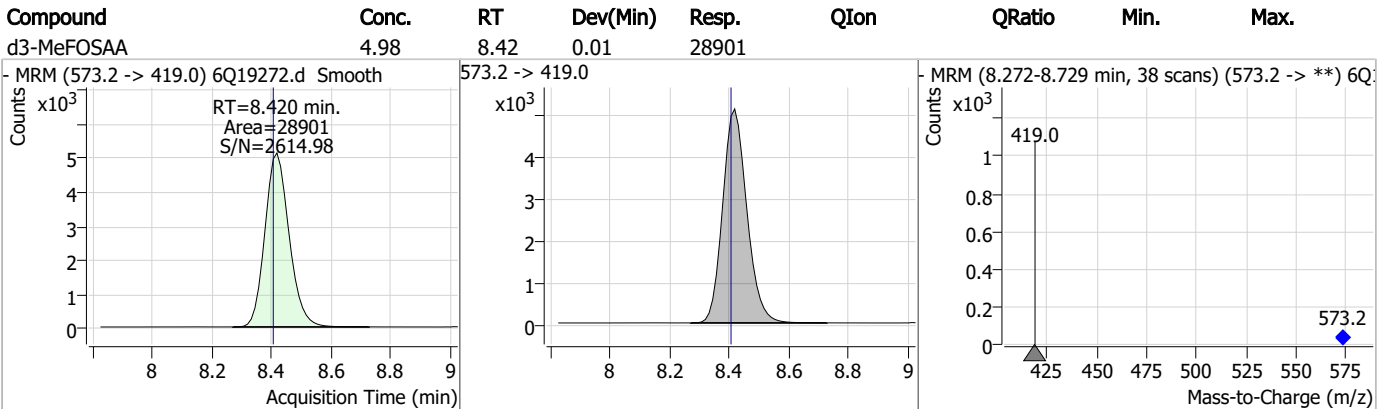
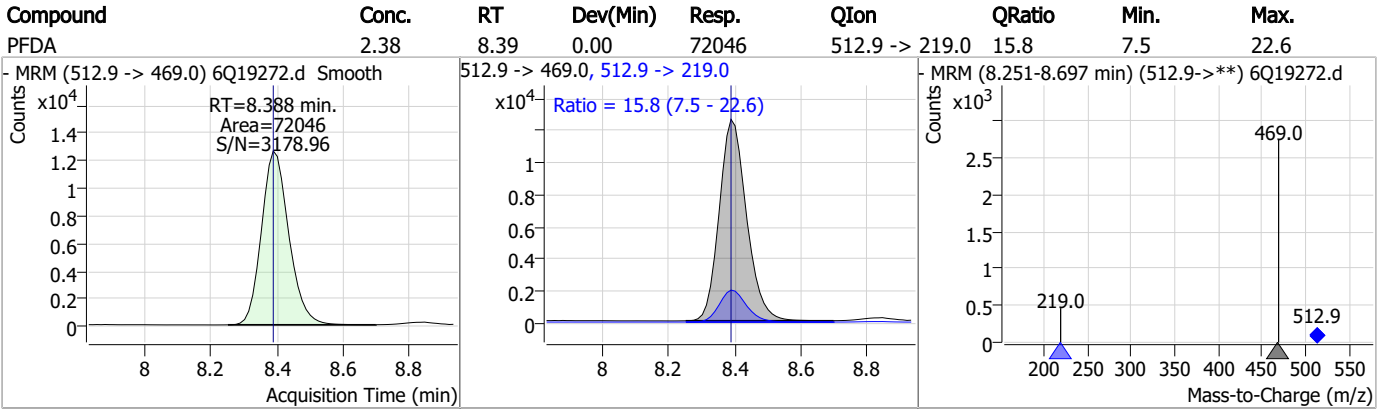
7.7.35
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.19	8.06	0.01	14870	449.0 -> 98.9	47.7	24.5	73.5
13C2-8:2FTS	5.02	8.16	0.00	4287				
8:2FTS	9.09	8.16	0.00	25925	527.1 -> 80.8	38.8	19.7	59.1
13C6-PFDA	1.18	8.39	0.00	20215				

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Perfluorinated Compounds by LC/MS/MS

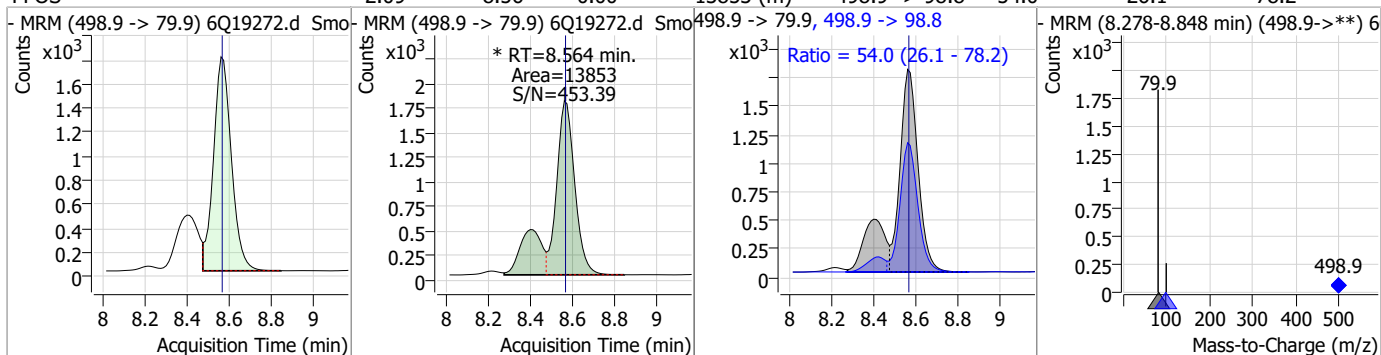


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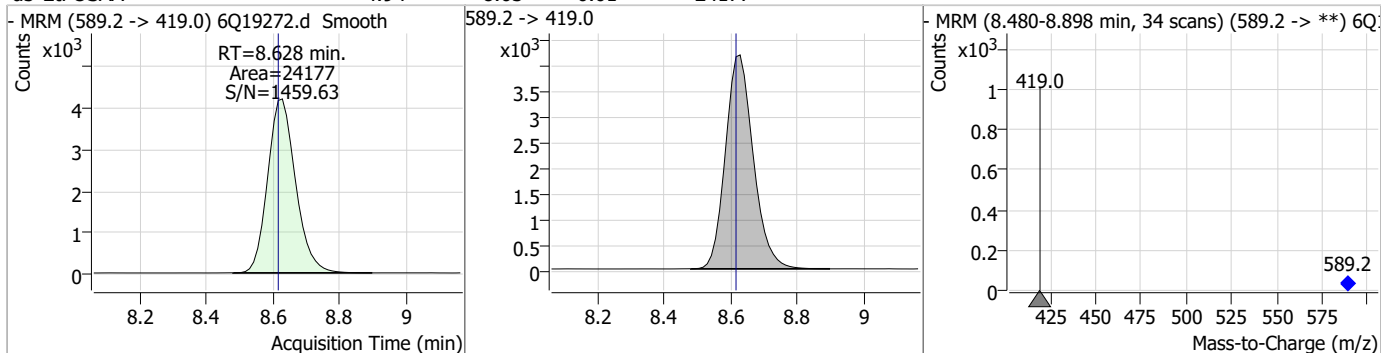


Perfluorinated Compounds by LC/MS/MS

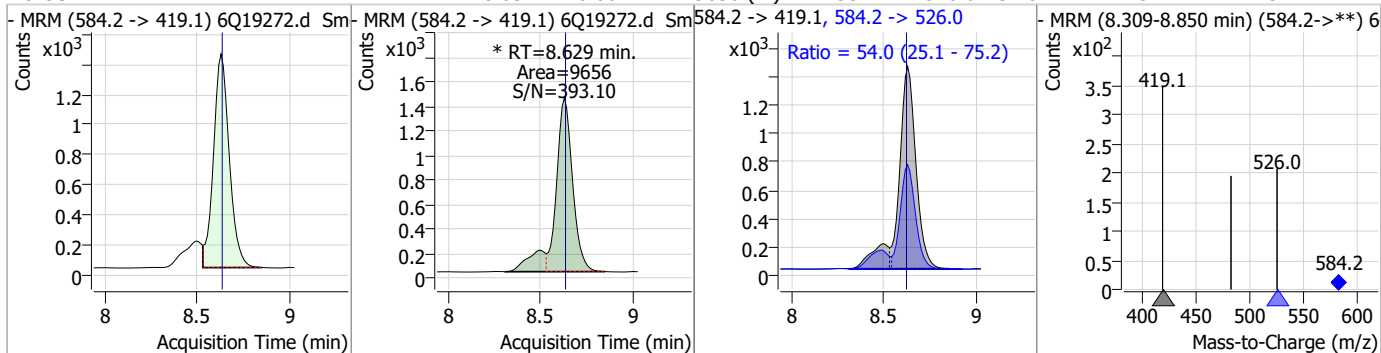
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.09	8.56	0.00	13853 (m)	498.9 -> 98.8	54.0	26.1	78.2



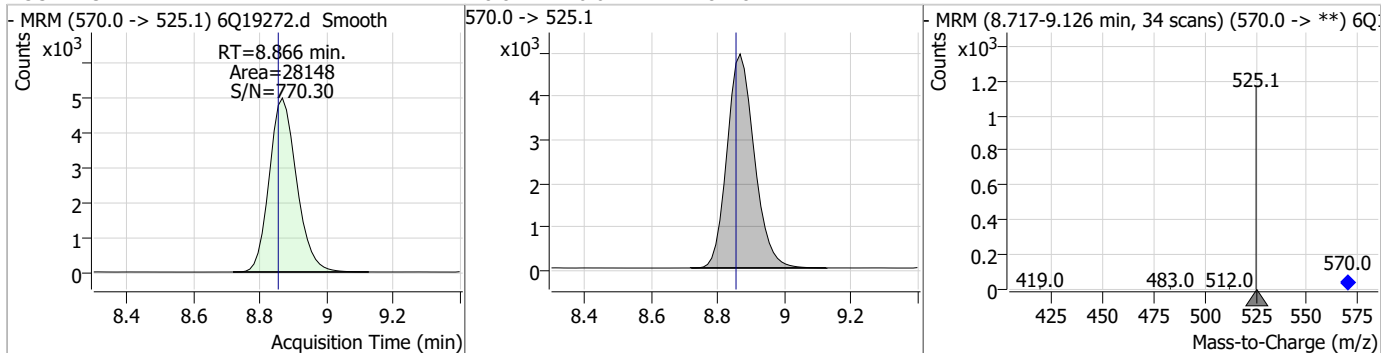
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.94	8.63	0.01	24177				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.41	8.63	0.00	9656 (m)	584.2 -> 526.0	54.0	25.1	75.2

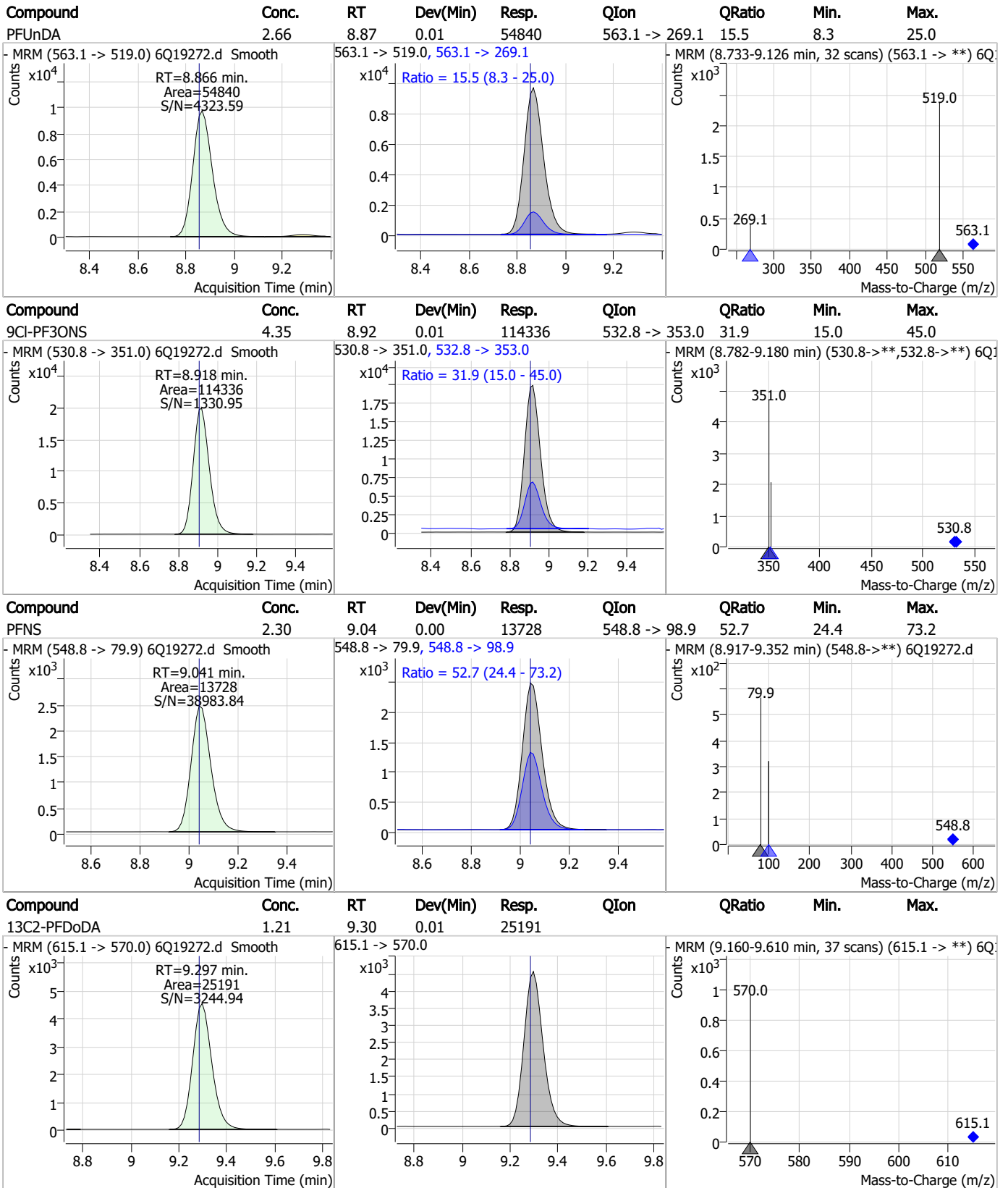


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.17	8.87	0.01	28148				



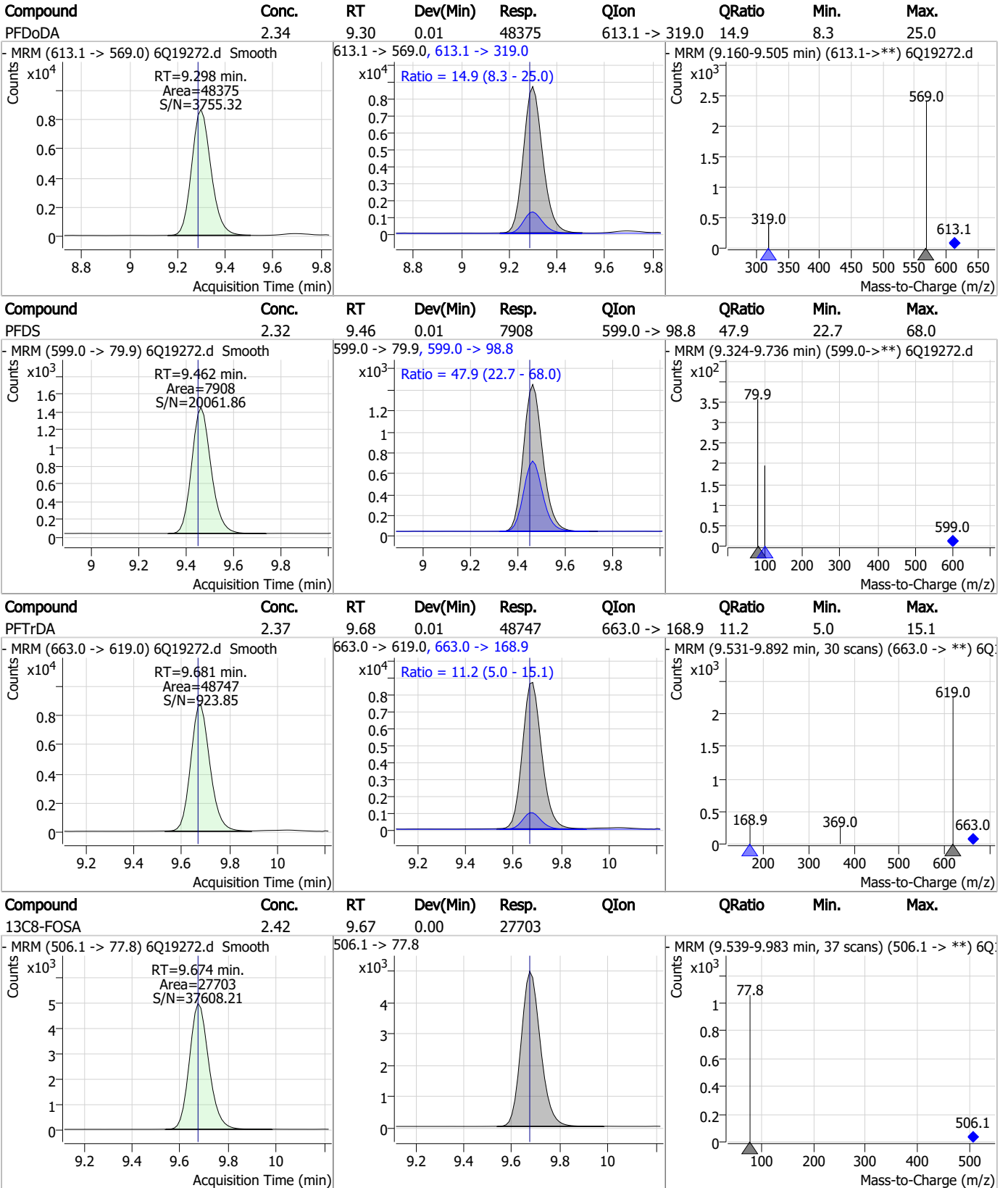
7.7.35
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Perfluorinated Compounds by LC/MS/MS



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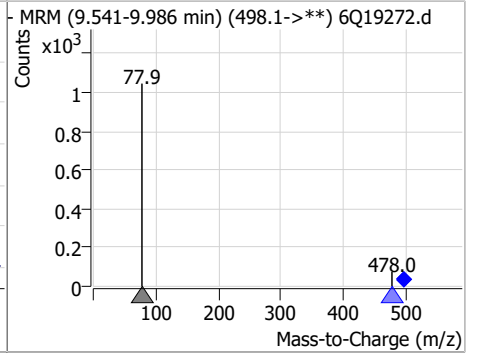
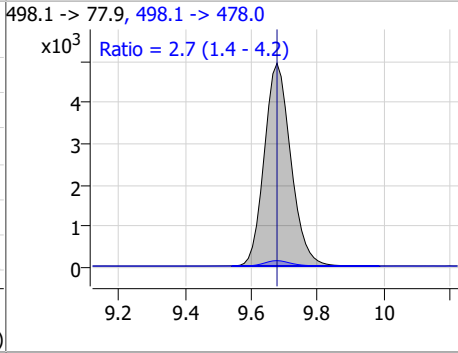
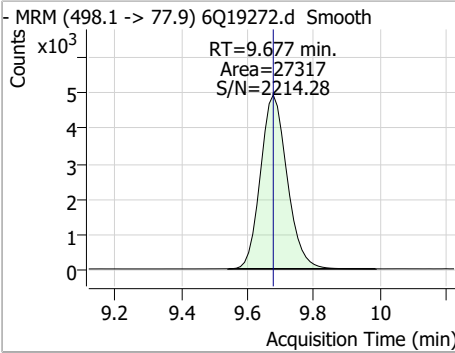
Perfluorinated Compounds by LC/MS/MS



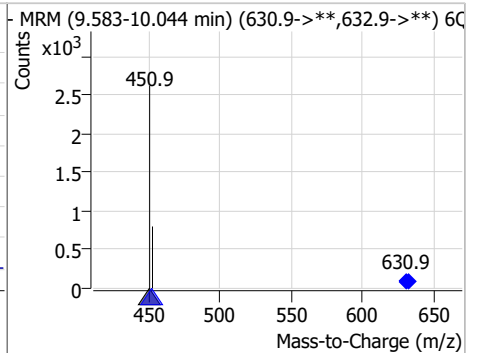
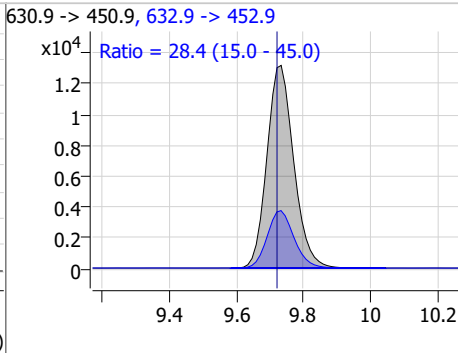
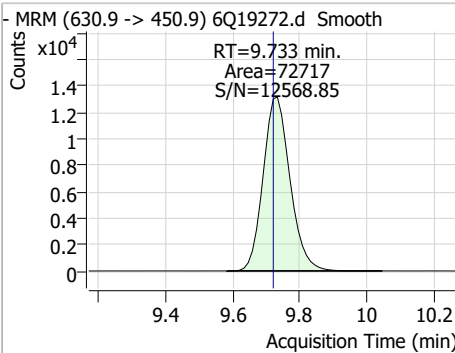
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Perfluorinated Compounds by LC/MS/MS

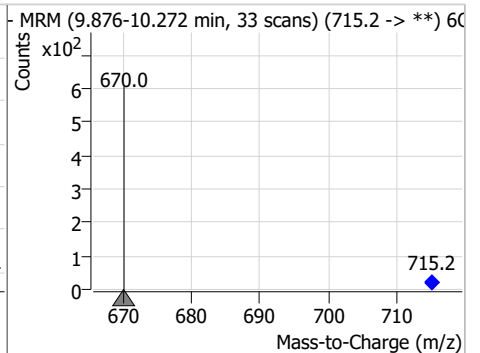
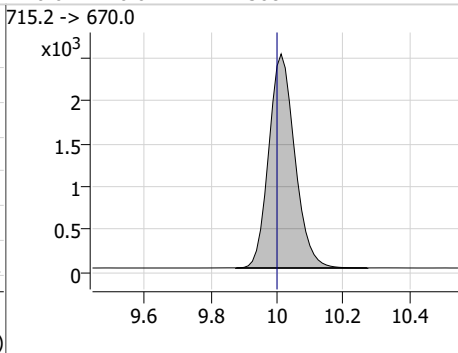
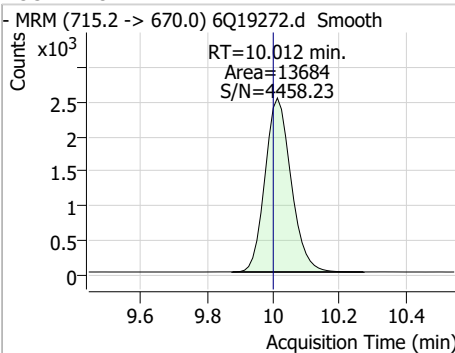
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.40	9.68	0.00	27317	498.1 -> 478.0	2.7	1.4	4.2



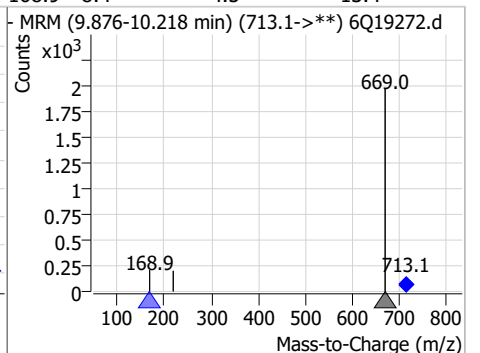
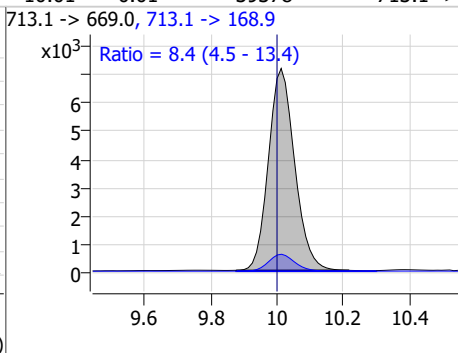
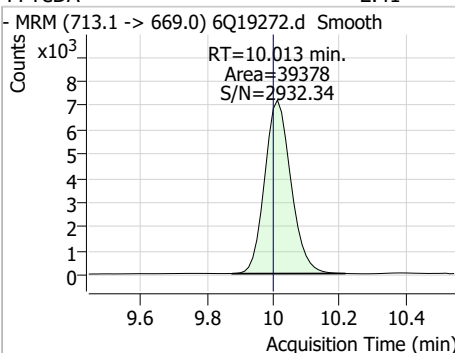
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.62	9.73	0.01	72717	632.9 -> 452.9	28.4	15.0	45.0



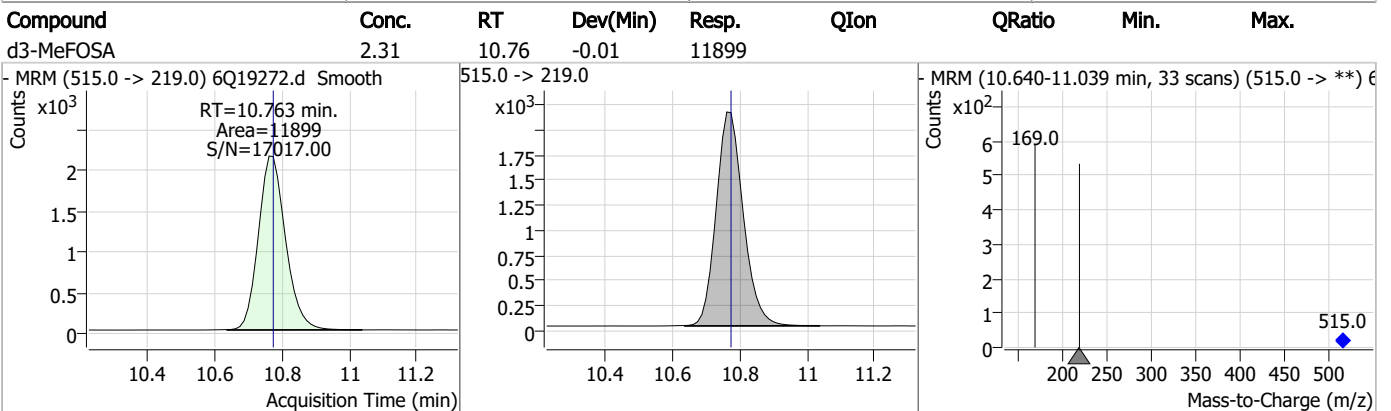
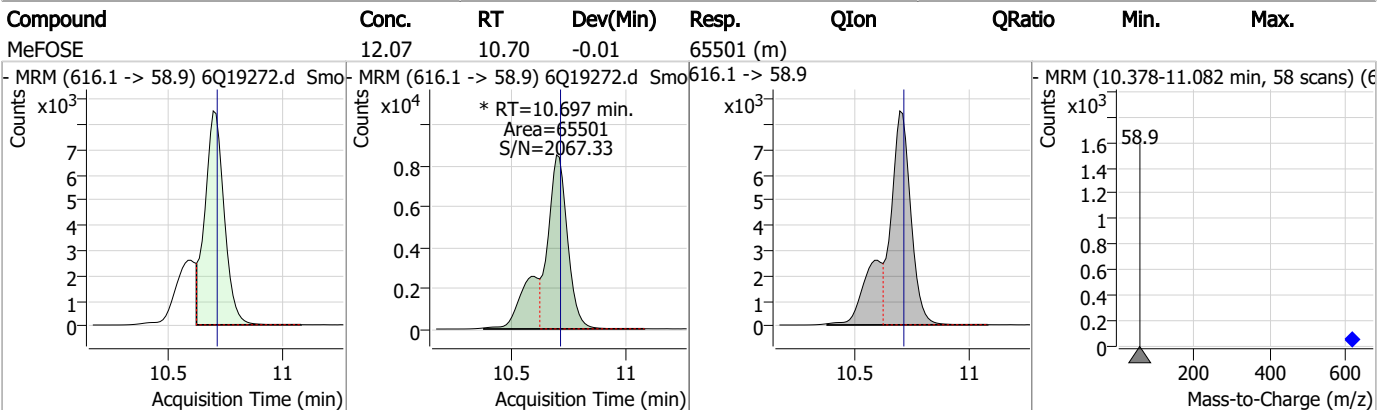
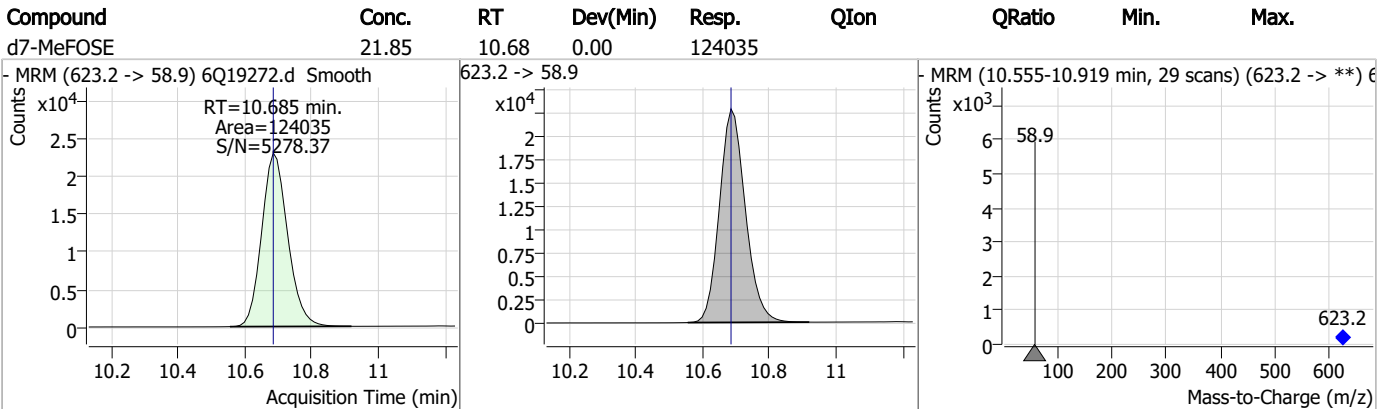
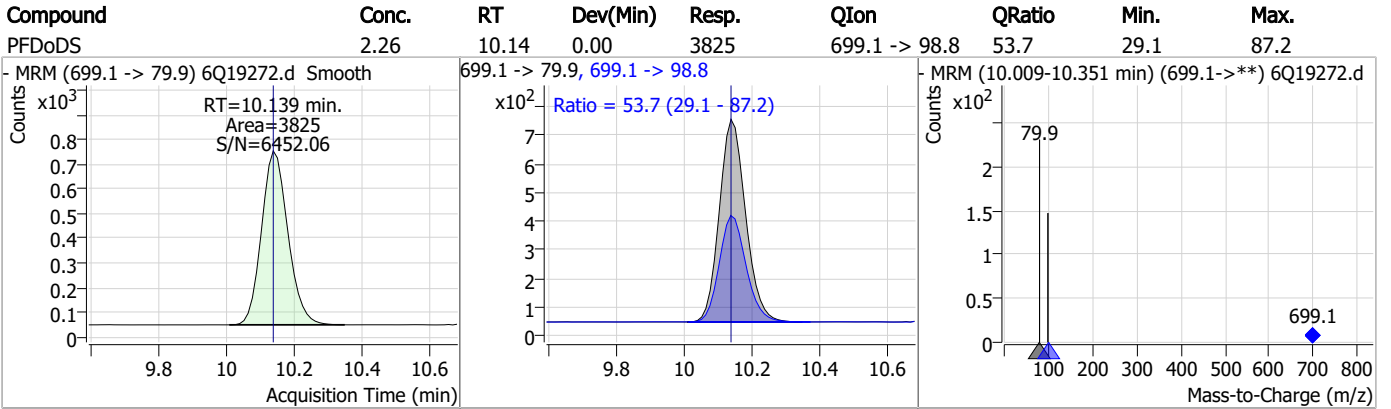
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	10.01	0.01	13684	715.2 -> 670.0	8.4	4.5	13.4



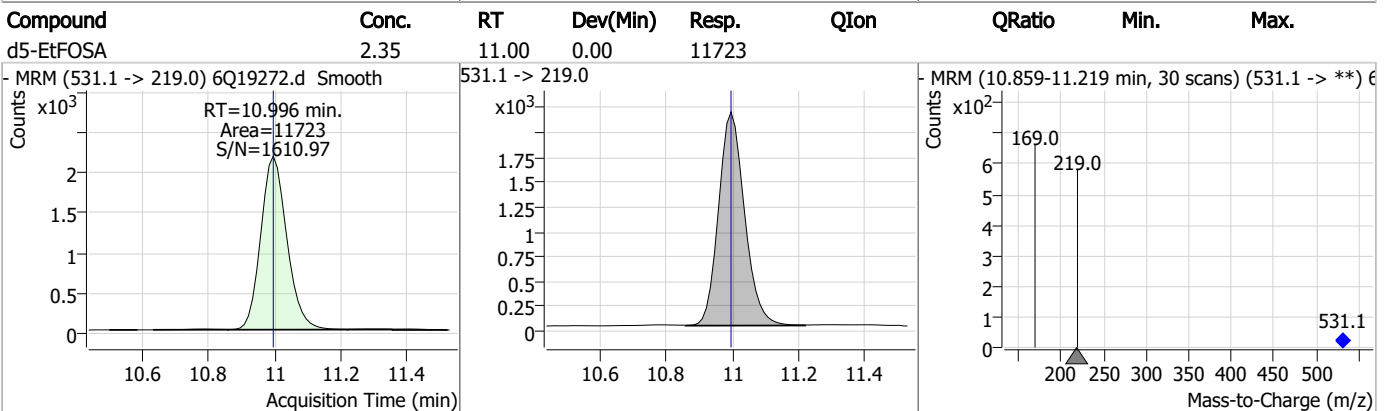
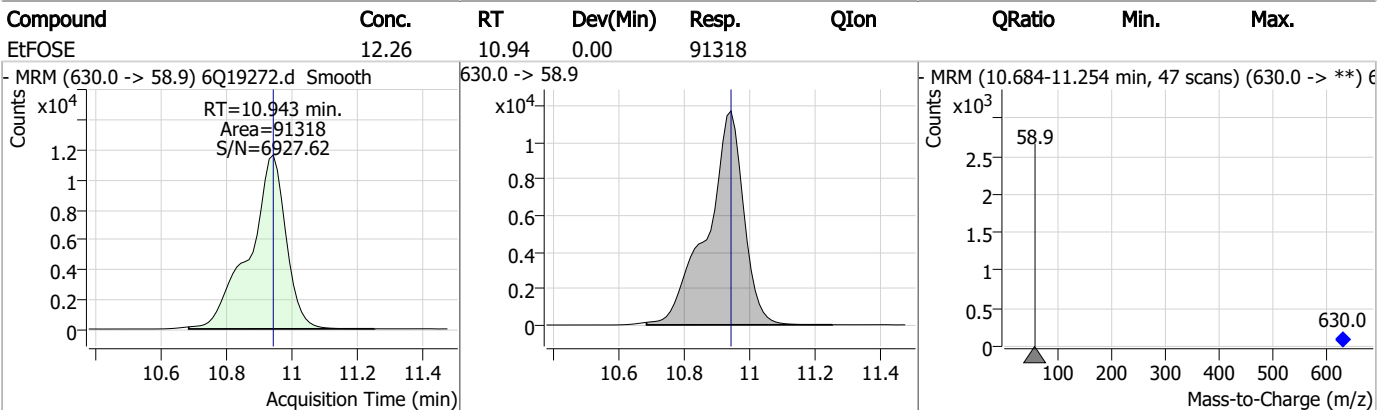
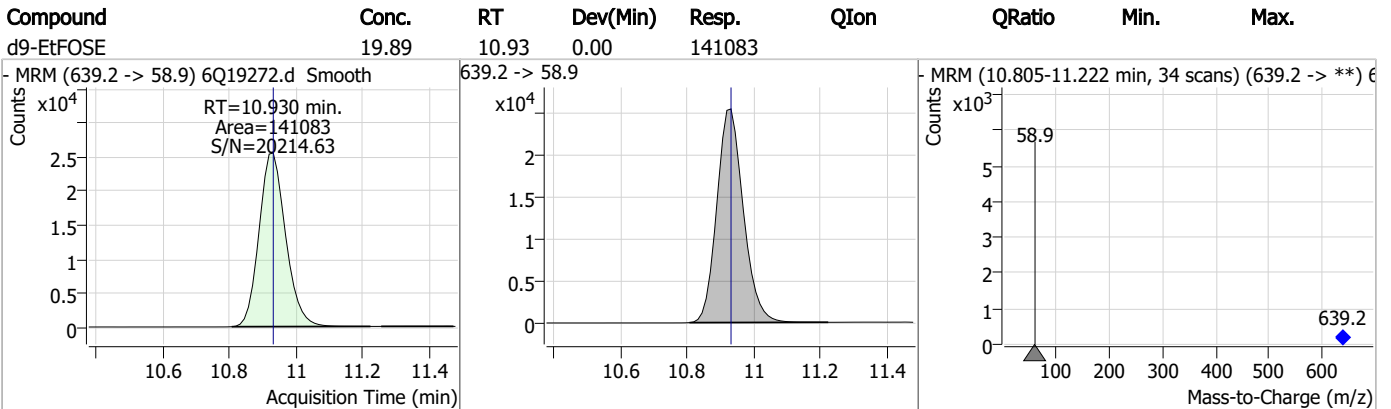
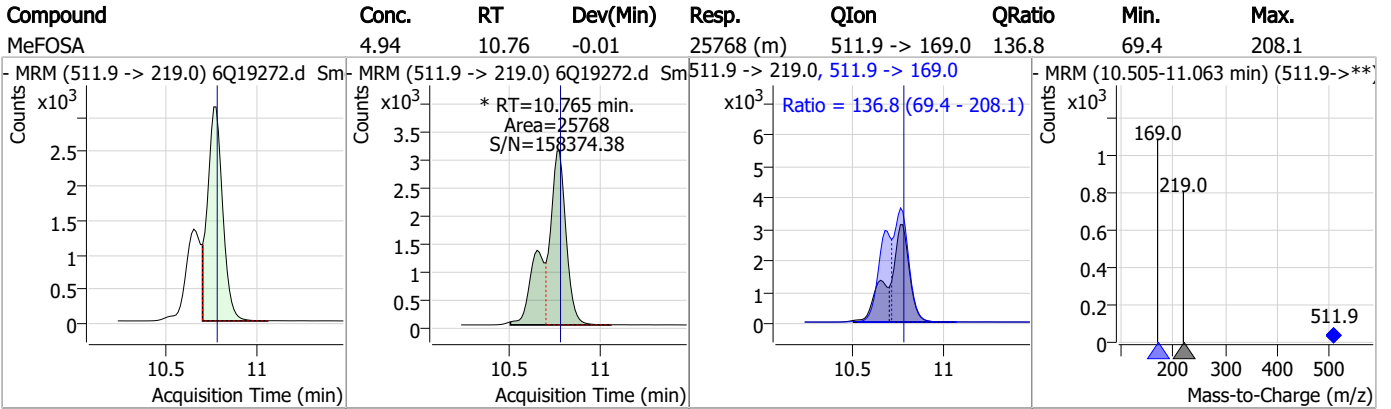
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.41	10.01	0.01	39378	713.1 -> 168.9	8.4	4.5	13.4



Perfluorinated Compounds by LC/MS/MS

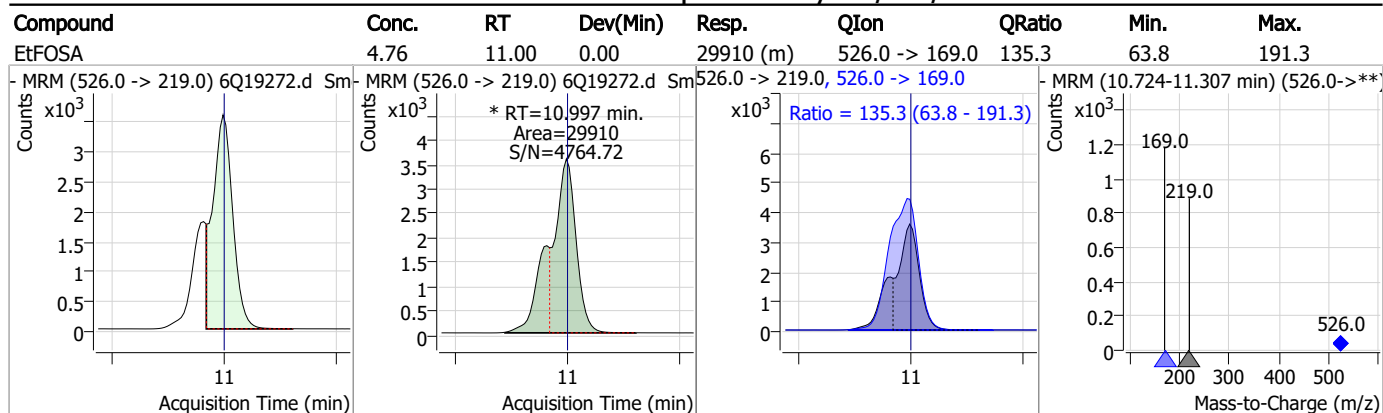


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-CC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19272.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/12/23 23:15 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.56	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		11.00	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q19284.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/13/2023 2:03:39 AM
 Sample Name : cc287-4
 Vial : P1-A5
 DA Method File : 1633_061223_S6Q287.quantmethod.xml
 Batch Name : s6q287.batch.bin
 Sample Information : OP97215,S6Q287,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.097	216.8 -> 171.9	145841	10.00 µg/L	0.012
M5-PFPeA	4.560	268.3 -> 223.0	48607	5.00 µg/L	0.000
M5-PFHxA	5.792	318.0 -> 273.0	58016	2.50 µg/L	0.000
M4-PFHpA	6.707	367.1 -> 322.0	48529	2.50 µg/L	0.000
M8-PFOA	7.352	421.1 -> 376.0	83353	2.50 µg/L	0.012
M9-PFNA	7.895	472.1 -> 427.0	35151	1.25 µg/L	0.013
M6-PFDA	8.400	519.1 -> 474.1	22552	1.25 µg/L	0.012
M7-PFUnDA	8.866	570.0 -> 525.1	29147	1.25 µg/L	0.012
M2-PFDoDA	9.297	615.1 -> 570.0	23788	1.25 µg/L	0.012
M2-PFTeDA	10.012	715.2 -> 670.0	13414	1.25 µg/L	0.012
M8-FOSA	9.674	506.1 -> 77.8	28188	2.50 µg/L	0.000
M3-PFBS	5.746	302.1 -> 79.9	19723	2.50 µg/L	0.000
M3-PFHxS	7.478	402.1 -> 79.9	11297	2.50 µg/L	0.000
M8-PFOS	8.575	507.1 -> 79.9	11286	2.50 µg/L	0.012
M2-4:2FTS	5.454	329.1 -> 80.9	2812	5.00 µg/L	0.012
M2-6:2FTS	7.113	429.1 -> 80.9	4638	5.00 µg/L	0.000
M2-8:2FTS	8.175	529.1 -> 80.9	3737	5.00 µg/L	0.012
M3-MeFOSAA	8.420	573.2 -> 419.0	27741	5.00 µg/L	0.012
M3-HFPO-DA	6.181	286.9 -> 168.9	34010	10.00 µg/L	0.012
M5-EtFOSAA	8.628	589.2 -> 419.0	24209	5.00 µg/L	0.012
M7-MeFOSE	10.685	623.2 -> 58.9	127284	25.00 µg/L	0.000
M9-EtFOSE	10.930	639.2 -> 58.9	147527	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	12432	2.50 µg/L	0.000
M3-MeFOSA	10.775	515.0 -> 219.0	11549	2.50 µg/L	0.000
13C4-PFOS	8.576	502.8 -> 79.9	15818	2.50 µg/L	0.012
13C3-PFBA	3.089	216.0 -> 172.0	62519	5.00 µg/L	0.000
18O2-PFHxS	7.490	403.0 -> 83.9	9143	2.50 µg/L	0.012
13C4-PFOA	7.352	417.1 -> 372.0	83736	2.50 µg/L	0.012
13C2-PFDA	8.388	515.1 -> 470.1	28601	1.25 µg/L	0.000
13C5-PFNA	7.895	468.0 -> 423.0	45270	1.25 µg/L	0.013
13C2-PFHxA	5.792	315.1 -> 270.0	49285	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.454	329.1 -> 80.9	2812	4.99 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-6:2FTS	7.113	429.1 -> 80.9	4638	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C2-8:2FTS	8.175	529.1 -> 80.9	3737	4.61 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.2%		
13C2-PFDoDA	9.297	615.1 -> 570.0	23788	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFTeDA	10.012	715.2 -> 670.0	13414	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C3-PFBS	5.746	302.1 -> 79.9	19723	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C3-PFHxS	7.478	402.1 -> 79.9	11297	2.33 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C4-PFBA	3.097	216.8 -> 171.9	145841	9.94 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.707	367.1 -> 322.0	48529	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C5-PFHxA	5.792	318.0 -> 273.0	58016	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C5-PFPeA	4.560	268.3 -> 223.0	48607	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C6-PFDA	8.400	519.1 -> 474.1	22552	1.43 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C7-PFUnDA	8.866	570.0 -> 525.1	29147	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-FOSA	9.674	506.1 -> 77.8	28188	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	7.352	421.1 -> 376.0	83353	2.67 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C8-PFOS	8.575	507.1 -> 79.9	11286	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C9-PFNA	7.895	472.1 -> 427.0	35151	1.27 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSAA	8.420	573.2 -> 419.0	27741	4.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C3-HFPO-DA	6.181	286.9 -> 168.9	34010	10.07 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSA	10.775	515.0 -> 219.0	11549	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.9%	
d5-EtFOSAA	8.628	589.2 -> 419.0	24209	4.84 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d7-MeFOSE	10.685	623.2 -> 58.9	127284	21.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
d9-EtFOSE	10.930	639.2 -> 58.9	147527	20.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.4%	
d5-EtFOSA	10.996	531.1 -> 219.0	12432	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
Target Compounds					QValue
4:2FTS	5.455	327.1 -> 307.0	47222	9.69 µg/L	99
		327.1 -> 80.9	17239		
6:2FTS	7.113	427.1 -> 407.0	49196	8.78 µg/L	92
		427.1 -> 80.9	15603		
8:2FTS	8.176	527.1 -> 507.0	26427	10.63 µg/L	97
		527.1 -> 80.8	9863		
EtFOSAA	8.629	584.2 -> 419.1	10157	2.53 µg/L	m 95
		584.2 -> 526.0	4774		
FOSA	9.677	498.1 -> 77.9	25053	2.17 µg/L	98
		498.1 -> 478.0	906		
MeFOSAA	8.421	570.1 -> 419.0	18603	2.76 µg/L	m 100
		570.1 -> 483.0	3682		
PFBA	3.093	212.8 -> 168.9	56262	9.67 µg/L	100
PFBS	5.747	298.7 -> 79.9	18290	2.11 µg/L	96
		298.7 -> 98.8	6728		
PFDA	8.400	512.9 -> 469.0	72191	2.14 µg/L	99
		512.9 -> 219.0	11006		
PFDODA	9.298	613.1 -> 569.0	49780	2.55 µg/L	98
		613.1 -> 319.0	7907		
PFDS	9.462	599.0 -> 79.9	8276	2.43 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3607			
PFHpA	6.708	363.1 -> 319.0	64959	2.50	µg/L	96
		363.1 -> 169.0	9284			
PFHpS	8.059	449.0 -> 79.9	14883	2.19	µg/L	97
		449.0 -> 98.9	7551			
PFHxA	5.795	313.0 -> 269.0	49069	2.11	µg/L	99
		313.0 -> 118.9	2542			
PFHxS	7.479	398.7 -> 79.9	15121	2.23	µg/L	m 95
		398.7 -> 98.9	7465			
PFNA	7.896	463.0 -> 419.0	78224	2.43	µg/L	100
		463.0 -> 219.0	13892			
PFNS	9.053	548.8 -> 79.9	12948	2.17	µg/L	86
		548.8 -> 98.9	7553			
PFOA	7.353	413.0 -> 369.0	98468	2.30	µg/L	99
		413.0 -> 169.0	16854			
PFOS	8.576	498.9 -> 79.9	14078	2.12	µg/L	m 97
		498.9 -> 98.8	7085			
PFPeA	4.563	263.0 -> 219.0	67306	4.71	µg/L	100
PFPeS	6.785	349.1 -> 79.9	15353	2.46	µg/L	97
		349.1 -> 98.9	6773			
PFTeDA	10.013	713.1 -> 669.0	41995	2.62	µg/L	99
		713.1 -> 168.9	3555			
PFTrDA	9.681	663.0 -> 619.0	48796	2.51	µg/L	96
		663.0 -> 168.9	5566			
PFUnDA	8.866	563.1 -> 519.0	56804	2.66	µg/L	99
		563.1 -> 269.1	9112			
11CI-PF3OUdS	9.733	630.9 -> 450.9	69422	4.33	µg/L	98
		632.9 -> 452.9	21521			
9CI-PF3ONS	8.918	530.8 -> 351.0	116206	4.34	µg/L	99
		532.8 -> 353.0	34186			
ADONA	6.959	376.9 -> 250.9	242498	4.21	µg/L	98
		376.9 -> 84.8	69941			
HFPO-DA	6.182	284.9 -> 168.9	17790	4.82	µg/L	99
		284.9 -> 184.9	2023			
3:3FTCA	3.958	241.0 -> 177.0	11283	11.54	µg/L	99
		241.0 -> 117.0	1473			
5:3FTCA	6.374	341.0 -> 237.1	248058	55.03	µg/L	97
		341.0 -> 217.0	179737			
7:3FTCA	7.748	441.0 -> 316.9	173509	53.79	µg/L	96
		441.0 -> 336.9	390497			
EtFOSA	10.997	526.0 -> 219.0	30615	4.60	µg/L	97
		526.0 -> 169.0	40099			
EtFOSE	10.943	630.0 -> 58.9	87023	11.17	µg/L	100
MeFOSA	10.777	511.9 -> 219.0	25697	5.08	µg/L	m 95
		511.9 -> 169.0	37140			
MeFOSE	10.709	616.1 -> 58.9	63327	11.37	µg/L	m 100
PFDoDS	10.139	699.1 -> 79.9	3832	2.26	µg/L	97
		699.1 -> 98.8	2129			
NFDHA	5.673	295.0 -> 201.0	12106	4.11	µg/L	96
		295.0 -> 84.9	3231			
PFMBA	4.988	279.0 -> 85.1	47676	4.65	µg/L	100
PFMPA	3.667	229.0 -> 84.9	37593	4.72	µg/L	100
PFEESA	6.301	314.8 -> 134.9	121664	4.25	µg/L	99
		314.8 -> 82.9	4487			

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



7.7.36
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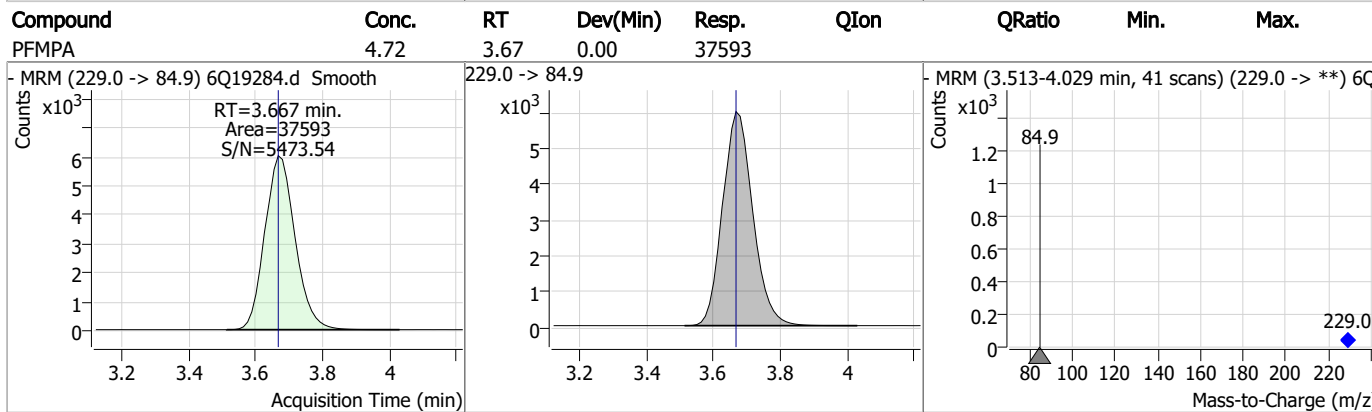
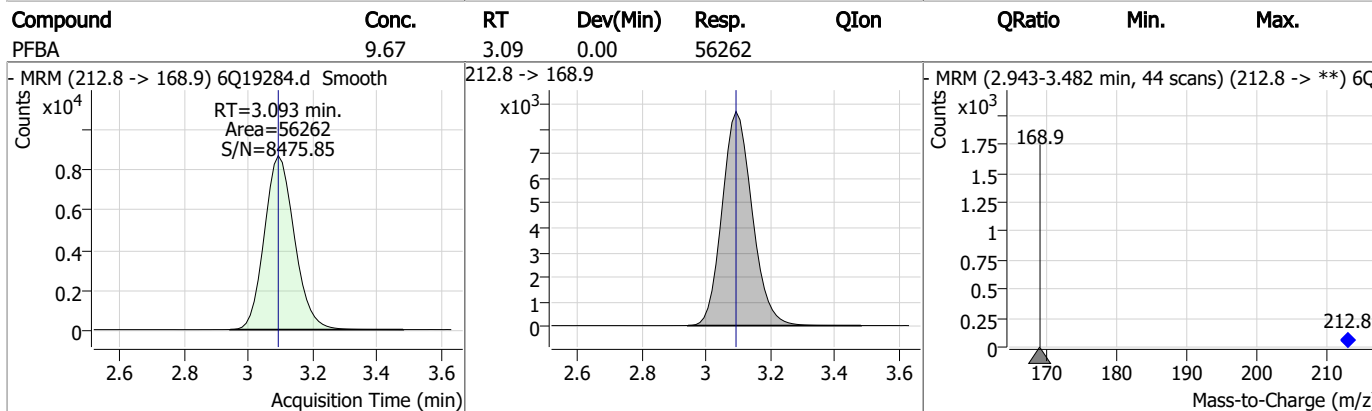
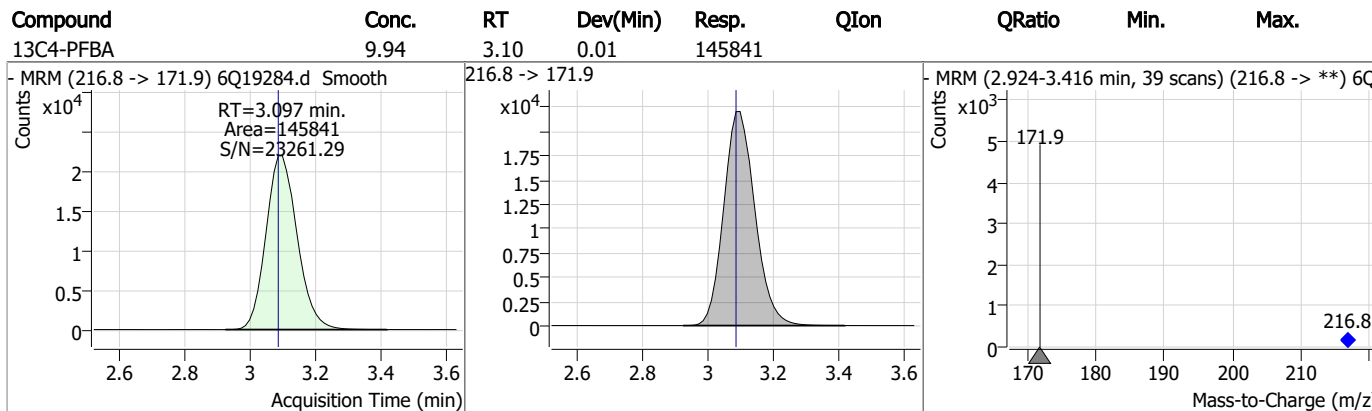
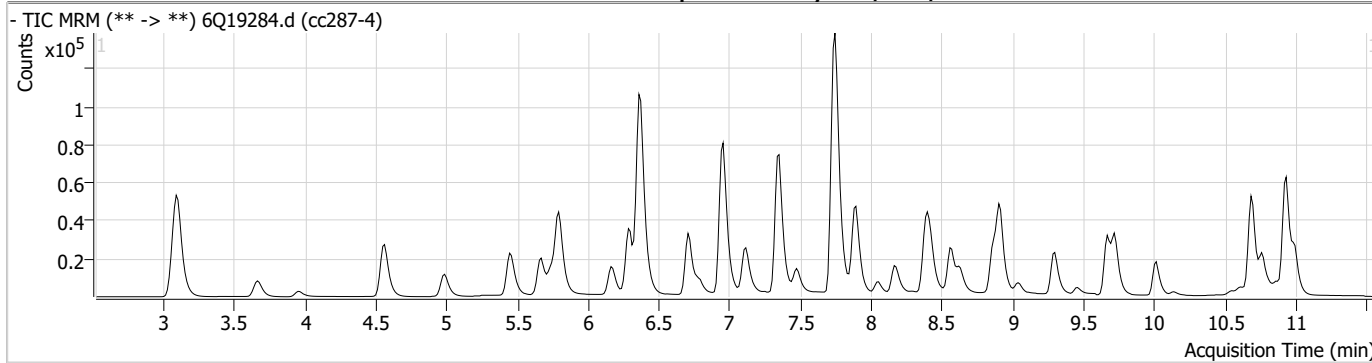
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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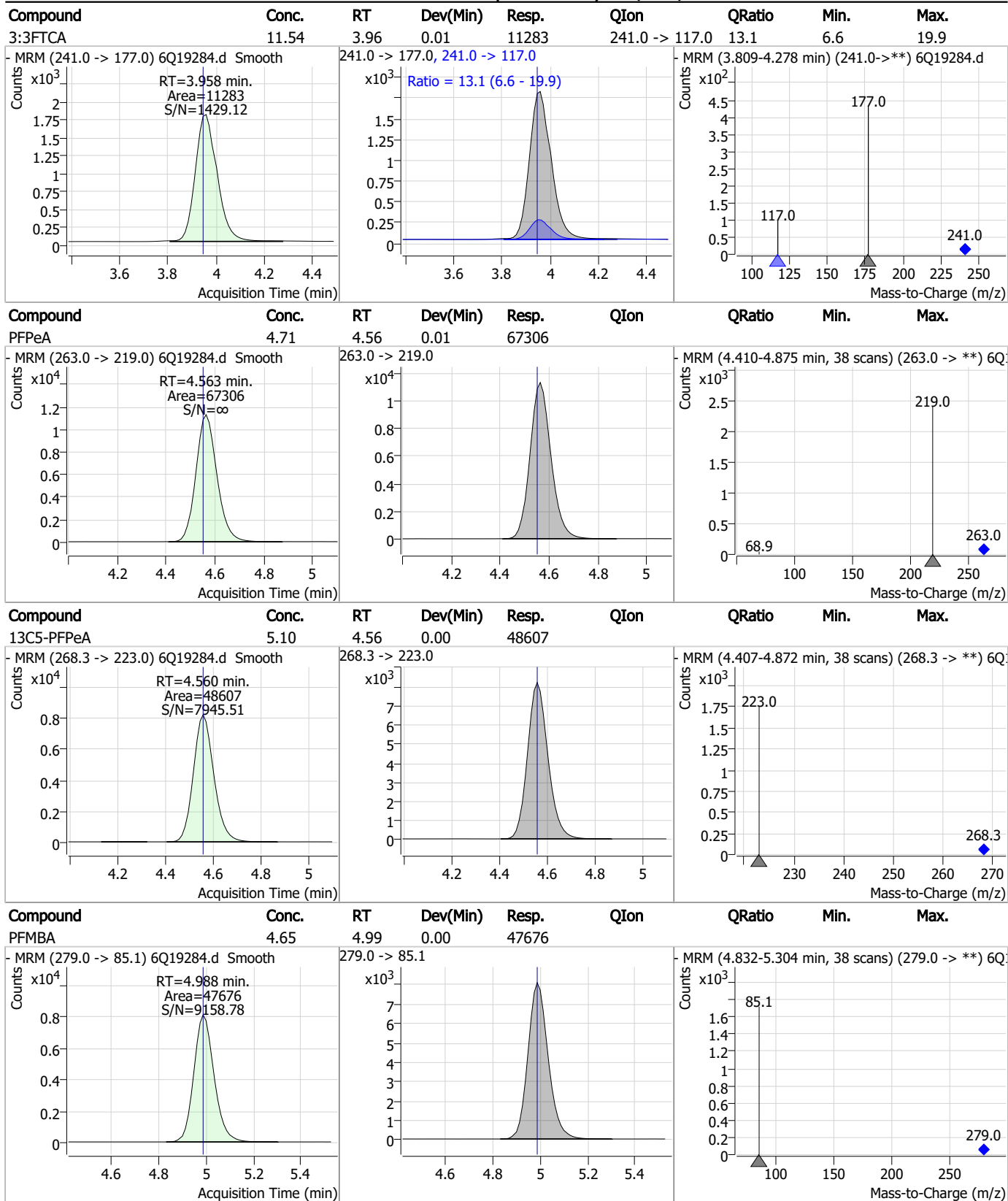
7.7.36

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Perfluorinated Compounds by LC/MS/MS

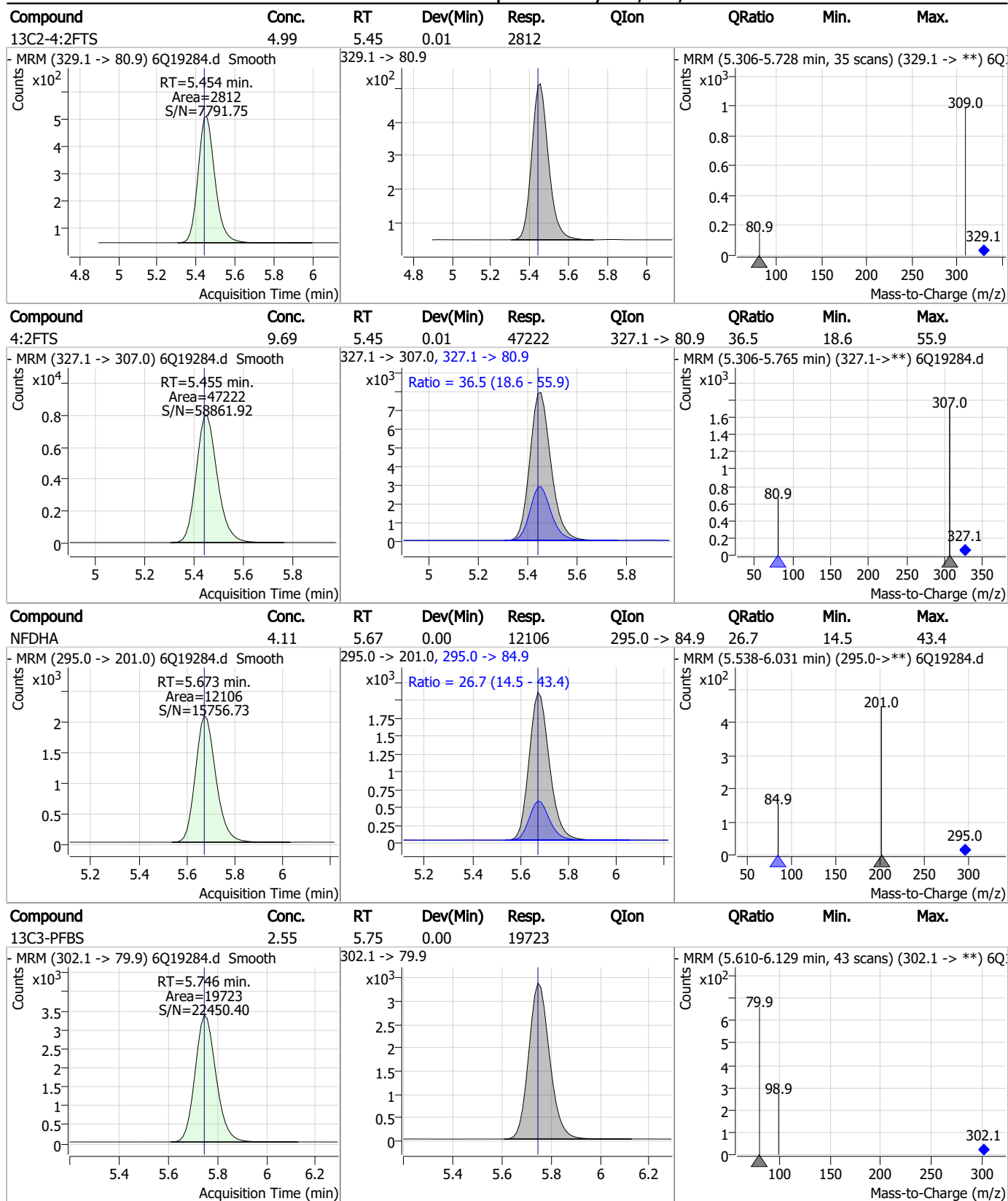


Perfluorinated Compounds by LC/MS/MS



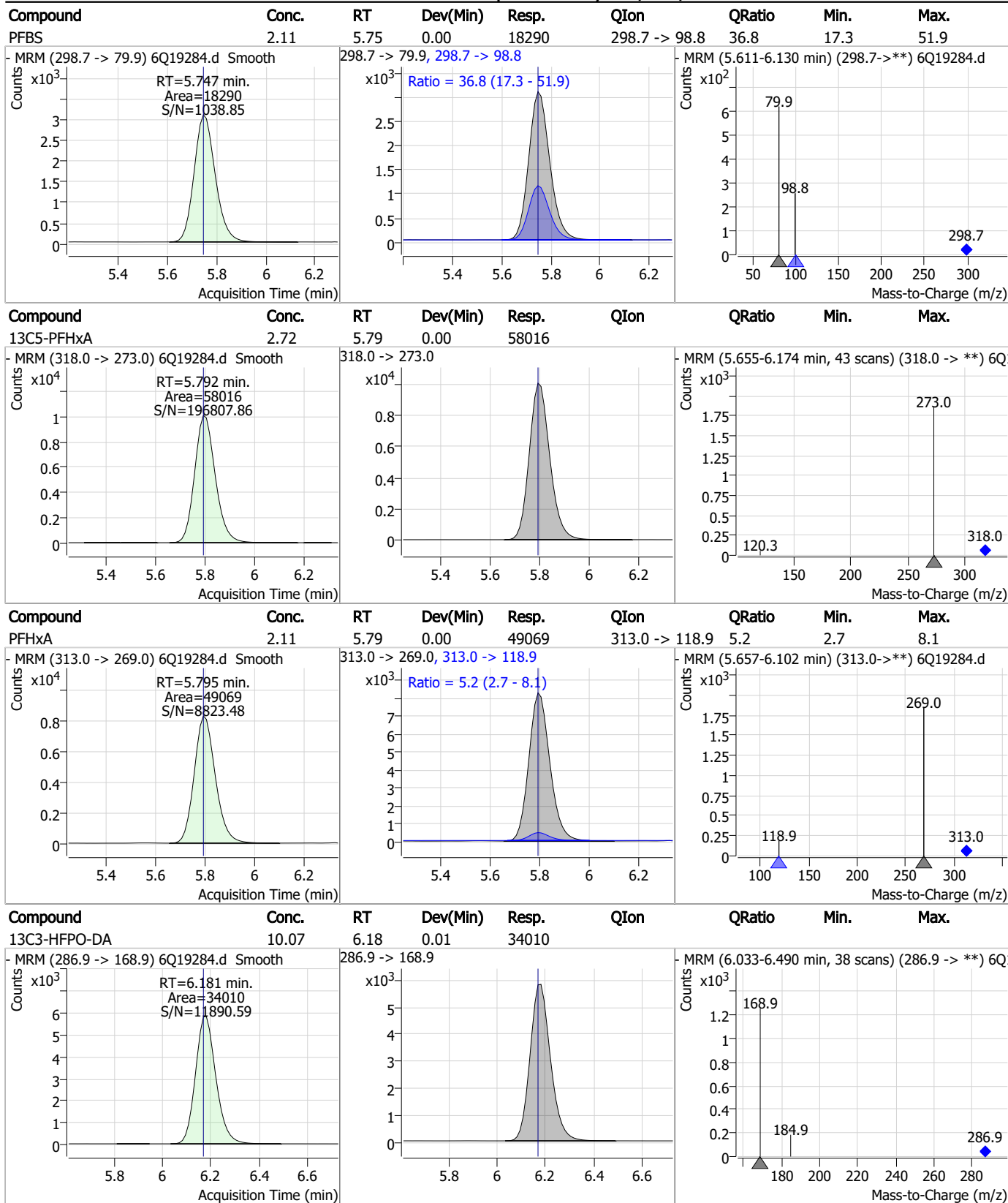
7.7.36
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Perfluorinated Compounds by LC/MS/MS



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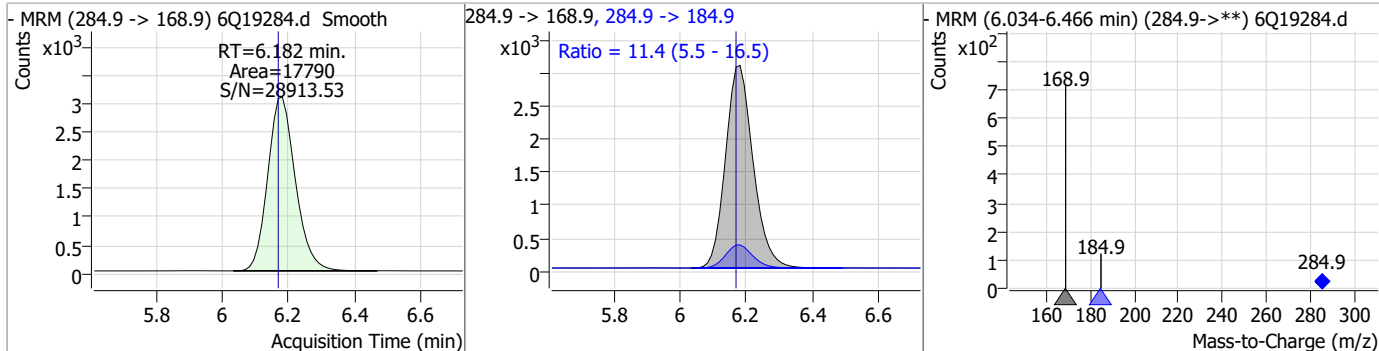
Perfluorinated Compounds by LC/MS/MS



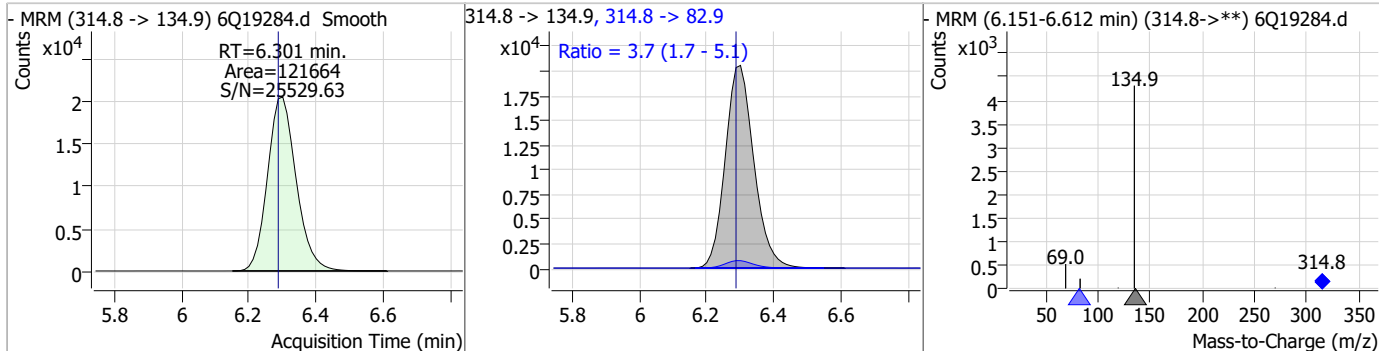
7.7.36
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Perfluorinated Compounds by LC/MS/MS

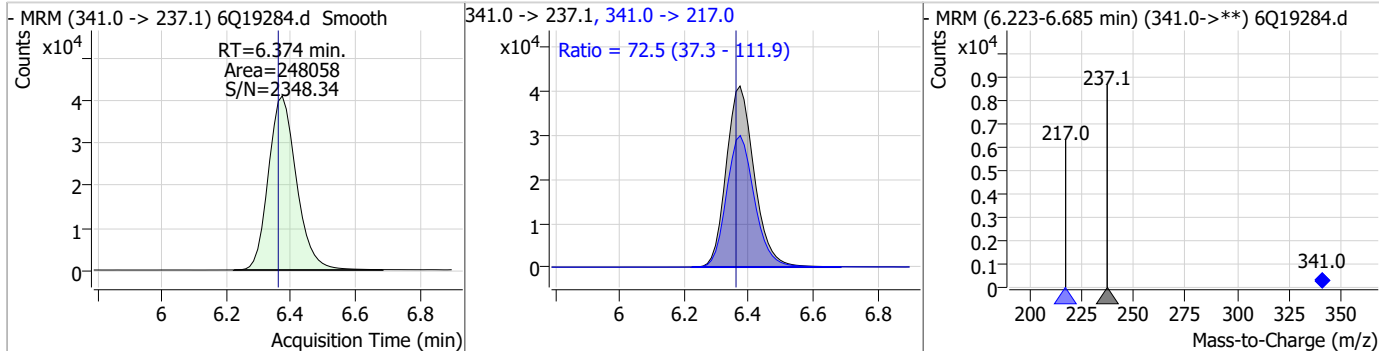
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.82	6.18	0.01	17790	284.9 -> 184.9	11.4	5.5	16.5



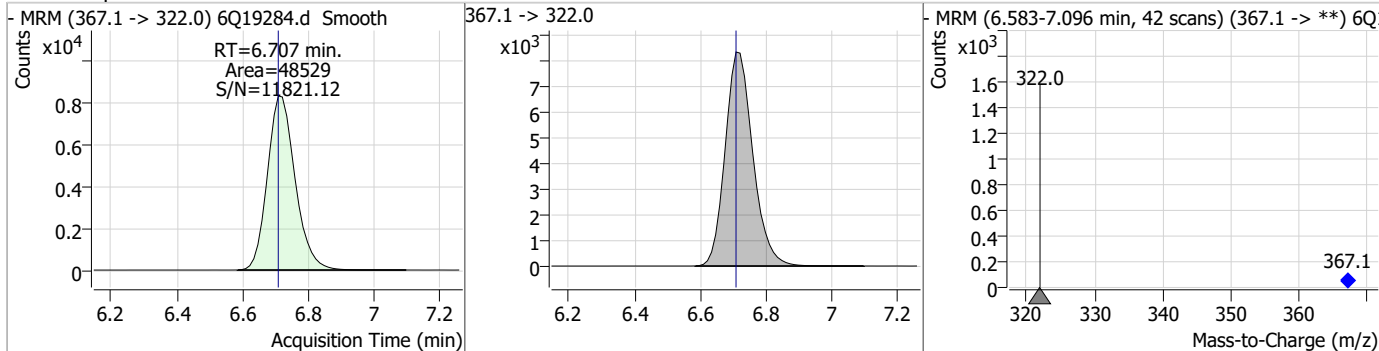
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.25	6.30	0.01	121664	314.8 -> 82.9	3.7	1.7	5.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	55.03	6.37	0.01	248058	341.0 -> 217.0	72.5	37.3	111.9

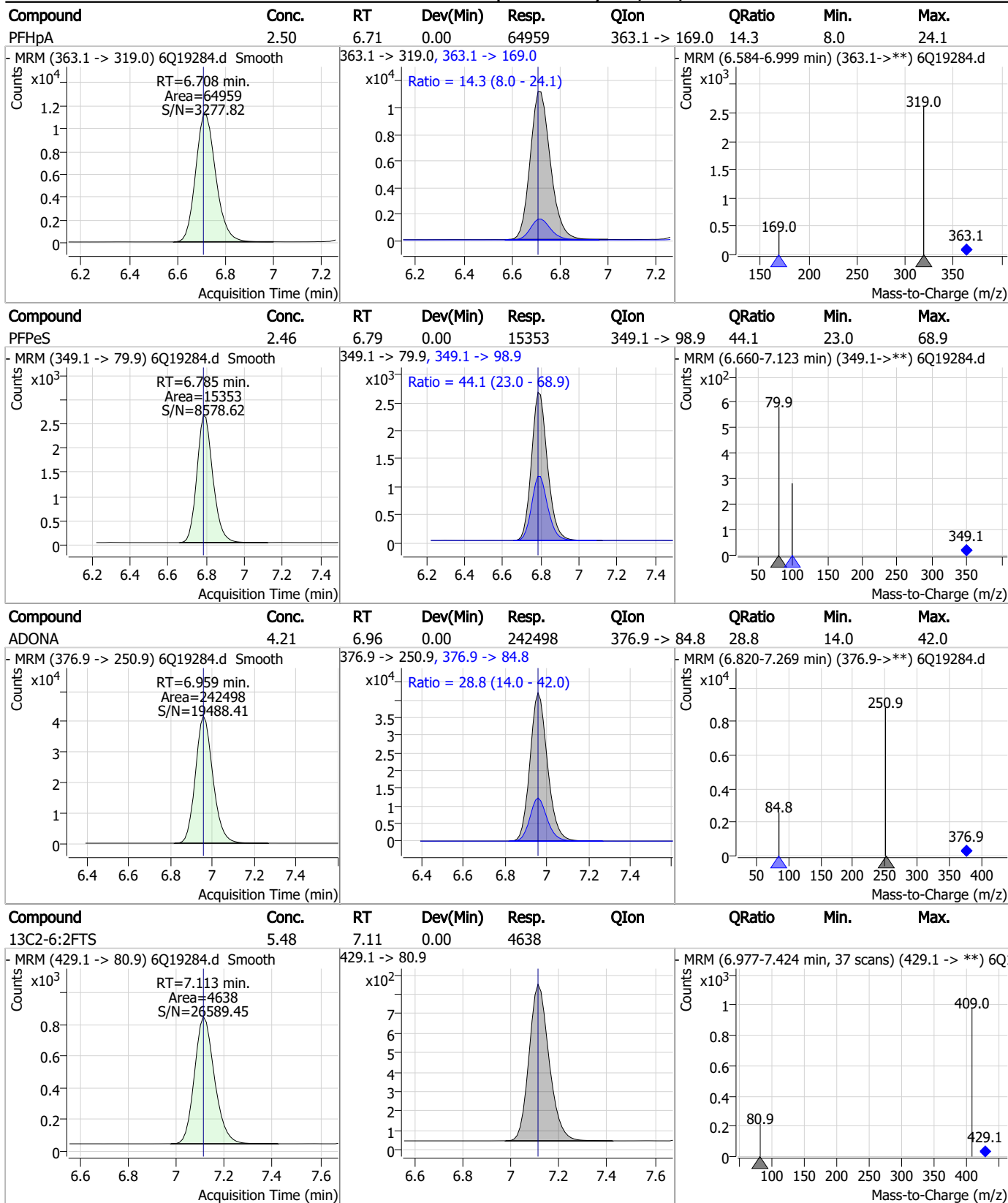


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.71	0.00	48529	367.1 -> 322.0			



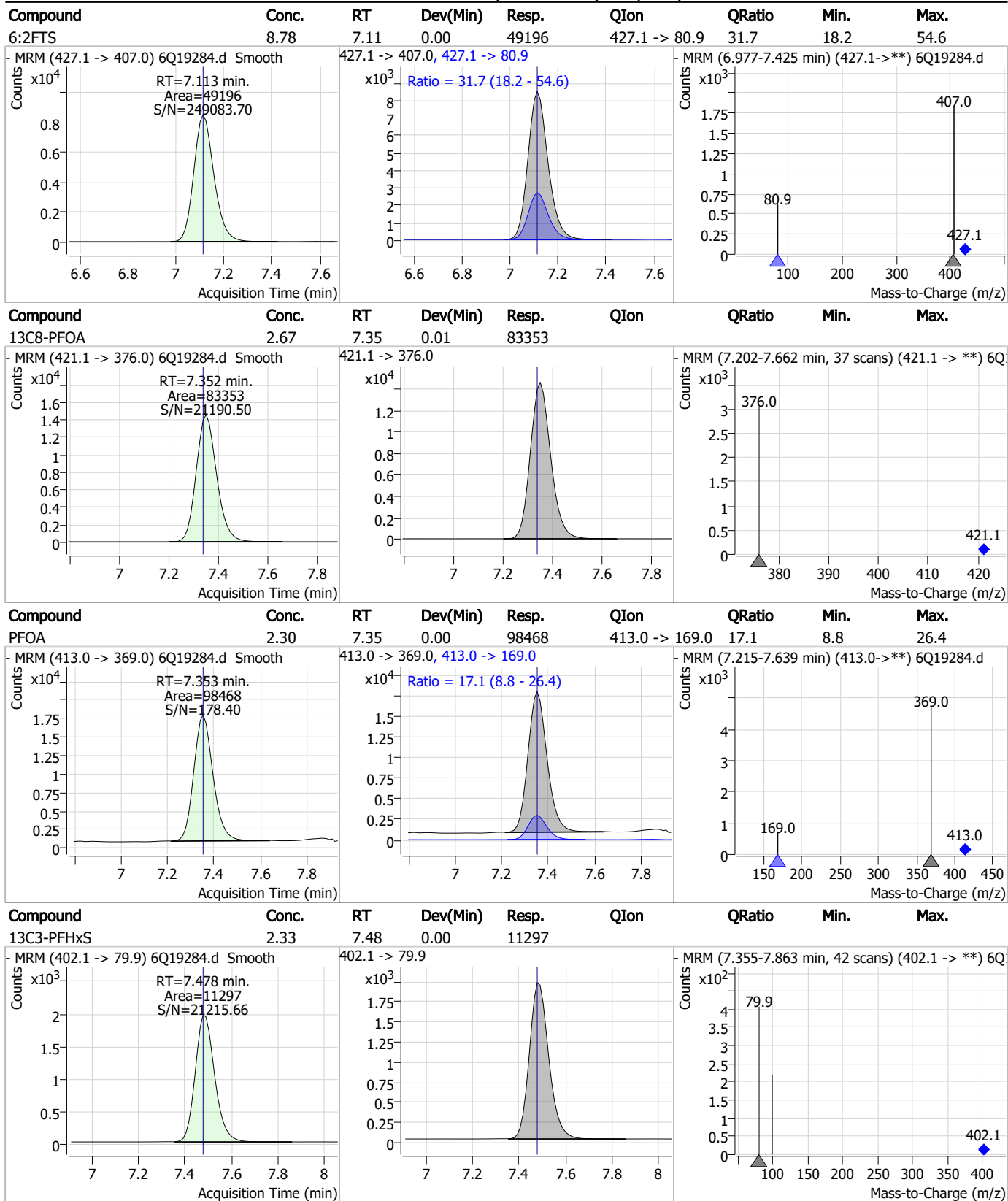
7.7.36
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Perfluorinated Compounds by LC/MS/MS



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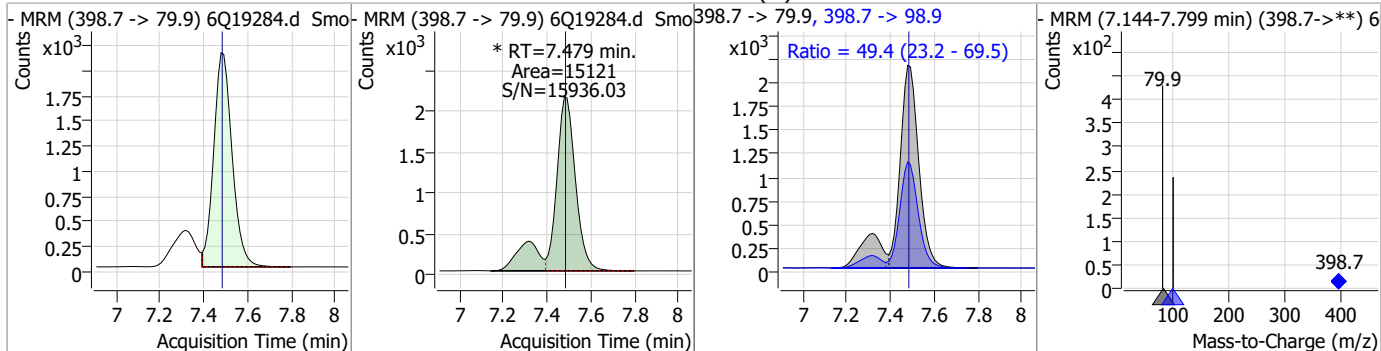
Perfluorinated Compounds by LC/MS/MS



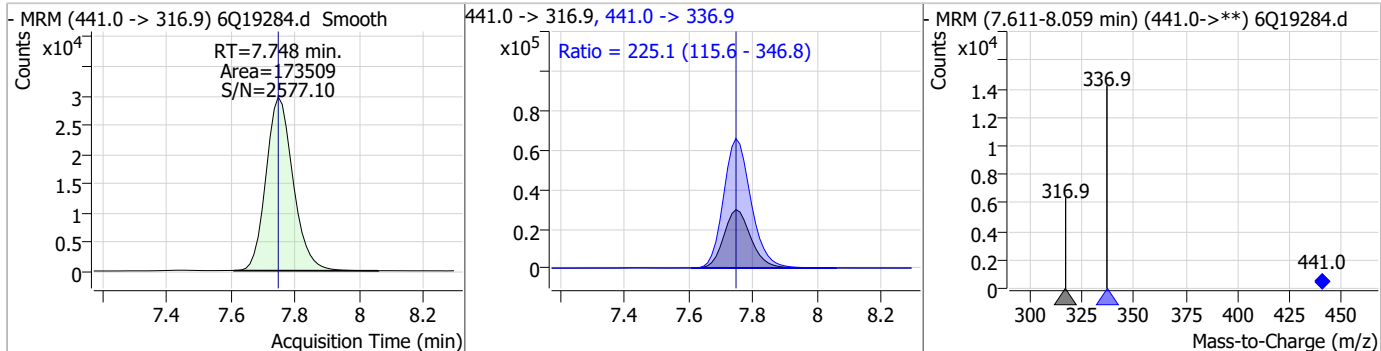
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Perfluorinated Compounds by LC/MS/MS

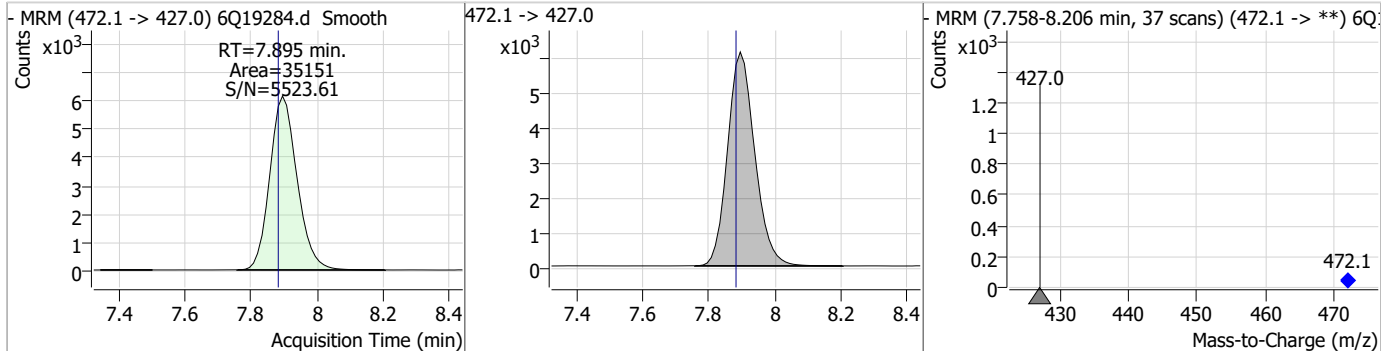
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.23	7.48	0.00	15121 (m)	398.7 -> 98.9	49.4	23.2	69.5



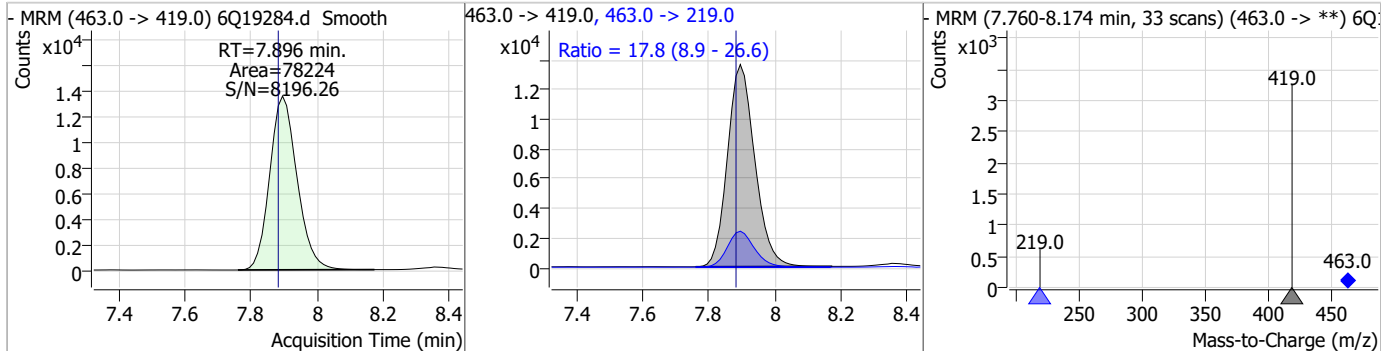
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	53.79	7.75	0.00	173509	441.0 -> 336.9	225.1	115.6	346.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.89	0.01	35151	472.1 -> 427.0			

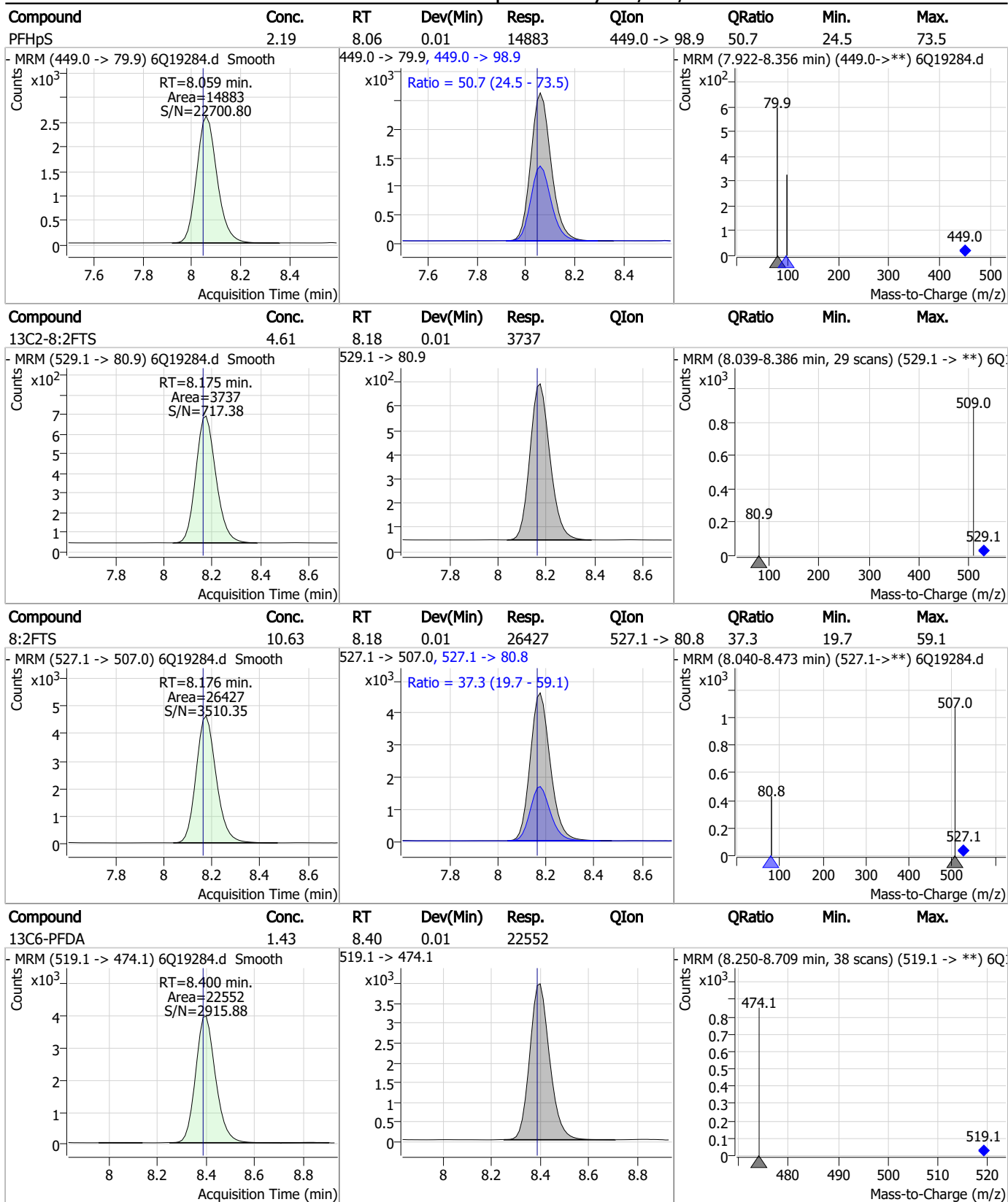


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.43	7.90	0.01	78224	463.0 -> 219.0	17.8	8.9	26.6



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Perfluorinated Compounds by LC/MS/MS

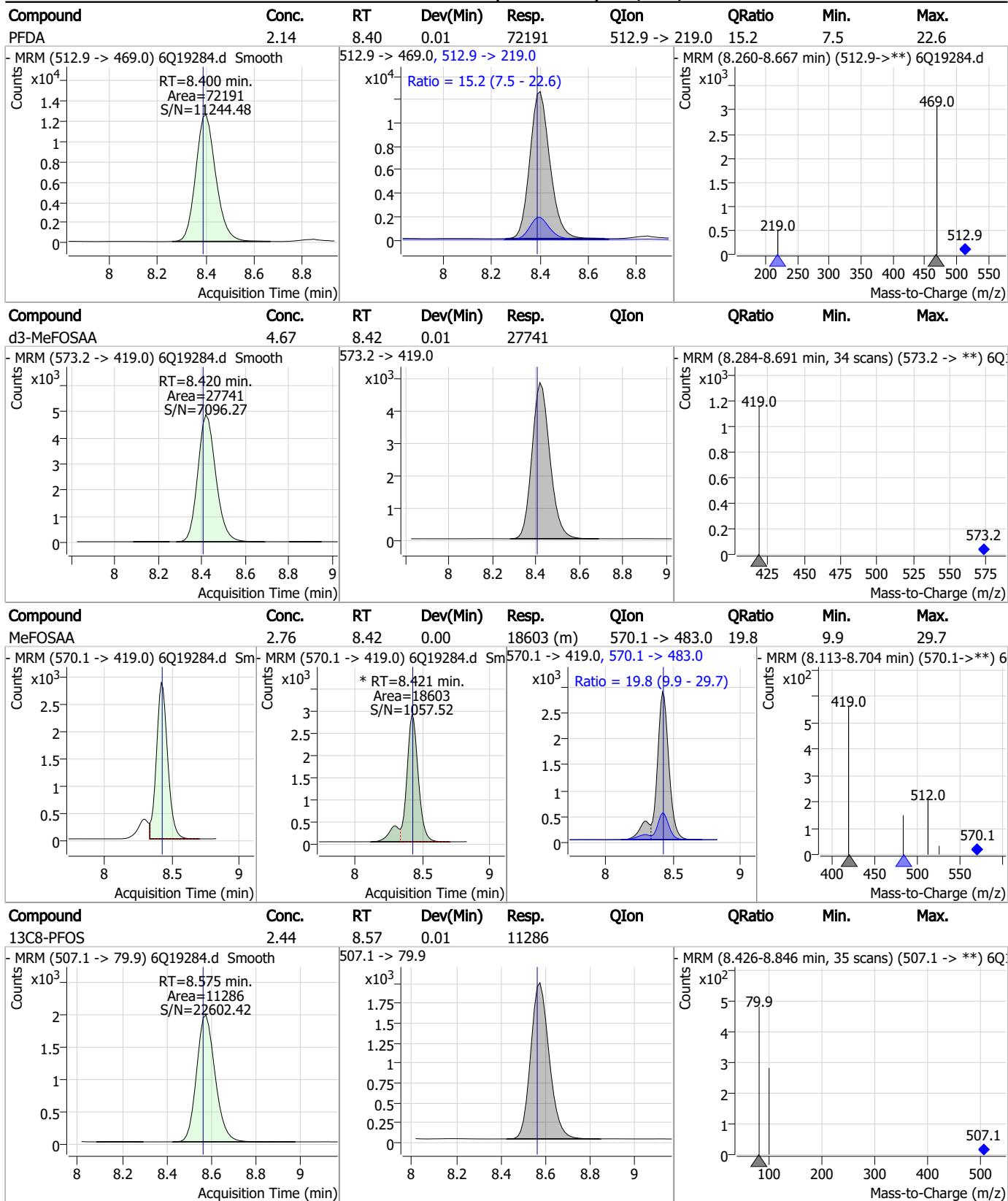


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Perfluorinated Compounds by LC/MS/MS

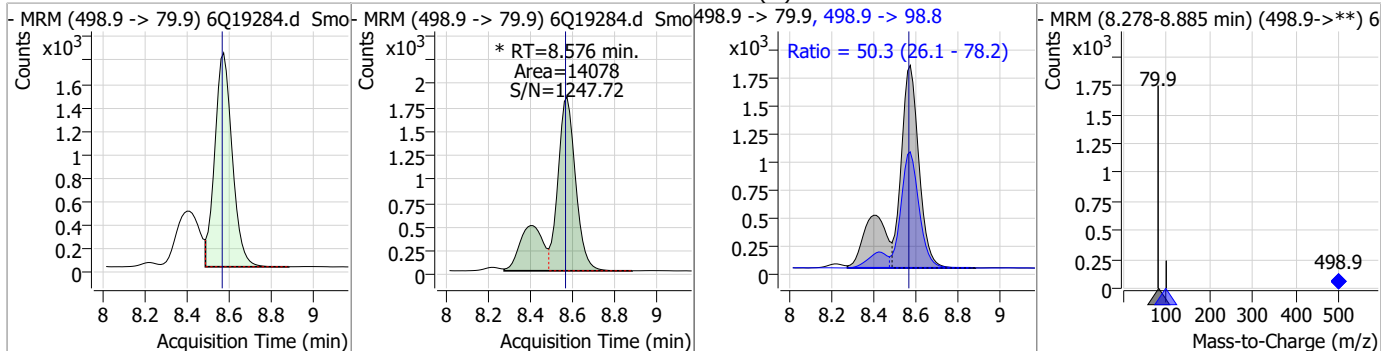


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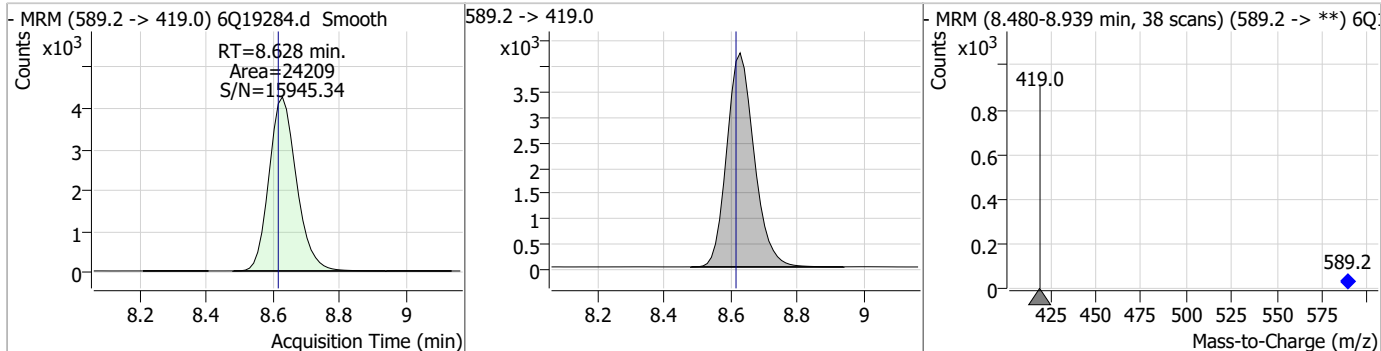
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Perfluorinated Compounds by LC/MS/MS

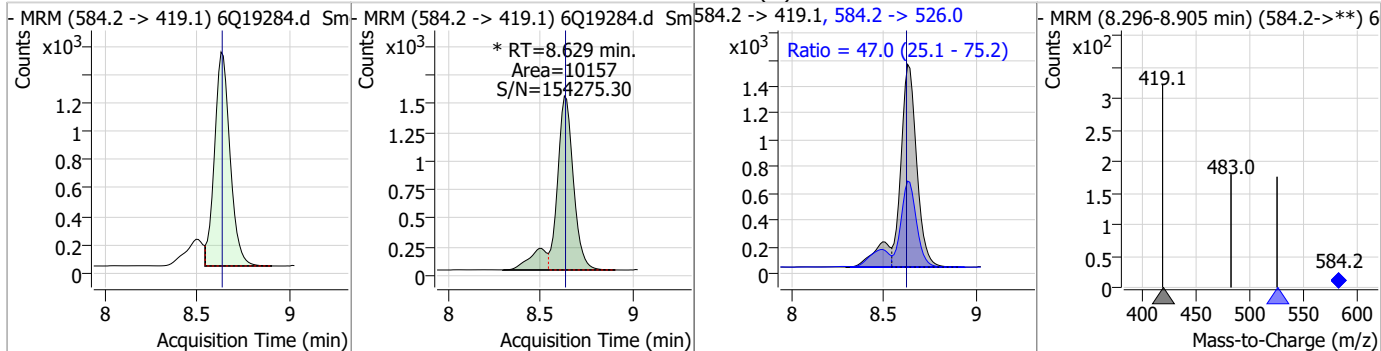
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.12	8.58	0.01	14078 (m)	498.9 -> 98.8	50.3	26.1	78.2



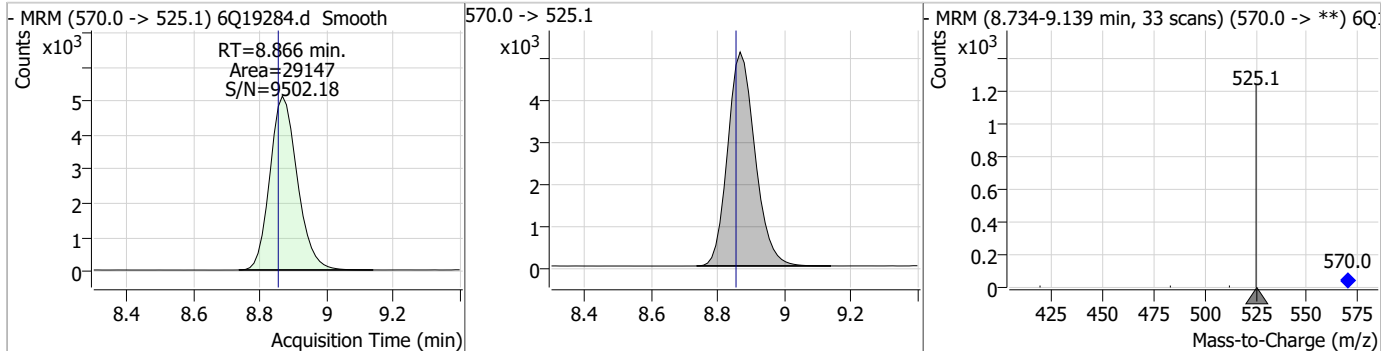
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.84	8.63	0.01	24209				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.53	8.63	0.00	10157 (m)	584.2 -> 526.0	47.0	25.1	75.2

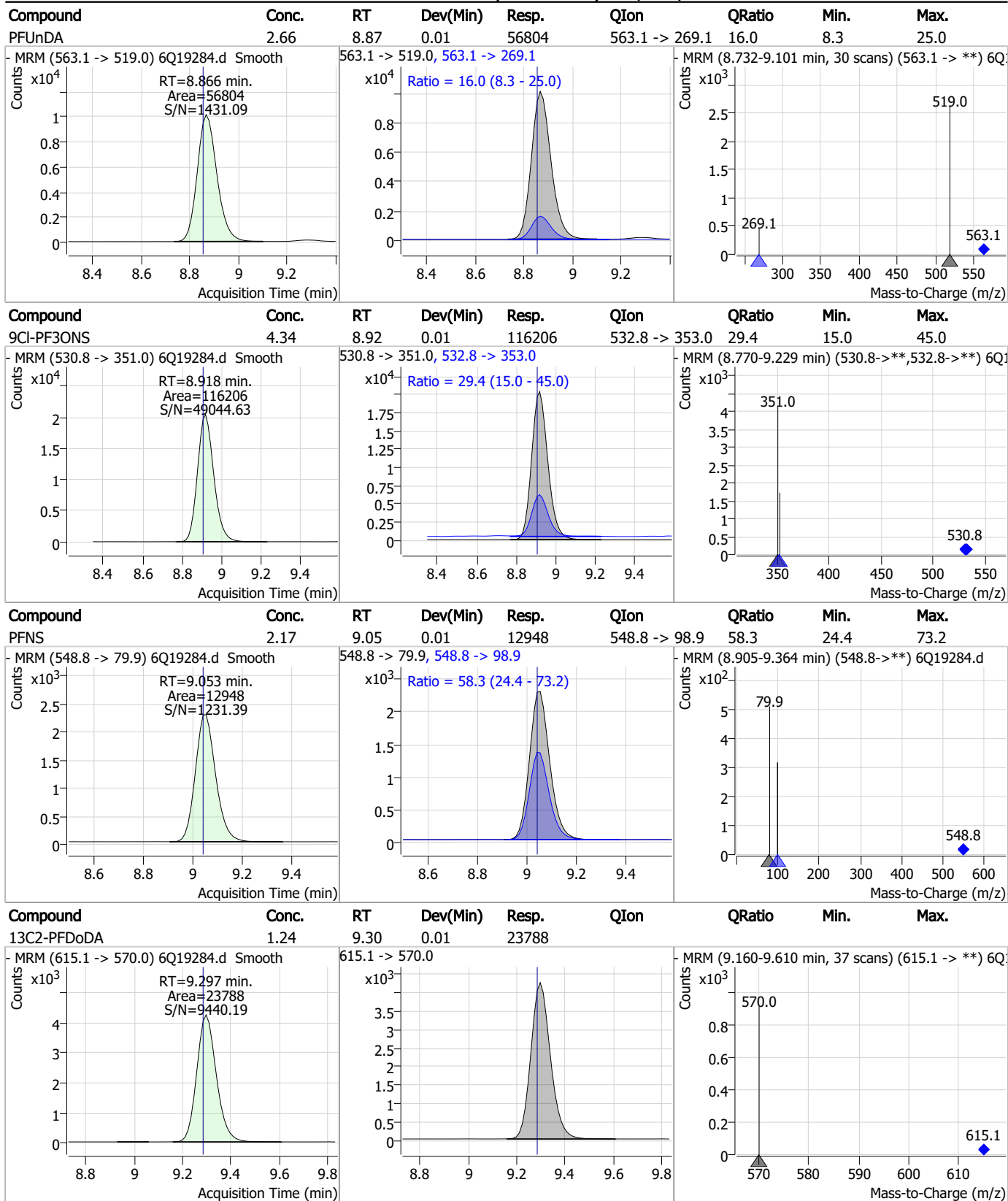


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.87	0.01	29147				



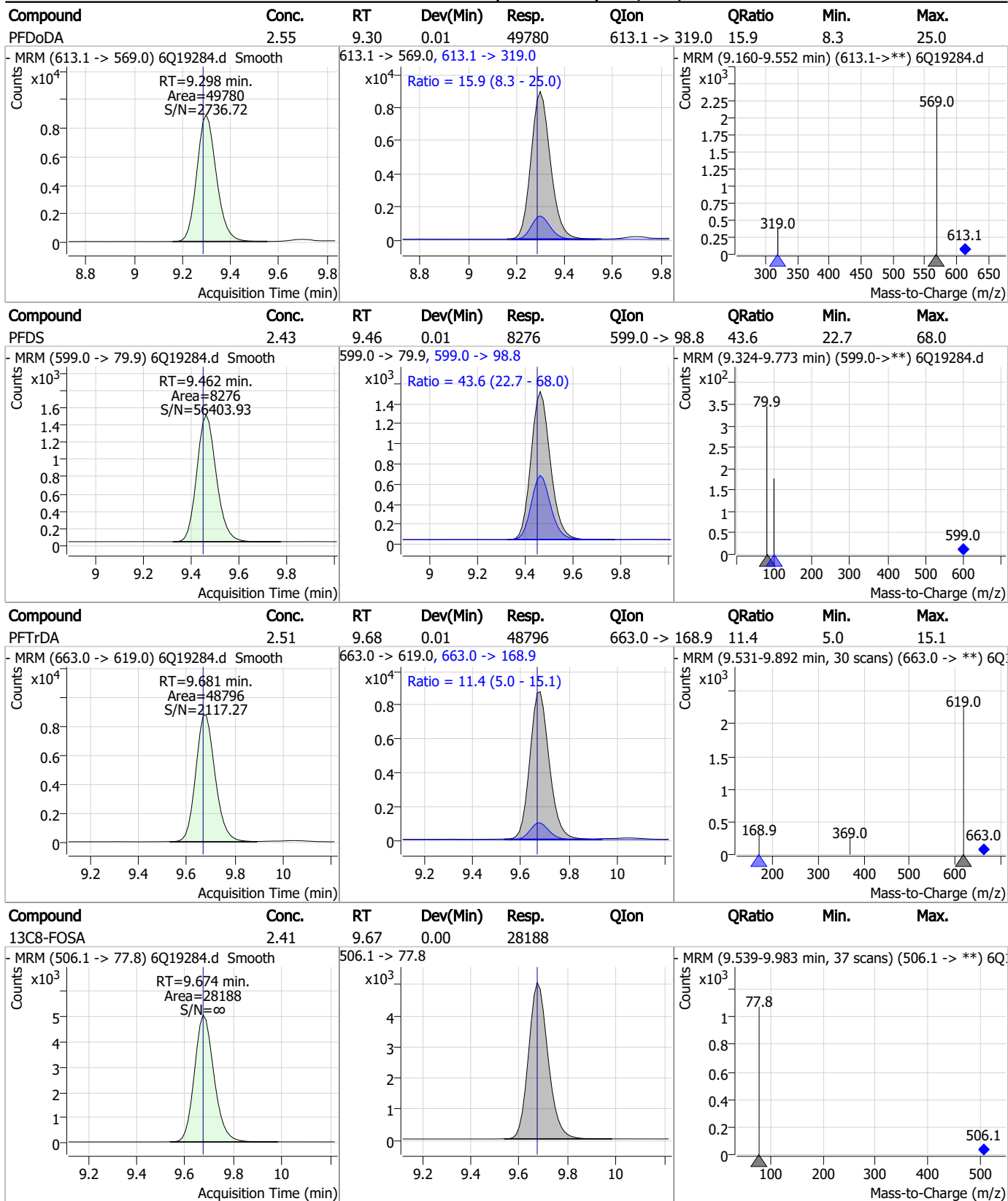
7.7.36
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Perfluorinated Compounds by LC/MS/MS



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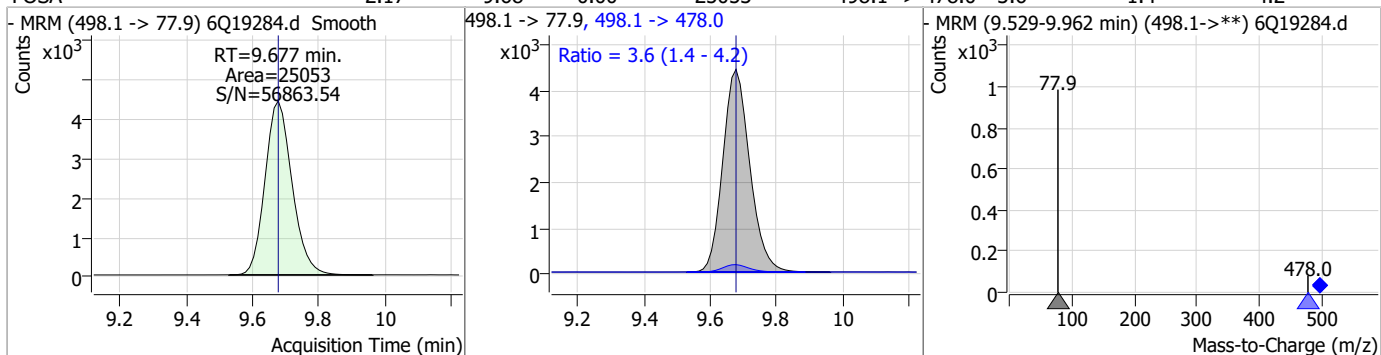
Perfluorinated Compounds by LC/MS/MS



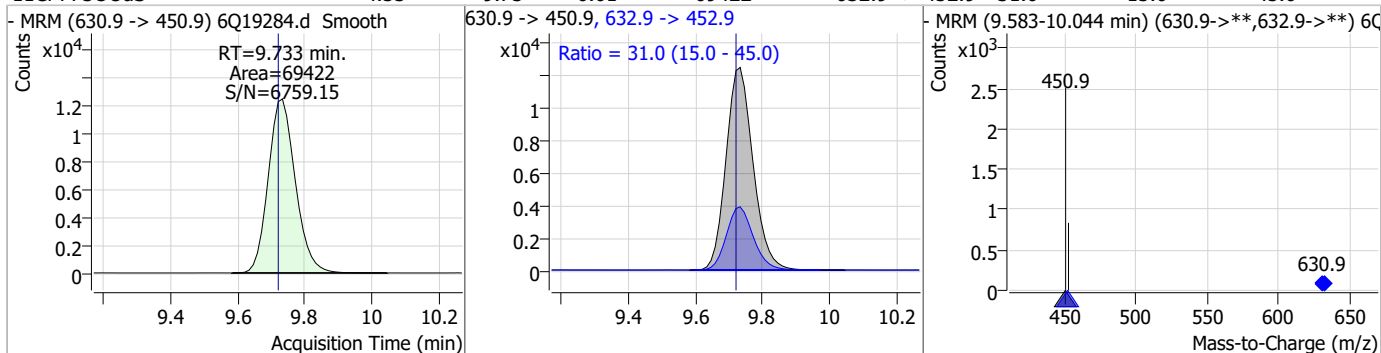
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Perfluorinated Compounds by LC/MS/MS

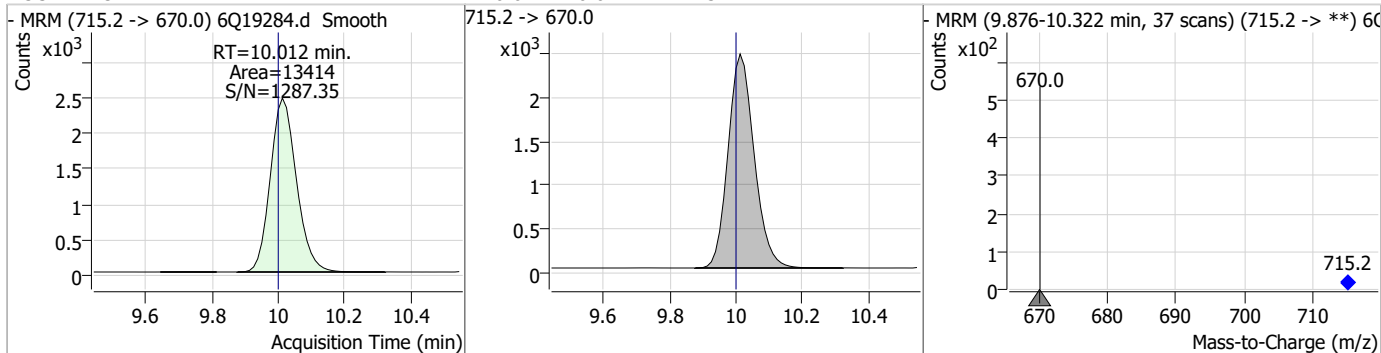
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.17	9.68	0.00	25053	498.1 -> 478.0	3.6	1.4	4.2



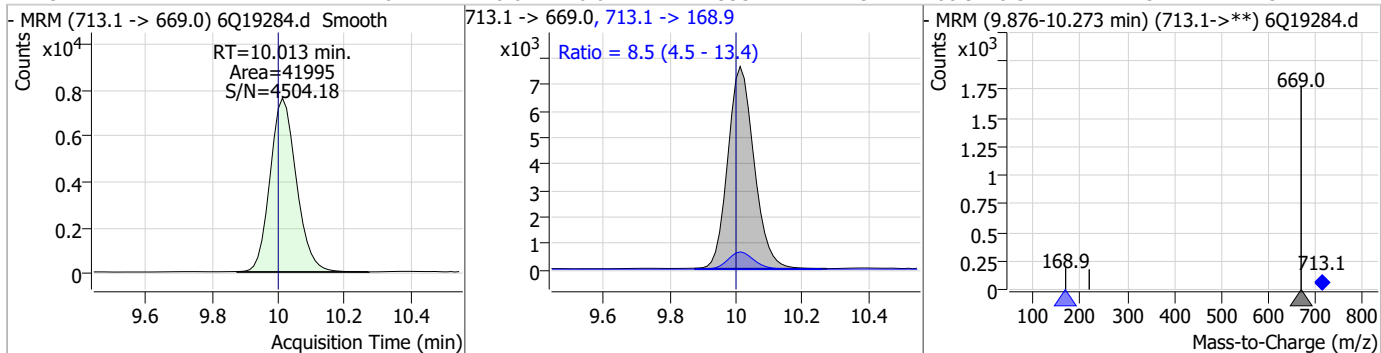
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.33	9.73	0.01	69422	632.9 -> 452.9	31.0	15.0	45.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	10.01	0.01	13414	715.2 -> 670.0	8.5	4.5	13.4



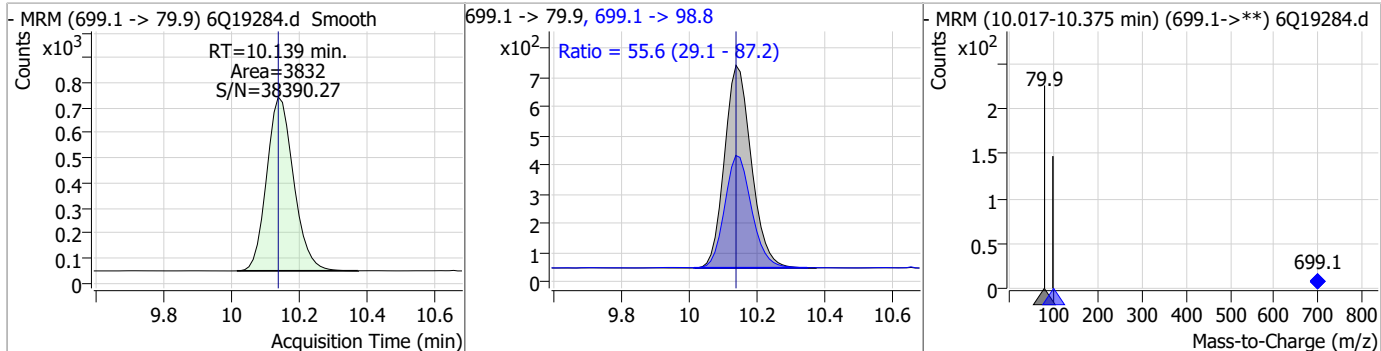
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.62	10.01	0.01	41995	713.1 -> 168.9	8.5	4.5	13.4



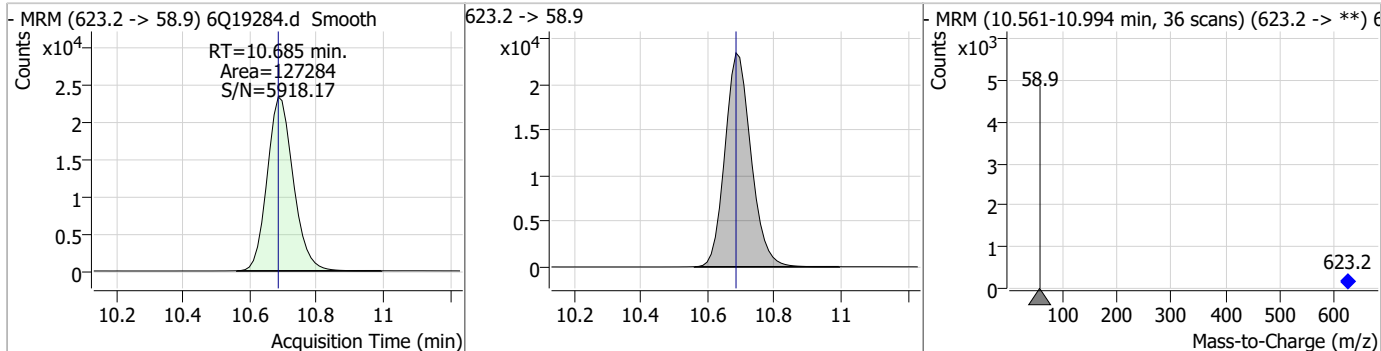
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Perfluorinated Compounds by LC/MS/MS

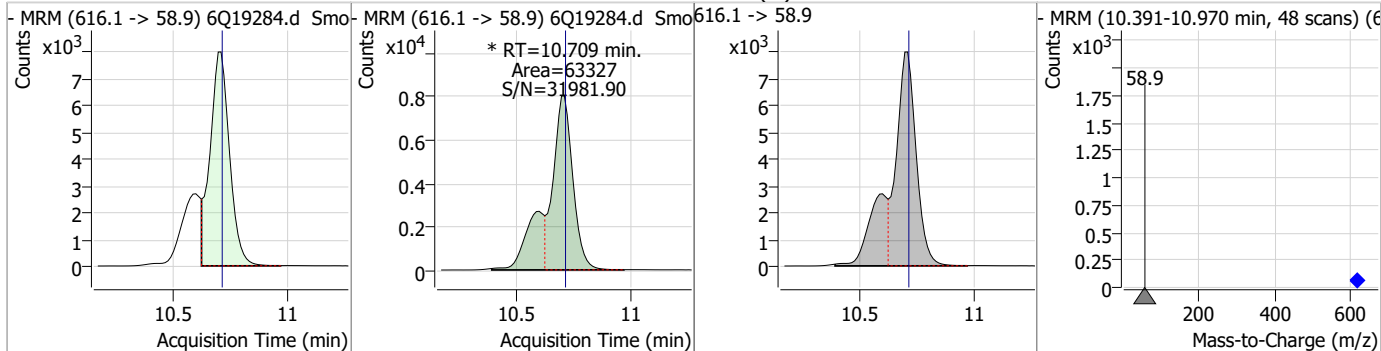
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.26	10.14	0.00	3832	699.1 -> 98.8	55.6	29.1	87.2



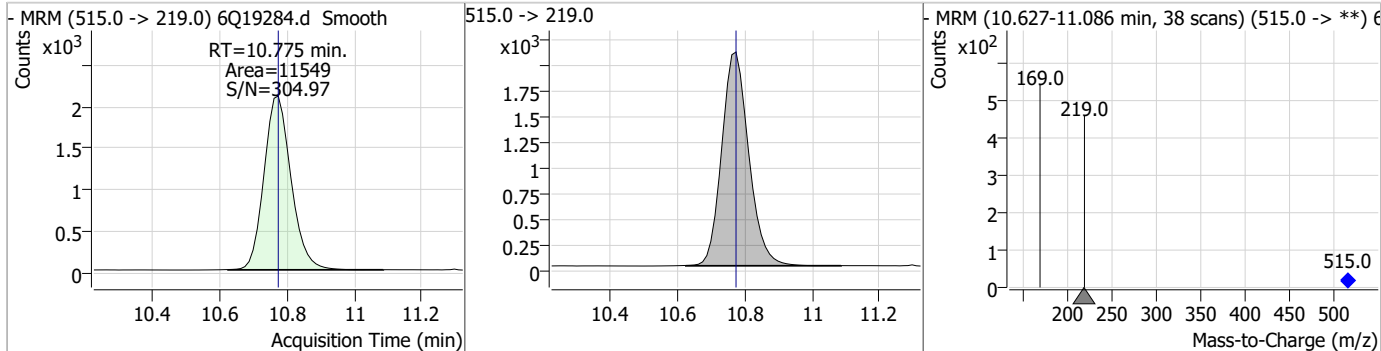
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.93	10.68	0.00	127284				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.37	10.71	0.00	63327 (m)				



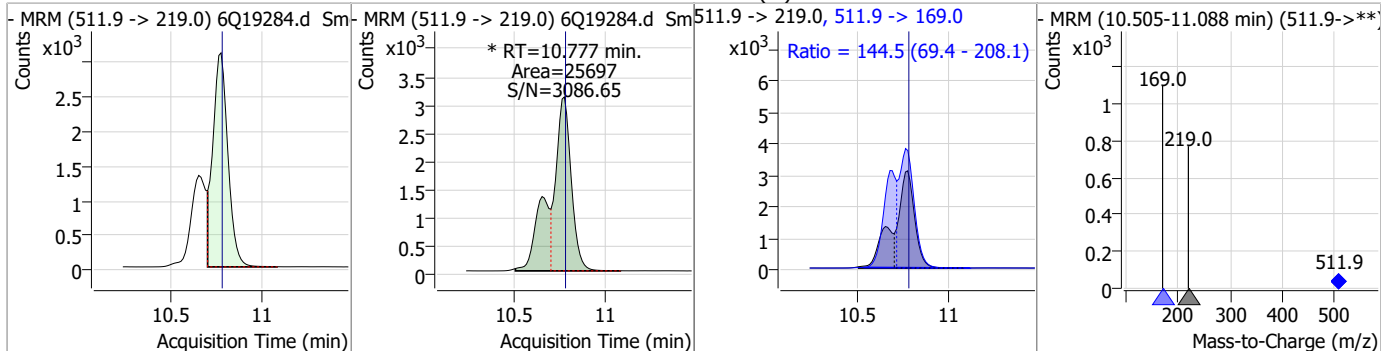
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.20	10.78	0.00	11549				



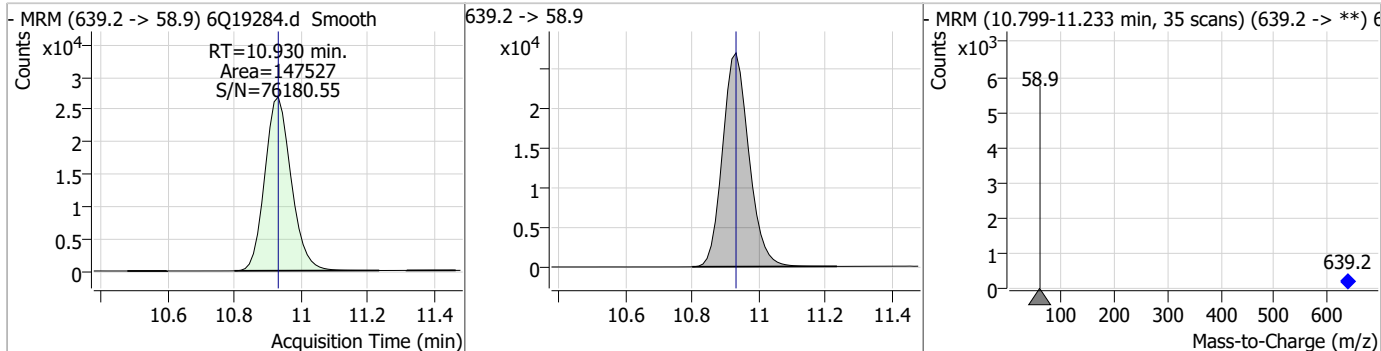
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Perfluorinated Compounds by LC/MS/MS

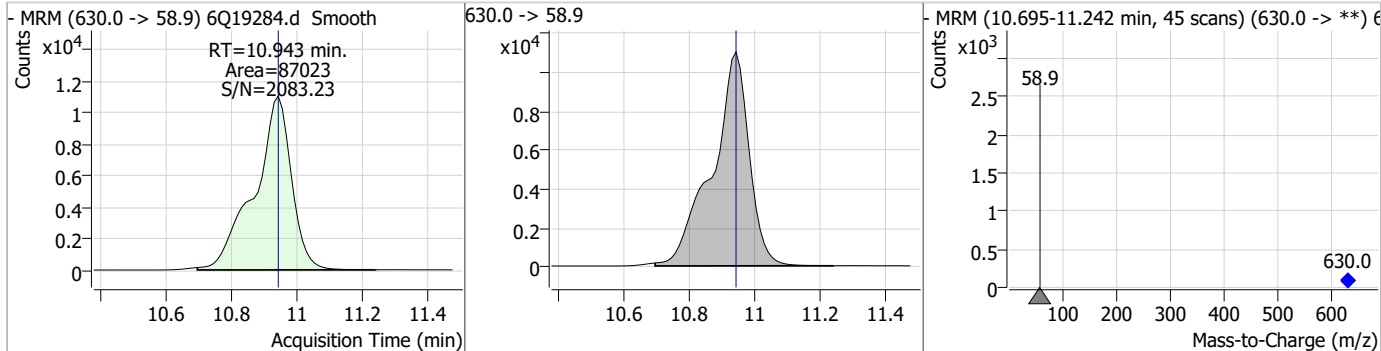
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.08	10.78	0.00	25697 (m)	511.9 -> 169.0	144.5	69.4	208.1



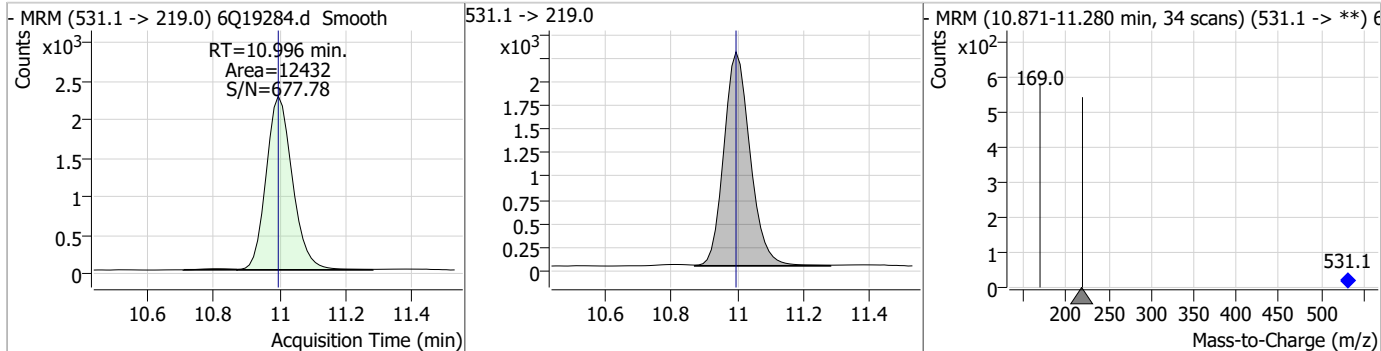
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.35	10.93	0.00	147527				



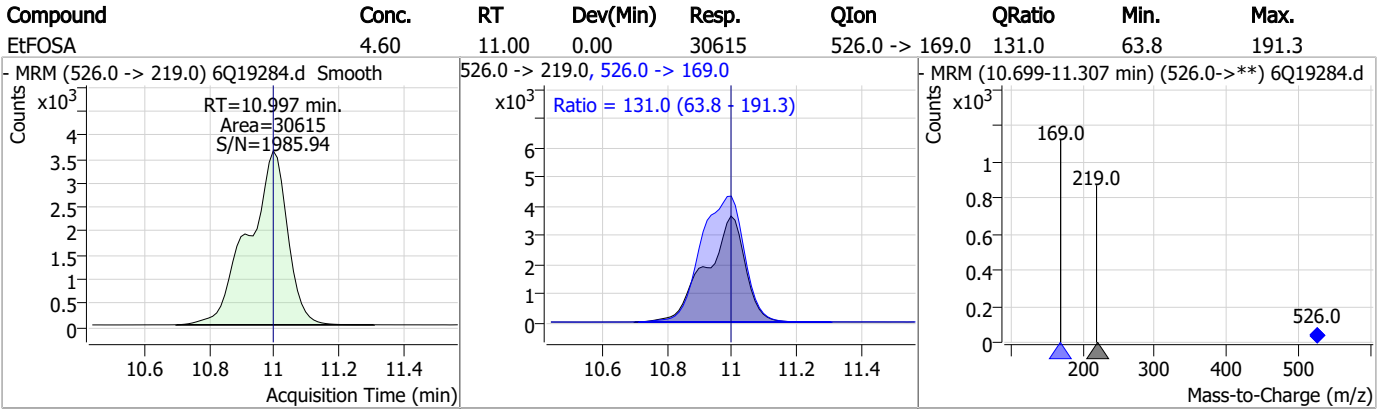
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.17	10.94	0.00	87023				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	11.00	0.00	12432				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q287-CC287 Method: EPA DRAFT 1633
Lab FileID: 6Q19284.D Analyst approved: 06/13/23 11:17 Martha Valls
Injection Time: 06/13/23 02:03 Supervisor approved: 06/13/23 13:30 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.48	Split peak
MeFOSAA	2355-31-9		8.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.58	Split peak
EtFOSAA	2991-50-6		8.63	Split peak
MeFOSE	24448-09-7		10.71	Split peak
MeFOSA	31506-32-8		10.78	Split peak

7.7.36.1
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SGS ORLANDO

DATE:	05/31/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_053123_S6Q279
CAL DATE:	05/31/23
ANALYST:	M. Valls
RUN BATCH:	S6Q279

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2127D
ICV STD LOT #:	LCMS 2127C/2125A
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q18557.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
2	6Q18558.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
3	6Q18559.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
4	6Q18560.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
5	6Q18561.d	P1-A9	High Std	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
6	6Q18562.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
7	6Q18563.d	P1-A5	cc278-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	surr high
8	6Q18564.d	P1-A2	cc278-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	surr failing high, re-calibrate
9	6Q18565.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	rr samples
10	6Q18566.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
11	6Q18567.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
12	6Q18568.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
13	6Q18569.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓
14	6Q18570.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	Eitfossa fail high, RR curve
15	6Q18571.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	↓
16	6Q18572.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	↓
17	6Q18573.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
18	6Q18574.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	↓
19	6Q18575.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
20	6Q18576.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	↓
21	6Q18577.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	↓
22	6Q18578.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	rr icv
23	6Q18579.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
24	6Q18580.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	↓
25	6Q18581.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
26	6Q18582.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
27	6Q18583.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
28	6Q18584.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
29	6Q18585.d	P1-A1	ic279-0	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
30	6Q18586.d	P1-A2	ic279-1	1633full.m	Calibration	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
31	6Q18587.d	P1-A3	ic279-2	1633full.m	Calibration	3.2/500	OP96663.S6Q279.500,,,5.0,1,water	✓
32	6Q18588.d	P1-A4	ic279-3	1633full.m	Calibration	10/500	OP96663.S6Q279.500,,,5.0,1,water	✓
33	6Q18589.d	P1-A5	icc279-4	1633full.m	Calibration	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
34	6Q18590.d	P1-A6	ic279-5	1633full.m	Calibration	40/500	OP96663.S6Q279.500,,,5.0,1,water	✓
35	6Q18591.d	P1-A7	ic279-6	1633full.m	Calibration	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q18592.d	P1-A8	ic279-7	1633full.m	Calibration	200/500	OP96663.S6Q279.500,,,5.0,1,water	✓
37	6Q18593.d	P1-A9	ic279-8	1633full.m	Calibration	1x	OP96663.S6Q279.500,,,5.0,1,water	✓
38	6Q18594.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
39	6Q18595.d	P1-B1	icv279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
40	6Q18596.d	P1-B2	icv279-20	1633full.m	QC	100/500	OP96663.S6Q279.500,,,5.0,1,water	✓
41	6Q18597.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
42	6Q18598.d	P1-A2	cc279-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q279.500,,,5.0,1,water	✓
43	6Q18599.d	P6-B5	op97070-bs	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
44	6Q18600.d	P6-B6	op97070-llbs:3	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
45	6Q18601.d	P6-B7	op97070-mb	1633full.m	Sample		OP97070.S6Q279.500,,,5.0,1,water	✓
46	6Q18602.d	P6-B9	FC6278-1	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
47	6Q18603.d	P6-C1	op97070-ms	1633full.m	Sample		OP97070.S6Q279.530,,,5.0,1,water	✓
48	6Q18604.d	P6-C2	FC6278-2	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
49	6Q18605.d	P6-C3	FC6278-3	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
50	6Q18606.d	P6-C4	op97070-dup	1633full.m	Sample		OP97070.S6Q279.520,,,5.0,1,water	✓
51	6Q18607.d	P6-C5	FC6278-4	1633full.m	Sample		OP97070.S6Q279.570,,,5.0,1,water	✓
52	6Q18608.d	P6-C7	FC5956-1	1633full.m	Sample		OP97070.S6Q279.5,,,5.0,1,water	rf10x
53	6Q18609.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
54	6Q18610.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
55	6Q18611.d	P6-C6	FC6278-5	1633full.m	Sample		OP97070.S6Q279.540,,,5.0,1,water	✓
56	6Q18612.d	P6-C8	op97024-bs	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
57	6Q18613.d	P6-C9	op97024-llbs:2	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
58	6Q18614.d	P6-D1	op97024-mb	1633full.m	Sample		OP97024.S6Q279.500,,,5.0,1,soil	✓
59	6Q18615.d	P6-D2	FC6086-1	1633full.m	Sample		OP97024.S6Q279.4.97,,,5.0,1,soil	✓
60	6Q18616.d	P6-D3	op97024-ms	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
61	6Q18617.d	P6-D4	op97024-mnsd	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
62	6Q18618.d	P6-D5	FC6086-2	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
63	6Q18619.d	P6-D6	FC6086-3	1633full.m	Sample		OP97024.S6Q279.5.01,,,5.0,1,soil	✓
64	6Q18620.d	P6-D7	FC6086-4	1633full.m	Sample		OP97024.S6Q279.5.00,,,5.0,1,soil	✓
65	6Q18621.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	✓
66	6Q18622.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	✓
67	6Q18623.d	P6-D8	FC6086-5	1633full.m	Sample		OP97024.S6Q279.5.05,,,5.0,1,soil	✓
68	6Q18624.d	P6-D9	FC6086-6	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
69	6Q18625.d	P6-E1	FC6086-7	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	✓
70	6Q18626.d	P6-E2	FC6086-8	1633full.m	Sample		OP97024.S6Q279.4.98,,,5.0,1,soil	✓
71	6Q18627.d	P6-E3	FC6086-9	1633full.m	Sample		OP97024.S6Q279.4.99,,,5.0,1,soil	✓
72	6Q18628.d	P6-E4	FC6086-10	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	✓
73	6Q18629.d	P6-E5	FC6086-11	1633full.m	Sample		OP97024.S6Q279.4.96,,,5.0,1,soil	Redo due to double NIS
74	6Q18630.d	P6-E6	FC6086-12	1633full.m	Sample		OP97024.S6Q279.5.02,,,5.0,1,soil	↓
75	6Q18631.d	P6-E7	FC6086-13	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
76	6Q18632.d	P6-E8	FC6086-14	1633full.m	Sample		OP97024.S6Q279.5.03,,,5.0,1,soil	↓
77	6Q18633.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q279.500,,,5.0,1,water	↓
78	6Q18634.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q279.500,,,5.0,1,water	↓



LCMS6-6Q ANALYSIS LOG

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79	6Q18635.d	P6-E9	FC6086-15	1633full.m	Sample	OP97024,S6Q279,5.00,,,5.0,1,soil	↓
80	6Q18636.d	P6-F1	FC6086-16	1633full.m	Sample	OP97024,S6Q279,4.99,,,5.0,1,soil	↓
81	6Q18637.d	P6-F2	FC6086-17	1633full.m	Sample	OP97024,S6Q279,5.04,,,5.0,1,soil	↓
82	6Q18638.d	P6-F3	FC6086-18	1633full.m	Sample	OP97024,S6Q279,4.98,,,5.0,1,soil	↓
83	6Q18639.d	P6-F4	FC6086-19	1633full.m	Sample	OP97024,S6Q279,5.01,,,5.0,1,soil	↓
84	6Q18640.d	P6-F5	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	rr, missing vial.
85	6Q18641.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
86	6Q18642.d	P1-A2	cc279-1,0LL	1633full.m	QC	1.6/500	✓
87	6Q18643.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
88	6Q18644.d	P2-A1	op97092-bs	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
89	6Q18645.d	P2-A2	op97092-llbs:3	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
90	6Q18646.d	P2-A3	op97092-mb	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
91	6Q18647.d	P2-A4	FC5851-5	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
92	6Q18648.d	P2-A5	FC5885-4	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	rr10x
93	6Q18649.d	P2-A6	FC5963-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	rr1x for co
94	6Q18650.d	P2-A7	FC5963-8	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
95	6Q18651.d	P2-A8	op97092-dup2	1633full.m	Sample	OP97092,S6Q279,68,,,5.0,1,water	✓
96	6Q18652.d	P2-A9	FC6238-3	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,1,water	✓
97	6Q18653.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
98	6Q18654.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
99	6Q18655.d	P2-B1	FC6325-1	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
100	6Q18656.d	P2-B2	op97092-ms	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
101	6Q18657.d	P2-B3	FC6325-2	1633full.m	Sample	OP97092,S6Q279,540,,,5.0,1,water	✓
102	6Q18658.d	P2-B4	op97092-dup1	1633full.m	Sample	OP97092,S6Q279,560,,,5.0,1,water	✓
103	6Q18659.d	P2-B5	FC6325-3	1633full.m	Sample	OP97092,S6Q279,550,,,5.0,1,water	✓
104	6Q18660.d	P2-B6	FC6006-5	1633full.m	Sample	OP97093,S6Q279,565,,,5.0,5,water	✓
105	6Q18661.d	P2-B7	FC6063-1	1633full.m	Sample	OP97093,S6Q279,500,,,5.0,10,water	Redo, surr fail low
106	6Q18662.d	P2-B8	FC6125-1	1633full.m	Sample	OP97093,S6Q279,545,,,5.0,1,water	✓
107	6Q18663.d	P6-B8	FC5956-1	1633full.m	Sample	OP97070,S6Q279,1,,,5.0,1,water	✓
108	6Q18664.d	P2-B9	FC5956-1	1633full.m	Sample	OP97070,S6Q279,5,,,5.0,5,water	dilution not use.
109	6Q18665.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
110	6Q18666.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
111	6Q18667.d	P2-C1	FC5885-4	1633full.m	Sample	OP97092,S6Q279,500,,,5.0,1,water	✓
112	6Q18668.d	P2-C2	FC5963-1	1633full.m	Sample	OP97092,S6Q279,60,,,5.0,10,water	✓
113	6Q18669.d	P2-C3	FC6114-1	1633full.m	Sample	OP97092,S6Q279,526,,,5.0,1,water	✓
114	6Q18670.d	P1-A5	ecc279-4	1633full.m	QC	25/400	✓
115	6Q18671.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓
116	6Q18672.d	P1-F1	List 40 surr test	1633full.m	Sample	OP96663,S6Q279,500,,,5.0,1,water	✓

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DATE:	06/01/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_053123_S6Q279
CAL DATE:	05/31/23
ANALYST:	M. Valls
RUN BATCH:	S6Q280

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2127D
ICV STD LOT #:	LCMS 2127C/2125A
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q18673.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
2	6Q18674.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
3	6Q18675.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
4	6Q18676.d	P1-A9	High Std	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
5	6Q18677.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
6	6Q18678.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q280.500,,,5.0,1.,water	✓
7	6Q18679.d	P1-A2	cc279-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q280.500,,,5.0,1.,water	✓
8	6Q18680.d	P3-A1	op97125-bs	1633full.m	Sample		OP97125.S6Q280.500,,,5.0,1.,water	✓
9	6Q18681.d	P3-A2	op97125-llbs:3	1633full.m	Sample		OP97125.S6Q280.500,,,5.0,1.,water	✓
10	6Q18682.d	P3-A3	op97125-mb	1633full.m	Sample		OP97125.S6Q280.500,,,5.0,1.,water	✓
11	6Q18683.d	P3-A4	FC5871-5	1633full.m	Sample		OP97125.S6Q280.546,,,5.0,1.,water	✓
12	6Q18684.d	P3-A5	op97124-bs	1633full.m	Sample		OP97124.S6Q280.500,,,5.0,1.,water	✓
13	6Q18685.d	P3-A6	op97124-llbs:2	1633full.m	Sample		OP97124.S6Q280.500,,,5.0,1.,water	✓
14	6Q18686.d	P3-A7	op97124-mb	1633full.m	Sample		OP97124.S6Q280.500,,,5.0,1.,water	✓
15	6Q18687.d	P3-A8	FC6360-1	1633full.m	Sample		OP97124.S6Q280.440,,,5.0,1.,water	cf
16	6Q18688.d	P3-A9	op97124-ms	1633full.m	Sample		OP97124.S6Q280.570,,,5.0,1.,water	reported from run s6q281
17	6Q18689.d	P3-B1	FC6360-2	1633full.m	Sample		OP97124.S6Q280.570,,,5.0,1.,water	efosaa high, r1x
18	6Q18690.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q280.500,,,5.0,1.,water	surr losa, efosaa, mefose, efosae high
19	6Q18691.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
20	6Q18692.d	P3-B2	FC6360-3	1633full.m	Sample	50/500	OP97124.S6Q280.420,,,5.0,10.,water	r1x surr high
21	6Q18693.d	P3-B3	JD66104-1	1633full.m	Sample		OP97124.S6Q280.60,,,5.0,1.,water	r1x surr high
22	6Q18694.d	P3-B4	FC6390-7	1633full.m	Sample		OP97124.S6Q280.532,,,5.0,1.,water	rr 1x due to surr from ccv high
23	6Q18695.d	P3-B5	FC6390-8	1633full.m	Sample		OP97124.S6Q280.550,,,5.0,1.,water	cf
24	6Q18696.d	P3-B6	FC6390-14	1633full.m	Sample		OP97124.S6Q280.534,,,5.0,1.,water	cf
25	6Q18697.d	P3-B7	FC6328-1	1633full.m	Sample		OP97124.S6Q280.570,,,5.0,1.,water	RR10X + redo lower volume
26	6Q18698.d	P3-B8	op97124-dup	1633full.m	Sample		OP97124.S6Q280.560,,,5.0,1.,water	RR10X
27	6Q18699.d	P1-A5	cc279-4	1633full.m	QC	20/500	OP96663.S6Q280.500,,,5.0,1.,water	✓
28	6Q18700.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q280.500,,,5.0,1.,water	✓
29	6Q18701.d	P3-B9	op97143-bs	1633full.m	Sample		OP97143.S6Q280.500,,,5.0,1.,water	✓
30	6Q18702.d	P3-C1	op97143-llbs:3	1633full.m	Sample		OP97143.S6Q280.500,,,5.0,1.,water	✓
31	6Q18703.d	P3-C2	op97143-mb	1633full.m	Sample		OP97143.S6Q280.500,,,5.0,1.,water	✓
32	6Q18704.d	P3-C3	FC6081-1	1633full.m	Sample		OP97143.S6Q280.554,,,5.0,1.,water	Redo to confirm
33	6Q18705.d	P3-C4	FC6205-1	1633full.m	Sample		OP97143.S6Q280.510,,,5.0,1.,water	✓
34	6Q18706.d	P3-C5	op97143-ms	1633full.m	Sample		OP97143.S6Q280.530,,,5.0,1.,water	✓
35	6Q18707.d	P3-C6	op97143-msd	1633full.m	Sample		OP97143.S6Q280.530,,,5.0,1.,water	✓

LCMS6-6Q ANALYSIS LOG

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36	6Q18708.d	P3-C7	FC6205-2	1633full.m	Sample	OP97143,S6Q280,500,,,5.0,1,water	✓
37	6Q18709.d	P3-C8	FC6205-3	1633full.m	Sample	OP97143,S6Q280,540,,,5.0,1,water	✓
38	6Q18710.d	P3-C9	FC6215-17	1633full.m	Sample	OP97143,S6Q280,540,,,5.0,1,water	✓
39	6Q18711.d	P1-A5	cc279-4	1633full.m	QC	OP96663,S6Q280,500,,,5.0,1,water	✓
40	6Q18712.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
41	6Q18713.d	P3-D1	FC6445-1	1633full.m	Sample	OP97143,S6Q280,540,,,5.0,1,water	✓
42	6Q18714.d	P3-D2	FC6445-2	1633full.m	Sample	OP97143,S6Q280,560,,,5.0,1,water	✓
43	6Q18715.d	P3-D3	FC6445-3	1633full.m	Sample	OP97143,S6Q280,560,,,5.0,1,water	✓
44	6Q18716.d	P3-D4	FC6445-4	1633full.m	Sample	OP97143,S6Q280,540,,,5.0,1,water	✓
45	6Q18717.d	P3-D5	FC6445-5	1633full.m	Sample	OP97143,S6Q280,520,,,5.0,1,water	✓
46	6Q18718.d	P3-D6	FC6445-6	1633full.m	Sample	OP97143,S6Q280,570,,,5.0,1,water	✓
47	6Q18719.d	P3-D7	FC6445-7	1633full.m	Sample	OP97143,S6Q280,560,,,5.0,1,water	✓
48	6Q18720.d	P1-A5	cc279-4	1633full.m	QC	OP96663,S6Q280,500,,,5.0,1,water	✓
49	6Q18721.d	P1-A2	cc279-1.0LL	1633full.m	QC	OP96663,S6Q280,500,,,5.0,1,water	✓
50	6Q18722.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
51	6Q18723.d	P3-D8	op97025-bs	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
52	6Q18724.d	P3-D9	op97025-llbs:2	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
53	6Q18725.d	P3-E1	op97025-mb	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
54	6Q18726.d	P3-E2	FC6086-20	1633full.m	Sample	OP97025,S6Q280,5.02,,,5.0,1,soil	✓
55	6Q18727.d	P3-E3	op97025-msd	1633full.m	Sample	OP97025,S6Q280,4.98,,,5.0,1,soil	✓
56	6Q18728.d	P3-E4	op97025-mssd	1633full.m	Sample	OP97025,S6Q280,5.03,,,5.0,1,soil	✓
57	6Q18729.d	P3-E5	FC6086-21	1633full.m	Sample	OP97025,S6Q280,5.01,,,5.0,1,soil	✓
58	6Q18730.d	P3-E6	FC6086-22	1633full.m	Sample	OP97025,S6Q280,4.98,,,5.0,1,soil	✓
59	6Q18731.d	P3-E7	FC6086-23	1633full.m	Sample	OP97025,S6Q280,5.03,,,5.0,1,soil	✓
60	6Q18732.d	P3-E8	FC6086-24	1633full.m	Sample	OP97025,S6Q280,4.99,,,5.0,1,soil	✓
61	6Q18733.d	P1-A5	cc279-4	1633full.m	QC	OP96663,S6Q280,500,,,5.0,1,water	✓
62	6Q18734.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
63	6Q18735.d	P3-E9	FC6086-25	1633full.m	Sample	OP97025,S6Q280,5.04,,,5.0,1,soil	✓
64	6Q18736.d	P3-F1	FC6086-26	1633full.m	Sample	OP97025,S6Q280,4.97,,,5.0,1,soil	✓
65	6Q18737.d	P3-F2	FC6086-27	1633full.m	Sample	OP97025,S6Q280,5.03,,,5.0,1,soil	✓
66	6Q18738.d	P3-F3	FC6086-28	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
67	6Q18739.d	P3-F4	FC6086-29	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
68	6Q18740.d	P3-F5	FC6086-30	1633full.m	Sample	OP97025,S6Q280,4.95,,,5.0,1,soil	✓
69	6Q18741.d	P3-F6	FC6086-31	1633full.m	Sample	OP97025,S6Q280,5.03,,,5.0,1,soil	✓
70	6Q18742.d	P3-F7	FC6086-32	1633full.m	Sample	OP97025,S6Q280,4.96,,,5.0,1,soil	✓
71	6Q18743.d	P3-F8	FC6086-33	1633full.m	Sample	OP97025,S6Q280,4.98,,,5.0,1,soil	✓
72	6Q18744.d	P3-F9	FC6086-34	1633full.m	Sample	OP97025,S6Q280,5.02,,,5.0,1,soil	✓
73	6Q18745.d	P1-A5	cc279-4	1633full.m	QC	OP96663,S6Q280,500,,,5.0,1,water	✓
74	6Q18746.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
75	6Q18747.d	P4-A1	FC6086-35	1633full.m	Sample	OP97025,S6Q280,4.99,,,5.0,1,soil	✓
76	6Q18748.d	P4-A2	FC6086-36	1633full.m	Sample	OP97025,S6Q280,5.00,,,5.0,1,soil	✓
77	6Q18749.d	P4-A3	FC6086-37	1633full.m	Sample	OP97025,S6Q280,5.03,,,5.0,1,soil	✓
78	6Q18750.d	P4-A4	FC6086-38	1633full.m	Sample	OP97025,S6Q280,5.02,,,5.0,1,soil	✓

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79	6Q18751.d	P4-A5	op97144-bs	1633full.m	Sample	OP97144,S6Q280,500,,,5.0,1,water	✓
80	6Q18752.d	P4-A6	op97144-llbs:3	1633full.m	Sample	OP97144,S6Q280,500,,,5.0,1,water	✓
81	6Q18753.d	P4-A7	op97144-mb	1633full.m	Sample	OP97144,S6Q280,500,,,5.0,1,water	✓
82	6Q18754.d	P4-A8	FC6216-1	1633full.m	Sample	OP97144,S6Q280,485,,,5.0,1,water	✓
83	6Q18755.d	P4-A9	FC6216-2	1633full.m	Sample	OP97144,S6Q280,520,,,5.0,1,water	✓
84	6Q18756.d	P4-B1	op97144-ms	1633full.m	Sample	OP97144,S6Q280,370,,,5.0,1,water	✓
85	6Q18757.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
86	6Q18758.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
87	6Q18759.d	P4-B2	FC6216-3	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
88	6Q18760.d	P4-B3	op97144-dup	1633full.m	Sample	OP97144,S6Q280,410,,,5.0,1,water	✓
89	6Q18761.d	P4-B4	FC6216-4	1633full.m	Sample	OP97144,S6Q280,460,,,5.0,1,water	✓
90	6Q18762.d	P4-B5	FC6216-5	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
91	6Q18763.d	P4-B6	FC6216-6	1633full.m	Sample	OP97144,S6Q280,440,,,5.0,1,water	rr10x
92	6Q18764.d	P4-B7	FC6216-7	1633full.m	Sample	OP97144,S6Q280,475,,,5.0,1,water	rr1x co
93	6Q18765.d	P4-B8	FC6216-8	1633full.m	Sample	OP97144,S6Q280,475,,,5.0,1,water	✓
94	6Q18766.d	P4-B9	FC6216-9	1633full.m	Sample	OP97144,S6Q280,485,,,5.0,1,water	✓
95	6Q18767.d	P4-C1	FC6216-10	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
96	6Q18768.d	P4-C2	FC6216-11	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	RR10X + redo lower volume
97	6Q18769.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
98	6Q18770.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
99	6Q18771.d	P4-C3	FC6216-12	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
100	6Q18772.d	P4-C4	FC6216-13	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
101	6Q18773.d	P4-C5	FC6216-14	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
102	6Q18774.d	P4-C6	FC6216-15	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
103	6Q18775.d	P4-C7	FC6216-16	1633full.m	Sample	OP97144,S6Q280,554,,,5.0,1,water	✓
104	6Q18776.d	P4-C8	FC6216-17	1633full.m	Sample	OP97144,S6Q280,60,,,5.0,1,water	✓
105	6Q18777.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓
106	6Q18778.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
107	6Q18779.d	P1-B3	RT TDCA	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
108	6Q18780.d	P1-B4	RT BR-LN	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
109	6Q18781.d	P1-A9	High Std	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
110	6Q18782.d	P1-A1	iblk	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
111	6Q18783.d	P1-A2	cc279-1.0LL	1633full.m	QC	1.6/500	✓
112	6Q18784.d	P4-C9	op97146-bs	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
113	6Q18785.d	P4-D1	op97146-llbs:2	1633full.m	Sample	OP97146,S6Q280,500,,,5.0,1,water	✓
114	6Q18786.d	P4-D2	op97146-mb	1633full.m	Sample	OP97146,S6Q280,500,,,5.0,1,water	✓
115	6Q18787.d	P4-D3	FC6212-1	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
116	6Q18788.d	P4-D4	FC6212-2	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
117	6Q18789.d	P4-D5	FC6212-3	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
118	6Q18790.d	P4-D6	FC6212-4	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
119	6Q18791.d	P4-D7	FC6212-5	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
120	6Q18792.d	P4-D8	op97146-ms	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
121	6Q18793.d	P1-A5	cc279-4	1633full.m	QC	20/500	✓

LCMS6-6Q ANALYSIS LOG

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122	6Q18794.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
123	6Q18795.d	P4-D9	FC6212-6	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
124	6Q18796.d	P4-E1	op97146-dup	1633full.m	Sample	OP97146,S6Q280,485,,,5.0,1,water	✓
125	6Q18797.d	P4-E2	FC6212-7	1633full.m	Sample	OP97146,S6Q280,410,,,5.0,1,water	✓
126	6Q18798.d	P4-E3	FC6212-8	1633full.m	Sample	OP97146,S6Q280,410,,,5.0,1,water	✓
127	6Q18799.d	P4-E4	FC6212-9	1633full.m	Sample	OP97146,S6Q280,410,,,5.0,1,water	✓
128	6Q18800.d	P4-E5	FC6212-10	1633full.m	Sample	OP97146,S6Q280,255,,,5.0,1,water	✓
129	6Q18801.d	P4-E6	FC6361-1	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓
130	6Q18802.d	P1-A5	ecc279-4	1633full.m	QC	20/500	✓
131	6Q18803.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q280,500,,,5.0,1,water	✓

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DATE:	06/12/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_061223_S6Q287
CAL DATE:	06/12/23
ANALYST:	M. Valls
RUN BATCH:	S6Q287

ELUENT A LOT #:	ACN 220811
ELUENT B LOT #:	HPLC WATER LOT: 230470 W5% Methanol 224279 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2124-D
ICV STD LOT #:	LCMS 2124D/2125B
ISTD/ID STD LOT #:	11851/11850

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q19228.d	P1-B9	CCB	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓
2	6Q19229.d	P1-A9	Check peaks	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	New column, RT set up
3	6Q19230.d	P1-A5	Check peaks	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
4	6Q19231.d	P1-B9	CCB	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
5	6Q19232.d	P1-B3	RT TDCA	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
6	6Q19233.d	P1-B9	CCB	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
7	6Q19234.d	P1-B9	CCB	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
8	6Q19235.d	P1-B3	RT TDCA	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
9	6Q19236.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	↓
10	6Q19237.d	P1-B3	RT TDCA	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓
11	6Q19238.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓
12	6Q19239.d	P1-A1	ic287-0	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓
13	6Q19240.d	P1-A2	ic287-1	1633full.m	Calibration	1.6/500	OP97215,S6Q287,500,,,5.0,1,water	✓
14	6Q19241.d	P1-A3	ic287-2	1633full.m	Calibration	3.2/500	OP97215,S6Q287,500,,,5.0,1,water	✓
15	6Q19242.d	P1-A4	ic287-3	1633full.m	Calibration	10/500	OP97215,S6Q287,500,,,5.0,1,water	✓
16	6Q19243.d	P1-A5	icc287-4	1633full.m	Calibration	20/500	OP97215,S6Q287,500,,,5.0,1,water	✓
17	6Q19244.d	P1-A6	ic287-5	1633full.m	Calibration	40/500	OP97215,S6Q287,500,,,5.0,1,water	✓
18	6Q19245.d	P1-A7	ic287-6	1633full.m	Calibration	100/500	OP97215,S6Q287,500,,,5.0,1,water	✓
19	6Q19246.d	P1-A8	ic287-7	1633full.m	Calibration	200/500	OP97215,S6Q287,500,,,5.0,1,water	✓
20	6Q19247.d	P1-A9	ic287-8	1633full.m	Calibration	1x	OP97215,S6Q287,500,,,5.0,1,water	✓
21	6Q19248.d	P1-A1	iblk	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓
22	6Q19249.d	P1-B1	icv287-4	1633full.m	QC	20/500	OP97215,S6Q287,500,,,5.0,1,water	✓
23	6Q19250.d	P1-B2	icv287-20	1633full.m	QC	100/500	OP97215,S6Q287,500,,,5.0,1,water	✓
24	6Q19251.d	P1-A5	cc287-4	1633full.m	QC	20/500	OP97215,S6Q287,500,,,5.0,1,water	✓
25	6Q19252.d	P1-A2	cc287-1,0LL	1633full.m	QC	1.6/500	OP97215,S6Q287,500,,,5.0,1,water	✓
26	6Q19253.d	P2-A1	FC6151-6	1633full.m	Sample	25/500	OP97120,S6Q287,500,,,5.0,1,6,SOLL	✓
27	6Q19254.d	P2-A2	FC6342-11	1633full.m	Sample		OP97215,S6Q287,420,,,5.0,1,water	✓
28	6Q19255.d	P2-A3	op97215-dup	1633full.m	Sample		OP97215,S6Q287,450,,,5.0,1,water	✓
29	6Q19256.d	P2-A4	FC6213-6	1633full.m	Sample		OP97160,S6Q287,490,,,5.0,1,water	pfba low, Redo
30	6Q19257.d	P2-A5	JD66240-1	1633full.m	Sample	100/500	OP97160,S6Q287,526,,,5.0,5,water	✓
31	6Q19258.d	P2-A6	JD66240-2	1633full.m	Sample	100/500	OP97160,S6Q287,510,,,5.0,5,water	low surr, Redo
32	6Q19259.d	P2-A7	FC6342-10	1633full.m	Sample	50/500	OP97215,S6Q287,480,,,5.0,10,water	Redo lower volume
33	6Q19260.d	P2-A8	op97215-ms	1633full.m	Sample	50/500	OP97215,S6Q287,460,,,5.0,10,water	✓
34	6Q19261.d	P1-A5	cc287-4	1633full.m	QC	20/500	OP97215,S6Q287,500,,,5.0,1,water	✓
35	6Q19262.d	P1-A1	iccb	1633full.m	Sample		OP97215,S6Q287,500,,,5.0,1,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

36	6Q19263.d	P2-B1	op97275-bs	1633full.m	Sample	OP97275.S6Q287.500,,,5.0,1,water	✓
37	6Q19264.d	P2-B2	op97275-llbs:3	1633full.m	Sample	OP97275.S6Q287.500,,,5.0,1,water	✓
38	6Q19265.d	P2-B3	op97275-mb	1633full.m	Sample	OP97275.S6Q287.500,,,5.0,1,water	✓
39	6Q19266.d	P2-B4	FC6445-4	1633full.m	Sample	OP97275.S6Q287.510,,,5.0,1,water	✓
40	6Q19267.d	P2-B5	FC6445-4	1633full.m	Sample	OP97275.S6Q287.60,,,5.0,1,water	✓
41	6Q19268.d	P2-B6	FC6649-1	1633full.m	Sample	OP97275.S6Q287.540,,,5.0,1,water	✓
42	6Q19269.d	P2-B7	op97275-ms	1633full.m	Sample	OP97275.S6Q287.550,,,5.0,1,water	✓
43	6Q19270.d	P2-B8	FC6649-2	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
44	6Q19271.d	P2-B9	FC6649-3	1633full.m	Sample	OP97275.S6Q287.570,,,5.0,1,water	✓
45	6Q19272.d	P1-A5	cc287-4	1633full.m	QC	20/500	✓
46	6Q19273.d	P1-A1	iccb	1633full.m	Sample	OP97215.S6Q287.500,,,5.0,1,water	✓
47	6Q19274.d	P2-C1	FC6649-4	1633full.m	Sample	OP97275.S6Q287.530,,,5.0,1,water	✓
48	6Q19275.d	P2-C2	op97275-dup	1633full.m	Sample	OP97275.S6Q287.570,,,5.0,1,water	✓
49	6Q19276.d	P2-C3	FC6649-5	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
50	6Q19277.d	P2-C4	FC6649-6	1633full.m	Sample	OP97275.S6Q287.550,,,5.0,1,water	✓
51	6Q19278.d	P2-C5	FC6651-1	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
52	6Q19279.d	P2-C6	FC6651-2	1633full.m	Sample	OP97275.S6Q287.520,,,5.0,1,water	✓
53	6Q19280.d	P2-C7	FC6651-3	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
54	6Q19281.d	P2-C8	FC6651-4	1633full.m	Sample	OP97275.S6Q287.570,,,5.0,1,water	✓
55	6Q19282.d	P2-C9	FC6651-5	1633full.m	Sample	OP97275.S6Q287.530,,,5.0,1,water	✓
56	6Q19283.d	P2-D1	FC6699-1	1633full.m	Sample	OP97275.S6Q287.550,,,5.0,1,water	✓
57	6Q19284.d	P1-A5	cc287-4	1633full.m	QC	20/500	✓
58	6Q19285.d	P1-A1	iccb	1633full.m	Sample	OP97215.S6Q287.500,,,5.0,1,water	✓
59	6Q19286.d	P2-D2	FC6699-2	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
60	6Q19287.d	P2-D3	FC6699-3	1633full.m	Sample	OP97275.S6Q287.560,,,5.0,1,water	✓
61	6Q19288.d	P1-A5	ecc287-4	1633full.m	QC	20/500	✓
62	6Q19289.d	P1-A1	iccb	1633full.m	Sample	OP97215.S6Q287.500,,,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
LCN75 2125A-E	FULL 2.5f 40 spike (Cal std)	11750	PROA 28 Comp	Alcalyte	3/3/28	5/10/24	1.0ppm	400ul	4.0ml	100ppb	955formol 581420	5/22/23	8/23/23	MS
LCN75 2125A-E	↓	LCN75 2067	40 2.5f Pdd on #1	595-Std.	—	8/23/23	1.0ppm	400ul	↓	↓	(2.400ml)	↓	↓	↓
LCN75 2125A-E	↓	LCN75 2117	40 2.5f Pdd on #2	—	—	11/8/23	1.0ppm	400ul	↓	↓	↓	↓	↓	↓
LCN75 2125A-E	↓	LCN75 2101	FOSE Std.	Wellington Labs	—	7/19/23	5.0ppm	400ul	↓	500ppb	PS1400H 05123231133123	↓	↓	↓
LCN75 2125A-E	↓	11804 A-5	MPK - GUES	Wellington Labs	01/1/28	05/23/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 05123231133123	5/24/23	10/28/23	MS
LCN75 2125A-E	↓	11635A	H3HPPO-DA	Wellington Labs	11/6/28	04/14/24	50ppm	40ul	↓	↓	↓	↓	↓	MS
LCN75 2125A-E	↓	11491	D-N-NEBASAN	Wellington Labs	05/6/27	03/15/24	50ppm	40ul	↓	↓	↓	↓	↓	MS
LCN75 2125A-E	↓	11399B 11807	PERC HXH	Wellington Labs	4/17/28	5/24/24	1.4ppm	25ul	4ml	6.25 125 250ppb	1633 MIV 5/24/23	10/28/23	MS	
LCN75 2125A-E	↓	LCN75 2097AB	BE LN ET-ME	595 Labs	NA	10/28/23	2ppm	↓	↓	125 512.5ppb (2.088ml)	↓	↓	↓	
LCN75 2125A-E	↓	11801B	PERC MXF	Wellington Labs	3/22/26	5/12/24	2ppm	↓	↓	125ppb	↓	↓	↓	
LCN75 2125A-E	↓	11802B 11809	PERC MXG	Wellington Labs	12/1/27	5/22/24	2ppm	↓	↓	125ppb	↓	↓	↓	
LCN75 2125A-E	↓	11803B 11810	PERC MXJ	Wellington Labs	3/28/28	5/22/24	4.30ppm	3/20ul	↓	312 1160ppb	↓	↓	↓	
LCN75 2125A-E	↓	11819	MPK - GUES	Wellington Labs	01/1/28	06/14/24	1.0ppm	1.2ml	2.5ml	0.5ppm	PS1400H 05123231133123	↓	↓	
LCN75 2125A-E	↓	11635A	H3HPPO-DA	Wellington Labs	11/6/28	04/14/24	50ppm	24ul	↓	↓	↓	↓	↓	
LCN75 2125A-E	↓	11584	D-N-NEBASAN	Wellington Labs	11/1/27	06/14/24	50ppm	24ul	↓	↓	↓	↓	↓	
LCN75 2125A-E	↓	11584	D-N-NEBASAN	Wellington Labs	11/1/27	06/14/24	50ppm	24ul	↓	↓	↓	↓	↓	

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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 2095A-5	(10ppb) PFC TD SURF	11669	HPAC-2UES	Wellington Labs	01/08/23	03/08/24	1.0ppm	2.4mL	~50mL	0.5ppm	Q51024	03/08/23	09/08/23	NS
↓	↓	11585	HPAC-2A	↓	11/08/23	01/08/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	d-N-HPAC-2A	↓	05/08/23	03/08/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 2096A-B	1633 OPPE End std.	11672	PFC-MXH	Wellington	8/8/23	3/23/24	1-4 ppm	250uL	4mL	0.25 ppm	1033 MIX	3/08/23	9/08/23	MS
↓	↓	11686	PFC-MXI	↓	2/23/23	3/30/24	1-10 ppm	250uL	↓	0.25 ppm	↓	↓	↓	↓
↓	↓	11074	PFC-MXF	↓	1/11/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11073	PFC-MXF	↓	12/1/23	3/10/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11675	PFC-MXS	↓	9/14/23	3/03/24	4-20 ppm	312uL	↓	312/1100 ppb	↓	↓	↓	↓
LCMS 2097A	BR-LN metel for 1633	11497	br-N metesa	Wellington	08/23/23	10/28/23	50ppm	200uL	5mL	2ppm	1033 MIX	4/16/23	10/28/23	MS
↓	↓	11498	br-N Effosa	↓	10/10/23	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11495	br-N metese	↓	10/07/23	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Effose	↓	10/17/23	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓

* tested on 3/30/23 10/21

40 mL

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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
LCM29 2067	40 L1st std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50ppm	80uL	4.0mL	1ppm	95% meth 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	PFD05		7/9/26	10/18/23							8/23/23	
		10829	N- MeTosA		8/3/26	8/23/23								
		10837	N- EFTosA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFD0A		5/7/26	10/18/23								
		1116B	3:3FTCA PERPA		2/3/27	2/8/24								
		10685A	5:3FTCA PERPA		11/1/25	8/23/23								
		1116A	7:3FTCA FHPA		11/2/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/3/25	10/18/23								
		10763B	PMBBA PESOHKA		3/3/25	10/18/23								
		10764	PMMPA PE406A		3/3/25	2/8/24								
		10765B	NEHDA 3.6-08PA		3/3/25	10/18/23								
					NG	02/10/23								

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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 2115	1.57 40 Scan Add-on 1516 spike mix	11523	df-N-Meiose	Wellington	1/23/27	5/9/24	50 ppm	200 uL	2 ml	5 ppm (1/5)	95% MeOH 5% H ₂ O	5/19/23	8/23/23	NV
		11460	dg-N-Etfose		1/23/27	12/6/23		200 uL		5 ppm				
		11115	M2-PTHXDA		1/23/28	8/23/23		40 uL		1 ppm				
		10836	D-N-Etfose		12/30/25	8/23/23		40 uL		1 ppm				
LCMS 2116	Full List (40) Spike (cal std)	11053	PROA 200 28 Comp.	Absolute	11/9/27	4/18/24	1.0 ppm	400 uL	4.0 ml	100 ppb	95% MeOH 5% H ₂ O (2.400 ml)	5/19/23	8/23/23	NV
		LCMS 2067	40 List Add on #1	Eqs std.		8/23/23	1.0 ppm	400 uL						
		LCMS 2117	40 List Add on #2			5/18/23	1.0 ppm	400 uL						
		LCMS 2054	Fose Std.			7/24/23	5.0 ppm	4800 uL		500 ppb				
LCMS 2117	40 List Add on #2	11250	FB5A-1	Wellington	11/10/26	11/8/23	50 ppm	80 uL	4.0 ml	1 ppm	95% MeOH 5% H ₂ O	5/19/23	11/8/23	MV
		11249	FHXSA-1		2/29/26	11/3/23	50 ppm	80 uL						
		11140B	L-PR5		7/12/26	5/9/24	50 ppm	80 uL						
		LCMS 2118A	PIC ID Sum (10 ppb)	Wellington	1/18/28	5/10/24	1.0 ppm	2.4 ml	5.0 ml	0.5 ppm	95% MeOH 5% H ₂ O	5/10/23	11/10/23	MJ
		11775A	NPRAC 24 ES		11/8/25	4/24/24	50 ppm	48 uL						
		1635A	M3H0 DA		5/16/27	3/13/24	50 ppm	48 uL						
		11431	d-11 Mehsam											

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NS 05/12/23

Organic Standards Preparation Log

SGS - Orlando	Name	Parent	Parent	Parent	Vendor	Lab*	Parent	Vol.	Final	Final	Diluent	Prep.	Exp.	Initials
Std. #	Description	Std. #	Name	Vendor	Exp. Date	Exp. Date	Conc.	Used	Vol.	Conc.	Lot	Date	Date	
LCMS 2098A	1033 OPike Cal std.	11072A	PFAC MYH	Wellington	8/8/23	3/23/24	1-4 ppm	250uL	4mL	0.25 250ppb	1033 mix	9/10/23	10/6/23	MS
LCMS 2097		11072B	8-1n Et, 4c	Sgs 1st	9/4	10/28/23	3ppm	250uL		0.25 250ppb				
LCMS 11075		11074B	PFAC MYE	Wellington	11/1/23	3/30/24	2ppm	250uL		125ppb				
LCMS 11072B		11075	PFAC MYG	Wellington	12/1/23	3/30/24	2ppm	250uL		125ppb				
LCMS 11070	(Interim) 537.1 Du std.	11072B	PFAC MYT	Wellington	9/14/20	3/23/24	4-20 ppm	312uL	4mL	312/1100 ppb	01111111 41.120	04/16/23	05/15/23	NS
LCMS 10436A		10436A	MAU:2 ETS		11/05/23	04/16/24		80uL		10ppm				NS
LCMS 10592B		10592B	d3-N- METSAA		10/22/23	05/15/23		160uL		20ppm				NS
LCMS 10492A		10492A	MPFOS		11/02/23	05/15/24		80uL		10ppm				NS
LCMS 11069		11069	WARFA		12/01/20	03/22/24		80uL		10ppm				NS
LCMS 11026	Full List (40) List 40 spike (S6)	11026	PF0A 28 Comp.	Absolute	11/9/23	4/11/24	1.0ppm	400uL	4.0mL	100ppb	95% MeOH 5% H2O	4/11/23	7/24/23	MS
LCMS 2067		2067	40 List #2	Sgs std.	8/23/23		1.0ppm	400uL		500ppb	(2.14031)			
LCMS 2070		2070	40 List #2		5/12/23		1.0ppm	400uL						
LCMS 2054		2054	FOSG std.		7/24/23		5.0ppm	400uL		500ppb				
LCMS 2101	FOSG std.	11336	N-et FOSG	Wellington	5/13/23	9/19/23	50ppm	200uL	2.0mL	5ppm	95% MeOH 5% H2O	4/11/23	9/19/23	MS
LCMS 11338		11338	N-me FOSG	Wellington	5/13/23	9/19/23	50ppm	200uL						

* based on date opened as specified in each SGS - Orlando SOP.

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11494



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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 ¹⁹F-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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Form#:13, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

brNMeFOSE0922 (1 of 7)
 rev1

7.9.1

7

11495



WELLINGTON LABORATORIES

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 ¹⁹F-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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brNEtFOSE1022 (1 of 7)
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7.9.1

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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 ¹⁹F-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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brNMeFOSA0822 (1 of 6)
 rev1

7.9.1

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

brNEtFOSA0922 (1 of 6)
rev1

7.9.1

7

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 (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ 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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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

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
		as the salt	as the acid	
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.

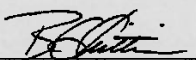
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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: _____


B.G. Chittim, General Manager

Date: 05/11/2023

(mm/dd/yyyy)

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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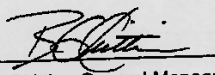
Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0323 (1 of 5)
rev0

Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

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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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

7.9.1

7

Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
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: _____

B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:
LOT NUMBER:
SOLVENT(S):
DATE PREPARED: (mm/dd/yyyy)
LAST TESTED: (mm/dd/yyyy)
EXPIRY DATE: (mm/dd/yyyy)
RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
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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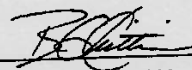
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Concentrations (µg/mL; ± 5% in methanol)

Table A:

PFAC-MXJ; Components and

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: 
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Date: 04/12/2023
(mm/dd/yyyy)

PFACMXJ0323 (3 of 5)
rev0

11807
received 10/16/23



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 (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ 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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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

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
		as the salt	as the acid	
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: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11808
rec'd. 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0323
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	03/23/2023
<u>LAST TESTED:</u> (mm/dd/yyyy)	03/24/2023
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	03/24/2026
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (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

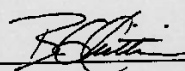
PFACMXF0323 (1 of 5)
rev0

7.9.1
7

Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11809
rec'd: 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

7.9.1

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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
		as the salt	as the acid	
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: 
B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11810
rec'd: 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXJ
<u>LOT NUMBER:</u>	PFACMXJ0323
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	03/27/2023
<u>LAST TESTED:</u> (mm/dd/yyyy)	03/28/2023
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	03/28/2028
<u>RECOMMENDED STORAGE:</u>	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.

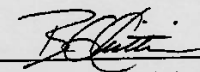
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7.9.1
7

Table A: PFAC-MXJ; Components and Concentrations ($\mu\text{g}/\text{mL}$; $\pm 5\%$ in methanol)

Compound	Acronym	Concentration ($\mu\text{g}/\text{mL}$)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
 B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

Form#: 13, Issued 2004-11-10
 Revision#: 9, Revised 2020-12-23

PFACMXJ0323 (3 of 5)
 rev0

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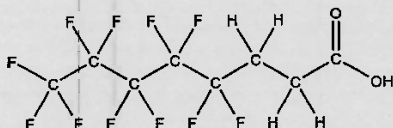
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: C₈H₅F₁₁O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

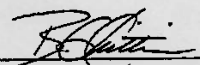
DOCUMENTATION/ DATA ATTACHED:

- 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 (C₈H₃F₁₁O₂) as an impurity determined by ¹⁹F NMR.

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Certified By: 
B.G. Chittim, General Manager
Date: 11/27/2020
(mm/dd/yyyy)

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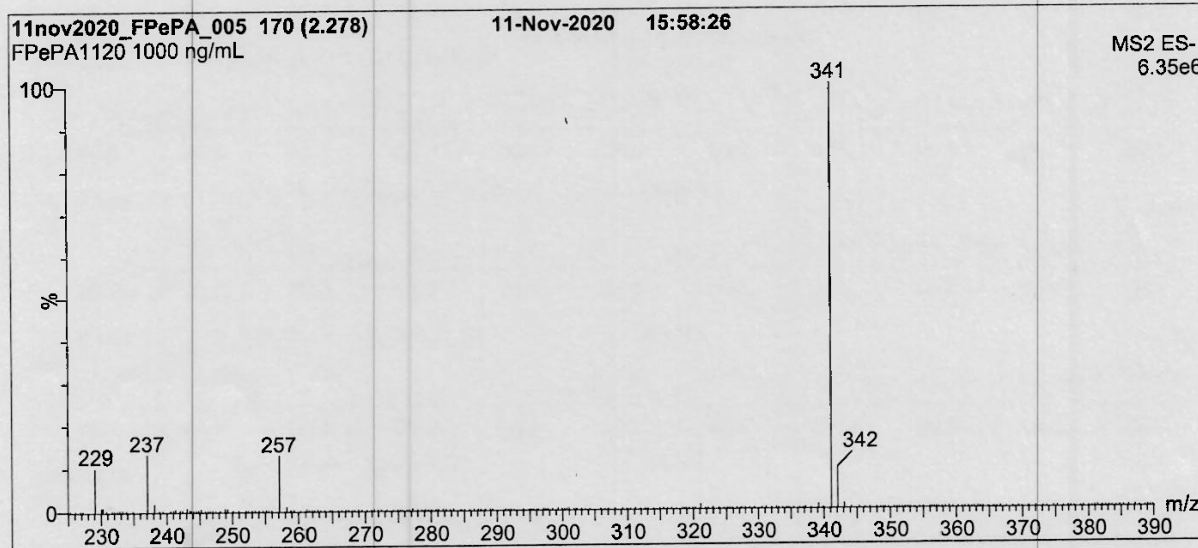
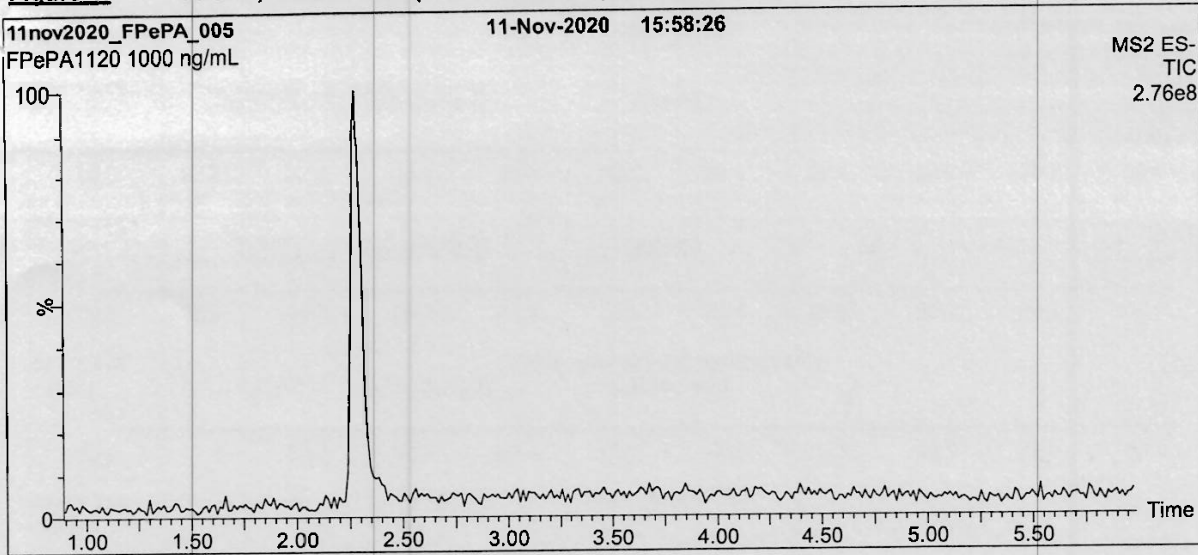
Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

FPePA1120 (1 of 4)
rev0

7.9.1

7

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_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

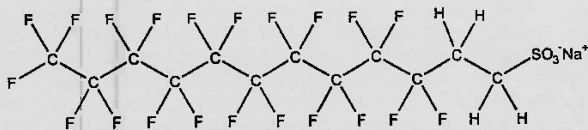
10726 A



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: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 48.3 ± 2.4 µg/mL (10:2FTS acid)
 48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

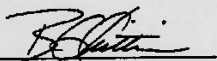
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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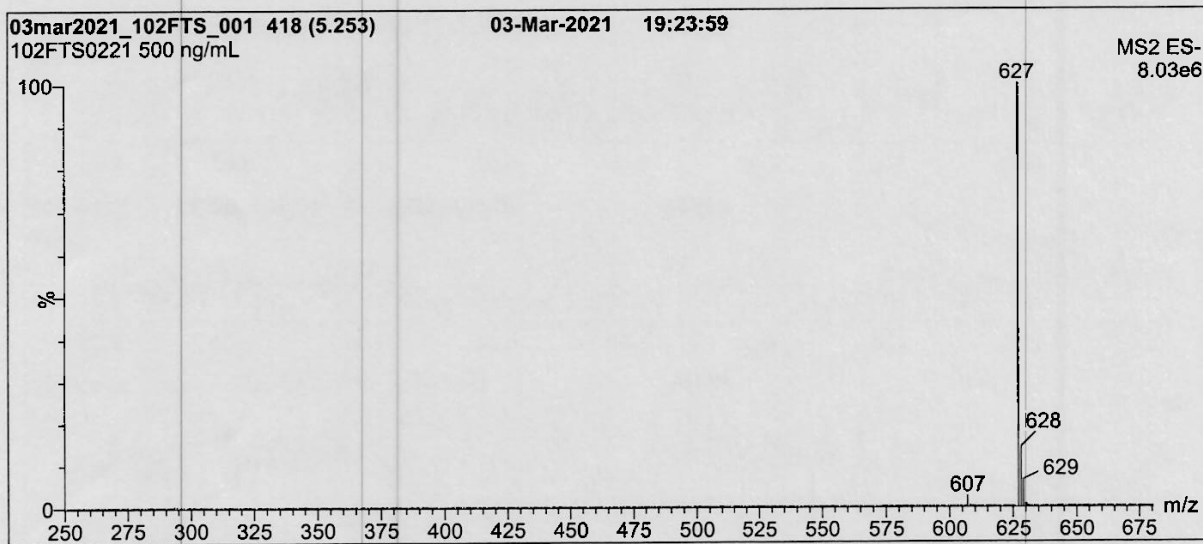
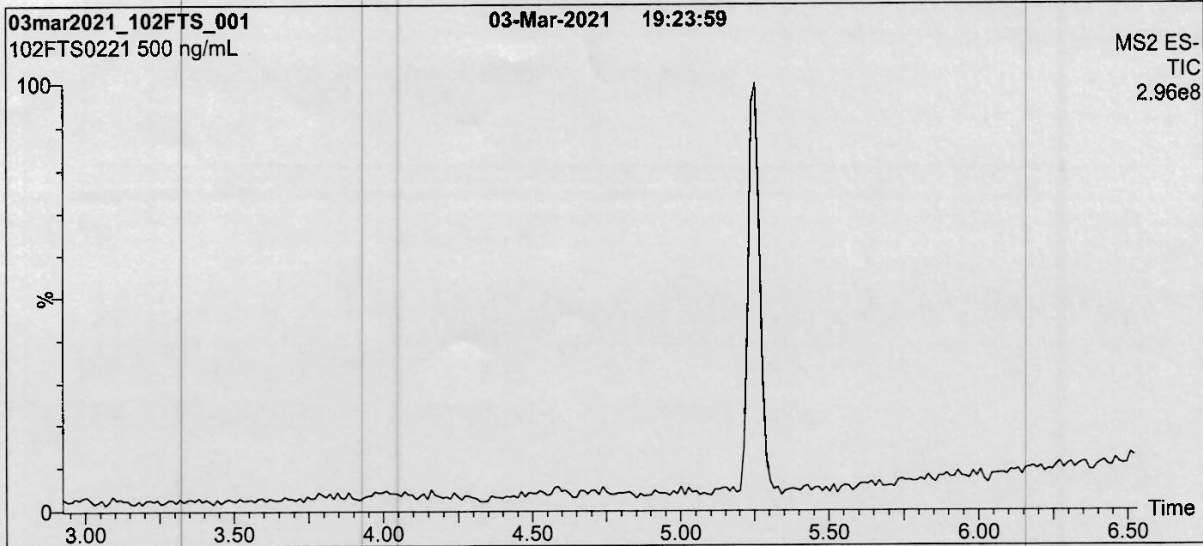
Certified By:  Date: 03/05/2021
(mm/dd/yyyy)
 B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10
 Revision#: 9, Revised 2020-12-23

7.9.1
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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10762 A-B

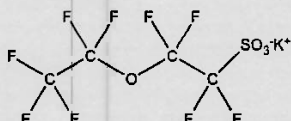


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *retd 8/20/21 WPH* **LOT NUMBER:** PFEESA0520
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₆SO₄K **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

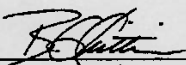
DOCUMENTATION/ DATA ATTACHED:

- 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).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/29/2020
B.G. Chittim, General Manager (mm/dd/yyyy)

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Revision#: 7, Revised 2020-01-09

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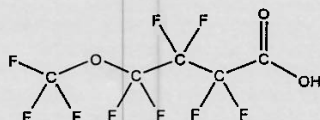
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *re'd
with
8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **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

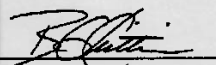
DOCUMENTATION/ DATA ATTACHED:

- 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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/21/2020
(mm/dd/yyyy)

B.G. Chittim, General Manager

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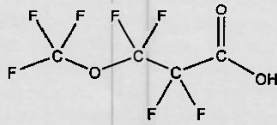


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
w/ln
8/20/21

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0320
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1
STRUCTURE:



MOLECULAR FORMULA: C₄HF₇O₃ **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

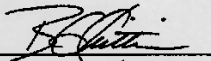
DOCUMENTATION/ DATA ATTACHED:

- 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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 12/21/2020
 (mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
 Revision#: 8, Revised 2020-09-10

PF4OPeA0320 (1 of 4)
 rev1

7.9.1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
wfu
8/20/21

LOT NUMBER:

36OPFHpA0320

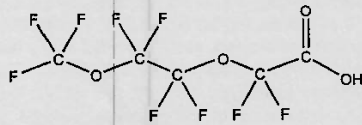
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₅HF₉O₄

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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10829



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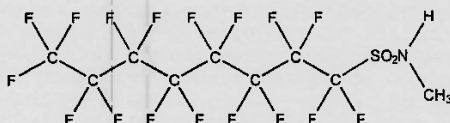
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



*rec'd
WPA
10/5/21*

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

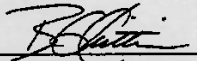
DOCUMENTATION/ DATA ATTACHED:

- 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: 08/04/2021
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

7.9.1
7



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

LOT NUMBER:

NEtFOSA0821M

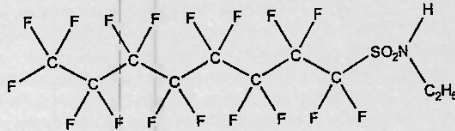
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

4151-50-2



MOLECULAR FORMULA:

$C_{10}H_{17}F_{17}NO_2S$

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

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:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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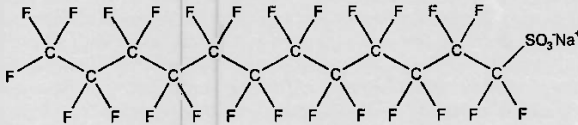
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
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)
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

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol

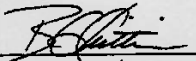
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

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10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

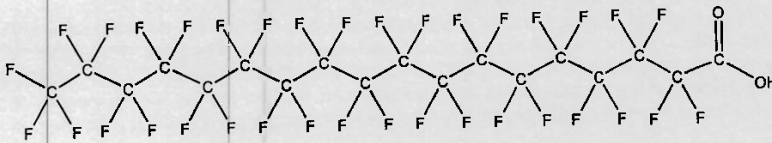
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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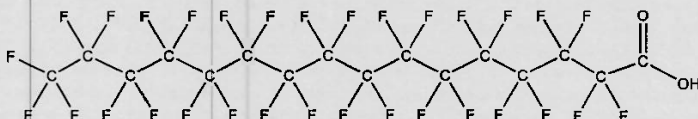
CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 NG on 18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

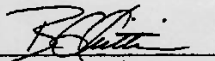
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 05/25/2021
 (mm/dd/yyyy)

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PFHxDA0421 (1 of 4)
 rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

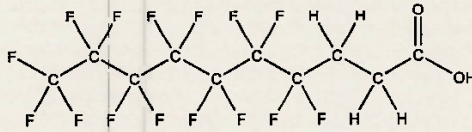
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

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:

B.G. Chittim, General Manager

Date:

11/27/2020

(mm/dd/yyyy)

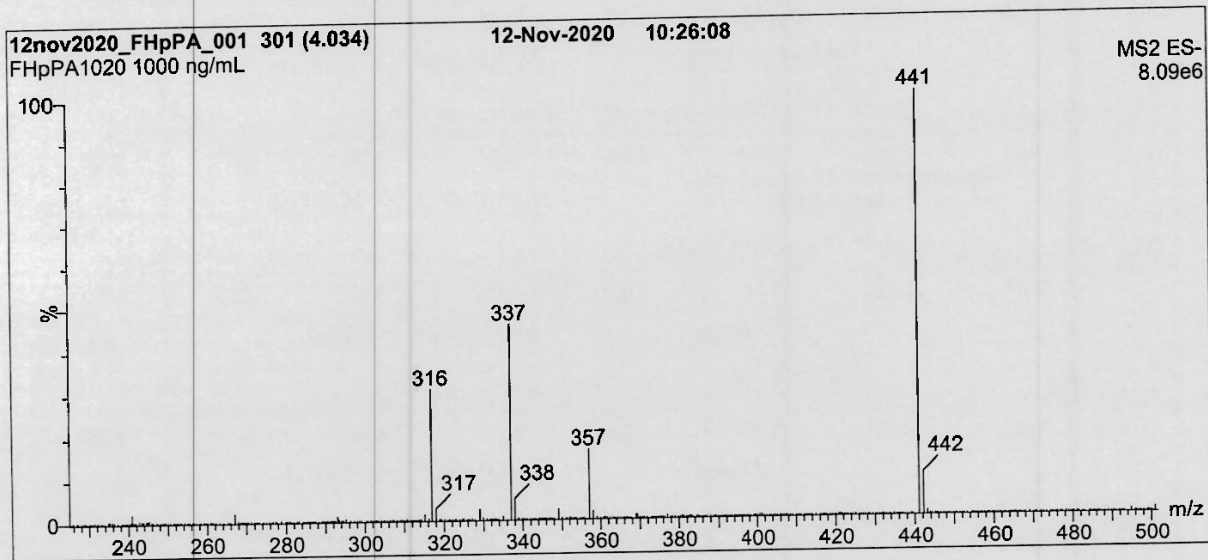
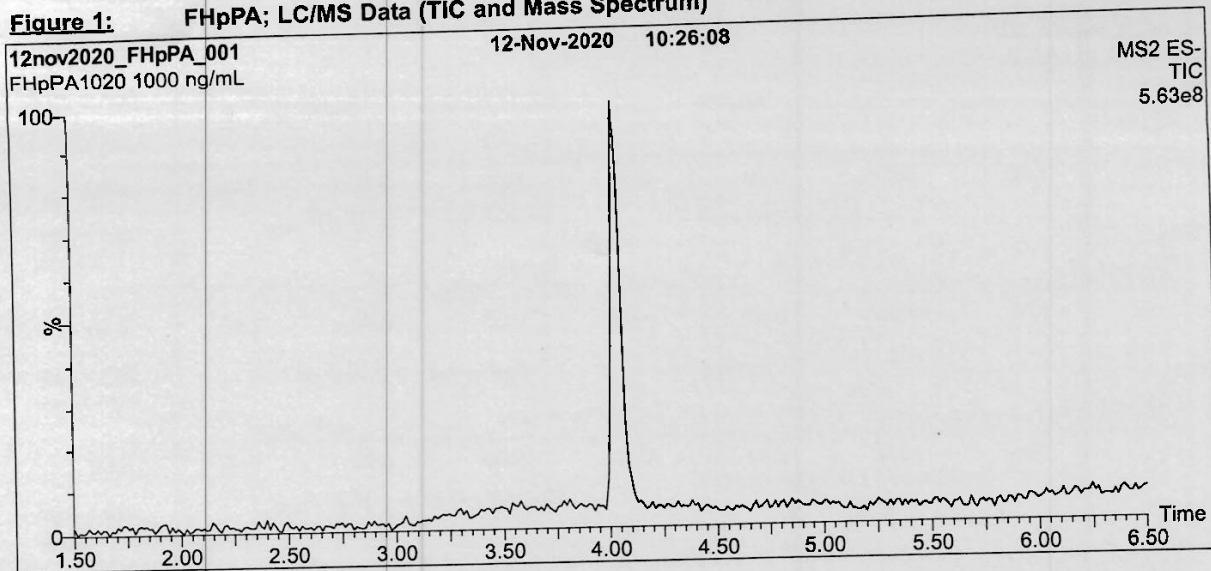
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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

FHpPA1020 (1 of 4)
rev0

7.9.1
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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPr PA(3:3 FTA) 1116 B



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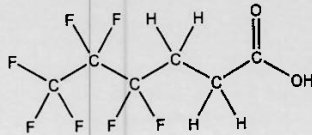
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

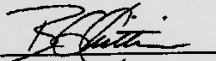
DOCUMENTATION/ DATA ATTACHED:

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 02/04/2022
(mm/dd/yyyy)

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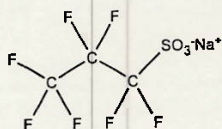
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
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)
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

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

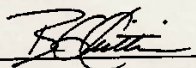
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 08/04/2021
(mm/dd/yyyy)

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LPFPPrS0721 (1 of 4)
rev0

Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

7.9.1
7

11252 11249
7/1/22 KA



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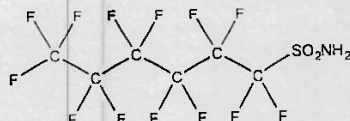
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA12211

STRUCTURE:

CAS #: 41997-13-1



MOLECULAR FORMULA: C₆H₂F₁₃NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/29/2021
EXPIRY DATE: (mm/dd/yyyy) 12/29/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

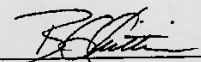
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 01/10/2022
(mm/dd/yyyy)

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Form# 27, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

FHxSA12211 (1 of 4)
rev0

7.9.1
7

11250 Lx 7/11/22



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

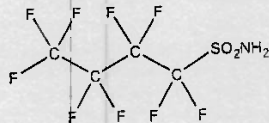
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₁₀NO₂S

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:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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FBSA11211 (1 of 4)
rev0

11332



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CERTIFICATE OF ANALYSIS DOCUMENTATION

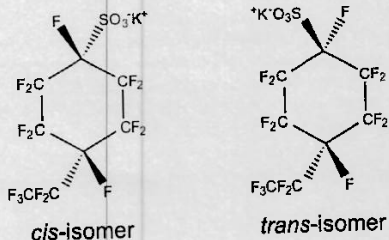
PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

CAS #: 335-24-0

STRUCTURE:



MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

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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7.9.1
7

11336



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSE-M

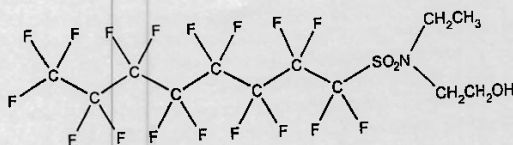
LOT NUMBER: NEtFOSE0622M

COMPOUND:

2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:

C₁₂H₁₀F₁₇NO₃S

MOLECULAR WEIGHT:

571.25

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)
05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 07/13/2022
(mm/dd/yyyy)

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NEtFOSE0622M (1 of 5)
rev0

Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11338



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

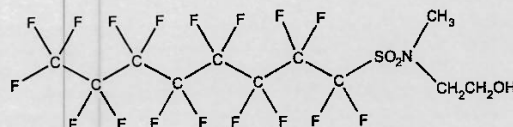
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₈F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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11764 A-5
rec'd: 04/20/23



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 (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). 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 ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
7

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
		as the salt	as the acid	
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: 
R.G. Chittim, General Manager

Date: 12/05/2022
(mm/dd/yyyy)

11765 A-J
Rec'd: 04/20/23



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 (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-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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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES1022 (1 of 7)
rev0

7.9.1
7

Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, \pm 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-($^{13}\text{C}_2$)butanoic acid	MPFBA	2000		1
Perfluoro-n-($^{13}\text{C}_3$)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- $^{13}\text{C}_5$)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- $^{13}\text{C}_5$)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-($^{13}\text{C}_6$)octanoic acid	M8PFOA	500		10
Perfluoro-n-($^{13}\text{C}_7$)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- $^{13}\text{C}_7$)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- $^{13}\text{C}_7$)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- $^{13}\text{C}_2$)dodecanoic acid	MPFDxA	250		19
Perfluoro-n-(1,2- $^{13}\text{C}_2$)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-($^{13}\text{C}_6$)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_2 -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)($^{13}\text{C}_7$)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- $^{13}\text{C}_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- $^{13}\text{C}_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}\text{C}_6$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- $^{13}\text{C}_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- $^{13}\text{C}_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- $^{13}\text{C}_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 11/24/2022

(mm/dd/yyyy)

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 2122A-E	1633 opike Cal Std.	11771 11799A	PFAC MXF	wellington	4/19/28	4-27-24 5-15-24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 mix	5/15/23	10/28/23	MJ
		LCMS 2097A	Br-LN Et+Me	sgs labo	N/A	10/28/23	2 ppm 5 ppm	250uL		125 312.5 ppb	2088ml			
		11772 11801A	PFAC MXF	wellington	3/24/26	4-27-24 5-15-24	2 ppm	250uL		125ppb				
		11774 11802A	PFAC MXG		12-01-27 12-01-27	4-27-24 5-15-24	2 ppm	250uL		125ppb				
		11738 11803A	PFAC MXJ		9/14/26 3-28-28	4-27-24 5-15-24	4-20 ppm	312uL	V	312/1160 ppb				
LCMS 2123A-B	PFC SPIKE	11750	PFAC MXJ	Absolute Wellington Labs	03/10/28	05/16/24	1.0ppm	2mL	5mL	95/1400H 51/420	100ppb	05/16/23	11/02/23	NG
		11432	N-Me- FOSA-M	wellington Labs	04/28/27	03/10/24	50ppm	40uL						NG
		11513	FBSA-1		11/10/26	04/18/24								NG
		11514	FWSA-1		10/29/26	04/18/24								NG
		11332	PFECHS		03/28/27	04/18/24								NG
LCMS 2123-2124	1633 opike Cal std.	11799B	PFAC MXH	wellington	4/19/28	5/22/24 5-15-24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 mix	5/22/23	10/28/23	NW
		LCMS 2097A 4801B	Br-LN Et+Me	sgs labo	N/A	10/28/23	2 ppm 5 ppm			125 312.5 ppb	(2088ml)			
		11801B	PFAC MXF	wellington	3/24/26	5/22/24	2 ppm			125ppb				
		11802B	PFAC MXG		12/1/27	5/22/24	2 ppm			125ppb				
		11803B	PFAC MXJ		3/28/28	5/22/24	4-20 ppm	312uL	V	312/1160 ppb				
						N/A	NW	Continue next page 5/22/23						

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Sid. #	Name Description	Parent Sid. #	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	(10PTB) PFC ID SURR	11669	PFAC-2YES	Wellington Labs	01/18/18	03/28/24	1.0ppm	2.4mL	~50mL	0.5ppm	95/100th 51420	02/08/23	09/18/23	NS
↓	↓	11585	PFAC-DA	↓	11/08/18	01/26/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	PFAC-d-N	↓	05/06/17	03/13/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 2096A-B	1033 spike Cal std.	11672	PFAC-MxH	Wellington Labs	8/8/27	3/23/24	1-4 ppm	250uL	4mL	02.5 125 250ppb	1033 MIX	3/30/23	9/30/23	MU
↓	↓	11686	PFAC-MxI	↓	2/27/28	3/30/24	170 ppm	250uL	↓	02.5 625ppb	↓	↓	↓	↓
↓	↓	11674A	PFAC-MxJ	↓	1/11/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11674B	PFAC-MxK	↓	12/11/27	3/30/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11600	PFAC-MxL	↓	9/14/26	3/23/24	4-20 ppm	312uL	↓	312/100 ppb	↓	↓	↓	↓
↓	↓	11675	PFAC-MxM	↓	10/28/23	10/28/23	50ppm	200uL	5mL	2ppm 5ppm	1033 MIX	4/6/23	10/28/23	MU
LCMS 2097A-B	BR-LN metel for 1633	11497	br-N metosa	Wellington Labs	08/23/27	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11498	br-N Etfose	↓	10/07/27	10/28/23	50ppm	200uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11495	br-N metose	↓	10/07/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Etfose	↓	10/07/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓					4/8/25								

* tested & signed by 3/20/24

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2125A-B	F-111 List 40 spike (Cal old)	11750	PFOA 28 Comp	Alabate	3/13/28	5/10/24	1.0ppm	400ul	4.0mL	100ppb	951MEOH 58420 (2,400ml)	5/22/23	8/23/23	MW
↓	↓	2067	40 List A old	SGS old.	—	8/23/23	1.0ppm	400ul	↓	↓	↓	↓	↓	↓
↓	↓	2117	40 List A old	↓	—	11/8/23	1.0ppm	400ul	↓	↓	↓	↓	↓	↓
↓	↓	2101	F08 Std.	↓	—	7/19/23	5.0ppm	400ul	↓	50ppb	↓	↓	↓	↓
LCMS 2126A-5	PFAC ID SURT (10 ppb)	11804	MPAC - 2YES	Wellington Labs	01/18/28	05/23/24	1.0ppm	1.2mL	~2.5mL	0.5ppm	951MEOH 57420	05/23/23	10/28/23	NG
↓	↓	11635A	M3HFO DA	↓	11/08/25	04/14/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
↓	↓	11431	D-N- MERSAM	↓	05/06/27	02/10/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
LCMS 2127A-E	1633 opice Cal old.	11799B	PFAC MxH	Wellington	4/19/28	5/22/24	1-4 ppm	2.50ul	4mL	62.5 125 250ppb	1033 MIX (268ml)	5/24/23	10/28/23	MW
↓	↓	2097A-B	BE IN ET ME	SGS Labo	MA	10/28/23	2 ppm	↓	↓	↓	↓	↓	↓	↓
↓	↓	11801B	PFAC Mx F	Wellington	3/24/26	5/22/24	2 ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11802B	PFAC Mx G	↓	12/1/27	5/22/24	2 ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11803B	PFAC Mx J	↓	3/28/28	5/22/24	4-20 ppm	3/2ul	↓	312 160ppb	↓	↓	↓	↓
LCMS 2128A-5	PFAC ID SURT (10 PPB)	F-5 11819	MPAC - 2YES	Wellington Labs	01/18/28	06/10/24	1.0ppm	1.2mL	~2.5mL	0.5ppm	951MEOH 57420	06/10/23	10/28/23	NG
↓	↓	11635A	M3HFO DA	↓	11/08/25	04/14/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
↓	↓	11584	D-N- MERSAM	↓	11/11/27	06/10/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
						NG	06/10/24							

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2067	40 List std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50 ppm	80 uL	4.0 mL	1 ppm	95% MeOH 5% H ₂ O	2/8/23	3/21/23 8/23/23	MV
		10840	L- PFDOS		7/9/26	10/18/23							8/23/23	
		10829	N- MCFOSA		8/3/26	8/23/23								
		10837	N- Etfosa		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFOBA		5/7/26	10/18/23								
		11116B	3:3 FTCA PFR-PA		2/3/27	2/8/24								
		10685A	5:3 FTCA PFPePA		11/11/25	8/23/23								
		11116A	7:3 FTCA FHP-PA		11/12/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/13/25	10/18/23								
		10763B	PFMBA		3/31/25	10/18/23								
		10764	PFMFA		3/31/25	2/8/24								
		10765B	NFHDA		3/31/25	10/18/23								
			3.6-OPFPA											
					NS	02/10/23								

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2098A	1033 spike Cal std.	11672A	PFAC MXH	Wellington	8/8/24	3/23/24	1-4 ppm	2.50mL	4mL	6.25 250ppb	1033 mix	4/16/23	10/6/23	MU
		LCMS 2097	Er-In Et. Me	SGS Labo	n/a	10/28/23	3ppm 5ppm	2.50mL		125ppb 312.5ppb				
		11674B	PFAC MYF	Wellington	11/1/25	3/30/24	2ppm	500uL 250uL		350ppb 125ppb				
		11675	PFAC MYG		12/1/27	3/30/24	2ppm	250uL		125ppb				
		11672B	PFAC MYJ		9/14/26	3/23/24	4-20 ppm	312uL		312/1100 ppb				
LCMS 2099	537.1 DW std. (Interim)	11670	M3PF-PEA	Wellington Labs	07/06/25	04/06/24	50ppm	80uL	4mL	10ppm	16:1 MeOH 4:1 H2O	04/16/23	06/15/23	NG
		10436A	MAG-a FTS		11/05/25	04/06/24		80uL		10ppm				NG
		10528B	D3-N-MEFOAA		10/22/25	05/15/23		160uL		20ppm				NG
		10498A	MPTOS		11/02/25	04/06/24		80uL		10ppm				NG
		11669	MARFA		12/01/26	03/20/24		80uL		10ppm				NG
LCMS 2100	Full List (40) List 40 spike (Std)	11626	PF0A DEP 28 Comp.	Absolute	11/9/27 4/23/24	4/11/24	1.0ppm	400uL	4.0mL	100ppb	75% MeOH 5% H2O (2.4008)	4/11/23	7/24/23	MU
		LCMS 2097	40 LIST ADP #1	SGS add.		8/23/23	1.0ppm	400uL						
		LCMS 2076	40 LIST ADP #2			5/12/23	1.0ppm	400uL						
		LCMS 2054	F05F Std.			7/24/23	5.0ppm	400uL		50ppb				
LCMS 2101	F05F std.	11336	N-et F05F	Wellington	5/13/27	9/19/23	50ppm	200uL	2.0mL	5ppm	95% MeOH 5% H2O	9/11/23	9/19/23	MU
		11338	N-me f05F		5/13/27	9/19/23	50ppm	200uL						

(1,000)

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ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819

10685A



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA

LOT NUMBER:

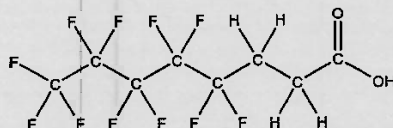
FPePA1120

COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:**CAS #:**

914637-49-3

**MOLECULAR FORMULA:** $C_8H_9F_{11}O_2$ **MOLECULAR WEIGHT:**

342.11

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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 ($C_8H_9F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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Certified By:

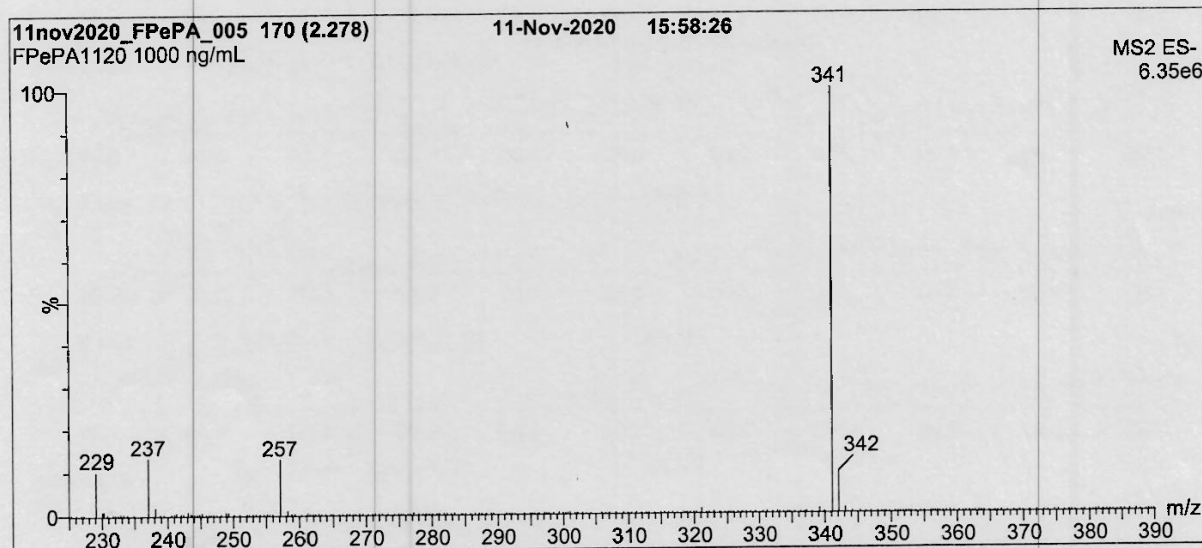
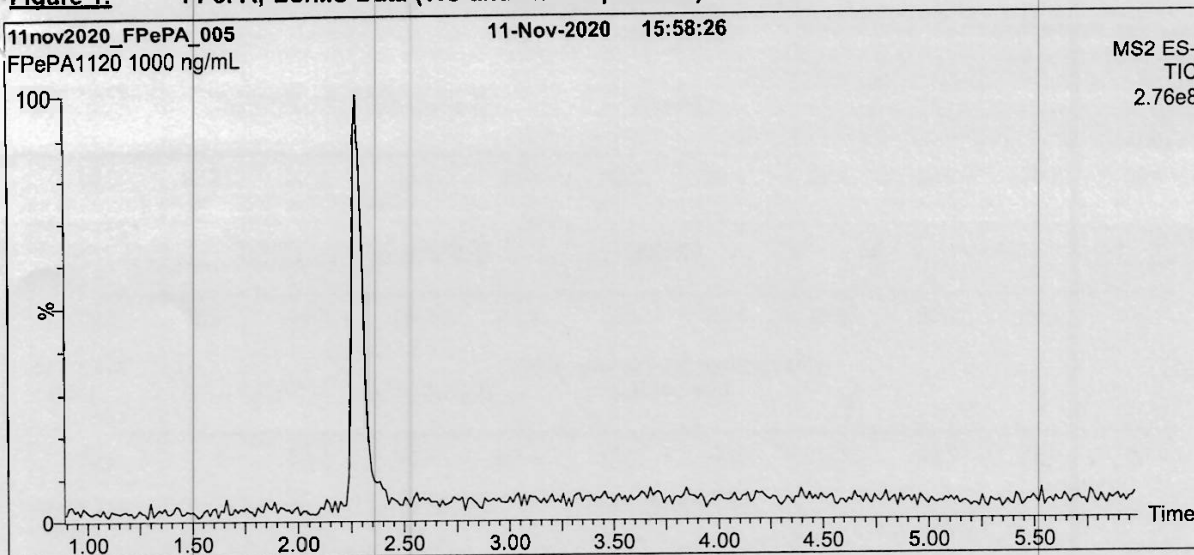
B.G. Chittim, General Manager
Date: 11/27/2020
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10

FPePA1120 (1 of 4)
rev0

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_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10726 A

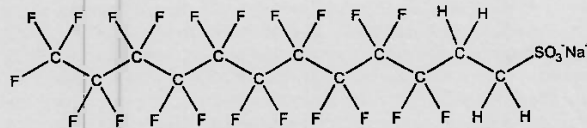


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

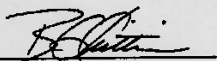
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

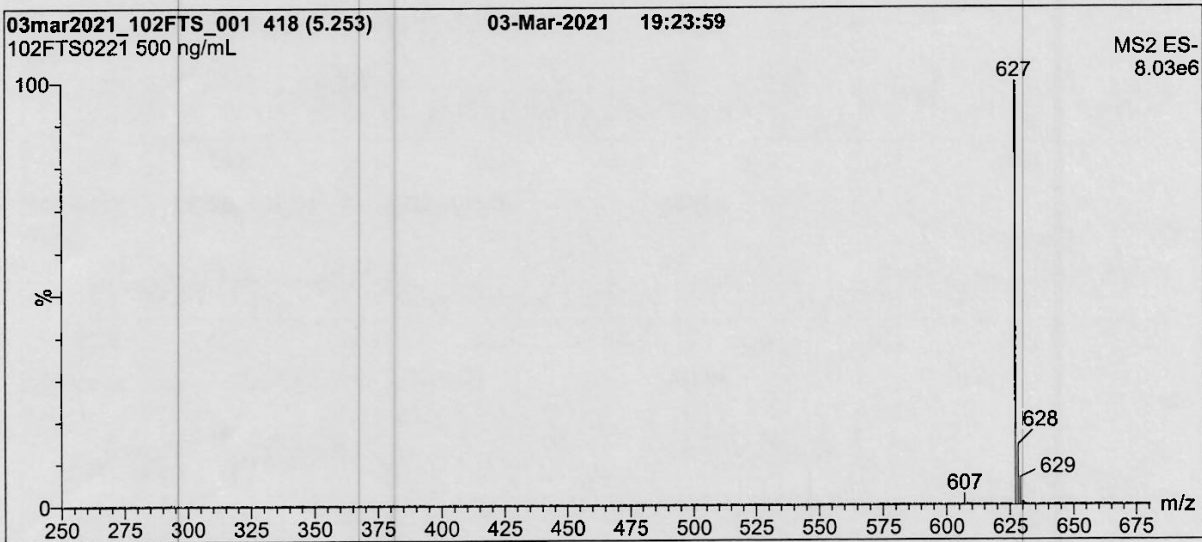
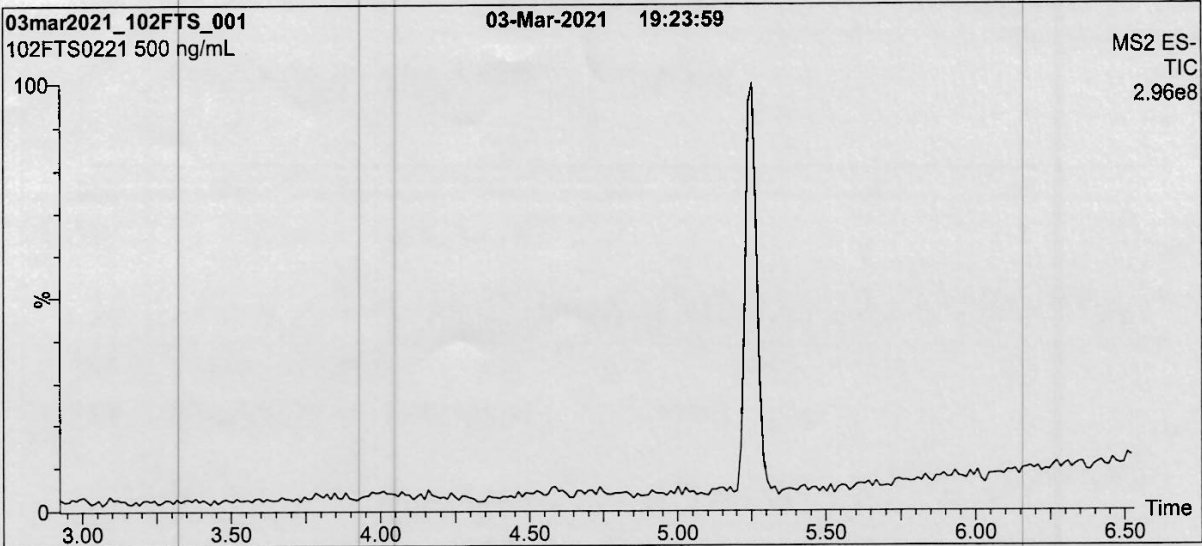
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 03/05/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10762 A-B



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFEESA

rec'd
8/20/21
WPH

LOT NUMBER:

PFEESA0520

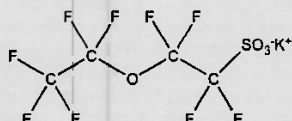
COMPOUND:

Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE:

CAS #:

117205-07-9



MOLECULAR FORMULA:

C₄F₉SO₄K

MOLECULAR WEIGHT:

354.19

CONCENTRATION:

50.0 ± 2.5 µg/ml (K salt)
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)

SOLVENT(S):

Methanol

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:

B.G. Chittim, General Manager

Date: 05/29/2020
(mm/dd/yyyy)

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10763 A-B



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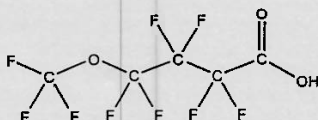
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **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

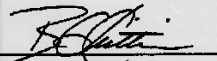
DOCUMENTATION/ DATA ATTACHED:

- 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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10764A-B



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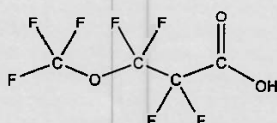
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA *rec'd
w/wh
8/20/21* **LOT NUMBER:** PF4OPeA0320

COMPOUND: Perfluoro-4-oxapentanoic acid

SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA)

STRUCTURE: **CAS #:** 377-73-1



MOLECULAR FORMULA: C₄HF₇O₃ **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

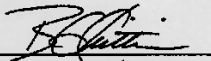
DOCUMENTATION/ DATA ATTACHED:

- 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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/21/2020
(mm/dd/yyyy)

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10765 A-13



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

*rec'd
WPH
8/20/21*

LOT NUMBER:

36OPFHpA0320

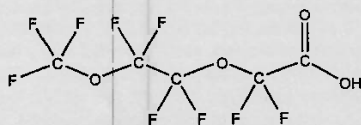
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₉O₄

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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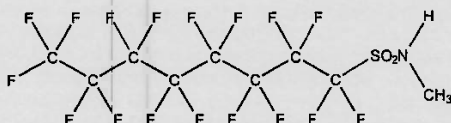
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



rec'd
WPA
10/5/21

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
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

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

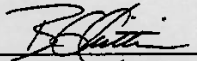
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

7.9.2

7



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

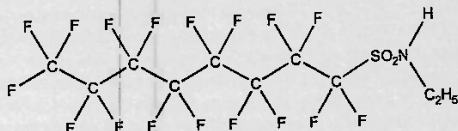
10837

LOT NUMBER: NEtFOSA0821M

COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:



CAS #: 4151-50-2

MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

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)

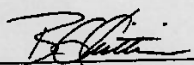
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA



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CERTIFICATE OF ANALYSIS DOCUMENTATION

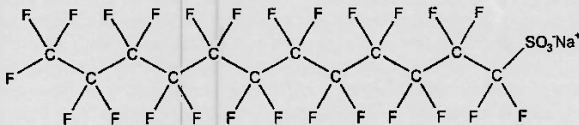
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
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)
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

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol


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: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

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10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

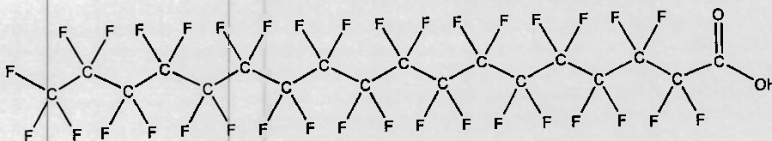
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoules 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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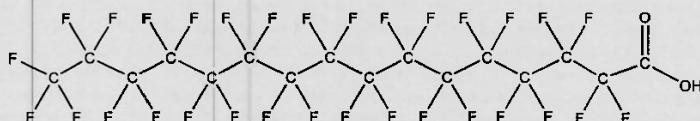
CERTIFICATE OF ANALYSIS DOCUMENTATION

10842 * NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **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

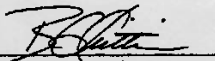
DOCUMENTATION/ DATA ATTACHED:

- 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.

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Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

PFHxDA0421 (1 of 4)
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PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

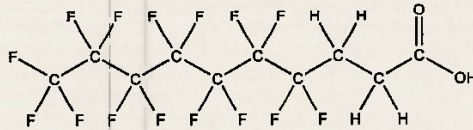
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

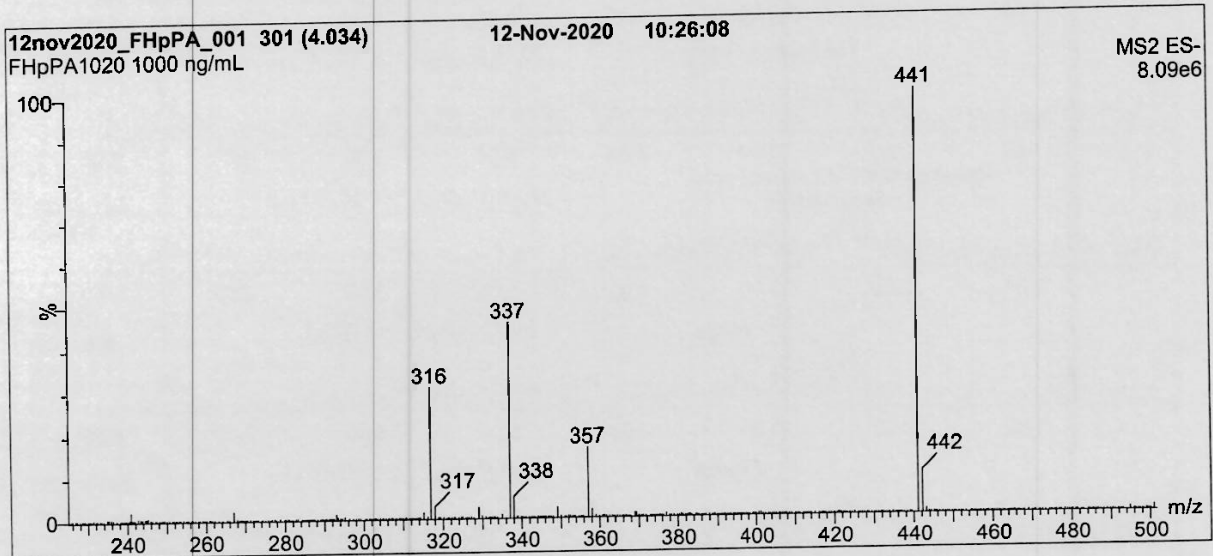
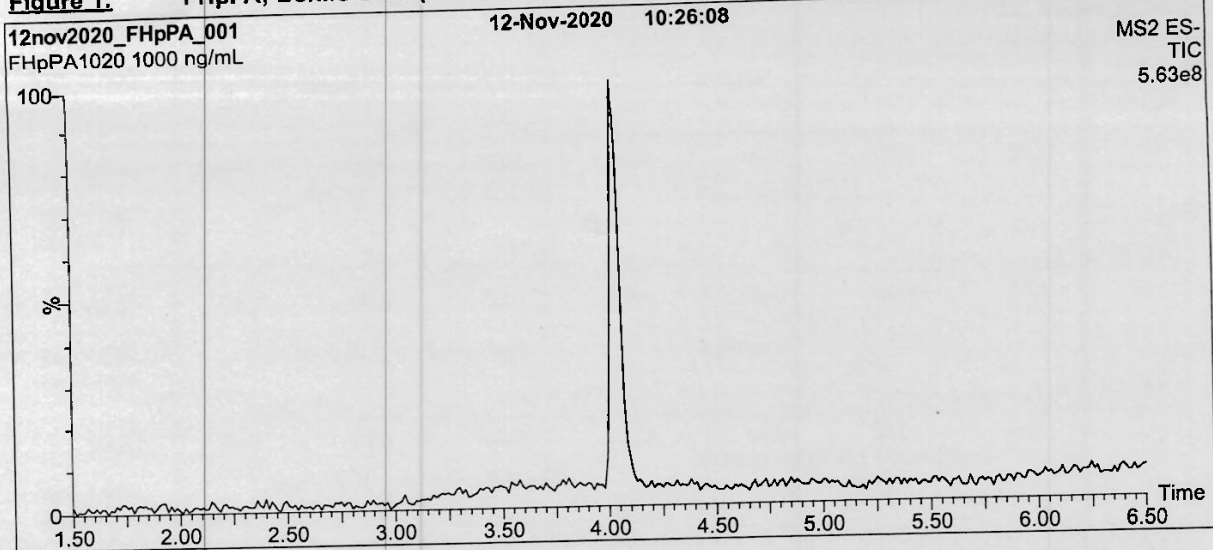
Date: 11/27/2020

(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

FHpPA1020 (1 of 4)
rev0

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FP_rPA(3:3FTCA) 1116 B



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DOCUMENTATION

PRODUCT CODE:

FP_rPA

LOT NUMBER:

FP_rPA0122

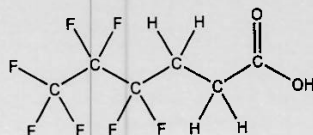
COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:

CAS #:

356-02-5



MOLECULAR FORMULA:

C₆H₅F₇O₂

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 (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

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Certified By:

B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

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PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

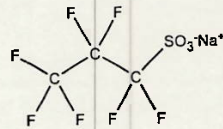
COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₃F₇SO₃Na

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:

B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

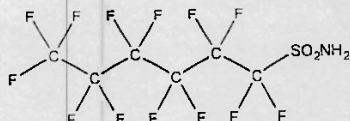
COMPOUND:

Perfluoro-1-hexanesulfonamide

STRUCTURE:

CAS #:

41997-13-1



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

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:

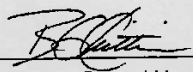
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 01/10/2022

(mm/dd/yyyy)

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PRODUCT CODE:

FBSA-I

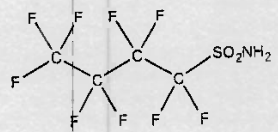
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₁₀NO₂S

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:
 B.G. Chittim, General Manager

Date: 11/10/2021
 (mm/dd/yyyy)

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 Revision#: 9, Revised 2020-12-23

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 rev0

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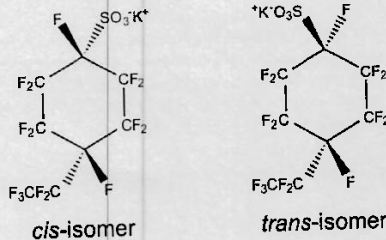
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PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

STRUCTURE:



CAS #: 335-24-0

MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

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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PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

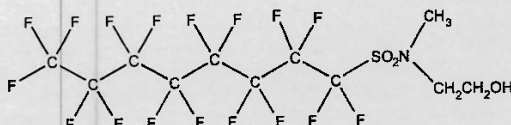
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₈F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NMeFOSE

**2-(N-Methylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NMeFOSE
<u>LOT NUMBER:</u>	brNMeFOSE0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/02/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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Revision#:9, Revised 2020-12-23

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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NEtFOSE
<u>LOT NUMBER:</u>	brNEtFOSE1022
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/12/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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Revision#:9, Revised 2020-12-23

brNEtFOSE1022 (1 of 7)
rev1

7.9.2

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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

**N-Methylperfluorooctanesulfonamide
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NMeFOSA
<u>LOT NUMBER:</u>	brNMeFOSA0822
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/18/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/23/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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Revision#:9, Revised 2020-12-23

brNMeFOSA0822 (1 of 6)
rev1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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).

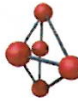
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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

brNEtFOSA0922 (1 of 6)
rev1

7.9.2
7



11750
Rec'd: 04/17/23

CERTIFIED WEIGHT REPORT

Part Number: 99542
Lot Number: 110422
Description: Perfluoro-n-butanoic acid (PFNA)
Expiration Date: 10/2025
Recommended Storage: -15°C
Nominal Concentration (µg/mL): 1.0
Notes: All assigned values are atom concentrations.

Method: Methanol (1 mL) + 2-Propanol
Lot: 10722 (85%)
32500 (15%)
Solvent(s):
Dilution Factor: 100.0
Initial Uncertainty: 0.01
Final Uncertainty: 0.01

Formulated By: Prashant Chauhan
Reviewed By: Pedro L. Ramos
Formulation Date: 01/15/23
Revision Date: 01/15/23

Expanded Uncertainty: (k=2)
Coverage: (95%)
Reference: NIST SRM 1971
Matrix: Perfluoro-n-butanoic acid (PFNA)

Compound	Part Number	Lot Number	Dilution Factor	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Initial Uncertainty (µg/mL)	Final Uncertainty (µg/mL)	Atom Concentration (ppm)	Expanded Uncertainty (ppm)	Coverage (%)	Reference	Matrix
Perfluoro-n-butanoic acid (PFNA)	99542	110422	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	100%	NIST SRM 1971	Perfluoro-n-butanoic acid (PFNA)
Perfluoro-n-pentanoic acid (PFPA)	99543	011723	0.02	2.00	0.017	50.3	1.01	0.02	2705-90-3	100%	NIST SRM 1971	Perfluoro-n-pentanoic acid (PFPA)
Perfluoro-n-hexanoic acid (PFHxA)	99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	100%	NIST SRM 1971	Perfluoro-n-hexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	100%	NIST SRM 1971	Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFPOA)	99202	090522	0.02	2.00	0.017	50.2	1.00	0.02	335-87-1 (L)	100%	NIST SRM 1971	Perfluorooctanoic acid (PFPOA)
Perfluorononanoic acid (PFNA)	99195	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	100%	NIST SRM 1971	Perfluorononanoic acid (PFNA)
Perfluorodecanoic acid (PFDA)	99205	071522	0.02	2.00	0.017	50.2	1.00	0.02	2059-94-8	100%	NIST SRM 1971	Perfluorodecanoic acid (PFDA)
Perfluoroundecanoic acid (PFUdA)	99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	100%	NIST SRM 1971	Perfluoroundecanoic acid (PFUdA)
Perfluorododecanoic acid (PFDDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72639-94-8	100%	NIST SRM 1971	Perfluorododecanoic acid (PFDDA)
Perfluorotridecanoic acid (PFTDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	100%	NIST SRM 1971	Perfluorotridecanoic acid (PFTDA)
Perfluoro-1,6-dioxadecanoic acid (PFOSA)	3677	FOSA0321	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	100%	NIST SRM 1971	Perfluoro-1,6-dioxadecanoic acid (PFOSA)
N-Methylperfluorooctanesulfonamide acid (N-MeFOAM)	4162	NMeFOAM042	0.02	2.00	0.017	50.0	1.00	0.05	2955-31-9 (L)	100%	NIST SRM 1971	N-Methylperfluorooctanesulfonamide acid (N-MeFOAM)
N-Ethylperfluorooctanesulfonamide acid (N-EFOAM)	4163	N-EFOAM1121	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	100%	NIST SRM 1971	N-Ethylperfluorooctanesulfonamide acid (N-EFOAM)
Perfluorobutanesulfonic acid (PFBS)	99194	060522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	100%	NIST SRM 1971	Perfluorobutanesulfonic acid (PFBS)
Perfluoropentanesulfonic acid (PFPS)	99544	091522	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	100%	NIST SRM 1971	Perfluoropentanesulfonic acid (PFPS)
Perfluorohexanesulfonic acid (PFHxS)	99198	030923	0.02	2.00	0.017	50.0	1.00	0.02	355-46-4 (L)	100%	NIST SRM 1971	Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanesulfonic acid (PFHpS)	3672	PFHPS082	0.02	2.10	0.017	47.8	1.00	0.05	375-95-8	100%	NIST SRM 1971	Perfluoroheptanesulfonic acid (PFHpS)
Perfluorooctanesulfonic acid (PFOS)	99201	030923	0.02	2.10	0.017	47.9	1.00	0.02	1783-23-1 (L)	100%	NIST SRM 1971	Perfluorooctanesulfonic acid (PFOS)
Perfluorononanesulfonic acid (PFNS)	3987	PFNS1122	0.02	2.10	0.017	48.0	1.01	0.05	68259-12-1	100%	NIST SRM 1971	Perfluorononanesulfonic acid (PFNS)
Perfluorodecane sulfonic acid (PFDS)	3671	PFDS1122	0.02	2.10	0.017	48.2	1.01	0.05	335-77-3	100%	NIST SRM 1971	Perfluorodecane sulfonic acid (PFDS)
1,1,1,1-Tetrafluoro-2,2,2-trifluoroethane sulfonic acid (TFTS)	6871	060522	0.02	2.00	0.017	50.2	1.00	0.05	27124-72-4	100%	NIST SRM 1971	1,1,1,1-Tetrafluoro-2,2,2-trifluoroethane sulfonic acid (TFTS)
1,1,1,1,2,2,2-Hexafluoroethane sulfonic acid (H2F6S)	6872	031023	0.02	2.10	0.017	47.9	1.01	0.05	93128-34-4	100%	NIST SRM 1971	1,1,1,1,2,2,2-Hexafluoroethane sulfonic acid (H2F6S)
2,2,2-Trifluoroethylperfluorooctanesulfonic acid (TFPOSA)	3682	8F150822	0.02	2.10	0.017	50.1	1.00	0.02	32155-13-6	100%	NIST SRM 1971	2,2,2-Trifluoroethylperfluorooctanesulfonic acid (TFPOSA)
1-Chloro-2,2,2-trifluoroethylperfluorooctanesulfonic acid (1C-TFPOSA)	4165	1C-TFPOSA1121	0.02	2.12	0.017	47.1	1.00	0.05	793051-28-9	100%	NIST SRM 1971	1-Chloro-2,2,2-trifluoroethylperfluorooctanesulfonic acid (1C-TFPOSA)
2-Chloro-2,2,2-trifluoroethylperfluorooctanesulfonic acid (2C-TFPOSA)	4164	2C-TFPOSA1122	0.02	2.14	0.017	46.8	1.00	0.05	794238-36-1	100%	NIST SRM 1971	2-Chloro-2,2,2-trifluoroethylperfluorooctanesulfonic acid (2C-TFPOSA)
Dibenzotetracyclo-[3,4,5,6]-dioxadecanoic acid (DOONA)	4103	NADOONA022	0.02	2.12	0.017	47.1	1.00	0.05	919005-14-4	100%	NIST SRM 1971	Dibenzotetracyclo-[3,4,5,6]-dioxadecanoic acid (DOONA)
Perfluorooctanoic acid (linear)*	99202	060822	0.02	2.00	0.004	48.6	0.99	0.010	335-87-1 (L)	100%	NIST SRM 1971	Perfluorooctanoic acid (linear)*
Perfluorodecanoic acid (branched isomer)*	99202	060822	0.02	2.00	0.004	0.6	0.01	0.001	335-87-1 (L)	100%	NIST SRM 1971	Perfluorodecanoic acid (branched isomer)*
Perfluoroundecanoic acid (linear)*	99198	030923	0.02	2.00	0.017	44.0	0.88	0.02	355-46-4 (L)	100%	NIST SRM 1971	Perfluoroundecanoic acid (linear)*
Perfluorodecanoic acid (branched isomer)*	99198	030923	0.02	2.00	0.017	6.0	0.12	0.0020	355-46-4 (L)	100%	NIST SRM 1971	Perfluorodecanoic acid (branched isomer)*
Perfluorododecanoic acid (linear)*	99201	030923	0.02	2.00	0.017	38.1	0.76	0.02	1783-23-1 (L)	100%	NIST SRM 1971	Perfluorododecanoic acid (linear)*
Perfluoroundecanoic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	7.5	0.15	0.005	1783-23-1 (L)	100%	NIST SRM 1971	Perfluoroundecanoic acid (branched isomer)*
Perfluorotridecanoic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	4.0	0.08	0.002	1783-23-1 (L)	100%	NIST SRM 1971	Perfluorotridecanoic acid (branched isomer)*
Perfluorodecanoic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	0.5	0.010	0.0002	1783-23-1 (L)	100%	NIST SRM 1971	Perfluorodecanoic acid (branched isomer)*
Methylperfluorooctanesulfonamide acid (linear)*	4162	NMeFOAM042	0.02	2.00	0.017	36.0	0.72	0.04	2955-31-9 (L)	100%	NIST SRM 1971	Methylperfluorooctanesulfonamide acid (linear)*
N-Ethylperfluorooctanesulfonamide acid (branched)*	4162	N-EFOAM042	0.02	2.00	0.017	6.5	0.13	0.011	2955-31-9 (L)	100%	NIST SRM 1971	N-Ethylperfluorooctanesulfonamide acid (branched)*
Methylperfluorodecanoic acid (branched)*	4162	NMeFOAM1121	0.02	2.00	0.017	5.0	0.10	0.005	2955-31-9 (L)	100%	NIST SRM 1971	Methylperfluorodecanoic acid (branched)*
Methylperfluoroundecanoic acid (branched)*	4162	NMeFOAM1121	0.02	2.00	0.017	2.5	0.05	0.0009	2955-31-9 (L)	100%	NIST SRM 1971	Methylperfluoroundecanoic acid (branched)*
N-Ethylperfluorodecanoic acid (linear)*	4163	N-EFOAM1121	0.02	2.00	0.017	36.5	0.73	0.04	2991-50-6 (L)	100%	NIST SRM 1971	N-Ethylperfluorodecanoic acid (linear)*
N-Ethylperfluoroundecanoic acid (branched)*	4163	N-EFOAM1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	100%	NIST SRM 1971	N-Ethylperfluoroundecanoic acid (branched)*
Methylperfluoroundecanoic acid (branched)*	4163	N-EFOAM1121	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	100%	NIST SRM 1971	Methylperfluoroundecanoic acid (branched)*
N-Ethylperfluorodecanoic acid (branched)*	4163	N-EFOAM1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	100%	NIST SRM 1971	N-Ethylperfluorodecanoic acid (branched)*

*Qualitative standard (Sect. 3.13) 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. The qualitative PFOA standard must be used in conjunction with a quantitative PFOA standard containing the branched and linear isomers to become commercially available.

*The certified value is the concentration calculated from gravimetric and volumetric measurements under atmospheric conditions. All standards are certified to 0.5% or better, unless otherwise noted. All standards, after opening vials, should be stored with cap tight and under appropriate laboratory conditions. All standards should be used within the stated shelf life. For more information, please contact Absolute Standards, Inc. at 800-368-1131 or www.absolutestandards.com. NIST Technical Note 1371, U.S. Government Printing Office, Washington, DC, (1994).

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 (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ 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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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

7.9.2
7

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
		as the salt	as the acid	
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-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNs	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	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-perfluorodecane sulfonate	8:2Fts	4000	3840	16

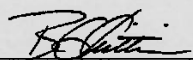
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^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: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

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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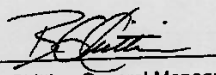
Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

PFACMXF0323 (1 of 5)
rev0

Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
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

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

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

7.9.2
7

Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
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: _____

B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:

LOT NUMBER:

SOLVENT(S):

DATE PREPARED: (mm/dd/yyyy)

LAST TESTED: (mm/dd/yyyy)

EXPIRY DATE: (mm/dd/yyyy)

RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
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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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
Tel: 519-822-2849 • Fax: 519-822-2849 • info@well-labs.com

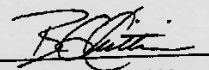
7.9.2

7

Concentrations (µg/mL; ± 5% in methanol)

Table A: PFAC-MXJ; Components and

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: 
B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

PFACMXJ0323 (3 of 5)
rev0

11850 A-J
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 ($\text{C}_4\text{-C}_{12}$, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) 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 $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

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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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

MPFACHIFES1022 (1 of 7)
rev0

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
		as the salt	as the acid	
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 ₆)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 ₁₀)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₁₁)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₁₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₁₄)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 ₃ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₃ -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 ₃ -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 ₆)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: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

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 (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). 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 ¹³C or >94% per ¹⁸O.

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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**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

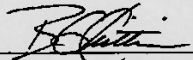
MPFACHIFIS1122 (1 of 5)
rev0

7.9.2
7

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
		as the salt	as the acid	
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)

SGS - ORLANDO

Date/Time Started 05/31/23 13:00

Date/Time Finished 6/1/23 11:00

Batch# OP97143 Ext. By GH

SPE LIQUID SAMPLE PREP REPORT

Method EPA 1633 Draft (QSM) List 40

Balance ID _____

Conc. By _____ Viald 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 97143 MB	/	500	7	N/A	25		5	A4	
OP 97143 BS	/	500	7	N/A		200			
OP 97143 LLBS	/	500	7	N/A		60			
FC 6081-1	2	554							
FC 6205-1	4	510							
	2	500							
	2	540							
FC 6215-17	1	540							
FC 6445-1	2	540							
	2	560							
	2	560							
	2	540							
	2	520						A4	
	2	570						F	
	2	560	7	N/A	25		5	F	
								F	
								F	
OP FC6205-1MS	5	530	7	N/A	25	200	5	A4	
OP FC6205-1MSD	6	530	7	N/A	25	200	5	A4	
OP DUP									

Comments:

EIS (SURR) ID: 11821A-C Conc: 250-5000 ng/ml Exp. Date: 05/23/24 Inj. By: GH Ver. By: CM
 SPIKE.1 ID: LMS 2124C Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: CM
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11820 D-E Conc: 250-1000 ng/ml Exp. Date: 5/24/24 Inj. By: MU Ver. By: NG

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot# 224231 1% NH4OH MeOH PF420 SPE Lot# 6736233-03
 Water Lot# OP97000 0.3M Formic Acid PF419 Syringe filter Lot# _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF415 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: [Signature]
 Accepted By: [Signature]

Date: 05/31/23
 Date: 6/1/23

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started 06/09/23 11:30

Method EPA 1633 Draft (QSM) List 40

Date/Time Finished 6/12/23 9:40 AM

Balance ID: _____

Batch# OP97275 Ext. By GH

Conc. By: _____ Viald 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 97275 MB		500	7						
OP 97275 BS		500	7	N/A	25		5	A4	
OP 97275 LLBS		500	7	N/A		200			
FC66445-4 Re	3	510	7			60			
FC6649-1	2	540	7						
	2	540	7						
	3	560	6						
	4	570	6						
	5	530	6						
	6	560	6						
FC6651-1	2	550	6					A4	
	2	560	6					A6	
	3	560	6						
	4	560	6						
	5	570	6						
	2	530	6						
FC6699-1	2	550	6						
	2	560	6						
	3	560	6						
FC66445-4 Re	1	60	7	N/A	25		5	A6	
OP FC6649-1 MS	3	550	7	N/A	25	200	5	A4	
OP MSD									
OP FC6649-4 DUP	3	570	6	N/A	25		5	A4	

Comments:

EIS (SURR) ID: 11821 F-H Conc: 250-5000 ng/mL Exp. Date: 06/05/24 Inj. By: GH Ver. By: CM
 SPIKE.1 ID: LEMS 2127A Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: CM
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11820 F-H Conc: 250-1000 Exp. Date: 06/05/24 Inj. By: MV Ver. By: NG

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot# 224279 1% NH4OH MeOH PF433 SPE Lot# 6736233-03
 Water Lot# OP97000 0.3M Formic Acid PF419 Syringe filter Lot# _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF428 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: [Signature]
 Accepted By: [Signature]

Date: 06/09/23
 Date: 06/12/23

7.102 7